



Planning Department
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Planned Development Amendment Application

Applicant Information

Applicant is: Property Owner Contract Buyer Option Holder Agent Other

Applicant Name Holt Homes, Inc.
Contact Name Contact Applicant's Consultant
Address 1301 SE Tech Center Drive, Suite 150
City, State, Zip Vancouver, WA 98683
Contact Email Contact Applicant's Consultant

Applicant's Consultant:
AKS Engineering & Forestry, LLC
Name: Zach Pelz
Phone: 503-400-6028
Email: pelzz@aks-eng.com

Property Owner Information

Property Owner Name R&B Kauer Investments, LLC; B.R. House, LLC, Howard N. Aster, Margaret E.B. Aster
Contact Name Contact Applicant's Consultant
Address P.O. Box 731
City, State, Zip McMinnville, OR 97128
Contact Email Contact Applicant's Consultant

Site Location and Description

Property Address No site address
Assessor Map No. R4 5- 24 - 00801 Total Site Area ±106.32 acres
Subdivision Hillcrest Planned Development Block N/A Lot N/A
Comprehensive Plan Designation Residential Zoning Designation R-2 PD

5. Document how the site can be efficiently provided with public utilities, including water, sewer, electricity, and natural gas, if needed, and that there is sufficient capacity to serve the proposed use:_____

See attached narrative.

6. Describe, in detail, how the proposed use will affect traffic in the area. What is the expected trip generation?_____

See attached narrative.

In addition to this completed application, the applicant must provide the following:

- A site plan (drawn to scale, legible, and of a reproducible size). The site plan should show existing and proposed features such as: access; lot and street lines with dimensions in feet; distances from property lines; improvements; north direction arrow, and significant features (slope, vegetation, adjacent development, drainage, etc.).*
- A copy of the current planned development overlay ordinance.*
- A legal description of the subject site, preferably taken from the deed.*
- Compliance of Neighborhood Meeting Requirements.*
- Payment of the applicable review fee, which can be found on the Planning Department web page.*

I certify the statements contained herein, along with the evidence submitted, are in all respects true and are correct to the best of my knowledge and belief.

DocuSigned by:

Mike Loomis

06A6D00756C34F5...

Applicant's Signature

Holt Holdings OR, LLC,
a Delaware limited liability company

By: Holt Group Holdings, LLC,
a Delaware limited liability company
Its: Sole Member
Mike Loomis

6/20/2024

Date

Howard Costa
Property Owner's Signature

June 27, 2024
Date

Andrius R. Kauer Investments
Property Owner's Signature

6-27-2024
Date

Benny Janna - BR House LLC
Property Owner's Signature

6-27-2024
Date

Property Owner's Signature

Date

Hillcrest Planned Development Amendment

Date: July 2024

Submitted to: City of McMinnville
231 NE Fifth Street
McMinnville, OR 97128

Applicant: Holt Homes, Inc.
1301 SE Tech Center Drive, Suite 150
Vancouver, WA 98683



AKS
ENGINEERING & FORESTRY

12965 SW Herman Road, Suite 100
Tualatin, OR 97062
(503) 563-6151

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- Exhibit A:** Preliminary Land Use Plans
 - Exhibit B:** Application Form
 - Exhibit C:** City of McMinnville Ordinance 4868
 - Exhibit D:** City of McMinnville Ordinance 5024
 - Exhibit E:** Property Ownership Information
 - Exhibit F:** Neighborhood Meeting Documentation
 - Exhibit G:** Correspondence
 - Exhibit H:** Preliminary Stormwater Report
-

Hillcrest

Planned Development Amendment

Submitted to:	City of McMinnville 231 NE Fifth Street McMinnville, OR 97128
Applicant:	Holt Homes, Inc. 1301 SE Tech Center Drive, Suite 150 Vancouver, WA 98683
Property Owners:	R&B Kauer Investments, LLC 3071 NW 2 nd Street McMinnville, OR 97128 B.R. House, LLC 708 NE Baker Street McMinnville, OR 97128 Howard N. and Margaret E.B. Aster P.O. Box 731 McMinnville, OR 97128
Applicant's Consultant:	AKS Engineering & Forestry, LLC 12965 SW Herman Road, Suite 100 Tualatin, OR 97062 Contact(s): Zach Pelz, AICP Email: pelzz@aks-eng.com Phone: (503) 400-6028
Site Location:	North of W 2 nd Street, West of NE Mount Mazama Street, South of NW Fox Ridge Road in McMinnville, Oregon
Yamhill County Assessor's Map:	4 5 24; Tax Lot 801
Site Size:	±106.3 acres
Land Use Districts:	Low-Density, 7000 SF Lot Residential (R-2); Planned Development (PD) Overlay



I. Executive Summary

AKS Engineering & Forestry, LLC (AKS) requests approval for a Major Planned Development (PD) Amendment on behalf of our Client, Holt Homes, Inc. (Applicant) for the remaining phases of the Hillcrest PD.

This application will be processed as a Major PD Amendment as it includes changes to the alignment of certain streets throughout the PD relative to that approved by Ordinance 5024 in 2017 (see McMinnville Zoning Ordinance Section 17.74.070). Despite the characterization as a “Major Amendment,” planned changes to the remaining phases of the Hillcrest PD are relatively minor and include the following:

1. Changes to the overall location and alignment of streets and mid-block pedestrian connections;
2. Minor changes to the size and arrangement of lots and phase boundaries in response to the revised street network;
3. The creation of new areas for wetland and related natural resources preservation;
4. ±13.0 acres of additional parks and open space areas throughout 17 tracts; and,
5. The creation of new areas for on-site stormwater management (see Exhibit A).

The planned changes to Ordinance 5024 are necessary following the discovery of geotechnical conditions and on-site natural resource features that were previously unknown.

This application demonstrates that the planned PD Amendment satisfies all relevant approval criteria in McMinnville Zoning Ordinance (MZO) Chapter 17.74, and more importantly, will provide needed housing for McMinnville’s growing population as recommended in the City of McMinnville’s 2023 *Housing Needs Analysis Final Draft Report* (HNA) prepared by ECONorthwest.

Background

The Hillcrest PD phased residential subdivision master plan was first approved by the McMinnville City Council in 2007 (Ordinance 4868, Exhibit C) and is comprised of 512 single-family attached and detached residential lots as well as multi-family homes, a ±7-acre neighborhood park, and a regional stormwater management facility. Three phases of development, including 64 home lots, a multi-family housing site, the neighborhood park, and a regional stormwater facility were constructed between 2007 and 2017.

In 2017, the City Council approved a Major PD Amendment to Ordinance 4868 in response to new Americans with Disabilities Act (ADA) requirements, which necessitated large-scale changes to the site grading plan, particularly in the vicinity of street intersections. Ordinance 5024 (Exhibit D) resulted in 40 additional residential lots.

Between 2017 and 2024, an additional 94 home lots have been constructed under the approval granted in Ordinance 5024. Of the 552 lots permitted by Ordinance 5024, a total of 158 lots have been constructed.

Summary of 2024 PD Amendment

Among other due diligence efforts, Applicant conducted site geotechnical and natural resources investigations beginning in 2023 as they evaluated the potential feasibility of building the remaining phases of the Hillcrest PD. These investigations revealed that shallow rock, undocumented/uncontrolled fills, and

wetlands were present in several locations on-site and where development was authorized by Ordinance 5024. Applicant determined that the cost to mitigate the approved development in these sensitive areas was not feasible, but that the project could be made feasible by relocating streets and lots to avoid and/or significantly minimize impacts in these areas. This application refines the approval vested in Ordinance 5024 through relatively minor adjustments to streets and lots and will subsequently help the City realize new homes necessary to accommodate McMinnville's growing population.

This application includes ±392 residential lots (two fewer lots than authorized in Ordinance 5024), 17 private open space and pedestrian access tracts (spanning ±13.0 acres), and two new stormwater management facilities across nine discrete phases of development on the remaining ±106.3-acres of land in the Hillcrest PD. The PD process is necessary to continue to allow flexibility to underlying street grade, block length and block perimeter, minimum lot size, building setbacks, and recommended lot width to depth ratio, as was authorized by Ordinance 5024.

In addition to incorporating revisions to Ordinance 5024, which makes residential development on this site feasible, the application is also using this opportunity to integrate the City of McMinnville's "Great Neighborhood Principles" into the plan and that were added to the City's Comprehensive Plan following the passage of Ordinance 5024. The Great Neighborhood Principles establish strategies to enhance the livability of the community by encouraging more open space and natural resources preservation, better pedestrian and vehicle connectivity, and improved housing choices, among other policies. The currently planned PD Amendment substantially improves conformance with the City's Great Neighborhood Principles as compared to Ordinance 5024.

PD Amendment vs. Planned Development vs. Phased Subdivision – Procedures and Criteria

As provided above, the subject application is a PD Major Amendment because of the PD Amendment approved by Ordinance 5024 and the preceding PD approval in Ordinance 4868 and due to changes to the street network as also described above. The review and approval criteria for PD Amendments are in MZO Section 17.74.070 and are abbreviated relative to the criteria for a new PD (MZO Section 17.51) or for a Phased Subdivision (MZO Section 17.53.070–17.53.079) in recognition that the scope of a PD Amendment is to modify only certain aspects of an approval that has been previously granted by the City and is not an entirely new project. PD Amendments are categorized as either minor or major based on the extent of the modification(s). Changes that increase the size of the PD site, increase residential density, reduce open space, or that result in modifications to the vehicular system, require review under the City's Major PD Amendment process. As above, changes to the location and configuration of planned streets are the trigger for a Major PD Amendment review for the current application. Major PD Amendments are decided by the McMinnville Planning Commission following a public hearing with a subsequent executing ordinance that is decided by the City Council after another public hearing.

Compared to a PD or PD Amendment, a Subdivision or Phased Subdivision, is reviewed subject to only clear and objective development criteria and procedures and are not eligible for the discretionary flexibility afforded to a PD or PD Amendment. Subdivision or Phased Subdivision applications are decided by the McMinnville Planning commission following a public hearing.

Project Need

McMinnville’s 2023 HNA finds that 4,657 new housing units are needed to accommodate anticipated population growth in McMinnville through 2043. Of this total housing need, more than 55 percent (2,561 homes) of the demand is expected to be for single-family detached home types. To meet project housing demand, the 2023 HNA recommends that future development on buildable land in the Low-Density, 7000 SF Lot Residential (R-2) zoning district should occur at a density of 4.4 dwellings per acre. The 2023 HNA acknowledges Applicant’s property as one of the largest R-2 zoned parcels within the City and with unconstrained buildable land that could accommodate needed housing.

The planned PD amendments included in this application would provide ±392 new single-family dwellings (±15 percent of 2023 HNA demand) at a density of 4.6 dwellings per acre and directly addresses need identified in the 2023 HNA.

While the subject site is characterized as “unconstrained buildable land” in the HNA, it is comprised of areas that result in development limitations. The City’s Comprehensive Plan calls for a mix of housing types; however, it also specifically recognizes those areas with mapped development limitations such as steep slopes, stream corridors, natural drainage ways, and wetlands as the appropriate areas to accommodate low density residential development. Although the remaining phases of the Hillcrest PD subdivision are planned to comprise exclusively single-family detached home lots, previous phases of the Hillcrest PD included multiple-family homes, which together satisfy the City’s goal for a mix of housing types while acknowledging development limitations in this area.

This written statement includes findings demonstrating that the application complies with all applicable conditions from Ordinance 5024 and all applicable approval standards within MZO Title 17. These findings are supported by substantial evidence, including preliminary plans and other written documentation. This information provides the necessary basis for the City to approve the application.

II. Site Description/Setting

The subject property (Tax Lot 801 of Yamhill County Assessor’s Map 4 5 24) comprises the remaining ±106.3-acres of the Hillcrest PD and is located at the far west end of McMinnville’s City limits and abuts the City’s Urban Growth Boundary (UGB). The site is flanked by NW Mount Mazama Street along its east side and NW Mount Ashland Lane and NW Elizabeth Street along its southerly extent. The property is within the City’s R-2 zoning district and the PD overlay most recently established through City of McMinnville Ordinance 5024.

Earlier phases of the Hillcrest PD surround the subject property to the south and east and are in the City’s Low-Density 9000 SF Lot Residential (R-1) and R-2 zoning districts. The property to the north is within the R-1 zoning district. The properties to the northwest and west are outside the City’s UGB, in the Yamhill County (County) 80-acre minimum Exclusive Farm Use District (EF-80). The property to the southwest is within the City’s UGB but outside City limits and is within the County’s 2.5-acre minimum Very Low-Density Residential District (VLDR-2.5).

The site is currently vacant. The majority of the site is comprised of scrub forestland while the eastern approximately one-third of the site is currently in use for agricultural production.

The site is characterized by relatively steep and undulating topography and is traversed by drainage channels at five locations across the site. The low point (± 200 -foot elevation) of the site is located near Tract D at the middle of the site where the site slopes upward to the east and west to a high point elevation of 340 and 440 feet, respectively. Average grades across the easterly portion of the site are currently ± 9 percent and ± 13 percent across the westerly portion of the site.

Mapped wetlands are located in the vicinity of an intermittent drainage channel at the east side of the site and near Tract D.

Per a September 26, 2023, report prepared by Columbia West Engineering, Inc., areas of undocumented/uncontrolled fill are present along the east edge of the site and in the vicinity of the Park/Open Space at Tract E and Tract E1. This same report indicates pockets of shallow basalt at several locations across the site.

Finally, portions of the site in Phases 3 through 9 are located above the 275-foot elevation contour. Based on feedback from the City of McMinnville and McMinnville Water & Light, all future homes above the 275-foot elevation contour will rely on a new public water booster pump station to provide sufficient pressure to these homes. Applicant is closely coordinating with the City and McMinnville Water & Light to procure the necessary water booster pump station infrastructure in time for Phase 3 home construction.

III. Applicable Review Criteria

CITY OF MCMINNVILLE ZONING ORDINANCE – TITLE 17

Chapter 17.74 Review Criteria

17.74.070 Planned Development Amendment – Review Criteria

An amendment to an existing planned development may be either major or minor. Minor changes to an adopted site plan may be approved by the Planning Director. Major changes to an adopted site plan shall be processed in accordance with Section 17.72.120, and include the following:

- An increase in the amount of land within the subject site;
- An increase in density including the number of housing units;
- A reduction in the amount of open space; or
- Changes to the vehicular system which results in a significant change to the location of streets, shared driveways, parking areas and access.

Response: This application requests a PD Amendment to the remaining phases of the Hillcrest PD, approved by Ordinance 5024. As detailed in the Executive Summary of this written narrative, the planned modifications to the 2017 Hillcrest PD Master Plan layout include a minor decrease in density, a significant increase in open space, new stormwater management facilities, modifications to the lot layout, and street realignment. Due only to the planned changes to the street realignment, a Major PD Amendment is required. A

summary of the planned PD amendments and their justification is provided in Table 1 below.

Table 1: Summary of PD Amendments			
Standard	Ordinance 5024	Planned	Justification
Street Network Alignment	See Exhibit A, Sheet P-03	See Exhibit A, Sheet P-03	Geotechnical conditions (undocumented/uncontrolled fills and pockets of shallow basalt) Natural resources including streams and wetlands
Open Space and Pedestrian Tracts	±1.0 acres of open space/pedestrian tracts	±13.0 acres of open space/pedestrian tracts (±1200 percent increase)	Geotechnical conditions (undocumented/uncontrolled fills and pockets of shallow basalt) Natural resources including streams and wetlands City of McMinnville Great Neighborhood Principles
Stormwater Management	0.0 acres of stormwater facilities on the subject site	±1.6 acres of stormwater facilities on the subject site (see Exhibit A, Tract E1 and O)	Stormwater studies/modeling conducted post Ordinance 5024
Lot Count	394 residential lots within remaining phases (552 lots in total Hillcrest PD site)	±392 residential lots within remaining phases (550 lots in total Hillcrest PD site) (less than a 1 percent decrease)	Geotechnical conditions (undocumented/uncontrolled fills and pockets of shallow basalt) Natural resources including streams and wetlands Additional open space/parks
Lot Size	Average lot area = ±9,550 square feet	Average lot area = ±7,960 square feet	Natural resources including streams and wetlands Additional open space/parks
Setbacks/Yards	R-4 setbacks in Northridge Phase; Reduced setbacks in other Hillcrest PD lots permitted as necessary for tree protection	Front: 20-feet Interior side: 5-feet Street side: 15-feet Rear: 20-feet; rear yard decks may encroach 10-feet into rear yard setback	Reduced side yard setbacks allow similar lot yield as Ordinance 5024 accounting for more than 14.0 acres of additional open space and protected natural resource areas HNA density target for R-2 zoning district is 4.46 dwellings/acre

An amendment to an existing planned development may be authorized, provided that the proposal satisfies all relevant requirements of this ordinance, and also provided that the applicant demonstrates the following:

Response: As demonstrated in this narrative and in the accompanying exhibits, the planned PD Amendment satisfies the applicable approval criteria and does not affect compliance with the relevant requirements of this ordinance. Moreover, while the PD Amendment is not

subject to new standards enacted since the adoption of Ordinance 5024, Applicant has made considerable efforts to incorporate the Great Neighborhood Principles and related site development standards that were enacted after Ordinance 5024. Subsequently, this application is far superior to Ordinance 5024 in its ability to promote the City’s current residential development aspirations. This criterion is met.

- A. **There are special physical conditions or objectives of a development which the proposal will satisfy to warrant a departure from the standard regulation requirements;**

Response: The subject site is a part of the approved Hillcrest PD. As a part of the previous approvals, the City determined that the steep slopes and natural drainage patterns on-site warrant departure from standard regulation requirements. Although modifications to the approved layout are being requested as a part of this application, the physical and environmental constraints of the property remain. This criterion is met.

Table 2 provides a summary of, and justification for, the standard regulation requirements for which deviations have been previously approved and those for which deviations are being requested as a part of this application.

Standard	Ordinance 5024	Planned	Justification
17.53.101(L) Street Grade	Exceed the maximum grade of 12 percent for local residential streets on <u>seven segments</u> of roadway within the remaining phases of the Hillcrest PD	Exceed the maximum grade of 12 percent for local residential streets on <u>four segments</u> of roadway as shown on the Street Plan with Road Grade (Sheet P-05) in Exhibit A	Due to site topography and ADA requirements certain streets have grades up to 15 percent (see Exhibit A) Current plan reduces total street segments where grades exceed 12 percent
17.53.103(B) Block Length and Perimeter	Exceed the maximum block length of 400 feet	Exceed the maximum block length of 400 feet	Site topography and ADA requirements Mid-block pedestrian and bicycle connections in lieu of grid-style street connectivity
	Exceed the maximum block perimeter of 1,600 feet.	Exceed the maximum block perimeter of 1,600 feet.	
17.53.105(A)(1) Lot Depth to Width	Exceed the lot depth to width ratio of 2 to 1	Exceed the lot depth to width standard of 2 to 1	Site topography Natural resources preservation
17.15.030 Lot Size	Allowed lots below 7,000 square foot minimum lot size, provided the average lot size is 7,000 square feet or greater	Allow lots below 7,000 square foot minimum lot size, provided the average lot size is 7,000 square feet or greater	Site topography HNA density target of 4.46 dwellings/acre ±14 acres of additional open space and natural resources preservation

17.15.040 Yard Requirements	R-4 setbacks in Northridge Phase; Reduced setbacks as necessary for tree protection	Front: 20-feet Interior side: 5-feet Street side: 15-feet Rear: 20-feet; rear yard decks may encroach 10-feet into rear yard setback	Reduced side yard setbacks allow similar lot yield as Ordinance 5024 accounting for more than 14.0 acres of additional open space and protected natural resource areas HNA density target for R-2 zoning district is 4.46 dwellings/acre
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B. Resulting development will not be inconsistent with the Comprehensive Plan objectives of the area;

Response: Upon passage of Ordinance 5024, the City Council found the 2017 PD Amendment to be consistent with the Comprehensive Plan objectives of the area. As described above, the planned changes in this application move the site closer to conformance with McMinnville’s Great Neighborhood Principles and related standards that have been enacted since Ordinance 5024. More importantly, the City can find that this PD Amendment results in a phased residential subdivision that can be cost-effectively constructed and that will provide the best possible likelihood that the City may achieve its need for additional single-family homes as expressed in the 2023 HNA. Responses summarizing conformance to the applicable Comprehensive Plan objectives are included in this written narrative. This criterion is met.

C. The development shall be designed so as to provide for adequate access to and efficient provision of services to adjoining parcels;

Response: The Preliminary Circulation and Preliminary Composite Utility Plans in Exhibit A illustrate how planned streets and other public utilities will connect with existing utilities in abutting developed areas as well as how such will be extended to abutting undeveloped parcels to accommodate efficient urbanization of those parcels when warranted. This criterion is met.

D. The plan can be completed within a reasonable period of time;

Response: The remaining nine phases of the Hillcrest PD are planned for consecutive construction over the next ±10–15 years, acknowledging that any major housing market fluctuations or other external factors could render such construction infeasible. This criterion is met.

E. The streets are adequate to support the anticipated traffic, and the development will not overload the streets outside the planned area;

Response: All streets will be constructed in accordance with the City’s street standards, and the street realignment will continue to connect to the existing street stubs in the constructed phases of the Hillcrest PD. Traffic studies submitted with prior approvals for the Hillcrest PD indicate acceptable traffic flow at full buildout, with certain improvements as included in Ordinance 5024. Per Ordinance 5024, prior to the issuance of the 290th building permit (which is expected to occur in Phase 4), Applicant will construct the required mitigative

measures that include a left-turn lane at the intersections of W 2nd Street/SW Hill Road and NW Horizon Drive/NW Hill Road. This PD Amendment application reduces the number of residential lots by two, which will slightly reduce traffic impacts. Therefore, the streets will remain adequate to support the anticipated traffic of the Hillcrest PD with the required mitigative measures outlined in the approved traffic studies for the Hillcrest PD.

F. Proposed utility and drainage facilities are adequate for the population densities and type of development proposed;

Response: Utilities serving the site will be adequate for the remaining homes in the Hillcrest PD. Utility capacity was reviewed during the past approval processes and determined to be adequate, accounting for the need to install a water system booster pump station to serve lots above the 275-foot elevation contour. The Preliminary Composite Utility Plan in Exhibit A and Preliminary Stormwater Report in Exhibit H demonstrate that each remaining phase of the Hillcrest PD has been designed to include all necessary infrastructure for that phase. Furthermore, this PD Amendment will not result in an increase in utility and drainage demand beyond the prior approval. This criterion is met.

G. The noise, air, and water pollutants caused by the development do not have an adverse effect upon surrounding areas, public utilities, or the city as a whole.

Response: The Hillcrest PD is expected to generate noise, air, and water impacts similar to those of a typical residential development and will comply with all applicable City, state, and federal regulations related to these impacts. Additionally, the planned modifications to the Hillcrest PD layout will improve the site's capacity for on-site stormwater management and enhance the protection of natural drainage features. This criterion is met.

Chapter 17.03 General Provisions

[...]

17.03.020 Purpose.

The purpose of the ordinance codified in Chapters 17.03 (General Provisions) through 17.74 (Review Criteria) of this title is to encourage appropriate and orderly physical development in the city through standards designed to protect residential, commercial, industrial, and civic areas from the intrusions of incompatible uses; to provide opportunities for establishments to concentrate for efficient operation in mutually beneficial relationship to each other and to shared services; to provide adequate open space, desired levels of population densities, workable relationships between land uses and the transportation system, adequate community facilities; and to provide assurance of opportunities for effective utilization of the land resources; and to promote in other ways public health, safety, convenience, and general welfare.

Response: The purpose of this application is to modify the layout for the remaining phases of the Hillcrest PD to ensure the highest likelihood that residential homes will be constructed on site and to serve the needs of McMinnville's growing population. Compliance with the provisions of Chapter 17.03 is detailed in this written narrative.

[...]

Chapter 17.11 Residential Design and Development Standards

17.11.110 Planned Development Residential Design and Development Standards

Chapter 17.51 of the McMinnville Municipal Code allows for planned development overlays in McMinnville as a means of providing greater flexibility and greater freedom of design in the development of land than may be possible under strict interpretation of the provisions of the zoning ordinance. McMinnville encourages residential planned developments as a means of achieving the City's adopted Great Neighborhood Principles.

Response: The Planned Development Residential Design and Development Standards of this chapter were adopted in 2022 as part of Ordinance 5113. This application is for a PD Amendment to Hillcrest PD approved by Ordinance 5024 in 2017, predating the adoption of City's Great Neighborhood Principles and the standards of this chapter. While this PD Amendment is not subject to new standards enacted since the adoption of Ordinance 5024, Applicant has made considerable efforts to incorporate the Great Neighborhood Principles and related site development standards that were enacted after Ordinance 5024. The currently planned PD amendment substantially improves conformance with the City's Great Neighborhood Principles as detailed in the written narrative below.

A. Guiding Principles.

1. **Appropriate site size and scale.** Small to medium sites (10,000 square feet to 40,000 square feet) should act as infill sites and respond to the surrounding neighborhood in scale, character, building design, details and materials. Large sites (over 40,000 square feet) should provide a variety of housing types, centralized common open space, and an interconnected system of streets and pathways that connect to the surrounding neighborhood.

Response: The remaining phases of the Hillcrest PD comprises ±106.3 acres, qualifying as a "large site." This PD Amendment includes ±392 residential lots and 17 private open space and pedestrian access tracts spanning ±13.0 acres, which provide significantly enhanced connectivity throughout the Hillcrest PD and surrounding neighborhood than that in Ordinance 5024. Although the remaining phases of the Hillcrest PD subdivision are planned to comprise exclusively single-family detached home lots, previous phases of the Hillcrest PD include multiple-family homes, which together satisfy the City's goal for a mix of housing types while acknowledging development limitations in this area. This guiding principle is met.

2. **Livability.** Residential Planned Developments should contribute to a livable neighborhood by incorporating visually pleasing design, minimizing the impact of vehicles, emphasizing pedestrian and bicycle connections, and providing public and private open spaces for outdoor use.

Response: The planned PD amendments significantly increase the amount of open space and pedestrian connectivity with 17 private open space and pedestrian access tracts spanning

±13.0 acres (compared to approximately 1.0 acres in Ordinance 5024). This guiding principle is met.

3. **Compatibility. Residential Developments should have a scale that is appropriate for the surrounding neighborhood and maintains the overall residential character of McMinnville.**

Response: As detailed in this written narrative, the planned PD amendments are relatively minor and do not materially change the scale or character of the neighborhood compared with Ordinance 5024. A substantial increase in parks and open spaces in this PD Amendment will provide greater opportunities for social interactions, will provide better integration of trees and natural spaces into the neighborhood, and will improve the overall character of the neighborhood. Finally, because the planned PD amendments largely maintain the approved density in Ordinance 5024 (planned density is two lots fewer), the City can find the planned PD Amendment is appropriate for the surrounding neighborhood and will maintain the overall residential character of the City. This guiding principle is met.

4. **Safety and Functionality. Developments should be safe and functional, by providing visibility into and within a residential development and by creating a circulation system that prioritizes bicycle and pedestrian safety.**

Response: The application provides safe and functional circulation through the site and to surrounding neighborhoods as shown on the Preliminary Circulation Plan in Exhibit A. Pedestrian connectivity is enhanced through the provision of 17 private open space and pedestrian access tracts spanning ±13.0 acres. This guiding principle is met.

5. **Enduring quality. Residential Planned Developments should incorporate design and building practices that promote the economic, ecological, and aesthetic environment of McMinnville, such as energy conservation, preservation of trees and open space, and quality building materials.**

Response: The planned PD amendments provide enhanced protection of trees, open space, and natural features through the inclusion of ±13.0 acres of open space. The open spaces are designed to not only preserve but also promote the creeks and natural drainageways that traverse the site and encourage community engagement with the environment as shown on the Preliminary Community Amenity Plan in Exhibit A. Finally, Applicant anticipates that new homes will incorporate sustainable design and building practices to increase energy conservation. This guiding principle is met.

- B. **Required Elements, Great Neighborhood Principles. All residential planned developments shall meet the Great Neighborhood Principles as identified below.**

1. **Natural Feature Preservation. Neighborhoods shall be designed to preserve significant natural features including, but not limited to, watercourses, sensitive lands, steep slopes, wetlands, wooded areas, and landmark trees.**

Response: The planned PD amendments included in this application are necessary following the discovery of geotechnical conditions and on-site natural resources features that were not known or considered in Ordinance 5024; the result is superior preservation of natural features/resources compared with Ordinance 5024. Approximately 13.0 acres of open space is located to protect and provide enjoyment of the natural drainageways traversing the site, as shown on the Preliminary Community Amenity Plan in Exhibit A. This principle is met.

2. **Scenic Views.** Public and private open spaces and streets shall be located and oriented to capture and preserve scenic views, including, but not limited to, views of significant natural features, landscapes, vistas, skylines, and other important features.

Response: As shown on the Preliminary Community Amenity Plan in Exhibit A, the planned PD amendments include ±13.0 acres of open space located to protect and provide enjoyment of the natural drainageways traversing the site, increase pedestrian connectivity, and provide common open space for the community to enjoy. The common open space will provide opportunities to enjoy scenic views of both the natural features on site and vistas beyond the Hillcrest PD. This principle is met.

3. **Parks and Open Spaces.**
 - a. Parks, trails, and open spaces shall be provided at a size and scale that is variable based on the size of the proposed development and the number of dwelling units.
 - b. Central parks and plazas shall be used to create public gathering spaces where appropriate.
 - c. Neighborhood and community parks shall be developed in appropriate locations consistent with the policies in the Parks Master Plan.

Response: As shown on the Preliminary Community Amenity Plan in Exhibit A, the planned PD amendments include ±13.0 acres of open space that has been located to protect and provide enjoyment of the natural drainageways traversing the site, increase pedestrian connectivity, and provide community gathering spaces. This principle is met.

4. **Pedestrian Friendly.**
 - a. Neighborhoods shall include a pedestrian network that provides for a safe and enjoyable pedestrian experience, and that encourages walking for a variety of reasons including, but not limited to, health, transportation, recreation, and social interaction.
 - b. Pedestrian connections shall be provided to commercial areas, schools, community facilities, parks, trails, and open spaces, and shall also be provided between streets that are disconnected (such as cul-de-sacs or blocks with lengths greater than 400 feet).

Response: As shown on the Preliminary Circulation Plan in Exhibit A, the planned PD amendments provide a system of mid-block pedestrian and bicycle paths throughout the remaining

phases of the Hillcrest PD subdivision. The planned network of on-street and mid-block pedestrian and bicycle connections, in conjunction with additional on-site parks and open spaces, create more and more convenient opportunities for walking and biking in the neighborhood. This principle is met.

5. **Bike Friendly.**

- a. Neighborhoods shall include a bike network that provides for a safe and enjoyable biking experience, and that encourages an increased use of bikes by people of all abilities for a variety of reasons, including, but not limited to, health, transportation, and recreation.
- b. Bike connections shall be provided to commercial areas, schools, community facilities, parks, trails, and open spaces.

Response:

As shown on the Preliminary Street Plan Overview with Road Grade in Exhibit A, the planned PD amendments include street realignment, which decreases the number of street sections that exceed a 12 percent grade and will support an enhanced bicycle network. Moreover, a well connected network of on-street and mid-block bicycle connections will improve convenience for bicyclists. This principle is met.

6. **Connected Streets.**

- a. Streets shall be designed to function and connect with the surrounding built environment and the existing and future street network, and shall incorporate human scale elements including, but not limited to, Complete Streets features as defined in the Comprehensive Plan, grid street networks, neighborhood traffic management techniques, traffic calming, and safety enhancements.
- b. Streets shall be designed to encourage more bicycle, pedestrian and transit mobility with a goal of less reliance on vehicular mobility.

Response:

As shown on the Preliminary Circulation Plan in Exhibit A, streets have been designed to respect the topography of the site while providing connections to existing phases of the Hillcrest PD and future development areas north and west of the site. Mid-block pedestrian and bicycle connections in several locations throughout the site encourage walking and bicycling and reduce reliance on automobile trips. Streets are designed according to the City's local residential street standards and feature two 14-foot-wide travel lanes intended to accommodate vehicles, bicycles, and on-street parking and a 5-foot-wide sidewalk and 4.5-foot-wide landscape strip with a 0.5-foot curb on either side of the roadway. This street design and network of multimodal on-site facilities encourage walking and bicycling while accommodating the needs of motor vehicles. This principle is met.

7. **Accessibility.**

- a. To the best extent possible all features within a neighborhood shall be designed to be accessible and feature elements and principles of Universal Design.

-
- b. Design practices should strive for best practices and not minimum practices.

Response: The planned PD amendments include street realignments as necessary to avoid sensitive areas of the site. The redesign of the street network results in fewer street segments (when compared to Ordinance 5024) that have grades in excess of 12 percent, which improves accessibility. This principle is met.

8. Human Scale Design.

- a. The size, form, and proportionality of development is designed to function and be balanced with the existing built environment.
- b. Buildings include design elements that promote inclusion and interaction with the right-of-way and public spaces, including, but not limited to, building orientation towards the street or a public space and placement of vehicle-oriented uses in less prominent locations.
- c. Public spaces include design elements that promote comfortability and ease of use at a human scale, including, but not limited to, street trees, landscaping, lighted public areas, and principles of Crime Prevention through Environmental Design (CPTED).

Response: As outlined above, the planned PD amendments maintain consistency with the scale and design of the constructed phases of the Hillcrest PD and significantly enhance opportunities for recreation and socialization through the inclusion of 17 parks and open space tracts over more than 13 acres of the site. Pedestrian and bicycle connections located in many of these tracts promote walking and biking. As shown in Exhibit A, all open spaces are located adjacent to public rights-of-way or are visible from a public right-of-way. Where necessary, lighting will be provided to ensure these areas are visible and safe during the evening. This principle is met.

9. Mix of Activities.

- a. Neighborhood destinations including, but not limited to, neighborhood-serving commercial uses, schools, parks, and other community services, shall be provided in locations that are easily accessible to surrounding residential uses.
- b. Neighborhood-serving commercial uses are integrated into the built environment at a scale that is appropriate with the surrounding area.
- c. Neighborhoods are designed such that owning a vehicle can be optional.

Response: As shown in Exhibit A, the planned PD amendments include more than 13 acres of parks and open space areas that will be used to provide mid-block pedestrian and bicycle connectivity, dog parks, walking trails, and open lawn areas. This mix of amenities is in addition to the Hillcrest regional park previously constructed in Phase 1 and together will

provide recreational opportunities for a broad range of user groups. The application does not include any commercial uses. This principle is met.

10. **Urban-Rural Interface. Buffers or transitions in the scale of uses, buildings, or lots shall be provided on urban lands adjacent to rural lands to ensure compatibility.**

Response: The City’s application of the R-2 zoning designation for the subject site was chosen, in part, to facilitate a smooth transition between urban and rural areas as suggested by this principle. The planned PD amendments include ±392 residential homes at a density of ±4.6 units per acre, which complies with the density requirements for the R-2 zoning district and all other relevant standards, as addressed in this written narrative. This principle is met.

11. **Housing for Diverse Incomes and Generations. A range of housing forms and types shall be provided and integrated into neighborhoods to provide for housing choice at different income levels and for different generations.**
12. **Housing Variety.**
 - a. **Neighborhoods shall have several different housing types.**
 - b. **Similar housing types, when immediately adjacent to one another, shall provide variety in building form and design.**

Response: The constructed phases of the Hillcrest PD contain a mix of housing types including a 68-unit multi-family housing complex and a variety of single-family homes. The planned PD amendments include ±392 new single-family detached homes on lots ranging in size from ±5,000 to ±28,193 square feet. The varying lot sizes will cater to a broad spectrum of housing needs across different age groups and income levels and provide needed housing for existing and future residents of the City at a density of ±4.6 units per acre. The project will also incorporate a variety of building styles and designs. These principles are met.

13. **Unique and Integrated Design Elements. Residential Planned Developments shall be encouraged to have:**
 - a. **Environmentally friendly construction techniques, green infrastructure systems, and energy efficiency incorporated into the built environment.**
 - b. **Opportunities for public art provided in private and public spaces.**
 - c. **Neighborhood elements and features including, but not limited to, signs, benches, park shelters, streetlights, bike racks, banners, landscaping, paved surfaces, and fences, with a consistent and integrated design that are unique to and define the neighborhood.**

Response: The purpose of this modification application is to modify the approval in Ordinance 5024 to better protect geologically sensitive areas of the site, wetlands, and other on-site natural resources. Further, Applicant anticipates that they will construct a majority, if not all, future homes on the site, and such homes are anticipated to be constructed using

environmentally friendly materials, appliances, and building practices. Neighborhood elements will be designed to complement the existing design of previously constructed phases of the Hillcrest PD. This principle is met.

C. **Required Elements, Common Open Space.** All Residential Planned Developments over four units shall meet the fundamental and supplemental requirements for Common Open Space.

1. **Characteristics.**

- a. Common open spaces offer residents social and health benefits while also defining and bringing character to a development.
- b. Common open spaces may include shared recreational facilities such as play areas, sports fields, or swimming pools; rooftop decks that prompt interaction and include shared amenities such as grills, play space, or seating.

2. **Guiding Principles.**

- a. Common open space should be appropriately located so users feel safe and residents take ownership and responsibility for the shared space.
- b. The design should consider its relationship to units, entries, and windows, as well as how landscaping, or other barriers, may impact sight corridors.
- c. Common open spaces should have clear intended uses with visual cues to inform users as to the desired function.
- d. Avoid large, hard-surfaced, or landscaped areas that lack furnishings or other design elements suggesting specific activities.
- e. Break down large spaces into smaller, comfortable outdoor rooms using fencing or low walls, furnishings, and lighting, building placement, and plantings.
- f. Sensitive design will produce greater benefits than expensive materials or furnishings and certainly more options for use than large undefined open areas

Response: The planned PD amendments include 17 parks and open space as well as pedestrian access tracts spanning ±13.0 acres. These parks and open spaces offer safe, accessible, and natural open space amenities that will encourage socialization and will provide opportunities for recreation as advocated by the guiding principles above.

3. **Fundamental Requirements.**

- a. A common open space shall be provided that is centrally located and designed with a clear function that enhances the livability of residents in the planned development. These functions shall include passive and active uses. The open space shall be accessible to all residents and if possible be fronted by clearly defined unit entrances. The common open space shall serve as the focus of surrounding buildings. Entries and windows shall face the common open space to

provide informal surveillance. Common open space shall be accessible to all residents.

Response: The completed phases of the Hillcrest PD include a ±7-acre neighborhood park that serves as the main common open space for the Hillcrest PD per Ordinance 5024. The planned PD amendments add more than ±13.0 acres of parks and open space above that approved in Ordinance 5024. As shown on the Preliminary Community Amenity Plan in Exhibit A, these common open spaces are integrated throughout the site to increase accessibility to all residents and offer a range of activities to suit a wide range of user groups. This requirement is met.

b. Common open space shall be a minimum of 15 percent of the planned development. Passive open space shall not be more than 5 percent of the planned development.

Response: As enumerated above, this application is for a PD Amendment to Hillcrest PD approved by Ordinance 5024 in 2017 and predates the adoption of City's Great Neighborhood Principles and the standards of this chapter. While this PD Amendment is not subject to new standards enacted since the adoption of Ordinance 5024, Applicant has made considerable efforts to incorporate the Great Neighborhood Principles and related site development standards that were enacted after Ordinance 5024, including these common open space requirements.

The completed phases of the Hillcrest PD currently include ±7.1 acres of active open space, primarily within the neighborhood park known as West Hills Neighborhood Park. This open space comprises ±11.9 percent of the net developable area of these completed phases.

As approved, Ordinance 5024 would add only ±1.0 acre of open space. The planned PD amendments include new parks and open spaces that will add more than ±13.0-acres of parks and open to the site. Planned open space equals ±15.3 percent of the net developable area of the subject site. Planned active use areas make up ±4.3 acres (±5.1 percent) of the subject site and will include activities such as pedestrian paths, trails, a dog park, and open lawns for programmed and spontaneous activities. Planned passive use areas will occupy ±8.7 acres (±10.3 percent) of the site and include areas that preserve natural features and create opportunities for scenic vistas and community enjoyment of nature.

With the planned PD Amendment, the overall Hillcrest PD will provide ±20.1 acres of open space (±13.9 percent of the total net developable area) including ±11.4 acres of active open space (±7.9 percent) and ±8.6 acres of passive open space (±6.0 percent).

Because prior phases of the Hillcrest PD have been constructed prior to this open space standard and because of the need to achieve the planned residential density to make it feasible to move forward with the project, achieving 15 percent open space and 10 percent active open space is not practicable.

While this principle does not apply, the Applicant has made significant effort to incorporate more passive and active open spaces into the site. The planned PD amendments represent a more than 1,200 percent increase in passive and active open space on this site (compared with Ordinance 5024). Although the planned PD amendments do not meet this requirement, conformance with this has been increased significantly; the current application includes $\pm 1,200$ percent more open space than Ordinance 5024.

- c. When vehicular areas are located between dwellings and common open space, clearly defined pathways shall be provided to enhance pedestrian safety.

Response: As shown in Exhibit A, in locations where vehicular areas are located between future dwellings and open spaces, clearly defined pathways have been provided. This requirement is met.

- d. Pathway surface shall be clearly marked and differentiated from the vehicular area with paint or alternative paving material.

Response: Pathway surfaces will be clearly marked and differentiated from the vehicular areas on site. This requirement is met.

- e. Common open space shall have a minimum dimension of 20 feet at the narrowest part.

Response: Common open spaces will exceed the minimum dimension of 20 feet across the site as shown on the Preliminary Subdivision Plat in Exhibit A. This requirement is met.

- f. Walkways are required between dwellings and common open space.

Response: Walkways will be provided throughout common open space, as practicable while ensuring preservation of the relatively steep slopes and natural resources, as shown on the Preliminary Community Amenity Plan in Exhibit A. This requirement is met.

4. Supplemental Requirements. Provide at least four of the options listed below.

- a. Provide opportunities for formal and informal recreational use by residents of all ages. This could be a shared recreational facility including sport fields, play structure, bike track, courts, swimming pool, or other options.
- b. Provide tall deciduous trees for summer shade and winter solar access. When possible, preserve and incorporate large existing trees at least 9 inches in diameter as a focal point of open spaces.
- c. Enhance the usability of the space through the inclusion of elements including seating, outdoor lighting, weather protection and/or shade structures, and art, among other features.
- d. Incorporate landscaping that receives at least 50 percent of its irrigation from harvested rainwater.

-
- e. Provide opportunities for food cultivation. Include a community garden and/or incorporate cultivated species into the landscaping.

Response: As detailed in the Preliminary Community Amenity Plan in Exhibit A, opportunities for formal and informal recreation use by residents of all ages is provided throughout the remaining phases of the Hillcrest PD to a substantially greater degree as compared to Ordinance 5024. Additional open spaces provide opportunities for enhanced tree preservation as well as provide appropriate places to site benches, fire pits, and other community amenities. Drought tolerant and/or low water demanding landscaping will be used throughout the site. Therefore, the application incorporates elements a. through d. above. The supplemental requirements are met.

D. Supplemental Elements, Consideration.

- 1. Modular Block Layouts.

[...]

- 2. Block Lengths.

[...]

- 3. Partial alley at the end of a block. A partial alley is where an alley is used to provide access to parking at the rear of lots, in lieu of driveways located at the front of the lot (see Figure, Partial Alley Block). Turnarounds are not required for partial alleys.

[...]

- 4. Usable Side Yard Setback. Optional for Tiny Homes, Plexes, and Single Dwellings in Residential Planned Developments. A usable side yard setback development is where dwelling units sharing street frontage are shifted to one side of their lot, to within 3 feet of the property line. This provides for greater usable yard space on each lot. These developments require that the planning for all house locations be done at the same time.

[...]

Response: The supplemental elements provided in this subsection were considered but are not feasible given the topography and natural resources present throughout the site.

Chapter 17.15 R-2 Low Density, 7000 SF Lot Residential Zone

17.15.010 Permitted Uses.

In an R-2 Zone, the following uses and their accessory uses are permitted:

- A. Tiny Houses, Site built single detached dwelling and Class A mobile home subject to the following standards:

[...]

Response: This application anticipates that the lots created via this planned PD Amendment will host detached single-family dwellings, which are permitted in the R-2 zoning district. This provision is met.

[...]

17.15.030 Lot Size.

In an R-2 Zone, the lot size shall not be less than seven thousand square feet except as provided in Section 17.11.070(C), Table 1(C), Townhouses, of this title.

Response: As shown on the Preliminary Land Use Plans in Exhibit A, the planned lots range in size from ±5,000 square feet to ±28,193 square feet, with an average lot size of ±7,965 square feet. Consistent with the approval in Ordinance 5024, the average lot size exceeds the 7,000 square foot minimum and the overall density does not exceed that allowed in the R-2 zoning district or that approved in Ordinance 5024. This standard is met.

17.15.040 Yard Requirements.

In an R-2 Zone, each lot shall have yards of the following size unless otherwise provided for in Section 17.54.050:

- A. A front yard shall not be less than twenty feet, except as provided in Section 17.11.030(C) Table 1(d), Cottage Clusters.
- B. A rear yard shall not be less than twenty feet, except as provided in Section 17.11.030(C), Table 1(f), Cottage Clusters.
- C. A side yard shall not be less than seven and one-half feet. An exterior side yard on the street side of a corner lot shall be not less than twenty feet, except as provided in Section 17.11.030(C), Table 1(c), Cottage Clusters.

Response: As outlined in Table 2, the application seeks approval for reduced street side-yard setbacks, reduced interior side yard setbacks, and approval for decks/patios to encroach into the 20-foot rear yard setback. The requested deviation in side yard setbacks allows Applicant to achieve the same density as approved by Ordinance 5024 and as recommended by the 2023 HNA and makes the project financially feasible while simultaneously setting aside nearly 14-acres of additional land for parks and protected open space (compared to Ordinance 5024). Moreover, allowing decks to encroach into the rear yard setback will provide opportunities for private outdoor open space throughout the steeply sloping site. A typical setback legend is provided on the Preliminary Product Distribution Plan in Exhibit A. With the requested PD flexibility, the criteria are met.

17.15.050 Building Height.

In an R-2 zone, a building shall not exceed a height of thirty-five feet.

Response: Applicant anticipates that future homes on the subject site will not require deviation from this building height standard. This standard can be met.

17.15.060 Density Requirements.

In an R-2 zone, the maximum density for single attached dwellings may not exceed four dwelling units per 7,000 square feet. Density maximums may not apply to any other permitted housing types, including accessory dwelling units.

Response: Policy 17.01 of the McMinnville Comprehensive Plan sets a targeted maximum density of 6.0 dwellings units per acre on the City's westside, where the subject site is located. The

application plans to achieve a density of 4.6 dwellings per acre and therefore satisfies the applicable density standard. This standard does not apply.

Chapter 17.51 Planned Development Overlay

17.51.010 Purpose

The purpose of a planned development is to provide greater flexibility and greater freedom of design in the development of land than may be possible under strict interpretation of the provisions of the zoning ordinance. Further, the purpose of a planned development is to encourage a variety in the development pattern of the community; encourage mixed uses in a planned area; encourage developers to use a creative approach and apply new technology in land development; preserve significant man-made and natural features; facilitate a desirable aesthetic and efficient use of open space; and create public and private common open spaces. A planned development is not intended to be simply a guise to circumvent the intent of the zoning ordinance.

[...]

Response: The planned PD amendments continue to meet the purpose for PD Overlays stated above. The planned amendments offer significantly more open space and increased preservation of natural features. As detailed in this written narrative, some flexibility to the applicable standards is requested; however, the Hillcrest PD continues to meet the intent of the zoning ordinance.

17.51.020 Standards and Requirements

The following standards and requirements shall govern the application of a planned development in a zone in which it is permitted:

A. The principal use of land in a planned development shall reflect the type of use indicated on the comprehensive plan or zoning map for the area. Accessory uses within the development may include uses permitted in any zone, except uses permitted only in the M-2 zone are excluded from all other zones. Accessory uses shall not occupy more than twenty-five percent of the lot area of the principal use;

Response: The planned PD amendments continue to be consistent with the residential zoning indicated on the comprehensive plan map and zoning map as detailed in this written narrative. This requirement is met.

B. Density for residential planned development shall be determined by the underlying zone designations.

Response: Policy 17.01 of the McMinnville Comprehensive Plan sets a targeted maximum density of 6.0 dwellings units per acre on the City's westside, where the subject site is located. The application plans to achieve a density of 4.6 dwellings per acre and therefore satisfies this density standard. This requirement is met.

[...]

Chapter 17.53 Land Division Standards

[...]

Approval of Streets and Ways

[...]

17.53.101 Streets

- A. General. The location, width, and grade of streets shall be considered in their relation to existing and planned streets, to topographical conditions, to public convenience and safety, and to the proposed use of the land to be served by the streets. Where location is not shown in a comprehensive plan, the arrangement of streets in a subdivision shall:
1. Provide for the continuation or appropriate projection of existing principal streets in surrounding areas; or
 2. Conform to a plan for the neighborhood approved or adopted by the Planning Commission to meet a particular situation where topographical or other conditions make continuance or conformance to existing streets impractical; or
 3. Maximize potential for unobstructed solar access to all lots or parcels. Streets providing direct access to abutting lots shall be laid out to run in a generally east-west direction to the maximum extent feasible, within the limitations of existing topography, the configuration of the site, predesigned future street locations, existing street patterns of adjacent development, and the preservation of significant natural features. The east-west orientation of streets shall be integrated into the design.

Response: While the topography presents challenges with steep slopes and natural features, the planned alignment of streets has been thoughtfully designed to prioritize accessibility (minimize portions of roadway that exceed a 12 percent grade). The planned street network seamlessly connects to the existing Hillcrest PD and surrounding community, as detailed in the Preliminary Circulation Plan in Exhibit A. The planned PD amendments continue to utilize existing Neighborhood Collector streets, ensuring efficient traffic flow. These provisions are met.

- B. Rights-of-way and street widths. The width of rights-of-way and streets shall be adequate to fulfill city specifications as provided in Section 17.53.151 of this chapter. Unless otherwise approved, the width of rights-of-way and streets shall be as shown in the following table:

Complete Street Design Standards							
	Arterial		Collector		Neighborhood Connector	Local Residential	Alley
	Major	Minor	Major	Minor			
Right-of-Way:	104 ft.	96 ft.	74 ft.	56 ft. (no bike lane) 66 ft. (bike lane)	50 ft.	50 ft.	20 ft.

Response: As shown on the Preliminary Street Plan in Exhibit A, all new local streets are designed with a 50-foot-wide public right-of-way and meet the Local Residential Street Design Standards. A private alley, maintenance accessway, and fire accessway will also be provided that have a right-of-way width of at least 20 feet. These requirements are met.

Where existing conditions, such as the topography or the size or shape of land parcels, make it otherwise impractical to provide buildable lots, the Planning Commission may accept a narrower right-of-way, ordinarily not less than 50 (fifty) feet. If necessary, special slope easements may be required.

Response: Except for planned alleys, the application does not include streets with a right-of-way width that is less than 50-feet. This requirement does not apply.

- C. Reserve strips. Reserve strips or street plugs controlling access to streets will not be approved unless necessary for the protection of the public welfare or of substantial property rights, in these cases, they may be required. The control and disposal of the land comprising such strips shall be placed within the jurisdiction of the Planning Commission under conditions approved by them.

Response: Reserve strips or street plugs are not requested with this PD Amendment application. This requirement does not apply.

- D. Alignment. As far as practical, streets other than minor streets shall be in alignment with existing streets by continuations of the center lines thereof. Staggered street alignment resulting in “T” intersections shall, wherever practical, leave a minimum distance of 200 feet between the center lines of streets having approximately the same direction and otherwise shall not be less than 125 feet.

Response: As shown on the Preliminary Circulation Plan, the planned PD amendments continue to extend the main Neighborhood Collector streets serving the site including W 2nd Street and Horizon Drive. In recognition of the challenging site topography, there is one instance of a staggered T intersection located in the vicinity of the intersections of W 2nd Street/Road G and W 2nd Street/Road D where the distance between street centerlines is less than 200 feet; as shown on the Preliminary Subdivision Plat sheet in Exhibit A, the distance between these T intersections is ±148 feet. Per D above, where necessary, this standard may be reduced to a minimum of 125-feet. Given the site topography and associated street and lot design considerations, this planned intersection spacing is necessary to balance the multiple objectives of development on this site. Correspondence with the City confirming the reduced intersection spacing is acceptable is provided in Exhibit G. This requirement is met.

17.53.103 Blocks

- A. General. The length, width, and shape of blocks shall take into account the need for adequate lot size and street width and shall recognize the limitations of the topography.
- B. Size. No block shall be more than 400 feet in length between street corner lines or have a block perimeter greater than 1,600 feet unless it is adjacent to an arterial street, or unless the topography or the location of adjoining streets justifies an exception. The recommended minimum length of blocks along an arterial street is 1,800 feet.

Response: As discussed above, site topography mandates a deviation from the block size requirements here, as was similarly approved by Ordinance 5024. In return, ample mid-block pedestrian and bicycle connections have been provided and assure convenient

access and mobility for these travel modes. These requirements are met through flexibility authorized by the PD Amendment.

C. Easements.

1. **Utility lines.** Easements for sewers, water mains, electric lines, or other public utilities shall be dedicated whenever necessary. The easements shall be at least 10 (ten) feet wide and centered on lot lines where possible, except for utility pole tieback easements which may be reduced to six (6) feet in width. Easements of 10 (ten) feet in width shall be required along all rights-of-way. Utility infrastructure may not be placed within one foot of a survey monument location noted on a subdivision or partition plat. The governing body of a city or county may not place additional restrictions or conditions on a utility easement granted under this chapter.
2. **Water courses.** If a subdivision is traversed by water courses such as a drainage way, channel, or stream, there shall be provided a storm unit easement or drainage right-of-way conforming substantially with the lines of the water course and of such width as will be adequate for the purpose, unless the water course is diverted, channeled, or piped in accordance with plans approved by the City Engineer's office. Streets or parkways parallel to major water courses may be required.
3. **Pedestrian ways.** When desirable for public convenience, safety, or travel, pedestrian ways not less than 10 (ten) feet in width may be required to connect to cul-de-sacs, to pass through unusually long or oddly shaped blocks, to connect to recreation or public areas such as schools, or to connect to existing or proposed pedestrian ways.

Response: As shown in Exhibit A, the application includes utility easements, easements that conserve natural drainageways, as well as pedestrian access tracts. Each of these easement types have been designed pursuant to applicable City standards. These requirements are met.

17.53.105 Lots

- A. **Size and shape.** Lot size, width, shape, and orientation shall be appropriate for the location of the subdivision and for the type of use contemplated. All lots in a subdivision shall be buildable.
 1. **Lot size** shall conform to the zoning requirement of the area. Depth and width of properties reserved or laid out for commercial and industrial purposes shall be adequate to provide for the off-street parking and service facilities required by the type of use contemplated. The depth of lot shall not ordinarily exceed two times the average width.

Response: The planned lot size, lot width, shape, and orientation are appropriate for maximizing protection of sensitive areas on-site, providing a similar number of residential lots as compared to Ordinance 5024, meeting the HNA density target for the R-2 zoning district, and for ensuring that all lots are buildable. As above, this PD Amendment (similar to Ordinance 5024) seeks relief from the standard R-2 lot size and lot depth-to-width ratio requirements. These requirements are met through flexibility authorized by the PD Amendment.

-
- B. Access. Each lot shall abut upon a street other than an alley for a width of at least 25 (twenty-five) feet or shall abut an access easement which in turn abuts a street for at least 15 (fifteen) feet if approved and created under the provisions of 17.53.100(C). Direct access onto a major collector or arterial street designated on the McMinnville Comprehensive Plan Map shall be avoided for all lots subdivided for single-detached, common wall, or duplex residential use, unless no other access point is practical.

Response: Each lot is planned to abut a street or an alley for a width of at least 25 feet, as shown on the Preliminary Subdivision Plat in Exhibit A. This standard is met.

- C. Through lots. Through lots shall be avoided except where they are essential to provide separation of residential development from major traffic arteries or adjacent nonresidential activities, or to overcome specific disadvantages of topography and orientation. A planting screen easement at least 10 (ten) feet wide, and across which there shall be no right of access, may be required along the line of lots abutting such a traffic artery or other incompatible use.

Response: No through lots are planned. This standard is not applicable.

- D. Lot side lines. The side lines of lots, as far as practicable, shall run at right angles to the street upon which the lots face.

Response: All lot lines are planned to run at right angles to the street upon which the lots face as far as practicable as shown on the Preliminary Subdivision Plat in Exhibit A. This standard is met.

- E. Flag lots. The creation of flag lots shall be discouraged and allowed only when it is the only reasonable method of providing access to the rear of a lot which is large enough to warrant partitioning or subdividing.

Response: No flag lots are planned. This standard is not applicable.

17.53.110 Lot Grading

Lot grading shall conform to the following standards unless physical conditions demonstrate the propriety of other standards:

- A. Cut slopes shall not exceed one and one-half (1½) feet horizontally to one (1) foot vertically.
- B. Fill slopes shall not exceed two (2) feet horizontally to one (1) foot vertically.
- C. The character of soil for fill and the characteristics of lots made usable by fill shall be suitable for the purpose intended.
- D. The minimum elevation at which a structure may be erected, taking into consideration the topography of the lot, the surrounding area, drainage patterns, and other pertinent data shall be established by the City Building Official.
- E. The City Engineer shall determine whether a storm drainage system is necessary to control, manage, and dispose of water lying on or running over a subdivision. In addition, the subdivider shall be required to meet other standards and conditions imposed by state laws and city ordinances.

Response: As shown in Exhibit A, cut slopes will not exceed 1½ feet horizontally to 1 foot vertically, and fill slopes will not exceed 2 feet horizontally to 1 foot vertically. The Preliminary Grading Plan has been designed such that all cut and fill slopes are 2:1 or flatter per these

requirements. Additional geotechnical studies and evaluations will be conducted and provided with final engineering submittals for construction. Finally, a Preliminary Stormwater Report (Exhibit H) outlines the conceptual stormwater management system for the project and documents the drainage characteristics on-site, both pre- and post-development. The criteria are met.

17.53.120 **Building Lines**

If special building setback lines are to be established in the subdivision or partition, they shall be shown on the plat or included in the deed restrictions.

Response: Deviations from building setbacks are requested with this PD Amendment application as detailed in this written narrative and shown on the Preliminary Product Distribution Plan in Exhibit A. The approved special building setback lines will be noted on the plat or included in the deed restrictions. This provision will be met.

[...]

Improvements

[...]

17.53.153 **Improvement Requirements.**

The following improvements shall be installed at the expense of the subdivider:

- A. **Water supply system.** All lots within a subdivision shall be served by the City water supply system.
- B. **Electrical system.** All lots within a subdivision shall be served by the City electrical system.
- C. **Sewer system.** All lots within a subdivision shall be served by the City sewer system.

Response: As shown in the Preliminary Composite Utility Plan in Exhibit A, the PD Amendment application includes the installation of all water, sanitary sewer, and electrical infrastructure, as well as stormwater and public street infrastructure to serve future homes on the site. These requirements are met.

- D. **Drainage.** Such grading shall be performed, and drainage facilities installed conforming to City specifications as are necessary to provide proper drainage within the subdivision and other affected areas in order to assure healthful, convenient conditions for the residents of the subdivision and for the general public. Drainage facilities in the subdivision shall be connected to drainage ways or storm sewers outside the subdivision. Dikes and pumping systems shall be installed, if necessary, to protect the subdivision against flooding or other inundations.

Response: Drainage facilities will be installed conforming to City specifications to provide proper drainage within the subdivision and other affected areas. The drainage facilities on-site have been designed to ensure that post-development flows do not exceed pre-development flows. Two new stormwater facilities are planned with this application (beyond that approved in Ordinance 5024) and that, in concert with existing stormwater facilities constructed in prior phases of the Hillcrest PD, will better ensure the appropriate

management of stormwater runoff. The Preliminary Stormwater Report in Exhibit H provides additional details regarding on-site stormwater management. This requirement is met.

E. **Streets.** The subdivider shall grade and improve streets in the subdivision, and the extension of such streets to the paving line of existing streets with which such streets intersect, in conformance with City specifications. Street improvements shall include related improvements such as curbs, intersection sidewalk aprons, street signs, gutters, shoulders, and median strips to the extent these are required.

Response: Street improvements are planned to be completed in accordance with all applicable City standards. As above, and as approved in Ordinance 5024, the application seeks approval for relief from the 12 percent maximum street grade standard in recognition of the challenging topography on-site. In such cases, steep streets are limited to short segments no longer than 200 feet. It is worth noting that Ordinance 5024 approved seven street segments where grades exceeded 12 percent. With the modifications to the street layout planned in this application, there are only four street segments where grades will exceed 12 percent.

As in Ordinance 5024, this flexibility is necessary to ensure compliance with ADA accessibility standards and serves to better protect on-site natural areas. All associated street elements, including curbs, sidewalk aprons at intersections, street signs, gutters, and shoulders, will be provided as applicable. Refer to the Preliminary Street Plan Overview with Road Grade and Preliminary Street Plan in Exhibit A. This requirement is met.

F. **Pedestrian ways.** A paved sidewalk not less than five (5) feet wide shall be installed in the center of pedestrian ways.

Response: Pedestrian ways will be provided with a paved sidewalk not less than 5 feet wide through the middle of each of the pedestrian tracts as shown on the Preliminary Street Plan in Exhibit A. This requirement is met.

G. **Private way/drive.** The subdivider shall grade and improve to conform to City specifications in terms of structural standards.

Response: All private ways and private drives will be graded and improved to conform to City specifications in terms of structural standards. This requirement will be met.

H. **Street trees consistent with the requirements of Chapter 17.58 of the McMinnville Zoning Ordinance and an approved street tree plan for the subdivision.**

Response: Street trees will be planted in compliance with the requirements of Chapter 17.58 and an approved street tree plan for the subdivision as detailed in this written narrative. This requirement will be met.

17.54.030 Buildings - Number Per Lot

In an R-1, R-2, and R-3 zone there shall be only one main building on a lot.

Response: No new home construction is requested with this application. However, Applicant anticipates that lots planned with this application will host only one main building each. This standard can be met.

This standard contradicts Oregon Revised Statutes (ORS) 197.758, which obligates cities to allow at least a duplex on all lots zoned for single-family detached homes. Because McMinnville defines a duplex as two dwellings on a single lot or parcel that may be attached or detached, the City must allow two detached buildings (of equal status, e.g., main building) on a lot per ORS 197.758.

[...]

17.54.050 Yards

- A. Measurement. The measurement of a yard shall be made perpendicular from the property line to the nearest portion of the building.
- B. Requirement exceptions. The following exceptions to the front-yard requirements for a dwelling are authorized for a lot in any zone:
 - 1. If there are dwellings on both abutting lots with front yards of depths less than the required depth for the zone, the depth of the front yard for the intervening lot need not exceed the average depth of the front yards of the abutting lots.
 - 2. If there is a dwelling on one abutting lot with a front yard of less depth than the required depth for the zone, the front yard for the lot need not exceed a depth halfway between the depth of the abutting lot and the required front- yard depth.
 - 3. Whether attached to a residence or as a separate structure, a covered storage facility (garage) for a vehicle on which the main opening is toward a street shall be located not less than 20 (twenty) feet from the property line bordering the street.
- C. Projections into yards. Architectural features such as cornices, canopies, sunshades, windows, chimneys, and flues shall not project more than 18 (eighteen) inches into a required yard. Eaves may extend a distance not to exceed 30 (thirty) inches into a required yard. Stairs may encroach up to five (5) feet into a required front yard provided that the stairs are not covered or enclosed, except for an eave not exceeding the 30 (thirty) inch encroachment as noted above.

Response: As shown in Exhibit A, the PD Amendment application conforms to applicable front yard setback requirements. The application seeks relief to the rear yard setbacks, such that decks or patios are allowed to encroach into the rear yard setback. Reductions to this setback help to provide private outdoor living space while accommodating the targeted density on-site necessary to achieve the City's housing needs and make development feasible in consideration of additional planned parks and open space (relative to Ordinance 5024). These requirements are met through flexibility authorized by the PD Amendment.

-
- D. In a district where automobile service stations are permitted or conditionally permitted, freestanding gasoline pumps and pump islands shall not be closer than 10 (ten) feet to a street property line.

Response: The subject property is within the R-2 zoning district and no automobile service stations are planned. This provision is not applicable.

- E. In a commercial or industrial zone, if an alley is adjacent to a required side or rear yard, the distance for a required yard may be measured from the center of the alley.

Response: The subject property is within the R-2 zoning district. This provision is not applicable.

- F. Yards required along arterial streets. Except in zones where greater setbacks are required, a minimum five (5) foot yard shall be provided where a lot or parcel abuts an arterial street, as those streets are defined in the City's Transportation Master Plan. The required five (5) foot yard shall be maintained as a clear vision area as defined in Section 17.54.080 except that the following uses may be allowed when alternatives are unavailable:

1. The exceptions described in Section 17.54.080.
2. Signs and signposts provided that the body of the sign is below three (3) feet in height or above eight (8) feet in height when measured from the top of the curb, or where no curb exists, eight and one-half (8.5) feet from the edge of the pavement or top of asphalt measured at the property line.

Response: No portion of the remaining phases of the Hillcrest PD are located along Arterial streets. These provisions are not applicable.

- G. A building may be constructed with a cantilever which extends up to two (2) feet over the setback at a height greater than eight feet when measured from the top of the curb, or where no curb exists, from eight and one-half (8.5) feet above the edge of the pavement, or top of asphalt measured at the property line.

Response: This provision is understood.

- H. Setback variance requests shall be processed under the provisions of Chapters 17.72 (Applications and Review Process) and 17.74 (Review Criteria), except that:

1. The applicant must prove that the vision of motorists, bicyclists, and pedestrians will not be blocked or adversely affected as a result of the variance;
2. Variances to the requirements of this section which do not involve building setbacks must comply with Section 17.54.060(H)(1) above, but need not comply with Section 17.74.110. (Ord. 4128 (part), 1981; Ord. 3380 (part), 1968).

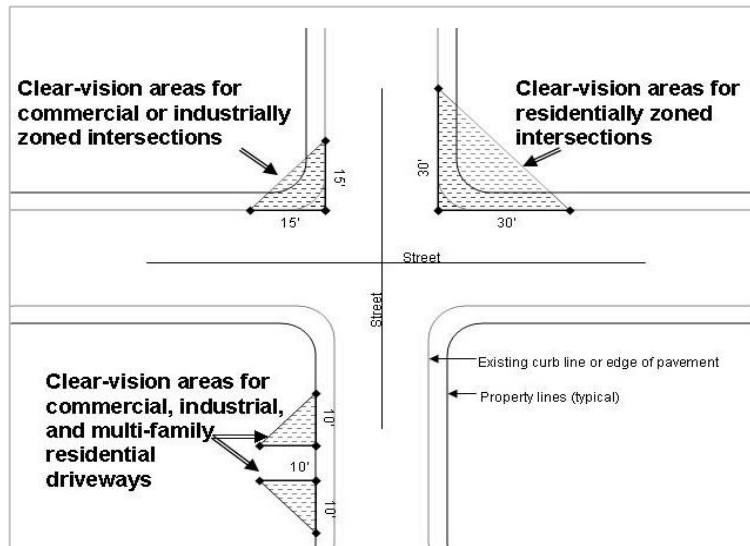
Response: The City's Planned Development process is intended to offer flexibility to standard lot design requirements, including setbacks, and is not subject to the variance process in H. above. This provision is not applicable.

[...]

17.54.080 Clear Vision Area

- A. Clear vision area requirement. A clear vision area shall be maintained on the corners of all properties at the intersection of two streets, a street and an alley, or a street and a railroad. Clear vision area requirements shall also apply to the first 10 (ten) feet of commercial and industrial access driveways when the driveway intersects with a street or alley. A clear vision area shall contain no planting, fence, wall, structure or temporary or permanent obstruction exceeding three (3) feet in height, measured from the top of the curb or, where no curb exists, from three and one-half (3.5) feet above the edge of the pavement, or top of asphalt measured at the property line, except that the following may be allowed in a clear vision area.
1. Trees exceeding this height may be located in the clear vision area provided all branches and foliage are removed to a height of eight feet above the grade;
 2. Telephone, power, and cable television pole, electrical junction boxes.
 3. Government issued traffic safety signs.
 4. Telephone switch boxes provided they are less than 10 inches wide at the widest dimension. (Ord. 4128 (part), 1981; Ord. 3380 (part), 1968).
- B. Clear Vision Area Measurement. The following measurements used in conjunction with the formula established in Section 17.06.080 shall be used to establish clear vision areas:
1. In a residential zone the minimum length of the triangle legs shall be 30 (thirty) feet at street intersections and 10 (ten) feet where a street and an alley intersect;
 2. In all other zones the minimum length of the triangle legs shall be 15 (fifteen) feet at street intersections and 10 (ten) feet where a street and an alley or street and access drive intersect, except that when the angle of intersection between two streets, is less than 30 (thirty) degrees, the length of the triangle legs shall be 25 (twenty-five) feet;
 3. In commercial and industrial zones, buildings and signs may be constructed with cantilevers which extend out over the clear vision area at a height greater than eight feet when measured from the top of the curb, or where no curb exists, from eight and one-half feet above the edge of the pavement, or top of asphalt measured at the property line;

Clear Vision Area



Response: Clear vision areas will be maintained in accordance with these requirements on all lots at the intersection of two streets or a street and an alley. These requirements will be met.

[...]

17.54.110 Use of Required Open Space

No lot area, yard, other open space, or off-street parking or loading area which is required by this title for one use shall be used as a required lot area, yard, or other open space or off-street parking or loading area for another use except as provided in Section 17.60.120 of this Ordinance.

Response: This provision is understood. No lot area, yard, other open space, or off-street parking or loading area required by this title for one use will be used as a required lot area, yard, or other open space or off-street parking or loading area for another use.

17.54.120 Minimum Requirement Maintenance

No lot area, yard, other open space, or off-street parking or loading area existing on or after the effective date of the ordinance codified in this title shall be reduced below the minimums required for it by this title, except when the provisions of either the variance or the planned development overlay processes are utilized. (Ord. 4128 (part), 1981; Ord. 3380 (part), 1968).

Response: The planned PD amendments continue to utilize the PD overlay process to reduce the street side, internal side, and rear yard requirements, as detailed in this written narrative. This provision is met.

17.54.130 Address Assignments

The Building Official shall be responsible for assigning addresses to new structures. Addresses shall conform to the established numbering system for the City and to the requirements of McMinnville Ordinance 1770 and shall be assigned at the time the building permit is issued or before final occupancy is granted. (Ord. 4128 (part), 1981; Ord. 3380 (part), 1968).

Response: This provision is understood.

[...]

Chapter 17.58 Trees

[...]

17.58.020 Applicability

The provisions of this ordinance shall apply to:

- A. Individual significant or historic trees as defined in this ordinance.
- B. All trees with trunks located completely or partially within any public area or right-of-way;
- C. All trees on developable land and subject to or undergoing development review such as site plan review, tentative subdivision review, or partition review;

Response: The subject site includes developable land and is subject to the planned development/subdivision review. Therefore, the provisions of MZO Chapter 17.58 are applicable and addressed in this written narrative.

[...]

17.58.040 Tree Removal/Replacement

- A. The removal or major pruning of a tree, if applicable under Section 17.58.020, shall require City approval, unless specifically designated as exempt by this ordinance. Persons wishing to remove or prune such trees shall file an application for a permit with the City. The applicant shall include information describing the location, type, and size of the subject tree or trees, and the reasons for the desired action, and the costs associated with tree removal, replacement, and repair of any other public infrastructure impacted by the tree removal or major pruning. Applications shall be reviewed by the City Manager or City Manager's Designee (hereafter "Manager") or the Landscape Review Committee as provided in this Chapter, including Section 17.58.050. Only applications for Complex Tree Removal Permits shall be forwarded to the McMinnville Landscape Review Committee for a decision within 30 (thirty) days of submittal, except as authorized in Section 17.58.050. Requests for tree removal within the Downtown Tree Zone shall be submitted to the City. Such requests shall be acted upon as soon as practicable, with consideration given to public safety, value of the tree to the public, and work schedules. The Manager should attempt to make decisions on such requests within five calendar days of submittal. The Landscape Review Committee or Manager, as appropriate, may approve, approve with conditions, or deny the request based on the criteria stated in Section 17.58.050. A decision of the committee or Manager may be appealed to the Planning Commission if written notice of the appeal is filed with the City within 15 (fifteen) days of the committee's or Manager's decision. A decision made by the Manager in response to a request to remove an unsafe tree, or a tree causing repeated and excessive damage to sidewalks, or other public or private improvements or structures shall be final, unless appealed by the applicant; no other party shall have standing to appeal.

Response: The application seeks approval for the removal of all on-site trees as necessary to construct new streets, sidewalks, landscape strips, public utilities, perform necessary site and lot grading, and to prep the site and planned lots for the construction of future

homes. Where possible, mature trees will be preserved. New street trees and individual lot landscaping will serve to replace trees that are removed to accommodate this development plan.

- B. Trees subject to this ordinance which are approved for removal or pruning shall be removed or pruned following accepted arboricultural pruning practices, such as those published by the International Society of Arboriculture (ISA) and any standards adopted by the City. The Manager, after consultation with appropriate city staff and/or a certified arborist, shall direct removal of downtown trees that are identified in a current Downtown Tree Zone inventory assessment as unhealthy, dangerous to the public, inappropriate for the downtown area, or otherwise in need of removal.
- C. The applicant shall be responsible for all costs associated with the tree removal or pruning, or as otherwise required by this ordinance, and shall ensure that all work is done in a manner which ensures safety to individuals and public and private property.
- D. Approval of a request to remove a tree may be conditioned upon replacement of the tree with another tree approved by the city, or a requirement to pay to the city an amount sufficient to fund the planting and establishment by the city of a tree, or trees, of similar value. The value of the existing tree to be removed shall be calculated using the methods set forth in the edition then in effect of the “Guide for Plant Appraisal” published by the International Society of Arboriculture Council of Tree Landscape Appraisers. Every attempt should be made to plant replacement trees in the same general location as the tree being removed. In the event that a replacement tree cannot be planted in the same general location, a condition of approval may be required to allow for the replacement tree to be planted in another location in the City as part of the City’s annual tree planting program.
- E. The applicant is responsible for grinding stumps and surface roots at least six inches below grade. At least a two-inch-thick layer of topsoil shall be placed over the remaining stump and surface roots. The area shall be crowned at least two inches above the surrounding grade to allow for settling and shall be raked smooth. The applicant shall restore any damaged turf areas and grades due to vehicular or mechanical operations. The area shall be re-seeded.

Response: The application seeks approval for the removal of all on-site trees as necessary to construct new streets, sidewalks, landscape strips, public utilities, perform necessary site and lot grading, and to prep the site and planned lots for the construction of future homes. Where possible, mature trees will be preserved. New street trees and individual lot landscaping will serve to replace trees that are removed to accommodate this development plan. These provisions can be met.

- F. The applicant shall complete the tree removal, and tree replacement if required, within six months of receiving notification of the Manager’s or Landscape Review Committee’s decision. The Manager or Landscape Review Committee may allow for additional time to complete the tree replacement to allow for planting in favorable seasons and to promote tree survivability.
- G. Other conditions may be attached to the permit approval by the McMinnville Landscape Review Committee as deemed necessary.

Response: Applicant plans to complete the requested tree removal for development in Phase 1 within 6 months of approval. Applicant requests that the City condition this approval such that tree removal in Phases 2 through 9 may commence concurrent with development activities in each of these phases. This approach will ensure that trees are not removed prematurely and will survive in the event that future modifications to the plan allow.

H. The planting of street trees shall be subject to the design drawings and specifications developed by the City in May 2014, as may be subsequently amended. Specific design drawings and specifications have been developed for trees outside the Downtown Tree Zone. Such design specifications may be periodically updated by the City to include specifications such as tree root barriers, watering tubes or structures, tree grates, and removable pavers, and shall graphically describe the proper method for planting trees to minimize the potential for sidewalk / tree root conflict.

Response: This provision is understood. Planting of street trees will be in accordance with all applicable City standards.

[...]

17.58.050 Application Review and Criteria.

A. Application for Simple Tree Removal Permit.

1. Review. Applications for simple tree removal permits shall be reviewed by the Manager in accordance with the requirements of this Chapter on a form containing information required by the Manager.
2. Criteria. Each tree proposed for removal must meet at least one of the following criteria:
 - a. The tree is a hazard as determined by a Certified arborist, and the arborist has demonstrated that less intensive options than removal, such as pruning, cabling, or bracing of limbs would not abate the hazard or would have a significant adverse effect on the health of the tree.
 - b. The tree is dead or in an advanced state of decline.
 - c. The tree species is on the nuisance list for Oregon or the list of invasive trees published by OSU Extension.
 - d. Tree is infested with pests or disease.
 - e. The tree roots are causing damage to sidewalks or other infrastructure, and the damage can't reasonably be abated without removing the tree. In evaluating whether the damage can be reasonably abated without removing the tree, consideration shall be given to impacts of the necessary abatement on the tree's health, further damage to infrastructure that would occur if the tree is retained, and alternative methods of abatement that would retain and protect the tree and prevent further damage. When considering reasonable abatement methods, greater priority shall be placed on retention of larger, healthy trees.
 - f. The tree has sustained physical damage to an extent that necessitates its removal to address an issue of safety or tree health and aesthetics.

- g. The proposed removal is part of an approved development project, a public improvement project where no reasonable alternative is available, or is part of a street tree improvement program. When considering reasonable alternatives, greater priority shall be placed on retention of larger, healthy trees.
- h. If the tree is on an adopted list or inventory of trees identified by the City as part of an adopted tree protection program, such as a Heritage Tree list the decision shall also meet any applicable requirements related to the protection of such trees.

Response: The remaining phases of the Hillcrest PD subject to this application contain trees, many of which will be necessary to remove in accordance with criterion (g). The subject tree removal will require a simple tree removal permit application. The site is steeply sloped, and extensive grading will be required to accommodate safe and efficient vehicular, pedestrian, and bicycle circulation as well as provide needed housing that will result in the necessity to remove many of the existing trees on-site. No reasonable alternatives to the removal of trees are available while still completing the remaining phases of the Hillcrest PD. Consistent with the approval in Ordinance 5024, a tree protection plan will be submitted with construction permits for approval.

[...]

17.58.080 Street Tree Planting - When Required

All new residential development, commercial or industrial development, subdivisions, partitions, or parking lots fronting on a public roadway which has a designated curb-side planting strip or planting island shall be required to plant street trees in accordance with the standards listed in Section 17.58.090.

Response: This application is for the remaining phases of the Hillcrest PD, a phased residential subdivision. Street trees will be planted according to the standards listed in Section 17.58.090.

17.58.090 Street Tree Standards

- A. The species of the street trees to be planted shall be chosen from the McMinnville Street Tree List, as approved by Resolution 2019-26, and as may have been subsequently amended, unless approval of another species is given by the McMinnville Landscape Review Committee. The Landscape Review Committee may periodically update the McMinnville Street Tree List as necessary to reflect current arborist practices and industry standards.
- B. Street trees shall be a minimum of two (2) inches in caliper measured at six (6) inches above ground level. All trees shall be healthy grown nursery stock with a single straight trunk, a well-developed leader with tops and roots characteristic of the species cultivar or variety. All trees must be free of insects, diseases, mechanical injury, and other objectionable features when planted.
- C. Small or narrow stature trees (under 25 feet tall and less than 16 feet wide branching) should be spaced no greater than 20 feet apart; medium sized trees (25 feet to 40 feet tall, 16 feet to 35 feet wide branching) should be spaced no greater than 30 feet apart; and large trees (over 40 feet tall and more than 35 feet wide branching) should be spaced no greater than 40 feet apart. Within

residential developments, street trees should be evenly spaced, with variations to the spacing permitted as approved by the City for specific site limitations and safety purposes. Within commercial and industrial development staggered, or irregular spacing is permitted, as may be approved by the McMinnville Landscape Review Committee. When planting replacement trees within the Downtown Tree Zone, consideration shall be given to the height of adjacent buildings.

- D. Except as provided in this Section, street trees shall be planted within a curbside planter strip or tree wells consistent with the applicable standards and dimensions of the City's adopted Complete Street standards, with the street trees centered between back of curb and front of sidewalk. However, where a street with sidewalk was previously constructed to a different standard, the Manager may authorize deviation to the street tree planting standards, with street trees planted in a narrower planter strip or behind the sidewalk. Except when authorized by the Manager, street trees shall not be planted within a curbside landscape strip narrower than four (4) feet in width between the sidewalk and curb. When nonconforming conditions do not allow for trees to be planted in tree wells or planter strips along major collector or arterial streets per the adopted Complete Street standards, street trees adjacent to major collector streets or arterial streets shall be placed a minimum of five (5) feet from the back edge of the sidewalk. Except when authorized by the Director, a street tree shall not be planted closer than two and one-half (2 1/2) feet from the face of a curb. These standards may be superseded by design drawings and specifications as periodically developed and adopted by the City.
- E. Street trees shall not be planted within ten (10) feet of fire hydrants, utility poles, sanitary sewer, storm sewer or water lines, or within twenty (20) feet of street light standards or street intersections, or within five (5) feet of a private driveway or alley. New utility poles shall not be located within five (5) feet of an existing street tree. Variations to these distances may be granted by the Public Works Director and as may be required to ensure adequate clear vision.
- F. Existing street trees shall be retained unless approved by the Manager for removal during site development or in conjunction with a street construction project. Sidewalks of variable width and elevation may be utilized as approved by the Manager to save existing street trees. Any street tree removed through demolition or construction within the street right-of-way, or as approved by the City, shall be replaced within the street right-of-way at a location approved by the city with a tree, or trees, of similar value. As an alternative the property owner may be required to pay to the City an amount sufficient to fund the planting and establishment by the city of a tree of similar value. The value of the existing street tree to be removed shall be calculated using the methods set forth in the edition then in effect of the "Guide for Plant Appraisal" published by the International Society of Arboriculture Council of Tree Landscape Appraisers. The developer or applicant shall be responsible for the cost of the planting, maintenance and establishment of the replacement tree.
- G. Sidewalk cuts in concrete for tree planting shall be a minimum of four feet by six feet, with the long dimension parallel to the curb, and if located within the Downtown Tree Zone shall follow the design drawing or updated design drawings and specifications as periodically developed and adopted by the City.

Response: All street trees will be planted in 4.5-foot-wide planter strips according to the standards listed above. A conceptual overview of the street trees is provided on the Master Plan

Layout with Aerial in Exhibit A. A local residential street section depicting the 4.5-foot-wide landscape strip is shown on the Preliminary Street Plan. These standards will be met.

17.58.100 Street Tree Plans

- A. Submittal.
 - 1. Subdivisions and Partitions: Street tree planting plans shall be submitted to the Landscape Review Committee for review and approval prior to the filing of a final subdivision or partition plat.
 - 2. Commercial, Industrial, Parking Lots, and Multi-dwelling Residential Development: Landscape plans, to include street tree planting as may be required by this ordinance, shall be submitted to the Landscape Review Committee for review and approval prior to the issuance of a building permit.
- B. Street Tree Plan Content. At a minimum, the street tree planting plan should:
 - 1. Indicate all existing trees, noting location, species, size (caliper and height) and condition;
 - 2. Indicate whether existing trees will be retained, removed or relocated;
 - 3. Indicate the measures to be taken during site development to ensure the protection of existing trees to be retained;
 - 4. Indicate the location, species, and size (caliper and height) of street trees to be planted;
 - 5. Indicate the location of proposed and existing utilities and driveways; and
 - 6. Indicate the location of rights-of-way, existing structures, driveways, and existing trees including their species, size, and condition, within twenty feet of the subject site.

Response: A street tree planting plan containing all applicable content listed above will be submitted prior to filing of the final subdivision plat. This provision will be met.

17.58.110 Street Tree Planting

- A. Residential subdivisions and partitions
 - 1. Planting Schedule: Street trees required of residential subdivisions and partitions shall be installed prior to submittal of a final subdivision plat or partition plat. As an alternative the applicant may file a surety bond or other approved security to assure the planting of the required street trees, as prescribed in Section 17.53.153.

Response: Street trees will be installed prior to the submittal of final plat or an approved security will be filed to assure the planting of the required street trees. This provision will be met.

[...]

Chapter 17.60 Off-Street Parking and Loading

17.60.050 Spaces – Location

- A. Except as provided below, required off-street parking spaces for dwellings shall be located on the same lot with the dwelling. For the following

residential uses, off-street parking shall be located not farther than five hundred feet from the building or use they are required to serve, measured in a straight line from the building.

1. Off-street parking for one or two upper story residential dwelling units above a non-residential use
2. Off-street parking for residential uses in the City Center Housing Overlay Zone designated in Chapter 17.66

Response: All off-street parking spaces will be located on the same lot as the residential home. This standard is met.

[...]

17.60.060 Spaces. Number Required

Except for the southerly 100 feet of Block 10 and the northerly 100 feet of Block 11, Rowland's Addition and the area bounded by Second Street, Adams Street, Fourth Street, and Galloway Street, at the time of erection of a new structure or at the time of enlargement or change of use of an existing structure, off-street parking spaces shall be provided as follows unless greater requirements are otherwise established. Where square feet are specified, the area measured shall be the gross floor area primary to the functioning of the particular use of the property but shall exclude space devoted to off-street parking or unloading.

A. Residential Land Use Category

[...]

4. Single Detached

Two spaces per dwelling with four or fewer bedrooms, and one additional space for every two additional bedrooms.

Response: A minimum of two spaces will be provided per dwelling unit in garages and within driveways. This requirement is met.

[...]

17.60.080 Design Requirements

A. All parking lots and driving aisles shall be asphaltic cement concrete or Portland cement concrete with driving aisles, maneuvering aisle and parking spaces clearly marked, except that in an industrial zone, parking spaces which are in addition to those required by this chapter, may be surfaced with a minimum of treated gravel and maintained dust free.

Response: No parking lots are planned. This requirement is not applicable.

B. In a residential zone, a required front yard or a required side yard adjacent to the street shall not be used for any purpose except for off-street parking of motor vehicles, unless otherwise allowed by this ordinance, and such parking space shall not be less than twenty feet in depth from the property line.

Response: No yard adjacent to a street will be used for any purpose except for off-street parking. All driveways will be a minimum of 20 feet in depth from the property line. This requirement is met.

C. Safe access shall be provided as follows:

[...]

5. Driveway cuts shall be a minimum of twenty feet from a street intersection.

Response: No driveway cuts will be located less than 20 feet from a street intersection. This requirement is met.

Chapter 17.72 Applications and Review Process

[...]

17.72.095 Neighborhood Meetings

[...]

G. Evidence of Compliance. In order for a land use application that requires a neighborhood meeting to be deemed complete, the following evidence shall be submitted with the land use application:

1. A copy of the meeting notice mailed to surrounding property owners;
2. A copy of the mailing list used to send the meeting notices;
3. One photograph for each waterproof sign posted on the subject site, taken from the adjacent right-of-way;
4. One 8 ½ x 11” copy of the materials presented by the applicant at the neighborhood meeting; and
5. Notes of the meeting, which shall include:
 - a. Meeting date;
 - b. Meeting time and location;
 - c. The names and addresses of those attending;
 - d. A summary of oral and written comments received; and
 - e. A summary of any revisions made to the proposal based on comments received at the meeting.

Response: A neighborhood meeting was held on May 20, 2024. Evidence of compliance is provided in Exhibit F. The comments received at the meeting were generally project-related and were responded to in the meeting. The following revisions or actions were taken after the meeting in response to comments received:

- Community members expressed the desire for open spaces to include dog parks, stations with dog waste bags, benches and seating areas, and play areas for children. Each of these elements has been incorporated into the common open space areas as shown on the Preliminary Community Amenity Plan in Exhibit A.
- Community members expressed concerns regarding deficiencies in water pressure in the surrounding neighborhood. Applicant contacted McMinnville Water & Light to bring these concerns to their attention. McMinnville Water & Light confirmed that their recent measurements indicate appropriate pressure in the areas discussed, as shown in Exhibit G. Further coordination will occur with McMinnville Water & Light throughout the project to ensure adequate water

pressure. Additionally, all future homes above the 275-foot elevation contour will rely on a new public water booster pump station to provide sufficient pressure to these homes. Applicant is closely coordinating with the City and McMinnville Water & Light to procure the necessary water booster pump station infrastructure in time for Phase 3 home construction.

- Neighbors expressed the desire to purchase lots prior to home building. Applicant will reach out to those who expressed interest when lots are platted.

CITY OF MCMINNVILLE COMPREHENSIVE PLAN

Chapter V Housing and Residential Development

Goal V-1 To promote development of affordable, quality housing for all city residents.

Goal V-2 To promote a residential development pattern that is land intensive and energy-efficient, that provides for an urban level of public and private services, and that allows unique and innovative development techniques to be employed in residential designs.

Response: The planned PD amendments would provide ±392 new single-family dwellings at a density of ±4.6 dwellings per acre, which directly addresses the need identified in the City’s HNA and does not exceed the maximum westside density of 6 units per acre (Policy 17.01). Although the remaining phases of the Hillcrest PD subdivision are planned to comprise exclusively single-family detached home lots, the previous phases of the Hillcrest PD include multiple-family homes, which together satisfy the City’s goal for a mix of housing types while acknowledging development limitations in this area. These goals are met.

Chapter VI Transportation System

Goal VI-1 To encourage development of a transportation system that provides for the coordinated movement of people and freight in a safe and efficient manner.

Response: As shown on the Preliminary Street Plan Exhibit A and detailed in this written narrative, all streets will be constructed in accordance with applicable street standards, and the revised street network will continue to provide connections to the previous phases of the Hillcrest PD and surrounding neighborhoods in a safe and efficient manner.

Traffic studies submitted with prior approvals for the Hillcrest PD indicate acceptable traffic flow at full buildout, with certain improvements as included in Ordinance 5024. Per Ordinance 5024, prior to the issuance of the 290th building permit (which is expected to occur in Phase 4), Applicant will construct the required mitigative measures, which include a left-turn lane at the intersections of W 2nd Street/SW Hill Road and NW Horizon Drive/NW Hill Road. This PD Amendment application reduces the number of residential lots by two, which will slightly reduce traffic impacts. Therefore, the streets will remain adequate to support the anticipated traffic of the Hillcrest PD with the required mitigative measures outlined in the approved traffic studies for the Hillcrest PD. This goal is met.

Chapter VII Community Facilities and Services

Goal VII-1 To provide necessary public and private facilities and utilities at levels commensurate with urban development, extended in a phased manner, and planned and provided in advance of or concurrent with development, in order to promote the orderly conversion of urbanizable and future urbanizable lands to urban lands within the McMinnville urban growth boundary.

Goal VII-3 To provide parks and recreation facilities, open spaces, and scenic areas for the use and enjoyment of all citizens of the community.

Response: Utilities serving the site will be adequate for the remaining homes in the Hillcrest PD. Utility capacity was reviewed during the past approval processes and determined to be adequate, accounting for the need to install a water system booster pump station to serve lots above the 275-foot elevation contour. The Preliminary Composite Utility Plan in Exhibit A and Preliminary Stormwater Report in Exhibit H demonstrate that each remaining phase of the Hillcrest PD has been designed to include all necessary infrastructure for that phase. Furthermore, this PD Amendment will not result in an increase in utility and drainage demand beyond the prior approval.

The planned PD amendments will provide an additional ±13.0 acres of parks and open space beyond that approved in Ordinance 5024, significantly increasing the amount of land dedicated to parks and recreation within the Hillcrest PD. These goals are met.

Chapter VIII Energy

Goal VIII-2 To conserve all forms of energy through utilization of land use planning tools.

Response: The planned PD amendments continue to propose compact urban development, as appropriate for site's topographical limitations, which is consistent with the land utilization approved in Ordinance 5024. This goal is met.

Chapter IX Urbanization

Goal IX-1 To provide adequate lands to service the needs of the projected population to the year 2023, and to ensure the conversion of these lands in an orderly, timely manner to urban uses.

Goal IX-2 To establish a land use planning framework for application of the goals, policies, and proposals of the McMinnville Comprehensive Plan.

Response: The site will remain within the City and its UGB. As mentioned above, urban services will be available to the site. While the PD Amendment is not subject to new standards enacted since the adoption of Ordinance 5024, Applicant has made considerable efforts to incorporate the Great Neighborhood Principles of this chapter that were enacted after Ordinance 5024. The currently planned PD Amendment substantially improves conformance with the City's Great Neighborhood Principles as compared to Ordinance 5024. These goals are met.

CITY OF MCMINNVILLE ORDINANCE 5024

Conditions of Approval

1. That the planned development overlay shall require the following setbacks:
 - A. Development of the multi-family lot and single-family lots within the Northridge subdivision shall be to standard R-4 zone setbacks.

-
- B. Lots within the Valley’s Edge Phase 2 subdivision shall be to a standard R-3 zone setback.
 - C. All other lots shall meet applicable R-2 zoning setbacks.

The Planning Director is authorized to permit reductions or increases to these setback standards as may be necessary to provide for the retention of trees greater than nine (9) inches in diameter measured at 4.5 feet above grade. In no case, however, may the side yard setback be reduced to less than five feet, or the exterior side yard setback to less than 12 feet, or the distance from the property line to the front opening of a garage be reduced to less than 18 feet without approval of the Planning Commission pursuant to the requirements of Chapter 17.69 (Variance). A request to adjust the setbacks for these lots shall be accompanied by a building plan for the subject site that clearly indicates the location of existing trees. Trees to be retained shall be protected during all phases of home construction.

Response: The planned PD amendments no longer request R-4 zoning district setbacks be applied to portions of the site; however, deviations from yard standards are still necessary. A typical setback legend is provided on the Preliminary Product Distribution Plan in Exhibit A. Because of the need to protect more open space, avoid development in geologically sensitive areas, and provide additional stormwater management facilities, ±14 acres of the subject site that were formerly believed to be developable are no longer available for new dwellings. Subsequently, this application seeks to balance these objectives by requesting reductions to the side- and rear-yard setback requirements and by slightly reducing the size of the lots.

Taken together, this program achieves density targets established in Ordinance 5024, the City’s Comprehensive Plan, and the 2023 HNA, while providing housing needed for McMinnville’s anticipated population growth.

- 2. That existing trees greater than nine inches in diameter above grade shall not be removed without prior review and written approval of the Planning Director. In addition, all trees shall be protected during home construction. A plan for such protection must be submitted with the building permit application and must meet with the approval of the Planning Director prior to release of construction or building permits within the subject site. Requests for removal of such trees based upon claims of disease, or hazard should be accompanied by a report from a licensed arborist.

Response: The application seeks approval for the removal of all on-site trees as necessary to construct new streets, sidewalks, landscape strips, public utilities, to perform necessary site and lot grading, and to prepare the site and planned lots for the construction of future homes as shown in Exhibit A. Where possible, mature trees will be preserved. New street trees and individual lot landscaping will serve to replace trees that are removed to accommodate this development plan.

- 3. That the “Hillcrest” phased tentative subdivision plan (revised as necessary to comply with the adopted conditions of approval) be placed on file with the Planning Department and that it become a part of the zone and binding on the property owner and developer, and shall in no way be binding on the City.

The developer shall be responsible for requesting approval of the Planning Commission for any major change of the details of the adopted plan. Minor changes to the details of the adopted plan may be approved by the Planning Director. It shall be the Planning Director's decision as to what constitutes a major or minor change. An appeal from a ruling by the Planning Director may be made only to the Commission. Review of the Planning Director's decision by the Planning Commission may be initiated at the request of any one of the Commissioners.

Response: In accordance with this condition and the standards in MZO 17.74.070, this application seeks approval for a major change to the remaining phases of the Hillcrest PD phased tentative subdivision plan.

4. That site plans and building elevations for the proposed multi-family units must be submitted to the Planning Director for review and approval prior to the issuance of any building permits for said units. The following criteria shall apply:
 - A. The building layout must be nonlinear in design, even if to meet this goal the number of units has to be reduced.
 - B. The building roof lines and facades must be broken so as to avoid a flat, uniform appearance.
 - C. The site shall be heavily landscaped with emphasis on those sides facing a public street. Street-side landscaping shall include berming, and street trees a minimum of two-inch caliper at time of planting. In addition, parking lots shall be broken up by landscaping, and usable open space shall be provided within the development.
 - D. Signage shall be limited to a maximum of two free-standing monument-type signs, each not more than four feet in height and not exceeding 36 square feet in area. The signs, if illuminated, must be indirectly illuminated and non flashing.
 - E. Horizontal lap siding or similar type siding must be used (no T-111 or similar), and architectural composition roofing or a similar or higher grade type of roofing must be applied.

Response: The multi-family component of the original Hillcrest PD has been constructed. This application does not seek a modification that would impact the constructed multi-family units.

5. Prior to the issuance of the 290th building permit for the master planned development, the developer shall complete the installation of left-turn-lane improvements, meeting the City's and Yamhill County's standards, at the intersections of Hill Road / Horizon Drive and Hill Road / West Second Street.

Response: This application does not seek a modification that would impact this condition of Ordinance 5024. Applicant will install the required improvements prior to the issuance of the 290th building permit.

6. That minimum lot sizes within the Hillcrest development may be reduced below 7,000 square feet, provided the overall residential density within the subject site (less the parkland and storm detention areas) does not exceed the net density allowed by the R-2 zone (gross density reduced by 25 percent to account for public infrastructure).

Response: This application does not seek a modification to the reduction of minimum lot sizes approved as a part of Ordinance 5024. The remaining phases of the Hillcrest PD subject

to this application continue to provide lots that are below 7,000 square feet while maintaining an average lot size that is greater than 7,000 square feet and not exceeding the maximum density permitted within the R-2 zoning district as detailed in this written narrative.

7. Grades shall not exceed six (6) percent on arterials, 10 (ten) percent on collector streets, or 12 (twelve) percent on any other street except as described below. Any local street grade exceeding 12 (twelve) percent shall be reviewed for approval by the Fire Code Official during the land use application review process. When a local residential street is approved to exceed 12 (twelve) percent the following shall be required:

- A. A maximum of 200 feet of roadway length may be allowed with a grade between 12 (twelve) percent and 15 (fifteen) percent for any one section. The roadway grade must reduce to no more than 12 (twelve) percent for a minimum of 75 linear feet of roadway length between each such section for firefighting operations.
- B. Fire sprinklers shall be installed in all residential and commercial structures whose access road is constructed at a grade higher than 12 (twelve) percent. The approval of such fire sprinklers shall be accomplished in accordance with the provisions of ORS 455.610(6).

Response: This application does not seek a modification to the street grade standards approved as a part of Ordinance 5024.

Centerline radii of curves shall not be less than 300 feet on major arterials, 200 feet on secondary arterials, or 100 feet on other streets, and shall be to an even 10 (ten) feet. Where existing conditions, particularly topography, make it otherwise impractical to provide buildable lots, the Planning Commission may accept sharper curves.

Response: The planned PD amendments include street realignments as necessary to avoid sensitive areas of the site and to minimize the depths of cuts into bedrock whenever possible. Additionally, eyebrow corners or curb bulb-outs with reduced centerline radii of curves are planned as necessary to maximize buildable lots to achieve the same density as approved by Ordinance 5024 and as recommended by the 2023 HNA. Eyebrow corners and curb bulb-outs will be designed according to local fire department requirements and standard engineering practices.

8. That condition of approval number 10 of S 13-06 is supplanted as follows: “The City Public Works Department will install, at the applicant’s expense, the necessary street signage (including stop signs, no parking signage, and street name signage), curb painting, and striping (including stop bars) associate with the development. The applicant shall reimburse the City for the signage and markings prior to the City’s approval of the final plat.”

Response: This application does not seek a modification that would impact this condition of Ordinance 5024.

-
9. That condition of approval numbers 14, 15 and 16 of S 13-06 is supplanted as follows: “Per the adopted 2010 Transportation System Plan (TSP), all remaining streets (including the extensions of 2nd Street and Horizon Drive) within the development area can be constructed to the local residential street standard. All streets shall be improved with a 28-foot wide paved section, 5-foot wide curbside planting strips, and five-foot-wide sidewalks placed one foot from the property line within a 50-foot right-of-way, as required by the McMinnville Land Division Ordinance for local residential streets.”

Response: This application does not seek a modification to the street standards approved as a part of Ordinance 5024. All remaining streets will be constructed to the local residential street standard as shown on the Preliminary Street Plan in Exhibit A. All streets will be improved with a 28-foot-wide paved section, 4.5-foot-wide planting strip with a 0.5-foot curb, and 5-foot-wide sidewalks placed 1 foot from the property line within a 50-foot right-of-way.

10. That the applicant shall provide information detailing the number of lots that will be made available for individual sale to builders for review and approval by the Planning Director prior to recording of the final plat. Upon approval, the referenced lots will be made available for sale to the general public for a minimum of one hundred twenty (120) days prior to building permit issuance for said lots.

Response: This application does not seek a modification that would impact this condition of Ordinance 5024.

11. That in addition to the pedestrian connections shown on Sheet SU-00 of the applicant’s submittal, pedestrian connections shall also be provided between NW Brookshire and NW Canyon Creek Drive, NW Canyon Creek Drive and Road A, between Road A and the adjacent westerly edge of the subdivision (Tax Lot 809), between NW C Loop and NW Elizabeth, between Road D and the northwesterly edge of the subdivision (Tax Lot 809) and between Road E and NW 2nd Street. All private pedestrian connections shall be dedicated as tracts commonly held and maintained by a Homeowner’s Association.

Response: This application does not seek a modification to the additional pedestrian connections required as a part of Ordinance 5024. These six additional pedestrian connections, along with significantly more open space and pedestrian connectivity, have been integrated into the amended Hillcrest PD layout as shown on the Preliminary Subdivision Plat in Exhibit A.

12. That based on a Geo-Technical Engineering report dated May 10, 2016, and the soils conditions shown in this report, foundations will necessitate design by a Geo-Technical Engineer. Each design must take into account what might occur to the down slope construction (Phase 4), when further development of the hillside occurs in the future. Since the May 10, 2016, report this hillside has been saturated with substantial rainfall. How this has affected any construction on the downside as well as future development should be taken into consideration in the design of Phase 4.

Response: This application does not seek a modification that would impact this condition of Ordinance 5024. This condition is specific to Valleys Edge Phase 4, which was completed/platted in early 2021 and is no longer applicable. However, based on the geotechnical conditions at the site, further site-specific geotechnical investigations will be conducted and provided during final engineering, including evaluations for slope stability

and surface drainage control. All recommendations from the geotechnical engineer will be integrated into site design and hillside development.

13. That Planned Development Ordinance 4868 is repealed in its entirety.

Response:

The changes to the layout for the remaining portion of the Hillcrest PD included in this PD Amendment application comply with the requirements of Ordinance 5024. Applicant understands that, should this request be approved, Ordinance 5024 will similarly be repealed and replaced with the ordinance enacting the approval of this request. The ordinance will contain applicable elements of Ordinance 5024 in addition to new conditions reflecting the modifications to the phased tentative subdivision plan included in this application. The new ordinance will serve to continue the Planning Commission's original 2007 approval and 2017 PD Amendment approval for the Hillcrest PD.

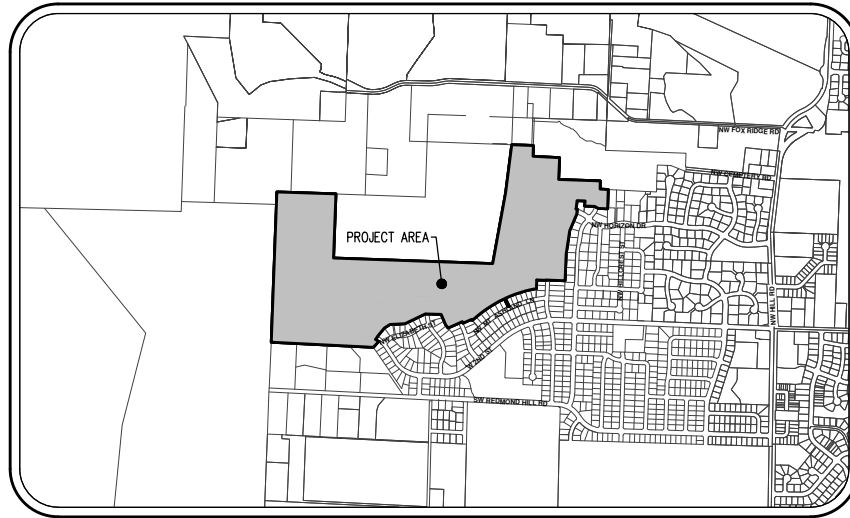
IV. Conclusion

The required findings have been made and this written narrative and accompanying documentation demonstrate that the application is consistent with all applicable conditions from Ordinance 5024 and all applicable approval standards within the McMinnville Zoning Ordinance. The evidence in the record is substantial and supports approval of the application. Therefore, Applicant respectfully requests that the City approve this application.

Exhibit A: Preliminary Land Use Plans

HILLCREST PLANNED DEVELOPMENT AMENDMENT

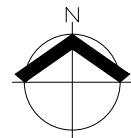
PRELIMINARY LAND USE PLANS



VICINITY MAP
1" = 1200'



SITE MAP
1" = 500'



CONTRACT PURCHASER
HOLT HOMES, INC
CONTACT: JOSHUA LANG
1301 SE TECH CENTER DRIVE, SUITE 150
VANCOUVER, WA 98683
PHONE: 971-276-9169

**PLANNING/ENGINEERING/
SURVEYING/LANDSCAPE
ARCHITECTURE FIRM**
AKS ENGINEERING & FORESTRY, LLC
CONTACT: ZACH PELZ, AICP
12965 SW HERMAN ROAD, SUITE 100
TUALATIN, OR 97062
PHONE: 503-563-6151
EMAIL: PELZZ@AKS-ENG.COM

GEOTECHNICAL ENGINEER
COLUMBIA WEST ENGINEERING, INC.
CONTACT: ALAN RUTHERFORD
11917 NE 95TH STREET
VANCOUVER, WA 98682
PHONE: 360-823-2900

PROJECT LOCATION:
LOCATED NORTH OF W 2ND ST, WEST OF NW
MT MAZAMA ST, SOUTH OF NW FOX RIDGE RD,
IN MCMINNVILLE, OREGON

PROPERTY DESCRIPTION:
TAX LOT 801
(YAMHILL COUNTY TAX MAP R4524) LOCATED IN
THE CENTER OF THE EAST 1/2 OF SECTION 45,
CITY OF MCMINNVILLE, YAMHILL COUNTY, OREGON

EXISTING LAND USE:
VACANT LAND

PROJECT PURPOSE:
SINGLE-FAMILY RESIDENTIAL PLANNED
DEVELOPMENT SUBDIVISION

LEGEND

EXISTING		PROPOSED		EXISTING		PROPOSED	
DECIDUOUS TREE			STORM DRAIN CLEAN OUT				
CONIFEROUS TREE			STORM DRAIN CATCH BASIN				
FIRE HYDRANT			STORM DRAIN AREA DRAIN				
WATER BLOWOFF			STORM DRAIN MANHOLE				
WATER METER			GAS METER				
WATER VALVE			GAS VALVE				
DOUBLE CHECK VALVE			GUY WIRE ANCHOR				
AIR RELEASE VALVE			UTILITY POLE				
SANITARY SEWER CLEAN OUT			POWER VAULT				
SANITARY SEWER MANHOLE			POWER JUNCTION BOX				
SIGN			POWER PEDESTAL				
STREET LIGHT			COMMUNICATIONS VAULT				
MAILBOX			COMMUNICATIONS JUNCTION BOX				
			COMMUNICATIONS RISER				

	EXISTING	PROPOSED
RIGHT-OF-WAY LINE		
BOUNDARY LINE		
PROPERTY LINE		
CENTERLINE		
DITCH		
CURB		
EDGE OF PAVEMENT		
EASEMENT		
FENCE LINE		
GRAVEL EDGE		
POWER LINE		
OVERHEAD WIRE		
COMMUNICATIONS LINE		
FIBER OPTIC LINE		
GAS LINE		
STORM DRAIN LINE		
SANITARY SEWER LINE		
WATER LINE		
RECLAIMED WATER LINE		

SHEET INDEX

PRELIMINARY OVERVIEW SHEETS

- P-00 COVER SHEET
- P-01 EXISTING CONDITIONS WITH AERIAL
- P-02 MASTER PLAN LAYOUT WITH AERIAL
- P-03 MASTER PLAN COMPARISON
- P-04 PRELIMINARY COMMUNITY AMENITY PLAN
- P-05 PRELIMINARY CIRCULATION PLAN
- P-06 PRELIMINARY PRODUCT DISTRIBUTION PLAN

PRELIMINARY SUBDIVISION PLAT

- SU-00 PRELIMINARY SUBDIVISION PLAT OVERVIEW
- SU-01 PRELIMINARY SUBDIVISION PLAT
- SU-02 PRELIMINARY SUBDIVISION PLAT
- SU-03 PRELIMINARY SUBDIVISION PLAT

PRELIMINARY STREET PLAN AND PROFILES

- ST-00 PRELIMINARY STREET PLAN OVERVIEW WITH ROAD GRADE
- ST-01 PRELIMINARY STREET PLAN
- ST-02 PRELIMINARY STREET PLAN
- ST-03 PRELIMINARY STREET PLAN
- SP-01 PRELIMINARY STREET PROFILES
- SP-02 PRELIMINARY STREET PROFILES
- SP-03 PRELIMINARY STREET PROFILES
- SP-04 PRELIMINARY STREET PROFILES
- SP-05 PRELIMINARY STREET PROFILES

PRELIMINARY COMPOSITE UTILITY PLAN

- CU-01 PRELIMINARY COMPOSITE UTILITY PLAN
- CU-02 PRELIMINARY COMPOSITE UTILITY PLAN
- CU-03 PRELIMINARY COMPOSITE UTILITY PLAN


PRELIMINARY GRADING PLAN


- GR-01 PRELIMINARY GRADING PLAN
- GR-02 PRELIMINARY GRADING PLAN
- GR-03 PRELIMINARY GRADING PLAN




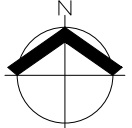
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JOB NUMBER: 5147-02
DATE: 06/28/2024
DESIGNED BY: AMG
DRAWN BY: JJA
CHECKED BY: PAS

LEGEND

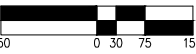
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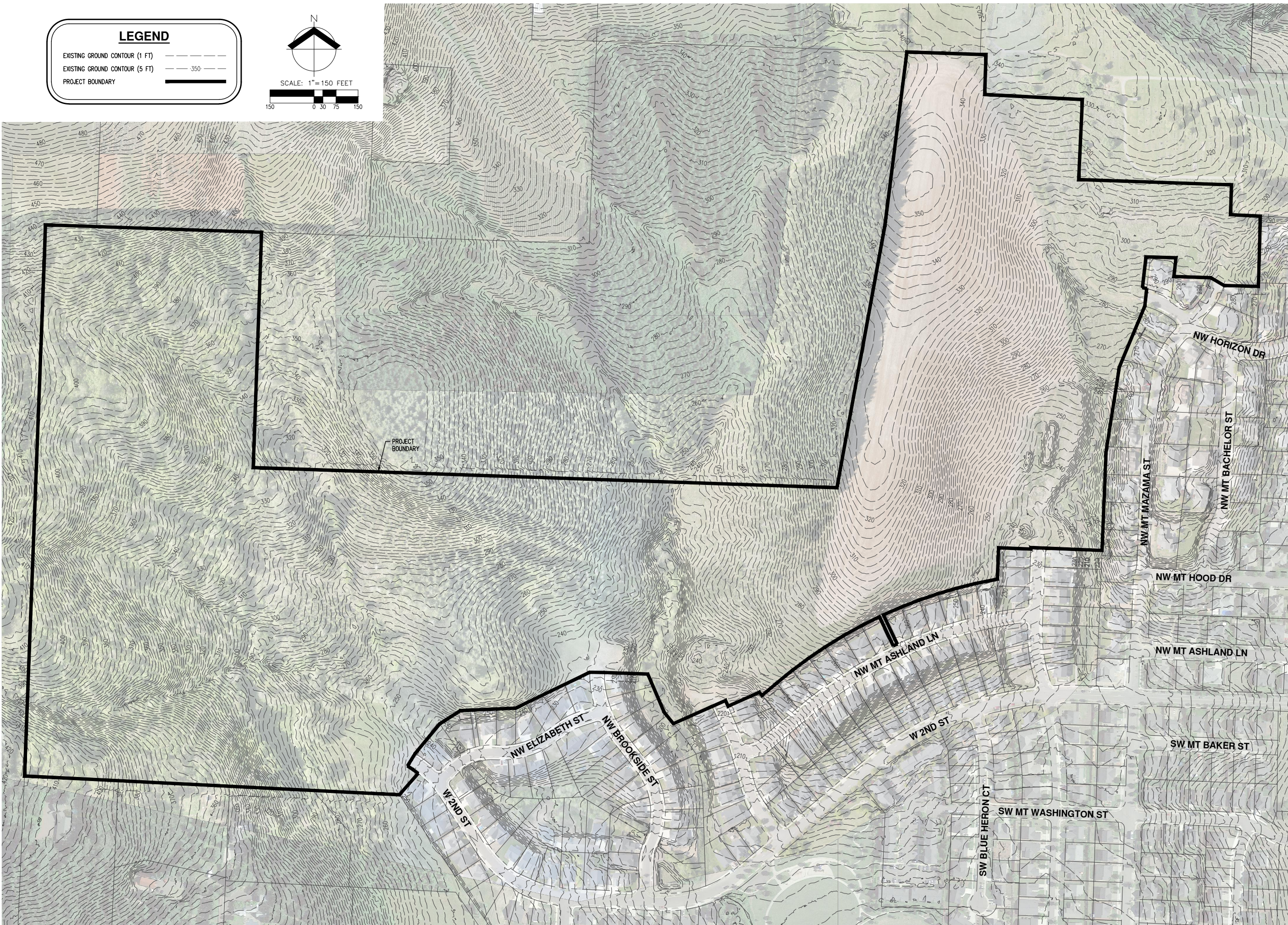
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PROJECT BOUNDARY 



SCALE: 1" = 150 FEET



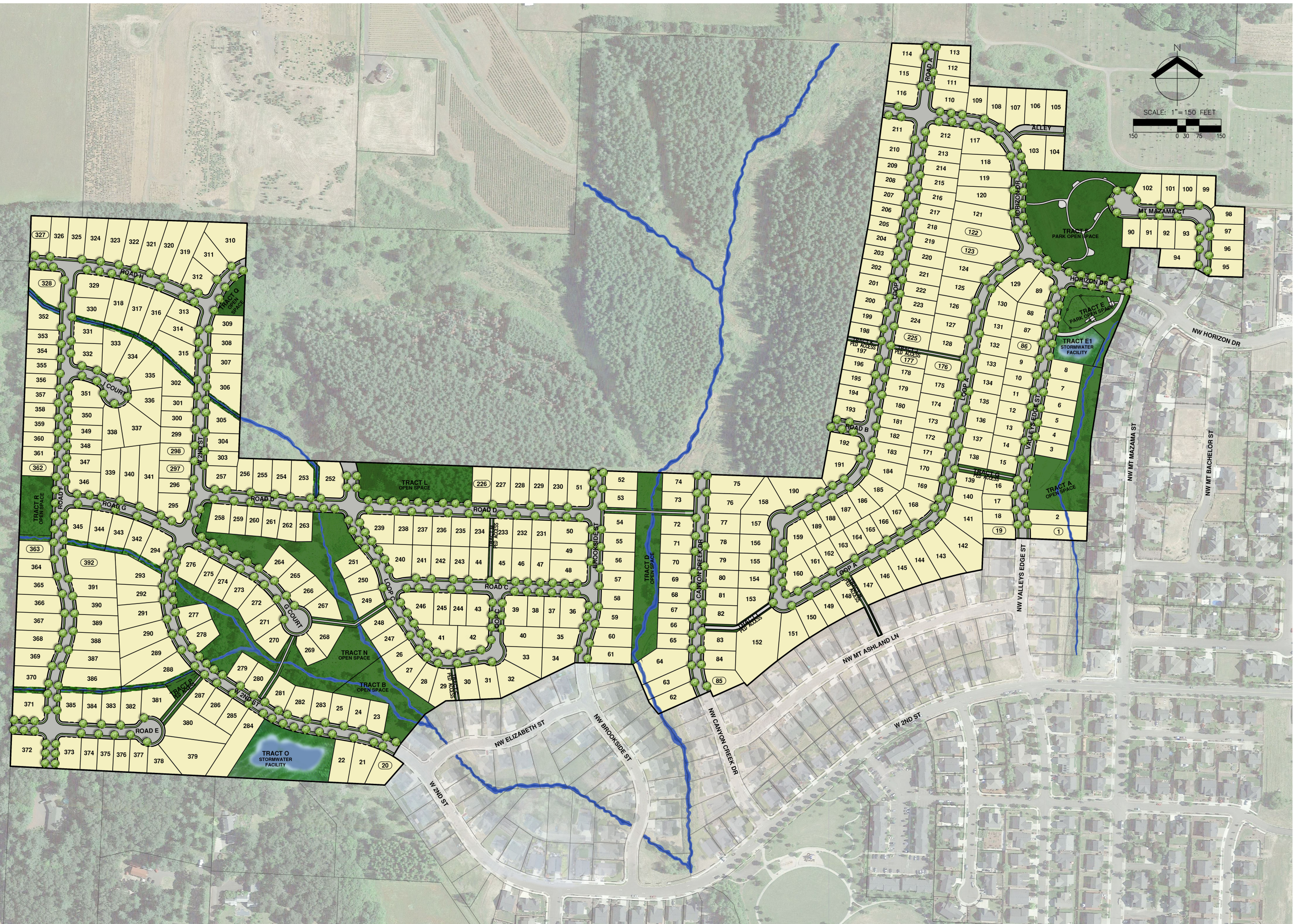
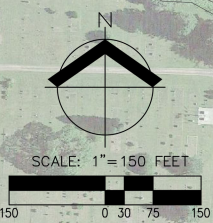


**EXISTING CONDITIONS WITH AERIAL
 HILLCREST PLANNED DEVELOPMENT AMENDMENT
 HOLT HOMES, INC
 McMINNVILLE, OR**

REGISTERED PROFESSIONAL ENGINEER
 STATE OF OREGON
PRELIMINARY
 NOT FOR CONSTRUCTION
 A SELLER

RENEWAL DATE: 6/30/26
 JOB NUMBER: 5147-02
 DATE: 06/28/2024
 DESIGNED BY: AMG
 DRAWN BY: AMG
 CHECKED BY: PAS

AKS DRAWING FILE: 5147-02-EX-COND.DWG | LAYOUT: P-01



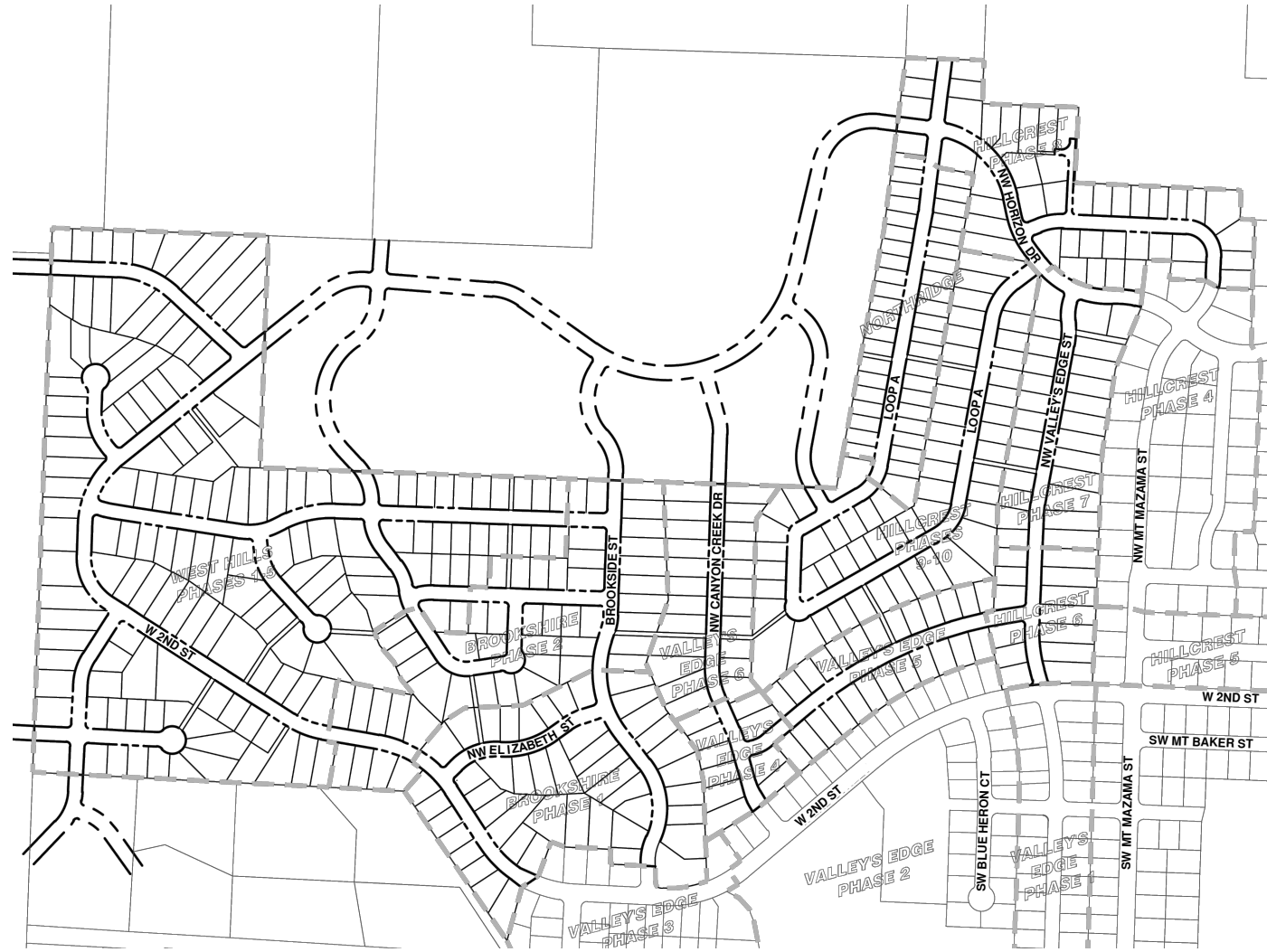
**MASTER PLAN LAYOUT WITH AERIAL
 HILLCREST PLANNED DEVELOPMENT AMENDMENT
 HOLT HOMES, INC
 McMINNVILLE, OR**



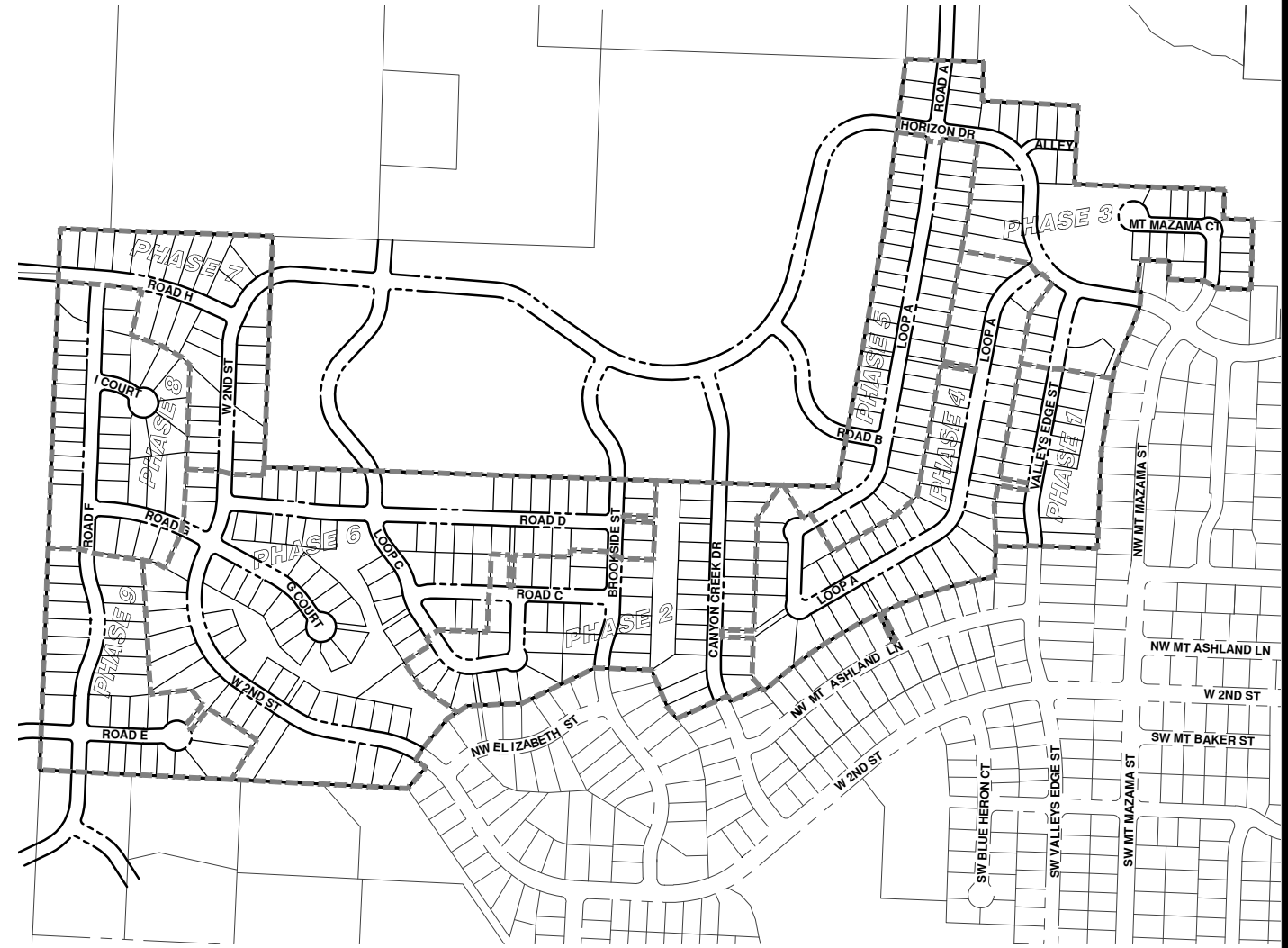
JOB NUMBER: 5147-02
 DATE: 06/28/2024
 DESIGNED BY: KAH
 DRAWN BY: NKP
 CHECKED BY: KAH

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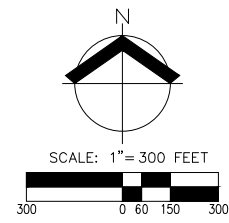
ORD. 5024/2017 APPROVED HILLCREST PD LAYOUT



MODIFIED HILLCREST PD LAYOUT



NOTE:
FUTURE ROADWAY CONNECTIONS AND PHASING
SHOWN ARE CONCEPTUAL AND SUBJECT TO CHANGE.



**MASTER PLAN COMPARISON
HILLCREST PLANNED DEVELOPMENT AMENDMENT
HOLT HOMES, INC
McMINNVILLE, OR**

REGISTERED PROFESSIONAL ENGINEER
NO. 10000
STATE OF OREGON
**PRELIMINARY
NOT FOR
CONSTRUCTION**
RENEWAL DATE: 6/30/26
JOB NUMBER: 5147-02
DATE: 06/28/2024
DESIGNED BY: AMG
DRAWN BY: JJA
CHECKED BY: PAS



GREEN OPEN SPACE

Open space tracts throughout the community preserve existing vegetation and wildlife habitat along the creek corridor. These green spaces create welcome opportunities to connect with nature.

PARK OPEN SPACE

Meandering, intersecting pathways provide pedestrian connections between residential areas. Open lawn areas provide flexible use areas for spontaneous activities, while a variety of seating options with picnic tables, benches, and fire pits create welcoming gathering areas and encourage social interactions.



PEDESTRIAN/BICYCLE CONNECTIONS

Mid-block multi-use trails connect the neighborhood, provide easy access to open spaces and park amenities, and promote a healthy, active lifestyle.



OFF-LEASH DOG PARK

Fenced off-leash areas are divided to provide space for large and small dogs. Double gated entries allow for secure access. Benches, drinking fountains, and shade trees create a welcoming environment while refuse containers aid in keeping the space tidy.



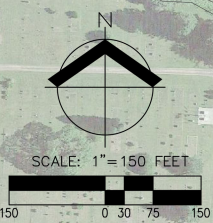
CREEK

An existing creek runs throughout the neighborhood, lending a soothing sound to open space tracts and for nearby homes.



STORMWATER FACILITY

Two vegetated stormwater facilities within the community collect and manage rainwater.



**PRELIMINARY COMMUNITY AMENITY PLAN
HILLCREST PLANNED DEVELOPMENT AMENDMENT
HOLT HOMES
MCMINNVILLE, OR**

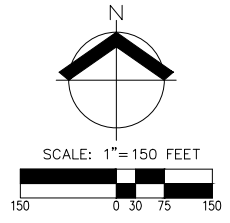
AKS
AKS ENGINEERING & FORESTRY, LLC
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503.563.6151
WWW.AKS-ENG.COM
ENGINEERING · SURVEYING · NATURAL RESOURCES
FORESTRY · PLANNING · LANDSCAPE ARCHITECTURE

REGISTERED
PRELIMINARY
PLANNING
NO. 13 FOR
CONSULTATION
ARCHITECT

JOB NUMBER: 5147-02
DATE: 06/28/2024
DESIGNED BY: KAH
DRAWN BY: CLM
CHECKED BY: KAH

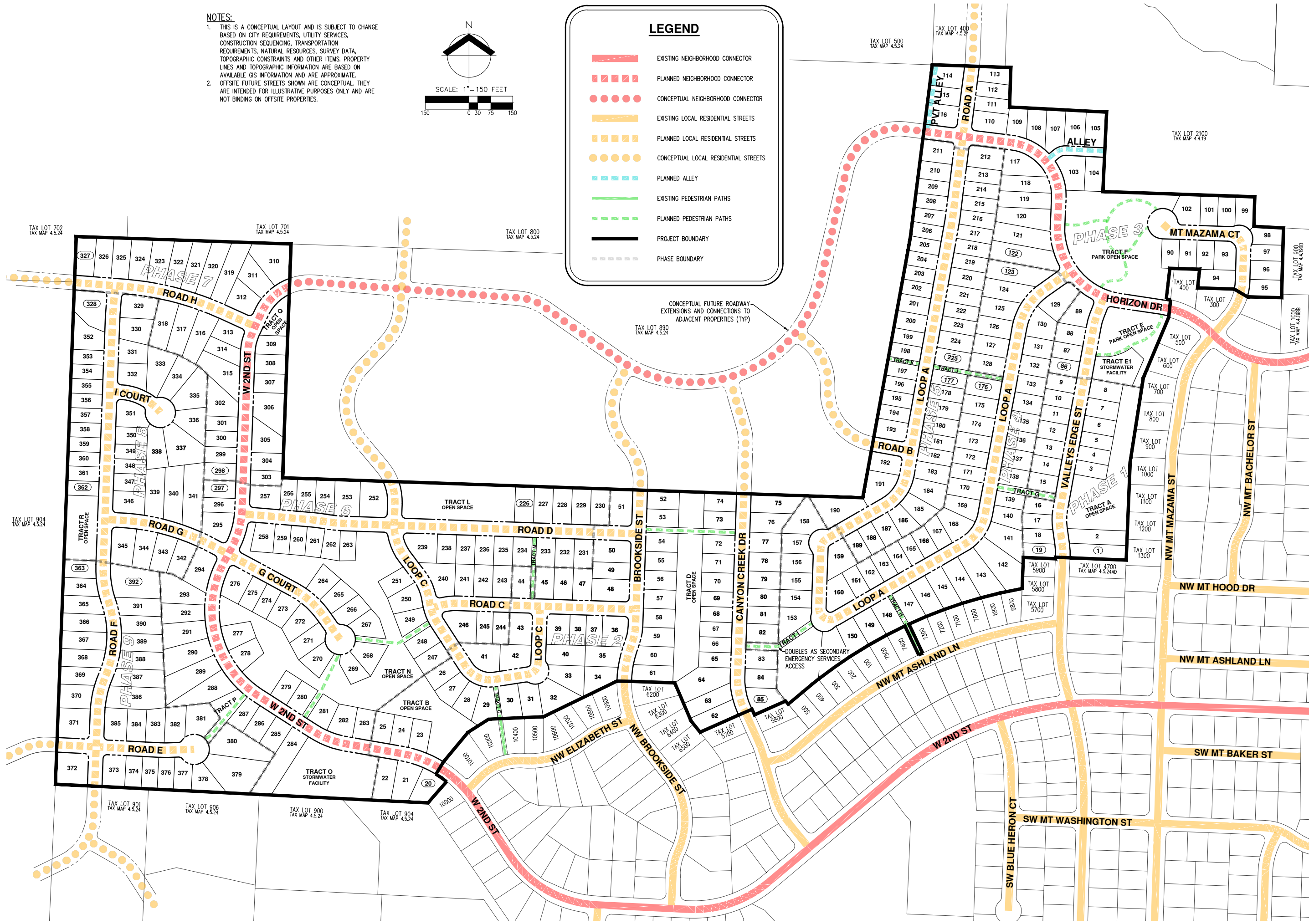
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NOTES:
 1. THIS IS A CONCEPTUAL LAYOUT AND IS SUBJECT TO CHANGE BASED ON CITY REQUIREMENTS, UTILITY SERVICES, CONSTRUCTION SEQUENCING, TRANSPORTATION REQUIREMENTS, NATURAL RESOURCES, SURVEY DATA, TOPOGRAPHIC CONSTRAINTS AND OTHER ITEMS. PROPERTY LINES AND TOPOGRAPHIC INFORMATION ARE BASED ON AVAILABLE GIS INFORMATION AND ARE APPROXIMATE.
 2. OFFSITE FUTURE STREETS SHOWN ARE CONCEPTUAL. THEY ARE INTENDED FOR ILLUSTRATIVE PURPOSES ONLY AND ARE NOT BINDING ON OFFSITE PROPERTIES.



LEGEND

- EXISTING NEIGHBORHOOD CONNECTOR
- PLANNED NEIGHBORHOOD CONNECTOR
- CONCEPTUAL NEIGHBORHOOD CONNECTOR
- EXISTING LOCAL RESIDENTIAL STREETS
- PLANNED LOCAL RESIDENTIAL STREETS
- CONCEPTUAL LOCAL RESIDENTIAL STREETS
- PLANNED ALLEY
- EXISTING PEDESTRIAN PATHS
- PLANNED PEDESTRIAN PATHS
- PROJECT BOUNDARY
- PHASE BOUNDARY



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 FORESTRY • PLANNING • LANDSCAPE ARCHITECTURE

**PRELIMINARY CIRCULATION PLAN
 HILLCREST PLANNED DEVELOPMENT AMENDMENT
 HOLT HOMES, INC
 McMINNVILLE, OR**

**REGISTERED PROFESSIONAL ENGINEER
 NOT FOR CONSTRUCTION
 RENEWAL DATE: 6/30/26**

JOB NUMBER: 5147-02
 DATE: 06/28/2024
 DESIGNED BY: AMG
 DRAWN BY: JJA
 CHECKED BY: PAS

AKS DRAWING FILE: 5147-02_CIRCULATION.DWG | LAYOUT: P-05

NOTES:

1. THIS IS A CONCEPTUAL LAYOUT AND IS SUBJECT TO CHANGE BASED ON CITY REQUIREMENTS, UTILITY SERVICES, TRANSPORTATION REQUIREMENTS, NATURAL RESOURCES, SURVEY DATA, TOPOGRAPHIC CONSTRAINTS AND OTHER ITEMS. PROPERTY LINES AND TOPOGRAPHIC INFORMATION ARE BASED ON AVAILABLE GIS INFORMATION AND ARE APPROXIMATE.

PHASING NOTES:

1. PHASE LINES AND ORDER OF CONSTRUCTION ARE PRELIMINARY AND SUBJECT TO CHANGE.
 2. INDIVIDUAL PHASES MAY BE SEPARATED INTO SUBPHASES BASED ON CONSTRUCTION SEQUENCE/TIMING NEEDS OF MARKET CONDITIONS.

PRODUCT DISTRIBUTION

COLOR	MINIMUM LOT DIMENSIONS	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	TOTAL
(Orange)	50' X 100'	13	19	11	20	34	19	12	19	7	154
(Yellow)	60' X 100'	6	47	26	34	15	53	18	16	23	238
TOTALS		19	66	37	54	49	72	30	35	30	392

DENSITY CALCULATIONS

ZONES R-1 & R-2

GROSS SITE AREA REMAINING: ±106.3 AC
 PUBLIC R.O.W DEDICATION: ±20.1 AC
 STORMWATER FACILITY/TRACTS: ±1.6 AC
 PUBLIC ACCESS TRACTS: ±13.0 AC
 NET DEVELOPABLE AREA: ±84.7 AC

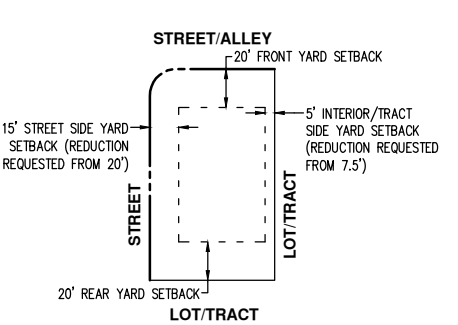
PROPOSED NUMBER OF LOTS: 392
 PROPOSED MIN. LOT AREA: ± 5,000 SF
 PROPOSED MAX. LOT AREA: ± 28,193 SF
 PROPOSED AVG. LOT AREA: ± 7,965 SF

PROPOSED GROSS DENSITY: 3.7 UNITS PER ACRE
 PROPOSED NET DENSITY: 4.6 UNITS PER ACRE
 MAXIMUM DENSITY ALLOWED: 6 UNITS PER ACRE

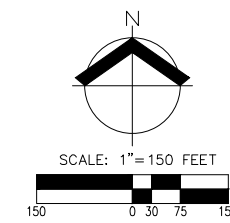
TOTAL OPEN SPACE: ±13.0 AC
 TOTAL OPEN SPACE PERCENTAGE: ±15.3%
 ACTIVE OPEN SPACE: ±4.3 AC
 ACTIVE OPEN SPACE PERCENTAGE: ±5.1%
 PASSIVE OPEN SPACE: ±8.7 AC

NOTE: OPEN SPACE PERCENTAGES ARE BASED ON NET DEVELOPABLE AREA

**TYPICAL SETBACK LEGEND
 SINGLE FAMILY DETACHED - FRONT LOAD**



NOTE: REAR YARD DECKS MAY ENCROUGH UP TO 10' INTO REAR YARD SETBACK. (INCREASE IN PERMITTED PROJECTIONS INTO YARDS REQUESTED)



**PRELIMINARY PRODUCT DISTRIBUTION PLAN
 HILLCREST PLANNED DEVELOPMENT AMENDMENT
 HOLT HOMES, INC
 McMINNVILLE, OR**

**REGISTERED PROFESSIONAL ENGINEER
 CIVIL ENGINEERING
 NOT FOR CONSTRUCTION
 4 SELLER**
 RENEWAL DATE: 6/30/26
 JOB NUMBER: 5147-02
 DATE: 06/28/2024
 DESIGNED BY: AMG
 DRAWN BY: JJA
 CHECKED BY: PAS



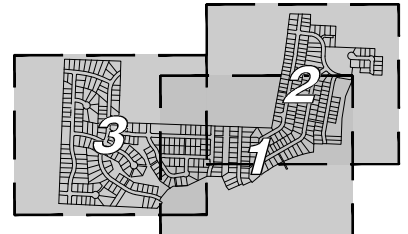
DENSITY CALCULATIONS

ZONES R-1 & R-2

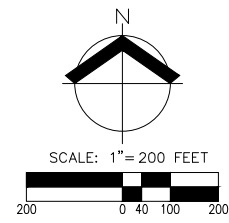
GROSS SITE AREA REMAINING:	±106.3 AC
PUBLIC R.O.W DEDICATION:	±20.1 AC
STORMWATER FACILITY/TRACTS:	±1.6 AC
PUBLIC ACCESS TRACTS:	±13.0 AC
NET DEVELOPABLE AREA:	±84.7 AC
PROPOSED NUMBER OF LOTS:	392
PROPOSED MIN. LOT AREA:	± 5,000 SF
PROPOSED MAX. LOT AREA:	± 28,193 SF
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PROPOSED GROSS DENSITY:	3.7 UNITS PER ACRE
PROPOSED NET DENSITY:	4.6 UNITS PER ACRE
MAXIMUM DENSITY ALLOWED:	6 UNITS PER ACRE
TOTAL OPEN SPACE:	±13.0 AC
TOTAL OPEN SPACE PERCENTAGE:	±15.3%
ACTIVE OPEN SPACE:	±4.3 AC
ACTIVE OPEN SPACE PERCENTAGE:	±5.1%
PASSIVE OPEN SPACE:	±8.7 AC

NOTE: OPEN SPACE PERCENTAGES SHOWN ARE BASED ON NET DEVELOPABLE AREA

- NOTES:**
1. PROPERTY LINES AND RIGHT-OF-WAY LINES ARE BASED ON INFORMATION PROVIDED BY GPS AND ARE CONSIDERED APPROXIMATE.
 2. NO FIELD WORK HAS BEEN CONDUCTED AT THIS TIME.
 3. THE PURPOSE OF THIS PRELIMINARY PLAT IS TO SHOW THE PROPOSED LOT DIMENSIONS FOR PLANNING PURPOSES. THE LAYOUT IS SUBJECT TO CHANGE BASED ON CITY REQUIREMENTS, UTILITY SERVICES, TRANSPORTATION REQUIREMENTS, NATURAL RESOURCES, SURVEY DATA, TOPOGRAPHIC CONSTRAINTS AND OTHER ITEMS.



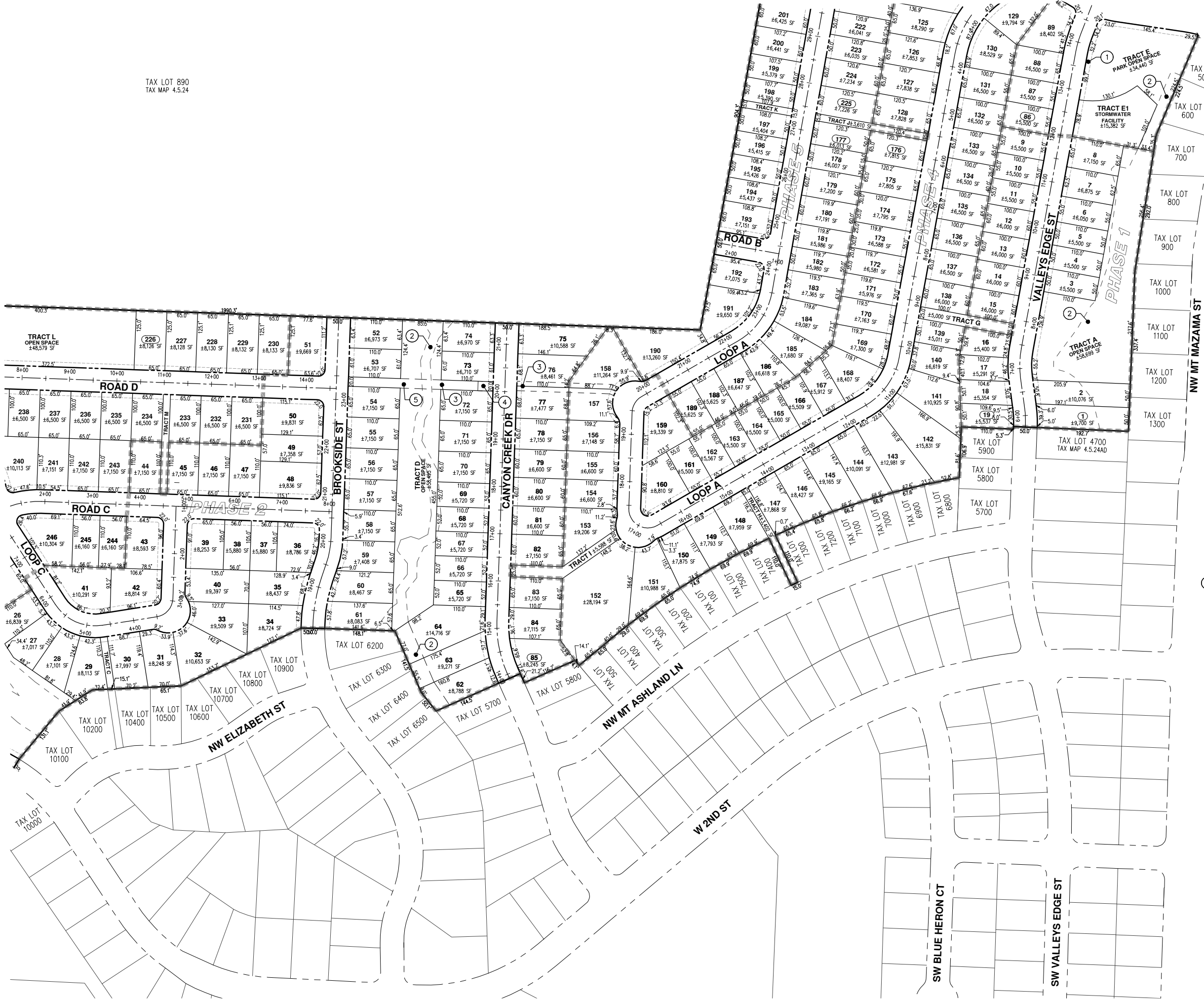
KEY MAP
 SCALE: 1" = 1250'



**PRELIMINARY SUBDIVISION PLAT OVERVIEW
 HILLCREST PLANNED DEVELOPMENT AMENDMENT
 HOLT HOMES, INC
 McMINNVILLE, OR**

REGISTERED PROFESSIONAL ENGINEER
 STATE OF OREGON
NOT FOR CONSTRUCTION
 RENEWAL DATE: 6/30/26
 JOB NUMBER: 5147-02
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 DESIGNED BY: AMG
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TAX LOT 890
TAX MAP 4.5.24



DEFINITIONS
 HOA - HILLCREST HOME OWNER'S ASSOCIATION, IT'S SUCCESSORS, OR ASSIGNS
 MWL - MCMINNVILLE WATER AND LIGHT
 COM - CITY OF MCMINNVILLE
KEYED TRACT NOTES:
 A: TRACT TO BE OWNED AND MAINTAINED BY HOA.
 B: TRACT TO BE SUBJECT TO STORMWATER/SANITARY SEWER EASEMENT TO CITY OF MCMINNVILLE OVER ITS ENTIRETY.
 C: TRACT TO BE SUBJECT TO WATER EASEMENT TO MWL OVER ITS ENTIRETY.
 D: TRACT TO BE SUBJECT TO EMERGENCY SERVICES ACCESS EASEMENT OVER ITS ENTIRETY.

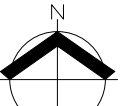
TRACT TABLE			
TRACT	AREA	PLANNED USE	OWNED & MAINTAINED/KEYED TRACT NOTES
TRACT A	58,699 SF	PRIVATE OPEN SPACE	A
TRACT B	37,576 SF	PRIVATE OPEN SPACE	A
TRACT C	1,663 SF	PED ACCESS	A
TRACT D	58,495 SF	PRIVATE OPEN SPACE	A
TRACT E	34,440 SF	PARK OPEN SPACE	A
TRACT E1	15,382 SF	STORMWATER FACILITY	A
TRACT F	108,028 SF	PARK OPEN SPACE	A
TRACT G	5,000 SF	PED ACCESS	A, B
TRACT H	3,402 SF	PED ACCESS	A
TRACT I	5,588 SF	PED ACCESS	A, B, D
TRACT J	3,610 SF	PED ACCESS	A, B
TRACT K	1,619 SF	PED ACCESS	A
TRACT L	48,579 SF	PRIVATE OPEN SPACE	A
TRACT M	3,150 SF	PED ACCESS	A
TRACT N	153,275 SF	PRIVATE OPEN SPACE	A
TRACT O	52,029 SF	STORMWATER FACILITY	A
TRACT P	9,502 SF	PED ACCESS	A, B, C
TRACT Q	8,892 SF	PRIVATE OPEN SPACE	A
TRACT R	24,369 SF	PRIVATE OPEN SPACE	A

NOTES:
 1. TRACTS SHOWN ARE FOR PLANNING PURPOSES ONLY. TRACTS WITH COMMON OWNERSHIP MAY BE SPLIT OR COMBINED DUE TO PHASE CHANGES, CONSTRUCTION SEQUENCING, PERMITTING REQUIREMENTS, OR OTHER.
 2. SEVERAL LOTS MAY BE CONVERTED/MODIFIED TO A COMMON OWNERSHIP TRACT TO PROVIDE A STORMWATER FACILITY TO MEET STATE AND FEDERAL PERMIT REQUIREMENTS DUE TO IMPACTS TO WETLANDS AND/OR JURISDICTIONAL WATERS.

EASEMENT KEYED NOTES:
 1. 10' PUBLIC UTILITY EASEMENT (TYP)
 2. VARIABLE WIDTH PRIVATE STORM DRAINAGE EASEMENT. 20' MINIMUM WIDTH
 3. 20' WATER EASEMENT TO MWL
 4. 20' EMERGENCY SERVICES ACCESS EASEMENT
 5. 20' PUBLIC PEDESTRIAN ACCESS EASEMENT
 6. 15'-20' SANITARY EASEMENT TO COM
 7. 15' STORMWATER EASEMENT TO COM
 8. 20' SHARED PRIVATE ACCESS EASEMENT FOR BENEFIT OF LOTS 102-104



KEY MAP
SCALE: 1" = 1250'



SCALE: 1" = 100 FEET

**PRELIMINARY SUBDIVISION PLAT
 HILLCREST PLANNED DEVELOPMENT AMENDMENT
 HOLT HOMES, INC
 MCMINNVILLE, OR**

REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY
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SU-01

AKS
 AKS ENGINEERING & FORESTRY, LLC
 12965 SW HERMAN RD., STE 100
 TUALATIN, OR 97062
 503.563.6151
 WWW.AKS-ENG.COM
 ENGINEERING - SURVEYING - NATURAL RESOURCES
 FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE



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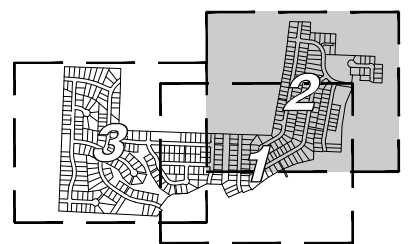
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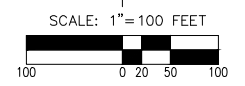
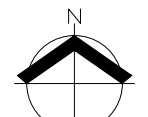
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KEY MAP
SCALE: 1" = 1250'



**PRELIMINARY SUBDIVISION PLAT
 HILLCREST PLANNED DEVELOPMENT AMENDMENT
 HOLT HOMES, INC
 MCMINNVILLE, OR**

PRELIMINARY
 REGISTERED PROFESSIONAL ENGINEER
 NOT FOR CONSTRUCTION
 4 SELLER

RENEWAL DATE: 6/30/26
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 DATE: 06/28/2024
 DESIGNED BY: AMG
 DRAWN BY: JJA
 CHECKED BY: PAS

SU-02

TAX LOT 702
TAX MAP 4.5.24

TAX LOT 701
TAX MAP 4.5.24

TAX LOT 890
TAX MAP 4.5.24

TAX LOT 904
TAX MAP 4.5.24

TAX LOT 901
TAX MAP 4.5.24

TAX LOT 906
TAX MAP 4.5.24

TAX LOT 900
TAX MAP 4.5.24

TAX LOT 904
TAX MAP 4.5.24

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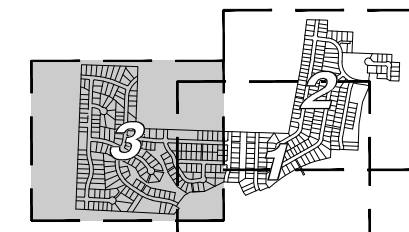
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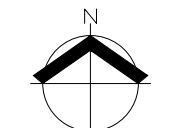
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KEY MAP
SCALE: 1" = 1250'



SCALE: 1" = 100 FEET

AKS
AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD., STE. 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

ENGINEERING - SURVEYING - LANDSCAPE ARCHITECTURE
FORESTRY - PLANNING

**PRELIMINARY SUBDIVISION PLAT
HILLCREST PLANNED DEVELOPMENT AMENDMENT
HOLT HOMES, INC
MCMINNVILLE, OR**

REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY
NOT FOR CONSTRUCTION
RENEWAL DATE: 6/30/26
JOB NUMBER: 5147-02
DATE: 06/28/2024
DESIGNED BY: AMG
DRAWN BY: JJA
CHECKED BY: PAS
SU-03

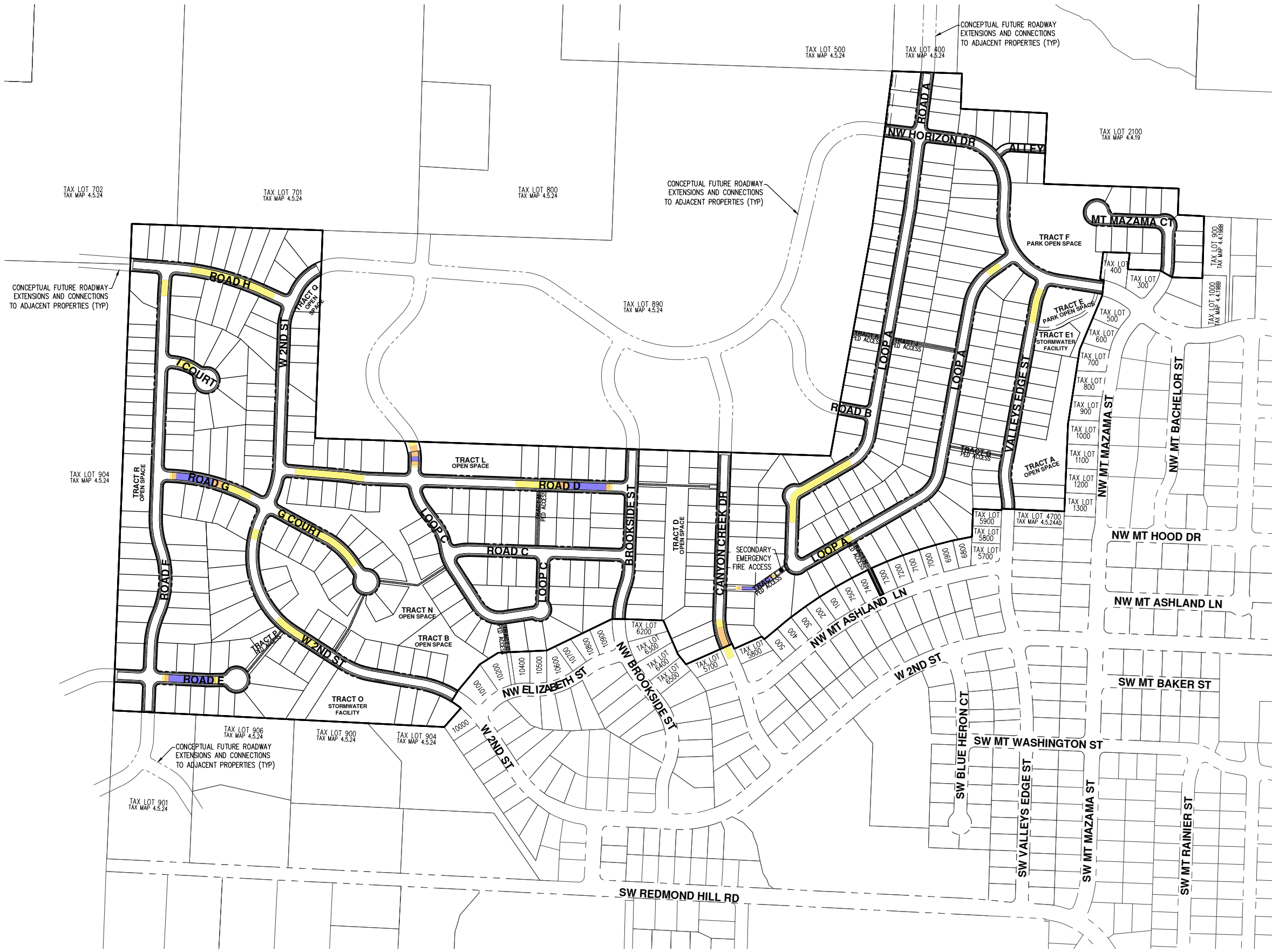
AKS DRAWING FILE: 5147-02 PRELIMINARY PLATTING | LAYOUT | SU-03

**PRELIMINARY STREET PLAN OVERVIEW WITH ROAD GRADE
 HILLCREST PLANNED DEVELOPMENT AMENDMENT
 HOLT HOMES, INC
 McMINNVILLE, OR**



RENEWAL DATE: 6/30/26
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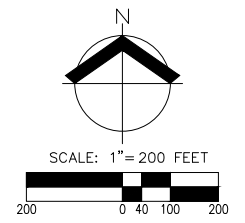
ST-00

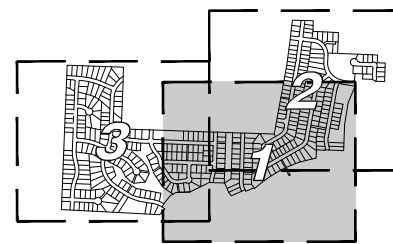
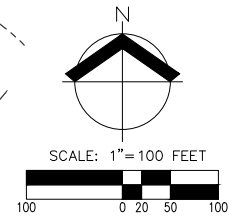


LEGEND

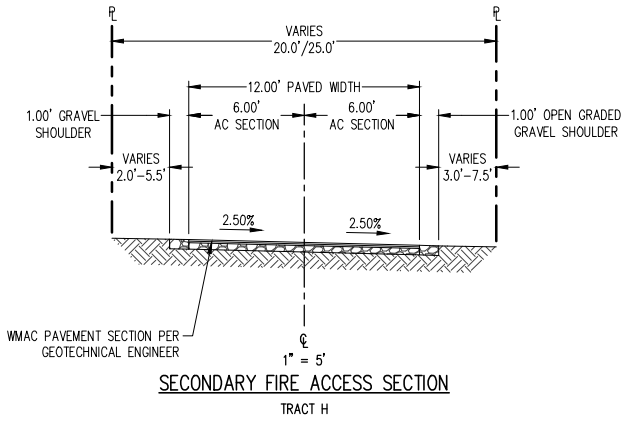
- 15.00% ROAD GRADE (Blue square)
- 12.01-14.99% ROAD GRADE (Orange square)
- 10.01-12.00% ROAD GRADE (Yellow square)

- PHASING NOTES:**
- THIS IS A CONCEPTUAL LAYOUT AND IS SUBJECT TO CHANGE BASED ON CITY REQUIREMENTS, UTILITY SERVICES, TRANSPORTATION REQUIREMENTS, NATURAL RESOURCES, SURVEY DATA, TOPOGRAPHIC CONSTRAINTS AND OTHER ITEMS. PROPERTY LINE INFORMATION SHOWN IS BASED ON AVAILABLE GIS INFORMATION AND IS APPROXIMATE.
 - PRELIMINARY ROAD GRADE DESIGN IS BASED ON LIDAR CONTOURS AND IS SUBJECT TO CHANGE BASED ON TOPOGRAPHIC SURVEY AND CITY ENGINEERING REQUIREMENTS.
 - FUTURE ROAD EXTENSIONS ONTO OFFSITE PROPERTIES ARE CONCEPTUAL IN NATURE AND ARE NOT BINDING ON OFFSITE PROPERTIES.

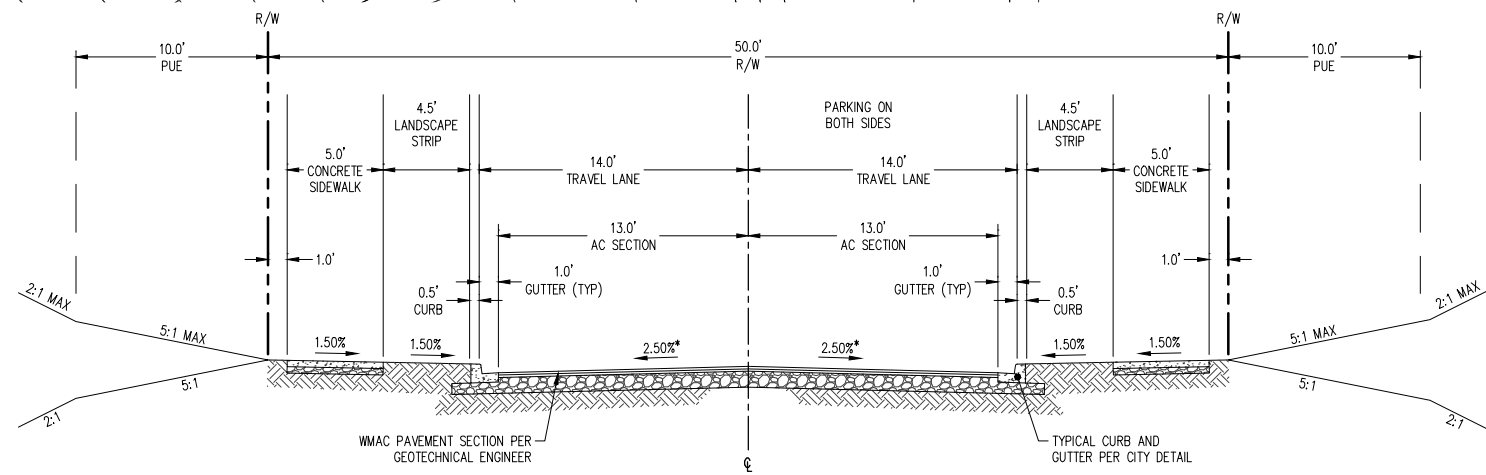




KEY MAP
 SCALE: 1" = 1250'



SECONDARY FIRE ACCESS SECTION
 TRACT H
 1" = 5'

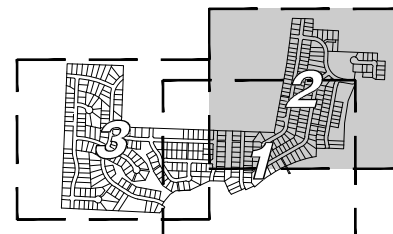
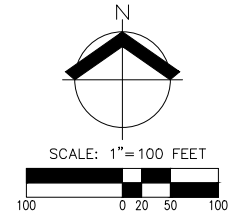
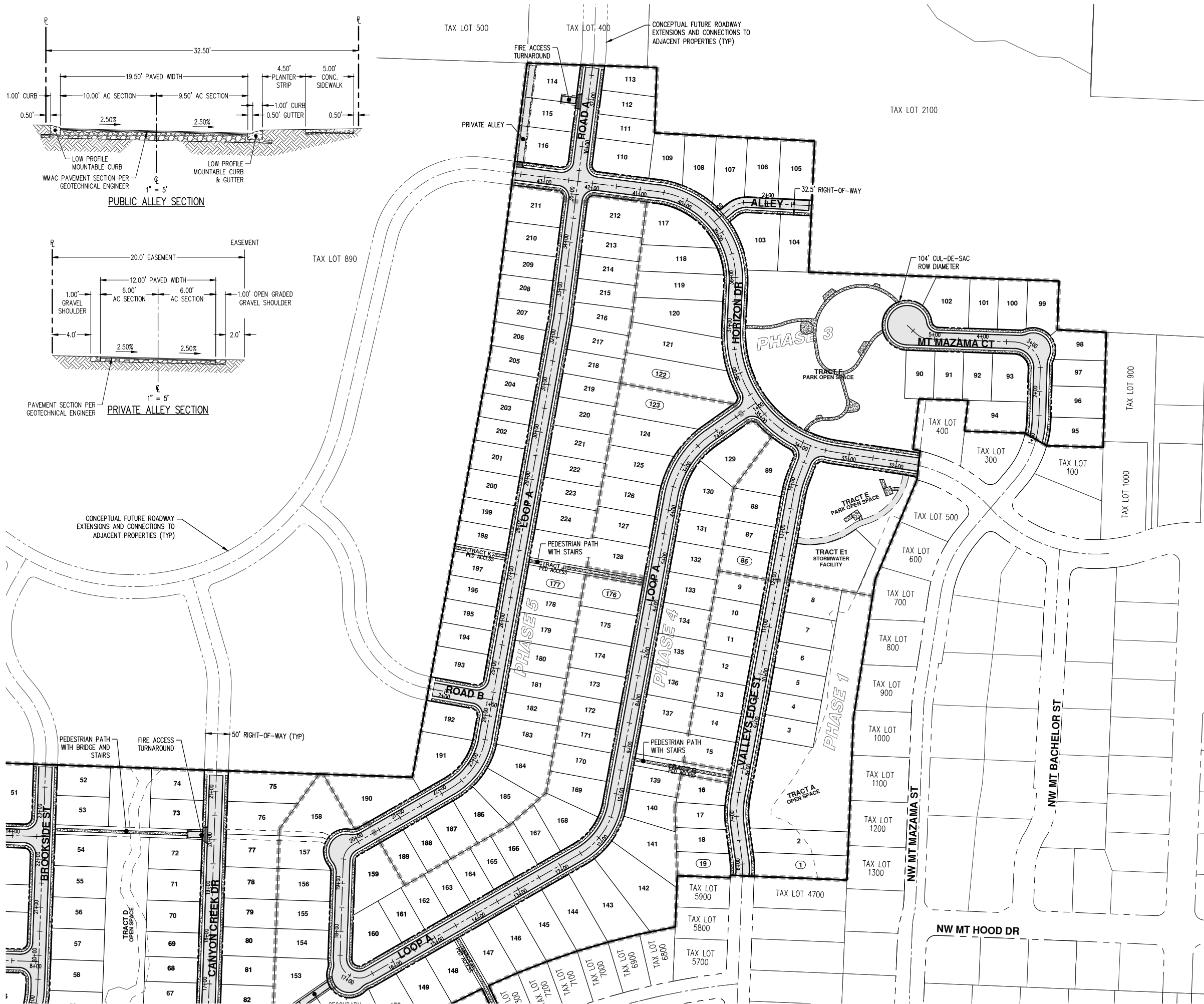
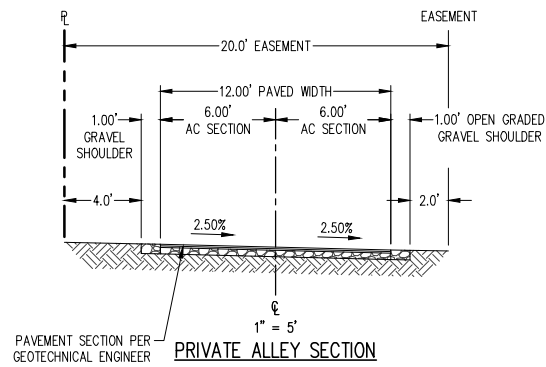
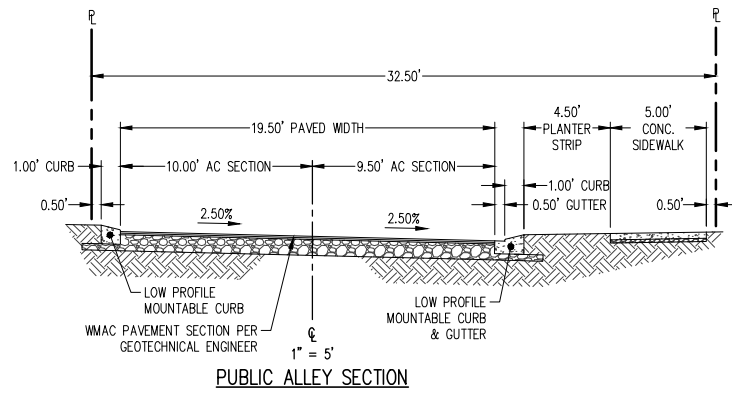


LOCAL RESIDENTIAL/NEIGHBORHOOD CONNECTOR STREET SECTION
 LOCAL RESIDENTIALS = CANYON CREEK DR, VALLEY'S EDGE ST, MT MAZAMA CT,
 BROOKSIDE ST, ROAD A, ROAD B, ROAD C, ROAD D,
 ROAD E, ROAD F, ROAD G, AND LOOP C
 NEIGHBORHOOD CONNECTORS = W 2ND ST, HORIZON DR

* SHED SECTIONS MAY BE REQUIRED AS DETERMINED DURING FINAL ENGINEERING. ALL SHED SECTIONS SHALL BE REQUIRED TO BE APPROVED BY THE CITY ENGINEER DURING FINAL ENGINEERING PRIOR TO INSTALLATION.

**PRELIMINARY STREET PLAN
 HILLCREST PLANNED DEVELOPMENT AMENDMENT
 HOLT HOMES, INC
 McMINNVILLE, OR**

REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY
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**PRELIMINARY STREET PLAN
HILLCREST PLANNED DEVELOPMENT AMENDMENT
HOLT HOMES, INC
MCMINNVILLE, OR**

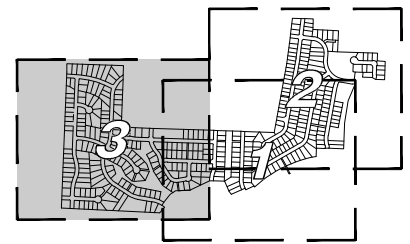
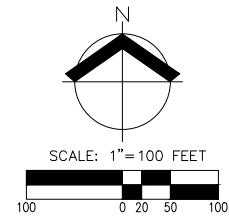
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ST-02

AKS DRAWING FILE: 5147-02_STREETSDWG | LAYOUT: ST-02

AKS DRAWING FILE: 5147-02 STREETS.DWG | LAYOUT: ST-03



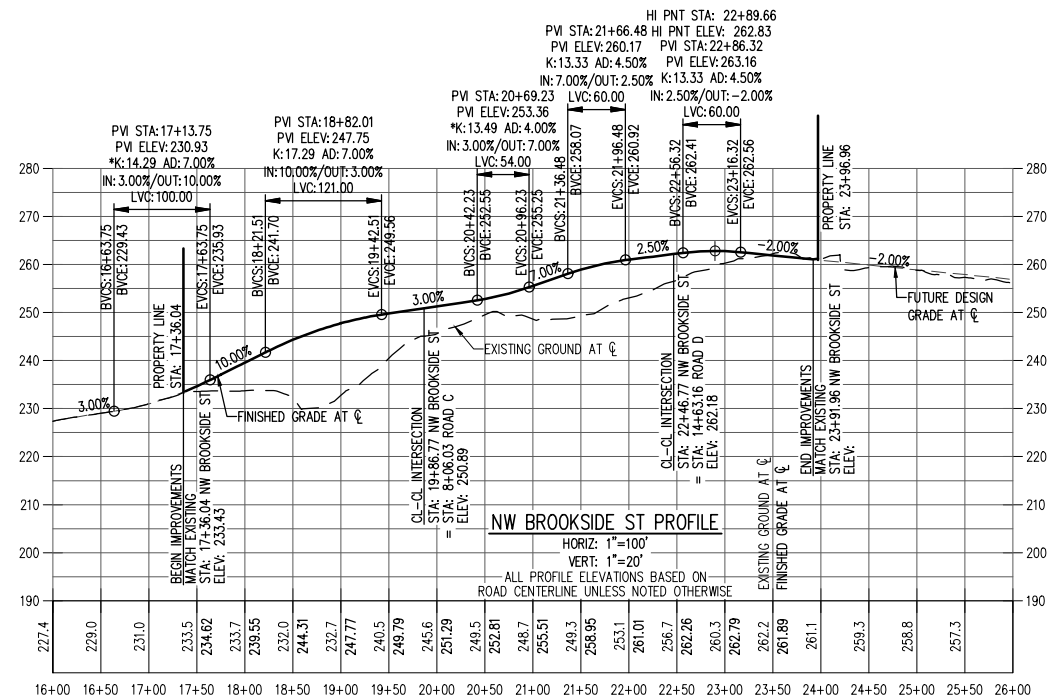
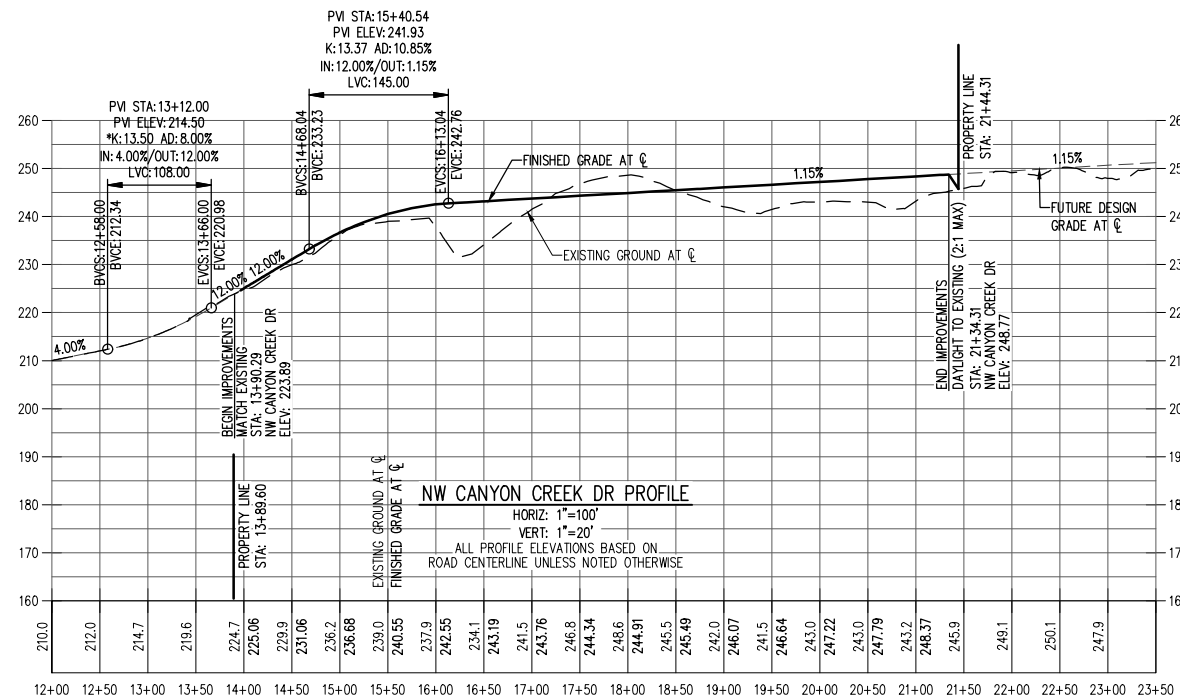
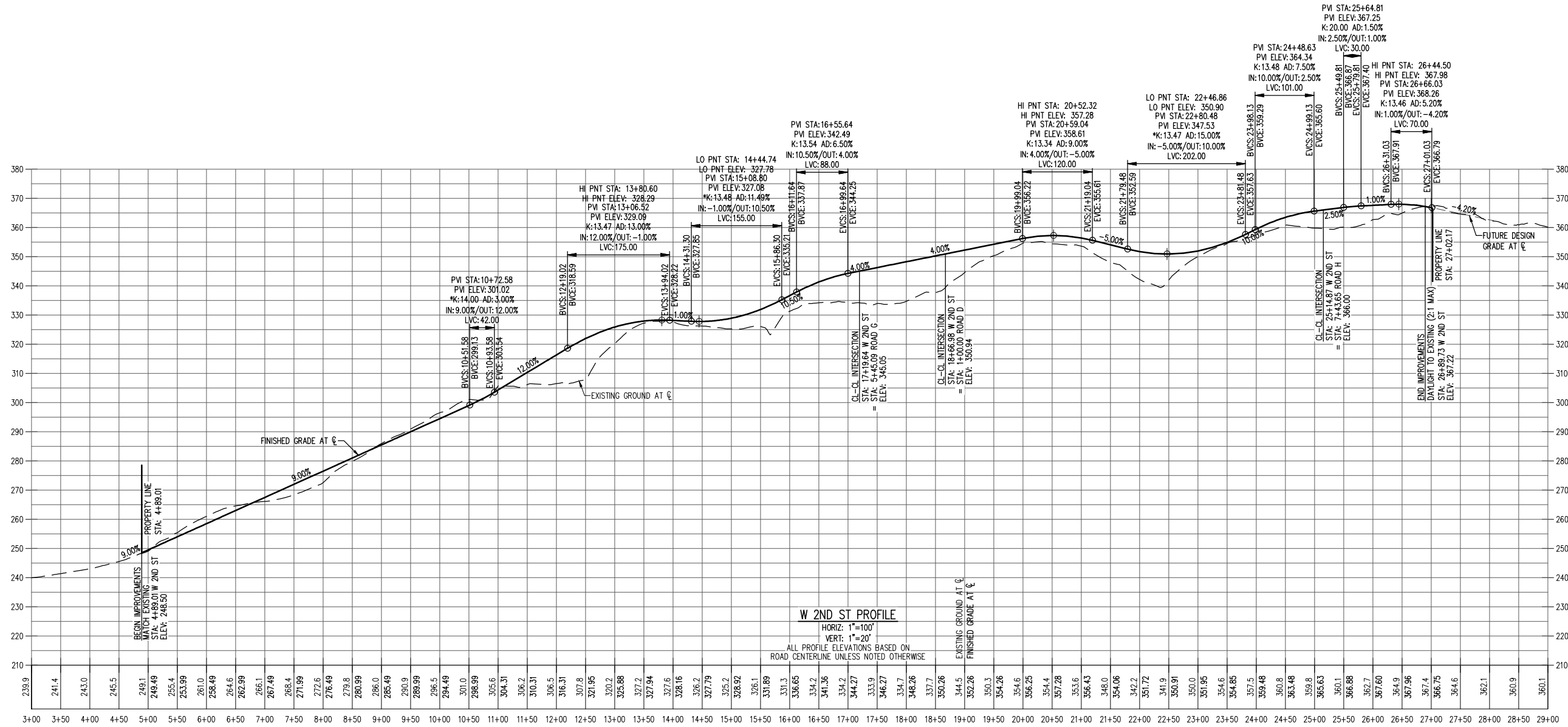
KEY MAP
SCALE: 1" = 1250'

**PRELIMINARY STREET PLAN
HILLCREST PLANNED DEVELOPMENT AMENDMENT
HOLT HOMES, INC
MCMINNVILLE, OR**

REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION
 4 SELLER
 RENEWAL DATE: 6/30/26
 JOB NUMBER: 5147-02
 DATE: 06/28/2024
 DESIGNED BY: AMG
 DRAWN BY: JJA
 CHECKED BY: PAS

ST-03

AKS
 AKS ENGINEERING & FORESTRY, LLC
 12965 SW HERMAN RD., STE 100
 TUALATIN, OR 97062
 503.563.6151
 WWW.AKS-ENG.COM
 ENGINEERING • SURVEYING • NATURAL RESOURCES
 FORESTRY • PLANNING • LANDSCAPE ARCHITECTURE



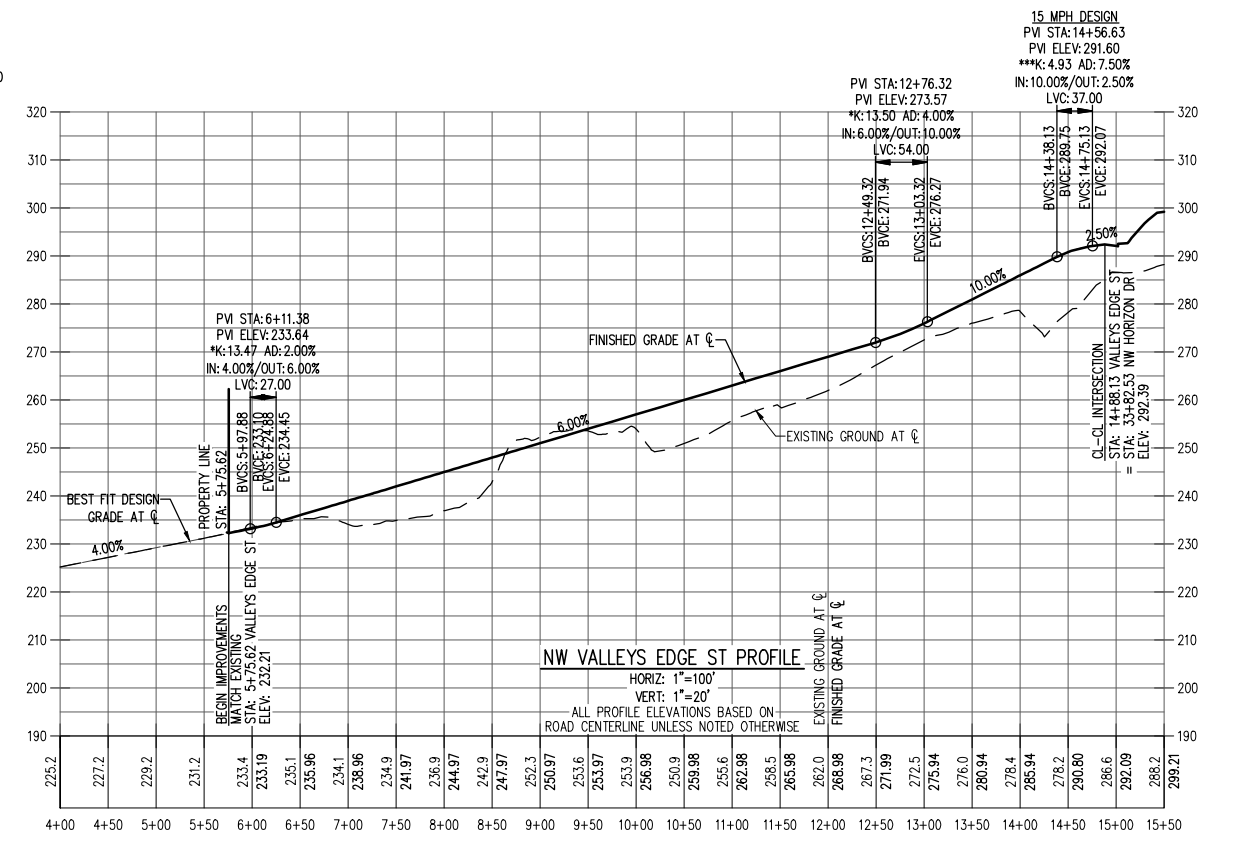
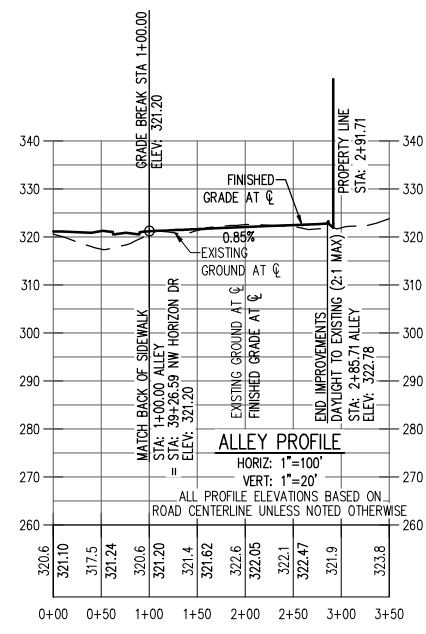
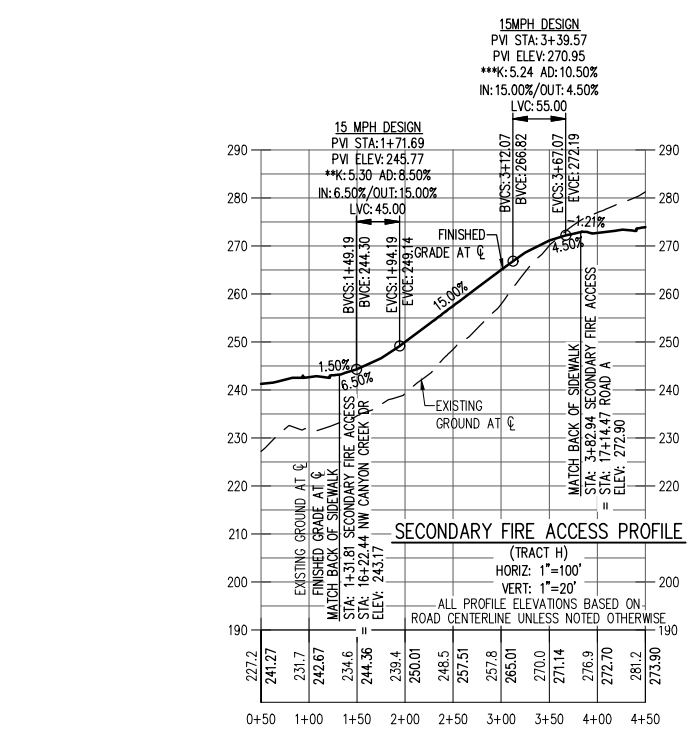
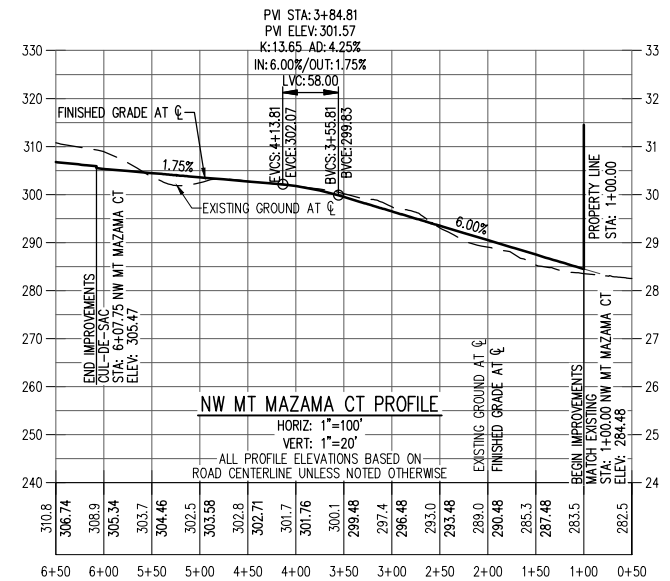
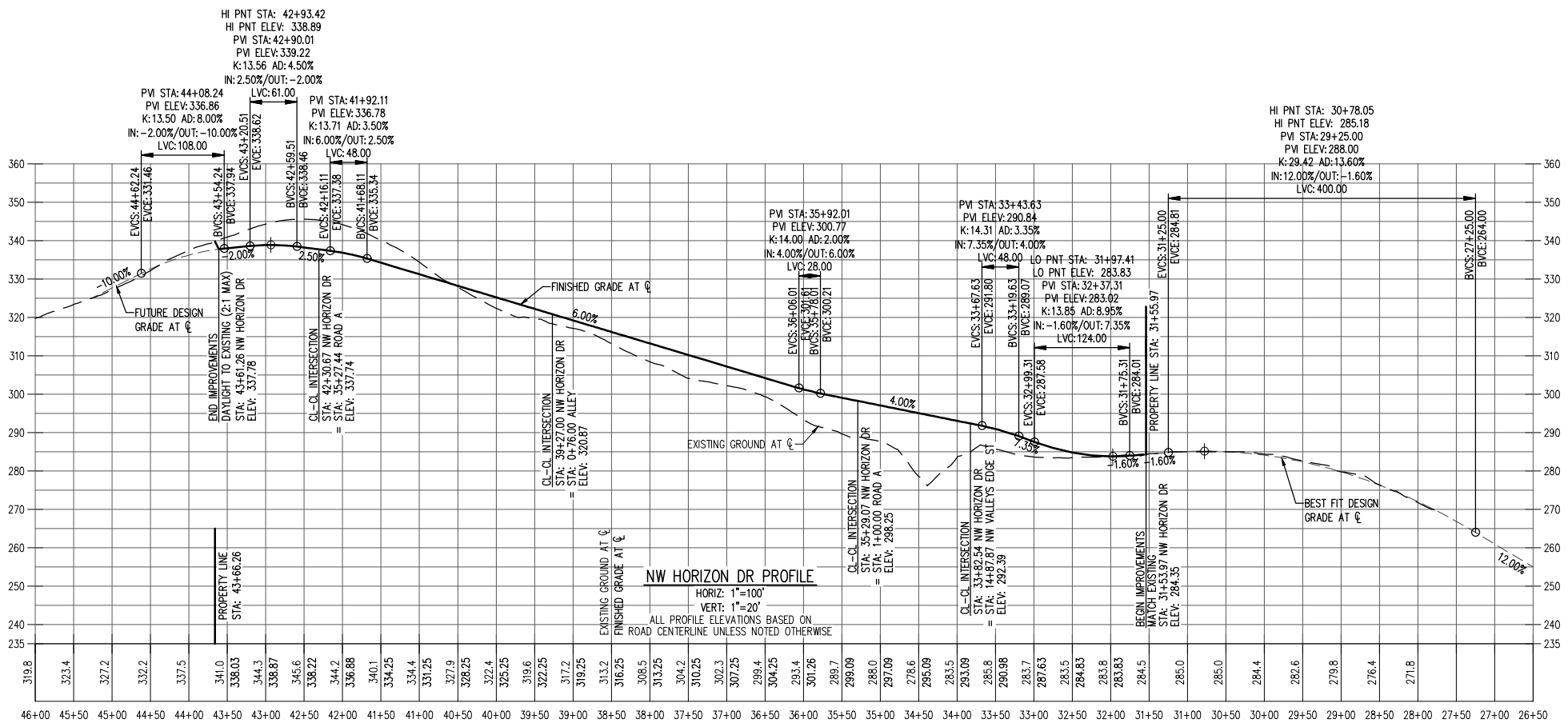
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PRELIMINARY STREET PROFILES
HILLCREST PLANNED DEVELOPMENT AMENDMENT
HOLT HOMES, INC
MCMINNVILLE, OR

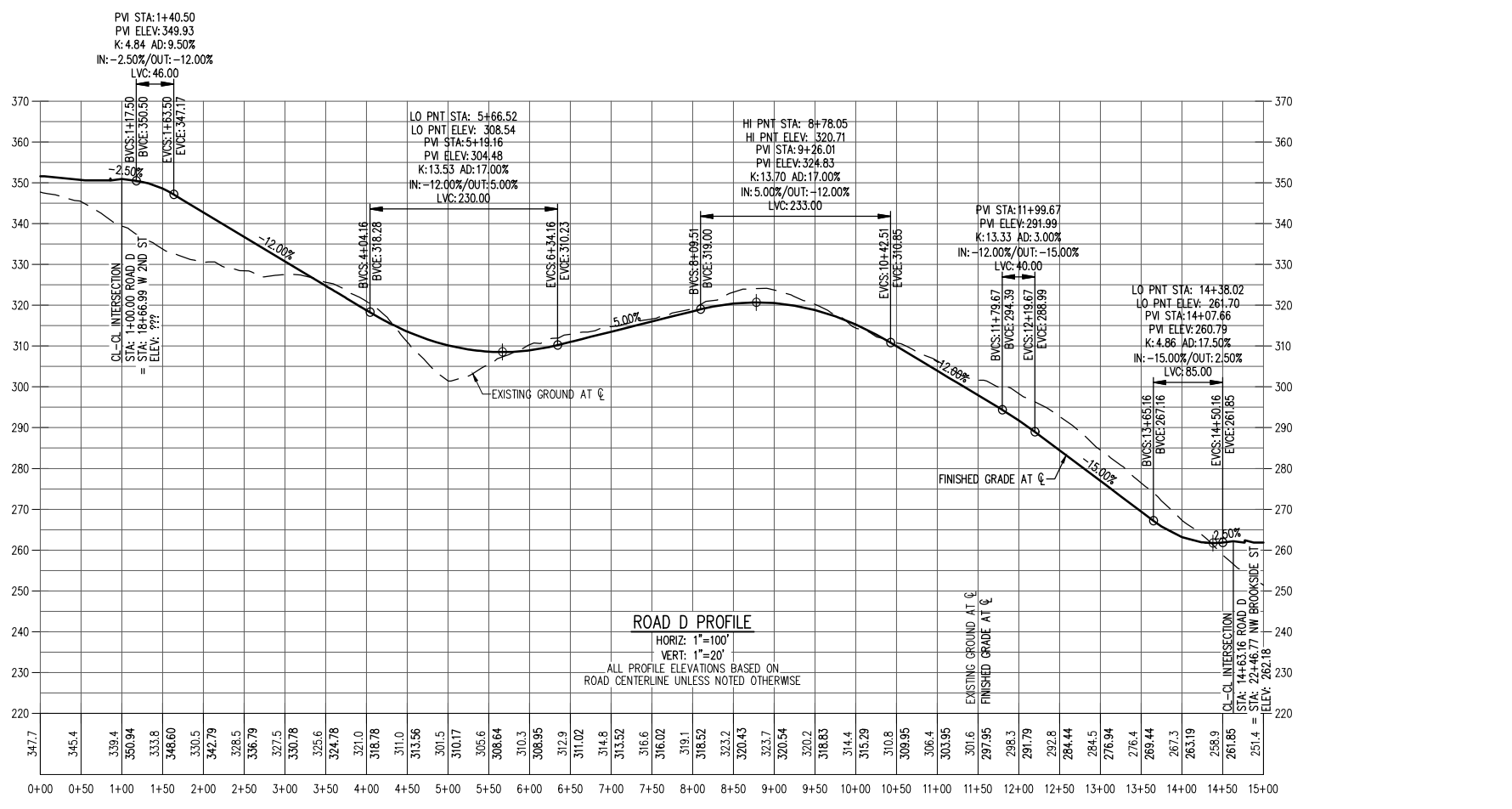
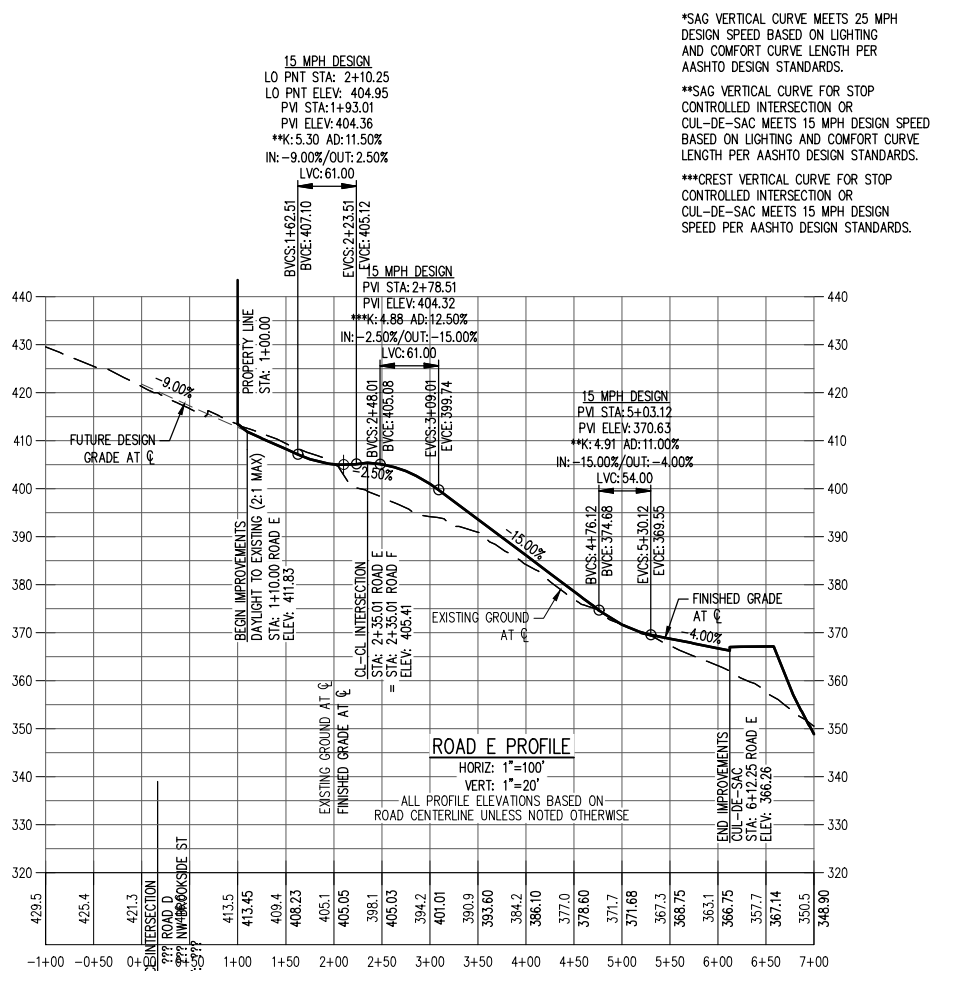
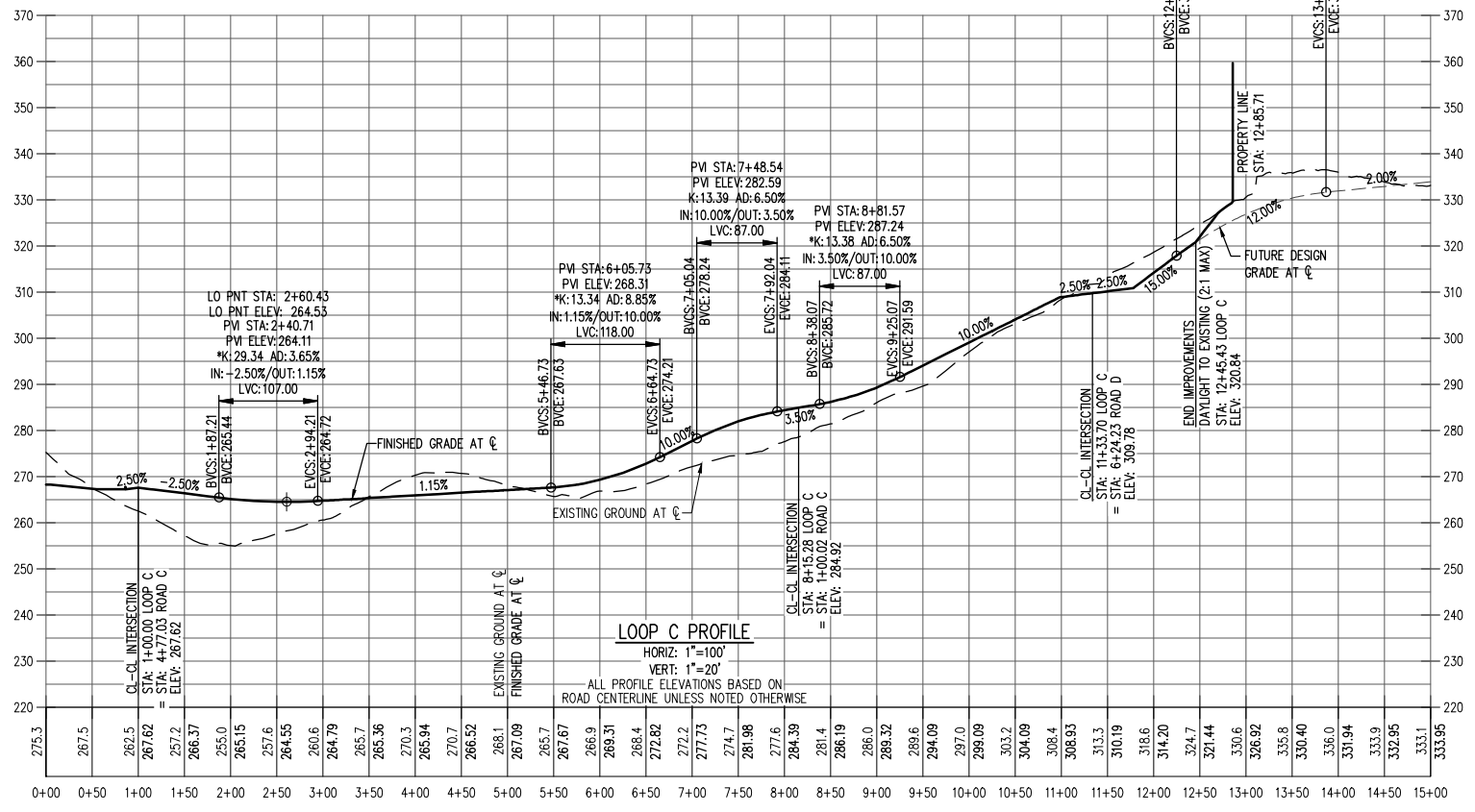
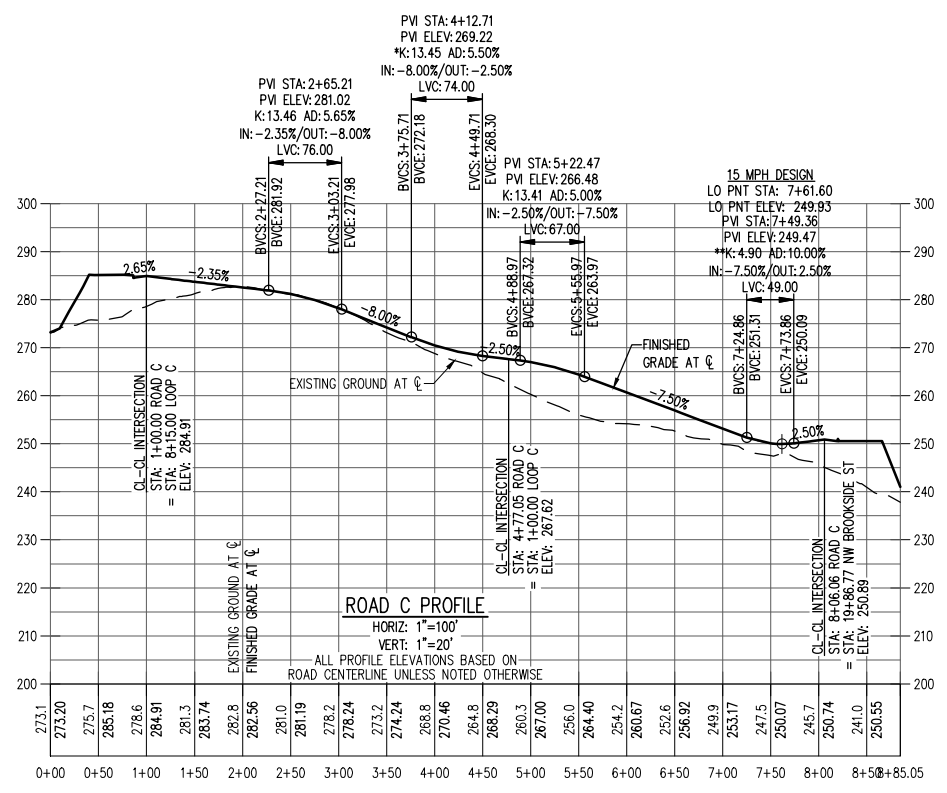
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MCMINNVILLE, OR

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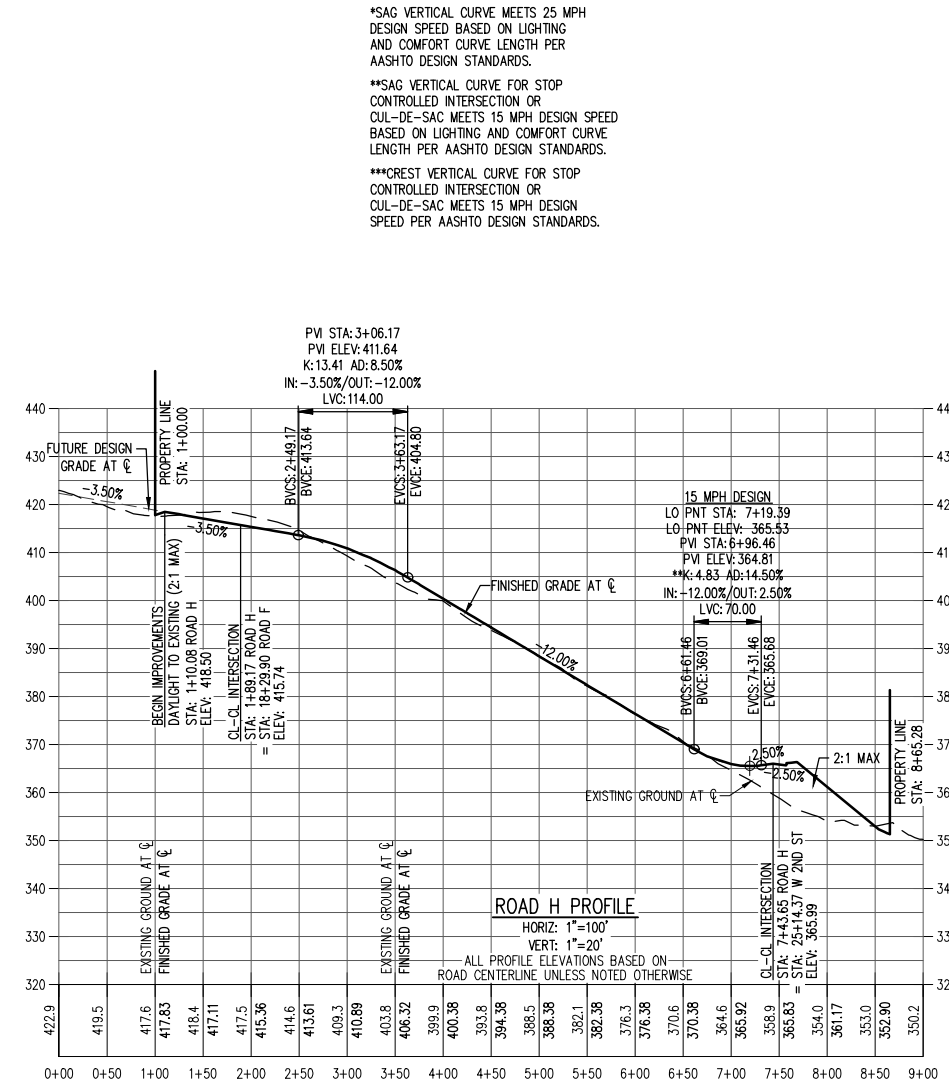
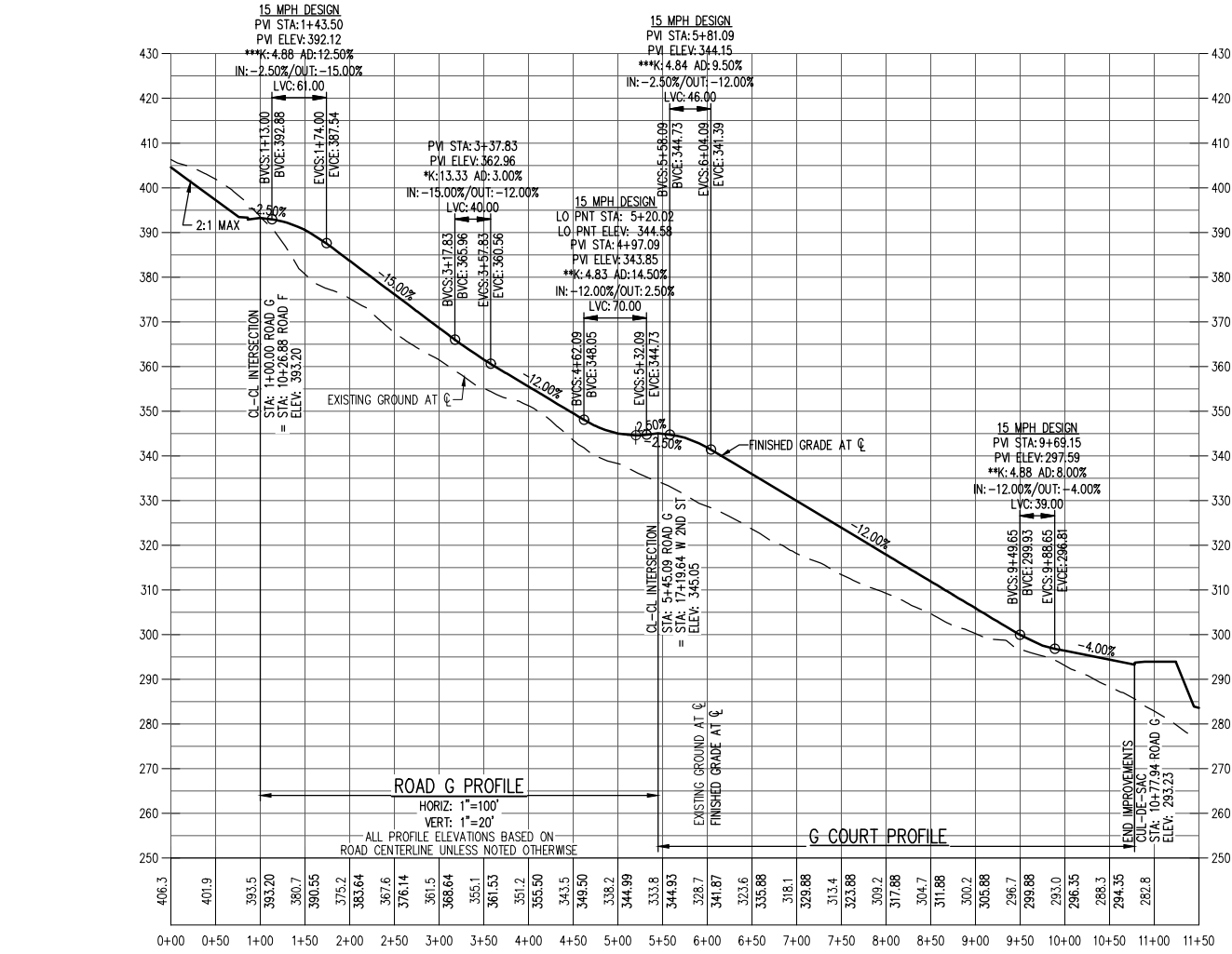
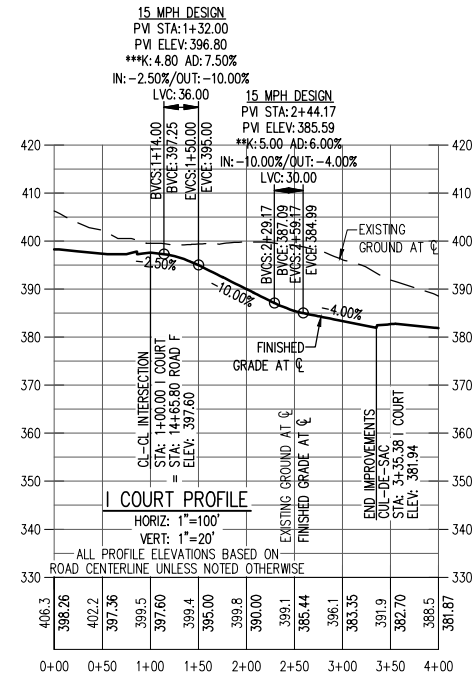
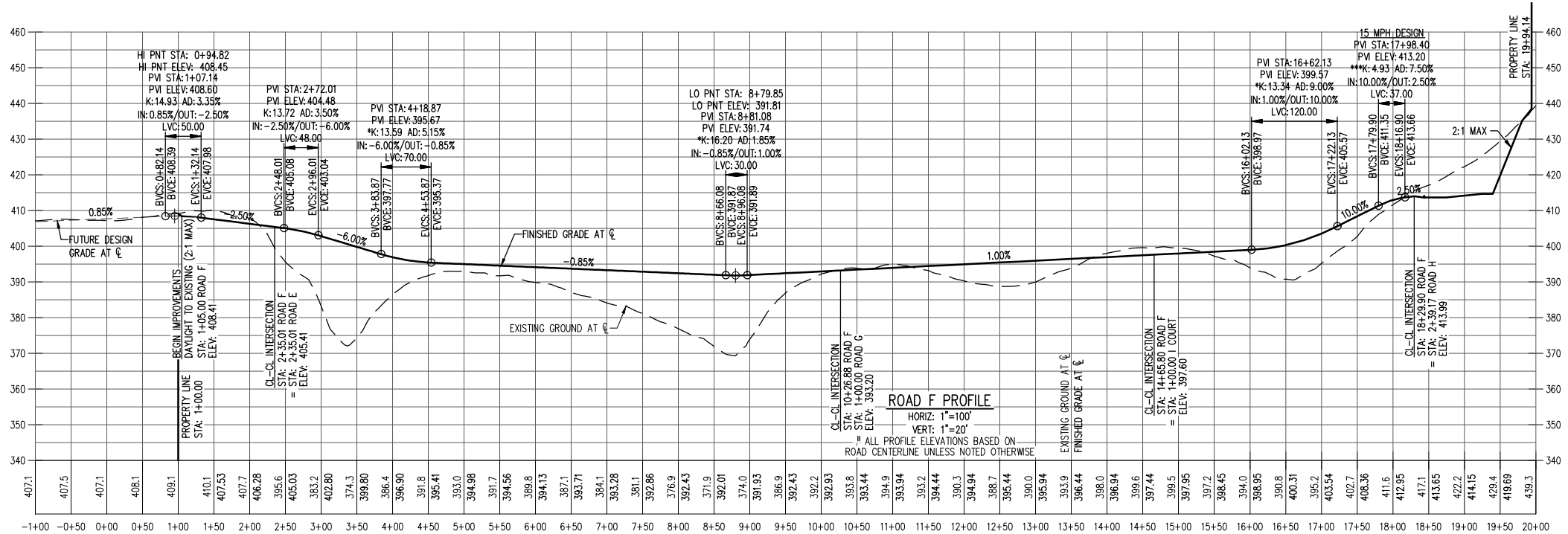
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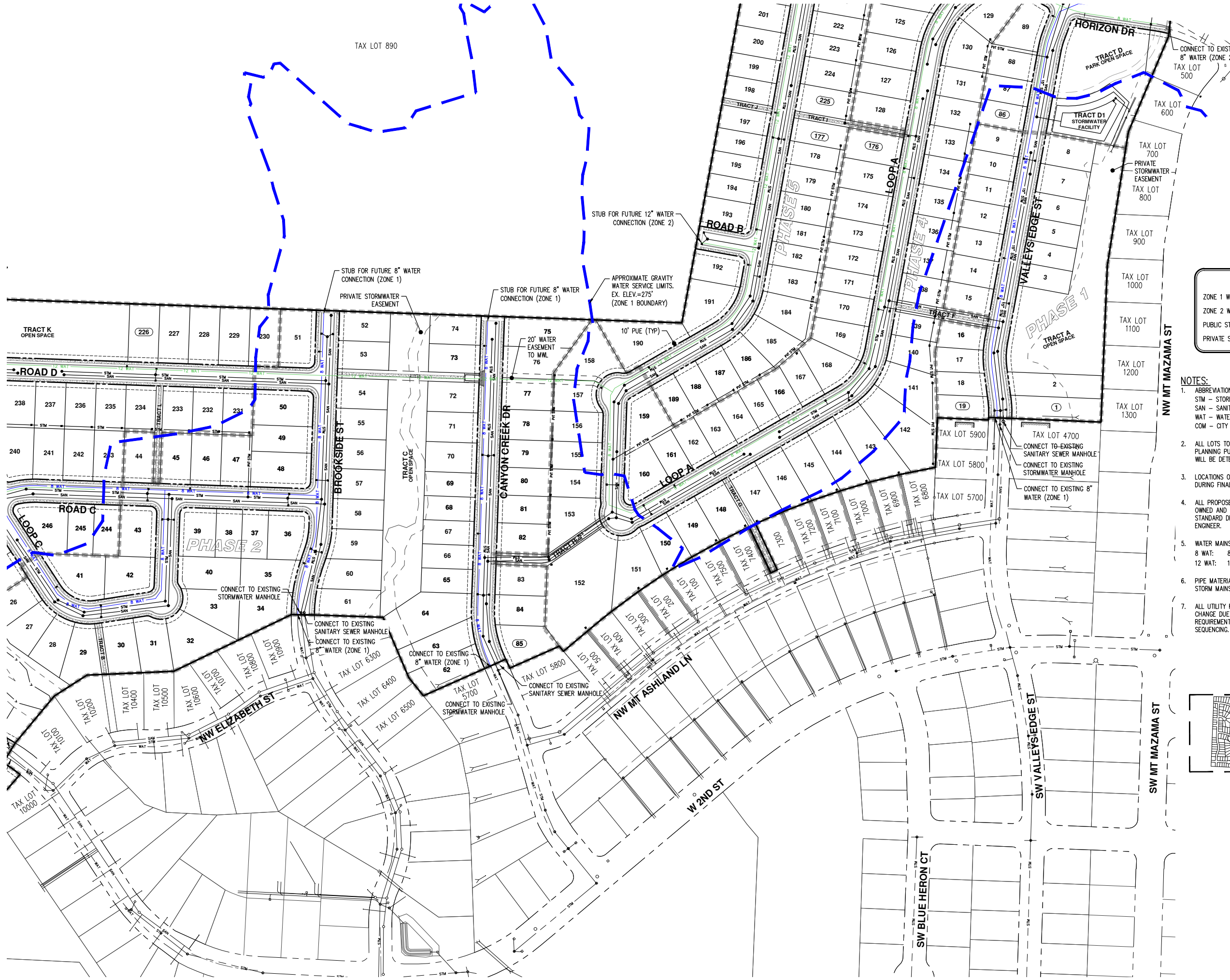
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SP-04



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PRELIMINARY STREET PROFILES
HILLCREST PLANNED DEVELOPMENT AMENDMENT
HOLT HOMES, INC
MCMINNVILLE, OR

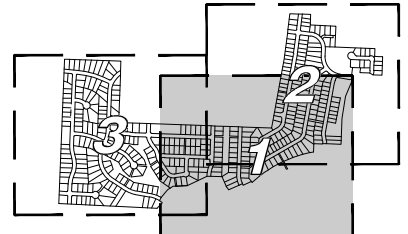
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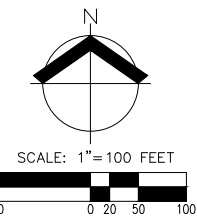
LEGEND

ZONE 1 WATER	8" WAT
ZONE 2 WATER	8" WAT
PUBLIC STORMWATER	STM
PRIVATE STORMWATER	PVT STM

- NOTES:**
- ABBREVIATIONS:
 STM - STORMWATER
 SAN - SANITARY SEWER
 WAT - WATER
 COM - CITY OF MCMINNVILLE
 - ALL LOTS TO RECEIVE SERVICE CONNECTIONS. FOR PRELIMINARY PLANNING PURPOSES NO INDIVIDUAL SERVICES ARE SHOWN, AND WILL BE DETERMINED DURING FINAL ENGINEERING.
 - LOCATIONS OF IRRIGATION WATER SERVICES TO BE DETERMINED DURING FINAL ENGINEERING.
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 - WATER MAINS SIZED AS SHOWN ON PLAN.
 8 WAT: 8" WATER MAIN
 12 WAT: 12" WATER MAIN
 - PIPE MATERIAL TO BE DETERMINED DURING FINAL ENGINEERING. STORM MAINS WILL BE SIZED DURING FINAL ENGINEERING.
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KEY MAP
 SCALE: 1" = 1250'

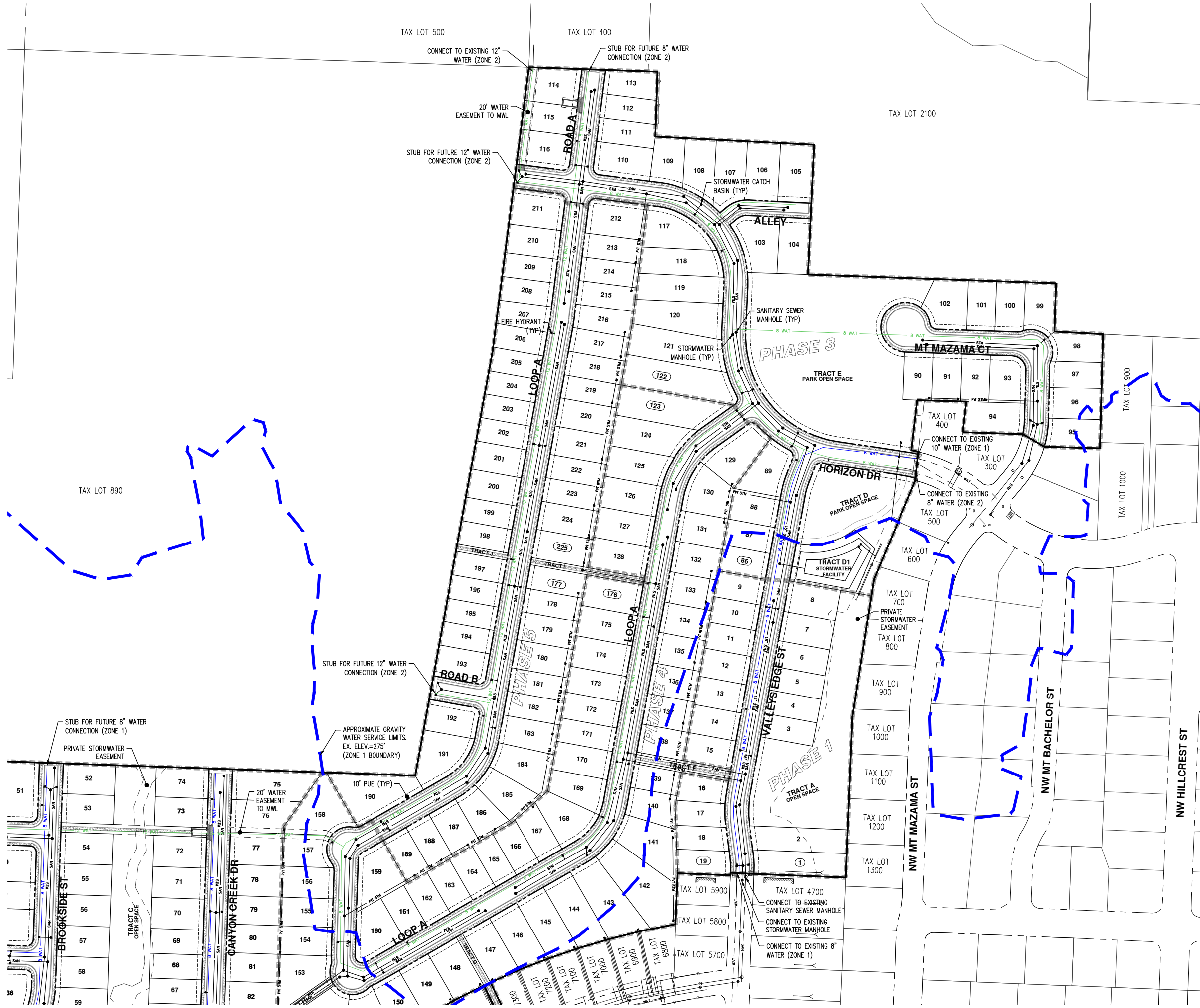


**PRELIMINARY COMPOSITE UTILITY PLAN
 HILLCREST PLANNED DEVELOPMENT AMENDMENT
 HOLT HOMES, INC
 MCMINNVILLE, OR**

PRELIMINARY
 NOT FOR
 CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
 STATE OF OREGON
 NO. 12345
 J. A. SELLIE

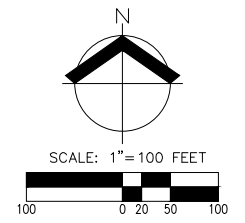
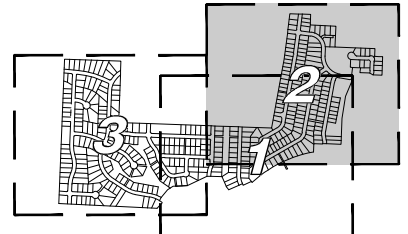
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LEGEND

ZONE 1 WATER	8 WAT
ZONE 2 WATER	8 WAT
PUBLIC STORMWATER	STM
PRIVATE STORMWATER	PVT STM

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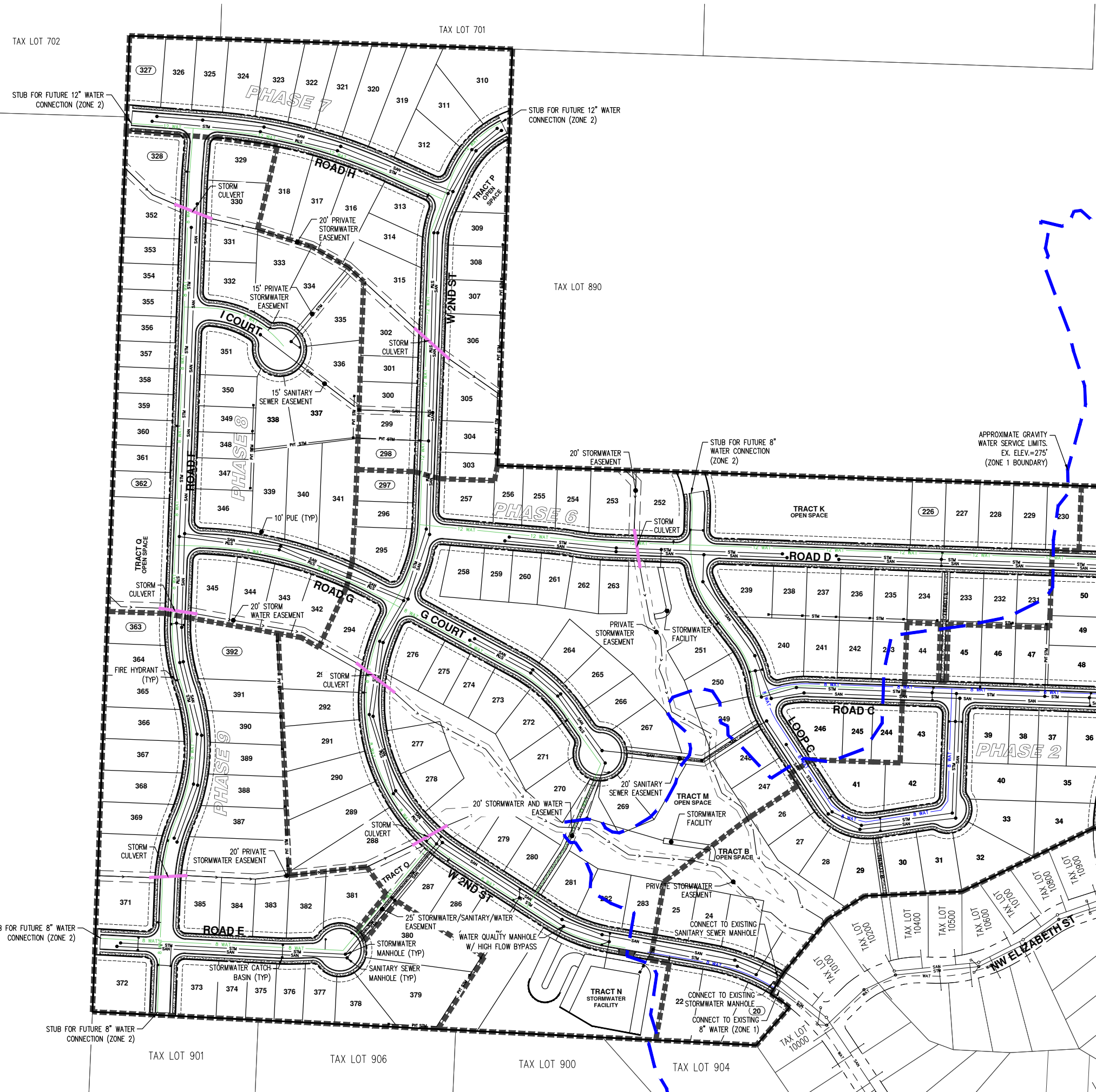


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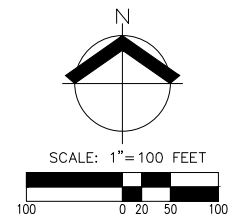
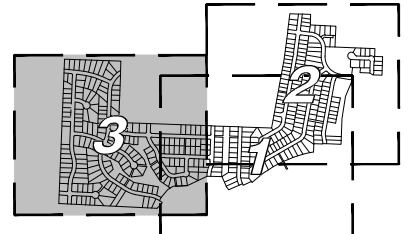
AKS DRAWING FILE: 5147-02 COMP UTIL/DWG LAYOUT CU-03



LEGEND

ZONE 1 WATER	8" WAT
ZONE 2 WATER	8" WAT
PUBLIC STORMWATER	STM
PRIVATE STORMWATER	PVT STM
STORMWATER CULVERT	STM CULVERT

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 HILLCREST PLANNED DEVELOPMENT AMENDMENT
 HOLT HOMES, INC
 MCMINNVILLE, OR**

**REGISTERED PROFESSIONAL ENGINEER
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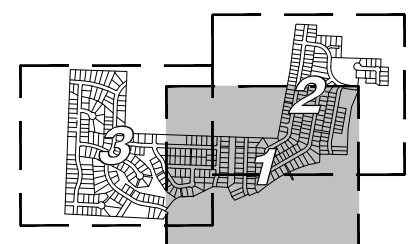
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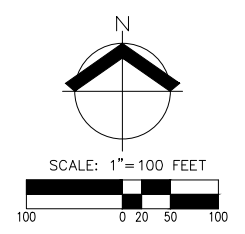
- NOTES:**
1. CONTOUR INTERVAL SHOWN IS 2 FOOT. VERTICAL DATUM IS BASED ON THE NAVD 88 DATUM. CONTOURS SHOWN ARE BASED ON LIDAR DATA PROVIDED BY OTHERS AND ARE CONSIDERED APPROXIMATE.
 2. THIS MAP IS FOR PRELIMINARY PURPOSES ONLY.
 3. THIS IS A CONCEPTUAL LAYOUT AND IS SUBJECT TO CHANGE BASED ON CITY REQUIREMENTS, UTILITY SERVICES, TRANSPORTATION REQUIREMENTS, NATURAL RESOURCES, SURVEY DATA, TOPOGRAPHIC CONSTRAINTS AND OTHER ITEMS. PROPERTY LINES ARE BASED ON AVAILABLE GIS INFORMATION AND ARE APPROXIMATE.
 4. SHOWN GRADING IS BASED ON PRELIMINARY DESIGN UTILIZING LIDAR CONTOURS AND ARE SUBJECT TO CHANGE BASED ON CITY ENGINEERING REQUIREMENTS. GRADING FOR PATHS AND STAIRS NOT SHOWN, BUT WILL BE PROVIDED DURING FINAL ENGINEERING.

LEGEND

EXISTING GROUND CONTOUR (2 FT)	---
EXISTING GROUND CONTOUR (10 FT)	---
FINISHED GRADE CONTOUR (2 FT)	---
FINISHED GRADE CONTOUR (10 FT)	---
PHASE BOUNDARY	-----



KEY MAP
 SCALE: 1" = 1250'



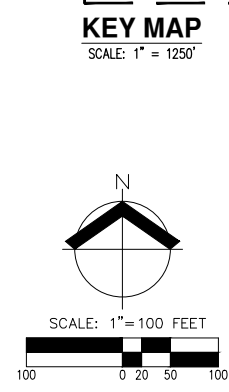
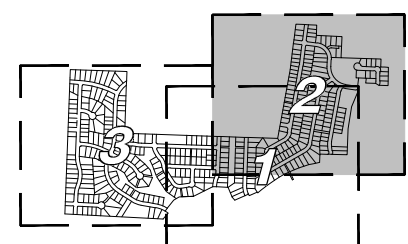
PRELIMINARY GRADING PLAN
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 4. SHOWN ROAD GRADES ARE BASED ON PRELIMINARY DESIGN UTILIZING LIDAR CONTOURS AND IS SUBJECT TO CHANGE BASED ON CITY ENGINEERING REQUIREMENTS.

LEGEND	
EXISTING GROUND CONTOUR (2 FT)	-----
EXISTING GROUND CONTOUR (10 FT)	----- 300 -----
FINISHED GRADE CONTOUR (2 FT)	-----
FINISHED GRADE CONTOUR (10 FT)	----- 300 -----
PHASE BOUNDARY	-----



**PRELIMINARY GRADING PLAN
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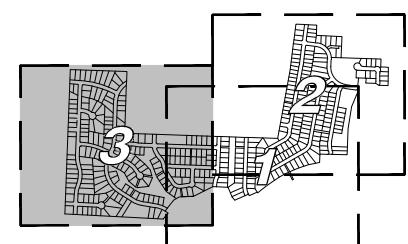
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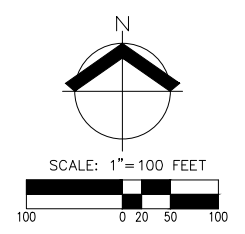
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LEGEND

EXISTING GROUND CONTOUR (2 FT)	---
EXISTING GROUND CONTOUR (10 FT)	---
FINISHED GRADE CONTOUR (2 FT)	---
FINISHED GRADE CONTOUR (10 FT)	---
PHASE BOUNDARY	■■■■■■■■



KEY MAP
 SCALE: 1" = 1250'



**PRELIMINARY GRADING PLAN
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 McMINNVILLE, OR**

PRELIMINARY
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GR-03

Exhibit B: Application Form

Exhibit C: City of McMinnville Ordinance 4868

ORDINANCE NO. 4868

An Ordinance rezoning certain property from an R-1 (Single-Family Residential) zone to an R-2 PD (Single-Family Residential Planned Development) zone on a parcel of land approximately 164.1 acres in size.

RECITALS

The Planning Commission received an application (ZC 19-06) from KHA Properties, LLC, dated December 14, 2007, for a zone change from an R-1 (Single-Family Residential) zone to an R-2 PD (Single-Family Residential Planned Development) zone on a parcel of land approximately 164.1 acres in size. The property is more specifically described as a Tax Lot 800, Section 24, T. 4 S., R. 5 W., W.M.

A public hearing was held on February 15, 2007 at 6:30 p.m. before the McMinnville Planning Commission after due notice had been given in the local newspaper on February 8, 2007, and written notice had been mailed to property owners within 300 feet of the affected property; and

At said public hearing, testimony was received, the application materials and a staff report were presented; and

The Planning Commission, being fully informed about said request, found that said change conformed to the zone change review criteria listed in Chapter 17.72.035 of Ordinance No. 3380 based on the material submitted by the applicant and findings of fact and the conclusionary findings for approval contained in the staff report, all of which are on file in the Planning Department, and that the zone change is consistent with the Comprehensive Plan; and

The Planning Commission approved said zone change and has recommended said change to the Council; and

On March 8, 2007, an appeal of the Planning Commission's recommendation was filed with the City Planning Department. Consistent with the requirements of the McMinnville Zoning Ordinance, a public hearing was scheduled before the City Council on April 10, 2007 after due notice had been given in the local newspaper, and written notice had been mailed to property owners within 300 feet of the affected property; and

At said public hearing, testimony was received, the application and materials and staff report were presented. Prior to public agency input being received, the hearing was continued by the City Council to its April 24, 2007 hearing where it was concluded and a decision reached; and now, therefore,

THE CITY OF McMINNVILLE ORDAINS AS FOLLOWS:

Section 1. That the Council adopts the findings and conclusions of the Planning Commission, staff report on file in the Planning Department, and the application filed by KHA Properties, LLC.

Section 2. That the property described in Exhibit "A," is hereby rezoned from an R-1 (Single-Family Residential) zone to an R-2 PD (Single-Family Residential Planned Development) zone, subject to the following conditions:

1. That the planned development overlay shall require the following setbacks:
 - A. Development of the multi-family lot and lots within the Northridge subdivision shall be to standard R-4 zone setbacks.
 - B. Lots within the Valley's Edge Phase 2 subdivision shall be to a standard R-3 zone setback.
 - C. All other lots shall meet applicable R-2 zoning setbacks.

The Planning Director is authorized to permit reductions or increases to these setback standards as may be necessary to provide for the retention of trees greater than nine (9) inches in diameter measured at 4.5 feet above grade. In no case, however, may the side yard setback be reduced to less than five feet, or the exterior side yard setback to less than 12 feet, or the distance from the property line to the front opening of a garage be reduced to less than 18 feet without approval of the Planning Commission pursuant to the requirements of Chapter 17.69 (Variance). A request to adjust the setbacks for these lots shall be accompanied by a building plan for the subject site that clearly indicates the location of existing trees. Trees to be retained shall be protected during all phases of home construction.

That existing trees greater than nine inches DBH (diameter at breast height) shall not be removed without prior review and written approval of the Planning Director. In addition, all trees shall be protected during home construction. A plan for such protection must be submitted with the building permit application and must meet with the approval of the Planning Director prior to release of construction or building permits within the subject site. Requests for removal of such trees based upon claims of disease, or hazard should be accompanied by a report from a licensed arborist.

2. That the "Hillcrest" tentative subdivision plan (revised as necessary to comply with the adopted conditions of approval) be placed on file with the Planning Department and that it become a part of the zone and binding on the property owner and developer, and shall in no way be binding on the City.

The developer shall be responsible for requesting approval of the Planning Commission for any major change of the details of the adopted plan. Minor changes to the details of the adopted plan may be approved by the Planning Director. It shall be the Planning Director's decision as to what constitutes a major or minor change. An appeal from a ruling by the Planning Director may be made only to the Commission. Review of the Planning Director's decision by the Planning Commission may be initiated at the request of any one of the Commissioners.

3. That site plans and building elevations for the proposed multi-family units must be submitted to the Planning Director for review and approval prior to the issuance of any building permits for said units. The following criteria shall apply:
 - A. The building layout must be nonlinear in design, even if to meet this goal the number of units has to be reduced.
 - B. The building roof lines and facades must be broken so as to avoid a flat, uniform appearance.

- C. The site shall be heavily landscaped with emphasis on those sides facing a public street. Street-side landscaping shall include berming, and street trees a minimum of two-inch caliper at time of planting. In addition, parking lots shall be broken up by landscaping, and usable open space shall be provided within the development.
 - D. Signage shall be limited to a maximum of two free-standing monument-type signs, each not more than four feet in height and not exceeding 36 square feet in area. The signs, if illuminated, must be indirectly illuminated and non flashing.
 - E. Horizontal lap siding or similar type siding must be used (no T-111 or similar), and architectural composition roofing or a similar or higher grade type of roofing must be applied.
4. Prior to the issuance of the 290th building permit for the master planned development, the developer shall complete the installation of left-turn-lane improvements, meeting the City's and Yamhill County's standards, at the intersections of Hill Road / Horizon Drive and Hill Road / West Second Street.
 5. That the minimum lot sizes within the Hillcrest development may be reduced below 7,000 square feet, provided the overall residential density within the subject site (less the parkland and storm detention areas) does not exceed the net density allowed by the R-2 zone (gross density reduced by 25 percent to account for public infrastructure).

Passed by the Council this 24th day of April 2007, by the following votes:

Ayes: Hansen, Hill, Menke, Olson, May, Yoder

Nays: _____

Approved this 24th day of April 2007.



MAYOR

COUNCIL PRESIDENT

Attest:


CITY RECORDER

Approved as to form:


CITY ATTORNEY

Exhibit D: City of McMinnville Ordinance 5024

ORDINANCE NO. 5024

AN ORDINANCE AMENDING PLANNED DEVELOPMENT ORDINANCE NO. 4868 TO ALLOW EXCEPTIONS TO CURRENT STREET GRADE, BLOCK LENGTH, BLOCK CIRCUMFERENCE AND LOT DEPTH TO WIDTH STANDARDS AND TO AMEND AN APPROVED RESIDENTIAL SUBDIVISION AND PHASING PLAN ON APPROXIMATELY 132 ACRES OF LAND.

RECITALS:

The subject site is located north of NW Redmond Hill Road, west of NW Mt. Mazama Street and south of NW Fox Ridge Road and is more specifically described as Tax Lot 801 Section 24, T. 4 S., R. 5 W., W.M.; and

The Planning Department received application ZC 6-17 on April 5, 2017, and deemed it complete on April 11, 2017. The first public hearing before the McMinnville Planning Commission was held on May 18, 2017, after due notice had been provided in the local newspaper on May 9, 2017, and written notice had been mailed to property owners within 300 feet of the affected property. At the May 18, 2017, Planning Commission public meeting, after the application materials and a staff report were presented and testimony was received, the Commission voted unanimously to recommend approval of ZC 6-17 to the McMinnville City Council; and

The City Council, being fully informed about said request, found that the requested amendments conformed to the applicable Comprehensive Plan goals and policies, as well as the zone change review criteria listed in Section 17.74.020 and Planned Development Amendment review criteria listed in Section 17.74.070 of the McMinnville Zoning Ordinance based on the material submitted by the applicant and the findings of fact and conclusionary findings for approval contained in Exhibit A; and

The City Council having received the Planning Commission recommendation and staff report, and having deliberated;

NOW, THEREFORE, THE COMMON COUNCIL FOR THE CITY OF MCMINNVILLE ORDAINS AS FOLLOWS:

1. That the Council adopts the Findings of Fact, Conclusionary Findings, Decision and Conditions of Approval as documented in Exhibit A for ZC 6-17; and
2. That the Conditions of Approval as documented in Exhibit A for ZC 6-17 are as follows:
 1. That the planned development overlay shall require the following setbacks:
 - A. Development of the multi-family lot and single-family lots within the Northridge subdivision shall be to standard R-4 zone setbacks.
 - B. Lots within the Valley's Edge Phase 2 subdivision shall be to a standard R-3 zone setback.

C. All other lots shall meet applicable R-2 zoning setbacks.

The Planning Director is authorized to permit reductions or increases to these setback standards as may be necessary to provide for the retention of trees greater than nine (9) inches in diameter measured at 4.5 feet above grade. In no case, however, may the side yard setback be reduced to less than five feet, or the exterior side yard setback to less than 12 feet, or the distance from the property line to the front opening of a garage be reduced to less than 18 feet without approval of the Planning Commission pursuant to the requirements of Chapter 17.69 (Variance). A request to adjust the setbacks for these lots shall be accompanied by a building plan for the subject site that clearly indicates the location of existing trees. Trees to be retained shall be protected during all phases of home construction.

2. That existing trees greater than nine inches in diameter above grade shall not be removed without prior review and written approval of the Planning Director. In addition, all trees shall be protected during home construction. A plan for such protection must be submitted with the building permit application and must meet with the approval of the Planning Director prior to release of construction or building permits within the subject site. Requests for removal of such trees based upon claims of disease, or hazard should be accompanied by a report from a licensed arborist.
3. That the "Hillcrest" phased tentative subdivision plan (revised as necessary to comply with the adopted conditions of approval) be placed on file with the Planning Department and that it become a part of the zone and binding on the property owner and developer, and shall in no way be binding on the City.

The developer shall be responsible for requesting approval of the Planning Commission for any major change of the details of the adopted plan. Minor changes to the details of the adopted plan may be approved by the Planning Director. It shall be the Planning Director's decision as to what constitutes a major or minor change. An appeal from a ruling by the Planning Director may be made only to the Commission. Review of the Planning Director's decision by the Planning Commission may be initiated at the request of any one of the Commissioners.

4. That site plans and building elevations for the proposed multi-family units must be submitted to the Planning Director for review and approval prior to the issuance of any building permits for said units. The following criteria shall apply:
 - A. The building layout must be nonlinear in design, even if to meet this goal the number of units has to be reduced.
 - B. The building roof lines and facades must be broken so as to avoid a flat, uniform appearance.
 - C. The site shall be heavily landscaped with emphasis on those sides facing a public street. Street-side landscaping shall include berming, and street trees a minimum of two-inch caliper at time of planting. In

addition, parking lots shall be broken up by landscaping, and usable open space shall be provided within the development.

- D. Signage shall be limited to a maximum of two free-standing monument-type signs, each not more than four feet in height and not exceeding 36 square feet in area. The signs, if illuminated, must be indirectly illuminated and non flashing.
 - E. Horizontal lap siding or similar type siding must be used (no T-111 or similar), and architectural composition roofing or a similar or higher grade type of roofing must be applied.
- 5. Prior to the issuance of the 290th building permit for the master planned development, the developer shall complete the installation of left-turn-lane improvements, meeting the City's and Yamhill County's standards, at the intersections of Hill Road / Horizon Drive and Hill Road / West Second Street.
 - 6. That minimum lot sizes within the Hillcrest development may be reduced below 7,000 square feet, provided the overall residential density within the subject site (less the parkland and storm detention areas) does not exceed the net density allowed by the R-2 zone (gross density reduced by 25 percent to account for public infrastructure).
 - 7. Grades shall not exceed six (6) percent on arterials, 10 (ten) percent on collector streets, or 12 (twelve) percent on any other street except as described below. Any local street grade exceeding 12 (twelve) percent shall be reviewed for approval by the Fire Code Official during the land use application review process. When a local residential street is approved to exceed 12 (twelve) percent the following shall be required:
 - A. A maximum of 200 feet of roadway length may be allowed with a grade between 12 (twelve) percent and 15 (fifteen) percent for any one section. The roadway grade must reduce to no more than 12 (twelve) percent for a minimum of 75 linear feet of roadway length between each such section for firefighting operations.
 - B. Fire sprinklers shall be installed in all residential and commercial structures whose access road is constructed at a grade higher than 12 (twelve) percent. The approval of such fire sprinklers shall be accomplished in accordance with the provisions of ORS 455.610(6).

Centerline radii of curves shall not be less than 300 feet on major arterials, 200 feet on secondary arterials, or 100 feet on other streets, and shall be to an even 10 (ten) feet. Where existing conditions, particularly topography, make it otherwise impractical to provide buildable lots, the Planning Commission may accept sharper curves.

- 8. That condition of approval number 10 of S 13-06 is supplanted as follows: "The City Public Works Department will install, at the applicant's expense, the necessary street signage (including stop signs, no parking signage, and street name signage), curb painting, and striping (including stop bars)

associate with the development. The applicant shall reimburse the City for the signage and markings prior to the City's approval of the final plat."

9. That condition of approval numbers 14, 15 and 16 of S 13-06 is supplanted as follows: "Per the adopted 2010 Transportation System Plan (TSP), all remaining streets (including the extensions of 2nd Street and Horizon Drive) within the development area can be constructed to the local residential street standard. All streets shall be improved with a 28-foot wide paved section, 5-foot wide curbside planting strips, and five-foot-wide sidewalks placed one foot from the property line within a 50-foot right-of-way, as required by the McMinnville Land Division Ordinance for local residential streets."
 10. That the applicant shall provide information detailing the number of lots that will be made available for individual sale to builders for review and approval by the Planning Director prior to recording of the final plat. Upon approval, the referenced lots will be made available for sale to the general public for a minimum of one hundred twenty (120) days prior to building permit issuance for said lots.
 11. That in addition to the pedestrian connections shown on Sheet SU-00 of the applicant's submittal, pedestrian connections shall also be provided between NW Brookshire and NW Canyon Creek Drive, NW Canyon Creek Drive and Road A, between Road A and the adjacent westerly edge of the subdivision (Tax Lot 809), between NW C Loop and NW Elizabeth, between Road D and the northwesterly edge of the subdivision (Tax Lot 809) and between Road E and NW 2nd Street. All private pedestrian connections shall be dedicated as tracts commonly held and maintained by a Homeowner's Association.
 12. That based on a Geo-Technical Engineering report dated May 10, 2016, and the soils conditions shown in this report, foundations will necessitate design by a Geo-Technical Engineer. Each design must take into account what might occur to the down slope construction (Phase 4), when further development of the hillside occurs in the future. Since the May 10, 2016, report this hillside has been saturated with substantial rainfall. How this has affected any construction on the downside as well as future development should be taken into consideration in the design of Phase 4.
 13. That Planned Development Ordinance No. 4868 is repealed in its entirety.
3. That this Ordinance shall take effect 30 days after its passage by the City Council.

Passed by the Council this 27th day of June 2017, by the following votes:

Ayes: Garvin, Stassens, Ruden


Nays: Jeffries


MAYOR Presiding officer

Attest:

Approved as to form:


CITY RECORDER


CITY ATTORNEY



**CITY OF MCMINNVILLE
PLANNING DEPARTMENT
231 NE FIFTH STREET
MCMINNVILLE, OR 97128**

503-434-7311
www.mcminnvilleoregon.gov

DECISION, CONDITIONS OF APPROVAL, FINDINGS OF FACT AND CONCLUSIONARY FINDINGS FOR THE APPROVAL OF A PLANNED DEVELOPMENT AMENDMENT REQUEST (ZC 6-17), TAX LOT 801, SECTION 25, T.4 S., R. 5 W., W.M., LOCATED GENERALLY NORTH OF REDMOND HILL ROAD AND WEST OF MT. MAZAMA AND SOUTH OF FOX RIDGE ROAD.

DOCKET: ZC 6-17

REQUEST: West Hills Properties, LLC, has submitted an application requesting approval of a Planned Development Amendment (ZC 6-17) to an existing multi-phase residential subdivision master plan. The proposed modifications are summarized as follows:

Street Grade – The applicant is requesting approval to exceed the maximum grade of 12% for local residential streets.

Lot Depth to Width Standard – The applicant is requesting approval to exceed the lot depth to width standard of 2 to 1 that is not ordinarily exceeded.

Block Length – The applicant is requesting approval to exceed the maximum block length of 400 feet.

Block Circumference – The applicant is requesting approval to exceed the maximum block circumference of 1,600 feet.

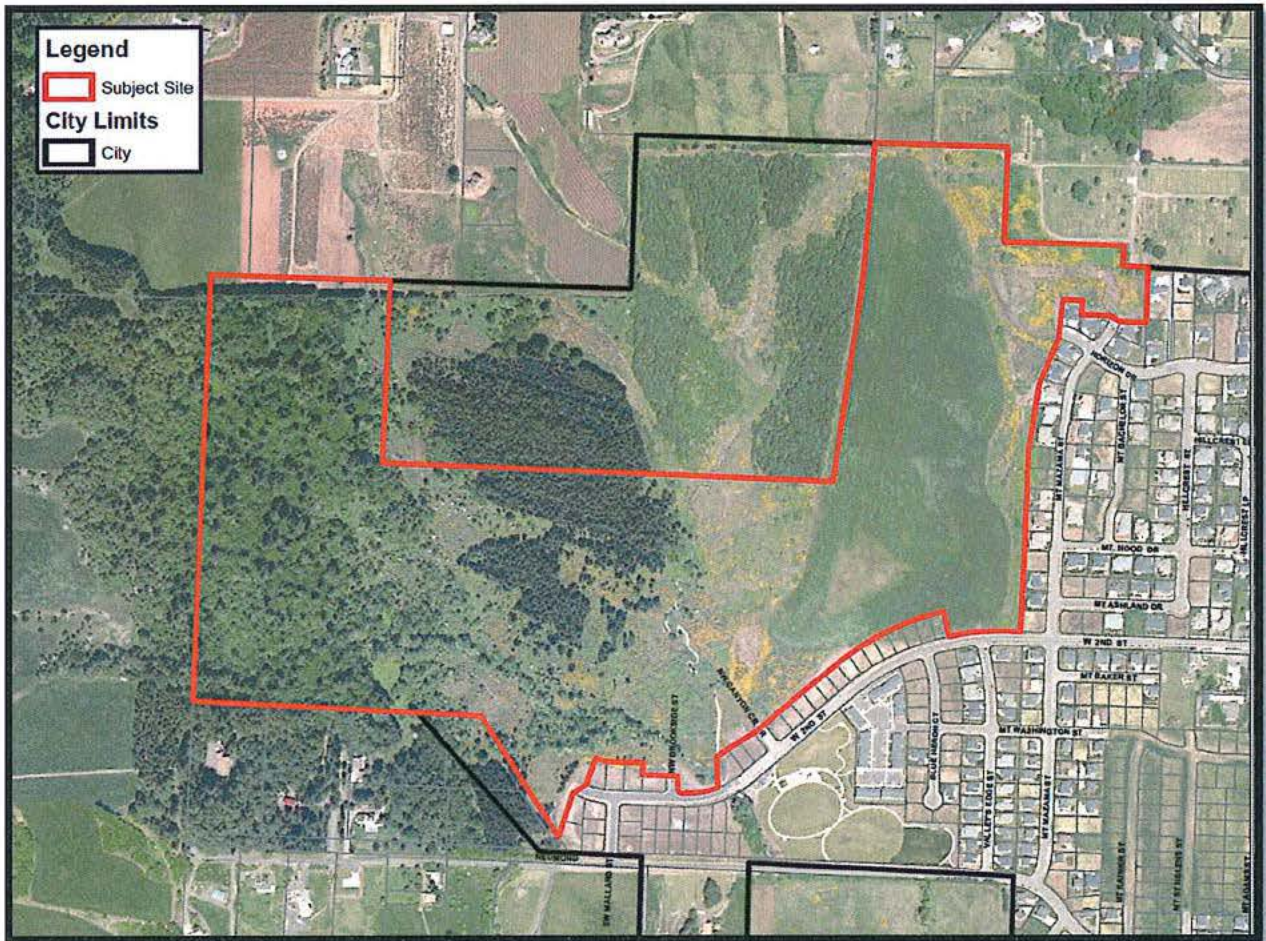
As part of this Planned Development amendment application the applicant is also requesting approval of an amended subdivision layout and phasing plan that would also increase by 40 the number of residential lots in the multi-phase development plan.

LOCATION: Tax Lot 801, Section 24, T.4 S., R. 5 W., W.M.

ZONING: The subject site's current zoning is R-2 PD

APPLICANT: West Hills Properties, LLC
2300 SW 2nd Street, Suite B
McMinnville, OR 97128

STAFF: Ron Pomeroy, Principal Planner



HEARINGS BODY: McMinnville Planning Commission

DATE & TIME: May 18, 2017, 6:30 p.m, McMinnville Civic Hall, 200 NE Second Street
McMinnville, OR 97128

DECISION-MAKING BODY: McMinnville City Council

DATE & TIME: June 13, 2017, 7:00 p.m, and June 27, 2017, McMinnville Civic Hall,
200 NE Second Street, McMinnville, OR 97128

COMMENTS: This matter was referred to the following public agencies for comment: McMinnville Fire Department, Police Department, Engineering Department, Building Department, Parks Department, City Manager, and City Attorney; McMinnville Water and Light; McMinnville School District No. 40; Yamhill County Public Works; Yamhill County Planning Department; Frontier Communications; Comcast; and Northwest Natural Gas. Their comments are provided in this exhibit.

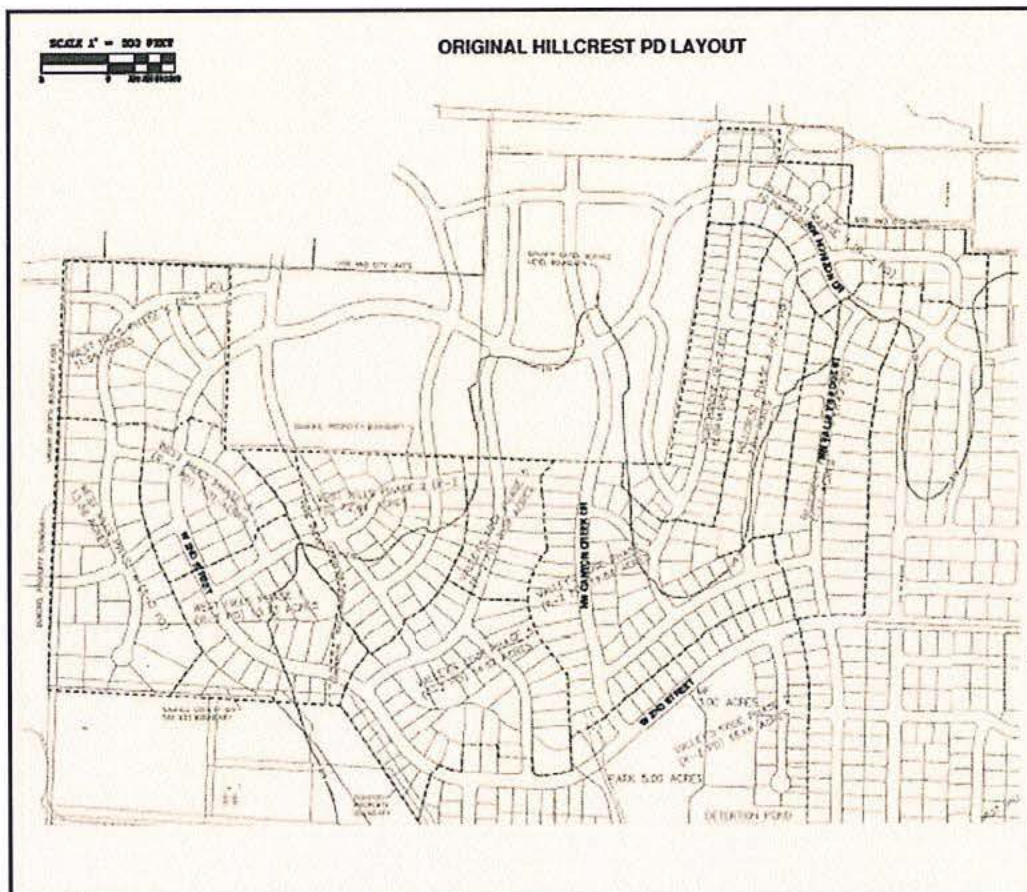
APPLICATION SUMMARY:

The applicant is requesting approval to amend Planned Development Ordinance 4868 to allow exceptions to current street grade, block length, block circumference and lot depth to width standards. Also are requested is approval to amend an approved residential subdivision and phasing plan on approximately 132 acres of land.

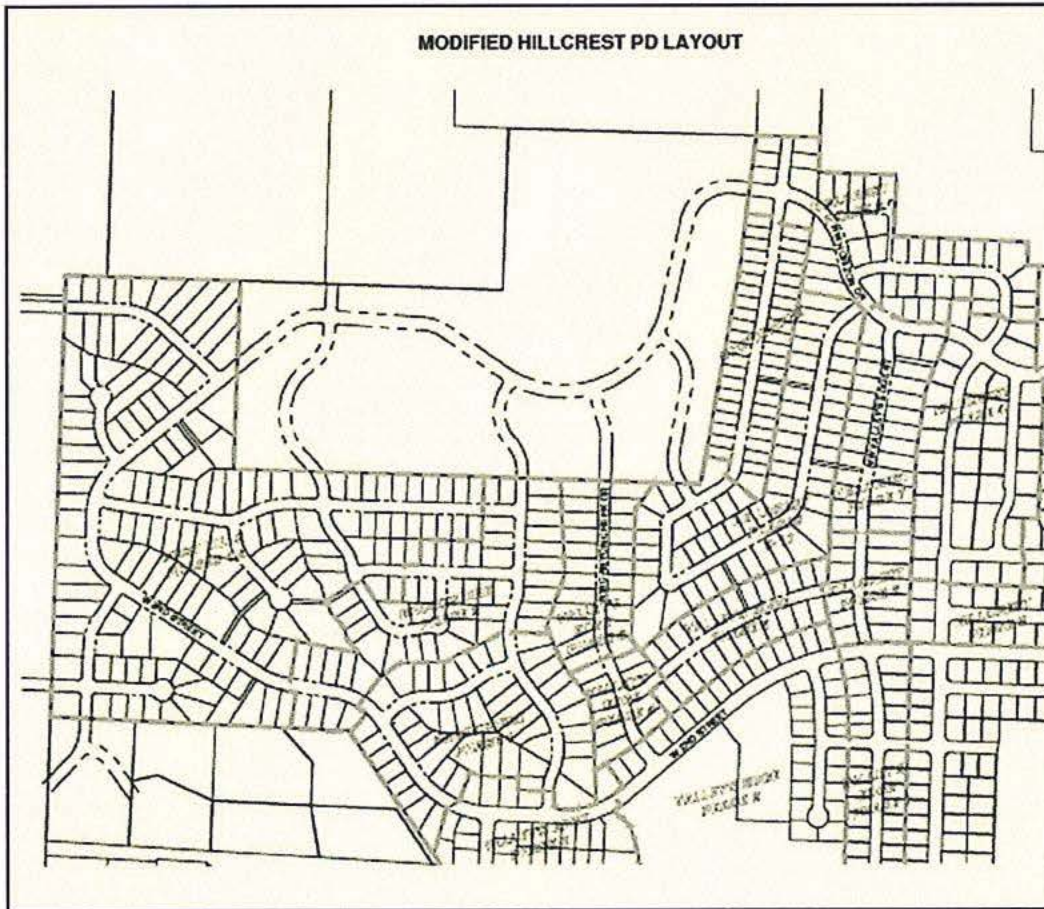
This request is to amend a Planned Development approved on April 24, 2007, when the McMinnville City Council adopted Ordinance No. 4868 for a zone change request from an R-1 (Single-Family Residential) zone to an R-2 PD (Single-Family Residential Planned Development) zone on a parcel of land approximately 164 acres in size. At the same time a phased subdivision request for approximately 4.0 acres of multifamily housing, 7.2 acres for park and storm water detention, and approximately 153 acres of residential housing (441 single-family detached residences, 50 single-family attached residences and 60 apartment units) was approved. It is the modification of this Ordinance and its implications to the attendant phased subdivision that is the subject of this Planned Development Amendment application.

Since that time, portions of that phased subdivision plan (referred to as the Hillcrest Planned Development) have been developed including the public park and storm water detention facility, multiple-family residential apartment complex and the Valley's Edge Phases 2 and 3 of the phased development plan. The remaining 132 acres of the original 164-acre multi-phase plan are the subject of this current zone change request.

For the benefit of context for the Commission, the originally approved (2007) conceptual subdivision plan for this site is provided below:



The proposed conceptual subdivision plan for this site is provided below:



CONDITIONS OF APPROVAL:

The following conditions of approval shall be required to ensure that the proposal is compliant with the City of McMinnville's Comprehensive Plan and Zoning Ordinance:

- 14. That the planned development overlay shall require the following setbacks:
 - A. Development of the multi-family lot and single-family lots within the Northridge subdivision shall be to standard R-4 zone setbacks.
 - B. Lots within the Valley's Edge Phase 2 subdivision shall be to a standard R-3 zone setback.
 - C. All other lots shall meet applicable R-2 zoning setbacks.

The Planning Director is authorized to permit reductions or increases to these setback standards as may be necessary to provide for the retention of trees greater than nine (9) inches in diameter measured at 4.5 feet above grade. In no case, however, may the side yard setback be reduced to less than five feet, or the exterior side yard setback to less than 12 feet, or the distance from the property line to the front opening of a garage be

reduced to less than 18 feet without approval of the Planning Commission pursuant to the requirements of Chapter 17.69 (Variance). A request to adjust the setbacks for these lots shall be accompanied by a building plan for the subject site that clearly indicates the location of existing trees. Trees to be retained shall be protected during all phases of home construction.

15. That existing trees greater than nine inches in diameter above grade shall not be removed without prior review and written approval of the Planning Director. In addition, all trees shall be protected during home construction. A plan for such protection must be submitted with the building permit application and must meet with the approval of the Planning Director prior to release of construction or building permits within the subject site. Requests for removal of such trees based upon claims of disease, or hazard should be accompanied by a report from a licensed arborist.
16. That the "Hillcrest" phased tentative subdivision plan (revised as necessary to comply with the adopted conditions of approval) be placed on file with the Planning Department and that it become a part of the zone and binding on the property owner and developer, and shall in no way be binding on the City.

The developer shall be responsible for requesting approval of the Planning Commission for any major change of the details of the adopted plan. Minor changes to the details of the adopted plan may be approved by the Planning Director. It shall be the Planning Director's decision as to what constitutes a major or minor change. An appeal from a ruling by the Planning Director may be made only to the Commission. Review of the Planning Director's decision by the Planning Commission may be initiated at the request of any one of the Commissioners.

17. That site plans and building elevations for the proposed multi-family units must be submitted to the Planning Director for review and approval prior to the issuance of any building permits for said units. The following criteria shall apply:
 - A. The building layout must be nonlinear in design, even if to meet this goal the number of units has to be reduced.
 - B. The building roof lines and facades must be broken so as to avoid a flat, uniform appearance.
 - C. The site shall be heavily landscaped with emphasis on those sides facing a public street. Street-side landscaping shall include berming, and street trees a minimum of two-inch caliper at time of planting. In addition, parking lots shall be broken up by landscaping, and usable open space shall be provided within the development.
 - D. Signage shall be limited to a maximum of two free-standing monument-type signs, each not more than four feet in height and not exceeding 36 square feet in area. The signs, if illuminated, must be indirectly illuminated and non flashing.
 - E. Horizontal lap siding or similar type siding must be used (no T-111 or similar), and architectural composition roofing or a similar or higher grade type of roofing must be applied.
18. Prior to the issuance of the 290th building permit for the master planned development, the developer shall complete the installation of left-turn-lane improvements, meeting the City's

and Yamhill County's standards, at the intersections of Hill Road / Horizon Drive and Hill Road / West Second Street.

19. That minimum lot sizes within the Hillcrest development may be reduced below 7,000 square feet, provided the overall residential density within the subject site (less the parkland and storm detention areas) does not exceed the net density allowed by the R-2 zone (gross density reduced by 25 percent to account for public infrastructure).
20. Grades shall not exceed six (6) percent on arterials, 10 (ten) percent on collector streets, or 12 (twelve) percent on any other street except as described below. Any local street grade exceeding 12 (twelve) percent shall be reviewed for approval by the Fire Code Official during the land use application review process. When a local residential street is approved to exceed 12 (twelve) percent the following shall be required:
 - A. A maximum of 200 feet of roadway length may be allowed with a grade between 12 (twelve) percent and 15 (fifteen) percent for any one section. The roadway grade must reduce to no more than 12 (twelve) percent for a minimum of 75 linear feet of roadway length between each such section for firefighting operations.
 - C. Fire sprinklers shall be installed in all residential and commercial structures whose access road is constructed at a grade higher than 12 (twelve) percent. The approval of such fire sprinklers shall be accomplished in accordance with the provisions of ORS 455.610(6).

Centerline radii of curves shall not be less than 300 feet on major arterials, 200 feet on secondary arterials, or 100 feet on other streets, and shall be to an even 10 (ten) feet. Where existing conditions, particularly topography, make it otherwise impractical to provide buildable lots, the Planning Commission may accept sharper curves.

21. That condition of approval number 10 of S 13-06 is supplanted as follows: "The City Public Works Department will install, at the applicant's expense, the necessary street signage (including stop signs, no parking signage, and street name signage), curb painting, and striping (including stop bars) associate with the development. The applicant shall reimburse the City for the signage and markings prior to the City's approval of the final plat."
22. That condition of approval numbers 14, 15 and 16 of S 13-06 is supplanted as follows: "Per the adopted 2010 Transportation System Plan (TSP), all remaining streets (including the extensions of 2nd Street and Horizon Drive) within the development area can be constructed to the local residential street standard. All streets shall be improved with a 28-foot wide paved section, 5-foot wide curbside planting strips, and five-foot-wide sidewalks placed one foot from the property line within a 50-foot right-of-way, as required by the McMinnville Land Division Ordinance for local residential streets."
23. That the applicant shall provide information detailing the number of lots that will be made available for individual sale to builders for review and approval by the Planning Director prior to recording of the final plat. Upon approval, the referenced lots will be made available for sale to the general public for a minimum of one hundred twenty (120) days prior to building permit issuance for said lots.
24. That in addition to the pedestrian connections shown on Sheet SU-00 of the applicant's submittal, pedestrian connections shall also be provided between NW Brookshire and NW

Canyon Creek Drive, NW Canyon Creek Drive and Road A, between Road A and the adjacent westerly edge of the subdivision (Tax Lot 809), between NW C Loop and NW Elizabeth, between Road D and the northwesterly edge of the subdivision (Tax Lot 809) and between Road E and NW 2nd Street. All private pedestrian connections shall be dedicated as tracts commonly held and maintained by a Homeowner's Association.

25. That based on a Geo-Technical Engineering report dated May 10, 2016, and the soils conditions shown in this report, foundations will necessitate design by a Geo-Technical Engineer. Each design must take into account what might occur to the down slope construction (Phase 4), when further development of the hillside occurs in the future. Since the May 10, 2016, report this hillside has been saturated with substantial rainfall. How this has affected any construction on the downside as well as future development should be taken into consideration in the design of Phase 4.
26. That Planned Development Ordinance No. 4868 is repealed in its entirety.

ATTACHMENTS:

1. ZC 6-17 Application and Attachments (*on file*)
2. Public Notices (*on file*)
3. McMinnville Ord. No. 4868 (*on file*)
4. Geotech Report by GeoPacific for West Hills Properties dated May 19, 2016 (*on file*)
5. Public Testimony Received (*on file*)
6. Planning Commission, May 18, 2017 Meeting Minutes (*on file*)
7. Memo from AKS Engineering and Forestry, dated May 30, 2017 (*on file*)

COMMENTS:

This matter was referred to the following public agencies for comment: McMinnville Fire Department, Police Department, Engineering and Building Departments, City Manager, and City Attorney, McMinnville School District No. 40, McMinnville Water and Light, Yamhill County Public Works, Yamhill County Planning Department, Frontier Communications, Comcast, Northwest Natural Gas. The following comments have been received.

McMinnville Engineering Department

- The applicant is proposing to construct the extensions of 2nd Street and Horizon Drive to the minor collector standard contained in the Transportation System Plan (TSP). Per the adopted 2010 TSP, all remaining streets (including the extensions of 2nd Street and Horizon Drive) within the development area can be constructed to the local residential street standard. Conditions 14, 15, and 16 of the existing subdivision approval for ZC18-06/S13-06 should be modified to reflect that the remaining streets shall be improved with a 28-foot wide paved section, 5-foot wide curbside planting strips, and five-foot-wide sidewalks placed one foot from the property line within a 50-foot right-of-way, as required by the McMinnville Land Division Ordinance for local residential streets.
- Condition 10 of the existing subdivision approval for ZC18-06/S13-06 should be modified to read:
 10. The City Public Works Department will install, at the applicant's expense, the necessary street signage (including stop signs, no parking signage, and street name signage), curb painting, and striping (including stop bars) associated with the development. The applicant shall reimburse the City for the signage and markings prior to the City's approval of the final plat.
- The requested street grade and block length exceptions are acceptable to the Engineering Department.
- The submitted Preliminary Stormwater Management Memo is acceptable to the Engineering Department.
- The submitted Traffic Analysis Update Memo acceptable to the Engineering Department.

McMinnville Fire Department

- 1) GRADE: Average road grade shall not exceed 12% except that any grade exceeding 12% shall be approved by the Fire Code Official (*during land use application*). No road grade shall exceed 15%.
- 2) When approved to exceed 12% grade, the following condition shall apply:
 - a) A maximum of 200 feet of road length may be allowed with a grade between 12% to 15% in any one section. The roadway must then level out below 12% for a minimum of length of 75 feet for firefighting operations.
 - b) Fire sprinklers shall be installed in any residential or commercial structure that is built on or whose access road is constructed to a grade of 12% or greater. The approval of fire sprinklers as an alternate means of fire safety shall be accomplished in accordance with the provisions of ORS 455.610(6) – (Low Rise Residential Dwelling Code).

McMinnville Water & Light

MW&L has no comments on this application.

McMinnville Parks Department

After reviewing the material about the planned development changes, I do not find any changes that impact the neighborhood park detention area (2.77 acres). I imagine the park will receive a greater volume of water over time as hard surfaces are more fully developed and the neighborhood is complete. However, that is what was intended with the detention capacity within the park. We shall see if the original calculations were accurate. But there are no concerning issues relative to anticipated impacts to the park of immediate surrounds with the proposed plans.

FINDINGS OF FACT

1. West Hills Development, LLC, has submitted a Planned Development Amendment request (ZC 6-17) requesting approval to amend Planned Development Ordinance 4868 to allow exceptions to current street grade, block length, block circumference and lot depth to width standards. Also requested is approval to amend an approved residential subdivision and phasing plan on approximately 132 acres of land. The property is located generally north of Redmond Hill Road and West of Mt. Mazama and South of Fox Ridge Road and is more specifically described as Tax Lot 801, Section 24, T. 4 S., R. 5 W., W.M.
2. The site is currently zoned R-2 PD (Single-Family Residential Planned Development) and is designated as Residential on the McMinnville Comprehensive Plan Map, 1980.
3. Sanitary sewer and municipal water and power can serve the site. The municipal water reclamation facility has sufficient capacity to accommodate expected waste flows resulting from development of the property.
4. This matter was referred to the following public agencies for comment: McMinnville Fire Department, Police Department, Engineering and Building Departments, City Manager, and City Attorney, McMinnville School District No. 40, McMinnville Water and Light, Yamhill County Public Works, Yamhill County Planning Department, Frontier Communications, Comcast, Northwest Natural Gas, Oregon Department of Transportation, Oregon Division of State Lands, and Oregon Department of Fish and Wildlife. No comments in opposition have been provided.
5. The applicant has submitted findings (Attachment 1) in support of this application. Those findings are herein incorporated.

CONCLUSIONARY FINDINGS:

The applicant provided findings for a wide range of Comprehensive Plan goals and policies, many of which were found to not apply to the request as the submitted application was for review of an approved Planned Development. However, all of the applicant's findings are incorporated herein as they were provided in the application. Staff concurs with the applicable findings provided by the applicant and offers the following additional findings.

Comprehensive Plan Volume I –

Chapter V. Housing and Residential Development – Land Use Controls

Planned Developments:

“The planned development (PD) is a method by which creative, large-scale development of land is encouraged for the collective benefit of the area’s future residents. [...] As written, the planned development provisions are intended to provide specific benefits to a development (e.g., developed parks, retention of unique natural areas, etc.) [...] It is important that the City continue to scrutinize planned development designs to insure that amenities are being provided in excess of what is normally required.

4. Future planned developments should be carefully scrutinized to insure that there are trade-offs favorable to the community when zoning ordinance requirements are varied. Those trade-offs should not just include a mixture of housing types.

Additional Design Considerations:

Pedestrian paths (sidewalks) are required by ordinance to be constructed in all new residential developments. Bike paths, however, have only been constructed in a few selected areas. The City should encourage the development of bike paths and foot paths to activity areas, such as parks, schools, and recreation facilities, in all development designs.

2. Open space is required in all residential developments in several ways. Traditional zoning setbacks reserve a large portion of each individual lot for potential open space. Planned developments can preserve large open areas for open space by clustering development in smaller areas. [...]
5. The City should encourage the provision of bike and foot paths within residential developments to connect to public and/or private parks, or recreation facilities and to connect to any paths which currently abut the land.”

Finding: Based on materials submitted by the applicant this proposal meets the intent of this portion of Volume I of the Comprehensive Plan relative to park space, open space and the provision of bike paths. Following the 2007 Planned Development approval for this site, the applicant worked with the McMinnville Parks Department to achieve the approximately 7-acre public park incorporating a functioning storm water facility sited along the major access into this development area. Additionally, the applicant has mapped the drainage ravines that carry storm runoff and traverse and meander throughout the site. The revised phased subdivision plan has aligned these natural drainageways with the common rear property lines of residential lots as much as practicable to allow their protection through restrictive easements to be maintained through homeowners associations to be created commensurate with the platting of subdivision phases. Additionally, the applicant has proposed the platting of six access tracts to serve as pedestrian connections at cul-de-sac and mid-block locations to enhance pedestrian connections through the topographically challenging hillside development area. Bikeways shall be provided as required by the adopted 2010 McMinnville Transportation System Plan (TSP).

In addition to that provided by the applicant, the following Goals and policies from Volume II of the McMinnville Comprehensive Plan of 1981 are also applicable to this request:

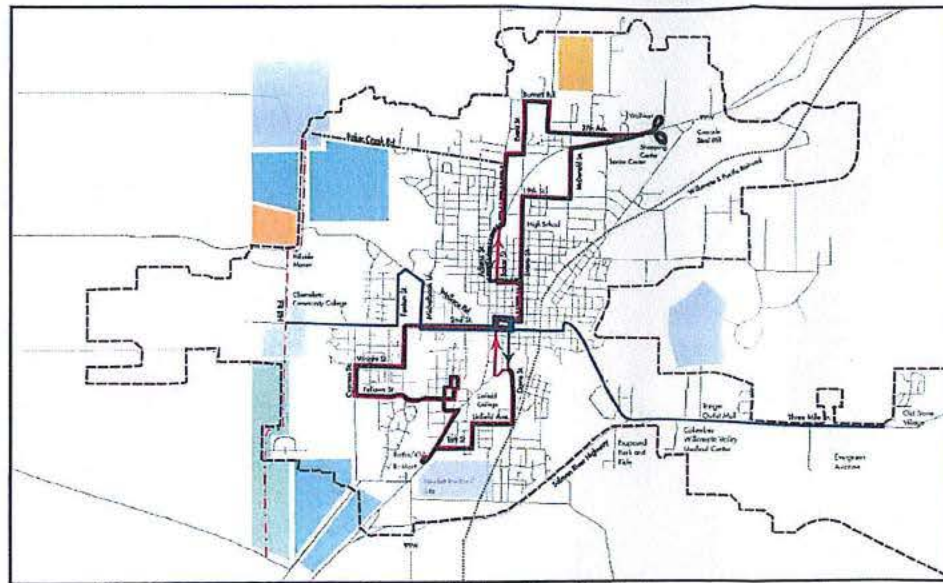
Comprehensive Plan Volume II –

Chapter V. Housing and Residential Development

Westside Density Policy:

- 71.01 The City shall plan for development of the property located on the west side of the city that is outside of planned or existing transit corridors (1/4 mile either side of the route) to be limited to a density of six units per acre. It is recognized that it is an objective of the City to disperse multiple family units throughout the community. In order to provide higher density housing on the west side, sewer density allowances of trade-offs shall be allowed and encouraged.
- 71.10 The following factors should be used to define appropriate density ranges allowed through zoning in the medium density residential areas:
1. The density of development in areas historically zoned for medium and high density development;
 2. The topography and natural features of the area and the degree of possible buffering from established low density residential areas;
 3. The capacity of the services;
 4. The distance to existing or planned public transit;
 5. The distance to neighborhood or general commercial centers; and
 6. The distance from public open space.

Finding: Policies 71.01 and 71.10 are met by this proposal in that the development site is located on the west side of the city, proposed less than an average of the six dwelling units per acres and is located outside of existing or planned transit corridors as demonstrated by Figure 5-6 of the adopted McMinnville Public Transit Plan (below). The multiple-family component of the approved 2007 Planned Development for this area has already been constructed in a manner that dispersed this more dense type of development within the west hills area. Public open space has already been provide and developed as a public park adjacent to the multiple-family residential development. Additionally, this development site is adjacent to areas similarly zoned R-2 PD and developed accordingly with medium density residential development. While distance to neighborhood or general Commercial centers is not as critical to medium density residential development as it is to residential development of much higher densities, a neighborhood serving professional and commercial center exists eastward from this site along W 2nd Street which is the main roadway that will traverse the subject site.



Proposed Bus Routes
 — Red Route
 — Blue Route
 — Green Route

Proposed Urban Growth Areas
 - - - Conceptual Bus Route 1
 - - - Conceptual Bus Route 2
 Mixed Use Node
 Density Corridor
 Mixed Residential
 Future School Site

Urban Growth Boundary
 Areas outside the Urban Growth Boundary have been recommended for inclusion by the Urban Growth Boundary Committee.

Figure 5-6

Planned Development Policies:

- 72.00 Planned unit developments shall be encouraged as a favored form of residential development as long as social, economic, and environmental savings will accrue to the residents of the development and the city.
- 74.00 Distinctive natural, topographic, and aesthetic features within planned developments shall be retained in all development designs.
- 77.00 The internal traffic system in planned developments shall be designed to promote safe and efficient traffic flow and give full consideration to providing pedestrian and bicycle pathways.
- 78.00 Traffic systems within planned developments shall be designed to be compatible with the circulation patterns of adjoining properties.

Finding: Policies 72.00, 74.00, 77.00 and 78.00 are met by this proposal in that the proposal encourages social and environmental benefits and retains natural and aesthetic features within the planned development area by moving proposed roadways away from natural drainageways and requiring their protection through the creation of restrictive easements. Additionally, the proposed street design complies with current adopted City public street standards as defined by the adopted 2010 McMinnville Transportation System Plan (TSP) and extends opportunities for continuation of public streets to other adjacent properties beyond the scope of this development. Pedestrian connections are also proposed at numerous mid-block and cul-de-sac locations to enhance pedestrian access and circulation throughout the neighborhood.

Residential Design Policies:

- 79.00 The density allowed for residential developments shall be contingent on the zoning classification, the topographical features of the property, and the capacities and

availability of public services including but not limited to sewer and water. Where densities are determined to be less than that allowed under the zoning classification, the allowed density shall be set through adopted clear and objective code standards enumerating the reason for the limitations, or shall be applied to the specific area through a planned development overlay. Densities greater than those allowed by the zoning classification may be allowed through the planned development process or where specifically provided in the zoning ordinance or by plan policy.

- 80.00 In proposed residential developments, distinctive or unique natural features such as wooded areas, isolated preservable trees, and drainage swales shall be preserved wherever feasible.
- 81.00 Residential designs which incorporate pedestrian and bikeway paths to connect with activity areas such as schools, commercial facilities, parks, and other residential areas, shall be encouraged.
- 82.00 The layout of streets in residential areas shall be designed in a manner that preserves the development potential of adjacent properties if such properties are recognized for development on the McMinnville Comprehensive Plan Map.
- 83.00 The City of McMinnville shall review the design of residential developments to insure site orientation that preserves the potential for future utilization of solar energy.

Finding: Policies 79.00, 80.00, 81.00, 82.00 and 83.00 are met by this proposal in that the overall residential density, while less than the underlying R-2 zone, can be allowed through the review and approval of the requested modification of the previously approved planned development zoning designation. While maximum density under the opportunity presented by the R-2 zone is not occurring with this proposal, it is important to note that, due to the topographic constraints and regulatory requirements applicable to this site, the applicant has achieved re-phasing plan that accommodates an additional 40 residential lots above that which was previously approved for this site in 2007. The proposed amended street layout demonstrates connection with the existing surrounding street network and preserves the development potential of other adjacent land. Other areas within the development are proposed to be connected by pedestrian pathways increasing opportunities for off-street pedestrian mobility. In addition, given the physical dimensions of the site, streets have been oriented to create opportunities for solar access as practicable.

Lot Sales Policy:

- 99.10 The City of McMinnville recognizes the value to the City of encouraging the sale of lots to persons who desire to build their own homes. Therefore, the City Planning staff shall develop a formula to be applied to medium and large size subdivisions that will require a reasonable proportion of lots be set aside for owner-developer purchase for a reasonable amount of time which shall be made a part of the subdivision ordinance.

Finding: Policy 99.10 shall be satisfied by Condition of Approval #10.

Streets

Policies:

- 118.00 The City of McMinnville shall encourage development of roads that include the

following design factors:

1. Minimal adverse effects on, and advantageous utilization of, natural features of the land.
 2. Reduction in the amount of land necessary for streets with continuance of safety, maintenance, and convenience standards.
 3. Emphasis placed on existing and future needs of the area to be serviced. The function of the street and expected traffic volumes are important factors.
 4. Consideration given to Complete Streets, in consideration of all modes of transportation (public transit, private vehicle, bike, and foot paths). (Ord.4922, February 23, 2010)
 5. Connectivity of local residential streets shall be encouraged. Residential cul-de-sac streets shall be discouraged where opportunities for through streets exist
- 119.00 The City of McMinnville shall encourage utilization of existing transportation corridors, wherever possible, before committing new lands.

Finding: Goal VI 1 and Policies 117.00, 118.00, and 119.00 are satisfied by this proposal in that the each of the proposed lots will abut public streets developed to City standards with adequate capacity to safely accommodate the expected trip generation from this development. Residential streets proposed within the development will connect at intersections except for the proposed cul-de-sac streets due to the presence topographical and water course constraints. The proposed street design will utilize connections to adjacent street stubs and have minimal adverse effects on the natural features of the land. In addition, street grades shall be designed in cooperation with the McMinnville Engineering and Fire Departments as reflected in the conditions of this Decision Document.

Bike Paths

Policies:

- 132.00 The City of McMinnville shall encourage development of subdivision designs that include bike and foot paths that interconnect neighborhoods and lead to schools, parks, and other activity areas.
- 132.15 The City of McMinnville shall require that all new residential developments such as subdivisions, planned developments, apartments, and condominium complexes provide pedestrian connections with adjacent neighborhoods.

Finding: Policies 132.00 and 132.15 are satisfied by this proposal in that the applicant proposes additional pedestrian pathways providing mid-block connections within the subdivision in situations where unique topography and steep water courses prevent other public connections. While the terrain makes the provision of separated bikeways challenging, public streets will be constructed to City standards to provide the opportunity for bicycle connections through this development area and beyond as required by the McMinnville TSP.

Supportive of General Land Use Plan Designations and Development Patterns

Policies:

132.27.00 The provision of transportation facilities and services shall reflect and support the land use designations and development patterns identified in the McMinnville Comprehensive Plan. The design and implementation of transportation facilities and services shall be based on serving current and future travel demand—both short-term and long-term planned uses.

Finding: Policy 132.27.00 is satisfied by this proposal in that the proposed street design reflects and supports the land use designation of the site and urban development patterns within the surrounding area.

Circulation

Policies:

132.41.00 Residential Street Network – A safe and convenient network of residential streets should serve neighborhoods. When assessing the adequacy of local traffic circulation, the following considerations are of high priority:

1. Pedestrian circulation,
2. Enhancement of emergency vehicle access,
3. Reduction of emergency vehicle response times,
4. Reduction of speeds in neighborhoods, and
5. Mitigation of other neighborhood concerns such as safety, noise, and aesthetics. (Ord. 4922, February 23, 2010)

132.41.05 Cul-de-sac streets in new development should only be allowed when connecting neighborhood streets are not feasible due to existing land uses, topography, or other natural and physical constraints. (Ord. 4922, February 23, 2010)

132.41.20 Modal Balance – The improvement of roadway circulation must not impair the safe and efficient movement of pedestrians and bicycle traffic. (Ord. 4922, February 23, 2010)

132.41.25 Consolidate Access – Efforts should be made to consolidate access points to properties along major arterial, minor arterial, and collector roadways. (Ord. 4922, February 23, 2010)

132.41.30 Promote Street Connectivity – The City shall require street systems in subdivisions and development that promote street connectivity between neighborhoods. (Ord. 4922, February 23, 2010)

Finding: Policies 132.41.00, 132.41.05, 132.41.20, 132.41.25 and 132.41.30 are satisfied by this proposal in that the proposed street pattern provides a safe and efficient network of residential streets to serve the proposed and adjacent existing residential neighborhoods. The cul-de-sac streets are proposed in response to the noted existence of topographic and environmental constraints. The proposed street system is also designed to promote a balance of safe and efficient movement of vehicles, pedestrians and bicycles as required by the requirements of the McMinnville TSP and provision of additional private pedestrian pathways. Vehicular access points to the adjacent street system comply with this policy and

promote safe street connectivity to the surrounding transportation network.

GOAL VII 1: TO PROVIDE NECESSARY PUBLIC AND PRIVATE FACILITIES AND UTILITIES AT LEVELS COMMENSURATE WITH URBAN DEVELOPMENT, EXTENDED IN A PHASED MANNER, AND PLANNED AND PROVIDED IN ADVANCE OF OR CONCURRENT WITH DEVELOPMENT, IN ORDER TO PROMOTE THE ORDERLY CONVERSION OF URBANIZABLE AND FUTURE URBANIZABLE LANDS TO URBAN LANDS WITHIN THE McMINNVILLE URBAN GROWTH BOUNDARY.

Sanitary Sewer System

Policies:

- 139.00 The City of McMinnville shall extend or allow extension of sanitary sewage collection lines with the framework outlined below:
1. Sufficient municipal treatment capacities exist to handle maximum flows of effluents.
 2. Sufficient trunk and main line capacities remain to serve undeveloped land within the projected service areas of those lines.
 3. Public water service is extended or planned for extension to service the area at the proposed development densities by such time that sanitary sewer services are to be utilized
 4. Extensions will implement applicable goals and policies of the comprehensive plan.

Storm Drainage

Policies:

- 142.00 The City of McMinnville shall insure that adequate storm water drainage is provided in urban developments through review and approval of storm drainage systems, and through requirements for connection to the municipal storm drainage system, or to natural drainage ways, where required.
- 143.00 The City of McMinnville shall encourage the retention of natural drainage ways for storm water drainage.

Water System

Policies:

- 144.00 The City of McMinnville, through McMinnville Water and Light, shall provide water services for development at urban densities within the McMinnville Urban Growth Boundary.
- 145.00 The City of McMinnville, recognizing McMinnville Water and Light as the agency responsible for water system services, shall extend water services within the framework outlined below:
1. Facilities are placed in locations and in such manner as to insure compatibility with surrounding land uses.

2. Extensions promote the development patterns and phasing envisioned in the McMinnville Comprehensive Plan.
3. For urban level developments within McMinnville, sanitary sewers are extended or planned for extension at the proposed development densities by such time as the water services are to be utilized;
4. Applicable policies for extending water services, as developed by the City Water and Light Commission, are adhered to.

147.00 The City of McMinnville shall continue to support coordination between city departments, other public and private agencies and utilities, and McMinnville Water and Light to insure the coordinated provision of utilities to developing areas. The City shall also continue to coordinate with McMinnville Water and Light in making land use decisions.

Water and Sewer – Land Development Criteria

Policies:

- 151.00 The City of McMinnville shall evaluate major land use decisions, including but not limited to urban growth boundary, comprehensive plan amendment, zone changes, and subdivisions using the criteria outlined below:
1. Sufficient municipal water system supply, storage and distribution facilities, as determined by McMinnville Water and Light, are available or can be made available, to fulfill peak demands and insure fire flow requirements and to meet emergency situation needs.
 2. Sufficient municipal sewage system facilities, as determined by the City Public Works Department, are available, or can be made available, to collect, treat, and dispose of maximum flows of effluents.
 3. Sufficient water and sewer system personnel and resources, as determined by McMinnville Water and Light and the City, respectively, are available, or can be made available, for the maintenance and operation of the water and sewer systems.
 4. Federal, state, and local water and waste water quality standards can be adhered to.
 5. Applicable policies of McMinnville Water and Light and the City relating to water and sewer systems, respectively, are adhered to.

Finding: Goal VII 1 and Policies 139.00, 142.00, 143.00.20, 144.00, 145.00, 147.00 and 151.00 are satisfied by the request as adequate levels of sanitary sewer collection, storm sewer and drainage facilities, municipal water distribution systems and supply, and energy distribution facilities, either presently serve or can be made available to serve the site. Additionally, the Water Reclamation Facility has the capacity to accommodate flow resulting from development of this site. Administration of all municipal water and sanitary sewer systems guarantee adherence to federal, state, and local quality standards. The City of McMinnville shall continue to support coordination between city departments, other public and private agencies and utilities, and McMinnville Water and Light to insure the coordinated provision of utilities to developing areas and in making land-use decisions.

Police and Fire Protection

Policies:

- 153.00 The City of McMinnville shall continue coordination between the planning and fire departments in evaluating major land use decisions.
- 155.00 The ability of existing police and fire facilities and services to meet the needs of new service areas and populations shall be a criterion used in evaluating annexations, subdivision proposals, and other major land use decisions.

Finding: Policies 153.00 and 155.00 are satisfied in that emergency services departments have reviewed this request. The concerns raised by the McMinnville Fire Department have been addressed with proposed modifications to street grade designs represented in the conditions of this Decision Document sufficient to ensure safe and efficient emergency access to protection to each lot.

Open Space

- 167.00 The City of McMinnville shall encourage the retention of open space and scenic areas throughout the community, especially at the entrances to the City.
- 168.00 Distinctive natural features and areas shall be retained, whenever possible, in future urban developments.
- 169.00 Drainage ways in the City shall be preserved, where possible, for natural areas and open spaces and to provide natural storm run-offs.

Finding: Policies 167.00, 168.00 and 169.00 are satisfied in that, in addition to the approximately 7-acre public park and adjacent storm water detention facility located along the north side of W 2nd Street, the applicant proposes to provide open spaces in the form of preserved drainage greenways that traverse the development area. These areas shall be maintained by a Home Owners Association according to CC&Rs as required by the 2007 Planning Commission subdivision approval that shall be recorded following approval of the Planning Director. The applicant is also proposing an additional storm water detention area near the southern edge (downhill side) of the development site to accommodate natural run-off which shall be designed and maintained in compliance with City requirements.

GOAL VIII 1: TO PROVIDE ADEQUATE ENERGY SUPPLIES, AND THE SYSTEMS NECESSARY TO DISTRIBUTE THAT ENERGY, TO SERVICE THE COMMUNITY AS IT EXPANDS.

Policies:

- 173.00 The City of McMinnville shall coordinate with McMinnville Water and Light and the various private suppliers of energy in this area in making future land use decisions.
- 177.00 The City of McMinnville shall coordinate with natural gas utilities for the extension of transmission lines and the supplying of this energy resource.

Finding: Goal VIII 1 is satisfied in that the City of McMinnville will continue coordinate with the various suppliers of energy and energy transmission systems commensurate

with proposed developments. No such concerns were raised during the review of this proposal.

Energy Conservation

Policies:

- 178.00 The City of McMinnville shall encourage a compact urban development pattern to provide for conservation of all forms of energy.

Finding: Policy 178.00 is satisfied in that the applicant's proposal has utilized density averaging through the Planned Development process to achieve a mix of residential lot sizes, along with the developed multiple-family component, in addition to the proposed single-family attached and detached residential dwelling opportunities achieving a more compact form of urban development and energy conservation than would have otherwise been achieved.

GOAL X 1: TO PROVIDE OPPORTUNITIES FOR CITIZEN INVOLVEMENT IN THE LAND USE DECISION MAKING PROCESS ESTABLISHED BY THE CITY OF McMINNVILLE.

Policies:

- 188.00 The City of McMinnville shall continue to provide opportunities for citizen involvement in all phases of the planning process. The opportunities will allow for review and comment by community residents and will be supplemented by the availability of information on planning requests and the provision of feedback mechanisms to evaluate decisions and keep citizens informed.

Finding: Goal VII 3 and Policy 188.00 are satisfied in that McMinnville continues to provide opportunities for the public to review and obtain copies of the application materials and completed staff report prior to the holding of advertised public hearing(s). All members of the public have access to provide testimony and ask questions during the public review and hearing process.

1. The following Sections of the McMinnville Zoning Ordinance (Ord. No. 3380) are applicable to the request:

General Provisions:

17.03.020 Purpose. The purpose of this ordinance is to encourage appropriate and orderly physical development in the City through standards designed to protect residential, commercial, industrial, and civic areas from the intrusions of incompatible uses; to provide opportunities for establishments to concentrate for efficient operation in mutually beneficial relationship to each other and to shared services; to provide adequate open space, desired levels of population densities, workable relationships between land uses and the transportation system, and adequate community facilities; to provide assurance of opportunities for effective utilization of the land resource; and to promote in other ways public health, safety, convenience, and general welfare.

Finding: Section 17.03.020 is satisfied by the request for the reasons enumerated in Conclusionary Finding for Approval No. 1.

Planned Developments:

17.51.010 Purpose. The purpose of a planned development is to provide greater flexibility and greater freedom of design in the development of land than may be possible under strict interpretation of the provisions of the zoning ordinance. Further, the purpose of a planned development is to encourage a variety in the development pattern of the community; encourage mixed uses in a planned area; encourage developers to use a creative approach and apply new technology in land development; preserve significant man-made and natural features; facilitate a desirable aesthetic and efficient use of open space; and create public and private common open spaces. A planned development is not intended to be simply a guise to circumvent the intent of the zoning ordinance.

Finding: Section 17.51.010 is satisfied by the request in that the applicant proposes a development plan to provide for single-family detached and detached lots. City policies noted above speak to proposing lower density than that allowed by the underlying zone due to unique circumstances or limitations on specific sites. In this instance, the development site is very challenging due to the steep and varied topography as well as the natural drainage ravines that traverse the site. These features combined make the provision of public streets and the creation of buildable lots challenging. However, the applicant has proposed modifying the existing approved phased development plan in a way that attains a greater number of residential building lots while identifying and protecting additional natural resources to a greater extent than was approved in the 2007 Planned Development approval. Specifically dedicated pedestrian walkway connections are also proposed for further enhance connectivity and circulation throughout the various phases of this Planned Development.

17.51.020 Standards and requirements. The following standards and requirements shall govern the application of a planned development in a zone in which it is permitted:

- A. The principal use of land in a planned development shall reflect the type of use indicated on the comprehensive plan or zoning map for the area. Accessory uses within the development may include uses permitted in any zone, except uses permitted only in the M-2 zone are excluded from all other zones. Accessory uses shall not occupy more than twenty-five percent of the lot area of the principal use;
- B. Density for residential planned development shall be determined by the underlying zone designations. (Ord. 4128 (part), 1981; Ord. 3380 (part), 1968).

Finding: Section 17.51.020 (A-B) are satisfied by the request in that the applicant proposes a development type (single-family attached and detached residential) consistent with the residential zoning indicated on the comprehensive plan map and zoning map. This proposed amendment to the existing planned development approval for this site complies with Sub B of this standard.

17.51.030 Procedure. The following procedures shall be observed when a planned development proposal (or in this case, an amendment to a previously approved Planned Development) is submitted for consideration:

- C. The Commission shall consider the preliminary development plan at a meeting at which time the findings of persons reviewing the proposal shall also be considered. In reviewing the plan, the Commission shall need to determine that:

- (1) There are special physical conditions or objectives of a development which the proposal will satisfy to warrant a departure from the standard regulation requirements;

- (2) Resulting development will not be inconsistent with the comprehensive plan objectives of the area;
- (3) The development shall be designed so as to provide for adequate access to and efficient provision of services to adjoining parcels (as amended by Ordinance No. 4242, April 5, 1983);
- (4) The plan can be completed within a reasonable period of time;
- (5) The streets are adequate to support the anticipated traffic, and the development will not overload the streets outside the planned area;
- (6) Proposed utility and drainage facilities are adequate for the population densities and type of development proposed;
- (7) The noise, air, and water pollutants caused by the development do not have an adverse effect upon surrounding areas, public utilities, or the City as a whole.

Finding: Section 17.51.030 (C) is satisfied by the request in that the design objective of this proposal is to fulfill the City's policy direction to residential development commensurate with the underlying zone given topographic and environmental constraints. The applicant has indicated that this proposal can be completed in a reasonable period of time as long as the economy does not experience another drastic downturn that recently slowed down the development of other phases of this previously approved plan. The proposed street network is adequate to support anticipated traffic which can also be supported by the surrounding existing street network. Public facilities have the capacity to adequately serve the proposed development and there are no indications that the proposal will have an adverse effect due to pollutants or noise on surrounding areas or the City as a whole.

Review Criteria:

17.74.070 Planned Development Amendment - Review Criteria. An amendment to an existing planned development may be either major or minor. Minor changes to an adopted site plan may be approved by the Planning Director. Major changes to an adopted site plan shall be processed in accordance with Section 17.72.120, and include the following:

- An increase in the amount of land within the subject site;
- An increase in density including the number of housing units;
- A reduction in the amount of open space; or
- Changes to the vehicular system which results in a significant change to the location of streets, shared driveways, parking areas and access.

An amendment to an existing planned development may be authorized, provided that the proposal satisfies all relevant requirements of this ordinance, and also provided that the applicant demonstrates the following:

- A. There are special physical conditions or objectives of a development which the proposal will satisfy to warrant a departure from the standard regulation requirements;
- B. Resulting development will not be inconsistent with the Comprehensive Plan objectives of the area;
- C. The development shall be designed so as to provide for adequate access to and efficient provision of services to adjoining parcels;

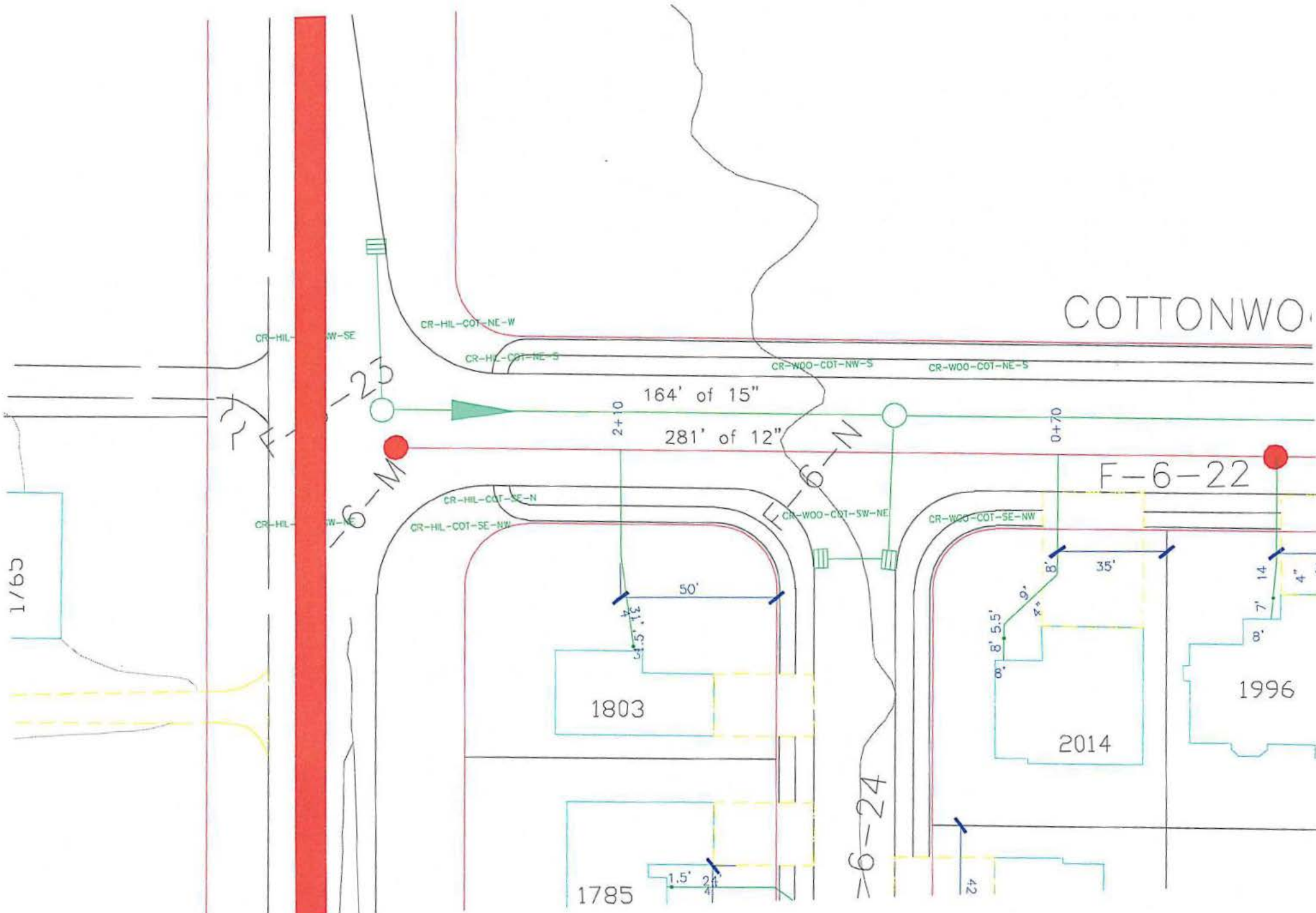
- D. The plan can be completed within a reasonable period of time;
- E. The streets are adequate to support the anticipated traffic, and the development will not overload the streets outside the planned area;
- F. Proposed utility and drainage facilities are adequate for the population densities and type of development proposed;
- G. The noise, air, and water pollutants caused by the development do not have an adverse effect upon surrounding areas, public utilities, or the city as a whole.

Finding: The requirements of Section 17.74.070 are met by this major modification to an existing planned development for the reasons enumerated in the finding provided for the Section 17.51.030(C) requirements provided above. In addition, the applicant has determined the ability to increase the number of single-family lots while providing additional environmental protections to existing drainageways. The proposed Planned Development amendment also offers a partially reconfigured local street system that, while providing access to each proposed lot, meets acceptable Fire Department standards while employing grades that, for shorter distances, exceed standard grade limitations. The applicant has proposed an innovative approach to increasing density while ensuring public safety and enhancing environmental protection.

- 2. Ordinance No. 4868 is applicable to this request and is noted in Attachment 4 of this Decision Document.

Finding: The subject request generally complies with the requirements of Ordinance 4868 as the proposal seeks to modify the Planned Development (zone change) approved by this ordinance. As a practical matter of administration, should this request be approved, Ordinance 4868 will be repealed and replaced with the ordinance enacting the approval of this request. Most of the elements of Ordinance 4868 will remain in addition to new conditions reflecting the modifications to the phased development plan proposed by the applicant. This newly enacted ordinance will also serve to continue the Planning Commission's 2007 approval of the phased subdivision plan as amended (S 13-06) in the same manner that Ordinance 4868 enabled that phased subdivision plan.

RP:sjs



COTTONWOOD

F-6-22

1803

2014

1996

1785

6-24

1/65

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CR-HIL-COT-NE-W

CR-HIL-COT-NE-S

CR-WOO-COT-NW-S

CR-WOO-COT-NE-S

CR-HIL-COT-SE-N

CR-HIL-COT-SE-N

CR-HIL-COT-SE-W

CR-WOO-COT-SW-NE

CR-WOO-COT-SE-NW

164' of 15"

281' of 12"

2+10

0+70

50'

35'

14'

4"

1.5' 2 1/4"

42

7'

8'

8'

10'

9'

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Exhibit E: Property Ownership Information

WARRANTY DEED
KHA Properties, LLC
to
R&B Kauer Investments, LLC (undivided one-half)
B.R. House, LLC (undivided one-fourth)
Howard N. Aster (undivided one-eighth) &
Margaret E.B. Aster (undivided one-eighth)

MAIL TAX STATEMENTS TO:

NO CHANGE

AFTER RECORDING, RETURN TO:

OFFICIAL YAMHILL COUNTY RECORDS
JAN COLEMAN, COUNTY CLERK



\$41.00

00221674200500293440040042

200529344

4:35:17 PM 12/28/2005

DMR-DDMR Cnt=1 Stn=3 KENTV
\$20.00 \$10.00 \$11.00

WARRANTY DEED - Statutory Form

KHA PROPERTIES, LLC, an Oregon limited liability company, Grantor, conveys and warrants to R&B KAUER INVESTMENTS, LLC, an Oregon limited liability company, as to an undivided one-half interest, B.R. HOUSE, LLC, an Oregon limited liability company, as to an undivided one-fourth interest, HOWARD N. ASTER as to an undivided one-eighth interest, and Margaret E.B. Aster, as to an undivided one-eighth interest, Grantee, the following described real property, free of encumbrances except as specifically set forth herein, situated in Yamhill County, Oregon:

See attached Exhibit A

The said property is free from all encumbrances except those created by Grantor.

The true consideration for this conveyance is \$-0- (Transfer from limited liability company to members).

THIS INSTRUMENT WILL NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES AND TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES AS DEFINED IN ORS 30.930.

THE PROPERTY DESCRIBED IN THIS INSTRUMENT MAY NOT BE WITHIN A FIRE PROTECTION DISTRICT PROTECTING STRUCTURES. THE PROPERTY IS SUBJECT TO LAND USE LAWS AND REGULATIONS WHICH, IN FARM OR FOREST ZONES, MAY NOT AUTHORIZE CONSTRUCTION OR SITING OF A RESIDENCE AND WHICH LIMIT LAWSUITS AGAINST FARMING OR FOREST PRACTICES AS DEFINED IN ORS 30.930 IN ALL ZONES. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES AND EXISTENCE OF FIRE PROTECTION FOR STRUCTURES.

The liability and obligations of the Grantor to Grantee and Grantee's heirs and assigns under the warranties and covenants contained herein or provided by law shall be limited to the amount, nature and terms of any right or indemnification available to Grantor under any title insurance policy, and Grantor shall have no liability or obligation except to the extent that reimbursement for such liability or obligation is available to Grantor under any such title insurance policy. (These limitations shall not be interpreted to relieve the Grantor of liability, but rather to limit the scope and amount of such liability.)

Dated this 27 day of December, 2005.

Raymond C. Kauer
Raymond C. Kauer, Manager

Howard N. Aster
Howard N. Aster, Manager

Barry House
Barry House, Manager

STATE OF OREGON)
) ss
County of Yamhill)

On December 23, 2005, personally appeared Raymond C. Kauer, who, being first duly sworn, did say that he is a Manager

of KHA Properties, LLC, a limited liability company, and that said instrument was signed on behalf of said company by authority of its members; and he acknowledged said instrument to be its voluntary act and deed.

Before me:



Mary L. Denson
NOTARY PUBLIC FOR OREGON

STATE OF OREGON)
) ss
County of Yamhill)

On December 27th 2005, personally appeared Howard N. Aster, who, being first duly sworn, did say that he is a Manager of KHA Properties, LLC, a limited liability company, and that said instrument was signed on behalf of said company by authority of its members; and he acknowledged said instrument to be its voluntary act and deed.

Before me:



Mary L. Denson
NOTARY PUBLIC FOR OREGON

STATE OF OREGON)
) ss
County of Yamhill)

On December 27th 2005, personally appeared Barry House, who, being first duly sworn, did say that he is a Manager of KHA Properties, LLC, a limited liability company, and that said instrument was signed on behalf of said company by authority of its members; and he acknowledged said instrument to be its voluntary act and deed.

Before me:



Mary L. Denson
NOTARY PUBLIC FOR OREGON

KAUER - Legal Description of Tax Lot 800 (160 Ac. more or less)

A tract of land in Section 24, Township 4 South, Range 5 West, Yamhill County, Oregon, being part of the John B. Davis Donation Land Claim No. 44 and the William C. Davis Donation Land Claim No. 69, and also being part of that tract of land described in deed from BARRY HOUSE and ROBERTA HOUSE, HOWARD N. ASTER and MARGARATE B. ASTER and RAYMOND C. KAUER and BARBARA M. KAUER to KHA PROPERTIES, LLC and recorded in Instrument 200322470, Yamhill County Deed Records, and being more particularly described as follows:

Beginning at a point that is North 36.415 chains from the southwest corner of said John B. Davis Donation Land Claim; thence South 89°10'43" East 3408.02 feet along the south line of that tract of land described in deed from BARRY HOUSE and ROBERTA HOUSE, HOWARD N. ASTER and MARGARATE B. ASTER and RAYMOND C. KAUER and BARBARA M. KAUER to KHA PROPERTIES, LLC and recorded in Instrument 200322470, Yamhill County Deed Records; thence North 00°20'28" West 629.86 feet; thence North 01°43'13" East 48.02 feet; thence North 00°39'53" West 52.35 feet; thence North 03°40'44" West 47.94 feet; thence North 06°24'27" West 75.06 feet; thence North 10°54'26" West 75.05 feet; thence North 14°29'26" West 76.51 feet; North 17°46'24" West 60.35 feet to the beginning of a non-tangent curve concave to the south having a radius of 1030.21 feet; thence easterly 255.43 feet along said curve (chord= North 83°08'50" East 254.78 feet); thence South 89°45'00" East 50.70 feet; thence North 00°15'00" East 267.78 feet to the southwest corner of HILLCREST PHASE 4; thence North 00°15'00" East 532.22 feet along the west line of HILLCREST PHASE 4; thence North 06°52'55" East 291.95 feet along said west line; thence North 20°40'09" East 224.52 feet along said west line; thence North 04°06'34" East 60.55 feet along said west line; thence North 04°35'27" East 108.63 feet along said west line to the northwest corner of HILLCREST PHASE 4; thence North 89°55'14" East 87.28 feet along the north line of HILLCREST PHASE 4; thence South 04°31'24" West 64.21 feet along said north line; North 89°55'14" East 126.21 feet along said north line; thence South 61°40'46" East 52.10 feet along said line; thence North 89°32'11" East 117.10 feet along said line to the west line of HILLCREST PHASE 3; thence North 00°27'49" West 240.00 feet along said west line to the north line of said KHA PROPERTIES, LLC tract; thence North 89°06'31" West 50.3' feet along said north line; thence North 1.50 chains along said north line; thence North 89°30" West 8.71 chains along said line; thence North 00°45' East 6.25 chains along said line; thence South 89°45" West 24.89 chains along said line; thence South 690.73' along said line; thence West 28.25 chains along said line to the northwest corner of said KHA PROPERTIES, LLC tract; thence South 37.985 chains along the west line of said tract to the point of beginning.

EXCEPTING THEREFROM that tract of land described in deed to Yamhill County and recorded August 5, 1926 in Book 94, Page 461, Yamhill County Deed Records.

ALSO EXCEPTING that tract of land described in deed from BARRY HOUSE and ROBERTA HOUSE, and RAYMOND C. KAUER and BARBARA M. KAUER to DONALD and JEAN OLIVER and recorded Film Volume 309, Page 354, Yamhill County Deed Records.

ALSO EXCEPTING that tract of land described in deed from BARRY HOUSE and ROBERTA HOUSE, and RAYMOND C. KAUER and BARBARA M. KAUER to RICHARD and CHARLOTTE BORGES and recorded Film Volume 309, Page 433, Yamhill County Deed Records.

ALSO EXCEPTING that tract of land described in deed to UNION LODGE NO. 43 A.F. and A.M. and recorded November 24, 1906 in Book 46 Page 571, Yamhill County Deed Records.

3/4

ALSO EXCEPTING that tract of land described in deed to LINFIELD COLLEGE, trustee of the RAYMOND C. KAUER and BARBARA M. KAUER Charitable Remainder Unitrust and BARRY W. HOUSE and ROBERTA M. HOUSE Charitable Remainder Unitrust and recorded December 27, 1995 in Instrument No. 199517375 and Instrument No. 199517376, Yamhill County Deed Records

ALSO EXCEPTING the following described tract: Beginning at a point that is North 36.415 chains from the southwest corner of said John B. Davis Donation Land Claim; thence North 20.00 feet to the north line of the county road which is the TRUE POINT OF BEGINNING; thence East along the fence line bordering the county road 1471 feet to an aluminum pipe; thence North 37°19' West 450 feet to an aluminum pipe; thence North 44°27' West 316 feet to an aluminum pipe; thence West parallel with the county road 977.6 feet to a fence line now there, which is the west line of the John b. Davis Donation Land Claim; thence South along said fence line to the point of beginning.

Exhibit F: Neighborhood Meeting Documentation

April 29, 2024



RE: Neighborhood Meeting Notice for a Planned Development Amendment Land Use Application

Dear Interested Party,

AKS Engineering & Forestry, LLC is working with Holt Homes, Inc (Applicant), regarding an application for a Planned Development (PD) Amendment to the Hillcrest PD Master Plan Subdivision. A neighborhood meeting is planned to discuss this upcoming application. Meeting details are provided below:

Date: Monday, May 20, 2024
Time: 6:00 PM
Location: McMinnville Community Center, Room 203
600 NE Evans Street
McMinnville, OR 97128

The Hillcrest PD Master Plan layout was originally approved by the City Council in 2007 (Ordinance No. 4868). The layout was later modified in 2017 to reconfigure the street and lot layout due to topography, natural resources preservation, and Americans with Disabilities Act (ADA) requirements that were not considered or were not required at the time of the original land use approval (Ordinance No. 5024). The current PD Amendment plans to modify the layout approved in 2017, for the remaining phases of the Hillcrest PD which include ±106-acres of land within a single tax lot (Tax Lot 801 of Yamhill County Assessor's Map 4 5 24). Since the approval of the 2017 layout, additional site constraints have been identified which necessitate adjustments to the layout, including street realignment, pedestrian path relocation, additional open space, a new stormwater facility, and revised lot lines to account for these changes.

As shown on the Conceptual Site Plan enclosed with this letter, the amended Hillcrest PD Master Plan layout comprises ±392 residential lots (two fewer than the 2017 approval), ±13.24-acres of open space (as increase of ±12.27 acres from the 2017 approval), new public streets, and a stormwater management facility. Please note that the attached plan is a preliminary plan, and some details of the proposal may change.

We look forward to discussing this project with you.

Sincerely,

AKS ENGINEERING & FORESTRY, LLC

A handwritten signature in black ink that reads 'Grace Wolff' in a cursive script.

Grace Wolff, Land Use Planner

3700 River Road N, Suite 1

Keizer, OR 97303

(503) 400-6028 | wolffg@aks-eng.com

Enclosures:

Yamhill County Assessor's Map 4 5 24

Conceptual Site Plan



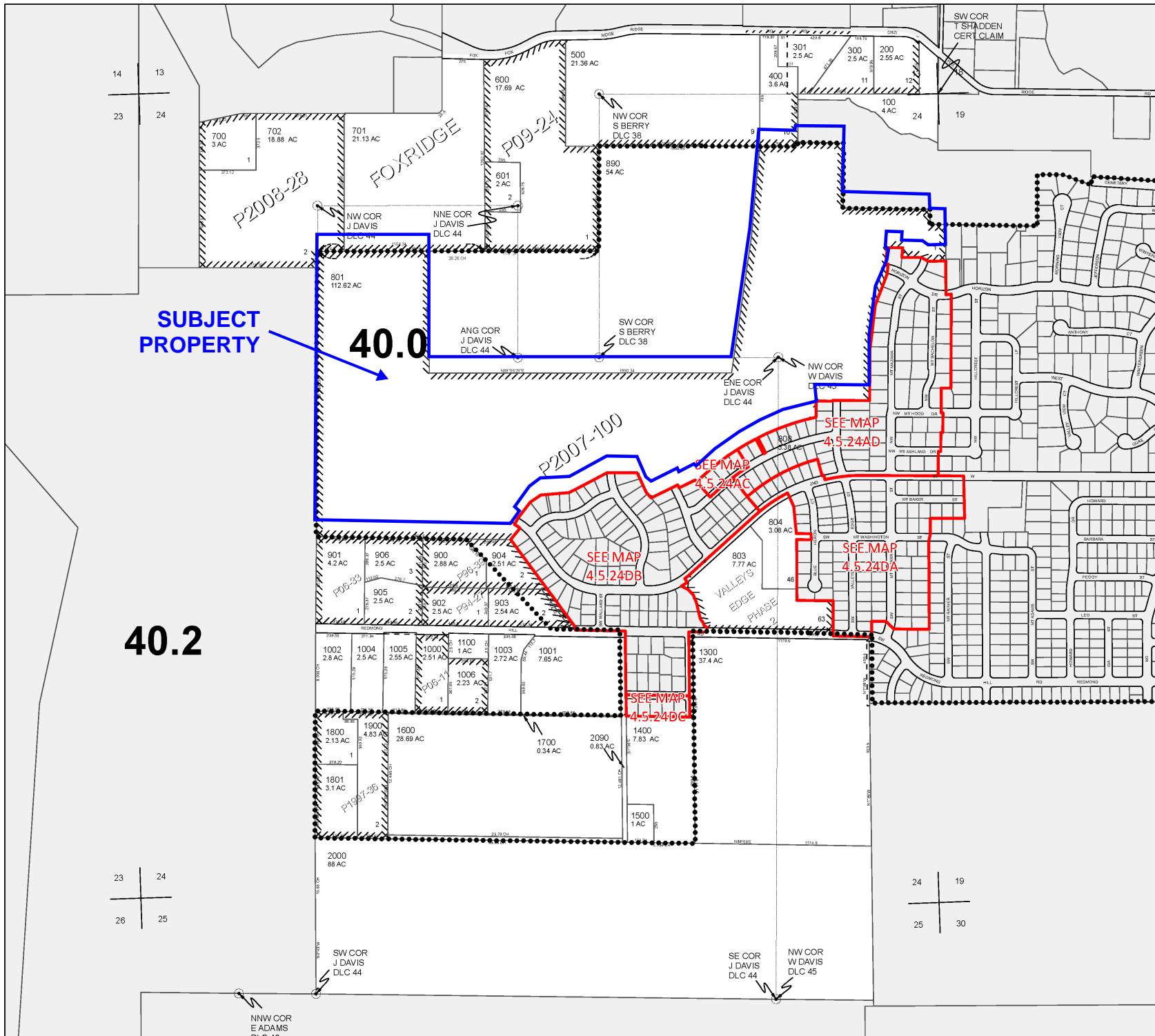
ASSESSMENT & TAX
CARTOGRAPHY

SECTION 24 T.4S. R.5W. W.M.
YAMHILL COUNTY OREGON
1" = 400'

**SUBJECT
PROPERTY**

40.0

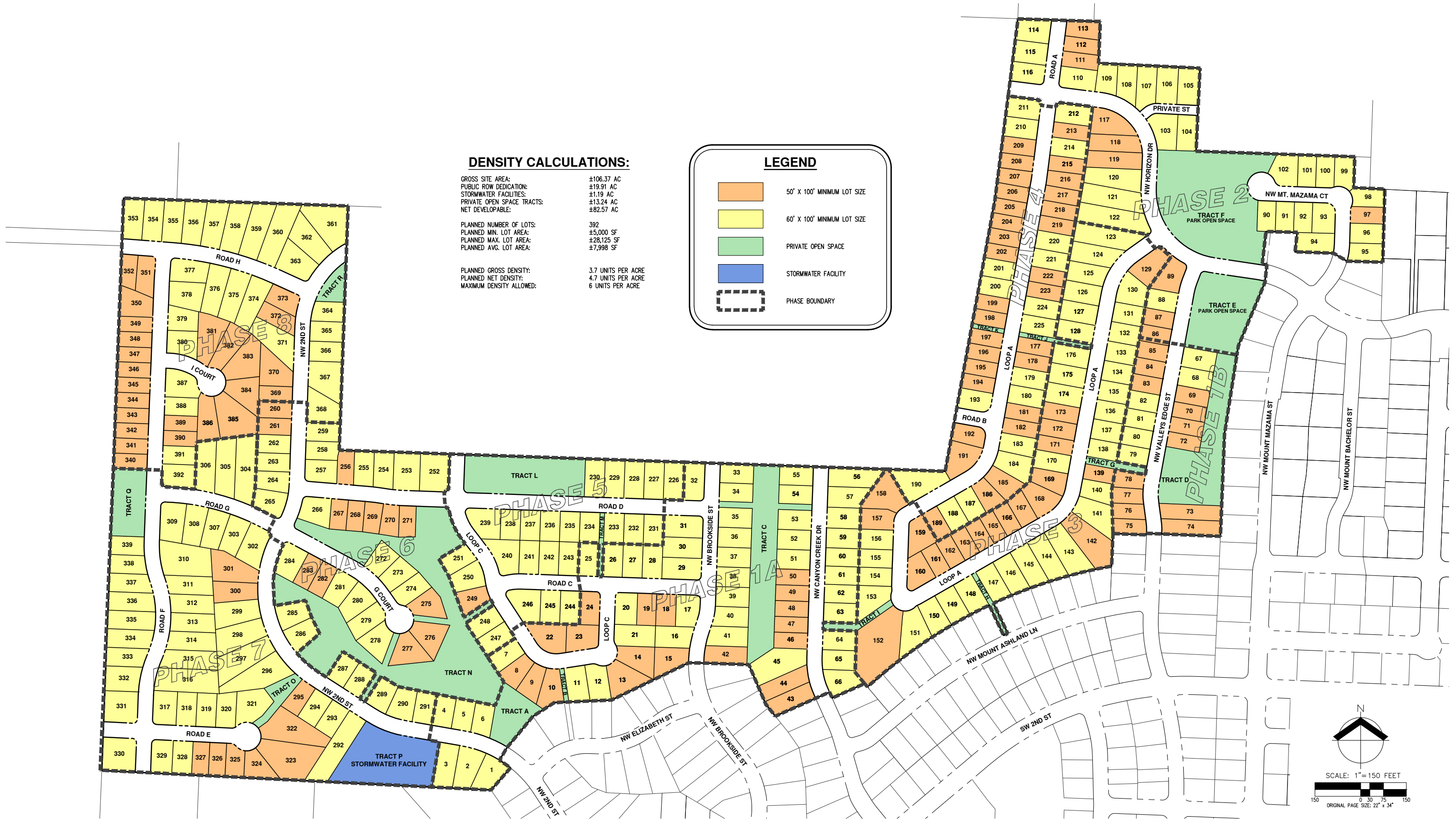
40.2



CANCELLED TAXLOTS:
800
802
806
805
1200
807

DATE PRINTED: 5/26/2021

This product is for Assessment and Taxation (A&T) purposes only and has not been prepared or is suitable for legal, engineering, surveying or any purposes other than assessment and taxation.

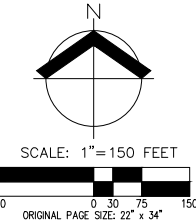


DENSITY CALCULATIONS:

GROSS SITE AREA:	±106.37 AC
PUBLIC ROW DEDICATION:	±19.91 AC
STORMWATER FACILITIES:	±1.19 AC
PRIVATE OPEN SPACE TRACTS:	±13.24 AC
NET DEVELOPABLE:	±82.57 AC
PLANNED NUMBER OF LOTS:	392
PLANNED MIN. LOT AREA:	±5,000 SF
PLANNED MAX. LOT AREA:	±28,125 SF
PLANNED AVG. LOT AREA:	±7,998 SF
PLANNED GROSS DENSITY:	3.7 UNITS PER ACRE
PLANNED NET DENSITY:	4.7 UNITS PER ACRE
MAXIMUM DENSITY ALLOWED:	6 UNITS PER ACRE

LEGEND

- 50' X 100' MINIMUM LOT SIZE
- 60' X 100' MINIMUM LOT SIZE
- PRIVATE OPEN SPACE
- STORMWATER FACILITY
- PHASE BOUNDARY



**CONCEPTUAL SITE PLAN
 HILLCREST PD**

R4419 02100
Union Lodge No 3 A F & A M
Po Box 453
McMinnville, OR 97128

R4419BB 01000
Shawn & Wendy Brooks
2615 NW Horizon Dr
McMinnville, OR 97128

R4523 00200
4E Land LLC
10075 SW Youngberg Hill Rd
McMinnville, OR 97128

R4524 00400
Allan Larsen
12421 SW Fox Ridge Rd
McMinnville, OR 97128

R4524 00701
David & Joanne Kraemer
2960 NW Hill Rd
McMinnville, OR 97128

R4524 00702
Damien Meskill
2237 NW Birch St
McMinnville, OR 97128

R4524 00890
Maxine Barber
13131 SW Fox Ridge Rd
McMinnville, OR 97128

R4524 00901
Alan & Marion Gallentine
3431 SW Redmond Hill Rd
McMinnville, OR 97128

R4524 00904
Jose & Maria Garcia
2265 SW Homer Ross Loop
McMinnville, OR 97128

R4524 00906
Michael Braziel & Liane Belderrain
1554 SW Ashley Dr
McMinnville, OR 97128

R4524AC 00200
Ethan & Kathryn Saunders
Po Box 981
Newberg, OR 97132

R4524AC 00400
Anthony & Emily Asay
2889 NW Mt Ashland Ln
McMinnville, OR 97128

R4524AD 00100
Bruce & Denise Lundquist
684 NW Mt Mazama St
McMinnville, OR 97128

R4524AD 00300
Michael & Kimberly Hoilien
2701 NW Horizon Dr
McMinnville, OR 97128

R4524AD 00500
Gary & Patricia Findley
15105 SW 98th Ave
Portland, OR 97224

R4524AD 00700
Gene & Kellie Menke
595 NW Mt Mazama St
McMinnville, OR 97128

R4524AD 00900
Claude & Tara Gregory
521 NW Mt Mazama St
McMinnville, OR 97128

R4524AD 01100
Lucas Cleavland
479 NW Mt Mazama St
McMinnville, OR 97128

R4524AD 01300
Heras & Heras Delas
415 NW Mt Mazama St
McMinnville, OR 97128

R4524AD 04700
Larry & Kristin Grantham
392 NW Valleys Edge St
McMinnville, OR 97128

R4419BB 00900
Jay & Stephanie Legard
2607 NW Horizon Dr
McMinnville, OR 97128

R4523 00200
4E Land LLC
10075 SW Youngberg Hill Rd
McMinnville, OR 97128

R4523 00200
4E Land LLC
10075 SW Youngberg Hill Rd
McMinnville, OR 97128

R4524 00500
Thad & Kristine Brill
12821 SW Fox Ridge Rd
McMinnville, OR 97128

R4524 00701
David & Joanne Kraemer
2960 NW Hill Rd
McMinnville, OR 97128

R4524 00702
Damien Meskill
2237 NW Birch St
McMinnville, OR 97128

R4524 00900
Douglass & Laura Worth
3275 SW Redmond Hill Rd
McMinnville, OR 97128

R4524 00904
Jose & Maria Garcia
2265 SW Homer Ross Loop
McMinnville, OR 97128

R4524 00906
Michael Braziel & Liane Belderrain
1554 SW Ashley Dr
McMinnville, OR 97128

R4524AC 00100
Brian & Laura Woodcock
2857 NW Mt Ashland Ln
McMinnville, OR 97128

R4524AC 00300
Kristen Meckem
2877 NW Mt Ashland Ln
McMinnville, OR 97128

R4524AC 00500
Lynn & Andrea Boes
2893 NW Mt Ashland Ln
McMinnville, OR 97128

R4524AD 00200
Ronald & Susan Bamer
2663 NW Horizon Dr
McMinnville, OR 97128

R4524AD 00400
Izolda Megla
2707 NW Horizon Dr
McMinnville, OR 97128

R4524AD 00600
Alf Wyller
613 NW Mt Mazama St
McMinnville, OR 97128

R4524AD 00800
Gregory & Victoria Cooper
573 NW Mt Mazama St
McMinnville, OR 97128

R4524AD 01000
Bonnie Shultz
491 NW Mt Mazama St
McMinnville, OR 97128

R4524AD 01200
Vipul & Melissa Grover
156 Landmark St
Marco Island, FL 34145

R4524AD 01400
Francis Wesolovski & Susan Robley
363 NW Mt Mazama St
McMinnville, OR 97128

R4524AD 04800
Liping Ye
650 NE 2nd St UNIT 366
McMinnville, OR 97128

R4524AD 05700
Nathan & Melinda Prewitt
309 NW Valleys Edge St
McMinnville, OR 97128

R4524AD 05900
Cole & Cayla Evans
Zillow Closing Services - Post
Irving, TX 75039

R4524AD 06300
Grant Stephens
2842 NW Mt Ashland Ln
McMinnville, OR 97128

R4524AD 06800
Nathan & Jenni Chambers
2801 NW Mt Ashland Ln
McMinnville, OR 97128

R4524AD 07000
Christopher Cartee
2813 NW Mt Ashland Ln
McMinnville, OR 97128

R4524AD 07200
Thomas Norby & Shella Lind
2831 NW Mt Ashland Ln
McMinnville, OR 97128

R4524AD 07400
Hanish Basra
2845 NW Mt Ashland Ln
McMinnville, OR 97128

R4524DB 05600
Debbie Forde
145 NW Canyon Creek Dr
McMinnville, OR 97128

R4524DB 05800
Rob Dehner
1203 NE Kirby St
McMinnville, OR 97128

R4524DB 06200
Isaac Mitchell
196 NW Brookside
McMinnville, OR 97128

R4524DB 06400
Amy Blum & Joann Goguen
170 NW Brookside
McMinnville, OR 97128

R4524DB 06600
Brian & Amy Ruden
146 NW Brookside
McMinnville, OR 97128

R4524DB 10000
Kahlil Pedizisai & Jennifer Madden
3118 SW 2nd St
McMinnville, OR 97128

R4524DB 10200
Kyle & Haley Johnson
3093 NW Elizabeth
McMinnville, OR 97128

R4524DB 10400
Maria Nava & Armando Lobatos
3087 NW Elizabeth
McMinnville, OR 97128

R4524DB 10600
Sarah Post & Blake Lundstrom
639 NE 7th St
McMinnville, OR 97128

R4524DB 10800
Charles & Candice Taron
433 SW Pemberly Loop
McMinnville, OR 97128

R4524AD 05800
Alison & Nancy Richbourg
341 NW Valleys Edge St
McMinnville, OR 97128

R4524AD 06200
David & Elena Odonnell
2848 NW Mt Ashland Ln
McMinnville, OR 97128

R4524AD 06400
Gerald Hubbard & Ann Juttelstad
2834 NW Mt Ashland Ln
McMinnville, OR 97128

R4524AD 06900
Francisco Contreras
577 NW HiLLCrest Dr
McMinnville, OR 97128

R4524AD 07100
Tony & Melanie Miller
2825 NW Mt Ashland Ln
McMinnville, OR 97128

R4524AD 07300
Paul & Morgan Brown
2837 NW Mt Ashland Ln
McMinnville, OR 97128

R4524AD 07500
Joven & Mary Susi
2849 NW Mt Ashland Ln
McMinnville, OR 97128

R4524DB 05700
Mark & Carolyn Gregory
157 NW Canyon Creek Dr
McMinnville, OR 97128

R4524DB 05900
Daniel & Mary Slimick
142 NW Canyon Creek Dr
McMinnville, OR 97128

R4524DB 06300
Jordan Lowery
184 NW Brookside
McMinnville, OR 97128

R4524DB 06500
Jeffrey Goldberg & Catherine Daniels
152 NW Brookside
McMinnville, OR 97128

R4524DB 09900
Sergio & Amy Gonzales
3114 SW 2nd St
McMinnville, OR 97128

R4524DB 10100
Jeremy Wilson & Sarah Breyer
3121 NW 2nd St
McMinnville, OR 97128

R4524DB 10300
Brookshire Estates Homeowners
Po Box 731
McMinnville, OR 97128

R4524DB 10500
Joshua & Huda Tikhonoff
3063 NW Elizabeth
McMinnville, OR 97128

R4524DB 10700
Richard & Michele Moberg
2621 NW Pinot Noir Dr
McMinnville, OR 97128

R4524DB 10900
Cully & Danielle Desmond
3005 NW Elizabeth
McMinnville, OR 97128

City of McMinnville
Planning Department
230 NE Second St
McMinnville, OR 97128

NEIGHBORHOOD MEETING

Future Land Use Application:

**Planned Development
Amendment**

**DATE: Monday,
May 20, 2024**

TIME: 6:00 PM

Meeting Location:

**McMinnville Community Center
Room 203
600 NE Evans Street
McMinnville, OR 97128**

Contact Name: Grace Wolff

Contact Number: (503) 400-6028







Hillcrest Planned Development Amendment

HOLTHOMES

Built for the Pacific Northwest

HILLCREST PLANNED DEVELOPMENT

Introductions

Holt Homes

- Josh Lang – Land Development Project Manager

AKS Engineering and Forestry

- Zach Pelz, AICP – Land Use Planner
- Grace Wolff – Land Use Planner
- Paul Sellke, PE, GE – Civil Engineer
- Andrew Gatley – Civil Designer



HILLCREST PLANNED DEVELOPMENT

Agenda

- Introductions
- Overview of Currently Approved Subdivision Plan
- Summary of Planned Modifications
- Questions



HOLT HOMES: WHO WE ARE

HOLT HOMES
Built for the Pacific Northwest

- Pacific Northwest – Community Focused Local Regional Homebuilder
- Building Homes in the PNW for 40 years
- Community and Sustainability Focused
- Holt is a Concept to Community Land Developer and Home Builder
- We provide diverse Home offerings to meet a wide variety of Homeowner needs



HOLT HOMES: WHAT WE BUILD

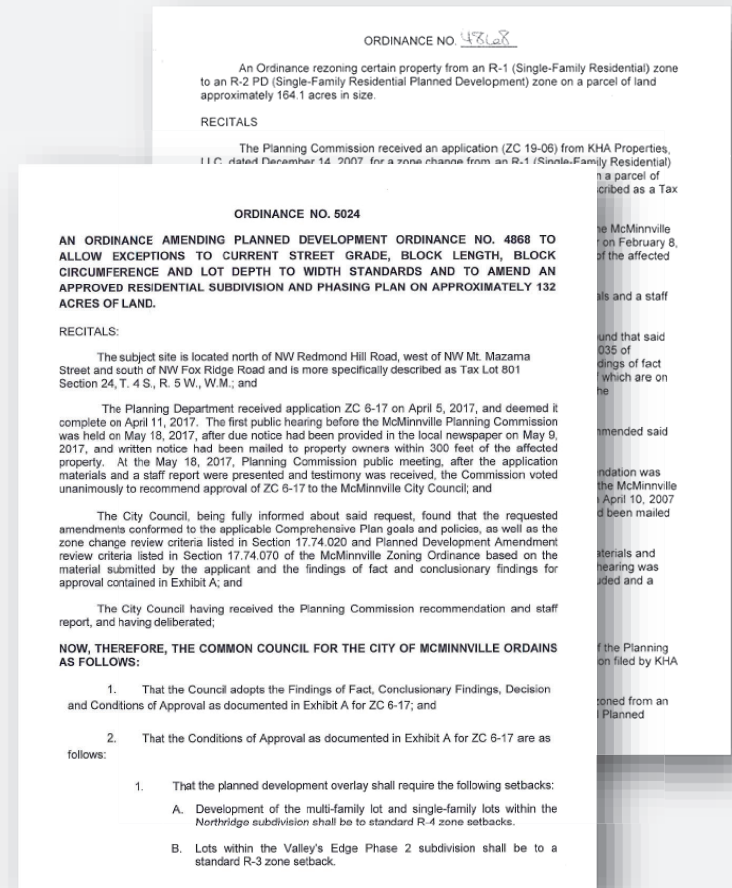
HOLT HOMES
Built for the Pacific Northwest



HILLCREST PLANNED DEVELOPMENT

Overview

- Multi-phase residential subdivision was originally approved by City Council in 2007 (Ordinance 4858)
- Modified in 2017 (Ordinance 5024)
 - New and updated Americans with Disabilities Act (ADA) standards
 - Steep topography and streams on site required modifications to the original street and lot layout
- Current approval does not expire



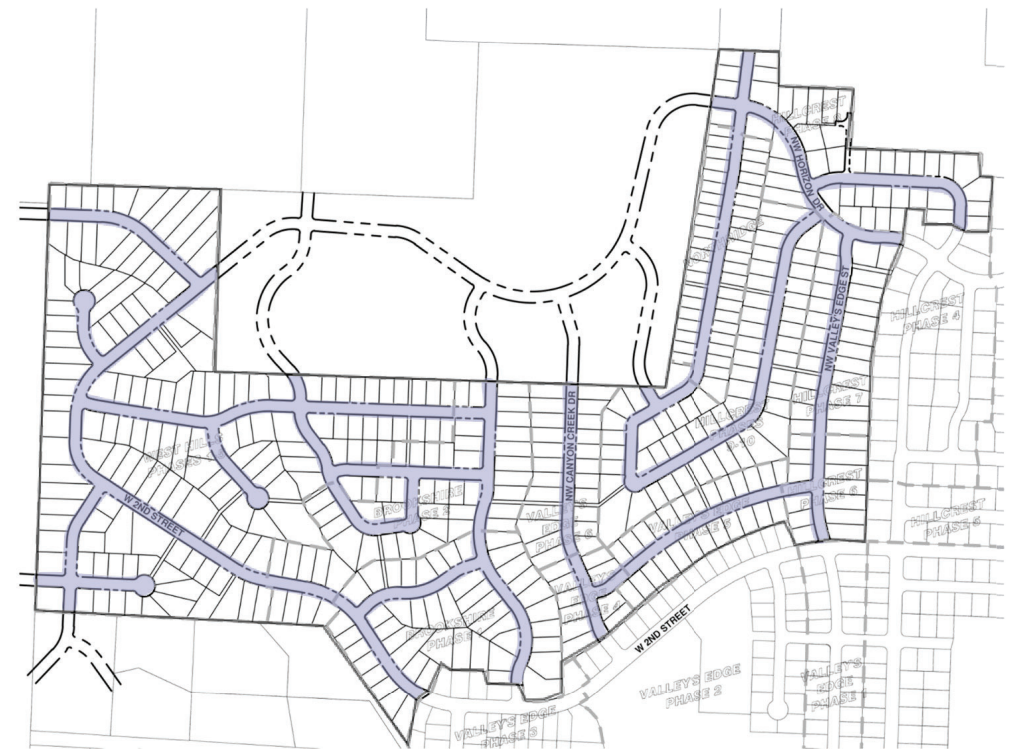
APPROVED SUBDIVISION PLAN

HOLTHOMES
Built for the Pacific Northwest

ORIGINAL SUBDIVISION PLAN (2007)



APPROVED SUBDIVISION PLAN (2017 MODIFICATION)



APPROVED SUBDIVISION PLAN

HOLTHOMES
Built for the Pacific Northwest

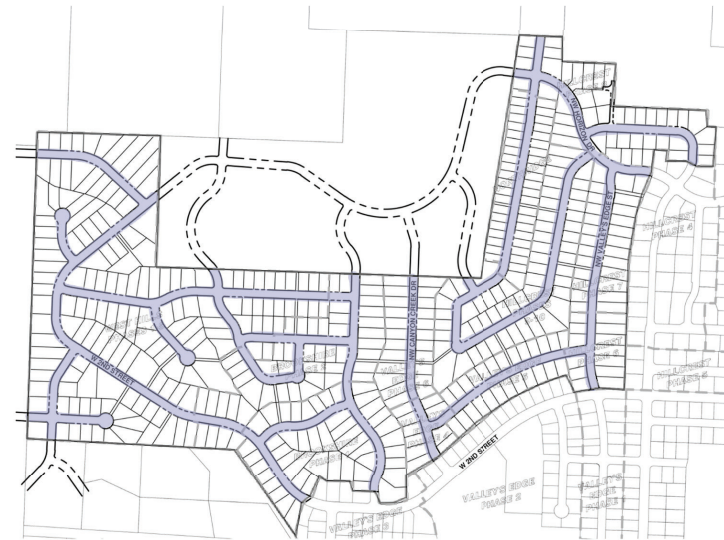
ORIGINAL SUBDIVISION PLAN (2007)

- 512 total lots approved (*64 constructed*)
- Mix of home types
- Multi-family housing component (*constructed*)
- 7-acre park and storm detention facility (*constructed*)



APPROVED SUBDIVISION PLAN (2017 MODIFICATION)

- 552 total lots approved (*94 constructed; 158 total*)
- Mix of home types
- Street intersections and grades modified
- Lot layout modified to account for street modifications, steep topography, and streams



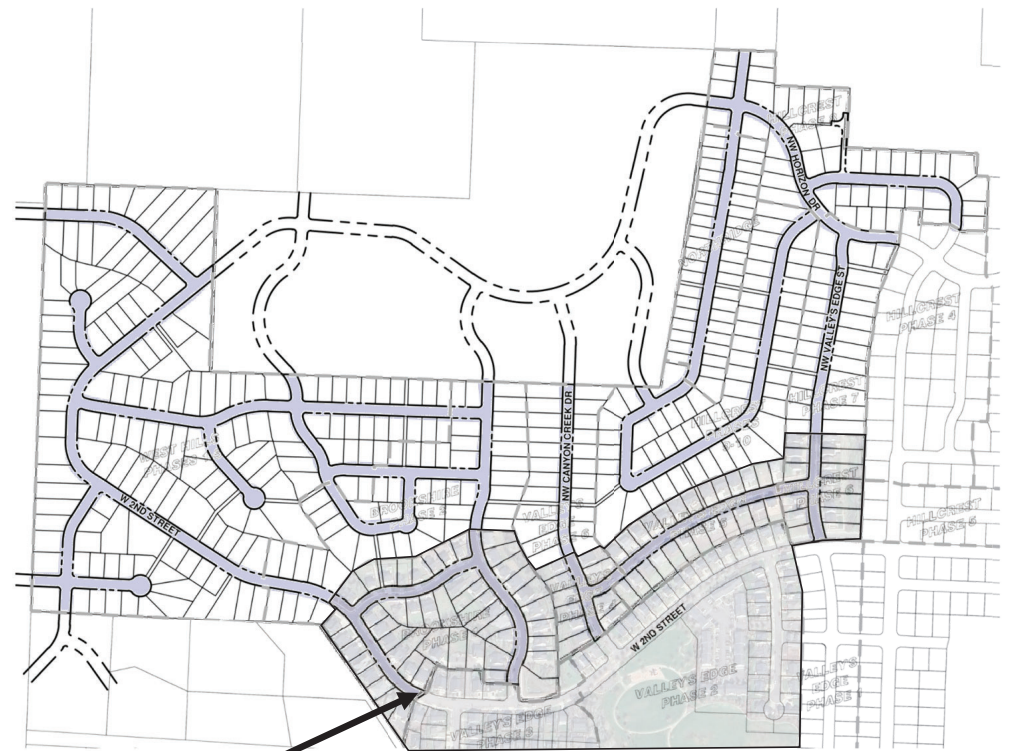
APPROVED SUBDIVISION PLAN

HOLTHOMES
Built for the Pacific Northwest

ORIGINAL SUBDIVISION PLAN (2007)



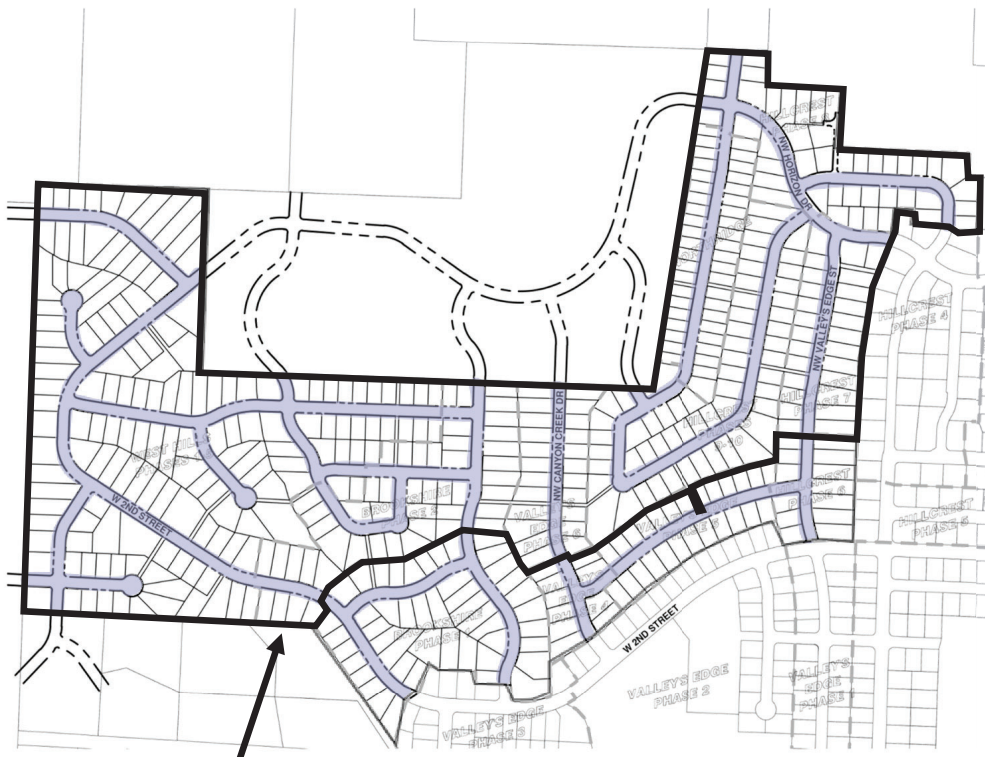
APPROVED SUBDIVISION PLAN (2017 MODIFICATION)



PHASES CONSTRUCTED
(158 of 552 approved lots)

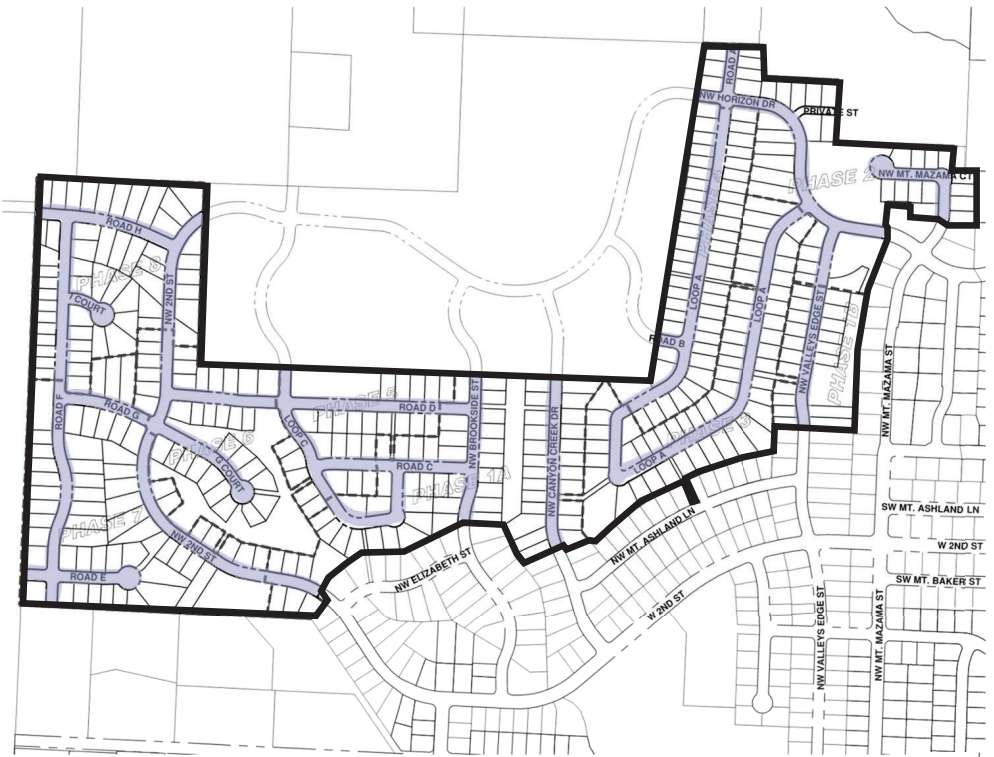


APPROVED SUBDIVISION PLAN (2017 MODIFICATION)



REMAINING PHASES
(394 approved lots remaining)

PLANNED MODIFICATIONS

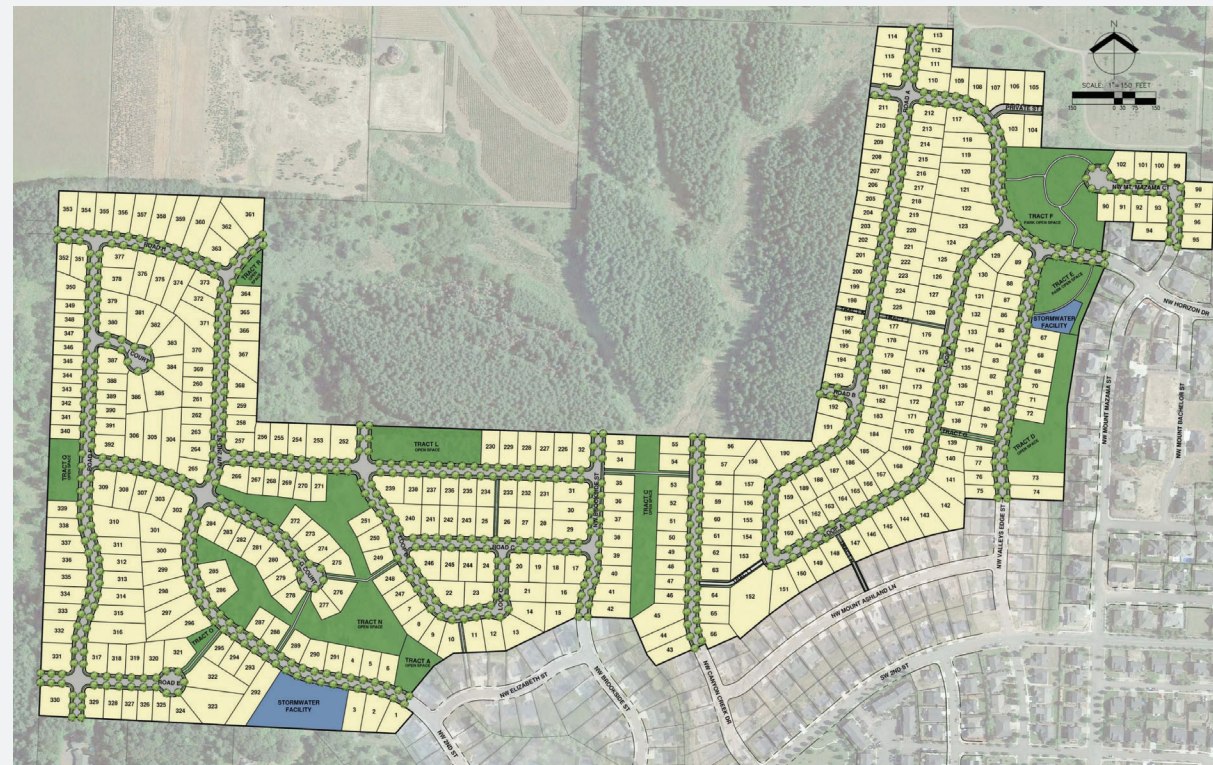


HILLCREST PLANNED DEVELOPMENT

Summary of Planned Modifications

New site studies determined:

- Additional buffer needed to preserve streams
- Geotechnical information requiring changes to street alignment
- Additional storm detention requirements
- ADA street design constraints
- Site topography constraints

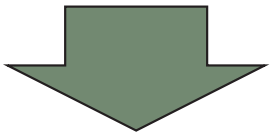


PLANNED MODIFICATIONS

HOLT HOMES
Built for the Pacific Northwest

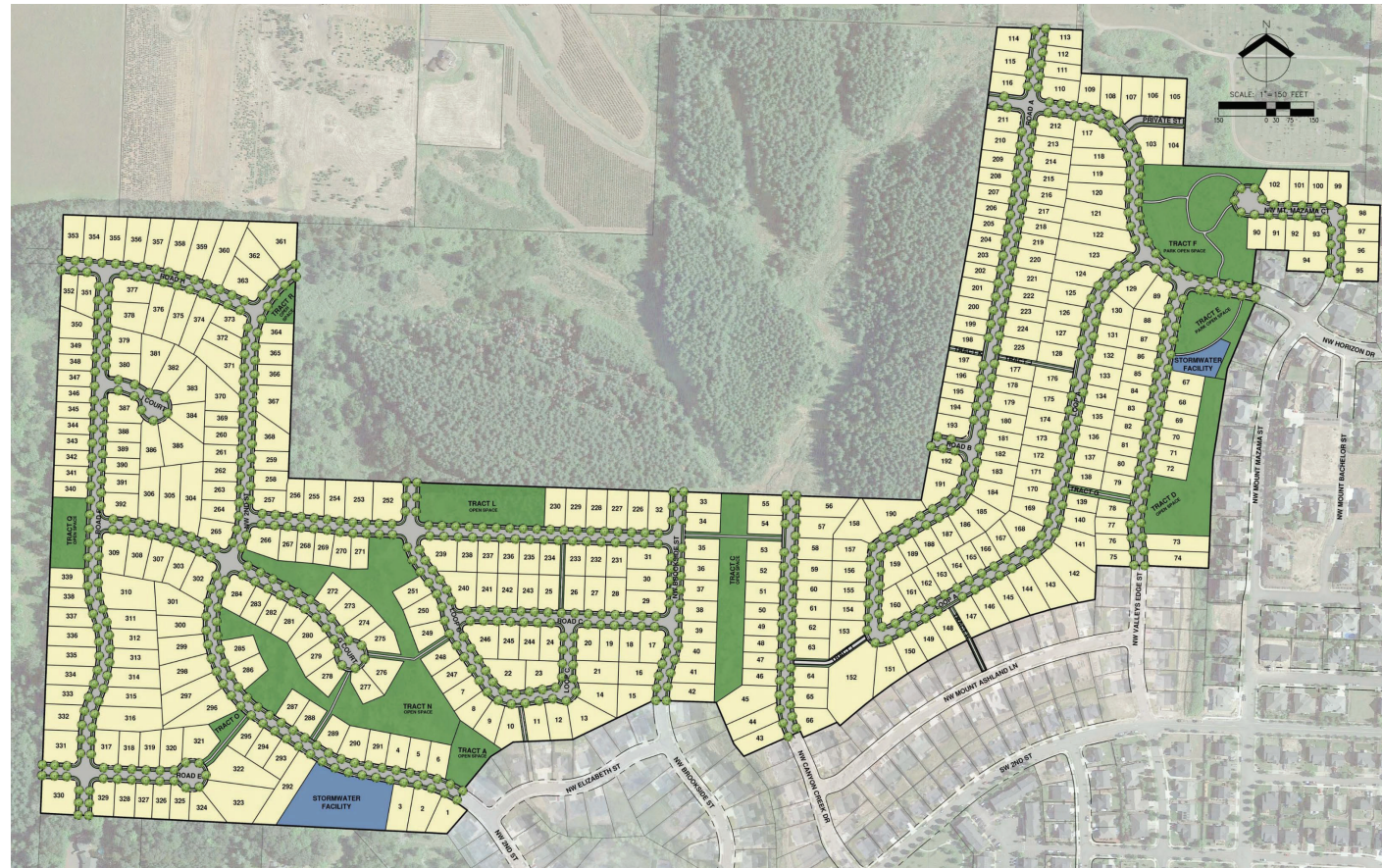
APPROVED SUBDIVISION PLAN (2017 MODIFICATION)

- 394 lots
- ± 0.97 acres of private open space



PLANNED MODIFICATIONS

- 392 lots
- ± 12.96 acres of private open space
- Street realignment
- Additional stormwater facilities
- Lot layout modifications



PLANNED MODIFICATIONS

HOLT HOMES
Built for the Pacific Northwest

Mid-Block Pedestrian Connections



Sources: <https://faculty.washington.edu/smott/SeattleStairs.html> (top left and top right); google earth 2024 (lower right)

PLANNED MODIFICATIONS

HOLT HOMES
Built for the Pacific Northwest



**Fire Pit/
Seating Areas**



**Dog
Parks**



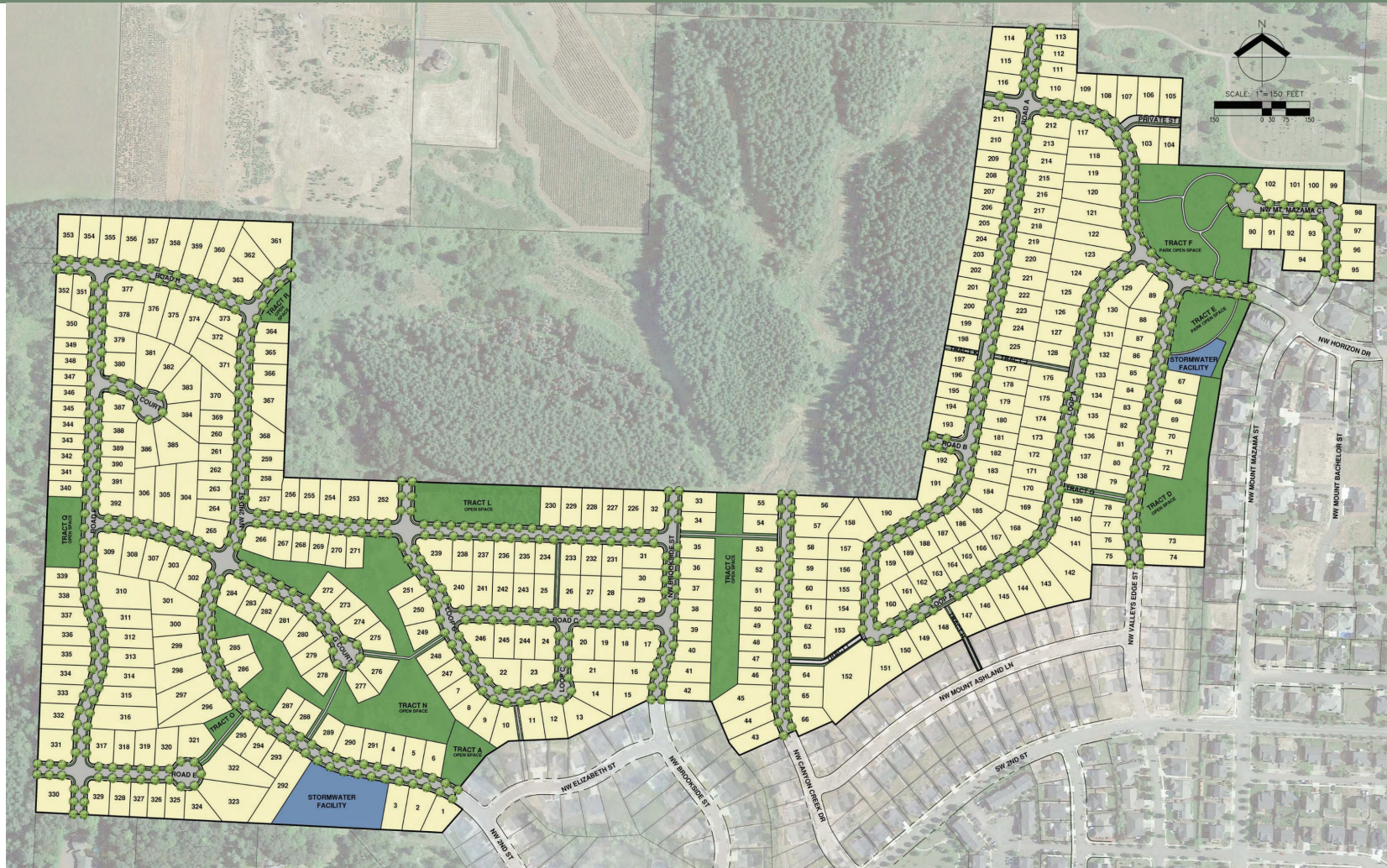
**Pedestrian
Paths**



Trails

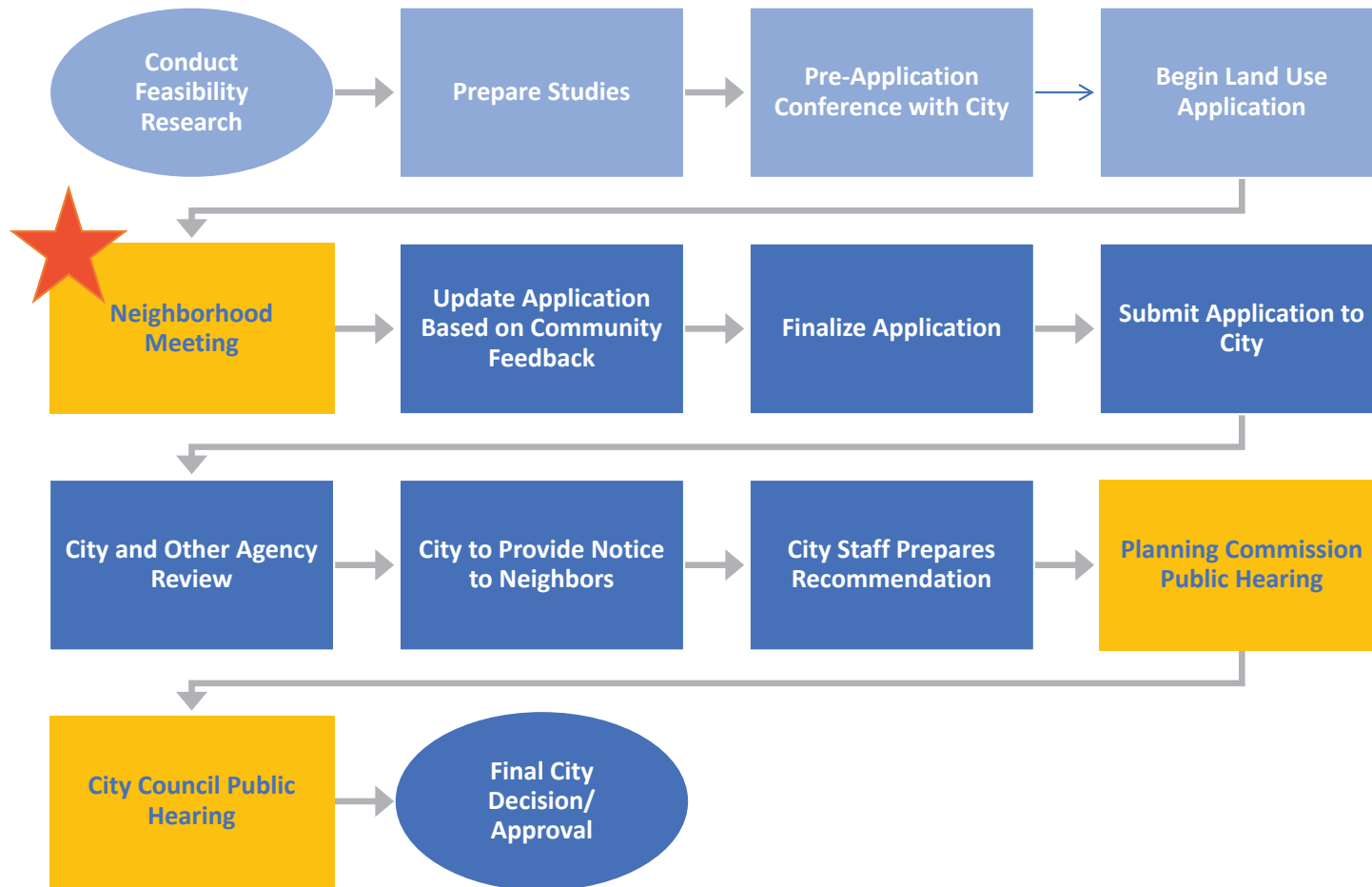
PLANNED MODIFICATIONS

HOLT HOMES
Built for the Pacific Northwest



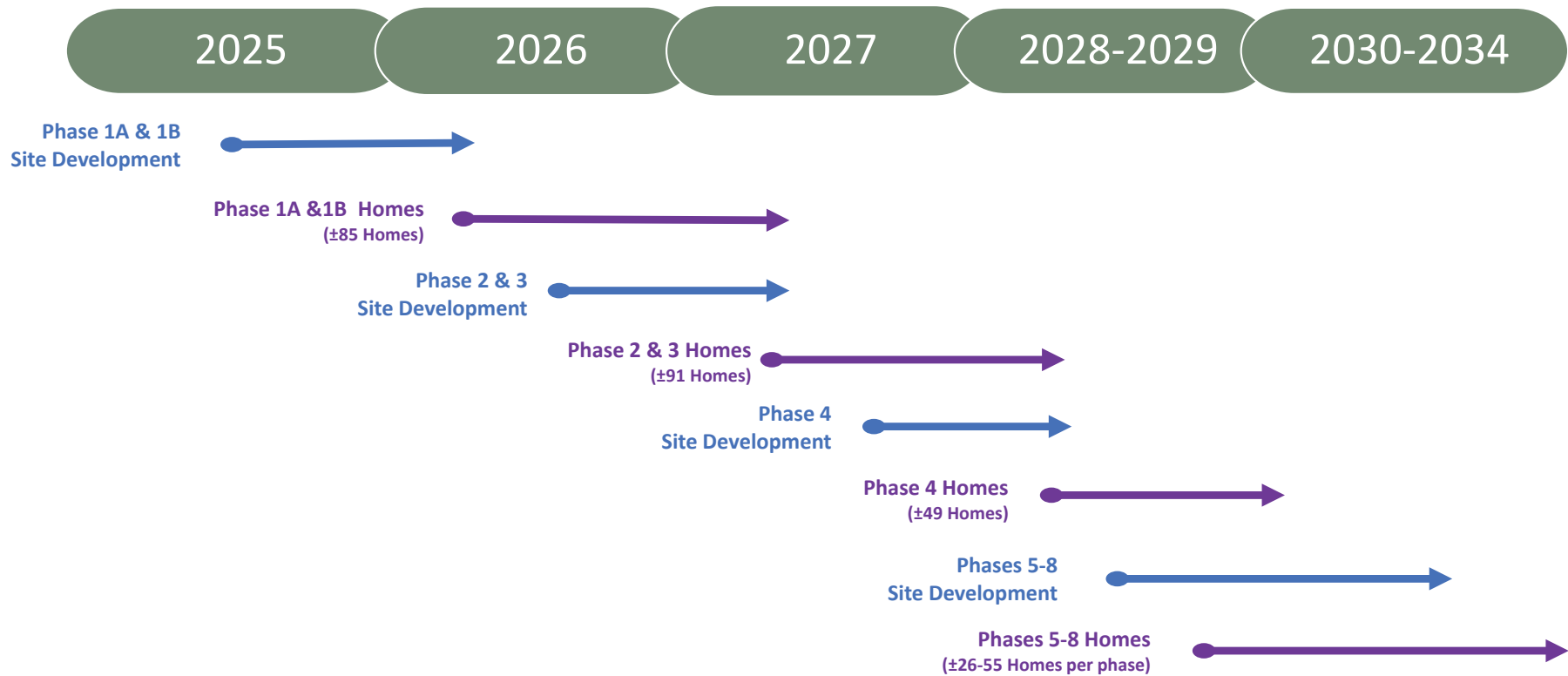
APPLICATION PROCESS

HOLTHOMES
Built for the Pacific Northwest



CONCEPTUAL PROJECT SCHEDULE

HOLTHOMES
Built for the Pacific Northwest



Thank you!

We appreciate your time.
Questions?

HOLTHOMES
Built for the Pacific Northwest



Neighborhood Meeting Summary

Project Name: Hillcrest Planned Development Amendment

Date/Time: May 20, 2024, 6:00 PM

Location: McMinnville Community Center, Room 203

Client Name: Holt Homes, Inc

Consultant: AKS Engineering & Forestry

Participants: Zach Pelz (AKS), Paul Sellke (AKS), Andrew Gatley (AKS), Grace Wolff (AKS), Josh Lang (Holt), See attached sign-in sheet for neighborhood attendees

Comments Received

A. Water Pressure

1. There are current deficiencies in water pressure in the surrounding neighborhood.
2. Pump Station should be constructed prior to any development.
3. Pump station is a temporary fix – need a reservoir at a higher elevation.

B. Traffic

1. Valley's Edge Street is not wide enough to support a high volume of construction traffic.
 - i. Other streets surrounding streets have similar issues.
2. Concerns with people not stopping at stop signs along Valley's Edge Street.
3. Roads in the area are too narrow to support more traffic.
 - i. With parking on both sides of the streets, they become like a one-way in the evenings.
 - ii. Safety concerns with children playing in the street.
4. Has a traffic study has been completed?
5. Who will complete the off-site improvements required in the conditions of approval at the 290th building permit?

C. Environmental Impacts

1. Will an Environmental Impact Study be completed?
 - i. There are deer, owls, turkey, elk, cougars, springs, creeks, etc.
 - ii. The wildlife will be pushed to surrounding EFU land.
2. Does the removal of trees trigger the need for an urban heat island study?
3. Will trees be preserved?
4. Suggestion to use green building strategies to mitigate effects of loss of trees such as light-colored roofs (black roofs will cause the neighborhood to be too hot).

D. Streams/Watercourses and Drainage

1. Will watercourses be preserved/how will they be preserved?
2. Does the City require preservation of seasonal water courses?
3. Upper NW Mt. Ashland Lane homes rear yard drainage concerns.

4. Creek areas are not conducive to active park amenities.
 5. How will drainage be managed?
 - i. Lots south of Tract D open space.
 - ii. Upper NW Mt. Ashland Lane.
- E. Home/Lot Details
1. What is the average home size?
 2. What is the anticipated home price?
 3. What is the average lot size?
 4. What is the density?
 5. Will there be an HOA?
 - i. Would existing neighbors need to join the HOA?
 6. Will there be any townhomes?
 7. Will homes be sprinkled?
 8. Will lots be available for purchase prior to home building?
 - i. What percentage of lots?
 - ii. Interest in purchasing properties adjacent to existing homes.
- F. Open Space Amenities
1. Dog parks.
 2. Stations with dog waste bags.
 3. Benches and seating areas.
 4. Play areas for children.
- G. Lighting
1. Request for DarkSky compliant lighting.
 2. Recent lights put in are too bright.
- H. Local Employment
1. Desire for Holt to utilize local builders, contractors, and materials.
- I. Other
1. Will there be blasting?
 2. What is the timing of this development compared to Fox Ridge Development?

Hillcrest Planned Development Amendment Land Use Application
 Neighborhood Meeting Sign-In Sheet
 McMinnville Community Center, Room 203
 Monday, May 20, 2024 | 6:00 PM

NAME	ADDRESS
Jeff Goldberg Catherine Daniels	152 NW Brookside, McMinnville
CLAUDE GREGORY TARA GREGORY	521 NW MT MAZAMA ST
Lynn + Andrew Boes	2893 NW MT Ashland Lane,
Christine Hanson	139 NW Canyon Creek Dr. McMinnville
MIKE BARBER	366 NW VALLEYS EDGE ST.
Kellie Menke	595 NW mt Mazama St.
Brian Ruden	146 NW Brookside St
Lonny + Lisa Watne	298 NW Valleys Edge
VIP GROVER	447 NW MT MAZAMA
Rachel Fagan + Clay Baldwin	2828 NW Mt Ashland Ln
Bonnie Shultz	491 NW Mt Mazama St
Steph Goldsmith	2905 Mt. Ashland Lane, 97138

Hillcrest Planned Development Amendment Land Use Application
Neighborhood Meeting Sign-In Sheet
 McMinnville Community Center, Room 203
 Monday, May 20, 2024 | 6:00 PM

NAME	ADDRESS
Debbie Lorde	145 NW Canyon Creek Dr. McMinnville
GENE MENKE	595 NW MT MAZAMA ST -
Robin Cavoretto	124 NW Canyon Creek Dr
John Gallup	604 NW Mt. Bachelor St - 97128
DIANE GALLUP	" " " "
Rich Moberg	3021 Elizabeth St. McM.
Kristi Bahr	3431 SW RHR Mac 97128
RONI BAMER + SUSIE	2663 NW HORIZON DR MAC
Linda Ockeever	2816 NW Mt Ashland
Lori Zumwalt	2470 SW West Wind Dr 97128
Sarah Breyer	3121 NW 2nd Street
Daniel Slimick	142 NW Canyon Creek Dr

Hillcrest Planned Development Amendment Land Use Application

Neighborhood Meeting Sign-In Sheet

McMinnville Community Center, Room 203

Monday, May 20, 2024 | 6:00 PM

NAME	ADDRESS
Jayne Preston	138 NW Brookside
DAN KIMBALL	2690 NW MT HOOD DRIVE
Kristin <u>Mantham</u>	392 NW Valleys Edge
Deanna Glawe	320 NW Valleys Edge
Bble Lindstrom	3039 NW Elizabeth
Tom Norby	2831 Mt. Ashland

Hillcrest Planned Development Amendment Land Use Application
Neighborhood Meeting Sign-In Sheet
McMinnville Community Center, Room 203
Monday, May 20, 2024 | 6:00 PM

NAME	ADDRESS
Allan Larsen	12421 SW Fox Ridge Rd McMinnville, OR
Cada Chamy	2984 SW 2nd Mac
Cedric Galt	16075 SW Youngberg Hill Pl.
Linda Key	13235 SW Fox Ridge R
Jose Garcia	2265 SW Haver Ross Ln Mc
Lauren Mitchell	196 NW Brookside Ct.

Exhibit G: Correspondence

From: [Andrew Gatley](#)
To: [James Lofton](#)
Cc: [Paul Sellke](#); [Jeff Gooden](#)
Subject: RE: Hillcrest Pre-app Follow-up -Intersection Spacing
Date: Monday, June 10, 2024 10:10:53 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)

James,

Great, thank you for the confirmation. The tract will be privately maintained.

Thanks,

Andrew Gatley

AKS ENGINEERING & FORESTRY, LLC

P: 503.563.6151 Ext. 183 | www.aks-eng.com | gatleya@aks-eng.com

From: James Lofton <James.Lofton@mcminnvilleoregon.gov>
Sent: Monday, June 10, 2024 8:59 AM
To: Andrew Gatley <gatleya@aks-eng.com>
Cc: Paul Sellke <PaulS@aks-eng.com>; Jeff Gooden <Jeff.Gooden@mcminnvilleoregon.gov>
Subject: RE: Hillcrest Pre-app Follow-up -Intersection Spacing

Proceed with caution: This email hails from an external source. Unverified emails may lead to phishing attacks or malware infiltration. Always exercise due diligence.

Good morning Andrew,

I have no concerns with the intersection spacing so long as the open-space tract is privately maintained.

Thanks,



James Lofton, P.E.

City Engineer

Office: 503.474.5119

Cell: 503.437.2127

James.lofton@mcminnvilleoregon.gov

From: Andrew Gatley <gatleya@aks-eng.com>
Sent: Friday, May 31, 2024 2:26 PM
To: James Lofton <James.Lofton@mcminnvilleoregon.gov>
Cc: Paul Sellke <PaulS@aks-eng.com>; Jeff Gooden <Jeff.Gooden@mcminnvilleoregon.gov>
Subject: Hillcrest Pre-app Follow-up -Intersection Spacing

This message originated outside of the City of McMinnville.

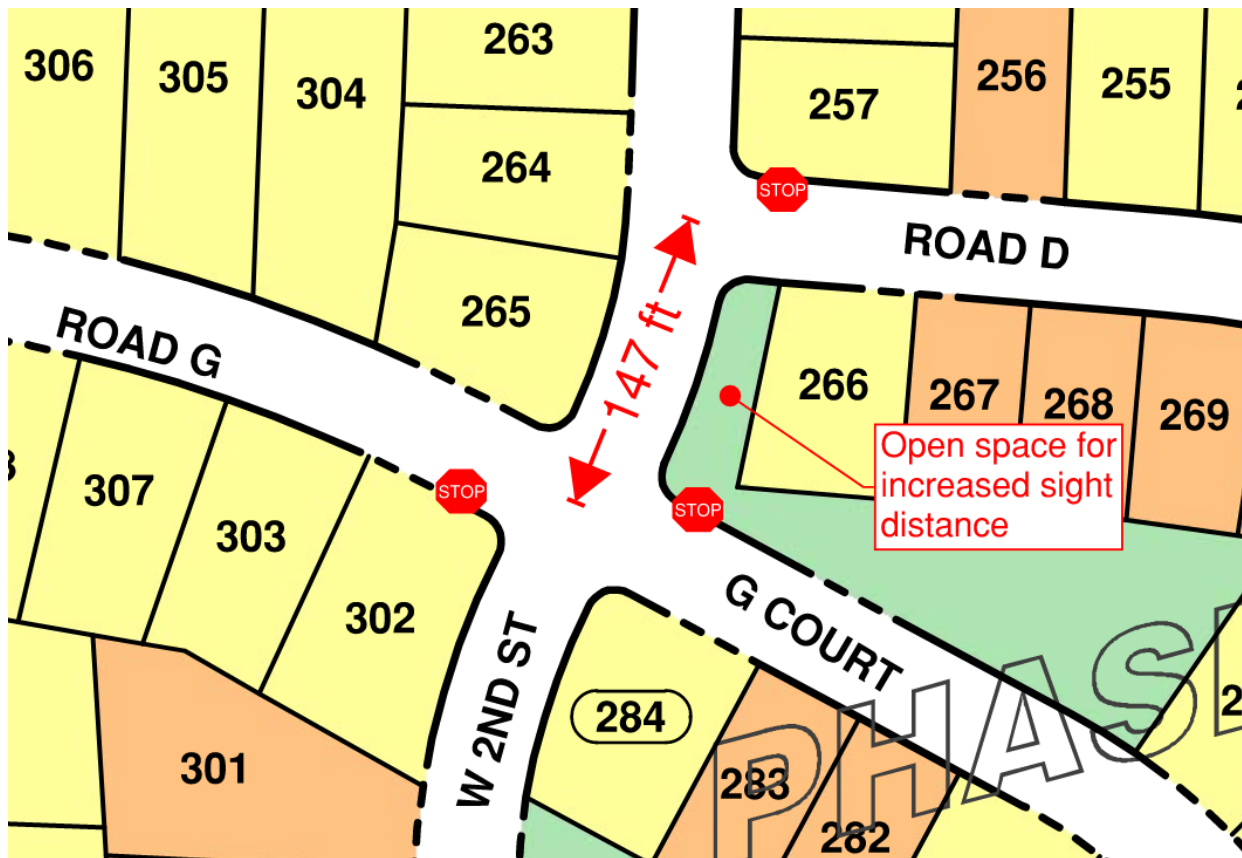
James,

The question was raised at the pre-app whether the intersection spacing between Road D and Road G/G Court is adequate. The relevant language from the McMinnville Zoning Ordinance is shown below:

17.53.101 Streets.

D. Alignment. As far as practical, streets other than minor streets shall be in alignment with existing streets by continuations of the center lines thereof. Staggered street alignment resulting in "T" intersections shall, wherever practical, leave a minimum distance of 200 feet between the center lines of streets having approximately the same direction and otherwise shall not be less than 125 feet.


Due to the steep site topography and natural resource constraints, it severely impacts lot density and layout to increase this distance to the preferred 200'. The currently proposed spacing satisfies the 125' minimum based on the language above. The current layout proposes 147' from centerline to centerline, and all approaches from Road G, G Court, and Road D are planned to be stop controlled, with no stop control along W 2nd St to allow for thru traffic. In addition, the open space tract between Road D and G Court allows additional vision clearance for traffic to see. Please see snip shown below for reference.



We would appreciate your feedback whether the proposed intersection spacing is adequate as shown. Additionally, please let us know if you feel that this needs to be resolved/approved with a Design Exception as part of the land use application or if this scenario can be approved as part of the engineering review of the construction plans.

Thanks,
Andrew Gatley
AKS ENGINEERING & FORESTRY, LLC
P: 503.563.6151 Ext. 183 | www.aks-eng.com | gatleya@aks-eng.com

From: [Steve L Wendell](#)
 To: [Paul Sellke](#); [Andrew Gatley](#)
 Cc: [James W. Burke](#)
 Subject: FW: Hillcrest PD - Water Pressure Q's
 Date: Wednesday, May 22, 2024 9:57:43 AM
 Attachments: [image002.png](#)

 IRONSCALES couldn't recognize this email as this is the first time you received an email from this sender SLW@mc-power.com

Proceed with caution: This email falls from an external source. Unverified emails may lead to phishing attacks or malware infiltration. Always exercise due diligence.

Paul,

See our comments below in red.

Thanks,



Steve Wendell
 Civil Engineering Supervisor
 Main 503-472-6158
 Direct 503-435-3112
 Cell 503-474-7768
 Email slw@mc-power.com

NOTE: Our office hours have changed and we are open Monday through Thursday, 7:00 am - 5:30 pm - Closed on Fridays



From: Paul Sellke <PaulS@aks-eng.com>
 Sent: Tuesday, May 21, 2024 1:15 PM
 To: James W. Burke <jwb@mc-power.com>; Steve L.Wendell <SLW@mc-power.com>
 Cc: Andrew Gatley <gatleya@aks-eng.com>
 Subject: Hillcrest PD - Water Pressure Q's

Hi James/Steve:

I have a couple of questions regarding the water system for the Hillcrest PD project in NW McMinnville and figured one of you would be able to help answer:

- Has MW&L heard of pressure concerns/complaints for the existing homes within the upper areas of Zone 1? We have heard of some neighbors complaining of pressure drops in the system where their pressure is currently at +32 psi...

We are not aware of this issue. Our water model and real world measurements indicate approximately 43 psi at the upper edge of Zone 1. There are some customers in Hillcrest 4 with booster pumps in their garages due to the elevation of the homes residing in Zone 2 even though the water meters are in Zone 1. It is possible that some of those private booster pump systems are not operating correctly.

- Is there any 'plan' to resolve some of these low pressure areas by switching properties onto Zone 2? No, MW&L will proceed with keeping Zone 1 and Zone 2 separate.
- Do you have any recent water system flow test results within the currently constructed portions of the Hillcrest PD? Brookshire Estates? Valleys Edge?

Location:	Date:	Time:	Project / Developer Name:	Tester:	Flow Hydrant	Pressure Hydrant	Pitot Gage Port 1:	Port Size:	Static	Residual	GPM at Residual	GPM at 20 PSI
Valleys Edge & Redmond Hill	1/25/2021	11:08 AM	351 SW Valleys Edge 13D System		452407970	452407971	35	2.5	84	80	1922	8590
Mt Ashland & Valley's Edge and Mt. Ashland - NW corner	4/5/2021	10:00 AM	West Hills Properties		4524A17085	4524A18965	0	2.5	48	46	1060	4408
Mt Ashland Ln NW, 2870 (Lot 105)	4/26/2021	9:00 AM	Lot 105 NE Mt Ashland Lane		4524A18965	4524D76425	27	2.5	64	59	872.2	2823
Mt Ashland Ln NW, 2884	5/3/2021	8:30 AM			4524A18965	4524D76425	0	2.5	69	68	978	7999

Thanks,

Paul Sellke, PE, GE
AKS ENGINEERING & FORESTRY, LLC

P: 503.563.6151 Ext. 219 | www.aks-eng.com | pauls@aks-eng.com

Exhibit H: Preliminary Stormwater Report

Hillcrest Planned Development Amendment McMinnville, Oregon

Preliminary Stormwater Report

Date:	July 2024
Client:	Holt Homes, Inc. 1301 SE Tech Center Dr., Suite 150 Vancouver, WA 98683
Engineering Contact:	Paul Sellke, PE, GE 503.563.6151 PaulS@aks-eng.com
Engineering Firm:	AKS Engineering & Forestry, LLC 12965 SW Herman Road Suite 100 Tualatin, OR 97062
AKS Job Number:	5147-02



www.aks-eng.com

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Figure 1: Vicinity Map

Figure 2: Pre-Developed Basin Delineation Map

Figures 3-NW, 3-SW, 3-SE, 3E, 3NE: Post-Developed Basin Delineation Map

Appendices

Appendix A: HydroCAD Reports for Project Area Pre-Developed Condition

Appendix B: HydroCAD Reports for Project Area Post-Developed Condition

Appendix C: USDA-NRCS Soil Resource Report

Appendix D: TR55 Runoff Curve Numbers

Preliminary Stormwater Report
HILLCREST PLANNED DEVELOPMENT AMENDMENT
MCMINNVILLE, OREGON

1.0 Purpose of Report

The purpose of this report is to analyze the effects the proposed development will have on the existing stormwater conveyance system; document the criteria, methodology, and informational sources used to design the proposed stormwater system; and present the preliminary results of our hydraulic analysis.

2.0 Project Location/Description

The proposed residential subdivision will be located north of W 2nd Street, west of NW Mt. Mazama Street, and south of NW Fox Ridge Road in the City of McMinnville, Oregon. The subdivision consists of six street extensions: W 2nd Street, NW Brookside Street, NW Canyon Creek Drive, NW Valley’s Edge Street, NW Mt. Mazama Street, and NW Horizon Drive, in McMinnville, Oregon. The Hillcrest Planned Development (PD) Amendment area encompasses the remaining ±106 acres of the original ±164 acre property (Tax Lot 801 of Yamhill County Assessor’s Map 4S-5-24).

The proposed project will consist of a 392-lot residential subdivision for single-family detached homes. The site improvements will include the construction of public streets, underground utilities, and new stormwater facilities. Additional stormwater facilities will be incorporated into the subdivision as needed to meet state and federal requirements for wetland fill permits.

3.0 Regulatory Design Criteria

The existing regional stormwater facility, built in 2007, and the Valley’s Edge Subdivision storm conveyance system (stormwater master plan for all subdivision phases) were designed using the 1991 City of McMinnville Storm Drainage Master Plan. This report will evaluate the proposed stormwater utilizing the 2009 Storm Drainage Master Plan standards (2009 SDMP).

3.1. Stormwater Quantity

Stormwater quantity management for this project currently uses the existing regional stormwater facility, which was designed by others to detain the stormwater runoff from the 10-year storm event (West Hills Properties 2016 Stormwater plans and calculations). Additional stormwater facilities (vegetated swales and/or extended dry basins) will be incorporated into the future phases of the subdivision to meet stormwater quantity requirements per the City of McMinnville 2009 SDMP, as well as state and federal wetland fill permit requirements (SLOPES V) where required.

3.2. Stormwater Quality

The City currently does not require stormwater quality treatment for stormwater runoff. Stormwater facilities (which will include water quality treatment) will be incorporated where necessary, as each phase develops, to meet the stormwater quality requirements to obtain state and federal wetland fill permits. The proposed project will also preserve the open channel waterways, which are recommended for water quality measures within Section 9.6.3 of the 2009 SDMP.

4.0 Design Parameters

4.1. Design Methodology

The Santa Barbara Urban Hydrograph (SBUH) Method was used to analyze stormwater runoff from the site. This method utilizes the Natural Resource Conservation Service (NRCS) Type 1A 24-hour design storm. HydroCAD 10.0 computer software aided in the analysis. Representative runoff Curve Numbers (CN) were obtained from the NRCS *Urban Hydrology for Small Watersheds* (Technical Release 55), and are included in Appendix D.

4.2. Design Storms

Per City of McMinnville 2009 SDMP requirements, the stormwater analysis utilized the 24-hour storm for the evaluation and design of the proposed stormwater facilities. The following 24-hour rainfall intensity was utilized as the design storm for the recurrence interval:

Table 4-1: Rainfall Intensities

Recurrence Interval (Years)	Total Precipitation Depth (Inches)	Storm Duration (Hours)
2	2.6	24
10	3.8*	24

*The original stormwater report by Westech Engineering used a 24-hour, 10-year rainfall intensity of 3.6 inches as required at the time of subdivision approval.

4.3. Pre-Developed Site Conditions

4.3.1. Site Topography

Existing on-site grades generally vary from $\pm 1\%$ to $\pm 30\%$, with the site draining south towards Cozine Creek. The site has a high point of ± 440 feet at the northwest corner of the site and a low point of ± 200 feet at the south end of the site, west of NW Canyon Creek Dr.

4.3.2. Land Use

The existing land use is an approved 552 lot subdivision, with 158 lots having been constructed to date. The undeveloped portions of the site are vacant land and currently comprises of pasture land and/or wooded areas.

4.4. Soil Type

The soil beneath the project site and associated drainage basins is classified by the USDA Soil Survey for Yamhill County. The following table outlines the Hydrologic Soil Group rating for each soil type:

Table 4-2: Hydrologic Soil Groupings

NRCS Map Unit Identification	NRCS Soil Classification	Hydrologic Soil Group Rating
2304D	Carlton Silt Loam	C/D
2702C	Dixonville Silty Clay	D
2702D	Dixonville Silty Clay	D
2778D	Panther Silty Clay Loam	D
2791D	Gellatly Silty Clay Loam	C
2792D	Witzel-Dixonville Complex	D
2793C	Witzel-Dixonville Complex	D
2798D	Witham Silty Clay Loam	D

Further information on this soil type is included in the NRCS Soil Resource Report located in Appendix C.

4.5. Post-Developed Site Conditions

4.5.1. Site Topography

The on-site slopes will be modified with cuts and fills to accommodate the construction of public streets, stormwater facilities, and the associated utilities. Additionally, sloped residential building pads will be constructed adjacent to the public right-of-way. Significant grading (cuts/fills) will be required to develop the site due to the site's topography.

4.5.2. Land Use

The post-developed site land use will consist of a 392-lot, single-family residential subdivision, with associated streets, sidewalks, and underground utilities.

4.5.3. Post-Developed Site Parameters

Appendix B of this report includes the HydroCAD report generated for each analyzed storm event. The report includes the parameters (e.g., impervious/pervious areas, time of concentration, etc.) applied to model the post-developed hydrology.

4.5.4. Description of Off-Site Contributing Basins

Off-site basins (Nodes 11X, 12X, 41X, and 70X) currently convey flow through the project site by a system of seasonal drainages running north to south. The preliminary analysis does not include flows of offsite drainage basins which contribute and flow through the seasonal drainages. To accommodate the flow coming from these off-site basins, the seasonal drainages will maintain their current alignment and road crossing culverts will be designed to convey the 10-year storm event.

5.0 Stormwater Analyses

5.1. Proposed Stormwater Main Sizing

The proposed curb and gutter inlets will be spaced per City of McMinnville requirements to properly convey stormwater runoff. The proposed storm system pipes and culverts will be sized using Manning's equation to convey the peak flows from the 10-year storm event. During final engineering, detailed analysis will be conducted to evaluate offsite and downstream drainage systems.

5.2. Proposed Stormwater Facilities

The City of McMinnville requires all proposed developments to provide stormwater detention of the post-developed 10-year storm event peak runoff to the pre-developed 10-year storm event peak runoff. Two stormwater detention ponds are anticipated to be constructed to achieve the required post-developed flow rates. The first facility is planned to be constructed with Phase 3 on the east edge of the project site, the second facility is planned to be constructed within Phase 6 on the south edge of the project site, west of W 2nd Street.

5.3. Proposed Stormwater Quantity Control Facilities

The proposed project will construct two extended dry basins with outlet structures designed to restrict post-development runoff flows per McMinnville standards, and SLOPES V standards where applicable for wetland fill permits.

Two detention ponds have been sized to restrict the total post-developed runoff to match the 10-year pre-developed runoff in conformance with the City of McMinnville 2009 SDMP standards. Runoff from the site is conveyed through a combination of surface flow and underground infrastructure to existing

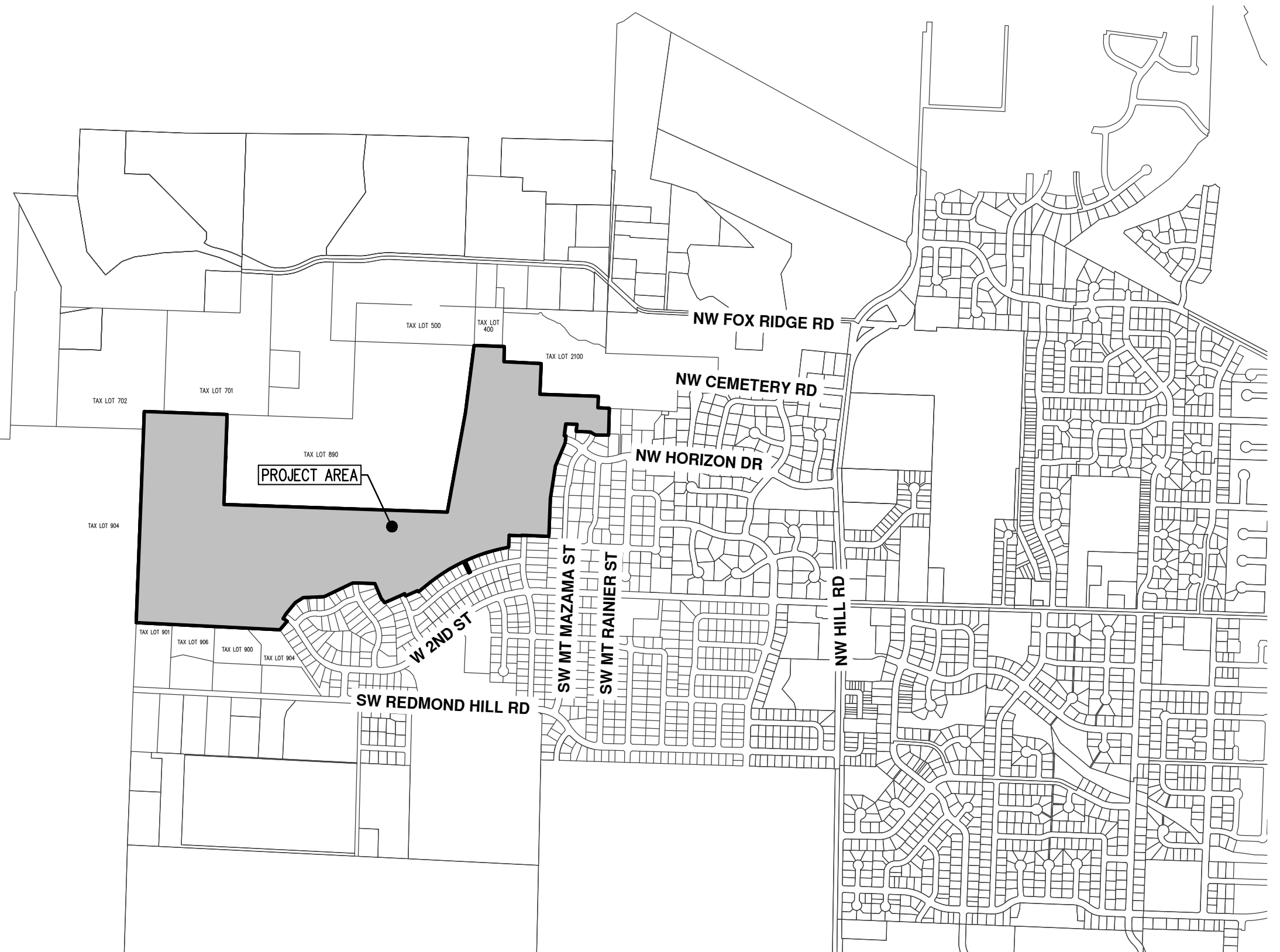
stormwater drainage channels. The existing channels direct runoff southerly where they ultimately join and discharge south of SW Redmond Hill Road (Link W60).

Approximately 1 acre at the northeast corner of the project site is proposed to outfall to an existing stormwater system within NW Horizon Drive (Link W70).

The table below details the total pre-developed and post-developed runoff numbers for the 10-year storm events at Link W60. Detailed calculations are included in Appendix A.

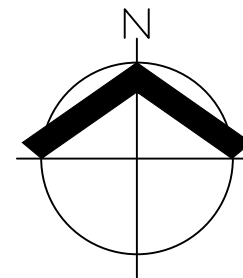
Table 5-1: Overall Pre-Developed and Post-Developed Flows (Link W60)

Storm Recurrence Interval	Peak Pre-Developed Flows (cfs)	Peak Post-Developed Flows (cfs)	Peak Flow Increase or (Decrease)
10-YR	50.29	43.06	(7.23)



VICINITY MAP

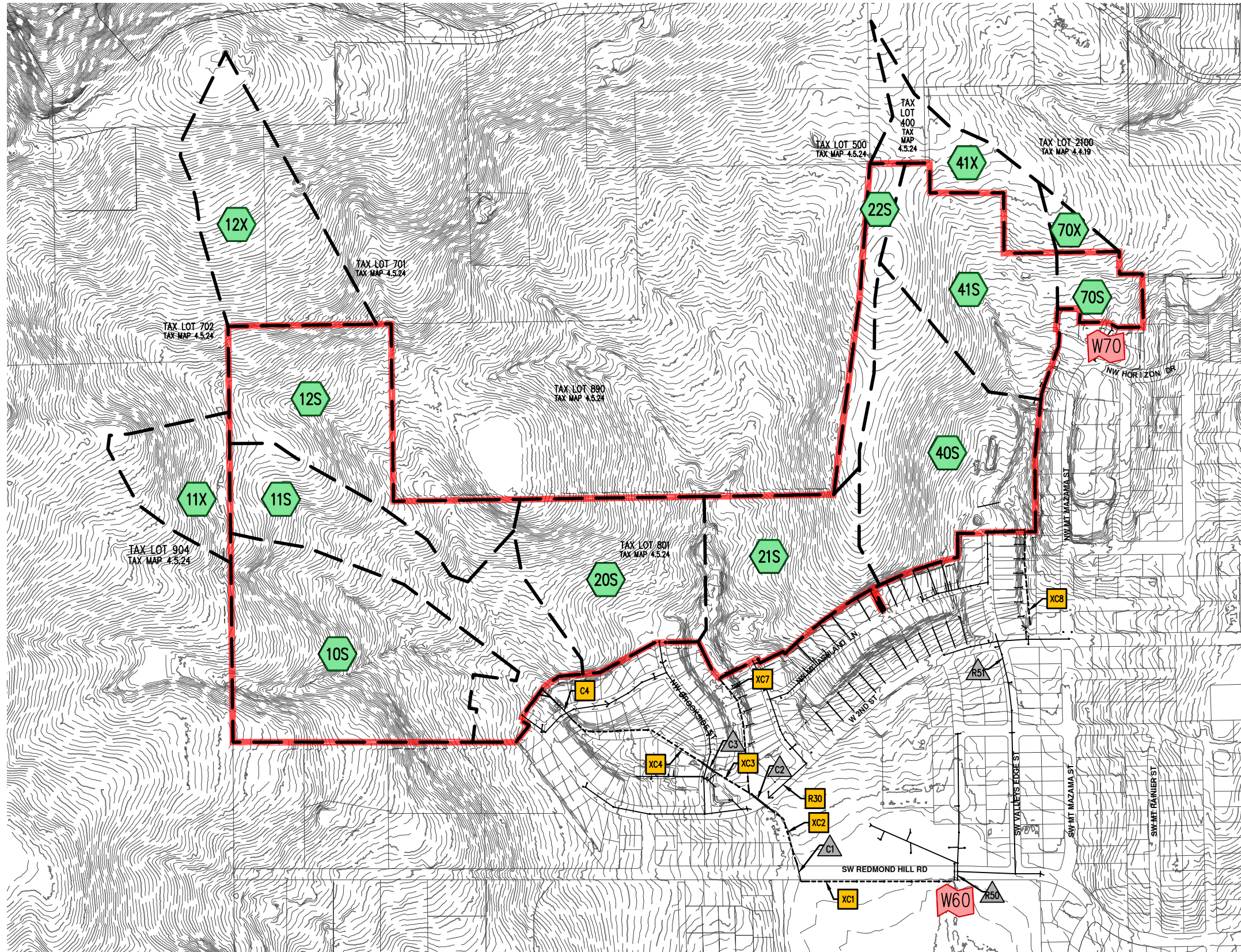
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DATE: 07/01/2024

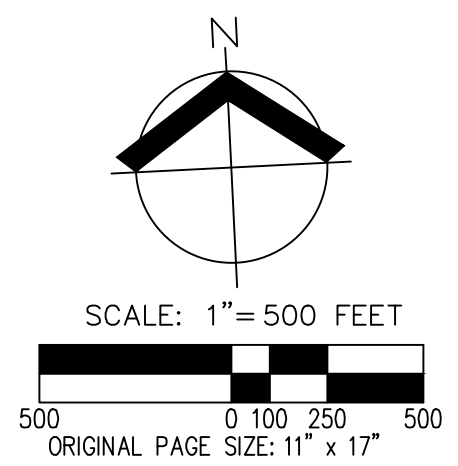
VICINITY MAP		FIGURE
HILLCREST PD		1
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM		DRWN: AMG CHKD: PAS AKS JOB: 5147-02





LEGEND

- 10S ONSITE DRAINAGE BASIN
- 10X OFFSITE DRAINAGE BASIN
- W10 STORM OUTFALL
- PROJECT BOUNDARY
- CATCHMENT BOUNDARY
- XC1 EXISTING CHANNEL
- C1 EXISTING CULVERT
- R1 EXISTING STORM MAIN



DATE: 07/02/2024





PRE-DEVELOPED BASIN DELINEATION MAP	FIGURE
HILLCREST PD	2
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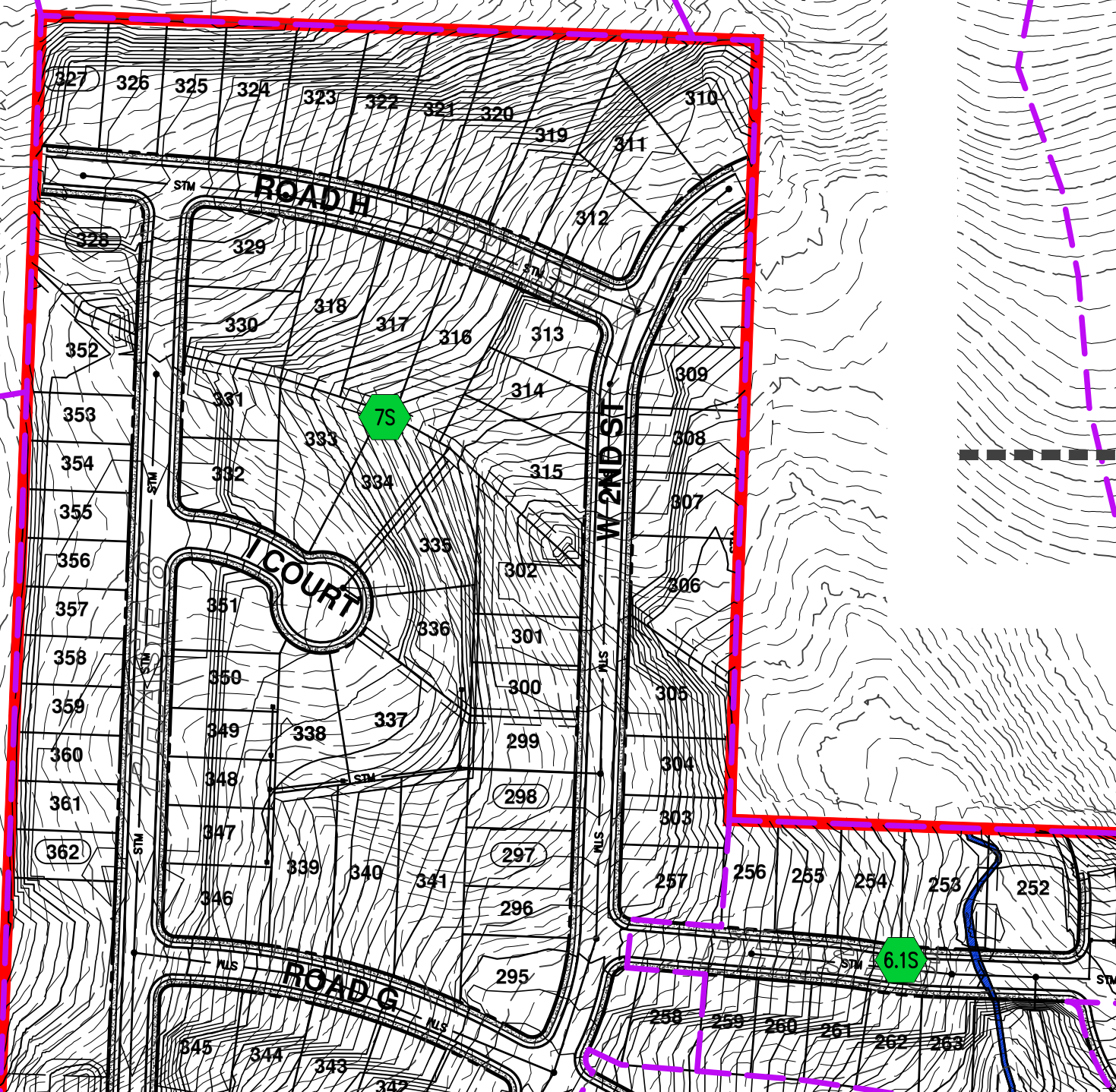


MATCHLINE - SEE THIS SHEET

12X

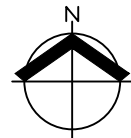
LEGEND

-  ONSITE DRAINAGE BASIN
-  OFFSITE DRAINAGE BASIN
-  PROJECT BOUNDARY
-  CATCHMENT BOUNDARY

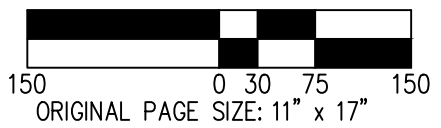


MATCHLINE - SEE THIS SHEET

12X



SCALE: 1" = 150 FEET

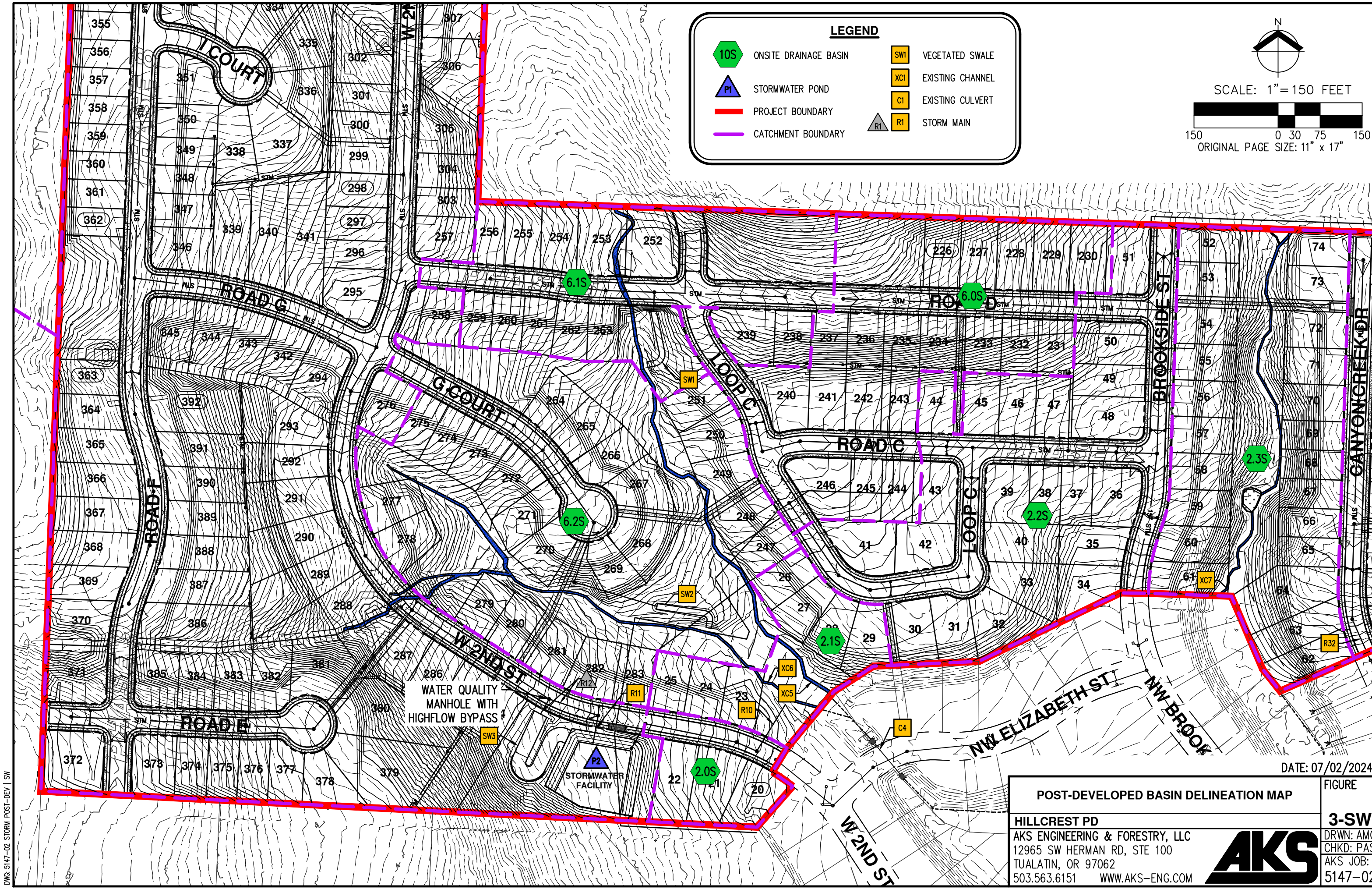


DATE: 07/02/2024

POST-DEVELOPED BASIN DELINEATION MAP		FIGURE
HILLCREST PD		3-NW
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM		DRWN: AMG CHKD: PAS AKS JOB: 5147-02



DWG: 5147-02 STORM POST-DEV | NW



LEGEND

10S	ONSITE DRAINAGE BASIN	SW1	VEGETATED SWALE
P1	STORMWATER POND	XC1	EXISTING CHANNEL
	PROJECT BOUNDARY	C1	EXISTING CULVERT
	CATCHMENT BOUNDARY	R1	STORM MAIN

N

SCALE: 1" = 150 FEET


150 0 30 75 150

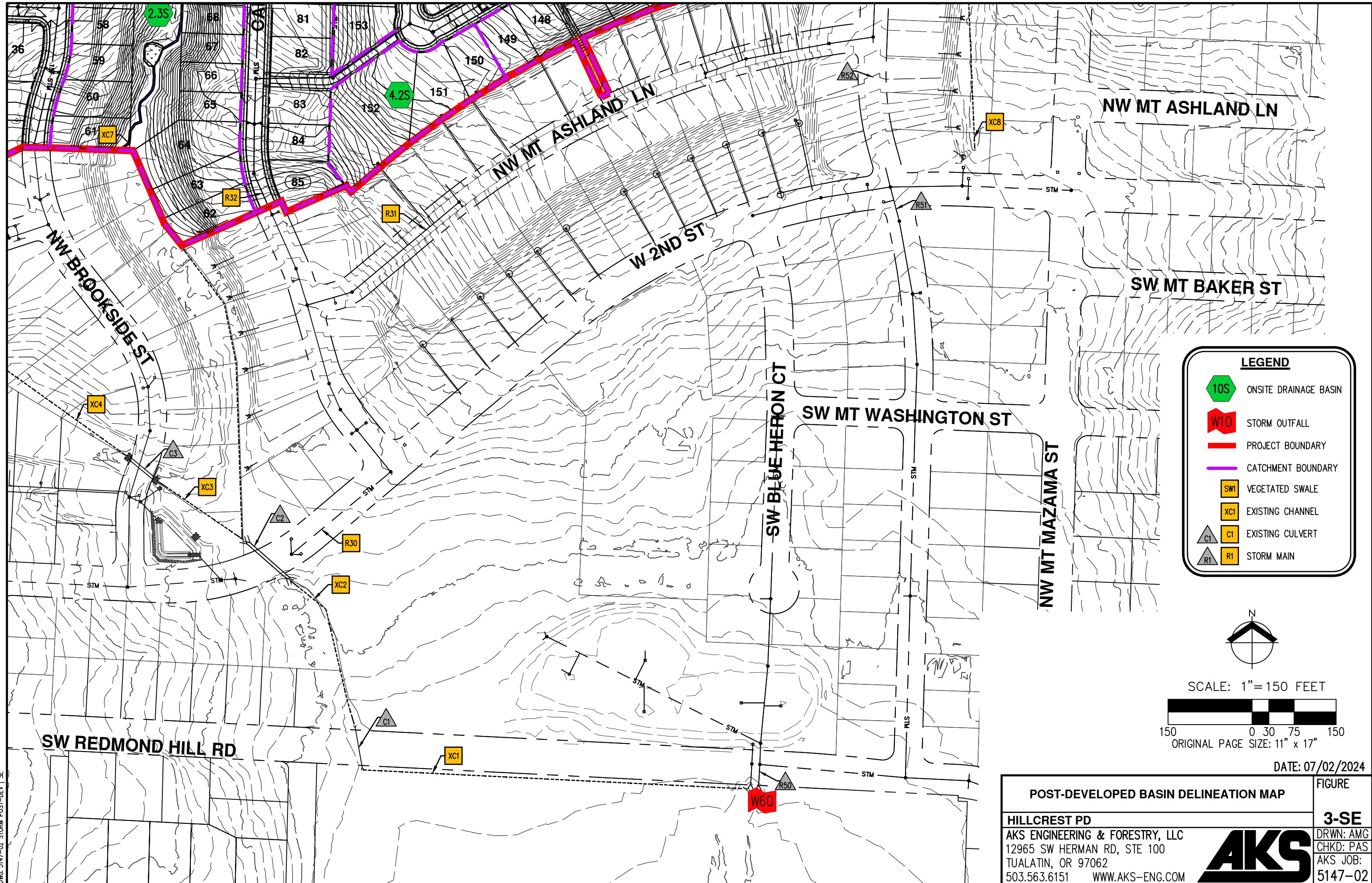
ORIGINAL PAGE SIZE: 11" x 17"

DWG: 5147-02 STORM POST-DEV | SW

DATE: 07/02/2024

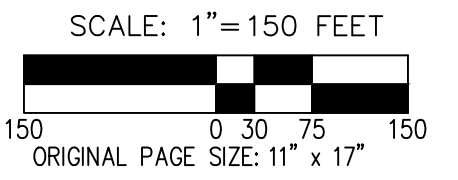
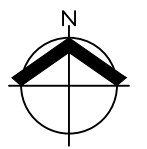
POST-DEVELOPED BASIN DELINEATION MAP		FIGURE
HILLCREST PD		3-SW
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM		DRWN: AMG CHKD: PAS AKS JOB: 5147-02





LEGEND

- 10S ONSITE DRAINAGE BASIN
- W10 STORM OUTFALL
- PROJECT BOUNDARY
- CATCHMENT BOUNDARY
- SW1 VEGETATED SWALE
- XC1 EXISTING CHANNEL
- C1 EXISTING CULVERT
- R1 STORM MAIN

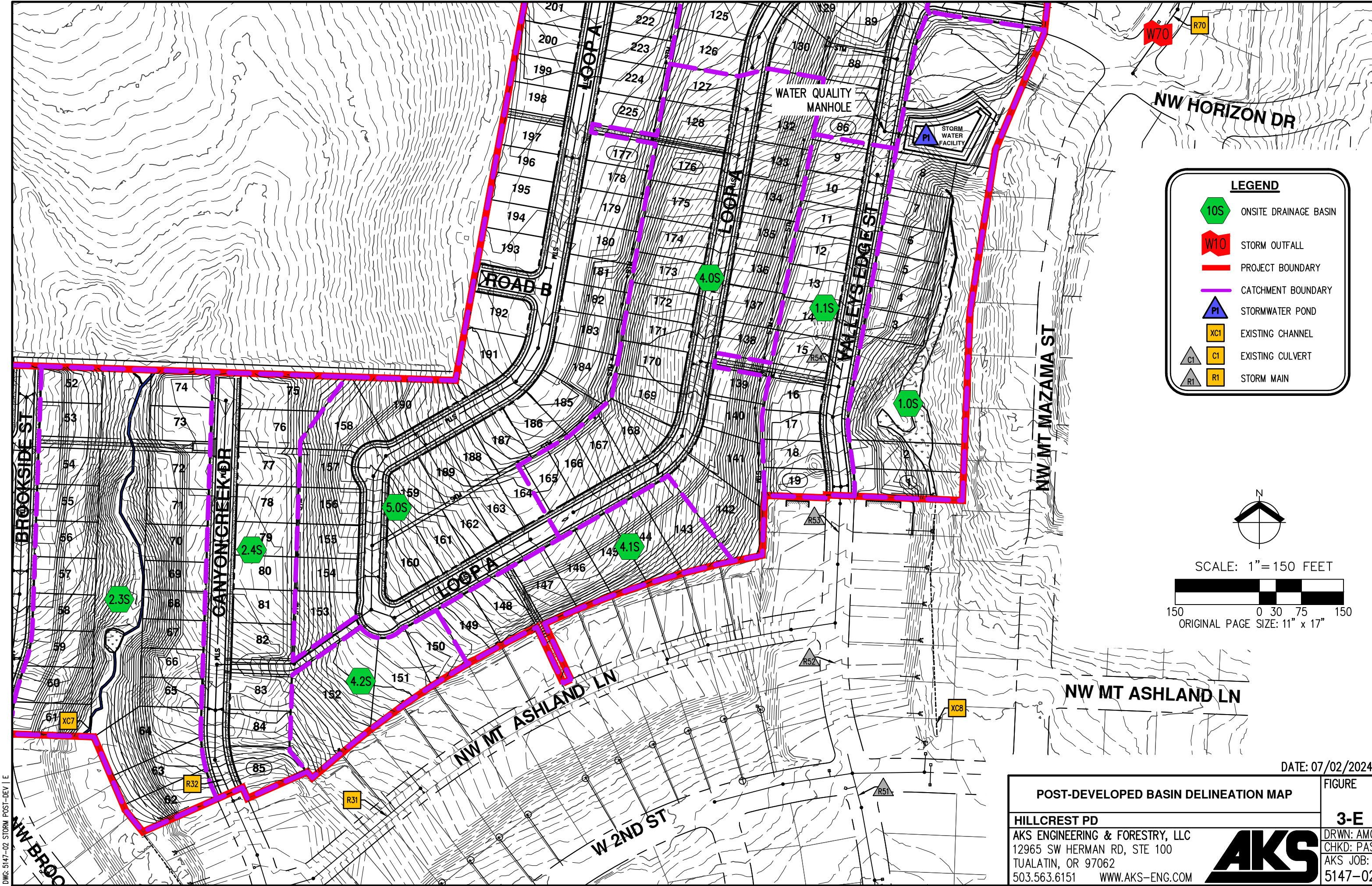


DATE: 07/02/2024

POST-DEVELOPED BASIN DELINEATION MAP		FIGURE
HILLCREST PD		3-SE
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM		DRWN: AMG CHKD: PAS AKS JOB: 5147-02



DWG: 5147-02 STORM POST-DEV I SE



LEGEND

- ⬡ 10S ONSITE DRAINAGE BASIN
- ⬢ W10 STORM OUTFALL
- PROJECT BOUNDARY
- CATCHMENT BOUNDARY
- ▲ P1 STORMWATER POND
- XC1 EXISTING CHANNEL
- C1 EXISTING CULVERT
- R1 STORM MAIN

N

SCALE: 1" = 150 FEET

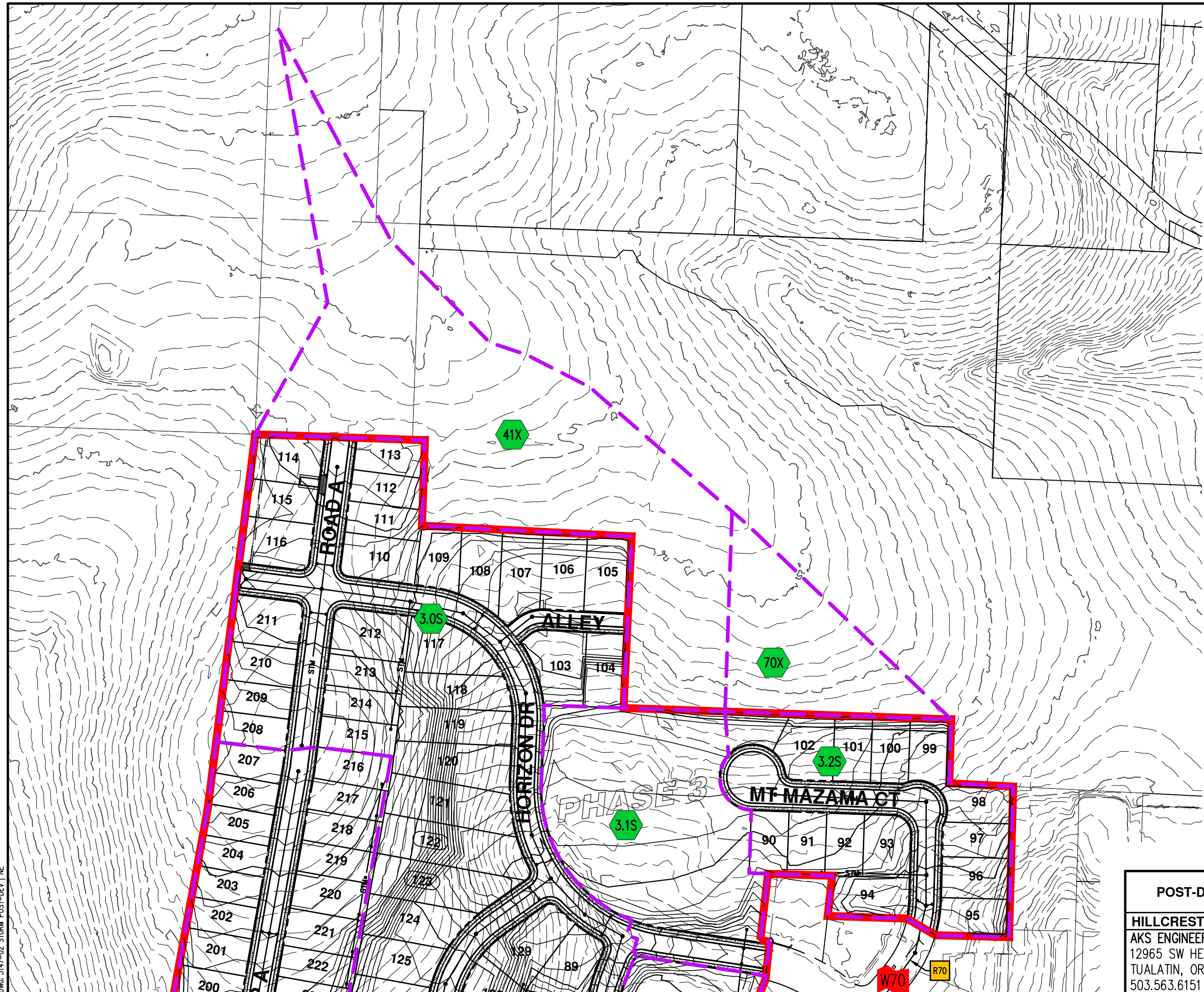
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DATE: 07/02/2024

POST-DEVELOPED BASIN DELINEATION MAP	FIGURE
HILLCREST PD	3-E
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: AMG CHKD: PAS AKS JOB: 5147-02

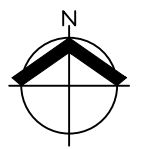


DWG: 5147-02 STORM POST-DEV I.E



LEGEND

- ⬡ 10S ONSITE DRAINAGE BASIN
- ⬡ 10X OFFSITE DRAINAGE BASIN
- ⬡ W10 STORM OUTFALL
- PROJECT BOUNDARY
- CATCHMENT BOUNDARY
- R1 STORM MAIN



SCALE: 1" = 150 FEET

150 0 30 75 150
ORIGINAL PAGE SIZE: 11" x 17"

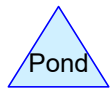
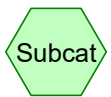
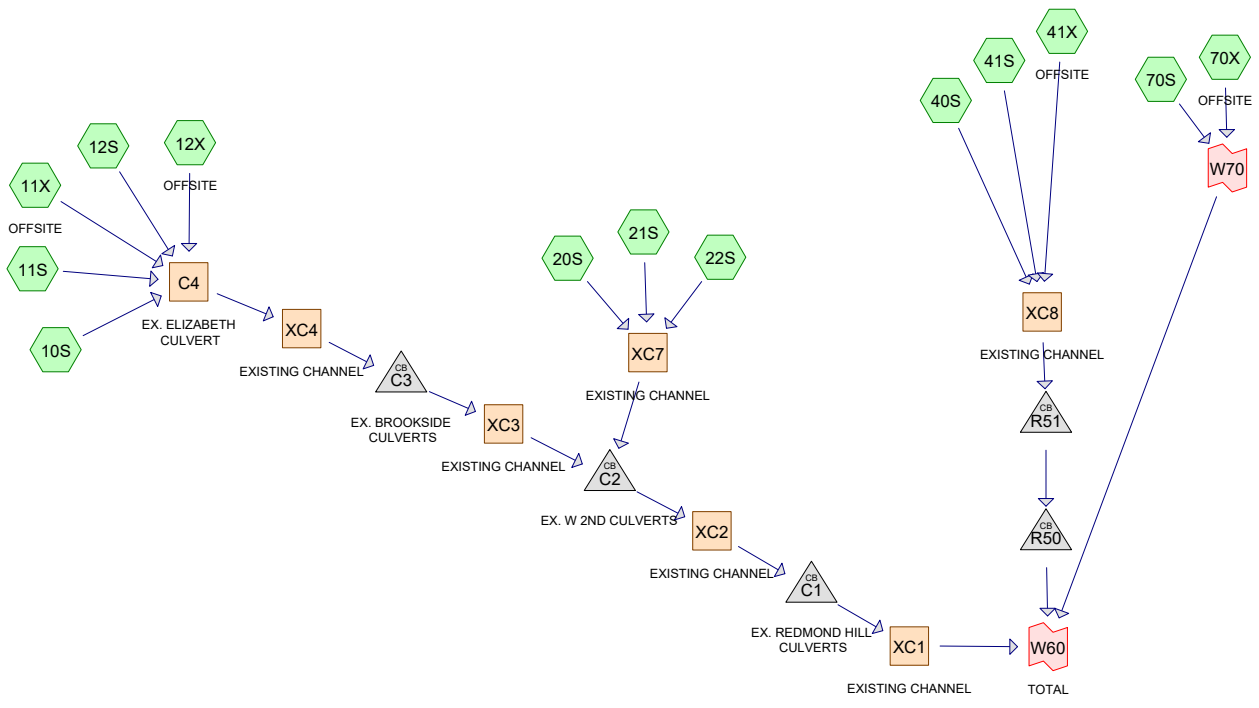
DATE: 07/02/2024

POST-DEVELOPED BASIN DELINEATION MAP	FIGURE
HILLCREST PD	3-NE
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: AMG CHKD: PAS AKS JOB: 5147-02



DWG: 5147-02 STORM POST-DEV I.NE

Appendix A: HydroCAD Reports for Project Area Pre-Developed Condition



Routing Diagram for 5147-02 PRE Dev
 Prepared by AKS Engineering & Forestry, Printed 7/3/2024
 HydroCAD® 10.00-22 s/n 01338 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
93,656	76	Woods/grass comb., Fair, HSG C (20S)
5,618,983	82	Woods/grass comb., Fair, HSG D (10S, 11S, 11X, 12S, 12X, 20S, 21S, 22S, 40S, 41S, 41X, 70S, 70X)
5,712,639	82	TOTAL AREA

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points

Runoff by SBUH method, Split Pervious/Imperv.

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

Subcatchment10S:	Runoff Area=865,505 sf 0.00% Impervious Runoff Depth>2.02" Flow Length=1,570' Tc=11.3 min CN=82/0 Runoff=8.91 cfs 145,808 cf
Subcatchment11S:	Runoff Area=622,621 sf 0.00% Impervious Runoff Depth>2.01" Flow Length=1,820' Tc=20.5 min CN=82/0 Runoff=5.50 cfs 104,392 cf
Subcatchment11X: OFFSITE	Runoff Area=239,422 sf 0.00% Impervious Runoff Depth>2.01" Flow Length=2,360' Tc=23.9 min CN=82/0 Runoff=2.01 cfs 40,071 cf
Subcatchment12S:	Runoff Area=610,449 sf 0.00% Impervious Runoff Depth>2.02" Flow Length=2,325' Tc=11.4 min CN=82/0 Runoff=6.27 cfs 102,835 cf
Subcatchment12X: OFFSITE	Runoff Area=550,602 sf 0.00% Impervious Runoff Depth>2.01" Flow Length=3,605' Tc=23.7 min CN=82/0 Runoff=4.63 cfs 92,161 cf
Subcatchment20S:	Runoff Area=545,335 sf 0.00% Impervious Runoff Depth>1.94" Flow Length=1,240' Tc=13.4 min CN=81/0 Runoff=5.12 cfs 88,209 cf
Subcatchment21S:	Runoff Area=490,167 sf 0.00% Impervious Runoff Depth>2.01" Flow Length=1,239' Tc=19.2 min CN=82/0 Runoff=4.42 cfs 82,240 cf
Subcatchment22S:	Runoff Area=144,126 sf 0.00% Impervious Runoff Depth>2.02" Flow Length=1,840' Tc=14.4 min CN=82/0 Runoff=1.41 cfs 24,242 cf
Subcatchment40S:	Runoff Area=729,632 sf 0.00% Impervious Runoff Depth>2.01" Flow Length=1,447' Tc=23.1 min CN=82/0 Runoff=6.19 cfs 122,166 cf
Subcatchment41S:	Runoff Area=513,825 sf 0.00% Impervious Runoff Depth>2.02" Flow Length=1,680' Tc=16.9 min CN=82/0 Runoff=4.81 cfs 86,313 cf
Subcatchment41X: OFFSITE	Runoff Area=246,206 sf 0.00% Impervious Runoff Depth>1.99" Flow Length=2,220' Tc=37.8 min CN=82/0 Runoff=1.71 cfs 40,897 cf
Subcatchment70S:	Runoff Area=109,455 sf 0.00% Impervious Runoff Depth>2.02" Flow Length=430' Slope=0.0750 '/' Tc=12.7 min CN=82/0 Runoff=1.10 cfs 18,426 cf
Subcatchment70X: OFFSITE	Runoff Area=45,294 sf 0.00% Impervious Runoff Depth>2.01" Flow Length=720' Tc=17.7 min CN=82/0 Runoff=0.42 cfs 7,605 cf
Reach C4: EX. ELIZABETH	Avg. Flow Depth=0.91' Max Vel=16.73 fps Inflow=27.23 cfs 485,266 cf 30.0" Round Pipe n=0.013 L=93.7' S=0.0540 '/' Capacity=95.32 cfs Outflow=27.22 cfs 485,227 cf
Reach XC1: EXISTING CHANNEL	Avg. Flow Depth=1.68' Max Vel=2.78 fps Inflow=36.65 cfs 674,953 cf n=0.080 L=310.0' S=0.0226 '/' Capacity=248.44 cfs Outflow=36.54 cfs 673,886 cf
Reach XC2: EXISTING CHANNEL	Avg. Flow Depth=1.68' Max Vel=2.78 fps Inflow=36.75 cfs 676,017 cf n=0.080 L=310.0' S=0.0226 '/' Capacity=248.44 cfs Outflow=36.65 cfs 674,953 cf

Reach XC3: EXISTING CHANNEL Avg. Flow Depth=1.09' Max Vel=2.61 fps Inflow=26.47 cfs 483,129 cf
n=0.065 L=176.0' S=0.0293 '/ Capacity=123.48 cfs Outflow=26.45 cfs 482,684 cf

Reach XC4: EXISTING CHANNEL Avg. Flow Depth=0.77' Max Vel=1.96 fps Inflow=27.22 cfs 485,227 cf
n=0.080 L=625.0' S=0.0400 '/ Capacity=640.20 cfs Outflow=26.47 cfs 483,129 cf

Reach XC7: EXISTING CHANNEL Avg. Flow Depth=0.94' Max Vel=1.39 fps Inflow=10.95 cfs 194,690 cf
n=0.080 L=710.0' S=0.0155 '/ Capacity=72.93 cfs Outflow=10.32 cfs 193,334 cf

Reach XC8: EXISTING CHANNEL Avg. Flow Depth=1.09' Max Vel=2.75 fps Inflow=12.69 cfs 249,376 cf
n=0.080 L=500.0' S=0.0380 '/ Capacity=116.73 cfs Outflow=12.57 cfs 248,742 cf

Pond C1: EX. REDMOND HILL CULVERTS Peak Elev=192.87' Inflow=36.65 cfs 674,953 cf
Outflow=36.65 cfs 674,953 cf

Pond C2: EX. W 2ND CULVERTS Peak Elev=192.87' Inflow=36.75 cfs 676,017 cf
Outflow=36.75 cfs 676,017 cf

Pond C3: EX. BROOKSIDE CULVERTS Peak Elev=199.77' Inflow=26.47 cfs 483,129 cf
Outflow=26.47 cfs 483,129 cf

Pond R50: Peak Elev=181.23' Inflow=12.57 cfs 248,742 cf
24.0" Round Culvert n=0.013 L=36.5' S=0.0085 '/ Outflow=12.57 cfs 248,742 cf

Pond R51: Peak Elev=199.44' Inflow=12.57 cfs 248,742 cf
30.0" Round Culvert n=0.013 L=63.0' S=0.0029 '/ Outflow=12.57 cfs 248,742 cf

Link W60: TOTAL Inflow=50.29 cfs 948,659 cf
Primary=50.29 cfs 948,659 cf

Link W70: Inflow=1.52 cfs 26,032 cf
Primary=1.52 cfs 26,032 cf

Total Runoff Area = 5,712,639 sf Runoff Volume = 955,365 cf Average Runoff Depth = 2.01"
100.00% Pervious = 5,712,639 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 10S:

Runoff = 8.91 cfs @ 8.00 hrs, Volume= 145,808 cf, Depth> 2.02"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

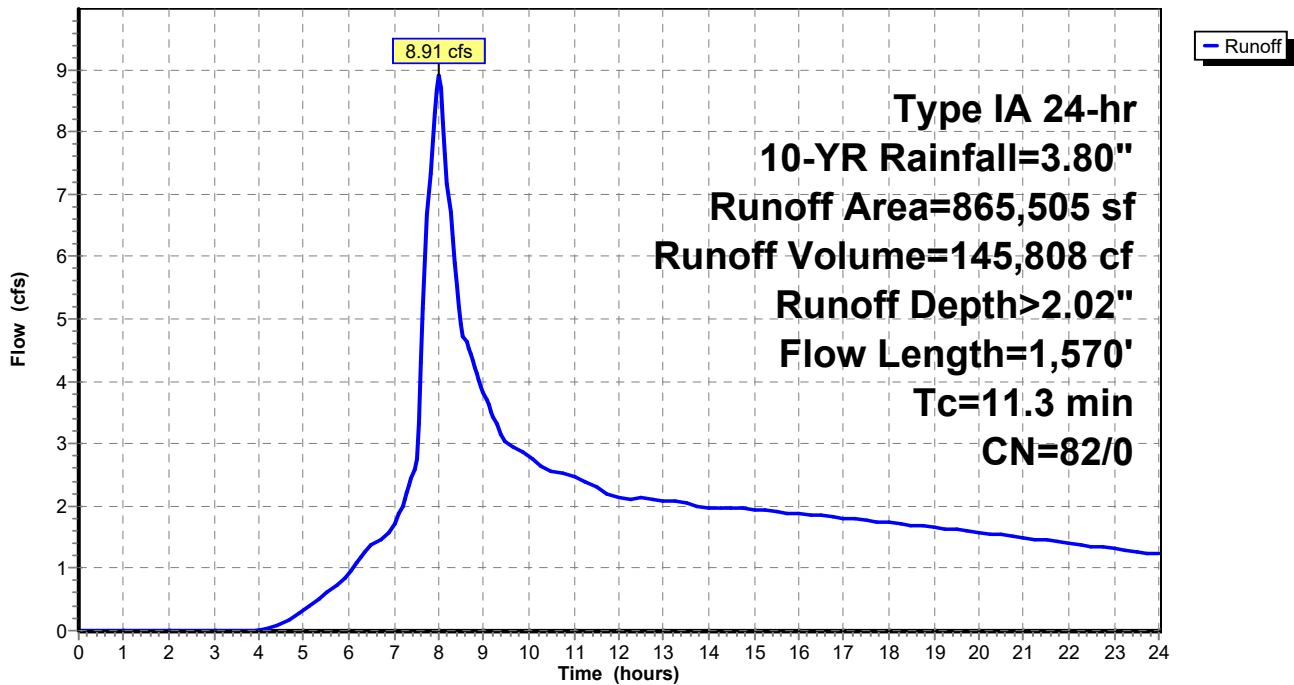
Area (sf)	CN	Description
865,505	82	Woods/grass comb., Fair, HSG D
865,505		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0700	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
1.5	240	0.3000	2.74		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.5	1,280	0.1000	14.60	131.41	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding

11.3 1,570 Total

Subcatchment 10S:

Hydrograph



Summary for Subcatchment 11S:

Runoff = 5.50 cfs @ 8.04 hrs, Volume= 104,392 cf, Depth> 2.01"

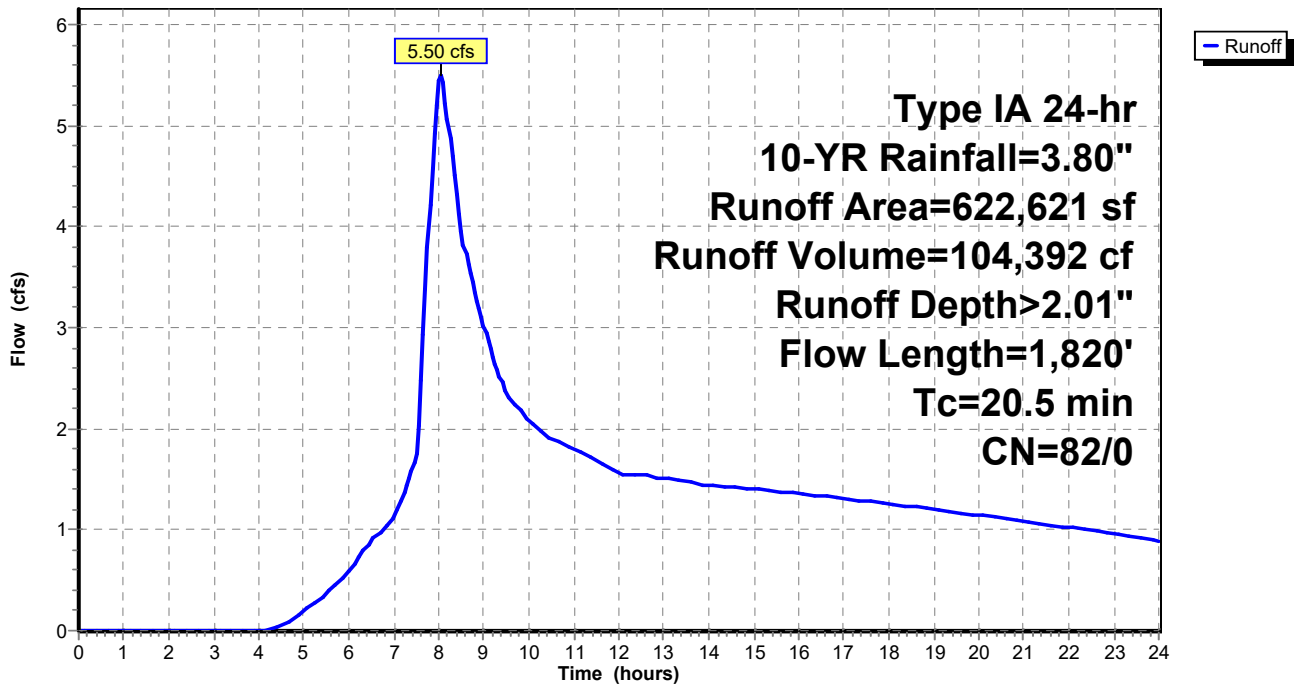
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
622,621	82	Woods/grass comb., Fair, HSG D
622,621		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.1000	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
12.6	1,220	0.1050	1.62		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.7	550	0.0750	12.65	113.81	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
20.5	1,820	Total			

Subcatchment 11S:

Hydrograph



Summary for Subcatchment 11X: OFFSITE

Runoff = 2.01 cfs @ 8.05 hrs, Volume= 40,071 cf, Depth> 2.01"

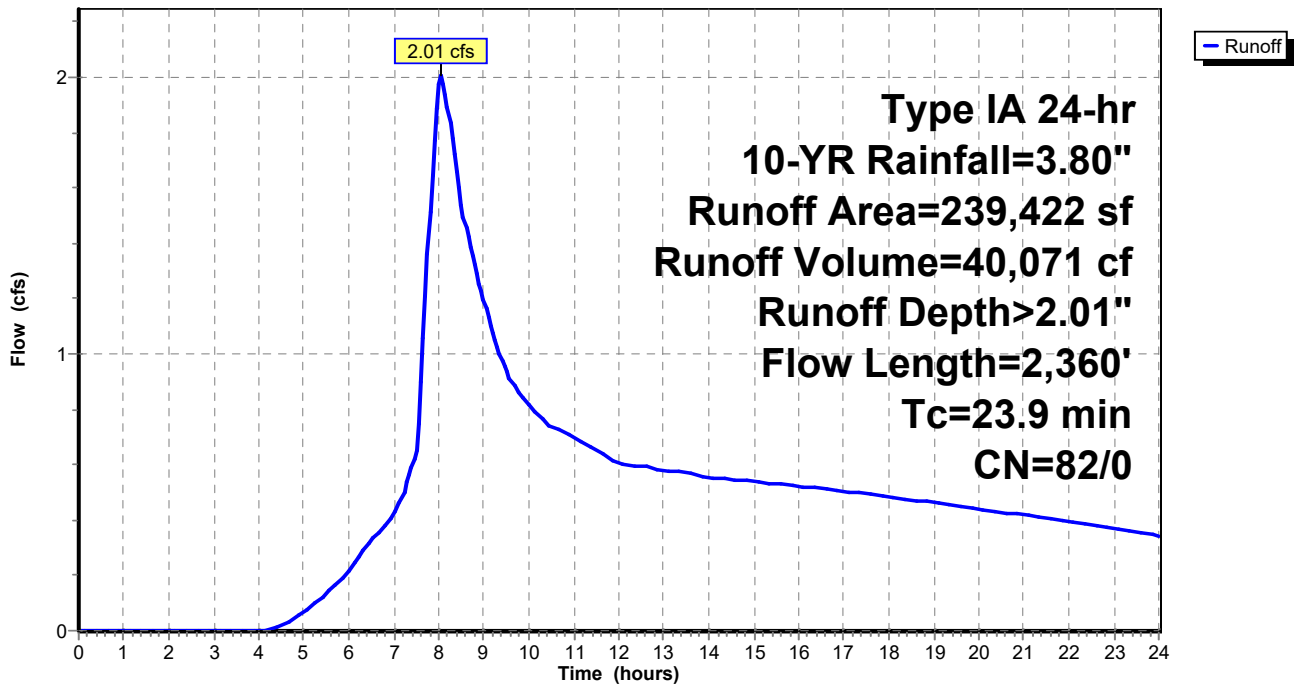
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
239,422	82	Woods/grass comb., Fair, HSG D
239,422		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	50	0.1570	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
4.1	490	0.1570	1.98		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.1	1,270	0.1050	1.62		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.7	550	0.0750	12.65	113.81	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
23.9	2,360	Total			

Subcatchment 11X: OFFSITE

Hydrograph



Summary for Subcatchment 12S:

Runoff = 6.27 cfs @ 8.00 hrs, Volume= 102,835 cf, Depth> 2.02"

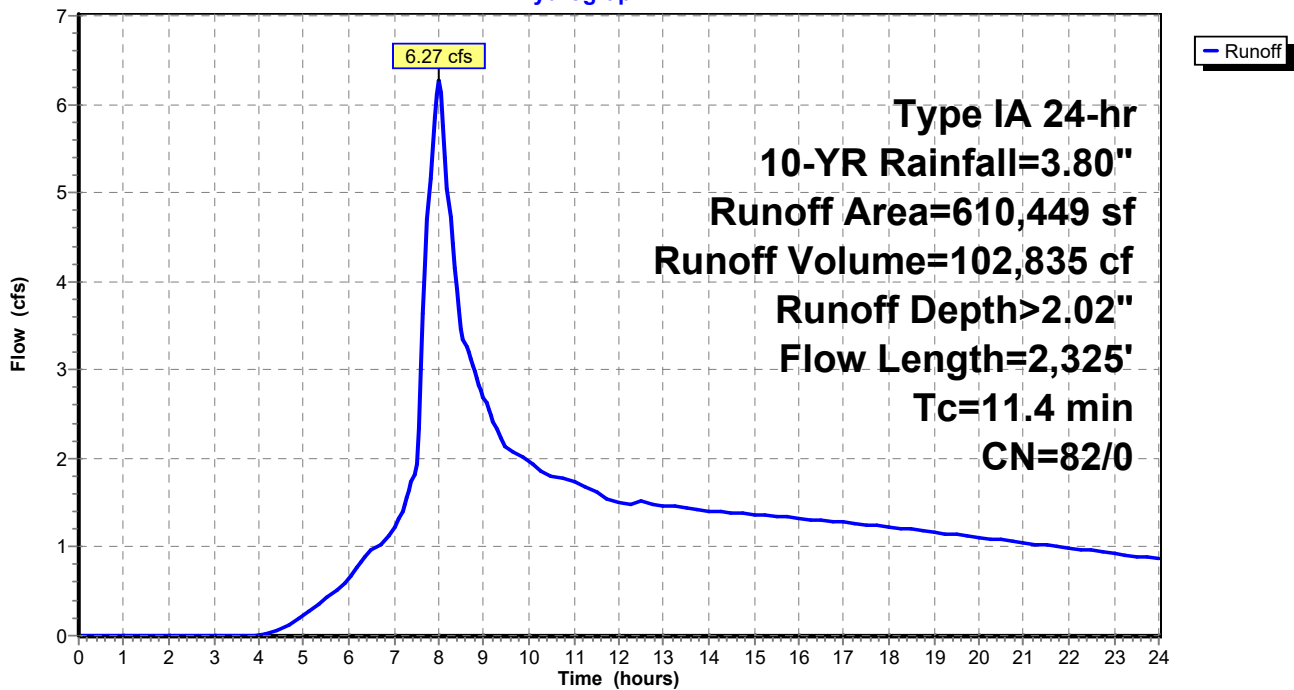
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
610,449	82	Woods/grass comb., Fair, HSG D
610,449		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.1350	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
2.6	285	0.1350	1.84		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.4	1,990	0.0900	13.85	124.67	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
11.4	2,325	Total			

Subcatchment 12S:

Hydrograph



Summary for Subcatchment 12X: OFFSITE

Runoff = 4.63 cfs @ 8.05 hrs, Volume= 92,161 cf, Depth> 2.01"

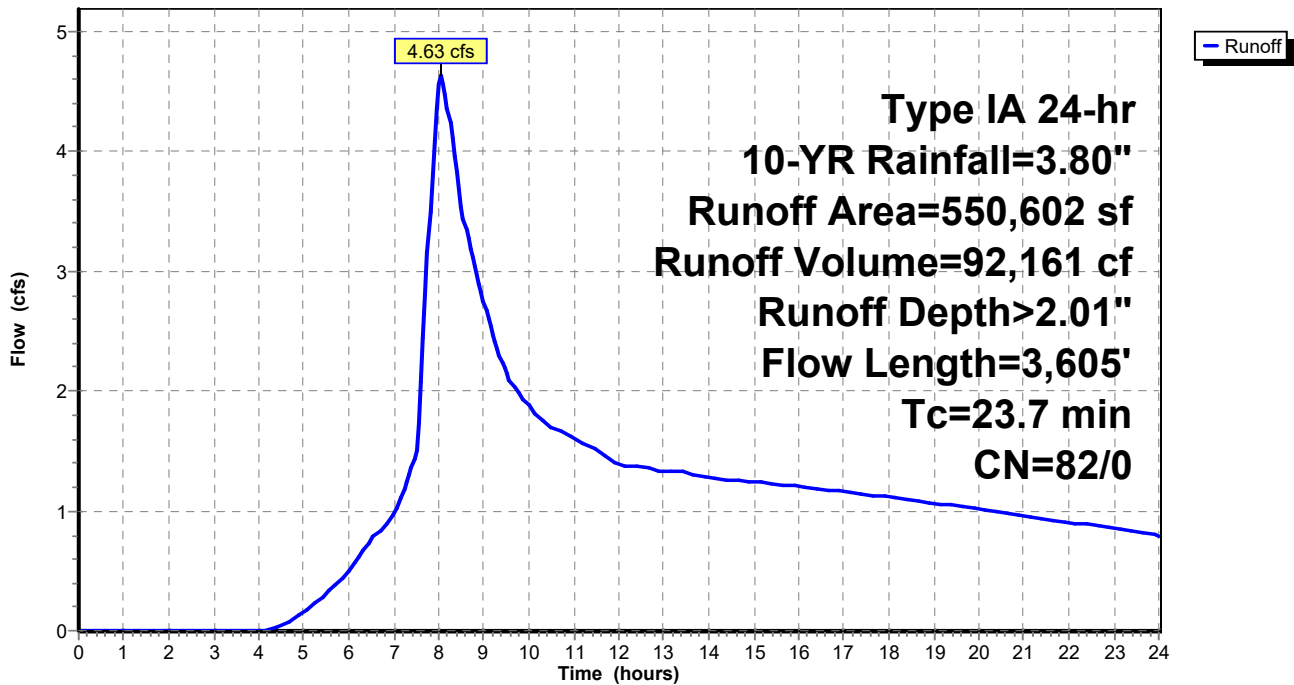
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
550,602	82	Woods/grass comb., Fair, HSG D
550,602		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	50	0.1230	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
11.2	1,180	0.1230	1.75		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.5	385	0.1350	1.84		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.4	1,990	0.0900	13.85	124.67	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
23.7	3,605	Total			

Subcatchment 12X: OFFSITE

Hydrograph



Summary for Subcatchment 20S:

Runoff = 5.12 cfs @ 8.01 hrs, Volume= 88,209 cf, Depth> 1.94"

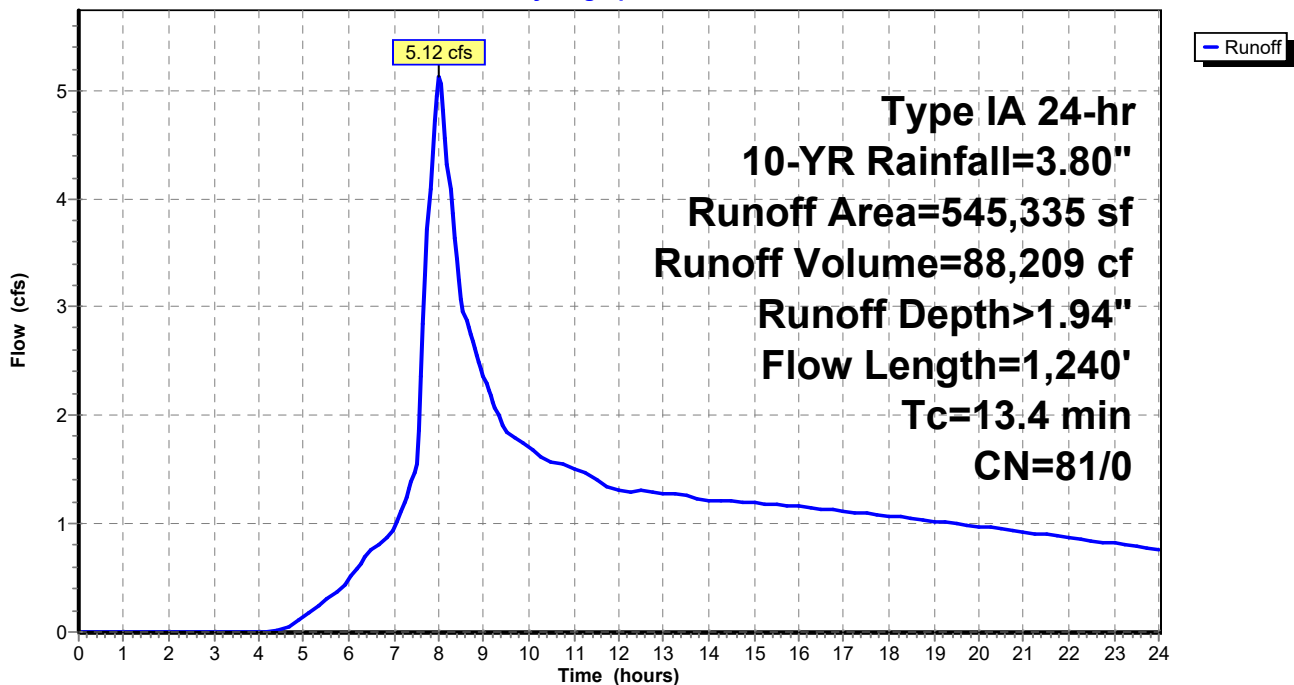
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
93,656	76	Woods/grass comb., Fair, HSG C
451,679	82	Woods/grass comb., Fair, HSG D
545,335	81	Weighted Average
545,335		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	50	0.1630	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
6.5	790	0.1630	2.02		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	230	0.0320	8.26	74.34	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
0.5	170	0.0140	5.46	49.17	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
13.4	1,240	Total			

Subcatchment 20S:

Hydrograph



Summary for Subcatchment 21S:

Runoff = 4.42 cfs @ 8.03 hrs, Volume= 82,240 cf, Depth> 2.01"

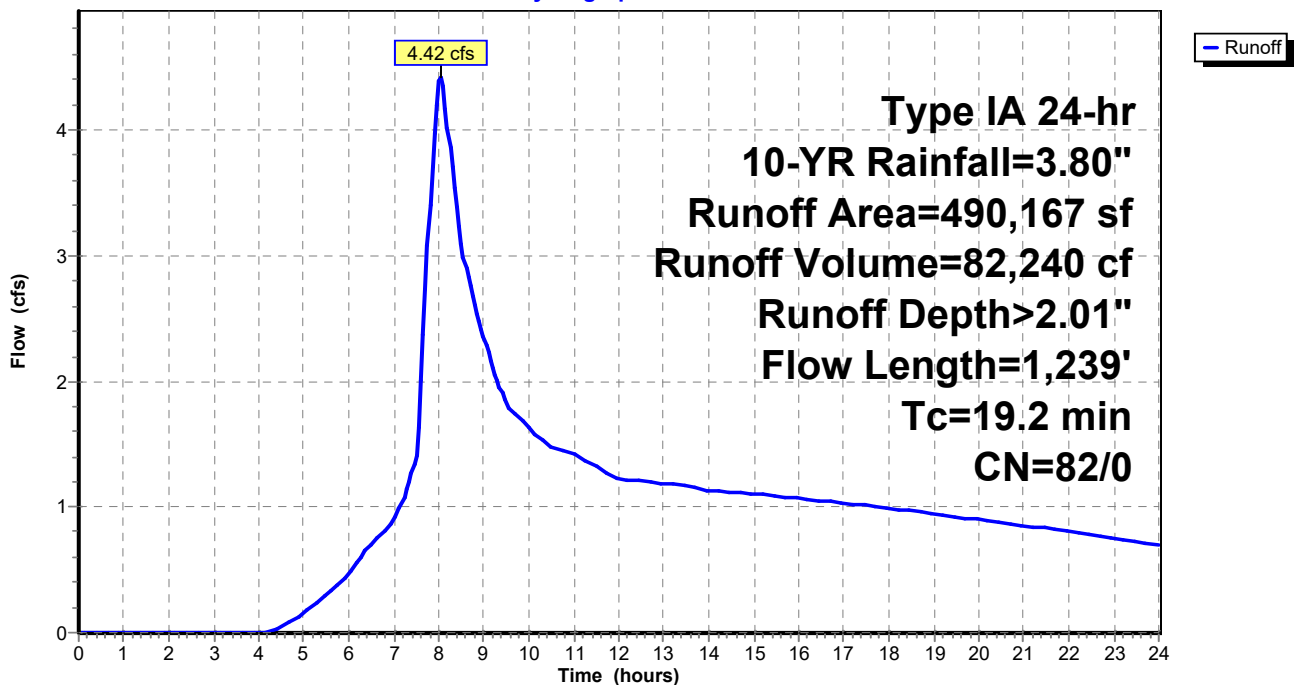
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
490,167	82	Woods/grass comb., Fair, HSG D
490,167		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	50	0.0730	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
4.2	340	0.0730	1.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.4	362	0.1270	1.78		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.9	323	0.1370	1.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	164	0.0130	5.26	47.38	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
19.2	1,239	Total			

Subcatchment 21S:

Hydrograph



Summary for Subcatchment 22S:

Runoff = 1.41 cfs @ 8.02 hrs, Volume= 24,242 cf, Depth> 2.02"

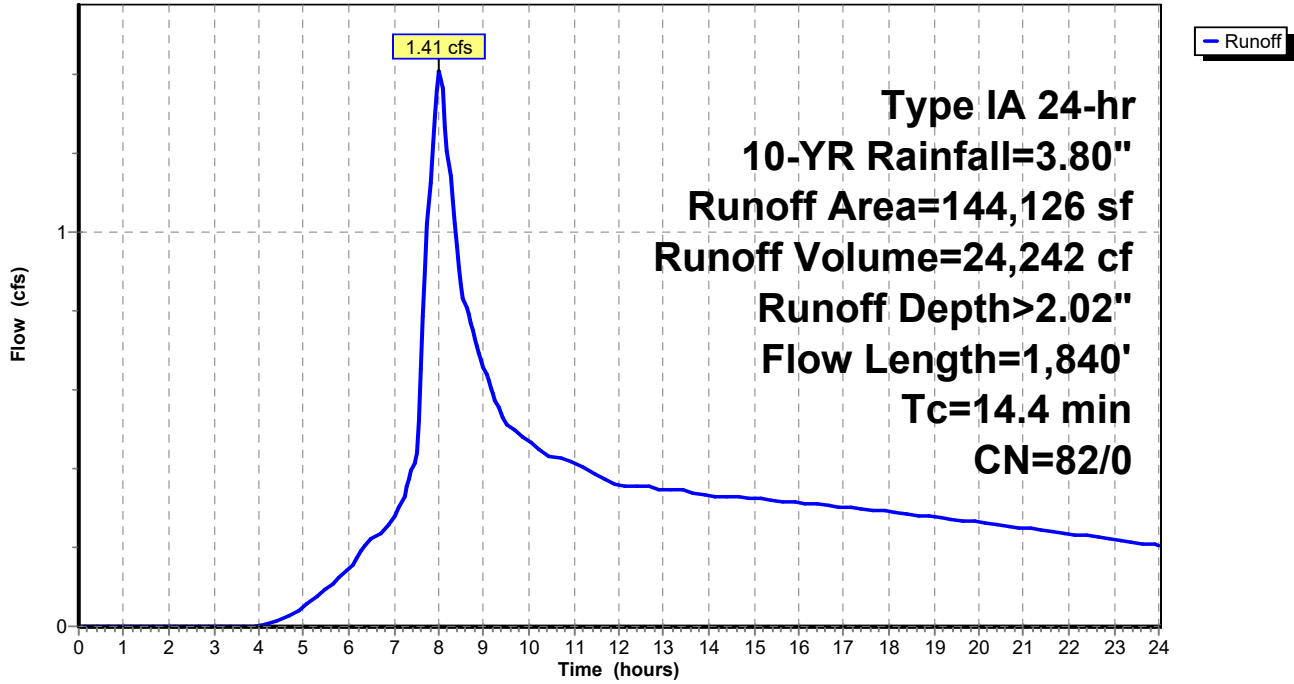
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
144,126	82	Woods/grass comb., Fair, HSG D
144,126		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.1150	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
5.2	530	0.1150	1.70		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.6	300	0.0330	8.39	75.49	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
0.3	235	0.0640	11.68	105.13	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
0.2	114	0.0550	10.83	97.46	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
0.2	59	0.0120	5.06	45.52	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
0.2	186	0.0890	13.77	123.97	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
0.4	202	0.0350	8.64	77.74	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
0.5	164	0.0130	5.26	47.38	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
14.4	1,840	Total			

Subcatchment 22S:

Hydrograph



Summary for Subcatchment 40S:

Runoff = 6.19 cfs @ 8.05 hrs, Volume= 122,166 cf, Depth> 2.01"

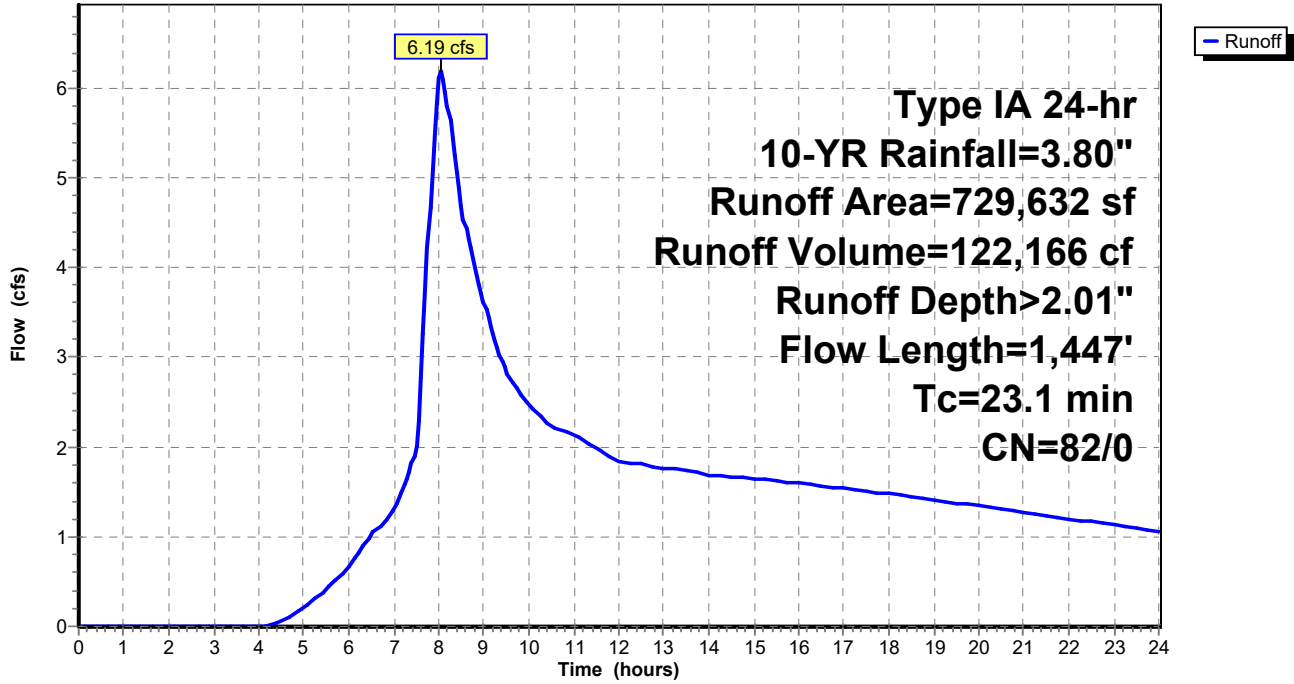
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
729,632	82	Woods/grass comb., Fair, HSG D
729,632		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	50	0.0620	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
6.3	472	0.0620	1.24		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.0	269	0.1930	2.20		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.5	157	0.1270	1.78		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.1	218	0.0560	1.18		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	128	0.1080	1.64		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	153	0.0570	11.02	99.21	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
23.1	1,447	Total			

Subcatchment 40S:

Hydrograph



Summary for Subcatchment 41S:

Runoff = 4.81 cfs @ 8.02 hrs, Volume= 86,313 cf, Depth> 2.02"

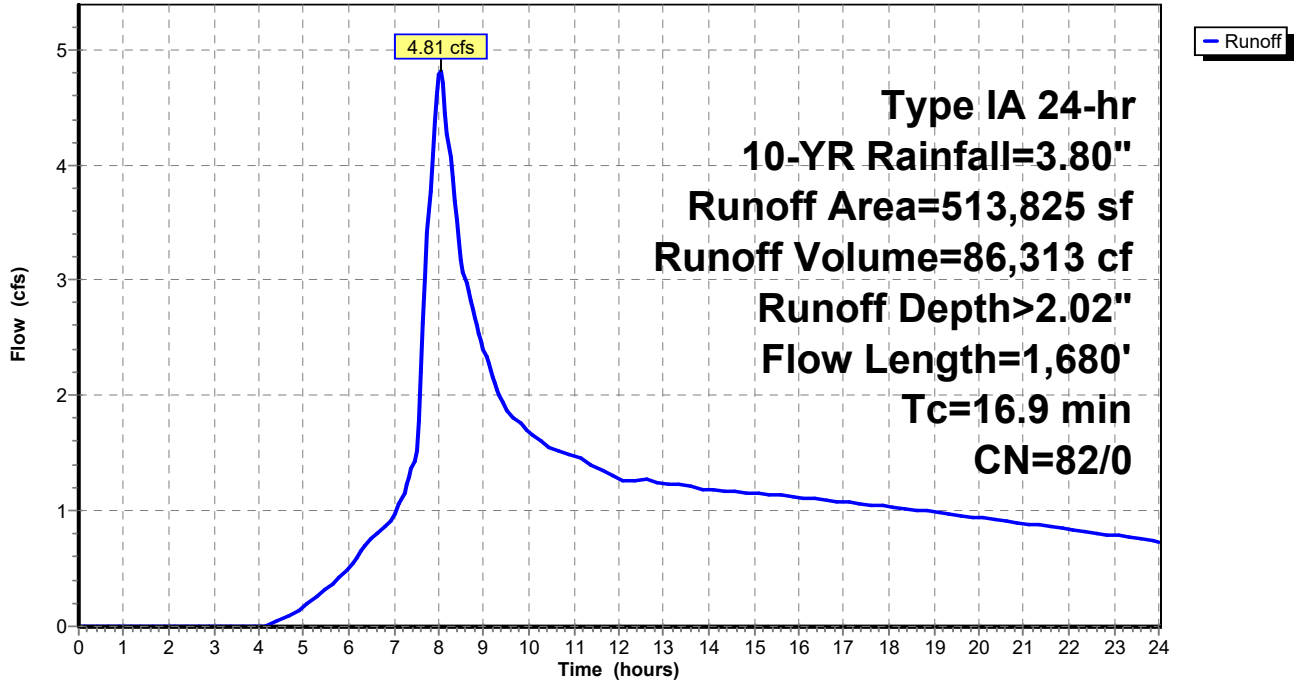
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
513,825	82	Woods/grass comb., Fair, HSG D
513,825		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0780	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
2.7	230	0.0780	1.40		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.4	284	0.0770	1.39		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.5	139	0.0970	1.56		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	137	0.0760	12.73	114.56	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
0.2	137	0.0440	9.69	87.17	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
0.1	68	0.0860	13.54	121.87	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
0.0	36	0.1580	18.35	165.18	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
0.1	78	0.1520	18.00	162.02	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
0.1	98	0.0810	13.14	118.27	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
0.4	253	0.0450	9.79	88.15	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
0.3	170	0.0310	8.13	73.17	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
16.9	1,680	Total			

Subcatchment 41S:

Hydrograph



Summary for Subcatchment 41X: OFFSITE

Runoff = 1.71 cfs @ 8.12 hrs, Volume= 40,897 cf, Depth> 1.99"

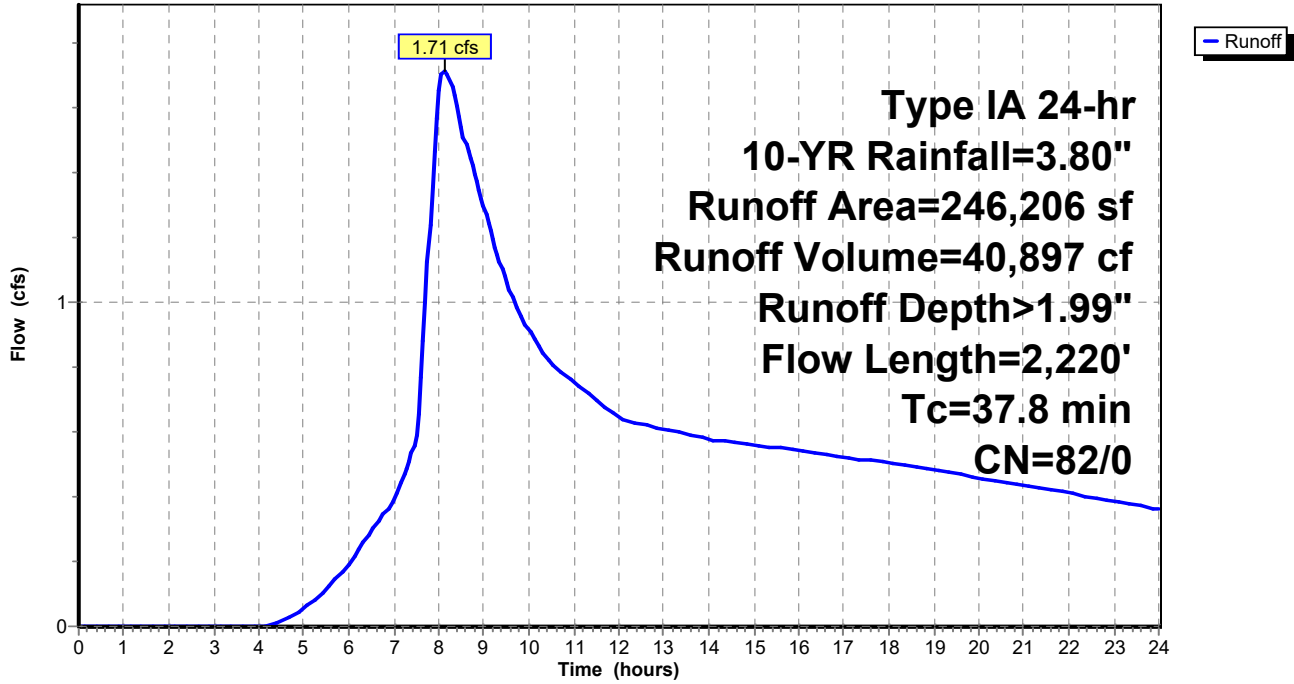
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
246,206	82	Woods/grass comb., Fair, HSG D
246,206		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0330	0.07		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
9.2	500	0.0330	0.91		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
9.3	490	0.0310	0.88		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
4.3	360	0.0770	1.39		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.0	300	0.1100	1.66		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	100	0.0810	13.14	118.27	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
0.4	250	0.0450	9.79	88.15	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
0.3	170	0.0310	8.13	73.17	Channel Flow, Area= 9.0 sf Perim= 10.0' r= 0.90' n= 0.030 Earth, grassed & winding
37.8	2,220	Total			

Subcatchment 41X: OFFSITE

Hydrograph



Summary for Subcatchment 70S:

Runoff = 1.10 cfs @ 8.01 hrs, Volume= 18,426 cf, Depth> 2.02"

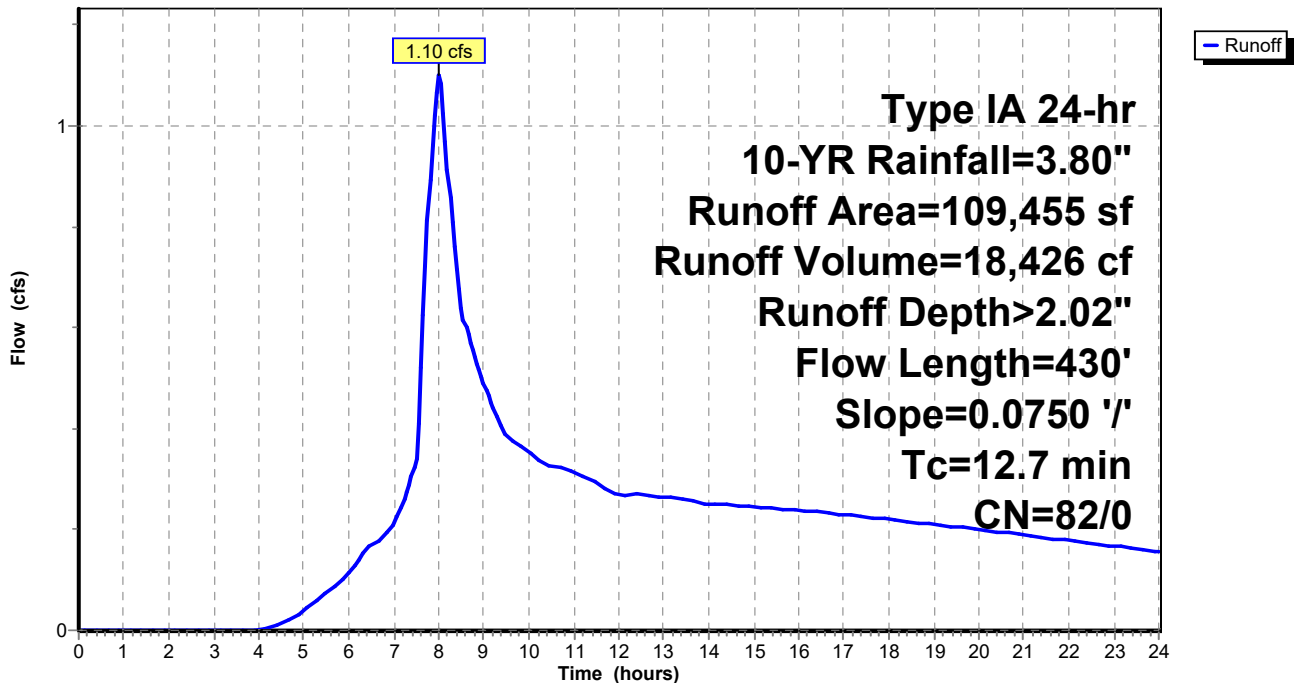
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
109,455	82	Woods/grass comb., Fair, HSG D
109,455		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	50	0.0750	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
4.6	380	0.0750	1.37		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
12.7	430	Total			

Subcatchment 70S:

Hydrograph



Summary for Subcatchment 70X: OFFSITE

Runoff = 0.42 cfs @ 8.03 hrs, Volume= 7,605 cf, Depth> 2.01"

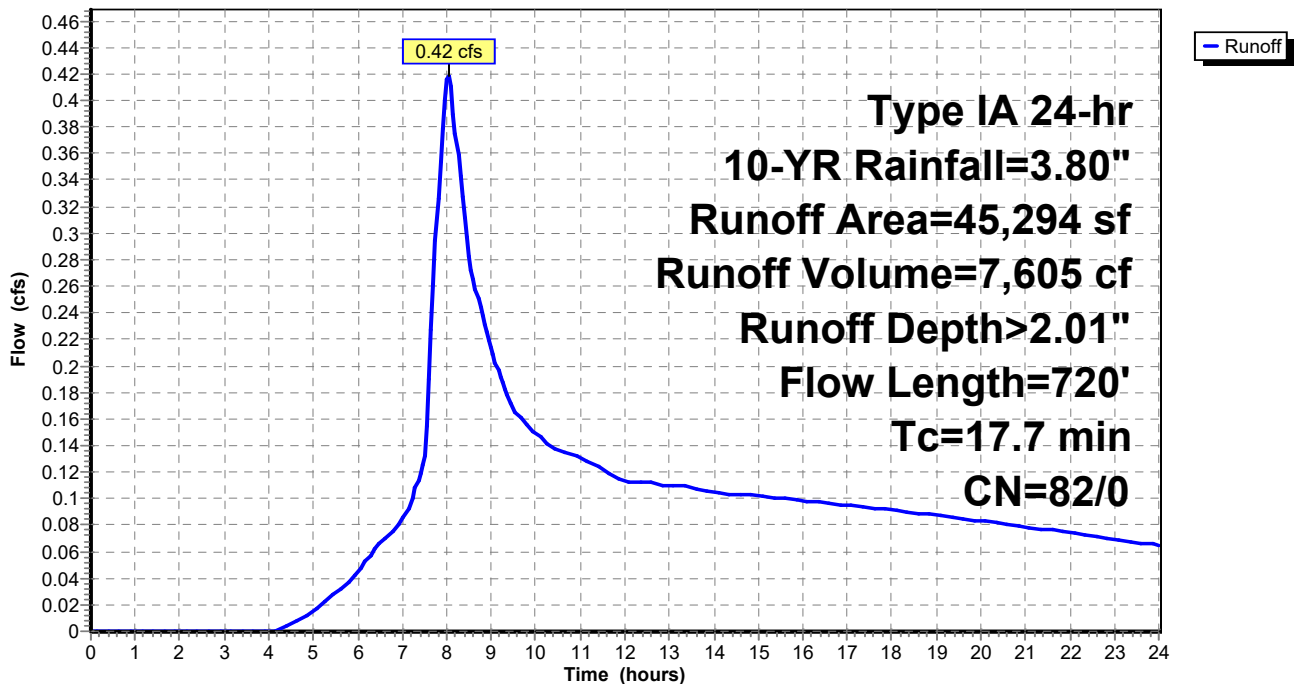
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
45,294	82	Woods/grass comb., Fair, HSG D
45,294		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	50	0.0550	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
3.4	240	0.0550	1.17		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
5.2	430	0.0750	1.37		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
17.7	720	Total			

Subcatchment 70X: OFFSITE

Hydrograph



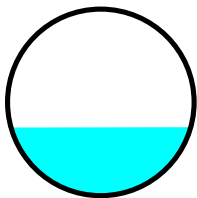
Summary for Reach C4: EX. ELIZABETH CULVERT

Inflow Area = 2,888,599 sf, 0.00% Impervious, Inflow Depth > 2.02" for 10-YR event
 Inflow = 27.23 cfs @ 8.02 hrs, Volume= 485,266 cf
 Outflow = 27.22 cfs @ 8.02 hrs, Volume= 485,227 cf, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 16.73 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 10.73 fps, Avg. Travel Time= 0.1 min

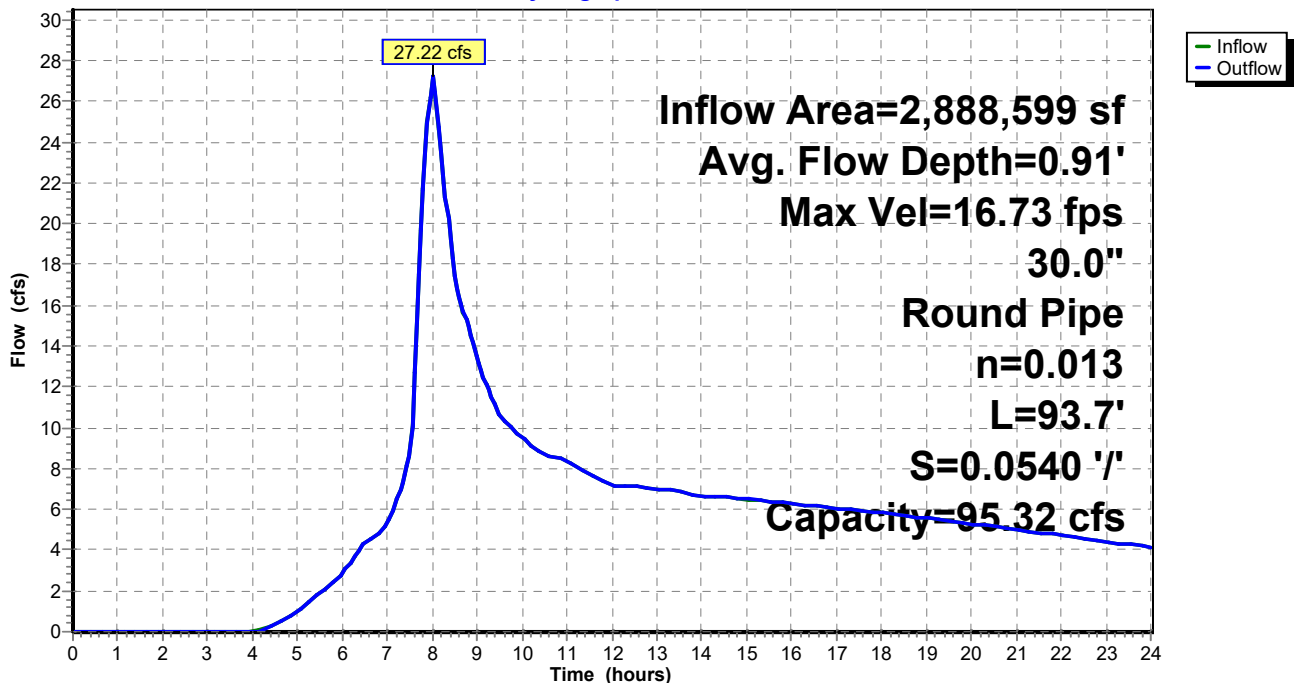
Peak Storage= 152 cf @ 8.02 hrs
 Average Depth at Peak Storage= 0.91'
 Defined Flood Depth= 236.00' Flow Area= 82.5 sf, Capacity= -37,261.47 cfs
 Bank-Full Depth= 2.50' Flow Area= 4.9 sf, Capacity= 95.32 cfs

30.0" Round Pipe
 n= 0.013
 Length= 93.7' Slope= 0.0540 '/'
 Inlet Invert= 228.52', Outlet Invert= 223.46'



Reach C4: EX. ELIZABETH CULVERT

Hydrograph



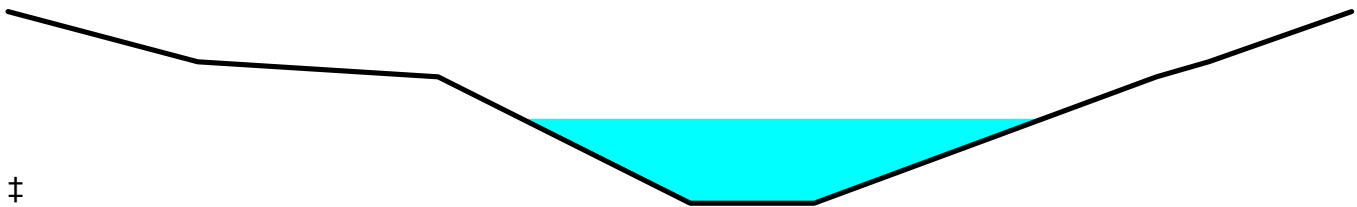
Summary for Reach XC1: EXISTING CHANNEL

Inflow Area = 4,068,227 sf, 0.00% Impervious, Inflow Depth > 1.99" for 10-YR event
 Inflow = 36.65 cfs @ 8.12 hrs, Volume= 674,953 cf
 Outflow = 36.54 cfs @ 8.15 hrs, Volume= 673,886 cf, Atten= 0%, Lag= 1.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.78 fps, Min. Travel Time= 1.9 min
 Avg. Velocity = 1.85 fps, Avg. Travel Time= 2.8 min

Peak Storage= 4,074 cf @ 8.15 hrs
 Average Depth at Peak Storage= 1.68'
 Defined Flood Depth= 3.50' Flow Area= 50.6 sf, Capacity= 195.68 cfs
 Bank-Full Depth= 3.81' Flow Area= 60.3 sf, Capacity= 248.44 cfs

Custom cross-section, Length= 310.0' Slope= 0.0226 '/' (101 Elevation Intervals)
 Constant n= 0.080 Earth, long dense weeds
 Inlet Invert= 189.00', Outlet Invert= 182.00'

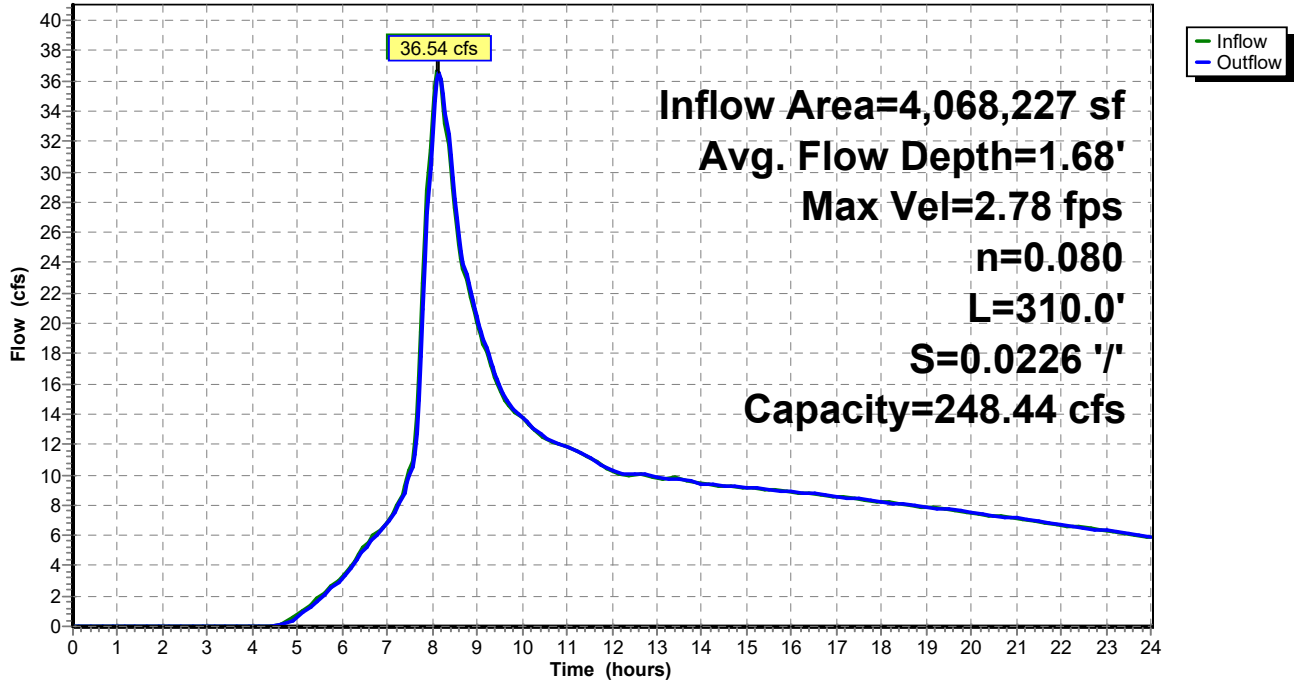


Offset (feet)	Elevation (feet)	Chan.Depth (feet)
-18.00	3.81	0.00
-13.41	2.81	1.00
-7.60	2.51	1.30
-1.50	0.00	3.81
1.50	0.00	3.81
9.78	2.51	1.30
11.04	2.81	1.00
14.50	3.81	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	3.0	0	0.00
2.51	25.6	18.2	7,929	89.18
2.81	31.9	25.4	9,874	103.49
3.81	60.3	33.7	18,701	248.44

Reach XC1: EXISTING CHANNEL

Hydrograph



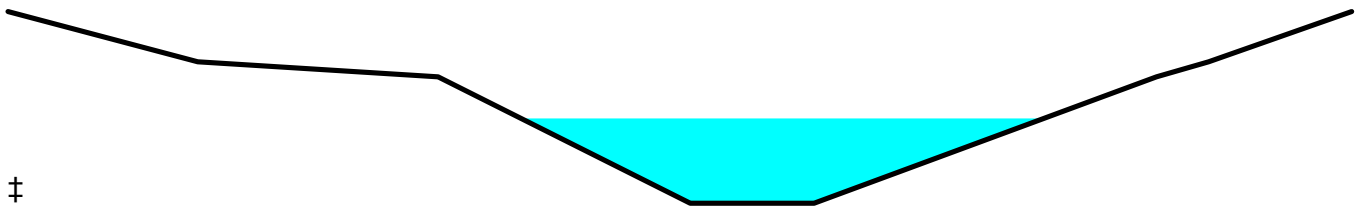
Summary for Reach XC2: EXISTING CHANNEL

Inflow Area = 4,068,227 sf, 0.00% Impervious, Inflow Depth > 1.99" for 10-YR event
 Inflow = 36.75 cfs @ 8.10 hrs, Volume= 676,017 cf
 Outflow = 36.65 cfs @ 8.12 hrs, Volume= 674,953 cf, Atten= 0%, Lag= 1.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.78 fps, Min. Travel Time= 1.9 min
 Avg. Velocity = 1.85 fps, Avg. Travel Time= 2.8 min

Peak Storage= 4,083 cf @ 8.12 hrs
 Average Depth at Peak Storage= 1.68'
 Defined Flood Depth= 3.50' Flow Area= 50.6 sf, Capacity= 195.68 cfs
 Bank-Full Depth= 3.81' Flow Area= 60.3 sf, Capacity= 248.44 cfs

Custom cross-section, Length= 310.0' Slope= 0.0226 '/' (101 Elevation Intervals)
 Constant n= 0.080 Earth, long dense weeds
 Inlet Invert= 189.00', Outlet Invert= 182.00'

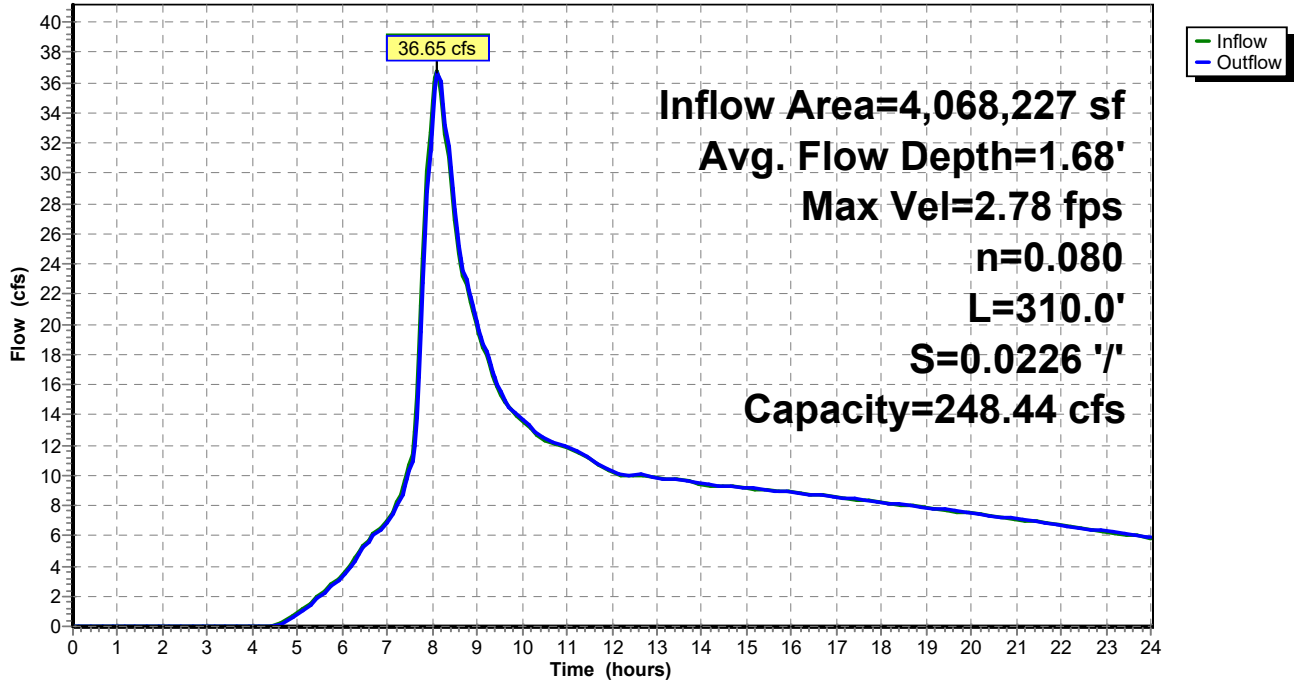


Offset (feet)	Elevation (feet)	Chan.Depth (feet)
-18.00	3.81	0.00
-13.41	2.81	1.00
-7.60	2.51	1.30
-1.50	0.00	3.81
1.50	0.00	3.81
9.78	2.51	1.30
11.04	2.81	1.00
14.50	3.81	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	3.0	0	0.00
2.51	25.6	18.2	7,929	89.18
2.81	31.9	25.4	9,874	103.49
3.81	60.3	33.7	18,701	248.44

Reach XC2: EXISTING CHANNEL

Hydrograph



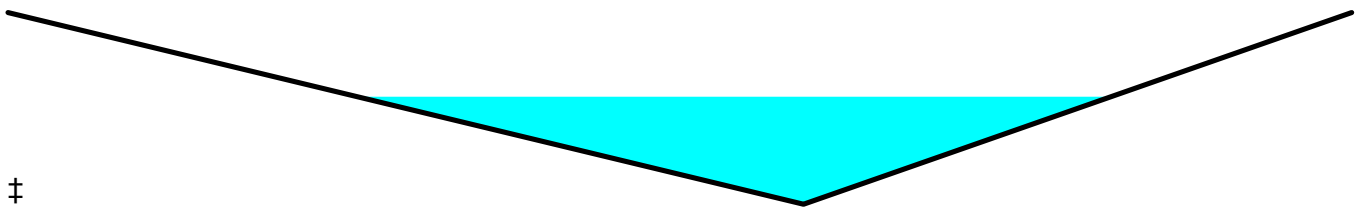
Summary for Reach XC3: EXISTING CHANNEL

Inflow Area = 2,888,599 sf, 0.00% Impervious, Inflow Depth > 2.01" for 10-YR event
 Inflow = 26.47 cfs @ 8.08 hrs, Volume= 483,129 cf
 Outflow = 26.45 cfs @ 8.09 hrs, Volume= 482,684 cf, Atten= 0%, Lag= 1.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.61 fps, Min. Travel Time= 1.1 min
 Avg. Velocity = 1.77 fps, Avg. Travel Time= 1.7 min

Peak Storage= 1,786 cf @ 8.09 hrs
 Average Depth at Peak Storage= 1.09'
 Bank-Full Depth= 1.95' Flow Area= 32.2 sf, Capacity= 123.48 cfs

Custom cross-section, Length= 176.0' Slope= 0.0293 '/'
 Constant n= 0.065
 Inlet Invert= 196.00', Outlet Invert= 190.84'

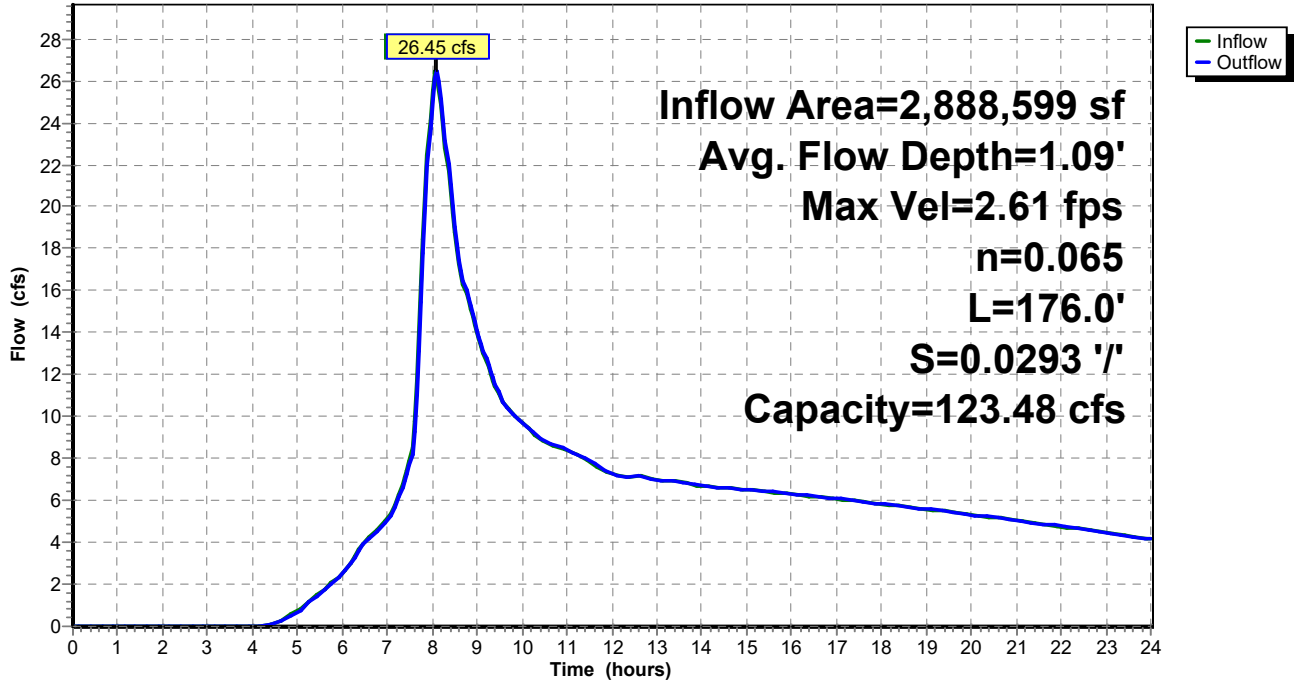


Offset (feet)	Elevation (feet)	Chan.Depth (feet)
-19.57	1.95	0.00
0.00	0.00	1.95
13.49	1.95	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
1.95	32.2	33.3	5,673	123.48

Reach XC3: EXISTING CHANNEL

Hydrograph



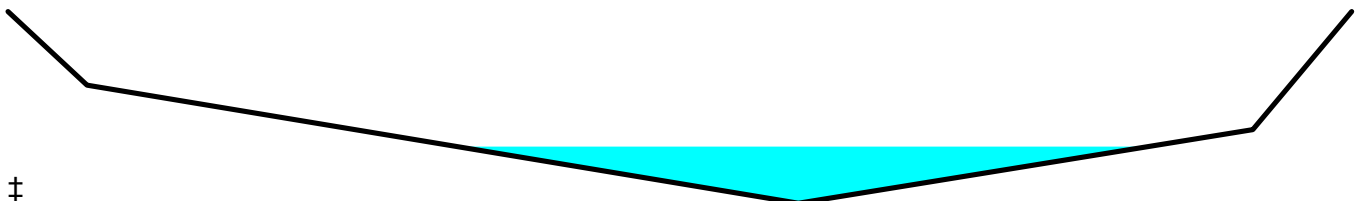
Summary for Reach XC4: EXISTING CHANNEL

Inflow Area = 2,888,599 sf, 0.00% Impervious, Inflow Depth > 2.02" for 10-YR event
 Inflow = 27.22 cfs @ 8.02 hrs, Volume= 485,227 cf
 Outflow = 26.47 cfs @ 8.08 hrs, Volume= 483,129 cf, Atten= 3%, Lag= 3.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 1.96 fps, Min. Travel Time= 5.3 min
 Avg. Velocity = 1.33 fps, Avg. Travel Time= 7.8 min

Peak Storage= 8,420 cf @ 8.08 hrs
 Average Depth at Peak Storage= 0.77'
 Defined Flood Depth= 1.60' Flow Area= 54.7 sf, Capacity= 188.70 cfs
 Bank-Full Depth= 2.60' Flow Area= 119.1 sf, Capacity= 640.20 cfs

Custom cross-section, Length= 625.0' Slope= 0.0400 '/' (102 Elevation Intervals)
 Constant n= 0.080 Earth, long dense weeds
 Inlet Invert= 223.00', Outlet Invert= 198.00'



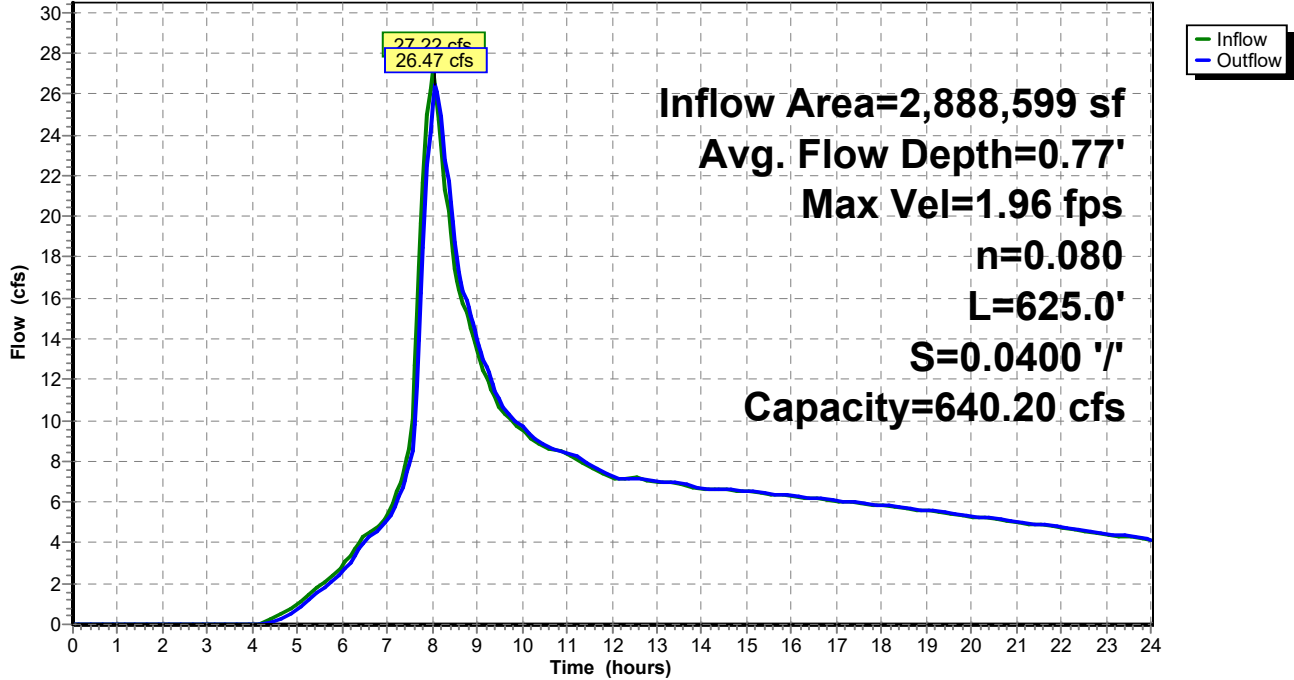
‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
-40.00	2.60	0.00
-36.00	1.60	1.00
0.00	0.00	2.60
23.00	1.00	1.60
28.00	2.60	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
1.00	22.8	45.5	14,219	53.21
1.60	54.7	61.0	34,164	188.70
2.60	119.1	68.4	74,438	640.20

Reach XC4: EXISTING CHANNEL

Hydrograph



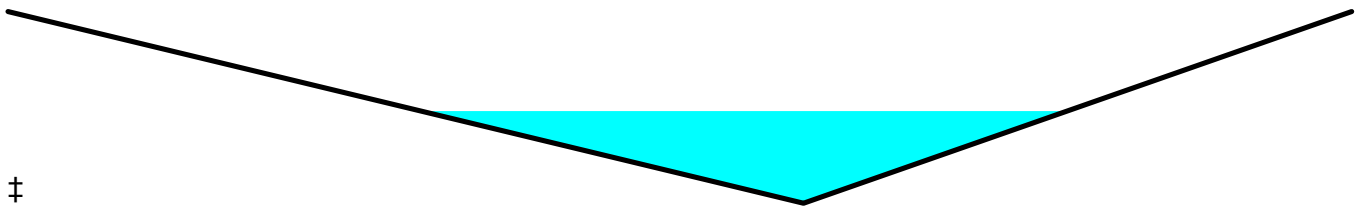
Summary for Reach XC7: EXISTING CHANNEL

Inflow Area = 1,179,628 sf, 0.00% Impervious, Inflow Depth > 1.98" for 10-YR event
 Inflow = 10.95 cfs @ 8.02 hrs, Volume= 194,690 cf
 Outflow = 10.32 cfs @ 8.12 hrs, Volume= 193,334 cf, Atten= 6%, Lag= 5.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 1.39 fps, Min. Travel Time= 8.5 min
 Avg. Velocity = 0.94 fps, Avg. Travel Time= 12.5 min

Peak Storage= 5,281 cf @ 8.12 hrs
 Average Depth at Peak Storage= 0.94'
 Defined Flood Depth= 2.00' Flow Area= 33.9 sf, Capacity= 77.87 cfs
 Bank-Full Depth= 1.95' Flow Area= 32.2 sf, Capacity= 72.93 cfs

Custom cross-section, Length= 710.0' Slope= 0.0155 '/'
 Constant n= 0.080 Earth, long dense weeds
 Inlet Invert= 204.00', Outlet Invert= 193.00'

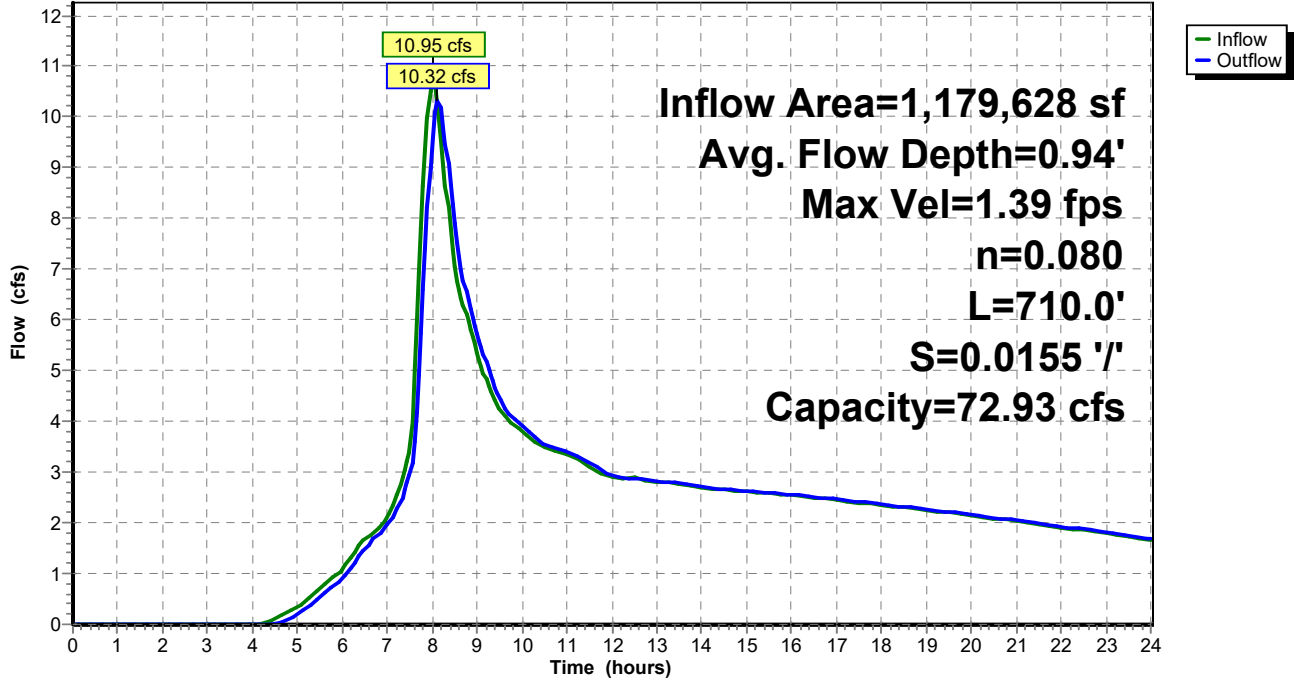


‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)	Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
-19.57	1.95	0.00	0.00	0.0	0.0	0	0.00
0.00	0.00	1.95	1.95	32.2	33.3	22,886	72.93
13.49	1.95	0.00					

Reach XC7: EXISTING CHANNEL

Hydrograph



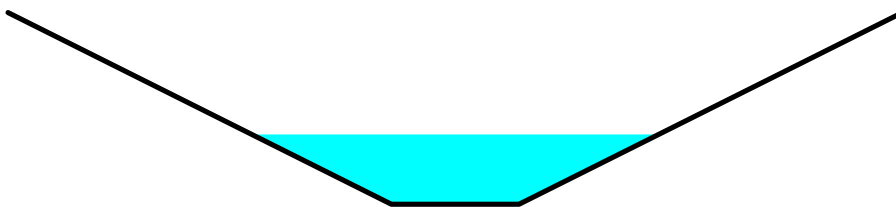
Summary for Reach XC8: EXISTING CHANNEL

Inflow Area = 1,489,663 sf, 0.00% Impervious, Inflow Depth > 2.01" for 10-YR event
 Inflow = 12.69 cfs @ 8.04 hrs, Volume= 249,376 cf
 Outflow = 12.57 cfs @ 8.08 hrs, Volume= 248,742 cf, Atten= 1%, Lag= 2.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.75 fps, Min. Travel Time= 3.0 min
 Avg. Velocity = 1.85 fps, Avg. Travel Time= 4.5 min

Peak Storage= 2,282 cf @ 8.08 hrs
 Average Depth at Peak Storage= 1.09'
 Bank-Full Depth= 3.00' Flow Area= 24.0 sf, Capacity= 116.73 cfs

Custom cross-section, Length= 500.0' Slope= 0.0380 '/'
 Constant n= 0.080
 Inlet Invert= 226.00', Outlet Invert= 207.00'

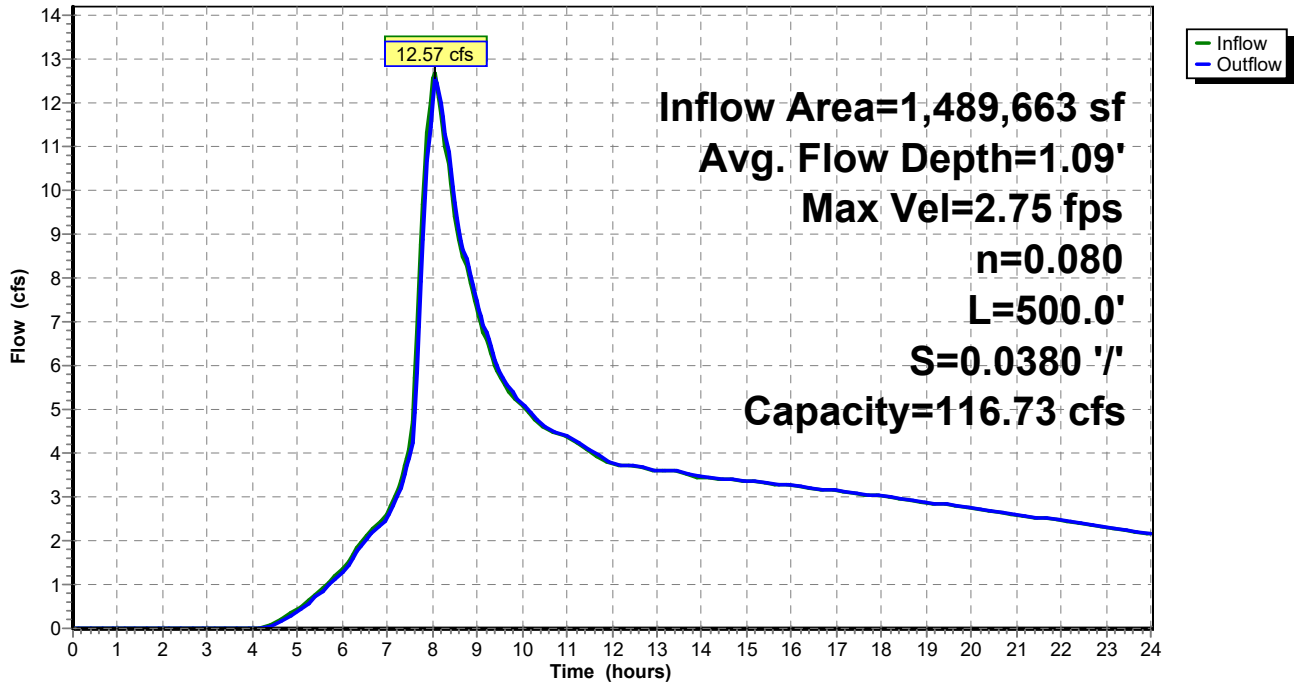


Offset (feet)	Elevation (feet)	Chan.Depth (feet)
-7.00	3.00	0.00
-1.00	0.00	3.00
1.00	0.00	3.00
7.00	3.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	2.0	0	0.00
3.00	24.0	15.4	12,000	116.73

Reach XC8: EXISTING CHANNEL

Hydrograph



Summary for Pond C1: EX. REDMOND HILL CULVERTS

Inflow Area = 4,068,227 sf, 0.00% Impervious, Inflow Depth > 1.99" for 10-YR event
 Inflow = 36.65 cfs @ 8.12 hrs, Volume= 674,953 cf
 Outflow = 36.65 cfs @ 8.12 hrs, Volume= 674,953 cf, Atten= 0%, Lag= 0.0 min
 Primary = 36.65 cfs @ 8.12 hrs, Volume= 674,953 cf

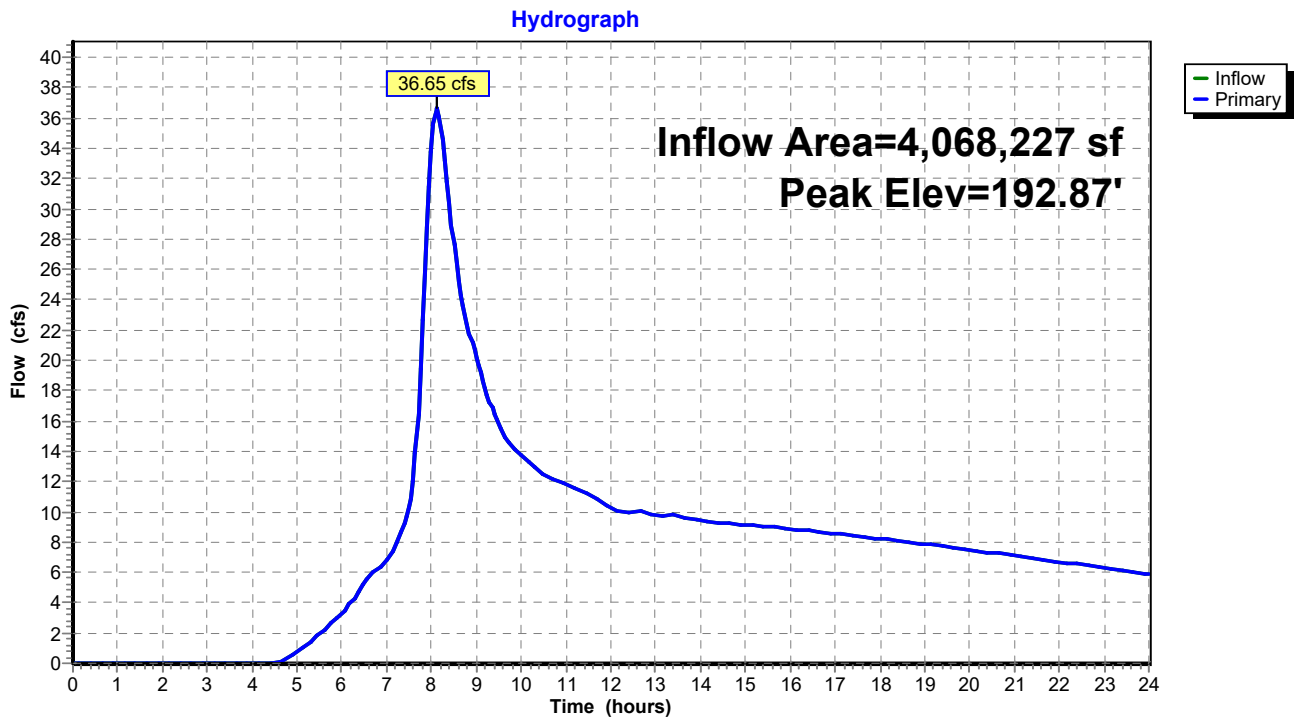
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 192.87' @ 8.12 hrs
 Flood Elev= 195.23'

Device	Routing	Invert	Outlet Devices
#1	Primary	190.83'	30.0" Round Culvert L= 93.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 190.83' / 189.53' S= 0.0140 '/ Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Primary	190.84'	30.0" Round Culvert L= 93.2' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 190.84' / 189.52' S= 0.0142 '/ Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=36.53 cfs @ 8.12 hrs HW=192.86' TW=190.68' (Dynamic Tailwater)

- 1=Culvert (Inlet Controls 18.33 cfs @ 4.28 fps)
- 2=Culvert (Inlet Controls 18.20 cfs @ 4.27 fps)

Pond C1: EX. REDMOND HILL CULVERTS



Summary for Pond C2: EX. W 2ND CULVERTS

Inflow Area = 4,068,227 sf, 0.00% Impervious, Inflow Depth > 1.99" for 10-YR event
 Inflow = 36.75 cfs @ 8.10 hrs, Volume= 676,017 cf
 Outflow = 36.75 cfs @ 8.10 hrs, Volume= 676,017 cf, Atten= 0%, Lag= 0.0 min
 Primary = 36.75 cfs @ 8.10 hrs, Volume= 676,017 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 192.87' @ 8.10 hrs
 Flood Elev= 195.23'

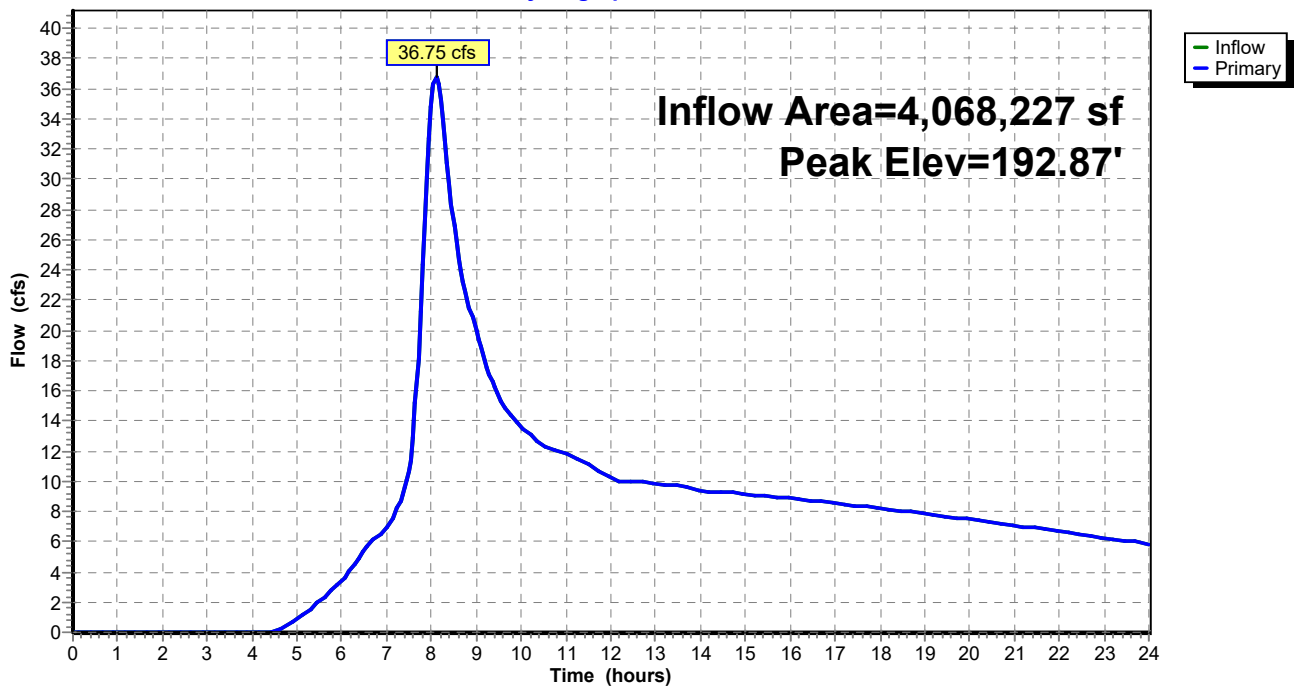
Device	Routing	Invert	Outlet Devices
#1	Primary	190.83'	30.0" Round Culvert L= 93.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 190.83' / 189.53' S= 0.0140 '/ Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Primary	190.84'	30.0" Round Culvert L= 93.2' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 190.84' / 189.52' S= 0.0142 '/ Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=36.75 cfs @ 8.10 hrs HW=192.87' TW=190.68' (Dynamic Tailwater)

- 1=Culvert (Inlet Controls 18.44 cfs @ 4.29 fps)
- 2=Culvert (Inlet Controls 18.31 cfs @ 4.28 fps)

Pond C2: EX. W 2ND CULVERTS

Hydrograph



Summary for Pond C3: EX. BROOKSIDE CULVERTS

Inflow Area = 2,888,599 sf, 0.00% Impervious, Inflow Depth > 2.01" for 10-YR event
 Inflow = 26.47 cfs @ 8.08 hrs, Volume= 483,129 cf
 Outflow = 26.47 cfs @ 8.08 hrs, Volume= 483,129 cf, Atten= 0%, Lag= 0.0 min
 Primary = 26.47 cfs @ 8.08 hrs, Volume= 483,129 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 199.77' @ 8.08 hrs
 Flood Elev= 201.10'

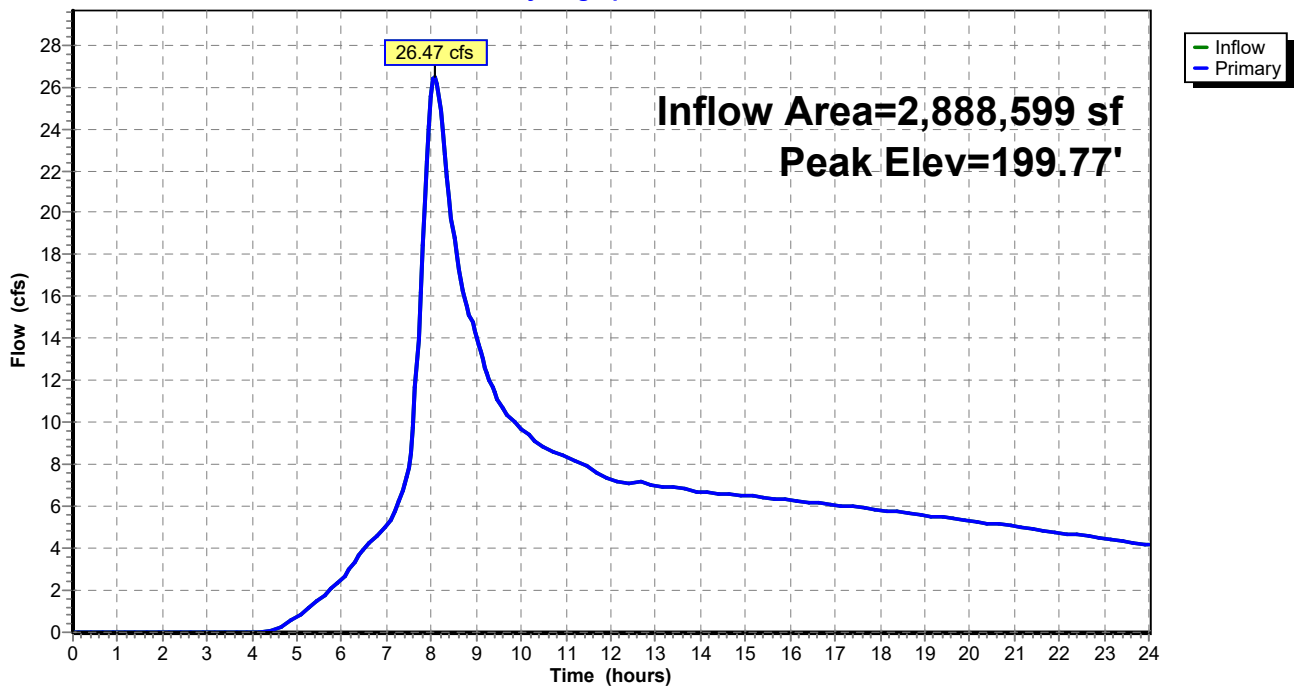
Device	Routing	Invert	Outlet Devices
#1	Primary	197.67'	30.0" Round Culvert L= 69.9' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 197.67' / 196.39' S= 0.0183 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Primary	198.60'	30.0" Round Culvert L= 70.3' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 198.60' / 197.08' S= 0.0216 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=26.39 cfs @ 8.08 hrs HW=199.77' TW=197.09' (Dynamic Tailwater)

- 1=Culvert (Inlet Controls 19.11 cfs @ 4.35 fps)
- 2=Culvert (Inlet Controls 7.28 cfs @ 3.24 fps)

Pond C3: EX. BROOKSIDE CULVERTS

Hydrograph



Summary for Pond R50:

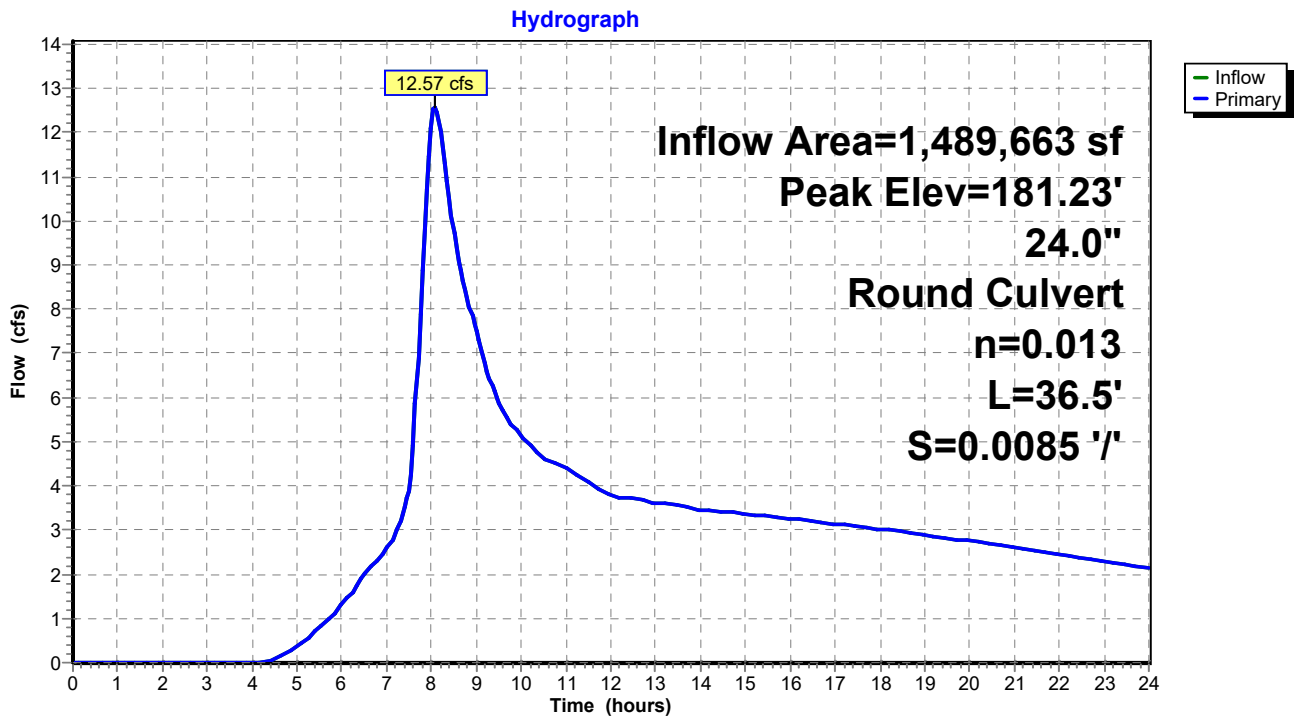
Inflow Area = 1,489,663 sf, 0.00% Impervious, Inflow Depth > 2.00" for 10-YR event
 Inflow = 12.57 cfs @ 8.08 hrs, Volume= 248,742 cf
 Outflow = 12.57 cfs @ 8.08 hrs, Volume= 248,742 cf, Atten= 0%, Lag= 0.0 min
 Primary = 12.57 cfs @ 8.08 hrs, Volume= 248,742 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 181.23' @ 8.08 hrs
 Flood Elev= 184.17'

Device	Routing	Invert	Outlet Devices
#1	Primary	179.32'	24.0" Round Culvert L= 36.5' Ke= 0.500 Inlet / Outlet Invert= 179.32' / 179.01' S= 0.0085 '/' Cc= 0.900 n= 0.013 PVC, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=12.54 cfs @ 8.08 hrs HW=181.23' TW=0.00' (Dynamic Tailwater)
 ←1=Culvert (Barrel Controls 12.54 cfs @ 5.22 fps)

Pond R50:



Summary for Pond R51:

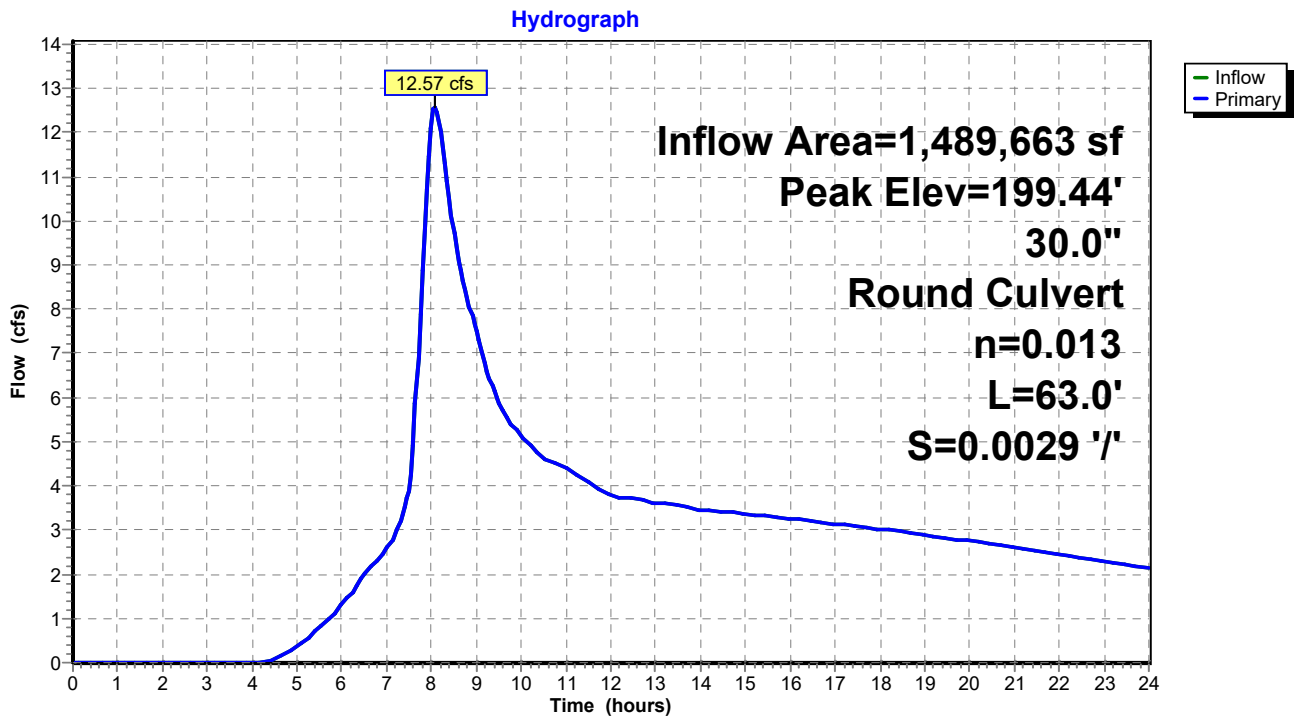
Inflow Area = 1,489,663 sf, 0.00% Impervious, Inflow Depth > 2.00" for 10-YR event
 Inflow = 12.57 cfs @ 8.08 hrs, Volume= 248,742 cf
 Outflow = 12.57 cfs @ 8.08 hrs, Volume= 248,742 cf, Atten= 0%, Lag= 0.0 min
 Primary = 12.57 cfs @ 8.08 hrs, Volume= 248,742 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 199.44' @ 8.08 hrs
 Flood Elev= 206.49'

Device	Routing	Invert	Outlet Devices
#1	Primary	197.59'	30.0" Round Culvert L= 63.0' Ke= 0.500 Inlet / Outlet Invert= 197.59' / 197.41' S= 0.0029 '/' Cc= 0.900 n= 0.013 PVC, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=12.54 cfs @ 8.08 hrs HW=199.43' TW=181.23' (Dynamic Tailwater)
 1=Culvert (Barrel Controls 12.54 cfs @ 4.50 fps)

Pond R51:



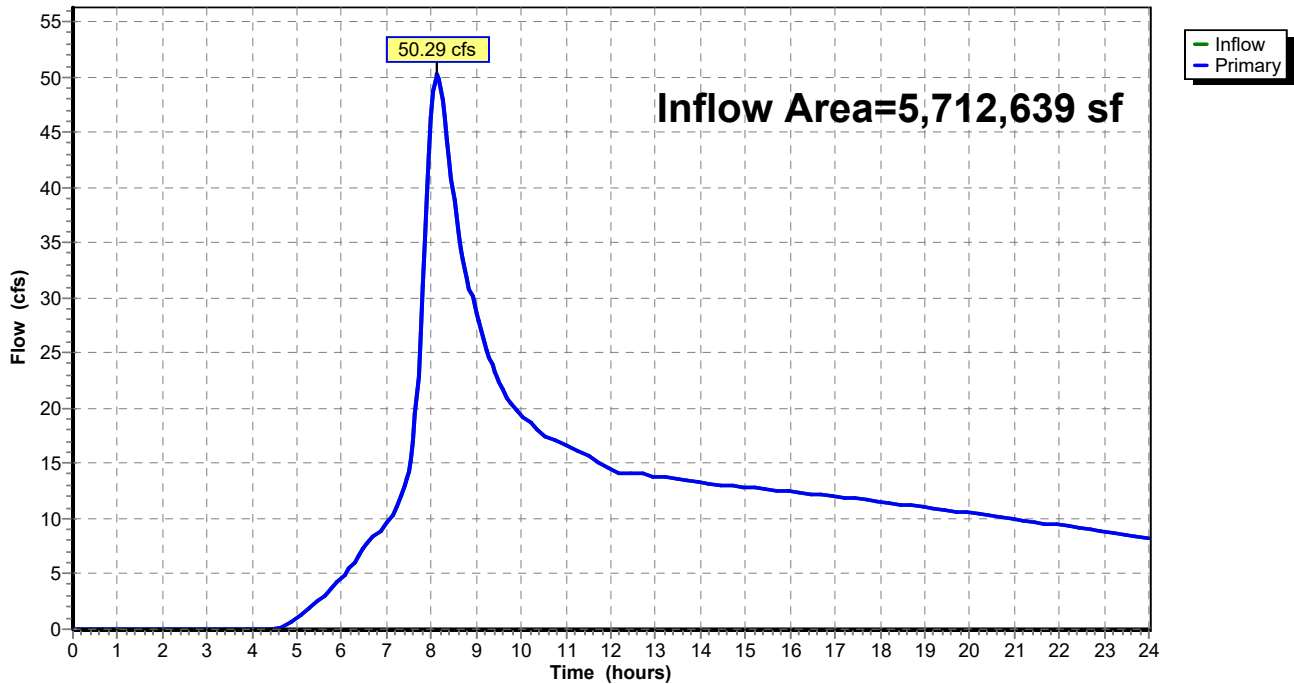
Summary for Link W60: TOTAL

Inflow Area = 5,712,639 sf, 0.00% Impervious, Inflow Depth > 1.99" for 10-YR event
Inflow = 50.29 cfs @ 8.13 hrs, Volume= 948,659 cf
Primary = 50.29 cfs @ 8.13 hrs, Volume= 948,659 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link W60: TOTAL

Hydrograph



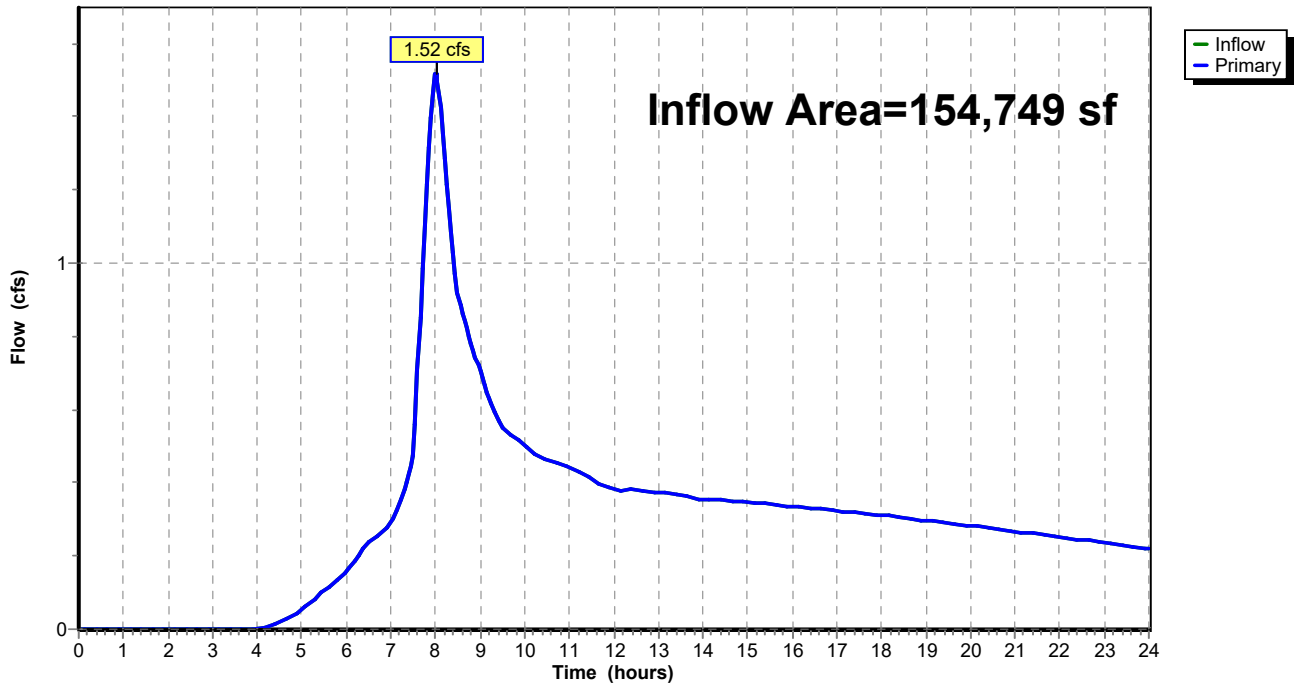
Summary for Link W70:

Inflow Area = 154,749 sf, 0.00% Impervious, Inflow Depth > 2.02" for 10-YR event
Inflow = 1.52 cfs @ 8.01 hrs, Volume= 26,032 cf
Primary = 1.52 cfs @ 8.01 hrs, Volume= 26,032 cf, Atten= 0%, Lag= 0.0 min

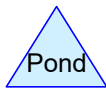
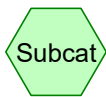
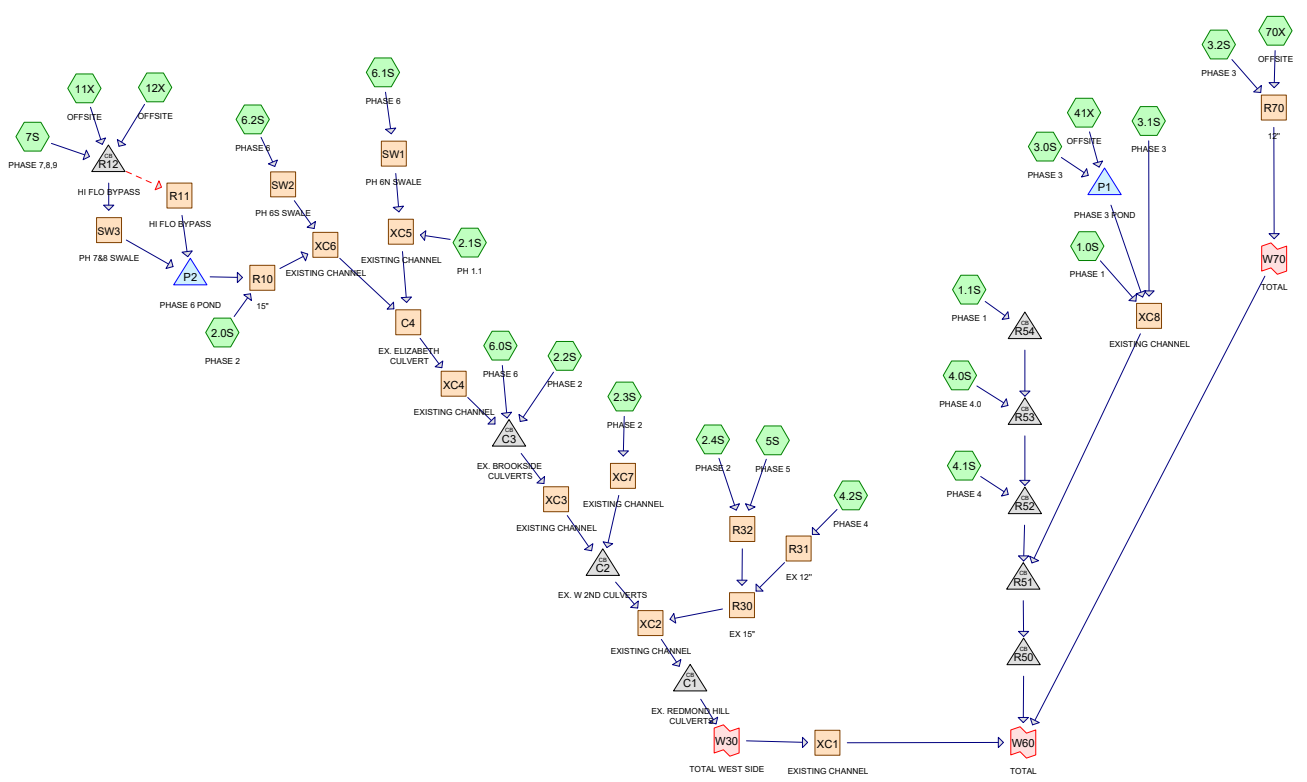
Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link W70:

Hydrograph



Appendix B: HydroCAD Reports for Project Area Post-Developed Condition



Routing Diagram for 5147-02 POST Dev
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5147-02 POST Dev

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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
7,920	98	2640 * 3 LOTS (4.2S)
18,480	98	2640 * 7 LOTS (4.1S)
21,120	98	2640 * 8 LOTS (1.0S)
54,172	74	>75% Grass cover, Good, HSG C (2.2S, 2.3S, 6.0S)
2,642,230	80	>75% Grass cover, Good, HSG D (1.0S, 1.1S, 2.0S, 2.1S, 2.2S, 2.3S, 2.4S, 3.0S, 3.1S, 3.2S, 4.0S, 4.1S, 4.2S, 5S, 6.0S, 6.1S, 6.2S, 7S)
58,080	98	Lot Impervious at 2640SF*11 Lot (1.1S, 2.4S)
295,680	98	Lot Impervious at 2640SF*112Lot (7S)
31,680	98	Lot Impervious at 2640SF*12Lot (6.1S)
34,320	98	Lot Impervious at 2640SF*13 Lot (3.2S)
50,160	98	Lot Impervious at 2640SF*19 Lot (6.0S)
58,080	98	Lot Impervious at 2640SF*22 Lot (2.2S)
60,720	98	Lot Impervious at 2640SF*23 Lot (2.3S)
63,360	98	Lot Impervious at 2640SF*24Lot (6.2S)
68,640	98	Lot Impervious at 2640SF*26 Lot (4.0S)
100,320	98	Lot Impervious at 2640SF*38 Lot (3.0S)
7,920	98	Lot Impervious at 2640SF*3Lot (2.0S)
139,920	98	Lot Impervious at 2640SF*53 Lot (5S)
18,480	98	Lot Impervious at 2640SF*7Lot (2.1S)
900,179	98	Paved roads w/curbs & sewers, HSG D (1.0S, 1.1S, 2.0S, 2.1S, 2.2S, 2.4S, 3.0S, 3.1S, 3.2S, 4.0S, 5S, 6.0S, 6.1S, 6.2S, 7S)
1,081,425	82	Woods/grass comb., Fair, HSG D (11X, 12X, 41X, 70X)
5,712,886	86	TOTAL AREA

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SBUH method, Split Pervious/Imperv.
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.0S: PHASE 1	Runoff Area=164,905 sf 17.66% Impervious Runoff Depth>2.17" Tc=5.0 min CN=80/98 Runoff=1.95 cfs 29,829 cf
Subcatchment1.1S: PHASE 1	Runoff Area=99,605 sf 61.82% Impervious Runoff Depth>2.92" Tc=5.0 min CN=80/98 Runoff=1.63 cfs 24,201 cf
Subcatchment2.0S: PHASE 2	Runoff Area=40,989 sf 50.01% Impervious Runoff Depth>2.72" Tc=5.0 min CN=80/98 Runoff=0.62 cfs 9,278 cf
Subcatchment2.1S: PH 1.1	Runoff Area=68,593 sf 28.40% Impervious Runoff Depth>2.35" Tc=5.0 min CN=80/98 Runoff=0.89 cfs 13,443 cf
Subcatchment2.2S: PHASE 2	Runoff Area=271,987 sf 53.84% Impervious Runoff Depth>2.75" Tc=5.0 min CN=79/98 Runoff=4.16 cfs 62,245 cf
Subcatchment2.3S: PHASE 2	Runoff Area=228,387 sf 26.59% Impervious Runoff Depth>2.27" Tc=5.0 min CN=79/98 Runoff=2.81 cfs 43,129 cf
Subcatchment2.4S: PHASE 2	Runoff Area=126,347 sf 55.99% Impervious Runoff Depth>2.82" Tc=5.0 min CN=80/98 Runoff=2.00 cfs 29,662 cf
Subcatchment3.0S: PHASE 3	Runoff Area=420,571 sf 47.48% Impervious Runoff Depth>2.67" Tc=5.0 min CN=80/98 Runoff=6.27 cfs 93,704 cf
Subcatchment3.1S: PHASE 3	Runoff Area=113,030 sf 15.87% Impervious Runoff Depth>2.14" Tc=5.0 min CN=80/98 Runoff=1.31 cfs 20,162 cf
Subcatchment3.2S: PHASE 3	Runoff Area=124,766 sf 52.60% Impervious Runoff Depth>2.76" Tc=5.0 min CN=80/98 Runoff=1.93 cfs 28,696 cf
Subcatchment4.0S: PHASE 4.0	Runoff Area=240,664 sf 48.61% Impervious Runoff Depth>2.69" Tc=5.0 min CN=80/98 Runoff=3.61 cfs 54,003 cf
Subcatchment4.1S: PHASE 4	Runoff Area=67,606 sf 27.33% Impervious Runoff Depth>2.33" Tc=5.0 min CN=80/98 Runoff=0.87 cfs 13,148 cf
Subcatchment4.2S: PHASE 4	Runoff Area=46,947 sf 16.87% Impervious Runoff Depth>2.16" Tc=5.0 min CN=80/98 Runoff=0.55 cfs 8,440 cf
Subcatchment5S: PHASE 5	Runoff Area=457,405 sf 53.77% Impervious Runoff Depth>2.78" Tc=5.0 min CN=80/98 Runoff=7.12 cfs 105,953 cf
Subcatchment6.0S: PHASE 6	Runoff Area=222,791 sf 48.06% Impervious Runoff Depth>2.68" Tc=5.0 min CN=80/98 Runoff=3.33 cfs 49,820 cf
Subcatchment6.1S: PHASE 6	Runoff Area=178,239 sf 42.64% Impervious Runoff Depth>2.59" Tc=5.0 min CN=80/98 Runoff=2.57 cfs 38,500 cf

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Type IA 24-hr 10-YR Rainfall=3.80"

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Subcatchment6.2S: PHASE 6	Runoff Area=355,074 sf 27.33% Impervious Runoff Depth>2.33" Tc=5.0 min CN=80/98 Runoff=4.54 cfs 69,054 cf
Subcatchment7S: PHASE 7,8,9	Runoff Area=1,403,555 sf 40.88% Impervious Runoff Depth>2.56" Tc=5.0 min CN=80/98 Runoff=19.94 cfs 299,704 cf
Subcatchment11X: OFFSITE	Runoff Area=239,258 sf 0.00% Impervious Runoff Depth>2.02" Flow Length=670' Tc=11.5 min CN=82/0 Runoff=2.45 cfs 40,303 cf
Subcatchment12X: OFFSITE	Runoff Area=550,580 sf 0.00% Impervious Runoff Depth>2.01" Flow Length=1,350' Tc=18.9 min CN=82/0 Runoff=4.99 cfs 92,390 cf
Subcatchment41X: OFFSITE	Runoff Area=233,996 sf 0.00% Impervious Runoff Depth>2.00" Flow Length=1,410' Tc=35.5 min CN=82/0 Runoff=1.67 cfs 38,918 cf
Subcatchment70X: OFFSITE	Runoff Area=57,591 sf 0.00% Impervious Runoff Depth>2.02" Flow Length=570' Tc=17.4 min CN=82/0 Runoff=0.53 cfs 9,672 cf
Reach C4: EX. ELIZABETH	Avg. Flow Depth=0.73' Max Vel=14.84 fps Inflow=17.67 cfs 477,371 cf 30.0" Round Pipe n=0.013 L=93.7' S=0.0540 ' ' Capacity=95.32 cfs Outflow=17.67 cfs 477,328 cf
Reach R10: 15"	Avg. Flow Depth=0.79' Max Vel=16.73 fps Inflow=13.64 cfs 358,585 cf 15.0" Round Pipe n=0.013 L=76.8' S=0.0850 ' ' Capacity=18.84 cfs Outflow=13.66 cfs 358,561 cf
Reach R11: HI FLO BYPASS	Avg. Flow Depth=1.16' Max Vel=13.62 fps Inflow=23.12 cfs 426,746 cf 21.0" Round Pipe n=0.013 L=30.0' S=0.0350 ' ' Capacity=29.64 cfs Outflow=23.12 cfs 426,735 cf
Reach R30: EX 15"	Avg. Flow Depth=1.09' Max Vel=8.55 fps Inflow=9.66 cfs 144,047 cf 15.0" Round Pipe n=0.013 L=230.0' S=0.0203 ' ' Capacity=9.20 cfs Outflow=9.66 cfs 144,002 cf
Reach R31: EX 12"	Avg. Flow Depth=0.14' Max Vel=8.51 fps Inflow=0.55 cfs 8,440 cf 12.0" Round Pipe n=0.013 L=120.6' S=0.1475 ' ' Capacity=13.68 cfs Outflow=0.55 cfs 8,438 cf
Reach R32:	Avg. Flow Depth=0.58' Max Vel=16.17 fps Inflow=9.11 cfs 135,616 cf 15.0" Round Pipe n=0.013 L=65.0' S=0.1000 ' ' Capacity=20.43 cfs Outflow=9.11 cfs 135,609 cf
Reach R70: 12"	Avg. Flow Depth=0.61' Max Vel=4.88 fps Inflow=2.44 cfs 38,368 cf 12.0" Round Pipe n=0.013 L=139.3' S=0.0100 ' ' Capacity=3.56 cfs Outflow=2.45 cfs 38,354 cf
Reach SW1: PH 6N SWALE	Avg. Flow Depth=0.68' Max Vel=0.29 fps Inflow=2.57 cfs 38,500 cf n=0.240 L=102.0' S=0.0050 ' ' Capacity=11.01 cfs Outflow=2.54 cfs 38,298 cf
Reach SW2: PH 6S SWALE	Avg. Flow Depth=0.93' Max Vel=0.35 fps Inflow=4.54 cfs 69,054 cf n=0.240 L=111.0' S=0.0050 ' ' Capacity=10.96 cfs Outflow=4.50 cfs 68,720 cf
Reach SW3: PH 7&8 SWALE	Avg. Flow Depth=0.37' Max Vel=0.35 fps Inflow=4.22 cfs 5,651 cf n=0.240 L=234.0' S=0.0130 ' ' Capacity=37.96 cfs Outflow=3.45 cfs 5,650 cf
Reach XC1: EXISTING CHANNEL	Avg. Flow Depth=1.53' Max Vel=2.63 fps Inflow=29.76 cfs 772,080 cf n=0.080 L=310.0' S=0.0226 ' ' Capacity=248.44 cfs Outflow=29.63 cfs 770,897 cf

Reach XC2: EXISTING CHANNEL Avg. Flow Depth=1.53' Max Vel=2.63 fps Inflow=29.89 cfs 773,262 cf
n=0.080 L=310.0' S=0.0226 '/ Capacity=248.44 cfs Outflow=29.76 cfs 772,080 cf

Reach XC3: EXISTING CHANNEL Avg. Flow Depth=0.99' Max Vel=2.44 fps Inflow=20.33 cfs 587,079 cf
n=0.065 L=176.0' S=0.0293 '/ Capacity=123.48 cfs Outflow=20.31 cfs 586,531 cf

Reach XC4: EXISTING CHANNEL Avg. Flow Depth=0.66' Max Vel=1.77 fps Inflow=17.67 cfs 477,328 cf
n=0.080 L=625.0' S=0.0400 '/ Capacity=640.20 cfs Outflow=17.30 cfs 475,014 cf

Reach XC5: EXISTING CHANNEL Avg. Flow Depth=0.37' Max Vel=0.73 fps Inflow=3.42 cfs 51,741 cf
n=0.240 L=650.0' S=0.0631 '/ Capacity=39.11 cfs Outflow=3.07 cfs 51,022 cf

Reach XC6: EXISTING CHANNEL Avg. Flow Depth=0.94' Max Vel=1.21 fps Inflow=15.74 cfs 427,281 cf
n=0.240 L=172.0' S=0.0581 '/ Capacity=37.55 cfs Outflow=15.70 cfs 426,349 cf

Reach XC7: EXISTING CHANNEL Avg. Flow Depth=0.56' Max Vel=0.98 fps Inflow=2.81 cfs 43,129 cf
n=0.080 L=710.0' S=0.0155 '/ Capacity=72.93 cfs Outflow=2.58 cfs 42,730 cf

Reach XC8: EXISTING CHANNEL Avg. Flow Depth=0.86' Max Vel=2.42 fps Inflow=7.82 cfs 159,453 cf
n=0.080 L=500.0' S=0.0380 '/ Capacity=116.73 cfs Outflow=7.70 cfs 158,986 cf

Pond C1: EX. REDMOND HILL CULVERTS Peak Elev=192.61' Inflow=29.76 cfs 772,080 cf
Outflow=29.76 cfs 772,080 cf

Pond C2: EX. W 2ND CULVERTS Peak Elev=192.30' Inflow=21.66 cfs 629,261 cf
Outflow=21.66 cfs 629,261 cf

Pond C3: EX. BROOKSIDE CULVERTS Peak Elev=199.51' Inflow=20.33 cfs 587,079 cf
Outflow=20.33 cfs 587,079 cf

Pond P1: PHASE 3 POND Peak Elev=267.41' Storage=25,404 cf Inflow=7.87 cfs 132,623 cf
Outflow=5.61 cfs 109,463 cf

Pond P2: PHASE 6 POND Peak Elev=278.98' Storage=92,980 cf Inflow=26.27 cfs 432,385 cf
Outflow=13.39 cfs 349,307 cf

Pond R12: HI FLO BYPASS Peak Elev=285.40' Inflow=27.34 cfs 432,397 cf
Primary=4.22 cfs 5,651 cf Secondary=23.12 cfs 426,746 cf Outflow=27.34 cfs 432,397 cf

Pond R50: Peak Elev=181.13' Inflow=11.68 cfs 250,339 cf
24.0" Round Culvert n=0.013 L=36.5' S=0.0085 '/ Outflow=11.68 cfs 250,339 cf

Pond R51: Peak Elev=199.36' Inflow=11.68 cfs 250,339 cf
30.0" Round Culvert n=0.013 L=63.0' S=0.0029 '/ Outflow=11.68 cfs 250,339 cf

Pond R52: Peak Elev=217.39' Inflow=6.11 cfs 91,353 cf
18.0" Round Culvert n=0.013 L=141.0' S=0.0596 '/ Outflow=6.11 cfs 91,353 cf

Pond R53: Peak Elev=238.93' Inflow=5.25 cfs 78,204 cf
12.0" Round Culvert n=0.013 L=54.8' S=0.0549 '/ Outflow=5.25 cfs 78,204 cf

5147-02 POST Dev

Type IA 24-hr 10-YR Rainfall=3.80"

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Pond R54:

Peak Elev=257.67' Inflow=1.63 cfs 24,201 cf
12.0" Round Culvert n=0.013 L=368.7' S=0.0550 ' Outflow=1.63 cfs 24,201 cf

Link W30: TOTAL WEST SIDE

Inflow=29.76 cfs 772,080 cf
Primary=29.76 cfs 772,080 cf

Link W60: TOTAL

Inflow=43.06 cfs 1,059,590 cf
Primary=43.06 cfs 1,059,590 cf

Link W70: TOTAL

Inflow=2.45 cfs 38,354 cf
Primary=2.45 cfs 38,354 cf

Total Runoff Area = 5,712,886 sf Runoff Volume = 1,174,255 cf Average Runoff Depth = 2.47"
66.13% Pervious = 3,777,827 sf 33.87% Impervious = 1,935,059 sf

Summary for Subcatchment 1.0S: PHASE 1

Runoff = 1.95 cfs @ 7.97 hrs, Volume= 29,829 cf, Depth> 2.17"

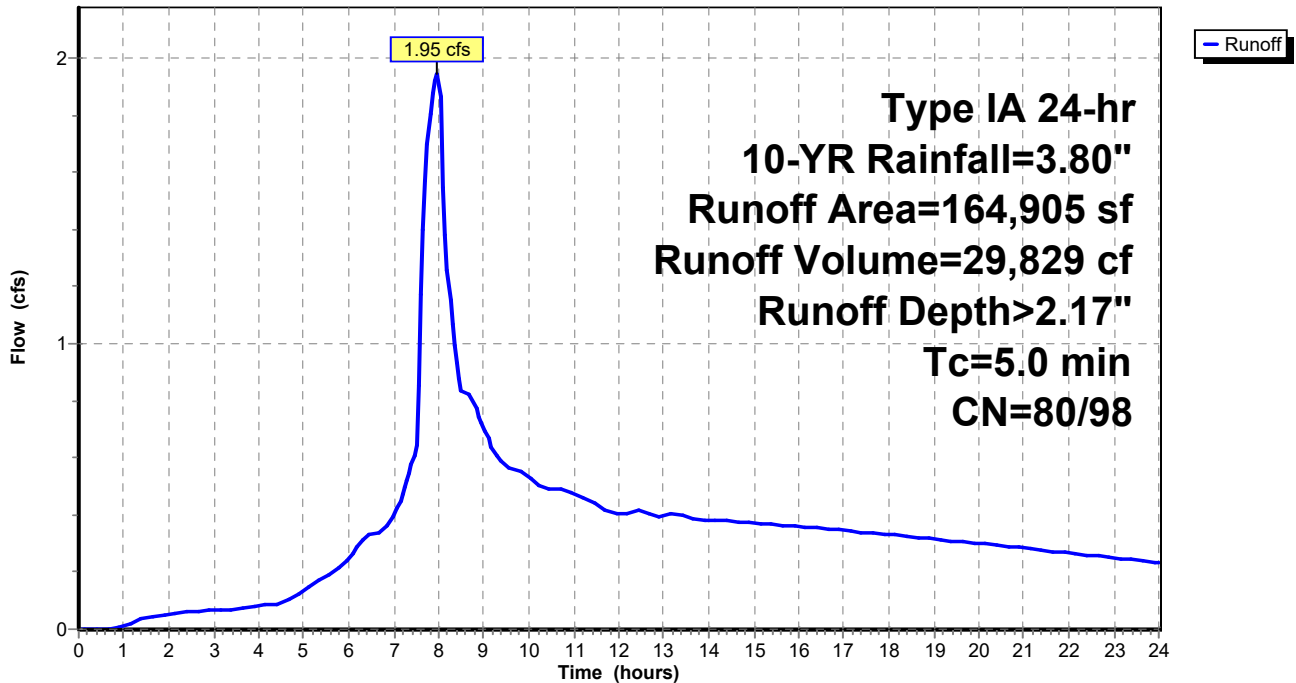
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
8,000	98	Paved roads w/curbs & sewers, HSG D
* 21,120	98	2640 * 8 LOTS
135,785	80	>75% Grass cover, Good, HSG D
164,905	83	Weighted Average
135,785		82.34% Pervious Area
29,120		17.66% Impervious Area

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

Subcatchment 1.0S: PHASE 1

Hydrograph



Summary for Subcatchment 1.1S: PHASE 1

Runoff = 1.63 cfs @ 7.92 hrs, Volume= 24,201 cf, Depth> 2.92"

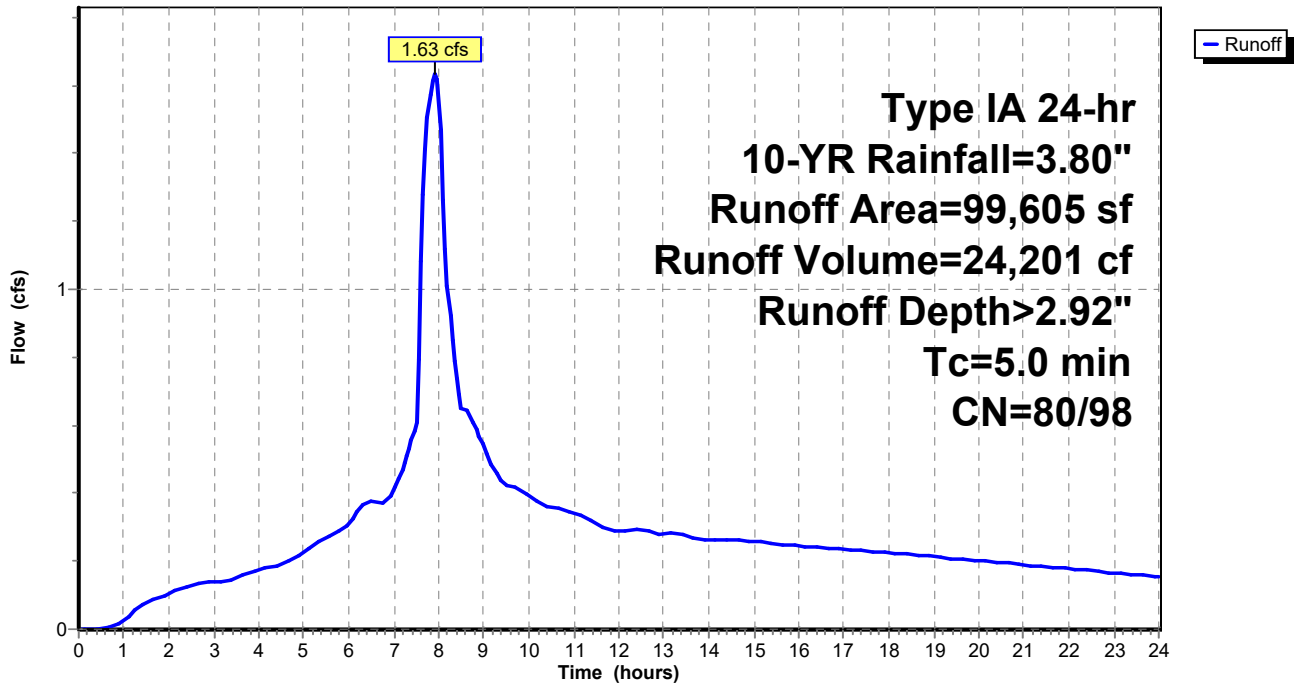
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
32,538	98	Paved roads w/curbs & sewers, HSG D
* 29,040	98	Lot Impervious at 2640SF*11 Lot
38,027	80	>75% Grass cover, Good, HSG D
99,605	91	Weighted Average
38,027		38.18% Pervious Area
61,578		61.82% Impervious Area

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

Subcatchment 1.1S: PHASE 1

Hydrograph



Summary for Subcatchment 2.0S: PHASE 2

Runoff = 0.62 cfs @ 7.93 hrs, Volume= 9,278 cf, Depth> 2.72"

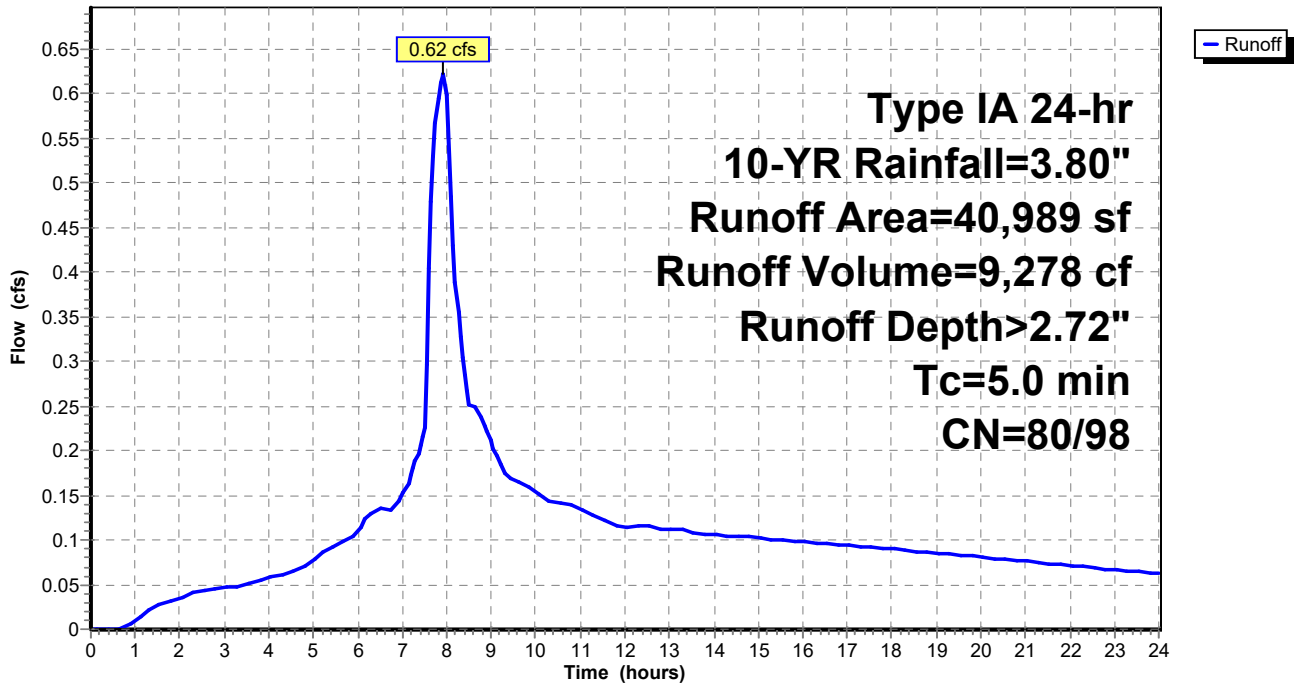
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
12,577	98	Paved roads w/curbs & sewers, HSG D
* 7,920	98	Lot Impervious at 2640SF*3Lot
20,492	80	>75% Grass cover, Good, HSG D
40,989	89	Weighted Average
20,492		49.99% Pervious Area
20,497		50.01% Impervious Area

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

Subcatchment 2.0S: PHASE 2

Hydrograph



Summary for Subcatchment 2.1S: PH 1.1

Runoff = 0.89 cfs @ 7.95 hrs, Volume= 13,443 cf, Depth> 2.35"

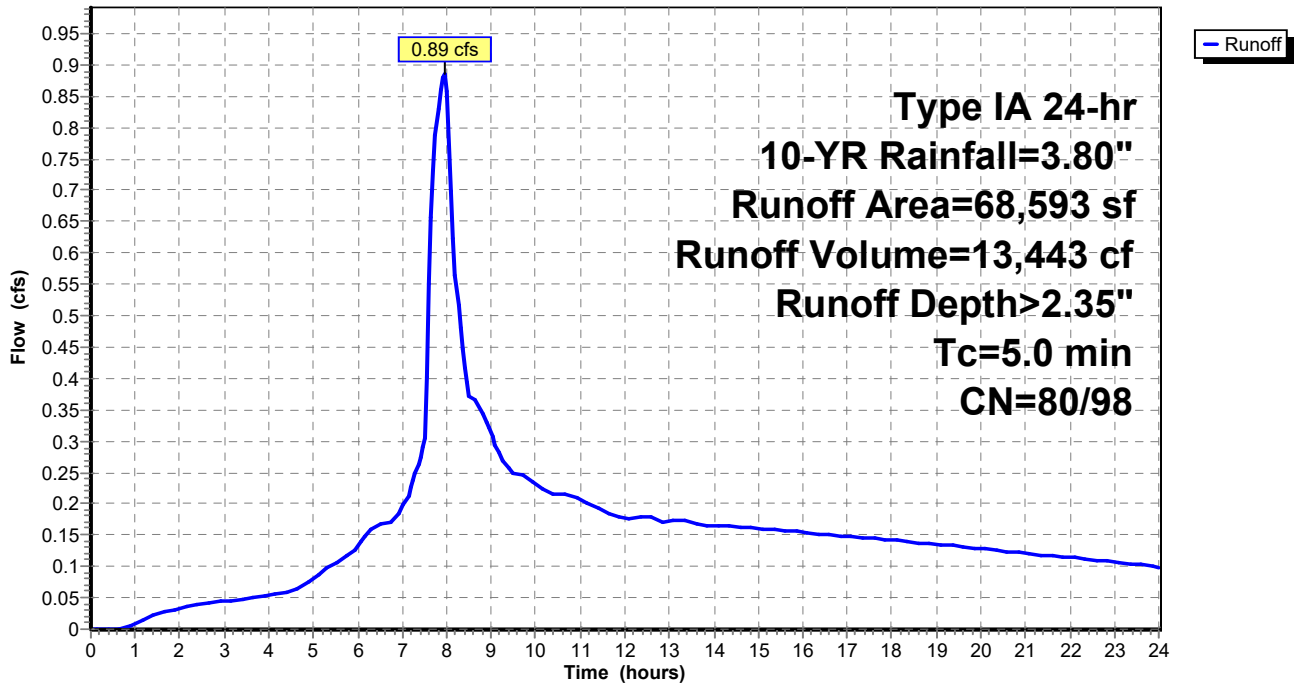
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
1,000	98	Paved roads w/curbs & sewers, HSG D
* 18,480	98	Lot Impervious at 2640SF*7Lot
49,113	80	>75% Grass cover, Good, HSG D
68,593	85	Weighted Average
49,113		71.60% Pervious Area
19,480		28.40% Impervious Area

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

Subcatchment 2.1S: PH 1.1

Hydrograph



Summary for Subcatchment 2.2S: PHASE 2

Runoff = 4.16 cfs @ 7.93 hrs, Volume= 62,245 cf, Depth> 2.75"

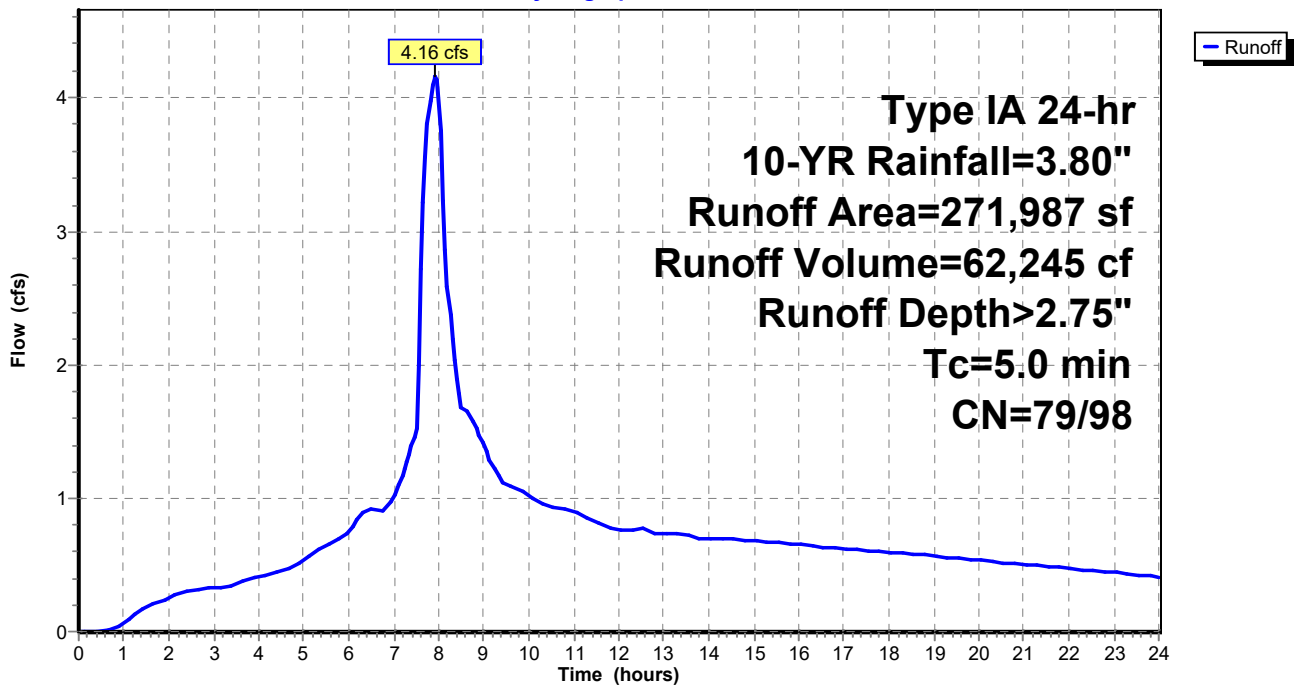
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
88,350	98	Paved roads w/curbs & sewers, HSG D
* 58,080	98	Lot Impervious at 2640SF*22 Lot
17,578	74	>75% Grass cover, Good, HSG C
107,979	80	>75% Grass cover, Good, HSG D
271,987	89	Weighted Average
125,557		46.16% Pervious Area
146,430		53.84% Impervious Area

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

Subcatchment 2.2S: PHASE 2

Hydrograph



Summary for Subcatchment 2.3S: PHASE 2

Runoff = 2.81 cfs @ 7.96 hrs, Volume= 43,129 cf, Depth> 2.27"

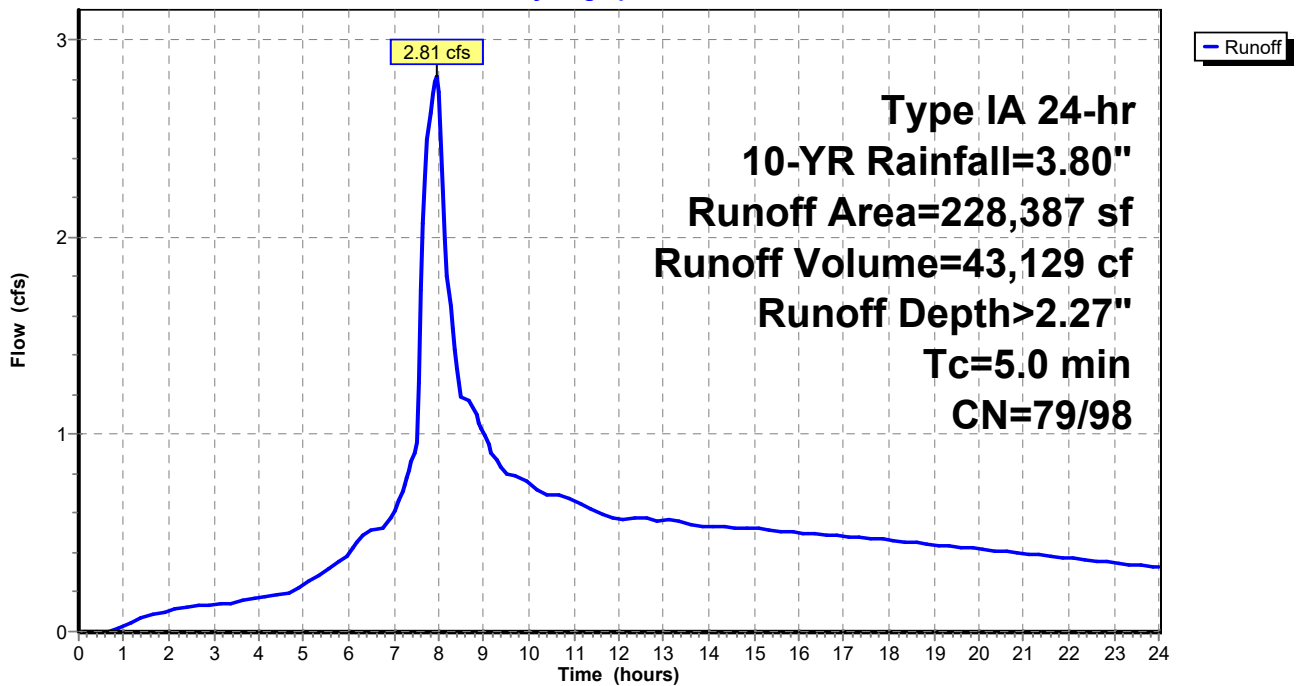
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
0	98	Paved roads w/curbs & sewers, HSG D
* 60,720	98	Lot Impervious at 2640SF*23 Lot
28,493	74	>75% Grass cover, Good, HSG C
139,174	80	>75% Grass cover, Good, HSG D
228,387	84	Weighted Average
167,667		73.41% Pervious Area
60,720		26.59% Impervious Area

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

Subcatchment 2.3S: PHASE 2

Hydrograph



Summary for Subcatchment 2.4S: PHASE 2

Runoff = 2.00 cfs @ 7.93 hrs, Volume= 29,662 cf, Depth> 2.82"

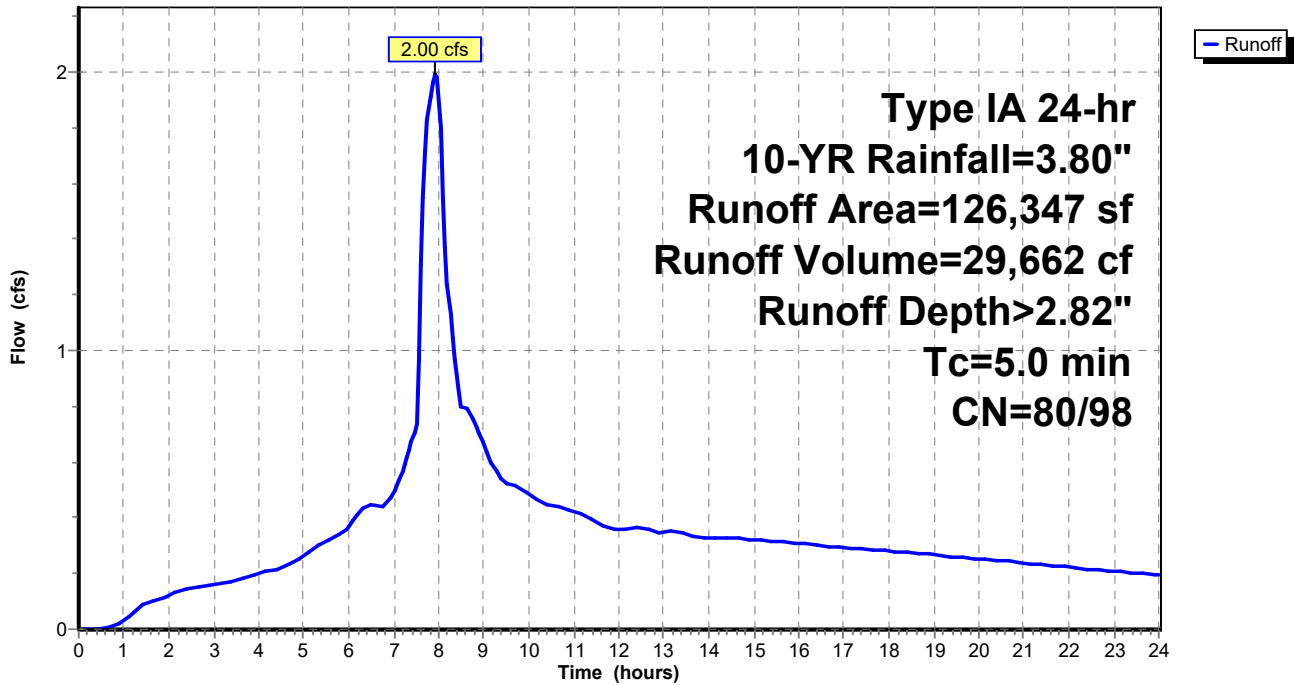
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
41,701	98	Paved roads w/curbs & sewers, HSG D
* 29,040	98	Lot Impervious at 2640SF*11 Lot
55,606	80	>75% Grass cover, Good, HSG D
126,347	90	Weighted Average
55,606		44.01% Pervious Area
70,741		55.99% Impervious Area

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

Subcatchment 2.4S: PHASE 2

Hydrograph



Summary for Subcatchment 3.0S: PHASE 3

Runoff = 6.27 cfs @ 7.93 hrs, Volume= 93,704 cf, Depth> 2.67"

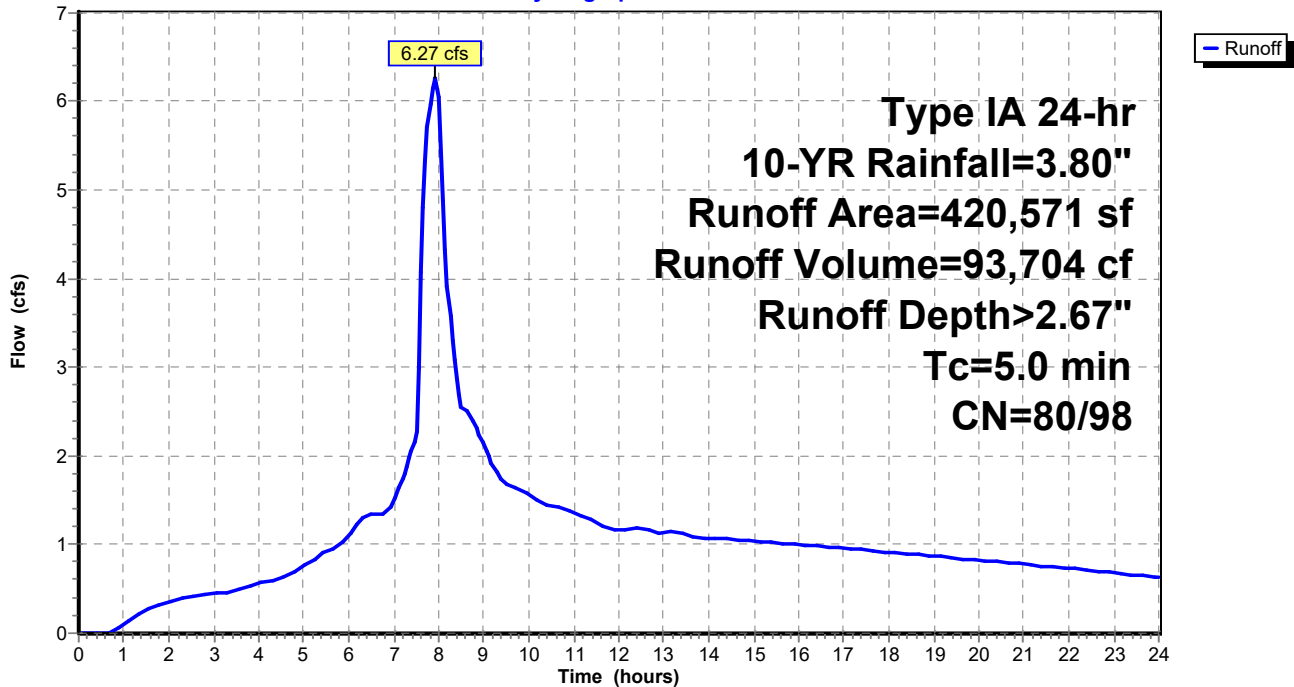
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
99,360	98	Paved roads w/curbs & sewers, HSG D
* 100,320	98	Lot Impervious at 2640SF*38 Lot
220,891	80	>75% Grass cover, Good, HSG D
420,571	89	Weighted Average
220,891		52.52% Pervious Area
199,680		47.48% Impervious Area

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

Subcatchment 3.0S: PHASE 3

Hydrograph



Summary for Subcatchment 3.1S: PHASE 3

Runoff = 1.31 cfs @ 7.97 hrs, Volume= 20,162 cf, Depth> 2.14"

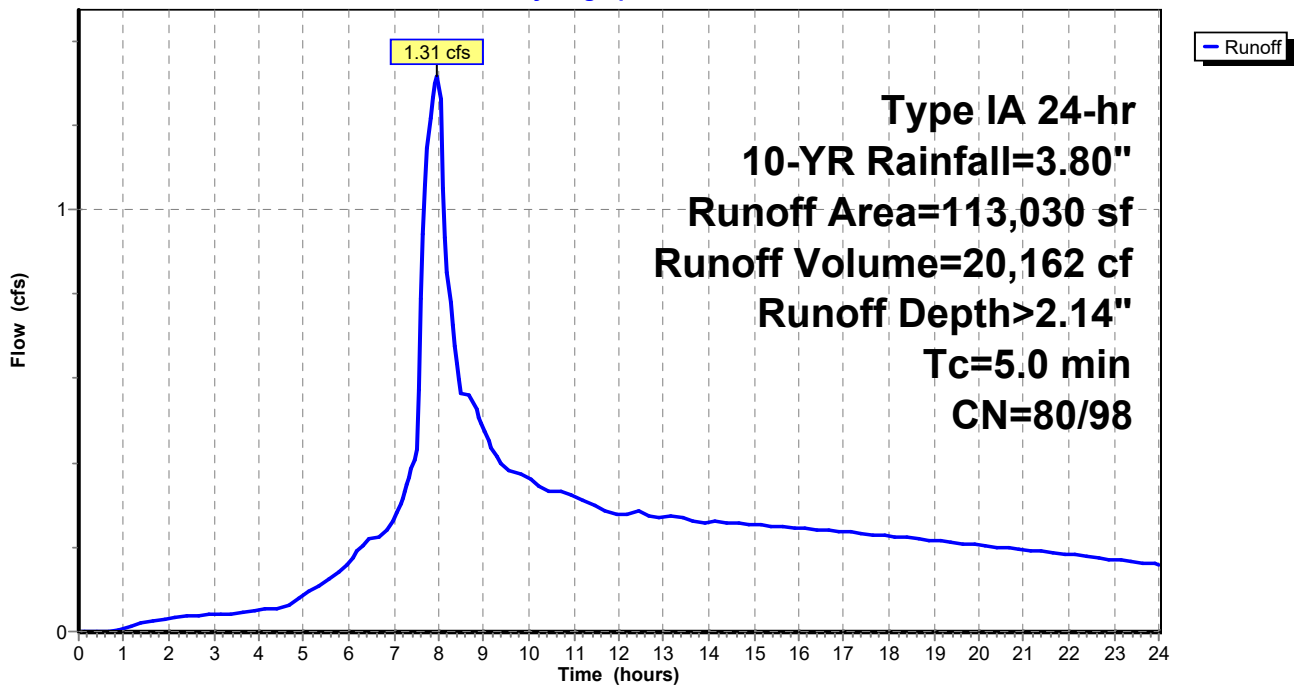
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
17,943	98	Paved roads w/curbs & sewers, HSG D
95,087	80	>75% Grass cover, Good, HSG D
113,030	83	Weighted Average
95,087		84.13% Pervious Area
17,943		15.87% Impervious Area

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

Subcatchment 3.1S: PHASE 3

Hydrograph



Summary for Subcatchment 3.2S: PHASE 3

Runoff = 1.93 cfs @ 7.93 hrs, Volume= 28,696 cf, Depth> 2.76"

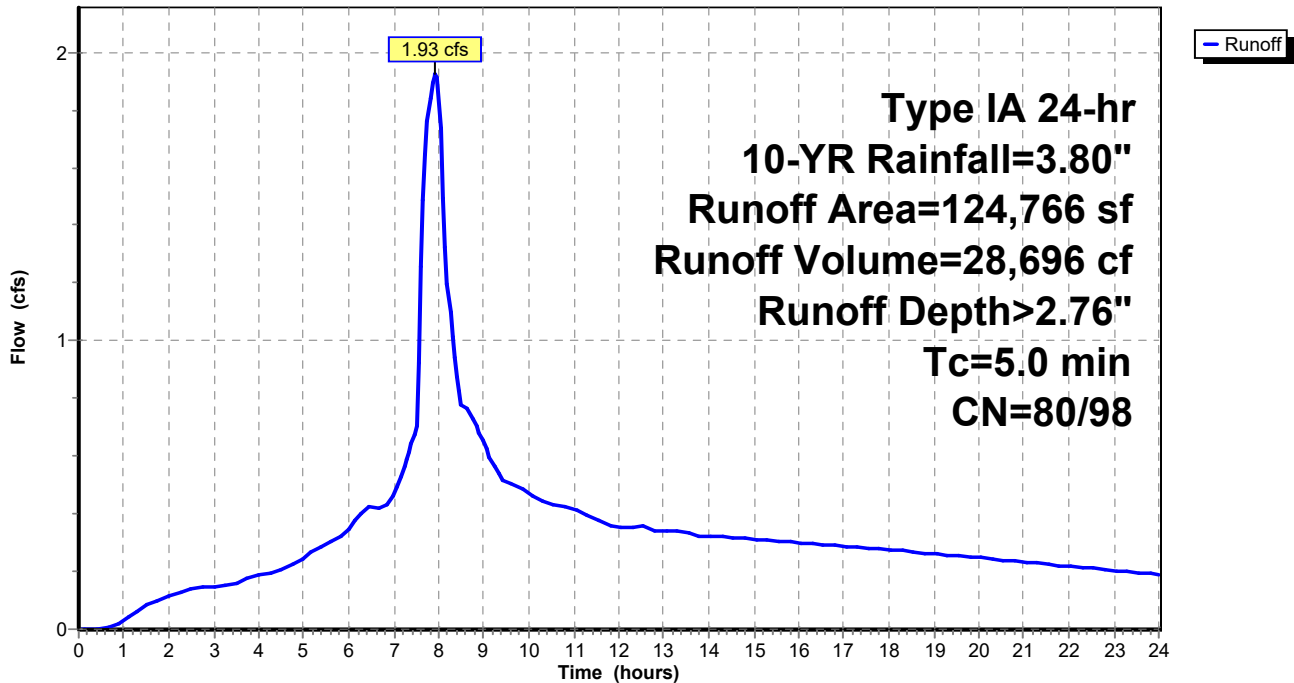
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
31,305	98	Paved roads w/curbs & sewers, HSG D
* 34,320	98	Lot Impervious at 2640SF*13 Lot
59,141	80	>75% Grass cover, Good, HSG D
124,766	89	Weighted Average
59,141		47.40% Pervious Area
65,625		52.60% Impervious Area

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

Subcatchment 3.2S: PHASE 3

Hydrograph



Summary for Subcatchment 4.0S: PHASE 4.0

Runoff = 3.61 cfs @ 7.93 hrs, Volume= 54,003 cf, Depth> 2.69"

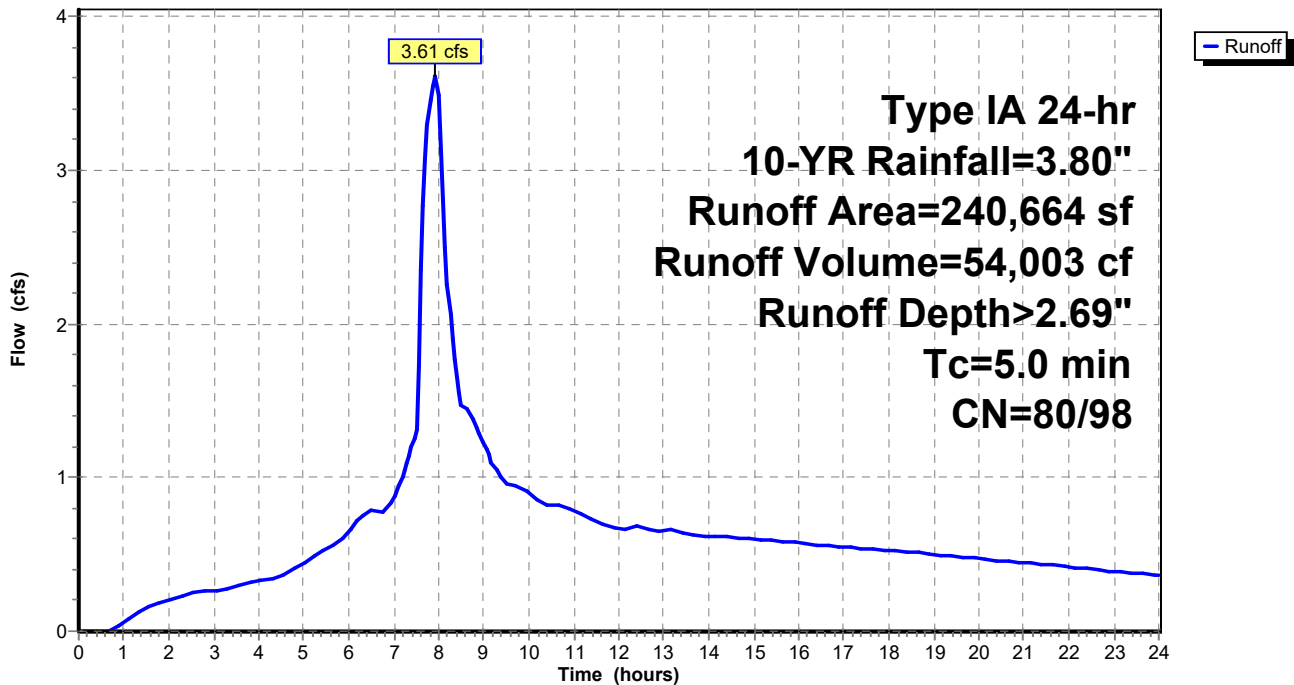
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
48,347	98	Paved roads w/curbs & sewers, HSG D
* 68,640	98	Lot Impervious at 2640SF*26 Lot
123,677	80	>75% Grass cover, Good, HSG D
240,664	89	Weighted Average
123,677		51.39% Pervious Area
116,987		48.61% Impervious Area

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

Subcatchment 4.0S: PHASE 4.0

Hydrograph



Summary for Subcatchment 4.1S: PHASE 4

Runoff = 0.87 cfs @ 7.95 hrs, Volume= 13,148 cf, Depth> 2.33"

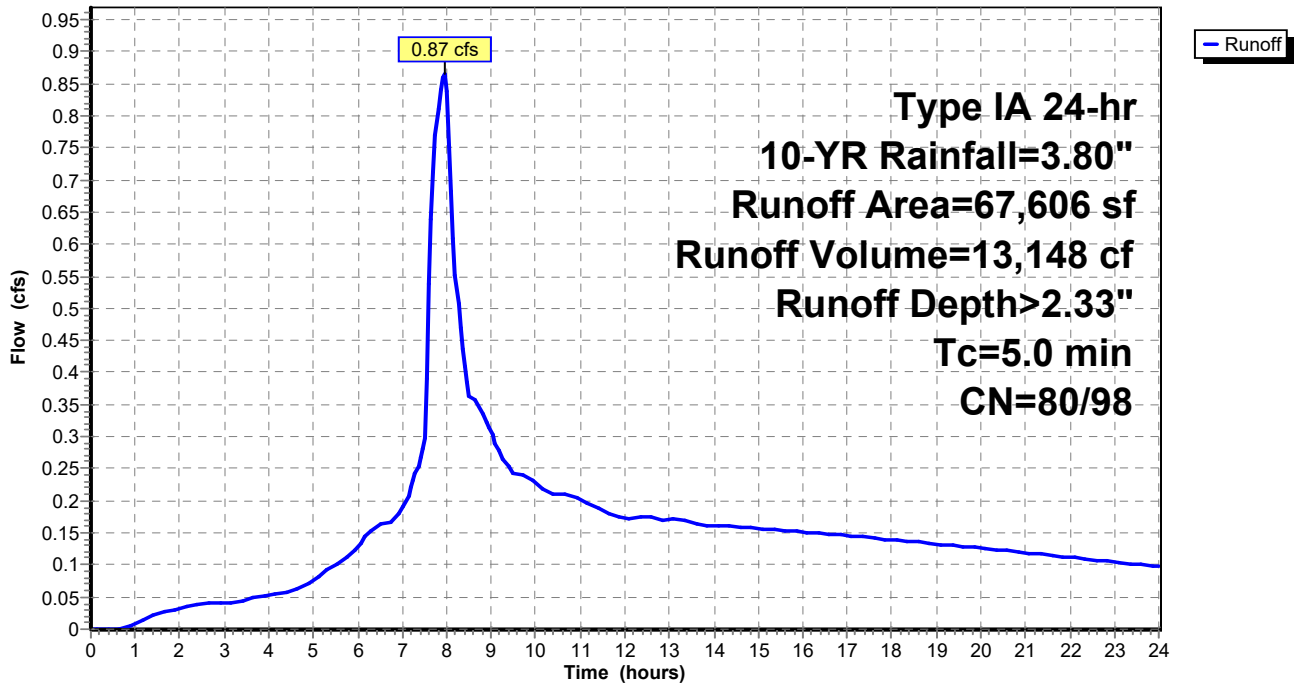
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
0	98	Paved roads w/curbs & sewers, HSG C
* 18,480	98	2640 * 7 LOTS
49,126	80	>75% Grass cover, Good, HSG D
67,606	85	Weighted Average
49,126		72.67% Pervious Area
18,480		27.33% Impervious Area

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

Subcatchment 4.1S: PHASE 4

Hydrograph



Summary for Subcatchment 4.2S: PHASE 4

Runoff = 0.55 cfs @ 7.97 hrs, Volume= 8,440 cf, Depth> 2.16"

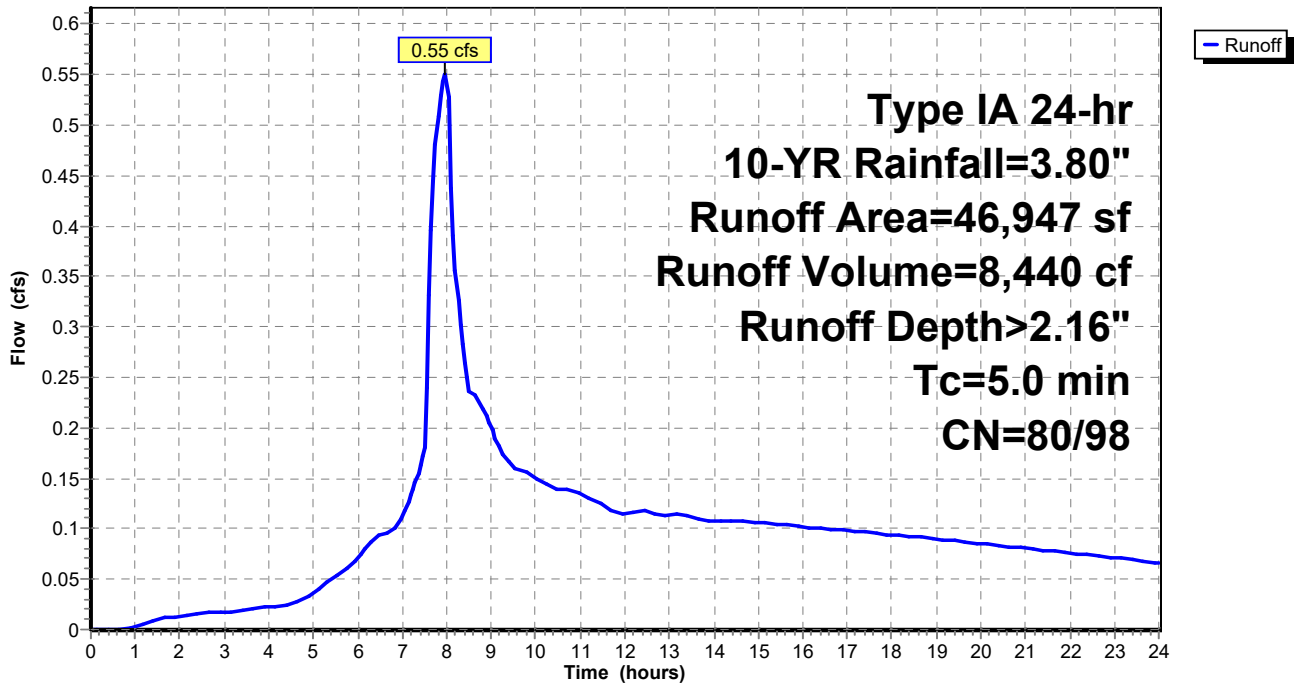
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
* 7,920	98	2640 * 3 LOTS
39,027	80	>75% Grass cover, Good, HSG D
46,947	83	Weighted Average
39,027		83.13% Pervious Area
7,920		16.87% Impervious Area

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

Subcatchment 4.2S: PHASE 4

Hydrograph



Summary for Subcatchment 5S: PHASE 5

Runoff = 7.12 cfs @ 7.93 hrs, Volume= 105,953 cf, Depth> 2.78"

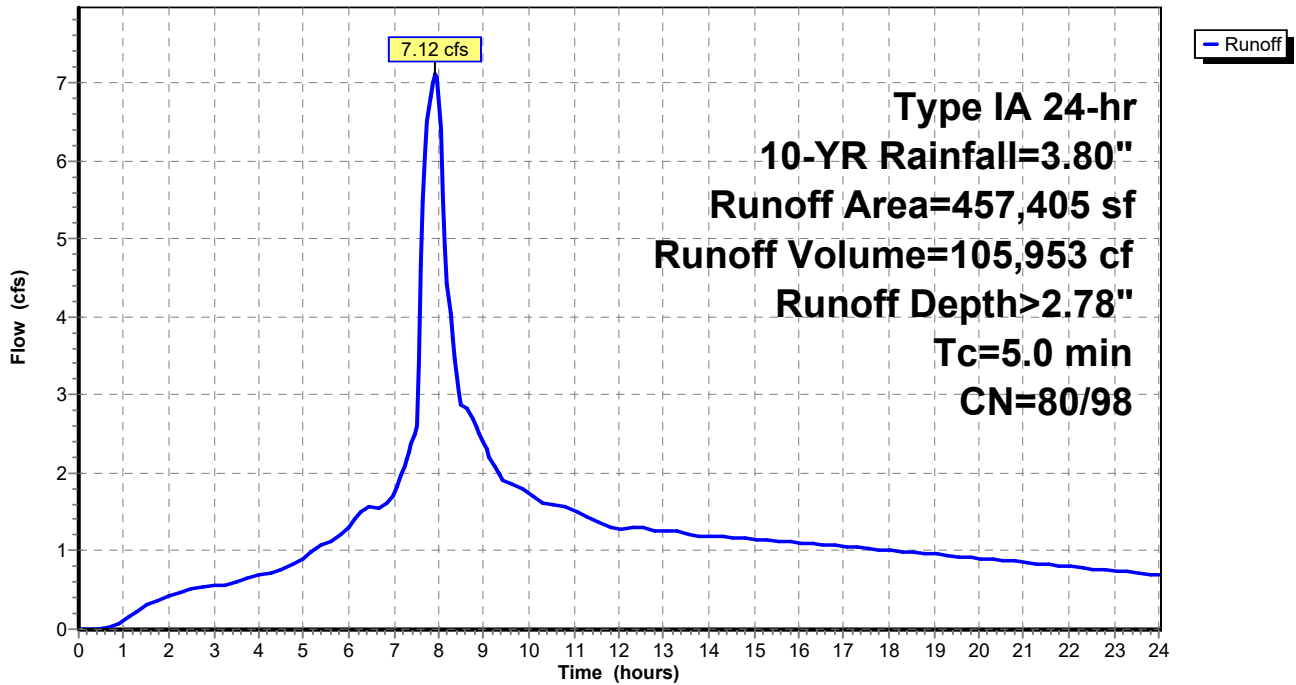
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
106,004	98	Paved roads w/curbs & sewers, HSG D
* 139,920	98	Lot Impervious at 2640SF*53 Lot
211,481	80	>75% Grass cover, Good, HSG D
457,405	90	Weighted Average
211,481		46.23% Pervious Area
245,924		53.77% Impervious Area

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

Subcatchment 5S: PHASE 5

Hydrograph



Summary for Subcatchment 6.0S: PHASE 6

Runoff = 3.33 cfs @ 7.93 hrs, Volume= 49,820 cf, Depth> 2.68"

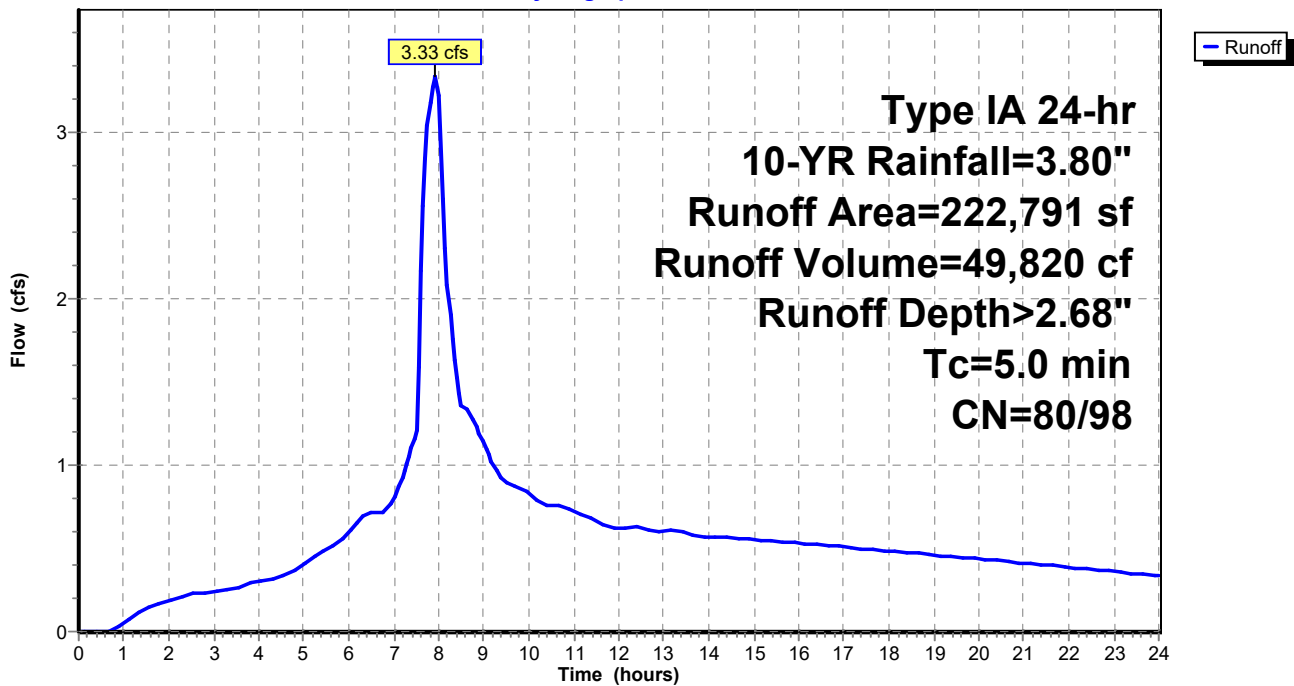
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
56,906	98	Paved roads w/curbs & sewers, HSG D
* 50,160	98	Lot Impervious at 2640SF*19 Lot
8,101	74	>75% Grass cover, Good, HSG C
107,624	80	>75% Grass cover, Good, HSG D
222,791	88	Weighted Average
115,725		51.94% Pervious Area
107,066		48.06% Impervious Area

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

Subcatchment 6.0S: PHASE 6

Hydrograph



Summary for Subcatchment 6.1S: PHASE 6

Runoff = 2.57 cfs @ 7.94 hrs, Volume= 38,500 cf, Depth> 2.59"

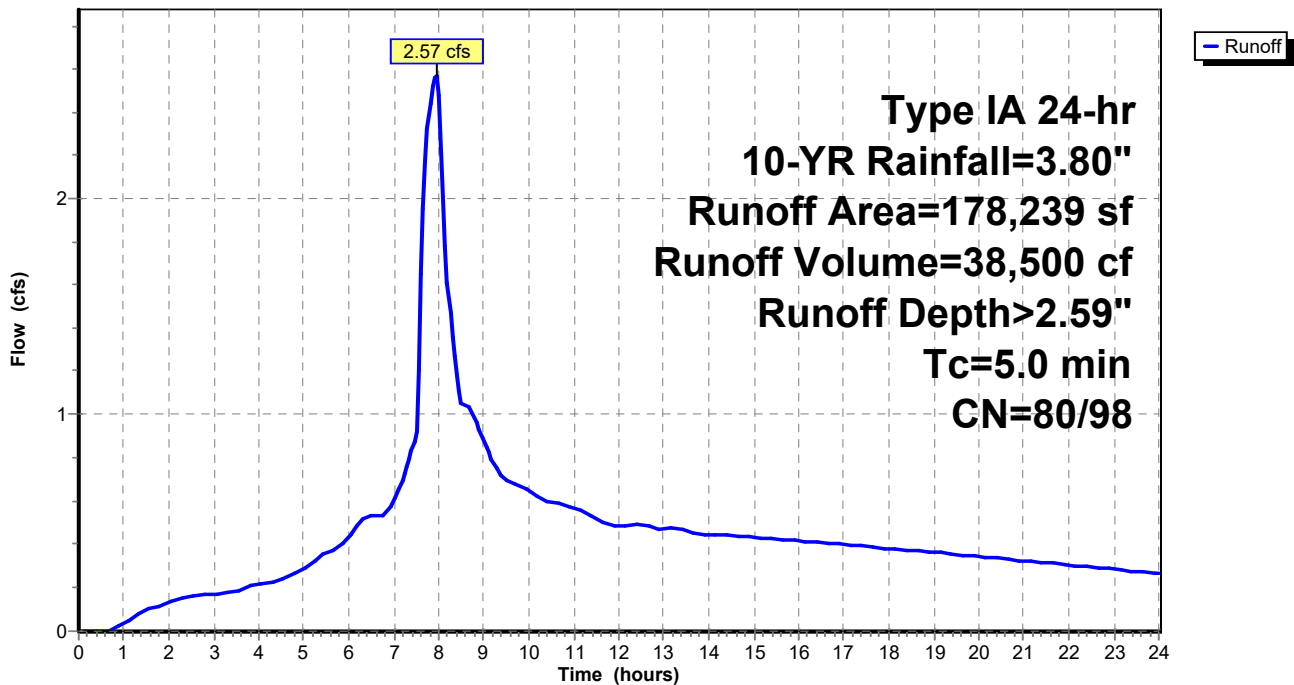
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
44,323	98	Paved roads w/curbs & sewers, HSG D
* 31,680	98	Lot Impervious at 2640SF*12Lot
102,236	80	>75% Grass cover, Good, HSG D
178,239	88	Weighted Average
102,236		57.36% Pervious Area
76,003		42.64% Impervious Area

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

Subcatchment 6.1S: PHASE 6

Hydrograph



Summary for Subcatchment 6.2S: PHASE 6

Runoff = 4.54 cfs @ 7.95 hrs, Volume= 69,054 cf, Depth> 2.33"

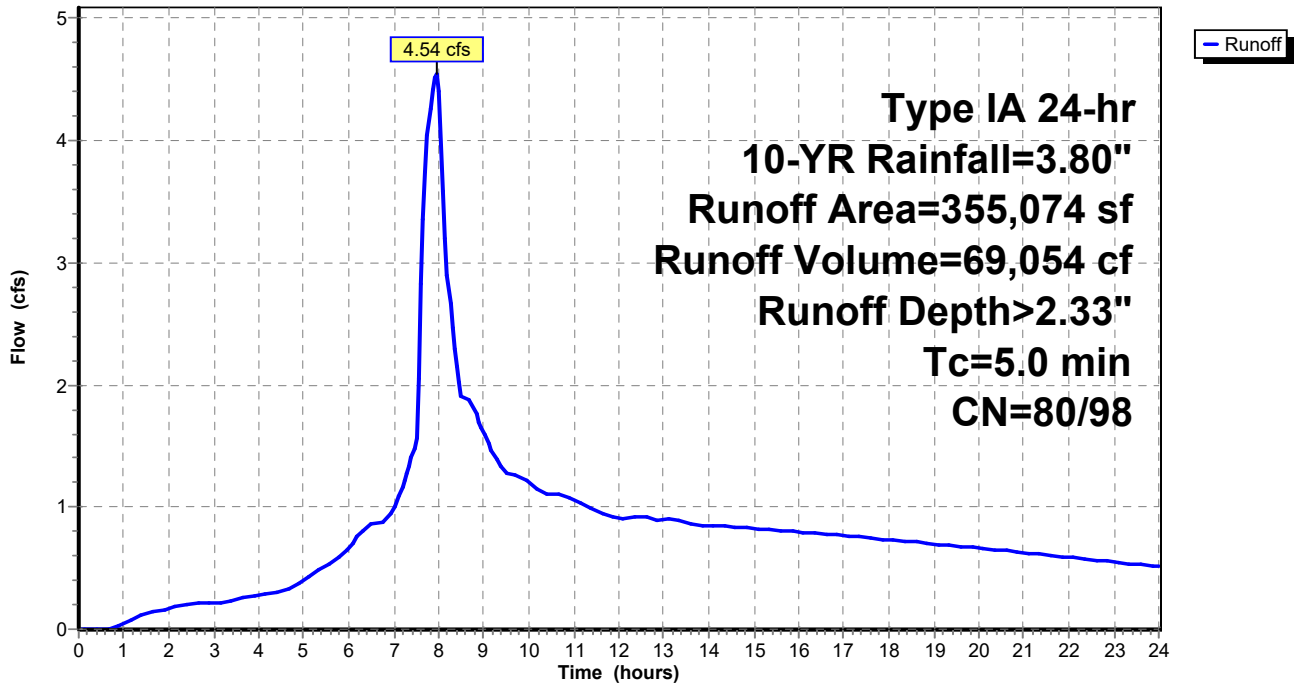
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
33,682	98	Paved roads w/curbs & sewers, HSG D
* 63,360	98	Lot Impervious at 2640SF*24Lot
258,032	80	>75% Grass cover, Good, HSG D
355,074	85	Weighted Average
258,032		72.67% Pervious Area
97,042		27.33% Impervious Area

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

Subcatchment 6.2S: PHASE 6

Hydrograph



Summary for Subcatchment 7S: PHASE 7,8,9

Runoff = 19.94 cfs @ 7.94 hrs, Volume= 299,704 cf, Depth> 2.56"

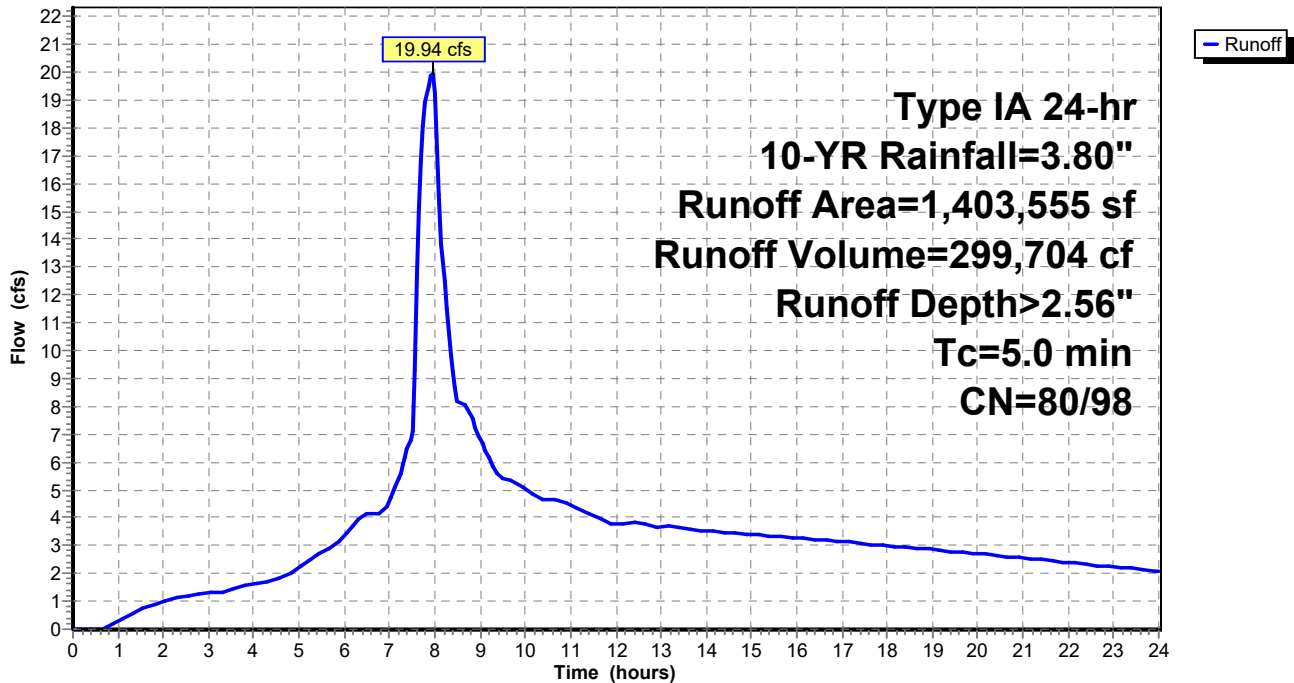
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
278,143	98	Paved roads w/curbs & sewers, HSG D
* 295,680	98	Lot Impervious at 2640SF*112Lot
829,732	80	>75% Grass cover, Good, HSG D
1,403,555	87	Weighted Average
829,732		59.12% Pervious Area
573,823		40.88% Impervious Area

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

Subcatchment 7S: PHASE 7,8,9

Hydrograph



5147-02 POST Dev

Prepared by AKS Engineering & Forestry

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Type IA 24-hr 10-YR Rainfall=3.80"

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Summary for Subcatchment 11X: OFFSITE

Runoff = 2.45 cfs @ 8.00 hrs, Volume= 40,303 cf, Depth> 2.02"

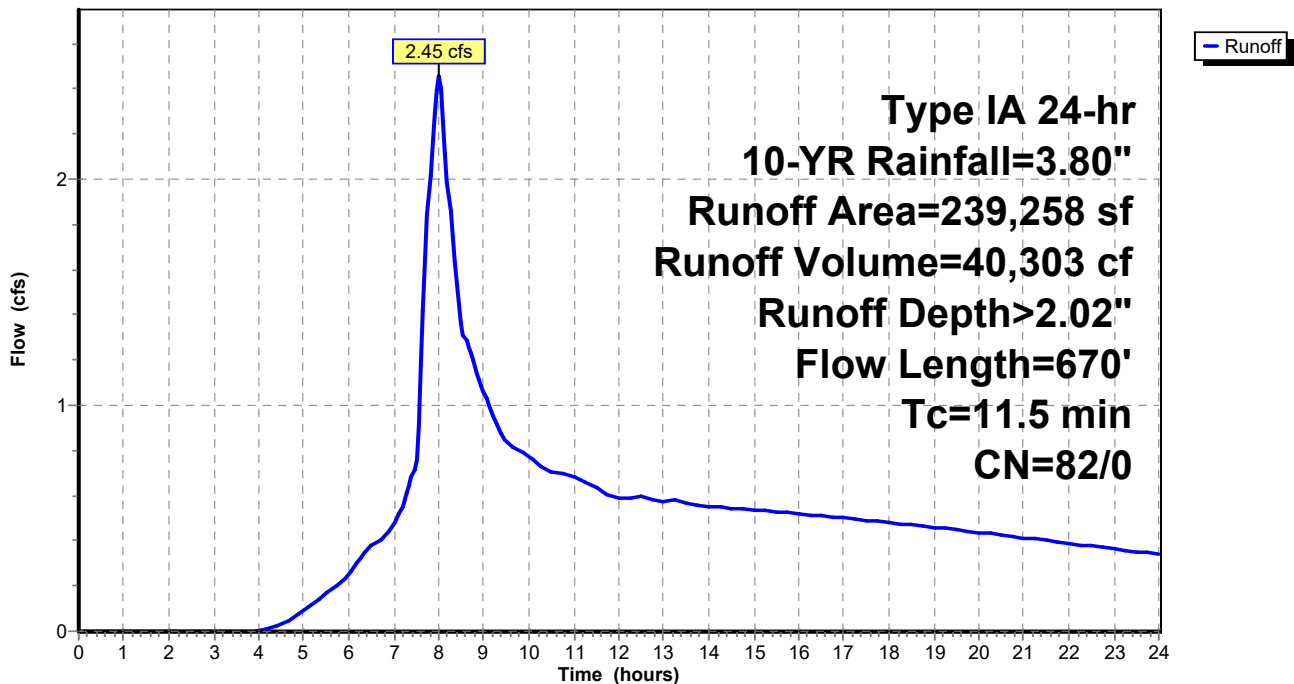
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
239,258	82	Woods/grass comb., Fair, HSG D
239,258		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	50	0.1570	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
4.1	490	0.1570	1.98		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.4	130	0.1000	1.58		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
11.5	670	Total			

Subcatchment 11X: OFFSITE

Hydrograph



Summary for Subcatchment 12X: OFFSITE

Runoff = 4.99 cfs @ 8.03 hrs, Volume= 92,390 cf, Depth> 2.01"

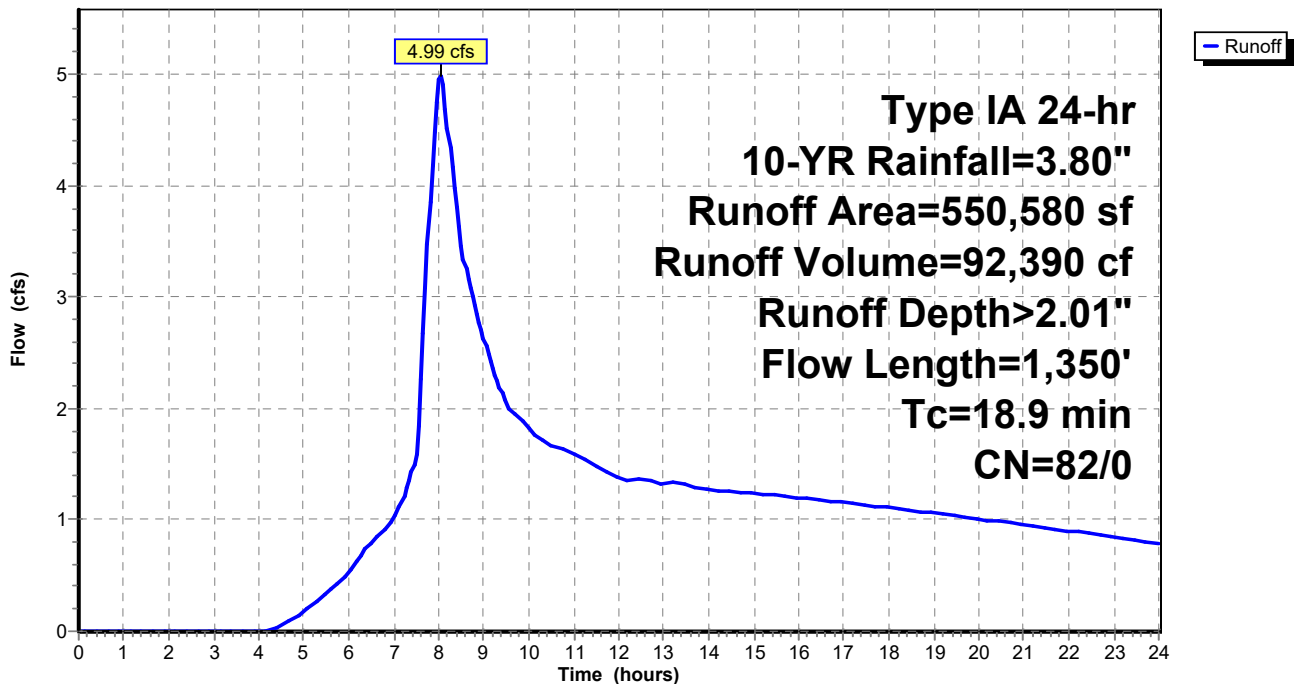
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
550,580	82	Woods/grass comb., Fair, HSG D
550,580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	50	0.1230	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
11.2	1,180	0.1230	1.75		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.1	120	0.1350	1.84		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
18.9	1,350	Total			

Subcatchment 12X: OFFSITE

Hydrograph



Summary for Subcatchment 41X: OFFSITE

Runoff = 1.67 cfs @ 8.10 hrs, Volume= 38,918 cf, Depth> 2.00"

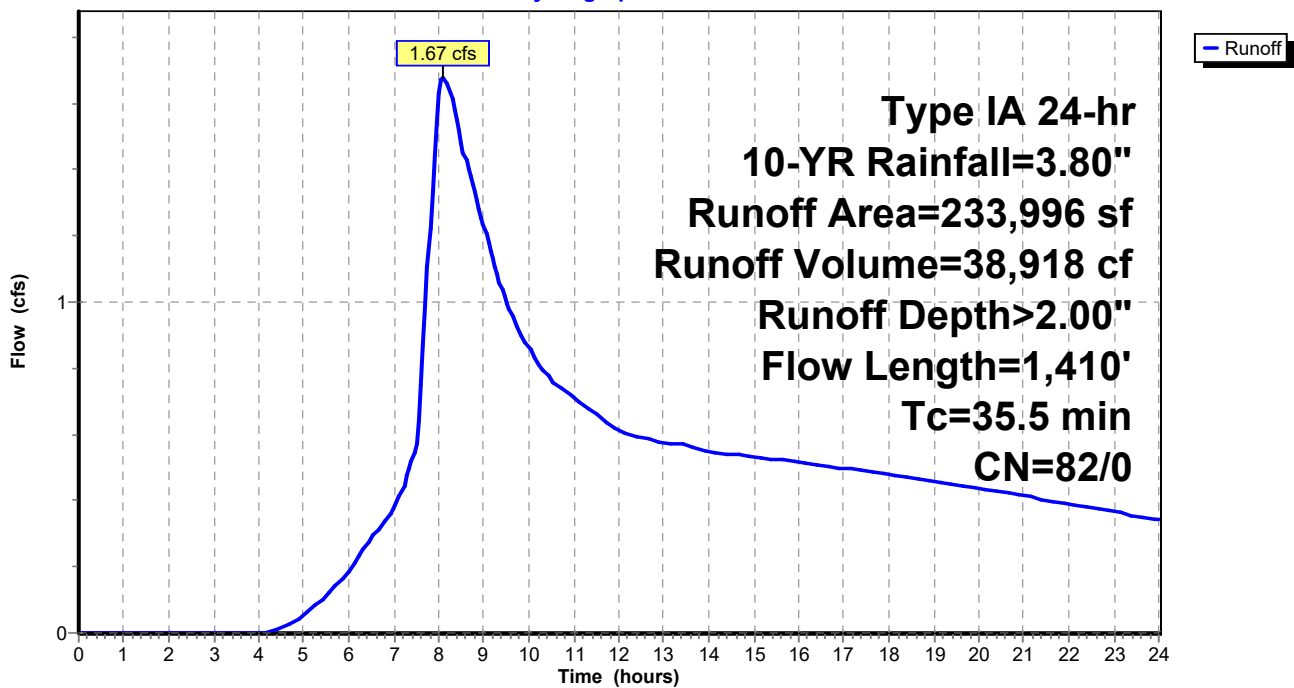
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
233,996	82	Woods/grass comb., Fair, HSG D
233,996		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0330	0.07		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
9.2	500	0.0330	0.91		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
9.3	490	0.0310	0.88		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
5.5	330	0.0400	1.00		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.3	40	0.2600	2.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
35.5	1,410	Total			

Subcatchment 41X: OFFSITE

Hydrograph



Summary for Subcatchment 70X: OFFSITE

Runoff = 0.53 cfs @ 8.03 hrs, Volume= 9,672 cf, Depth> 2.02"

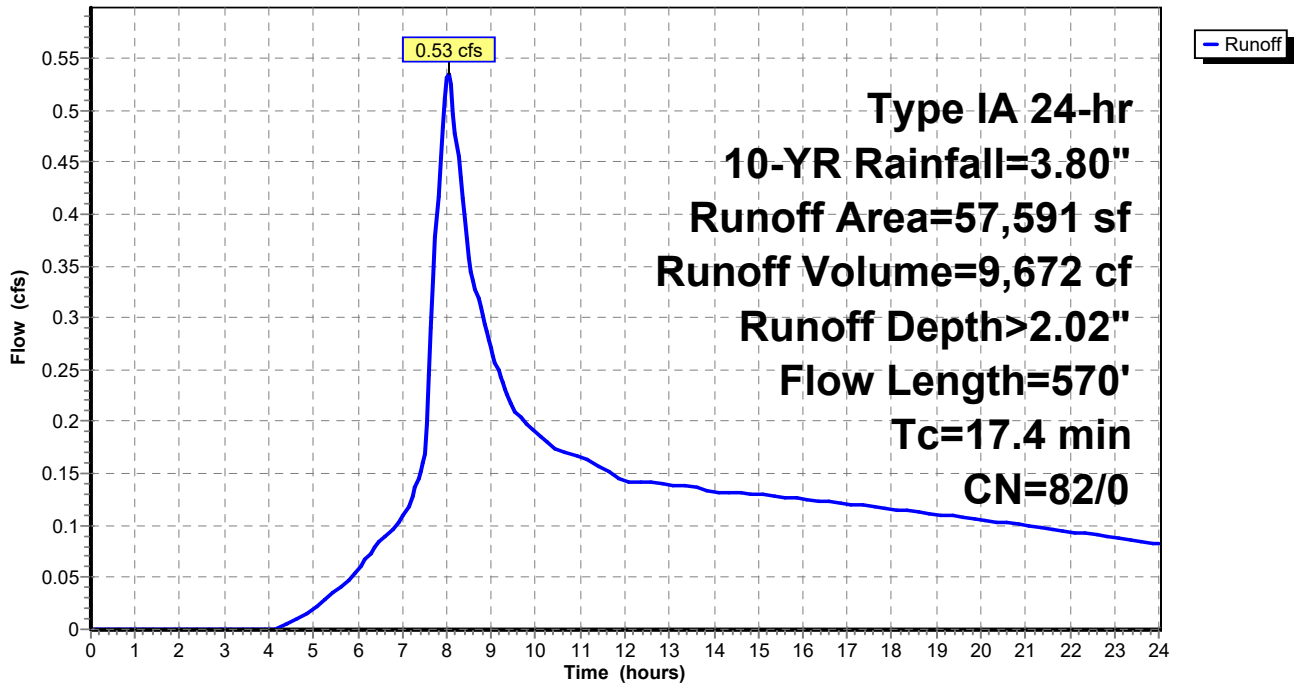
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-YR Rainfall=3.80"

Area (sf)	CN	Description
57,591	82	Woods/grass comb., Fair, HSG D
57,591		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	50	0.0480	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.60"
5.5	360	0.0480	1.10		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.3	60	0.5800	3.81		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.0	100	0.0280	0.84		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
17.4	570	Total			

Subcatchment 70X: OFFSITE

Hydrograph



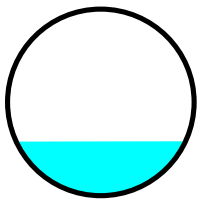
Summary for Reach C4: EX. ELIZABETH CULVERT

Inflow Area = 2,836,288 sf, 27.74% Impervious, Inflow Depth > 2.02" for 10-YR event
 Inflow = 17.67 cfs @ 8.50 hrs, Volume= 477,371 cf
 Outflow = 17.67 cfs @ 8.51 hrs, Volume= 477,328 cf, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 14.84 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 9.98 fps, Avg. Travel Time= 0.2 min

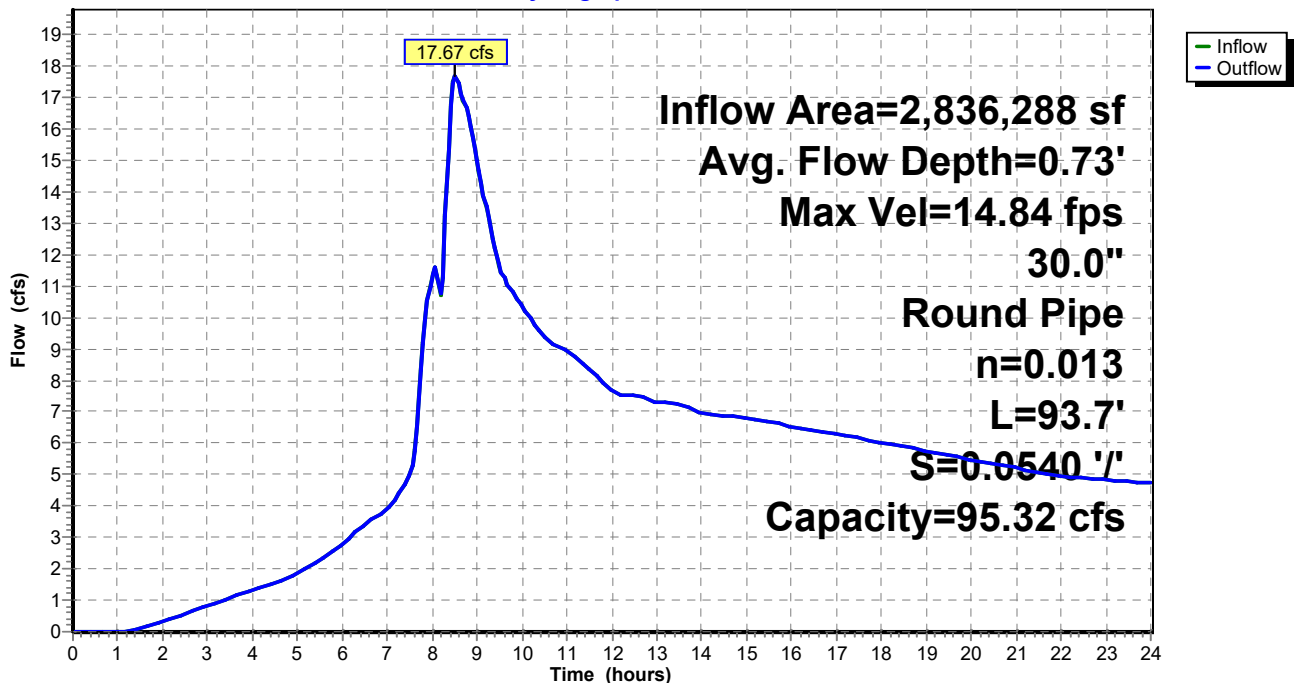
Peak Storage= 112 cf @ 8.51 hrs
 Average Depth at Peak Storage= 0.73'
 Defined Flood Depth= 236.00' Flow Area= 82.5 sf, Capacity= -37,261.47 cfs
 Bank-Full Depth= 2.50' Flow Area= 4.9 sf, Capacity= 95.32 cfs

30.0" Round Pipe
 n= 0.013
 Length= 93.7' Slope= 0.0540 '/'
 Inlet Invert= 228.52', Outlet Invert= 223.46'



Reach C4: EX. ELIZABETH CULVERT

Hydrograph



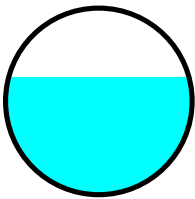
Summary for Reach R10: 15"

Inflow Area = 2,234,382 sf, 26.60% Impervious, Inflow Depth > 1.93" for 10-YR event
 Inflow = 13.64 cfs @ 8.52 hrs, Volume= 358,585 cf
 Outflow = 13.66 cfs @ 8.51 hrs, Volume= 358,561 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 16.73 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 11.44 fps, Avg. Travel Time= 0.1 min

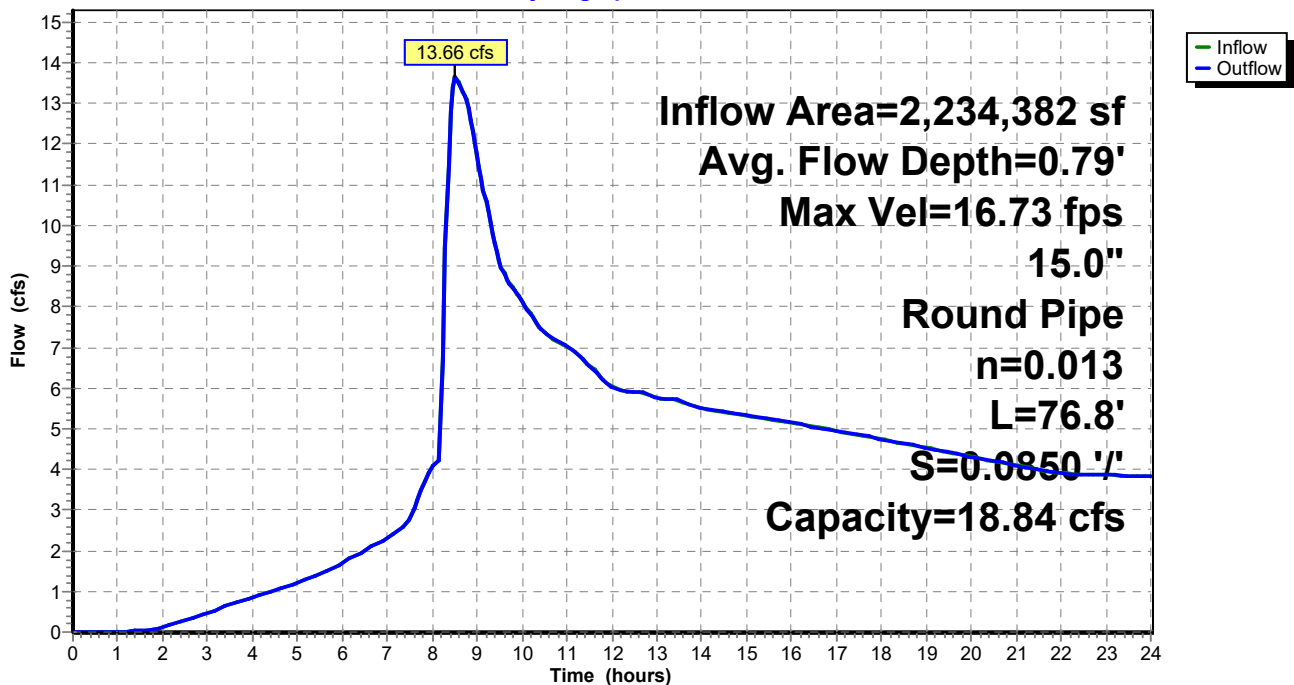
Peak Storage= 63 cf @ 8.51 hrs
 Average Depth at Peak Storage= 0.79'
 Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 18.84 cfs

15.0" Round Pipe
 n= 0.013 Concrete pipe, straight & clean
 Length= 76.8' Slope= 0.0850 '/'
 Inlet Invert= 249.37', Outlet Invert= 242.84'



Reach R10: 15"

Hydrograph



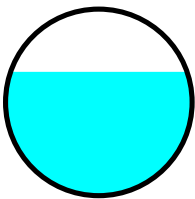
Summary for Reach R11: HI FLO BYPASS

Inflow = 23.12 cfs @ 7.98 hrs, Volume= 426,746 cf
 Outflow = 23.12 cfs @ 7.98 hrs, Volume= 426,735 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 13.62 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 8.71 fps, Avg. Travel Time= 0.1 min

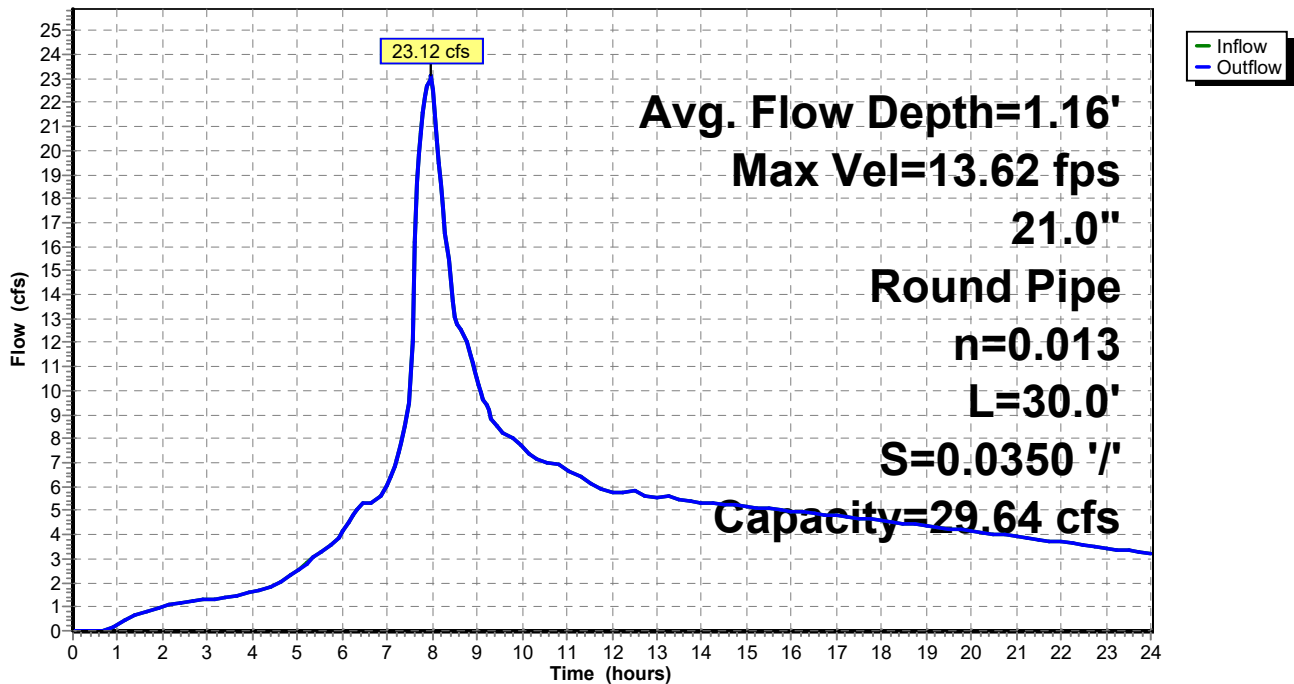
Peak Storage= 51 cf @ 7.98 hrs
 Average Depth at Peak Storage= 1.16'
 Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 29.64 cfs

21.0" Round Pipe
 n= 0.013 PVC, smooth interior
 Length= 30.0' Slope= 0.0350 '/'
 Inlet Invert= 274.05', Outlet Invert= 273.00'



Reach R11: HI FLO BYPASS

Hydrograph



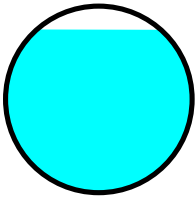
Summary for Reach R30: EX 15"

Inflow Area = 630,699 sf, 51.46% Impervious, Inflow Depth > 2.74" for 10-YR event
 Inflow = 9.66 cfs @ 7.93 hrs, Volume= 144,047 cf
 Outflow = 9.66 cfs @ 7.94 hrs, Volume= 144,002 cf, Atten= 0%, Lag= 0.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 8.55 fps, Min. Travel Time= 0.4 min
 Avg. Velocity = 5.46 fps, Avg. Travel Time= 0.7 min

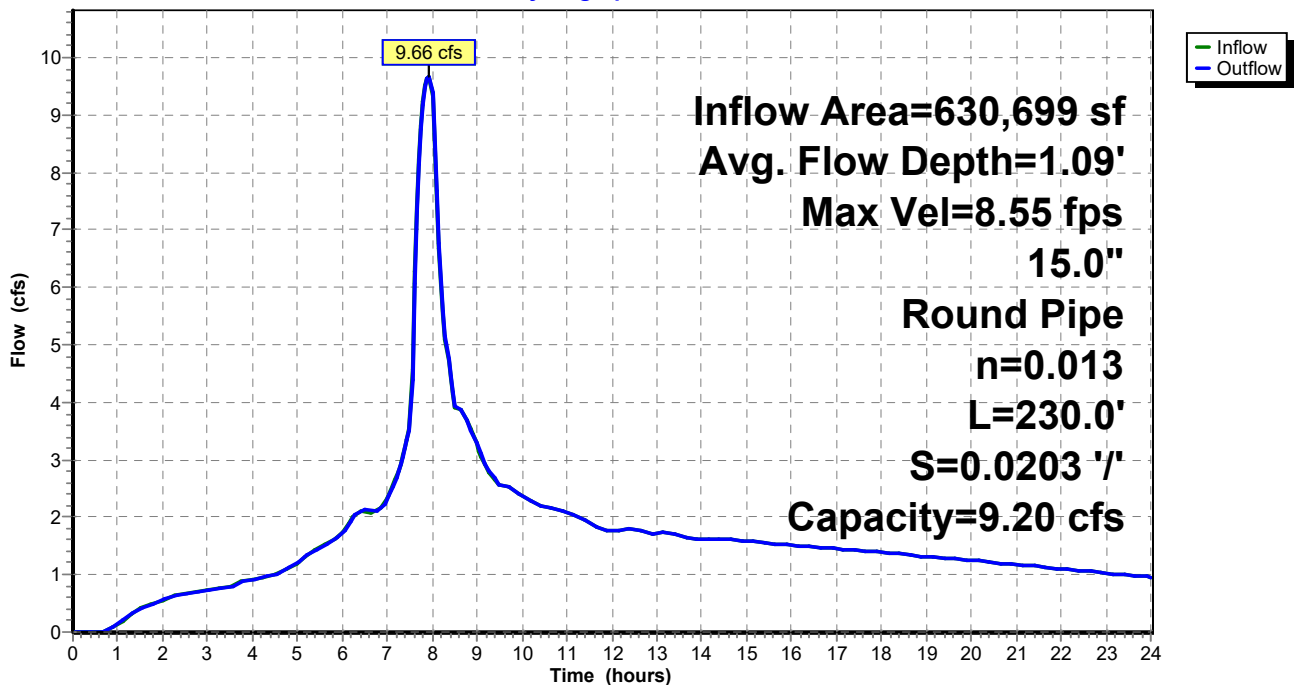
Peak Storage= 261 cf @ 7.94 hrs
 Average Depth at Peak Storage= 1.09'
 Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.20 cfs

15.0" Round Pipe
 n= 0.013
 Length= 230.0' Slope= 0.0203 '/'
 Inlet Invert= 195.20', Outlet Invert= 190.53'



Reach R30: EX 15"

Hydrograph



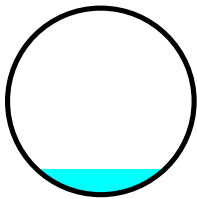
Summary for Reach R31: EX 12"

Inflow Area = 46,947 sf, 16.87% Impervious, Inflow Depth > 2.16" for 10-YR event
 Inflow = 0.55 cfs @ 7.97 hrs, Volume= 8,440 cf
 Outflow = 0.55 cfs @ 7.97 hrs, Volume= 8,438 cf, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 8.51 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 4.80 fps, Avg. Travel Time= 0.4 min

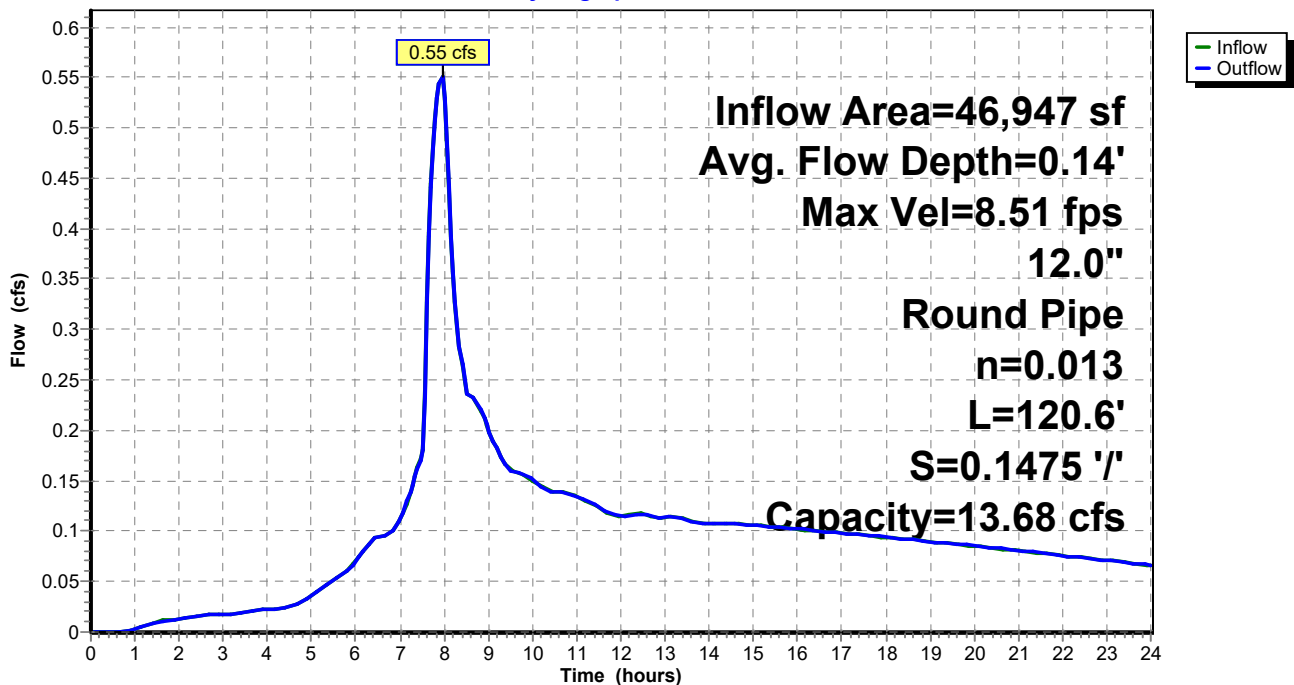
Peak Storage= 8 cf @ 7.97 hrs
 Average Depth at Peak Storage= 0.14'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 13.68 cfs

12.0" Round Pipe
 n= 0.013
 Length= 120.6' Slope= 0.1475 '/'
 Inlet Invert= 223.63', Outlet Invert= 205.84'



Reach R31: EX 12"

Hydrograph



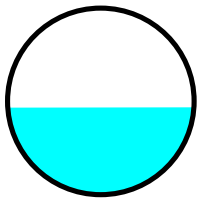
Summary for Reach R32:

Inflow Area = 583,752 sf, 54.25% Impervious, Inflow Depth > 2.79" for 10-YR event
 Inflow = 9.11 cfs @ 7.93 hrs, Volume= 135,616 cf
 Outflow = 9.11 cfs @ 7.93 hrs, Volume= 135,609 cf, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 16.17 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 9.48 fps, Avg. Travel Time= 0.1 min

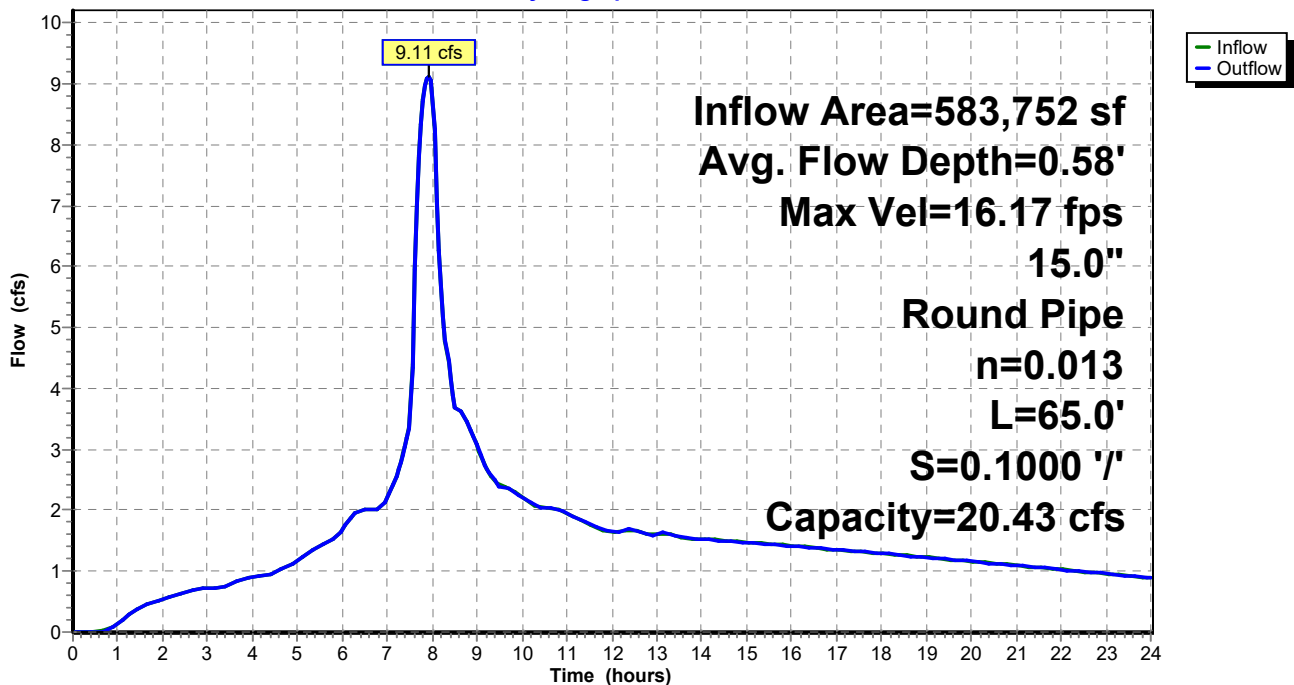
Peak Storage= 37 cf @ 7.93 hrs
 Average Depth at Peak Storage= 0.58'
 Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 20.43 cfs

15.0" Round Pipe
 n= 0.013
 Length= 65.0' Slope= 0.1000 '/'
 Inlet Invert= 225.29', Outlet Invert= 218.79'



Reach R32:

Hydrograph



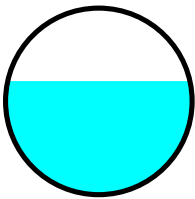
Summary for Reach R70: 12"

Inflow Area = 182,357 sf, 35.99% Impervious, Inflow Depth > 2.52" for 10-YR event
 Inflow = 2.44 cfs @ 7.97 hrs, Volume= 38,368 cf
 Outflow = 2.45 cfs @ 7.98 hrs, Volume= 38,354 cf, Atten= 0%, Lag= 0.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 4.88 fps, Min. Travel Time= 0.5 min
 Avg. Velocity = 2.95 fps, Avg. Travel Time= 0.8 min

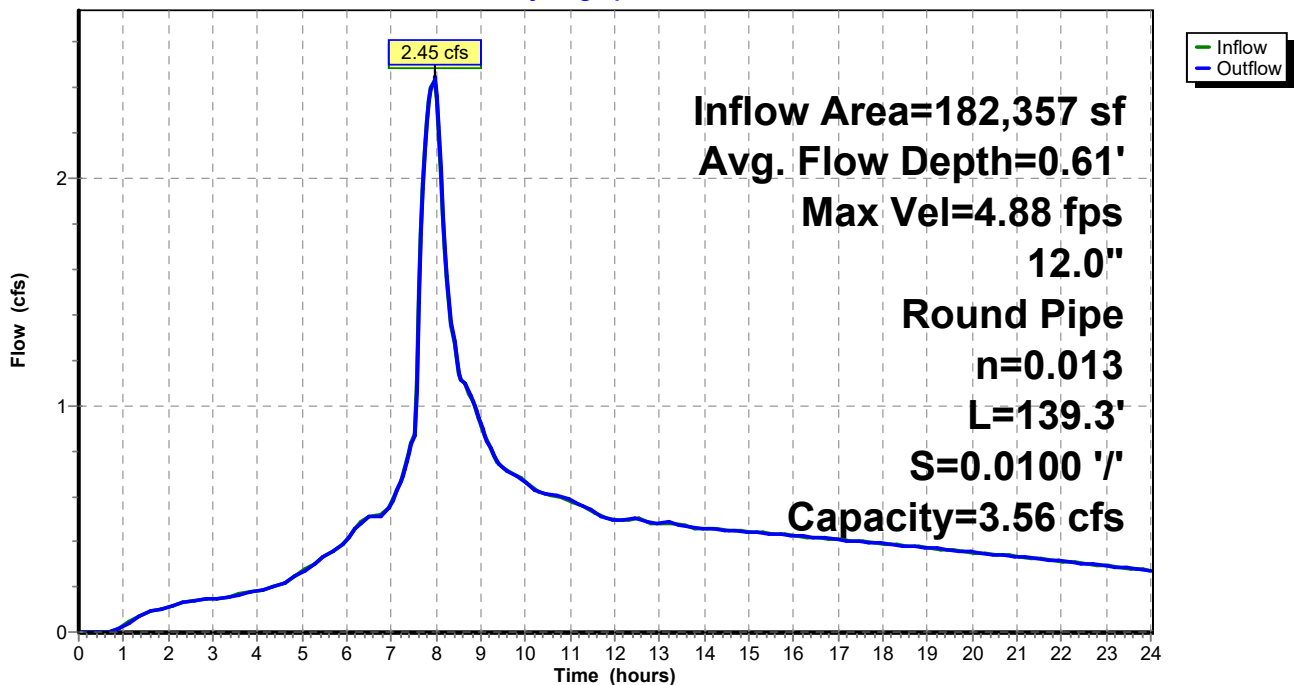
Peak Storage= 70 cf @ 7.98 hrs
 Average Depth at Peak Storage= 0.61'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.56 cfs

12.0" Round Pipe
 n= 0.013 PVC, smooth interior
 Length= 139.3' Slope= 0.0100 '/'
 Inlet Invert= 279.08', Outlet Invert= 277.69'



Reach R70: 12"

Hydrograph



Summary for Reach SW1: PH 6N SWALE

Inflow Area = 178,239 sf, 42.64% Impervious, Inflow Depth > 2.59" for 10-YR event
 Inflow = 2.57 cfs @ 7.94 hrs, Volume= 38,500 cf
 Outflow = 2.54 cfs @ 7.99 hrs, Volume= 38,298 cf, Atten= 1%, Lag= 3.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.29 fps, Min. Travel Time= 5.8 min
 Avg. Velocity = 0.15 fps, Avg. Travel Time= 11.0 min

Peak Storage= 878 cf @ 7.99 hrs
 Average Depth at Peak Storage= 0.68'
 Bank-Full Depth= 1.50' Flow Area= 24.0 sf, Capacity= 11.01 cfs

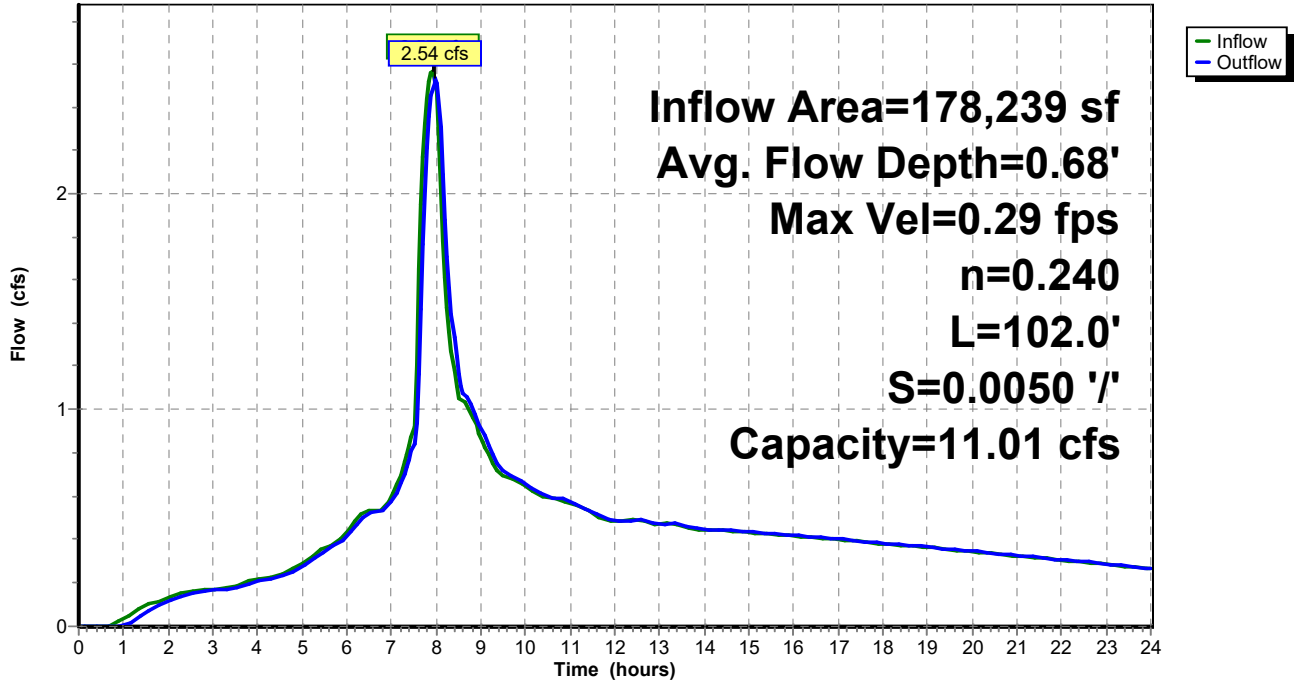
Custom cross-section, Length= 102.0' Slope= 0.0050 '/'
 Constant n= 0.240 Sheet flow over Dense Grass
 Inlet Invert= 292.74', Outlet Invert= 292.23'



Offset (feet)	Elevation (feet)	Chan.Depth (feet)	Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
-11.00	1.50	0.00	0.00	0.0	10.0	0	0.00
-5.00	0.00	1.50	1.50	24.0	22.4	2,448	11.01
5.00	0.00	1.50					
11.00	1.50	0.00					

Reach SW1: PH 6N SWALE

Hydrograph



Summary for Reach SW2: PH 6S SWALE

Inflow Area = 355,074 sf, 27.33% Impervious, Inflow Depth > 2.33" for 10-YR event
 Inflow = 4.54 cfs @ 7.95 hrs, Volume= 69,054 cf
 Outflow = 4.50 cfs @ 7.99 hrs, Volume= 68,720 cf, Atten= 1%, Lag= 2.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.35 fps, Min. Travel Time= 5.3 min
 Avg. Velocity = 0.19 fps, Avg. Travel Time= 9.8 min

Peak Storage= 1,421 cf @ 7.99 hrs
 Average Depth at Peak Storage= 0.93'
 Bank-Full Depth= 1.50' Flow Area= 24.0 sf, Capacity= 10.96 cfs

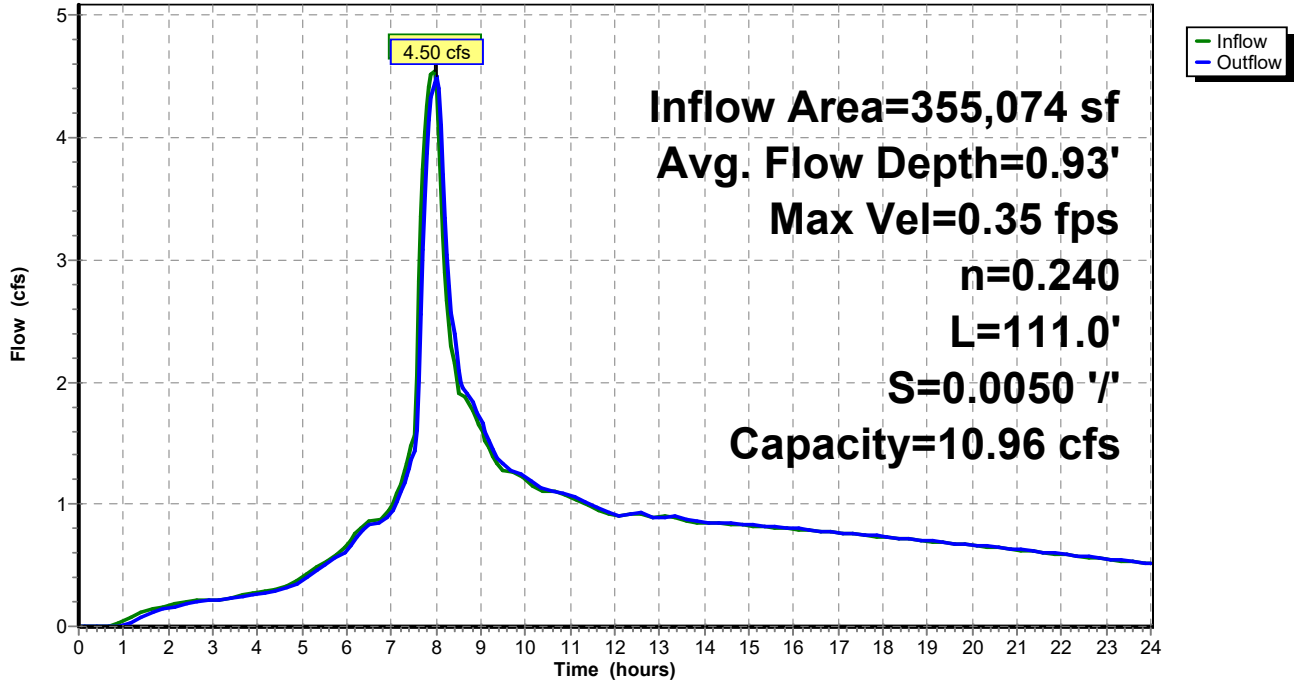
Custom cross-section, Length= 111.0' Slope= 0.0050 '/'
 Constant n= 0.240 Sheet flow over Dense Grass
 Inlet Invert= 261.49', Outlet Invert= 260.94'



Offset (feet)	Elevation (feet)	Chan.Depth (feet)	Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
-11.00	1.50	0.00	0.00	0.0	10.0	0	0.00
-5.00	0.00	1.50	1.50	24.0	22.4	2,664	10.96
5.00	0.00	1.50					
11.00	1.50	0.00					

Reach SW2: PH 6S SWALE

Hydrograph



Summary for Reach SW3: PH 7&8 SWALE

Inflow Area = 2,193,393 sf, 26.16% Impervious, Inflow Depth = 0.03" for 10-YR event
 Inflow = 4.22 cfs @ 7.98 hrs, Volume= 5,651 cf
 Outflow = 3.45 cfs @ 8.05 hrs, Volume= 5,650 cf, Atten= 18%, Lag= 4.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.35 fps, Min. Travel Time= 11.1 min
 Avg. Velocity = 0.06 fps, Avg. Travel Time= 67.0 min

Peak Storage= 2,303 cf @ 8.05 hrs
 Average Depth at Peak Storage= 0.37'
 Bank-Full Depth= 1.50' Flow Area= 46.5 sf, Capacity= 37.96 cfs

Custom cross-section, Length= 234.0' Slope= 0.0130 '/'
 Constant n= 0.240 Sheet flow over Dense Grass
 Inlet Invert= 283.04', Outlet Invert= 280.00'

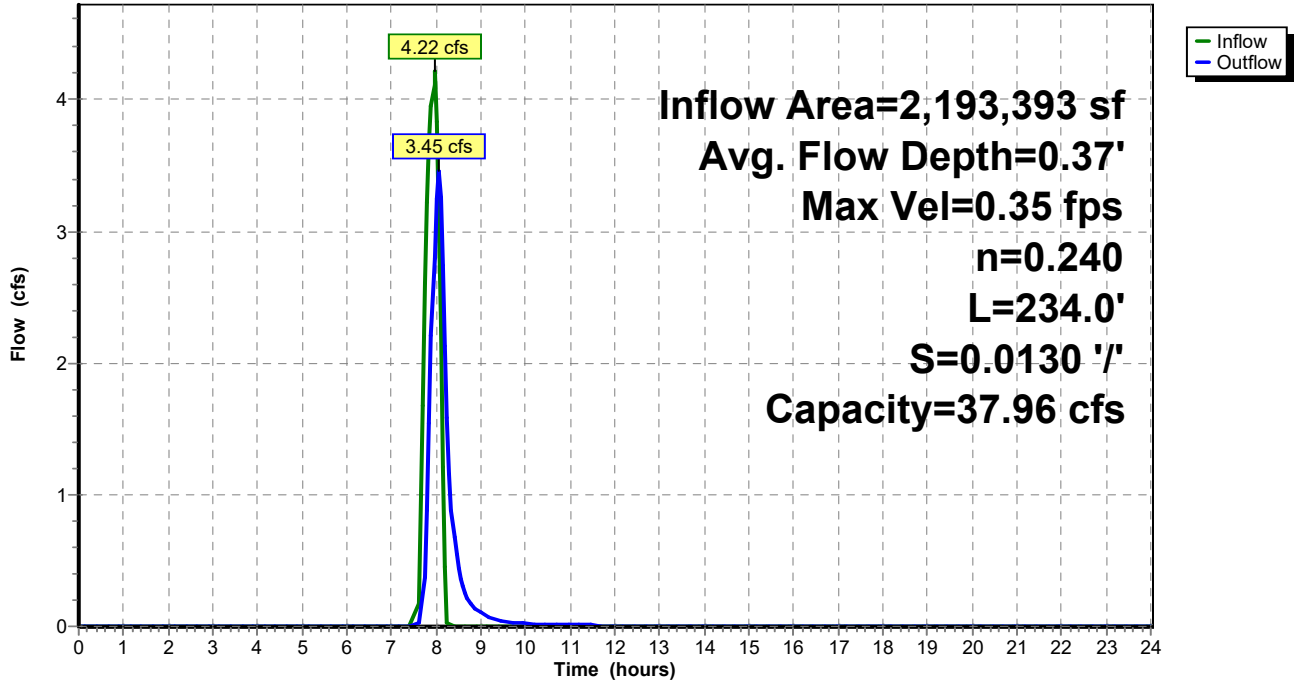


Offset (feet)	Elevation (feet)	Chan.Depth (feet)
-18.50	1.50	0.00
-12.50	0.00	1.50
12.50	0.00	1.50
18.50	1.50	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	25.0	0	0.00
1.50	46.5	37.4	10,881	37.96

Reach SW3: PH 7&8 SWALE

Hydrograph



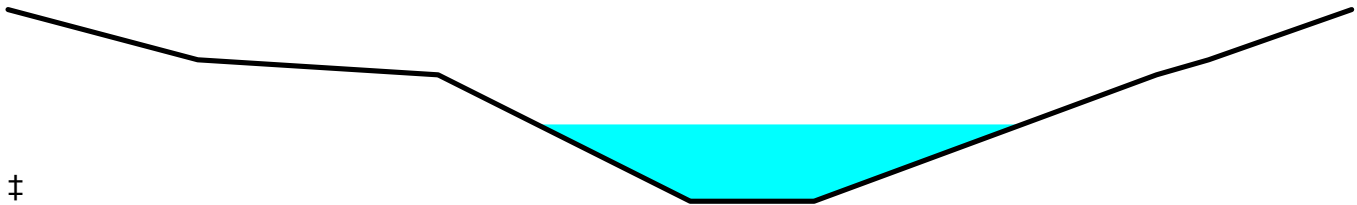
Summary for Reach XC1: EXISTING CHANNEL

Inflow Area = 4,190,152 sf, 34.02% Impervious, Inflow Depth > 2.21" for 10-YR event
 Inflow = 29.76 cfs @ 8.03 hrs, Volume= 772,080 cf
 Outflow = 29.63 cfs @ 8.04 hrs, Volume= 770,897 cf, Atten= 0%, Lag= 1.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.63 fps, Min. Travel Time= 2.0 min
 Avg. Velocity = 1.82 fps, Avg. Travel Time= 2.8 min

Peak Storage= 3,487 cf @ 8.04 hrs
 Average Depth at Peak Storage= 1.53'
 Defined Flood Depth= 3.50' Flow Area= 50.6 sf, Capacity= 195.68 cfs
 Bank-Full Depth= 3.81' Flow Area= 60.3 sf, Capacity= 248.44 cfs

Custom cross-section, Length= 310.0' Slope= 0.0226 '/' (101 Elevation Intervals)
 Constant n= 0.080 Earth, long dense weeds
 Inlet Invert= 189.00', Outlet Invert= 182.00'

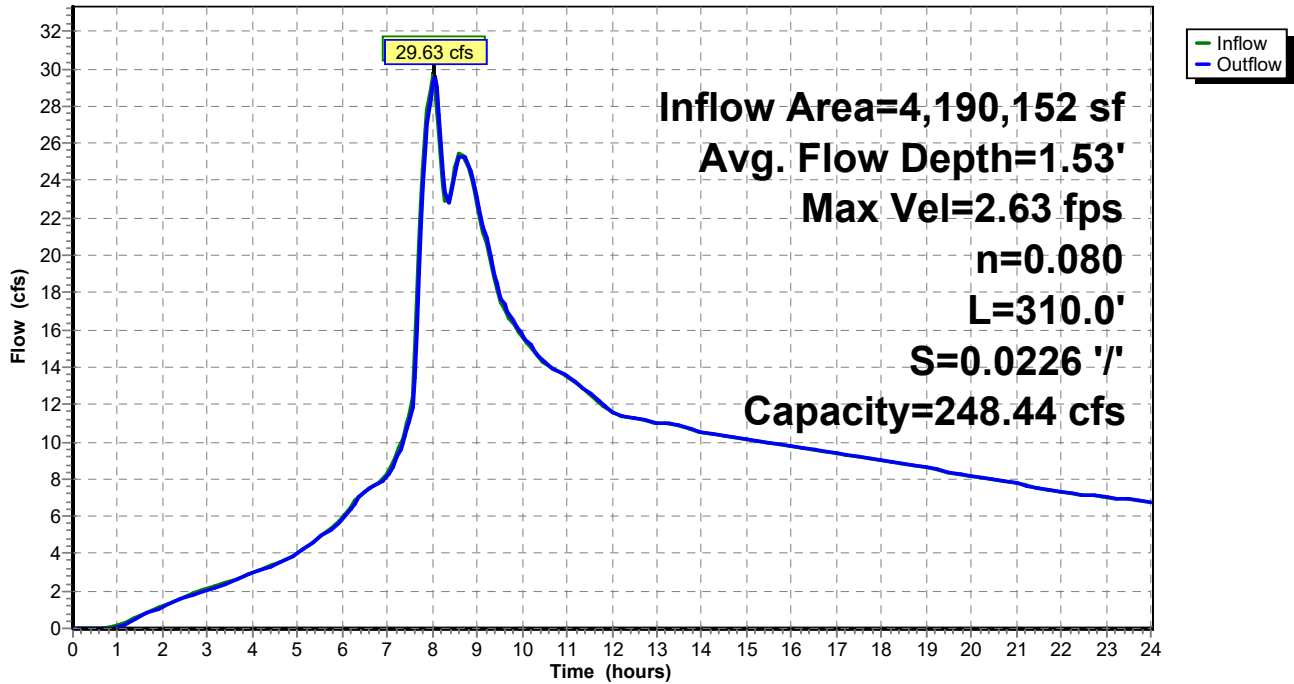


Offset (feet)	Elevation (feet)	Chan.Depth (feet)
-18.00	3.81	0.00
-13.41	2.81	1.00
-7.60	2.51	1.30
-1.50	0.00	3.81
1.50	0.00	3.81
9.78	2.51	1.30
11.04	2.81	1.00
14.50	3.81	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	3.0	0	0.00
2.51	25.6	18.2	7,929	89.18
2.81	31.9	25.4	9,874	103.49
3.81	60.3	33.7	18,701	248.44

Reach XC1: EXISTING CHANNEL

Hydrograph



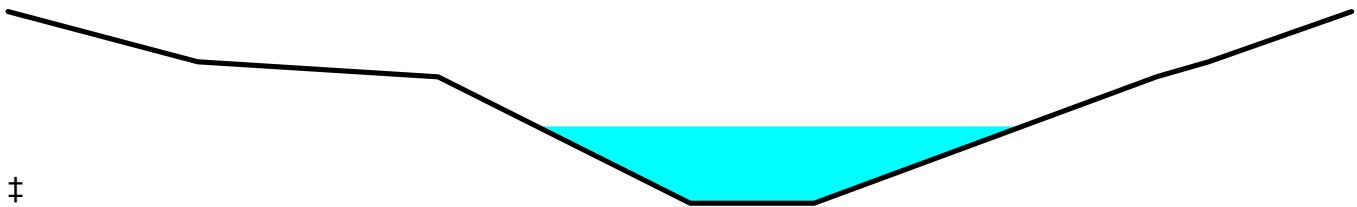
Summary for Reach XC2: EXISTING CHANNEL

Inflow Area = 4,190,152 sf, 34.02% Impervious, Inflow Depth > 2.21" for 10-YR event
 Inflow = 29.89 cfs @ 8.00 hrs, Volume= 773,262 cf
 Outflow = 29.76 cfs @ 8.03 hrs, Volume= 772,080 cf, Atten= 0%, Lag= 1.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.63 fps, Min. Travel Time= 2.0 min
 Avg. Velocity = 1.82 fps, Avg. Travel Time= 2.8 min

Peak Storage= 3,499 cf @ 8.03 hrs
 Average Depth at Peak Storage= 1.53'
 Defined Flood Depth= 3.50' Flow Area= 50.6 sf, Capacity= 195.68 cfs
 Bank-Full Depth= 3.81' Flow Area= 60.3 sf, Capacity= 248.44 cfs

Custom cross-section, Length= 310.0' Slope= 0.0226 '/' (101 Elevation Intervals)
 Constant n= 0.080 Earth, long dense weeds
 Inlet Invert= 189.00', Outlet Invert= 182.00'

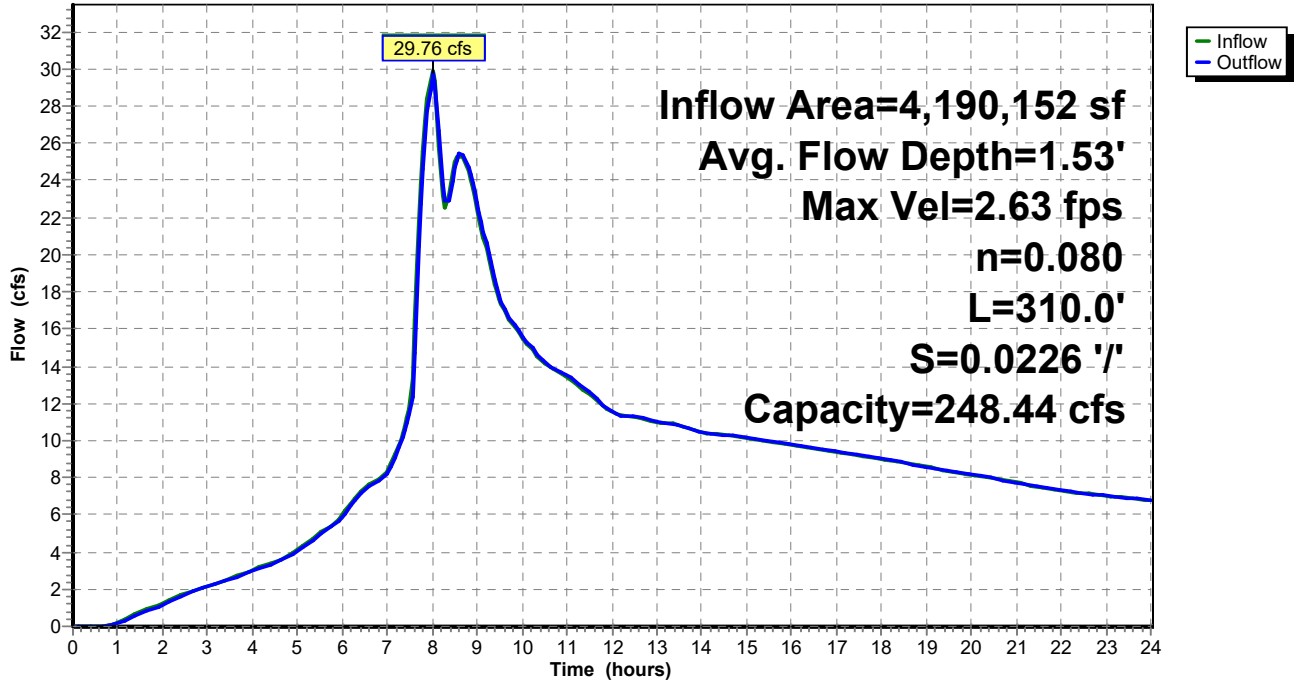


Offset (feet)	Elevation (feet)	Chan.Depth (feet)
-18.00	3.81	0.00
-13.41	2.81	1.00
-7.60	2.51	1.30
-1.50	0.00	3.81
1.50	0.00	3.81
9.78	2.51	1.30
11.04	2.81	1.00
14.50	3.81	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	3.0	0	0.00
2.51	25.6	18.2	7,929	89.18
2.81	31.9	25.4	9,874	103.49
3.81	60.3	33.7	18,701	248.44

Reach XC2: EXISTING CHANNEL

Hydrograph



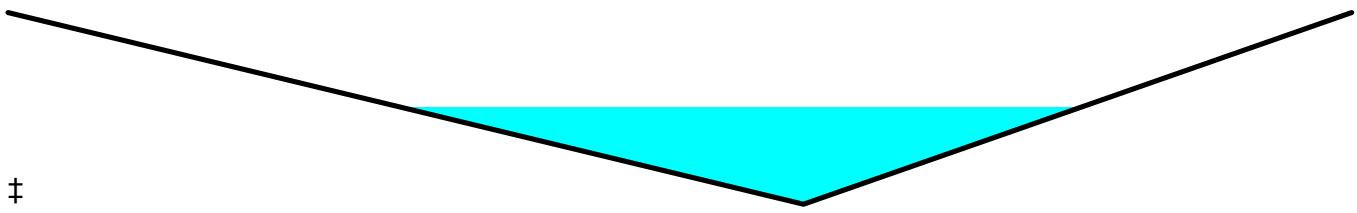
Summary for Reach XC3: EXISTING CHANNEL

Inflow Area = 3,331,066 sf, 31.23% Impervious, Inflow Depth > 2.11" for 10-YR event
 Inflow = 20.33 cfs @ 8.61 hrs, Volume= 587,079 cf
 Outflow = 20.31 cfs @ 8.63 hrs, Volume= 586,531 cf, Atten= 0%, Lag= 1.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.44 fps, Min. Travel Time= 1.2 min
 Avg. Velocity = 1.77 fps, Avg. Travel Time= 1.7 min

Peak Storage= 1,465 cf @ 8.63 hrs
 Average Depth at Peak Storage= 0.99'
 Bank-Full Depth= 1.95' Flow Area= 32.2 sf, Capacity= 123.48 cfs

Custom cross-section, Length= 176.0' Slope= 0.0293 '/'
 Constant n= 0.065
 Inlet Invert= 196.00', Outlet Invert= 190.84'

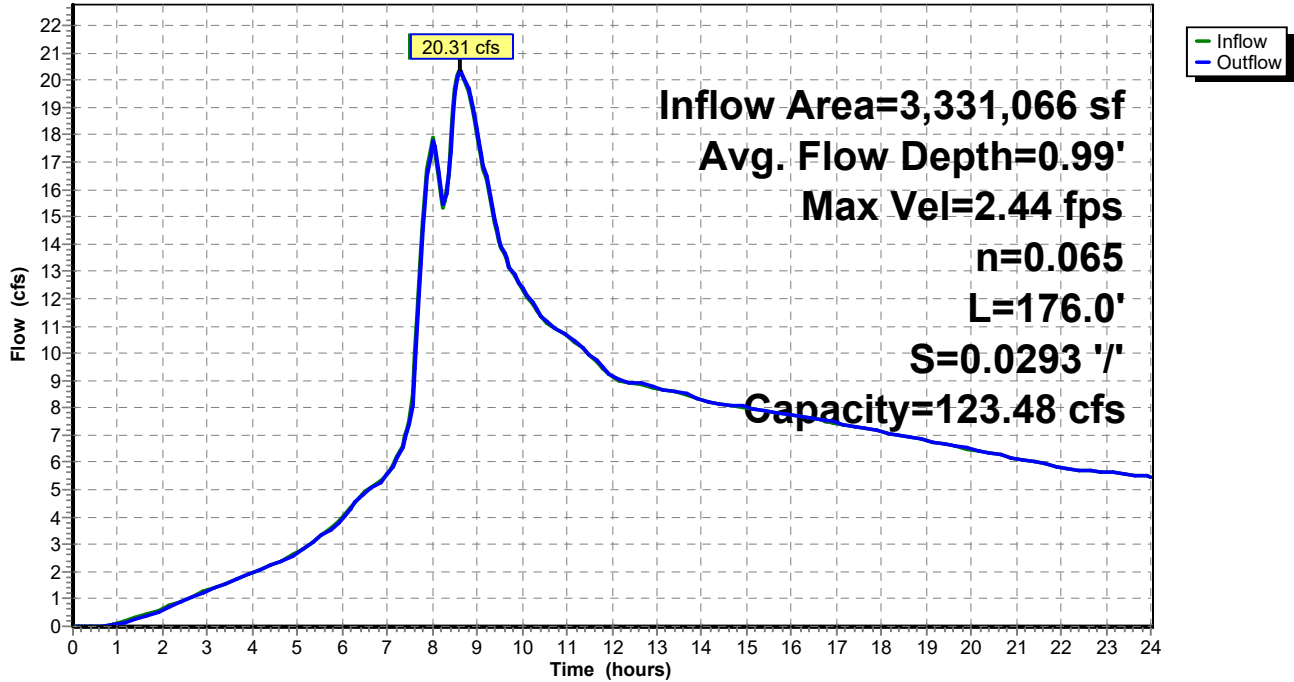


Offset (feet)	Elevation (feet)	Chan.Depth (feet)
-19.57	1.95	0.00
0.00	0.00	1.95
13.49	1.95	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
1.95	32.2	33.3	5,673	123.48

Reach XC3: EXISTING CHANNEL

Hydrograph



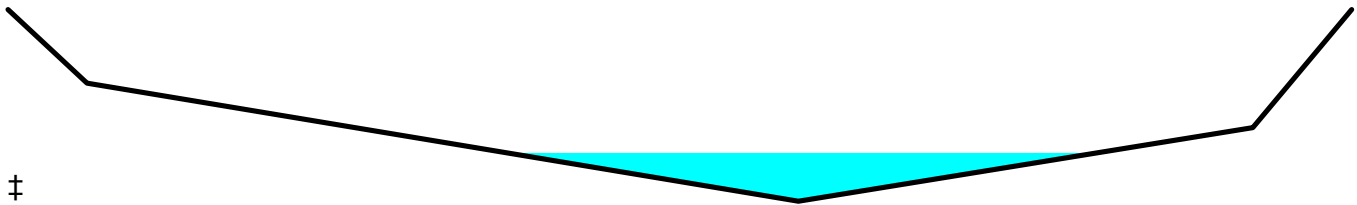
Summary for Reach XC4: EXISTING CHANNEL

Inflow Area = 2,836,288 sf, 27.74% Impervious, Inflow Depth > 2.02" for 10-YR event
 Inflow = 17.67 cfs @ 8.51 hrs, Volume= 477,328 cf
 Outflow = 17.30 cfs @ 8.62 hrs, Volume= 475,014 cf, Atten= 2%, Lag= 6.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 1.77 fps, Min. Travel Time= 5.9 min
 Avg. Velocity = 1.25 fps, Avg. Travel Time= 8.3 min

Peak Storage= 6,122 cf @ 8.62 hrs
 Average Depth at Peak Storage= 0.66'
 Defined Flood Depth= 1.60' Flow Area= 54.7 sf, Capacity= 188.70 cfs
 Bank-Full Depth= 2.60' Flow Area= 119.1 sf, Capacity= 640.20 cfs

Custom cross-section, Length= 625.0' Slope= 0.0400 '/' (102 Elevation Intervals)
 Constant n= 0.080 Earth, long dense weeds
 Inlet Invert= 223.00', Outlet Invert= 198.00'

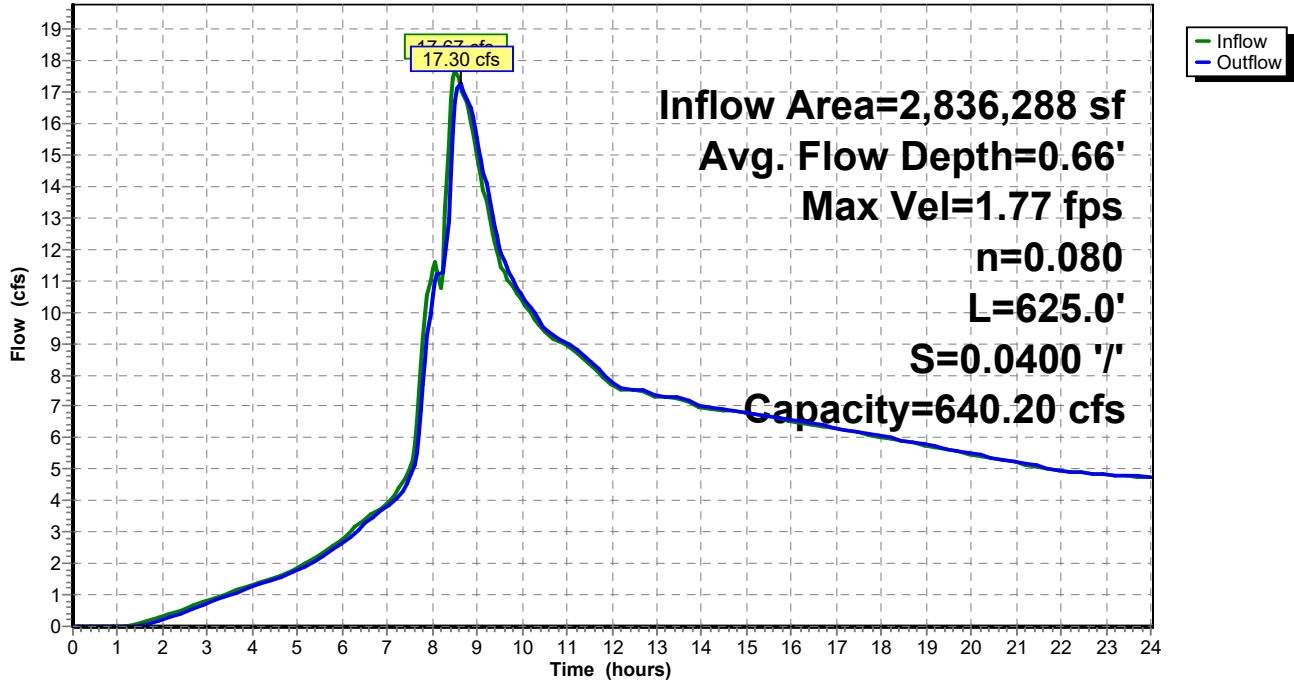


Offset (feet)	Elevation (feet)	Chan.Depth (feet)
-40.00	2.60	0.00
-36.00	1.60	1.00
0.00	0.00	2.60
23.00	1.00	1.60
28.00	2.60	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
1.00	22.8	45.5	14,219	53.21
1.60	54.7	61.0	34,164	188.70
2.60	119.1	68.4	74,438	640.20

Reach XC4: EXISTING CHANNEL

Hydrograph



Summary for Reach XC5: EXISTING CHANNEL

Inflow Area = 246,832 sf, 38.68% Impervious, Inflow Depth > 2.52" for 10-YR event
 Inflow = 3.42 cfs @ 7.98 hrs, Volume= 51,741 cf
 Outflow = 3.07 cfs @ 8.09 hrs, Volume= 51,022 cf, Atten= 10%, Lag= 6.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.73 fps, Min. Travel Time= 14.8 min
 Avg. Velocity = 0.38 fps, Avg. Travel Time= 28.5 min

Peak Storage= 2,728 cf @ 8.09 hrs
 Average Depth at Peak Storage= 0.37'
 Bank-Full Depth= 1.50' Flow Area= 24.0 sf, Capacity= 39.11 cfs

Custom cross-section, Length= 650.0' Slope= 0.0631 '/'
 Constant n= 0.240 Sheet flow over Dense Grass
 Inlet Invert= 286.00', Outlet Invert= 245.00'

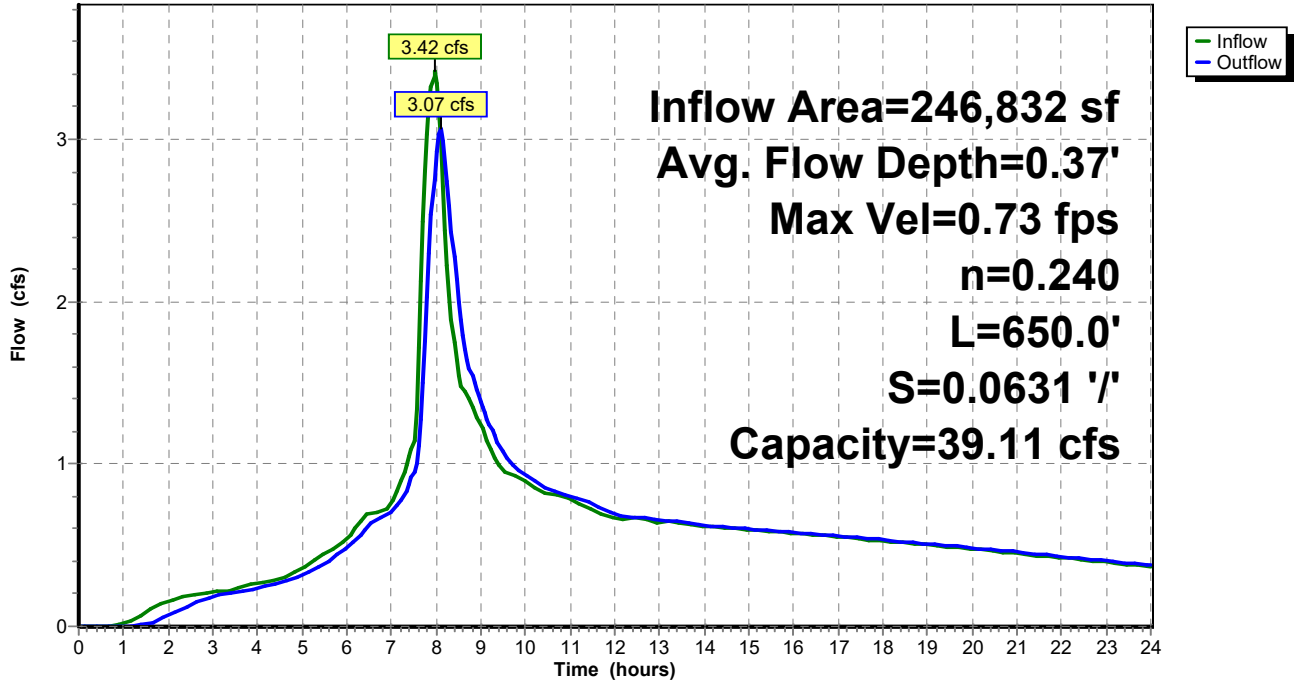


Offset (feet)	Elevation (feet)	Chan.Depth (feet)
-11.00	1.50	0.00
-5.00	0.00	1.50
5.00	0.00	1.50
11.00	1.50	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	10.0	0	0.00
1.50	24.0	22.4	15,600	39.11

Reach XC5: EXISTING CHANNEL

Hydrograph



Summary for Reach XC6: EXISTING CHANNEL

Inflow Area = 2,589,456 sf, 26.70% Impervious, Inflow Depth > 1.98" for 10-YR event
 Inflow = 15.74 cfs @ 8.50 hrs, Volume= 427,281 cf
 Outflow = 15.70 cfs @ 8.52 hrs, Volume= 426,349 cf, Atten= 0%, Lag= 1.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 1.21 fps, Min. Travel Time= 2.4 min
 Avg. Velocity = 0.78 fps, Avg. Travel Time= 3.7 min

Peak Storage= 2,231 cf @ 8.52 hrs
 Average Depth at Peak Storage= 0.94'
 Bank-Full Depth= 1.50' Flow Area= 24.0 sf, Capacity= 37.55 cfs

Custom cross-section, Length= 172.0' Slope= 0.0581 '/'
 Constant n= 0.240 Sheet flow over Dense Grass
 Inlet Invert= 252.00', Outlet Invert= 242.00'



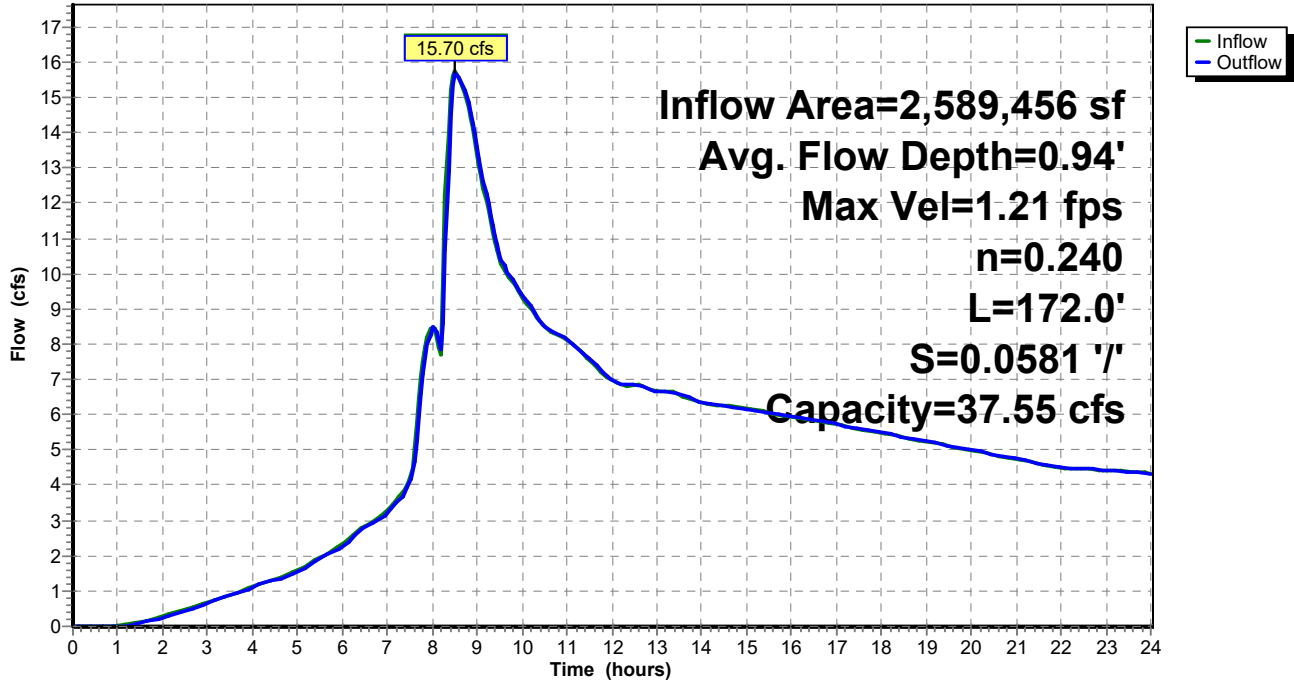
‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)		
-11.00	1.50	0.00		
-5.00	0.00	1.50		
5.00	0.00	1.50		
11.00	1.50	0.00		

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	10.0	0	0.00
1.50	24.0	22.4	4,128	37.55

Reach XC6: EXISTING CHANNEL

Hydrograph



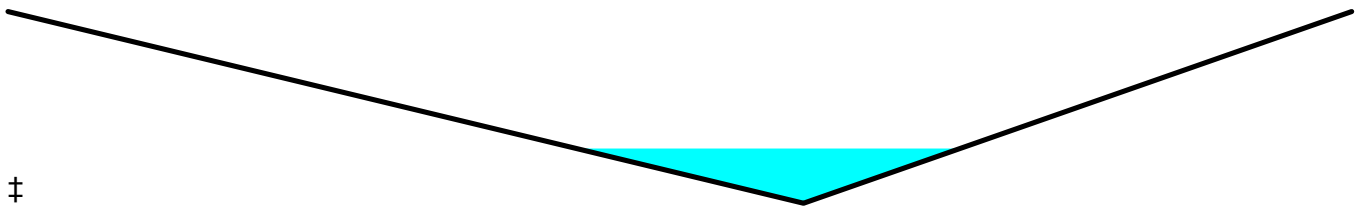
Summary for Reach XC7: EXISTING CHANNEL

Inflow Area = 228,387 sf, 26.59% Impervious, Inflow Depth > 2.27" for 10-YR event
 Inflow = 2.81 cfs @ 7.96 hrs, Volume= 43,129 cf
 Outflow = 2.58 cfs @ 8.05 hrs, Volume= 42,730 cf, Atten= 8%, Lag= 5.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.98 fps, Min. Travel Time= 12.1 min
 Avg. Velocity = 0.62 fps, Avg. Travel Time= 19.1 min

Peak Storage= 1,869 cf @ 8.05 hrs
 Average Depth at Peak Storage= 0.56'
 Defined Flood Depth= 2.00' Flow Area= 33.9 sf, Capacity= 77.87 cfs
 Bank-Full Depth= 1.95' Flow Area= 32.2 sf, Capacity= 72.93 cfs

Custom cross-section, Length= 710.0' Slope= 0.0155 '/'
 Constant n= 0.080 Earth, long dense weeds
 Inlet Invert= 204.00', Outlet Invert= 193.00'

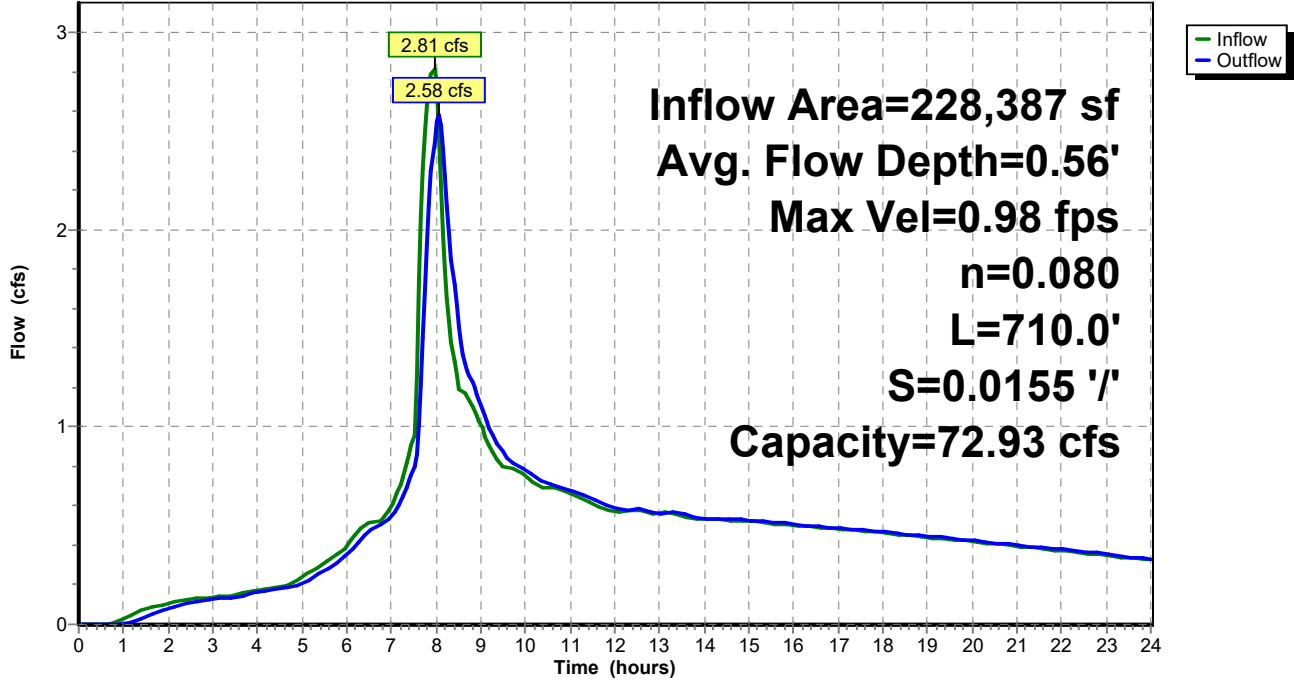


Offset (feet)	Elevation (feet)	Chan.Depth (feet)
-19.57	1.95	0.00
0.00	0.00	1.95
13.49	1.95	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
1.95	32.2	33.3	22,886	72.93

Reach XC7: EXISTING CHANNEL

Hydrograph



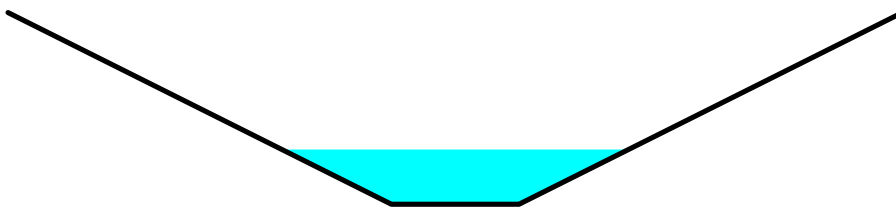
Summary for Reach XC8: EXISTING CHANNEL

Inflow Area = 932,502 sf, 26.46% Impervious, Inflow Depth > 2.05" for 10-YR event
 Inflow = 7.82 cfs @ 8.16 hrs, Volume= 159,453 cf
 Outflow = 7.70 cfs @ 8.21 hrs, Volume= 158,986 cf, Atten= 2%, Lag= 3.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.42 fps, Min. Travel Time= 3.4 min
 Avg. Velocity = 1.51 fps, Avg. Travel Time= 5.5 min

Peak Storage= 1,591 cf @ 8.21 hrs
 Average Depth at Peak Storage= 0.86'
 Bank-Full Depth= 3.00' Flow Area= 24.0 sf, Capacity= 116.73 cfs

Custom cross-section, Length= 500.0' Slope= 0.0380 '/'
 Constant n= 0.080
 Inlet Invert= 226.00', Outlet Invert= 207.00'

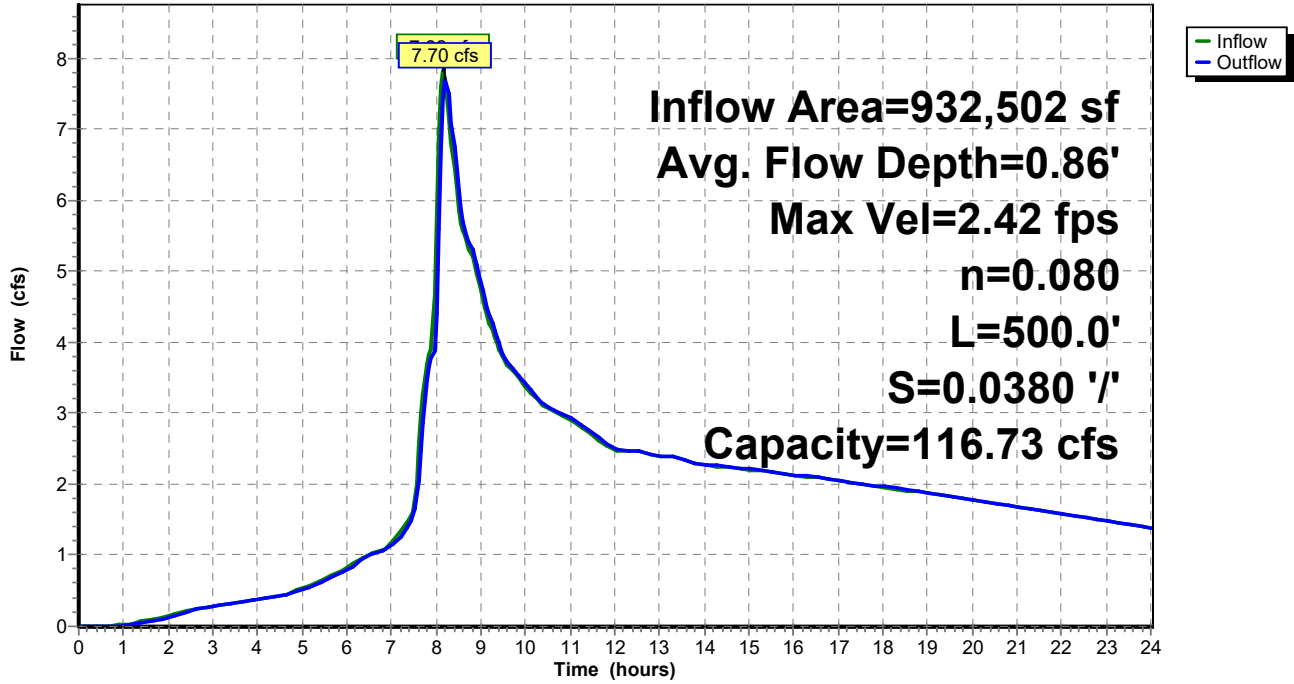


Offset (feet)	Elevation (feet)	Chan.Depth (feet)
-7.00	3.00	0.00
-1.00	0.00	3.00
1.00	0.00	3.00
7.00	3.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	2.0	0	0.00
3.00	24.0	15.4	12,000	116.73

Reach XC8: EXISTING CHANNEL

Hydrograph



Summary for Pond C1: EX. REDMOND HILL CULVERTS

Inflow Area = 4,190,152 sf, 34.02% Impervious, Inflow Depth > 2.21" for 10-YR event
 Inflow = 29.76 cfs @ 8.03 hrs, Volume= 772,080 cf
 Outflow = 29.76 cfs @ 8.03 hrs, Volume= 772,080 cf, Atten= 0%, Lag= 0.0 min
 Primary = 29.76 cfs @ 8.03 hrs, Volume= 772,080 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 192.61' @ 8.03 hrs
 Flood Elev= 195.23'

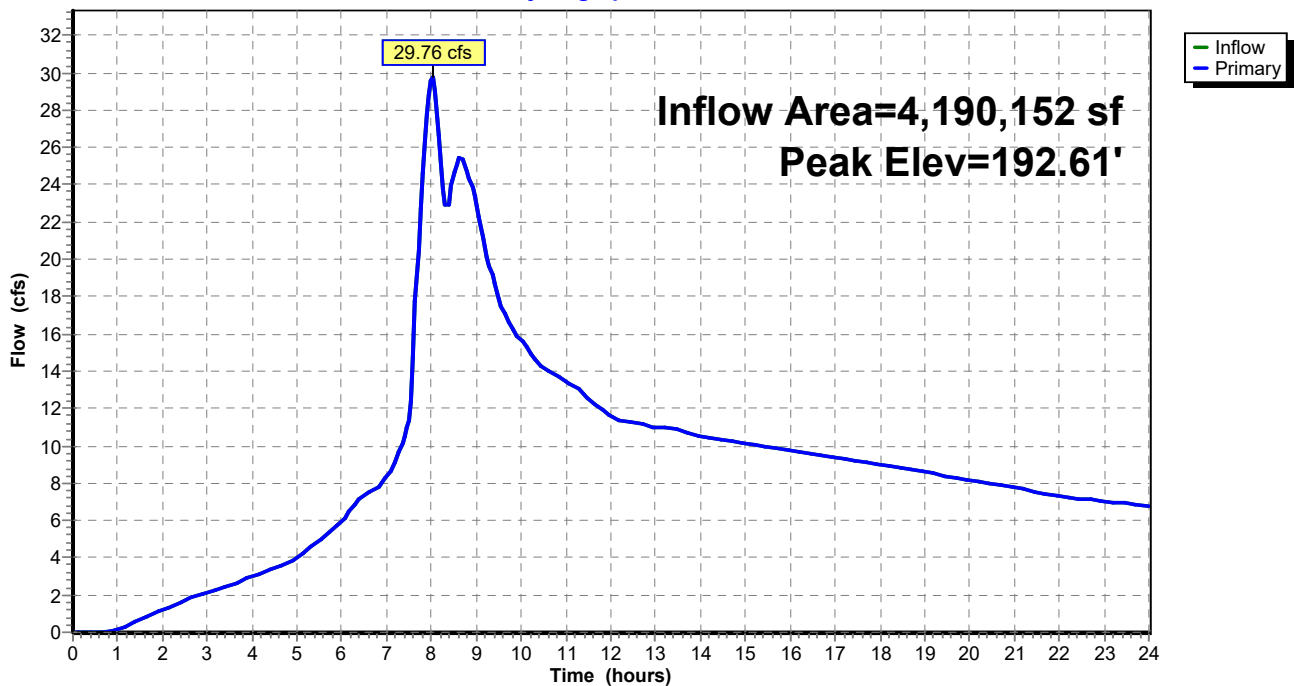
Device	Routing	Invert	Outlet Devices
#1	Primary	190.83'	30.0" Round Culvert L= 93.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 190.83' / 189.53' S= 0.0140 '/ Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Primary	190.84'	30.0" Round Culvert L= 93.2' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 190.84' / 189.52' S= 0.0142 '/ Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=29.61 cfs @ 8.03 hrs HW=192.60' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Inlet Controls 14.87 cfs @ 4.00 fps)
- 2=Culvert (Inlet Controls 14.74 cfs @ 3.99 fps)

Pond C1: EX. REDMOND HILL CULVERTS

Hydrograph



Summary for Pond C2: EX. W 2ND CULVERTS

Inflow Area = 3,559,453 sf, 30.93% Impervious, Inflow Depth > 2.12" for 10-YR event
 Inflow = 21.66 cfs @ 8.62 hrs, Volume= 629,261 cf
 Outflow = 21.66 cfs @ 8.62 hrs, Volume= 629,261 cf, Atten= 0%, Lag= 0.0 min
 Primary = 21.66 cfs @ 8.62 hrs, Volume= 629,261 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 192.30' @ 8.62 hrs
 Flood Elev= 195.23'

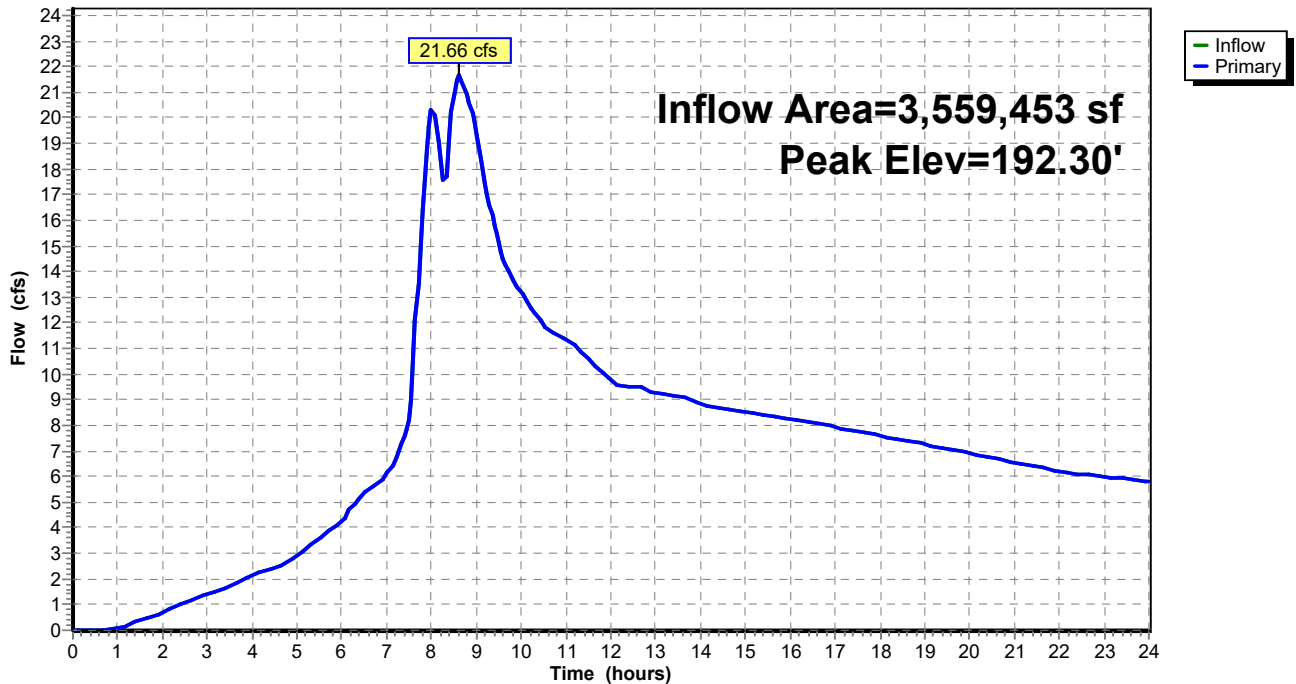
Device	Routing	Invert	Outlet Devices
#1	Primary	190.83'	30.0" Round Culvert L= 93.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 190.83' / 189.53' S= 0.0140 '/ Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Primary	190.84'	30.0" Round Culvert L= 93.2' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 190.84' / 189.52' S= 0.0142 '/ Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=21.64 cfs @ 8.62 hrs HW=192.30' TW=190.42' (Dynamic Tailwater)

- 1=Culvert (Inlet Controls 10.88 cfs @ 3.64 fps)
- 2=Culvert (Inlet Controls 10.76 cfs @ 3.62 fps)

Pond C2: EX. W 2ND CULVERTS

Hydrograph



Summary for Pond C3: EX. BROOKSIDE CULVERTS

Inflow Area = 3,331,066 sf, 31.23% Impervious, Inflow Depth > 2.11" for 10-YR event
 Inflow = 20.33 cfs @ 8.61 hrs, Volume= 587,079 cf
 Outflow = 20.33 cfs @ 8.61 hrs, Volume= 587,079 cf, Atten= 0%, Lag= 0.0 min
 Primary = 20.33 cfs @ 8.61 hrs, Volume= 587,079 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 199.51' @ 8.61 hrs
 Flood Elev= 201.10'

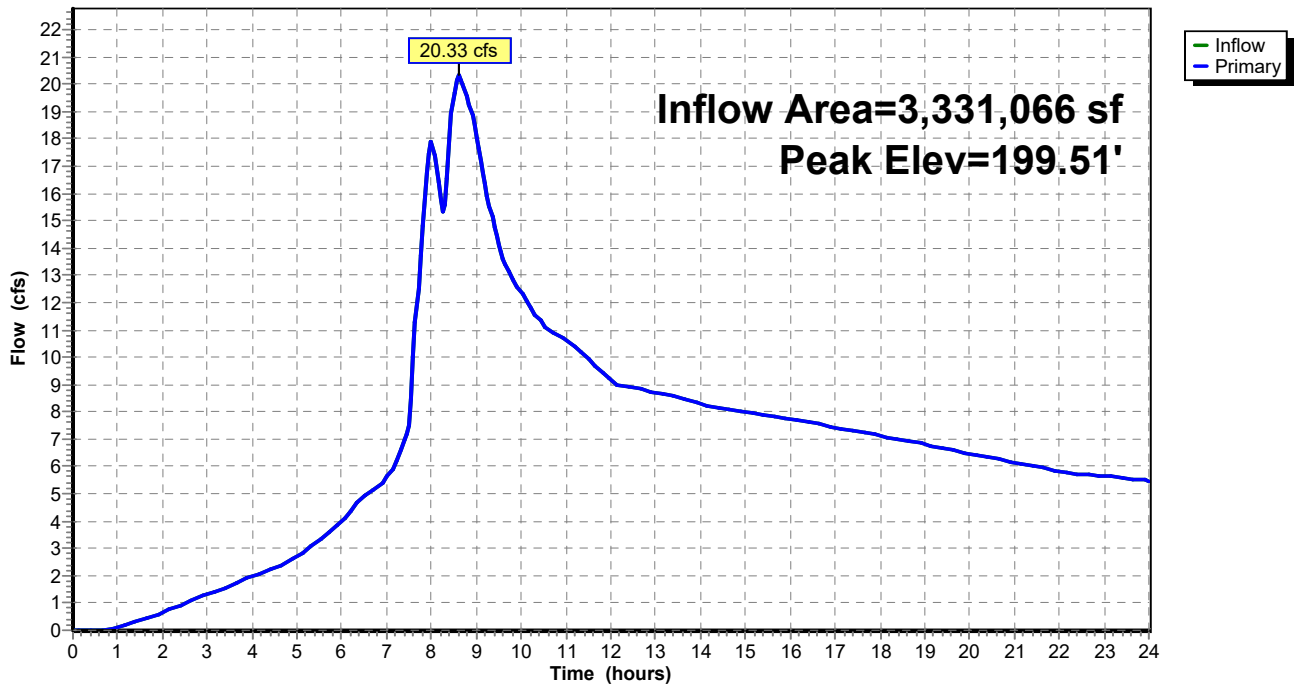
Device	Routing	Invert	Outlet Devices
#1	Primary	197.67'	30.0" Round Culvert L= 69.9' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 197.67' / 196.39' S= 0.0183 '/ Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Primary	198.60'	30.0" Round Culvert L= 70.3' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 198.60' / 197.08' S= 0.0216 '/ Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=20.31 cfs @ 8.61 hrs HW=199.51' TW=196.99' (Dynamic Tailwater)

- 1=Culvert (Inlet Controls 15.72 cfs @ 4.07 fps)
- 2=Culvert (Inlet Controls 4.59 cfs @ 2.86 fps)

Pond C3: EX. BROOKSIDE CULVERTS

Hydrograph



Summary for Pond P1: PHASE 3 POND

Inflow Area = 654,567 sf, 30.51% Impervious, Inflow Depth > 2.43" for 10-YR event
 Inflow = 7.87 cfs @ 7.98 hrs, Volume= 132,623 cf
 Outflow = 5.61 cfs @ 8.20 hrs, Volume= 109,463 cf, Atten= 29%, Lag= 13.6 min
 Primary = 5.61 cfs @ 8.20 hrs, Volume= 109,463 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 267.41' @ 8.20 hrs Surf.Area= 8,691 sf Storage= 25,404 cf
 Flood Elev= 267.50' Surf.Area= 8,803 sf Storage= 26,197 cf

Plug-Flow detention time= 191.0 min calculated for 109,463 cf (83% of inflow)
 Center-of-Mass det. time= 79.7 min (820.7 - 741.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	263.50'	35,637 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
263.50	4,530	313.0	0	0	4,530
268.50	10,091	428.8	35,637	35,637	11,613

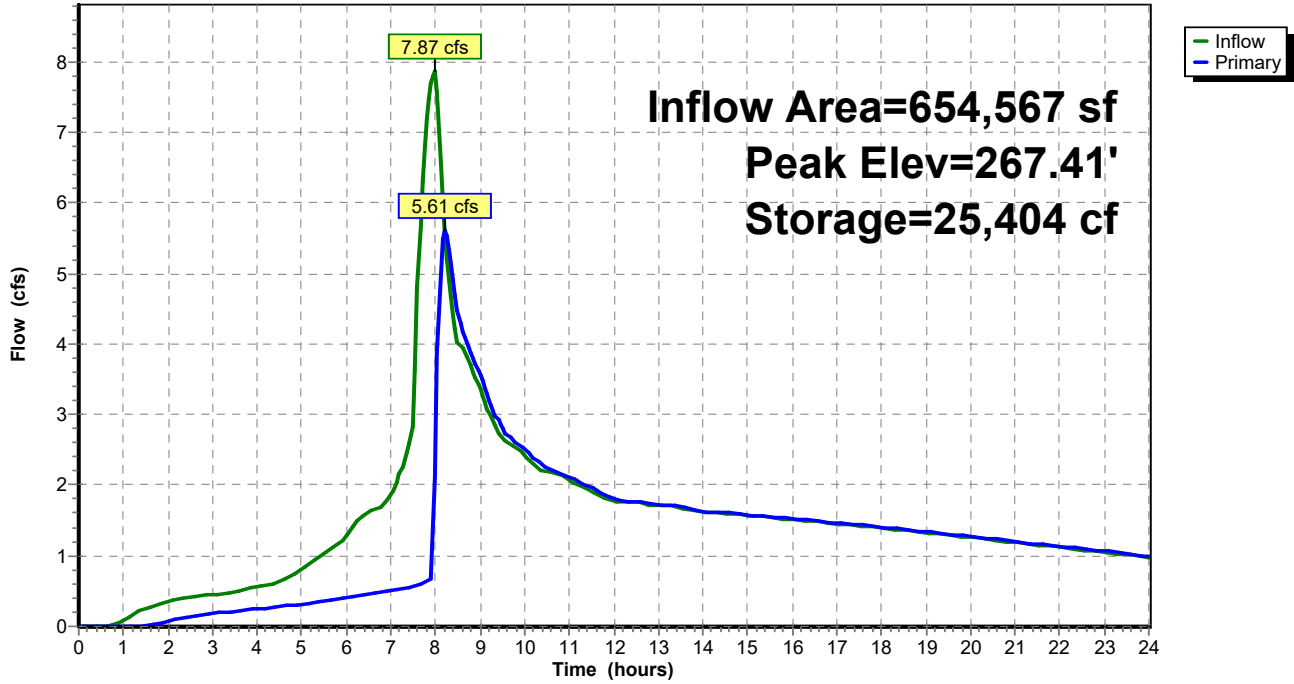
Device	Routing	Invert	Outlet Devices
#1	Primary	263.50'	12.0" Round Pond Outfall L= 12.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 263.50' / 262.50' S= 0.0833 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	267.10'	28.0" x 24.0" Horiz. Ditch Inlet C= 0.600 Limited to weir flow at low heads
#3	Device 1	263.50'	3.8" Vert. Detention Orifice C= 0.600

Primary OutFlow Max=5.60 cfs @ 8.20 hrs HW=267.41' TW=226.86' (Dynamic Tailwater)

- ↑ 1=Pond Outfall (Passes 5.60 cfs of 6.98 cfs potential flow)
- ↑ 2=Ditch Inlet (Weir Controls 4.87 cfs @ 1.82 fps)
- ↑ 3=Detention Orifice (Orifice Controls 0.73 cfs @ 9.33 fps)

Pond P1: PHASE 3 POND

Hydrograph



Summary for Pond P2: PHASE 6 POND

Inflow Area = 2,193,393 sf, 26.16% Impervious, Inflow Depth > 2.37" for 10-YR event
 Inflow = 26.27 cfs @ 7.99 hrs, Volume= 432,385 cf
 Outflow = 13.39 cfs @ 8.52 hrs, Volume= 349,307 cf, Atten= 49%, Lag= 31.5 min
 Primary = 13.39 cfs @ 8.52 hrs, Volume= 349,307 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 278.98' @ 8.52 hrs Surf.Area= 17,816 sf Storage= 92,980 cf
 Flood Elev= 279.50' Surf.Area= 18,313 sf Storage= 101,083 cf

Plug-Flow detention time= 214.3 min calculated for 349,307 cf (81% of inflow)
 Center-of-Mass det. time= 93.4 min (838.5 - 745.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	273.00'	116,634 cf	Custom Stage Data (Irregular) Listed below		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
273.00	12,111	431.4	0	0	12,111
280.50	19,267	537.0	116,634	116,634	21,022

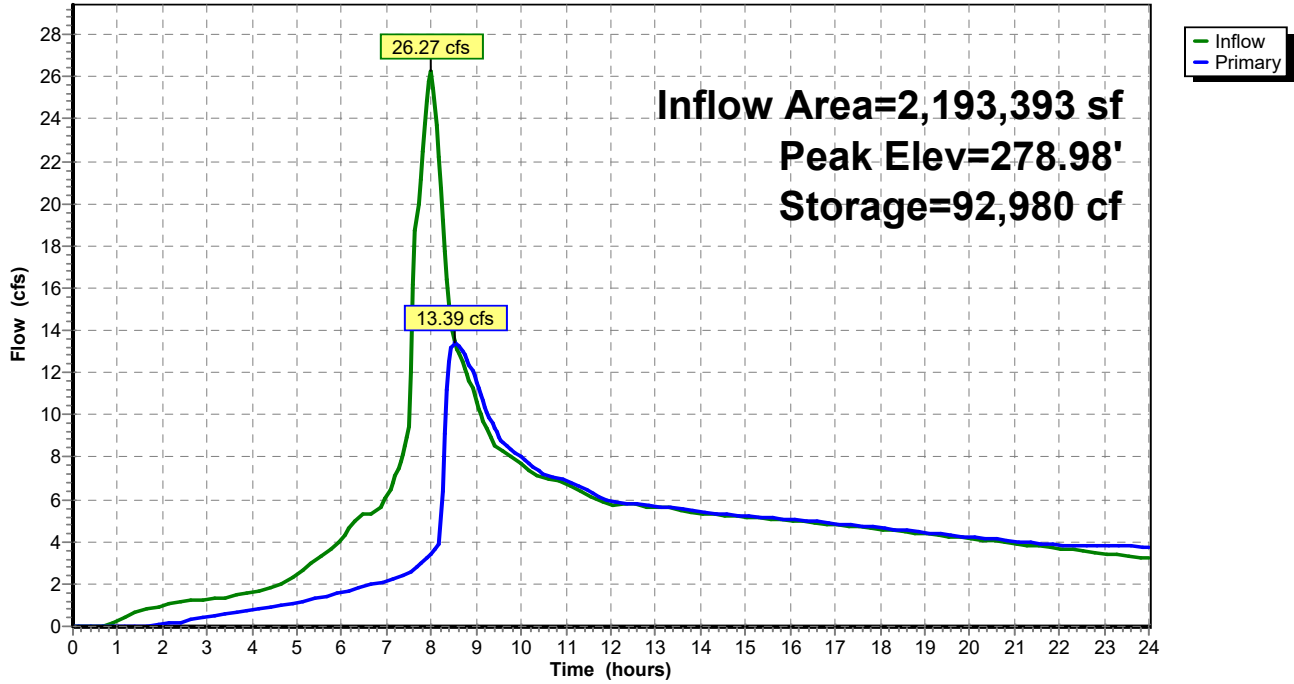
Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	18.0" Round Pond Outfall L= 50.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 271.00' S= 0.0300 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Primary	273.00'	8.0" Vert. Detention Orifice 1 C= 0.600
#3	Device 1	278.50'	28.0" x 24.0" Horiz. Upper Ditch Inlet 1 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=13.36 cfs @ 8.52 hrs HW=278.98' TW=250.16' (Dynamic Tailwater)

- 1=Pond Outfall (Passes 9.37 cfs of 20.36 cfs potential flow)
- 3=Upper Ditch Inlet 1 (Weir Controls 9.37 cfs @ 2.26 fps)
- 2=Detention Orifice 1 (Orifice Controls 3.99 cfs @ 11.44 fps)

Pond P2: PHASE 6 POND

Hydrograph



Summary for Pond R12: HI FLO BYPASS

Inflow Area = 2,193,393 sf, 26.16% Impervious, Inflow Depth > 2.37" for 10-YR event
 Inflow = 27.34 cfs @ 7.98 hrs, Volume= 432,397 cf
 Outflow = 27.34 cfs @ 7.98 hrs, Volume= 432,397 cf, Atten= 0%, Lag= 0.0 min
 Primary = 4.22 cfs @ 7.98 hrs, Volume= 5,651 cf
 Secondary = 23.12 cfs @ 7.98 hrs, Volume= 426,746 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 285.40' @ 7.98 hrs
 Flood Elev= 285.90'

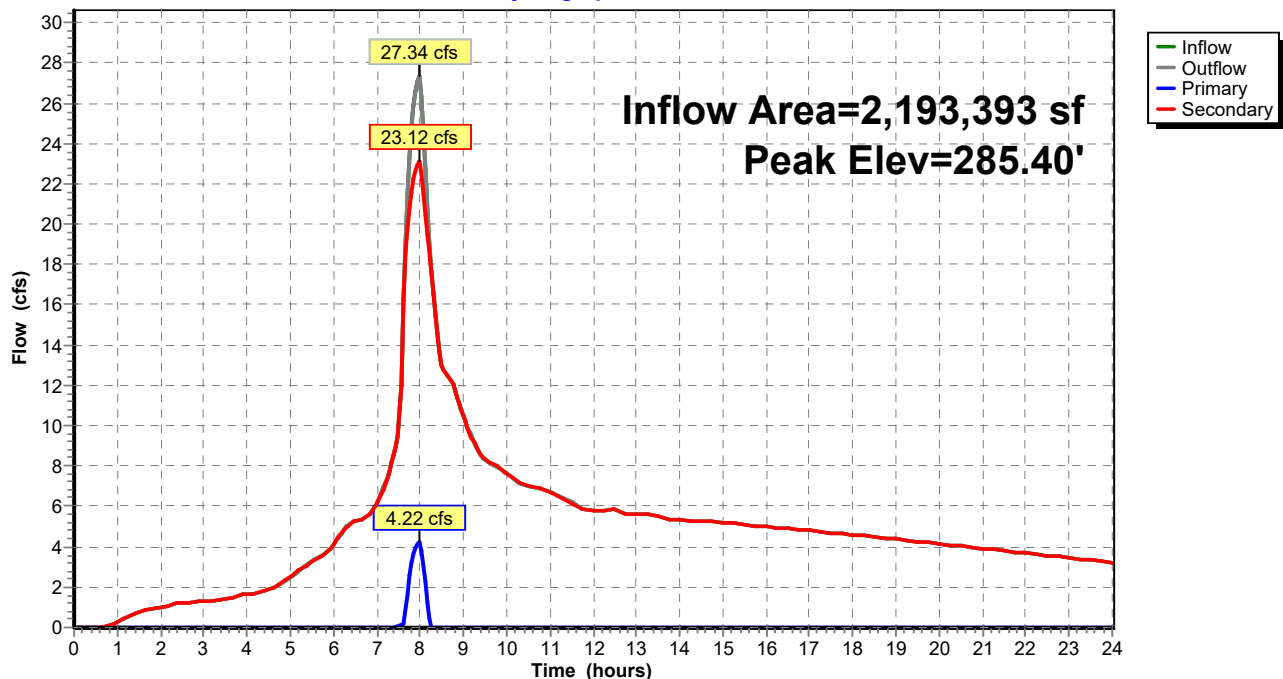
Device	Routing	Invert	Outlet Devices
#1	Secondary	280.54'	21.0" Round BYPASS L= 92.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 280.54' / 274.24' S= 0.0685'/' Cc= 0.900 n= 0.013, Flow Area= 2.41 sf
#2	Primary	283.66'	12.0" Round WATER QUALITY FLOW L= 30.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 283.66' / 283.04' S= 0.0205'/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=4.13 cfs @ 7.98 hrs HW=285.35' TW=283.38' (Dynamic Tailwater)
 ↳ **2=WATER QUALITY FLOW** (Inlet Controls 4.13 cfs @ 5.26 fps)

Secondary OutFlow Max=22.99 cfs @ 7.98 hrs HW=285.35' TW=275.21' (Dynamic Tailwater)
 ↳ **1=BYPASS** (Inlet Controls 22.99 cfs @ 9.56 fps)

Pond R12: HI FLO BYPASS

Hydrograph



Summary for Pond R50:

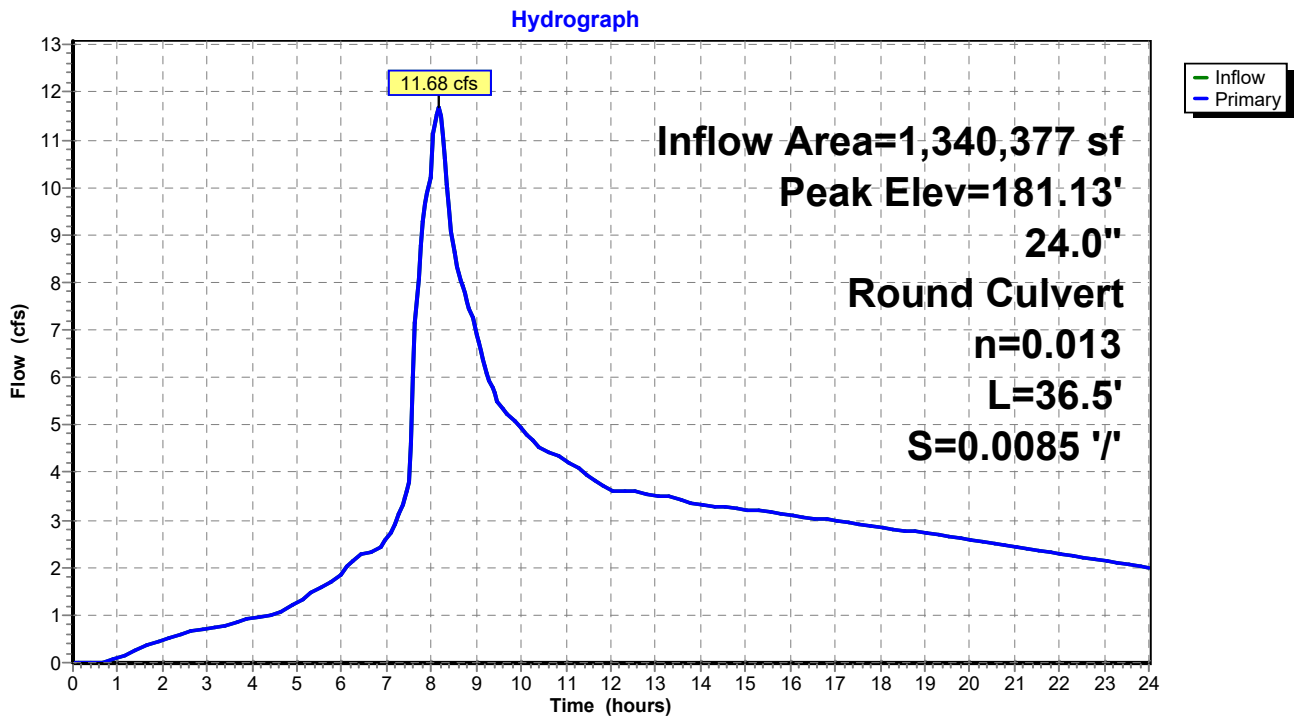
Inflow Area = 1,340,377 sf, 33.11% Impervious, Inflow Depth > 2.24" for 10-YR event
 Inflow = 11.68 cfs @ 8.15 hrs, Volume= 250,339 cf
 Outflow = 11.68 cfs @ 8.15 hrs, Volume= 250,339 cf, Atten= 0%, Lag= 0.0 min
 Primary = 11.68 cfs @ 8.15 hrs, Volume= 250,339 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 181.13' @ 8.15 hrs
 Flood Elev= 184.17'

Device	Routing	Invert	Outlet Devices
#1	Primary	179.32'	24.0" Round Culvert L= 36.5' Ke= 0.500 Inlet / Outlet Invert= 179.32' / 179.01' S= 0.0085 '/' Cc= 0.900 n= 0.013 PVC, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=11.68 cfs @ 8.15 hrs HW=181.13' TW=0.00' (Dynamic Tailwater)
 ←1=Culvert (Barrel Controls 11.68 cfs @ 5.13 fps)

Pond R50:



Summary for Pond R51:

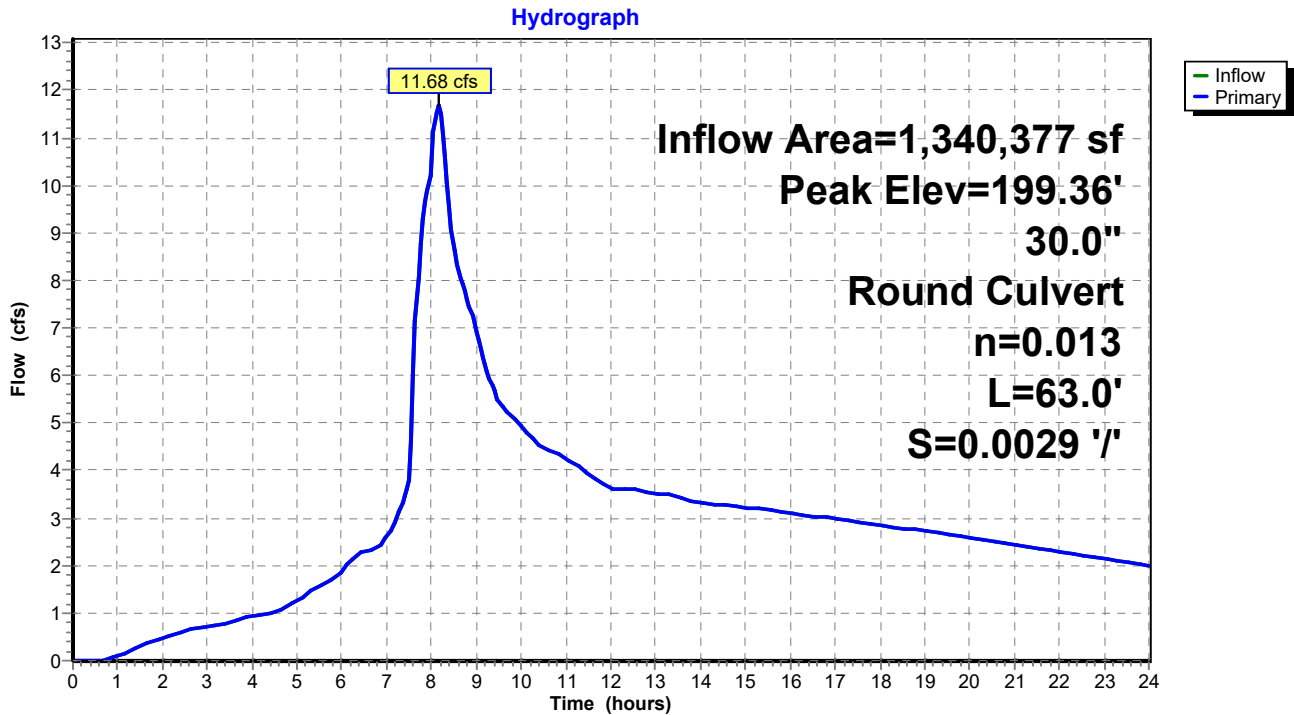
Inflow Area = 1,340,377 sf, 33.11% Impervious, Inflow Depth > 2.24" for 10-YR event
 Inflow = 11.68 cfs @ 8.15 hrs, Volume= 250,339 cf
 Outflow = 11.68 cfs @ 8.15 hrs, Volume= 250,339 cf, Atten= 0%, Lag= 0.0 min
 Primary = 11.68 cfs @ 8.15 hrs, Volume= 250,339 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 199.36' @ 8.15 hrs
 Flood Elev= 206.49'

Device #	Routing	Invert	Outlet Devices
#1	Primary	197.59'	30.0" Round Culvert L= 63.0' Ke= 0.500 Inlet / Outlet Invert= 197.59' / 197.41' S= 0.0029 '/' Cc= 0.900 n= 0.013 PVC, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=11.68 cfs @ 8.15 hrs HW=199.36' TW=181.13' (Dynamic Tailwater)
 ←1=Culvert (Barrel Controls 11.68 cfs @ 4.41 fps)

Pond R51:



Summary for Pond R52:

Inflow Area = 407,875 sf, 48.31% Impervious, Inflow Depth > 2.69" for 10-YR event
 Inflow = 6.11 cfs @ 7.93 hrs, Volume= 91,353 cf
 Outflow = 6.11 cfs @ 7.93 hrs, Volume= 91,353 cf, Atten= 0%, Lag= 0.0 min
 Primary = 6.11 cfs @ 7.93 hrs, Volume= 91,353 cf

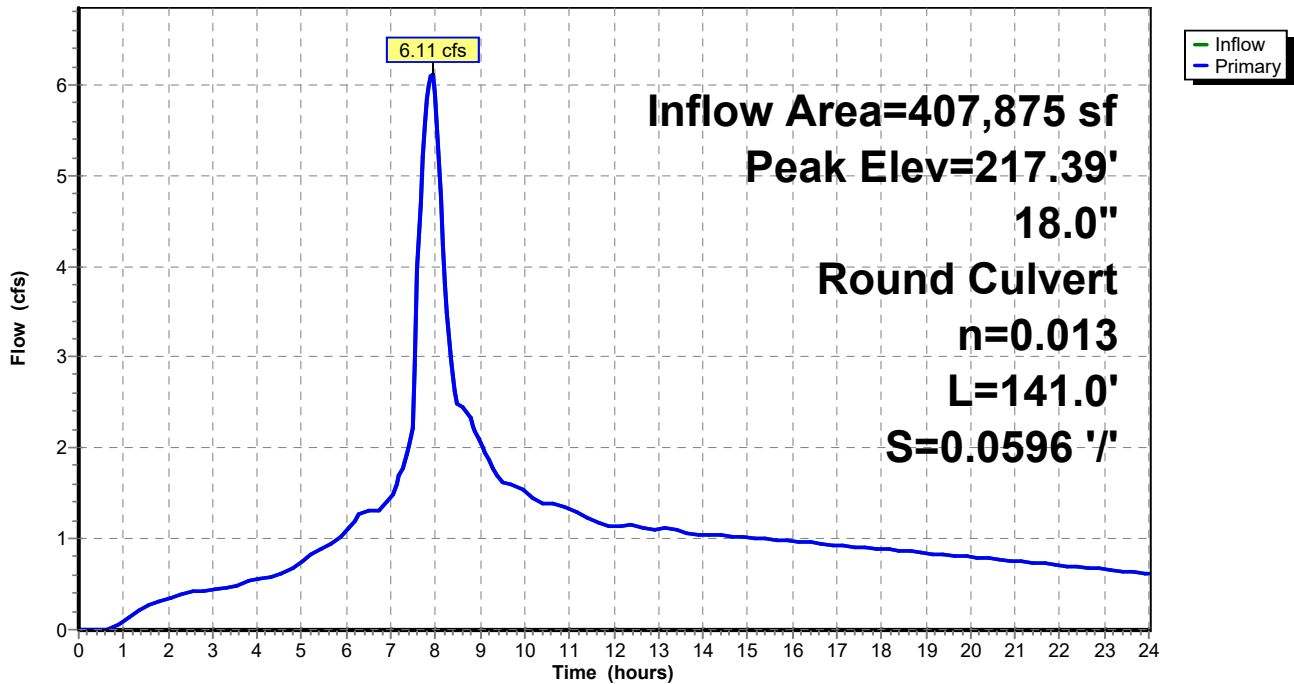
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 217.39' @ 7.93 hrs
 Flood Elev= 222.18'

Device	Routing	Invert	Outlet Devices
#1	Primary	216.12'	18.0" Round Culvert L= 141.0' Ke= 0.500 Inlet / Outlet Invert= 216.12' / 207.72' S= 0.0596 '/' Cc= 0.900 n= 0.013 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=6.10 cfs @ 7.93 hrs HW=217.39' TW=199.20' (Dynamic Tailwater)
 ↳ **1=Culvert** (Inlet Controls 6.10 cfs @ 3.83 fps)

Pond R52:

Hydrograph



Summary for Pond R53:

Inflow Area = 340,269 sf, 52.48% Impervious, Inflow Depth > 2.76" for 10-YR event
 Inflow = 5.25 cfs @ 7.93 hrs, Volume= 78,204 cf
 Outflow = 5.25 cfs @ 7.93 hrs, Volume= 78,204 cf, Atten= 0%, Lag= 0.0 min
 Primary = 5.25 cfs @ 7.93 hrs, Volume= 78,204 cf

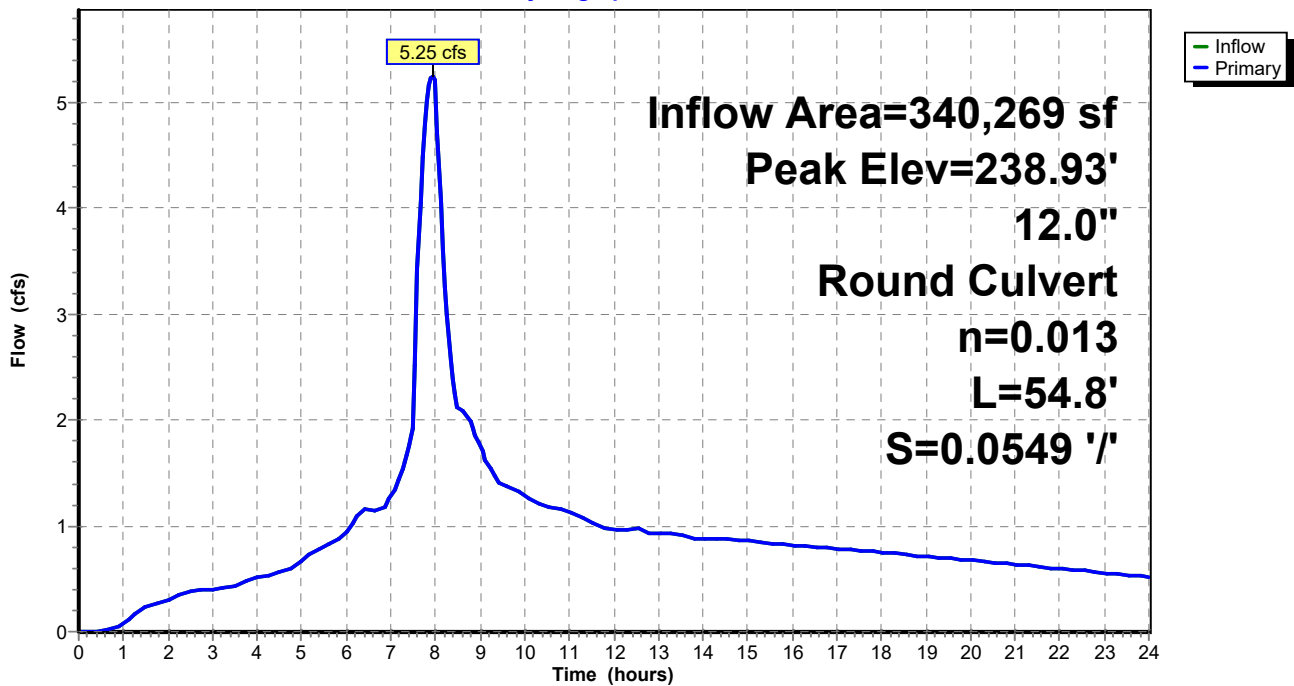
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 238.93' @ 7.93 hrs
 Flood Elev= 242.22'

Device	Routing	Invert	Outlet Devices
#1	Primary	236.50'	12.0" Round Culvert L= 54.8' Ke= 0.500 Inlet / Outlet Invert= 236.50' / 233.49' S= 0.0549 '/' Cc= 0.900 n= 0.013 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=5.24 cfs @ 7.93 hrs HW=238.92' TW=217.39' (Dynamic Tailwater)
 ↳ **1=Culvert** (Inlet Controls 5.24 cfs @ 6.67 fps)

Pond R53:

Hydrograph



Summary for Pond R54:

Inflow Area = 99,605 sf, 61.82% Impervious, Inflow Depth > 2.92" for 10-YR event
 Inflow = 1.63 cfs @ 7.92 hrs, Volume= 24,201 cf
 Outflow = 1.63 cfs @ 7.92 hrs, Volume= 24,201 cf, Atten= 0%, Lag= 0.0 min
 Primary = 1.63 cfs @ 7.92 hrs, Volume= 24,201 cf

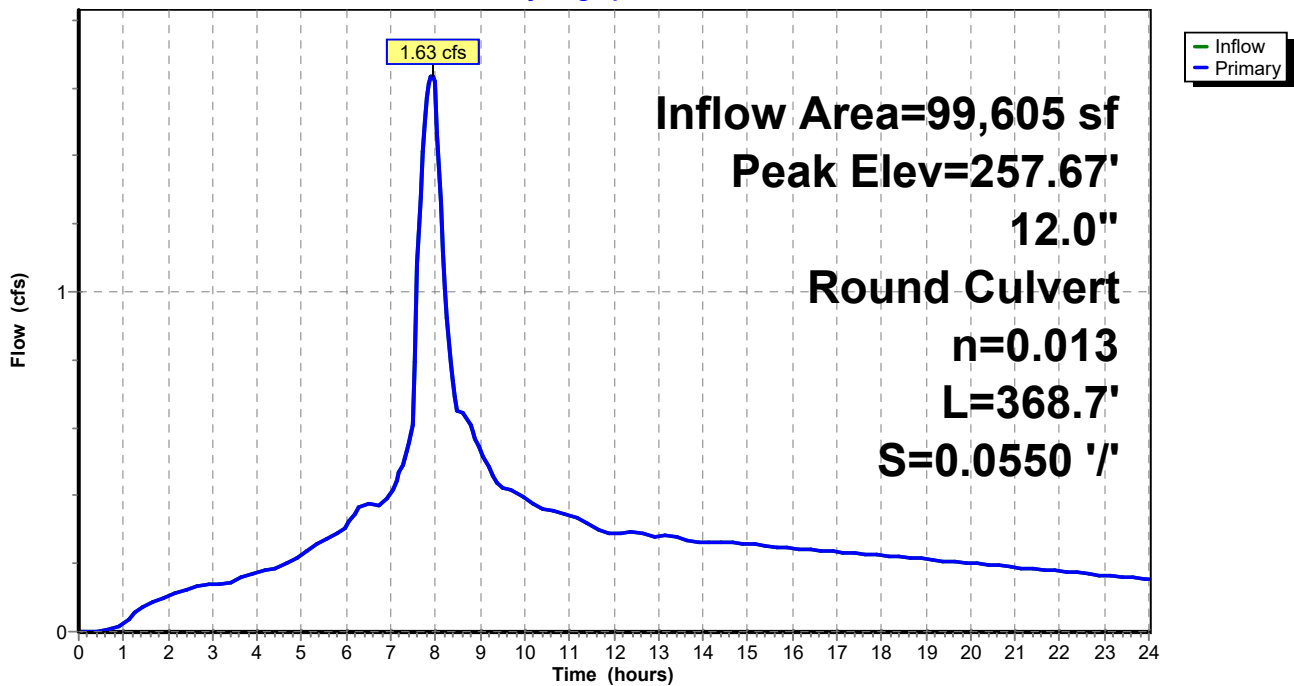
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 257.67' @ 7.92 hrs
 Flood Elev= 264.35'

Device	Routing	Invert	Outlet Devices
#1	Primary	256.98'	12.0" Round Culvert L= 368.7' Ke= 0.500 Inlet / Outlet Invert= 256.98' / 236.70' S= 0.0550 '/' Cc= 0.900 n= 0.013 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.63 cfs @ 7.92 hrs HW=257.67' TW=238.92' (Dynamic Tailwater)
 ↳ **1=Culvert** (Inlet Controls 1.63 cfs @ 2.83 fps)

Pond R54:

Hydrograph



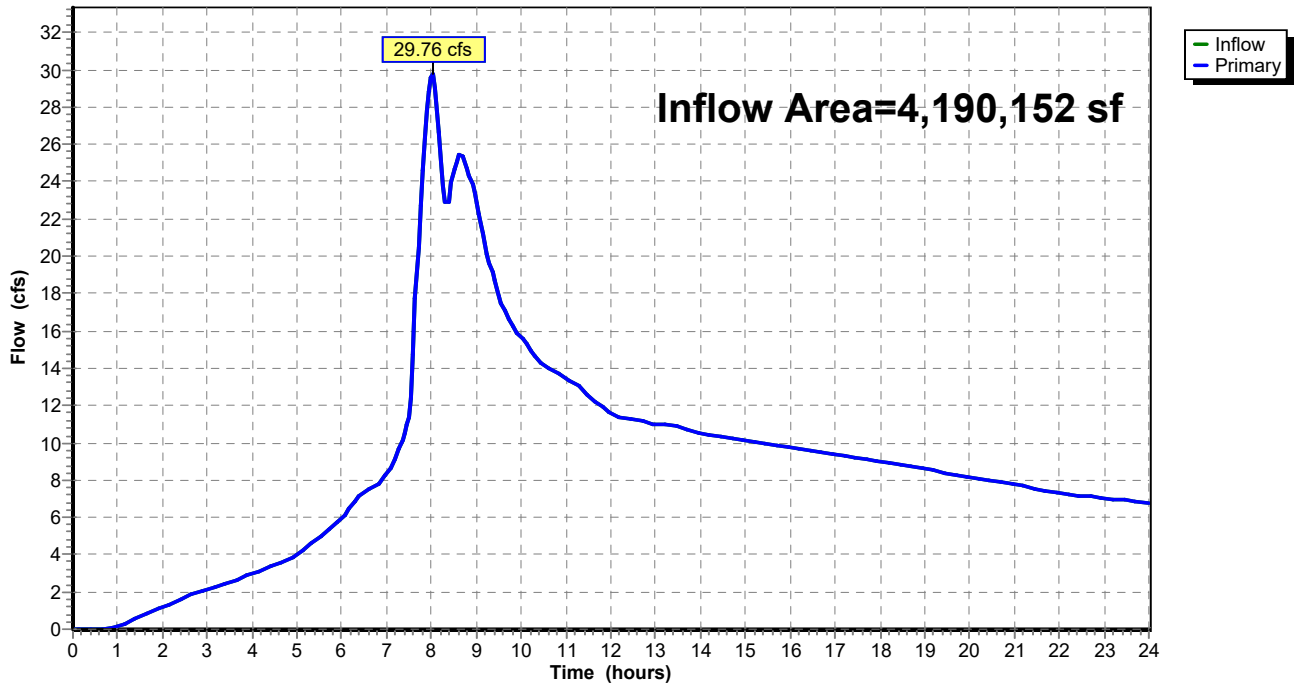
Summary for Link W30: TOTAL WEST SIDE

Inflow Area = 4,190,152 sf, 34.02% Impervious, Inflow Depth > 2.21" for 10-YR event
Inflow = 29.76 cfs @ 8.03 hrs, Volume= 772,080 cf
Primary = 29.76 cfs @ 8.03 hrs, Volume= 772,080 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link W30: TOTAL WEST SIDE

Hydrograph



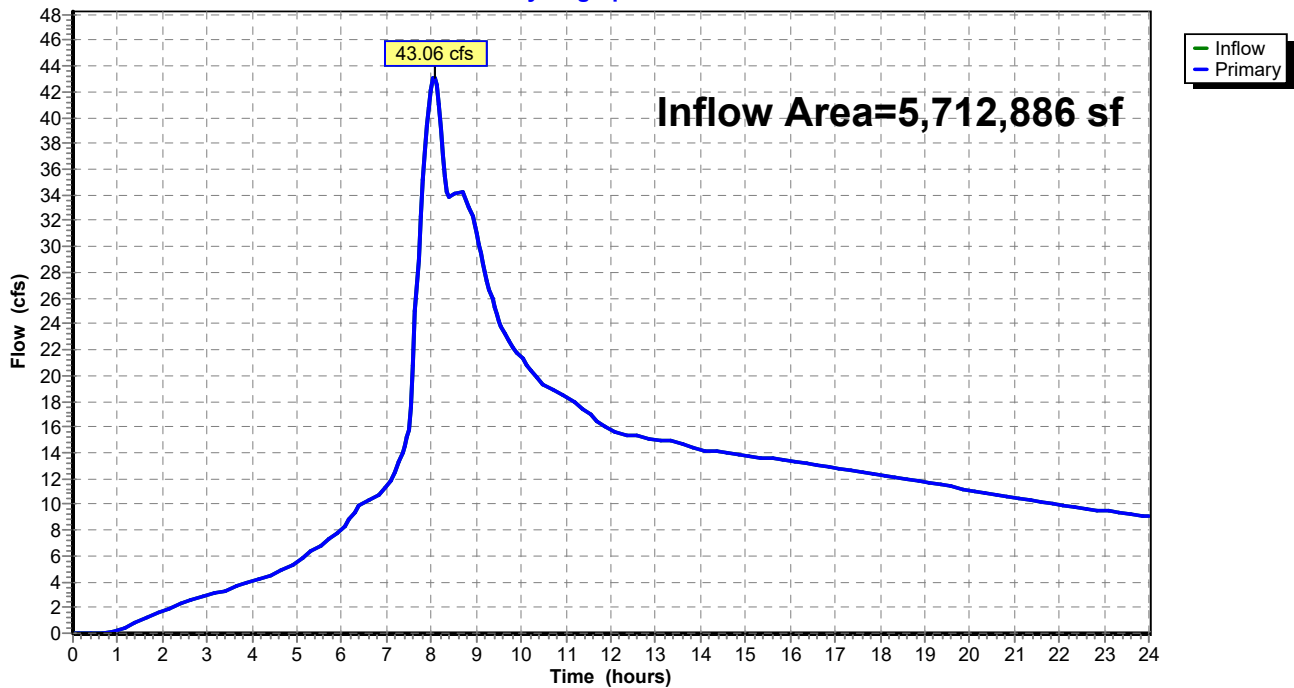
Summary for Link W60: TOTAL

Inflow Area = 5,712,886 sf, 33.87% Impervious, Inflow Depth > 2.23" for 10-YR event
Inflow = 43.06 cfs @ 8.06 hrs, Volume= 1,059,590 cf
Primary = 43.06 cfs @ 8.06 hrs, Volume= 1,059,590 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link W60: TOTAL

Hydrograph



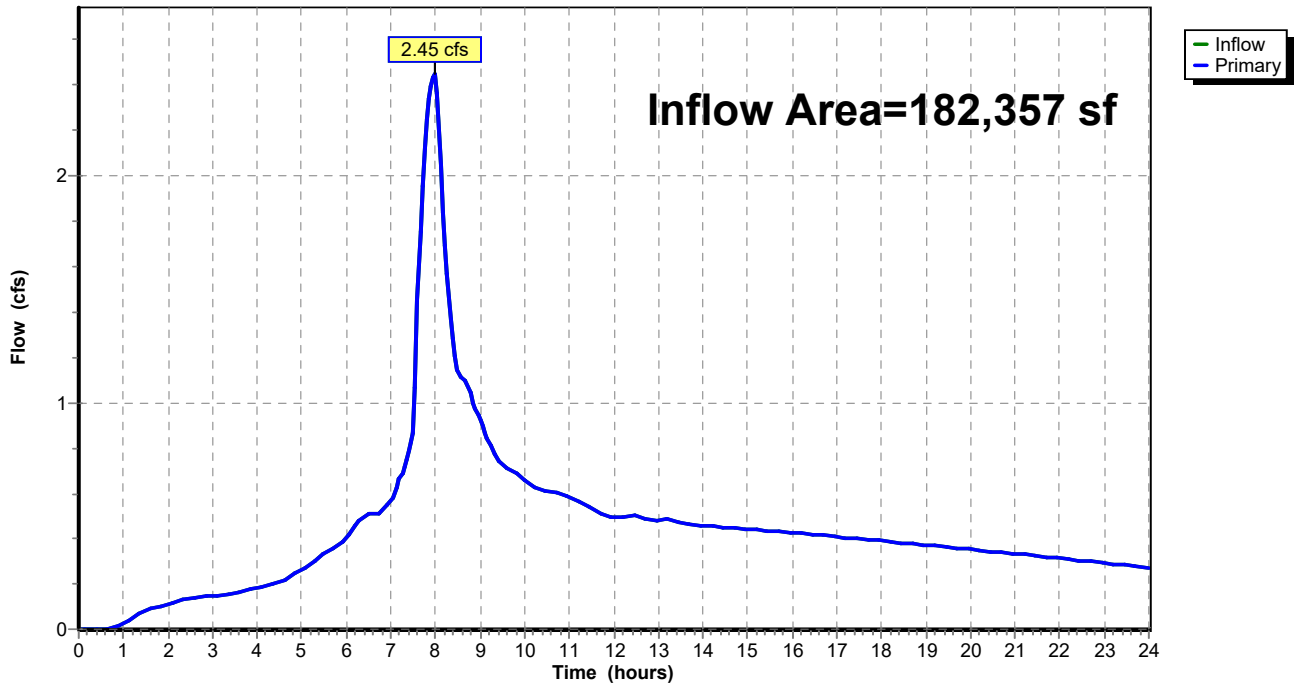
Summary for Link W70: TOTAL

Inflow Area = 182,357 sf, 35.99% Impervious, Inflow Depth > 2.52" for 10-YR event
Inflow = 2.45 cfs @ 7.98 hrs, Volume= 38,354 cf
Primary = 2.45 cfs @ 7.98 hrs, Volume= 38,354 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

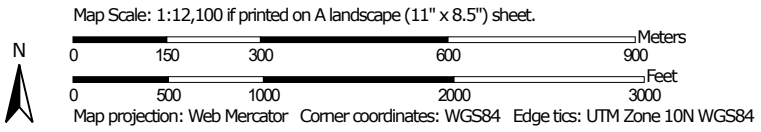
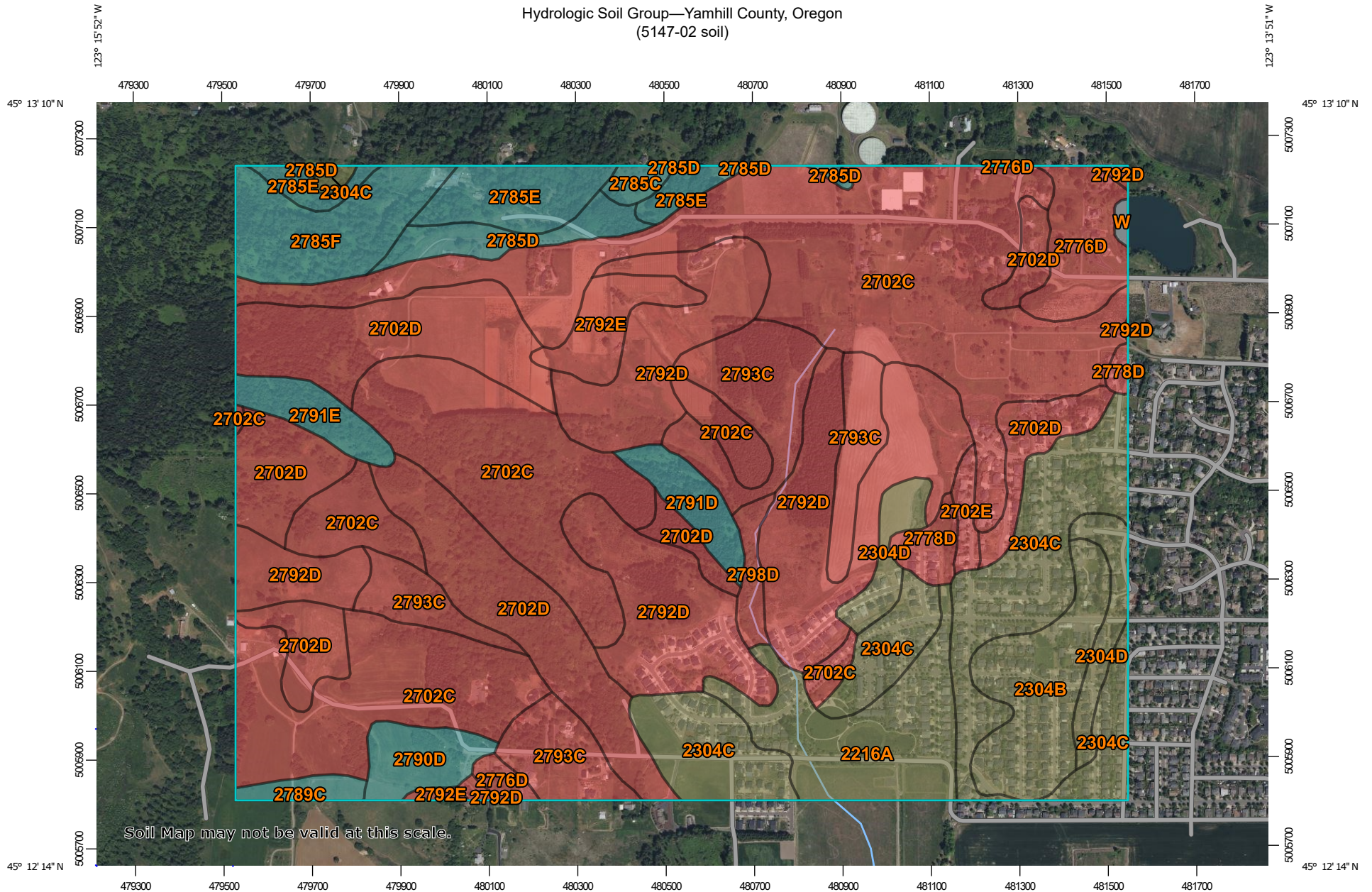
Link W70: TOTAL

Hydrograph



Appendix C: USDA-NRCS Soil Resource Report

Hydrologic Soil Group—Yamhill County, Oregon
(5147-02 soil)



MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons





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

Soil Rating Lines


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

Soil Rating Points






 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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: Yamhill County, Oregon
 Survey Area Data: Version 12, Sep 8, 2023

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

Date(s) aerial images were photographed: May 17, 2023—Jun 3, 2023

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
2216A	Chehalem silty clay loam, volcanic, 0 to 3 percent slopes	C/D	29.8	4.2%
2304B	Carlton silt loam, 0 to 7 percent slopes	C/D	24.2	3.4%
2304C	Carlton silt loam, 2 to 12 percent slopes	C/D	65.2	9.1%
2304D	Carlton silt loam, 12 to 20 percent slopes	C/D	14.2	2.0%
2702C	Dixonville silty clay loam, 3 to 12 percent slopes	D	210.4	29.4%
2702D	Dixonville silty clay loam, 12 to 20 percent slopes	D	98.4	13.7%
2702E	Dixonville silty clay loam, 20 to 30 percent slopes	D	3.1	0.4%
2776D	Panther-Witham complex, hummocky, 2 to 25 percent slopes	D	16.4	2.3%
2778D	Panther silty clay loam, hummocky, 2 to 25 percent slopes	D	5.8	0.8%
2785C	Saum-Parrett complex, 2 to 12 percent slopes	C	2.5	0.3%
2785D	Saum-Parrett complex, 12 to 20 percent slopes	C	10.1	1.4%
2785E	Saum-Parrett complex, 20 to 30 percent slopes	C	19.4	2.7%
2785F	Saum-Parrett complex, 30 to 60 percent slopes	C	21.0	2.9%
2789C	Goodin-Melbourne complex, 2 to 12 percent slopes	C	3.4	0.5%
2790D	Melbourne-Goodin silty clay loams, 12 to 20 percent slopes	C	9.3	1.3%
2791D	Gellatly silty clay loam, 12 to 20 percent north slopes	C	8.0	1.1%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
2791E	Gellatly silty clay loam, 20 to 30 percent north slopes	C	8.1	1.1%
2792D	Witzel-Dixonville complex, 12 to 20 percent south slopes	D	103.0	14.4%
2792E	Witzel-Dixonville complex, 20 to 30 percent south slopes	D	11.0	1.5%
2793C	Witzel-Dixonville complex, 2 to 12 percent slopes	D	48.2	6.7%
2798D	Witham silty clay loam, hummocky, 2 to 25 percent slopes	D	4.4	0.6%
W	Water		0.7	0.1%
Totals for Area of Interest			716.4	100.0%

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix D: TR55 Runoff Curve Numbers

TR55 RUNOFF CURVE NUMBERS

Table 2-2a Runoff curve numbers for urban areas ^{1/}

Cover description	Average percent impervious area ^{2/}	Curve numbers for hydrologic soil group			
		A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) ^{3/} :					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) ^{4/}		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82

Developing urban areas

Newly graded areas (pervious areas only, no vegetation) ^{5/}		77	86	91	94
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Idle lands (CN's are determined using cover types similar to those in table 2-2c).

¹ Average runoff condition, and $I_a = 0.2S$.
² The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.
³ CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.
⁴ Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.
⁵ Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

Table 2-2b Runoff curve numbers for cultivated agricultural lands ^{1/}

Cover description			Curve numbers for hydrologic soil group			
Cover type	Treatment ^{2/}	Hydrologic condition ^{3/}	A	B	C	D
Fallow	Bare soil	—	77	86	91	94
	Crop residue cover (CR)	Poor	76	85	90	93
		Good	74	83	88	90
Row crops	Straight row (SR)	Poor	72	81	88	91
		Good	67	78	85	89
	SR + CR	Poor	71	80	87	90
		Good	64	75	82	85
	Contoured (C)	Poor	70	79	84	88
		Good	65	75	82	86
	C + CR	Poor	69	78	83	87
		Good	64	74	81	85
	Contoured & terraced (C&T)	Poor	66	74	80	82
		Good	62	71	78	81
C&T+ CR	Poor	65	73	79	81	
	Good	61	70	77	80	
Small grain	SR	Poor	65	76	84	88
		Good	63	75	83	87
	SR + CR	Poor	64	75	83	86
		Good	60	72	80	84
	C	Poor	63	74	82	85
		Good	61	73	81	84
	C + CR	Poor	62	73	81	84
		Good	60	72	80	83
	C&T	Poor	61	72	79	82
		Good	59	70	78	81
	C&T+ CR	Poor	60	71	78	81
		Good	58	69	77	80
Close-seeded or broadcast legumes or rotation meadow	SR	Poor	66	77	85	89
		Good	58	72	81	85
	C	Poor	64	75	83	85
		Good	55	69	78	83
	C&T	Poor	63	73	80	83
		Good	51	67	76	80

¹ Average runoff condition, and $I_a=0.2S$

² Crop residue cover applies only if residue is on at least 5% of the surface throughout the year.

³ Hydraulic condition is based on combination factors that affect infiltration and runoff, including (a) density and canopy of vegetative areas, (b) amount of year-round cover, (c) amount of grass or close-seeded legumes, (d) percent of residue cover on the land surface (good $\geq 20\%$), and (e) degree of surface roughness.

Poor: Factors impair infiltration and tend to increase runoff.

Good: Factors encourage average and better than average infiltration and tend to decrease runoff.

Table 2-2c Runoff curve numbers for other agricultural lands ^{1/}

Cover description	Hydrologic condition	Curve numbers for hydrologic soil group			
		A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. ^{2/}	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element. ^{3/}	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 ^{4/}	48	65	73
Woods—grass combination (orchard or tree farm). ^{5/}	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods. ^{6/}	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 ^{4/}	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

¹ Average runoff condition, and $I_a = 0.2S$.

² **Poor:** <50% ground cover or heavily grazed with no mulch.

Fair: 50 to 75% ground cover and not heavily grazed.

Good: > 75% ground cover and lightly or only occasionally grazed.

³ **Poor:** <50% ground cover.

Fair: 50 to 75% ground cover.

Good: >75% ground cover.

⁴ Actual curve number is less than 30; use CN = 30 for runoff computations.

⁵ CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.

⁶ **Poor:** Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.

Fair: Woods are grazed but not burned, and some forest litter covers the soil.

Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

Table 2-2d Runoff curve numbers for arid and semiarid rangelands ^{1/}

Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition ^{2/}	A ^{3/}	B	C	D
Herbaceous—mixture of grass, weeds, and low-growing brush, with brush the minor element.	Poor		80	87	93
	Fair		71	81	89
	Good		62	74	85
Oak-aspen—mountain brush mixture of oak brush, aspen, mountain mahogany, bitter brush, maple, and other brush.	Poor		66	74	79
	Fair		48	57	63
	Good		30	41	48
Pinyon-juniper—pinyon, juniper, or both; grass understory.	Poor		75	85	89
	Fair		58	73	80
	Good		41	61	71
Sagebrush with grass understory.	Poor		67	80	85
	Fair		51	63	70
	Good		35	47	55
Desert shrub—major plants include saltbush, greasewood, creosotebush, blackbrush, bursage, palo verde, mesquite, and cactus.	Poor	63	77	85	88
	Fair	55	72	81	86
	Good	49	68	79	84

¹ Average runoff condition, and $I_a = 0.2S$. For range in humid regions, use table 2-2c.

² Poor: <30% ground cover (litter, grass, and brush overstory).

Fair: 30 to 70% ground cover.

Good: > 70% ground cover.

³ Curve numbers for group A have been developed only for desert shrub.