JAHNKE & JAHNKE ASSOCIATES, LLC
ENGINEERS · PLANNERS · SURVEYORS
ENGINEERING SOLUTIONS SINCE 1964

Project: Silvernail Apartments
Date: 11/26/2025
Calc By: BK Check By: BK

Dear Reviewer,

This site is located at 2417 Silvernail Road Waukesha WI. The existing office building and parking & drive areas are to be demolished and disposed off offsite. The redevelopment consists of a mixed use commercial and residential apartment building with three levels of underground parking. To handle the stormwater a detention chamber is provided to the south of the proposed building. The basin was designed to have after redevelopment the same or less runoff rates than the current conditions for the 1,2,10, & 100 year storms, please see the existing and proposed runoff rates below. Water discharges from the basin though a 12" diameter storm sewer to the existing wetland area on the south half of the property

Storm Event (yr)	Existing Conditions (cfs)	Proposed Conditions (cfs)
1	1.66	1.23
2	1.93	1.48
10	2.92	2.40
100	5.02	3.79

Just upstream of the proposed detention basin is a raingarden running the width of the proposed building plus some. The raingarden is there to provide water quality treatment to stormwater runoff prior draining into the detention basin and off the property to the existing wetland on the south end of the property. The raingarden also provides over 900 cubic feet of sediment trap. While also acting as an infiltration basin.

If you have any questions or require more information, please contact me.

Sincerely,

Robert A Krause PE
Project Manager
Jahnke and Jahnke Associates LLC
524 Bluemound Road
Waukesha, WI. 53188
t: (262) 542-5797
d: (262) 720-7938
rkrause@jahnkeandjahnke.com

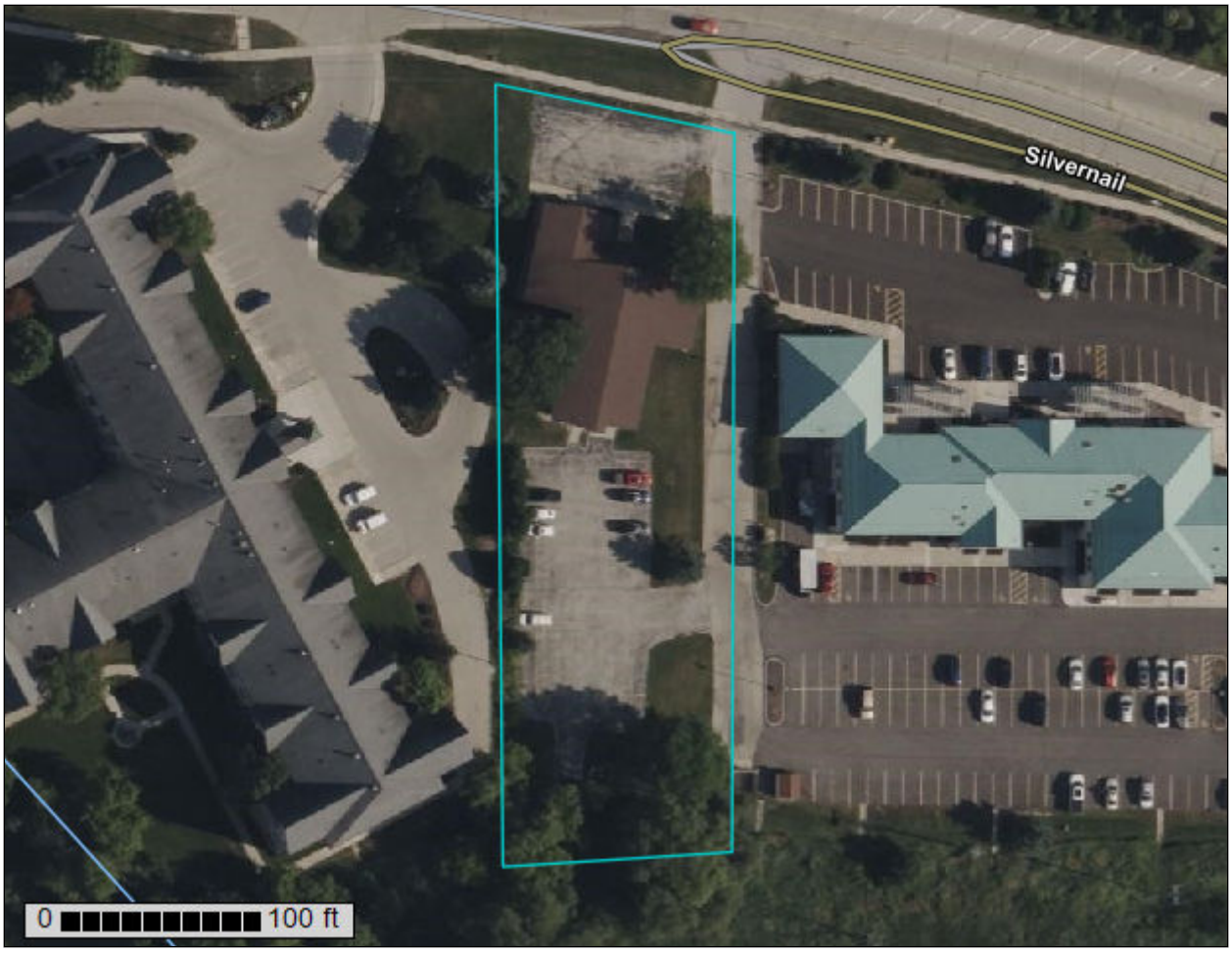
United States Department of Agriculture

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 Waukesha County, Wisconsin



October 2, 2025

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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Contents

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.

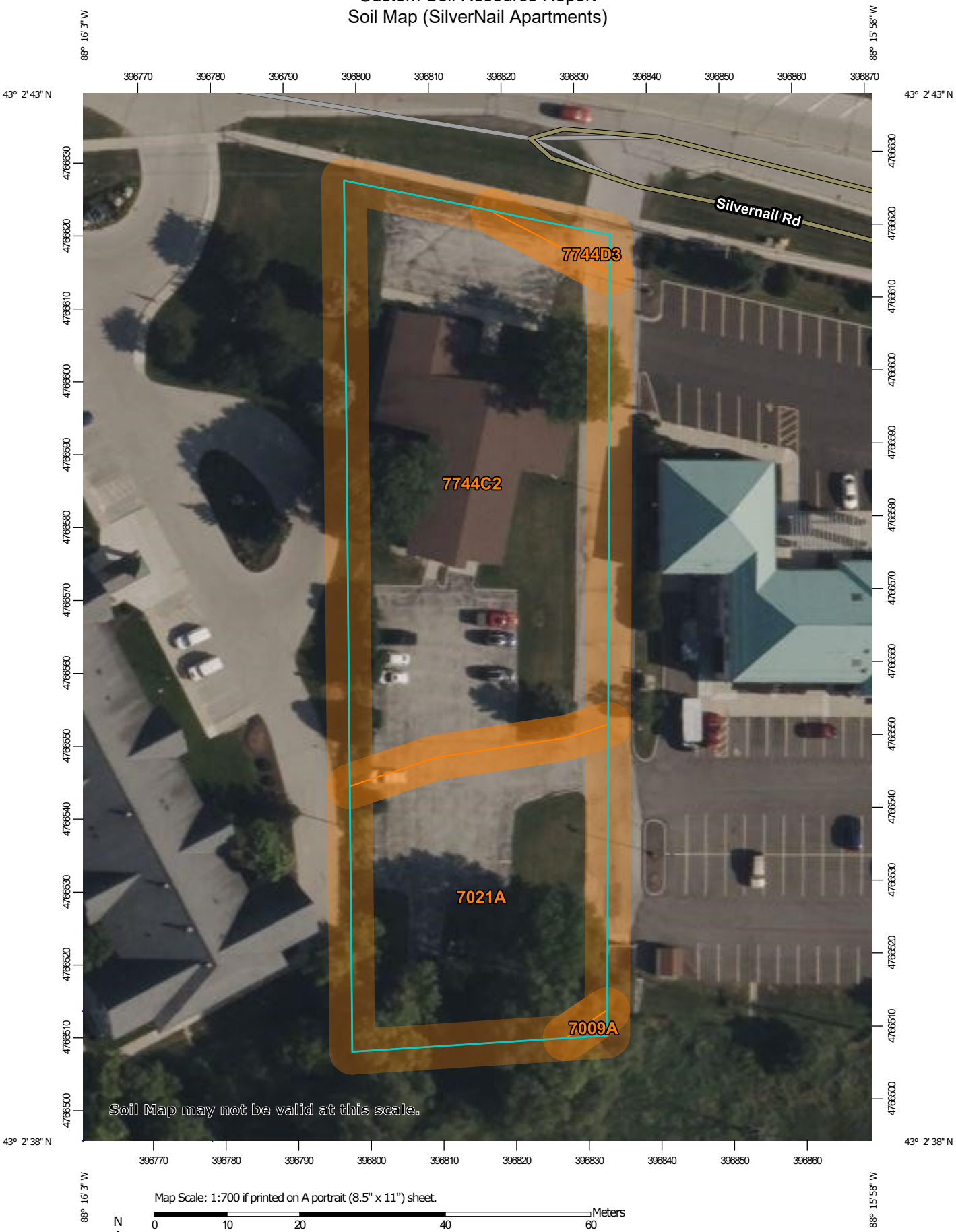
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree 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

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.



Map Scale: 1:700 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 10 20 40 60

Feet
0 30 60 120 180

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

Map Unit Legend (SilverNail Apartments)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7009A	Houghton muck, 0 to 2 percent slopes	0.0	0.2%
7021A	Palms muck, 0 to 2 percent slopes	0.3	34.0%
7744C2	Hochheim loam, 6 to 12 percent slopes, eroded	0.7	64.7%
7744D3	Hochheim soils, 12 to 20 percent slopes, severely eroded	0.0	1.0%
Totals for Area of Interest		**1.0**	**100.0%**

Map Unit Descriptions (SilverNail Apartments)

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.

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.

Waukesha County, Wisconsin

7009A—Houghton muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2szff
Elevation: 600 to 1,090 feet
Mean annual precipitation: 31 to 35 inches
Mean annual air temperature: 43 to 48 degrees F
Frost-free period: 124 to 192 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Houghton, muck, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houghton, Muck

Setting

Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material

Typical profile

Oap - 0 to 6 inches: muck
Oa - 6 to 79 inches: muck

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 5.95 in/hr)
Depth to water table: About 0 to 4 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: F095XB001WI - Mucky Swamp
Forage suitability group: Not suited, flooded or organics (G095BY010WI)
Other vegetative classification: Not suited, flooded or organics (G095BY010WI)
Hydric soil rating: Yes

Minor Components

Houghton, ponded

Percent of map unit: 4 percent

Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F095XB001WI - Mucky Swamp
Other vegetative classification: Not suited, flooded or organics (G095BY010WI)
Hydric soil rating: Yes

Palms

Percent of map unit: 2 percent
Landform: Lakebeds (relict)
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F095XB001WI - Mucky Swamp
Other vegetative classification: Not suited, flooded or organics (G095AY010WI)
Hydric soil rating: Yes

Adrian

Percent of map unit: 2 percent
Landform: Lakebeds (relict)
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F095XB001WI - Mucky Swamp
Hydric soil rating: Yes

Edwards

Percent of map unit: 1 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F095XB001WI - Mucky Swamp
Hydric soil rating: Yes

Willette, muck

Percent of map unit: 1 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F095XA001WI - Mucky Swamp
Hydric soil rating: Yes

7021A—Palms muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2szdc
Elevation: 780 to 1,240 feet
Mean annual precipitation: 31 to 35 inches
Mean annual air temperature: 43 to 49 degrees F
Frost-free period: 124 to 178 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Palms, muck, and similar soils: 87 percent
Minor components: 13 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Palms, Muck

Setting

Landform: Interdrumlins
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material over loamy drift

Typical profile

Oap - 0 to 13 inches: muck
Oa - 13 to 30 inches: muck
2Cg - 30 to 79 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 1.98 in/hr)
Depth to water table: About 0 to 4 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 15.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F095XB001WI - Mucky Swamp
Forage suitability group: Not suited, flooded or organics (G095BY010WI)
Other vegetative classification: Not suited, flooded or organics (G095BY010WI)

Hydric soil rating: Yes

Minor Components

Houghton, muck

Percent of map unit: 8 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F095XB001WI - Mucky Swamp
Other vegetative classification: Not suited, flooded or organics (G095BY010WI)
Hydric soil rating: Yes

Adrian

Percent of map unit: 5 percent
Landform: Interdrumlins
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F095XB001WI - Mucky Swamp
Hydric soil rating: Yes

7744C2—Hochheim loam, 6 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2t03r
Elevation: 900 to 1,340 feet
Mean annual precipitation: 31 to 33 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 135 to 175 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hochheim, eroded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hochheim, Eroded

Setting

Landform: Drumlins
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy till and/or calcareous, dense loamy till

Typical profile

Ap - 0 to 7 inches: loam

Bt - 7 to 16 inches: clay loam
C - 16 to 33 inches: gravelly sandy loam
Cd - 33 to 79 inches: gravelly sandy loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: 20 to 40 inches to densic material
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 60 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: F095XB007WI - Loamy Upland with Carbonates
Forage suitability group: Mod AWC, adequately drained (G095BY005WI)
Other vegetative classification: Mod AWC, adequately drained (G095BY005WI)
Hydric soil rating: No

Minor Components

Theresa

Percent of map unit: 5 percent
Landform: Drumlins
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F095XB007WI - Loamy Upland with Carbonates
Hydric soil rating: No

Hochheim

Percent of map unit: 5 percent
Landform: Drumlins
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Head slope, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F095XB006WI - Shallow Upland
Hydric soil rating: No

7744D3—Hochheim soils, 12 to 20 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: g949
Elevation: 670 to 1,100 feet
Mean annual precipitation: 28 to 36 inches
Mean annual air temperature: 37 to 55 degrees F
Frost-free period: 135 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Hochheim and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hochheim

Setting

Landform: Ground moraines, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous, dense loamy till

Typical profile

A,E - 0 to 6 inches: clay loam
Bt1,Bt2,BC - 6 to 17 inches: clay loam
C - 17 to 60 inches: gravelly loam

Properties and qualities

Slope: 12 to 20 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 60 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F095XB007WI - Loamy Upland with Carbonates
Forage suitability group: Mod AWC, adequately drained with limitations (G095BY006WI)

Other vegetative classification: Mod AWC, adequately drained with limitations (G095BY006WI)
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group (SilverNail Apartments)

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

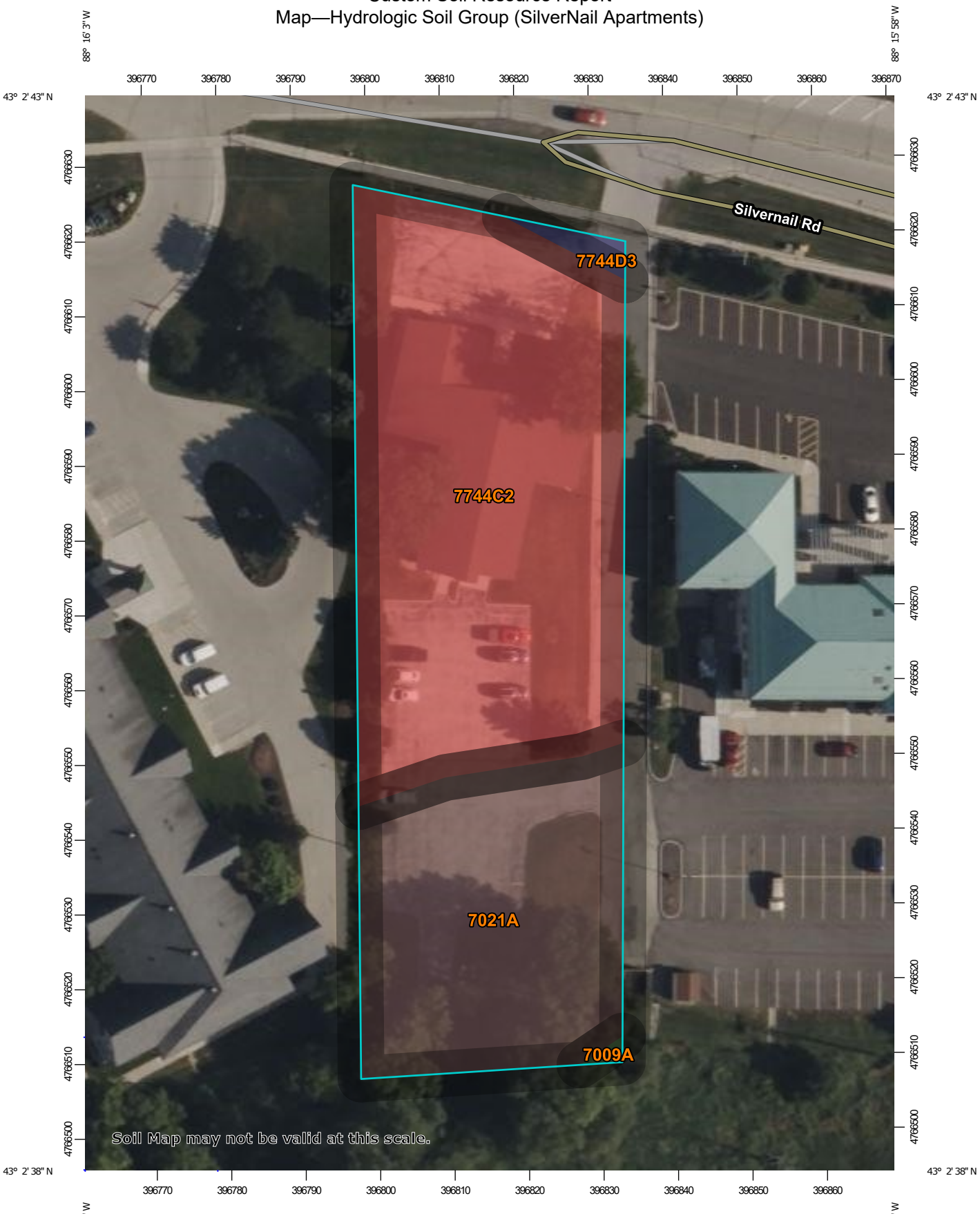
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group (SilverNail Apartments)



Map Scale: 1:700 if printed on A portrait (8.5" x 11") sheet.

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Meters: 0 10 20 40 60

Feet: 0 30 60 120 180

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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

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

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Waukesha County, Wisconsin
Survey Area Data: Version 4, Sep 10, 2025

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

Date(s) aerial images were photographed: Aug 4, 2022—Sep 13, 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.

Table—Hydrologic Soil Group (SilverNail Apartments)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
7009A	Houghton muck, 0 to 2 percent slopes	A/D	0.0	0.2%
7021A	Palms muck, 0 to 2 percent slopes	B/D	0.3	34.0%
7744C2	Hochheim loam, 6 to 12 percent slopes, eroded	D	0.7	64.7%
7744D3	Hochheim soils, 12 to 20 percent slopes, severely eroded	B	0.0	1.0%
Totals for Area of Interest			**1.0**	**100.0%**

Rating Options—Hydrologic Soil Group (SilverNail Apartments)

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: WI

Data description

Data type: Precipitation depth | Units: English | Time series type: Partial duration

Select location

1) Manually:

a) **By location** (decimal degrees, use "-" for S and W): Latitude: Longitude: Submit

b) **By station** (list of WI stations): Select station

c) **By address** Search

2) Use map:

NOAA Atlas 14, Volume 8, Version 2
Location name: Pewaukee, Wisconsin, USA*
Latitude: 43.045°, Longitude: -88.2669°
Elevation: 891 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.338** (0.273-0.418)	**0.405** (0.326-0.501)	**0.512** (0.411-0.634)	**0.599** (0.479-0.744)	**0.717** (0.556-0.901)	**0.805** (0.614-1.02)	**0.892** (0.662-1.14)	**0.978** (0.702-1.27)	**1.09** (0.757-1.44)	**1.17** (0.799-1.56)
10-min	**0.495** (0.399-0.612)	**0.592** (0.477-0.733)	**0.749** (0.602-0.929)	**0.877** (0.702-1.09)	**1.05** (0.814-1.32)	**1.18** (0.898-1.49)	**1.31** (0.969-1.68)	**1.43** (1.03-1.86)	**1.60** (1.11-2.11)	**1.72** (1.17-2.29)
15-min	**0.603** (0.487-0.747)	**0.722** (0.582-0.894)	**0.914** (0.735-1.13)	**1.07** (0.856-1.33)	**1.28** (0.992-1.61)	**1.44** (1.10-1.82)	**1.59** (1.18-2.04)	**1.75** (1.25-2.27)	**1.95** (1.35-2.57)	**2.09** (1.43-2.79)
30-min	**0.828** (0.668-1.02)	**0.996** (0.803-1.23)	**1.27** (1.02-1.57)	**1.48** (1.19-1.84)	**1.78** (1.38-2.24)	**2.00** (1.53-2.54)	**2.22** (1.65-2.85)	**2.44** (1.75-3.17)	**2.72** (1.89-3.59)	**2.92** (2.00-3.90)
60-min	**1.06** (0.858-1.32)	**1.28** (1.03-1.58)	**1.63** (1.31-2.02)	**1.93** (1.54-2.40)	**2.35** (1.83-2.97)	**2.68** (2.05-3.41)	**3.01** (2.24-3.88)	**3.36** (2.42-4.39)	**3.82** (2.66-5.07)	**4.18** (2.85-5.58)
2-hr	**1.30** (1.06-1.59)	**1.56** (1.27-1.90)	**2.00** (1.62-2.44)	**2.37** (1.92-2.91)	**2.92** (2.31-3.67)	**3.35** (2.60-4.24)	**3.80** (2.87-4.87)	**4.28** (3.12-5.55)	**4.93** (3.48-6.49)	**5.44** (3.75-7.20)
3-hr	**1.46** (1.20-1.77)	**1.73** (1.42-2.10)	**2.21** (1.81-2.69)	**2.64** (2.15-3.22)	**3.27** (2.62-4.11)	**3.79** (2.97-4.78)	**4.35** (3.31-5.55)	**4.94** (3.63-6.39)	**5.77** (4.11-7.58)	**6.43** (4.46-8.47)
6-hr	**1.76** (1.46-2.11)	**2.04** (1.70-2.44)	**2.55** (2.12-3.07)	**3.03** (2.51-3.66)	**3.78** (3.08-4.72)	**4.41** (3.51-5.53)	**5.10** (3.94-6.48)	**5.85** (4.37-7.54)	**6.94** (5.01-9.06)	**7.82** (5.49-10.2)
12-hr	**2.09** (1.76-2.48)	**2.36** (1.99-2.80)	**2.87** (2.41-3.41)	**3.36** (2.81-4.01)	**4.14** (3.43-5.14)	**4.82** (3.89-6.00)	**5.58** (4.37-7.02)	**6.41** (4.85-8.19)	**7.63** (5.57-9.88)	**8.63** (6.12-11.2)
24-hr	**2.39** (2.04-2.80)	**2.69** (2.30-3.16)	**3.27** (2.78-3.84)	**3.81** (3.23-4.49)	**4.66** (3.90-5.70)	**5.40** (4.40-6.62)	**6.20** (4.91-7.72)	**7.09** (5.42-8.96)	**8.37** (6.18-10.7)	**9.43** (6.76-12.1)
2-day	**2.66** (2.30-3.08)	**3.08** (2.66-3.56)	**3.81** (3.29-4.42)	**4.48** (3.85-5.21)	**5.48** (4.62-6.59)	**6.32** (5.20-7.63)	**7.21** (5.76-8.84)	**8.17** (6.30-10.2)	**9.53** (7.10-12.1)	**10.6** (7.71-13.5)
3-day	**2.92** (2.55-3.36)	**3.36** (2.93-3.86)	**4.13** (3.59-4.76)	**4.83** (4.18-5.57)	**5.87** (4.98-7.00)	**6.74** (5.59-8.08)	**7.66** (6.17-9.33)	**8.66** (6.72-10.7)	**10.1** (7.55-12.7)	**11.2** (8.18-14.1)
4-day	**3.15** (2.77-3.61)	**3.60** (3.16-4.12)	**4.39** (3.84-5.03)	**5.10** (4.44-5.86)	**6.16** (5.26-7.31)	**7.04** (5.87-8.41)	**7.99** (6.46-9.68)	**9.00** (7.03-11.1)	**10.4** (7.87-13.1)	**11.6** (8.51-14.6)
7-day	**3.72** (3.30-4.21)	**4.22** (3.75-4.78)	**5.10** (4.51-5.78)	**5.87** (5.16-6.68)	**7.00** (6.03-8.21)	**7.94** (6.68-9.37)	**8.92** (7.29-10.7)	**9.97** (7.85-12.2)	**11.4** (8.70-14.2)	**12.6** (9.35-15.8)
10-day	**4.24** (3.79-4.76)	**4.79** (4.28-5.39)	**5.74** (5.11-6.47)	**6.57** (5.82-7.43)	**7.77** (6.72-9.02)	**8.74** (7.39-10.2)	**9.75** (8.00-11.6)	**10.8** (8.56-13.1)	**12.3** (9.39-15.2)	**13.4** (10.0-16.7)
20-day	**5.80** (5.25-6.43)	**6.49** (5.88-7.21)	**7.64** (6.90-8.50)	**8.60** (7.72-9.60)	**9.93** (8.66-11.3)	**11.0** (9.37-12.6)	**12.0** (9.95-14.1)	**13.1** (10.4-15.6)	**14.5** (11.2-17.6)	**15.6** (11.7-19.2)
30-day	**7.17** (6.56-7.90)	**8.00** (7.30-8.82)	**9.32** (8.49-10.3)	**10.4** (9.42-11.5)	**11.8** (10.4-13.3)	**12.9** (11.1-14.7)	**14.0** (11.7-16.2)	**15.0** (12.1-17.8)	**16.4** (12.7-19.8)	**17.4** (13.2-21.3)
45-day	**8.98** (8.28-9.83)	**10.0** (9.20-10.9)	**11.6** (10.6-12.7)	**12.8** (11.7-14.1)	**14.4** (12.7-16.1)	**15.6** (13.5-17.6)	**16.7** (14.0-19.1)	**17.7** (14.3-20.7)	**18.9** (14.8-22.7)	**19.8** (15.2-24.1)
60-day	**10.6** (9.80-11.5)	**11.8** (10.9-12.8)	**13.6** (12.5-14.8)	**15.0** (13.8-16.4)	**16.7** (14.8-18.5)	**18.0** (15.6-20.1)	**19.1** (16.1-21.8)	**20.1** (16.3-23.4)	**21.3** (16.7-25.3)	**22.0** (16.9-26.8)

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

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

Please refer to NOAA Atlas 14 document for more information.

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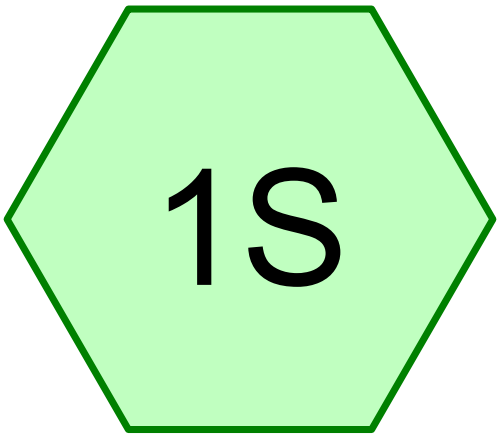
PF graphical



Drainage Area

Subcat Reach Pond Link

Routing Diagram for Existing Cond SilerNail
Prepared by Jahnke & Jahnke Associates Inc, Printed 10/2/2025

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.286	84	50-75% Grass cover, Fair, HSG D (1S)
0.536	98	Hard Surface (1S)
0.822	**93**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.286	HSG D	1S
0.536	Other	1S
0.822		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.286	0.000	0.286	50-75% Grass cover, Fair	1S
0.000	0.000	0.000	0.000	0.536	0.536	Hard Surface	1S
0.000	**0.000**	**0.000**	**0.286**	**0.536**	**0.822**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage Area Runoff Area=0.822 ac 65.21% Impervious Runoff Depth>1.67"
Flow Length=329' Tc=16.5 min CN=93 Runoff=1.66 cfs 0.114 af

Total Runoff Area = 0.822 ac Runoff Volume = 0.114 af Average Runoff Depth = 1.67"
34.79% Pervious = 0.286 ac 65.21% Impervious = 0.536 ac

Summary for Subcatchment 1S: Drainage Area

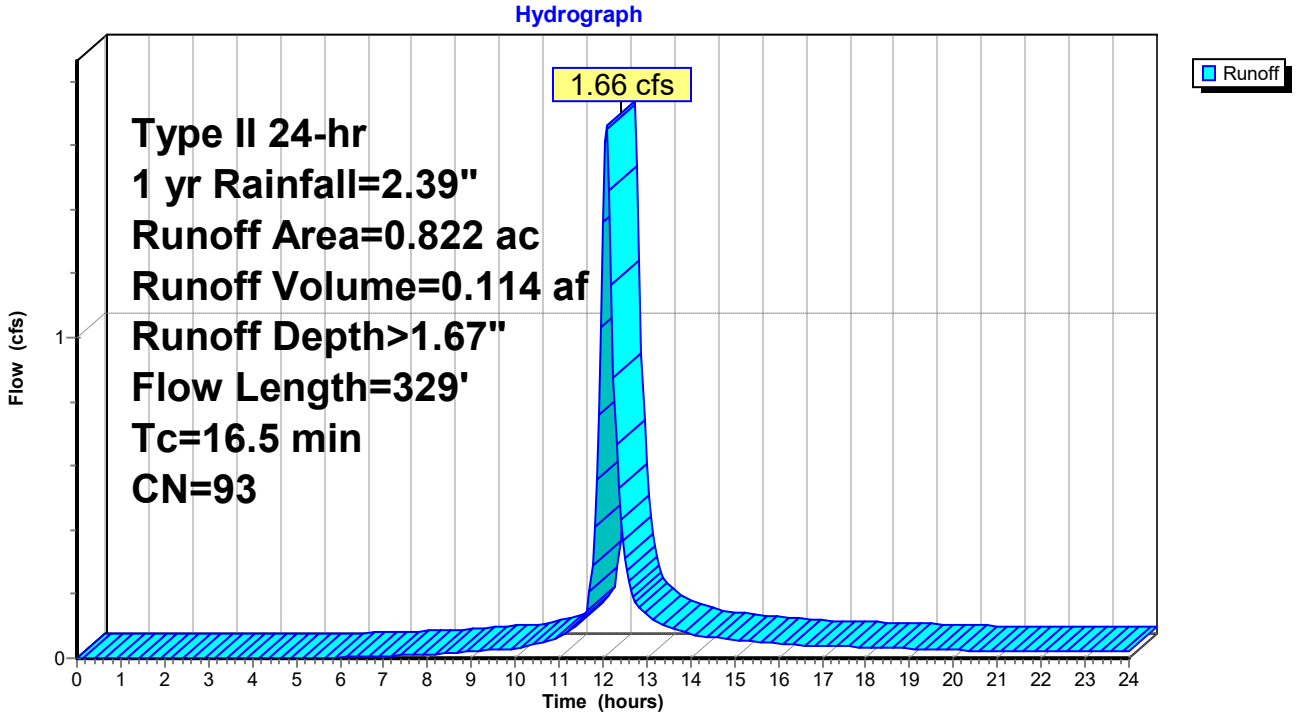
Runoff = 1.66 cfs @ 12.08 hrs, Volume= 0.114 af, Depth> 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1 yr Rainfall=2.39"

	Area (ac)	CN	Description
*	0.536	98	Hard Surface
	0.286	84	50-75% Grass cover, Fair, HSG D
	0.822	93	Weighted Average
	0.286		34.79% Pervious Area
	0.536		65.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	185	0.0702	0.20		**Sheet Flow, Sheet Flow grass** Grass: Dense n= 0.240 P2= 2.69"
0.3	26	0.0673	1.57		**Sheet Flow, Drive Crossing** Smooth surfaces n= 0.011 P2= 2.69"
0.8	118	0.0254	2.39		**Shallow Concentrated Flow, North Side Of Wetland** Grassed Waterway Kv= 15.0 fps
16.5	329	Total			

Subcatchment 1S: Drainage Area



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage Area Runoff Area=0.822 ac 65.21% Impervious Runoff Depth>1.95"
Flow Length=329' Tc=16.5 min CN=93 Runoff=1.93 cfs 0.134 af

Total Runoff Area = 0.822 ac Runoff Volume = 0.134 af Average Runoff Depth = 1.95"
34.79% Pervious = 0.286 ac 65.21% Impervious = 0.536 ac

Summary for Subcatchment 1S: Drainage Area

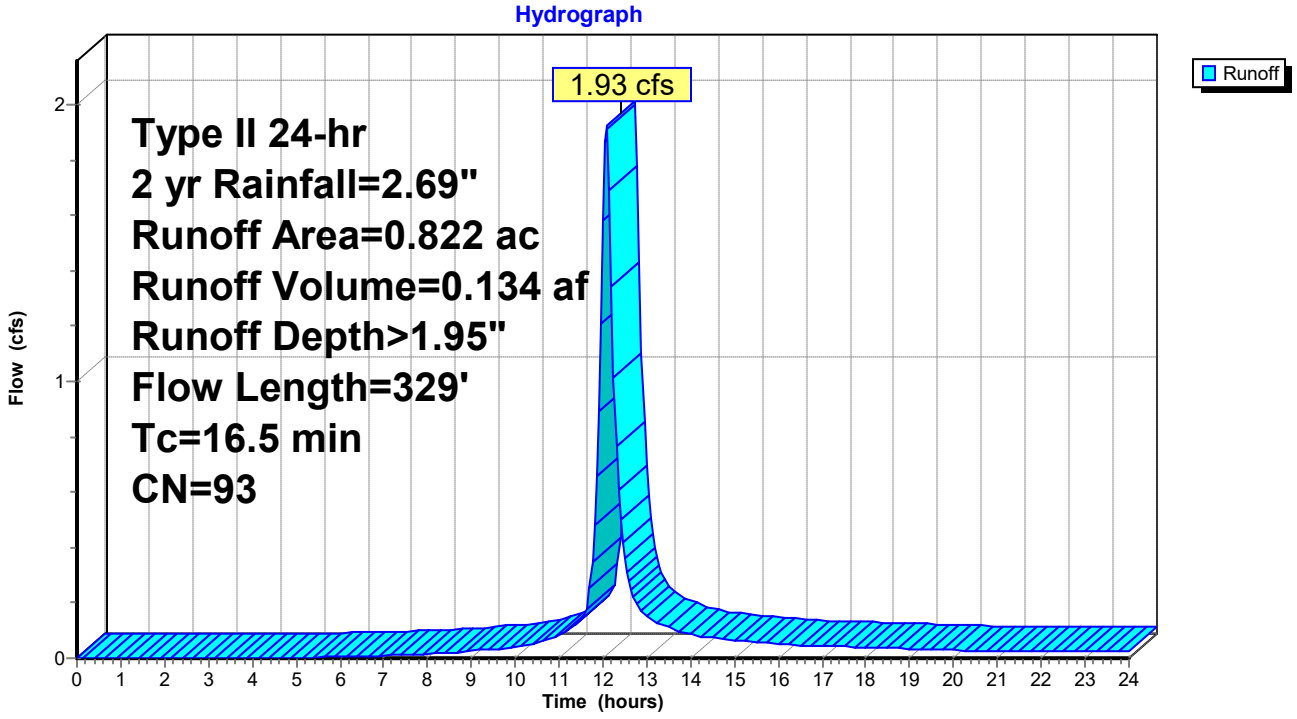
Runoff = 1.93 cfs @ 12.08 hrs, Volume= 0.134 af, Depth> 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 yr Rainfall=2.69"

	Area (ac)	CN	Description
*	0.536	98	Hard Surface
	0.286	84	50-75% Grass cover, Fair, HSG D
	0.822	93	Weighted Average
	0.286		34.79% Pervious Area
	0.536		65.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	185	0.0702	0.20		**Sheet Flow, Sheet Flow grass** Grass: Dense n= 0.240 P2= 2.69"
0.3	26	0.0673	1.57		**Sheet Flow, Drive Crossing** Smooth surfaces n= 0.011 P2= 2.69"
0.8	118	0.0254	2.39		**Shallow Concentrated Flow, North Side Of Wetland** Grassed Waterway Kv= 15.0 fps
16.5	329	Total			

Subcatchment 1S: Drainage Area



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage Area Runoff Area=0.822 ac 65.21% Impervious Runoff Depth>3.03"
Flow Length=329' Tc=16.5 min CN=93 Runoff=2.92 cfs 0.207 af

Total Runoff Area = 0.822 ac Runoff Volume = 0.207 af Average Runoff Depth = 3.03"
34.79% Pervious = 0.286 ac 65.21% Impervious = 0.536 ac

Summary for Subcatchment 1S: Drainage Area

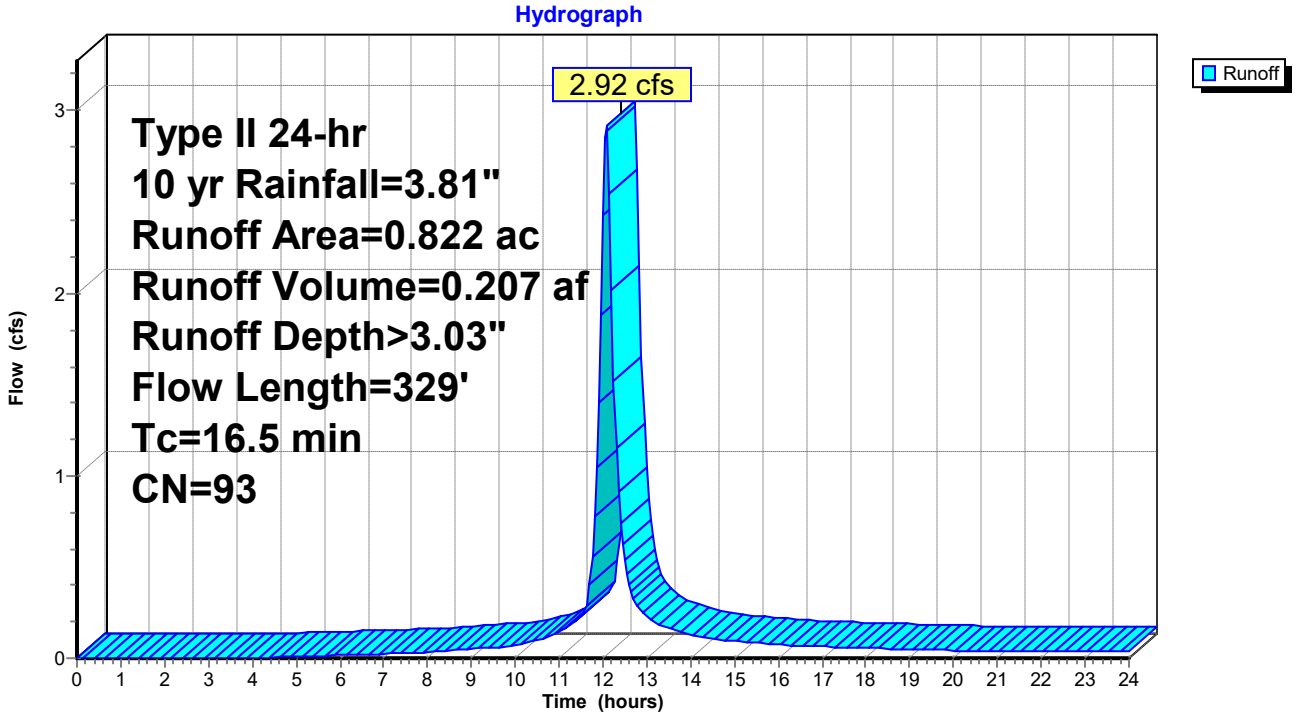
Runoff = 2.92 cfs @ 12.08 hrs, Volume= 0.207 af, Depth> 3.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 yr Rainfall=3.81"

	Area (ac)	CN	Description
*	0.536	98	Hard Surface
	0.286	84	50-75% Grass cover, Fair, HSG D
	0.822	93	Weighted Average
	0.286		34.79% Pervious Area
	0.536		65.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	185	0.0702	0.20		**Sheet Flow, Sheet Flow grass** Grass: Dense n= 0.240 P2= 2.69"
0.3	26	0.0673	1.57		**Sheet Flow, Drive Crossing** Smooth surfaces n= 0.011 P2= 2.69"
0.8	118	0.0254	2.39		**Shallow Concentrated Flow, North Side Of Wetland** Grassed Waterway Kv= 15.0 fps
16.5	329	Total			

Subcatchment 1S: Drainage Area



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage Area Runoff Area=0.822 ac 65.21% Impervious Runoff Depth>5.36"
Flow Length=329' Tc=16.5 min CN=93 Runoff=5.02 cfs 0.367 af

Total Runoff Area = 0.822 ac Runoff Volume = 0.367 af Average Runoff Depth = 5.36"
34.79% Pervious = 0.286 ac 65.21% Impervious = 0.536 ac

Summary for Subcatchment 1S: Drainage Area

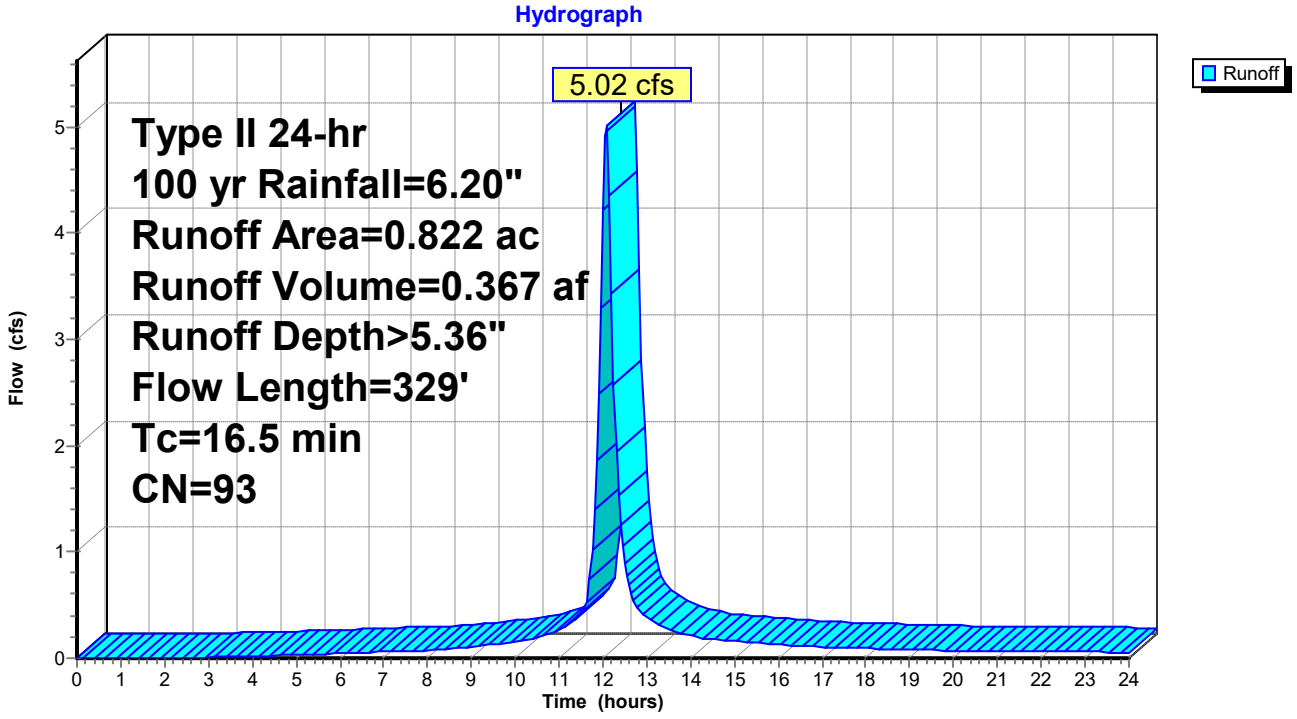
Runoff = 5.02 cfs @ 12.08 hrs, Volume= 0.367 af, Depth> 5.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 yr Rainfall=6.20"

	Area (ac)	CN	Description
*	0.536	98	Hard Surface
	0.286	84	50-75% Grass cover, Fair, HSG D
	0.822	93	Weighted Average
	0.286		34.79% Pervious Area
	0.536		65.21% Impervious Area

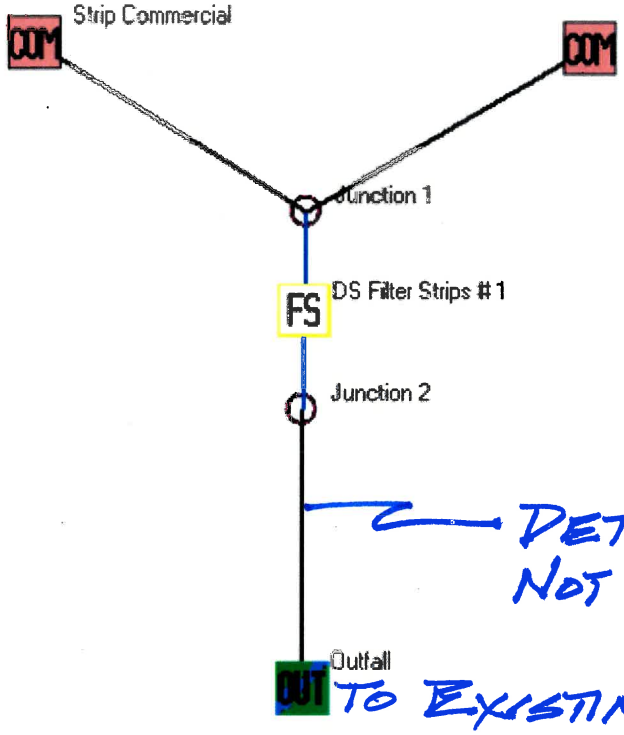
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	185	0.0702	0.20		**Sheet Flow, Sheet Flow grass** Grass: Dense n= 0.240 P2= 2.69"
0.3	26	0.0673	1.57		**Sheet Flow, Drive Crossing** Smooth surfaces n= 0.011 P2= 2.69"
0.8	118	0.0254	2.39		**Shallow Concentrated Flow, North Side Of Wetland** Grassed Waterway Kv= 15.0 fps
16.5	329	Total			

Subcatchment 1S: Drainage Area



ROOF & GRASS WEST

PARKING & DRIVE EAST



DETENTION BASIN
NOT REQ FOR TREATMENT

TO EXISTING WETLAND

WINSLAM MODEL

NOT TO SCALE

WinSLAMM

File Name:

S:\projects\24-10012 Bleck Silvermail\WinSLAMM V10.3\24-10012 WinSLAMM 2025-10-23 BK.mdb

Outfall Output Summary

	Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of All Land Uses without Controls	75509		0.63	100.8	475.3	
Outfall Total with Controls	0	100.00 %	0.00	0	0	100.00 %

Current File Output: Annualized Total After Outfall Controls: 0

Years in Model Run: 1.00

Annualized: 0

Print Output Summary to Text File

Print Output Summary to .csv File

Total Area Modeled (ac): 1.024

Total Control Practice Costs

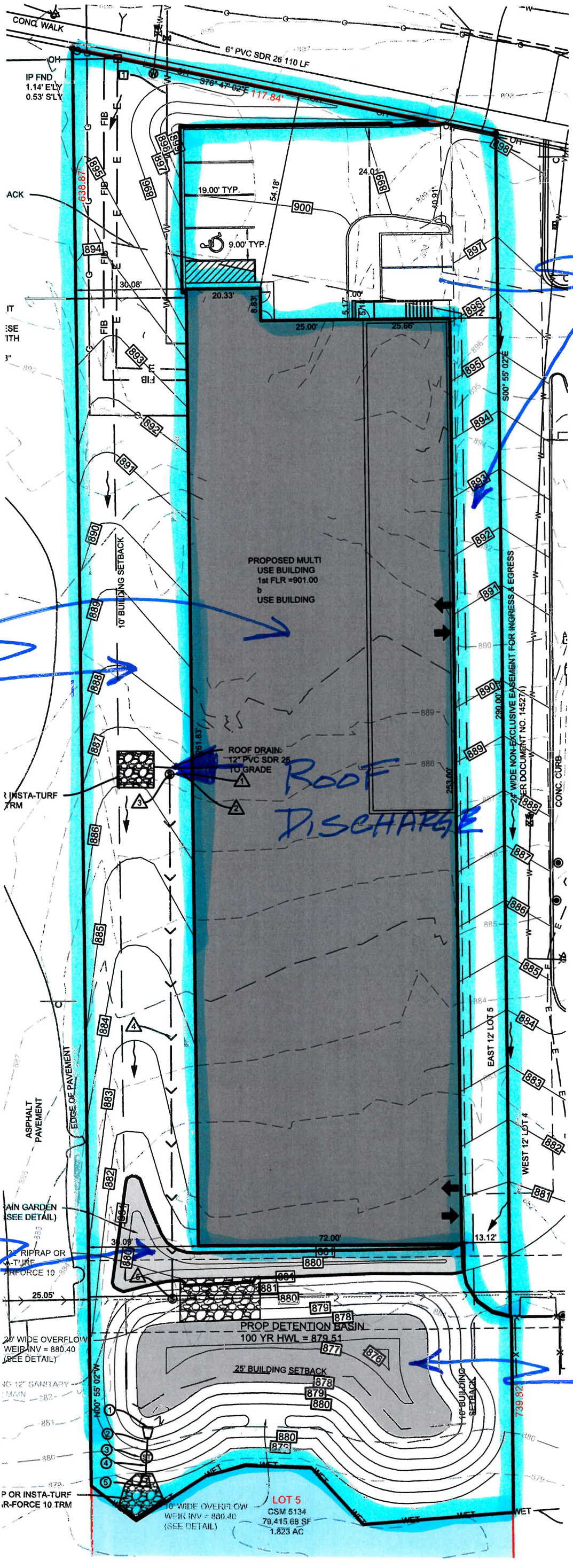
Capital Cost	N/A
Land Cost	N/A
Annual Maintenance Cost	N/A
Present Value of All Costs	N/A
Annualized Value of All Costs	N/A

Perform Outfall Flow Duration Curve Calculations

Receiving Water Impacts Due To Stormwater Runoff

(CWP Impervious Cover Model)

	Calculated Rv	Approximate Urban Stream Classification
Without Controls	0.63	Poor
With Controls	0.00	Good

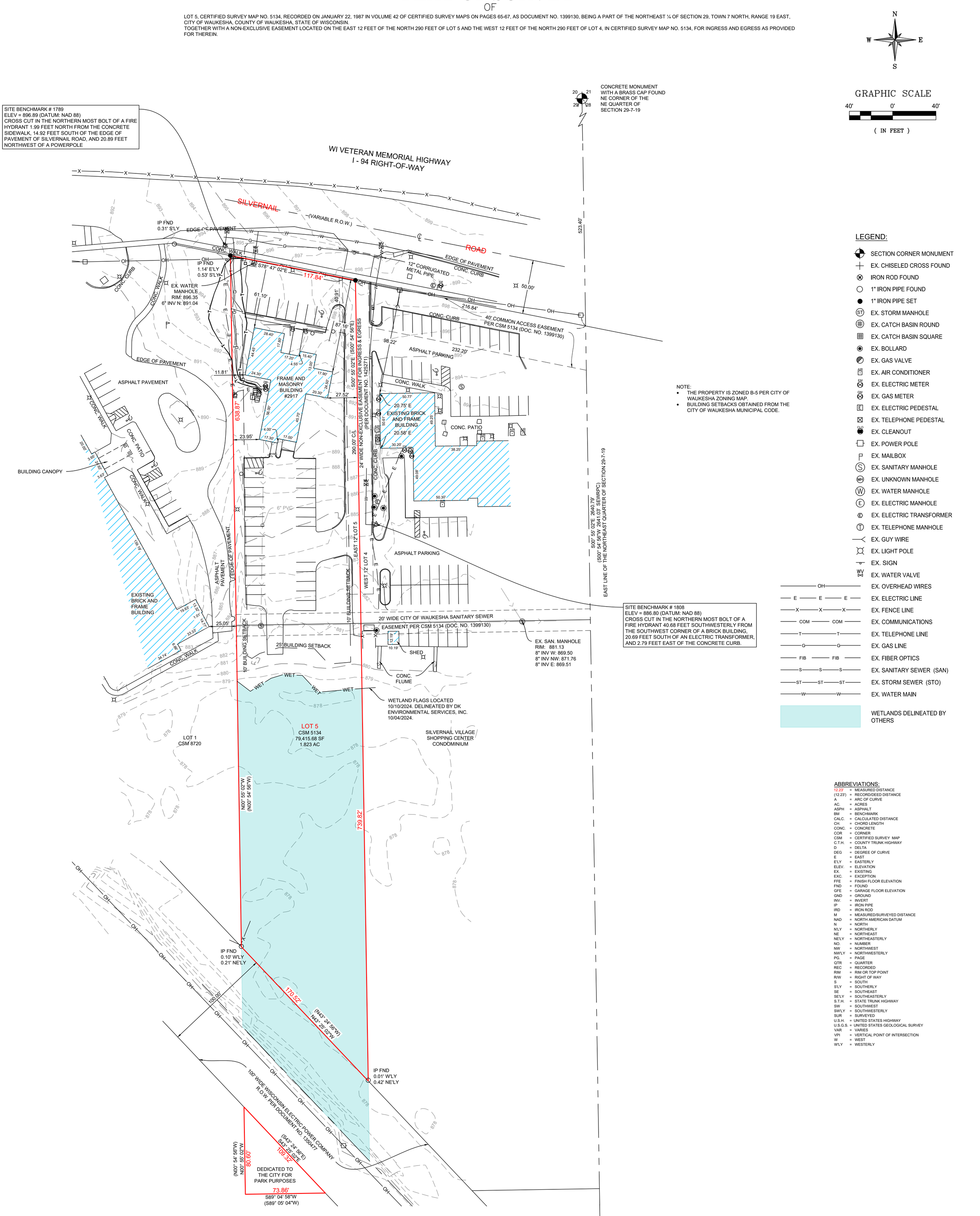


WINSLAMM MODEL
NOT TO SCALE

PLAT OF SURVEY

OF

LOT 5, CERTIFIED SURVEY MAP NO. 5134, RECORDED ON JANUARY 22, 1987 IN VOLUME 42 OF CERTIFIED SURVEY MAPS ON PAGES 65-67, AS DOCUMENT NO. 1399130, BEING A PART OF THE NORTHEAST ¼ OF SECTION 29, TOWN 7 NORTH, RANGE 19 EAST, CITY OF WAUKESHA, COUNTY OF WAUKESHA, STATE OF WISCONSIN.
TOGETHER WITH A NON-EXCLUSIVE EASEMENT LOCATED ON THE EAST 12 FEET OF THE NORTH 290 FEET OF LOT 5 AND THE WEST 12 FEET OF THE NORTH 290 FEET OF LOT 4, IN CERTIFIED SURVEY MAP NO. 5134, FOR INGRESS AND EGRESS AS PROVIDED FOR THEREIN.



NOTE:
- THE PROPERTY IS ZONED B-5 PER CITY OF WAUKESHA ZONING MAP.
- BUILDING SETBACKS OBTAINED FROM THE CITY OF WAUKESHA MUNICIPAL CODE.

LEGEND:

- SECTION CORNER MONUMENT
- EX. CHISELED CROSS FOUND
- IRON ROD FOUND
- 1" IRON PIPE FOUND
- 1" IRON PIPE SET
- EX. STORM MANHOLE
- EX. CATCH BASIN ROUND
- EX. CATCH BASIN SQUARE
- EX. BOLLARD
- EX. GAS VALVE
- EX. AIR CONDITIONER
- EX. ELECTRIC METER
- EX. GAS METER
- EX. ELECTRIC PEDESTAL
- EX. TELEPHONE PEDESTAL
- EX. CLEANOUT
- EX. POWER POLE
- EX. MAILBOX
- EX. SANITARY MANHOLE
- EX. UNKNOWN MANHOLE
- EX. WATER MANHOLE
- EX. ELECTRIC MANHOLE
- EX. ELECTRIC TRANSFORMER
- EX. TELEPHONE MANHOLE
- EX. GUY WIRE
- EX. LIGHT POLE
- EX. SIGN
- EX. WATER VALVE
- EX. OVERHEAD WIRES
- EX. ELECTRIC LINE
- EX. FENCE LINE
- EX. COMMUNICATIONS
- EX. TELEPHONE LINE
- EX. GAS LINE
- EX. FIBER OPTICS
- EX. SANITARY SEWER (SAN)
- EX. STORM SEWER (STO)
- EX. WATER MAIN
- WETLANDS DELINEATED BY OTHERS

ABBREVIATIONS:

12.23'	=	MEASURED DISTANCE
(12.23')	=	RECORD/DEED DISTANCE
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CH.	=	CHORD LENGTH
CONC.	=	CONCRETE
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CSM	=	CERTIFIED SURVEY MAP
C.T.H.	=	COUNTY TRUNK HIGHWAY
D	=	DELTA
DEG	=	DEGREE OF CURVE
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E'LY	=	EASTERLY
ELEV.	=	ELEVATION
EX.	=	EXISTING
EXC.	=	EXCEPTION
FFE	=	FINISH FLOOR ELEVATION
FND	=	FOUND
GFE	=	GARAGE FLOOR ELEVATION
GND	=	GROUND
INV.	=	INVERT
IP	=	IRON PIPE
IRD	=	IRON ROD
M	=	MEASURED/SURVEYED DISTANCE
NAD	=	NORTH AMERICAN DATUM
N	=	NORTH
N'LY	=	NORTHERLY
NE	=	NORTHEAST
NE'LY	=	NORTHEASTERLY
NO.	=	NUMBER
NW	=	NORTHWEST
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PG.	=	PAGE
QTR	=	QUARTER
REC	=	RECORDED
RIM	=	RIM OR TOP POINT
R/W	=	RIGHT OF WAY
S	=	SOUTH
S'LY	=	SOUTHERLY
SE	=	SOUTHEAST
SE'LY	=	SOUTHEASTERLY
S.T.H.	=	STATE TRUNK HIGHWAY
SW	=	SOUTHWEST
SW'LY	=	SOUTHWESTERLY
SUR	=	SURVEYED
U.S.H.	=	UNITED STATES HIGHWAY
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VAR	=	VARIES
VPI	=	VERTICAL POINT OF INTERSECTION
W	=	WEST
W'LY	=	WESTERLY

SURVEY NOTES:
1. Date of the Survey field work: 11/01/2024
2. Building lines, easements and other restrictions not shown herein, should refer to deed, title policy and local zoning ordinances.
3. All dimensions shown are in decimal feet, US survey units.
4. Legal description was obtained from the client which may not be current, accurate or complete. Review legal description and record measurements on this plat and at once report any apparent difference to the surveyor.
5. Utilities have not been certified, therefore the location and size of the underground structures and utilities shown hereon have been located to a reasonable degree of accuracy, but Jahnke & Jahnke Associates LLC does not guarantee their exact location or the location of others not shown. Contact Diggers Hotline, Inc., Etc.
6. Reference bearing is assumed unless noted. Bearing shown here are based on the North American Datum of 1983/2011 (NAD 83/2011), Wisconsin State Plane Coordinate System South Zone. Elevations (if any) shown are in relation to the North American Vertical Datum of 1988 (NAVD 88).
7. No measurements are to be assumed by scaling.
8. Any comments, modifications, alterations and revisions to this Survey must be brought to our attention within 30 days from date of completion on this sheet.
9. To insure legitimacy of this Plat of Survey, it must carry the Embossed Corporate Seal of Jahnke & Jahnke Associates LLC.
10. Per scope of this survey, not all improvements are shown.
11. This property is subject to a Easement granted to The Milwaukee Electric Railway and Light Company, for utility purposes, recorded as Document No. 172828.

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

CALL DIGGERS HOTLINE
811 OR 1-800-242-8511 TOLL FREE
WIS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE
MILW. AREA 1-414-259-1181

NOTE: The location and size of the underground structures and utilities shown hereon have been located to a reasonable degree of accuracy, but the Engineer and/or Surveyor does not guarantee their exact location or the location of others not shown. Contact Diggers Hotline, Inc., Etc.

STATE OF WISCONSIN } SS.
COUNTY OF WAUKESHA }

I CERTIFY, THAT THIS SURVEY WAS PREPARED UNDER MY SUPERVISION AND TO THE BEST OF MY PROFESSIONAL KNOWLEDGE AND BELIEF, PLAT HEREON DRAWN IS A REPRESENTATION OF SAME.

DATED AT WAUKESHA, WISCONSIN THIS 12th DAY OF NOVEMBER, 2024.

BY: _____
MOHAMMAD I. RANJHA - WISCONSIN PROFESSIONAL LAND SURVEYOR NO. S-2126

WISCONSIN
MOHAMMAD I RANJHA
S-2126
WAUKESHA
WIS.
LAND SURVEYOR

SHEET: 1 OF 8

JAHNKE & JAHNKE
ASSOCIATES, LLC.
ENGINEERS● PLANNERS● SURVEYORS
CONNECT► EMPOWER►DESIGN
WWW.JAHNKEANDJAHNKE.COM
524 BLUEMOUND ROAD, WAUKESHA, WI 53188
PHONE: (262) 542-5797, EMAIL: SURVEY@JAHNKEANDJAHNKE.COM

PROJECT
2417 SILVERNAIL ROAD,
WAUKESHA, WI 53186

DRAWN BY: JB | CHECKED BY: MR
JOB NO.: 24-10012

CLIENT
BLECK & BLECK ARCHITECTS, LLC
200 E. CHRUCH STREET,
LIBERTYVILLE, IL 60048

REVISIONS

DATE	DESCRIPTION	BY

FILE NAME: S:\projects\24-10012 Bleck Silvernail\DWG\24-10012 R3 CIVIL.dwg

ENGINEERING PLANS

FOR

SILVERNAIL APARTMENTS

AT
2417 SILVERNAIL ROAD
CITY OF WAUKESHA
WAUKESHA COUNTY, WISCONSIN

INDEX

CIVIL ENGINEERING PLANS		REVISIONS 1	2	3	4	5	6	7
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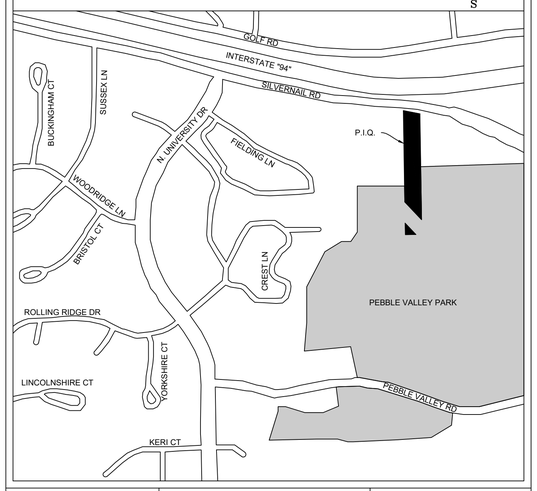
2 OF 9	COVER SHEET							
3 OF 9	EXISTING CONDITIONS PLAN							
4 OF 9	SITE PLAN							
5 OF 9	GRADING PLAN							
6 OF 9	UTILITY PLAN							
7 OF 9	EROSION CONTROL PLAN							
8 OF 9	SPECIFICATIONS & DETAILS							
9 OF 9	DETAILS							

SUPPORTING DOCUMENTS		REVISIONS 1	2	3	4	5	6	7
1 of 3	DRAINAGE & DETENTION CALCULATIONS							
2 of 3	CITY STANDARD CONSTRUCTION SPECIFICATIONS							
3 of 3	CITY STANDARD CONSTRUCTION DETAILS							

NOTE: THE DESIGNS CONTAINED IN THE ABOVE PLANS AND SUPPORTING DOCUMENTS WERE PREPARED WITH THE UNDERSTANDING THAT THEY WOULD BE USED AS A WHOLE PLAN SET. EACH CONSTRUCTION DISCIPLINE IS TO USE ALL THE PLANS AND SUPPORTING DOCUMENTS TOGETHER AS A WHOLE AND NOT AS SEPARATE DOCUMENTS. EACH CONTRACTOR IS TO BECOME COMPLETELY FAMILIAR WITH THE WHOLE PLAN SET AND THE EXISTING SITE CONDITIONS. SHOULD ANYTHING WITH ALL THESE PLANS AND SUPPORTING DOCUMENTS BE INCONSISTENT WITH THE SITE CONDITIONS THEN THE CONTRACTOR IS TO CONTACT THE ENGINEER IMMEDIATELY BEFORE ANY CONSTRUCTION IS STARTED.

LOCATION MAP

SCALE: 1" = 500'



SECTION: 29	TOWNSHIP: 7N	RANGE: 19E

BENCHMARKS:

REFERENCE BENCHMARKS:

REFERENCE BENCHMARK #1

THE SOUTHEAST CORNER OF THE NORTHEAST QUARTER OF SECTION 29, TOWNSHIP 7 NORTH, RANGE 19 EAST, IN THE CITY OF WAUKESHA, WAUKESHA COUNTY, WISCONSIN, BEING MARKED BY A CONCRETE MONUMENT WITH A SEWRPC BRASS CAP (SEWRPC MONUMENT NO. 07191220). SAID MONUMENT BEING 37.58 FEET SOUTHWESTERLY FROM THE NORTHWEST CORNER OF A CONCRETE PORCH AT 2568-2570 PEBBLE VALLEY ROAD, 104.76 FEET EASTERLY FROM A FIRE HYDRANT ON THE WESTERLY SIDE OF PEBBLE VALLEY ROAD, AND 76.43 FEET NORTHERLY FROM A TWIN 12" WILLOW TREE.

ELEVATION = 886.55
DATUM: NAVD 88

REFERENCE BENCHMARK #2

THE NORTHEAST CORNER OF THE NORTHEAST QUARTER OF SECTION 29, TOWNSHIP 7 NORTH, RANGE 19 EAST, IN THE CITY OF WAUKESHA, WAUKESHA COUNTY, WISCONSIN, BEING MARKED BY A CONCRETE MONUMENT WITH A SEWRPC BRASS CAP (SEWRPC MONUMENT NO. 07191130). SAID MONUMENT BEING PLACED IN THE PAVEMENT OF GOLF ROAD IN BETWEEN ADDRESSES 2240 GOLF ROAD AND 2400 GOLF ROAD. SAID MONUMENT ALSO BEING 49.43 FEET SOUTHERLY FROM A FIRE HYDRANT

ELEVATION = 920.26
DATUM: NAVD 88

SITE BENCHMARKS:

SITE BENCHMARK #1789

CROSS CUT IN THE NORTHERN MOST BOLT OF A FIRE HYDRANT 1.99 FEET NORTH FROM THE CONCRETE SIDEWALK, 14.92 FEET SOUTH OF THE EDGE OF PAVEMENT OF SILVERNAIL ROAD, AND 20.89 FEET NORTHWEST OF A POWERPOLE

ELEVATION = 896.89
DATUM: NAVD 88

SITE BENCHMARK #1808

CROSS CUT IN THE NORTHERN MOST BOLT OF A FIRE HYDRANT 40.68 FEET SOUTHWESTERLY FROM THE SOUTHWEST CORNER OF A BRICK BUILDING, 20.69 FEET SOUTH OF AN ELECTRIC TRANSFORMER, AND 2.79 FEET EAST OF THE CONCRETE CURB.

ELEVATION = 886.80
DATUM: NAVD 88

LEGEND

SYMBOL	DESCRIPTION
	SECTION CORNER MONUMENT
	CHISELED CROSS FOUND
	IRON ROD FOUND
	IRON PIPE FOUND
ST	STORM MANHOLE
	CATCH BASIN ROUND
	CATCH BASIN SQUARE
SIA	SIAMESE HYDRANT
	GAS VALVE
AIR	AIR CONDITIONER
ELE	ELECTRIC METER
GAS	GAS METER
E	ELECTRIC PEDESTAL
	TELEPHONE PEDESTAL
CO	CLEANOUT
	POWER POLE
P	MAILBOX
S	SANITARY MANHOLE
U	UNKNOWN MANHOLE
	COMBINED SEWER MANHOLE
E	ELECTRIC MANHOLE
ETR	ELECTRIC TRANSFORMER
T	TELEPHONE MANHOLE
	GUY WIRE
	LIGHT POLE
	SIGN
	BOLLARD (BOL)
WVE	WATER VALVE
OH	OVERHEAD WIRES
BES	BUREAU OF ELECTRICAL SERVICES
X	FENCE LINE
COM	COMMUNICATIONS
T	TELEPHONE LINE
G	GAS LINE
FIB	FIBER OPTICS
S	EX. SANITARY SEWER (SAN)
ST	EX. STORM SEWER (STO)
	EX. SANITARY SEWER (SAN)
	EX. STORM SEWER (STO)
W	WATER MAIN
	TREE LINE

ABREVIATIONS

ABBREVIATIONS:

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GND	=	GROUND
INV.	=	INVERT
IP	=	IRON PIPE
IRD	=	IRON ROD
NAD	=	NORTH AMERICAN DATUM
NAVD DATUM	=	NORTH AMERICAN VERTICAL
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N'LY	=	NORTHERLY
NE	=	NORTHEAST
NE'LY	=	NORTHEASTERLY
NO.	=	NUMBER
NW	=	NORTHWEST
NW'LY	=	NORTHWESTERLY
PG.	=	PAGE
QTR	=	QUARTER
R	=	RADIUS
REC	=	RECORDED
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SUR	=	SURVEYED
U.S.H.	=	UNITED STATES HIGHWAY
VAR	=	VARIES
W	=	WEST
W'LY	=	WESTERLY

NOTE: ALL WORK TO BE COMPLETED IN THE RIGHT OF WAY AND ON THIS SITE SHALL BE IN CONFORMANCE WITH THE CITY OF WAUKESHA DEPARTMENT OF PUBLIC WORKS, DESIGN AND CONSTRUCTION MANUAL DIVISION 3 STANDARD CONSTRUCTION SPECIFICATIONS, CURRENT ADDITION.
ALL WORK TO BE COMPLETED IN THE RIGHT OF WAY AND ON THIS SITE SHALL ALSO CONFORM TO THE CITY OF WAUKESHA DEPARTMENT OF PUBLIC WORKS DESIGN AND CONSTRUCTION MANUAL DIVISION 4, STANDARD DETAILS, CURRENT ADDITION.

NOTE:
ALL SITE IMPROVEMENTS AND CONSTRUCTION SHOWN ON THE PLANS SHALL CONFORM TO THE CITY OF WAUKESHA DEVELOPMENT HANDBOOK & INFRASTRUCTURE SPECIFICATIONS, WHERE THE PLANS DO NOT COMPLY, IT SHALL BE THE SOLE RESPONSIBILITY AND EXPENSE OF THE DEVELOPER TO MAKE REVISIONS TO THE PLANS AND/OR CONSTRUCTED INFRASTRUCTURE TO COMPLY.

NOT VALID WITHOUT ORIGINAL SIGNATURE

NOTE: THE TOTAL DISTURBED AREA FOR THIS PROJECT WILL BE 49,848 SF OR 1.14 ACRES

COVER PAGE

2 OF 9

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

CALL DIGGERS HOTLINE
811 OR 1-800-242-8511 TOLL FREE
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MILW. AREA 1-414-259-1181

NOTE: The location and size of the underground structures and utilities shown hereon have been located to a reasonable degree of accuracy, but the Engineer and/or Surveyor does not guarantee their exact location or the location of others not shown. Contact Diggers Hotline, Inc., Etc.

REVISIONS

DESCRIPTION	DATE	BY
CITY REVIEW COMMENTS	11/26/2025	

CHECKED BY: RK
DATE: 10/29/2025

DRAWN BY: JB
JOB NO. 25-10012

CLIENT

BLECK & BLECK ARCHITECTS, LLC
200 E. CHRUCH STREET,
LIBERTYVILLE, IL 60048

PROJECT

2417 SILVERNAIL ROAD,
WAUKESHA, WI 53186

JAHNKE & JAHNKE
ASSOCIATES, LLC
ENGINEERS ▲ PLANNERS ▲ SURVEYORS
CONNECT ▲ EMPOWER ▲ DESIGN
WWW.JAHNKEANDJAHNKE.COM
524 BLUEMOUND ROAD, WAUKESHA, WI 53188
PHONE: (262) 542-5797, EMAIL: SURVEY@JAHNKEANDJAHNKE.COM

FILE NAME: S:\projects\24-10012 Bleck Silvernail\DWG\24-10012 R3 CIVIL.dwg

NOTE:
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- EX. SANITARY SEWER (SAN)
- EX. STORM SEWER (STO)
- EX. WATER MAIN
- WETLANDS DELINEATED BY OTHERS

WETLAND LINE TABLE

Line Table

Line #	Direction	Length
L1	S00° 55' 02"E	377.18'
L2	S86° 03' 33"W	9.60'
L3	S84° 48' 15"W	31.19'
L4	N42° 52' 49"W	21.26'
L5	N88° 10' 33"W	18.30'
L6	S73° 05' 39"W	11.06'
L7	S57° 51' 40"W	22.61'
L8	N52° 34' 44"W	15.37'

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N
W E
S

SCALE IN FEET
0 20'

REVISIONS

BY	DESCRIPTION	DATE
	CITY REVIEW COMMENTS	11/26/2025

CHECKED BY: RK
DATE: 10/29/2025

DRAWN BY: JB
JOB NO. 25-10012

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ASSOCIATES, LLC
ENGINEERS • PLANNERS • SURVEYORS
CONNECT ▶ EMPOWER ▶ DESIGN
WWW.JAHNKEANDJAHNKE.COM
524 BLUEMOUND ROAD, WAUKESHA, WI 53188
PHONE: (262) 542-5797, EMAIL: SURVEY@JAHNKEANDJAHNKE.COM

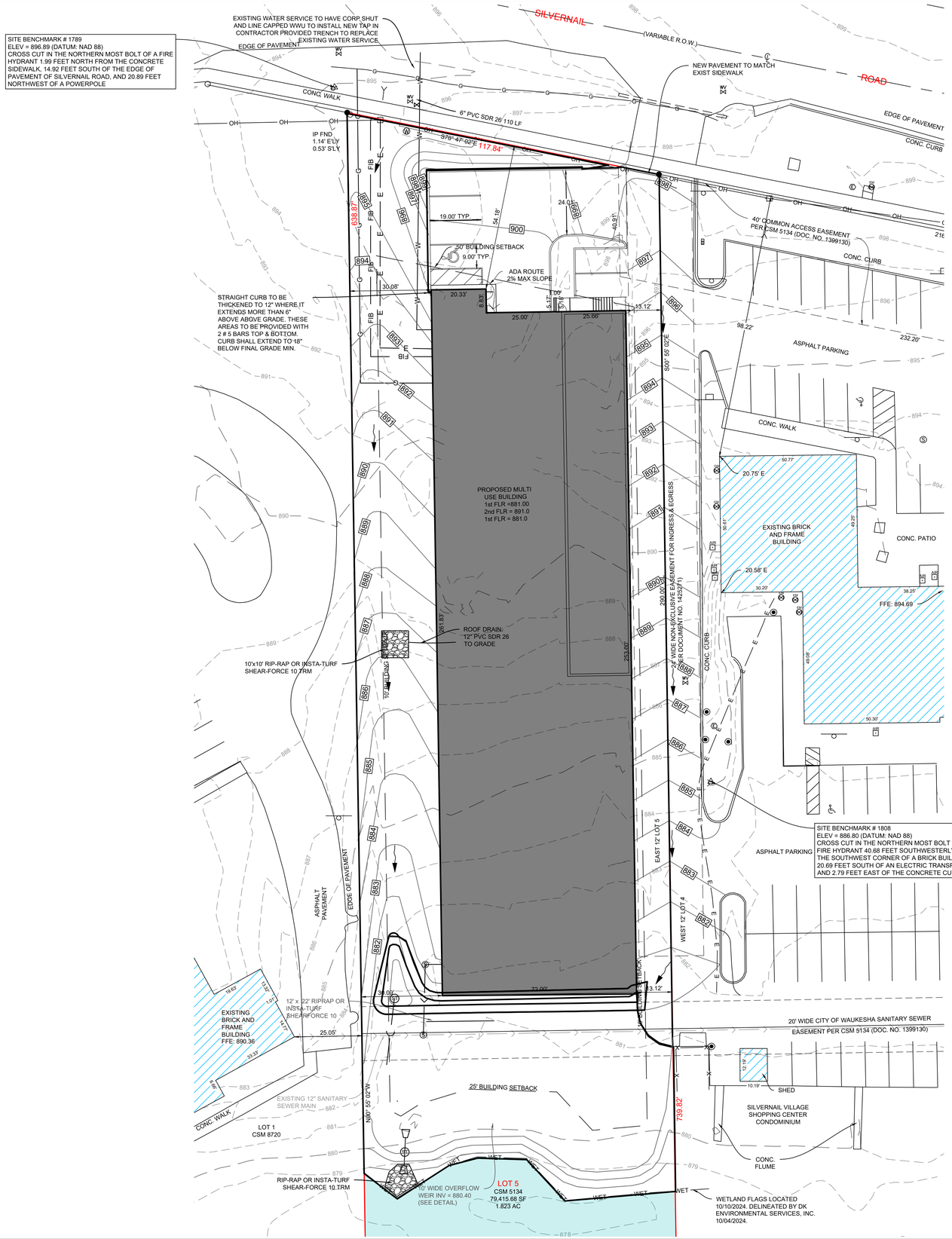
WISCONSIN
ROBERT A. KRAUSE
26766
WAUKESHA, WI
PROFESSIONAL ENGINEER

NOT VALID WITHOUT ORIGINAL SIGNATURE

EXISTING CONDITIONS

3 OF 9

FILE NAME: S:\projects\24-10012 Bleck Silvernail\DWG\24-10012 R3 CIVIL.dwg



SITE INFORMATION
DISTURBED AREA = 0.822 AC
EXIST IMPERVIOUS = 0.536 AC
PROPOSED IMPERVIOUS = 0.599 AC
EXIST 100 YR STORM WATER DISCHARGE = 5.02 CFS
PROP 100 YR STORM WATER DISCHARGE = 3.81 CFS

LEGEND:

- SECTION CORNER MONUMENT
- EX. CHISELED CROSS FOUND
- IRON ROD FOUND
- 1" IRON PIPE FOUND
- 1" IRON PIPE SET
- EX. STORM MANHOLE
- EX. CATCH BASIN ROUND
- EX. CATCH BASIN SQUARE
- EX. BOLLARD
- EX. GAS VALVE
- EX. AIR CONDITIONER
- EX. ELECTRIC METER
- EX. GAS METER
- EX. ELECTRIC PEDESTAL
- EX. TELEPHONE PEDESTAL
- EX. CLEANOUT
- EX. POWER POLE
- EX. MAILBOX
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- EX. UNKNOWN MANHOLE
- EX. WATER MANHOLE
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- EX. ELECTRIC TRANSFORMER
- EX. TELEPHONE MANHOLE
- EX. GUY WIRE
- EX. LIGHT POLE
- EX. SIGN
- EX. WATER VALVE
- EX. OVERHEAD WIRES
- EX. ELECTRIC LINE
- EX. FENCE LINE
- EX. COMMUNICATIONS
- EX. TELEPHONE LINE
- EX. GAS LINE
- EX. FIBER OPTICS
- EX. SANITARY SEWER (SAN)
- EX. STORM SEWER (STO)
- EX. WATER MAIN
- WETLANDS DELINEATED BY OTHERS
- FLOW DIRECTION
- PROPOSED ELECTRIC LINE
- PROPOSED FIBER OPTICS
- PROPOSED GAS LINE
- PROPOSED TELEPHONE LINE
- EX. GAS LINE
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROP. WATER LINE
- 886.54 PROP. SPOT GRADE
- 6.26% PROP. GRADE AND DIRECTION

ABBREVIATIONS:

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SLY	=	SOUTHERLY
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NOTE:
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TO OBTAIN LOCATIONS OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

CALL DIGGERS HOTLINE
811 OR 1-800-242-8511 TOLL FREE
WIS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE
MILW. AREA 1-414-259-1181

NOTE: The location and size of the underground structures and utilities shown hereon have been located to a reasonable degree of accuracy, but the Engineer and/or Surveyor does not guarantee their exact location or the location of others not shown. Contact Diggers Hotline, Inc., Etc.

ROBERT A. KRAUSE
26786-E
WAUKESHA, WI
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N W E S

SCALE IN FEET
0 20'

REVISIONS

BY	DESCRIPTION	DATE
	CITY REVIEW COMMENTS	11/26/2025

CHECKED BY: RK
DATE: 10/29/2025
DRAWN BY: JB
JOB NO: 25-10012

CLIENT
BLECK & BLECK ARCHITECTS, LLC
200 E. CHRUCH STREET,
LIBERTYVILLE, IL 60048

PROJECT
2417 SILVERNAIL ROAD,
WAUKESHA, WI 53186

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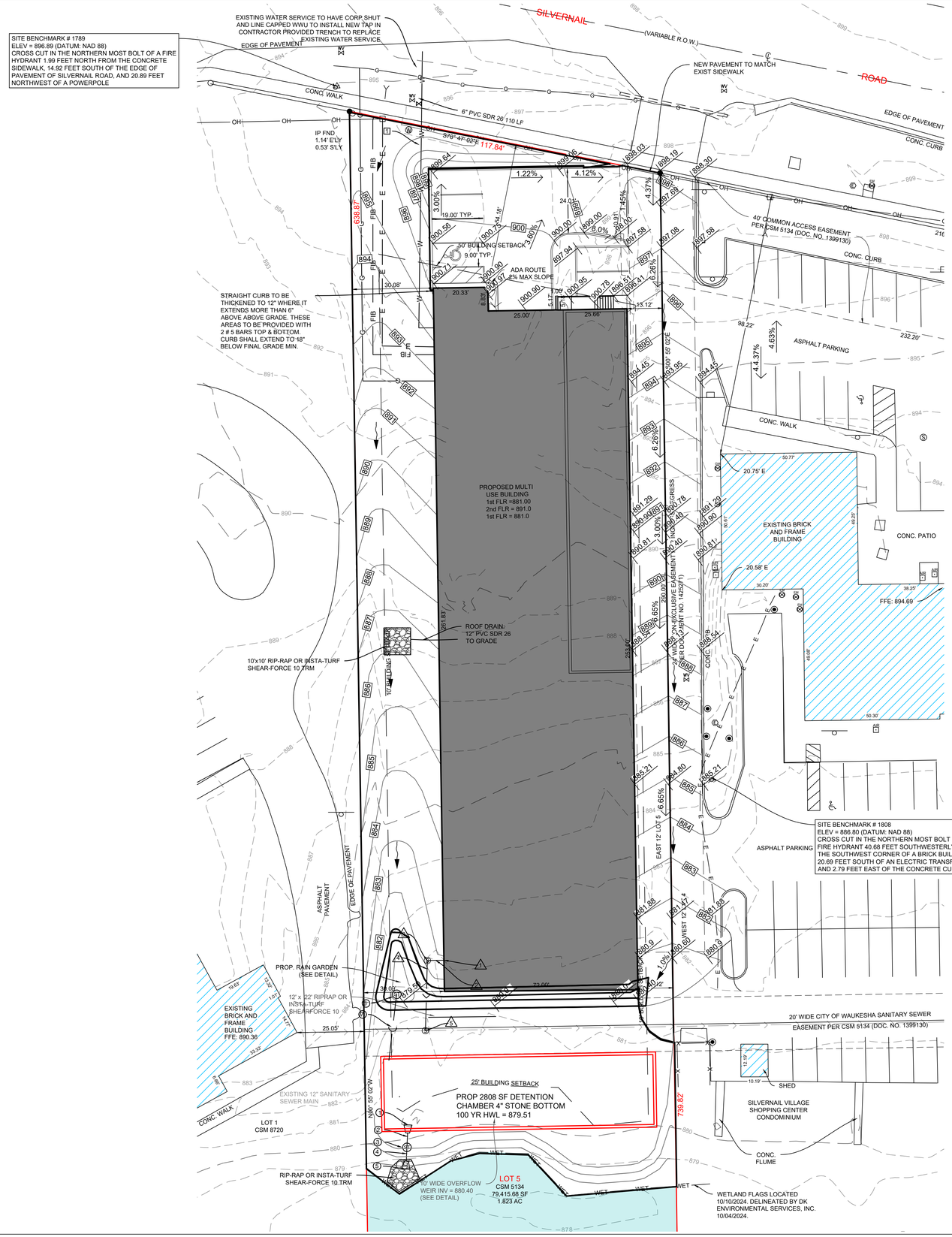
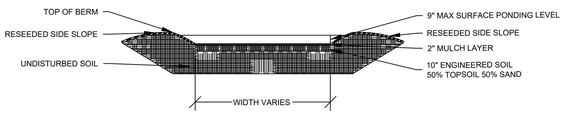
SITE PLAN

4 OF 9





RAIN GARDEN SECTION
(NOT TO SCALE)

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WISCONSIN ROBERT A. KRAUSE 26786 WAUKESHA, WI PROFESSIONAL ENGINEER

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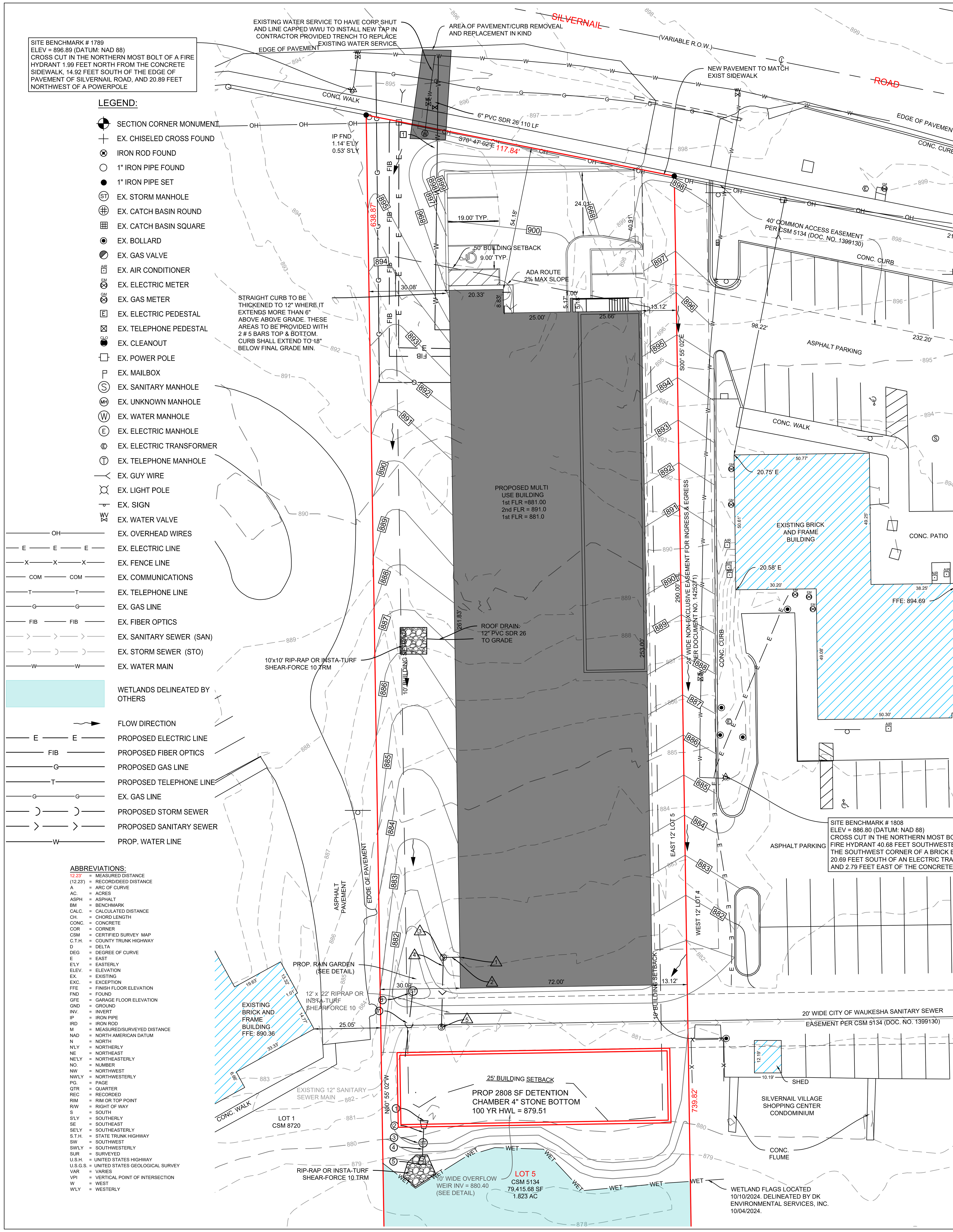
GRADING PLAN

5 OF 9

FILE NAME: S:\projects\24-10012 Bleck Silvernail\DWG\24-10012 R3 CIVIL.dwg

NOTE: ALL WORK TO BE COMPLETED IN THE RIGHT OF WAY AND ON THIS SITE SHALL BE IN CONFORMANCE WITH THE CITY OF WAUKESHA DEPARTMENT OF PUBLIC WORKS, DESIGN AND CONSTRUCTION MANUAL DIVISION 3 STANDARD CONSTRUCTION SPECIFICATIONS, CURRENT ADDITION.
ALL WORK TO BE COMPLETED IN THE RIGHT OF WAY AND ON THIS SITE SHALL ALSO CONFORM TO THE CITY OF WAUKESHA DEPARTMENT OF PUBLIC WORKS DESIGN AND CONSTRUCTION MANUAL DIVISION 4, STANDARD DETAILS, CURRENT ADDITION.



SITE BENCHMARK # 1789
ELEV = 896.89 (DATUM: NAD 88)
CROSS CUT IN THE NORTHERN MOST BOLT OF A FIRE HYDRANT 1.99 FEET NORTH FROM THE CONCRETE SIDEWALK, 14.92 FEET SOUTH OF THE EDGE OF PAVEMENT OF SILVERNAIL ROAD, AND 20.89 FEET NORTHWEST OF A POWERPOLE
LEGEND:
SECTION CORNER MONUMENT
EX. CHISELED CROSS FOUND
IRON ROD FOUND
1" IRON PIPE FOUND
1" IRON PIPE SET
EX. STORM MANHOLE
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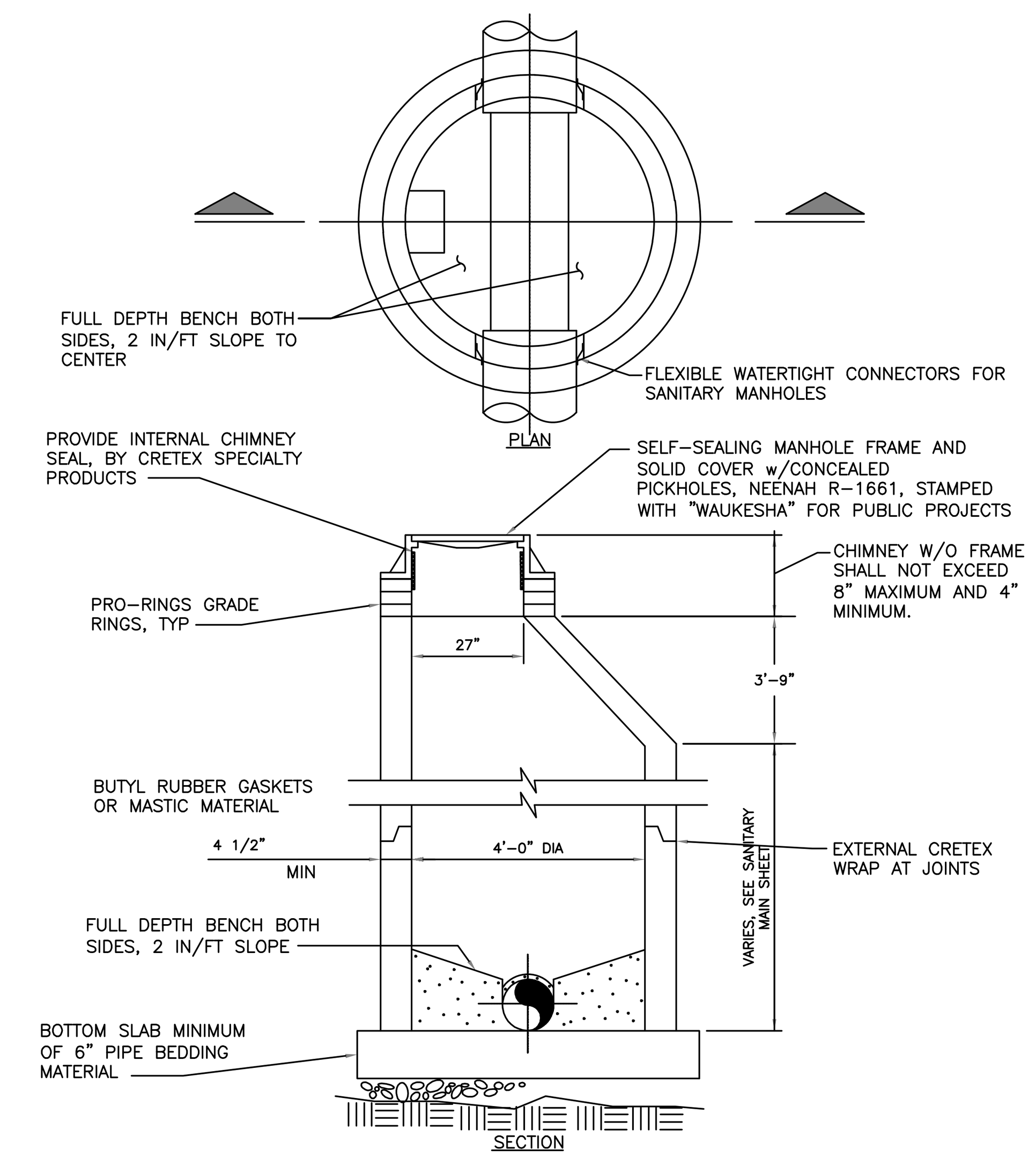
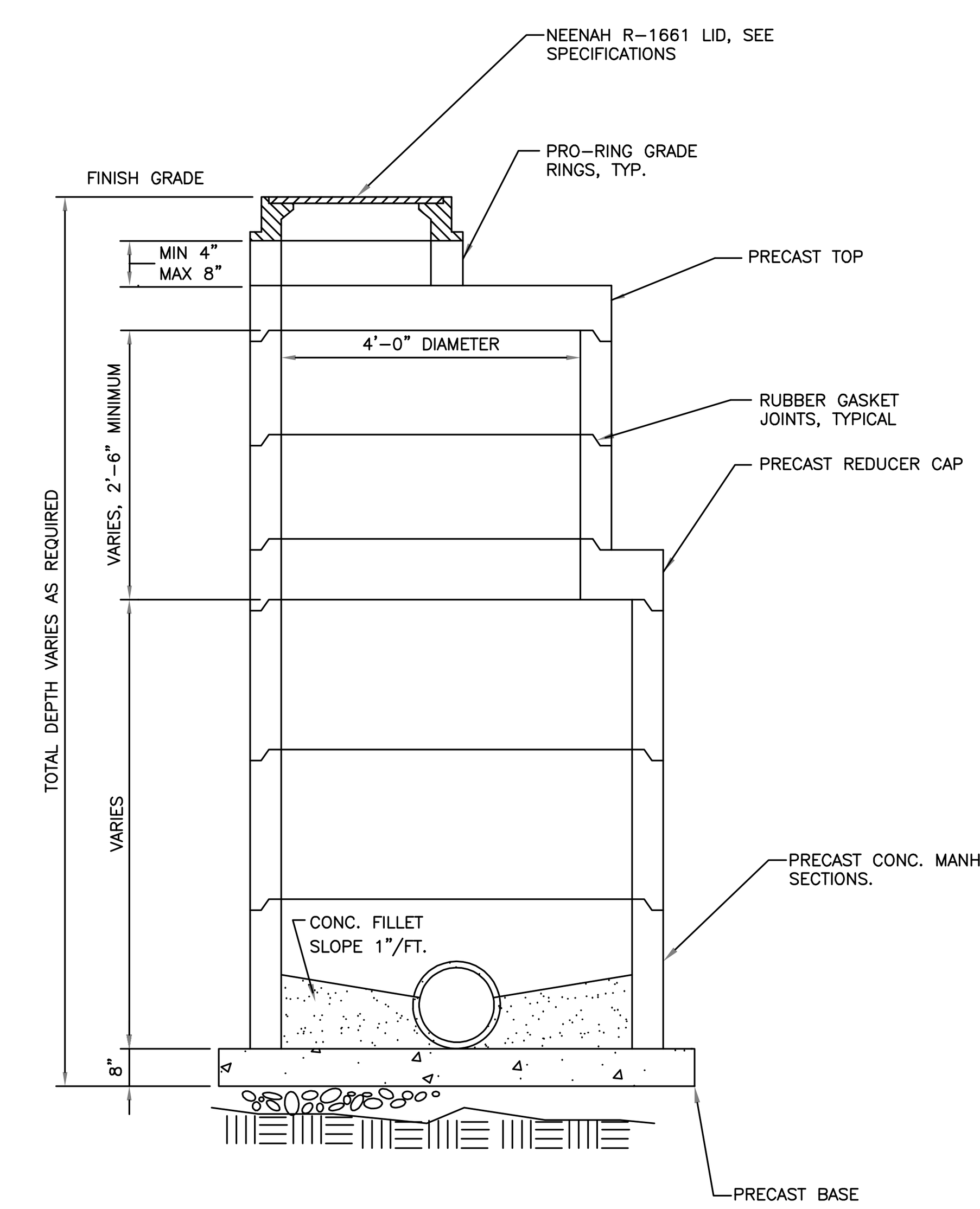
EXISTING WATER SERVICE TO HAVE CORP SHUT AND LINE CAPPED WWU TO INSTALL NEW TAP IN CONTRACTOR PROVIDED TRENCH TO REPLACE EXISTING WATER SERVICE
AREA OF PAVEMENT/CURB REMOVAL AND REPLACEMENT IN KIND
SILVERNAIL ROAD
(VARIABLE R.O.W.)
EDGE OF PAVEMENT
NEW PAVEMENT TO MATCH EXIST SIDEWALK
CONC. WALK
6" PVC SDR 26 110 LF
IP FND 1.14' E'LY 0.53' S'LY
S76° 47' 02"E 117.84'
CONC. CURB
40' COMMON ACCESS EASEMENT PER CSM 5134 (DOC. NO. 1399130)
50' BUILDING SETBACK
ADA ROUTE 2% MAX SLOPE
STRAIGHT CURB TO BE THICKENED TO 12" WHERE IT EXTENDS MORE THAN 6" ABOVE ABOVE GRADE. THESE AREAS TO BE PROVIDED WITH 2 # 5 BARS TOP & BOTTOM. CURB SHALL EXTEND TO 18" BELOW FINAL GRADE MIN.
ASPHALT PARKING
PROPOSED MULTI USE BUILDING
1st FLR =881.00
2nd FLR = 891.0
1st FLR = 881.0
EXISTING BRICK AND FRAME BUILDING
CONC. PATIO
FFE: 894.69
ROOF DRAIN: 12" PVC SDR 26 TO GRADE
10'x10' RIP-RAP OR INSTA-TURF SHEAR-FORCE 10 TRM
24' WIDE NON-EXCLUSIVE EASEMENT FOR INGRESS & EGRESS PER DOCUMENT NO. 1425271
SITE BENCHMARK # 1808
ELEV = 886.80 (DATUM: NAD 88)
CROSS CUT IN THE NORTHERN MOST BOLT OF A FIRE HYDRANT 40.68 FEET SOUTHWESTERLY FROM THE SOUTHWEST CORNER OF A BRICK BUILDING, 20.69 FEET SOUTH OF AN ELECTRIC TRANSFORMER, AND 2.79 FEET EAST OF THE CONCRETE CURB.
ASPHALT PAVEMENT
EAST 12' LOT 5
WEST 12' LOT 4
PROP. RAIN GARDEN (SEE DETAIL)
12' x 22' RIPRAP OR INSTA-TURF SHEARFORCE 10
EXISTING BRICK AND FRAME BUILDING FFE: 890.36
20' WIDE CITY OF WAUKESHA SANITARY SEWER EASEMENT PER CSM 5134 (DOC. NO. 1399130)
EXISTING 12" SANITARY SEWER MAIN
25' BUILDING SETBACK
PROP 2808 SF DETENTION CHAMBER 4" STONE BOTTOM
100 YR HWL = 879.51
LOT 1 CSM 8720
SHED
SILVERNAIL VILLAGE SHOPPING CENTER CONDOMINIUM
CONC. FLUME
RIP-RAP OR INSTA-TURF SHEAR-FORCE 10 TRM
10' WIDE OVERFLOW WEIR INV = 880.40 (SEE DETAIL)
LOT 5
CSM 5134
79,415.68 SF
1.823 AC
WETLAND FLAGS LOCATED 10/10/2024. DELINEATED BY DK ENVIRONMENTAL SERVICES, INC. 10/04/2024.



PLAN
FULL DEPTH BENCH BOTH SIDES, 2 IN/FT SLOPE TO CENTER
FLEXIBLE WATERTIGHT CONNECTORS FOR SANITARY MANHOLES
PROVIDE INTERNAL CHIMNEY SEAL, BY CRETEX SPECIALTY PRODUCTS
SELF-SEALING MANHOLE FRAME AND SOLID COVER w/CONCEALED PICKHOLES, NEENAH R-1661, STAMPED WITH "WAUKESHA" FOR PUBLIC PROJECTS
CHIMNEY W/O FRAME SHALL NOT EXCEED 8" MAXIMUM AND 4" MINIMUM.
PRO-RINGS GRADE RINGS, TYP
27"
3'-9"
BUTYL RUBBER GASKETS OR MASTIC MATERIAL
4 1/2" MIN
4'-0" DIA
EXTERNAL CRETEX WRAP AT JOINTS
FULL DEPTH BENCH BOTH SIDES, 2 IN/FT SLOPE
VARIES, SEE SANITARY MAIN SHEET
BOTTOM SLAB MINIMUM OF 6" PIPE BEDDING MATERIAL
SECTION

NOTES:
1. MANHOLE SECTIONS, BASES AND TOP SLABS SHALL BE PRECAST REINFORCED CONCRETE.
2. JOINTS BETWEEN MANHOLE SECTIONS SHALL BE TONGUE AND GROOVE WITH COMPRESSION TYPE RUBBER GASKET OR/AND APPROVED BITUMASTIC MATERIAL.
3. THE INVERT CHANNEL SHALL BE TROWELED SMOOTH, DENSE SURFACE AND A SEMICIRCLE SHAPE CONFORMING TO THE INSIDE OF THE ADJACENT SEWER SECTIONS.
4. ALL PIPE SHALL BE GROUTED IN-PLACE INTO NEW MANHOLE WALLS. PROVIDE A WATERTIGHT, FLEXIBLE SEAL BETWEEN PIPE AND MANHOLE. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
5. MANHOLE CASTINGS SHALL BE NEENAH R-1661 FRAME AND SELF-SEALING SOLID COVER WITH CONCEALED PICK-HOLES WITH THE "CITY OF WAUKESHA" & "DPW" ON PUBLIC MANHOLES.
6. ALL ANNULAR SPACES SHALL BE FILLED WITH A MASTIC OR CEMENTITIOUS FILLER.

STANDARD SANITARY MANHOLE DETAIL
(NOT TO SCALE)



NEENAH R-1661 LID, SEE SPECIFICATIONS
PRO-RING GRADE RINGS, TYP.
FINISH GRADE
MIN 4" MAX 8"
PRECAST TOP
4'-0" DIAMETER
RUBBER GASKET JOINTS, TYPICAL
PRECAST REDUCER CAP
TOTAL DEPTH VARIES AS REQUIRED
VARIES, 2'-6" MINIMUM
VARIES
PRECAST CONC. MANHOLE SECTIONS.
CONC. FILLET SLOPE 1"/FT.
8"
PRECAST BASE

STANDARD STORM MANHOLE DETAIL
(NOT TO SCALE)

STORM TAGS
1 PROP FES
INV: 879.51
2 PROP. 6 LF STORM SEWER
12" SDR 26 @ 1.0%
3 PROP. STORM MH CLID
RIM: 881.25
INV N: 879.45
INV S: 879.40
4 PROP. 5 LF STORM SEWER
12" SDR 26 @ 1.0%
5 PROP FES
INV: 879.35
6 PROP CATCH BASIN 2FT
RIM = 880.5
INV = 879.5
7 PROP 22 LF 12" PVC SDR 26
@ 1.00%

SANITARY TAGS
1 PROP SAN INV AT WALL
INV S:
2 PROP 7 LF 8" PVC SDR 26 SAN SERVICE
@ 2.00%
3 PROP SAN MH CLID
RIM: 886.50
INV E:
INV S:
4 PROP 26 LF 8" SDR 26 SAN SERVICE
PVC @ 2.00%
5 EX. SAN MH CLID
RIM: 880.52
INV N:
INV W:
INV E:

WATER TAGS
1 PROP 110 LF 6" DR-14 PVC WATER SERVICE WITH VALVE BOX

N W E S
SCALE IN FEET
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PROFESSIONAL ENGINEER

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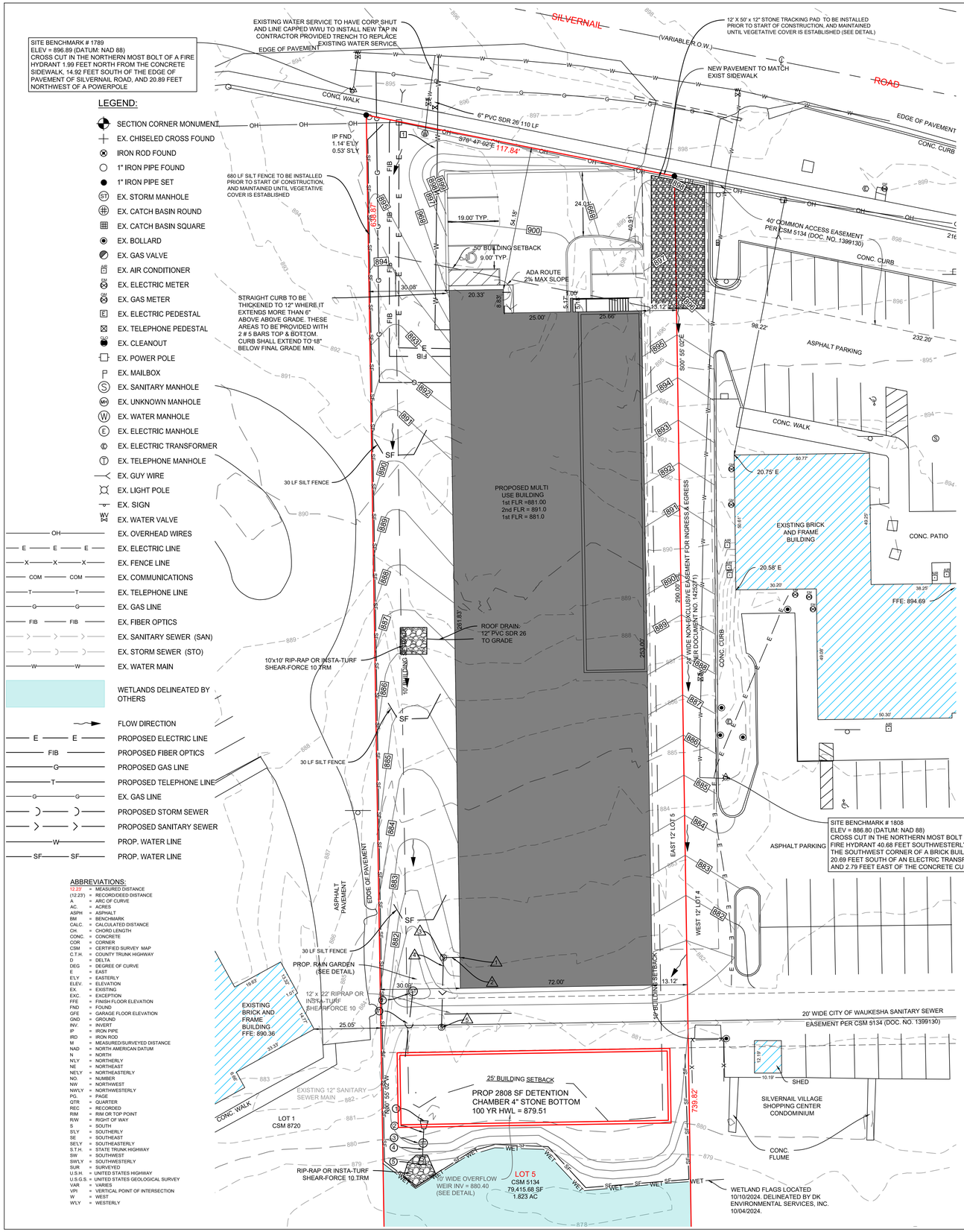
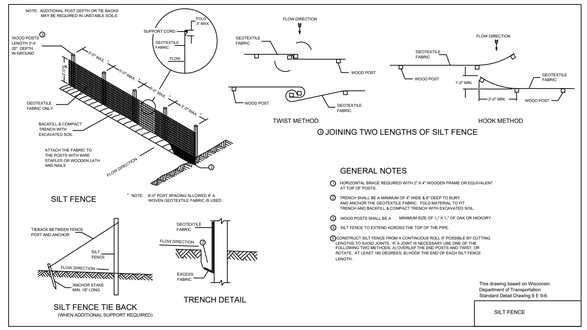
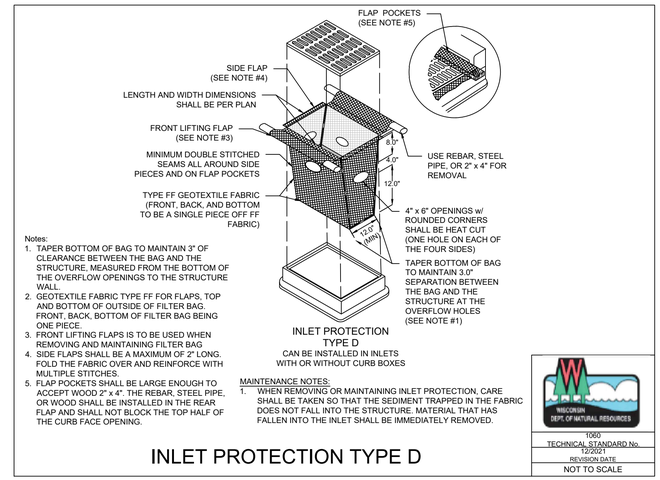
NOTE:
- THE PROPERTY IS ZONED B-5 PER CITY OF WAUKESHA ZONING MAP.
- BUILDING SETBACKS OBTAINED FROM THE CITY OF WAUKESHA MUNICIPAL CODE.

UTILITY PLAN

FILE NAME: S:\projects\24-10012 Bleck Silvernail\DWG\24-10012 R3 CIVIL.dwg







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

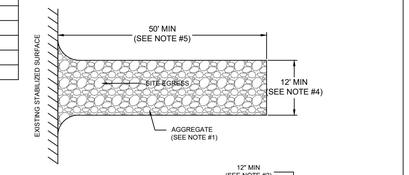
MAINTENANCE NOTES:
1. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED IN THE FABRIC DOES NOT FALL INTO THE STRUCTURE. MATERIAL THAT HAS FALLEN INTO THE INLET SHALL BE IMMEDIATELY REMOVED.

INLET PROTECTION TYPE D

WISCONSIN DEPT. OF NATURAL RESOURCES
1060 TECHNICAL STANDARD No.
12/2021 REVISION DATE
NOT TO SCALE

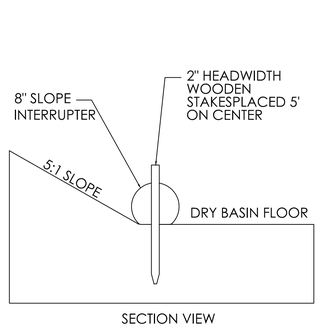
Sieve Size	Percent by weight passing
3"	100
2-1/2"	90-100
1-1/2"	25-60
3/4"	0-20
3/8"	0-5

1. Use hard, durable, angular stone or recycled concrete meeting the gradation in Table 1. Where this gradation is not available, meet the gradation in Wisconsin Department of Transportation (DOT) 2018 Standard Specification, Section 312, Select Crushed Material.
2. Slope the stone tracking pad in a manner to direct runoff to an approved treatment practice.
3. Select fabric type based on soil conditions and vehicles loading.
4. Install tracking pad across full width of the access point, or restrict existing traffic to a dedicated egress lane at least 12 feet wide across the top of the pad.
5. If a 50' pad length is not possible due to site geometry, install the maximum length practicable and supplement with additional practices as needed.



STONE TRACKING PAD DETAIL

WISCONSIN DEPT. OF NATURAL RESOURCES
1057 TS-9
TECHNICAL STANDARD No.
06/2018 REVISION DATE
NOT TO SCALE



SEDIMENT LOGS (WATTLES)

NOTE:
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NOT VALID WITHOUT ORIGINAL SIGNATURE

ROBERT A. KRAUSE 26786-6 WAUKESHA, WI — WISCONSIN — PROFESSIONAL ENGINEER

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

CALL DIGGERS HOTLINE
811 OR 1-800-242-8511 TOLL FREE
WIS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE
MILW. AREA 1-414-259-1181

NOTE: The location and size of the underground structures and utilities shown hereon have been located to a reasonable degree of accuracy, but the Engineer and/or Surveyor does not guarantee their exact location or the location of others not shown. Contact Diggers Hotline, Inc., Etc.

N W E S

SCALE IN FEET
0 20'

REVISIONS

DESCRIPTION	DATE	BY
CITY REVIEW COMMENTS	11/26/2025	

CHECKED BY: RK
DATE: 10/29/2025
DRAWN BY: JB
JOB NO. 25-10012

CLIENT
BLECK & BLECK ARCHITECTS, LLC
200 E. CHRUCH STREET,
LIBERTYVILLE, IL 60048

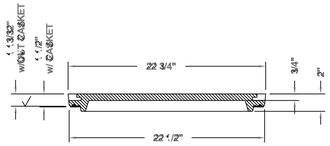
PROJECT
2417 SILVERNAIL ROAD,
WAUKESHA, WI 53186

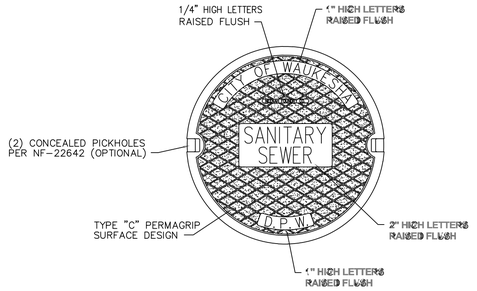
JAHNKE & JAHNKE
ASSOCIATES, LLC
ENGINEERS ▲ SURVEYORS
CONNECT ▶ EMPOWER ▶ DESIGN
WWW.JAHNKEANDJAHNKE.COM
524 BLUEMOUND ROAD, WAUKESHA, WI 53188
PHONE: (262) 542-5797 . EMAIL: SURVEY@JAHNKEANDJAHNKE.COM

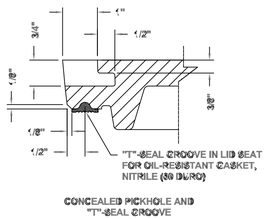
EROSION CONTROL PLAN

7 OF 9

FILE NAME: S:\projects\24-10012 Bleck Silvernail\DWG\24-10012 R3 CIVIL.dwg







CONCEALED PICKHOLE AND "T"-SEAL GROOVE
SCALED 1:2

MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT, UNLESS SPECIFIED ON PURCHASE ORDER
WEIGHT: 108 LBS.

DR. E. NIVER	SCALE 1/8"=1"	TITLE: R-1660 PLATEN LID WITH T-SEAL LTRD. 'CITY OF WAUKESHA', 'D.P.W.', 'SANITARY SEWER'	
CH. RKB			
APP. EWT		NEENAH FOUNDRY NEENAH WISCONSIN 54956 PHONE 800-558-5075 LINCOLN, NEBRASKA 68528 PHONE 800-254-7488	NF-16605268 B
DATE 04-08-2013			
www.nfco.com			

STANDARD SANITARY SEWER LID DETAIL
(NOT TO SCALE)

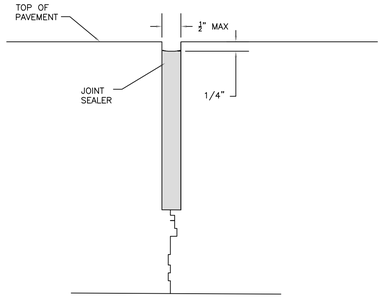
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: 106#

DR. E. NIVER	SCALE 1/8"=1"	TITLE: R-1660 LID LTRD. 'STORM SEWER' AND 'CITY OF WAUKESHA', 'D.P.W.'	
CH.			
APP.	DIM CHK.	NEENAH FOUNDRY COMPANY NEENAH WISCONSIN 54956	NF-16605261 B
DATE 04-27-2011			

STANDARD STRAIGHT CURB DETAIL
(NOT TO SCALE)

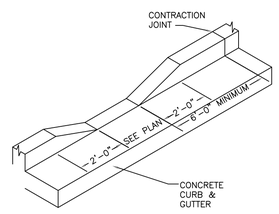
WDNR EROSION CONTROL NOTES

1. POST WDNR CERTIFICATE OF PERMIT COVERAGE ON SITE AND MAINTAIN UNTIL CONSTRUCTION ACTIVITIES HAVE CEASED, THE SITE IS STABILIZED, AND A NOTICE OF TERMINATION IS FILED WITH WDNR.
2. KEEP A COPY OF THE CURRENT EROSION CONTROL PLAN ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
3. SUBMIT PLAN REVISIONS OR AMENDMENTS TO THE WDNR AT LEAST 5 DAYS PRIOR TO FIELD IMPLEMENTATION.
4. **12 GAUGE CONSTRUCTION LLC** IS RESPONSIBLE FOR ROUTINE SITE INSPECTIONS AT LEAST ONCE EVERY 7 DAYS AND WITHIN 24 HOURS AFTER A RAINFALL EVENT OF 0.5 INCHES OR GREATER. KEEP INSPECTION REPORTS ON-SITE AND MAKE THEM AVAILABLE UPON REQUEST.
5. INSPECT AND MAINTAIN ALL INSTALLED EROSION CONTROL PRACTICES UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.
6. WHEN POSSIBLE: PRESERVE EXISTING VEGETATION (ESPECIALLY ADJACENT TO SURFACE WATERS), MINIMIZE LAND-DISTURBING CONSTRUCTION ACTIVITY ON SLOPES OF 20% OR MORE, MINIMIZE SOIL COMPACTION, AND PRESERVE TOPSOIL.
7. REFER TO THE WDNR STORMWATER CONSTRUCTION TECHNICAL STANDARDS AT http://dnr.wi.gov/topic/stormwater/standards/const_standards.html.
8. INSTALL PERIMETER EROSION CONTROLS AND ROCK TRACKING PAD CONSTRUCTION ENTRANCE(S) PRIOR TO ANY LAND-DISTURBING ACTIVITIES, INCLUDING CLEARING AND GRUBBING. USE **WDNR TECHNICAL STANDARD *STONE TRACKING PAD AND TIRE WASHING #1057*** FOR ROCK CONSTRUCTION ENTRANCE(S).
9. INSTALL INLET PROTECTION PRIOR TO LAND-DISTURBING ACTIVITIES IN THE CONTRIBUTING DRAINAGE AREA AND/OR IMMEDIATELY UPON INLET INSTALLATION. COMPLY WITH **WDNR TECHNICAL STANDARD *STORM DRAIN INLET PROTECTION FOR CONSTRUCTION SITES #1060.***
10. STAGE CONSTRUCTION GRADING ACTIVITIES TO MINIMIZE THE CUMULATIVE EXPOSED AREA. CONDUCT TEMPORARY GRADING FOR EROSION CONTROL PER **WDNR TECHNICAL STANDARD *TEMPORARY GRADING PRACTICES FOR EROSION CONTROL #1067.***
11. INSTALL AND MAINTAIN SILT FENCING PER **WDNR TECHNICAL STANDARD *SILT FENCE #1056.*** REMOVE SEDIMENT FROM BEHIND SILT FENCES AND SEDIMENT BARRIERS BEFORE SEDIMENT REACHES A DEPTH THAT IS EQUAL TO ONE-HALF OF THE FENCE AND/OR BARRIER HEIGHT.
12. REPAIR BREAKS AND GAPS IN SILT FENCES AND BARRIERS IMMEDIATELY. REPLACE DECOMPOSING STRAW BALES (TYPICAL BALE LIFE IS 3 MONTHS). LOCATE, INSTALL, AND MAINTAIN STRAW BALES PER **WDNR TECHNICAL STANDARD *DITCH CHECKS #1062.***
13. INSTALL AND MAINTAIN FILTER SOCKS IN ACCORDANCE WITH **WDNR TECHNICAL STANDARD *INTERIM MANUFACTURED PERIMETER CONTROL AND SLOPE INTERRUPTION PRODUCTS # 1071.***
14. IMMEDIATELY STABILIZE STOCKPILES AND SURROUND STOCKPILES AS NEEDED WITH SILT FENCE OR OTHER PERIMETER CONTROL IF STOCKPILES WILL REMAIN INACTIVE FOR 7 DAYS OR LONGER.
15. IMMEDIATELY STABILIZE ALL DISTURBED AREAS THAT WILL REMAIN INACTIVE FOR 14 DAYS OR LONGER. BETWEEN SEPTEMBER 15 AND OCTOBER 15: STABILZE WITH MULCH, TACKIFIER, AND A PERENNIAL SEED MIXED WITH WINTER WHEAT, ANNUAL OATS, OR ANNUAL RYE, AS APPROPRIATE FOR REGION AND SOIL TYPE OCTOBER 15 THROUGH COLD WEATHER: STABILIZE WITH A POLYMER AND DORMANT SEED MIX, AS APPROPRIATE FOR REGION AND SOIL TYPE.
16. STABILIZE AREAS OF FINAL GRADING WITHIN 7 DAYS OF REACHING FINAL GRADE.
17. SWEEP/CLEAN UP ALL SEDIMENT/TRASH THAT MOVES OFF-SITE DUE TO CONSTRUCTION ACTIVITY OR STORM EVENTS BEFORE THE END OF THE SAME WORKDAY OR AS DIRECTED BY **12 GAUGE CONSTRUCTION LLC**. SEPARATE SWEPT MATERIALS (SOILS AND TRASH) AND DISPOSE OF APPROPRIATELY.
18. **12 GAUGE CONSTRUCTION LLC** IS RESPONSIBLE FOR CONTROLLING DUST PER **WDNR TECHNICAL STANDARD *DUST CONTROL ON CONSTRUCTION SITES # 1068.***
19. PROPERLY DISPOSE OF ALL WASTE AND UNUSED BUILDING MATERIALS (INCLUDING GARBAGE, DEBRIS, CLEANING WASTES, OR OTHER CONSTRUCTION MATERIALS) AND DO NOT ALLOW THESE MATERIALS TO BE CARRIED BY RUNOFF INTO THE RECEIVING CHANNEL.
20. COORDINATE WITH **12 GAUGE CONSTRUCTION LLC** TO UPDATE THE LAND DISTURBANCE PERMIT TO INDICATE THE ANTICIPATED OR LIKELY DISPOSAL LOCATIONS FOR ANY EXCAVATED SOILS OR CONSTRUCTION DEBRIS THAT WILL BE HAULED OFF-SITE FOR DISPOSAL.
    THE DEPOSITED OR STOCKPILED MATERIAL NEEDS TO INCLUDE PERIMETER SEDIMENT CONTROL MEASURES (SUCH AS SILT FENCE, HAY BALES, FILTER SOCKS, OR COMPACTED EARTHEN BERMS).
21. FOR NON-CHANNELIZED FLOW ON DISTURBED OR CONSTRUCTED SLOPES, PROVIDE CLASS **[SPECIFY CLASS I, II, OR III]** TYPE **[SPECIFY TYPE A, B, OR C]** EROSION CONTROL MATTING. SELECT EROSION MATTING FROM APPROPRITE MATRIX IN WDOT'S WIDOT PRODUCT ACCEPTABILITY LIST (PAL); INSTALL AND MAINTAIN PER **WDNR TECHNICAL STANDARD *NON-CHANNEL EROSION MAT #1052.***
22. FOR CHANNELIZED FLOW ON DISTURBED OR CONSTRUCTED AREAS, PROVIDE CLASS **[SPECIFY CLASS I, II, OR III]** TYPE **[SPECIFY TYPE A, B, OR C]** EROSION CONTROL MATTING. SELECT EROSION MATTING FROM APPROPRIATE MATRIX IN WDOT'S WIDOT PRODUCT ACCEPTABILITY LIST (PAL); INSTALL AND MAINTAIN PER **WDNR TECHNICAL STANDARD *CHANNEL EROSION MAT #1053.***
23. MAKE PROVISIONS FOR WATERING DURING THE FIRST 8 WEEKS FOLLOWING SEEDING OR PLANTING OF DISTURBED AREAS WHENEVER MORE THAN 7 CONSECUTIVE DAYS OF DRY WEATHER OCCUR.
24. **12 GAUGE CONSTRUCTION LLC** IS RESPONSIBLE FOR COMPLYING WITH ALL-APPLICABLE WDNR REMEDIATION AND WASTE MANAGEMENT REQUIREMENTS FOR HANDLING AND DISPOSING OF CONTAMINATED MATERIALS. SITE-SPECIFIC INFORMATION FOR AREAS WITH KNOWN OR SUSPECTED SOIL AND/OR GROUNDWATER CONTAMINATION CAN BE FOUND ON WDNR'S BUREAU OF REMEDIATION AND REDEVELOPMENT TRACKING SYSTEM PUBLIC DATABASE AT: http://dnr.wi.gov/botw/
25. **REPAIR OR REPLACE SILT FENCE/SILT LOGS AS REQUIRED TO STOP MATERIAL FROM LEAVING THE CONSTRUCTION SITE** IF THERE IS A DISCHARGE OF SEDIMENT AND/OR OTHER CONTAMINANTS. A SPILL PLAN IS REQUIRED IF THERE IS POTENTIAL TO DISCHARGE CONTAMINANTS TO WATERS OF THE STATE.
26. INSTALL AND MAINTAIN A CONCRETE WASHOUT BASIN PER EPA 833-F-11-006: https://www3.epa.gov/npdes/pubs/concretewashout.pdf. REQUIRE USE BY ALL CONCRETE CONTRACTORS. LIQUID MAY BE REUSED IN CONCRETE MIXING, EVAPORATED, OR DISPOSED OF AS WASTEWATER.

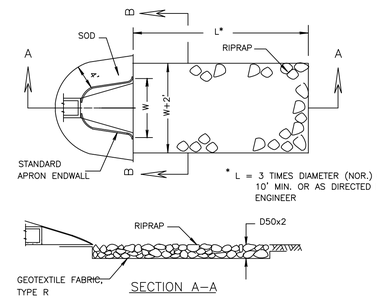


NOTES:
1. AFTER SAWING, BLOW WITH OIL- AND WATER-FREE COMPRESSED AIR TO ELIMINATE DEBRIS
2. WATER SEAL WITH APPROVED JOINT SEALER.

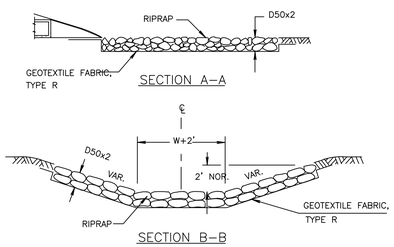
STANDARD JOINT FILLER DETAIL
(NOT TO SCALE)



STANDARD CURB DEPRESSION DETAIL
(NOT TO SCALE)

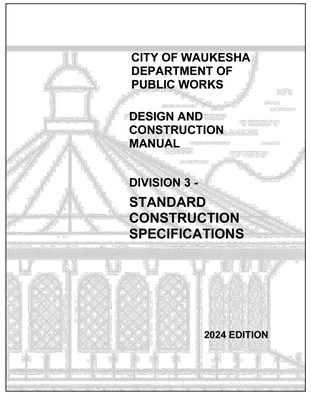


* L = 3 TIMES DIAMETER (NOR.) OR 10' MIN. OR AS DIRECTED BY THE ENGINEER



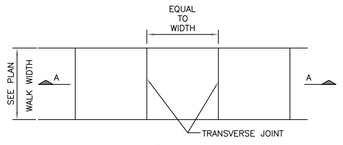
STANDARD RIP-RAP AND GEOTEXTILE FABRIC DETAIL
(NOT TO SCALE)

NOTE:
ALL SITE IMPROVEMENTS AND CONSTRUCTION SHOWN ON THE PLANS SHALL CONFORM TO THE CITY OF WAUKESHA DEVELOPMENT HANDBOOK & INFRASTRUCTURE SPECIFICATIONS. WHERE THE PLANS DO NOT COMPLY, IT SHALL BE THE SOLE RESPONSIBILITY AND EXPENSE OF THE DEVELOPER TO MAKE REVISIONS TO THE PLANS AND/OR CONSTRUCTED INFRASTRUCTURE TO COMPLY.

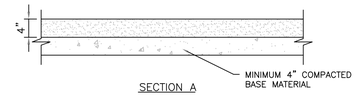


STANDARD CONSTRUCTION SPECIFICATIONS OF THE CITY OF WAUKESHA SHALL GOVERN THE SITE CONTRUCTION AT THIS SITE.

https://webfile.waukesha-wi.gov/waukeshawi25/Document_Center/Government/Public%20Works/Construction%20Projects/2024/2024%20Standard%20Construction%20Specifications.pdf?t=20250617091536&t=20250617091536



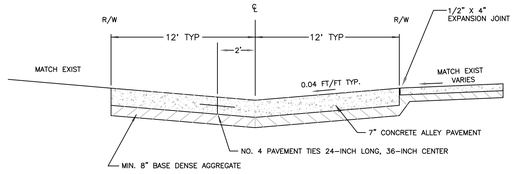
PLAN



SECTION A

NOTES:
1. TRANSVERSE JOINTS SHALL BE CUT WITH A JOINTER HAVING A RADIUS OF 1/4" AT SPACING AS INDICATED OR AS DIRECTED BY THE ENGINEER.
2. SIDEWALK SHALL BE 6" THICK AT ALL DRIVEWAY CROSSING.

STANDARD CONCRETE SIDEWALK DETAIL
(NOT TO SCALE)



NOTE:
- OFFSET CENTER PAVING JOINT 2 FT FROM CENTERLINE
- CURB PLACED AT THE SIDE OF ALLEY IN SOME LOCATIONS

CONCRETE DRIVEWAY DETAIL
(NOT TO SCALE)

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N
W E
S

SCALE IN FEET
0 20'

REVISIONS

DESCRIPTION	DATE	BY
CITY REVIEW COMMENTS	11/26/2025	

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DATE: 10/29/2025
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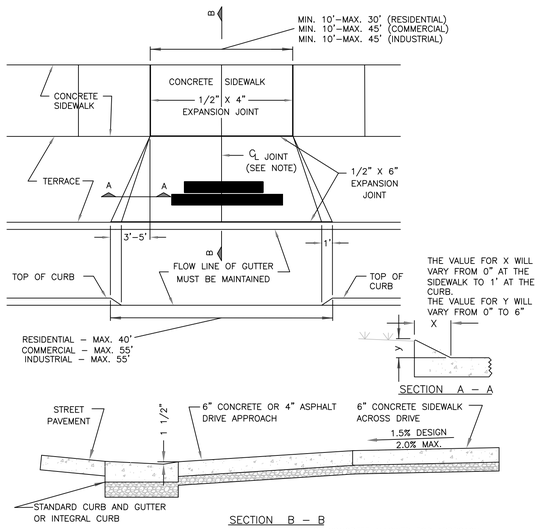
CLIENT
BLECK & BLECK ARCHITECTS, LLC
200 E. CHRUCH STREET,
LIBERTYVILLE, IL 60048

PROJECT
2417 SILVERNAIL ROAD,
WAUKESHA, WI 53186

JAHNKE & JAHNKE
ASSOCIATES, LLC
ENGINEERS • PLANNERS • SURVEYORS
CONNECT ▶ EMPOWER ▶ DESIGN
WWW.JAHNKEANDJAHNKE.COM
524 BLUEMOUND ROAD, WAUKESHA, WI 53188
PHONE: (262) 542-5797, EMAIL: SURVEY@JAHNKEANDJAHNKE.COM

FILE NAME: S:\projects\24-10012 Bleck Silvernail\DWG\24-10012 R3 CIVIL.dwg

SPECIFICATIONS & DETAILS

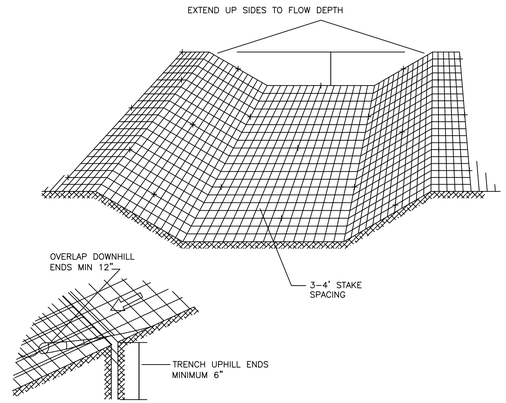


SECTION B – B

NOTES:

1. DRIVEWAYS 10' TO 20' WIDE SHALL HAVE ONE ℄ JOINT.
2. DRIVEWAYS 21' TO 30' WIDE SHALL HAVE TWO ℄ JOINTS EQUALLY SPACED.
3. DRIVEWAYS 31–40' WIDE SHALL HAVE THREE ℄ JOINTS EQUALLY SPACED.
4. 1/2" X 6" EXPANSION JOINT AT THE FACE OF WALK AND BACK OF CURB IS REQUIRED ONLY FOR CONCRETE DRIVE APPROACH.
5. FLARE WIDTH = 3' MIN. TO 5' MAX.
6. 8" CONCRETE ALLOWED FOR APPROACH AND SIDEWALK FOR HEAVY TRAFFIC.
7. 4" OF DENSE AGGREGATE BASE (3/4" OR 1–1/4") REQUIRED UNDER APPROACH AND SIDEWALK
8. 6" MINIMUM OF DENSE AGGREGATE BASE (1–1/4") REQUIRED UNDER CURB AND GUTTER.
9. THE ENTIRE CURB AND GUTTER SHALL BE REMOVED AND REPLACED FOR THE WIDTH OF THE DRIVE APPROACH. SAWCUTTING OF THE HEAD (ONLY) IS NOT ALLOWED.
10. MAINTAIN A MIN 5–FEET BETWEEN CURB AND GUTTER JOINTS.

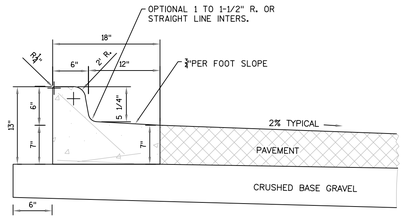
STANDARD DRIVE APPROACH DETAIL
(NOT TO SCALE)



STANDARD EROSION MATTING DETAIL
(NOT TO SCALE)

NOTE: AT ALL HANDICAP RAMP LOCATIONS THE CROSS SLOPE OF THE FLANGE CANNOT EXCEED 1/4"/FT. THIS MUST BE MAINTAINED THE WIDTH OF THE RAMP. TRANSITION A MINIMUM 5 FT. ALONG THE FACE OF THE FLANGE ON EITHER SIDE OF THE RAMP TO THE TYPICAL CROSS SLOPE.

NOTE: WHEN TYPE "B" CURB AND GUTTERS USED WITH CONCRETE PAVEMENT, THE CURB AND GUTTER SHALL BE TIED TO THE PAVEMENT WITH NO. 4, 2'–0" DEFORMED EPOXY–COATED TIE BARS SPACED AT 3'–0" C. TO C.



18" TYPE "B" CURB DETAIL
(NOT TO SCALE)

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CALL DIGGERS HOTLINE
811 OR 1-800-242-8511 TOLL FREE
WIS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE
MILW. AREA 1-414-259-1181

NOTE: The location and size of the underground structures and utilities shown hereon have been located to a reasonable degree of accuracy, but the Engineer and/or Surveyor does not guarantee their exact location or the location of others not shown. Contact Diggers Hotline, Inc., Etc.

N
W E
S

SCALE IN FEET
0 20'

REVISIONS

BY	DESCRIPTION	DATE
	CITY REVIEW COMMENTS	11/26/2025

CHECKED BY: RK
DATE: 10/29/2025

DRAWN BY: JB
JOB NO. 25-10012

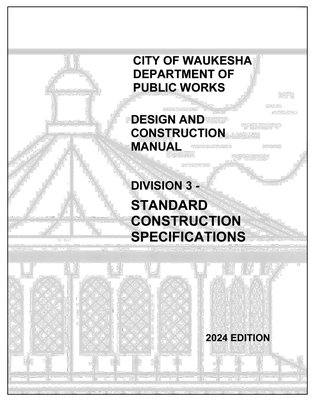
CLIENT
BLECK & BLECK ARCHITECTS, LLC
200 E. CHRUCH STREET,
LIBERTYVILLE, IL 60048

PROJECT
2417 SILVERNAIL ROAD,
WAUKESHA, WI 53186

JAHNKE & JAHNKE
ASSOCIATES, LLC
ENGINEERS • PLANNERS • SURVEYORS
CONNECT ▶ EMPOWER ▶ DESIGN
WWW.JAHNKEANDJAHNKE.COM
524 BLUEMOUND ROAD, WAUKESHA, WI 53188
PHONE: (262) 542-5797, EMAIL: SURVEY@JAHNKEANDJAHNKE.COM

FILE NAME: S:\projects\24-10012 Bleck Silvernail\DWG\24-10012 R3 CIVIL.dwg

NOTE:
ALL SITE IMPROVEMENTS AND CONSTRUCTION SHOWN ON THE PLANS SHALL CONFORM TO THE CITY OF WAUKESHA DEVELOPMENT HANDBOOK & INFRASTRUCTURE SPECIFICATIONS. WHERE THE PLANS DO NOT COMPLY, IT SHALL BE THE SOLE RESPONSIBILITY AND EXPENSE OF THE DEVELOPER TO MAKE REVISIONS TO THE PLANS AND/OR CONSTRUCTED INFRASTRUCTURE TO COMPLY.



STANDARD CONSTRUCTION SPECIFICATIONS OF THE CITY OF WAUKESHA SHALL GOVERN THE SITE CONSTRUCTION AT THIS SITE.

https://webfile.waukesha-wi.gov/waukeshawi25/Document_Center/Government/Public%20Works/Construction%20Projects/2024/2024%20Standard%20Construction%20Specifications.pdf?t=20250617091536O&t=20250617091536O

City of Waukesha
Department of Public Works

Design and Construction Manual
2023 Edition

Division 4
Standard Details

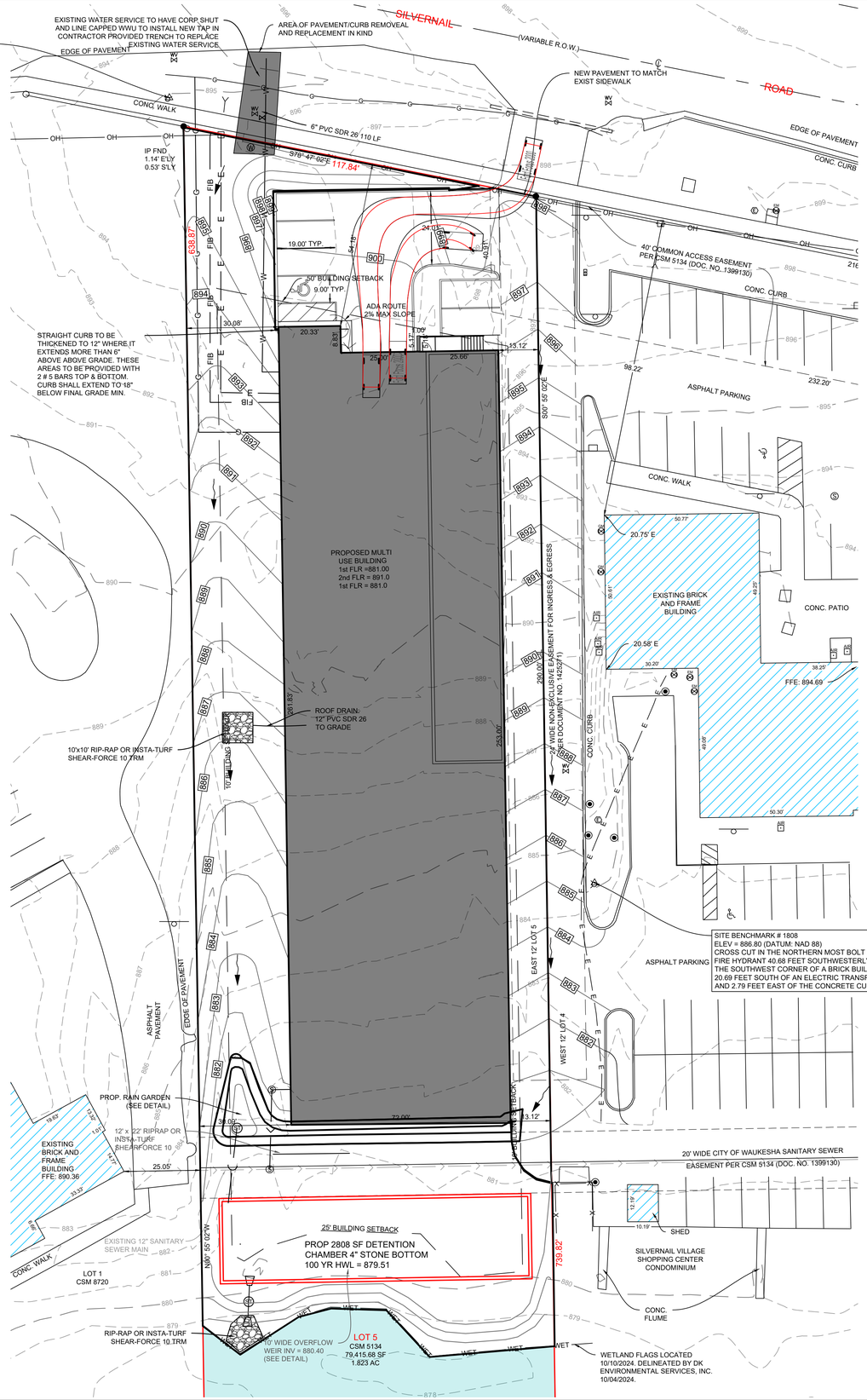
STANDARD DETAILS OF THE CITY OF WAUKESHA DESIGN MANUAL STANDARD DETAILS SHALL GOVERN THE SITE CONSTRUCTION AT THIS SITE.

https://webfile.waukesha-wi.gov/waukeshawi25/Document_Center/Government/Public%20Works/Bidding%20Information/_2023%20Standard%20Detail%20Drawings%20-%20All.pdf?t=20250617091541O&t=20250617091541O

NOT VALID WITHOUT ORIGINAL SIGNATURE

DETAILS

9 OF 9



LEGEND:

- SECTION CORNER MONUMENT
- EX. CHISELED CROSS FOUND
- IRON ROD FOUND
- 1" IRON PIPE FOUND
- 1" IRON PIPE SET
- EX. STORM MANHOLE
- EX. CATCH BASIN ROUND
- EX. CATCH BASIN SQUARE
- EX. BOLLARD
- EX. GAS VALVE
- EX. AIR CONDITIONER
- EX. ELECTRIC METER
- EX. GAS METER
- EX. ELECTRIC PEDESTAL
- EX. TELEPHONE PEDESTAL
- EX. CLEANOUT
- EX. POWER POLE
- EX. MAILBOX
- EX. SANITARY MANHOLE
- EX. UNKNOWN MANHOLE
- EX. WATER MANHOLE
- EX. ELECTRIC MANHOLE
- EX. ELECTRIC TRANSFORMER
- EX. TELEPHONE MANHOLE
- EX. GUY WIRE
- EX. LIGHT POLE
- EX. SIGN
- EX. WATER VALVE
- EX. OVERHEAD WIRES
- EX. ELECTRIC LINE
- EX. FENCE LINE
- EX. COMMUNICATIONS
- EX. TELEPHONE LINE
- EX. GAS LINE
- EX. FIBER OPTICS
- EX. SANITARY SEWER (SAN)
- EX. STORM SEWER (STO)
- EX. WATER MAIN
- WETLANDS DELINEATED BY OTHERS
- FLOW DIRECTION
- PROPOSED ELECTRIC LINE
- PROPOSED FIBER OPTICS
- PROPOSED GAS LINE
- PROPOSED TELEPHONE LINE
- EX. GAS LINE
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROP. WATER LINE
- 886.54 PROP. SPOT GRADE
- 6.26% PROP. GRADE AND DIRECTION

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

CALL DIGGERS HOTLINE
811 OR 1-800-242-8511 TOLL FREE
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ABBREVIATIONS:

12.23'	=	MEASURED DISTANCE
(12.23')	=	RECORD/DEED DISTANCE
A	=	ARC OF CURVE
AC.	=	ACRES
ASPH	=	ASPHALT
BM	=	BENCHMARK
CALC.	=	CALCULATED DISTANCE
CH.	=	CHORD LENGTH
CONC.	=	CONCRETE
COR	=	CORNER
CSM	=	CERTIFIED SURVEY MAP
C.T.H.	=	COUNTY TRUNK HIGHWAY
D	=	DELTA
DEG	=	DEGREE OF CURVE
E	=	EAST
ELY	=	EASTERLY
ELEV.	=	ELEVATION
EX.	=	EXISTING
EXC.	=	EXCEPTION
FFE	=	FINISH FLOOR ELEVATION
FND	=	FOUND
GFE	=	GARAGE FLOOR ELEVATION
GND	=	GROUND
INV.	=	INVERT
IP	=	IRON PIPE
IRD	=	IRON ROD
M	=	MEASURED/SURVEYED DISTANCE
NAD	=	NORTH AMERICAN DATUM
N	=	NORTH
NLY	=	NORTHERLY
NE	=	NORTHEAST
NELY	=	NORTHEASTERLY
NO.	=	NUMBER
NW	=	NORTHWEST
NWLY	=	NORTHWESTERLY
PG.	=	PAGE
QTR	=	QUARTER
REC	=	RECORDED
RIM	=	RIM OR TOP POINT
R/W	=	RIGHT OF WAY
S	=	SOUTH
SLY	=	SOUTHERLY
SE	=	SOUTHEAST
SELY	=	SOUTHEASTERLY
S.T.H.	=	STATE TRUNK HIGHWAY
SW	=	SOUTHWEST
SWLY	=	SOUTHWESTERLY
SUR	=	SURVEYED
U.S.H.	=	UNITED STATES HIGHWAY
U.S.G.S.	=	UNITED STATES GEOLOGICAL SURVEY
VAR	=	VARIES
VPI	=	VERTICAL POINT OF INTERSECTION
W	=	WEST
WLY	=	WESTERLY

NOTE:
- THE PROPERTY IS ZONED B-5 PER CITY OF WAUKESHA ZONING MAP.
- BUILDING SETBACKS OBTAINED FROM THE CITY OF WAUKESHA MUNICIPAL CODE.

WISCONSIN ROBERT A. KRAUSE 26786-E WAUKESHA, WI PROFESSIONAL ENGINEER

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SITE PLAN

N W E S

SCALE IN FEET
0 20'

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FILE NAME: S:\projects\24-10012 Bleck Silvernail\DWG\24-10012 R3 CIVIL.dwg

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	25 yr	Type II 24-hr		Default	24.00	1	4.66	2

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	4R	99.80	39.80	60.0	1.0000	0.010	0.0	6.0	0.0	

Summary for Reach 4R: (new Reach)

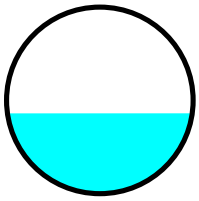
[52] Hint: Inlet/Outlet conditions not evaluated
[61] Hint: Exceeded Reach 3R outlet invert by 0.22' @ 11.95 hrs

Inflow Area = 0.422 ac,100.00% Impervious, Inflow Depth > 4.42" for 25 yr event
Inflow = 2.81 cfs @ 11.95 hrs, Volume= 0.155 af
Outflow = 2.81 cfs @ 11.95 hrs, Volume= 0.155 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 34.74 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 10.34 fps, Avg. Travel Time= 0.1 min

Peak Storage= 5 cf @ 11.95 hrs
Average Depth at Peak Storage= 0.22' , Surface Width= 0.50'
Bank-Full Depth= 0.50' Flow Area= 0.2 sf, Capacity= 7.29 cfs

6.0" Round Pipe
n= 0.010 PVC, smooth interior
Length= 60.0' Slope= 1.0000 '/'
Inlet Invert= 99.80', Outlet Invert= 39.80'



Reach 4R: (new Reach)