



Planning Board AGENDA

Thursday, July 16, 2026 - 6:00 PM

Regular Meeting
Agawam Senior Center
954 Main Street
Agawam, MA 01001

A. Planning Board

- 1) 6:00PM Public Hearing-Zoning Amendment-An Ordinance Enacting a Temporary Moratorium on Date Centers in the Town of Agawam-Mayor Johnson & Council President Russo
- 2) Site Plan-314-318 Silver Street-KY Shawn, LLC
- 3) Approval of Minutes-June 18, 2026
- 4) Correspondences



Town of Agawam

Building Department

1000 Suffield Street, Agawam, Massachusetts 01001

Telephone - (413) 821-0632

July 8, 2026

To: Office of Planning and Community Development:

Planning Board Meeting- July 16, 2026:

Re: TOR-2026-4- Zoning Ordinance Amendment- "Data Center Moratorium":

The Building Department has the no issues or concerns at this time for the proposed 270 day Data Center Moratorium for the Town of Agawam.

Respectfully,

Kevin Duquette

Kevin Duquette
Inspector of Buildings
Town of Agawam



Town of Agawam

Christopher C. Johnson, Mayor
36 Main Street
Agawam, MA 01001
Telephone: 413-786-4520

Memorandum

To: Agawam City Council
From: Christopher C. Johnson, Mayor
Re: TOR-2026-4 (Data Center Moratorium)
Date: June 11, 2026

Based upon published reports, the state is experiencing a Data Center boom which is being driven by the expansion of the artificial intelligence industry. The Commonwealth is actively courting AI developers with tax incentives in an effort to bring their well-paying high tech jobs to Massachusetts.

Our town code contains no specific provisions which determine the appropriate location or regulation of Data Centers. TOR-2026-4 is a zoning ordinance amendment that will place a 270 day moratorium on applications for Data Centers in Agawam providing the town with the opportunity to research and develop appropriate zoning and other regulations regarding Data Centers. The ordinance also provides the Council with the ability to extend the moratorium for an additional 90 days, if necessary to complete the work.

Please keep in mind that to my knowledge, the town has **NOT** been contacted by any developer seeking to build a Data Center in Agawam. This moratorium is **NOT** in response to any proposed development of a Data Center. It simply gives Agawam the time to research and enact responsible legislation regarding Data Centers.

Please do not hesitate to contact me with any questions.

Very truly yours,

Christopher C. Johnson
Mayor

**AN ORDINANCE ENACTING A TEMPORARY MORATORIUM
ON DATA CENTERS IN THE TOWN OF AGAWAM**

(Sponsored by Christopher C. Johnson, Mayor and Anthony J. Russo, Council President)

WHEREAS, the Commonwealth of Massachusetts is experiencing a Data Center boom which is being driven by the artificial intelligence industry; and

WHEREAS, the Commonwealth of Massachusetts is courting artificial intelligence developers in an effort to bring these well-paying high tech jobs to the state; and

WHEREAS, the Town of Agawam's zoning code currently contains no specific provisions regulating Data Centers; and

WHEREAS, the Town of Agawam needs time to review its zoning code to formulate provisions governing the location and mitigating the potential impact of Data Centers; and

NOW THEREFORE, the Agawam City Council hereby amends Chapter 180 entitled Zoning of the Code of the Town of Agawam as follows:

1. Add the following definition to §180-2 entitled Definitions and word usage:

Data Centers: a building or series of buildings, with the intended primary use being commercial, that houses and supports the high-performance servers, storage systems, networking equipment, and related computing infrastructure and equipment necessary for storing, processing and distributing data and applications.

2. Add the following new §180-8.2 to read as follows:

A. There is hereby enacted, effective immediately, a two hundred seventy (270) day moratorium on any new construction and development within the Town of Agawam of Data Centers as they are currently defined in §180-2. Said moratorium prohibits acceptance by the Town of Agawam of any new applications and permits for zoning permissions and decisions for the intended purpose of the development and operation of a Data Center. Should the Code of the Town of Agawam be amended prior to the expiration of the 270-day period to regulate Data Centers, the moratorium shall terminate upon the effective date of the amendment. The moratorium period may be extended one time by a two thirds vote of the City Council, not to exceed an additional ninety (90) days.

- B. The purpose of this temporary moratorium is to provide the Town of Agawam with an opportunity to better assess the impacts, if any, that the construction, expansion and operation of Data Centers will have on city infrastructure, and to determine the appropriate locations, if any, for the construction, expansion and operation of Data Centers in the Town. The Town will undertake an analysis to determine the impact of such construction on public safety; water/sewer infrastructure; roadway infrastructure; and the safety of the general public. This list of impacts is not designed to be exhaustive and other impacts may be identified during the town's analysis.
- C. During the term of this moratorium, the Town staff shall review current zoning codes; seek input and recommendations from industry professionals; and seek input from the general public in an effort to propose revisions to the Code of the Town of Agawam to better enable the community to regulate the location, construction, expansion and operation of Data Centers, if deemed appropriate, which shall be placed before the City Council for its consideration.
- D. In addition, consideration shall be given for the adoption of measures which shall potentially govern Data Centers post construction and development, including operational limitations reasonably intended to address concerns raised during the process.

DATED THIS ____ DAY OF _____, 2026.

PER ORDER OF THE AGAWAM CITY COUNCIL

Anthony J. Russo, President

APPROVED AS TO FORM AND LEGALITY



Christopher S. Cappucci, Solicitor

SITE EVALUATION STATEMENT AND STORMWATER MANAGEMENT REPORT

Project:
**OFFICE & EQUIPMENT REPAIR FACILITY
314-318 SILVER STREET
AGAWAM, MA 01001
FURROW Project No. 1289-01-26**

Owner/Applicant:
**KY SHAWN LLC
69 FRANKLIN ST
FEEDING HILLS, MA 01030**

Prepared By:
FURROW ENGINEERING
**199 SERVISTAR INDUSTRIAL WAY, SUITE 2
WESTFIELD, MASSACHUSETTS 01085**



Luke Showalter, P.E.
Project Engineer

Date:
June 18, 2026

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I. INTRODUCTION

A. Project Description

The site under investigation is located at 314-318 Silver Street in Agawam, Massachusetts and consists of three adjacent parcels under common ownership. The parcels are mostly undeveloped land and have an approximate combined area of 4.0 acres. The site was previously developed with multiple buildings that were demolished and removed in 2018. A portion of paved area was left along the frontage of the parcels, but the rest of the site was allowed to naturalize. The parcels are located north of Silver Street and maintain one (1) combined section of frontage of approximately 191 feet. The site is abutted to the north, east, and west by residential houses, and to the south by commercial and industrial properties.

KY Shawn LLC is proposing to construct a new 10,152 sf office and heavy equipment repair facility. The proposed development would include a parking lot, gravel turn around and storage area, and a new stormwater management system to mitigate the additional stormwater runoff.

The proposed stormwater drainage system design mitigates the increase in stormwater runoff using standard catch basins with deep sumps and an infiltration basin with a sediment forebay. Runoff from all proposed paved areas is directed to the deep sump catch basins and discharged to the sediment forebay of the infiltration basin to promote stormwater treatment and groundwater recharge on-site.

B. Existing Soils, Topography and Land Uses

The subject property is currently an undeveloped lot covered in weeds and brush vegetation. The topography of the proposed area of development has slopes ranging from 1% to approximately 6%.

The United States Department of Agriculture – Soil Conservation Service- Soil Survey of Hampden County, Massachusetts characterized soils on site and land adjacent as follows:

Map Unit Symbol	Location	Soil Name	Hydrologic Group	USDA Soil Texture Class
254A	On-Site	Merrimac	A	Fine Sandy Loam
254B	On-Site	Merrimac	A	Fine Sandy Loam

The USDA defines groups of soils into Hydrologic Soil Groups (HSG) according to their runoff-producing characteristics. Soils are assigned to four groups (A, B, C, and D

Groups). In group A, are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They typically are deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They may have a hardpan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other nearly impervious material.

The USDA Soil Survey gives an HSG A for Merrimac soil. The soil type was confirmed in the field by means of deep hole observations performed on May 18, 2026. The groundwater was found to be at a depth of approximately 8 feet below existing grade in the proposed area of the infiltration basin. See Appendix D for Soil Evaluation Logs. In conclusion, the soils on-site have a high permeability and are highly suitable for stormwater infiltration.

II. STORMWATER RUNOFF ANALYSIS

A. Design Criteria

The potential stormwater impacts of this project were evaluated for the 2-, 10-, 25-, and 100-yr., 24-hour storm events. These storm events were evaluated in order to model the operation of the proposed stormwater management system, during the design storm events to ensure no increased runoff occurs due to the proposed development.

Precipitation rates were obtained from National Oceanic and Atmospheric Administration (NOAA) Atlas 14 online database, see Appendix F. The 24-hour precipitation/rainfall amounts for the design storms are as follows:

Table 1: 24-hour Rainfall Depths

24-hour Rainfall (in)				
Design Storm, Recurrence Interval	2-year	10-year	25-year	100-year
Precipitation, inches	3.21	5.17	6.40	8.29

B. Methodology

Peak Flow Rate Calculations

Stormwater Runoff volumes for the indicated recurrence intervals were computed using HydroCAD. HydroCAD, a hydrology program, is designed and calculations are in accordance with the criteria of the Natural Resource Conservation Service's "Urban Hydrology for Small Watersheds," Technical Release (TR) TR-55 and TR-20. A minimum time of concentration (Tc) of 5 minutes was used in accordance with TR-55 for

small, highly impervious sites. HydroCAD was utilized to tabulate and graph the individual subcatchments hydrograph and provide stage-discharge graphs and tables.

III. STORMWATER MANAGEMENT

A. Introduction

The potential stormwater impacts of this project were evaluated for the 2-, 10-, 25- and 100-year 24-hour storm event. Stormwater runoff from the subject parcel will be mitigated such that post-development peak discharge rates do not exceed pre-development levels. These storm events were evaluated in order to model the operation of the proposed stormwater management system. The subject project does not increase the peak flow rate for the 2-, 10-, 25- or 100-year 24-hour storm events. Peak stormwater flows for the indicated recurrence intervals were computed using HydroCAD (a proprietary stormwater modeling program that utilizes the SCS TR-20/TR-55 methodology) for the subcatchment areas within the proposed project site.

B. Runoff Curve Coefficient

The computation of the runoff curve number is based on a combination of land use. The pre and post-development conditions have a variety of different land uses. The land use categories listed in Table 2 were identified for use in computing the pre-and post-development runoff from the site. The table also indicates the runoff curve number (RCN) and hydrologic soil group assigned to each land use.

Table 2: Pre and Post-Development RCN

<u>Land Use</u>	<u>Hydrologic Soil Group</u>	<u>RCN</u>
Paved parking	N/A	98
Roofs	N/A	98
Gravel Storage	A	76
Brush, Fair Condition	A	35

C. Pre-Development Conditions

1. Subcatchment Description:

Table 2 indicates the RCN and hydrologic soil group assigned to each land use within the subcatchment for the pre-development conditions. The existing watershed for the proposed development area consists of two (2) subcatchment areas (see figure F-1 for location) designated as Subcatchment E1 and E2.

Subcatchment E1 contains the majority of the area of development, which includes the undeveloped portion of vegetated land. Runoff from the entire subcatchment currently sheet flows to the natural depression at the rear of the parcels. The depression functions as a closed drainage area where runoff is temporarily stored and infiltrated into the ground. There is no defined surface outlet or off-site drainage discharge point under the analyzed storm events. For modeling and reporting purposes, this analysis utilized a point downstream of the depression as Analysis Point "A" (see Figure F-1).

Subcatchment E2 contains a small portion of paved and vegetated area at the front of the site along Silver Street. The entire subcatchment sheet flows to a catch basin within the Silver Street right-of-way and discharges into the municipal drainage system. For this analysis we have utilized the existing catch basin as Analysis Point "B" (see Figure F-1).

The results of the stormwater management pre-development analysis are summarized in Tables 3 and 4 below.

2. Time of Concentration

Each flow path is delineated along the longest hydrologic path within each corresponding subcatchment.

Table 3: Pre-Development Hydrologic Parameters

Sub-Catchment	Drainage Area, Sq. Ft.	Weighted Runoff Curve No.	Time of Concentration, Min.
E1	150,017	35	13.8
E2	6,946	80	5.0

Ref. Appendix A and Figure 1 Pre-Development Subcatchment Plan

Table 4: Pre-Development Peak Flow Rates per Storm Event

Analysis Point	Peak Flow Rates 24-hour Storm Event [CFS]			
	2-Year	10-Year	25-Year	100-Year
Point "A"	0.00	0.00	0.00	0.00
Point "B"	0.26	0.57	0.77	1.09

Ref. Appendix A and Figure 1 Pre-Development Subcatchment Plan

D. Post-Development Conditions

1. Subcatchment Description:

Table 2 indicates the RCN and hydrologic soil group assigned to each land use for the post-development conditions. The proposed watershed on the subject parcel is composed of one (1) subcatchment and one infiltration basin (see figure F-2 for locations).

Subcatchment P1 contains the entire area of development including the building, paved parking areas, gravel storage area, and the undeveloped rear portion of the parcel. Runoff from the entire Subcatchment P1 ultimately discharges into the proposed infiltration basin in the northeast corner of the parcel. Runoff from the roof and paved areas is routed through deep-sump catch basins prior to discharging to the sediment forebay of the infiltration basin. Runoff from all analyzed storm events, including the 100-year storm, is fully infiltrated into the ground within the proposed infiltration basin.

The results of the stormwater management post-development analysis are summarized in Tables 5 and 6 below.

2. Time of Concentration

Each flow path is delineated along the longest hydrologic path within each corresponding subcatchment.

Table 5: Post-Development Hydrologic Parameters

Sub-Catchment	Drainage Area, Sq. Ft.	Weighted Runoff Curve No.	Time of Concentration, Min.
P1	156,963	54	5.0

Ref. Appendix B and Figure 2 Post-Development Subcatchment Plan

Table 6: Post-Development Mitigated Peak Flow Rates per Storm Event

Analysis Point	Peak Flow Rates 24-hour Storm Event [CFS]			
	2-Year	10-Year	25-Year	100-Year
Point "A"	0.00	0.00	0.00	0.00

Ref. Appendix B and Figure 2 Post-Development Subcatchment Plan

E. Pre and Post Development Summary

Table 7 and 8 below summarizes the Pre and Post-development conditions for the proposed project. The post-mitigated peak flow rates are stormwater flow rates with the proposed infiltration basin system in-place.

Table 7: Summary of Peak Flow Rates per Storm Event - Analysis Point "A"

Storm Event	Peak Stormwater Runoff Flow Rate per 24-hour Storm Event Type III 24-Hour	
	Cubic Feet per Second (CFS)	
	Analysis Point "A"	
	Pre-Development	Post-Development
2 Year	0.00	0.00
10 Year	0.00	0.00
25 Year	0.00	0.00
100 Year	0.00	0.00

Ref. Appendix A and B

Table 8: Summary of Peak Flow Rates per Storm Event - Analysis Point "B"

Storm Event	Peak Stormwater Runoff Flow Rate per 24-hour Storm Event Type III 24-Hour	
	Cubic Feet per Second (CFS)	
	Analysis Point "B"	
	Pre-Development	Post-Development
2 Year	0.26	0.00
10 Year	0.57	0.00
25 Year	0.77	0.00
100 Year	1.09	0.00

Ref. Appendix A and B

IV. Stormwater Management Standards Narrative

The following narrative addresses the proposed developments adherence to the ten (10) Massachusetts Stormwater Standards.

Standard 1-No New Untreated Discharges

No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

All stormwater runoff from paved areas of the proposed project will be treated via deep sump catch basins and an infiltration basin with sediment forebay. The proposed stormwater management system will achieve greater than 80% TSS removal for the water quality volume.

Standard 2-Peak Rate Attenuation

Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.

The proposed design's post-development peak discharge rates do not exceed pre-development peak discharge rates. Under both existing and proposed conditions for Analysis Point "A", the modeled peak discharge rates are 0.00 cfs because runoff from the analyzed storm events is infiltrated on site with no off-site discharge.

At Analysis Point "B," the existing site discharges a portion of runoff to the Silver Street drainage system. Under proposed conditions, this discharge is eliminated because the developed area is routed to the proposed infiltration basin. Therefore, the proposed design does not increase peak discharge rates at the analyzed points.

Post-development runoff for the entire development area is collected and routed to the infiltration basin, where it is fully infiltrated. Please see Tables 7 and 8 for pre- and post-development flow rates and Appendices A and B for supporting calculations.

Standard 3-Recharge

Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil

type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

-In accordance with the MSH Standard #3 Recharge to Groundwater, calculated volumes of stormwater is required to be recharged to compensate for the proposed impervious area and approximate existing site conditions. The soil hydrologic groups "A", "B", "C" and "D" are utilized to calculate the volume to be recharged 0.60, 0.35, 0.25, and 0.10 inches, respectively, over the total impervious area of the proposed development. In other terms, a volume of stormwater as a function of impervious area is required to be recharged. The results of these calculations are shown in Appendix C.

*The proposed recharge system is an infiltration basin. The required recharge volume was determined by the "Static" Method in accordance with the MSH and found to be **2,156 C.F.** The system will provide a storage volume of **15,159 C.F.** The system provides a stormwater runoff storage volume in excess of the required recharge volume, thereby complying with Stormwater Standard #3 for the proposed development (see Appendix C for calculations).*

All runoff from the paved areas of the development will be captured and discharged into the infiltration basin. (See Subcatchment P1 in Appendix B Post Development Runoff Calculations). The entire storage volume of the infiltration system will drain completely within the required 72-hour drawdown period (See Appendix C for calculations).

Standard 4-Water Quality

Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:

- a. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;
- b. Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and
- c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

The MSH requires the applicant to remove 80% of the total suspended solids (TSS). The BMPs proposed for the subject project are deep sump catch basins and an infiltration basin with sediment forebay. We have utilized the TSS removal rates suggested in the MSH (Vol. 1 Ch. 1 Page 11). The best management practices proposed for this project are sized to capture at least 80% of TSS produced from the subject project. The results of these calculations are shown below in Table 9.

Table 9: TSS Removal Rates

<i>Best Management Practice (BMP)</i>	<i>BMP TSS Removal Rate</i>	<i>Annual TSS Load entering the BMP [unit]</i>	<i>Amount of TSS Removed by the BMP</i>	<i>TSS remaining after the BMP</i>
<i>Deep Sump Catch Basin</i>	<i>25%</i>	<i>1.0</i>	<i>0.25</i>	<i>0.75</i>
<i>Infiltration Basin w/ sediment forebay</i>	<i>80%</i>	<i>0.75</i>	<i>0.60</i>	<i>0.15</i>
<i>Total Percent of TSS Removed =</i>			<i>85%</i>	

The site is subject to 44% pretreatment requirement due to a rapid infiltration rate. This is achieved using deep sump catch basins and a sediment forebay prior to discharge into the infiltration basin. The BMP's proposed meet the TSS removal rates as required by Standard 4.

Standard 5-Land Uses with Higher Potential Pollution Loads

For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated there under at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

-The proposed use of this development will not qualify as a land use with higher potential pollutant loads.

Standard 6-Critical Areas

Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the

Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A “storm water discharge” as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of public water supply.

-The proposed project site is not located within a Zone I, Zone II, or Interim Wellhead Protection Area of a public water supply, nor is it within or near any other designated critical areas.

Standard 7-Redevelopment Projects Subject to the Standards Only to the Maximum Extent Practicable

A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

-The proposed development project complies with all required stormwater management standards.

Standard 8-Construction Period Pollution Prevention and Erosion and Sedimentation Control

A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

-A construction period pollution prevention and erosion and sedimentation control plan has been developed. Please see Section VII in this report.

Standard 9-Operation and Maintenance Plan

A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.

-A long-term operation and maintenance has been developed and is part of this stormwater management report. Please see Section V. A plan showing the locations of all BMP's is also included in this report.

Standard 10-Prohibition of Illicit Discharges

All illicit discharges to the stormwater management system are prohibited.

-There will be no illicit discharges to the proposed stormwater management system. See Appendix G for the Illicit Discharge Compliance Statement.

V. Operation and Maintenance Narrative

Applicant:

KY SHAWN LLC
69 FRANKLIN ST
FEEDING HILLS, MA 01030

The party responsible for maintenance of the stormwater management system depicted in the plan set enclosed dated 6-18-2026 and described in this report is KY Shawn LLC.

A. Catch Basins with Deep Sumps

1. All catch basins and stormwater manholes shall be inspected, four times annually. Sumps shall be cleaned four times per year or whenever the depth of deposits is greater than or equal to one half the depth from the bottom of the invert of the lowest pipe in the basin.

B. Sediment Forebay

At a minimum, inspect sediment forebays monthly and clean them out at least four times per year. Stabilize the floor and sidewalls of the sediment forebay before making it operational, otherwise the practice will discharge excess amounts of suspended sediments. When mowing grasses, keep the grass height no greater than 6 inches. Set mower blades no lower than 3 to 4 inches. Check for signs of rilling and gulying and repair as needed. After removing the sediment, replace any vegetation damaged during the clean-out by either reseeding or resodding. When reseeding, incorporate practices such as hydroseeding with a tackifier, blanket, or similar practice to ensure that no scour occurs in the forebay, while the seeds germinate and develop roots.

C. Recharge Basin:

Once the basin is in use, inspect it after every major storm for the first few months to ensure it is stabilized and functioning properly and if necessary take corrective action. Note how long water remains standing in the basin after a storm; standing water within the basin 48 to 72 hours after a storm indicates that the infiltration capacity may have

been overestimated. If the ponding is due to clogging, immediately address the reasons for the clogging (such as upland sediment erosion, excessive compaction of soils, or low spots). Thereafter, inspect the infiltration basin at least twice per year. Important items to check during the inspection include:

- Signs of differential settlement,
- Cracking,
- Erosion,
- Leakage in the embankments
- Tree growth on the embankments
- Condition of riprap,
- Sediment accumulation and
- The health of the turf.

At least twice a year, mow the buffer area, side slopes, and basin bottom. Remove grass clippings and accumulated organic matter to prevent an impervious organic mat from forming. Remove trash and debris at the same time. Use deep tilling to break up clogged surfaces, and revegetate immediately.

Remove sediment from the basin as necessary, but wait until the floor of the basin is thoroughly dry. Use light equipment to remove the top layer so as to not compact the underlying soil. Deeply till the remaining soil, and revegetate as soon as possible. Inspect and clean pretreatment devices associated with basins at least twice a year, and ideally every other month.

D. General Maintenance Practices

1. Grass clippings, excess landscape material or any debris shall NOT be disposed of within the forebay or the infiltration basin.
2. Paved access ways should be treated with sand and limited amounts of de-icing materials during the winter months. As soon as practicable in the spring these areas should be swept clean and again prior to the end of the fall season.
3. All vegetated slopes and swales shall be visibly inspected, twice annually, prior to the seeding seasons. All areas in need of repair shall be fertilized and seeded as required.

VI. Inspection and Construction Schedule

A. Construction Schedule

1. Mobilize equipment on site.
 2. Install erosion and sediment control measures (if necessary)
 3. Begin site preparation
 4. Excavate for site utilities and drainage system.
 5. Building Construction
-

6. Paved area construction/grading
7. Final grading
8. Paving and Landscaping

B. Inspection Schedule

1. Project engineer shall inspect the drainage systems during general construction intervals.
2. During excavation and construction of the infiltration basin, a soil evaluator or professional engineer shall be present on site to ensure native or similar soils underlay the entire basin to promote infiltration.
3. Project engineer shall inspect the following specific phases of work:
 - A. Installation of erosion control measures
 - B. Rough drainage system
 - C. Final grading and seeding
 - D. Follow-up inspection during the following growing season.

VII. Long Term and Construction Period Pollution Prevention and Erosion and Sedimentation Control

EROSION AND SEDIMENTATION CONTROLS:

STABILIZATION PRACTICES:

Temporary Stabilization: Any disturbed area where construction activity is suspended for more than fourteen days shall be seeded to stabilize erodible materials.

Permanent Stabilization: When a landscaped area has been graded to the final increment, it shall be seeded or sodded within fourteen days.

STRUCTURAL PRACTICES:

Sedimentation Control System: Sedimentation control systems consisting of silt fence shall be installed along the limits of the project as shown on the plans (see attached plans). Where necessary, wings shall be added to the sedimentation control system along the toe of slope to prevent sediment from moving along and around the fence.

Catch Basin Protection: Catch basins shall be protected using filtration fabric sedimentation control systems as shown on the plans.

POST CONSTRUCTION STORM WATER MANAGEMENT:

Post-construction stormwater runoff will be managed by the permanent stormwater management system shown on the approved plans and described in this report. The system may include stormwater collection, conveyance, pretreatment, treatment, infiltration, detention, recharge, and/or controlled discharge components, as applicable to the project.

The stormwater management system has been designed to reduce pollutant loading, minimize erosion, provide groundwater recharge where feasible, and control post-development runoff in accordance with the applicable stormwater standards. Following construction, the permanent stormwater BMPs shall be inspected and maintained in accordance with the Operation and Maintenance Plan included in this report.

OTHER CONTROLS

WASTE DISPOSAL :

Waste Materials: All waste materials shall be collected and stored in a manner that will prevent materials from entering watercourses, wetlands, or other off site areas. Material shall be regularly collected and disposed of offsite in a manner consistent with all federal, state and local regulations.

Hazardous Waste: All hazardous waste materials shall be disposed of in a manner specified by State regulations and/or in accordance with the manufacturer's recommendations.

Sanitary Waste: During construction all sanitary waste will be collected in portable sanitary units. These units will be emptied as necessary by a qualified contractor and disposed of in accordance with all State and local regulations. After completion all sanitary waste will be directed into the municipal sewer system.

OFF-SITE VEHICLE TRACKING:

The paved areas adjacent to the site entrance will be swept as needed to remove any excess mud, dirt or rock tracked from the site. The site was designed to balance the total cut with the total fill, eliminating most need for hauling material on and off site. Dump trucks hauling material from the construction site will be covered with a tarpaulin.

MAINTENANCE AND INSPECTION

INSPECTION SCHEDULE

DURING CONSTRUCTION:

All areas disturbed by construction that have not been finally stabilized will be inspected at least once every seven-calendar day. These areas will also be inspected following (within 24 hours) any storm in which 0.5 inches or more of rain occurs in a 24-hour period.

POST CONSTRUCTION:

All areas that have been temporarily or finally stabilized will be inspected at least once a month for three months following final stabilization.

INSPECTION PROCEDURES

PERSONNEL:

Inspections shall be conducted by qualified personnel provided by the contractor.

ITEMS TO BE INSPECTED:

The following items shall be inspected as described below:

<u>Item</u>	<u>Procedure</u>
Catch basin protection	Protective measures shall be inspected to insure that sediment is not entering the catch basins. Catch basin sumps shall be monitored for sediment deposition. Silt Sacks shall be inspected to insure that they have not clogged.
Discharge points	All discharge points shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Discharge points shall also be inspected to insure that erosion protection measures at the discharge are functioning
Vehicle entrances/exits	Locations where vehicles enter or exit the site shall be inspected for evidence of off- site sediment tracking.
General	Construction areas and perimeter of the site shall be inspected for any evidence of debris that may blow or wash off site, and for debris that has blown or washed off site. Construction areas shall be inspected for any spills or unsafe storage of materials that could pollute off site waters.

REVISIONS TO POLLUTION CONTROL PLAN:

If the results of the inspections require modifications to the pollution control plan, the plans shall be revised as soon as practicable after the inspection. Changes to the plan shall be implemented within 7 calendar days following the inspection.

RECORD KEEPING:

A written report summarizing the scope of the inspection, the name(s) and qualifications of inspection personnel, the date and time of the inspection, major observations relative to the implementation of the pollution control plan, and actions taken shall be completed within 24 hours of the inspection. This report shall be signed by the responsible person designated by the registrant. This report shall be retained as part of the pollution control plan for at least three years after the date of the inspection.

MAINTENANCE:

GENERAL:

Maintenance procedures should be implemented as soon as possible after the need for maintenance is recognized. Contractors shall utilize good housekeeping practices to minimize the possibilities of spills or leaks of potential pollutants. Hazardous materials shall be handled with the utmost care in accordance with all regulations and the recommendations of the manufacturer.

MAINTENANCE OF EROSION CONTROLS:

Erosion controls shall be maintained as noted below:

<u>Item</u>	<u>Procedure</u>
Catch basin protection	Any damage to Silt Sacks or other protective measures shall be repaired immediately. Clogged Silt Sacks shall be cleaned or replaced. Any sediment accumulated in the catch basin sumps shall be removed. Sediment shall be removed when it accumulates to one half of the sump depth.
Discharge points	Any sediment or debris accumulated at discharge points shall be removed. Any damage to riprap shall be immediately repaired.
Vehicle entrances/exits	Any material tracked onto roadways shall be immediately cleaned up. If necessary, stabilized construction entrances shall be provided to minimize sediment tracking.
General	Any debris blowing or flowing off the site shall be immediately cleaned up. Any unsafe storage practices noted in the inspection shall be immediately remedied.

NON-STORM WATER DISCHARGES

GENERAL:

It is expected that the following non-storm water discharges may occur from the site during the construction period:

- Discharges from firefighting activities.
- Waters used for dust control.
- Drainage from watering vegetation.
- Pavement wash waters without use of detergent and where spills or leaks of hazardous materials have not occurred (unless cleanup has removed all spilled materials)
- Uncontaminated groundwater from dewatering operations.
- All non-stormwater discharges will be directed to the storm drainage system and/or discharge upstream of sediment and erosion controls.

E/P

SUBCATCHMENT DESIGNATION

1

POND

A

REACH/ANALYSIS POINT

SUBCATCHMENT BOUNDARY

TIME OF CONCENTRATION FLOW PATH

The map displays a subcatchment area bounded by a dashed line. A thick line with arrows indicates the time of concentration flow path, starting from a pond (labeled '1') and reaching an analysis point (labeled 'A'). The map includes several land parcels with owner names and acreage: Ernest A. Jr. L/E Malone (8.57 acre), Anthony E. Malone (0.368 acre), Jonathan Beatty (0.41 acre), and Claude L. Talbot (1.3 acre). It also shows existing buildings, garages, and houses. Setbacks are marked, including a 15.0' side yard setback and a 35.0' front yard setback. The map is divided into two zones: Agricultural and Business A. A scale bar at the bottom indicates 1" = 30'.

FOR PERMITTING ONLY

F-1 PRE-DEVELOPMENT SUBCATCHMENT PLAN

PROJECT DESCRIPTION:
NEW OFFICE & REPAIR FACILITY
914-318 SILVER ST
AGAWAM, MA 01001

APPLICANT:
KY SHAWN LLC
69 FRANKLIN ST
FEEDING HILLS, MA 01030

Furrow

Engineering

199 Servistar Industrial Way - Suite 2
Westfield, MA 01085
Phone: (413) 562-4884

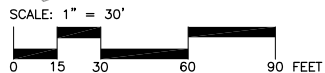
ORIGINAL SEAL IS IN BLUE
INK. COPIES ARE NOT VALID

REVISION DESCRIPTION	
BY:	
DATE:	
NO.	
PROJECT # 125-01-26	
DRAWN BY: LDS	
DATE: 6/12/26	
SCALE: 1" = 30'	
SHEET: F-1	

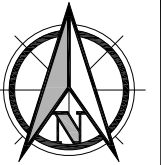
Page 28 of 162

DRAINAGE MAP LEGEND

	<i>SUBCATCHMENT DESIGNATION</i>
	<i>POND</i>
	<i>REACH/ANALYSIS POINT</i>
	<i>SUBCATCHMENT BOUNDARY</i>
	<i>TIME OF CONCENTRATION FLOW PATH</i>



FOR PERMITTING ONLY



PROJECT DESCRIPTION: NEW OFFICE & REPAIR FACILITY
314-318 SILVER ST
AGAWAM, MA 01001

APPLICANT: KY SHAWN LLC
69 FRANKLIN ST
FEEDING HILLS, MA 01030

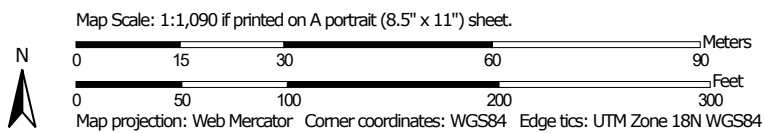
Furrow Engineering
199 Servistar Industrial Way - Suite 2
Westfield, MA 01085
Phone: (413) 562-4884

ORIGINAL SEAL IS IN BLUE
INK. COPIES ARE NOT VALID

REVISION DESCRIPTION		BY:	DATE:	NO.
PROJECT # <u>2005-01-26</u>				
DRAWN BY: <u>LDS</u>				
DATE: <u>6/12/26</u>				
SCALE: <u>1" = 30'</u>				
SHEET: <u>F-2</u>				

FIGURE 3
USDA SOIL SURVEY MAP

Soil Map—Hampden County, Massachusetts, Central Part
(314-318 Silver Street)



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

Soil Map—Hampden County, Massachusetts, Central Part
(314-318 Silver Street)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

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 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Hampden County, Massachusetts, Central Part

Survey Area Data: Version 19, Sep 5, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

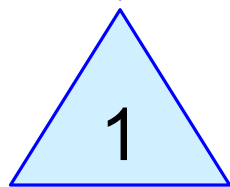
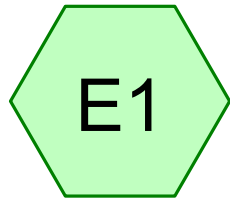
Date(s) aerial images were photographed: Oct 15, 2020—Oct 31, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

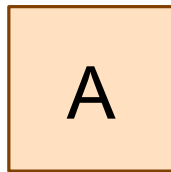
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
254A	Merrimac fine sandy loam, 0 to 3 percent slopes	0.2	6.5%
254B	Merrimac fine sandy loam, 3 to 8 percent slopes	3.3	93.5%
Totals for Area of Interest		3.6	100.0%

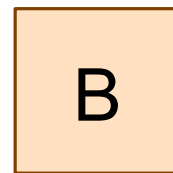
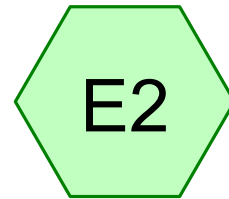
APPENDIX A
PRE DEVELOPMENT RUNOFF CALCULATIONS



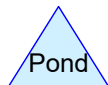
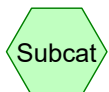
Existing Natural
Depression



Analysis Point "A" Site
Discharge Point



Analysis Point "B" Catch
Basin



Routing Diagram for 1289- Hydro CAD PRE
Prepared by Furrow Engineering, Printed 6/16/2026
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1289- Hydro CAD PRE

Prepared by Furrow Engineering

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.490	35	Brush, Fair, HSG A (E1, E2)
0.114	98	Paved parking, HSG A (E2)
3.603	37	TOTAL AREA

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Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
3.603	HSG A	E1, E2
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
3.603		TOTAL AREA

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Page 4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
3.490	0.000	0.000	0.000	0.000	3.490	Brush, Fair	E1, E2
0.114	0.000	0.000	0.000	0.000	0.114	Paved parking	E2
3.603	0.000	0.000	0.000	0.000	3.603	TOTAL AREA	

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Type III 24-hr 2-Year Rainfall=3.21"

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Page 5

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1:

Runoff Area=150,017 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=482' Tc=13.8 min CN=35 Runoff=0.00 cfs 0.000 af

Subcatchment E2:

Runoff Area=6,946 sf 71.24% Impervious Runoff Depth=1.41"
Flow Length=48' Slope=0.0170 '/' Tc=5.0 min CN=80 Runoff=0.26 cfs 0.019 af

Reach A: Analysis Point "A" Site Discharge Point

Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach B: Analysis Point "B" Catch Basin

Inflow=0.26 cfs 0.019 af
Outflow=0.26 cfs 0.019 af

Pond 1: Existing Natural Depression

Peak Elev=494.20' Storage=0 cf Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 3.603 ac Runoff Volume = 0.019 af Average Runoff Depth = 0.06"
96.85% Pervious = 3.490 ac 3.15% Impervious = 0.114 ac

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Type III 24-hr 2-Year Rainfall=3.21"

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Page 6

Summary for Subcatchment E1:

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

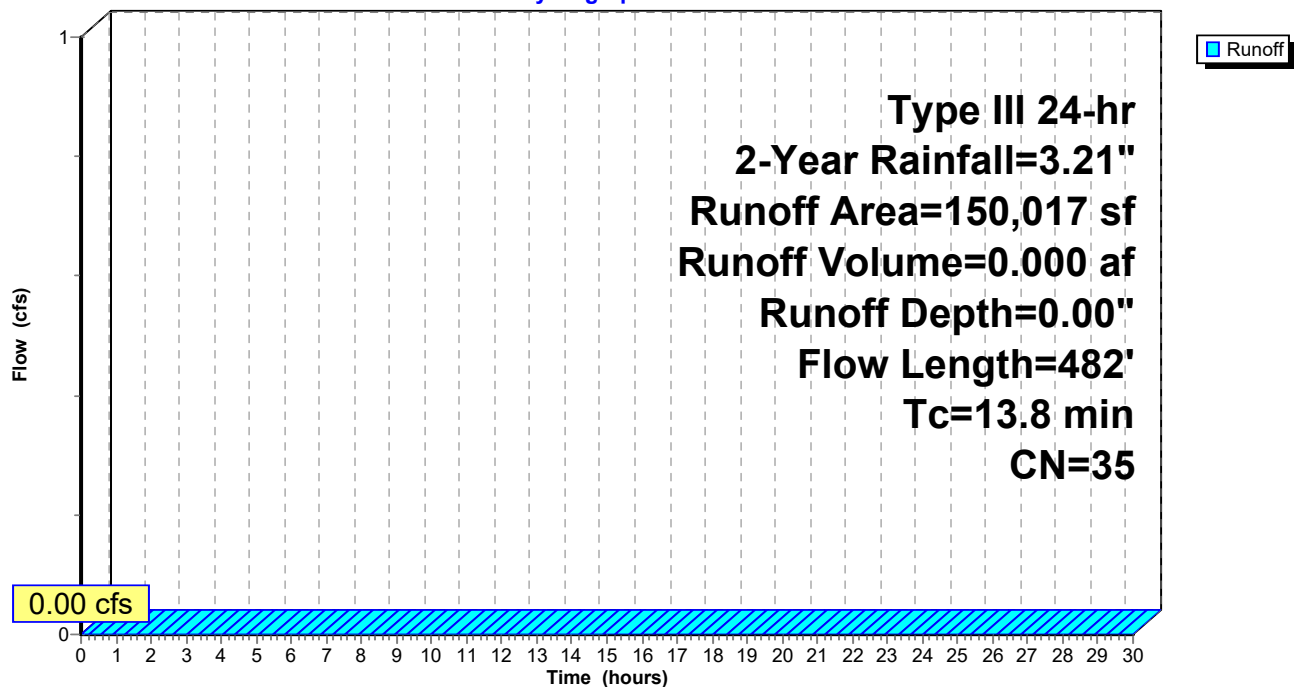
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.21"

Area (sf)	CN	Description
150,017	35	Brush, Fair, HSG A
150,017		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.7	20	0.0220	0.12		Sheet Flow, 20 feet grass/weeds Grass: Short n= 0.150 P2= 2.90"
6.8	202	0.0050	0.49		Shallow Concentrated Flow, Grass/Weeds 0.5% slope Short Grass Pasture Kv= 7.0 fps
4.3	260	0.0210	1.01		Shallow Concentrated Flow, Grass/Weeds 2.1% slope Short Grass Pasture Kv= 7.0 fps
13.8	482	Total			

Subcatchment E1:

Hydrograph



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Type III 24-hr 2-Year Rainfall=3.21"

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Summary for Subcatchment E2:[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 0.26 cfs @ 12.08 hrs, Volume= 0.019 af, Depth= 1.41"

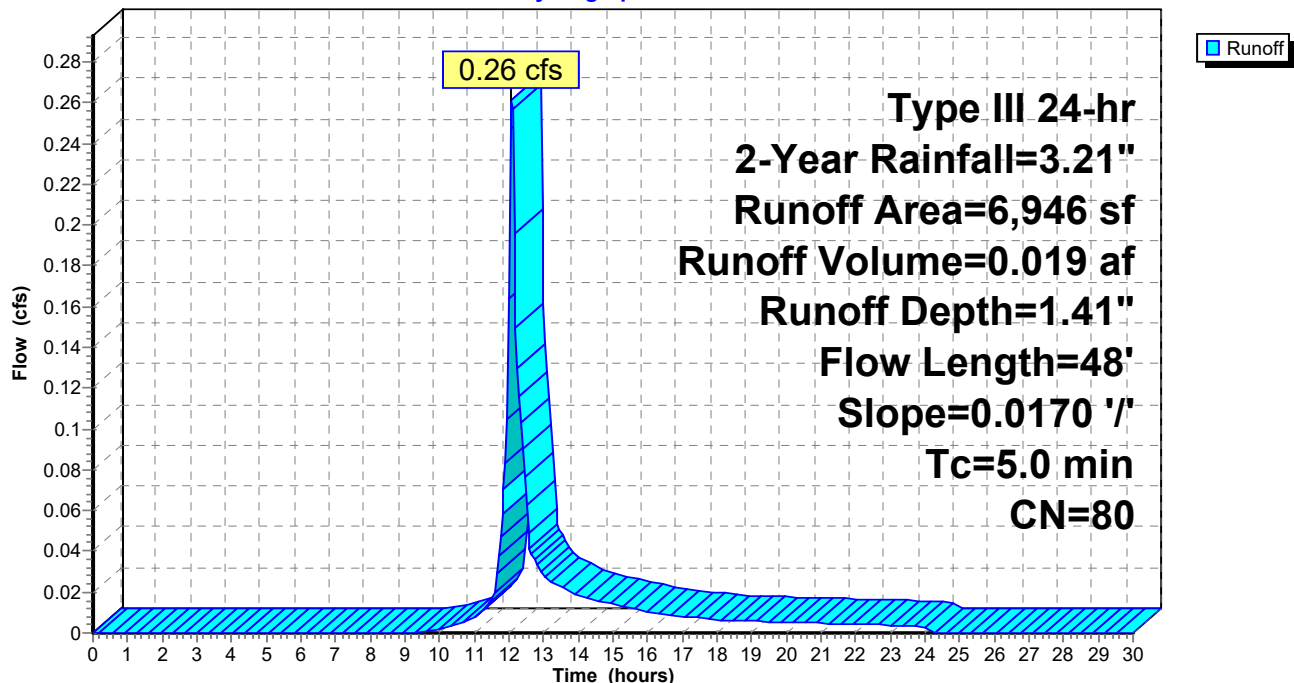
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, $dt=0.05$ hrs
Type III 24-hr 2-Year Rainfall=3.21"

Area (sf)	CN	Description
1,998	35	Brush, Fair, HSG A
4,948	98	Paved parking, HSG A
6,946	80	Weighted Average
1,998		28.76% Pervious Area
4,948		71.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	20	0.0170	0.11		Sheet Flow, 20 Feet grass/weeds
					Grass: Short n= 0.150 P2= 2.90"
0.2	28	0.0170	2.65		Shallow Concentrated Flow, Paved 1.7% Slope
					Paved Kv= 20.3 fps
3.2	48	Total, Increased to minimum Tc = 5.0 min			

Subcatchment E2:

Hydrograph

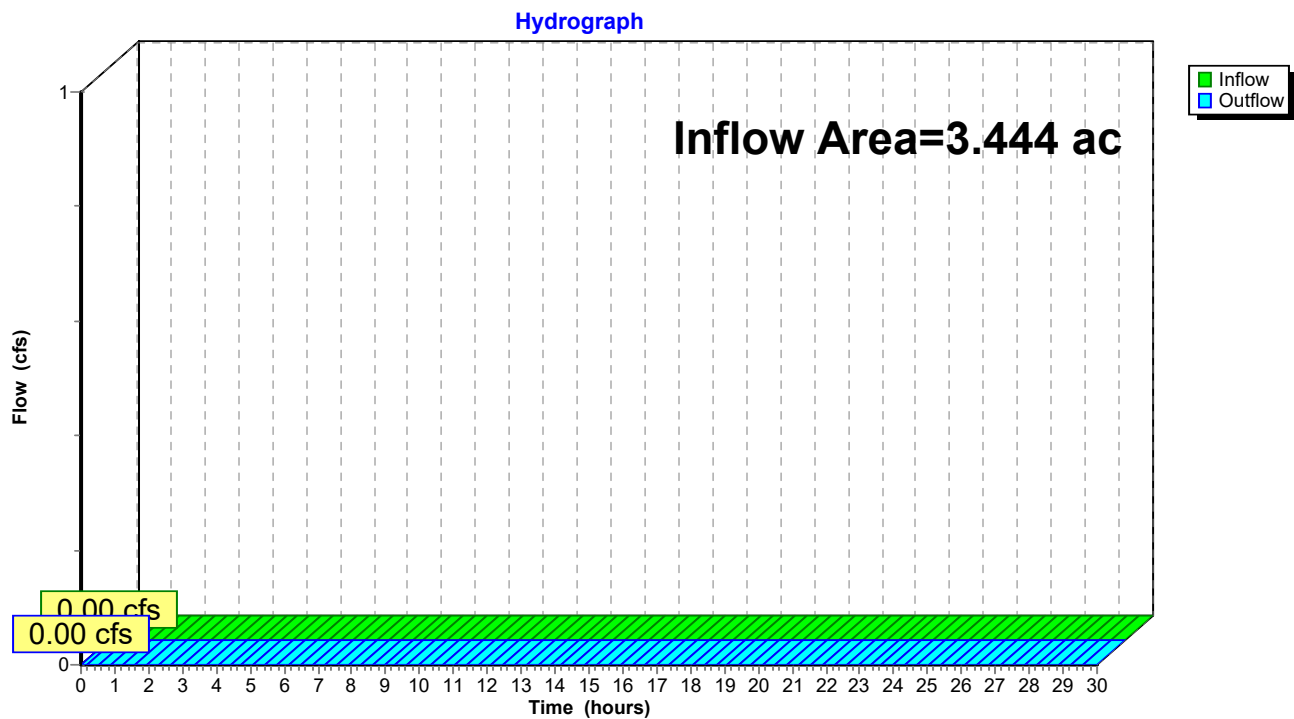


Summary for Reach A: Analysis Point "A" Site Discharge Point

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.444 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

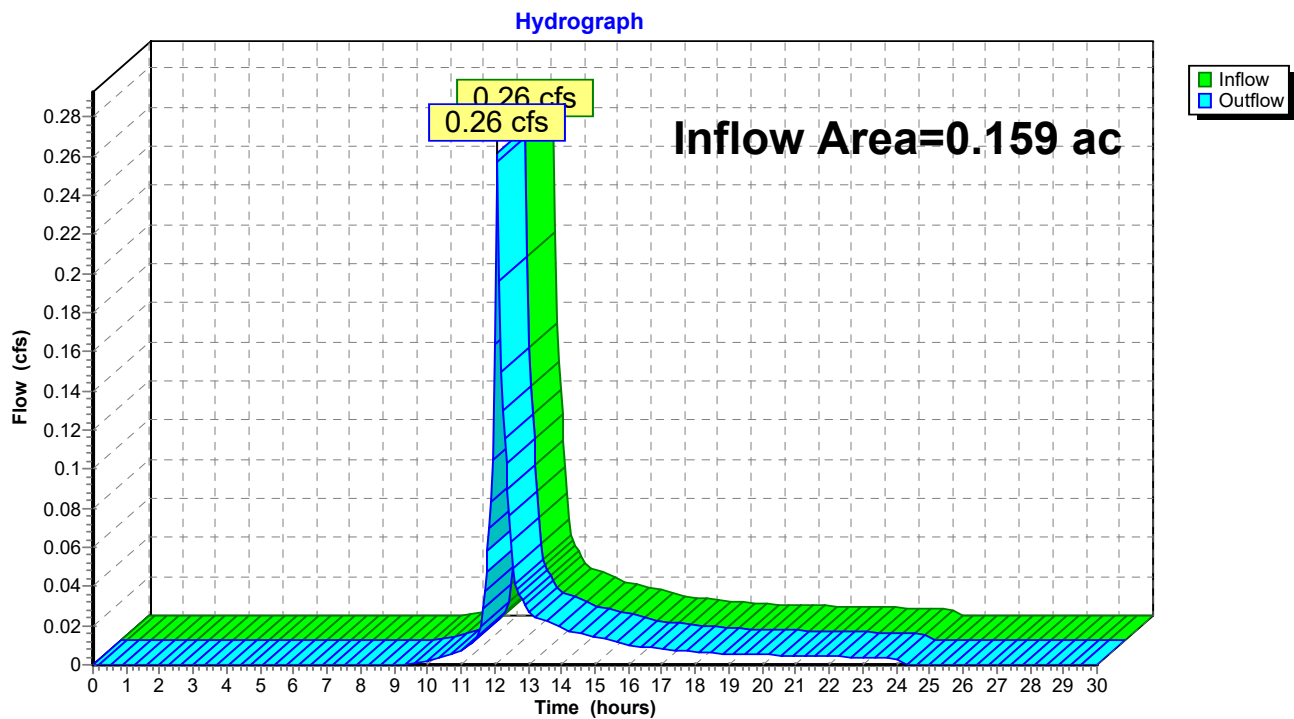
Reach A: Analysis Point "A" Site Discharge Point

Summary for Reach B: Analysis Point "B" Catch Basin

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.159 ac, 71.24% Impervious, Inflow Depth = 1.41" for 2-Year event
Inflow = 0.26 cfs @ 12.08 hrs, Volume= 0.019 af
Outflow = 0.26 cfs @ 12.08 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach B: Analysis Point "B" Catch Basin

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Type III 24-hr 2-Year Rainfall=3.21"

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Summary for Pond 1: Existing Natural Depression

Inflow Area = 3.444 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

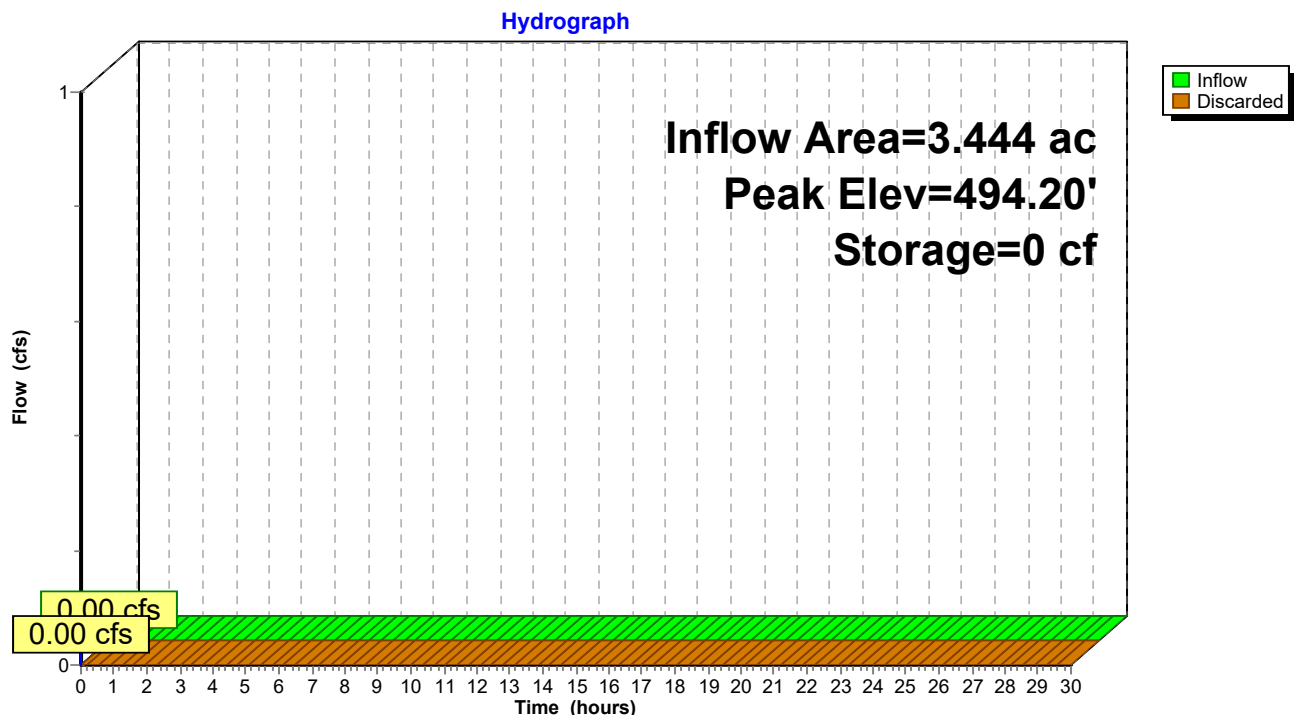
Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 494.20' @ 0.00 hrs Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description		
#1	494.20'	4,260 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
494.20	0	0	0	0	
495.00	15,975	4,260	4,260	15,976	

Device	Routing	Invert	Outlet Devices		
#1	Discarded	494.20'	8.270 in/hr Exfiltration over Wetted area Phase-In= 0.01'		

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=494.20' (Free Discharge)
 ↑1=Exfiltration (Controls 0.00 cfs)

Pond 1: Existing Natural Depression

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Type III 24-hr 10-Year Rainfall=5.17"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1:

Runoff Area=150,017 sf 0.00% Impervious Runoff Depth=0.11"
Flow Length=482' Tc=13.8 min CN=35 Runoff=0.05 cfs 0.030 af

Subcatchment E2:

Runoff Area=6,946 sf 71.24% Impervious Runoff Depth=3.04"
Flow Length=48' Slope=0.0170 '/' Tc=5.0 min CN=80 Runoff=0.57 cfs 0.040 af

Reach A: Analysis Point "A" Site Discharge Point

Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach B: Analysis Point "B" Catch Basin

Inflow=0.57 cfs 0.040 af
Outflow=0.57 cfs 0.040 af

Pond 1: Existing Natural Depression

Peak Elev=494.30' Storage=8 cf Inflow=0.05 cfs 0.030 af
Outflow=0.05 cfs 0.030 af

Total Runoff Area = 3.603 ac Runoff Volume = 0.071 af Average Runoff Depth = 0.24"
96.85% Pervious = 3.490 ac 3.15% Impervious = 0.114 ac

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Type III 24-hr 10-Year Rainfall=5.17"

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Summary for Subcatchment E1:

Runoff = 0.05 cfs @ 15.03 hrs, Volume= 0.030 af, Depth= 0.11"

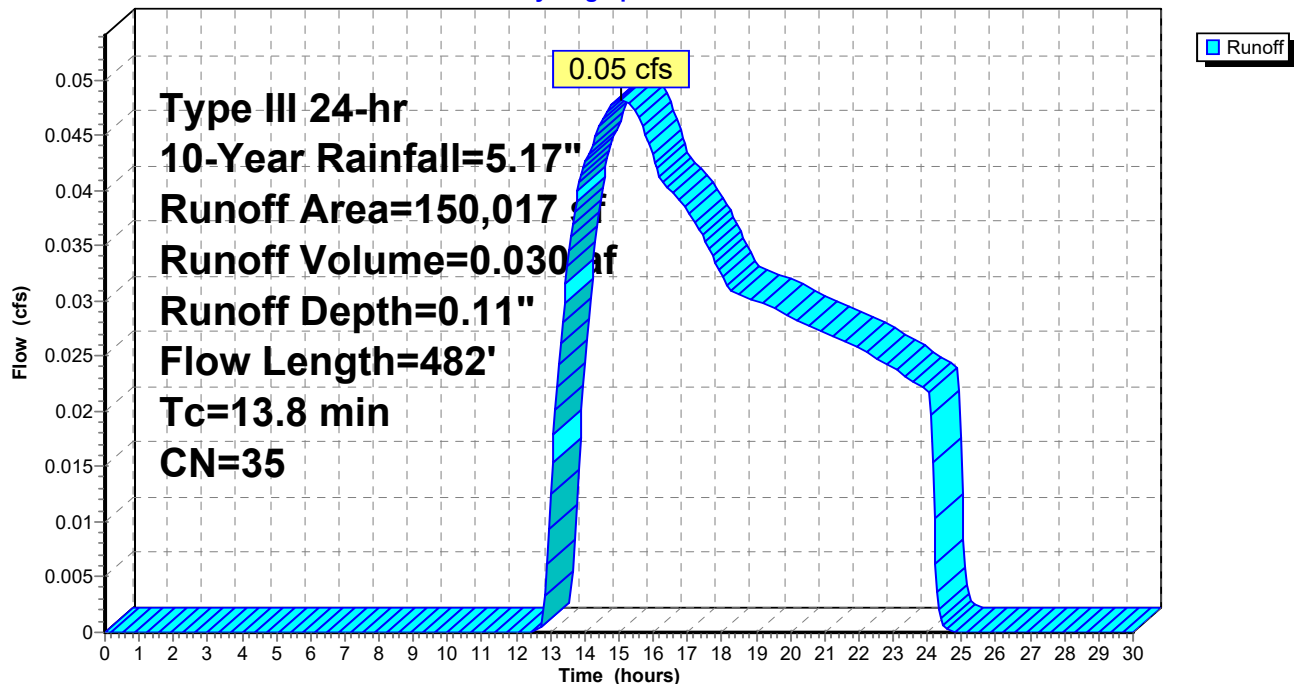
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.17"

Area (sf)	CN	Description
150,017	35	Brush, Fair, HSG A
150,017		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.7	20	0.0220	0.12		Sheet Flow, 20 feet grass/weeds Grass: Short n= 0.150 P2= 2.90"
6.8	202	0.0050	0.49		Shallow Concentrated Flow, Grass/Weeds 0.5% slope Short Grass Pasture Kv= 7.0 fps
4.3	260	0.0210	1.01		Shallow Concentrated Flow, Grass/Weeds 2.1% slope Short Grass Pasture Kv= 7.0 fps
13.8	482	Total			

Subcatchment E1:

Hydrograph



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Type III 24-hr 10-Year Rainfall=5.17"

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Page 13

Summary for Subcatchment E2:[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 0.57 cfs @ 12.08 hrs, Volume= 0.040 af, Depth= 3.04"

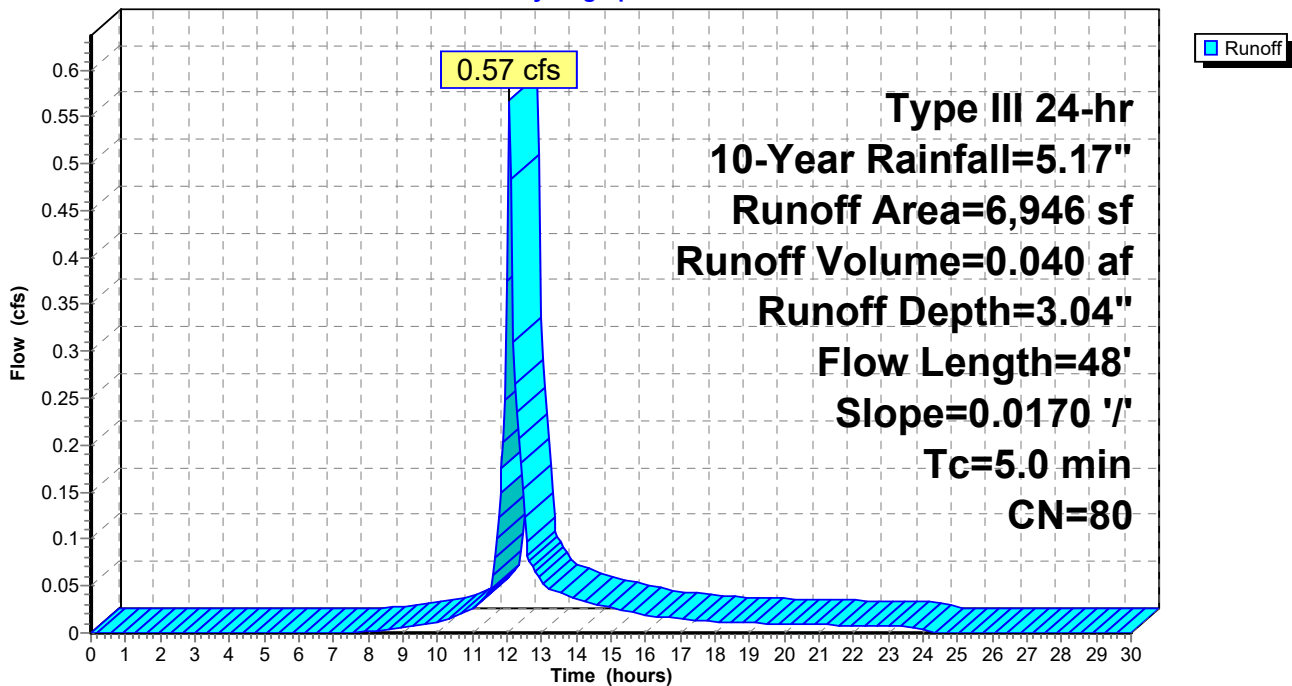
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, $dt=0.05$ hrs
Type III 24-hr 10-Year Rainfall=5.17"

Area (sf)	CN	Description
1,998	35	Brush, Fair, HSG A
4,948	98	Paved parking, HSG A
6,946	80	Weighted Average
1,998		28.76% Pervious Area
4,948		71.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	20	0.0170	0.11		Sheet Flow, 20 Feet grass/weeds
					Grass: Short n= 0.150 P2= 2.90"
0.2	28	0.0170	2.65		Shallow Concentrated Flow, Paved 1.7% Slope
					Paved Kv= 20.3 fps
3.2	48	Total, Increased to minimum Tc = 5.0 min			

Subcatchment E2:

Hydrograph

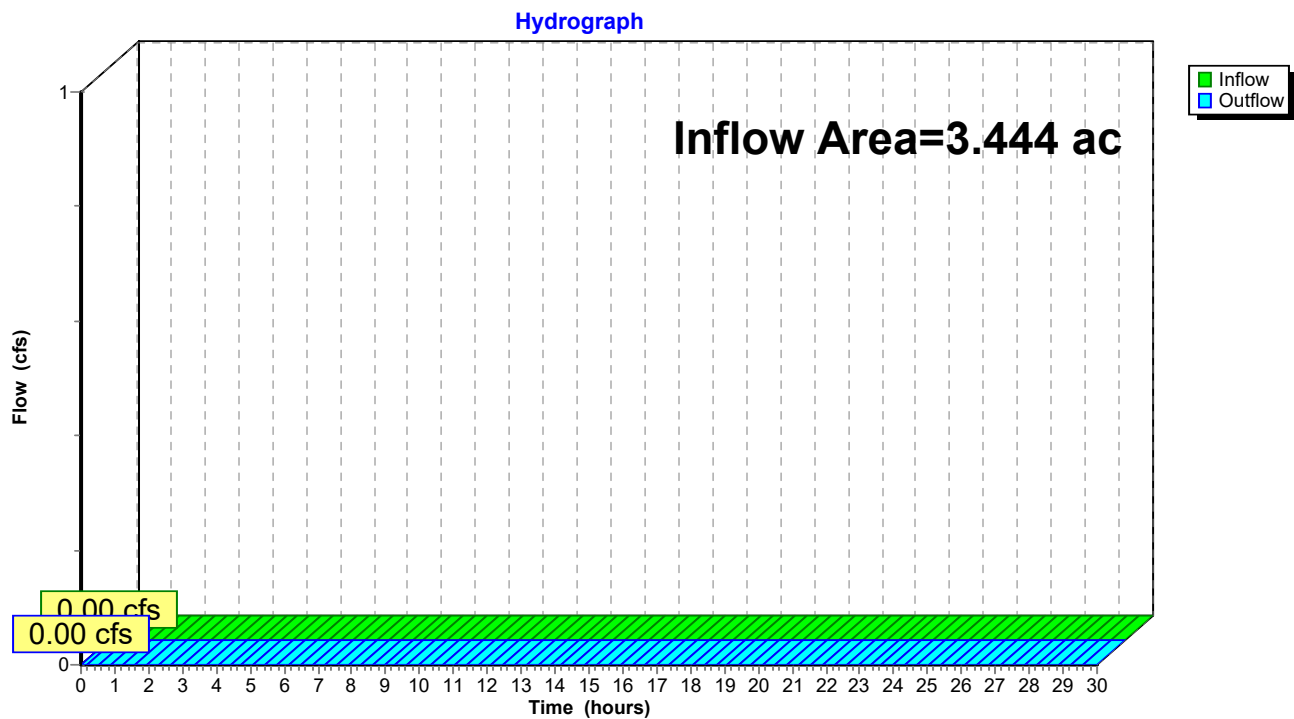


Summary for Reach A: Analysis Point "A" Site Discharge Point

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.444 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

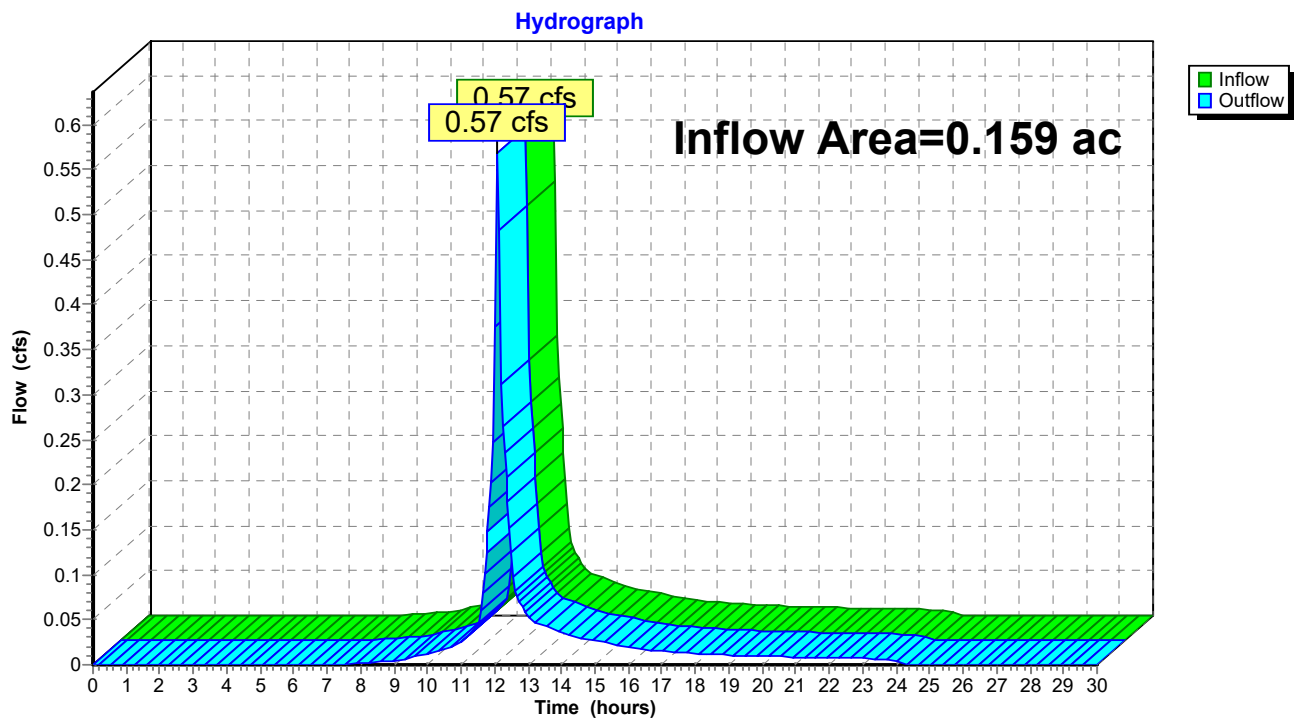
Reach A: Analysis Point "A" Site Discharge Point

Summary for Reach B: Analysis Point "B" Catch Basin

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.159 ac, 71.24% Impervious, Inflow Depth = 3.04" for 10-Year event
Inflow = 0.57 cfs @ 12.08 hrs, Volume= 0.040 af
Outflow = 0.57 cfs @ 12.08 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach B: Analysis Point "B" Catch Basin

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Type III 24-hr 10-Year Rainfall=5.17"

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Summary for Pond 1: Existing Natural Depression

Inflow Area = 3.444 ac, 0.00% Impervious, Inflow Depth = 0.11" for 10-Year event
Inflow = 0.05 cfs @ 15.03 hrs, Volume= 0.030 af
Outflow = 0.05 cfs @ 15.11 hrs, Volume= 0.030 af, Atten= 0%, Lag= 4.8 min
Discarded = 0.05 cfs @ 15.11 hrs, Volume= 0.030 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 494.30' @ 15.11 hrs Surf.Area= 252 sf Storage= 8 cf

Plug-Flow detention time= 2.4 min calculated for 0.030 af (100% of inflow)
Center-of-Mass det. time= 2.4 min (1,080.2 - 1,077.8)

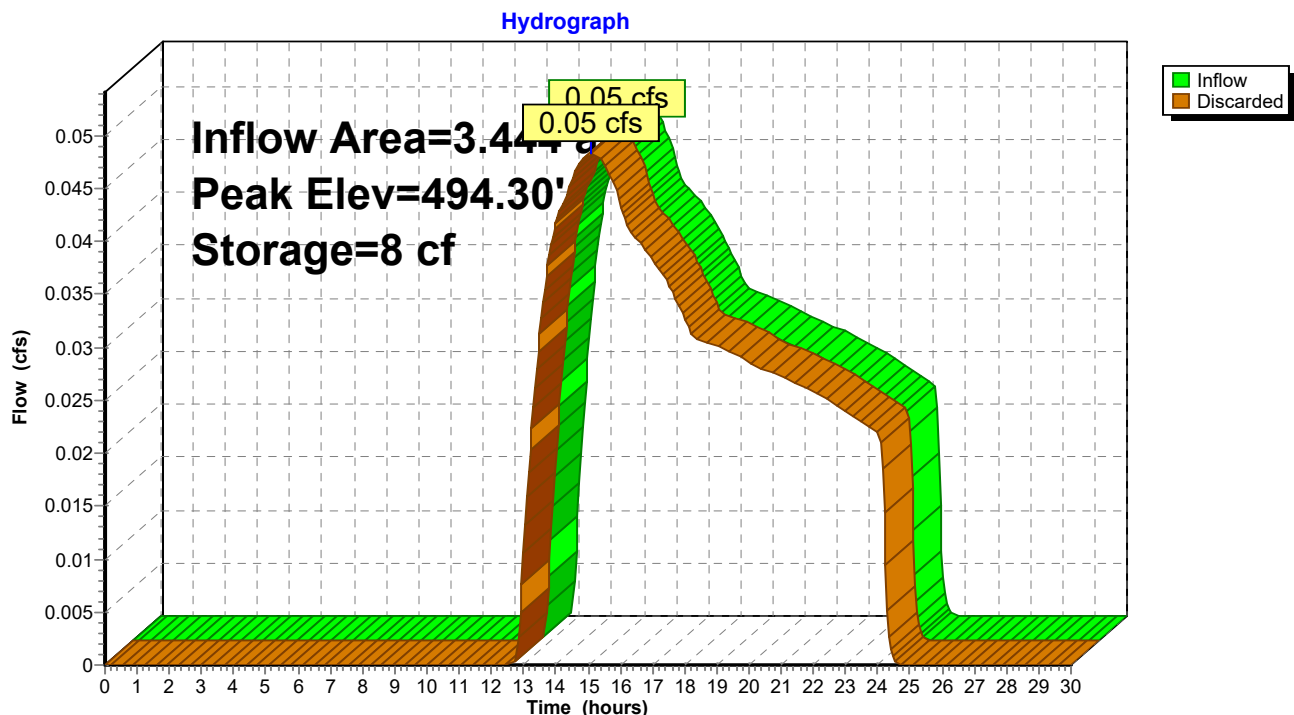
Volume	Invert	Avail.Storage	Storage Description
#1	494.20'	4,260 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
494.20	0	0	0	0
495.00	15,975	4,260	4,260	15,976

Device	Routing	Invert	Outlet Devices
#1	Discarded	494.20'	8.270 in/hr Exfiltration over Wetted area Phase-In= 0.01'

Discarded OutFlow Max=0.05 cfs @ 15.11 hrs HW=494.30' (Free Discharge)
↑1=Exfiltration (Exfiltration Controls 0.05 cfs)

Pond 1: Existing Natural Depression



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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1:

Runoff Area=150,017 sf 0.00% Impervious Runoff Depth=0.34"
Flow Length=482' Tc=13.8 min CN=35 Runoff=0.30 cfs 0.097 af

Subcatchment E2:

Runoff Area=6,946 sf 71.24% Impervious Runoff Depth=4.14"
Flow Length=48' Slope=0.0170 '/' Tc=5.0 min CN=80 Runoff=0.77 cfs 0.055 af

Reach A: Analysis Point "A" Site Discharge Point

Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach B: Analysis Point "B" Catch Basin

Inflow=0.77 cfs 0.055 af
Outflow=0.77 cfs 0.055 af

Pond 1: Existing Natural Depression

Peak Elev=494.43' Storage=101 cf Inflow=0.30 cfs 0.097 af
Outflow=0.25 cfs 0.097 af

Total Runoff Area = 3.603 ac Runoff Volume = 0.152 af Average Runoff Depth = 0.51"
96.85% Pervious = 3.490 ac 3.15% Impervious = 0.114 ac

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Type III 24-hr 25-Year Rainfall=6.40"

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Summary for Subcatchment E1:

Runoff = 0.30 cfs @ 12.53 hrs, Volume= 0.097 af, Depth= 0.34"

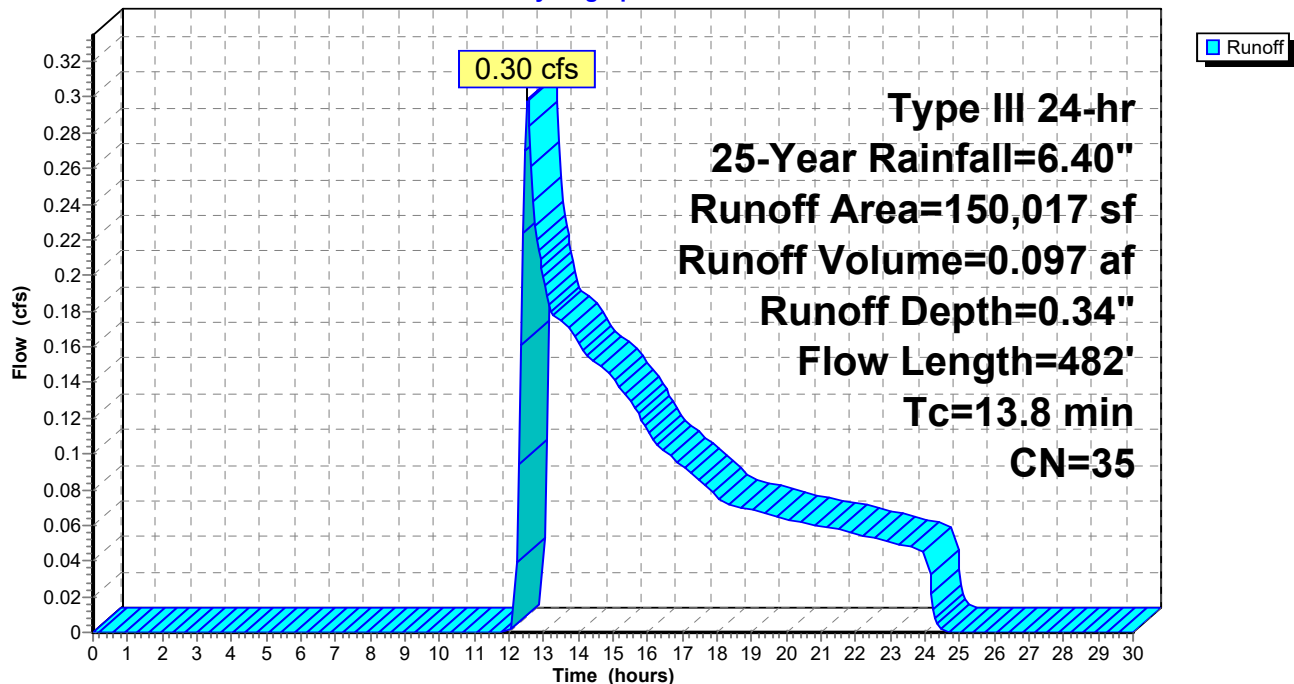
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.40"

Area (sf)	CN	Description
150,017	35	Brush, Fair, HSG A
150,017		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.7	20	0.0220	0.12		Sheet Flow, 20 feet grass/weeds Grass: Short n= 0.150 P2= 2.90"
6.8	202	0.0050	0.49		Shallow Concentrated Flow, Grass/Weeds 0.5% slope Short Grass Pasture Kv= 7.0 fps
4.3	260	0.0210	1.01		Shallow Concentrated Flow, Grass/Weeds 2.1% slope Short Grass Pasture Kv= 7.0 fps
13.8	482	Total			

Subcatchment E1:

Hydrograph



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Type III 24-hr 25-Year Rainfall=6.40"

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Summary for Subcatchment E2:[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 0.77 cfs @ 12.07 hrs, Volume= 0.055 af, Depth= 4.14"

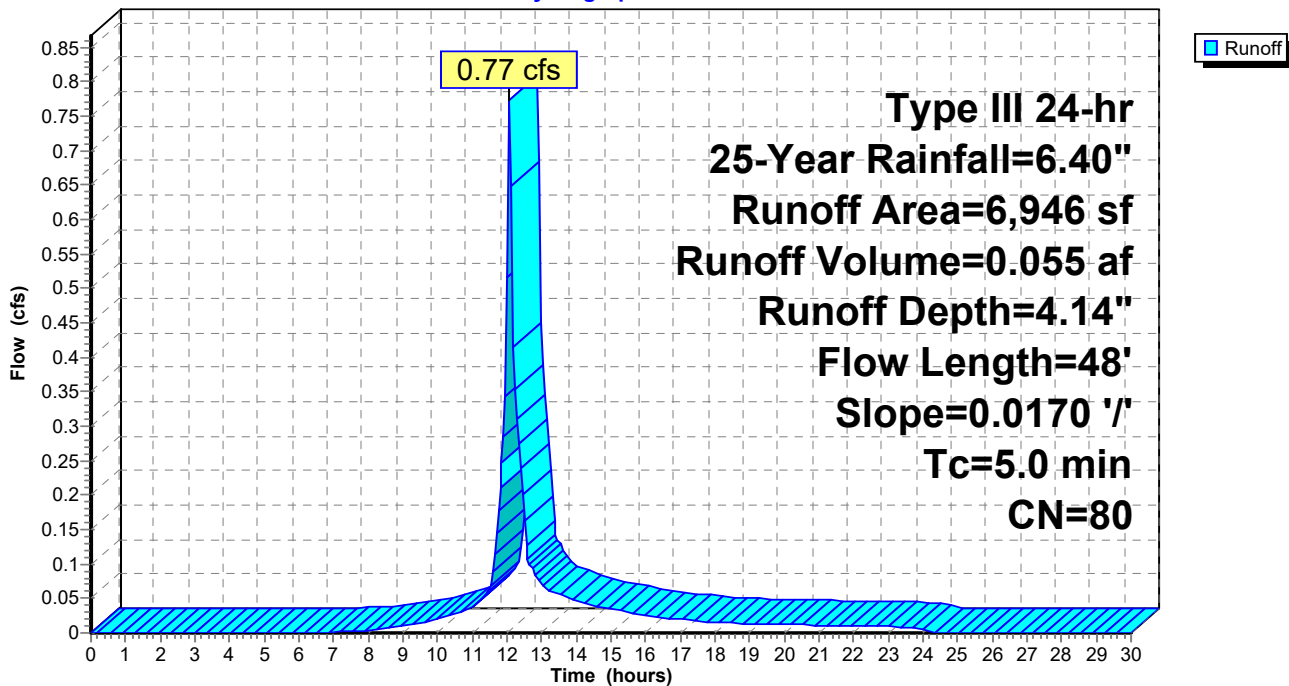
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, $dt=0.05$ hrs
Type III 24-hr 25-Year Rainfall=6.40"

Area (sf)	CN	Description
1,998	35	Brush, Fair, HSG A
4,948	98	Paved parking, HSG A
6,946	80	Weighted Average
1,998		28.76% Pervious Area
4,948		71.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	20	0.0170	0.11		Sheet Flow, 20 Feet grass/weeds
					Grass: Short n= 0.150 P2= 2.90"
0.2	28	0.0170	2.65		Shallow Concentrated Flow, Paved 1.7% Slope
					Paved Kv= 20.3 fps
3.2	48	Total, Increased to minimum Tc = 5.0 min			

Subcatchment E2:

Hydrograph

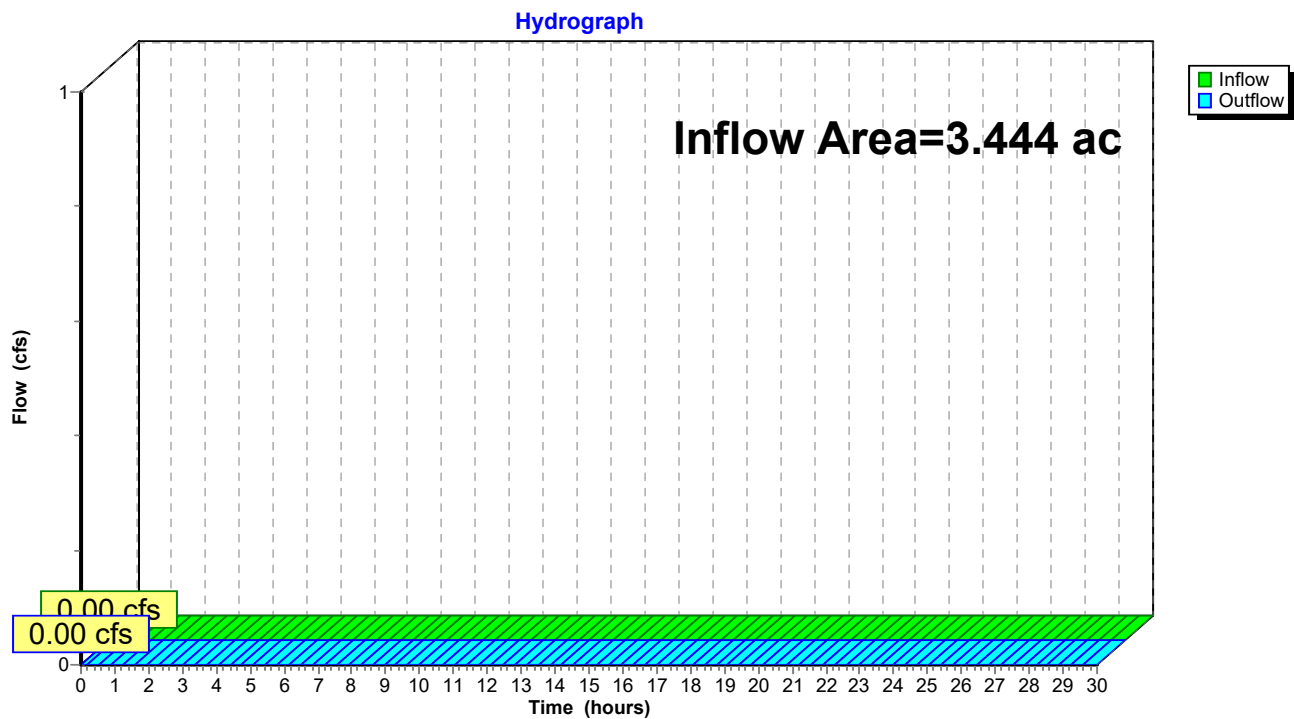


Summary for Reach A: Analysis Point "A" Site Discharge Point

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.444 ac, 0.00% Impervious, Inflow Depth = 0.00" for 25-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

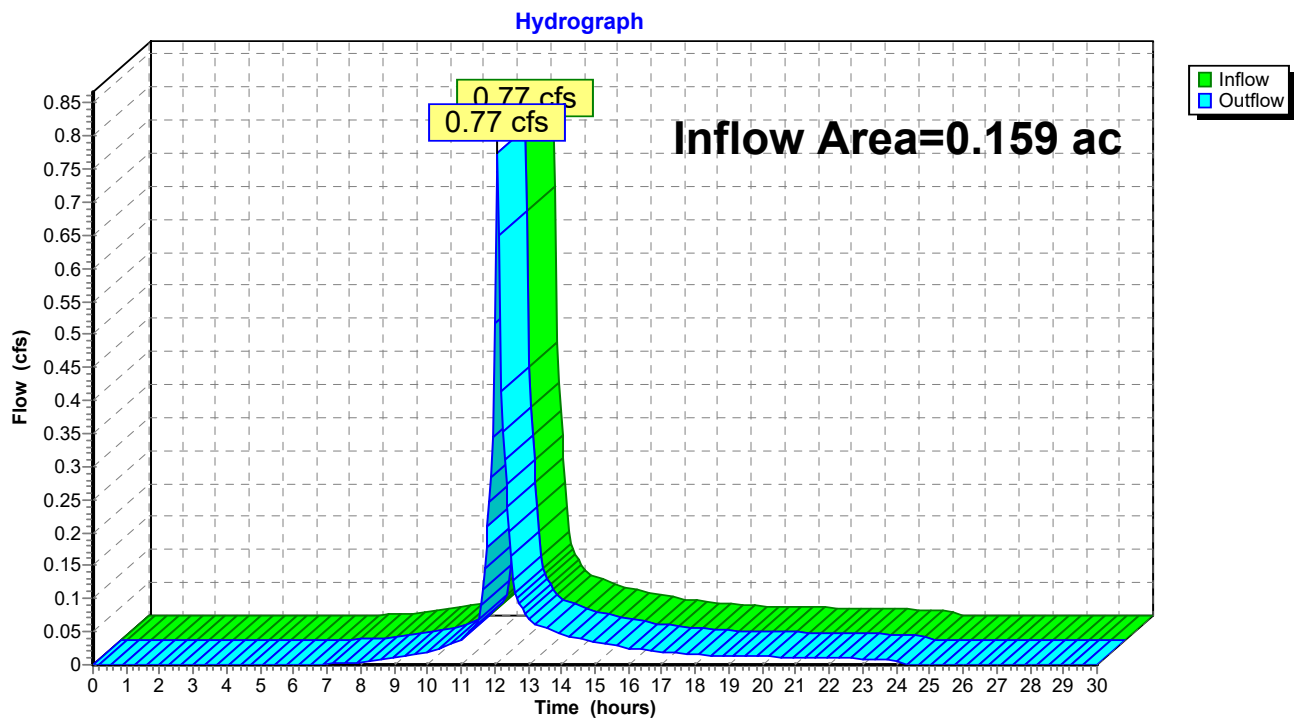
Reach A: Analysis Point "A" Site Discharge Point

Summary for Reach B: Analysis Point "B" Catch Basin

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.159 ac, 71.24% Impervious, Inflow Depth = 4.14" for 25-Year event
Inflow = 0.77 cfs @ 12.07 hrs, Volume= 0.055 af
Outflow = 0.77 cfs @ 12.07 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach B: Analysis Point "B" Catch Basin

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Type III 24-hr 25-Year Rainfall=6.40"

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Summary for Pond 1: Existing Natural Depression

Inflow Area = 3.444 ac, 0.00% Impervious, Inflow Depth = 0.34" for 25-Year event
Inflow = 0.30 cfs @ 12.53 hrs, Volume= 0.097 af
Outflow = 0.25 cfs @ 12.67 hrs, Volume= 0.097 af, Atten= 15%, Lag= 8.4 min
Discarded = 0.25 cfs @ 12.67 hrs, Volume= 0.097 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 494.43' @ 12.67 hrs Surf.Area= 1,320 sf Storage= 101 cf

Plug-Flow detention time= 4.6 min calculated for 0.097 af (100% of inflow)
Center-of-Mass det. time= 4.6 min (998.3 - 993.7)

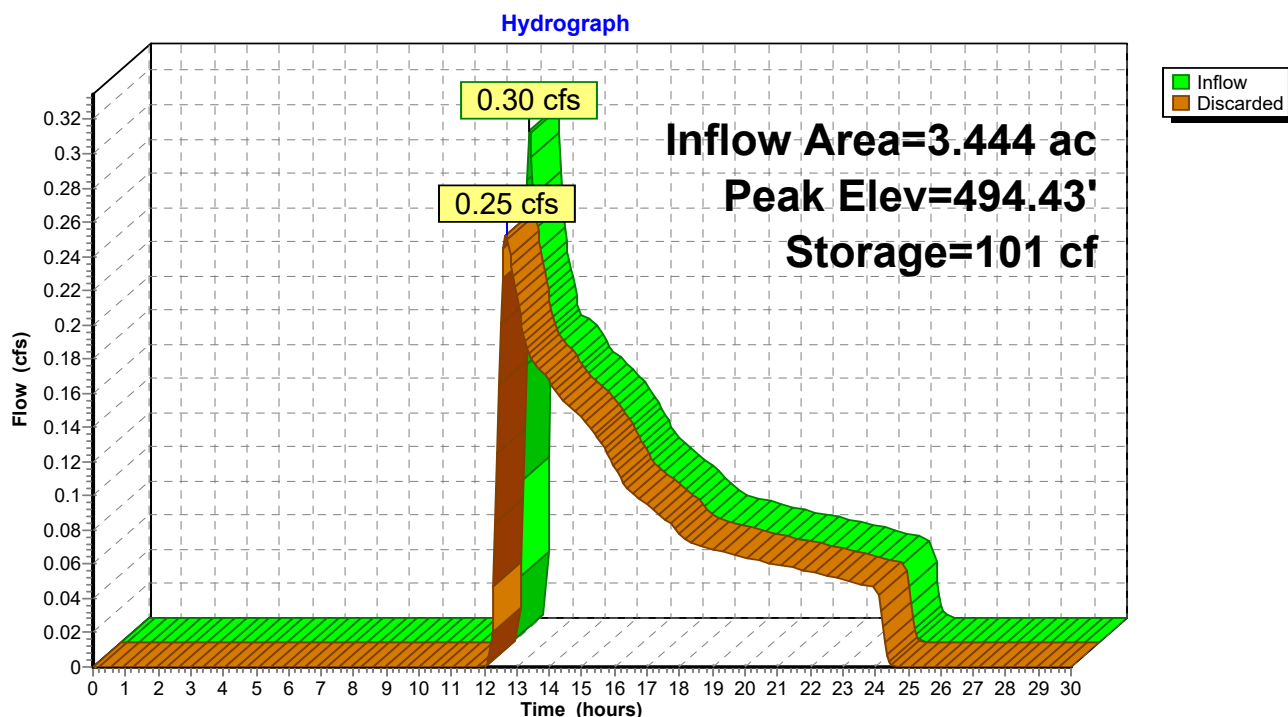
Volume	Invert	Avail.Storage	Storage Description
#1	494.20'	4,260 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
494.20	0	0	0	0
495.00	15,975	4,260	4,260	15,976

Device	Routing	Invert	Outlet Devices
#1	Discarded	494.20'	8.270 in/hr Exfiltration over Wetted area Phase-In= 0.01'

Discarded OutFlow Max=0.25 cfs @ 12.67 hrs HW=494.43' (Free Discharge)
↑1=Exfiltration (Exfiltration Controls 0.25 cfs)

Pond 1: Existing Natural Depression



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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1:

Runoff Area=150,017 sf 0.00% Impervious Runoff Depth=0.90"
Flow Length=482' Tc=13.8 min CN=35 Runoff=1.49 cfs 0.260 af

Subcatchment E2:

Runoff Area=6,946 sf 71.24% Impervious Runoff Depth=5.90"
Flow Length=48' Slope=0.0170 '/' Tc=5.0 min CN=80 Runoff=1.09 cfs 0.078 af

Reach A: Analysis Point "A" Site Discharge Point

Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach B: Analysis Point "B" Catch Basin

Inflow=1.09 cfs 0.078 af
Outflow=1.09 cfs 0.078 af

Pond 1: Existing Natural Depression

Peak Elev=494.68' Storage=912 cf Inflow=1.49 cfs 0.260 af
Outflow=1.09 cfs 0.260 af

Total Runoff Area = 3.603 ac Runoff Volume = 0.338 af Average Runoff Depth = 1.13"
96.85% Pervious = 3.490 ac 3.15% Impervious = 0.114 ac

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Type III 24-hr 100-Year Rainfall=8.29"

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Summary for Subcatchment E1:

Runoff = 1.49 cfs @ 12.37 hrs, Volume= 0.260 af, Depth= 0.90"

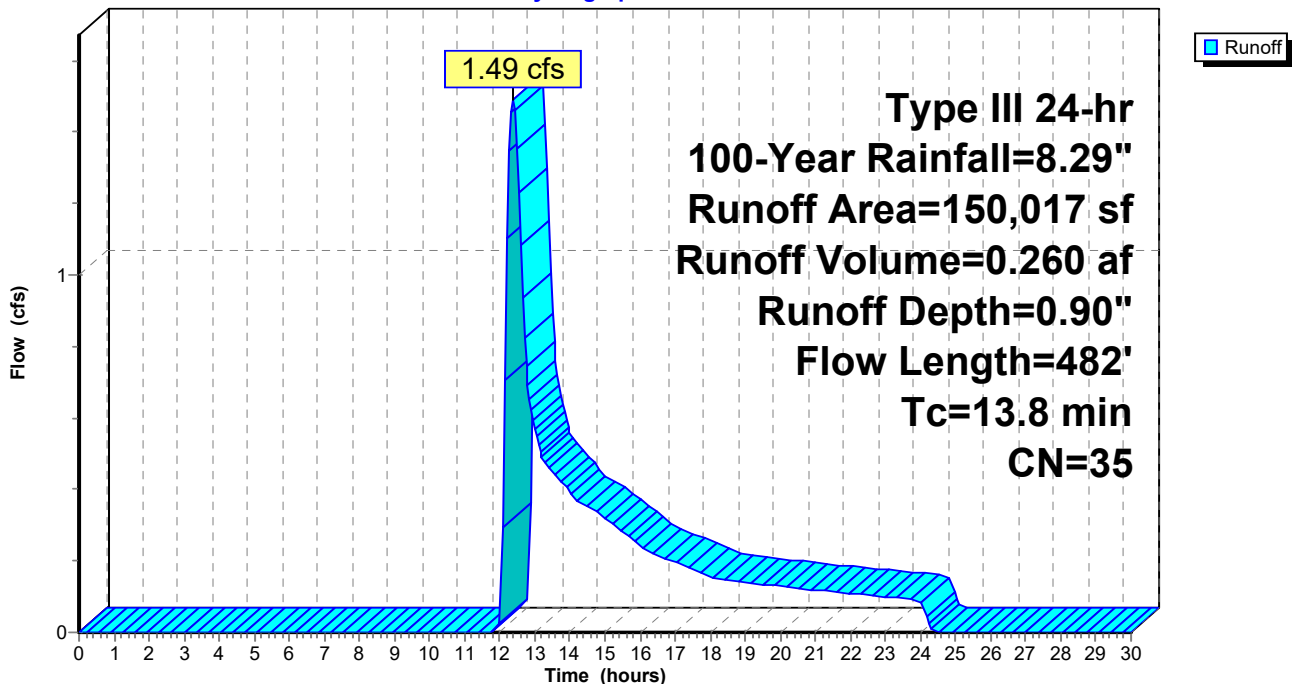
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (sf)	CN	Description
150,017	35	Brush, Fair, HSG A
150,017		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.7	20	0.0220	0.12		Sheet Flow, 20 feet grass/weeds Grass: Short n= 0.150 P2= 2.90"
6.8	202	0.0050	0.49		Shallow Concentrated Flow, Grass/Weeds 0.5% slope Short Grass Pasture Kv= 7.0 fps
4.3	260	0.0210	1.01		Shallow Concentrated Flow, Grass/Weeds 2.1% slope Short Grass Pasture Kv= 7.0 fps
13.8	482	Total			

Subcatchment E1:

Hydrograph



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Type III 24-hr 100-Year Rainfall=8.29"

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Summary for Subcatchment E2:[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 1.09 cfs @ 12.07 hrs, Volume= 0.078 af, Depth= 5.90"

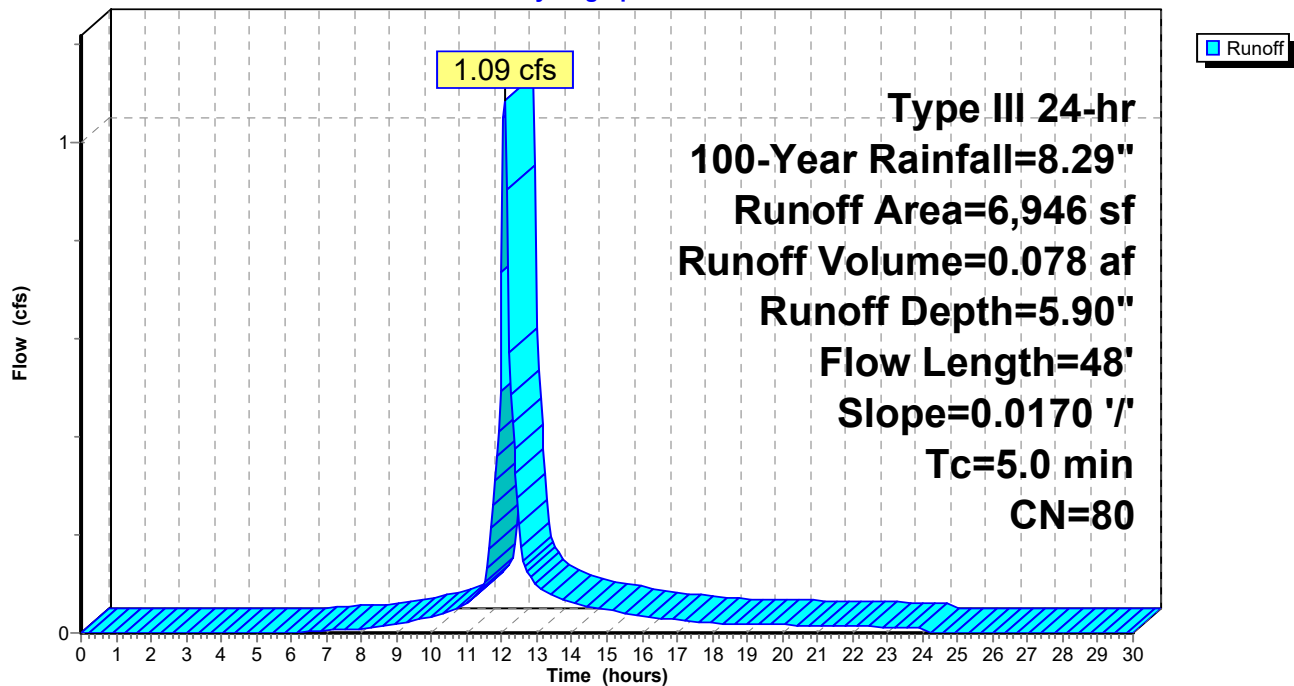
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, $dt=0.05$ hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (sf)	CN	Description
1,998	35	Brush, Fair, HSG A
4,948	98	Paved parking, HSG A
6,946	80	Weighted Average
1,998		28.76% Pervious Area
4,948		71.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	20	0.0170	0.11		Sheet Flow, 20 Feet grass/weeds
					Grass: Short n= 0.150 P2= 2.90"
0.2	28	0.0170	2.65		Shallow Concentrated Flow, Paved 1.7% Slope
					Paved Kv= 20.3 fps
3.2	48	Total, Increased to minimum Tc = 5.0 min			

Subcatchment E2:

Hydrograph

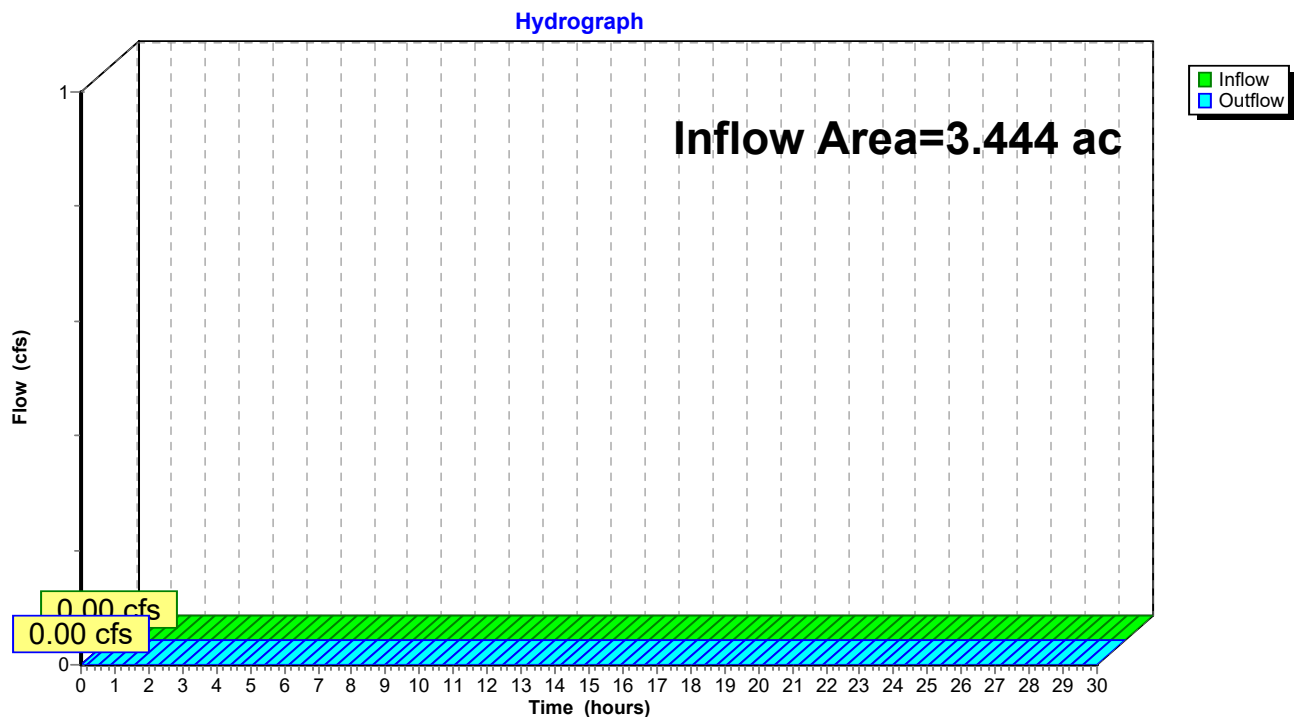


Summary for Reach A: Analysis Point "A" Site Discharge Point

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.444 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

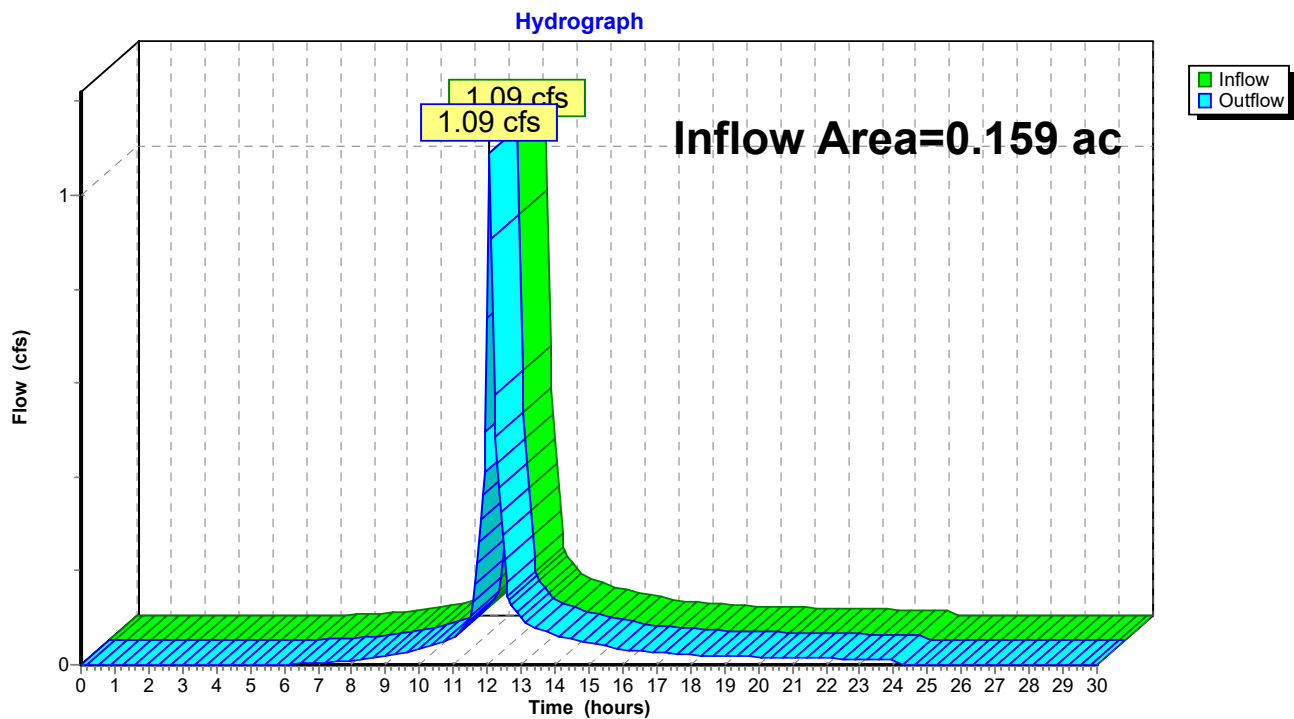
Reach A: Analysis Point "A" Site Discharge Point

Summary for Reach B: Analysis Point "B" Catch Basin

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.159 ac, 71.24% Impervious, Inflow Depth = 5.90" for 100-Year event
Inflow = 1.09 cfs @ 12.07 hrs, Volume= 0.078 af
Outflow = 1.09 cfs @ 12.07 hrs, Volume= 0.078 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach B: Analysis Point "B" Catch Basin

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Type III 24-hr 100-Year Rainfall=8.29"

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Summary for Pond 1: Existing Natural Depression

Inflow Area = 3.444 ac, 0.00% Impervious, Inflow Depth = 0.90" for 100-Year event
Inflow = 1.49 cfs @ 12.37 hrs, Volume= 0.260 af
Outflow = 1.09 cfs @ 12.60 hrs, Volume= 0.260 af, Atten= 27%, Lag= 13.6 min
Discarded = 1.09 cfs @ 12.60 hrs, Volume= 0.260 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 494.68' @ 12.60 hrs Surf.Area= 5,719 sf Storage= 912 cf

Plug-Flow detention time= 8.4 min calculated for 0.259 af (100% of inflow)
Center-of-Mass det. time= 8.4 min (946.8 - 938.4)

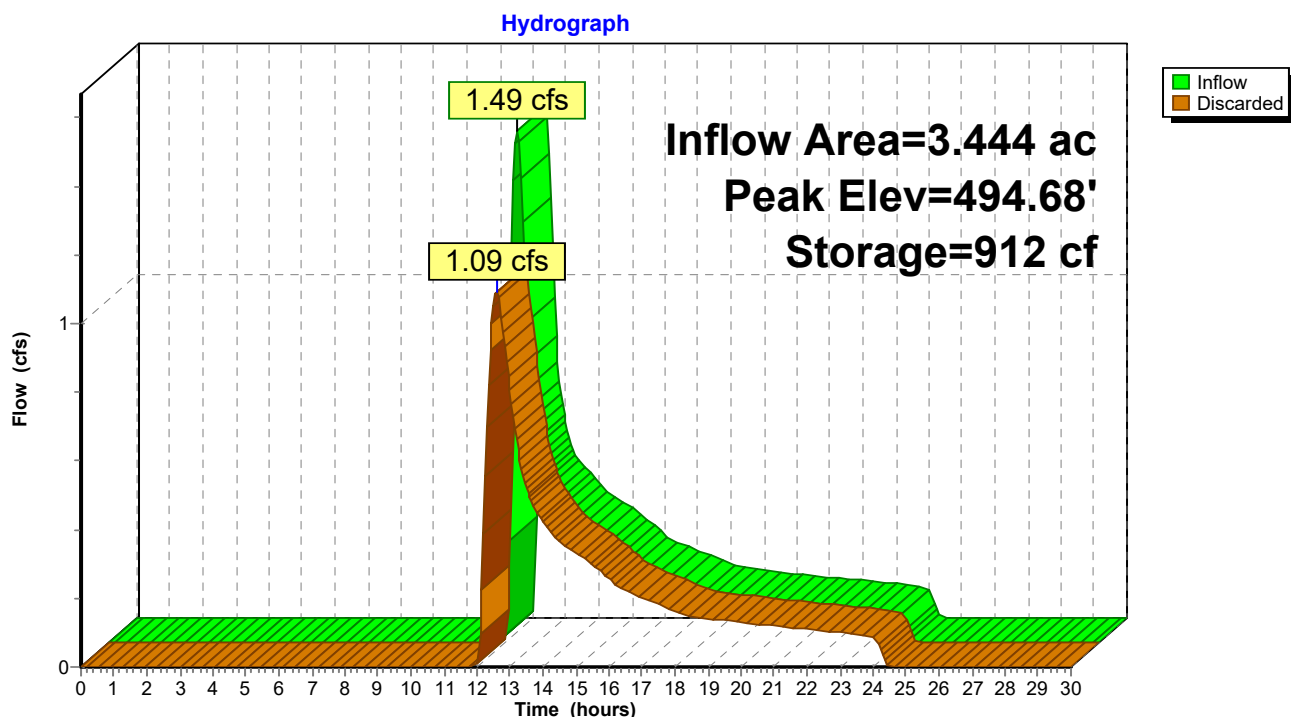
Volume	Invert	Avail.Storage	Storage Description
#1	494.20'	4,260 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
494.20	0	0	0	0
495.00	15,975	4,260	4,260	15,976

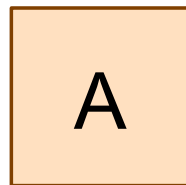
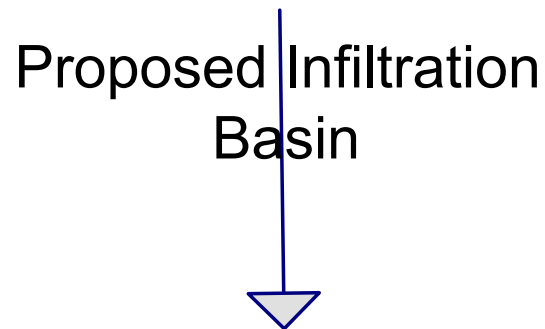
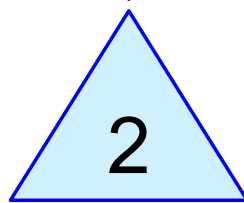
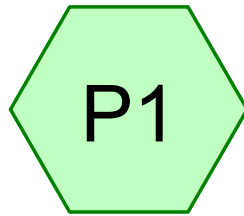
Device	Routing	Invert	Outlet Devices
#1	Discarded	494.20'	8.270 in/hr Exfiltration over Wetted area Phase-In= 0.01'

Discarded OutFlow Max=1.09 cfs @ 12.60 hrs HW=494.68' (Free Discharge)
↑1=Exfiltration (Exfiltration Controls 1.09 cfs)

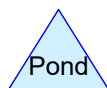
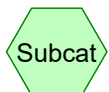
Pond 1: Existing Natural Depression



APPENDIX B
POST DEVELOPMENT RUNOFF CALCULATIONS



Analysis Point "A" Site
Discharge Point



Routing Diagram for 1289- Hydro CAD POST
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1289- Hydro CAD POST

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.502	35	Brush, Fair, HSG A (P1)
0.058	98	Future Paved parking, HSG A (P1)
0.458	98	Future Pavement (Gravel), HSG A (P1)
0.115	76	Gravel Storage, HSG A (P1)
0.237	98	Paved parking, HSG A (P1)
0.233	98	Roofs, HSG A (P1)
3.603	54	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
3.603	HSG A	P1
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
3.603		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
2.502	0.000	0.000	0.000	0.000	2.502	Brush, Fair	P1
0.058	0.000	0.000	0.000	0.000	0.058	Future Paved parking	P1
0.458	0.000	0.000	0.000	0.000	0.458	Future Pavement (Gravel)	P1
0.115	0.000	0.000	0.000	0.000	0.115	Gravel Storage	P1
0.237	0.000	0.000	0.000	0.000	0.237	Paved parking	P1
0.233	0.000	0.000	0.000	0.000	0.233	Roofs	P1
3.603	0.000	0.000	0.000	0.000	3.603	TOTAL AREA	

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Type III 24-hr 2-Year Rainfall=3.21"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P1:

Runoff Area=156,963 sf 27.37% Impervious Runoff Depth=0.23"

Flow Length=335' Tc=5.0 min CN=54 Runoff=0.31 cfs 0.068 af

Reach A: Analysis Point "A" Site Discharge Point

Inflow=0.00 cfs 0.000 af

Outflow=0.00 cfs 0.000 af

Pond 2: Proposed Infiltration Basin

Peak Elev=490.01' Storage=16 cf Inflow=0.31 cfs 0.068 af

Outflow=0.31 cfs 0.068 af

Total Runoff Area = 3.603 ac Runoff Volume = 0.068 af Average Runoff Depth = 0.23"
72.63% Pervious = 2.617 ac 27.37% Impervious = 0.986 ac

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Type III 24-hr 2-Year Rainfall=3.21"

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Summary for Subcatchment P1:[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 0.31 cfs @ 12.34 hrs, Volume= 0.068 af, Depth= 0.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, $dt=0.05$ hrs
Type III 24-hr 2-Year Rainfall=3.21"

	Area (sf)	CN	Description
*	19,934	98	Future Pavement (Gravel), HSG A
*	5,000	76	Gravel Storage, HSG A
*	2,541	98	Future Paved parking, HSG A
	10,329	98	Paved parking, HSG A
	10,152	98	Roofs, HSG A
	109,007	35	Brush, Fair, HSG A
	156,963	54	Weighted Average
	114,007		72.63% Pervious Area
	42,956		27.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	20	0.0120	0.77		Sheet Flow, 20 feet paved Smooth surfaces $n=0.011$ $P2=2.90"$
1.2	162	0.0120	2.22		Shallow Concentrated Flow, Paved 1.2% slope Paved $K_v=20.3$ fps
2.0	153	0.0320	1.25		Shallow Concentrated Flow, Grass/Weeds 3.2% Slope Short Grass Pasture $K_v=7.0$ fps
3.6	335	Total, Increased to minimum $T_c = 5.0$ min			

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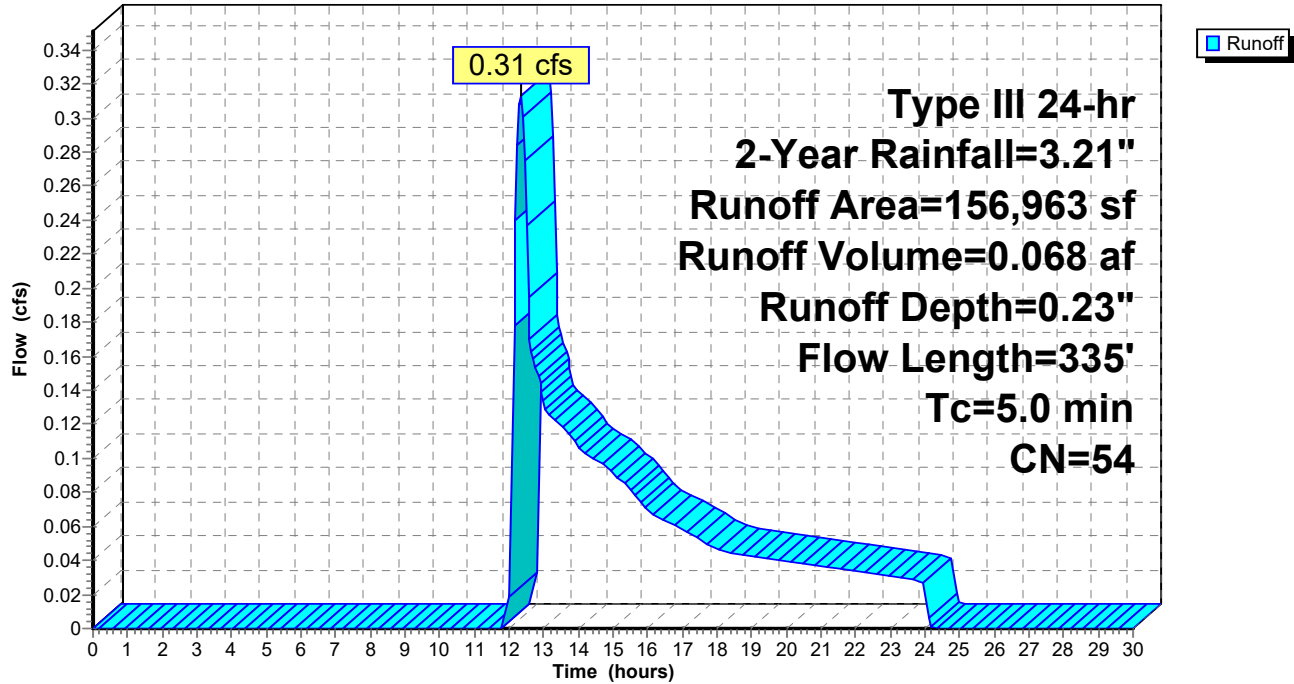
Type III 24-hr 2-Year Rainfall=3.21"

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Subcatchment P1:

Hydrograph



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Type III 24-hr 2-Year Rainfall=3.21"

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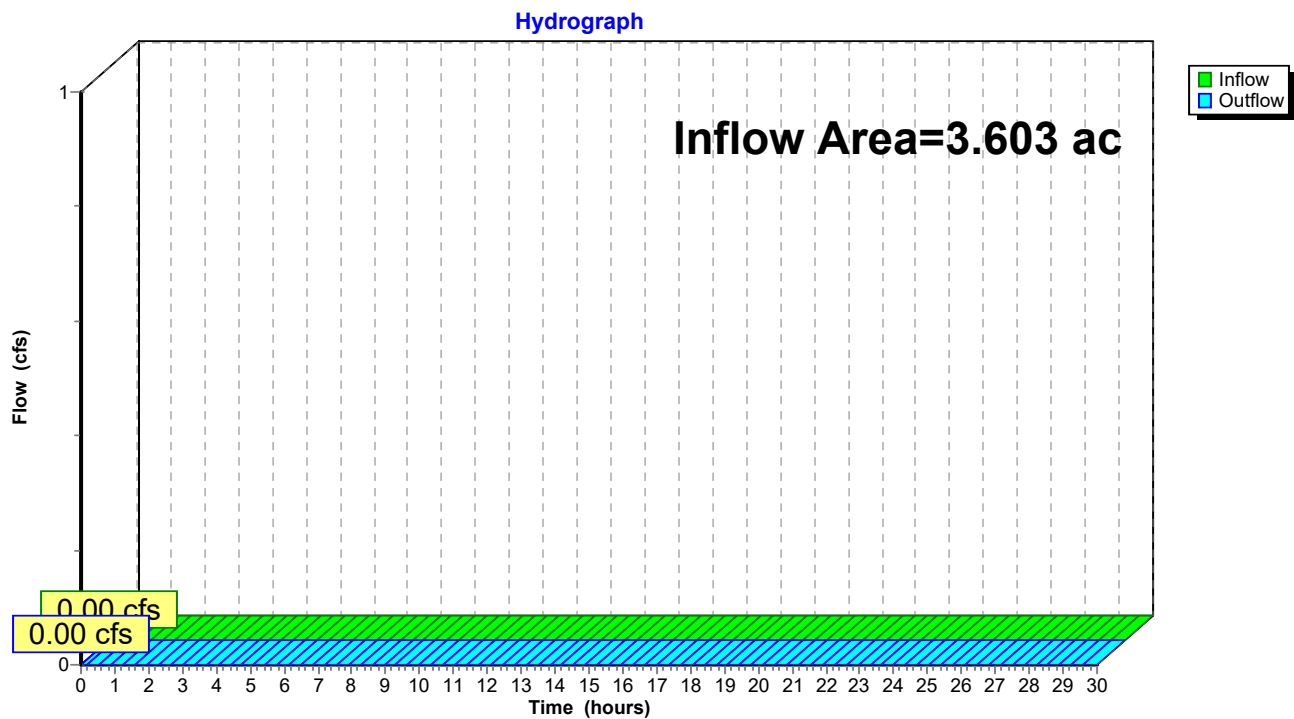
Summary for Reach A: Analysis Point "A" Site Discharge Point

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.603 ac, 27.37% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach A: Analysis Point "A" Site Discharge Point



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Type III 24-hr 2-Year Rainfall=3.21"

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Summary for Pond 2: Proposed Infiltration Basin

Inflow Area = 3.603 ac, 27.37% Impervious, Inflow Depth = 0.23" for 2-Year event
 Inflow = 0.31 cfs @ 12.34 hrs, Volume= 0.068 af
 Outflow = 0.31 cfs @ 12.35 hrs, Volume= 0.068 af, Atten= 0%, Lag= 0.9 min
 Discarded = 0.31 cfs @ 12.35 hrs, Volume= 0.068 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 490.01' @ 12.35 hrs Surf.Area= 2,142 sf Storage= 16 cf

Plug-Flow detention time= 0.9 min calculated for 0.068 af (100% of inflow)
 Center-of-Mass det. time= 0.9 min (963.5 - 962.6)

Volume	Invert	Avail.Storage	Storage Description	
#1	490.00'	27,521 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
490.00	2,136	0	0	2,136
491.00	2,961	2,537	2,537	2,980
492.00	3,843	3,392	5,930	3,886
493.00	4,781	4,303	10,233	4,852
494.00	5,776	5,271	15,504	5,880
495.00	19,629	12,018	27,521	19,738

Device	Routing	Invert	Outlet Devices	
#1	Discarded	490.00'	8.270 in/hr Exfiltration over Wetted area Phase-In= 0.01'	

Discarded OutFlow Max=0.31 cfs @ 12.35 hrs HW=490.01' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.31 cfs)

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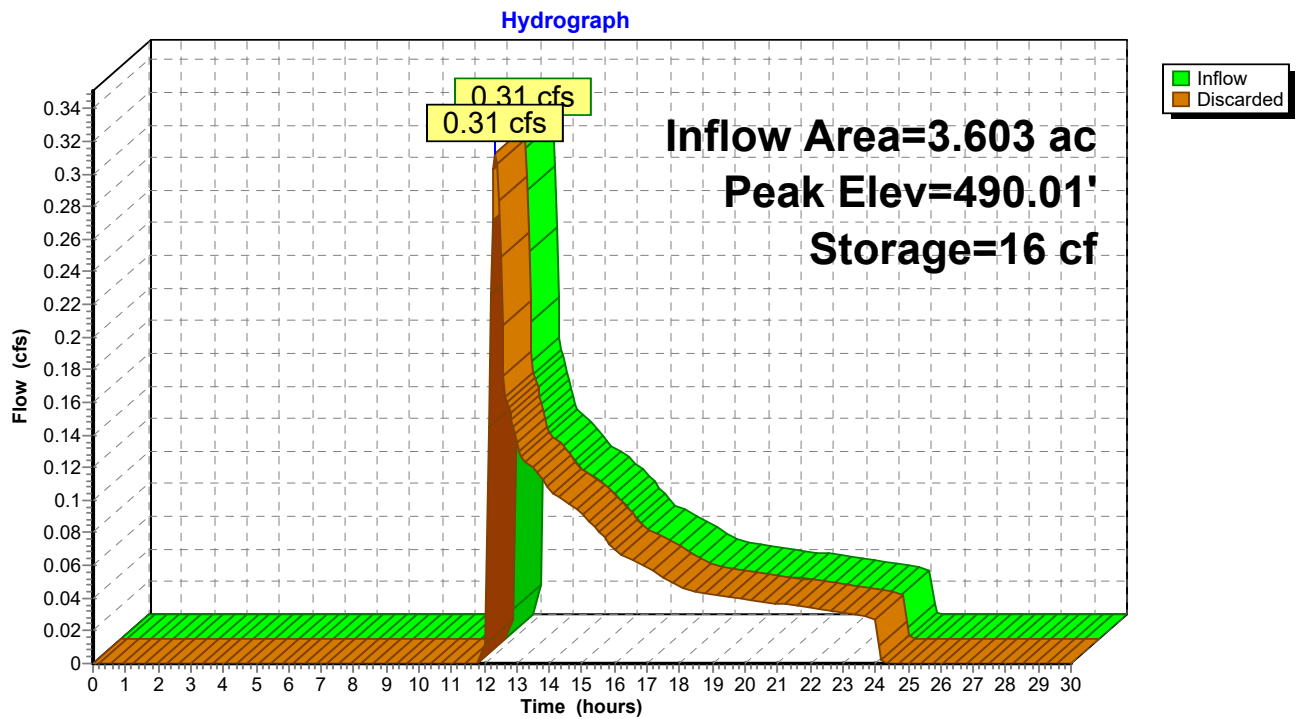
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Type III 24-hr 2-Year Rainfall=3.21"

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Pond 2: Proposed Infiltration Basin



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Type III 24-hr 10-Year Rainfall=5.17"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P1:

Runoff Area=156,963 sf 27.37% Impervious Runoff Depth=1.00"
Flow Length=335' Tc=5.0 min CN=54 Runoff=3.43 cfs 0.301 af

Reach A: Analysis Point "A" Site Discharge Point

Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 2: Proposed Infiltration Basin

Peak Elev=491.26' Storage=3,334 cf Inflow=3.43 cfs 0.301 af
Outflow=0.61 cfs 0.301 af

Total Runoff Area = 3.603 ac Runoff Volume = 0.301 af Average Runoff Depth = 1.00"
72.63% Pervious = 2.617 ac 27.37% Impervious = 0.986 ac

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Type III 24-hr 10-Year Rainfall=5.17"

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Summary for Subcatchment P1:[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 3.43 cfs @ 12.10 hrs, Volume= 0.301 af, Depth= 1.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, $dt=0.05$ hrs
Type III 24-hr 10-Year Rainfall=5.17"

	Area (sf)	CN	Description
*	19,934	98	Future Pavement (Gravel), HSG A
*	5,000	76	Gravel Storage, HSG A
*	2,541	98	Future Paved parking, HSG A
	10,329	98	Paved parking, HSG A
	10,152	98	Roofs, HSG A
	109,007	35	Brush, Fair, HSG A
	156,963	54	Weighted Average
	114,007		72.63% Pervious Area
	42,956		27.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	20	0.0120	0.77		Sheet Flow, 20 feet paved Smooth surfaces $n=0.011$ $P2=2.90"$
1.2	162	0.0120	2.22		Shallow Concentrated Flow, Paved 1.2% slope Paved $K_v=20.3$ fps
2.0	153	0.0320	1.25		Shallow Concentrated Flow, Grass/Weeds 3.2% Slope Short Grass Pasture $K_v=7.0$ fps
3.6	335	Total, Increased to minimum $T_c = 5.0$ min			

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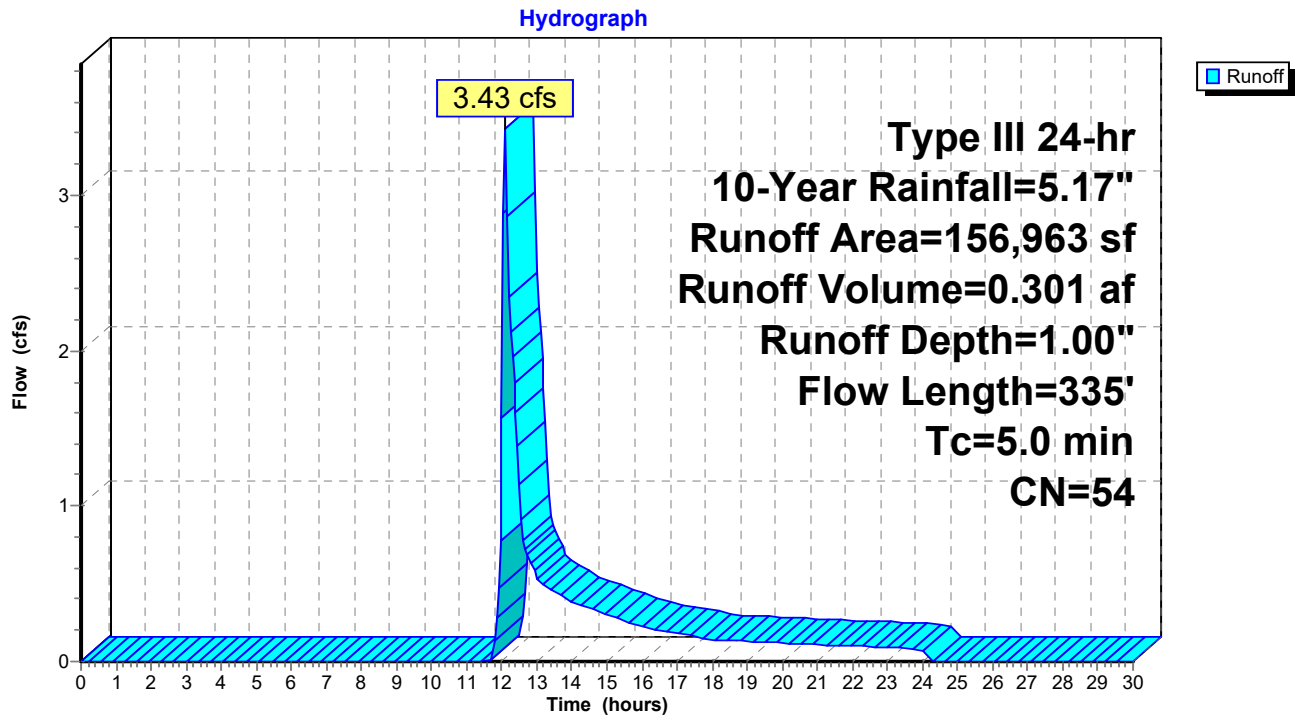
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Type III 24-hr 10-Year Rainfall=5.17"

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Subcatchment P1:



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Type III 24-hr 10-Year Rainfall=5.17"

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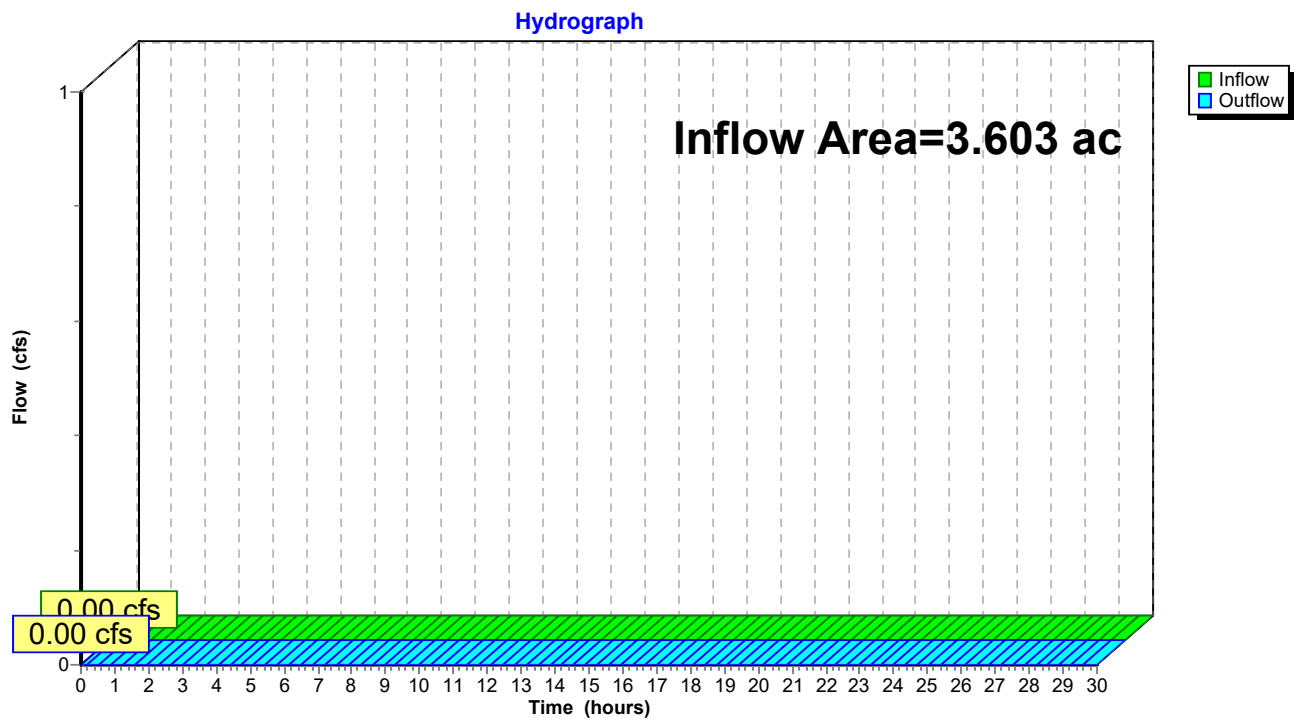
Summary for Reach A: Analysis Point "A" Site Discharge Point

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.603 ac, 27.37% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach A: Analysis Point "A" Site Discharge Point



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Type III 24-hr 10-Year Rainfall=5.17"

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Summary for Pond 2: Proposed Infiltration Basin

Inflow Area = 3.603 ac, 27.37% Impervious, Inflow Depth = 1.00" for 10-Year event
 Inflow = 3.43 cfs @ 12.10 hrs, Volume= 0.301 af
 Outflow = 0.61 cfs @ 12.87 hrs, Volume= 0.301 af, Atten= 82%, Lag= 46.2 min
 Discarded = 0.61 cfs @ 12.87 hrs, Volume= 0.301 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 491.26' @ 12.87 hrs Surf.Area= 3,179 sf Storage= 3,334 cf

Plug-Flow detention time= 47.6 min calculated for 0.301 af (100% of inflow)
 Center-of-Mass det. time= 47.5 min (939.9 - 892.4)

Volume	Invert	Avail.Storage	Storage Description	
#1	490.00'	27,521 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
490.00	2,136	0	0	2,136
491.00	2,961	2,537	2,537	2,980
492.00	3,843	3,392	5,930	3,886
493.00	4,781	4,303	10,233	4,852
494.00	5,776	5,271	15,504	5,880
495.00	19,629	12,018	27,521	19,738

Device	Routing	Invert	Outlet Devices	
#1	Discarded	490.00'	8.270 in/hr Exfiltration over Wetted area Phase-In= 0.01'	

Discarded OutFlow Max=0.61 cfs @ 12.87 hrs HW=491.26' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.61 cfs)

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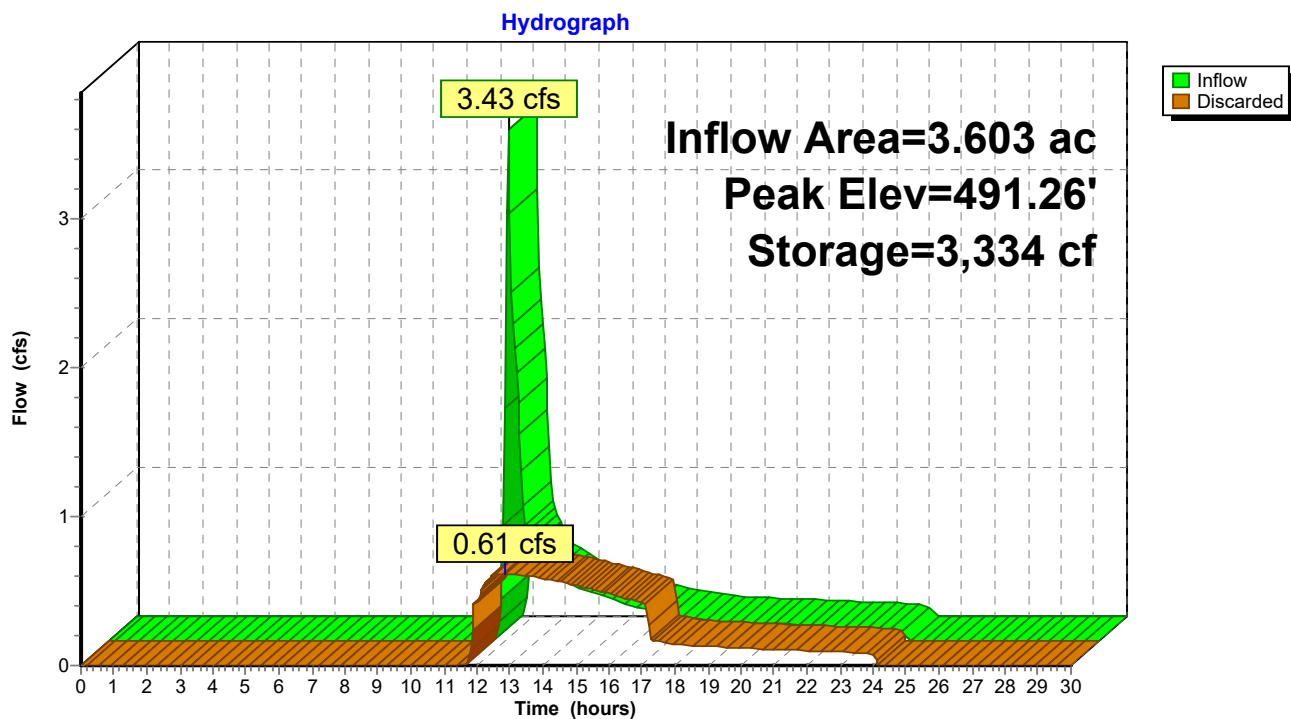
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Type III 24-hr 10-Year Rainfall=5.17"

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Pond 2: Proposed Infiltration Basin



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Type III 24-hr 25-Year Rainfall=6.40"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P1:

Runoff Area=156,963 sf 27.37% Impervious Runoff Depth=1.67"
Flow Length=335' Tc=5.0 min CN=54 Runoff=6.39 cfs 0.501 af

Reach A: Analysis Point "A" Site Discharge Point

Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 2: Proposed Infiltration Basin

Peak Elev=492.35' Storage=7,309 cf Inflow=6.39 cfs 0.501 af
Outflow=0.81 cfs 0.501 af

Total Runoff Area = 3.603 ac Runoff Volume = 0.501 af Average Runoff Depth = 1.67"
72.63% Pervious = 2.617 ac 27.37% Impervious = 0.986 ac

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Type III 24-hr 25-Year Rainfall=6.40"

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Summary for Subcatchment P1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 6.39 cfs @ 12.09 hrs, Volume= 0.501 af, Depth= 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.40"

	Area (sf)	CN	Description
*	19,934	98	Future Pavement (Gravel), HSG A
*	5,000	76	Gravel Storage, HSG A
*	2,541	98	Future Paved parking, HSG A
	10,329	98	Paved parking, HSG A
	10,152	98	Roofs, HSG A
	109,007	35	Brush, Fair, HSG A
	156,963	54	Weighted Average
	114,007		72.63% Pervious Area
	42,956		27.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	20	0.0120	0.77		Sheet Flow, 20 feet paved Smooth surfaces n= 0.011 P2= 2.90"
1.2	162	0.0120	2.22		Shallow Concentrated Flow, Paved 1.2% slope Paved Kv= 20.3 fps
2.0	153	0.0320	1.25		Shallow Concentrated Flow, Grass/Weeds 3.2% Slope Short Grass Pasture Kv= 7.0 fps
3.6	335	Total, Increased to minimum Tc = 5.0 min			

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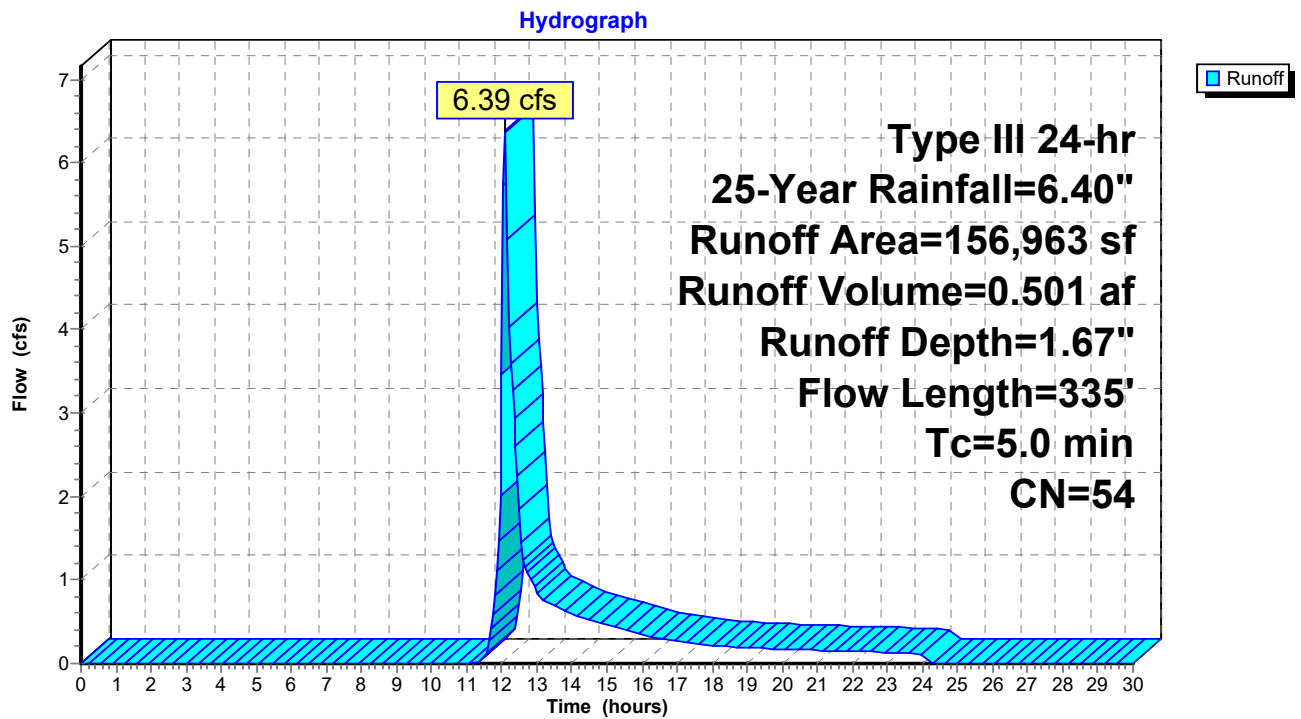
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Type III 24-hr 25-Year Rainfall=6.40"

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Subcatchment P1:



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Type III 24-hr 25-Year Rainfall=6.40"

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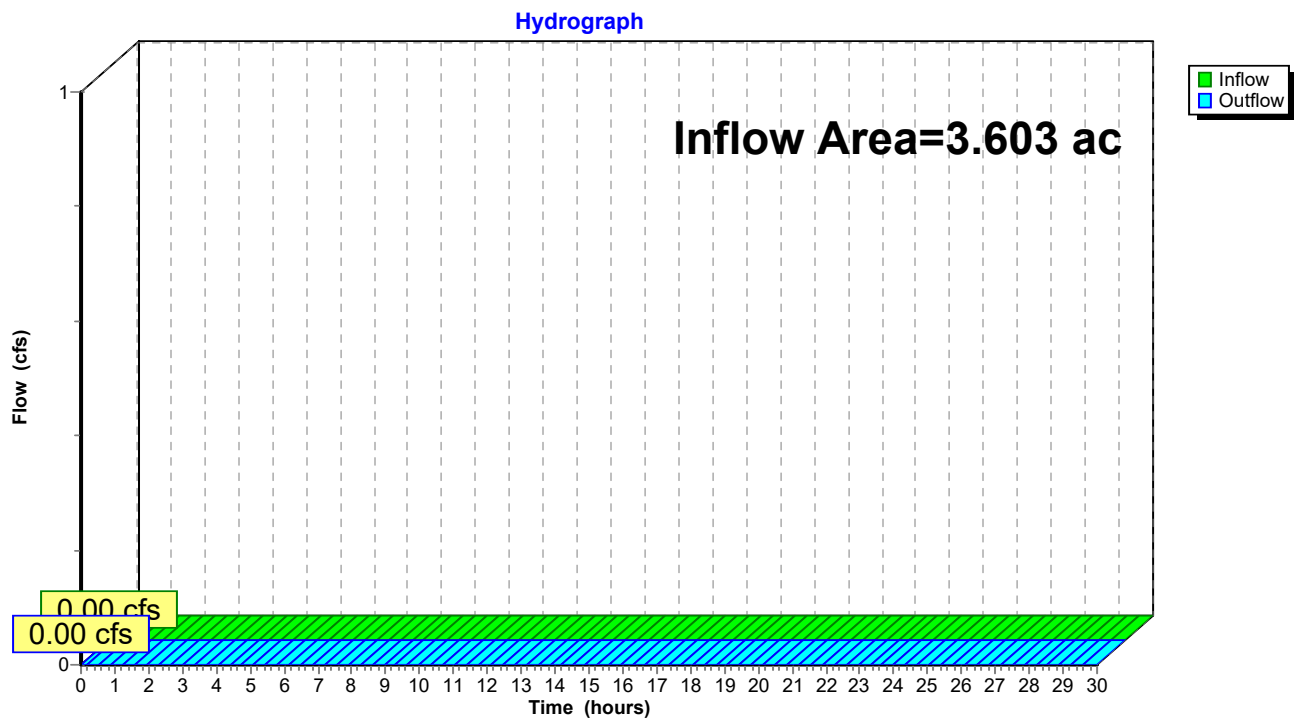
Summary for Reach A: Analysis Point "A" Site Discharge Point

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.603 ac, 27.37% Impervious, Inflow Depth = 0.00" for 25-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach A: Analysis Point "A" Site Discharge Point



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Type III 24-hr 25-Year Rainfall=6.40"

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Summary for Pond 2: Proposed Infiltration Basin

Inflow Area = 3.603 ac, 27.37% Impervious, Inflow Depth = 1.67" for 25-Year event
 Inflow = 6.39 cfs @ 12.09 hrs, Volume= 0.501 af
 Outflow = 0.81 cfs @ 13.07 hrs, Volume= 0.501 af, Atten= 87%, Lag= 58.4 min
 Discarded = 0.81 cfs @ 13.07 hrs, Volume= 0.501 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 492.35' @ 13.07 hrs Surf.Area= 4,155 sf Storage= 7,309 cf

Plug-Flow detention time= 95.5 min calculated for 0.500 af (100% of inflow)
 Center-of-Mass det. time= 95.3 min (969.7 - 874.3)

Volume	Invert	Avail.Storage	Storage Description	
#1	490.00'	27,521 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
490.00	2,136	0	0	2,136
491.00	2,961	2,537	2,537	2,980
492.00	3,843	3,392	5,930	3,886
493.00	4,781	4,303	10,233	4,852
494.00	5,776	5,271	15,504	5,880
495.00	19,629	12,018	27,521	19,738

Device	Routing	Invert	Outlet Devices	
#1	Discarded	490.00'	8.270 in/hr Exfiltration over Wetted area Phase-In= 0.01'	

Discarded OutFlow Max=0.81 cfs @ 13.07 hrs HW=492.34' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.81 cfs)

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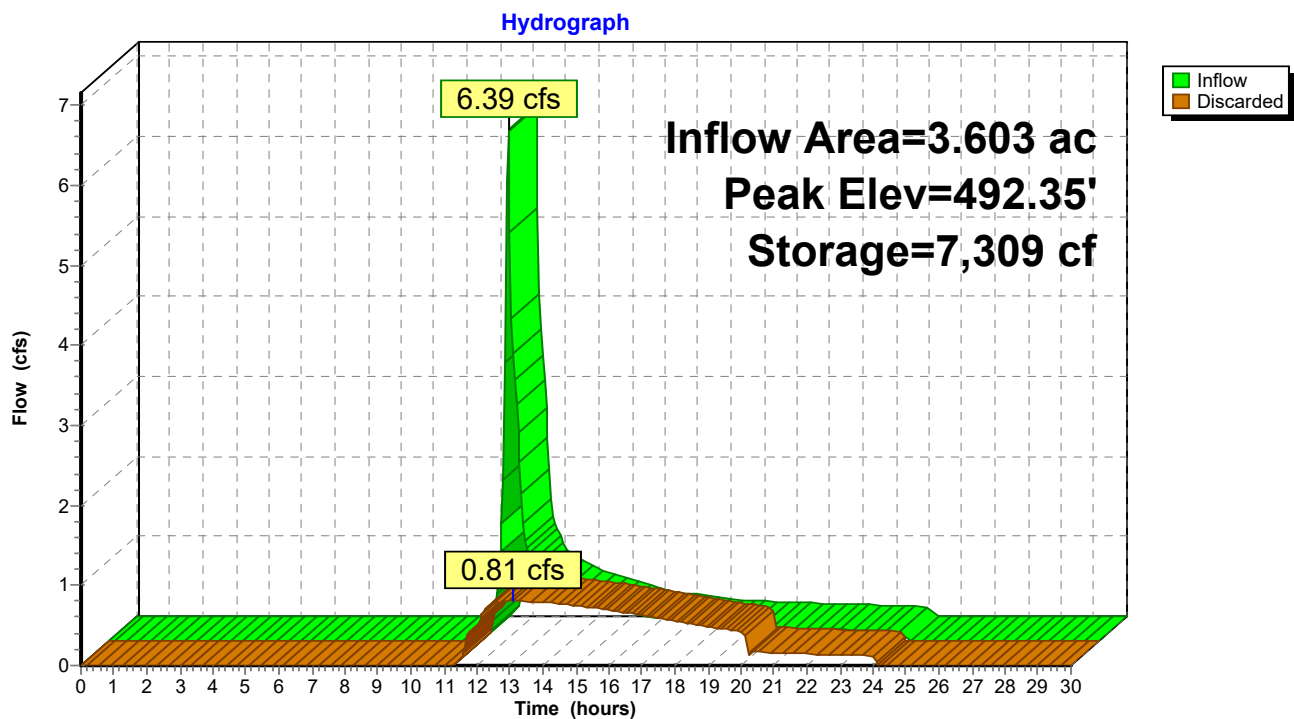
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Type III 24-hr 25-Year Rainfall=6.40"

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Pond 2: Proposed Infiltration Basin



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Type III 24-hr 100-Year Rainfall=8.29"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P1:

Runoff Area=156,963 sf 27.37% Impervious Runoff Depth=2.87"
Flow Length=335' Tc=5.0 min CN=54 Runoff=11.71 cfs 0.862 af

Reach A: Analysis Point "A" Site Discharge Point

Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 2: Proposed Infiltration Basin

Peak Elev=493.94' Storage=15,187 cf Inflow=11.71 cfs 0.862 af
Outflow=1.11 cfs 0.863 af

Total Runoff Area = 3.603 ac Runoff Volume = 0.862 af Average Runoff Depth = 2.87"
72.63% Pervious = 2.617 ac 27.37% Impervious = 0.986 ac

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Type III 24-hr 100-Year Rainfall=8.29"

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Summary for Subcatchment P1:[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 11.71 cfs @ 12.09 hrs, Volume= 0.862 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, $dt=0.05$ hrs
Type III 24-hr 100-Year Rainfall=8.29"

	Area (sf)	CN	Description
*	19,934	98	Future Pavement (Gravel), HSG A
*	5,000	76	Gravel Storage, HSG A
*	2,541	98	Future Paved parking, HSG A
	10,329	98	Paved parking, HSG A
	10,152	98	Roofs, HSG A
	109,007	35	Brush, Fair, HSG A
	156,963	54	Weighted Average
	114,007		72.63% Pervious Area
	42,956		27.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	20	0.0120	0.77		Sheet Flow, 20 feet paved Smooth surfaces $n=0.011$ $P2=2.90"$
1.2	162	0.0120	2.22		Shallow Concentrated Flow, Paved 1.2% slope Paved $K_v=20.3$ fps
2.0	153	0.0320	1.25		Shallow Concentrated Flow, Grass/Weeds 3.2% Slope Short Grass Pasture $K_v=7.0$ fps
3.6	335	Total, Increased to minimum $T_c = 5.0$ min			

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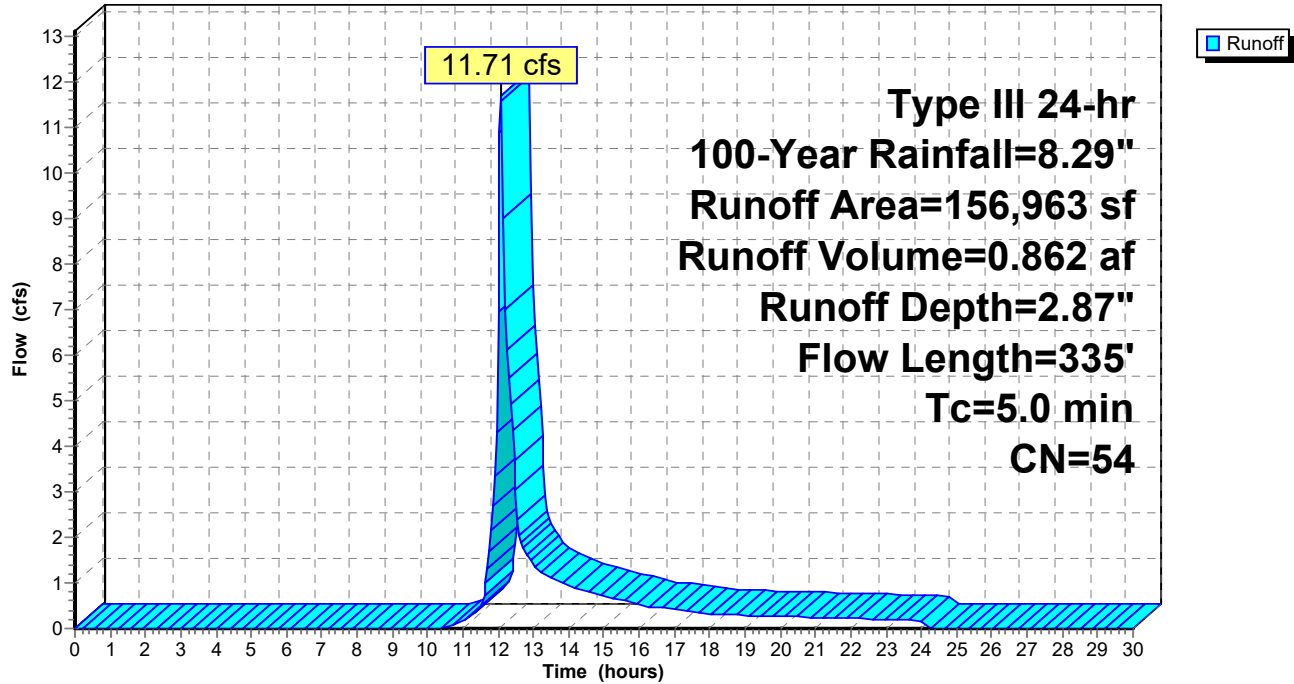
Type III 24-hr 100-Year Rainfall=8.29"

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Subcatchment P1:

Hydrograph



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Type III 24-hr 100-Year Rainfall=8.29"

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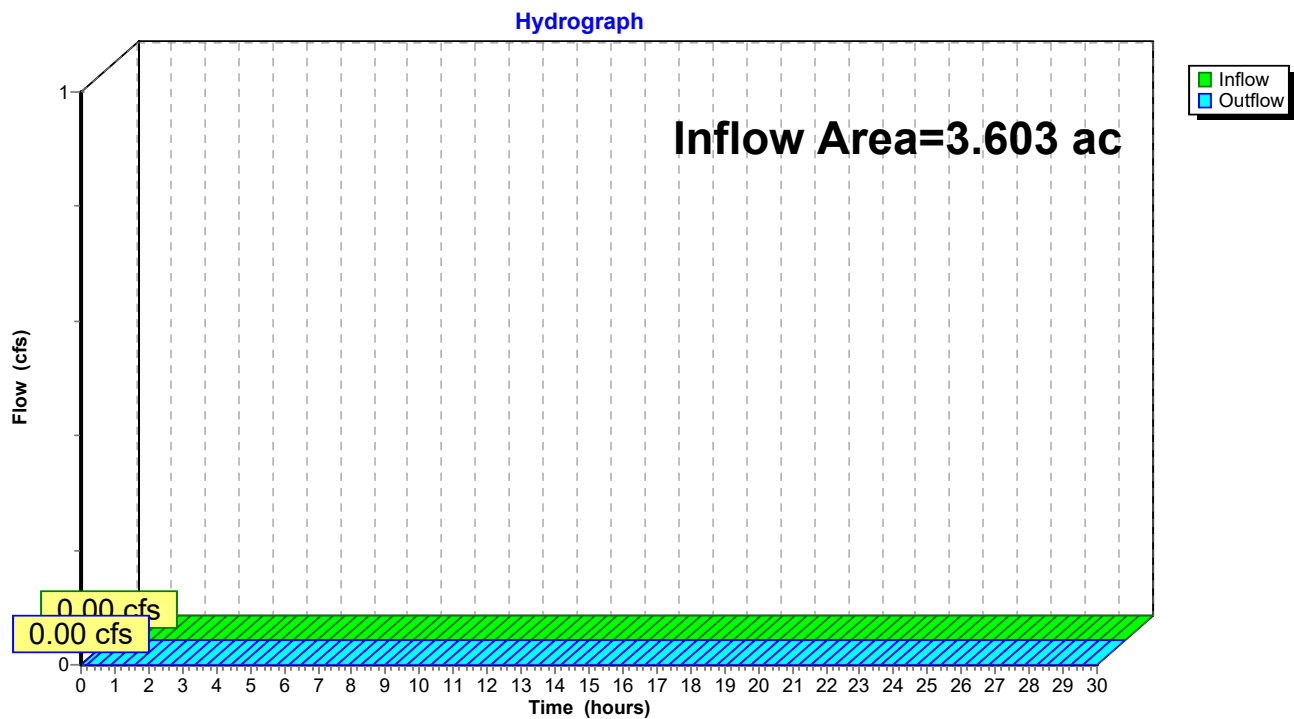
Summary for Reach A: Analysis Point "A" Site Discharge Point

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.603 ac, 27.37% Impervious, Inflow Depth = 0.00" for 100-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach A: Analysis Point "A" Site Discharge Point



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Type III 24-hr 100-Year Rainfall=8.29"

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Summary for Pond 2: Proposed Infiltration Basin

Inflow Area = 3.603 ac, 27.37% Impervious, Inflow Depth = 2.87" for 100-Year event
 Inflow = 11.71 cfs @ 12.09 hrs, Volume= 0.862 af
 Outflow = 1.11 cfs @ 13.50 hrs, Volume= 0.863 af, Atten= 90%, Lag= 84.7 min
 Discarded = 1.11 cfs @ 13.50 hrs, Volume= 0.863 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 493.94' @ 13.50 hrs Surf.Area= 5,719 sf Storage= 15,187 cf

Plug-Flow detention time= 160.5 min calculated for 0.861 af (100% of inflow)
 Center-of-Mass det. time= 160.4 min (1,017.4 - 857.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	490.00'	27,521 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
490.00	2,136	0	0	2,136
491.00	2,961	2,537	2,537	2,980
492.00	3,843	3,392	5,930	3,886
493.00	4,781	4,303	10,233	4,852
494.00	5,776	5,271	15,504	5,880
495.00	19,629	12,018	27,521	19,738

Device	Routing	Invert	Outlet Devices	
#1	Discarded	490.00'	8.270 in/hr Exfiltration over Wetted area Phase-In= 0.01'	

Discarded OutFlow Max=1.11 cfs @ 13.50 hrs HW=493.94' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 1.11 cfs)

1289- Hydro CAD POST

Prepared by Furrow Engineering

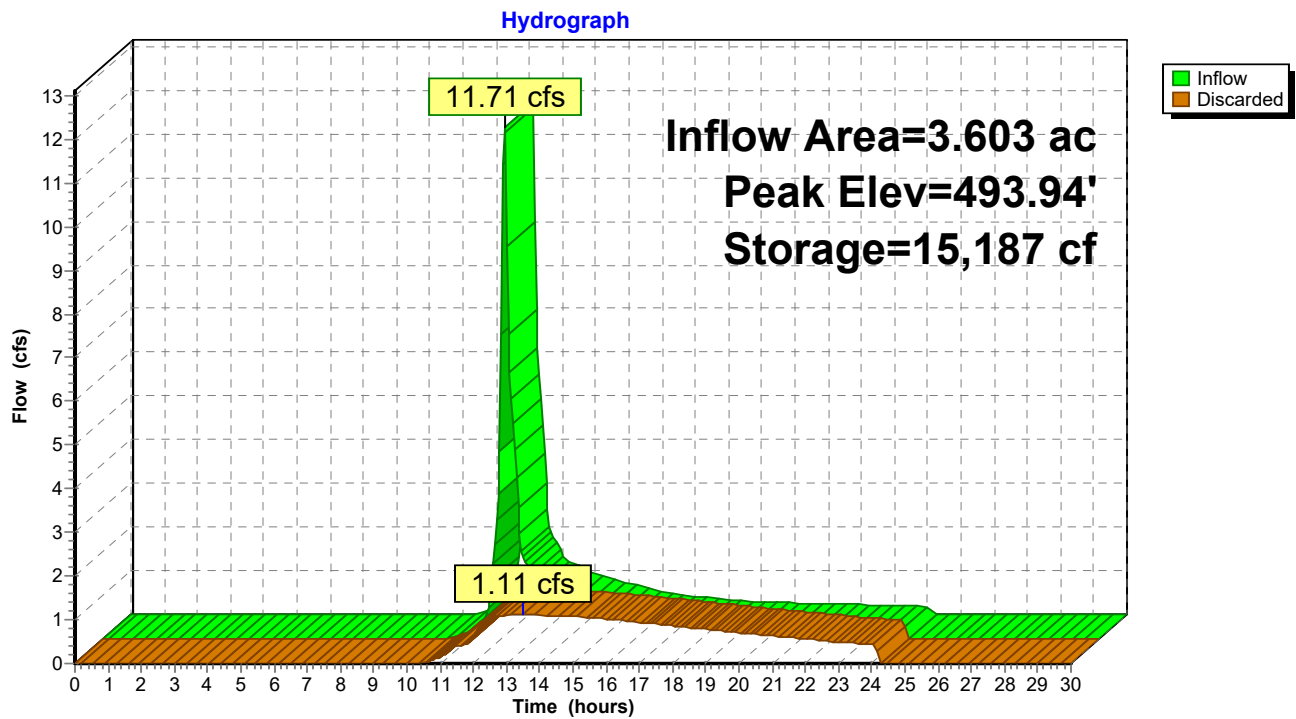
HydroCAD® 10.00-26 s/n 04245 © 2020 HydroCAD Software Solutions LLC

Type III 24-hr 100-Year Rainfall=8.29"

Printed 6/16/2026

Page 28

Pond 2: Proposed Infiltration Basin



APPENDIX C
GROUNDWATER RECHARGE CALCULATIONS
WATER QUALITY CALCULATIONS

OFFICE & EQUIPMENT REPAIR FACILITY

Furrow Engineering
199 Servistar Industrial Way - Suite 2
Westfield, MA 01085
Telephone: 413-562-4884

Job Number: 1289
Date: 6-12-26
Calculated By: LDS
Checked By:

Groundwater Recharge Calculations**Required Recharge Volume¹**

$R_v = F \times \text{impervious area}$

Where: R_v = required recharge volume (acre-feet)
 F = target depth factor associated with each hydrologic soil group (inches)
Impervious Area = pavement and rooftop area on site (acres)
(Net increase from pre-development only)

NRCS Hydrologic Soil Type	Approx. Soil Texture	Target Depth Factor (inches)	Impervious Area (acre)	R_v (acre-feet)	R_v (cf)
A	sand	0.60	0.99	0.050	2,156
B	loam	0.35	0.00	0.000	0
C	silty loam	0.25	0.00	0.000	0
D	clay	0.10	0.00	0.000	0
Total =			0.99	0.050	2,156

Basin Bottom Elevation =	490
100-year Water Surface Elevation =	493.94
Basin Rim Elevation=	495

Provided Storage Volume

Recharge Structure	Required Storage Volume (cf)	Provided Storage Volume (cf)
Infiltration Basin	2,156	15,159*
Total		15,159*

> 2,156 OK

*Obtained from HydroCAD stage storage table for storage volume below the 100-year Water Surface Elevation

Notes:

- 1) Refer to Massachusetts Stormwater Handbook Volume 3, Chapter 1, page 15 dated February 2008
- 2) Refer to HydroCAD report

OFFICE & EQUIPMENT REPAIR FACILITY

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Drawdown Calculations

Drawdown Time

$$\text{Time}_{\text{drawdown}}^1 = \frac{\text{Rv}}{(\text{K})(\text{Bottom Area})}$$

Where: Time_{drawdown} = time it takes the basin to drain completely (hours)
Rv = storage volume (cubic feet)
K = saturated hydraulic conductivity (in/hr)
Bottom Area = bottom area of recharge structure

Recharge Structure	Rv (cf)	K ² (in/hr)	Bottom Area (sf)	Drawdown Time (hr)
Infiltration Basin	15,159	8.27	2,136	10.3

Notes:

- 1) Refer to Massachusetts Stormwater Handbook Volume 3, Chapter 1, page 25 dated February 2008
- 2) Refer to Massachusetts Stormwater Handbook Volume 3, Chapter 1, page 22 dated February 2008 (Rawls Rates Table)
- 3) Refer to HydroCAD report

OFFICE & EQUIPMENT REPAIR FACILITY

Furrow Engineering
199 Servistar Industrial Way - Suite 2
Westfield, MA 01085
Telephone: 413-562-4884

Job Number: 1241
Date: 4-6-26
Calculated By: LDS
Checked By:

Water Quality Volume Calculations

Water Quality Treatment Volume

$$V_{WQ} = (D_{WQ}/12 \text{ inches/foot}) * (A_{IMP} * 43,560 \text{ sq.ft./acre})$$

Where: V_{WQ} = Required Water Quality Volume (cubic feet)
 D_{WQ} = Water quality Depth: 1 inch for Zone II or Interim Wellhead Protection Area
or exfiltration to soils with infiltration rate greater than 2.4 in/hr or greater;
1/2 inch for discharges near or to other areas
 A_{IMP} = Impervious Area (acres)

Drainage Area	A_{IMP} (acres)	D_{WQ} (inches)	V_{WQ} (cubic feet)	Provided Volume (cubic feet)	Treatment BMP
Entire Site	0.99	1.0	3,594	15,159	Infiltration Basin w/ Sediment forebay

Notes:

- 1) Refer to Massachusetts Stormwater Handbook Volume 3, Chapter 1, page 32 dated February 2008
- 2) All stormwater runoff entering the infiltration basin has had at least 44% TSS removal pretreatment by means of deep sump catch basins and a sediment forebay
- 3) On site soils have an infiltration rate greater than 2.4 in/hr

APPENDIX D
SOIL EVALUATION LOGS

SAGE ENGINEERING AND CONTRACTING, INC.

DESIGN-BUILD DEVELOPMENT, ARCHITECTURAL ENGINEERING, AND CONSTRUCTION MANAGEMENT

FORM 11

SOIL EVALUATOR FORM

Page 2 of 3

* STORMWATER TESTING

Soil Evaluator:

Luke Showalter, P.E. (SE13700)

199 Servistar Industrial Way, Suite 2

Westfield, Ma 01085

Tel: 413-562-4884

Fax: 413-562-4899

Site Address: 314-318 Silver St
Agawam, MA 01001

Owner: KY Shawn LLC

Address: 69 Franklin St
Feeding Hills, MA 01030

Tel: _____

Deep Hole Number _____ Date: 5/18/2016 Time: 10 AM Weather: Sunny 80°

Location (Identify on site plan): See C-3 Plan Sheet

Land Use: Commercial Slope (%): 0-3 Surface Stones: None

Vegetation: Cleared + Stripped

Landform: Outwash plain

Position on landscape (sketch on the back): Nearly level graded upland.

Distances from:

Open Water Body: 7100 feet Drainage way: 750 feet No. 6200 ft

Possible Wet Area: 750 feet Property Line: 220 feet Grillage

Drinking Water Well: Public feet Other: _____

DEEP OBSERVATION HOLE LOG					
Depth from Surface (Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-16	FILL	SL			Placed Loom
16-112	C	S	10YR 5/4	NONE	Fine, single-grain, loose

MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic): Outwash

Depth to Bedrock: >112"

Depth to Groundwater: Standing Water in the Hole: 96"

Weeping from Pit Face: 95"

Estimated Seasonal High Ground Water: 95"

Observation Hole #		
Depth of Perc		
Start Pre-soak		
End Pre-soak		
Time at 12"		
Time at 9"		
Time at 6"		
Time (9"-6")		
Rate Min./Inch		

Site Passed ☐ Site Failed ☐

Performed By: _____

Witnessed By: _____

Comments: _____

DEEP OBSERVATION HOLE LOG					
Depth from Surface (Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-18	FILL	SL			Placed Loom
18-54	FILL	-		NONE	Sandy Fill
54-105	C	S	10YR 5/4		Fine, loose, single-grain

MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic): Outwash

Depth to Bedrock: >105"

Depth to Groundwater: Standing Water in the Hole: 98"

Weeping from Pit Face: 97"

Estimated Seasonal High Ground Water: 97"

ORIGINAL

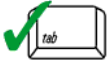
APPENDIX E
MASSDEP STORMWATER CHECKLIST



Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the [Massachusetts Stormwater Handbook](#). The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.¹ This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8²
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

¹ The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

² For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



Signature and Date

6-18-26

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

- ☒ New development
- ☐ Redevelopment
- ☐ Mix of New Development and Redevelopment



Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- ☒ No disturbance to any Wetland Resource Areas
- ☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- ☐ Reduced Impervious Area (Redevelopment Only)
- ☒ Minimizing disturbance to existing trees and shrubs
- ☐ LID Site Design Credit Requested:
 - ☐ Credit 1
 - ☐ Credit 2
 - ☐ Credit 3
- ☐ Use of "country drainage" versus curb and gutter conveyance and pipe
- ☐ Bioretention Cells (includes Rain Gardens)
- ☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- ☐ Treebox Filter
- ☐ Water Quality Swale
- ☐ Grass Channel
- ☐ Green Roof
- ☐ Other (describe):

Standard 1: No New Untreated Discharges

- ☒ No new untreated discharges
- ☒ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- ☒ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

- ☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- ☒ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- ☒ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

- ☒ Soil Analysis provided.
- ☒ Required Recharge Volume calculation provided.
- ☐ Required Recharge volume reduced through use of the LID site Design Credits.
- ☒ Sizing the infiltration, BMPs is based on the following method: Check the method used.
 - ☒ Static
 - ☐ Simple Dynamic
 - ☐ Dynamic Field¹
- ☒ Runoff from all impervious areas at the site discharging to the infiltration BMP.
- ☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- ☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- ☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
 - ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
 - ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
 - ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
 - ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- ☒ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- ☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

¹ 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

- ☒ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- ☒ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
 - Provisions for storing materials and waste products inside or under cover;
 - Vehicle washing controls;
 - Requirements for routine inspections and maintenance of stormwater BMPs;
 - Spill prevention and response plans;
 - Provisions for maintenance of lawns, gardens, and other landscaped areas;
 - Requirements for storage and use of fertilizers, herbicides, and pesticides;
 - Pet waste management provisions;
 - Provisions for operation and management of septic systems;
 - Provisions for solid waste management;
 - Snow disposal and plowing plans relative to Wetland Resource Areas;
 - Winter Road Salt and/or Sand Use and Storage restrictions;
 - Street sweeping schedules;
 - Provisions for prevention of illicit discharges to the stormwater management system;
 - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
 - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
 - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- ☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
 - ☒ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
 - ☐ is within the Zone II or Interim Wellhead Protection Area
 - ☐ is near or to other critical areas
 - ☒ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
 - ☐ involves runoff from land uses with higher potential pollutant loads.
 - ☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.
 - ☒ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

- ☒ The BMP is sized (and calculations provided) based on:
 - ☒ The ½" or 1" Water Quality Volume or
 - ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- ☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- ☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

- ☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- ☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted **prior to** the discharge of stormwater to the post-construction stormwater BMPs.
- ☐ The NPDES Multi-Sector General Permit does **not** cover the land use.
- ☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- ☐ All exposure has been eliminated.
- ☐ All exposure has **not** been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- ☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

- ☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- ☐ Critical areas and BMPs are identified in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

- ☐ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
 - ☐ Limited Project
 - ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
 - ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
 - ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
 - ☐ Bike Path and/or Foot Path
 - ☐ Redevelopment Project
 - ☐ Redevelopment portion of mix of new and redevelopment.
- ☐ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- ☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
 - Construction Period Operation and Maintenance Plan;
 - Names of Persons or Entity Responsible for Plan Compliance;
 - Construction Period Pollution Prevention Measures;
 - Erosion and Sedimentation Control Plan Drawings;
 - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
 - Vegetation Planning;
 - Site Development Plan;
 - Construction Sequencing Plan;
 - Sequencing of Erosion and Sedimentation Controls;
 - Operation and Maintenance of Erosion and Sedimentation Controls;
 - Inspection Schedule;
 - Maintenance Schedule;
 - Inspection and Maintenance Log Form.
- ☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

- ☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has **not** been included in the Stormwater Report but will be submitted **before** land disturbance begins.
- ☐ The project is **not** covered by a NPDES Construction General Permit.
- ☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- ☒ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

- ☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
 - ☒ Name of the stormwater management system owners;
 - ☒ Party responsible for operation and maintenance;
 - ☒ Schedule for implementation of routine and non-routine maintenance tasks;
 - ☒ Plan showing the location of all stormwater BMPs maintenance access areas;
 - ☒ Description and delineation of public safety features;
 - ☒ Estimated operation and maintenance budget; and
 - ☒ Operation and Maintenance Log Form.
- ☐ The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
 - ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
 - ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

- ☒ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- ☒ An Illicit Discharge Compliance Statement is attached;
- ☐ NO Illicit Discharge Compliance Statement is attached but will be submitted **prior to** the discharge of any stormwater to post-construction BMPs.

APPENDIX F
NOAA ATLAS 14 PRECIPITATION DATA



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerals](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.340 (0.263-0.438)	0.409 (0.315-0.527)	0.522 (0.401-0.673)	0.615 (0.470-0.800)	0.743 (0.551-1.01)	0.840 (0.611-1.17)	0.941 (0.665-1.36)	1.05 (0.708-1.57)	1.21 (0.784-1.87)	1.34 (0.848-2.12)
10-min	0.482 (0.372-0.620)	0.580 (0.447-0.746)	0.739 (0.568-0.956)	0.871 (0.666-1.13)	1.05 (0.780-1.44)	1.19 (0.865-1.66)	1.33 (0.942-1.93)	1.49 (1.00-2.22)	1.72 (1.11-2.65)	1.90 (1.20-3.00)
15-min	0.567 (0.438-0.730)	0.682 (0.526-0.878)	0.870 (0.668-1.12)	1.02 (0.783-1.33)	1.24 (0.918-1.69)	1.40 (1.02-1.95)	1.57 (1.11-2.27)	1.76 (1.18-2.61)	2.02 (1.31-3.12)	2.23 (1.41-3.53)
30-min	0.766 (0.591-0.985)	0.923 (0.712-1.19)	1.18 (0.906-1.52)	1.39 (1.06-1.81)	1.68 (1.25-2.30)	1.91 (1.38-2.66)	2.14 (1.51-3.09)	2.39 (1.60-3.56)	2.75 (1.78-4.25)	3.04 (1.93-4.81)
60-min	0.965 (0.745-1.24)	1.16 (0.897-1.50)	1.49 (1.14-1.92)	1.76 (1.34-2.29)	2.13 (1.58-2.90)	2.41 (1.75-3.36)	2.70 (1.91-3.92)	3.03 (2.25-4.51)	3.48 (2.25-5.38)	3.85 (2.44-6.09)
2-hr	1.24 (0.960-1.58)	1.48 (1.15-1.90)	1.89 (1.46-2.43)	2.22 (1.71-2.88)	2.69 (2.01-3.65)	3.03 (2.22-4.22)	3.40 (2.43-4.94)	3.83 (2.58-5.68)	4.47 (2.90-6.88)	5.00 (3.18-7.87)
3-hr	1.42 (1.11-1.81)	1.71 (1.33-2.17)	2.17 (1.69-2.78)	2.56 (1.98-3.30)	3.10 (2.32-4.20)	3.50 (2.58-4.86)	3.92 (2.82-5.71)	4.44 (3.00-6.56)	5.23 (3.40-8.02)	5.90 (3.75-9.25)
6-hr	1.78 (1.39-2.24)	2.16 (1.69-2.73)	2.78 (2.17-3.53)	3.30 (2.56-4.22)	4.01 (3.03-5.42)	4.53 (3.37-6.29)	5.10 (3.71-7.44)	5.82 (3.95-8.57)	6.95 (4.54-10.6)	7.94 (5.06-12.4)
12-hr	2.17 (1.72-2.73)	2.69 (2.12-3.38)	3.53 (2.78-4.46)	4.23 (3.31-5.37)	5.19 (3.95-6.99)	5.89 (4.41-8.16)	6.67 (4.89-9.72)	7.67 (5.22-11.2)	9.26 (6.06-14.1)	10.7 (6.83-16.6)
24-hr	2.55 (2.03-3.18)	3.21 (2.55-4.00)	4.28 (3.39-5.37)	5.17 (4.07-6.53)	6.40 (4.91-8.59)	7.29 (5.50-10.1)	8.29 (6.13-12.1)	9.60 (6.55-14.0)	11.7 (7.69-17.7)	13.6 (8.73-21.0)
2-day	2.89 (2.31-3.58)	3.67 (2.94-4.55)	4.95 (3.94-6.16)	6.01 (4.76-7.53)	7.46 (5.76-9.98)	8.52 (6.48-11.7)	9.71 (7.25-14.1)	11.3 (7.74-16.4)	13.9 (9.18-21.0)	16.3 (10.5-25.1)
3-day	3.16 (2.54-3.90)	4.01 (3.22-4.96)	5.41 (4.33-6.71)	6.56 (5.22-8.20)	8.16 (6.33-10.9)	9.31 (7.10-12.8)	10.6 (7.95-15.4)	12.4 (8.49-17.9)	15.3 (10.1-23.0)	17.9 (11.6-27.5)
4-day	3.40 (2.74-4.18)	4.31 (3.47-5.31)	5.80 (4.65-7.17)	7.03 (5.61-8.75)	8.73 (6.79-11.6)	9.96 (7.62-13.7)	11.4 (8.52-16.4)	13.2 (9.09-19.1)	16.3 (10.8-24.5)	19.1 (12.4-29.3)
7-day	4.07 (3.30-4.98)	5.10 (4.13-6.24)	6.78 (5.46-8.33)	8.17 (6.55-10.1)	10.1 (7.87-13.3)	11.5 (8.80-15.6)	13.0 (9.80-18.7)	15.1 (10.4-21.7)	18.5 (12.3-27.7)	21.6 (14.0-32.9)
10-day	4.73 (3.85-5.77)	5.82 (4.73-7.10)	7.60 (6.15-9.31)	9.08 (7.30-11.2)	11.1 (8.68-14.6)	12.6 (9.66-17.0)	14.2 (10.7-20.3)	16.4 (11.3-23.5)	19.9 (13.2-29.6)	23.0 (14.9-35.0)
20-day	6.81 (5.58-8.24)	7.96 (6.51-9.64)	9.84 (8.01-12.0)	11.4 (9.22-14.0)	13.5 (10.6-17.5)	15.1 (11.6-20.1)	16.8 (12.6-23.5)	19.0 (13.2-26.9)	22.2 (14.8-32.9)	25.1 (16.3-37.9)
30-day	8.56 (7.04-10.3)	9.73 (7.99-11.7)	11.7 (9.53-14.1)	13.2 (10.8-16.2)	15.4 (12.1-19.8)	17.1 (13.1-22.5)	18.8 (14.0-25.9)	20.8 (14.6-29.4)	23.8 (15.9-35.0)	26.2 (17.1-39.6)
45-day	10.7 (8.86-12.9)	12.0 (9.85-14.4)	13.9 (11.4-16.8)	15.6 (12.7-19.0)	17.9 (14.0-22.7)	19.6 (15.0-25.5)	21.4 (15.8-28.9)	23.2 (16.3-32.7)	25.8 (17.3-37.8)	27.8 (18.1-41.8)
60-day	12.6 (10.4-15.0)	13.8 (11.4-16.6)	15.9 (13.1-19.1)	17.6 (14.4-21.4)	20.0 (15.7-25.2)	21.8 (16.7-28.2)	23.6 (17.4-31.6)	25.4 (17.9-35.6)	27.6 (18.6-40.3)	29.2 (19.1-43.8)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

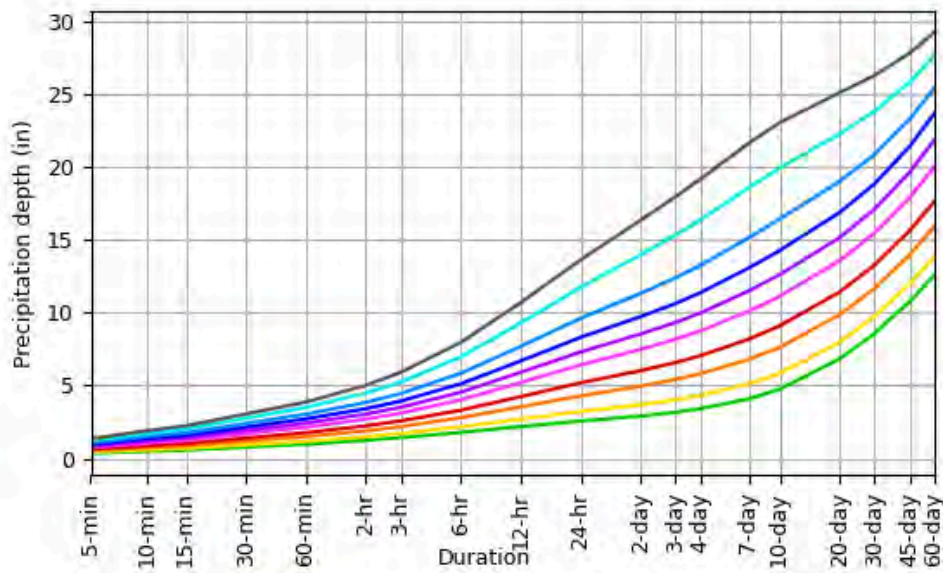
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

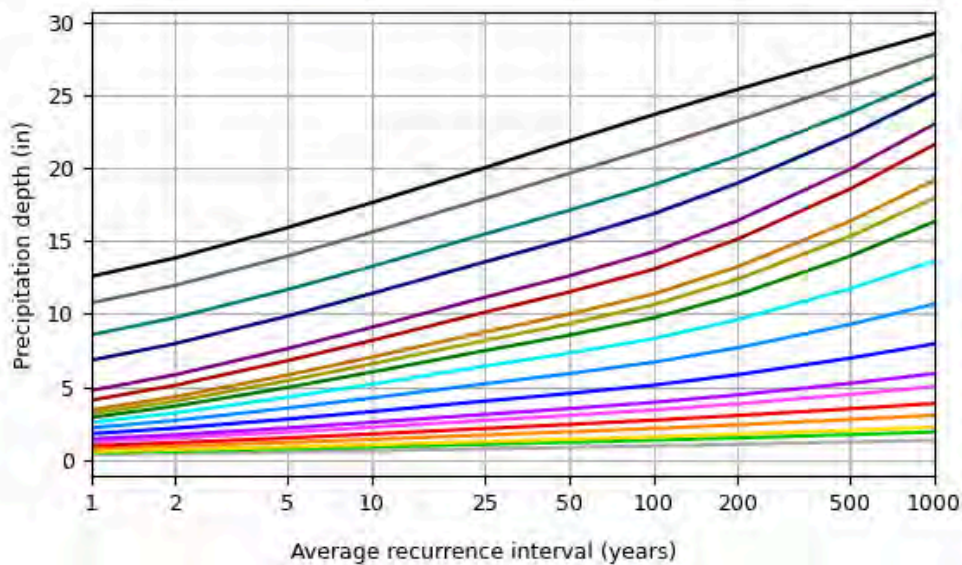
[Back to Top](#)

PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 42.0613°, Longitude: -72.6386°



Average recurrence interval (years)
1
2
5
10
25
50
100
200
500
1000

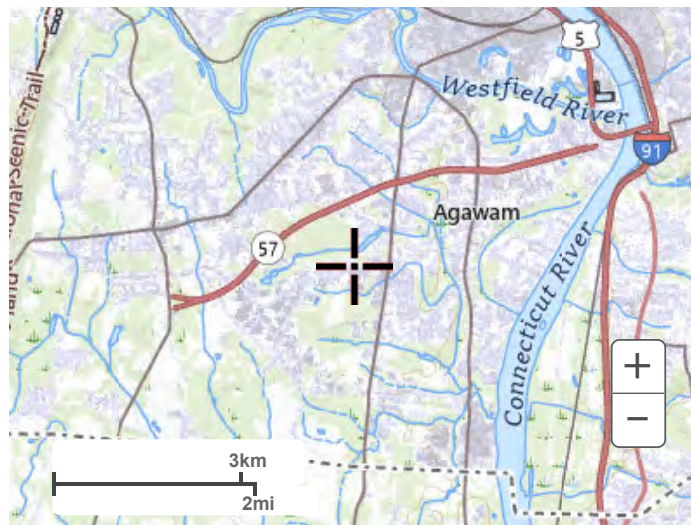


Duration	
5-min	2-day
10-min	3-day
15-min	4-day
30-min	7-day
60-min	10-day
2-hr	20-day
3-hr	30-day
6-hr	45-day
12-hr	60-day
24-hr	

[Back to Top](#)

Maps & aerials

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



[Back to Top](#)

[US Department of Commerce](#)
[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

APPENDIX G
ILLICIT DISCHARGE COMPLIANCE STATEMENT

-Furrow Engineering-

ILLICIT DISCHARGE COMPLIANCE STATEMENT

314-318 Silver Street
Agawam, Massachusetts

Date: June 18, 2026

This statement is provided in accordance with the provisions of the Massachusetts Stormwater Management Standard 10 and of the Massachusetts Stormwater Management Handbook.

Note the following:

- The development of this site includes installation of a new stormwater management system which has no connection to the site's wastewater sewer system or to any other non-stormwater collection system.
- The facility's Operations & Maintenance Plan and Long Term Pollution Prevention Plan also take measures to prevent any discharge of non-stormwater to the drainage system.
- Any illicit discharges identified during or after construction will be immediately disconnected.

John Cain
KY Shawn LLC

Furrow Engineering
199 Servistar Industrial Way - Suite 2
Westfield, Massachusetts 01085
Tel: 413-562-4884 ∞ Fax: 413-562-4899

Furrow Engineering

June 18, 2026

Taryn Egerton, Director and Conservation Officer
Public Works and Municipal Annex
1000 Suffield Street
Agawam, Ma 01001

RE: Application for Site Plan Approval and Stormwater Permit,
New construction of a 10,152 S.F. office and equipment repair facility,
314-318 Silver Street, Agawam, Massachusetts

Ms. Egerton:

On behalf of KY Shawn LLC, Furrow Engineering is submitting the attached application and supporting documents for Site Plan approval and Stormwater Permit.

In general, the proposed application is for the new construction of a 10,152 S.F. office and heavy equipment repair facility with associated parking lot.

The following information is attached for your review:

- Form D Application for Site Plan Approval
- Stormwater Permit Application
- Stormwater Management Report (Under Separate Cover)
- Engineered Site Plans & Preliminary Architectural Plans (Under Separate Cover)

We look forward to working with the Town of Agawam Planning Department to ensure the design is in conformance with the Agawam Zoning Ordinance. We are available at your convenience to review the plans and supporting documents. If you have any questions, please feel free to contact us.

Sincerely,



Luke Showalter, P.E.
Project Engineer

C.C. John Cain, KY Shawn LLC

Furrow Engineering
199 Servistar Industrial Way, Suite 2
Westfield, Massachusetts 01085
Tel: 413-562-4884
Page 1 of 5

Table of Contents

- I. Form D Application for Site Plan Approval
- II. Stormwater Permit Application
- III. Zoning Determination
- IV. Stormwater Management Report (Under Separate Cover)
- V. Engineered Site Plans (Under Separate Cover)

I. SITE PLAN APPROVAL APPLICATION

Furrow Engineering
199 Servistar Industrial Way, Suite 2
Westfield, Massachusetts 01085
Tel: 413-562-4884
Page 3 of 5

TOWN OF AGAWAM, MASSACHUSETTS

FORM D

Application for Site Plan Approval

Please complete the following form and electronically submit with site plans, completed Zoning Determination and Storm Water Management Report to: siteplan@agawam.ma.us in addition to sending four (4) hard copies of the Site Plan and one (1) hard copy of the Storm Water Management Report and completed Zoning Determination to:

Agawam Planning Department

36 Main Street

Agawam, MA 01001

June 18 2026

1. Name of Business Cain's Mechanical LLC

Address 69 Franklin Street, Feeding Hills, MA 01030

Phone # 413-896-1612 email John@cainsmechanical.com

2. Name of Applicant/Owner KY Shawn LLC

Address 69 Franklin Street, Feeding Hills, MA 01030

Phone # 413-896-1612 email John@cainsmechanical.com

3. Name of Engineer/Architect Furrow Engineering

Address 199 Servistar Industrial Way, Suite 2, Westfield, MA 01085

Phone # 413-562-4884 email Luke@sage-llc.com

4. Please give a brief description of the proposed project:

New Construction of a 10,152 S.F. office and equipment repair facility.

II. STORMWATER PERMIT APPLICATION

Furrow Engineering
199 Servistar Industrial Way, Suite 2
Westfield, Massachusetts 01085
Tel: 413-562-4884
Page 4 of 5



Application Date: _____
Application Fee Paid: _____
Date Paid: _____
Inspection Fee Paid: _____
Date Paid: _____

Town of Agawam Department of Public Works Stormwater Permit Application

Rev. November 2006

Return this application to:
Town of Agawam Department of Public Works
1000 Suffield Street
Agawam, MA 01001

Storm Drain Permit Application / Inspection Fees		
Area of Disturbance*	Application Fees	Inspection Fees
1 to 5 Acres	\$200	\$100
Over 5 Acres to 20 Acres	\$700	\$350
Over 20 Acres to 50 Acres	\$1,500	\$750
Over 50 Acres	\$1,500 plus \$25 per Acre over 50	\$750 plus \$10 per Acre over 50

*If the area of the parcel(s) and area of project disturbance differ such that the area of disturbance will be in a lower fee category, the applicant may submit a certified statement by the project designer, a P.E., of the project's area of disturbance.

1. Project / Site Information

314-318 Silver Street

Site Address		
Agawam	MA	01001
City		
18-2 LOT 6, 49 & 50	State	Zip Code
	4 acres	1.9 acres
Parcel ID	Parcel Size	Number of Acres to be Disturbed

Is there an existing larger project this site is now a part of? ☒ No ☐ Yes

If **yes**, name of larger project: _____

EXISTING SITE DESCRIPTION: (Example: 5 Acres of forest land, 2 Acre single family residence, 50 Acre Farm Land or Attach Project Narrative.)

4 acres of partially developed land with brush and vegetation

2. Builder / Contractor Information

Sage Engineering & Contracting, Inc.

Builder / Contractor Name

199 Servistar Industrial Way

Address

Westfield

MA

01085

City

State

Zip Code

Showalter

Luke

413-562-4884

Contact / Last Name

First Name

Telephone (including area code)

3. Owner Information

KY Shawn LLC

Property Owner Name

69 Franklin Street

Address

Feeding Hills

MA

01030

City

State

Zip Code

Cain

John

413-896-1612

Contact / Last Name

First Name

Telephone (including area code)

4. Project Description / Features

☐ Single Family/Multi Family Home

☐ Sub-division # of Lots: _____

☒ New Commercial / Industrial Site Plan

☐ Redevelopment Site Plan

☐ Re-grading or Land Disturbance

☐ Other _____

Proposed Project Site includes the following features:

☒ Proposed Impervious Area

Existing (ft²) 4,948

Proposed (ft²) 20,481

☒ Detention Pond

☐ Sub-surface Detention / Infiltration

☐ Wetland Protection Act / Conservation Commission Jurisdiction

☐ River Act / Conservation Commission Jurisdiction

FINAL APPROVED PLAN / CONDITIONS OF PERMIT:

Storm Drain Permit #: SD _____

5. Stormwater Management Plan

The Stormwater Permit Application must include submission of a **Stormwater Management Plan**. The purpose of the Stormwater Management Plan is to ensure that the runoff from a site has been treated for water quality and quantity impacts during the construction of the project and during the long term. This treatment includes, but is not limited to, erosion and sediment control to the extent practicable via structural and non-structural BMPs during construction and the establishment of structural BMPs for the long term controls.

See Agawam Stormwater Management Ordinance (Ch. 175-35) and the Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas prepared by the Massachusetts DEP <http://www.mass.gov/dep/water/esfull.pdf> for additional information and guidance.

The following minimum information must be included within the Stormwater Management Plan.

Project Plan

- A plan identifying the project site area
- Plan must highlight the portion of the area to be disturbed

Short Term – Erosion and Sediment Control Measures

- Written description of proposed temporary BMPs
- A plan at an appropriate scale of those BMPs
- A description and schedule of maintenance of proposed BMPs
- Construction details
- Reporting requirements of erosion and sediment controls
- On-site hazardous materials handling and storage
- Dust control BMPs
- Off-site sedimentation measures
- Plan and procedures

Long Term - Stormwater Quality and Quantity Controls

- Written description of proposed permanent BMP's
- A plan at a scale of not less than 1"= 40' of those BMPs
- Construction details
- Computations in an acceptable format
- A description and schedule of long term maintenance of proposed BMPs
- Reporting requirements for maintenance and inspections as specified by the DPW
- A description of long term maintenance and inspection schedules shall be submitted for site development projects.
- Construction Certification Statement – A statement to be signed by the contractor and all relevant subcontractors shall be included, certifying that they have read and understand the construction phase requirements and agree to comply.

All components of the Stormwater Management Plan shall be prepared and stamped by a licensed Professional Engineer for all site plans, subdivisions and residential projects greater than 2 building lots.

Storm Drain Permit #: SD_____

6. Certification Statement

The owner or authorized representative and all contractors and subcontractors shall sign certification statements as part of the permit application and Stormwater Management Plan. In signing the plan, the authorized representative certifies that the information is true and assumes liability for the plan. In addition, the undersigned agrees:

1. To furnish any additional information relating to the installation of use of the storm drain for which this permit is sought as may be requested by the Superintendent.
2. To accept and abide by all the provisions of Section 175 inclusive of the Ordinances of the Town of Agawam and of all other pertinent ordinance or regulations that may be adopted in the future.
3. To operate and maintain any storm drain and detention facilities, as may be required as a condition of the storm drainage permit in efficient manner at all items, and at no expense to the Town.
4. To cooperate at all items with the Superintendent of Public Works and his representatives in their inspection of storm drains, and any maintenance thereof.
5. To notify the Superintendent of Public Works immediately in the event of any accident, negligence, or other occurrence that occasions discharge to the storm drain of any wastes or process waters not covered by this permit or allowed by Section 175 the Ordinance of the Town of Agawam.
6. To indemnify the Town from loss or damage that may directly or indirectly be occasioned by the installation of the storm drain and related facility or connection.

Owner Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person(s) who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

X	6-18-26
Applicant's Signature	Date
X	
Owner's Signature	Date

Contractors and Subcontractors Certification:

I certify under penalty of law that I understand the terms and conditions of the Storm Drain Permit that authorizes storm water discharges associated with industrial activity from the construction site identified as part of this certification.

X	6-18-26
Contractor's Signature	Date
X	
Subcontractor's Signature	Date

APPLICATION APPROVED AND PERMIT GRANTED	PERMIT #: SD_____
Signed	
Superintendent	Date

III. ZONING DETERMINATION

Furrow Engineering
199 Servistar Industrial Way, Suite 2
Westfield, Massachusetts 01085
Tel: 413-562-4884
Page 5 of 5



The Commonwealth of Massachusetts
Town of Agawam
Inspection Services - Building Department
1000 Suffield Street, Agawam MA 01001 – (413) 821-0632

OFFICE ONLY Date Filed: RECEIVED BY BUILDING DEPARTMENT JUN 03 2026 TOWN OF AGAWAM
--

Application for Zoning Determination

FILING INSTRUCTIONS: Deliver this form (no fee required) to Inspection Services.
For digital submissions, please confirm receipt. A complete application will be processed within 30 days.
The applicant must pick-up, or arrange for the receipt of, this processed form.

1) PROPERTY INFORMATION											
a. Street Address		314-318 Silver Street			b. Zoning District		Business A/Agricultural				
c. Assessor's Map		18-2			d. Lot(s)		6, 49, & 50				
e. Registry of Deeds Book		26217			f. Page		150				
g. Overlay Districts		☐ Historic Preservation ☐ Mixed-Use Business C									
h. Previous Special Permits, Site Plan Approvals, Findings or Variances Issued for this Site											
2) APPLICANT & OWNER INFORMATION											
a. Applicant Name		KY Shawn LLC			b. Applicant Phone		413-562-4884				
c. Applicant Email		john@cainsmechanical.com									
d. Applicant Mailing Address		69 Franklin St, Feeding Hills, MA 01030									
e. Applicant Relationship to Property		☒ Owner ☐ Agent ☐ Other:									
f. Representative Name (if any)		Furrow Engineering			g. Rep. Phone		413-562-4884				
h. Rep. Email		luke@sage-llc.com									
i. Owner Mailing Address		69 Franklin St, Feeding Hills, MA 01030									
j. Owner Name (if different)					k. Owner Phone		413-562-4884				
l. Owner Email		john@cainsmechanical.com									
m. Owner Mailing Address											
3) PROJECT & SITE DETAILS											
NOTE: Any omission of requested information may result in an INCOMPLETE determination											
		Existing				Proposed				-FOR BUILDING DEPT. REVIEW- REQUIRED / NCU	
		☐ No changes to building, site or lot									
a. Lot Size	192,866	SF	192,866	SF					LOT SIZE		☐
b. Frontage	190.45	FT	190.45	FT					FRONTAGE		☐
c. Front Lot Line	n/a	FT	98	FT					FRONT SB		☐
d. Side Lot Line (Left/Right)	L: FT n/a	R: n/a	FT	L: 11	FT	R: 11	FT		SIDE SB		☐
e. Rear Lot Line	n/a	FT	395	FT					REAR SB		☐
f. Building Height	n/a	FT	28	FT					BLDG HT		☐
g. Total BLDG/Res Area	0	SF	0	SF	11,976	SF	0	SF	AREA LIM		☐
h. BLDG Coverage (Footprint)	0	SF	0	% of lot	10,152	SF	5.3	% of lot	LOT COVER		☐
i. Impervious Coverage	0	SF	0	% of lot	20,584	SF	10.7	% of lot	IMPERVIOUS		☐
j. Parking/Loading Spaces	P: 0	L: 0			P: 27	L: 4			PARKING		☐
k. Bicycle/EV Charge Spaces	B: 0	EV: 0			B: 0	EV: 0			BIKE/EV		☐
l. Signs (Size & Type)	n/a x n/a	T: n/a			n/a x TBD	T: Wall/Ground mount			SIGNS		☐
m. Fence (Size & Type)	n/a LIN FT	T: n/a			n/a LIN FT	T: n/a					
n. Wetland Area	n/a	SF	n/a	SF							
o. Utility Services	☒ Town Water	☒ Town Sewer	☒ Town Water	☒ Town Sewer					NON-CONFORMING USE		☐

p. Current Use of Property	Vacant
q. Proposed Use of Property	Sales Office & Truck Repair
r. Project Description	
Construction of a new 10,152 sf office and truck repair facility with 27 new parking spaces.	
s. I have attached additional narrative, plans or supporting materials (any oversize plans should also be included in an 8.5 x 11" format)	☒ Yes ☐ No
t. Work is proposed in or within 100' of a wetland or 200' of a stream/river, or construction will occur within the Floodplain district. If so, <u>CONSERVATION COMMISSION</u> review is required.	☐ Yes ☒ No ☐ Unsure
u. The following projects shall be required to comply with the requirements of a <u>STORM DRAIN PERMIT</u>: [1] Any alteration to sites on parcels of one acre or greater. [2] Any alteration to individual lots less than one acre, but which are contiguous or are deemed part of a common project which is one acre or greater.	☒ Yes ☐ No ☐ Unsure
v. The project will affect at least one of the following; additional gross floor area by 2,000 square feet, any change of use, changes to parking and/ or curb cuts.	☒ Yes ☐ No

4) CERTIFICATION

This determination is based only on the information provided, which I represent as accurate. The issuance of a Zoning Determination does not relieve the Applicant of the responsibility to obtain other zoning or non-zoning permits, as may be required, and this determination is based on the zoning in effect at the issue date and grants no protection from any pending or future zoning changes. Additional information may be requested and required to properly process this form. Any non-zoning related comments provided are cursory in nature; Applicants should follow-up with appropriate Town Departments. Sec. 1-7 of the Town of Agawam's General Ordinances authorizes the denial of a license or permit where an outstanding debt or obligation to the Town exists.

Signature		Date	6/2/2026
☐ Applicant ☒ Applicant's Representative			

ZONING DETERMINATION - OFFICE USE ONLY			
☐ Approved ☐ Denied: ☐ The proposed use is not permitted in the subject zoning district ☐ Only permissible with variance relief from the Zoning Board of Appeals			
☒ Approved Pending additional approval:			
<u>Per Zoning Ordinance Section(s)</u>	<u>Required Permit(s)</u>	<u>Approval Required</u>	<u>Permitting Authority</u>
-180-13-B	☒ Building Permit(s)	☐ Special Permit(s)	☒ Planning Board
-Form-A-Required	☒ Electrical Permit(s)	☒ Site Plan Review	☐ Board of Appeals
	☒ Plumbing/Gas Permit(s)	☐ Variance	☐ City Council
Town Building Official		Issue Date	6/3/2026

This determination may be appealable to the Zoning Board of Appeals under the provisions of MGL Ch. 40A Sec. 8.
Revised 09/08/2022



Town of Agawam

Department Of Public Works

DPW
1000 Suffield Street
Agawam, MA 01001
Phone: 413-821-0600
Fax: 413-821-0631

MEMORANDUM

To: Planning Board
CC: File
From: Engineering
Date: July 2, 2026
Subject: SP 678 – Office & Equipment Repair Facility – 314-318 Silver Street

Per your request we have reviewed the Site Plan for proposed office and equipment repair facility to be located at #314-318 Silver Street; prepared by Furrow Engineering; dated June 18, 2026. Based on our review, Engineering has the following comments:

1. An ANR plan shall be submitted to the Town if the 3 existing lots that make up the site are being combined into one.
2. The design of the proposed infiltration basin should include an emergency overflow with a minimum of 1 foot of freeboard between the overflow and the top of the pond, as per Massachusetts stormwater regulations. Existing contours indicate that abutting properties slope towards the project site. Engineering requests that the existing contours be extended a minimum of 30 ft. onto abutting properties to determine if the installation of an emergency overflow is feasible.
3. The bituminous concrete pavement detail on the site plans shall match Town of Agawam standards (see attached detail).
4. Engineering requests cross-section details of the detention basin as well as the forebay.
5. Engineering requests a detail of the proposed oil grit separator.
6. Engineering recommends installing a cleanout at the junction of drainage lines where the roof drains tie into the 10" HDPE line on the Eastern side of the building.
7. Engineering has noted that there may be a potential utility conflict at the crossing between the drainage line running from PR. CB-1 to PR. CB-2 and the sewer lateral tying into the Silver Street main. If the sewer lateral will be installed above the storm drain, a minimum of 18-inch vertical separation is needed between the pipes.
8. Engineering requests the following note to be added to the Site Plans: The Contractor shall limit the use of heavy construction equipment within areas designated for stormwater infiltration in order to prevent the loss of soil permeability. Excavation shall be performed with light equipment positioned outside the limits of the infiltration components of the stormwater system whenever possible.
9. Inlet protections shall be installed on the catch basins in Silver Street.
10. A construction entrance shall be installed and a detail shall be included in the plans.
11. Sizing calculations of the forebay shall be included in the stormwater report.
12. Engineering recommends that the Planning Board require arborvitae to be planted along the Eastern and Western property lines to act as sight buffers for the existing single-family homes abutting the site.

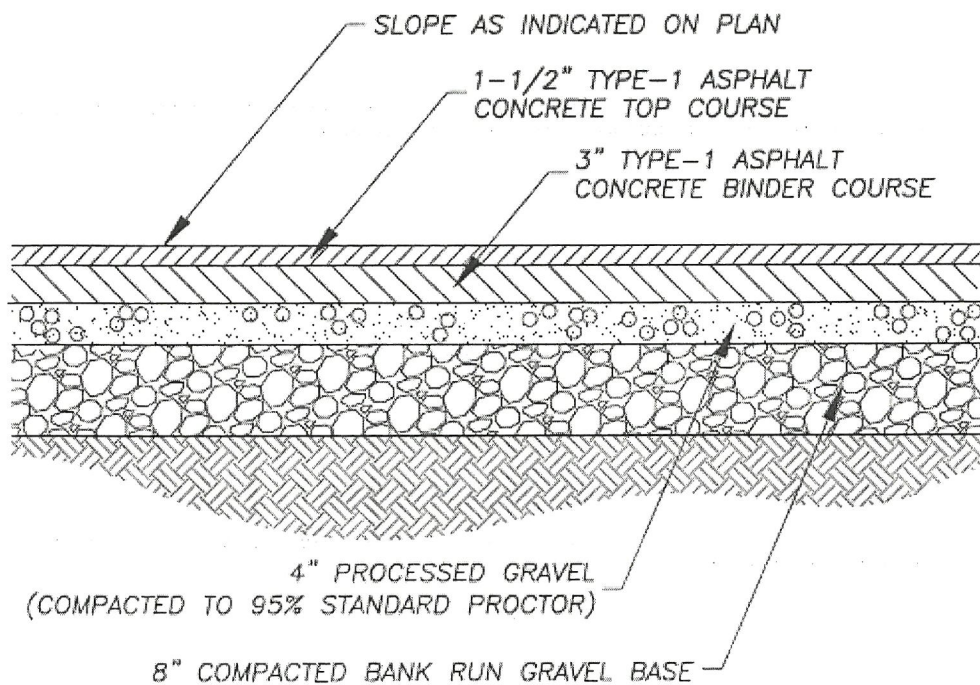
Engineering reserves the right to make additional comments as new information is submitted. If you have any questions, please do not hesitate to contact this division.

Sincerely,

Michelle C. Chase, P.E.
Town Engineer

Michael F. Albro, P.E.
Assistant Town Engineer

Ryan P. Rivest, E.I.T.
Civil Engineer I



BITUMINOUS CONCRETE PAVING DETAIL

NO SCALE

NEW OFFICE & EQUIPMENT REPAIR FACILITY

PERMITTING SET 314-318 SILVER STREET AGAWAM, MA 01001

DATE: 06/18/2026

OWNER & PROFESSIONALS

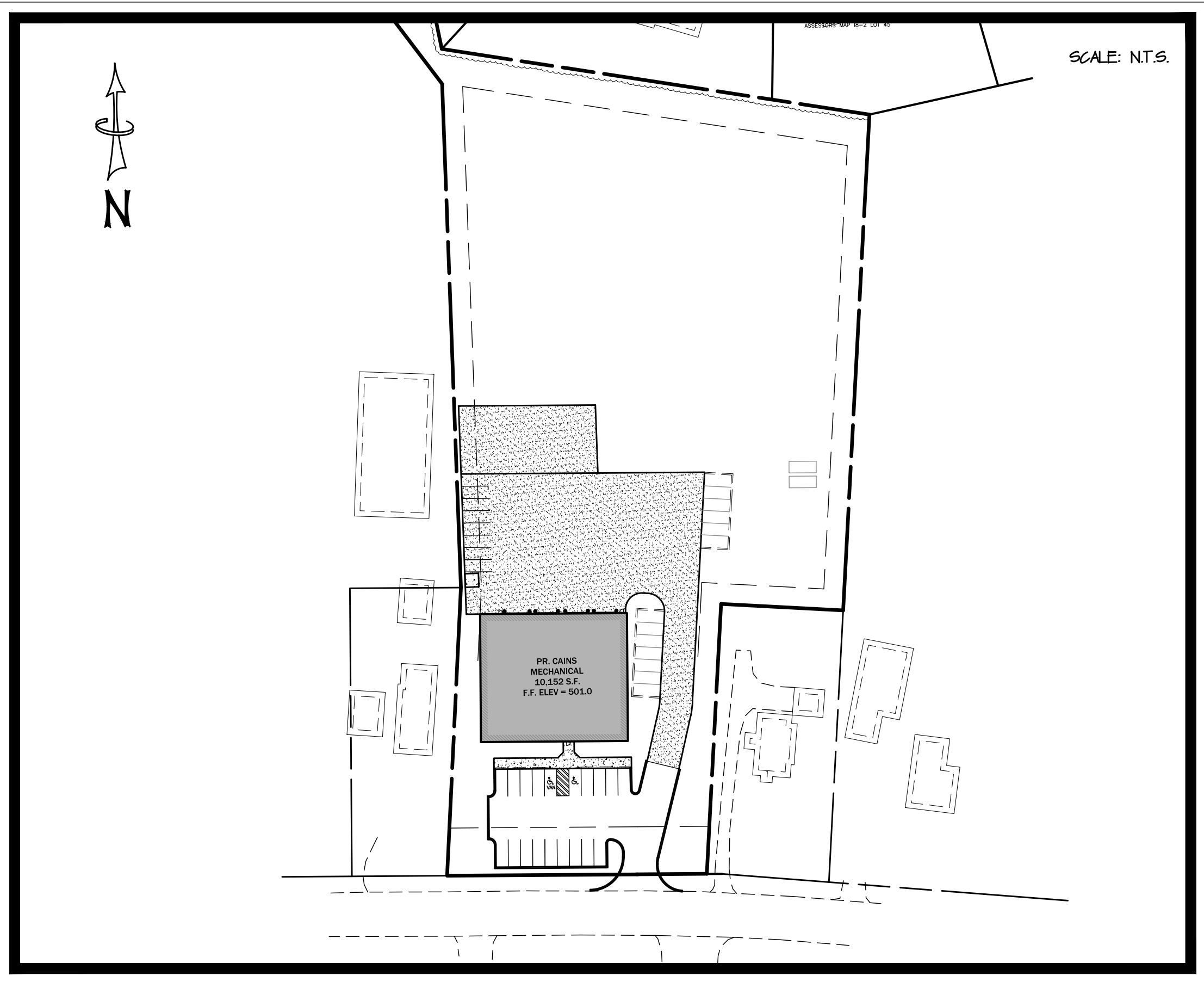
APPLICANT:
KY SHAWN LLC
69 FRANKLIN ST
FEEDING HILLS, MA 01030

RECORD OWNER:
KY SHAWN LLC
69 FRANKLIN ST
FEEDING HILLS, MA 01030

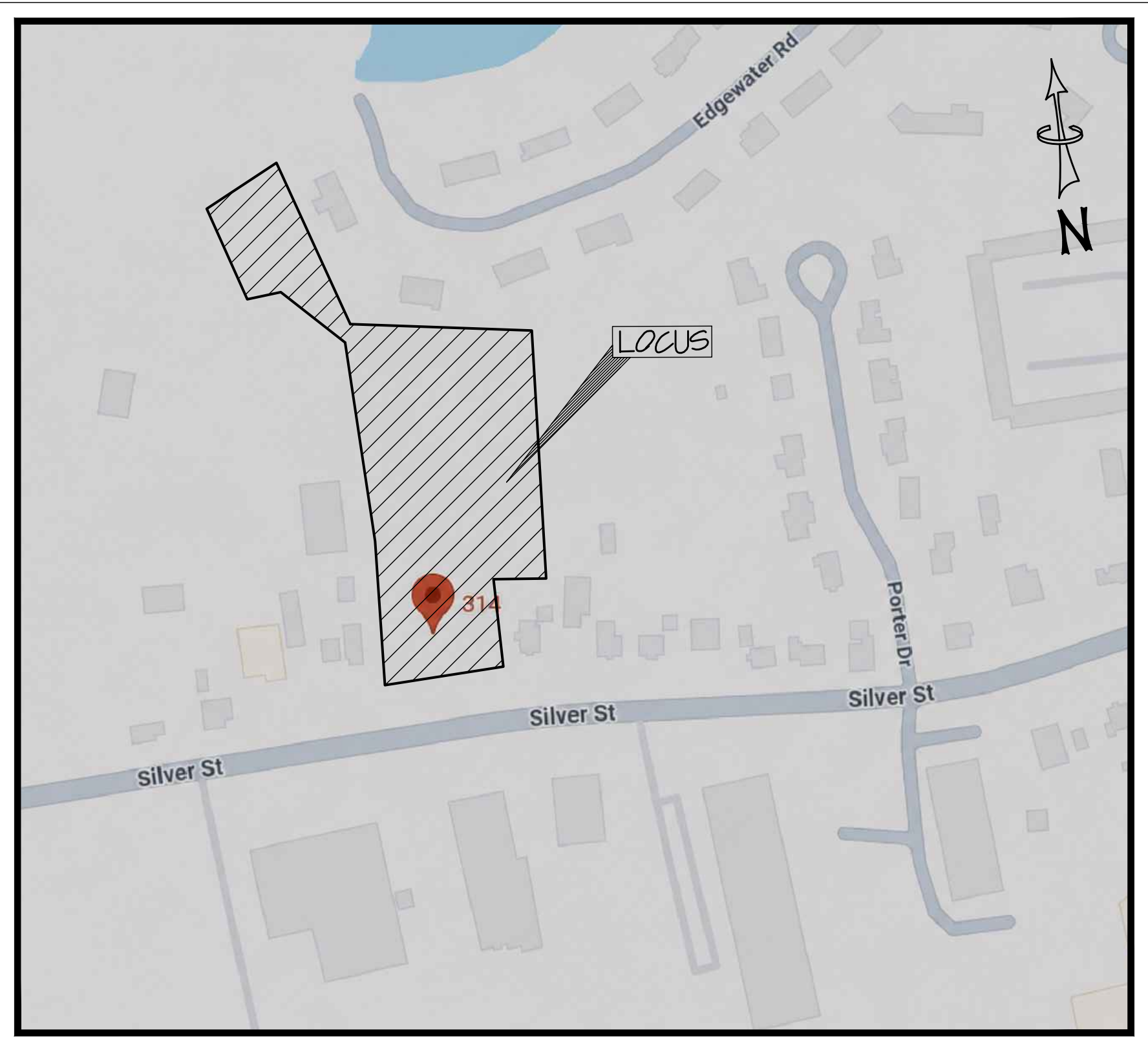
CIVIL ENGINEER:
FURROW ENGINEERING
199 SERVISTAR INDUSTRIAL WAY – SUITE 2
WESTFIELD, MASSACHUSETTS 01085

DESIGN/BUILDER:
SAGE ENGINEERING & CONTRACTING, INC.
199 SERVISTAR INDUSTRIAL WAY – SUITE 2
WESTFIELD, MASSACHUSETTS 01085

SITE PLAN



LOCUS PLAN
NOT TO SCALE



DRAWING LIST

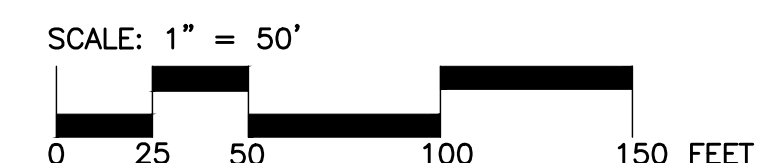
T-1	TITLE SHEET	6-18-16
C-0	NOTES	6-18-16
C-1	OVERALL EXISTING CONDITIONS PLAN	6-18-16
C-2	EXISTING CONDITIONS PLAN	6-18-16
C-3	LAYOUT PLAN	6-18-16
C-4	LANDSCAPING PLAN	6-18-16
C-5	PHOTOMETRIC PLAN	6-18-16
C-6	UTILITIES PLAN	6-18-16
C-7	GRADING & STORMWATER PLAN	6-18-16
D-1	SITE DETAILS	6-18-16
A1.1	FIRST FLOOR PLAN	6-18-16
A2.1	ELEVATIONS	6-18-16
A2.2	ELEVATIONS	6-18-16

FOR PERMITTING ONLY

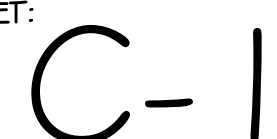
T-1 TITLE SHEET

Furrow
Engineering

199 Servistar Industrial Way - Suite 2
Westfield, MA 01085
Phone: (413) 562-4884



C-1 OVERALL EXISTING CONDITIONS PLAN



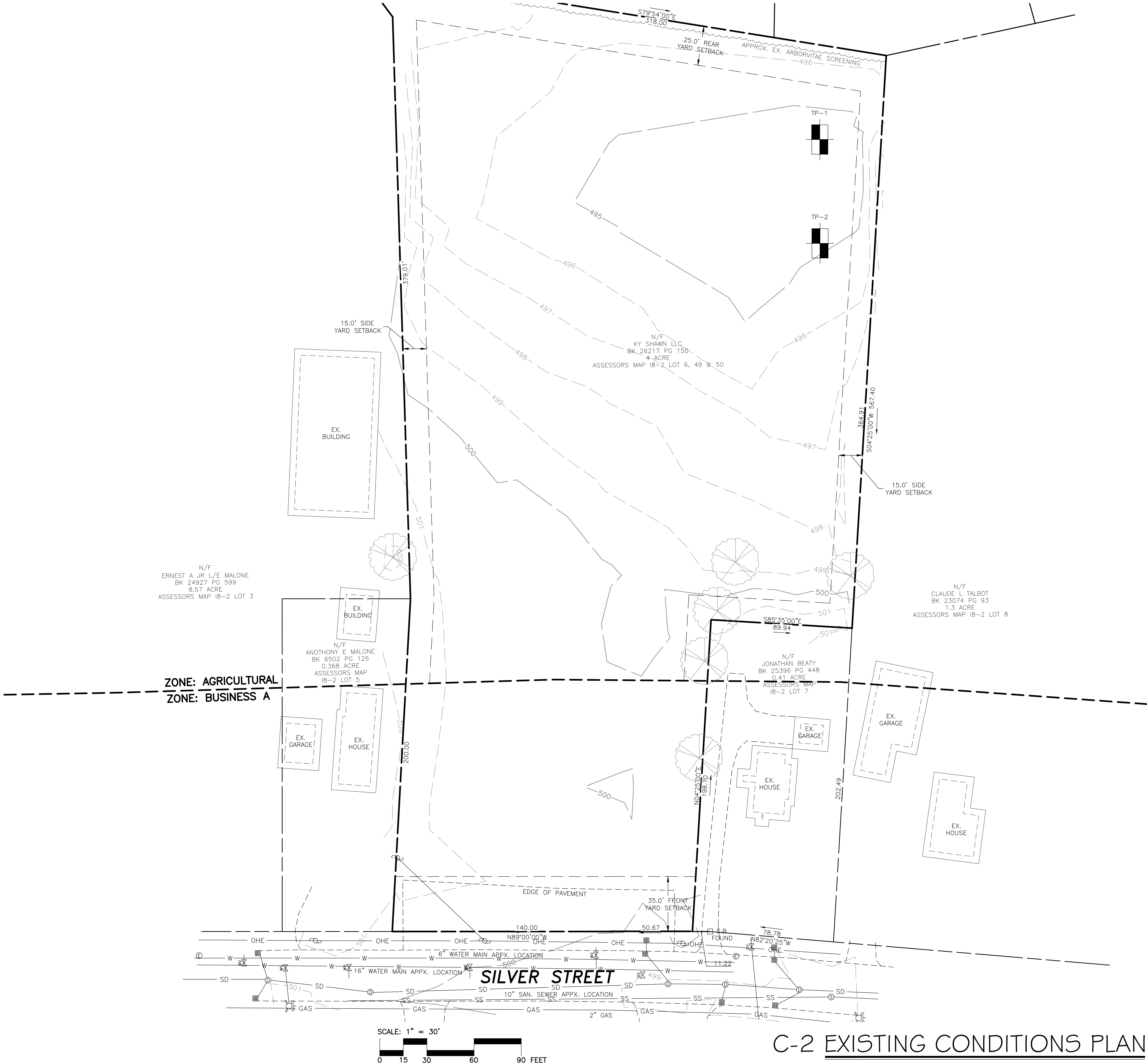
GENERAL NOTES

1. PRIOR TO STARTING EXCAVATION WORK ON THE SITE, THE CONTRACTOR SHALL CONTACT DIG-SAFE (FOUR DAYS PRIOR TO WORK), TO HAVE ALL UTILITIES PROPERLY MARKED IN THE FIELD.
2. FOR REFERENCE TO ENCLOSED PERIMETER SEE HAMPDEN COUNTY REGISTRY OF DEEDS PLAN BOOK 26217 PAGE 150.
3. UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE AND BASED ON SURFACE FEATURES AS LOCATED BY A SURVEY PERFORMED BY THIS OFFICE AND PLAN TITLED "AGAWAM - 1929 - SHEET NO 2 OF 5 SHEETS" DATED JUNE 5, 1929. ACTUAL LOCATIONS SHOULD BE VERIFIED WITH THE APPROPRIATE UTILITY COMPANY AND/OR MUNICIPAL DEPARTMENT PRIOR TO CONSTRUCTION.
4. ABUTTING PROPERTY LINES AND BUILDING LOCATIONS ARE APPROXIMATE AND WERE OBTAINED FROM A PLAN TITLED "PLAN OF LAND" DRAWN BY DURKEE WHITE, TOWNE CHAPDELAINE CIVIL ENGINEERS AND LAND SURVEYORS, DATED NOV 1917 AND THE QUIT CLAIM DEED, BOOK 26217 PAGE 150, DATED FEBRUARY 11, 2026.
5. THE TOPOGRAPHIC INFORMATION SHOWN IS FROM A SURVEY IN THE FIELD PERFORMED BY THIS OFFICE DURING THE MONTH OF APRIL, 2026

SOIL EVALUATION LOGS
SOIL EVALUATOR: LUKE SHOWALTER, PE
PERFORMED ON: MAY 18, 2026
FOR FULL SOIL EVALUATION LOGS SEE STORMWATER REPORT

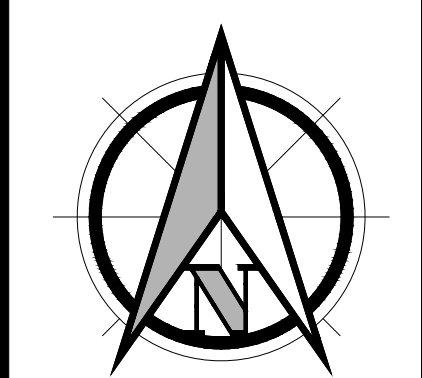
TP-1 ELEV.=494.7'		
DEPTH	HORIZON	SOIL TEXTURE
0-16"	LOAM FILL	--
16-112"	C	SAND
ESHGW: 95" (486.8')		

TP-2 ELEV.=494.9'		
DEPTH	HORIZON	SOIL TEXTURE
0-18"	LOAM FILL	--
18-54"	SANDY FILL	--
54-105"	C	SAND
ESHGW: 98" (486.7')		



FOR PERMITTING ONLY

C-2 EXISTING CONDITIONS PLAN



PROJECT DESCRIPTION:
NEW OFFICE & REPAIR FACILITY
314-318 SILVER ST
AGAWAM, MA 01001

APPLICANT:
KY SHAWN LLC
69 FRANKLIN ST
FEEDING HILLS, MA 01030

Furrow Engineering
199 Servistar Industrial Way - Suite 2
Westfield, MA 01085
Phone: (413) 562-4884



ORIGINAL SEAL IS IN BLUE
INK COPIES ARE NOT VALID

REVISION DESCRIPTION		DATE	
NO.	DESCRIPTION	DATE	BY
1	SUBMITTED SITE PLAN APPROVAL	6-18-24	LD
2			
3			
4			
5			

PROJECT # 123-01-26
DRAWN BY: HJM
DATE: 2/16/26
SCALE: 1" = 30'
SHEET: C-2

SITE PLANTING LIST				
KEY	BOTANICAL NAME	COMMON NAME	QTY.	SIZE
TREES				
AR	ACER RUBRUM / RED SUNSET	RED SUNSET RED MAPLE	3	2" CAL.
SHRUBS				
HP	HYDRANGEA PANICULATA 'BOBO'	DWARF PANICLE HYDRAGEA	4	#3 CONT.
IC	ILEX CRENATA 'STEEDS'	JAPANESE HOLLY	2	#5 CONT.
GB	ILEX GLABRA 'GEM BOX'	INKBERRY HOLLY	8	#3 CONT.
GROUND COVER				
PSM	PREMIUM SEED MIX*		RATE	6LBS./1,000 SF
***	BARK MULCH			BROWN - 4" DEPTH

*PREMIUM SEED MIX INCLUDES --
50% RYEGRASS
20% CHEWINGS FESCUE
15% CREEPING RED FESCUE
15% KENTUCKY BLUEGRASS

TOPSOIL NOTES:

1. ALL DISTURBED AREAS TO BE SEEDED OR PLANTED SHALL RECEIVE TOPSOIL (6" MINIMUM DEPTH).

2. TOPSOIL SHALL CONSIST OF FERTILE, FRIABLE, NATURAL LOAM FREE OF SUBSOIL, CLAY LUMPS, BRUSH, STONES OR OTHER DELETERIOUS MATERIALS LARGER THAN 2" IN GREATEST DIMENSION AND MEETING THE FOLLOWING GRADATION, pH AND ORGANIC CONTENT REQUIREMENTS:

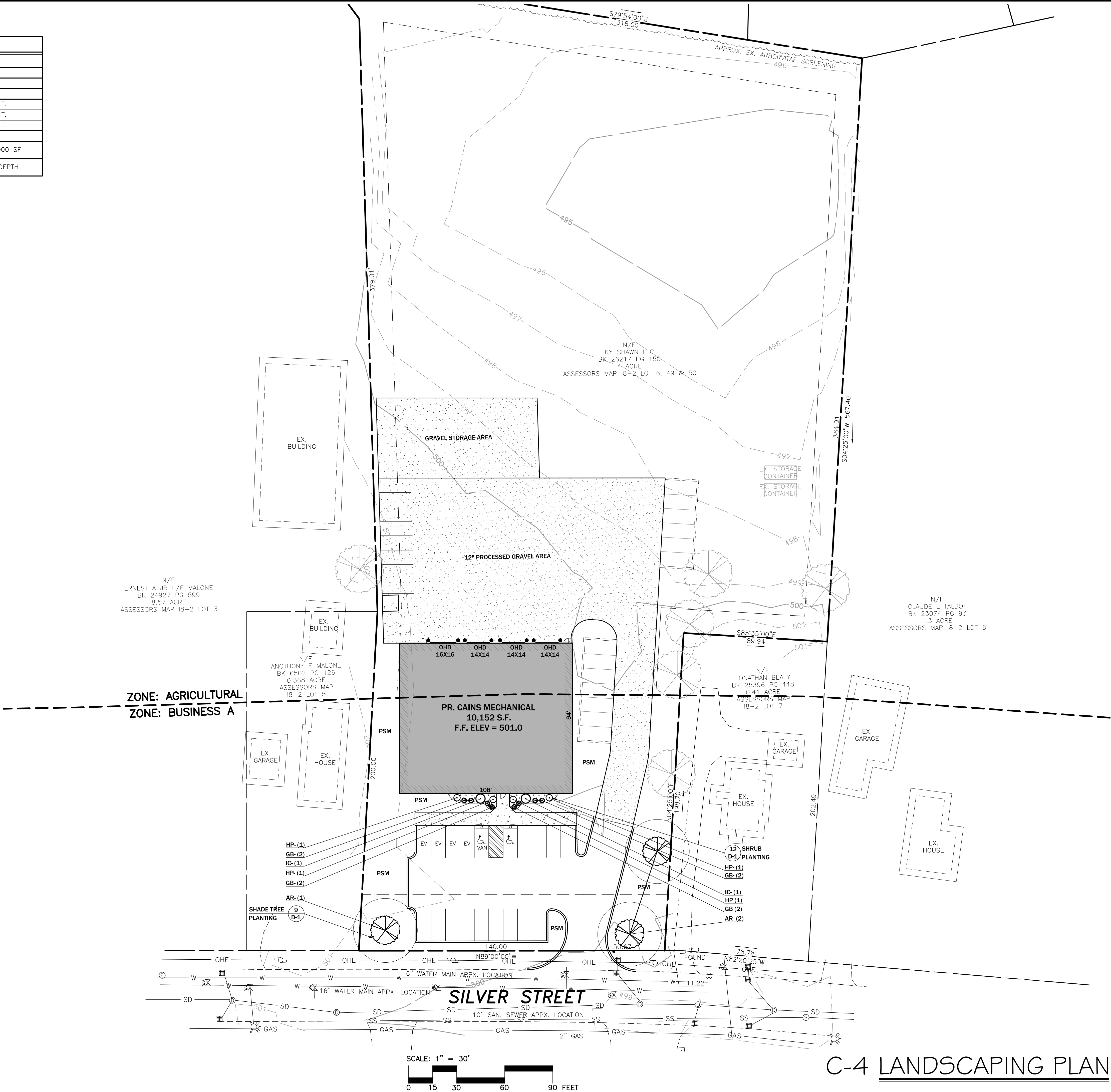
SIEVE	PERCENT PASSING
2"	100
1"	85 - 100
3/4"	65-100
NO. 200	20-60

PH RANGE: 5.5 - 7.6

ORGANIC CONTENT: 2% - 20%

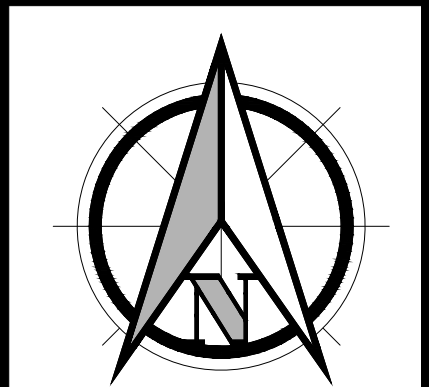
3. PROPOSED TOPSOIL SHALL BE TESTED BY INDEPENDENT TESTING FACILITY WITH TEST RESULTS SUBMITTED TO THE ENGINEER FOR APPROVAL. CONTRACTOR SHALL PAY FOR ALL TESTING. ACCEPTANCE OF TOPSOIL SHALL BE BASED UPON TEST RESULTS. ONE TEST SHALL BE PERFORMED PER 100 C.Y. OF TOPSOIL.

4. NATURAL TOPSOIL MAY BE AMENDED WITH APPROVED MATERIALS, BY APPROVED METHODS, TO MEET THE ABOVE SPECIFICATIONS.



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C-4 LANDSCAPING PLAN



PROJECT DESCRIPTION:
NEW OFFICE & REPAIR FACILITY
914-918 SILVER ST
AGAWAM, MA 01001

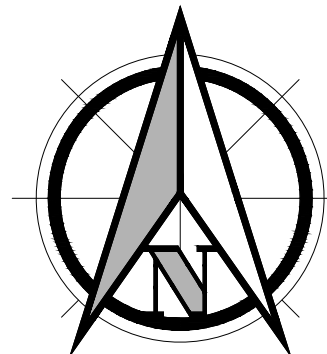
APPLICANT:
KY SHAWN LLC
69 FRANKLIN ST
FEEDING HILLS, MA 01030

Furrow Engineering
199 Servistar Industrial Way - Suite 2
Westfield, MA 01085
Phone: (413) 562-4884

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NO.	DATE	BY	REVISION DESCRIPTION
1	6-18-14	LDG	SUBMITTED SITE PLAN APPROVAL
2			
3			
4			
5			

PROJECT # 1283-01-26
DRAWN BY: HJM
DATE: 2/16/26
SCALE: 1" = 30'
SHEET: C-4

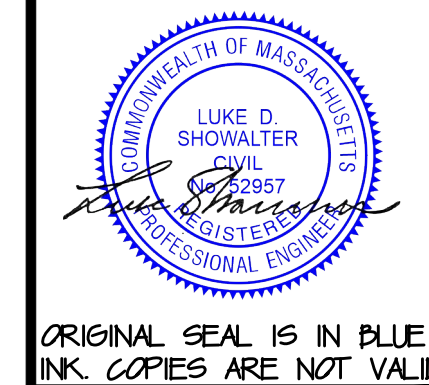


PROJECT DESCRIPTION:
NEW OFFICE & REPAIR FACILITY
314-318 SILVER ST
AGAWAM, MA 01001

APPLICANT:
KY SHAWN LLC
69 FRANKLIN ST
FEEDING HILLS, MA 01030

Furrow
Engineering

199 Servistar Industrial Way - Suite 2
Westfield, MA 01085
Phone: (413) 562-4884

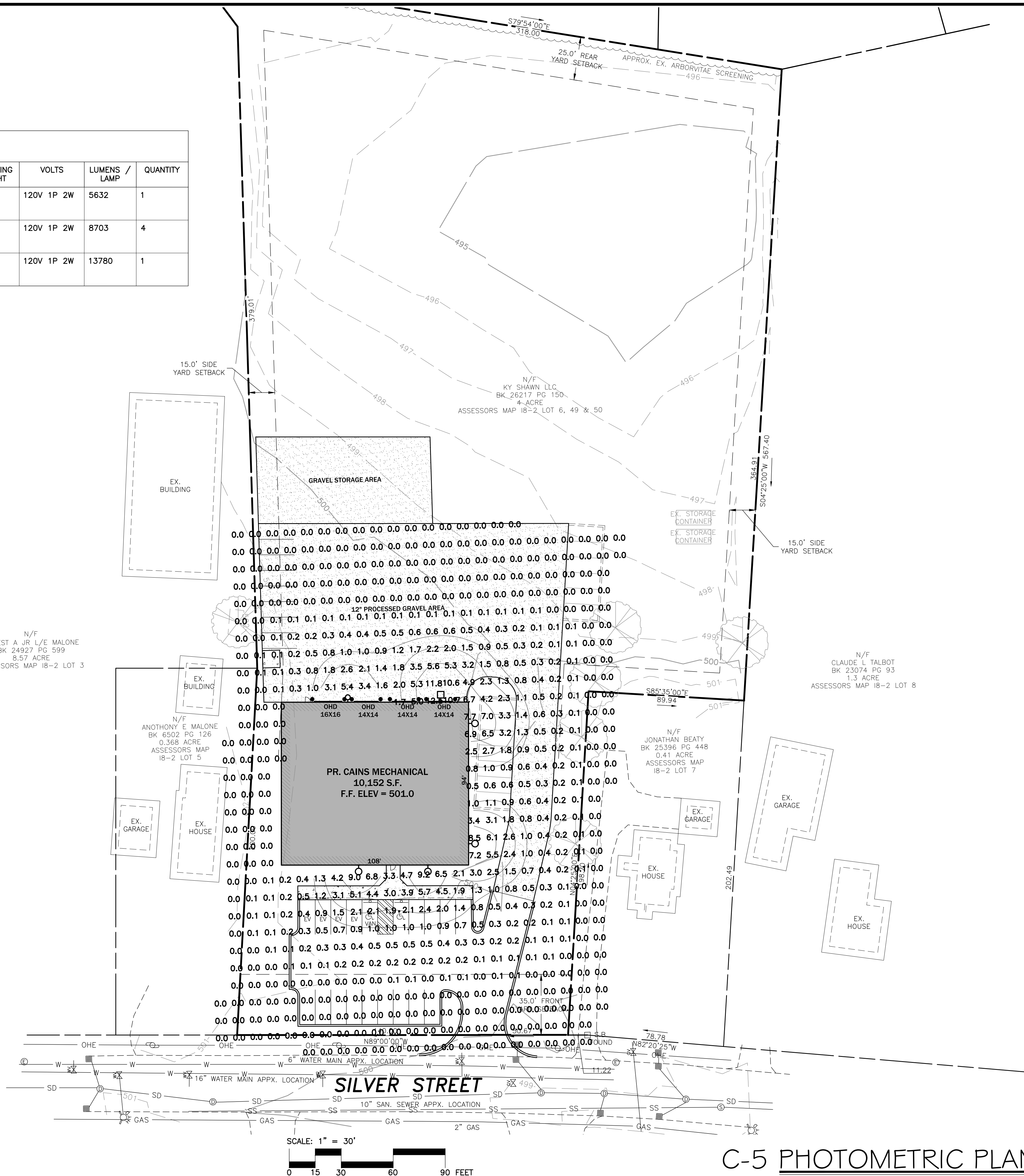


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NO.	DATE	BY	REVISION DESCRIPTION				
			1	2	3	4	5
1	6-18-14	LD	SUBMITTED	SITE PLAN	APPROVAL		
2							
3							
4							
5							

PROJECT # 1234-01-26
DRAWN BY: HJM
DATE: 2/16/26
SCALE: 1" = 30'
SHEET: C-5

LUMINAIRE SCHEDULE							
SYMBOL	DESCRIPTION	MODEL	MOUNTING	MOUNTING HEIGHT	VOLTS	LUMENS / LAMP	QUANTITY
⊙	Outdoor Full-Cutoff Wall-Mounted Area Luminaires	RAB Lighting Inc., SLIM17FAFC40 @40w 3000k	WALL	18'	120V 1P 2W	5632	1
⊙	Outdoor Full-Cutoff Wall-Mounted Area Luminaires	RAB Lighting Inc., SLIM17FAFC60 @60w 3000k	WALL	18'	120V 1P 2W	8703	4
⊠	Outdoor Full-Cutoff Wall-Mounted Area Luminaires	RAB Lighting Inc., SLIM17FAFC100 @100w 3000k	WALL	18'	120V 1P 2W	13780	1



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CB-1
RIM= 499.2
INV. IN (6" ROOF DRAIN) = 496.2
INV. OUT = 496.0

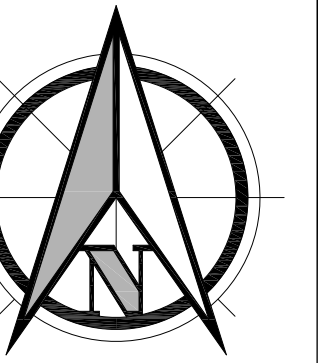
CB-2
RIM= 498.4
INV. IN= 495.0
INV. OUT= 494.9

CB-3
RIM= 498.0
INV. IN= 493.6
INV. OUT= 493.5



FOR PERMITTING ONLY

C-6 UTILITIES PLAN



PROJECT DESCRIPTION:
NEW OFFICE & REPAIR FACILITY
314-318 SILVER ST
AGAWAM, MA 01001

KY SHAWN LLC
69 FRANKLIN ST
FEEDING HILLS, MA 01030

APPLICANT:

Furrow Engineering

Westfield, MA 01085
Phone: (413) 562-4884



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NO	DATE	BY:	REVISION DESCRIPTION
1	6-18-26	LDS	SUBMITTED SITE PLAN APPROVAL
2	—	—	—
3	—	—	—
4	—	—	—
5	—	—	—

PROJECT # **1285-01-26**

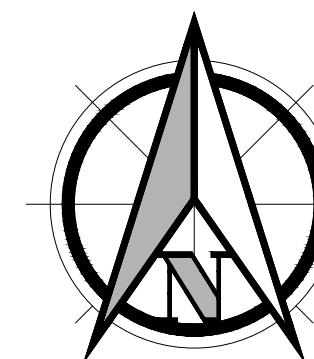
DRAWN BY: **HUM**

DATE: **2/16/26**

SCALE: **1" = 30'**

SHEET: _____

C-6

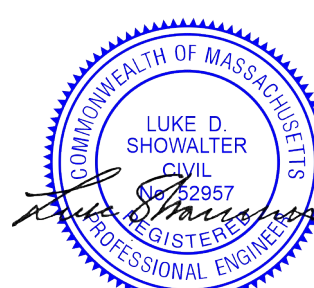


PROJECT DESCRIPTION:
NEW OFFICE & REPAIR FACILITY
314-318 SILVER ST

KY SHAWN LLC
69 FRANKLIN ST
FEEDING HILLS, MA 01030

Furrow Engineering

99 Servistar Industrial Way -
Westfield, MA 01085
Phone: (413) 562-4884



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REVISION DESCRIPTION		SUBMITTED SITE PLAN APPROVAL	
NO	DATE	BY	LDS
1	6-18-26		
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PROJECT # **1285-01-26**

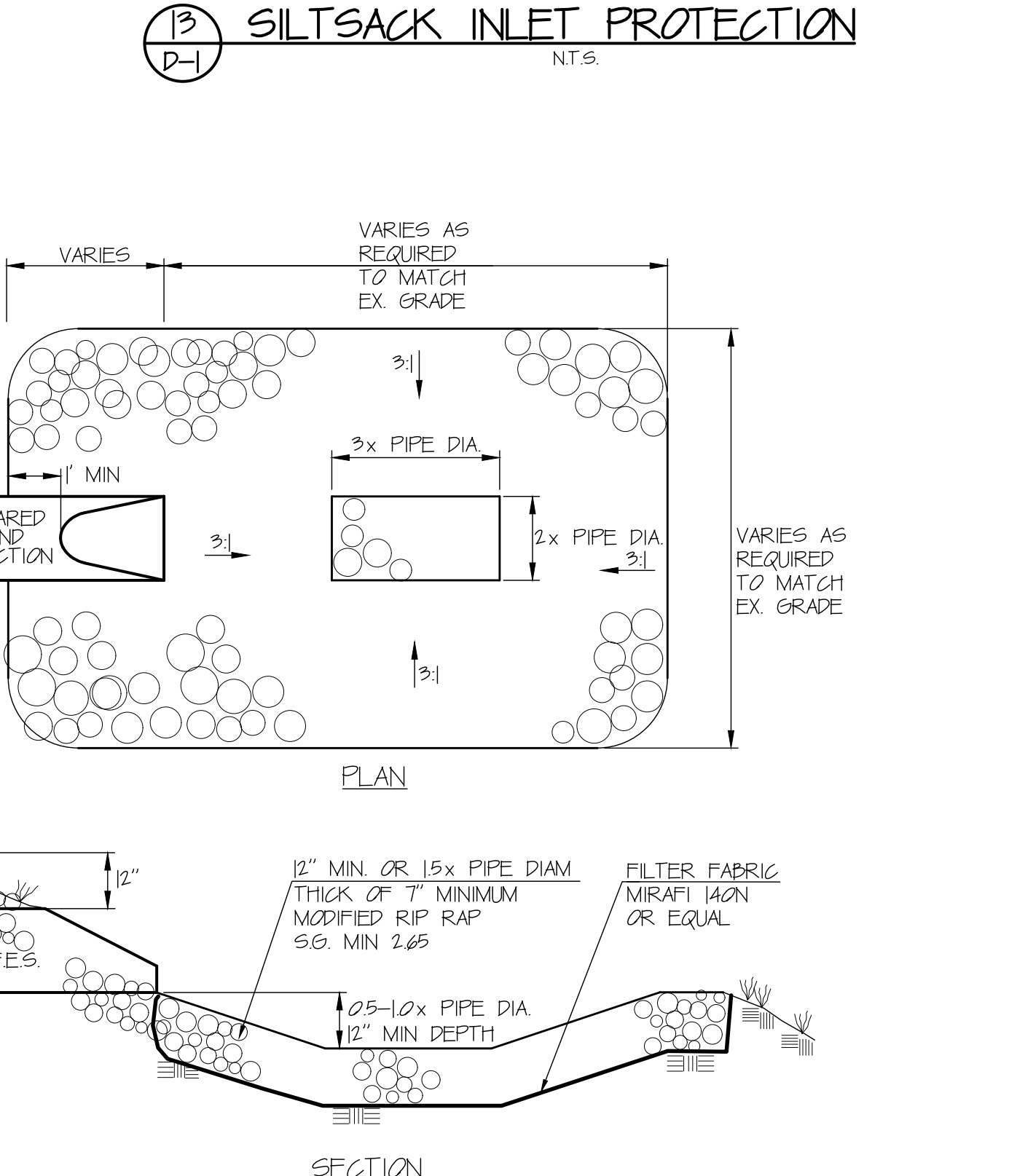
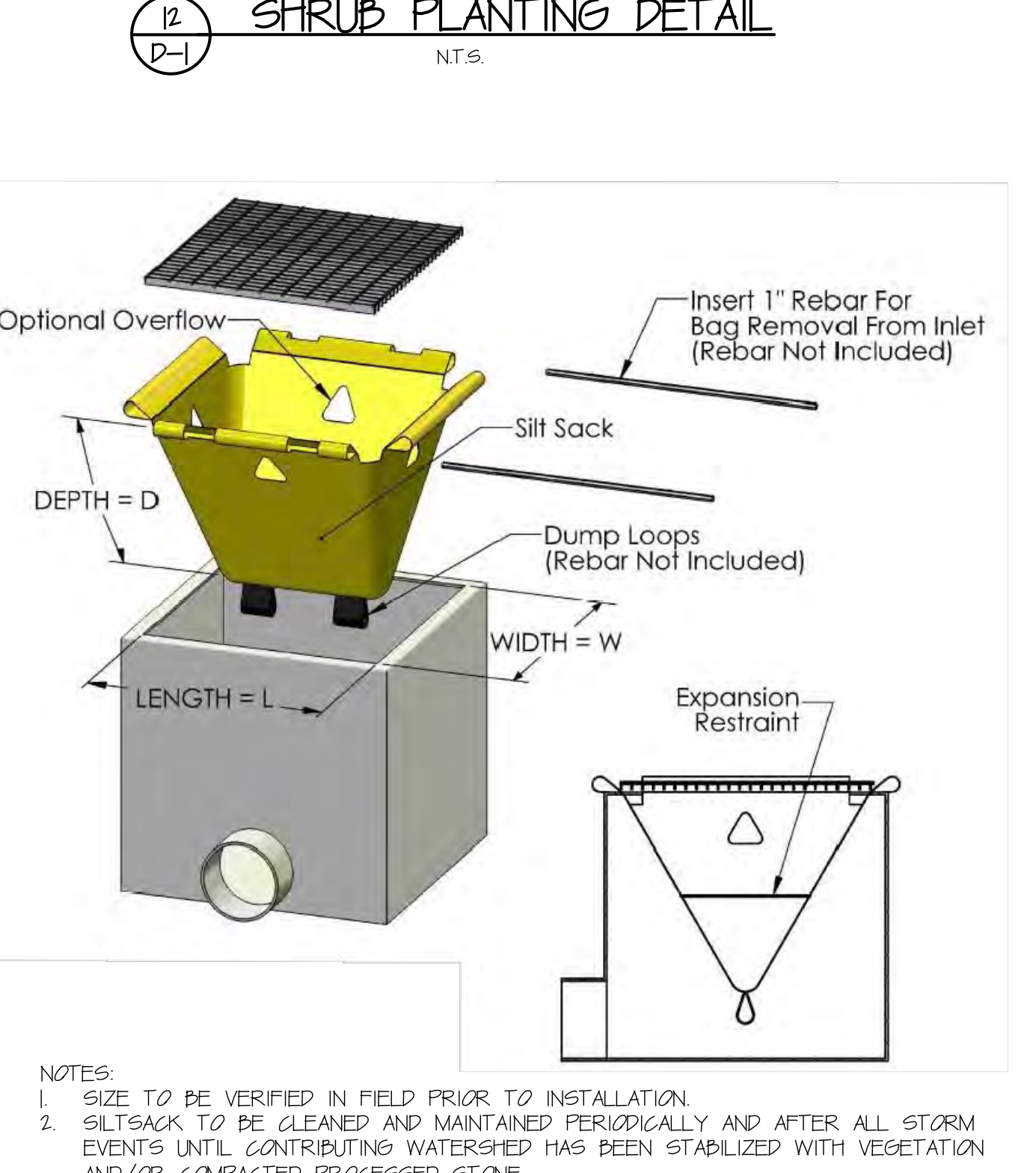
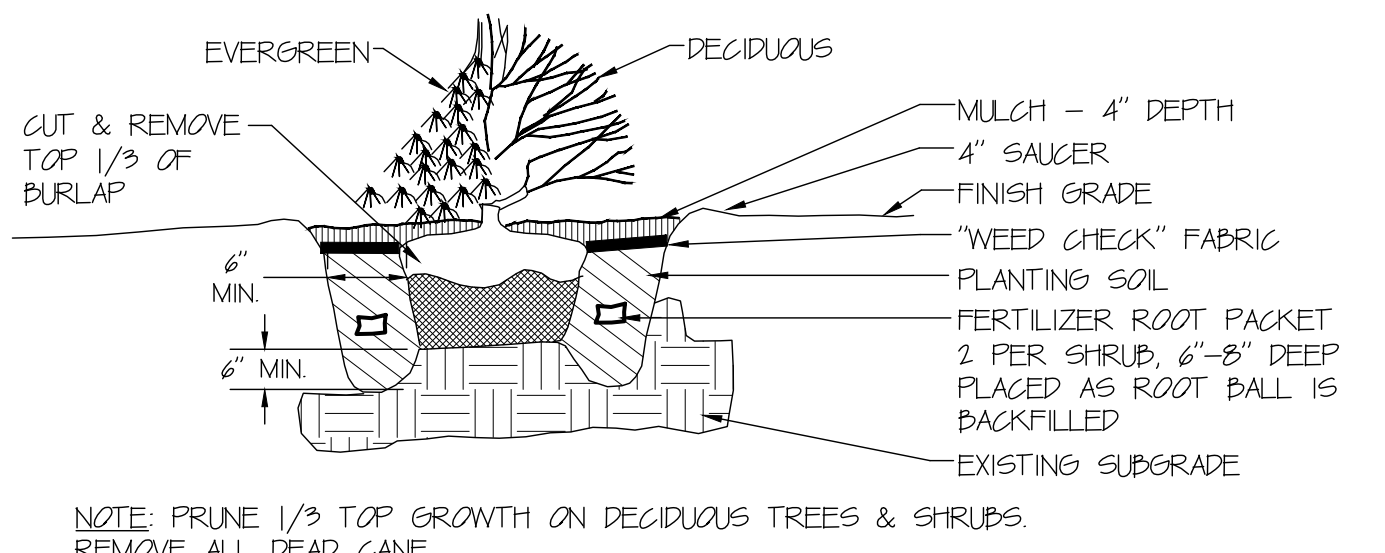
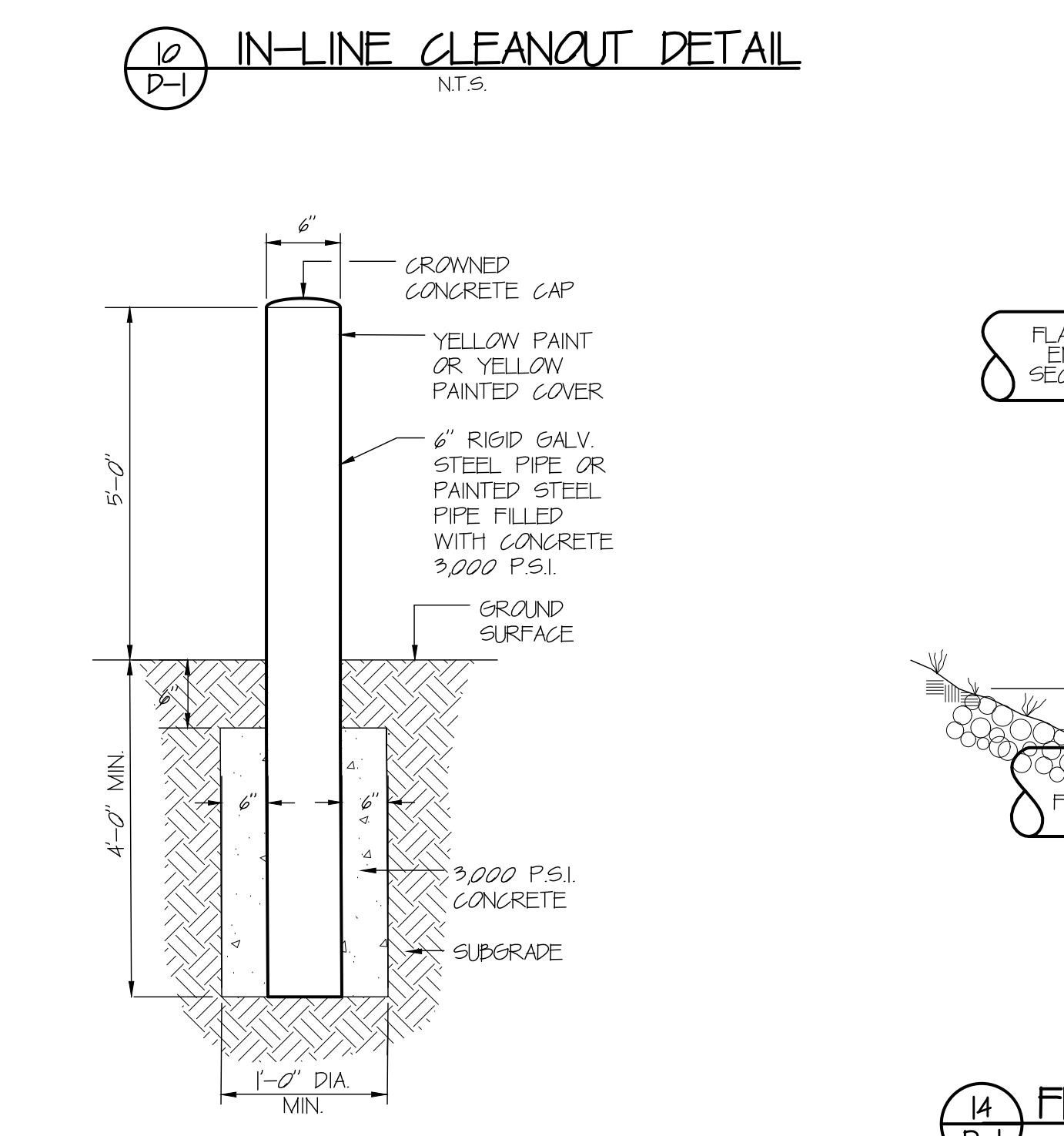
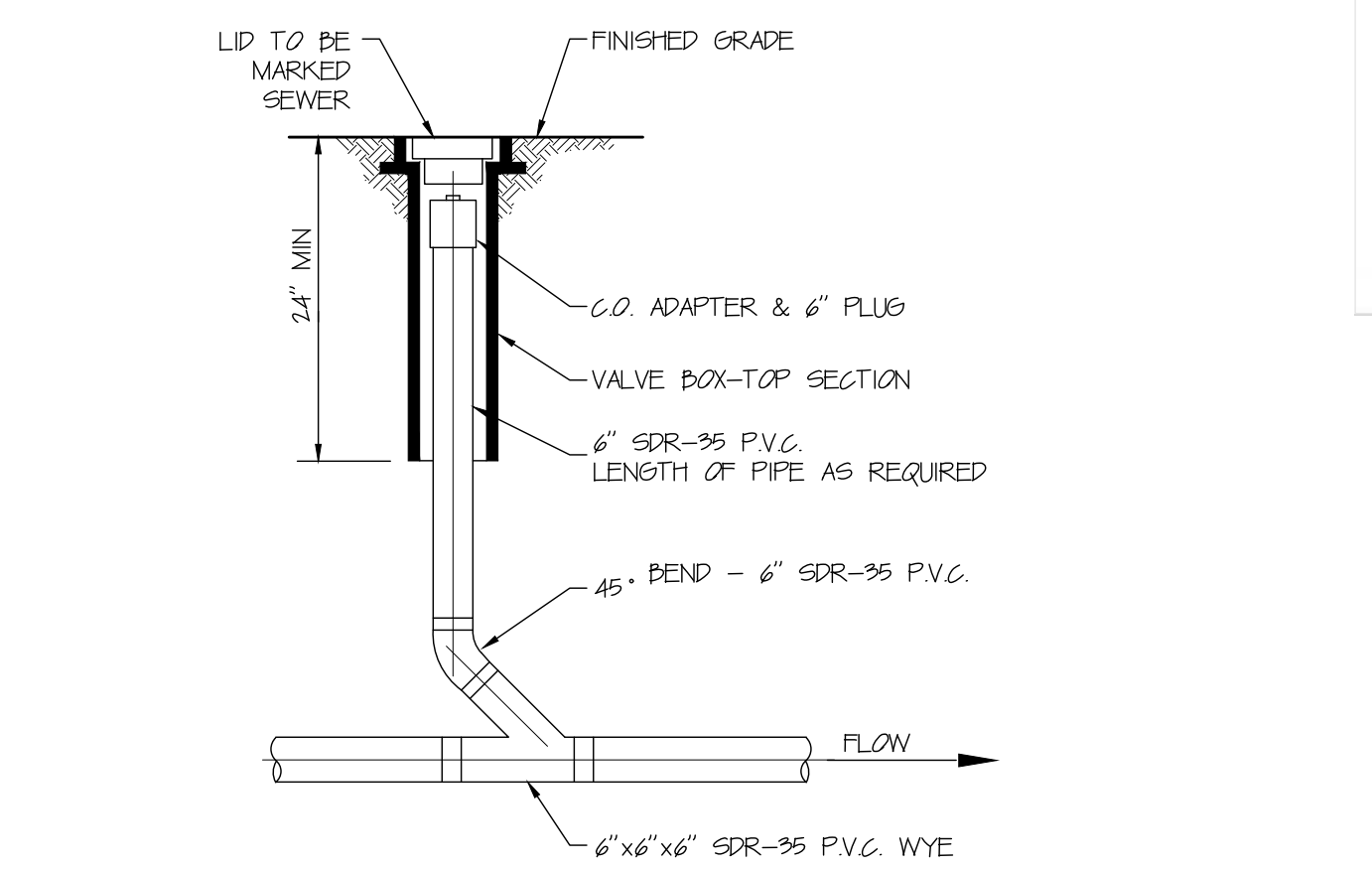
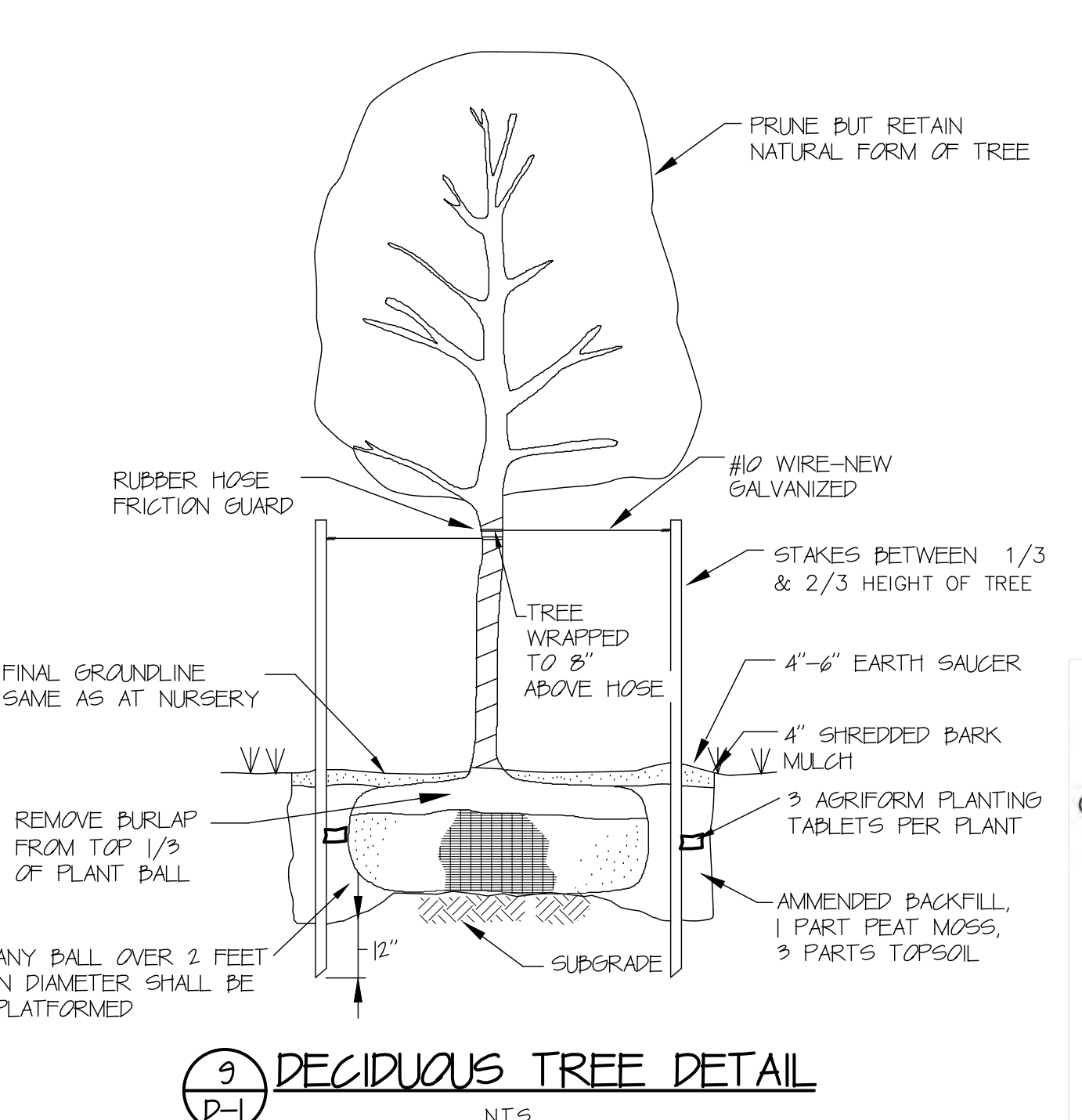
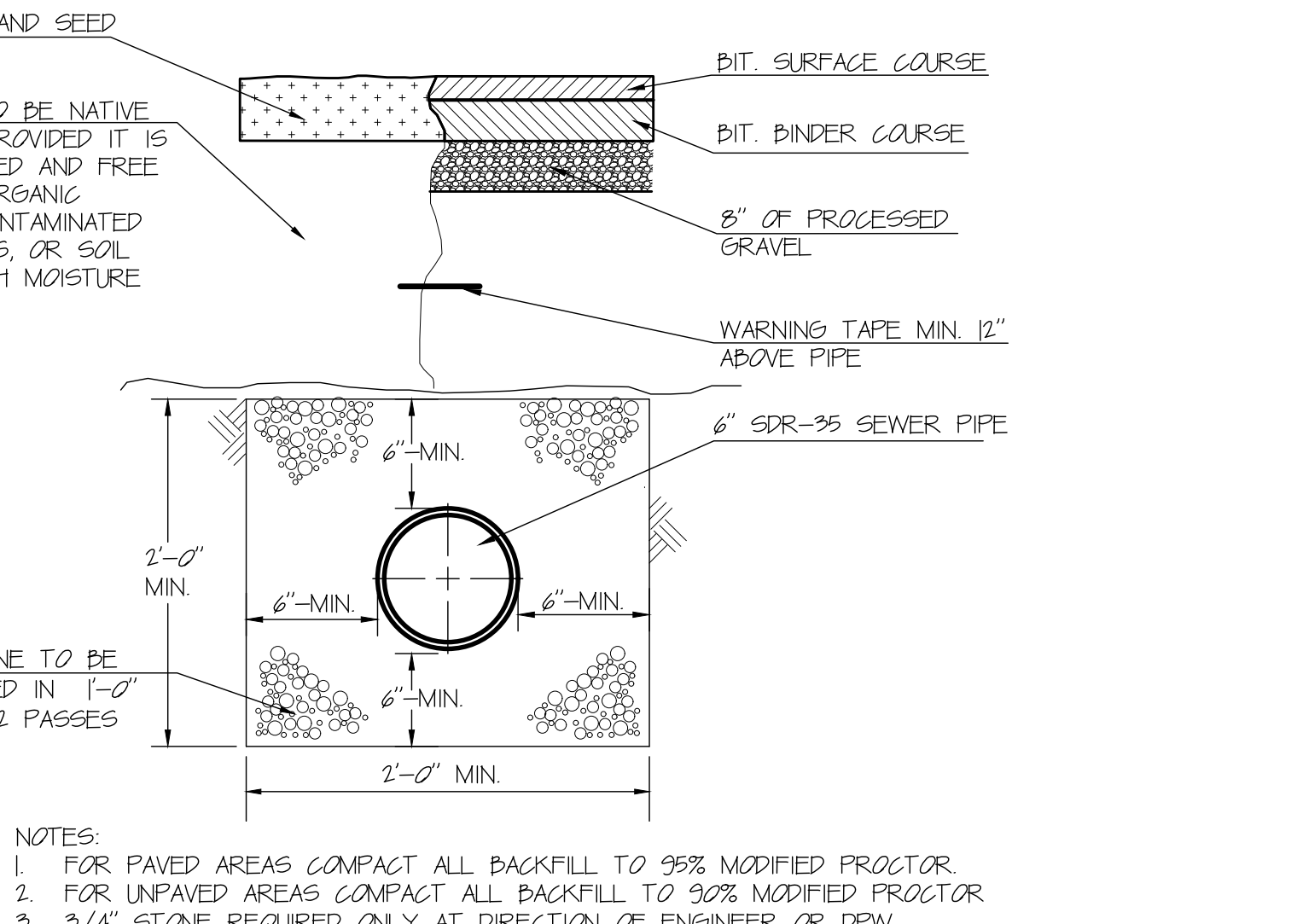
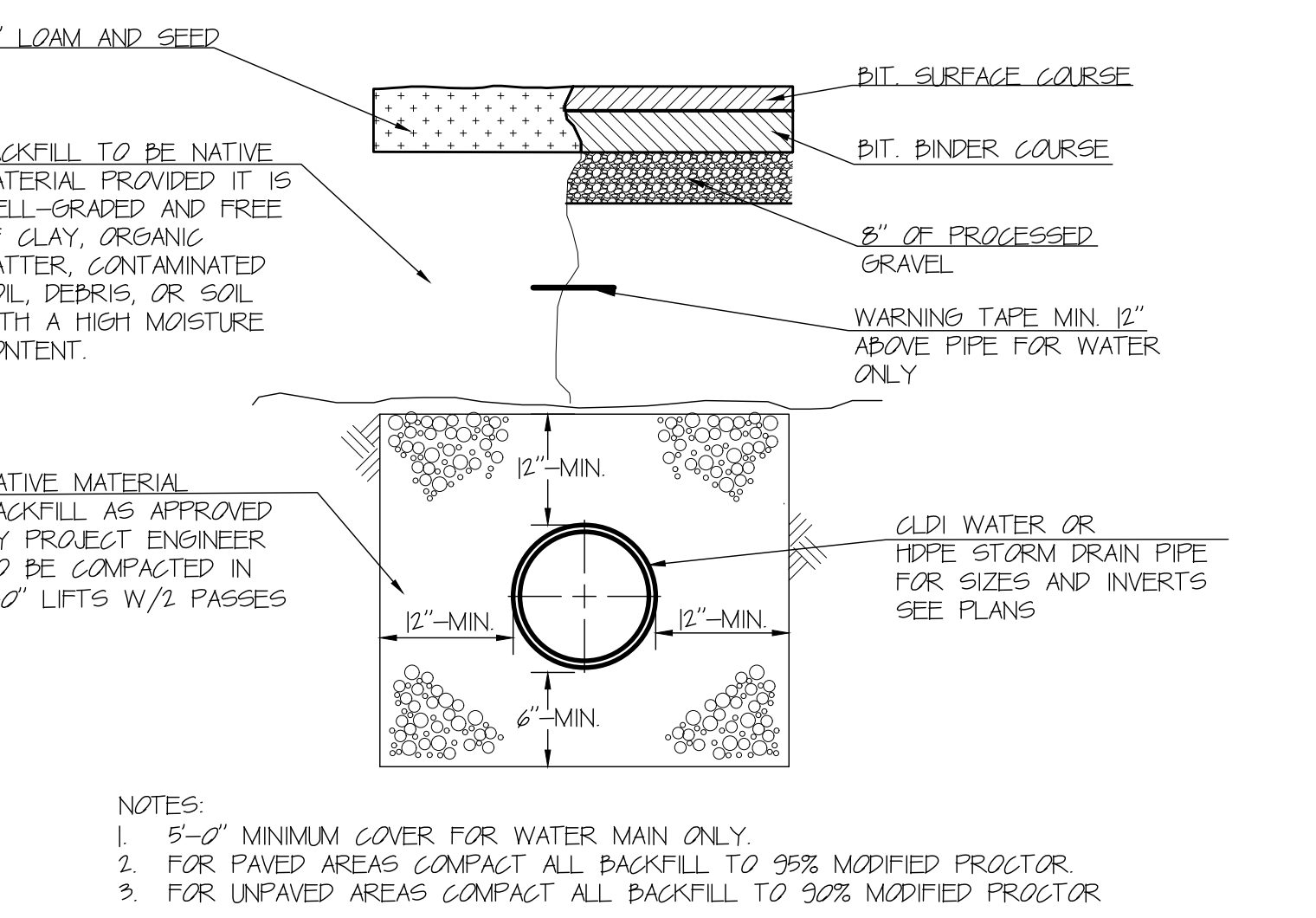
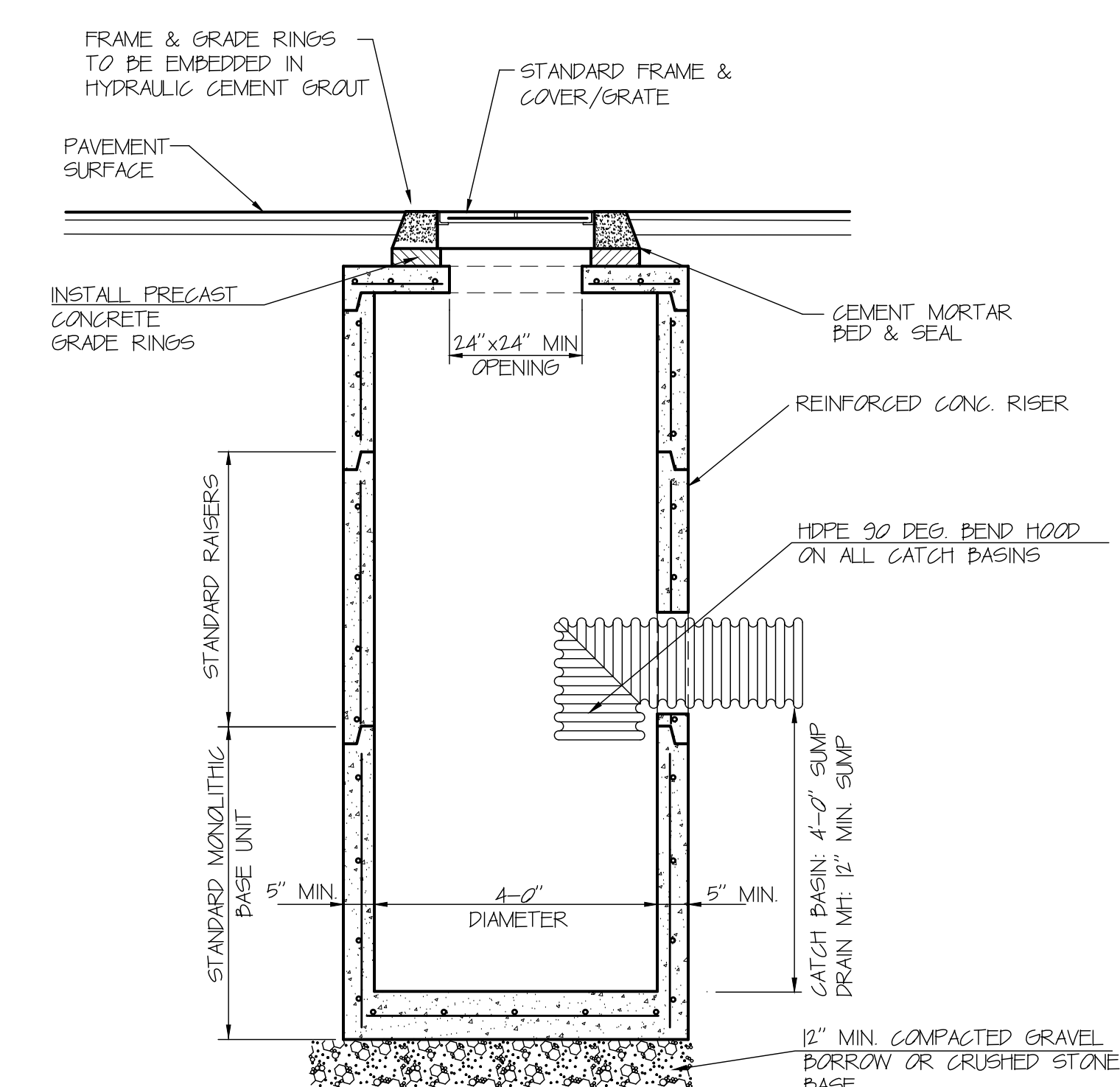
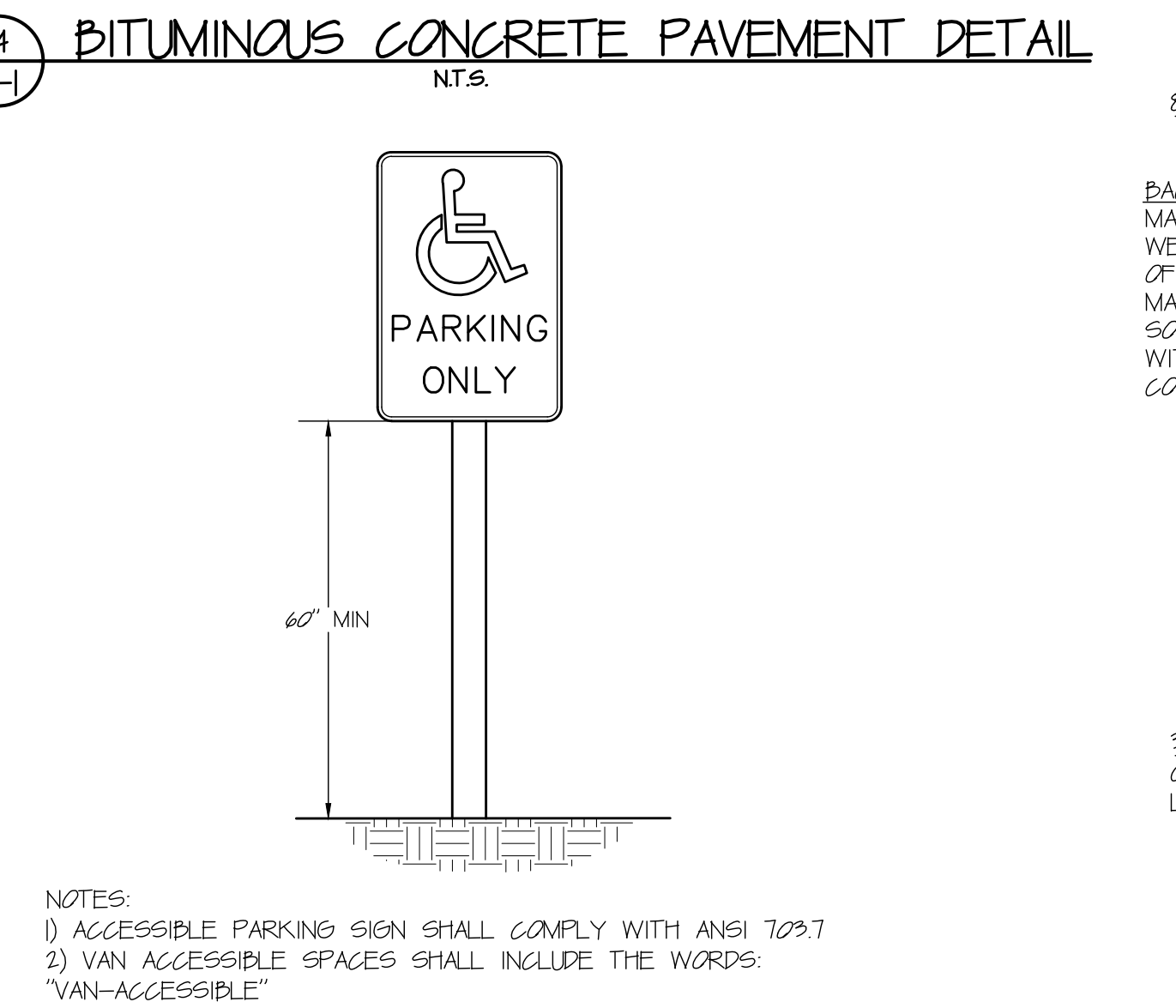
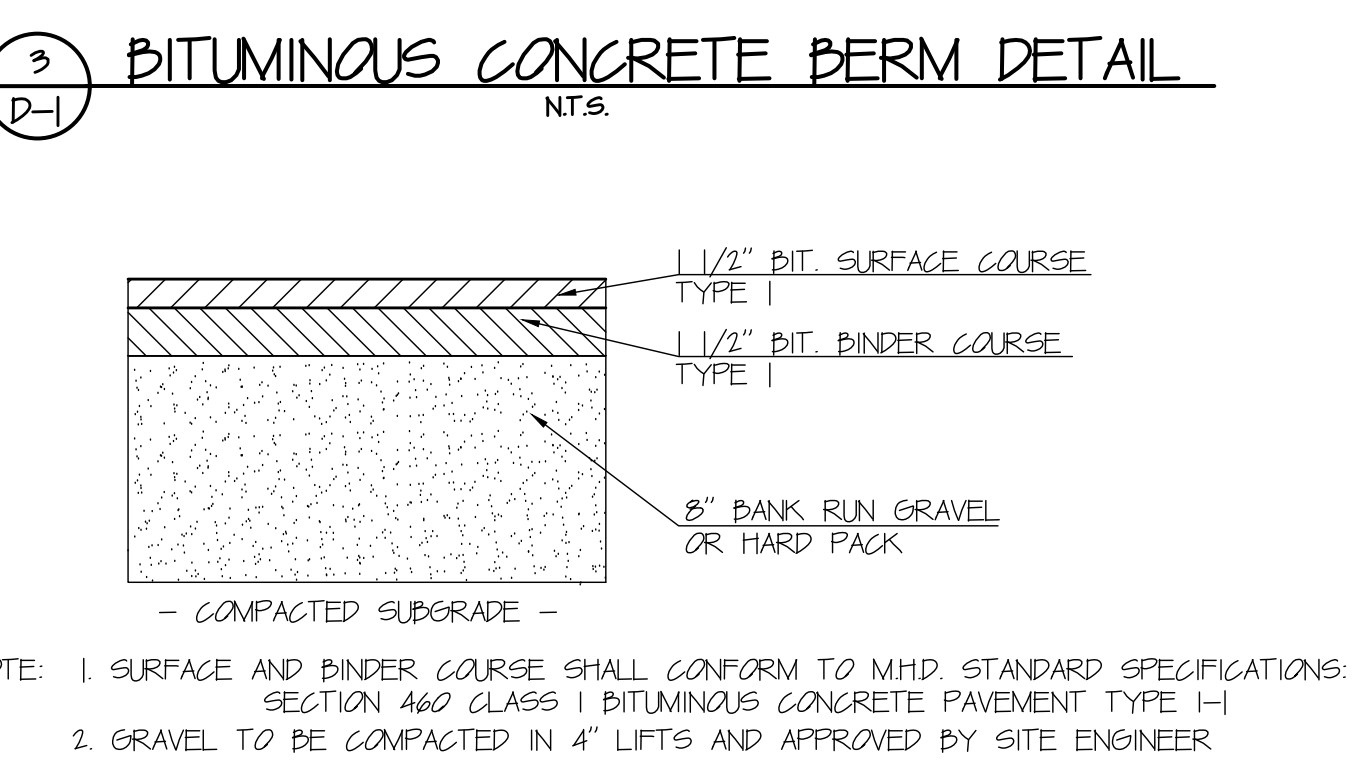
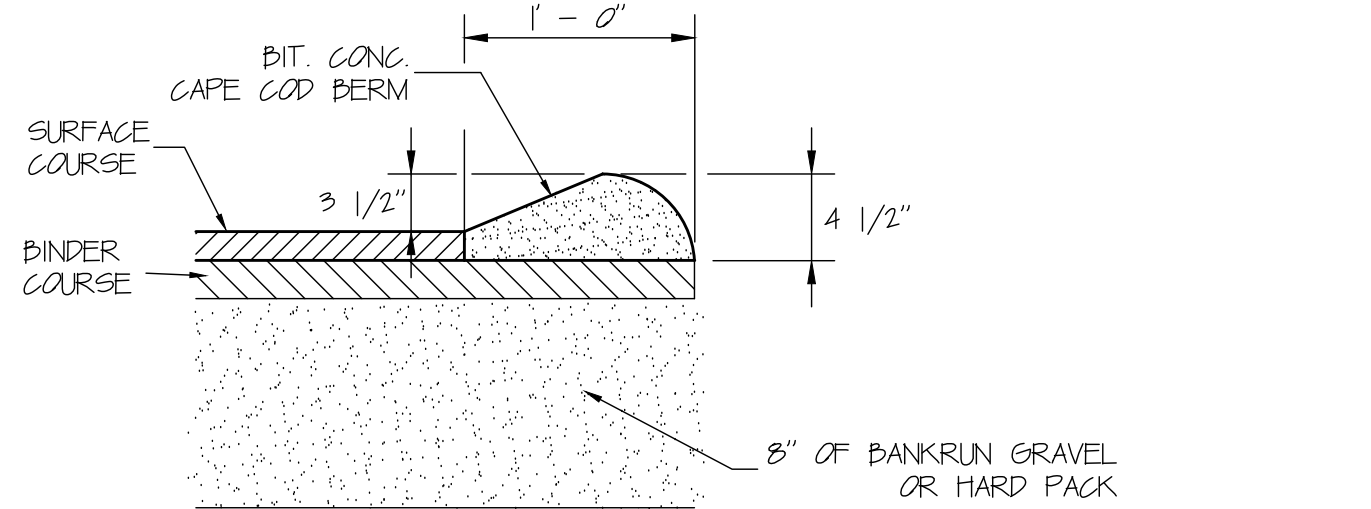
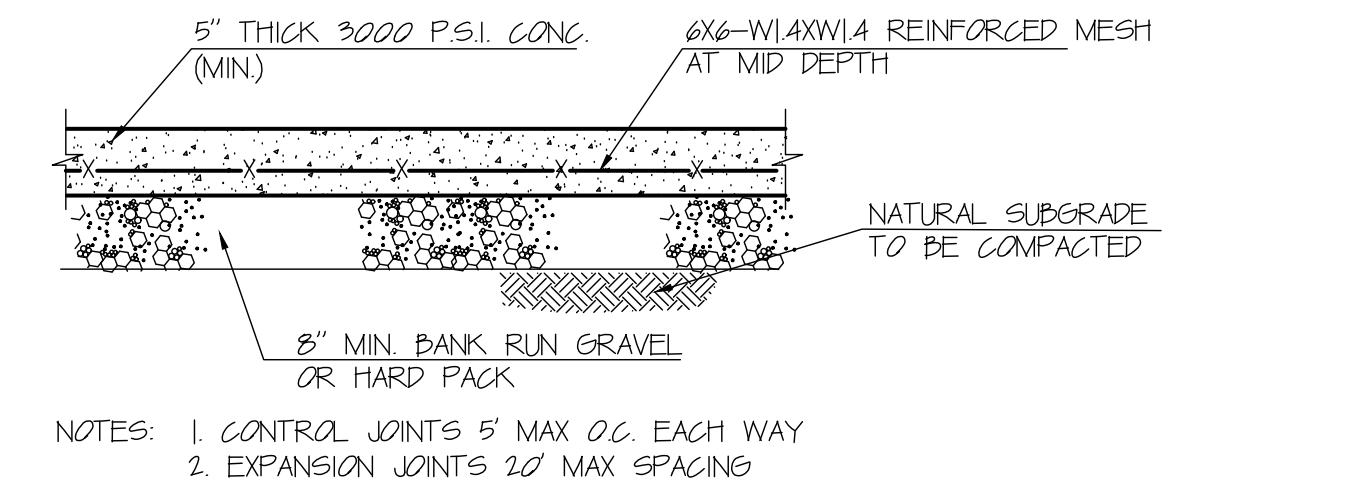
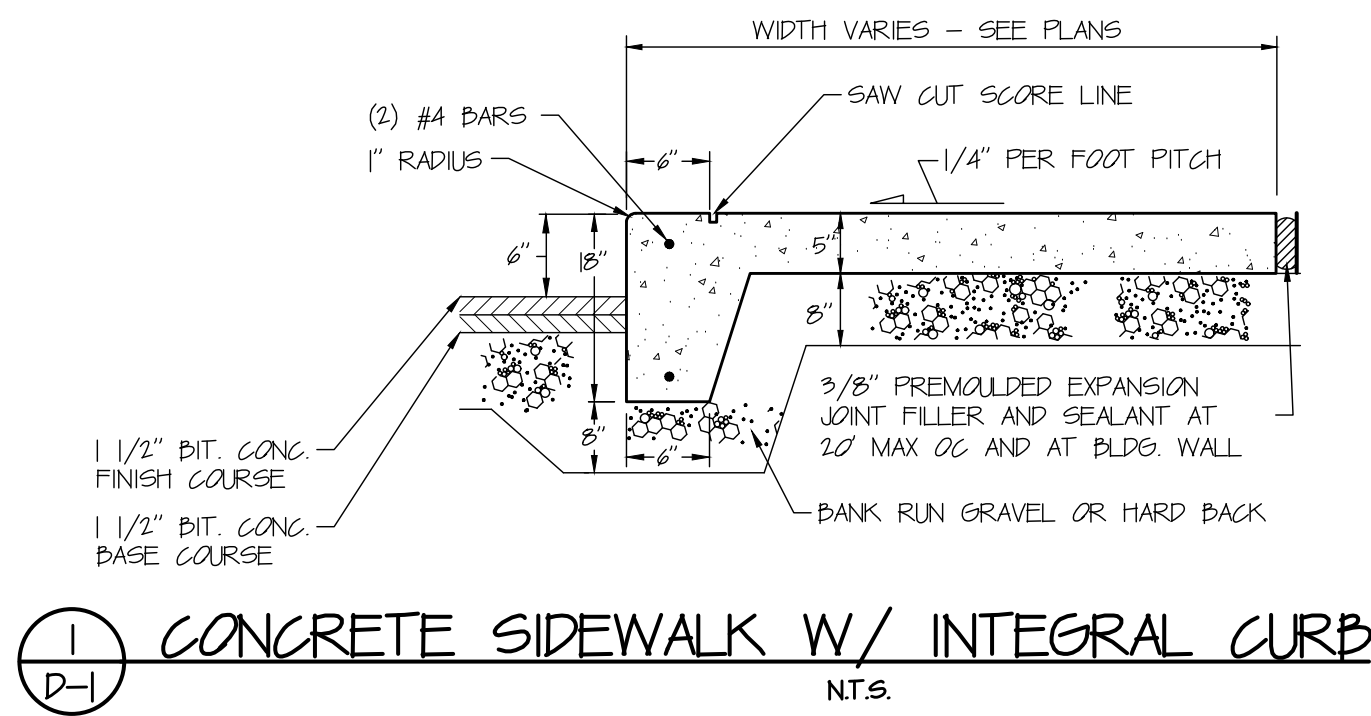
DRAWN BY: **HJM**

DATE: **2/16/26**

SCALE: **1" = 30'**

SHEET:

SHEET: C-7



PROJECT DESCRIPTION:

NEW OFFICE & REPAIR FACILITY

314-316 SILVER ST

AGAWAM, MA 01001

APPLICANT:

KY SHAWN LLC

69 FRANKLIN ST

FEEDING HILLS, MA 01030

Furrow

Engineering

199 Servistar Industrial Way - Suite 2

Westfield, MA 01085

Phone: (413) 562-4884

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REVISION DESCRIPTION

DATE

BY

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NO.

PROJECT #

123-01-26

DRAWN BY:

HJM

DATE:

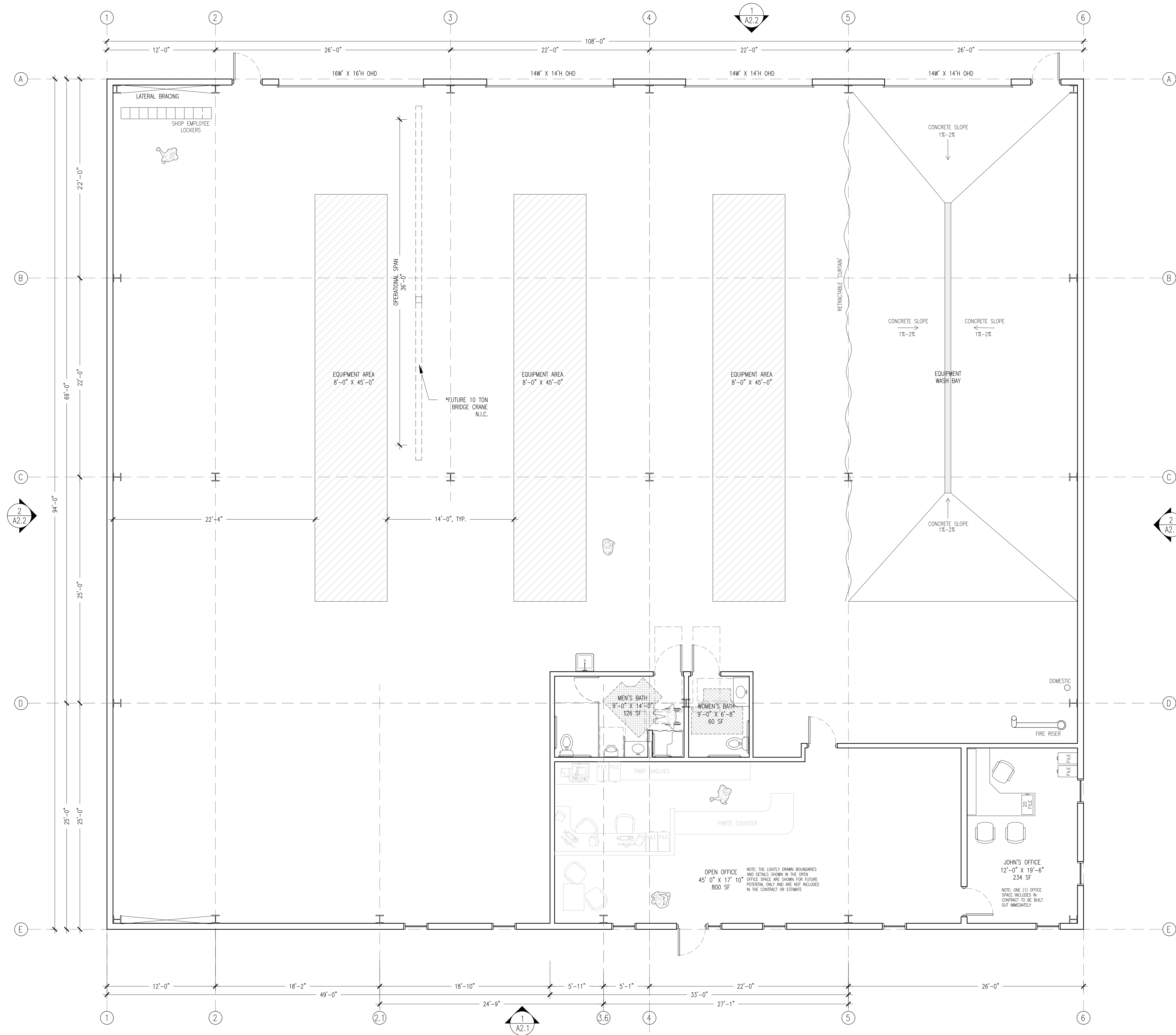
2/16/26

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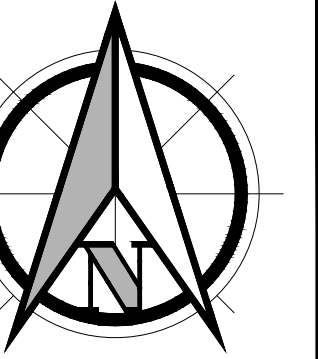
NTS.

SHEET:

D-1



A1.1 FIRST FLOOR PLAN



PROJECT DESCRIPTION:
NEW OFFICE & REPAIR FACILITY
914-918 SILVER ST
AGAWAM, MA 01001

APPLICANT:
KY SHAWN LLC
69 FRANKLIN ST
FEEDING HILLS, MA 01030

Furrow
Engineering
199 Servistar Industrial Way - Suite 2
Westfield, MA 01085
Phone: (413) 562-4884

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DATE	BY	REVISION DESCRIPTION
3-8-26	ZRM	UPDATED CHANGES AND INCREASED LOD.
6-17-26	ZRM	REDUCED OFFICE REDESIGN
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6	6	

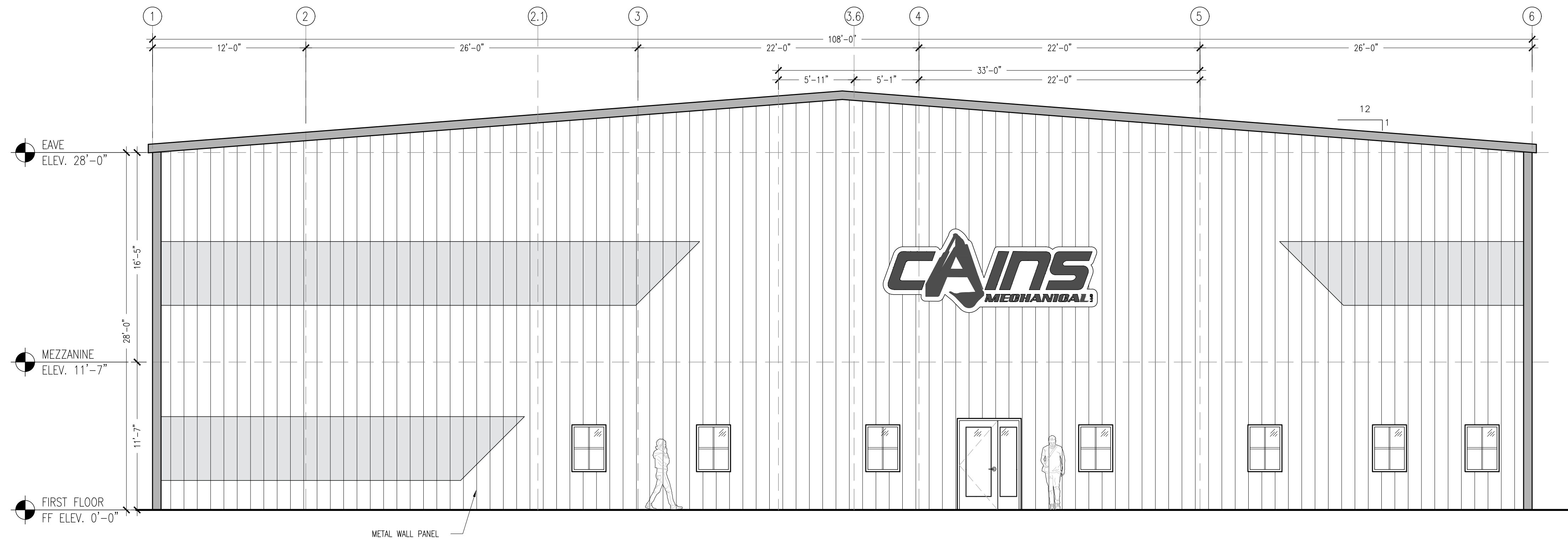
PROJECT #
1250-01-26

DRAWN BY:
HJM

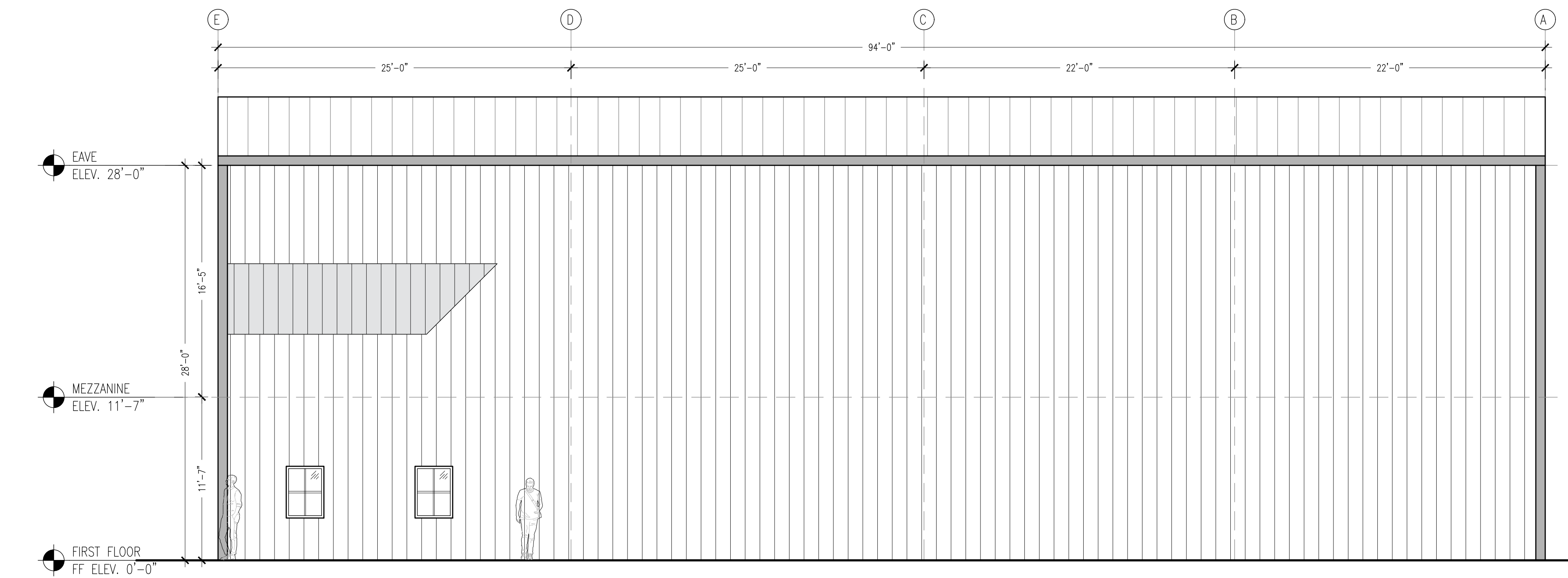
DATE:
2-16-26

SCALE:
3/16"=1'-0"

SHEET:
A1.1



1 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



2 EAST ELEVATION
SCALE: 3/16" = 1'-0"

PROJECT DESCRIPTION: NEW OFFICE & REPAIR FACILITY
91A-91B SILVER ST
AGAWAM, MA 01001
APPLICANT: KY SHAWN LLC
69 FRANKLIN ST
FEEDING HILLS, MA 01030

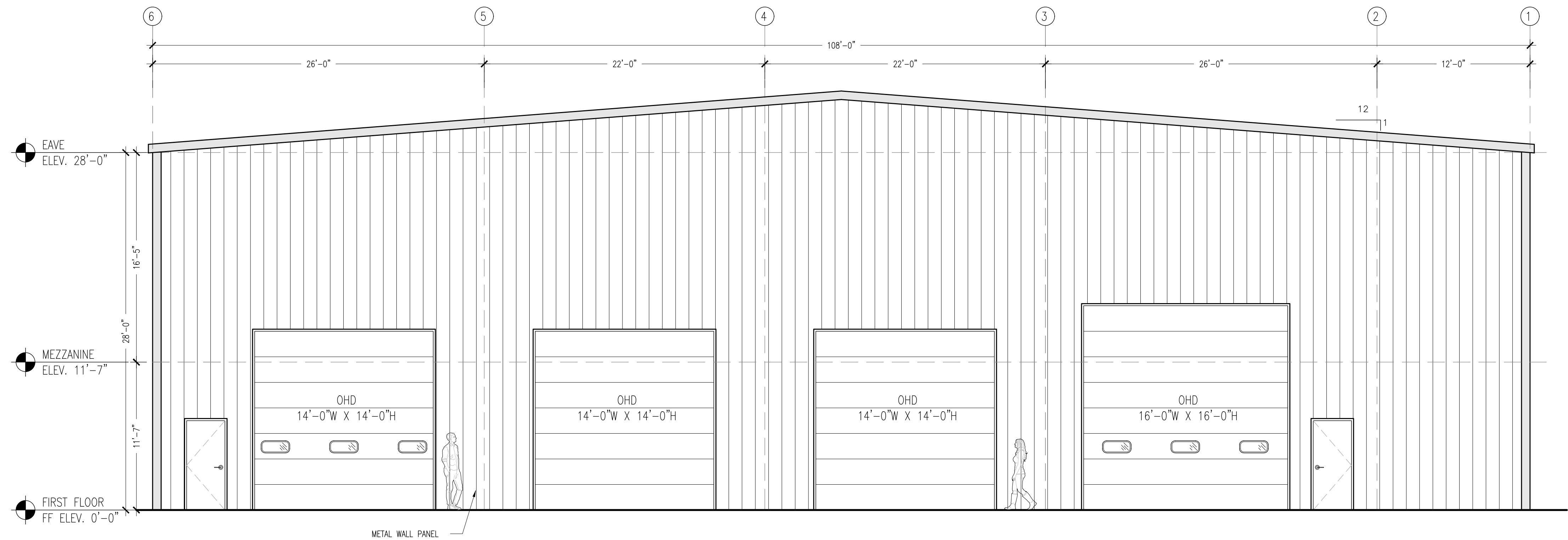
Furrow Engineering
199 Servistar Industrial Way - Suite 2
Westfield, MA 01085
Phone: (413) 562-4884

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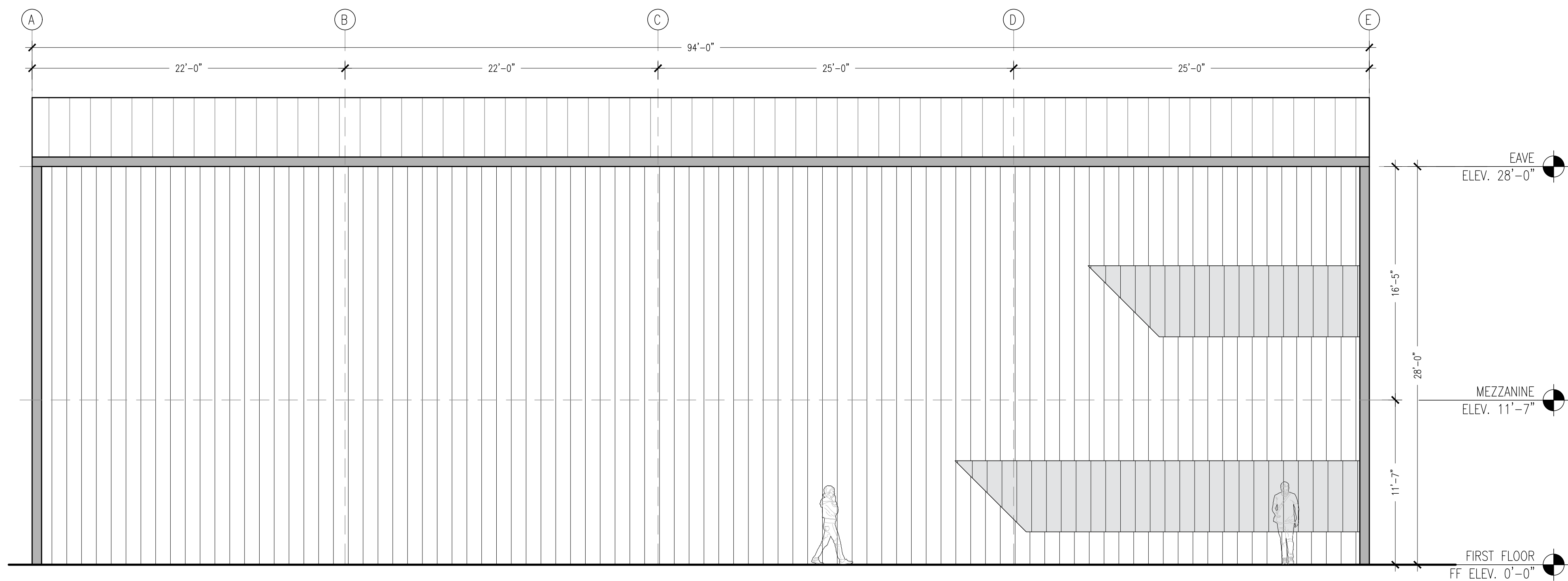
REVISION DESCRIPTION	
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A2.1 ELEVATIONS

A2.1



1 NORTH ELEVATION
SCALE: 3/16" = 1'-0"



2 WEST ELEVATION
SCALE: 3/16" = 1'-0"

PROJECT DESCRIPTION:
NEW OFFICE & REPAIR FACILITY
314-318 SILVER ST
AGAWAM, MA 01001
APPLICANT:
KY SHAWN LLC
69 FRANKLIN ST
FEEDING HILLS, MA 01030

Furrow
Engineering
199 Servistar Industrial Way - Suite 2
Westfield, MA 01085
Phone: (413) 562-4884

ORIGINAL SEAL IS IN BLUE
INK COPIES ARE NOT VALID

REVISION DESCRIPTION	BY:	DATE:
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PROJECT #
1230-01-26
DRAWN BY:
ZRW
DATE:
3-11-26
SCALE:
3/16" = 1'-0"
SHEET:

A2.2

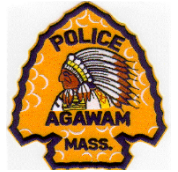
A2.2 ELEVATIONS



AGAWAM POLICE DEPARTMENT

681 Springfield Street, Feeding Hills, MA 01030
Telephone (413)786-4767 | FAX (413)786-4821

Eric P. Gillis
Chief of Police



To: Planning Board

From: Sergeant Brian Machos- Safety Officer

Date: June 23, 2026

Re: 314-318 Silver Street

I have reviewed the proposed site plans for this location. I do not have any safety-related concerns regarding this project. Silver Street presently sees a high level of commercial vehicle traffic, and do not feel this business would contribute to any future traffic congestion issues.



Town of Agawam

Building Department

1000 Suffield Street, Agawam, Massachusetts 01001

Telephone - (413) 821-0632

June 22, 2026

To: Office of Planning and Community Development:

Re: Site Plan Review comments- 314-318 Silver Street Agawam, MA 01001;

The Building Department has no specific zoning issues or concerns at this time for the proposed site plan dated June 18, 2026 for the referenced property.

The following would need to be addressed for site plan review criteria;

- A Form-A (ANR) would be required to combine all 3 parcels for the proposed project.

Respectfully,

Kevin Duquette

Kevin Duquette
Inspector of Buildings
Town of Agawam

Agawam Planning Board June 18, 2026

MEMBERS PRESENT:

Vi Baldwin-Chair
Frank DeStefano – Vice Chair
Michael DiLullo
Mike Cleavall

MEMBERS ABSENT:

Charles Elfman

ALSO PRESENT:

Stefanie Kesecker

Ms. Baldwin called the meeting to order at 6:00pm.

1. 6:00PM Public Hearing-Zoning Amendment-An Ordinance Regarding Fence Height
Council President Russo

Council President Anthony Russo, 40 Corey Street, was present for this agenda item. He stated the ordinance is to increase the allowed fence height from 6.5ft. to 8ft. He stated residents have approached him regarding this ordinance in regards to privacy due to the topography of homes and this will allow for screening. He stated he met with the Building Inspector and discussed this proposal. He stated anything over 6.5ft. the “sail effect” is increased, which is the risk of the fence falling or flying through air and creating damage. He stated the Building Inspector would have the discretion to decide if such fences would be a nuisance. He stated this ordinance was modeled after the State Code. He stated the Building Inspector sent a memo dated May 28, 2026 with suggestions on the wording, which Mr. Russo stated would be incorporated. Mr. DeStefano asked if the type of fence would be limited. Mr. Russo stated no, but most would be vinyl. Ms. Baldwin asked if the memo from the Building Inspector as well as the ZBA was seen. Mr. Russo stated affirmative and he stated the ZBA memo did not pertain to this amendment. Mr. Cleavall asked if the maximum height was 8ft. Mr. Russo stated yes.

Ms. Baldwin opened the hearing to public comment and there was none.

Motion was made by Mr. DiLullo and seconded by Mr. Cleavall to close the public hearing regarding the Zoning Amendment for an Ordinance Regarding Fence Height Council President Russo.

VOTE 4-0-0

Motion was made by Mr. Cleavall and seconded by Mr. DiLullo to send a Positive Recommendation the City Council regarding the Zoning Amendment for an Ordinance Regarding Fence Height by Council President Russo to include the Building Inspector’s recommendations.

VOTE 4-0-0

2. Site Plan-73 Garden Street-Juniors Towing

Petitioner Wilson Maldonado, 43 North Sumner Street #1, Holyoke was present for this agenda item. He stated he is going to use this location for personal storage and to park his trucks.

Ms. Baldwin stated there are no comments or concerns from the Engineering or Police Departments. She stated the Building Inspector memo dated May 21, 2026 stated that “Any storage of unregistered vehicles on the property that are not associated with the towing business or the existing repair service garage, must be removed from the property forthwith. Furthermore, maintaining access to an around the building for any emergency purpose, including for first responders is essential that such access be preserved to a feasible extent at all times to ensure the safety of the building occupants and to facilitate maintenance of the building, safety, and any emergency response operations.” Mr. Maldonado stated he understand and would follow the Building Inspector’s instructions.

Ms. Baldwin had Mr. Maldonado showed the Board where the storage area was located on the property.

Mr. DeStefano asked if there would be 9 cars. Mr. Maldonado stated at most 2 vehicles would be there at a time, and his personal vehicles will be stored inside the garage.

Motion was made by Mr. Cleavall and seconded by Mr. DiLullo to approve the Site Plan for 73 Garden Street for Juniors Towing conditional upon the outdoor storage be limited to the secure storage area shown on the plan.

VOTE 4-0-0

3. Request for Bond Release-Nicole Terrace Subdivision

The Board received a memo from the Engineering Department recommending a full bond release for the subdivision with \$16,000 lot bond amount for the remaining lot.

Motion was made by Mr. DiLullo and seconded by Mr. Cleavall to release the full bond for Nicole Terrace Subdivision.

VOTE 4-0-0

Motion was made by Mr. DeStefano and seconded by Mr. DiLullo to set \$16,000 for Lot 13 and execute a performance agreement.

VOTE 4-0-0

4. Approval of Minutes-June 4, 2026

Motion was made by Mr. DiLullo and seconded by Mr. DeStefano to approve the June 4, 2026 minutes as written.

VOTE 2-0-2(Baldwin/Cleavall)

5. Correspondences

Agawam Planning Board June 18, 2026

None

Motion was made by Mr. DeStefano and seconded by Mr. Clevall to adjourn the meeting.

VOTE 4-0-0

Meeting adjourn at 6:30pm.

DRAFT