PLANNING COMMISSION AGENDA
October 13, 2016 7:00 PM
NEWBERG PUBLIC SAFETY BUILDING
401 EAST THIRD STREET

I. CALL MEETING TO ORDER

II. ROLL CALL

III. PUBLIC COMMENTS (5-minute maximum per person – for items not on the agenda)

IV. CONSENT CALENDAR

1. Approval of the August 11, 2016 Planning Commission meeting minutes
2. Approval of the September 8, 2016 Planning Commission meeting minutes

V. QUASI-JUDICIAL PUBLIC HEARING (complete registration form to give testimony - 5 minute maximum per person except for principals, unless otherwise set by majority motion of the Planning Commission).

1. **Columbia Estates Subdivision:** Consider a subdivision tentative plan to divide a 3.06 acre site into 24 lots for single-family detached homes. The site is in the R-2 zone (medium density residential).
   APPLICANT: Del Boca Vista, LLC
   LOCATION: North of Columbia Dr., south of Lynn Dr. TAX LOTS: 3218AB-1700, -1701, -1702
   FILE NO.: SUB2-16-002 ORDER: 2016-24
   CRITERIA: Newberg Development Code Sections: 15.235.060(A)

VI. LEGISLATIVE PUBLIC HEARING (complete registration form to give testimony - 5 minute maximum per person except for principals, unless otherwise set by majority motion of the Planning Commission). No new public hearings after 10 p.m. except by majority vote of the Planning Commissioners.

1. **Transportation System Plan** – Consider adoption of a new Transportation System Plan and associated Comprehensive Plan and Development Code amendments, **PC Resolution 2016-322.**
   File No. CPTA4-11-001

VII. ITEMS FROM STAFF

1. Update on Council items
2. Anticipated schedule of Planning Commission activities
3. Other reports, letters or correspondence
4. Next Planning Commission meeting: November 10, 2016

VIII. ITEMS FROM COMMISSIONERS

IX. ADJOURNMENT

FOR QUESTIONS, PLEASE STOP BY THE COMMUNITY DEVELOPMENT DEPT. AT 414 E. FIRST STREET, OR CALL 503-537-1240

ACCOMMODATION OF PHYSICAL IMPAIRMENTS*: In order to accommodate persons with physical impairments, please notify the Community Development Department Office Assistant II of any special physical or language accommodations you may need as far in advance of the meeting as possible as and no later than 48 business hours prior to the meeting. To request these arrangements, please contact the Office Assistant at (503) 537-1240. For TTY services please dial 711.*

NEWBERG PLANNING COMMISSION MINUTES
August 11, 2016, 7:00 PM
PUBLIC SAFETY BUILDING (401 E. THIRD STREET)

Chair Allyn Edwards called the meeting to order at 7: 00 p.m.

ROLL CALL

Members Present:	Allyn Edwards, Chair	Jason Dale
	Philip Smith	Gary Bliss
	Cathy Stuhr	Ron Wolfe
Members Absent:	Noelle Torres, excused	Miranda Piros, Student excused
Staff Present:	Doug Rux, Community Development Director	
	Steve Olson, Senior Planner	
	Bobbie Morgan, Office Assistant II	

PUBLIC COMMENTS: None

CONSENT CALENDAR:
Approval of the June 9, 2016 Planning Commission Meeting Minutes
Approval of the July 14, 2016 Planning Commission Meeting Minutes

MOTION: Cathy Stuhr/Ron Wolfe moved to approve the June 9, 2016 minutes and July 14, 2016 minutes with a correction on the hearing date listed on page 8 under items from staff. The date should have been August 11. Motion carried (6 Yes/ 0 No).

QUASI-JUDICIAL PUBLIC HEA2RING:

1. **Conditional Use Permit – 1916 Carol Avenue:** Consider a conditional use permit application to allow an accessory dwelling unit (ADU) to be built at 1916 Carol Avenue. The site is in the R-1 zone. The four-bedroom ADU would be built in the basement of the existing house.
   APPLICANT: Highland Construction, Inc.
   OWNER: Dale Goldsmith
   LOCATION: 1916 Carol Avenue TAX LOT: 3217CA-00109
   FILE NO.: CUP-16-004 ORDER: 2016-23
   CRITERIA: Newberg Development Code Sections: 15.225.060, 15.445.260

CALL TO ORDER: Chair Allyn Edwards read the hearing rules and opened the public hearing at 7:07 pm.

CALL FOR ABSTENTIONS, BIAS, EX PARTE CONTACT, AND OBJECTIONS TO JURISDICTION:
Chair Allyn Edwards said his daughter lived off of Carol Avenue, but he thought he could make a decision on the matter.

STAFF REPORT: Senior Planner Steve Olson presented the staff report and entered the report into the record. This was a request for a Conditional Use Permit for an accessory dwelling unit at 1916 Carol Avenue. He explained the location, R-1 zoning, and site plan. The unit would be built in the basement of the existing house. A Conditional Use was required because it was in the R-1 zone. He then discussed the process and criteria for the application. It had to be created within or as an addition to a single family structure and it could not exceed 50% of the size of the primary unit up to a maximum of a 1,000 square feet. The unit was proposed to be 986 square feet, however after a public comment from a neighbor and more measurements, it came out at 1,100

square feet. He read a letter from the applicant explaining the original measurements excluded a space along the north wall of the room which had been filled with shelves of memorabilia. A false wall could be put in or the size of the unit could be modified and he asked that the Commission not delay the decision. The application could be denied due the size, it could be approved with the condition that it be reduced, or the applicant could submit a revised floor plan. Other criterion were the number of residents permitted was restricted to up to five people, there would be one on-site parking space for the unit, and the front door could not be at the front of the residence. They were not planning to have more than five people, there would be three off street parking spaces to the rear of the lot, and the front door was on the back of the building. The proposal met all of the development standards in the R-1 zone. Some of the public comments expressed gladness that they would be renting to college students and concern that the house did not have any on street parking, which was not a criterion. He then summarized the Conditional Use criteria. The unit would be located in the basement which was low impact, the parking proposed was appropriate, in order to use the parking the western half of the main driveway would need to be kept clear, a six foot fence would need to be added to the western property line for a visual buffer from the neighbor, the location, design, and site planning would be convenient and functional, and it was consistent with the code. Staff recommended approval with conditions.

PUBLIC TESTIMONY:

PROPONENTS

Dale Goldsmith, applicant, said the design had been revised to reduce the size to under 1,000 square feet and he had copies to pass out to the Commission. His wife had used the basement for hobbies and storage and it made it difficult to measure. He thought it was done accurately, but had made a mistake. He discussed a recent article by DMS Architects in Portland that listed additional benefits of accessory dwelling units. They provided rental income, enabled multi-generational living on the site, increased the home's property value, helped the planet by using existing infrastructure and reduced urban sprawl, and basements were inherently green as they were low energy users. He read the letters from his neighbors and acknowledged their concerns. He promised to be a good neighbor.

PC Philip Smith asked how he planned to keep the western half of the driveway and turn around clear, would he be putting up signage.

Mr. Goldsmith thought he and his tenants would the only ones using the driveway and he did not think there was need for signage. Regarding the 6 foot fence, it had not been put up in the past because a neighbor liked to use his driveway for truck access to his backyard. He did not have an objection to it.

SP Olson said the applicant submitted a new floor plan, and the Commission would need to vote on whether or not to accept it.

PC Philip Smith said the new floor plan showed a reasonable way to comply with the code and he would like to see it.

MOTION: Philip Smith/Cathy Stuhr moved to accept the new floor plan. Motion carried (6 Yes/ 0 No).

The Commission reviewed the new floor plan.

Dennis Fletcher, applicant's builder, said there was a need for safe college housing that was efficient and that was how they planned this unit. After looking at the measurements again, they realized it was too big and they reduced the unit from four bedrooms to three and it was now 974 square feet. He hoped that the project would be approved.

PC Cathy Stuhr asked about the stairwell from the garage and water heater in the garage. Mr. Fletcher said the garage was an emergency exit only and the water heater in the garage would be only used for the ADU. PC Cathy Stuhr thought the water heater should be within the ADU.

OPPONENTS

Sharon Gstettenbauer, neighbor on Carol Avenue, said the original plans were for five students, then it was reduced to four students and she questioned if they could fit into a 1,000 square foot unit. She had not been able to look at the new floor plan as it was just presented. It was more like a dormitory than an additional housing unit. This was a business out of Mr. Goldsmith's home to make money. This was a residential neighborhood and the unit did not fit with the neighborhood. The square footage had been revised because the neighbors had put pressure on the issue.

PC Cathy Stuhr said the Commission's job was to look at whether or not applications complied with the code and asked if she felt the same now that it was for three bedrooms instead of four? Ms. Gstettenbauer thought the intent of the code was for a mother in law unit, not a dormitory. If Mr. Goldsmith wanted to help college students, the maximum should be two students so they each had their own bathroom.

Judy Durkee, neighbor on Carol Avenue, thought the square footage was not being measured correctly on both the original plan and the new plan. The purpose of the unit was to be a small apartment and she thought this was a dormitory as Mr. Goldsmith was planning to house up to five people. The characteristics of the unit should be reasonably compatible with the surrounding area, and she did not think it was compatible with a quiet, single family neighborhood. There would be a traffic and parking impact due to the configuration of the street corner, fire hydrant, and mailboxes. She showed a picture of Mr. Goldsmith's driveway and how it would be difficult for people to get in and out. She thought it would have a negative impact on property values and it would impact the quality and character of the neighborhood.

Janelle Nordyke, neighbor on Carol Avenue, thought adding a three bedroom unit for five college students did not align with the surrounding houses. This was a quiet neighborhood with single family dwellings. She did not think it was the same as having five children of varying ages living in the house, as the college students were older and would have their own cars coming in and out. There was not enough on street parking and the increased traffic on a dangerous corner would not add value to the neighborhood. Adding a dormitory-like unit for students was not in line with the surrounding single family homes. The public comments that had been received that were in favor of the project either did not live on the street or did not drive past this house. Reducing the bedrooms, but still keeping the same number of students did not fit with the neighborhood. She asked that the application be denied.

Randy Nordyke, neighbor on Carol Avenue, stated this was a bad idea. It was a single residence neighborhood and this unit violated that. There was no assurance that it would be used for college students in the long run. Some houses in the neighborhood had been rented to college students and they had been good neighbors. However, they were using the whole house not less than 1,000 square feet. The students all had cars and their friends visited regularly. There was no on-street parking for Mr. Goldsmith's house and it was a dangerous corner. It did not fit in with the neighborhood.

APPLICANT REBUTTAL:

Mr. Goldsmith discussed the map of his neighborhood and where other accessory dwelling units were located. He thought 1,000 square feet when properly laid out was adequate living space. The reason for the shared bathroom was to provide additional amenities, such as a washer and dryer, two toilets, three showers, and a bathtub. There was a vanity sink in each bedroom. It was designed to be better than average living space. Regarding parking, there was room for four cars inside his garage. A small number of students had cars and the students would be able to walk to and from college. The measurements were now accurate.

PC Philip Smith said the existing driveway was 18 feet wide, and Mr. Goldsmith would only use the eastern half. It would be narrow, and he suggested widening the driveway. Mr. Fletcher said a foot could be added to the west side, but there was a retaining wall on the east side. There was also a clear view of the corner. They met the code requirements, were under the square footage, and had compromised on the living space. He did not think it was out of line with the neighborhood.

PC Jason Dale clarified there would be one off street parking space, four parking spaces in the garage, and three parking spaces behind the house.

Chair Allyn Edwards suggested taking some space from bedroom 1 and enclosing the bathtub and toilet area to make it more private.

CLOSE OF PUBLIC TESTIMONY: Chair Allyn Edwards closed the public testimony portion of the hearing at 8:20 pm.

FINAL COMMENTS FROM STAFF AND RECOMMENDATION:
Community Development Director Doug Rux discussed the definition of dormitory from the code, which was six or more people sharing a common kitchen.

SP Olson clarified the limitation for ADUs was based on the number of residents, not number of bedrooms. Having three bedrooms did not limit it to three residents. They could go up to five per code. A lot of the ADU criteria were clear and objective, but Conditional Use criteria was more subjective such as compatibility. Staff thought due to the size of the unit, two off street parking spaces should be required, but that was a judgment call for the Commission. There were three parking spaces available in the rear. Staff thought the driveway width would be functional, but that was also a judgment call.

PC Cathy Stuhr asked how the parking requirements were passed on if the house was sold. SP Olson said if the Conditional Use was approved, it was a permanent condition. It had the force of law and would exist in City records and would have to be continued to be met.

PC Cathy Stuhr clarified each single family dwelling unit was allowed five unrelated occupants and they could not reduce it to three. If the Commission was going to move forward with the application, she thought a condition should be added that the water heater was included in the ADU space.

SP Olson said it had to be an independent living unit, but the utilities would be shared and some things were in common. CDD Rux said the code did not specify where a water heater could be located. It would be a judgment call of the Commission.

Chair Allyn Edwards thought it should be included in the ADU because if the heater had to be repaired they would have go through the garage to access it.

PLANNING COMMISSION DELIBERATION:
PC Philip Smith said the Commission had to look at the criteria in the code and not the applicant's intentions for its use. There had to be adequate parking and he thought there was. It needed to fit in with the neighborhood, and this was under the house and invisible to the neighborhood. There was safe access, and the design was for students. He thought the application met the code.

MOTION: Philip Smith/Jason Dale moved to approve the Conditional Use Permit for 1916 Carol Avenue with the conditions that a fence be installed on the western property line, the water heater be part of the ADU, there should be at least two parking spaces in the back, and a clear turnaround with a sign.

PC Ron Wolfe suggested that three parking spaces in the back be required.

Philip Smith/Jason Dale made a friendly amendment to the motion that three parking spaces be required in the back.

PC Gary Bliss said the tenants did not own the water heater and if it had to be fixed, the owner renting the units would be fixing it. He thought that condition should be deleted.

PC Cathy Stuhr thought it should be a self-contained unit.

Chair Allyn Edwards was concerned about a new owner not wanting someone to access the garage. He thought it was a privacy and access issue. The water heater could be put in the kitchen.

ACTION BY PLANNING COMMISSION:

Motion carried (6 Yes/ 0 No).

LEGISLATIVE PUBLIC HEARING:

1. **Marijuana Regulation Reconciliation**: A resolution amending the Newberg Development Code for medical marijuana dispensaries, processors, wholesalers and recreational marijuana processors as permitted or conditional uses in districts and subdistricts within the City of Newberg
   File: DCA-16-003

CALL TO ORDER: Chair Allyn Edwards opened the public hearing at 8:51 pm.

STAFF REPORT: CDD Rux presented the staff report. The City had passed regulations regarding marijuana, however in 2016 the legislature passed new rules that more aligned the medical and recreational programs together. A reconciliation had to be done regarding what had already been passed by the City, especially in regard to where facilities would be allowed. The marijuana subcommittee recommended medical dispensaries be allowed in C-1 and C-4, allow medical marijuana processors as a Conditional Use in C-2 with a 1,000 foot buffer from schools and parks, medical marijuana wholesalers should mirror the recreational wholesalers regulations, include medical dispensaries in the same subdistricts as retailers, reject the idea of reducing the buffer from a school to 500 feet if there was a physical separation barrier and keep the 1,000 foot buffer, and allow recreational processors in the same subdistricts as medical processors and keep the 1,000 foot buffer. He reviewed the changes included in Exhibit A of the Development Code regulations.

Chair Allyn Edwards asked about the Department of Revenue and the fee for collection of marijuana taxes. CDD Rux responded that the Department of Revenue was allowed to collect the taxes for local jurisdictions, but they would have to negotiate the fee with each jurisdiction. Currently the City was collecting the tax and the City had not asked the Department of Revenue to do it. Taxes had to be filed appropriately to make sure the retailers were paying the tax. Newberg adopted a 5% tax on medical marijuana and 10% on recreational, and the State passed regulations that local jurisdictions could only collect a 3% tax on retail. The Council directed staff that Newberg's taxes were passed before the State regulations and they would leave them as they were.

PC Philip Smith asked about combining recreational retailers and medical dispensaries. CDD Rux said there were currently three operating medical dispensaries in Newberg, but they could now apply to be recreational retailers. Medical wholesalers could now apply to become retail wholesalers, and the same situation was for processors. There was potential for four or five more retailers/dispensaries.

FINAL COMMENTS FROM STAFF AND RECOMMENDATION:

CDD Rux said staff recommended adoption of the resolution. He thought the changes aligned the regulations to make them consistent across the board.

PC Cathy Stuhr said there was a consideration to allow wholesalers in residential zones, but she thought it should be kept out of residential.

ACTION BY PLANNING COMMISSION:

MOTION: Cathy Stuhr/Ron Wolfe moved to approve Resolution 2016-321. The motion carried (6 Yes/ 0 No).

ITEMS FROM STAFF:
The next Planning Commission meeting would be held on September 8, 2016.

ITEMS FROM COMMISSIONERS: None.

Chair Allyn Edwards adjourned the meeting at 9:16 pm

Approved by the Newberg Planning Commission this October 13, 2016.

_____ _____

Allyn Edwards, Planning Commission Chair Bobbie Morgan, Office Assistant II

NEWBERG PLANNING COMMISSION MINUTES
September 8, 2016, 7:00 PM
PUBLIC SAFETY BUILDING (401 E. THIRD STREET)

Chair Allyn Edwards called the meeting to order at 7:00 PM.

ROLL CALL

Members Present:	Allyn Edwards, Chair Jason Dale Miranda Piros, Student
Members Absent:	Gary Bliss, excused Cathy Stuhr, excused Philip Smith, excused Noelle Torres, excused Ron Wolfe, excused
Staff Present:	Steve Olson, Senior Planner Bobbie Morgan, Office Assistant II

PUBLIC COMMENTS: None

Chair Allyn Edwards said there was no quorum present that night and the items on the agenda were postponed until October 13, 2016.

CONSENT CALENDAR:
Approval of the August 11, 2016 Planning Commission Meeting Minutes

LEGISLATIVE PUBLIC HEARING: (complete registration form to give testimony - 5 minute maximum per person except for principals, unless otherwise set by majority motion of the Planning Commission). No new public hearings after 10 p.m. except by majority vote of the Planning Commissioners.

1. Transportation System Plan – Consider adoption of a new Transportation System Plan and associated Comprehensive Plan and Development Code amendments, **PC Resolution 2016-322.** File No. CPTA4-11-001

NEW BUSINESS
1. Pavement Funding Master Plan Update

ITEMS FROM STAFF:
1. Senior Planner Steve Olson explained the items that would be on the next meeting's agenda.

2. The next Planning Commission meeting would be held on October 13, 2016.

ITEMS FROM COMMISSIONERS:

Chair Allyn Edwards asked when City Attorney Truman Stone would be giving Planning Commission training.

SP Steve Olson responded it was scheduled for November 10.

SP Steve Olson asked the Commissioners to save their packets for the next meeting so staff did not have to make the copies again.

Chair Allyn Edwards adjourned the meeting at 7:08 PM.

Approved by the Newberg Planning Commission this October 13, 2016.

_____	_____
Allyn Edwards, Planning Commission Chair	Bobbie Morgan, Office Assistant II

OUTLINE FOR QUASI-JUDICIAL PUBLIC HEARING

Newberg Planning Commission

1. CALL TO ORDER
OPEN THE PUBLIC HEARING, ANNOUNCE THE PURPOSE, DISCUSS TESTIMONY PROCEDURE, AND TIME ALLOTMENTS

2. CALL FOR ABSTENTIONS, BIAS, EX PARTE CONTACT, AND OBJECTIONS TO JURISDICTION

3. LEGAL ANNOUNCEMENT
READ "**QUASI-JUDICIAL ANNOUNCEMENTS**" SHEET

4. STAFF REPORT
COMMISSION MAY ASK BRIEF QUESTIONS FOR CLARIFICATION

5. PUBLIC TESTIMONY
5 MINUTE TIME LIMIT PER SPEAKER (15 MINUTE LIMIT FOR APPLICANT AND PRINCIPAL OPPONENT). SPEAKER GOES TO WITNESS TABLE, STATES NAME & PRESENTS TESTIMONY. COMMISSION MAY ASK QUESTIONS OF SPEAKERS.

A. APPLICANT(S)
B. OTHER PROPONENTS
C. OPPONENTS AND UNDECIDED
D. STAFF READS WRITTEN CORRESPONDENCE (TIME LIMIT APPLIES)
E. APPLICANT REBUTTAL

6 CLOSE OF PUBLIC TESTIMONY PORTION OF HEARING

7. FINAL COMMENTS FROM STAFF AND RECOMMENDATION

8. PLANNING COMMISSION DELIBERATION INCLUDING DISCUSSION OF CRITERIA WITH FINDINGS OF FACT

9. ACTION BY THE PLANNING COMMMISSION

A. ORDER OR RESOLUTION – Usually requires passage of order if the commission is the final decision maker, or a resolution if the commission is only advisory to the council.
B. VOTE – Vote is done by roll call.
C. COMBINATION – Can be combined with other commission action; separate vote on each action is required.

QUASI-JUDICIAL
PUBLIC HEARING PROCESS
TESTIMONY AND EVIDENCE REQUIREMENTS

ORS 197.763 requires certain statements to be made at the commencement of a public hearing.

- The applicable City and State zoning criteria must be listed. This means that we must advise you of the standards that must be satisfied by the applicant prior to our approval of an application. The Planning Staff will list the applicable criteria during his or her presentation of the staff report.

- Persons wishing to participate in this hearing must direct their testimony or the evidence toward the criteria stated by the Planner or other specific City or State criteria which you believe apply. You must tell us why the testimony or evidence relates to the criteria.

- Any issue which might be raised in an appeal of this case to the Land Use Board of Appeals (LUBA) must be raised in person or by letter at the local level prior to the City approving or denying the application. The law states that the issue must be raised in enough detail to afford the decision-maker and the parties an opportunity to respond. This part of the law is also known as the "raise it or waive it" requirement. If you do not bring it up now, you can't bring it up at LUBA.

- Failure of the applicant to raise constitutional or other issues relating to proposed conditions of approval in enough detail to allow the local government or its designee to respond to the issue precludes an action for damages in Circuit Court.

- Prior to the conclusion of the initial evidentiary hearing on an application, any participant may request an opportunity to present additional evidence or testimony regarding the application. The Planning Commission will grant such a request through a continuance or extension of the record.

Community Development Department
P.O. Box 970 ▪ 414 E First Street ▪ Newberg, Oregon 97132
503-537-1240 ▪ Fax 503-537-1272 ▪ www.newbergoregon.gov

PLANNING COMMISSION STAFF REPORT

Columbia Estates

Subdivision Tentative Plan application

FILE NUMBER: SUB2-16-002

REQUEST: Approval for a Subdivision tentative plan to divide a 3.06 acre site into 24 lots for single-family detached homes.

APPLICANT: Del Boca Vista, LLC

OWNER: Jo Dacklin (tax lots -1700, -1701), Richard & Merilee Lee (tax lot -1702)

LOCATION: North of Columbia Drive, south of Lynn Drive, tax lots 3218AB-1700, -1701, -1702.

DESIGNATION: Comprehensive Plan designation of MDR (Medium Density Residential); Zoning designation of R-2 (Medium Density Residential)

CODE CRITERIA: Newberg Development Code § 15.235.060(A)

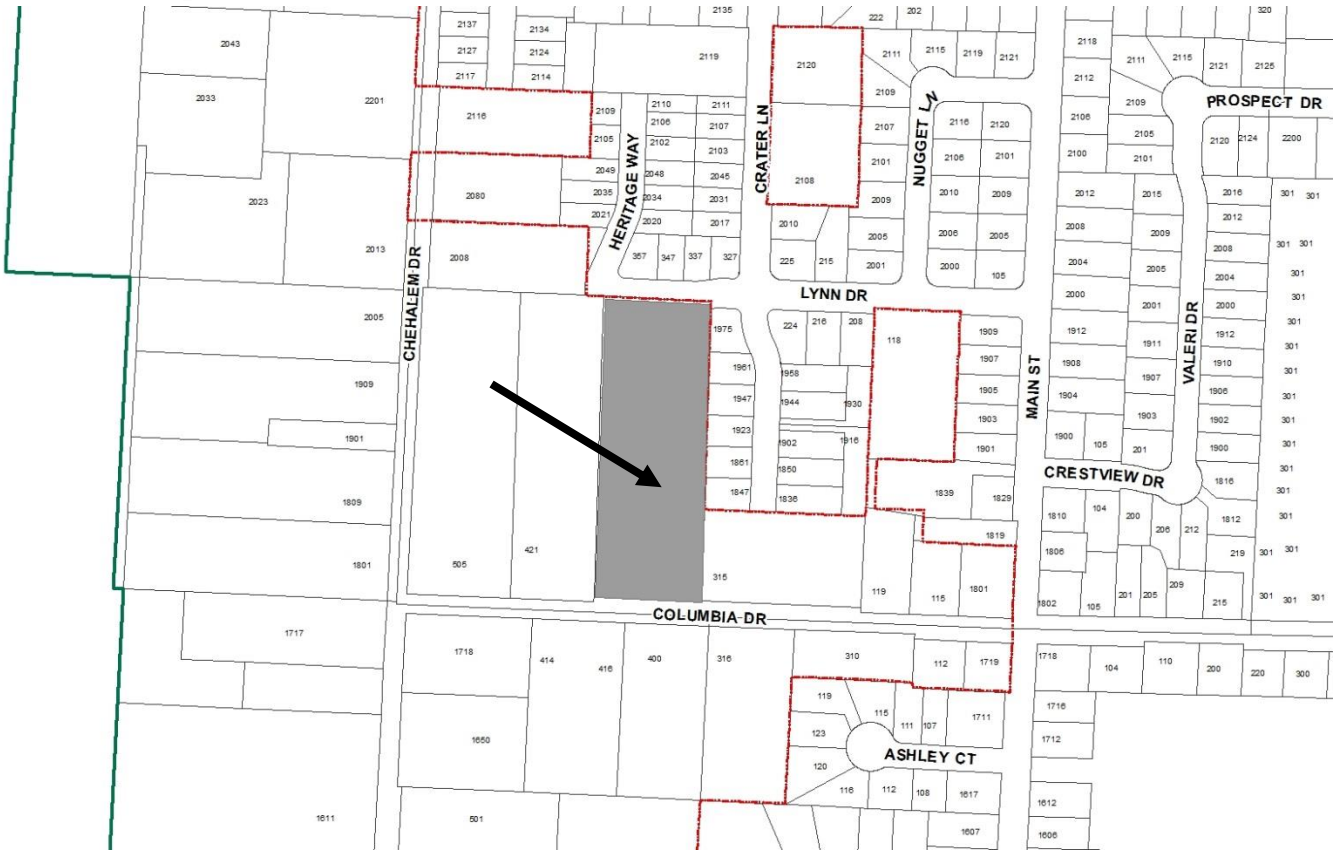
HEARING DATE: Planning Commission Hearing on October 13, 2016

ATTACHMENTS:

Planning Commission Order 2016-24 with:
- Exhibit A: Findings
- Exhibit B: Conditions of approval
- Exhibit C: Tentative plan
- Exhibit D: Phasing plan

1. Neighborhood aerial photo
2. Aerial with 5-foot contours
3. Public & Agency Comments
4. Supplemental memo – Westlake Consultants 9/30/16
5. Application
6. Newberg Development Code (by reference)

Location Map:



Proposal

The applicant has requested a Subdivision tentative plan approval for Columbia Estates subdivision. The application would divide a 3.06 acre site into 24 lots for single-family detached homes, in two phases. This is normally a Type II application, but the applicant has requested that it be reviewed as a Type III application with a public hearing and review by the Planning Commission.

Process

This is a Type III application for a Subdivision tentative plan. The Planning Commission hearing is a quasi-judicial hearing, and after taking public testimony the Planning Commission will make a decision on the application based on the criteria listed in the attached findings.

Noticing: Important dates related to this application are:

1.	9/21/16	The Community Development Director deemed the application complete.
2.	9/21/16	The applicant mailed notice to the property owners within 500 feet of the site.
3.	9/18/16	The applicant posted notice on the site.
4.	9/28/16	The Newberg Graphic published notice of the Planning Commission hearing.

5. 10/13/16: The Planning Commission will hold a quasi-judicial hearing to consider the application.

Criteria: The following criteria apply to the subject proposal:

15.235.060 Subdivision requirements – Type II and Type III.

A. The director (Type II) or planning commission (Type III) shall approve a subdivision of four parcels or more under a Type II or Type III procedure if the resulting parcels comply with the following approval criteria:

1. Approval does not impede the future best use of the remainder of the property under the same ownership or adversely affect the safe and healthful development of such remainder or adjoining land or access thereto.

2. The subdivision complies with this code including but not limited to NMC 15.340.010 through 15.440.080 and NMC 15.235.030 et seq.

3. Either:

a. Improvements required to be completed prior to final plat approval; or

b. The subdivider will substantially complete, as defined by city policies, required improvements prior to final plat approval, and enter into a performance agreement to complete the remaining improvements. The performance agreement shall include security in a form acceptable to the city in sufficient amount to insure completion of all required improvements; or

c. A local improvement district shall have been formed to complete the required improvements; or

d. The required improvements are contained in a city or other government agency capital improvement project that is budgeted and scheduled for construction.

Site Information

The site is located north of Columbia Drive and south of Lynn Drive. It is currently three parcels, has a slight slope to the south/southeast, and has a few mature trees along with grass fields.

Surrounding uses:

- North: single-family homes (R-2, on typically 5,000 sf lots)
- East: single-family homes (R-2, on approx. 6,000 sf lots)
- South: rural residential (outside city limits)
- West: rural residential (outside city limits)

Access and Transportation: The proposed subdivision takes access from both Columbia Drive and Lynn Drive, and will construct a new local street between them. Columbia Drive is under Yamhill County jurisdiction and Lynn Drive is under the City of Newberg jurisdiction.

Existing Utilities:

a. Water: There is an 8-inch public water line that is located in Lynn Drive.
b. Wastewater: There is an 8-inch public wastewater line that is located in Lynn Drive that could be extended south through the property to serve a portion of the site at its current elevation.
c. Stormwater: The current site is an open field of a pervious nature. The applicant must comply with the stormwater requirements of the municipal code and PW Design and Construction Standards Manual in effect at the time of site development. Stormwater currently flows north to south where it meets with a Yamhill County roadside ditch along Columbia Drive.
d. As required by the Newberg Municipal Code and at the time of site development, the applicant shall install all overhead utilities underground.

Agency Comments:

The application was routed to several public agencies for review and comment. Comments and recommendations from city departments and TVF&R (Tualatin Valley Fire & Rescue) have been incorporated into the findings and conditions. The findings are jointly written by the Planning Division and Engineering Department. As of the writing of this report, the city received the following agency comments:

- **PGE: Reviewed, no conflict.**
- **Newberg School District: Reviewed, no conflict.**

Public Comment:

As of the writing of this staff report, the city has received three written public comments. They are summarized below – the full comments are in Attachment 3.

Mike Brown was concerned about the amount of fill being placed on the property, the impact on neighboring properties from surface runoff, whether the applicant had considered other options for sewer connections, and the impact on the adjacent bed & breakfast business. He also asked whether the City Engineer had signed off on the proposed plan, or if it had been reviewed by a civil engineer.

Ed and Cathy Christie were concerned about increased runoff and erosion in their yard from amount of fill on the project site, and requested that the developer be required to post a $100,000 bond as a condition of approval to cover any potential water or mud damage to adjacent yards. They were concerned about the loss of privacy for neighboring properties from 2-3 story houses being built on so much fill, and asked if the developer and city had considered lowering the sewer line in Lynn Drive to reduce the need for fill on the site. They also requested that the developer not make the subdivision lots as small as proposed.

William and Velina Haines were concerned about increased runoff and erosion on adjacent properties from the amount of fill being placed on the project site. They wanted more specifics on how the base of the slope along the eastern property line was being designed to control runoff and protect adjacent properties. They were also concerned about the impact on the adjacent bed & breakfast, the water district line in Columbia Drive, and future parking impacts. They requested that the developer make the lots along the east side larger to make them more similar to adjacent properties, and to consider changing the sewer design to not require so much fill on the property.

Issues & Analysis summary:

1. **Previous public comments**: During the annexation application process several months ago the city received public comments with concerns about stormwater flows onto adjacent property, traffic increases, street improvements, compatibility with adjoining subdivision lots, protection of the water district line in Columbia Drive, and the review process in general for water/sanitary sewer/stormwater improvements.

2. **Review process when an application is submitted**: When a subdivision application is submitted the City routes copies of the application for review to City departments (Public Works -Engineering, Public Works – Maintenance, Planning, Tualatin Valley Fire & Rescue, among others), Yamhill County Roads dept., Newberg School District, Chehalem Park and Recreation District, and all of the city's franchise utilities. All of their comments are incorporated into the staff report. The City's Engineering Services Department has several civil engineers with PE (Professional Engineer) licenses, who have reviewed the applicant's preliminary water/sanitary sewer/stormwater designs to determine if they meet city codes and standards, and written the findings and conditions of approval for those systems in this report.

3. **Water district line in Columbia Drive**: The applicant has noted in the subdivision application that they are aware of this line and will take steps to protect it during Columbia Drive street improvements.

4. **Compatibility with adjoining subdivision lots**: The site has R-2 (medium density residential) zoning, which has a minimum lot size of 3,000 square feet and a maximum lot size of 5,000 square feet. There is no city requirement to make the lot sizes the same as in adjoining subdivisions so the applicant could have proposed all 3,000 square foot lots in the subdivision. The applicant has voluntarily reduced the number of lots to 24, and increased the size of the northern subdivision lots to the 4,000 – 5,000 square foot range to address some neighborhood concerns.

5. **Sanitary sewer design**: The annexation approval for the property required the applicant to analyze the capacity of the Highway 240 pump station at the time of development. The Highway 240 pump station study found that the pump station had adequate capacity for this development proposal. The proposed sanitary sewer design does not meet some city standards, but as conditioned can be revised to meet city standards for gravity flow by deepening the sewer connection in Lynn Drive. This should also reduce the need for fill on the site. This condition is similar to the idea submitted in some public comments.

6. **Stormwater system design**: The applicant will need to submit a revised grading plan showing how the drainage from the slopes along the rear property lines of the new lots will be addressed and/or a lesser amount of fill on the proposed lots.

7. **Traffic:** The project is expected to generate approximately 24 trips during the PM peak traffic hour. This makes it too small to require a full traffic study, as the Development Code requires a traffic study for any project that will generate more than 40 trips during the PM peak hour. The annexation approval for this site required that, at the time of development, a limited traffic study be completed to evaluate the intersection of Main Street and Lynn Drive, and to evaluate Columbia Drive. The traffic engineer found that the intersections will continue to operate at acceptable levels of service (LOS A and B respectively), that Main Street does not meet warrants for adding a stop sign at Lynn Drive, and that no off-site improvements are required. The City Engineer has reviewed and accepted the results of the traffic study. The applicant will construct the new internal street to City standards, and improve the frontages

of the property on Lynn Drive and Columbia Drive to City standards with curb, gutter and sidewalk. When houses are built in the proposed subdivision the builder will pay Transportation System Development Charges to the City, which the City will use to make off-site improvements to the city street system as determined by the Transportation System Plan. The applicant cannot be required to improve additional sections of Columbia Drive as it would not be proportional to the impact of their proposed development. If other properties along Columbia Drive annex into the city in the future and develop then their street frontages will be improved to City standards at that time.

8. **Phasing:** The proposal is to construct the subdivision in two phases. The first phase will include the northern half of the project. The applicant will need to submit a revised phasing plan including the storm drainage line and the stormwater facility in Phase 1. Additionally in order to meet the fire code, the applicant will need to construct a temporary hammerhead style fire department turnaround south of lots 5 and 20. The plat will need to grant an easement over the hammerhead for fire purposes.

9. **Development standards for houses**: The house designs are not reviewed as part of the subdivision application. The relevant standards for houses in the R-2 zone are:
    a. Two off-street parking spaces per house
    b. Front setbacks: minimum 15 feet to the house & 20 feet to the garage
    c. Side and rear setbacks: minimum 5 feet
    d. Maximum lot coverage: 50% of the lot (this means that the house can only cover 50% of the lot, which usually results in a backyard that is deeper than the minimum setback)
    e. Maximum combined parking and lot coverage: 60% of the lot
    f. Maximum building height: 30 feet (measured to the midpoint of the highest roof gable)

    These standards will be reviewed when the building permits are submitted for the houses.

PRELIMINARY STAFF RECOMMENDATION: The preliminary staff recommendation is made in the absence of public hearing testimony, and may be modified subsequent to the close of the public hearing. At this writing, staff recommends the following motion:

Move to adopt Planning Commission Order 2016-24, which approves the requested subdivision tentative plan with the attached conditions.

PLANNING COMMISSION ORDER NO. 2016-24

AN ORDER APPROVING SUB2-16-002 FOR THE COLUMBIA ESTATES SUBDIVISION TENTATIVE PLAN, LOCATED NORTH OF COLUMBIA DRIVE, SOUTH OF LYNN DRIVE, YAMHILL COUNTY TAX LOTS 3218AB-1700, -1701, -1702.

RECITALS

1. Del Boca Vista, LLC submitted an application for tentative plan approval for a 24 lot subdivision north of Columbia Drive, south of Lynn Drive, Yamhill County tax lots 3218AB-1700, -1701, and -1702.

2. After proper notice, the Newberg Planning Commission held a hearing on October 13, 2016 to consider the application. The Commission considered testimony, and deliberated.

3. The Newberg Planning Commission finds that the application, as conditioned, meets the applicable criteria as shown in the findings shown in Exhibit "A".

The Newberg Planning Commission orders as follows:

1. The tentative subdivision plan application SUB2-16-002 is hereby approved, subject to the conditions contained in Exhibit "B". Exhibit "B" is hereby adopted and by this reference incorporated.

2. The findings shown in Exhibit "A" and plans shown in Exhibits "C" and "D" are hereby adopted. Exhibits "A", "C", an "D" are hereby adopted and by this reference incorporated.

3. This order shall be effective October 28, 2016 unless appealed prior to that date.

4. This order shall expire two years after the effective date above if the applicant does not record the final plat by that time, unless an extension is granted per Newberg Development Code 15.235.130(B).

Adopted by the Newberg Planning Commission this 13th day of October, 2016.

ATTEST:

Planning Commission Chair

Planning Commission Secretary

List of Exhibits:
- Exhibit "A": Findings
- Exhibit "B": Conditions
- Exhibit "C": Tentative plan
- Exhibit "D": Phasing plan

Columbia Estates Subdivision tentative plan

SUB2-16-002

I. ANNEXATION CONDITIONS OF APPROVAL: from city Ordinance 2016-2803.

1. At the time of development, a detailed analysis of the Highway 240 sanitary sewer pump station is required, and any necessary upgrades to the pump station would be completed by the developer.

Finding: The applicant has submitted an analysis of the Highway 240 sanitary sewer pump station, which found that the pump station had adequate capacity for this development proposal. This analysis has been accepted by the City Engineer.

2. At the time of development, a limited traffic study will be required to evaluate the intersection of Main Street and Lynn Drive, and to evaluate Columbia Drive.

Finding: The applicant has submitted a traffic study, as required. The traffic engineer analyzed the impact of 29 single-family homes (the maximum density allowed on the property), so the impact of the proposed 24 lot subdivision will be slightly less. The traffic engineer estimated that 29 new single-family homes would generate approximately 276 trips each day, with 29 of those trips during the PM peak hour. These estimates are in line with the ITE (Institute of Traffic Engineers) Trip Generation Manual estimates for typical single-family homes. The report looked at crash histories and stop sign warrants, and found that there was no need to add a stop sign on Main Street at Lynn Drive, and no changes needed to the Columbia Drive/Main Street intersection, which already has a 4-way stop. The intersection of Lynn Drive and Main Street currently operates at a Level of Service (LOS) of A, and the intersection of Columbia Drive and Main Street currently operates at a LOS of B, which are low traffic conditions. The proposed development will add trips to both intersections and slightly increase the typical delay for users of each intersection, but both intersections will continue to operate at the same level of service. The traffic engineer's conclusion is that the transportation system in the area has significant remaining capacity, and no off-site improvements are required to mitigate the impact of this development. The City Engineer has reviewed and accepted the results of the traffic study.

The applicant will construct the new internal street and improve the Lynn Drive and Columbia Drive frontages of their property to City standards with curb, gutter and sidewalk at their own expense; the applicant cannot be required to improve additional sections of Columbia Drive as it would not be proportional to the impact of their proposed development. If other properties along Columbia Drive annex into the City in the future and develop then their street frontages will be improved to City standards at that time. When houses are built in the proposed subdivision the builder will pay

Transportation System Development Charges to the City, which the City will use to make off-site improvements to the city street system as determined by the Transportation System Plan.

3. The TPR report submitted by the applicant's traffic engineer states that, in order to comply with the TPR, development should be limited to 29 single-family homes or acceptable uses that generate less than the 300 trips anticipated in the Comprehensive Plan

Finding: The proposed subdivision is for 24 single-family homes, and is therefore below the limit of 29 single-family homes set at the annexation approval.

II. SUBDIVISION CRITERIA THAT APPLY: Newberg Development Code (NDC) 15.235.060(A).

The Director (Type II) or Planning Commission (Type III) shall approve a subdivision of four parcels or more under a Type II or Type III procedure if the resulting parcels comply with the following approval criteria:

1. Approval does not impede the future best use of the remainder of the property under the same ownership or adversely affect the safe and healthful development of such remainder or adjoining land or access thereto.

Finding: The applicant is dividing their entire site, so there is no remainder under the same ownership that could be adversely affected. All adjoining properties have access, so approval of the subdivision would not adversely affect access. The applicant provided a phasing plan on September 16, 2016. The phasing plan shows that Phase 1 will include the ten northernmost lots. Phase 1 will also need to include the stormwater facility in the southeast corner of the property and the storm drainage line to convey the stormwater to the proposed facility. In order to meet the requirements of NMC Chapter 13, the applicant will need to submit a revised phasing plan including the storm drainage line and the stormwater facility in Phase 1. Additionally in order to meet the fire code, the applicant will need to construct a temporary hammerhead style fire department turnaround south of lots 5 and 20. The plat will need to grant an easement over the hammerhead for fire purposes.

For the reasons listed above, approval of the subdivision as conditioned would not impede the future best use of the remainder of the property or adversely affect the safe and healthful development of adjoining land or access thereto.

2. The subdivision complies with this code including but not limited to 15.340.010 through 15.440.080 and 15.235.030 et seq.

Finding: The lot standards and development standards are addressed in detail below in section III.

3. Either:

a. Improvements required to be completed prior to final plat approval; or

b. The sub divider will substantially complete, as defined by city policies,

required improvements prior to final plat approval, and enter into a performance agreement to complete the remaining improvements. The performance agreement shall include security in a form acceptable to the city in sufficient amount to insure completion of all required improvements; or

c. A local improvement district shall have been formed to complete the required improvements; or

d. The required improvements are contained in a city or other government agency capital improvement project that is budgeted and scheduled for construction.

Finding: The required public improvements for each phase will be completed prior to final plat approval for each phase.

III. Applicable Lot Requirements: Newberg Development Code 15.405.010, Lot Area; Lot Areas per Dwelling Unit

A. In the following districts, each lot or development site shall have an area as shown below except as otherwise permitted by this code:

2. In the R-2, R-3, and RP districts, each lot or development site shall have a minimum area of 3,000 square feet or as may be established by a subdistrict. In the R-2 and R-P districts, the average size of lots in a subdivision intended for single-family development shall not exceed 5,000 square feet.

C. In calculating lot area for this section, lot area does not include land within public or private streets. In calculating lot area for maximum lot area/minimum density requirements, lot area does not include land within stream corridors, land reserved for public parks or open spaces, commons buildings, land for preservation of natural, scenic, or historic resources, land on slopes exceeding 15 percent or for avoidance of identified natural hazards, land in shared access easements, public walkways, or entirely used for utilities, land held in reserve in accordance with a future development plan, or land for uses not appurtenant to the residence.

Finding: All of the lots are at least 3,000 square feet, and exceed the minimum standard. The lot area does not include land within public or private streets. The average lot size is 3,902 square feet, so the average lot size does not exceed 5,000 square feet. This criterion is met.

The applicant increased the lot size of the northern lots to more closely match the lot size of adjoining subdivision lots. The applicant was not required to do this by city codes, but chose to do this to address neighborhood concerns about compatibility.

IV. Applicable Lot Requirements – Newberg Development Code 15.405.030 Lot Dimensions and Frontage

A. Width. Widths of lots shall conform to the standards of this code.

B. Depth to Width Ratio. Each lot and parcel shall have an average depth between the front and rear lines of not more than two and one-half times the average width between the side lines. Depths of lots shall conform to the standards of this code. Development of lots under 15,000 square feet are exempt from the lot depth to width ratio requirement.

C. Area. Lot sizes shall conform to standards set forth in this code. Lot area calculations shall not include area contained in public or private streets as defined by this code.

D. Frontage.

1. No lot or development site shall have less than the following lot frontage standards:

a. Each lot or development site shall have either frontage on a public street for a distance of at least 25 feet or have access to a public street through an easement that is at least 25 feet wide. No new private streets, as defined in NMC 15.05.030, shall be created to provide frontage or access.

b. Each lot in an R-2 and R-3 zone shall have a minimum width of 30 feet at the front building line.

c. Each lot in an R-1, AI, or RP zone shall have a minimum width of 50 feet at the front building line.

d. Each lot in an AR zone shall have a minimum width of 45 feet at the front building line.

2. The above standards apply with the following exceptions:

a. Legally created lots of record in existence prior to the effective date of the ordinance codified in this code.

b. Lots or development sites which, as a process of their creation, were approved with sub-standard widths in accordance with provisions of this code.

c. Existing private streets may not be used for new dwelling units, except private streets that were created prior to March 1, 1999, including paving to fire access roads standards and installation of necessary utilities, and private streets allowed in the airport residential and airport industrial districts.

Finding: The site is in the R-2 zone, so each lot must have at least 25 feet of frontage on a public street and be at least 30 feet wide at the front building line. All of the lots in the subdivision have at least 37 feet of frontage on a street and are at least 37 feet wide at the front building line. This criterion is met.

V. Applicable Development Standards

NDC 15.510.040: Water Supply. All lots and parcels within subdivisions and partitions shall be served by the water system of the City of Newberg.

Public Works Design and Construction Standards (PWDCS) 3.2.3.I.: All terminations shall be planned and located such that new or existing pavement will not have to be cut in the future when the main is extended.

PWDCS 3.2.3.V: The standard minimum cover over buried water mains within the street right-of-way shall be thirty six inches from finish grade. Standard Drawing 211 also notes that a minimum 18" of vertical separation is required from wastewater lines.

Findings: There is an existing 8" water main in Lynn Drive. The applicant is proposing to connect to this line and extend an 8" water main south in Street A. This proposed extension will serve all proposed lots in the development. This requirement is met.

The submitted plans show the water line stopping short of Columbia Drive which would require a future extension of the line to cut the pavement in Street A which does not meet PWDCS 3.2.3.I. The plans submitted for construction shall show the public water line extended into Columbia Drive.

The submitted plans do not indicate the cover over the water line pipe or separation between the water and wastewater lines as required by PWDCS 3.2.3.V. The plans submitted for construction shall show a minimum 36" of cover over the waterline and 18" of vertical separation between the water and wastewater lines. This is not possible with the submitted proposed design of the wastewater line.

NDC 15.510.050: Sewage. All lots and parcels within subdivisions and partitions shall, where practicable, as determined by the Director, in accordance with the provisions of this Code, be served by the sewage system of the City.

PWDCS 2.1: Public wastewater systems within the public right-of-way shall be designed to provide gravity service to all areas of development.

PWDCS 2.7: Each individual building site shall be connected by a separate, private, building wastewater service line connected to the public sewer.

PWDCS 2.4.2: Wastewater sewers in residential areas shall be placed in the street with the following minimum cover: In the roadway – Eight feet, Building Service Lateral – Six feet.

Findings: There is an existing 8" public wastewater line in Lynn Drive. This line was never intended to serve this development site. Per the Wastewater Master Plan, this site should be served by the Hwy 240 pump station and a public line in Chehalem Drive. The applicant's plans show an 8" wastewater line extended south from Lynn Drive to a point approximately 420' south. Lots 12-17 & 8-11 are

proposed to be served by private grinder pumps and a private lateral for each. They are shown in a 10' private easement behind the 10' PUE. If the private wastewater design remains in this configuration, no structure will be allowed to be constructed in this 20'.The proposed design does not extend public gravity sewer to all areas of development and does not provide the minimum 8' of cover for the pipe. The applicant submitted a letter on October 3, 2016 that noted that the PWDCS allows for a variance in certain circumstances. In order to approve the alternative, the applicant will need to apply for each request when construction drawings are submitted per PWDCS 1.11 Approval of Alternate Materials, Methods or Design. The letter did not provide enough information in order to properly review and make a determination if the requests could be approved. In order to meet the requirements of the code, the submitted construction plans will need to show:

- Extending the public wastewater line to approximately 15+80 at minimum slope. This provides gravity service to all areas per PWDCS 2.1.
- Installing a deeper manhole in Lynn Drive and extending a flatter sewer line towards Crater Lane for approximately 185'. This redesign allows the line in Street A to meet all standards because the line can be 5' deeper. This also eliminates the need to place as much fill as shown.

NDC 15.510.060: Land Surface Drainage. Such grading shall be done and such drainage facilities shall be constructed by the land divider as are adequate for the purpose of proper drainage of the partition or subdivision, of areas affected thereby, and for the preservation of healthful and convenient surroundings and conditions for residents of the subdivision or partition, and for the general public, in accordance with specifications adopted by the City Council under 15.510.030.

Findings: The proposed plans show an estimated 6-8' of fill over most of the lots. The proposed grading does not preserve healthful and convenient surroundings and conditions of the residents. In addition, the submitted plans do not show how the drainage from the 2:1 slopes along the rear property lines will be conveyed away from neighboring properties and into the public storm drainage system. As noted previously, the wastewater system will need to be redesigned leading the possibility of lessening the amount of fill shown on the lots. The applicant will need to submit a revised grading plan showing how the drainage from the slopes along the rear property lines will be addressed and/or a lesser amount of fill on the proposed lots. The submitted preliminary stormwater report and plans appear to meet the requirements of NMC Chapter 13. Final plans and calculations will need to be submitted meeting all requirements of the code and the PWDCS. The area is greater than 1 acre of disturbed area. The applicant shall provide a copy of the DEQ 1200-C permit and associated ESC plan to the City for review prior to issuance of any city permit.

NDC 15.505.030: Streets and Alleys. The land divider or developer shall grade and pave all streets and alleys in the subdivision or partition to the width specified in

15.505.060, and provide for drainage of all such streets and alleys, construct curbs and gutters within the subdivision or partition in accordance with specifications adopted by the City Council under 15.510.030. Such improvements shall be constructed to specifications of the City under the supervision and direction of the Director. It shall be the responsibility of the land divider or developer to provide street signs

Findings: The applicant submitted plans that show the construction of Street A. Street A is shown to have a 54' right-of-way and a 32' wide street section. To meet the requirements of NDC 15.505.030 the applicant will need to submit construction drawings for Street A, and dedicate said right-of-way.

NDC 15.505.090 Intersections of streets.

A. Angles. Streets shall intersect one another at an angle as near to the right angle as is practicable considering topography of the area and previous adjacent layout; where not so practicable, the right-of-way and street paving within the acute angle shall have a minimum of 30 feet centerline radius where such angle is not less than 75 degrees. In the case of streets intersecting at an angle of less than 75 degrees, then of such minimum as the director may determine in accordance with the purpose of this code.

B. Offsets. Intersections shall be so designed that no offset dangerous to the traveling public is created as a result of staggering of intersections, and in no case shall there be an offset of less than 100 feet centerline to centerline.

Finding: The proposed street intersects Lynn Drive and Columbia Drive at 90 degrees. The new street is offset from Heritage Way 118 feet, which exceeds the minimum 100 foot offset. These criteria are met.

NDC 15.505.160 Platting standards for blocks.

A. Purpose. Streets and walkways can provide convenient travel within a neighborhood and can serve to connect people and land uses. Large, uninterrupted blocks can serve as a barrier to travel, especially walking and biking. Large blocks also can divide rather than unite neighborhoods. To promote connected neighborhoods and to shorten travel distances, these following minimum standards for block lengths are established.

B. Maximum Block Length and Perimeter. The maximum length and perimeters of blocks in the zones listed below shall be according to the following table. The review body for a subdivision, partition, conditional use permit, or a Type II design review may require installation of streets or walkways as necessary to meet the standards below.

Zone(s)	*Maximum Block Length*	*Maximum Block Perimeter*
R-1	*800 feet*	*2,000 feet*
R-2, R-3, RP, I	*1,200 feet*	*3,000 feet*

Finding: The existing block perimeter at the site is approximately 5,500 feet. The proposed street connection between Lynn Drive and Columbia Drive reduces the block perimeter to approximately 2,800 feet, which meets the maximum block perimeter standard for the R-2 zone. The proposed block length is approximately 640 feet, and meets the maximum block length standard in the R-2 zone.

NDC 15.505.040: Existing Streets. A subdivision, partition or development requiring a Type II design review abutting or adjacent to an existing road of inadequate width, shall dedicate additional right-of-way to and improve the street to the width specified in 15.505.060.

NDC 15.505.210: Sidewalks. Sidewalks shall be located and constructed in accordance with the provisions of 15.510.030. Minimum width is five feet.

15.505.220 Public walkways.
A. The review body for a design review or land division may require easements for and construction of public walkways where such walkway is needed for the public safety and convenience or where the walkway is necessary to meet the standards of this code or a walkway plan. Public walkways are to connect to cul-de-sacs, to pass through oddly shaped or unusually long blocks, to provide for networks of public paths according to adopted plans, or to provide access to schools, parks or other community destinations or public areas of such design, width, and location as reasonably required to facilitate public use. Where possible, said dedications may also be employed to accommodate public utilities.

NDC 15.510.070: Street Trees. Street trees shall be provided adjacent to all public rights-of-way abutting or within a subdivision or partition. Street trees shall be installed in accordance with the provisions of 15.420.010(B) (4).

Finding: The subject property is adjacent to Lynn Drive and Columbia Drive. Lynn Drive is a local street with a 54' right-of-way per the Development Code. The submitted plans show the construction of Lynn Drive per the code. Columbia Drive is a minor collector with a 56' right-of-way. The submitted plans show the applicant will complete the required ¾ street improvement on Columbia Drive. To meet the requirements of NDC 15.505.040 the applicant will need to submit construction drawings for Lynn Drive and Columbia Drive and dedicate said right-of-way. The applicant will need to obtain a public improvements permit from Yamhill County for the Columbia Drive improvements. Sidewalks and street

trees will be provided along each lot frontage. The applicant needs to submit a street tree plan showing a species listed on the City's preferred street tree list and per PWDCS Detail 108. This criterion is met, as conditioned.

FIRE CODE REVIEW – TVFR:

These notes are provided in regards to the plans dated June 30, 2016. There may be more or less requirements needed based upon the final project design, however, Tualatin Valley Fire & Rescue will endorse this proposal predicated on the following criteria and conditions of approval.

FIRE APPARATUS ACCESS

*1. **FIRE APPARATUS ACCESS ROAD DISTANCE FROM BUILDINGS AND FACILITIES:** Access roads shall be within 150 feet of all portions of the exterior wall of the first story of the building as measured by an approved route around the exterior of the building or facility. An approved turnaround is required if the remaining distance to an approved intersecting roadway, as measured along the fire apparatus access road, is greater than 150 feet. (OFC 503.1.1)*

Finding: This requirement is met.

*2. **FIRE APPARATUS ACCESS ROAD WIDTH AND VERTICAL CLEARANCE:** Fire apparatus access roads shall have an unobstructed driving surface width of not less than 20 feet (26 feet adjacent to fire hydrants (OFC D103.1)) and an unobstructed vertical clearance of not less than 13 feet 6 inches. (OFC 503.2.1)*

Finding: This requirement is met**.**

*3. **NO PARKING:** Parking on emergency access roads shall be as follows (OFC D103.6.1-2):*
1. 20-26 feet road width – no parking on either side of roadway
2. 26-32 feet road width – parking is allowed on one side
3. Greater than 32 feet road width – parking is not restricted

Finding: Plans indicate a roadway width of 32ft. Parking is not restricted.

***4. FIRE APPARATUS ACCESS ROADS WITH FIRE HYDRANTS:** Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet and shall extend 20 feet before and after the point of the hydrant. (OFC D103.1)*

Finding: This requirement is met**.**

*5. **SURFACE AND LOAD CAPACITIES:** Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced as to provide all-weather driving capabilities. (OFC 503.2.3)*

*6. **TURNING RADIUS:** The inside turning radius and outside turning radius shall not be less than 28 feet and 48 feet respectively, measured from the same center point. (OFC 503.2.4 & D103.3)*

Finding: Turning radiuses on the north and south entrances to the development need to be a minimum of 28ft.

*7. **ACCESS ROAD GRADE:** Fire apparatus access roadway grades shall not exceed 15%.*

Finding: This requirement is met**.**

*8. **ANGLE OF APPROACH/GRADE FOR INTERSECTIONS:** Intersections shall be level (maximum 5%) with the exception of crowning for water run-off. (OFC 503.2.7 & D103.2)*

*9. **ACCESS DURING CONSTRUCTION:** Approved fire apparatus access roadways shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. Temporary address signage shall also be provided during construction. (OFC 3309 and 3310.1)*

*10. **TRAFFIC CALMING DEVICES:** Shall be prohibited on fire access routes unless approved by the Fire Marshal. (OFC 503.4.1)*

FIREFIGHTING WATER SUPPLIES:

*11. **SINGLE FAMILY DWELLINGS - REQUIRED FIRE FLOW:** The minimum available fire flow for one and two-family dwellings served by a municipal water supply shall be 1,000 gallons per minute. If the structure(s) is (are) 3,600 square feet or larger, the required fire flow shall be determined according to OFC Appendix B. (OFC B105.2)*

*12. **FIRE FLOW WATER AVAILABILITY:** Applicants shall provide documentation of a fire hydrant flow test or flow test modeling of water availability from the local water purveyor if the project includes a new structure or increase in the floor area of an existing structure. Tests shall be conducted from a fire hydrant within 400 feet for commercial projects, or 600 feet for residential development. Flow tests will be accepted if they were performed within 5 years as long as no adverse modifications have been made to the supply system. Water availability information may not be required to be submitted for every project. (OFC Appendix B)*

Finding: Provide documentation of fire hydrant flow test.

*13. **WATER SUPPLY DURING CONSTRUCTION IN MUNICIPAL AREAS:** In areas with fixed and reliable water supply, approved firefighting water supplies shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. (OFC 3312.1)*

FIRE HYDRANTS:

*14. **FIRE HYDRANTS – ONE- AND TWO-FAMILY DWELLINGS & ACCESSORY STRUCTURES:** Where the most remote portion of a structure is more than 600 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the structure(s), on-site fire hydrants and mains shall be provided. (OFC 507.5.1)*

Finding: This requirement is met.

*15. **FIRE HYDRANT NUMBER AND DISTRIBUTION:** The minimum number and distribution of fire hydrants available to a building shall not be less than that listed in Table C 105.1. (OFC Appendix C)*

*16. **FIRE HYDRANT(S) PLACEMENT:** (OFC C104)*
• Existing hydrants in the area may be used to meet the required number of hydrants as approved. Hydrants that are up to 600 feet away from the nearest point of a subject building that is protected with fire sprinklers may contribute to the required number of hydrants. (OFC 507.5.1)
• Hydrants that are separated from the subject building by railroad tracks shall not contribute to the required number of hydrants unless approved by the Fire Marshal.
• Hydrants that are separated from the subject building by divided highways or freeways shall not contribute to the required number of hydrants. Heavily traveled collector streets may be considered when approved by the Fire Marshal.
• Hydrants that are accessible only by a bridge shall be acceptable to contribute to the required number of hydrants only if approved by the Fire Marshal.

*17. **FIRE HYDRANT DISTANCE FROM AN ACCESS ROAD:** Fire hydrants shall be located not more than 15 feet from an approved fire apparatus access roadway unless approved by the Fire Marshal. (OFC C102.1)*

*18. **REFLECTIVE HYDRANT MARKERS:** Fire hydrant locations shall be identified by the installation of blue reflective markers. They shall be located adjacent and to the side of the center line of the access roadway that the fire hydrant is located on. In the case that there is no center line, then assume a center line and place the reflectors accordingly.*
(OFC 507)

***Finding:** Contact TVFR for reflective markers.*

*19. **PHYSICAL PROTECTION:** Where fire hydrants are subject to impact by a motor vehicle, guard posts, bollards or other approved means of protection shall be provided. (OFC 507.5.6 & OFC 312)*

*20. **CLEAR SPACE AROUND FIRE HYDRANTS:** A 3 foot clear space shall be provided around the circumference of fire hydrants. (OFC 507.5.5)*

BUILDING ACCESS AND FIRE SERVICE FEATURES

*21. **PREMISES IDENTIFICATION:** New and existing buildings shall have approved address numbers; building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property, including monument signs. These numbers shall contrast with their background. Numbers shall be a minimum of 4 inches high with a minimum stroke width of 1/2 inch. (OFC 505.1)*

Conclusion: Based on the above-mentioned findings, the application meets the required criteria within the Newberg Development Code, subject to completion of the attached conditions.

Columbia Estates subdivision tentative plan
SUB2-16-002

A. The applicant must provide the following information for review and approval <u>prior</u> to construction of any improvements:

1. **Revised Phasing Plan:**

   a. In order to meet the requirements of NMC Chapter 13, the applicant will need to submit a revised phasing plan including the storm drainage line and the stormwater facility in Phase 1. Additionally in order to meet the fire code, the applicant will need to construct a temporary hammerhead style fire department turnaround south of lots 5 and 20. The plat will need to grant an easement over the hammerhead for fire purposes.

2. **Construction Plans must be submitted for all infrastructure per the requirements below.**

   Utilities:

   1. Sanitary Sewer Requirements: In order to meet the requirements of the code, the submitted construction plans will need to show:
      a. Extending the public wastewater line to approximately 15+80 at minimum slope. This provides gravity service to all areas per PWDCS 2.1.
      b. Installing a deeper manhole in Lynn Drive and extending a flatter sewer line towards Crater Lane for approximately 185'. This redesign allows the line in Street A to meet all standards because the line can be 5' deeper. This also eliminates the need to place as much fill as shown.

   2. Storm Sewer Requirements:
      a. The applicant will need to submit a revised grading plan showing how the drainage from the slopes along the rear property lines will be addressed and/or a lesser amount of fill on the proposed lots.
      b. Stormwater report and plans: Final plans and calculations will need to be submitted meeting all requirements of the code and the PWDCS.
      c. The applicant shall provide a copy of the DEQ 1200-C permit and associated ESC plan to the City for review prior to issuance of any city permit.

   3. Water Requirements
      a. The plans submitted for construction shall show the public water line extended into Columbia Drive.

b. The submitted plans do not indicate the cover over the water line pipe or separation between the water and wastewater lines as required by PWDCS 3.2.3.V. The plans submitted for construction shall show a minimum 36" of cover over the waterline and 18" of vertical separation between the water and wastewater lines. This is not possible with the submitted proposed design of the wastewater line.

4. Streets:
   a. To meet the requirements of NDC 15.505.030 the applicant will need to submit construction drawings for Street A and dedicate said right-of-way.
   b. To meet the requirements of NDC 15.505.040 the applicant will need to submit construction drawings for Lynn Drive and Columbia Drive and dedicate said right-of-way. The applicant will need to obtain a public improvements permit from Yamhill County for the Columbia Drive improvements.

3. **Street Tree Plan:** The applicant needs to submit a street tree plan showing a species listed on the City's preferred street tree list and per PWDCS Detail 108. A landscape bond will be required for installation of street trees.

4. **TVFR** requirements:
   a. Turning radiuses on the north and south entrances to the development need to be a minimum of 28ft.
   b. Provide documentation of fire hydrant flow test.
   c. Contact TVFR for reflective markers.

B. The applicant must complete the following <u>prior</u> to final plat approval.

1. **Substantially Complete the Construction Improvements:** Prior to final plat approval, the applicant must substantially complete the construction improvements and secure for them in accordance with city policy. Complete construction and call for a walk-through inspection with the Engineering Service Department.

   a. Construct all public streets according to city standards for local residential streets.
   b. Construct all approved public utility lines, including stormwater facilities.

C. Final Plat Application: In accordance with NDC 15.235.150, submit the following for City review of the final plat application. Construction improvements should be substantially complete at this point.

1. **Application Materials:**

   a. Type I application form (found either at City Hall or on the website – www.newbergoregon.gov in the Planning Forms section) with the appropriate fees.
   b. A current title report (within 6 months old) for the property. Include copies of all existing easements and CC&Rs that pertain to the property.

c. A written response to these Conditions of Approval that specifies how each condition has been met.

d. Two blue-line copies of the final subdivision plat for preliminary review by the City Engineering Services Department. The City Engineer will make red-line comments on these sheets for your surveyor/engineer to correct prior to printing final Mylar copies.

e. Any other documents required for review.

2. **Dedications/Easements Required:** The plat must show the following:

   a. Easements:
      i. All utility, sanitary sewer, water and storm drainage easements to the City.
      ii. 10 ft utility easements along all frontages.
   b. Dedications of Right-Of-Way as shown on the tentative plat and required by these conditions.

3. **Documents Required:** Provide the following documents for review and approval:

   a. A signed and notarized performance agreement that assures construction and performance in accordance with the approved final plans.
   b. A bond for street tree planting in an amount to be approved by the Planning Division.
   c. A maintenance agreement and private sanitary sewer easement document for the private sanitary sewer lines that cross the affected southern lots.

4. **Final Mylar Copies of the Subdivision Plat:** Submit two final mylar copies of the corrected final subdivision plat (after red-line corrections have been made). Original plats shall be in substantial conformity to the approved tentative plan and shall conform to the Yamhill County Surveyor's specifications and requirements pertaining to material that has the characteristics of adequate strength, permanency, as well as suitability for binding and copying. Plats shall be in clear and legible form and may be placed on as many sheets as necessary, but a face sheet and an index page shall be included for all plats placed upon three or more sheets. Scale requirements shall be the same as specified for the tentative plans.

D. The final plat process must be completed <u>prior</u> to issuance of any building permits. The City will review the final plat application after the applicant has completed all of the conditions of approval listed above.

1. **City Review:** In accordance with NDC 15.235.160 and 15.235.180, Planning staff shall determine that:

   a. Streets, roads, and alleys for public use are dedicated without any reservation or restriction other than reversionary rights upon vacation of any such street or road and easements for public utilities.
   b. The proposal complies with this code.
   c. The plat is in substantial conformity with the provisions of the tentative plan for

the subdivision, as approved.

d. The plat contains a donation to the public of all common improvements, including but not limited to streets, roads, parks, sewage disposal and water supply systems.

e. Explanations of all common improvements required as conditions of approval of the tentative plan of the subdivision have been accounted for and referenced on the plat.

f. There will exist an adequate quantity and quality of water and an adequate sewage disposal system to support the proposed use of the land described in the plat.

g. Either:

   i. Improvements as required by this code or as a condition of tentative plan approval have been filed with the Director; or

   ii. A performance agreement (bond) or suitable substitute as agreed upon by the city and applicant has been filed with the Director in sufficient amount to insure the completion of all required improvements; or

   iii. A petition for improvements has been properly executed by the applicant who is effecting the subdivision and will be assessed for said improvements.

h. Taxes, as well as public liens, assessments and fees, with respect to the subdivision area have been paid, or adequate guarantee has been provided assuring said taxes, liens, assessments and fees will be paid prior to recordation.

i. The sub divider has entered into agreement with the city relating to completion of improvements, payment of sewer and water hookup fees, inspection fees, public lands payments, monumentation or any other elements deemed relevant to the purpose of this or any other city ordinance, state statute or federal law.

j. If the conditions set at the time of tentative land division approval are not fulfilled and the final plat or final map is not recorded by the tentative plan expiration date, the tentative land division approval is null and void.

k.

2. **Required Signatures:** According to NDC 15.235.180, approval of a final subdivision plat must be acknowledged and signed by the following:

   a. Community Development Director
   b. The County Assessor
   c. The County Surveyor
   d. The City Recorder

3. **Recording:** Deliver the approved subdivision plat to the office of the County Clerk for recording. The County Clerk's office is located at 414 NE Evans St, McMinnville, OR 97128.

4. **Completion:** Return an exact mylar copy of the recorded plat to the Director to complete the subdivision process.

E. Development Notes:

1. **Postal Service:** The applicant shall submit plans to the Newberg Postmaster for approval of proposed mailbox delivery locations. Contact the Newberg Post Office for assistance

at 503-554-8014.

2. **PGE:** PGE can provide electrical service to this project under terms of the current tariff which will involve developer expense and easements. Contact the Service & Design Supervisor, PGE, at 503-463-4348.

3. **Frontier:** The developer must coordinate trench/conduit requirements with Frontier. Contact the Engineering Division, Frontier, at 541-269-3375.

4. **Addresses:** The Planning Division will assign addresses for the new subdivision. Planning Division staff will send out notice of the new addresses after they receive a recorded mylar copy of the final subdivision plat.

Exhibit C: Tentative Plan

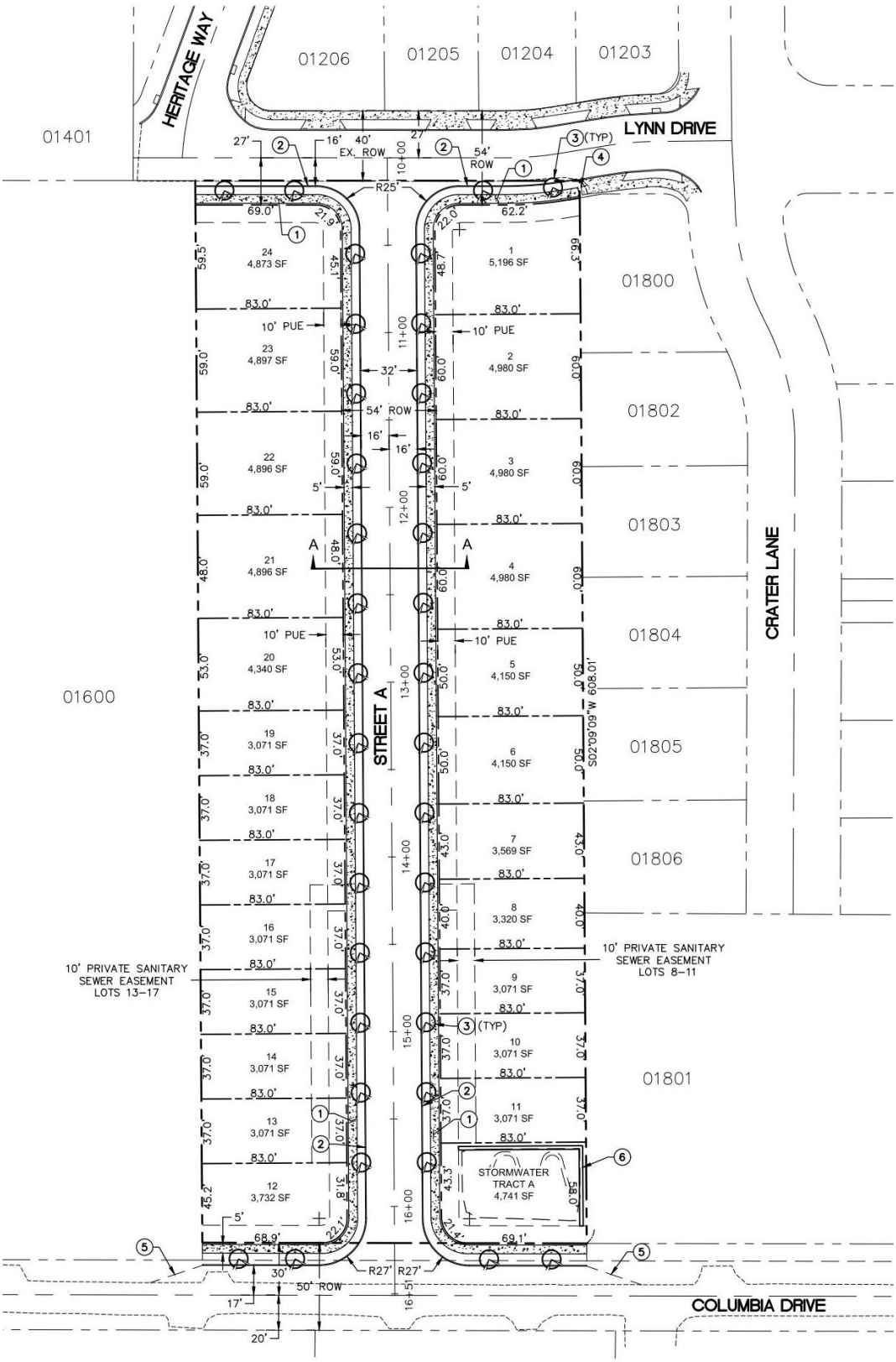
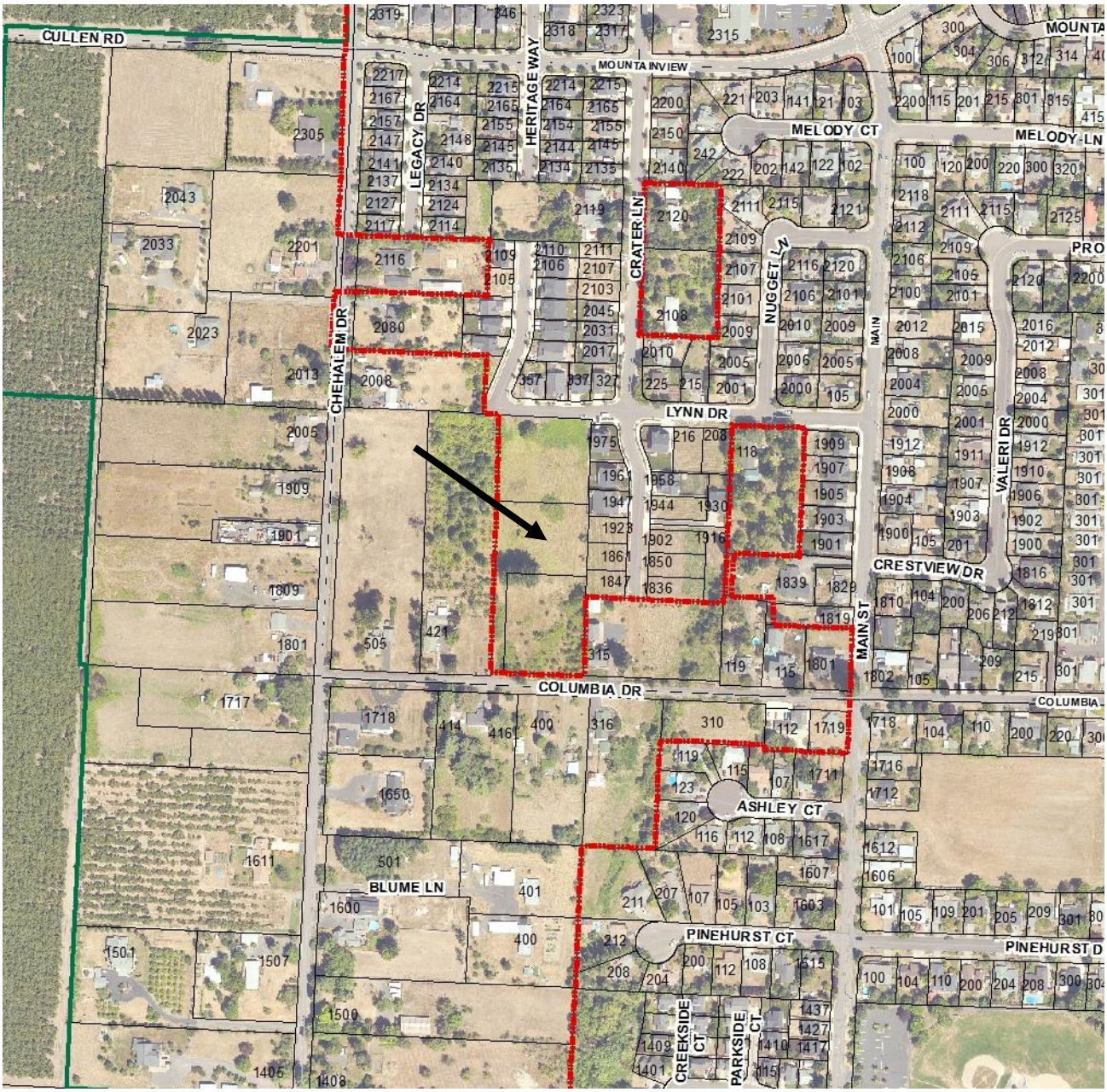
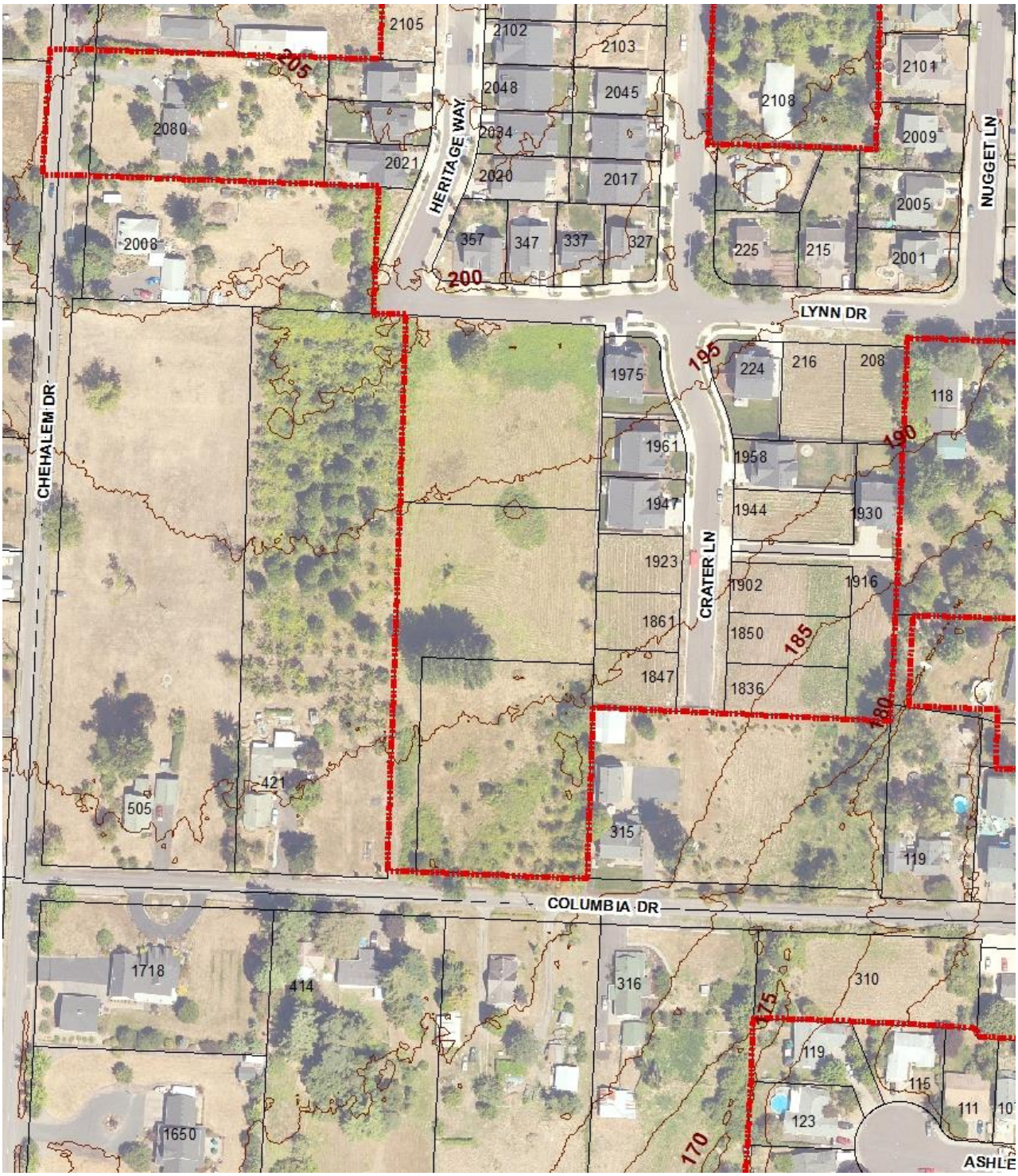


Exhibit D: Phasing Plan

Attachment 1: Neighborhood aerial photo



Attachment 2: Aerial with 5-foot contour lines



Attachment 3: Public Comments

Proposed Columbia Estates Development, File No. SUB2-16-002

My name is Mike Brown, my address is 1861 Crater Ln, Newberg. My property borders the proposed development on its east side. Thank you for the opportunity to speak.

The applicant proposes to use a large amount of fill in order to elevate the proposed lots to achieve enough elevation for sewage discharge. This fill will elevate homes behind me and my neighbors 2-3 feet.

I have major concerns with this plan.

1) Has the City Engineer signed off on this plan? Has there been any official review of the plan by an unbiased Civil Engineer? If this plan is approved and then fails, my neighbors and myself are at risk of runoff from the fill draining into our lots. Essentially, the applicant is saying in his application to "trust" him that this plan will not cause damage to our property. I'm not willing to take that risk and as my representatives I'm asking the Planning Commission to not gamble with our property. I'm asking the Planning Commission to protect our property and its value.

2) Has the applicant pursued any other option besides the fill? Is it not possible to connect to the sewer the same way my home has? Again, my home borders the proposed development.

3) The applicant states the "toe of the fill" stops short of the property line so that "surface runoff of the fill slope flows south towards Columbia Dr. without encroaching on neighboring properties". I cannot find mention of erosion protection of that toe. What is the applicant doing to prevent erosion?

4) The part of this development that borders the Bed and Breakfast on Columbia Dr. is the most densely packed portion of the development. How is that going to affect business at the B and B? Is this proposed development worth the risk to our neighbors' livelihood?

In closing, I do understand that these 3 tax lots are destined for development. I'm not against that. I am against this specific plan and I am asking the Commission to reject this application.

10/4/16

October 3, 2016
To: Newberg City Planning Commission.
Re: Columbia Estates File SUB2-16-002

When we moved into our home on Crater Lane we fully expected houses would be built on the land behind us.
Our faulty thinking was, the houses would be comparable to the existing neighborhood.

Our concerns with the purposed development are three fold:
First, the fill, which will likely have mud and water runoff into our backyard.
Second, the number of houses being built on such a small area of land.
Third, the narrow two and three story houses on 3,000 and 4,000 square foot lots.

Because the houses are to be built on a fill, not only will there likely be water and mud running into our backyard, but we will have neighbors behind us in two and three story houses with great views, or not, into the windows of our homes.

Have the city planners and the developer considered other options rather than filling? For example, have you considered digging the sewer a little deeper at the city connection, extending west on Lynne Street to a point at the center of street 'A', then running south to lot 6 or 7? This would eliminate most of the fill and have a much more positive affect on the entire neighborhood.

As a condition of approval, we would request the developer post a $100,000 bond which would help cover any potential water or mud damage done to the existing neighborhood yards.

Additionally, there have been many comments over this process about being zoned R2, which allows for 3,000 square foot lot sizes. We would respond to that by stating, 'Just because you can doesn't mean you should'.

Finally, if the developer has followed the guidelines which agencies have established, our understanding is the City Council and City Planning Commission are then required to vote "yes". So, what is the purpose of this entire process? Why bother with community input?

Thank You for considering our comments.

Sincerely,

Ed & Cathy Christe

1923 Crater Lane

PUBLIC COMMENTS

RECEIVED
OCT 06 2016
Initial: _____

Date: October 4, 2016

To: City of Newberg Planning Commission

From: Mr. and Mrs. William Haines – 1847 Crater Lane

Re: Comments on File SUB2-16-002

Columbia Estates Subdivision Application

We are submitting written comments in response to the notice received September 23, 2016.

We are opposed to the request by Del Boca Vista LLC based on the following concerns.

1. Comments on our original letter dated May 8, 2016 still apply.
2. The Subdivision development plan proposes to grade the project property to create a gravity flow for sewer water. The grading is intended to direct the sewer flow for most of the new homes toward Lynn Drive, while the remaining homes at the south end close to Columbia Drive will have individual pumps. While the plan goes into great detail on how sewer and storm water will be handled within the development, we have a number of concerns about the grading and the possible negative impact to adjoining properties, including ours.
   a. In addition to reviewing code requirements for the project property, what measures have been/will be taken to ensure code and adherence to other laws and regulations to protect the adjoining properties?
   b. With the grading and removal of most or all of the existing vegetation, we're concerned there will be increased runoffs (proposal describes as "minor accumulation of surface runoff") into the adjoining properties and increase to the current water tables. This is especially true for the west and south sides of the project property where natural flow is to the southeast. Therefore, will elevating the landmass cause storm water flow, as described in the Geotechnical Report, to divert onto these properties and substantially increase the level of their water table which is already high?
   c. Does the proposed plan violate the Oregon Drainage Law, or any other law/regulation/ordinance?
   d. There was no description of how the east side of the project property would be constructed. What is planned beyond the "toe of the fill"—concrete ditch, culvert or some form of permanent solution to drain runoff toward the catchment pond. Not a dirt ditch!
   e. What are the plans for the project properties where the approximate limits of the grade slope down/contours towards the adjoining properties?
   f. How is the erosion being addressed?
   g. How is runoff down this slope going to be handled to prevent standing water and/or flooding of existing properties and/or home crawl spaces/basements or the main floors?
   h. What considerations are being taken to ensure an existing business (Bed and Breakfast), which sits on the eastern boundary, will not be adversely impacted?
   i. What precautions are being taken to protect the water lines for the county neighbors along Columbia Drive?
   j. Regarding the storm water detention facility, who is responsible and how will it be maintained after the construction?
   k. While there is some information about the development of the project property, there was nothing to address how the adjoining land would be protected from any potential damage. We ask that the proposed fill and how it would impact the areas, both on the project property AND neighboring properties, be closely reviewed.

l. What assurances/guarantee will the Developers, et.al and the City of Newberg provide to the neighboring homeowners, especially those in the path of the natural flow of storm water drainage, that their properties will not incur damage and/or negatively affect property value?
m. What recourse do we homeowners have against the responsible/liable parties?
n. What other alternatives, such as installing individual pumps for all houses or a pumping station for the entire subdivision, are viable in order to avoid the need of grading the project property altogether?

3. The project plans to subdivide the properties into 24 lots of 3,071 to 5,196, with an average size of 3,902 sf. While the neighboring lots east toward Crater Lane and north toward Lynn Drive are also zoned R2, the average lot size is at least 5,000 sf; and the other county neighboring lots are at least 1 acre. The adjoining land will be adversely affected by the lack of compatibility of lot size; as a compromise, a better transition would be 5,000 sf lots along the east side for a planned development to create a coordinated, cohesive neighborhood concept. Smaller lots could then be developed on the west side in anticipation of further growth of the urban development plan.
4. The proposed density is a concern for a number of reasons.
   a. Based on the planned lot sizes, we anticipate the houses will be built to the maximum width, length and height restrictions. With the proposed grade, some homes will stand even taller, and the situation would be exacerbated if an exception to the 30 feet height was requested and approved.
   b. While the traffic study to determine the need for additional traffic control is very thorough and important, it does not address the equally important anticipated increase in traffic and its impact on safety. This is of utmost concern for children walking to/from school. Many families walk to the neighborhood parks, and many others walk, run, bike along all these surrounding roads. Columbia Drive is very narrow and already quite busy with vehicles, including school buses.
   c. Parking will be a concern as well. Due to the width of most of the lots, they will likely be constructed with one car garages. While the individual driveway would accommodate another car, it's very likely many homeowners, and their visitors, will need to park one or more of their vehicles on the street—some on the new street "A", but probably also along Lynn Drive, Heritage Way and Crater Lane.

We expressed some of our concerns in our letter dated May 8, 2016, however we now understand they will be addressed during this subdivision application. We look forward to the developer's response to all questions and issues raised by the opponents. The proposed storm water drainage solution should not only meet code standards and adherence to drainage law, but also ensure adjoining properties are not adversely impacted by potential damage. Otherwise, an acceptable alternative engineering solution should be implemented in its place.

Thank you for the opportunity to express our comments and concerns. Although we would like to see this parcel remain open space, we are not against development. We know that development of this parcel and others nearby is inevitable as part of the Newberg Urban Development Growth Plan; and we would support a congruent plan. We are against this particular development and urge you to disapprove Del Boca's application.

Very Respectfully,

William and Velina Haines
1847 Crater Lane
Newberg, OR 97132

Westlake consultants, inc | PLANNING | ENGINEERING | SURVEYING

PROJECT MEMO

Date: September 30, 2016
To: City of Newberg
From: Westlake Consultants, Inc.
Ryan Crowther, PE – Project Engineer
RE: Columbia Estates Sanitary Sewer Main (WCI Ref. No. 2657-001)

This memo is in regards to the proposed sanitary line for the Columbia Estates project, located at 421 W Columbia Drive, Newberg Oregon. Due to site constraints, including the depth and location of the existing sanitary line, as well as existing elevations of Lynn Drive and Columbia Drive, it is proposed that a shallow sanitary sewer main be constructed at the subject site. The purpose of this memo is to demonstrate site constraints which provide for minimal cover over the sanitary sewer line, and detail measures that will be taken to protect the shallow line as well as considerations for sanitary sewer water line crossings.

There is no existing sanitary sewer main in Columbia Drive, on the downhill side of the proposed development. Due to a creek crossing along Columbia Drive, it is not feasible to extend the existing sanitary main in Columbia Drive to the proposed site. Due to this, it is recommended to extend the sanitary line as far south from Lynn Drive as possible within the development. The cover over the main will range between 8' at Lynn drive to 2' at the southern terminus of the sanitary main. The proposed profile of the proposed roadway is dictated by the existing elevations on Lynn Drive and Columbia Drive.

Due to the shallow nature of the sanitary sewer, it is expected that the material will be ductile iron. Per the City of Newberg standard detail 110, a cover less than the minimum shown in Table 1 may be considered when circumstances dictate. Table 2 calls for the minimum cover for ductile iron to be 18" in paved areas. It shall also be verified during design that no pipes intrude into the proposed roadway section.

The City of Newberg code calls for 18" vertical clearance at the intersection of sanitary and water lines, with the water lines crossing above the sanitary line. Due to the existing conditions present at the site, this is not feasible for the project. The relevant section of OAR Chapter 333 referenced in the City of Newberg standards is attached to this memo, and presents multiple exceptions for when the clearance does not meet this requirement. It is proposed that this project is constructed per the requirements outlined in OAR 333-061-0050(9), which is attached as a supplement to this memo.

To verify that the requirements shown in OAR 333-061-0050(9) be met, it is proposed that this section be referenced in the general notes within the construction plans. Per section (B) of this code, it states that if the separation of the line is less than 18", the materials shall be PVC pressure pipe (ASTM D-2241, SDR 32.5), high-density PE pipe (Drisco pipe 1000), ductile-iron Class 50 (AWWA C-51), or other acceptable pipe; or the sewer shall be encased in a reinforced concrete jacket for a distance of 10 feet on both sides of the crossing. As stated previously in this memo, it is assumed that the sanitary lines will be constructed from ductile iron pipe, satisfying this requirement.

OAR Chapter 333-061-0050(9) is attached for reference, following.

enters the building. The distance between tracer lead access locations shall not be more than 1,000 feet. Joints or splices in wire shall be waterproof.

(l) Piping that is to be used for disinfection contact time shall be verified by plug flow calculations under maximum flow conditions.

(9) Crossings-Sanitary sewers and water lines:

(a) All reference to sewers in this section shall mean sanitary sewers;

(b) In situations involving a water line parallel to a sewer main or sewer lateral, the separation between the two shall be as indicated in Figure 1;

(c) In situations where a water line and a sewer main or sewer lateral cross, the separation between the two shall be as follows:

(A) Wherever possible, the bottom of the water line shall be 1.5 feet or more above the top of the sewer line and one full length of the water line shall be centered at the crossing;

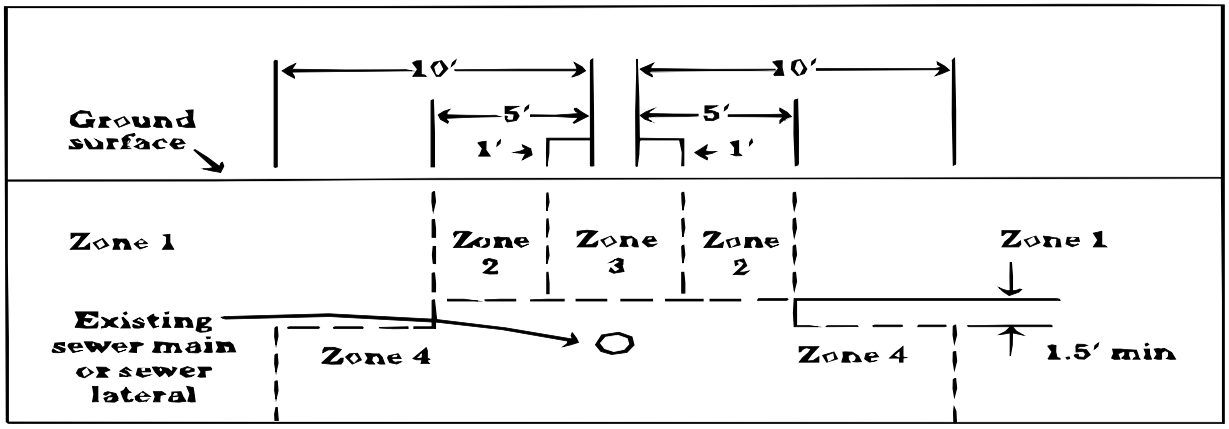
(B) Where the water line crosses over the sewer line but with a clearance of less than 1.5 feet, the sewer line shall be exposed to the sewer line joints on both sides of the crossing to permit examination of the sewer pipe. If the sewer pipe is in good condition and there is no evidence of leakage from the sewer line, the 1.5-foot separation may be reduced. However, in this situation, the water supplier must center one length of the water line at the crossing and must prepare a written report of the findings and indicating the reasons for reducing the separation. If the water supplier determines that the conditions are not favorable or finds evidence of leakage from the sewer line, the sewer line shall be replaced with a full length of pipe centered at the crossing point, of PVC pressure pipe (ASTM D-2241, SDR 32.5), high-density PE pipe (Drisco pipe 1000), ductile-iron Class 50 (AWWA C-51), or other acceptable pipe; or the sewer shall be encased in a reinforced concrete jacket for a distance of 10 feet on both sides of the crossing.

(C) Where the water line crosses under the sewer line, the water supplier shall expose the sewer line and examine it as indicated in paragraph (9)(c)(B) of this rule. If conditions are favorable and there is no evidence of leakage from the sewer line, the sewer line may be left in place, but special precautions must be taken to assure that the backfill material over the water line in the vicinity of the crossing is thoroughly tamped in order to prevent settlement which could result in the leakage of sewage. In this situation, the water supplier must center one length of the water line at the crossing and must prepare a written report recording the manner in which the sewer line was supported at the crossing and the material and methods used in backfilling and tamping to prevent settlement of the sewer. If the water supplier determines that conditions are not favorable or finds evidence of

leakage from the sewer line, the provisions of paragraph (9)(c)(B) of this rule apply.

(d) When a water main is installed under a stream or other watercourse, a minimum cover of 30 inches shall be provided over the pipe. Where the watercourse is more than 15 feet wide, the pipe shall be of special construction with flexible watertight joints, valves shall be provided on both sides of the crossing so that the section can be isolated for testing or repair, and test cocks shall be provided at the valves.

Figure 1: Water Line-Sewer Line Separation



Zone 1: Only crossing restrictions apply;
Zone 2: Case-by-case determination;
Zone 3: Parallel water line prohibited;
Zone 4: Parallel water line prohibited;

(10) Disinfection of facilities:

(a) Following construction or installation of new facilities and repairs to existing facilities, those portions of the facilities which will be in contact with water delivered to users must be cleaned and flushed with potable water and disinfected according to AWWA Standards C651 through C654 before they are placed into service. Disinfection must be by chlorine unless another disinfectant can be demonstrated to be equally effective.

(b) For construction of new distribution pipelines (with any associated service connections and other appurtenances installed at the time of construction), disinfection by chlorination must be conducted as specified in paragraphs (A) through (C) of this subsection unless another method from AWWA Standard C651 is used.

(A) A solution with a free chlorine residual of 25 mg/l must be introduced to the pipe such that the solution will contact all surfaces and trapped air will be eliminated. The solution must remain in place for at least 24 hours.

(B) After 24 hours, if the free chlorine residual is 10 mg/l or greater, the chlorine solution must be drained and the pipe flushed with potable

Columbia Estates Subdivision

Supplemental Response to

Subdivision Application

August 29, 2017

MEMO

To: Newberg Planning Division

From: Daniel Danicic, PE

Date: 9/16/16

Re: Columbia Estates File SUB2-16-002

Anticipating a late fall start for construction, the applicant proposes to build the subdivision in 2 phases.

Supplemental Response – Columbia Estates Subdivision

a. Pursuant to Newberg Code Section 15.100.040(F), please consider this communication as Applicant's request that this Application for Subdivision be processed as a Type III application.

b. Please note that this subdivision will not be subject to Conditions Covenants and Restrictions.

c. As to the third subdivision criterion: We will substantially complete, as defined by city policies, required improvements prior to final plat approval, and enter into a performance agreement to complete the remaining improvements. The performance agreement shall include security in a form acceptable to the city in sufficient amount to insure completion of all required improvements.

Supplemental Response – Columbia Estates Subdivision

15.505.090 Intersections of streets.

A. Angles. Streets shall intersect one another at an angle as near to the right angle as is practicable considering topography of the area and previous adjacent layout; where not so practicable, the right-of-way and street paving within the acute angle shall have a minimum of 30 feet centerline radius where such angle is not less than 75 degrees. In the case of streets intersecting at an angle of less than 75 degrees, then of such minimum as the director may determine in accordance with the purpose of this code.

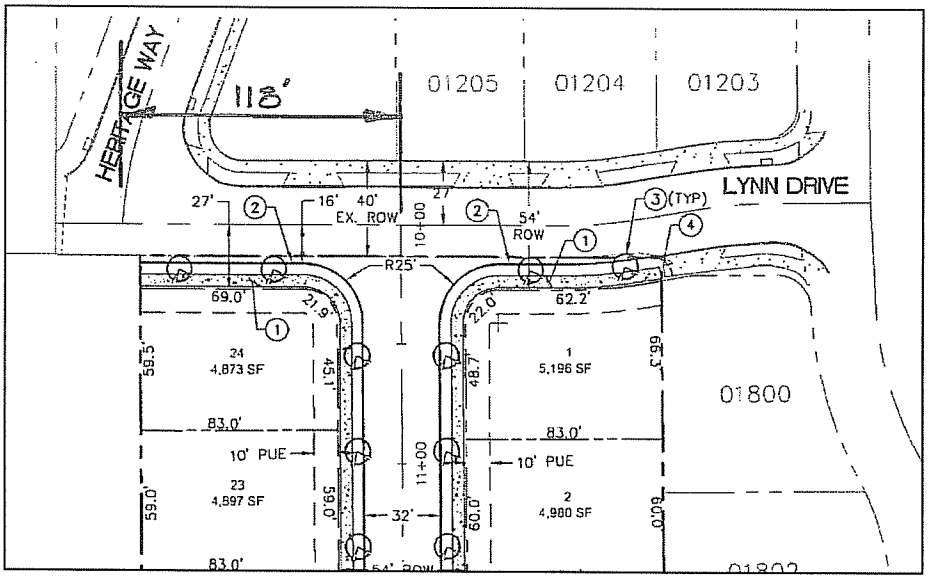
B. Offsets. Intersections shall be so designed that no offset dangerous to the traveling public is created as a result of staggering of intersections, and in no case shall there be an offset of less than 100 feet centerline to centerline.

C. New or improved intersection construction shall incorporate the minimum intersection curb return radii requirements shown in the following table:

Minimum Curb Return Radii (Feet) Edge of Pavement/Curb
Lowest Street Classification of Two Intersection Streets
Local residential street
15 feet

RESPONSE:

A. All proposed street intersections are at right angles.
B. All proposed street intersections are greater than 100 feet. The nearest intersection is Heritage Way and Lynn Drive. The new street will be offset 118 feet, see diagram below.



C. All new curb returns will have a radius of 25 feet, exceeding the 15 foot minimum.

Supplemental Response – Columbia Estates Subdivision

Modifications to the plan set:

1. Existing Conditions and Grading Plan.
   Sheet P500 has been revised to include the contours adjacent to the proposed project. The contours are based on available LIDAR data.

2. Surface Water Control
   Sheet P500 shows how the lots are graded so that the majority of surface water drains towards the street. The fill portion of the lots do not fill all the way to the property line. Rather the toe of the fill stops short of the property line so that the minor accumulation of surface runoff from the fill slope is contained on the proposed development site which then flows south towards Columbia Drive without encroaching on adjacent properties.

3. Surrounding Development Drawing
   Sheet P601 was revised to more clearly highlight the existing structures adjacent to the proposed development. Unfortunately, the aerial photo itself could not be improved.

4. Sanitary Sewer Plan
   Lots which will need individual sewer pumps will each have a separate force-main lines located within easements on private property and will each discharge into the public sanitary sewer system such that the entire public system will operate under gravity flow conditions.

Supplemental Response – Columbia Estates Subdivision

MEMO

DEL BOCA VISTA

To: Steve Olson, City of Newberg

From: Daniel Danicic, PE

Date: 8/22/16

Re: Columbia Estates Subdivision Application – File
HYW 240 Pump Station Analysis

The Staff completeness check comments on 7/31/16, the Engineering Division noted:

> Hwy 240 pump station: One annexation condition was "At the time of development, a detailed analysis of the Highway 240 sanitary sewer pump station is required, and any necessary upgrades to the pump station would be completed by the developer." This needs to be supplied as part of the subdivision application.

On 8/22/16 the Engineering Division reported that the current peak flow of the pump station is 825 GPM.

The proposed subdivision contains 24 lots. The City of Newberg's sanitary master plan from 2007 (Chapter 4 – Flow Projections) estimates 91.2 GCD (Gallons per capita per day) for R-2 zoning. Per the city it should be assumed that each lot will contain an average of 2.75 persons, therefore the average daily flow is approximately 251 GPD. This gives a total of approximately 6,024 GPD of additional sanitary flow from the proposed subdivision per the City of Newberg Sanitary Sewer Master Plan. This equates to 4.18 GPM if additional flow.

The design report for the HWY 240 Pump Station provided by the City, states that the initial pump design shall be for 1,000 GPM capacity. With the proposed subdivision, the flow will be 825 GPM plus 4.18 GPM equaling 829.18 GPM which is less than 1,000 GPM design capacity.

The pump station therefore has capacity.

Supplemental Response – Columbia Estates Subdivision

Please replace Page 11 in the initial application narrative with the following page.

15.505 STREET AND TRANSPORTATION IMPROVEMENTS DESIGN STANDARDS

15.505.020 Layout of streets, alleys, bikeways, and walkways.

A. Streets, alleys, bikeways, and walkways shall be laid out and constructed as shown in the Newberg transportation system plan or in adopted future street plans.

B. In areas where the transportation system plan or future street plans do not show specific transportation improvements, roads and streets shall be laid out so as to conform to subdivisions, partitions, and developments previously approved for adjoining property as to width, general direction and in other aspects, unless it is found in the public interest to modify these patterns. In addition, transportation improvements shall conform to the standards within this code.

RESPONSE: Not applicable.

15.505.030 Construction of new streets and alleys.

The land divider or developer shall grade and pave all streets and alleys in the subdivision, partition or development to the width specified in NMC 15.505.060, and provide for drainage of all such streets and alleys, construct curbs and gutters within the subdivision, partition or development in accordance with specifications adopted by the city council under NMC 15.510.030. Such improvements shall be constructed to specifications of the city under the supervision and direction of the director. It shall be the responsibility of the land divider or developer to provide street signs.

RESPONSE: These provisions will be met with the submission of subdivision plans.

15.505.040 Improvements to existing streets.

A subdivision, partition or development requiring a Type II design review abutting or adjacent to an existing road of inadequate width shall dedicate additional right-of-way to and improve the street to the width specified in NMC 15.505.060.

RESPONSE: A 10-foot dedication along Columbia frontage will be provided to allow for a full 30-foot right-of-way width from centerline.

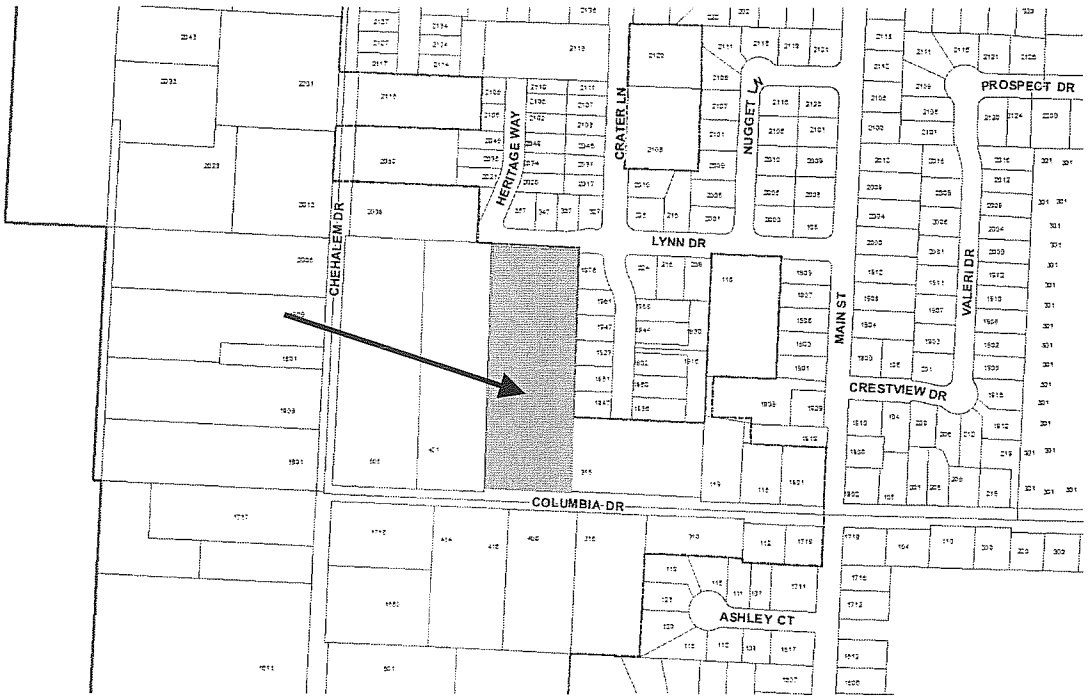
City of Newberg
Community Development Department
P.O. Box 970 ▪ 414 E First Street ▪ Newberg, Oregon 97132
503-537-1240. Fax 503-537-1272 www.newbergoregon.gov

NOTICE OF PLANNING COMMISSION HEARING ON A PROPOSED SUBDIVISION TENTATIVE PLAN

A property owner in your neighborhood submitted an application to the City of Newberg for Subdivision for 3.06 acres located north of Columbia Drive and south of Lynn Drive, Yamhill County tax lots 3218AB-1700, -1701, and -1702. The Newberg Planning Commission will hold a hearing on _____, at 7pm at the Newberg Public Safety Building, 401 E. Third Street, Newberg, OR, to evaluate the proposal. You are invited to take part in the City's review of this project by sending in your written comments or testifying before the Planning Commission. For more details about giving comments, please see the back of this sheet.

The application is a Tentative Plan for Subdivision for a 24 lot subdivision

APPLICANT:	***Del Boca Vista, LLC***
TELEPHONE:	***503-590-8600***
PROPERTY OWNER:	***Jo Daklin (taxlots 1700 & 1701),***
	Richard & Merrilee Lee (tax lot 1702)
LOCATION:	***North of Columbia Drive, south of Lynn Drive***
TAX LOT NUMBER:	***Yamhill County tax lot number 3218AB-1700, -1701, -1702***



We are mailing you information about this project because you own land within 500 feet of the proposed annexation. We invite you to participate in the land use hearing scheduled before the Planning Commission. If you wish to participate in the hearing, you may do so in person or be represented by someone else. You also may submit written comments. Oral testimony is typically limited to five minutes per speaker.

If you mail your comments to the City, please put the following information on the outside of the envelope:

Written Comments: File No.
City of Newberg
Community Development Department
PO Box 970
Newberg, OR 97132

Persons who wish to submit written testimony must submit 12 copies of any written material by 12:00 p.m. (noon) the day of the meeting. Lengthy materials should be submitted prior to the deadline to ensure sufficient time for Council review. Written testimony submitted after the deadline will be accepted only by affirmative vote of the majority of the council.

You can look over all the information about this project or drop comments off at Newberg City Hall, 414 E. First Street. A copy of the application is also available online at www.newbergoregon.gov/planning. You can also buy copies of the information for a cost of 25 cents a page. A staff report relating to the proposal will be available for inspection at no cost seven days prior to the public hearing. If you have any questions about the project, you can call the Newberg Planning Division at 503-537-1240.

Any issue which might be raised in an appeal of this case to the Land Use Board of Appeals (LUBA) must be raised during the public hearing process. You must include enough detail to enable the decision maker an opportunity to respond. The applicable criteria used to make a decision on this application for annexation & zone change are found in Newberg Development Code Sections 15.250.030 and 15.302.030.

Failure of an issue to be raised in the hearing, in person or by letter, or failure to provide statements or evidence sufficient to afford the decision maker an opportunity to respond to the issue precludes appeal to the State Land Use Board of Appeals based on that issue.

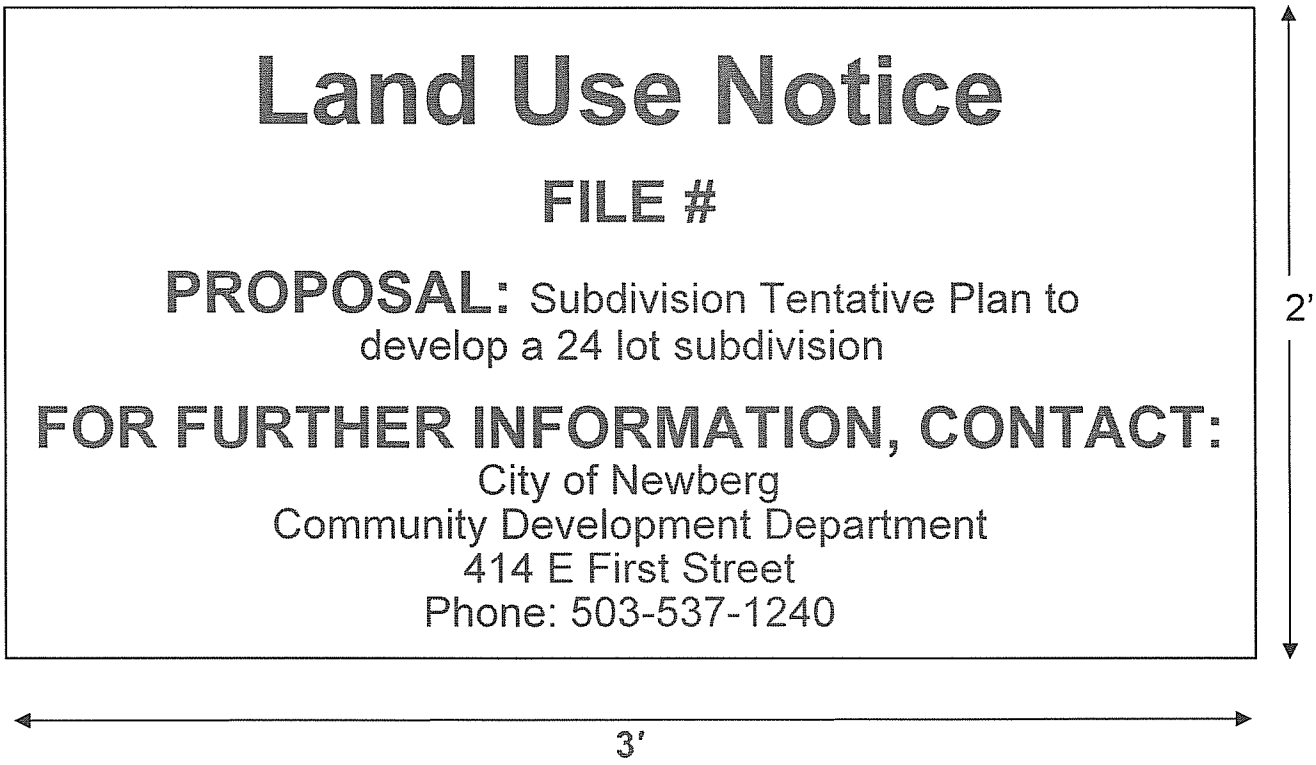
The Planning Commission will make a decision on the application at the end of the public hearing process. If you participate in the public hearing process, either by testifying at the public hearing, or by sending in written comments, you will be sent information about any decision made by the City relating to this project.

Date Mailed: ***Insert date.***

ACCOMMODATION OF PHYSICAL IMPAIRMENTS:

In order to accommodate persons with physical impairments, please notify the City Recorder's office of any special physical or language accommodations you may need as far in advance of the meeting as possible and no later than 48 hours prior to the meeting. To request these arrangements, please contact the City Recorder at 503-537-1283. For TTY services please dial 711.

DRAFT POSTED NOTICE



Notice must be white with black letters, and must be landscape orientation, as shown above. The notice must be lettered using block printing or a "sans-serif" font, such as Arial.

Columbia Estates Subdivision

Subdivision Application

July 7, 2016

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A	Application Form
B	Traffic Study
C	Tentative Plan
D	Storm Drainage Report
E	Current Title Report
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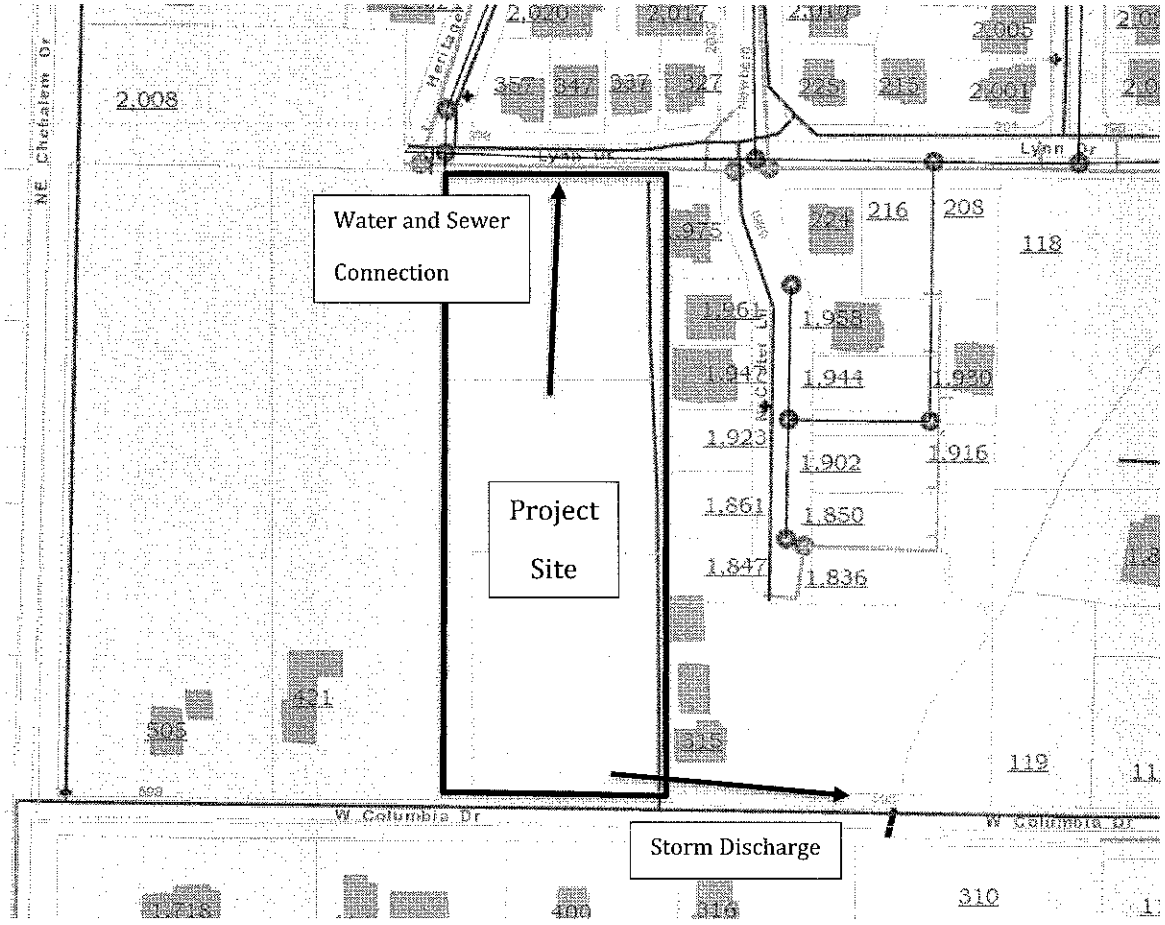
DATA SHEET

Property Owner	Jo Dacklin 11990 SW King James Place King City, OR 97224
Applicant	Del Boca Vista, LLC PO Box 486 Newberg, OR 97132 Phone: 971-706-2058
Property Description	3218AB-1700, 1701, and 1702 North of Columbia Dr. between Chehalem Dr. and Main St.
Zoning:	MDR Medium Density Residential
Lot Size:	3.06 ac
Proposal:	24-Lot Subdivision
Minimum Lot Size per Code:	3,000sf
Proposed Lots sizes:	3,071-5,196 sf
Average Lot Size:	3,902 sf
Target Density:	9 units per acre
Proposed Density:	7.84 units/acre

PROJECT OVERVIEW

Del Boca Vista, LLC is proposing a 24-lot subdivision for a detached single-family residential development. This subdivision will occur on tax lots 3218AB-1700, 1701, and 1702 which are located north of Columbia Dr. between Chehalem Dr. and Main St. Newberg, OR 97132. The property currently is vacant land. Access to the new lots will be by public road from Columbia Dr. to Lynn Drive that meets Public Works standards.

PUBLIC SERVICES



Sanitary Sewer

An 8-inch PVC sanitary sewer exists in Lynn Drive. This will be used to serve the proposed subdivision. Lots 1 – 7 and 18 – 24 will be served by gravity to the public sanitary sewer. The reaming lots near Columbia will utilize individual house pumps to discharge into the gravity system.

Water Supply

Municipal water is available to the site by an 8-inch line in Lynn Drive. The new waterline through the proposed subdivision from Lynn to Columbia Drive to allow for future extension.

There is an existing water line along Columbia Drive that belongs to the Chehalem Valley Water District. No connections will be made to this system. Care will be taken to protect the line during construction. The water district reports that there is an abandoned service line along the east side of the proposed development. This line will be removed when encountered during construction.

Storm Drainage

Stormwater will be collected by catch basins conveyed through a pipe network to a regional water quality and quantity facility. Orifices will be set to release post-developed peak flows to pre-developed rates. Stormwater leaves the site at the southeast property corner and will be piped to an existing roadside ditch to the east of the subject property. Refer to Exhibit D for the preliminary storm report.

The proposed water quantity and quality facilities will meet City of Newberg Stormwater Management Manual standards. A vegetated water quality swale will treat the water and an infiltration/detention pond in conjunction with individual lot infiltration planters will detain post-developed peak flow rates to pre-developed peak flow rates for ½ of the 2, 2, 10, and 25-year design storms.

Transportation

Columbia Dr. is classified as a Minor Collector in the Transportation System Plan. The frontage along Columbia Dr. already provides 30 feet of public right-of-way from the centerline to allow for the full development of Columbia Drive. Lynn Drive is classified as a Local Residential in the Transportation System Plan. Approximately 310 feet of lot frontage along Lynn Dr. will be dedicate a varying amount so as to provide a total 54-foot public right-of-way to allow for the full development of Lynn Dr.

The City's street system will serve the traffic from Columbia Estates with acceptable performance metrics when complete. Refer to Exhibit B for the Traffic Impact Analysis. There is adequate capacity at the intersection of the Lynn Dr at Main St intersection for the traffic Columbia Estates will generate. Warrants in the 2009 MUTCD for a stop sign on Lynn Dr at Main St are not met, but the City has exercised engineering judgment and installed a TWSC sign on the Lynn Dr approach, which appears to be serving the community well. The intersection of Columbia and Main is currently a four-way stop. There is significant capacity to serve additional traffic with the addition of traffic from Columbia Estates

SUBDIVISION CRITERIA

1. FUTURE USE

Approval does not impede the future best use of the property under the same ownership as the full extent of the property is being developed to its maximum extent practicable.

Adjoining land will not be adversely affected. Adjacent properties are zoned as follows: to the North: City R-2, to the South: County VLDR-1, to the West: County VLDR-1 and to the East: City R-2 and County VLDR-1.

2. APPLICABLE SUBDIVISION CRITERIA

15.405 LOT REQUIREMENTS

15.405.010 Lot area – Lot areas per dwelling unit.

A. In the following districts, each lot or development site shall have an area as shown below except as otherwise permitted by this code:

1. In the R-1 district, each lot or development site shall have a minimum area of 5,000 square feet or as may be established by a subdistrict. The average size of lots in a subdivision intended for single-family development shall not exceed 10,000 square feet.

2. In the R-2, R-3, and RP districts, each lot or development site shall have a minimum area of 3,000 square feet or as may be established by a subdistrict. In the R-2 and R-P districts, the average size of lots in a subdivision intended for single-family development shall not exceed 5,000 square feet.

3. In the AI, AR, C-1, C-2, and C-3 districts, each lot or development site shall have a minimum area of 5,000 square feet or as may be established by a subdistrict.

4. In the M-1, M-2 and M-3 districts, each lot or development site shall have a minimum area of 20,000 square feet.

5. Institutional districts shall have a minimum size of five contiguous acres in order to create a large enough campus to support institutional uses; however, additions to the district may be made in increments of any size.

6. Within the commercial zoning district(s) of the riverfront overlay subdistrict, there is no minimum lot size required, provided the other standards of this code can be met.

B. Lot or Development Site Area per Dwelling Unit.

1. In the R-1 district, there shall be a minimum of 5,000 square feet per dwelling unit.

2. In the R-2, AR, and R-P districts, there shall be a minimum of 3,000 square feet of lot or development site area per dwelling unit. In the R-2 and R-P districts, lots or development sites in excess of 15,000 square feet used for multiple single-family, duplex or multifamily dwellings shall be developed at a minimum of one dwelling per 5,000 square feet lot area.

3. In the R-3 district, there shall be a minimum of 1,500 square feet of lot or development site area per dwelling unit. Lots or development sites in excess of

15,000 square feet used for multiple single-family, duplex or multifamily dwellings shall be developed at a minimum of one dwelling per 2,500 square feet lot area.

C. In calculating lot area for this section, lot area does not include land within public or private streets. In calculating lot area for maximum lot area/minimum density requirements, lot area does not include land within stream corridors, land reserved for public parks or open spaces, commons buildings, land for preservation of natural, scenic, or historic resources, land on slopes exceeding 15 percent or for avoidance of identified natural hazards, land in shared access easements, public walkways, or entirely used for utilities, land held in reserve in accordance with a future development plan, or land for uses not appurtenant to the residence.

D. Lot size averaging is allowed for any subdivision. Some lots may be under the minimum lot size required in the zone where the subdivision is located, as long as the average size of all lots is at least the minimum lot size.

RESPONSE:

Lot Number	Lot Size (SF)	Lot Number	Lot Size (SF)
1	5196	13	3071
2	4980	14	3071
3	4980	15	3071
4	4980	16	3071
5	4150	17	3071
6	4150	18	3071
7	3569	19	3071
8	3320	20	4340
9	3071	21	4896
10	3071	22	4896
11	3071	23	4897
12	3732	24	4873
		Total	93648
		Average	3902

The table above demonstrates that the proposed lot areas meet the code standard when taking into account lot size averaging.

15.405.030 Lot dimensions and frontage.

B. Depth to Width Ratio. Each lot and parcel shall have an average depth between the front and rear lines of not more than two and one-half times the average width between the side lines. Depths of lots shall conform to the standards of this code. Development of lots under 15,000 square feet are exempt from the lot depth to width ratio requirement.

C. Area. Lot sizes shall conform to standards set forth in this code. Lot area calculations shall not include area contained in public or private streets as defined by this code.

D. Frontage.

1. No lot or development site shall have less than the following lot frontage standards:

b. Each lot in an R-2 and R-3 zone shall have a minimum width of 30 feet at the front building line.

RESPONSE: The proposed lot configuration meets all of the provisions of this code section for depth to width ratio, area, and minimum frontage at front building line.

15.405.040 Lot coverage and parking coverage requirements.

B. Residential uses in residential zones shall meet the following maximum lot coverage and parking coverage standards. See the definitions in NMC 15.05.030 and Appendix A, Figure 4.

1. Maximum Lot Coverage.

b. R4-2 and RP: 50 percent.

2. Maximum Parking Coverage. R-1, R-2, R-3, and RP: 30 percent.

3. Combined Maximum Lot and Parking Coverage.

a. R-1, R-2 and RP: 60 percent.

RESPONSE: The development of the individual lots will meet this criterion.

15.410 YARD SETBACK REQUIREMENTS

15.410.020 Front yard setback.

15.410.030 Interior yard setback.

15.410.040 Setback and yard restrictions as to schools, churches, public buildings.

15.410.050 Special setback requirements to planned rights-of-way.

15.410.060 Vision clearance setback.

15.410.070 Yard exceptions and permitted intrusions into required yard setbacks.

RESPONSE: These provisions will be met with the submission of subdivision plans.

15.415 BUILDING AND SITE DESIGN STANDARDS

15.415.010 Main buildings and uses as accessory buildings.

15.415.020 Building height limitation.

15.415.030 Building height exemptions.

15.415.040 Public access required.

15.415.050 Rules and exceptions governing single-family attached dwellings.

15.415.060 Home occupation.

RESPONSE: These provisions will be met with the submission of subdivision plans.

15.420 LANDSCAPING AND OUTDOOR AREAS

RESPONSE: These provisions will be met with the submission of subdivision plans.

Chapter 15.425 EXTERIOR LIGHTING

RESPONSE: These provisions will be met with the submission of subdivision plans.

15.430 UNDERGROUND UTILITY INSTALLATION

Sections:

15.430.010 Underground utility installation.

15.430.010 Underground utility installation.

A. All new utility lines, including but not limited to electric, communication, natural gas, and cable television transmission lines, shall be placed underground. This does not include surface-mounted transformers, connections boxes, meter cabinets, service cabinets, temporary facilities during construction, and high-capacity electric lines operating at 50,000 volts or above.

B. Existing utility lines shall be placed underground when they are relocated, or when an addition or remodel requiring a Type II design review is proposed, or when a developed area is annexed to the city.

C. The director may make exceptions to the requirement to underground utilities based on one or more of the following criteria:

1. The cost of undergrounding the utility is extraordinarily expensive.

2. There are physical factors that make undergrounding extraordinarily difficult.

3. Existing utility facilities in the area are primarily overhead and are unlikely to be changed.

RESPONSE: These provisions will be met with the submission of subdivision plans.

Chapter 15.435 SIGNS

RESPONSE: No signs are proposed for this development.

Chapter 15.440 OFF-STREET PARKING, BICYCLE PARKING, AND PRIVATE WALKWAYS

RESPONSE: No off-street parking, bicycle parking or private walkways are proposed for this development.

15.505 STREET AND TRANSPORTATION IMPROVEMENTS DESIGN STANDARDS

15.505.020 Layout of streets, alleys, bikeways, and walkways.

A. Streets, alleys, bikeways, and walkways shall be laid out and constructed as shown in the Newberg transportation system plan or in adopted future street plans.

B. In areas where the transportation system plan or future street plans do not show specific transportation improvements, roads and streets shall be laid out so as to conform to subdivisions, partitions, and developments previously approved for adjoining property as to width, general direction and in other aspects, unless it is found in the public interest to modify these patterns. In addition, transportation improvements shall conform to the standards within this code.

RESPONSE: Not applicable.

15.505.030 Construction of new streets and alleys.

The land divider or developer shall grade and pave all streets and alleys in the subdivision, partition or development to the width specified in NMC 15.505.060, and provide for drainage of all such streets and alleys, construct curbs and gutters within the subdivision, partition or development in accordance with specifications adopted by the city council under NMC 15.510.030. Such improvements shall be constructed to specifications of the city under the supervision and direction of the director. It shall be the responsibility of the land divider or developer to provide street signs.

RESPONSE: These provisions will be met with the submission of subdivision plans.

15.505.040 Improvements to existing streets.

A subdivision, partition or development requiring a Type II design review abutting or adjacent to an existing road of inadequate width shall dedicate additional right-of-way to and improve the street to the width specified in NMC 15.505.060.

RESPONSE: A 10-foot dedication along Wynooski Street frontage will be provided to allow for a full 30-foot right-of-way width from centerline.

15.505.060 Street width and design standards.

A. Design Standards. All streets shall conform with the standards contained in Table 15.505.060. Where a range of values is listed, the director shall determine the width based on a consideration of the total street section width needed, existing street widths, and existing development patterns. Preference shall be given to the higher value. Where values may be modified by the director, the overall width shall be determined using the standards under subsections (B) through (I) of this section.

RESPONSE: These provisions will be met with the submission of subdivision plans.

B. Motor Vehicle Travel Lanes. Collector and arterial streets shall have a minimum width of 12 feet. Where circumstances warrant, the director may allow a reduction of this width to 11 feet.

RESPONSE: These provisions will be met with the submission of subdivision plans.

C. Bike Lanes. Striped bike lanes shall be a minimum of five feet wide. Where circumstances warrant, the director may allow a reduction of this width to four feet. Bike lanes shall be provided where shown in the Newberg transportation system plan.

RESPONSE: Not applicable.

D. Parking Lanes. Where on-street parking is allowed on collector and arterial streets, the parking lane shall be a minimum of eight feet wide. Where circumstances warrant, the director may allow a reduction of this width to seven feet.

RESPONSE: These provisions will be met with the submission of subdivision plans.

G. Sidewalks. Sidewalks shall be provided on both sides of all public streets. Minimum width is five feet.

RESPONSE: These provisions will be met with the submission of subdivision plans.

H. Planter Strips. Except where infeasible, a planter strip shall be provided between the sidewalk and the curb line. This strip shall be landscaped in accordance with the standards in NMC 15.420.020. Curb-side sidewalks may be allowed on limited

residential streets. Where curb-side sidewalks are allowed, the following shall be provided where possible:

1. Additional reinforcement is done to the sidewalk section at corners.

2. Sidewalk width is six feet.

RESPONSE: Not applicable

15.505.090 Intersections of streets.

A. Angles. Streets shall intersect one another at an angle as near to the right angle as is practicable considering topography of the area and previous adjacent layout; where not so practicable, the right-of-way and street paving within the acute angle shall have a minimum of 30 feet centerline radius where such angle is not less than 75 degrees. In the case of streets intersecting at an angle of less than 75 degrees, then of such minimum as the director may determine in accordance with the purpose of this code.

B. Offsets. Intersections shall be so designed that no offset dangerous to the traveling public is created as a result of staggering of intersections, and in no case shall there be an offset of less than 100 feet centerline to centerline.

C. New or improved intersection construction shall incorporate the minimum intersection curb return radii requirements shown in the following table:

Minimum Curb Return Radii (Feet) Edge of Pavement/Curb
Lowest Street Classification of Two Intersection Streets
Local residential street
15 feet

RESPONSE: These provisions will be met with the submission of subdivision plans.

15.505.110 Future extension of streets.

Where the subdivision or partition is adjacent to land likely to be divided in the future, streets shall continue through to the boundary lines of the area under the same ownership of which the subdivision or partition is a part, where the director determines that such continuation is necessary to provide for the orderly division of such adjacent land or the transportation and access needs of the community

RESPONSE: Not applicable.

15.505.120 Cul-de-sacs.

A. Cul-de-sacs shall only be permitted when one or more of the circumstances listed in this section exist. When cul-de-sacs are justified, public walkway connections shall be provided to connect with another street, greenway, school, or similar destination unless one or more of the circumstances listed in this section exist.

1. Physical or topographic conditions make a street or walkway connection impracticable. These conditions include but are not limited to controlled access streets, railroads, steep slopes, wetlands, or water bodies where a connection could not be reasonably made.

2. Buildings or other existing development on adjacent lands physically preclude a connection now or in the future considering the potential for redevelopment.

3. Where streets or accessways would violate provisions of leases, easements, or similar restrictions.

4. Where the streets or accessways abut the urban growth boundary and rural resource land in farm or forest use, except where the adjoining land is designated as an urban reserve area.

B. There shall be no cul-de-sacs more than 400 feet long (measured from the centerline of the intersection to the radius point of the bulb) or serving more than 18 single-family dwellings.

C. Each cul-de-sac shall have a circular end with a minimum diameter of 90 feet, curb-to-curb, within a 103-foot minimum diameter right-of-way. For residential uses, a 35-foot radius may be allowed if the street has no parking, a mountable curb, attached sidewalks, and sprinkler systems in every building along the street.

RESPONSE: Not applicable

15.505.130 Street names and street signs.

Streets that are in alignment with existing named streets shall bear the names of such existing streets. Names for streets that are not in alignment with existing streets are subject to approval by the director and the fire chief and shall not unnecessarily duplicate or resemble the name of any existing or platted street in the city. It shall be the responsibility of the land divider to provide street signs.

RESPONSE: These provisions will be met with the submission of subdivision plans.

15.505.140 Grades and curves.

Unless otherwise approved by the director because topographical conditions will not reasonably permit, grades shall not exceed six percent on arterials, 10 percent

on collector streets, or 12 percent on all other streets. Centerline radii on curves shall not be less than 300 feet on arterials, or 230 feet on all other streets

RESPONSE: These provisions will be met with the submission of subdivision plans.

15.505.200 Vehicular access standards.

A. Purpose. The purpose of these standards is to manage vehicle access to maintain traffic flow, safety, roadway capacity, and efficiency. They help to maintain an adequate level of service consistent with the functional classification of the street. Major roadways, including arterials, and collectors serve as the primary system for moving people and goods within and through the city. Access is limited and managed on these roads to promote efficient through movement. Local streets and alleys provide access to individual properties. Access is managed on these roads to maintain safe maneuvering of vehicles in and out of properties and to allow safe through movements. If vehicular access and circulation are not properly designed, these roadways will be unable to accommodate the needs of development and serve their transportation function.

B. Access Spacing Standards. Public street intersection and driveway spacing shall follow the table below...

RESPONSE: These provisions will be met with the submission of subdivision plans.

F. Shared Driveways.

1. The number of driveways onto arterial streets shall be minimized by the use of shared driveways with adjoining lots where feasible. The city shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes. Where there is an abutting developable property, a shared driveway shall be provided. When shared driveways are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway temporarily ends at the property line, but may be accessed or extended in the future as the adjacent parcel develops. "Developable" means that a parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).

RESPONSE: Not applicable.

2. Access easements (i.e., for the benefit of affected properties) and maintenance agreements shall be recorded for all shared driveways, including pathways, at the time of final plat approval or as a condition of site development approval.

RESPONSE: These provisions will be met with the submission of subdivision plans.

3. No more than three lots may access one shared driveway.

RESPONSE: These provisions will be met with the submission of subdivision plans.

4. Shared driveways shall be posted as no parking fire lanes where required by the fire marshal.

RESPONSE: These provisions will be met with the submission of subdivision plans.

5. Where three lots or three dwellings share one driveway, one additional parking space over those otherwise required shall be provided for each dwelling. Where feasible, this shall be provided as a common use parking space adjacent to the driveway.

RESPONSE: Not applicable.

15.505.210 Sidewalks.

Sidewalks shall be located and constructed in accordance with the provisions of NMC 15.510.030. Minimum width is five feet.

RESPONSE: These provisions will be met with the submission of subdivision plans.

Columbia Estates Subdivision

Exhibit A

Application Form

TYPE II APPLICATION (LAND USE) – 2016

File #: _____

TYPES – PLEASE CHECK ONE:

___ Design review
___ Tentative Plan for Partition
___ Tentative Plan for Subdivision
___ Type II Major Modification
___ Variance _____
___ Other: (Explain) _____

APPLICANT INFORMATION:

APPLICANT: Del Boca Vista LLC
ADDRESS: 645 NE Third Street Suite 200 McMinnville, OR 97128
EMAIL ADDRESS: jessica@dbvcorp.com
PHONE: 971-706-2058 MOBILE: 971-998-7507 FAX: _____
OWNER (if different from above): See attached documents PHONE: none
ADDRESS: _____
ENGINEER/SURVEYOR: Westlake Consultants PHONE: none
ADDRESS: 15115 SW Sequoia Pkwy Tigard OR 97224

GENERAL INFORMATION:

PROJECT NAME: Columbia Estates PROJECT LOCATION: Lynn Dr and Prospect Way
PROJECT DESCRIPTION/USE: Subdivision of bare land to 24 lots
MAP/TAX LOT NO. (i.e.3200AB-400): R3218 AB-1700, 1701 & 1702 ZONE: R-2 SITE SIZE: 3.06 SQ. FT. ☐ ACRE ☒
COMP PLAN DESIGNATION: MDR TOPOGRAPHY: Flat
CURRENT USE: Vacant
SURROUNDING USES:
NORTH: R2 (Newberg) SOUTH: VLDR-1 (County)
EAST: VLDR-1 (Newberg) WEST: VLDR-1 (County)

SPECIFIC PROJECT CRITERIA AND REQUIREMENTS ARE ATTACHED

General Checklist: ☐ Fees ☐ Public Notice Information ☐ Current Title Report ☐ Written Criteria Response ☐ Owner Signature

For detailed checklists, applicable criteria for the written criteria response, and number of copies per application type, turn to:

Design Review ..... **p. 12**
Partition Tentative Plat ..... **p. 14**
Subdivision Tentative Plat ..... **p. 17**
Variance Checklist ..... **p. 20**

The above statements and information herein contained are in all respects true, complete, and correct to the best of my knowledge and belief. Tentative plans must substantially conform to all standards, regulations, and procedures officially adopted by the City of Newberg. All owners must sign the application or submit letters of consent. Incomplete or missing information may delay the approval process.

Applicant Signature 7/1/16 Date

Marc Willcuts, Del Boca Vista, Member
Print Name

Owner Signature Merrilee A. Lee 7/5/16 Date

Merrilee A. Lee
Print Name

Attachments: General Information, Fee Schedule, Criteria, Checklists

Columbia Estates Subdivision

Exhibit B

Traffic Study

Traffic Impact Analysis
Columbia Estates

Newberg, Oregon

May 12, 2016

completed with
Del Boca Vista
McMinnville, Oregon

Prepared by:
Associated Transportation Engineering & Planning, Inc.
Salem, Oregon
May 10, 2016

ASSOCIATED
TRANSPORTATION
ENGINEERING &
PLANNING INC.

A.T.E.P., Inc.
1155 13th St. S.E.
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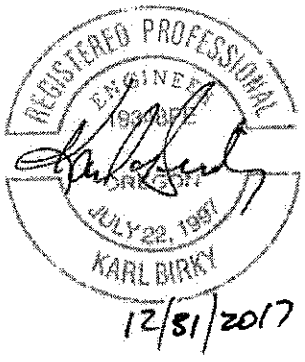
Tel.: 503-364-5066
FAX: 503-364-1260
e-mail: kbirky@atepinc.com

Traffic Impact Analysis
Columbia Estates

Newberg, Oregon

May 12, 2016



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Summary of Findings: 2
History and Existing Conditions: 2
Traffic Conditions when Columbia Estates is Complete: 3
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Figure 6 - 2017 AM Peak hour Counts and Metrics with Columbia Estates 6
Figure 7 - 2017 PM Peak hour Counts and Metrics with Columbia Estates 6

Appendices

Turning Movement Counts

ODOT Crash Data

Computer Modeling Printouts

ASSOCIATED TRANSPORTATION ENGINEERING & PLANNING Inc.
A.T.E.P., Inc.
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Traffic Impact Analysis
Columbia Estates
Newberg, Oregon

Introduction:

Del Boca Vista, LLC intends to develop 29 attached single family home lots on tax lots 1700, 1701 and 1702 of tax map 3S 2W Sec 18AB in Newberg, Oregon. The 3 acre site is between Columbia Dr and Lynn Dr about 500 feet east of Chehalem Dr. The new street through the project will connect to Columbia Dr on the south and Lynn Dr on the north.

Figure 1 - Vicinity Map

Residents of Columbia Estates will travel north to Lynn Dr and then to Main St or south to Columbia Dr and to Chehalem Dr or Main St to access the larger transportation network in the City of Newberg. This analysis will consider the traffic impacts at the intersections of Lynn Dr at Main St and Columbia Dr at Main St. The analysis will assume that 60% of the traffic will use Columbia Dr and the remaining 40% of the traffic will use Lynn Dr. Crash data was provided by the City of Newberg Police Department for the most recent 5 years.

Summary of Findings:

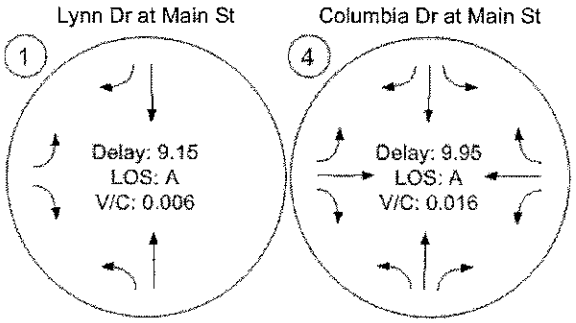
The homes in Columbia Estates will be considered single family homes in this analysis. If 29 homes are built in the development they will generate an estimated 276 trips each day. 22 of those trips will be in the AM Peak hour and 29 trips will be in the PM Peak hour. The City's street system will serve this traffic with acceptable performance metrics when complete. The transportation system development charges (TSDCs) the developer pays the City will continue to be used to make offsite improvements to the City's street system.

There were no reported accidents at the intersection of Lynn Dr at Main St in the past 5 years. It is noted that there have been 2 reported accidents at the intersection of Main St at Mountainview Dr. There is adequate capacity at the intersection of the Lynn Dr at Main St intersection for the traffic Columbia Estates will generate. Warrants in the 2009 MUTCD for a stop sign on Lynn Dr at Main St are not met, but the City has exercised engineering judgment and installed a TWSC sign on the Lynn Dr approach, which appears to be serving the community well. Traffic impacts from developments like Columbia Estates have been anticipated by the City and should not require offsite changes to convey the traffic.

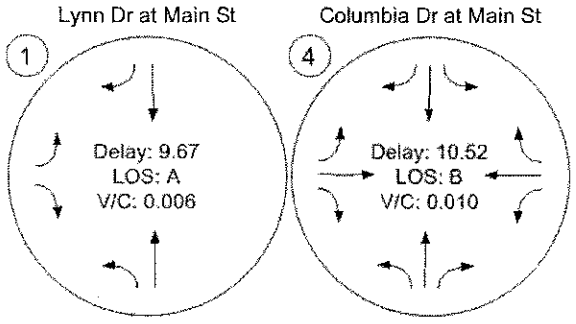
History and Existing Conditions:

The site is currently a vacant parcel in the City with frontage onto Columbia Dr and Lynn Dr. The plan is to extend a street through the parcel connecting Columbia Dr and Lynn Dr. Turning movement counts

were obtained by Quality Counts on Wed and Thurs April 13 and 14, 2016. The turning movements counts were adjusted to estimate the 30 highest hour annual traffic volumes and added to a computer model to estimate the performance metrics at the studied intersections. Cities and traffic engineers generally use the volume to capacity ratio (v/c) or the Level of Service (LOS) to measure performance. LOS A is very good and LOS F is failing. v/c ratios range from 0.000 to 1.000 and generally v/c ratios below 0.800 are acceptable. The performance metrics for the studied intersections is shown in Figure 2. Both intersections are serving drivers well and have significant capacity for additional traffic.



Existing AM Peak Hour Summary

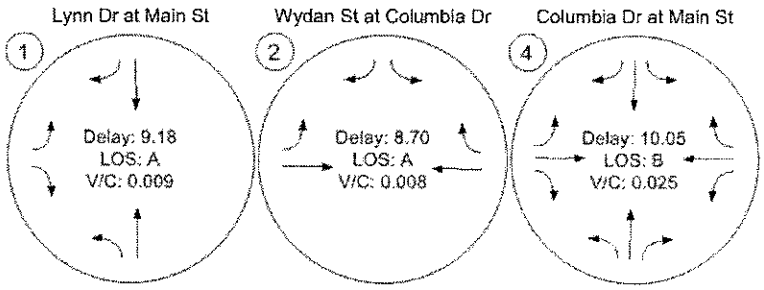


Existing PM Peak Hour Summary

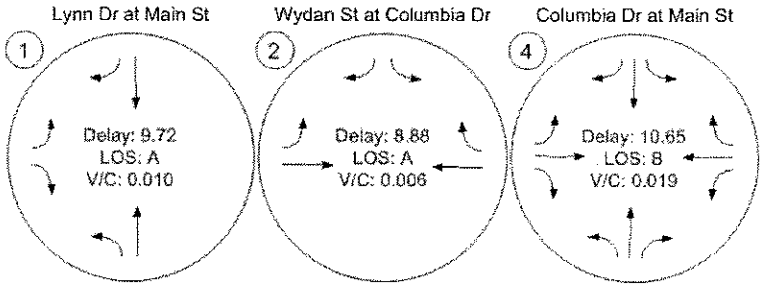
Figure 2 - Existing Traffic Conditions

Traffic Conditions when Columbia Estates is Complete:

The new street through Columbia Estates as Chandler Dr. Traffic from the planned development was added to the computer model and analyzed. The performance metrics of the studied intersections is shown in Figure 3. There is significant capacity to serve additional traffic with the addition of traffic from Columbia Estates.



2017 AM Peak Hour Summary with Columbia Estates



2017 PM Peak Hour Summary with Columbia Estates

Figure 3 - 2017 Traffic Conditions with Columbia Estates

Crash Data:

The Newberg Police Department provided information about reported crashes at the intersections in this study for the past 5 years. There were no reported crashes at the Lynn Dr at Main St intersection in that time period. There were 2 reported crashes at Main St at Mountain View in 2012.

Summary:

The City's street system will serve the traffic from Columbia Estates with acceptable performance metrics when complete. There is significant remaining capacity at the studied intersections to serve existing drivers, drivers from Columbia Estates and future traffic from undeveloped projects. The transportation system development charges (TSDCs) the developer pays the City will continue to be used to make offsite improvements to the City's street system.

There were no reported accidents at the intersection of Lynn Dr at Main St in the past 5 years. It is noted that there have been 2 reported accidents at the intersection of Main St at Mountainview Dr. There is adequate capacity at the intersection of the Lynn Dr at Main St intersection for the traffic Columbia Estates will generate. Warrants in the 2009 MUTCD for a stop sign on Lynn Dr at Main St are not met, but the City has exercised engineering judgment and installed a TWSC sign on the Lynn Dr approach, which appears to be serving the community well. Traffic impacts from developments like Columbia Estates have been anticipated by the City and should not require offsite changes to convey the traffic.

There is vegetation in the vision sight triangle at the intersection of Nuggett Ln at Lynn Dr. Consideration should be given to removing these sight obscuring trees and shrubs to improving vision opportunities for drivers at the intersection.

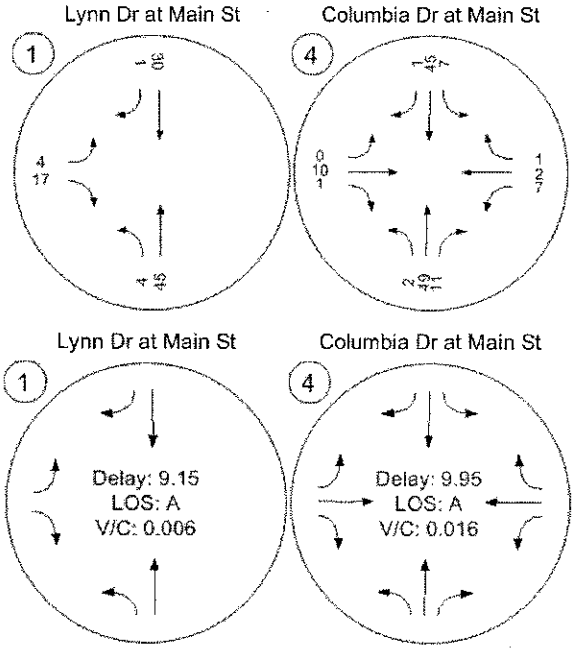


Figure 4 - Existing AM Peak hour Counts and Metrics

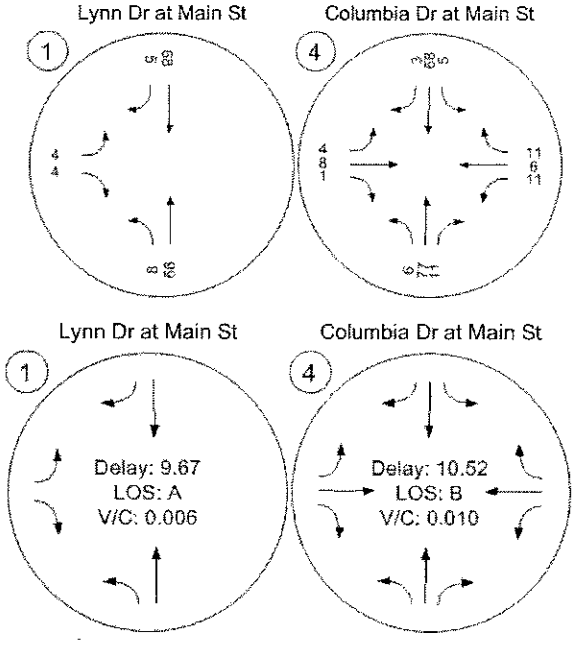


Figure 5 - Existing PM Peak hour Counts and Metrics

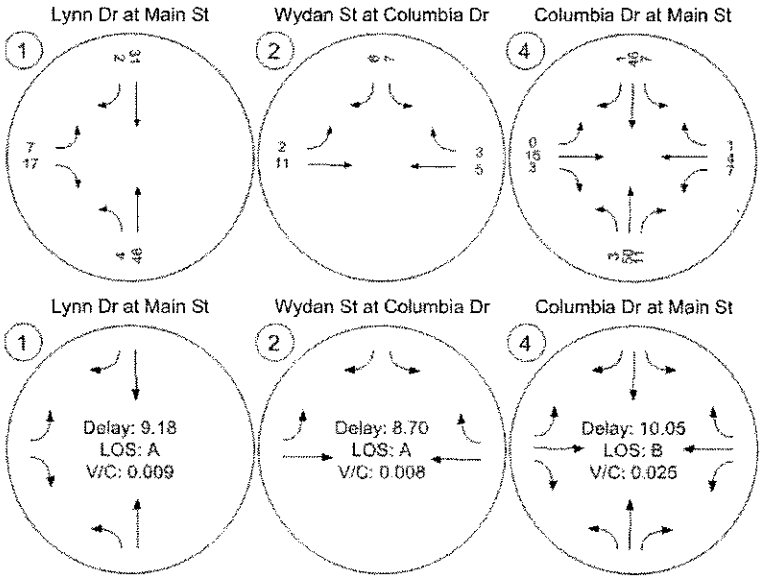


Figure 6 - 2017 AM Peak hour Counts and Metrics with Columbia Estates

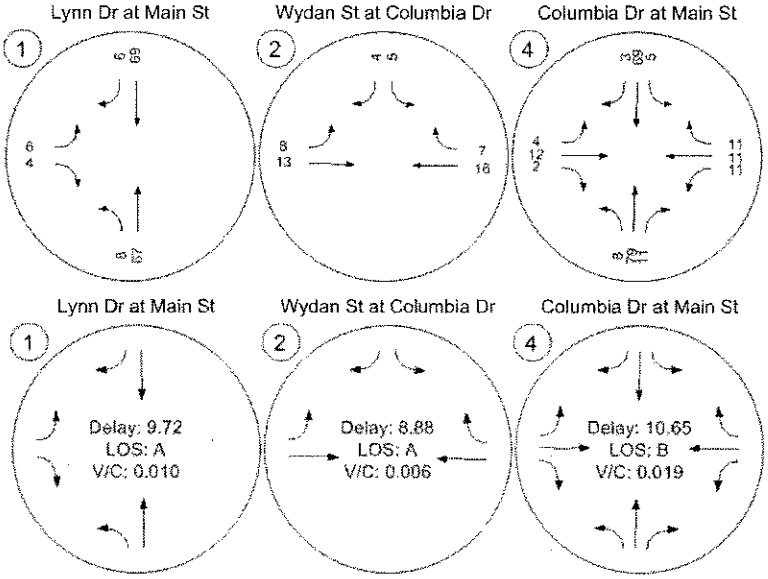


Figure 7 - 2017 PM Peak hour Counts and Metrics with Columbia Estates

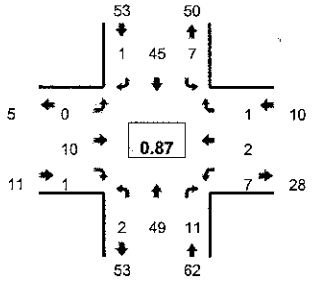
Type of peak hour being reported: Intersection Peak

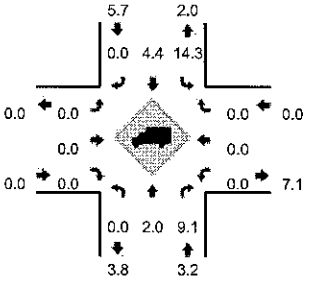
Method for determining peak hour: Total Entering Volume

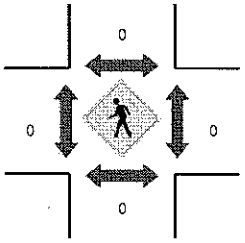
LOCATION: N Main St -- Columbia Dr
CITY/STATE: Newberg, OR

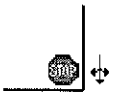
QC JOB #: 13782801
DATE: Thu, Apr 14 2016

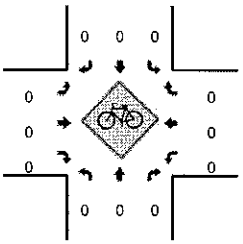
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:25 AM -- 7:40 AM

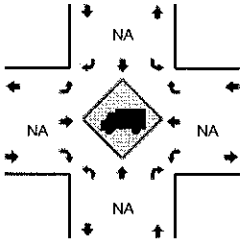


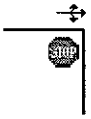


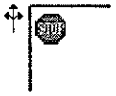


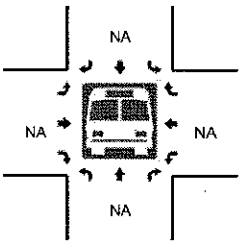












5-Min Count Period Beginning At	N Main St (Northbound)				N Main St (Southbound)				Columbia Dr (Eastbound)				Columbia Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	2	1	0	1	1	0	0	0	0	0	0	0	0	0	0	5	
7:05 AM	0	4	0	0	1	3	0	0	0	0	0	0	0	0	0	0	8	
7:10 AM	0	4	3	0	0	1	0	0	0	0	0	0	0	0	0	0	8	
7:15 AM	0	1	1	0	2	3	0	0	0	0	0	0	2	0	0	0	9	
7:20 AM	0	4	2	0	2	1	0	0	0	2	0	0	0	0	0	0	11	
7:25 AM	0	6	3	0	1	2	0	0	0	2	0	0	0	1	0	0	15	
7:30 AM	0	7	1	0	1	3	0	0	0	0	0	0	1	0	0	0	13	
7:35 AM	0	2	1	0	0	4	1	0	0	1	0	0	2	0	0	0	11	
7:40 AM	0	3	1	0	1	2	0	0	0	0	0	0	0	1	0	0	8	
7:45 AM	0	4	1	0	1	6	0	0	0	1	0	0	0	0	0	0	13	
7:50 AM	0	3	1	0	0	5	0	0	0	0	0	0	2	0	0	0	11	
7:55 AM	1	1	0	0	0	5	0	0	0	2	0	0	0	0	0	0	9	121
8:00 AM	1	6	3	0	0	4	0	0	0	0	0	0	0	0	0	0	16	132
8:05 AM	0	4	0	0	1	4	0	0	0	2	0	0	0	0	0	0	11	135
8:10 AM	0	2	0	0	0	2	0	0	0	0	0	0	1	0	1	0	6	133
8:15 AM	0	3	0	0	1	5	0	0	0	1	0	0	0	0	0	0	10	134
8:20 AM	0	6	0	0	1	3	0	0	0	1	1	0	1	0	0	0	13	136
8:25 AM	0	3	0	0	1	4	0	0	0	0	0	0	2	0	0	0	10	131
8:30 AM	0	2	1	0	0	4	0	0	0	0	0	0	0	1	0	0	8	126
8:35 AM	0	2	3	0	0	3	0	0	0	0	0	0	1	0	0	0	9	124
8:40 AM	1	2	1	0	1	3	0	0	0	0	1	0	1	1	1	0	12	128
8:45 AM	0	3	0	0	0	1	0	0	0	1	0	0	0	0	1	0	6	121
8:50 AM	0	3	2	0	0	4	0	0	0	0	1	0	0	1	1	0	12	122
8:55 AM	0	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	4	117

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	60	20	0	8	36	4	0	0	12	0	0	12	4	0	0	156
Heavy Trucks	0	0	0		0	4	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

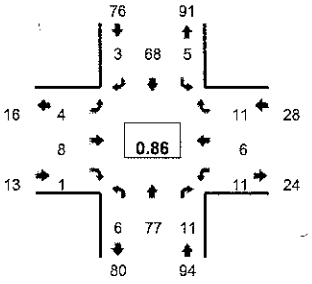
Report generated on 4/20/2016 11:01 AM

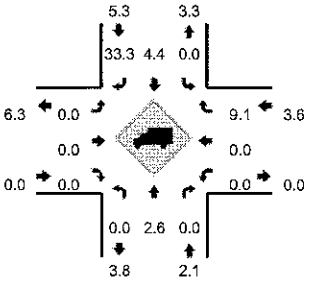
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

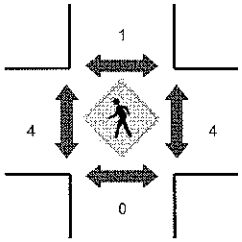
LOCATION: N Main St -- Columbia Dr | QC JOB #: 13782802
CITY/STATE: Newberg, OR | DATE: Wed, Apr 13 2016

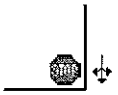
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

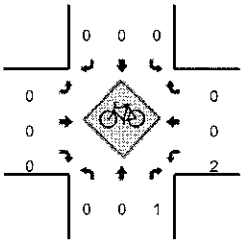


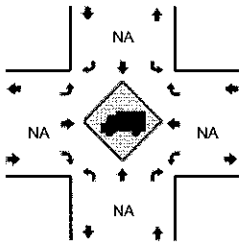


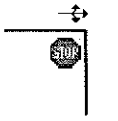
Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

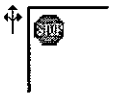


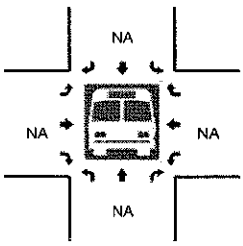












5-Min Count Period	N Main St (Northbound)				N Main St (Southbound)				Columbia Dr (Eastbound)				Columbia Dr (Westbound)				Total	Hourly Totals
Beginning At	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	4	0	0	0	3	0	0	0	2	2	0	3	1	2	0	17	
4:05 PM	0	3	0	0	0	5	0	0	0	2	0	0	0	0	0	0	10	
4:10 PM	0	7	1	0	1	6	1	0	2	0	0	0	0	3	0	0	21	
4:15 PM	0	7	2	0	0	3	0	0	0	0	0	0	0	2	2	0	16	
4:20 PM	0	6	2	0	1	3	0	0	0	1	0	0	0	1	0	0	14	
4:25 PM	1	7	1	0	1	3	0	0	0	1	0	0	1	0	1	0	16	
4:30 PM	1	4	0	0	0	4	0	0	1	0	0	0	1	2	1	0	14	
4:35 PM	0	9	1	0	1	9	1	0	0	0	1	0	1	0	2	0	25	
4:40 PM	0	7	2	0	1	4	0	0	0	0	0	0	0	0	1	0	15	
4:45 PM	2	6	0	0	1	4	0	0	1	2	0	1	1	1	2	0	21	
4:50 PM	0	1	2	0	0	6	1	0	1	0	0	0	0	0	1	0	12	
4:55 PM	2	6	0	0	0	7	0	0	0	0	0	0	1	0	2	0	18	199
5:00 PM	0	2	0	0	1	6	0	0	0	3	0	0	2	1	1	0	16	198
5:05 PM	0	4	2	0	0	5	0	0	0	0	0	0	0	2	1	0	14	202
5:10 PM	1	12	0	0	0	8	0	0	0	0	0	0	1	1	0	0	23	204
5:15 PM	0	8	0	0	0	6	0	0	0	0	0	0	1	0	1	0	16	204
5:20 PM	0	8	1	0	0	7	0	0	0	0	0	0	2	0	0	0	18	208
5:25 PM	1	5	2	0	1	4	0	0	0	1	0	0	1	1	0	0	16	208
5:30 PM	0	9	1	0	0	2	1	0	1	2	0	0	1	0	0	0	17	211
5:35 PM	1	8	1	0	1	0	0	0	0	0	1	0	0	2	0	0	14	200
5:40 PM	0	7	2	0	0	5	0	0	0	1	0	0	0	1	2	0	18	203
5:45 PM	0	7	1	0	0	2	1	0	0	0	1	0	1	2	0	0	15	197
5:50 PM	0	2	2	0	0	2	0	0	0	0	0	0	1	0	0	0	7	192
5:55 PM	0	8	0	0	1	2	0	0	0	0	0	0	0	1	3	0	15	189

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	88	12	0	12	68	4	0	4	8	4	4	8	4	20	0	244
Heavy Trucks	0	0	0		0	8	0		0	0	0		0	0	0		8
Pedestrians		0				4				4				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 4/20/2016 11:01 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

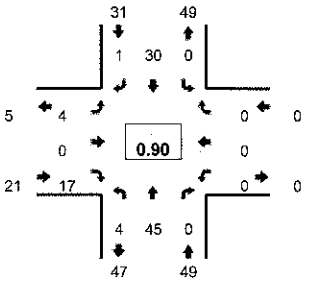
Type of peak hour being reported: Intersection Peak

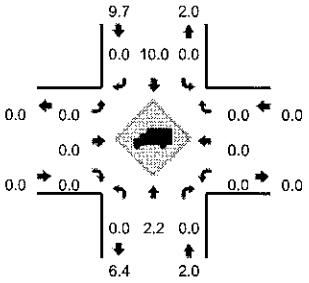
Method for determining peak hour: Total Entering Volume

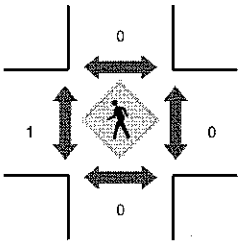
LOCATION: N Main St -- Lynn Dr
CITY/STATE: Newberg, OR

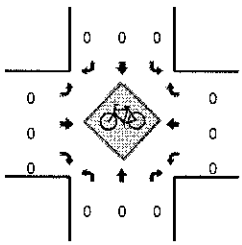
QC JOB #: 13782803
DATE: Thu, Apr 14 2016

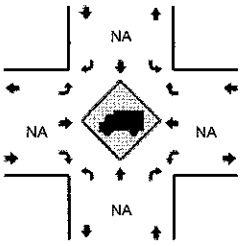
Peak-Hour: 7:20 AM -- 8:20 AM
Peak 15-Min: 7:55 AM -- 8:10 AM

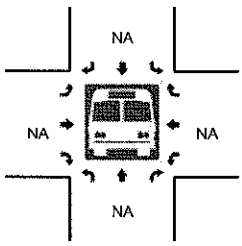












5-Min Count Period Beginning At	N Main St (Northbound)				N Main St (Southbound)				Lynn Dr (Eastbound)				Lynn Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	3	0	0	0	1	0	0	1	0	1	0	0	0	0	0	6	
7:05 AM	0	4	0	0	0	1	0	0	0	0	1	0	0	0	0	0	6	
7:10 AM	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6	
7:15 AM	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5	
7:20 AM	2	3	0	0	0	1	0	0	0	0	2	0	0	0	0	0	8	
7:25 AM	0	6	0	0	0	1	0	0	0	0	1	0	0	0	0	0	8	
7:30 AM	1	8	0	0	0	2	0	0	0	0	2	0	0	0	0	0	11	
7:35 AM	1	1	0	0	0	3	0	0	1	0	1	0	0	0	0	0	7	
7:40 AM	0	4	0	0	0	3	0	0	1	0	0	0	0	0	0	0	8	
7:45 AM	0	4	0	0	0	3	0	0	2	0	1	0	0	0	0	0	10	
7:50 AM	0	3	0	0	0	2	0	0	0	0	3	0	0	0	0	0	8	
7:55 AM	0	2	0	0	0	4	0	0	0	0	2	0	0	0	0	0	8	91
8:00 AM	0	7	0	0	0	2	0	0	0	0	2	0	0	0	0	0	11	96
8:05 AM	0	4	0	0	0	3	1	0	0	0	1	0	0	0	0	0	9	99
8:10 AM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6	99
8:15 AM	0	2	0	0	0	3	0	0	0	0	2	0	0	0	0	0	7	101
8:20 AM	2	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	98
8:25 AM	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	8	98
8:30 AM	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5	92
8:35 AM	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5	90
8:40 AM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6	88
8:45 AM	1	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6	84
8:50 AM	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5	81
8:55 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	74

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	52	0	0	0	36	4	0	0	0	20	0	0	0	0	0	112
Heavy Trucks	0	4	0		0	4	0		0	0	0		0	0	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 4/20/2016 11:01 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

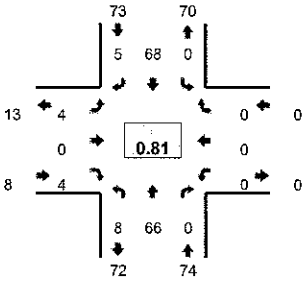
Type of peak hour being reported: Intersection Peak

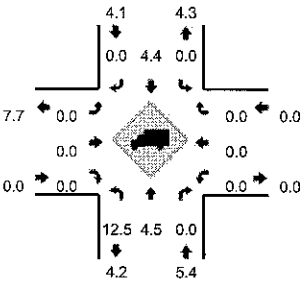
Method for determining peak hour: Total Entering Volume

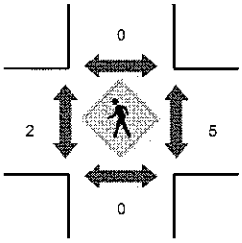
LOCATION: N Main St -- Lynn Dr
CITY/STATE: Newberg, OR

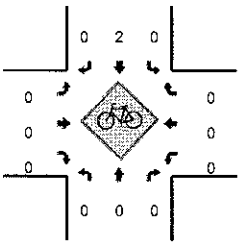
QC JOB #: 13782804
DATE: Wed, Apr 13 2016

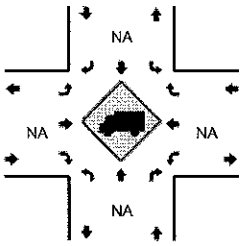
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

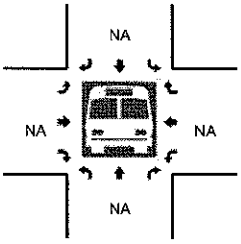












5-Min Count Period Beginning At	N Main St (Northbound)				N Main St (Southbound)				Lynn Dr (Eastbound)				Lynn Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	7	0	0	0	3	0	0	0	0	0	0	0	0	0	0	10	
4:05 PM	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7	
4:10 PM	2	6	0	0	0	9	0	0	0	0	0	0	0	0	0	0	17	
4:15 PM	1	7	0	0	0	3	1	0	0	0	0	0	0	0	0	0	12	
4:20 PM	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	8	
4:25 PM	2	6	0	0	0	3	0	0	1	0	0	0	0	0	0	0	12	
4:30 PM	0	5	0	0	0	4	1	0	0	0	0	0	0	0	0	0	10	
4:35 PM	1	9	0	0	0	8	1	0	0	0	0	0	0	0	0	0	19	
4:40 PM	1	6	0	0	0	4	0	0	1	0	2	0	0	0	0	0	14	
4:45 PM	1	5	0	0	0	6	0	0	1	0	0	0	0	0	0	0	13	
4:50 PM	0	0	0	0	0	8	0	0	1	0	0	0	0	0	0	0	9	
4:55 PM	2	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	12	143
5:00 PM	0	3	0	0	0	6	0	0	0	0	1	0	0	0	0	0	10	143
5:05 PM	0	2	0	0	0	6	0	0	0	0	0	0	0	0	0	0	8	144
5:10 PM	1	11	0	0	0	6	0	0	0	0	1	0	0	0	0	0	19	146
5:15 PM	0	10	0	0	0	6	1	0	0	0	0	0	0	0	0	0	17	151
5:20 PM	0	4	0	0	0	6	2	0	0	0	0	0	0	0	0	0	12	155
5:25 PM	1	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	9	152
5:30 PM	2	8	0	0	0	3	0	0	0	0	0	0	0	0	0	0	13	155
5:35 PM	1	8	0	0	0	1	0	0	1	0	0	0	0	0	0	0	11	147
5:40 PM	1	6	0	0	0	4	0	0	0	0	0	0	0	0	0	0	11	144
5:45 PM	0	6	0	0	0	3	0	0	0	0	0	0	0	0	0	0	9	140
5:50 PM	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5	136
5:55 PM	0	9	0	0	0	2	2	0	0	0	0	0	0	0	0	0	13	137

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	100	0	0	0	72	12	0	0	0	4	0	0	0	0	0	192
Heavy Trucks	4	4	0		0	4	0		0	0	0		0	0	0		12
Pedestrians		0				0				4				8			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 4/20/2016 11:01 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

CDS150 04/19/2016

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

PAGE: 1

Columbia Dr & Chehalem Dr
January 1, 2010 through December 31, 2014

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

Hi Karl,

Attached are the crash summary and crash detail reports you requested. There were two intersections with no crashes
reported for the time period requested (Chehalem Dr & Foothills, Columbia Dr & Chehalem Dr) and one intersection (Chehalem Dr & Mountainview Dr) with no data at all.

Thank you Karl and hope you are getting to enjoy this beautiful weather we are having !

Kim

Kim Ward
Crash Reporting Technician
Crash Analysis and Reporting Unit
Transportation Data Section
555 13th Street NE, Suite 2
Salem, Oregon 97301-4178
ph: (503) 986-4237
fax: (503) 986-4249
mailto: kimberlee.s.ward@odot.state.or.us

Hi Karl,

There have been no accidents at or near that intersection in the past 5 years, the closest would be 2 crashes at Main and Moutainview in 2012.

Let me know if you have any further questions!

Melissa Ferguson

Newberg-Dundee Police Department
401 E. Third St.
P.O. Box 970
Newberg, OR 97132
Phone: 503-537-1169
Fax: 503-538-5393

From: Karan Frketich
Sent: Wednesday, April 13, 2016 10:01 AM
To: 'Karl Birky, P.E.' <kbirky@atepinc.com>
Cc: Melissa Ferguson <melissa.ferguson@newbergoregon.gov>
Subject: RE: Checking In

Carl, I have cc'd Melissa who is our records clerk. She should be able to help you.

Thank you.

From: Karl Birky, P.E. [mailto:kbirky@atepinc.com]
Sent: Wednesday, April 13, 2016 8:52 AM
To: Karan Frketich <karan.frketich@newbergoregon.gov>
Subject: RE: Checking In

Karan:

I am working on a traffic study for a parcel between Columbia Dr and Lynn Lane in Newberg. The City has asked that we look at the intersection of Lynn Lane at Main St. Can you point me in the direction where I can get a 5 year summary of crashes at or near this intersection.

Thank you,

Karl Birky, PE, PTOE

Columbia Dr Estates TIA

Vistro File: J:\...\Columbia Dr TIA.vistro
Report File: J:\...\2016 AM Columbia Dr TIA.pdf

Scenario 1: Existing AM Peak
4/21/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Lynn Dr at Main St	Two-way stop	HCM2010	EBL	0.006	9.1	A
4	Columbia Dr at Main St	Two-way stop	HCM2010	EBT	0.016	10.0	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

Generated with PTV VISTRO

Version 3.00-04

Columbia Dr Estates TIA

Scenario 1: 1: Existing AM Peak

Intersection Level Of Service Report
#1: Lynn Dr at Main St

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Main St		Main St		Lynn Dr	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name	Main St		Main St		Lynn Dr	
Base Volume Input [veh/h]	4	45	30	1	4	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	7.10	7.10	7.10	7.10	7.10	7.10
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	45	30	1	4	17
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	1	13	9	0	1	5
Total Analysis Volume [veh/h]	5	52	34	1	5	20
Pedestrian Volume [ped/h]	0		0		0	

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Version 3.00-04

Columbia Dr Estates TIA

Scenario 1: 1: Existing AM Peak

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			no
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			no
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.02
d_M, Delay for Movement [s/veh]	7.34	0.00	0.00	0.00	9.15	8.61
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.11	0.11	0.00	0.00	0.08	0.08
95th-Percentile Queue Length [ft]	2.87	2.87	0.00	0.00	1.93	1.93
d_A, Approach Delay [s/veh]	0.64		0.00		8.72	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.18					
Intersection LOS	A					

Generated with PTV VISTRO

Version 3.00-04

Columbia Dr Estates TIA

Scenario 1: 1: Existing AM Peak

Intersection Level Of Service Report
#4: Columbia Dr at Main St

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Main St			Main St			Columbia Dr			Columbia Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Main St			Main St			Columbia Dr			Columbia Dr		
Base Volume Input [veh/h]	2	49	11	7	45	1	0	10	1	7	2	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	49	11	7	45	1	0	10	1	7	2	1
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	1	15	3	2	13	0	0	3	0	2	1	0
Total Analysis Volume [veh/h]	2	58	13	8	54	1	0	12	1	8	2	1
Pedestrian Volume [ped/h]	0			0			0			0		

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Columbia Dr Estates TIA

Scenario 1: 1: Existing AM Peak

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	7.33	0.00	0.00	7.37	0.00	0.00	9.47	9.95	8.65	9.52	9.89	8.67
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.15	0.15	0.15	0.13	0.13	0.13	0.05	0.05	0.05	0.04	0.04	0.04
95th-Percentile Queue Length [ft]	3.71	3.71	3.71	3.23	3.23	3.23	1.31	1.31	1.31	1.03	1.03	1.03
d_A, Approach Delay [s/veh]	0.20			0.94			9.85			9.51		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.91											
Intersection LOS	A											

Columbia Dr Estates TIA

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Scenario 1: Existing AM Peak
4/21/2016

Turning Movement Volume: Summary

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
1	Lynn Dr at Main St	4	45	30	1	4	17	101

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Columbia Dr at Main St	2	49	11	7	45	1	0	10	1	7	2	1	136

Columbia Dr Estates TIA

Vistro File: J:\...\Columbia Dr TIA.vistro
Report File: J:\...\2016 AM Columbia Dr TIA.pdf

Scenario 1: Existing AM Peak
4/21/2016

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
1	Lynn Dr at Main St	Final Base	4	45	30	1	4	17	101
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**4**	**45**	**30**	**1**	**4**	**17**	**101**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Columbia Dr at Main St	Final Base	2	49	11	7	45	1	0	10	1	7	2	1	136
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**2**	**49**	**11**	**7**	**45**	**1**	**0**	**10**	**1**	**7**	**2**	**1**	**136**

Columbia Dr Estates TIA

Vistro File: J:\...\Columbia Dr TIA.vistro
Report File: J:\...\2016 AM Columbia Dr TIA.pdf

Scenario 1: Existing AM Peak
4/21/2016

Trip generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total trips	% of Total Trips
1: Columbia Estates	Single Family Homes	ITE 210	homes	0.750	0.000	50.00	50.00	0	0	0	0.00
					Added Trips Total			**0**	**0**	**0**	**0.00**

Columbia Dr Estates TIA

Vistro File: J:\...\Columbia Dr TIA.vistro
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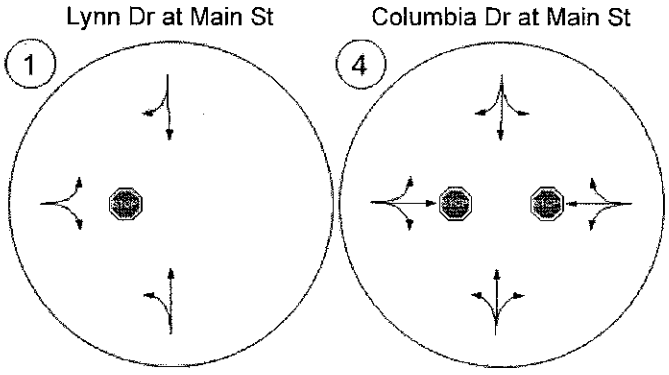
Scenario 1: Existing AM Peak
4/21/2016

Trip distribution summary

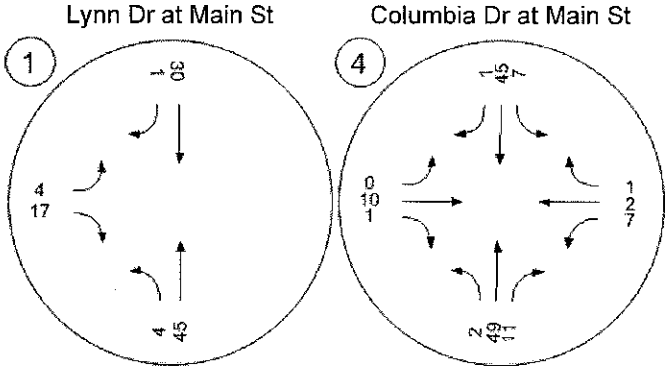
Zone / Gate	Zone 1: Columbia Estates			
	To Columbia Estates:		From Columbia Estates:	
	Share %	Trips	Share %	Trips
2: Gate	20.00	0	20.00	0
3: Gate	20.00	0	20.00	0
4: Gate	30.00	0	30.00	0
5: Gate	20.00	0	20.00	0
6: Gate	10.00	0	10.00	0
Total	**100.00**	**0**	**100.00**	**0**

Report Figure 1: Study Intersections

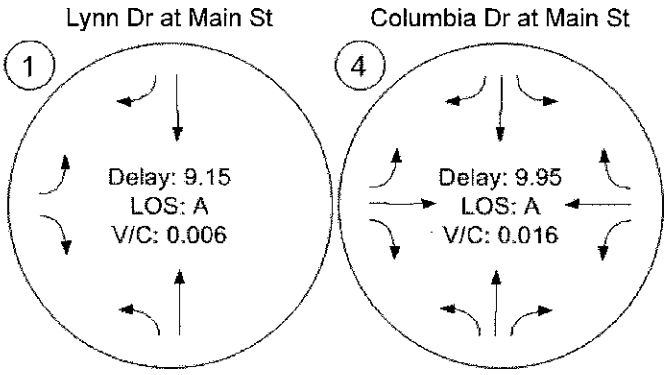
Report Figure 2: Lane Configuration and Traffic Control



Report Figure 3e: Traffic Volume - Future Total Volume



Report Figure 4: Traffic Conditions



Columbia Dr Estates TIA

Vistro File: J:\...\Columbia Dr TIA.vistro
Report File: J:\...\2016 PM Columbia Dr TIA.pdf

Scenario 2: Existing PM Peak
4/21/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Lynn Dr at Main St	Two-way stop	HCM2010	EBL	0.006	9.7	A
4	Columbia Dr at Main St	Two-way stop	HCM2010	WBT	0.010	10.5	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

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Columbia Dr Estates TIA

Scenario 2: 2: Existing PM Peak

Intersection Level Of Service Report
#1: Lynn Dr at Main St

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Main St		Main St		Lynn Dr	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name	Main St		Main St		Lynn Dr	
Base Volume Input [veh/h]	8	66	68	5	4	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	6.30	6.30	6.30	6.30	6.30	6.30
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	66	68	5	4	4
Peak Hour Factor	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	3	21	22	2	1	1
Total Analysis Volume [veh/h]	10	84	87	6	5	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			no
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			no
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	7.46	0.00	0.00	0.00	9.67	8.81
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.20	0.20	0.00	0.00	0.04	0.04
95th-Percentile Queue Length [ft]	5.10	5.10	0.00	0.00	0.88	0.88
d_A, Approach Delay [s/veh]	0.79		0.00		9.24	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.85					
Intersection LOS	A					

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Columbia Dr Estates TIA

Scenario 2: 2: Existing PM Peak

Intersection Level Of Service Report
#4: Columbia Dr at Main St

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Main St			Main St			Columbia Dr			Columbia Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Main St			Main St			Columbia Dr			Columbia Dr		
Base Volume Input [veh/h]	6	77	11	5	68	3	4	8	1	11	6	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	77	11	5	68	3	4	8	1	11	6	11
Peak Hour Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	2	23	3	2	20	1	1	2	0	3	2	3
Total Analysis Volume [veh/h]	7	93	13	6	82	4	5	10	1	13	7	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.02	0.01	0.01
d_M, Delay for Movement [s/veh]	7.41	0.00	0.00	7.45	0.00	0.00	10.17	10.47	8.83	10.17	10.52	8.98
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh]	0.24	0.24	0.24	0.20	0.20	0.20	0.07	0.07	0.07	0.13	0.13	0.13
95th-Percentile Queue Length [ft]	6.09	6.09	6.09	4.98	4.98	4.98	1.76	1.76	1.76	3.28	3.28	3.28
d_A, Approach Delay [s/veh]	0.46			0.49			10.27			9.77		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	2.30											
Intersection LOS	B											

Columbia Dr Estates TIA

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Scenario 2: Existing PM Peak
4/21/2016

Turning Movement Volume: Summary

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
1	Lynn Dr at Main St	8	66	68	5	4	4	155

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Columbia Dr at Main St	6	77	11	5	68	3	4	8	1	11	6	11	211

Columbia Dr Estates TIA

Vistro File: J:\...\Columbia Dr TIA.vistro
Report File: J:\...\2016 PM Columbia Dr TIA.pdf

Scenario 2: Existing PM Peak
4/21/2016

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
1	Lynn Dr at Main St	Final Base	8	66	68	5	4	4	155
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**8**	**66**	**68**	**5**	**4**	**4**	**155**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Columbia Dr at Main St	Final Base	6	77	11	5	68	3	4	8	1	11	6	11	211
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**6**	**77**	**11**	**5**	**68**	**3**	**4**	**8**	**1**	**11**	**6**	**11**	**211**

Columbia Dr Estates TIA

Vistro File: J:\...\Columbia Dr TIA.vistro
Report File: J:\...\2016 PM Columbia Dr TIA.pdf

Scenario 2: Existing PM Peak
4/21/2016

Trip generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total trips	% of Total Trips
1: Columbia Estates	Single Family Homes	ITE 210	homes	0.750	0.000	50.00	50.00	0	0	0	0.00
					Added Trips Total			**0**	**0**	**0**	**0.00**

Columbia Dr Estates TIA

Vistro File: J:\...\Columbia Dr TIA.vistro
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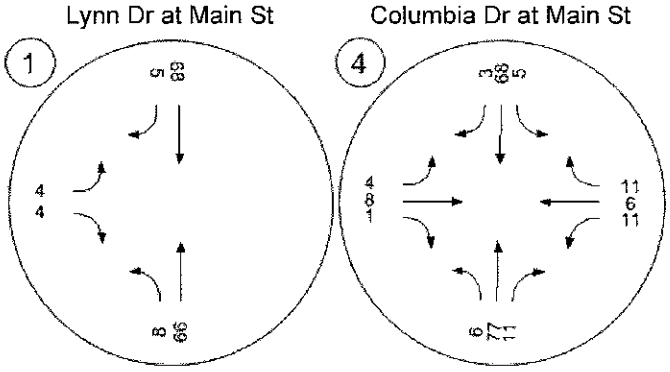
Scenario 2: Existing PM Peak
4/21/2016

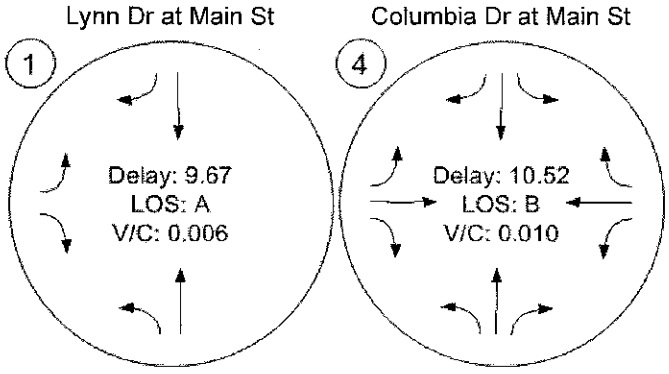
Trip distribution summary

Zone / Gate	Zone 1: Columbia Estates			
	To Columbia Estates:		From Columbia Estates:	
	Share %	Trips	Share %	Trips
2: Gate	20.00	0	20.00	0
3: Gate	20.00	0	20.00	0
4: Gate	30.00	0	30.00	0
5: Gate	20.00	0	20.00	0
6: Gate	10.00	0	10.00	0
Total	**100.00**	**0**	**100.00**	**0**

Report Figure 3e: Traffic Volume - Future Total Volume



Report Figure 4: Traffic Conditions



Columbia Dr Estates TIA

Vistro File: J:\...\Columbia Dr TIA.vistro
Report File: J:\...\2017 AM Columbia Dr TIA.pdf

Scenario 3: 2017 Developed AM Peak
4/21/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Lynn Dr at Main St	Two-way stop	HCM2010	EBL	0.009	9.2	A
2	Wydan St at Columbia Dr	Two-way stop	HCM2010	SBL	0.008	8.7	A
4	Columbia Dr at Main St	Two-way stop	HCM2010	EBT	0.025	10.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

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Columbia Dr Estates TIA

Scenario 3: 3: 2017 Developed AM Peak

Intersection Level Of Service Report
#1: Lynn Dr at Main St

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	Main St		Main St		Lynn Dr	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name	Main St		Main St		Lynn Dr	
Base Volume Input [veh/h]	4	45	30	1	4	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	7.10	7.10	7.10	7.10	7.10	7.10
Growth Rate	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	1	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	46	31	2	7	17
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	1	13	9	1	2	5
Total Analysis Volume [veh/h]	5	53	36	2	8	20
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			no
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			no
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.02
d_M, Delay for Movement [s/veh]	7.35	0.00	0.00	0.00	9.18	8.64
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.12	0.12	0.00	0.00	0.09	0.09
95th-Percentile Queue Length [ft]	2.93	2.93	0.00	0.00	2.21	2.21
d_A, Approach Delay [s/veh]	0.63		0.00		8.79	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.28					
Intersection LOS	A					

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Columbia Dr Estates TIA

Scenario 3: 3: 2017 Developed AM Peak

Intersection Level Of Service Report
#2: Wydan St at Columbia Dr

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Wydan St		Columbia Dr		Columbia Dr	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name	Wydan St		Columbia Dr		Columbia Dr	
Base Volume Input [veh/h]	0	0	0	11	5	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.60	2.60	2.60	2.60	2.60	2.60
Growth Rate	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	6	2	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	6	2	11	5	3
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	2	2	1	3	1	1
Total Analysis Volume [veh/h]	8	7	2	13	6	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	no		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	no		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.70	8.41	7.24	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.04	0.04	0.03	0.03	0.00	0.00
95th-Percentile Queue Length [ft]	1.11	1.11	0.71	0.71	0.00	0.00
d_A, Approach Delay [s/veh]	8.56		0.97		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.57					
Intersection LOS	A					

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Columbia Dr Estates TIA

Version 3.00-04

Scenario 3: 3: 2017 Developed AM Peak

Intersection Level Of Service Report
#4: Columbia Dr at Main St

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.025

Intersection Setup

Name	Main St			Main St			Columbia Dr			Columbia Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Main St			Main St			Columbia Dr			Columbia Dr		
Base Volume Input [veh/h]	2	49	11	7	45	1	0	10	1	7	2	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
Growth Rate	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	0	0	5	2	0	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	50	11	7	46	1	0	15	3	7	4	1
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	1	15	3	2	14	0	0	4	1	2	1	0
Total Analysis Volume [veh/h]	4	59	13	8	55	1	0	18	4	8	5	1
Pedestrian Volume [ped/h]	0			0			0			0		

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Version 3.00-04

Columbia Dr Estates TIA

Scenario 3: 3: 2017 Developed AM Peak

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	7.34	0.00	0.00	7.37	0.00	0.00	9.59	10.05	8.70	9.67	9.96	8.70
Movement LOS	A	A	A	A	A	A	A	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.16	0.16	0.16	0.13	0.13	0.13	0.09	0.09	0.09	0.05	0.05	0.05
95th-Percentile Queue Length [ft]	3.88	3.88	3.88	3.28	3.28	3.28	2.20	2.20	2.20	1.37	1.37	1.37
d_A, Approach Delay [s/veh]	0.39			0.92			9.80			9.70		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.50											
Intersection LOS	B											

Columbia Dr Estates TIA

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Scenario 3: 2017 Developed AM Peak
4/21/2016

Turning Movement Volume: Summary

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
1	Lynn Dr at Main St	4	46	31	2	7	17	107

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
2	Wydan St at Columbia Dr	7	6	2	11	5	3	34

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Columbia Dr at Main St	3	50	11	7	46	1	0	15	3	7	4	1	148

Columbia Dr Estates TIA

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Scenario 3: 2017 Developed AM Peak
4/21/2016

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
1	Lynn Dr at Main St	Final Base	4	45	30	1	4	17	101
		Growth Rate	1.02	1.02	1.02	1.02	1.02	1.02	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	1	3	0	4
		Other	0	0	0	0	0	0	0
		Future Total	**4**	**46**	**31**	**2**	**7**	**17**	**107**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
2	Wydan St at Columbia Dr	Final Base	0	0	0	11	5	0	16
		Growth Rate	1.02	1.02	1.02	1.02	1.02	1.02	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	7	6	2	0	0	3	18
		Other	0	0	0	0	0	0	0
		Future Total	**7**	**6**	**2**	**11**	**5**	**3**	**34**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Columbia Dr at Main St	Final Base	2	49	11	7	45	1	0	10	1	7	2	1	136
		Growth Rate	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	1	0	0	0	0	0	0	5	2	0	2	0	10
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**3**	**50**	**11**	**7**	**46**	**1**	**0**	**15**	**3**	**7**	**4**	**1**	**148**

Columbia Dr Estates TIA

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Scenario 3: 2017 Developed AM Peak
4/21/2016

Trip generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total trips	% of Total Trips
1: Columbia Estates	Single Family Homes	ITE 210	homes	0.750	29.000	25.00	75.00	6	16	22	100.00
					Added Trips Total			**6**	**16**	**22**	**100.00**

Columbia Dr Estates TIA

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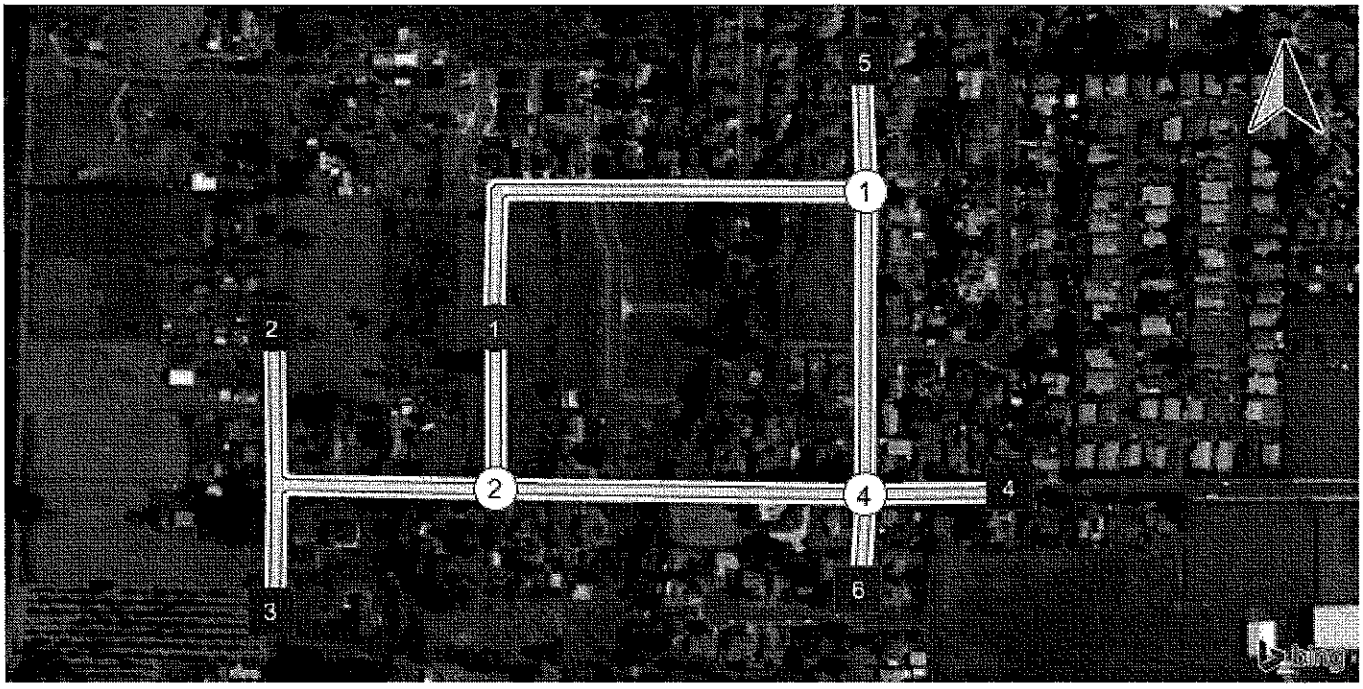
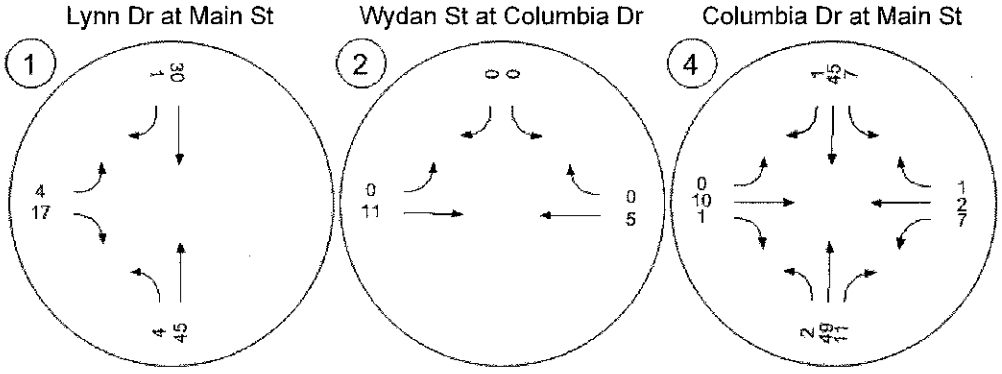
Scenario 3: 2017 Developed AM Peak
4/21/2016

Trip distribution summary

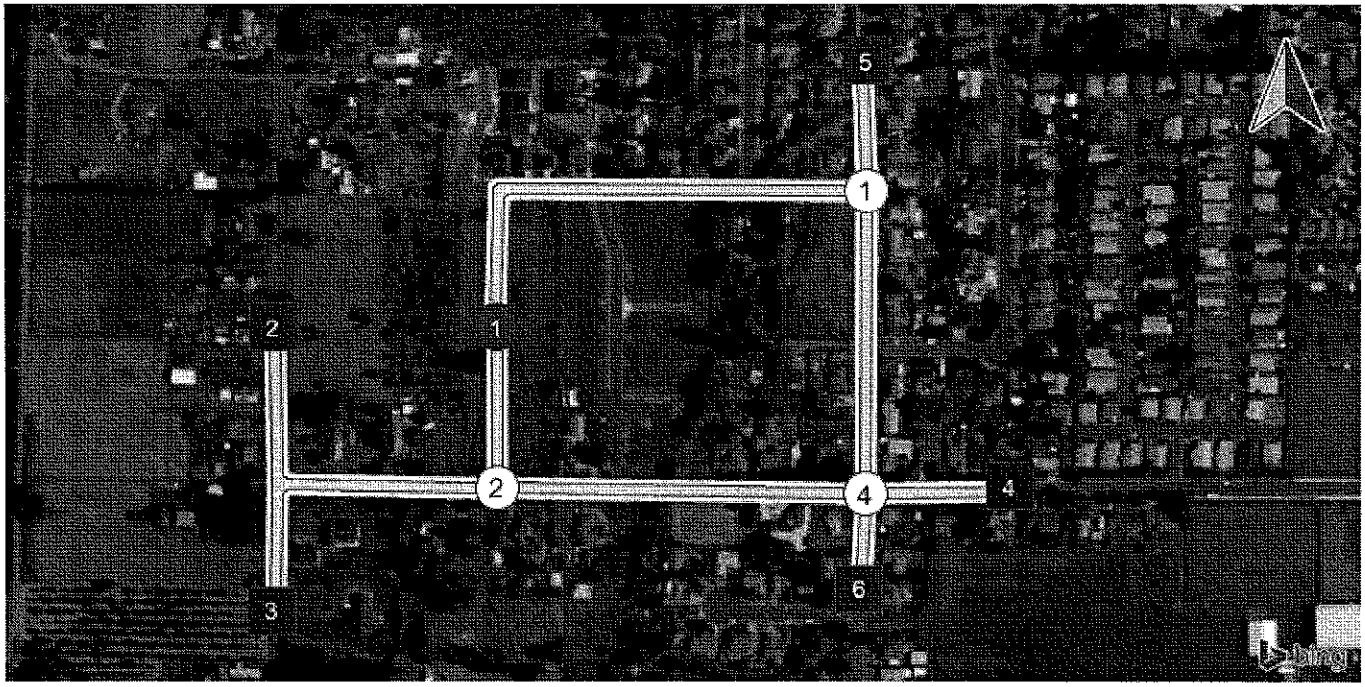
Zone / Gate	Zone 1: Columbia Estates			
	To Columbia Estates:		From Columbia Estates:	
	Share %	Trips	Share %	Trips
2: Gate	20.00	1	20.00	3
3: Gate	20.00	1	20.00	3
4: Gate	30.00	2	30.00	5
5: Gate	20.00	1	20.00	3
6: Gate	10.00	1	10.00	2
Total	**100.00**	**6**	**100.00**	**16**

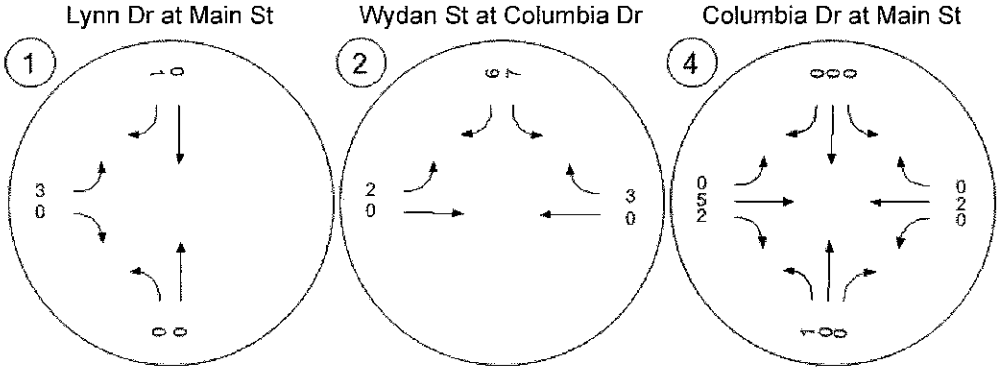
Report Figure 3a: Traffic Volume - Base Volume



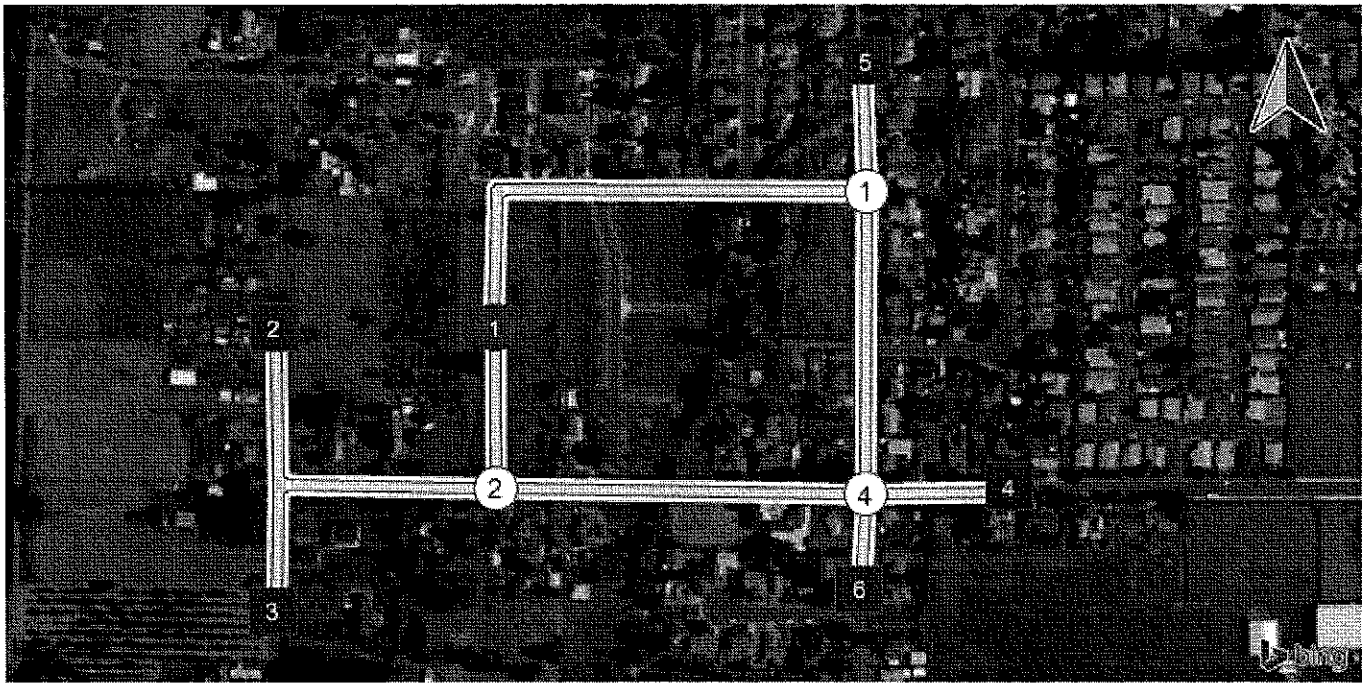


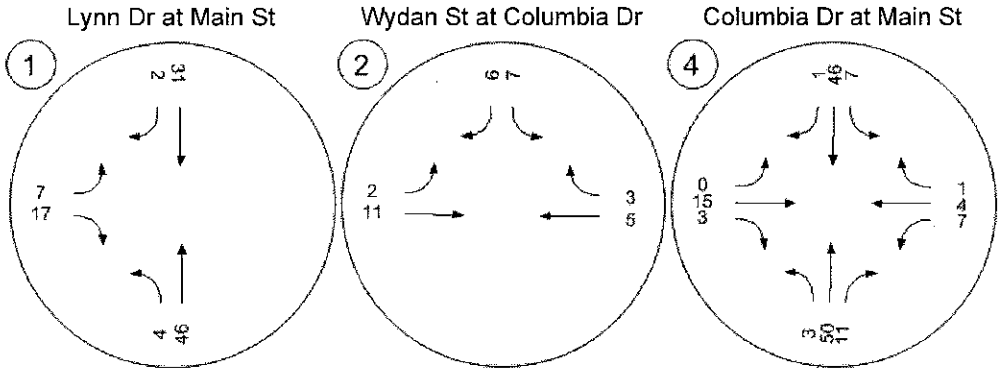
Report Figure 3c: Traffic Volume - Net New Site Trips



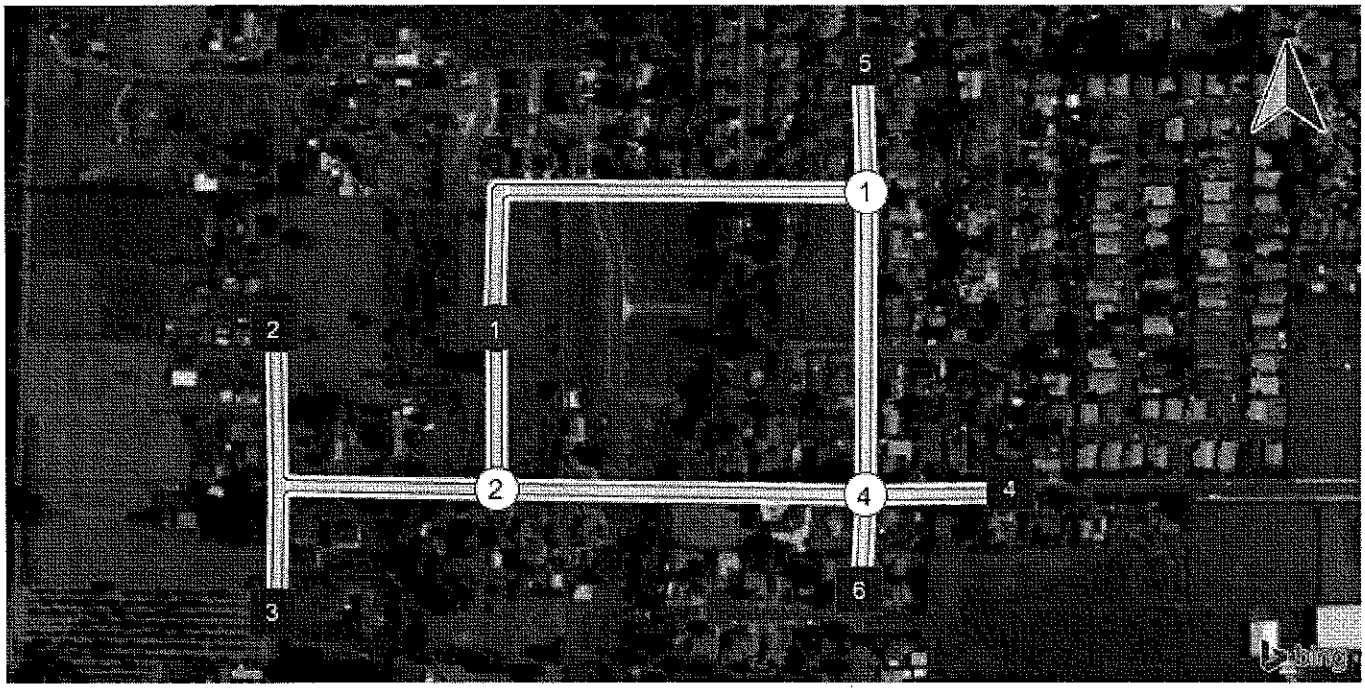


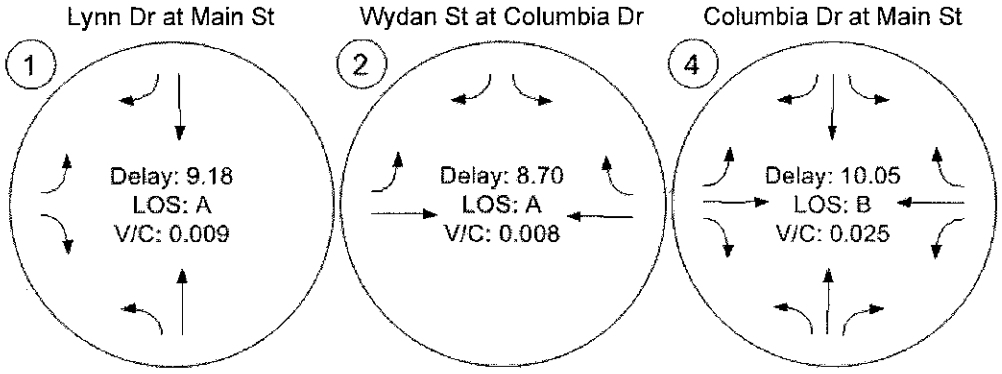
Report Figure 3e: Traffic Volume - Future Total Volume





Report Figure 4: Traffic Conditions





Columbia Dr Estates TIA

Vistro File: J:\...\Columbia Dr TIA.vistro
Report File: J:\...\2017 PM Columbia Dr TIA.pdf

Scenario 4: 2017 Developed PM Peak
4/21/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Lynn Dr at Main St	Two-way stop	HCM2010	EBL	0.010	9.7	A
2	Wydan St at Columbia Dr	Two-way stop	HCM2010	SBL	0.006	8.9	A
4	Columbia Dr at Main St	Two-way stop	HCM2010	WBT	0.019	10.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

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Columbia Dr Estates TIA

Version 3.00-04

Scenario 4: 4: 2017 Developed PM Peak

Intersection Level Of Service Report
#1: Lynn Dr at Main St

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Main St		Main St		Lynn Dr	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name	Main St		Main St		Lynn Dr	
Base Volume Input [veh/h]	8	66	68	5	4	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	6.30	6.30	6.30	6.30	6.30	6.30
Growth Rate	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	4	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	67	69	9	6	4
Peak Hour Factor	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	3	21	22	3	2	1
Total Analysis Volume [veh/h]	10	86	88	11	8	5
Pedestrian Volume [ped/h]	0		0		0	

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Columbia Dr Estates TIA

Version 3.00-04

Scenario 4: 4: 2017 Developed PM Peak

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			no
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			no
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	7.47	0.00	0.00	0.00	9.72	8.85
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.21	0.21	0.00	0.00	0.05	0.05
95th-Percentile Queue Length [ft]	5.24	5.24	0.00	0.00	1.19	1.19
d_A, Approach Delay [s/veh]	0.78		0.00		9.39	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.95					
Intersection LOS	A					

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Columbia Dr Estates TIA

Scenario 4: 4: 2017 Developed PM Peak

Intersection Level Of Service Report
#2: Wydan St at Columbia Dr

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Wydan St		Columbia Dr		Columbia Dr	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name	Wydan St		Columbia Dr		Columbia Dr	
Base Volume Input [veh/h]	0	0	0	13	16	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.28	3.28	3.28	3.28	3.28	3.28
Growth Rate	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	4	8	0	0	7
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	4	8	13	16	7
Peak Hour Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	2	1	2	4	5	2
Total Analysis Volume [veh/h]	6	5	10	16	19	8
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	no		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	no		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.88	8.47	7.30	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.03	0.03	0.05	0.05	0.00	0.00
95th-Percentile Queue Length [ft]	0.85	0.85	1.26	1.26	0.00	0.00
d_A, Approach Delay [s/veh]	8.69		2.81		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.63					
Intersection LOS	A					

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Columbia Dr Estates TIA

Version 3.00-04

Scenario 4: 4: 2017 Developed PM Peak

Intersection Level Of Service Report
#4: Columbia Dr at Main St

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Main St			Main St			Columbia Dr			Columbia Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Main St			Main St			Columbia Dr			Columbia Dr		
Base Volume Input [veh/h]	6	77	11	5	68	3	4	8	1	11	6	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28
Growth Rate	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	0	0	4	1	0	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	79	11	5	69	3	4	12	2	11	11	11
Peak Hour Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	2	24	3	2	21	1	1	4	1	3	3	3
Total Analysis Volume [veh/h]	10	95	13	6	83	4	5	14	2	13	13	13
Pedestrian Volume [ped/h]	0			0			0			0		

Generated with PTV VISTRO

Columbia Dr Estates TIA

Version 3.00-04

Scenario 4: 4: 2017 Developed PM Peak

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.02	0.02	0.01
d_M, Delay for Movement [s/veh]	7.41	0.00	0.00	7.45	0.00	0.00	10.35	10.58	8.87	10.35	10.65	9.05
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh]	0.26	0.26	0.26	0.20	0.20	0.20	0.09	0.09	0.09	0.16	0.16	0.16
95th-Percentile Queue Length [ft]	6.39	6.39	6.39	5.04	5.04	5.04	2.34	2.34	2.34	4.07	4.07	4.07
d_A, Approach Delay [s/veh]	0.63			0.48			10.36			10.02		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	2.68											
Intersection LOS	B											

Columbia Dr Estates TIA

Vistro File: J:\...\Columbia Dr TIA.vistro
Report File: J:\...\2017 PM Columbia Dr TIA.pdf

Scenario 4: 2017 Developed PM Peak
4/21/2016

Turning Movement Volume: Summary

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
1	Lynn Dr at Main St	8	67	69	9	6	4	163

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
2	Wydan St at Columbia Dr	5	4	8	13	16	7	53

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Columbia Dr at Main St	8	79	11	5	69	3	4	12	2	11	11	11	226

Columbia Dr Estates TIA

Vistro File: J:\...\Columbia Dr TIA.vistro
Report File: J:\...\2017 PM Columbia Dr TIA.pdf

Scenario 4: 2017 Developed PM Peak
4/21/2016

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
1	Lynn Dr at Main St	Final Base	8	66	68	5	4	4	155
		Growth Rate	1.02	1.02	1.02	1.02	1.02	1.02	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	4	2	0	6
		Other	0	0	0	0	0	0	0
		Future Total	**8**	**67**	**69**	**9**	**6**	**4**	**163**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
2	Wydan St at Columbia Dr	Final Base	0	0	0	13	16	0	29
		Growth Rate	1.02	1.02	1.02	1.02	1.02	1.02	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	5	4	8	0	0	7	24
		Other	0	0	0	0	0	0	0
		Future Total	**5**	**4**	**8**	**13**	**16**	**7**	**53**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Columbia Dr at Main St	Final Base	6	77	11	5	68	3	4	8	1	11	6	11	211
		Growth Rate	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	2	0	0	0	0	0	0	4	1	0	5	0	12
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**8**	**79**	**11**	**5**	**69**	**3**	**4**	**12**	**2**	**11**	**11**	**11**	**226**

Columbia Dr Estates TIA

Vistro File: J:\...\Columbia Dr TIA.vistro
Report File: J:\...\2017 PM Columbia Dr TIA.pdf

Scenario 4: 2017 Developed PM Peak
4/21/2016

Trip generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total trips	% of Total Trips
1: Columbia Estates	Single Family Homes	ITE 210	Homes	1.000	29.000	63.00	37.00	18	11	29	100.00
					Added Trips Total			**18**	**11**	**29**	**100.00**

Columbia Dr Estates TIA

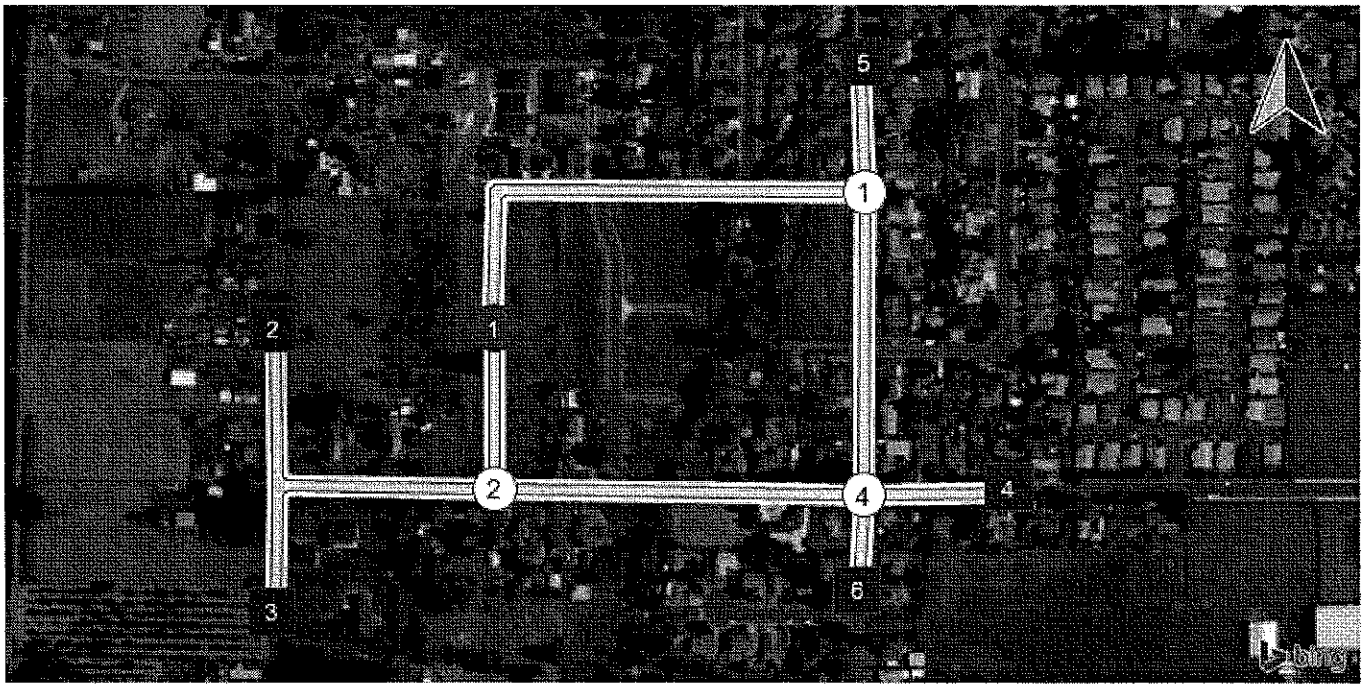
Vistro File: J:\...\Columbia Dr TIA.vistro
Report File: J:\...\2017 PM Columbia Dr TIA.pdf

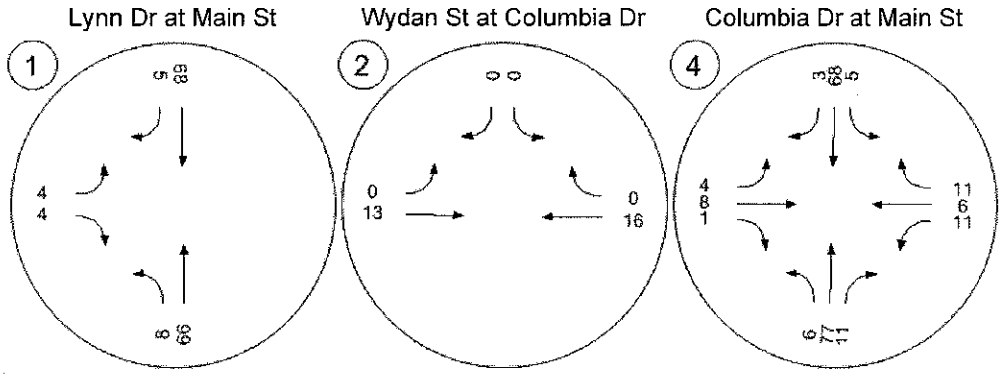
Scenario 4: 2017 Developed PM Peak
4/21/2016

Trip distribution summary

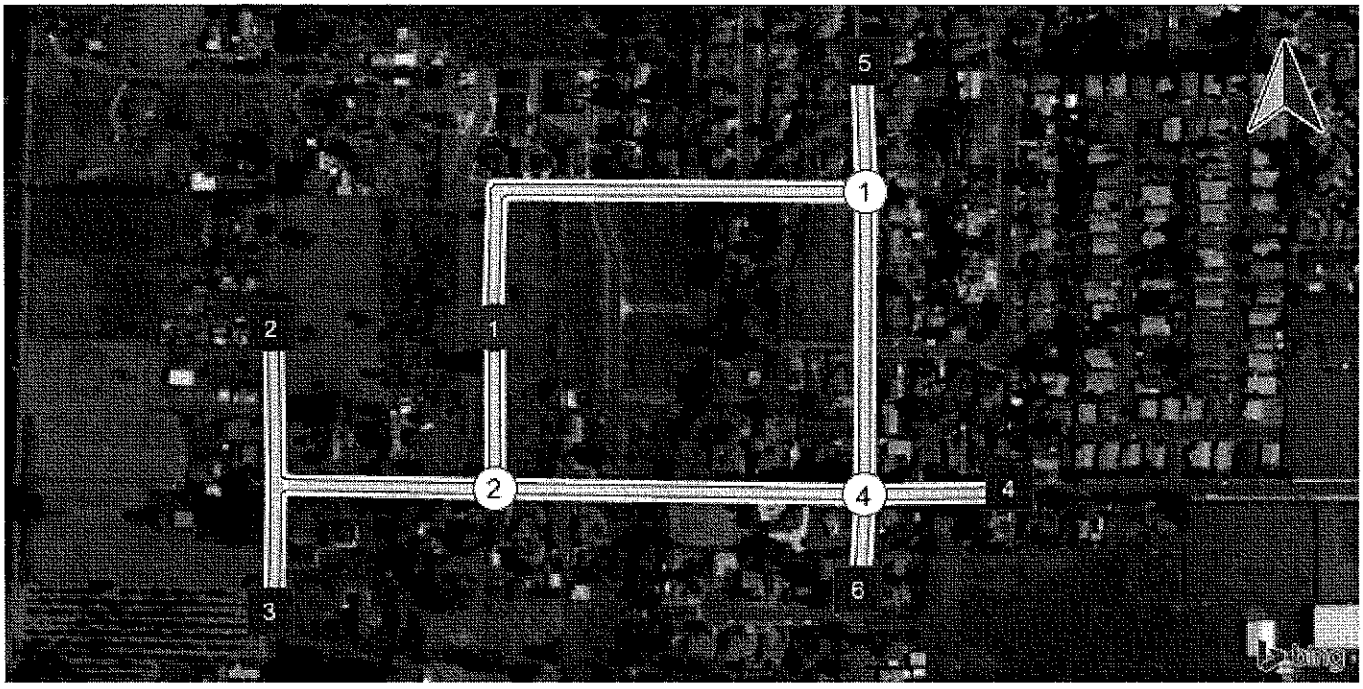
Zone / Gate	Zone 1: Columbia Estates			
	To Columbia Estates:		From Columbia Estates:	
	Share %	Trips	Share %	Trips
2: Gate	20.00	4	20.00	2
3: Gate	20.00	4	20.00	2
4: Gate	30.00	5	30.00	4
5: Gate	20.00	4	20.00	2
6: Gate	10.00	2	10.00	1
Total	**100.00**	**19**	**100.00**	**11**

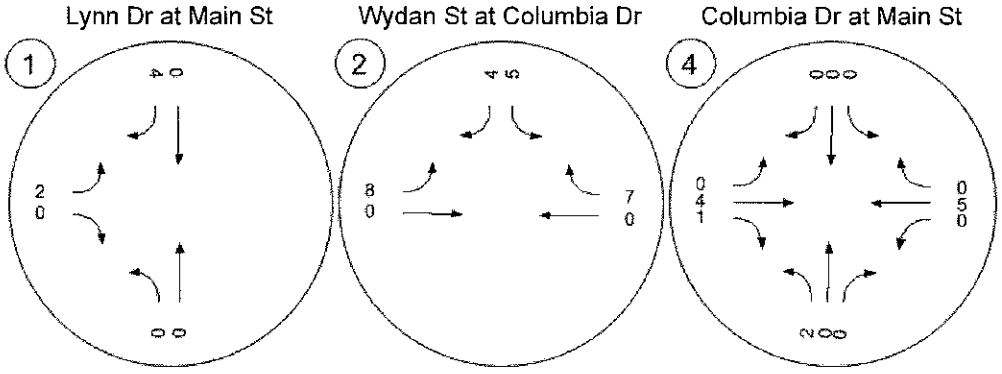
Report Figure 3a: Traffic Volume - Base Volume



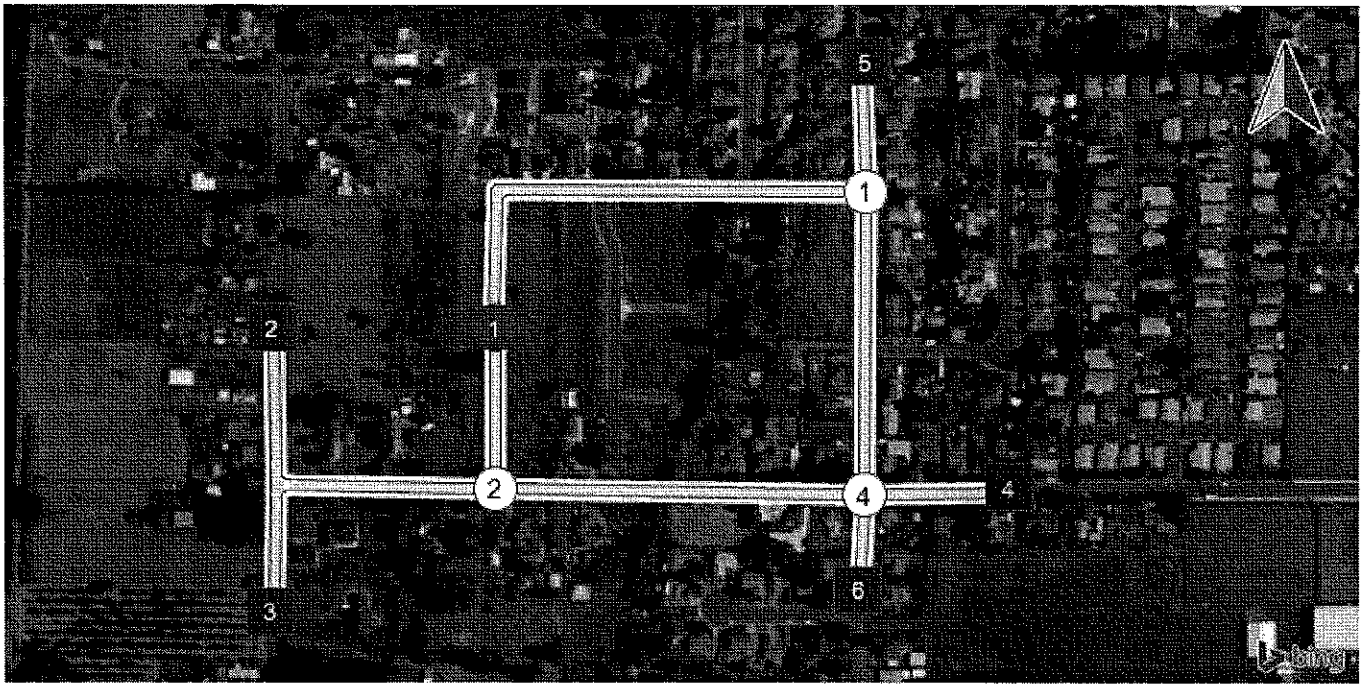


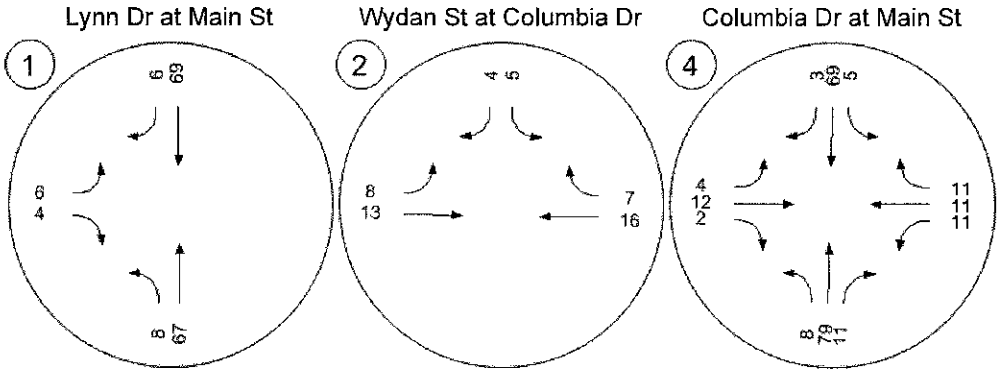
Report Figure 3c: Traffic Volume - Net New Site Trips



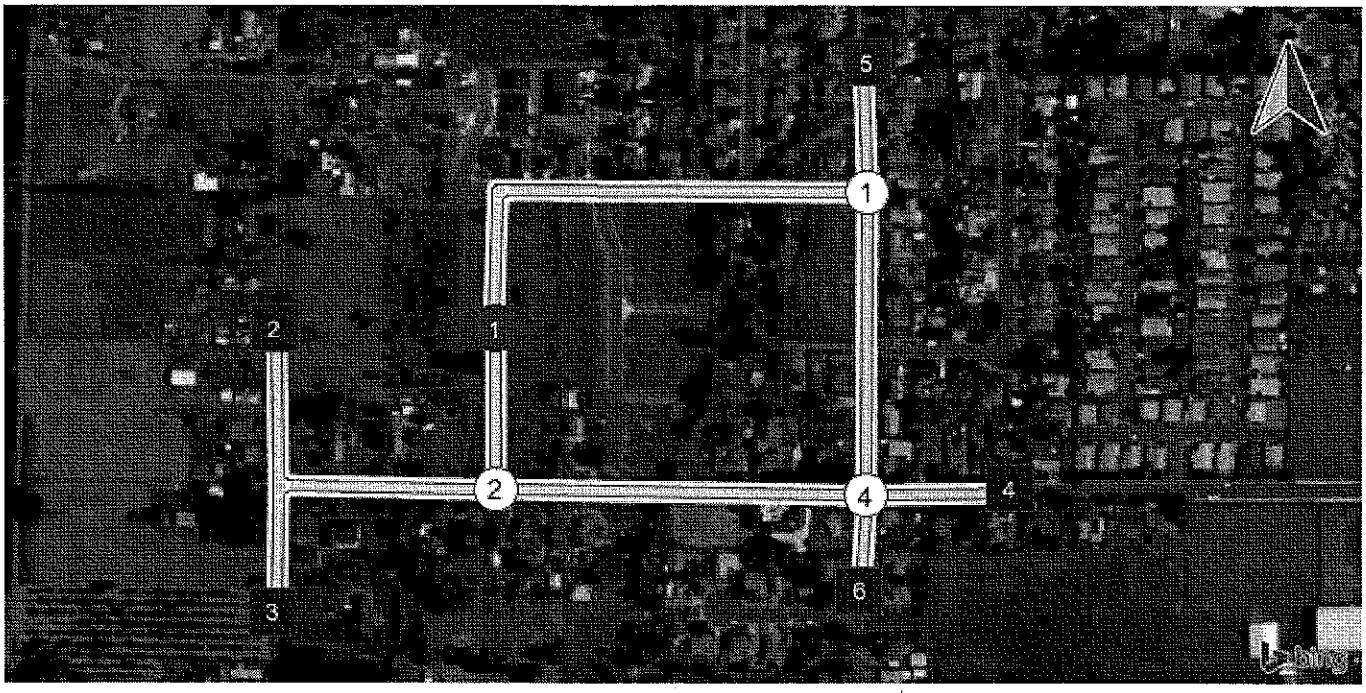


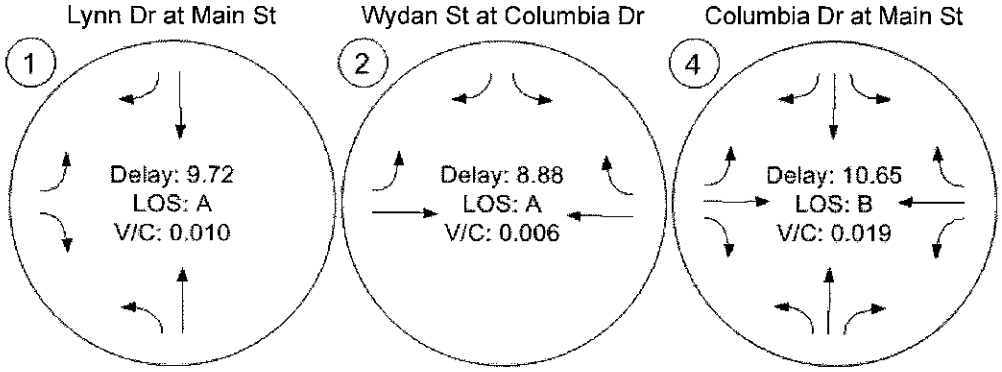
Report Figure 3e: Traffic Volume - Future Total Volume





Report Figure 4: Traffic Conditions



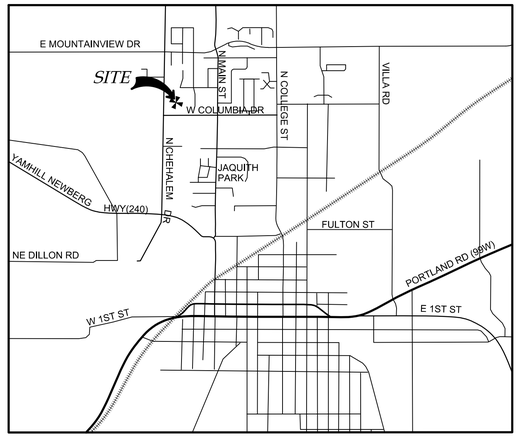


Columbia Estates Subdivision

Exhibit C

Tentative Plan

PRELIMINARY PLANS FOR
COLUMBIA ESTATES
NEWBERG, OR

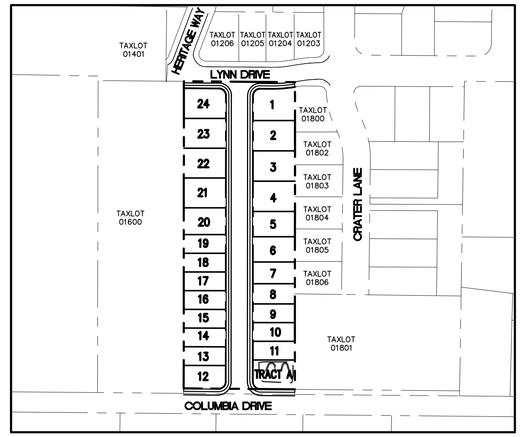


VICINITY MAP

NOT TO SCALE

SHEET INDEX

NAME:	NO.
COVER SHEET	P100
EXISTING CONDITIONS	P200
SITE PLAN / PRELIMINARY PLAT	P300
PRELIMINARY STREET AND SANITARY PLAN AND PROFILE	P301
PRELIMINARY UTILITY PLAN	P400
PRELIMINARY GRADING PLAN	P500
FUTURE STREETS PLAN	P600
SURROUNDING DEVELOPMENT - AERIAL	P601



LOCATION MAP

SCALE: 1"=150'

PROPERTY DESCRIPTION

TAX MAP & LOT:
TAX MAP 3S2W18AB, TAX LOTS 1700, 1701, 1702

SITE SIZE:
3.069 ACRES

PROPOSAL:
24 LOT RESIDENTIAL SUBDIVISION
(SINGLE FAMILY DETACHED)

STREET ADDRESS

421 W COLUMBIA DRIVE
NEWBERG, OR 97132

OWNER

DEL BOCA VISTA LLC
P.O. BOX 486
NEWBERG, OR 97132

APPLICANT

DEL BOCA VISTA LLC
P.O. BOX 486
NEWBERG, OR 97132
PHONE: (971) 706-2058

ENGINEER / SURVEYOR

WESTLAKE CONSULTANTS, INC.
PACIFIC CORPORATE CENTER
15115 S.W. SEQUOIA PARKWAY,
SUITE 150 TIGARD, OREGON 97224
PHONE: (503) 684-0652
FAX: (503) 624-0157
CONTACT: JEFF VANDERDASSON
RYAN CROWTHER

DATUM

ELEVATIONS ARE BASED ON YAMHILL COUNTY GEODETIC CONTROL POINT NO. 167. MARK IS AN IRON PIPE IN A MONUMENT BOX AT THE CENTERLINE OF HOLVACK CT. AND FOOTHILLS DR. PUBLISHED ELEVATION IS 230.80' (NGVD29). VERTCON WAS USED TO CALCULATE A +3.41' ADJUSTMENT TO CONVERT TO NAVD88 DATUM. HELD ELEVATION = 234.21' (NAVD88).

LEGEND

EXISTING

- WATER METER
- FIRE HYDRANT
- WATER VALVE
- STORM CATCH BASIN
- STORM MANHOLE
- SEWER MANHOLE
- SD — STORM LINE
- W — WATER LINE
- SS — SANITARY LINE
- BUILDING FOOTPRINT
- 192 — 2-FOOT CONTOUR

PROPOSED

- INLET MANHOLE
- MANHOLE
- STORM LINE
- W — WATER LINE
- SS — SANITARY LINE
- SIDEWALK
- 192 — 1-FOOT CONTOUR

ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THESE RULES BY CALLING THE CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503) 232-1987).

UTILITY STATEMENT: THE UNDERGROUND UTILITIES SHOWN ARE PER FIELD MARKINGS AND RECORD DRAWINGS PROVIDED BY THE RESPECTIVE UTILITY AGENCIES. LOCATION OF NON-OBSERVABLE AND/OR UNDERGROUND UTILITIES ARE SHOWN FOR INFORMATION ONLY AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE.

UTILITY VERIFICATION: CONTRACTOR SHALL POTHOLE TO VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION AND SHALL PROVIDE **WESTLAKE CONSULTANTS, INC.** 72-HOURS NOTICE OF ANY POTENTIAL CONFLICTS.

WESTLAKE CONSULTANTS INC.
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PACIFIC CORPORATE CENTER
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FAX (503) 624-0157

COLUMBIA ESTATES
NEWBERG, OR

COVER SHEET

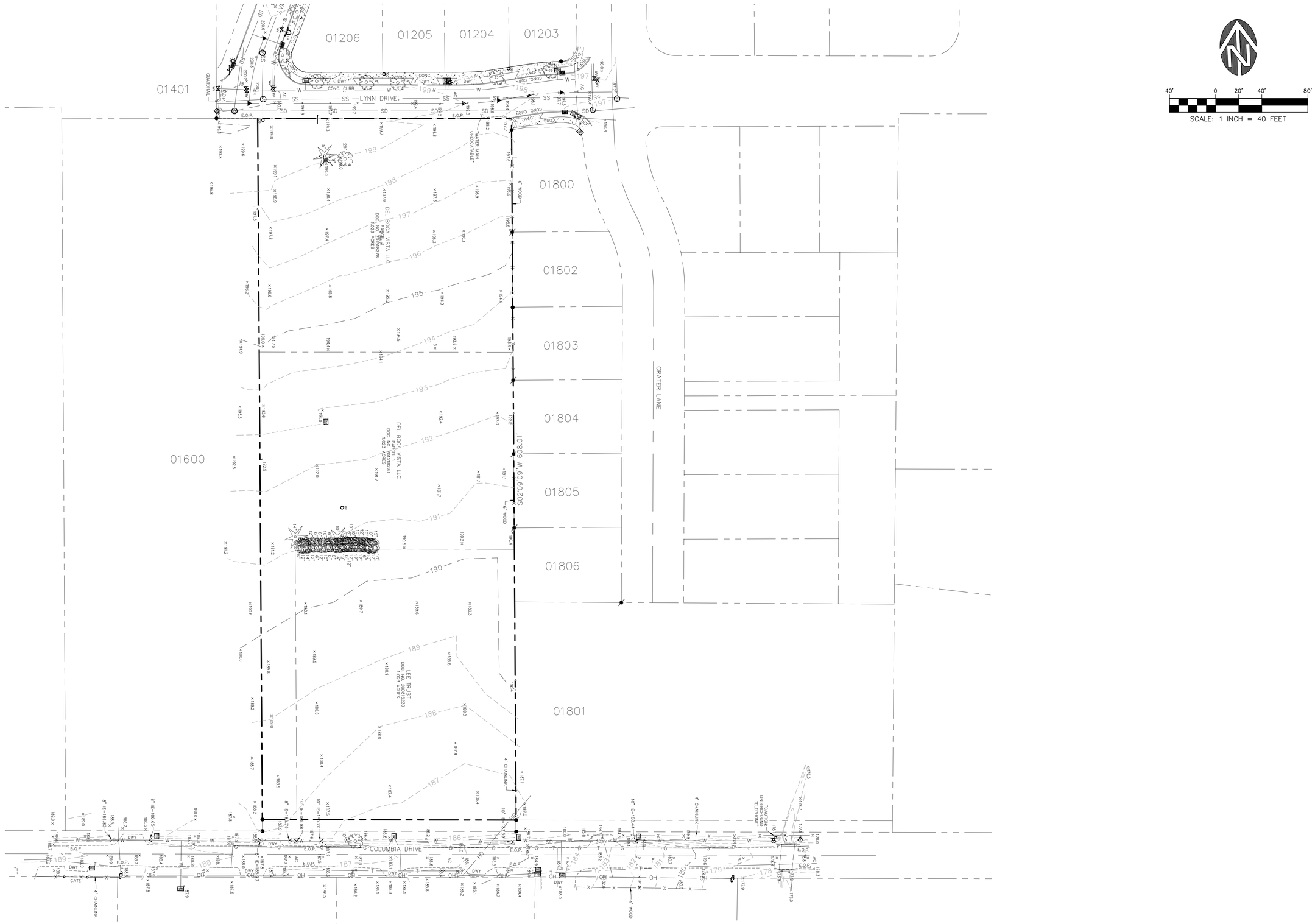
NO.	DATE	DESCRIPTION	DRAFT BY:	CHECK BY:

REVISIONS

SHEET
P100

JOB NO.
2657-001

PERMIT SUBMITTAL 6/30/2016



COLUMBIA ESTATES

NEWBERG, OR

EXISTING CONDITIONS

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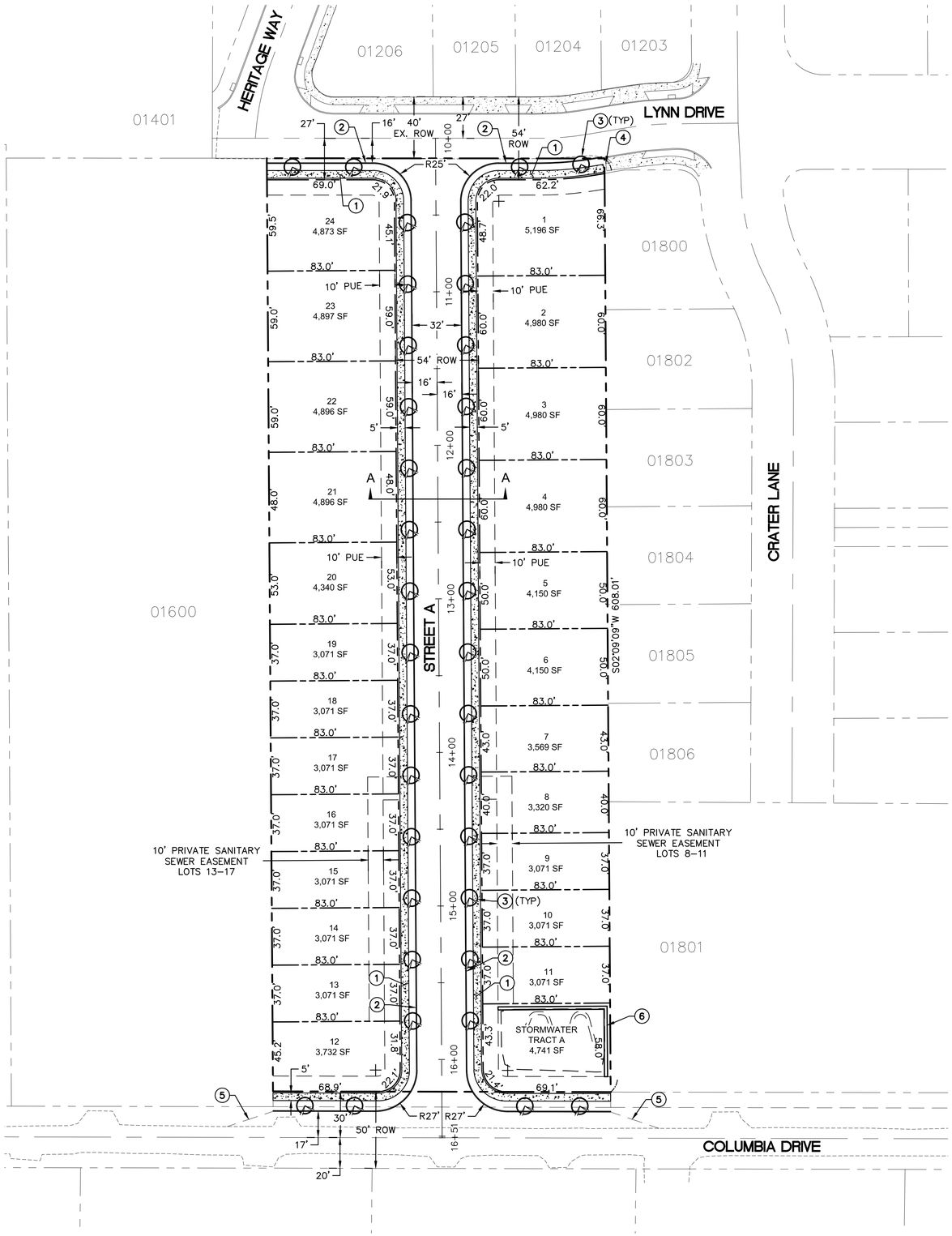
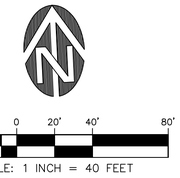
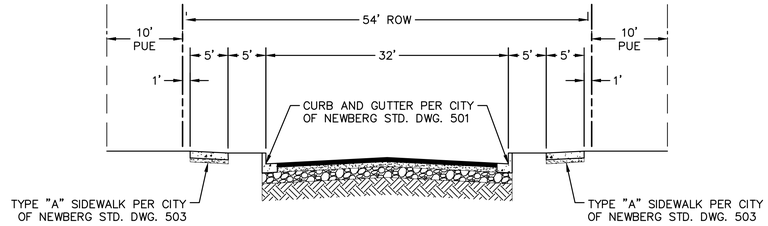




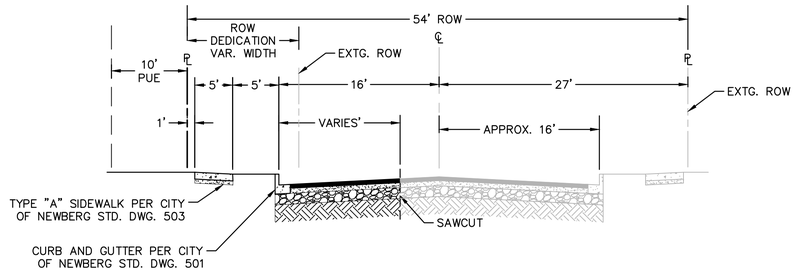
CONSTRUCTION KEYNOTES:

1. INSTALL 5' CONCRETE SIDEWALK.
2. INSTALL STANDARD CURB & GUTTER.
3. PROPOSED STREET TREE AT 35' – 40' ON CENTER. STREET TREES TO BE LOCATED DURING DESIGN TO AVOID CONFLICTS.
4. MATCH EXISTING SIDEWALK, CURB & GUTTER.
5. AC TAPER TO EXISTING EDGE OF PAVEMENT.
6. INSTALL RETAINING WALL.



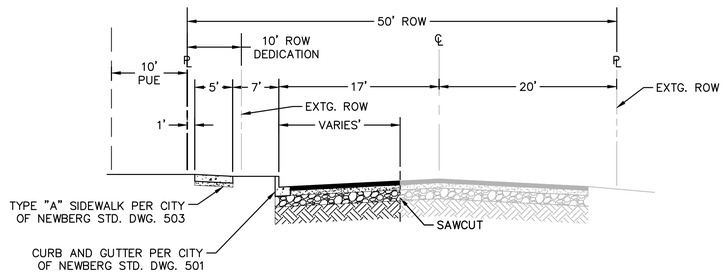
TYPICAL STREET SECTION 'A' - SIDEWALK WITH PLANTER STRIP

SCALE: NOT TO SCALE



TYPICAL HALF STREET SECTION - LYNN DRIVE

SCALE: NOT TO SCALE



TYPICAL HALF STREET SECTION - COLUMBIA DRIVE

SCALE: NOT TO SCALE

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FAX (503) 624-0157

COLUMBIA ESTATES

NEWBERG, OR

SITE PLAN / PRELIMINARY PLAT

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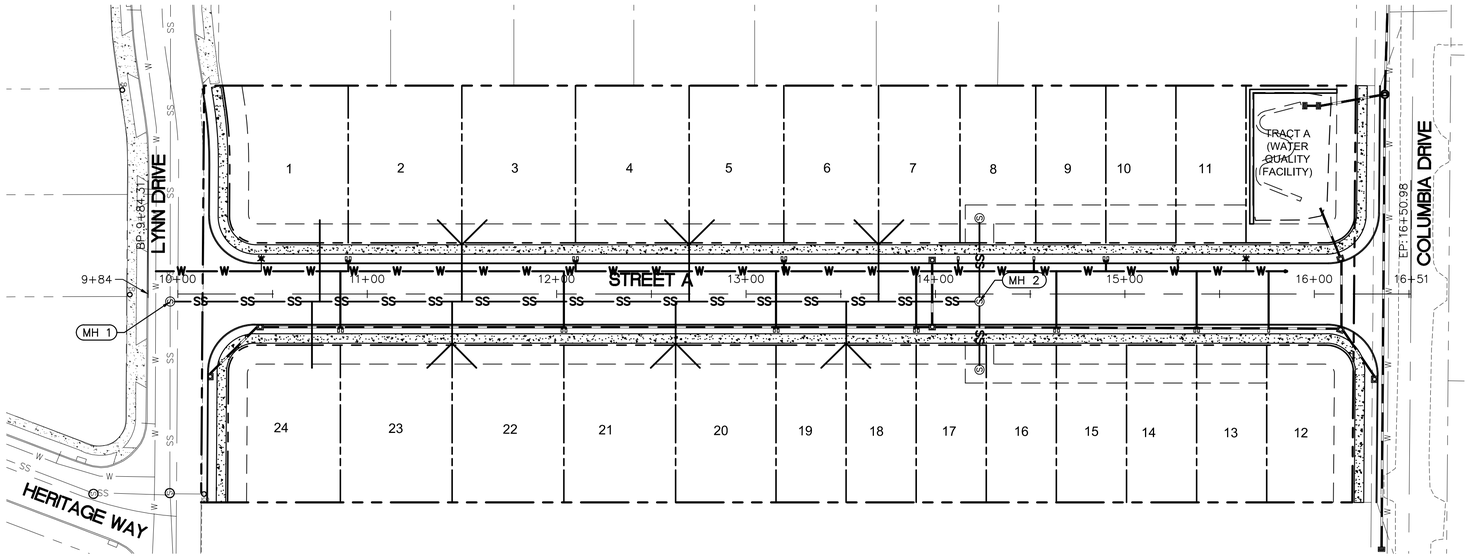
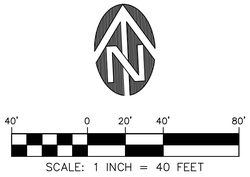
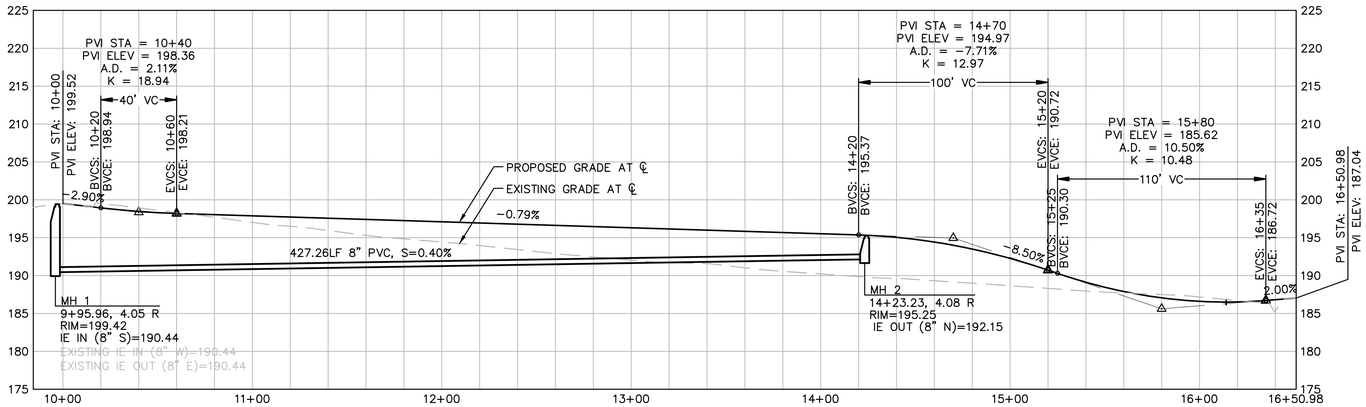




CONSTRUCTION KEYNOTES:

1. INSTALL 5' CONCRETE SIDEWALK.
2. INSTALL STANDARD CURB & GUTTER.
3. INSTALL 4.5' LANDSCAPE.
4. MATCH EXISTING SIDEWALK, CURB & GUTTER.



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FAX (503) 624-0157

COLUMBIA ESTATES

NEWBERG, OR

PRELIMINARY STREET AND SANITARY PLAN AND PROFILE

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P301

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2657-001

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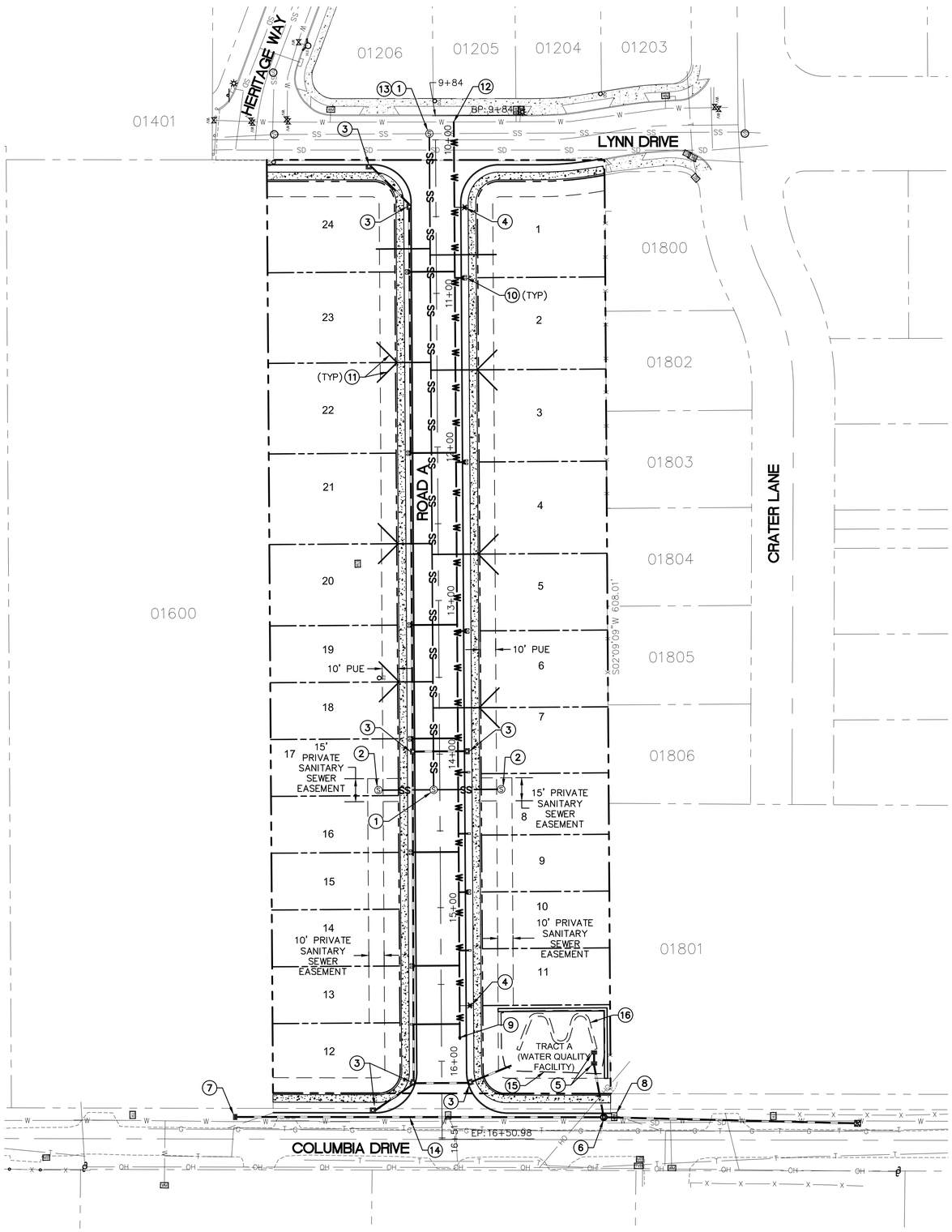

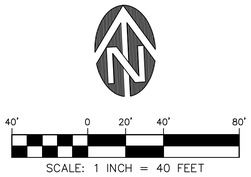

CONSTRUCTION KEYNOTES:

1. INSTALL 48" STANDARD SANITARY MANHOLE.
2. INSTALL PRIVATE SANITARY SEWER MANHOLE. LOTS SOUTH OF MANHOLE TO BE PUMPED USING PRIVATE GRINDER PUMPS TO PRIVATE MANHOLE BEFORE CONNECTION TO PUBLIC MAIN.
3. INSTALL INLET MANHOLE.
4. INSTALL FIRE HYDRANT.
5. INSTALL OUTFLOW CONTROL STRUCTURE.
6. INSTALL 48" STANDARD STORMWATER MANHOLE.
7. INSTALL DITCH INLET IN EXISTING ROADSIDE SWALE.
8. RELOCATE WATER SERVICE AS REQUIRED.
9. INSTALL BLOW OFF.
10. INSTALL DOMESTIC WATER METER.
11. INSTALL 4" SANITARY SEWER LATERAL.
12. CONNECT TO EXISTING WATERMAIN.
13. CONNECT TO EXISTING SANITARY SEWER.
14. INSTALL STORM BY-PASS LINE.
15. APPROXIMATE DETENTION POND PERIMETER.
16. APPROXIMATE WATER QUALITY SWALE LOCATION.

NOTES:

1. ALL LOTS TO UTILIZE CURB WEEPS FOR STORMWATER DRAINAGE.
2. ALL SANITARY SEWER MAINS TO BE 8" DIAMETER. ALL SANITARY SEWER LATERALS TO BE 4" DIAMETER.
3. STORM MAINS TO BE A MINIMUM OF 12" DIAMETER.
4. WATER MAINS TO BE 8" DIAMETER.
5. ON SITE LIDA INFILTRATION FACILITIES TO BE UTILIZED ON A MINIMUM OF 3 LOTS PER THE PRELIMINARY STORMWATER REPORT. FINAL STORMWATER REPORT WILL IDENTIFY THE ACTUAL NUMBER OF LIDA FACILITIES REQUIRED.

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(503) 684-0652
FAX (503) 624-0157

COLUMBIA ESTATES

NEWBERG, OR

PRELIMINARY UTILITY PLAN

NO.	DATE	DESCRIPTION	DRAFT BY:	CHECK BY:

REVISIONS

SHEET
P400

JOB NO.
2657-001

PERMIT SUBMITTAL 6/30/2016

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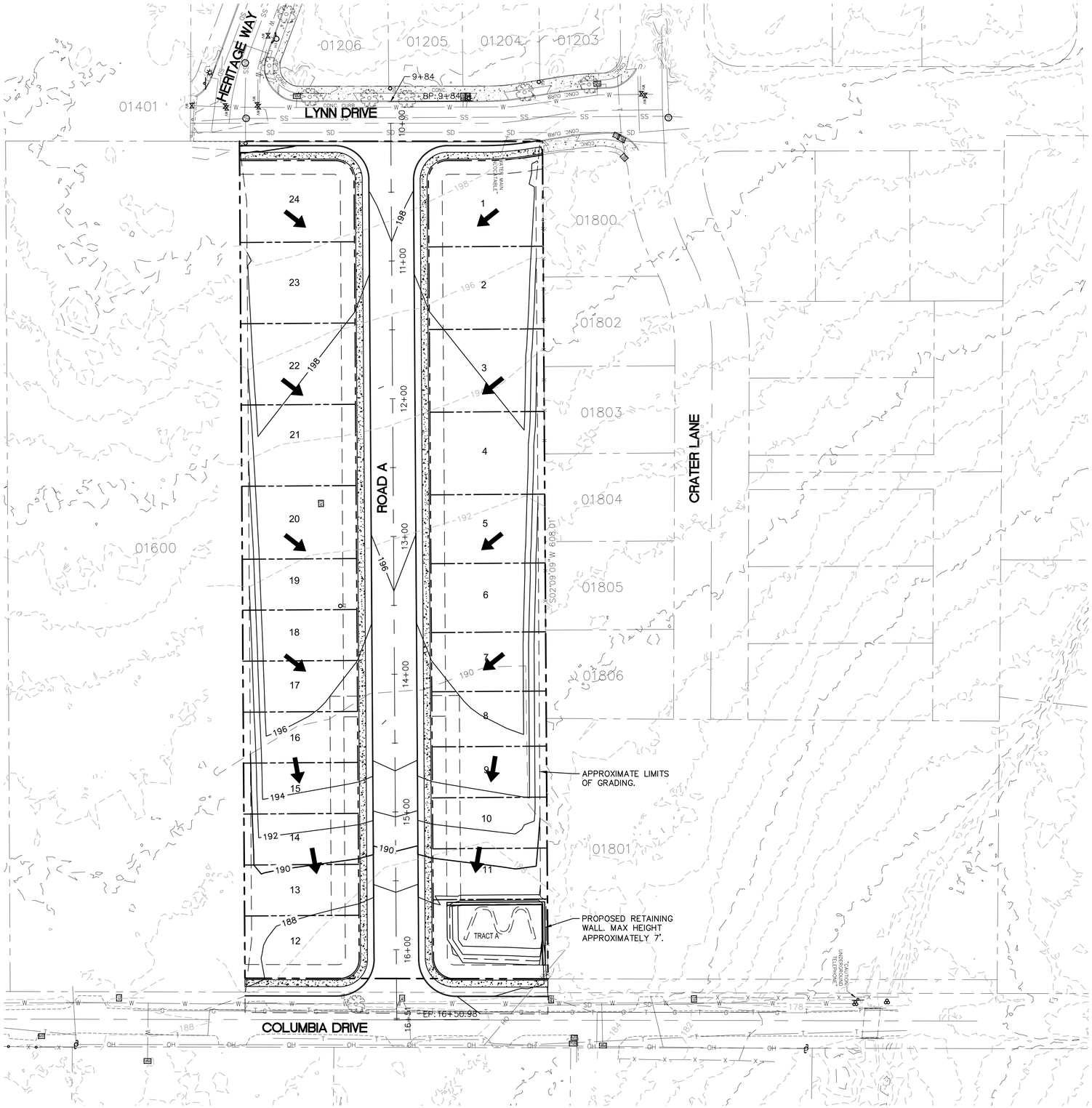

40' 0 20' 40' 80'

SCALE: 1 INCH = 40 FEET

NOTE:

1. CONTOURS ON ADJACENT PROPERTIES OBTAINED FROM AVAILABLE NOAA LIDAR DATA.
2. PROPOSED LOT DRAINAGE TO SLOPE TO DRAIN TO ROAD A. SEE PROPOSED SLOPE ARROWS FOR ADDITIONAL INFORMATION.

WESTLAKE CONSULTANTS INC.
ENGINEERING ◆ SURVEYING ◆ PLANNING
PACIFIC CORPORATE CENTER
15115 S.W. SEQUOIA PARKWAY, SUITE 150
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(503) 684-0652
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COLUMBIA ESTATES

NEWBERG, OR

PRELIMINARY GRADING PLAN

NO.	DATE	REVISIONS	DRAFT BY:	CHECK BY:

SHEET
P500

JOB NO.
2657-001

PERMIT SUBMITTAL 6/30/2016

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COLUMBIA ESTATES

NEWBERG, OR

FUTURE STREETS PLAN

REVISIONS				
NO.	DATE	DESCRIPTION	DRAFT BY:	CHECK BY:

SHEET
P600

JOB NO.
2657-001

PERMIT SUBMITTAL 6/30/2016

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COLUMBIA ESTATES

NEWBERG, OR

SURROUNDING DEVELOPMENT

NO.	DATE	DESCRIPTION	DRAFT BY:	CHECK BY:

REVISIONS

SHEET
P601

JOB NO.
2657-001

PERMIT SUBMITTAL 6/30/2016

Drawing Name: c:\2657-001 161 Evgn\CAD\Dwg\Production\LAND\ISE\265701-P601.dwg Aug 05, 2016 - 1:58pm - jph

Columbia Estates Subdivision

Exhibit D

Stormwater Drainage Report

COLUMBIA ESTATES
PRELIMINARY
STORMWATER NARRATIVE

Newberg, Oregon

For:
Del Boca Vista LLC
P.O. Box 486
Newberg, Oregon 97132

Prepared By:
Westlake Consultants Inc.
15115 SW Sequoia Parkway, Suite 150
Tigard, OR 97224
Phone: (503) 684-0652
Fax: (503) 624-0157

June 15th, 2016
WCI #2657-001

Westlake consultants, inc

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NRCS Soils Report 5
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City of Newberg Private/Public Water Quality & Quantity Treatment Detail No. 453 5
City of Newberg Vegetated Swale Detail No. 460 5
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City of Newberg Oriface Plate and Guide Detail No. 418 5
Geotechnical Report Columbia Drive subdivision by Rapid Soil Solutions LLC 5

Introduction/Purpose:

The proposed project is a 24 lot single family detached residential subdivision. The site layout runs north and south and is located between existing Lynn Drive Columbia Drive.

Stormwater will be collected by catch basins conveyed through a pipe network to a regional water quality and quantity facility. Orifices will be set to release post-developed peak flows to pre-developed rates. Stormwater leaves the site at the southeast property corner and will be piped to an existing roadside ditch to the east of the subject property.

The purpose of this preliminary Stormwater Report is to demonstrate compliance with City of Newberg drainage requirements and design criteria.

Jurisdictional Standards:

The stormwater management facility was designed according to the requirements set forth in "2015 Public Works Design and Construction Standards - City of Newberg, dated August 2015". The on-site stormwater management facility will released peak post-developed flows to pre-developed peak flow rates for the ½ of the 2, 2, 10, and 25 year, 24 hour runoff events. Water quality facilities will be designed to treat the water quality storm of 1.0 inch in 24 hours with an average storm return period of 96 hours.

Stormwater Management Calculations:

Pre-Developed:

Total Site Area = 133,731 sf = 3.07 acres
Removal of On-site area not detained = 1,129 sf = 0.03 acres
Additional Off-site Area = 1520.01 sf = 0.03 acres
→Effective Site Area = 3.07 – 0.03 + 0.03 = 3.07 acres
Impervious Area Total = 0.0 acres, CN = 98
Pervious Area = 3.07 acres, C/D soils → CN = 80

Table -1: Pre-Developed Peak Flow Rates

DESIGN STORM EVENT	DEPTH (IN)	PEAK FLOW RATE (CFS)
½ of the 2 Year	1.25	0.04
2 Year	2.5	0.37
10 Year	3.5	0.83
25 Year	4.0	1.08

Post-Developed:

Total Site Area = 133,731 sf = 3.07 acres
Removal of On-site area not detained = 1,129 sf = 0.03 acres
Additional Off-site Area = 1520.01 sf = 0.03 acres
→Effective Site Area = 3.07 – 0.03 + 0.03 = 3.07 acres
Impervious Area Total = 2.24 acres, CN = 98

- Sidewalk, Curbs, and Street = 26,981 sf = 0.62 acres, CN = 98
- Houses = 24 * 2,877 sf = 69,048 sf = 1.59 acres, CN = 98
- Additional Off-site Area = 1,520 sf = 0.03 acres, CN = 98

Pervious Area Total = 3.07 acres – 2.24 acres = 0.83 acres, CN = 61

Table -2: Post-Developed Peak Flow Rates

DESIGN STORM EVENT	DEPTH (IN)	INFILTRATION LOTS PEAK FLOW RATE (CFS)	REST OF THE DEVELOPMENT PEAK FLOW RATE (CFS)	TOTAL DEVELOPED PEAK FLOW RATE (CFS)
½ of the 2 Year	1.25	0.06	0.55	0.61
2 Year	2.5	0.12	1.18	1.30
10 Year	3.5	0.15	1.68	1.83
25 Year	4.0	0.18	1.97	2.15

Water Quality Calculations:

A vegetated swale will be utilized to meet water quality design criteria. The swale will be located running along the bottom of the detention pond. Design of the vegetated swale is based on the requirements set forth in 2015 Public Works Design and Construction Standards - City of Newberg, dated August 2015, standard detail No. 460. A 2.0 wide swale with 100.0 LF is required to treat the anticipated water quality flow.

Detention Calculations:

A regional infiltration/detention basin as well as three individual lot infiltration planters will be utilized to meet the flow control criteria. Individual planter infiltration footprints were calculated using standard detail No. 451. The infiltration rates were determined using the EPA falling head method. The rate calculated near Lynn Drive was 6 in/hr and for the detention facility the rate was reported as 1.7 in/hr. A factor of safety of 2 was utilized in the HyroCAD model for exfiltration into the subsoils. For the flow control structure the maximum orifice size is 6" based on standard detail No. 417 and No. 418.

Table -3: Infiltration/Detention Facility Peak Flow Release Rates

	INFILTRATION				
DESIGN STORM EVENT	PLANTER (CFS) THREE LOTS	POND (CFS)	PRE-DEVELOPED PEAK FLOW RATE (CFS)	POST-DEVELOPED RELEASED FLOW RATE (CFS)	MEET MAX. RELEASE RATE ?
½ of the 2 Year	0.03	0.04	0.04	0.04	YES!
2 Year	0.03	0.04	0.37	0.37	YES!
10 Year	0.03	0.05	0.83	0.83	YES!
25 Year	0.03	0.05	1.08	1.08	YES!

Computer Modeling:

The analysis of the stormwater conditions was completed using HydroCAD 10. This program uses site conditions, such as soil types, storm characteristics, and impervious areas, to determine runoff rates and volumes for a site for different storm events. A Type-1A storm event was modeled with a ½ of the 2, 2, 10 and 25 year storm events. Rain depths for 24-hour storms are based on *Table 4.2 Rainfall Depths.*

The United States Department of Agriculture Natural Resources Conservation Service (NRCS) websoil survey was utilized to determine the hydrological soil group for the project site. The site falls within hydrological soils group C/D.
http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

Summary:

The proposed water quantity and quality facilities will meet City of Newberg Stormwater Management Manual standards. A vegetated water quality swale will treat the water and an infiltration/detention pond in conjunction with individual lot infiltration planters will detain post-developed peak flow rates to pre-developed peak flow rates for ½ of the 2, 2, 10, and 25 year design storms.

Appendix:

Developed Site Map with Impervious Areas

Vegetated Swale Calculations

HyrdoCAD Report

NRCS Soils Report

City of Newberg LIDA Sizing Form Detail No. 451

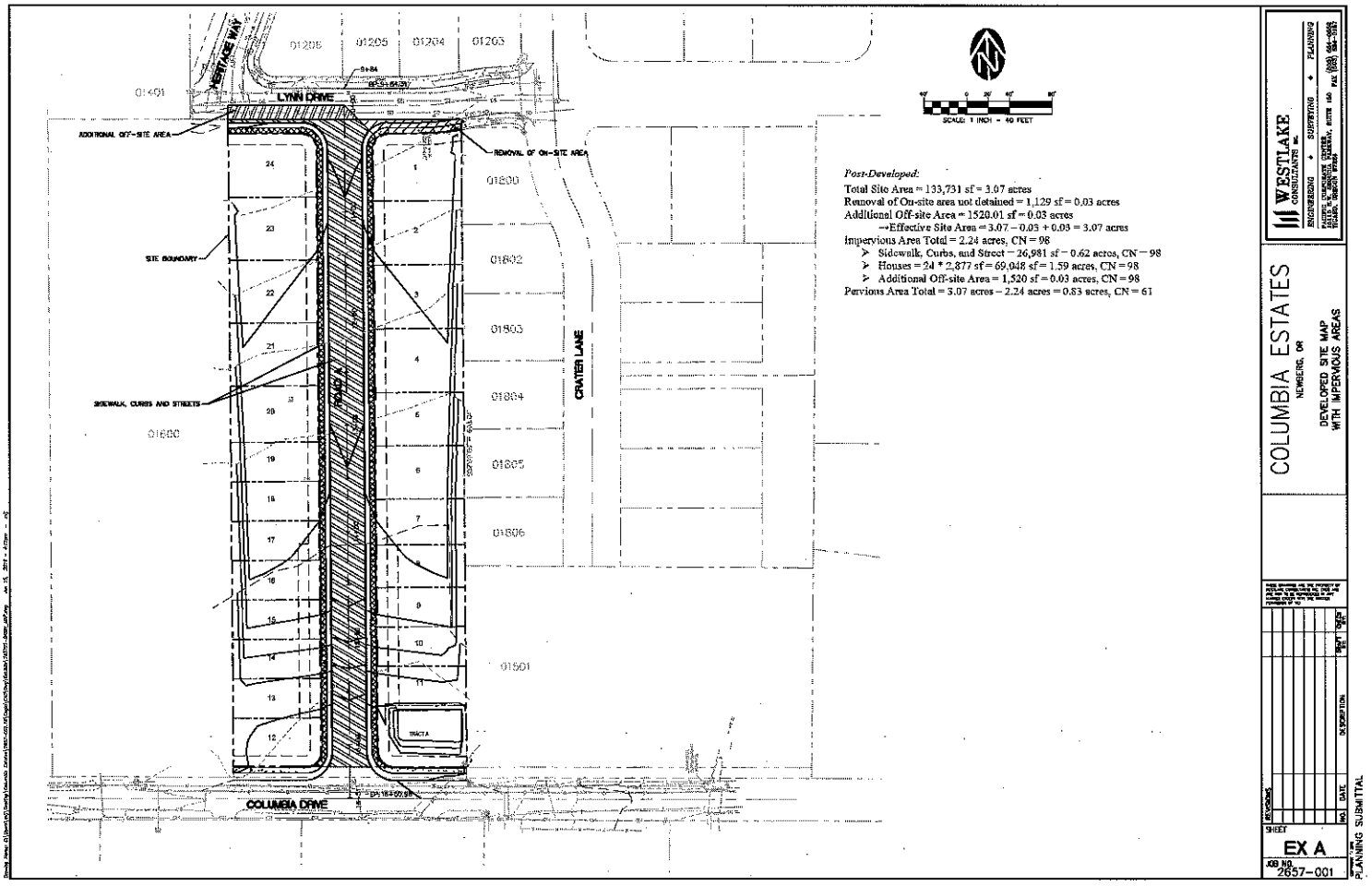
City of Newberg Private/Public Water Quality & Quantity Treatment Detail No. 453

City of Newberg Vegetated Swale Detail No. 460

City of Newberg Outflow Control Structure Detail No. 417

City of Newberg Oriface Plate and Guide Detail No. 418

Geotechnical Report Columbia Drive subdivision by Rapid Soil Solutions LLC


VERTICE WAY
LYNN DRIVE
ADDITIONAL OFF-SITE AREA
REMOVAL OF ON-SITE AREA
SITE BOUNDARY
SIDEWALK, CURBS AND STREETS
CRATER LANE
COLUMBIA DRIVE
TRACT A
01205
01204
01203
01401
01600
01601
01602
01603
01604
01605
01606
SCALE: 1 INCH = 40 FEET
Post-Developed:
Total Site Area = 133,731 sf = 3.07 acres
Removal of On-site area not detained = 1,129 sf = 0.03 acres
Additional Off-site Area = 1520.01 sf = 0.03 acres
→Effective Site Area = 3.07 – 0.03 + 0.03 = 3.07 acres
Impervious Area Total = 2.24 acres, CN = 98
Sidewalk, Curbs, and Street = 26,981 sf = 0.62 acres, CN = 98
Houses = 24 * 2,877 sf = 69,048 sf = 1.59 acres, CN = 98
Additional Off-site Area = 1,520 sf = 0.03 acres, CN = 98
Pervious Area Total = 3.07 acres – 2.24 acres = 0.83 acres, CN = 61
WESTLAKE CONSULTANTS, INC.
COLUMBIA ESTATES
NEWBERG, OR
DEVELOPED SITE MAP WITH IMPERVIOUS AREAS
REVISIONS
NO. DATE DESCRIPTION
SHEET
EX A
JOB NO.
2657-001
PLANNING SUBMITTAL

BIO-FILTRATION SWALE DESIGN - CITY OF NEWBERG

Location: COLUMBIA ESTATES Date: 6/10/2016 Job #: 2657-001

Water Quality Flow:

A = 94,525 sf
I = 1 inches
WQF = 0.09 cfs

Swale Design Data:

Q = 0.09 Design flow rate (c.f.s.)
n = 0.24 manning's n
S = 0.005 longitudinal slope of swale (ft/ft)
b = 2.00 width of bottom (ft.)
Z = 4.00 side slope (ft/ft)

Solve for flow depth by trial and error:

y (ft)	b (ft)	T (ft)
0.2120	1.92	3.62
0.2100	1.97	3.65
0.2000	2.25	3.85
0.2050	2.11	3.75
0.2090	**2.00**	3.67

Determine velocity due to design storm:

y = 0.209 found from trial and error
A = 0.59 sq. ft.

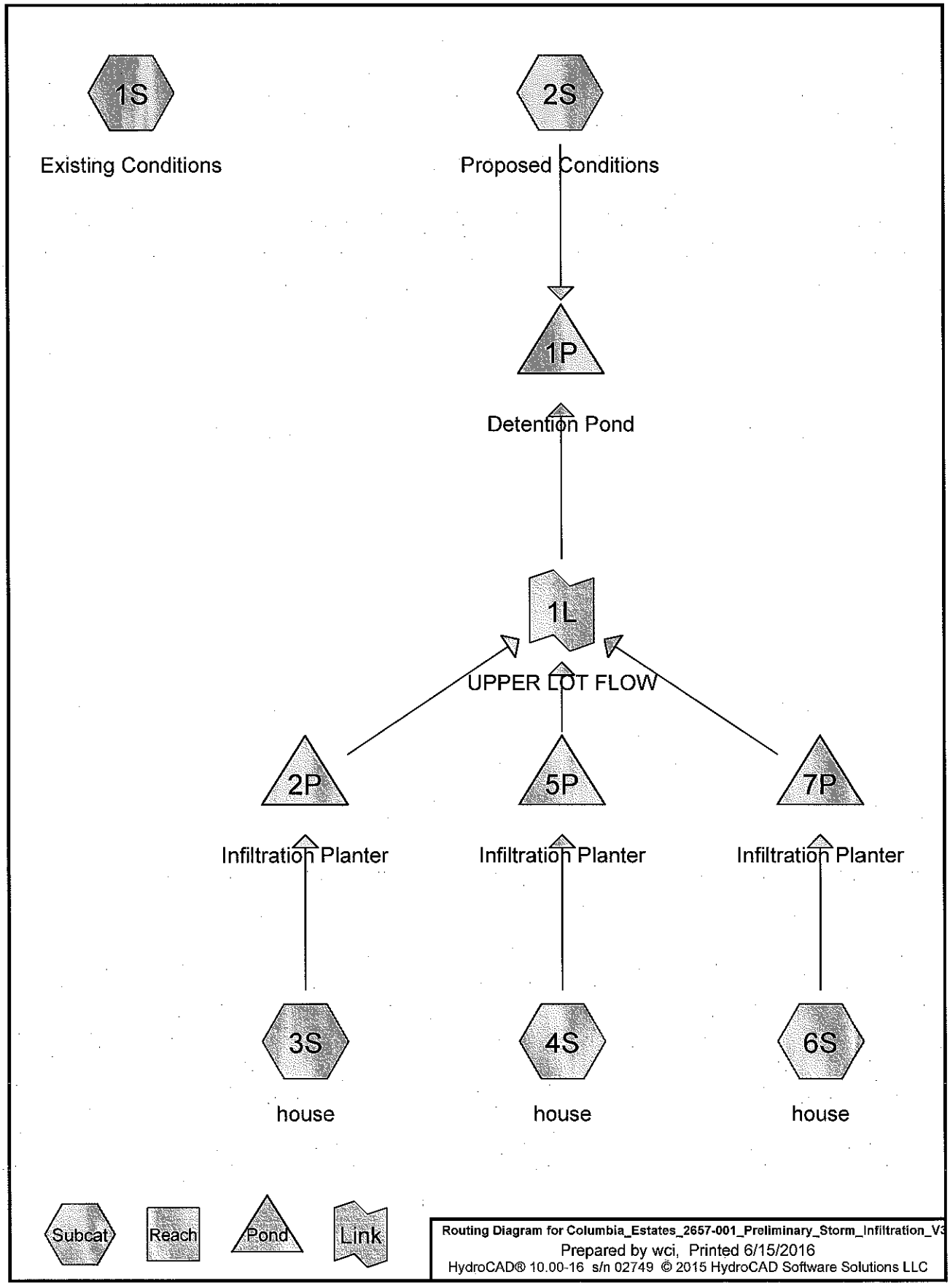
V=Q/A

V = 0.15 ft/s < 0.9 ft/s OK

Determine required length:

L=(V)(t)(60)

t = 9.00 min (minimum required)
V = 0.15 ft/s
L= 83.06 Use Minimum Swale Length


1S
Existing Conditions
2S
Proposed Conditions
1P
Detention Pond
1L
UPPER LOT FLOW
2P
Infiltration Planter
5P
Infiltration Planter
7P
Infiltration Planter
3S
house
4S
house
6S
house
Subcat
Reach
Pond
Link
Routing Diagram for Columbia_Estates_2657-001_Preliminary_Storm_Infiltration_V3
Prepared by wci, Printed 6/15/2016
HydroCAD® 10.00-16 s/n 02749 © 2015 HydroCAD Software Solutions LLC

Time span=0.00-100.00 hrs, dt=0.01 hrs, 10001 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Existing Conditions Runoff Area=3.070 ac 0.00% Impervious Runoff Depth=0.17"
Flow Length=650' Slope=0.0200 '/' Tc=25.4 min CN=80/0 Runoff=0.04 cfs 0.044 af

Subcatchment2S: Proposed Conditions Runoff Area=2.870 ac 71.08% Impervious Runoff Depth=0.74"
Tc=5.0 min CN=61/98 Runoff=0.55 cfs 0.176 af

Subcatchment3S: house Runoff Area=2,877 sf 100.00% Impervious Runoff Depth=1.03"
Tc=5.0 min CN=0/98 Runoff=0.02 cfs 0.006 af

Subcatchment4S: house Runoff Area=2,877 sf 100.00% Impervious Runoff Depth=1.03"
Tc=5.0 min CN=0/98 Runoff=0.02 cfs 0.006 af

Subcatchment6S: house Runoff Area=2,877 sf 100.00% Impervious Runoff Depth=1.03"
Tc=5.0 min CN=0/98 Runoff=0.02 cfs 0.006 af

Pond 1P: Detention Pond Peak Elev=182.59' Storage=2,617 cf Inflow=0.57 cfs 0.178 af
Discarded=0.04 cfs 0.089 af Primary=0.04 cfs 0.088 af Outflow=0.08 cfs 0.178 af

Pond 2P: Infiltration Planter Peak Elev=198.54' Storage=5 cf Inflow=0.02 cfs 0.006 af
Discarded=0.01 cfs 0.005 af Primary=0.01 cfs 0.001 af Outflow=0.02 cfs 0.006 af

Pond 5P: Infiltration Planter Peak Elev=198.54' Storage=5 cf Inflow=0.02 cfs 0.006 af
Discarded=0.01 cfs 0.005 af Primary=0.01 cfs 0.001 af Outflow=0.02 cfs 0.006 af

Pond 7P: Infiltration Planter Peak Elev=198.54' Storage=5 cf Inflow=0.02 cfs 0.006 af
Discarded=0.01 cfs 0.005 af Primary=0.01 cfs 0.001 af Outflow=0.02 cfs 0.006 af

Link 1L: UPPER LOT FLOW Inflow=0.02 cfs 0.002 af
Primary=0.02 cfs 0.002 af

Total Runoff Area = 6.138 ac Runoff Volume = 0.237 af Average Runoff Depth = 0.46"
63.54% Pervious = 3.900 ac 36.46% Impervious = 2.238 ac

Summary for Subcatchment 1S: Existing Conditions

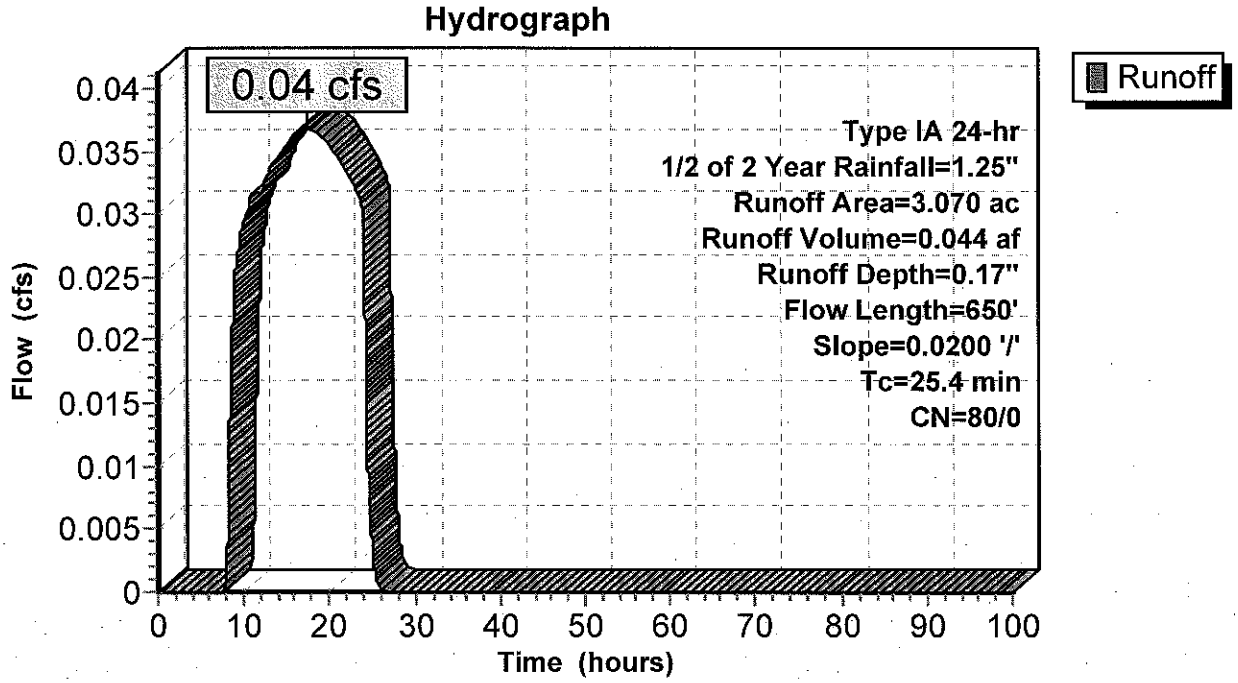
Runoff = 0.04 cfs @ 17.34 hrs, Volume= 0.044 af, Depth= 0.17"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 1/2 of 2 Year Rainfall=1.25"

Area (ac)	CN	Description
3.070	80	Pasture/grassland/range, Good, HSG D
3.070	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	100	0.0200	0.10		**Sheet Flow, Sheet Flow** Grass: Dense n= 0.240 P2= 2.50"
9.3	550	0.0200	0.99		**Shallow Concentrated Flow, Shallow Concentrated Flow** Short Grass Pasture Kv= 7.0 fps
25.4	650	Total			

Subcatchment 1S: Existing Conditions



Summary for Subcatchment 2S: Proposed Conditions

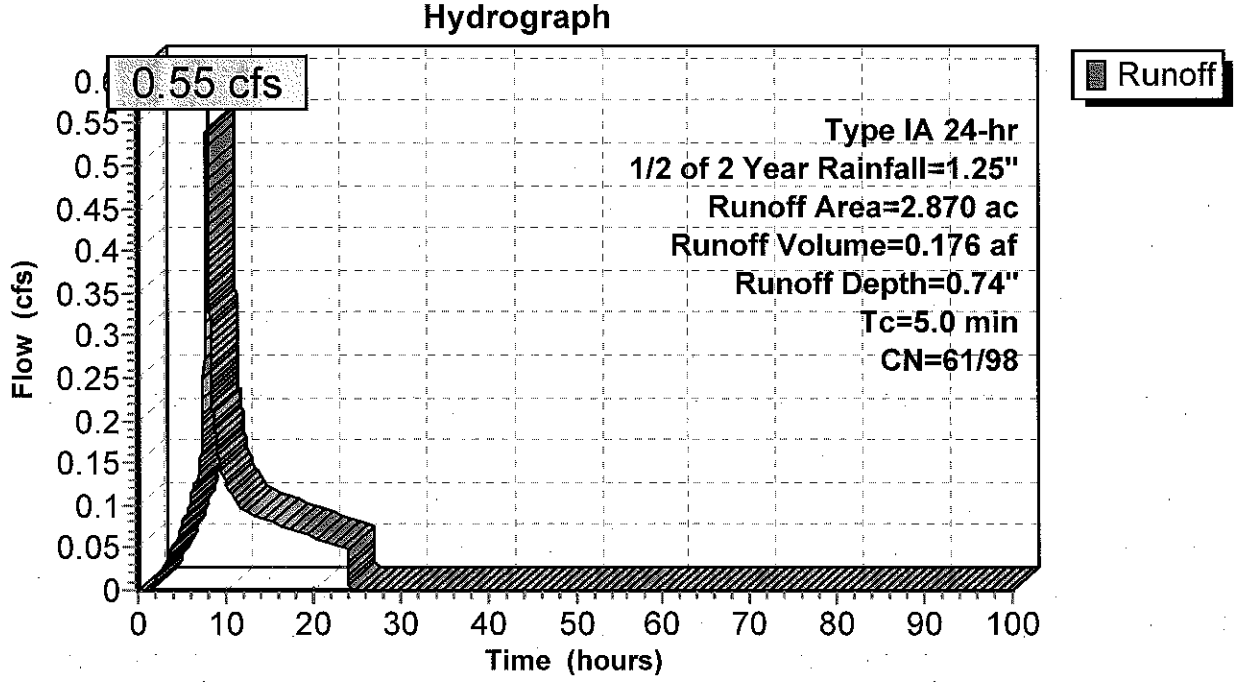
Runoff = 0.55 cfs @ 7.89 hrs, Volume= 0.176 af, Depth= 0.74"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 1/2 of 2 Year Rainfall=1.25"

	Area (ac)	CN	Description
*	2.040	98	Impervious Area
	0.830	61	>75% Grass cover, Good, HSG B
	2.870	87	Weighted Average
	0.830	61	28.92% Pervious Area
	2.040	98	71.08% Impervious Area

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

Subcatchment 2S: Proposed Conditions



Summary for Subcatchment 3S: house

Runoff = 0.02 cfs @ 7.89 hrs, Volume= 0.006 af, Depth= 1.03"

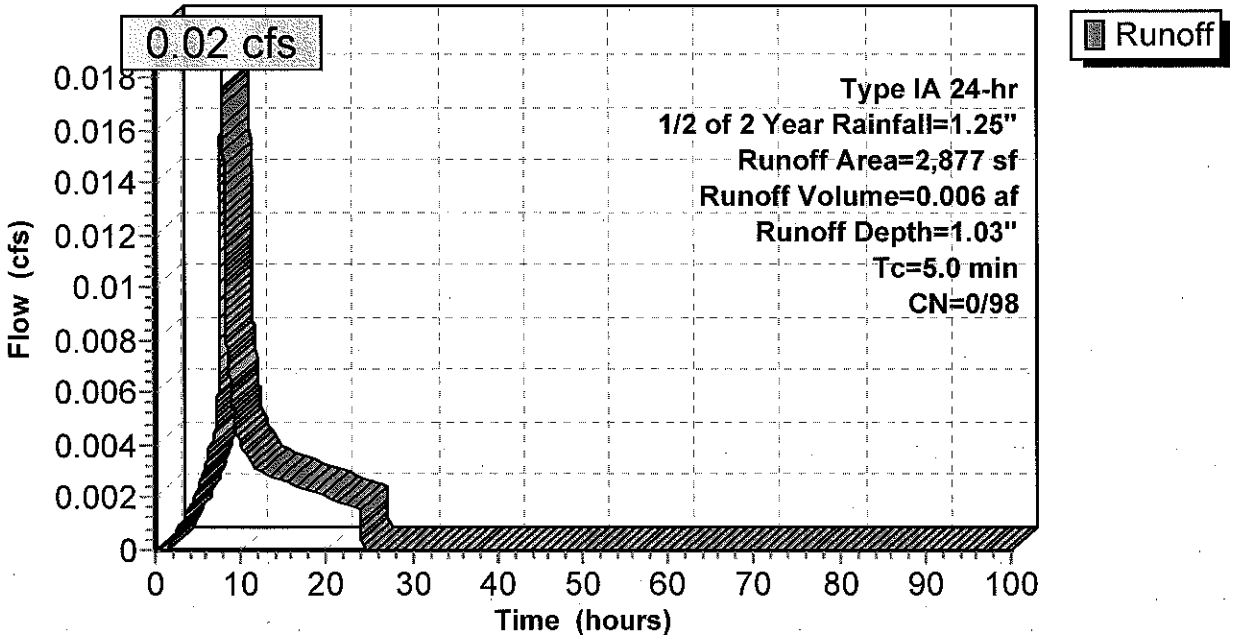
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 1/2 of 2 Year Rainfall=1.25"

Area (sf)	CN	Description
2,877	98	Water Surface, HSG C
2,877	98	100.00% Impervious Area

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

Subcatchment 3S: house

Hydrograph



Summary for Subcatchment 4S: house

Runoff = 0.02 cfs @ 7.89 hrs, Volume= 0.006 af, Depth= 1.03"

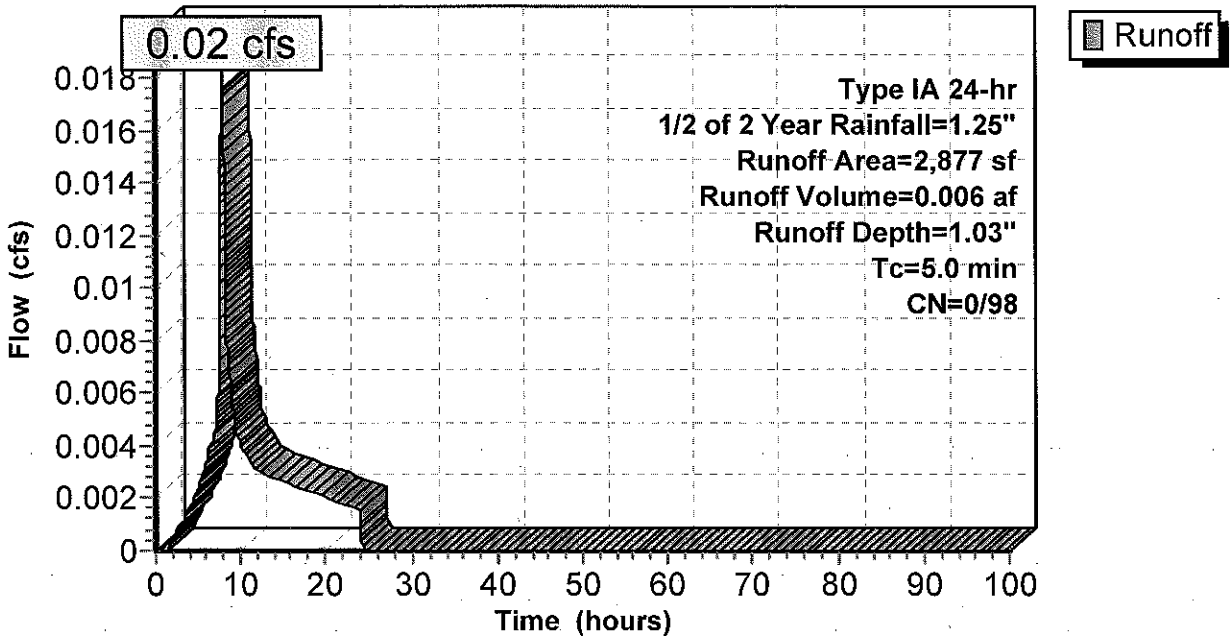
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 1/2 of 2 Year Rainfall=1.25"

Area (sf)	CN	Description
2,877	98	Water Surface, HSG C
2,877	98	100.00% Impervious Area

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

Subcatchment 4S: house

Hydrograph



Summary for Subcatchment 6S: house

Runoff = 0.02 cfs @ 7.89 hrs, Volume= 0.006 af, Depth= 1.03"

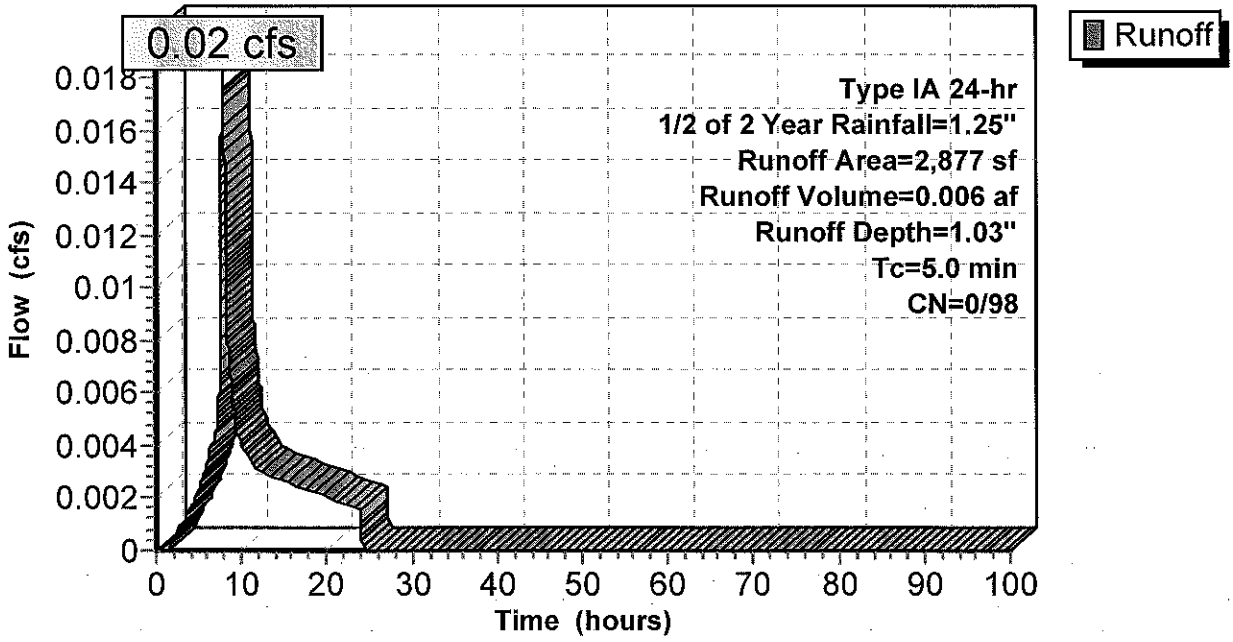
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 1/2 of 2 Year Rainfall=1.25"

Area (sf)	CN	Description
2,877	98	Water Surface, HSG C
2,877	98	100.00% Impervious Area

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

Subcatchment 6S: house

Hydrograph



Summary for Pond 1P: Detention Pond

Inflow Area = 3.068 ac, 72.95% Impervious, Inflow Depth = 0.69" for 1/2 of 2 Year event
Inflow = 0.57 cfs @ 7.91 hrs, Volume= 0.178 af
Outflow = 0.08 cfs @ 14.35 hrs, Volume= 0.178 af, Atten= 85%, Lag= 386.7 min
Discarded = 0.04 cfs @ 14.35 hrs, Volume= 0.089 af
Primary = 0.04 cfs @ 14.35 hrs, Volume= 0.088 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 182.59' @ 14.35 hrs Surf.Area= 1,868 sf Storage= 2,617 cf

Plug-Flow detention time= 389.8 min calculated for 0.177 af (100% of inflow)
Center-of-Mass det. time= 389.9 min (1,089.7 - 699.9)

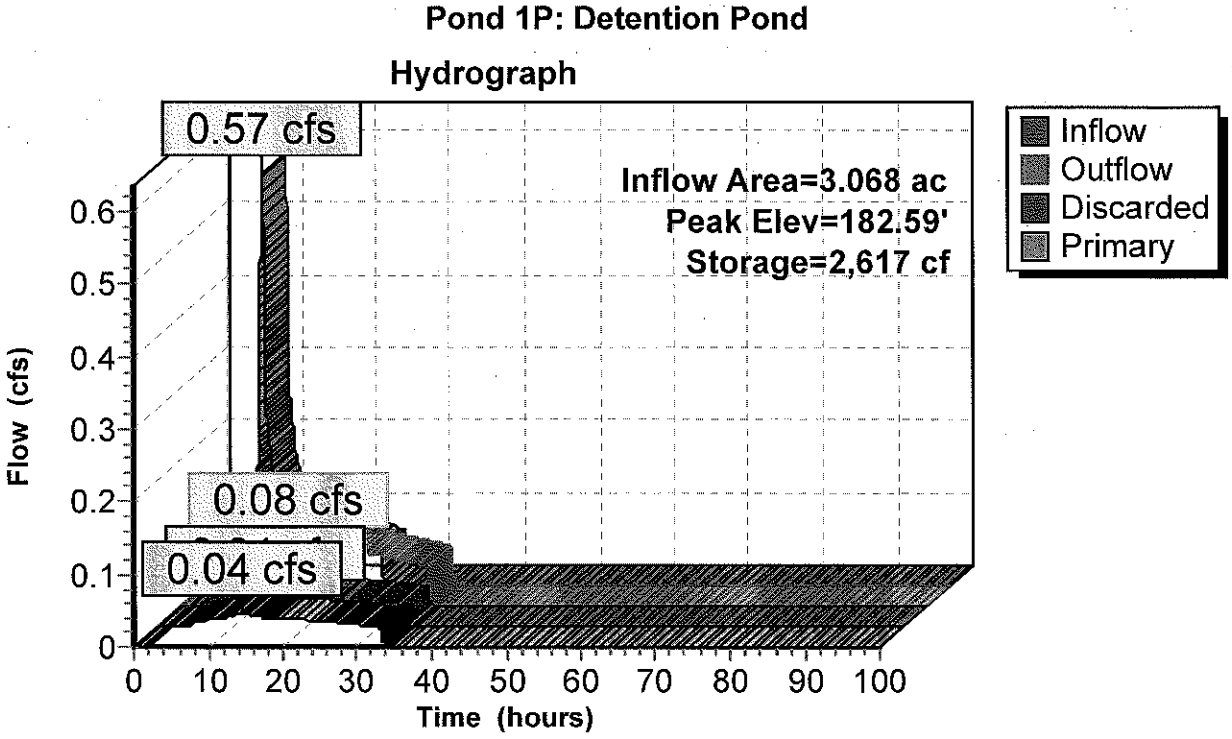
Volume	Invert	Avail.Storage	Storage Description
#1	181.00'	7,847 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
181.00	1,391	0	0
182.00	1,723	1,557	1,557
183.00	1,969	1,846	3,403
184.00	2,220	2,095	5,498
185.00	2,478	2,349	7,847

Device	Routing	Invert	Outlet Devices
#1	Discarded	181.00'	**0.900 in/hr Exfiltration over Horizontal area**
#2	Primary	179.53'	**0.9" Vert. Orifice/Grate** C= 0.620
#3	Primary	182.54'	**3.4" Vert. Orifice/Grate** C= 0.620
#4	Primary	183.73'	**4.5" Vert. Orifice/Grate** C= 0.620
#5	Primary	184.38'	**3.0" Vert. Orifice/Grate** C= 0.620

Discarded OutFlow Max=0.04 cfs @ 14.35 hrs HW=182.59' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.04 cfs @ 14.35 hrs HW=182.59' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 8.65 fps)
├**3=Orifice/Grate** (Orifice Controls 0.01 cfs @ 0.79 fps)
├**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Orifice/Grate** (Controls 0.00 cfs)


Pond 1P: Detention Pond
Hydrograph
0.57 cfs
0.08 cfs
0.04 cfs
Inflow Area=3.068 ac
Peak Elev=182.59'
Storage=2,617 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0
0.1
0.2
0.3
0.4
0.5
0.6
0
10
20
30
40
50
60
70
80
90
100
Time (hours)

Summary for Pond 2P: Infiltration Planter

Inflow Area = 0.066 ac,100.00% Impervious, Inflow Depth = 1.03" for 1/2 of 2 Year event
Inflow = 0.02 cfs @ 7.89 hrs, Volume= 0.006 af
Outflow = 0.02 cfs @ 8.00 hrs, Volume= 0.006 af, Atten= 4%, Lag= 6.6 min
Discarded = 0.01 cfs @ 7.58 hrs, Volume= 0.005 af
Primary = 0.01 cfs @ 8.00 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 198.54' @ 8.00 hrs Surf.Area= 130 sf Storage= 5 cf

Plug-Flow detention time= 2.7 min calculated for 0.006 af (100% of inflow)
Center-of-Mass det. time= 2.7 min (703.5 - 700.8)

Volume	Invert	Avail.Storage	Storage Description
#1	198.50'	130 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
198.50	130	0	0
199.50	130	130	130

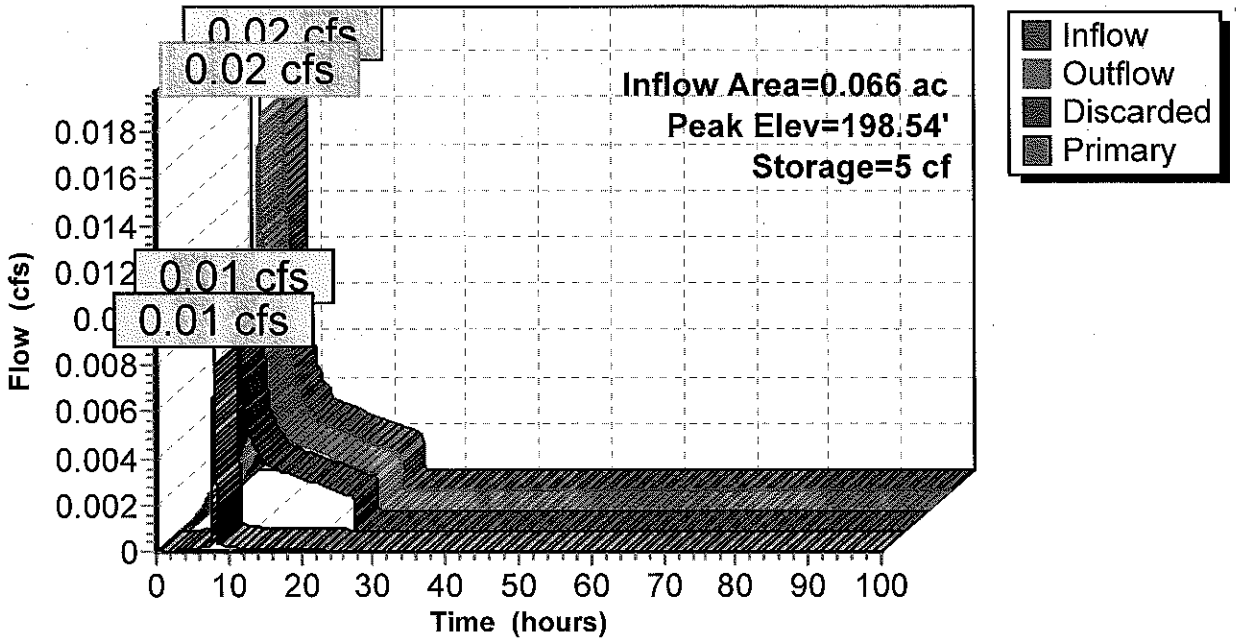
Device	Routing	Invert	Outlet Devices
#1	Discarded	198.50'	**3.000 in/hr Exfiltration over Horizontal area**
#2	Primary	198.50'	**12.0" Vert. Orifice/Grate** C= 0.620

Discarded OutFlow Max=0.01 cfs @ 7.58 hrs HW=198.51' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.01 cfs @ 8.00 hrs HW=198.54' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.01 cfs @ 0.72 fps)

Pond 2P: Infiltration Planter

Hydrograph



Summary for Pond 5P: Infiltration Planter

Inflow Area = 0.066 ac,100.00% Impervious, Inflow Depth = 1.03" for 1/2 of 2 Year event
Inflow = 0.02 cfs @ 7.89 hrs, Volume= 0.006 af
Outflow = 0.02 cfs @ 8.00 hrs, Volume= 0.006 af, Atten= 4%, Lag= 6.6 min
Discarded = 0.01 cfs @ 7.58 hrs, Volume= 0.005 af
Primary = 0.01 cfs @ 8.00 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 198.54' @ 8.00 hrs Surf.Area= 130 sf Storage= 5 cf

Plug-Flow detention time= 2.7 min calculated for 0.006 af (100% of inflow)
Center-of-Mass det. time= 2.7 min (703.5 - 700.8)

Volume	Invert	Avail.Storage	Storage Description
#1	198.50'	130 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
198.50	130	0	0
199.50	130	130	130

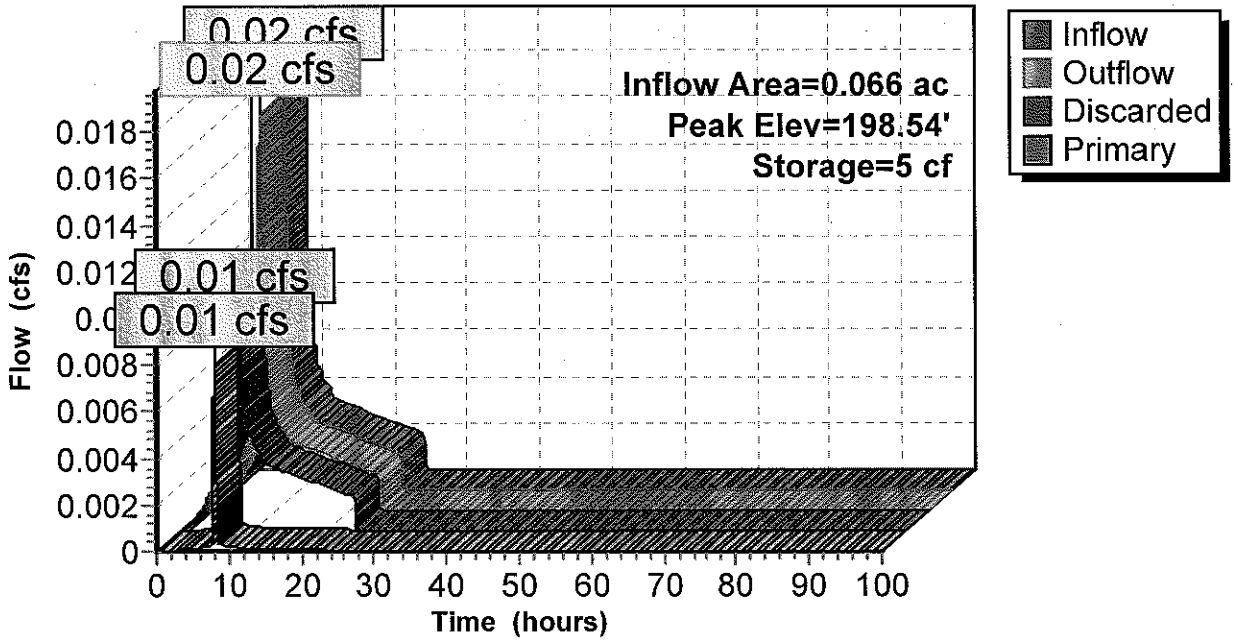
Device	Routing	Invert	Outlet Devices
#1	Discarded	198.50'	**3.000 in/hr Exfiltration over Horizontal area**
#2	Primary	198.50'	**12.0" Vert. Orifice/Grate** C= 0.620

Discarded OutFlow Max=0.01 cfs @ 7.58 hrs HW=198.51' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.01 cfs @ 8.00 hrs HW=198.54' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.01 cfs @ 0.72 fps)

Pond 5P: Infiltration Planter

Hydrograph



Summary for Pond 7P: Infiltration Planter

Inflow Area = 0.066 ac,100.00% Impervious, Inflow Depth = 1.03" for 1/2 of 2 Year event
Inflow = 0.02 cfs @ 7.89 hrs, Volume= 0.006 af
Outflow = 0.02 cfs @ 8.00 hrs, Volume= 0.006 af, Atten= 4%, Lag= 6.6 min
Discarded = 0.01 cfs @ 7.58 hrs, Volume= 0.005 af
Primary = 0.01 cfs @ 8.00 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 198.54' @ 8.00 hrs Surf.Area= 130 sf Storage= 5 cf

Plug-Flow detention time= 2.7 min calculated for 0.006 af (100% of inflow)
Center-of-Mass det. time= 2.7 min (703.5 - 700.8)

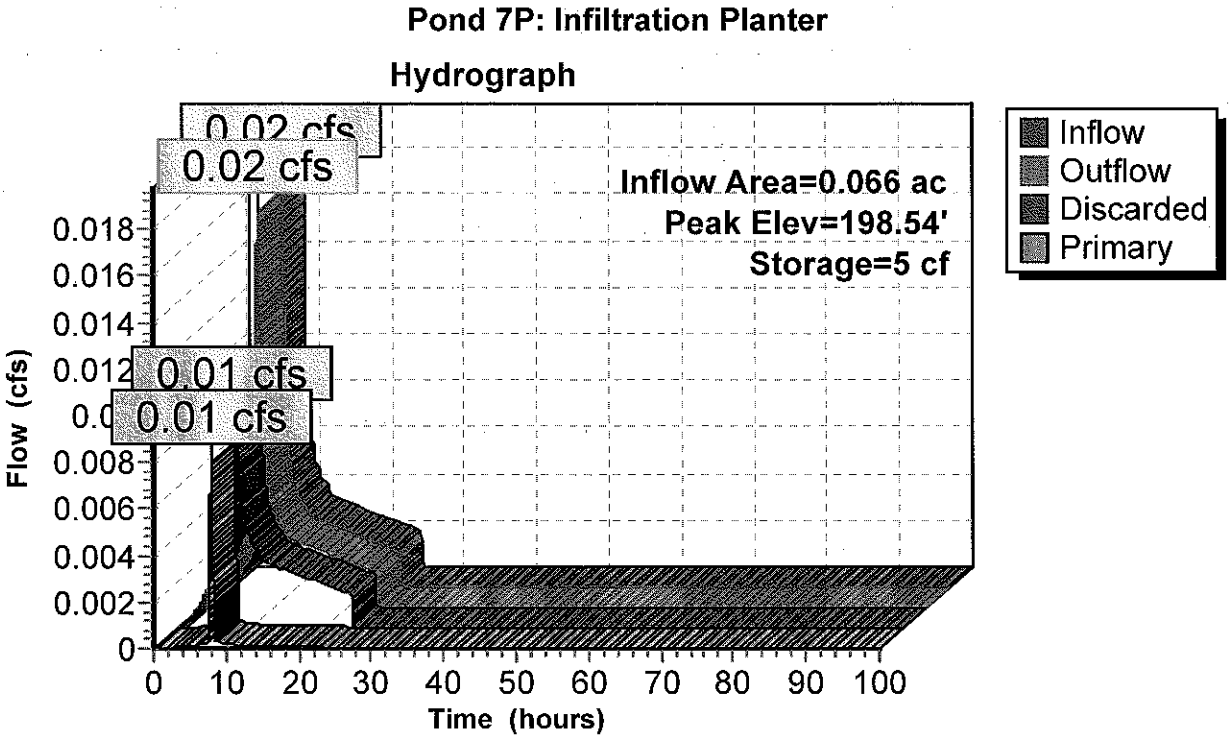
Volume	Invert	Avail.Storage	Storage Description
#1	198.50'	130 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
198.50	130	0	0
199.50	130	130	130

Device	Routing	Invert	Outlet Devices
#1	Discarded	198.50'	**3.000 in/hr Exfiltration over Horizontal area**
#2	Primary	198.50'	**12.0" Vert. Orifice/Grate** C= 0.620

Discarded OutFlow Max=0.01 cfs @ 7.58 hrs HW=198.51' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.01 cfs @ 8.00 hrs HW=198.54' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.01 cfs @ 0.72 fps)


Pond 7P: Infiltration Planter
Hydrograph
0.02 cfs
0.01 cfs
Inflow Area=0.066 ac
Peak Elev=198.54'
Storage=5 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.018
0.016
0.014
0.012
0.008
0.006
0.004
0.002
0
0 10 20 30 40 50 60 70 80 90 100
Time (hours)

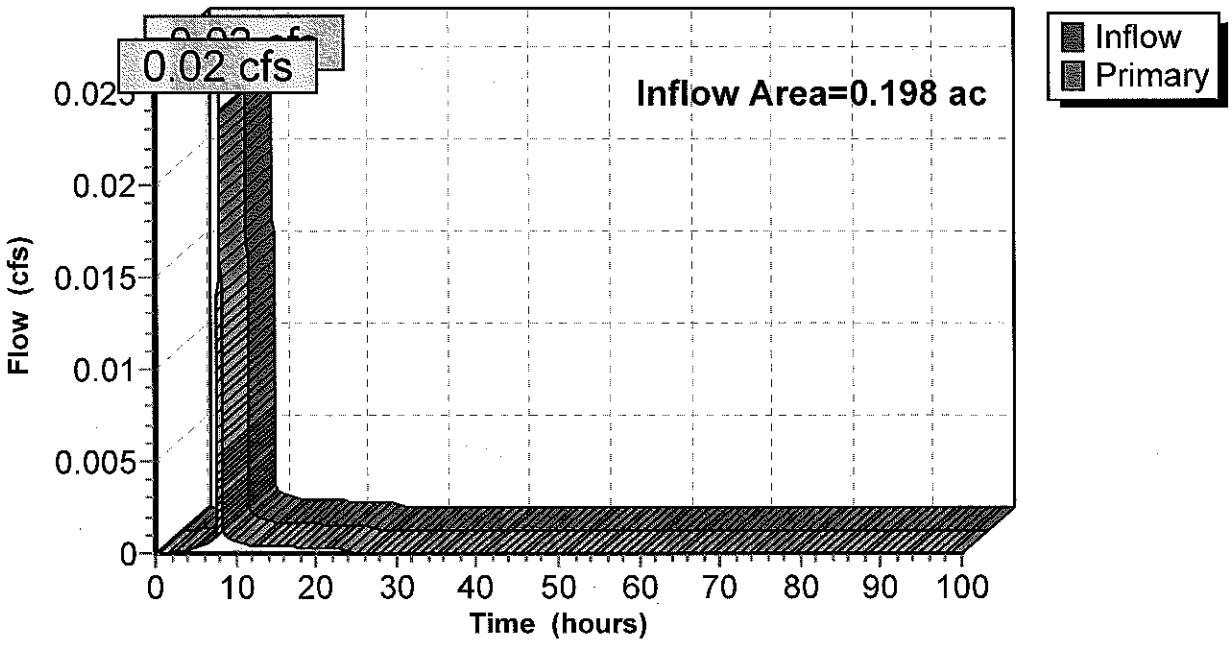
Summary for Link 1L: UPPER LOT FLOW

Inflow Area = 0.198 ac,100.00% Impervious, Inflow Depth = 0.10" for 1/2 of 2 Year event
Inflow = 0.02 cfs @ 8.00 hrs, Volume= 0.002 af
Primary = 0.02 cfs @ 8.00 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs

Link 1L: UPPER LOT FLOW

Hydrograph



Time span=0.00-100.00 hrs, dt=0.01 hrs, 10001 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Existing Conditions Runoff Area=3.070 ac 0.00% Impervious Runoff Depth=0.89"
Flow Length=650' Slope=0.0200 '/' Tc=25.4 min CN=80/0 Runoff=0.37 cfs 0.227 af

Subcatchment2S: Proposed Conditions Runoff Area=2.870 ac 71.08% Impervious Runoff Depth=1.67"
Tc=5.0 min CN=61/98 Runoff=1.18 cfs 0.400 af

Subcatchment3S: house Runoff Area=2,877 sf 100.00% Impervious Runoff Depth=2.27"
Tc=5.0 min CN=0/98 Runoff=0.04 cfs 0.012 af

Subcatchment4S: house Runoff Area=2,877 sf 100.00% Impervious Runoff Depth=2.27"
Tc=5.0 min CN=0/98 Runoff=0.04 cfs 0.012 af

Subcatchment6S: house Runoff Area=2,877 sf 100.00% Impervious Runoff Depth=2.27"
Tc=5.0 min CN=0/98 Runoff=0.04 cfs 0.012 af

Pond 1P: Detention Pond Peak Elev=183.73' Storage=4,899 cf Inflow=1.26 cfs 0.407 af
Discarded=0.04 cfs 0.105 af Primary=0.37 cfs 0.302 af Outflow=0.41 cfs 0.407 af

Pond 2P: Infiltration Planter Peak Elev=198.58' Storage=10 cf Inflow=0.04 cfs 0.012 af
Discarded=0.01 cfs 0.010 af Primary=0.03 cfs 0.002 af Outflow=0.04 cfs 0.012 af

Pond 5P: Infiltration Planter Peak Elev=198.58' Storage=10 cf Inflow=0.04 cfs 0.012 af
Discarded=0.01 cfs 0.010 af Primary=0.03 cfs 0.002 af Outflow=0.04 cfs 0.012 af

Pond 7P: Infiltration Planter Peak Elev=198.58' Storage=10 cf Inflow=0.04 cfs 0.012 af
Discarded=0.01 cfs 0.010 af Primary=0.03 cfs 0.002 af Outflow=0.04 cfs 0.012 af

Link 1L: UPPER LOT FLOW Inflow=0.09 cfs 0.007 af
Primary=0.09 cfs 0.007 af

Total Runoff Area = 6.138 ac Runoff Volume = 0.664 af Average Runoff Depth = 1.30"
63.54% Pervious = 3.900 ac 36.46% Impervious = 2.238 ac

Summary for Subcatchment 1S: Existing Conditions

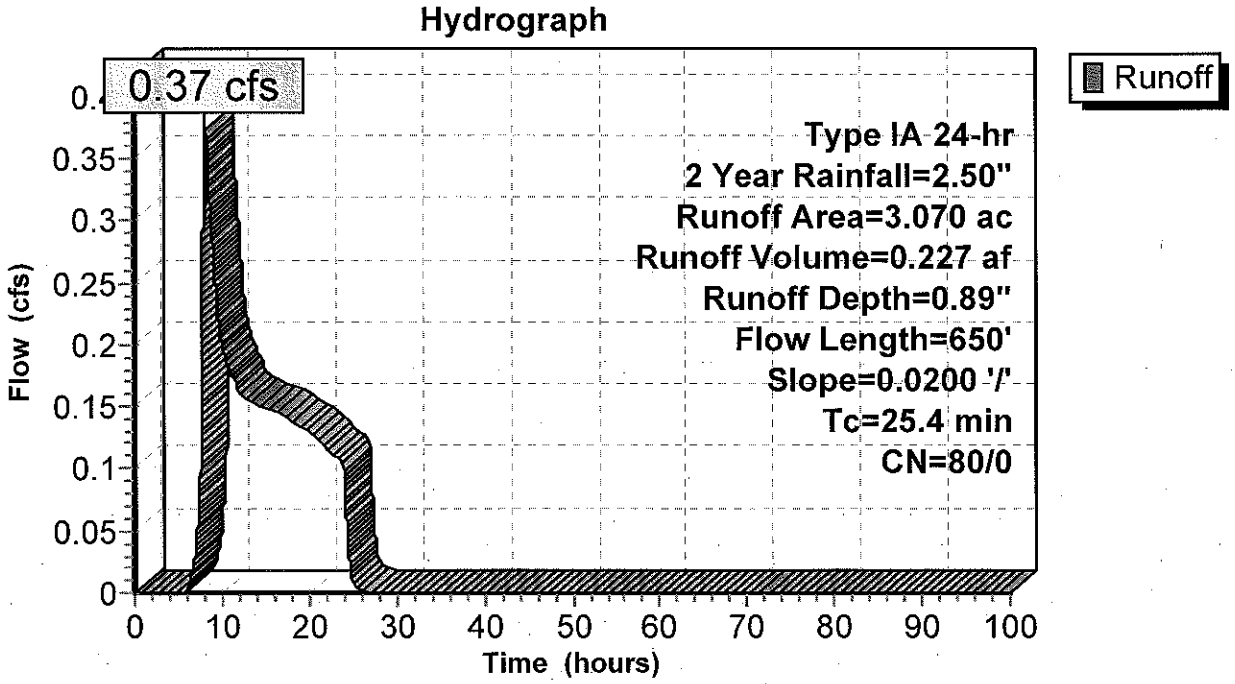
Runoff = 0.37 cfs @ 8.07 hrs, Volume= 0.227 af, Depth= 0.89"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2 Year Rainfall=2.50"

Area (ac)	CN	Description
3.070	80	Pasture/grassland/range, Good, HSG D
3.070	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	100	0.0200	0.10		**Sheet Flow, Sheet Flow** Grass: Dense n= 0.240 P2= 2.50"
9.3	550	0.0200	0.99		**Shallow Concentrated Flow, Shallow Concentrated Flow** Short Grass Pasture Kv= 7.0 fps
25.4	650	Total			

Subcatchment 1S: Existing Conditions



Summary for Subcatchment 2S: Proposed Conditions

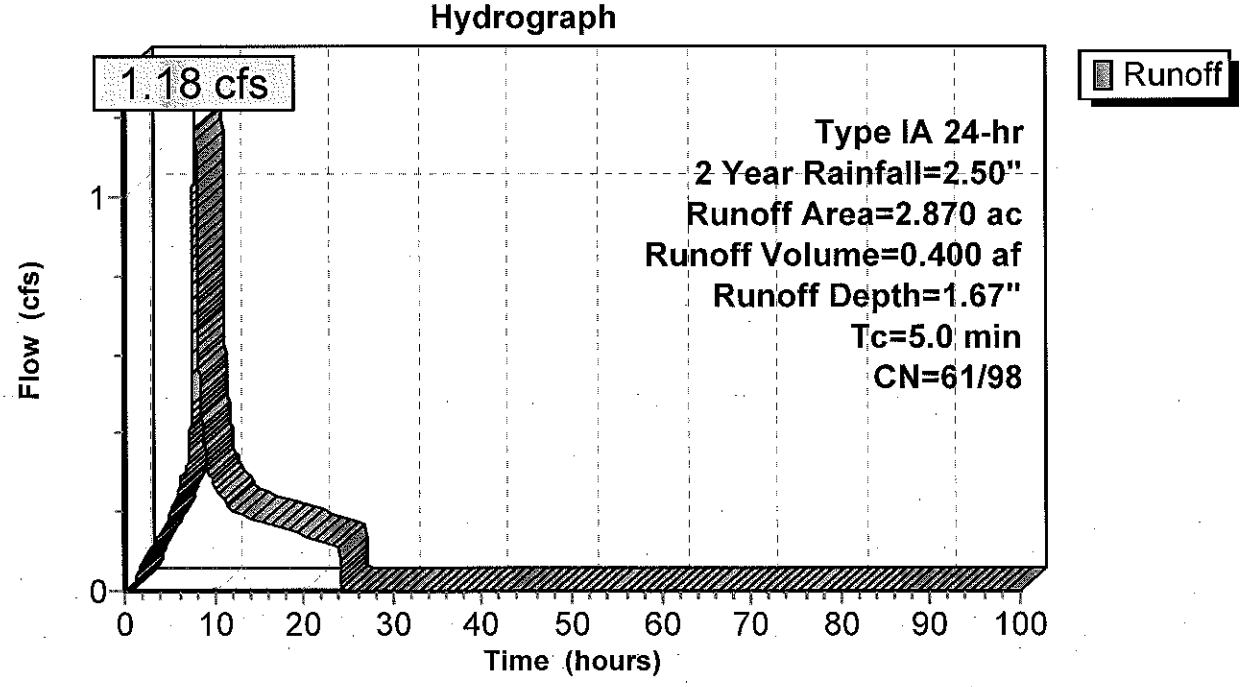
Runoff = 1.18 cfs @ 7.88 hrs, Volume= 0.400 af, Depth= 1.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2 Year Rainfall=2.50"

	Area (ac)	CN	Description
*	2.040	98	Impervious Area
	0.830	61	>75% Grass cover, Good, HSG B
	2.870	87	Weighted Average
	0.830	61	28.92% Pervious Area
	2.040	98	71.08% Impervious Area

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

Subcatchment 2S: Proposed Conditions



Summary for Subcatchment 3S: house

Runoff = 0.04 cfs @ 7.88 hrs, Volume= 0.012 af, Depth= 2.27"

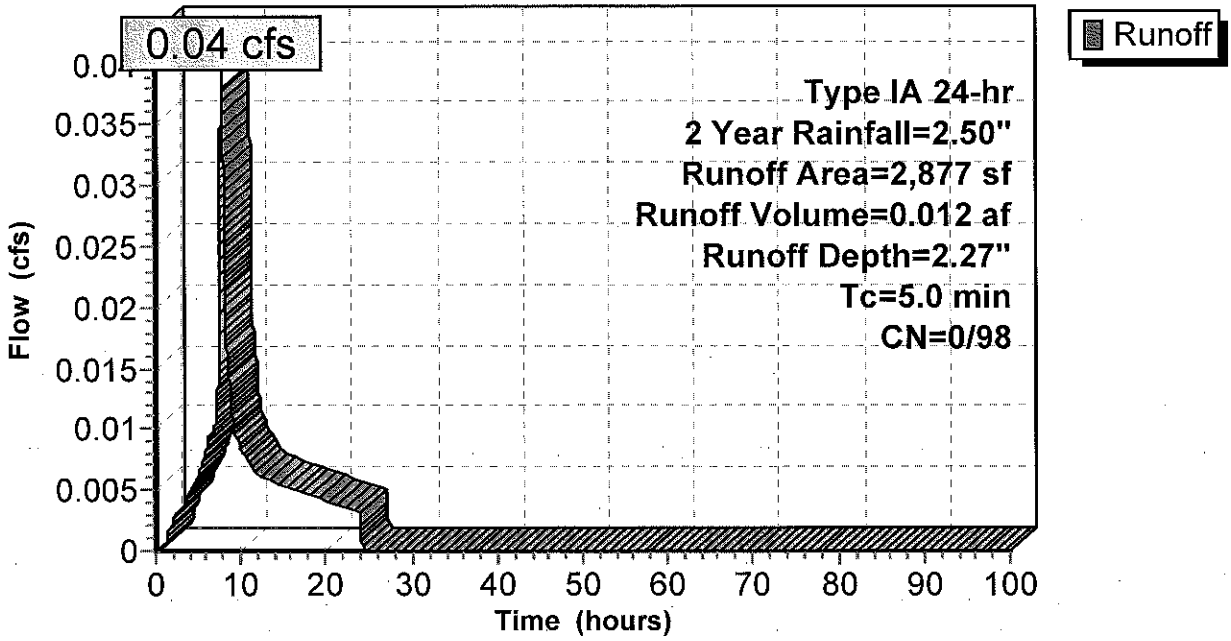
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2 Year Rainfall=2.50"

Area (sf)	CN	Description
2,877	98	Water Surface, HSG C
2,877	98	100.00% Impervious Area

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

Subcatchment 3S: house

Hydrograph



Summary for Subcatchment 4S: house

Runoff = 0.04 cfs @ 7.88 hrs, Volume= 0.012 af, Depth= 2.27"

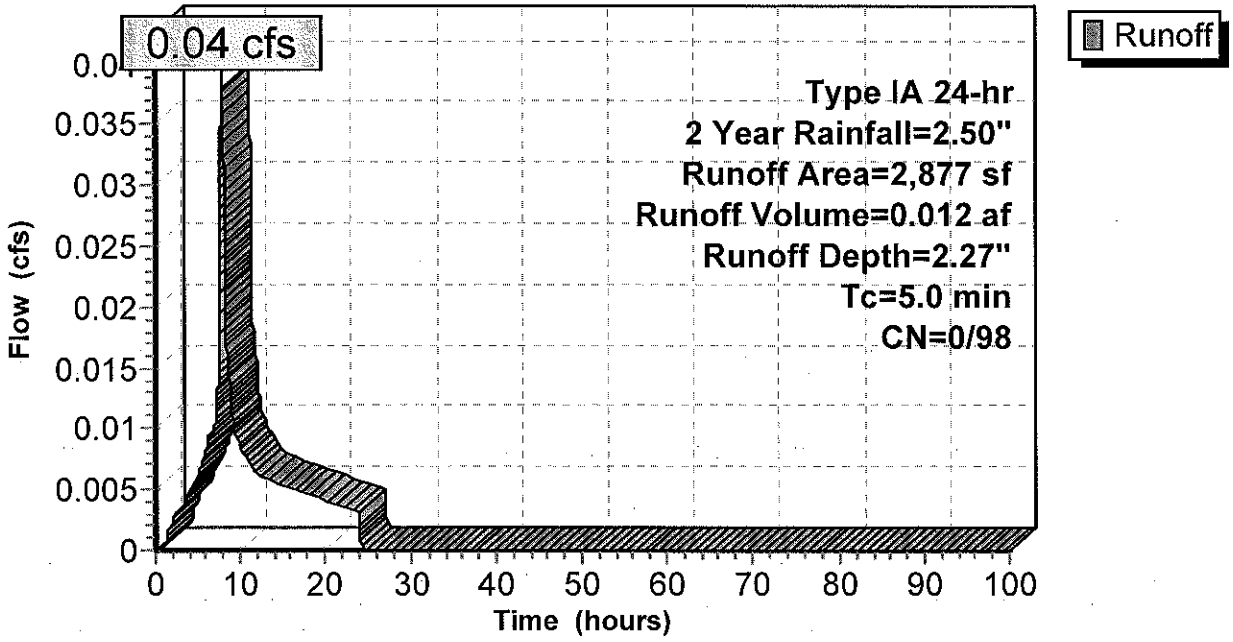
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2 Year Rainfall=2.50"

Area (sf)	CN	Description
2,877	98	Water Surface, HSG C
2,877	98	100.00% Impervious Area

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

Subcatchment 4S: house

Hydrograph



Summary for Subcatchment 6S: house

Runoff = 0.04 cfs @ 7.88 hrs, Volume= 0.012 af, Depth= 2.27"

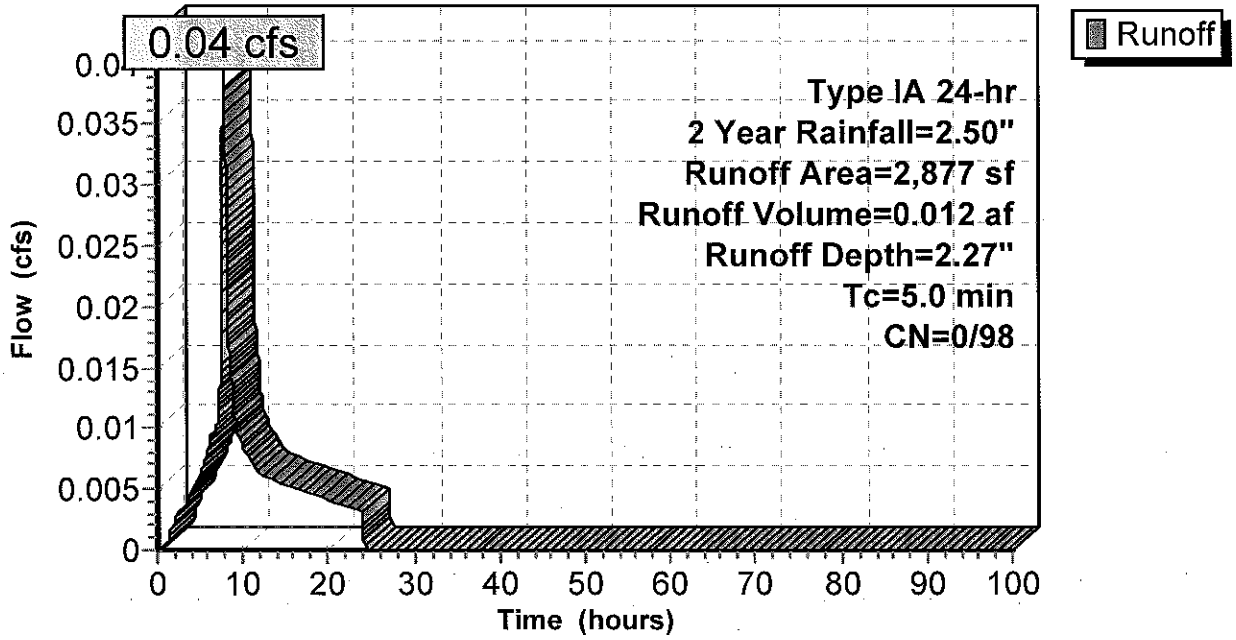
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2 Year Rainfall=2.50"

Area (sf)	CN	Description
2,877	98	Water Surface, HSG C
2,877	98	100.00% Impervious Area

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

Subcatchment 6S: house

Hydrograph



Summary for Pond 1P: Detention Pond

Inflow Area = 3.068 ac, 72.95% Impervious, Inflow Depth = 1.59" for 2 Year event
Inflow = 1.26 cfs @ 7.89 hrs, Volume= 0.407 af
Outflow = 0.41 cfs @ 8.86 hrs, Volume= 0.407 af, Atten= 67%, Lag= 58.2 min
Discarded = 0.04 cfs @ 8.86 hrs, Volume= 0.105 af
Primary = 0.37 cfs @ 8.86 hrs, Volume= 0.302 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 183.73' @ 8.86 hrs Surf.Area= 2,151 sf Storage= 4,899 cf

Plug-Flow detention time= 257.0 min calculated for 0.407 af (100% of inflow)
Center-of-Mass det. time= 257.0 min (939.8 - 682.8)

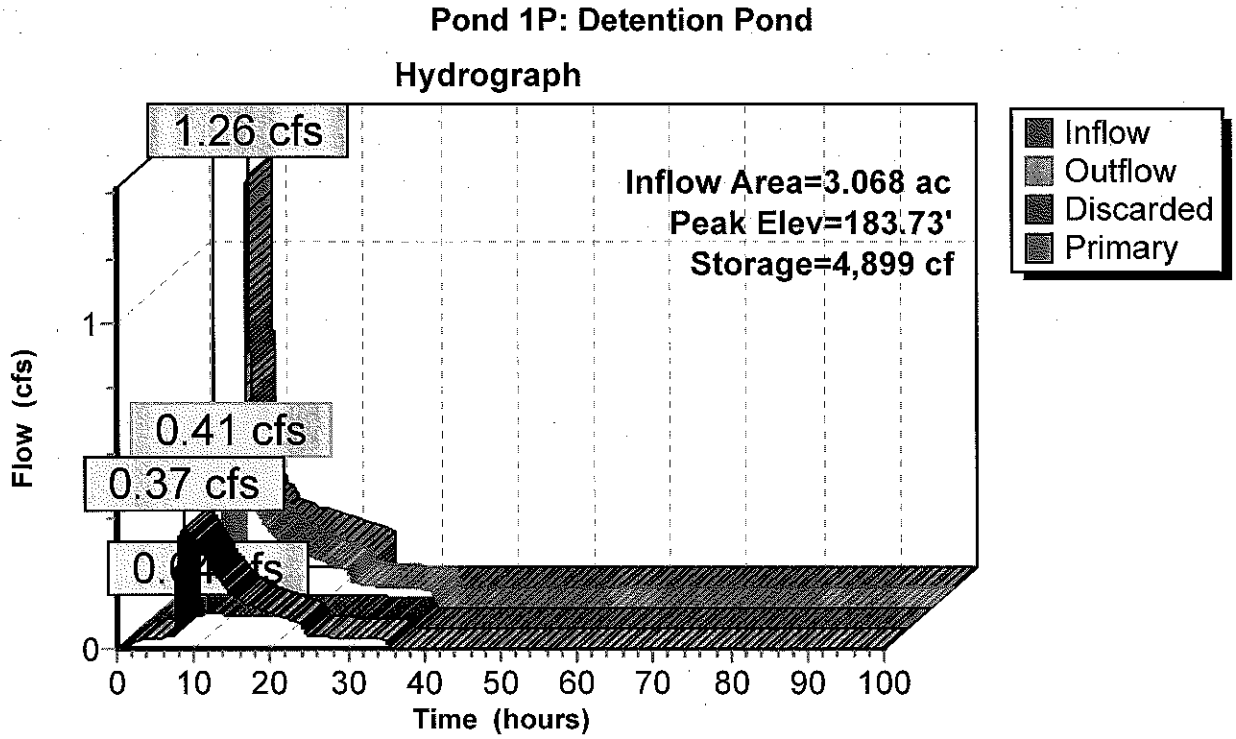
Volume	Invert	Avail.Storage	Storage Description
#1	181.00'	7,847 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
181.00	1,391	0	0
182.00	1,723	1,557	1,557
183.00	1,969	1,846	3,403
184.00	2,220	2,095	5,498
185.00	2,478	2,349	7,847

Device	Routing	Invert	Outlet Devices
#1	Discarded	181.00'	**0.900 in/hr Exfiltration over Horizontal area**
#2	Primary	179.53'	**0.9" Vert. Orifice/Grate** C= 0.620
#3	Primary	182.54'	**3.4" Vert. Orifice/Grate** C= 0.620
#4	Primary	183.73'	**4.5" Vert. Orifice/Grate** C= 0.620
#5	Primary	184.38'	**3.0" Vert. Orifice/Grate** C= 0.620

Discarded OutFlow Max=0.04 cfs @ 8.86 hrs HW=183.73' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.37 cfs @ 8.86 hrs HW=183.73' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 10.15 fps)
├**3=Orifice/Grate** (Orifice Controls 0.32 cfs @ 5.08 fps)
├**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Orifice/Grate** (Controls 0.00 cfs)


Pond 1P: Detention Pond
Hydrograph
1.26 cfs
0.41 cfs
0.37 cfs
Inflow Area=3.068 ac
Peak Elev=183.73'
Storage=4,899 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0
1
0 10 20 30 40 50 60 70 80 90 100
Time (hours)

Summary for Pond 2P: Infiltration Planter

Inflow Area = 0.066 ac,100.00% Impervious, Inflow Depth = 2.27" for 2 Year event
Inflow = 0.04 cfs @ 7.88 hrs, Volume= 0.012 af
Outflow = 0.04 cfs @ 7.94 hrs, Volume= 0.012 af, Atten= 1%, Lag= 3.5 min
Discarded = 0.01 cfs @ 6.37 hrs, Volume= 0.010 af
Primary = 0.03 cfs @ 7.94 hrs, Volume= 0.002 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 198.58' @ 7.94 hrs Surf.Area= 130 sf Storage= 10 cf

Plug-Flow detention time= 3.0 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 3.0 min (675.6 - 672.6)

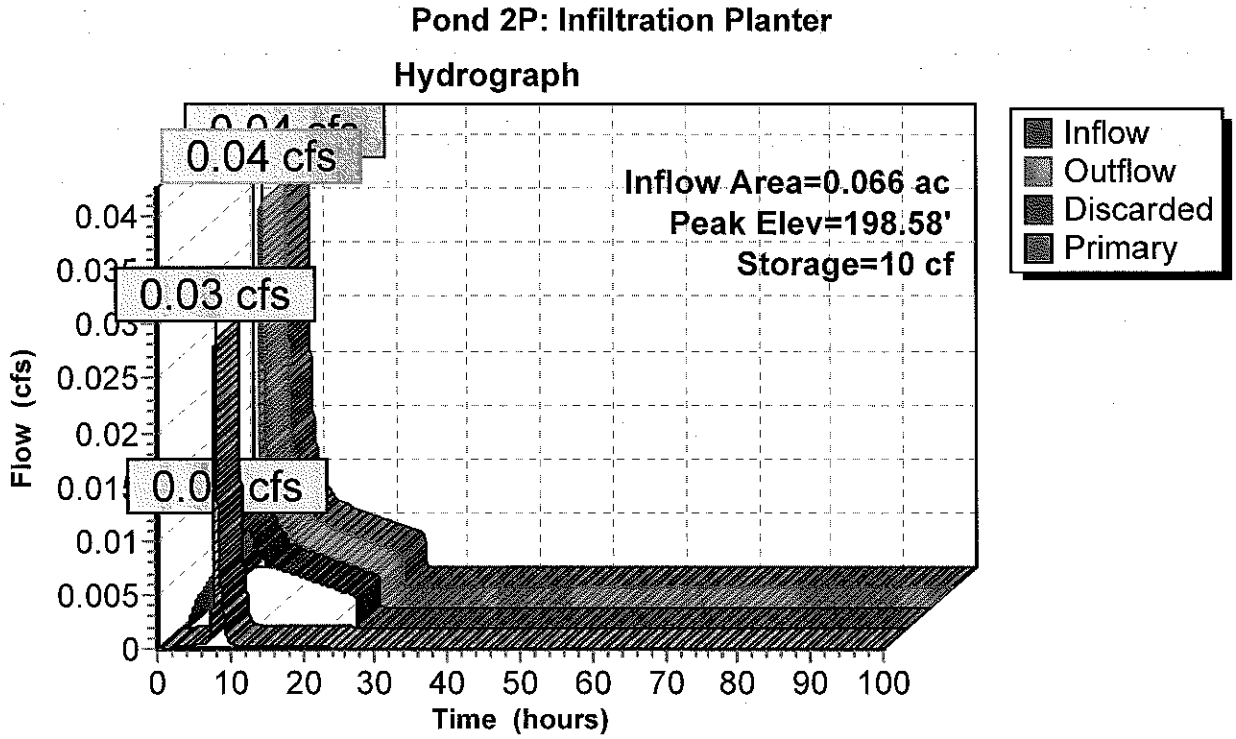
Volume	Invert	Avail.Storage	Storage Description
#1	198.50'	130 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
198.50	130	0	0
199.50	130	130	130

Device	Routing	Invert	Outlet Devices
#1	Discarded	198.50'	**3.000 in/hr Exfiltration over Horizontal area**
#2	Primary	198.50'	**12.0" Vert. Orifice/Grate** C= 0.620

Discarded OutFlow Max=0.01 cfs @ 6.37 hrs HW=198.51' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.03 cfs @ 7.94 hrs HW=198.58' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 0.99 fps)


Pond 2P: Infiltration Planter
Hydrograph
0.04 cfs
0.03 cfs
Inflow Area=0.066 ac
Peak Elev=198.58'
Storage=10 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.04
0.025
0.02
0.01
0.005
0
0 10 20 30 40 50 60 70 80 90 100
Time (hours)

Summary for Pond 5P: Infiltration Planter

Inflow Area = 0.066 ac,100.00% Impervious, Inflow Depth = 2.27" for 2 Year event
Inflow = 0.04 cfs @ 7.88 hrs, Volume= 0.012 af
Outflow = 0.04 cfs @ 7.94 hrs, Volume= 0.012 af, Atten= 1%, Lag= 3.5 min
Discarded = 0.01 cfs @ 6.37 hrs, Volume= 0.010 af
Primary = 0.03 cfs @ 7.94 hrs, Volume= 0.002 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 198.58' @ 7.94 hrs Surf.Area= 130 sf Storage= 10 cf

Plug-Flow detention time= 3.0 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 3.0 min (675.6 - 672.6)

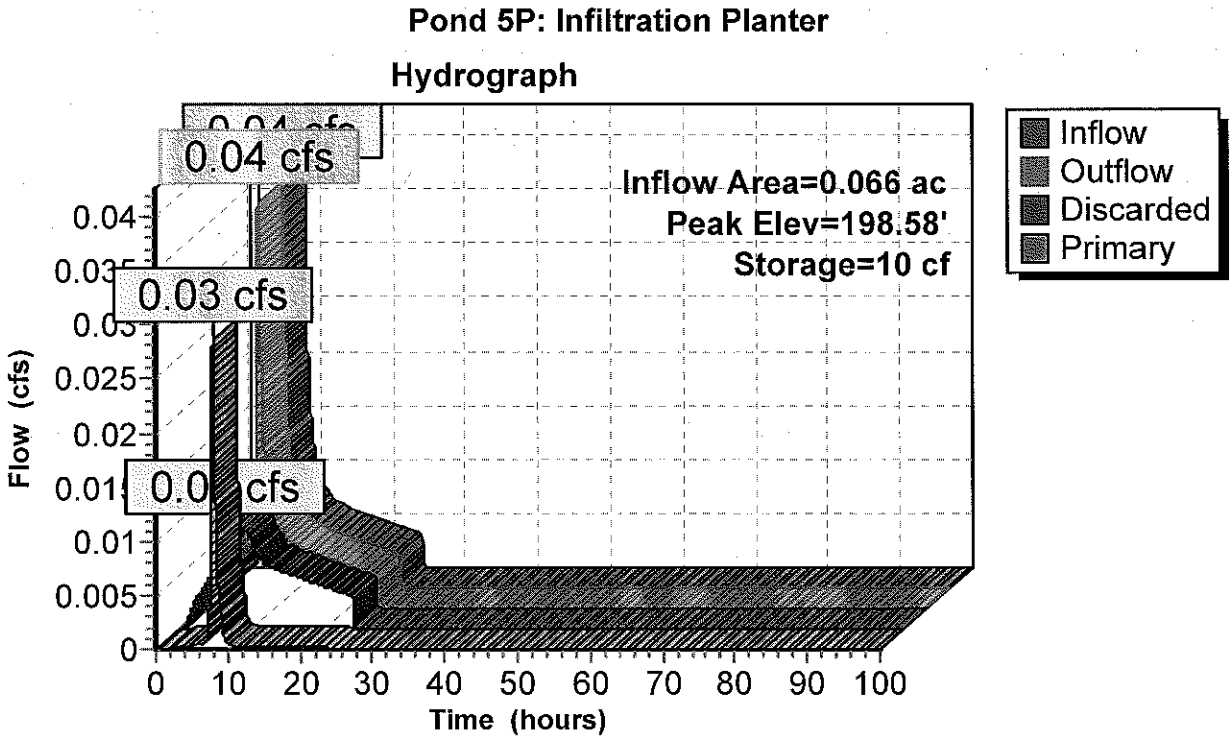
Volume	Invert	Avail.Storage	Storage Description
#1	198.50'	130 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
198.50	130	0	0
199.50	130	130	130

Device	Routing	Invert	Outlet Devices
#1	Discarded	198.50'	**3.000 in/hr Exfiltration over Horizontal area**
#2	Primary	198.50'	**12.0" Vert. Orifice/Grate** C= 0.620

Discarded OutFlow Max=0.01 cfs @ 6.37 hrs HW=198.51' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.03 cfs @ 7.94 hrs HW=198.58' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 0.99 fps)


Pond 5P: Infiltration Planter
Hydrograph
0.04 cfs
0.03 cfs
0.0 cfs
Inflow Area=0.066 ac
Peak Elev=198.58'
Storage=10 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.04
0.025
0.02
0.01
0.005
0
0 10 20 30 40 50 60 70 80 90 100
Time (hours)

Summary for Pond 7P: Infiltration Planter

Inflow Area = 0.066 ac,100.00% Impervious, Inflow Depth = 2.27" for 2 Year event
Inflow = 0.04 cfs @ 7.88 hrs, Volume= 0.012 af
Outflow = 0.04 cfs @ 7.94 hrs, Volume= 0.012 af, Atten= 1%, Lag= 3.5 min
Discarded = 0.01 cfs @ 6.37 hrs, Volume= 0.010 af
Primary = 0.03 cfs @ 7.94 hrs, Volume= 0.002 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 198.58' @ 7.94 hrs Surf.Area= 130 sf Storage= 10 cf

Plug-Flow detention time= 3.0 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 3.0 min (675.6 - 672.6)

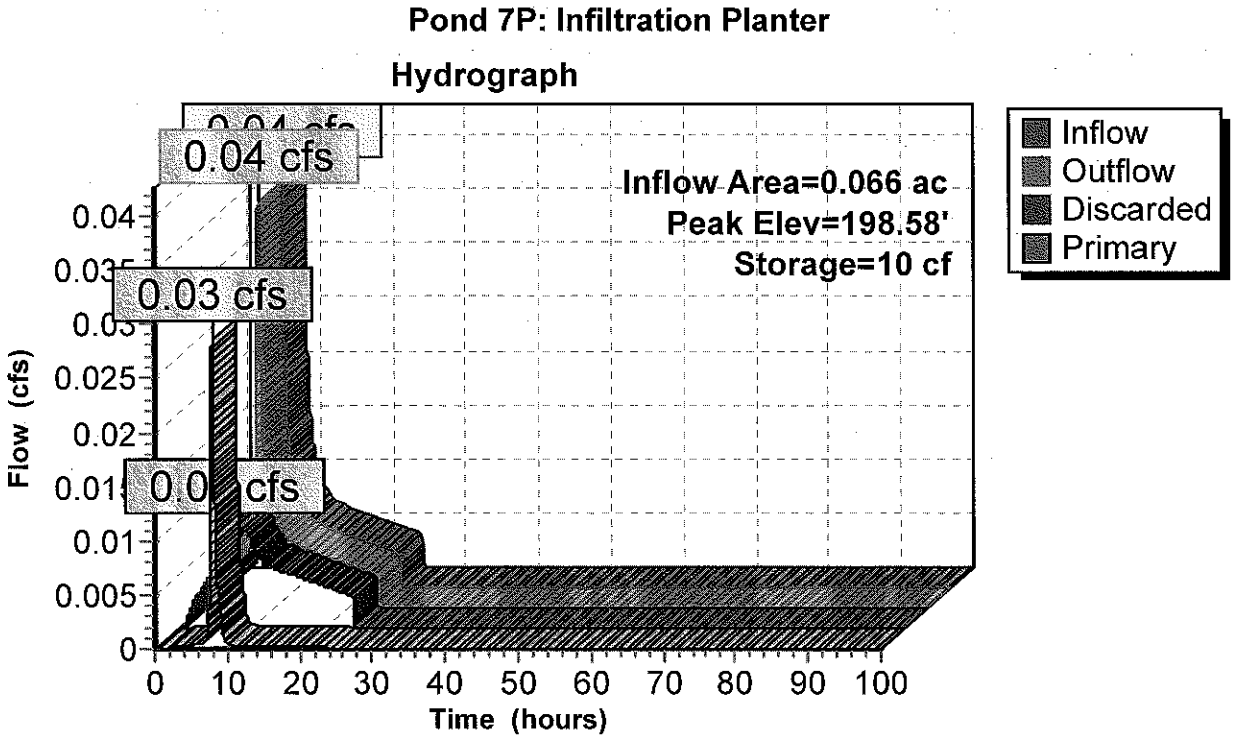
Volume	Invert	Avail.Storage	Storage Description
#1	198.50'	130 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
198.50	130	0	0
199.50	130	130	130

Device	Routing	Invert	Outlet Devices
#1	Discarded	198.50'	**3.000 in/hr Exfiltration over Horizontal area**
#2	Primary	198.50'	**12.0" Vert. Orifice/Grate** C= 0.620

Discarded OutFlow Max=0.01 cfs @ 6.37 hrs HW=198.51' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

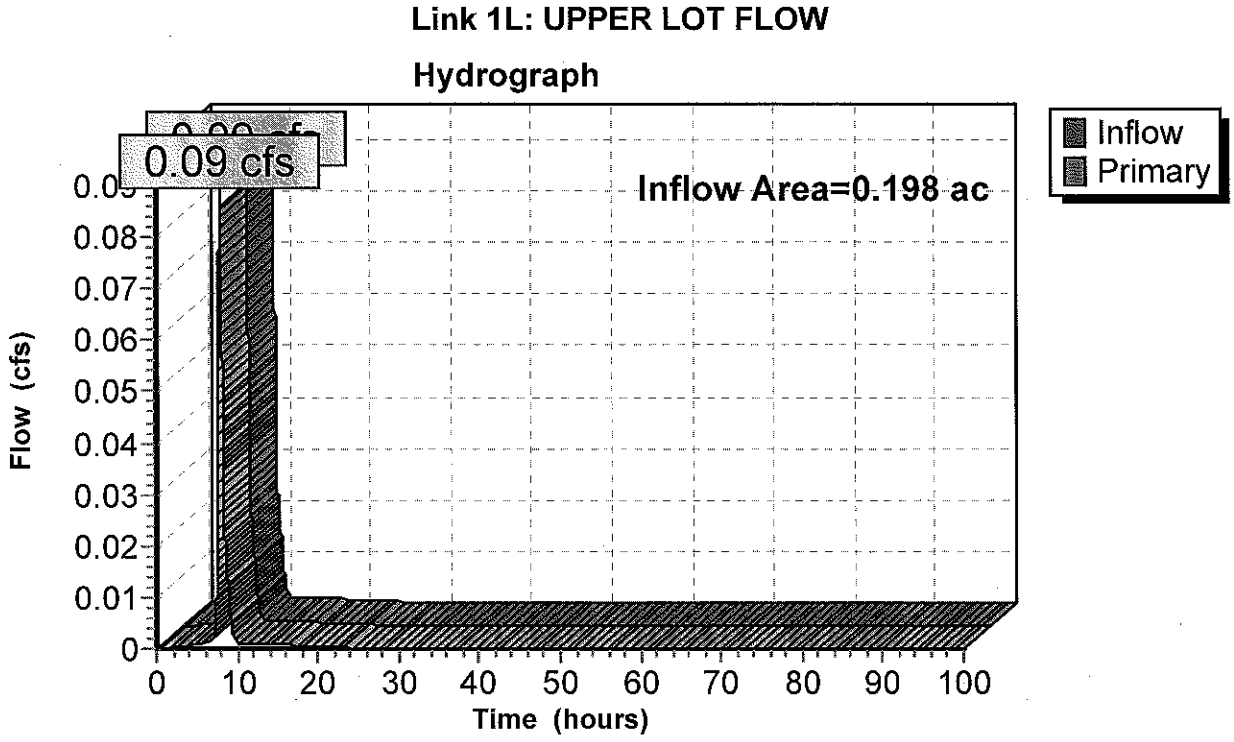
Primary OutFlow Max=0.03 cfs @ 7.94 hrs HW=198.58' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 0.99 fps)


Pond 7P: Infiltration Planter
Hydrograph
0.04 cfs
0.03 cfs
Inflow Area=0.066 ac
Peak Elev=198.58'
Storage=10 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.04
0.025
0.02
0.01
0.005
0
0 10 20 30 40 50 60 70 80 90 100
Time (hours)

Summary for Link 1L: UPPER LOT FLOW

Inflow Area = 0.198 ac,100.00% Impervious, Inflow Depth = 0.42" for 2 Year event
Inflow = 0.09 cfs @ 7.94 hrs, Volume= 0.007 af
Primary = 0.09 cfs @ 7.94 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs



Time span=0.00-100.00 hrs, dt=0.01 hrs, 10001 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Existing Conditions Runoff Area=3.070 ac 0.00% Impervious Runoff Depth=1.64"
Flow Length=650' Slope=0.0200 '/' Tc=25.4 min CN=80/0 Runoff=0.83 cfs 0.419 af

Subcatchment2S: Proposed Conditions Runoff Area=2.870 ac 71.08% Impervious Runoff Depth=2.49"
Tc=5.0 min CN=61/98 Runoff=1.68 cfs 0.595 af

Subcatchment3S: house Runoff Area=2,877 sf 100.00% Impervious Runoff Depth=3.27"
Tc=5.0 min CN=0/98 Runoff=0.05 cfs 0.018 af

Subcatchment4S: house Runoff Area=2,877 sf 100.00% Impervious Runoff Depth=3.27"
Tc=5.0 min CN=0/98 Runoff=0.05 cfs 0.018 af

Subcatchment6S: house Runoff Area=2,877 sf 100.00% Impervious Runoff Depth=3.27"
Tc=5.0 min CN=0/98 Runoff=0.05 cfs 0.018 af

Pond 1P: Detention Pond Peak Elev=184.38' Storage=6,369 cf Inflow=1.82 cfs 0.609 af
Discarded=0.05 cfs 0.110 af Primary=0.83 cfs 0.499 af Outflow=0.88 cfs 0.609 af

Pond 2P: Infiltration Planter Peak Elev=198.60' Storage=13 cf Inflow=0.05 cfs 0.018 af
Discarded=0.01 cfs 0.013 af Primary=0.04 cfs 0.005 af Outflow=0.05 cfs 0.018 af

Pond 5P: Infiltration Planter Peak Elev=198.60' Storage=13 cf Inflow=0.05 cfs 0.018 af
Discarded=0.01 cfs 0.013 af Primary=0.04 cfs 0.005 af Outflow=0.05 cfs 0.018 af

Pond 7P: Infiltration Planter Peak Elev=198.60' Storage=13 cf Inflow=0.05 cfs 0.018 af
Discarded=0.01 cfs 0.013 af Primary=0.04 cfs 0.005 af Outflow=0.05 cfs 0.018 af

Link 1L: UPPER LOT FLOW Inflow=0.13 cfs 0.014 af
Primary=0.13 cfs 0.014 af

Total Runoff Area = 6.138 ac Runoff Volume = 1.067 af Average Runoff Depth = 2.09"
63.54% Pervious = 3.900 ac 36.46% Impervious = 2.238 ac

Summary for Subcatchment 1S: Existing Conditions

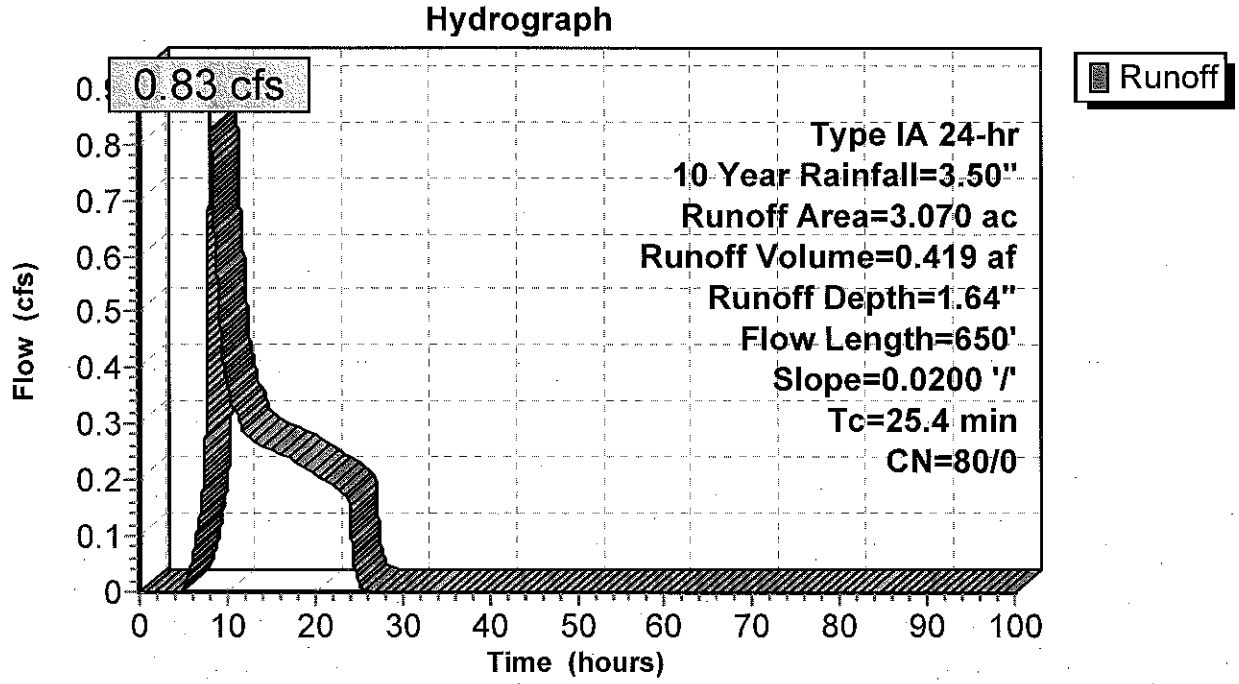
Runoff = 0.83 cfs @ 8.01 hrs, Volume= 0.419 af, Depth= 1.64"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 Year Rainfall=3.50"

Area (ac)	CN	Description
3.070	80	Pasture/grassland/range, Good, HSG D
3.070	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	100	0.0200	0.10		**Sheet Flow, Sheet Flow** Grass: Dense n= 0.240 P2= 2.50"
9.3	550	0.0200	0.99		**Shallow Concentrated Flow, Shallow Concentrated Flow** Short Grass Pasture Kv= 7.0 fps
25.4	650	Total			

Subcatchment 1S: Existing Conditions



Summary for Subcatchment 2S: Proposed Conditions

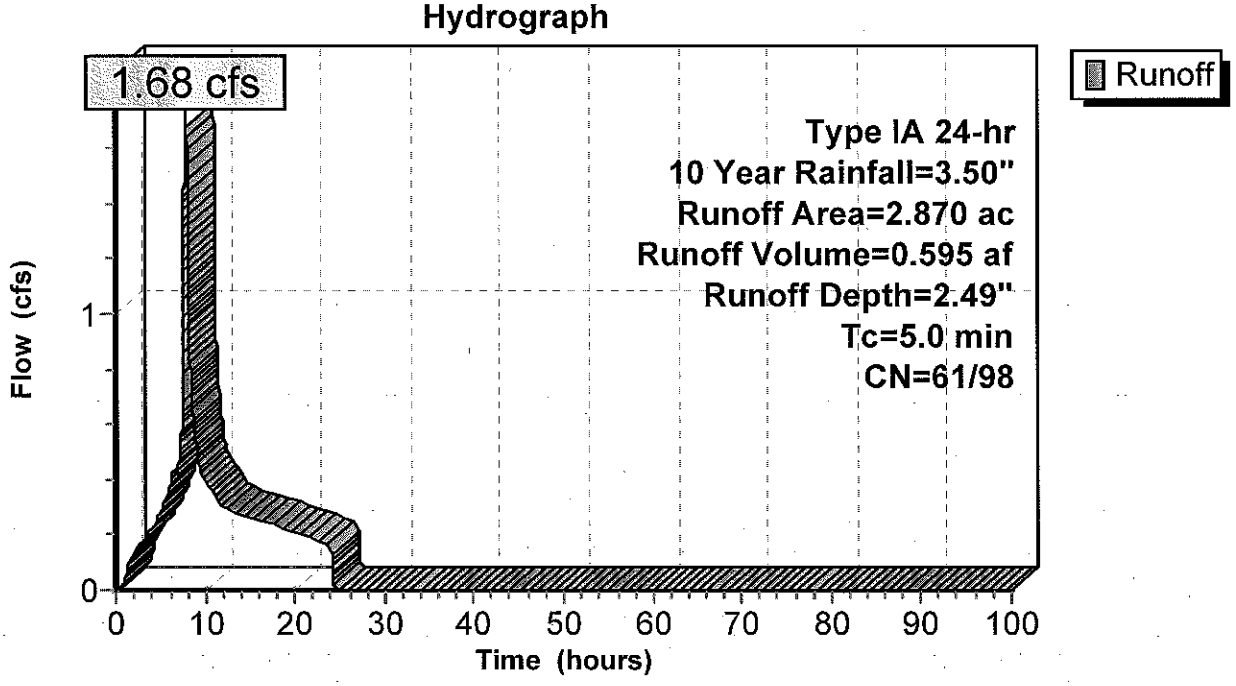
Runoff = 1.68 cfs @ 7.89 hrs, Volume= 0.595 af, Depth= 2.49"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 Year Rainfall=3.50"

	Area (ac)	CN	Description
*	2.040	98	Impervious Area
	0.830	61	>75% Grass cover, Good, HSG B
	2.870	87	Weighted Average
	0.830	61	28.92% Pervious Area
	2.040	98	71.08% Impervious Area

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

Subcatchment 2S: Proposed Conditions



Summary for Subcatchment 3S: house

Runoff = 0.05 cfs @ 7.88 hrs, Volume= 0.018 af, Depth= 3.27"

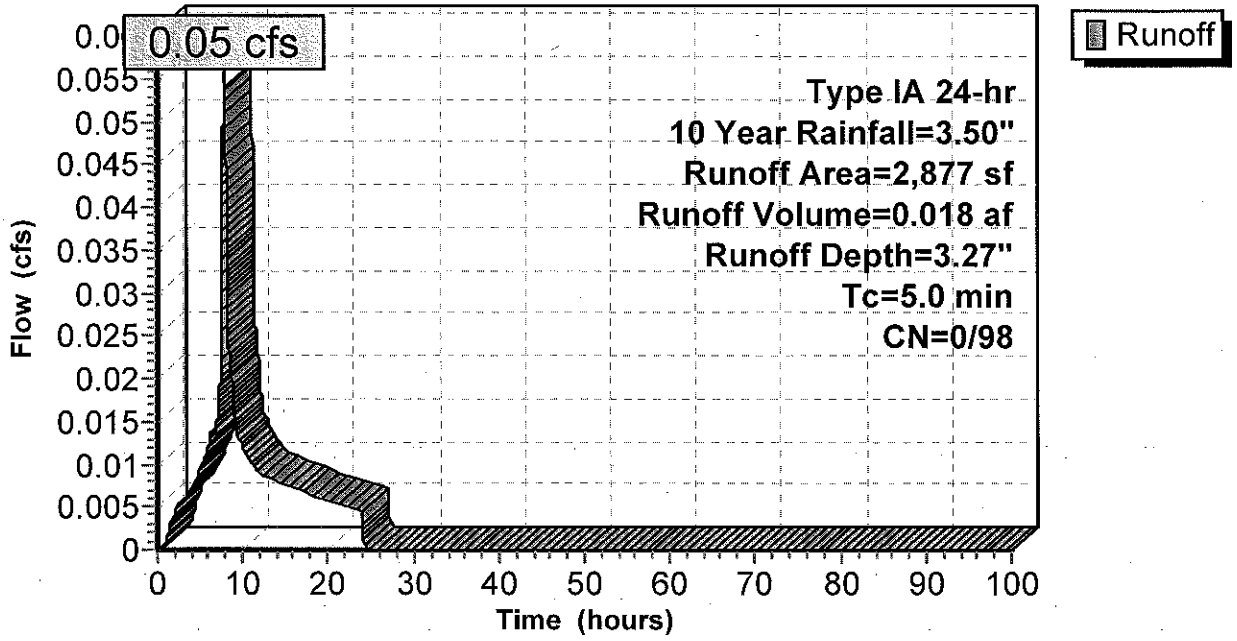
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 Year Rainfall=3.50"

Area (sf)	CN	Description
2,877	98	Water Surface, HSG C
2,877	98	100.00% Impervious Area

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

Subcatchment 3S: house

Hydrograph



Summary for Subcatchment 4S: house

Runoff = 0.05 cfs @ 7.88 hrs, Volume= 0.018 af, Depth= 3.27"

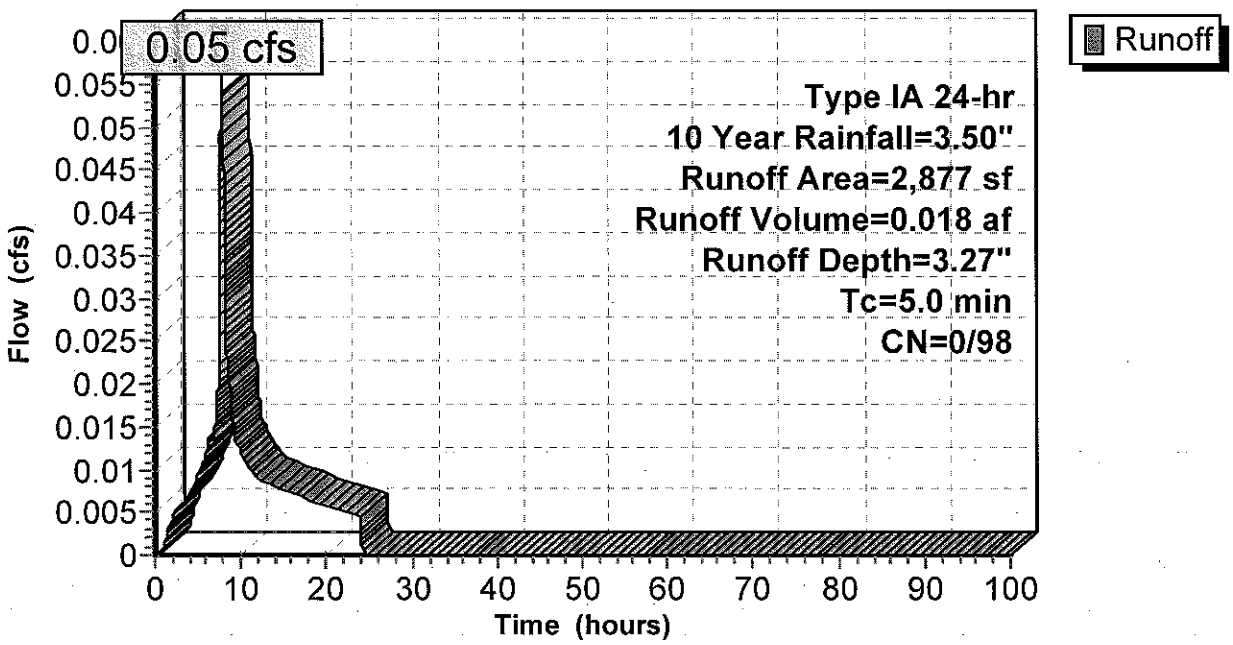
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 Year Rainfall=3.50"

Area (sf)	CN	Description
2,877	98	Water Surface, HSG C
2,877	98	100.00% Impervious Area

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

Subcatchment 4S: house

Hydrograph



Summary for Subcatchment 6S: house

Runoff = 0.05 cfs @ 7.88 hrs, Volume= 0.018 af, Depth= 3.27"

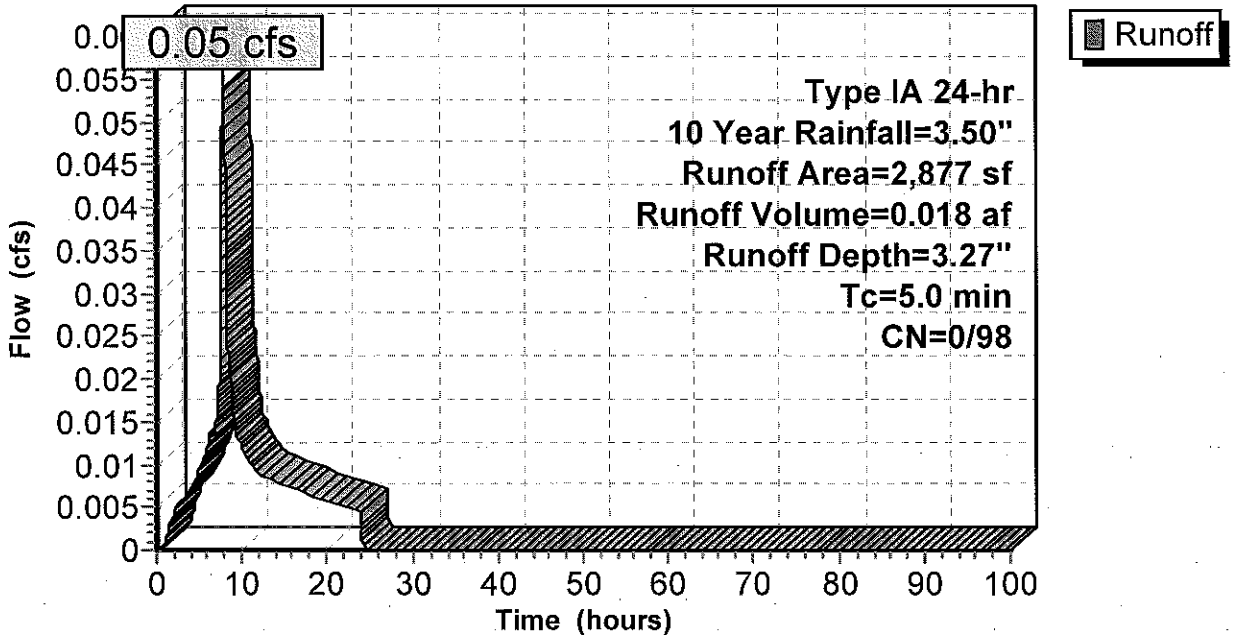
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 Year Rainfall=3.50"

Area (sf)	CN	Description
2,877	98	Water Surface, HSG C
2,877	98	100.00% Impervious Area

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

Subcatchment 6S: house

Hydrograph



Summary for Pond 1P: Detention Pond

Inflow Area = 3.068 ac, 72.95% Impervious, Inflow Depth = 2.38" for 10 Year event
Inflow = 1.82 cfs @ 7.90 hrs, Volume= 0.609 af
Outflow = 0.88 cfs @ 8.32 hrs, Volume= 0.609 af, Atten= 52%, Lag= 25.3 min
Discarded = 0.05 cfs @ 8.32 hrs, Volume= 0.110 af
Primary = 0.83 cfs @ 8.32 hrs, Volume= 0.499 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 184.38' @ 8.32 hrs Surf.Area= 2,319 sf Storage= 6,369 cf

Plug-Flow detention time= 209.9 min calculated for 0.609 af (100% of inflow)
Center-of-Mass det. time= 210.0 min (888.3 - 678.4)

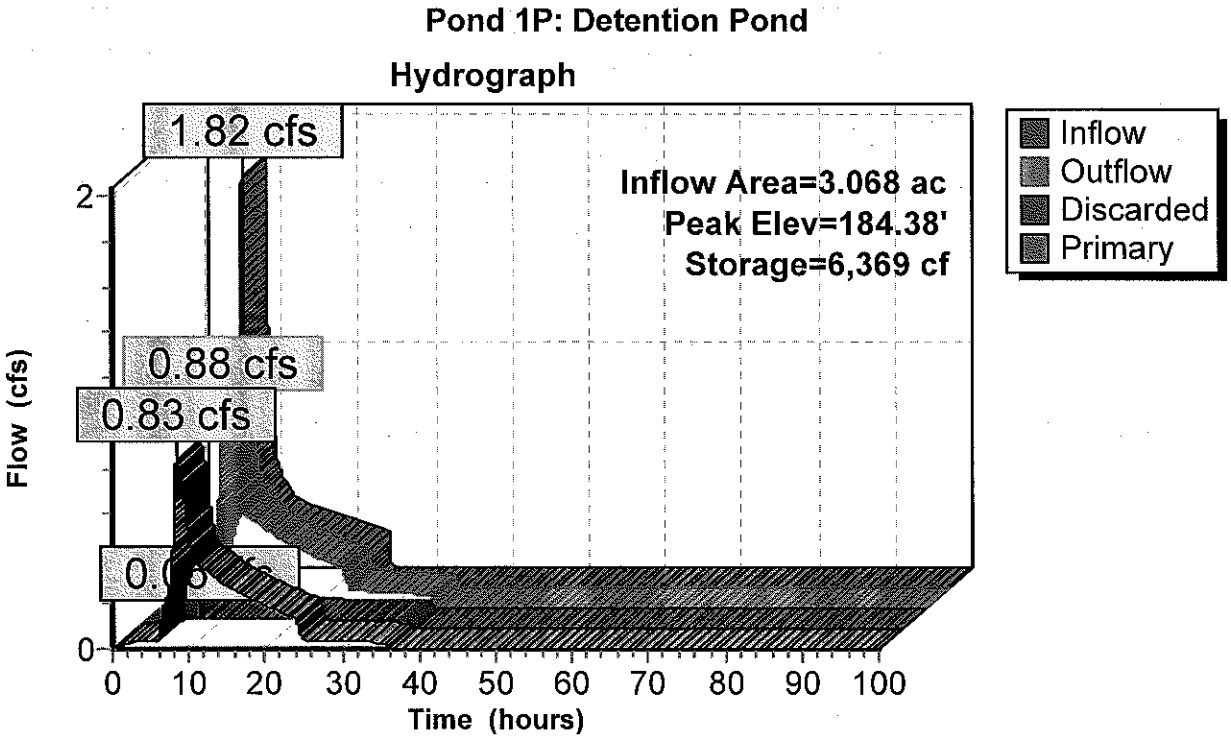
Volume	Invert	Avail.Storage	Storage Description
#1	181.00'	7,847 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
181.00	1,391	0	0
182.00	1,723	1,557	1,557
183.00	1,969	1,846	3,403
184.00	2,220	2,095	5,498
185.00	2,478	2,349	7,847

Device	Routing	Invert	Outlet Devices
#1	Discarded	181.00'	**0.900 in/hr Exfiltration over Horizontal area**
#2	Primary	179.53'	**0.9" Vert. Orifice/Grate** C= 0.620
#3	Primary	182.54'	**3.4" Vert. Orifice/Grate** C= 0.620
#4	Primary	183.73'	**4.5" Vert. Orifice/Grate** C= 0.620
#5	Primary	184.38'	**3.0" Vert. Orifice/Grate** C= 0.620

Discarded OutFlow Max=0.05 cfs @ 8.32 hrs HW=184.38' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.83 cfs @ 8.32 hrs HW=184.38' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 0.05 cfs @ 10.92 fps)
├**3=Orifice/Grate** (Orifice Controls 0.41 cfs @ 6.49 fps)
├**4=Orifice/Grate** (Orifice Controls 0.38 cfs @ 3.40 fps)
└**5=Orifice/Grate** (Orifice Controls 0.00 cfs @ 0.22 fps)


Pond 1P: Detention Pond
Hydrograph
1.82 cfs
0.88 cfs
0.83 cfs
Inflow Area=3.068 ac
Peak Elev=184.38'
Storage=6,369 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0
2
0 10 20 30 40 50 60 70 80 90 100
Time (hours)

Summary for Pond 2P: Infiltration Planter

Inflow Area = 0.066 ac,100.00% Impervious, Inflow Depth = 3.27" for 10 Year event
Inflow = 0.05 cfs @ 7.88 hrs, Volume= 0.018 af
Outflow = 0.05 cfs @ 7.92 hrs, Volume= 0.018 af, Atten= 0%, Lag= 2.7 min
Discarded = 0.01 cfs @ 5.09 hrs, Volume= 0.013 af
Primary = 0.04 cfs @ 7.92 hrs, Volume= 0.005 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 198.60' @ 7.92 hrs Surf.Area= 130 sf Storage= 13 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 3.4 min (666.2 - 662.8)

Volume	Invert	Avail.Storage	Storage Description
#1	198.50'	130 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

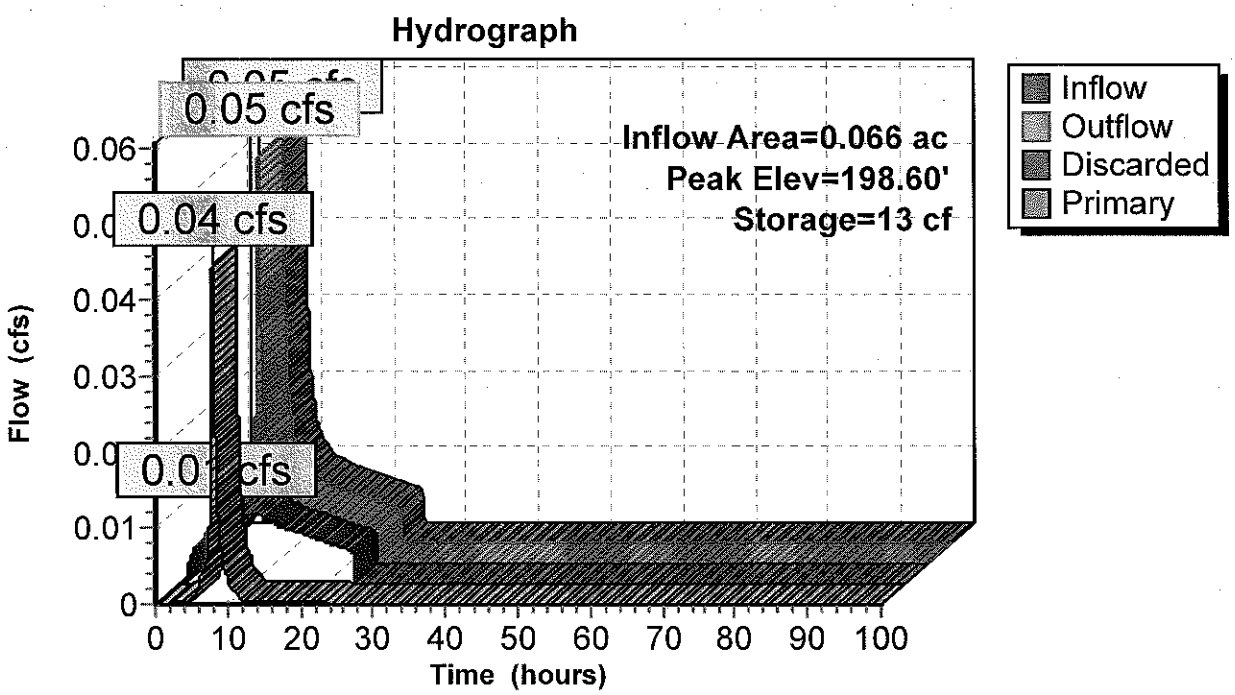
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
198.50	130	0	0
199.50	130	130	130

Device	Routing	Invert	Outlet Devices
#1	Discarded	198.50'	**3.000 in/hr Exfiltration over Horizontal area**
#2	Primary	198.50'	**12.0" Vert. Orifice/Grate** C= 0.620

Discarded OutFlow Max=0.01 cfs @ 5.09 hrs HW=198.51' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.04 cfs @ 7.92 hrs HW=198.60' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 1.11 fps)

Pond 2P: Infiltration Planter



Summary for Pond 5P: Infiltration Planter

Inflow Area = 0.066 ac,100.00% Impervious, Inflow Depth = 3.27" for 10 Year event
Inflow = 0.05 cfs @ 7.88 hrs, Volume= 0.018 af
Outflow = 0.05 cfs @ 7.92 hrs, Volume= 0.018 af, Atten= 0%, Lag= 2.7 min
Discarded = 0.01 cfs @ 5.09 hrs, Volume= 0.013 af
Primary = 0.04 cfs @ 7.92 hrs, Volume= 0.005 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 198.60' @ 7.92 hrs Surf.Area= 130 sf Storage= 13 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 3.4 min (666.2 - 662.8)

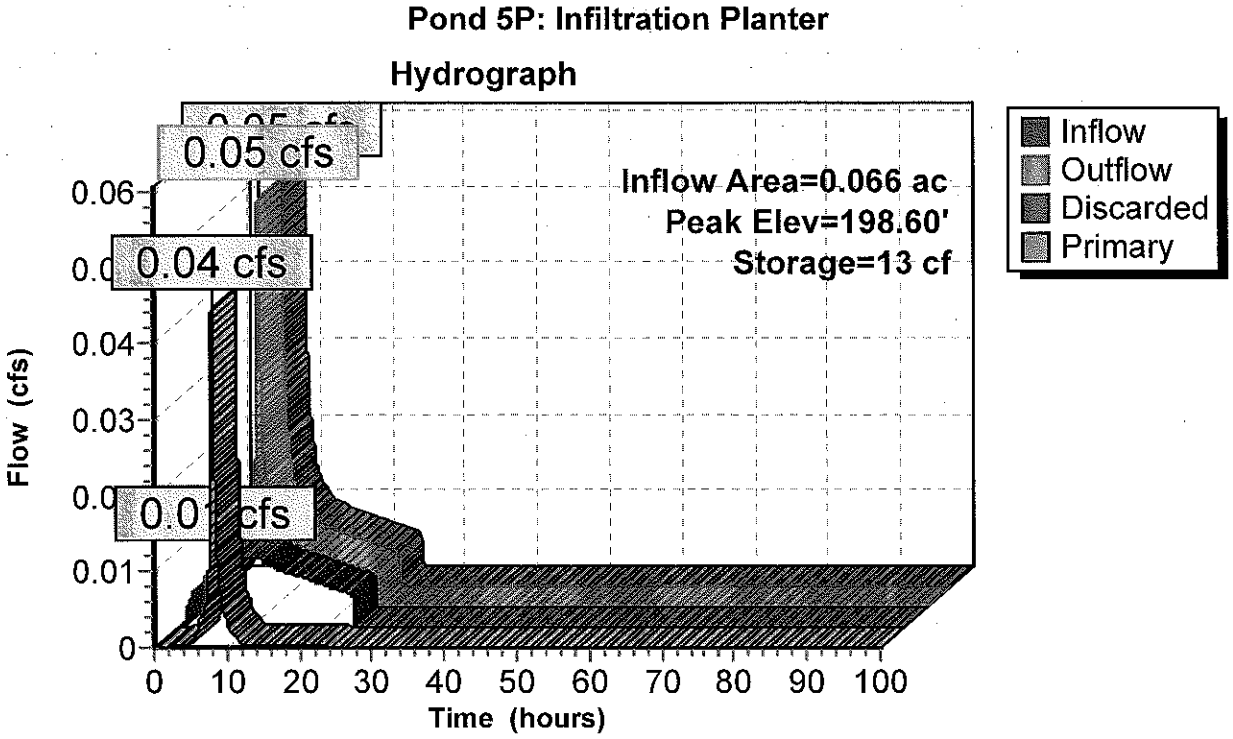
Volume	Invert	Avail.Storage	Storage Description
#1	198.50'	130 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
198.50	130	0	0
199.50	130	130	130

Device	Routing	Invert	Outlet Devices
#1	Discarded	198.50'	**3.000 in/hr Exfiltration over Horizontal area**
#2	Primary	198.50'	**12.0" Vert. Orifice/Grate** C= 0.620

Discarded OutFlow Max=0.01 cfs @ 5.09 hrs HW=198.51' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.04 cfs @ 7.92 hrs HW=198.60' (Free Discharge)
↑**2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 1.11 fps)


Pond 5P: Infiltration Planter
Hydrograph
0.05 cfs
0.04 cfs
0.0 cfs
Inflow Area=0.066 ac
Peak Elev=198.60'
Storage=13 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.06
0.04
0.03
0.01
0
0 10 20 30 40 50 60 70 80 90 100
Time (hours)

Summary for Pond 7P: Infiltration Planter

Inflow Area = 0.066 ac,100.00% Impervious, Inflow Depth = 3.27" for 10 Year event
Inflow = 0.05 cfs @ 7.88 hrs, Volume= 0.018 af
Outflow = 0.05 cfs @ 7.92 hrs, Volume= 0.018 af, Atten= 0%, Lag= 2.7 min
Discarded = 0.01 cfs @ 5.09 hrs, Volume= 0.013 af
Primary = 0.04 cfs @ 7.92 hrs, Volume= 0.005 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 198.60' @ 7.92 hrs Surf.Area= 130 sf Storage= 13 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 3.4 min (666.2 - 662.8)

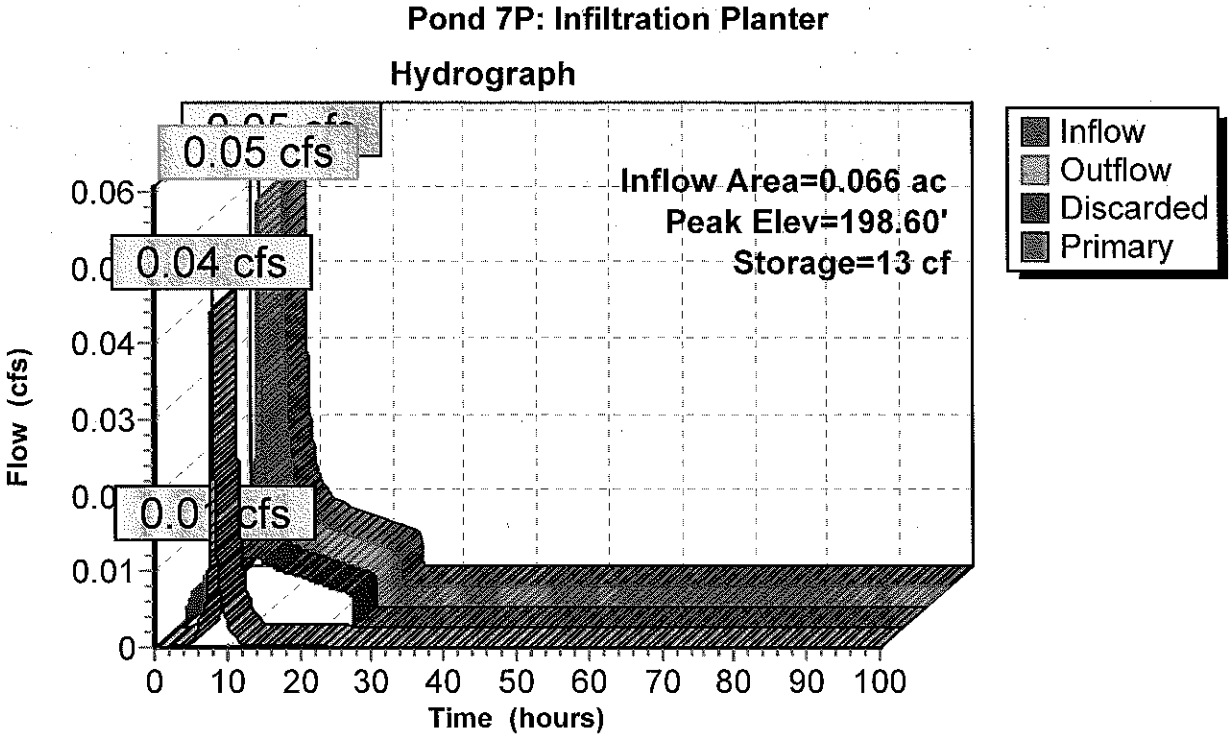
Volume	Invert	Avail.Storage	Storage Description
#1	198.50'	130 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
198.50	130	0	0
199.50	130	130	130

Device	Routing	Invert	Outlet Devices
#1	Discarded	198.50'	**3.000 in/hr Exfiltration over Horizontal area**
#2	Primary	198.50'	**12.0" Vert. Orifice/Grate** C= 0.620

Discarded OutFlow Max=0.01 cfs @ 5.09 hrs HW=198.51' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.04 cfs @ 7.92 hrs HW=198.60' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 1.11 fps)


Pond 7P: Infiltration Planter
Hydrograph
0.05 cfs
0.04 cfs
Inflow Area=0.066 ac
Peak Elev=198.60'
Storage=13 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.06
0.04
0.03
0.01
0
0 10 20 30 40 50 60 70 80 90 100
Time (hours)

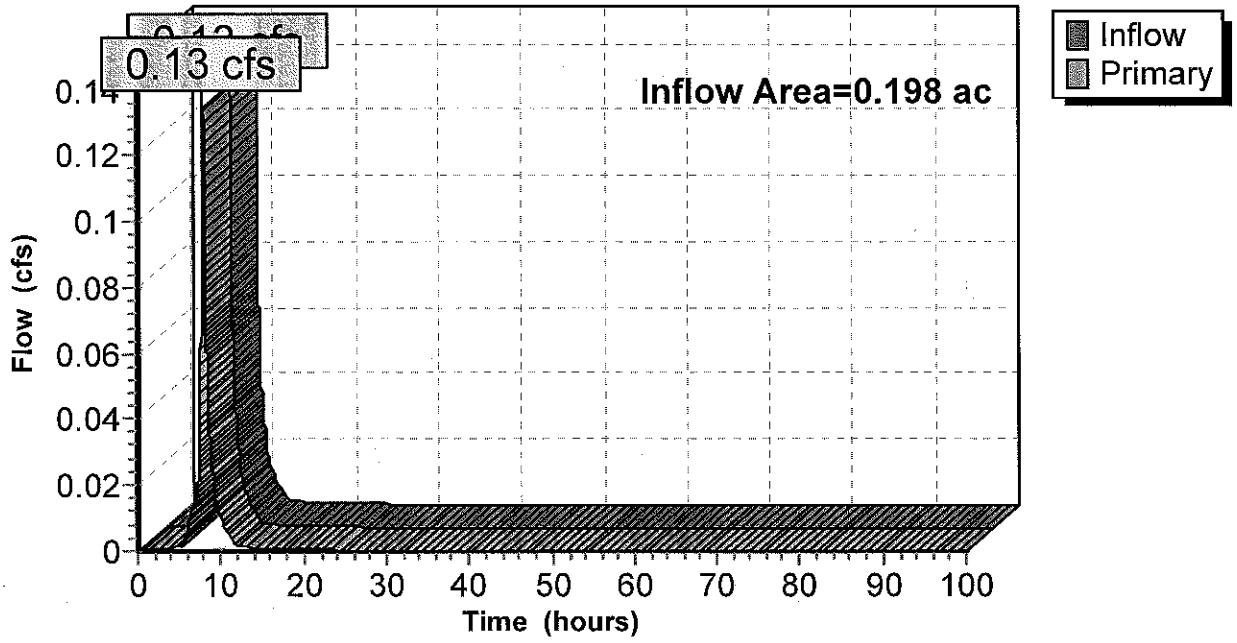
Summary for Link 1L: UPPER LOT FLOW

Inflow Area = 0.198 ac,100.00% Impervious, Inflow Depth = 0.87" for 10 Year event
Inflow = 0.13 cfs @ 7.92 hrs, Volume= 0.014 af
Primary = 0.13 cfs @ 7.92 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs

Link 1L: UPPER LOT FLOW

Hydrograph



Time span=0.00-100.00 hrs, dt=0.01 hrs, 10001 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Existing Conditions Runoff Area=3.070 ac 0.00% Impervious Runoff Depth=2.04"
Flow Length=650' Slope=0.0200 '/' Tc=25.4 min CN=80/0 Runoff=1.08 cfs 0.522 af

Subcatchment2S: Proposed Conditions Runoff Area=2.870 ac 71.08% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=61/98 Runoff=1.97 cfs 0.696 af

Subcatchment3S: house Runoff Area=2,877 sf 100.00% Impervious Runoff Depth=3.77"
Tc=5.0 min CN=0/98 Runoff=0.06 cfs 0.021 af

Subcatchment4S: house Runoff Area=2,877 sf 100.00% Impervious Runoff Depth=3.77"
Tc=5.0 min CN=0/98 Runoff=0.06 cfs 0.021 af

Subcatchment6S: house Runoff Area=2,877 sf 100.00% Impervious Runoff Depth=3.77"
Tc=5.0 min CN=0/98 Runoff=0.06 cfs 0.021 af

Pond 1P: Detention Pond Peak Elev=184.68' Storage=7,072 cf Inflow=2.13 cfs 0.715 af
Discarded=0.05 cfs 0.113 af Primary=1.08 cfs 0.602 af Outflow=1.13 cfs 0.715 af

Pond 2P: Infiltration Planter Peak Elev=198.61' Storage=14 cf Inflow=0.06 cfs 0.021 af
Discarded=0.01 cfs 0.014 af Primary=0.05 cfs 0.006 af Outflow=0.06 cfs 0.021 af

Pond 5P: Infiltration Planter Peak Elev=198.61' Storage=14 cf Inflow=0.06 cfs 0.021 af
Discarded=0.01 cfs 0.014 af Primary=0.05 cfs 0.006 af Outflow=0.06 cfs 0.021 af

Pond 7P: Infiltration Planter Peak Elev=198.61' Storage=14 cf Inflow=0.06 cfs 0.021 af
Discarded=0.01 cfs 0.014 af Primary=0.05 cfs 0.006 af Outflow=0.06 cfs 0.021 af

Link 1L: UPPER LOT FLOW Inflow=0.16 cfs 0.019 af
Primary=0.16 cfs 0.019 af

Total Runoff Area = 6.138 ac Runoff Volume = 1.281 af Average Runoff Depth = 2.50"
63.54% Pervious = 3.900 ac 36.46% Impervious = 2.238 ac

Summary for Subcatchment 1S: Existing Conditions

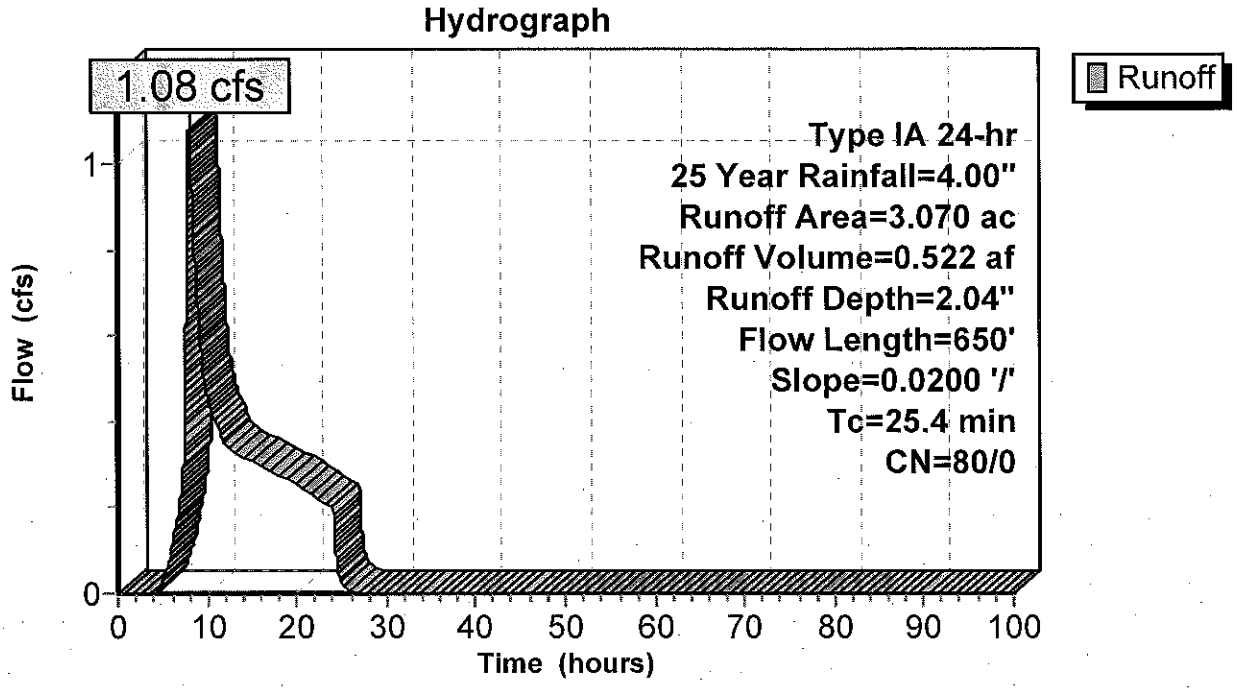
Runoff = 1.08 cfs @ 8.01 hrs, Volume= 0.522 af, Depth= 2.04"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=4.00"

Area (ac)	CN	Description
3.070	80	Pasture/grassland/range, Good, HSG D
3.070	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	100	0.0200	0.10		**Sheet Flow, Sheet Flow** Grass: Dense n= 0.240 P2= 2.50"
9.3	550	0.0200	0.99		**Shallow Concentrated Flow, Shallow Concentrated Flow** Short Grass Pasture Kv= 7.0 fps
25.4	650	Total			

Subcatchment 1S: Existing Conditions



Summary for Subcatchment 2S: Proposed Conditions

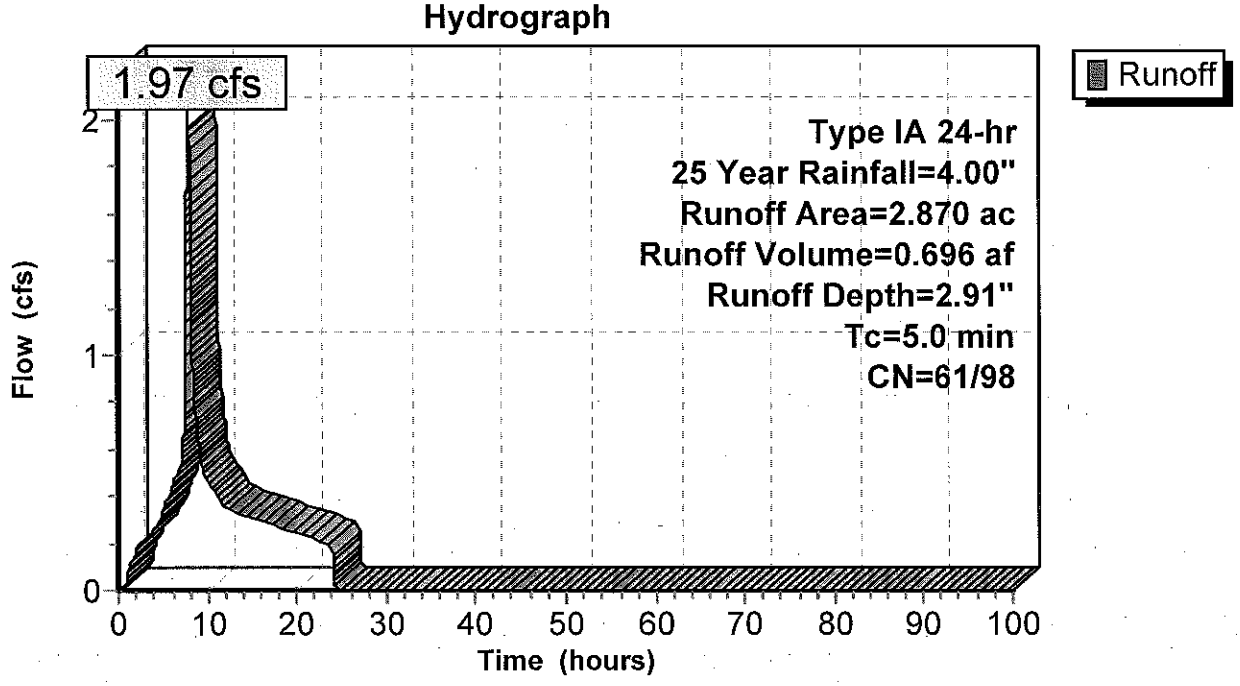
Runoff = 1.97 cfs @ 7.90 hrs, Volume= 0.696 af, Depth= 2.91"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=4.00"

	Area (ac)	CN	Description
*	2.040	98	Impervious Area
	0.830	61	>75% Grass cover, Good, HSG B
	2.870	87	Weighted Average
	0.830	61	28.92% Pervious Area
	2.040	98	71.08% Impervious Area

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

Subcatchment 2S: Proposed Conditions



Summary for Subcatchment 3S: house

Runoff = 0.06 cfs @ 7.88 hrs, Volume= 0.021 af, Depth= 3.77"

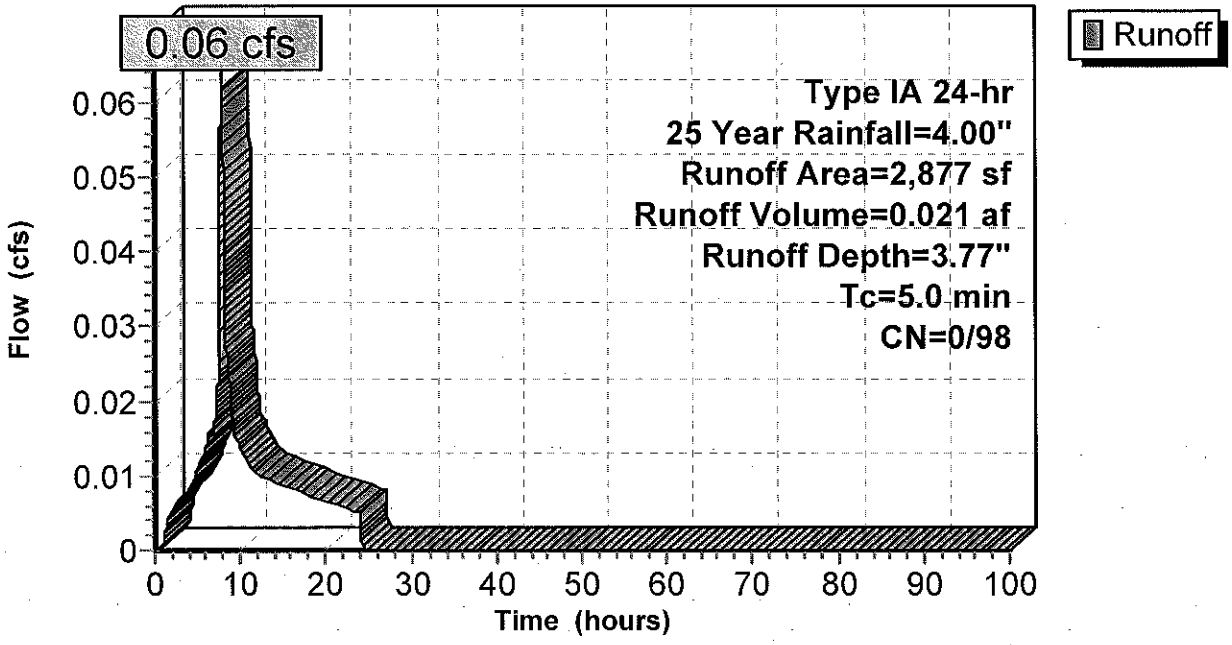
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=4.00"

Area (sf)	CN	Description
2,877	98	Water Surface, HSG C
2,877	98	100.00% Impervious Area

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

Subcatchment 3S: house

Hydrograph



Summary for Subcatchment 4S: house

Runoff = 0.06 cfs @ 7.88 hrs, Volume= 0.021 af, Depth= 3.77"

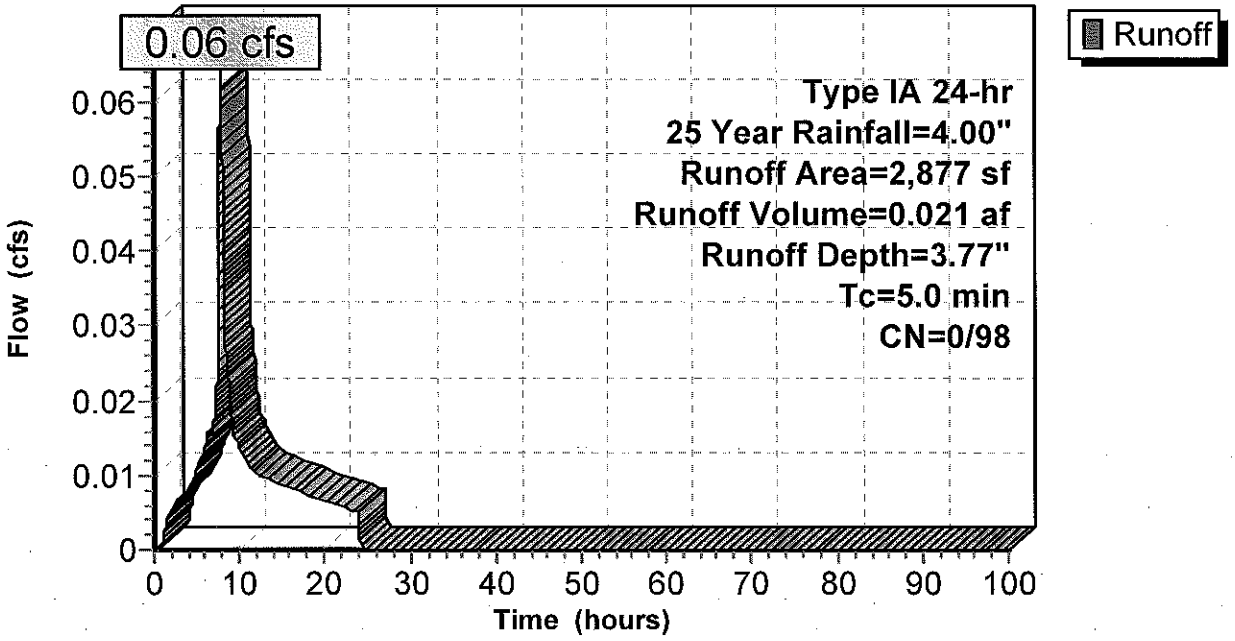
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=4.00"

Area (sf)	CN	Description
2,877	98	Water Surface, HSG C
2,877	98	100.00% Impervious Area

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

Subcatchment 4S: house

Hydrograph



Summary for Subcatchment 6S: house

Runoff = 0.06 cfs @ 7.88 hrs, Volume= 0.021 af, Depth= 3.77"

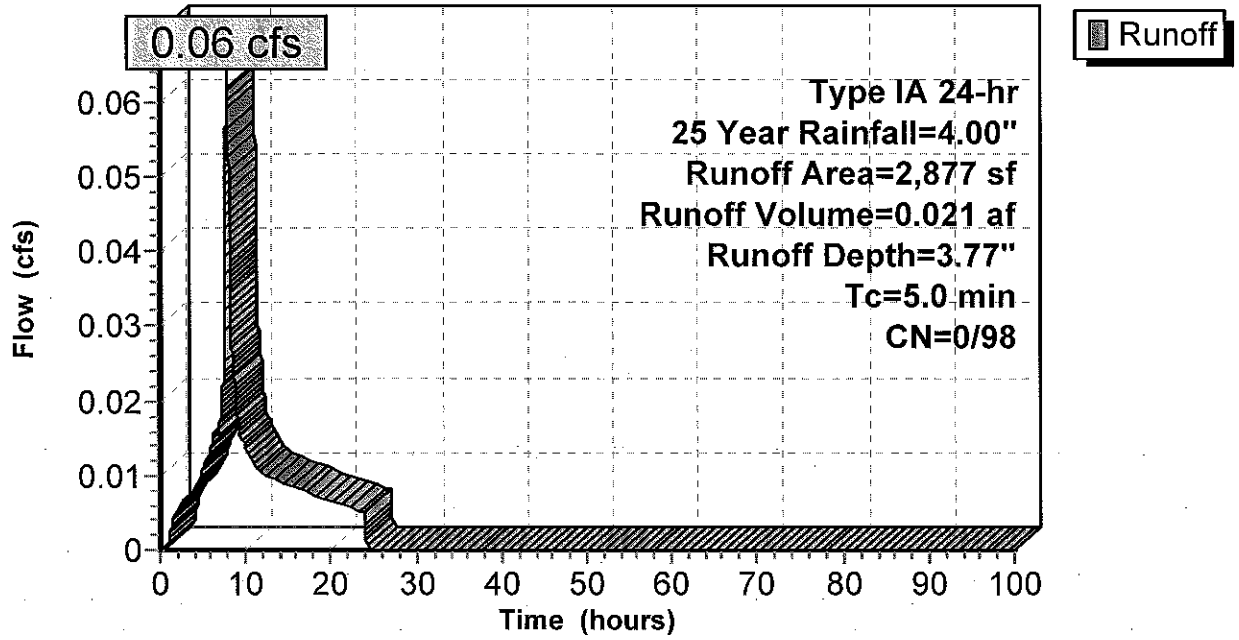
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=4.00"

Area (sf)	CN	Description
2,877	98	Water Surface, HSG C
2,877	98	100.00% Impervious Area

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

Subcatchment 6S: house

Hydrograph



Summary for Pond 1P: Detention Pond

Inflow Area = 3.068 ac, 72.95% Impervious, Inflow Depth = 2.80" for 25 Year event
Inflow = 2.13 cfs @ 7.90 hrs, Volume= 0.715 af
Outflow = 1.13 cfs @ 8.26 hrs, Volume= 0.715 af, Atten= 47%, Lag= 22.0 min
Discarded = 0.05 cfs @ 8.26 hrs, Volume= 0.113 af
Primary = 1.08 cfs @ 8.26 hrs, Volume= 0.602 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 184.68' @ 8.26 hrs Surf.Area= 2,396 sf Storage= 7,072 cf

Plug-Flow detention time= 195.6 min calculated for 0.715 af (100% of inflow)
Center-of-Mass det. time= 195.7 min (872.3 - 676.7)

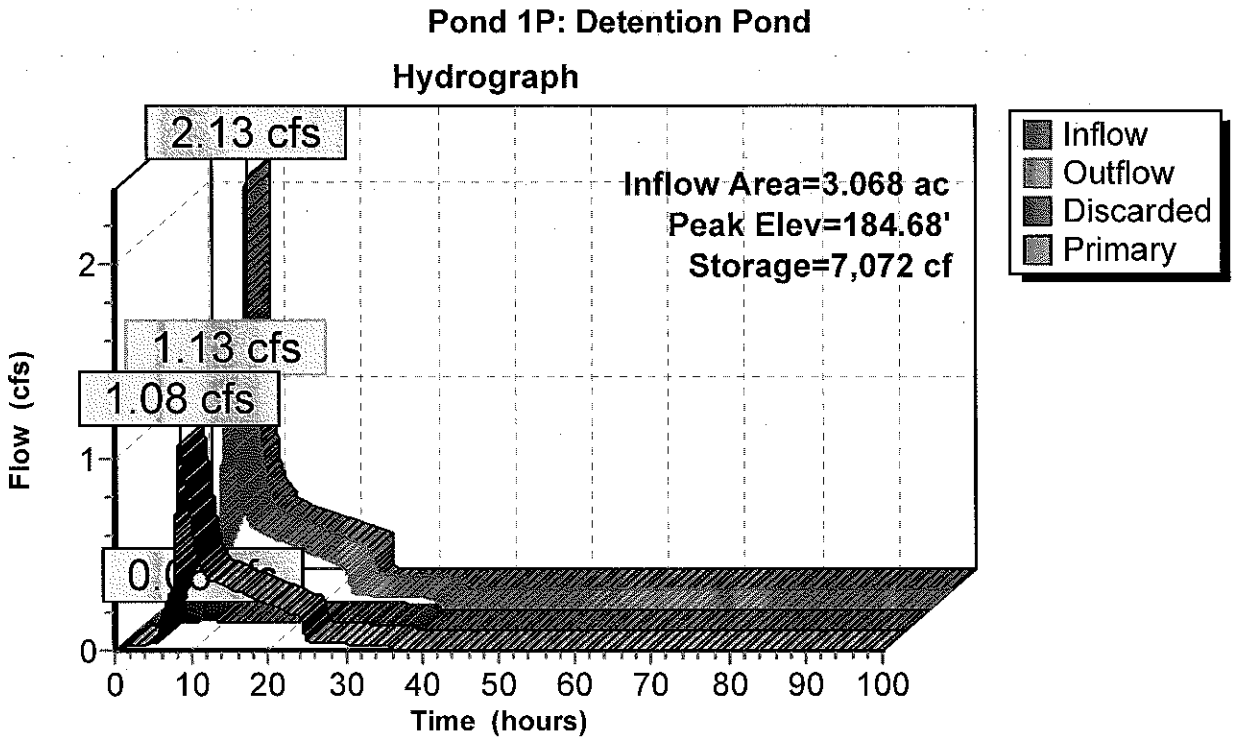
Volume	Invert	Avail.Storage	Storage Description
#1	181.00'	7,847 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
181.00	1,391	0	0
182.00	1,723	1,557	1,557
183.00	1,969	1,846	3,403
184.00	2,220	2,095	5,498
185.00	2,478	2,349	7,847

Device	Routing	Invert	Outlet Devices
#1	Discarded	181.00'	**0.900 in/hr Exfiltration over Horizontal area**
#2	Primary	179.53'	**0.9" Vert. Orifice/Grate** C= 0.620
#3	Primary	182.54'	**3.4" Vert. Orifice/Grate** C= 0.620
#4	Primary	183.73'	**4.5" Vert. Orifice/Grate** C= 0.620
#5	Primary	184.38'	**3.0" Vert. Orifice/Grate** C= 0.620

Discarded OutFlow Max=0.05 cfs @ 8.26 hrs HW=184.68' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=1.08 cfs @ 8.26 hrs HW=184.68' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 0.05 cfs @ 11.25 fps)
├**3=Orifice/Grate** (Orifice Controls 0.44 cfs @ 7.04 fps)
├**4=Orifice/Grate** (Orifice Controls 0.48 cfs @ 4.35 fps)
└**5=Orifice/Grate** (Orifice Controls 0.10 cfs @ 2.09 fps)


Pond 1P: Detention Pond
Hydrograph
2.13 cfs
1.13 cfs
1.08 cfs
Inflow Area=3.068 ac
Peak Elev=184.68'
Storage=7,072 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0
1
2
0 10 20 30 40 50 60 70 80 90 100

Summary for Pond 2P: Infiltration Planter

Inflow Area = 0.066 ac,100.00% Impervious, Inflow Depth = 3.77" for 25 Year event
Inflow = 0.06 cfs @ 7.88 hrs, Volume= 0.021 af
Outflow = 0.06 cfs @ 7.92 hrs, Volume= 0.021 af, Atten= 0%, Lag= 2.4 min
Discarded = 0.01 cfs @ 4.55 hrs, Volume= 0.014 af
Primary = 0.05 cfs @ 7.92 hrs, Volume= 0.006 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 198.61' @ 7.92 hrs Surf.Area= 130 sf Storage= 14 cf

Plug-Flow detention time= 3.6 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 3.6 min (663.1 - 659.5)

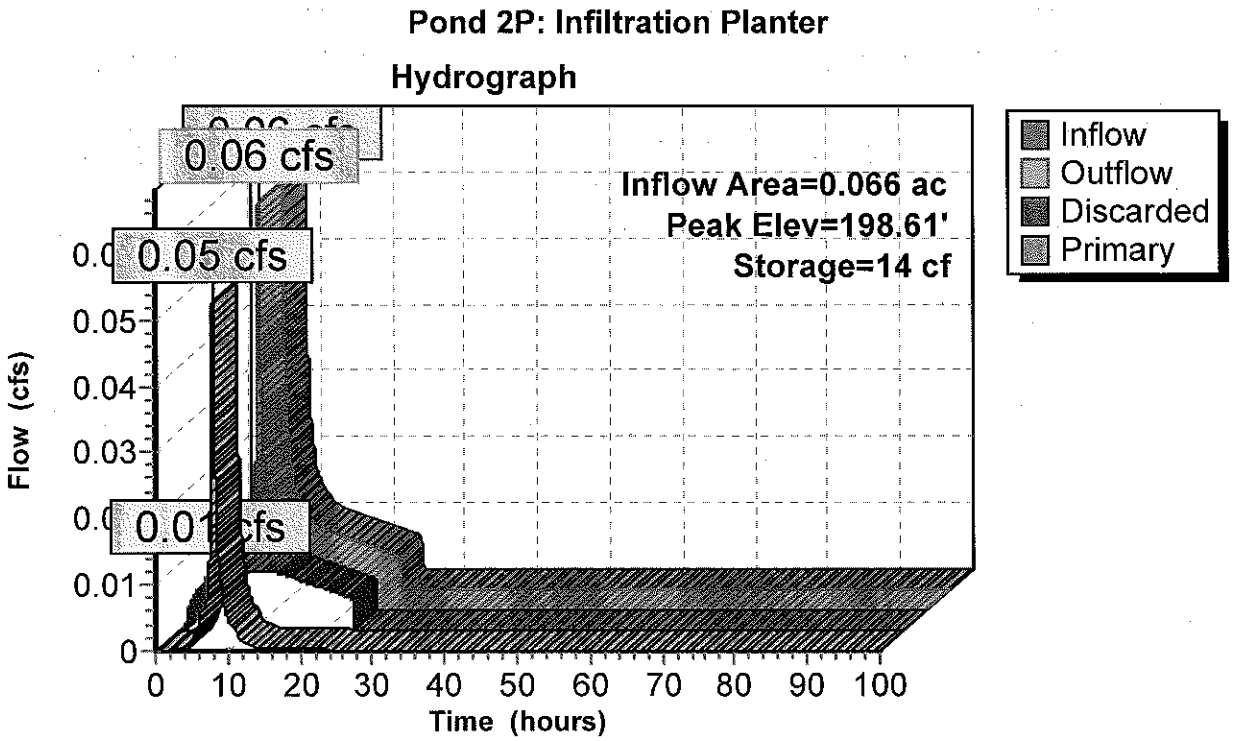
Volume	Invert	Avail.Storage	Storage Description
#1	198.50'	130 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
198.50	130	0	0
199.50	130	130	130

Device	Routing	Invert	Outlet Devices
#1	Discarded	198.50'	**3.000 in/hr Exfiltration over Horizontal area**
#2	Primary	198.50'	**12.0" Vert. Orifice/Grate** C= 0.620

Discarded OutFlow Max=0.01 cfs @ 4.55 hrs HW=198.51' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.05 cfs @ 7.92 hrs HW=198.61' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.05 cfs @ 1.16 fps)


Pond 2P: Infiltration Planter
Hydrograph
0.06 cfs
0.05 cfs
Inflow Area=0.066 ac
Peak Elev=198.61'
Storage=14 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.05
0.04
0.03
0.01
0
0 10 20 30 40 50 60 70 80 90 100
Time (hours)

Summary for Pond 5P: Infiltration Planter

Inflow Area = 0.066 ac,100.00% Impervious, Inflow Depth = 3.77" for 25 Year event
Inflow = 0.06 cfs @ 7.88 hrs, Volume= 0.021 af
Outflow = 0.06 cfs @ 7.92 hrs, Volume= 0.021 af, Atten= 0%, Lag= 2.4 min
Discarded = 0.01 cfs @ 4.55 hrs, Volume= 0.014 af
Primary = 0.05 cfs @ 7.92 hrs, Volume= 0.006 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 198.61' @ 7.92 hrs Surf.Area= 130 sf Storage= 14 cf

Plug-Flow detention time= 3.6 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 3.6 min (663.1 - 659.5)

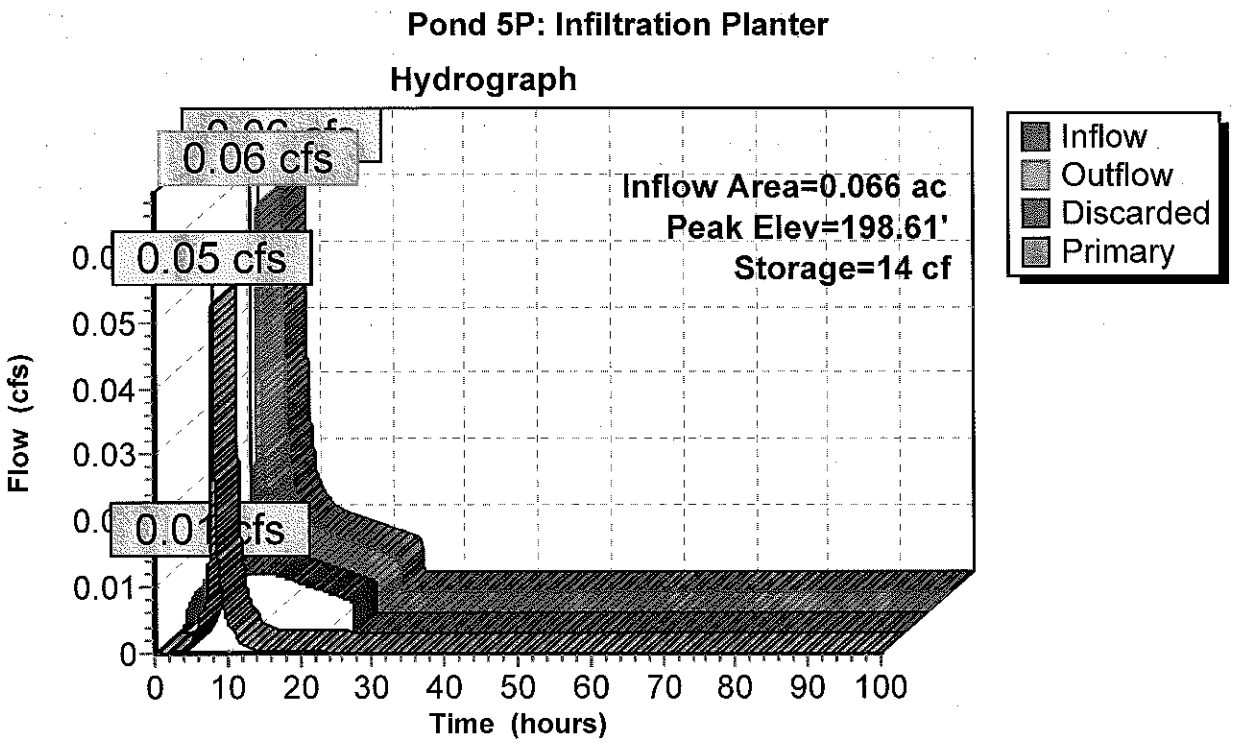
Volume	Invert	Avail.Storage	Storage Description
#1	198.50'	130 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
198.50	130	0	0
199.50	130	130	130

Device	Routing	Invert	Outlet Devices
#1	Discarded	198.50'	**3.000 in/hr Exfiltration over Horizontal area**
#2	Primary	198.50'	**12.0" Vert. Orifice/Grate** C= 0.620

Discarded OutFlow Max=0.01 cfs @ 4.55 hrs HW=198.51' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.05 cfs @ 7.92 hrs HW=198.61' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.05 cfs @ 1.16 fps)


Pond 5P: Infiltration Planter
Hydrograph
0.06 cfs
0.05 cfs
Inflow Area=0.066 ac
Peak Elev=198.61'
Storage=14 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.05
0.04
0.03
0.01
0
0 10 20 30 40 50 60 70 80 90 100
Time (hours)

Summary for Pond 7P: Infiltration Planter

Inflow Area = 0.066 ac,100.00% Impervious, Inflow Depth = 3.77" for 25 Year event
Inflow = 0.06 cfs @ 7.88 hrs, Volume= 0.021 af
Outflow = 0.06 cfs @ 7.92 hrs, Volume= 0.021 af, Atten= 0%, Lag= 2.4 min
Discarded = 0.01 cfs @ 4.55 hrs, Volume= 0.014 af
Primary = 0.05 cfs @ 7.92 hrs, Volume= 0.006 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 198.61' @ 7.92 hrs Surf.Area= 130 sf Storage= 14 cf

Plug-Flow detention time= 3.6 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 3.6 min (663.1 - 659.5)

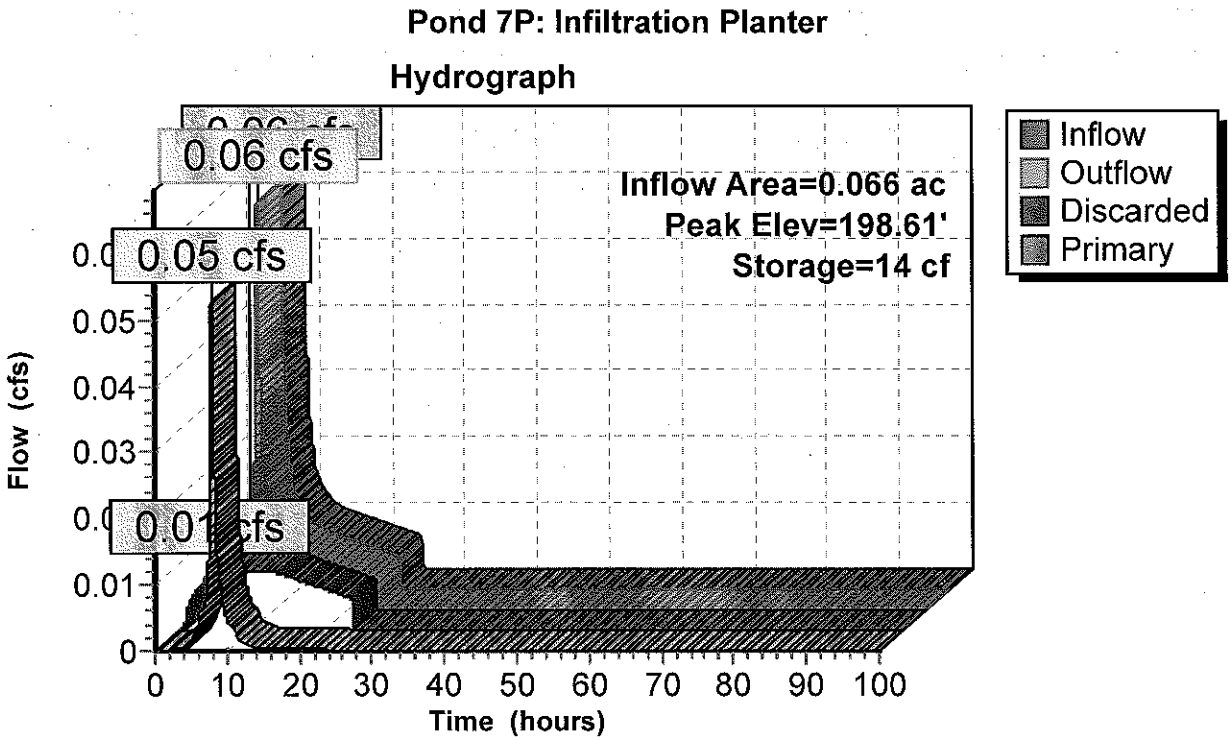
Volume	Invert	Avail.Storage	Storage Description
#1	198.50'	130 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
198.50	130	0	0
199.50	130	130	130

Device	Routing	Invert	Outlet Devices
#1	Discarded	198.50'	**3.000 in/hr Exfiltration over Horizontal area**
#2	Primary	198.50'	**12.0" Vert. Orifice/Grate** C= 0.620

Discarded OutFlow Max=0.01 cfs @ 4.55 hrs HW=198.51' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.05 cfs @ 7.92 hrs HW=198.61' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.05 cfs @ 1.16 fps)


Pond 7P: Infiltration Planter
Hydrograph
0.06 cfs
0.05 cfs
Inflow Area=0.066 ac
Peak Elev=198.61'
Storage=14 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.05
0.04
0.03
0.01
0
0 10 20 30 40 50 60 70 80 90 100
Time (hours)

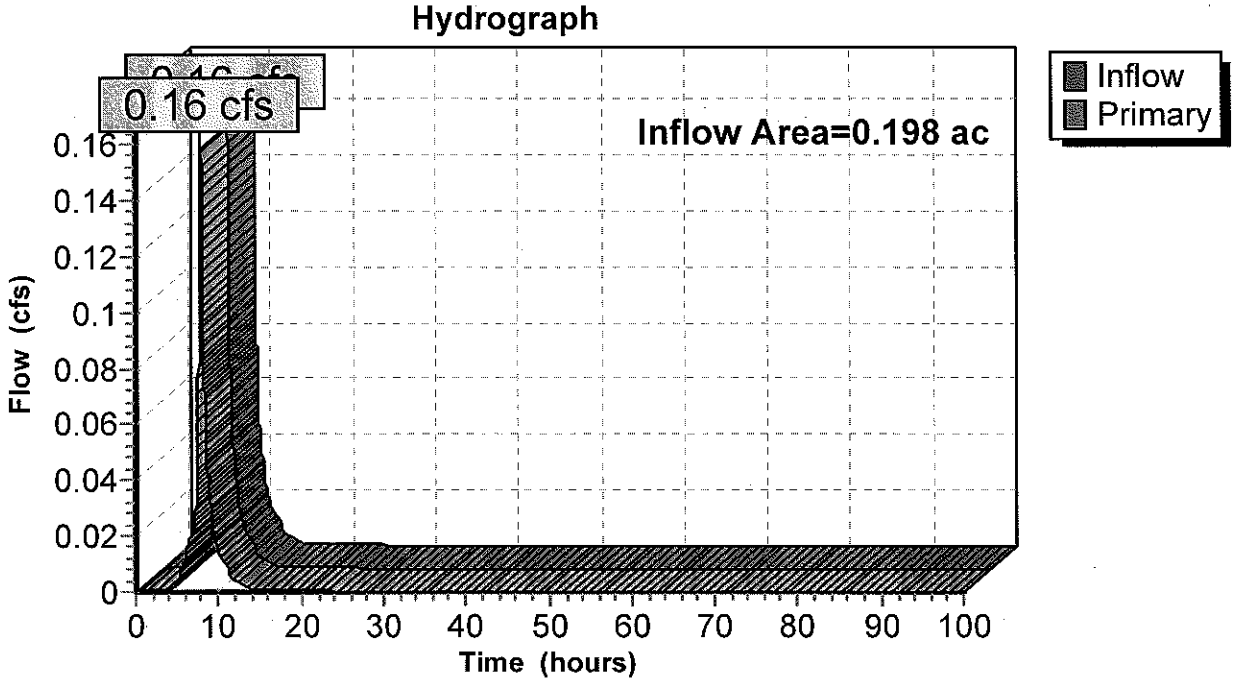
Summary for Link 1L: UPPER LOT FLOW

Inflow Area = 0.198 ac,100.00% Impervious, Inflow Depth = 1.14" for 25 Year event
Inflow = 0.16 cfs @ 7.92 hrs, Volume= 0.019 af
Primary = 0.16 cfs @ 7.92 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs

Link 1L: UPPER LOT FLOW

Hydrograph



Hydrologic Soil Group—Yamhill County, Oregon
(PL)

Map Scale: 1:1,090 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

Hydrologic Soil Group—Yamhill County, Oregon
(PL)

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: http://websoilsurvey.nrcs.usda.gov
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 3, Sep 18, 2015

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

Date(s) aerial images were photographed: Jul 8, 2010—Sep 4, 2011

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

Hydrologic Soil Group— Summary by Map Unit — Yamhill County, Oregon (OR071)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
2300A	Aloha silt loam, 0 to 3 percent slopes	C/D	3.1	100.0%
Totals for Area of Interest			**3.1**	**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

City of Newberg LIDA Sizing Form

(Include this form with plan submittal)

Project Title: _____

Project Address: _____

Project Taxlot/ Taxmap#: _____

Project Location: _____

Contact Name/Title/Company: _____

Phone/e-mail: _____

STEP 1: Determine Impervious Area Requiring Treatment

Total Gross Site Area (acres): _____

Pre. Dev. Impervious Area (ft): _____ (X)

Proposed Net New Impervious Area (ft): (PA)= (Y) - (X) _____ (PA)

Post Dev. Impervious Area (ft): _____ (Y)

STEP 2: Deduct Impervious Area LIDA Credits

Porous Pavement (sq. ft.): _____ (P)

Green Roof (sq. ft): _____ (G)

Other Credits as approved (sq. ft.): _____ (O)

Total Credits (sq. ft.): (C)= (P)+(G)+(O) _____ (C)

Impervious Area Requiring Treatment (sq. ft.): (IA)= (PA) - (C) _____ (IA)

STEP 3: Size LIDA Facilities for Remaining Impervious Area

	Impervious Area Treated (sq. ft.)	SF, Sizing Factor	LIDA Facility Size (sq. ft.)
Infiltration Planters/ Rain Garden	2,877 sf	0.045	130 sf
Flow-through Planter		0.060	
Public Flow-through Planter		0.060	

Total Impervious Area Treated (sq. ft.) _____ MUST BE EQUAL TO (IA)

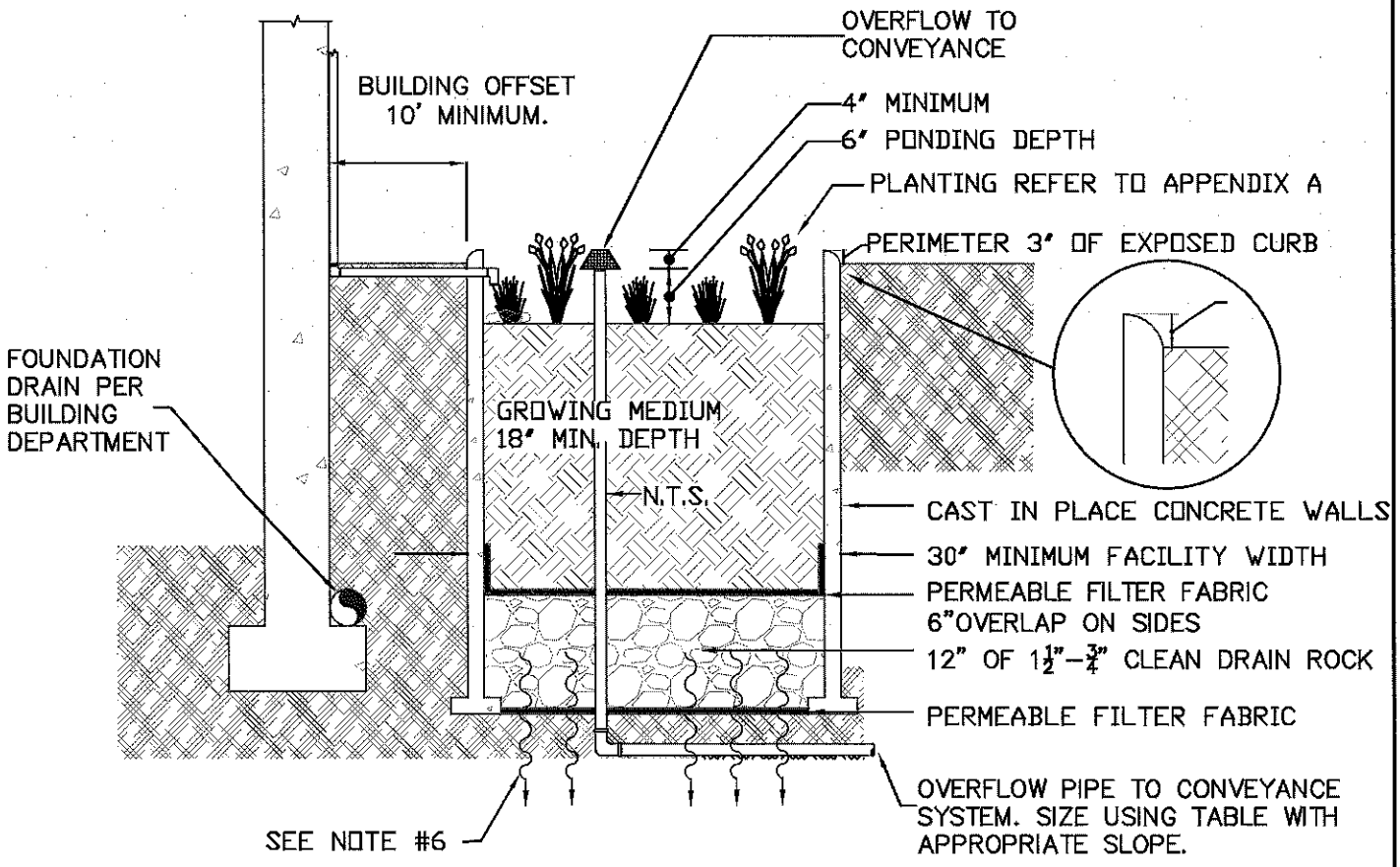
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE 503-537-1240
FAX 503-537-1277

REVISIONS

LIDA SIZING FORM

SCALE: N.T.S.
DATE: MARCH 2014
APPROVED BY: JAY H.
STANDARD DRAWING 451

PRIVATE/ PUBLIC WATER QUALITY & QUANTITY TREATMENT



OVERFLOW PIPE SIZE (1/8 in./ft. SLOPE)	
MAX PROJECT ROOF AREA (ft.)	OVERFLOW PIPE SIZE (in.)
822	3
1,880	4
3,340	6

OVERFLOW PIPE SIZE (1/4 in./ft. SLOPE)	
MAX PROJECT ROOF AREA (ft.)	OVERFLOW PIPE SIZE (in.)
1,160	3
2,650	4
4,720	6

NOTES:

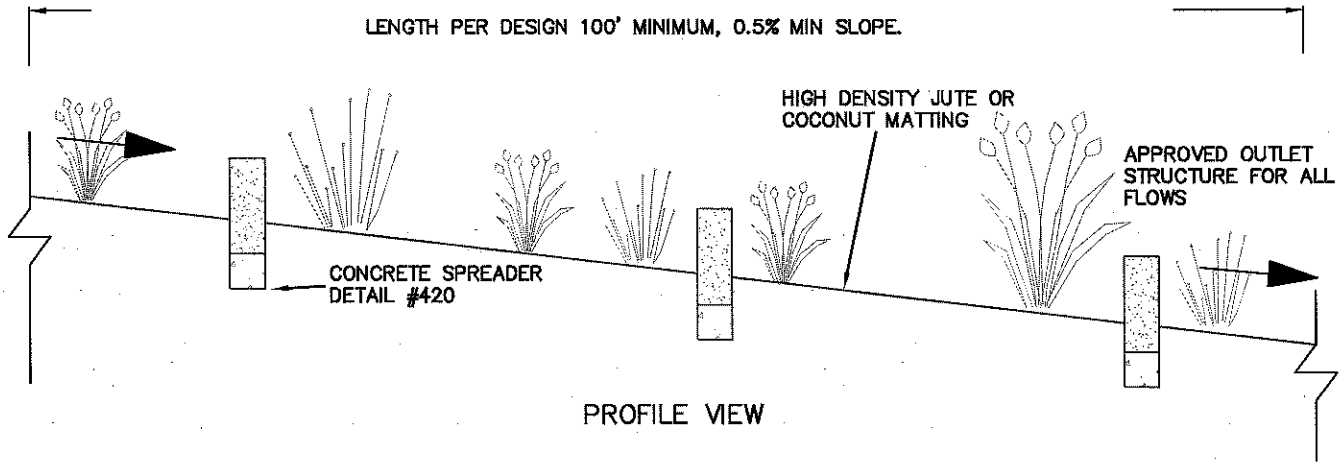
1. MAXIMUM SLOPE OF PLANTER 0.5%.
2. NO TREES OR DEEP ROOTED VEGETATION OVER PIPING IS ALLOWED IN FACILITY.
3. STORM FLOW INLETS THROUGH WALL CUT OUTS, BOTH TO MAINTAIN MAXIMUM LINEAR DISTANCE FROM THE OVERFLOW PIPE.
4. PRIVATE OVERFLOW PIPE TO BE MINIMUM SPECIFIED IN THE PLUMBING CODE, SEE TABLE. PUBLIC FACILITIES SHALL BE SIZED TO CONVEY THE 25 YEAR STORM.
5. ENERGY DISSIPATERS REQUIRED AT WATER ENTRANCES MINIMUM 18"X18"X6" OF 4 TO 6 INCH ANGULAR RIPRAP.
6. SIZING FACTORS, FOR INFILTRATION FACILITIES ASSUME AN UNFACTORED INFILTRATION RATE GREATER THAN 2 IN PER HOUR.
7. MUST BE LOCATED 3' MINIMUM FROM ADJACENT PROPERTY LINE.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

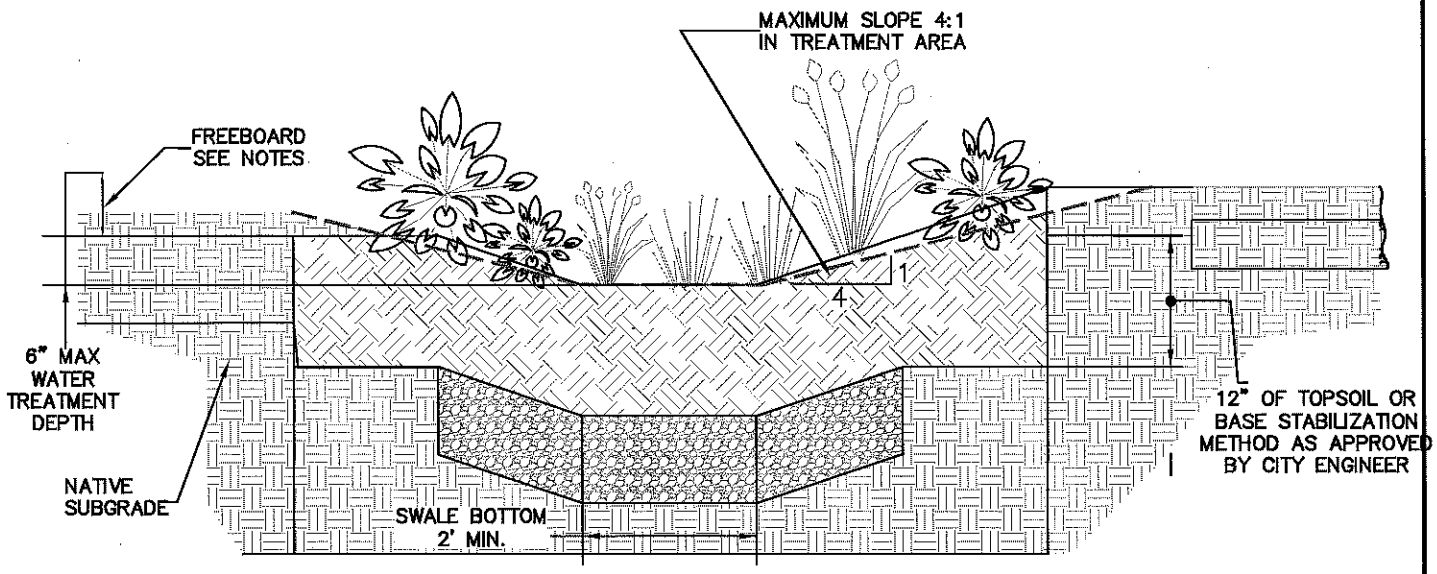
REVISIONS:

INFILTRATION PLANTER

SCALE: N.T.S.
DATE: MARCH 2014
APPROVED BY: JAY H.
STANDARD DRAWING 453



PROFILE VIEW



CROSS-SECTIONAL VIEW WITH ON STREET PARKING

HYDRAULIC DESIGN CRITERIA:

1. DESIGN FLOW: WATER QUALITY FLOW
2. MIN. HYDRAULIC RESIDENCE TIME: 9 MINUTES
3. MAXIMUM WATER DESIGN DEPTH: 0.5 FEET
4. MINIMUM FREE BOARD: 1.0 FOOT (FOR FACILITIES NOT NOT PROTECTED FROM HIGH FLOWS)
5. MANNING "n" VALUE: 0.24
6. MAXIMUM VELOCITY: 2.0 fps BASED ON 25-YEAR FLOW

FACILITY DESIGN CRITERIA:

1. UP UNTIL THE MAX WATER SURFACE, INTERIOR SIDE SLOPES, MAX SLOPE IS 4H:1V
2. ABOVE MAX WATER SURFACE, INTERIOR SIDE SLOPES, MAX SLOPE IS 2H:1V
3. IF INTERIOR SIDE SLOPES MUST BE MOWED SIDE SLOPE THEN THE MAX SLOPE IS 4H:1V
4. EXTERIOR SIDE SLOPES MAX 2H:1V
5. MINIMUM FREEBOARD 1 FOOT FROM 25 YEAR DESIGN WATER SURFACE ELEVATION
6. PROVIDE AN ENERGY DISSIPATER AT THE ENTRANCE OF SWALE, WITH A MINIMUM LENGTH OF 4 FEET. IT WILL BE DESIGNED TO REDUCE VELOCITIES AND SPREAD THE FLOW ACROSS THE TREATMENT CROSS SECTION.

FACILITY DESIGN CRITERIA:

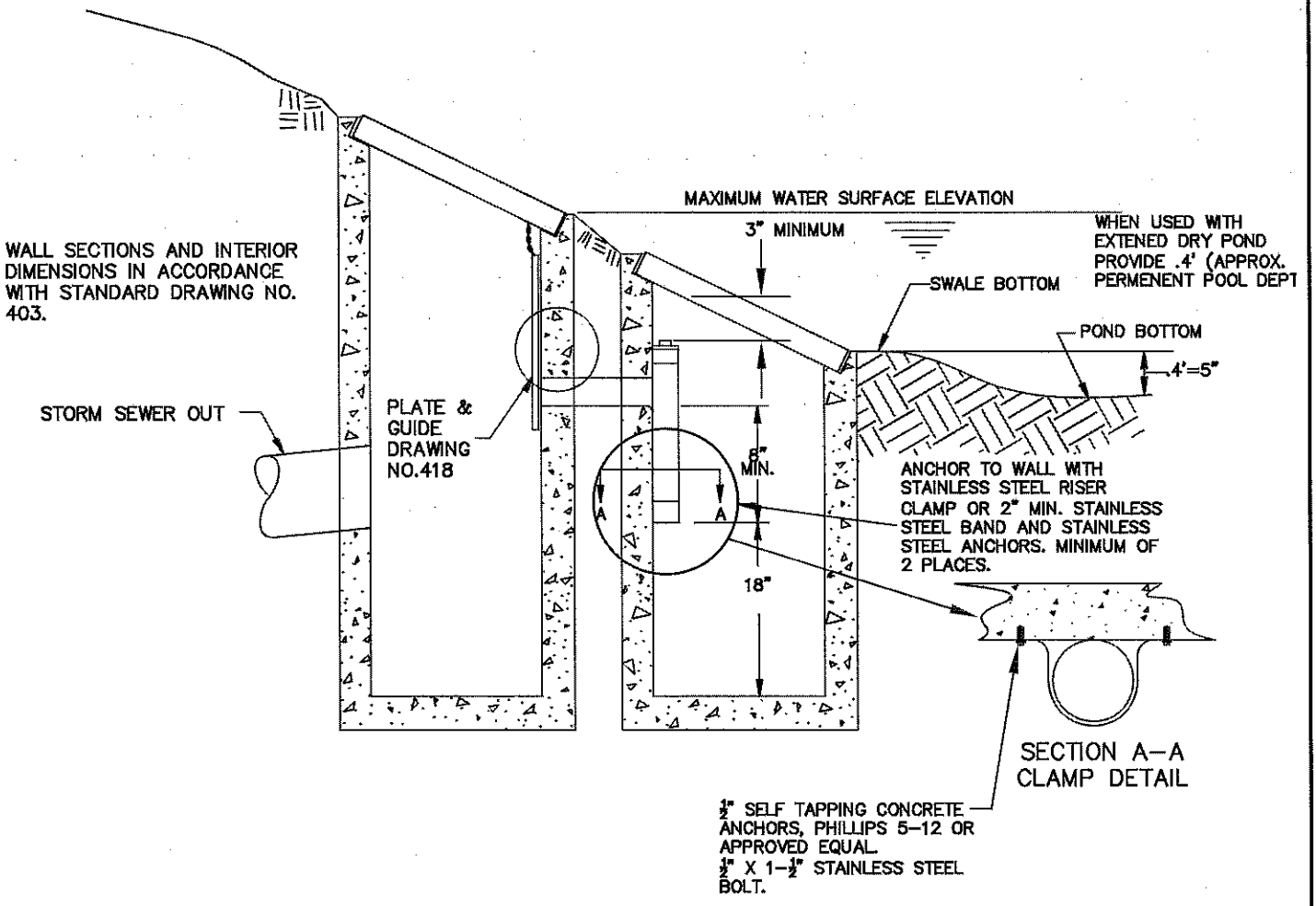
7. THE USE OF INTERMEDIATE FLOW SPREADERS IS REQUIRED, SPACING FOR CONCRETE SPREADERS TO BE DETERMINED BY DESIGN ENGINEER.
8. EXTEND RIVER ROCK, TOPSOIL, AND HIGH DENSITY JUTE OR COCONUT MATTING TO TOP OF TREATMENT AREA (OR WQV LEVEL). EXTEND TOPSOIL AND LOW DENSITY JUTE MATTING TO THE EDGE OF WATER QUALITY TRACT.
9. WHERE SWALES WRAP 180-DEGREES FORMING PARALLEL CHANNELS, FREEBOARD SHALL BE PROVIDED BETWEEN EACH OF THE PARALLEL CHANNELS. A 1 FOOT WALL ABOVE GROUND SURFACE MAY ALSO BE USED. ALTERNATIVE: A SOIL BASED BERM WITH A MIN. TOP WIDTH OF 1 FOOT & MAX 2.5H:1V SIDE SLOPES MAY BE USED.
10. WHERE SWALES ARE DESIGNED WITH DITCH INLETS & OUTLET STRUCTURES & DESIGN OF MAINTENANCE ACCESS TO SUCH STRUCTURES MAY BE DIFFICULT DUE TO SWALE LOCATION, SWALES MAYBE DESIGNED AS FLOW THROUGH FACILITIES WITH UNSUMPED STRUCTURES. MAINTENANCE ACCESS TO STRUCTURE END OF THE FACILITY IS REQUIRED.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:

VEGETATED SWALE

SCALE: N.T.S.
DATE: MARCH 2014
APPROVED BY: JAY H.
STANDARD DRAWING 460



NOTES:

1. CONNECTING PIPE AND TEE SHALL BE 4", 6", OR 8" AWWA C–900 OR ASTM 3034 PVC,AND ONE SIZE LARGER THAN THE ORIFICE OPENING.
2. MAXIMUM ORIFICE OPENING SHALL BE 6" DIAMETER.
3. STRUCTURES SHALL CONFORM TO STANDARD DRAWING NO. 390 DITCH INLET.
4. FRAME AND GRATE SHALL CONFORM TO STANDARD DRAWING NO.403, DITCH INLET FRAME AND GRATE.
5. PLATE AND GUIDE SHALL BE SECURED FLUSH AGAINST WALL OF STRUCTURE AS APPROVED.
6. MAINTAINANCE ACCESS REQUIRED TO WITHIN 10' OF CENTER OF BOTH STRUCTURES.

City of Newberg
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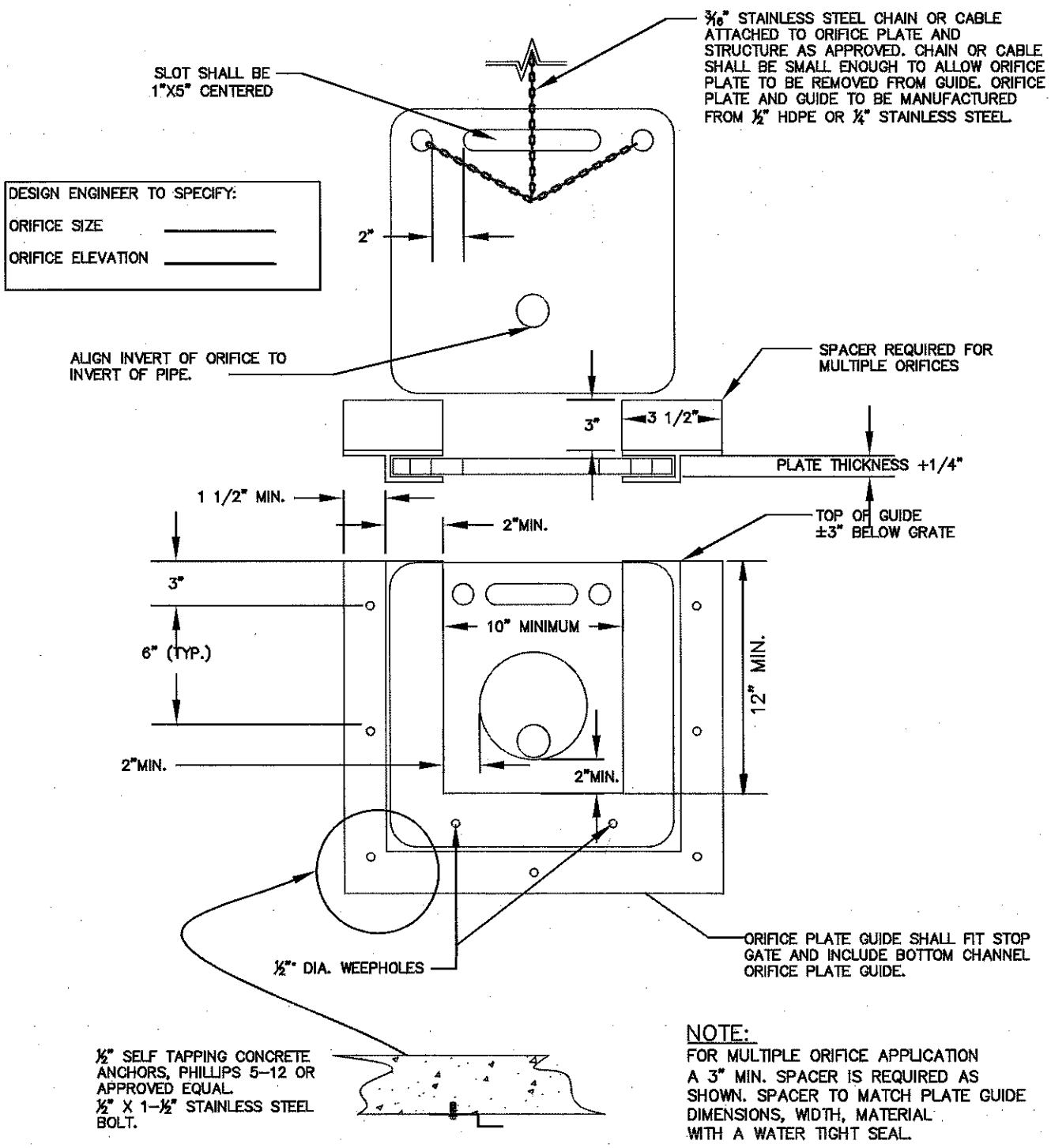
REVISIONS:

OUTFLOW CONTROL STRUCTURE

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	417



City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
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REVISIONS:

ORIFACE PLATE AND GUIDE

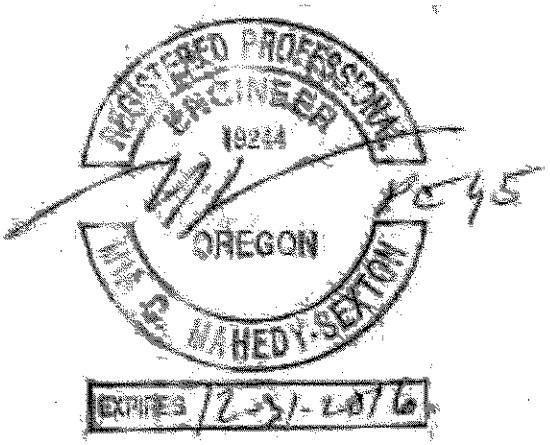
SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	418

Geotechnical Report

Columbia Drive subdivision
Newberg, Oregon

Prepared for:
Del Bocco Vista

28 April 2016



Rapid Soil Solutions LLC
3915 SW Plum Street
Portland, OR 97219
503-816-3689

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1.0 PROJECT AND SITE DESCRIPTIONS

Rapid Soil Solutions (RSS) has prepared this geotechnical report for the proposed development of three parcels between Lynn Drive and Columbia Drive, in Nehalem, and assigned the tax lot IDs of R3218AB 01700, R3218AB 01701, and R3218AB 01702. The site is comprised of a large field with generally southeast-descending slopes and intermittent trees. The site is bound to the south by Columbia Drive and to the north by Lynn Drive. A single parcel (R3218AB 01600) containing a single family residence assigned the street address of 421 W Columbia Drive. To the east is a set of single family residences with house numbers including 308 Lynn Drive, 1961 through 1847 Crater Lane and 315 Columbia Drive. The site is situated roughly 500' east of NE Chehalem Drive, 770' west of N Main Street, 0.41 miles west of N College Street (OR-219), 0.50 miles north of Yamhill-Newberg Highway (OR-240), 0.94 miles north of 99W (Pacific Highway W), and is roughly 1.09 miles south of NE North Valley Road. The site can be found in the northwest quarter of the northeast quarter of Section 18, Township 3-South, Range 2-West W.M. in Yamhill County, and can be distinguished by the tax lot numbers 1700, 1701 and 1702 (R3218AB 01700, R3218AB 01701, and R3218AB 01702). The latitude and longitude of the site are 45.313905 and -122.981887 (45°18'50.1"N, 122°58'54.8"W). See Appendix A, Figure 1 for site location indicated on a USGS 7.5 minute topographic map. Subsequent figures include additional site location information.

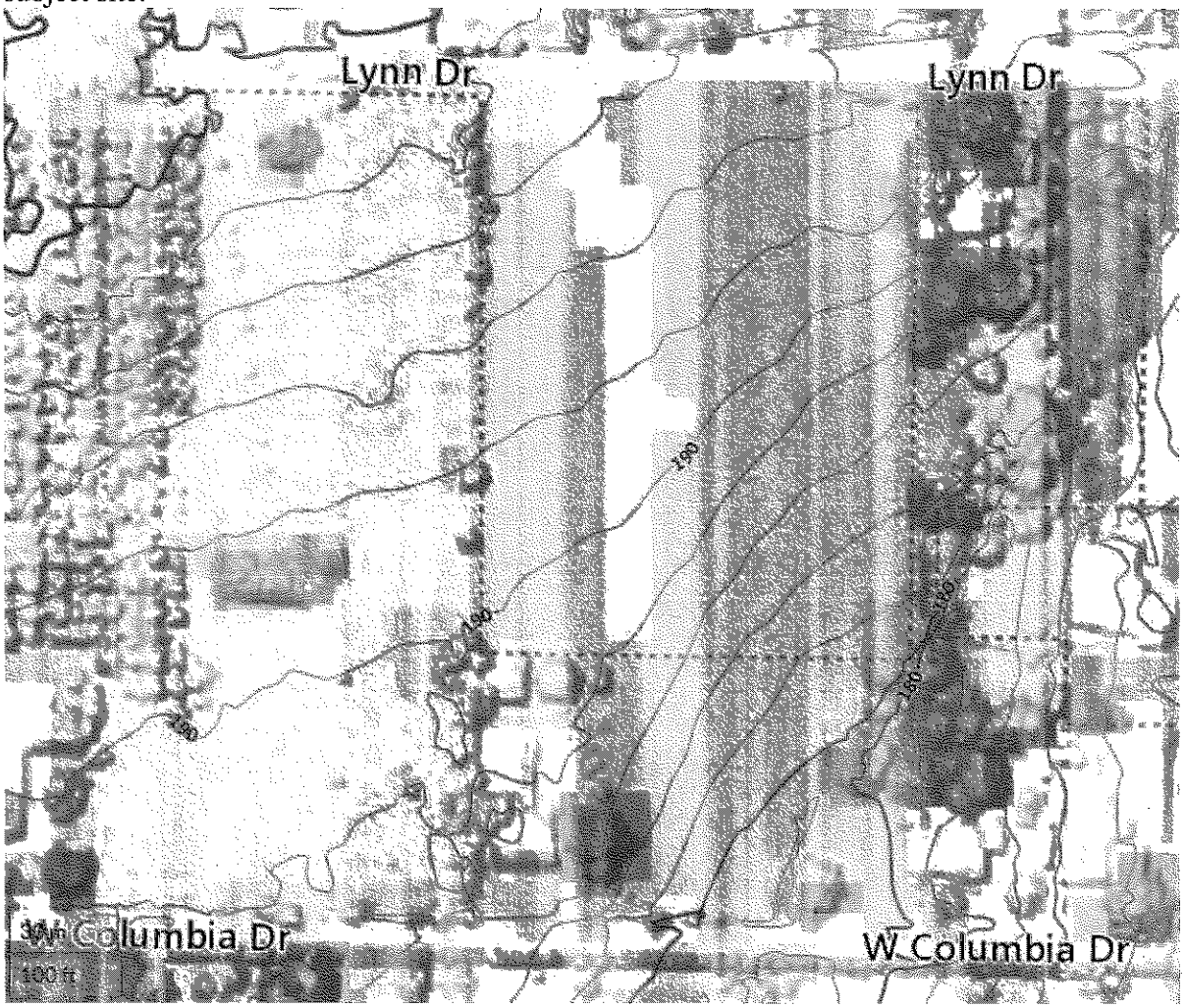
2.0 SITE CONDITIONS

2.1 Surface Conditions

This 3.06-acre subject site is situated just below the southwestern-descending slopes of the Chehalem Mountains. The site is mapped by Coe (2011: Open File Report O-11-06) as falling within the lowlands of the Willamette River Basin with slopes that descend towards the Chehalem Creek, a tributary to the Willamette River. The site is classified as situated within 100' elevation of local waterways; the closest down-slope waterway, is a south-flowing tributary to Chehalem Creek that passes roughly 250' beyond the southeastern corner of the subject site. Lidar imagery indicates that the slopes on site are generally all descending southeast towards the previously noted, un-named, south-flowing tributary to Chehalem Creek. Historical aerial imagery indicates that there were two structures on the site, constructed prior to 1994 and were demolished or fell down between 2002 and 2003. The spot where the larger of the two structures once stood now contains a dense blackberry thicket. A row of trees is present roughly on the western half of the parcel in the center of the subject site. Other trees on site can be found in the southeastern corner of the site and along the southern edge. Two power poles can be seen in aerial imagery, within the northeastern quarter of the site, but appear to have been removed between 2013 and 2014. One pole with a meter still remains on site, near the center of the parcel.

The majority of the site currently contains tall grasses. Additionally there are some trees in various locations on the parcel and a large blackberry thicket situated within the site's northeastern quarter. Historical aerial imagery indicates that the northern half of the site

was used to grow a field crop such as grass, while the southern portion of the site may have also once been used for agricultural purposes, but no evidence indicates a previous application as a tree farm or orchard.
RSS understands that the proposed work will establish a 29-lot subdivision within the subject site.

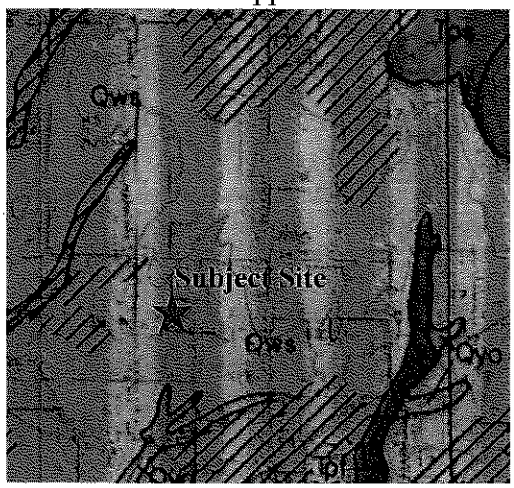


2.2 Regional Geology

Current geologic literature[1][2][3][4] classifies the slopes underlying the subject site as

1 Burns, Scott, Growney, Larry, Brodersen, B., Yeats, R.S., and Popowski, T.A., 1997, Map showing faults, bedrock geology, and sediment thickness of the western half of the Oregon City 1:100,000 quadrangle, Washington, Multnomah, and Marion Counties: Oregon Department of Geology and Mineral Industries, Interpretive Map Series 4, scale 1:100,000.
2 Hart, D.H. and Newcomb, R.C., 1965, Geology and ground water of the Tualatin Valley, Oregon: U.S. Geological Survey, Water-Supply Paper 1697, scale 1:48,000.
3 Schlicker, H.G. and Deacon, R.J., 1967, Engineering geology of the Tualatin Valley region: Oregon Department of Geology and Mineral Industries, Bulletin 60, scale 1:48,000.
4 Gannett, M.W. and Caldwell, R.R., 1998, Geologic framework of the Willamette lowland aquifer system,

Missoula floods deposits. These periglacial sediments were emplaced from about 21,000 to 12,000 years ago when dozens of gigantic floods burst through the ice damn that retained Glacial Lake Missoula. The floodwaters, which reached an elevation of 400 feet above sea level, soured many areas down to bedrock and buried others beneath thick layers of gravel, sand and silt that can be divided into a fine-grained and course-grained units. Additionally the slopes underlying the site are mapped as fine-grained deposits. This fine-grained unit is comprised primarily of unconsolidated clay, silt, and fine to medium grained white or tan sand. The sediments are deposited in a series of distinct layers, a few inches to a few feet thick, each of which represents a single flood. The finer sediments are predominantly quartz and feldspar and also contain white mica. The coarser sediments can be comprised of Columbia River Basalt fragments. Poorly defined beds of 1- to 3-feet thickness are observed in outcrops, and complex layering has been recorded in boreholes. The clay phase of the deposit is mapped just northeast of the subject site. The total thickness of the unconsolidated sedimentary deposits at the subject site falls between 0 and 99 meters. Soil development commonly introduces significant clay and iron oxides into the upper 6-10 feet of the deposit.



Qyo Young alluvium

Qws Willamette Silt

Qs Upland Silt

Troutdale Formation

Tcr Columbia River Basalt

Tos undifferentiated Oligocne marine sediments

2.3 Field Exploration and Subsurface Conditions

2.3.1 Field Explorations

Four (4) test pits were excavated with an excavator and two (2) hand augur holes. The location of the test pits are shown on Figure 4 in Appendix A. A GIT observed the excavation of the pits and logged the subsurface materials with them reviewed by a registered professional engineer. Soil logs detailing materials encountered are Appendix B. The logs were created using the Unified Soil Classification and Visual Manual Procedure (ASTM-D 2488). Samples were transported to the laboratory ACS Testing of Tigard, Oregon for further classification in seal bags. Please see Appendix B for further laboratory results.

Oregon and Washington: U.S. Geological Survey, Professional Paper 1424-A, scale 1:250,000.

2.3.1 Subsurface Conditions
The soil conditions were stiff silty to CLAY at 6 feet. With moisture contents ranging from 29% to 39.4%

2.3.2 Groundwater
Groundwater was encountered in TP #2 at 4ft and TP #4 at 5.5ft. Existing test pit (shown on figure 3) on site confirms shallow ground water during the winter months as found in TP's 2 and 4.

3.0 GEOTECHNICAL DESIGN RECOMMENDATIONS

3.1 Foundation Design

The building foundations may be installed on either engineered fill or firm native sub-grade that is found at a depth of about 2 feet. This depth may be locally variable and should be confirmed by a geotechnical engineer or their representative at the time of construction.

Continuous wall and isolated spread footings should be at least 16 and 24 inches wide, respectively. The bottom of exterior footings should be at least 16 inches below the lowest adjacent exterior grade. The bottom of interior footings should be at least 12 inches below the base of the floor slab.

Footings placed on engineered fill or firm native sub-grade should be designed for an allowable bearing capacity of 2000 *pounds per square foot* (**psf**). The recommended allowable bearing pressure can be doubled for short-term loads such as those resulting from wind or seismic forces.

Based on our analysis the total post-construction settlement is calculated to be less than 1 inch, with differential settlement of less than 0.5 inch over a 50-foot span for maximum column, perimeter footing loads of less than 100 kips and 6.0 kips per linear foot.

Lateral loads on footings can be resisted by passive earth pressure on the sides of the structures and by friction at the base of the footings. An allowable lateral bearing pressure of 100 *pounds per cubic foot* (**psf/f**) below grade may be used. Adjacent floor slabs, pavements or the upper 12-inch depth of adjacent, unpaved areas should not be considered when calculating passive resistance. An angle of internal friction of 32 degrees can be used.

If construction is undertaken during wet weather, we recommend a thin layer of compacted, crushed rock be placed over the footing sub-grades to help protect them from disturbance due to the elements and foot traffic.

3.2 Floor Slabs

Satisfactory sub-grade support for building floor slabs can be obtained from the native sub-grade prepared in accordance with our recommendations presented below. A 6-inch-thick layer of imported granular material should be placed and compacted over the prepared sub-grade. Imported granular material should be crushed rock or crushed gravel that is fairly well graded between coarse and fine, contains no deleterious materials, have a maximum particle size of 1 inch, have less than 5 percent by weight passing the U.S. Standard No. 200 Sieve, and meet OSSC 02630.10 – Dense Graded Aggregate 1"-0". The imported granular material should be placed in 6-inch-thick lifts and compacted to at least 95 percent of the maximum dry density as determined by American Society for Testing and Materials (ASTM) D 1557. A sub-grade modulus of 125 pounds per cubic inch (pci) may be used to design the floor slab.

Installation of a vapor barrier is required for all the houses built on this lot. It will reduce the potential for moisture transmission through, and efflorescence growth on, the floor slabs. Additionally, flooring manufacturers often require vapor barriers to protect flooring and flooring adhesives and will warrant their product only if a vapor barrier is installed according to their recommendations. The selection and design of an appropriate vapor barrier, if needed, should be based on discussions among members of the design team.

3.3 Seismic Design Criteria

The seismic design criteria for this project found herein is based on the ASCE 7-10 and from the USGS Earthquake Hazards Program. A summary of seismic design criterion below: using a Lat of 45.31305 and Long of -122.981887

	Short Period	**1 Second**
Maximum Credible Earthquake Spectral Acceleration	Ss = 0.956g	S1 = 0.438 g
Adjusted Spectral Acceleration	Sms = 1.068	Sm1 = 0.684
Design Spectral Response Acceleration Perimeters	Sds = 0.712	Sd1= 0.456

3.4 GeoHazard Review

The Oregon HazVu: Statewide Geohazard Viewer5 and Metromap6 were reviewed on 26 April 2016 to investigated mapped geological hazards. This review indicates that the subject site is situated just beyond the northeastern edge of the 100-year floodplain, as mapped by FEMA. The expected earthquake-shaking hazard is classified as 'very strong' with a liquefaction hazard classification of 'low'. The nearest mapped active fault is a NW-SE oriented fault that passes by the subject site approximately 0.38 miles to the southwest. Other, inactive faults are mapped further away. There are no landslides on or in close proximity to the subject site. The nearest mapped landslide is along the edge of steeps slopes of the Chehalem Mountains, roughly 1.90 miles north of the subject site. The landslide susceptibility for the site is classified as low (landsliding unlikely) to moderate (landsliding possible).

5 http://www.oregongeology.org/hazvu/
6 http://gis.oregonmetro.gov/metromap/

3.5 Roadway Design

Our pavement design recommendations are based on the clayey SILT, 6" of 1 ½" minus rock with 2" of ¾" minus with 4in of AC will meet 25 year traffic growth for interior street design. RSS shall be called to proof roll the sub-grade before rock is placed. Please allow 24hours for all inspections.

Wet weather section for winter work: RSS recommends an over excavation of 18in of and replacing with 3in minus rock. The wet weather section shall be constructed using only tracked vehicles. No wheeled vehicles shall be allowed on the grade until the full rock section is placed. In lieu of the large 3in rock the contractor can cement treat the base to a depth of 18in. A sample three (3) 5 gallon buckets of the soil and sample of the cement shall be given to RSS at least a week's prior to CTB work. RSS will have its lab run a proctor with the soil and 3 different percentages of cement. The lab will then will break the samples to giving us the most cost effective cement percentage with the highest strength. RSS lab will need to be onsite during CTB operations to provide moisture percentages to CTB operator and measure the cement mixed to ensure it meets our lab values.

3.6 Infiltration testing

Two (2) hand augur holes were excavated as shown on figure 3 in the appendix A for infiltration tests for storm water design. See attached spread sheet in appendix B. RSS found at 2ft neat Lynn Drive we had 6in/hr drainage after 3 hour test. In the proposed pond we had 1.7in/hr of water drainage. Infiltration tests were conducted using the EPA falling head method. The reported rate is the last test after 3 hours.

4.0 CONSTRUCTION RECOMMENDATIONS

4.1 Site Preparation

Demolition should include removal of existing improvements throughout the project site. Underground utility lines, vaults, basement walls or tanks should be removed or grouted full if left in place. I recommend that soil disturbed during grubbing operations be removed to firm, undisturbed sub-grade. RSS will need to supply a stripping inspection prior to any other work taking place. Please allow 24hours notice for all inspections.

4.1.1 Proof Rolling

Following stripping and prior to placing aggregate base course, pavement the exposed sub-grade should be evaluated by proof rolling. The sub-grade should be proof rolled to identify soft, loose, or unsuitable areas. Please give 24 hour notice to observe the proof rolling. Soft or loose zones identified during the field evaluation should be compacted to an unyielding condition or be excavated and replaced with structural fill, as discussed in the *Structural Fill* section of this report.

4.1.2 Wet Weather Conditions

The near-surface soils will be difficult during or after extended wet periods when the moisture content of the surface soil is more than a few percentage points above optimum. See above roadway design section.

4.1.3 Test pit backfilling

RSS excavated a total of four (4) tests pits to evaluate the site soils. They were backfilled and compacted with the machine. If will need to be re-excavated at time of construction and backfilled as per the standards in this report.

4.2 Excavation

Subsurface conditions of accessible cleared areas of the project site show predominately SILT to a depth explored (8 feet). Excavations in the upper soils may be readily accomplished with conventional earthwork equipment with smooth faced bucket.

4.3 Structural Fills

Fills should be placed over sub-grade prepared in compliance with Section 4.1 of this report. Material used, as structural fill should be free of organic matter or other unsuitable materials and should meet specifications provided in OSSC, depending upon the application. A discussion of these materials is in the following sections.

4.3.1 Native Soils

Laboratory testing indicates that the moisture content of the typical for optimum moisture content of the soil required for satisfactory compaction. This is depending on the weather conditions at the time of excavation. Native soils can use ASTM D698 and 95% compaction is required. Please supply the engineer with a 5gallon bucket of material 48hours prior to any compaction tests required. Compaction tests are required every 500 cu feet of fill or every 1.5 feet of elevation.

4.3.2 Imported Granular Fill

The imported granular material must be reasonably well graded to between coarse and fine material and have less than 5% by weight passing the US Standard No.200 Sieve. Imported granular material should be placed in lifts 8 to12 inches and be compacted to at least 92% of the maximum dry density, as determined by ASTM D 1557. Where imported granular material is placed over wet or soft soil sub-grades, we recommend that a geo-textile serve as a barrier between the sub-grade and imported granular material. Please supply the engineer with a 5gallon bucket of material 48hours prior to any compaction tests required. Compaction tests are required every 500 cu feet of fill or every 1.5 feet of elevation

4.3.3 Pavement Base Aggregate

Imported base aggregate for roads and parking lots should be clean, crushed rock or crushed gravel. The base aggregate should meet the gradation defined in OSSC 02630.10 – Dense Graded Aggregate 1 1/2"-0," with the exception that the

aggregate should have less than 5% passing a US Standard No. 200 Sieve. The base aggregate should be compacted to at least 92% of the maximum dry density, as determined by ASTM D 1557. Please supply the engineer with a 5gallon bucket of material 48hours prior to any compaction tests required.

4.4 Drainage Considerations

The Contractor shall be made responsible for temporary drainage of surface water and groundwater as necessary to prevent standing water and/or erosion at the working surface. We recommend removing only the foliage necessary for construction to help minimize erosion. Slope the ground surface around the structures to create a minimum gradient of 2% away from the building foundations for a distance of at least 5 feet. Surface water should be directed away from all buildings into drainage swales or into a storm drainage system.

5.0 CONSTRUCTION OBSERVATIONS

Satisfactory pavement and earthwork performance depends on the quality of construction. Sufficient monitoring of the activities of the contractor is a key part of determining that the work is completed in accordance with the construction drawings and specifications. I recommend that a geotechnical engineer observe general excavation, stripping, fill placement, and sub-grades in addition to base. Subsurface conditions observed during construction should be compared with those encountered during the subsurface explorations. Recognition of changed conditions requires experience. Therefore, qualified personnel should visit the site with sufficient frequency to detect whether subsurface conditions changes significantly from those anticipated.

6.0 LIMITATIONS

This report has been prepared for the exclusive use of the addressee, and their architects and engineers for aiding in the design and construction of the proposed development. It is the addressee's responsibility to provide this report to the appropriate design professionals, building officials, and contractors to ensure correct implementation of the recommendations.
The opinions, comments and conclusions presented in this report were based upon information derived from our literature review, field investigation, and laboratory testing. Conditions between, or beyond, our exploratory borings may vary from those encountered. Unanticipated soil conditions and seasonal soil moisture variations are commonly encountered and cannot be fully determined by merely taking soil samples or soil borings. Such variations may result in changes to our recommendations and may require that additional expenditures be made to attain a properly constructed project. Therefore, some contingency fund is recommended to accommodate such potential extra costs.

If there is a substantial lapse of time between the submission of this report and the start of work at the site; if conditions have changed due to natural causes or construction operations at, or adjacent to, the site; or, if the basic project scheme is significantly modified from that assumed, it is recommended this report be reviewed to determine the applicability of the conclusions and recommendations.

The work has been conducted in general conformance with the standard of care in the field of geotechnical engineering currently in practice in the Pacific Northwest for projects of this nature and magnitude. No warranty, express or implied, exists on the information presented in this report. By utilizing the design recommendations within this report, the addressee acknowledges and accepts the risks and limitations of development at the site, as outlined within the report.

APPENDIX A

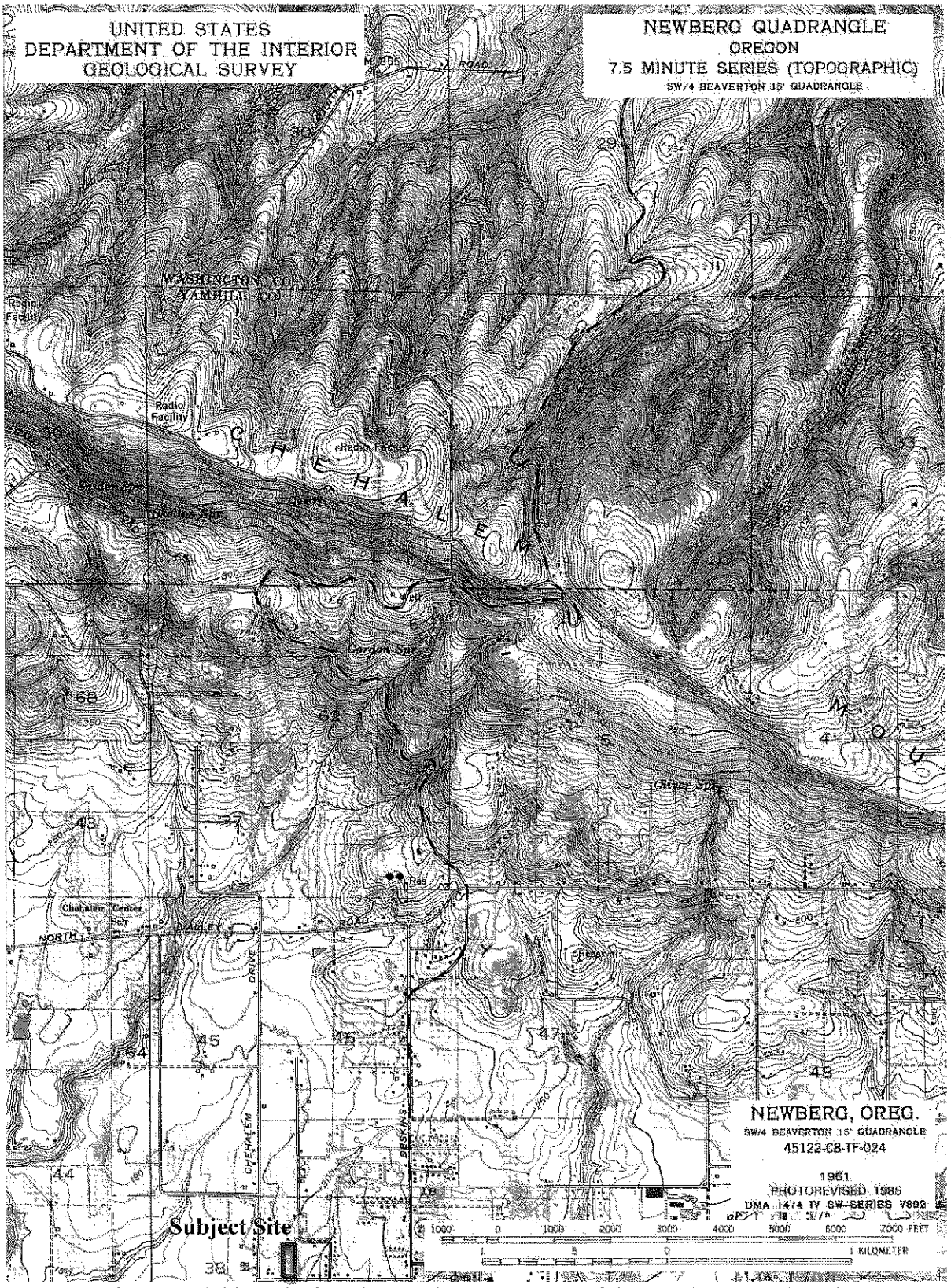


Figure 1: Subject site location on the NW quarter of the Newberg Quadrangle

Figure 2: Subject site location on the Yamhill County Assessor's Map

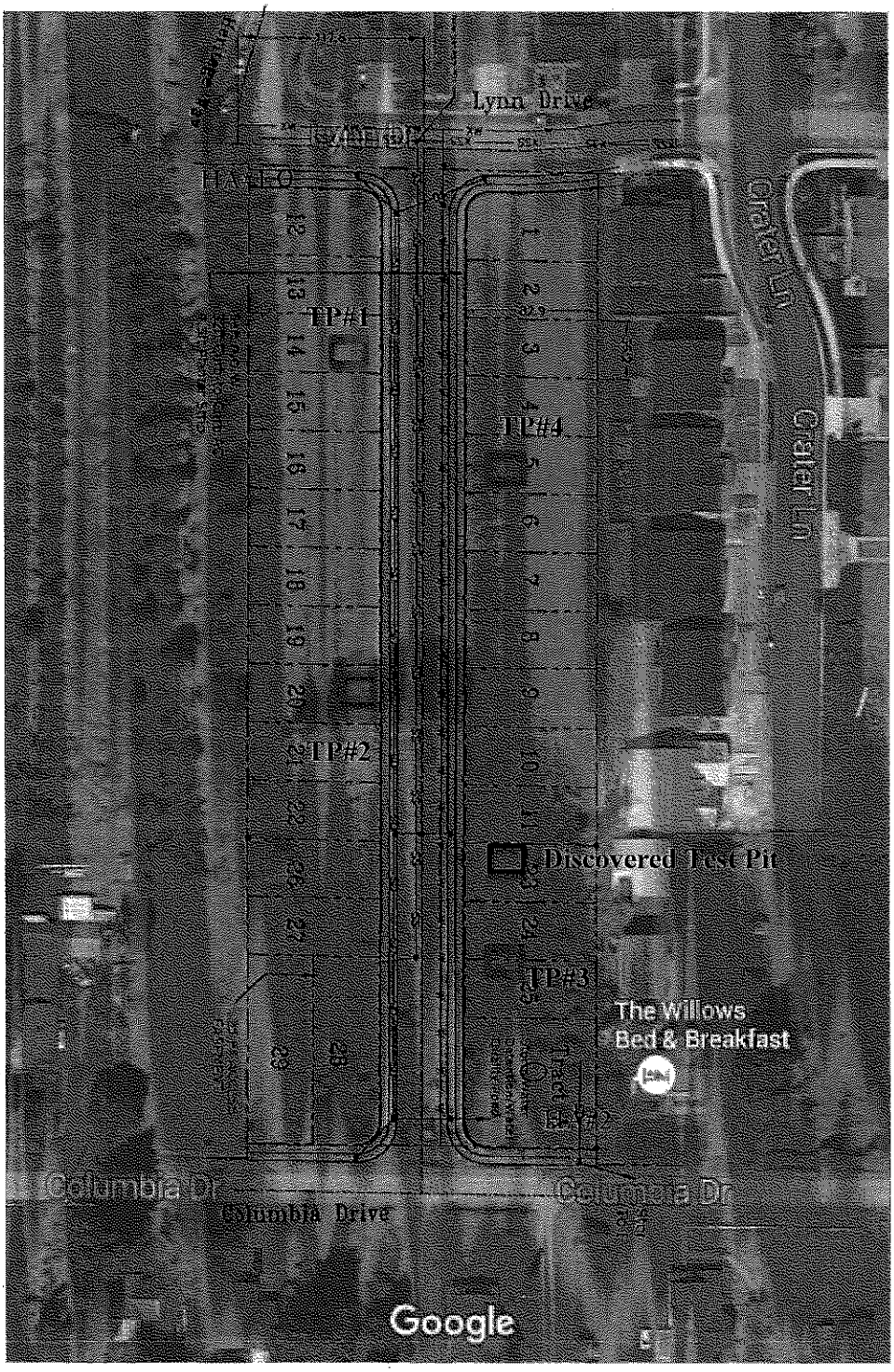


Figure 3: Site plan and aerial imagery with test pit and hand auger locations overlaid

Image of a discovered test pit in the southern half of the subject site. A thin layer of water remained in the bottom of the test pit at the time of the site visit. A layer of dried material spans the top of the test pit. This material is likely the dried remnants of a scum mat that grew on top of accumulated water in the test pit. This would indicate high water levels for an extended period of time since the creation of this test pit.

APPENDIX B

503.443.3799

7409 SW Tech Center Dr, #145
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phn: 503-443-3799
fax: 503-620-2748

RAPID SOIL SOLUTIONS
3915 SW PLUM STREET
PORTLAND, OR 97219-6018

PROJECT:	RSS 2016 LAB SERVICES	**JOB NO:**	16-6172
LOCATION:	COLUMBIA SUBDIVISION	**WORK ORDER NO:**	N/A
SAMPLE SOURCE:	SEE BELOW	**DATE SAMPLED:**	4/21/16

MECHANICAL SIEVE ANALYSIS
GROUP SYMBOL, USCS (ASTM D-2487)

				Silt or	SAND								GRAVEL									COBBLES	
				Clay	Fine			Medium			Coarse		Fine				Coarse						
Location & Depth	USCS	LL	PI	#200	#100	#50	#40	#30	#16	#10	#8	#4	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	3"	6"	Lab #

PERCENT PASSING BY WEIGHT

TP1 @6'		38	14																				8890
TP3 @2'		29	8																				8890

BORING	DEPTH	MC%
TP1	6'	34.8
TP2	4'	35.3
TP3	2'	29.0
TP4	8'	39.3

REVIEWED BY DE/js
Doug Esquivel VP

TP#1

Surface Elevation: 198
Boring Date: 4/21/16
Boring Location: Newberg, OR
Drilling Method: Excavator

Depth	Remarks	Moisture (%)	Dry Density	Blow Counts	Sample Type	Water Table		
0						GWT not encountered	TP	Topsoil
1							ML-CL	Damp, tan - medium brown, stiff SILT, PP = 1
2								
3								
4							ML-CL	Damp, tan medium brown, very stiff CLAY, PP= 2
5								
6	PI=14, LL=38	34.8					CL	Damp, medium brown, very stiff, CLAY, end test pit at 6ft
7								

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LOG OF BORING

Rapid Soil Solutions	**Columbia Subdivision** **Del Boco Vista**	Plate 1

TP#2

Surface Elevation: 193
Boring Date: 4/21/16
Boring Location: Newberg, OR
Drilling Method: Excavator

Depth	Remarks	Moisture (%)	Dry Density	Blow Counts	Sample Type	Water Table		
0							TP	Topsoil
1							ML-CL	Damp, tan - medium brown, stiff silty CLAY
2								
3							ML-CL	Damp, medium brown with some redox coloration, stiff silty CLAY, PP=1
4		35.3				▼	ML-CL	Wet, medium brown, hard CLAY
5								End test pit at 4ft
6								
7								

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LOG OF BORING

Rapid Soil Solutions	Columbia Subdivision Del Boco Vista	Plate 1

TP#3

Surface Elevation: 139
Boring Date: 4/21/16
Boring Location: Newberg, OR
Drilling Method: Excavator

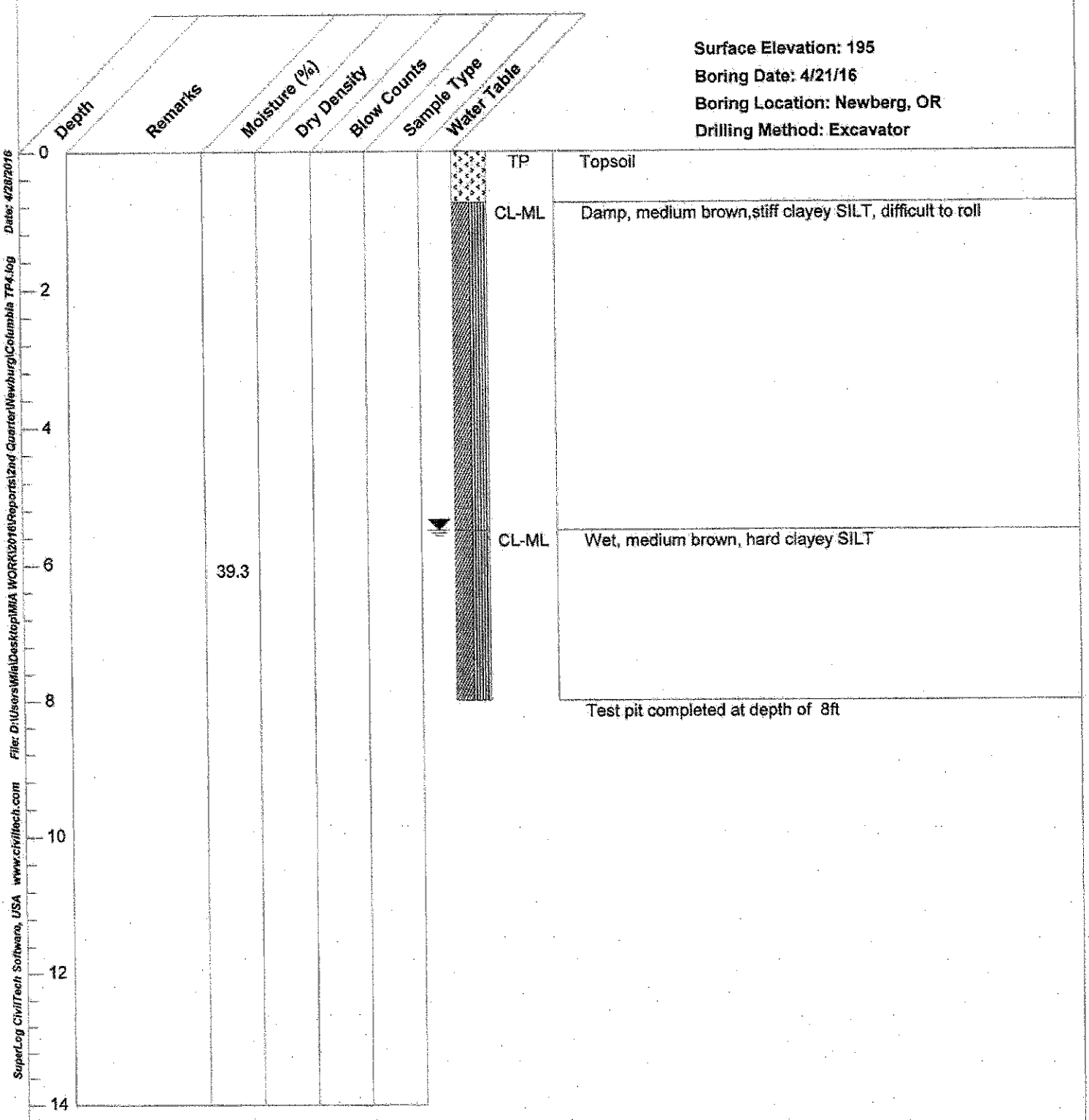
Depth	Remarks	Moisture (%)	Dry Density	Blow Counts	Sample Type	Water Table
0					TP	GWT not encountered
0	Topsoil					
1	Damp, medium brown,stiff clayey SILT, difficult to roll				CL-ML	
2		29				
2	Test pit completed at depth of 2ft					
3						
4						
5						
6						
7						

SuperLog CivilTech Software, USA www.civiltech.com File: D:\Users\Mia\Desktop\MIA WORK\2016\Reports\2nd Quarter\Newburg\Columbia TP3.log Date: 4/28/2016

LOG OF BORING

Rapid Soil Solutions	Columbia Subdivision Project No. Del Boco Vista	Plate 1

TP#4



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LOG OF BORING

Rapid Soil Solutions	**Columbia Subdivision** **Del Boco Vista**	**Plate 1**

Infilration Test Results

Address: Columbia Drive Subdivision 4/26/2016

By: Wilton Roberts, supervised by Mia Mahedy-Sexton, PE GE

Purpose: Infiltration Test Hand Auger

HA#1 Depth = 2'

#1		#2		#3	
Time	Measurement	Time	Measurement	Time	Measurement
12:18	9.6 In.	13:18	9.5 In.	14:18	13.0 In.
12:38	16.7 In.	13:38	15.5 In.	14:38	16.0 In.
12:58	19.0 In.	13:58	17.2 In.	14:58	17.5 In.
13:18	20.7 In.	14:18	18.9 In.	15:18	19.0 In.
Rate	11.1 In./Hr		9.4 In./Hr		6.0 In./Hr

Soils:

0-2' Silty clay

HA#2 Depth = 2'

#1		#2		#3	
Time	Measurement	Time	Measurement	Time	Measurement
12:28	9.0 In.	13:28	9.0 In.	14:28	8.8 In.
12:48	10.0 In.	13:48	9.7 In.	14:48	9.0 In.
13:08	11.2 In.	14:08	10.3 In.	15:08	9.8 In.
13:28	12.0 In.	14:28	11.0 In.	15:28	10.5 In.
	3.0 In./Hr		2.0 In./Hr		1.7 In./Hr

Soils:

0-2' Silty clay

Rapid Soil Solutions LLC

3915 SW Plum Street
Portland, OR 97219
503-816-3689

Columbia Estates Subdivision

Exhibit E

Current Title Report

First American

First American Title Company of Oregon
825 NE Evans Street
McMinnville, OR 97128
Phn - (503)376-7363
Fax - (866)800-7294

REVISED PUBLIC RECORD REPORT FOR NEW SUBDIVISION OR LAND PARTITION (COLUMBIA SUBDIVISION)

THIS REPORT IS ISSUED BY THE ABOVE-NAMED COMPANY ("THE COMPANY") FOR THE EXCLUSIVE USE OF:

Del Boca Vista LLC
645 NE Third Street, Suite 200
McMinnville, OR 97128
Phone: (503)590-8600

Date Prepared : July 06, 2016
Effective Date : 8:00 A.M on July 01, 2016
Order No. : 1039-2529663
Reference : Columbia

The information contained in this report is furnished by First American Title Insurance Company of Oregon (the "Company") as an information service based on the records and indices maintained by the Company for the county identified below. This report is not title insurance, is not a preliminary title report for title insurance, and is not a commitment for title insurance. No examination has been made of the Company's records, other than as specifically set forth in this report. Liability for any loss arising from errors and/or omissions is limited to the lesser of the fee paid or the actual loss to the Customer, and the Company will have no greater liability by reason of this report. This report is subject to the Definitions, Conditions and Stipulations contained in it.

REPORT

A. The Land referred to in this report is located in the County of Yamhill, State of Oregon, and is described as follows:

As fully set forth on Exhibit "A" attached hereto and by this reference made a part hereof.

B. As of the Effective Date, the tax account and map references pertinent to the Land are as follows:

As fully set forth on Exhibit "A" attached hereto and by this reference made a part hereof.

C. As of the Effective Date and according to the Public Records, we find title to the land apparently vested in:

As fully set forth on Exhibit "B" attached hereto and by this reference made a part hereof.

D. As of the Effective Date and according to the Public Records, the Land is subject to the following liens and encumbrances, which are not necessarily shown in the order of priority:

As fully set forth on Exhibit "C" attached hereto and by this reference made a part hereof.

EXHIBIT "A"
(Land Description Map Tax and Account)

PARCEL 1

Beginning at a point on the East line of Tract 32 NORTHWEST NEWBERG SUBDIVISION, a plat of record in Yamhill County, Oregon said point bears North 00° 02' 28" East 264.54 feet from the Southeast corner of said Tract 32, and running thence along the East line thereof, North 00° 02' 28" East 170.73 feet to a point; thence North 89° 32' 47" West, 220.00 feet to a point thence South 00° 02' 28" West 435.06 feet to a point in the center of Walker Drive, being also the South line of said Tract 32; thence along said South line South 89° 29' 32" East 30.00 feet to a point; thence North 00° 02' 28" East 264.54 feet to a point; thence South 89° 29' 32" East 190.00 feet to the point of beginning.

PARCEL 2

Beginning at a point on the East line of Tract 32 NORTHWEST NEWBERG SUBDIVISION, a plat of record in Yamhill County, Oregon, said point bears North 00° 02' 28" East 435.27 feet from the Southeast corner of Tract 32, running thence along the East line thereof, North 00° 02' 28" East 202.55 feet to a point, which point is the Northeast corner of Tract 32; thence North 89° 32' 47" West 220.0 feet to a point; thence South 00° 02' 28" West 202.55 feet to a point; thence South 89° 32' 47" East 220.0 feet to the point of beginning.

PARCEL 3

Beginning at a point on the East line of Tract 32, NORTHWEST NEWBERG SUBDIVISION, a plat of record in Yamhill County, Oregon, said point bears North 00° 02' 28" East 264.54 feet from the Southeast corner of said Tract 32, and running thence North 89° 29' 32" West 190.0 feet to a point; thence South 00° 02' 28" West 264.54 to a point in the center of Walker Drive, being also the South line of said Tract 32; thence along said South line South 89° 29' 32" East 190.0 feet to a point, which is also the Southeast corner of Tract 32; thence North 00° 02' 28" East 264.54 feet to the point of beginning.

Map No.: R3218AB-01701
Tax Account No.: 276891

EXHIBIT "B"
(Vesting)

Del Boca Vista, LLC, an Oregon limited liability company as to Parcel 1 and 2, and Richard T. Lee and Merrilee A. Lee Revocable Living Trust dated September 18, 2008 as to Parcel 3

EXHIBIT "C"
(Liens and Encumbrances)

1. Taxes for the fiscal year 2016-2017 a lien due, but not yet payable.

2. The rights of the public in and to that portion of the premises herein described lying within the limits of streets, roads and highways.

3. Electric Power Line Easement recorded May 08, 1979 in Film Volume 139 and Page 1551

NOTE: Taxes for the year 2015-2016 PAID IN FULL
Tax Amount: $556.60
Map No.: R3218AB-01701
Property ID: 276891
Tax Code No.: 29.2
(Affects Parcel 1)

NOTE: Taxes for the year 2015-2016 PAID IN FULL
Tax Amount: $552.06
Map No.: R3218AB-01700
Property ID: 41644
Tax Code No.: 29.2
(Affects Parcel 2)

NOTE: Taxes for the year 2015-2016 PAID IN FULL
Tax Amount: $687.47
Map No.: R3218AB-01702
Property ID: 276908
Tax Code No.: 29.2
(Affects Parcel 3)

4. Deed of Trust and the terms and conditions thereof.

Grantor/Trustor:	Del Boca Vista, LLC, an Oregon limited liability company
Grantee/Beneficiary:	Barbara K. Morton, Trustee of the Barbara K. Morton Trust
Trustee:	First American Title Company of Oregon
Amount:	$150,000.00
Recorded:	November 20, 2015
Recording Information:	Instrument No. 201518279, Deed and Mortgage Records+

(Affects Parcel 1)

The beneficial interest under said Deed of Trust has been assigned to Richard W. Morton, by Assignment recorded May 19, 2016, as 201607056 .

(NOTE: Assignment 201607056 erroneously refers to Trust Deed instrument number as 201518280)

5. Deed of Trust and the terms and conditions thereof.

Grantor/Trustor:	Del Boca Vista, LLC, an Oregon limited liability company
Grantee/Beneficiary:	Barbara K. Morton, Trustee of the Barbara K. Morton Trust
Trustee:	First American Title Company of Oregon
Amount:	$150,000.00
Recorded:	November 20, 2015
Recording Information:	Instrument No. 201518280
(Affects Parcel 2)	

The beneficial interest under said Deed of Trust has been assigned to Robert C. Morton, by Assignment recorded May 19, 2016, as 201607055 .

DEFINITIONS, CONDITIONS AND STIPULATIONS

1. **Definitions.** The following terms have the stated meaning when used in this report:
   (a) "Customer": The person or persons named or shown as the addressee of this report.
   (b) "Effective Date": The effective date stated in this report.
   (c) "Land": The land specifically described in this report and improvements affixed thereto which by law constitute real property.
   (d) "Public Records": Those records which by the laws of the state of Oregon impart constructive notice of matters relating to the Land.

2. **Liability of the Company.**
   (a) This is not a commitment to issue title insurance and does not constitute a policy of title insurance.
   (b) The liability of the Company for errors or omissions in this public record report is limited to the amount of the charge paid by the Customer, provided, however, that the Company has no liability in the event of no actual loss to the Customer.
   (c) No costs (including, without limitation attorney fees and other expenses) of defense, or prosecution of any action, is afforded to the Customer.
   (d) In any event, the Company assumes no liability for loss or damage by reason of the following:
      (1) Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records.
      (2) Any facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the land or by making inquiry of persons in possession thereof.
      (3) Easements, liens or encumbrances, or claims thereof, which are not shown by the Public Records.
      (4) Discrepancies, encroachments, shortage in area, conflicts in boundary lines or any other facts which a survey would disclose.
      (5) (i) Unpatented mining claims; (ii) reservations or exceptions in patents or in Acts authorizing the issuance thereof, (iii) water rights or claims or title to water.
      (6) Any right, title, interest, estate or easement in land beyond the lines of the area specifically described or referred to in this report, or in abutting streets, roads, avenues, alleys, lanes, ways or waterways.
      (7) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use or enjoyment on the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the Public Records at the effective date hereof.
      (8) Any governmental police power not excluded by 2(d)(7) above, except to the extent that notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the Public Records at the effective date hereof.
      (9) Defects, liens, encumbrances, adverse claims or other matters created, suffered, assumed, agreed to or actually known by the Customer.

3. **Report Entire Contract.** Any right or action or right of action that the Customer may have or may bring against the Company arising out of the subject matter of this report must be based on the provisions of this report. No provision or condition of this report can be waived or changed except by a writing signed by an authorized officer of the Company. By accepting this form report, the Customer acknowledges and agrees that the Customer has elected to utilize this form of public record report and accepts the limitation of liability of the Company as set forth herein.

4. **Charge.** The charge for this report does not include supplemental reports, updates or other additional services of the Company.

Columbia Estates Subdivision

Exhibit F

Public Notice Information

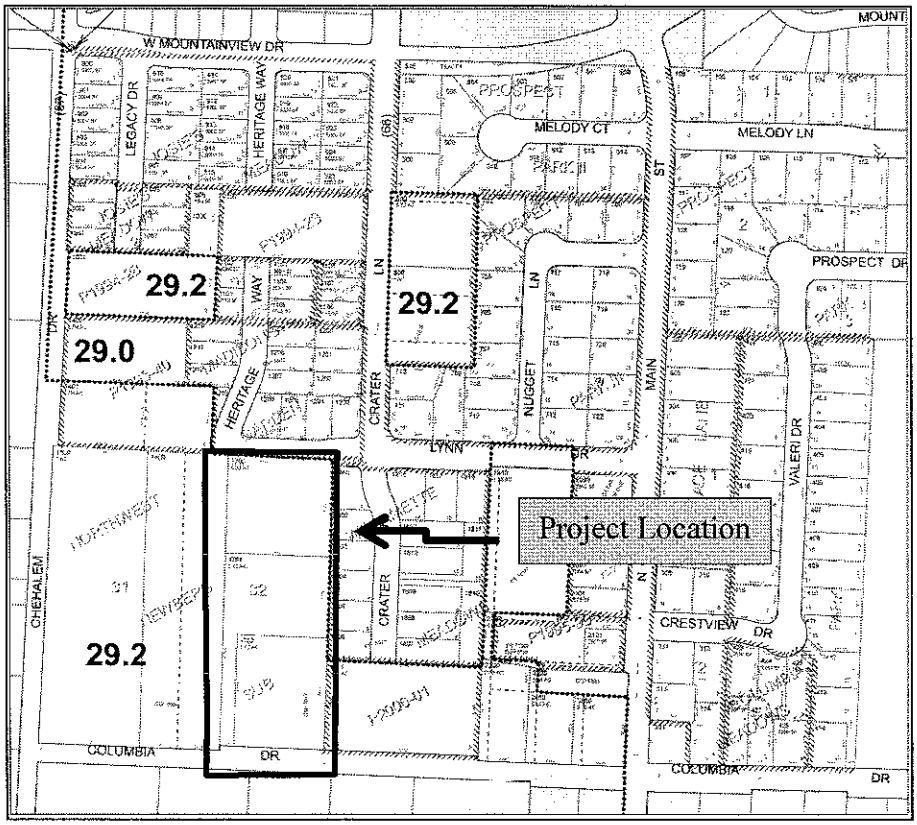
City of Newberg
Community Development Department
P.O. Box 970 • 414 E First Street • Newberg, Oregon 97132
503-537-1240. Fax 503-537-1272 www.newbergoregon.gov

WE WANT YOUR COMMENTS ON A PROPOSED NEW DEVELOPMENT IN YOUR NEIGHBORHOOD

A property owner in your neighborhood submitted an application to the City of Newberg to subdivide a parcel of land from three lots into 24 separate lots. You are invited to take part in the City's review of this project by sending in your written comments. You also may request that the Planning Commission hold a hearing on the application. For more details about giving comments, please see the back of this sheet.

The application would subdivide the R-2 zoned property in 24 residential lots with lots varying in size from 3,071-5,196 square feet and access to the new lots will be by public road from Columbia Dr. to Lynn Drive.

APPLICANT:	***Del Boca Vista, LLC***
TELEPHONE:	***503 590-8600***
PROPERTY OWNERS:	***Jo Daklin (TL 1700 and 1701)*** ***Richard and Merrilee Lee (Tax Lot 1702)***
LOCATION:	***See map below***
TAX LOT NUMBER:	***Yamhill County Tax Map 3218AB Tax Lot Numbers 1700, 1701 and 1702***



We are mailing you information about this project because you own land within 500 feet of the proposed new project. We invite you to send any written comments for or against the proposal within 14 days from the date this notice is mailed. You also may request that the Newberg Planning Commission hold a hearing on the application by sending a written request during this 14-day period and identifying the issues you would like the Planning Commission to address.

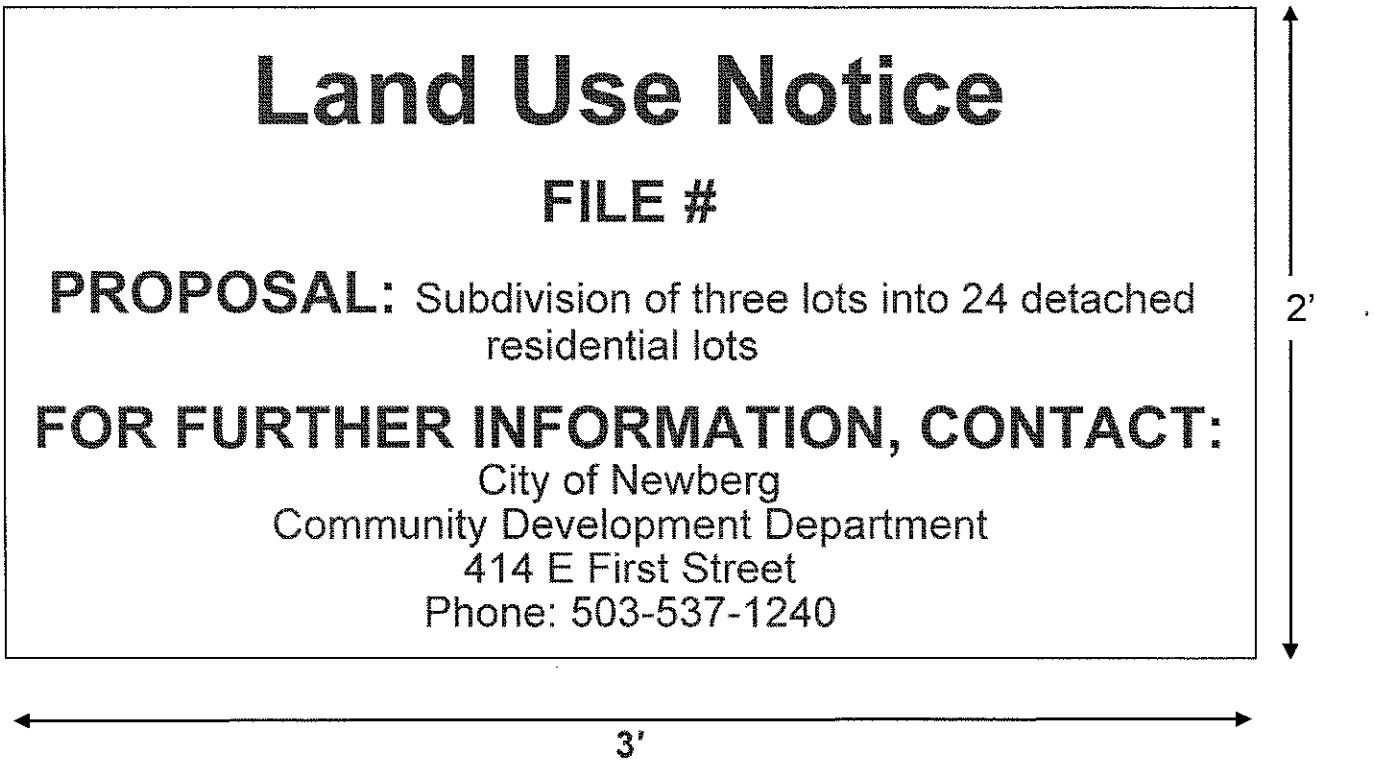
If you mail your comments to the City, please put the following information on the outside of the envelope:

Written Comments: File No.XX
City of Newberg
Planning & Building Department
PO Box 970
Newberg, OR 97132

All written comments must be turned in by 4:30 p.m. on enter date two weeks from date you mailed notice. Any issue which might be raised in an appeal of this case to the Land Use Board of Appeals (LUBA) must be submitted to the City in writing before this date. You must include enough detail to enable the decision maker an opportunity to respond. The applicable criteria used to make a decision on this application for preliminary subdivision plan approval are found in Newberg Development Code 15.235.060(A). You can look over all the information about this project or drop comments off at Newberg City Hall, 414 E. First Street. You can also buy copies of the information for a cost of 25 cents a page. If you have any questions about the project, you can call the Newberg Planning Division at 503-537-1240. The City Planning director will make a decision at the end of a 14-day comment period. If you send in written comments about this project, you will be sent information about any decision made by the City relating to this project.

Date Mailed: Date notice is mailed

DRAFT POSTED NOTICE



Notice must be white with black letters, and must be landscape orientation, as shown above. The notice must be lettered using block printing or a "sans-serif" font, such as Arial.

Eugene & Concejo Zirschky
2120 NE Crater Ln
Newberg, OR 97132

Jeffrey & Stacey
2107 Nugget Ln
Newberg, OR 97132

Howard & Patricia Decassios
2101 Nugget Ln
Newberg, OR 97132

Milford & Carol Schroeder
2009 Nugget Ln
Newberg, OR 97132

Ralph & Brenda Thorp
2005 Nugget Ln
Newberg, OR 97132

Jerry McClellan
215 Lynn Dr
Newberg, OR 97132

Joshua Legler
2010 Crater Ln
Newberg, OR 97132

John & Eva Gussenhoven
225 Lynn Dr
Newberg, OR 97132

Greg & Elizabeth Sharp
2001 Nugget Ln
Newberg, OR 97132

Shawn & Julie Bishop
2000 Nugget Ln
Newberg, OR 97132

Scott & Denise Downey
2006 Nugget Ln
Newberg, OR 97132

Terri & John Andries
210 Nugget Ln
Newberg, OR 97132

Ron Manning
PO Box 605
Newberg, OR 97132

Lee Johnson
2116 NE Chehalem Dr
Newberg, OR 97132

Dixie Reeve
2117 Legacy Dr
Newberg, OR 97132

G Vern & Debby Rabe
19791 NE Sunnycrest Rd
Newberg, OR 97132

Jodi Tautfest
2114 Legacy Dr
Newberg, OR 97132

David & Elizabeth Hancock
2119 N Crater Ln
Newberg, OR 97132

Lori Witcosky
2105 Heritage Way
Newberg, OR 97132

Brian Tower
2109 Heritage Way
Newberg, OR 97132

Mike & Kimberly Gayman
2110 Heritage Way
Newberg, OR 97132

Susan Knight
2102 Heritage Way
Newberg, OR 97132

Heinrich & Joy Weyer
2106 Heritage Way
Newberg, OR 97132

Adam & Jennifer Lundstrom
2045 N Crater Ln
Newberg, OR 97132

Daniel Boyes
2103 Crater Ln
Newberg, OR 97132

David Todd
23445 NE Sunnycrest Rd
Newberg, OR 97132

Rex & Jennifer Philips
2031 N Crater Ln
Newberg, OR 97132

Peter & Darla Petrillo
2107 N Crater Ln
Newberg, OR 97132

Bjorn M & Margaret Skyberg
327 Lynn Dr
Newberg, OR 97132

Nadine Brood
1909 NE Chehalem Dr
Newberg, OR 97132

Brian Tower
2109 Heritage Way
Newberg, OR 97132

Mike & Kimberly Gayman
2110 Heritage Way
Newberg, OR 97132

Heinrich & Joy Weyer
2106 Heritage Way
Newberg, OR 97132

Susan Knight
2102 Heritage Way
Newberg, OR 97132

Daniel Boyes
2103 Crater Ln
Newberg, OR 97132

David Todd
23445 NE Sunnycrest Rd
Newberg, OR 97132

Adam & Jennifer Lundstrom
2045 N Crater Ln
Newberg, OR 97132

Rex & Jennifer Philips
2031 N Crater Ln
Newberg, OR 97132

Peter & Darla Petrillo
2107 N Crater Ln
Portland, OR 97225

Bjorn M & Margaret Skyberg
327 Lynn Dr
Newberg, OR 0

Anthony Davies
337 Lynn Dr
Newberg, OR 97132

Derik Stone
347 Lynn Dr
Newberg, OR 97132

Scott & Misako Murphy
357 Lynn Dr
Newberg, OR 97132

Bryce Kurtz
2020 Heritage Way
Newberg, OR 97132

Scott & Carrie Fowles
2034 Heritage Way
Newberg, OR 97132

Bruce & Linda Gillespie
2048 Heritage Way
Newberg, OR 97132

Shelley A Hughes
2049 Heritage Way
Newberg, OR 97132

Joshua & Miklyn Perdue
2035 Heritage Way
Newberg, OR 97132

Kent Winter
2021 Heritage Way
Newberg, OR 97132

Coyote Homes Inc
PO Box 490
Newberg, OR 97132

David & Kristine Nelson
PO Box 490
Newberg, OR 97132

Trevor & Jacki Snyder
2008 NE Chehalem Dr
Newberg, OR 97132

Carl Ehry
505 W Columbia Dr
Newberg, OR 97132

Joseph Ladd
421 W Columbia Dr
Newberg, OR 97132

Jo Dacklin
11990 SW King James Pl
Newberg, OR 97132

Brenda Haugen
1947 N Crater Ln
Newberg, OR 97132

Colin & Amy Sorensen
308 Lynn Dr
Newberg, OR 97132

Michelle Vondrachek
351 NE Columbia Dr
Newberg, OR 97132

Brian Snider
1961 N Crater Ln
Newberg, OR 97132

Christie Living Trust
PO Box 3190
Newberg, OR 97132

Michael Brown
1861 Crater Lane
Newberg, OR 97132

William Haines
98 Ewelani St
Aiea, HI 96701

Roger Nelson
PO Box 760
Wilsonville, OR 97070

Jo Dacklin
11990 SW King James Pl,
King City, OR 97224

Richard & Merrilee Lee
PO Box 275
Ridgefield, WA 98642

Robert & Dawn Raymond
1930 Crater Ln
Newberg, OR 97132

Roger Nelson
PO Box 760
Wilsonville, OR 97070

Robert & Tanya Gore
1958 Crater Ln
Newberg, OR 97132

David & Alexis MacKie
224 Lynn Dr
Newberg, OR 97132

Perry Mick
PO Box 564
Newberg, OR 97132

Frederick P & Linda Boetsch
PO Box 191
Centralia, WA 98531

Oliver & Dawn Hall
119 NE Columbia Dr
Newberg, OR 97132

Tina Kasuba
PO Box 269
Newberg, OR 97132

Cecil & Alma Loggains
115 W Columbia Dr
Newberg, OR 97132

Frank & Caroleta Piscitelli
112 W Columbia Dr
Newberg, OR 97132

Michele Vondrachek
315 NE Columbia Dr
Newberg, OR 97132

Bill & Maureen Rogers
316 NE Columbia Dr
Newberg, OR 97132

Michael & Sarah Owen
107 Ashley Ct
Newberg, OR 97132

George Piper Jr
605 Holly Dr
Newberg, OR 97132

Alan & Minnie Halstead
119 Ashley Ct
Newberg, OR 97132

David Jarvis
132 Ashley Ct
Newberg, OR 97123

Todd Erickson
102 Ashley Ct
Newberg, OR 97132

Kenneth & Linda Woodward
112 Ashley Ct
Newberg, OR 97132

Thomas D Jr & Lois Ruiz
211 Pinehurst Ct
Newberg, OR 97132

William & Brenda Jolliff
207 Pinehurst Ct
Newberg, OR 97132

Eldin & Sylvia Hunt
107 Pinehurst Ct
Newberg, OR 97132

Equity Trust Company Custodian Fbo
9163 NE Broadacres Rd
Aurora, OR 97002

Wells Fargo Bank Na 2007 -rfc1 Tr
1600 S Douglas Rd #200-a
Anaheim, CA 92806-5948

Michael & Judith Huelsman
2005 NE Chehalem Dr
Newberg, OR 97132

Elizabeth Watson
1611 NE Chehalem Dr
Newberg, OR 97132

Dale & Alvina M Self
PO Box 297
Newberg, OR 97132

Robert & Cheryl Fletcher
1650 NE Chehalem Dr
Newberg, OR 97132

Anna Laakso
1717 NE Chehalem Dr
Newberg, OR 97132

Danny Tatman
1909 NE Chehalem Dr
Newberg, OR 97132

Yvonne L & Arvid Alen
11316 NW 6th Ave
Vancouver, WA 98685

Mildred A Weatherly
1718 NE Chehalem Dr
Newberg, OR 97132

Michael & Bonnie Klohs
17710 NE Hillsboro Hwy
Newberg, OR 97132

Wanda & Ronald Wayman
416 NE Columbia Dr
Newberg, OR 97132

Gregg & Kathy S Blume
400 NE Blume Ln
Newberg, OR 97132

Exhibit "1"
To Planning Commission Rules

OUTLINE FOR LEGISLATIVE PUBLIC HEARING

Newberg Planning Commission

1. CALL TO ORDER

OPEN THE PUBLIC HEARING, ANNOUNCE THE PURPOSE, DISCUSS TESTIMONY PROCEDURE, AND TIME ALLOTMENTS

2. CALL FOR ABSTENTIONS AND OBJECTIONS TO JURISDICTION

3. STAFF REPORT

COMMISSION MAY ASK BRIEF QUESTIONS FOR CLARIFICATION

4. PUBLIC TESTIMONY

5 MINUTE TIME LIMIT PER SPEAKER (15 MINUTE LIMIT FOR APPLICANT AND PRINCIPAL OPPONENT). SPEAKER GOES TO WITNESS TABLE, STATES NAME & PRESENTS TESTIMONY. COMMISSION MAY ASK QUESTIONS OF SPEAKERS.

A. APPLICANT(S) (IF ANY)
B. OTHER PROPONENTS
C. OPPONENTS AND UNDECIDED
D. STAFF READS WRITTEN CORRESPONDENCE (TIME LIMIT APPLIES)
E. APPLICANT (IF ANY) REBUTTAL

5. CLOSE OF PUBLIC TESTIMONY PORTION OF HEARING

6. FINAL COMMENTS FROM STAFF AND RECOMMENDATION

7. PLANNING COMMISSION DELIBERATION

8. ACTION BY THE PLANNING COMMMISSION

A. RESOLUTION – Usually requires passage of resolution.
B. VOTE – Vote is done by roll call.
C. COMBINATION – Can be combined with other commission action; separate vote on each action is required.

Supplemental material for the TSP Agenda Item VI

1. Email from Robert Soppe, August 31, 2016
2. Letter from Roy Gathercoal, September 13, 2016

Jessica Nunley Pelz

From: Robert Soppe <rs@compprobsolv.com>
Sent: Wednesday, August 31, 2016 1:42 PM
To: Jessica Nunley Pelz
Subject: RE: Planning Commission Meeting Agenda/Packet 2016-0908 - TSP Adoption

Jessica:

Thank you for the update. I'd like to pass along a number of comments as you may (or may not) wish to address them before the meeting:

All comments are in addition to the many unanswered ones from last meeting.

Page numbers are PDF, subtract 18 for document page numbers.

P. 9, Public Comments: ".. the city has received no additional comments on the draft TSP". Were my comments emailed on 8/4 received? I will resend the email after this one.

P. 77 (and elsewhere) E18: it would be helpful to note if this is N or S to the UGB. One can look it up on the map but it would be much more useful if it stated it here.

P. 74: "the City's public portion of project costs ($40 Million): where can I find the calculation for the $40M?

P. 89 BY22, signal at Bypass and Wilsonville Rd: didn't Wilsonville Road get moved to where it doesn't connect with the Bypass? Should this read "Bypass/219 Traffic Signal" and "New Traffic Signal at Bypass and OR219"?

P92, Expansion Projects map: it would be informative to mention that there are other "expansion" projects planned and shown on Bypass Projects map on page 97. The same applies to Intersection Projects map on page 94. It may apply to some other maps, too.

P. 99, middle "the city will monitor the local street system to address unintended consequences…": will this be the City or ODOT? ODOT budgeted it; will they reimburse the City?

From: Jessica Nunley Pelz [mailto:jessica.pelz@newbergoregon.gov]
Sent: Wednesday, August 31, 2016 12:06 PM
To: Garth Appanaitis <gaa@dksassociates.com>; Carl Springer <cds@dksassociates.com>; COLE Terry D <terry.d.cole@odot.state.or.us>; Kaaren Hofmann <Kaaren.Hofmann@newbergoregon.gov>; Jay Harris <Jay.Harris@newbergoregon.gov>; 'Karl Birky' <karl.birky@yahoo.com>
Subject: Planning Commission Meeting Agenda/Packet 2016-0908 - TSP Adoption

Good morning,

Please see the link below for the September 8, 2016 Planning Commission packet, which includes consideration of the new Transportation System Plan. The Planning Commission will hold a public hearing and make a recommendation to the City Council.

https://www.newbergoregon.gov/pc/page/planning-commission-meeting-82

Please let me know if you have questions.

Thank you,

Jessica Pelz, AICP
Associate Planner
City of Newberg
414 E First Street
Newberg, OR 97132
503-554-7744

From: Bobbie Morgan
Sent: Wednesday, August 31, 2016 11:23 AM
To: Allyn Edwards; Cathy Stuhr; Doug Rux; Gary Bliss; Jason Dale; Miranda Piros; Noelle Torres; Philip Smith; Ron Wolfe; (sam@necoregon.com); Bill Smethurst ; Bob Andrews; Bobbie Morgan; Brian Casey; Brittney Jeffries; Brooks Bateman; Sue Ryan; Dan Danicic (dan@dbvcorp.com); Jessica Nunley Pelz; Joe Keizur; John Bridges; Julie Fugate; Karan Frketich; Ken Friday; Rea Andrew; Sharon Corson-Small; Steve Olson; Truman Stone
Subject: Planning Commission Meeting Agenda/Packet 2016-0908

https://www.newbergoregon.gov/pc/page/planning-commission-meeting-82

PLANNING COMMISSION MEETING
September 8, 2016 7:00 PM
NEWBERG PUBLIC SAFETY BUILDING
401 EAST THIRD STREET

Bobbie Morgan
Community Development Office Assistant II
(503) 554.7788

414 E First Street / P.O. Box 970
Newberg, OR 97132
City Hall (503) 537-1240 Fax (503) 537-1272
bobbie.morgan@newbergoregon.gov
http://www.newbergoregon.gov/

[Received by Roy Gathercoal, September 13, 2016]

Thank you. Please read https://www.ada.gov/smtown.htm the ADA Guide for Small Towns. Remember it when you make the many hard decisions that might affect people with disabilities.

I firmly believe that every city staff person, every city official and every Planning Commission member is committed to obeying the Americans with Disabilities Act (ADA). We are all good people who care about people. Surely we would never stand in the doorway of a business or on a street corner and prohibit a person using a walker entrance. Unethical and illegal deeds may, however, result from a failure to attend to some important principle or even some detail.

Today in Newberg many obstacles preclude people with various disabilities from full participation in this community. Because none of us would intentionally deny our neighbors the opportunity to thrive in Newberg this must be due to a failure to read and understand the law, probably because other things seem to be more important. The "install the required parking spaces" and "change the bathrooms so that people in wheelchairs can use them" notes permanently occupy a space near the bottom of the To Do pile. This is understandable on some level--there is always so very much to do--but we should recognize that left uncorrected it does leave some of our neighbors effectively cut off from activities the rest of us take for granted.

Yet these people pay taxes and are full citizens of these United States of America. The ADA quite simply spells out what is firmly established in the Bill of Rights, clarifying that people with disabilities do enjoy the same legal and constitutional rights as the rest of us. It is not a small thing to deny someone those rights. It is not legal--a violation of constitutional rights--even to ignore something within your custodianship that denies some of our neighbors the ability to fully participate.

Based on population statistics of the US as a whole, from 1,500 to 2,000 of our neighbors here in Newberg need some accommodation to participate fully as citizens.

Sometimes it is missing curb cuts so they cannot get down the street without riding into the lane of automobile and truck traffic https://www.ada.gov/pcatoolkit/chap6toolkit.htm ;

Sometimes it is a stair or a door threshold too high to ride a chair or carry a walker through or a hallway too narrow to turn in https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/ada-standards/chapter-4-accessible-routes ;

Sometimes it is signage or important written directions or instructions unreadable to people lacking standard vision http://www.novapolymers.com/5-reasons-signs-not-ada-compliant/ ;

Sometimes it is a meeting place with rest rooms everyone can use http://www.adabathroom.com/ ;

Sometimes it is the inability to find a parking space that will accommodate a rear- or side-opening van with wheelchair lift, see http://www.rutan.com/files/Publication/6d99e402-6e84-4472-ba01-676747a7d4b6/Presentation/Publi

cationAttachment/975995c7-36ee-4b85-8c84-676e9793e0aa/Ninth%20Circuit%20Holds%20that%20ADA%20Applies%20to%20Public.pdf ;

Sometimes there is no physical barrier at all, but a lifetime of being excluded and recent experiences of humiliation keeps people in their homes where they are safer and the obstacles are known out of fear.

No one knows how many people with disabilities actually live in Newberg. There is no centralized club or group and no events for people with disabilities. Many--perhaps most--people with disabilities have been thoroughly conditioned by society to stay out of the way and to be grateful for every crumb. We never see many of them, for they have given up the struggle to be just an ordinary person in public.

To overturn this awful condition and to reclaim many new participants in our vibrant and growing community, people must feel safe. They must have confidence they will not be subjected to unusual danger or to go to an event only to find out they cannot participate. Then we will see many more of our neighbors who live with disabilities. They might even serve on city committees or as volunteers to help others.

Currently, if I rely upon bus transportation, I cannot safely attend a planning commission meeting, unless it should end before 7 pm when the buses stop. It would be foolish to try and go home in a wheelchair through our many shadowy streets with holes, posts and sharp drop-offs where a curb ramp ought to be. I can't volunteer to be somewhere I cannot reach.

People with Disabilities are the group in the US with the highest level of unemployment. There are many complex reasons for this; few businesses would hire someone who would require modifications to even enter the workplace. For the rest of us, however, this is a massive untapped resource: coping with a disability does not necessarily make you stupid or rude or unable to learn. Often it simply means you can no longer walk through that doorway or easily use the bathroom in the Public Service building.

So how do these barriers blocking our neighbors occur? Through decades of omissions and priority decisions that have ensured vital accessibility projects are never funded. How could this happen?

The ADA and Department of Justice is usually the lone voice of those with disabilities and the former seems too intimidating for many of our leaders to read; the latter is so very far away and wields large and disruptive tools. Thus when there are many other concerns and interests, each shepherded by passionate (and sometimes professional) bold advocates, the small voices of those with disabilities cannot be heard. So we celebrate the 26th birthday of the ADA even as we again put off required accommodations.

The only hope for many of us with disabilities is that our leaders will remember our silent neighbors and will be their spokespersons when others are competing for attention. This is not an unreasonable hope, for it is part of the law that each public official has sworn to uphold, even in a hard situations.

Newberg's transition plan as a result of self-evaluation (required by law to be completed in 1993) has not been enacted. We conducted a self study but the results have been incompletely consulted; Bad news about city compliance does not permit a city to overlook ADA federal requirements.

"All city governments were required to complete a self-evaluation of their facilities, programs, policies, and practices by January 26, 1993. The self-evaluation identifies and corrects those policies and practices that are inconsistent with Title II's requirements. Self-evaluations should consider all of a city's programs, activities, and services, as well as the policies and practices that a city has put in place to implement its various programs and services. Remedial measures necessary to bring the programs, policies, and services into compliance with Title II should be specified -- including, but not limited to: (1) relocation of programs to accessible facilities; (2) offering programs in an alternative accessible manner; (3) structural changes to provide program access; (4) policy modifications to ensure nondiscrimination; and (5) auxiliary aids needed to provide effective communication."

from ADA online publication "The ADA and City Government" https://www.ada.gov/comprob.htm

Please remember your neighbors in Newberg whose daily struggle with disability has been allowed to exclude them from civic life, especially when they are not present to represent their needs. Please set aside some time to read any of many guides written just for you and available at www.ADA.gov. Please follow US law and include in your decisions, an awareness of the needs of too many of our neighbors.