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STORMWATER DESIGN REPORT

**Casas Del Rio
Camden Lutheran Housing, Inc.**

Ray, Borton and N. 10th Streets

Block 804, Lots 47-86

Block 805, Lots 1-40

City of Camden

Camden County, NJ

June 2024

Prepared by:

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I. SUMMARY

This Report concerns the Stormwater Management System (SWMS) for the proposed subdivision of Block 804, Lots 47-86 lying between Ray and Borton Streets and Block 805, Lots 1-40 lying between Borton and North 10th Streets in the City of Camden, NJ. The total property area is 51,200 SF (1.175 acres).

EXISTING CONDITIONS (PRE-DEVELOPMENT)

The existing property is vacant and has been for some time having an impervious area of 0 SF (0%). Site grades are relatively flat varying from a high of 28.9 To a low of 27.0 generally sloping from the center of each block to the abutting streets and from the north (Elm Street) to the south (toward the lots fronting on Pearl Street).

The NRCS Soil Survey (provided in Appendix A) identifies the existing soil to be Urban Land (UR) which has is an HSG “D”. Current land use is considered “Open Space, Good Condition (Grass Cover >75%)” with a CN Value of 80 for an HSG “D”.

All stormwater runoff flows uncontrolled out the abutting streets.

PROPOSED CONDITIONS (POST-DEVELOPMENT)

The proposed development includes subdividing each block into 13 new lots and constructing new 2 story residential houses on each lot.

The area of proposed Lots 1 in each block (fronting on Elm Street) will be 1,972 SF (0.0453 acre) with an impervious area of 1,331 SF (67.5%), excluding the 210 SF porous paver car parking area which will recharge stormwater directly back into the ground.

All the other proposed lots will be 1,969 SF (0.0452 acres) with an impervious area of 1,330 SF (67.5%), excluding the 210 SF porous paver car parking area which will recharge stormwater directly back into the ground.

The proposed houses extend across the entire lot width of the properties.

Stormwater runoff from the front yards (197 SF comprised of the front door step/walk and grass/planting area) will flow overland to the sidewalk/curb/street gutter.

Stormwater runoff from the rear yards will flow to the pervious paving system under the parking area (587 SF) to recharge into the ground by means of a stone/pipe recharge system located below the parking areas, or overland to the sidewalk/curb/street gutter (175 SF planter area).

Stormwater runoff from the roof area (1,010 SF) will be directed into the stone/pipe recharge system located below the grass area.

The proposed Grass and Landscape Planting areas are considered “Open Space, Good Condition (Grass Cover >75%)” with a CN Value of 74 for an HSG “C” reflecting the new soils that will be constructed on.

STORMWATER MANAGEMENT SYSTEM DESIGN

The Stormwater System (SWMS) for each lot will include a stone/recharge system consisting of a pervious paving area 10.5' x 20' (the vehicle parking area) comprised of pervious pavers underlain with a 4" of #57 stone as a choker course (0.60' total thickness). The recharge area below will consist of two 30 LF lengths of 30" HDPE perforated pipe within 4.25' deep, 10.5' x 30' bed of AASHTO No.2 stone. The total depth of the system will be 4.85'

Overflow from the system is provided by a 6" SDR35 pipe system in the upper 0.5' of No. 2 stone bed which outfalls at a 2% minimum slope to the combined sewer system in Borton Street.

Stormwater from the roof area will be directed by a 6" SDR35 pipe at 2% minimum slope into one of the 30" HDPE perforated pipes at a point nearest to the rear of the house.

Preliminary soil testing indicates that the soil infiltration rates on the site range from 0.34 to 3.16 inches per hour with depth to high water of 4' to 9.2'. Accordingly, the systems on some lots will function properly with no extra-ordinary measures required while the systems on other lots may require an underdrain (2" perforated pipe), and/or excavation of the existing soil to a point as much as 4' below the bottom of the proposed system. Details for a range of possible systems is included on the design plans. The final design to be used for each property will be determined based on soil testing at each system location to be undertaken as part of the individual lot site plan preparation.

DESIGN REQUIREMENTS

The project will disturb approximately 82,955 SF (1.90 acres) including work within the public right-of-way and street pavement reconstruction/resurfacing, and will create 34,580 SF of new impervious area and thus the project is subject to the New Jersey Stormwater requirements outlined in N.J.A.C 7:8-1.2 (July 2023), and the City of Camden Stormwater Ordinance. Stormwater management is proposed for this project to meet the requirements of N.J.A.C 7:8 (July 2023).

In accordance with Green Infrastructure standards set forth in N.J.A.C.7:8-5.3 and City requirements, Green Infrastructure BMP's shall be used as identified in Table 5.1 at N.J.A.C. 7:8-5.2(f) and/or alternative stormwater management measures approved in accordance with N.J.A.C. 7:8-5.2(g).

In accordance with Groundwater Recharge standards set forth in N.J.A.C 7:8-5.4(b)2 and City requirements, the groundwater recharge requirements do not apply to the project because the project is in an Urban Redevelopment Area.

In accordance with Stormwater Runoff Quality standards set forth in N.J.A.C 7:8-5.5(a) and City requirements, the groundwater recharge requirements do not apply to the project because the project will result in an increase of 5,460 SF (0.125 acres) of regulated motor vehicle surface which is less than the 0.25 acres or more increase that triggers this requirement.

In accordance with the Stormwater Runoff Quantity standards set forth in N.J.A.C 7:8-5.6(b)3 and City requirements, there will be an increase in stormwater runoff quantity for the 2-, 10- and 100-year storm events and therefore a stormwater management system (SWMS) is being proposed to reduce the post-development peak flows to less than 50%, 75% and 80% (respectively) of the pre-development peak flows.

In accordance with the green infrastructure standards set forth in N.J.A.C 7:8-5.3(d) and City requirements, a pervious paving system in the proposed parking area (210 SF) is proposed which complies with the BMP methods listed in Table 5-1.

STORMWATER MANAGEMENT APPROACH

Drainage Areas

Each of the 26 proposed lots are considered separate drainage areas as they do not combine with other lots within the project. As each lot is identical (except for 3 SF additional area on Lots 1 in each block), a single hydrograph analysis for one “representative lot” is used for calculation of the peak flows from a “representative lot.”

Since front and rear yards flow separately to the abutting street systems and do not combine on the lot, the point of interest is taken at “hypothetical point” calculated by adding the calculated stormwater runoff from the front and rear yard areas.

The pre-development condition drainage area for the “representative” lot is shown in Figure 3. This area is identified as Node 1EX in the HydroCAD model.

The post-development condition drainage area for the “representative” lot is shown in Figure 4. The individual subareas are identified as:

- Node 2PR in HydroCAD model (Proposed Roof to SWMS, Rear Yard)
- Node 3PR in HydroCAD model (Proposed Parking Area to SWMS, Rear Yard)
- Node 4PR in HydroCAD model (Proposed Patio/Sidewalk to SWMS, Rear Yard)
- Node 5PR in HydroCAD model (Proposed RY Grass to SWMS, Rear Yard)
- Node 6PR in HydroCAD model (Proposed RY Landscaping, Rear Yard)
- Node 7PR in HydroCAD model (Proposed Front Yard))

NRCS Methodology

In accordance with N.J.A.C 7:8-5.7, stormwater runoff is calculated using the USDA Natural Resources Conservation Service (NRCS) Methodology. Pre-development and post-development hydrographs are developed for each drainage area/subarea described in the previous section using an area, hydrologic soil group (HSG), land cover, rainfall depth and time of concentration. A table summarizing the area, HSG, and land cover with curve numbers for the pre- and post-development conditions is provided in Appendices B and C.

The HydroCAD computer software was utilized to undertake the NRCS Methodology calculations.

The time of concentration for all areas is taken as 6 minutes (NRCS minimum) for each subarea.

In accordance with N.J.A.C 7:8-5.6, stormwater analysis must be performed for current and projected storm events, as defined and determined pursuant with N.J.A.C 7:8-5.7(c) and (d). The analysis used is based on the county-specific New Jersey 24-hour rainfall frequency data for Camden County as provided in Table 5-1 of the New Jersey Stormwater Best Management Practices Manual (July 2023) because it has larger depths than the site specific rainfall data from NOAA Atlas 14 and, therefore, results in a more conservative design. The rainfall depths are provided in the Table below with design current and future rainfall depths in bold.

Design Rainfall Depths

Design Storm Event	Site Specific Rainfall Depth (NOAA Atlas 14, Vol2, Ver3 (inches))	Table 5-1: County Specific Rainfall (inches), Camden	Current Adj. Factor Camden	Current Rainfall (inches)	Future Adj. Factor Camden	Future Rainfall (inches)
2-year	3.28	3.31	1.03	3.41	1.18	3.91
10-year	5.98	5.06	1.04	5.26	1.22	6.17
100-year	7.92	8.52	1.05	8.95	1.39	11.84

The hydrograph summaries calculated with the NRCS methodology using the HydroCAD computer software are provided in Appendix B for the Current Rainfall Conditions and in Appendix C for the Future Rainfall Conditions.

Stormwater Runoff Quality

Although the project will not increase the regulated motor vehicle surface area by 0.25 acres or more and runoff quality measures are not required, stormwater runoff from the total of 5,460 SF (0.125 acres) of vehicle parking area (210 SF per lot) will all be treated for water quality by the proposed pervious paving with recharge into the ground by means of a stone/pipe recharge system located below the parking pervious paving area.

Green Infrastructure

Stormwater runoff from the rear yard will incorporate a pervious paving system (an allowable BMP in Table 5-1) under the parking area to recharge runoff from the vehicle parking area and the adjacent impervious and grass areas into the ground by means of a stone/pipe recharge system located below the parking areas. For each lot, the pervious paving area is 210 SF with an additional patio/sidewalk/grass area draining of 379 SF. This additional area is 1.8x the pervious paving area which is less than the maximum allowed of 3x.

Therefore, the project complies with N.J.A.C 7:8-5.6(b)3 and City requirements.

Stormwater Runoff Quantity

The table below shows a comparison of peak flow rates for pre- and post-development for a “representative lot” at Node POI in the HydroCAD model.

The post-development peak flow rates for under Current and Projected Rainfall Conditions for the 2-, 10- and 100-year storm events do not exceed the pre-development peak flow rates.

Therefore, the project complies with N.J.A.C 7:8-5.3(d) and City requirements.

CURRENT RAINFALL

Storm Event	Pre-Developed Peak Flow	Allowed Maximum Rate	Post-Developed Peak Flow
2-year	0.11	0.055 (50%)	0.02
10-year	0.14	0.105 (75%)	0.03
100-year	0.39	0.312 (80%)	0.23

PROJECTED RAINFALL

Storm Event	Pre-Developed Peak Flow	Allowed Maximum Rate	Post-Developed Peak Flow
2-year	0.14	0.17 (50%)	0.03
10-year	0.18	0.135 (75%)	0.03
100-year	0.41	0.328 (80%)	0.29

STORMWATER CONVEYANCE SYSTEM

The existing sewer in Borton Street is a 10” VCP combined sewer. Due to the unknown condition of the existing pipe and the need for new sanitary and storm overflow pipe connections from each house, the existing pipe will be replaced with a new 10” SDR35 pipe. The new pipe will be constructed at the same grade as the existing pipe between the two existing manholes and be extended an additional 60LF toward Elm Street to service Lots 1, 2 and 3 in each Block, terminating in a new manhole.

CONCLUSION

The proposed stormwater management system meets the requirements of N.J.A.C 7:8 that are applicable at the time of the initial application to the City, as well as the City of Camden requirements, by managing the post-development peak discharge rates to not exceed the allowed percentage of the pre-development peak flows.

As a result, the proposed development meets the intent of the state and city requirements and will have no adverse impact on the existing stormwater conveyance system that services the site and adjacent properties.

OPERATIONS AND MAINTENANCE MANUAL

Each property will have its own SWMS with the responsibility for maintenance lying with each individual property owner.

As shown on Sheets C-301 and C-302 of the Site Plans:

1. The property owner of each individual lot is responsible for maintaining the stormwater management system, overflow pipe and house sanitary pipe for that lot to the point of connection with the street main.
2. Visual inspections shall be made at least annually as well as after every storm exceeding two (2) inches of rainfall. Any accumulated debris shall be removed immediately so that the system operates as designed. All work shall be done by a qualified contractor complying with OSHA standards with removal and disposal of materials in compliance with all local, state and federal laws.
3. All structural components must be inspected for cracking, subsidence, breaching, wear and deterioration at least annually. The condition of the surrounding and above lying materials shall be inspected for evidence of potential failures or deterioration.
4. Routine maintenance of the system should typically be undertaken by 2 people for safety considerations. Equipment anticipated for may include a jet vacuum vehicle, shovels, lighting equipment and wheel barrel or truck for hauling away debris. No manufacturer's instructions or user manuals are available for the maintenance of these components. Water, mosquito control chemicals, paver or pipe component replacement may also be required depending on the condition of the components.
5. Maintenance records must be maintained on-site for a minimum period of three years.

FIGURES

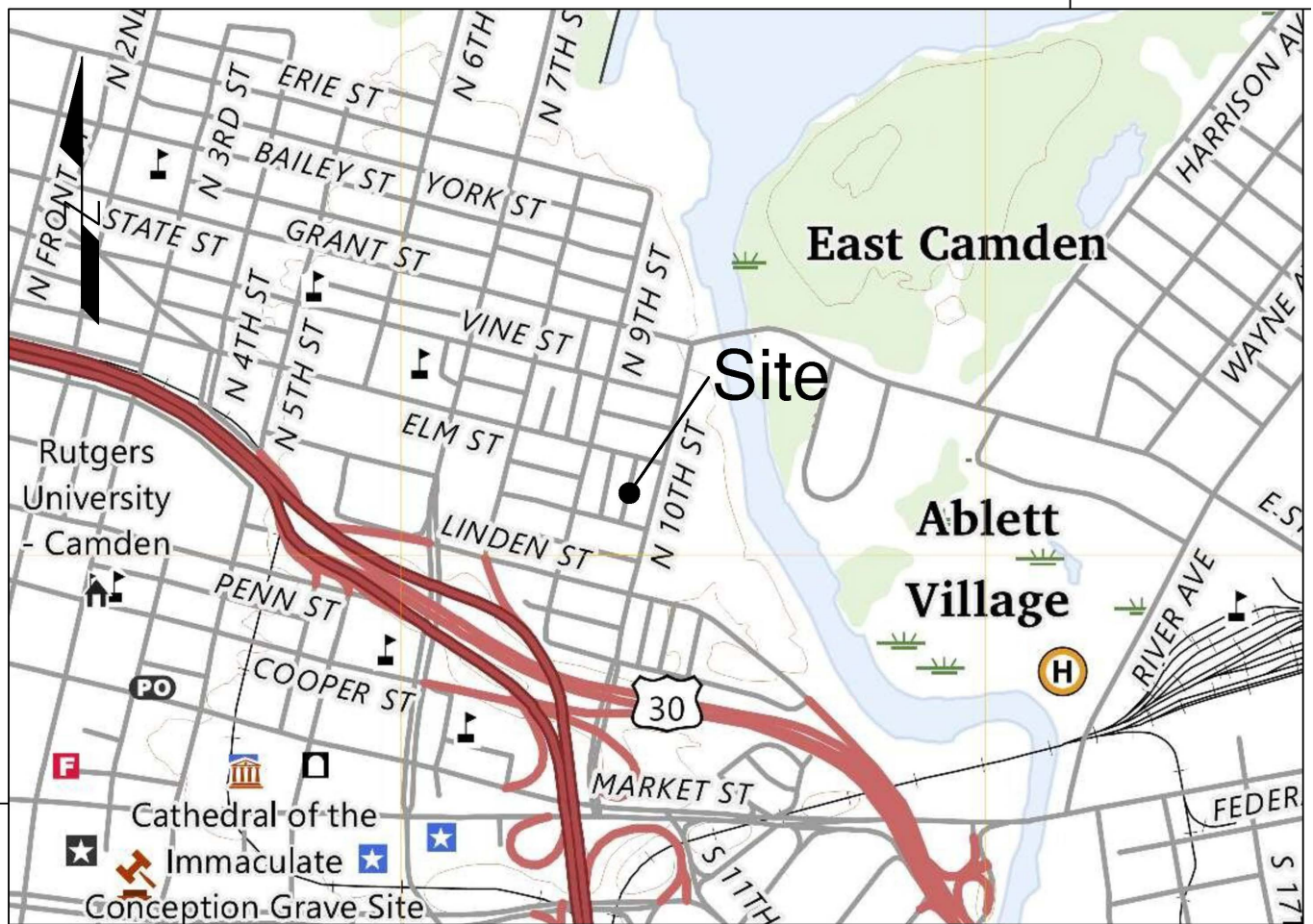
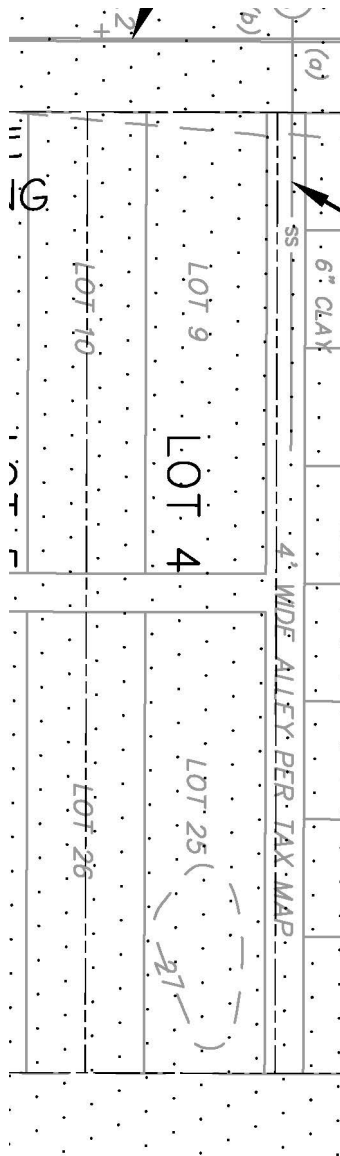


Figure 1 - Location Map
(Source: USGS Quad)



Figure 2 - NRCS Soils Map



Lot Area = 1,969 SF

Existing Ground Cover - "Open Space, Good Condition (Grass Cover >75%)"

Figure 3 - Pre-Development Condition Drainage Area Map (Typical Lot)

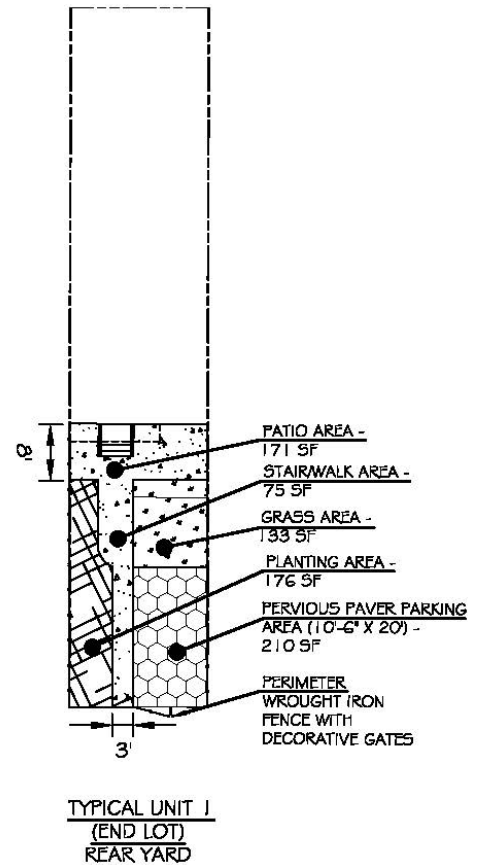
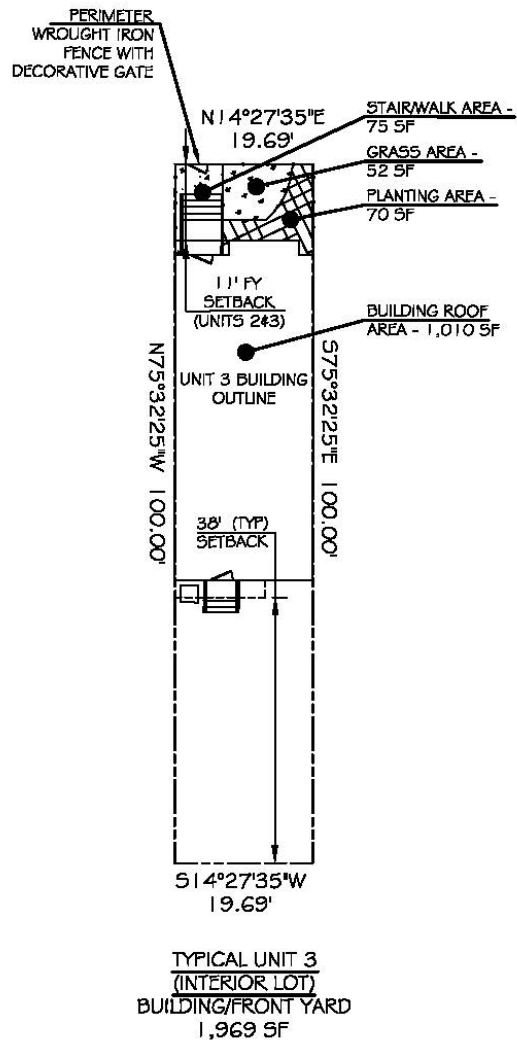


Figure 4 - Post-Development Condition Drainage Area Map (Typical Lot)

APPENDIX A

NRCS Soils Report



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Camden County, New Jersey**

Casas Del Rio, Blocks 804 & 805



June 24, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report


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 1:12,000.

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: Camden County, New Jersey
Survey Area Data: Version 17, Aug 28, 2023

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

Date(s) aerial images were photographed: Jun 5, 2022—Jul 4, 2022

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
UR	Urban land	1.5	100.0%
Totals for Area of Interest		1.5	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Custom Soil Resource Report

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Camden County, New Jersey

UR—Urban land

Map Unit Setting

National map unit symbol: rvrf
Elevation: 0 to 170 feet
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

Minor Components

Udorthents

Percent of map unit: 5 percent
Landform: Low hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelpdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

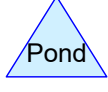
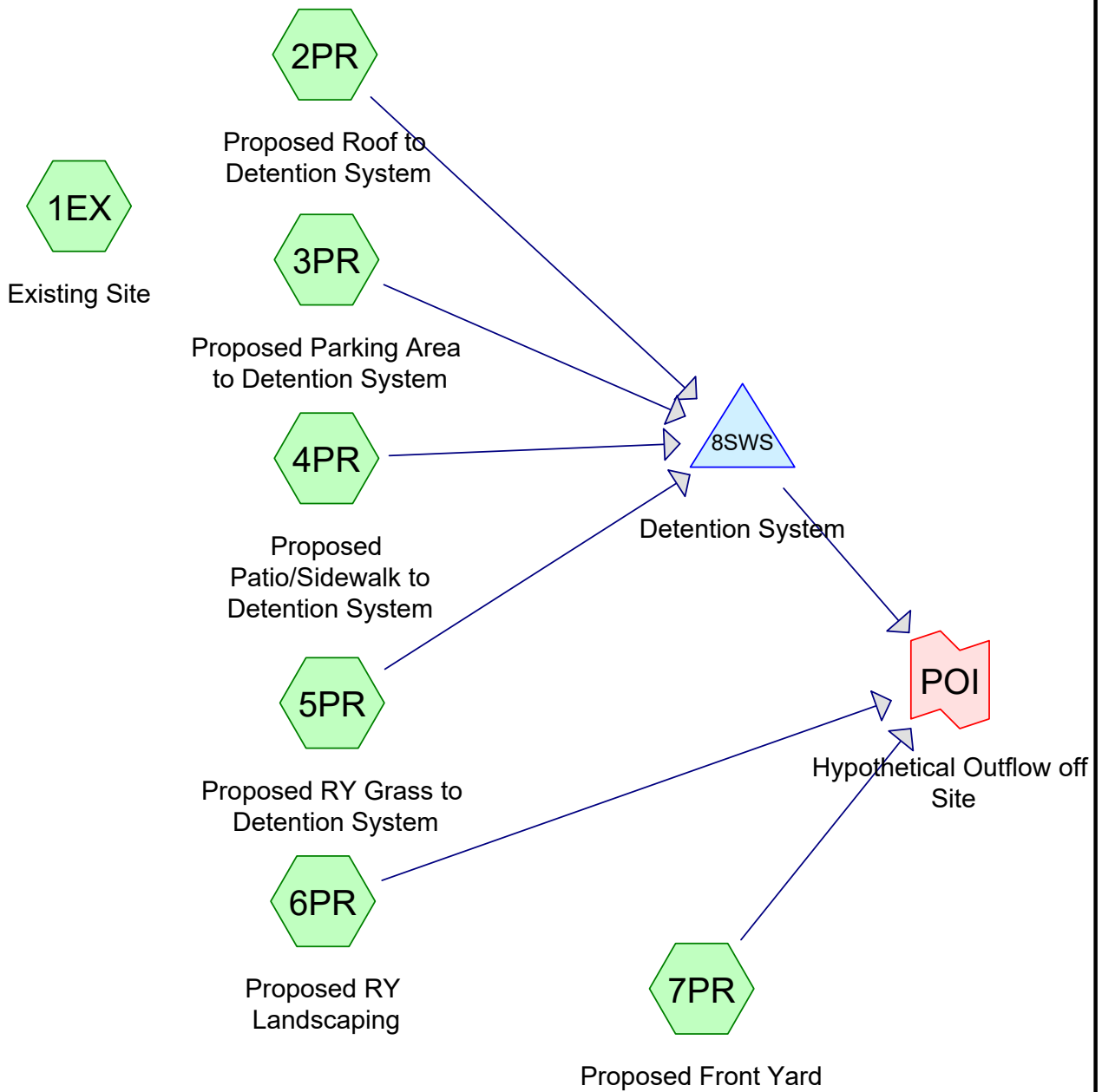
United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

APPENDIX B

Pre- and Post-Development Hydrograph Analysis

Current Rainfall



Casas Del Rio - 13.5x30 + 2-30 in pipes 3.75 ft deep-CURRENT

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.007	74	>75% Grass cover, Good, HSG C (Replaced Soil) (5PR, 6PR)
0.003	80	>75% Grass cover, Good, HSG C (Replaced Soil) (7PR)
0.045	80	>75% Grass cover, Good, HSG D (1EX)
0.002	98	Concrete Sidewalk (7PR)
0.006	98	Impervious Concrete (4PR)
0.023	98	Impervious Roof (2PR)
0.005	98	Pervious Pavers (3PR)
0.091	87	TOTAL AREA

Casas Del Rio - 13.5x30 + 2-30 in pipes 3.75 ft Type II 24-hr 2-yr (Camd Cur) Rainfall=3.41"

Prepared by Jenne Associates, LLC

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Time span=1.00-24.00 hrs, dt=0.03 hrs, 768 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment1EX: Existing Site Runoff Area=1,972 sf 0.00% Impervious Runoff Depth>1.56"
Tc=10.0 min CN=80 Runoff=0.11 cfs 0.006 af

Subcatchment2PR: Proposed Roof to Runoff Area=1,010 sf 100.00% Impervious Runoff Depth>3.17"
Tc=10.0 min CN=98 Runoff=0.10 cfs 0.006 af

Subcatchment3PR: Proposed Parking Area Runoff Area=210 sf 100.00% Impervious Runoff Depth>3.17"
Tc=10.0 min CN=98 Runoff=0.02 cfs 0.001 af

Subcatchment4PR: Proposed Runoff Area=246 sf 100.00% Impervious Runoff Depth>3.17"
Tc=10.0 min CN=98 Runoff=0.02 cfs 0.001 af

Subcatchment5PR: Proposed RY Grass to Runoff Area=133 sf 0.00% Impervious Runoff Depth>1.17"
Tc=10.0 min CN=74 Runoff=0.01 cfs 0.000 af

Subcatchment6PR: Proposed RY Landscaping Runoff Area=176 sf 0.00% Impervious Runoff Depth>1.17"
Tc=10.0 min CN=74 Runoff=0.01 cfs 0.000 af

Subcatchment7PR: Proposed Front Yard Runoff Area=197 sf 38.07% Impervious Runoff Depth>2.10"
Tc=10.0 min CN=87 Runoff=0.01 cfs 0.001 af

Pond 8SWS: Detention System Peak Elev=21.98' Storage=400 cf Inflow=0.15 cfs 0.009 af
Outflow=0.00 cfs 0.000 af

Link POI: Hypothetical Outflow off Site Inflow=0.02 cfs 0.001 af
Primary=0.02 cfs 0.001 af

Total Runoff Area = 0.091 ac Runoff Volume = 0.016 af Average Runoff Depth = 2.16"
60.93% Pervious = 0.055 ac 39.07% Impervious = 0.035 ac

Summary for Subcatchment 1EX: Existing Site

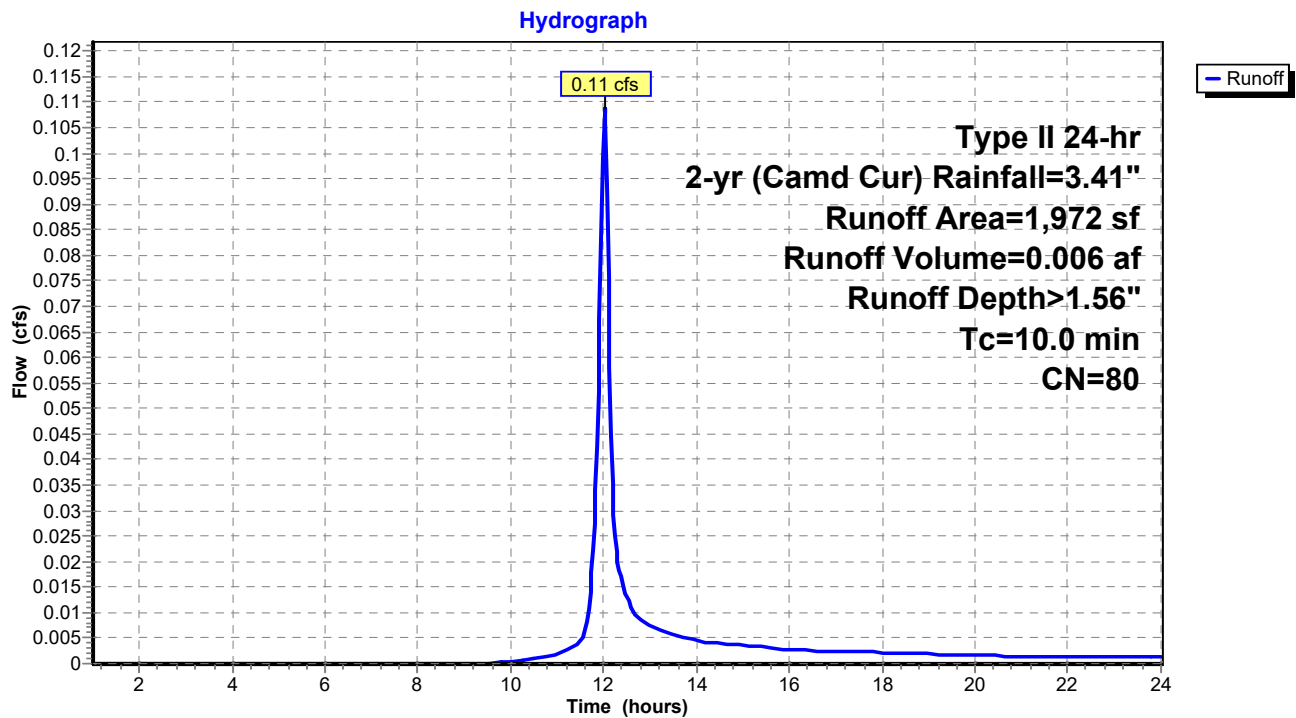
Runoff = 0.11 cfs @ 12.02 hrs, Volume= 0.006 af, Depth> 1.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type II 24-hr 2-yr (Camd Cur) Rainfall=3.41"

Area (sf)	CN	Description
* 1,972	80	>75% Grass cover, Good, HSG D
1,972		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 1EX: Existing Site



Summary for Subcatchment 2PR: Proposed Roof to Detention System

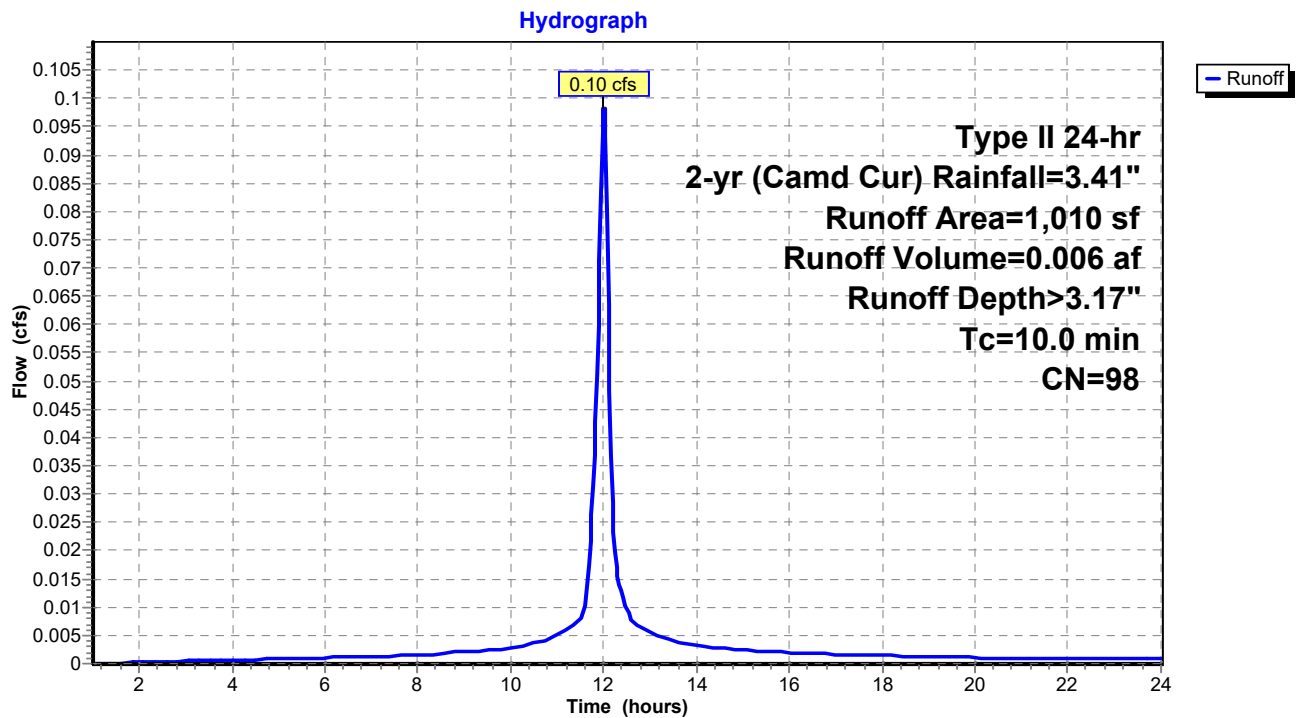
Runoff = 0.10 cfs @ 12.01 hrs, Volume= 0.006 af, Depth> 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type II 24-hr 2-yr (Camd Cur) Rainfall=3.41"

Area (sf)	CN	Description
* 1,010	98	Impervious Roof
1,010		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 2PR: Proposed Roof to Detention System



Summary for Subcatchment 3PR: Proposed Parking Area to Detention System

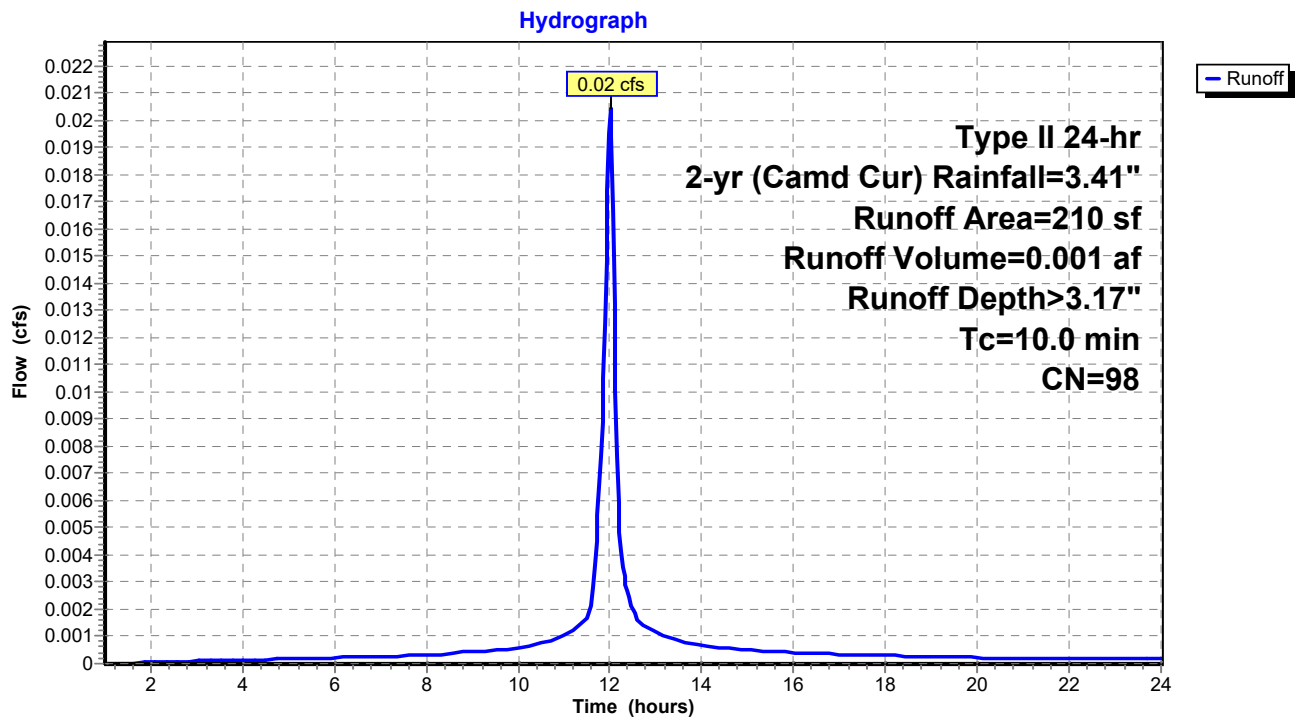
Runoff = 0.02 cfs @ 12.01 hrs, Volume= 0.001 af, Depth> 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type II 24-hr 2-yr (Camd Cur) Rainfall=3.41"

Area (sf)	CN	Description
* 210	98	Pervious Pavers
210		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 3PR: Proposed Parking Area to Detention System



Summary for Subcatchment 4PR: Proposed Patio/Sidewalk to Detention System

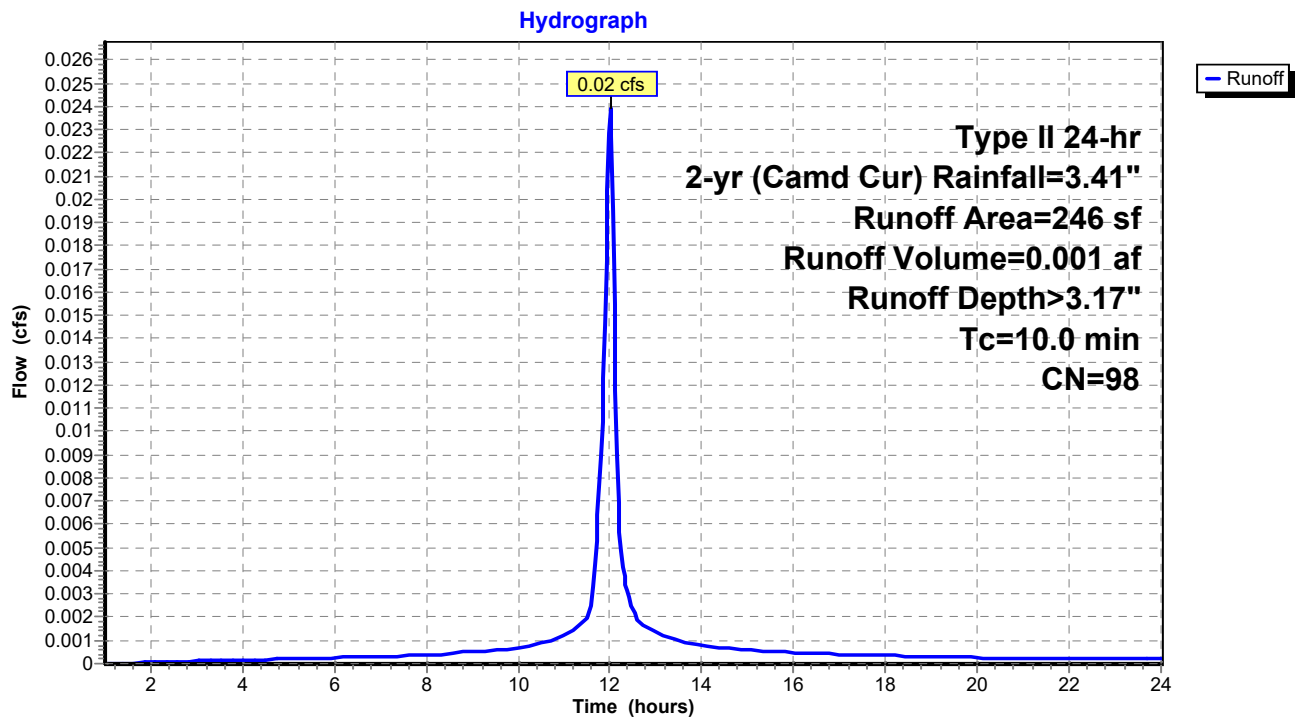
Runoff = 0.02 cfs @ 12.01 hrs, Volume= 0.001 af, Depth> 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type II 24-hr 2-yr (Camd Cur) Rainfall=3.41"

Area (sf)	CN	Description
* 246	98	Impervious Concrete
246		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 4PR: Proposed Patio/Sidewalk to Detention System



Summary for Subcatchment 5PR: Proposed RY Grass to Detention System

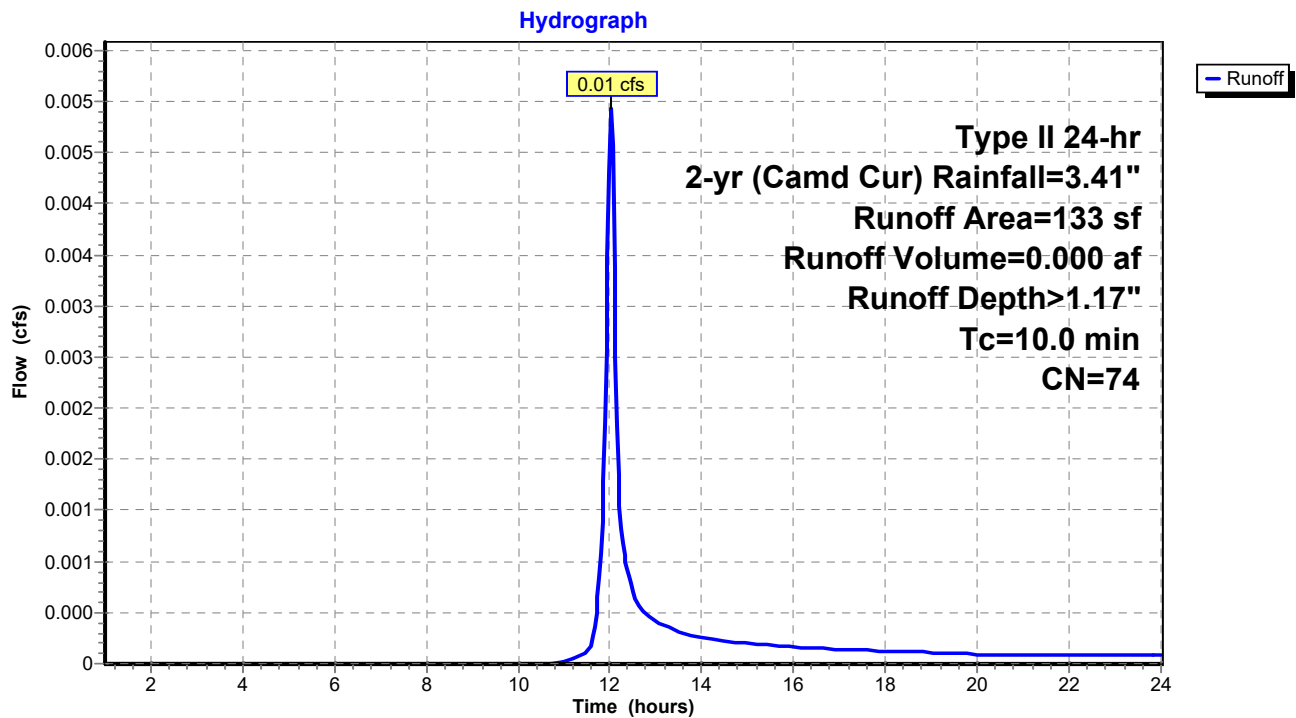
Runoff = 0.01 cfs @ 12.02 hrs, Volume= 0.000 af, Depth> 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type II 24-hr 2-yr (Camd Cur) Rainfall=3.41"

Area (sf)	CN	Description
* 133	74	>75% Grass cover, Good, HSG C (Replaced Soil)
133		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 5PR: Proposed RY Grass to Detention System



Summary for Subcatchment 6PR: Proposed RY Landscaping

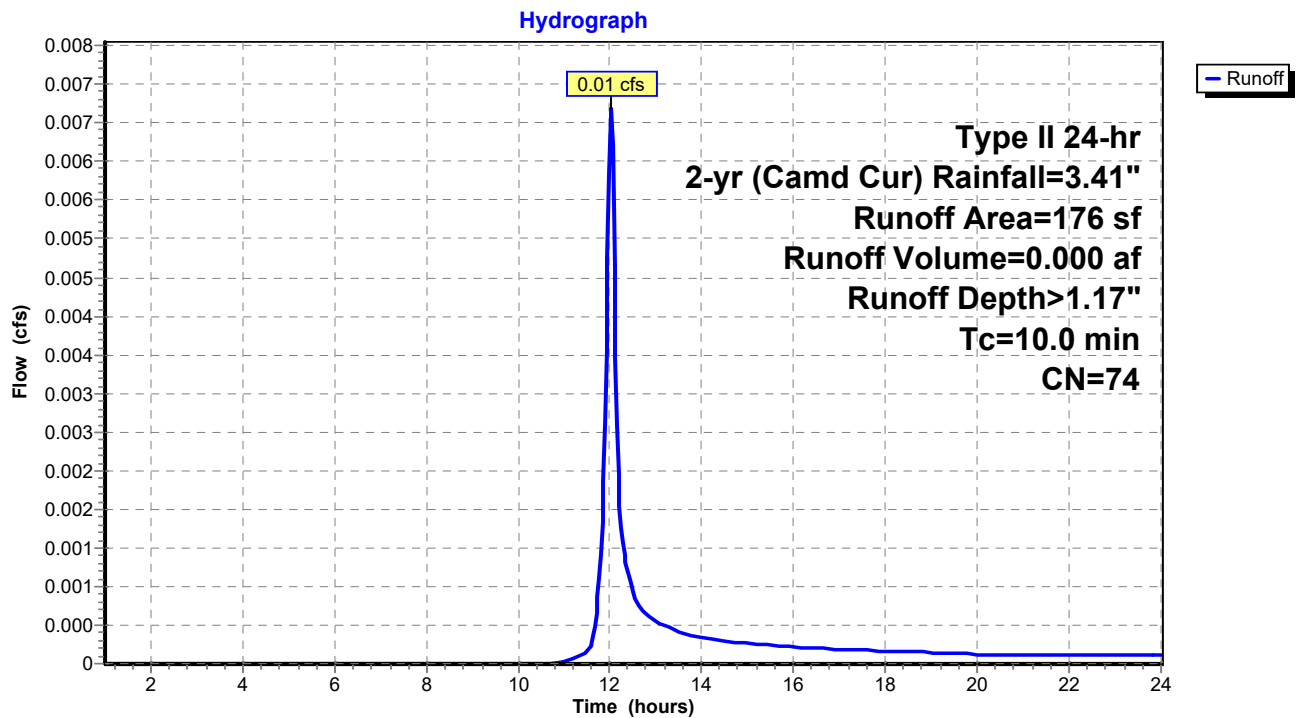
Runoff = 0.01 cfs @ 12.02 hrs, Volume= 0.000 af, Depth> 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type II 24-hr 2-yr (Camd Cur) Rainfall=3.41"

Area (sf)	CN	Description
* 176	74	>75% Grass cover, Good, HSG C (Replaced Soil)
176		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 6PR: Proposed RY Landscaping



Summary for Subcatchment 7PR: Proposed Front Yard

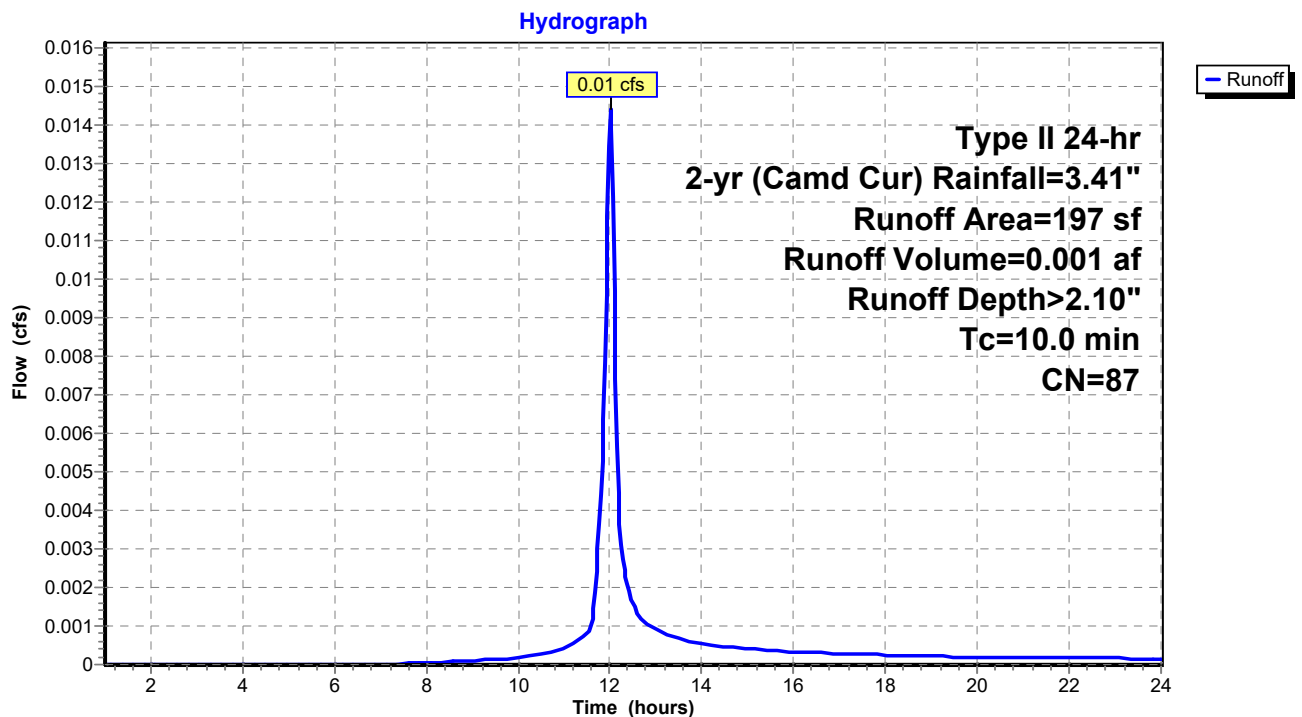
Runoff = 0.01 cfs @ 12.01 hrs, Volume= 0.001 af, Depth> 2.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type II 24-hr 2-yr (Camd Cur) Rainfall=3.41"

Area (sf)	CN	Description
* 75	98	Concrete Sidewalk
* 122	80	>75% Grass cover, Good, HSG C (Replaced Soil)
197	87	Weighted Average
122		61.93% Pervious Area
75		38.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 7PR: Proposed Front Yard



Summary for Pond 8SWS: Detention System

[92] Warning: Device #1 is above defined storage

Inflow Area = 0.037 ac, 91.68% Impervious, Inflow Depth > 3.01" for 2-yr (Camd Cur) event
Inflow = 0.15 cfs @ 12.01 hrs, Volume= 0.009 af
Outflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs / 8

Peak Elev= 21.98' @ 24.01 hrs Surf.Area= 315 sf Storage= 400 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

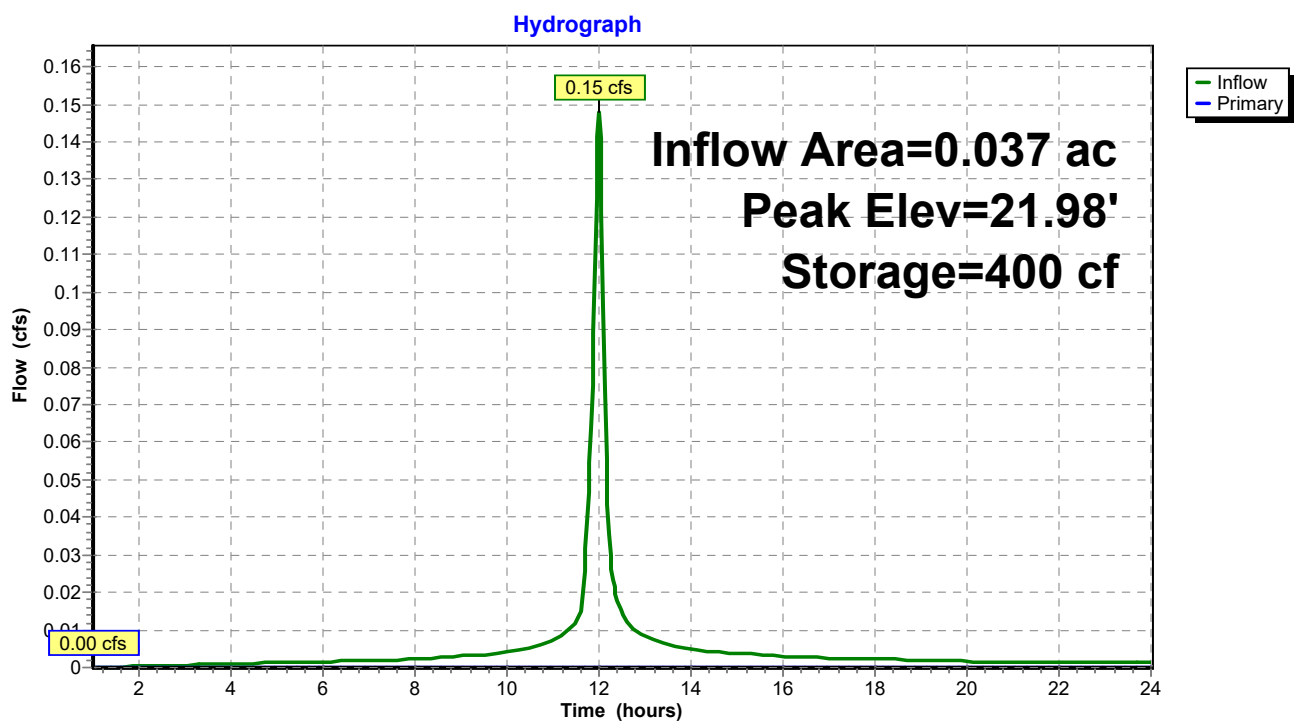
Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	355 cf	10.50'W x 30.00'L x 3.75'H 10.5' x 30' Stone 3.75' Deep 1,181 cf Overall - 295 cf Embedded = 887 cf x 40.0% Voids
#2	20.00'	295 cf	30.0" Round 2 @ 30' Perf 30" HDPE x 2 Inside #1 L= 30.0'
		649 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	23.75'	6.0" Vert. 6" Overflow Pipe C= 0.600

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=20.00' (Free Discharge)

↑**1=6" Overflow Pipe** (Controls 0.00 cfs)

Pond 8SWS: Detention System

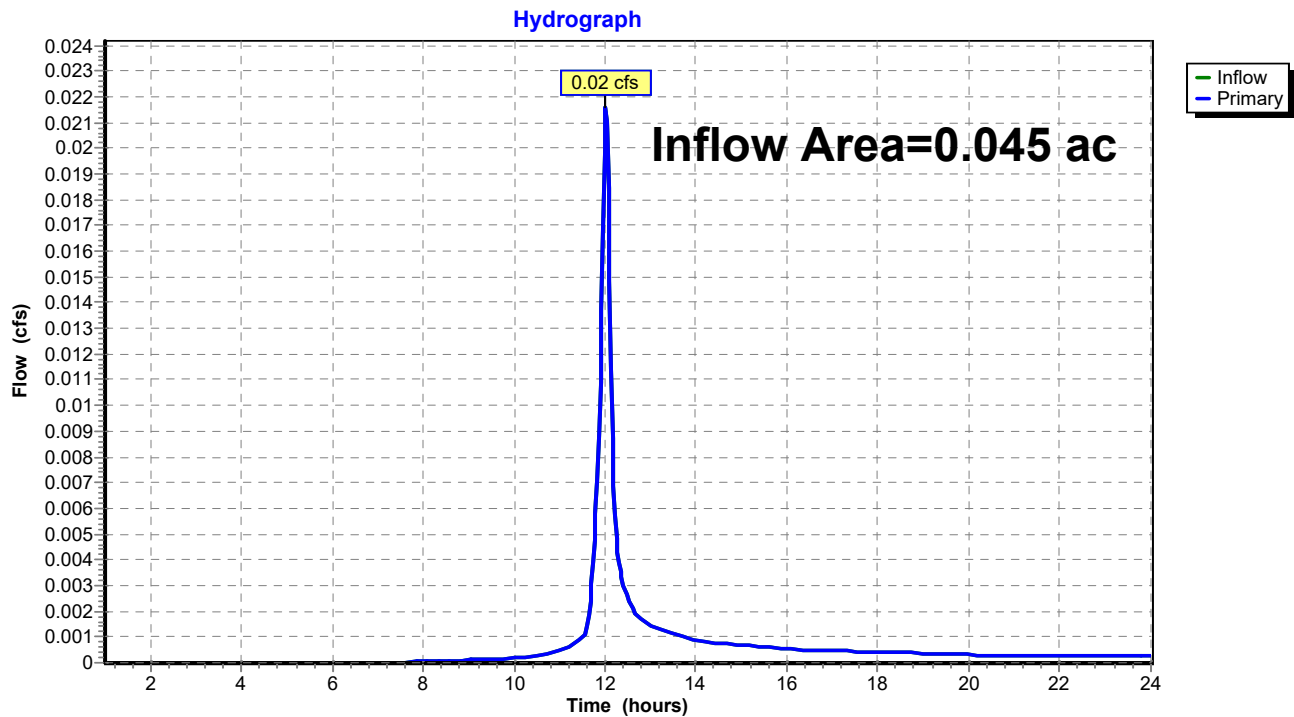


Summary for Link POI: Hypothetical Outflow off Site

Inflow Area = 0.045 ac, 78.14% Impervious, Inflow Depth > 0.31" for 2-yr (Camd Cur) event
Inflow = 0.02 cfs @ 12.02 hrs, Volume= 0.001 af
Primary = 0.02 cfs @ 12.02 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs

Link POI: Hypothetical Outflow off Site



Casas Del Rio - 13.5x30 + 2-30 in pipes 3.75 Type III 24-hr 10-yr (Camd Cur) Rainfall=5.26"

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Time span=1.00-24.00 hrs, dt=0.03 hrs, 768 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment1EX: Existing Site	Runoff Area=1,972 sf 0.00% Impervious Runoff Depth>3.12" Tc=10.0 min CN=80 Runoff=0.14 cfs 0.012 af
Subcatchment2PR: Proposed Roof to	Runoff Area=1,010 sf 100.00% Impervious Runoff Depth>5.02" Tc=10.0 min CN=98 Runoff=0.10 cfs 0.010 af
Subcatchment3PR: Proposed Parking Area	Runoff Area=210 sf 100.00% Impervious Runoff Depth>5.02" Tc=10.0 min CN=98 Runoff=0.02 cfs 0.002 af
Subcatchment4PR: Proposed	Runoff Area=246 sf 100.00% Impervious Runoff Depth>5.02" Tc=10.0 min CN=98 Runoff=0.03 cfs 0.002 af
Subcatchment5PR: Proposed RY Grass to	Runoff Area=133 sf 0.00% Impervious Runoff Depth>2.57" Tc=10.0 min CN=74 Runoff=0.01 cfs 0.001 af
Subcatchment6PR: Proposed RY Landscaping	Runoff Area=176 sf 0.00% Impervious Runoff Depth>2.57" Tc=10.0 min CN=74 Runoff=0.01 cfs 0.001 af
Subcatchment7PR: Proposed Front Yard	Runoff Area=197 sf 38.07% Impervious Runoff Depth>3.81" Tc=10.0 min CN=87 Runoff=0.02 cfs 0.001 af
Pond 8SWS: Detention System	Peak Elev=23.69' Storage=641 cf Inflow=0.16 cfs 0.015 af Outflow=0.00 cfs 0.000 af
Link POI: Hypothetical Outflow off Site	Inflow=0.03 cfs 0.002 af Primary=0.03 cfs 0.002 af

Total Runoff Area = 0.091 ac Runoff Volume = 0.029 af Average Runoff Depth = 3.81"
60.93% Pervious = 0.055 ac 39.07% Impervious = 0.035 ac

Summary for Subcatchment 1EX: Existing Site

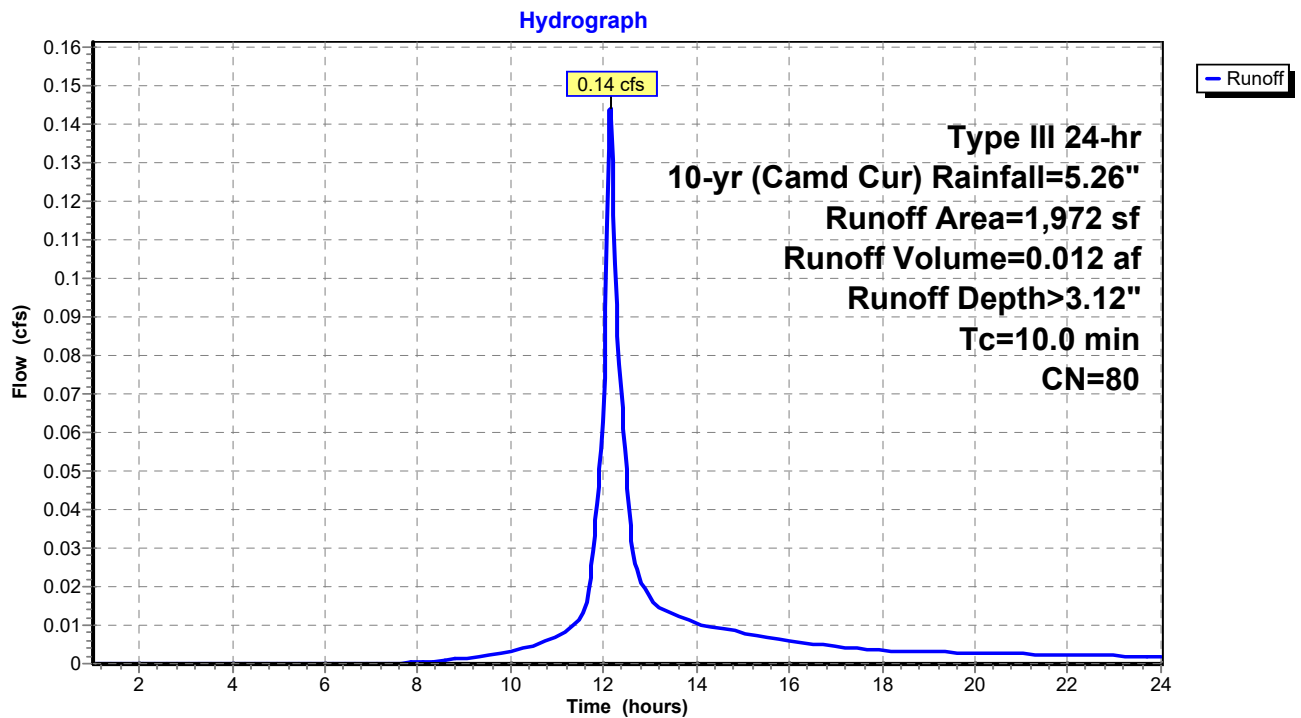
Runoff = 0.14 cfs @ 12.14 hrs, Volume= 0.012 af, Depth> 3.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-yr (Camd Cur) Rainfall=5.26"

Area (sf)	CN	Description
* 1,972	80	>75% Grass cover, Good, HSG D
1,972		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 1EX: Existing Site



Summary for Subcatchment 2PR: Proposed Roof to Detention System

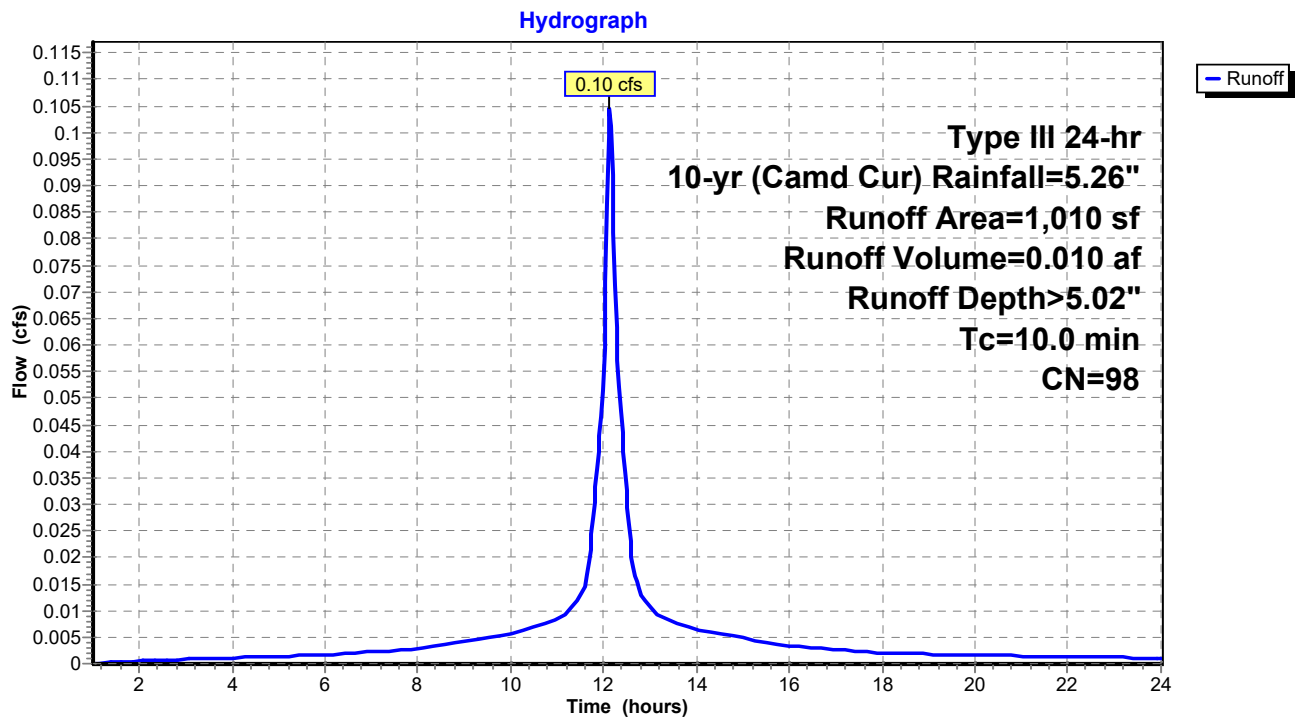
Runoff = 0.10 cfs @ 12.13 hrs, Volume= 0.010 af, Depth> 5.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-yr (Camd Cur) Rainfall=5.26"

Area (sf)	CN	Description
* 1,010	98	Impervious Roof
1,010		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 2PR: Proposed Roof to Detention System



Summary for Subcatchment 3PR: Proposed Parking Area to Detention System

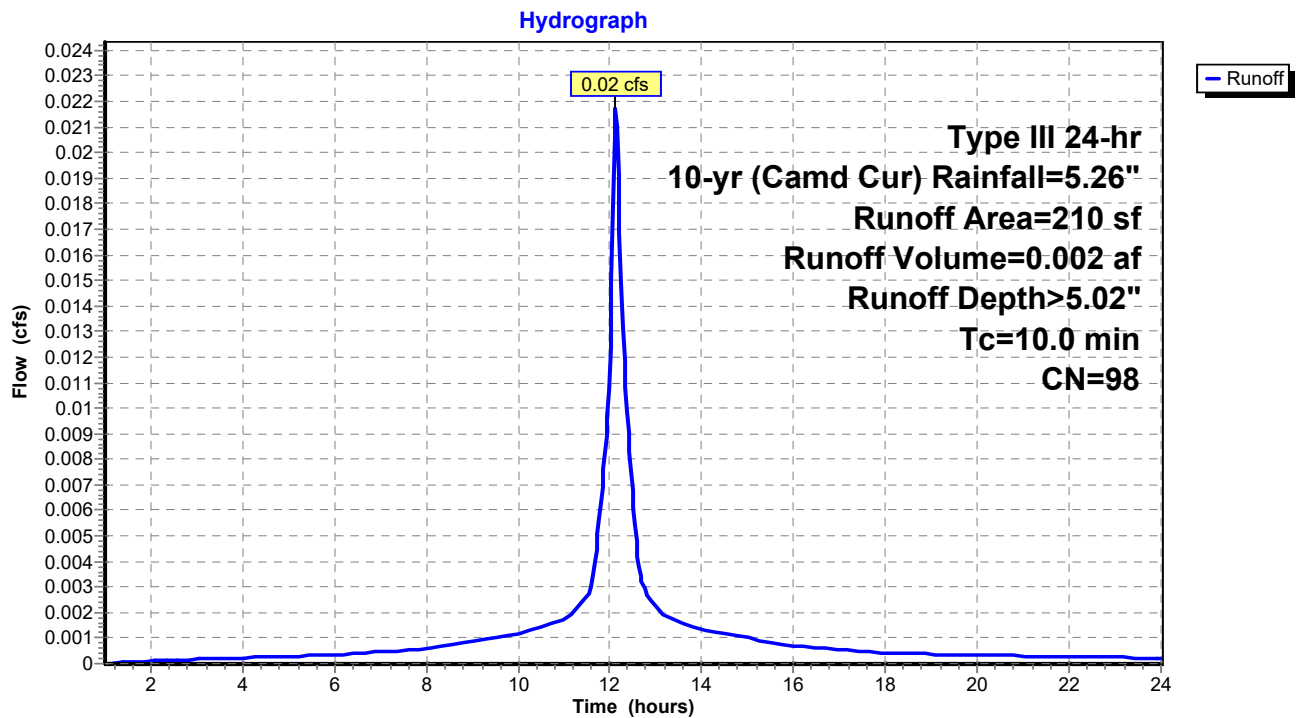
Runoff = 0.02 cfs @ 12.13 hrs, Volume= 0.002 af, Depth> 5.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-yr (Camd Cur) Rainfall=5.26"

Area (sf)	CN	Description
* 210	98	Pervious Pavers
210		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 3PR: Proposed Parking Area to Detention System



Summary for Subcatchment 4PR: Proposed Patio/Sidewalk to Detention System

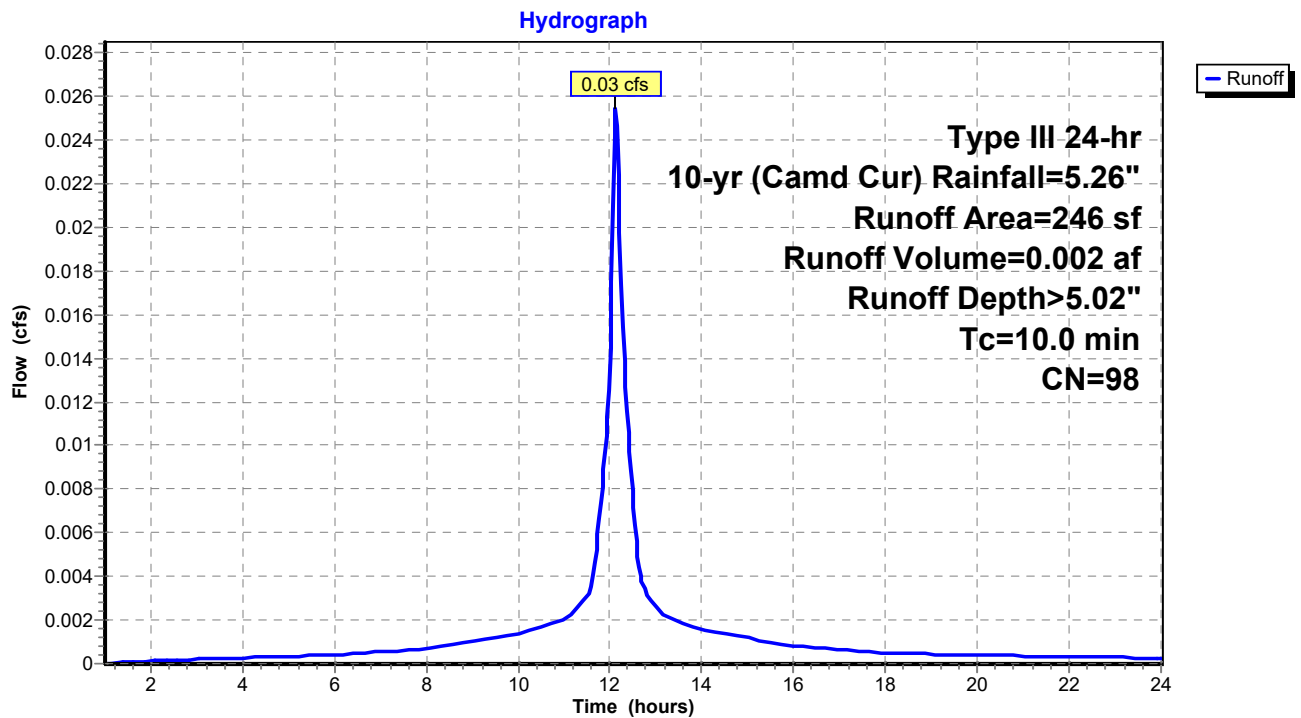
Runoff = 0.03 cfs @ 12.13 hrs, Volume= 0.002 af, Depth> 5.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-yr (Camd Cur) Rainfall=5.26"

Area (sf)	CN	Description
* 246	98	Impervious Concrete
246		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 4PR: Proposed Patio/Sidewalk to Detention System



Summary for Subcatchment 5PR: Proposed RY Grass to Detention System

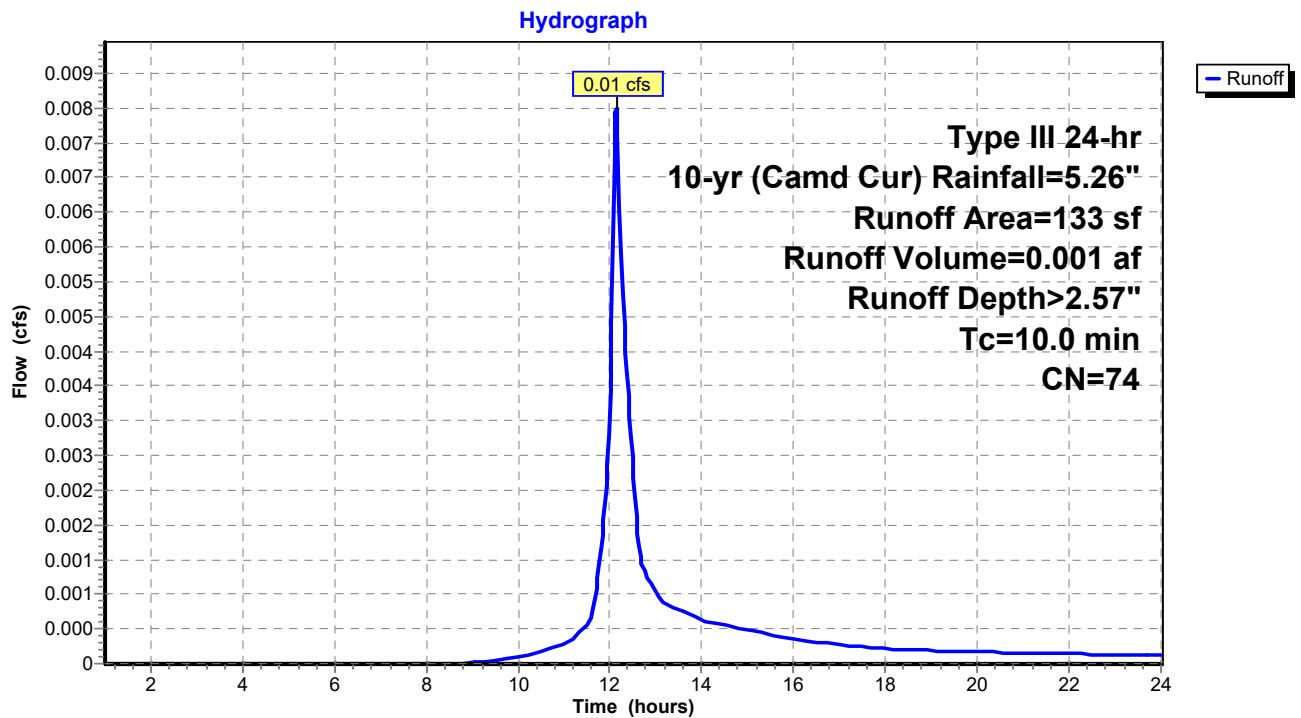
Runoff = 0.01 cfs @ 12.14 hrs, Volume= 0.001 af, Depth> 2.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-yr (Camd Cur) Rainfall=5.26"

Area (sf)	CN	Description
* 133	74	>75% Grass cover, Good, HSG C (Replaced Soil)
133		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 5PR: Proposed RY Grass to Detention System



Summary for Subcatchment 6PR: Proposed RY Landscaping

Runoff = 0.01 cfs @ 12.14 hrs, Volume= 0.001 af, Depth> 2.57"

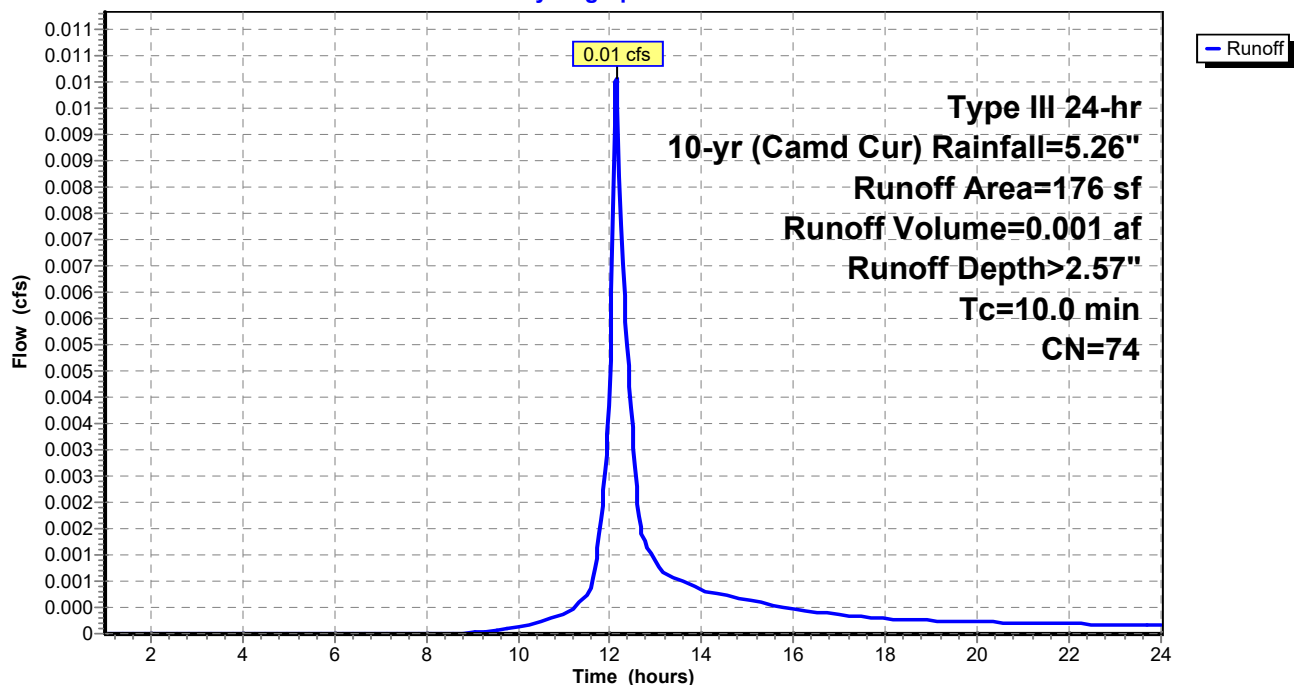
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-yr (Camd Cur) Rainfall=5.26"

Area (sf)	CN	Description
* 176	74	>75% Grass cover, Good, HSG C (Replaced Soil)
176		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 6PR: Proposed RY Landscaping

Hydrograph



Summary for Subcatchment 7PR: Proposed Front Yard

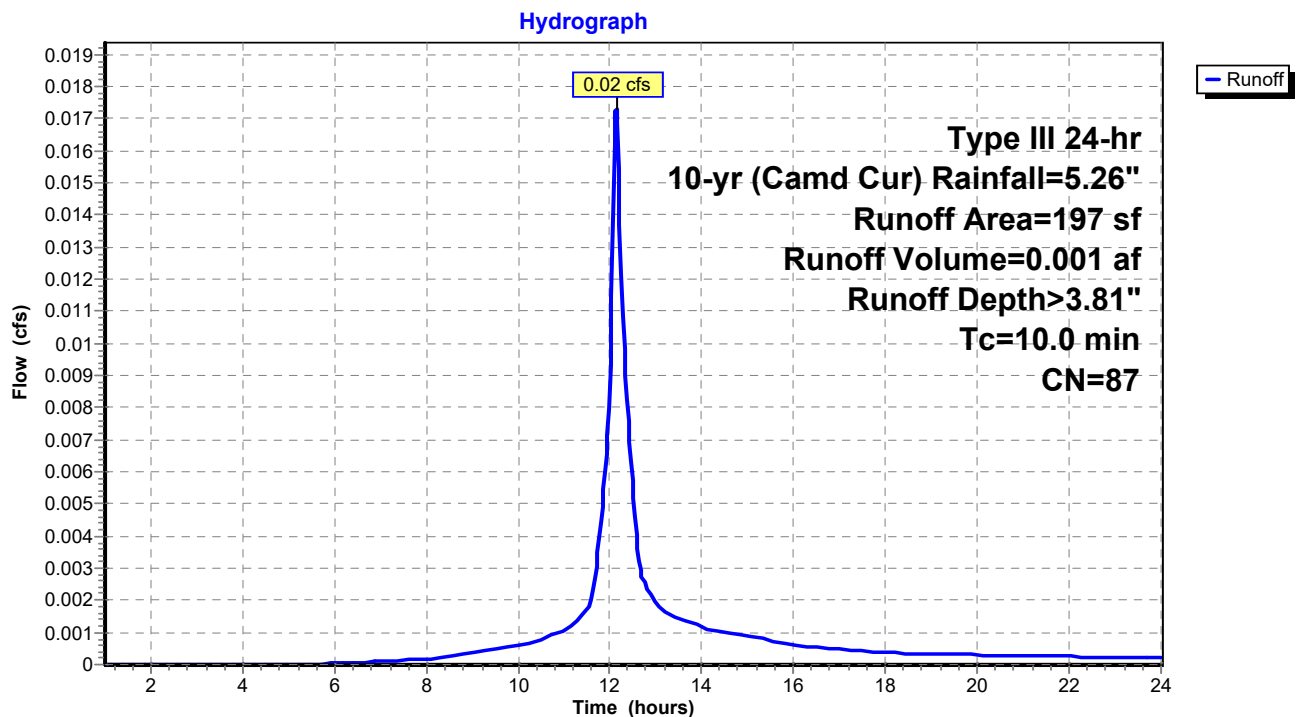
Runoff = 0.02 cfs @ 12.14 hrs, Volume= 0.001 af, Depth> 3.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-yr (Camd Cur) Rainfall=5.26"

	Area (sf)	CN	Description
*	75	98	Concrete Sidewalk
*	122	80	>75% Grass cover, Good, HSG C (Replaced Soil)
	197	87	Weighted Average
	122		61.93% Pervious Area
	75		38.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 7PR: Proposed Front Yard



Summary for Pond 8SWS: Detention System

[92] Warning: Device #1 is above defined storage

Inflow Area = 0.037 ac, 91.68% Impervious, Inflow Depth > 4.81" for 10-yr (Camd Cur) event
 Inflow = 0.16 cfs @ 12.13 hrs, Volume= 0.015 af
 Outflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs / 8
 Peak Elev= 23.69' @ 24.01 hrs Surf.Area= 315 sf Storage= 641 cf

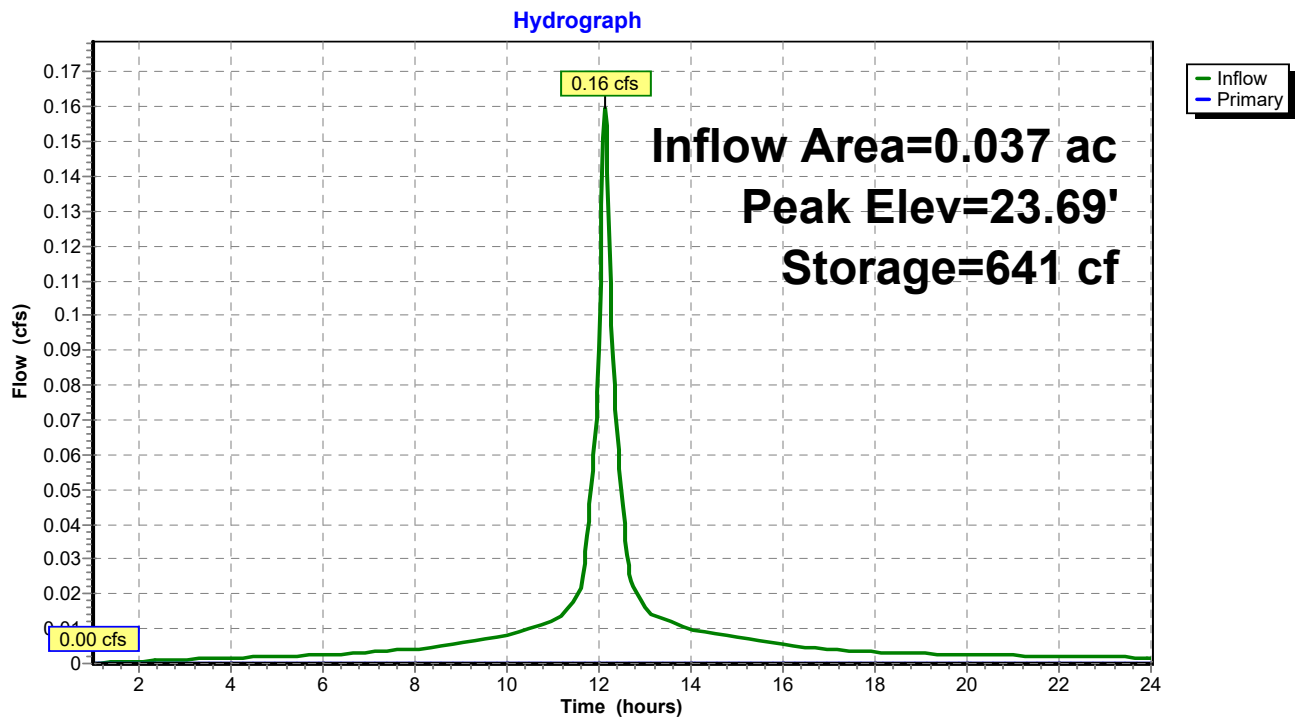
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	355 cf	10.50'W x 30.00'L x 3.75'H 10.5' x 30' Stone 3.75' Deep 1,181 cf Overall - 295 cf Embedded = 887 cf x 40.0% Voids
#2	20.00'	295 cf	30.0" Round 2 @ 30' Perf 30" HDPE x 2 Inside #1 L= 30.0'
		649 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	23.75'	6.0" Vert. 6" Overflow Pipe C= 0.600

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=20.00' (Free Discharge)
 ↑**1=6" Overflow Pipe** (Controls 0.00 cfs)

Pond 8SWS: Detention System

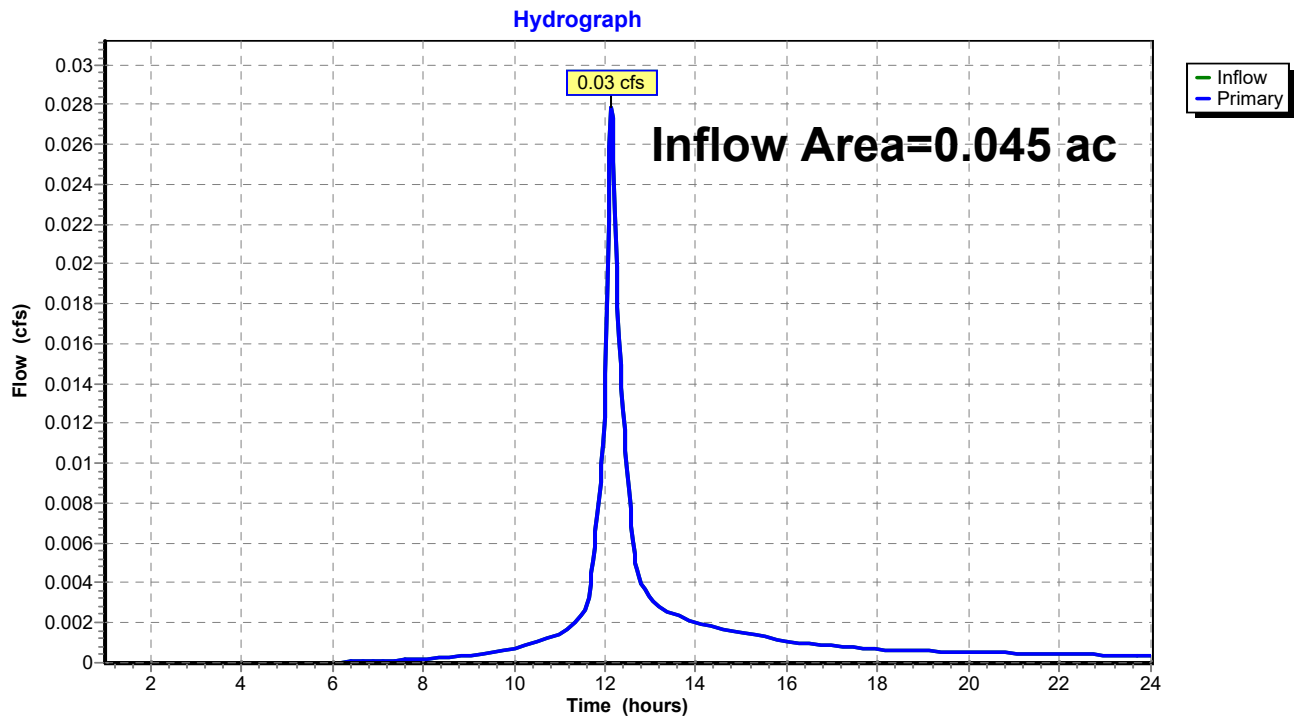


Summary for Link POI: Hypothetical Outflow off Site

Inflow Area = 0.045 ac, 78.14% Impervious, Inflow Depth > 0.61" for 10-yr (Camd Cur) event
Inflow = 0.03 cfs @ 12.14 hrs, Volume= 0.002 af
Primary = 0.03 cfs @ 12.14 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs

Link POI: Hypothetical Outflow off Site



Casas Del Rio - 13.5x30 + 2-30 in pipes 3. Type III 24-hr 100-yr (Camd Cur)) Rainfall=11.33"

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Time span=1.00-24.00 hrs, dt=0.03 hrs, 768 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment1EX: Existing Site	Runoff Area=1,972 sf 0.00% Impervious Runoff Depth>8.79" Tc=10.0 min CN=80 Runoff=0.39 cfs 0.033 af
Subcatchment2PR: Proposed Roof to	Runoff Area=1,010 sf 100.00% Impervious Runoff Depth>11.06" Tc=10.0 min CN=98 Runoff=0.23 cfs 0.021 af
Subcatchment3PR: Proposed Parking	Runoff Area=210 sf 100.00% Impervious Runoff Depth>11.06" Tc=10.0 min CN=98 Runoff=0.05 cfs 0.004 af
Subcatchment4PR: Proposed	Runoff Area=246 sf 100.00% Impervious Runoff Depth>11.06" Tc=10.0 min CN=98 Runoff=0.06 cfs 0.005 af
Subcatchment5PR: Proposed RY Grass to	Runoff Area=133 sf 0.00% Impervious Runoff Depth>7.97" Tc=10.0 min CN=74 Runoff=0.02 cfs 0.002 af
Subcatchment6PR: Proposed RY Landscaping	Runoff Area=176 sf 0.00% Impervious Runoff Depth>7.97" Tc=10.0 min CN=74 Runoff=0.03 cfs 0.003 af
Subcatchment7PR: Proposed Front Yard	Runoff Area=197 sf 38.07% Impervious Runoff Depth>9.70" Tc=10.0 min CN=87 Runoff=0.04 cfs 0.004 af
Pond 8SWS: Detention System	Peak Elev=24.02' Storage=649 cf Inflow=0.35 cfs 0.033 af Outflow=0.15 cfs 0.001 af
Link POI: Hypothetical Outflow off Site	Inflow=0.23 cfs 0.007 af Primary=0.23 cfs 0.007 af

Total Runoff Area = 0.091 ac Runoff Volume = 0.073 af Average Runoff Depth = 9.62"
60.93% Pervious = 0.055 ac 39.07% Impervious = 0.035 ac

Summary for Subcatchment 1EX: Existing Site

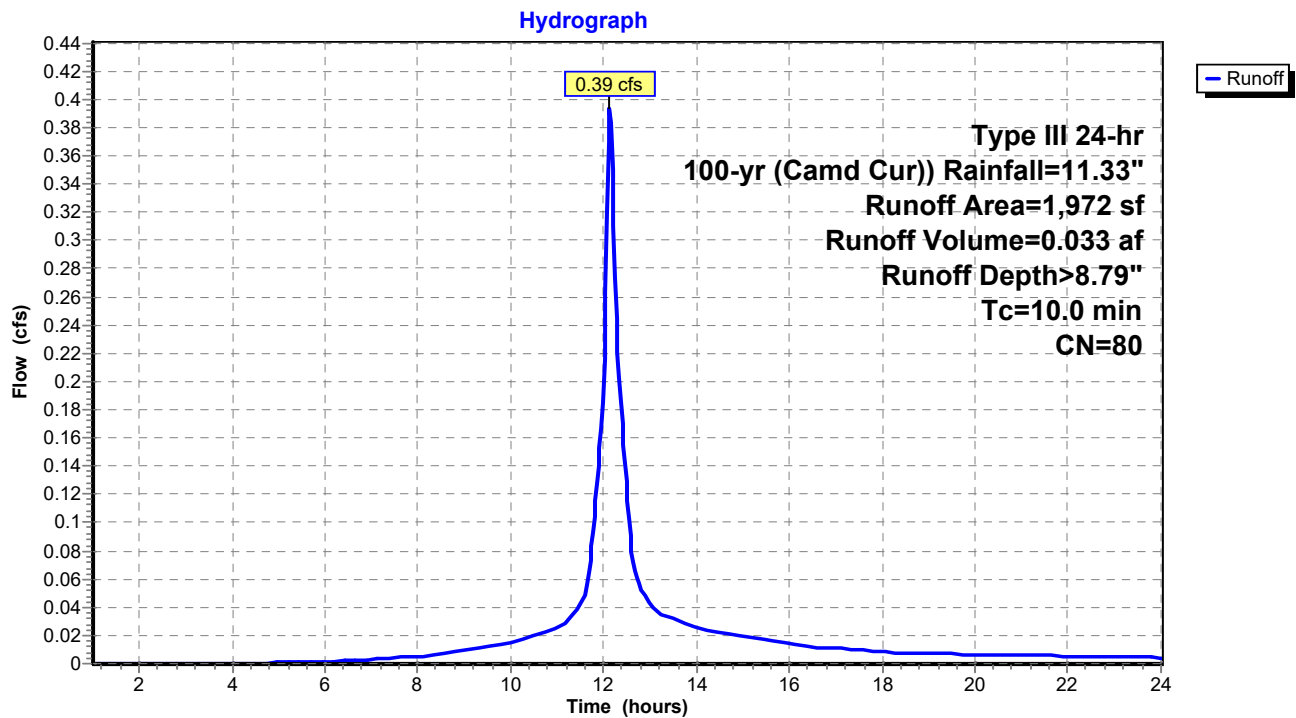
Runoff = 0.39 cfs @ 12.14 hrs, Volume= 0.033 af, Depth> 8.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-yr (Camd Cur)) Rainfall=11.33"

Area (sf)	CN	Description
* 1,972	80	>75% Grass cover, Good, HSG D
1,972		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 1EX: Existing Site



Summary for Subcatchment 2PR: Proposed Roof to Detention System

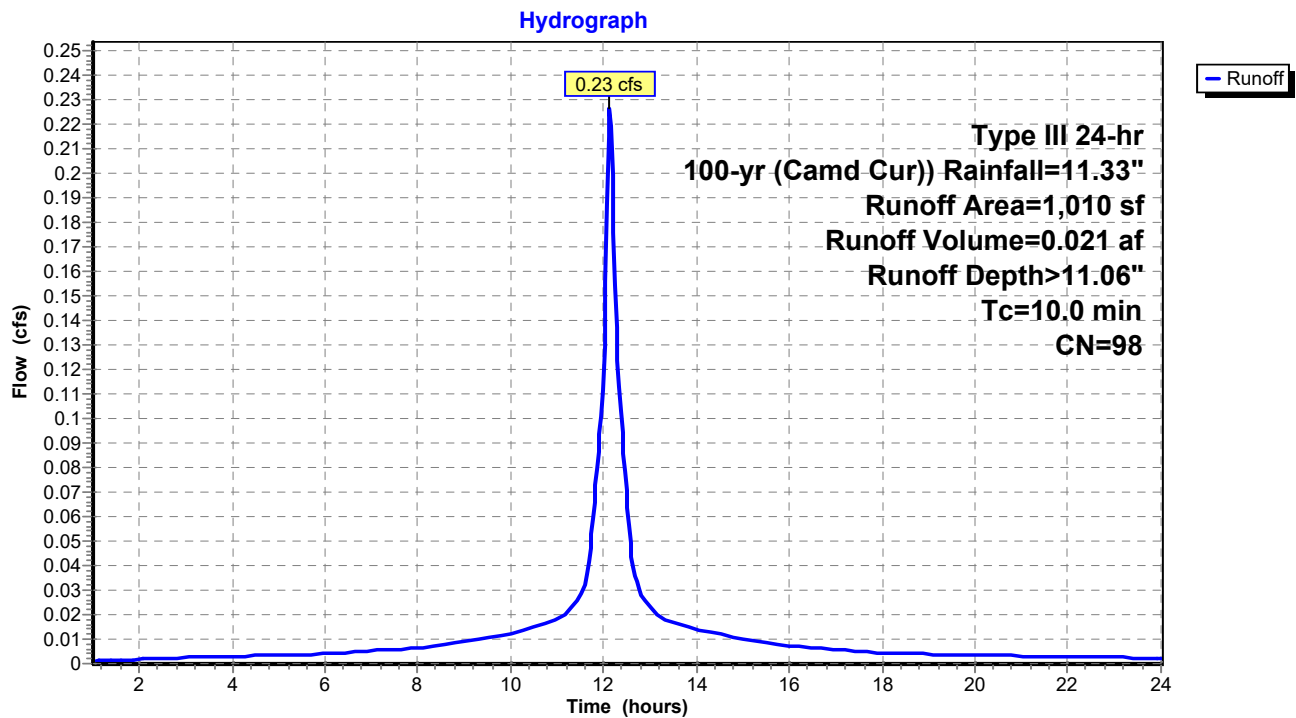
Runoff = 0.23 cfs @ 12.13 hrs, Volume= 0.021 af, Depth>11.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-yr (Camd Cur)) Rainfall=11.33"

Area (sf)	CN	Description
* 1,010	98	Impervious Roof
1,010		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 2PR: Proposed Roof to Detention System



Summary for Subcatchment 3PR: Proposed Parking Area to Detention System

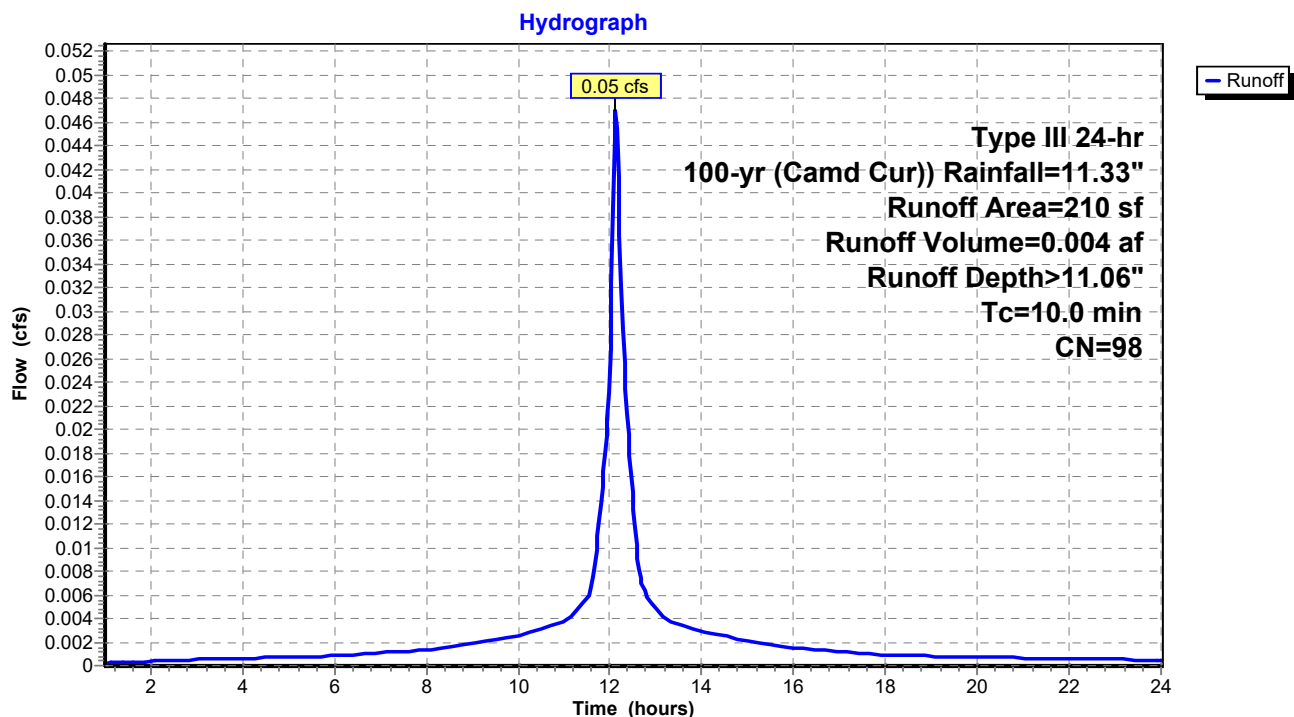
Runoff = 0.05 cfs @ 12.13 hrs, Volume= 0.004 af, Depth>11.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-yr (Camd Cur)) Rainfall=11.33"

Area (sf)	CN	Description
* 210	98	Pervious Pavers
210		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 3PR: Proposed Parking Area to Detention System



Summary for Subcatchment 4PR: Proposed Patio/Sidewalk to Detention System

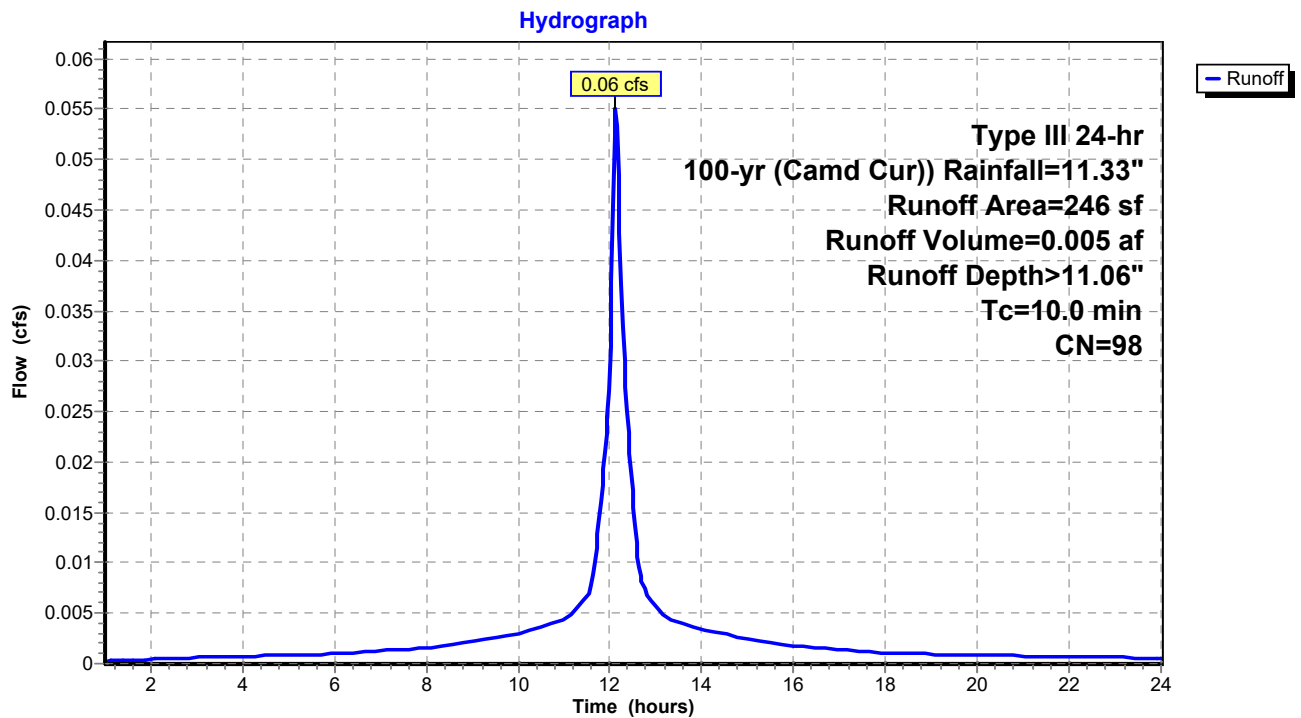
Runoff = 0.06 cfs @ 12.13 hrs, Volume= 0.005 af, Depth>11.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-yr (Camd Cur)) Rainfall=11.33"

Area (sf)	CN	Description
* 246	98	Impervious Concrete
246		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 4PR: Proposed Patio/Sidewalk to Detention System



Summary for Subcatchment 5PR: Proposed RY Grass to Detention System

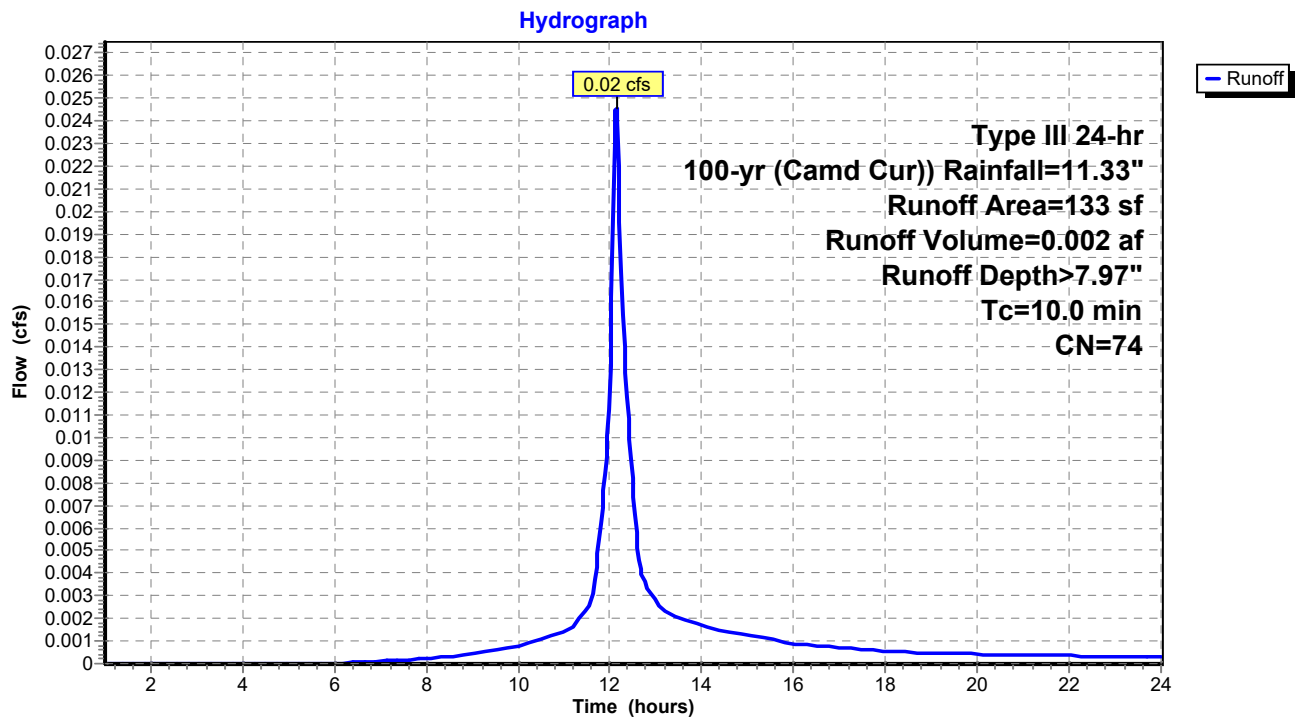
Runoff = 0.02 cfs @ 12.14 hrs, Volume= 0.002 af, Depth> 7.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-yr (Camd Cur)) Rainfall=11.33"

Area (sf)	CN	Description
* 133	74	>75% Grass cover, Good, HSG C (Replaced Soil)
133		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 5PR: Proposed RY Grass to Detention System



Summary for Subcatchment 6PR: Proposed RY Landscaping

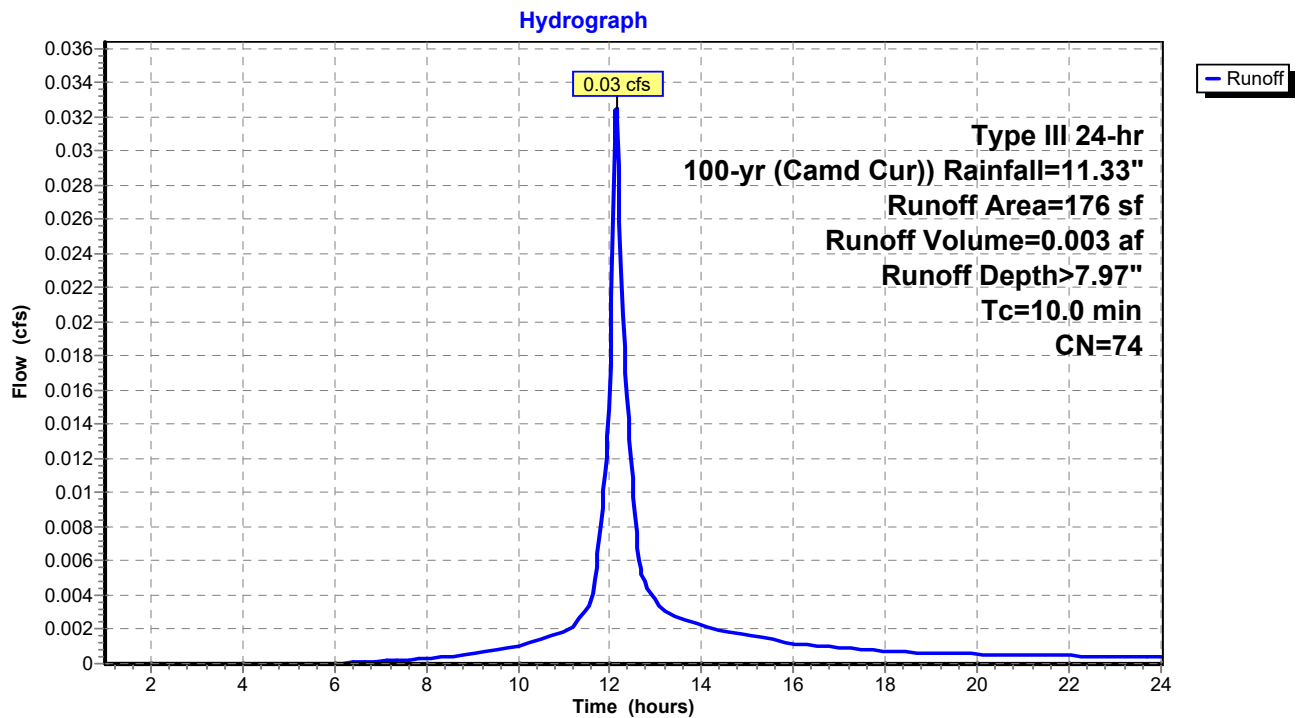
Runoff = 0.03 cfs @ 12.14 hrs, Volume= 0.003 af, Depth> 7.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-yr (Camd Cur)) Rainfall=11.33"

Area (sf)	CN	Description
* 176	74	>75% Grass cover, Good, HSG C (Replaced Soil)
176		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 6PR: Proposed RY Landscaping



Summary for Subcatchment 7PR: Proposed Front Yard

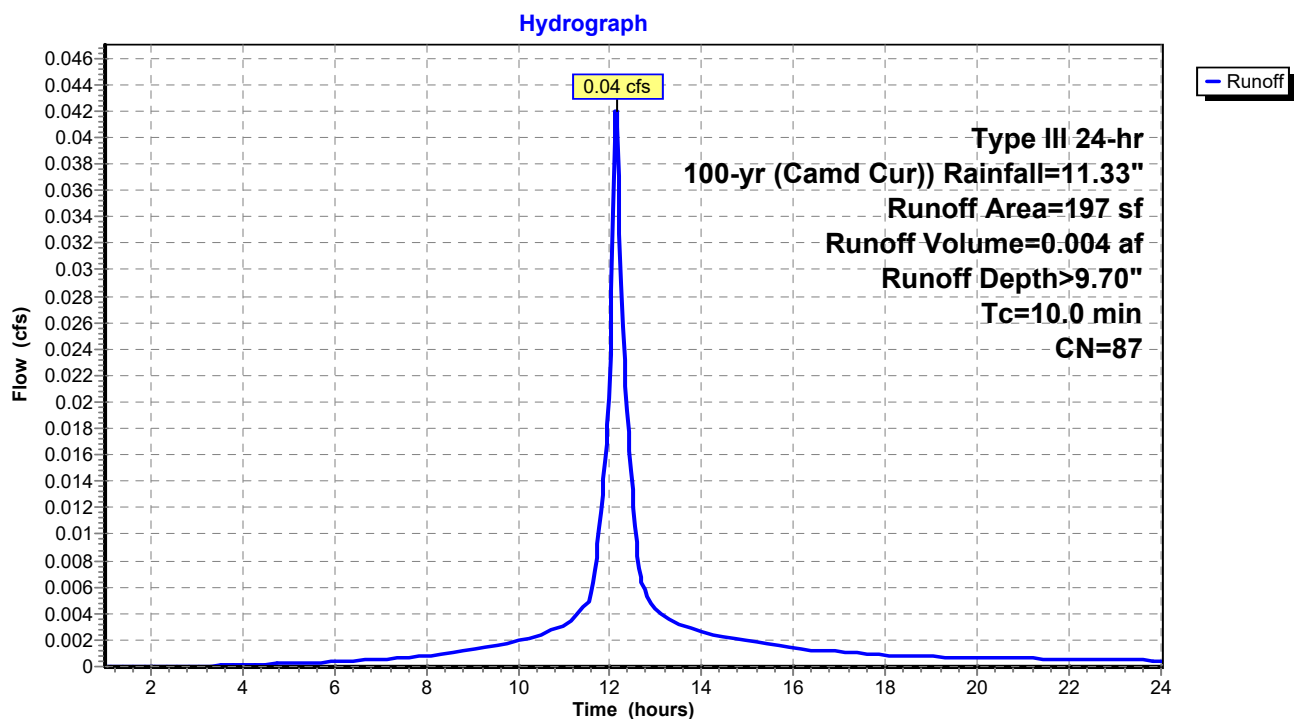
Runoff = 0.04 cfs @ 12.13 hrs, Volume= 0.004 af, Depth> 9.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-yr (Camd Cur)) Rainfall=11.33"

	Area (sf)	CN	Description
*	75	98	Concrete Sidewalk
*	122	80	>75% Grass cover, Good, HSG C (Replaced Soil)
	197	87	Weighted Average
	122		61.93% Pervious Area
	75		38.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 7PR: Proposed Front Yard



Summary for Pond 8SWS: Detention System

[82] Warning: Early inflow requires earlier time span

[92] Warning: Device #1 is above defined storage

[93] Warning: Storage range exceeded by 0.27'

Inflow Area = 0.037 ac, 91.68% Impervious, Inflow Depth > 10.81" for 100-yr (Camd Cur)) event
 Inflow = 0.35 cfs @ 12.13 hrs, Volume= 0.033 af
 Outflow = 0.15 cfs @ 12.14 hrs, Volume= 0.001 af, Atten= 57%, Lag= 0.5 min
 Primary = 0.15 cfs @ 12.14 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs / 8

Peak Elev= 24.02' @ 12.14 hrs Surf.Area= 315 sf Storage= 649 cf

Plug-Flow detention time= 536.1 min calculated for 0.001 af (3% of inflow)

Center-of-Mass det. time= (not calculated: outflow precedes inflow)

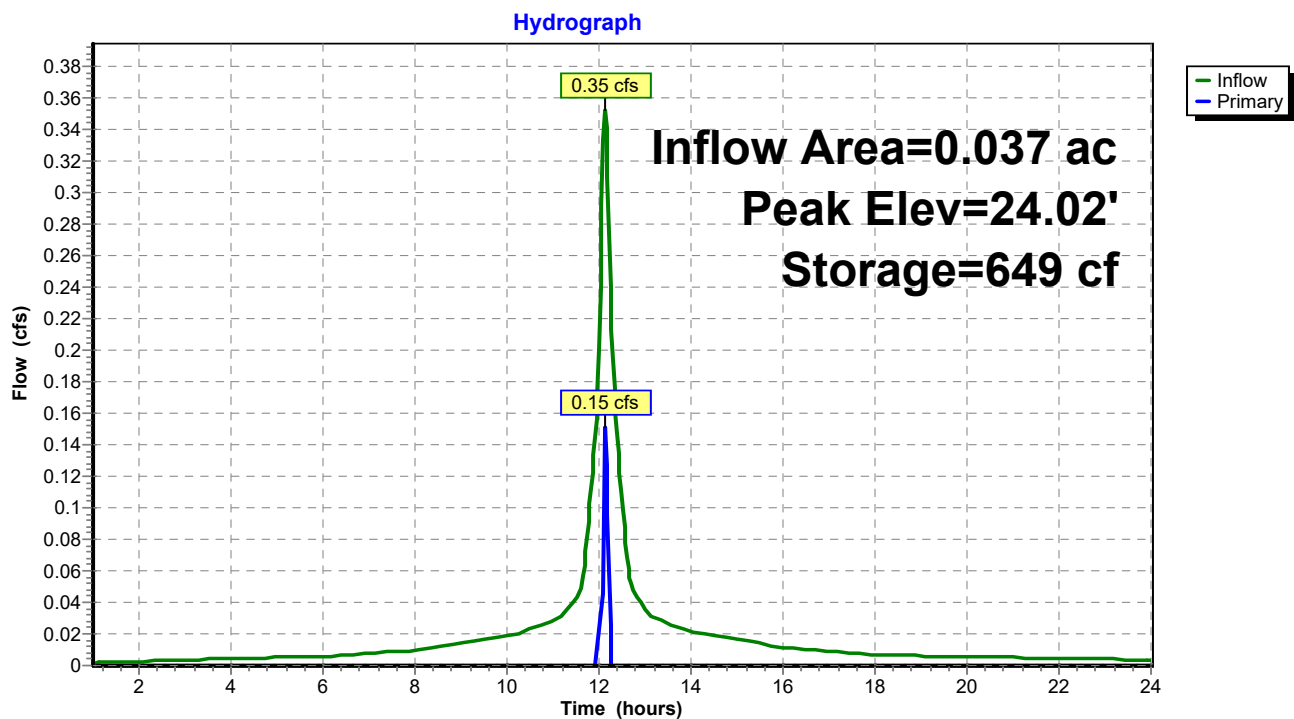
Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	355 cf	10.50'W x 30.00'L x 3.75'H 10.5' x 30' Stone 3.75' Deep 1,181 cf Overall - 295 cf Embedded = 887 cf x 40.0% Voids
#2	20.00'	295 cf	30.0" Round 2 @ 30' Perf 30" HDPE x 2 Inside #1 L= 30.0'
		649 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	23.75'	6.0" Vert. 6" Overflow Pipe C= 0.600

Primary OutFlow Max=0.13 cfs @ 12.14 hrs HW=23.97' (Free Discharge)

↑**1=6" Overflow Pipe** (Orifice Controls 0.13 cfs @ 1.60 fps)

Pond 8SWS: Detention System

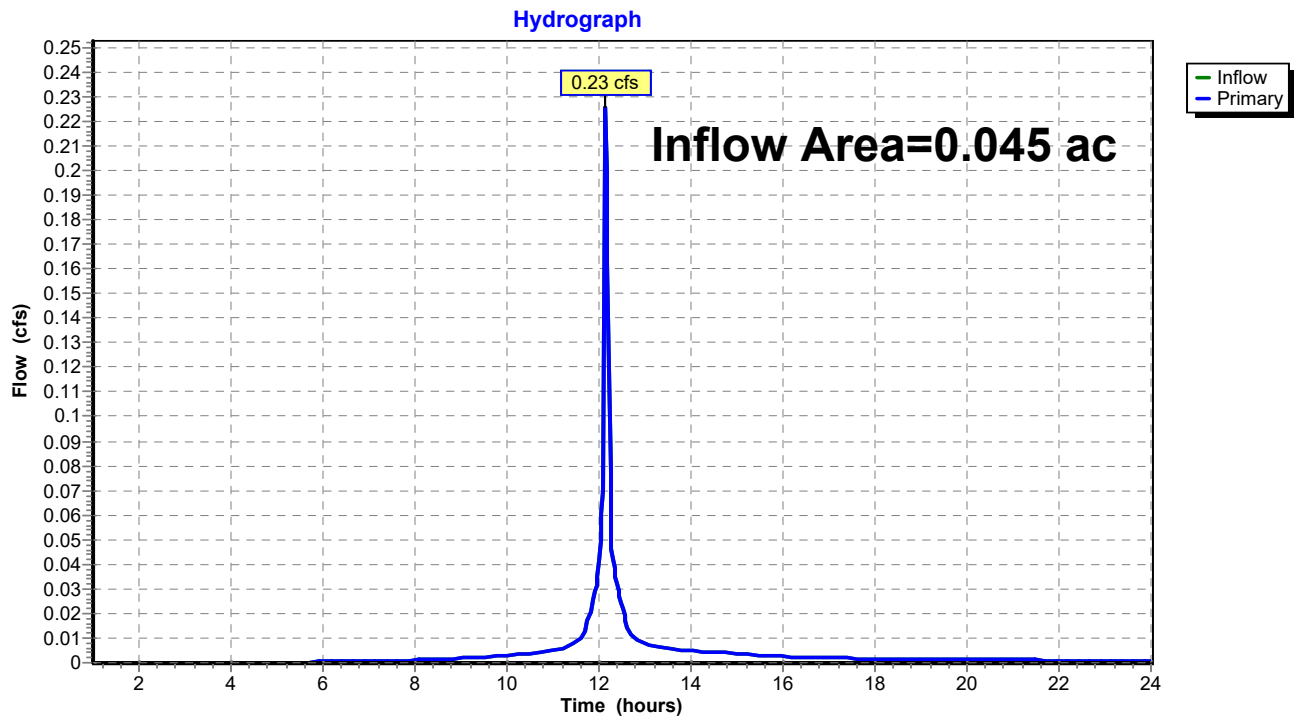


Summary for Link POI: Hypothetical Outflow off Site

Inflow Area = 0.045 ac, 78.14% Impervious, Inflow Depth > 1.97" for 100-yr (Camd Cur)) event
Inflow = 0.23 cfs @ 12.14 hrs, Volume= 0.007 af
Primary = 0.23 cfs @ 12.14 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs

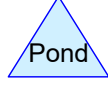
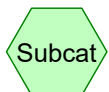
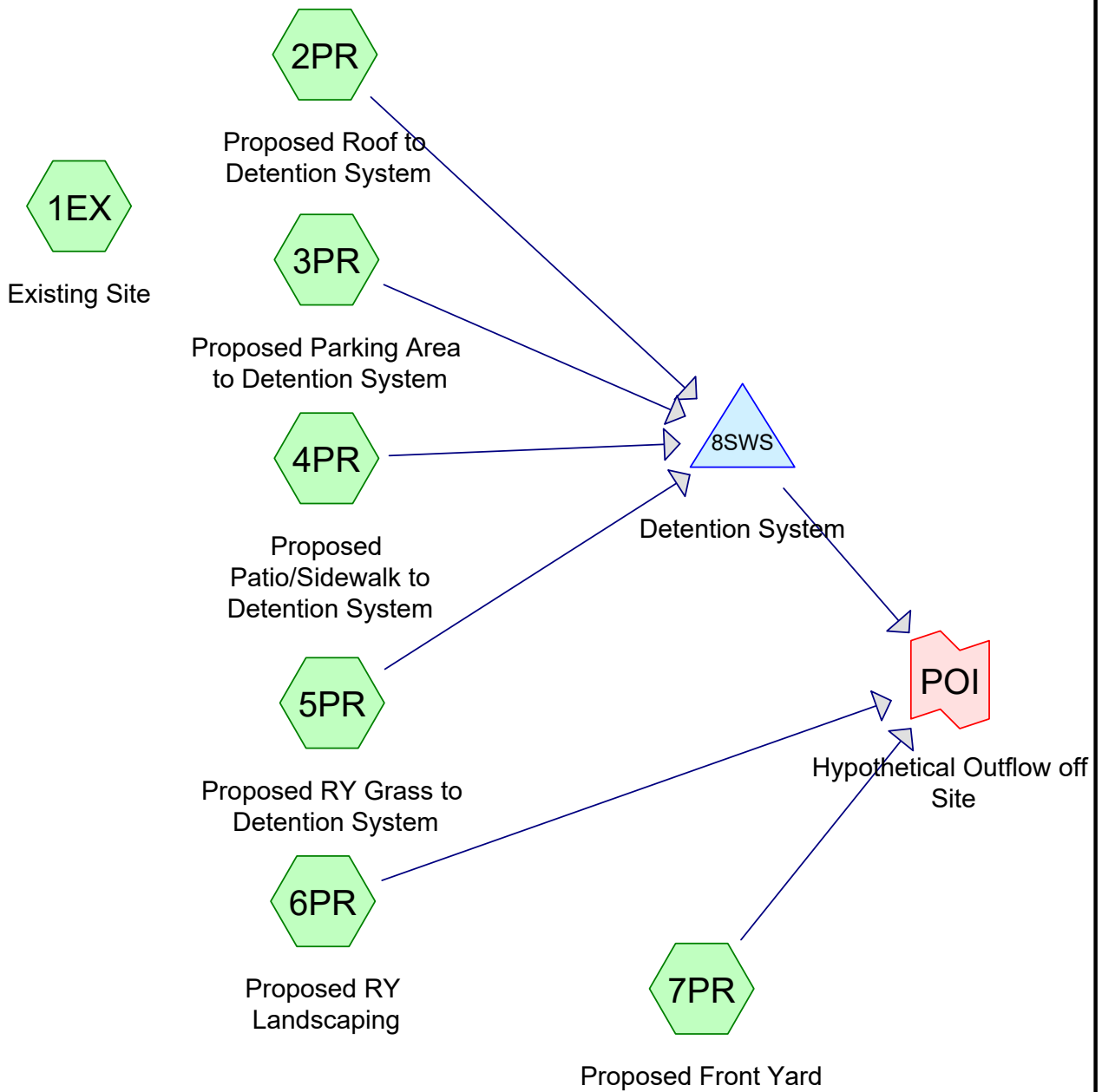
Link POI: Hypothetical Outflow off Site



APPENDIX C

Pre- and Post-Development Hydrograph Analysis

Future Rainfall



Casas Del Rio - 13.5x30 + 2-30 in pipes 3.75 ft deep-FUTURE

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.007	74	>75% Grass cover, Good, HSG C (Replaced Soil) (5PR, 6PR)
0.003	80	>75% Grass cover, Good, HSG C (Replaced Soil) (7PR)
0.045	80	>75% Grass cover, Good, HSG D (1EX)
0.002	98	Concrete Sidewalk (7PR)
0.006	98	Impervious Concrete (4PR)
0.023	98	Impervious Roof (2PR)
0.005	98	Pervious Pavers (3PR)
0.091	87	TOTAL AREA

Casas Del Rio - 13.5x30 + 2-30 in pipes 3.75 ft Type II 24-hr 2-yr (Camd Fut) Rainfall=3.91"

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Time span=1.00-24.00 hrs, dt=0.03 hrs, 768 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment1EX: Existing Site Runoff Area=1,972 sf 0.00% Impervious Runoff Depth>1.96"
Tc=10.0 min CN=80 Runoff=0.14 cfs 0.007 af

Subcatchment2PR: Proposed Roof to Runoff Area=1,010 sf 100.00% Impervious Runoff Depth>3.67"
Tc=10.0 min CN=98 Runoff=0.11 cfs 0.007 af

Subcatchment3PR: Proposed Parking Area Runoff Area=210 sf 100.00% Impervious Runoff Depth>3.67"
Tc=10.0 min CN=98 Runoff=0.02 cfs 0.001 af

Subcatchment4PR: Proposed Runoff Area=246 sf 100.00% Impervious Runoff Depth>3.67"
Tc=10.0 min CN=98 Runoff=0.03 cfs 0.002 af

Subcatchment5PR: Proposed RY Grass to Runoff Area=133 sf 0.00% Impervious Runoff Depth>1.53"
Tc=10.0 min CN=74 Runoff=0.01 cfs 0.000 af

Subcatchment6PR: Proposed RY Landscaping Runoff Area=176 sf 0.00% Impervious Runoff Depth>1.53"
Tc=10.0 min CN=74 Runoff=0.01 cfs 0.001 af

Subcatchment7PR: Proposed Front Yard Runoff Area=197 sf 38.07% Impervious Runoff Depth>2.55"
Tc=10.0 min CN=87 Runoff=0.02 cfs 0.001 af

Pond 8SWS: Detention System Peak Elev=22.33' Storage=465 cf Inflow=0.17 cfs 0.011 af
Outflow=0.00 cfs 0.000 af

Link POI: Hypothetical Outflow off Site Inflow=0.03 cfs 0.001 af
Primary=0.03 cfs 0.001 af

Total Runoff Area = 0.091 ac Runoff Volume = 0.020 af Average Runoff Depth = 2.59"
60.93% Pervious = 0.055 ac 39.07% Impervious = 0.035 ac

Summary for Subcatchment 1EX: Existing Site

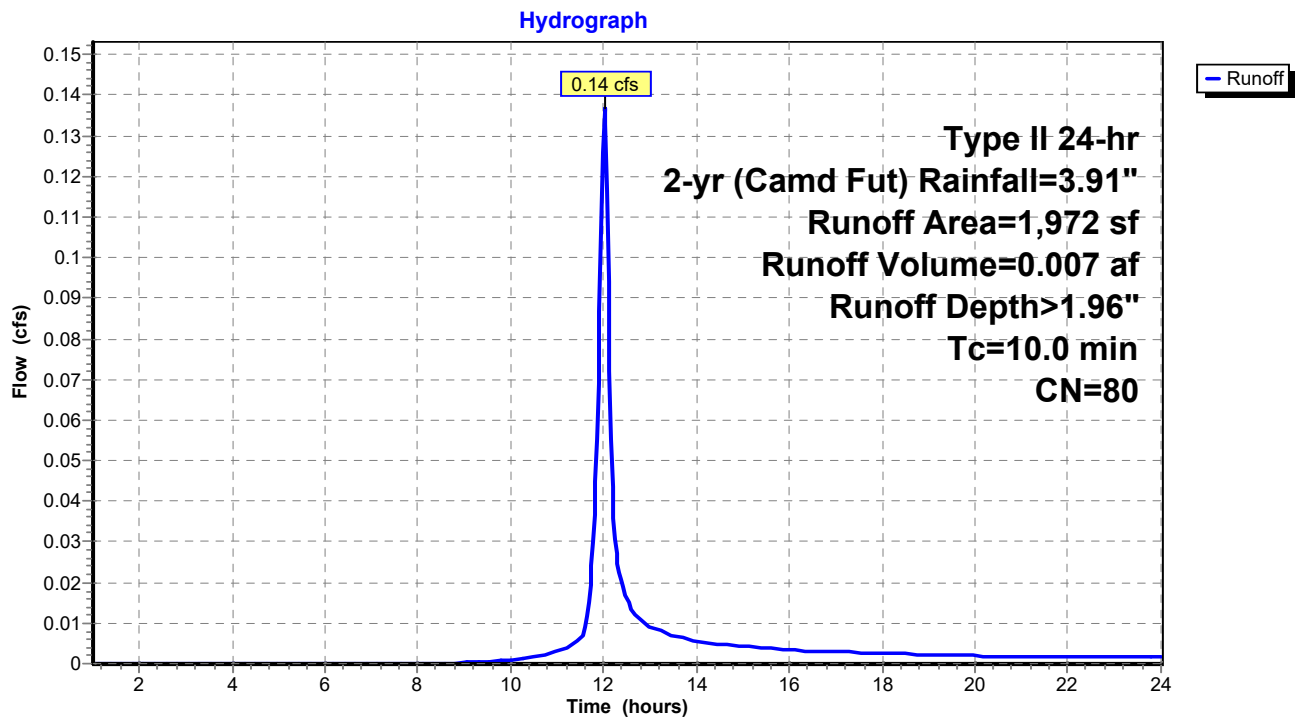
Runoff = 0.14 cfs @ 12.02 hrs, Volume= 0.007 af, Depth> 1.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type II 24-hr 2-yr (Camd Fut) Rainfall=3.91"

Area (sf)	CN	Description
* 1,972	80	>75% Grass cover, Good, HSG D
1,972		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 1EX: Existing Site



Summary for Subcatchment 2PR: Proposed Roof to Detention System

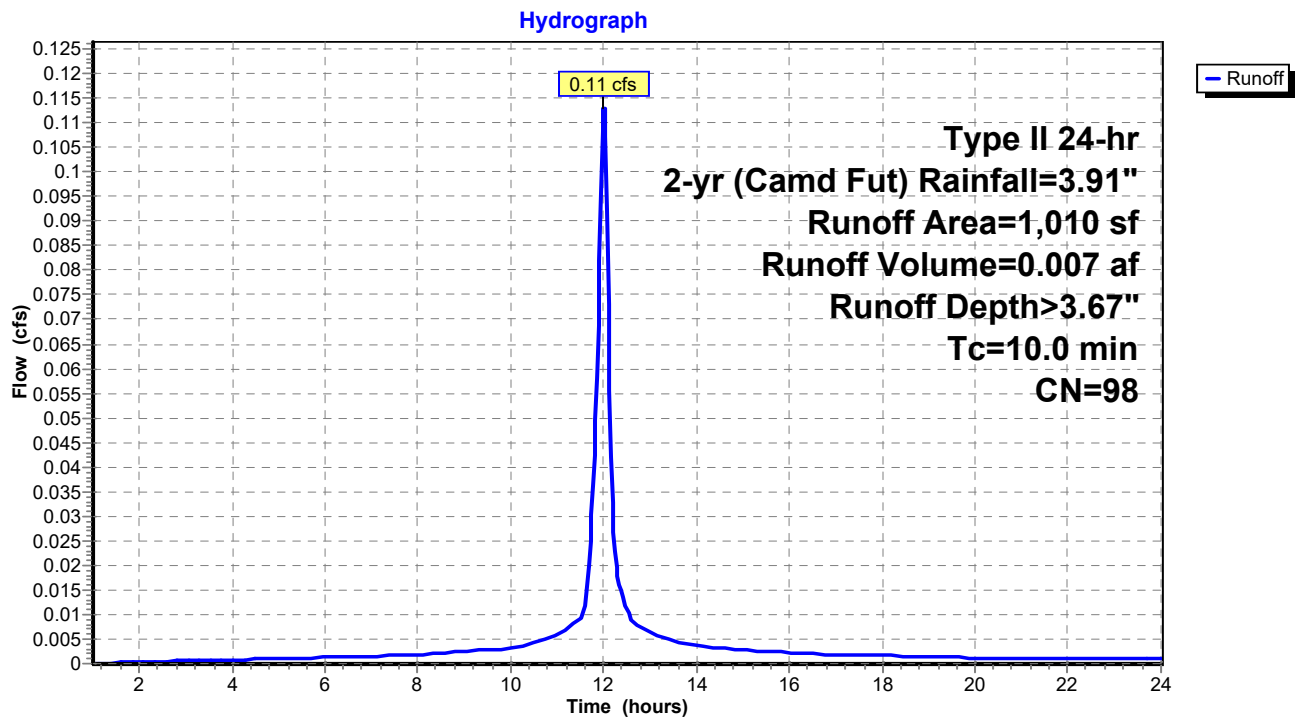
Runoff = 0.11 cfs @ 12.01 hrs, Volume= 0.007 af, Depth> 3.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type II 24-hr 2-yr (Camd Fut) Rainfall=3.91"

Area (sf)	CN	Description
* 1,010	98	Impervious Roof
1,010		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 2PR: Proposed Roof to Detention System



Summary for Subcatchment 3PR: Proposed Parking Area to Detention System

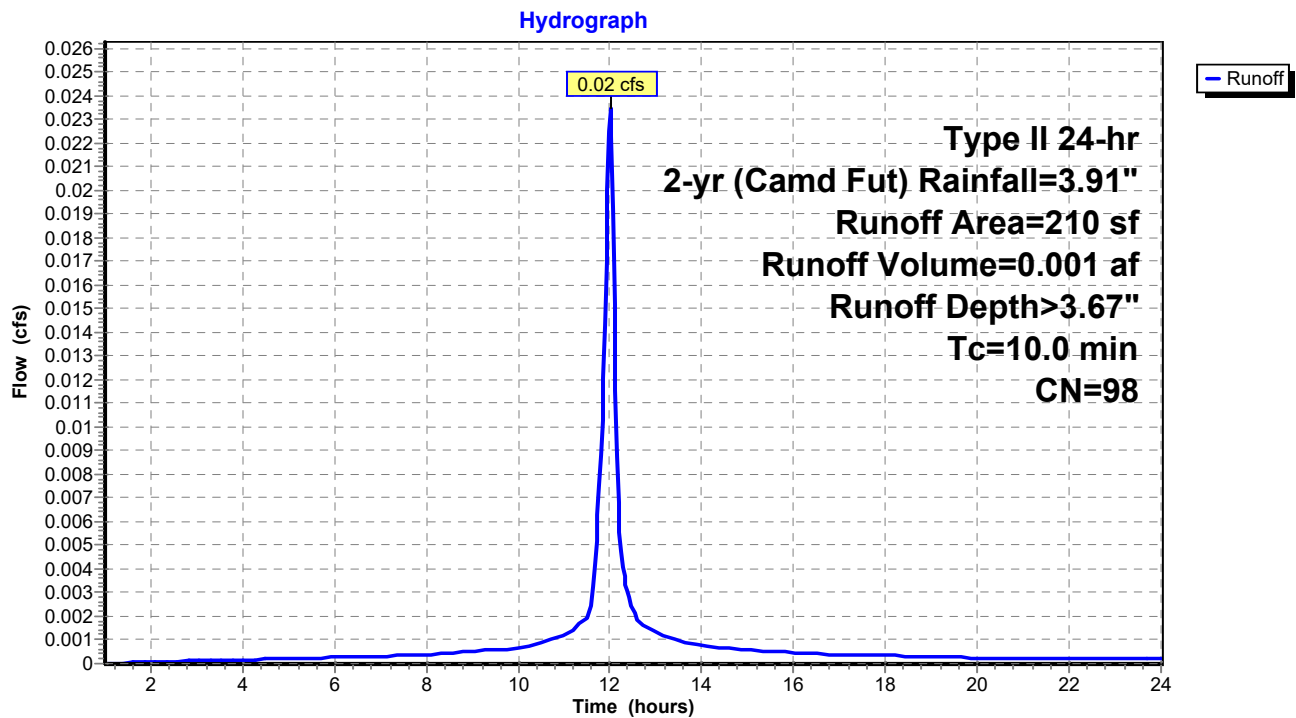
Runoff = 0.02 cfs @ 12.01 hrs, Volume= 0.001 af, Depth> 3.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type II 24-hr 2-yr (Camd Fut) Rainfall=3.91"

Area (sf)	CN	Description
* 210	98	Pervious Pavers
210		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 3PR: Proposed Parking Area to Detention System



Summary for Subcatchment 4PR: Proposed Patio/Sidewalk to Detention System

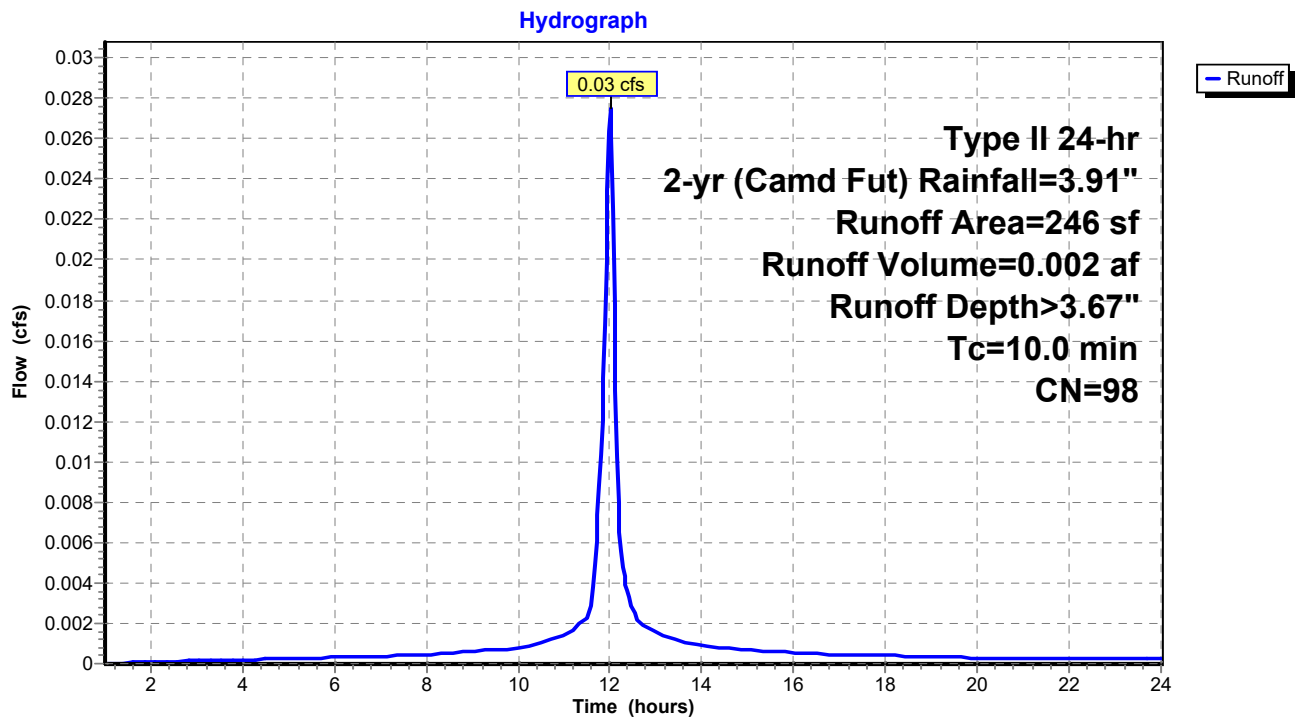
Runoff = 0.03 cfs @ 12.01 hrs, Volume= 0.002 af, Depth> 3.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type II 24-hr 2-yr (Camd Fut) Rainfall=3.91"

Area (sf)	CN	Description
* 246	98	Impervious Concrete
246		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 4PR: Proposed Patio/Sidewalk to Detention System



Summary for Subcatchment 5PR: Proposed RY Grass to Detention System

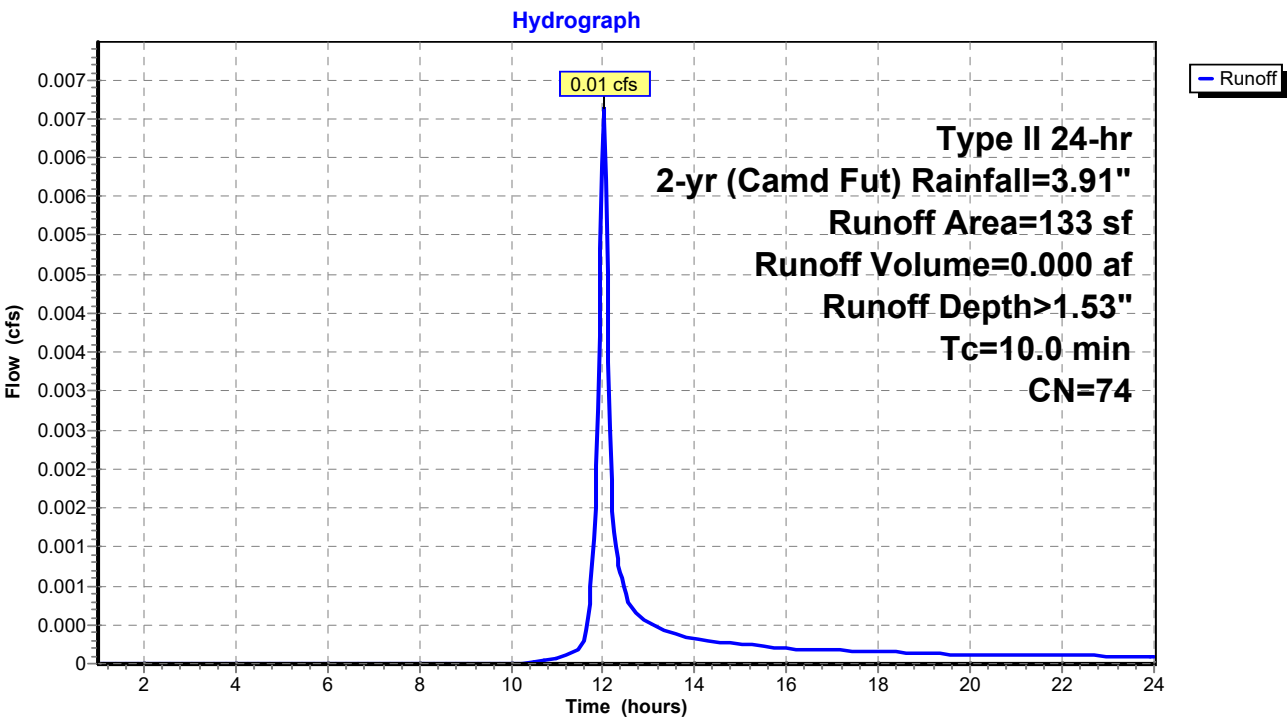
Runoff = 0.01 cfs @ 12.02 hrs, Volume= 0.000 af, Depth> 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
Type II 24-hr 2-yr (Camd Fut) Rainfall=3.91"

Area (sf)	CN	Description
* 133	74	>75% Grass cover, Good, HSG C (Replaced Soil)
133		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 5PR: Proposed RY Grass to Detention System



Summary for Subcatchment 6PR: Proposed RY Landscaping

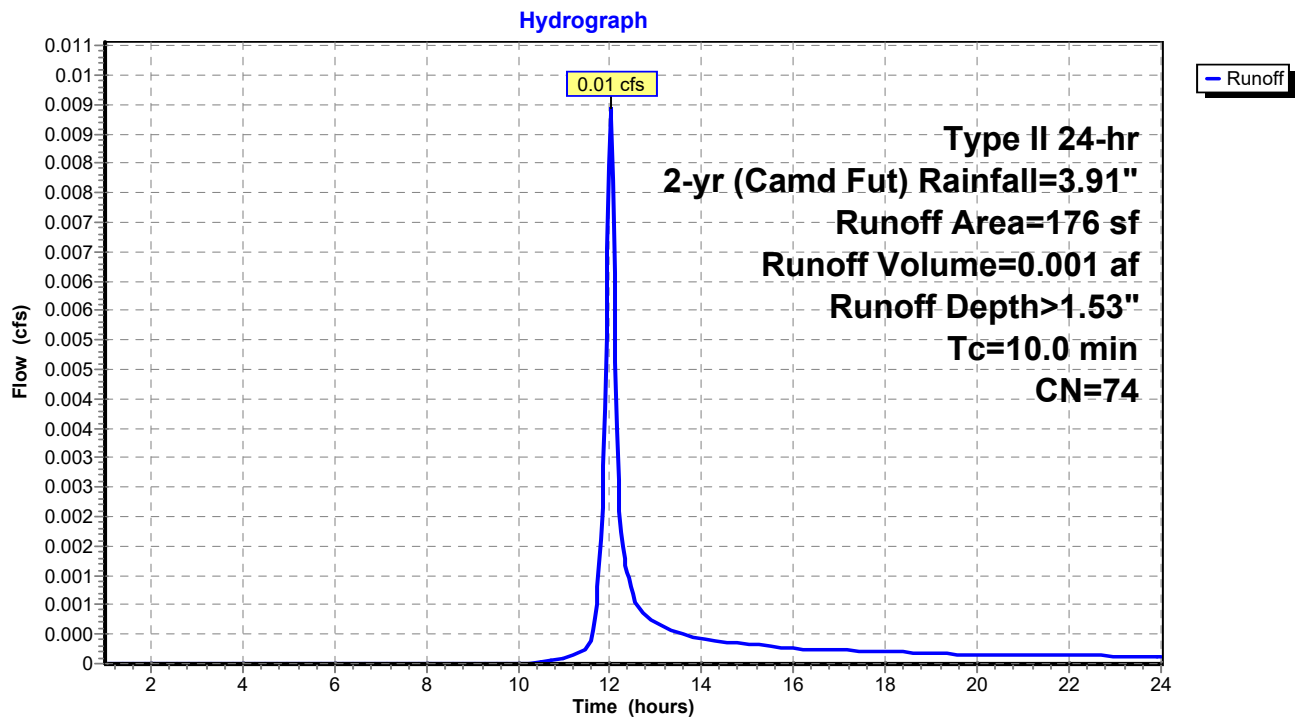
Runoff = 0.01 cfs @ 12.02 hrs, Volume= 0.001 af, Depth> 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type II 24-hr 2-yr (Camd Fut) Rainfall=3.91"

Area (sf)	CN	Description
* 176	74	>75% Grass cover, Good, HSG C (Replaced Soil)
176		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 6PR: Proposed RY Landscaping



Summary for Subcatchment 7PR: Proposed Front Yard

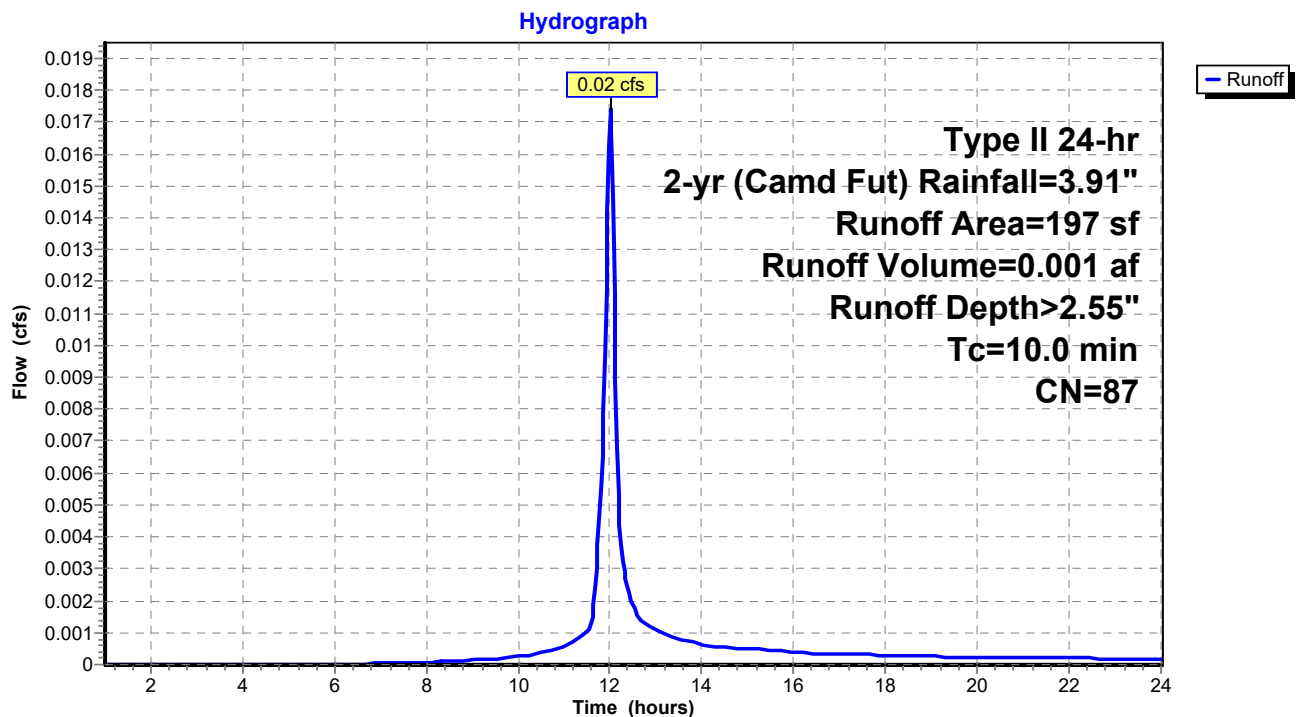
Runoff = 0.02 cfs @ 12.01 hrs, Volume= 0.001 af, Depth> 2.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type II 24-hr 2-yr (Camd Fut) Rainfall=3.91"

	Area (sf)	CN	Description
*	75	98	Concrete Sidewalk
*	122	80	>75% Grass cover, Good, HSG C (Replaced Soil)
	197	87	Weighted Average
	122		61.93% Pervious Area
	75		38.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 7PR: Proposed Front Yard



Summary for Pond 8SWS: Detention System

[92] Warning: Device #1 is above defined storage

Inflow Area = 0.037 ac, 91.68% Impervious, Inflow Depth > 3.49" for 2-yr (Camd Fut) event
 Inflow = 0.17 cfs @ 12.01 hrs, Volume= 0.011 af
 Outflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs / 6
 Peak Elev= 22.33' @ 24.01 hrs Surf.Area= 315 sf Storage= 465 cf

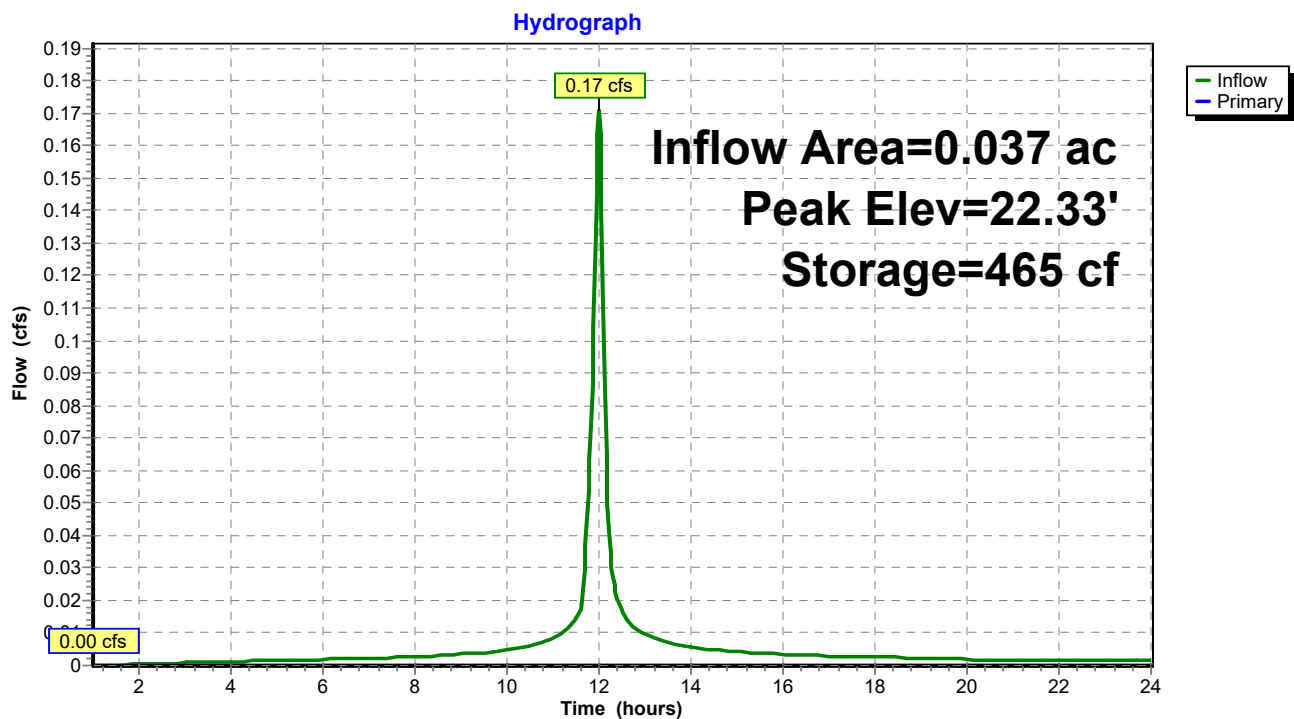
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	355 cf	10.50'W x 30.00'L x 3.75'H 10.5' x 30' Stone 3.75' Deep 1,181 cf Overall - 295 cf Embedded = 887 cf x 40.0% Voids
#2	20.00'	295 cf	30.0" Round 2 @ 30' Perf 30" HDPE x 2 Inside #1 L= 30.0'
		649 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	23.75'	6.0" Vert. 6" Overflow Pipe C= 0.600

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=20.00' (Free Discharge)
 ↑**1=6" Overflow Pipe** (Controls 0.00 cfs)

Pond 8SWS: Detention System

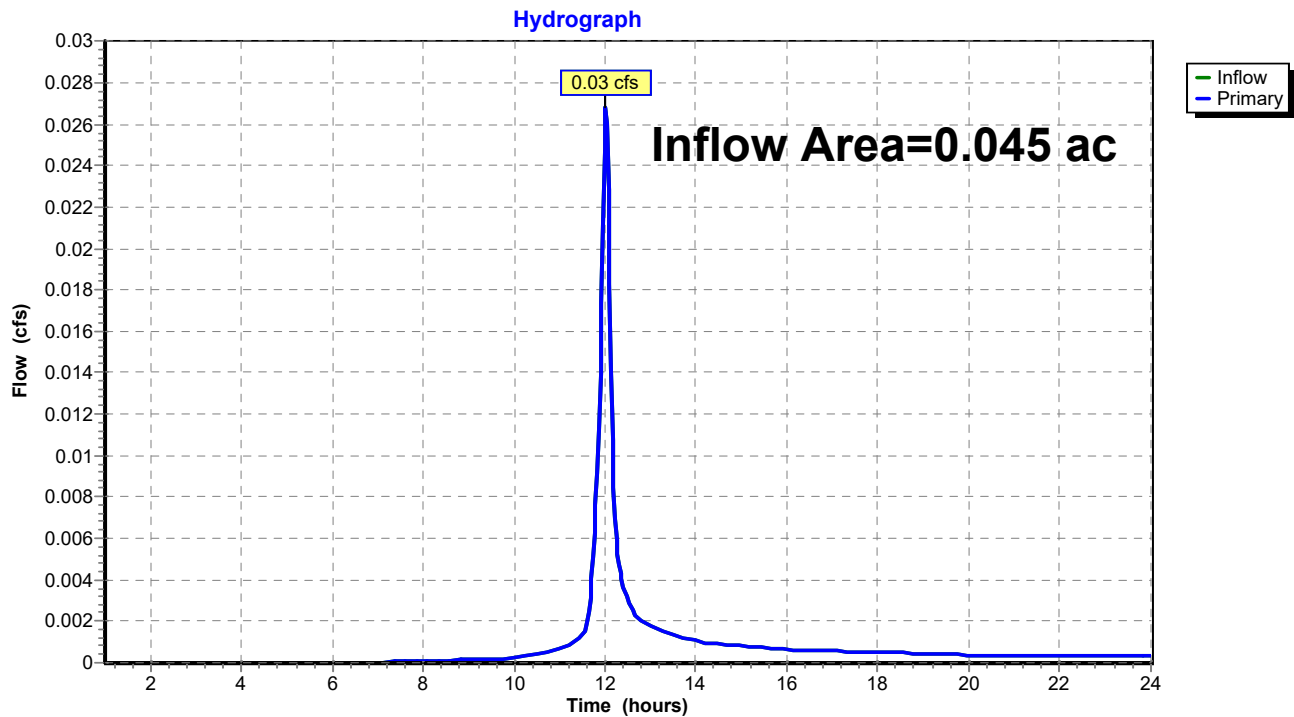


Summary for Link POI: Hypothetical Outflow off Site

Inflow Area = 0.045 ac, 78.14% Impervious, Inflow Depth > 0.39" for 2-yr (Camd Fut) event
Inflow = 0.03 cfs @ 12.02 hrs, Volume= 0.001 af
Primary = 0.03 cfs @ 12.02 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs

Link POI: Hypothetical Outflow off Site



Casas Del Rio - 13.5x30 + 2-30 in pipes 3.75 fType III 24-hr 10-yr (Camd Fut) Rainfall=6.17"

Prepared by Jenne Associates, LLC

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Time span=1.00-24.00 hrs, dt=0.03 hrs, 768 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment1EX: Existing Site	Runoff Area=1,972 sf 0.00% Impervious Runoff Depth>3.93" Tc=10.0 min CN=80 Runoff=0.18 cfs 0.015 af
Subcatchment2PR: Proposed Roof to	Runoff Area=1,010 sf 100.00% Impervious Runoff Depth>5.92" Tc=10.0 min CN=98 Runoff=0.12 cfs 0.011 af
Subcatchment3PR: Proposed Parking Area	Runoff Area=210 sf 100.00% Impervious Runoff Depth>5.92" Tc=10.0 min CN=98 Runoff=0.03 cfs 0.002 af
Subcatchment4PR: Proposed	Runoff Area=246 sf 100.00% Impervious Runoff Depth>5.92" Tc=10.0 min CN=98 Runoff=0.03 cfs 0.003 af
Subcatchment5PR: Proposed RY Grass to	Runoff Area=133 sf 0.00% Impervious Runoff Depth>3.32" Tc=10.0 min CN=74 Runoff=0.01 cfs 0.001 af
Subcatchment6PR: Proposed RY Landscaping	Runoff Area=176 sf 0.00% Impervious Runoff Depth>3.32" Tc=10.0 min CN=74 Runoff=0.01 cfs 0.001 af
Subcatchment7PR: Proposed Front Yard	Runoff Area=197 sf 38.07% Impervious Runoff Depth>4.67" Tc=10.0 min CN=87 Runoff=0.02 cfs 0.002 af
Pond 8SWS: Detention System	Peak Elev=23.78' Storage=649 cf Inflow=0.19 cfs 0.017 af Outflow=0.00 cfs 0.000 af
Link POI: Hypothetical Outflow off Site	Inflow=0.03 cfs 0.003 af Primary=0.03 cfs 0.003 af

Total Runoff Area = 0.091 ac Runoff Volume = 0.035 af Average Runoff Depth = 4.66"
60.93% Pervious = 0.055 ac 39.07% Impervious = 0.035 ac

Summary for Subcatchment 1EX: Existing Site

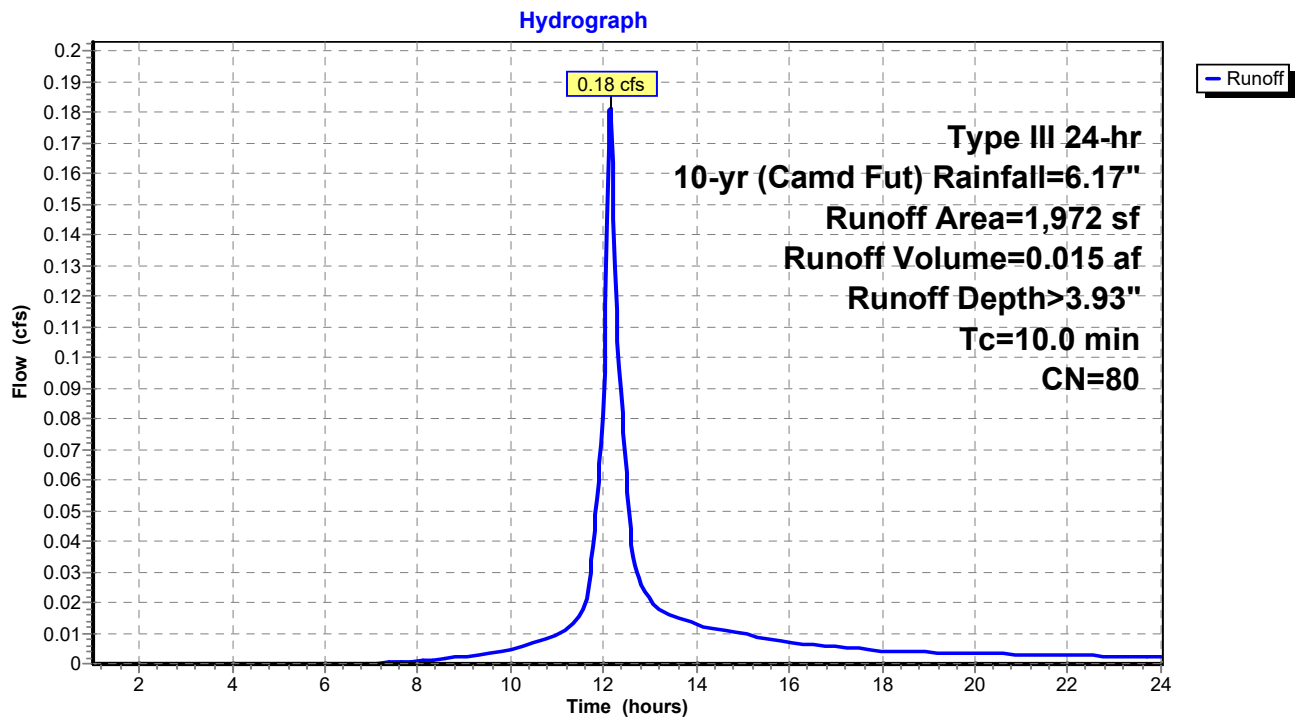
Runoff = 0.18 cfs @ 12.14 hrs, Volume= 0.015 af, Depth> 3.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-yr (Camd Fut) Rainfall=6.17"

Area (sf)	CN	Description
* 1,972	80	>75% Grass cover, Good, HSG D
1,972		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 1EX: Existing Site



Summary for Subcatchment 2PR: Proposed Roof to Detention System

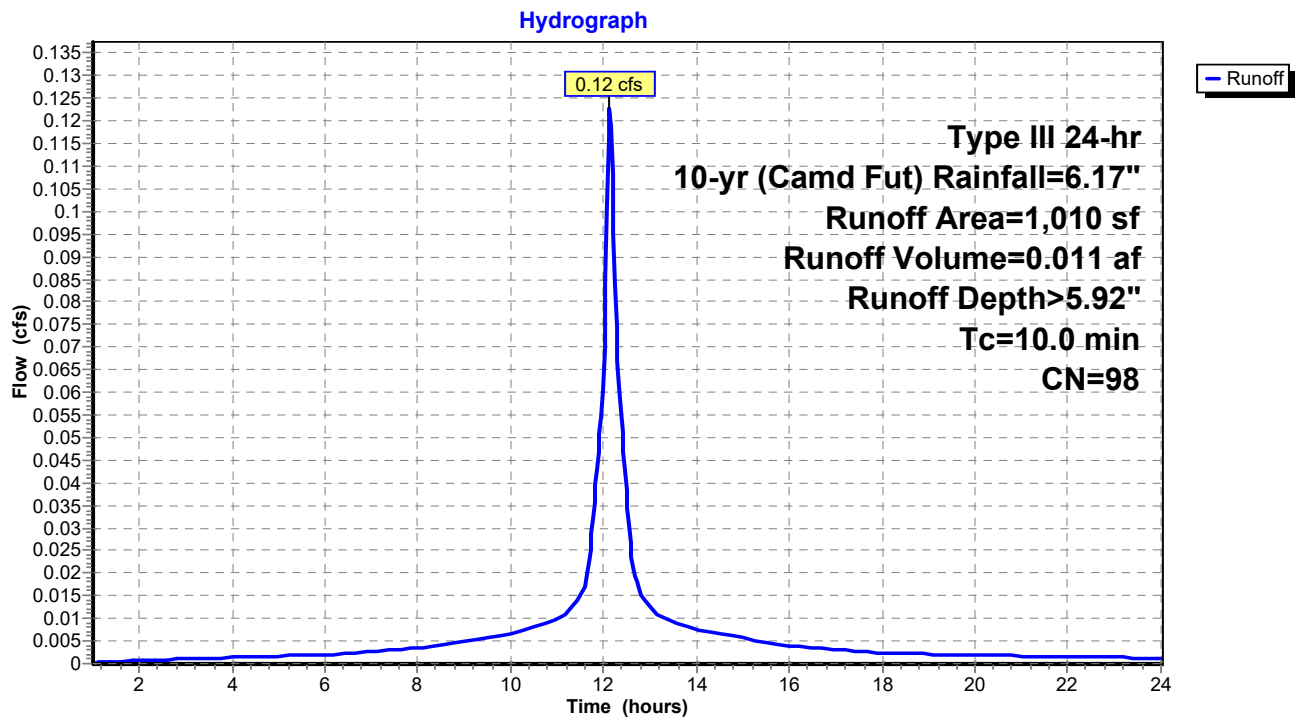
Runoff = 0.12 cfs @ 12.13 hrs, Volume= 0.011 af, Depth> 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-yr (Camd Fut) Rainfall=6.17"

Area (sf)	CN	Description
* 1,010	98	Impervious Roof
1,010		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 2PR: Proposed Roof to Detention System



Summary for Subcatchment 3PR: Proposed Parking Area to Detention System

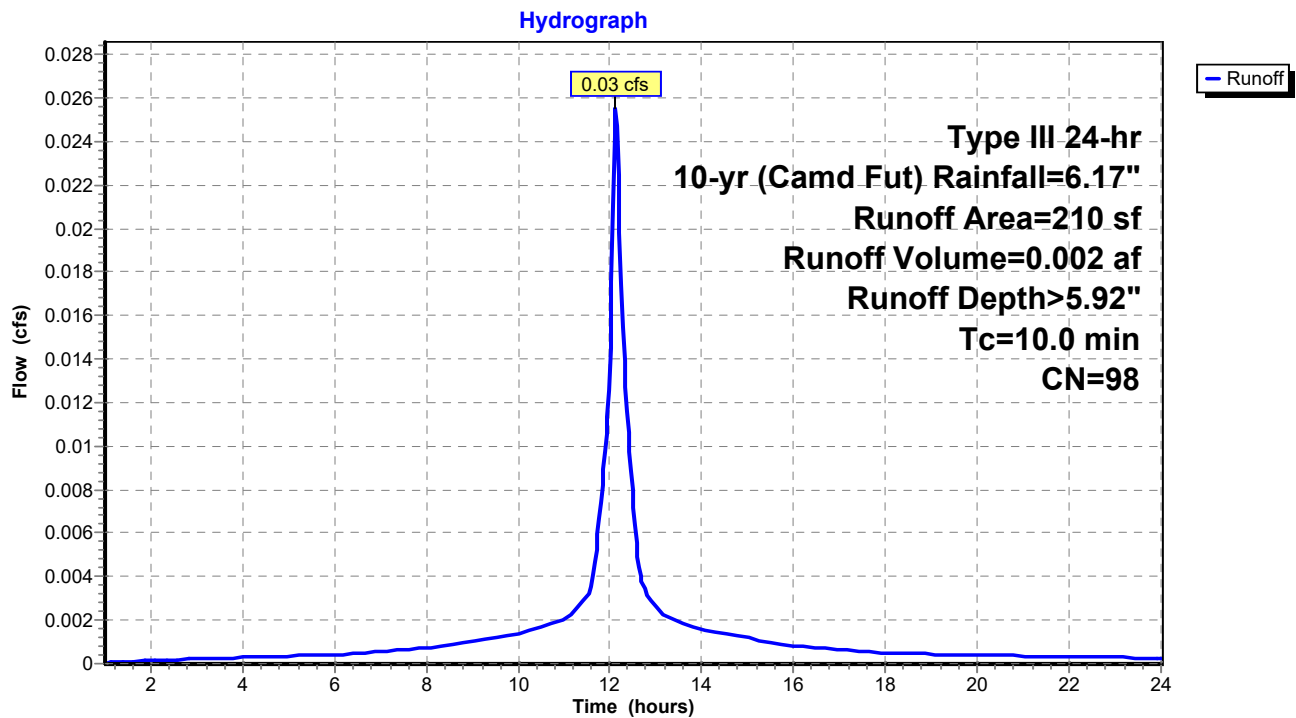
Runoff = 0.03 cfs @ 12.13 hrs, Volume= 0.002 af, Depth> 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-yr (Camd Fut) Rainfall=6.17"

Area (sf)	CN	Description
* 210	98	Pervious Pavers
210		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 3PR: Proposed Parking Area to Detention System



Summary for Subcatchment 4PR: Proposed Patio/Sidewalk to Detention System

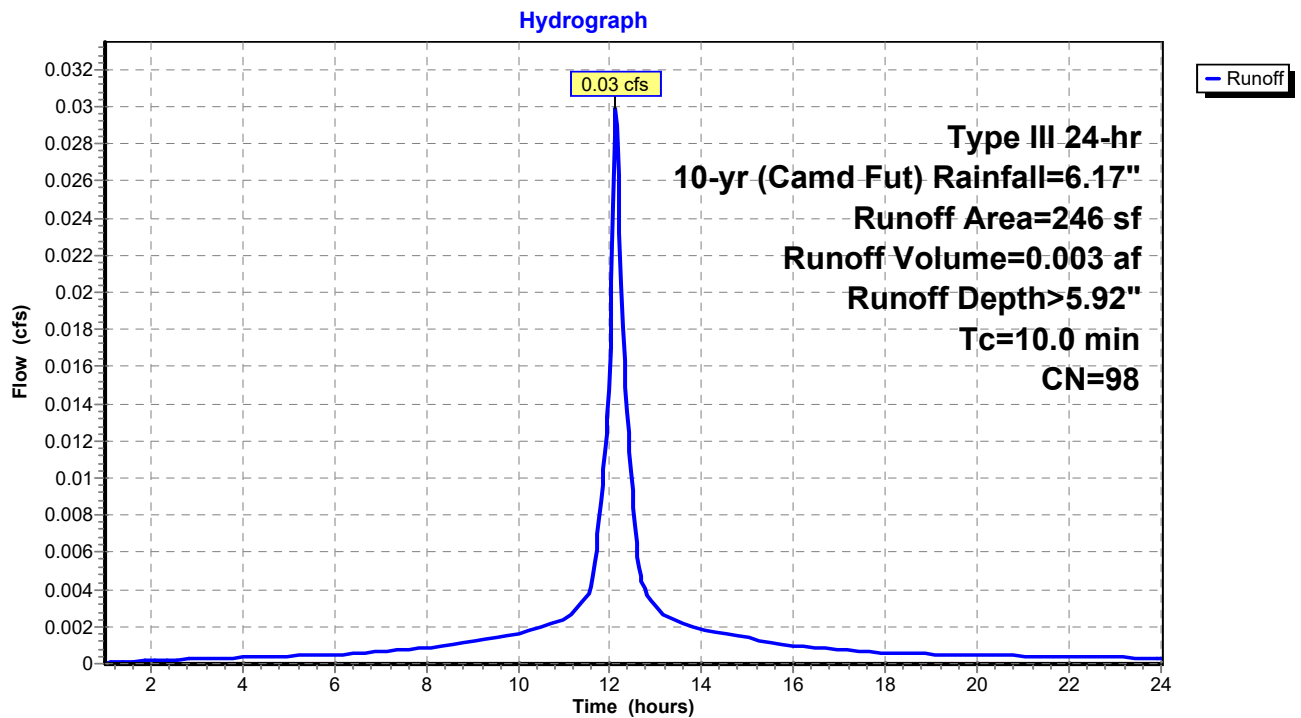
Runoff = 0.03 cfs @ 12.13 hrs, Volume= 0.003 af, Depth> 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-yr (Camd Fut) Rainfall=6.17"

Area (sf)	CN	Description
* 246	98	Impervious Concrete
246		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 4PR: Proposed Patio/Sidewalk to Detention System



Summary for Subcatchment 5PR: Proposed RY Grass to Detention System

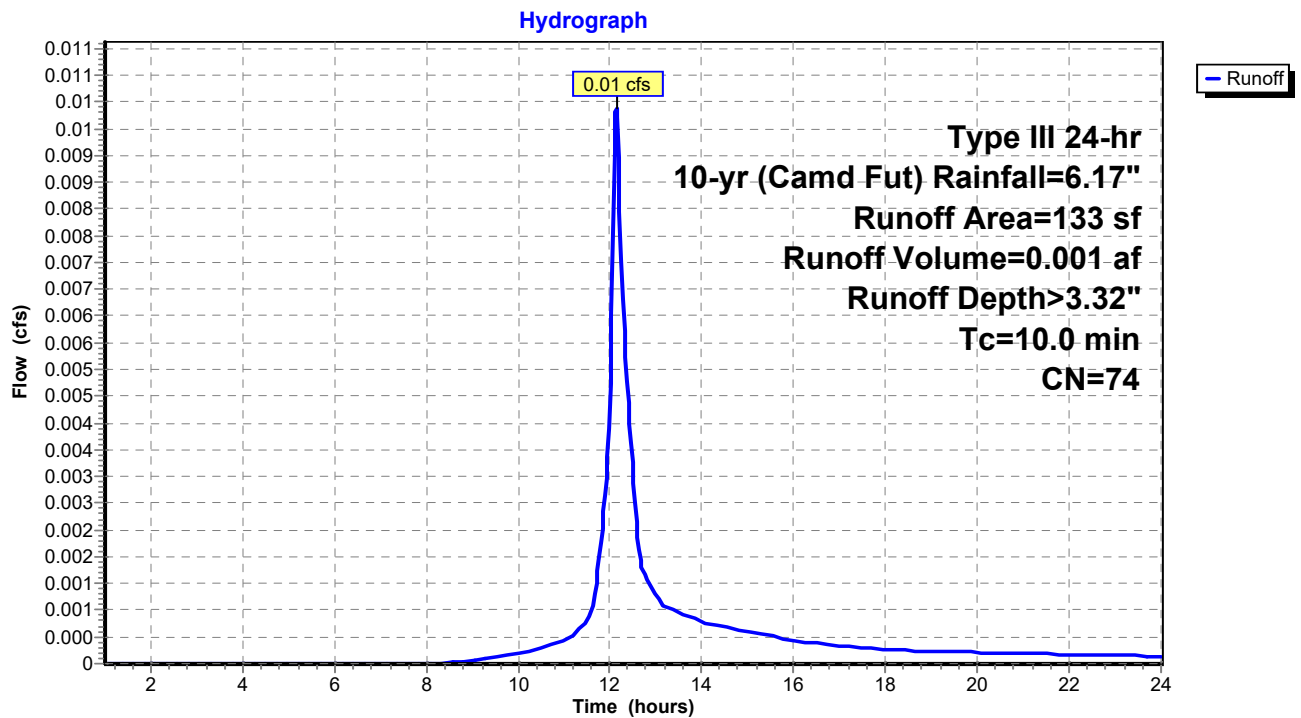
Runoff = 0.01 cfs @ 12.14 hrs, Volume= 0.001 af, Depth> 3.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-yr (Camd Fut) Rainfall=6.17"

Area (sf)	CN	Description
* 133	74	>75% Grass cover, Good, HSG C (Replaced Soil)
133		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 5PR: Proposed RY Grass to Detention System



Summary for Subcatchment 6PR: Proposed RY Landscaping

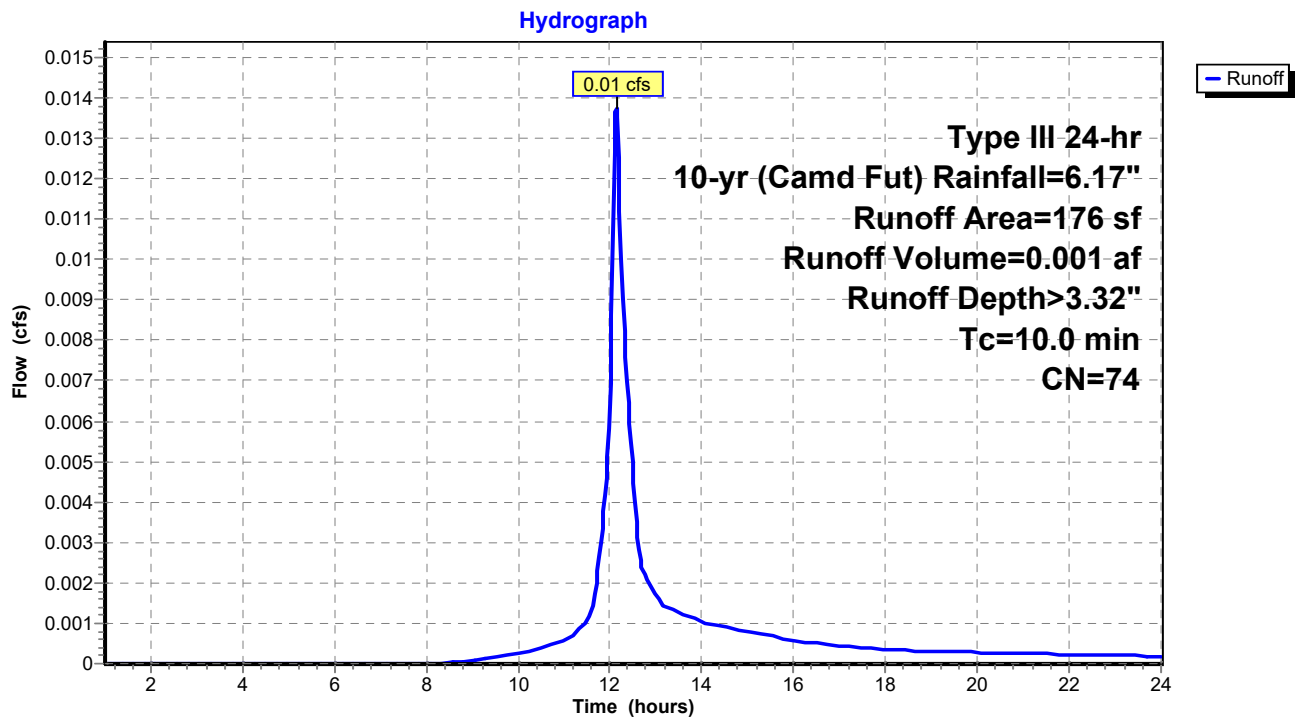
Runoff = 0.01 cfs @ 12.14 hrs, Volume= 0.001 af, Depth> 3.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-yr (Camd Fut) Rainfall=6.17"

Area (sf)	CN	Description
* 176	74	>75% Grass cover, Good, HSG C (Replaced Soil)
176		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 6PR: Proposed RY Landscaping



Summary for Subcatchment 7PR: Proposed Front Yard

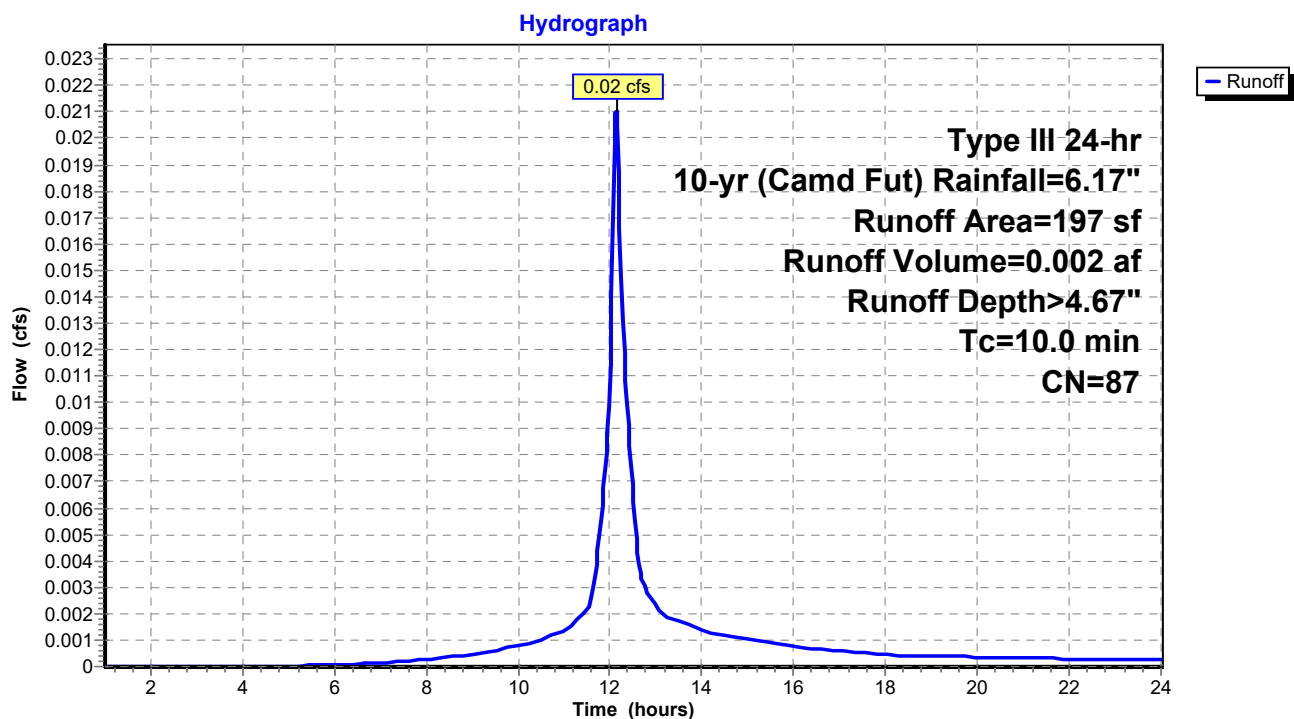
Runoff = 0.02 cfs @ 12.14 hrs, Volume= 0.002 af, Depth> 4.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-yr (Camd Fut) Rainfall=6.17"

Area (sf)	CN	Description
* 75	98	Concrete Sidewalk
* 122	80	>75% Grass cover, Good, HSG C (Replaced Soil)
197	87	Weighted Average
122		61.93% Pervious Area
75		38.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 7PR: Proposed Front Yard



Summary for Pond 8SWS: Detention System

[82] Warning: Early inflow requires earlier time span

[92] Warning: Device #1 is above defined storage

[93] Warning: Storage range exceeded by 0.03'

Inflow Area = 0.037 ac, 91.68% Impervious, Inflow Depth > 5.71" for 10-yr (Camd Fut) event
 Inflow = 0.19 cfs @ 12.13 hrs, Volume= 0.017 af
 Outflow = 0.00 cfs @ 15.37 hrs, Volume= 0.000 af, Atten= 98%, Lag= 194.1 min
 Primary = 0.00 cfs @ 15.37 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs / 6
 Peak Elev= 23.78' @ 15.37 hrs Surf.Area= 315 sf Storage= 649 cf

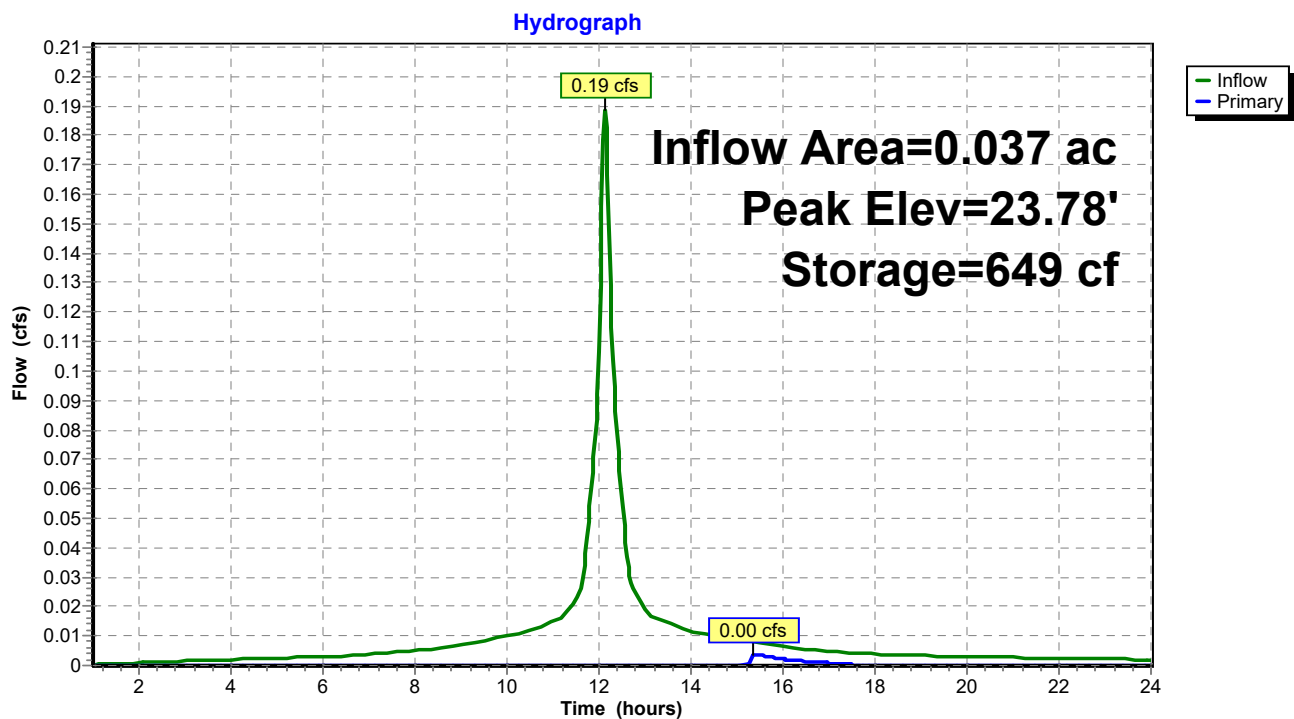
Plug-Flow detention time= 793.1 min calculated for 0.000 af (2% of inflow)
 Center-of-Mass det. time= 213.6 min (965.3 - 751.7)

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	355 cf	10.50'W x 30.00'L x 3.75'H 10.5' x 30' Stone 3.75' Deep 1,181 cf Overall - 295 cf Embedded = 887 cf x 40.0% Voids
#2	20.00'	295 cf	30.0" Round 2 @ 30' Perf 30" HDPE x 2 Inside #1 L= 30.0'
		649 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	23.75'	6.0" Vert. 6" Overflow Pipe C= 0.600

Primary OutFlow Max=0.00 cfs @ 15.37 hrs HW=23.78' (Free Discharge)
 ↑**1=6" Overflow Pipe** (Orifice Controls 0.00 cfs @ 0.63 fps)

Pond 8SWS: Detention System

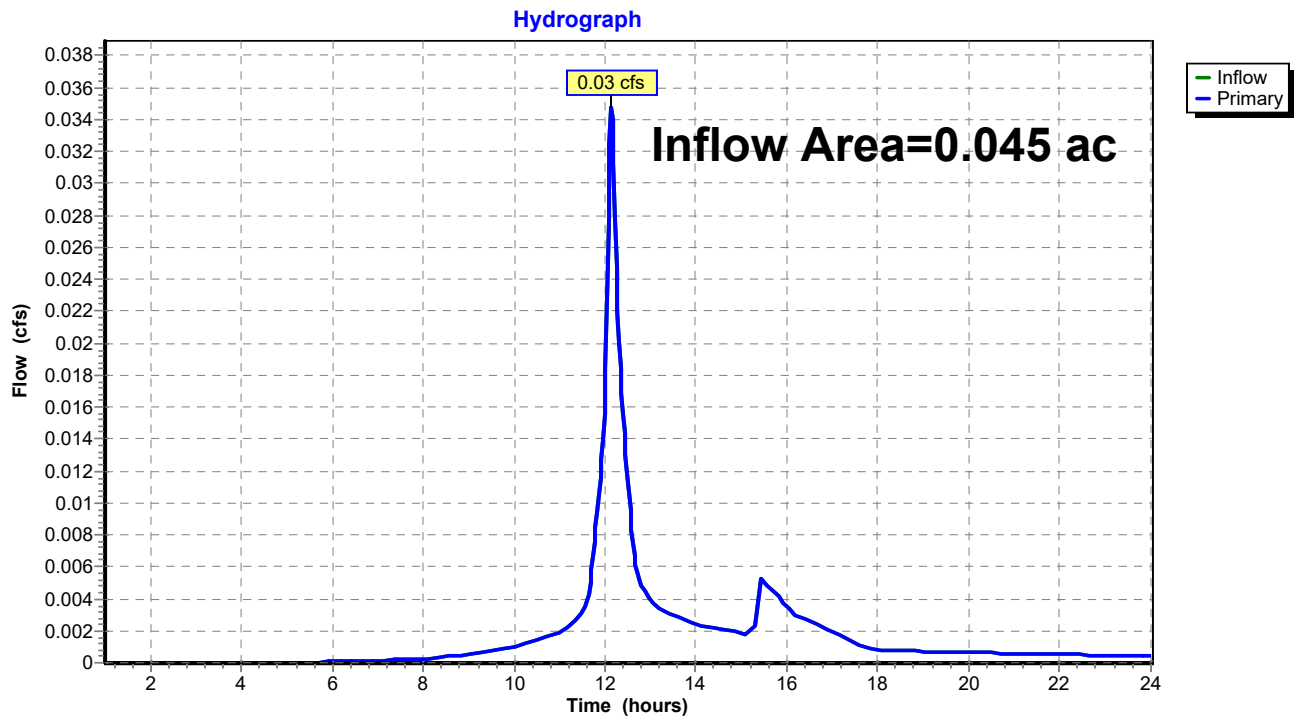


Summary for Link POI: Hypothetical Outflow off Site

Inflow Area = 0.045 ac, 78.14% Impervious, Inflow Depth > 0.84" for 10-yr (Camd Fut) event
Inflow = 0.03 cfs @ 12.14 hrs, Volume= 0.003 af
Primary = 0.03 cfs @ 12.14 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs

Link POI: Hypothetical Outflow off Site



Casas Del Rio - 13.5x30 + 2-30 in pipes 3. Type III 24-hr 100-yr (Camd Fut)) Rainfall=11.84"

Prepared by Jenne Associates, LLC

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Time span=1.00-24.00 hrs, dt=0.03 hrs, 768 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment1EX: Existing Site	Runoff Area=1,972 sf 0.00% Impervious Runoff Depth>9.28" Tc=10.0 min CN=80 Runoff=0.41 cfs 0.035 af
Subcatchment2PR: Proposed Roof to	Runoff Area=1,010 sf 100.00% Impervious Runoff Depth>11.57" Tc=10.0 min CN=98 Runoff=0.24 cfs 0.022 af
Subcatchment3PR: Proposed Parking	Runoff Area=210 sf 100.00% Impervious Runoff Depth>11.57" Tc=10.0 min CN=98 Runoff=0.05 cfs 0.005 af
Subcatchment4PR: Proposed	Runoff Area=246 sf 100.00% Impervious Runoff Depth>11.57" Tc=10.0 min CN=98 Runoff=0.06 cfs 0.005 af
Subcatchment5PR: Proposed RY Grass to	Runoff Area=133 sf 0.00% Impervious Runoff Depth>8.45" Tc=10.0 min CN=74 Runoff=0.03 cfs 0.002 af
Subcatchment6PR: Proposed RY Landscaping	Runoff Area=176 sf 0.00% Impervious Runoff Depth>8.45" Tc=10.0 min CN=74 Runoff=0.03 cfs 0.003 af
Subcatchment7PR: Proposed Front Yard	Runoff Area=197 sf 38.07% Impervious Runoff Depth>10.21" Tc=10.0 min CN=87 Runoff=0.04 cfs 0.004 af
Pond 8SWS: Detention System	Peak Elev=23.94' Storage=649 cf Inflow=0.37 cfs 0.035 af Outflow=0.11 cfs 0.001 af
Link POI: Hypothetical Outflow off Site	Inflow=0.19 cfs 0.008 af Primary=0.19 cfs 0.008 af

Total Runoff Area = 0.091 ac Runoff Volume = 0.076 af Average Runoff Depth = 10.11"
60.93% Pervious = 0.055 ac 39.07% Impervious = 0.035 ac

Summary for Subcatchment 1EX: Existing Site

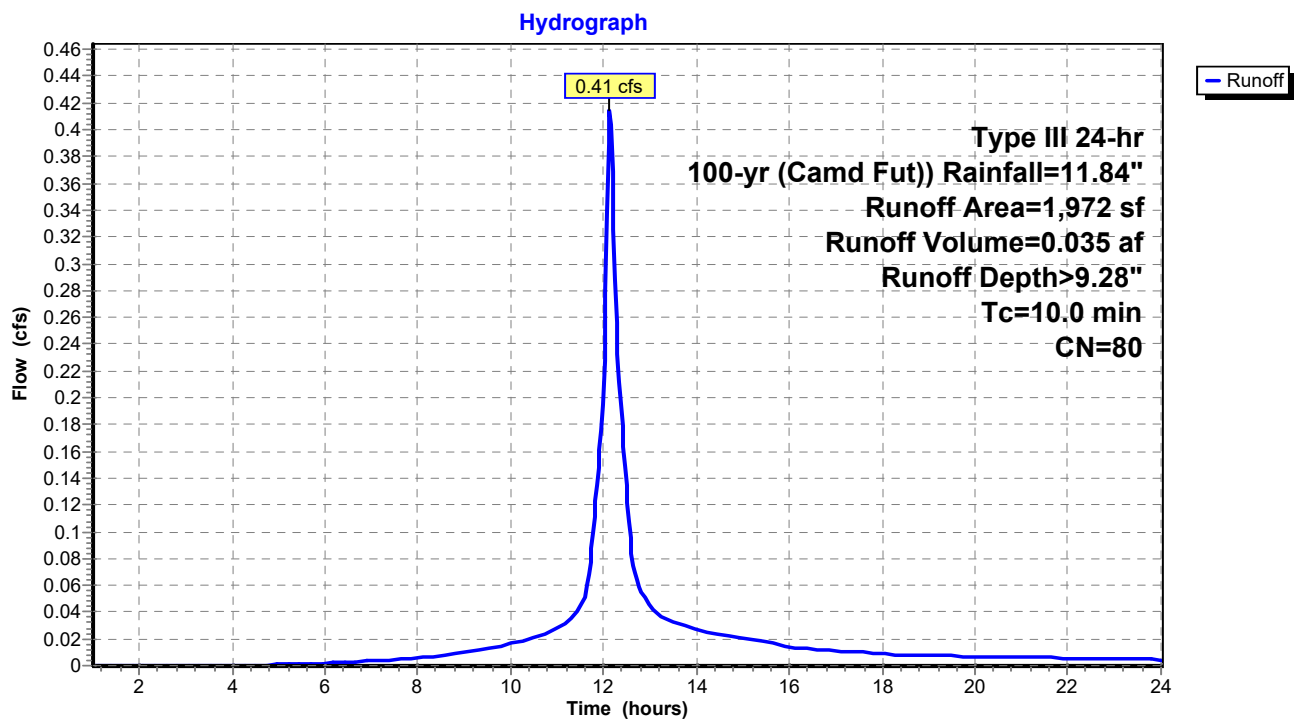
Runoff = 0.41 cfs @ 12.14 hrs, Volume= 0.035 af, Depth> 9.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-yr (Camd Fut)) Rainfall=11.84"

Area (sf)	CN	Description
* 1,972	80	>75% Grass cover, Good, HSG D
1,972		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 1EX: Existing Site



Summary for Subcatchment 2PR: Proposed Roof to Detention System

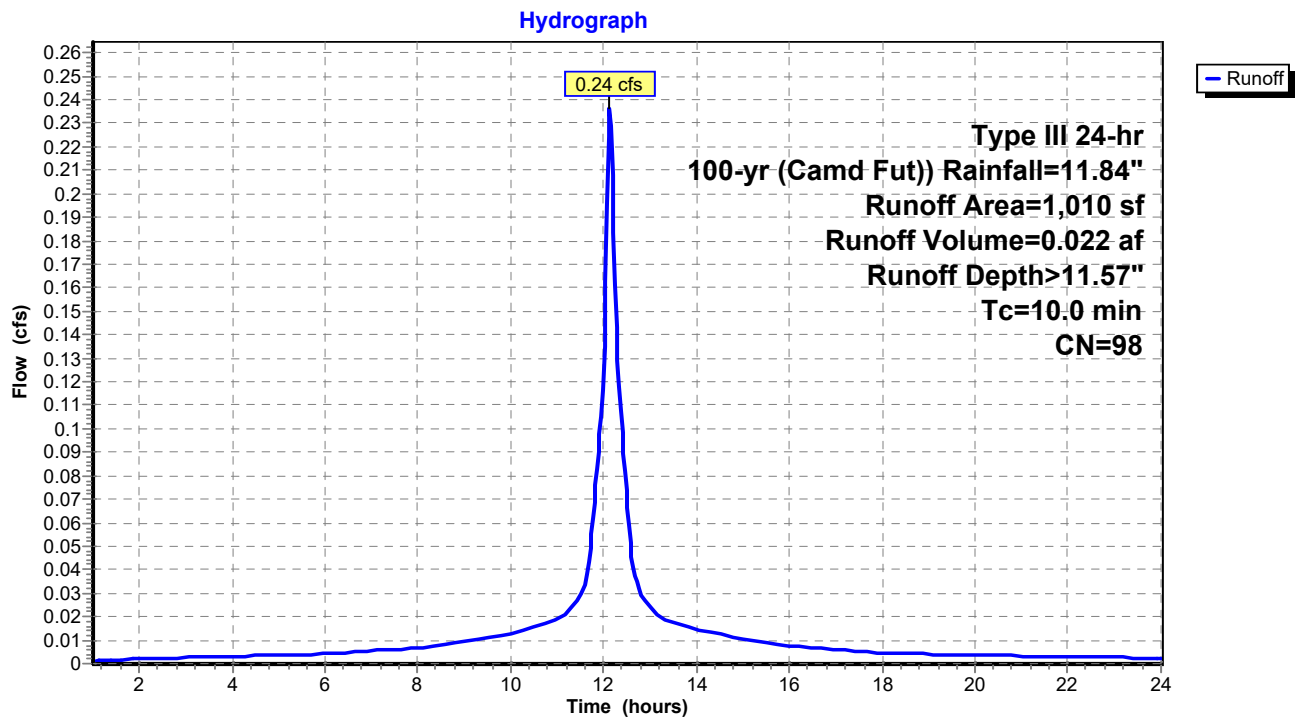
Runoff = 0.24 cfs @ 12.13 hrs, Volume= 0.022 af, Depth>11.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-yr (Camd Fut)) Rainfall=11.84"

Area (sf)	CN	Description
* 1,010	98	Impervious Roof
1,010		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 2PR: Proposed Roof to Detention System



Summary for Subcatchment 3PR: Proposed Parking Area to Detention System

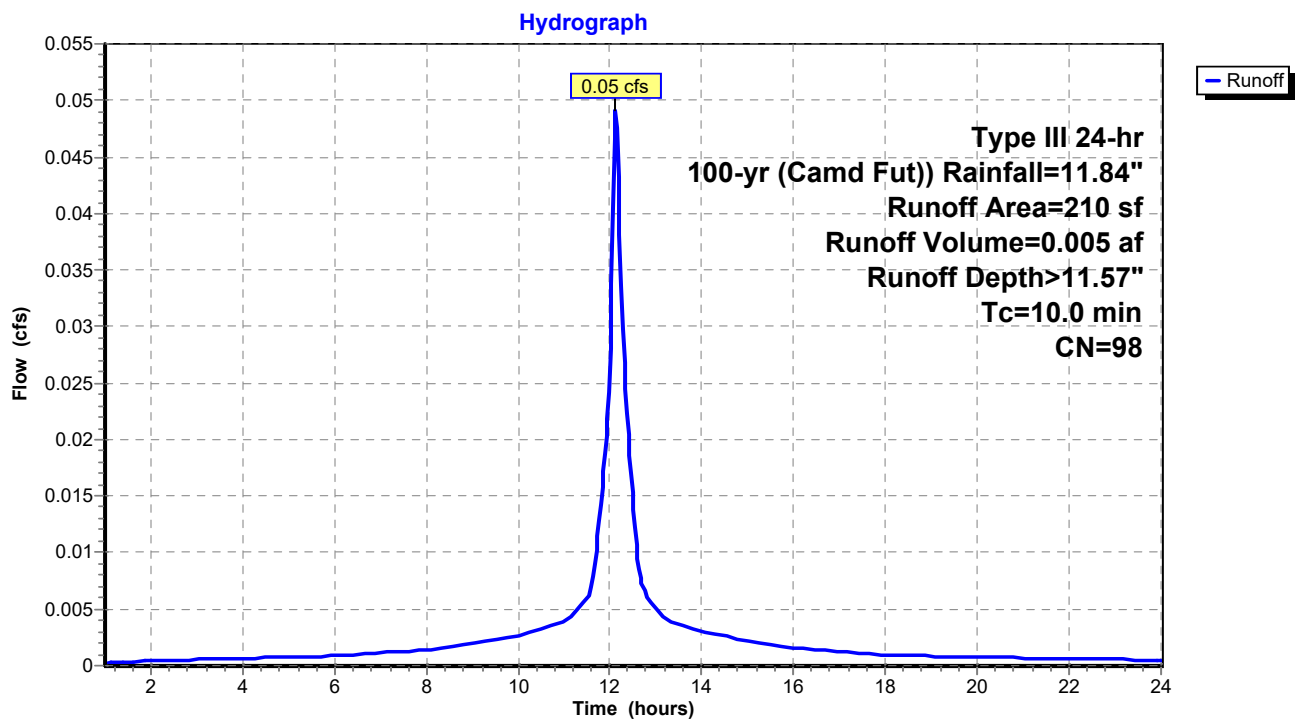
Runoff = 0.05 cfs @ 12.13 hrs, Volume= 0.005 af, Depth>11.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-yr (Camd Fut)) Rainfall=11.84"

Area (sf)	CN	Description
* 210	98	Pervious Pavers
210		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 3PR: Proposed Parking Area to Detention System



Summary for Subcatchment 4PR: Proposed Patio/Sidewalk to Detention System

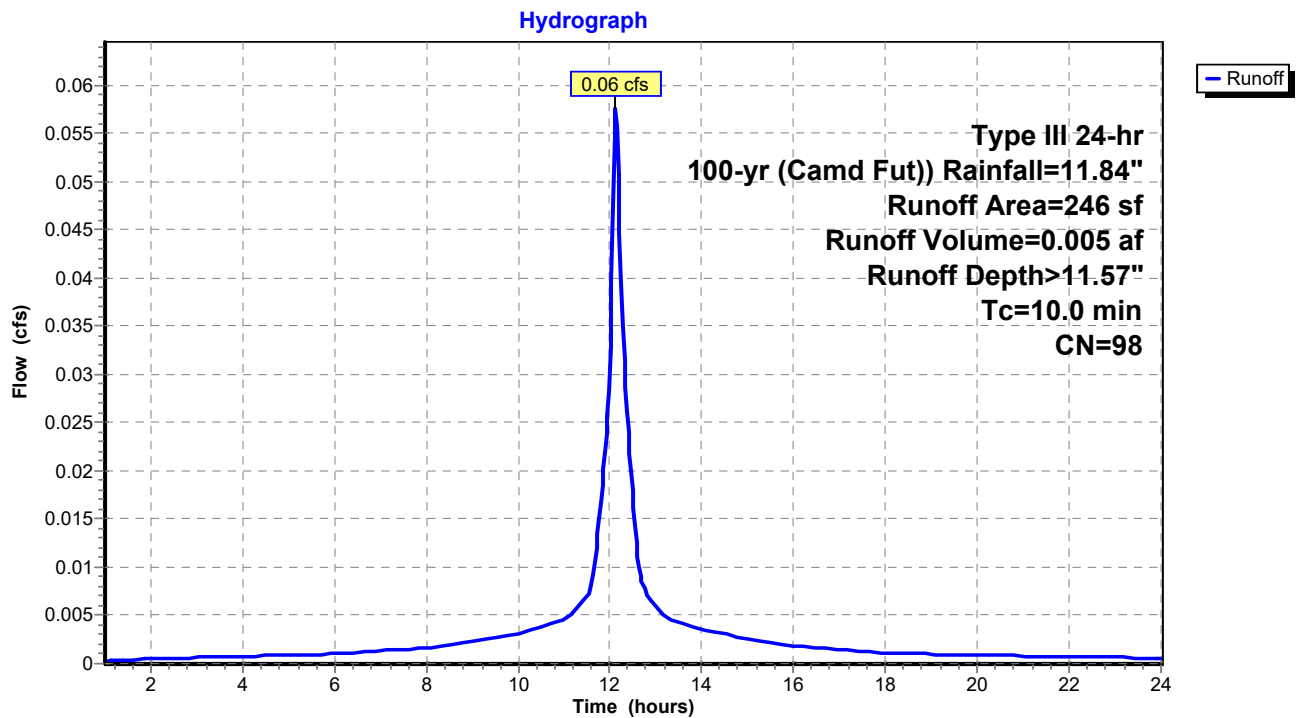
Runoff = 0.06 cfs @ 12.13 hrs, Volume= 0.005 af, Depth>11.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-yr (Camd Fut)) Rainfall=11.84"

Area (sf)	CN	Description
* 246	98	Impervious Concrete
246		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 4PR: Proposed Patio/Sidewalk to Detention System



Summary for Subcatchment 5PR: Proposed RY Grass to Detention System

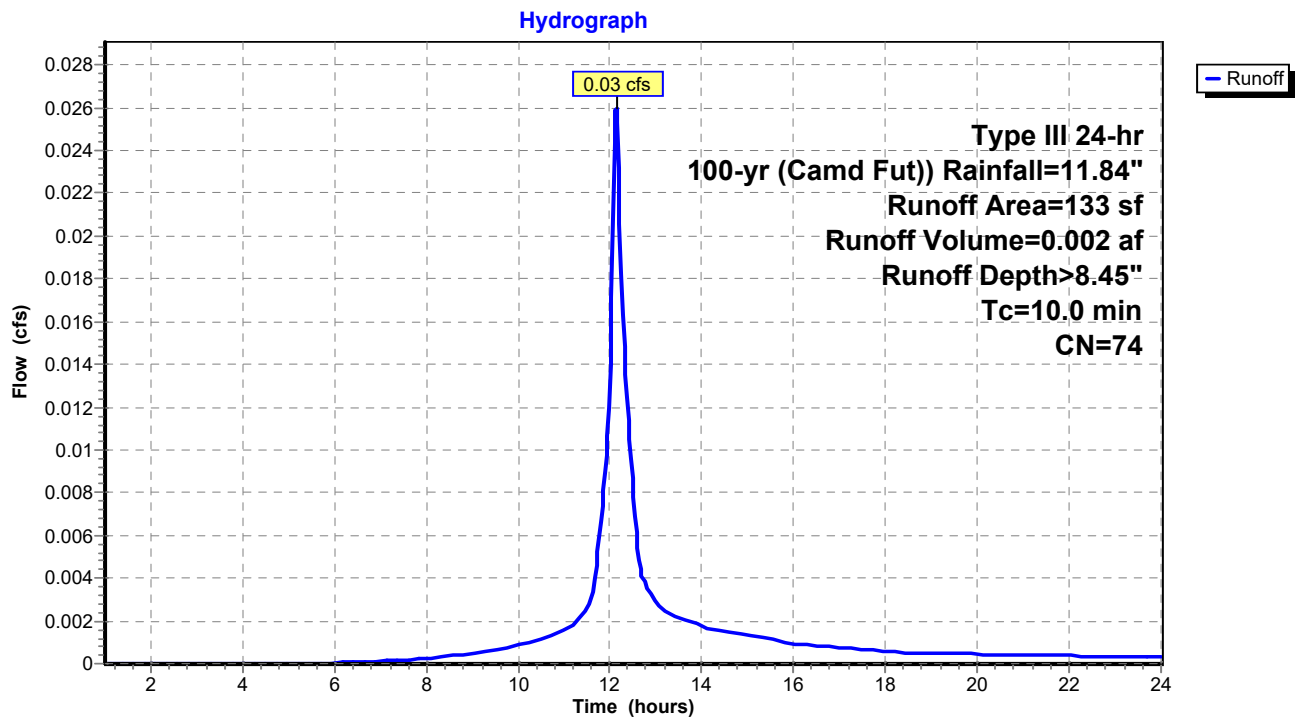
Runoff = 0.03 cfs @ 12.14 hrs, Volume= 0.002 af, Depth> 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-yr (Camd Fut)) Rainfall=11.84"

Area (sf)	CN	Description
* 133	74	>75% Grass cover, Good, HSG C (Replaced Soil)
133		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 5PR: Proposed RY Grass to Detention System



Summary for Subcatchment 6PR: Proposed RY Landscaping

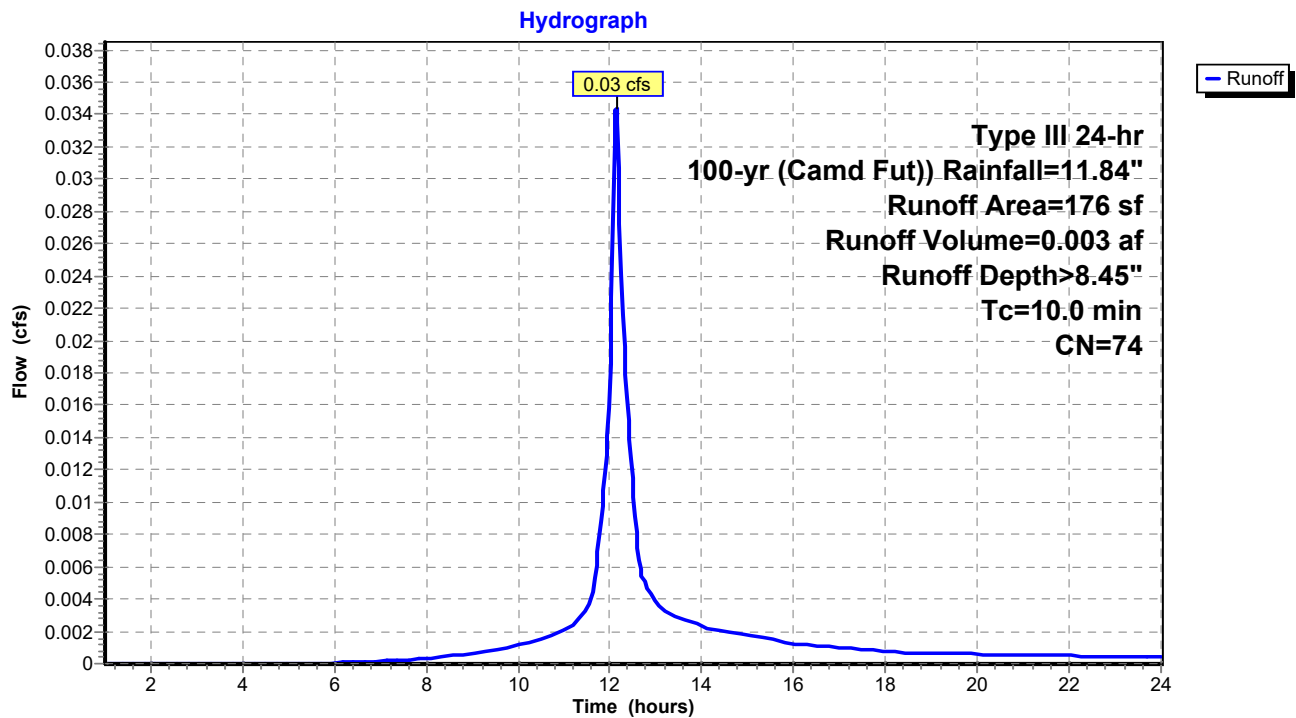
Runoff = 0.03 cfs @ 12.14 hrs, Volume= 0.003 af, Depth> 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-yr (Camd Fut)) Rainfall=11.84"

Area (sf)	CN	Description
* 176	74	>75% Grass cover, Good, HSG C (Replaced Soil)
176		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum
6.0	0				Total, Increased to minimum Tc = 10.0 min

Subcatchment 6PR: Proposed RY Landscaping



Summary for Subcatchment 7PR: Proposed Front Yard

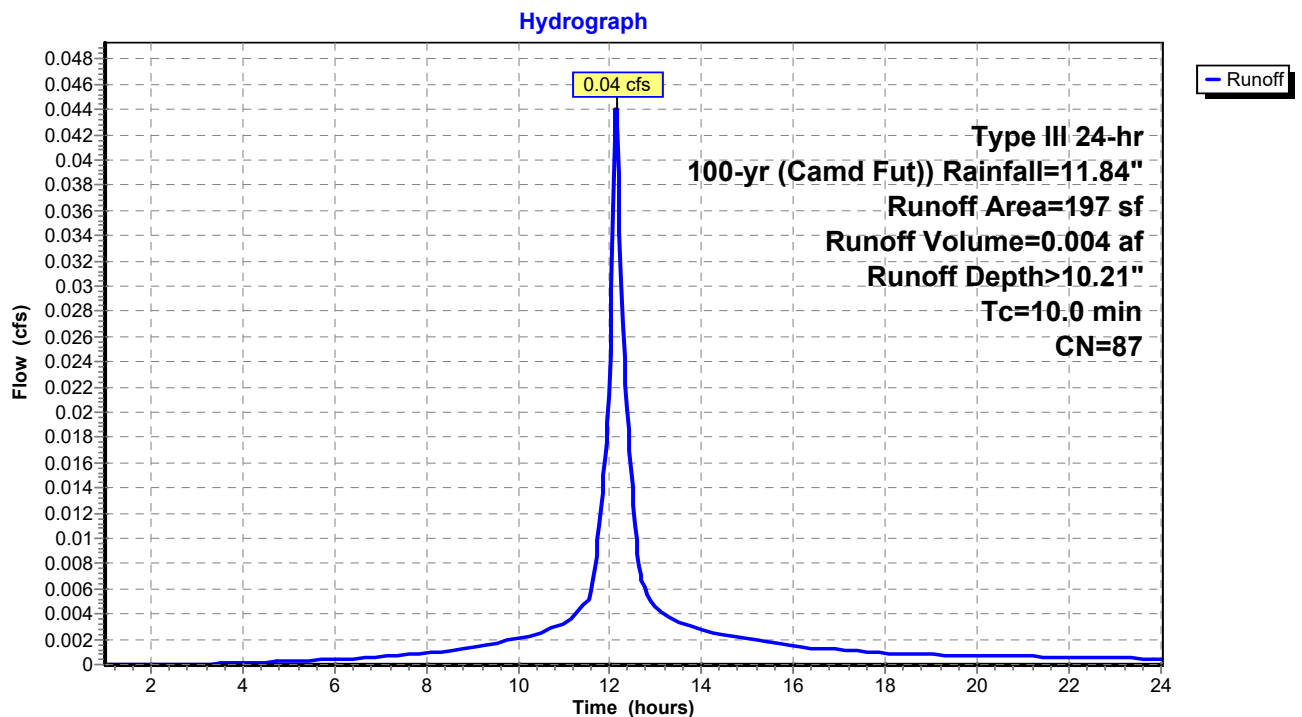
Runoff = 0.04 cfs @ 12.13 hrs, Volume= 0.004 af, Depth>10.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-yr (Camd Fut)) Rainfall=11.84"

	Area (sf)	CN	Description
*	75	98	Concrete Sidewalk
*	122	80	>75% Grass cover, Good, HSG C (Replaced Soil)
	197	87	Weighted Average
	122		61.93% Pervious Area
	75		38.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 7PR: Proposed Front Yard



Summary for Pond 8SWS: Detention System

[82] Warning: Early inflow requires earlier time span

[92] Warning: Device #1 is above defined storage

[93] Warning: Storage range exceeded by 0.19'

Inflow Area = 0.037 ac, 91.68% Impervious, Inflow Depth > 11.31" for 100-yr (Camd Fut)) event
 Inflow = 0.37 cfs @ 12.13 hrs, Volume= 0.035 af
 Outflow = 0.11 cfs @ 12.13 hrs, Volume= 0.001 af, Atten= 71%, Lag= 0.0 min
 Primary = 0.11 cfs @ 12.13 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs / 6
 Peak Elev= 23.94' @ 12.13 hrs Surf.Area= 315 sf Storage= 649 cf

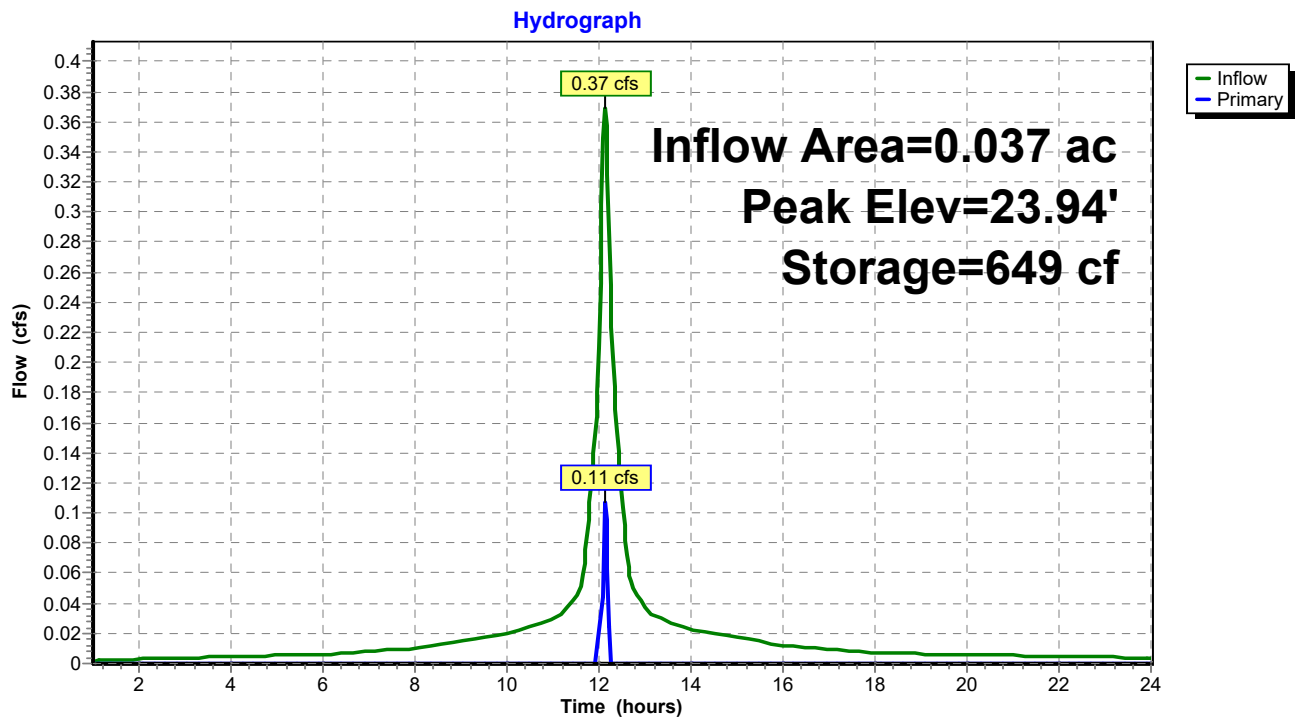
Plug-Flow detention time= 555.4 min calculated for 0.001 af (3% of inflow)
 Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	355 cf	10.50'W x 30.00'L x 3.75'H 10.5' x 30' Stone 3.75' Deep 1,181 cf Overall - 295 cf Embedded = 887 cf x 40.0% Voids
#2	20.00'	295 cf	30.0" Round 2 @ 30' Perf 30" HDPE x 2 Inside #1 L= 30.0'
		649 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	23.75'	6.0" Vert. 6" Overflow Pipe C= 0.600

Primary OutFlow Max=0.10 cfs @ 12.13 hrs HW=23.94' (Free Discharge)
1=6" Overflow Pipe (Orifice Controls 0.10 cfs @ 1.50 fps)

Pond 8SWS: Detention System

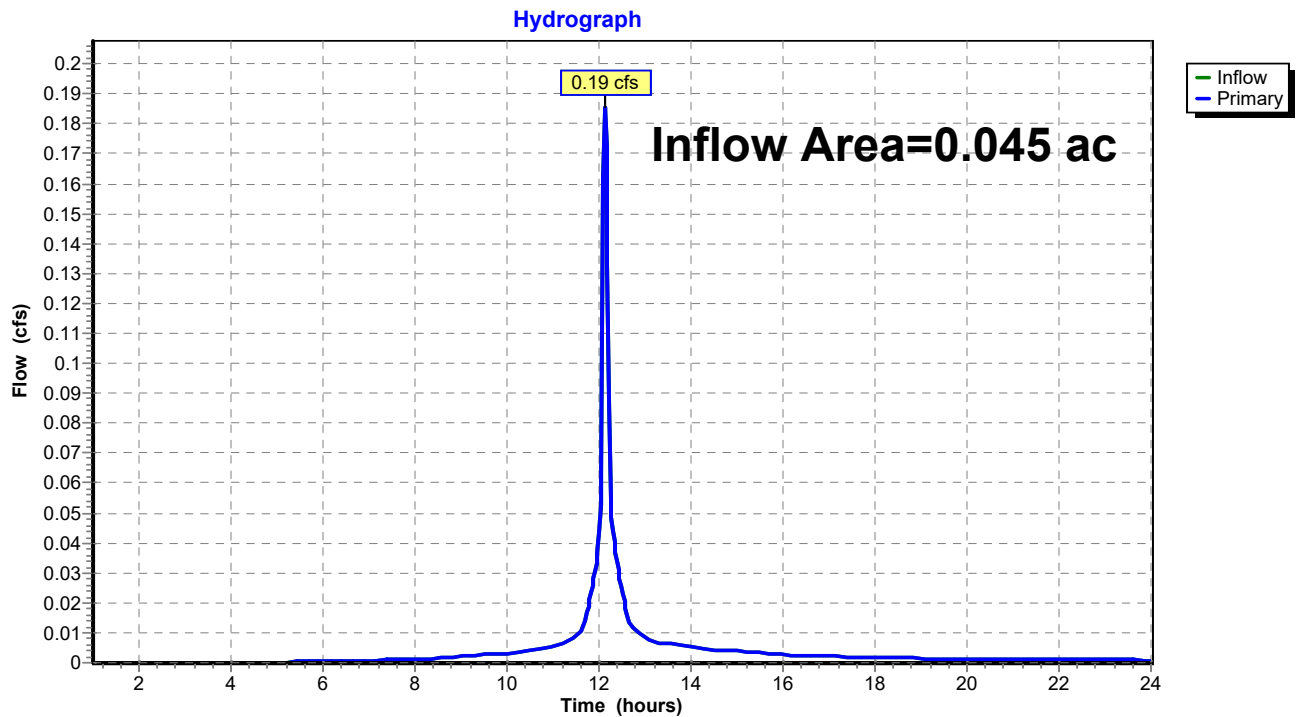


Summary for Link POI: Hypothetical Outflow off Site

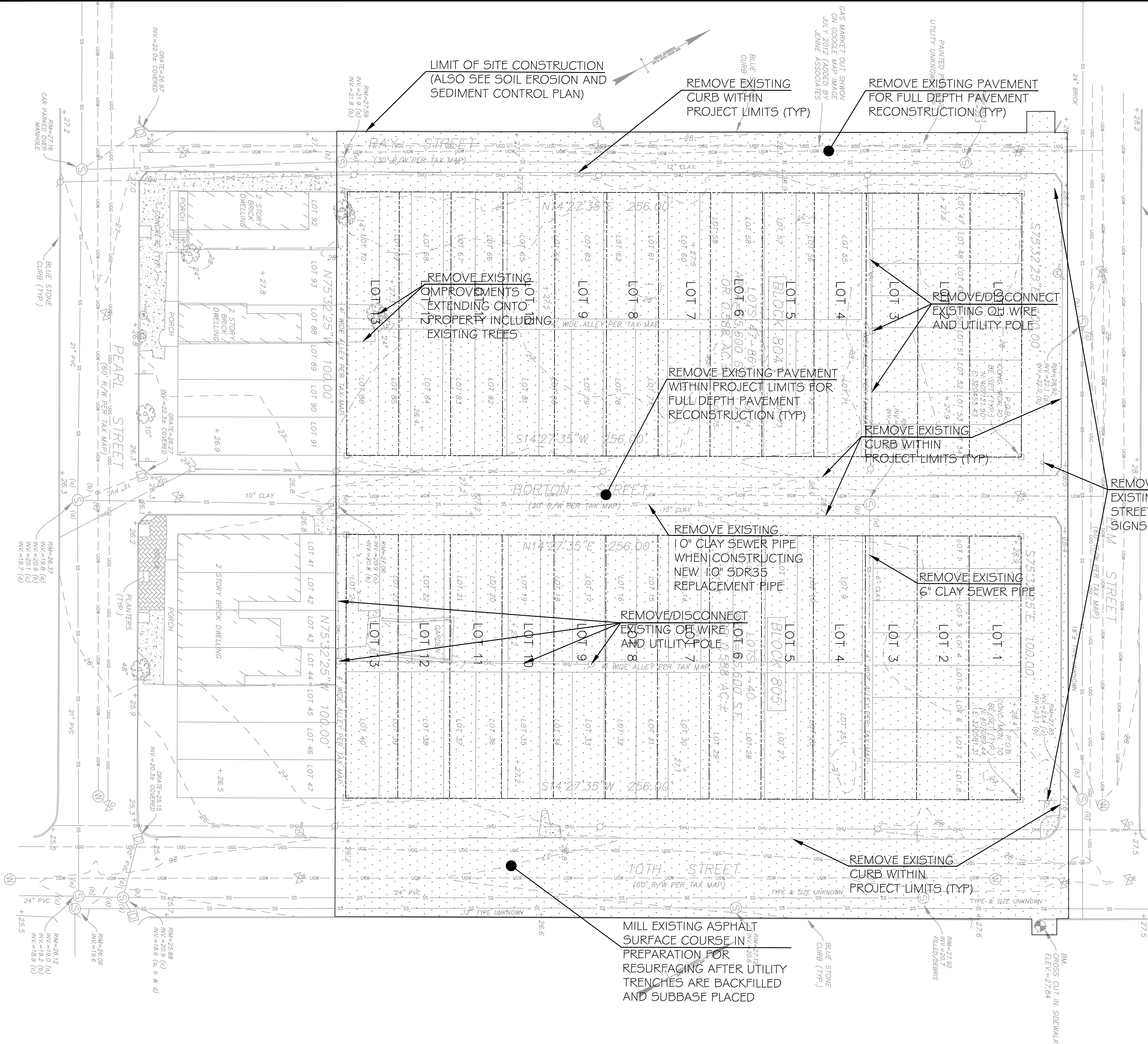
Inflow Area = 0.045 ac, 78.14% Impervious, Inflow Depth > 2.02" for 100-yr (Camd Fut)) event
Inflow = 0.19 cfs @ 12.13 hrs, Volume= 0.008 af
Primary = 0.19 cfs @ 12.13 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-24.01 hrs, dt= 0.03 hrs

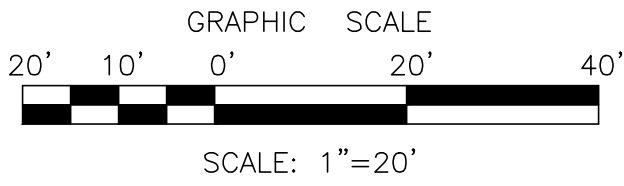
Link POI: Hypothetical Outflow off Site



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1 SITE DEMOLITION PLAN
1"=20'



DEMOLITION NOTES

1. BOUNDARY, TOPOGRAPHIC AND UTILITY INFORMATION SHOWN FROM PLAN ENTITLED, "BOUNDARY AND TOPOGRAPHIC SURVEY, ELM STREET BLOCK 804, LOTS 47-86, BLOCK 805, LOTS 1-40, CITY OF CAMDEN, CAMDEN COUNTY, NEW JERSEY" PREPARED BY RWC SURVEYING, JOHN J. HANLON, N.J.P.L.S., DATED 3/17/2024. HORIZONTAL DATUM: NAD83. VERTICAL DATUM: SHOWN TO NAVD83.
2. ADDITIONAL UTILITY INFORMATION REGARDING GAS SERVICE PIPE IN RAY STREET ADDED FROM UTILITY MARKOUTS SHOWN ON GOOGLE STREET VIEW (PHOTOGRAPH DATED JULY 2012) BY JENNE ASSOCIATES IN MAY 2024.
3. PROPOSED LOTS SHOWN FROM PLAN ENTITLED "MAJOR SUBDIVISION PLAN, ELM STREET BLOCK 804, LOTS 47-86, BLOCK 805, LOTS 1-40, CITY OF CAMDEN, CAMDEN COUNTY, NEW JERSEY" PREPARED BY RWC SURVEYING, JOHN J. HANLON, N.J.P.L.S., DATED 3/17/2024.
4. THERE ARE NO WATER COURSES OR WETLANDS ON THE PROPERTY AND IT DOES NOT LIE WITHIN A REGULATED FLOOD
5. THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES ARE SHOWN BASED ON AVAILABLE INFORMATION AND SURFACE EVIDENCE AND ARE TO BE CONSIDERED APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION (N/D ONE CALL AT 811 OR 1-800-272-1000) AND NOTIFY THE DESIGNER IMMEDIATELY IF THE LOCATION OF UNKNOWN UTILITIES MAY IMPACT THE PROPOSED CONSTRUCTION.
6. THE CONTRACTOR SHALL VERIFY ALL INFORMATION TO THEIR SATISFACTION PRIOR TO THE EXECUTION OF CONTRACTS OR COMMENCING WORK. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER OF RECORD.
7. THE CONTRACTOR SHALL DEMOLISH ALL BUILDINGS, PAVEMENT, ETC WHERE INDICATED WITHIN THE LIMIT OF DISTURBANCE. EDGES OF PAVEMENT DEMOLITION SHALL BE SAW CUT. DEMOLISHED CONCRETE AND ASPHALT SHALL BE CURED TO THE DIMENSIONS INDICATED IN THE PROJECT GEOTECHNICAL REPORT AND STOCKPILED FOR REUSE AS SITE FILL. ALL DEMOLITION AND MATERIAL REUSE SHALL BE IN ACCORDANCE WITH ENVIRONMENTAL REQUIREMENTS FOR THE SITE.
8. THE CONTRACTOR MUST ACCEPT THE SITE AS IS AND SHALL BE DEEMED TO HAVE INSPECTED THE SITE AND REVIEWED ALL CONTRACT DOCUMENTS PRIOR TO SUBMITTING A BID. THE CONTRACTOR SHALL INSPECT THE SITE THOROUGHLY AND FIELD VERIFY THE LOCATION AND DEPTH OF ALL APPLICABLE EXISTING UTILITIES. SOME UNDERGROUND UTILITIES MAY BE LOCATED DIFFERENT THAN SHOWN ON THIS PLAN. ALL CONTRACTORS USING THESE PLANS FOR DEMOLITION OR CONSTRUCTION SHALL CONFIRM ALL UTILITIES IN THE FIELD TO ESTABLISH LOCATIONS, SIZES, MATERIALS, AND ELEVATIONS. ANY DISCREPANCIES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND THE CONSTRUCTION MANAGER. CONTRACTOR SHALL PROTECT AND MAINTAIN UTILITIES AS NOTED.
9. THE CONTRACTOR SHALL CARRY OUT THE WORK OF THIS CONTRACT PLACING THE SAFETY AND PROTECTION OF THE SURROUNDING COMMUNITY AND PROPERTY AT THE HIGHEST PRIORITY. THE CONTRACTOR SHALL ENSURE FREE AND SAFE PASSAGE OF PERSONS AROUND THE AREA OF THE DEMOLITION AS DIRECTED BY THE GOVERNING AGENCIES AND THE OWNER. ALL OPERATIONS SHALL BE CONDUCTED SO AS TO PREVENT DAMAGE TO ADJACENT BUILDINGS, STRUCTURES, AND OTHER FACILITIES AND INJURY TO PERSONS, BOTH PEDESTRIAN AND WORKERS ALIKE. THE CONSULTANT DOES NOT HAVE THE RIGHT TO STOP DEMOLITION ACTIVITIES. SUCH DIRECTION MUST COME FROM THE OWNER.
10. THE CONTRACTOR SHALL INSTALL AND MAINTAIN CONSTRUCTION SIGNAGE AND ASSOCIATED TRAFFIC MEASURES. THE CONTRACTOR SHALL FOLLOW THE WORK ZONE SAFETY GUIDELINES FOR CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS REQUIRED BY LOCAL JURISDICTION.
11. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAINTAINING THE SECURITY OF THE PROJECT SITE AT ALL TIMES.
12. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL UTILITIES, WHETHER SHOWN OR NOT ON THE CONTRACT DRAWING, AND SHALL ABANDON, REMOVE, OR PROTECT THE UTILITIES AS INDICATED HEREON OR AS DIRECTED BY THE OWNER, SUBCONSULTANT, OR INTERESTED UTILITY COMPANY.
13. THE CONTRACTOR SHALL VERIFY THAT A SOIL EROSION AND SEDIMENT CONTROL PERMIT HAS BEEN OBTAINED FOR DEMOLITION ACTIVITIES. CONTRACTOR SHALL COMPLY WITH THE CONDITIONS THEREON BY INSTALLING AND MAINTAINING ALL SSC MEASURES AND MAKING THE REQUIRED NOTIFICATIONS.
14. PRIOR TO DEMOLITION, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL CONTENTS OF THE BUILDINGS TO BE DEMOLISHED INCLUDING, BUT NOT NECESSARILY LIMITED TO, FURNISHINGS, MECHANICAL EQUIPMENT, RESERVOIR TANKS, PLUMBING FIXTURES, FURNITURE, CABINETS, ETC. IN ACCORDANCE WITH ENVIRONMENTAL REQUIREMENTS FOR THE SITE.
15. PRIOR TO DEMOLITION, THE CONTRACTOR SHALL DISCONNECT AND CAP/TERMINATE AT THE UTILITY MAIN ALL BUILDING SERVICES, E.G. WATER, SEWER, GAS, ELECTRIC, TELEPHONE, ETC. (UNLESS OTHERWISE NOTED) IN ACCORDANCE WITH ALL LOCAL REGULATION AND UTILITY COMPANY REQUIREMENTS. THIS WORK SHALL BE COORDINATED WITH ALL UTILITY COMPANIES AND OBTAINING AND PAYING FEES FOR ALL STREET AND SIDEWALK OPENING PERMITS.
16. THE CONTRACTOR SHALL DEMOLISH AND REMOVE THE BUILDINGS WHERE INDICATED, INCLUDING ALL FLOOR SLABS, PITS, WALLS, FOOTINGS, GRADE BEAMS, COLUMNS, UTILITIES ETC. ALL VOIDS REMAINING FROM THE REMOVAL OF SUBSURFACE ELEMENTS SHALL BE BACKFILLED WITH COMPACTED MATERIAL AS PER THE FINAL GEOTECHNICAL ENGINEERING REPORT.
17. ALL EXISTING SITE ELEMENTS SLATED FOR DEMOLITION SHALL BE REMOVED IN THEIR ENTIRETY INCLUDING, BUT NOT LIMITED TO, ASPHALT, BUSHES, TREES, PLANTERS, ETC. WITHIN THE CONTRACT LIMITS UNLESS OTHERWISE NOTED.
18. CONTRACTOR TO VERIFY THAT ALL ENVIRONMENTAL CONCERNS (ASBESTOS, LEAD BASED PAINT, HAZMAT MATERIALS, UNDERGROUND STORAGE TANKS, TRANSFORMERS, ETC.) HAVE BEEN REMOVED PRIOR TO COMMENCEMENT OF DEMOLITION ACTIVITIES. THESE POTENTIAL CONCERNS ARE NOT SHOWN ON THIS PLAN. THE CONTRACTOR SHALL REFER TO THE ENVIRONMENTAL REPORTS AND DOCUMENTS FOR ENVIRONMENTAL CONCERN LOCATIONS AND DISPOSAL PROCEDURES.
19. CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL ADJACENT RIGHT-OF-WAYS AND ADJACENT PROPERTIES CLEAN DURING DEMOLITION.
20. CONTRACTOR SHALL STOCKPILE REMOVED ASPHALT AND CONCRETE IN SEPARATE PILES. REMOVED MATERIAL MAY BE REUSED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND ENVIRONMENTAL REQUIREMENTS.
21. CONTRACTOR TO PROVIDE DUST CONTROL MEASURES DURING DEMOLITION AND CONSTRUCTION ACTIVITIES.
22. CONTRACTOR TO WASH TRUCK TIRES BEFORE EXITING THE CONSTRUCTION SITE.
23. EXISTING IRRIGATION WELLS ONSITE SHALL BE DECOMMISSIONED BY NJ LICENSED WELL DRILLER.
24. PER CITY ORDINANCE ALL UTILITY SERVICES TO BE ABANDONED ARE TO BE DISCONNECTED AT THE MAIN AND REMOVED FROM THE GROUND.

CASAS DEL RIO

CITY OF CAMDEN, NJ
CAMDEN LUTHERAN HOUSING INC.

Architect

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NJ Certificate of Authorization for Engineering
24GA28135000

Carl A. Jenne, P.E.
NJ Professional Engineer
No. 24GE02628700

DATE	ISSUE	DESCRIPTION
6/28/2024	1	PLANNING BD. SUBMISSION

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Project
CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

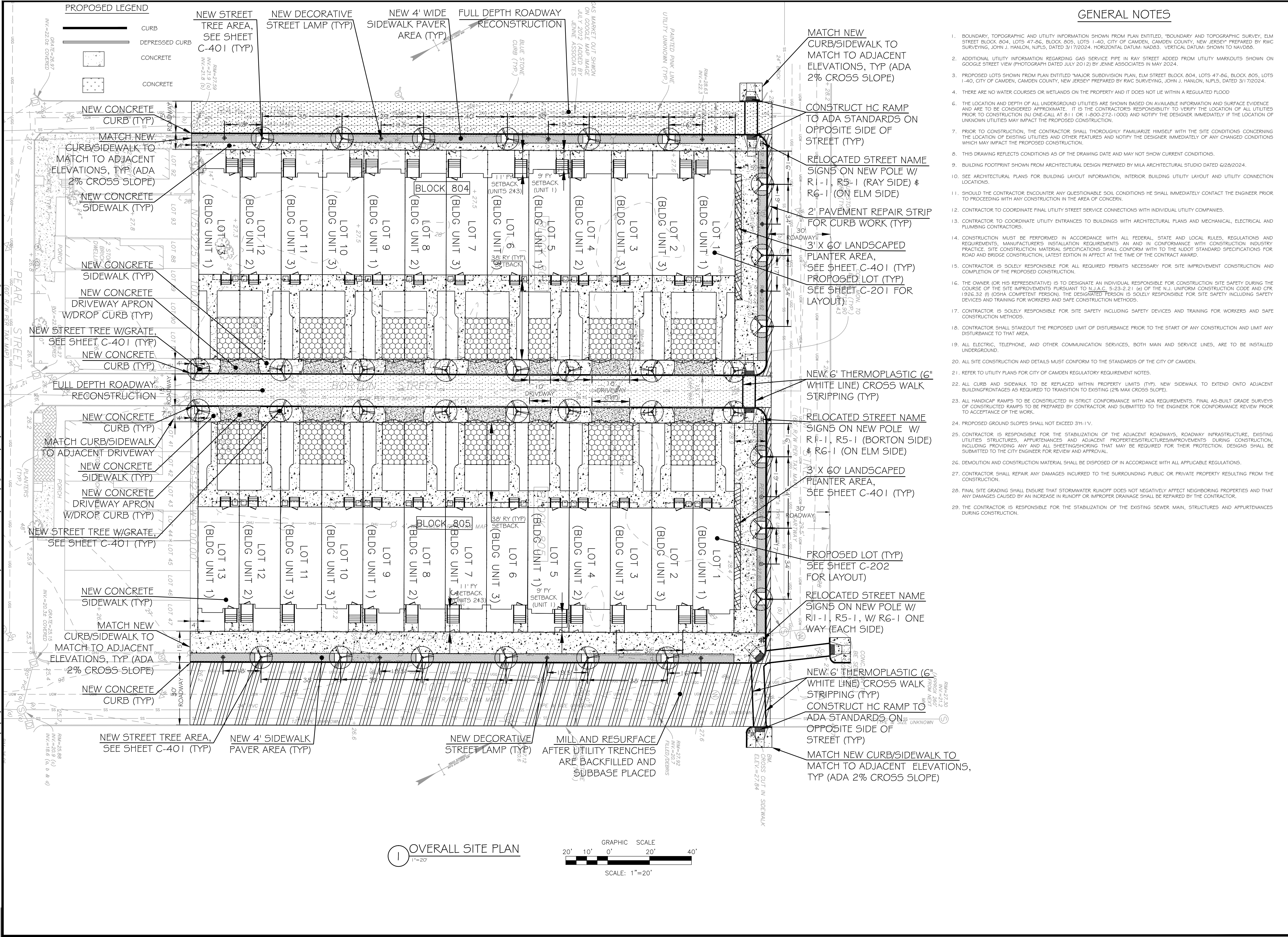
Drawing Title
SITE DEMOLITION PLAN

Drawing No.	Project No. 23-014
	Scale AS NOTED
	Drawn/Checked by CAJ/CJ
NJ LIC. No. 22414	

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Project
CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title
OVERALL SITE PLAN

Drawing No.
C-101

MICHAEL I. MILLA	Project No. 23-014
	Scale AS NOTED
	Drawn/Checked by CAJ/CJ
NJ LIC. No. 22414	

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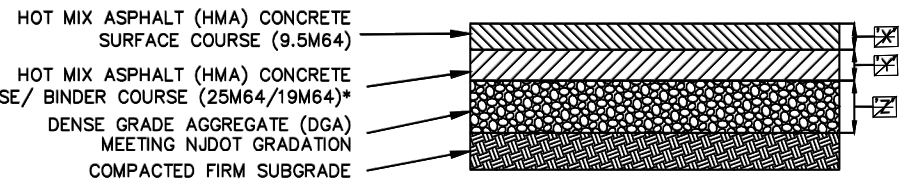
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CAMDEN CITY ORDINANCE SPECIFICATIONS PER CITY SIDEWALK APPLICATION NOTES:

- A. CONCRETE MUST BE PORTLAND CEMENT CONCRETE, AIR-ENTRAINED, CONFORM TO THE NJDOT STANDARD SPECIFICATIONS FOR CLASS B CONCRETE, AND MUST HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,500 PSI AFTER 28 DAYS.
- B. INSTALL EXPANSION JOINT PAPER AGAINST EXISTING CONCRETE AND EVERY 20 FT.
- C. GRADES AND CROSS SLOPES: THE MAXIMUM SIDEWALK CROSS SLOPE IS 2%. THE MAXIMUM GRADE IS 12:1 (8.33%), HOWEVER, THE LONGITUDINAL GRADE OF THE SIDEWALK SHOULD BE CONSISTENT WITH THE GRADE OF THE ADJACENT ROADWAY. IF THE 12:1 GRADE IS NOT FEASIBLE DUE TO TOPOGRAPHY AND OTHER PHYSICAL CONSTRAINTS, THEN THE GRADE SHOULD BE DEVELOPED TO THE EXTENT FEASIBLE. WHEN SIDEWALK GRADES ARE STEEPER THAN 12:1, FOR A MAXIMUM DISTANCE OF 30 FEET ARE UNAVOIDABLE, A LEVEL 4 FOOT LONG LANDING SHOULD BE INCLUDED IF FEASIBLE (OR AT A DISTANCE THAT IS PRACTICABLE). SIDEWALK DEPTH: 5 IN. NOTE NOT EXCEED 2%, APRON DEPTH: 6 IN. NOT TO EXCEED 8%, HANDICAP RAMP DEPTH 6 IN., HANDICAP RAMPS SHALL BE INSTALLED UNDER ADA GUIDELINES. PLEASE REFER TO A LICENSED SURVEYOR AS NEEDED.
- D. TWO INSPECTIONS WILL BE PERFORMED PRIOR OF APPROVING WORK: 1) FORM INSPECTION, 2) POUR INSPECTION.
- E. CONTRACTOR OR UTILITY CO. RESPONSIBLE TO SUPPLY A CONCRETE SLIP.
- F. CURB INSTALLATION: MATCH EXISTING (PROVIDING AREAS ARE SMALL). PLEASE CONTACT INSPECTOR CARDI TO VERIFY APPROVED ADJUSTMENTS.
- G. CURB INSTALLATION: CURB DIMENSION 18 IN. VERTICAL, 7" WIDE (TOP), 8" WIDE (BOTTOM) (LARGE AREAS).
- H. CONTRACTOR OR UTILITY CO. MUST USE WATER WHEN SAW CUTTING CONCRETE OR ASPHALT TO PREVENT DUST IN THE AIR. CONTRACTOR/UTILITY CO. RESPONSIBLE TO CALL IN FOR MARKOUTS "811".
- I. STREET RESTORATION: EXISTING CONCRETE BASE AND ASPHALT TOP: INSTALL 6 IN. CONCRETE BASE AND NJDOT ASPHALT TOP 2 IN. NOTE: EXISTING ASPHALT MUST BE SAW CUTTED SQUARE AT LEAST FOUR IN. BACK FROM EXISTING OPENING AROUND PERIMETER.
- J. STREET RESTORATION: ASPHALT STREET: NJDOT ASPHALT BASE, 6 IN., 2 IN. ASPHALT TOP, HOT TACK SEAMS INNER AND OUTER SEAM. ~~COLD TACK IS NOT ACCEPTED.~~
- K. STREET RESTORATION: CONCRETE STREET: 8 IN. DEPTH (CITY)
- L. WAITING TIME FOR CONCRETE SETTING UP IN THE STREET, WAITING PERIOD SHOULD BE A MINIMUM OF THREE DAYS PRIOR OF INSTALLING ASPHALT. STEEL PLATES SHOULD BE IN PLACE FOR THE SAFETY OF THE RESIDENTS OF THE CITY OF CAMDEN.
- M. ROAD RESTORATION: CONCRETE ROAD: 9 TO 10 IN. DEPTH AND INSTALL DOWEL RODS IN EXISTING SLAB. UTILITY CO. OR CONTRACTOR MUST REMOVE WHOLE SLAB (JOINT TO JOINT).
- N. PLEASE PROVIDE 95% TO 98% COMPACTION. COMPACT IN 12 IN. LIFTS. CONTRACTOR OR UTILITY CO. MUST USE NJDOT CERTIFIED CLEAN FILL (DGA).
- O. INSPECTION SCHEDULING: PLEASE CALL MRS. WALKER AT (856) 757-7680
- P. CONTRACTOR OR UTILITY CO. RESPONSIBLE TO CLEAN AREA AND SECURE ALL EQUIPMENT PRIOR OF DEPARTING WORK AREA. CITY OF CAMDEN ACCEPTS NO LIABILITY.
- Q. CONTRACTOR/UTILITY CO. RESPONSIBLE TO PROVIDE TEMPORARY TRAFFIC CONTROL PLAN IN COMPLIANCE WITH MUTCD REQUIREMENTS IF NEEDED. REFER TO CAMDEN COUNTY POLICE DEPT. TRAFFIC CONTROL OFFICER LT. MOFFA AT (856) 757-7280. NOTE: MUST BE PRE-APPROVED PRIOR OF WORKING IN THE STREET OR SIDEWALK (IF RESTRICTING TRAFFIC). NOTE: SIDEWALK CLOSED: PLEASE INSTALL PEDESTRIAN SIDEWALK CLOSED SIGNS WITH ARROW DIRECTING ACROSS THE STREET OR PROVIDE OTHER OPTIONS IN COMPLIANCE WITH MUTCD REQUIREMENTS.

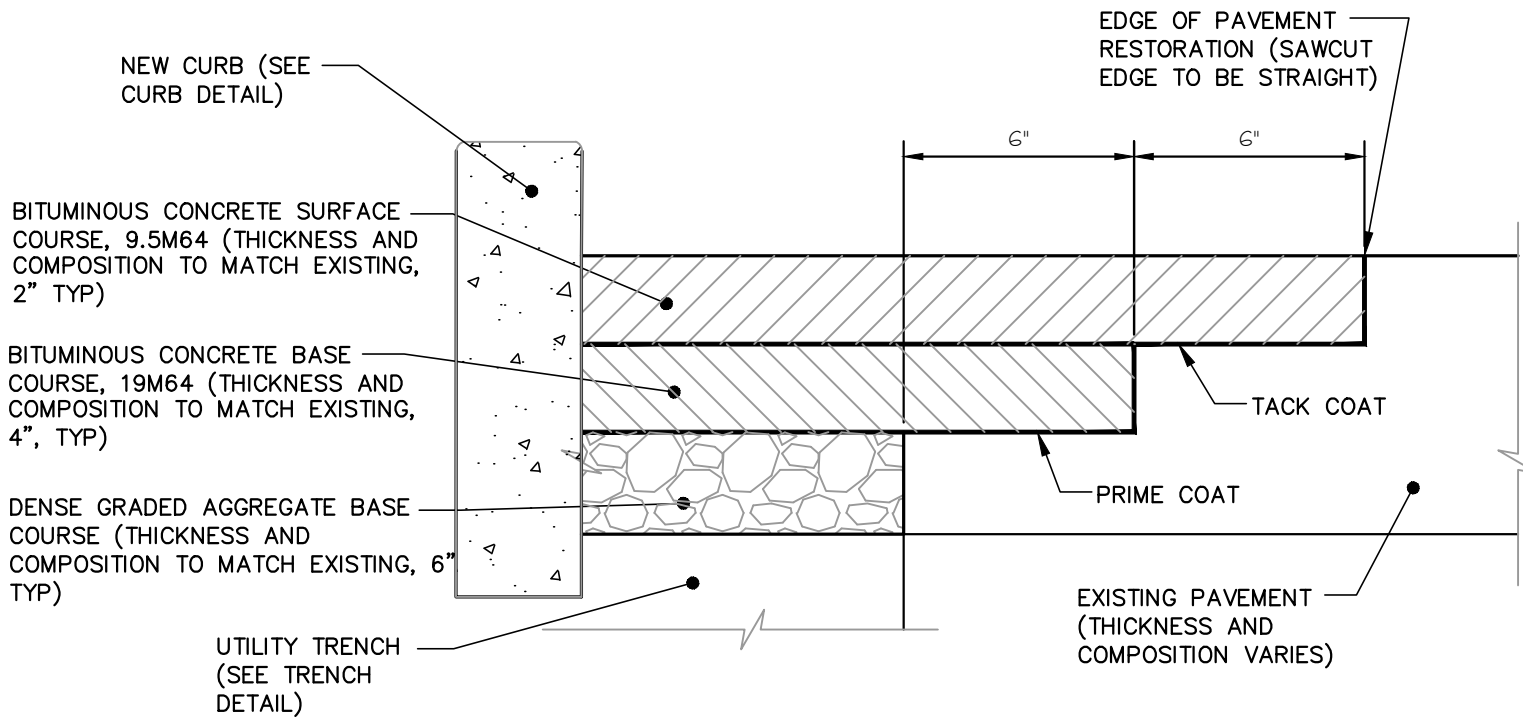
ASPHALT SECTION	SURFACE COURSE - "X"	BASE COURSE - "Y"	SUBBASE - "Z"
STANDARD DUTY	1.5 INCHES	2.5 INCHES	4 INCHES
HEAVY DUTY	1.5 INCHES	4 INCHES	6 INCHES
PUBLIC RIGHT-OF-WAY	2 INCHES	4 INCHES	6 INCHES

NOTE: THICKNESSES TO BE CONFIRMED BY GEOTECHNICAL ENGINEER OF RECORD.

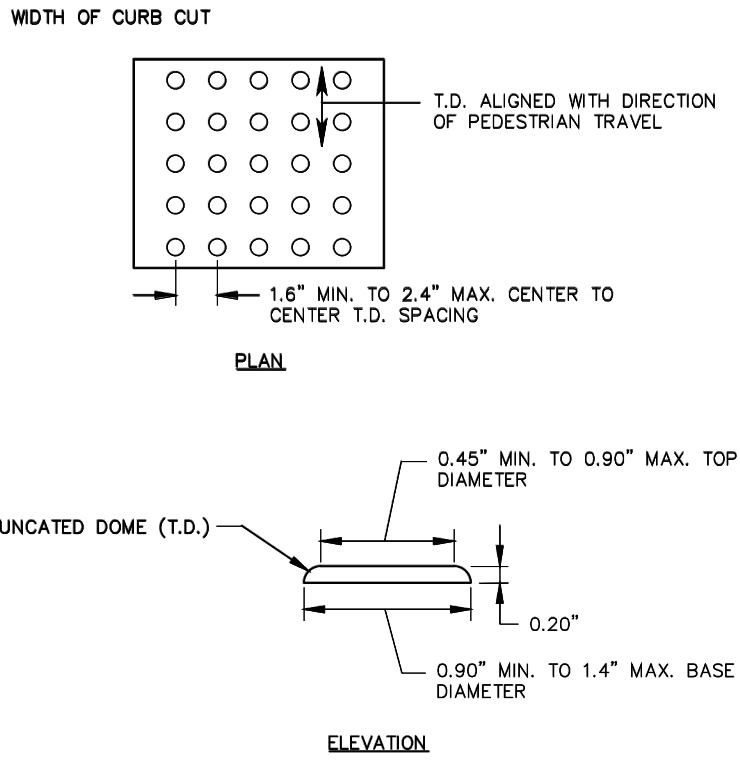


- NOTES:
- PRIOR TO ANY ASPHALT PAVING ACTIVITIES, THE CONTRACTOR SHALL PROVIDE ASPHALT DESIGN MIX SUBMITTAL TO THE OWNER'S ENGINEER FOR REVIEW AND APPROVAL.
 - PRIOR TO ANY ASPHALT PAVING ACTIVITIES, THE PAVEMENT SUBGRADE AND SUBBASE SHALL BE PROPERLY PREPARED AND ADEQUATELY COMPACTED AS REQUIRED BY GEOTECHNICAL ENGINEER OF RECORD RECOMMENDATION.
 - ALL AREAS TO BE PAVED SHALL BE PROFFEROLLED WITH A SMOOTH ROLLER HAVING A MINIMUM STATIC DRUM WEIGHT OF 6-TONS AND A FULLY LOADED TRAILER DUMP TRUCK. ANY SOFT AREAS SHALL BE REMOVED AND REPLACED WITH APPROVED, COMPACTED FILL. FILL SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 12-INCHES AND SHALL BE COMPACTED TO AT LEAST 95% OF ITS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.
 - THE ASPHALT MIXTURE AFTER BEING SPREAD, SHALL BE THOROUGHLY COMPACTED BY ROLLING AS SOON AS IT WILL BEAR THE WEIGHT OF THE ROLLERS WITHOUT UNDESIRABLE DISPLACEMENT. THE NUMBER, WEIGHT, AND TYPES OF ROLLERS AND SEQUENCES OF ROLLING OPERATIONS SHALL BE SUCH THAT THE REQUIRED DENSITY AND SURFACE ARE CONSISTENTLY ATTAINED WHILE THE MIXTURE IS IN A WORKABLE CONDITION.
 - ASPHALT SHALL BE COMPACTED TO A MINIMUM OF 93% OF THE MAXIMUM THEORETICAL DENSITY ACCORDING TO ASTM D6041 FOR THE 9.5M64 AND 19M64 COURSES. FOR THE 25M64 COURSE, THE ASPHALT SHALL BE COMPACTED TO A MINIMUM OF 92% OF THE MAXIMUM THEORETICAL DENSITY, OR IN ACCORDANCE WITH GEOTECHNICAL ENGINEER OF RECORD RECOMMENDATION.
 - A TESTING AGENCY SHALL PERFORM IN PLACE DENSITY TESTS AS PART OF THE CONSTRUCTION TESTING REQUIREMENTS USING THE NUCLEAR METHOD IN ACCORDANCE WITH ASTM D-2922 METHOD B DIRECT TRANSMISSION.
 - APPLY TACK COAT TO ASPHALTIC CONCRETE BASE COURSE PRIOR TO PLACING SURFACE COURSE. APPLY EMULSIFIED ASPHALT TACK COAT BETWEEN EACH LIFT OR LAYER OF FULL DEPTH ASPHALTIC CONCRETE BASES, WHERE APPLICABLE.
 - ASPHALT PAVING OPERATIONS SHALL ONLY OCCUR WHEN ATMOSPHERIC TEMPERATURE IS ABOVE 40°F. DO NOT PLACE ASPHALT ON FROZEN GROUND OR IN STANDING WATER. DO NOT PAVE IN THE RAIN.

4 ASPHALT PAVEMENT DETAIL



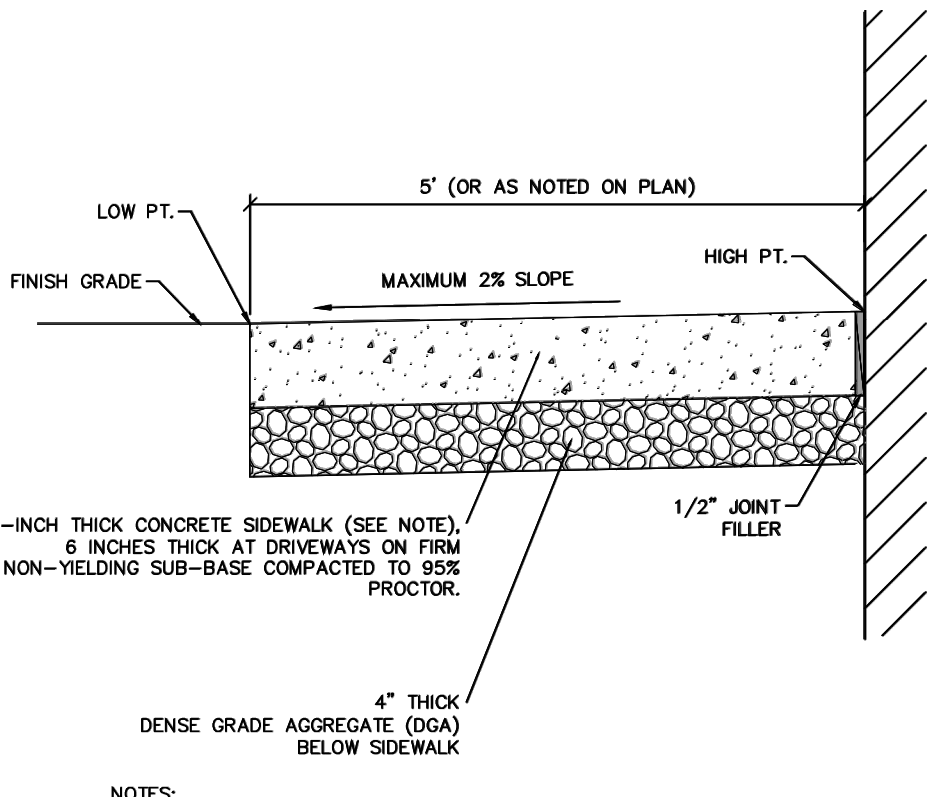
8 ROADWAY PAVEMENT RESTORATION DETAIL



- NOTES:
- DETECTABLE WARNING SURFACE (DWS) SHALL EXTEND FULL WIDTH OF CURB RAMP (EXCLUSIVE OF FLARES) OR FULL WIDTH OF LANDING/TURNING SPACE.
 - DWS SHALL EXTEND 2 FEET MINIMUM IN THE DIRECTION OF PEDESTRIAN TRAVEL.
 - TYPICALLY, DWS SHALL BE PLACED ADJACENT TO BACK OF CURB.

1 DETECTIBLE WARNING SURFACE DETAIL

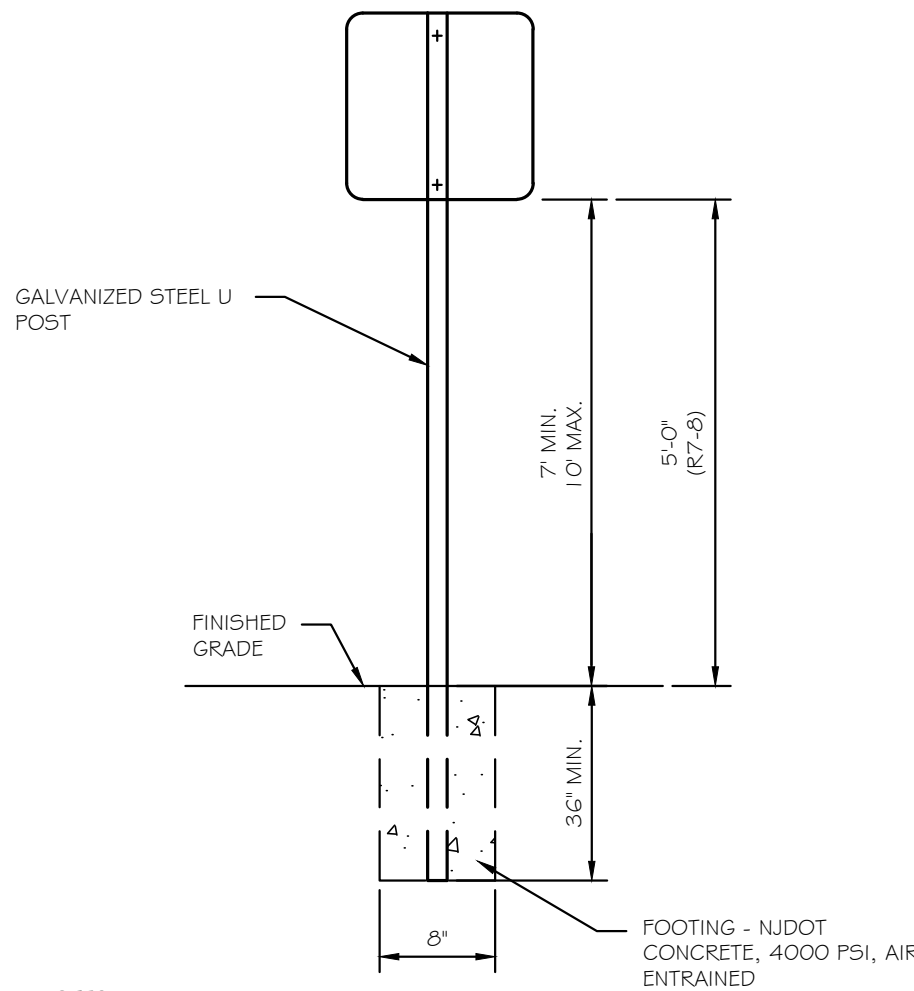
NOT TO SCALE



- NOTES:
- CONCRETE MUST BE PORTLAND CEMENT CONCRETE, AIR-ENTRAINED, CONFORM TO THE NJDOT STANDARD SPECIFICATIONS FOR CLASS B CONCRETE, AND MUST HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,500 PSI AFTER 28 DAYS.

2 CAMDEN CONCRETE SIDEWALK DETAIL

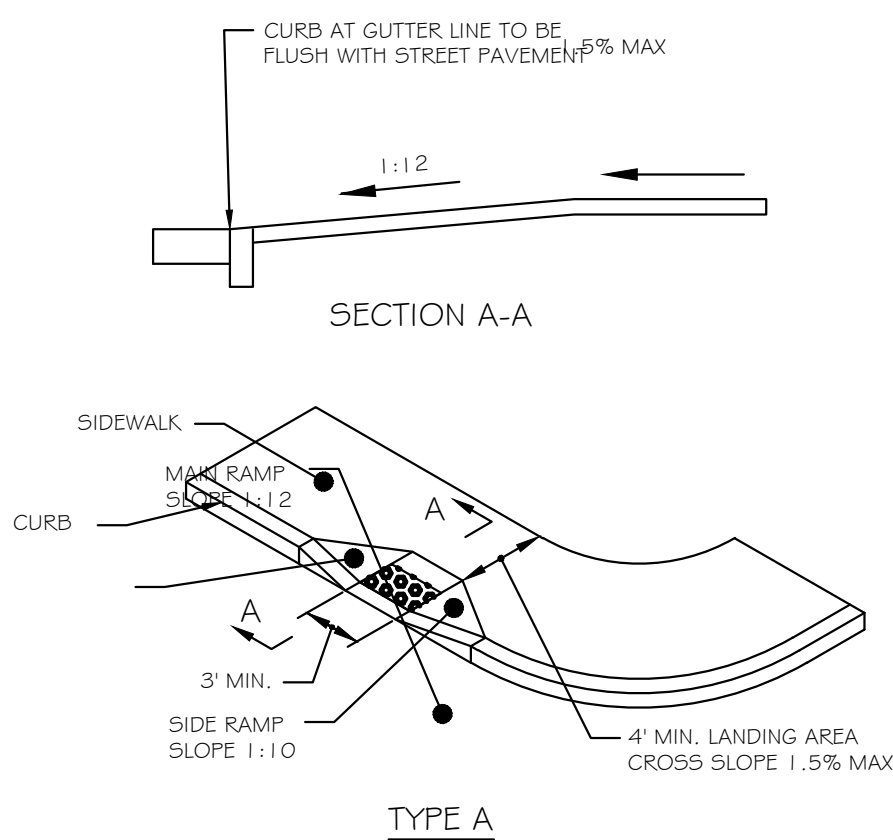
NOT TO SCALE



- NOTES:
- ALL POSTS SHALL BE OF ADEQUATE LENGTH TO MEET THE REQUIREMENTS FOR ERECTION AS STATED IN THE CURRENT "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
 - ALL POSTS AND BRACKETS SHALL BE CUT AND BENT AND THE HOLES SHALL BE PUNCHED OR DRILLED BEFORE GALVANIZING. GALVANIZING SHALL CONFORM TO THE CURRENT A.S.T.M. SPECIFICATIONS.

6 REGULATORY SIGN POST DETAIL

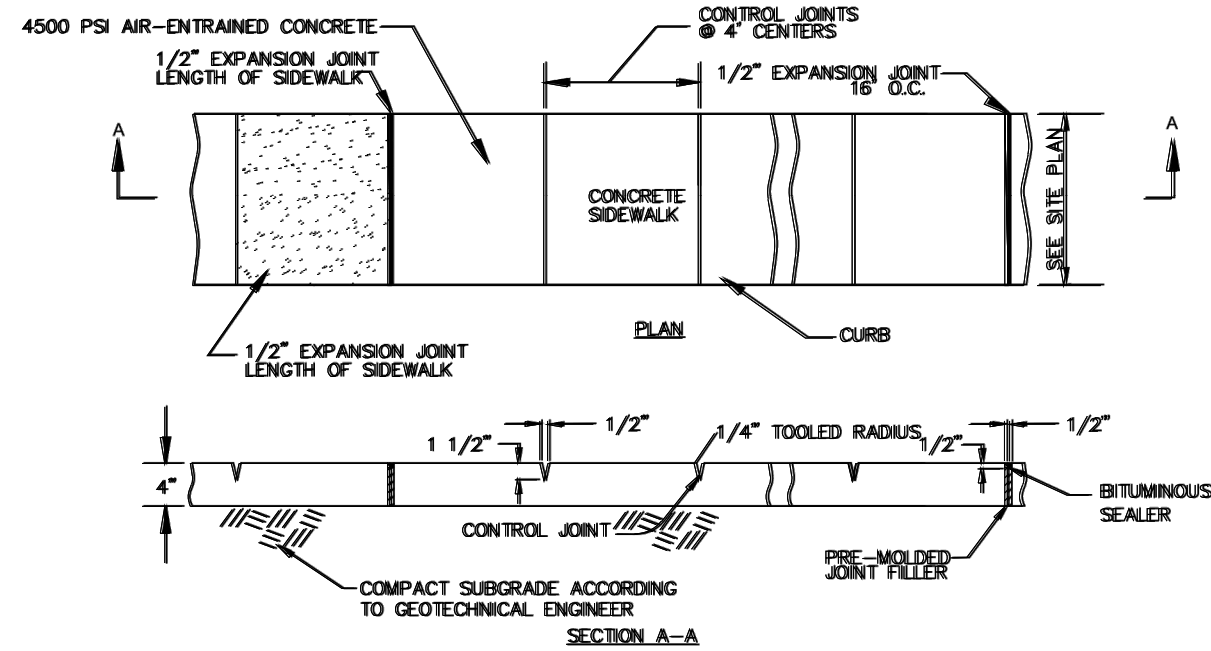
NOT TO SCALE



- NOTES:
- RAMPS AND SIDE RAMPS SHALL HAVE A HAND BROOMED FINAL FINISH.
 - SEE PLANS FOR EXACT LOCATION OF RAMPS.
 - ALL RAMPS SHALL BE PROVIDED WITH DETECTABLE WARNINGS CONSISTING OF RAISED OR TRUNCATED DOMES (DIA. 0.9 IN., HEIGHT 0.2 IN., CENTER TO CENTER SPACING 2.35 IN.) VISIBILITY SHALL CONTRAST WITH THE WALKING SURFACE.
 - DETECTABLE WARNINGS SHALL EXTEND THE FULL WIDTH AND DEPTH OF THE RAMP, INCLUDING SIDE FLARES.
 - DETECTABLE WARNINGS MAY BE WORKED INTO THE CONCRETE (TRUNCATED) OR BE A FABRICATED SHEET THAT IS ATTACHED TO THE SURFACE. ALL FABRICATED PIECES SHALL BE APPROVED BY THE ENGINEER PRIOR TO FABRICATION.

10 CURB RAMP DETAIL

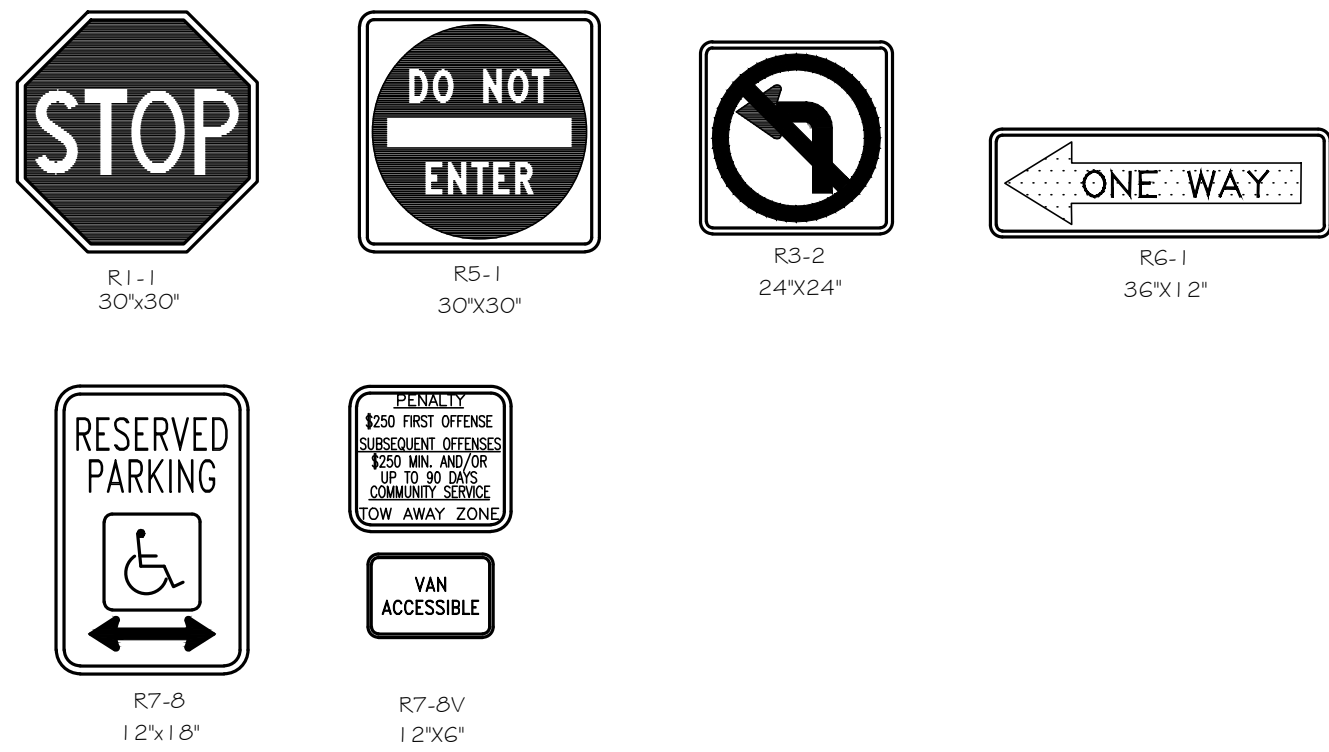
NOT TO SCALE



- NOTES:
- ALL SIDEWALKS SHALL BE FLOATED, TOOLED, AND SOFT BROOM BRUSHED.
 - SIDEWALKS SHALL BE INSTALLED ON AN APPROVED, COMPACTED SUBGRADE.
 - MAXIMUM CROSS SLOPE OF 1/4" PER FOOT.

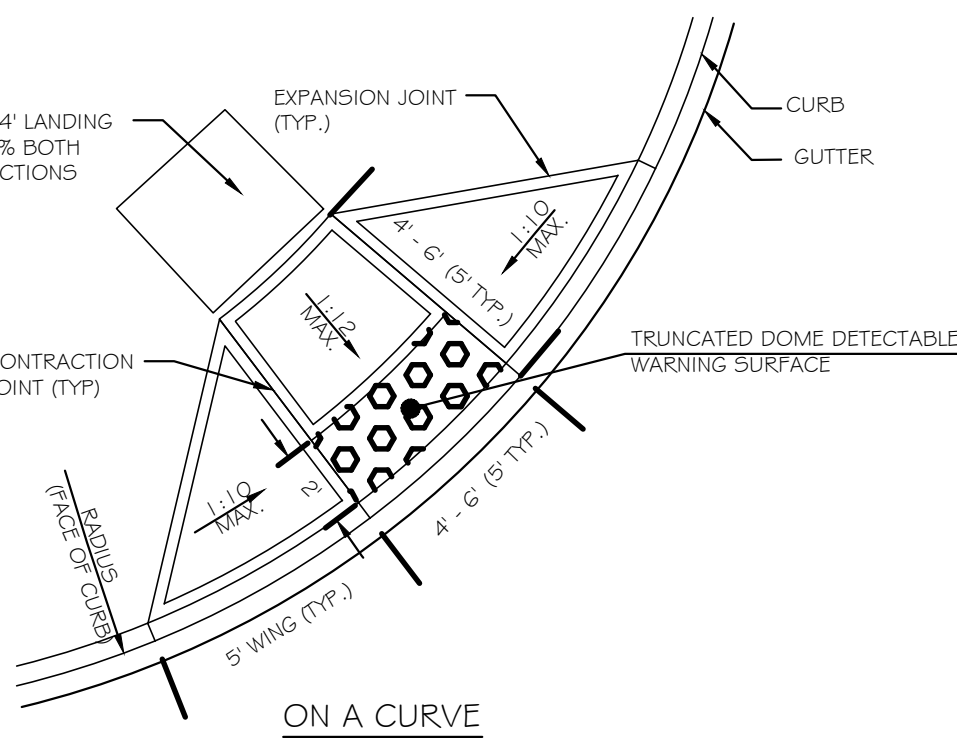
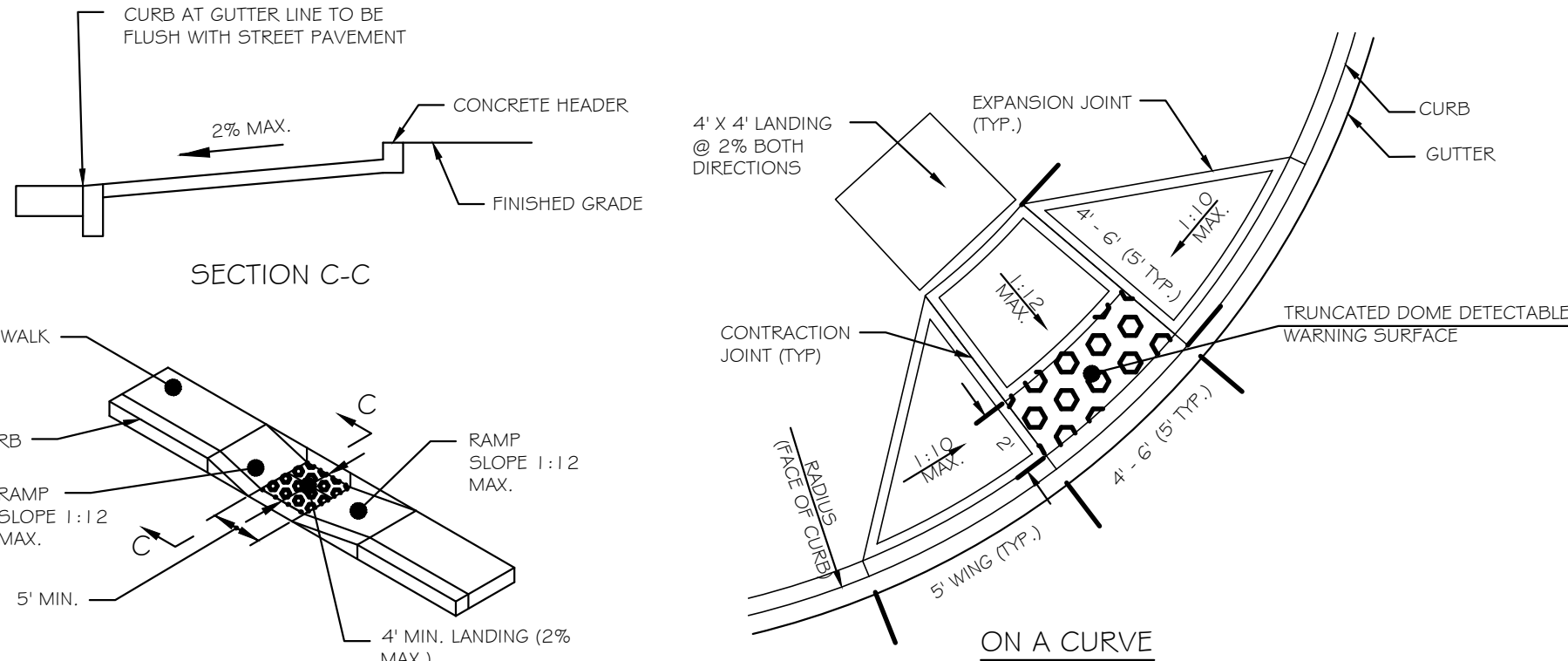
3 ONSITE CONCRETE SIDEWALK DETAIL

NOT TO SCALE



7 SIGN LEGEND

NOT TO SCALE



CASAS DEL RIO

CITY OF CAMDEN, NJ
CAMDEN LUTHERAN HOUSING INC.

Architect

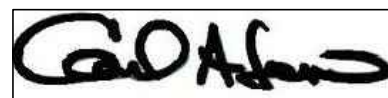
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NJ Certificate of Authorization for Engineering
24GA28135000



Carl A. Jenne, P.E.
NJ Professional Engineer
No. 24GE02628700

DATE	ISSUE	DESCRIPTION
6/28/2024	1	PLANNING BD. SUBMISSION

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Project
CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title

SITE DETAILS 1

Drawing No.

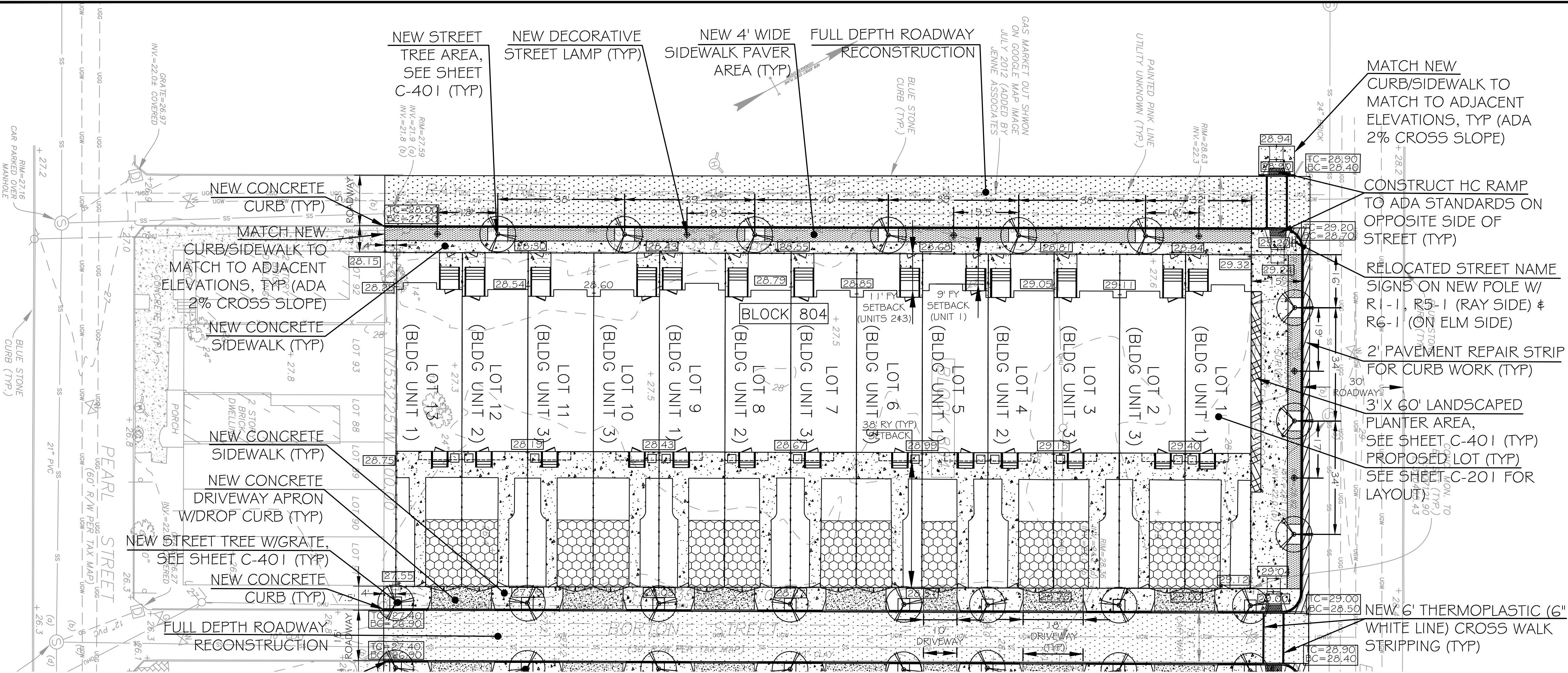
C-102

MICHAEL I. MILLA	Project No. 23-014
	Scale AS NOTED
	Drawn/Checked by CAJ/CJ
NJ LIC. No. 22414	

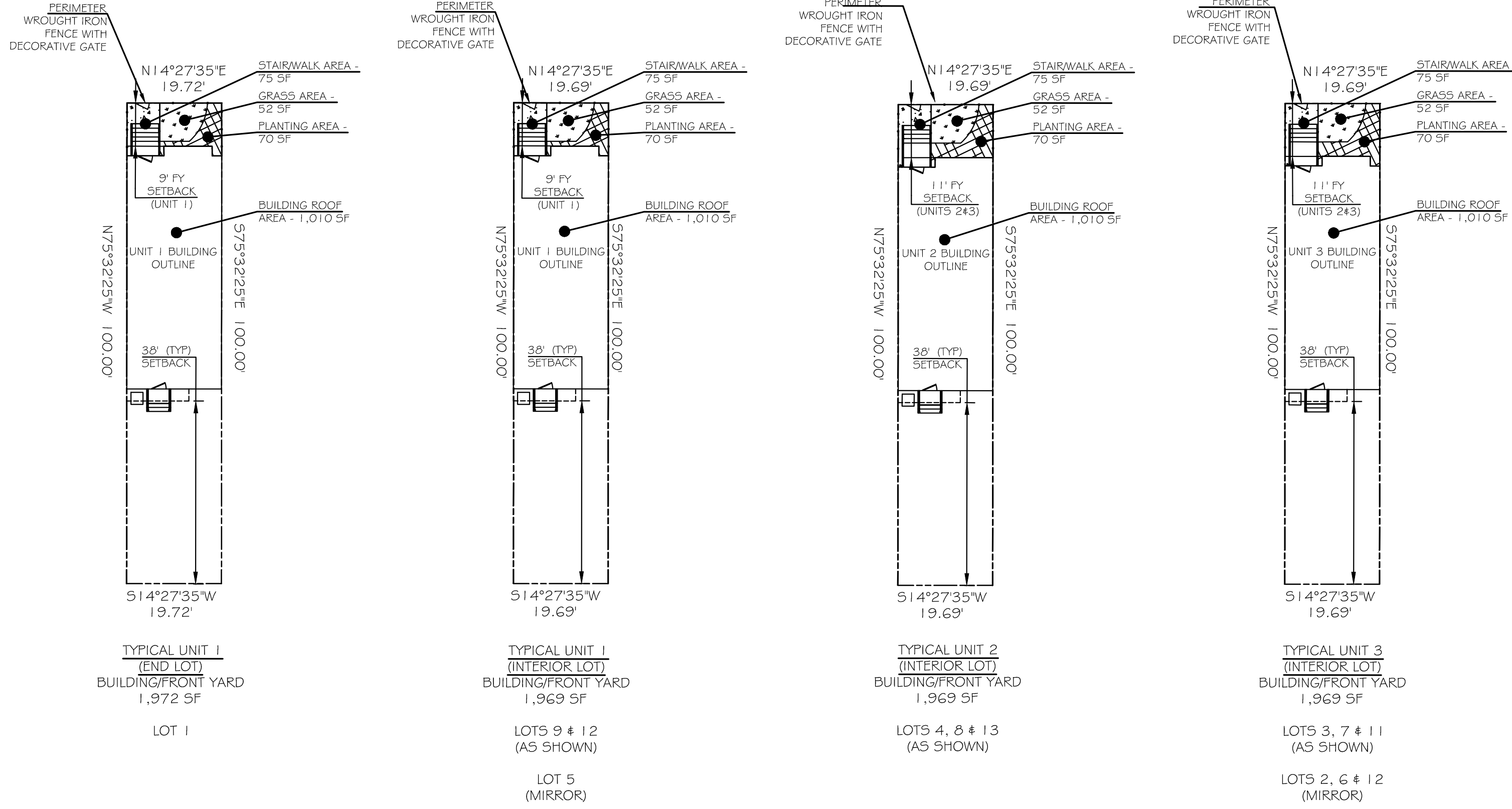
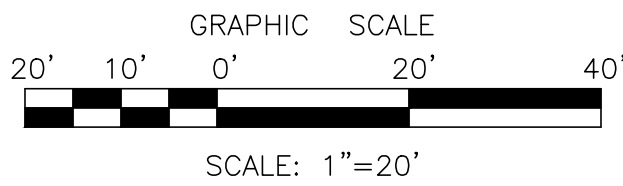
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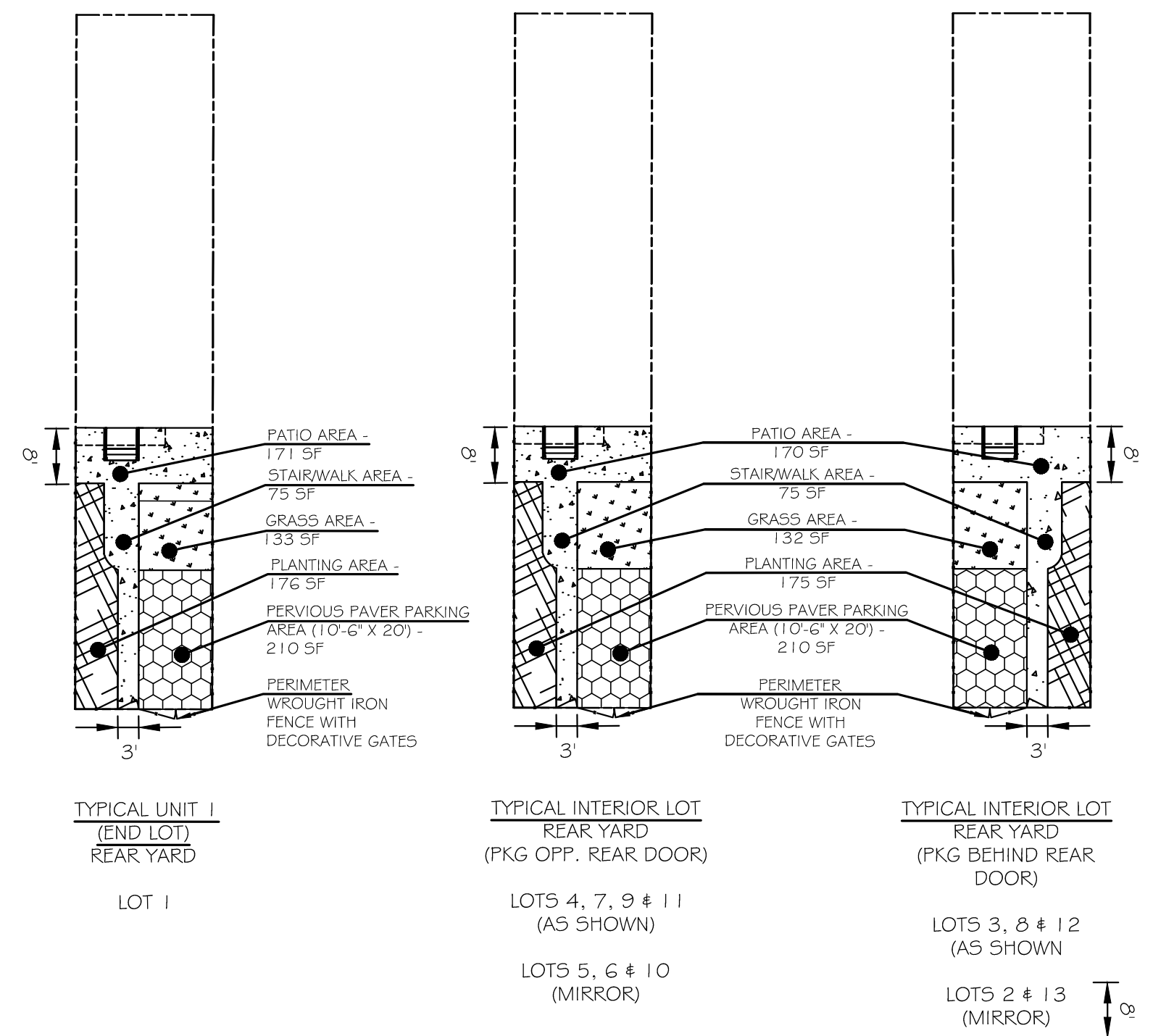
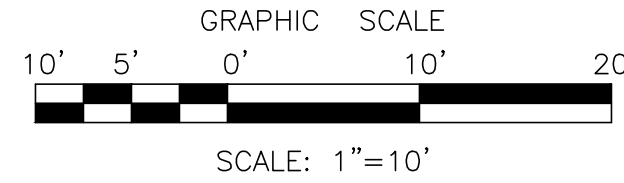
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1 BLOCK 804 DETAILED SITE AND GRADING PLAN



2 LOT IMPROVEMENT DETAILS



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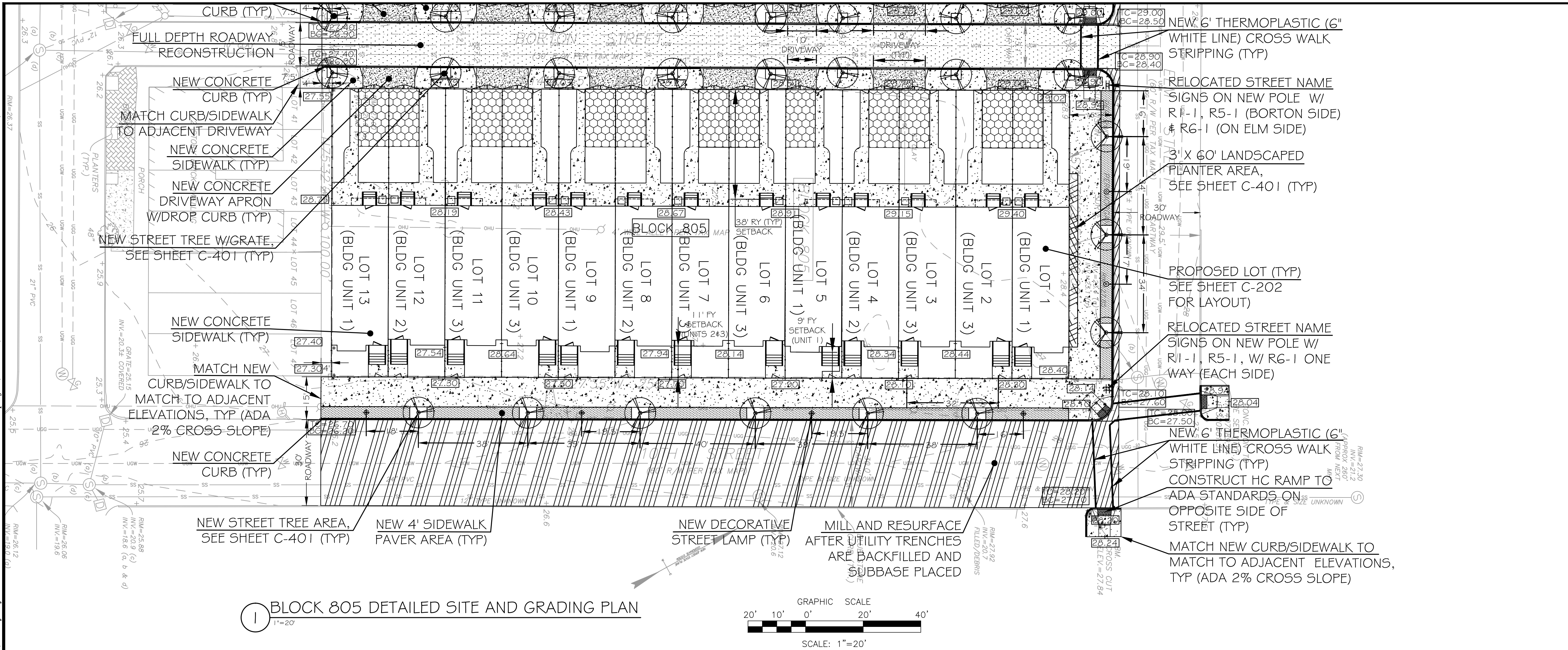
Project
CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title
BLOCK #804 DETAILED SITE
AND GRADING PLAN

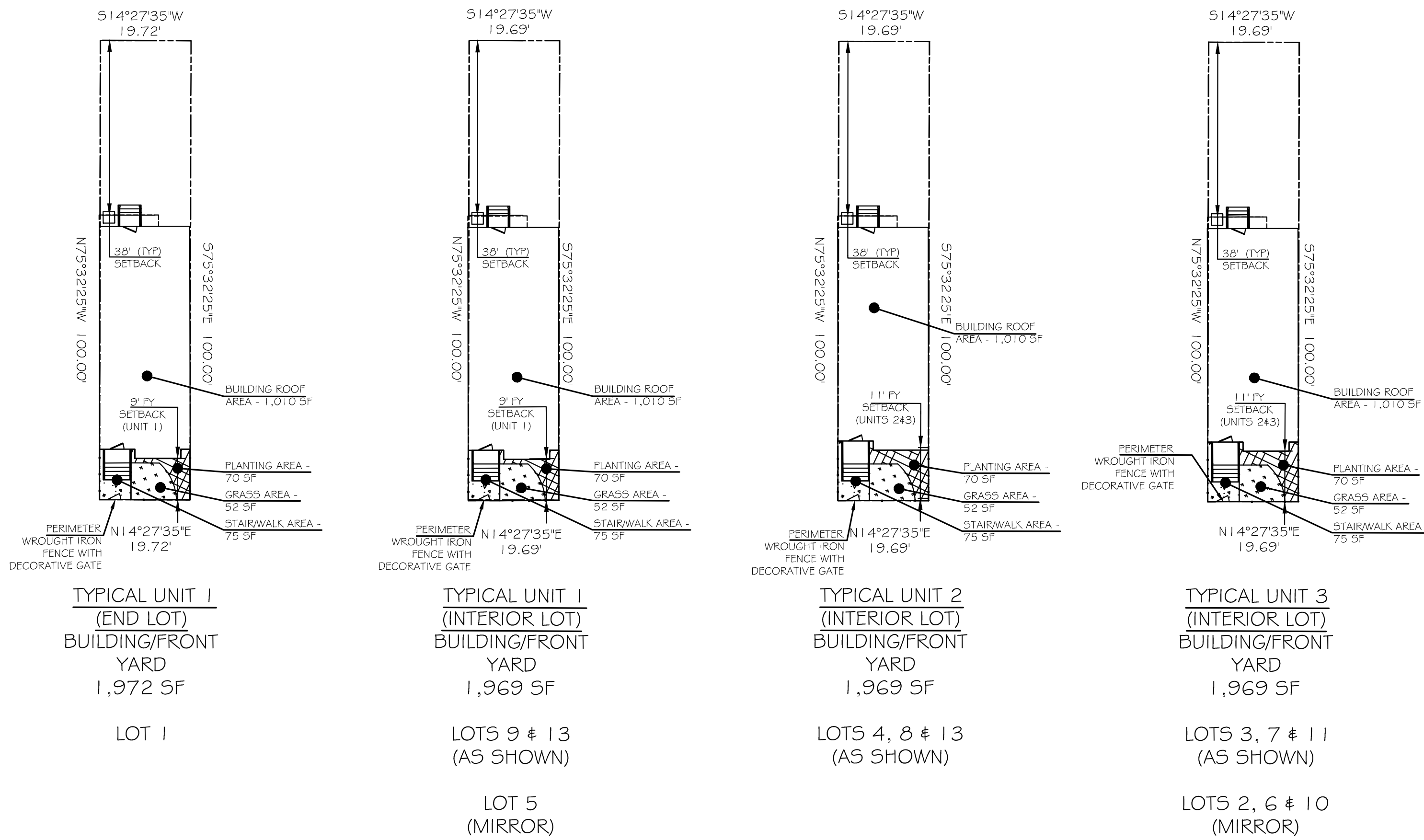
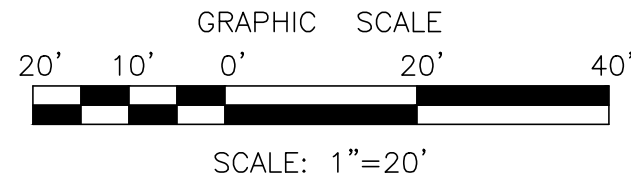
Drawing No.
C-201

MICHAEL I. MILLA	Project No. 23-014
	Scale AS NOTED
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NJ LIC. No. 22414	

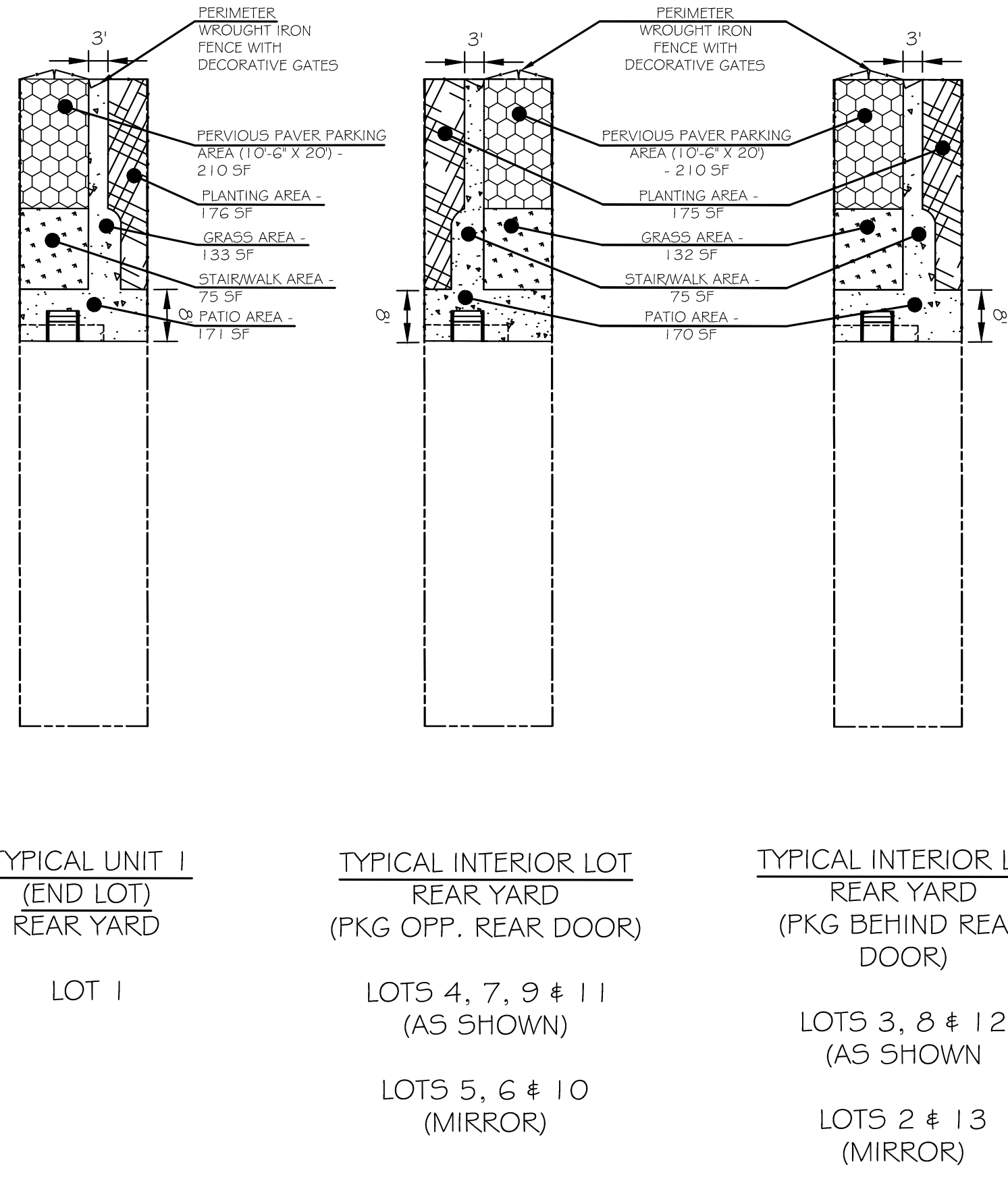
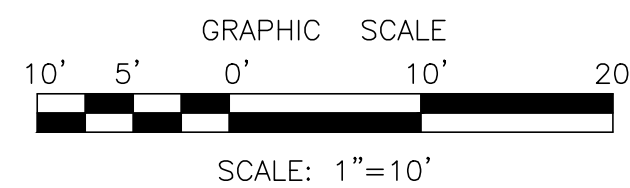
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1 BLOCK 805 DETAILED SITE AND GRADING PLAN



2 LOT IMPROVEMENT DETAILS



CASAS DEL RIO

CITY OF CAMDEN, NJ
CAMDEN LUTHERAN HOUSING INC.

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Carl A. Jenne, P.E.

NJ Professional Engineer
No. 24GE02628700

DATE	ISSUE	DESCRIPTION
6/28/2024	1	PLANNING BD. SUBMISSION

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Project

CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title

BLOCK #805 DETAILED SITE
AND GRADING PLAN

Drawing No.

C-202

MICHAEL I. MILLA	Project No. 23-014
	Scale AS NOTED
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[illegible]

1. THE PROPERTY OWNER OF EACH INDIVIDUAL LOT IS RESPONSIBLE FOR MAINTAINING THE STORMWATER MANAGEMENT SYSTEM AND OVERFLOW PIPE FOR THAT LOT THE POINT OF CONNECTION TO THE STREET MAIN.
2. VISUAL INSPECTIONS SHALL BE MADE AT LEAST ANNUALLY AS WELL AS AFTER EVERY STORM EXCEEDING TWO (2) INCHES OF RAINFALL, ANY ACCUMULATED DEBRIS SHALL BE REMOVED IMMEDIATELY SO THAT IT OPERATES AS DESIGNED. ALL WORK SHOULD BE DONE BY A QUALIFIED CONTRACTOR COMPLYING WITH OSHA STANDARDS WITH REMOVAL AND DISPOSAL OF MATERIALS IN COMPLIANCE WITH ALL LOCAL, STATE AND FEDERAL LAWS.
3. ALL STRUCTURAL COMPONENTS MUST BE INSPECTED FOR CRACKING, SUBSIDENCE, BREACHING, WEAR AND DETERIORATION AT LEAST ANNUALLY. THE CONDITION OF THE SURROUNDING AND ABOVE LYING MATERIALS SHALL BE INSPECTED FOR EVIDENCE OF POTENTIAL FAILURES OR DETERIORATION.
4. ROUTINE MAINTENANCE SHOULD TYPICALLY BE UNDERTAKEN BY 2 PEOPLE FOR SAFETY CONSIDERATIONS. EQUIPMENT ANTICIPATED MAY INCLUDE A JET VACUUM VEHICLE, SHOVELS, LIGHTING EQUIPMENT AND A WHEEL BARREL OR TRUCK FOR HAULING AWAY DEBRIS. NO MANUFACTURER'S INSTRUCTIONS OR USER MANUALS ARE AVAILABLE FOR THE MAINTENANCE OF THESE COMPONENTS. WATER, MOSQUITO CONTROL CHEMICALS, PAVEMENT OR PIPE COMPONENT REPLACEMENT MATERIALS MAY ALSO BE REQUIRED DEPENDING ON THE CONDITION OF THE COMPONENTS.
5. MAINTENANCE RECORDS MUST BE MAINTAINED ON-SITE FOR A MINIMUM OF THREE (3) YEARS.

Profile view of the proposed sewer main. The vertical axis shows elevation in feet (18 to 30). The horizontal axis shows stationing (0+00 to 3+00). The profile includes the existing roadway surface (dashed line), the existing 6" clay pipe (dashed line), and the new 10" SDR35 pipe (solid line). The new pipe is shown replacing the existing 10" clay pipe. The profile also shows the existing combined sewer manhole (SM) at station 27+00 and the proposed combined sewer manhole (SM) at station 28+20. The profile is labeled with stationing and elevations at various points: STA. 04+50, STA. 27+00, STA. 27+30, STA. 27+60, STA. 28+20, STA. 28+50, and STA. 34+32. The profile also includes labels for the existing 6" clay pipe, the new 10" SDR35 pipe, and the existing combined sewer manhole (SM).

Station	Elevation (ft)	Description
0+00	26.5	Existing Roadway Surface
27+00	26.5	Existing Combined Sewer Manhole (SM)
27+30	21.16	Proposed Combined Sewer Manhole (SM)
27+60	21.44	Proposed Combined Sewer Manhole (SM)
28+20	21.99	Proposed Combined Sewer Manhole (SM)
28+50	22.33	Proposed Combined Sewer Manhole (SM)
34+32	22.33	Proposed Combined Sewer Manhole (SM)

GOLF NEW 10" SDR35

NEW 4" SDR35 HOUSE
SANITARY SERVICE
LATERAL (TYP)

NEW SEWER MANHOLE
RIM = 28.42
INV = 22.42 (NEW I.C.
SDR35, OUT)

DATE	ISSUE	DESCRIPTION
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Project

CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title

BLOCK #804 UTILITY PLAN

Drawing No.

C-301

MICHAEL I. MILLA

Scale
AS NOTED

Drawn/Checked by
CAJ/CJ

NJ LIC. No. 22414

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CASAS DEL RIO

CITY OF CAMDEN, N.J.

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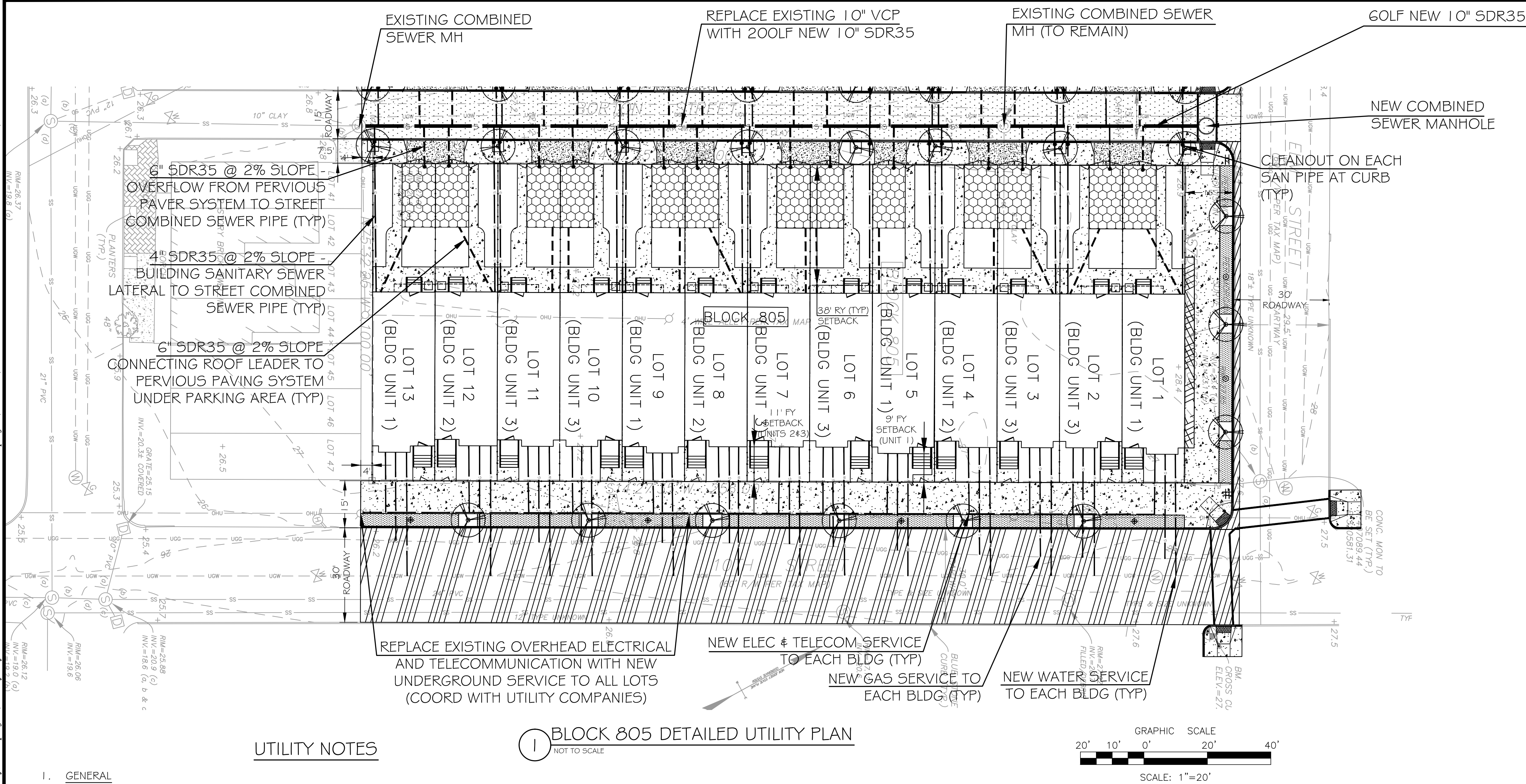
Carl Adams

Carl A. Jenne, P.E.

NJ Professional Engineer
No. 24GE02628700

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UTILITY NOTES

- GENERAL
 - ALL UTILITIES TO BE INSTALLED IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS
 - BUILDING ENTRY/METER LOCATIONS SHOWN ARE SCHEMATIC. FINAL LOCATIONS TO BE DETERMINED BY UTILITY COMPANY AND ARCHITECT.
 - LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND MUST BE VERIFIED BY CONTRACTOR BEFORE START OF EXCAVATION OR CONSTRUCTION.
 - LOCATIONS OF PROPOSED UTILITY CONNECTIONS ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE WITH ARCHITECT AND/OR UTILITY COMPANIES FOR EXACT LOCATION OF UTILITY CONNECTIONS PRIOR TO INSTALLATION.
- WATER
 - WHEN WATER MAIN IS LOCATED WITHIN 10' HORIZONTALLY OF THE SEWER MAIN, IT SHALL BE AT LEAST 18" HIGHER OR CONCRETE ENCASED.
 - ALL EXPOSED WATER LATERALS SHALL BE INSULATED AND HEAT TRACED.
- STORM AND SANITARY
 - COORDINATE SEWER CONNECTIONS WITH PLUMBING PLANS.
 - ALL STORM AND SANITARY SEWER LATERAL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE NORTH HUDSON SEWER AUTHORITY (NHSA) REQUIREMENTS AND IN COMPLIANCE WITH THE PERMIT TO BE OBTAINED FOR THE PROJECT.
- ELECTRIC AND GAS
 - CONTRACTOR SHALL COORDINATE WITH THE FINAL PLUMBING PLANS FOR LOCATION OF THE BUILDING SERVICE LOCATIONS. REQUIREMENT CHANGES TO THE EXISTING ELECTRICAL AND NATURAL GAS SERVICES.
 - SERVICE CONNECTION SIZES AND INSTALLATION REQUIREMENTS SHALL BE AS REQUIRED BY THE RESPECTIVE UTILITY COMPANIES.

STORMWATER SYSTEM O&M REQUIREMENTS

- THE PROPERTY OWNER OF EACH INDIVIDUAL LOT IS RESPONSIBLE FOR MAINTAINING THE STORMWATER MANAGEMENT SYSTEM AND OVERFLOW PIPE FOR THAT LOT THE POINT OF CONNECTION TO THE STREET MAIN.
- VISUAL INSPECTIONS SHALL BE MADE AT LEAST ANNUALLY AS WELL AS AFTER EVERY STORM EXCEEDING TWO (2) INCHES OF RAINFALL. ANY ACCUMULATED DEBRIS SHALL BE REMOVED IMMEDIATELY SO THAT IT OPERATES AS DESIGNED. ALL WORK SHOULD BE DONE BY A QUALIFIED CONTRACTOR COMPLYING WITH OSHA STANDARDS WITH REMOVAL AND DISPOSAL OF MATERIALS IN COMPLIANCE WITH ALL LOCAL, STATE AND FEDERAL LAWS.
- ALL STRUCTURAL COMPONENTS MUST BE INSPECTED FOR CRACKING, SUBSIDENCE, BREACHING, WEAR AND DETERIORATION AT LEAST ANNUALLY. THE CONDITION OF THE SURROUNDING AND ABOVE LYING MATERIALS SHALL BE INSPECTED FOR EVIDENCE OF POTENTIAL FAILURES OR DETERIORATION.
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- MAINTENANCE RECORDS MUST BE MAINTAINED ON-SITE FOR A MINIMUM OF THREE (3) YEARS.

SANITARY SEWER FLOW

SANITARY SEWER FLOW CALCULATION

3 BEDROOM HOUSE @ 300 GPD
BLOCK 804: 13 HOUSES @ 300 GPD = 3,900 GPD
BLOCK 805: 3 HOUSES @ 300 GPD = 3,900 GPD
TOTAL FOR PROPOSED PROJECT = 7,800 GPD

SANITARY SEWER LATERAL

4" SDR35 AT 2% MINIMUM SLOPE

SANITARY AND STORM SEWER MATERIALS

- PVC PIPE SPEC (INCL. SDR):
PIPE - ASTM D-3034,
GASKETS - ASTM F-0477,
JOINTS - ASTM D-3212
- ADS PIPE SPECIFICATION:
PIPE - NT-12 ST IB PIPE-
ASTM F2648,
GASKETS - ASTM F-0477,
JOINTS - ASTM D-3212



CASAS DEL RIO

CITY OF CAMDEN, NJ
CAMDEN LUTHERAN HOUSING INC.

Architect

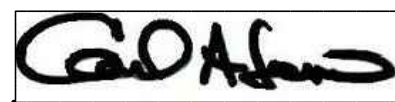
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Carl A. Jenne, P.E.

NJ Professional Engineer
No. 24GE02628700

DATE	ISSUE	DESCRIPTION
6/28/2024	1	PLANNING BD. SUBMISSION

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Project

CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title

BLOCK #805 UTILITY PLAN

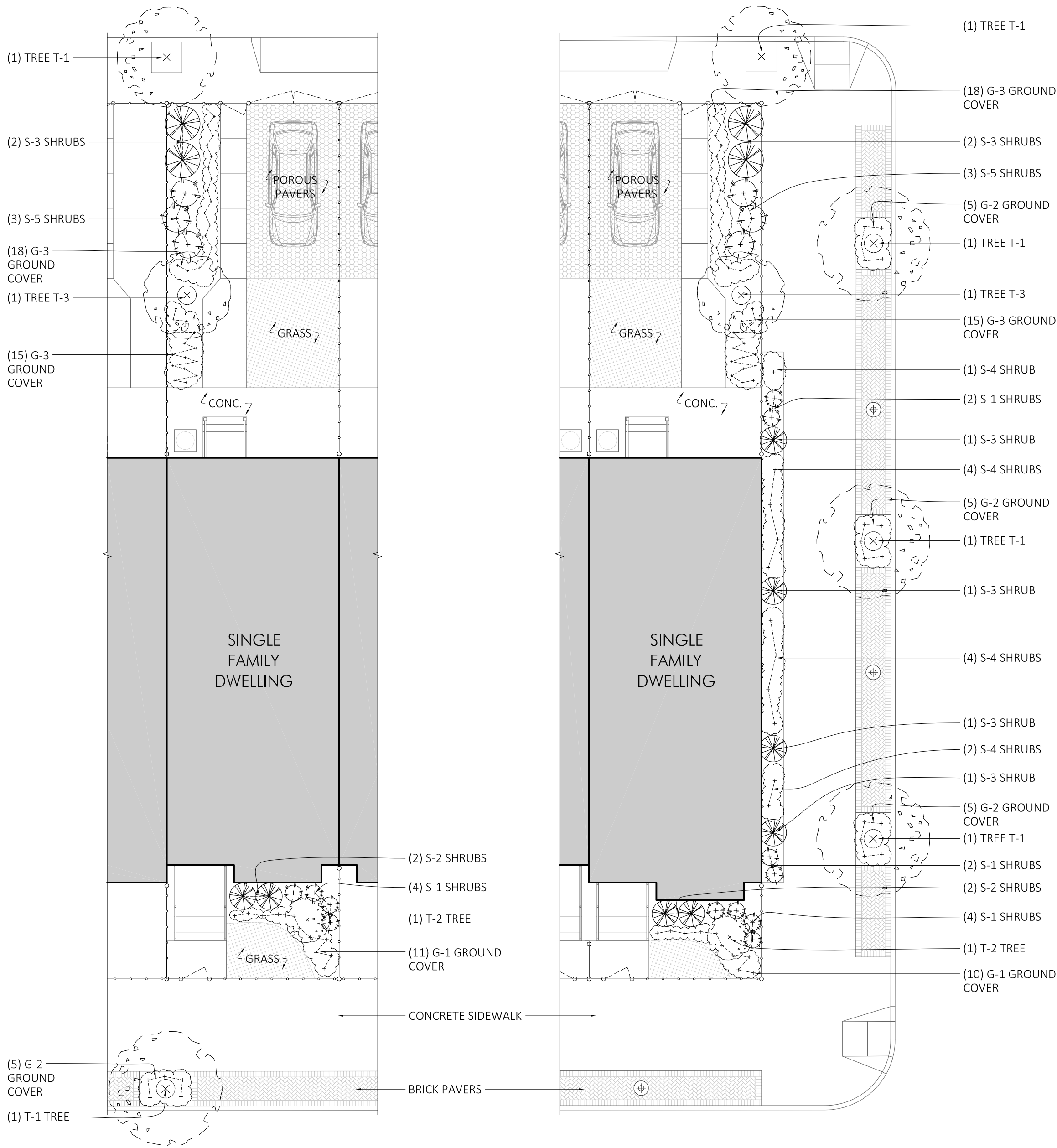
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C-302

MICHAEL I. MILLA	Project No. 23-014
	Scale AS NOTED
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NJ LIC. No. 22414	

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TYPICAL LANDSCAPE PLAN AT PROPOSED LOTS #2 THRU 13, BLOCKS 804 & 805.

TYPICAL LANDSCAPE PLAN AT PROPOSED LOT #1, BLOCKS 804 & 805.

1 LANDCAPING PLAN - TYPICAL

SCALE : 1" = 10'

2 LANDCAPING PLAN - END UNITS

SCALE : 1" = 10'

LANDSCAPING SCHEDULE

TAG	TOTAL QTY. (INC. BLOCK #804 & 805)	COMMON NAME	BOTANICAL NAME	SIZE	NOTES
TREES					
T-1	35	WIRELESS ZELKOVA	ZELKOVA SERRATA 'SCHMIDTLOW'	6FT - 8FT	B+B
T-2	26	HYDRANGEA VANILLA STRAWBERRY	HYDRANGEA PANICULATA 'RENHY'	4FT - 5FT	TREE FORM
T-3	16	EMPEROR JAPANESE MAPLE	ACER PALMATUM 'WOLFF'	5FT - 6FT	B+B
SHRUBS					
S-1	112	EARLY SUNRISE TICKSEED	COREOPSIS GRANDIFLORA 'EARLY SUNRISE'	3 GAL	
S-2	52	BUSH MONKEY FLOWER	MIMULUS AURANTIACUS	2 GAL	
S-3	60	WHITE RHODODENDRON	RHODODENDRON CATAWBIENSE ALBUM	2 GAL	
S-4	22	BABY GEM BOXWOOD	BUXUS MICROPHYLLA VAR. JANOPICA 'GREGEM'	2 GAL	
S-5	78	GREEN MOUNTAIN BOXWOOD	BUXUS x 'GREEN MOUNTAIN'	3 GAL	
GROUND COVER					
G-1	284	EMERALD BLUE CREEPING PHLOX	PHLOX SUBULATA 'EMERALD BLUE'	2-1/2 PEAT POT	
G-2	95	CREEPING PHLOX	PHLOX SUBULATA 'CREEPING PHLOX'	2-1/2 PEAT POT	
G-3	858	GREEN CARPET JAPANESE SPURGE	PACHYSANDRA TERMINALIS 'GREEN CARPET'	2-1/2 PEAT POT	

3 TYPICAL PLANTING DETAILS

SCALE : NTS

GENERAL LANDSCAPING REQUIREMENTS

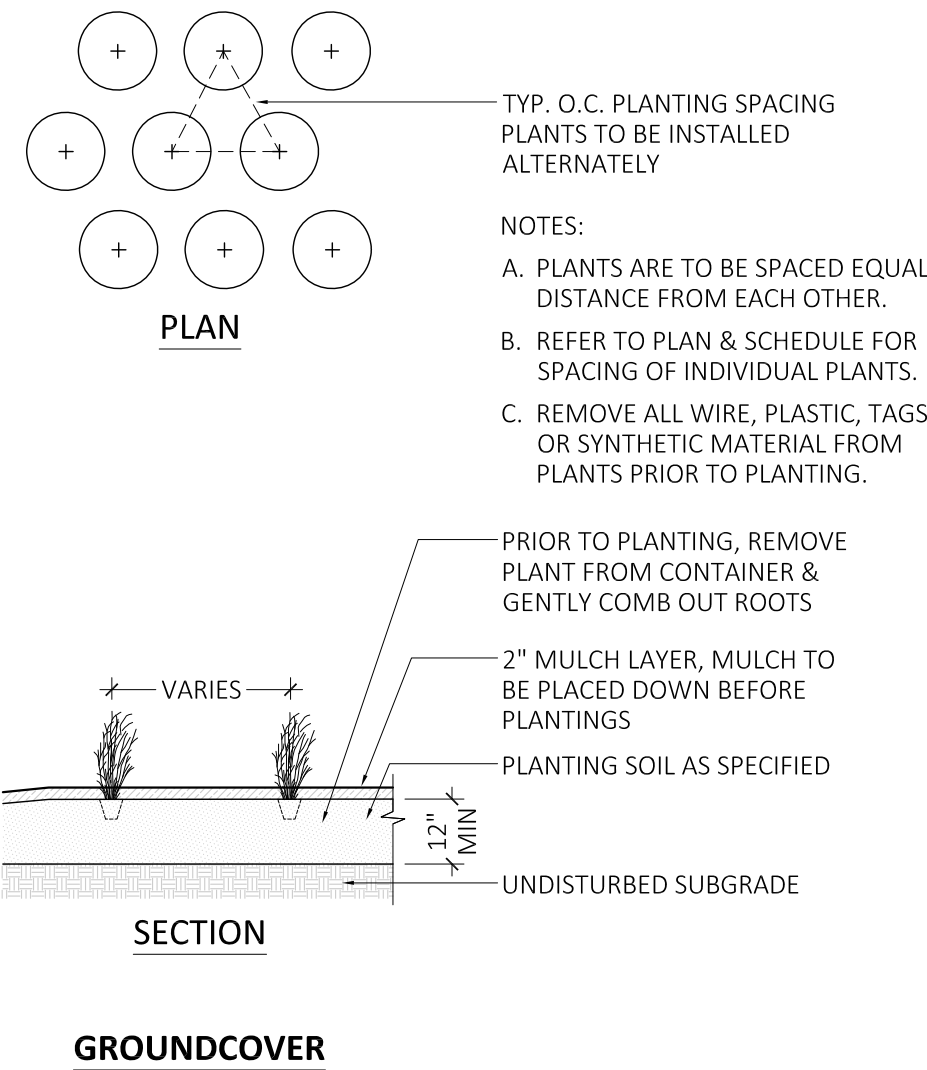
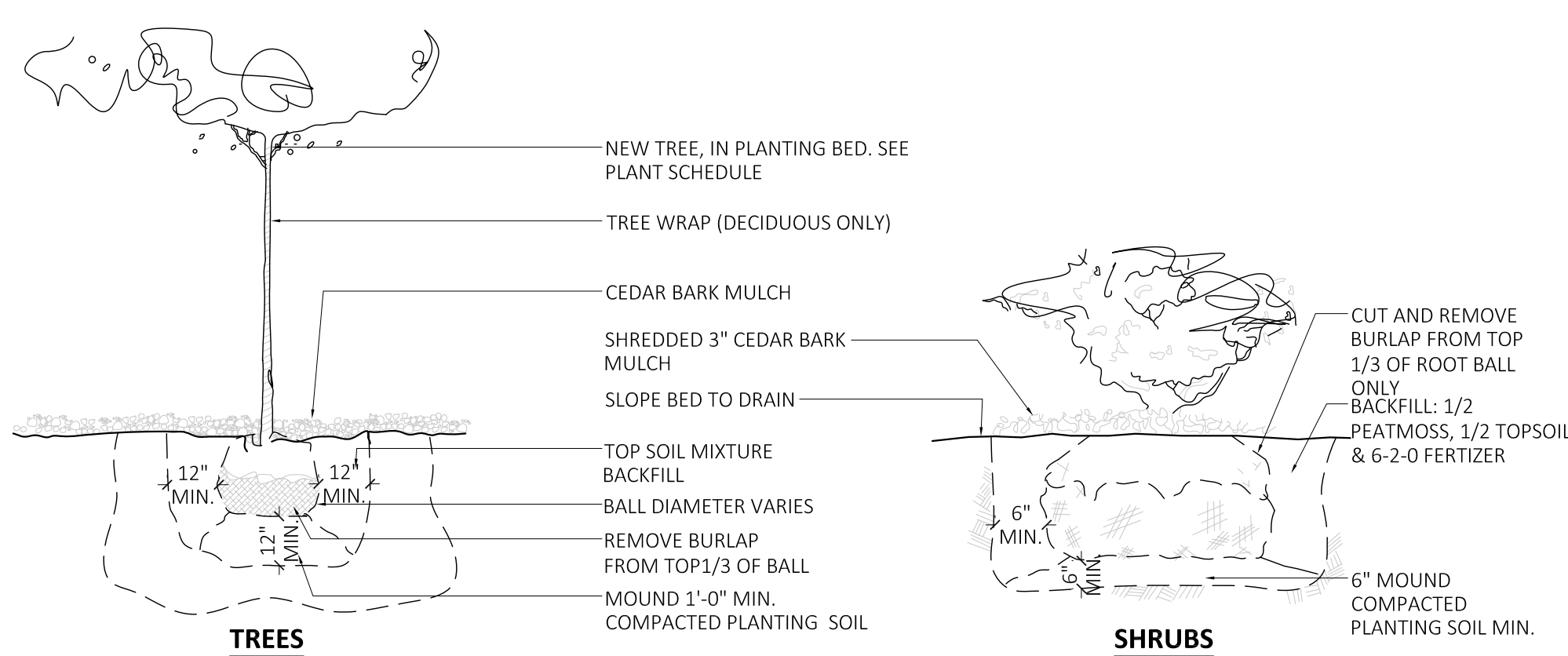
- TREE LOCATIONS SHOWN ON PLAN TO BE VERIFIED WITH ARCHITECT IN THE FIELD, PRIOR TO PLANTING- BASED ON SCHEDULE ABOVE AND DETAILS. PROVIDE 3" PINE BARK MULCH AT ALL TREE LOCATIONS.
- ALL PLANTING BEDS SHALL RECEIVE 3" PINE BARK MULCH.
- ALL PLANTING BEDS SHALL RECEIVE MIN 6" OF TOPSOIL/PLANTING MIX OVER 12" APPROVED CLEANFILL.TOPSOIL SHALL BE NATURAL LOAM-FREE FROM SUB SOILS. TOP SOIL SHALL BE OF UNIFORM QUALITY FREE FROM CLAY, HARD PAN, SODS, STONE ASHES OR CEMENT. TOP SOIL SHALL CONTAIN AT LEAST 5% ORGANIC WATER DETERMINED BY LOSS, ON IGNITION OF MOISTURE FREE SAMPLES.
- AFTER PLANTING SOAK WITH APPROVED LIQUID FERTILIZER 1/4 STRENGTH AS PER MANUFACTURER RECOMMENDATIONS. PROTECT FROM HOT SUN & STAKE W/WOOD STAKES PAINTED GREEN; 3 STAKES REQUIRED PER TREE AT 120 DEGREE SPACING, INSERT IN GROUND MIN. 12" BEFORE TYING GUYS. FERTILIZE EVERY FOUR WEEKS THROUGH GUARANTEE PERIOD. TREES SHOULD BE PLANTED SPRING THROUGH SUMMER ONLY. FOLLOW ALL RECOMMENDATIONS OF THE AMERICAN ASSOCIATION OF NURSERYMEN.
- USE PLANTING MIX OF 1/2 CLEAN TOPSOIL AND 1/2 CLEAN PEAT MOSS W/620 FERTILIZER ABOVE FOR NEW STREET TREE PLANTING. AFTER PLANTING SOAK W/LIQUID FERTILIZER AT 1/4 STRENGTH THE MFG. RECOMMENDATION. PROTECT FROM HOT SUN & STAKE W/WOOD STAKES PAINTED GREEN (3 REQ'D/TREE @ 120 SPACING & FORCE VERTICAL BEFORE TYING GUYS.) FERTILIZE EVERY FOUR WEEKS THROUGH FIRST SIX MONTHS OR THROUGH GUARANTEE PERIOD WHERE APPLICABLE.
- PLANTING QUANTITIES AND LOCATIONS ON THIS SHEET ARE APPROXIMATE, FOR GENERAL DESCRIPTIVE PURPOSES, AND SHALL BE CONSIDERED THE MINIMUM REQUIRED. THE SCHEDULE SHALL PREVAIL.
- MAINTENANCE PLAN SHALL INCLUDE: - ADULT GROWTH SHALL BE MAINTAINED AT A 4' HEIGHT MINIMUM.

GRASS MIX NOTES

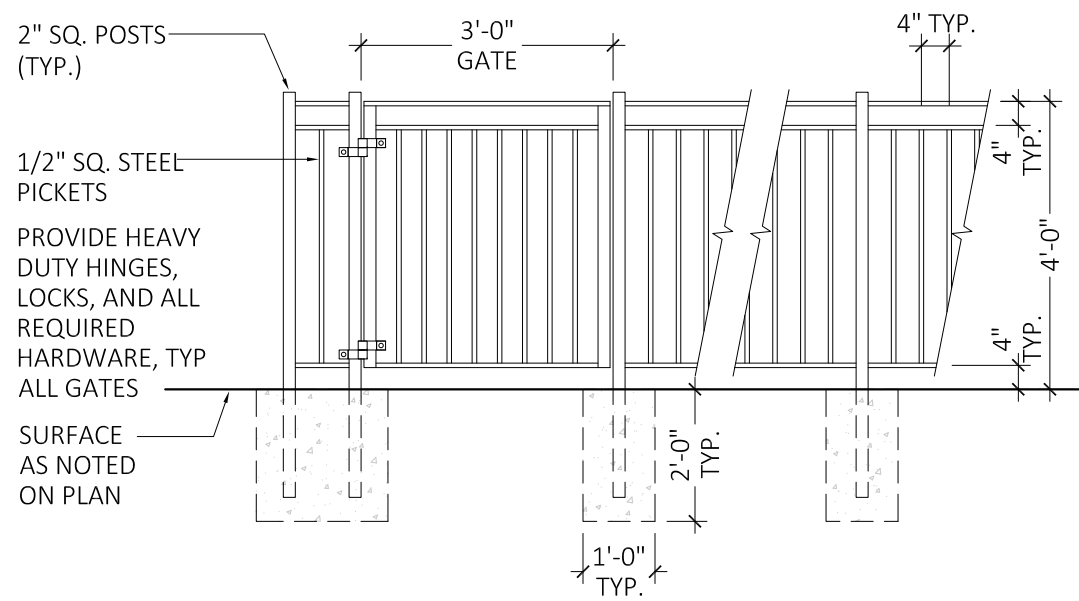
- PRIOR TO SEEDING, AREA IS TO BE TOPSOILED, FINE GRADED, AND RAKED OF ALL DEBRIS LARGER THAN 2" DIAMETER.
- THE FOLLOWING SEED MIX SHALL BE SOWN AT THE RATES AS SPECIFIED:

RED FESCUE	1 1/2 LBS / 1,000 SF
PERENNIAL RYEGRASS	1 LB / 1,000 SF
KENTUCKY BLUEGRASS	1 1/2 LBS / 1,000 SF
SPREADING FESCUE	1 LB / 1,000 SF
- SEEDED LAWN AREAS SHALL BE MULCHED TO PRESERVE SOIL MOISTURE AND PREVENT EROSION DURING THE ESTABLISHMENT PERIOD UNTIL A STAND OF COVER IS ACCEPTED BY THE OWNER.
- SEEDING DATES FOR THIS MIXTURE SHALL BE AS FOLLOWS:

SPRING	APRIL 1 - MAY 31
FALL	AUGUST 16 - OCTOBER 31
- GERMINATION RATES WILL VARY AS TO TIME OF YEAR FOR SOWING. CONTRACTOR SHALL IRRIGATE SEEDED AREA UNTIL AN ACCEPTABLE STAND OF COVER IS ESTABLISHED BY OWNER.



NOTE:
FENCING & GATES SHALL BE WELDED METAL, PAINTED BLACK.
A 4" Ø SPHERE SHALL NOT PASS THRU PICKETS @ ANY POINT



4 TYPICAL FENCING/GATE DETAIL

SCALE : 3/8" = 1'-0"

Architect

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Civil Engineer

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DATE	ISSUE	DESCRIPTION
06/28/24	1	PLANNING BD. SUBMISSION

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Project

CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title

**LANDSCAPE PLAN,
NOTES & DETAILS**

Drawing No.

C-401

MICHAEL I. MILLA

Project No.
23-014

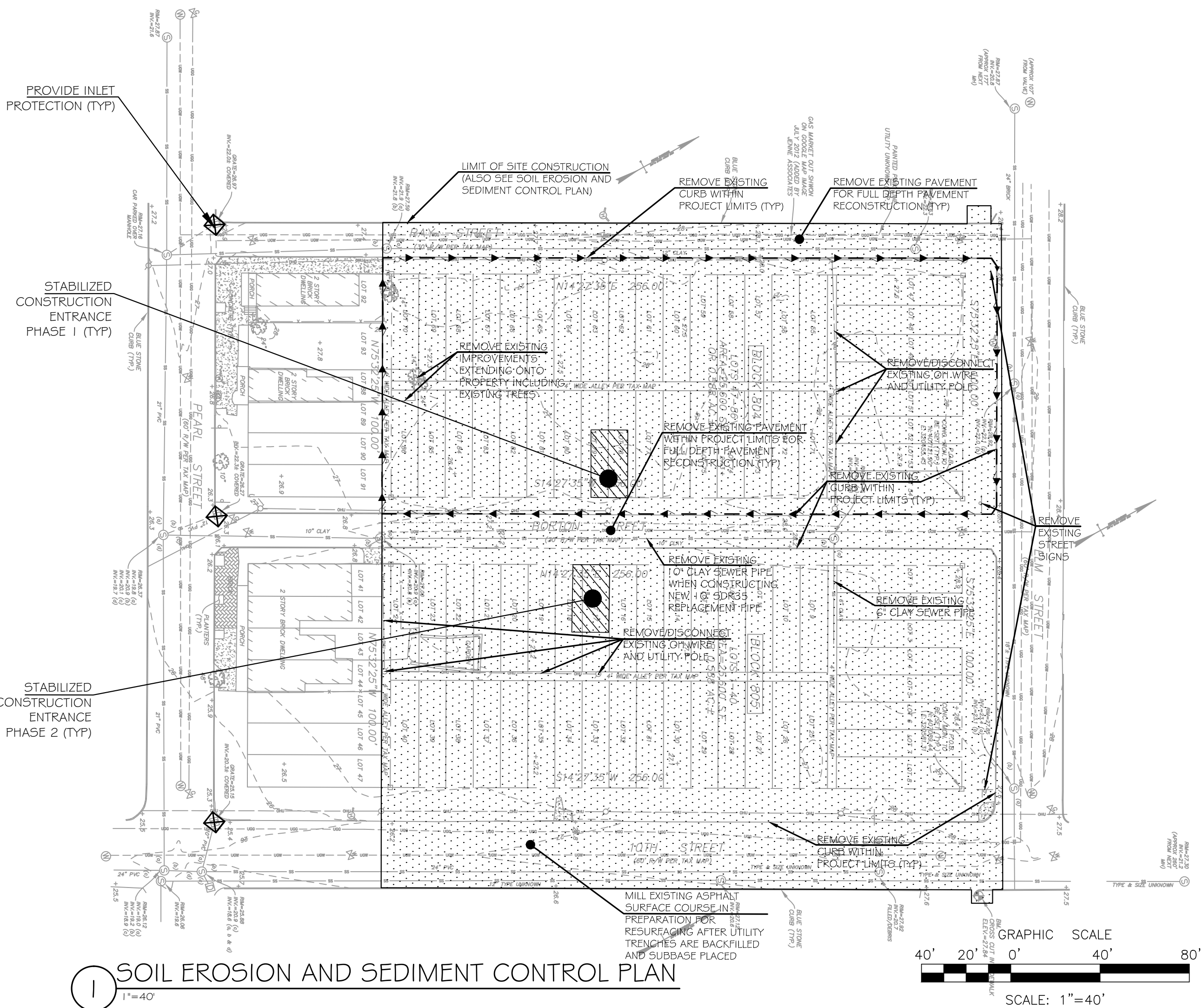
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STABILIZATION SPECIFICATIONS

- TEMPORARY STABILIZATION SPECIFICATIONS
 - APPLY GROUND LIMESTONE AT A RATE OF 90 LBS. PER 1000 SQ. FT.
 - APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS. PER 1000 SQ. FT.
 - APPLY PERENNIAL RYE GRASS SEED AT 1 LBS. PER 1000 SQ. FT. AND ANNUAL RYEGRASS AT 1 LBS. PER 1000 SQ. FT.
 - MULCH WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT.
 - ACCEPTABLE MULCH ANCHORING: 1) LIQUID MULCH BINDER, 2) PEG AND TWINE, AND 3) MULCH NETTING.
- PERMANENT STABILIZATION SPECIFICATIONS
 - APPLY TOPSOIL TO A DEPTH OF 5 INCHES (UNSETTLED).
 - APPLY GROUND LIMESTONE AT A RATE OF 90 LBS. PER 1000 SQ. FT. AND WORK 4 INCHES INTO SOIL.
 - APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS. PER 1000 SQ. FT.
 - APPLY HARD FESCUE SEED AT 2.7 LBS. PER 1000 SQ. FT. AND CREEPING RED FESCUE SEED AT 0.7 LBS. PER 1000 SQ. FT. AND PERENNIAL RYEGRASS SEED AT 0.25 LBS. PER 1000 SQ. FT. (OPTIMAL SEEDING DATES ARE 2/15-4/30 AND 8/15-10/30).
 - APPLY GROUND LIMESTONE AT A RATE OF 90 LBS. PER 1000 SQ. FT.
 - MULCH WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT.
 - ACCEPTABLE MULCH ANCHORING: 1) LIQUID MULCH BINDER, 2) PEG AND TWINE, AND 3) MULCH NETTING.

DUST CONTROL NOTES

AS PER THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY, JULY 1999. THE FOLLOWING METHODS SHOULD BE CONSIDERED FOR CONTROLLING DUST:

MULCHES – SEE STANDARD FOR STABILIZATION WITH MULCHES ONLY (PG. 5-1)

VEGETATIVE COVER – SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER (PG. 7-1), PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION WITH SOD (PG. 6-1)

SPRAY-ON ADHESIVES – ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS) KEEP TRAFFIC OFF THESE AREAS

TABLE 1.6-1: DUST CONTROL MATERIALS

MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY (GAL/ACRE)
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1,200
LATEX EMULSION	12.5:1	FINE SPRAY	235
RESIN IN WATER	4:1	FINE SPRAY	300
POLYACRYLAMIDE (PAM) - SPRAY ON	MAY ALSO BE USED AS AN ADDITIVE TO SEDIMENT BASINS TO FLOCCULATE AND PRECIPITATE SUSPENDED COLLOIDS. SEE SEDIMENT BASIN STANDARDS (PG. 26-1) APPLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS		
POLYACRYLAMIDE (PAM) - DRY SPRAY			
ACIDULATED SOY BEAN SOAP STICK	NONE	COARSE SPRAY	1,200

TILLAGE – TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF THE SITE. CHISEL-TYPE PLOWS SPACE ABOUT 12 INCHES APART, AND SPRING-TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

SPRINKLING – SITE IS SPRINKLED UNTIL THE SURFACE IS WET

BARRIERS – SOLID BOARD FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.

CALCIUM CHLORIDE – SHALL BE IN THE FORM OF LOOSE, DRY GRANULATES OF FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. IF USED ON STEEPER SLOPES, THEN USE OTHER PRACTICES TO PREVENT WASHING INTO STREAMS, OR ACCUMULATION AROUND PLANTS.

STONE – COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

a)

SEQUENCE OF CONSTRUCTION

THE CAMDEN SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING AT LEAST 72 HOURS PRIOR TO ANY SOIL DISTURBING ACTIVITIES.

PHASE 1 - CONSTRUCTION (BLOCK 804)

- INSTALL SILT FENCING, STABILIZED CONSTRUCTION ENTRANCE AND INLET PROTECTION WHERE REQUIRED - 1 WEEK
- UNDERTAKE SITE DEMOLITION - 2 WEEKS
- STAKEOUT CURBS/SIDEWALK AND CONSTRUCT NEW CURBS - 4 WEEKS
- INSTALL UNDERGROUND UTILITY SERVICES FROM THE STREET TO THE PROPERTY LINES - 6 WEEKS
- REPAIR/RECONSTRUCT RAY AND ELM STREET ROADWAYS (TO BASE COURSE) - 3 WEEKS
- CONSTRUCT INDIVIDUAL HOUSES WITH SITE IMPROVEMENTS AND UTILITY CONNECTIONS - 12 MONTHS
- INSTALL SIDEWALKS, STREET TREES AND LIGHTING - 8 WEEKS
- COMPLETE SITE LANDSCAPING AND HOUSE FINISH WORK - 6 WEEKS
- COMPLETE FINISH PAVEMENT COURSE ON RAY AND ELM STREETS - 2 WEEKS
- CALL CAMDEN SCD FOR FINAL INSPECTION. REMOVE SOIL EROSION AND SEDIMENT CONTROL MEASURES ONLY AFTER FINAL CAMDEN SCD APPROVAL.
- TOTAL CONTINUOUS TIME ESTIMATE FOR PHASE 1 - 18 MONTHS

PHASE 2 - CONSTRUCTION (BLOCK 805)

- INSTALL SILT FENCING, STABILIZED CONSTRUCTION ENTRANCE AND INLET PROTECTION WHERE REQUIRED - 1 WEEK
- UNDERTAKE SITE DEMOLITION - 2 WEEKS
- STAKEOUT CURBS/SIDEWALK AND CONSTRUCT NEW CURBS - 4 WEEKS
- INSTALL UNDERGROUND UTILITY SERVICES FROM THE STREET TO THE PROPERTY LINES - 6 WEEKS
- REPAIR/RECONSTRUCT BORTON, NORTH 10TH AND ELM STREET ROADWAYS (TO BASE COURSE) - 5 WEEKS
- CONSTRUCT INDIVIDUAL HOUSES WITH SITE IMPROVEMENTS AND UTILITY CONNECTIONS - 12 MONTHS
- INSTALL SIDEWALKS, STREET TREES AND LIGHTING - 8 WEEKS
- COMPLETE SITE LANDSCAPING AND HOUSE FINISH WORK - 6 WEEKS
- COMPLETE FINISH PAVEMENT COURSE ON BORTON, NORTH 10TH AND ELM STREET - 2 WEEKS
- CALL CAMDEN SCD FOR FINAL INSPECTION. REMOVE SOIL EROSION AND SEDIMENT CONTROL MEASURES ONLY AFTER FINAL CAMDEN SCD APPROVAL.
- TOTAL CONTINUOUS TIME ESTIMATE FOR PHASE 2 - 18 MONTHS

CAMDEN COUNTY SCD NOTES

- ALL APPLICABLE EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN PLACE PRIOR TO ANY GRADING OPERATION AND/OR INSTALLATION OF PROPOSED STRUCTURES OR UTILITIES.
- SOIL EROSION AND SEDIMENT CONTROL PRACTICES ON THIS PLAN SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.
- APPLICABLE EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE LEFT IN PLACE UNTIL CONSTRUCTION IS COMPLETED AND/OR THE AREA IS STABILIZED.
- THE CONTRACTOR SHALL PERFORM ALL WORK, FURNISH ALL MATERIALS AND INSTALL ALL MEASURES REQUIRED TO REASONABLY CONTROL SOIL EROSION RESULTING FROM CONSTRUCTION OPERATIONS AND PREVENT EXCESSIVE FLOW OF SEDIMENT FROM THE CONSTRUCTION SITE.
- ANY DISTURBED AREA THAT IS TO BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING AND FERTILIZATION IN ACCORDANCE WITH THE NEW JERSEY STANDARDS AND THEIR RATES SHOULD BE INCLUDED IN THE NARRATIVE. IF THE SEASON PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH SALT HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS (I.E. PEG AND TWINE, MULCH NETTING OR LIQUID MULCH BINDER).
- IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO PROVIDE CONFIRMATION OF LIME, FERTILIZER AND SEED APPLICATION AND RATES OF APPLICATION AT THE REQUEST OF THE CAMDEN COUNTY SOIL CONSERVATION DISTRICT.
- ALL CRITICAL AREAS SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH AT A RATE OF 2 TONS PER ACRE, ACCORDING TO THE NEW JERSEY STANDARDS IMMEDIATELY FOLLOWING ROUGH GRADING.
- THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SUCH THAT ALL STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
- ALL SEDIMENTATION STRUCTURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS AND AFTER EVERY STORM EVENT.
- A CRUSHED STONE, TIRE CLEANING PAD WILL BE INSTALLED WHEREVER A CONSTRUCTION ACCESS EXISTS. THE STABILIZED PAD WILL BE INSTALLED ACCORDING TO THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS
- ALL DRIVEWAYS MUST BE STABILIZED WITH 2 ½" CRUSHED STONE OR SUBBASE PRIOR TO INDIVIDUAL LOT CONSTRUCTION.
- PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
- ALL CATCH BASIN INLETS WILL BE PROTECTED ACCORDING TO THE CERTIFIED PLAN.
- ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED, AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.
- ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA. THE SEDIMENT FILTER SHOULD BE COMPOSED OF A SUITABLE SEDIMENT FILTER FABRIC. (SEE DETAIL) THE BASIN MUST BE DEWATERED TO NORMAL POOL WITHIN 10 DAYS OF THE DESIGN STORM.
- N.J.A.C. 7:24-39, ET SEQ. REQUIRES THAT NO CERTIFICATE OF OCCUPANCY BE ISSUED BEFORE ALL PROVISIONS OF THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN HAVE BEEN COMPLIED WITH FOR PERMANENT MEASURES. ALL SITE WORK FOR THE PROJECT MUST BE COMPLETED PRIOR TO THE DISTRICT ISSUING A REPORT OF COMPLIANCE AS A PREREQUISITE TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY BY THE MUNICIPALITY.

- MULCHING IS REQUIRED ON ALL SEEDED AREAS TO INSURE AGAINST EROSION BEFORE GRASS IS ESTABLISHED TO PROMOTE EARLIER VEGETATION COVER.
- OFFSITE SEDIMENT DISTURBANCE MAY REQUIRE ADDITIONAL CONTROL MEASURES TO BE DETERMINED BY THE EROSION CONTROL INSPECTOR.
- A COPY OF THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN MUST BE MAINTAINED ON THE PROJECT SITE DURING CONSTRUCTION.
- THE CAMDEN COUNTY SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED 72 HOURS PRIOR TO ANY LAND DISTURBANCE.
- ANY CONVEYANCE OF THIS PROJECT PRIOR TO ITS COMPLETION WILL TRANSFER FULL RESPONSIBILITY FOR COMPLIANCE WITH THE CERTIFIED PLAN TO ANY SUBSEQUENT OWNERS.
- IMMEDIATELY AFTER THE COMPLETION OF STRIPPING AND STOCKPILING OF TOPSOIL, THE STOCKPILE MUST BE STABILIZED ACCORDING TO THE STANDARD FOR TEMPORARY VEGETATIVE COVER. STABILIZE TOPSOIL PILE WITH STRAW MULCH FOR PROTECTION IF THE SEASON DOES NOT PERMIT THE APPLICATION AND ESTABLISHMENT OF TEMPORARY SEEDING. ALL SOIL STOCKPILES ARE NOT TO BE LOCATED WITHIN FIFTY (50) FEET OF A FLOODPLAIN, SLOPE, ROADWAY OR DRAINAGE FACILITY AND THE BASE MUST BE PROTECTED WITH A SEDIMENT BARRIER.
- ANY CHANGES TO THE SITE PLAN WILL REQUIRE THE SUBMISSION OF A REVISED SOIL EROSION AND SEDIMENT CONTROL PLAN TO THE CAMDEN COUNTY SOIL CONSERVATION DISTRICT. THE REVISED PLAN MUST BE IN ACCORDANCE WITH THE CURRENT NEW JERSEY STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL.
- METHODS FOR THE MANAGEMENT OF HIGH ACID PRODUCING SOILS SHALL BE IN ACCORDANCE WITH THE STANDARDS. HIGH ACID PRODUCING SOILS ARE THOSE FOUND TO CONTAIN IRON SULFIDES OR HAVE A pH OF 4 OR LESS.
- TEMPORARY AND PERMANENT SEEDING MEASURES MUST BE APPLIED ACCORDING TO THE NEW JERSEY STANDARDS, AND MULCHED WITH SALT HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS (I.E. PEG AND TWINE, MULCH NETTING OR LIQUID MULCH BINDER).
- MAXIMUM SIDE SLOPES OF ALL EXPOSED SURFACES SHALL NOT BE CONSTRUCTED STEEPER THAN 3:1 UNLESS OTHERWISE APPROVED BY THE DISTRICT.
- DUST IS TO BE CONTROLLED BY AN APPROVED METHOD ACCORDING TO THE NEW JERSEY STANDARDS AND MAY INCLUDE WATERING WITH A SOLUTION OF CALCIUM CHLORIDE AND WATER.
- ADJOINING PROPERTIES SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE PROPOSED SITE.
- USE STAGED CONSTRUCTION METHODS TO MINIMIZE EXPOSED SURFACES, WHERE APPLICABLE.
- ALL VEGETATIVE MATERIAL SHALL BE SELECTED IN ACCORDANCE WITH AMERICAN STANDARDS FOR NURSERY STOCK OF THE AMERICAN ASSOCIATION OF THE NURSERYMEN AND IN ACCORDANCE WITH THE NEW JERSEY STANDARDS.
- NATURAL VEGETATION AND SPECIES SHALL BE RETAINED WHERE SPECIFIED ON THE LANDSCAPE PLAN.
- THE SOIL EROSION INSPECTOR MAY REQUIRE ADDITIONAL SOIL EROSION MEASURES TO BE INSTALLED, AS DIRECTED BY THE DISTRICT INSPECTOR.

AREA OF DISTURBANCE = 82,955 SF

SOIL COMPACTION NOTES

- THIS PROJECT IS EXEMPT FROM THE SOIL COMPACTION MITIGATION REQUIREMENT OF THE LAND GRADING STANDARD FOR THE FOLLOWING REASONS:
 - THE PROJECT IS LOCATED IN AN URBAN REDEVELOPMENT AREA (

APPLICANT

CASAS DEL RIO
CAMDEN LUTHERAN HOUSING, INC.
800 GALINDEZ COURT
CAMDEN, NJ 08102



CASAS DEL RIO

CITY OF CAMDEN, NJ

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NJ Certificate of Authorization for Engineering
24GA28135000



Carl A. Jenne, P.E.

NJ Professional Engineer
No. 24GE02628700

DATE	ISSUE	DESCRIPTION
6/28/2024	1	PLANNING BD. SUBMISSION

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Project

CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title

SOIL EROSION AND SEDIMENT
CONTROL PLAN

Drawing No.

SESC-101

MICHAEL I. MILLA

Project No.

23-014

Scale

AS NOTED

Drawn/Checked by

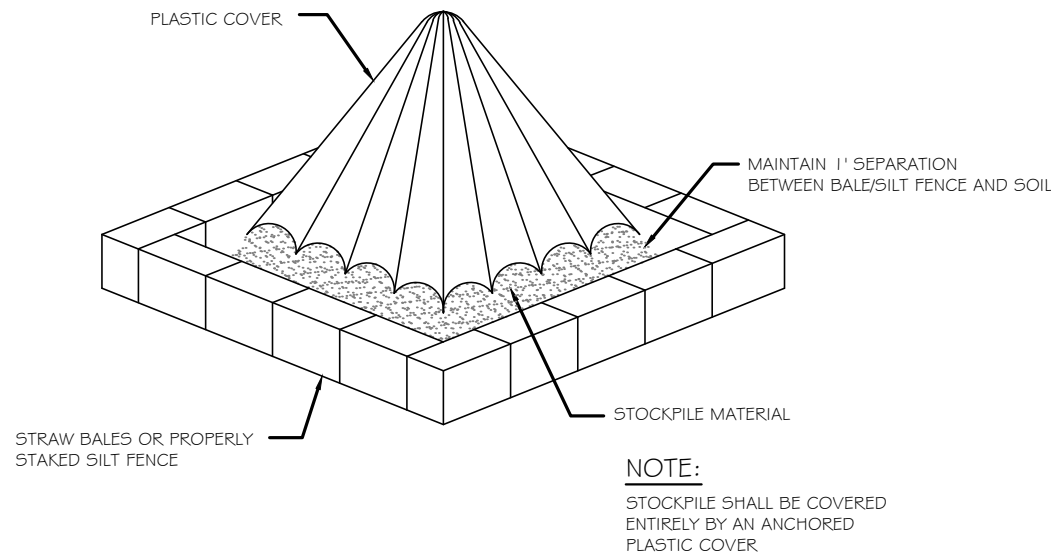
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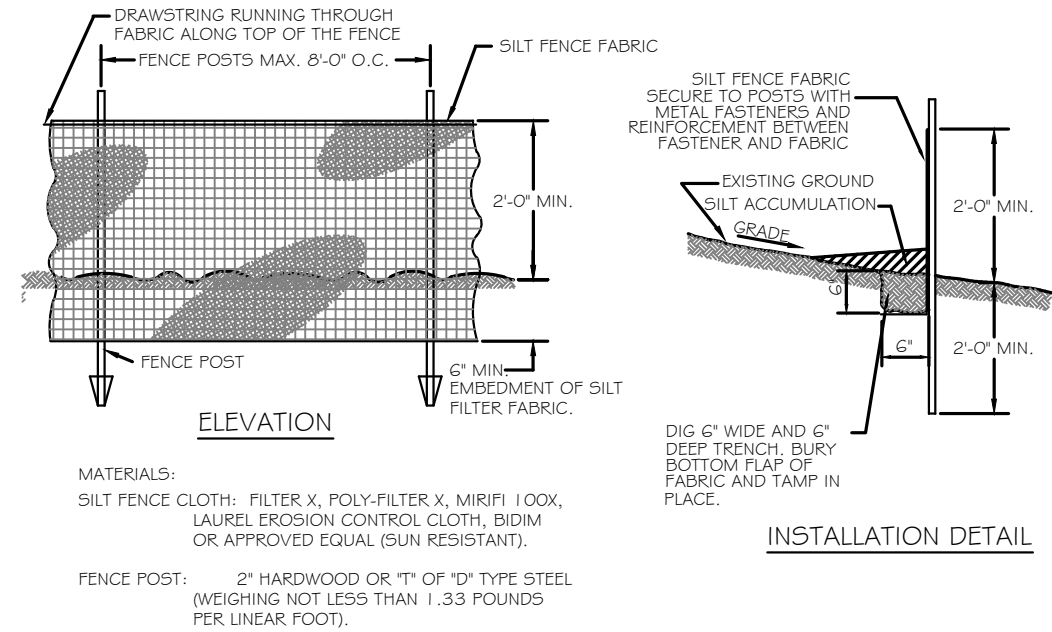
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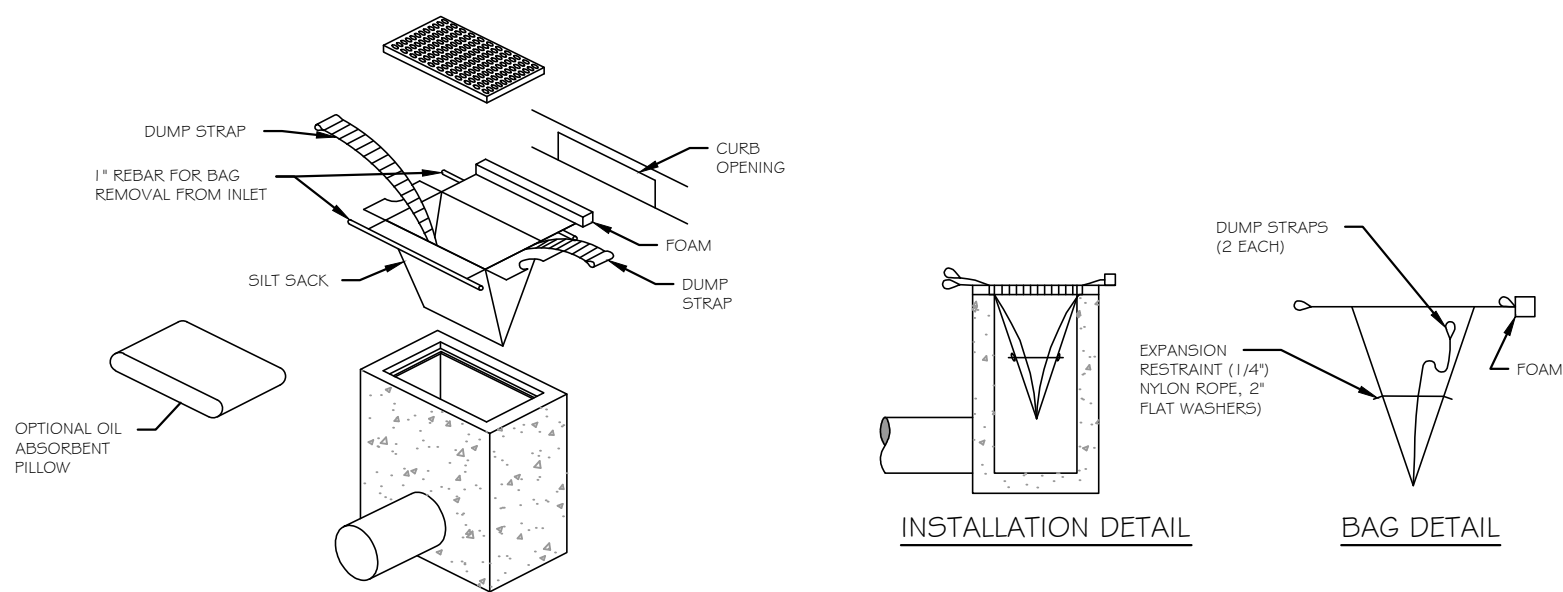
SOIL STOCKPILE PROTECTION DETAIL

NOT TO SCALE



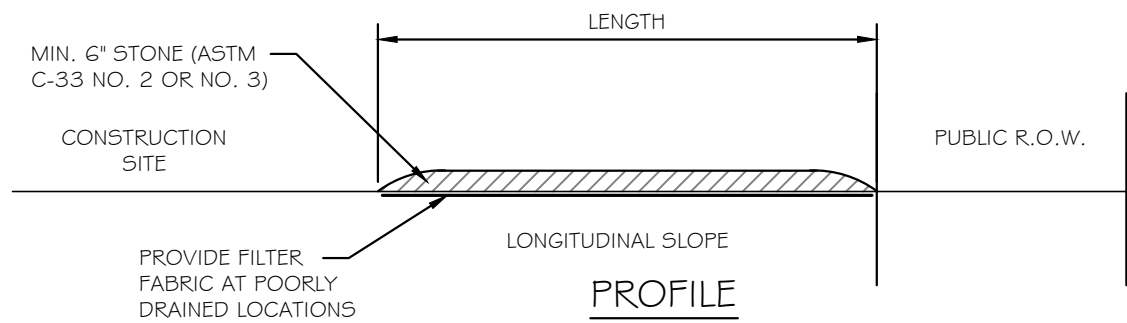
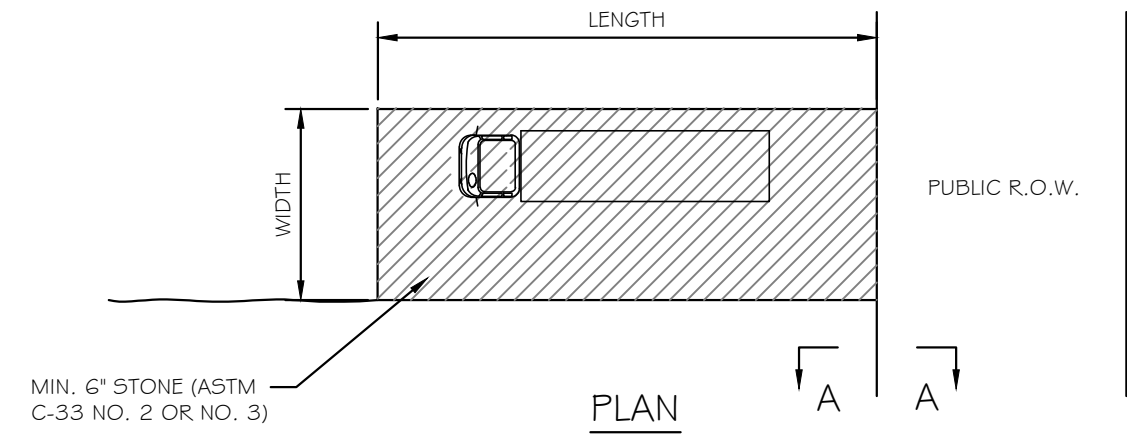
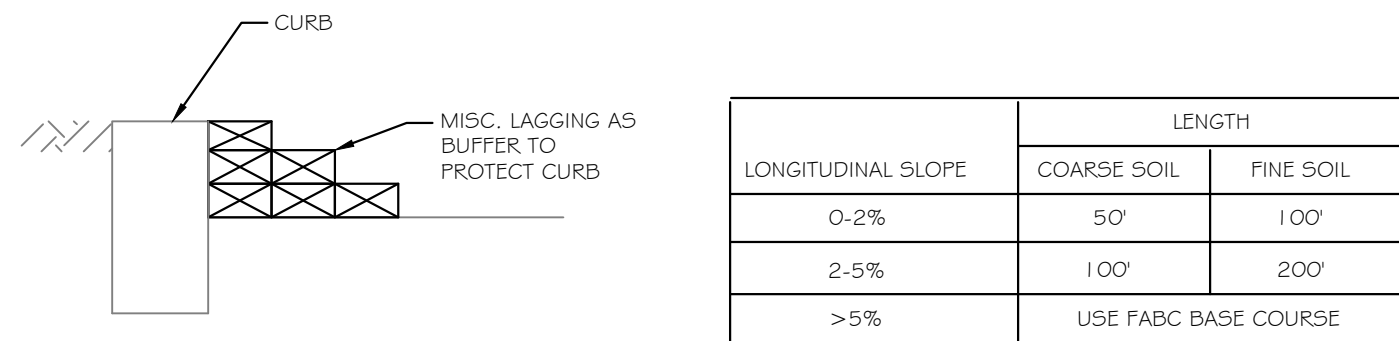
SILT FENCE DETAIL

NOT TO SCALE



INLET PROTECTION DETAIL

NOT TO SCALE



STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE

APPLICANT

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CLHI
NORTH CAMDEN

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Carl A. Jenne, P.E.
NJ Professional Engineer
No. 24GE02628700

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Project

CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title

**SOIL EROSION AND SEDIMENT
CONTROL PLAN DETAILS**

Drawing No.

SESC-102

MICHAEL I. MILLA	Project No. 23-014
	Scale AS NOTED
	Drawn/Checked by CAJ/CJ
NJ LIC. No. 22414	

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1 ARCHITECTURAL RENDERING - N. 10th STREET

SCALE : NTS



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Project

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CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title

ARCHITECTURAL
RENDERING
VIEW ALONG
N. 10th
STREET

Drawing No.

A-010

MICHAEL I. MILLA

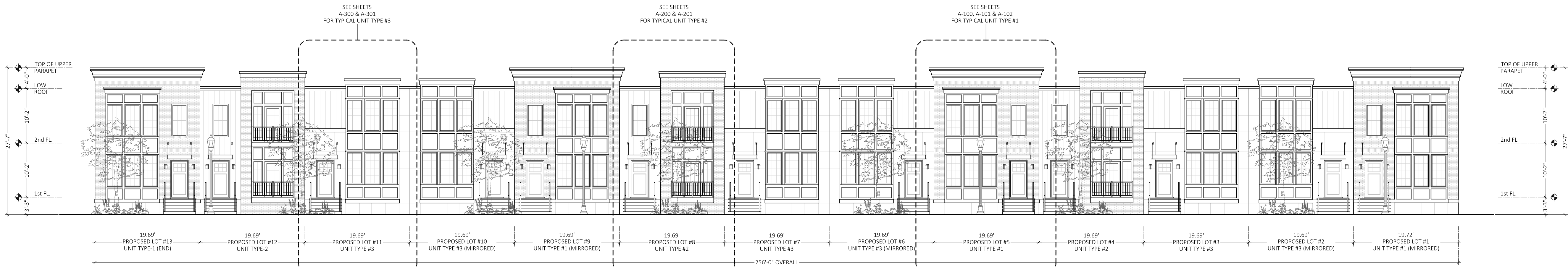
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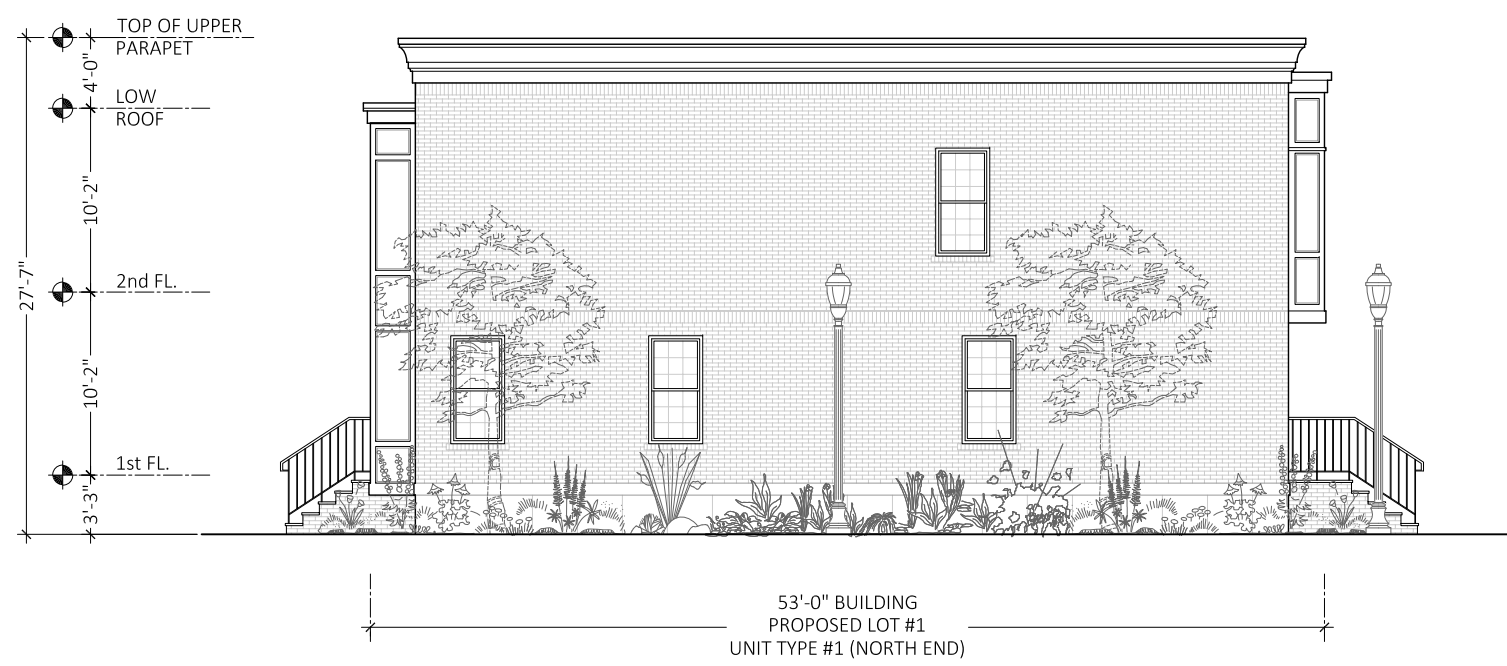
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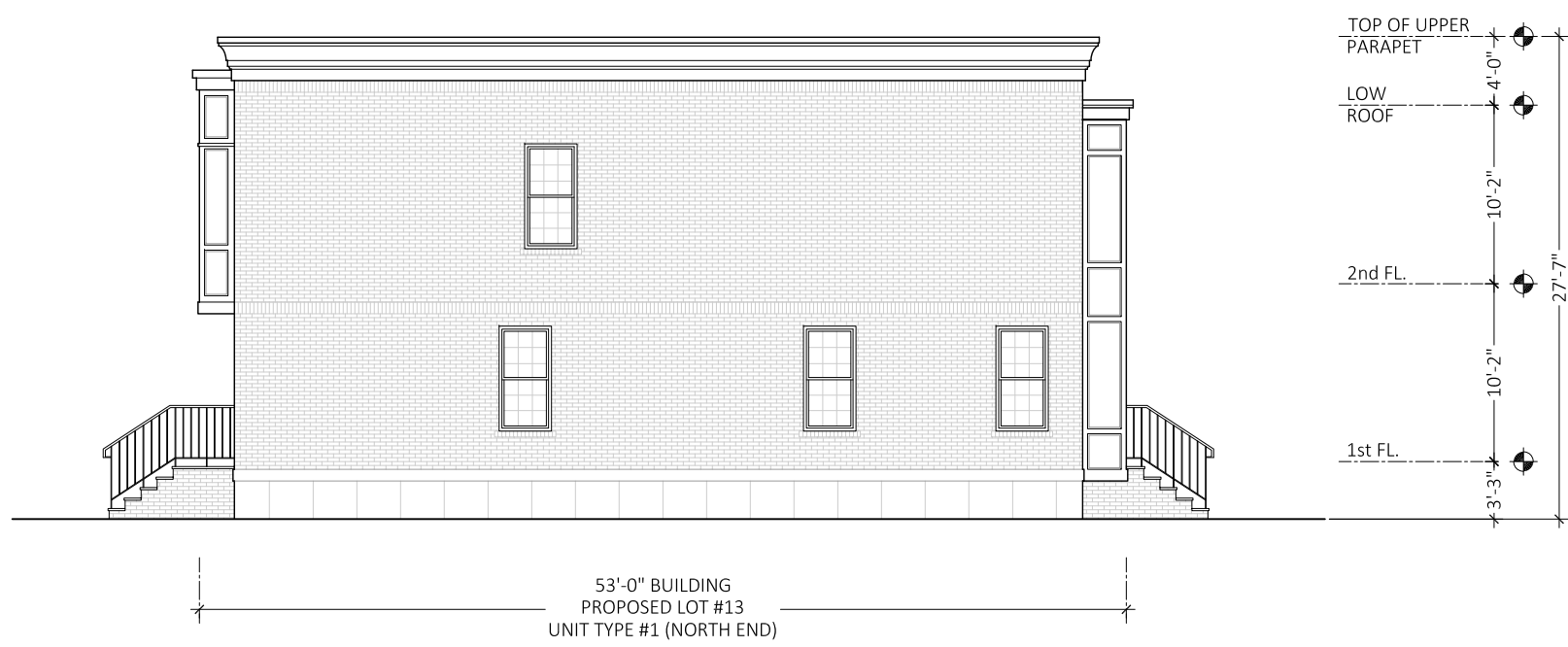
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1 FRONT STREET ELEVATION AT 10th STREET & RAY STREET
SCALE: 3/32" = 1'-0"



2 NORTH STREET ELEVATION AT ELM STREET
SCALE: 3/32" = 1'-0"



3 SOUTH STREET ELEVATION AT ALLEY
SCALE: 3/32" = 1'-0"



4 REAR STREET ELEVATION AT BORTON STREET
SCALE: 3/32" = 1'-0"



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CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title

BUILDING/
STREET
ELEVATIONS

Drawing No.

A-020

MICHAEL I. MILLA

Project No.
23-014

Scale
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CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

UNIT TYPE #1 PROPOSED FLOOR PLANS

A-100

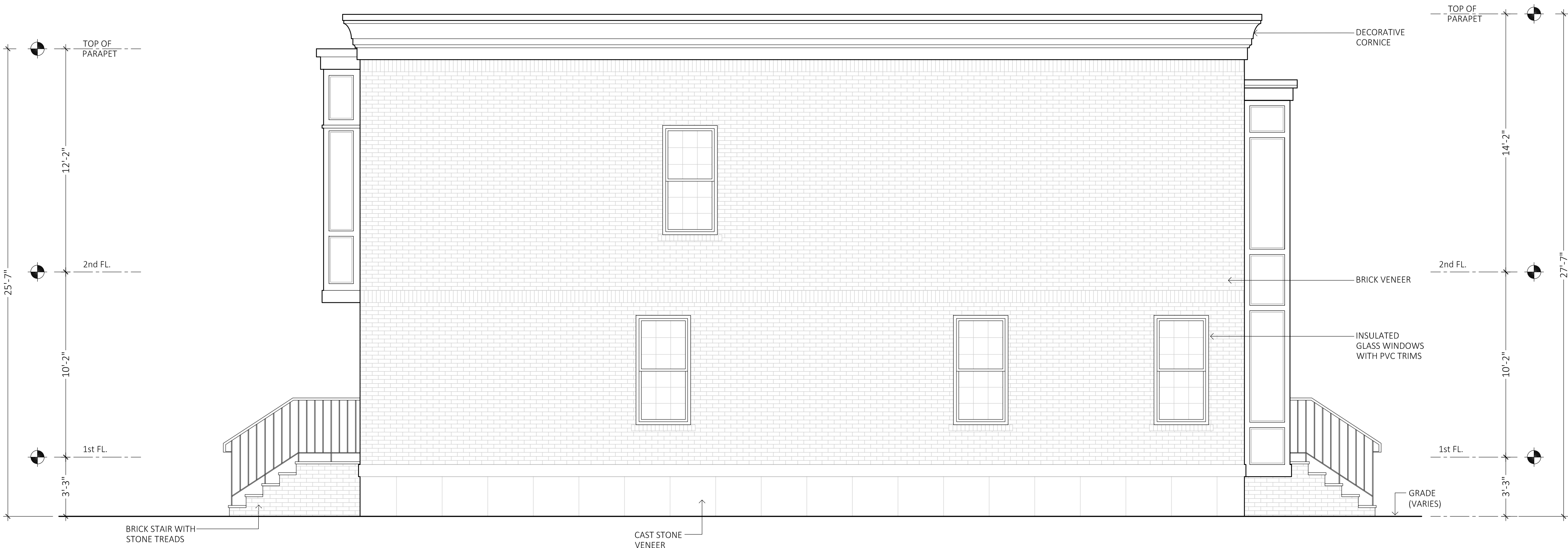
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1 TYPICAL FRONT ELEVATION - UNIT TYPE-1
SCALE : 1/4" = 1'-0"

2 TYPICAL REAR ELEVATION - UNIT TYPE-1
SCALE : 1/4" = 1'-0"

3 REAR ELEVATION AT END UNITS - UNIT TYPE-1
SCALE : 1/4" = 1'-0"



4 SIDE ELEVATION AT NORTH & SOUTH - UNIT TYPE-1
SCALE : 1/4" = 1'-0"



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CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title

**UNIT TYPE #1
PROPOSED
BUILDING
ELEVATIONS**

Drawing No.

A-101

MICHAEL I. MILLA

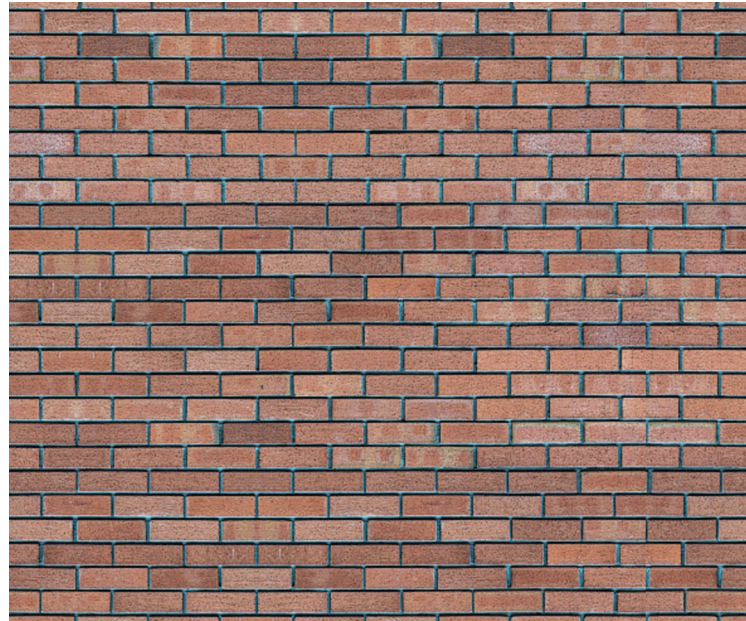
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BRICK VENEER



AZEK PANELS



CAST STONE VENEER



1 UNIT #1 - FRONT ELEVATION
SCALE : 3/8" = 1'-0"



2 UNIT #1 - REAR ELEVATION
SCALE : 3/8" = 1'-0"



AZEK PANELS



VINYL SIDING



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CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title

**UNIT TYPE #1
PROPOSED
BUILDING
MATERIALS**

Drawing No.

A-102

MICHAEL I. MILLA

Project No.
23-014

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CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title

UNIT TYPE #2
PROPOSED
FLOOR PLANS,
& ELEVATIONS

Drawing No.

A-200

MICHAEL I. MILLA

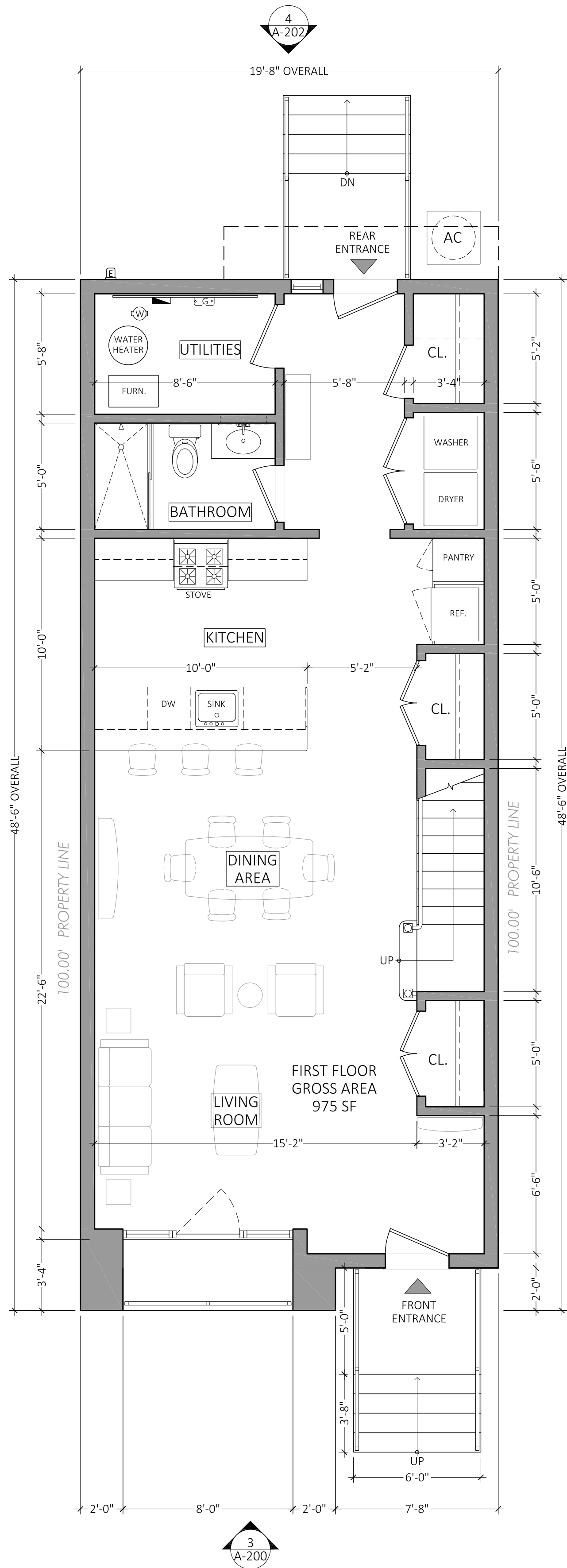
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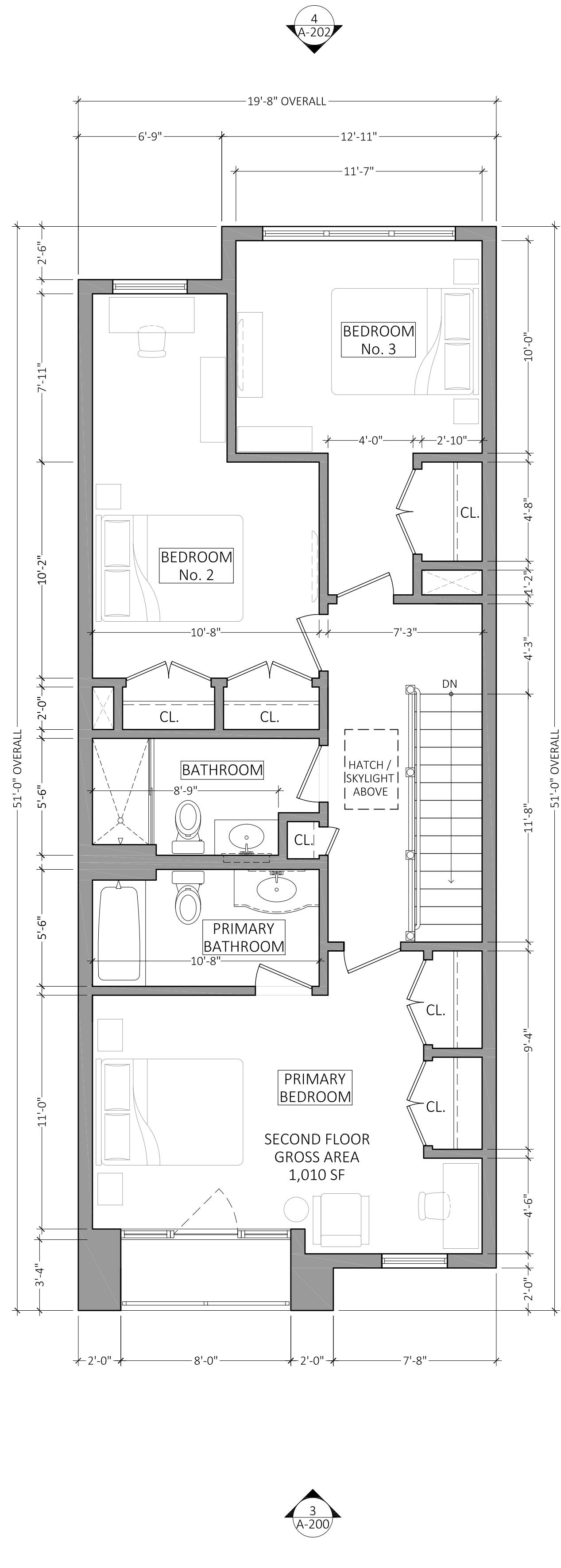
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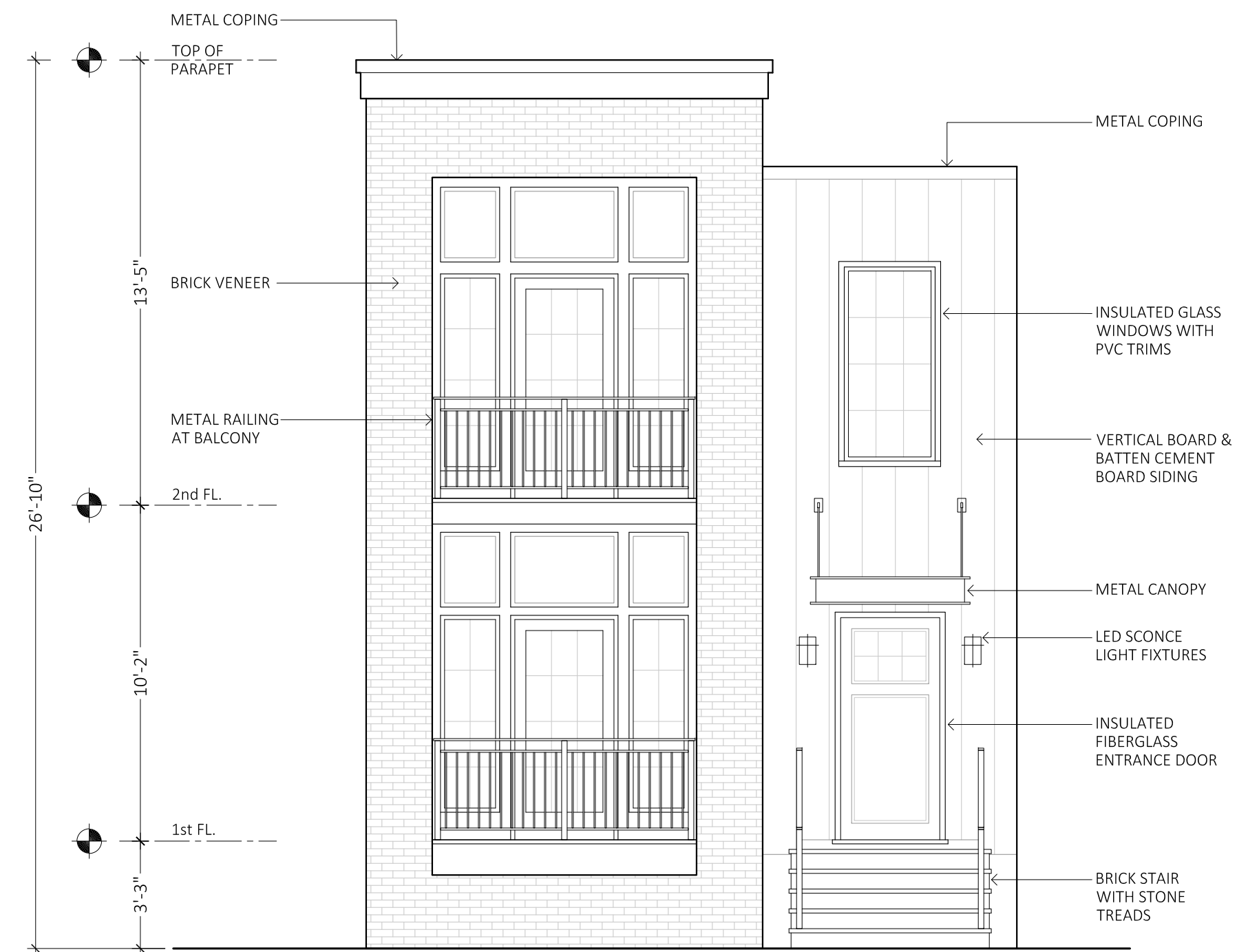
1 PROPOSED FIRST FLOOR PLAN - UNIT TYPE-2

SCALE : 1/4" = 1'-0"



2 PROPOSED SECOND FLOOR PLAN - UNIT TYPE-2

SCALE : 1/4" = 1'-0"



3 TYPICAL FRONT ELEVATION - UNIT TYPE-2

SCALE : 1/4" = 1'-0"



4 TYPICAL REAR ELEVATION - UNIT TYPE-2

SCALE : 1/4" = 1'-0"



1 UNIT #2 - FRONT ELEVATION
SCALE : 3/8" = 1'-0"



2 UNIT #1 - REAR ELEVATION
SCALE : 3/8" = 1'-0"



CASAS DEL RIO

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DATE	ISSUE	DESCRIPTION
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Project

CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title

UNIT TYPE #2
PROPOSED
BUILDING
MATERIALS

Drawing No.

A-201

MICHAEL I. MILLA

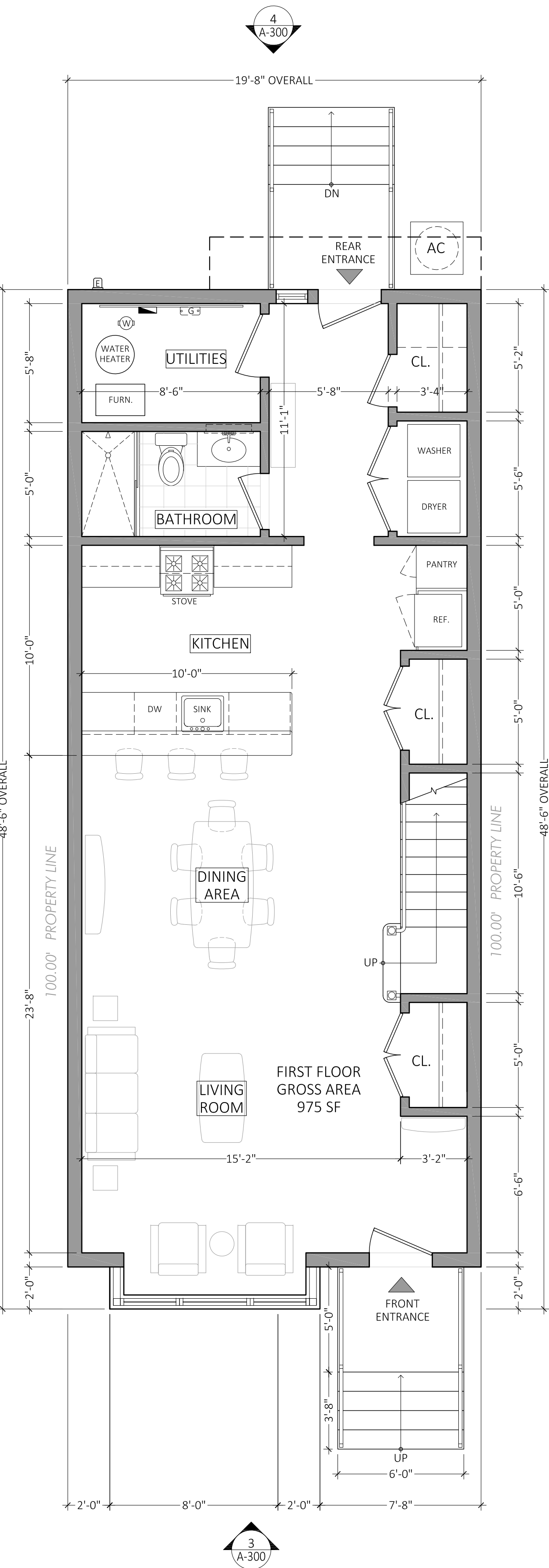
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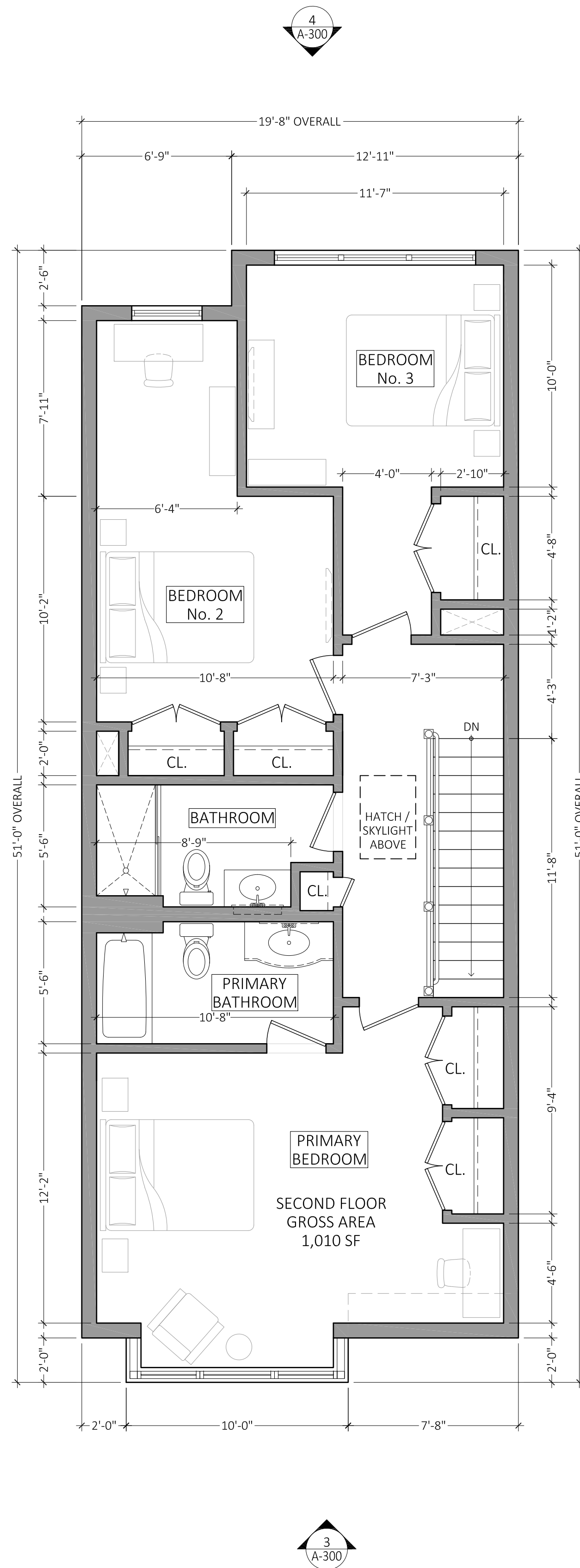
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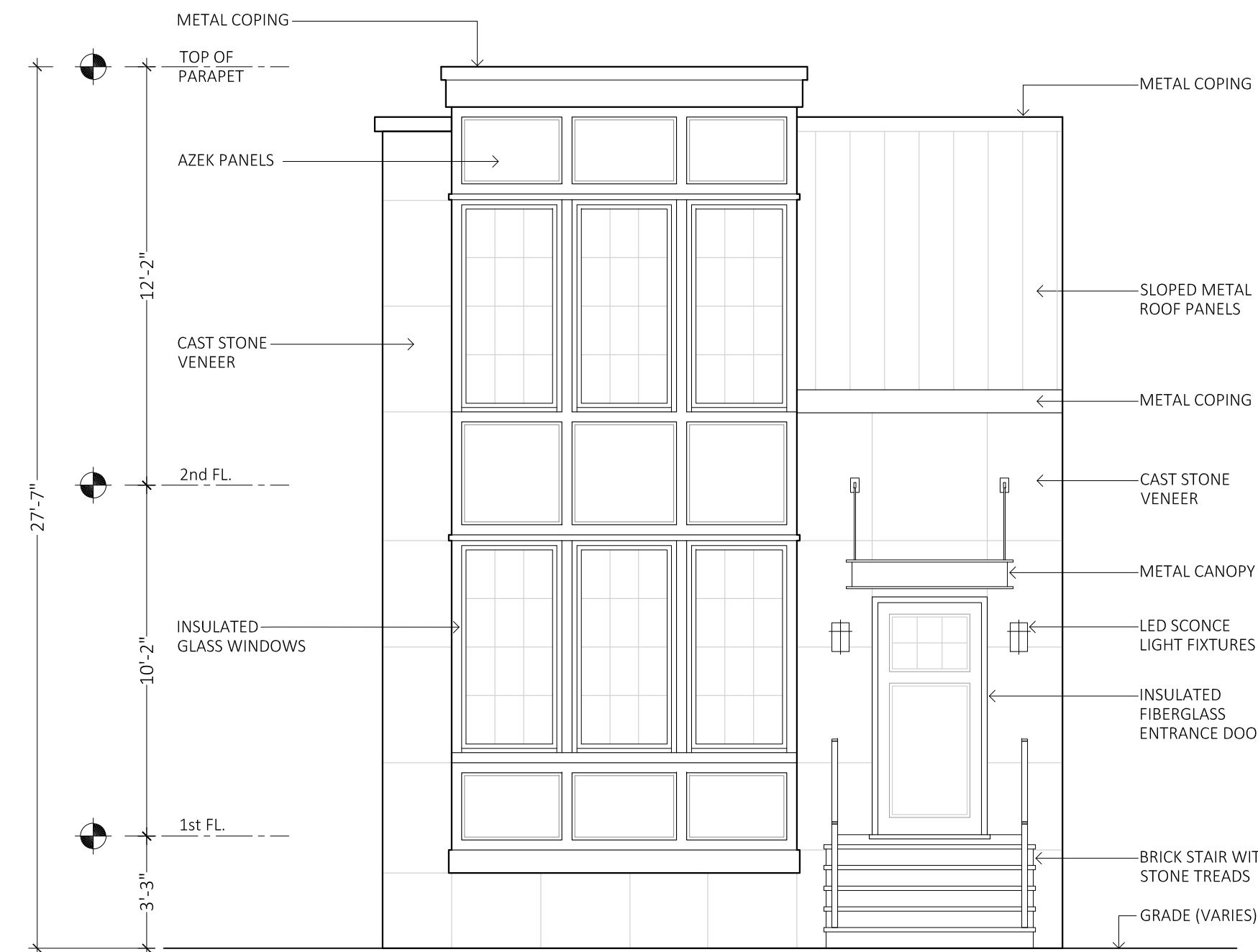
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1 PROPOSED FIRST FLOOR PLAN - UNIT TYPE-3
SCALE : 1/4" = 1'-0"



2 PROPOSED SECOND FLOOR PLAN - UNIT TYPE-3
SCALE : 1/4" = 1'-0"



3 TYPICAL FRONT ELEVATION - UNIT TYPE-3
SCALE : 1/4" = 1'-0"



4 TYPICAL REAR ELEVATION - UNIT TYPE-3
SCALE : 1/4" = 1'-0"



CASAS DEL RIO

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Project

CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title

UNIT TYPE #3
PROPOSED
FLOOR PLANS,
& ELEVATIONS

Drawing No.

A-300

MICHAEL I. MILLA

Project No.
23-014

Scale
AS NOTED

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METAL ROOF PANELS



CAST STONE VENEER



AZEK PANELS



1 UNIT #3 - FRONT ELEVATION
SCALE : 3/8" = 1'-0"



2 UNIT #3 - REAR ELEVATION
SCALE : 3/8" = 1'-0"



AZEK PANELS



VINYL SIDING



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Warren, NJ 07059

DATE	ISSUE	DESCRIPTION
06/28/24	1	PLANNING BD. SUBMISSION

It is a violation of the law for any person, unless acting under the direction of a licensed architect, to alter this item in any way.

Project

CASAS DEL RIO
CAMDEN LUTHERAN HOUSING INC.
NORTH CAMDEN, NJ

Drawing Title

UNIT TYPE #3
PROPOSED
BUILDING
MATERIALS

Drawing No.

A-301

MICHAEL I. MILLA

Project No.
23-014

Scale
AS NOTED

Drawn/Checked by
NS/MM

NJ LIC. No. 22414

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