Drainage Conformance Letter
For
Sherwin Williams at Lot 5B, Monument Ridge, 4th Replat
705 W. Baptist Rd, Monument CO

February 25, 2022

Prepared For:

WALL DEVELOPMENT GROUP

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February 25, 2022

City of Monument
Planning Department
645 Beacon Lite Road
Monument, CO 80132

Re: Sherwin Williams store at 705 West Baptist Road

EES is pleased to provide a drainage letter of conformance for the proposed site layout for Lot 5B, Monument Ridge 4th Replat, more specifically located at 705 West Baptist Road, Monument, Colorado. The proposed project site is approximately 0.73 acres and is located at the southeast corner of West Baptist Road and Providence Point intersection. The site is bounded to the north by West Baptist Road, to the east by Family of Christ Lutheran Church (FCL Church), to the south by a private access road also serving future apartments, and to the west by an Auto Zone store. In the existing condition, the site is primarily undeveloped open space with retaining walls in the northeast corner and a temporary retention pond on the south portion of the site. The existing drainage patterns/basins are analyzed below.

BASIN OS-A1 – Basin OS-A1 is a 1.10-acre basin apart of FCL Church site. This basin discharges to parking lot detention located within the basin. The release rate from the parking lot detention to receiving basin H-1 for the 5-year and 100-year storm event are 4.00-cfs and 7.00-cfs, respectively. Discharge from the parking lot detention is collected in a temporary retention pond within basin H-1.

BASIN H-1 – Basin H-1 is a 0.59-acre parcel in its existing condition. The impervious value for the basin is 0.0%. The 5-year and 100-year runoff coefficients are 0.08 and 0.35, respectively. The runoff for the 5-year and 100-year storm event are 0.19-cfs and 1.75-cfs, respectively. Historically, runoff sheet flows to the west and into an existing Type 13 inlet within the Auto Zone parking lot. Once collected by the inlet, the runoff is passed via storm sewer to Monument Ranch detention Pond A.

BASIN H-2 – Basin H-2 is a 0.18-acre basin apart of the Auto Zone site. The impervious value for the basin is 92.1%. The 5-year and 100-year runoff coefficients are 0.84 and 0.91, respectively. The runoff for the 5-year and 100-year storm event are 0.61-cfs and 1.40-cfs, respectively. Historically, runoff sheet flows into an existing Type 13 inlet within the Auto Zone parking lot. Once collected by the inlet, the runoff is passed via storm sewer to Monument Ranch detention Pond A.

BASIN H-3 – Basin H-3 is a 0.19-acre parcel in its existing condition. The impervious value for the basin is 0.0%. The 5-year and 100-year runoff coefficients are 0.08 and 0.35, respectively. The runoff for the 5-year and 100-year storm event are 0.06-cfs and 0.56-cfs, respectively. Historically, runoff sheet flows to the west and is collected by a concrete valley pan within the Auto Zone parking lot. Runoff is then passed to the West Baptist ROW before being conveyed to the Monument Ranch Pond C.

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EXISTING RUNOFF SUMMARY TABLE

BASIN	DESIGN POINT	CONTRIBUTING BASIN AGREAGE	% IMPERVIOUS	5-YR C-VALUE	100-YR C-VALUE	5-YR RUNOFF (CFS)	100-YR RUNOFF (CFS)
OS-A1	1	1.10	-	-	-	4.00	7.00
H-1	2	0.59	0.0	0.08	0.35	0.19	1.75
H-2	3	0.18	92.1	0.84	0.91	0.61	1.40
H-3	4	0.19	0.0	0.08	0.35	0.06	0.56

The proposed development consists of a 4,500-sf paint store and associated drives, parking, walks and landscaping. The proposed development will utilize the existing site accesses and shared access drives. Drainage patterns in the proposed condition have been broken into four (4) basins in total identified herein as Basins A, B, C and D.

BASIN A – Basin A is 0.41 acres and consists of the paint store, paved parking, walks and landscaping. The impervious value for the basin is 86.4%. The 5-year and 100-year runoff coefficients are 0.77 and 0.85, respectively. The runoff for the 5-year and 100-year storm event are 1.26-cfs and 2.97-cfs, respectively. Runoff follows the historic pattern and is directed westerly via sheet flow and is captured by the existing Type 13 inlet in the Auto Zone site (Basin H-2). Hydraulic calculations appended to this letter confirm that the existing Type 13 inlet and downstream storm sewer have capacity for Basin A and H-2.

BASIN B – Basin B is 0.21 acres and consists of the paved parking, walks, and landscaping. The impervious value for the basin is 66.5%. The 5-year and 100-year runoff coefficients are 0.63 and 0.76, respectively. The runoff for the 5-year and 100-year storm event are 0.54-cfs and 1.37-cfs, respectively. Runoff follows historic patterns and is directed westerly by sheet flow where it is concentrated in an existing concrete gutter pan. Runoff is then passed to the West Baptist ROW before being conveyed to the Monument Ranch Pond C.

BASIN C – Basin C is 0.02 acres and consists of the paved driveway. The impervious value for the basin is 100%. The 5-year and 100-year runoff coefficients are 0.89 and 0.96, respectively. The runoff for the 5-year and 100-year storm event are 0.07-cfs and 0.17-cfs, respectively. Runoff follows historic patterns and is collected in the private drive curb and gutter before being captured in an existing 10’ Type R inlet along Providence Point.

BASIN D – Basin D is 0.20 acres and consists of landscaping. The impervious value for the basin is 0.0%. The 5-year and 100-year runoff coefficients are 0.08 and 0.35, respectively. The runoff for the 5-year and 100-year storm event are 0.06-cfs and 0.59-cfs, respectively. Runoff behind the terraced retaining walls is collected in a swale before being joined by discharge from the parking lot detention of Basin OS-A1. The combined flows are directed by swale to a proposed Type C inlet in sump. The proposed Type C inlet connects to an extension of storm sewer SD-101 which is a stub from an existing 10’ Type R inlet in Providence Point. Hydraulic calculations appended to this letter confirm that the proposed Type C inlet and downstream storm sewer have capacity for Basin D and OS-A1.

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DEVELOPED RUNOFF SUMMARY TABLE

BASIN	DESIGN POINT	CONTRIBUTING BASIN AGREAGE	% IMPERVIOUS	5-YR C-VALUE	100-YR C-VALUE	5-YR RUNOFF (CFS)	100-YR RUNOFF (CFS)
A	1	0.41	86.4%	0.77	0.85	1.26	2.97
B	3	0.21	66.5%	0.63	0.76	0.54	1.37
C	4	0.02	100.0%	0.89	0.96	0.07	0.17
D	6	0.20	0.0%	0.08	0.35	0.06	0.59

Respectfully submitted,
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APPENDIX A – Soil Survey, FIRMette, & Wetlands Mapper
APPENDIX B – Hydrology
APPENDIX C – Hydraulics
APPENDIX D – Reference Materials
APPENDIX E – Drainage Maps

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APPENDIX A – Soil Survey, FIRMette, & Wetlands Mapper

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 El Paso County Area, Colorado

705 W. Baptist Rd.

February 10, 2022

Preface

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

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

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

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

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

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

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How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

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

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

Soil Map

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

Custom Soil Resource Report
Soil Map

Map Scale: 1:502 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 5 10 20 30

Feet
0 20 40 80 120

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

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

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

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 19, Aug 31, 2021

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

Date(s) aerial images were photographed: Aug 19, 2018—Sep 23, 2018

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
93	Tomah-Crowfoot complex, 8 to 15 percent slopes	0.8	100.0%
Totals for Area of Interest		**0.8**	**100.0%**

Map Unit Descriptions

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

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

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

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

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.

El Paso County Area, Colorado

93—Tomah-Crowfoot complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 36bb
Elevation: 7,300 to 7,600 feet
Farmland classification: Not prime farmland

Map Unit Composition

Tomah and similar soils: 50 percent
Crowfoot and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tomah

Setting

Landform: Alluvial fans, hills
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from arkose and/or residuum weathered from arkose

Typical profile

A - 0 to 10 inches: loamy sand
E - 10 to 22 inches: coarse sand
Bt - 22 to 48 inches: stratified coarse sand to sandy clay loam
C - 48 to 60 inches: coarse sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R049XY216CO - Sandy Divide
Hydric soil rating: No

Description of Crowfoot

Setting

Landform: Alluvial fans, hills
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Linear
Across-slope shape: Linear

Parent material: Alluvium

Typical profile

A - 0 to 12 inches: loamy sand
E - 12 to 23 inches: sand
Bt - 23 to 36 inches: sandy clay loam
C - 36 to 60 inches: coarse sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R049XY216CO - Sandy Divide
Hydric soil rating: No

Minor Components

Pleasant

Percent of map unit:
Landform: Depressions
Hydric soil rating: Yes

Other soils

Percent of map unit:
Hydric soil rating: No

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

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 13. The **horizontal datum** was NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the **North American Vertical Datum of 1988 (NAVD88)**. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at http://www.ngs.noaa.gov/.

Base Map information shown on this FIRM was provided in digital format by El Paso County, Colorado Springs Utilities, City of Fountain, Bureau of Land Management, National Oceanic and Atmospheric Administration, United States Geological Survey, and Anderson Consulting Engineers, Inc. These data are current as of 2006.

This map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable, in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact **FEMA Map Service Center** (MSC) via the FEMA Map Information eXchange (FMIX) 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. The MSC may also be reached by Fax at 1-800-358-9620 and its website at http://www.msc.fema.gov/.

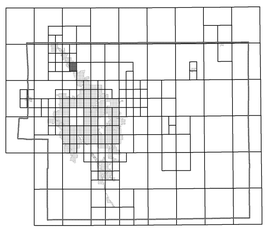
If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.

El Paso County Vertical Datum Offset Table

Flooding Source	Vertical Datum Offset (ft)

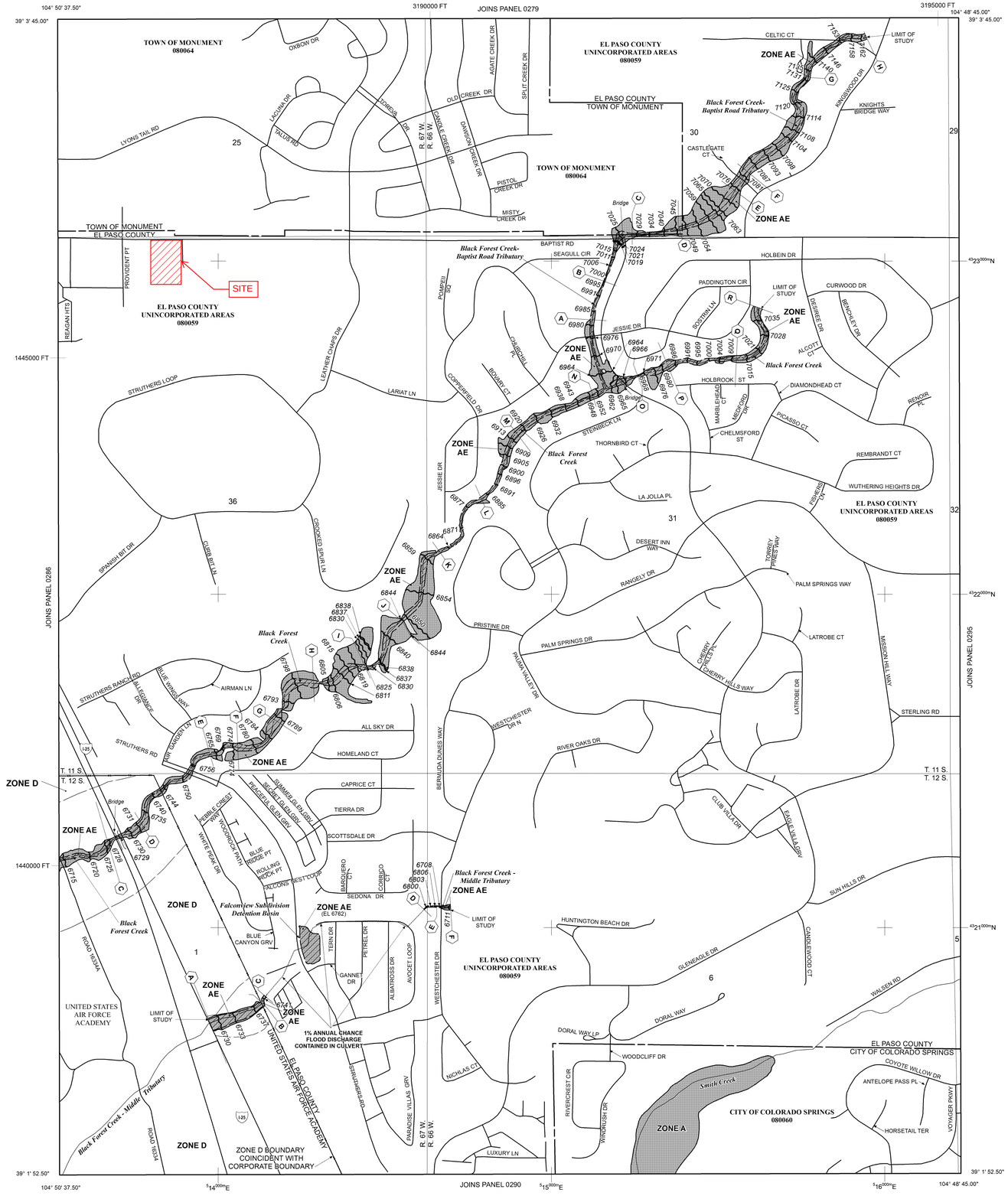
REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION

Panel Location Map



This Digital Flood Insurance Rate Map (DFIRM) was produced through a Cooperating Technical Partner (CTP) agreement between the State of Colorado Water Conservation Board (CWCB) and the Federal Emergency Management Agency (FEMA).

Additional Flood Hazard information and resources are available from local communities and the Colorado Water Conservation Board.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAS) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area Formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	Floodplain boundary
	Floodway boundary
	Zone D Boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A — A	Cross section line
23 — 23	Transect line
97° 07' 30.00" 32° 22' 30.00"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4376000mN	1000-meter Universal Transverse Mercator grid ticks, zone 13
6000000 FT	5000-foot grid ticks: Colorado State Plane coordinate system, central zone (FIPSZONE 0502), Lambert Conformal Conic Projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 ●	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
MARCH 17, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
DECEMBER 7, 2018 - to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

For community map revision history prior to countywide mapping, refer to the Community Map History Table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NFIP

PANEL 0287G

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

EL PASO COUNTY, COLORADO AND INCORPORATED AREAS

PANEL 287 OF 1300

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
COLORADO SPRINGS, CITY OF	080060	0287	G
EL PASO COUNTY	080059	0287	G
MONUMENT, TOWN OF	080064	0287	G

Notice: This map was reissued on 05/15/2020 to make a correction.This version replaces any previous versions. See the Notice-to-User Letter that accompanied this correction for details.

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
08041C0287G

MAP REVISED
DECEMBER 7, 2018

Federal Emergency Management Agency

U.S. Fish and Wildlife Service

National Wetlands Inventory

705 W. Baptist Rd.

February 25, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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SOLUTIONS, INC.

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Glendale, CO 80246
www.ees.us.com
303-572-7997

APPENDIX B – Hydrology

Table 6-6. Runoff Coefficients for Rational Method
(Source: UDFCD 2001)

Land Use or Surface Characteristics	Percent Impervious	Runoff Coefficients											
		2-year		5-year		10-year		25-year		50-year		100-year	
		HSG A&B	HSG C&D	HSG A&B	HSG C&D	HSG A&B	HSG C&D	HSG A&B	HSG C&D	HSG A&B	HSG C&D	HSG A&B	HSG C&D
Business													
Commercial Areas	95	0.79	0.80	0.81	0.82	0.83	0.84	0.85	0.87	0.87	0.88	0.88	0.89
Neighborhood Areas	70	0.45	0.49	0.49	0.53	0.53	0.57	0.58	0.62	0.60	0.65	0.62	0.68
Residential													
1/8 Acre or less	65	0.41	0.45	0.45	0.49	0.49	0.54	0.54	0.59	0.57	0.62	0.59	0.65
1/4 Acre	40	0.23	0.28	0.30	0.35	0.36	0.42	0.42	0.50	0.46	0.54	0.50	0.58
1/3 Acre	30	0.18	0.22	0.25	0.30	0.32	0.38	0.39	0.47	0.43	0.52	0.47	0.57
1/2 Acre	25	0.15	0.20	0.22	0.28	0.30	0.36	0.37	0.46	0.41	0.51	0.46	0.56
1 Acre	20	0.12	0.17	0.20	0.26	0.27	0.34	0.35	0.44	0.40	0.50	0.44	0.55
Industrial													
Light Areas	80	0.57	0.60	0.59	0.63	0.63	0.66	0.66	0.70	0.68	0.72	0.70	0.74
Heavy Areas	90	0.71	0.73	0.73	0.75	0.75	0.77	0.78	0.80	0.80	0.82	0.81	0.83
Parks and Cemeteries	7	0.05	0.09	0.12	0.19	0.20	0.29	0.30	0.40	0.34	0.46	0.39	0.52
Playgrounds	13	0.07	0.13	0.16	0.23	0.24	0.31	0.32	0.42	0.37	0.48	0.41	0.54
Railroad Yard Areas	40	0.23	0.28	0.30	0.35	0.36	0.42	0.42	0.50	0.46	0.54	0.50	0.58
Undeveloped Areas													
Historic Flow Analysis--Greenbelts, Agriculture	2	0.03	0.05	0.09	0.16	0.17	0.26	0.26	0.38	0.31	0.45	0.36	0.51
Pasture/Meadow	0	0.02	0.04	0.08	0.15	0.15	0.25	0.25	0.37	0.30	0.44	0.35	0.50
Forest	0	0.02	0.04	0.08	0.15	0.15	0.25	0.25	0.37	0.30	0.44	0.35	0.50
Exposed Rock	100	0.89	0.89	0.90	0.90	0.92	0.92	0.94	0.94	0.95	0.95	0.96	0.96
Offsite Flow Analysis (when landuse is undefined)	45	0.26	0.31	0.32	0.37	0.38	0.44	0.44	0.51	0.48	0.55	0.51	0.59
Streets													
Paved	100	0.89	0.89	0.90	0.90	0.92	0.92	0.94	0.94	0.95	0.95	0.96	0.96
Gravel	80	0.57	0.60	0.59	0.63	0.63	0.66	0.66	0.70	0.68	0.72	0.70	0.74
Drive and Walks	100	0.89	0.89	0.90	0.90	0.92	0.92	0.94	0.94	0.95	0.95	0.96	0.96
Roofs	90	0.71	0.73	0.73	0.75	0.75	0.77	0.78	0.80	0.80	0.82	0.81	0.83
Lawns	0	0.02	0.04	0.08	0.15	0.15	0.25	0.25	0.37	0.30	0.44	0.35	0.50

3.2 Time of Concentration

One of the basic assumptions underlying the Rational Method is that runoff is a function of the average rainfall rate during the time required for water to flow from the hydraulically most remote part of the drainage area under consideration to the design point. However, in practice, the time of concentration can be an empirical value that results in reasonable and acceptable peak flow calculations.

For urban areas, the time of concentration (t_c) consists of an initial time or overland flow time (t_i) plus the travel time (t_t) in the storm sewer, paved gutter, roadside drainage ditch, or drainage channel. For non-urban areas, the time of concentration consists of an overland flow time (t_i) plus the time of travel in a concentrated form, such as a swale or drainageway. The travel portion (t_t) of the time of concentration can be estimated from the hydraulic properties of the storm sewer, gutter, swale, ditch, or drainageway. Initial time, on the other hand, will vary with surface slope, depression storage, surface cover, antecedent rainfall, and infiltration capacity of the soil, as well as distance of surface flow. The time of concentration is represented by Equation 6-7 for both urban and non-urban areas.

NOAA Atlas 14, Volume 8, Version 2
Location name: Colorado Springs, Colorado, USA*
Latitude: 39.056°, Longitude: -104.8407°
Elevation: 6881.38 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	**0.232** (0.190-0.283)	**0.293** (0.240-0.357)	**0.396** (0.323-0.484)	**0.484** (0.393-0.595)	**0.611** (0.479-0.777)	**0.712** (0.545-0.915)	**0.816** (0.602-1.07)	**0.925** (0.654-1.24)	**1.08** (0.729-1.48)	**1.19** (0.786-1.66)
10-min	**0.339** (0.278-0.414)	**0.429** (0.351-0.523)	**0.580** (0.473-0.709)	**0.709** (0.575-0.871)	**0.895** (0.702-1.14)	**1.04** (0.797-1.34)	**1.20** (0.882-1.57)	**1.36** (0.957-1.82)	**1.57** (1.07-2.17)	**1.74** (1.15-2.43)
15-min	**0.414** (0.339-0.504)	**0.523** (0.428-0.638)	**0.707** (0.577-0.864)	**0.865** (0.702-1.06)	**1.09** (0.856-1.39)	**1.27** (0.972-1.64)	**1.46** (1.08-1.92)	**1.65** (1.17-2.22)	**1.92** (1.30-2.64)	**2.13** (1.40-2.96)
30-min	**0.571** (0.468-0.696)	**0.721** (0.591-0.880)	**0.975** (0.796-1.19)	**1.19** (0.968-1.47)	**1.51** (1.18-1.91)	**1.75** (1.34-2.25)	**2.01** (1.48-2.64)	**2.28** (1.61-3.06)	**2.65** (1.80-3.65)	**2.93** (1.94-4.08)
60-min	**0.735** (0.603-0.897)	**0.902** (0.738-1.10)	**1.19** (0.975-1.46)	**1.46** (1.18-1.79)	**1.85** (1.46-2.37)	**2.17** (1.67-2.81)	**2.52** (1.87-3.33)	**2.89** (2.05-3.91)	**3.42** (2.33-4.73)	**3.84** (2.53-5.35)
2-hr	**0.900** (0.742-1.09)	**1.08** (0.891-1.31)	**1.41** (1.16-1.72)	**1.72** (1.40-2.10)	**2.19** (1.75-2.81)	**2.60** (2.01-3.35)	**3.03** (2.26-3.99)	**3.51** (2.51-4.72)	**4.19** (2.87-5.77)	**4.74** (3.15-6.57)
3-hr	**1.01** (0.834-1.21)	**1.19** (0.979-1.43)	**1.52** (1.25-1.84)	**1.85** (1.51-2.24)	**2.37** (1.91-3.04)	**2.82** (2.20-3.64)	**3.32** (2.50-4.37)	**3.88** (2.79-5.22)	**4.69** (3.24-6.45)	**5.36** (3.57-7.39)
6-hr	**1.21** (1.01-1.45)	**1.40** (1.17-1.68)	**1.78** (1.47-2.13)	**2.15** (1.77-2.59)	**2.76** (2.24-3.52)	**3.30** (2.59-4.23)	**3.90** (2.95-5.11)	**4.58** (3.32-6.13)	**5.57** (3.88-7.63)	**6.40** (4.30-8.77)
12-hr	**1.45** (1.21-1.72)	**1.69** (1.41-2.00)	**2.15** (1.79-2.56)	**2.60** (2.15-3.10)	**3.30** (2.69-4.17)	**3.92** (3.10-4.98)	**4.60** (3.50-5.97)	**5.36** (3.91-7.12)	**6.46** (4.52-8.78)	**7.38** (4.98-10.0)
24-hr	**1.71** (1.44-2.01)	**2.02** (1.70-2.38)	**2.58** (2.16-3.04)	**3.10** (2.58-3.67)	**3.90** (3.17-4.85)	**4.57** (3.62-5.73)	**5.31** (4.05-6.80)	**6.11** (4.47-8.02)	**7.26** (5.10-9.76)	**8.19** (5.57-11.1)
2-day	**2.00** (1.70-2.33)	**2.36** (2.00-2.75)	**2.99** (2.52-3.50)	**3.57** (2.99-4.19)	**4.43** (3.62-5.44)	**5.15** (4.09-6.38)	**5.91** (4.54-7.50)	**6.74** (4.96-8.76)	**7.91** (5.59-10.5)	**8.86** (6.07-11.9)
3-day	**2.18** (1.85-2.52)	**2.56** (2.17-2.97)	**3.23** (2.74-3.76)	**3.84** (3.23-4.49)	**4.74** (3.89-5.79)	**5.49** (4.38-6.77)	**6.29** (4.84-7.94)	**7.15** (5.27-9.25)	**8.36** (5.92-11.1)	**9.33** (6.41-12.5)
4-day	**2.32** (1.98-2.68)	**2.72** (2.31-3.14)	**3.42** (2.90-3.96)	**4.04** (3.41-4.71)	**4.97** (4.09-6.05)	**5.75** (4.60-7.07)	**6.57** (5.08-8.27)	**7.46** (5.52-9.62)	**8.71** (6.19-11.5)	**9.71** (6.70-13.0)
7-day	**2.71** (2.32-3.11)	**3.12** (2.67-3.59)	**3.86** (3.29-4.45)	**4.53** (3.83-5.24)	**5.52** (4.56-6.67)	**6.34** (5.10-7.75)	**7.23** (5.61-9.03)	**8.17** (6.08-10.5)	**9.51** (6.80-12.5)	**10.6** (7.34-14.0)
10-day	**3.06** (2.62-3.49)	**3.50** (3.01-4.01)	**4.29** (3.67-4.92)	**5.00** (4.25-5.76)	**6.05** (5.01-7.26)	**6.92** (5.58-8.40)	**7.84** (6.11-9.76)	**8.84** (6.60-11.3)	**10.2** (7.34-13.4)	**11.4** (7.91-15.0)
20-day	**4.05** (3.50-4.59)	**4.64** (4.00-5.27)	**5.64** (4.85-6.42)	**6.51** (5.56-7.44)	**7.75** (6.43-9.18)	**8.76** (7.09-10.5)	**9.80** (7.66-12.0)	**10.9** (8.17-13.7)	**12.4** (8.94-16.1)	**13.6** (9.52-17.8)
30-day	**4.87** (4.22-5.49)	**5.58** (4.84-6.31)	**6.77** (5.84-7.67)	**7.77** (6.67-8.84)	**9.17** (7.61-10.8)	**10.3** (8.33-12.2)	**11.4** (8.92-13.9)	**12.5** (9.41-15.7)	**14.1** (10.2-18.1)	**15.2** (10.7-19.9)
45-day	**5.89** (5.12-6.61)	**6.76** (5.87-7.59)	**8.16** (7.07-9.20)	**9.32** (8.03-10.5)	**10.9** (9.04-12.7)	**12.1** (9.81-14.3)	**13.3** (10.4-16.0)	**14.4** (10.9-17.9)	**16.0** (11.6-20.4)	**17.1** (12.1-22.3)
60-day	**6.74** (5.88-7.55)	**7.74** (6.74-8.67)	**9.32** (8.09-10.5)	**10.6** (9.15-11.9)	**12.3** (10.2-14.2)	**13.5** (11.0-15.9)	**14.7** (11.6-17.7)	**15.9** (12.0-19.7)	**17.4** (12.6-22.2)	**18.5** (13.1-24.0)

[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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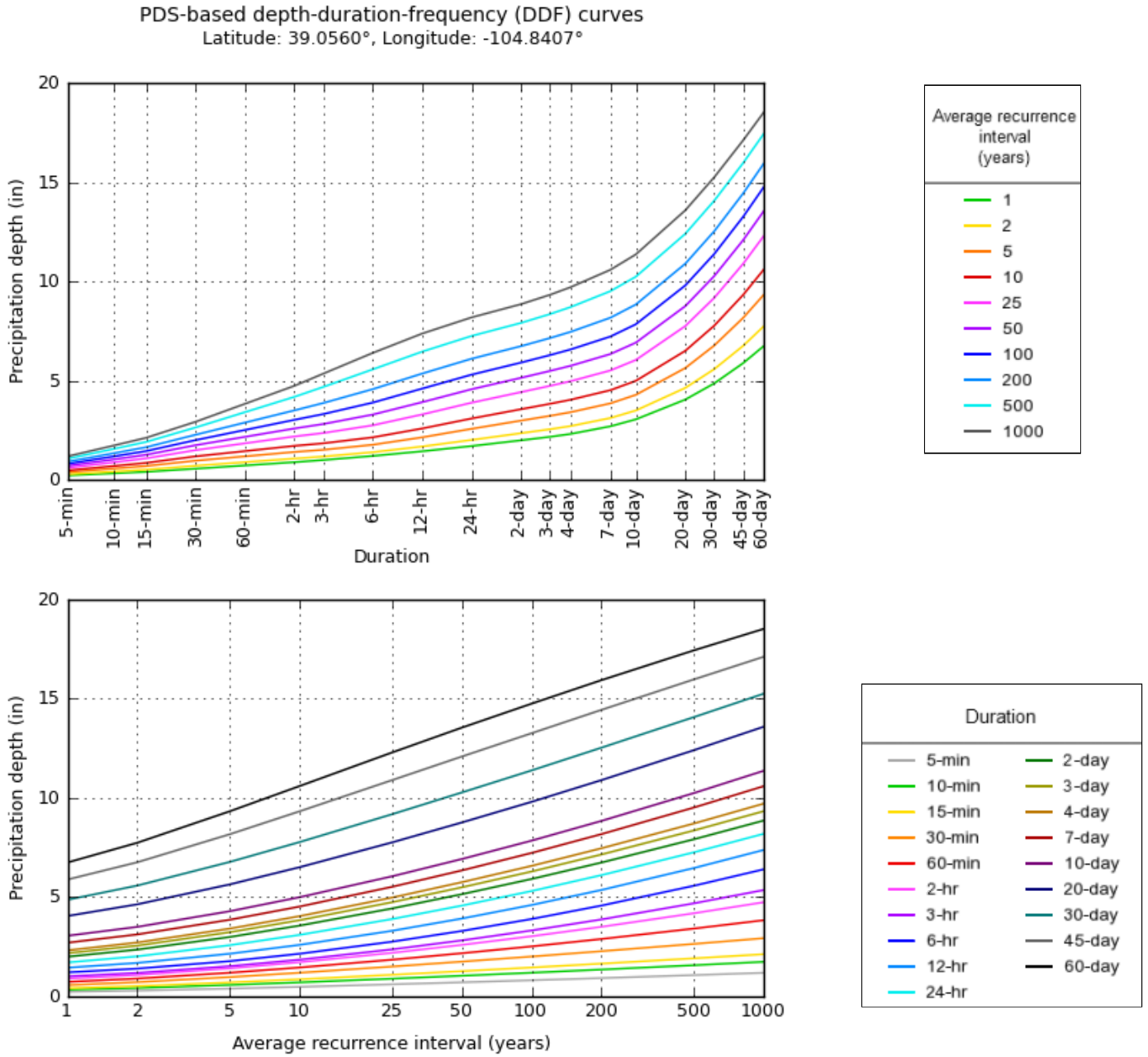
PF graphical



NOAA Atlas 14, Volume 8, Version 2

Created (GMT): Thu Feb 10 23:23:53 2022

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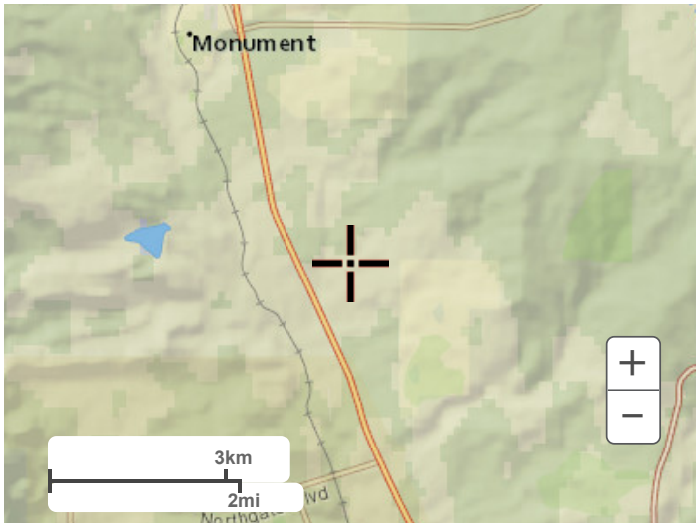
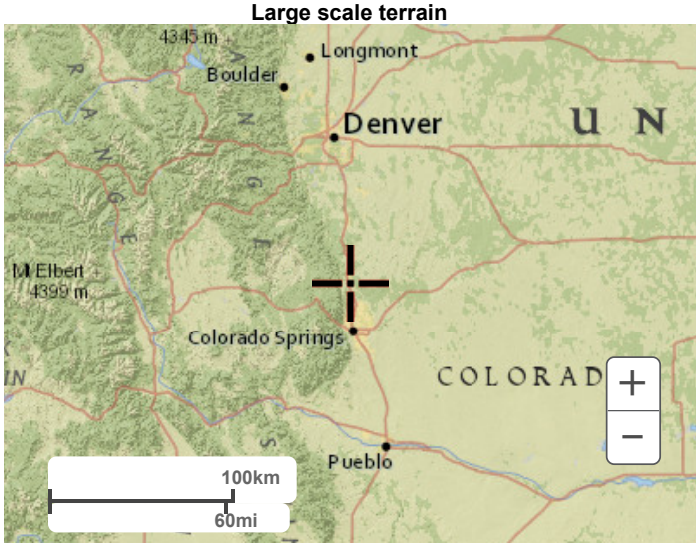
Maps & aerials

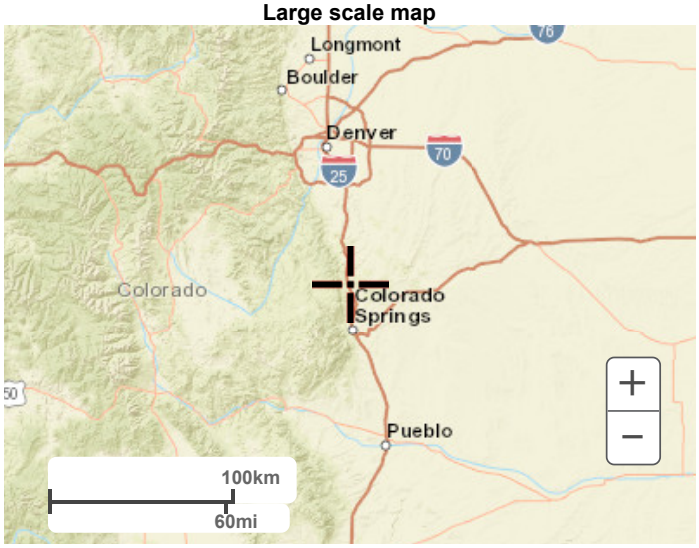
Small scale terrain



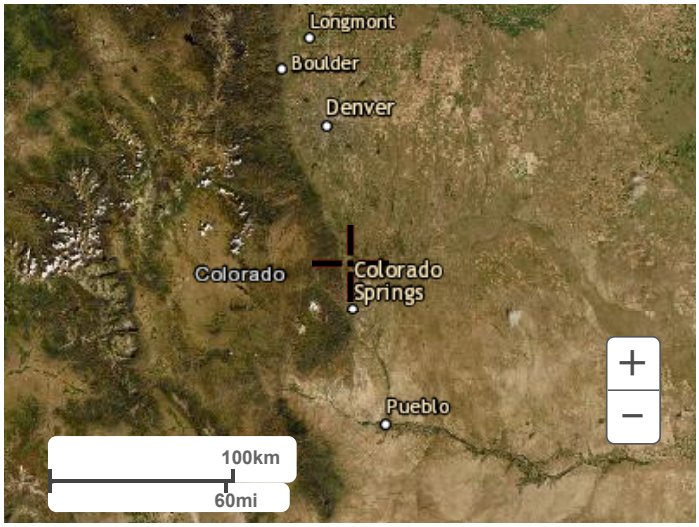
Large scale terrain



Large scale map



Large scale aerial



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National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

EXISTING CONDITIONS

Runoff Coefficients

Project: 705 West Baptist Road

Section:

Created by: OWS Date: 2/24/2022

Checked by: MSG Date: 2/24/2022

Sub-Basin Data			Composite C					Sub Area (Roof)						Sub Area (Drives/Walks/Paved)						Sub Area (Landscape)					
Basin ID	Description	Total Area (ac)	C_2	C_5	C_{10}	C_{100}	I (%)	C_2	C_5	C_{10}	C_{100}	I (%)	Area (ac)	C_2	C_5	C_{10}	C_{100}	I (%)	Area (ac)	C_2	C_5	C_{10}	C_{100}	I (%)	Area (ac)
On/Off-Site Detained																									
OS-A1	Offsite Church Site	1.10																							
H-1	Landscaping	0.59	0.02	0.08	0.15	0.35	0.0	0.71	0.73	0.75	0.81	90	0.00	0.89	0.90	0.92	0.96	100	0.00	0.02	0.08	0.15	0.35	0	0.59
H-2	Drives/Walks/Paving & Landscaping	0.18	0.82	0.84	0.86	0.91	92.1	0.71	0.73	0.75	0.81	90	0.00	0.89	0.90	0.92	0.96	100	0.17	0.02	0.08	0.15	0.35	0	0.01
H-3	Landscaping	0.19	0.02	0.08	0.15	0.35	0.0	0.71	0.73	0.75	0.81	90	0.00	0.89	0.90	0.92	0.96	100	0.00	0.02	0.08	0.15	0.35	0	0.19

EXISTING CONDITIONS

Time of Concentration

Project: 705 West Baptist Road

Section:

Created by: OWS Date: 2/24/2022

Checked by: MSG Date: 2/24/2022

Urban TOC_{min} = 5 min

Rural TOC_{min} = 10 min

	SUB-BASIN DATA			INITIAL/OVERLAND FLOW (t_o)			TRAVEL TIME (t_t)								Tc CHECK (Urbanized basins)				FINAL Tc (min)
									Type of Land Surface					TOTAL					
Basin ID On/Off-Site Detained	Description	C_5	Area (ac)	Length (ft)	Slope (ft/ft)	t_o (min)	Length (ft)	S_w (ft/ft)	Code	Description	Convey Coef (C_v)	Velocity (ft/s)	Time (min)	$t_c = t_i + t_t$ (min)	(Yes /No)	Length (ft)	$T_{c\,max}$ (min)	$Tc_{max} > t_c$	
H-1	*Landscaping*	0.08	0.59	-	-	-	-	-	-	-	-	-	-	-	BY INSPECTION				5.00
H-2	Drives/Walks/Paving & Landscaping	0.84	0.18	-	-	-	-	-	-	-	-	-	-	-	BY INSPECTION				5.00
H-3	*Landscaping*	0.08	0.19	-	-	-	-	-	-	-	-	-	-	-	BY INSPECTION				5.00
OS-A1	Offsite Church Site	-	1.10	-	-	-	-	-	-	-	-	-	-	-	-				-

Notes:

$t_i = (0.395*(1.1-C_5)*(L^0.5))/(S^0.33)$, from UDFCD Eqn RO-3

Velocity from $V = C_v*S_w^{0.5}$, from UDFCD Eqn RO-4, C_v from Table R0-2 (See Sheet Design Info)

$t_t = L/60V$

t_i max = 10+L/180, from UDFCD Eqn RO-5

Final Tc > 10 min for nonurban watersheds

UDFCD Table RO-2 Land Surface Coefficients	
Code	Description
1	Heavy meadow
2	Tillage/field
3	Short pasture and lawns
4	Nearly bare ground
5	Grassed waterway
6	Paved areas and shallow paved swales
7	Rail Ballast

EXISTING CONDITIONS - 5 YEAR MINOR STORM

Storm Drainage System Design (Rational Method Procedure)

Project: 705 West Baptist Road
Section:

Created by: OWS 2/24/2022
Checked by: MSG 2/24/2022

DEVELOPED CONDITIONS

Design Storm: 5-yr P = 1.19 in

LOCATION		DESIGN POINT	DIRECT RUNOFF							TOTAL RUNOFF				STREET		PIPE			TRAVEL TIME			REMARKS
			AREA DESIGN (name)	AREA (AC)	RUNOFF COEFF (5 Yr)	t_c (MIN)	C.A. (AC)	I IN / HR	Q (CFS)	t_c (MIN)	SUM (C*A) (AC)	I (IN / HR)	Q (CFS)	SLOPE (%)	STREET FLOW (CFS)	DESIGN FLOW (CFS)	SLOPE (%)	PIPE SIZE (in)	LENGTH (FT)	VELOCITY (FPS)	t_t (MIN)	
DP	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)		(21)	(22)
1	OS-A1	Offsite Church Site	DP-1	-	-	-	-	-	4.00													Exist. Type 13 Inlet
2	H-1	Landscaping	DP-2	0.59	0.08	5.00	0.05	4.04	0.19													Exist. Type 13 Inlet
3	H-2	*Drives/Walks/Paving & Landscaping*	DP-3	0.18	0.84	5.00	0.15	4.04	0.61													Exist. Type 13 Inlet
4	H-3	Landscaping	DP-4	0.19	0.08	5.00	0.01	4.04	0.06													Sheet flow to exist. pan

(1) Basin Description linked to C-Value Sheet
(2) Basin Design Point
(3) Enter the Basin Name from C Value Sheet
(4) Basin Area linked to C-Value Sheet
(5) Composite C linked to C-Value Sheet
(6) Time of Concentration linked to C-Value Sheet
(7) =Column 4 x Column 5
(8) =28.5*P/(10+Column 6)^0.786
(9) =Column 7 x Column 8
(10) =Column 6 x Column 21
(11) Add the Basin Areas (7) to get the combined basin AC
(12) =28.5*P/(10+Column 10)^0.786
(13) Sum of Qs
(14) Additonal Street Overland Flow
(15) Additonal Street Overland Flow
(16) Additonal Pipe Flow
(17) Additonal Pipe Flow
(18) Additonal Pipe Flow
(19) Additional Flow Length
(20) Overland Velocity
(21) =Column 16 / Column 20 / 60

EXISTING CONDITIONS - 100 YEAR MINOR STORM

Storm Drainage System Design (Rational Method Procedure)

Project: 705 West Baptist Road
Section:

Created by: OWS 2/24/2022
Checked by: MSG 2/24/2022

DEVELOPED CONDITIONS

Design Storm: 100-yr P = 2.52 in

LOCATION		DESIGN POINT	DIRECT RUNOFF							TOTAL RUNOFF				STREET		PIPE			TRAVEL TIME			REMARKS
			AREA DESIGN (name)	AREA (AC)	RUNOFF COEFF (100 Yr)	t_c (MIN)	C.A. (AC)	I IN / HR	Q (CFS)	t_c (MIN)	SUM (C*A) (AC)	I (IN / HR)	Q (CFS)	SLOPE (%)	STREET FLOW (CFS)	DESIGN FLOW (CFS)	SLOPE (%)	PIPE SIZE (in)	LENGTH (FT)	VELOCITY (FPS)	t_t (MIN)	
DP	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)		(21)	(22)
1	OS-A1	Offsite Church Site	DP-1	-	-	-	-	-	7.00													Exist. Type 13 Inlet
2	H-1	Landscaping	DP-2	0.59	0.35	5.00	0.20	8.55	1.75													Exist. Type 13 Inlet
3	H-2	*Drives/Walks/Paving & Landscaping*	DP-3	0.18	0.91	5.00	0.16	8.55	1.40													Exist. Type 13 Inlet
4	H-3	Landscaping	DP-4	0.19	0.35	5.00	0.07	8.55	0.56													Sheet flow to exist. pan

(1) Basin Description linked to C-Value Sheet
(2) Basin Design Point
(3) Enter the Basin Name from C Value Sheet
(4) Basin Area linked to C-Value Sheet
(5) Composite C linked to C-Value Sheet
(6) Time of Concentration linked to C-Value Sheet
(7) =Column 4 x Column 5
(8) =28.5*P/(10+Column 6)^0.786
(9) =Column 7 x Column 8
(10) =Column 6 x Column 21
(11) Add the Basin Areas (7) to get the combined basin AC
(12) =28.5*P/(10+Column 10)^0.786
(13) Sum of Qs
(14) Additonal Street Overland Flow
(15) Additonal Street Overland Flow
(16) Additonal Pipe Flow
(17) Additonal Pipe Flow
(18) Additonal Pipe Flow
(19) Additional Flow Length
(20) Overland Velocity
(21) =Column 16 / Column 20 / 60

DEVELOPED CONDITIONS

Runoff Coefficients

Project: 705 West Baptist Road

Section:

Created by: OWS Date: 2/24/2022

Checked by: MSG Date: 2/24/2022

Sub-Basin Data			Composite C					Sub Area (Roof)						Sub Area (Drives/Walks/Paved)						Sub Area (Landscape)					
Basin ID	Description	Total Area (ac)	C_2	C_5	C_{10}	C_{100}	I (%)	C_2	C_5	C_{10}	C_{100}	I (%)	Area (ac)	C_2	C_5	C_{10}	C_{100}	I (%)	Area (ac)	C_2	C_5	C_{10}	C_{100}	I (%)	Area (ac)
On/Off-Site Detained																									
A	Roof, Drives/Walks/Paving, & Landscaping	0.41	0.75	0.77	0.79	0.85	86.4	0.71	0.73	0.75	0.81	90	0.10	0.89	0.90	0.92	0.96	100	0.26	0.02	0.08	0.15	0.35	0	0.04
H-2	Drives/Walks/Paving & Landscaping	0.18	0.82	0.84	0.86	0.91	92.1	0.71	0.73	0.75	0.81	90	0.00	0.89	0.90	0.92	0.96	100	0.17	0.02	0.08	0.15	0.35	0	0.01
B	Drives/Walks/Paving & Landscaping	0.21	0.60	0.63	0.66	0.76	66.5	0.71	0.73	0.75	0.81	90	0.00	0.89	0.90	0.92	0.96	100	0.14	0.02	0.08	0.15	0.35	0	0.07
C	Drives/Walks/Paving	0.02	0.89	0.90	0.92	0.96	100.0	0.71	0.73	0.75	0.81	90	0.00	0.89	0.90	0.92	0.96	100	0.02	0.02	0.08	0.15	0.35	0	0.00
D	Landscaping	0.20	0.02	0.08	0.15	0.35	0.0	0.71	0.73	0.75	0.81	90	0.00	0.89	0.90	0.92	0.96	100	0.00	0.02	0.08	0.15	0.35	0	0.20
OS-A1	Offsite Church Site	1.10																							

DEVELOPED CONDITIONS

Time of Concentration

Project: 705 West Baptist Road

Section:

Created by: OWS Date: 2/24/2022

Checked by: MSG Date: 2/24/2022

Urban TOC $_{min}$ = 5 min

Rural TOC $_{min}$ = 10 min

	SUB-BASIN DATA			INITIAL/OVERLAND FLOW (t_o)			TRAVEL TIME (t_t)								Tc CHECK (Urbanized basins)				FINAL Tc (min)
									Type of Land Surface					TOTAL					
Basin ID On/Off-Site Detained	Description	C_5	Area (ac)	Length (ft)	Slope (ft/ft)	t_o (min)	Length (ft)	S_w (ft/ft)	Code	Description	Convey Coef (C_v)	Velocity (ft/s)	Time (min)	$t_c = t_i + t_t$ (min)	(Yes /No)	Length (ft)	$T_{c\,max}$ (min)	$Tc_{max} > t_c$	
A	*Roof, Drives/Walks/Paving, & Landscaping*	0.77	0.41	-	-	-	-	-	-	-	-	-	-	-	BY INSPECTION				5.00
H-2	Drives/Walks/Paving & Landscaping	0.84	0.18	-	-	-	-	-	-	-	-	-	-	-	BY INSPECTION				5.00
B	*Drives/Walks/Paving & Landscaping*	0.63	0.21	-	-	-	-	-	-	-	-	-	-	-	BY INSPECTION				5.00
C	Drives/Walks/Paving	0.90	0.02	-	-	-	-	-	-	-	-	-	-	-	BY INSPECTION				5.00
D	Landscaping	0.08	0.20	-	-	-	-	-	-	-	-	-	-	-	BY INSPECTION				5.00
OS-A1	Offsite Church Site	-	1.10	-	-	-	-	-	-	-	-	-	-	-	-				-

Notes:

t_i= (0.395*(1.1-C_5)*(L^0.5))/(S^0.33), from UDFCD Eqn RO-3

Velocity from V = C_v*S_w^0.5, from UDFCD Eqn RO-4, C_v from Table R0-2 (See Sheet Design Info)

t_t=L/60V

t_i max = 10+L/180, from UDFCD Eqn RO-5

Final Tc > 10 min for nonurban watersheds

UDFCD Table RO-2 Land Surface Coefficients	
Code	Description
1	Heavy meadow
2	Tillage/field
3	Short pasture and lawns
4	Nearly bare ground
5	Grassed waterway
6	Paved areas and shallow paved swales
7	Rail Ballast

DEVELOPED CONDITIONS - 5 YEAR MINOR STORM

Storm Drainage System Design (Rational Method Procedure)

Project: 705 West Baptist Road
Section:

Created by: OWS 2/24/2022
Checked by: MSG 2/24/2022

DEVELOPED CONDITIONS

Design Storm: 5-yr P = 1.19 in

LOCATION		DESIGN POINT	DIRECT RUNOFF							TOTAL RUNOFF				STREET		PIPE			TRAVEL TIME			REMARKS
			AREA DESIGN (name)	AREA (AC)	RUNOFF COEFF (5 Yr)	t_c (MIN)	C.A. (AC)	I IN / HR	Q (CFS)	t_c (MIN)	SUM (C*A) (AC)	I (IN / HR)	Q (CFS)	SLOPE (%)	STREET FLOW (CFS)	DESIGN FLOW (CFS)	SLOPE (%)	PIPE SIZE (in)	LENGTH (FT)	VELOCITY (FPS)	t_t (MIN)	
DP	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)		(21)	(22)
1	A	Roof, Drives/Walks/Paving, & Landscaping	DP-1	0.41	0.77	5.00	0.31	4.04	1.26													Exist. Type 13 Inlet
2	H-2	*Drives/Walks/Paving & Landscaping*	DP-2	0.18	0.84	5.00	0.15	4.04	0.61													Exist. Type 13 Inlet
3	B	Drives/Walks/Paving & Landscaping	DP-3	0.21	0.63	5.00	0.13	4.04	0.54													Sheet flow to exist. pan
4	C	*Drives/Walks/Paving*	DP-4	0.02	0.90	5.00	0.02	4.04	0.07													Exist. 10' Type R inlet
5	OS-A1	Offsite Church Site	DP-5	-	-	-	-	-	4.00													Prop. Type C Inlet
6	D	Landscaping	DP-6	0.20	0.08	5.00	0.02	4.04	0.06													Prop. Type C Inlet

(1) Basin Description linked to C-Value Sheet
(2) Basin Design Point
(3) Enter the Basin Name from C Value Sheet
(4) Basin Area linked to C-Value Sheet
(5) Composite C linked to C-Value Sheet
(6) Time of Concentration linked to C-Value Sheet
(7) =Column 4 x Column 5
(8) =28.5*P/(10+Column 6)^0.786
(9) =Column 7 x Column 8
(10) =Column 6 x Column 21
(11) Add the Basin Areas (7) to get the combined basin AC
(12) =28.5*P/(10+Column 10)^0.786
(13) Sum of Qs
(14) Additonal Street Overland Flow
(15) Additonal Street Overland Flow
(16) Additonal Pipe Flow
(17) Additonal Pipe Flow
(18) Additonal Pipe Flow
(19) Additional Flow Length
(20) Overland Velocity
(21) =Column 16 / Column 20 / 60

DEVELOPED CONDITIONS - 100 YEAR MINOR STORM

Storm Drainage System Design (Rational Method Procedure)

Project: 705 West Baptist Road
Section:

Created by: OWS 2/24/2022
Checked by: MSG 2/24/2022

DEVELOPED CONDITIONS

Design Storm: 100-yr P = 2.52 in

LOCATION		DESIGN POINT	DIRECT RUNOFF							TOTAL RUNOFF				STREET		PIPE			TRAVEL TIME			REMARKS
			AREA DESIGN (name)	AREA (AC)	RUNOFF COEFF (100 Yr)	t_c (MIN)	C.A. (AC)	I IN / HR	Q (CFS)	t_c (MIN)	SUM (C*A) (AC)	I (IN / HR)	Q (CFS)	SLOPE (%)	STREET FLOW (CFS)	DESIGN FLOW (CFS)	SLOPE (%)	PIPE SIZE (in)	LENGTH (FT)	VELOCITY (FPS)	t_t (MIN)	
DP	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)		(21)	(22)
1	A	Roof, Drives/Walks/Paving, & Landscaping	DP-1	0.41	0.85	5.00	0.35	8.55	2.97													Exist. Type 13 Inlet
2	H-2	*Drives/Walks/Paving & Landscaping*	DP-2	0.18	0.91	5.00	0.16	8.55	1.40													Exist. Type 13 Inlet
3	B	Drives/Walks/Paving & Landscaping	DP-3	0.21	0.76	5.00	0.16	8.55	1.37													Sheet flow to exist. pan
4	C	*Drives/Walks/Paving*	DP-4	0.02	0.96	5.00	0.02	8.55	0.17													Exist. 10' Type R inlet
5	OS-A1	Offsite Church Site	DP-5	-	-	-	-	-	7.00													Prop. Type C Inlet
6	D	Landscaping	DP-6	0.20	0.35	5.00	0.07	8.55	0.59													Prop. Type C Inlet

(1) Basin Description linked to C-Value Sheet
(2) Basin Design Point
(3) Enter the Basin Name from C Value Sheet
(4) Basin Area linked to C-Value Sheet
(5) Composite C linked to C-Value Sheet
(6) Time of Concentration linked to C-Value Sheet
(7) =Column 4 x Column 5
(8) =28.5*P/(10+Column 6)^0.786
(9) =Column 7 x Column 8
(10) =Column 6 x Column 21
(11) Add the Basin Areas (7) to get the combined basin AC
(12) =28.5*P/(10+Column 10)^0.786
(13) Sum of Qs
(14) Additonal Street Overland Flow
(15) Additonal Street Overland Flow
(16) Additonal Pipe Flow
(17) Additonal Pipe Flow
(18) Additonal Pipe Flow
(19) Additional Flow Length
(20) Overland Velocity
(21) =Column 16 / Column 20 / 60

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APPENDIX C – Hydraulics

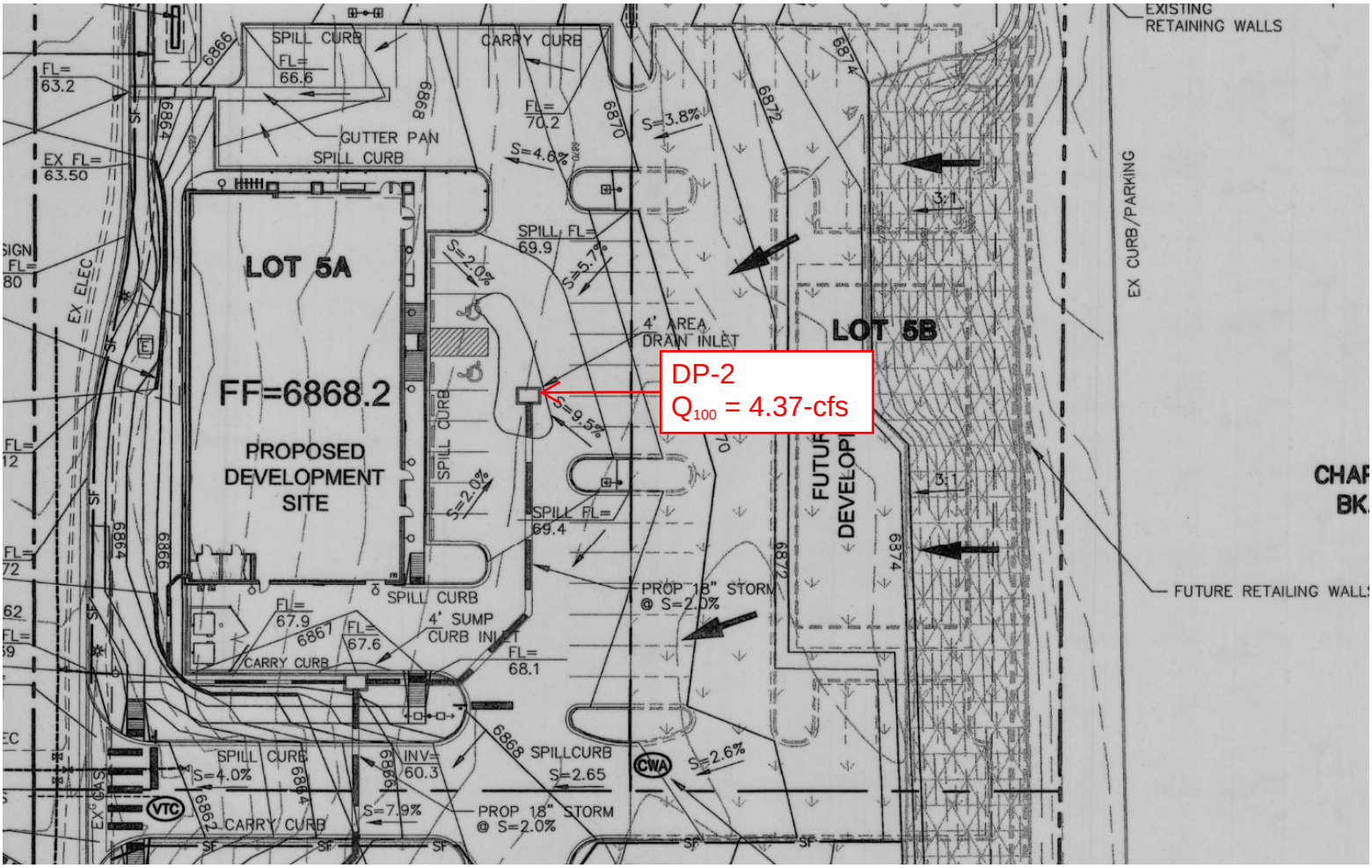
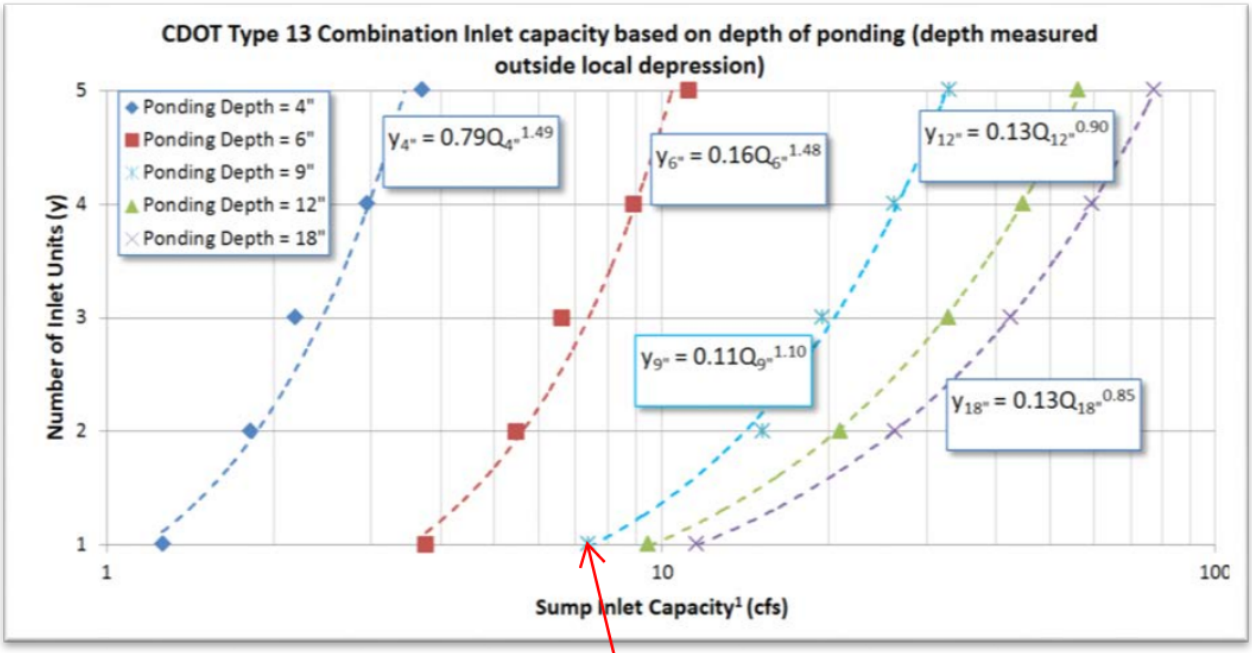


Figure 3.4.2-2. CDOT Type 13 Combination inlet interception capacity in a sump



Existing Type 13 inlet capacity: 6.25-cfs

Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Friday, Feb 25 2022

DP2 - Downstream Pipe

Circular

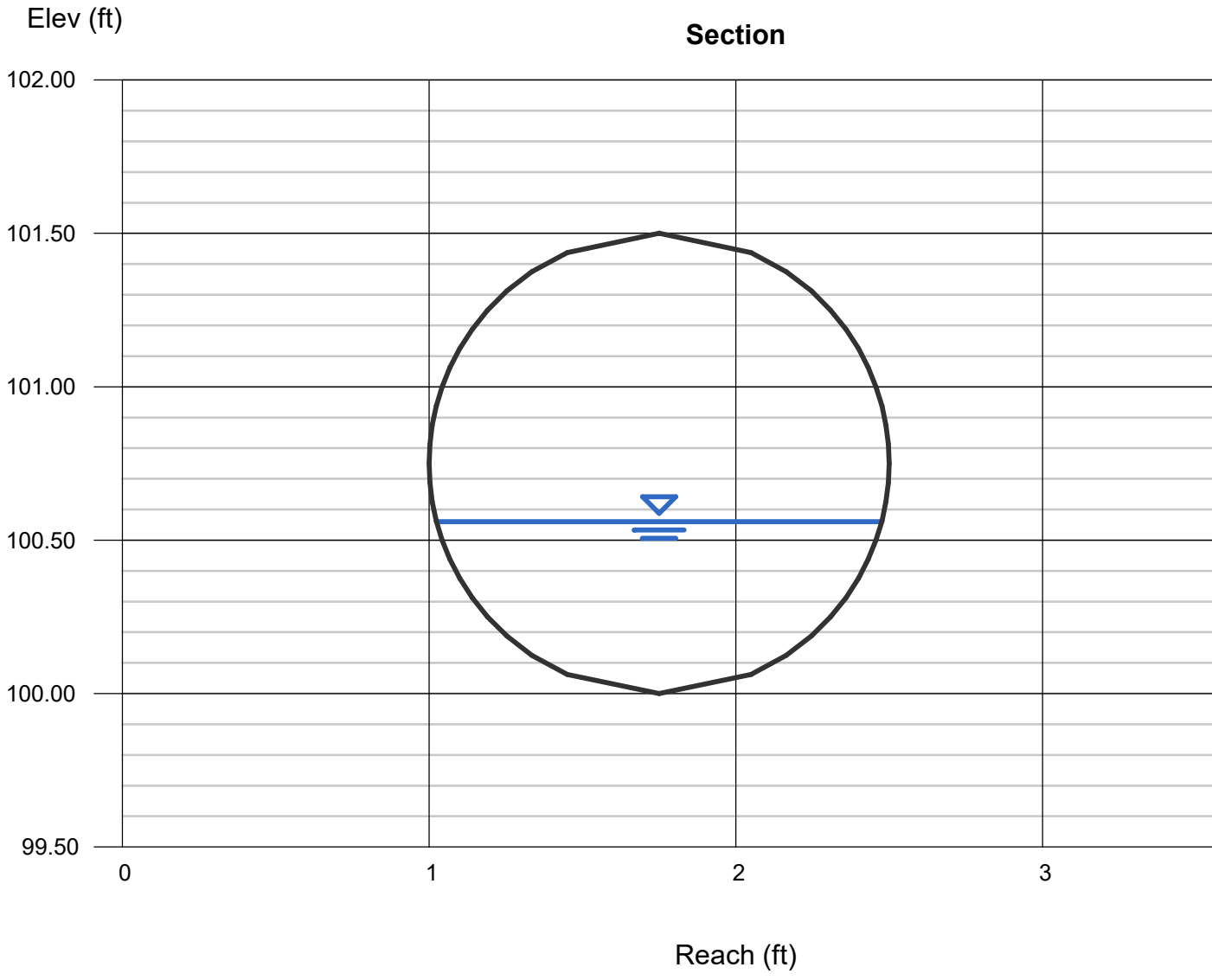
Diameter (ft)	= 1.50
Invert Elev (ft)	= 100.00
Slope (%)	= 2.00
N-Value	= 0.013

Calculations

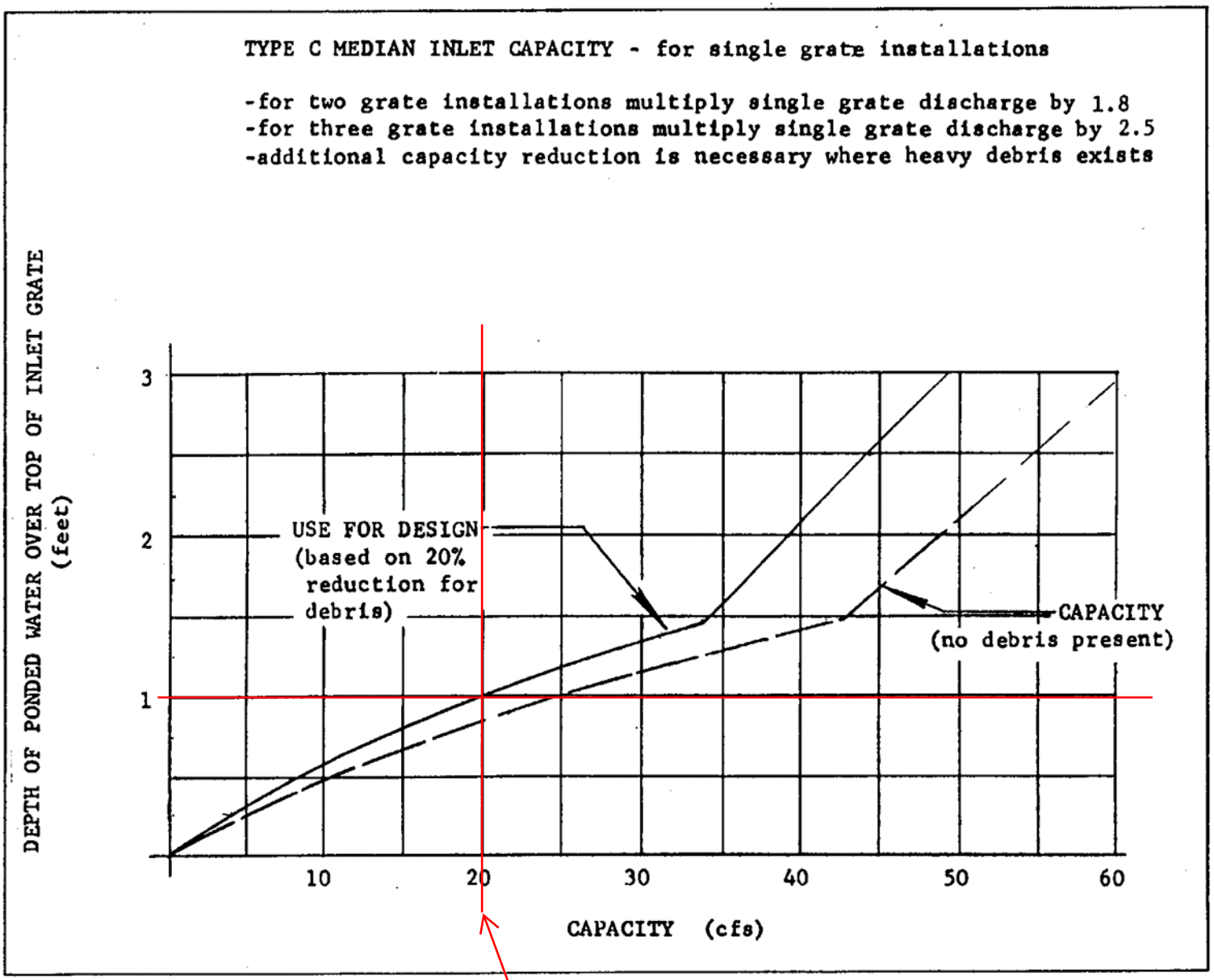
Compute by:	Known Q
Known Q (cfs)	= 4.37

Highlighted

Depth (ft)	= 0.56
Q (cfs)	= 4.370
Area (sqft)	= 0.60
Velocity (ft/s)	= 7.26
Wetted Perim (ft)	= 1.97
Crit Depth, Yc (ft)	= 0.81
Top Width (ft)	= 1.45
EGL (ft)	= 1.38



DP6 - Type C Inlet
Q_{100} = 7.59-cfs



Capacity:
Q_{100} = 20-cfs

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ENGINEERING
SOLUTIONS, INC.

501 S Cherry St
Suite 300
Glendale, CO 80246
www.ees.us.com
303-572-7997

APPENDIX D – Reference Materials

PRELIMINARY/FINAL DRAINAGE REPORT
FOR
MONUMENT RIDGE

March 14, 2006
Revised July 28, 2006

Prepared for:

ESI
15 North Nevada Avenue
Colorado Springs, CO 80903
(719) 471-1742

Prepared by:

WestWorks Engineering

WestWorks Job #90537

1023 W. COLORADO AVENUE COLORADO SPRINGS, CO 80904 • PHONE: (719) 685-1670 • FAX: (719) 685-1429

PRELIMINARY/FINAL DRAINAGE REPORT FOR MONUMENT RIDGE

Engineer's Statement:
The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according the criteria established by the City/County for drainage reports and said report is in conformity with the master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors, or omissions on my part in preparing this report.

_____ _____
Chad D. Kuzbek, Colorado PE #35751 Date
For and on behalf of WestWorks Engineering

Developer's Statement:
I, the developer have read and will comply with all of the requirements specified in this drainage report and plan.

CAA 2006 LLC
Business Name

By: _____

Title: PARTNER

Address: 25 N. CASCADE, #201
COLORADO SPRINGS CO. 80903

Triview Metropolitan District for Town of Monument Only:
Filed in accordance with Sections 12.13.010 of the Subdivision Ordinance for the Town of Monument, revised 1997 and 13.11.160 of the Zoning Ordinance for the Town of Monument, revised 1997.

_____ _____
For the Triview Metropolitan District Engineer Date

Conditions:

PRELIMINARY/FINAL DRAINAGE REPORT FOR MONUMENT RIDGE

PURPOSE

The purpose of this drainage report is to identify specific solutions to problems on site and off-site resulting from the development of the subdivision to be platted.

This report is intended as a Final Drainage Report for the main storm drain infrastructure for the site. That is, this report seeks to size several inlets to be located in the main internal access roads, storm drain to be stubbed to each commercial pad, and the proposed water quality detention pond for the entire site. This report is considered a Preliminary Drainage Report for each of the individual commercial pad sites and the future residential development. With development of any commercial pad site or the residential site, an additional Final Drainage Report will be required to size and locate individual storm drain inlets, extend the storm drain stubbed to each area, and confirm compliance with the overall drainage patterns established in this report.

GENERAL LOCATION AND DESCRIPTION

The Monument Ridge site consists of 26.6 acres within the northeast quarter of Section 36, Township 11 South, Range 67 West of the Sixth P.M. in the Town of Monument, El Paso County, Colorado. This site is bounded by Baptist Road to the north, Struthers Road to the west, and rural residential lots of the Chaparral Hills subdivision to the east and south. Proposed development of the site consists of several commercial sites and a potential single family residential site. The site ultimately drains into the main channel of Jackson Creek on the west side of Struthers Road.

The site is currently undeveloped and covered with native grasses and patches of gamble oak. The terrain is rolling and generally drains from northeast to southwest. Existing soils on the site consist mostly of Peyton-Pring complex (Map Symbol 68). The average existing soil condition on the site reflects the characteristics of Hydrologic Soil Group 'B' as designated in the "Soil Survey of El Paso County Area," prepared by the USDA NRCS.

DRAINAGE BASINS AND SUB-BASINS

Existing Drainage Conditions:

The existing drainage conditions include a relatively minor amount of off-site runoff from the east. There are 2 existing outfall locations. These locations are designated by Design Point EX-A (DP-EX-A) and DP-EX-C.

At the time this report was written, Baptist Road improvements were under construction. These improvements include widening and the installation of curb & gutter. Therefore, no off-site flow from Baptist Road is anticipated to impact this site.

DP-EX-A includes combined runoff from Basins OS-EX-A (off-site basin) and EX-A. The combined flow at DP-EX-A is Q_{10} = 14 cfs and Q_{100} = 37 cfs. This flow will travel south in the existing ditch along Struthers Road.

DP-EX-C includes combined runoff from Basins OS-EX-C (off-site basin) and EX-C. DP-OS-C1 is the existing parking lot "pond" on the existing church site. This existing pond consists of a 15" high concrete wall with eight (8) 7/8" diameter holes in it. While the holes in the wall may provide some water quality function, the model for this pond shows that the 15" wall will overtop, thus this pond is not anticipated to provide much peak flow attenuation. The combined flow at DP-EX-C is Q_{10} = 19 cfs and Q_{100} = 51 cfs. This flow will travel to a low point adjacent to Struthers Road. This low point is planned to be improved with a 36" culvert (by others).

Developed Drainage Conditions:

The majority of the site will be developed into several commercial pad sites. A portion of the site (Basin OS-A3) is planned for future single family residential development. The majority of developed drainage on the site will be routed to either proposed water quality Pond C or water quality and detention Pond A. Pond C is only to provide water quality capture volume for the tributary developed area. Pond A is intended to provide water quality capture volume (WQCV) for most of the site and detain developed flows and release them at or below historic flow rates.

The proposed storm drain system draining into Pond A is broken into 2 main branches. The first branch runs under the main access road through the middle of the site (SD-100 to SD-108 and SD-110 to SD-111). The second branch is at the proposed site access adjacent to Pond A (SD-115, SD-117, and SD-118).

The proposed storm drain system draining to Pond C includes SD-109, SD-112, SD-113, and SD-116.

Storm Drain System Under Main Access Road Through Site (all to Pond A):

Off-site Basin OS-A1 is an existing church site. DP-OS-A1 is an existing parking lot "pond" on the existing church site. This existing pond consists of a 15" high concrete wall with eight (8) 7/8" diameter holes in it. While the holes in the wall may provide some water quality function, the model for this pond shows that the 15" wall will overtop, thus this pond is not anticipated to provide much peak flow attenuation. A proposed 18" RCP is stubbed just east of the access road (storm drain design point SD-100). This pipe should be extended to the eastern boundary on the site with future pad site development (Basin A1). A retaining wall is anticipated along the eastern boundary with future pad site development. A swale should be graded above this retaining wall and a grated inlet be placed in the low point to pick up off-site drainage from

Basin OS-A1. The exact alignment, size, and swale configuration should be confirmed with the final drainage report and construction of the pad site in Basin A1.

A proposed 18" RCP (SD-101) is stubbed into Basin A1 for future inlet(s). The proposed 18" RCP at SD-100 may also be used to collect french drains or area drains below the retaining wall located along the eastern boundary of Basin A1.

Basin A2 will drain Q_{10} = 5 cfs and Q_{100} = 9 cfs to DP-A2. DP-A2 is a proposed 12' sump inlet. A proposed 24" RCP (SD-102) will carry combined flows of Q_{10} = 14 cfs and Q_{100} = 26 cfs west toward SD-103.

A proposed 24" RCP (SD-104) is stubbed into Basin A3 for future inlet(s). SD-103 is a proposed 24" RCP that will carry the combined flow of Q_{10} = 19 cfs and Q_{100} = 37 cfs from SD-102 & SD-104.

A proposed 24" RCP (SD-105) is stubbed into Basin A4 for future inlet(s). SD-107 is a proposed 30" RCP that will carry the combined flow of Q_{10} = 28 cfs and Q_{100} = 54 cfs from SD-103 & SD-105.

Basin A6 includes a portion of the main access drive that drains flows of Q_{10} = 2 cfs and Q_{100} = 4 cfs to DP-A6. DP-A6 is a proposed 6' sump inlet. A proposed 18" RCP (SD-106) will carry flows from DP-A6 to the inlet at DP-A5.

Basin A5 includes a portion of the main access drive that drains flows of Q_{10} = 3 cfs and Q_{100} = 6 cfs to DP-A5. DP-A5 is a proposed 8' sump inlet. A proposed 30" RCP (SD-108) will carry combined flows from SD-106 and SD-107 south toward SD-110.

A proposed 30" RCP (SD-111) is stubbed into Basin OS-A3 for future inlet(s). Basin OS-A3 includes approximately 6.7 acres for future townhome residential development. The anticipated flows at DP-OS-A3 also include runoff from off-site basin OS-A2. Basin OS-A2 includes a portion of the rural residential Chaparral Hills subdivision. SD-111 will drain flows of Q_{10} = 15 cfs and Q_{100} = 36 cfs west toward SD-110. If future development of Basin OS-A3 increases runoff beyond what is anticipated in this report, then additional detention may be required.

SD-110 is a proposed 36" RCP that will carry the combined flow of Q_{10} = 46 cfs and Q_{100} = 91 cfs from SD-108 & SD-111 to proposed Pond A. The outlet of the proposed 36" RCP (SD-110) storm drain into Pond A shall be protected by a proposed 10'x20' riprap pad (D_{50} = 24" diameter, 4' thick).

Storm Drain System Along Southwest Portion of Site (to Pond A):

A proposed 24" RCP (SD-115) is stubbed into Basin A11 for future inlet(s). Basin A12 includes a portion of the main access drive that drains flows of Q_{10} = 2 cfs and Q_{100} = 4 cfs to DP-A12. DP-A12 is a proposed 4' sump inlet. A proposed 24" RCP (SD-117) will carry combined flows of Q_{10} = 12 cfs and Q_{100} = 20 cfs from DP-A12 and SD-115 toward SD-118.

Basin A8 includes a portion of the main access drive and a portion of future residential rear lots that drains flows of Q_{10} = 7 cfs and Q_{100} = 12 cfs to DP-A8. DP-A8 is a proposed 10' sump inlet. A proposed 30" RCP (SD-118) will carry combined flows of Q_{10} = 18 cfs and Q_{100} = 31 cfs from DP-A8 and SD-117 into Pond A. The outlet of the proposed 30" RCP (SD-118) storm drain into Pond A shall be protected by a proposed 10'x20' riprap pad (D_{50} = 24" diameter, 4' thick).

Other Basins to Pond A:

Basin A13 includes the area of Pond A itself. Basin A13 generates runoff of Q_{10} = 2 cfs and Q_{100} = 3 cfs.

Basin A14 includes a small area of commercial ground adjacent to Pond A. Basin A14 generates runoff of Q_{10} = 2 cfs and Q_{100} = 3 cfs. Future development of Basin A14 will require the construction of a suitable outfall into Pond A (e.g., inlet, pipe, and riprap).

POND A:

Pond A is sized to provide water quality capture volume (WQCV) for commercial development in Basins A1 through A14 and Basin OS-A1 and residential development in Basins OS-A2 and OS-A3. The required WQCV for this entire tributary area is 0.9 AC-FT where approximately 1.5 AC-FT is provided. The outfall structure will consist of a proposed 4' diameter manhole with a series of small holes drilled into the side and a 2' diameter grate on top. A proposed 24" RCP will carry the pond discharge from the outfall structure to just upstream of the inlet side of a proposed 60" RCP culvert running west under the improved Struthers Road (by others). The outlet of the proposed 24" RCP storm drain from Pond A shall be protected by a proposed 6'x10' riprap pad (D_{50} = 12" diameter, 2' thick). The fully developed combined flow into the Pond A is Q_{10} = 65 cfs and Q_{100} = 127 cfs. The outflow of Q_{10} = 13 cfs and Q_{100} = 30 cfs results in a 100-year ponding volume of 3.3 AC-FT. Pond A shall be privately owned and maintained. Recommended maintenance for water quality ponds is included in the Appendix of this report.

Basin A15 includes the outer portion of the Pond A berm. Runoff of Q_{10} = 0.5 cfs and Q_{100} = 1 cfs will sheet flow south in the ditch along Struthers Road. This runoff will end up at the 60" RCP culvert running west under Struthers Road (by others).

The total combined discharge from Pond A along with undetained flows from Basin A15 is represented by DP-A. Total flows at DP-A of Q_{10} = 10 cfs and Q_{100} = 27 cfs are less than the historic flows of Q_{10} = 15 cfs and Q_{100} = 42 cfs at DP-EX-A. Therefore development of this subdivision will not adversely affect downstream properties.

Basins Draining to Pond C

SD-112 is a proposed 18" RCP stubbed to pick up drainage from Basin C1 and carry it south to Pond C. The discharge point from SD-112 into Pond C shall be protected by a 6'x10' riprap pad (D_{50} = 12" diameter, 2' thick). Also draining to Pond C is Basin C2.

Pond C is a proposed water quality pond located at DP-C2. Pond C is intended to provide WQCV for commercial development in Basins C1 and C2. The required WQCV for this entire tributary area is 0.11 AC-FT where approximately 0.11 AC-FT is provided. The outfall structure will consist of a proposed CDOT Standard D-9 inlet box with a series of small holes drilled into the side and a 3' x 3' grate on top. It should be noted that Pond C is not intended to provide detention volume for peak flow attenuation, but is only for WQCV. The fully developed combined flow into Pond C is Q_{10} = 10 cfs and Q_{100} = 18 cfs. The outflow of Q_{10} = 7 cfs and Q_{100} = 15 cfs results in a 100-year ponding volume of 0.3 AC-FT. Pond C shall be privately owned and maintained. Recommended maintenance for water quality ponds is included in the Appendix of this report. A proposed 24" RCP (SD-113) will carry the pond discharge from the outfall structure south to DP-C3.

DP-C3 is a proposed 4' at-grade inlet. Basin C3 is the north half of the proposed entrance road to Struthers and generates flows of Q_{10} = 1 cfs and Q_{100} = 2 cfs. The at-grade inlet at DP-C3 will collect approximately half of this flow with the other half discharging into Struthers Road. SD-116 is a proposed 24" RCP draining the combined flows of Q_{10} = 7 cfs and Q_{100} = 15 cfs from SD-113 and DP-C3. SD-116 will travel south to DP-C4.

DP-C4 is a proposed 4' at-grade inlet. Basin C4 is the south half of the proposed entrance road to Struthers and generates flows of Q_{10} = 1 cfs and Q_{100} = 2 cfs. The at-grade inlet at DP-C4 will collect approximately half of this flow with the other half discharging into Struthers Road. SD-109 is a proposed 24" RCP draining the combined flows of Q_{10} = 7 cfs and Q_{100} = 17 cfs from SD-116 and DP-C4. SD-109 will discharge at the inlet side of a proposed 36" RCP culvert running west under the improved Struthers Road (by others). The outlet of the SD-109 shall be protected by a proposed 6'x10' riprap pad (D_{50} = 12" diameter, 2' thick).

The total developed flow from Basins C1 through C4 (including Pond C and the at-grade inlets at DP-C3 and DP-C4) to the proposed 36" RCP culvert running west under Struthers Road (by others) is represented by DP-C. Flows at DP-C of Q_{10} = 7 cfs and Q_{100} = 17 cfs are less than the historic flows at DP-EX-C of Q_{10} = 19 cfs and Q_{100} = 51 cfs. Therefore development of this subdivision will not adversely affect downstream properties.

Basins Not Draining to Pond A or Pond C

There are 2 basins with a 'B' designation in their name that do not drain to Pond A or Pond C. Basin B2 includes a portion of landscape area adjacent to Struthers Road. Basin B2 will drain Q_{10} = 0.6 cfs and Q_{100} = 1 cfs into Struthers Road. Also draining to Struthers Road is the flow-by from the at-grade inlets at DP-C3 and DP-C4. Total discharge to Struthers Road is represented by DP-B2. The total combined runoff at DP-B2 of Q_{10} = 2 cfs and Q_{100} = 3 cfs will travel south in Struthers Road to a proposed 20' Type R sump inlet to be constructed by others

with Struthers Road improvements. This minor flow is not anticipated to adversely impact the drainage in Struthers Road.

Basin B3 includes a small landscape area that drains north into Baptist Road. The minor runoff of Q_{10} = 0.2 cfs and Q_{100} = 0.5 cfs will not adversely impact the drainage in Baptist Road.

DRAINAGE DESIGN CRITERIA

This drainage report was prepared in accordance to the criteria established in the City of Colorado Springs and El Paso County Drainage Criteria Manual, as well as the "Design Criteria and Construction Specifications Manual for Residential Development," for the Triview Metropolitan District. This report has taken into the account the results and recommendations of the following previous drainage studies:

"Drainage Master Plan for Jackson Creek, Teachout Creek, and No Name Creek Final Report," prepared by Ayres Associates, dated October 2002.

WestWorks Engineering uses the SCS Hydrograph Procedure (TR20) for analysis of total drainage study areas over 100 acres. This methodology is implemented in accordance with the City/County Drainage Criteria Manual Guidelines.

For the SCS Hydrograph Procedure, WestWorks Engineering uses the aid of HydroCAD version 7.00 for runoff calculations, routing quantities, and detention. Runoff quantities are analyzed for storms with recurrence intervals of 10 years and 100 years. The 2-hour storm distributions are based on the distribution as shown in Figure 5-5a of the City/County Drainage Criteria Manual. Runoff Curve Numbers are taken from Tables 5-6 and 5-7 (using AMC III) of the City/County Drainage Criteria Manual. Calculations for the SCS Hydrograph Procedure are shown in the Appendix of this report.

DRAINAGE FACILITY DESIGN

All internal common roadways within this commercial development have adequate capacity to handle the 10-year and 100-year flows.

All inlets, storm drains, culverts, and open channels are sized using the procedures outlined in the City/County Drainage Criteria Manual Chapters 7, 8, 9, and 10 respectively. All of the drainage systems, including the streets, are designed to safely route the 10-year and 100-year storm flows.

FLOODPLAIN STATEMENT

No portion of the Monument Ridge subdivision is within a F.E.M.A. designated floodplain per Flood Insurance Rate Map Community Panel Nos. 08041C0286 F and 08041C0287 F, effective March 17th, 1997.

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APPENDIX E – Drainage Maps

MONUMENT RIDGE
DRAINAGE MAP – HISTORIC CONDITIONS
TOWN OF MONUMENT, EL PASO COUNTY, COLORADO

BASIN	Q10 [CFS]	Q100 [CFS]
EX-A	14	37
EX-C	17	47
OS-EX-A	2	5
OS-EX-C	4	7

DESIGN POINT	Q10 [CFS]	Q100 [CFS]	DESCRIPTION
SURFACE:			
EX-A	15	42	TO DITCH ALONG STRUTHERS
EX-C	19	51	TO 36" RCP CULVERT
OS-C1	3	7	EXISTING CHURCH SITE PARKING LOT POND OUTFALL
EX	35	93	THEORETICAL TOTAL HISTORIC FLOW FROM SITE & OFF-SITE

POND	Q10 [CFS]	Q100 [CFS]
OS-C1		
IN	4	7
OUT	3	7
VOLUME	0.05 AC-FT	0.05 AC-FT

NOTE:
ALL RUNOFF AND VOLUME QUANTITIES BASED ON THE 2-YEAR AMC III STORM MODEL.

DRAINAGE MAP LEGEND

- EXISTING MAJOR CONTOUR (10') — 100
- EXISTING MINOR CONTOUR (2')
- PROPOSED MAJOR CONTOUR (10') — 100
- PROPOSED MINOR CONTOUR (2')
- RETAINING WALL
- BASIN IDENTIFIER / BASIN AREA [AC] — A / 10.0
- SURFACE DESIGN POINT IDENTIFIER — A1
- STORM DRAIN DESIGN POINT IDENTIFIER — SD-101
- DRAINAGE BASIN BOUNDARY

N

0 100 200 400
HORIZONTAL SCALE: 1"=100'

REV.	DESCRIPTION	DATE
1.	PER TOWN OF MONUMENT & TRIVIEW METRO COMMENTS	7/28/06

REVIEW:
STREET DESIGN:
ROUGH CUT REVIEW _____ DATE _____
FINAL REVIEW _____ DATE _____
DRAINAGE DESIGN:
_____ DATE _____

DESIGN DATA:
SIDEWALKS: WIDTH: _____ LOCATION: ☐ Attached ☐ Detached
CURB TYPE: ☐1 ☐2 ☐3
R/W WIDTH: _____ F/C-F/C _____
STREET TYPE: _____ HVEEM _____
ASPHALT THICKNESS: AC Surface _____ AC Base _____
AGG. BASE THICKNESS: Class 6 _____ Class 5 _____ Class 2 _____

PREPARED FOR:
ESI
15 NORTH NEVADA AVENUE
COLORADO SPRINGS, CO 80903

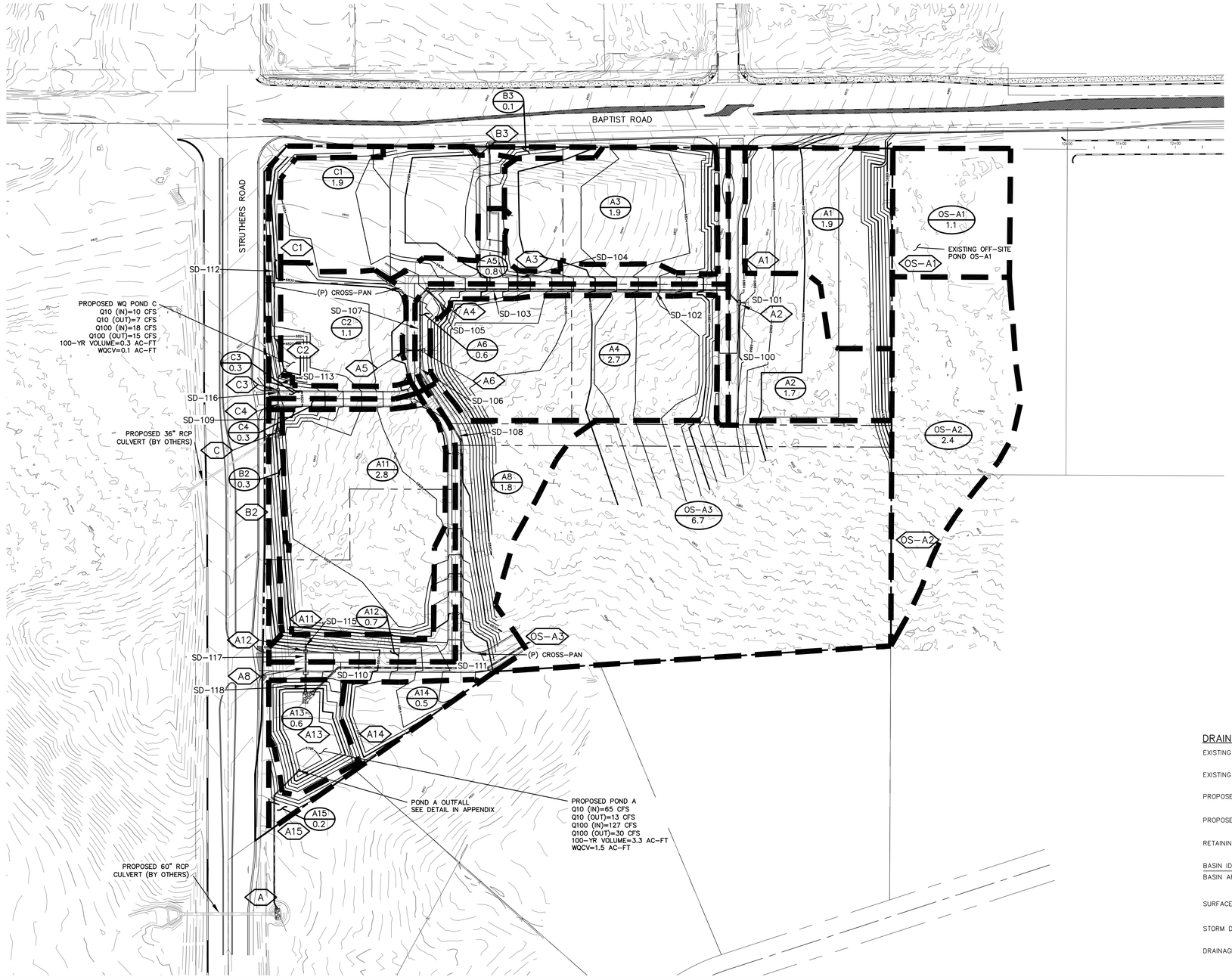
WESTWORKS ENGINEERING
1023 W. COLORADO AVE. COLORADO SPRINGS, CO 80904 (719) 685-1670

MONUMENT RIDGE

DRAINAGE MAP
HISTORIC CONDITIONS

DRAWN BY: CDK	
SCALE: 1"=100'	DATE: 7/28/06
JOB NUMBER: 90537	SHEET: 1 OF 2

MONUMENT RIDGE
DRAINAGE MAP – DEVELOPED CONDITIONS
TOWN OF MONUMENT, EL PASO COUNTY, COLORADO



BASIN	Q10 [CFS]	Q100 [CFS]
A1	6	11
A2	5	9
A3	7	11
A4	9	16
A5	3	6
A6	2	4
A7	--	--
A8	7	12
A9	--	--
A10	--	--
A11	9	16
A12	2	4
A13	2	3
A14	2	3
A15	0.5	1
B1	--	--
B2	0.6	1
B3	0.2	0.5
C1	6	11
C2	4	7
C3	1	2
C4	1	2
OS-A1	4	7
OS-A2	3	7
OS-A3	13	29

POND	Q10 [CFS]	Q100 [CFS]
A		
IN	65	127
OUT	13	30
VOLUME	1.8 AC-FT	3.3 AC-FT
C		
IN	10	18
OUT	7	15
VOLUME	0.1 AC-FT	0.3 AC-FT
OS-A1		
IN	4	7
OUT	3	7
VOLUME	0.05 AC-FT	0.05 AC-FT

DESIGN POINT	Q10 [CFS]	Q100 [CFS]	DESCRIPTION
SURFACE:			
A1	6	11	FUTURE CONNECTION
A2	5	9	12' SUMP INLET
A3	7	11	FUTURE CONNECTION
A4	9	16	FUTURE CONNECTION
A5	3	6	8' SUMP INLET
A6	2	4	6' SUMP INLET
A7	--	--	NOT USED
A8	7	12	10' SUMP INLET
A9	--	--	NOT USED
A10	--	--	NOT USED
A11	9	15	FUTURE CONNECTION
A12	2	4	4' SUMP INLET
A13	2	3	POND A GROUND SURFACE
A14	2	3	FUTURE CONNECTION
A15	0.5	1	SHEET FLOW TO SOUTH
A	10	27	TOTAL COMBINED FLOW FROM SITE TO SOUTH
B1	--	--	NOT USED
B2	2	3	SHEET FLOW INTO STRUTHERS ROAD
B3	0.2	0.5	SHEET FLOW INTO BAPTIST ROAD
C	7	17	TOTAL FLOW TO (P) 36" CULVERT UNDER STRUTHERS
C1	6	11	FUTURE CONNECTION
C2	4	7	WATER QUALITY POND C & FUTURE CONNECTION
C3	1	2	4' AT-GRADE INLET
C4	1	2	4' AT-GRADE INLET
OS-A1	3	7	EXISTING CHURCH SITE DISCHARGE
OS-A2	3	7	SHEET FLOW ONTO SITE
OS-A3	13	29	FUTURE CONNECTION (TOWNHOME RESIDENTIAL)
STORM DRAIN:			
SD-100	3	7	18" RCP
SD-101	6	11	18" RCP
SD-102	14	26	24" RCP
SD-103	19	37	24" RCP
SD-104	7	11	24" RCP
SD-105	9	16	24" RCP
SD-106	2	4	18" RCP
SD-107	28	54	30" RCP
SD-108	33	63	30" RCP
SD-109	7	17	24" RCP
SD-110	46	91	36" RCP
SD-111	15	36	30" RCP
SD-112	6	11	18" RCP
SD-113	7	15	24" RCP
SD-114	--	--	NOT USED
SD-115	9	16	24" RCP
SD-116	7	15	24" RCP
SD-117	12	20	24" RCP
SD-118	18	31	30" RCP

NOTE:
ALL RUNOFF AND VOLUME QUANTITIES BASED ON THE 2-YEAR AMC III STORM MODEL.

DRAINAGE MAP LEGEND

- EXISTING MAJOR CONTOUR (10')
- EXISTING MINOR CONTOUR (2')
- PROPOSED MAJOR CONTOUR (10')
- PROPOSED MINOR CONTOUR (2')
- RETAINING WALL
- BASIN IDENTIFIER / BASIN AREA [AC] — A / 10.0
- SURFACE DESIGN POINT IDENTIFIER — A1
- STORM DRAIN DESIGN POINT IDENTIFIER — SD-101
- DRAINAGE BASIN BOUNDARY

N

0 100 200 400
HORIZONTAL SCALE: 1"=100'

REV.	DESCRIPTION	DATE
1.	PER TOWN OF MONUMENT & TRIVIEW METRO COMMENTS	7/28/06

REVIEW:
STREET DESIGN:
ROUGH CUT REVIEW _____ DATE _____
FINAL REVIEW _____ DATE _____
DRAINAGE DESIGN:
_____ DATE _____

DESIGN DATA:
SIDEWALKS: WIDTH: _____ LOCATION: ☐ Attached ☐ Detached
CURB TYPE: ☐1 ☐2 ☐3
R/W WIDTH: _____ F/C-F/C _____
STREET TYPE: _____ HVEEM _____
ASPHALT THICKNESS: AC Surface _____ AC Base _____
AGG. BASE THICKNESS: Class 6 _____ Class 5 _____ Class 2 _____

PREPARED FOR:
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15 NORTH NEVADA AVENUE
COLORADO SPRINGS, CO 80903

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1023 W. COLORADO AVE. COLORADO SPRINGS, CO 80904 (719) 685-1670

MONUMENT RIDGE

DRAINAGE MAP
DEVELOPED CONDITIONS

DRAWN BY: CDK
SCALE: 1"=100'
DATE: 7/28/06
JOB NUMBER: 90537
SHEET: 2 OF 2

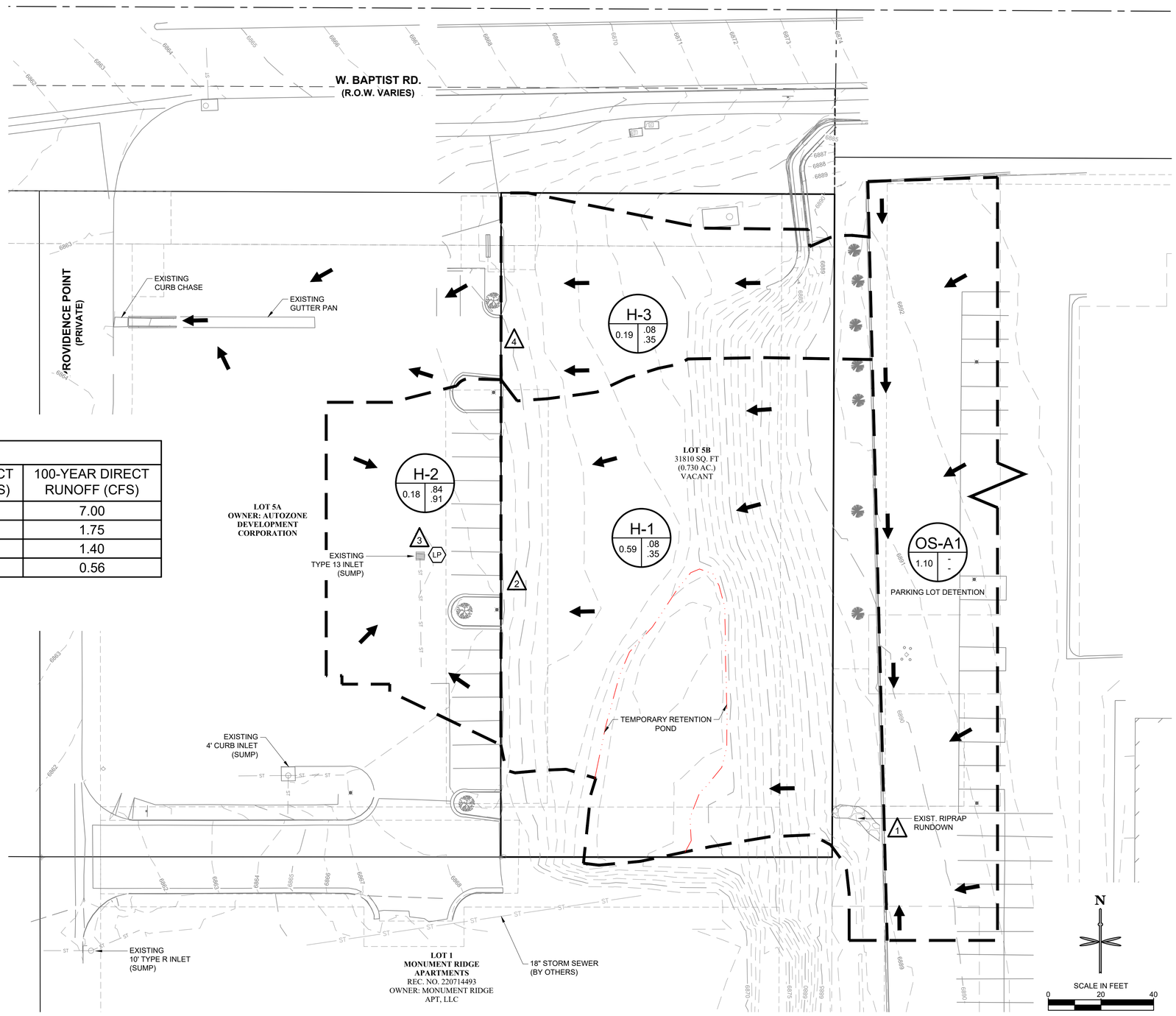
705 W. BAPTIST RD.
PRELIMINARY SITE PLAN

LOCATED IN THE EAST 1/2 OF THE NORTHWEST 1/4 OF SECTION 36, TOWNSHIP 11 SOUTH, RANGE 67 WEST OF THE 6TH P.M., TOWN OF MONUMENT, COUNTY OF EL PASO, STATE OF COLORADO

705 WEST BAPTIST ROAD

DRAINAGE LEGEND

- PROPOSED PROPERTY LINE
- 5280 EXISTING MINOR CONTOUR
- 5280 EXISTING MAJOR CONTOUR
- 5280 MINOR CONTOUR
- 5280 MAJOR CONTOUR
- PROPOSED BASIN DELINEATION
- PROPOSED STORM SEWER (BY OTHERS)
- PROPOSED STORM INLET AND MANHOLE
- EXISTING STORM INLET AND MANHOLE
- PROPOSED DRAINAGE FLOW ARROW
- 1 DESIGN POINT
- HP / LP HIGH POINT & LOW POINT
- A BASIN DESIGNATION
- A 5-YEAR RUNOFF COEFFICIENT
- A 100-YEAR RUNOFF COEFFICIENT
- BASIN AREA IN ACRES



BASIN SUMMARY TABLE

DESIGN POINT	BASIN ID	TRIBUTARY AREA (ACRES)	C_5	C_{100}	5-YEAR DIRECT RUNOFF (CFS)	100-YEAR DIRECT RUNOFF (CFS)
1	OS-A1	1.10	-	-	4.00	7.00
2	H-1	0.59	0.08	0.35	0.19	1.75
3	H-2	0.18	0.84	0.91	0.61	1.40
4	H-3	0.19	0.08	0.35	0.06	0.56

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

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
501 S Cherry St, Suite 300
Denver, CO 80246
303-572-7997 www.ees.us.com

SITE PLAN
705 W. BAPTIST RD.
705 WEST BAPTIST ROAD, MONUMENT CO

EXISTING DRAINAGE MAP

PROJECT NO:	WDV004.01
DESIGNED BY:	MSG
DRAWN BY:	OWS
DATE:	01/20/2022

1 OF 2

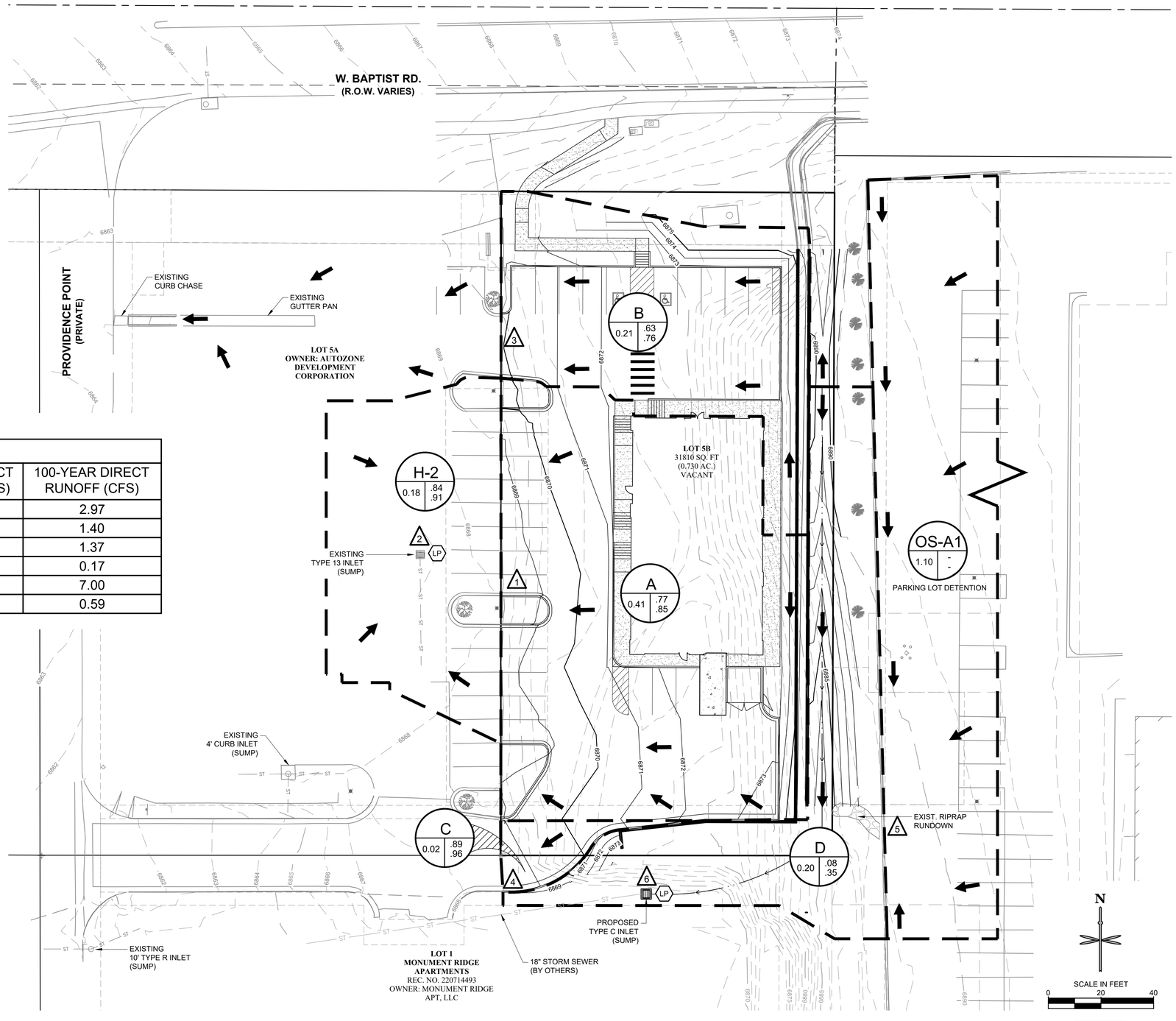
705 W. BAPTIST RD.
PRELIMINARY SITE PLAN

LOCATED IN THE EAST 1/2 OF THE NORTHWEST 1/4 OF SECTION 36, TOWNSHIP 11 SOUTH, RANGE 67 WEST OF THE 6TH P.M., TOWN OF MONUMENT, COUNTY OF EL PASO, STATE OF COLORADO

705 WEST BAPTIST ROAD

DRAINAGE LEGEND

- PROPOSED PROPERTY LINE
- EXISTING MINOR CONTOUR (5280)
- EXISTING MAJOR CONTOUR (5280)
- MINOR CONTOUR (5280)
- MAJOR CONTOUR (5280)
- PROPOSED BASIN DELINEATION
- PROPOSED STORM SEWER (BY OTHERS)
- PROPOSED STORM INLET AND MANHOLE
- EXISTING STORM INLET AND MANHOLE
- PROPOSED DRAINAGE FLOW ARROW
- DESIGN POINT
- HIGH POINT & LOW POINT (HP, LP)
- BASIN DESIGNATION
- 5-YEAR RUNOFF COEFFICIENT
- 100-YEAR RUNOFF COEFFICIENT
- BASIN AREA IN ACRES



BASIN SUMMARY TABLE

DESIGN POINT	BASIN ID	TRIBUTARY AREA (ACRES)	C_5	C_{100}	5-YEAR DIRECT RUNOFF (CFS)	100-YEAR DIRECT RUNOFF (CFS)
1	A	0.41	0.77	0.85	1.26	2.97
2	H-2	0.18	0.84	0.91	0.61	1.40
3	B	0.21	0.63	0.76	0.54	1.37
4	C	0.02	0.90	0.96	0.07	0.17
5	OS-A1	1.10	-	-	4.00	7.00
6	D	0.20	0.08	0.35	0.06	0.59

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SITE PLAN
705 W. BAPTIST RD.
705 WEST BAPTIST ROAD, MONUMENT CO

PROPOSED DRAINAGE MAP

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2 OF 2