



**NOTICE OF PUBLIC MEETING**  
**CITY OF ALBANY**  
**CITY COUNCIL**  
 Council Chambers  
 333 Broadalbin Street SW  
 Wednesday, November 12, 2008  
 7:15 p.m.

**OUR MISSION IS**

*"Providing quality public services  
 for a better Albany community."*

**OUR VISION IS**

*"A vital and diversified community  
 that promotes a high quality of life,  
 great neighborhoods, balanced  
 economic growth, and quality public  
 services."*

**AGENDA**

Rules of Conduct for Public Hearing

1. No person shall be disorderly, abusive, or disruptive of the orderly conduct of the hearing.
2. Persons shall not testify without first receiving recognition from the presiding officer and stating their full name and residence address.
3. No person shall present irrelevant, immaterial, or repetitious testimony or evidence.
4. There shall be no audience demonstrations such as applause, cheering, display of signs, or other conduct disruptive of the hearing.

1. CALL TO ORDER
2. PLEDGE OF ALLEGIANCE TO THE FLAG
3. ROLL CALL
4. SCHEDULED BUSINESS
  - a. Communication
    - 1) Accepting resignation from Gordy Gamet from the Parks & Recreation Commission. [Page 1]

Action: \_\_\_\_\_

- b. Quasi-Judicial Public Hearing
  - 1) SD-07-07 and SP-19-07, Fabian Estates Subdivision Tentative Plat and tree felling. [Pages 2-228]

Action: \_\_\_\_\_

- c. Final Decision
  - 1) SP-12-08 and AD-01-08, Oregon Acquisition One LLC (SmartCentres) Shopping Center. [Pages 229-299]

Action: \_\_\_\_\_

- d. Business from the Public

- e. First Reading of Ordinances
  - 1) Levying assessments against property specifically benefited by sewer and water connections and the assessment of sewer, water, parks and transportation system development charges for property described as Tax Lot 400, Parcel 11S-03W-08CC, and site address 1910 Geary Street SE; and declaring an emergency. [Pages 300-302]

Action: \_\_\_\_\_ ORD. NO. \_\_\_\_\_

- 2) Amending AMC Chapter 13.21 concerning parking regulations and declaring an emergency. [Pages 303-307]
- Action: \_\_\_\_\_ ORD. NO. \_\_\_\_\_

- f. Adoption of Resolutions
  - 1) Approving an extended property tax abatement agreement between the City of Albany, a cosponsor of the South Santiam Enterprise Zone, and Entek Membranes, LLC. [Pages 308-312]

Action: \_\_\_\_\_ RES. NO. \_\_\_\_\_

- 2) Establishing a 50-foot parking restriction at 1290 Industrial Way. [Pages 313-316]

Action: \_\_\_\_\_ RES. NO. \_\_\_\_\_

- 3) Establishing a parking restriction on 36<sup>th</sup> Avenue adjacent to South Albany High School. [Pages 317-320]

Action: \_\_\_\_\_ RES. NO. \_\_\_\_\_

f. Adoption of Resolutions *continued*

- 4) Ratifying the sale of City-owned property at 38159 Scrael Hill Road and accepting the following easements and ratifying the warranty deed. [Pages 321-350]

Action (Conservation easement): _____	RES. NO. _____
Action (Construction easement): _____	RES. NO. _____
Action (Access/maintenance easement): _____	RES. NO. _____
Action (Access/maintenance easement): _____	RES. NO. _____
Action (Noise easement): _____	RES. NO. _____
Action (Warranty deed): _____	RES. NO. _____

g. Adoption of Consent Calendar

- 1) Approval of Minutes  
a) October 8, 2008, City Council Meeting [Pages 351-361]  
b) October 22, 2008, City Council Meeting [Pages 362-366]  
2) Authorizing the City Manager to sign a lease agreement with the District 4 Council of Governments for usage of the Albany Senior Center for the Senior Meals program. [Pages 367-375]  
3) Approving a liquor license for Mexico Lindo II, 637 Hickory Street, Suite 130. [Page 376]  
4) Accepting a public sewer line easement from P & F Geary Square, LLC. [Pages 377-382] RES. NO. \_\_\_\_\_

Action: \_\_\_\_\_

h. Award of Bid

- 1) WL-09-01, Eighth Avenue Water Line Replacement. [Pages 383-386]

Action: \_\_\_\_\_

i. Personnel Request

- 1) Approving salary grade increase for Nonbargaining (Confidential) Administrative Assistant I. [Page 387]

Action: \_\_\_\_\_

j. Reports

- 1) Receiving Parks & Recreation 2008 Summer & Event Statistics Report. [Pages 388-396]

Action: \_\_\_\_\_

- 2) Receiving Code Enforcement Team First Quarter Report for Fiscal Year 2008-2009. [Pages 397-398]

Action: \_\_\_\_\_

5. BUSINESS FROM THE COUNCIL

6. RECESS TO EXECUTIVE SESSION TO DISCUSS CURRENT LITIGATION OR LITIGATION LIKELY TO BE FILED IN ACCORDANCE WITH ORS 192.660 (2)(h)

7. RECONVENE

8. NEXT MEETING DATE: Regular Session Monday, November 24, 2008

9. ADJOURNMENT

City of Albany Web site: [www.cityofalbany.net](http://www.cityofalbany.net)

**Hyde, Laura**

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**From:** Hodney, Ed  
**Sent:** Monday, October 27, 2008 9:18 AM  
**To:** Hyde, Laura  
**Cc:** Hayes, Tari  
**Subject:** FW: Resignation from Parks Commission

Finally received the attached from Gordy Gamet. Please let the Mayor know. I'll work on possible replacement candidates for him.

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**From:** Gamet, Gordon, ALBANY, Vet Sales [mailto:gordon.gamet@purina.nestle.com]  
**Sent:** Monday, October 27, 2008 9:13 AM  
**To:** Hodney, Ed  
**Subject:** Resignation from Parks Commission

Dear Ed,

I am writing to inform you of my resignation from the Albany Parks & Recreation Commission effective immediately. I regret having to do this, but with my work travel schedule it has become very difficult for me to make to meetings. I have enjoyed my time on the commission and if you need any help on a special project or something else I would be glad to try and help out.

Sincerely,  
Gordon (Gordy) Gamet



TO: Albany City Council

VIA: Wes Hare, City Manager  
Greg Byrne, Community Development Director

FROM: Don Donovan, Planning Manager

DATE: November 5, 2008, for the November 12, 2008, City Council Meeting

SUBJECT: Files SD-07-07 and SP-19-07  
Fabian Estates Subdivision Tentative Plat and Tree Felling

Action Requested:

Hold a public hearing on the issues raised in the LUBA remand of the City Council decision to approve the Fabian Estates Subdivision Tentative Plat and tree felling.

Discussion:

On December 12, 2007, the City Council approved a Subdivision Tentative Plat application and a Site Plan Review for Tree Felling application for Fabian Estates subdivision. Fabian Estates subdivision would be located on property on the south side of Maier Lane, east of Skyline Drive in North Albany. The subdivision would divide a 4.52-acre parcel of land into 11 residential single-family lots. A total of 129 trees larger than 8 inches in diameter would be removed to construct the subdivision; 208 trees larger than 8 inches in diameter would remain.

The approval was appealed to the state Land Use Board of Appeals (LUBA). LUBA remanded the decision back to the City to more fully explain parts of the approval.

Essentially, the LUBA remand: 1) requires more information about access for the adjoining property to the east; 2) requires the applicant to submit a storm drainage plan; and 3) requires the City to respond to the appellant's contention that a Comprehensive Plan Implementation Method applies to the subdivision review. The staff report attached to this memo addresses each of these requirements.

LUBA found that the rest of the City's decision was consistent with the requirements for review of the subdivision and tree felling applications. No further review of the tree felling is required. Testimony at the public hearing will be limited to the three issues identified by LUBA in the remand.

Testimony is limited to the following three questions:

1. Is the 40-foot-wide access easement extension provided by the subdivision to the properties to the east consistent with the Albany Development Code (ADC) 12.150 requirement for a "street" extension, and does this easement satisfy the ADC 11.180(2) requirement that the required access to adjoining developable land allow that land to be developed in accordance with the ADC or is another form of access required?

The staff report finds that the 40-foot-wide easement does not meet the ADC 12.150 requirement for a street extension, so the requirement in ADC 11.180(2) for access to the adjoining property will not be met unless a public street right-of-way is dedicated.



Dedication of a right-of-way meets the definition of "street" in the ADC. The applicant has agreed to dedicate the right-of-way.

The street would not have to actually be built with the subdivision. It could be built later if the property to the east is ever divided to create another parcel that would need access to the public street that will be built in the Fabian Estates subdivision. (The street would be only about 32 feet long.)

2. Have the requirements of ADC 12.530 been met?

ADC 12.530 requires the applicant to submit a storm drainage plan. The applicant did submit a storm drainage plan with the original application, but the City Council required in a condition of approval that the applicant change the plan. This did not meet the requirement that the applicant submit a plan that shows what would be built. The applicant has now submitted a storm drainage plan that includes the requirements imposed in the condition. The City Engineer has reviewed the plan and approved it as required by ADC 12.530.

3. Does Albany Comprehensive Plan Goal 7, Implementation Measure 10, require the applicant to increase minimum lot sizes in the subdivision because the slopes on the subject property exceed 25 percent?

The staff report explains that Comprehensive Plan Implementation Methods are not review criteria for subdivisions.

The exhibits attached to the staff report include 13 pages of utility plans (Exhibit D). These plans are the storm drainage plan required by ADC 12.530. The plans also show proposed sewer and water lines. The sewer and water line plans are included just to demonstrate that there will not be conflicts between the location and grade of these lines with the proposed storm drainage system. We are not reviewing the sewer and water plans as part of the LUBA remand.

On the day after this memo and staff report were delivered to the City Manager's office to be included in the City Council agenda packet, the applicant submitted a letter to the City Council that summarizes the applicant's position on the three issues listed above. Staff has not had time to review the additional/substitute condition they propose, nor have we had time to consider the legal arguments they offer. We were able to include the letter in the agenda packet at the last minute so that the Council will have it in advance of the scheduled public hearing. The letter is located after the staff report in the agenda packet.

If you have questions before the hearing, please let me know.

Budget Impact:

None.

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# Community Development Department

333 Broadalbin Street SW, P.O. Box 490  
Albany, OR 97321

Phone: (541) 917-7550 Facsimile: (541) 917-7598  
[www.cityofalbany.net](http://www.cityofalbany.net)

## STAFF REPORT

### Subdivision Tentative Plat/Site Plan Review – LUBA Remand

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<b><u>HEARING BODY</u></b>	ALBANY CITY COUNCIL
<b><u>HEARING DATE</u></b>	Wednesday, November 12, 2008
<b><u>HEARING TIME</u></b>	7:15 p.m.
<b><u>HEARING LOCATION</u></b>	Council Chambers, Albany City Hall, 333 Broadalbin Street SW

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### **GENERAL INFORMATION**

DATE OF REPORT:	November 5, 2008
FILES:	SD-07-07 and SP-19-07
TYPE OF APPLICATIONS:	1) <u>SD-07-07</u> : Subdivision Tentative Plat that would divide a 4.52-acre parcel of land into 11 residential single-family lots (Fabian Estates). 2) <u>SP-19-07</u> : Site Plan Review to remove 129 trees to construct the subdivision. There are 337 trees larger than 8 inches in diameter on the property. Of the 337 trees, 208 trees would be saved.
REVIEW BODY:	City Council
PROPERTY OWNER/ APPLICANT:	Frank Fabian; PO Box 1482; Albany, OR 97321
APPLICANT REPS:	Dan Watson; K&D Engineering, Inc.; P.O. Box 725; Albany, OR 97321  Joel Kalberer; Weatherford Thompson, et al Attorneys; 130 1st Avenue SW; Albany, OR 97321
ADDRESS/LOCATION:	No addresses yet. South side of Maier Lane NW, east of Skyline Drive NW.
MAP/TAX LOT:	Benton County Assessor's Map No. 10S-4W-36CC; Tax Lot 3300
ZONING:	RS-10 (Residential Single Family)
TOTAL LAND AREA:	4.52 acres
EXISTING LAND USE:	Vacant land
NEIGHBORHOOD:	North Albany
SURROUNDING ZONING:	North: RS-10 (Residential Single Family) South: RS-10 East: RS-10 West: RS-10

**SURROUNDING USES:** North: Single-family houses  
South: Single-family houses  
East: Single-family houses  
West: Single-family houses

**PRIOR HISTORY:** No other land use applications for this property have been reviewed by the Planning Division.

**NOTICE INFORMATION**

A Notice of Public Hearing was mailed to surrounding property owners on October 23, 2008. The site was posted on October 27, 2008, with signs that advertise the public hearing, in accordance with Albany Development code Section 1.410. At the time this staff report was finished on November 5, 2008, the Albany Planning Division had not received written comments from any of the property owners who were mailed notice.

**STAFF RECOMMENDATIONS**

**APPROVAL with CONDITIONS:**

- 1) SD-07-07: Subdivision Tentative Plat that would divide a 4.52-acre parcel of land into 11 residential single-family lots (Fabian Estates); and
- 2) File SP-19-07: Site Plan Review to remove 129 trees to construct the subdivision.

The proposed conditions of approval are listed in the original staff report for these applications dated November 7, 2007 (adopted by the City Council on December 12, 2007) and in this staff report.

**CITY COUNCIL DECISION**

*[Note to City Council: Choose the motion below that corresponds to the City Council decision.]*

**MOTION TO APPROVE WITH CONDITIONS**

*If the findings in the staff report adequately address the testimony presented at the public hearing, the City Council may approve the application based on the findings and conclusions of the staff report.*

I MOVE that the City Council APPROVE WITH CONDITIONS the Subdivision Tentative Plat application for Fabian Estates Subdivision (File SD-07-07). This motion is based on the findings and conclusions of the staff report and testimony presented at the public hearing.

OR

**MOTION TO APPROVE WITH CONDITIONS AS MODIFIED**

*If the findings in the staff report are adequate, but information presented at the public hearing leads the City Council to conclude that additional condition(s) are necessary for the application to meet the review criteria, the City Council may include new conditions and approve the application.*

I MOVE that the City Council APPROVE WITH CONDITIONS AS MODIFIED the Subdivision Tentative Plat application for Fabian Estates Subdivision (File SD-07-07). The modifications are ([SPECIFY MODIFICATIONS]). This motion is based on the findings and conclusions of the staff report and testimony presented at the public hearing.

OR

**MOTION TO GRANT TENTATIVE APPROVAL WITH CONDITIONS**

*If new information is presented at the public hearing, and the City Council wishes staff to prepare additional findings that address the information, the City Council may grant tentative approval and direct staff to prepare additional findings. At the next meeting, the City Council would review the additional findings, and if they are satisfactory, approve the application based on the staff report, the new information, and the additional findings.*

I MOVE that the City Council grant TENTATIVE APPROVAL WITH CONDITIONS the Subdivision Tentative Plat application for Fabian Estates Subdivision (File SD-07-07). I also MOVE that the City Council direct staff to prepare additional findings that address the new information presented at the public hearing for consideration at the next meeting.

OR

**MOTION TO DENY**

*If the City Council finds that the applicant has not provided sufficient evidence to demonstrate that the review criteria have been met, or if they find the applicant has presented incorrect information, the City Council may deny the application.*

I MOVE that the City Council DENY the Subdivision Tentative Plat application for Fabian Estates Subdivision File SD-07-07). I also MOVE that the City Council direct staff to prepare findings to support denial based on the testimony presented at the public hearing and to present these findings for consideration at the next meeting.

## APPEALS

Within five days of the City Council's final decision on this application, the Community Development Director will provide written notice of the decision to the applicant and any other parties entitled to notice.

The City's decision may be appealed to the Oregon Land Use Board of Appeals (LUBA) if a person with standing files a Notice of Intent to Appeal not later than 21 days after the Director's notice of decision is mailed [ADC 1.330(5)(a)].

## STAFF ANALYSIS

### Subdivision File SD-07-07

#### Background

On December 12, 2007, the City Council approved a Subdivision Tentative Plat application and a Site Plan Review for Tree Felling application for Fabian Estates subdivision. Fabian Estates subdivision would be located on property on the south side of Maier Lane, east of Skyline Drive in North Albany. The subdivision would divide a 4.52-acre parcel of land into 11 residential single-family lots. A total of 129 trees larger than 8 inches in diameter on the property now would be removed to construct the subdivision; 208 trees larger than 8 inches in diameter would remain.

The approval was appealed to the state Land Use Board of Appeals (LUBA). LUBA remanded the decision back to the city to more fully explain parts of the approval.

Essentially, LUBA remand requires: 1) more information about access for the adjoining property to the east; 2) the applicant to submit a storm drainage plan; and 3) the City to respond to the appellant's contention that a Comprehensive Plan Implementation Method applies to the subdivision review.

LUBA found that the rest of the City's decision was consistent with the requirements for review of the subdivision and tree felling applications. No further review of the tree felling is required. Staff review, testimony at the public hearing, and the City Council decision will be limited to the following three issues identified in the LUBA remand.

1. Is the 40-foot-wide access easement extension provided by the subdivision to the properties to the east consistent with the Albany Development Code (ADC) 12.150 requirement for a "street" extension, and does this easement satisfy the ADC 11.180(2) requirement that the required access to adjoining developable land allow that land to be developed in accordance with the ADC or is another form of access required?
2. Have the requirements of ADC 12.530 been met? (ADC 12.530 requires the applicant to submit a storm drainage plan.)
3. Does Albany Comprehensive Plan Goal 7, Implementation Measure 10, require the applicant to increase minimum lot sizes in the subdivision because the slopes on the subject property exceed 25 percent?

This staff report addresses each of the three issues. The Albany Development Code Review Criteria to which each of the questions relates is listed above each of the questions.

The staff report is written in response to LUBA statements, questions, and conclusions. Legal language used in the LUBA opinion identifies the parties who appealed the decision as "Petitioner," and the attorney who defended the decision at LUBA on behalf of the applicant as "Intervenor." Those terms are used occasionally in the text below.

The applicants submitted an Urban Conversion Plan (Exhibit B), utility plans (Exhibit D), a drawing that shows a turnaround (Exhibit E), a Storm Drainage and Detention Study (Exhibit F), and a Water Quality Report (Exhibit G) in response to the LUBA remand. All of these documents are attached to the staff report as Exhibits.

#### Review Criteria and Questions

- (2) *Adjoining land can be developed or is provided access that will allow its development in accordance with this Code.*

Is the 40-foot-wide access easement extension provided by the subdivision to the properties to the east consistent with the Albany Development Code (ADC) 12.150 requirement for a "street" extension, and does this easement satisfy the ADC 11.180(2) requirement that the required access to adjoining developable land allow that land to be developed in accordance with the ADC or is another form of access required?

## FINDINGS OF FACT

- 2.1 ADC Article 22 does not have a definition of "adjoining." *Webster's Dictionary* (Tenth Edition) defines "adjoin" as "to lie next to or in contact with."
- 2.2 As noted in the decision that was remanded:
  - 2.2.1 This review criterion has been interpreted by the City Council to require only that adjoining land either have access, or be provided access, to public streets. [LUBA 95-256, *Fechtig v. City of Albany*, Record page 193, in which the City Council's decision was affirmed.]
  - 2.2.2 ADC 12.060 requires that development must have frontage on, or approved access to, a public street currently open to traffic.
  - 2.2.3 ADC 12.110 says that new streets may be required to be located where the City Engineer determines that additional access is needed to relieve or avoid access deficiencies on adjacent or nearby properties.
- 2.3 The City Council interpretation cited above also goes on to say that "In accordance with the Development Code" means in accordance with ADC 12.060: "No development shall occur unless the development has frontage on or approved access to a public street currently open to traffic."
- 2.4 The City Council interpretations referenced above set the parameters for responding to this review criterion.
- 2.5 The LUBA Final Opinion and Order (page 6) says: "As we have already noted, ADC 12.150 appears to require that the access to adjoining developable property that ADC 11.180(2) requires must be provided by a "street." It is unclear to us whether the 40-foot dedicated access easement constitutes a "dedicated public thoroughfare" or in some other way qualifies as a "street." It is also unclear to us whether the 40-foot dedicated access easement is sufficient to allow adjoining properties to be developed "in accordance with this Code." On remand, the city must provide a better explanation for why the approved 40-foot easement (1) is consistent with the ADC 12.150 requirement for a "street" extension and (2) satisfies the ADC 11.180(2) requirement that the required access to adjoining developable land allow that land to be developed "in accordance with this Code."
- 2.6 "Street" is defined in ADC Article 22 as "A public thoroughfare or right-of-way dedicated, deeded or condemned; other than an alley, which affords the principal means of access to abutting property, including avenue, place, way, drive, land, boulevard, highway, road, and other thoroughfares except as excluded in this Code. The word "street" shall include all arterial highways, freeways, traffic collector streets, and local streets.
- 2.7 ADC 12.150 says "Where it is necessary to give access to or permit a future division of adjoining land, streets shall be extended to the adjoining tract. (Emphasis added.) A reserve strip access at the end of a dedicated street shall be deeded to the City. In addition, a barricade at the end of the street shall be installed and paid for by the property owners. It shall not be removed until authorized by the City Engineer."
- 2.8 This review criterion simply requires that adjoining properties have frontage on or approved access to a public street currently open to traffic. ADC 12.150 may require that street(s) be extended to adjoining

properties “where it is necessary...,” and ADC 12.110 may require street(s) to be located “...where the City Engineer determines that additional access is needed...”

2.9 ADC 12.090 permits the creation of an access easement in lieu of a street: “In general, the creation of access easements between property owners is discouraged. However, there are some instances where an access easement is the only viable method of providing access to a developable lot. The review body will approve an access easement where the applicant has demonstrated that all of the following criteria have been met:

(1) No more than two parcels or uses are to be served by the proposed access easement;

(2) There is insufficient room for the public right-of-way due to topography, lot configuration, or placement of existing buildings, and

(3) The City Engineer has determined that there is not a need for a public street in this location.”

2.10 The City Council interprets ADC 12.090(1) to mean that the owner of the property has the right to use the access because they own the property, and not more than two other properties may be granted an easement to use the access. So, a total of three properties may use an access that has easements over it.

2.11 Properties to the north: Maier Lane (a public street right-of-way) adjoins the Fabian Estates subdivision property along the property’s north boundary. There are no privately owned properties that adjoin to the north.

2.12 Properties to the south: Two properties adjoin to the south. The two properties are: Benton County Tax Assessor’s Map No. 11S-4W-1BB, Tax lot 200 (Rawland) and Tax lot 401 (Davenport).

Tax Lot 200 has slopes in some places that exceed 50 percent. This parcel has frontage on and access to West Thornton Lake Drive.

Tax Lot 401 does not have frontage on a public street. The same property owners own the parcel adjacent to the south with frontage on, and access to, West Thornton Lake Drive. An easement across the parcel adjacent to the south to West Thornton Lane Drive in favor of Tax Lot 401 can provide access for the upper parcel. Alternatively, the two parcels can be combined creating one parcel with frontage on, and access to, West Thornton Lake Drive. Some of the slopes on the upper parcel are up to 50 percent. The average slope adjoining the proposed subdivision is about 30 percent. The maximum grade generally allowed by the ADC for a public street is 12 percent (ADC 12.210). The steep slopes preclude extension of a public street or driveway from the Fabian Estates subdivision to the Chambers parcel. The City Engineer has determined that there is not a need for a public street in this location.

2.13 Properties to the west: There is one adjoining property to the west. This property has frontage on, and access to Maier Lane and Skyline Drive.

2.14 Properties to the east: Three parcels adjoin the subdivision property to the east. There is a fourth parcel to the east, but it is actually separated by a flag lot from the subdivision property and is therefore, not adjoining. In the original findings approving the subdivision application, the City characterized this fourth parcel as an adjoining parcel. That characterization was in error. The City now finds that three parcels to the east are adjoining.

2.15 The properties to the east are zoned RS-10. RS-10 is a single-family zoning district. The average minimum lot size in RS-10 zoning districts is 10,000 square feet.

All of the adjoining parcels to the east are currently developed in accordance with the Development Code. The parcels have single-family homes built on them.



The adjoining parcel abutting Maier Lane (Tax Lot 500) has frontage on, and access to, Maier Lane. The two other adjoining parcels (and the fourth non-adjoining parcel) have access via a shared driveway over a private easement to Maier Lane. The easement is located adjacent to the subdivision property's eastern boundary. All of the adjoining properties to the east currently have frontage on, or access to, Maier Lane.

- 2.16 It may be possible to divide each of the three parcels that adjoin the subdivision property to the east. If the parcels are divided they will need frontage on, or access to, a public street.
- 2.17 ADC 12.120 shows that the minimum right-of-way width for a local street is 42 feet. ADC 12.122(6) may allow a narrow right-of-way width for "constrained sites." For example, the Fabian Estates subdivision plat shows a 41-foot-wide street right-of-way for a new street within the subdivision.

ADC 3.190, Table 1 shows that the minimum setback for houses from streets in RS-10 zoning districts is 20 feet. The City's electronic maps that include aerial photography show that the house on adjoining Tax Lot 600 is about 40 feet from the eastern boundary of the subdivision property.

There is not enough room to provide a public street right-of-way and the required setback to the existing house at this location.

- 2.18 The three adjoining parcels to the east vary in size from about 55,000 square feet to 60,000 square feet. Each of the parcels has enough land area to be divided into multiple smaller parcels, but the placement of existing homes on the parcels, and steep slopes on the eastern area of the parcels, restrict the actual remaining development potential of the parcels.

The applicant provided an Urban Conversion Plan that shows how each of the three adjoining parcels to the east could be divided. For the sake of this review, it is realistic and reasonable to assume that each of the parcels could be divided into two smaller parcels.

- 2.19 The two lots created from Tax Lot 500 would have frontage on, and access to, Maier Lane.
- 2.20 The two parcels created from Tax Lot 600 would use the existing access easement across Tax Lot 500.
- 2.21 The tentative subdivision plat for Fabian Estates shows an easement from the end of the new street named Fabian Way to the "flag pole" section of adjoining Tax Lot 900. The easement would be about 32 feet long. The easement is intended to provide access for the two parcels that could be created from Tax Lot 900.
- 2.22 If the City determines that the easement does not meet the requirements of ADC 12.090, the applicants propose to dedicate a public street right-of-way instead of the easement.

## CONCLUSIONS

- 2.1 The public street right-of-way for Maier Lane adjoins the subdivision property to the north.
- 2.2 The easterly adjoining property to the south (Tax Lot 200) has frontage on and access to, West Thornton Lake Drive. The westerly adjoining property to the south (Tax Lot 401) can be provided access to West Thornton Lake Drive on an easement over Tax Lot 300 to the south, or by combining it with Tax Lot 300. Both parcels are currently under the same ownership. It is not possible to build a public street from the Fabian Estates subdivision to West Thornton Lake Drive because the street grade would be too steep (steeper than 12 percent).
- 2.3 The adjoining property to the west has frontage on, and access to, Maier Lane and Skyline Drive.
- 2.4 There are three parcels of land that adjoin the subdivision property to the east. Each of these parcels is now developed in accordance with the ADC with a single-family house, and with access to a public street

on a shared easement. The ADC requires access to adjoining undeveloped property, but does not guaranty additional access for further development of already developed property.

- 2.5 Although each of the parcels to the east is currently developed in accordance with the ADC, and ADC 12.150 therefore does not apply to this situation, the applicants provided an Urban Conversion Plan that shows how each parcel can be divided into smaller parcels.

Each of the adjoining parcels to the east has enough land area to be divided into multiple parcels, but the placement of existing houses on the parcels and the very steep slopes on the eastern areas of the parcels, makes it practical to divide each parcel into only two parcels.

The two parcels that could be created from Tax Lot 500 would have frontage on, and access to, Maier Lane. The two parcels that could be created from Tax Lot 600 would have access on a shared easement to Maier Lane. The two parcels that could be created from Tax Lot 900 would have access to the new street in Fabian Estates (Fabian Way).

(It is not possible to provide a public street right-of-way and new street along the west boundary of the parcels to the east because there is not enough width to do so.)

- 2.6 The applicants propose an easement to provide access for the two parcels that could be created from Tax Lot 900. To allow the easement, ADC 12.090(2) requires the applicant to demonstrate that “there is insufficient room for the public right-of-way due to topography, lot configuration, or placement of existing buildings.” The applicants have not provided any information that would show that ADC 12.090(2) is met.
- 2.7 The ADC definition of street includes a “[dedicated] right-of-way.” A public street right-of-way at the same location as the easement would meet the ADC 9.150 requirement for a street to be extended to adjoining parcel to the east.
- 2.8 This review criterion will be met when the following conditions are met.

#### CONDITION

1. The applicant shall dedicate a 40-foot-wide public street right-of-way between the end of Fabian Way and the adjoining parcel to the east. A street does not have to be built in the right-of-way with construction of the Fabian Estates subdivision.

**(4) *The location and design allows development to be conveniently served by various public utilities.***

Have the requirements of ADC 12.530 been met? (ADC 12.530 requires the applicant to submit a storm drainage plan.)

#### FINDINGS OF FACT

##### Storm Drainage

- 4.1 ADC 12.530 says:

“The review body will approve a development request only where adequate provisions for storm and flood water run-off have been made as determined by the City Engineer. The storm water drainage system must be separate and independent of any sanitary sewerage system. Where possible, inlets should be provided so surface water is not carried across any intersection or allowed to flood any street. Surface water drainage patterns and proposed storm drainage must be shown on every development proposal plan. All proposed storm sewer plans and systems must be approved by the City Engineer as part of the tentative plat or site plan review process.

“Ditches are not allowed without specific approval of the City Engineer. Open natural drainageways of sufficient width and capacity to provide for flow and maintenance may be permitted. For the purposes of this article, an open natural drainageway is defined as a natural path that has the specific function of transmitting natural stream water or stormwater run-off from a point of higher elevation to a point of lower elevation.”

- 4.2 ADC 12.550 requires that a culvert or other drainage facility shall be large enough to accommodate potential runoff from its entire upstream drainage area, whether inside or outside of the development. The City Engineer must review and approve the necessary size of the facility, based on the provisions of the Storm Drainage Master Plans, and sound engineering principles and assuming conditions of maximum potential watershed development permitted by the Comprehensive Plan.
- 4.3 ADC 12.560 says where it is anticipated by the City Engineer that the additional runoff resulting from the development will overload an existing drainage facility, the review body will withhold approval of the development until provisions have been made for improvement of said potential condition.
- 4.4 The City’s utility maps show that there is a 12-inch public storm drain main stubbed to the south end of Patrick Lane NW. There is a natural drainageway just west of the subdivision property that provides drainage for the area where the subdivision will be built. The drainageway flows south to West Thornton Lake Drive NW.
- 4.5 For the purpose of responding to the LUBA remand, the applicant submitted a storm drainage plan. The storm drainage system is shown on Sheets 13.a, 13.a1, and 13.b.
- 4.6 The storm drainage plan shows that the section of the Patrick Lane NW street extension the applicant will build north of Maier Lane NW will slope down to the north, where runoff from this section of new street will be collected in new curb inlets near the existing end of Patrick Lane NW.

The section of the street improvements to Maier Lane NW west of the Patrick Lane NW street extension will slope down to the west. Curb inlets are shown at the intersection of Maier Lane NW and Fabian Way NW, and on the south side of the end of the Maier Lane NW improvements. Curb inlets in Fabian Way NW will collect the drainage from the street and Lots 1 through 7. These flows will be routed through a detention system and a pollution control manhole before heading south in a piped system adjacent to the existing drainageway near the west boundary.

Roof drains from Lots 8 through 11 will be routed to a private piped detention system and discharge to the proposed public manhole just south of Maier Lane, near the west boundary of Lot 11, where it will combine with the rest of the subdivision’s drainage prior to flowing south in the piped drainage system.

The piped flow will continue south to, and across, West Thornton Lake Drive, then discharge to a bio-swale before entering another piped segment and will discharge just downstream of the West Thornton Lake outlet. (West Thornton Lake Drive is under Benton County’s jurisdiction.)

The applicant has provided written documents that demonstrate that the detention facilities will detain up through a 100-year storm event. The storm drainage system will be designed to restrict developed peak flows to match undeveloped peak flows. The applicant has also provided written documents that demonstrate that adequate stormwater quality improvements can be and will be provided.

The proposed stormwater improvements are in close proximity to an existing drainageway and ultimately discharge to West Thornton Lake. Construction of the proposed improvements may require a permit from the Department of State Lands and/or the Army Corps of Engineers. A wetland delineation and determination of the ordinary high water mark will be required to determine whether or not these permits are required.

## Erosion Control

- 4.7 ADC 12.585 requires that a National Pollution Discharge Elimination System (NPDES) permit for subdivision construction be obtained from the Oregon Department of Environmental Quality (DEQ). In addition, the City requires that, prior to beginning any excavation or fill on the site, the applicant must submit an erosion control/prevention plan to the City of Albany Engineering Division for review and approval.
- 4.8 The City also requires that prior to beginning any excavation or fill on the site, the applicant must submit an erosion control/prevention plan to the City of Albany Engineering Division for review and approval. Among other requirements, erosion control measures must be monitored daily, and maintained as necessary, by the property owner/developer. Ground cover must be reestablished by seeding and mulching on or before September 1st with ground cover established by October 15th. If the approved plan proves to be ineffective, as determined by the City, the owner/developer will be required to implement additional measures to prevent erosion.

## CONCLUSIONS

- 4.1 In general, the City Engineer has determined that adequate provisions for storm and floodwater runoff have been provided. In making this determination the City Engineer considered the improvements shown on Sheets 1 through 13b of the plans submitted October 31, 2008, the access/turnaround improvements shown in the schematic submitted via e-mail by K&D Engineering on October 31, 2008 for Tax Lot 300 (11-4W-1BB), and the detention study, hydraulic calculations, and water quality study submitted on October 31, 2008.
- 4.2 The City requires that a Permit for Private Construction of Public Improvements must be obtained from the City's Engineering Division to build required public improvements. Final design details (such as manhole locations, lateral locations, pipe size and grade, etc.) for required public improvements must be reviewed and approved by the City's Engineering Division.
- 4.3 The City requires that any public storm drainage pipes must be at least 10 inches in diameter. The proposed storm drain plan shows pipes that are smaller.
- 4.3 The City requires a more detailed storm drainage plan at the time the applicant applies for a Permit for Construction of Public Improvements. Details included with the plan must include design and calculation data that shows how stormwater detention will be provided such that the rate of runoff from the new streets and subdivision does not exceed the rate that comes off the property now (before development).
- 4.4 Trees will have to be removed to construct the proposed storm drainage system. Tree removal for construction of the storm drainage system was not approved with the original subdivision and Site Plan Review for Tree Felling applications. The City's tree felling regulations require Site Plan Review if five or more trees larger than eight inches in diameter are to be removed on a parcel, or property in contiguous ownership, larger than 20,000 square feet. A permit from the City Forester must be obtained to remove one to four trees larger than 25 inches in diameter.
- 4.5 A NPDES permit must be obtained prior to construction of the subdivision, and City requirements for erosion control must be met at the time construction of the subdivision begins.

## CONDITIONS

- 4.1 Before the City will approve the final subdivision plat, the property owner/developer must construct public storm drainage improvements to provide drainage for the new sections of streets in the subdivision and for each lot in the subdivision.

- 4.2 The property owner/developer must obtain a Permit for Private Construction of Public Improvements from the City's Engineering Division to build the required public improvements. Final design details (such as manhole locations, lateral locations, pipe size and grade, etc.) for required public improvements must be reviewed and approved by the City's Engineering Division.
- 4.3 Calculations for detention and pipe sizes must be provided to the City's Engineering Division with the application for the Permit for Private Construction of Public Improvements. Storm drainage at the point of discharge may not exceed the pre-development rate of runoff that flows into the existing drainage from the subdivision property. Detention must be provided for flows up through the 100-year event (5, 10, 25, 50, and 100-year events).
- 4.4 The property owner/developer may provide an improvement assurance that guarantees the required public improvements will be made. The improvement assurance must be in accordance with the requirements of ADC 12.590 through 12.610. The City will sign the final plat when the improvements are made, or when the improvement assurance is provided and all other conditions of approval are met.
- 4.6 The property owner/developer must obtain a NPDES permit for subdivision construction from the Oregon DEQ. In addition, the City requires that, prior to beginning any excavation or fill on the site, the applicant must submit an erosion control/prevention plan to the City of Albany Engineering Division for review and approval.
- 4.7 As shown on the plans that were submitted with the subdivision application, stormwater leaving the proposed development must be piped for its entirety through West Thornton Lake Drive. Stormwater between West Thornton Lake Drive and its point of discharge, located just downstream of the West Thornton Lake outlet, shall be either piped or discharged to an open drainage system as directed and approved by the City Engineer. Exceptions may be provided for water quality facilities to be located between the proposed development and the point of discharge, located just downstream of the West Thornton Lake outlet. Any exceptions must be approved by the City Engineer.
- 4.8 The applicant must secure the approval of the pipe installation, installation of water quality facilities, and/or installation of open drainage systems across those properties between the subdivision property and West Thornton Lake and secure a public easement providing the City with the rights to maintain the storm drain system that is installed.

A 30-foot-wide storm drainage easement will be required between Maier Lane and West Thornton Lake Drive and a 20-foot storm drainage easement will be required between West Thornton Lake Drive and the outfall which is shown just downstream of the outlet from West Thornton Lake. These easements must be centered over the storm drainage facilities. Additional access easements will be required over the proposed access roads. These include a 12-foot-wide access road shown near the northwest corner of Lot 11, the driveway and turnaround on Tax Lot 300 (11-4W-1BB) as shown on the schematic provided by K&D Engineering via e-mail on October 31, 2008, and the 15-foot and 12-foot access roads as shown on sheet 13.b. The existing driveway connecting the depicted locations on sheet 13.b must also be included at a minimum width of 12 feet.

Any modifications to these easement limits must be approved by the City Engineer. Easement dedication documents, including any permissions and restrictions of use within the easements, must be approved by the City Engineer.

- 4.9 The City requires that public storm drainage pipes be at least 10 inches in diameter. Any request for an exception to this standard must be approved by the City Engineer and would be considered during the construction plan review process.
- 4.10 The minimum slope for the access road proposed on Sheet 13.b shall be 12 percent. Any requests by the owner/developer for an exception to this requirement must be approved by the City Engineer.

- 4.11 If improvements to Lots 6 and 7 cannot drain to the street via gravity then they will be required to connect to the private storm drain system terminating on Lot 8 as shown on sheet 13.a. If adequate grade is not available for gravity flow, the lots may be required to pump. Any requests by the owner/developer for an exception to this requirement must be approved by the City Engineer.
- 4.12 The storm drainage system for the subdivision shall incorporate Best Management Practices for treating the stormwater quality prior to it being discharged into West Thornton Lake. Approval of Best Management Practices is at the City Engineer's discretion.
- 4.13 Site Plan Review for Tree Felling is required if five or more trees larger than eight inches in diameter are to be removed on a parcel, or property in contiguous ownership, larger than 20,000 square feet. A permit from the City Forester must be obtained to remove one to four trees larger than 25 inches in diameter. No approval for tree removal to construct the proposed storm drainage system across the properties not owned by the applicant has been obtained.
- Prior to issuance of the Permit for Private Construction of Public Improvements, the property owner must apply for, and be granted approval for any required tree felling reviews, approvals, or permits.
- 4.14 Prior to issuance of a Public Works Site Improvement (SI) permit the applicant must obtain all applicable permits from the Oregon Department of Environmental Quality, Oregon Department of State Lands, Army Corps of Engineers, and Benton County.

**Comprehensive Plan Implementation Method (The question below does not relate to any of the Subdivision Tentative Plat Review Criteria. It is question about how one provision in the Comprehensive Plan applies to review of the subdivision plat.)**

Does Albany Comprehensive Plan Goal 7, Implementation Measure 10, require the applicant to increase minimum lot sizes in the subdivision because the slopes on the subject property exceed 25 percent?

**Petitioners Argument**

- 1.1 The LUBA Final Opinion and Order (page 14) says: "In [the thirteenth and fourteenth] assignments of error, petitioners argue that the city erred in failing to respond to petitioners' argument that **Albany Comprehensive Plan (ACP) Goal 7, Implementation Method 10**, requires the city to increase minimum lot sizes in the subdivision because some of the slopes on the subject property exceed 25%."

Comprehensive Plan Goal 7, Implementation Method 10 says:

"10. Increase minimum lot sizes (or minimum lot area per unit) on hillside areas, allowing higher densities for cluster developments approved through Planned Development as outlined in the following table:

<u>Slope %</u>	<u>Standard Dev.</u>	<u>(RS 6.5 Lot)</u>	<u>PUD Devel.</u>	<u>(RS 6.5 Avg)</u>
13 to 20	1.25	8125	1.00	6500
21 to 25	1.50	9750	1.15	7475
26 to 30	2.00	13000	1.40	9100
31 & above	3.00	19500	2.00	13000"

- 1.2 In support of the thirteenth and fourteenth assignments of error, petitioners cite ADC 1.050, which provides in relevant part:

"Since the City of Albany has a Comprehensive Plan and implementing regulations which have been acknowledged by the State of Oregon as being in compliance with statewide goals, any action taken in conformance with this Code shall be deemed also in compliance with statewide goals and the Comprehensive Plan. Unless stated otherwise within this Code, specific findings demonstrating

compliance with the Comprehensive Plan are not required for land use application approval. *However, this provision shall not relieve the proponent of the burden of responding to allegations that the development action requested is inconsistent with one or more Comprehensive Plan policies.*" (Emphasis added.)

- 1.3 LUBA found that the Intervenor did not respond to petitioners' argument that the last sentence of ADC 1.050 required the city to respond to petitioners' allegation that the proposed subdivision does not comply with ACP Goal 7, Implementation Method 10. Because the Intervenor did not respond, LUBA agreed with petitioners that the city erred in failing to respond to petitioners' argument. The City's response is set forth below.

#### Comprehensive Plan Explanation of Implementation Methods

- 1.4 The Comprehensive Plan (page ii) explains the hierarchy of goals, policies, and implementation methods included in the Plan and the obligation of applicants and the City to consider these Comprehensive Plan provisions as follows:

"Plan statements (goals, policies, implementation methods, and recommendations) identify the intent of the City to accomplish certain results. The different types of statements vary in specificity, with goals being the most general and implementation methods being the most specific. The City's obligation under these statements also varies according to the type of statement."

- 1.5 The Comprehensive Plan (page iii) explains the City's obligation in regard to Implementation Methods as follows:

"Completion of any project will depend on a number of factors such as specific City priorities, City financing, grant availability, etc. The City must periodically review project statements as part of a process to determine a priority list of projects to be completed. The list can be any length, and inclusion of an item on the list does not obligate the City to complete that project within the time period allocated.

Since implementation methods are suggestions to future City decision-makers to implement the goals and policies set forth in the Plan, the listing of any particular implementation method in this Plan does not, by virtue of the listing alone, obligate the City to undertake any particular implementation method.

Standards will be incorporated into City regulations and policies by separate action, given the constraints of staff time and City priorities, and will not be put into effect by virtue of this Plan alone.

It may not be necessary for the City to incorporate a specific implementation method where it can be demonstrated that an alternative action or no action at all will better or equally accomplish the intent of the related goals or policies.

The list of implementation methods is not exclusive, and the City will always have the power to adopt alternate methods for implementing the Plan's goals and policies."

- 1.6 The language from the Comprehensive Plan cited in Finding 1.5 above makes it clear that Implementation Methods are not binding on the City to put into effect. "Since implementation methods are suggestions to future City decision-makers to implement the goals and policies set forth in the Plan, the listing of any particular implementation method in this Plan does not, by virtue of the listing alone, obligate the City to undertake any particular implementation method. Standards will be incorporated into City regulations and policies by separate action, given the constraints of staff time and City priorities, and will not be put into effect by virtue of this Plan alone." [Emphasis added.]

#### History of Hillside Development Standards

- 1.7 Although the Implementation Method cited above related to development on steep slopes is not obligatory, and is not a review criterion for Subdivision Tentative Plat application reviews, the City's

Development Code does have mandatory standards for developments, including subdivisions, in areas with slopes 12 percent or greater.

- 1.8 ADC Article 6 includes standards for Hillside Development. ADC 6.180 says the Hillside Development standards apply to any property proposed for development that has slopes of 12 percent or greater as shown on Plate 7 of the Albany Comprehensive Plan. The original staff report for the Fabian Estates subdivision found that "...The Hillside Development Standards apply to the proposed subdivision." (Finding 5.2) The findings go on to explain how the proposed subdivision meets each of the Hillside Development standards including ADC 6.200 cited below. The petitioners did not challenge these findings.
- 1.9 A previous version of the ADC included a requirement (ADC 6.210) that required "In slope areas of 12-25%, the minimum lot size shall be 15,000 sq. ft." The City Council adopted revisions to the Hillside Development standards in April 2007 (Ordinance 5668). The revisions deleted ADC 6.210 and replaced it with the following requirements that are "...intended to regulate the development of potentially hazardous terrain, minimize public and private losses due to earth movement hazards in specified areas, and minimize erosion and related environmental damage" (ADC 6.170, Purpose Statement).

Specifically,

6.200 Geotechnical Report Required. For any development subject to the applicability criterion in ADC 6.180, an applicant shall provide a geologic and soils report prepared and stamped by a certified engineering geologist or a licensed civil engineer, licensed in the specialty of geotechnical engineering with the State of Oregon.

The report must identify the following:

- (1) All geologic and soils hazards and certify that the site, and each individual lot if land division is proposed, are suitable for the proposed development.
- (2) Area(s) suitable for building and describe how slopes will be stabilized.
- (3) Suitable building footprint(s) for development on each lot.
- (4) Any requirements that must be met from the time construction begins to the time construction is completed.
- (5) Any requirements that must be met after construction is completed (e.g., maintenance requirements for continued slope stabilization).

## CONCLUSIONS

- 1.1 It is not mandatory that any particular Comprehensive Plan Implementation Method be incorporated into the ADC.
- 1.2 Simply listing a particular Implementation Method in the Comprehensive Plan does not make it a mandatory standard or a review criterion to be used by the City to review a proposed development.
- 1.3 At one point, ADC Article 6, Hillside Development, did include a requirement that lots to be created in RS-10 zoning districts on slopes 12 percent or greater be at least 15,000 square feet. This put the Implementation Method referenced above into the ADC. In 2007, the City Council adopted revisions to the Hillside Development standards. The requirement that lots in RS-10 zoning districts on slopes 12 percent or greater was removed from the ADC and that requirement was replaced with ADC 6.200, which better accomplishes the intent of the Plan's goals and policies.
- 1.4 ADC 1.050 specifically says that "...findings demonstrating compliance with the Comprehensive Plan are not required for land use application approval." The applicant is not required to submit findings with a Subdivision Tentative Plat application that demonstrate compliance with Comprehensive Plan Implementation Methods, nor is the City required to include such findings in making a decision on a Subdivision Tentative Plat application.



- 1.5 The City Council finds that the proposed Subdivision Tentative Plat for Fabian Estates complies with current ADC standards for Hillside Development as described in the findings in the original staff report. The findings, conclusions, and conditions related to Hillside Development in the staff report are incorporated here by reference.
- 1.6 Note also that the last sentence of ADC 1.050 says "...this provision shall not relieve the proponent of the burden of responding to allegations that the development action requested is inconsistent with one or more Comprehensive Plan policies." [Emphasis added.] As noted in Finding 1.4, there are differences between Comprehensive Plan goals, policies, and Implementation Methods. The last sentence in ADC 1.050 does not apply to goals or Implementation Methods; it applies to Comprehensive plan policies only. If it was intended to apply to goals and Implementation Methods, those terms would have been specified, as they are in other parts of the Comprehensive Plan and ADC.
- 1.7 ADC 1.050 requires the applicant or City to apply Comprehensive Plan goals and/or policies directly, and demonstrate that the application is consistent with such ACP goals, policies, only if the ADC specifically requires findings regarding Comprehensive Plan goals or policies. The ADC does not specifically require findings regarding Comprehensive Plan goals or policies for Subdivision Tentative Plat applications.
- 1.8 The proponent (applicant) and City have adequately responded to the petitioners' allegation that the proposed Subdivision Tentative Plat is not consistent with Goal 7, Implementation Method 10.

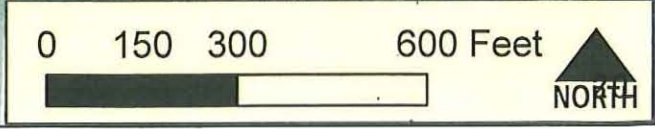
*U:\Community Development\Planning\Current\2007\07sd07\ubaremand\07sd07lubaremandccs.dd.dot*



**EXHIBIT A**  
**Fabian Estates**  
**SD-07-07**



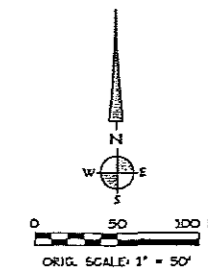
**Subject Property**





**URBAN CONVERSION PLAN**  
FOR  
**4 LOTS EAST OF FABIAN ESTATES**

LOCATED IN  
SEC. 36, T. 11 S., R. 4 W., W.M.  
CITY OF ALBANY, BENTON COUNTY, OREGON  
OCTOBER 7, 2008



**URBAN CONVERSION PLAN**

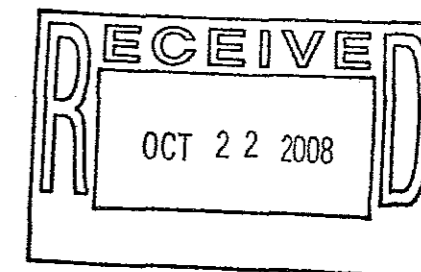
THIS PLAN SHOWS HOW FUTURE DEVELOPMENT COULD BE SERVED BY THE ACCESS FACILITIES CONSTRUCTED FOR "FABIAN ESTATES".  
LOT AREA '5' SHOWN ARE FOR RECONFIGURED LOTS.

**CURRENT ZONING:**

RESIDENTIAL SINGLE FAMILY (RS 10)

**CURRENT USE:**


RESIDENTIAL



Date: 10/6/2008 Time: 11:42  
View: PLOT Scale: 1"=50'(PS)  
File: d:\p\2008\06-63-1\DCG3-up.dwg  
User: k

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DATE	REVISIONS	BY

**K & D ENGINEERING, INC.**  

 276 N.W. HICKORY STREET  
 P.O. BOX 725  
 ALBANY, OREGON 97321  
 (541) 928-2583

**URBAN CONVERSION PLAN**  
**4 LOTS EAST OF FABIAN ESTATES**  
 CITY OF ALBANY, BENTON COUNTY, OREGON

**URBAN CONVERSION PLAN**

HORIZ. SCALE: 1" = 50'	SHEET No.
VERT. SCALE:	
ISSN DATE: OCT. 6, 2008	
DESIGN BY: DKW	
CHECK BY: MEH	
PROJECT No.: 06-b3-x	

File SD-07-07. Fabian Estates Subdivision. Adjoining Properties (Tax Lots).

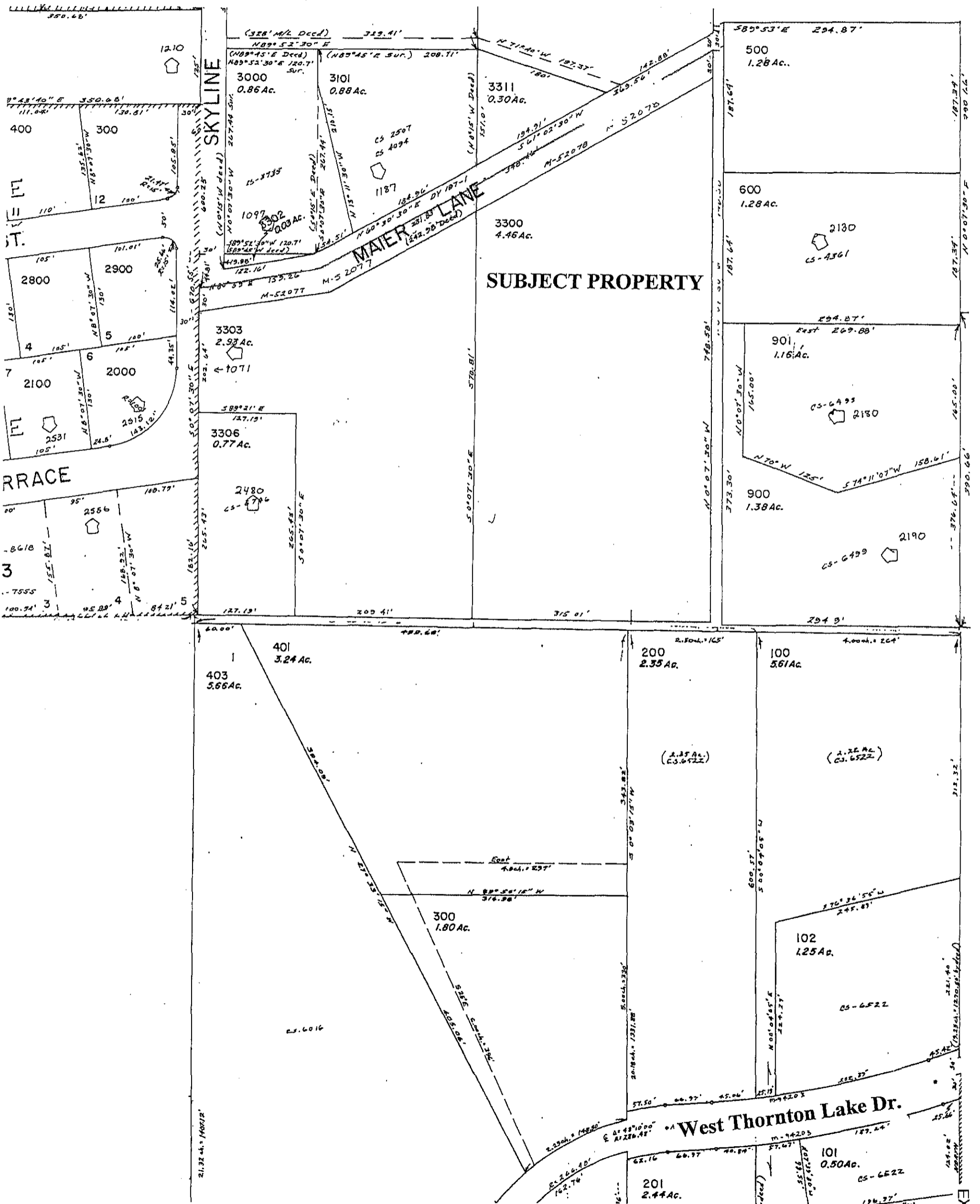
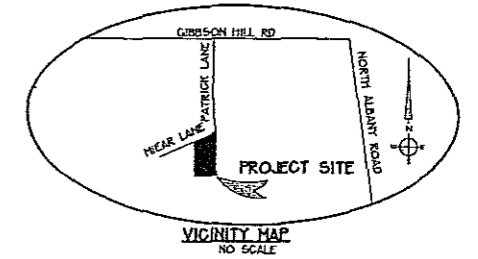


EXHIBIT C

EXHIBIT D  
FABIAN ESTATES SUBDIVISION

FOR  
**THE MARTIN CO.**  
TAX LOT 3300; 10-4-36CC  
LOCATED IN  
SEC. 36, T. 10 S., R. 4 W., W.M.  
CITY OF ALBANY, BENTON COUNTY, OREGON  
OCTOBER 22, 2008



LEGEND

--- PROJECT BOUNDARY	△ THRUST BLOCK
--- PROPERTY LINE	△ THRUST COLLAR EXIST./PROPOSED
--- STREET CENTERLINE	☆ STREET LIGHT EXIST./PROPOSED
--- EXIST. CURB/GUTTER WITH SIDEWALK	--- PROPOSED SEWER LINE
--- EXIST. ASPHALT CONCRETE PAVEMENT	--- PROPOSED WATER
--- EXIST. GRAVEL	--- PROPOSED STORM DRAIN
--- EXIST. WATER LINE	● CONG. MANHOLE EXIST./PROPOSED
--- EXIST. SEWER LINE	○ CLEAN-OUT EXIST./PROPOSED
--- EXIST. STORM DRAIN	□ PROPOSED CURB INLET / FIELD INLET
--- EXIST. GAS MAIN	□ PROPOSED WHEELCHAIR ACCESSIBLE RAMP
--- EXIST. POWER LINE	◆ ELEVATION FLAG
--- EXIST. TELEPHONE LINE	⊕ STREET "CURVE TABLE" REFERENCES
--- P.U.E. OR OTHER EASEMENT	⊙ STREET CONSTRUCTION REFERENCES
--- EXIST. TELEPHONE/FIBER OPTICS CABLE	⊠ PIPE REFERENCES
--- EXIST. OVERHEAD POWER LINES	--- PROPOSED CURB + GUTTER
--- EXIST. TELEVISION LINE	--- PROPOSED CURB + GUTTER WITH SIDEWALK
--- EXIST. FENCE	⊕ X = 55 LATERAL LENGTH
--- EXIST. DITCH	⊕ Y = DIST. FROM DOWNSTREAM M.H.
--- EXIST. CURB INLET C.B.	⊕ WATERLINE PIPE JOINT RESTRAINT
--- FOUND SURVEY MONUMENT	
--- EXIST. TELEPHONE PEDESTAL	
--- EXIST. POWER PEDESTAL/PULL BOX	
--- EXIST. POWER POLE	
--- EXIST. TREE/VEGETATION	
⊕ FIRE HYDRANT EXIST./PROPOSED	
⊕ WATER VALVE EXIST./PROPOSED	
⊕ WATER METER EXIST./PROPOSED	
⊕ BLOW-OFF EXIST./PROPOSED	

ABBREVIATIONS

AC ASPHALT CONCRETE PAVING	P POWER
AG W ASBESTOS CEMENT WATER LINE	P/L PROPERTY LINE
ADA DISABILITIES ADT	PC POINT OF CURVATURE
AP ANGLE POINT	PE FLAIN END
AWWA AMERICAN WATER WORKS ASSOCIATION	PRC POINT OF REVERSE CURVATURE
B.O. BLOW-OFF	PT POINT OF TANGENCY
BCR BEGIN CURB RETURN	PUE PUBLIC UTILITY EASEMENT
BOG BEGIN OF CURB	PVC POLYVINYL CHLORIDE
BVC BEGIN VERTICAL CURVE	RT RIGHT
BVCS BEGIN VERTICAL CURVE STATION	RP RADIUS POINT
C.B. CATCH BASIN	R/W RIGHT-OF-WAY
C.O. CLEAN-OUT	S SLOPE
C CENTERLINE	S.D. STORM DRAIN
CONG. CONCRETE	S.S. SANITARY SEWER
CONST. CONSTRUCTION	SDA-# STORM DRAIN ALIGNMENT NO.
COV COVER	SHV SHEET
DI DUCTILE IRON	SSA-# SANITARY SEWER ALIGNMENT NO.
DEA + # DIAMETER	STA STATION
EGR END CURB RETURN	T TELEPHONE
ELEV. ELEVATION	TOC TOP OF CURB
ESC EROSION + SEDIMENTATION CONTROL	TRANS. TRANSITION
END END VERTICAL CURVE	TV TELEVISION
EVCS END VERTICAL CURVE STATION	TYP. TYPICAL
EXIST. + 0 EXISTING	VS VERTICAL CURVE
F.G. FINISHED GRADE	W WATER
F.H. FIRE HYDRANT	WL WATER LINE
FLG FLANGE	WM WATER METER
F/O FIBER OPTICS CABLE	YPC YELLOW PLASTIC CAP
FUT. FUTURE	
G GAS	
GB GRADE BREAK	
IE + INV. INVERT ELEVATION	
LT LEFT	
MH MANHOLE	
MJ MECHANICAL JOINT	
NO. NUMBER	

DRAWING INDEX

SHEET TITLE	SHEET NO.
COVER SHEET	1 of 13
<b>DETAILS &amp; SPECIFICATIONS</b>	
DETAILS + SPECIFICATIONS	2 of 13
DETAILS + SPECIFICATIONS	3 of 13
DETAILS + SPECIFICATIONS	4 of 13
<b>GRADING &amp; EROSION CONTROL</b>	
GRADING, DEMO. + EROSION CONTROL PLAN	5 of 13
GRADING + EROSION CONTROL DETAILS + SPECIFICATIONS	6 of 13
<b>STREET &amp; STORM DRAIN CONSTRUCTION</b>	
FABIAN WAY, STA. 1+18.00 TO STA. 6+24	7 of 13
MAIER LANE, STA. 1+00 TO STA. 7+00	8 of 13
MAIER LANE + PATRICK LANE, STA. 7+00 TO STA. 10+45	9 of 13
<b>SANITARY SEWER &amp; WATERLINE CONSTRUCTION</b>	
FABIAN WAY, STA. 1+18.00 TO STA. 6+24	10 of 13
MAIER LANE, STA. 1+00 TO STA. 7+00	11 of 13
MAIER LANE + PATRICK LANE, STA. 7+00 TO STA. 10+45	12 of 13
<b>SANITARY SEWER, WATERLINE, STORM DRAIN, &amp; STREET CONSTRUCTION</b>	
CHAD AVE + MAIER LANE EASTBOUND	13 of 13
PLAN AND PROFILE STORM DRAIN PIPE	13.a of 13
STORM DRAIN CONSTRUCTION	13.b of 13

VERTICAL CONTROL

VERTICAL CONTROL IS BASED ON CITY OF ALBANY CONTROL STATION 95618, A 2" ALLEX CAP IN MONUMENT BOX, LOCATED 2 FEET FROM THE EAST EDGE OF PAVEMENT OF SKYLINE DRIVE AND ACROSS FROM A GRAVEL ROAD (13TH AVE) TO THE WEST CAP ELEVATION 412.04

HORIZONTAL CONTROL

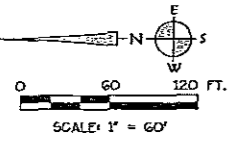
HORIZONTAL CONTROL IS BASED ON FOUND MONUMENTS ON THE EAST PROPERTY LINE OF SUBJECT PROPERTY, BEARING BEING N 00°07'30" E BASED ON C.S. 4014

OWNER/DEVELOPER

FRANK FABIAN  
THE MARTIN CO.  
P.O. BOX 1482  
ALBANY, OREGON 97321

ENGINEER

DANIEL K. WATSON  
K&D ENGINEERING, INC.  
276 NW HICKORY STREET  
ALBANY, OR 97321  
(541) 928-2583

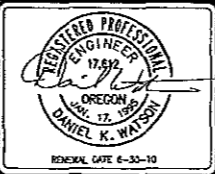


GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE CURRENT EDITION OF THE CITY OF ALBANY STANDARD CONSTRUCTION SPECIFICATIONS AND STANDARD DRAWINGS.
2. LOCATIONS OF EXISTING UTILITIES ARE ASSUMED FROM INFORMATION AVAILABLE AND ARE NOT GUARANTEED TO BE COMPLETE AND ACCURATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UTILITIES. THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS AND COMPLY WITH REQUIREMENTS AND SPECIFICATIONS OF THE RESPECTIVE UTILITIES WHERE IT IS NECESSARY FOR THE UTILITIES TO CUT, MOVE, RELOCATE OR RECONNECT ANY EXISTING FACILITY. FOR LOCATES CALL ONE THE CONTRACTOR SHALL MAINTAIN CITY LOCATE MARKINGS TO PRECLUDE RE-LOCATES.
3. CONSTRUCTION SITE SAFETY AND TRAFFIC CONTROL SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL BY THE ENGINEER AND THE CITY OF ALBANY AT THE PRE-CONSTRUCTION MEETING.
4. THE CONTRACTOR SHALL ERECT, MAINTAIN, AND REMOVE ALL REQUIRED TEMPORARY TRAFFIC CONTROL DEVICES.
5. WHERE PRIVATE PROPERTY ACCESS IS TEMPORARILY RESTRICTED AS A RESULT OF THE WORK, THE CONTRACTOR SHALL COMPLY WITH ALL CITY REQUIREMENTS INCLUDING SECTION 202.020, "ACCESS TO PUBLIC AND PRIVATE PROPERTY" OF THE GENERAL AND TECHNICAL REQUIREMENTS.
6. EXACT PAVEMENT SAW CUT LIMITS TO BE LOCATED BY ENGINEER IN FIELD. THE ENGINEER WILL PROVIDE ONE SET OF CONSTRUCTION STAKES FOR PIPELINE ALIGNMENTS, GRADES AND STRUCTURES. SURVEY CONTROL LOST OR DAMAGED THROUGH CONTRACTOR NEGLIGENCE AND REQUIRING RE-ESTABLISHMENT WILL BE PROVIDED AT THE CONTRACTOR'S EXPENSE.
7. PROPERTY MONUMENTS LOST AS A RESULT OF CONTRACTOR'S ACTIVITIES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
8. CONTRACTOR SHALL KEEP ALL STREETS CLEAR OF DEBRIS FROM CONSTRUCTION SITE.
9. ALL EXISTING OR CONSTRUCTION MANHOLES, CLEANOUTS, MONUMENT, GAS VALVES, WATER VALVES, AND SIMILAR STRUCTURES SHALL BE ADJUSTED TO MATCH FINISHED GRADE OF THE PAVEMENT, SIDEWALK, LANDSCAPED AREA OR MEDIAN STRIP WHEREIN THEY LIE.
10. CONTRACTOR SHALL MAINTAIN PROPER SUPPORT OF EXISTING UTILITIES AND INSURE MINIMUM COMPACTION STANDARDS AS PER THE PROJECT SPECIFICATIONS.
11. ALL WATER VALVES FOR LIVE WATER MAINS SHALL BE KEPT ACCESSIBLE FOR OPERATION AT ALL TIMES.
12. THE ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF ANY WATER LINE, SEWER LINE, OR MANHOLE TESTING. TEST RESULTS FROM TEST NOT WITNESSED BY THE ENGINEER OR HIS AUTHORIZED REPRESENTATIVE WILL NOT BE ACCEPTED.
13. PROPERTY LINE STATIONING SHOWN ON THE DRAWINGS IS BASED ON 90° ANGLE OR RADIAL TO THE CENTERLINE STATIONING AT THE PROPERTY LINE AND RIGHT-OF-WAY INTERSECTION.
14. CONTRACTOR SHALL MAINTAIN ONE SET OF DRAWINGS ON SITE WITH AS-BUILT INFORMATION RECORDED.
15. ITEMS OF WORK NOT SHOWN ON THE PLANS BUT NECESSARY FOR SUCCESSFUL COMPLETION OF THIS PROJECT MAY BE REQUIRED BY THE CITY.
16. CONTRACTOR SHALL BACKFILL BEHIND CURBS AND SHALL PROVIDE FINAL CLEAN-UP AND SLOPED GRADED GROUND, AS PER GRADING PLAN, BEHIND CURBS.
17. THE OWNER SHALL OBTAIN ALL NECESSARY PERMITS FROM BENTON COUNTY. COPIES OF ALL REQUIRED PERMITS MUST BE SUBMITTED TO THE CITY PRIOR TO BEGINNING CONSTRUCTION.
18. PIPE DISTANCES SHOWN ARE MEASURED HORIZONTALLY FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.

Date: 10/27/2008 Time: 14:46  
Scale: 1"=20'(FS)  
File: d:\2008\10-27-08\10-27-08.dwg (Brics)  
THIS DOCUMENT, DESIGNS, & IDEAS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE IS THE PROPERTY OF K&D ENGINEERING, INC. AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF K&D ENGINEERING, INC.

DATE	REVISIONS	BY
10/27/08	REVISED PER CITY OF ALBANY	B.E.

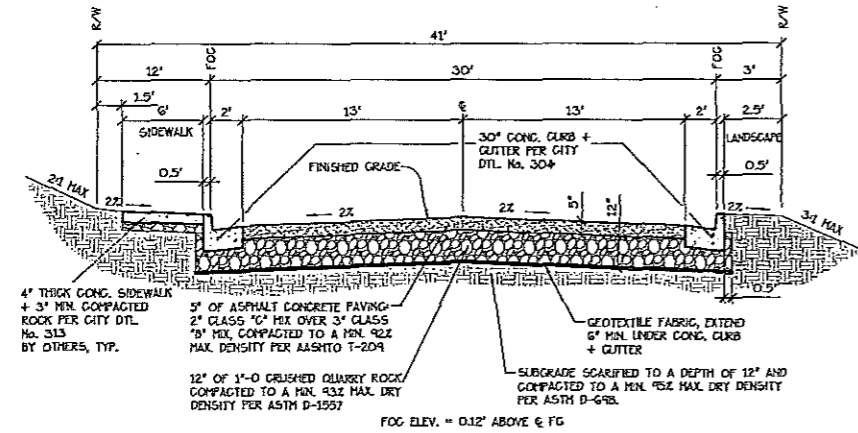


**K & D ENGINEERING, INC.**  
276 N.W. HICKORY STREET  
P.O. BOX 725  
ALBANY, OREGON 97321  
(541) 928-2583

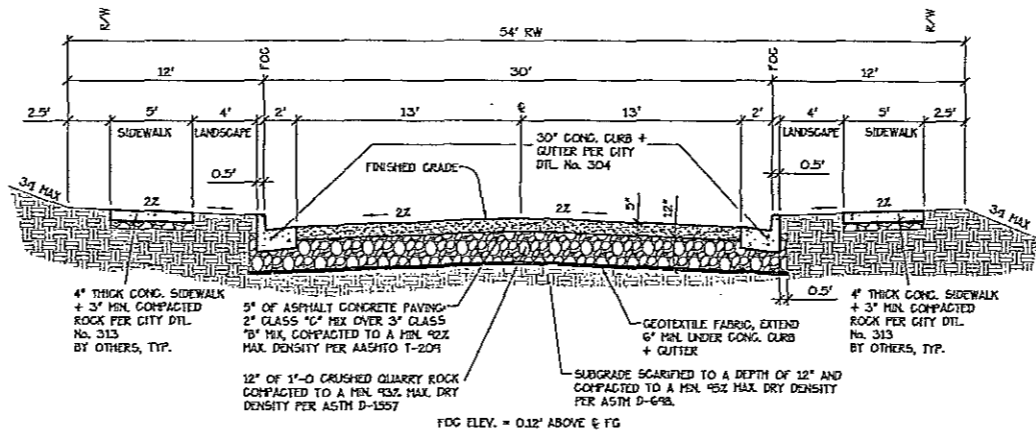
**FABIAN ESTATES SUBDIVISION**  
CITY OF ALBANY, BENTON COUNTY, OREGON

COVER  
OCT 31 2008

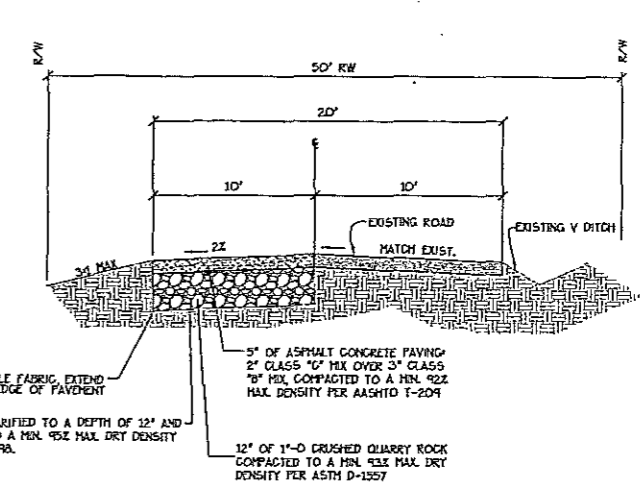
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VERT. SCALE:	
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DRAWN BY: WF	
CHECK BY: D.K.W.	
PROJECT No.: 06-63E	123



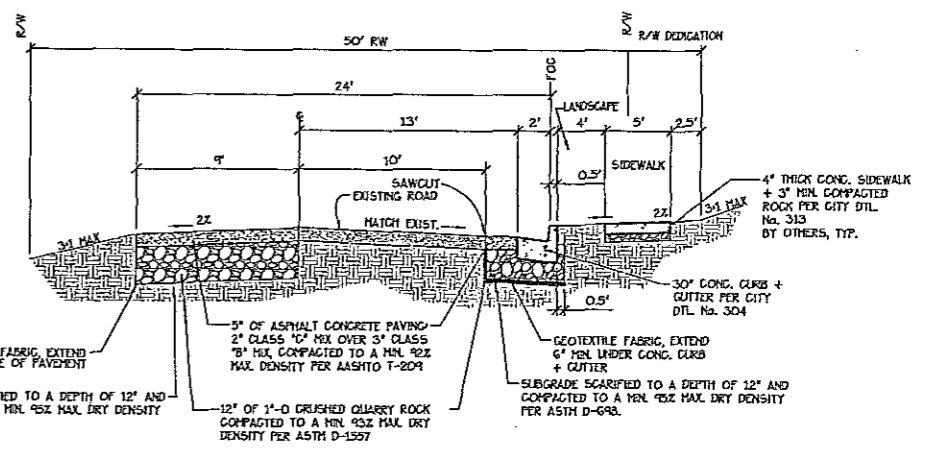
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PATRICK LANE AND FABIAN WAY



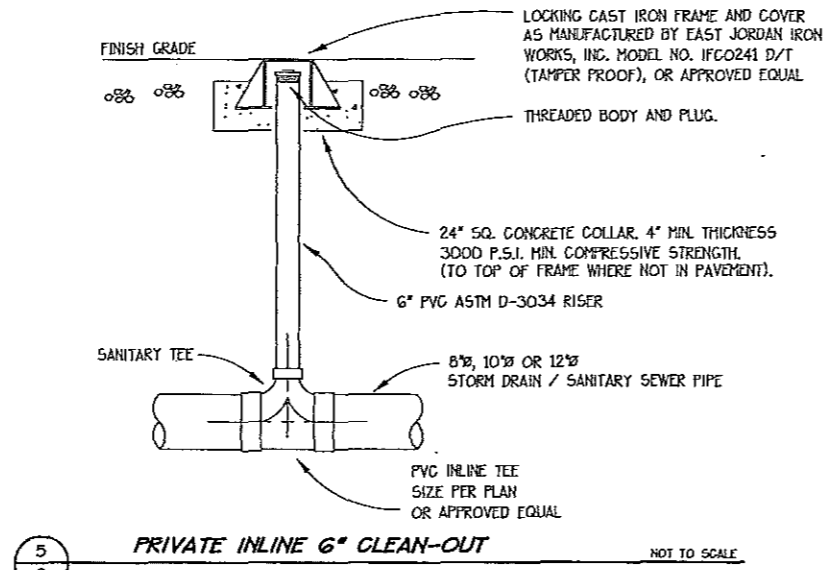
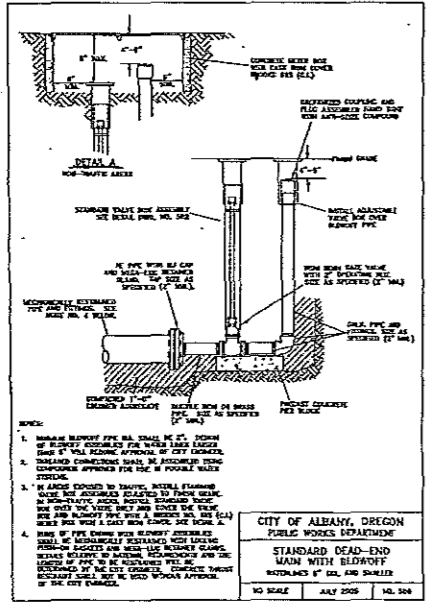
2 30' TYP. STREET SECTION NOT TO SCALE  
MAIER LANE STA. 4+46.44 TO 7+49.46



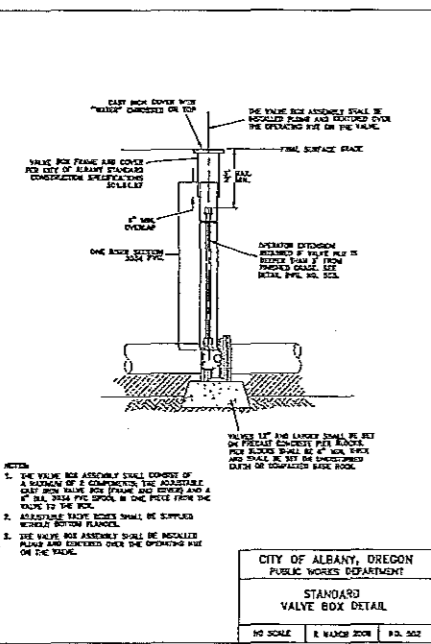
3 20' PARTIAL STREET SECTION NOT TO SCALE  
MAIER LANE STA. 1+00 TO 5+24+83.15



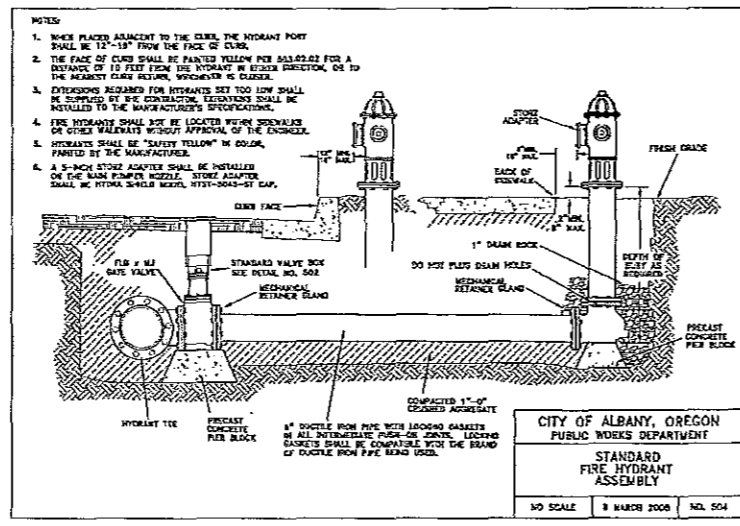
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MAIER LANE STA. 2+83.15 TO STA. 4+46.44



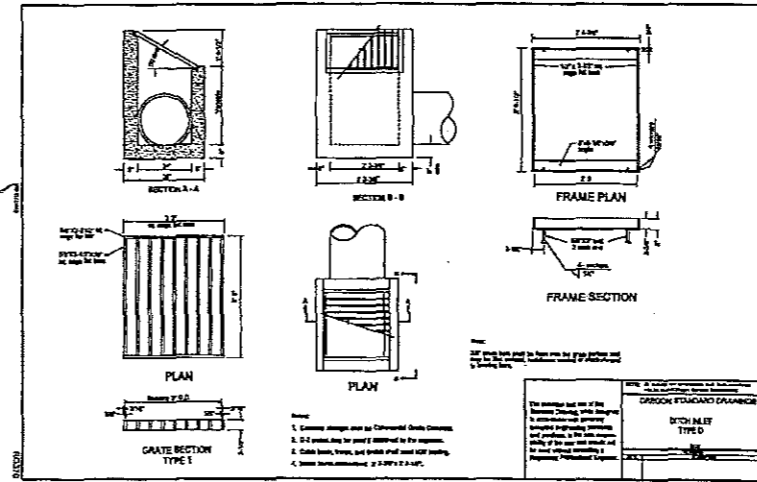
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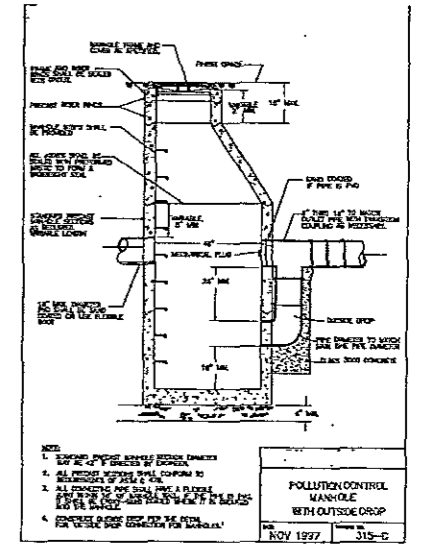
CITY OF ALBANY, OREGON  
PUBLIC WORKS DEPARTMENT  
STANDARD VALVE BOX DETAIL  
NO SCALE 8 MARCH 2008 NO. 504



CITY OF ALBANY, OREGON  
PUBLIC WORKS DEPARTMENT  
STANDARD FIRE HYDRANT ASSEMBLY  
NO SCALE 8 MARCH 2008 NO. 504



CITY OF ALBANY, OREGON  
PUBLIC WORKS DEPARTMENT  
GRATE SECTION TYPE 1  
NO SCALE 8 MARCH 2008 NO. 504



CITY OF ALBANY, OREGON  
PUBLIC WORKS DEPARTMENT  
POLLUTION CONTROL MANHOLE WITH OUTSIDE DROP  
NOV 1997 315-C

Drawn 10/30/2008 File: 1101  
Scale: 1=20'(FS)  
File: dvg\2006\06-63-e\63c-dtd.dwg (5/18)

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DATE	REVISIONS	BY



**K & D ENGINEERING, INC.**

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P.O. BOX 725  
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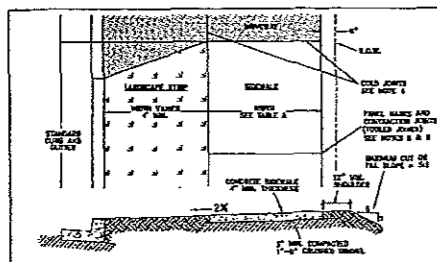
**FABIAN ESTATES SUBDIVISION**

CITY OF ALBANY, BENTON COUNTY, OREGON

**DETAILS**

HORIZ. SCALE: 1" = 20'  
VERT. SCALE: 1" = 4'  
SIGN DATE:    
DESIGN BY: WF  
CHECK BY: DKW  
PROJECT No.: 06-63E

SHEET No. 2 OF 124

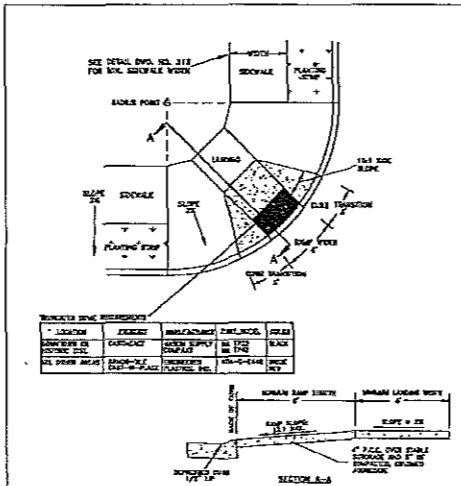


STREET TYPE	SETBACK SIDEWALK (STANDARD LOCATION)	CONCRETE SIDEWALK (STANDARD LOCATION)
ARTERIAL AND COLLECTOR	5 FT.	7 FT.
LOCAL	5 FT.	5 FT.

**STANDARD SIDEWALK SPECIFICATIONS**

1. STANDARD SIDEWALK SHALL BE CONSTRUCTED A MINIMUM OF 4" BELOW THE CURB, SIDEWALK DIMENSIONS PERMANENT TO THE CURB IS NOT PERMITTED WITHOUT APPROVAL OF THE ENGINEER.
2. SIDEWALK FOR SIDEWALK SHALL HAVE A COMPENSATION STRIP OF 400# FIBER AND A 2" TO 4" SAND.
3. THE SIDEWALK AND LANDSCAPE STRIP SHALL BE TO THE CURB AS AN EXISTING SIDEWALK. SIDEWALK SHALL BE 1/2" BELOW THE CURB 1/2" FROM ESTABLISHED LINE AND SHALL BE REPAIRED WITH A SIMILAR CONC.
4. COLD JOINTS SHALL BE LOCATED IN MIDDLE OF BAY BETWEEN JOINTS AND JOINTS OF EXISTING SIDEWALK SHALL BE IN CONSTRUCTION APPROXIMATELY 1/2" FROM CURB AS TO EXISTING SIDEWALK. SIDEWALK SHALL BE 1/2" BELOW THE CURB 1/2" FROM ESTABLISHED LINE AND SHALL BE REPAIRED WITH A SIMILAR CONC.
5. THE SIDEWALK SHALL BE LINED WITH 20# GROUND SPUN FIBER UNDER A 2" SAND JOINTING FILL.
6. CONCRETE JOINTS SHALL BE CONSTRUCTED AT EVERY CURB LINE, WALL, JUMP OF THE JOINTS SHALL BE 1/2" BELOW THE CURB 1/2" FROM ESTABLISHED LINE.
7. ALL SIDEWALK SHALL BE FINISHED WITH A 1/2" SAND JOINTING FILL. THE JOINTING FILL SHALL BE REPAIRED TO THE LINE OF THE SIDEWALK. JOINTING FILL SHALL BE REPAIRED WITH A SIMILAR CONC. JOINTING FILL SHALL BE REPAIRED WITH A SIMILAR CONC.
8. SEE LOCAL ORD. NO. 314 FOR STANDARD SPECIFICATIONS RELATIVE TO STANDARD SIDEWALK DIMENSIONS (ENGINEER, POLICE, ETC.).

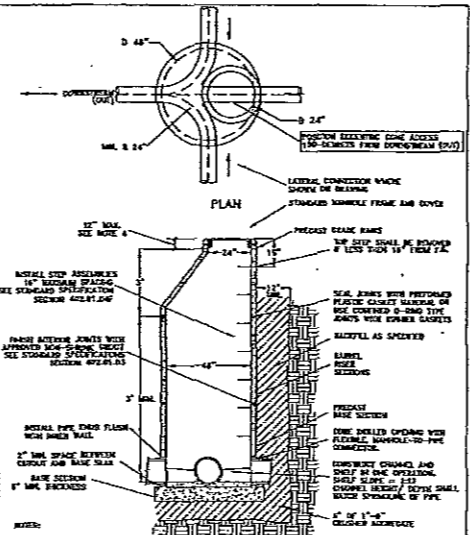
**CITY OF ALBANY, OREGON**  
PUBLIC WORKS DEPARTMENT  
**STANDARD (SETBACK) SIDEWALK**  
NO SCALE | MARCH 2007 | NO. 313



LOCATION	CONCRETE	FINISH	THICKNESS	FINISH	THICKNESS
STANDARD CURB	CONCRETE	FINISH	4"	FINISH	4"
STANDARD CURB	CONCRETE	FINISH	4"	FINISH	4"

1. ALL NEW AND RECONSTRUCTED CURBS BETWEEN SHALL HAVE A 12" MIN. RADIUS.
2. MAXIMUM BAY LENGTH SHALL BE 12" REGARDLESS OF SIDEWALK LOCATION.
3. MAXIMUM LENGTH OF CURBLINE BAY SHALL BE 8'.
4. EXISTING CURBS BAY ON CURB WHITE SHALL HAVE TO BE REPAIRED OR RECONSTRUCTED TO ACCOMMODATE MAXIMUM BAY REQUIREMENTS.
5. THE ENHANCEMENT POINT SHALL BE FOR A SPECIFIC SITE WILL DETERMINE CONSTRUCTION OF BAYS WITHIN FROM STANDARD SIDEWALK CONSTRUCTION AND BAY LIMITATIONS.
6. THROUGH CURBS SHALL BE CAST-IN-PLACE IN FRESH CONCRETE AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7. REFER TO LOCAL ORD. NO. 314 FOR ADDITIONAL SIDEWALK REQUIREMENTS.

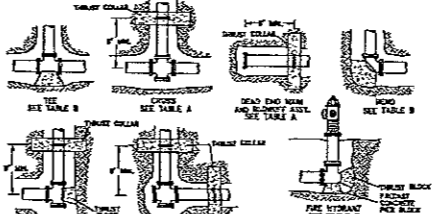
**CITY OF ALBANY, OREGON**  
PUBLIC WORKS DEPARTMENT  
**INTERSECTION RAMP FOR NEW RESIDENTIAL STREETS WITH SETBACK SIDEWALKS**  
NO SCALE | 8 MARCH 2008 | NO. 316



1. MANHOLE BASES, BASES, SECTIONS, IDENTIFY CURBS AND BAYS SHALL BE CONSTRUCTED OF PRECAST INTERLOCKED CONCRETE CONSTRUCTION TO JOINTS.
2. ALL MANHOLE BASES AND FOR PIPES 4" OR SMALLER, CONSTRUCTION SHALL BE CONFORMED TO THE CITY ENGINEER.
3. MANHOLE CONSTRUCTION SHALL BE CONFORMED WITH LOCAL ORD. NO. 314.
4. MAXIMUM DISTANCE BETWEEN THE TOP OF THE CURB, SECTION AND FINAL SERVICE GRADE SHALL NOT EXCEED 12".
5. REFER TO LOCAL ORD. NO. 314 FOR ADDITIONAL SIDEWALK REQUIREMENTS.

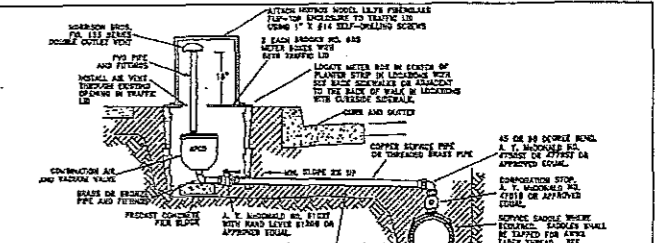
**CITY OF ALBANY, OREGON**  
PUBLIC WORKS DEPARTMENT  
**STANDARD PRECAST MANHOLE**  
NO SCALE | MAY 2000 | NO. 401

PIPE SIZE	IF	W	L
12"	12"	12"	12"
18"	18"	18"	18"
24"	24"	24"	24"
30"	30"	30"	30"
36"	36"	36"	36"
42"	42"	42"	42"
48"	48"	48"	48"
54"	54"	54"	54"
60"	60"	60"	60"



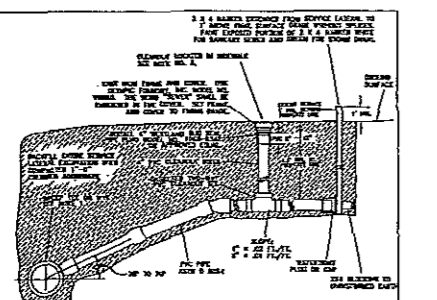
1. WATER PIPE AND FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS. ALL WATER PIPES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS. ALL WATER PIPES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS.
2. WATER APPROVED CONCRETE BLOCKING SHALL BE CONSTRUCTED AS SHOWN IN THESE DETAILS.
3. CONCRETE BLOCKING IS NOT PERMITTED UNDER ANY CIRCUMSTANCES.
4. THE USE OF THE BACK STOP WILL REQUIRE APPROVAL OF THE CITY ENGINEER. WHERE APPROVED, THE CITY ENGINEER SHALL BE NOTIFIED IN WRITING AND SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS.
5. ALL FITTINGS BETWEEN TRUNK MAINS AND FEEDER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS.

**CITY OF ALBANY, OREGON**  
PUBLIC WORKS DEPARTMENT  
**STANDARD BLOCKING DETAILS**  
NO SCALE | FEBRUARY 2000 | NO. 501



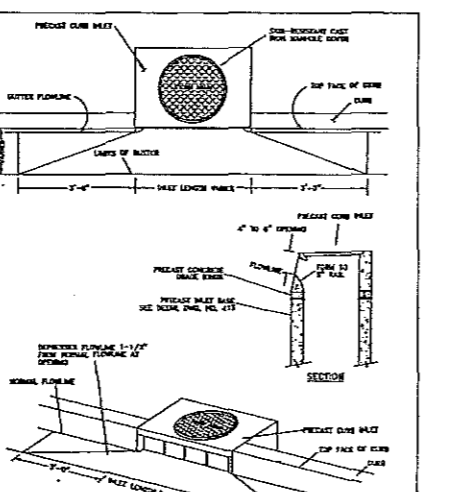
1. ALL MATERIALS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
2. FOUNDATION TOP, 8" ABOVE COVER OR BRASS PIPE, SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS. ALL FOUNDATION TOPS SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS.
3. DUCTILE IRON SADDLES SHALL BE INSTALLED ON 4" DUCTILE IRON PIPE. ALL SIZES OF CAST IRON AND STEEL PIPE AND WORK ALL TYPES (EXCEPT OF PIPE MATERIAL). ALL DUCTILE IRON PIPE APPLICATIONS OVER 4" SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS.
4. ALL COMPONENTS INSTALLED BETWEEN THE MAIN VALVE AND THE SERVICE VALVE SHALL BE BRASS OR BRONZE.
5. THE SERVICE VALVE SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS. THE SERVICE VALVE SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS.
6. CONCRETE PROTECTION SHALL BE INSTALLED FOR NEW COVER SERVICE VALVE CONNECTIONS TO EXISTING EXHAUST-VENT WATER MAINS. THE METHOD OF PROVIDING CONCRETE PROTECTION WILL BE APPROVED BY THE ENGINEER.
7. ALL VALVE BOX SHALL BE EXPOSED ABOVE GRADE TO PREVENT WATER INfiltration. LOCATION OF THE BOX SHALL BE 8" ABOVE GRADE AND WILL BE APPROVED BY THE ENGINEER.
8. CUTTING, REPAIRING, STAMPING AND REPAIRING OF COVER SHALL BE PERFORMED USING TOOLS AND METHODS SPECIFIC TO WATER MAINS.
9. ALL COVER SERVICE PIPES SHALL BE DIRECT BURIED IN ROCK BATTERIES TO AVOID ANY COVER CONTACT WITH MAINS. SERVICE LINES SHALL BE INSTALLED BY JACKING OR BORING.

**CITY OF ALBANY, OREGON**  
PUBLIC WORKS DEPARTMENT  
**1" AND 2" COMBINATION AIR/VACUUM RELEASE VALVE**  
NO SCALE | MAY 2008 | NO. 509



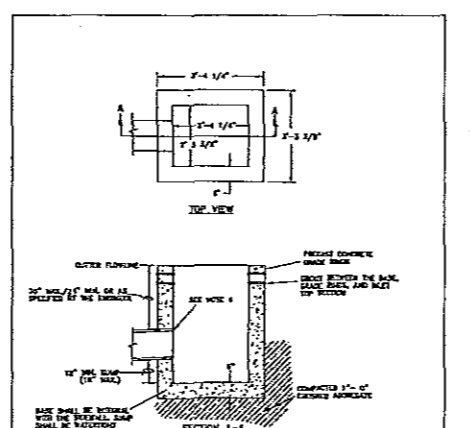
1. CURB INLET SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS. ALL CURB INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS.
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5. CURB INLET SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS. ALL CURB INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS.

**CITY OF ALBANY, OREGON**  
PUBLIC WORKS DEPARTMENT  
**4" AND 6" SANITARY SEWER AND STORM DRAIN SERVICE CONNECTION DETAIL**  
NO SCALE | MARCH 2007 | NO. 411



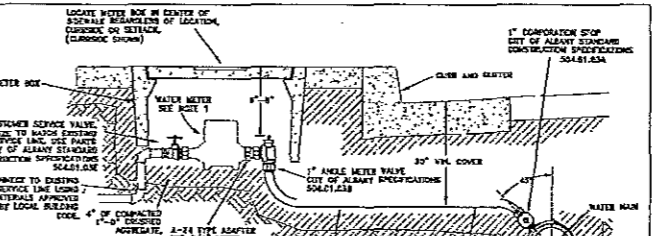
1. PRECAST CONCRETE CURB INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS. ALL CURB INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS.
2. MANHOLE CONSTRUCTION SHALL BE CONFORMED WITH LOCAL ORD. NO. 314.
3. CONCRETE PROTECTION SHALL BE INSTALLED FOR NEW COVER SERVICE VALVE CONNECTIONS TO EXISTING EXHAUST-VENT WATER MAINS. THE METHOD OF PROVIDING CONCRETE PROTECTION WILL BE APPROVED BY THE ENGINEER.
4. CUTTING, REPAIRING, STAMPING AND REPAIRING OF COVER SHALL BE PERFORMED USING TOOLS AND METHODS SPECIFIC TO WATER MAINS.
5. ALL COVER SERVICE PIPES SHALL BE DIRECT BURIED IN ROCK BATTERIES TO AVOID ANY COVER CONTACT WITH MAINS. SERVICE LINES SHALL BE INSTALLED BY JACKING OR BORING.

**CITY OF ALBANY, OREGON**  
PUBLIC WORKS DEPARTMENT  
**STANDARD PRECAST CURB INLET**  
NO SCALE | MARCH 2002 | NO. 412



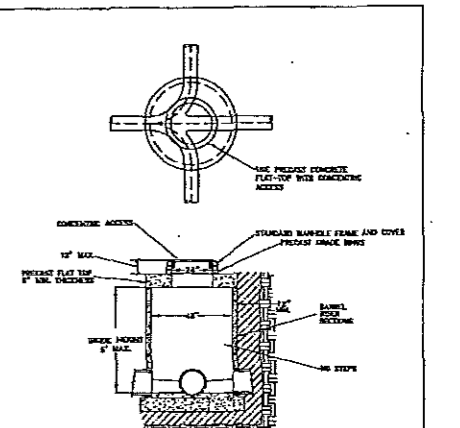
1. STANDARD CURB INLET BASES SHALL BE PRECAST IN PLACE CONFORMING TO THE REQUIREMENTS OF THE CITY ENGINEER'S SPECIFICATIONS. ALL CURB INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS.
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**CITY OF ALBANY, OREGON**  
PUBLIC WORKS DEPARTMENT  
**STANDARD CURB INLET BASE**  
NO SCALE | MARCH 2002 | NO. 413



1. WITH THE EXCEPTION OF THE WATER METER, ALL MATERIALS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. A CITY VALVE METER SERVICE VALVE SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS.
2. CONCRETE PROTECTION SHALL BE INSTALLED FOR NEW COVER SERVICE VALVE CONNECTIONS TO EXISTING EXHAUST-VENT WATER MAINS. THE METHOD OF PROVIDING CONCRETE PROTECTION WILL BE APPROVED BY THE ENGINEER.
3. CUTTING, REPAIRING, STAMPING AND REPAIRING OF COVER SHALL BE PERFORMED USING TOOLS AND METHODS SPECIFIC TO WATER MAINS.
4. ALL COVER SERVICE PIPES SHALL BE DIRECT BURIED IN ROCK BATTERIES TO AVOID ANY COVER CONTACT WITH MAINS. SERVICE LINES SHALL BE INSTALLED BY JACKING OR BORING.

**CITY OF ALBANY, OREGON**  
PUBLIC WORKS DEPARTMENT  
**3/4" AND 1" WATER METERS**  
NO SCALE | 8 MARCH 2008 | NO. 507



1. PRECAST CONCRETE CURB INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS. ALL CURB INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY ENGINEER'S SPECIFICATIONS.
2. MANHOLE CONSTRUCTION SHALL BE CONFORMED WITH LOCAL ORD. NO. 314.
3. CONCRETE PROTECTION SHALL BE INSTALLED FOR NEW COVER SERVICE VALVE CONNECTIONS TO EXISTING EXHAUST-VENT WATER MAINS. THE METHOD OF PROVIDING CONCRETE PROTECTION WILL BE APPROVED BY THE ENGINEER.
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5. ALL COVER SERVICE PIPES SHALL BE DIRECT BURIED IN ROCK BATTERIES TO AVOID ANY COVER CONTACT WITH MAINS. SERVICE LINES SHALL BE INSTALLED BY JACKING OR BORING.

**CITY OF ALBANY, OREGON**  
PUBLIC WORKS DEPARTMENT  
**FLAT-TOP PRECAST MANHOLE DETAIL**  
NO SCALE | MAY 2008 | NO. 402

Date: 10/31/2008  
Scale: 1/2"=1'-0"  
Project: 06-03-06-03-06-03-01-01-01 (1/1)

DATE	REVISIONS	BY



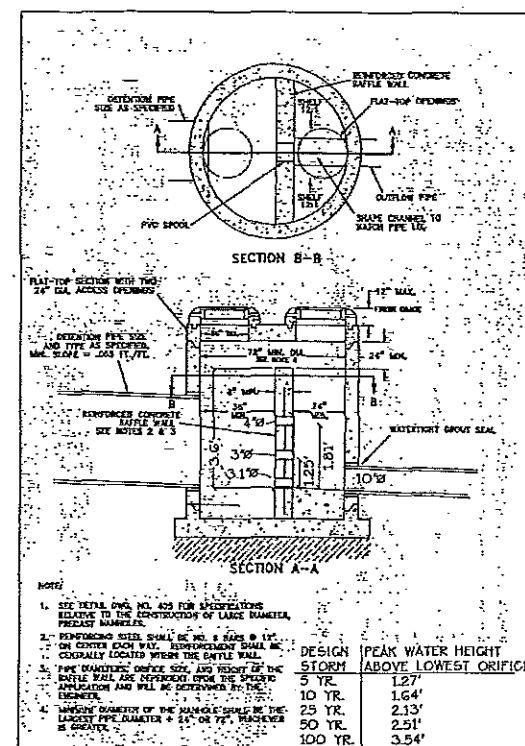
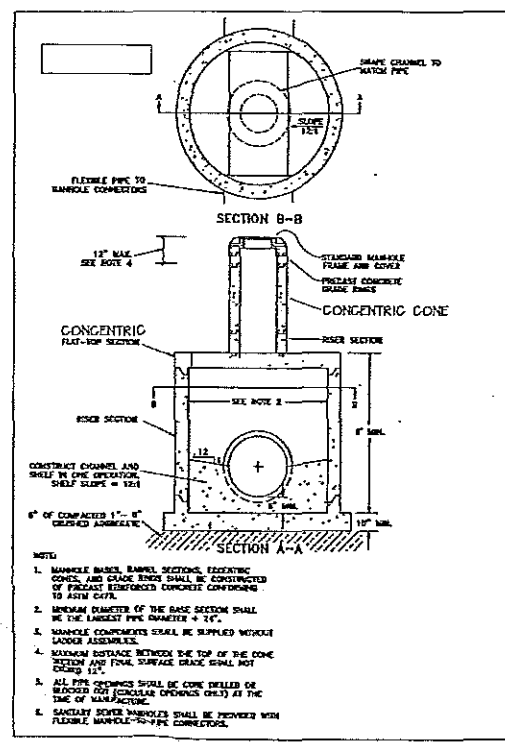
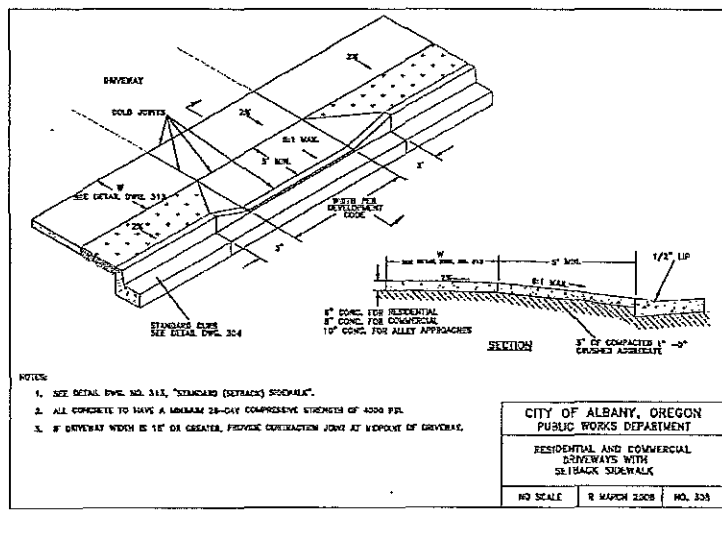
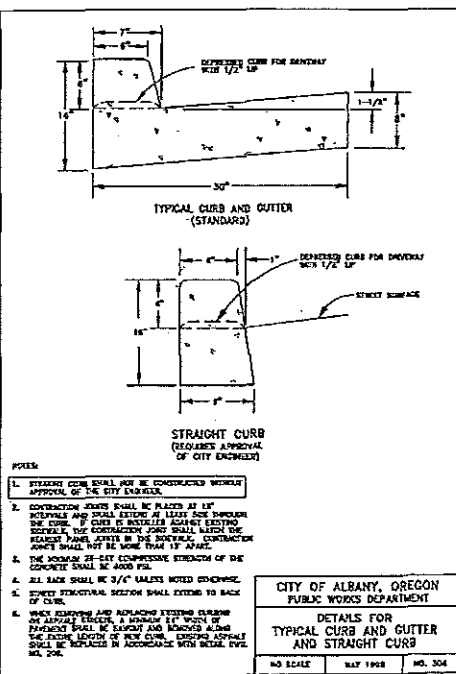
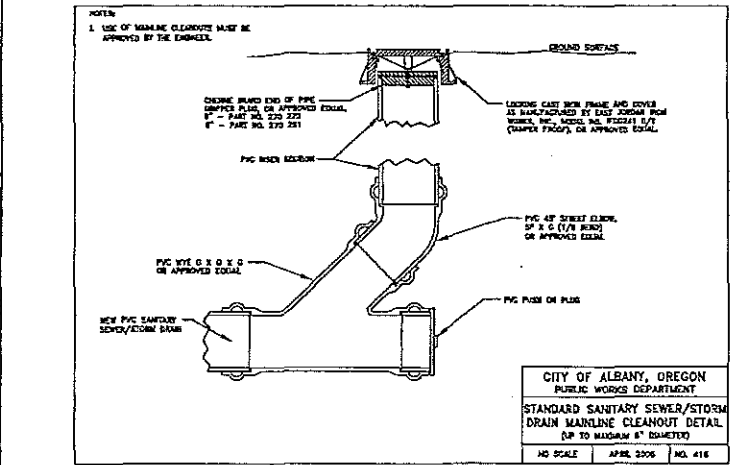
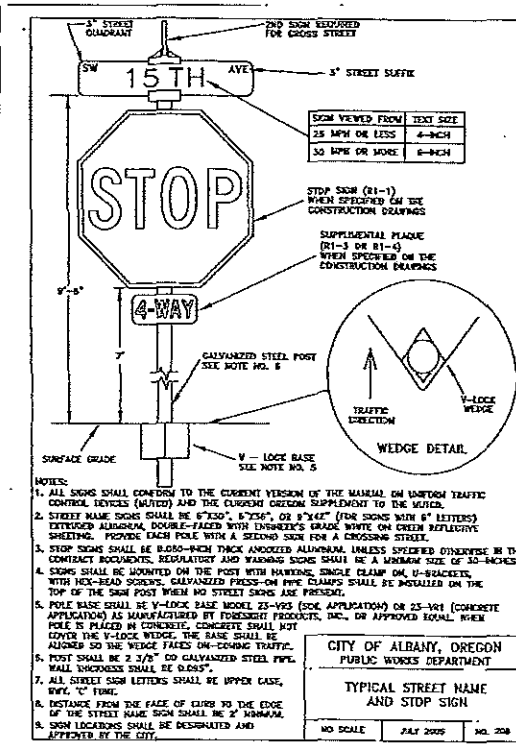
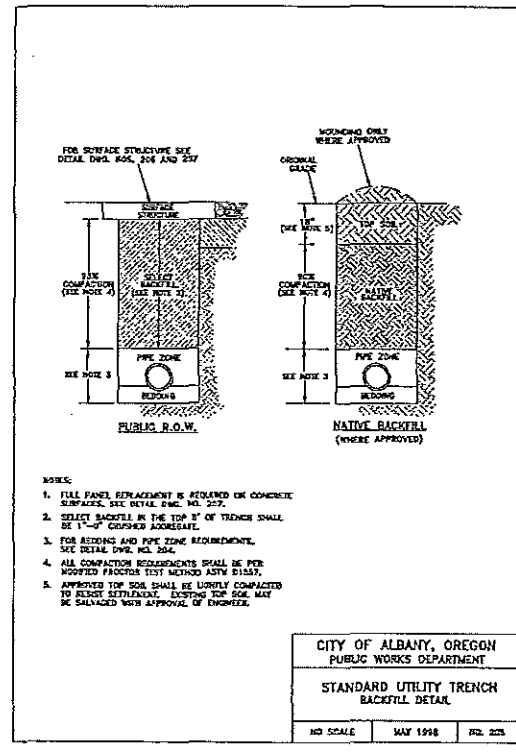
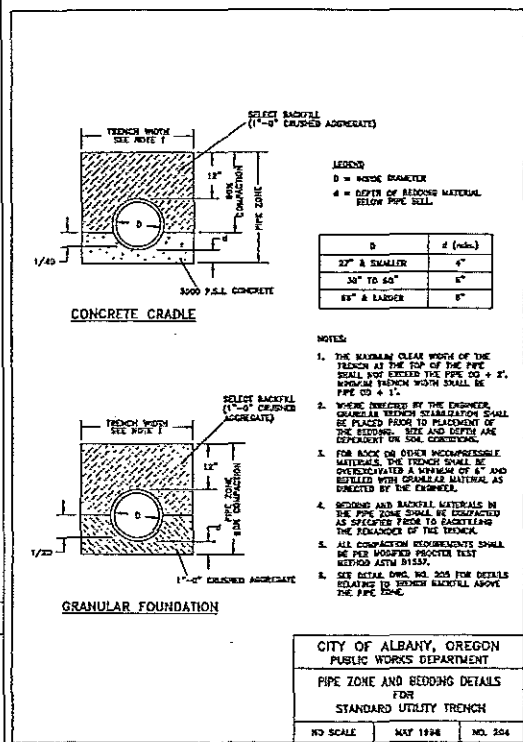
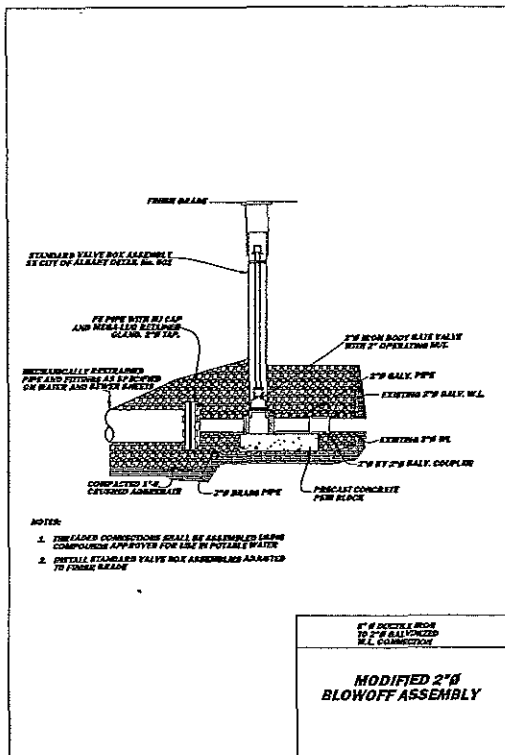
**K & D ENGINEERING, INC.**  
276 N.W. HICKORY STREET  
P.O. BOX 725  
ALBANY, OREGON 97321  
(541) 928-2583

**FABIAN ESTATES SUBDIVISION**  
CITY OF ALBANY, BENTON COUNTY, OREGON

**DETAILS**

Sheet No. **3**  
Scale: 1/2"=1'-0"  
Project No: 06-03E





DESIGN STORM	PEAK WATER HEIGHT ABOVE LOWEST ORIFICE
5 YR.	0.67'
10 YR.	0.81'
25 YR.	1.40'
50 YR.	2.49'
100 YR.	3.18'

Manhole frame and cover as specified. Shown on manhole and cover detail.

Frame and filter rings shall be sealed with gasket. Precast adjustment rings.

Provide Manhole slope unless otherwise specified. Concentric cone may be used if slope or ladders are not specified.

All joints shall be sealed with non-stretch gasket, preformed plastic or rubber ring to form a watertight seal.

Standard precast manhole risers as required. Variable length.

Mechanical plug with 2'0" offset.

Notes:

- All precast sections shall conform to requirements of ASTM C978.
- Standard precast manhole section diameter shall be 72". Maximum pipe diameter 18".
- All connecting pipes shall have a flexible joint within 18" of manhole wall.
- See Manhole Base Section Drawing P0030 for base details.

Date: 10/31/2008 Time: 14:21  
 Scale: 1=20'(FS)  
 File: dvg\2008\08-63-e\63c-dtd.dwg (brian)

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DATE	REVISIONS	BY



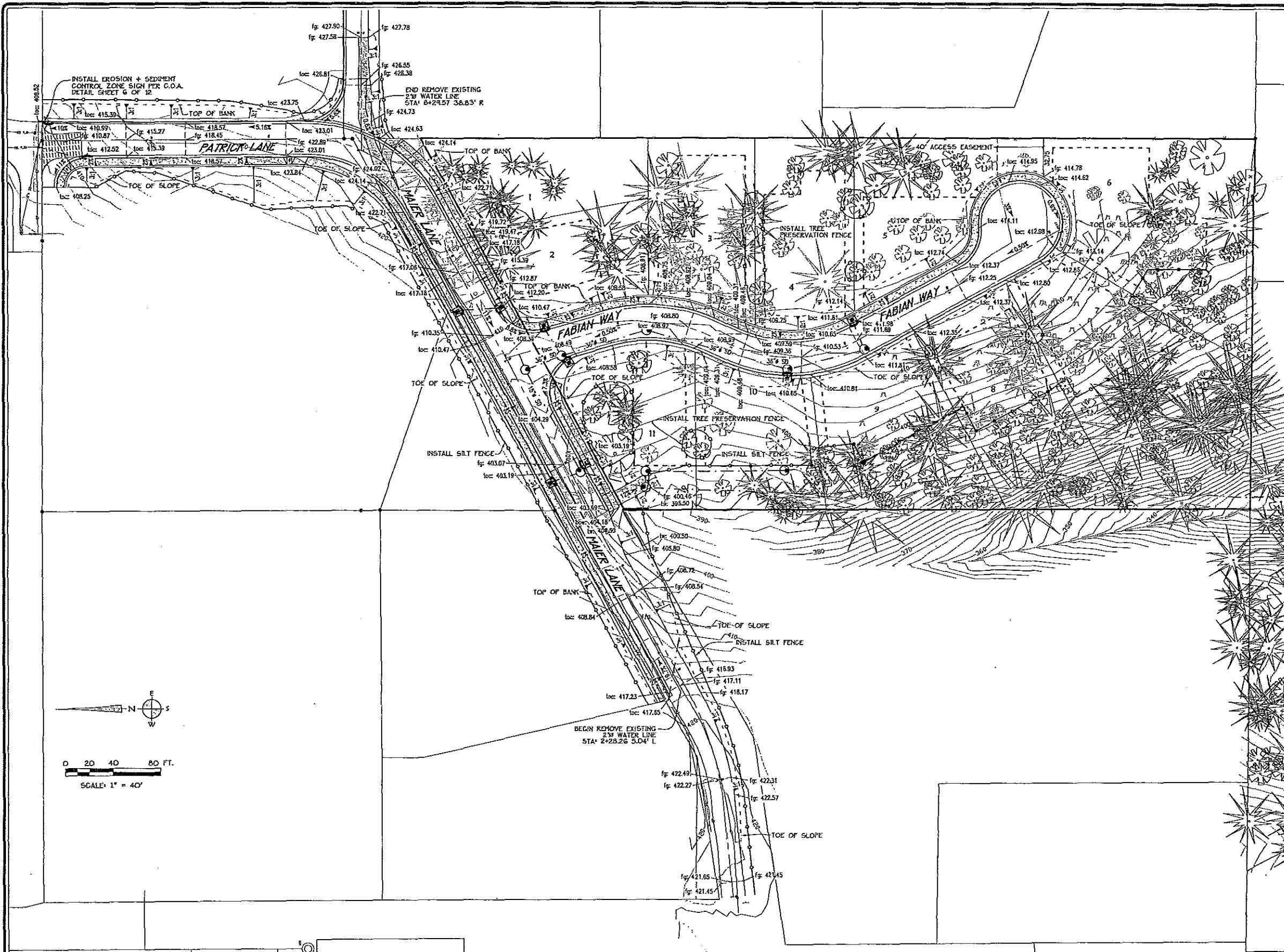
**K & D ENGINEERING, INC.**  
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**FABIAN ESTATES SUBDIVISION**  
 CITY OF ALBANY, BENTON COUNTY, OREGON

VERT. SCALE: |  
 HORIZ. SCALE: |  
 SIGN DATE: |  
 DESIGN BY: WF  
 DRAWN BY: WF  
 CHECK BY: DKW  
 PROJECT No: 08-b3E

SHEET No. 4 OF 75





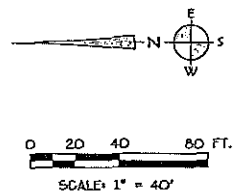
- LEGEND:**
- TREE PROTECTION FENCE
  - SEDIMENT FABRIC FENCE
  - BIOMATS AROUND CURB INLETS
  - EXISTING GROUND SURFACE
  - EXISTING GROUND SPOT ELEVATION
  - PROPOSED CURB INLET
  - PROPOSED STORM DRAIN
  - PROPOSED FINISHED GRADE ELEVATION
  - PROPOSED TOP OF CURB ELEVATION
  - PROPOSED TOP OF WALL ELEVATION
  - PROPOSED GROUND SLOPE + DIRECTION
  - PROJECT BOUNDARY

- EXISTING TREES
- EXISTING TREES TO BE REMOVED
- CONSTRUCTION ENTRANCE SEE DETAIL ON SHEET 6.
- PAVEMENT TO BE REMOVED

**EROSION CONTROL NOTES:**  
 CONST. TEMPORARY CONSTRUCTION ACCESS PER DETAIL ON SHEET 6 OF 12.  
 INSTALL BIOMAT SEDIMENT FILTER BAGS AT ALL CURB INLETS PER DETAIL ON SHEET 6 OF 12.  
 INSTALL SEDIMENT FILTER FABRIC FENCE AS MARKED, PER DETAIL ON SHEET 6 OF 12.  
 PRESERVE TREES OUTSIDE OF FENCE.  
 SEE TREE PRESERVATION PLAN FOR PROTECTION MEASURES OF TREES TO REMAIN.

**VERTICAL CONTROL:**  
 VERTICAL CONTROL IS BASED ON CITY OF ALBANY CONTROL STATION 43518, A 2" ALUM. GAP IN MONUMENT BOX, LOCATED 2 FEET FROM THE EAST EDGE OF PAVEMENT OF SKYLINE DRIVE AND ACROSS FROM A GRAVEL ROAD (13TH AVE) TO THE WEST GAP ELEVATION 412.04

**HORIZONTAL CONTROL:**  
 HORIZONTAL CONTROL IS BASED ON FOUND MONUMENTS ON THE EAST PROPERTY LINE OF SUBJECT PROPERTY, BEARING BEING N 00°07'30" E BASED ON C.S. 4094



Date: 10/31/2008 Time: 15:42  
 Scale: 1"=40'-0"  
 Plot: 06-032008-06-03-A&S-E-01-01.dwg (Draw)

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 (541) 928-2583

**FABIAN ESTATES**  
 CITY OF ALBANY, BENTON COUNTY, OREGON

**GRADING, DEMO. & EROSION CONTROL NOTES & DETAILS**

HORIZ. SCALE: 1"=40'  
 VERT. SCALE: 1"=4'-0"  
 SIGN DATE: \_\_\_\_\_  
 DESIGNED BY: WF  
 DRAWN BY: WF  
 CHECK BY: D.K.W.  
 PROJECT No.: 06-b3E

SHEET No. 5 OF 23

**STANDARD EROSION SEDIMENTATION CONTROL NOTES:**

1. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION IS ESTABLISHED.
2. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD BY THE ENGINEER PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS WILL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
3. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONFORMANCE WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT-LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM OR VIOLATE CONDITIONS OF THE DEQ 12000-G PERMIT.
4. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED, AS NECESSARY, FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT-LADEN WATER DOES NOT LEAVE THE SITE.
5. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED, AS NECESSARY, TO ENSURE THEIR CONTINUED EFFECTIVENESS.
6. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH, OR WITHIN 48 HOURS FOLLOWING A STORM EVENT.
7. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A TRAPPED CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO FINISH. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE TOWNSHIP DRAIN SYSTEM.
8. WHEN WEATHER CONDITIONS MAY REQUIRE SOME OR ALL OF THE FOLLOWING:
  - A) THE WATERS OR HOLDINGS OF ANY EXPOSED AREAS DURING THE WARM SEASON, AS NECESSARY, TO PROTECT EXPOSED SOILS FROM EROSION AND PREVENT SEDIMENTATION PROBLEMS.
  - B) THE PROTECTION OF EXISTING AND NEWLY CONSTRUCTED STORM DRAIN INLETS, WASHOUT FENCES, FILTER FABRIC AND GRAVEL, OR OTHER APPROPRIATE MEASURES TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAIN SYSTEM.
  - C) THE IMPLEMENTATION OF ANY ADDITIONAL EROSION CONTROL MEASURES REQUIRED BY LOCAL, STATE, OR FEDERAL AUTHORITIES.
9. STRAP BALES CANNOT BE SUBSTITUTED FOR SEDIMENT FENCES.
10. THE FILL WILL CONSIST OF THE EXCAVATED MATERIAL TAKEN FROM STREETS, TRENCHES AND LOTS WITHIN THE SITE.
11. A COMPREHENSIVE LIST OF AVAILABLE BEST MANAGEMENT PRACTICES (BMP) OPTIONS BASED ON DEQ'S 12000-G PERMIT APPLICATION AND ESDP CLEARANCE DOCUMENT HAS BEEN REVIEWED TO COMPLETE THIS EROSION AND SEDIMENT CONTROL PLAN. SOME OF THE ABOVE LISTED BMP'S WERE NOT CHOSEN BECAUSE THEY WERE DETERMINED TO NOT EFFECTIVELY MANAGE EROSION PREVENTION AND SEDIMENT CONTROL FOR THIS PROJECT BASED ON SPECIFIC SITE CONDITIONS, INCLUDING SOIL CONDITIONS, TOPOGRAPHIC CONSTRAINTS, ACCESSIBILITY TO THE SITE, AND OTHER RELATED CONDITIONS. AS THE PROJECT PROGRESSES AND THERE IS A NEED TO REVISE THE ESDP, AN ACTION PLAN WILL BE SUBMITTED.
12. DISCHARGE OF GROUND WATER OR STORM WATER TO THE SANITARY SEWER IS STRICTLY PROHIBITED AND VOID.

**TEMPORARY FILTER SEDIMENT BARRIER:**

1. USE EXTRA-STRENGTH ANDOCO 2225 FILTER FABRIC OR APPROVED EQUAL.
2. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO PREVENT USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPUN TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP AND BOTH ENDS SECURELY FASTENED TO THE POST, OR OVERLAP 2'x2' POSTS AND ATTACH AS SHOWN ON DETAIL AT RIGHT.
3. SEDIMENT FENCES SHALL BE INSPECTED BY THE CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
4. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED AT A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY IN THE GROUND A MINIMUM OF 24-INCHES.
5. THE FILTER FABRIC SHALL HAVE A MINIMUM BURL OF 6 INCHES. ALL EXCAVATED MATERIAL FROM FILTER FABRIC INSTALLATION SHALL BE BACK FILLED AND COMPACTED, ALONG THE ENTIRE DISTURBED AREA.
6. STANDARD OR HEAVY DUTY FILTER FABRIC FENCE SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2'x2' POST INSTALLATION. STITCHED LOOPS SHALL BE INSTALLED ON THE UP HILL SIDE OF THE SLOPED AREA.
7. SEDIMENT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UP-SLOPE AREA HAS BEEN PERMANENTLY STABILIZED.

**PERMANENT SEEDING:**

1. ALL DISTURBED AREAS AND FILL AREAS SHALL BE SEEDING WITH HYDROSEED CONTAINING MULCH, SEED, AND OTHER ADDITIVES TYPICAL OF HYDROSEEDING MIXES. THE MIXTURE SHALL BE PLACED AT THE APPROPRIATE PROPORTIONS OF EACH TO FORM A HOMOGENEOUS MIXTURE AND APPLIED AT A RATE TO PROVIDE SEED APPLICATION AT 250 POUNDS PER ACRE AND MULCH AT 1500 POUNDS PER ACRE. SEED SHALL BE CRACKED HYDROSEED CONTAINING 400 ANNUAL RYE GRASS AND 50% TURF TYPE FESCUE. MULCH SHALL BE WOOD OR GRASS STRAW CELLULOSE FIBER, COLORED GREEN TO VISIBLY AND UNIFORM APPLICATION. (SEEDING MAY BE ELIMINATED IF STRIPPINGS ARE PLACED ON LOTS AFTER GRADING)
2. SIMILAR MIXES DESIGNED TO ACHIEVE EROSION CONTROL MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.

**GENERAL GRADING NOTES:**

1. GRADING SHALL CONFORM TO THE GEOTECHNICAL CONSULTATION REPORT PREPARED BY FOUNDATION ENGINEERS, INC.
2. ANY GRADING ON THE SITE SHALL BE COMPLETED SO AS TO MAINTAIN EXISTING DRAINAGE FROM ADJACENT PROPERTIES.
3. ALL FILLS SHALL BE PLACED AS ENGINEERED FILLS. STRIP A MINIMUM FOUR INCHES (4") PRIOR TO PLACING FILLS. AN ADDITIONAL 12 INCHES SHALL BE REMOVED (AND LATER RE-USED AS FILL) AFTER STRIPPING. BASEMENT SOILS SHALL BE COMPACTED AND REFINED BY THE ENGINEER PRIOR TO PLACEMENT OF FILL. ALL BASEMENT SOILS TO BE COMPACTED TO NINETY-TWO PERCENT (92%) OF THE MAXIMUM DRY DENSITY PER ASTM D-698 SPECIFICATIONS.
4. THE CONTRACTOR SHALL ALTER THE MOISTURE CONTENT OF THE SOIL EITHER BY ADDING MOISTURE OR BY DRYING THE SOIL BY AERATION SUCH THAT THE MOISTURE CONTENT OF THE SOIL DOES NOT VARY BY PLUS OR MINUS THREE PERCENT (3%) OF THE OPTIMUM.
5. DEPOSIT MATERIAL IN LAYERS NOT TO EXCEED SIX INCHES (6") DEEP ACROSS THE FULL WIDTH OF THE FILL. PLACE MATERIAL IN CONTINUOUS HORIZONTAL LAYERS. CONTACT EACH LIFT TO AT LEAST NINETY-TWO PERCENT (92%) MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698. IF THE SURFACE OF A PREVIOUS LIFT IS TOO DRY OR SMOOTH TO BOND PROPERLY WITH THE NEXT LAYER OF MATERIAL, MOISTEN OR SCARPEN, OR BOTH, BEFORE THE NEXT LAYER OF MATERIAL IS PLACED. OWNER SHALL PROVIDE COMPACTION TESTING OF ALL EXPOSED FILLS.
6. CONTRACTOR SHALL CONFORM TO ALL CONSTRUCTION PERMITS REQUIRED BY THE CITY OF ALBANY.
7. ALL MATERIALS AND WORKMANSHIP FOR PUBLIC FACILITIES SHALL CONFORM TO THE CITY OF ALBANY STANDARD CONSTRUCTION SPECIFICATIONS.

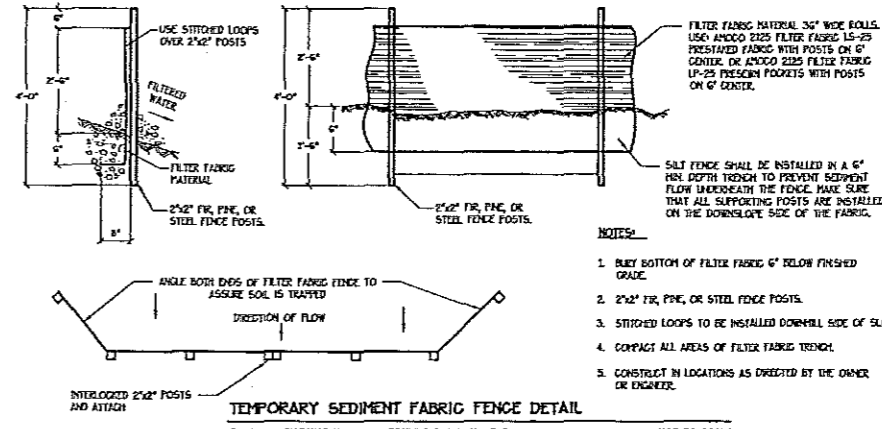
**CONSTRUCTION ENTRANCE:**

1. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
2. MATERIAL SHOULD BE CLEAN 1"-0 CRUSHED AGGREGATE, (OR LARGER, AS NECESSARY). PIT-RUN CANNOT BE SUBSTITUTED FOR 1"-0 AGGREGATE.
3. THE ROCK PAD SHALL BE AT LEAST 8 INCHES THICK AND AT LEAST 50 FEET IN LENGTH. WIDTH SHALL BE THE FULL WIDTH OF THE VEHICLE WHEELS AND EGRESS AREA.
4. ADDITIONAL GRAVEL SHALL BE ADDED PERIODICALLY, IF NECESSARY, TO MAINTAIN PROPER FUNCTION OF THE PAD.
5. IF THE GRAVEL PAD DOES NOT ADEQUATELY REMOVE DIRT AND MUD FROM VEHICLE WHEELS SUCH THAT MUD AND DIRT TRACKING IS EVIDENT OFF SITE, ADDITIONAL MEASURES MUST BE TAKEN. SUCH MEASURES MAY INCLUDE WASHING OFF WHEELS BEFORE VEHICLES LEAVE THE SITE OR OTHER CONSTRUCTION TECHNIQUES/WORK OPERATIONS MODIFICATIONS. WHEEL WASHING SHOULD BE DONE ON THE GRAVEL PAD AND WASH WATER SHOULD DRAIN THROUGH A SILT TRAPPING STRUCTURE PRIOR TO LEAVING THE CONSTRUCTION SITE.
6. USE SUB-GRADE STABILIZATION FABRIC UNDER GRAVEL PADS.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING THE PUBLIC ROADWAY IF SOIL FROM THE SITE IS TRACKED OFF SITE.
8. INSTALL EROSION SEDIMENT CONTROL SIGN FACING GEODEXIC WAY. (SEE BELOW)

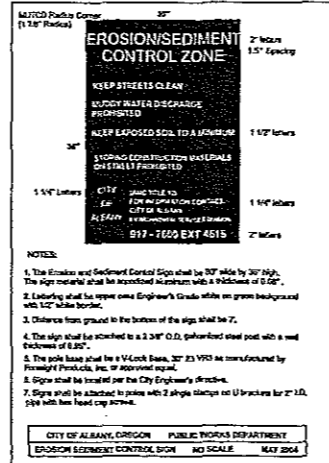
**EROSION CONTROL INSTALLATION TABLE:**

THE FOLLOWING TABLE IS INTENDED TO ASSIST THE CONTRACTOR TO DOCUMENT EROSION AND SEDIMENT CONTROL MEASURES.

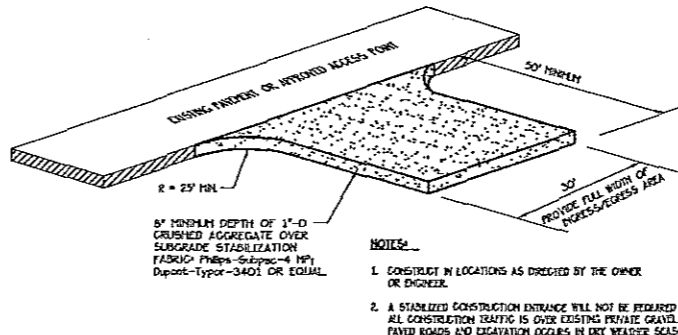
EROSION CONTROL FENCE	DATE INSTALLED:
	DATE MAINTAINED:
	DATE REMOVED:
INLET SEDIMENT FILTERS	DATE INSTALLED:
	DATE MAINTAINED:
	DATE REMOVED:
GRAVEL CONSTRUCTION ENTRANCE	DATE INSTALLED:
	DATE MAINTAINED:
	DATE REMOVED:
BIOFILTER CHECK DAM	DATE INSTALLED:
	DATE MAINTAINED:
	DATE REMOVED:
"EROSION SEDIMENT CONTROL" SIGN	DATE INSTALLED:
	DATE MAINTAINED:
	DATE REMOVED:



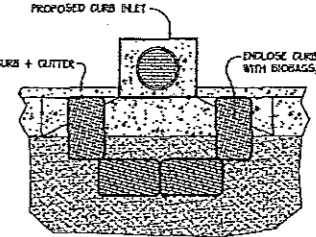
- NOTES:**
1. BURY BOTTOM OF FILTER FABRIC 6" BELOW FINISHED GRADE.
  2. 2'x2" FIBER, PINE, OR STEEL FENCE POSTS.
  3. STITCHED LOOPS TO BE INSTALLED DOWNHILL SIDE OF SLOPE.
  4. COMPACT ALL AREAS OF FILTER FABRIC TRENCH.
  5. CONSTRUCT IN LOCATIONS AS DICTATED BY THE OWNER OR ENGINEER.



THIS SIGN SHALL BE POSTED AT THIS PROJECT ENTRANCE.



- NOTES:**
1. CONSTRUCT IN LOCATIONS AS DICTATED BY THE OWNER OR ENGINEER.
  2. A STABILIZED CONSTRUCTION ENTRANCE WILL NOT BE REQUIRED IF ALL CONSTRUCTION TRAFFIC IS OVER EXISTING PAVED GRAVEL OR PAVED ROADS AND EXCAVATION OCCURS IN DRY WEATHER SEASON.



- NOTES:**
1. TO BE USED TO PREVENT SEDIMENT LADEN WATER FROM ENTERING THE INLET BASIN.
  2. TO BE USED ONLY IF SITE AND WEATHER CONDITIONS REQUIRE.

Date: 10/31/2008  
 Scale: 1"=40'(FS)  
 File: dsg\_2008\_06-63-a\63e-gr-ec.dwg (6/26)

DATE	REVISIONS	BY



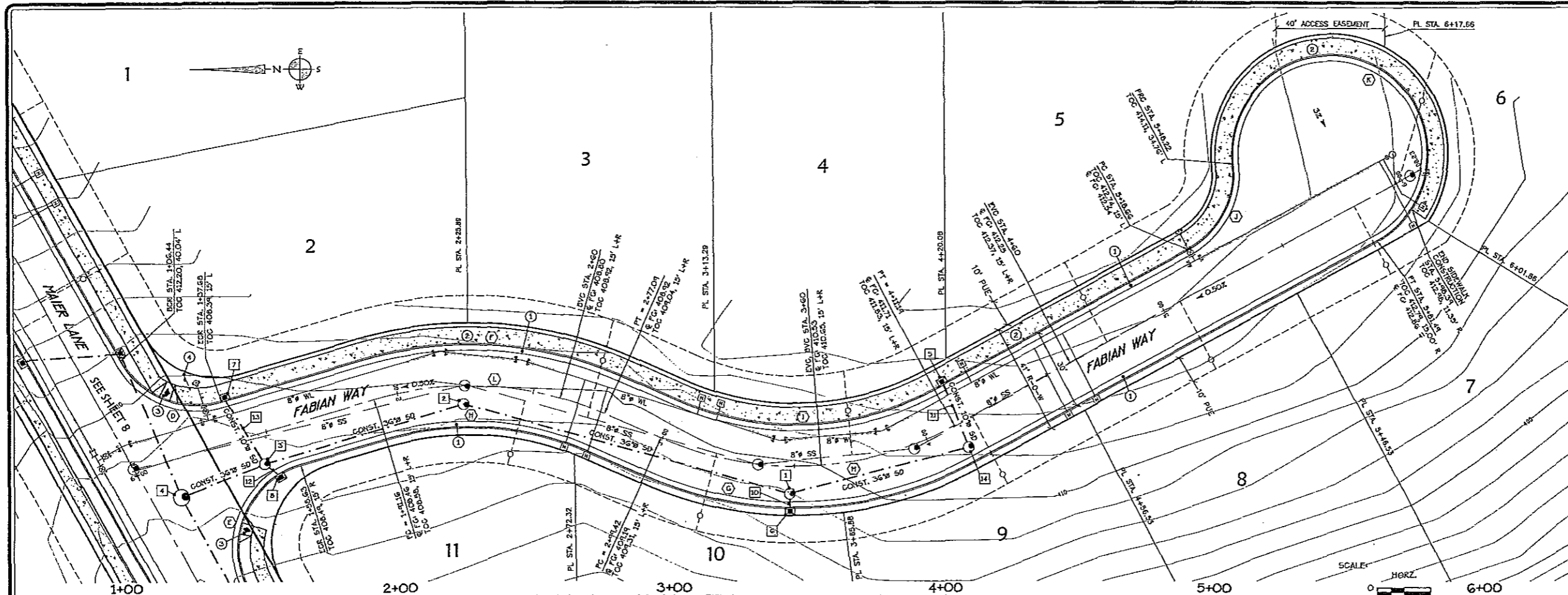
**K & D ENGINEERING, INC.**  
 276 N.W. HICKORY STREET  
 P.O. BOX 725  
 ALBANY, OREGON 97321  
 (541) 928-2583

**FABIAN ESTATES**  
 CITY OF ALBANY, BENTON COUNTY, OREGON

**GRADING & EROSION CONTROL NOTES & DETAILS**

HORIZ. SCALE: 1"=20'
VERT. SCALE:
ISSN DATE:
DESIGN BY: WF
DRAWN BY: WF
CHECK BY: DKW
PROJECT No: 06-63E

SHEET No. 6 OF 28



**FACE OF CURB CURVE DATA**

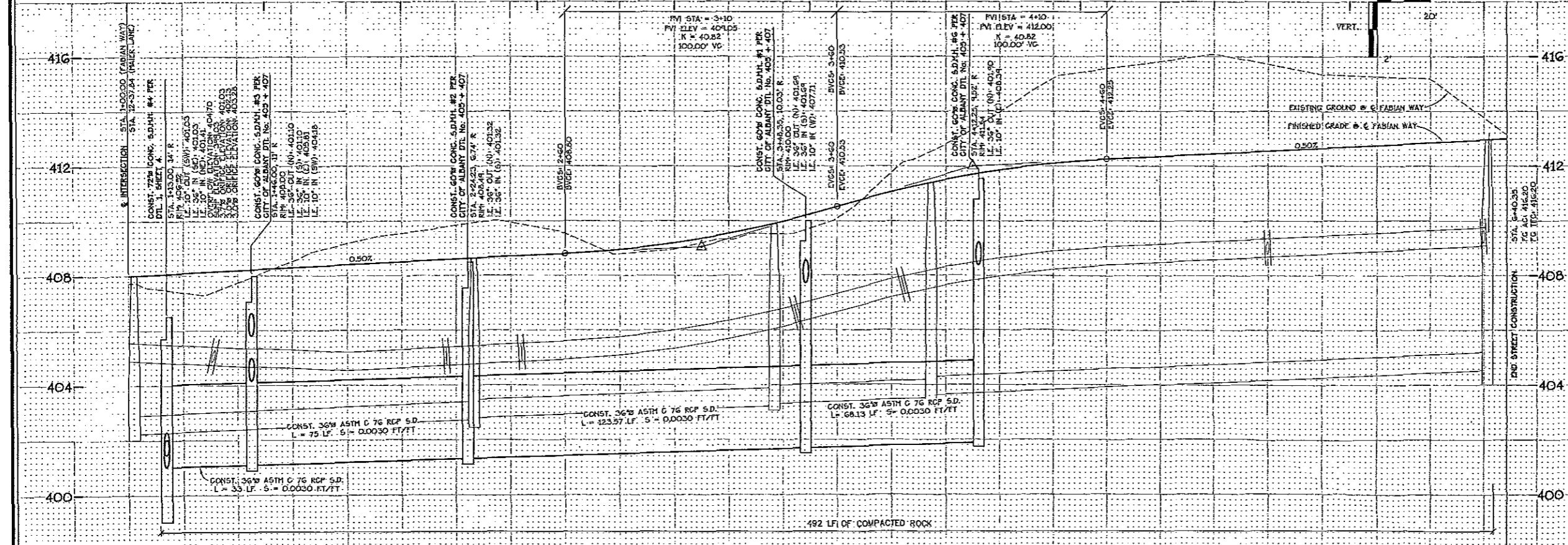
CURVE	RADIUS	LENGTH	CHORD	DELTA
D	32.00'	43.25'	52°19'33"W 40.03'	77°25'54"
E	32.00'	57.28'	N67°40'27"W 49.94'	102°34'06"
F	138.00'	96.40'	N03°37'22"E 94.46'	40°01'33"
G	138.00'	125.40'	S02°23'46"E 121.13'	52°03'50"
H	108.00'	78.43'	N03°37'22"E 73.92'	40°01'33"
I	108.00'	88.14'	S02°23'46"E 94.80'	52°03'50"
J	32.00'	37.71'	S62°11'28"E 35.57'	67°31'14"
K	36.00'	155.52'	N27°48'42"E 91.86'	247°31'14"

**CENTERLINE CURVE DATA**

CURVE	RADIUS	LENGTH	CHORD	DELTA
L	123.00'	85.93'	S03°37'22"E 84.19'	40°01'33"
H	123.00'	111.77'	S02°23'46"E 107.96'	52°03'50"

- CONSTRUCTION NOTES:**
- CONST. 30" WIDE CONC. CURB + GUTTER PER CITY OF ALBANY DTL No. 304, TYP.
  - CONST. 6" WIDE CONC. SIDEWALK PER CITY OF ALBANY DTL No. 313. SIDEWALK ALONG FABIAN WAY TO BE BUILT WITH HOUSING.
  - CONST. CONC. ACCESS RAMP PER CITY OF ALBANY DTL No. 316.
  - INSTALL COMBINED STREET/STOP SIGN PER CITY OF ALBANY DTL No. 206.

- STORM DRAIN NOTES:**
- CONST. 60% CONC. S.D.M.H. #1 PER CITY OF ALBANY DTL No. 405 + 407 STA. 3+48.35, 10.03' R RIM 410.00
  - CONST. 60% CONC. S.D.M.H. #2 PER CITY OF ALBANY DTL No. 405 + 407 STA. 2+24.23, 6.74' R RIM 408.49
  - CONST. 60% CONC. S.D.M.H. #3 PER CITY OF ALBANY DTL No. 405 + 407 STA. 1+46.00, 11.07' R RIM 408.00
  - CONST. 72% CONC. S.D.M.H. #4 PER DTL No. 1 ON SHEET 4. STA. 1+13.00, 14.07' R RIM 406.52
  - CONST. CONC. CURB INLET #1 PER CITY OF ALBANY DTL No. 412 + 413 STA. 4+15.02, 15' L TOC 411.91 IE 10% OUT 408.91
  - CONST. CONC. CURB INLET #2 PER CITY OF ALBANY DTL No. 412 + 413 STA. 3+48.52, 15' L TOC 410.84 IE 10% OUT 407.84
  - CONST. CONC. CURB INLET #3 PER CITY OF ALBANY DTL No. 412 + 413 STA. 2+58.24, 15' L TOC 408.40 IE 10% OUT 405.95
  - CONST. CONC. CURB INLET #4 PER CITY OF ALBANY DTL No. 412 + 413 STA. 1+49.87, 16.25' R TOC 408.43 IE 10% OUT 404.32
  - CONST. 10% ASTH D3034 SER 35 PVC S.D. L = 6.35 LF S = 0.0200 FT/FT
  - CONST. 10% ASTH C 76 RCP S.D. L = 26.04 LF S = 0.0200 FT/FT
  - CONST. 10% ASTH D3034 SER 35 PVC S.D. L = 7.21 LF S = 0.0200 FT/FT
  - CONST. 10% ASTH C 76 RCP S.D. L = 28.29 LF S = 0.0050 FT/FT
  - CONST. 60% CONC. S.D.M.H. #5 PER CITY OF ALBANY DTL No. 405 + 407 STA. 4+12.25, 15.2' R RIM 411.54



Date: 10/31/2008 Time: 13:22  
 Scale: 1"=20'(FS)  
 File: dsg\2006\06-63-a\63c-st.dwg (8-to)

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DATE	REVISIONS	BY



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**FABIAN ESTATES**

CITY OF ALBANY, BENTON COUNTY, OREGON

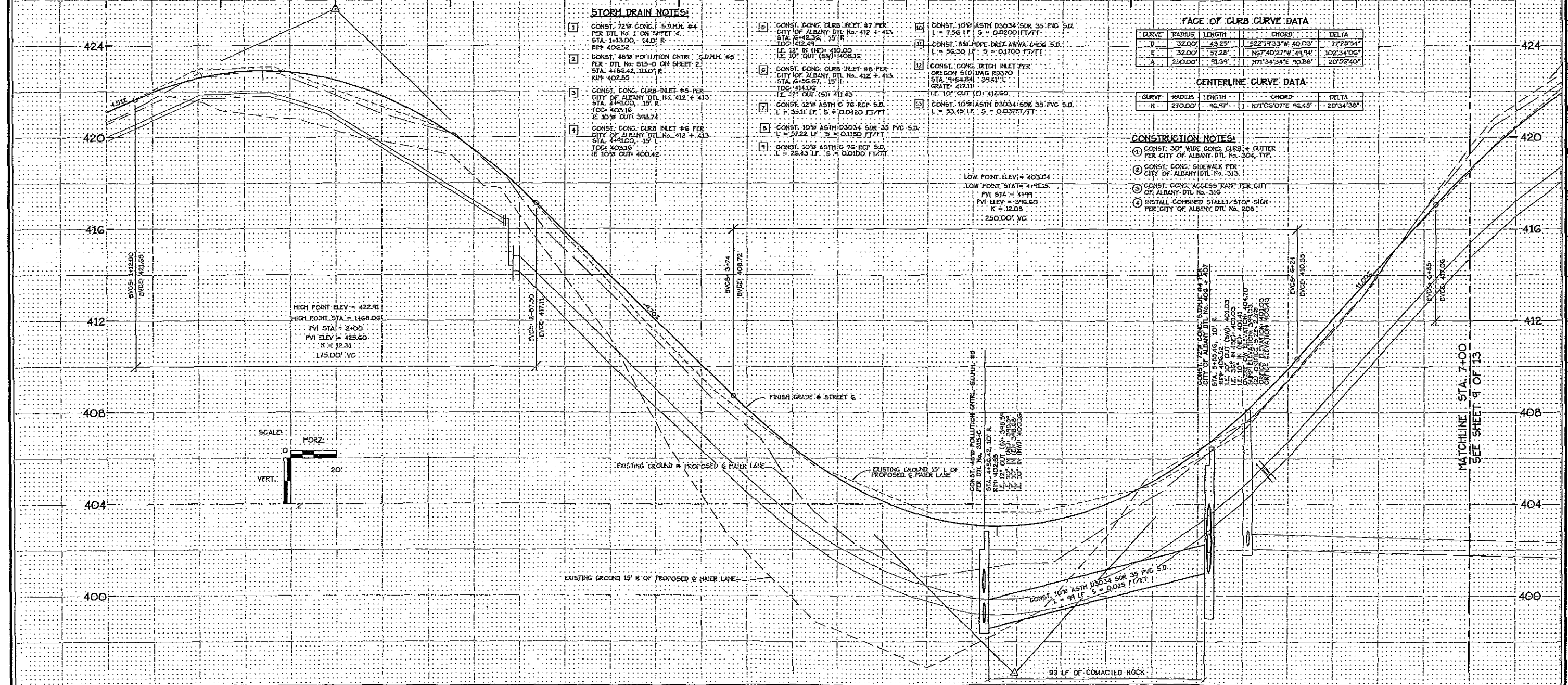
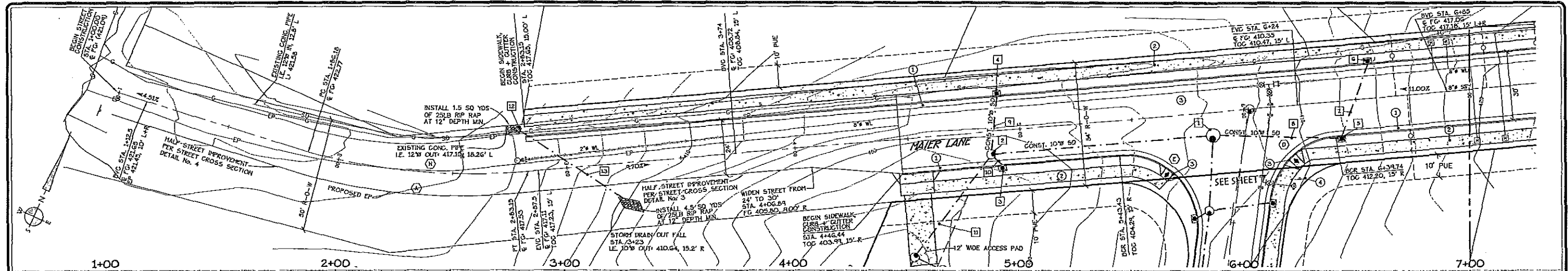
**STREET AND STORM DRAIN CONSTRUCTION**

1+00.00 - 6+24.00  
 Fabian Way

HORIZ. SCALE: 1"=20'  
 VERT. SCALE: 1"=2'

SHEET No. **7** OF **23**

PROJECT No: **06-b3E**



**STORM DRAIN NOTES:**

- 1. CONST. 72" CONC. S.D.M.H. #4 PER DTL No. 1 ON SHEET 4. STA. 1+33.00, 34.0' R. RIM 406.52
- 2. CONST. 48" POLLUTION CTRL. S.D.M.H. #5 PER DTL No. 313-0 ON SHEET 2. STA. 4+56.42, 10.0' R. RIM 402.50
- 3. CONST. CONC. CURB INLET #5 PER CITY OF ALBANY DTL No. 412 + 413. STA. 4+10.00, 15' R. TOC 403.16 IE 10" OUT 398.74
- 4. CONST. CONC. CURB INLET #6 PER CITY OF ALBANY DTL No. 412 + 413. STA. 4+10.00, 15' R. TOC 403.16 IE 10" OUT 400.42
- 5. CONST. CONC. CURB INLET #7 PER CITY OF ALBANY DTL No. 412 + 413. STA. 4+42.36, 15' R. TOC 412.41 IE 10" IN (NW) 410.00 IE 10" OUT (SW) 408.16
- 6. CONST. CONC. CURB INLET #8 PER CITY OF ALBANY DTL No. 412 + 413. STA. 4+56.67, 15' R. TOC 414.09 IE 10" OUT (SE) 411.45
- 7. CONST. 12" ASTH C 76 RCP S.D. L = 35.11 LF. S = 0.0420 FT/FT
- 8. CONST. 10" ASTH D3034 SDR 35 PVC S.D. L = 57.22 LF. S = 0.1180 FT/FT
- 9. CONST. 10" ASTH D3034 SDR 35 PVC S.D. L = 26.43 LF. S = 0.0180 FT/FT
- 10. CONST. 10" ASTH D3034 SDR 35 PVC S.D. L = 756 LF. S = 0.0200 FT/FT
- 11. CONST. 8" HOPE DRIP ANWA C406 S.D. L = 56.30 LF. S = 0.1100 FT/FT
- 12. CONST. CONC. DITCH INLET PER OREGON STD DWG R0370 STA. 4+64.84, 34.41' L. GRADE 47.11 IE 10" OUT 412.00
- 13. CONST. 10" ASTH D3034 SDR 35 PVC S.D. L = 93.45 LF. S = 0.0371 FT/FT

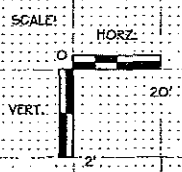
**FACE OF CURB CURVE DATA**

CURVE	RADIUS	LENGTH	CHORD	DELTA
D	32.00'	43.25'	522°13'33"W 40.03'	77°29'34"
E	32.00'	57.28'	N67°40'27"W 24.74'	102°34'06"
A	250.00'	91.34'	N77°34'34"E 90.88'	20°56'40"

**CENTERLINE CURVE DATA**

CURVE	RADIUS	LENGTH	CHORD	DELTA
N	270.00'	96.47'	N71°06'07"E 96.45'	20°34'38"

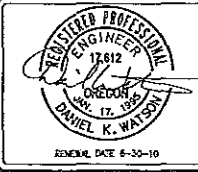
- CONSTRUCTION NOTES:**
- 1. CONST. 30" WIDE CONC. CURB + CUTTER PER CITY OF ALBANY DTL No. 304, TYP.
  - 2. CONST. CONC. SIDEWALK PER CITY OF ALBANY DTL No. 313.
  - 3. CONST. CONC. ACCESS RAMP PER CITY OF ALBANY DTL No. 208.
  - 4. INSTALL COMBINED STREET/STOP SIGN PER CITY OF ALBANY DTL No. 208.



Sheet 10/31/2008 Title 1514  
 Scale: 1"=20'(H)  
 Plot deg\2006\06-63-a\63c-st.dwg (8/18)

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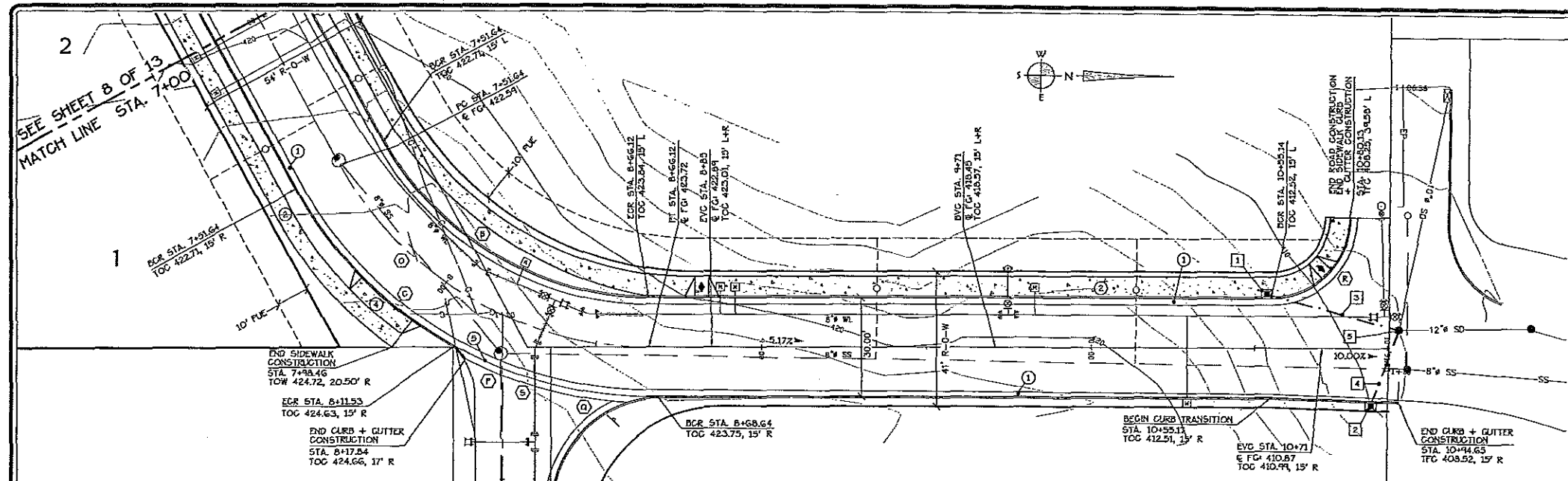
**K & D ENGINEERING, INC.**  
 276 N.W. HICKORY STREET  
 P.O. BOX 725  
 ALBANY, OREGON 97321  
 (541) 928-2583

**FABIAN ESTATES**  
 CITY OF ALBANY, BENTON COUNTY, OREGON

**STREET & STORM DRAIN CONSTRUCTION**  
 1+00.00 - 7+00.00  
 Maier Lane

HORIZ. SCALE: 1"=20'  
 VERT. SCALE: 1"=2'  
 SHEET No. 8 OF 130  
 PROJECT No: 06-b3E





**FACE OF CURB CURVE DATA**

CURVE	RADIUS	LENGTH	CHORD	DELTA
B	42'	58.43'	N30°23'31"E 53.80'	61°17'59"
C	122'	68.29'	N45°00'23"E 67.40'	32°04'13"
F	20'	16.47'	N66°24'20"E 16.01'	47°11'21"
G	35'	52.51'	N46°55'49"E 47.72'	85°57'27"
R	25'	38.85'	N44°46'37"W 39.06'	89°02'16"

**CENTERLINE CURVE DATA**

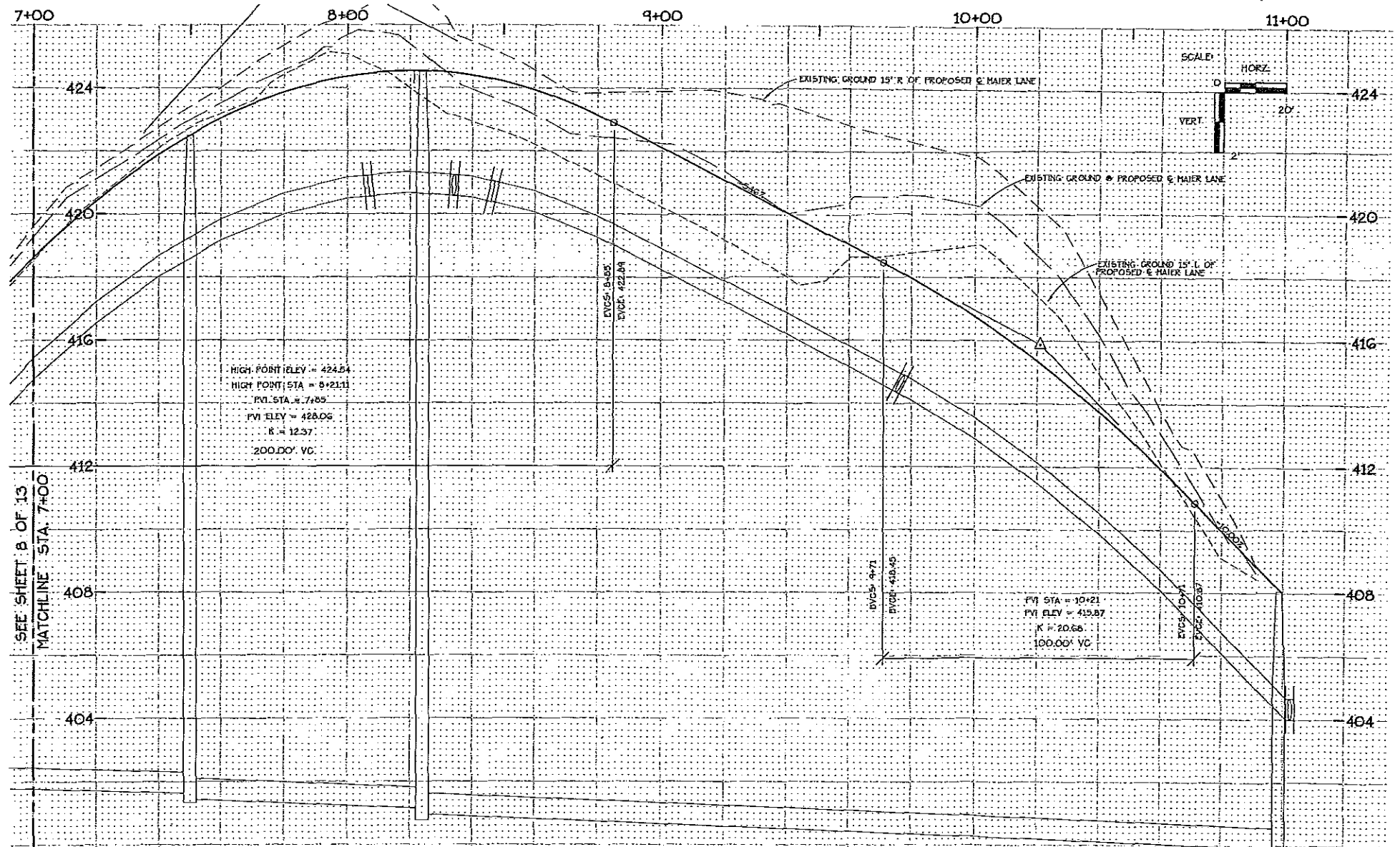
CURVE	RADIUS	LENGTH	CHORD	DELTA
O	107'	114.48'	N30°23'31"E 109.04'	61°17'59"

**VALLEY GUTTER CENTER LINE CURVE DATA**

CURVE	RADIUS	LENGTH	CHORD	DELTA
S	122'	64.75'	N13°46'00"E 63.99'	30°24'33"

- CONSTRUCTION NOTES:**
- CONST. 30" WIDE CONC. CURB & GUTTER PER CITY OF ALBANY DTL No. 304, TYP.
  - CONST. CONC. SIDEWALK PER CITY OF ALBANY DTL No. 313.
  - CONST. CONC. ACCESS RAMP PER CITY OF ALBANY DTL No. 316.
  - CONST. CONC. RESIDENTIAL DRIVEWAY PER CITY OF ALBANY DTL No. 308.
  - CONST. CONC. VALLEY GUTTER PER CITY OF ALBANY DTL No. 305.

- STORM DRAIN NOTES:**
- CONST. CONC. CURB INLET #4 PER CITY OF ALBANY DTL No. 412 + 413 STA. 10+63.70, 15' L TOC 422.63 LE 10" OUT (NE) 408.63
  - CONST. CONC. CURB INLET #10 PER CITY OF ALBANY DTL No. 412 + 413 STA. 10+53.26, 15' R TOC 409.46 LE 10" IN (E) 403.46 LE 10" OUT (W) 405.46 STUB 10" IN (E)
  - CONST. 10" ASTH D3034 50R 35 PVC S.D. L = 42.5 LF S = 0.15 FT/FT
  - CONST. 10" ASTH D3034 50R 35 PVC S.D. L = 24.17 LF S = 0.1500 FT/FT
  - CORE DRILL EXIST. 18" PIPE ENDS SHALL BE INSTALLED FLUSH WITH THE INTERIOR SURFACE OF THE STRUCTURE. STA. 10+41.56, 5.54' L RHP 406.09 LE 10" IN (SW) 402.26 LE 10" IN (SE) 401.84



Date: 10/31/2008 Time: 13:22  
Scale: 1"=20'(H)  
File: dwp\2008\06-63-01\03E-1.dwg (Brite)

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(541) 928-2583

**FABIAN ESTATES**

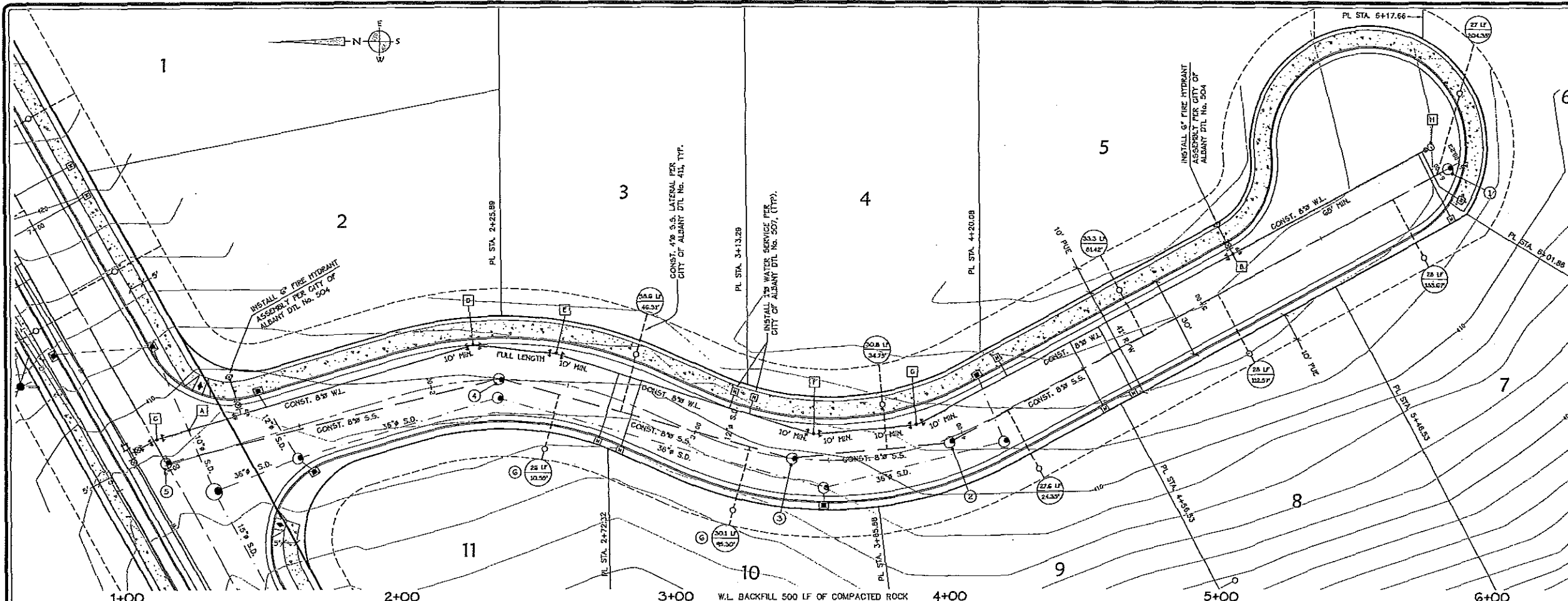
CITY OF ALBANY, BENTON COUNTY, OREGON

**STREET & STORM DRAIN CONSTRUCTION**

7+00.00 - 11+00.00  
Maier Lane & Patrick Lane

HORIZ. SCALE: 1"=20'  
VERT. SCALE: 1"=2'  
SIGN DATE:        
DSGN BY: WF  
DRWN BY: WF  
CHKD BY: D.K.W.  
PROJECT No: 06-63E

SHEET No. 9 OF 131



**WATERLINE CONSTRUCTION NOTES:**

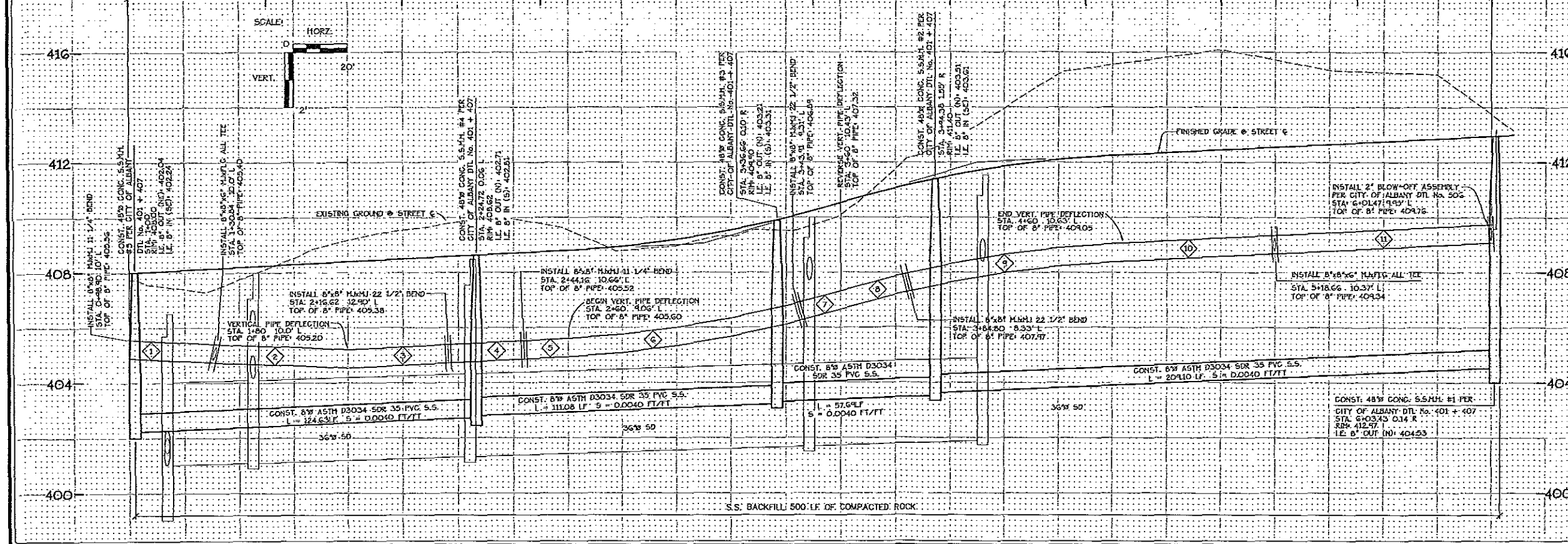
- A INSTALL 8" x 8" MFLG ALL TEE  
STA. 1+25.81 10.00' L  
(1) 6" FLOW GATE VALVE (DG)  
(2) 6" MEGA-LUG RETAINER GLANDS (DN+SE)  
(1) 6" MEGA-LUG RETAINER GLAND (DE)
- B INSTALL 8" x 8" MFLG ALL TEE  
STA. 5+18.66 10.37' L  
(1) 6" FLOW GATE VALVE (DG)  
(2) 6" MEGA-LUG RETAINER GLANDS (DN+SE)  
(1) 6" MEGA-LUG RETAINER GLAND (DE)
- C INSTALL 8" x 8" MFLG 11 1/4" BEND  
(2) 6" MEGA-LUG RETAINER GLANDS  
STA. 0+40.90 10' L
- D INSTALL 8" x 8" MFLG 22 1/2" BEND  
(2) 6" MEGA-LUG RETAINER GLANDS  
STA. 2+16.62 12.50' L
- E INSTALL 8" x 8" MFLG 11 1/4" BEND  
(2) 6" MEGA-LUG RETAINER GLANDS  
STA. 2+44.36 10.66' L
- F INSTALL 8" x 8" MFLG 22 1/2" BEND  
(2) 6" MEGA-LUG RETAINER GLANDS  
STA. 3+43.99 9.31' L
- G INSTALL 8" x 8" MFLG 22 1/2" BEND  
(2) 6" MEGA-LUG RETAINER GLANDS  
STA. 3+84.80 8.33' L
- H INSTALL 2" BLOW-OFF ASSEMBLY  
PER CITY OF ALBANY DTL No. 506  
STA. 6+04.47 9.75' L

**SANITARY SEWER CONSTRUCTION NOTES:**

- 1 CONST. 48" CONC. S.S.M.H. #1 PER  
CITY OF ALBANY DTL No. 401 + 407  
STA. 6+03.43 0.14' R  
RHP 412.97
- 2 CONST. 48" CONC. S.S.M.H. #2 PER  
CITY OF ALBANY DTL No. 401 + 407  
STA. 3+44.36 1.5' R  
RHP 411.40
- 3 CONST. 48" CONC. S.S.M.H. #3 PER  
CITY OF ALBANY DTL No. 401 + 407  
STA. 3+56.66 0.10' R  
RHP 404.90
- 4 CONST. 48" CONC. S.S.M.H. #4 PER  
CITY OF ALBANY DTL No. 401 + 407  
STA. 2+24.72 0.06' L  
RHP 408.62
- 5 CONST. 48" CONC. S.S.M.H. #5 PER  
CITY OF ALBANY DTL No. 401 + 407  
STA. 1+00.00  
RHP 408.00
- 6 SEWER LATERALS SHALL BE  
INSTALLED ABOVE 36" S.D. PIPE.  
INDIVIDUAL PRIVATE SEWAGE  
PUMPS WILL BE REQUIRED.

**WATER PIPE CONSTRUCTION NOTES:**

- 1 CONST. 8" DI CLASS 52 WL  
L = 31.95 LF S = 0.0041 FT/FT
- 2 CONST. 8" DI CLASS 52 WL  
L = 49.16 LF S = 0.0041 FT/FT
- 3 CONST. 8" DI CLASS 52 WL  
L = 36.62 LF S = 0.0049 FT/FT
- 4 CONST. 8" DI CLASS 52 WL  
L = 27.54 LF S = 0.0049 FT/FT
- 5 CONST. 8" DI CLASS 52 WL  
L = 15.84 LF S = 0.0049 FT/FT
- 6 CONST. 8" DI CLASS 52 WL  
L = 83.91 LF R = 45%
- 7 CONST. 8" DI CLASS 52 WL  
L = 16.09 LF R = 45%
- 8 CONST. 8" DI CLASS 52 WL  
L = 24.80 LF R = 45%
- 9 CONST. 8" DI CLASS 52 WL  
L = 75.20 LF R = 45%
- 10 CONST. 8" DI CLASS 52 WL  
L = 55.66 LF S = 0.0049 FT/FT
- 11 CONST. 8" DI CLASS 52 WL  
L = 82.81 LF S = 0.0049 FT/FT



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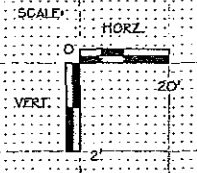
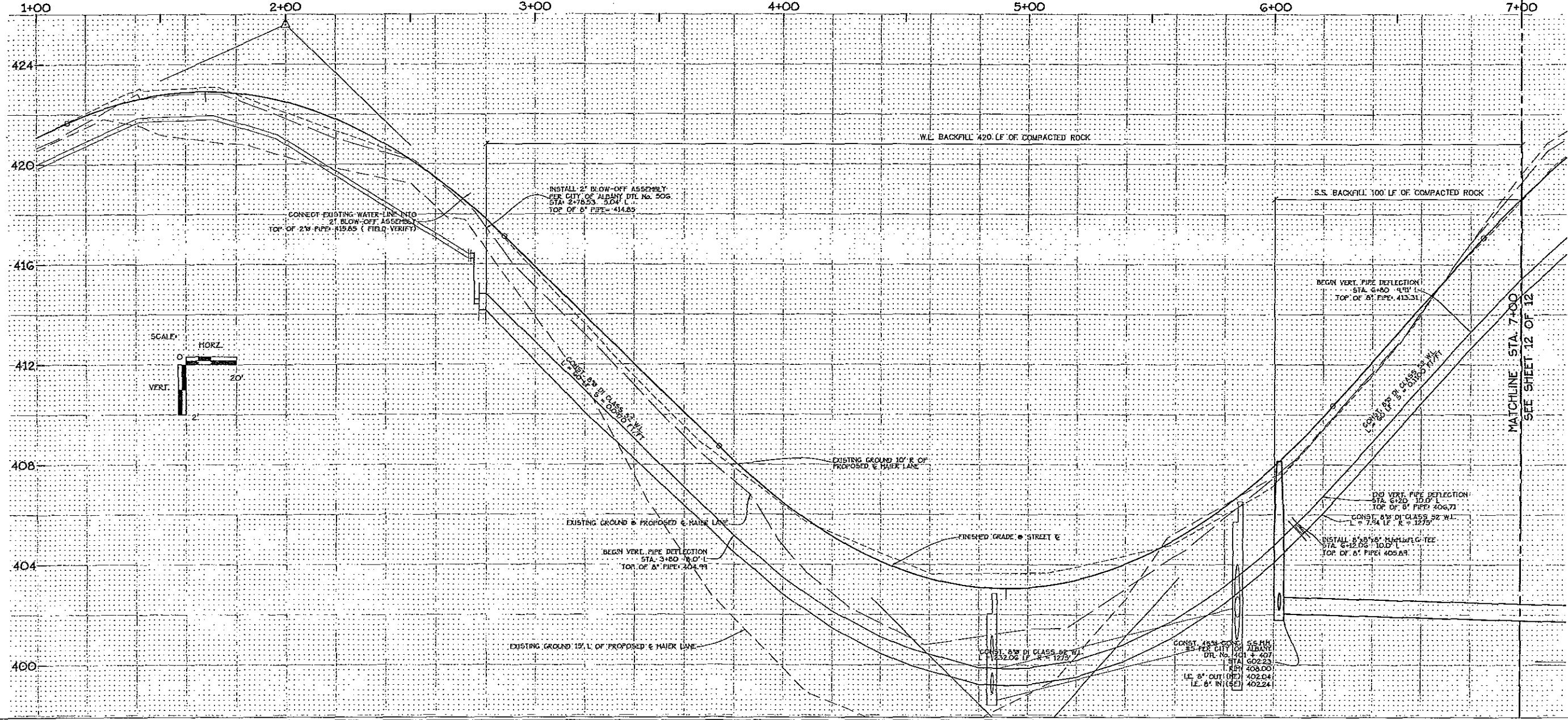
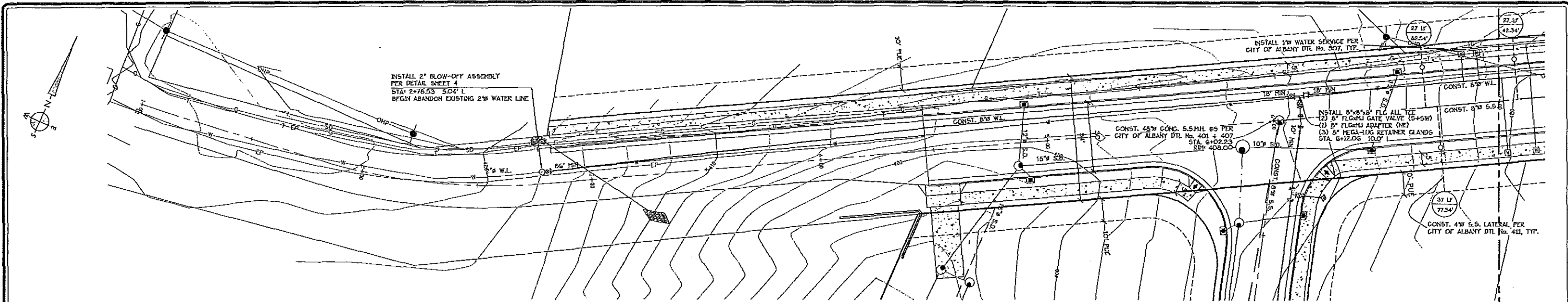


**K & D ENGINEERING, INC.**  
 276 N.W. HICKORY STREET  
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 ALBANY, OREGON 97321  
 (541) 928-2583

**FABIAN ESTATES**  
 CITY OF ALBANY, BENTON COUNTY, OREGON

**SEWER & WATER CONSTRUCTION**  
 1+00.00 to 6+24.00  
 Fabian May

SHEET No. 10 OF 13  
 HORIZ. SCALE: 1"=20'  
 VERT. SCALE: 1"=2'  
 DRAWN BY: WF  
 CHECK BY: D.K.W.  
 PROJECT No: 06-b3E



Detail 10/21/2008 Time: 13:27  
 Scale: 1"=20'(H)  
 File: dwg\_2008\_08-63-a\63f-w5.dwg (Brian)  
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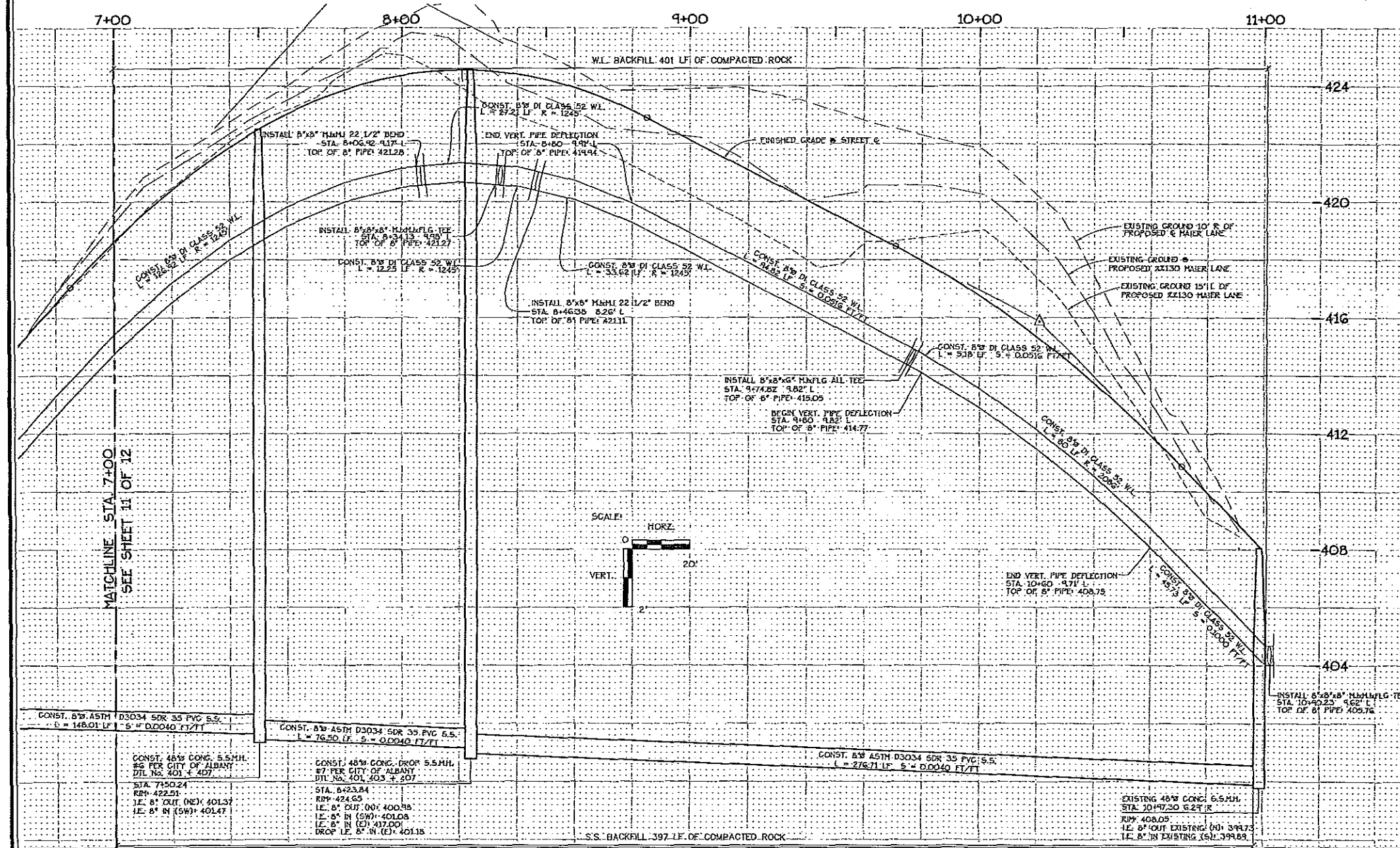
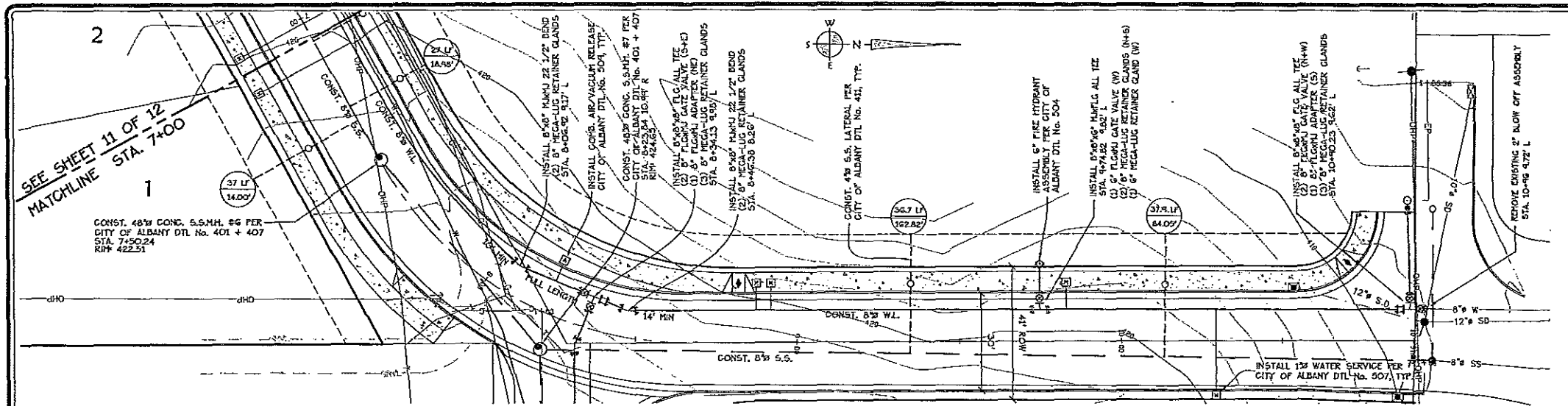


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 276 N.W. HICKORY STREET  
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**FABIAN ESTATES**  
 CITY OF ALBANY, BENTON COUNTY, OREGON

**SEWER & WATER CONSTRUCTION**  
 1+00.00 - 7+00.00  
 Water Line

SHEET No. 11 OF 33  
 13  
 PROJECT No: 06-63E



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 CITY OF ALBANY, BENTON COUNTY, OREGON

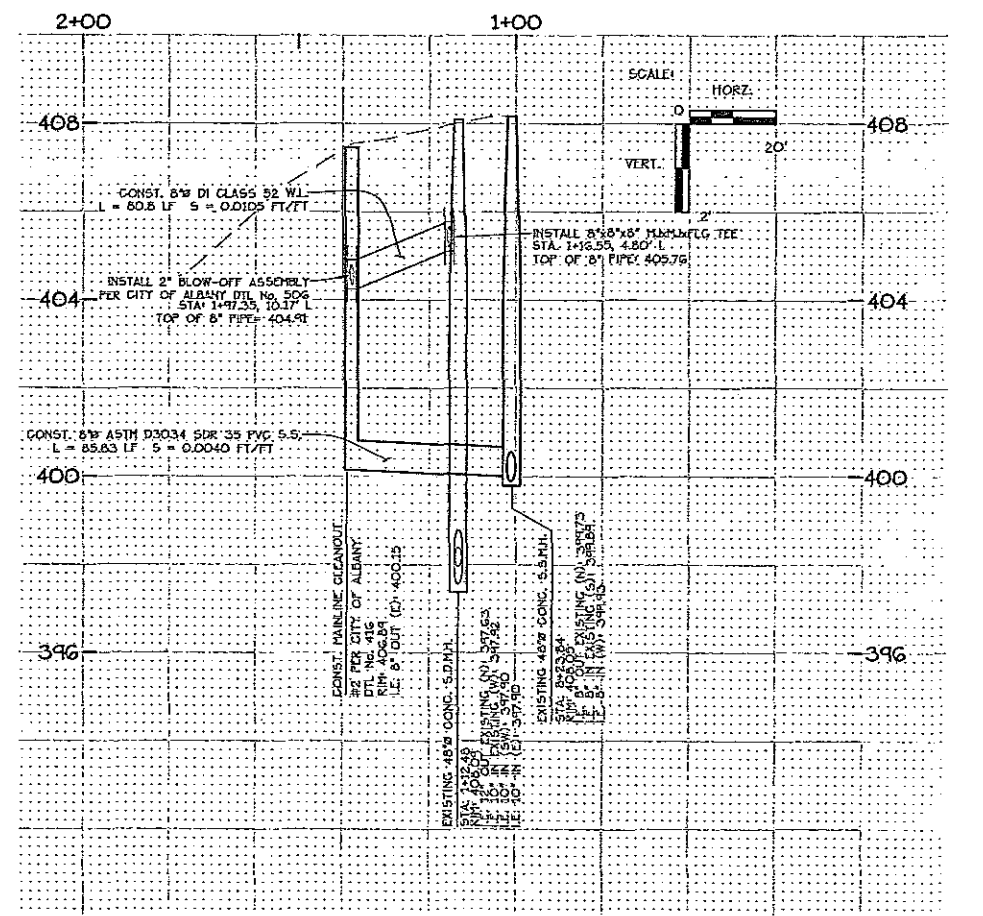
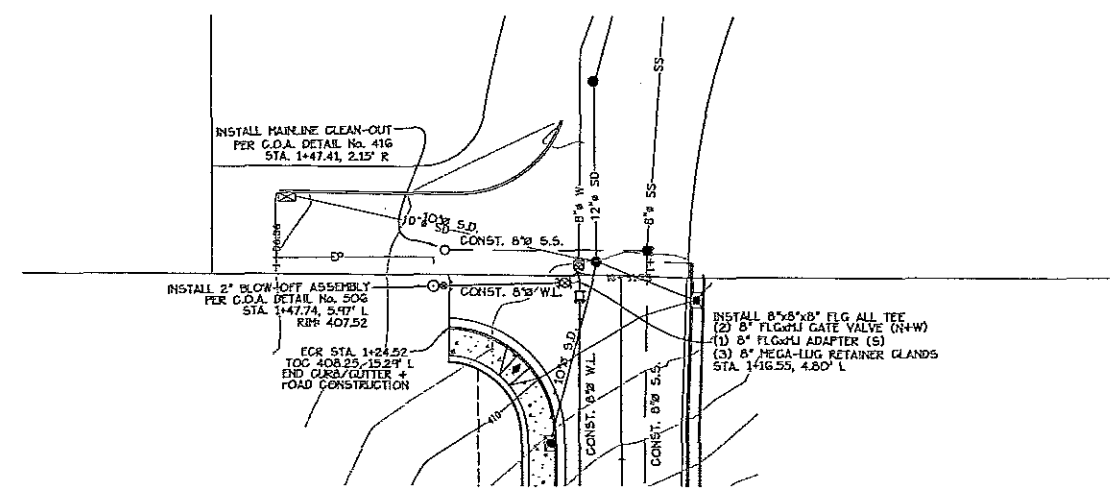
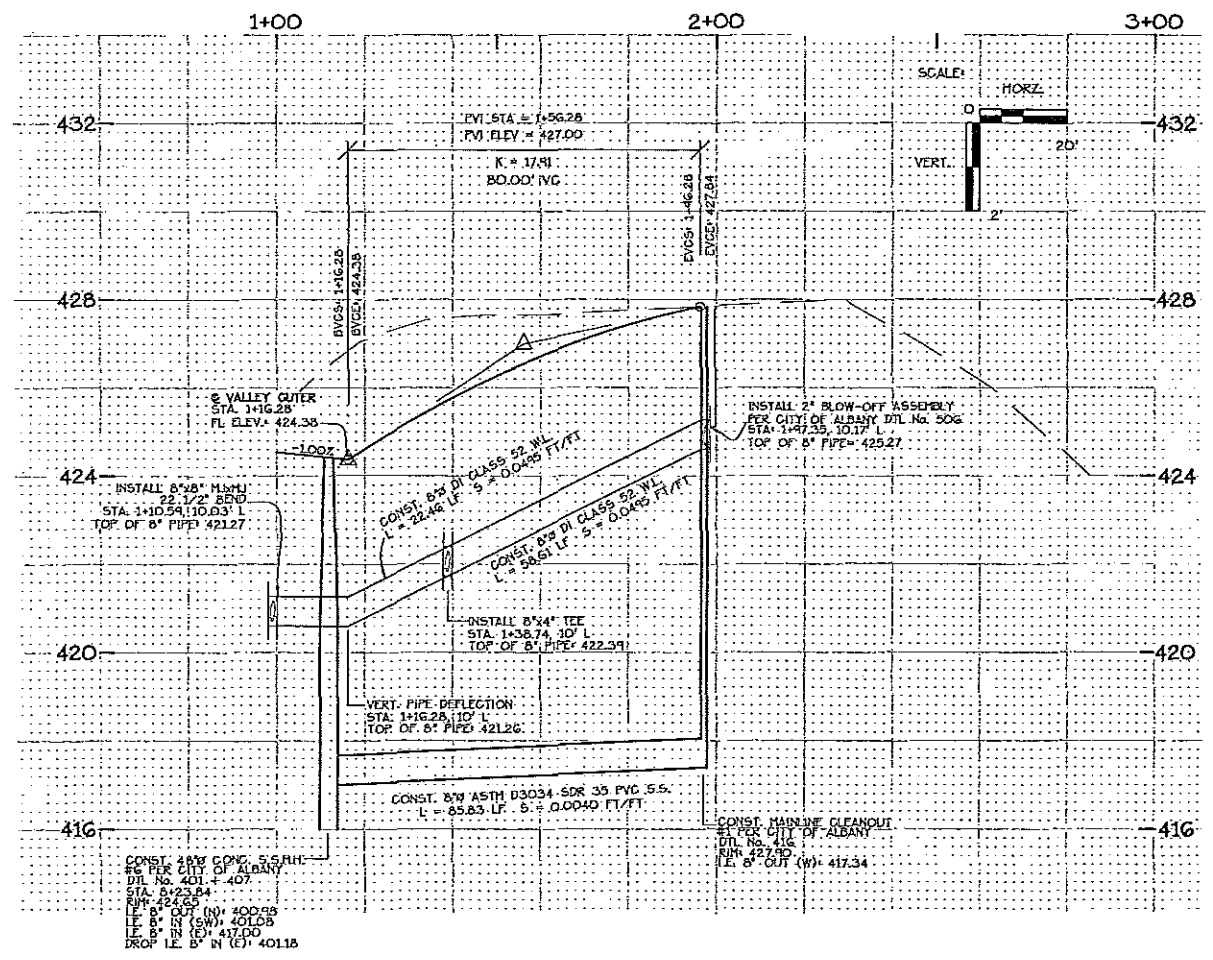
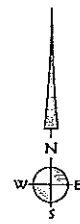
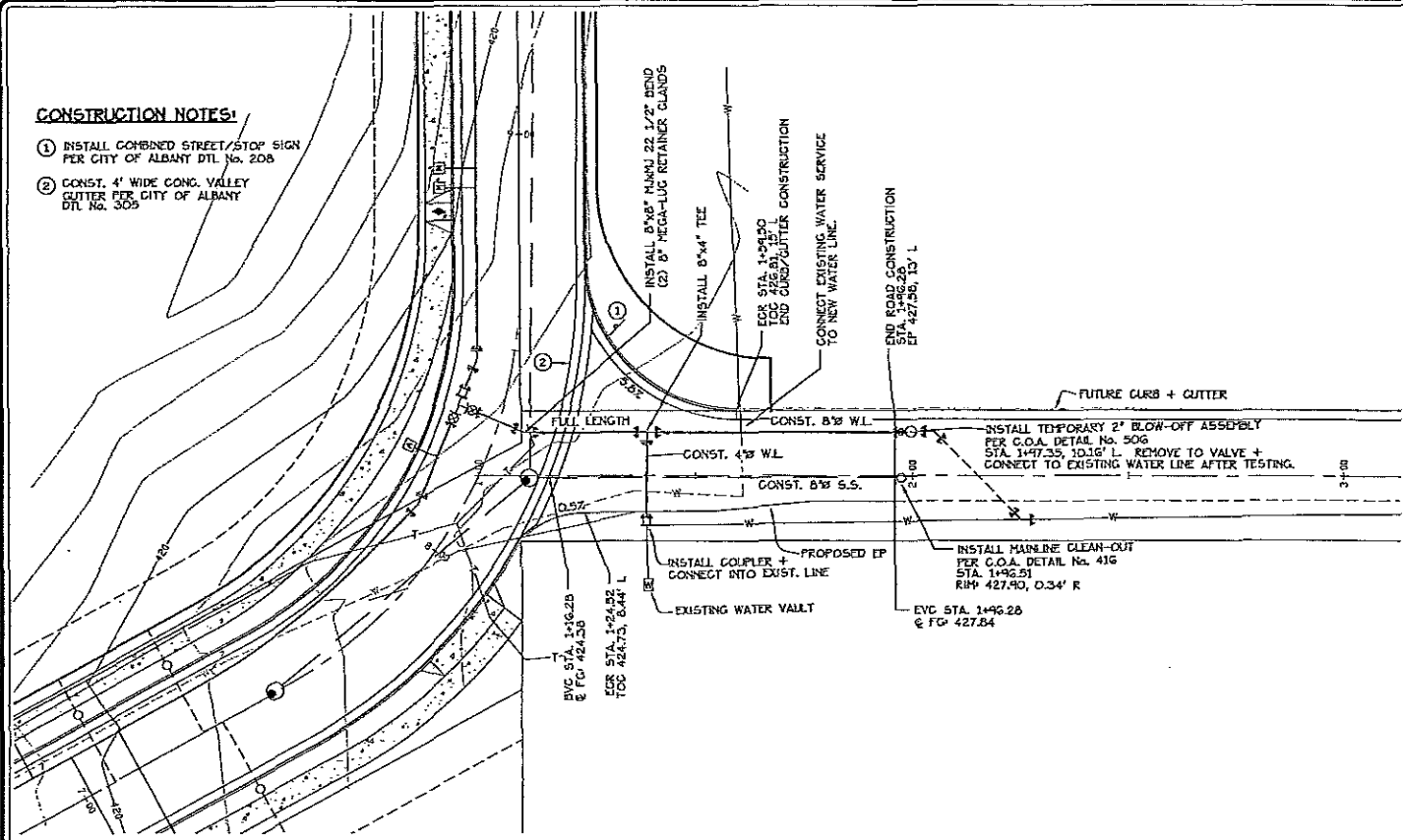
**SEWER & WATER CONSTRUCTION**  
 7+00.00 - 11+00.00  
 Maier Lane & Patrick Lane

HORIZ. SCALE: 1"=20'
VERT. SCALE: 1"=2'
SIGN DATE:
DESIGN BY: WJ
DRAWN BY: WJG
CHECK BY: D.K.W.
PROJECT No.: 06-b3E



**CONSTRUCTION NOTES:**

- 1. INSTALL COMBINED STREET/STOP SIGN PER CITY OF ALBANY DTL No. 206
- 2. CONST. 4' WIDE CONC. VALLEY CUTTER FOR CITY OF ALBANY DTL No. 305



Date: 10/22/2008 Time: 8:35  
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**FABIAN ESTATES**

CITY OF ALBANY, BENTON COUNTY, OREGON

**CHAD AVE & MAIER LANE EAST CONSTRUCTION**

CHAD AVE & MAIER LANE

**CONSTRUCTION NOTES:**

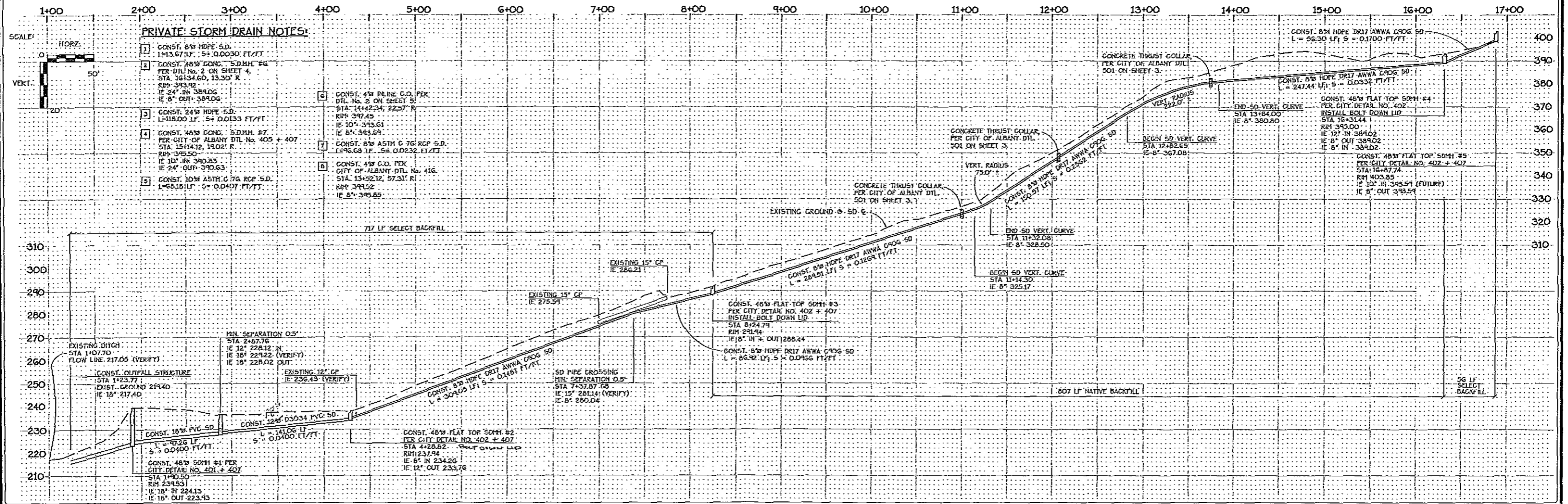
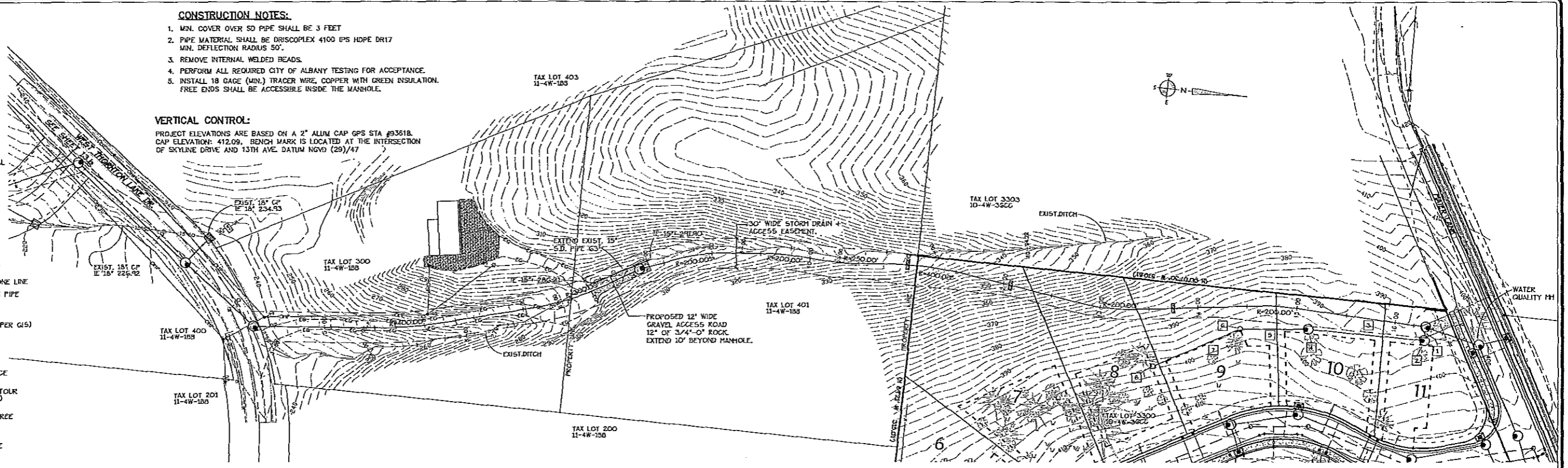
1. MIN. COVER OVER SD PIPE SHALL BE 3 FEET
2. PIPE MATERIAL SHALL BE DRISCOPLEX 4100 IPS HOPE DR17 MIN. DEFLECTION RADIUS 50'.
3. REMOVE INTERNAL WELDED BEADS.
4. PERFORM ALL REQUIRED CITY OF ALBANY TESTING FOR ACCEPTANCE.
5. INSTALL 18 GAUGE (MIN.) TRACER WIRE, COPPER WITH GREEN INSULATION. FREE ENDS SHALL BE ACCESSIBLE INSIDE THE MANHOLE.

**LEGEND:**

- EXISTING**
- ☒ CURB INLET CB
  - ↑ SIGN POST
  - UTILITY POLE
  - GUY WIRE
  - ☐ PHONE PEDESTAL
  - ☐ POWER VAULT/PEDESTAL
  - ⊙ WATER VALVE
  - AC ASPHALT CONCRETE
  - CP CONCRETE PIPE
  - EP EDGE OF PAVEMENT
  - EG EDGE OF GRAVEL
  - IE INVERT ELEVATION
  - MP METAL PIPE
  - OHP OVERHEAD POWER LINE
  - UTP UNDERGROUND TELEPHONE LINE
  - 12"SD EXISTING STORM DRAIN PIPE (SIZE AS NOTED)
  - UGP UNDERGROUND POWER
  - W WATER LINE (LOCATED PER GIS)
  - WV WATER VAULT
  - ⊙ WATER METER
  - ☐ STORM DRAIN REFERENCE
  - EXISTING GROUND CONTOUR (2' CONTOUR INTERVAL)
  - ☐ EXISTING DECIDUOUS TREE
  - ☐ EXISTING CONIFER TREE

**VERTICAL CONTROL:**

PROJECT ELEVATIONS ARE BASED ON A 2" ALUM CAP GPS STA #93618. CAP ELEVATION: 412.09, BENCH MARK IS LOCATED AT THE INTERSECTION OF SKYLINE DRIVE AND 13TH AVE. DATUM NGVD (29)/47



**PRIVATE STORM DRAIN NOTES:**

1. CONST. 8" HOPE S.D. 1:13.67 LF. S = 0.0030 FT/FT
2. CONST. 48" CONC. 5" D.M.H. #4 PER DTL No. 2 ON SHEET 4. STA. 36134.60, 13.30' R. RIM: 393.92 IE 24" IN 384.06 IE 8" OUT: 384.06
3. CONST. 24" HOPE S.D. L=118.00 LF. S = 0.0133 FT/FT
4. CONST. 48" CONC. 5" D.M.H. #7 PER CITY OF ALBANY DTL No. 405 + 407. STA. 15414.12, 19.02' R. RIM: 345.50 IE 10" IN 340.85 IE 24" OUT: 370.63
5. CONST. 10" W. ASTH. C 76 RCP S.D. L=58.16 LF. S = 0.0407 FT/FT
6. CONST. 4" DLINE C.O. PER DTL No. 2 ON SHEET 5. STA. 14422.34, 22.57' R. RIM: 347.45 IE 10" IN 343.61 IE 8" IN 343.61
7. CONST. 8" W. ASTH. C 76 RCP S.D. L=96.68 LF. S = 0.0232 FT/FT
8. CONST. 4" C.O. PER CITY OF ALBANY DTL No. 416. STA. 15432.12, 57.31' R. RIM: 345.50 IE 8" IN 345.69

Date: 10/31/2008 Time: 11:53  
 Scale: 1"=50'(H)  
 Plot: dsg2006-06-63-e-0663a-0832-tp.dwg  
 User: 0832-ba.dwg 0832-f.dwg

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NO.	DATE	REVISIONS	BY



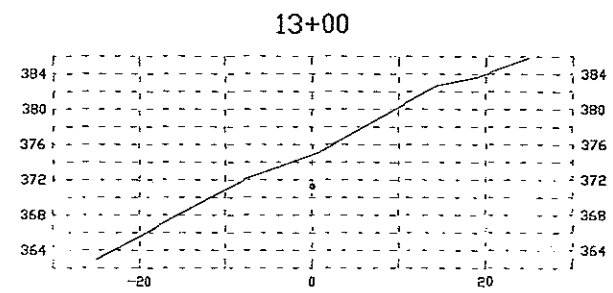
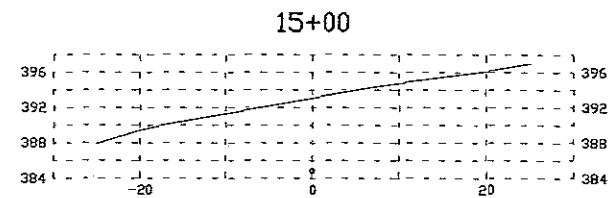
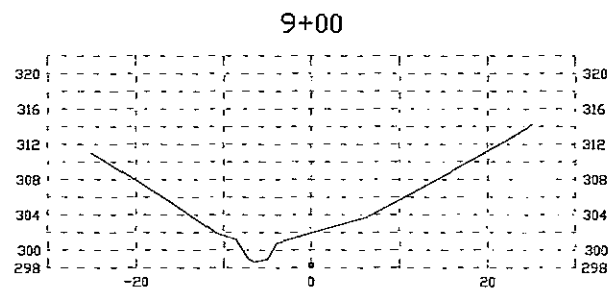
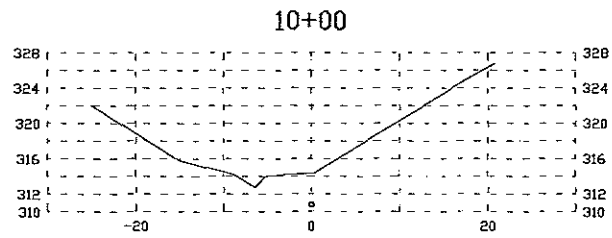
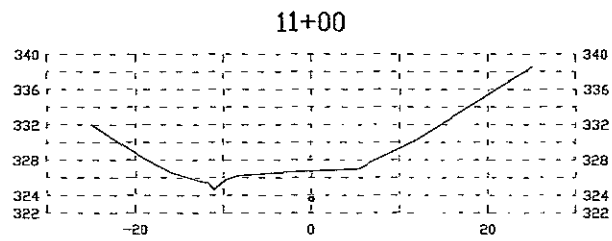
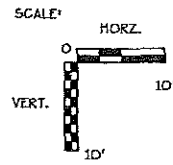
**K & D ENGINEERING, INC.**  
 276 N.W. HICKORY STREET  
 P.O. BOX 725  
 ALBANY, OREGON 97321  
 (541) 928-2583

**FABIAN ESTATES**  
 CITY OF ALBANY, BENTON COUNTY, OREGON

**PLAN & PROFILE STORM DRAIN PIPE**

HORIZ. SCALE: 1"=50'  
 VERT. SCALE: 1"=20'  
 SIGN DATE: \_\_\_\_\_  
 DESIGN BY: D.K.W.  
 DRAWN BY: M.E.H.  
 CHECK BY: D.K.W.  
 PROJECT No: 08-32

SHEET No. 13.a  
 36/13



Date: 10/30/2006 Time: 11:48  
 Scale: 1"=10'(H)  
 File: d:\g\2006\10-30-06\0832-tp.dwg  
 User: 0832-bndvg, 0832-P.dwg

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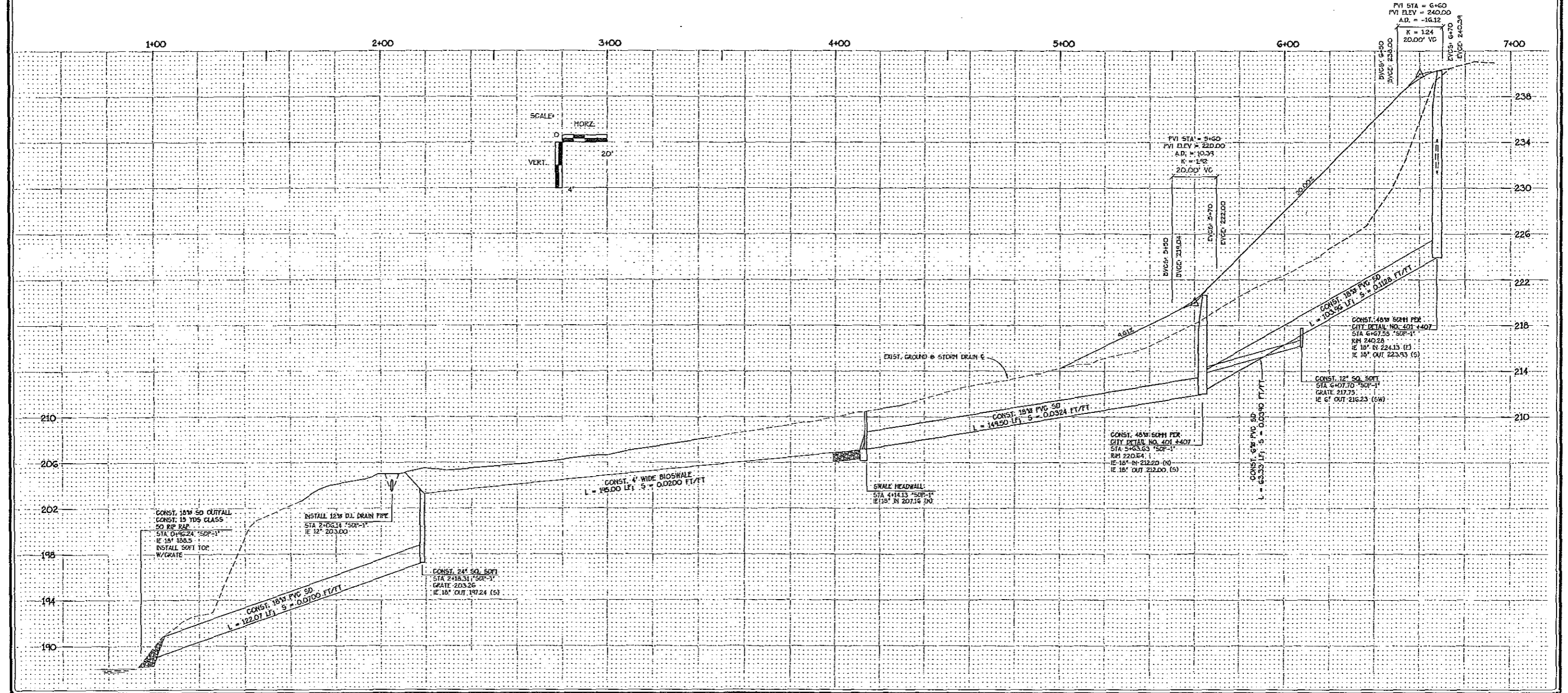
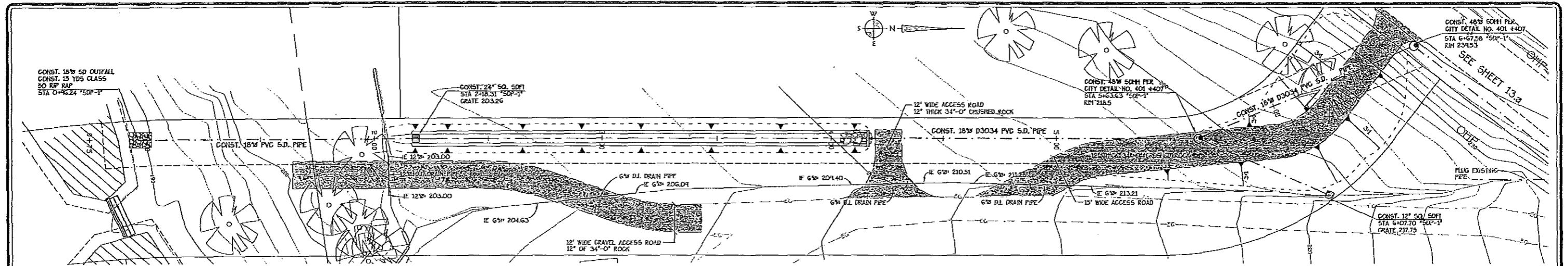
**FABIAN ESTATES**

CITY OF ALBANY, BENTON COUNTY, OREGON

STORM DRAIN PIPE  
 CROSS SECTIONS

HORIZ. SCALE: 1"=10'  
 VERT. SCALE: 1"=10'  
 DESIGNED BY: D.K.W.  
 DRAWN BY: M.E.H.  
 CHECK BY: D.K.W.  
 PROJECT No.: 08-32

SHEET No.  
 13 of 37



Detail 10/25/2006  
 Scale: 1"=20'(H)  
 1"=4'(V)  
 Xref: 0663F-badg, 0663F-pudg  
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DATE	REVISIONS	BY



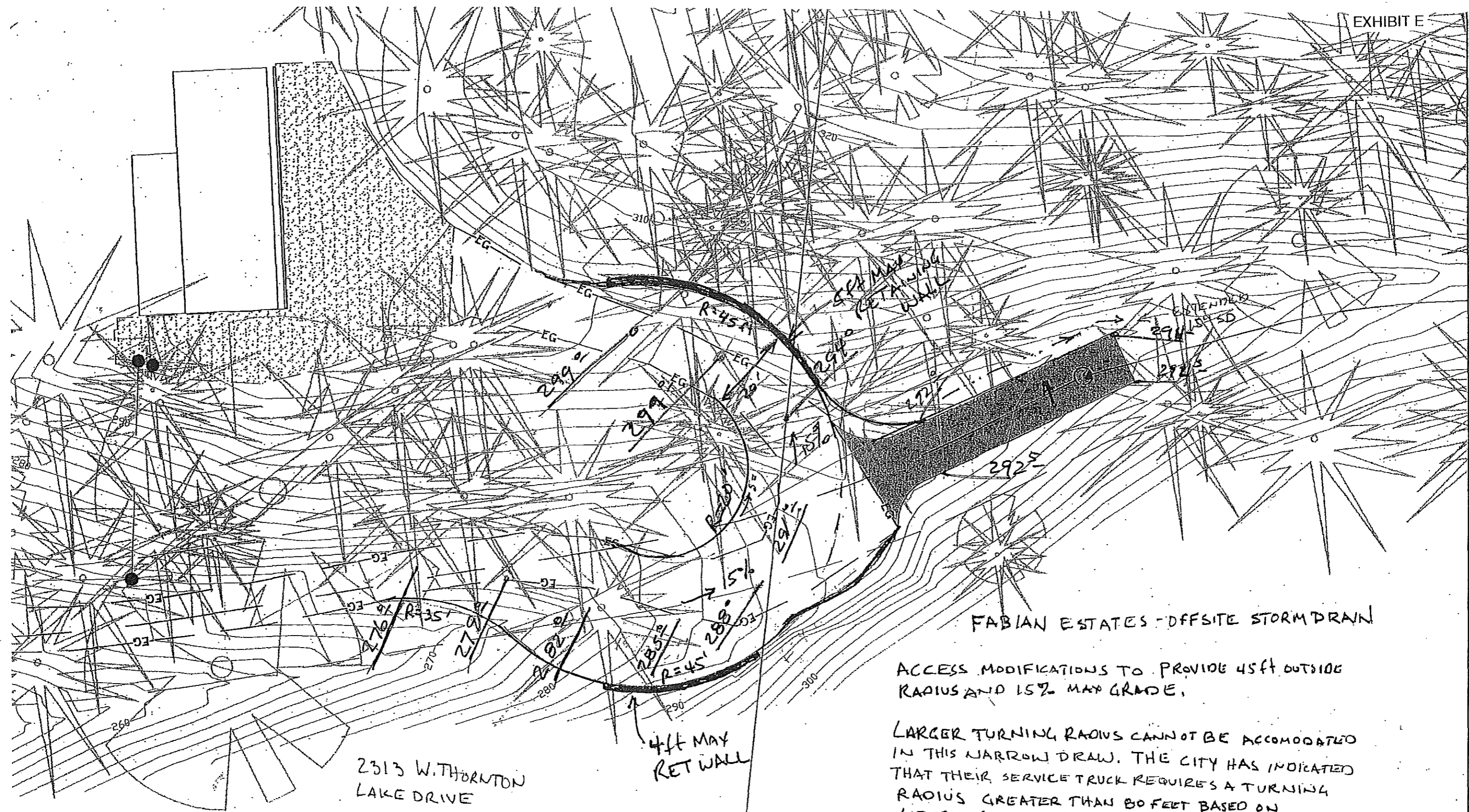
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 ALBANY, OREGON 97321  
 (541) 928-2583

**FABIAN ESTATES**  
 CITY OF ALBANY, BENTON COUNTY, OREGON

**STORM DRAIN CONSTRUCTION**  
 HORIZ. SCALE: 1"=20'  
 VERT. SCALE: 1"=4'  
 DESIGNED BY: N.W.  
 DRAWN BY: M.E.H.  
 CHECKED BY: D.K.W.  
 PROJECT NO: 06-b3-f

SHEET NO. **13.b**  
 OF **38** 13





FABIAN ESTATES - OFFSITE STORM DRAIN

**K & D ENGINEERING, INC.**

**K & D**

276 N.W. HICKORY STREET  
 P.O. BOX 725  
 ALBANY, OREGON 97321  
 (541) 928-2583

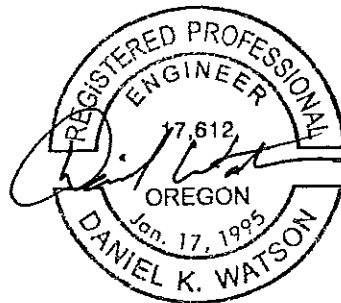
OCT 31 2008

TURNAROUND

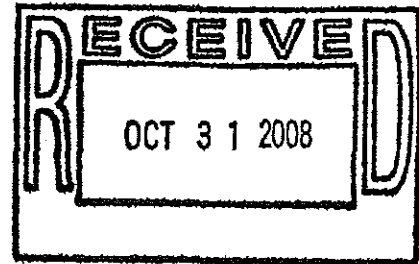
**STORM DRAINAGE AND  
DETENTION STUDY**

**FABIAN ESTATES SUBDIVISION**

City of Albany



RENEWAL DATE: 6/30/10



Prepared by: Nolan Nelson, EIT  
K&D Engineering  
PO Box 725  
Albany, Oregon 97321  
Client: Gary Davenport, Fabian Estates LLC  
Project No. 06-63E  
Date: October 31, 2008

## **PROJECT DESCRIPTION**

The proposed site is approximately 4.6 acres on the south end of Maier Lane. The tax lot is TL 3300 of Map 10-04-36 in the City of Albany, Benton County, Oregon. This study was prepared to determine the detention required on site in order to minimize impact on downstream drainage facilities.

The City of Albany requires that 5 through 100 year storm events be detained. Because of the steep slopes on site, pipe detention was the more feasible option than a surface detention pond.

## **METHODS**

Peak flows were calculated using the SCS Urban Hydrograph Method as described in the NRCS Engineering Handbook. This method uses an equation based on land use, slope, and soil conditions. Calculations for flow, required detention, pipe capacities, and orifice sizes were performed using the StormNET software.

## **General Requirements:**

The City of Albany specifies storm water detention guidelines in their Engineering Standards Division E, Stormwater Management, under section 7.01. Below is a list of applicable requirements for this project.

- The storm water that will be generated by the proposed development shall be controlled and conveyed in accordance with all City of Albany Standards. Detention Basins will be required to detain the runoff from storms up to the 100 year twenty four hour storm to pre-development rates.
- The minimum allowable orifice size shall be 2 inches.
- Detention basins shall be open basins or ponds or underground storage, or a combination of the above.
- All aspects of the on-site drainage system must be properly designed to handle flows on site and all flows and that flow through the site.
- All aspects of public health must be carefully reviewed. Protective measures may be required.
- The impact of a system failure should be analyzed in terms of on-site and off-site effects.
- The frequency and difficulty of maintaining the facility should be kept to a minimum.
- The site should be evaluated to determine if hazardous materials are present.
- It is important that roof runoffs pass through the facility.
- All detention facilities shall have emergency overflow facilities. The overflow shall be capable of passing the 100 year storm.

## **Closed Detention System Requirements**

The City of Albany has given specific guidelines for a closed detention system. In this project the detention shall be achieved using underground pipe storage. These guidelines are therefore applicable to this design.

- A minimum grade of .003 ft/ft shall be used in all pipes.
- The outfall control structure shall meet the standards set forth in the standard construction specifications or as approved by the city engineer.
- Access to the detention system shall be provided at the up and downstream terminus of the system. The maximum distance between access points shall be 400 feet.
- Facility maintenance personal and equipment must be able to access the system year around.

## **INCLUDED AREAS**

The areas included in this report are areas found on the 4.6 acre Fabian Estates Subdivision and contributing upstream areas. The pre-developed areas included in the project area are classified as undeveloped. The developed flow areas include all the pre-developed areas except they have been modeled using developed conditions with medium sized lots (approximately ¼ acre).

## **PRE-DEVELOPED FLOWS**

Pre-developed flows and times of concentration were determined using the StormNET software and are based on the guidelines set forth by SCS Method. Flows were calculated using the storm events specified for the City of Albany for 10 through 100 year storm events. The pre-developed areas included an undeveloped area that is a mix of forest and grass with a curve numbers of 70. The storm events used were 5 year, 10 year, 25 year, 50 year, and 100 year 24 hour Type 1A storms that are 2.86 in., 3.32 in., 3.93 in., 4.40 in. and 4.86 in. respectively. The total peak flows for the pre-developed conditions were calculated to be 0.35 cfs, 0.60 cfs, 0.89 cfs, 1.27 cfs, and 1.59 cfs for 5, 10, 25, 50, and 100 year storm events respectively.

## **DEVELOPED FLOWS**

The developed curve numbers for the SCS method were based on the NRCS Engineering Handbook. The Curve number used for all of the developed sub basins was 73 for subdivision with medium sized lots (slightly smaller than 1/3 of an acre). Total developed flows for a 5 year, 10 year, 25 year, 50 year, and 100 year storm are 0.65 cfs, 0.95 cfs, 1.38 cfs, 1.72 cfs, and 2.12 cfs respectively.

## **DETENTION**

Detention was designed to limit the total flow leaving the site to the pre-developed flows for a 5 through 100 year storm. There are two detention systems on site. One system is for the improved Maier Lane and Lots 1-7 in the Fabian Estates subdivision. The other



system will be constructed on the west side of the Fabian Estates subdivision along the back of lots 8-11 in order to drain and detain the drainage from those lots.

The first detention system will be constructed within Fabian Way and will consist of a control manhole, 5 detention manholes, and 330 Feet of 36 inch diameter pipe for a total storage volume of 2603.5 cubic feet. The control manhole will consist of three orifices are for multiple stage discharges. As the incoming flows increase the control manhole will discharge increased flows in order to closely model the pre-developed flows. The first orifice will be at the same invert elevation as the detention pipe and will be 3.1 inches in diameter. The second orifice will be 3 inches in diameter and the invert will be 1.25 feet higher than the first orifice. The third orifice will be 4.1 inches in diameter and the invert will be 1.81 feet higher than the first orifice. The predeveloped flows for the main system are 0.29 cfs, 0.49 cfs, 0.71 cfs, 1.03 cfs, and 1.28 for 5-yr, 10-yr, 25-yr, 50-yr, and 100-yr storms respectively. The constructed detention pipe will discharge 0.28 cfs, 0.44 cfs, 0.75 cfs, 0.99 cfs and 1.40 cfs for 5-yr, 10-yr, 25-yr, 50-yr and 100-yr storms respectively. The total storage required for the main proposed system including manholes is 2,599 cubic feet; therefore the pipe system has adequate storage for 5 through 100 year storm events. If the maximum storage capacity is exceeded the system will overflow the flow control system and discharge as required.

The detention system for lots 8-11 will be constructed within back of the lots and will consist of a control manhole, 118 Feet of 24 inch diameter pipe, and approximately for a total storage volume of 370.5 cubic feet. The control manhole will contain one orifice and an overflow pipe As the incoming flows increase the control manhole will discharge increased flows in order to closely model the pre-developed flows. The orifice will be at the same invert elevation as the detention pipe and will be 2.0 inches in diameter. The overflow pipe will be an 8 inch pipe with an elevation 3.5 feet higher than the invert of the orifice. The pre-developed flows for the system are 0.06 cfs, 0.11 cfs, 0.18 cfs, 0.24 cfs, and 0.31 for 5-yr, 10-yr, 25-yr, 50-yr, and 100-yr storms respectively. The constructed detention pipe will discharge 0.07 cfs, 0.09 cfs, 0.12 cfs, 0.17 cfs and 0.19 cfs for 5-yr, 10-yr, 25-yr, 50-yr and 100-yr storms respectively. The total storage required for the main proposed system including manholes is 373 cubic feet; therefore the pipe system has adequate storage for 5 through 100 year storm events. If the maximum storage capacity is exceeded the system will overflow the flow control system and discharge as required.

The maintenance access will meet Albany standards. There should not be an excess vector control problem in this system. The site will be a residential subdivision, so no hazardous materials should enter the system. The main pollutants are expected to be oils and sediment from vehicle traffic. These pollutants are common in subdivisions and are not unexpected. The system is designed so that no intermittent low spots are in place. This will allow all excess runoff to collect at the existing low area and discharge at desired location. Roof runoffs for lots 1-5 will be collected through weep holes in the curb. Runoffs for lots 6 and 7 may need to be pumped to the street. Roof runoffs for lots 8-11 will be collected in the detention system along the west side of the property. A minimum grade of .003 ft/ft has been implemented throughout the detention system. The

outfall structure will be designed and constructed as approved by the city engineering department.

### **PIPE DESIGN**

The pipe system that drains to West Thornton Lake was designed to allow the 100 year storm flows to pass under gravity flow conditions. The 100 year flow that enters this drainage system is approximately 1.9 cfs. This is accommodated with 10 inch pipes on site and an 8 inch pipe running at a steep angle down the hillside. An 18 inch pipe is needed where existing and new flows combine in the manhole in West Thornton Lake Drive. Pipe capacities and discharges are listed in the StormNET output report.

### **WATER QUALITY**

Pre-treatment facilities proposed for the project are detailed in the report titled "Water Quality Report, Fabian Estates Subdivision", prepared by K & D Engineering Inc. dated June 18, 2008.

### **SUMMARY**

- The pre-developed flows through this site range from 0.35 cfs for a 5 year storm to 1.59 cfs for a 100 year storm.
- The developed flows through this site range from 0.65 cfs for a 5 year storm to 2.12 cfs for a 100 year storm.
- The developed flows after detention through this site range from 0.35 cfs for a 5 year storm to 1.59 cfs for a 100 year storm
- The total maximum detention requirement is approximately 2,972 cubic feet during a 100 year storm. The detention will be provided in 24inch and 36 inch diameter pipes constructed within the public street right-of-way and along the backsides of lots 8-11.

Table 1: Data Summary

	5 year	10 year	25 year	50 year	100 year
Pre-developed	0.35	0.60	0.89	1.27	1.59
Developed	0.65	0.95	1.38	1.72	2.12
Detention outflow	0.35	0.53	0.87	1.16	1.59
Peak Height above outlet (Main detention)	1.27	1.64	2.13	2.51	3.54
Peak Height above outlet (Lot detention)	0.47	0.81	1.40	2.49	3.18

# **Pre-Developed StormNET Runoff Reports**

# Fabian Pre-developed Runoff

BOSS International StormNET® - Version 4.11.0 (Build 13753)

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\*\*\*\*\*

Analysis Options

\*\*\*\*\*

Flow Units ..... cfs  
Subbasin Hydrograph Method. SCS TR-55  
Time of Concentration..... SCS TR-55  
Link Routing Method ..... Hydrodynamic  
Pond Exfiltration..... None  
Starting Date ..... MAR-21-2008 00:00:00  
Ending Date ..... MAR-22-2008 00:00:00  
Report Time Step ..... 00:05:00

\*\*\*\*\*

Element Count

\*\*\*\*\*

Number of rain gages ..... 1  
Number of subbasins ..... 5  
Number of nodes ..... 6  
Number of links ..... 4

\*\*\*\*\*

Raingage Summary

\*\*\*\*\*

Gage ID	Data Source	Data Type	Interval hours
Gage-1	5 year	CUMULATIVE	0.10

\*\*\*\*\*

Subbasin Summary

\*\*\*\*\*

Subbasin ID	Total Area acres
Sub-14	0.53
Sub-15	0.19
Sub-16	0.25
Sub-17	0.76
Sub-2	2.58

\*\*\*\*\*

## Fabian Pre-developed Runoff

Node Summary

\*\*\*\*\*

Node ID	Element Type	Invert Elevation ft	Maximum Depth ft	Ponded Area ft <sup>2</sup>	External Inflow
Jun-34	JUNCTION	9.73	1.50	0.00	
Jun-35	JUNCTION	6.30	1.50	0.00	
Jun-36	JUNCTION	3.87	1.50	0.00	
Jun-37	JUNCTION	1.57	1.50	0.00	
Out-6	OUTFALL	0.00	1.50	0.00	
Out-7	OUTFALL	0.00	1.50	0.00	

\*\*\*\*\*

Link Summary

\*\*\*\*\*

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Con-36	Jun-35	Jun-36	CONDUIT	48.6	5.0000	0.0150
Con-37	Jun-36	Out-6	CONDUIT	76.8	5.0358	0.0150
Con-38	Jun-34	Jun-35	CONDUIT	68.5	5.0044	0.0150
Con-39	Jun-37	Out-7	CONDUIT	31.5	4.9889	0.0150

\*\*\*\*\*

Cross Section Summary

\*\*\*\*\*

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft <sup>2</sup>	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Con-36	CIRCULAR	1.50	1.50	1	1.77	0.38	20.36
Con-37	CIRCULAR	1.50	1.50	1	1.77	0.38	20.43
Con-38	CIRCULAR	1.50	1.50	1	1.77	0.38	20.37
Con-39	CIRCULAR	1.50	1.50	1	1.77	0.38	20.33

\*\*\*\*\*

Runoff Quantity Continuity

\*\*\*\*\*

	Volume acre-ft	Depth inches
Total Precipitation .....	1.023	2.849
Surface Runoff .....	0.009	0.002
Continuity Error (%) .....	-0.000	

\*\*\*\*\*

Flow Routing Continuity

\*\*\*\*\*

	Volume acre-ft	Volume Mgallons

## Fabian Pre-developed Runoff

External Inflow .....	0.000	0.000
External Outflow .....	0.265	0.086
Initial Stored Volume ....	0.000	0.000
Final Stored Volume .....	0.000	0.000
Continuity Error (%) .....	-0.028	

\*\*\*\*\*  
 Composite Curve Number Computations Report  
 \*\*\*\*\*

-----  
 Subbasin Sub-14  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.53	-	70.00
Composite Area & Weighted CN	0.53		70.00

-----  
 Subbasin Sub-15  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
Paved roads with curbs & sewers	0.19	A	98.00
Composite Area & Weighted CN	0.19		98.00

-----  
 Subbasin Sub-16  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.25	-	70.00
Composite Area & Weighted CN	0.25		70.00

-----  
 Subbasin Sub-17  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.76	-	70.00
Composite Area & Weighted CN	0.76		70.00

-----  
 Subbasin Sub-2  
 -----

Area	Soil
------	------

## Fabian Pre-developed Runoff

Soil/Surface Description	(acres)	Group	CN
-	2.58	B	70.00
Composite Area & Weighted CN	2.58		70.00

\*\*\*\*\*  
 SCS TR-55 Time of Concentration Computations Report  
 \*\*\*\*\*

### Sheet Flow Equation

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where:

Tc = Time of Concentration (hrs)  
 n = Manning's Roughness  
 Lf = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 Sf = Slope (ft/ft)

### Shallow Concentrated Flow Equation

$$V = 16.1345 * (S_f^{0.5}) \text{ (unpaved surface)}$$

$$V = 20.3282 * (S_f^{0.5}) \text{ (paved surface)}$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)

### Channel Flow Equation

$$V = (1.49 * (R^{2/3}) * (S_f^{0.5})) / n$$

$$R = A_q / W_p$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 Aq = Flow Area (ft<sup>2</sup>)  
 Wp = Wetted Perimeter (ft)



## Fabian Pre-developed Runoff

V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)  
 n = Manning's Roughness

-----  
 Subbasin Sub-14  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (minutes):	8.45	0.00	0.00
=====			
Total TOC (minutes):	8.45		
=====			

-----  
 Subbasin Sub-15  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.13	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.25	0.00	0.00
Computed Flow Time (minutes):	1.97	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	6.43	0.00	0.00
Computed Flow Time (minutes):	1.30	0.00	0.00
=====			
Total TOC (minutes):	5.00		
=====			

-----  
 Subbasin Sub-16  
 -----

## Fabian Pre-developed Runoff

-----  
Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.10	0.00	0.00
Computed Flow Time (minutes):	4.85	0.00	0.00

-----  
Shallow Concentrated Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	5.10	0.00	0.00
Computed Flow Time (minutes):	1.63	0.00	0.00

---

Total TOC (minutes):	6.48		
----------------------	------	--	--

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-----  
Subbasin Sub-17  
-----

-----  
Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	75.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (minutes):	10.10	0.00	0.00

---

Total TOC (minutes):	10.10		
----------------------	-------	--	--

---

-----  
Subbasin Sub-2  
-----

-----  
Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00

## Fabian Pre-developed Runoff

```

Flow Length (ft):           250.00      0.00      0.00
Slope (%):                  10.00      0.00      0.00
2 yr, 24 hr Rainfall (in):  2.52      0.00      0.00
Velocity (ft/sec):          0.16      0.00      0.00
Computed Flow Time (minutes): 26.46      0.00      0.00
    
```

```

Total TOC (minutes):       26.46
    
```

\*\*\*\*\*  
Subbasin Runoff Summary  
\*\*\*\*\*

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days hh:mm:ss
Sub-14	2.860	0.638	0.040	70.000	0 00:08:26
Sub-15	2.860	2.628	0.130	98.000	0 00:05:00
Sub-16	2.860	0.638	0.020	70.000	0 00:06:29
Sub-17	2.860	0.638	0.060	70.000	0 00:10:05
Sub-2	2.860	0.638	0.170	70.000	0 00:26:27
Averages / Totals	2.860	0.726	0.37		

\*\*\*\*\*  
Node Depth Summary  
\*\*\*\*\*

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days hh:mm	Maximum Poned Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-34	0.07	0.12	9.85	0 08:21	0	0	0:00:00
Jun-35	0.07	0.12	6.42	0 08:22	0	0	0:00:00
Jun-36	0.07	0.13	4.00	0 08:08	0	0	0:00:00
Jun-37	0.03	0.06	1.63	0 08:08	0	0	0:00:00
Out-6	0.07	0.12	0.12	0 08:21	0	0	0:00:00
Out-7	0.03	0.06	0.06	0 08:08	0	0	0:00:00

\*\*\*\*\*  
Node Flow Summary  
\*\*\*\*\*

## Fabian Pre-developed Runoff

Node ID	Element Type	Maximum Lateral Inflow cfs	Maximum Total Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
Jun-34	JUNCTION	0.25	0.24	0 08:08	0.00	
Jun-35	JUNCTION	0.02	0.26	0 08:08	0.00	
Jun-36	JUNCTION	0.04	0.29	0 08:08	0.00	
Jun-37	JUNCTION	0.06	0.06	0 08:08	0.00	
Out-6	OUTFALL	0.00	0.29	0 08:21	0.00	
Out-7	OUTFALL	0.00	0.06	0 08:08	0.00	

\*\*\*\*\*  
 Outfall Loading Summary  
 \*\*\*\*\*

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Maximum Flow cfs
Out-6	94.71	0.12	0.29
Out-7	68.20	0.03	0.06
System	81.45	0.15	0.35

\*\*\*\*\*  
 Link Flow Summary  
 \*\*\*\*\*

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged Minutes
Con-36	CONDUIT	0 08:22	3.70	1.00	0.25	20.36	0.01	0.08	0
Con-37	CONDUIT	0 08:21	4.06	1.00	0.29	20.43	0.01	0.08	0
Con-38	CONDUIT	0 08:21	3.73	1.00	0.24	20.37	0.01	0.08	0
Con-39	CONDUIT	0 08:08	2.51	1.00	0.06	20.33	0.00	0.04	0

\*\*\*\*\*  
 Highest Flow Instability Indexes  
 \*\*\*\*\*  
 All links are stable.

Analysis begun on: Fri Oct 31 08:19:35 2008

# Fabian Pre-developed Runoff

Analysis ended on: Fri Oct 31 08:19:37 2008  
Total elapsed time: 00:00:02

# Fabian Pre-developed Runoff

BOSS International StormNET® - Version 4.11.0 (Build 13753)

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\*\*\*\*\*

## Analysis Options

\*\*\*\*\*

Flow Units ..... cfs  
Subbasin Hydrograph Method. SCS TR-55  
Time of Concentration..... SCS TR-55  
Link Routing Method ..... Hydrodynamic  
Pond Exfiltration..... None  
Starting Date ..... MAR-21-2008 00:00:00  
Ending Date ..... MAR-22-2008 00:00:00  
Report Time Step ..... 00:05:00

\*\*\*\*\*

## Element Count

\*\*\*\*\*

Number of rain gages ..... 1  
Number of subbasins ..... 5  
Number of nodes ..... 6  
Number of links ..... 4

\*\*\*\*\*

## Raingage Summary

\*\*\*\*\*

Gage ID	Data Source	Data Type	Interval hours
Gage-1	10 year	CUMULATIVE	0.10

\*\*\*\*\*

## Subbasin Summary

\*\*\*\*\*

Subbasin ID	Total Area acres
Sub-14	0.53
Sub-15	0.19
Sub-16	0.25
Sub-17	0.76
Sub-2	2.58

\*\*\*\*\*

## Fabian Pre-developed Runoff

Node Summary  
\*\*\*\*\*

Node ID	Element Type	Invert Elevation ft	Maximum Depth ft	Ponded Area ft <sup>2</sup>	External Inflow
Jun-34	JUNCTION	9.73	1.50	0.00	
Jun-35	JUNCTION	6.30	1.50	0.00	
Jun-36	JUNCTION	3.87	1.50	0.00	
Jun-37	JUNCTION	1.57	1.50	0.00	
Out-6	OUTFALL	0.00	1.50	0.00	
Out-7	OUTFALL	0.00	1.50	0.00	

\*\*\*\*\*  
Link Summary  
\*\*\*\*\*

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Con-36	Jun-35	Jun-36	CONDUIT	48.6	5.0000	0.0150
Con-37	Jun-36	Out-6	CONDUIT	76.8	5.0358	0.0150
Con-38	Jun-34	Jun-35	CONDUIT	68.5	5.0044	0.0150
Con-39	Jun-37	Out-7	CONDUIT	31.5	4.9889	0.0150

\*\*\*\*\*  
Cross Section Summary  
\*\*\*\*\*

Link ID	Shape	Depth/Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft <sup>2</sup>	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Con-36	CIRCULAR	1.50	1.50	1	1.77	0.38	20.36
Con-37	CIRCULAR	1.50	1.50	1	1.77	0.38	20.43
Con-38	CIRCULAR	1.50	1.50	1	1.77	0.38	20.37
Con-39	CIRCULAR	1.50	1.50	1	1.77	0.38	20.33

Runoff Quantity	Volume acre-ft	Depth inches
Total Precipitation .....	1.188	3.307
Surface Runoff .....	0.012	0.003
Continuity Error (%) .....	-0.000	

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
.....		



## Fabian Pre-developed Runoff

External Inflow .....	0.000	0.000
External Outflow .....	0.365	0.119
Initial Stored Volume ....	0.000	0.000
Final Stored Volume .....	0.000	0.000
Continuity Error (%) .....	-0.031	

\*\*\*\*\*  
 Composite Curve Number Computations Report  
 \*\*\*\*\*

-----  
 Subbasin Sub-14  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.53	-	70.00
Composite Area & Weighted CN	0.53		70.00

-----  
 Subbasin Sub-15  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
Paved roads with curbs & sewers	0.19	A	98.00
Composite Area & Weighted CN	0.19		98.00

-----  
 Subbasin Sub-16  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.25	-	70.00
Composite Area & Weighted CN	0.25		70.00

-----  
 Subbasin Sub-17  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.76	-	70.00
Composite Area & Weighted CN	0.76		70.00

-----  
 Subbasin Sub-2  
 -----

Area	Soil
------	------

## Fabian Pre-developed Runoff

Soil/Surface Description	(acres)	Group	CN
-	2.58	B	70.00
Composite Area & Weighted CN	2.58		70.00

\*\*\*\*\*  
 SCS TR-55 Time of Concentration Computations Report  
 \*\*\*\*\*

### Sheet Flow Equation

$$T_c = (0.007 * ((n * L_f)^{0.8}) / ((P^{0.5}) * (S_f^{0.4}))$$

Where:

Tc = Time of Concentration (hrs)  
 n = Manning's Roughness  
 Lf = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 Sf = Slope (ft/ft)

### Shallow Concentrated Flow Equation

$$V = 16.1345 * (S_f^{0.5}) \text{ (unpaved surface)}$$

$$V = 20.3282 * (S_f^{0.5}) \text{ (paved surface)}$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)

### Channel Flow Equation

$$V = (1.49 * (R^{2/3}) * (S_f^{0.5})) / n$$

$$R = A_q / W_p$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 Aq = Flow Area (ft<sup>2</sup>)  
 Wp = Wetted Perimeter (ft)

## Fabian Pre-developed Runoff

V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)  
 n = Manning's Roughness

-----  
 Subbasin Sub-14  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (minutes):	8.45	0.00	0.00
=====			
Total TOC (minutes):	8.45		
=====			

-----  
 Subbasin Sub-15  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.13	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.25	0.00	0.00
Computed Flow Time (minutes):	1.97	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	6.43	0.00	0.00
Computed Flow Time (minutes):	1.30	0.00	0.00
=====			
Total TOC (minutes):	5.00		
=====			

-----  
 Subbasin Sub-16  
 -----

## Fabian Pre-developed Runoff

-----

### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.10	0.00	0.00
Computed Flow Time (minutes):	4.85	0.00	0.00

### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	5.10	0.00	0.00
Computed Flow Time (minutes):	1.63	0.00	0.00

=====  
 Total TOC (minutes): 6.48  
 =====

### Subbasin Sub-17

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	75.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (minutes):	10.10	0.00	0.00

=====  
 Total TOC (minutes): 10.10  
 =====

### Subbasin Sub-2

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00

## Fabian Pre-developed Runoff

```

Flow Length (ft):           250.00      0.00      0.00
Slope (%):                  10.00      0.00      0.00
2 yr, 24 hr Rainfall (in):  2.52      0.00      0.00
Velocity (ft/sec):          0.16      0.00      0.00
Computed Flow Time (minutes): 26.46      0.00      0.00
    
```

```

=====
Total TOC (minutes):       26.46
=====
    
```

\*\*\*\*\*  
Subbasin Runoff Summary  
\*\*\*\*\*

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	Time of Concentration hh:mm:ss
Sub-14	3.320	0.899	0.080	70.000	0	00:08:26
Sub-15	3.320	3.087	0.150	98.000	0	00:05:00
Sub-16	3.320	0.898	0.040	70.000	0	00:06:29
Sub-17	3.320	0.899	0.110	70.000	0	00:10:05
Sub-2	3.320	0.899	0.310	70.000	0	00:26:27
Averages / Totals	3.320	0.995	0.62			

\*\*\*\*\*  
Node Depth Summary  
\*\*\*\*\*

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Maximum Poned Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-34	0.08	0.15	9.88	0	08:17	0	0	0:00:00
Jun-35	0.08	0.15	6.45	0	08:18	0	0	0:00:00
Jun-36	0.08	0.16	4.03	0	08:08	0	0	0:00:00
Jun-37	0.04	0.08	1.65	0	08:08	0	0	0:00:00
Out-6	0.08	0.17	0.17	0	08:08	0	0	0:00:00
Out-7	0.03	0.08	0.08	0	08:08	0	0	0:00:00

\*\*\*\*\*  
Node Flow Summary  
\*\*\*\*\*

## Fabian Pre-developed Runoff

Node ID	Element Type	Maximum Lateral Inflow cfs	Maximum Total Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
Jun-34	JUNCTION	0.41	0.40	0 08:08	0.00	
Jun-35	JUNCTION	0.04	0.43	0 08:08	0.00	
Jun-36	JUNCTION	0.08	0.49	0 08:08	0.00	
Jun-37	JUNCTION	0.11	0.11	0 08:08	0.00	
Out-6	OUTFALL	0.00	0.49	0 08:08	0.00	
Out-7	OUTFALL	0.00	0.11	0 08:08	0.00	

\*\*\*\*\*

### Outfall Loading Summary

\*\*\*\*\*

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Maximum Flow cfs
Out-6	95.24	0.16	0.49
Out-7	70.11	0.04	0.11
System	82.68	0.20	0.59

\*\*\*\*\*

### Link Flow Summary

\*\*\*\*\*

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged Minutes
Con-36	CONDUIT	0 08:18	4.29	1.00	0.42	20.36	0.02	0.10	0
Con-37	CONDUIT	0 08:08	4.60	1.00	0.49	20.43	0.02	0.11	0
Con-38	CONDUIT	0 08:17	4.32	1.00	0.40	20.37	0.02	0.10	0
Con-39	CONDUIT	0 08:08	2.97	1.00	0.11	20.33	0.01	0.05	0

\*\*\*\*\*

### Highest Flow Instability Indexes

\*\*\*\*\*

All links are stable.

Analysis begun on: Fri Oct 31 08:21:07 2008



## Fabian Pre-developed Runoff

Analysis ended on: Fri Oct 31 08:21:09 2008  
Total elapsed time: 00:00:02

# Fabian Pre-developed Runoff

BOSS International StormNET® - Version 4.11.0 (Build 13753)

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\*\*\*\*\*  
Analysis Options  
\*\*\*\*\*

Flow Units ..... cfs  
Subbasin Hydrograph Method. SCS TR-55  
Time of Concentration..... SCS TR-55  
Link Routing Method ..... Hydrodynamic  
Pond Exfiltration..... None  
Starting Date ..... MAR-21-2008 00:00:00  
Ending Date ..... MAR-22-2008 00:00:00  
Report Time Step ..... 00:05:00

\*\*\*\*\*  
Element Count  
\*\*\*\*\*

Number of rain gages ..... 1  
Number of subbasins ..... 5  
Number of nodes ..... 6  
Number of links ..... 4

\*\*\*\*\*  
Raingage Summary  
\*\*\*\*\*

Gage ID	Data Source	Data Type	Interval hours
Gage-1	25 year	CUMULATIVE	0.10

\*\*\*\*\*  
Subbasin Summary  
\*\*\*\*\*

Subbasin ID	Total Area acres
Sub-14	0.53
Sub-15	0.19
Sub-16	0.25
Sub-17	0.76
Sub-2	2.58

\*\*\*\*\*

## Fabian Pre-developed Runoff

Node Summary

\*\*\*\*\*

Node ID	Element Type	Invert Elevation ft	Maximum Depth ft	Ponded Area ft <sup>2</sup>	External Inflow
Jun-34	JUNCTION	9.73	1.50	0.00	
Jun-35	JUNCTION	6.30	1.50	0.00	
Jun-36	JUNCTION	3.87	1.50	0.00	
Jun-37	JUNCTION	1.57	1.50	0.00	
Out-6	OUTFALL	0.00	1.50	0.00	
Out-7	OUTFALL	0.00	1.50	0.00	

\*\*\*\*\*

Link Summary

\*\*\*\*\*

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Con-36	Jun-35	Jun-36	CONDUIT	48.6	5.0000	0.0150
Con-37	Jun-36	Out-6	CONDUIT	76.8	5.0358	0.0150
Con-38	Jun-34	Jun-35	CONDUIT	68.5	5.0044	0.0150
Con-39	Jun-37	Out-7	CONDUIT	31.5	4.9889	0.0150

\*\*\*\*\*

Cross Section Summary

\*\*\*\*\*

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft <sup>2</sup>	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Con-36	CIRCULAR	1.50	1.50	1	1.77	0.38	20.36
Con-37	CIRCULAR	1.50	1.50	1	1.77	0.38	20.43
Con-38	CIRCULAR	1.50	1.50	1	1.77	0.38	20.37
Con-39	CIRCULAR	1.50	1.50	1	1.77	0.38	20.33

\*\*\*\*\*

Runoff Quantity Continuity

\*\*\*\*\*

	Volume acre-ft	Depth inches
Total Precipitation .....	1.406	3.915
Surface Runoff .....	0.016	0.005
Continuity Error (%) .....	-0.000	

\*\*\*\*\*

Flow Routing Continuity

\*\*\*\*\*

	Volume acre-ft	Volume Mgallons

## Fabian Pre-developed Runoff

External Inflow .....	0.000	0.000
External Outflow .....	0.508	0.166
Initial Stored Volume .....	0.000	0.000
Final Stored Volume .....	0.000	0.000
Continuity Error (%) .....	-0.029	

\*\*\*\*\*  
 Composite Curve Number Computations Report  
 \*\*\*\*\*

-----  
 Subbasin Sub-14  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-----			
-	0.53	-	70.00
Composite Area & Weighted CN	0.53		70.00

-----  
 Subbasin Sub-15  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-----			
Paved roads with curbs & sewers	0.19	A	98.00
Composite Area & Weighted CN	0.19		98.00

-----  
 Subbasin Sub-16  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-----			
-	0.25	-	70.00
Composite Area & Weighted CN	0.25		70.00

-----  
 Subbasin Sub-17  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-----			
-	0.76	-	70.00
Composite Area & Weighted CN	0.76		70.00

-----  
 Subbasin Sub-2  
 -----

Area                  Soil

## Fabian Pre-developed Runoff

Soil/Surface Description	(acres)	Group	CN
-	2.58	B	70.00
Composite Area & Weighted CN	2.58		70.00

\*\*\*\*\*  
 SCS TR-55 Time of Concentration Computations Report  
 \*\*\*\*\*

### Sheet Flow Equation

-----

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where:

T<sub>c</sub> = Time of Concentration (hrs)  
 n = Manning's Roughness  
 L<sub>f</sub> = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 S<sub>f</sub> = Slope (ft/ft)

### Shallow Concentrated Flow Equation

-----

$$V = 16.1345 * (S_f^{0.5}) \text{ (unpaved surface)}$$

$$V = 20.3282 * (S_f^{0.5}) \text{ (paved surface)}$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

T<sub>c</sub> = Time of Concentration (hrs)  
 L<sub>f</sub> = Flow Length (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)

### Channel Flow Equation

-----

$$V = (1.49 * (R^{2/3}) * (S_f^{0.5})) / n$$

$$R = A_q / W_p$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

T<sub>c</sub> = Time of Concentration (hrs)  
 L<sub>f</sub> = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 A<sub>q</sub> = Flow Area (ft<sup>2</sup>)  
 W<sub>p</sub> = Wetted Perimeter (ft)

## Fabian Pre-developed Runoff

V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)  
 n = Manning's Roughness

-----  
 Subbasin Sub-14  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (minutes):	8.45	0.00	0.00
=====			
Total TOC (minutes):	8.45		
=====			

-----  
 Subbasin Sub-15  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.13	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.25	0.00	0.00
Computed Flow Time (minutes):	1.97	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	6.43	0.00	0.00
Computed Flow Time (minutes):	1.30	0.00	0.00
=====			
Total TOC (minutes):	5.00		
=====			

-----  
 Subbasin Sub-16  
 -----

## Fabian Pre-developed Runoff

-----

### Sheet Flow Computations

-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.10	0.00	0.00
Computed Flow Time (minutes):	4.85	0.00	0.00

### Shallow Concentrated Flow Computations

-----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	5.10	0.00	0.00
Computed Flow Time (minutes):	1.63	0.00	0.00

---

Total TOC (minutes):	6.48		
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---

### Subbasin Sub-17

#### Sheet Flow Computations

-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	75.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (minutes):	10.10	0.00	0.00

---

Total TOC (minutes):	10.10		
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---

### Subbasin Sub-2

#### Sheet Flow Computations

-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00



## Fabian Pre-developed Runoff

```

Flow Length (ft):           250.00      0.00      0.00
Slope (%):                  10.00      0.00      0.00
2 yr, 24 hr Rainfall (in):  2.52      0.00      0.00
Velocity (ft/sec):          0.16      0.00      0.00
Computed Flow Time (minutes): 26.46      0.00      0.00
    
```

```

Total TOC (minutes):       26.46
    
```

\*\*\*\*\*  
Subbasin Runoff Summary  
\*\*\*\*\*

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days hh:mm:ss
Sub-14	3.930	1.283	0.130	70.000	0 00:08:26
Sub-15	3.930	3.695	0.180	98.000	0 00:05:00
Sub-16	3.930	1.283	0.060	70.000	0 00:06:29
Sub-17	3.930	1.283	0.180	70.000	0 00:10:05
Sub-2	3.930	1.283	0.530	70.000	0 00:26:27
Averages / Totals	3.930	1.389	0.93		

\*\*\*\*\*  
Node Depth Summary  
\*\*\*\*\*

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days hh:mm	Maximum Pondered Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-34	0.09	0.18	9.91	0 08:19	0	0	0:00:00
Jun-35	0.09	0.19	6.49	0 08:21	0	0	0:00:00
Jun-36	0.10	0.20	4.07	0 08:08	0	0	0:00:00
Jun-37	0.04	0.10	1.67	0 08:08	0	0	0:00:00
Out-6	0.10	0.19	0.19	0 08:08	0	0	0:00:00
Out-7	0.04	0.10	0.10	0 08:08	0	0	0:00:00

\*\*\*\*\*  
Node Flow Summary  
\*\*\*\*\*

## Fabian Pre-developed Runoff

Node ID	Element Type	Maximum Lateral Inflow cfs	Maximum Total Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
Jun-34	JUNCTION	0.61	0.59	0 08:19	0.00	
Jun-35	JUNCTION	0.06	0.62	0 08:21	0.00	
Jun-36	JUNCTION	0.13	0.72	0 08:04	0.00	
Jun-37	JUNCTION	0.18	0.18	0 08:04	0.00	
Out-6	OUTFALL	0.00	0.71	0 08:08	0.00	
Out-7	OUTFALL	0.00	0.18	0 08:08	0.00	

\*\*\*\*\*  
 Outfall Loading Summary  
 \*\*\*\*\*

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Maximum Flow cfs
Out-6	95.89	0.22	0.71
Out-7	72.94	0.06	0.18
System	84.42	0.28	0.89

\*\*\*\*\*  
 Link Flow Summary  
 \*\*\*\*\*

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged Minutes
Con-36	CONDUIT	0 08:24	4.75	1.00	0.62	20.36	0.03	0.13	0
Con-37	CONDUIT	0 08:08	5.29	1.00	0.71	20.43	0.03	0.13	0
Con-38	CONDUIT	0 08:21	4.83	1.00	0.59	20.37	0.03	0.12	0
Con-39	CONDUIT	0 08:08	3.46	1.00	0.18	20.33	0.01	0.07	0

\*\*\*\*\*  
 Highest Flow Instability Indexes  
 \*\*\*\*\*  
 All links are stable.

Analysis begun on: Fri Oct 31 08:21:44 2008

# Fabian Pre-developed Runoff

Analysis ended on: Fri Oct 31 08:21:46 2008  
Total elapsed time: 00:00:02

# Fabian Pre-developed Runoff

BOSS International StormNET® - Version 4.11.0 (Build 13753)

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\*\*\*\*\*

## Analysis Options

\*\*\*\*\*

Flow Units ..... cfs  
Subbasin Hydrograph Method. SCS TR-55  
Time of Concentration..... SCS TR-55  
Link Routing Method ..... Hydrodynamic  
Pond Exfiltration..... None  
Starting Date ..... MAR-21-2008 00:00:00  
Ending Date ..... MAR-22-2008 00:00:00  
Report Time Step ..... 00:05:00

\*\*\*\*\*

## Element Count

\*\*\*\*\*

Number of rain gages ..... 1  
Number of subbasins ..... 5  
Number of nodes ..... 6  
Number of links ..... 4

\*\*\*\*\*

## Raingage Summary

\*\*\*\*\*

Gage ID	Data Source	Data Type	Interval hours
Gage-1	50 year	CUMULATIVE	0.10

\*\*\*\*\*

## Subbasin Summary

\*\*\*\*\*

Subbasin ID	Total Area acres
Sub-14	0.53
Sub-15	0.19
Sub-16	0.25
Sub-17	0.76
Sub-2	2.58

\*\*\*\*\*

## Fabian Pre-developed Runoff

Node Summary

\*\*\*\*\*

Node ID	Element Type	Invert Elevation ft	Maximum Depth ft	Ponded Area ft <sup>2</sup>	External Inflow
Jun-34	JUNCTION	9.73	1.50	0.00	
Jun-35	JUNCTION	6.30	1.50	0.00	
Jun-36	JUNCTION	3.87	1.50	0.00	
Jun-37	JUNCTION	1.57	1.50	0.00	
Out-6	OUTFALL	0.00	1.50	0.00	
Out-7	OUTFALL	0.00	1.50	0.00	

\*\*\*\*\*

Link Summary

\*\*\*\*\*

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Con-36	Jun-35	Jun-36	CONDUIT	48.6	5.0000	0.0150
Con-37	Jun-36	Out-6	CONDUIT	76.8	5.0358	0.0150
Con-38	Jun-34	Jun-35	CONDUIT	68.5	5.0044	0.0150
Con-39	Jun-37	Out-7	CONDUIT	31.5	4.9889	0.0150

\*\*\*\*\*

Cross Section Summary

\*\*\*\*\*

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft <sup>2</sup>	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Con-36	CIRCULAR	1.50	1.50	1	1.77	0.38	20.36
Con-37	CIRCULAR	1.50	1.50	1	1.77	0.38	20.43
Con-38	CIRCULAR	1.50	1.50	1	1.77	0.38	20.37
Con-39	CIRCULAR	1.50	1.50	1	1.77	0.38	20.33

\*\*\*\*\*

Runoff Quantity Continuity

\*\*\*\*\*

	Volume acre-ft	Depth inches
Total Precipitation .....	1.574	4.383
Surface Runoff .....	0.020	0.006
Continuity Error (%) .....	-0.000	

\*\*\*\*\*

Flow Routing Continuity

\*\*\*\*\*

	Volume acre-ft	Volume Mgallons

## Fabian Pre-developed Runoff

External Inflow .....	0.000	0.000
External Outflow .....	0.629	0.205
Initial Stored Volume ....	0.000	0.000
Final Stored Volume .....	0.000	0.000
Continuity Error (%) .....	-0.028	

\*\*\*\*\*  
 Composite Curve Number Computations Report  
 \*\*\*\*\*

-----  
 Subbasin Sub-14  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-----			
-	0.53	-	70.00
Composite Area & Weighted CN	0.53		70.00

-----  
 Subbasin Sub-15  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-----			
Paved roads with curbs & sewers	0.19	A	98.00
Composite Area & Weighted CN	0.19		98.00

-----  
 Subbasin Sub-16  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-----			
-	0.25	-	70.00
Composite Area & Weighted CN	0.25		70.00

-----  
 Subbasin Sub-17  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-----			
-	0.76	-	70.00
Composite Area & Weighted CN	0.76		70.00

-----  
 Subbasin Sub-2  
 -----

Area                  Soil

## Fabian Pre-developed Runoff

Soil/Surface Description	(acres)	Group	CN
-	2.58	B	70.00
Composite Area & Weighted CN	2.58		70.00

\*\*\*\*\*  
 SCS TR-55 Time of Concentration Computations Report  
 \*\*\*\*\*

### Sheet Flow Equation

$$T_c = (0.007 * ((n * L_f)^{0.8}) / ((P^{0.5}) * (S_f^{0.4}))$$

Where:

Tc = Time of Concentration (hrs)  
 n = Manning's Roughness  
 Lf = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 Sf = Slope (ft/ft)

### Shallow Concentrated Flow Equation

$$V = 16.1345 * (S_f^{0.5}) \text{ (unpaved surface)}$$

$$V = 20.3282 * (S_f^{0.5}) \text{ (paved surface)}$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)

### Channel Flow Equation

$$V = (1.49 * (R^{2/3}) * (S_f^{0.5})) / n$$

$$R = A_q / W_p$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 Aq = Flow Area (ft<sup>2</sup>)  
 Wp = Wetted Perimeter (ft)



## Fabian Pre-developed Runoff

V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)  
 n = Manning's Roughness

-----  
 Subbasin Sub-14  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (minutes):	8.45	0.00	0.00
=====			
Total TOC (minutes):	8.45		
=====			

-----  
 Subbasin Sub-15  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.13	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.25	0.00	0.00
Computed Flow Time (minutes):	1.97	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	6.43	0.00	0.00
Computed Flow Time (minutes):	1.30	0.00	0.00
=====			
Total TOC (minutes):	5.00		
=====			

-----  
 Subbasin Sub-16  
 -----

## Fabian Pre-developed Runoff

-----  
Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.10	0.00	0.00
Computed Flow Time (minutes):	4.85	0.00	0.00

-----  
Shallow Concentrated Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	5.10	0.00	0.00
Computed Flow Time (minutes):	1.63	0.00	0.00

=====  
Total TOC (minutes):                    6.48  
=====

-----  
Subbasin Sub-17  
-----

-----  
Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	75.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (minutes):	10.10	0.00	0.00

=====  
Total TOC (minutes):                    10.10  
=====

-----  
Subbasin Sub-2  
-----

-----  
Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00

## Fabian Pre-developed Runoff

```

Flow Length (ft):          250.00      0.00      0.00
Slope (%):                 10.00      0.00      0.00
2 yr, 24 hr Rainfall (in):  2.52      0.00      0.00
Velocity (ft/sec):         0.16      0.00      0.00
Computed Flow Time (minutes): 26.46      0.00      0.00
    
```

---

```

Total TOC (minutes):      26.46
    
```

---

```

*****
Subbasin Runoff Summary
*****
    
```

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	hh:mm:ss
Sub-14	4.400	1.603	0.170	70.000	0	00:08:26
Sub-15	4.400	4.164	0.200	98.000	0	00:05:00
Sub-16	4.400	1.603	0.080	70.000	0	00:06:29
Sub-17	4.400	1.603	0.250	70.000	0	00:10:05
Sub-2	4.400	1.603	0.720	70.000	0	00:26:27
<hr/>						
Averages / Totals	4.400	1.716	1.32			

```

*****
Node Depth Summary
*****
    
```

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	hh:mm	Maximum Ponded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-34	0.10	0.21	9.94	0	08:16	0	0	0:00:00
Jun-35	0.10	0.22	6.52	0	08:18	0	0	0:00:00
Jun-36	0.11	0.24	4.11	0	08:04	0	0	0:00:00
Jun-37	0.05	0.12	1.69	0	08:04	0	0	0:00:00
Out-6	0.11	0.23	0.23	0	08:15	0	0	0:00:00
Out-7	0.05	0.12	0.12	0	08:04	0	0	0:00:00

```

*****
Node Flow Summary
*****
    
```

---

## Fabian Pre-developed Runoff

Node ID	Element Type	Maximum Lateral Inflow cfs	Maximum Total Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
Jun-34	JUNCTION	0.86	0.84	0 08:15	0.00	
Jun-35	JUNCTION	0.08	0.89	0 08:04	0.00	
Jun-36	JUNCTION	0.17	1.04	0 08:04	0.00	
Jun-37	JUNCTION	0.25	0.25	0 08:04	0.00	
Out-6	OUTFALL	0.00	1.03	0 08:15	0.00	
Out-7	OUTFALL	0.00	0.24	0 08:04	0.00	

\*\*\*\*\*  
 Outfall Loading Summary  
 \*\*\*\*\*

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Maximum Flow cfs
Out-6	96.35	0.28	1.03
Out-7	74.79	0.07	0.24
System	85.57	0.35	1.27

\*\*\*\*\*  
 Link Flow Summary  
 \*\*\*\*\*

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged Minutes
Con-36	CONDUIT	0 08:18	5.21	1.00	0.89	20.36	0.04	0.15	0
Con-37	CONDUIT	0 08:15	5.85	1.00	1.03	20.43	0.05	0.16	0
Con-38	CONDUIT	0 08:16	5.28	1.00	0.83	20.37	0.04	0.14	0
Con-39	CONDUIT	0 08:04	3.79	1.00	0.24	20.33	0.01	0.08	0

\*\*\*\*\*  
 Highest Flow Instability Indexes  
 \*\*\*\*\*  
 All links are stable.

Analysis begun on: Fri Oct 31 08:22:10 2008

## Fabian Pre-developed Runoff

Analysis ended on: Fri Oct 31 08:22:12 2008  
Total elapsed time: 00:00:02

# Fabian Pre-developed Runoff

BOSS International StormNET® - Version 4.11.0 (Build 13753)

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\*\*\*\*\*  
Analysis Options  
\*\*\*\*\*

Flow Units ..... cfs  
Subbasin Hydrograph Method. SCS TR-55  
Time of Concentration..... SCS TR-55  
Link Routing Method ..... Hydrodynamic  
Pond Exfiltration..... None  
Starting Date ..... MAR-21-2008 00:00:00  
Ending Date ..... MAR-22-2008 00:00:00  
Report Time Step ..... 00:05:00

\*\*\*\*\*  
Element Count  
\*\*\*\*\*

Number of rain gages ..... 1  
Number of subbasins ..... 5  
Number of nodes ..... 6  
Number of links ..... 4

\*\*\*\*\*  
Raingage Summary  
\*\*\*\*\*

Gage ID	Data Source	Data Type	Interval hours
Gage-1	100 year	CUMULATIVE	0.10

\*\*\*\*\*  
Subbasin Summary  
\*\*\*\*\*

Subbasin ID	Total Area acres
Sub-14	0.53
Sub-15	0.19
Sub-16	0.25
Sub-17	0.76
Sub-2	2.58

\*\*\*\*\*

## Fabian Pre-developed Runoff

Node Summary

\*\*\*\*\*

Node ID	Element Type	Invert Elevation ft	Maximum Depth ft	Ponded Area ft <sup>2</sup>	External Inflow
Jun-34	JUNCTION	9.73	1.50	0.00	
Jun-35	JUNCTION	6.30	1.50	0.00	
Jun-36	JUNCTION	3.87	1.50	0.00	
Jun-37	JUNCTION	1.57	1.50	0.00	
Out-6	OUTFALL	0.00	1.50	0.00	
Out-7	OUTFALL	0.00	1.50	0.00	

\*\*\*\*\*

Link Summary

\*\*\*\*\*

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Con-36	Jun-35	Jun-36	CONDUIT	48.6	5.0000	0.0150
Con-37	Jun-36	Out-6	CONDUIT	76.8	5.0358	0.0150
Con-38	Jun-34	Jun-35	CONDUIT	68.5	5.0044	0.0150
Con-39	Jun-37	Out-7	CONDUIT	31.5	4.9889	0.0150

\*\*\*\*\*

Cross Section Summary

\*\*\*\*\*

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft <sup>2</sup>	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Con-36	CIRCULAR	1.50	1.50	1	1.77	0.38	20.36
Con-37	CIRCULAR	1.50	1.50	1	1.77	0.38	20.43
Con-38	CIRCULAR	1.50	1.50	1	1.77	0.38	20.37
Con-39	CIRCULAR	1.50	1.50	1	1.77	0.38	20.33

\*\*\*\*\*

Runoff Quantity Continuity

\*\*\*\*\*

	Volume acre-ft	Depth inches
Total Precipitation .....	1.739	4.841
Surface Runoff .....	0.024	0.007
Continuity Error (%) .....	-0.000	

\*\*\*\*\*

Flow Routing Continuity

\*\*\*\*\*

	Volume acre-ft	Volume Mgallons



## Fabian Pre-developed Runoff

External Inflow .....	0.000	0.000
External Outflow .....	0.752	0.245
Initial Stored Volume ....	0.000	0.000
Final Stored Volume .....	0.000	0.000
Continuity Error (%) .....	-0.028	

\*\*\*\*\*  
 Composite Curve Number Computations Report  
 \*\*\*\*\*

-----  
 Subbasin Sub-14  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.53	-	70.00
Composite Area & Weighted CN	0.53		70.00

-----  
 Subbasin Sub-15  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
Paved roads with curbs & sewers	0.19	A	98.00
Composite Area & Weighted CN	0.19		98.00

-----  
 Subbasin Sub-16  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.25	-	70.00
Composite Area & Weighted CN	0.25		70.00

-----  
 Subbasin Sub-17  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.76	-	70.00
Composite Area & Weighted CN	0.76		70.00

-----  
 Subbasin Sub-2  
 -----

Area	Soil
------	------

## Fabian Pre-developed Runoff

Soil/Surface Description	(acres)	Group	CN
-	2.58	B	70.00
Composite Area & Weighted CN	2.58		70.00

\*\*\*\*\*  
 SCS TR-55 Time of Concentration Computations Report  
 \*\*\*\*\*

### Sheet Flow Equation

-----

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where:

Tc = Time of Concentration (hrs)  
 n = Manning's Roughness  
 Lf = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 Sf = Slope (ft/ft)

### Shallow Concentrated Flow Equation

-----

$$V = 16.1345 * (S_f^{0.5}) \text{ (unpaved surface)}$$

$$V = 20.3282 * (S_f^{0.5}) \text{ (paved surface)}$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)

### Channel Flow Equation

-----

$$V = (1.49 * (R^{2/3}) * (S_f^{0.5})) / n$$

$$R = A_q / W_p$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 Aq = Flow Area (ft<sup>2</sup>)  
 Wp = Wetted Perimeter (ft)

## Fabian Pre-developed Runoff

V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)  
 n = Manning's Roughness

-----  
 Subbasin Sub-14  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (minutes):	8.45	0.00	0.00
=====			
Total TOC (minutes):	8.45		
=====			

-----  
 Subbasin Sub-15  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.13	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.25	0.00	0.00
Computed Flow Time (minutes):	1.97	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	6.43	0.00	0.00
Computed Flow Time (minutes):	1.30	0.00	0.00
=====			
Total TOC (minutes):	5.00		
=====			

-----  
 Subbasin Sub-16  
 -----

## Fabian Pre-developed Runoff

-----  
Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.10	0.00	0.00
Computed Flow Time (minutes):	4.85	0.00	0.00

-----  
Shallow Concentrated Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	5.10	0.00	0.00
Computed Flow Time (minutes):	1.63	0.00	0.00

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Total TOC (minutes):	6.48		
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-----  
Subbasin Sub-17  
-----

-----  
Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	75.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (minutes):	10.10	0.00	0.00

---

Total TOC (minutes):	10.10		
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-----  
Subbasin Sub-2  
-----

-----  
Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00

## Fabian Pre-developed Runoff

```

Flow Length (ft):           250.00      0.00      0.00
Slope (%):                  10.00      0.00      0.00
2 yr, 24 hr Rainfall (in):  2.52      0.00      0.00
Velocity (ft/sec):          0.16      0.00      0.00
Computed Flow Time (minutes): 26.46      0.00      0.00
    
```

---

```

Total TOC (minutes):       26.46
    
```

---

\*\*\*\*\*  
Subbasin Runoff Summary  
\*\*\*\*\*

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	Time of Concentration hh:mm:ss
Sub-14	4.860	1.933	0.220	70.000	0	00:08:26
Sub-15	4.860	4.623	0.220	98.000	0	00:05:00
Sub-16	4.860	1.933	0.100	70.000	0	00:06:29
Sub-17	4.860	1.933	0.310	70.000	0	00:10:05
Sub-2	4.860	1.933	0.920	70.000	0	00:26:27
<hr/>						
Averages / Totals	4.860	2.052	1.66			

\*\*\*\*\*  
Node Depth Summary  
\*\*\*\*\*

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Maximum Ponded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-34	0.11	0.24	9.97	0	08:16	0	0	0:00:00
Jun-35	0.11	0.25	6.55	0	08:19	0	0	0:00:00
Jun-36	0.12	0.27	4.14	0	08:04	0	0	0:00:00
Jun-37	0.05	0.13	1.70	0	08:04	0	0	0:00:00
Out-6	0.12	0.26	0.26	0	08:15	0	0	0:00:00
Out-7	0.05	0.13	0.13	0	08:04	0	0	0:00:00

\*\*\*\*\*  
Node Flow Summary  
\*\*\*\*\*

---

## Fabian Pre-developed Runoff

Node ID	Element Type	Maximum Lateral Inflow cfs	Maximum Total Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
Jun-34	JUNCTION	1.08	1.05	0 08:15	0.00	
Jun-35	JUNCTION	0.10	1.11	0 08:04	0.00	
Jun-36	JUNCTION	0.22	1.30	0 08:04	0.00	
Jun-37	JUNCTION	0.31	0.31	0 08:04	0.00	
Out-6	OUTFALL	0.00	1.28	0 08:15	0.00	
Out-7	OUTFALL	0.00	0.31	0 08:04	0.00	

\*\*\*\*\*  
 Outfall Loading Summary  
 \*\*\*\*\*

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Maximum Flow cfs
Out-6	96.68	0.35	1.28
Out-7	76.54	0.09	0.31
System	86.61	0.44	1.58

\*\*\*\*\*  
 Link Flow Summary  
 \*\*\*\*\*

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged Minutes
Con-36	CONDUIT	0 08:19	5.51	1.00	1.10	20.36	0.05	0.17	0
Con-37	CONDUIT	0 08:15	6.20	1.00	1.28	20.43	0.06	0.17	0
Con-38	CONDUIT	0 08:17	5.60	1.00	1.04	20.37	0.05	0.16	0
Con-39	CONDUIT	0 08:04	4.03	1.00	0.31	20.33	0.02	0.09	0

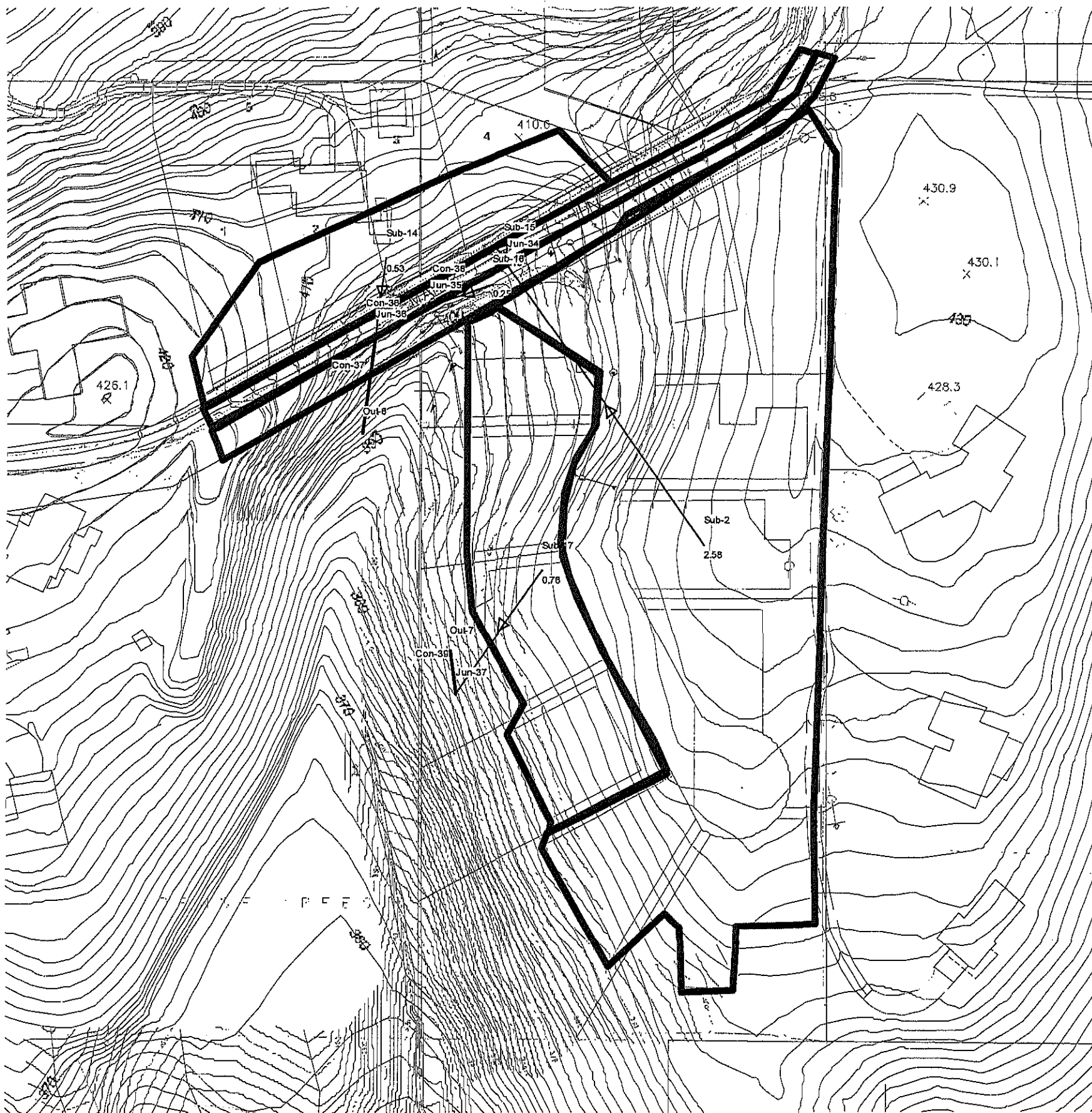
\*\*\*\*\*  
 Highest Flow Instability Indexes  
 \*\*\*\*\*  
 All links are stable.

Analysis begun on: Fri Oct 31 08:22:41 2008

## Fabian Pre-developed Runoff

Analysis ended on: Fri Oct 31 08:22:43 2008  
Total elapsed time: 00:00:02

### Fabian Pre-developed Runoff Areas





# **Developed StormNET Runoff Reports**

# Fabian Developed Model with Detention

BOSS International StormNET® - Version 4.11.0 (Build 13753)

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\*\*\*\*\*  
Analysis Options  
\*\*\*\*\*

Flow Units ..... cfs  
Subbasin Hydrograph Method. SCS TR-55  
Time of Concentration..... SCS TR-55  
Link Routing Method ..... Hydrodynamic  
Pond Exfiltration..... None  
Starting Date ..... MAR-21-2008 00:00:00  
Ending Date ..... MAR-22-2008 00:00:00  
Report Time Step ..... 00:05:00

\*\*\*\*\*  
Element Count  
\*\*\*\*\*

Number of rain gages ..... 1  
Number of subbasins ..... 5  
Number of nodes ..... 12  
Number of links ..... 13

\*\*\*\*\*  
Raingage Summary  
\*\*\*\*\*

Gage ID	Data Source	Data Type	Interval hours
Gage-1	5 year	CUMULATIVE	0.10

\*\*\*\*\*  
Subbasin Summary  
\*\*\*\*\*

Subbasin ID	Total Area acres
Sub-14	0.53
Sub-15	0.19
Sub-16	0.25
Sub-17	0.82
Sub-2	2.54

\*\*\*\*\*

## Fabian Developed Model with Detention

Node Summary

\*\*\*\*\*

Node ID	Element Type	Invert Elevation ft	Maximum Depth ft	Ponded Area ft <sup>2</sup>	External Inflow
Jun-34	JUNCTION	10.86	1.50	0.00	
Jun-35	JUNCTION	7.43	1.50	0.00	
Jun-36	JUNCTION	5.00	1.50	0.00	
Jun-37	JUNCTION	7.17	1.50	0.00	
Jun-38	JUNCTION	0.35	4.17	0.00	
Jun-39	JUNCTION	12.43	1.50	0.00	
Jun-40	JUNCTION	4.86	1.50	0.00	
Out-6	JUNCTION	1.54	2.15	0.00	
Out-7	OUTFALL	0.00	1.50	0.00	
Out-8	OUTFALL	0.00	1.50	0.00	
Back of Lot Detention	STORAGE	2.55	3.20	0.00	
Main Detention	STORAGE	2.04	3.60	0.00	

\*\*\*\*\*

Link Summary

\*\*\*\*\*

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Con-36	Jun-35	Jun-36	CONDUIT	49.0	4.9622	0.0150
Con-38	Jun-34	Jun-35	CONDUIT	68.5	5.0044	0.0150
Con-39	Jun-36	Main Detention	CONDUIT	27.2	10.8864	0.0150
Con-40	Out-6	Out-7	CONDUIT	19.3	8.0000	0.0150
Con-41	Jun-37	Jun-40	CONDUIT	203.0	1.1379	0.0150
Con-42	Jun-38	Out-8	CONDUIT	17.3	2.0185	0.0150
Con-43	Jun-39	Jun-37	CONDUIT	263.0	2.0002	0.0150
Con-44	Jun-40	Back of Lot Detention	CONDUIT	28.3	8.1683	0.0150
Reg-1	Main Detention	Out-6	ORIFICE			
Reg-2	Back of Lot Detention	Jun-38	ORIFICE			
Reg-4	Main Detention	Out-6	ORIFICE			
Reg-5	Main Detention	Out-6	ORIFICE			
Reg-8	Back of Lot Detention	Jun-38	ORIFICE			

\*\*\*\*\*

Cross Section Summary

\*\*\*\*\*

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft <sup>2</sup>	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Con-36	CIRCULAR	1.50	1.50	1	1.77	0.38	20.28
Con-38	CIRCULAR	1.50	1.50	1	1.77	0.38	20.37

## Fabian Developed Model with Detention

Con-	Shape	Length	Width	Depth	Flow	Velocity	Volume
Con-39	CIRCULAR	1.50	1.50	1	1.77	0.38	30.04
Con-40	CIRCULAR	1.50	1.50	1	1.77	0.38	25.75
Con-41	CIRCULAR	1.50	1.50	1	1.77	0.38	9.71
Con-42	CIRCULAR	1.50	1.50	1	1.77	0.38	12.93
Con-43	CIRCULAR	1.50	1.50	1	1.77	0.38	12.88
Con-44	CIRCULAR	1.50	1.50	1	1.77	0.38	26.02

```

*****
Runoff Quantity Continuity
*****
Total Precipitation ..... 1.028 2.849
Surface Runoff ..... 0.001 0.003
Continuity Error (%) ..... -0.000
  
```

```

*****
Flow Routing Continuity
*****
External Inflow ..... 0.000 0.000
External Outflow ..... 0.342 0.112
Initial Stored Volume .... 0.000 0.000
Final Stored Volume ..... 0.005 0.002
Continuity Error (%) ..... -0.002
  
```

\*\*\*\*\*  
 Composite Curve Number Computations Report  
 \*\*\*\*\*

-----  
 Subbasin Sub-14  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.53	-	75.00
Composite Area & Weighted CN	0.53		75.00

-----  
 Subbasin Sub-15  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
Paved roads with curbs & sewers	0.19	A	98.00
Composite Area & Weighted CN	0.19		98.00

-----  
 Subbasin Sub-16  
 -----

## Fabian Developed Model with Detention

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.25	-	98.00
Composite Area & Weighted CN	0.25		98.00

-----  
Subbasin Sub-17  
-----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.82	-	73.00
Composite Area & Weighted CN	0.82		73.00

-----  
Subbasin Sub-2  
-----

Soil/Surface Description	Area (acres)	Soil Group	CN
1/3 acre lots, 30% impervious	2.54	B	73.00
Composite Area & Weighted CN	2.54		73.00

\*\*\*\*\*  
SCS TR-55 Time of Concentration Computations Report  
\*\*\*\*\*

Sheet Flow Equation  
-----

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where:

Tc = Time of Concentration (hrs)  
n = Manning's Roughness  
Lf = Flow Length (ft)  
P = 2 yr, 24 hr Rainfall (inches)  
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation  
-----

$$V = 16.1345 * (S_f^{0.5}) \text{ (unpaved surface)}$$

$$V = 20.3282 * (S_f^{0.5}) \text{ (paved surface)}$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

## Fabian Developed Model with Detention

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)

### Channel Flow Equation

-----  

$$V = (1.49 * (R^{2/3}) * (Sf^{0.5})) / n$$

$$R = Aq / Wp$$

$$Tc = (Lf / V) / (3600 \text{ sec/hr})$$

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 Aq = Flow Area (ft<sup>2</sup>)  
 Wp = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)  
 n = Manning's Roughness

### Subbasin Sub-14

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	5.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.11	0.00	0.00
Computed Flow Time (minutes):	8.85	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	300.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.87	0.00	0.00
Computed Flow Time (minutes):	1.74	0.00	0.00

=====  
 Total TOC (minutes): 10.59  
 =====

## Fabian Developed Model with Detention

### Subbasin Sub-15

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.13	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.13	0.00	0.00
Computed Flow Time (minutes):	3.76	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	6.43	0.00	0.00
Computed Flow Time (minutes):	1.30	0.00	0.00

---

Total TOC (minutes): 5.05

---

### Subbasin Sub-16

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.05	0.00	0.00
Computed Flow Time (minutes):	9.24	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	5.10	0.00	0.00
Computed Flow Time (minutes):	1.63	0.00	0.00

---

Total TOC (minutes): 10.87

---

## Fabian Developed Model with Detention

-----  
 Subbasin Sub-17  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.15	0.00	0.00
Flow Length (ft):	75.00	0.00	0.00
Slope (%):	5.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.21	0.00	0.00
Computed Flow Time (minutes):	6.08	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	400.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.87	0.00	0.00
Computed Flow Time (minutes):	2.32	0.00	0.00

=====  
 Total TOC (minutes):                    8.40  
 =====

-----  
 Subbasin Sub-2  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	153.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.09	0.00	0.00
Computed Flow Time (minutes):	27.01	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	520.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	6.43	0.00	0.00
Computed Flow Time (minutes):	1.35	0.00	0.00



## Fabian Developed Model with Detention

```

=====
Total TOC (minutes):                28.36
=====

```

```

*****
Subbasin Runoff Summary
*****

```

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days hh:mm:ss
Sub-14	2.860	0.870	0.080	75.000	0 00:10:35
Sub-15	2.860	2.628	0.130	98.000	0 00:05:03
Sub-16	2.860	2.628	0.170	98.000	0 00:10:52
Sub-17	2.860	0.772	0.100	73.000	0 00:08:23
Sub-2	2.860	0.773	0.260	73.000	0 00:28:21
-----					
Averages / Totals	2.860	0.973	0.65		

```

*****
Node Depth Summary
*****

```

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days hh:mm	Maximum Ponded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-34	0.07	0.13	10.99	0 08:15	0	0	0:00:00
Jun-35	0.08	0.17	7.60	0 08:05	0	0	0:00:00
Jun-36	0.07	0.14	5.14	0 08:05	0	0	0:00:00
Jun-37	0.05	0.12	7.29	0 08:06	0	0	0:00:00
Jun-38	0.04	0.08	0.43	0 08:25	0	0	0:00:00
Jun-39	0.00	0.00	12.43	0 00:00	0	0	0:00:00
Jun-40	0.03	0.07	4.93	0 08:07	0	0	0:00:00
Out-6	0.08	0.12	1.66	0 09:20	0	0	0:00:00
Out-7	0.08	0.11	0.11	0 09:20	0	0	0:00:00
Out-8	0.04	0.08	0.08	0 08:25	0	0	0:00:00
Back of Lot Detention	0.15	0.47	3.02	0 08:25	0	0	0 0:00:00
Main Detention	0.55	1.27	3.31	0 09:20	0	0	0:00:00

```

*****
Node Flow Summary
*****

```

## Fabian Developed Model with Detention

Node ID	Element Type	Maximum Lateral Inflow cfs	Maximum Total Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
Jun-34	JUNCTION	0.32	0.32	0 08:15	0.00	
Jun-35	JUNCTION	0.17	0.47	0 08:05	0.00	
Jun-36	JUNCTION	0.08	0.55	0 08:05	0.00	
Jun-37	JUNCTION	0.10	0.10	0 08:05	0.00	
Jun-38	JUNCTION	0.00	0.07	0 08:25	0.00	
Jun-39	JUNCTION	0.00	0.00	0 00:00	0.00	
Jun-40	JUNCTION	0.00	0.10	0 08:06	0.00	
Out-6	JUNCTION	0.00	0.28	0 09:20	0.00	
Out-7	OUTFALL	0.00	0.28	0 09:20	0.00	
Out-8	OUTFALL	0.00	0.07	0 08:25	0.00	
Back of Lot Detention	STORAGE	0.00	0.10	0 08:07	0.00	
Main Detention	STORAGE	0.00	0.55	0 08:05	0.00	

\*\*\*\*\*  
 Detention Pond Summary  
 \*\*\*\*\*

Detention Pond ID	Maximum Ponded Volume 1000 ft <sup>3</sup>	Maximum Ponded Volume (%)	Time of Max Ponded Volume days hh:mm	Average Ponded Volume 1000 ft <sup>3</sup>	Average Ponded Volume (%)	Maximum Pond Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft <sup>3</sup>
Back of Lot Detention	0.065	0	0 08:25	0.014	0	0.07	0.00	0:00:00	0.000
Main Detention	1.045	56	0 09:20	0.360	19	0.28	0.00	0:00:00	0.000

\*\*\*\*\*  
 Outfall Loading Summary  
 \*\*\*\*\*

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Maximum Flow cfs
Out-7	94.70	0.15	0.28
Out-8	68.59	0.04	0.07
System	81.65	0.19	0.34

\*\*\*\*\*  
 Link Flow Summary

## Fabian Developed Model with Detention

\*\*\*\*\*

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged Minutes
Con-36	CONDUIT	0 08:05	4.89	1.00	0.47	20.28	0.02	0.10	0
Con-38	CONDUIT	0 08:15	3.66	1.00	0.32	20.37	0.02	0.10	0
Con-39	CONDUIT	0 08:05	1.67	1.00	0.55	30.04	0.02	0.46	0
Con-40	CONDUIT	0 09:20	4.56	1.00	0.28	25.75	0.01	0.08	0
Con-41	CONDUIT	0 08:06	2.24	1.00	0.10	9.71	0.01	0.06	0
Con-42	CONDUIT	0 08:25	1.85	1.00	0.07	12.93	0.01	0.05	0
Con-43	CONDUIT	0 00:00	0.00	1.00	0.00	12.88	0.00	0.04	0
Con-44	CONDUIT	0 08:07	1.11	1.00	0.10	26.02	0.00	0.18	0
Reg-1	ORIFICE	0 09:20			0.28			1.00	
Reg-2	ORIFICE	0 00:00			0.00			0.00	
Reg-4	ORIFICE	0 09:20			0.00			0.08	
Reg-5	ORIFICE	0 00:00			0.00			0.00	
Reg-8	ORIFICE	0 08:25			0.07			1.00	

\*\*\*\*\*  
Highest Flow Instability Indexes  
\*\*\*\*\*  
All links are stable.

Analysis begun on: Thu Oct 30 20:03:28 2008  
Analysis ended on: Thu Oct 30 20:03:42 2008  
Total elapsed time: 00:00:14

# Fabian Developed Model with Detention

BOSS International StormNET® - Version 4.11.0 (Build 13753)

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\*\*\*\*\*  
Analysis Options  
\*\*\*\*\*

Flow Units ..... cfs  
Subbasin Hydrograph Method. SCS TR-55  
Time of Concentration..... SCS TR-55  
Link Routing Method ..... Hydrodynamic  
Pond Exfiltration..... None  
Starting Date ..... MAR-21-2008 00:00:00  
Ending Date ..... MAR-22-2008 00:00:00  
Report Time Step ..... 00:05:00

\*\*\*\*\*  
Element Count  
\*\*\*\*\*

Number of rain gages ..... 1  
Number of subbasins ..... 5  
Number of nodes ..... 12  
Number of links ..... 13

\*\*\*\*\*  
Raingage Summary  
\*\*\*\*\*

Gage ID	Data Source	Data Type	Interval hours
Gage-1	10 year	CUMULATIVE	0.10

\*\*\*\*\*  
Subbasin Summary  
\*\*\*\*\*

Subbasin ID	Total Area acres
Sub-14	0.53
Sub-15	0.19
Sub-16	0.25
Sub-17	0.82
Sub-2	2.54

\*\*\*\*\*

## Fabian Developed Model with Detention

Node Summary

\*\*\*\*\*

Node ID	Element Type	Invert Elevation ft	Maximum Depth ft	Ponded Area ft <sup>2</sup>	External Inflow
Jun-34	JUNCTION	10.86	1.50	0.00	
Jun-35	JUNCTION	7.43	1.50	0.00	
Jun-36	JUNCTION	5.00	1.50	0.00	
Jun-37	JUNCTION	7.17	1.50	0.00	
Jun-38	JUNCTION	0.35	4.17	0.00	
Jun-39	JUNCTION	12.43	1.50	0.00	
Jun-40	JUNCTION	4.86	1.50	0.00	
Out-6	JUNCTION	1.54	2.15	0.00	
Out-7	OUTFALL	0.00	1.50	0.00	
Out-8	OUTFALL	0.00	1.50	0.00	
Back of Lot Detention	STORAGE	2.55	3.20	0.00	
Main Detention	STORAGE	2.04	3.60	0.00	

\*\*\*\*\*

Link Summary

\*\*\*\*\*

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Con-36	Jun-35	Jun-36	CONDUIT	49.0	4.9622	0.0150
Con-38	Jun-34	Jun-35	CONDUIT	68.5	5.0044	0.0150
Con-39	Jun-36	Main Detention	CONDUIT	27.2	10.8864	0.0150
Con-40	Out-6	Out-7	CONDUIT	19.3	8.0000	0.0150
Con-41	Jun-37	Jun-40	CONDUIT	203.0	1.1379	0.0150
Con-42	Jun-38	Out-8	CONDUIT	17.3	2.0185	0.0150
Con-43	Jun-39	Jun-37	CONDUIT	263.0	2.0002	0.0150
Con-44	Jun-40	Back of Lot Detention	CONDUIT	28.3	8.1683	0.0150
Reg-1	Main Detention	Out-6	ORIFICE			
Reg-2	Back of Lot Detention	Jun-38	ORIFICE			
Reg-4	Main Detention	Out-6	ORIFICE			
Reg-5	Main Detention	Out-6	ORIFICE			
Reg-8	Back of Lot Detention	Jun-38	ORIFICE			

\*\*\*\*\*

Cross Section Summary

\*\*\*\*\*

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft <sup>2</sup>	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Con-36	CIRCULAR	1.50	1.50	1	1.77	0.38	20.28
Con-38	CIRCULAR	1.50	1.50	1	1.77	0.38	20.37

## Fabian Developed Model with Detention

Con-	Shape	Area	Length	Depth	Flow	Velocity	Volume
Con-39	CIRCULAR	1.50	1.50	1	1.77	0.38	30.04
Con-40	CIRCULAR	1.50	1.50	1	1.77	0.38	25.75
Con-41	CIRCULAR	1.50	1.50	1	1.77	0.38	9.71
Con-42	CIRCULAR	1.50	1.50	1	1.77	0.38	12.93
Con-43	CIRCULAR	1.50	1.50	1	1.77	0.38	12.88
Con-44	CIRCULAR	1.50	1.50	1	1.77	0.38	26.02

```

*****
Runoff Quantity Continuity
*****
Total Precipitation ..... 1.193 3.307
Surface Runoff ..... 0.002 0.004
Continuity Error (%) ..... -0.000
    
```

```

*****
Flow Routing Continuity
*****
External Inflow ..... 0.000 0.000
External Outflow ..... 0.448 0.146
Initial Stored Volume .... 0.000 0.000
Final Stored Volume ..... 0.009 0.003
Continuity Error (%) ..... 0.001
    
```

\*\*\*\*\*  
 Composite Curve Number Computations Report  
 \*\*\*\*\*

-----  
 Subbasin Sub-14  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.53	-	75.00
Composite Area & Weighted CN	0.53		75.00

-----  
 Subbasin Sub-15  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
Paved roads with curbs & sewers	0.19	A	98.00
Composite Area & Weighted CN	0.19		98.00

-----  
 Subbasin Sub-16  
 -----

## Fabian Developed Model with Detention

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.25	-	98.00
Composite Area & Weighted CN	0.25		98.00

-----  
Subbasin Sub-17  
-----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.82	-	73.00
Composite Area & Weighted CN	0.82		73.00

-----  
Subbasin Sub-2  
-----

Soil/Surface Description	Area (acres)	Soil Group	CN
1/3 acre lots, 30% impervious	2.54	B	73.00
Composite Area & Weighted CN	2.54		73.00

\*\*\*\*\*  
SCS TR-55 Time of Concentration Computations Report  
\*\*\*\*\*

Sheet Flow Equation  
-----

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where:

Tc = Time of Concentration (hrs)  
n = Manning's Roughness  
Lf = Flow Length (ft)  
P = 2 yr, 24 hr Rainfall (inches)  
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation  
-----

$$V = 16.1345 * (S_f^{0.5}) \text{ (unpaved surface)}$$

$$V = 20.3282 * (S_f^{0.5}) \text{ (paved surface)}$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

## Fabian Developed Model with Detention

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)

### Channel Flow Equation

$V = (1.49 * (R^{2/3}) * (Sf^{0.5})) / n$   
 $R = Aq / Wp$   
 $Tc = (Lf / V) / (3600 \text{ sec/hr})$

Where:

TC = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 Aq = Flow Area (ft<sup>2</sup>)  
 Wp = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)  
 n = Manning's Roughness

### Subbasin Sub-14

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	5.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.11	0.00	0.00
Computed Flow Time (minutes):	8.85	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	300.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.87	0.00	0.00
Computed Flow Time (minutes):	1.74	0.00	0.00

=====  
 Total TOC (minutes):                    10.59  
 =====



## Fabian Developed Model with Detention

### Subbasin Sub-15

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.13	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.13	0.00	0.00
Computed Flow Time (minutes):	3.76	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	6.43	0.00	0.00
Computed Flow Time (minutes):	1.30	0.00	0.00

Total TOC (minutes): 5.05

### Subbasin Sub-16

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.05	0.00	0.00
Computed Flow Time (minutes):	9.24	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	5.10	0.00	0.00
Computed Flow Time (minutes):	1.63	0.00	0.00

Total TOC (minutes): 10.87

## Fabian Developed Model with Detention

-----  
 Subbasin Sub-17  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.15	0.00	0.00
Flow Length (ft):	75.00	0.00	0.00
Slope (%):	5.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.21	0.00	0.00
Computed Flow Time (minutes):	6.08	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	400.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.87	0.00	0.00
Computed Flow Time (minutes):	2.32	0.00	0.00

---

Total TOC (minutes):                    8.40

---

-----  
 Subbasin Sub-2  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	153.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.09	0.00	0.00
Computed Flow Time (minutes):	27.01	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	520.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	6.43	0.00	0.00
Computed Flow Time (minutes):	1.35	0.00	0.00

## Fabian Developed Model with Detention

=====  
 Total TOC (minutes):                    28.36  
 =====

\*\*\*\*\*  
 Subbasin Runoff Summary  
 \*\*\*\*\*

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	hh:mm:ss
Sub-14	3.320	1.176	0.120	75.000	0	00:10:35
Sub-15	3.320	3.087	0.150	98.000	0	00:05:03
Sub-16	3.320	3.087	0.190	98.000	0	00:10:52
Sub-17	3.320	1.060	0.160	73.000	0	00:08:23
Sub-2	3.320	1.060	0.420	73.000	0	00:28:21
Averages / Totals	3.320	1.280	0.94			

\*\*\*\*\*  
 Node Depth Summary  
 \*\*\*\*\*

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	hh:mm	Maximum Ponded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-34	0.08	0.16	11.02	0	08:15	0	0	0:00:00
Jun-35	0.09	0.20	7.63	0	08:10	0	0	0:00:00
Jun-36	0.08	0.17	5.17	0	08:10	0	0	0:00:00
Jun-37	0.06	0.15	7.32	0	08:05	0	0	0:00:00
Jun-38	0.05	0.09	0.44	0	08:30	0	0	0:00:00
Jun-39	0.00	0.00	12.43	0	00:00	0	0	0:00:00
Jun-40	0.03	0.08	4.94	0	08:06	0	0	0:00:00
Out-6	0.09	0.15	1.69	0	09:01	0	0	0:00:00
Out-7	0.08	0.14	0.14	0	09:01	0	0	0:00:00
Out-8	0.05	0.09	0.09	0	08:30	0	0	0:00:00
Back of Lot Detention	0.23	0.81	3.36	0	08:30	0	0	0:00:00
Main Detention	0.76	1.64	3.68	0	09:01	0	0	0:00:00

\*\*\*\*\*  
 Node Flow Summary  
 \*\*\*\*\*

## Fabian Developed Model with Detention

Node ID	Element Type	Maximum Lateral Inflow cfs	Maximum Total Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
Jun-34	JUNCTION	0.50	0.50	0 08:15	0.00	
Jun-35	JUNCTION	0.19	0.67	0 08:10	0.00	
Jun-36	JUNCTION	0.12	0.79	0 08:09	0.00	
Jun-37	JUNCTION	0.16	0.16	0 08:05	0.00	
Jun-38	JUNCTION	0.00	0.09	0 08:30	0.00	
Jun-39	JUNCTION	0.00	0.00	0 00:00	0.00	
Jun-40	JUNCTION	0.00	0.16	0 08:05	0.00	
Out-6	JUNCTION	0.00	0.44	0 09:01	0.00	
Out-7	OUTFALL	0.00	0.44	0 09:01	0.00	
Out-8	OUTFALL	0.00	0.09	0 08:30	0.00	
Back of Lot Detention	STORAGE	0.00	0.16	0 08:06	0.00	
Main Detention	STORAGE	0.00	0.79	0 08:10	0.00	

\*\*\*\*\*  
 Detention Pond Summary  
 \*\*\*\*\*

Detention Pond ID	Maximum Poned Volume 1000 ft <sup>3</sup>	Maximum Poned Volume (%)	Time of Max Poned Volume days hh:mm	Average Poned Volume 1000 ft <sup>3</sup>	Average Poned Volume (%)	Maximum Pond Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft <sup>3</sup>
Back of Lot Detention	0.141	0	0 08:30	0.029	0	0.09	0.00	0:00:00	0.000
Main Detention	1.455	77	0 09:01	0.567	30	0.44	0.00	0:00:00	0.000

\*\*\*\*\*  
 Outfall Loading Summary  
 \*\*\*\*\*

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Maximum Flow cfs
Out-7	95.34	0.20	0.44
Out-8	70.98	0.05	0.09
System	83.16	0.25	0.53

\*\*\*\*\*  
 Link Flow Summary

## Fabian Developed Model with Detention

\*\*\*\*\*

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged Minutes
Con-36	CONDUIT	0 08:10	5.44	1.00	0.67	20.28	0.03	0.12	0
Con-38	CONDUIT	0 08:15	4.15	1.00	0.49	20.37	0.02	0.12	0
Con-39	CONDUIT	0 08:10	1.52	1.00	0.79	30.04	0.03	0.55	0
Con-40	CONDUIT	0 09:01	5.14	1.00	0.44	25.75	0.02	0.10	0
Con-41	CONDUIT	0 08:05	2.57	1.00	0.16	9.71	0.02	0.08	0
Con-42	CONDUIT	0 08:30	2.04	1.00	0.09	12.93	0.01	0.06	0
Con-43	CONDUIT	0 00:00	0.00	1.00	0.00	12.88	0.00	0.05	0
Con-44	CONDUIT	0 08:06	0.98	1.00	0.16	26.02	0.01	0.29	0
Reg-1	ORIFICE	0 09:01			0.32			1.00	
Reg-2	ORIFICE	0 00:00			0.00			0.00	
Reg-4	ORIFICE	0 09:01			0.12			1.00	
Reg-5	ORIFICE	0 00:00			0.00			0.00	
Reg-8	ORIFICE	0 08:30			0.09			1.00	

\*\*\*\*\*

Highest Flow Instability Indexes

\*\*\*\*\*

All links are stable.

Analysis begun on: Thu Oct 30 20:05:06 2008  
 Analysis ended on: Thu Oct 30 20:05:22 2008  
 Total elapsed time: 00:00:16

# Fabian Developed Model with Detention

BOSS International StormNET® - Version 4.11.0 (Build 13753)

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\*\*\*\*\*  
Analysis Options  
\*\*\*\*\*  
Flow Units ..... cfs  
Subbasin Hydrograph Method. SCS TR-55  
Time of Concentration..... SCS TR-55  
Link Routing Method ..... Hydrodynamic  
Pond Exfiltration..... None  
Starting Date ..... MAR-21-2008 00:00:00  
Ending Date ..... MAR-22-2008 00:00:00  
Report Time Step ..... 00:05:00

\*\*\*\*\*  
Element Count  
\*\*\*\*\*  
Number of rain gages ..... 1  
Number of subbasins ..... 5  
Number of nodes ..... 12  
Number of links ..... 13

\*\*\*\*\*  
Raingage Summary  
\*\*\*\*\*  
Gage                    Data                    Data                    Interval  
ID                    Source                    Type                    hours  
-----  
Gage-1                25 year                    CUMULATIVE            0.10

\*\*\*\*\*  
Subbasin Summary  
\*\*\*\*\*  
Subbasin                    Total  
ID                    Area  
                          acres  
-----  
Sub-14                0.53  
Sub-15                0.19  
Sub-16                0.25  
Sub-17                0.82  
Sub-2                 2.54

\*\*\*\*\*

## Fabian Developed Model with Detention

Node Summary  
\*\*\*\*\*

Node ID	Element Type	Invert Elevation ft	Maximum Depth ft	Ponded Area ft <sup>2</sup>	External Inflow
Jun-34	JUNCTION	10.86	1.50	0.00	
Jun-35	JUNCTION	7.43	1.50	0.00	
Jun-36	JUNCTION	5.00	1.50	0.00	
Jun-37	JUNCTION	7.17	1.50	0.00	
Jun-38	JUNCTION	0.35	4.17	0.00	
Jun-39	JUNCTION	12.43	1.50	0.00	
Jun-40	JUNCTION	4.86	1.50	0.00	
Out-6	JUNCTION	1.54	2.15	0.00	
Out-7	OUTFALL	0.00	1.50	0.00	
Out-8	OUTFALL	0.00	1.50	0.00	
Back of Lot Detention	STORAGE	2.55	3.20	0.00	
Main Detention	STORAGE	2.04	3.60	0.00	

\*\*\*\*\*  
Link Summary  
\*\*\*\*\*

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Con-36	Jun-35	Jun-36	CONDUIT	49.0	4.9622	0.0150
Con-38	Jun-34	Jun-35	CONDUIT	68.5	5.0044	0.0150
Con-39	Jun-36	Main Detention	CONDUIT	27.2	10.8864	0.0150
Con-40	Out-6	Out-7	CONDUIT	19.3	8.0000	0.0150
Con-41	Jun-37	Jun-40	CONDUIT	203.0	1.1379	0.0150
Con-42	Jun-38	Out-8	CONDUIT	17.3	2.0185	0.0150
Con-43	Jun-39	Jun-37	CONDUIT	263.0	2.0002	0.0150
Con-44	Jun-40	Back of Lot Detention	CONDUIT	28.3	8.1683	0.0150
Reg-1	Main Detention	Out-6	ORIFICE			
Reg-2	Back of Lot Detention	Jun-38	ORIFICE			
Reg-4	Main Detention	Out-6	ORIFICE			
Reg-5	Main Detention	Out-6	ORIFICE			
Reg-8	Back of Lot Detention	Jun-38	ORIFICE			

\*\*\*\*\*  
Cross Section Summary  
\*\*\*\*\*

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft <sup>2</sup>	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Con-36	CIRCULAR	1.50	1.50	1	1.77	0.38	20.28
Con-38	CIRCULAR	1.50	1.50	1	1.77	0.38	20.37

## Fabian Developed Model with Detention

Con-	Shape	Area	Length	Depth	Flow	Velocity	Volume
Con-39	CIRCULAR	1.50	1.50	1	1.77	0.38	30.04
Con-40	CIRCULAR	1.50	1.50	1	1.77	0.38	25.75
Con-41	CIRCULAR	1.50	1.50	1	1.77	0.38	9.71
Con-42	CIRCULAR	1.50	1.50	1	1.77	0.38	12.93
Con-43	CIRCULAR	1.50	1.50	1	1.77	0.38	12.88
Con-44	CIRCULAR	1.50	1.50	1	1.77	0.38	26.02

```

*****
Runoff Quantity Continuity
*****
Total Precipitation ..... 1.413 3.915
Surface Runoff ..... 0.002 0.006
Continuity Error (%) ..... -0.000
    
```

```

*****
Flow Routing Continuity
*****
External Inflow ..... 0.000 0.000
External Outflow ..... 0.602 0.196
Initial Stored Volume .... 0.000 0.000
Final Stored Volume ..... 0.017 0.006
Continuity Error (%) ..... -0.007
    
```

\*\*\*\*\*  
 Composite Curve Number Computations Report  
 \*\*\*\*\*

-----  
 Subbasin Sub-14  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.53	-	75.00
Composite Area & Weighted CN	0.53		75.00

-----  
 Subbasin Sub-15  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
Paved roads with curbs & sewers	0.19	A	98.00
Composite Area & Weighted CN	0.19		98.00

-----  
 Subbasin Sub-16  
 -----



## Fabian Developed Model with Detention

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.25	-	98.00
Composite Area & Weighted CN	0.25		98.00

-----  
Subbasin Sub-17  
-----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.82	-	73.00
Composite Area & Weighted CN	0.82		73.00

-----  
Subbasin Sub-2  
-----

Soil/Surface Description	Area (acres)	Soil Group	CN
1/3 acre lots, 30% impervious	2.54	B	73.00
Composite Area & Weighted CN	2.54		73.00

\*\*\*\*\*  
SCS TR-55 Time of Concentration Computations Report  
\*\*\*\*\*

Sheet Flow Equation  
-----

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where:

T<sub>c</sub> = Time of Concentration (hrs)  
n = Manning's Roughness  
L<sub>f</sub> = Flow Length (ft)  
P = 2 yr, 24 hr Rainfall (inches)  
S<sub>f</sub> = Slope (ft/ft)

Shallow Concentrated Flow Equation  
-----

V = 16.1345 \* (S<sub>f</sub><sup>0.5</sup>) (unpaved surface)  
V = 20.3282 \* (S<sub>f</sub><sup>0.5</sup>) (paved surface)  
T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where:

## Fabian Developed Model with Detention

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)

### Channel Flow Equation

-----  
 $V = (1.49 * (R^{2/3}) * (Sf^{0.5})) / n$   
 $R = Aq / Wp$   
 $Tc = (Lf / V) / (3600 \text{ sec/hr})$

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 Aq = Flow Area (ft<sup>2</sup>)  
 Wp = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)  
 n = Manning's Roughness

### Subbasin Sub-14

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	5.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.11	0.00	0.00
Computed Flow Time (minutes):	8.85	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	300.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.87	0.00	0.00
Computed Flow Time (minutes):	1.74	0.00	0.00

=====  
 Total TOC (minutes): 10.59  
 =====

## Fabian Developed Model with Detention

### Subbasin Sub-15

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.13	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.13	0.00	0.00
Computed Flow Time (minutes):	3.76	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	6.43	0.00	0.00
Computed Flow Time (minutes):	1.30	0.00	0.00

Total TOC (minutes): 5.05

### Subbasin Sub-16

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.05	0.00	0.00
Computed Flow Time (minutes):	9.24	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	5.10	0.00	0.00
Computed Flow Time (minutes):	1.63	0.00	0.00

Total TOC (minutes): 10.87

## Fabian Developed Model with Detention

-----  
 Subbasin Sub-17  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.15	0.00	0.00
Flow Length (ft):	75.00	0.00	0.00
Slope (%):	5.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.21	0.00	0.00
Computed Flow Time (minutes):	6.08	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	400.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.87	0.00	0.00
Computed Flow Time (minutes):	2.32	0.00	0.00

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Total TOC (minutes):                    8.40

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-----  
 Subbasin Sub-2  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	153.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.09	0.00	0.00
Computed Flow Time (minutes):	27.01	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	520.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	6.43	0.00	0.00
Computed Flow Time (minutes):	1.35	0.00	0.00

## Fabian Developed Model with Detention

=====  
 Total TOC (minutes):                    28.36  
 =====

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 Subbasin Runoff Summary  
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Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	hh:mm:ss
Sub-14	3.930	1.614	0.180	75.000	0	00:10:35
Sub-15	3.930	3.695	0.180	98.000	0	00:05:03
Sub-16	3.930	3.695	0.230	98.000	0	00:10:52
Sub-17	3.930	1.477	0.250	73.000	0	00:08:23
Sub-2	3.930	1.477	0.660	73.000	0	00:28:21
Averages / Totals	3.930	1.719	1.37			

\*\*\*\*\*  
 Node Depth Summary  
 \*\*\*\*\*

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	hh:mm	Maximum Ponded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-34	0.09	0.20	11.06	0	08:15	0	0	0:00:00
Jun-35	0.11	0.24	7.67	0	08:10	0	0	0:00:00
Jun-36	0.09	0.20	5.20	0	08:10	0	0	0:00:00
Jun-37	0.07	0.18	7.35	0	08:05	0	0	0:00:00
Jun-38	0.06	0.11	0.46	0	08:40	0	0	0:00:00
Jun-39	0.00	0.00	12.43	0	00:00	0	0	0:00:00
Jun-40	0.04	0.10	4.96	0	08:05	0	0	0:00:00
Out-6	0.10	0.20	1.74	0	08:39	0	0	0:00:00
Out-7	0.10	0.17	0.17	0	08:39	0	0	0:00:00
Out-8	0.06	0.10	0.10	0	08:40	0	0	0:00:00
Back of Lot Detention	0.40	1.40	3.95	0	08:40	0	0	0:00:00
Main Detention	1.00	2.13	4.17	0	08:39	0	0	0:00:00

\*\*\*\*\*  
 Node Flow Summary  
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## Fabian Developed Model with Detention

Node ID	Element Type	Maximum Lateral Inflow cfs	Maximum Total Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
Jun-34	JUNCTION	0.75	0.75	0 08:15	0.00	
Jun-35	JUNCTION	0.23	0.96	0 08:10	0.00	
Jun-36	JUNCTION	0.18	1.13	0 08:10	0.00	
Jun-37	JUNCTION	0.25	0.25	0 08:05	0.00	
Jun-38	JUNCTION	0.00	0.12	0 08:40	0.00	
Jun-39	JUNCTION	0.00	0.00	0 00:00	0.00	
Jun-40	JUNCTION	0.00	0.25	0 08:05	0.00	
Out-6	JUNCTION	0.00	0.75	0 08:39	0.00	
Out-7	OUTFALL	0.00	0.75	0 08:39	0.00	
Out-8	OUTFALL	0.00	0.12	0 08:40	0.00	
Back of Lot Detention	STORAGE	0.00	0.25	0 08:05	0.00	
Main Detention	STORAGE	0.00	1.13	0 08:10	0.00	

\*\*\*\*\*  
 Detention Pond Summary  
 \*\*\*\*\*

Detention Pond ID	Maximum Ponded Volume 1000 ft <sup>3</sup>	Maximum Ponded Volume (%)	Time of Max Ponded Volume days hh:mm	Average Ponded Volume 1000 ft <sup>3</sup>	Average Ponded Volume (%)	Maximum Pond Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft <sup>3</sup>
Back of Lot Detention	0.280	0	0 08:40	0.062	0	0.12	0.00	0:00:00	0.000
Main Detention	1.979	105	0 08:39	0.823	44	0.75	0.00	0:00:00	0.000

\*\*\*\*\*  
 Outfall Loading Summary  
 \*\*\*\*\*

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Maximum Flow cfs
Out-7	95.89	0.26	0.75
Out-8	73.61	0.07	0.12
System	84.75	0.33	0.87

\*\*\*\*\*  
 Link Flow Summary

## Fabian Developed Model with Detention

\*\*\*\*\*

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged Minutes
Con-36	CONDUIT	0 08:10	6.00	1.00	0.96	20.28	0.05	0.15	0
Con-38	CONDUIT	0 08:15	4.73	1.00	0.75	20.37	0.04	0.15	0
Con-39	CONDUIT	0 08:10	1.49	1.00	1.13	30.04	0.04	0.57	0
Con-40	CONDUIT	0 08:39	5.95	1.00	0.75	25.75	0.03	0.12	0
Con-41	CONDUIT	0 08:05	2.92	1.00	0.25	9.71	0.03	0.09	0
Con-42	CONDUIT	0 08:40	2.21	1.00	0.12	12.93	0.01	0.07	0
Con-43	CONDUIT	0 00:00	0.00	1.00	0.00	12.88	0.00	0.06	0
Con-44	CONDUIT	0 08:05	1.07	1.00	0.25	26.02	0.01	0.49	0
Reg-1	ORIFICE	0 08:39			0.37			1.00	
Reg-2	ORIFICE	0 00:00			0.00			0.00	
Reg-4	ORIFICE	0 08:39			0.21			1.00	
Reg-5	ORIFICE	0 08:39			0.17			0.94	
Reg-8	ORIFICE	0 08:40			0.12			1.00	

\*\*\*\*\*

Highest Flow Instability Indexes

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All links are stable.

Analysis begun on: Thu Oct 30 20:06:42 2008  
 Analysis ended on: Thu Oct 30 20:06:57 2008  
 Total elapsed time: 00:00:15

# Fabian Developed Model with Detention

BOSS International StormNET® - Version 4.11.0 (Build 13753)

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## Analysis Options

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Flow Units ..... cfs  
Subbasin Hydrograph Method. SCS TR-55  
Time of Concentration..... SCS TR-55  
Link Routing Method ..... Hydrodynamic  
Pond Exfiltration..... None  
Starting Date ..... MAR-21-2008 00:00:00  
Ending Date ..... MAR-22-2008 00:00:00  
Report Time Step ..... 00:05:00

\*\*\*\*\*

## Element Count

\*\*\*\*\*

Number of rain gages ..... 1  
Number of subbasins ..... 5  
Number of nodes ..... 12  
Number of links ..... 13

\*\*\*\*\*

## Raingage Summary

\*\*\*\*\*

Gage ID	Data Source	Data Type	Interval hours
Gage-1	50 year	CUMULATIVE	0.10

\*\*\*\*\*

## Subbasin Summary

\*\*\*\*\*

Subbasin ID	Total Area acres
Sub-14	0.53
Sub-15	0.19
Sub-16	0.25
Sub-17	0.82
Sub-2	2.54

\*\*\*\*\*



## Fabian Developed Model with Detention

Node Summary  
\*\*\*\*\*

Node ID	Element Type	Invert Elevation ft	Maximum Depth ft	Ponded Area ft <sup>2</sup>	External Inflow
Jun-34	JUNCTION	10.86	1.50	0.00	
Jun-35	JUNCTION	7.43	1.50	0.00	
Jun-36	JUNCTION	5.00	1.50	0.00	
Jun-37	JUNCTION	7.17	1.50	0.00	
Jun-38	JUNCTION	0.35	4.17	0.00	
Jun-39	JUNCTION	12.43	1.50	0.00	
Jun-40	JUNCTION	4.86	1.50	0.00	
Out-6	JUNCTION	1.54	2.15	0.00	
Out-7	OUTFALL	0.00	1.50	0.00	
Out-8	OUTFALL	0.00	1.50	0.00	
Back of Lot Detention	STORAGE	2.55	3.20	0.00	
Main Detention	STORAGE	2.04	3.60	0.00	

\*\*\*\*\*  
Link Summary  
\*\*\*\*\*

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Con-36	Jun-35	Jun-36	CONDUIT	49.0	4.9622	0.0150
Con-38	Jun-34	Jun-35	CONDUIT	68.5	5.0044	0.0150
Con-39	Jun-36	Main Detention	CONDUIT	27.2	10.8864	0.0150
Con-40	Out-6	Out-7	CONDUIT	19.3	8.0000	0.0150
Con-41	Jun-37	Jun-40	CONDUIT	203.0	1.1379	0.0150
Con-42	Jun-38	Out-8	CONDUIT	17.3	2.0185	0.0150
Con-43	Jun-39	Jun-37	CONDUIT	263.0	2.0002	0.0150
Con-44	Jun-40	Back of Lot Detention	CONDUIT	28.3	8.1683	0.0150
Reg-1	Main Detention	Out-6	ORIFICE			
Reg-2	Back of Lot Detention	Jun-38	ORIFICE			
Reg-4	Main Detention	Out-6	ORIFICE			
Reg-5	Main Detention	Out-6	ORIFICE			
Reg-8	Back of Lot Detention	Jun-38	ORIFICE			

\*\*\*\*\*  
Cross Section Summary  
\*\*\*\*\*

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft <sup>2</sup>	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Con-36	CIRCULAR	1.50	1.50	1	1.77	0.38	20.28
Con-38	CIRCULAR	1.50	1.50	1	1.77	0.38	20.37

## Fabian Developed Model with Detention

Con-	Shape	Length	Width	Depth	Flow	Area	Volume
Con-39	CIRCULAR	1.50	1.50	1	1.77	0.38	30.04
Con-40	CIRCULAR	1.50	1.50	1	1.77	0.38	25.75
Con-41	CIRCULAR	1.50	1.50	1	1.77	0.38	9.71
Con-42	CIRCULAR	1.50	1.50	1	1.77	0.38	12.93
Con-43	CIRCULAR	1.50	1.50	1	1.77	0.38	12.88
Con-44	CIRCULAR	1.50	1.50	1	1.77	0.38	26.02

```

*****
Runoff Quantity Continuity
*****
Total Precipitation ..... 1.582 4.383
Surface Runoff ..... 0.002 0.007
Continuity Error (%) ..... -0.000
    
```

```

*****
Flow Routing Continuity
*****
External Inflow ..... 0.000 0.000
External Outflow ..... 0.725 0.236
Initial Stored Volume .... 0.000 0.000
Final Stored Volume ..... 0.023 0.008
Continuity Error (%) ..... -0.007
    
```

\*\*\*\*\*  
 Composite Curve Number Computations Report  
 \*\*\*\*\*

-----  
 Subbasin Sub-14  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.53	-	75.00
Composite Area & Weighted CN	0.53		75.00

-----  
 Subbasin Sub-15  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
Paved roads with curbs & sewers	0.19	A	98.00
Composite Area & Weighted CN	0.19		98.00

-----  
 Subbasin Sub-16  
 -----

## Fabian Developed Model with Detention

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.25	-	98.00
Composite Area & Weighted CN	0.25		98.00

-----  
Subbasin Sub-17  
-----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.82	-	73.00
Composite Area & Weighted CN	0.82		73.00

-----  
Subbasin Sub-2  
-----

Soil/Surface Description	Area (acres)	Soil Group	CN
1/3 acre lots, 30% impervious	2.54	B	73.00
Composite Area & Weighted CN	2.54		73.00

\*\*\*\*\*  
SCS TR-55 Time of Concentration Computations Report  
\*\*\*\*\*

-----  
Sheet Flow Equation  
-----

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where:

Tc = Time of Concentration (hrs)  
n = Manning's Roughness  
Lf = Flow Length (ft)  
P = 2 yr, 24 hr Rainfall (inches)  
Sf = Slope (ft/ft)

-----  
Shallow Concentrated Flow Equation  
-----

$$V = 16.1345 * (S_f^{0.5}) \text{ (unpaved surface)}$$

$$V = 20.3282 * (S_f^{0.5}) \text{ (paved surface)}$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

## Fabian Developed Model with Detention

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)

### Channel Flow Equation

$V = (1.49 * (R^{2/3}) * (Sf^{0.5})) / n$   
 $R = Aq / Wp$   
 $Tc = (Lf / V) / (3600 \text{ sec/hr})$

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 Aq = Flow Area (ft<sup>2</sup>)  
 Wp = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)  
 n = Manning's Roughness

### Subbasin Sub-14

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	5.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.11	0.00	0.00
Computed Flow Time (minutes):	8.85	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	300.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.87	0.00	0.00
Computed Flow Time (minutes):	1.74	0.00	0.00
<b>Total TOC (minutes):</b>	<b>10.59</b>		

## Fabian Developed Model with Detention

### Subbasin Sub-15

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.13	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.13	0.00	0.00
Computed Flow Time (minutes):	3.76	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	6.43	0.00	0.00
Computed Flow Time (minutes):	1.30	0.00	0.00

---

Total TOC (minutes):                    5.05

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### Subbasin Sub-16

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.05	0.00	0.00
Computed Flow Time (minutes):	9.24	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	5.10	0.00	0.00
Computed Flow Time (minutes):	1.63	0.00	0.00

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Total TOC (minutes):                    10.87

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## Fabian Developed Model with Detention

-----  
 Subbasin Sub-17  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.15	0.00	0.00
Flow Length (ft):	75.00	0.00	0.00
Slope (%):	5.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.21	0.00	0.00
Computed Flow Time (minutes):	6.08	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	400.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.87	0.00	0.00
Computed Flow Time (minutes):	2.32	0.00	0.00
<hr/>			
Total TOC (minutes):	8.40		
<hr/>			

-----  
 Subbasin Sub-2  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	153.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.09	0.00	0.00
Computed Flow Time (minutes):	27.01	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	520.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	6.43	0.00	0.00
Computed Flow Time (minutes):	1.35	0.00	0.00

## Fabian Developed Model with Detention

=====  
 Total TOC (minutes):                    28.36  
 =====

\*\*\*\*\*  
 Subbasin Runoff Summary  
 \*\*\*\*\*

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	hh:mm:ss
Sub-14	4.400	1.972	0.230	75.000	0	00:10:35
Sub-15	4.400	4.164	0.200	98.000	0	00:05:03
Sub-16	4.400	4.164	0.260	98.000	0	00:10:52
Sub-17	4.400	1.821	0.320	73.000	0	00:08:23
Sub-2	4.400	1.821	0.860	73.000	0	00:28:21
-----						
Averages / Totals	4.400	2.078	1.73			

\*\*\*\*\*  
 Node Depth Summary  
 \*\*\*\*\*

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	hh:mm	Maximum Pondered Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-34	0.10	0.22	11.08	0	08:15	0	0	0:00:00
Jun-35	0.12	0.27	7.70	0	08:10	0	0	0:00:00
Jun-36	0.10	0.22	5.22	0	08:05	0	0	0:00:00
Jun-37	0.08	0.20	7.37	0	08:05	0	0	0:00:00
Jun-38	0.07	0.13	0.48	0	08:34	0	0	0:00:00
Jun-39	0.00	0.00	12.43	0	00:00	0	0	0:00:00
Jun-40	0.05	0.18	5.04	0	08:34	0	0	0:00:00
Out-6	0.11	0.23	1.77	0	08:34	0	0	0:00:00
Out-7	0.11	0.20	0.20	0	08:34	0	0	0:00:00
Out-8	0.06	0.12	0.12	0	08:34	0	0	0:00:00
Back of Lot Detention	0.57	2.49	5.04	0	08:34	0	0	0:00:00
Main Detention	1.13	2.51	4.55	0	08:34	0	0	0:00:00

\*\*\*\*\*  
 Node Flow Summary  
 \*\*\*\*\*

## Fabian Developed Model with Detention

Node ID	Element Type	Maximum Lateral Inflow cfs	Maximum Total Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
Jun-34	JUNCTION	0.96	0.96	0 08:15	0.00	
Jun-35	JUNCTION	0.26	1.17	0 08:09	0.00	
Jun-36	JUNCTION	0.23	1.40	0 08:05	0.00	
Jun-37	JUNCTION	0.32	0.32	0 08:05	0.00	
Jun-38	JUNCTION	0.00	0.17	0 08:34	0.00	
Jun-39	JUNCTION	0.00	0.00	0 00:00	0.00	
Jun-40	JUNCTION	0.00	0.32	0 08:05	0.00	
Out-6	JUNCTION	0.00	0.99	0 08:34	0.00	
Out-7	OUTFALL	0.00	0.99	0 08:34	0.00	
Out-8	OUTFALL	0.00	0.17	0 08:34	0.00	
Back of Lot Detention	STORAGE	0.00	0.32	0 08:05	0.00	
Main Detention	STORAGE	0.00	1.40	0 08:05	0.00	

\*\*\*\*\*  
 Detention Pond Summary  
 \*\*\*\*\*

Detention Pond ID	Maximum Poned Volume 1000 ft <sup>3</sup>	Maximum Poned Volume (%)	Time of Max Poned Volume days hh:mm	Average Poned Volume 1000 ft <sup>3</sup>	Average Poned Volume (%)	Maximum Pond Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft <sup>3</sup>
Back of Lot Detention	0.373	0	0 09:02	0.094	0	0.17	0.00	0:00:00	0.000
Main Detention	2.332	124	0 08:34	0.952	51	0.99	0.00	0:00:00	0.000

\*\*\*\*\*  
 Outfall Loading Summary  
 \*\*\*\*\*

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Maximum Flow cfs
Out-7	96.27	0.31	0.99
Out-8	75.29	0.08	0.17
System	85.78	0.40	1.15

\*\*\*\*\*  
 Link Flow Summary



## Fabian Developed Model with Detention

\*\*\*\*\*

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged Minutes
Con-36	CONDUIT	0 08:10	6.29	1.00	1.17	20.28	0.06	0.16	0
Con-38	CONDUIT	0 08:15	5.15	1.00	0.96	20.37	0.05	0.16	0
Con-39	CONDUIT	0 08:05	1.59	1.00	1.40	30.04	0.05	0.57	0
Con-40	CONDUIT	0 08:34	6.37	1.00	0.99	25.75	0.04	0.14	0
Con-41	CONDUIT	0 08:05	3.15	1.00	0.32	9.71	0.03	0.11	0
Con-42	CONDUIT	0 08:34	2.41	1.00	0.17	12.93	0.01	0.08	0
Con-43	CONDUIT	0 00:00	0.00	1.00	0.00	12.88	0.00	0.07	0
Con-44	CONDUIT	0 08:05	1.05	1.00	0.32	26.02	0.01	0.56	0
Reg-1	ORIFICE	0 08:34			0.40			1.00	
Reg-2	ORIFICE	0 00:00			0.00			0.00	
Reg-4	ORIFICE	0 08:34			0.26			1.00	
Reg-5	ORIFICE	0 08:34			0.33			1.00	
Reg-8	ORIFICE	0 08:34			0.17			1.00	

\*\*\*\*\*  
Highest Flow Instability Indexes  
\*\*\*\*\*  
All links are stable.

Analysis begun on: Thu Oct 30 20:07:21 2008  
Analysis ended on: Thu Oct 30 20:07:37 2008  
Total elapsed time: 00:00:16

## Fabian Developed Model with Detention

BOSS International StormNET® - Version 4.11.0 (Build 13753)

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\*\*\*\*\*  
 Analysis Options  
 \*\*\*\*\*

Flow Units ..... cfs  
 Subbasin Hydrograph Method. SCS TR-55  
 Time of Concentration..... SCS TR-55  
 Link Routing Method ..... Hydrodynamic  
 Pond Exfiltration..... None  
 Starting Date ..... MAR-21-2008 00:00:00  
 Ending Date ..... MAR-22-2008 00:00:00  
 Report Time Step ..... 00:05:00

\*\*\*\*\*  
 Element Count  
 \*\*\*\*\*

Number of rain gages ..... 1  
 Number of subbasins ..... 5  
 Number of nodes ..... 12  
 Number of links ..... 13

\*\*\*\*\*  
 Raingage Summary  
 \*\*\*\*\*

Gage ID	Data Source	Data Type	Interval hours
Gage-1	100 year	CUMULATIVE	0.10

\*\*\*\*\*  
 Subbasin Summary  
 \*\*\*\*\*

Subbasin ID	Total Area acres
Sub-14	0.53
Sub-15	0.19
Sub-16	0.25
Sub-17	0.82
Sub-2	2.54

\*\*\*\*\*

## Fabian Developed Model with Detention

Node Summary

\*\*\*\*\*

Node ID	Element Type	Invert Elevation ft	Maximum Depth ft	Ponded Area ft <sup>2</sup>	External Inflow
Jun-34	JUNCTION	10.86	1.50	0.00	
Jun-35	JUNCTION	7.43	1.50	0.00	
Jun-36	JUNCTION	5.00	1.50	0.00	
Jun-37	JUNCTION	7.17	1.50	0.00	
Jun-38	JUNCTION	0.35	4.17	0.00	
Jun-39	JUNCTION	12.43	1.50	0.00	
Jun-40	JUNCTION	4.86	1.50	0.00	
Out-6	JUNCTION	1.54	2.15	0.00	
Out-7	OUTFALL	0.00	1.50	0.00	
Out-8	OUTFALL	0.00	1.50	0.00	
Back of Lot Detention	STORAGE	2.55	3.20	0.00	
Main Detention	STORAGE	2.04	3.60	0.00	

\*\*\*\*\*

Link Summary

\*\*\*\*\*

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Con-36	Jun-35	Jun-36	CONDUIT	49.0	4.9622	0.0150
Con-38	Jun-34	Jun-35	CONDUIT	68.5	5.0044	0.0150
Con-39	Jun-36	Main Detention	CONDUIT	27.2	10.8864	0.0150
Con-40	Out-6	Out-7	CONDUIT	19.3	8.0000	0.0150
Con-41	Jun-37	Jun-40	CONDUIT	203.0	1.1379	0.0150
Con-42	Jun-38	Out-8	CONDUIT	17.3	2.0185	0.0150
Con-43	Jun-39	Jun-37	CONDUIT	263.0	2.0002	0.0150
Con-44	Jun-40	Back of Lot Detention	CONDUIT	28.3	8.1683	0.0150
Reg-1	Main Detention	Out-6	ORIFICE			
Reg-2	Back of Lot Detention	Jun-38	ORIFICE			
Reg-4	Main Detention	Out-6	ORIFICE			
Reg-5	Main Detention	Out-6	ORIFICE			
Reg-8	Back of Lot Detention	Jun-38	ORIFICE			

\*\*\*\*\*

Cross Section Summary

\*\*\*\*\*

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft <sup>2</sup>	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Con-36	CIRCULAR	1.50	1.50	1	1.77	0.38	20.28
Con-38	CIRCULAR	1.50	1.50	1	1.77	0.38	20.37

## Fabian Developed Model with Detention

Con-39	CIRCULAR	1.50	1.50	1	1.77	0.38	30.04
Con-40	CIRCULAR	1.50	1.50	1	1.77	0.38	25.75
Con-41	CIRCULAR	1.50	1.50	1	1.77	0.38	9.71
Con-42	CIRCULAR	1.50	1.50	1	1.77	0.38	12.93
Con-43	CIRCULAR	1.50	1.50	1	1.77	0.38	12.88
Con-44	CIRCULAR	1.50	1.50	1	1.77	0.38	26.02

```

*****
Volume      Depth
Runoff Quantity Continuity  acre-ft  inches
*****
Total Precipitation ..... 1.747  4.841
Surface Runoff ..... 0.003  0.008
Continuity Error (%) ..... -0.000
    
```

```

*****
Volume      Volume
Flow Routing Continuity  acre-ft  Mgallons
*****
External Inflow ..... 0.000  0.000
External Outflow ..... 0.850  0.277
Initial Stored Volume .... 0.000  0.000
Final Stored Volume ..... 0.027  0.009
Continuity Error (%) ..... -0.005
    
```

\*\*\*\*\*  
 Composite Curve Number Computations Report  
 \*\*\*\*\*

-----  
 Subbasin Sub-14  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.53	-	75.00
Composite Area & Weighted CN	0.53		75.00

-----  
 Subbasin Sub-15  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
Paved roads with curbs & sewers	0.19	A	98.00
Composite Area & Weighted CN	0.19		98.00

-----  
 Subbasin Sub-16  
 -----

## Fabian Developed Model with Detention

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.25	-	98.00
Composite Area & Weighted CN	0.25		98.00

### Subbasin Sub-17

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.82	-	73.00
Composite Area & Weighted CN	0.82		73.00

### Subbasin Sub-2

Soil/Surface Description	Area (acres)	Soil Group	CN
1/3 acre lots, 30% impervious	2.54	B	73.00
Composite Area & Weighted CN	2.54		73.00

\*\*\*\*\*  
 SCS TR-55 Time of Concentration Computations Report  
 \*\*\*\*\*

#### Sheet Flow Equation

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where:

Tc = Time of Concentration (hrs)  
 n = Manning's Roughness  
 Lf = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 Sf = Slope (ft/ft)

#### Shallow Concentrated Flow Equation

V = 16.1345 \* (Sf<sup>0.5</sup>) (unpaved surface)  
 V = 20.3282 \* (Sf<sup>0.5</sup>) (paved surface)  
 Tc = (Lf / V) / (3600 sec/hr)

Where:

## Fabian Developed Model with Detention

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)

### Channel Flow Equation

$V = (1.49 * (R^{(2/3)}) * (Sf^{0.5})) / n$   
 $R = Aq / Wp$   
 $Tc = (Lf / V) / (3600 \text{ sec/hr})$

Where:

TC = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 Aq = Flow Area (ft<sup>2</sup>)  
 Wp = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)  
 n = Manning's Roughness

### Subbasin Sub-14

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	5.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.11	0.00	0.00
Computed Flow Time (minutes):	8.85	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	300.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.87	0.00	0.00
Computed Flow Time (minutes):	1.74	0.00	0.00

=====  
 Total TOC (minutes): 10.59  
 =====

## Fabian Developed Model with Detention

### Subbasin Sub-15

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.13	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.13	0.00	0.00
Computed Flow Time (minutes):	3.76	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	6.43	0.00	0.00
Computed Flow Time (minutes):	1.30	0.00	0.00
<b>Total TOC (minutes):</b>	<b>5.05</b>		

### Subbasin Sub-16

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	30.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.05	0.00	0.00
Computed Flow Time (minutes):	9.24	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	500.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	5.10	0.00	0.00
Computed Flow Time (minutes):	1.63	0.00	0.00
<b>Total TOC (minutes):</b>	<b>10.87</b>		

## Fabian Developed Model with Detention

-----  
 Subbasin Sub-17  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.15	0.00	0.00
Flow Length (ft):	75.00	0.00	0.00
Slope (%):	5.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.21	0.00	0.00
Computed Flow Time (minutes):	6.08	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	400.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.87	0.00	0.00
Computed Flow Time (minutes):	2.32	0.00	0.00

=====  
 Total TOC (minutes): 8.40  
 =====

-----  
 Subbasin Sub-2  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	153.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.09	0.00	0.00
Computed Flow Time (minutes):	27.01	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	520.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	6.43	0.00	0.00
Computed Flow Time (minutes):	1.35	0.00	0.00



## Fabian Developed Model with Detention

=====  
 Total TOC (minutes):                    28.36  
 =====

\*\*\*\*\*  
 Subbasin Runoff Summary  
 \*\*\*\*\*

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	hh:mm:ss
Sub-14	4.860	2.336	0.290	75.000	0	00:10:35
Sub-15	4.860	4.623	0.220	98.000	0	00:05:03
Sub-16	4.860	4.623	0.290	98.000	0	00:10:52
Sub-17	4.860	2.171	0.400	73.000	0	00:08:23
Sub-2	4.860	2.171	1.070	73.000	0	00:28:21
Averages / Totals	4.860	2.440	2.09			

\*\*\*\*\*  
 Node Depth Summary  
 \*\*\*\*\*

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	hh:mm	Maximum Ponded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-34	0.11	0.25	11.11	0	08:19	0	0	0:00:00
Jun-35	0.13	0.30	7.73	0	08:10	0	0	0:00:00
Jun-36	0.11	0.58	5.58	0	08:27	0	0	0:00:00
Jun-37	0.08	0.23	7.40	0	08:05	0	0	0:00:00
Jun-38	0.07	0.14	0.49	0	08:34	0	0	0:00:00
Jun-39	0.00	0.00	12.43	0	00:00	0	0	0:00:00
Jun-40	0.09	0.86	5.72	0	08:34	0	0	0:00:00
Out-6	0.12	0.28	1.82	0	08:27	0	0	0:00:00
Out-7	0.11	0.24	0.24	0	08:27	0	0	0:00:00
Out-8	0.07	0.13	0.13	0	08:34	0	0	0:00:00
Back of Lot Detention	0.78	3.18	5.73	0	08:33	0	0	0:00:00
Main Detention	1.25	3.54	5.58	0	08:27	0	0	0:00:00

\*\*\*\*\*  
 Node Flow Summary  
 \*\*\*\*\*

## Fabian Developed Model with Detention

Node ID	Element Type	Maximum Lateral Inflow cfs	Maximum Total Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
Jun-34	JUNCTION	1.19	1.19	0 08:15	0.00	
Jun-35	JUNCTION	0.29	1.42	0 08:10	0.00	
Jun-36	JUNCTION	0.28	1.69	0 08:05	0.00	
Jun-37	JUNCTION	0.40	0.40	0 08:05	0.00	
Jun-38	JUNCTION	0.00	0.19	0 08:33	0.00	
Jun-39	JUNCTION	0.00	0.00	0 00:00	0.00	
Jun-40	JUNCTION	0.00	0.43	0 08:07	0.00	
Out-6	JUNCTION	0.00	1.40	0 08:27	0.00	
Out-7	OUTFALL	0.00	1.40	0 08:27	0.00	
Out-8	OUTFALL	0.00	0.19	0 08:34	0.00	
Back of Lot Detention	STORAGE	0.00	0.40	0 08:05	0.00	
Main Detention	STORAGE	0.00	1.69	0 08:05	0.00	

\*\*\*\*\*  
 Detention Pond Summary  
 \*\*\*\*\*

Detention Pond ID	Maximum Ponded Volume 1000 ft <sup>3</sup>	Maximum Ponded Volume (%)	Time of Max Ponded Volume days hh:mm	Average Ponded Volume 1000 ft <sup>3</sup>	Average Ponded Volume (%)	Maximum Pond Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft <sup>3</sup>
Back of Lot Detention	0.373	0	0 10:01	0.090	0	0.19	0.00	0:00:00	0.000
Main Detention	2.599	138	0 08:33	1.061	56	1.40	0.00	0:00:00	0.000

\*\*\*\*\*  
 Outfall Loading Summary  
 \*\*\*\*\*

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Maximum Flow cfs
Out-7	96.49	0.37	1.40
Out-8	76.82	0.10	0.19
System	86.66	0.46	1.58

\*\*\*\*\*  
 Link Flow Summary

## Fabian Developed Model with Detention

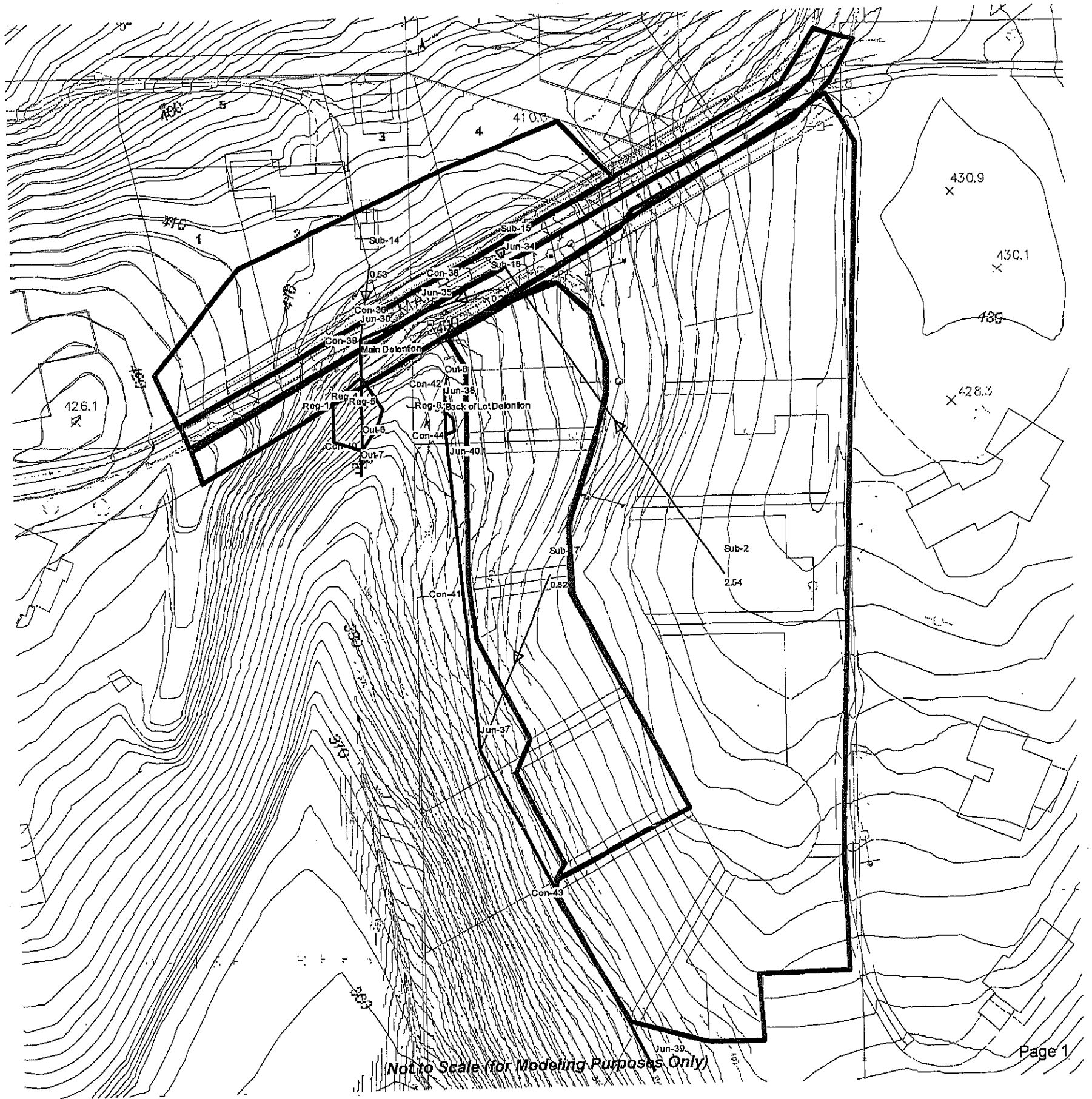
\*\*\*\*\*

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged Minutes
Con-36	CONDUIT	0 08:10	6.61	1.00	1.41	20.28	0.07	0.28	0
Con-38	CONDUIT	0 08:15	5.76	1.00	1.19	20.37	0.06	0.18	0
Con-39	CONDUIT	0 08:05	1.72	1.00	1.69	30.04	0.06	0.69	0
Con-40	CONDUIT	0 08:27	6.92	1.00	1.40	25.75	0.05	0.17	0
Con-41	CONDUIT	0 08:07	3.37	1.00	0.43	9.71	0.04	0.34	0
Con-42	CONDUIT	0 08:34	2.49	1.00	0.19	12.93	0.01	0.09	0
Con-43	CONDUIT	0 00:00	0.00	1.00	0.00	12.88	0.00	0.08	0
Con-44	CONDUIT	0 08:05	1.06	1.00	0.40	26.02	0.02	0.79	0
Reg-1	ORIFICE	0 08:27			0.48			1.00	
Reg-2	ORIFICE	0 00:00			0.00			0.00	
Reg-4	ORIFICE	0 08:27			0.36			1.00	
Reg-5	ORIFICE	0 08:27			0.56			1.00	
Reg-8	ORIFICE	0 08:33			0.19			1.00	

\*\*\*\*\*  
Highest Flow Instability Indexes  
\*\*\*\*\*  
All links are stable.

Analysis begun on: Thu Oct 30 20:09:08 2008  
Analysis ended on: Thu Oct 30 20:09:23 2008  
Total elapsed time: 00:00:15

### Fabian Developed Model with Detention Areas



**100-year Storm  
Downstream Analysis  
StormNET Runoff Reports**

# Downstream System

BOSS International StormNET® - Version 4.11.0 (Build 13753)

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\*\*\*\*\*  
 Analysis Options  
 \*\*\*\*\*

Flow Units ..... cfs  
 Subbasin Hydrograph Method. SCS TR-20  
 Time of Concentration..... SCS TR-55  
 Link Routing Method ..... Hydrodynamic  
 Pond Exfiltration..... None  
 Starting Date ..... JUN-21-2008 00:00:00  
 Ending Date ..... JUN-22-2008 00:00:00  
 Report Time Step ..... 00:05:00

\*\*\*\*\*  
 Element Count  
 \*\*\*\*\*

Number of rain gages ..... 1  
 Number of subbasins ..... 8  
 Number of nodes ..... 25  
 Number of links ..... 24

\*\*\*\*\*  
 Raingage Summary  
 \*\*\*\*\*

Gage ID	Data Source	Data Type	Interval hours
Gage-1	100 year storm	CUMULATIVE	0.10

\*\*\*\*\*  
 Subbasin Summary  
 \*\*\*\*\*

Subbasin ID	Total Area acres
Sub-1	3.07
Sub-13	2.24
Sub-14	0.96
Sub-15	1.07
Sub-2	3.34
Sub-4	1.32
Sub-5	1.51
Sub-6	3.15

## Downstream System

\*\*\*\*\*  
Node Summary  
\*\*\*\*\*

Node ID	Element Type	Invert Elevation ft	Maximum Depth ft	Ponded Area ft <sup>2</sup>	External Inflow
Jun-10	JUNCTION	280.00	3.00	0.00	
Jun-12	JUNCTION	234.93	1.50	0.00	
Jun-13	JUNCTION	236.41	1.50	0.00	
Jun-14	JUNCTION	236.54	3.00	0.00	
Jun-15	JUNCTION	328.00	3.00	0.00	
Jun-17	JUNCTION	389.02	6.00	0.00	
Jun-19	JUNCTION	361.00	3.00	0.00	
Jun-2	JUNCTION	398.59	1.00	0.00	
Jun-35	JUNCTION	207.16	2.00	0.00	
Jun-38	JUNCTION	212.00	1.50	0.00	
Jun-39	JUNCTION	216.23	1.50	0.00	
Jun-40	JUNCTION	223.93	1.50	0.00	
Jun-41	JUNCTION	228.02	1.50	0.00	
Jun-42	JUNCTION	233.76	1.50	0.00	
Jun-43	JUNCTION	288.44	1.00	0.00	
Jun-44	JUNCTION	186.38	2.00	0.00	
Jun-45	JUNCTION	380.80	1.00	0.00	
Jun-46	JUNCTION	347.36	1.00	0.00	
Jun-47	JUNCTION	325.87	1.00	0.00	
Jun-6	JUNCTION	401.03	1.25	0.00	
Jun-7	JUNCTION	401.10	1.25	0.00	
Jun-8	JUNCTION	408.16	1.00	0.00	
Jun-9	JUNCTION	290.00	3.00	0.00	
Jun-11	OUTFALL	177.94	2.00	0.00	

\*\*\*\*\*  
Inlet Summary  
\*\*\*\*\*

Inlet ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation ft	Inlet Rim Elevation ft	Ponded Area ft <sup>2</sup>	Initial Water Elevation ft	G. Clog Fa
Jun-24	FHWA HEC-22	GENERIC	N/A	1	409.00	410.00	10.00	409.00	

\*\*\*\*\*  
Roadway and Gutter Summary  
\*\*\*\*\*

Inlet ID	Roadway Longitudinal	Roadway Cross	Roadway Manning's	Gutter Cross	Gutter Width	Gutter Depression

## Downstream System

	Slope ft/ft	Slope ft/ft	Roughness	Slope ft/ft	ft	in
Jun-24	-	0.0200	0.0160	0.0620	2.00	2.00

\*\*\*\*\*  
Link Summary  
\*\*\*\*\*

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Bioswale	Jun-35	Jun-44	CONDUIT	198.0	10.4971	0.0320
Con-10	Jun-14	Jun-13	CONDUIT	30.5	0.4264	0.0110
Con-11	Jun-13	Jun-12	CONDUIT	93.5	1.5831	0.0110
Con-12	Jun-12	Jun-41	CONDUIT	33.9	20.4015	0.0110
Con-13	Jun-10	Jun-14	CONDUIT	275.4	15.7778	0.0320
Con-16	Jun-2	Jun-17	CONDUIT	55.7	17.1721	0.0110
Con-17	Jun-19	Jun-15	CONDUIT	250.1	13.1942	0.0320
Con-2	Jun-8	Jun-6	CONDUIT	57.2	12.4716	0.0110
Con-3	Jun-7	Jun-6	CONDUIT	33.3	0.2100	0.0110
Con-33	Jun-24	Jun-8	CONDUIT	35.2	2.3843	0.0110
Con-38	Jun-38	Jun-35	CONDUIT	149.1	3.2468	0.0110
Con-39	Jun-39	Jun-38	CONDUIT	63.3	6.6793	0.0110
Con-4	Jun-6	Jun-2	CONDUIT	98.9	2.4671	0.0110
Con-40	Jun-40	Jun-38	CONDUIT	103.2	11.5657	0.0110
Con-41	Jun-41	Jun-40	CONDUIT	145.9	2.8039	0.0110
Con-42	Jun-17	Jun-45	CONDUIT	256.4	3.2054	0.0110
Con-43	Jun-43	Jun-42	CONDUIT	396.9	13.7754	0.0110
Con-44	Jun-42	Jun-41	CONDUIT	92.4	6.2148	0.0110
Con-45	Jun-44	Jun-11	CONDUIT	120.5	7.0036	0.0320
Con-46	Jun-45	Jun-46	CONDUIT	168.3	19.8681	0.0110
Con-47	Jun-46	Jun-47	CONDUIT	108.2	19.8669	0.0110
Con-48	Jun-47	Jun-43	CONDUIT	274.1	13.6561	0.0110
Con-8	Jun-9	Jun-10	CONDUIT	67.5	14.8126	0.0110
Con-9	Jun-15	Jun-9	CONDUIT	350.3	10.8466	0.0320

\*\*\*\*\*  
Cross Section Summary  
\*\*\*\*\*

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft <sup>2</sup>	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Bioswale	IRREGULAR	2.00	15.32	1	22.42	0.99	334.42
Con-10	CIRCULAR	1.50	1.50	1	1.77	0.38	8.11
Con-11	CIRCULAR	1.50	1.50	1	1.77	0.38	15.62
Con-12	CIRCULAR	1.50	1.50	1	1.77	0.38	56.07
Con-13	TRAPEZOIDAL	3.00	7.00	1	12.00	1.27	258.92



## Downstream System

Con-16	CIRCULAR	0.83	0.83	1	0.55	0.21	10.73
Con-17	TRAPEZOIDAL	3.00	7.00	1	12.00	1.27	236.77
Con-2	CIRCULAR	0.83	0.83	1	0.55	0.21	9.14
Con-3	CIRCULAR	1.25	1.25	1	1.23	0.31	3.50
Con-33	CIRCULAR	1.00	1.00	1	0.79	0.25	6.50
Con-38	CIRCULAR	1.50	1.50	1	1.77	0.38	22.37
Con-39	CIRCULAR	1.50	1.50	1	1.77	0.38	32.08
Con-4	CIRCULAR	0.83	0.83	1	0.55	0.21	4.07
Con-40	CIRCULAR	1.50	1.50	1	1.77	0.38	42.22
Con-41	CIRCULAR	1.50	1.50	1	1.77	0.38	20.79
Con-42	CIRCULAR	0.67	0.67	1	0.35	0.17	2.56
Con-43	CIRCULAR	0.67	0.67	1	0.35	0.17	5.30
Con-44	CIRCULAR	1.50	1.50	1	1.77	0.38	30.95
Con-45	IRREGULAR	2.00	15.32	1	22.42	0.99	273.16
Con-46	CIRCULAR	0.67	0.67	1	0.35	0.17	6.37
Con-47	CIRCULAR	0.67	0.67	1	0.35	0.17	6.37
Con-48	CIRCULAR	0.67	0.67	1	0.35	0.17	5.28
Con-8	CIRCULAR	1.25	1.25	1	1.23	0.31	29.38
Con-9	TRAPEZOIDAL	3.00	7.00	1	12.00	1.27	214.68

\*\*\*\*\*  
 Transect Summary  
 \*\*\*\*\*

Transect XS-1

Area:

0.0110	0.0225	0.0347	0.0474	0.0607
0.0745	0.0889	0.1039	0.1194	0.1351
0.1512	0.1675	0.1842	0.2011	0.2183
0.2358	0.2535	0.2716	0.2899	0.3085
0.3275	0.3466	0.3661	0.3859	0.4059
0.4263	0.4469	0.4678	0.4890	0.5105
0.5322	0.5543	0.5766	0.5993	0.6222
0.6454	0.6688	0.6926	0.7166	0.7410
0.7656	0.7905	0.8157	0.8412	0.8669
0.8930	0.9193	0.9459	0.9728	1.0000

Head:

0.0281	0.0548	0.0803	0.1048	0.1284
0.1512	0.1732	0.1947	0.2182	0.2422
0.2657	0.2888	0.3115	0.3339	0.3559
0.3776	0.3990	0.4201	0.4410	0.4615
0.4819	0.5019	0.5218	0.5414	0.5609
0.5801	0.5992	0.6181	0.6368	0.6553
0.6737	0.6919	0.7100	0.7279	0.7458
0.7634	0.7810	0.7985	0.8158	0.8330
0.8501	0.8671	0.8841	0.9009	0.9176
0.9343	0.9508	0.9673	0.9837	1.0000

Width:

0.4125	0.4334	0.4543	0.4752	0.4961
0.5170	0.5379	0.5587	0.5718	0.5822

## Downstream System

0.5927	0.6031	0.6136	0.6240	0.6345
0.6449	0.6554	0.6658	0.6762	0.6867
0.6971	0.7076	0.7180	0.7285	0.7389
0.7493	0.7598	0.7702	0.7807	0.7911
0.8016	0.8120	0.8225	0.8329	0.8433
0.8538	0.8642	0.8747	0.8851	0.8956
0.9060	0.9164	0.9269	0.9373	0.9478
0.9582	0.9687	0.9791	0.9896	1.0000

```

*****
Runoff Quantity Continuity      Volume      Depth
*****                          acre-ft     inches
-----                          -
Total Precipitation .....      6.722      4.841
Surface Runoff .....           0.278      0.007
Continuity Error (%) .....     -0.000
    
```

```

*****
Flow Routing Continuity      Volume      Volume
*****                          acre-ft     Mgallons
-----                          -
External Inflow .....        0.000      0.000
External Outflow .....        2.776      0.905
Initial Stored Volume .....    0.000      0.000
Final Stored Volume .....      0.009      0.003
Continuity Error (%) .....     -0.003
    
```

\*\*\*\*\*  
 Composite Curve Number Computations Report  
 \*\*\*\*\*

-----  
 Subbasin Sub-1  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
Woods & grass combination, Fair	3.07	B	65.00
Composite Area & Weighted CN	3.07		65.00

-----  
 Subbasin Sub-13  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
Pasture, grassland, or range, Fair	2.22	B	69.00
Composite Area & Weighted CN	2.22		69.00

## Downstream System

### Subbasin Sub-14

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.96	-	73.00
Composite Area & Weighted CN	0.96		73.00

### Subbasin Sub-15

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.07	-	98.00
Composite Area & Weighted CN	1.07		98.00

### Subbasin Sub-2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	3.34	-	73.00
Composite Area & Weighted CN	3.34		73.00

### Subbasin Sub-4

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.03	-	70.00
Composite Area & Weighted CN	1.03		70.00

### Subbasin Sub-5

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.68	-	70.00
Composite Area & Weighted CN	0.68		70.00

### Subbasin Sub-6

Soil/Surface Description	Area (acres)	Soil Group	CN
Woods & grass combination, Fair	3.15	B	65.00

## Downstream System

Composite Area & Weighted CN

3.15

65.00

\*\*\*\*\*  
SCS TR-55 Time of Concentration Computations Report  
\*\*\*\*\*

### Sheet Flow Equation

-----

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where:

Tc = Time of Concentration (hrs)  
n = Manning's Roughness  
Lf = Flow Length (ft)  
P = 2 yr, 24 hr Rainfall (inches)  
Sf = Slope (ft/ft)

### Shallow Concentrated Flow Equation

-----

$$V = 16.1345 * (S_f^{0.5}) \text{ (unpaved surface)}$$
$$V = 20.3282 * (S_f^{0.5}) \text{ (paved surface)}$$
$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

Tc = Time of Concentration (hrs)  
Lf = Flow Length (ft)  
V = Velocity (ft/sec)  
Sf = Slope (ft/ft)

### Channel Flow Equation

-----

$$V = (1.49 * (R^{2/3}) * (S_f^{0.5})) / n$$
$$R = A_q / W_p$$
$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

Tc = Time of Concentration (hrs)  
Lf = Flow Length (ft)  
R = Hydraulic Radius (ft)  
Aq = Flow Area (ft<sup>2</sup>)  
Wp = Wetted Perimeter (ft)  
V = Velocity (ft/sec)  
Sf = Slope (ft/ft)  
n = Manning's Roughness

## Downstream System

-----  
 Subbasin Sub-1  
 -----

-----  
 Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	45.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	1.71	0.00	0.00
Computed Flow Time (minutes):	0.59	0.00	0.00

-----  
 Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	1.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	7.22	0.00	0.00
Computed Flow Time (minutes):	0.00	0.00	0.00

-----  
 Channel Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	260.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	12.00	0.00	0.00
Wetted Perimeter (ft):	9.50	0.00	0.00
Velocity (ft/sec):	25.96	0.00	0.00
Computed Flow Time (minutes):	0.17	0.00	0.00

-----  
 Total TOC (minutes): 5.00  
 -----

-----  
 Subbasin Sub-13  
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-----  
 Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	75.00	0.00	0.00
Slope (%):	15.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	1.15	0.00	0.00

## Downstream System

Computed Flow Time (minutes):      1.09            0.00            0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	120.00	0.00	0.00
Slope (%):	15.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	6.25	0.00	0.00
Computed Flow Time (minutes):	0.32	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	1.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	1.00	0.00	0.00
Wetted Perimeter (ft):	0.11	0.00	0.00
Velocity (ft/sec):	59.01	0.00	0.00
Computed Flow Time (minutes):	0.00	0.00	0.00

Total TOC (minutes):                    5.00

-----  
Subbasin Sub-14  
-----

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (minutes):	8.45	0.00	0.00

Total TOC (minutes):                    8.45

-----  
Subbasin Sub-15  
-----

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C

## Downstream System

Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	25.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.05	0.00	0.00
Computed Flow Time (minutes):	7.98	0.00	0.00

### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	400.00	0.00	0.00
Slope (%):	5.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	3.61	0.00	0.00
Computed Flow Time (minutes):	1.85	0.00	0.00
<hr/>			
Total TOC (minutes):	9.83		

### Subbasin Sub-2

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	100.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	0.13	0.00	0.00
Computed Flow Time (minutes):	12.76	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	100.00	0.00	0.00
Slope (%):	0.30	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	1.11	0.00	0.00
Computed Flow Time (minutes):	1.50	0.00	0.00

#### Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	475.00	0.00	0.00
Slope (%):	0.30	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.00	0.00	0.00

## Downstream System

Velocity (ft/sec):	1.17	0.00	0.00
Computed Flow Time (minutes):	6.78	0.00	0.00
<hr/>			
Total TOC (minutes):	21.04		
<hr/>			

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 Subbasin Sub-4  
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### Sheet Flow Computations

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	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	68.00	0.00	0.00
Slope (%):	30.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	1.49	0.00	0.00
Computed Flow Time (minutes):	0.76	0.00	0.00

### Shallow Concentrated Flow Computations

-----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	1.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	7.22	0.00	0.00
Computed Flow Time (minutes):	0.00	0.00	0.00

### Channel Flow Computations

-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	164.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	12.00	0.00	0.00
Wetted Perimeter (ft):	9.50	0.00	0.00
Velocity (ft/sec):	25.96	0.00	0.00
Computed Flow Time (minutes):	0.11	0.00	0.00

Total TOC (minutes):	5.00		
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 Subbasin Sub-5  
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### Sheet Flow Computations

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## Downstream System

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	45.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	1.71	0.00	0.00
Computed Flow Time (minutes):	0.59	0.00	0.00

### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	1.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	7.22	0.00	0.00
Computed Flow Time (minutes):	0.00	0.00	0.00

### Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	200.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	12.00	0.00	0.00
Wetted Perimeter (ft):	9.50	0.00	0.00
Velocity (ft/sec):	25.96	0.00	0.00
Computed Flow Time (minutes):	0.13	0.00	0.00

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Total TOC (minutes): 5.00

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### Subbasin Sub-6

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	80.00	0.00	0.00
Slope (%):	60.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	2.03	0.00	0.00
Computed Flow Time (minutes):	0.66	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	1.00	0.00	0.00
Slope (%):	20.00	0.00	0.00

## Downstream System

Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	7.22	0.00	0.00
Computed Flow Time (minutes):	0.00	0.00	0.00

### Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	330.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	12.00	0.00	0.00
Wetted Perimeter (ft):	9.50	0.00	0.00
Velocity (ft/sec):	25.96	0.00	0.00
Computed Flow Time (minutes):	0.21	0.00	0.00
<hr/>			
Total TOC (minutes):	5.00		

\*\*\*\*\*  
Subbasin Runoff Summary  
\*\*\*\*\*

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	Time of Concentration hh:mm:ss
Sub-1	4.860	1.561	0.920	65.000	0	00:05:00
Sub-13	4.860	1.856	0.880	69.000	0	00:05:00
Sub-14	4.860	2.171	0.470	73.000	0	00:08:26
Sub-15	4.860	4.623	1.230	98.000	0	00:09:49
Sub-2	4.860	2.171	1.500	73.000	0	00:21:02
Sub-4	4.860	1.933	0.550	70.000	0	00:05:00
Sub-5	4.860	1.933	0.630	70.000	0	00:05:00
Sub-6	4.860	1.561	0.950	65.000	0	00:05:00
Averages / Totals	4.860	2.018	6.83			

\*\*\*\*\*  
Node Depth Summary  
\*\*\*\*\*

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days hh:mm	Maximum Ponded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-10	0.15	0.33	280.33	0 08:05	0	0	0:00:00

## Downstream System

Jun-12	0.12	0.23	235.16	0	08:05	0	0	0:00:00
Jun-13	0.27	0.56	236.97	0	08:05	0	0	0:00:00
Jun-14	0.37	0.78	237.32	0	08:05	0	0	0:00:00
Jun-15	0.09	0.21	328.21	0	08:00	0	0	0:00:00
Jun-17	0.22	0.52	389.54	0	08:10	0	0	0:00:00
Jun-19	0.06	0.13	361.13	0	08:00	0	0	0:00:00
Jun-2	0.12	0.24	398.83	0	08:10	0	0	0:00:00
Jun-35	0.11	0.23	207.39	0	08:05	0	0	0:00:00
Jun-38	0.33	0.71	212.71	0	08:06	0	0	0:00:00
Jun-39	0.09	0.20	216.43	0	08:05	0	0	0:00:00
Jun-40	0.18	0.34	224.27	0	08:06	0	0	0:00:00
Jun-41	0.28	0.58	228.60	0	08:06	0	0	0:00:00
Jun-42	0.13	0.25	234.01	0	08:11	0	0	0:00:00
Jun-43	0.14	0.29	288.73	0	08:11	0	0	0:00:00
Jun-44	0.12	0.26	186.64	0	08:06	0	0	0:00:00
Jun-45	0.13	0.26	381.06	0	08:10	0	0	0:00:00
Jun-46	0.13	0.26	347.62	0	08:10	0	0	0:00:00
Jun-47	0.14	0.29	326.16	0	08:10	0	0	0:00:00
Jun-6	0.19	0.41	401.44	0	08:10	0	0	0:00:00
Jun-7	0.31	0.63	401.73	0	08:10	0	0	0:00:00
Jun-8	0.00	0.00	408.16	0	00:00	0	0	0:00:00
Jun-9	0.12	0.22	290.22	0	08:01	0	0	0:00:00
Jun-11	0.12	0.26	178.20	0	08:06	0	0	0:00:00

\*\*\*\*\*  
Node Flow Summary  
\*\*\*\*\*

Node ID	Element Type	Maximum Lateral Inflow cfs	Maximum Total Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
Jun-10	JUNCTION	0.91	2.96	0 08:05	0.00	
Jun-12	JUNCTION	0.00	2.96	0 08:05	0.00	
Jun-13	JUNCTION	0.00	2.96	0 08:05	0.00	
Jun-14	JUNCTION	0.00	2.96	0 08:05	0.00	
Jun-15	JUNCTION	0.63	1.16	0 08:00	0.00	
Jun-17	JUNCTION	0.00	1.95	0 08:10	0.00	
Jun-19	JUNCTION	0.54	0.54	0 08:00	0.00	
Jun-2	JUNCTION	0.47	1.95	0 08:10	0.00	
Jun-35	JUNCTION	0.87	6.76	0 08:05	0.00	
Jun-38	JUNCTION	0.00	6.03	0 08:06	0.00	
Jun-39	JUNCTION	1.23	1.23	0 08:05	0.00	
Jun-40	JUNCTION	0.00	4.82	0 08:06	0.00	
Jun-41	JUNCTION	0.00	4.82	0 08:06	0.00	
Jun-42	JUNCTION	0.00	1.94	0 08:11	0.00	
Jun-43	JUNCTION	0.00	1.94	0 08:10	0.00	
Jun-44	JUNCTION	0.00	6.76	0 08:05	0.00	

## Downstream System

Jun-45	JUNCTION	0.00	1.94	0	08:10	0.00
Jun-46	JUNCTION	0.00	1.94	0	08:10	0.00
Jun-47	JUNCTION	0.00	1.94	0	08:10	0.00
Jun-6	JUNCTION	0.00	1.50	0	08:10	0.00
Jun-7	JUNCTION	1.50	1.50	0	08:10	0.00
Jun-8	JUNCTION	0.00	0.00	0	00:00	0.00
Jun-9	JUNCTION	0.94	2.07	0	08:01	0.00
Jun-11	OUTFALL	0.00	6.76	0	08:06	0.00

\*\*\*\*\*  
 Inlet Depth Summary  
 \*\*\*\*\*

Inlet ID	Max Gutter Spread during Peak Flow ft	Max Gutter Water Elev during Peak Flow ft	Max Gutter Water Depth during Peak Flow ft	Time of Maximum Depth Occurrence days hh:mm
Jun-24	0.00	410.00	0.00	0 00:00

\*\*\*\*\*  
 Inlet Flow Summary  
 \*\*\*\*\*

Inlet ID	Peak Flow cfs	Peak Lateral Flow cfs	Peak Flow Intercepted by Inlet cfs	Peak Flow Bypassing Inlet cfs	Inlet Efficiency during Peak Flow %	Total Flooding acre-in	Total Time Flooded minutes
Jun-24	0.00	0.00	-	-	-	0.000	0

\*\*\*\*\*  
 Outfall Loading Summary  
 \*\*\*\*\*

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Maximum Flow cfs
Jun-11	98.93	1.90	6.76
System	98.93	1.90	6.76

## Downstream System

\*\*\*\*\*  
 Link Flow Summary  
 \*\*\*\*\*

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged Minutes
Bioswale	CHANNEL	0 08:05	3.87	1.00	6.76	334.42	0.02	0.12	0
Con-10	CONDUIT	0 08:05	3.87	1.00	2.96	8.11	0.37	0.45	0
Con-11	CONDUIT	0 08:05	7.92	1.00	2.96	15.62	0.19	0.26	0
Con-12	CONDUIT	0 08:05	7.71	1.00	2.96	56.07	0.05	0.27	0
Con-13	CONDUIT	0 08:05	3.45	1.00	2.96	258.92	0.01	0.18	0
Con-16	CONDUIT	0 08:10	8.12	1.00	1.95	10.73	0.18	0.45	0
Con-17	CONDUIT	0 08:00	2.75	1.00	0.54	236.77	0.00	0.06	0
Con-2	CONDUIT	0 00:00	0.00	1.00	0.00	9.14	0.00	0.25	0
Con-3	CONDUIT	0 08:10	3.10	1.00	1.50	3.50	0.43	0.42	0
Con-33	CONDUIT	0 00:00	0.00	1.00	0.00	6.50	0.00	0.00	0
Con-38	CONDUIT	0 08:06	12.67	1.00	6.03	22.37	0.27	0.31	0
Con-39	CONDUIT	0 08:05	4.38	1.00	1.23	32.08	0.04	0.30	0
Con-4	CONDUIT	0 08:10	7.57	1.00	1.50	4.07	0.37	0.39	0
Con-40	CONDUIT	0 08:06	8.72	1.00	4.82	42.22	0.11	0.35	0
Con-41	CONDUIT	0 08:06	10.40	1.00	4.82	20.79	0.23	0.31	0
Con-42	CONDUIT	0 08:10	9.22	1.00	1.94	2.56	0.76	0.58	0
Con-43	CONDUIT	0 08:11	14.47	1.00	1.94	5.30	0.37	0.41	0
Con-44	CONDUIT	0 08:11	5.17	1.00	1.94	30.95	0.06	0.28	0
Con-45	CHANNEL	0 08:06	3.63	1.00	6.76	273.16	0.02	0.13	0
Con-46	CONDUIT	0 08:10	15.36	1.00	1.94	6.37	0.31	0.39	0
Con-47	CONDUIT	0 08:10	14.44	1.00	1.94	6.37	0.31	0.41	0
Con-48	CONDUIT	0 08:10	13.47	1.00	1.94	5.28	0.37	0.43	0
Con-8	CONDUIT	0 08:01	10.31	1.00	2.07	29.38	0.07	0.22	0
Con-9	CONDUIT	0 08:00	4.36	1.00	1.16	214.68	0.01	0.07	0

\*\*\*\*\*  
 Highest Flow Instability Indexes  
 \*\*\*\*\*  
 Link Con-45 (2)  
 Link Con-39 (1)  
 Link Con-38 (1)

WARNING 139 : Poned area defined for on sag Inlet Jun-24 is zero. Assumed 10 ft<sup>2</sup> (0.929 m<sup>2</sup>).

Analysis begun on: Thu Oct 30 18:55:18 2008  
 Analysis ended on: Thu Oct 30 18:55:23 2008  
 Total elapsed time: 00:00:05

# Downstream System

BOSS International StormNET® - Version 4.11.0 (Build 13753)

---

```
*****
Analysis Options
*****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-20
Time of Concentration..... SCS TR-55
Link Routing Method ..... Hydrodynamic
Pond Exfiltration..... None
Starting Date ..... JUN-21-2008 00:00:00
Ending Date ..... JUN-22-2008 00:00:00
Report Time Step ..... 00:05:00
```

```
*****
Element Count
*****
Number of rain gages ..... 1
Number of subbasins ..... 8
Number of nodes ..... 25
Number of links ..... 24
```

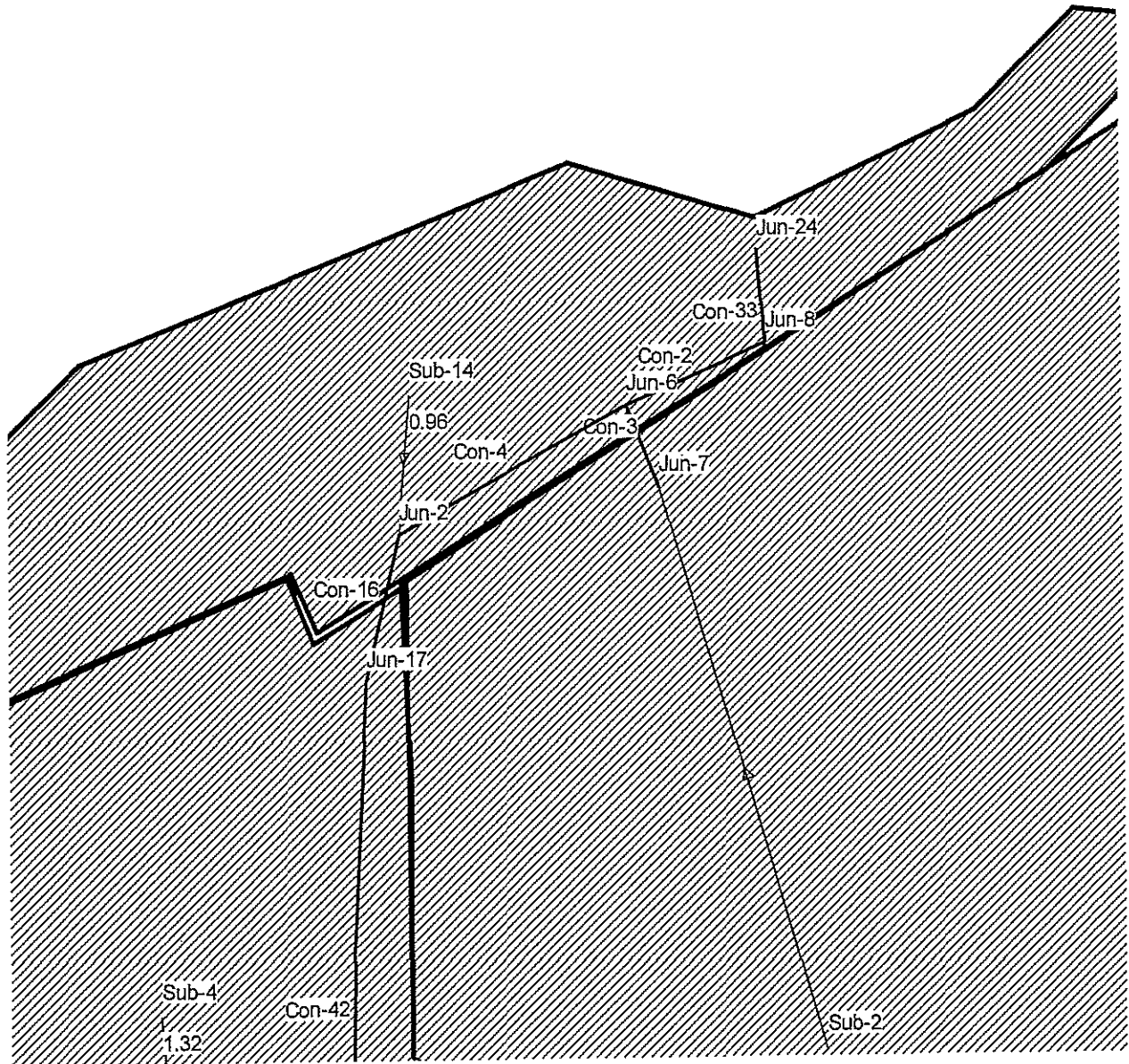
```
*****
Raingage Summary
*****
```

Gage ID	Data Source	Data Type	Interval hours
Gage-1	Water Quality Storm	CUMULATIVE	0.10

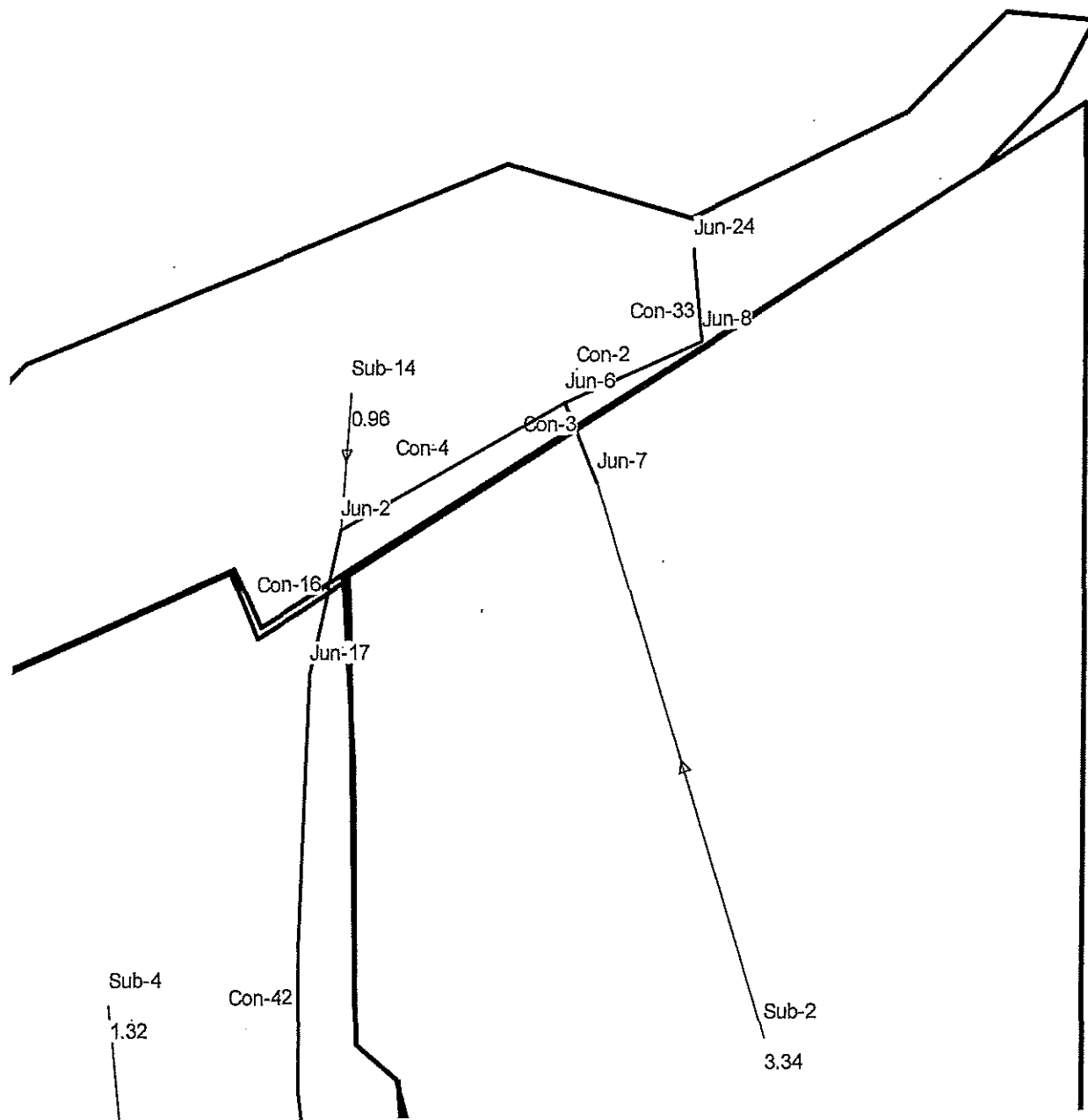
```
*****
Subbasin Summary
*****
```

Subbasin ID	Total Area acres
Sub-1	3.07
Sub-13	2.24
Sub-14	0.96
Sub-15	1.07
Sub-2	3.34
Sub-4	1.32
Sub-5	1.51
Sub-6	3.15

# Downstream System

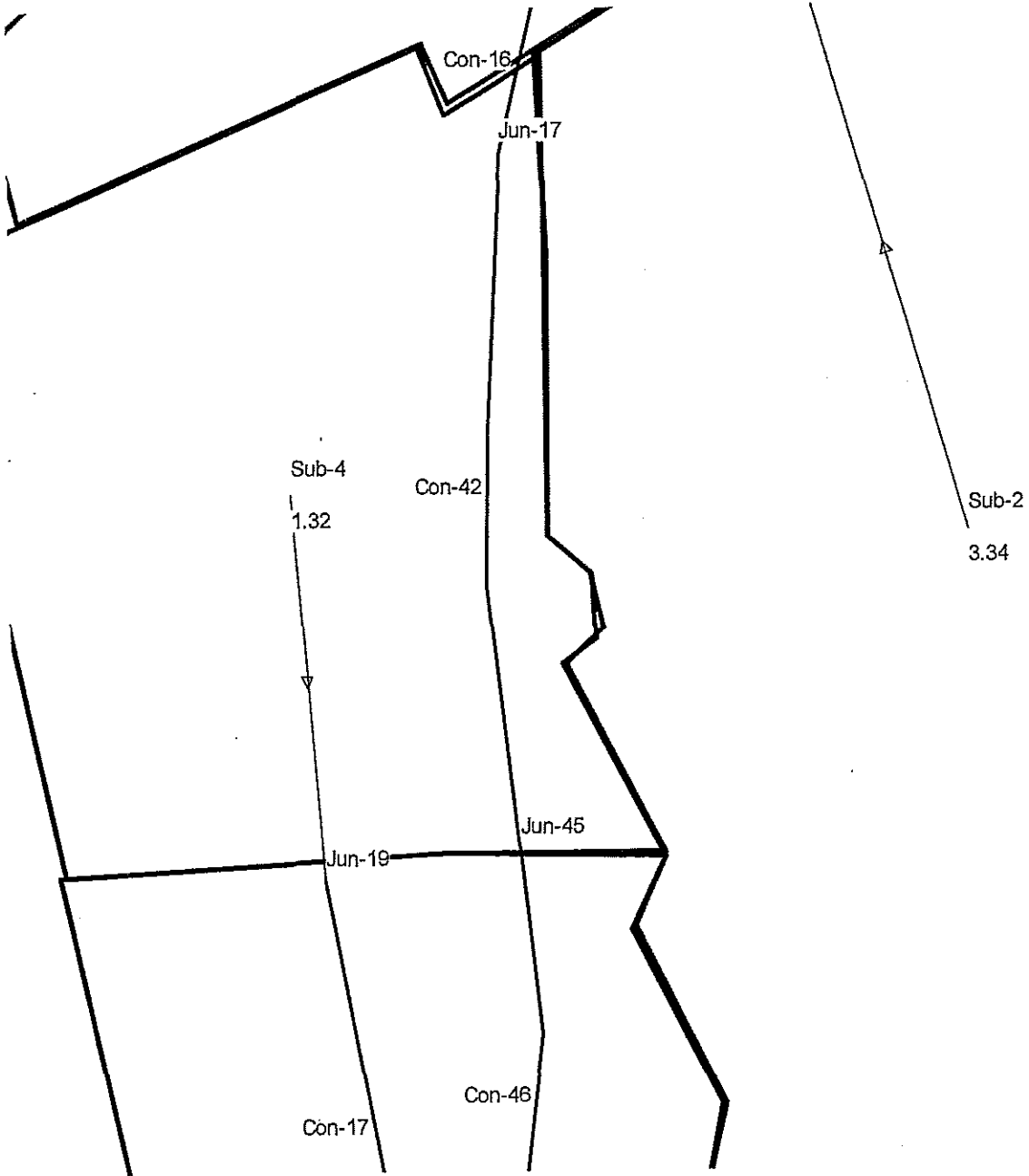


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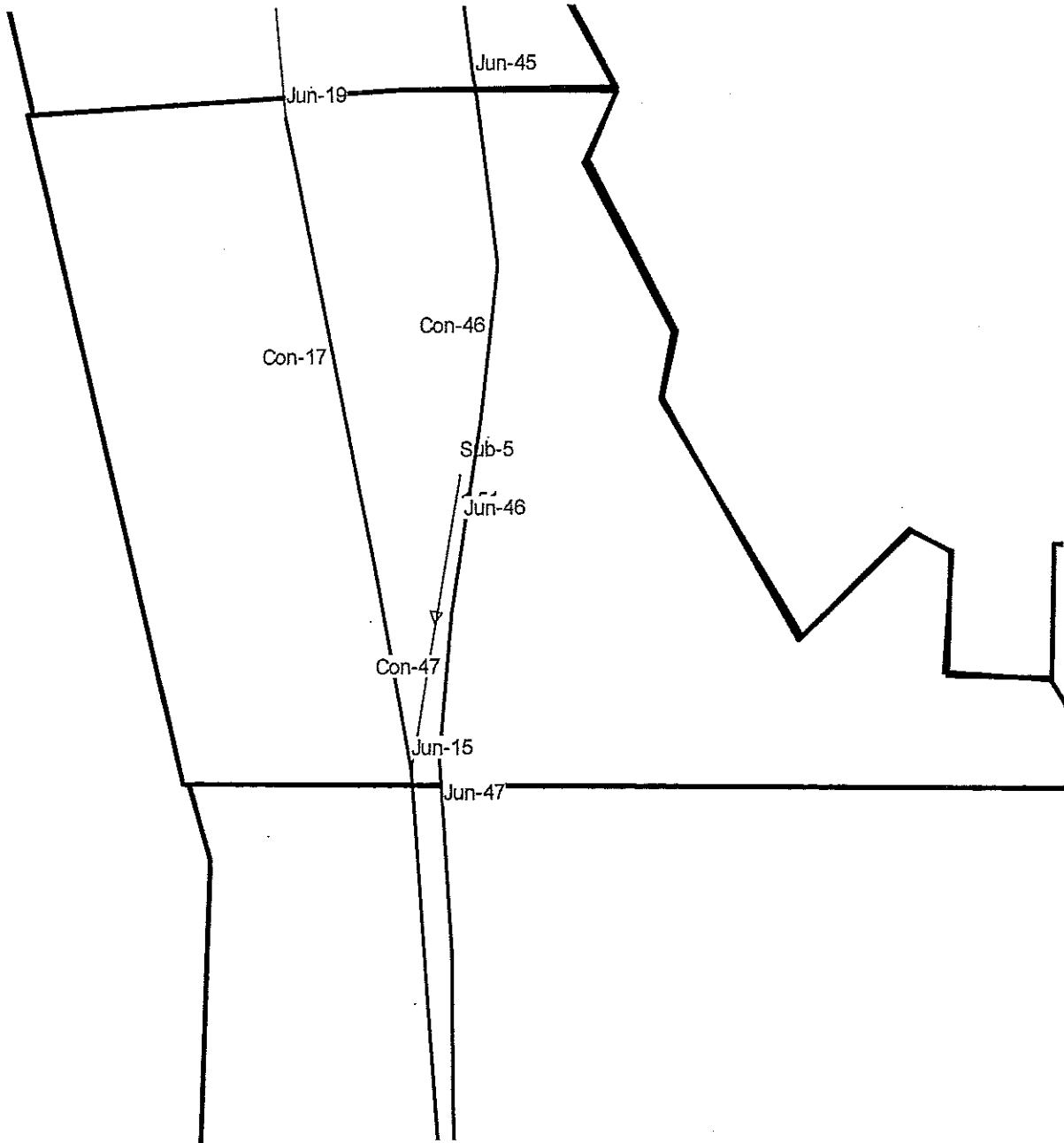




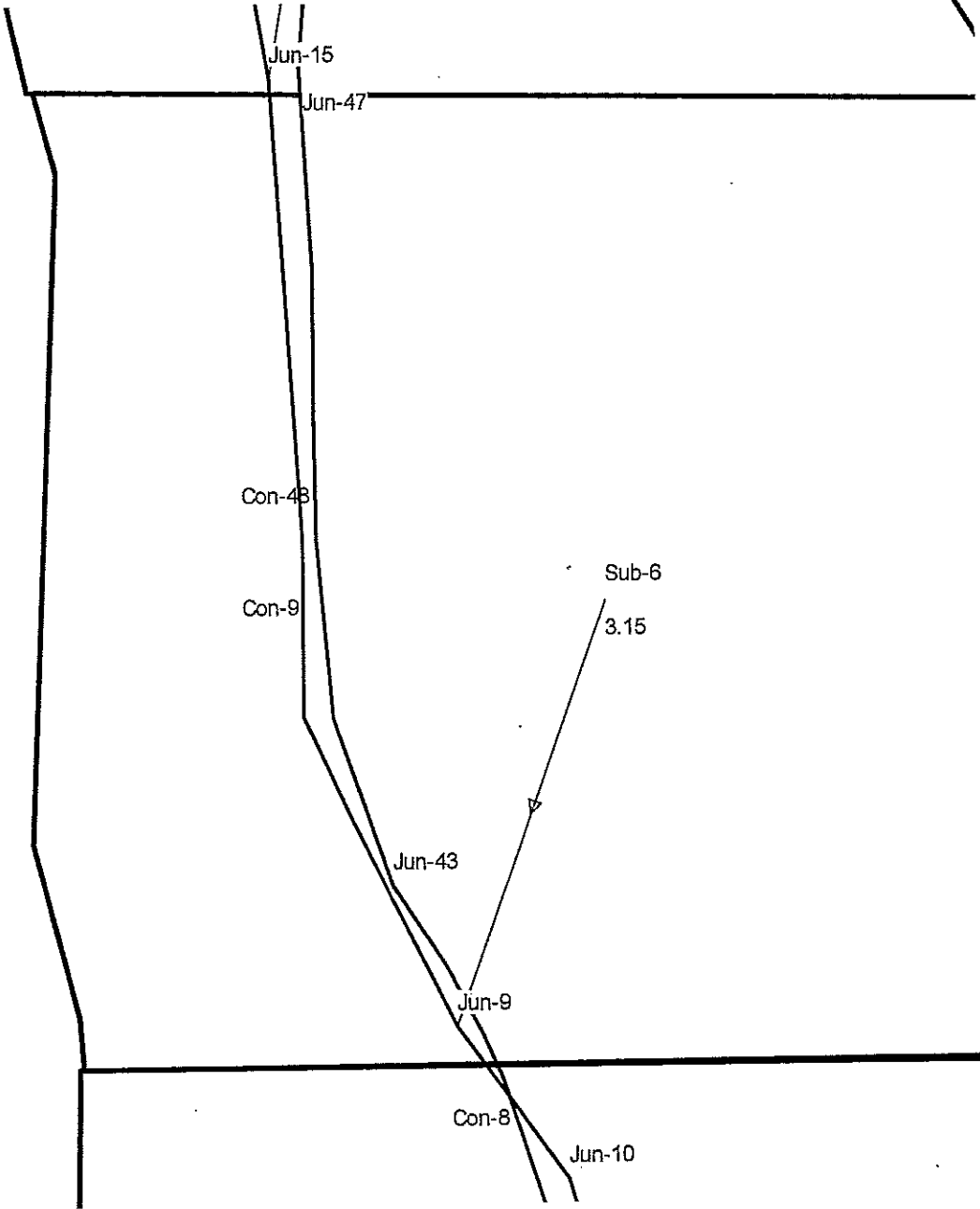
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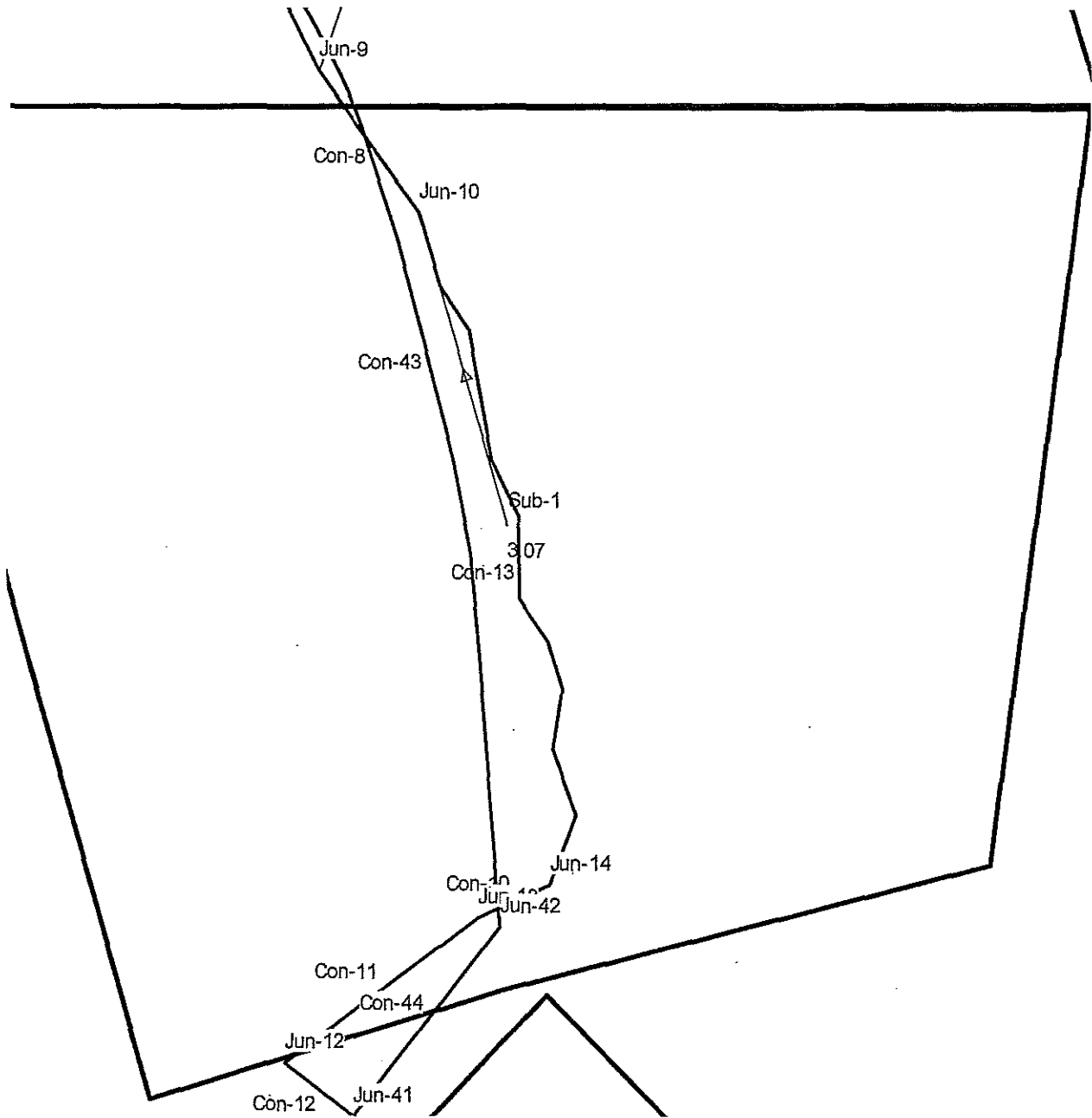
# Downstream System



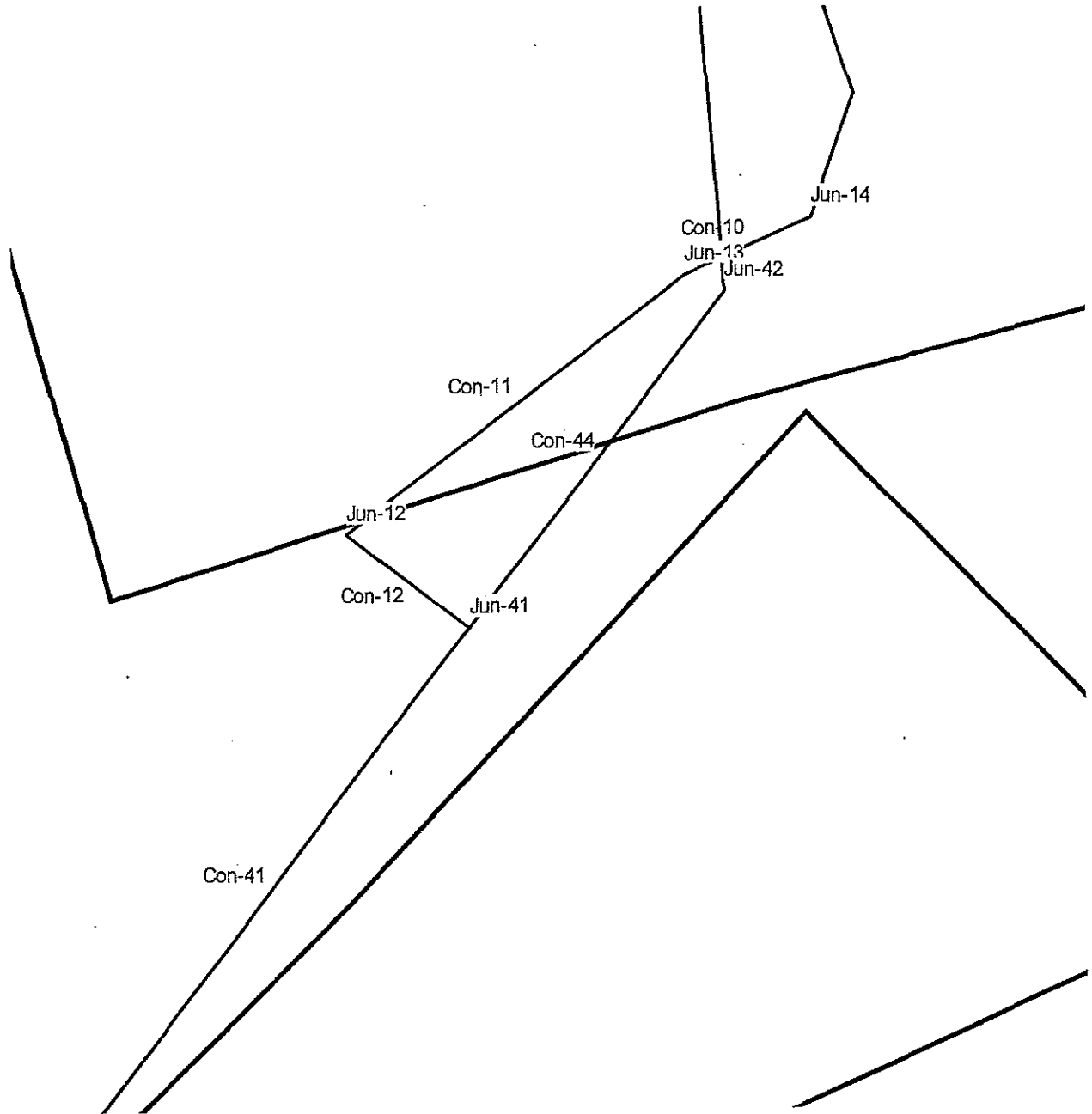
# Downstream System



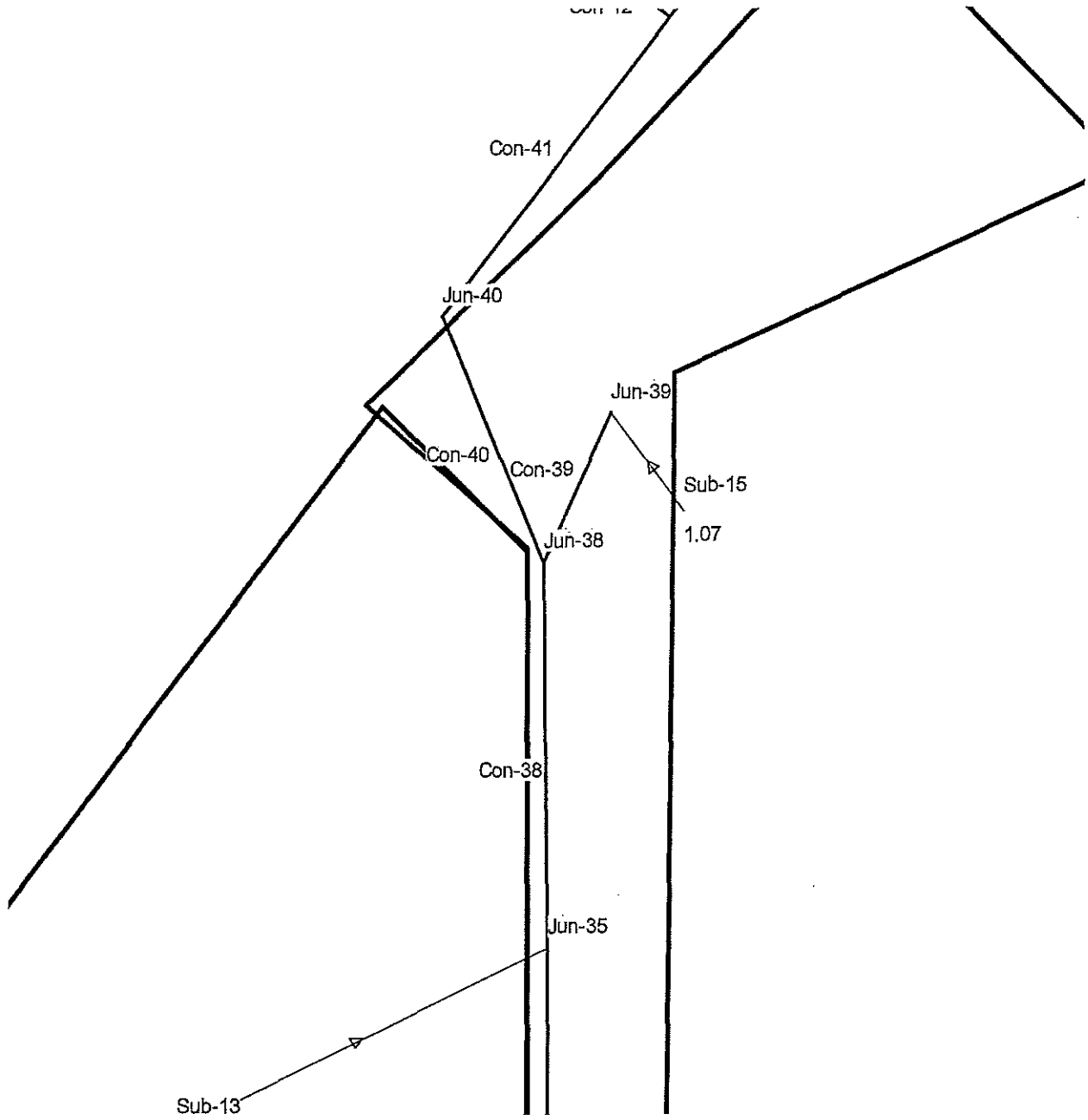
# Downstream System



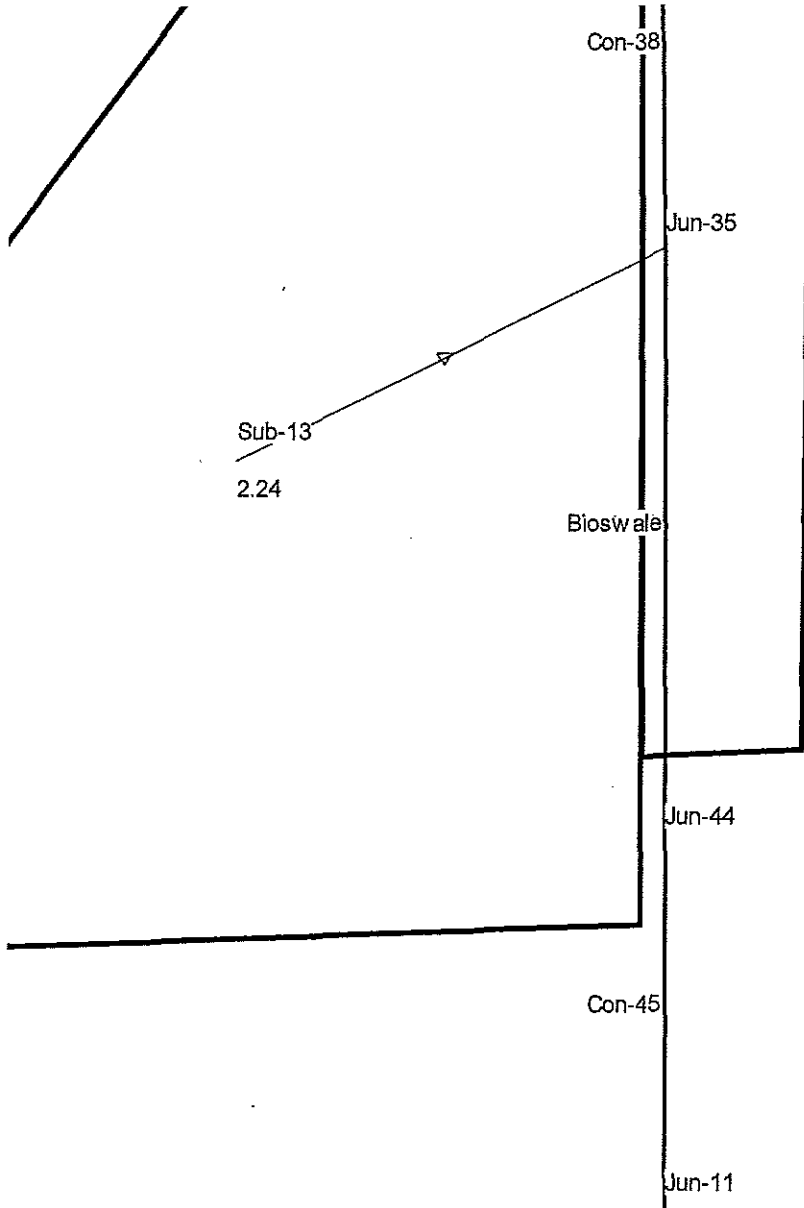
# Downstream System



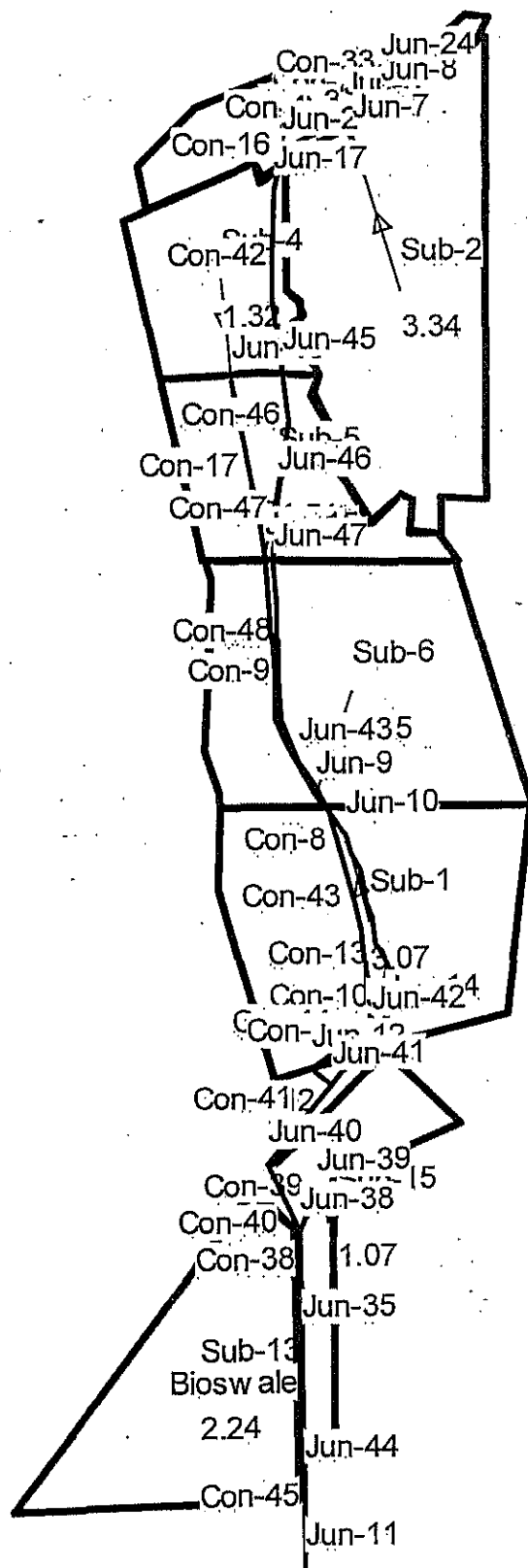
# Downstream System



# Downstream System



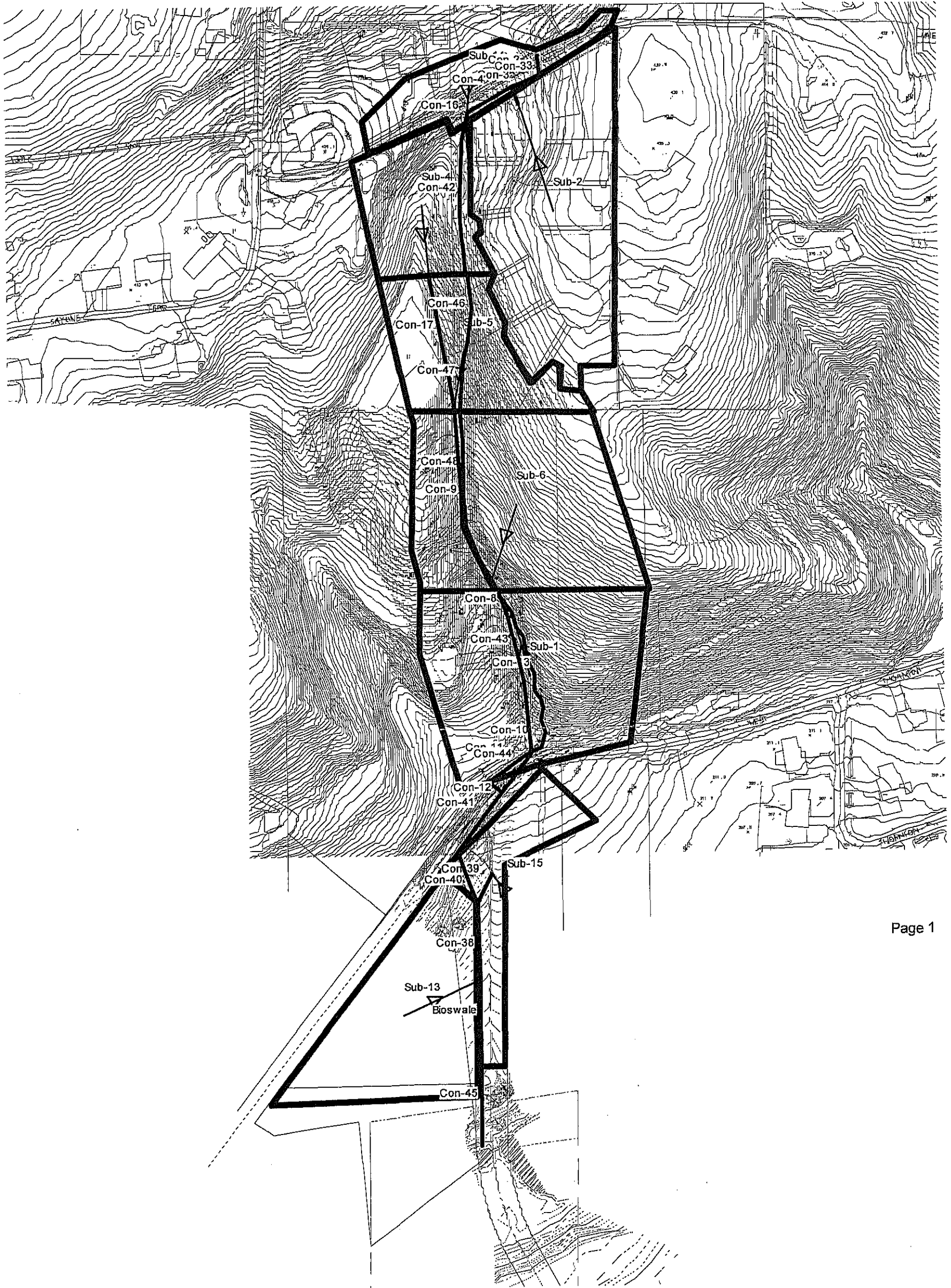
### Downstream System



Element Labels



# Downstream System





Fabian Estates  
06-83 E  
Sheet 13a MH #2 Hydraulic  
Jump Calc

MH #2 w/ 18" out

Assume worst case scenario where water is slowed to 0 ft/sec in manhole before discharging into 18" pipe

Normal depth of 18" = 5.04" = 0.42'

$$V_1 = 14.17 \text{ ft/sec}$$

$$V_2 = 5.17 \text{ ft/sec}$$

$$\text{Entrance loss} = \frac{V^2}{2g} = \frac{(14.17 \frac{\text{ft}}{\text{sec}})^2}{2 \cdot 32.2 \frac{\text{ft}}{\text{sec}^2}} = 3.25'$$

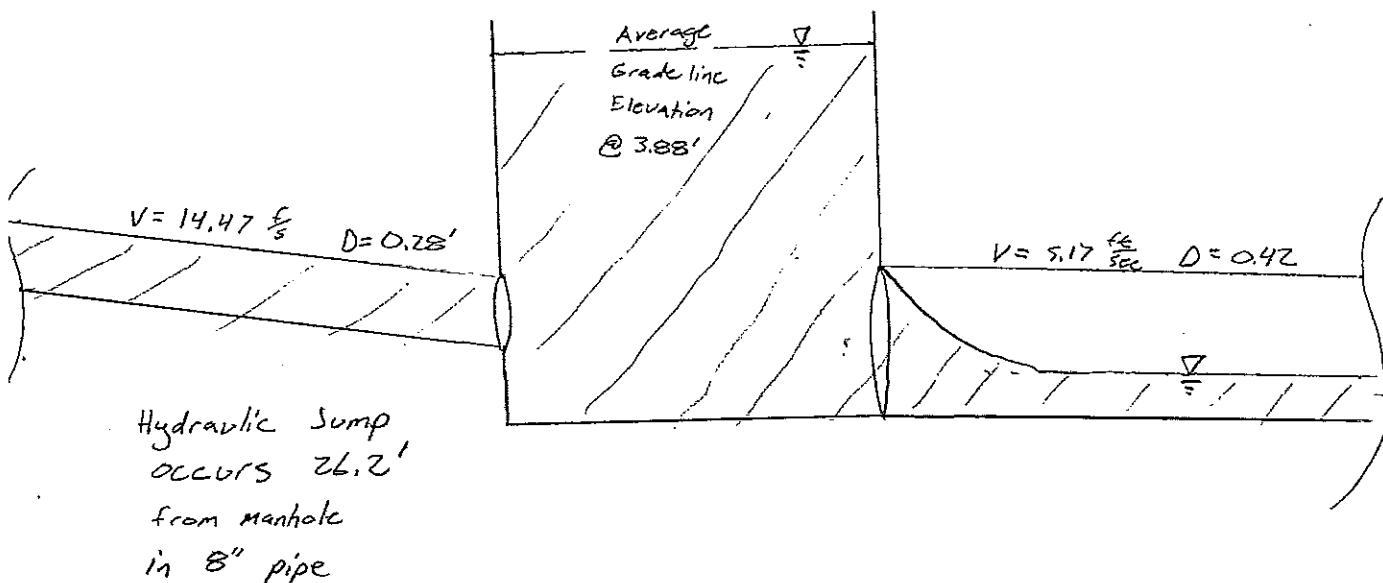
$$\text{Exit loss} = 0.5 \frac{V^2}{2g} = 0.5 \cdot \frac{5.17^2}{2 \cdot 32.2} = 0.21'$$

$$\text{Total loss} = 3.46'$$

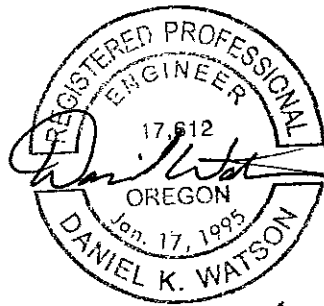
$$\text{Total Depth} = 0.42' + 3.46' = 3.88'$$

$$\text{MH Depth} = 4.18'$$

Water will not exceed the limits of the MH  
But it is recommended that a bolt down lid be installed



**WATER QUALITY REPORT  
FABIAN ESTATES SUBDIVISION  
ALBANY, OR 97321**



RENEWAL DATE: 6/30/10

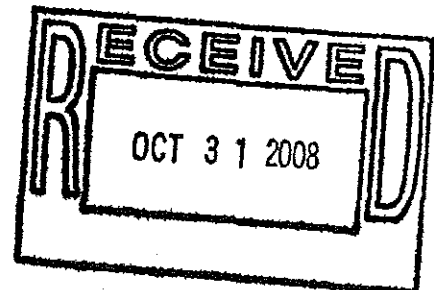
**Prepared By:** Nolan Nelson, E.I.T  
**Checked By:** Daniel Watson, P.E.  
K&D Engineering,  
P.O. Box 725  
Albany, OR 97321

**Client:** Gary Davenport  
Fabian Estates, LLC

**Project No.:** 06-63-E

**Date:** October 31, 2008

**Contents:** Summary  
Stormceptor Detail  
Storm Drain Plan and Profile  
Stormnet Basin Map  
Stormnet Reports  
Swale Flow Spreadsheet  
Swale Design Plan



## **PROJECT DESCRIPTION**

The proposed subdivision Fabian Estates is approximately 4.6 acres on the south side of Maier Lane. The tax lot is TL 3300 of Map 10-04-36 in the City of Albany, Benton County, Oregon. This study was done to determine the storm water quality flows to be treated in order to minimize impact downstream of the project site.

## **TREATMENT**

The flows from the public streets associated with Fabian Estates will be routed through a Stormceptor (or Downstream Defender) pollution control manhole. The flows will then be routed by culverts to a bioswale before discharge into West Thornton Lake.

## **METHODS**

Peak flows were calculated using the SCS Urban Hydrograph Method as described in the NRCS Engineering Handbook. This method uses an equation based on land use, slope, and soil conditions. Calculations for flow were performed using the Stormnet software, swale capacities were determined using Manning's Equation for open channel flow.

## **INCLUDED AREAS**

The areas included in this report are the Fabian Estates subdivision site, the areas downstream of Fabian estates and the areas surrounding the access road down to West Thornton Lake.

## **WATER QUALITY FLOWS**

Water Quality flows and times of concentration were determined using the Stormnet software based on the guidelines set forth by the City of Portland. A time of concentration was developed for each area using the NRCS TR-55. Flows were calculated using a 1.5 inch 24 hour Type 1A storm which is 75% of the 2 year storm. The curve numbers for the SCS method were based on the NRCS Engineering Handbook. The curve numbers ranged from 72 for the undeveloped areas and 98 for impervious areas. Individual hydrographs for sub basins' discharges are attached to this report. The maximum water quality flow is 0.36 cfs. The storm water will ultimately discharge into the West Thornton Lake.

## **DESIGN**

This design is intended for pollution control of runoff leaving the Fabian Estates Subdivision. The runoff enters the storm drain system in Fabian Estates and flows through a pollution control manhole before entering into a vegetated swale and eventually is discharged into West Thornton Lake.

The swale was designed by City of Portland 2008 Standards under the performance approach.. The City of Portland requirements are as follows:

The swale width and profile shall be designed to convey runoff from the pollution reduction design storm intensity at:

- Maximum design depth of 0.33 feet.
- Maximum design velocity of 0.9 feet per second.
- Minimum hydraulic residence time (time for  $Q_{\text{design}}$  to pass through the swale) of 9 minutes.
- Minimum longitudinal slope of 0.5 percent, maximum slope of 5 percent. For slopes greater than 5 percent, check dams shall be used (one 6-inch high dam every 10 feet).
- Designed using a Manning "n" value of 0.25.
- 4:1 (or flatter) side slopes in the treatment area.
- Minimum length of 100 feet.
- A minimum of 1 foot of freeboard above the water surface shall be provided for facilities not protected by high-flow storm diversion devices.
- Swales without high-flow diversion devices shall be sized to safely convey the 25-year storm event
- Velocity through the facility shall not exceed 3 feet per second (fps) during the high-flow events
- The swale shall incorporate a flow-spreading device at the inlet. In swales with a bottom width greater than 6 feet, a flow spreader shall be installed at least every 50 feet.
- To minimize flow channelization, the swale bottom shall be smooth, with uniform longitudinal slope,
- a minimum bottom width of 4 feet.
- Maximum bottom width shall be 8 feet..

The swale was designed at a slope of 2% with a bottom width of 4 feet. The swale can convey up to 0.6 cfs and still maintain City of Portland requirements. The maximum water quality flow will be 0.36 cfs with a maximum velocity of 0.34 feet per second. Because the minimum residence time is 9 minutes this swale has a minimum length of 185 feet. The actual swale will be 195 feet in length. Freeboard was designed to be 1.5 feet above the treatment area. High Flow velocities for a 25 year storm are approximately 0.63 feet per second. (see Minimum Grassy Swale Design spreadsheet)

## **INSTALLATION AND MAINTENANCE**

Installation will be the responsibility of the developer. The swale will be installed during construction of the public facilities. All the swales should be constructed under the City of Portland's standards for a grassy swale. As called out by the Washington County Clean Water Services Standards, plantings for the bottom of the swale shall be either:

Mix 1

75-89% Tall or meadow Fescue  
10-15% Seaside Creeping Bentgrass or Colonial Bentgrass  
5-10% Redtop  
or,

Mix 2

60-70% Tall Fescue  
10-15% Seaside Creeping Bentgrass or Colonial Bentgrass  
10-15% Meadow Foxtail  
6-10% Alsike Clover  
1-5% Marshfield Big Trefoil  
1-6% Redtop

Swales will be maintained long term by the City of Albany.







# Hydro Conduit

STC 450i Precast Concrete Stormceptor  
(450 US Gallon Capacity)

PROJECT:  
LOCATION:

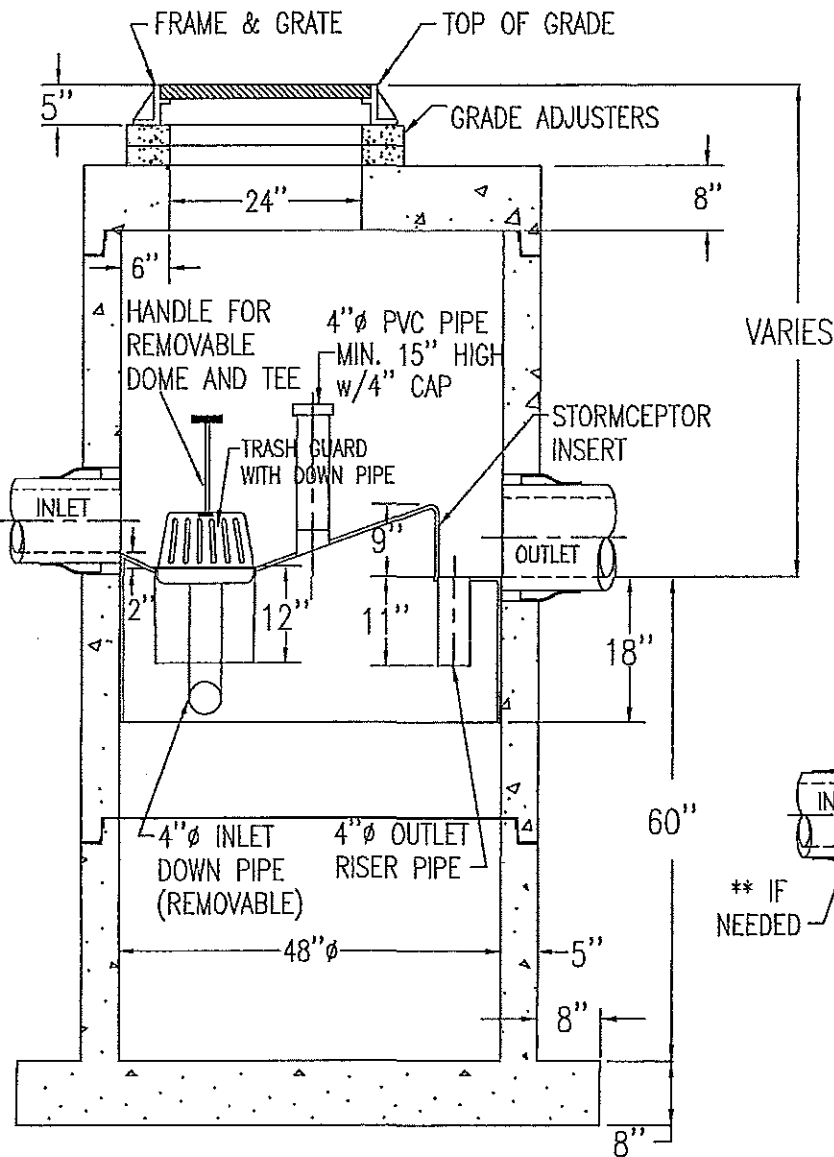
DR. BY: N. BALDWIN

CK. BY:

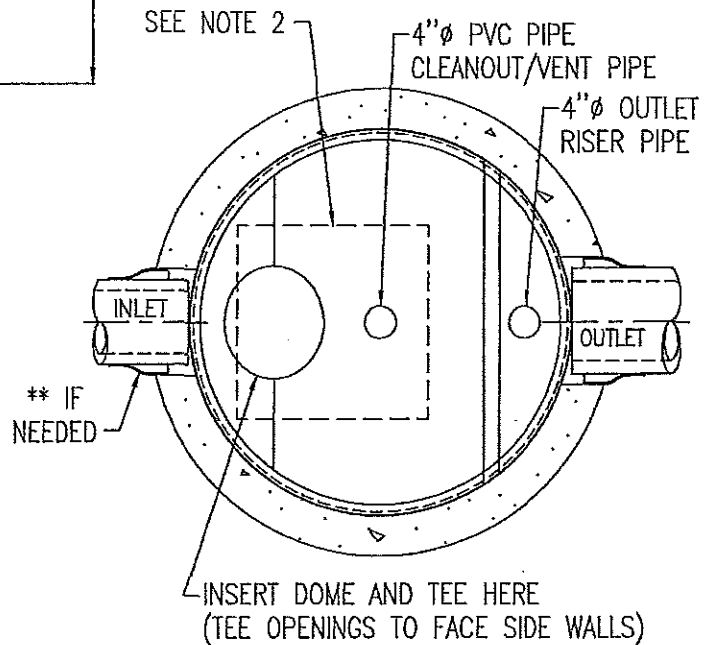
DATE: MARCH 20, 2001

SCALE: N.T.S.

DWG.#



SECTION THRU CHAMBER



SECTION THRU PLAN VIEW

NOTE :

1. THE USE OF FLEXIBLE CONNECTIONS IS RECOMMENDED AT THE OUTLET WHERE APPLICABLE.
2. THE COVER SHOULD BE POSITIONED OVER THE 4"Ø CLEANOUT/VENT PIPE AND THE 4"Ø INLET DOWN PIPE.
3. THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OFF THE FOLLOWING U.S. PATENTS: #4985148, #5498331, #5725760, #5753115, #5849181.
4. CONTRACTOR TO PROVIDE CRANE TO SET UNIT (HEAVIEST SECTION WEIGHS 5000 LB)

### Downstream System

	Slope ft/ft	Slope ft/ft	Roughness	Slope ft/ft	ft	in
Jun-24	-	0.0200	0.0160	0.0620	2.00	2.00

\*\*\*\*\*  
Link Summary  
\*\*\*\*\*

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Bioswale	Jun-35	Jun-44	CONDUIT	198.0	10.4971	0.0320
Con-10	Jun-14	Jun-13	CONDUIT	30.5	0.4264	0.0110
Con-11	Jun-13	Jun-12	CONDUIT	93.5	1.5831	0.0110
Con-12	Jun-12	Jun-41	CONDUIT	33.9	20.4015	0.0110
Con-13	Jun-10	Jun-14	CONDUIT	275.4	15.7778	0.0320
Con-16	Jun-2	Jun-17	CONDUIT	55.7	17.1721	0.0110
Con-17	Jun-19	Jun-15	CONDUIT	250.1	13.1942	0.0320
Con-2	Jun-8	Jun-6	CONDUIT	57.2	12.4716	0.0110
Con-3	Jun-7	Jun-6	CONDUIT	33.3	0.2100	0.0110
Con-33	Jun-24	Jun-8	CONDUIT	35.2	2.3843	0.0110
Con-38	Jun-38	Jun-35	CONDUIT	149.1	3.2468	0.0110
Con-39	Jun-39	Jun-38	CONDUIT	63.3	6.6793	0.0110
Con-4	Jun-6	Jun-2	CONDUIT	98.9	2.4671	0.0110
Con-40	Jun-40	Jun-38	CONDUIT	103.2	11.5657	0.0110
Con-41	Jun-41	Jun-40	CONDUIT	145.9	2.8039	0.0110
Con-42	Jun-17	Jun-45	CONDUIT	256.4	3.2054	0.0110
Con-43	Jun-43	Jun-42	CONDUIT	396.9	13.7754	0.0110
Con-44	Jun-42	Jun-41	CONDUIT	92.4	6.2148	0.0110
Con-45	Jun-44	Jun-11	CONDUIT	120.5	7.0036	0.0320
Con-46	Jun-45	Jun-46	CONDUIT	168.3	19.8681	0.0110
Con-47	Jun-46	Jun-47	CONDUIT	108.2	19.8669	0.0110
Con-48	Jun-47	Jun-43	CONDUIT	274.1	13.6561	0.0110
Con-8	Jun-9	Jun-10	CONDUIT	67.5	14.8126	0.0110
Con-9	Jun-15	Jun-9	CONDUIT	350.3	10.8466	0.0320

\*\*\*\*\*  
Cross Section Summary  
\*\*\*\*\*

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft <sup>2</sup>	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Bioswale	IRREGULAR	2.00	15.32	1	22.42	0.99	334.42
Con-10	CIRCULAR	1.50	1.50	1	1.77	0.38	8.11
Con-11	CIRCULAR	1.50	1.50	1	1.77	0.38	15.62
Con-12	CIRCULAR	1.50	1.50	1	1.77	0.38	56.07
Con-13	TRAPEZOIDAL	3.00	7.00	1	12.00	1.27	258.92

### Downstream System

Con-16	CIRCULAR	0.83	0.83	1	0.55	0.21	10.73
Con-17	TRAPEZOIDAL	3.00	7.00	1	12.00	1.27	236.77
Con-2	CIRCULAR	0.83	0.83	1	0.55	0.21	9.14
Con-3	CIRCULAR	1.25	1.25	1	1.23	0.31	3.50
Con-33	CIRCULAR	1.00	1.00	1	0.79	0.25	6.50
Con-38	CIRCULAR	1.50	1.50	1	1.77	0.38	22.37
Con-39	CIRCULAR	1.50	1.50	1	1.77	0.38	32.08
Con-4	CIRCULAR	0.83	0.83	1	0.55	0.21	4.07
Con-40	CIRCULAR	1.50	1.50	1	1.77	0.38	42.22
Con-41	CIRCULAR	1.50	1.50	1	1.77	0.38	20.79
Con-42	CIRCULAR	0.67	0.67	1	0.35	0.17	2.56
Con-43	CIRCULAR	0.67	0.67	1	0.35	0.17	5.30
Con-44	CIRCULAR	1.50	1.50	1	1.77	0.38	30.95
Con-45	IRREGULAR	2.00	15.32	1	22.42	0.99	273.16
Con-46	CIRCULAR	0.67	0.67	1	0.35	0.17	6.37
Con-47	CIRCULAR	0.67	0.67	1	0.35	0.17	6.37
Con-48	CIRCULAR	0.67	0.67	1	0.35	0.17	5.28
Con-8	CIRCULAR	1.25	1.25	1	1.23	0.31	29.38
Con-9	TRAPEZOIDAL	3.00	7.00	1	12.00	1.27	214.68

\*\*\*\*\*  
 Transect Summary  
 \*\*\*\*\*

Transect XS-1  
 Area:

0.0110	0.0225	0.0347	0.0474	0.0607
0.0745	0.0889	0.1039	0.1194	0.1351
0.1512	0.1675	0.1842	0.2011	0.2183
0.2358	0.2535	0.2716	0.2899	0.3085
0.3275	0.3466	0.3661	0.3859	0.4059
0.4263	0.4469	0.4678	0.4890	0.5105
0.5322	0.5543	0.5766	0.5993	0.6222
0.6454	0.6688	0.6926	0.7166	0.7410
0.7656	0.7905	0.8157	0.8412	0.8669
0.8930	0.9193	0.9459	0.9728	1.0000

Hrad:

0.0281	0.0548	0.0803	0.1048	0.1284
0.1512	0.1732	0.1947	0.2182	0.2422
0.2657	0.2888	0.3115	0.3339	0.3559
0.3776	0.3990	0.4201	0.4410	0.4615
0.4819	0.5019	0.5218	0.5414	0.5609
0.5801	0.5992	0.6181	0.6368	0.6553
0.6737	0.6919	0.7100	0.7279	0.7458
0.7634	0.7810	0.7985	0.8158	0.8330
0.8501	0.8671	0.8841	0.9009	0.9176
0.9343	0.9508	0.9673	0.9837	1.0000

Width:

0.4125	0.4334	0.4543	0.4752	0.4961
0.5170	0.5379	0.5587	0.5718	0.5822

### Downstream System

0.5927	0.6031	0.6136	0.6240	0.6345
0.6449	0.6554	0.6658	0.6762	0.6867
0.6971	0.7076	0.7180	0.7285	0.7389
0.7493	0.7598	0.7702	0.7807	0.7911
0.8016	0.8120	0.8225	0.8329	0.8433
0.8538	0.8642	0.8747	0.8851	0.8956
0.9060	0.9164	0.9269	0.9373	0.9478
0.9582	0.9687	0.9791	0.9896	1.0000

```

*****
Volume      Depth
Runoff Quantity Continuity  acre-ft    inches
*****
Total Precipitation .....      2.075      1.494
Surface Runoff .....          0.021      0.000
Continuity Error (%) .....     -0.000
  
```

```

*****
Volume      Volume
Flow Routing Continuity  acre-ft    Mgallons
*****
External Inflow .....          0.000      0.000
External Outflow .....         0.233      0.076
Initial Stored Volume ....      0.000      0.000
Final Stored Volume .....      0.003      0.001
Continuity Error (%) .....     -0.126
  
```

\*\*\*\*\*  
 Composite Curve Number Computations Report  
 \*\*\*\*\*

-----  
 Subbasin Sub-1  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
Woods & grass combination, Fair	3.07	B	65.00
Composite Area & Weighted CN	3.07		65.00

-----  
 Subbasin Sub-13  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
Pasture, grassland, or range, Fair	2.22	B	69.00
Composite Area & Weighted CN	2.22		69.00

-----

## Downstream System

### Subbasin Sub-14

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.96	-	73.00
Composite Area & Weighted CN	0.96		73.00

### Subbasin Sub-15

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.07	-	98.00
Composite Area & Weighted CN	1.07		98.00

### Subbasin Sub-2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	3.34	-	73.00
Composite Area & Weighted CN	3.34		73.00

### Subbasin Sub-4

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.03	-	70.00
Composite Area & Weighted CN	1.03		70.00

### Subbasin Sub-5

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.68	-	70.00
Composite Area & Weighted CN	0.68		70.00

### Subbasin Sub-6

Soil/Surface Description	Area (acres)	Soil Group	CN
Woods & grass combination, Fair	3.15	B	65.00

## Downstream System

Composite Area &amp; Weighted CN

3.15

65.00

\*\*\*\*\*  
 SCS TR-55 Time of Concentration Computations Report  
 \*\*\*\*\*

### Sheet Flow Equation

-----

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where:

Tc = Time of Concentration (hrs)  
 n = Manning's Roughness  
 Lf = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 Sf = Slope (ft/ft)

### Shallow Concentrated Flow Equation

-----

$$V = 16.1345 * (S_f^{0.5}) \text{ (unpaved surface)}$$

$$V = 20.3282 * (S_f^{0.5}) \text{ (paved surface)}$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)

### Channel Flow Equation

-----

$$V = (1.49 * (R^{2/3}) * (S_f^{0.5})) / n$$

$$R = A_q / W_p$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 Aq = Flow Area (ft<sup>2</sup>)  
 Wp = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)  
 n = Manning's Roughness

## Downstream System

-----  
Subbasin Sub-1  
-----

Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	45.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	1.71	0.00	0.00
Computed Flow Time (minutes):	0.59	0.00	0.00

Shallow Concentrated Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	1.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	7.22	0.00	0.00
Computed Flow Time (minutes):	0.00	0.00	0.00

Channel Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	260.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	12.00	0.00	0.00
Wetted Perimeter (ft):	9.50	0.00	0.00
Velocity (ft/sec):	25.96	0.00	0.00
Computed Flow Time (minutes):	0.17	0.00	0.00

=====  
Total TOC (minutes):                   5.00  
=====

-----  
Subbasin Sub-13  
-----

Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	75.00	0.00	0.00
Slope (%):	15.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	1.15	0.00	0.00

## Downstream System

Computed Flow Time (minutes):      1.09            0.00            0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	120.00	0.00	0.00
Slope (%):	15.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	6.25	0.00	0.00
Computed Flow Time (minutes):	0.32	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	1.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	1.00	0.00	0.00
Wetted Perimeter (ft):	0.11	0.00	0.00
Velocity (ft/sec):	59.01	0.00	0.00
Computed Flow Time (minutes):	0.00	0.00	0.00

=====  
 Total TOC (minutes):                    5.00  
 =====

-----  
 Subbasin Sub-14  
 -----

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (minutes):	8.45	0.00	0.00

=====  
 Total TOC (minutes):                    8.45  
 =====

-----  
 Subbasin Sub-15  
 -----

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C



## Downstream System

Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	25.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.05	0.00	0.00
Computed Flow Time (minutes):	7.98	0.00	0.00

### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	400.00	0.00	0.00
Slope (%):	5.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	3.61	0.00	0.00
Computed Flow Time (minutes):	1.85	0.00	0.00
=====			
Total TOC (minutes):	9.83		
=====			

### Subbasin Sub-2

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	100.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	0.13	0.00	0.00
Computed Flow Time (minutes):	12.76	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	100.00	0.00	0.00
Slope (%):	0.30	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	1.11	0.00	0.00
Computed Flow Time (minutes):	1.50	0.00	0.00

#### Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	475.00	0.00	0.00
Slope (%):	0.30	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.00	0.00	0.00

## Downstream System

Velocity (ft/sec):	1.17	0.00	0.00
Computed Flow Time (minutes):	6.78	0.00	0.00
=====			
Total TOC (minutes):	21.04		
=====			

-----  
 Subbasin Sub-4  
 -----

-----  
 Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	68.00	0.00	0.00
Slope (%):	30.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	1.49	0.00	0.00
Computed Flow Time (minutes):	0.76	0.00	0.00

-----  
 Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	1.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	7.22	0.00	0.00
Computed Flow Time (minutes):	0.00	0.00	0.00

-----  
 Channel Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	164.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	12.00	0.00	0.00
Wetted Perimeter (ft):	9.50	0.00	0.00
Velocity (ft/sec):	25.96	0.00	0.00
Computed Flow Time (minutes):	0.11	0.00	0.00

=====			
Total TOC (minutes):	5.00		
=====			

-----  
 Subbasin Sub-5  
 -----

-----  
 Sheet Flow Computations  
 -----

## Downstream System

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	45.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	1.71	0.00	0.00
Computed Flow Time (minutes):	0.59	0.00	0.00

### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	1.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	7.22	0.00	0.00
Computed Flow Time (minutes):	0.00	0.00	0.00

### Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	200.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	12.00	0.00	0.00
Wetted Perimeter (ft):	9.50	0.00	0.00
Velocity (ft/sec):	25.96	0.00	0.00
Computed Flow Time (minutes):	0.13	0.00	0.00

---

Total TOC (minutes): 5.00

---

### Subbasin Sub-6

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	80.00	0.00	0.00
Slope (%):	60.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	2.03	0.00	0.00
Computed Flow Time (minutes):	0.66	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	1.00	0.00	0.00
Slope (%):	20.00	0.00	0.00

## Downstream System

Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	7.22	0.00	0.00
Computed Flow Time (minutes):	0.00	0.00	0.00

### Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	330.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	12.00	0.00	0.00
Wetted Perimeter (ft):	9.50	0.00	0.00
Velocity (ft/sec):	25.96	0.00	0.00
Computed Flow Time (minutes):	0.21	0.00	0.00
=====			
Total TOC (minutes):	5.00		
=====			

### \*\*\*\*\* Subbasin Runoff Summary \*\*\*\*\*

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days hh:mm:ss
Sub-1	1.500	0.031	0.010	65.000	0 00:05:00
Sub-13	1.500	0.071	0.020	69.000	0 00:05:00
Sub-14	1.500	0.130	0.010	73.000	0 00:08:26
Sub-15	1.500	1.280	0.350	98.000	0 00:09:49
Sub-2	1.500	0.130	0.030	73.000	0 00:21:02
Sub-4	1.500	0.084	0.010	70.000	0 00:05:00
Sub-5	1.500	0.084	0.010	70.000	0 00:05:00
Sub-6	1.500	0.031	0.010	65.000	0 00:05:00
Averages / Totals	1.500	0.151	0.35		

### \*\*\*\*\* Node Depth Summary \*\*\*\*\*

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days hh:mm	Maximum Poned Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-10	0.01	0.03	280.03	0 21:40	0	0	0:00:00

### Downstream System

Jun-12	0.01	0.03	234.96	0	22:49	0	0	0:00:00
Jun-13	0.03	0.07	236.48	0	23:05	0	0	0:00:00
Jun-14	0.04	0.09	236.63	0	23:07	0	0	0:00:00
Jun-15	0.01	0.02	328.02	0	20:22	0	0	0:00:00
Jun-17	0.04	0.07	389.09	0	17:11	0	0	0:00:00
Jun-19	0.01	0.01	361.01	0	18:12	0	0	0:00:00
Jun-2	0.02	0.04	398.63	0	17:07	0	0	0:00:00
Jun-35	0.02	0.05	207.21	0	07:47	0	0	0:00:00
Jun-38	0.08	0.16	212.16	0	07:56	0	0	0:00:00
Jun-39	0.04	0.11	216.34	0	07:58	0	0	0:00:00
Jun-40	0.03	0.05	223.98	0	20:29	0	0	0:00:00
Jun-41	0.04	0.08	228.10	0	20:29	0	0	0:00:00
Jun-42	0.02	0.04	233.80	0	17:13	0	0	0:00:00
Jun-43	0.02	0.04	288.48	0	17:13	0	0	0:00:00
Jun-44	0.02	0.05	186.43	0	08:01	0	0	0:00:00
Jun-45	0.02	0.04	380.84	0	17:13	0	0	0:00:00
Jun-46	0.02	0.04	347.40	0	17:11	0	0	0:00:00
Jun-47	0.02	0.04	325.91	0	17:10	0	0	0:00:00
Jun-6	0.03	0.06	401.09	0	17:07	0	0	0:00:00
Jun-7	0.06	0.10	401.20	0	17:05	0	0	0:00:00
Jun-8	0.00	0.00	408.16	0	00:00	0	0	0:00:00
Jun-9	0.02	0.03	290.03	0	21:37	0	0	0:00:00
Jun-11	0.02	0.07	178.01	0	07:46	0	0	0:00:00

\*\*\*\*\*  
Node Flow Summary  
\*\*\*\*\*

Node ID	Element Type	Maximum Lateral Inflow cfs	Maximum Total Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
Jun-10	JUNCTION	0.01	0.05	0 21:38	0.00	
Jun-12	JUNCTION	0.00	0.05	0 22:45	0.00	
Jun-13	JUNCTION	0.00	0.05	0 23:06	0.00	
Jun-14	JUNCTION	0.00	0.05	0 21:40	0.00	
Jun-15	JUNCTION	0.01	0.02	0 20:20	0.00	
Jun-17	JUNCTION	0.00	0.04	0 17:07	0.00	
Jun-19	JUNCTION	0.01	0.01	0 17:35	0.00	
Jun-2	JUNCTION	0.01	0.04	0 17:07	0.00	
Jun-35	JUNCTION	0.01	0.37	0 07:55	0.00	
Jun-38	JUNCTION	0.00	0.40	0 07:58	0.00	
Jun-39	JUNCTION	0.35	0.35	0 08:00	0.00	
Jun-40	JUNCTION	0.00	0.09	0 20:29	0.00	
Jun-41	JUNCTION	0.00	0.09	0 20:28	0.00	
Jun-42	JUNCTION	0.00	0.04	0 17:13	0.00	
Jun-43	JUNCTION	0.00	0.04	0 17:12	0.00	
Jun-44	JUNCTION	0.00	0.36	0 07:49	0.00	

### Downstream System

Jun-45	JUNCTION	0.00	0.04	0	17:11	0.00
Jun-46	JUNCTION	0.00	0.04	0	17:12	0.00
Jun-47	JUNCTION	0.00	0.04	0	17:12	0.00
Jun-6	JUNCTION	0.00	0.03	0	17:06	0.00
Jun-7	JUNCTION	0.03	0.03	0	17:05	0.00
Jun-8	JUNCTION	0.00	0.00	0	00:00	0.00
Jun-9	JUNCTION	0.01	0.03	0	21:25	0.00
Jun-11	OUTFALL	0.00	0.63	0	07:46	0.00

\*\*\*\*\*  
 Inlet Depth Summary  
 \*\*\*\*\*

Inlet ID	Max Gutter Spread during Peak Flow ft	Max Gutter Water Elev during Peak Flow ft	Max Gutter Water Depth during Peak Flow ft	Time of Maximum Depth Occurrence days hh:mm
Jun-24	0.00	410.00	0.00	0 00:00

\*\*\*\*\*  
 Inlet Flow Summary  
 \*\*\*\*\*

Inlet ID	Peak Flow cfs	Peak Lateral Flow cfs	Peak Flow Intercepted by Inlet cfs	Peak Flow Bypassing Inlet cfs	Inlet Efficiency during Peak Flow %	Total Flooding acre-in	Total Time Flooded minutes
Jun-24	0.00	0.00	-	-	-	0.000	0

\*\*\*\*\*  
 Outfall Loading Summary  
 \*\*\*\*\*

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Maximum Flow cfs
Jun-11	80.11	0.15	0.63
System	80.11	0.15	0.63

## Downstream System

\*\*\*\*\*  
Link Flow Summary  
\*\*\*\*\*

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged Minutes
Bioswale	CHANNEL	0 07:49	2.13	1.00	0.36	334.42	0.00	0.02	0
Con-10	CONDUIT	0 23:06	1.31	1.00	0.05	8.11	0.01	0.05	0
Con-11	CONDUIT	0 22:45	2.57	1.00	0.05	15.62	0.00	0.03	0
Con-12	CONDUIT	0 22:43	2.28	1.00	0.05	56.07	0.00	0.04	0
Con-13	CONDUIT	0 21:40	0.75	1.00	0.05	258.92	0.00	0.02	0
Con-16	CONDUIT	0 17:07	3.09	1.00	0.04	10.73	0.00	0.06	0
Con-17	CONDUIT	0 18:12	0.64	1.00	0.01	236.77	0.00	0.01	0
Con-2	CONDUIT	0 00:00	0.00	1.00	0.00	9.14	0.00	0.03	0
Con-3	CONDUIT	0 17:06	1.02	1.00	0.03	3.50	0.01	0.06	0
Con-33	CONDUIT	0 00:00	0.00	1.00	0.00	6.50	0.00	0.00	0
Con-38	CONDUIT	0 07:55	6.99	1.00	0.37	22.37	0.02	0.07	0
Con-39	CONDUIT	0 07:58	5.02	1.00	0.40	32.08	0.01	0.09	0
Con-4	CONDUIT	0 17:07	2.68	1.00	0.03	4.07	0.01	0.06	0
Con-40	CONDUIT	0 20:29	2.73	1.00	0.09	42.22	0.00	0.06	0
Con-41	CONDUIT	0 20:29	3.44	1.00	0.09	20.79	0.00	0.04	0
Con-42	CONDUIT	0 17:11	3.42	1.00	0.04	2.56	0.02	0.08	0
Con-43	CONDUIT	0 17:13	4.63	1.00	0.04	5.30	0.01	0.06	0
Con-44	CONDUIT	0 17:14	2.17	1.00	0.04	30.95	0.00	0.04	0
Con-45	CHANNEL	0 07:46	2.02	1.00	0.63	273.16	0.00	0.06	0
Con-46	CONDUIT	0 17:12	5.22	1.00	0.04	6.37	0.01	0.06	0
Con-47	CONDUIT	0 17:12	4.89	1.00	0.04	6.37	0.01	0.06	0
Con-48	CONDUIT	0 17:12	4.57	1.00	0.04	5.28	0.01	0.06	0
Con-8	CONDUIT	0 21:38	4.33	1.00	0.03	29.38	0.00	0.02	0
Con-9	CONDUIT	0 20:22	0.80	1.00	0.02	214.68	0.00	0.01	0

\*\*\*\*\*  
Highest Flow Instability Indexes  
\*\*\*\*\*

Link Con-45 (38)  
Link Bioswale (33)  
Link Con-39 (7)  
Link Con-38 (6)

WARNING 139 : Poned area defined for on sag Inlet Jun-24 is zero. Assumed 10 ft<sup>2</sup> (0.929 m<sup>2</sup>).

Analysis begun on: Thu Oct 30 18:55:44 2008  
Analysis ended on: Thu Oct 30 18:55:47 2008  
Total elapsed time: 00:00:03

## Downstream System

BOSS International StormNET® - Version 4.11.0 (Build 13753)

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```
*****
Analysis Options
*****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-20
Time of Concentration..... SCS TR-55
Link Routing Method ..... Hydrodynamic
Pond Exfiltration..... None
Starting Date ..... JUN-21-2008 00:00:00
Ending Date ..... JUN-22-2008 00:00:00
Report Time Step ..... 00:05:00
```

```
*****
Element Count
*****
Number of rain gages ..... 1
Number of subbasins ..... 8
Number of nodes ..... 25
Number of links ..... 24
```

```
*****
Raingage Summary
*****
```

Gage ID	Data Source	Data Type	Interval hours
Gage-1	25 year storm	CUMULATIVE	0.10

```
*****
Subbasin Summary
*****
```

Subbasin ID	Total Area acres
Sub-1	3.07
Sub-13	2.24
Sub-14	0.96
Sub-15	1.07
Sub-2	3.34
Sub-4	1.32
Sub-5	1.51
Sub-6	3.15



### Downstream System

\*\*\*\*\*  
Node Summary  
\*\*\*\*\*

Node ID	Element Type	Invert Elevation ft	Maximum Depth ft	Ponded Area ft <sup>2</sup>	External Inflow
Jun-10	JUNCTION	280.00	3.00	0.00	
Jun-12	JUNCTION	234.93	1.50	0.00	
Jun-13	JUNCTION	236.41	1.50	0.00	
Jun-14	JUNCTION	236.54	3.00	0.00	
Jun-15	JUNCTION	328.00	3.00	0.00	
Jun-17	JUNCTION	389.02	6.00	0.00	
Jun-19	JUNCTION	361.00	3.00	0.00	
Jun-2	JUNCTION	398.59	1.00	0.00	
Jun-35	JUNCTION	207.16	2.00	0.00	
Jun-38	JUNCTION	212.00	1.50	0.00	
Jun-39	JUNCTION	216.23	1.50	0.00	
Jun-40	JUNCTION	223.93	1.50	0.00	
Jun-41	JUNCTION	228.02	1.50	0.00	
Jun-42	JUNCTION	233.76	1.50	0.00	
Jun-43	JUNCTION	288.44	1.00	0.00	
Jun-44	JUNCTION	186.38	2.00	0.00	
Jun-45	JUNCTION	380.80	1.00	0.00	
Jun-46	JUNCTION	347.36	1.00	0.00	
Jun-47	JUNCTION	325.87	1.00	0.00	
Jun-6	JUNCTION	401.03	1.25	0.00	
Jun-7	JUNCTION	401.10	1.25	0.00	
Jun-8	JUNCTION	408.16	1.00	0.00	
Jun-9	JUNCTION	290.00	3.00	0.00	
Jun-11	OUTFALL	177.94	2.00	0.00	

\*\*\*\*\*  
Inlet Summary  
\*\*\*\*\*

Inlet ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation ft	Inlet Rim Elevation ft	Ponded Area ft <sup>2</sup>	Initial Water Elevation ft	Gully Clog Factor
Jun-24	FHWA HEC-22	GENERIC	N/A	1	409.00	410.00	10.00	409.00	0

\*\*\*\*\*  
Roadway and Gutter Summary  
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Inlet ID	Roadway Longitudinal	Roadway Cross	Roadway Manning's	Gutter Cross	Gutter Width	Gutter Depression
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### Downstream System

	Slope ft/ft	Slope ft/ft	Roughness	Slope ft/ft	ft	in
Jun-24	-	0.0200	0.0160	0.0620	2.00	2.00

\*\*\*\*\*  
Link Summary  
\*\*\*\*\*

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Bioswale	Jun-35	Jun-44	CONDUIT	198.0	10.4971	0.0320
Con-10	Jun-14	Jun-13	CONDUIT	30.5	0.4264	0.0110
Con-11	Jun-13	Jun-12	CONDUIT	93.5	1.5831	0.0110
Con-12	Jun-12	Jun-41	CONDUIT	33.9	20.4015	0.0110
Con-13	Jun-10	Jun-14	CONDUIT	275.4	15.7778	0.0320
Con-16	Jun-2	Jun-17	CONDUIT	55.7	17.1721	0.0110
Con-17	Jun-19	Jun-15	CONDUIT	250.1	13.1942	0.0320
Con-2	Jun-8	Jun-6	CONDUIT	57.2	12.4716	0.0110
Con-3	Jun-7	Jun-6	CONDUIT	33.3	0.2100	0.0110
Con-33	Jun-24	Jun-8	CONDUIT	35.2	2.3843	0.0110
Con-38	Jun-38	Jun-35	CONDUIT	149.1	3.2468	0.0110
Con-39	Jun-39	Jun-38	CONDUIT	63.3	6.6793	0.0110
Con-4	Jun-6	Jun-2	CONDUIT	98.9	2.4671	0.0110
Con-40	Jun-40	Jun-38	CONDUIT	103.2	11.5657	0.0110
Con-41	Jun-41	Jun-40	CONDUIT	145.9	2.8039	0.0110
Con-42	Jun-17	Jun-45	CONDUIT	256.4	3.2054	0.0110
Con-43	Jun-43	Jun-42	CONDUIT	396.9	13.7754	0.0110
Con-44	Jun-42	Jun-41	CONDUIT	92.4	6.2148	0.0110
Con-45	Jun-44	Jun-11	CONDUIT	120.5	7.0036	0.0320
Con-46	Jun-45	Jun-46	CONDUIT	168.3	19.8681	0.0110
Con-47	Jun-46	Jun-47	CONDUIT	108.2	19.8669	0.0110
Con-48	Jun-47	Jun-43	CONDUIT	274.1	13.6561	0.0110
Con-8	Jun-9	Jun-10	CONDUIT	67.5	14.8126	0.0110
Con-9	Jun-15	Jun-9	CONDUIT	350.3	10.8466	0.0320

\*\*\*\*\*  
Cross Section Summary  
\*\*\*\*\*

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft <sup>2</sup>	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Bioswale	IRREGULAR	2.00	15.32	1	22.42	0.99	334.42
Con-10	CIRCULAR	1.50	1.50	1	1.77	0.38	8.11
Con-11	CIRCULAR	1.50	1.50	1	1.77	0.38	15.62
Con-12	CIRCULAR	1.50	1.50	1	1.77	0.38	56.07
Con-13	TRAPEZOIDAL	3.00	7.00	1	12.00	1.27	258.92

### Downstream System

Con-16	CIRCULAR	0.83	0.83	1	0.55	0.21	10.73
Con-17	TRAPEZOIDAL	3.00	7.00	1	12.00	1.27	236.77
Con-2	CIRCULAR	0.83	0.83	1	0.55	0.21	9.14
Con-3	CIRCULAR	1.25	1.25	1	1.23	0.31	3.50
Con-33	CIRCULAR	1.00	1.00	1	0.79	0.25	6.50
Con-38	CIRCULAR	1.50	1.50	1	1.77	0.38	22.37
Con-39	CIRCULAR	1.50	1.50	1	1.77	0.38	32.08
Con-4	CIRCULAR	0.83	0.83	1	0.55	0.21	4.07
Con-40	CIRCULAR	1.50	1.50	1	1.77	0.38	42.22
Con-41	CIRCULAR	1.50	1.50	1	1.77	0.38	20.79
Con-42	CIRCULAR	0.67	0.67	1	0.35	0.17	2.56
Con-43	CIRCULAR	0.67	0.67	1	0.35	0.17	5.30
Con-44	CIRCULAR	1.50	1.50	1	1.77	0.38	30.95
Con-45	IRREGULAR	2.00	15.32	1	22.42	0.99	273.16
Con-46	CIRCULAR	0.67	0.67	1	0.35	0.17	6.37
Con-47	CIRCULAR	0.67	0.67	1	0.35	0.17	6.37
Con-48	CIRCULAR	0.67	0.67	1	0.35	0.17	5.28
Con-8	CIRCULAR	1.25	1.25	1	1.23	0.31	29.38
Con-9	TRAPEZOIDAL	3.00	7.00	1	12.00	1.27	214.68

\*\*\*\*\*  
 Transect Summary  
 \*\*\*\*\*

Transect XS-1

Area:	0.0110	0.0225	0.0347	0.0474	0.0607
	0.0745	0.0889	0.1039	0.1194	0.1351
	0.1512	0.1675	0.1842	0.2011	0.2183
	0.2358	0.2535	0.2716	0.2899	0.3085
	0.3275	0.3466	0.3661	0.3859	0.4059
	0.4263	0.4469	0.4678	0.4890	0.5105
	0.5322	0.5543	0.5766	0.5993	0.6222
	0.6454	0.6688	0.6926	0.7166	0.7410
	0.7656	0.7905	0.8157	0.8412	0.8669
	0.8930	0.9193	0.9459	0.9728	1.0000
Hrad:	0.0281	0.0548	0.0803	0.1048	0.1284
	0.1512	0.1732	0.1947	0.2182	0.2422
	0.2657	0.2888	0.3115	0.3339	0.3559
	0.3776	0.3990	0.4201	0.4410	0.4615
	0.4819	0.5019	0.5218	0.5414	0.5609
	0.5801	0.5992	0.6181	0.6368	0.6553
	0.6737	0.6919	0.7100	0.7279	0.7458
	0.7634	0.7810	0.7985	0.8158	0.8330
	0.8501	0.8671	0.8841	0.9009	0.9176
	0.9343	0.9508	0.9673	0.9837	1.0000
Width:	0.4125	0.4334	0.4543	0.4752	0.4961
	0.5170	0.5379	0.5587	0.5718	0.5822

### Downstream System

0.5927	0.6031	0.6136	0.6240	0.6345
0.6449	0.6554	0.6658	0.6762	0.6867
0.6971	0.7076	0.7180	0.7285	0.7389
0.7493	0.7598	0.7702	0.7807	0.7911
0.8016	0.8120	0.8225	0.8329	0.8433
0.8538	0.8642	0.8747	0.8851	0.8956
0.9060	0.9164	0.9269	0.9373	0.9478
0.9582	0.9687	0.9791	0.9896	1.0000

```

*****
Runoff Quantity Continuity
*****
Total Precipitation .....      5.435      3.915
Surface Runoff .....           0.189      0.005
Continuity Error (%) .....     -0.000
    
```

```

*****
Flow Routing Continuity
*****
External Inflow .....           0.000      0.000
External Outflow .....          1.897      0.618
Initial Stored Volume .....     0.000      0.000
Final Stored Volume .....        0.008      0.003
Continuity Error (%) .....     -0.009
    
```

\*\*\*\*\*  
 Composite Curve Number Computations Report  
 \*\*\*\*\*

-----  
 Subbasin Sub-1  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
Woods & grass combination, Fair	3.07	B	65.00
Composite Area & Weighted CN	3.07		65.00

-----  
 Subbasin Sub-13  
 -----

Soil/Surface Description	Area (acres)	Soil Group	CN
Pasture, grassland, or range, Fair	2.22	B	69.00
Composite Area & Weighted CN	2.22		69.00

-----

## Downstream System

### Subbasin Sub-14

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.96	-	73.00
Composite Area & Weighted CN	0.96		73.00

### Subbasin Sub-15

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.07	-	98.00
Composite Area & Weighted CN	1.07		98.00

### Subbasin Sub-2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	3.34	-	73.00
Composite Area & Weighted CN	3.34		73.00

### Subbasin Sub-4

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.03	-	70.00
Composite Area & Weighted CN	1.03		70.00

### Subbasin Sub-5

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.68	-	70.00
Composite Area & Weighted CN	0.68		70.00

### Subbasin Sub-6

Soil/Surface Description	Area (acres)	Soil Group	CN
Woods & grass combination, Fair	3.15	B	65.00

## Downstream System

Composite Area & Weighted CN

3.15

65.00

\*\*\*\*\*  
 SCS TR-55 Time of Concentration Computations Report  
 \*\*\*\*\*

### Sheet Flow Equation

-----

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where:

Tc = Time of Concentration (hrs)  
 n = Manning's Roughness  
 Lf = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 Sf = Slope (ft/ft)

### Shallow Concentrated Flow Equation

-----

$$V = 16.1345 * (S_f^{0.5}) \text{ (unpaved surface)}$$

$$V = 20.3282 * (S_f^{0.5}) \text{ (paved surface)}$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)

### Channel Flow Equation

-----

$$V = (1.49 * (R^{2/3}) * (S_f^{0.5})) / n$$

$$R = A_q / W_p$$

$$T_c = (L_f / V) / (3600 \text{ sec/hr})$$

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 Aq = Flow Area (ft<sup>2</sup>)  
 Wp = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)  
 n = Manning's Roughness

## Downstream System

-----  
 Subbasin Sub-1  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	45.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	1.71	0.00	0.00
Computed Flow Time (minutes):	0.59	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	1.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	7.22	0.00	0.00
Computed Flow Time (minutes):	0.00	0.00	0.00

Channel Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	260.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	12.00	0.00	0.00
Wetted Perimeter (ft):	9.50	0.00	0.00
Velocity (ft/sec):	25.96	0.00	0.00
Computed Flow Time (minutes):	0.17	0.00	0.00

=====  
 Total TOC (minutes):                     5.00  
 =====

-----  
 Subbasin Sub-13  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	75.00	0.00	0.00
Slope (%):	15.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	1.15	0.00	0.00

## Downstream System

Computed Flow Time (minutes):            1.09            0.00            0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	120.00	0.00	0.00
Slope (%):	15.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	6.25	0.00	0.00
Computed Flow Time (minutes):	0.32	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	1.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	1.00	0.00	0.00
Wetted Perimeter (ft):	0.11	0.00	0.00
Velocity (ft/sec):	59.01	0.00	0.00
Computed Flow Time (minutes):	0.00	0.00	0.00

=====  
 Total TOC (minutes):                    5.00  
 =====

-----  
 Subbasin Sub-14  
 -----

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (minutes):	8.45	0.00	0.00

=====  
 Total TOC (minutes):                    8.45  
 =====

-----  
 Subbasin Sub-15  
 -----

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C



### Downstream System

Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	25.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.52	0.00	0.00
Velocity (ft/sec):	0.05	0.00	0.00
Computed Flow Time (minutes):	7.98	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	400.00	0.00	0.00
Slope (%):	5.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	3.61	0.00	0.00
Computed Flow Time (minutes):	1.85	0.00	0.00
=====			
Total TOC (minutes):	9.83		
=====			

Subbasin Sub-2

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.40	0.00	0.00
Flow Length (ft):	100.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	0.13	0.00	0.00
Computed Flow Time (minutes):	12.76	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	100.00	0.00	0.00
Slope (%):	0.30	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	1.11	0.00	0.00
Computed Flow Time (minutes):	1.50	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	475.00	0.00	0.00
Slope (%):	0.30	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.00	0.00	0.00

### Downstream System

Velocity (ft/sec):	1.17	0.00	0.00
Computed Flow Time (minutes):	6.78	0.00	0.00
<hr/>			
Total TOC (minutes):	21.04		
<hr/>			

-----  
 Subbasin Sub-4  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	68.00	0.00	0.00
Slope (%):	30.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	1.49	0.00	0.00
Computed Flow Time (minutes):	0.76	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	1.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	7.22	0.00	0.00
Computed Flow Time (minutes):	0.00	0.00	0.00

Channel Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	164.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	12.00	0.00	0.00
Wetted Perimeter (ft):	9.50	0.00	0.00
Velocity (ft/sec):	25.96	0.00	0.00
Computed Flow Time (minutes):	0.11	0.00	0.00

Total TOC (minutes):	5.00		
<hr/>			

-----  
 Subbasin Sub-5  
 -----

Sheet Flow Computations  
 -----

## Downstream System

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	60.00	0.00	0.00
Slope (%):	45.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	1.71	0.00	0.00
Computed Flow Time (minutes):	0.59	0.00	0.00

### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	1.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	7.22	0.00	0.00
Computed Flow Time (minutes):	0.00	0.00	0.00

### Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	200.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	12.00	0.00	0.00
Wetted Perimeter (ft):	9.50	0.00	0.00
Velocity (ft/sec):	25.96	0.00	0.00
Computed Flow Time (minutes):	0.13	0.00	0.00

=====  
 Total TOC (minutes): 5.00  
 =====

### Subbasin Sub-6

#### Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	80.00	0.00	0.00
Slope (%):	60.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	2.50	0.00	0.00
Velocity (ft/sec):	2.03	0.00	0.00
Computed Flow Time (minutes):	0.66	0.00	0.00

#### Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	1.00	0.00	0.00
Slope (%):	20.00	0.00	0.00

### Downstream System

Surface Type:	Unpaved	Unpaved	Unpaved
Velocity (ft/sec):	7.22	0.00	0.00
Computed Flow Time (minutes):	0.00	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	330.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	12.00	0.00	0.00
Wetted Perimeter (ft):	9.50	0.00	0.00
Velocity (ft/sec):	25.96	0.00	0.00
Computed Flow Time (minutes):	0.21	0.00	0.00
<hr/>			
Total TOC (minutes):	5.00		

\*\*\*\*\*  
Subbasin Runoff Summary  
\*\*\*\*\*

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	hh:mm:ss
Sub-1	3.930	0.988	0.480	65.000	0	00:05:00
Sub-13	3.930	1.221	0.520	69.000	0	00:05:00
Sub-14	3.930	1.477	0.290	73.000	0	00:08:26
Sub-15	3.930	3.695	0.990	98.000	0	00:09:49
Sub-2	3.930	1.477	0.930	73.000	0	00:21:02
Sub-4	3.930	1.283	0.330	70.000	0	00:05:00
Sub-5	3.930	1.283	0.380	70.000	0	00:05:00
Sub-6	3.930	0.988	0.490	65.000	0	00:05:00
<hr/>						
Averages / Totals	3.930	1.370	4.29			

\*\*\*\*\*  
Node Depth Summary  
\*\*\*\*\*

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	hh:mm	Maximum Pondered Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-10	0.12	0.23	280.23	0	08:05	0	0	0:00:00

## Downstream System

Jun-12	0.10	0.18	235.11	0	08:06	0	0	0:00:00
Jun-13	0.22	0.40	236.81	0	08:05	0	0	0:00:00
Jun-14	0.30	0.55	237.09	0	08:05	0	0	0:00:00
Jun-15	0.07	0.15	328.15	0	08:02	0	0	0:00:00
Jun-17	0.18	0.36	389.38	0	08:10	0	0	0:00:00
Jun-19	0.04	0.09	361.09	0	08:05	0	0	0:00:00
Jun-2	0.10	0.19	398.78	0	08:10	0	0	0:00:00
Jun-35	0.09	0.18	207.34	0	08:06	0	0	0:00:00
Jun-38	0.27	0.53	212.53	0	08:07	0	0	0:00:00
Jun-39	0.08	0.18	216.41	0	08:04	0	0	0:00:00
Jun-40	0.15	0.26	224.19	0	08:06	0	0	0:00:00
Jun-41	0.23	0.42	228.44	0	08:06	0	0	0:00:00
Jun-42	0.11	0.20	233.96	0	08:11	0	0	0:00:00
Jun-43	0.11	0.22	288.66	0	08:11	0	0	0:00:00
Jun-44	0.10	0.20	186.58	0	08:07	0	0	0:00:00
Jun-45	0.10	0.20	381.00	0	08:10	0	0	0:00:00
Jun-46	0.10	0.20	347.56	0	08:10	0	0	0:00:00
Jun-47	0.11	0.22	326.09	0	08:11	0	0	0:00:00
Jun-6	0.16	0.31	401.34	0	08:10	0	0	0:00:00
Jun-7	0.26	0.48	401.58	0	08:10	0	0	0:00:00
Jun-8	0.00	0.00	408.16	0	00:00	0	0	0:00:00
Jun-9	0.10	0.17	290.17	0	08:05	0	0	0:00:00
Jun-11	0.10	0.20	178.14	0	08:07	0	0	0:00:00

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### Node Flow Summary

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Node ID	Element Type	Maximum Lateral Inflow cfs	Maximum Total Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
Jun-10	JUNCTION	0.47	1.63	0 08:04	0.00	
Jun-12	JUNCTION	0.00	1.62	0 08:06	0.00	
Jun-13	JUNCTION	0.00	1.62	0 08:05	0.00	
Jun-14	JUNCTION	0.00	1.63	0 08:05	0.00	
Jun-15	JUNCTION	0.37	0.68	0 08:00	0.00	
Jun-17	JUNCTION	0.00	1.17	0 08:10	0.00	
Jun-19	JUNCTION	0.33	0.33	0 08:04	0.00	
Jun-2	JUNCTION	0.29	1.17	0 08:10	0.00	
Jun-35	JUNCTION	0.51	4.21	0 08:06	0.00	
Jun-38	JUNCTION	0.00	3.74	0 08:06	0.00	
Jun-39	JUNCTION	0.99	0.99	0 08:04	0.00	
Jun-40	JUNCTION	0.00	2.76	0 08:06	0.00	
Jun-41	JUNCTION	0.00	2.76	0 08:06	0.00	
Jun-42	JUNCTION	0.00	1.17	0 08:11	0.00	
Jun-43	JUNCTION	0.00	1.17	0 08:11	0.00	
Jun-44	JUNCTION	0.00	4.21	0 08:06	0.00	

### Downstream System

Jun-45	JUNCTION	0.00	1.17	0	08:10	0.00
Jun-46	JUNCTION	0.00	1.17	0	08:10	0.00
Jun-47	JUNCTION	0.00	1.17	0	08:10	0.00
Jun-6	JUNCTION	0.00	0.92	0	08:10	0.00
Jun-7	JUNCTION	0.92	0.92	0	08:10	0.00
Jun-8	JUNCTION	0.00	0.00	0	00:00	0.00
Jun-9	JUNCTION	0.49	1.16	0	08:04	0.00
Jun-11	OUTFALL	0.00	4.20	0	08:07	0.00

\*\*\*\*\*  
 Inlet Depth Summary  
 \*\*\*\*\*

Inlet ID	Max Gutter Spread during Peak Flow ft	Max Gutter Water Elev during Peak Flow ft	Max Gutter Water Depth during Peak Flow ft	Time of Maximum Depth Occurrence days hh:mm
Jun-24	0.00	410.00	0.00	0 00:00

\*\*\*\*\*  
 Inlet Flow Summary  
 \*\*\*\*\*

Inlet ID	Peak Flow cfs	Peak Lateral Flow cfs	Peak Flow Intercepted by Inlet cfs	Peak Flow Bypassing Inlet cfs	Inlet Efficiency during Peak Flow %	Total Flooding acre-in	Total Time Flooded minutes
Jun-24	0.00	0.00	-	-	-	0.000	0

\*\*\*\*\*  
 Outfall Loading Summary  
 \*\*\*\*\*

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Maximum Flow cfs
Jun-11	98.18	1.30	4.20
System	98.18	1.30	4.20

## Downstream System

\*\*\*\*\*  
 Link Flow Summary  
 \*\*\*\*\*

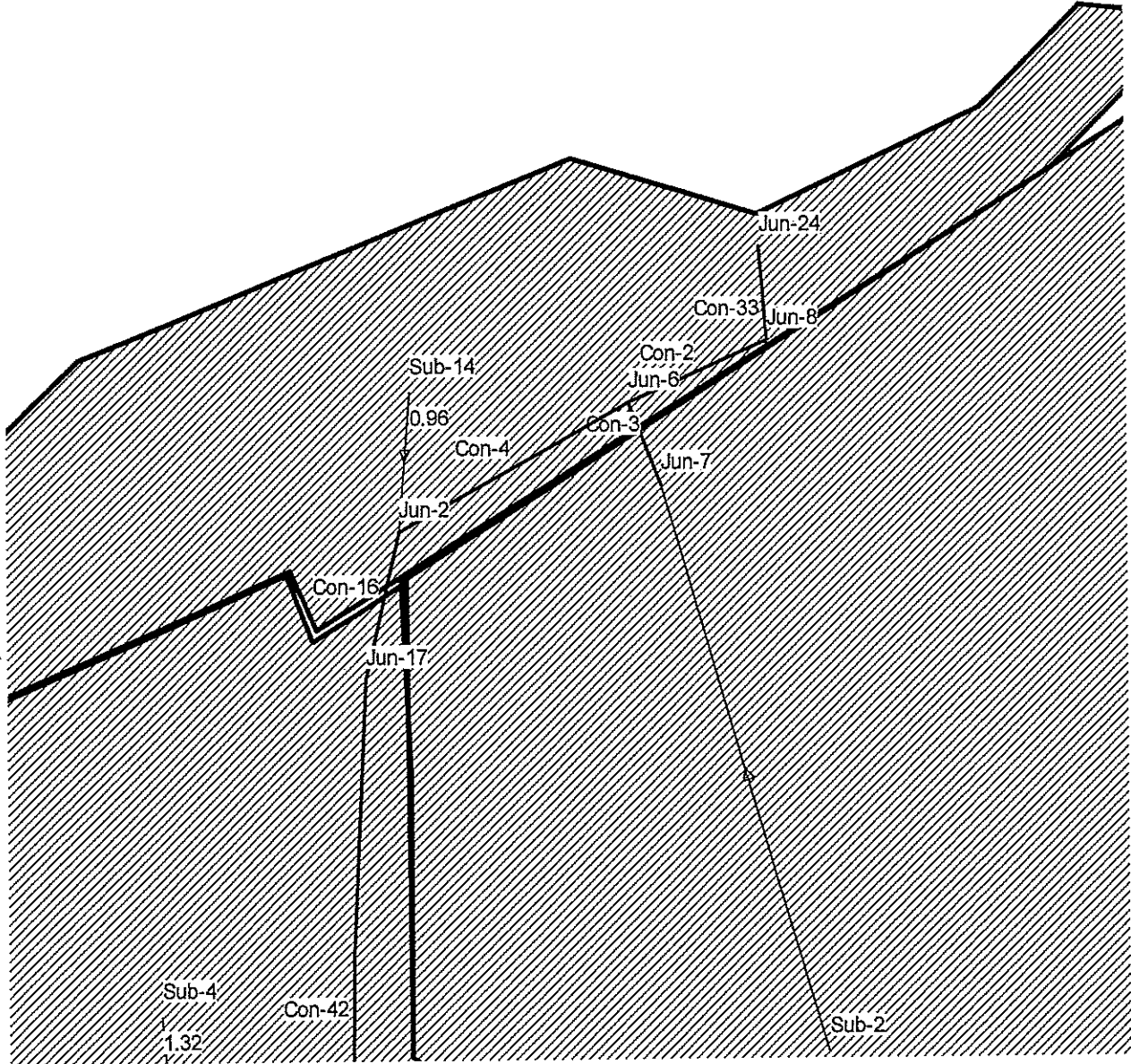
Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged Minutes
Bioswale	CHANNEL	0 08:06	3.29	1.00	4.21	334.42	0.01	0.09	0
Con-10	CONDUIT	0 08:05	3.40	1.00	1.62	8.11	0.20	0.31	0
Con-11	CONDUIT	0 08:06	6.90	1.00	1.62	15.62	0.10	0.19	0
Con-12	CONDUIT	0 08:06	6.48	1.00	1.62	56.07	0.03	0.20	0
Con-13	CONDUIT	0 08:05	3.02	1.00	1.63	258.92	0.01	0.13	0
Con-16	CONDUIT	0 08:10	7.56	1.00	1.17	10.73	0.11	0.33	0
Con-17	CONDUIT	0 08:05	2.32	1.00	0.32	236.77	0.00	0.04	0
Con-2	CONDUIT	0 00:00	0.00	1.00	0.00	9.14	0.00	0.19	0
Con-3	CONDUIT	0 08:10	2.76	1.00	0.92	3.50	0.26	0.32	0
Con-33	CONDUIT	0 00:00	0.00	1.00	0.00	6.50	0.00	0.00	0
Con-38	CONDUIT	0 08:07	11.66	1.00	3.74	22.37	0.17	0.24	0
Con-39	CONDUIT	0 08:05	4.21	1.00	0.99	32.08	0.03	0.24	0
Con-4	CONDUIT	0 08:10	6.80	1.00	0.92	4.07	0.23	0.30	0
Con-40	CONDUIT	0 08:07	7.38	1.00	2.76	42.22	0.07	0.26	0
Con-41	CONDUIT	0 08:06	9.10	1.00	2.76	20.79	0.13	0.23	0
Con-42	CONDUIT	0 08:10	8.46	1.00	1.17	2.56	0.46	0.42	0
Con-43	CONDUIT	0 08:11	12.50	1.00	1.17	5.30	0.22	0.31	0
Con-44	CONDUIT	0 08:11	4.69	1.00	1.17	30.95	0.04	0.21	0
Con-45	CHANNEL	0 08:07	3.09	1.00	4.20	273.16	0.02	0.10	0
Con-46	CONDUIT	0 08:10	13.51	1.00	1.17	6.37	0.18	0.30	0
Con-47	CONDUIT	0 08:10	12.70	1.00	1.17	6.37	0.18	0.31	0
Con-48	CONDUIT	0 08:11	11.83	1.00	1.17	5.28	0.22	0.33	0
Con-8	CONDUIT	0 08:05	9.12	1.00	1.16	29.38	0.04	0.16	0
Con-9	CONDUIT	0 08:02	3.63	1.00	0.68	214.68	0.00	0.05	0

\*\*\*\*\*  
 Highest Flow Instability Indexes  
 \*\*\*\*\*  
 Link Con-45 (3)  
 Link Bioswale (2)  
 Link Con-39 (2)  
 Link Con-38 (1)

WARNING 139 : Poned area defined for on sag Inlet Jun-24 is zero. Assumed 10 ft<sup>2</sup> (0.929 m<sup>2</sup>).

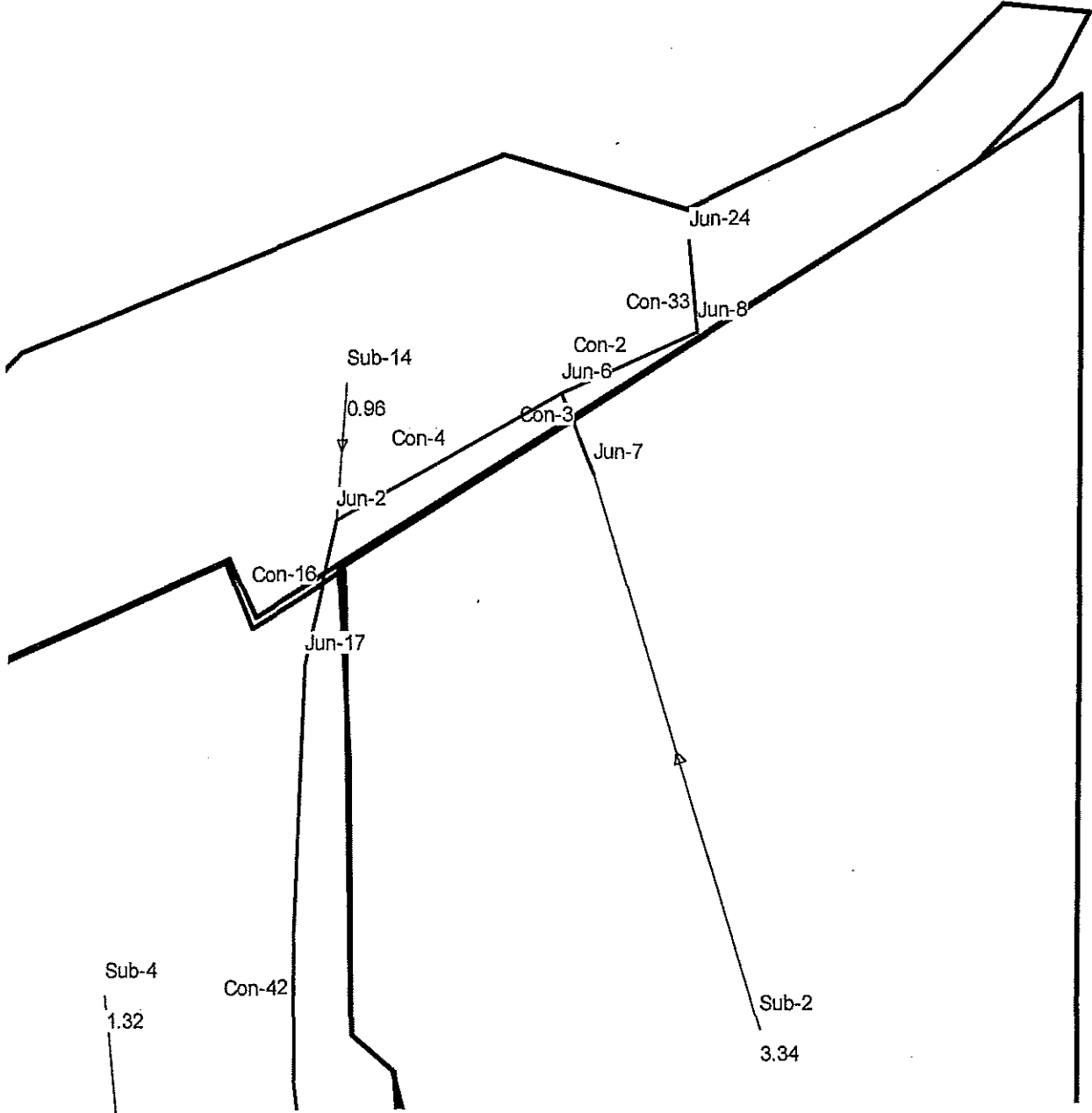
Analysis begun on: Thu Oct 30 18:48:49 2008  
 Analysis ended on: Thu Oct 30 18:48:57 2008  
 Total elapsed time: 00:00:08

# Downstream System

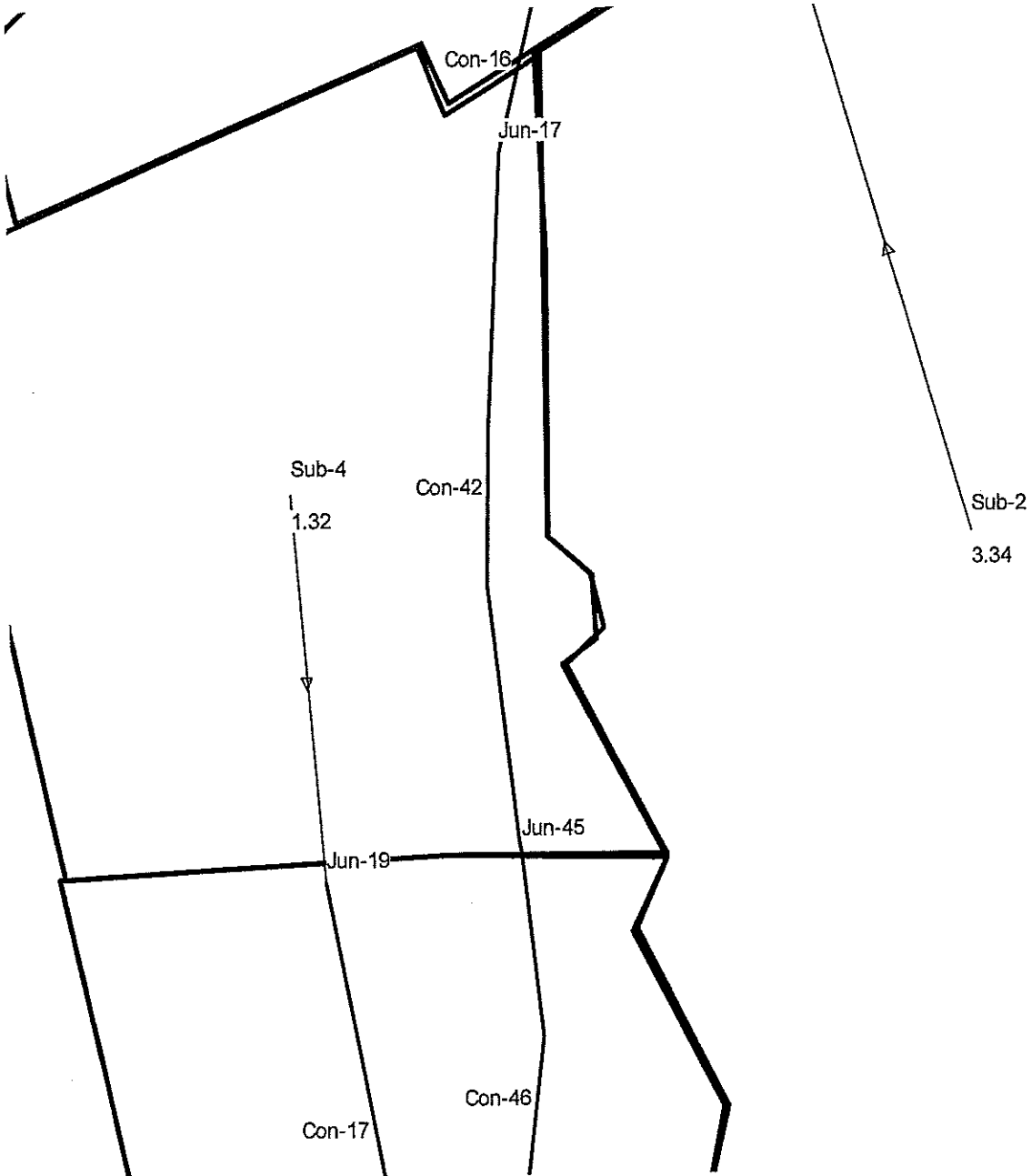




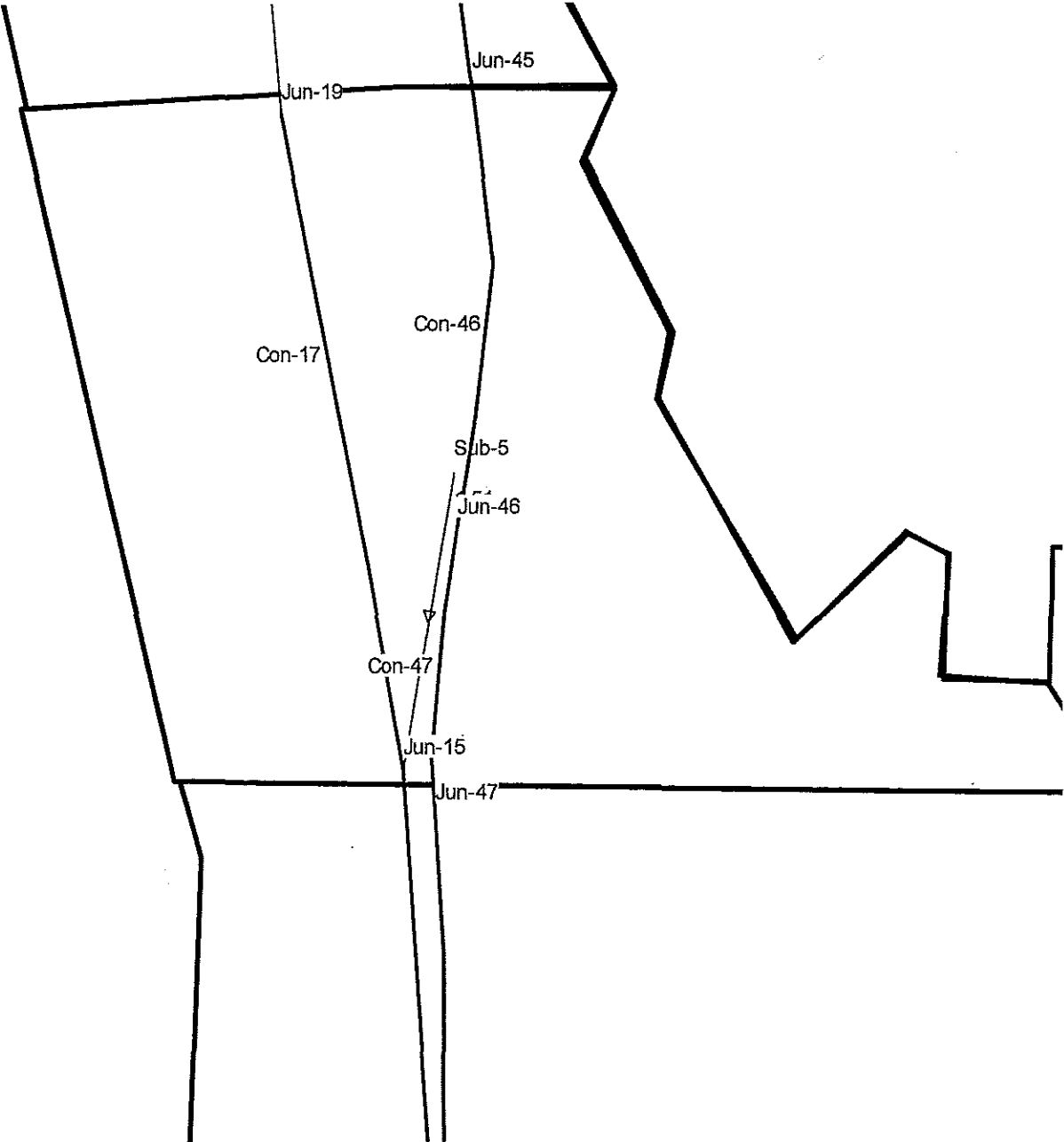
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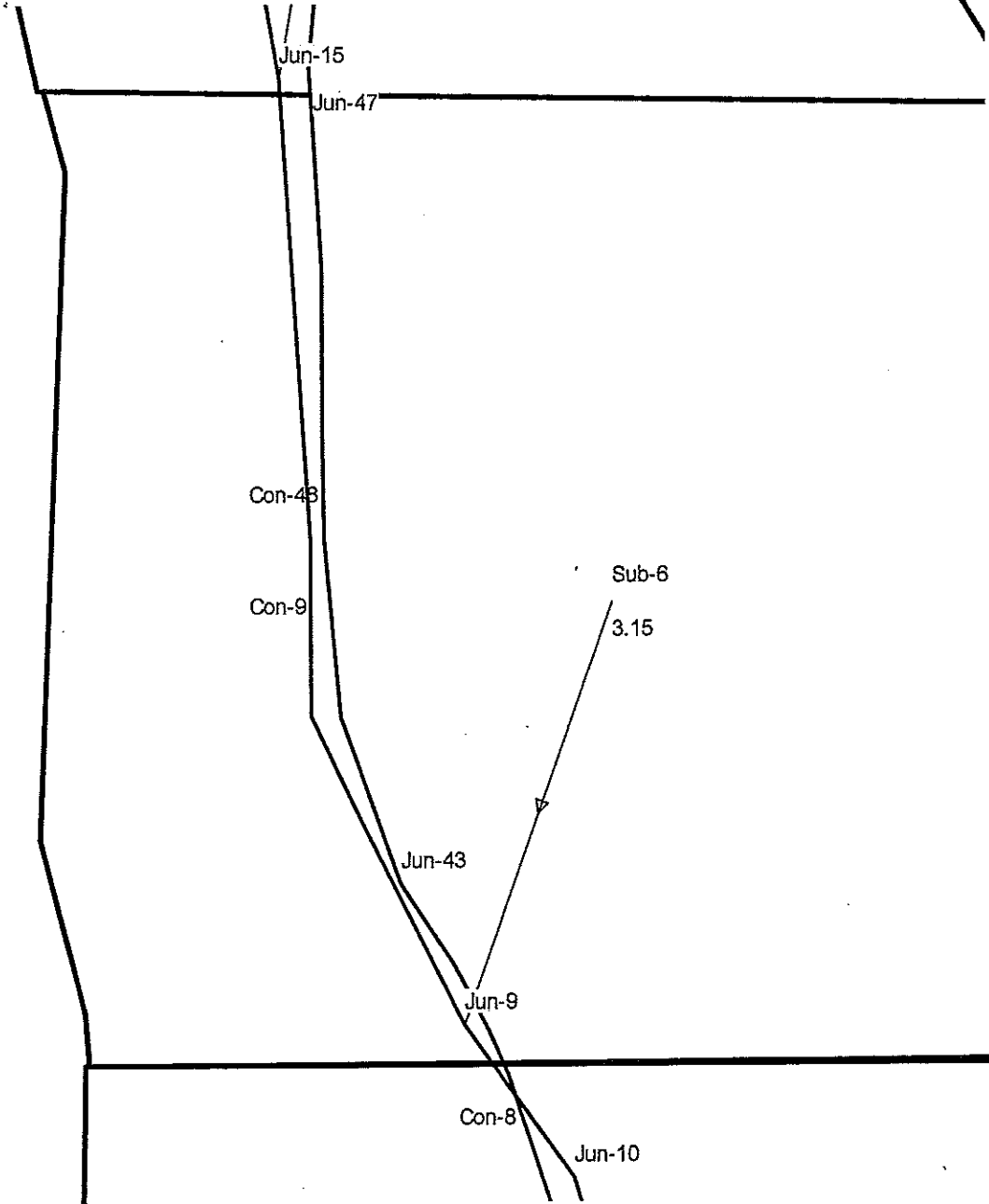
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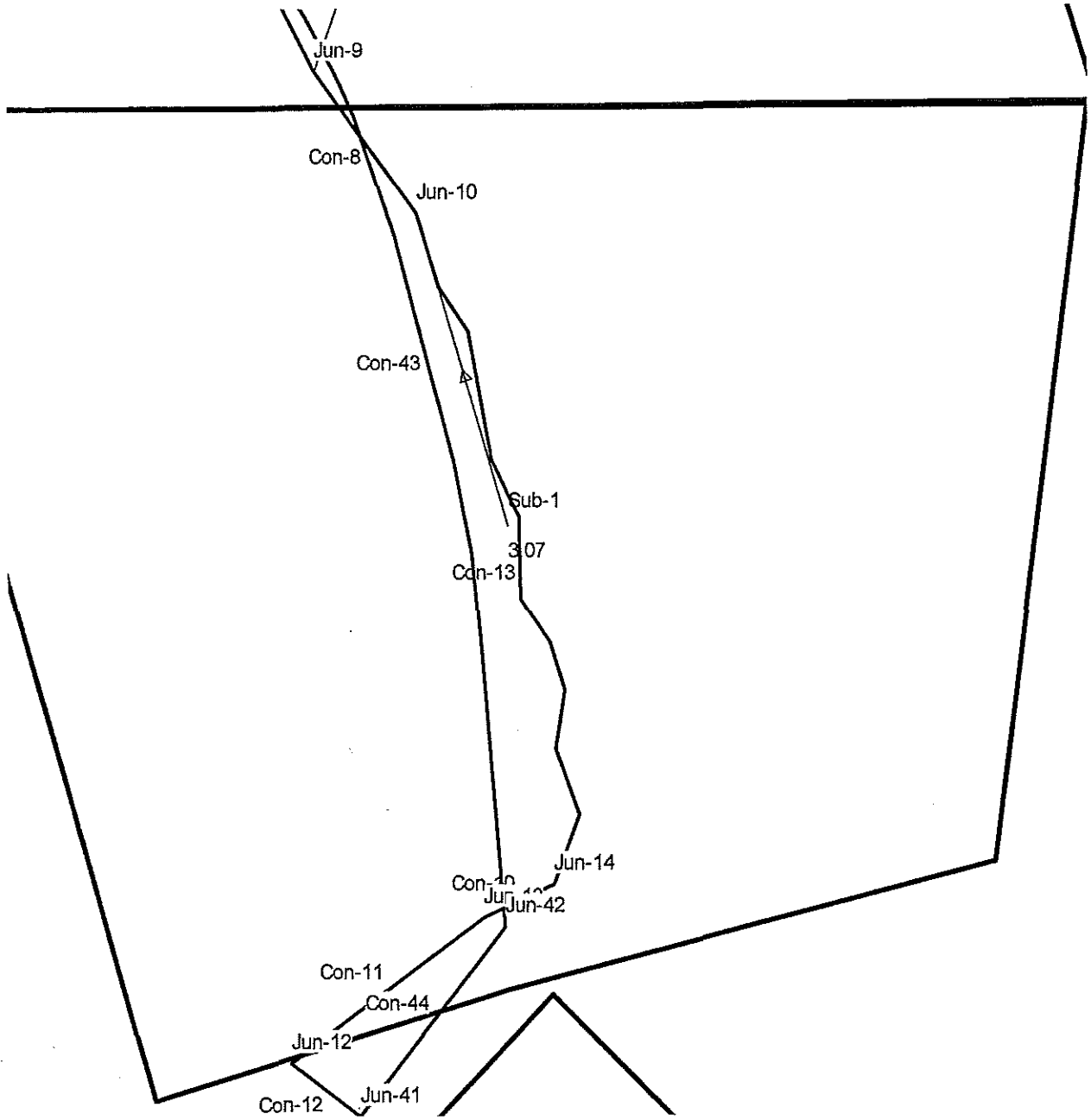
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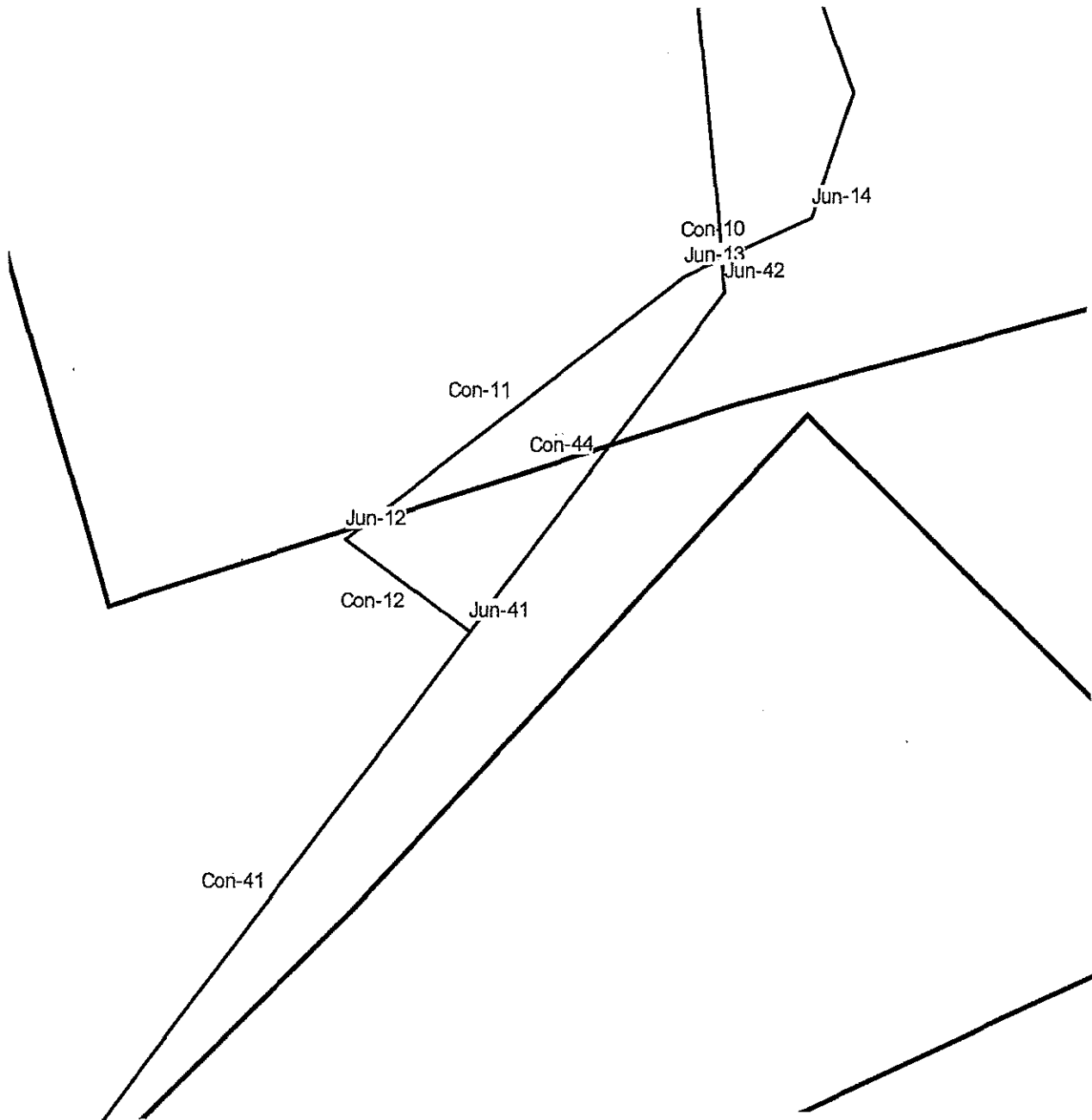
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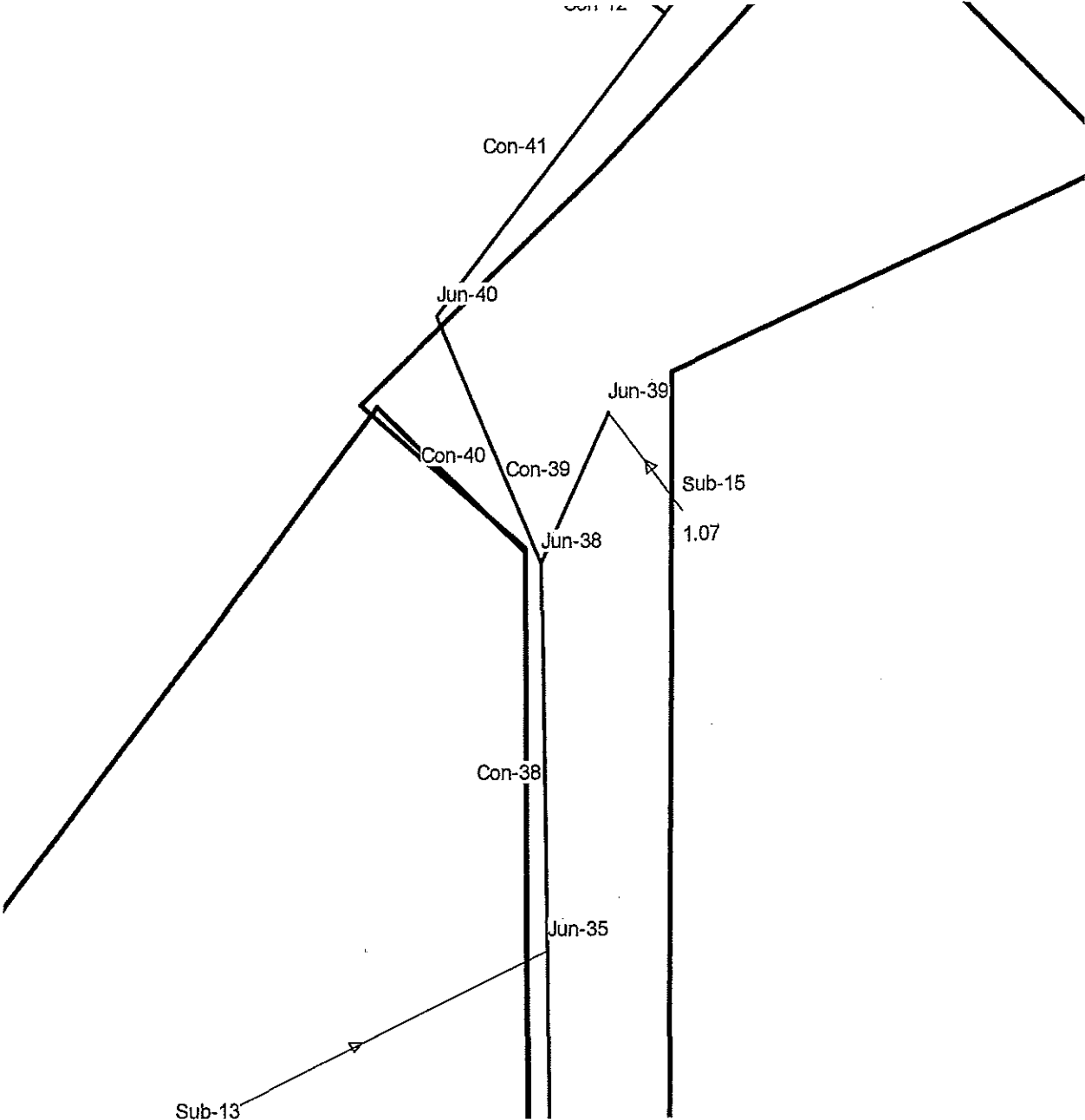
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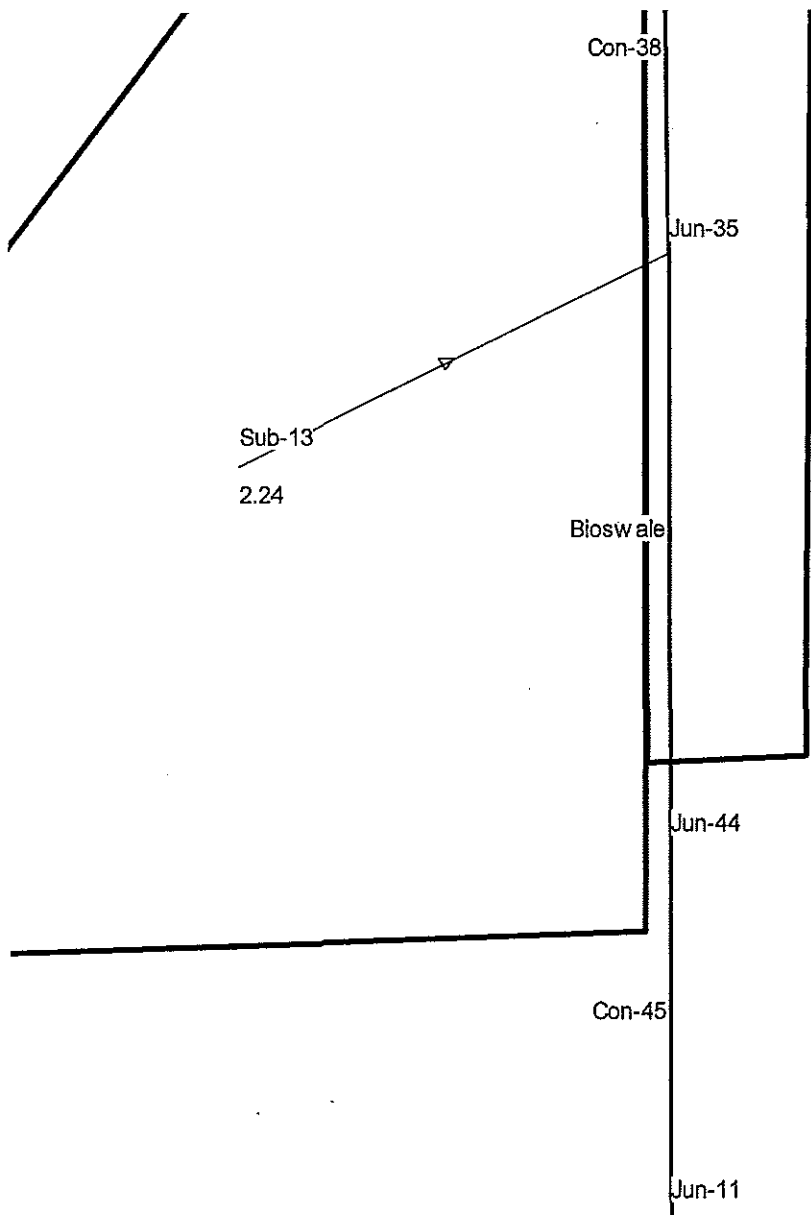
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# Downstream System

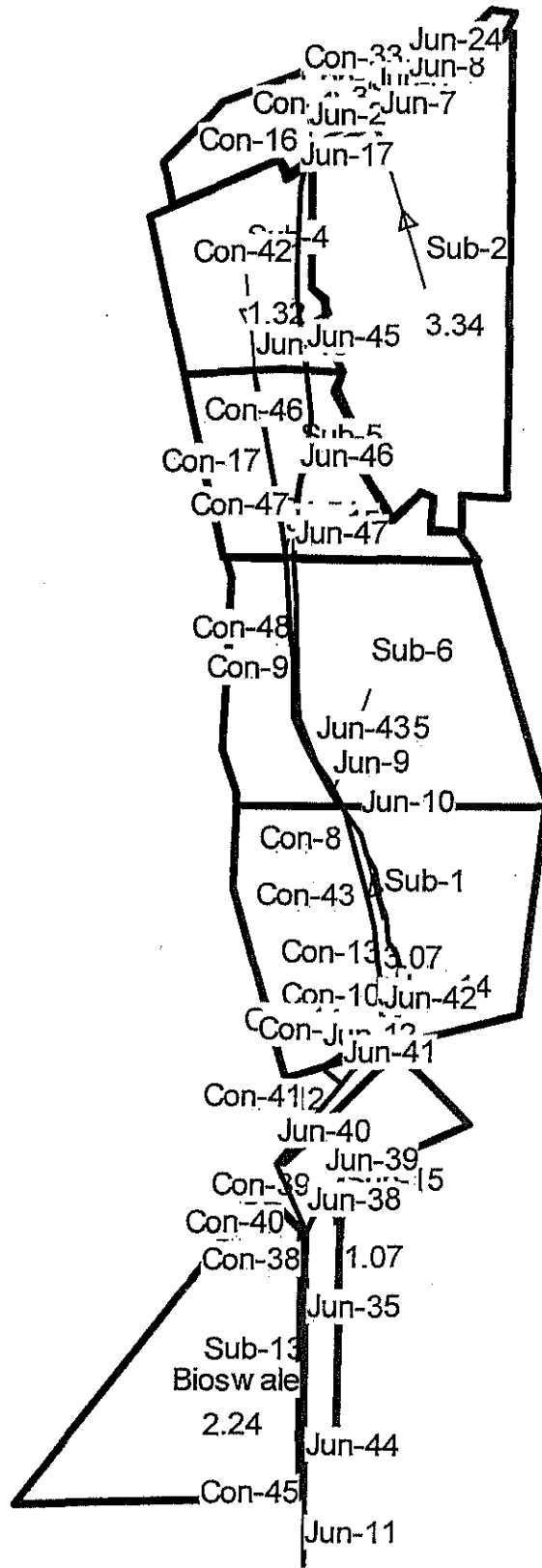


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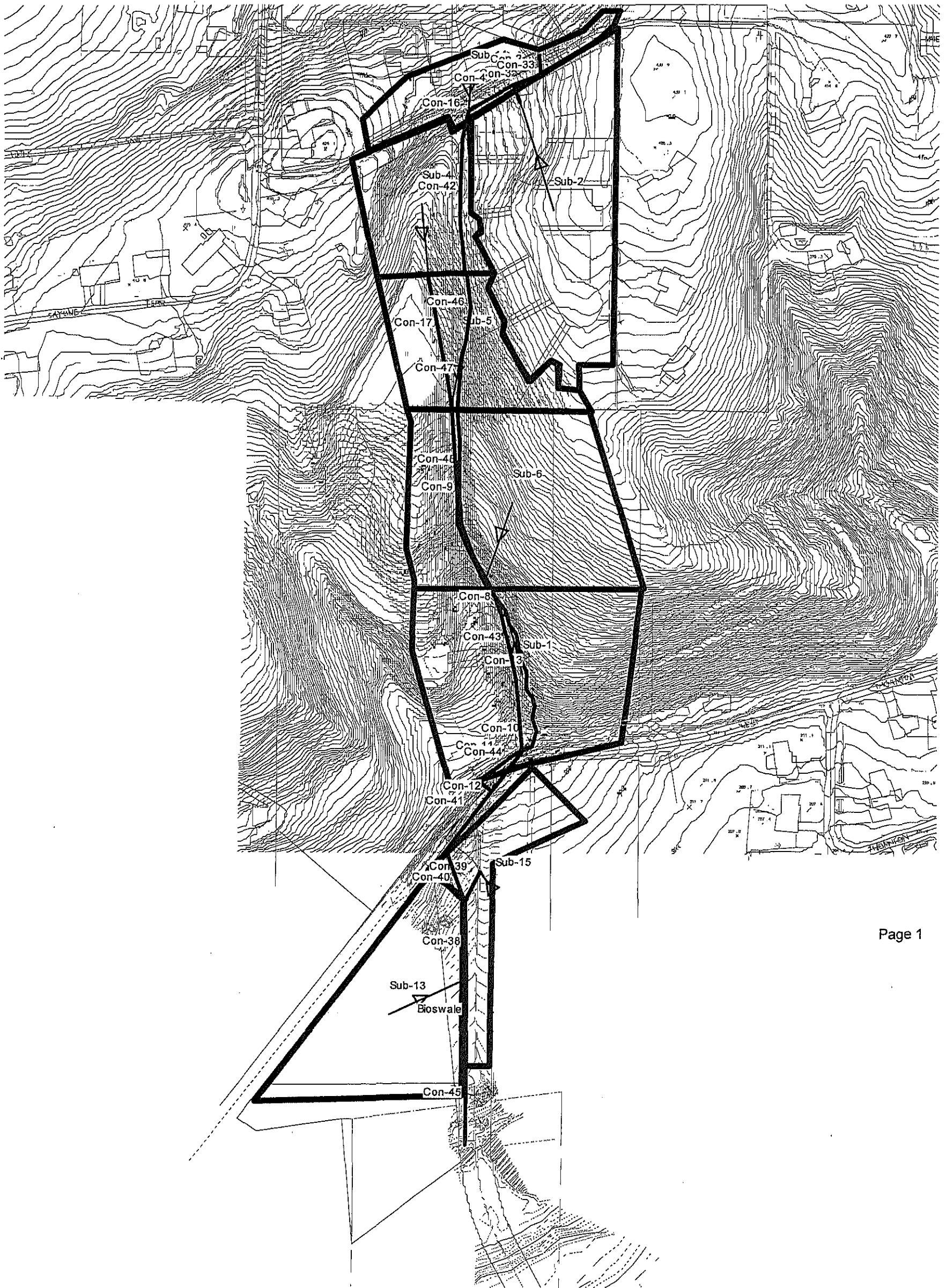


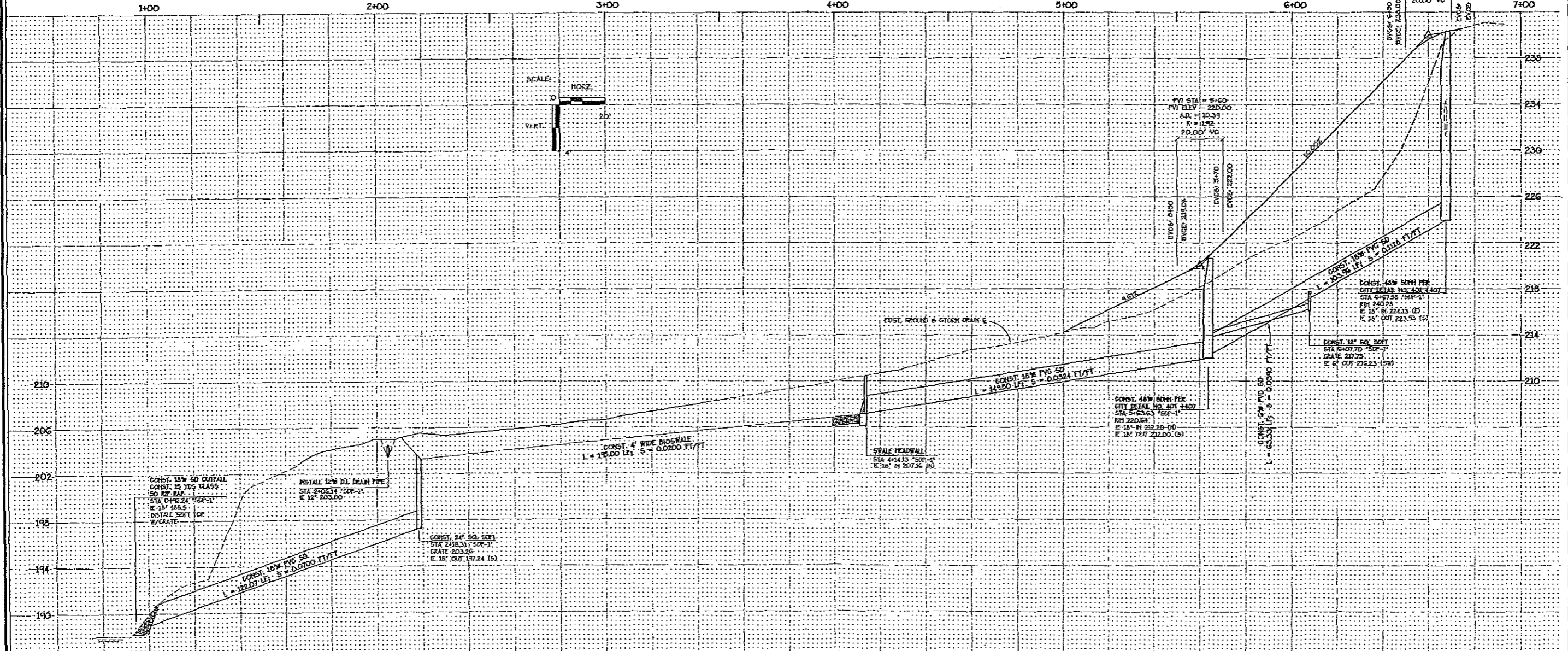
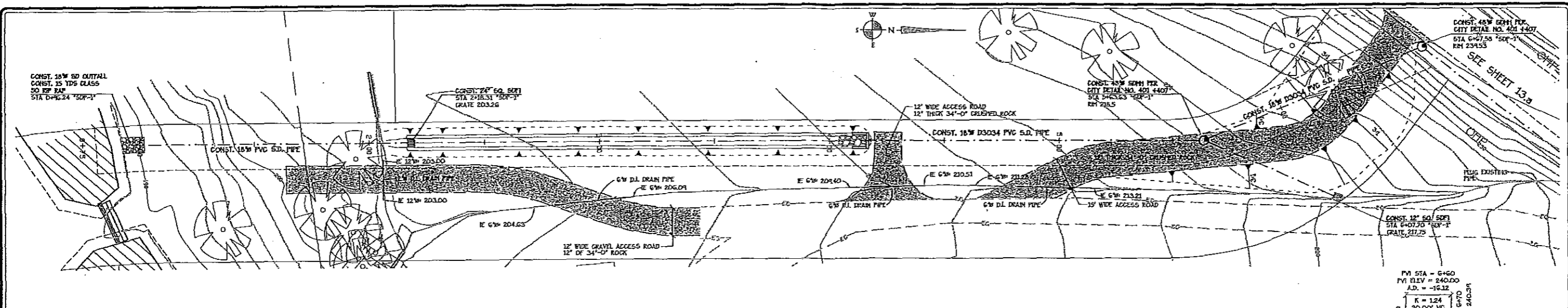
# Downstream System



Element Labels

# Downstream System





Date: 10/21/2008  
 Scale: 1"=20'  
 File: 06631-06-03-0003-06631-1.dwg  
 User: 06631-bldg, 06631-p.dwg

THIS DOCUMENT, DESIGNS, & IDEAS INCORPORATED HEREIN AS AN INSTRUMENT OF PROFESSIONAL SERVICE IS THE PROPERTY OF K&D ENGINEERING, INC. AND IS NOT TO BE REPRODUCED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF K&D ENGINEERING, INC.

NO.	DATE	REVISIONS	BY



**K & D ENGINEERING, INC.**  
 276 N.W. HICKORY STREET  
 P.O. BOX 725  
 ALBANY, OREGON 97321  
 (541) 928-2583

**FABIAN ESTATES**  
 CITY OF ALBANY, BENTON COUNTY, OREGON

**STORM DRAIN CONSTRUCTION**

HORIZ. SCALE: 1"=20'  
 VERT. SCALE: 1"=4'  
 DRAWN DATE: D.K.W.  
 DESIGN BY: M.J.N.  
 DRAWN BY: MEH  
 CHECK BY: DKW  
 PROJECT No.: 06-63-F

SHEET No.  
**13.b**  
 of  
**13**





November 6, 2008

**VIA E-MAIL ONLY**

Albany City Council  
c/o Don Donovan, Planning Manager  
333 Broadalbin St. SW  
Albany, OR 97321

***Re: Fabian Estates Subdivision Remand  
File Nos. SD-07-07 & SP-19-07***

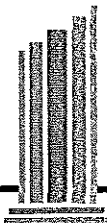
Dear Councilors:

After approval by this Council a year ago, this matter was remanded by LUBA for consideration of three issues. Those three issues are comprehensively outlined in the Staff Report. This submittal letter is intended to outline the Applicant's position regarding each issue and provide a context for the evidence and testimony to be submitted at the public hearing on November 12, 2008.

The first issue, not in any order other than for simplicity, is the applicability of Goal 7, Implementation Measure 10. Applicant cannot substantively add to the information contained in the Staff Report regarding this issue. Essentially, this is not a criterion in this subdivision application.

The second issue is whether the proposed subdivision provides for access to adjacent properties under ADC 11.180(2). That criterion requires access to adjoining developable land to allow that land to be developed in accordance with the ADC. The only adjacent properties at issue are the three properties to the east of the subject parcel. Under ADC 11.180(2), no additional access is required because those properties are already developed pursuant to the ADC, with existing access for the that development.

However, in an effort to address any alternative interpretations of the ADC that may be proposed by opponents or LUBA, Applicant also provides a city street extension to the eastern boundary of the subject parcel from the end of the proposed cul-de-sac. This extension specifically addresses LUBA's stated concern that the previously proposed access easement did not meet ADC 12.150's requirement for access by a street. The street extension will be unimproved until such time as development on adjacent property occurs and improvements are required. In addition, adjacent property owners have expressed no interest in developing the adjacent properties and improving the proposed street extension at this time, essentially a road to



nowhere, would serve no purpose. The Staff Report and submittals by Applicant's engineer address the details of this extension.

The third and final issue to consider on remand is storm drainage from the proposed subdivision. LUBA remanded this issue because Applicant failed to show the proposed storm sewer plans and systems on the tentative subdivision plat and there was no evidence that the City Engineer had approved any such plans as required by ADC 12.530. On remand, Applicant has shown the proposed drainage plan on the plat and the City Engineer has approved subject to the enumerated conditions in the Staff Report. The proposed plan goes far beyond what has been required for other such developments in Albany, especially at this level of review, it is sufficient to satisfy LUBA's concerns, and it provides substantial, engineered responses to any potential objections by opponents. Applicant's engineer will discuss details and explain the drainage plan at the public hearing.

The purpose of storm drainage planning is to ensure that the City's systems can handle the drainage flow and that downstream property owners are not damaged. In this case, Applicant is essentially creating a drainage system for the City utilizing the natural conditions of the property. The most significant proposed condition in implementing this plan is for Applicant to obtain easements across private property from the subject property to Thornton Lake. This plan is shown on the plat and the evidence shows that the City Engineer has approved the plan. Applicant will seek to obtain the required easements.

However, the applicant has no control over other property owners' property. It is often the case that a developer cannot obtain easements across private property for purposes of city utilities. If that occurs here, applicant proposes an alternative condition that will meet all of the concerns addressed by the private easements. The alternative condition is as follows:

*Easements through private property shall not be required if the applicant can demonstrate that post-development peak flows and total volumes to that property do not exceed pre-development peak flows and total volumes through those private properties.*

If Applicant can meet this condition, then the easement condition serves no purpose other than placing an onerous and unjustified condition on Applicant. Failing to obtain easements across private property does not mean Applicant is failing to meet the criterion or looking for an easy way to avoid obligations. It simply means that Applicant must do so much engineering, designing, and improvements that the actual drainage from development does not impact downstream properties. This is a huge burden and easements would be the preferred method to meet the conditions, if such easements can be obtained.

The proposed alternative condition meets all of the requirements of Oregon law. Under Oregon law, an uphill property owner has the absolute right to direct surface water upon the land of an adjacent owner if that water would naturally flow there. This flow could be in such quantities as would naturally drain in that direction. The flow of water may even be increased in any natural channels which carry the water from the upper to the lower property, so long as the

uphill owner does not redirect water from land that would not normally flow onto the downhill property. Garbarino v. VanCleave, 214 Or. 554 (1958); Rehfuss v. Weeks, 93 Or. 25 (1919).

In the present case, the land area that would drain onto the downstream property owner's property after proposed development is land that currently drains onto the downstream property. If the required easements across private property cannot be obtained, Applicant proposes a drainage system that is designed to release the same amount of offsite drainage after development as is currently released prior to development. In that event, there would be no impact on the downstream property and no need for an easement.

The condition of an easement for the benefit of the city is essentially an exaction of off-site improvements from the Applicant. This requires an individualized determination that the condition or exaction relates both in nature and extent to the impact of the proposed subdivision. In other words, there must be a "rough proportionality" between the exaction and the impacts. Dolan v. City of Tigard, 512 U.S. 374, 114 S.Ct. 2309 (1994). The burden of showing rough proportionality is on the City. Art Piculell Group v. Clackamas County, 142 Or. App. 327; J.C. Reeves Corp. v. Clackamas County, 131 Or. App. 615 (1994). The City must present evidence why, if there is NO increase in rate or volume of water draining to downstream properties and thus no negative impact, Applicant must obtain easements across private property. This is the exact issue that Dolan determined was an unconstitutional taking. An over-exaction against the Applicant would result in a taking and unnecessary litigation.

One of Dolan's concerns was the extent to which particular property can be burdened because of impacts attributable to its development. When there appears to be a risk of leveraging, or singling out, one developer for concessions as a condition for approval, the application of the condition at issue is subject to a heightened takings clause standard. Dudek v. Umatilla County, 187 Or. App. 504, 513 (2003). The City must be careful in determining the level of exactions required of Applicant. Any condition beyond requiring discharge volume and rate to be no greater than historical, is an obvious attempt to single out Applicant to meet a public need, rather than addressing the impacts of the proposed subdivision.

The City merely needs to find that it is feasible to meet the applicable approval standards and place conditions to ensure that those standards will be satisfied. The Applicant's plan clearly shows that meeting the approval standards are feasible. It has been established by LUBA that the City Council should rely on the testimony of Applicant's engineer, an expert witness, when no evidence is presented to contradict that expert's analysis and opinion. Without contradictory expert evidence, it would be unreasonable for the City to rely on opinions of the opponents. Testimony by an attorney, planner, and neighbors does not qualify as contradictory expert evidence.

Please keep in mind what this application is requesting. It's to subdivide RS-10 zoned property into lots at a *lower* density than allowed by the zoning. It is urban, not rural, property and this proposal implements the planned use of the property. The subject property is currently assessed at about \$10.00 due to deferrals, but if subdivided can generate substantial income for the City, schools, and other public entities relying on property tax income.

Regardless of letters to the editor, assertions of opponents, and other opposition to any development in Albany, not all developers come from out of town, hire outside employees, and maximize the density of development on a piece of property. Here we have a local owner and developer who employs local employees at a time when sources of income of citizens and the City are tightening. He is trying to do this right: not attempting to maximize development on every inch of the property; not attempting to cut corners on environmental concerns; not destroying the character of the neighborhood.

The Albany Development Code provides criteria. If those criteria are met or Applicant shows it is feasible to meet the criteria through appropriate conditions, there is no rational basis to prevent this property from being developed as intended pursuant to its zoning. Objecting to development simply because you've "already got yours" and don't want any change in your neighborhood is not a valid objection and does not address the criteria. That is the driving force to opposition of this development and should be considered by the Council when determining the merits.

Thank you for your consideration in this matter.

Very truly yours,

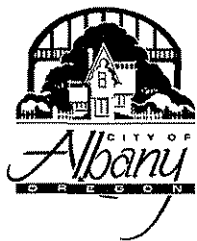
Andrew J. Bean

AJB:jlr

cc: Client


Jlr:N:\ATTY\AJB\Clients\Fabian Estates\Councilors.ltr11-15-07.doc





TO: Albany City Council

VIA: Wes Hare, City Manager  
Greg Byrne, Community Development Director

FROM: Don Donovan, Planning Manager 

DATE: November 5, 2008, for the November 12, 2008, City Council Meeting

SUBJECT: Files SP-12-08 and AD-01-08  
Oregon Acquisition One LLC (SmartCentres) Shopping Center

Action Requested:

Make the final decision on the applications referenced above.

Discussion:

On October 8, 2008, the City Council held a public hearing on a Site Plan Review application and an Adjustment application for construction of a shopping center (files referenced above). The shopping center would be built on property located on the south side of Santiam Highway, west of Goldfish Farm Road SE.

At the October 22, 2008, City Council meeting, the Council made a tentative decision to approve the applications for the shopping center and directed staff to bring findings to the next meeting to support the decision.

Attached to this memo is the original staff report for the applications and Supplemental Findings. These are the documents that will support City Council approval of the applications. These documents will be cited in the motion for final approval. A suggested motion for approval is attached to this memo.

The staff report is the document reviewed by the City Council at the October 8, 2008, public hearing. The staff report includes most of the information necessary to support the Council's decision. The Supplemental Findings address concerns raised by people that spoke at the public hearing or submitted written testimony.

The City Council required an additional condition in response to concerns expressed in a letter from Linn County about Goldfish Farm Road. The condition is included in the Supplemental Findings on page 4 (Findings 1.9, Condition 1.7).

The applicant's attorney wrote most of the Supplemental Findings. This saves staff time and it's also important to have the applicant involved because it is the City's policy to have the applicant defend the decision if it is appealed to LUBA. The applicant has an interest in making sure the findings are complete and accurate. Staff reviews and edits the findings before we pass them on to the City Council. Staff makes sure that the information presented in the findings accurately represents the facts, the discussion at the public hearing, the City Council's positions on the issues, and the longer term interests of the Council and staff in reviewing development applications.

If you have questions about the information in this memo, the staff report, or the Supplemental Findings before the meeting, please let me know.

Budget Impact:

No impact in making the decision to approve the applications.

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**FILES SP-12-08 AND AD-01-08 (OREGON ACQUISITION ONE LLC)**

**CITY COUNCIL FINAL DECISION**

**MOTION TO APPROVE WITH CONDITIONS**

I MOVE that the City Council APPROVE the Site Plan Review application for construction of a shopping center with six buildings on 25.67 acres of land; and the Adjustment application to allow some 24-foot-wide travel aisles in the parking lots on the northern parcel of the shopping center where 26-foot-wide travel aisles are usually required (Files SP-12-08 and AD-01-08) and ADOPT the Findings of Fact, Conclusions, and Conditions set forth in the Staff Report, as modified by the Supplemental Findings, including the conditions set forth therein.

This motion is based upon the evidence and testimony in the record, including the written and oral testimony presented at the October 8, 2008, public hearing, Council deliberation at the October 22, 2008, City Council meeting, and the Supplemental Findings presented to the City Council at the November 12, 2008, City Council meeting.

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# COMMUNITY DEVELOPMENT DEPARTMENT

333 Broadalbin Street SW, P.O. Box 490  
Albany, OR 97321

Ph: (541) 917-7550 Fax: (541) 917-7598  
[www.cityofalbany.net](http://www.cityofalbany.net)

## STAFF REPORT

### Site Plan Review and Adjustment Applications

This Staff Report was referenced by the City Council in the motion to approve the applications at the November 12, 2008 City Council meeting. Note that some findings, conclusions, and conditions are modified by the Supplemental Findings presented to the City Council at the November 12, 2008 meeting.

#### GENERAL INFORMATION

DATE OF REPORT: October 1, 2008

FILES: SP-12-08 and AD-01-08

TYPE OF APPLICATIONS: SP-12-08: Site Plan Review for construction of a shopping center with six buildings on 25.67 acres of land. Tenants for the buildings have not yet been identified.

AD-01-08: Adjustment to allow some 24-foot-wide travel aisles in the parking lots on the northern parcel of the shopping center where 26-foot-wide travel aisles are usually required.

REVIEW BODY: City Council (The City Council "called up" the staff decision to approve the applications and will hold a *de novo* (new) hearing on the applications.)

PROPERTY OWNER/  
APPLICANT: Oregon Acquisition One LLC; Andrew Sinclair; 201 - 11120 Horseshoe Way; Richmond, BC V7A 5H7

APPLICATION PREPARED BY: WRG Design, Inc.; 5415 SW Westgate Drive, Suite 100; Portland, OR 97221

ADDRESSES/LOCATIONS: Tax Lot 200: 4212 Santiam Highway SE  
Tax Lot 2900: 1300 Goldfish Farm Road SE  
Tax Lot 3000: 1330 Goldfish Farm Road SE

MAP/TAX LOT: Linn County Assessor's Map No. 11S-3W-9D; Tax Lots 200, 2900, 3000

ZONING: RC (Regional Commercial)

TOTAL LAND AREA: 25.67 acres

EXISTING LAND USE: Vacant land that has been used for storage of manufactured homes.

NEIGHBORHOOD: East Albany

SURROUNDING ZONING: North: LI (Light Industrial) and CC (Community Commercial) across Santiam Highway  
South: RM (Residential Medium Density)  
East: RC (Regional Commercial) across Goldfish Farm Road  
West: CC (Community Commercial) and Linn County UGM -

**SURROUNDING USES:** North: Gas station, trailer sales across Santiam Highway  
South: Single-family houses  
East: Coastal Farm and Ranch Supply across Goldfish Farm Road  
West: Gas station/convenience store, Veterans of Foreign Wars, vacant land

**PRIOR HISTORY:** File AN-02-01: The westerly 2/3 (approximately) of this property was annexed to the city in 2002. The easterly part of the property was annexed in 1964.

Files CP-01-03/ZC-01-03: The Comprehensive Plan map designation and the zoning of the southerly 12.1 acres of the westerly 2/3 of this property were changed from residential to commercial in 2006.

### **NOTICE INFORMATION**

A Notice of Public Hearing was mailed to surrounding property owners on September 18, 2008. The property was posted with signs that advertise the public hearing on September 30, 2008. At the time the staff report was finished, the Planning Division had received three new letters with comments about the applications.

Three letters about the applications were received at the time a Notice of Filing was mailed on May 23, 2008. The Notice of Filing was mailed at the time the applications were complete and before the staff decision was made. The three letters included: 1) a letter from John Hartman dated May 26, 2008; 2) a letter from Paul and Kim Shreve dated May 30, 2008; and a letter from Bruce Wheeler/Coastal Farm dated June 5, 2008. These letters are attached for information to this staff report as Attachments 2, 3, and 4.

The letters were provided to the applicants for their response. The response, dated June 27, 2008, is attached as Attachment 5. Staff agrees with the responses and they are adopted by reference as findings in support of the decision to approve with conditions the Site Plan Review application. Additional information that relates to the issues raised in the letters is included in the Staff Analysis below.

A letter was received from the Oregon Department of Transportation (ODOT) in response to a Project Review provided to ODOT by the City. The ODOT letter is attached to this staff report as Attachment 6. Transportation is addressed under Review Criterion (1) below on page 4.

Four letters were received when the Notice of Public Hearing was mailed out. The four letters are: 1) a letter from John Hartman dated September 22, 2008; 2) a letter from Paul and Kimberly Shreve; 3) a letter from Barry and Janet Ruebenson dated September 26, 2008; and 4) a letter from Norm and Lynn Kellogg dated September 25, 2008. These letters are attached to this staff report as 21, 22, 23, and 24. The letters were not received in time to include responses in the staff report. In addition, Mr. Hartman wrote a letter dated September 15, 2008, to Councilor Christman. This letter is attached to the staff report as Attachment 25. The letter would be an *ex parte* communication (a communication that took place outside the hearing process), except we have attached the letter to this staff report so that it is available to anyone to read and respond to if they wish. All of the letters have been provided to the applicants for responses. The questions raised in the letters must be addressed in the final decision on the applications.

### **STAFF DECISION**

File SP-12-08: APPROVAL WITH CONDITIONS of the Site Plan Review application for construction of a shopping center with six buildings on 25.67 acres of land. Tenants for the buildings have not yet been identified. The conditions of approval are listed in the staff report.

File AD-01-08: APPROVAL of the Adjustment application to allow some 24-foot-wide travel aisles in the parking lots on the northern parcel of the shopping center where 26-foot-wide travel aisles are usually required.

that would allow 24-foot-wide travel aisle in the parking lot adjacent to Buildings B, D, and E where 26 feet is usually required.

## STAFF ANALYSIS

### Site Plan Review File SP-12-08

#### Description of the Applications

Oregon Acquisition One LLC submitted to the City's Planning Division a Site Plan Review application and an Adjustment application for a proposed shopping center. The property where the shopping center is proposed is located on the south side of Santiam Highway, west of Goldfish Farm Road. The property is currently made up of three separate tax lots which total 25.67 acres. The shopping center would include six buildings. Tenants for the buildings have not yet been identified. The Adjustment application is to allow some 24-foot-wide travel aisles in the parking lots on the northern parcel of the shopping center where 26-foot-wide travel aisles are usually required.

The Site Plan submitted with the application (Sheet C6) shows that six buildings would be constructed. The buildings are designated Buildings A – F. Building A is shown to be 187,000 square feet. The other five buildings range in size from 4,000 square feet to 18,185 square feet. The total square footage of all of the building in the shopping center would be 235,480 square feet.

A new street would be constructed across the property from Goldfish Farm Road to the west boundary of the property. This street would eventually be extended to the west to Timber Street. This street is shown in the City's Transportation System Plan (TSP) as a street needed to accommodate vehicle traffic in this area as it develops. The requirement to build the street is included in an annexation agreement entered into by previous owners of the property and the City. The new street would divide the 25.67 acres owned by Oregon Acquisition One into a parcel of land on the north side of the street and a parcel of land on the south side of the street. Albany Development Code (ADC) Section 12.070 says "Streets are usually created through the approval of a subdivision or partition plat." However, the City Council may also approve the creation of a street by acceptance of a deed. If the creation of a street unintentionally results in a land partition, the owner is not required to apply for partition approval as long as the resulting parcels comply with Code standards.

A written document titled "SC Retail Center" was submitted with the Site Plan Review and Adjustment applications. The document includes a Proposal Summary, Site Statistics, and Findings and Conclusions that address each of the relevant Albany Development Code sections. This written document is referred to as the "Narrative" when it is cited in the staff report below. The Narrative has exhibits attached, including a Traffic Impact Analysis, Transportation Memorandum, Preliminary Drainage Report, Stormwater Memorandum, Noise Study, Geotechnical Report, Arborist Memorandum, and Architectural Memorandum.

A set of drawings was also submitted with the applications. The drawings include a Site Plan, Planting Plans, and drawings that show other details of the proposed shopping center construction. The drawings were done by WRG Design, Inc. and are dated 4/17/08. Revised drawings of certain sheets were submitted on May 19, 2008; July 25, 2008; and August 26, 2008. The Site Plan (Sheet C6) shows that six buildings will be constructed.

The drawings and other documents referenced above are cited in the staff report where information included in the drawings and other documents is applicable to the review criteria. The City Council will be provided with a copy of the drawings and other documents with the staff report prior to the public hearing.

#### Review Criteria

Albany Development Code (ADC) Section 2.650 includes the following review criteria which must be met for the Site Plan Review application to be approved. Code criteria are written in *bold italics* and are followed by findings, conclusions, and conditions of approval where conditions are necessary to meet the review criteria.

*(1) The transportation system can safely and adequately accommodate the proposed development.*

FINDINGS OF FACT

- 1.1 The proposed shopping center would be built on property located at the southwest corner of Santiam Highway (Highway 20) and Goldfish Farm Road.
- 1.2 TSP shows that a new major collector street should be constructed across the shopping center property (Project #150). The new street will begin to connect Goldfish Farm Road and Timber Street. The Site Plan shows that the new collector street will be built from Goldfish Farm Road to near the west boundary of the shopping center property. The street will have to cross an intervening property not owned by the applicants. Street improvements will stop about 50 feet short of the west boundary of the shopping center property. See the Findings under 1.23 below.
- 1.3 ADC 12.060 says that no development may occur unless the development has frontage on or approved access to a public street currently open to traffic. A currently non-opened public right-of-way may be opened by improving it to City standards. Streets within and adjacent to a development must be improved to City standards. Any new street or additional street width planned as a portion of an approved street plan shall be dedicated and improved to City standards.
- 1.4 In order to comply with these requirements, Santiam Highway and the proposed east/west collector street must be improved to City standards along the frontages of the property where the shopping center is proposed. The Site Plan shows the required improvements.
- 1.5 ADC 12.290 requires that all development for which land use applications are required must include sidewalks adjacent to public streets. In the case of arterial or collector streets, sidewalks must be built during their construction and considered during their reconstruction. Sidewalks are required on both sides of all streets.  
  
ADC 12.300 says the required width for a sidewalk on an arterial or collector street is seven (7) feet. This width may be reduced to six (6) feet if the sidewalk is separated from the curb by a landscaped planter strip at least five (5) feet wide.
- 1.6 Santiam Highway is classified as a principal arterial street and is under the jurisdiction of the Oregon Department of Transportation (ODOT). The shopping center property has about 860 feet of frontage on Santiam Highway. Curb, gutter, and sidewalk have been constructed along the east 370 feet of the property's frontage. Improvements adjacent to the property include two vehicle travel lanes in each direction; a two-way center left turn lane; and on-street bike lanes. The posted speed limit is 45 miles per hour.
- 1.7 Goldfish Farm Road is classified as a minor arterial street. The street is under the jurisdiction of the City and is constructed to City standards. Improvements include curb, gutter, and sidewalk; a vehicle travel lane in each direction; a center left turn lane; and on-street bike lanes. The intersection of Santiam Highway and Goldfish Farm Road is controlled with a traffic signal.
- 1.8 Access to the proposed shopping center will be provided by the new collector street and by Goldfish Farm Road.
- 1.9 In a letter dated April 2, 2008, ODOT indicated that they consider Goldfish Farm Road to be a private approach in terms of Oregon Administrative Rules (OAR) for the purpose of access to the state highway (Santiam Highway). As a result of this determination, an approach road permit will be necessary. A traffic impact study approved by ODOT is a required component of a complete application for the access permit.



- 1.10 A portion of the property included in the site for the shopping center was the subject of recent Comprehensive Plan Map and Zoning Map amendments. The zoning designation of 12.1 acres of the property was changed from RS-6.5 (Residential Single Family) to RC (Regional Commercial). A condition of the map amendments was that, when developed, new vehicle trips from the entire shopping center site must be limited to no more than 800 net new p.m. peak hour trips. This limitation is referenced here as “the trip cap.”
- 1.11 The applicants submitted a Transportation Impact Analysis (TIA) with the Site Plan Review application. The scope of the study was established by ODOT. The TIA was done by Kittelson & Associates, Inc. (Kittelson), and is dated March 2008. In response to comments by City and ODOT staff, Kittelson also submitted two supplemental transportation information reports. The first report is dated May 16, 2008. The second report is dated May 30, 2008.
- 1.12 The total area of the six buildings that would be built is 235,480 square feet. Based on the ITE trip generation rate for Shopping Center (Category 820) and an earlier site plan that showed buildings that totaled 238,900 square feet, Kittelson estimates that construction of the shopping center would result in a total of 730 net new p.m. peak hour vehicle trips. (The total building square footage was reduced from 238,900 square feet to 235,480 square feet with the current site plan.)

When analyzing the impact of the proposed shopping center on the street and highway system, Kittelson assumed that the development of the shopping center would result in the 800 net new vehicle trips allowed under the trip cap. Because the TIA analyzed the impact of 800 peak hour trips rather than the lower number of peak hour trips the development is actually expected to generate, the TIA is conservative in projecting traffic impact.

- 1.13 The TIA analyzes the operation of the street and highway system at full build-out of the shopping center in 2009 and in 2024 (build out + 15 years). The study assumes that all driveway accesses for the center will be on the new east/west collector street and Goldfish Farm Road. No direct driveway access is proposed on Santiam Highway.
- 1.14 The TIA evaluates the two southern driveways on Goldfish Farm Road and the following intersections (Santiam Highway is referred to as “US-20” in the TIA):
- US-20/Waverly Drive
  - US-20/Airport Road
  - US-20/Fescue Street
  - US-20/Timber Street
  - US-20/Goldfish Farm Road
  - US-20/Scrael Hill Road
  - Goldfish Farm Road/New Collector
  - Timber Street/New Collector
- 1.15 US-20/Waverly Drive: US-20 is classified as a Regional Highway and is under the jurisdiction of ODOT. Waverly Drive is classified as a minor arterial street and is under the jurisdiction of the City. ODOT has jurisdiction over the intersection. ODOT’s performance standard for the signalized intersection is a volume to capacity (v/c) ratio of 0.85.

In 2009, without the proposed shopping center being built, the v/c ratio of the intersection at the p.m. peak hour would be 1.07. With construction of the shopping center, and no traffic mitigation, the v/c ratio would increase to 1.12. The applicants have identified mitigation as being construction of an eastbound right turn lane from US-20 onto Waverly Drive. Construction of the turn lane would reduce the year 2009 v/c ratio with construction of the shopping center to 1.05. Although that’s still higher than ODOT’s performance standard for the intersection, the improvement would offset the shopping center’s impact on the intersection.

The ultimate improvement planned for the intersection in the City's TSP includes the eastbound right turn lane as well as a second westbound left turn lane and a second southbound through lane. With the ultimate improvement in place, in 2024, the intersection is projected to operate with a v/c ratio of 0.86. In 2024, Albany will likely have become a Metropolitan Planning Organization (MPO) and the performance standard for the intersection will be a v/c ratio of 0.90.

The ultimate improvements will be partially funded by Transportation System Development Fees, and will likely be constructed at one time as part of a joint ODOT/City project. If the eastbound right turn lane were constructed at the time the shopping center is built, the applicants would need to acquire off-site property for dedication as public right-of-way, the improvement would be done as a stand-alone project and the improvements would need to be reconstructed in the future when the ultimate intersection improvement is constructed.

The applicant has proposed that rather than constructing the turn lane when the shopping center is built, that a condition of approval of the shopping center be that they pay a share of the cost of the eastbound right turn lane. The payment would be proportional to the shopping center's impact on the intersection. The funds would be held by the City and used in the future to help fund the larger ultimate intersection improvement. The applicant has calculated that 937 additional p.m. peak vehicle trips would enter the intersection in year 2024. Of those, 200 would be generated by the shopping center. The applicant has therefore, offered to pay an amount equal to  $200/937$  of the estimated cost of the eastbound right turn lane.

The total cost of the east bound right turn lane is estimated to be \$480,000. The applicant has offered to pay \$102,455. Staff does not believe that paying for a proportional share of only the right turn lane would fully address the impact of the shopping center traffic on the intersection. The shopping center will add trips not to just the eastbound right turn movement, but also to other movements that create the need for the ultimate intersection improvement anticipated by the TSP. In order to be truly proportional, the shopping center would need to fund its share of all of the capacity improvements planned for the intersection. If private acquisition of off-site right-of-way was not a problem, the applicants would need to construct and pay for the full cost of the construction of the turn lane (\$480,000) in order to mitigate its impact on the intersection.

Given the difficulty of acquiring the needed off-site right-of-way from property owners who may not be willing to sell, an alternative to building the turn lane would be for the applicants to pay an amount equal to the proportional share of ultimate intersection improvements shown in the TSP as being needed to provide capacity for growth. The current cost of the ultimate improvement described in the City's TSP (Project #4) is \$2,749,648. The cost of the improvements needed to provide capacity for growth is \$952,377. The shopping center's proportional share of that cost would be  $200/937 \times \$952,377$  or \$203,282. That amount is proportional to the shopping center's impact on the overall intersection, and also less than the estimated cost of building just the eastbound right turn lane.

- 1.16 US-20/Airport Road: US-20 is classified as a Regional Highway and is under the jurisdiction of ODOT. Airport Road and the I-5 on/off ramps on the south side of the intersection are also under the jurisdiction of ODOT. ODOT's performance standard for the signalized intersection is a v/c ratio of 0.75.

In 2009, without the proposed shopping center being built, the v/c ratio of the intersection at the p.m. peak hour would be 0.89. With construction of the shopping center, and no traffic mitigation, the v/c ratio would increase to 1.12. The applicants have identified mitigation as being development of separate left and left-through lanes for the northbound approach; separate left, through, and right turn lanes for the southbound approach; and modification of the traffic signal to accommodate the new intersection geometry. With the mitigation, the intersection would operate with a v/c ratio of 0.76 in 2009 with construction of the shopping center. Although that's still higher than ODOT's performance standard for the intersection, the improvement would offset the shopping center's impact on the intersection. The applicants propose to construct the identified mitigation as a condition of approval of the shopping center.

An analysis of the operation of the intersection in 2024 was done. The analysis shows that the intersection would operate with a v/c ratio of 0.64 with the construction of the interchange improvements identified in Albany's TSP and ODOT's Albany I-5 Corridor Refinement Plan.

- 1.17 US-20/Fescue Street: US-20 is classified as a Regional Highway and is under the jurisdiction of ODOT. The north and south approach to the intersection (Fescue Street I-5 on and off-ramps) are also under the jurisdiction of ODOT. ODOT's performance standard for the signalized intersection is a v/c ratio of 0.75.

In 2009, without the proposed shopping center being built, the v/c ratio of the intersection at the p.m. peak hour would be 0.67. With construction of the shopping center, and no traffic mitigation, the v/c ratio would increase to 0.81. The applicants have identified mitigation as being construction of an eastbound right-turn lane with an overlap phase on the traffic signal. With the mitigation, the intersection would operate with a v/c ratio of 0.71 in 2009 with construction of the shopping center. The applicant proposes to construct the identified mitigation as a condition of approval of the shopping center. An analysis of the operation of the intersection in 2024 was done. The analysis shows that the intersection would operate with a v/c ratio of 0.67 with the construction of the interchange and highway improvements identified in Albany's TSP and ODOT's Albany I-5 Corridor Refinement Plan.

- 1.18 US-20/Timber Street: US-20 is classified as a Regional Highway and is under the jurisdiction of ODOT. Timber Street is classified as a minor arterial and is currently under the jurisdiction of Linn County. ODOT has jurisdiction over the intersection.

Because the intersection is controlled with a minor street stop sign, ODOT's current performance standard is a v/c ratio of 0.80 for the worst case movement. In this case, the southbound left turn is the worst case movement. In the future when Timber Street is improved and a traffic signal installed, ODOT's performance standard will change to a v/c ratio of 0.75. The applicant does not propose to extend the new east/west collector street west of the shopping center property to make a connection to Timber Street. An analysis of the operation of the intersection in 2024 was done to evaluate how the intersection would perform when a connection is made to Timber Street. In 2024, with the construction of the interchange and highway improvements identified in Albany's TSP and ODOT's Albany I-5 Corridor Refinement Plan the intersection was projected to operate with a v/c ratio of 0.35.

- 1.19 US-20/Goldfish Farm Road: US-20 is classified as a Regional Highway and is under the jurisdiction of ODOT. Goldfish Farm Road is classified as a minor arterial and is under the jurisdiction of the City. ODOT has jurisdiction over the intersection. ODOT's performance standard for the signalized intersection is a v/c ratio of 0.75.

In 2009, without the proposed shopping center being built, the v/c ratio of the intersection at the p.m. peak hour would be 0.30. With construction of the shopping center, and no traffic mitigation, the v/c ratio would increase to 0.88. The applicants have identified mitigation as being construction of an eastbound right-turn lane; construction of dual northbound left turn lanes; and to restripe the southbound approach for a left and shared through/right turn lane. With this mitigation, the intersection would operate with a v/c ratio of 0.58 in 2009 with construction of the shopping center. An analysis of the operation of the intersection in 2024 was done. The analysis shows that the intersection would operate with a v/c ratio of 0.68. The applicants propose to construct the identified mitigation as a condition of approval of the shopping center.

- 1.20 US-20/Scravel Hill Road: US-20 is classified as a Regional Highway and is under the jurisdiction of ODOT. Scravel Hill Road is classified as a minor arterial and is under the jurisdiction of Linn County. ODOT has jurisdiction over the intersection. ODOT's performance standard for the stop-controlled intersection is a v/c ratio of 0.80 for the worst case movement.

In this case, the southbound left turn will be the worst case movement. In 2009, without the proposed shopping center being built, the v/c ratio of the intersection at the p.m. peak hour would be 0.07. With

construction of the shopping center, and no traffic mitigation, the v/c ratio would increase to 0.08. In 2024, the worst case movement is projected to operate with a v/c ratio of 0.10. The operation of the intersection meets ODOT's performance standard throughout the horizon year TIA and no mitigation is necessary.

- 1.21 Goldfish Farm Road/New Collector Street: Goldfish Farm Road is classified as a minor arterial and is under the jurisdiction of the City. The new collector will be classified as a major collector and will be under the jurisdiction of the City.

The applicants have proposed that the street have a right-of-way width of 79 feet. The street would have a curb to curb width of 50 feet. This width will provide 12-foot-wide travel lane in each direction; 12-foot left-turn pocket; a 2-foot-wide median island; and 6-foot-wide bike lanes. The applicants also propose to widen Goldfish Farm Road near the intersection to provide for a southbound right turn lane from Goldfish Farm Road onto the new collector street. Because the new intersection will be controlled with a stop sign on the eastbound approach, the City's performance standard is a v/c ratio of 0.85 for the worst case movement.

For this intersection, the worst case movement will be the eastbound left turn. In 2009, with construction of the shopping center, the v/c ratio will be 0.85 during the p.m. peak hour. This meets the City's performance standard. This result assumes that the development generates 800 net new peak hour trips. An analysis of the intersection's operation based on the 730 p.m. peak hour trips that the development is actually expected to generate, results in the conclusion that the intersection will operate with a v/c ratio of 0.80 in 2009. For 2024, two separate possibilities were considered. The first possibility is that the new east/west collector street will not have not been extended and connected to Timber Street. Under those conditions, assuming 800 net new trips, the v/c ratio of the intersection would remain 0.85. The second possibility is that the new east/west collector street has been extended to Timber Street and a new traffic signal has been installed at the US-20/Timber intersection. Under those conditions, the new intersection on Goldfish Farm Road would operate with a v/c ratio of 0.38. In all cases the intersection will meet the City's performance standard and no mitigation is necessary.

- 1.22 Timber Street/New Collector Street: Timber Street is classified as a minor arterial and is currently under the jurisdiction of Linn County. The new collector street will be classified as a major collector and will be under the jurisdiction of the City. The intersection does not currently exist and is not proposed to be constructed with this development.

When this intersection is constructed, the City's TSP indicates the need for installation of a traffic signal to control the intersection. The City's performance standard for signalized intersections is Level of Service (LOS) D. In 2024, during the p.m. peak hour, the intersection is projected to operate at LOS B. This result assumes that the new east/west collector street has been extended to Timber Street; Timber Street is improved between US-20 and 18th Avenue; and traffic signals are installed at both US-20/Timber and Timber/New Collector.

- 1.23 The Site Plan shows that public right-of-way will be dedicated across the shopping center property for the new east/west collector street from Goldfish Farm Road to the west boundary of the property. Extension of the street to the west boundary of the shopping center property was a condition of an annexation agreement entered into by a previous owner of part of the shopping center property and the City. A short section of right-of-way is needed across the property not owned by the applicants at the easterly west boundary of the shopping center property. The applicants have agreed to make an effort to acquire the offsite right-of-way and build this section of the street with the other required public improvements. In the event that the applicants cannot negotiate a purchase with the adjoining landowner, the applicants have indicated a willingness to pay the cost of condemnation and provide a financial assurance for completion of the street and utility improvements.

The westerly 280 feet of the new collector street, which includes the necessary area of off-site right-of-

way on the adjoining parcel, is not necessary to provide access for the shopping center. It is needed to extend the street and public utilities to the westerly boundary of the shopping center so that the street and utilities can be extended in the future.

The applicants submitted a street elevation profile that shows what the elevations of the street extension to Timber Street could be. At the request of the City's Engineering Division, the grade of the western end of the new collector street will slope down to the existing grade of the abutting property for the last 50 feet of the street. This last 50 feet of street will not be built with construction of the shopping center and the rest of the east/west collector street.

There will be a grade differential between the new street and adjoining properties that will require acquisition of construction and fill slope easements along a portion of the new street. The property owner will provide a payment to the City equal to the cost of building this 50-foot section of street. The payment will be used to build this section of street at the time the street is extended to the west at some time in the future. The City Engineer approved this plan.

- 1.24 The applicants propose to widen the west side of Goldfish Farm Road south of US-20 in order to accommodate an additional northbound left turn onto US-20, a southbound right turn lane onto the new collector street, and a lane transition south of the new collector street. The length of the widening will be about 670 feet, and will require dedication of additional right-of-way; replacement of curb, gutter, and sidewalk along the west side of the street; and new pavement for the widening.

#### Street Trees

- 1.25 ADC 12.321 says "When a new public street is created in conjunction with development, street trees are required in accordance with the standards provided in the Standard Construction Specifications and the Urban Forestry Management Plan."

ADC 12.324 says the following options are available to meet this requirement:

- (1) Submit a street tree plan to the City for planting and establishing trees within the public right-of-way that meets the City standards. The City Forester shall either approve or deny the plan based on the plan's compliance with these requirements.
- (2) Pay a fee to the City based upon a requirement for one tree per thirty linear feet (30') of street frontage. This fee shall be deposited into the City's Urban Forestry Program Fees Fund. The City shall thereafter assume responsibility for the purchase, installation, and establishment of street trees with the public right-of-way or public lands maintained by the City within or abutting the specified development.

These requirements apply only "when a new street is created." The proposed plan for the shopping center includes the creation of one new street – the new east/west collector street. Planting Plans L0, L1, L2, and L4 show that street trees will be provided along both sides of the street. The trees shown are Red Oaks, spaced 30 feet on center. The trees will be 3 inches in diameter at time of planting. The City Forester has approved the plan for street trees. The Planting Plans also show that street trees will also be provided along Goldfish Farm Road.

#### CONCLUSIONS

- 1.1 The Site Plan shows that street right-of-way for the new collector street shown in the City's TSP across the shopping center property will be dedicated by the property owner. Santiam Highway and the new east/west collector street will be improved to City standards along the frontages of the shopping center property. Sidewalks will be included along the streets. Goldfish Farm Road along the frontage of the property is already improved to City standards.

- 1.2 A condition of approval for a Comprehensive Plan Map and Zoning Map Amendment for this property limits the number of new vehicle trips that can be generated by development on the shopping center property to 800 net new p.m. peak hour trips.
- 1.3 The applicants submitted a Traffic Impact Analysis (TIA) with the Site Plan Review application and two supplemental transportation information reports. The TIA estimates that the proposed shopping center will generate 730 net new p.m. peak hour vehicle trips. When analyzing the impact on the transportation system, the TIA assumes that the shopping center will generate the 800 net new p.m. peak hour trips. The results of the TIA, therefore, are conservative, in that they overestimate the traffic impact that will be generated by the proposed shopping center. The impacts resulting from the development will be slightly less than what is projected by the traffic study, and intersection operations will be somewhat better.
- 1.4 The TIA concludes that the two new driveways on Goldfish Farm Road that will be built with the shopping center will operate at acceptable levels of service. The TIA also concludes that, with the mitigation identified in the TIA, all of the intersections analyzed will operate at acceptable levels of service, except the intersection of Santiam Highway (U.S. 20) and Waverly Drive.
- 1.5 To mitigate the impact of new traffic to and from the shopping center on the intersection of Santiam Highway and Waverly Drive, a condition of approval of the shopping center will be that the applicants (the property owner) pay to the City of Albany the cost of the property's proportionate share of the improvements identified in the City's TSP that will be needed for the intersection of Santiam Highway and Waverly Drive to operate at an acceptable level of service.
- 1.6 The applicants propose to dedicate the right-of-way needed for the new east/west collector street and to build the street from Goldfish Farm Road to the west boundary of the shopping center property, except that part of the street would cross a property currently not owned by the applicants and except for the westernmost 50 feet of the street. The applicants will make an effort to acquire the needed right-of-way across the property they don't own. If they are not able to acquire the right-of-way, the applicants will pay the cost the City would incur to condemn the property and the applicants will provide a financial assurance for utility and street improvements in the right-of-way.

As noted in the findings, the westerly 280 feet of the new collector street, which includes the necessary area of off-site right-of-way on the adjoining parcel, is not necessary to provide access for the shopping center. The applicants will not build the last 50 feet of the street so that the street can be sloped down to match the grade of the adjacent property. The elevation of the street will match when the adjacent property is developed and the street is extended to the west. The applicants will pay to the City the cost of building the last 50 feet of the street. The payment will be used to construct this section of street later when the street is extended west.

- 1.7 This review criterion will be met when the following conditions are met.

#### CONDITIONS

- 1.1 Prior to issuance of any building permits for the shopping center project, the property owner must dedicate the public right-of-way necessary to widen Santiam Highway west of Goldfish Farm Road. The new right-of-way line must be located at least 6 inches behind the new back of sidewalk location. [Improvements along the south side of the highway are also required. See 1.3(a) below.]
- 1.2 Prior to issuance of any building permits for the shopping center project, the property owner must dedicate the public right-of-way for the new east/west collector street from Goldfish Farm Road to the west boundary of the shopping center property. The property owner must also secure any fill slope and construction easements necessary for the construction of the new street.

In the event that the applicant cannot secure the necessary off-site right-of-way and easements from the adjoining parcel at 4196 Santiam Highway, the property owner must pay all City costs for condemnation of the right-of-way. The applicant must provide a financial assurance acceptable to the City Attorney for the costs of condemnation.

- 1.3 Prior to issuance of any building permits for the shopping center project, the property owner/developer must obtain construction permits from the agency with jurisdiction over the facility (ODOT or City) and then construct or financially assure the following (Santiam Highway is referred to as US-20 below):
- a. US-20 Site Frontage: Construct curb, gutter, sidewalk, and pavement to match existing along the west 480 feet of the property's frontage on US-20 generally as shown on the Site Plan. The design of the improvements must be approved by ODOT.
  - b. US-20/Airport Road: Construct separate left and left-through lanes for the northbound approach; separate left, through, and right turn lanes for the southbound approach; and modification of the traffic signal to accommodate the new intersection geometry. The design of the improvements must be approved by ODOT.
  - c. US-20/Fescue Street: Construct an eastbound right-turn lane with an overlap phase on the traffic signal. The design of the improvements must be approved by ODOT.
  - d. US-20/Goldfish Farm Road: Construct an eastbound right turn lane; dual northbound left turn lanes; and restripe the southbound approach for a left and shared through/right turn lane. The design of the improvements must be approved by ODOT.
  - e. Goldfish Farm Road/New Collector Street: Construct a southbound right turn lane from Goldfish Farm Road onto the new collector street together with a transition on the south side of the intersection as shown on the Site Plan. Improvements must include the new curb, gutter, sidewalk, pavement, and striping needed to accomplish the road widening.
  - f. New Collector Street: Construct a new collector street from Goldfish Farm Road to the west boundary of the shopping center property (except as noted in the paragraph below). Improvements shall be generally as shown on the Site Plan and include curb, gutter, and sidewalk; a vehicle travel lane in each direction; a center left turn lane; and a bike lane in each direction. A two-foot-wide concrete median island must be included from Goldfish Farm Road west to the first driveway on the south side of the road. The sidewalk along the collector street must be setback from the curb by a landscape strip at least six feet in width.

The last 50 feet (approximately) of the collector street will not be built at this time. The grade of this section of street must be constructed to the grade shown on the street profile submitted by the applicants to the City and attached to the email from Alan Lee to Jeff Woodward on August 15, 2008. Before any building permits are issued for the shopping center project, the applicant must pay to the City the estimated cost of constructing the last 50 feet of the street. The estimate must be prepared by the applicant and must be approved by the City Engineer.

- 1.4 Prior to issuance of any building permits for the shopping center project, the property owner must either secure and dedicate the right-of-way needed and construct a 250 foot eastbound right turn lane from US-20 onto Waverly Drive or pay to the City the amount of \$203,282 to be held and used by the City for future capacity improvements at the intersection.

- (2) *Parking areas and entrance-exit points are designed to facilitate traffic and pedestrian safety and avoid congestion.*

## FINDINGS OF FACT

### Entrance-Exit Points

- 2.1 ADC 12.100(2) requires that driveways for commercial uses must have widths of 24-32 feet for two-lane driveways and 36 feet for three-lane driveways. Three-lane driveways must have designated lanes and turning movements. There must be a minimum separation of 22 feet between all driveways except for single- and two-family dwellings. The width of a driveway will be determined by measuring at the curb line and will exclude the transitions which must conform to standards fixed by the City Engineer.

The northern parcel will have two driveway accesses located on the new east/west collector street. The Site Plan shows that each of the driveways will be 26 feet wide. Each driveway will have two lanes.

The southern parcel will have two driveway accesses located on the new east/west collector street and two driveway accesses on Goldfish Farm Road. The Site Plan shows that the westerly driveway on the new collector street will be 30 feet wide. It will have two lanes. The Site Plan shows the easterly driveway will be 36 feet wide. It will have three lanes and directional pavement markings as required. The Site Plan shows that the northern driveway on Goldfish Farm Road will be 36 feet wide and the southern driveway will be 30 feet wide. The northern driveway will have three designated approach lanes and directional pavement marking arrows as required. The southern driveway will have two lanes.

- 2.2 ADC 12.100(3) requires that all driveways must be located the maximum distance which is practical from a street intersection and in no instance shall the distance from an intersection be closer than the following as measured from the nearest curb return radius: Arterial Street - 40 feet; Collector Street - 20 feet.

The new east/west street will be classified as a collector street. The nearest driveway for the northern parcel on the east/west street will be located about 200 feet from the intersection of Goldfish Farm Road. Goldfish Farm Road is classified as an arterial street. The nearest driveway for the southern parcel on the east/west street will be located about 500 feet from the intersection of Goldfish Farm Road.

- 2.3 Albany does not have a performance standard for the operation of private driveway connections to the public street system. Nevertheless, the traffic study included an analysis of the performance of the two driveway approaches to Goldfish Farm Road for Building A. The operation of both driveways will meet Albany's standard for the performance of two-way stop controlled intersections.

At year 2009 during the p.m. peak traffic hour the worst case movement at the northern driveway will operate with a v/c ratio of 0.82. The worst case movement at the southern driveway will operate with a v/c ratio of 0.03. At year 2024, with the new collector street connected to Timber Street the operation of the two driveways will greatly improve. The northern driveway will operate with a v/c ratio of 0.07, and the southern driveway with a v/c ratio of 0.01.

- 2.4 The applicants submitted a Circulation Plan with the Site Plan Review application (Sheet C5). All of the driveways for the site are on a public street that will include sidewalk facilities. The Site Plan shows that crosswalks will be striped across all of the site driveways in order to facilitate safe and efficient pedestrian movements along the public street system and into the shopping center.

### Number of Required Parking Spaces

- 2.5 ADC 4.250, Table 2 lists the number of off-street parking spaces that are required for a variety of uses. ADC 4.250 says that "the area measured is the combined floor area of each level of a building exclusive of vent shafts, court yards, stairwells, elevator shafts, restrooms, storage rooms and rooms designed and



used for the purpose of storage and operation of maintenance equipment, and covered or enclosed parking areas.” The table shows that shopping centers must provide at least one off-street parking space for every 200 square feet of sales floor area.

The Site Plan (Sheet C6) submitted with the Site Plan Review application shows six buildings will be constructed. The buildings are designated Buildings A, B, C, D, E, and F. The Site Plan shows the square footage of each building and the number of parking spaces that will be provided. The buildings are described as being on either the “northern parcel” or the “southern parcel.” There are five buildings on the northern parcel and one building on the southern parcel.

The information on the Site Plan shows that the five buildings on the northern parcel will include a total of 48,480 square feet. The “net building sales area” is shown as 48,000 square feet. The applicants explain that they deducted 120 square feet from the gross floor area of each building for mechanical and electrical rooms as allowed by ADC 4.250. The 120 square feet would be a room(s) approximately 11 feet by 11 feet. (They could also have subtracted out the square footage of restrooms, but they didn’t.) The deduction from gross floor area is reasonable. The net floor area of the buildings on the northern parcel is 48,000 square feet. This building will need 240 off-street parking spaces. The Site Plan shows 240 spaces will be provided.

The information on the Site Plan shows that the building on the southern parcel will be 187,000 square feet. The net building sales area is shown as 172,000 square feet of sales floor area. The applicants explain that “based on average mechanical/storage size requirements for retailers of this magnitude, and past experience, 15,000 square feet of mechanical/storage area was excluded from the gross floor area to determine the total sales floor area... It should be noted the 15,000 square foot estimate is conservative and may ultimately end up being larger, thereby, reducing GLA further.” Planning staff confirmed with an architect that designs large format retail stores that storage/mechanical areas for this type of building may vary from about 4 percent to 8 percent of gross floor area. The 15,000 square feet assumed by the applicants is about 8 percent of the gross floor area of Building A. This building will need 860 off-street parking spaces. The Site Plan shows there will be 860 parking spaces on the southern parcel.

### Parking Lot Design

2.6 ADC 9.120 includes parking area improvement standards.

ADC 9.120(2) requires that all parking areas conform to the setback, clear vision, landscaping, and buffering/screening provisions of the Code. The Site Plan shows that the proposed parking lots will meet the required 10-foot setback from front property lines. Buffering and screening will be provided along the west and south property boundaries. The Site Plan shows clear vision areas at the corners where driveways intersect streets. See additional analysis under Review Criterion (5) below.

ADC 9.120(3) requires that all parking areas have a durable, dust-free surfacing of asphaltic concrete, cement concrete, or other materials approved by the Director of Public Works. In written information submitted with the application, the applicants explain that the parking areas will be surfaced with asphalt.

ADC 9.120(4) requires that adequate drainage be provided to dispose of the run-off generated by the impervious surface area of the parking area. Provisions shall be made for the on-site collection of drainage waters to eliminate sheet flow of such waters onto sidewalks, public rights-of-way, and abutting private property. All drainage systems must be approved by the Director of Public Works. Storm drainage is addressed under Review Criterion (4) below.

ADC 9.120(5) requires a curb not less than 6 inches in height along the perimeter of all parking areas. Site Plan Note 5 shows a curb around the perimeter of the parking lot.

ADC 9.120(6) requires that all parking stalls fronting a sidewalk, alleyway, street or property line have a secured wheel bumper not less than 6 inches in height nor less than 6 feet in length, to be set back from the front of the stall a minimum of 2-1/2 feet. If the sidewalk is widened to 7 feet 6 inches to allow for vehicle encroachment, no wheel bumpers are required. Note 4, which appears on the Site Plan in the parking lots on the northern parcel on the Site Plan, says "Proposed typical 18.5' x 9' parking stall. Wheel stop will be installed if front of stall abuts a pedestrian way." Note 4 applies to most of the parking spaces on the northern parcel. There are places where parking spaces abut a sidewalk that is not 7.5 feet wide, so wheel bumpers will be required at these locations. Note 26 says "Proposed 15.5' x 9' parking stall. Wheel stop will be installed if front of stall abuts a pedestrian walkway." This note appears adjacent to walkways where appropriate bumper overhang area has been provided in conformance with ADC 8.380(5)(a). Note 16 says "Proposed 16.0' x 9' parking stall. Wheel stop will be provided if front of stall abuts pedestrian walkway."

Note 18, which appears on the Site Plan in the parking lots on the southern parcel, says "Proposed typical 18.5' x 9.5' parking stall. Wheel stop will be installed if front of stall abuts a pedestrian way." Note (6) in ADC 9.130, Table 1 says "where appropriate bumper overhang area is provided (extruded curbs), that parking space length can be reduced." This implies that the extruded curb will function as the wheel bumper and a separate wheel bumper is not required. There are no places on the southern parcel where a parking space abuts a sidewalk where an appropriate bumper overhang area has not been provided. No wheel bumpers will be required on the southern parcel. See the analysis of parking space and aisle width dimensions in response to ADC 9.130, Table 1 below.

ADC 9.120(7) requires that groups of more than 2 parking spaces must be located and served by an aisle or turnaround so that their use will require no backing movements or other maneuvering within a street right-of-way other than an alley. The Site Plans shows that the parking areas for the shopping center will be arranged so that no backing or maneuvering will be necessary in public rights-of-way.

ADC 9.120(8) requires parking areas with more than 2 parking spaces to be permanently and clearly marked. Written information submitted with the application says the parking areas will be striped as shown on the Site Plan.

ADC 9.120(9) requires where a proposed parking area is adjacent to a developed or undeveloped site within the same zoning district, the proposed parking area must be designed to connect to the existing or future adjacent parking area. The shopping center property is zoned RC (Regional Commercial). The northwest corner of the shopping center property is adjacent to a property also zoned RC (Regional Commercial). Connecting development on the northern parcel of the shopping center with the adjacent lot would allow for internally linked trips and avoid forcing drivers who visit both sites from having to use the highway and city street systems to travel between sites. A condition of approval of the shopping center site plan will be that a connection to this property be provided.

ADC 9.120(10) requires that parking lots be landscaped in accordance with the standards listed in ADC 9.150. See the analysis of parking lot landscaping under Review Criterion (5) below.

ADC 9.120(12) requires that all parking areas must provide handicapped parking spaces in conformance with the Oregon State Structural Specialty Code. The Site Plan shows that 1,100 parking spaces will be provided. Of those spaces, 28 are designated as disabled parking spaces. The northern parcel has 240 spaces, with 10 of them accessible. The southern parcel has 860 spaces, with 20 of them accessible. The City's Building Division reviewed the spaces for location, dimensions, and signs and found them to be in conformance with the Oregon State Structural Specialty Code.

ADC 9.130, Table 1 shows required dimensional requirements for parking lots. Note 4 on the Site Plan shows that the typical parking space in parking lot on the northern parcel will be 9 feet wide and 18.5 feet long. Table 1 shows that 9-foot-wide parking spaces oriented at 90 degrees to vehicle travel aisles must be 18.5 feet long. Notes on the Site Plan say that wheel stops will be installed where required. Table 1

shows that the required aisle width is 26 feet. Most of the travel aisle widths are shown to be 24 feet. The applicants submitted an Adjustment application to allow the more narrow widths. An analysis of that application follows in this staff report. The other aisle widths are shown to be 26 feet.

Note 18 on the Site Plan shows that the typical parking space in the parking lot on the southern parcel will be 9.5 feet wide and 18.5 feet long. The travel aisle widths are all shown to be 26 feet. The southerly access to the shopping center is shown to be 30 feet wide. The access drive in front of Building A is shown to be 30 feet wide.

### Bicycle Parking

2.7 ADC 9.120(13) requires bicycle parking as follows:

- (c) For commercial or office development -- at least 2 spaces, and 1 space for every 10 automobile spaces required. Up to two motor-vehicle parking spaces may be deleted if additional sheltered bicycle parking is provided at a rate of 5 bicycle spaces to 1 motor-vehicle space.
- (d) The Director may allow exemptions to or reductions in required bicycle spaces in connection with uses that are not likely to need bicycle parking.

A total of 240 vehicle parking spaces will be provided for the northern parcel. Twenty-four bicycle parking space are required. In written information provided with the application (Narrative, page 55), the applicants say they will provide 24 bicycle parking spaces on the northern parcel.

A total of 860 vehicle parking spaces will be provided on the southern parcel. Eighty-six bicycle parking spaces are required. The applicants request that the number of required bicycle parking spaces be reduced from 86 spaces to 43 spaces. They explain that they do not expect that a large-format retail store, such as Building A, will generate enough bicycle traffic to warrant 86 bicycle parking spaces. And they point out that the City granted a similar request to Costco when they built a store in Albany in 2001. That decision recognized that because of the large size and quantity of goods sold by Costco, their customers typically use automobiles to transport purchases.

The City's Transportation Analyst considered the request to reduce the number of bicycle parking spaces required for Building A and found that there have been no reports that demand for bicycle parking at Costco has ever approached or exceeded the supply provided. Based on this analysis, the request to reduce the number of bicycle parking spaces required for Building A can be granted.

Bicycle parking spaces must meet the following standards:

- (e) Required spaces should be visible and not hidden, and must be located as near as possible to building entrances used by automobile occupants.
- (f) Each required bicycle parking space must have a parking rack securely fastened to the ground. Parking racks must support each bicycle at a minimum of two points, including at least one point on the frame, and must allow the frame and at least one wheel to be locked with a U-type lock.
- (g) Bicycle parking areas must provide at least 3 feet of clearance around all 3 sides of a fully-loaded bicycle rack and have an overhead clearance of at least 7 feet.
- (h) At least one-half of required bicycle parking spaces must be sheltered. Spaces must be protected from precipitation by a roof overhang or a separate roof at least 7 feet in height. Bicycle parking spaces within roofed buildings and bike lockers are considered sheltered spaces.

The location of the required bicycle parking spaces is shown on the Site Plan (Note 13). The applicants submitted a detail drawing of the type of bicycle rack that is proposed. The drawing is attached to this staff report as Attachment 7. The applicants explain that all of the bicycle-parking areas are located near the main entrances to buildings. The bicycle spaces on the northern parcel are located under awnings directly north of Buildings F and C, and directly south of Building D. The bicycle spaces on the southern

parcel are located along the front facade with half of the stalls located under awnings to provide shelter. The spaces will be located in areas that will provide a minimum of 3 feet of clearance around all 3 sides of a fully-loaded bicycle rack and have an overhead clearance of at least 7 feet. Bicycle parking facilities will allow bike frames and one wheel to lock together with a U-type lock (Narrative, page 55).

### Lighting

- 2.8 ADC 9.120(14) requires that any lights provided to illuminate public or private parking areas be arranged to reflect the light away from any abutting or adjacent residential district.

A Site Lighting plan was submitted with the application (Sheet C11). Four detail drawings with specifications were also submitted that show proposed light fixtures. The detail drawings show the light fixtures. The Site Lighting plan shows that lighting will be placed throughout the parking lot, near the buildings, and on the buildings.

The Site Lighting plans shows lighting contours. The plan shows that approximately 0.1 to 0.6 foot candles of light will be cast on the buffer area along the south boundary of the shopping center property at points about 20 feet from the property line. The plan shows that approximately 0.0 to 0.8 foot candles of light will be cast on the buffer area along the west boundary of the shopping center property at points about 15 feet from the property line.

The applicants explain that the photometric model used to estimate the amount of light does not account for the six-foot solid screen/sound walls that will be provided along the southern and western property boundaries because the model cannot account for the horizontal structure.

Staff asked the applicants to provide detail drawings that show how much light there will be at the property line and on adjacent property. In response, the applicants submitted lighting details. These drawings are attached to the staff report as Attachments 8 -12. The drawings show that the level of light at the south and west property lines varies from 0 foot candles to .3 foot candles.

The applicants point out that 0.2-foot candles is equivalent to moonlight (Narrative, page 69-70).

ADC 9.120(14) is the standard that applies to the lighting on the parking lot. ADC 9.480 says that "No direct or sky-reflected glare in excess of 0.5-foot candles of light, whether from floodlights or from high temperature processes such as combustion or welding or otherwise, visible at the lot line shall be permitted. These regulations shall not apply to signs or floodlighting of parking areas otherwise permitted by this Code. [Underlining added for emphasis.] This standard seems to be intended for industrial processes and parking lot lighting is specifically excluded. Nevertheless, the lighting details submitted by the applicants show that the lighting visible beyond the south and west property lines will be less than 0.5 foot candles.

### CONCLUSIONS

- 2.1 The proposed driveways for the shopping center meet ADC location standards and width standards.
- 2.2 The new driveways on Goldfish Farm Road for the shopping center will have enough storage to accommodate vehicle queues waiting to turn on to Goldfish Farm Road.
- 2.3 The two new driveway intersections on Goldfish Farm Road will operate at an acceptable level of service.
- 2.4 The Circulation Plan submitted by the applicants shows a complete pedestrian access plan for the proposed shopping center.
- 2.5 The Site Plan shows the required number of off-street parking spaces will be provided.

- 2.6 The Site Plan and Planting Plans show that the proposed parking lots will conform to the setback, clear vision, landscaping, and buffering/screening provisions of the Code.
- 2.7 The parking lots will have perimeter curb, will be surfaced with asphalt, will be striped, and have adequate drainage.
- 2.8 The parking spaces will meet the required dimensional standards. Wheel stops will be provided where required.
- 2.9 A vehicle driveway connection must be made from the development on the northern property to the parcel of land to the west.
- 2.10 Parking spaces accessible to the disabled will be provided in conformance with the Oregon State Structural Specialty Code.
- 2.11 Bicycle parking will be provided in conformance with ADC 9.120(13). If only 43 bicycle parking spaces are provided, they must be all be covered spaces to make sure that there will be enough spaces in bad weather.
- 2.12 The lighting on the site will be arranged to reflect light away from the abutting residential land to the south.
- 2.13 This review criterion will be met when the following conditions are met.

#### CONDITIONS

- 2.1 The driveways to Goldfish Farm Road and the new collector street must be constructed at the locations and dimensions shown on the Site Plan.
- 2.2 All new driveways shall be stop controlled at their approach to a public street. The property owner/developer must install the stop signs.
- 2.3 Driveways with more than one exiting lane to a street shall have striped lane lines and directional pavement arrow markings.
- 2.4 The net building sales area for the northern parcel must not exceed 48,000 square feet if 240 parking spaces are provided as shown on the Site Plan. The net building sales area for Building A must not exceed 172,000 square feet if 860 parking spaces are provided as shown on the Site Plan. Net building sales area must be calculated by the applicant as described in ADC 4.250 and submitted with building permit applications. The calculations must be verified by city staff before building permits and/or tenant improvement permits are issued for each building and/or tenant space.
- 2.5 The parking lots for the shopping center must be constructed in conformance with ADC dimensional standards, substantially as shown on the Site Plan. The Site Plan submitted with building permit applications will be reviewed for conformance.
- 2.6 A two-way driveway connection must be made from the shopping center property/parking lot on the northern parcel to the parcel adjacent to the west.
- 2.7 At least 24 bicycle parking spaces must be provided on the northern parcel. At least 43 bicycle parking spaces must be provided on the southern parcel. The bicycle parking spaces must conform with ADC 9.120(13). The spaces that are provided on the southern parcel must be covered spaces in order to encourage to the extent possible the use of bicycles to access the site.

(3) *Public utilities can accommodate the proposed development.*

FINDINGS OF FACT

Sanitary Sewer

- 3.1 The City's utility maps show that there is an 8-inch public sanitary sewer main along the shopping center property's Highway 20 frontage and also along the Goldfish Farm Road frontage. An 8-inch main is stubbed to the property from the sewer main in Goldfish Farm Road, just south of the proposed main driveway for Building A.
- 3.2 ADC 12.470 requires that all new development must extend and connect to the public sewer system when service is available within 300 feet of the property.
- 3.3 ADC 12.490 requires that sewer collection mains must be extended along the full length of a property's frontage, or to a point identified by the City Engineer as necessary to accommodate likely system expansion.
- 3.4 ADC 12.510 requires that all new development must, where appropriate, make provisions for the continuation or appropriate projection of existing sewer lines serving surrounding areas. Line extensions may be required through the interior of a property to the developed where the City Engineer determines that the extension is needed to provide service to upstream properties.
- 3.5 The Sanitary/Water Plan (Sheet C9) submitted by the applicants shows that an 8-inch public sanitary sewer main will be extended to the property's west boundary within the proposed new east/west collector street, to a point south of Building E. Each proposed building would be served by individual sewer service laterals connected to this new public main.
- 3.6 Buildings B, C, D, E, and F can all be served by laterals tapped from the existing public sewer main along the south side of Highway 20. Building A can be served by a connection to the existing main in Goldfish Farm Road. The parcel at the northwest corner of the property is currently developed and is served by a connection to the main in Highway 20. Other parcels to the west of the property will be served by the public sewer main in Timber Street, or a future extension of this main. Therefore, no public sanitary sewer main extension is required within the proposed east/west collector street.
- 3.7 In 2007, the City retained a consultant to evaluate sewer lines within the Cox Creek Sewer Basin. The consultants conclusions are included in a report titled "City of Albany, Cox Creek Basin – Flow Monitoring, Wet Weather Modeling, and Capacity Analysis," dated July 25, 2007. It was determined that once the Wastewater Treatment Plant expansion project that is under construction now is completed there will be a limited amount of available capacity left in the lower end of this sewer basin based on flow capacity limits established in the "City of Albany, Cox Creek Basin – Flow Monitoring, Wet Weather Modeling, and Capacity Analysis". The Wastewater Treatment Plant project will be completed in December 2008. The City's Engineering staff estimates that the proposed development would not create wastewater flows greater than the assumed available capacity. However, the proposed development will consume the assumed remaining available capacity in the Cox Creek Sewer Basin. Therefore, capacity improvements in this sewer basin will be required prior to approval of any further development in the basin that requires an increase in sanitary sewer service *greater* than *what* is currently provided to the property or a new criteria for determining available capacity will need to be developed. Connection of a single family home on a lot that currently exist will continue to be allowed in all circumstances.

Water

- 3.8 The City's utility maps show that there is a 12-inch public water main along the north side of Highway 20 and a 24-inch main in Goldfish Farm Road.

- 3.9 ADC 12.410 requires that all new development, including a single-family residence, must extend and connect to the public water system when service is available within 150 feet of the property.
- 3.10 ADC 12.430 requires that water distribution mains must be extended along the full length of the property's frontage along the right-of-way or to a point identified by the City Engineer as necessary to accommodate likely system expansion. Main extensions may be required through the interior of properties when necessary to provide for service to other properties or to provide looping for fire flows.
- 3.11 AMC 11.01.120 (2)(c) says the City has sole right to determine size, location, and type of facility to be constructed. All engineering of public water facilities must be based on both domestic and fire protection design criteria, and in accordance with the City's water facility plan.
- 3.12 AMC 11.01.120 (2)(h) requires that all public main extensions must include fire hydrants and other appurtenances in a manner consistent with the recommendations of the water system facility plan, the Standard Construction Specifications, and/or the fire marshal.
- 3.13 AMC 11.01.120(2)(b) requires that all public water system improvements be installed in public rights-of-way or public utility easements. The normal location for the public water main extensions will be in a dedicated street right-of-way.
- 3.14 The Sanitary/Water Plan shows the extension of a public water main (the size is not shown) to the property's west boundary within the proposed east/west collector street. Each proposed building will be served by individual water services/meters connected to this new public main. This main must be a minimum 12-inch public water main, and must be extended to the westernmost boundary of the property, west of Building A.
- 3.15 Recent water system improvements in Goldfish Farm Road, from Highway 20 to Spicer Road, provide adequate pressure, flow, and redundancy to accommodate the proposed development.

#### Storm Drainage

- 3.16 ADC 12.530 says the review body will approve a development request only where adequate provisions for storm and flood water run-off have been made as determined by the City Engineer. Ditches are not allowed without specific approval of the City Engineer. Open natural drainageways of sufficient width and capacity to provide for flow and maintenance may be permitted.
- 3.17 ADC 12.550 requires that a culvert or other drainage facility shall be large enough to accommodate potential run-off from its entire upstream drainage area, whether inside or outside of the development. The City Engineer must review and approve the necessary size of the facility, based on the provisions of the Storm Drainage Master Plans, and sound engineering principles and assuming conditions of maximum potential watershed development permitted by the Comprehensive Plan.
- 3.18 ADC 12.560 says where it is anticipated by the City Engineer that the additional run-off resulting from the development will overload an existing drainage facility, the review body will withhold approval of the development until provisions have been made for improvement of said potential condition.
- 3.19 The applicants submitted a Preliminary Drainage Report with the Site Plan Review application. The report includes a description of the proposed drainage system for the shopping center and calculations.

At the request of the City's Engineering staff, the applicants submitted a revised Preliminary Drainage Report. The revised report is dated September 2, 2008. The revised report concludes that "The proposed conveyance system has the capacity to handle all storm events up to and including the 25-year storm event. The 100-year storm event is able to be conveyed to the Cox Creek outfall without flooding." (Preliminary Drainage Study, page 5.)

- 3.20 The Storm Sewer Plan (Sheet C8) shows private storm drainage pipes and two private detention ponds within the private parking lots, and public storm drainage pipes and detention within the public streets. This plan is generally acceptable, except the plan at the intersection of Goldfish Farm Road and Highway 20 must be modified as described in Finding 3.21 below.
- 3.21 The plan that was submitted would result in a conflict between the existing 24-inch water main and a proposed 30-inch pipe between SDMH#2 and SDMH#3. It will be necessary to cross the water main further to the north near where the existing storm drain main crosses because the water main is much deeper at that location. When the applicant submits detailed engineering plans for construction, the plans should route both the existing storm drainage in Goldfish Farm Road and the new storm drainage from the shopping center property over the deeper portion of the water main near Highway 20.

It is the City's practice to only approve parallel pipe systems as a last resort. It is not an efficient use of the City's resources to maintain two parallel systems. As such, the preferred alternative is to combine the two systems prior to crossing Goldfish Farm Road. This would require removing and replacing a portion of the existing storm system with a larger capacity pipe. The amount of cover over the storm drain pipe is anticipated to represent a challenge and may impact the design. The City Engineer will consider these, and any other alternative configurations, at the time construction plans are submitted to the City's Engineering Division.

- 3.22 The plan that was submitted also shows a new 30-inch main will be constructed along Highway 20, parallel with the existing 30-inch main across the north end of the Coastal Farm property. Similar to the crossing of Gold Fish Farm Road, the proposed configuration is not usually approved. The City will require that all options for combining these flows, including removing and replacing the existing pipe with a larger diameter pipe be considered. The City Engineer will consider proposed alternatives at the time of review of construction drawings.
- 3.23 The applicants proposed private drainage systems along the south and west boundaries of the shopping center property to collect drainage from the shopping center property at the toe of the fill slope and drainage that may drain toward the shopping center from adjacent properties.
- 3.24 This review criterion requires that public facilities can accommodate the proposed development. The applicants must submit enough information for the City Engineer to conclude that public storm drainage system to which the shopping center storm drainage system will discharge can accommodate the drainage from the shopping center.

Staff reviewed the Preliminary Drainage Report and concluded that the discharge of storm drainage from the shopping center will likely have a negligible effect on the water surface elevation of Cox Creek at the point of discharge.

A more detailed review of the proposed storm drainage system is done at the time the developer of the shopping center submits construction drawings to the City's Engineering Division and Building Division for review. The City has Engineering Standards that are applied at that time. The City Engineer may require design changes at that time.

The City Engineer has identified a culvert entrance at Santiam Highway as a potential restriction in the existing public storm drainage system. The City Engineer may require that the culvert entrance be improved or that the shopping center's drainage discharge on the downstream side of the culvert.

## CONCLUSIONS

- 3.1 The proposed shopping center must be connected to the public sanitary sewer system. The applicant's utility plan shows that a new public sewer main will be extended in the east/west collector street. It is not necessary to construct this line. The buildings on the northern parcel can be connected to the existing



sewer mains in Santiam Highway and Goldfish Farm Road. The building on the southern parcel can be connected to the existing sewer main in Goldfish Farm Road.

- 3.2 The proposed shopping center must be connected to the public water system. The applicant's utility plan shows that a new public water main will be extended in the east/west collector street with services for each of the buildings in the shopping center. The new water main must be a 12-inch line and must be extended to the west boundary of the shopping center property as shown on the utility plan.
- 3.3 The proposed shopping center must be connected to the public storm drainage system. The storm drainage system that is shown on the applicant's utility plan is generally acceptable, but modifications are needed at the intersection of Goldfish Farm Road. Also, the parallel storm drain line shown in Santiam Highway east of Goldfish Farm Road may not be allowed. Modifications to the storm drainage plan shown on the utility plan are required in the conditions of approval below. It may be necessary to modify the culvert under Santiam Highway or discharge the storm drainage from the shopping center downstream of the culvert.

### CONDITIONS

- 3.1 Before the City will issue any building permits for the shopping center project, the property owner/developer must construct a 12-inch public water main in the proposed east/west collector street through the property. This public water main must be extended from Goldfish Farm Road to the westernmost boundary of the shopping center property.
- 3.2 Before the City will issue any building permits for the shopping center project, the property owner/developer must construct private and public storm drainage facilities as shown on the Storm Sewer Plan that was submitted. However, alternate configurations to the proposed routing of pipes at the intersection of Goldfish Farm Road and Highway 20, and potentially along Highway 20 to the east, must be considered to avoid potential utility conflicts and so that parallel systems are not constructed.
- 3.3 The storm drainage system within the Goldfish Farm Road public right-of-way and within the new east/west collector street right-of-way must be a publicly owned and maintained system. The storm drainage systems on the private properties must be privately owned and maintained.
- 3.4 Private drainage systems must be provided along the south and west boundaries of the shopping center property to collect drainage that may drain toward the shopping center from adjacent properties now and to collect drainage from the shopping center property at the toe of fill slopes. These drainage systems must be maintained by the shopping center owner so that they continue to function as designed.
- 3.5 The property owner/developer must obtain a Permit for Private Construction of Public Improvements from the City's Engineering Division to build all required public improvements. Final design details (such as manhole locations, lateral locations, pipe size and grade, etc.) for required public improvements must be reviewed and approved by the City's Engineering Division.
- 3.6 Before the City will issue any building permits for the shopping center project, the property owner/developer must construct the public improvements identified above. Alternatively, the City will issue building permits for the project before all of the public improvement have been made if the property owner/developer provides an improvement assurance. The improvement assurance guarantees that the required infrastructure improvements will be made. The improvement assurance must be as specified in ADC 12.590 – 12.610.

- (4) *Any special features of the site (such as topography, hazards, vegetation, wildlife habitat, archaeological sites, historic sites, etc.) have been adequately considered and utilized.*

## FINDINGS OF FACT

- 4.1 Topography. *Comprehensive Plan, Plate 7: Slopes*, does not show any steep slopes on this property. The Existing Conditions drawing submitted with the Site Plan Review application shows that elevations on the property range from about 225 feet to 232 feet. There is a pond on the property that is about 20 feet deeper than the 225-foot elevation.

The applicants submitted a Preliminary Geotechnical Review. The Review was done by GeoDesign, and is dated October 6, 2005. The report identifies the existing pond on the property. Aerial photographs show that the pond was created between 1979 and 1994. The pond is approximately 20 feet deep at its deepest location. The applicants propose to fill the pond. There was also a log pond located on the eastern area of the property, but that pond has been filled. The Review makes recommendations about foundation support, pavement, and other considerations for cost estimating purposes.

- 4.2 Hazards. *Comprehensive Plan, Plate 5: Floodplains*, does not show a 100-year floodplain on the property. FEMA/FIRM Community Panel Number 410137 0004F, dated July 7, 1999, shows that part of the property is in Zone A, an area inundated by a 100-year flood where no base flood elevation has been determined.

The applicants submitted a Base Flood Determination. The Determination was done by WRG Design, Inc. It's dated November 6, 2007. The Determination finds that the 100-year Base Flood Elevation is 231 feet. At the request of the City's Engineering staff, the applicants submitted a revised Base Flood Determination report. The report is dated September 1, 2008.

The applicants submitted an application for a Conditional Letter of Map Revision for Fill to FEMA. The applicants plan to fill the property to at least elevation 232 feet. With the fill, all of the buildings in the shopping center will be more than one foot above the 100-year flood elevation. The applicant received a Conditional Letter of Map Revision for Fill "outlining concurrency" on the site (Exhibit G of the application).

ADC 6.071 specifically excludes excavation and fill (grading) from the definition of development. Grading is regulated by Albany Municipal Code (AMC) Title 12. Filling the property is not subject to Site Plan Review. AMC 12.35.010(1) requires that a grading permit be obtained from the City's Public Works Department, Engineering Division if 50 cubic yards of fill or more is to be placed in a floodplain. The revised report concludes that the water surface elevation during a 100-year flood will rise less than one inch. A more detailed review of the proposed fill for the shopping center will be done at the time a grading permit application is submitted and reviewed. Adjacent property owners are given notice when an application for grading is received and have an opportunity to comment.

- 4.3 Vegetation. *Comprehensive Plan, Plate 3: Natural Vegetation and Wildlife Habitat*, shows an area of natural vegetation and wildlife habitat on the property. Plate 3 also shows a "dry log pond" surrounding the location where Goldfish Farm Road has been built south of Highway 20. Plate 3 was included in the first Comprehensive Plan in 1989. Conditions in the vicinity of this property have apparently changed.

The vegetation on the property now is mostly weeds and scattered trees. The trees appear to be mostly volunteer cottonwood trees.

ADC 9.207 requires Site Plan Review approval for the felling of five or more trees larger than 25 inches in circumference (approximately 8 inches in diameter) on a lot or property in contiguous single ownership in excess of 20,000 square feet in any zone. AMC 7.98.030(6) requires an application to the City and a

permit to remove any tree larger than or equal to six and one-half feet in circumference (approximately 25 inches in diameter).

The applicants submitted a Tree Removal Plan (Sheet C4). The Tree Removal Plan shows that there are four trees larger than 8 inches in diameter that will be removed to construct the proposed shopping center. The trees are four 10-inch black cottonwood trees. Site Plan Review for the proposed tree felling is not required. None of the trees are larger than 25 inches in diameter. A permit to fell the trees is not required.

- 4.4 Wetlands. *Comprehensive Plan, Plate 6: Wetland Sites*, does not show any wetlands on this property. The City's East I-5 Local Wetlands Inventory identifies wetlands on the property. The wetlands are not classified as significant. The applicants submitted a copy of a Wetlands Delineation Report for the property. The report was done by Environmental Science & Assessment, LLC. The report is dated January 29, 2007. The report concludes that there are three small wetlands and the pond on the property. The wetlands total 4.4 acres. The pond is about 4 acres.

The applicants also submitted a letter from the Oregon Department of State Lands (DSL). DSL administers wetlands regulations in Oregon. The letter says that DSL has reviewed the wetland delineation report and that DSL concurs with the conclusions of the report. The letter concludes that, although there are wetlands on the property, there are no waters on the site that are subject to the permit requirements of the state's Removal-Fill Law.

ADC 6.290 includes local wetland regulations. ADC 6.280 says the regulations apply to those areas meeting DSL's criteria, identified as wetlands on the Comprehensive Plan wetlands map exhibit, and designated as Open Space in the Comprehensive Plan. The wetlands on the shopping center property do not meet DSL's criteria and the property is not designated Open Space on the Comprehensive Plan Map. (The property is designated General Commercial on the Comprehensive Plan Map.)

- 4.5 Archaeological and Historic Sites. *Comprehensive Plan, Plate 9: Historic Districts*, shows the property is not in a historic district. There are no known archaeological sites on the property.

## CONCLUSIONS

- 4.1 The three special features of the shopping center site are the existing pond, the floodplain, and the wetlands. The applicants will fill the pond. They will also fill the rest of the property to at least elevation 232 feet. The Base Flood Determination submitted by the applicants finds that the 100-year Base Flood Elevation is 231 feet. All of the buildings in the shopping center will be at least one foot above the 100-year flood elevation. A grading permit must be obtained for the proposed fill on within the floodplain.
- 4.2 There are about 4 acres of wetlands on the property. The City's local wetlands regulations do not apply to the wetlands. The state DSL has determined that the wetlands on the site are not subject to the permit requirements of the state's Removal-Fill Law. The wetlands will be filled to construct the shopping center.
- 4.3 The special features on this site have been adequately considered and utilized.
- 4.4 This review criterion will be met when the following condition is met.

## CONDITION

- 4.1 The property owner/developer must obtain a grading permit from the City's Engineering Division for fill in the floodplain if 50 cubic yards of fill or more is proposed.

- (5) *The design and operating characteristics of the proposed development are reasonably compatible with surrounding development and land uses, and any negative impacts have been sufficiently minimized.*

## FINDINGS OF FACT

5.1 ADC 2.600 says site plan review is not intended to evaluate the proposed use or the structural design of the proposal. Rather, the review focuses on the layout of a proposed development, including building placement, setbacks, parking areas, external storage areas, open areas, and landscaping.

5.2 Surrounding development and land uses include a gas station and trailer sales to the north; single-family houses to the south; a Coastal Farm and Ranch Supply store, offices, and distribution facility to the east; a gas station/convenience store, Veterans of Foreign Wars, and vacant land to the west.

5.3 Building and Parking Lot Setbacks. ADC 4.090, Table 1 shows that the minimum front setback for buildings and parking areas in RC zoning districts is 10 feet. The site plan shows that all of the buildings and parking areas in the proposed shopping center will be set back at least 10 feet from front property lines (along streets). The Site Plan and building elevation drawings show that there will be awnings on the buildings on the northern parcel. Written information submitted with the Site Plan Review applications says that the awnings will be 5 feet wide (Narrative, page 25-26). They will extend into the front yard setback along the north side of the new east/west collector street. ADC 4.140(2)(a) allows building features, such as awnings, to project into front yard setbacks up to 5 feet.

ADC 4.090, Table 1 shows that no setback is required along interior (side and back) property lines, except Note 5 says that interior yards abutting residential districts and/or uses require 1 foot of setback for each foot of finished wall height with a minimum setback of 10 feet. The Site Plan shows that all buildings and parking areas will be setback at least 10 feet from interior property lines. Part of the property to the west is zoned Linn County UGM. The City's Comprehensive Plan shows the property designated URR. When the property is annexed to the City, the property could be zoned for a variety of residential uses or two types of commercial use. The property to the south is zoned RM (Residential Medium Density) and Linn County UGM. Building A is the only building that abuts a residential zoning district or use. The Site Plan shows that Building A, which is a maximum of 35 feet in height, will be set back a distance that varies from 45 to 110 feet from the west and south property lines. (See also the requirements for buffering and screening in 5.8 below.)

5.4 Building Height. ADC 4.090, Table 1 shows that there is no maximum height for buildings in RC zoning districts. The building elevation drawings submitted with the Site Plan Review application show that the proposed buildings will vary from 24 feet to 35 feet in height to the top of roof parapets.

5.5 Lot Coverage. ADC 4.090, Table 1 shows that the maximum lot coverage allowed in RC zoning districts is 90 percent. In written information submitted with the application (Narrative, page 24), the applicants say the lot coverage for the northern parcel will be 82.1 percent for the northern parcel and 83.7 percent for the southern parcel. The Site Plan shows the total area of the northern parcel is 221,882 square feet and that the landscape area is 39,775 square feet. Landscape areas cover 17.9 percent of the parcel. The remainder is building and parking lot coverage which equals 82.1 percent of the parcel. The Site Plan shows the total area of the southern parcel is 822,596 square feet and that the landscape area is 134,195 square feet. Landscape areas cover 16.3 percent of the parcel. The remainder is building and parking lot coverage which equals 83.7 percent of the parcel. The lot coverage for both parcels is less than the maximum 90 percent allowed.

5.6 Landscaping of Yards. ADC 4.270 says that front and interior setback yards, exclusive of accessways and other permitted intrusions, must be landscaped before occupancy. The minimum landscaping per 1000 square feet of required setback yard areas in all commercial and industrial zones is:

- (1) Five 5-gallon or eight 1-gallon shrubs, trees, perennials, or accent plants.

- (2) The remaining area must be treated with living ground cover, lawn, or bark, rock, or other attractive ground cover.
- (3) In addition, one tree at least six feet in height is required for every 30 feet of street frontage.

The applicants submitted Planting Plans with the application (Sheets L0 – L9). The Planting Plans show that required landscaping will be provided in the interior yards along the west and south boundaries of the site. (See also the requirements for buffering and screening in 5.8 below.) The Planting Plans show the required landscaping in the front yard along Santiam Highway and Goldfish Farm Road. In addition, the Planting Plans show Red Oak trees will be planted in the landscape strip along Goldfish Farm Road and along the new east/west collector street.

5.7 Parking Lot Landscaping. ADC 9.150 includes required landscaping standards for parking lots.

- (1) Planter Bays. Parking areas shall be divided into bays of not more than 12 parking spaces. Between or at the end of each parking bay there shall be curbed planters of at least 5 feet in width. Each planter shall contain one tree at least 10 feet high and decorative ground cover containing at least two shrubs for every 100 square feet of landscape area.

The Site Plan shows that the parking areas will be divided into bays of not more than 12 parking spaces. The Site Plan shows curbed planters at the end of each row of parking, except in front of Building D and F, and on the north side of Building A.

The planter bays in the parking lots on the northern parcel are shown to be 5 feet wide. The planter bays on the southern parcel are shown to be 6 feet wide. The Planting Plans show that each required planter bay will have the required landscaping, except at south end of the row of parking to the east of Building C; two rows of parking north of Building A; the ends of the rows of parking along Goldfish Farm Road at both driveways; and some places on the southern parcel where only one Emerald Queen Maple tree is shown for two planter bays. Each planter bay is 6 feet by 18.5 feet (111 square feet). Each planter bay must have one tree.

- (2) Entryway Landscaping. Entryways into parking lots shall be bordered by a minimum 5-foot-wide landscape planter strip meeting the same landscaping provisions as for planter bays, except that no sight obscuring trees or shrubs are permitted.

There are three entries to the proposed shopping center along Goldfish Farm Road. The Planting Plans show that the entryways will be bordered by minimum 5-foot-wide planter strips with the required landscaping. The “vision clearance triangles” at the entries are clear of sight obscuring trees or shrubs (no vegetation taller than 2 feet is allowed).

- (3) Parking Space Buffers. Parking areas shall be separated from the exterior wall of a structure by pedestrian entrance ways or loading areas or by a 5-foot strip of landscaping materials.

The Site Plan shows that all of the parking areas are separated from the exterior walls of structures by walkways, loading areas, or landscape strips.

5.8 Buffering and Screening: ADC 9.210 requires buffering and screening in order to reduce the impacts on adjacent uses which are of a different type. Buffering and screening is required in accordance with the matrix shown on ADC page 9-11. The property owner of each proposed development is responsible for the installation and maintenance of the buffering and screening. Where a proposed use abuts undeveloped property, only one half of the buffer width shall be required.

ADC 9.240 says the minimum improvements within a buffer area must consist of the following:

- (1) At least one row of trees. These trees will be not less than 10 feet high at time of planting for deciduous trees and spaced not more than 30 feet apart and 5 feet high at time of planting for evergreen trees and spaced not more than 15 feet apart. This requirement may be waived by the Director where it can be demonstrated that such trees would conflict with other purposes of this Code (e.g. solar access).
- (2) At least five 5-gallon shrubs or ten 1-gallon shrubs for each 1,000 square feet of required buffer area.
- (3) The remaining area treated with attractive ground cover (e.g., lawn, bark, rock, ivy, evergreen shrubs).

ADC 9.250 says where screening is required, the following standards apply in addition to conditions (1) and (3) above:

- (1) One row of evergreen shrubs which will grow to form a continuous hedge at least four feet in height within two years of planting, or
- (2) A minimum of a five-foot fence or masonry wall constructed to provide a uniform sight-obscuring screen, or
- (3) An earth berm combined with evergreen plantings or a fence which forms a sight and noise buffer at least six feet in height within two years of installation.

The matrix on ADC page 9-11 shows that a 10-foot-wide buffer area and screening is required between a proposed commercial use and residential zoning districts. The matrix also shows that a 10-foot-wide buffer area is required between a commercial use and any arterial street.

Property to the north: Santiam Highway (an arterial street) borders the shopping center property to the north. A 10-foot side buffer area is required between the shopping center and the street. The Site Plan and the Planting Plans show the required buffer area and landscaping, except the deciduous trees are spaced 40 to 60 feet apart. The trees must be spaced a maximum of 30 feet apart.

Property to the east: Goldfish Farm Road (an arterial street) borders the shopping center property to the east. A 10-foot side buffer area is required between the shopping center and the street. The Site Plan and the Planting Plans show the required buffer area and landscaping, except the deciduous trees are spaced up to 90 feet apart. The trees must be spaced a maximum of 30 feet apart.

Property to the west: Part of the property adjacent to the shopping center property to the west and south is outside the Albany city limits and is zoned Linn County UGM. The intent of UGM zoning districts is to protect the land for future urban density development.

The Albany Comprehensive Plan Map shows this property designated URR (Urban Residential Reserve). ADC 2.570, Plan Designation Zoning Matrix, shows that a variety of residential zoning designations and two commercial zoning designations are compatible with the URR Comprehensive Plan Map designation. This property could be zoned residential or commercial when annexed to the city.

The Site Plan and Planting Plans show a buffer area and the required landscaping will be provided along the southern section of the west property line adjacent to the UGM land (evergreen trees 6 – 8 feet tall at time of planting spaced 15 feet apart). The width of the buffer is not shown, but it scales about 15 feet on the Site Plan and Planting Plan.

Site Plan Note 10 identifies a “Proposed retaining wall,” and Note 22 says “Install 6’ tall decorative screen.” See landscape plans for detail.” See further discussion about the screen wall/fence under Finding 5.12 below.

Property to the south: The Site Plan shows a buffer area that varies in width from 30 feet to 56 feet will be provided along the south property line. The buffer is located between the south property line and a paved vehicle travel lane that will be constructed adjacent to Building A and continue out to Goldfish Farm Road. The Planting Plans (Sheet L7 and L8) show that the required landscaping will be provided in the buffer area (evergreen trees 6 – 8 feet tall at time of planting spaced 15 feet apart).

A stormwater detention pond will be located partly in the buffer area along the south property line. ADC 9.230 says a buffer area may only be occupied by utilities, screening, sidewalks, bikeways and landscaping. No buildings, accessways or parking areas are allowed in a buffer area except where an accessway has been approved by the City. The stormwater detention pond can be classified as either a utility or landscaping, or something similar, and is therefore allowed in the buffer area.

Site Plan Note 10 identifies a “Proposed retaining wall,” and Note 20 says “Install 6’ tall decorative screen wall along entire southern property line. See landscape plans for detail.” See further discussion about the screen wall/fence under Finding 5.12 below.

Sheet L10 is titled “Woodcrete Screen Wall Detail.” This is the screen wall/fence proposed along the west and south boundaries of the property. Exhibit I is a set of details submitted with the application. One of the detail drawings shows a “Woodcrete” fence. Specifications for the fence are also included. Neither Sheet L10 nor Exhibit I show a retaining wall. The applicants later submitted detail drawings (cross sections) that show the retaining walls and fences. The drawings are attached to this staff report as Attachments 13 – 19. See further discussion about the walls and fences in Finding 5.12 below.

- 5.9 Irrigation System. ADC 9.160 requires that all required landscape areas be provided with a piped underground irrigation system, unless a licensed landscape architect or certified nurseryman submits written verification that the proposed plant materials do not require irrigation. Irrigation systems installed in the public right-of-way require an encroachment permit.

The Planting Plans say that all landscape areas will have a complete underground automatic irrigation system.

- 5.10 Outside Storage. ADC 4.290(3) says in RC zones:

- (a) Exterior display of goods is permitted except in the required front yard setback or buffer yard. Display is limited to a sample of goods offered for sale by the establishment. Display areas may not be used for storage. Display areas may not expand beyond 25 percent of the primary street frontage and must be designated on the site plan. Display areas adjacent to residential districts or uses must be set back at least 10 feet and must be screened from view with a sight-obscuring fence, wall, hedge, or berm, which must be constructed of non-combustible material.

The Site Plan shows an “outdoor seasonal sales area” on the north side of Building A. The sales area is not in the required front yard setback or in a buffer yard. The frontage of the southern parcel where Building A is located is more than 800 feet long. The sales area is shown to be 181 feet long. This is about 23 percent of the frontage. The sales area is not adjacent to a residential district or use.

- (b) Exterior storage is permitted in interior yards, but is excluded from required buffer yards and minimum required setback areas. Storage areas adjacent to residential districts or uses must be screened from view with a sight-obscuring fence, wall, hedge, or berm, any or all of which must be constructed of non-combustible material. This enclosure must be located on the property at the required setback line as if the berm, fence, wall, or hedge were a building.

No exterior storage is shown on the Site Plan.

- 5.11 Screening of Refuse Containers. ADC 4.300 requires that any refuse container or disposal area that would otherwise be visible from a public street, customer, or resident parking area, any public facility, or any residential area, must be screened from view by placement of a sight-obscuring fence, wall, or hedge at least 6 feet tall. All refuse materials must be contained within the screened area. Refuse disposal areas may not be located in required setbacks or buffer yards and must be placed at least 15 feet from any dwelling window.

The Site Plan Note 9 shows a “proposed loading/garbage area” adjacent to Buildings B, D, E, and F, and multiple garbage areas adjacent to Building A. These areas are not located in required setbacks or buffer yards or near any dwelling window.

There is no reference on the plans to enclosures for the garbage areas. A detail drawing (Exhibit I with the application) that shows a “trash enclosure” was submitted separate from the site plan. The trash enclosure shown on the detail drawing is 6 feet in height and includes masonry walls and a solid metal gate.

The garbage areas for Buildings B, D, E, and F must be screened because they will be visible from public streets, customer parking areas. The garbage areas for Building A do not have to be screened because they will not be visible from public streets, customer parking areas, resident parking areas, public facilities, or any residential areas, but the applicants say they will be screened anyway.

- 5.12 Fences. ADC 4.310 includes the following standards for fences in commercial zoning districts.

- (3) Fences are limited to the height and locational standards listed below:
- (a) Fences may be up to eight (8) feet in height provided that the fence is located behind the required front yard planting area and outside of any vision clearance area.
  - (b) Fences more than six (6) feet in height require Building Permits.
- (4) Wherever a sight-obscuring fence, wall or hedge is required under the provisions of this Code, it must meet the following provisions:
- (a) Opacity. In order to be “sight-obscuring,” fences and walls will be at least 75 percent opaque when viewed from any angle at a point 25 feet away from the fence or wall. Hedges will be of an evergreen species that will meet and maintain year-round the same standard within three (3) years of planting.
  - (b) Height. Fences and walls will be a minimum of six feet in height. Hedges will be of a species capable of attaining a height of at least six (6) feet within three (3) years of planting, given their age, height and health when planted.
  - (c) Maintenance. Fences and walls will be maintained in safe condition and opacity is maintained as required in subsection (a) of this section. Wooden materials will be protected from rot, decay, and insect infestation. Plants forming hedges will be replaced within six (6) months after dying or becoming diseased to the point that the opacity required in subsection (a) of this section is not met.

The Site Plan (Notes 10 and 27) show that a retaining wall with a wrought iron fence will be constructed along the northerly section of the west property line of the shopping center adjacent to the existing commercial property. Notes 10 and 24 show that a retaining wall and wrought iron fence will be constructed along the north edge of the “storm water management” (SWM) pond near the south boundary of the property. Note 24 shows that a wrought iron fence will be constructed around the SWM pond near the northeast corner of the property.

The Site Plan (Note 22) shows that a “decorative screen wall” will be built along the southern section of the west property boundary of the shopping center property adjacent land designated for residential use.



The Site Plan (Notes 10 and 20) shows that a “decorative screen wall” will be built along the south boundary of the shopping center property adjacent to an existing residential subdivision and adjacent to vacant land.

Notes 20 and 21 say “See landscape plans for detail.” Sheet L10 shows detail drawings of a screening wall and “piers.” The piers are underground and support the fence. There is no reference to a retaining wall on these drawings.

Written information submitted with the application references a retaining wall along the west boundary of the property, but not the south boundary (Narrative, page 31). Application Exhibit I includes two drawings of wrought iron fences, one is 4 feet tall and the other is 6 feet tall. Neither drawing shows a retaining wall.

Sheet L10 is titled “Woodcrete Screen Wall Detail.” This is the fence proposed along the south and west boundaries of the property. Exhibit I is a set of details submitted with the application. One of the detail drawings shows a “Woodcrete” fence. Specifications for the fence are also included. Neither Sheet L10 nor Exhibit I show a retaining wall.

[The applicants later submitted detail drawings that show cross sections for the retaining walls and fences along the south and west boundaries of the property. The applicants also submitted specific elevation information about the height of the walls and fences. The information showed that the wall and fence along the south boundary of the property would vary in height from 6 feet to 10.5 feet. The section of fence that would exceed 8 feet is located along the most westerly section of the south property line adjacent to undeveloped property. The information showed that the wall and fence along the west boundary of the property would vary in height from 12 feet to 15.5 feet. The maximum height for a fence in this RC zoning district is 8 feet. The drawings and other information that were submitted showed that the retaining walls with the fences on top of them would create fences taller than 8 feet. The applicants explained that when the undeveloped property to the south and west is developed, the owners will have to fill the property. When the adjacent property was filled, the fence along the south and west property lines would then be shorter, but it would still exceed 8 feet in some places. The applicants decided to change their plan so that the fence would not exceed 8 feet. This information is not necessarily germane to the review of the plans as they are today, but help explain the evolution of the project.]

The applicants submitted a new set of drawings dated August 15, 2008, that show the fence along the west property line. The drawings are attached to this staff report as Attachments 13 -19. The plans show that the fence will be moved back from the west property line. A 6-foot Woodcrete fence will be placed a distance that varies from 10 feet to 36 feet back from the west property line. This will create a slope that varies from 2:1 to 4:1 from the west property line to the fence. The slope will be landscaped with the plant materials required in the buffer area along this property line.

The applicants did not submit a drawing that shows how the fence along the south property line near the west end adjacent to the undeveloped property will be made less than 8 feet. It is possible to incorporate a transition from the fence along the south property line that does not exceed 8 feet to the setback fence along the west property line that does not exceed 8 feet at any point. This will be a condition of approval. (One way the height of the fence can be reduced is by reducing the height along this section of fence to 42 inches, which is the minimum height required for pedestrian safety. The total height of the retaining wall and fence would then be 8 feet.)

5.13 Environmental Standards: ADC 9.440 – 9.500 include environmental standards.

Noise: The applicants submitted a Noise Study for the proposed shopping center. The study was done by Daly Standlee & Associates. It’s dated May 15, 2008. The purpose of the study was to determine if any noise mitigation measures would be necessary to meet applicable noise regulations.

The applicable noise regulations are Oregon Department of Environmental Quality (DEQ) Noise Control Regulations for Industry and Commerce (Oregon Administrative Rules 340-035-0035) and AMC 7.08.050 (and referenced in ADC 9.440).

OAR 340-35-035 – Table 8 shows allowed noise limits. The table is included below.

<b>OAR 340-35-035 – TABLE 8</b>	
<b>New Industrial and Commercial Noise Source Standards</b>	
<b>Allowable Statistical Noise Levels in Any One Hour</b>	
<b>7 am – 10 pm</b>	<b>10 pm – 7 am</b>
L <sub>50</sub> – 55 dBA	L <sub>50</sub> – 50 dBA
L <sub>10</sub> – 60 dBA	L <sub>10</sub> – 55 dBA
L <sub>01</sub> – 75 dBA	L <sub>01</sub> – 60 dBA

AMC 7.080.050 says “It is unlawful for any person to create, assist in creating, permit, continue, or permit the continuance of any loud, disturbing, or unnecessary noise in the City. The following acts are declared to be violations of this section, but such enumerations are not deemed to be exclusive...” The Code lists 10 violations, none of which specifically address commercial development. Noisy “mechanical devices” and vehicles are included in the list.

Noise at the shopping center will be generated by outside refrigeration equipment, rooftop heating and cooling equipment (HVAC), trash compactors, parking lot sweepers, and refrigerated trailers at loading docks. The assumptions of the study model the worst case scenario where all of these noise sources are operating at the same time. Daly Standlee & Associates (DSA) used a computer program they developed based on established acoustical sound propagation equations presented in reference materials. The program describes the effects of distance, atmospheric absorption, and man-made barriers on sound propagation. The intent of the noise analysis is to predict the greatest amount of noise that could possibly be radiated from the shopping center to surrounding residences.

The noise study includes predicted noise levels for both daytime hours (7:00 a.m. – 10:00 p.m.) and nighttime hours (10:00 p.m. – 7:00 a.m.). The computer model includes daytime noise generating activities in the daytime hour calculations and nighttime activities in the nighttime hour calculations. The noise study assumes the 6-foot sound wall shown in the drawings submitted with the Site Plan Review application will be provided. First floor noise levels were predicted for daytime hours because outdoor activities are considered to be of most concern during those hours. Second story noise levels were predicted for nighttime hours because the noise levels outside of bedrooms is considered of most concern during those hours.

The study notes that the methodology used by the computer model results in the maximum hourly statistical noise levels that would ever be expected at the houses nearest the shopping center and that the conditions used by the model (worst case scenario) will most likely never occur. Therefore, the sound levels predicted by the computer model should be considered very conservative.

The DEQ noise regulations limit sound that occurs for a duration of 1 percent of an hour, 10 percent, and 50 percent of an hour. The noise study finds that during the loudest daytime hour, the 1 percent and 50 percent levels are within the allowed limits at the houses along the south boundary of the shopping center property. (Daytime is defined between 7:00 a.m. – 10:00 p.m.) The 10 percent limit would be exceeded by 1 decibel without mitigation. The predicted noise level was found to be caused by the combination of the noise from the parking lot sweeper and the noise from the rooftop chillers.

The noise study finds that during the loudest nighttime hour, the 1 percent and 10 percent levels are within the allowed limits at the houses along the south boundary of the shopping center. The 50 percent limit would be exceeded by up to 5 decibels at the second floor windows of the houses west of the

shopping center. The predicted noise level was found to be caused solely by the chillers located on the roof of the building.

The noise study finds that if the noise radiating from the chillers was reduced by approximately 5dBA, the overall noise level at both the ground level and the second story windows at all of the houses could be made to comply with the DEQ regulations during both daytime and nighttime hours.

The study finds the predicted noise level can be reduced to meet the DEQ regulations by constructing 8-foot-high barriers alongside the chillers. Alternatively, a variety of chillers that are approximately 13 dBA quieter than that assumed in the study could be used to achieve the needed reduction. This approach has been used on several projects analyzed by DSA in the past and found to be an effective way to control chiller radiated noise.

As noted in Findings 5.3 and 5.8 above, the property adjacent to the west is designated primarily for future residential development. The noise study does not address the impact of noise from the shopping center on the property to the west. It will be necessary to establish the impact and any necessary mitigation measures. This will be included as a condition of approval below.

Visible emissions: The shopping center is not expected to generate any visible emissions.

Water quality: ADC 9.455 applies to industrial development, not commercial development. Nevertheless, the shopping center will include a storm drainage system that uses detention basins which will also treat the stormwater before it is discharged to the public storm drainage system. See the findings about the storm drainage system under Review Criterion (3) above.

Vibration: The shopping center is not expected to generate any vibration. ADC 9.460 says that vibrations from temporary construction and vehicles that leave the site (such as trucks) are exempt; vibrations lasting less than 5 minutes per day are also exempt from regulation.

Odors: Tenants in the shopping center may include businesses that cook food. The only odor expected to be generated by the shopping center will be odors generated by cooking food. Vents will be located through the roof(s) of the building(s). This is the most effective way to dissipate cooking odors.

Glare: See Findings 2.9 above.

Heat: The shopping center is not expected to produce any heat other than normal heat generated by HVAC systems for the buildings.

Insects and rodents: The shopping center may attract insects and/or rodents because food and refuse will be stored, sold, and prepared on the site. The shopping center management and tenants will control any insects or rodents that become a nuisance.

Hazardous waste: The shopping center is not expected to produce any hazardous waste.

- 5.14 Operating characteristics. The operating characteristics of the proposed shopping center will include primarily vehicles, including cars and trucks going to and from the site. See the findings, conclusions, and conditions under Review Criterion (1) above. Other operating characteristics are described above.
- 5.15 Commercial Design Standards. See the findings, conclusions, and conditions in the design standards review that follows this section of the staff report.

## CONCLUSIONS

- 5.1 The Site Plan shows that the setbacks of the proposed buildings and parking lots will meet required setbacks from property lines. There is no maximum height for buildings in this RC zoning district. The proposed lot coverage of buildings and parking areas is less than the maximum 90 percent lot coverage allowed.
- 5.2 The Site Plan and Planting Plans show that the front and interior yards for the proposed shopping center will be landscaped as required.
- 5.3 The Site Plan and Planting Plans show that the required planter bays and landscaping in the planter bays will be provided, except a few revisions to the plans are needed. The revisions are required as conditions of approval below.
- 5.4 The Site Plan and Planting Plans show that the required buffering and screening will be provided, except a few revisions to the spacing of the trees along Santiam Highway and along Goldfish Farm Road are needed. The revisions are required as conditions of approval below.
- 5.5 An irrigation system will be provided as required.
- 5.6 No outside storage is proposed. Outside display in conformance with ADC 4.290(3) is proposed.
- 5.7 All of the refuse containers in the "garbage areas" shown on the site plan must be screened as required in ADC 4.300 and substantially as shown on the "trash enclosure" detail drawing submitted by the applicants.
- 5.8 The "decorative screen wall" shown on Sheet L10 of the plans submitted by the applicants must be provided along the southern section of the west boundary and all of the south boundary of the shopping center property. A wrought iron fence may be provided as shown along the northerly section of the west property line adjacent to the developed commercial property.
- 5.9 The fence along the west property line must be constructed as shown on the drawings submitted by the applicants dated August 15, 2008. The transition from the fence along the south property line to the setback fence along the west property line must not exceed 8 feet in height.
- 5.10 The noise study submitted by the applicants shows that noise generating equipment that will be used on the shopping center property will not exceed the maximum noise level allowed at property to the south if mitigation measures are implemented. The mitigation measures are required in the conditions of approval below. In addition, a noise study must be submitted that establishes that generating equipment that will be used on the shopping center property will not exceed the maximum noise level allowed at property to the west.
- 5.11 The shopping center will meet the environmental standards listed in the Findings above.
- 5.12 The design and operating characteristics of the proposed development will be reasonably compatible with surrounding development and land uses with mitigation and when the conditions of approval listed below are met.

## CONDITIONS

- 5.1 ADC 9.150(1) requires that parking areas shall be divided into bays of not more than 12 parking spaces. Between or at the end of each parking bay there shall be curbed planters of at least 5 feet in width. Each planter shall contain one tree at least 10 feet high and decorative ground cover containing at least two shrubs for every 100 square feet of landscape area.

The Site Plan that was submitted does not show all the required planter bays. Additional parking bays are required in front of Building D and F, and on the north side of Building A.

The Planting Plans show that additional trees are needed in the planter bays at the south end of the row of parking to the east of Building C; two rows of parking north of Building A; the ends of the rows of parking along Goldfish Farm Road at both driveways; and some places on the southern parcel where only one Emerald Queen Maple tree is shown for two planter bays.

- 5.2 ADC 9.210 requires a 10-foot-wide buffer area between a commercial use and any arterial street. Santiam Highway and Goldfish Farm Road (arterial streets) border the shopping center property to the north and east. A 10-foot wide buffer area is required between the shopping center and these streets. The Site Plan and Planting Plans show the required buffer area and landscaping, except the trees are spaced up to 90 feet apart. The trees must be spaced a maximum of 30 feet apart.
- 5.3 A minimum 10-foot-wide buffer area and landscaping are required along part of the west boundary of the shopping center property. The width of the buffer along the west boundary is not shown, but it scales about 15 feet on the Site Plan and Planting Plans. The buffer area must be at least 10 feet wide.
- 5.4 All of the refuse containers in the “garbage areas” shown on the Site Plan must be screened as required in ADC 4.300 and substantially as shown on the “trash enclosure” detail drawing submitted by the applicants.
- 5.5 Before any building permits will be issued for the shopping center project, a revised site plan must be submitted that shows the requirements above will be met. Specific places where the requirements are not met are referenced in 5.1 above, but these references are not meant to be exclusive. There may be other places that do not meet the ADC 9.150(1) landscape requirements. The final landscape plans must show the requirements will be met at every location in the shopping center.
- 5.6 The retaining wall and “decorative screen wall” must be provided along the south boundary of the shopping center property substantially as shown on Sheet L10 of the plans and the drawings dated August 11, 2008 submitted by the applicants.
- 5.7 The fence along the west boundary of the property must be provided as shown on the set of four drawings submitted by the applicants dated August 15, 2008. These drawings show a 6-foot Woodcrete fence will be placed a distance that varies from 10 feet to 36 feet back from the west property line. This will create a slope that varies from 2:1 to 4:1 from the west property line to the fence. The slope will be landscaped with the plant materials required in the buffer area along this property line.
- 5.8 The drawings submitted by the applicants dated August 11, 2008 show that most of the fence along the south boundary of the shopping center property will not exceed 8 feet in height. The drawings show that a short section of fence along the west end of the south boundary would exceed 8 feet.  
  
The applicants did not submit a drawing that shows how the fence along the south property line will be made less than 8 feet. The fence along the south boundary of the shopping center property may not exceed 8 feet. This creates the need for a shorter fence or a transition between the fence along the south property line that does not exceed 8 feet to the fence along the west property line. The applicants must submit drawings to the City’s Planning Division that show a shorter fence and/or how the transition will be made. The drawings must be approved prior to construction of the fence.
- 5.9 Noise generated at the shopping center must meet applicable noise regulations. The applicable noise regulations are Oregon Department of Environmental Quality (DEQ) Noise Control Regulations for Industry and Commerce (Oregon Administrative Rules 340-035-0035) and Albany Municipal Code (AMC) 7.08.050 (and referenced in ADC 9.440).

- 5.10 The noise mitigation measures identified in the Noise Study submitted by the applicants must be implemented. The Noise Study was done by Daly Standlee & Associates and is dated May 15, 2008. The mitigation measures shall be as follows:
- a. Construct 8-foot high barriers alongside the chillers on the roof of Building A. Alternatively, a variety of chillers that are approximately 13 dBA quieter than that assumed in the study may be used to achieve the needed reduction. (The chillers assumed in the Noise Study generate 70 dBA.)
- 5.11 Prior to issuance of any building permits for the shopping center project, the property owner/developer must submit to the City's Planning Division a noise study that shows the impact of noise generating equipment that will be used on the shopping center property will not exceed the maximum noise level allowed at property to the south and any mitigation measures necessary to achieve compliance.

## DESIGN STANDARDS

***Building Orientation (ADC 8.330).*** Building orientation and maximum setback standards are established to help create an attractive streetscape and pleasant pedestrian environment.

- (1) ***New commercial buildings shall be oriented to existing or new public streets. Building orientation is demonstrated by placing buildings and their public entrances close to the street so that pedestrians have a direct and convenient route from the street sidewalk to building entrances.***
  - (a) ***On sites smaller than 3 acres, commercial buildings shall be oriented to the public street/sidewalk and off-street parking shall be located to the side or rear of the building(s), except where it is not feasible due to limited or no street frontage or where there are access restrictions.***

## FINDINGS OF FACT

The site where the shopping center is proposed is 25.67 acres. The site is not smaller than 3 acres. Nevertheless, the Site Plan shows that Buildings C, D, and F on the northern parcel will be oriented to the new east-west collector street. The building elevation drawings submitted with the application show that each of these buildings will have nearly identical facades facing the street, and on the opposite sides facing the parking lots. Each of these buildings will have public entrances on the east-west collector street. The buildings will be setback from the front property line distances that vary from 10 feet to 25 feet, which provides areas in front of the buildings for landscaping and benches. Parking will be located to the side and rear of these buildings. A Circulation Plan (Sheet C5) was submitted with the application.

- (b) ***Buildings on larger sites [larger than 3 acres] may be setback from the public street and oriented to traffic aisles on private property, if the on-site circulation system is developed like a public street with pedestrian access, landscape strips and street trees.***

## FINDINGS OF FACT

In order to fully use the entire northern parcel, Buildings B and E are setback from the public street and oriented to traffic aisles that are developed like public streets. The traffic aisles to which Buildings B and E are oriented have setback sidewalks with landscape strips. The sidewalks provide access to each of the buildings. The application shows these buildings will also have nearly identical facades facing the traffic aisle, and opposite facing the parking lot.

Building A is setback from the new east/west collector street and from Goldfish Farm Road. The traffic aisle in front of the building is developed like a public street with a wide sidewalk with street trees in tree wells in front of the building and a sidewalk with landscaping on the other side. Wide pedestrian connections will be provided to Goldfish Farm Road. See the discussion about these pedestrian connections under the discussion related to ADC 8.380 below.

- (2) ***At least one major public entrance shall be visible from the abutting public street. Corner entrances may be used to provide orientation to two streets. Customer entrances should be clearly defined, highly visible, using features such as canopies, porticos, arcades, arches, wing walls and planters.***

## FINDINGS OF FACT

All of the entrances for the buildings on the northern parcel, on the facades that face the new east/west street (Buildings C, D, and F) or face the drive aisle (Buildings B and E), will be visible from the new east/west collector street or the drive aisle. Buildings D and F also have corner entrances. The building elevation drawings

submitted with the application show that customer entrances are defined with metal awnings, towers and/or cornice treatments above the doors.

The two public entrances for Building A will be visible from Goldfish Farm Road and from the east/west collector street. The building elevation drawings show that these entrances will be defined by bumping out the entrances and putting canopies over them.

## CONCLUSIONS

ADC 8.330 explains that "Building orientation and maximum setback standards are established to help create an attractive streetscape and pleasant pedestrian environment." ADC 8.330(1) says that "New commercial buildings shall be oriented to existing or new public streets. Building orientation is demonstrated by placing buildings and their public entrances close to the street so that pedestrians have a direct and convenient route from the street sidewalk to building entrances. ADC 8.330(1)(a) says "On sites smaller than 3 acres, commercial buildings shall be oriented to the public street/sidewalk and off-street parking shall be located to the side or rear of the building(s)..." ADC 8.330(1)(b) says "Buildings on larger sites [larger than 3 acres] may be setback from the public street and oriented to traffic aisles on private property if the on-site circulation system is developed like a public street..." ADC 8.330(2) says "Customer entrances should be clearly defined..."

The purpose of the design standards listed above is to "help create an attractive streetscape and pleasant pedestrian environment." New commercial buildings must be oriented to public streets, or may be oriented to traffic aisles on the property if the traffic aisles are developed like public streets. Customer entrances should be clearly defined. As explained in the Findings of Fact above, all of the buildings in the proposed shopping center are oriented to the new public east/west collector street or to a traffic aisle developed like a public street. This creates an attractive streetscape and a pleasant pedestrian environment. The parking areas are located at the back or side of the buildings, if the front of the building is on the public street or traffic aisle developed like a public street. The customer entrances along the public street and/or traffic aisle are clearly defined with awnings, etc.

The function of the buildings in creating an attractive streetscape and pleasant pedestrian environment is compromised, however, by placing identical public entrances and building features (such as awnings and signage) on the parking lot (back side) of the buildings.

In such a design, customer entrances are not "clearly defined" as required by ADC 8.330(2). There will be a tendency on the part of retailers to orient toward the parking lot, and to limit entry to that door for security and inventory control. This would result in a design with the *potential* for a pedestrian-oriented design without *accomplishing* it. The intent of the design standards will likely be negated. To create an attractive streetscape and pleasant pedestrian environment and meet the design standards referenced above, public entrances may not be located on the back sides of the buildings.

## CONDITION

1. Public entrances may not be located on the parking lot (back) sides of Buildings B, C, D, E, and F.

***General Building Design (ADC 8.340). New commercial buildings shall provide architectural relief and interest with emphasis at building entrances and along sidewalks, to promote and enhance a comfortable pedestrian scale and orientation. Blank walls shall be avoided when practicable.***

- (1) ***Ground floor windows shall be provided along building frontages adjacent to sidewalks. The main front building elevation(s) shall provide windows or transparency at the pedestrian level in the following minimum proportions: RC zone - 25% transparency.***



## FINDINGS OF FACT

The building elevation drawings show that the main front building elevations for Buildings C, D, and F are located on the new east/west collector street. A table included in the Narrative (page 42) shows that Building C will have 53 percent glazing. Building D will have 59 percent glazing. Building F will have 59 percent glazing. The main front building elevations for Buildings B and E will be on internal drive aisles, which are developed like a public street. The table shows that Building B will have 71 percent glazing. Building C will have 64 percent glazing. Building E will have 67 percent glazing. The building elevation drawings and the table show that the other frontages of these buildings adjacent to sidewalks will also have glazing as required.

The building elevation drawing for Building A and calculations submitted by the applicants show that the main front building elevation will have 34 percent glazing. The other sides of the building are not located adjacent to sidewalks and are therefore, not required to have windows or transparency.

## CONCLUSION

This standard is met.

- (2) *Walls visible from a public street shall include a combination of architectural elements and features such as offsets, windows, entry treatments, wood siding, brick stucco, synthetic stucco, textured concrete block, textured concrete, and landscaping.*

## FINDINGS OF FACT

All of the walls of the buildings will be visible from at least some angle from a public street. The building elevation drawings show that all of the walls will include combinations of offsets, windows, awnings, canopies, EIFS (exterior insulation and finish system), cornices and trim, white ground face CMU (cement masonry units), burgundy red split face CMU, painted precast concrete trim, metal lattice, and landscaping.

## CONCLUSION

This standard is met.

***Street Connectivity and Internal Circulation (ADC 8.350). The following standards emphasize the importance of connections and circulation between uses and properties. The standards apply to both public and private streets.***

- (1) *New commercial buildings may be required to provide street or driveway stubs and reciprocal access easements to promote efficient circulation between uses and properties, and to promote connectivity and dispersal of traffic.*
- (2) *The internal vehicle circulation system of a commercial development shall be a continuation of the adjacent public street pattern wherever possible and promote street connectivity. The vehicle circulation system shall mimic a traditional local street network and break the development into numerous smaller blocks.*
- (3) *Travel lanes shall be internal to the site and shall not be located between the sidewalk(s) and building(s), except as provided in (4) below.*
- (4) *Where drop off facilities are provided, they shall be designed to meet the requirements of the American Disabilities Act but still provide for direct pedestrian circulation.*

## FINDINGS OF FACT

The shopping center property has frontage on Santiam Highway to the north and frontage on Goldfish Farm Road to the east. One of the properties to the south is developed with a subdivision. All of the lots have access to public streets. The other property to the south abuts the subdivision. Streets inside the subdivision have been stubbed so that the streets can be extended into the other property when it is developed. A new east/west collector street will be constructed from Goldfish Farm Road through the shopping center property to the west, providing the opportunity to extend the street to west when it is needed.

There are no public streets adjacent to the shopping center property that can be extended into the property. The proposed vehicle circulation system inside the development breaks the development into numerous blocks. (See the Circulation Plan, Sheet C5). There are no travel lanes located between sidewalks and buildings. No drop off facilities will be provided.

## CONCLUSION

This standard is met.

- (5) *Internal roadways shall be designed to slow traffic speeds. This can be achieved by keeping road widths to a minimum, allowing parallel parking and planting street trees to visually narrow the road.*

## FINDINGS OF FACT

The "internal roadways" on the northern parcel are the two entry ways to the development on this parcel and the vehicle travel aisles in the parking lots. ADC 9.130, Table 1 shows that the minimum aisle width for vehicle travel aisles for parking spaces configured at 90 degrees to the aisles is 26 feet. The Site Plan shows that the entry ways and some of the aisle widths will be 26 feet. Some of the aisle widths will be 24 feet. The 26-foot-wide travel aisles are the minimum width and the 24-foot-wide travel aisles are less than the usual minimum width. The applicants have submitted an Adjustment application to allow the narrower width.

The "internal roadways" on the south parcel are the vehicle travel aisles in the parking lot, an access drive along the south edge of the parking lot, and an access drive along the front of Building A. ADC 9.130, Table 1 shows that the minimum aisle width for vehicle travel aisles for parking spaces configured at 90 degrees to the aisle is 26 feet. The Site Plan shows that the vehicle travel aisles in the parking lot will all be 26 feet wide, which is the minimum width allowed. The access drive along the south edge of the parking lot is shown to be 30 feet wide. There will be a sidewalk and landscape strip along this drive to visually narrow the road. The access drive in front of the store will be 30 feet wide. There will be landscape planters, striped crosswalks, cross hatch striping, and "Yield" signs painted on the pavement to slow traffic.

## CONCLUSION

This standard is met.

***Pedestrian Amenities (ADC 8.360). Amenities such as awnings, seating, special paving and planters can have a dramatic affect on the pedestrian environment. Commercial developers should give as much thought to the pedestrian environment as they give to vehicle access, circulation and parking. The standards for pedestrian amenities are related to the scale of the development and also provide the flexibility for the developer to select the most appropriate amenities for the particular site and use.***

- (1) *All new commercial structures shall provide pedestrian amenities. The number of pedestrian amenities shall comply with the following sliding scale.*

<i>Size of Structure or Improvement</i>	<i>Number of Amenities</i>
<i>Less than 5,000 sf</i>	<i>1</i>
<i>5,000 – 10,000 sf</i>	<i>2</i>
<i>10,001 – 50,000 sf</i>	<i>3</i>
<i>More than 50,000 sf</i>	<i>4</i>

- (2) *Acceptable pedestrian amenities include the following improvements. No more than two of any item may be used to fulfill the requirement:*

- (a) Sidewalks at least 10 feet wide with ornamental treatments (e.g., brick pavers), or sidewalks which are 50% wider than required by the Code.*
- (b) Benches and public outdoors seating for at least four people.*
- (c) Sidewalk planter(s) enclosing a total of 8 square feet.*
- (d) Pocket parks or decorative gardens (minimum usable area of 300 square feet).*
- (e) Plazas (minimum usable area of 300 square feet).*
- (f) Street trees that are 50 percent larger than required by the Code.*
- (g) Weather protection (awnings, etc.).*
- (h) Other pedestrian amenities that are not listed but are similar in scale and benefit.*

- (3) *Pedestrian amenities shall comply with the following standards:*

- (a) Amenities shall be located outside the building main entrance, along pedestrian corridors, or near transit stops. Amenities shall be visible and accessible to the general public from an improved public or private street. Access to pocket parks, plazas, and sidewalks must be provided via a public right-of-way or a public access easement.*
- (b) Amenities are not subject to setback requirements*
- (c) Amenities are consistent with the character and scale of surrounding developments. For example, similarity in awning height, bench style, planter materials, street trees, and pavers is recommended to foster continuity in the design of pedestrian areas. Materials should be suitable for outdoor use, easily maintained, and have a reasonably long life cycle (e.g., 10 years before replacement).*

#### FINDINGS OF FACT

Building A will be 187,000 square feet (4 pedestrian amenities required). Building B will be 6,055 square feet (2 pedestrian amenities required). Building C will be 4,000 square feet (1 pedestrian amenity required). Building D will be 18,435 square feet (3 pedestrian amenities required). Building E will be 9,750 square feet (2 pedestrian amenities required). Building F will be 11,240 square feet (3 pedestrian amenities required).

The Site Plan shows that pedestrian amenities will include awnings, widened sidewalks, larger street trees, and benches. The Site Plan shows that Building A will have 4 awnings (only 2 may be counted), a 10-foot-wide sidewalk through the parking lot where only a 7-foot-wide sidewalk is required, and four benches in front of the building. Building B will have awnings and a benches. Building C will have awnings and benches. Building D will have awnings. Building E will have awnings. Building F will have awnings and benches. Each bench will have seating for four people. The applicants submitted a detail drawing that shows the type of bench that will be provided (Attachment 20 attached to this staff report).

#### CONCLUSION

This standard is met.

**Pedestrian Connections (ADC 8.370).**

- (1) *New retail, office and institutional buildings at or near existing or planned transit stops shall provide for convenient pedestrian access to transit.*

**FINDINGS OF FACT**

There is not an existing or planned transit stop on Santiam Highway or on Goldfish Farm Road. Albany Transit System buses currently go east on Santiam Highway only to Price Road, which is about 1/2 mile to the west of Goldfish Farm Road.

**CONCLUSION**

This standard does not apply because there is not a transit stop nearby.

- (2) *Walkways shall connect building entrances to streets adjoining the site.*

**FINDINGS OF FACT**

The Site Plan shows two walkways from Santiam Highway that connect to the front doors of the buildings on the northern parcel. Buildings C, D, and F have plazas in front of them that connect directly to the sidewalk along the new east/west collector street. The Site Plan shows two walkways from Goldfish Farm Road that connect to the front doors of the building on the southern parcel.

**CONCLUSION**

This standard is met.

- (3) *Pedestrian connections to adjoining properties shall be provided except where such connection is impractical. Pedestrian connections shall connect the on-site circulation system to existing or proposed streets, walkways, and driveways that abut the property. Where adjacent properties are undeveloped or have potential of redevelopment, street, access ways and walkways on site shall be laid out or stubbed to allow for extension by the adjoining property.*

**FINDINGS OF FACT**

Santiam Highway is adjacent to the north boundary of the shopping center property. As noted in (2) above, walkways will connect the shopping center to the sidewalk along Santiam Highway. Goldfish Farm Road is adjacent to the east boundary of the shopping center property. As noted in (2) above, walkways will connect the shopping center to the sidewalk along Goldfish Farm Road. The proposed east/west collector street and sidewalks on both sides will be extended to the west boundary of the shopping center property so that the street and sidewalks can be extended to serve properties to the west in the future. There is a residential subdivision along the south boundary of the shopping center property and the property further west is designated on the Comprehensive Plan Map for residential use. The backyards of the existing subdivision abut the shopping center property. Two streets with sidewalks on both sides have been extended in the existing subdivision to the boundary of the property further west, so it is expected to be developed with the same street and sidewalk pattern as the existing subdivision. No pedestrian connections between the property to the south, other than the sidewalk along Goldfish Farm Road are practical or necessary.

**CONCLUSION**

These standards are met.

***Large Parking Areas (ADC 8.380)*** *The amount of parking needed for larger commercial development can result in a large expanse of pavement. Landscaping within a parking area shall be incorporated in a manner that is both attractive and easy to maintain, minimizes the visual impact of surface parking, and improves environmental and climatic impacts. In addition to the provisions of Article 9, the following standards apply to commercial development where more than 75 parking spaces are proposed.*

- (1) *Walkways are necessary for persons who will access the site by walking, biking or transit. A continuous pedestrian walkway at least 7 feet wide shall be provided from the primary frontage sidewalk to the customer entrance for each building. This internal walkway shall incorporate a mix of landscaping, benches, drop-off bays and bicycle facilities for at least 50 percent of the length of the walkway. The walkways must be designed for access by disabled persons. If the walkway crosses a parking area or vehicle aisle, the standards in subsection (2) below apply.*

#### FINDINGS OF FACT

The parking lot for the northern parcel will have 240 parking spaces. The primary frontage of this parcel is the new east/west collector street. The Site Plan shows a 7-foot-wide sidewalk will be provided from the sidewalk along the east/west collector street to the front door of each building. The Site Plan and Planting Plans show landscaping will be located along the entire length of the walkways. It will be necessary to add benches along the walkways to meet this requirement.

The parking lot for the southern parcel will have 860 spaces. The primary frontage of the southern parcel is Goldfish Farm Road. The Site Plan shows two continuous pedestrian walkways from Goldfish Farm Road to the customer entrances for Building A. The northerly walkway is shown to be 10.5 feet wide. The southerly walkway is shown to be 7 feet wide. The walkways will be striped where they cross a vehicle travel aisle. The Site Plan and Planting Plans show that there will be landscaping and benches located along the entire length of the walkways. The walkways must be designed for access by disabled persons.

#### CONCLUSION

These standards will be met when the following conditions are met.

#### CONDITIONS

2. At least two benches must be added along the two walkways in the northern parking lots.
  3. All of the walkways within the proposed development must be designed for access by disabled persons.
- (2) *For the safety of pedestrians, parking lots shall be designed to separate pedestrians from vehicles and include protected pedestrian walkways from parking areas to building entrances. Walkways shall be protected by landscaping or parking bumpers. Walkways shall have a minimum width of 7 feet with no car overhang or other obstruction; 9 feet 6 inches for car overhang on one side; 12 feet for car overhang on both sides. Walkways may cross a vehicle aisle if distinguished by a color, texture or elevation different from the parking and driving areas. Walkways shall not share a vehicle aisle.*

#### FINDINGS OF FACT

The Site Plan shows that two walkways will be provided in the parking lots on the northern parcel to separate pedestrians from vehicles. These walkways are shown to be 7 feet wide. A 6.5-foot-wide landscape strip will be provided on each side of each of the walkways. The Site Plan shows the walkways will be striped where they cross a vehicle travel aisle. Neither of the walkways share a vehicle travel aisle.

The Site Plan shows that two walkways will be provided in the parking lot on the southern parcel to separate pedestrians from vehicles. As noted above, the northerly walkway is shown to be 10.5 feet wide. The southerly

walkway is shown to be 7 feet wide. A landscape strip about 5 feet wide will be provided on each side of the northerly walkway to protect pedestrians from the adjacent parking spaces. A landscape strip about 6 feet wide will be provided on each side of the southerly walkway. The Site Plan shows the walkways will be striped where they cross a vehicle travel aisle. Neither of the walkways share a vehicle travel aisle.

#### CONCLUSION

These standards will be met when the following conditions are met.

#### CONDITION

4. The walkways in the parking lots must be constructed substantially as shown on the Site Plan that was submitted for review. The crossings must be striped where they cross a vehicle travel aisle.
- (3) *The parking area shall be divided into pods of no more than 50 spaces each with landscape strips, peninsulas, or grade separations to reduce the visual impact of large expanses of paving, to direct vehicular traffic through the parking lot, and to provide a location for pedestrian walkways.*

#### FINDINGS OF FACT

The Site Plan shows the parking lots on the northern parcel and the southern parcel will be divided into pods of no more than 50 spaces. The Planting Plans show that each pod will be separated with landscape strips and/or walkways.

#### CONCLUSION

This standard is met.

- (4) *Pods may have access at one or both ends. A pod may be U-shaped with double access at one end.*

#### FINDINGS OF FACT

The pods shown on the Site Plan each have access at one or two ends.

#### CONCLUSION

This standard is met.

- (5) *Pods shall be separated with physical breaks by providing one or more of the following:*
  - (a) *Landscape strips between parallel parking rows that are a minimum 5 feet in width with no car overhang and 10 feet in width with a car overhang. When incorporating pedestrian walkways, such strips shall be a minimum of 20 feet in width to accommodate vehicular overhangs, walkways, lights, posts and other appurtenances.*
  - (b) *Building pads, landscaped pedestrian walkways, interior streets or other site features.*

#### FINDINGS OF FACT

The Site Plan shows that the landscape strips between rows of parking spaces will be 6 feet wide. The parking spaces will be 18.5 long, which is the required dimension for a space where no bumper overhang is provided. To ensure that cars do not pull forward and use the curb along the landscape strip as a wheel stop, a wheel bumper will have to be provided at the front of each parking stall.

## CONCLUSION

This standard will be met when the following conditions are met.

## CONDITION

5. Each of the parking spaces that abut a landscape strip that is less than 10 feet wide must have wheel bumper placed at least 2-1/2 feet from the front of the parking space. The wheel bumpers must be at least 6 inches in height and 6 feet in length and be secured to the pavement.
- (6) *Landscaping for large parking areas shall consist of a minimum of seven percent of the total parking area plus a ratio of one tree per eight parking spaces to create a canopy effect. The total parking area includes parking spaces, travel aisles, sidewalks and abutting landscaped areas.*

## FINDINGS OF FACT

The Site Plan shows that the northern parking lots will have 12.3 percent landscaping. The parking lots on the southern parcel will have 11.2 percent landscaping. Calculations are provided in the Narrative (page 49).

A table included on the Tree Plan (Sheet L0) shows that the northern parcel will have 240 parking spaces. If one tree for every eight parking spaces was provided, a total of 30 trees would be required. The table shows that 39 trees will be provided. The table shows that the southern parcel will have 860 parking spaces. If one tree for every eight parking spaces was provided, 108 trees would be required. The table shows that 130 trees will be provided. More trees than the minimum required number of trees will be provided in the parking lots.

## CONCLUSION

This standard is met.

***Compatibility Details (ADC 8.390). Commercial development shall be designed to comply with the following applicable details and any other details warranted by the local conditions.***

- (1) *Lighting is arranged to reflect away from adjoining properties and/or streets.*

## FINDING OF FACT

See Finding 2.8 above.

## CONCLUSION

This standard is met.

- (2) *Undesirable impacts produced on the site, such as noise, glare, odors, dust or vibrations have been adequately screened from adjacent properties.*

## FINDINGS OF FACT

See the Findings under 5.13 above.

## CONCLUSION

This standard is met.

- (3) *The site is protected from any undesirable impacts that are generated on abutting properties.*

#### FINDINGS OF FACT

Santiam Highway abuts the shopping center property to the north. There is a gas station and a business that sells horse trailers on the properties across Santiam Highway. Goldfish Farm Road abuts the property to the west. There is Coastal Farm and Ranch Supply retail store, corporate offices, and warehouse on the property across Goldfish Farm Road. There is a residential subdivision on the property to the south and vacant land. There is a gas station/convenience store, a Veterans of Foreign Wars club on the properties to the west and vacant land.

Both Santiam Highway and Goldfish Farm Road are classified as an arterial streets. The buffer matrix on ADC page 9-11, requires buffering along arterial streets to mitigate the impact of traffic on adjacent land uses. The surrounding retail businesses generate traffic, but little other impact. The Site Plan and Planting Plans show that the required buffer area will be provided along Santiam Highway and along Goldfish Farm Road. Conditions of approval under Review Criterion (5) above require revisions to the spacing of the trees in the buffer areas.

#### CONCLUSION

This standard is not applicable because no undesirable impacts are generated on abutting properties.

- (4) *Unightly exterior improvements and items such as trash receptacles, exterior vents and mechanical devices have been adequately screened.*

#### FINDINGS OF FACT

ADC 4.300 requires that "Any refuse container or disposal area that would otherwise be visible from a public street, customer or resident parking area, any public facility, or any residential area, must be screened from view by placement of a sight-obscuring fence, wall, or hedge at least 6 feet tall. All refuse materials must be contained within the screened area. Refuse disposal areas may not be located in required setbacks or buffer yards and must be placed at least 15 feet from any dwelling window."

The Site Plan shows "garbage/loading areas" (Note 9) for each building, except Building C. A detail drawing of a "trash enclosure" was submitted with the application. The detail drawings shows a trash enclosure with masonry (concrete block) walls and a solid metal door. This meets the ADC 4.300 requirement for screening trash enclosures. All of the mechanical equipment for the buildings will be on the roofs of the buildings and will be screened by parapet walls.

#### CONCLUSION

This standard will be met when the following condition is met.

#### CONDITION

6. ADC 4.300 requires that "Any refuse container or disposal area that would otherwise be visible from a public street, customer or resident parking area, any public facility, or any residential area, must be screened from view by placement of a sight-obscuring fence, wall, or hedge at least 6 feet tall. All refuse materials must be contained within the screened area. Refuse disposal areas may not be located in required setbacks or buffer yards and must be placed at least 15 feet from any dwelling window."

The garbage/loading areas must meet these requirements. Trash enclosures must be screened as shown on the detail drawing submitted with the application, or equivalent.



- (5) *Storage areas, trash collection facilities and noise generating equipment have been located either away from public streets and abutting residential uses or zones or sight obscuring fencing has been provided.*

#### FINDINGS OF FACT

The Site Plan does not show any outside storage areas. See the discussion about noise generating equipment and trash collection facilities under (4) above.

#### CONCLUSION

This standard is met.

- (6) *Where needed, loading facilities are provided on-site and are of sufficient size and number. Where possible, these areas shall be designed so that vehicles enter and exit the site in a forward motion.*

#### FINDINGS OF FACT

ADC 4.260 requires that loading area for commercial buildings must be off the street and must meet the following requirements:

- (1) Vehicles in the berths shall not protrude into a public right-of-way or sidewalk. Loading berths shall be located so that vehicles are not required to back or maneuver in a public street.
- (2) A school having a capacity greater than twenty-five students shall have a driveway designed for continuous forward flow of passenger vehicles for the purpose of loading and unloading children.
- (3) The minimum area required for commercial loading spaces is as follows:  
250 square feet for buildings of 5,000 to 20,000 square feet of gross floor area.  
500 square feet for buildings of 20,000 to 50,000 square feet of gross floor area.  
750 square feet for buildings in excess of 50,000 square feet of gross floor area.
- (4) The required loading area shall not be less than ten feet wide by twenty-five feet long and shall have an unobstructed height of fourteen feet.
- (5) Required loading facilities shall be installed prior to final building inspection and shall be permanently maintained as a condition of use.
- (6) Loading areas shall be subject to the same provisions as parking areas relative to plan information, setbacks, buffering/screening requirements, and lighting.

The Site Plan shows a garbage/loading area for each building, except Building C. Two of these areas are shown for Building A. In addition, the Site Plan shows a loading dock for Building A. The loading areas are located so that vehicles in these areas will not protrude into a public right-of-way or sidewalk. Each of the loading areas is at least ten feet wide by twenty-five feet long. None of the loading areas are located under any obstruction.

The loading areas are located on the west side of Building A. There are three proposed loading doors facing south and three loading doors facing north.

Building A will be more than 50,000 square feet. The minimum area loading area required for this building is 750 square feet. The two loading areas for Building A are 9,460 square feet.

Buildings B, D, E, and F will all be less than 20,000 square feet. The minimum loading area required for these buildings is 250 square feet. The Site Plan shows the loading area for Building B will be 250 square feet. Building C is less than 5,000 square feet, so it is not required to have a loading area. No loading area is shown on the Site Plan for Building C. The loading area for Building D will be 360 square feet. The loading area for Building E will be 250 square feet. The loading area for Building F will be 260 square feet.

#### CONCLUSION

These standards are met.

## STAFF ANALYSIS

### **File AD-01-08**

Albany Development Code (ADC) Section 2.080 includes the following review criteria which must be met for the Adjustment application to be approved. Code criteria are written in *bold italics* and are followed by findings, conclusions, and conditions of approval where conditions are necessary to meet the review criteria.

#### Description of the Application

The applicants submitted an Adjustment application with the Site Plan Review application for the shopping center. The adjustment would allow some 24-foot-wide travel aisle in the parking lot where 26 feet is usually required.

- (1) *The requested adjustment is for 10 percent or less of the numerical development standard.*

#### FINDINGS OF FACT

- 1.1 ADC 9.130, Table 1 shows required dimensions for parking spaces and aisles. The Site Plan shows that all of the parking spaces on the northern parcel will be configured at 90 degrees to vehicle travel aisles. The spaces are shown to be 9 feet wide. Table 1 shows that for 9-foot-wide spaces oriented at 90 degrees to vehicle travel aisles, the vehicle travel aisles must be at least 26 feet wide. Some of the vehicle travel aisles on the northern parcel are shown to be 26 feet wide and some are shown to be 24 feet wide.
- 1.2 The applicants request that an adjustment be granted to allow the 24-foot-wide vehicle travel aisles. Two feet is an 8 percent reduction in the usual 26-foot required aisle width.

#### CONCLUSIONS

- 1.1 The requested adjustment is to allow some of the vehicle travel aisles in the parking areas on the northern parcel to be 8 percent less in width than the 26 feet width usually required.
- 1.2 Eight percent is less than 10 percent of the 26-foot numerical standard.
- 1.3 This review criterion is met.

- (2) *The need for the requested adjustment is created by the configuration of an existing or proposed structure on the site.*

#### FINDINGS OF FACT

- 2.1 ADC Article 22 defines a structure as "Anything constructed or built, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner."
- 2.2 The placement of the proposed buildings, a stormwater detention facility, pedestrian walkways, and landscape strips on the site leave only 24 feet for the width of some of the vehicle travel aisles.
- 2.3 ADC 9.130, Table 1, Note (5) says that the minimum aisle width for two-way traffic and for emergency vehicle operations area is 24 feet. The proposed 24-foot-wide vehicle travel aisles meet this minimum width.

## CONCLUSIONS

- 2.1 The need for the narrower vehicle travel aisles is created by the configuration of structures on the site.
- 2.2 This review criterion is met.

Attachments: Attachments 1 - 27

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**SUPPLEMENTAL FINDINGS**  
**FILES SP-12-08 AND AD-01-08, EAST ALBANY RETAIL PROJECT**  
**ADOPTED BY THE CITY COUNCIL ON NOVEMBER 12, 2008**

The following findings are adopted pursuant to the Albany City Council's decision to approve Oregon Acquisition One LLC's applications for: (1) Site plan review for construction of a shopping center with six buildings on 25.67 acres of land; and (2) An adjustment to allow 24-foot-wide travel aisles in the parking lots on the northern parcel of the shopping center where 26-foot-wide travel aisles are usually required (Planning Files SP-12-08 and AD-01-08). These findings supplement the Staff Report and all its attachments presented to the Albany City Council for its October 8, 2008, hearing on this matter (the "Staff Report"). These Supplemental Findings together with the Staff Report are intended together to be the findings supporting the City Council's approval of applications SP-12-08 and AD-01-08. If these Supplemental Findings conflict with any findings in the Staff Report, these Supplemental Findings govern. These Supplemental Findings address the applicable criteria in light of the evidence that has been received by the Council throughout the proceedings before it.

**I. Procedural Findings:**

Albany Development Code ("ADC") 1.340 requires that the City review Oregon Acquisition One LLC's concurrent applications for site plan review and an adjustment pursuant to the City's Type I-L process. City staff reviewed the applications accordingly and issued a decision to approve the applications on September 9, 2008. On September 10, 2008, pursuant to City Resolution No. 5477, the Albany City Council ("Council") adopted Resolution No. 5656, which called up the staff decision to allow the Council to conduct a *de novo* review of the applications. The Council held a public hearing on October 8, 2008, to hear public testimony regarding the City staff's decision to approve the applications.

Mayor Bedore called the hearing to order at 7:34 p.m. City Attorney Jim Delapoer discussed the procedural issues surrounding the September 10, 2008 public declarations by Councilors Konopa and Olsen to abstain from participating in the Council's review of this matter. After Mr. Delapoer summarized the law in this area, Councilor Konopa again declared that she would abstain from participating and voting on this matter unless her vote was needed to allow the City to issue a decision in accordance with Oregon law. The basis of her abstention was her concern that she could not review the applications in an unbiased manner, since she believed they would lead to construction of a Wal-Mart Superstore on the property. Councilor Konopa has previously publicly opposed the construction of Wal-Mart stores in other communities in Oregon, and her husband has opposed Wal-Mart stores in his professional capacity as staff director of the United Food and Commercial Workers Union Local 555. Councilor Olsen stated that although he previously stated that he was biased against the applications, upon further consultation with the City Attorney, he determined that he did not have a bias or conflict of interest that rose to the level that it required his recusal. He stated his intention to hear the evidence and participate in the voting and discussion of this matter. Mayor Bedore inquired whether any members of the Council had any conflicts of interest or ex parte communications to disclose. Councilors Christman and Johnson both disclosed that they had received a letter from John Hartman with respect to this matter and that they had turned the letter over to City Planning staff, who had included the letter as an attachment to the Staff Report. No other Councilors disclosed any ex parte communications in this matter. No member of the public challenged or rebutted the ex parte disclosures or the abstention or participation of any member of the Council in this matter. Mayor Bedore read the additional notices required by ORS 197.763. He then called for the staff report.

Don Donovan, City Planning Manager, summarized the proposed development and the staff report. After this presentation, the applicant and its representatives presented testimony, and members of the public (some in favor, some in opposition, and one neutral) also presented testimony. At the conclusion of this

testimony, the Council closed the public hearing in this matter at 9:47 p.m. and approved a motion to hold deliberations in the matter on October 22, 2008.

On October 22, 2008, the Council deliberated regarding the proposed applications and voted 4-1 to affirm staff's decision by tentatively approving with conditions the Site Plan Review and Adjustment applications. The vote was tentative until the Council made the final decision to approve on November 12, 2008, subject to the Staff Report's Findings of Fact and Conclusions and as conditioned in the Staff Report, except as modified by these Supplemental Findings.

## II. Substantive Findings:

### A. Site Plan Review Criteria [Albany Development Code (ADC) 2.650]

ADC 2.650 provides the criteria for approval of a Site Plan application: *A site plan approval will be granted if the review body finds that the applicant has met all of the following criteria that are applicable to the proposed development:*

#### (1) *The transportation system can safely and adequately accommodate the proposed development.*

The Council finds that the proposed site plan complies with this criterion for the reasons stated in the Staff Report's Findings of Fact and Conclusions regarding this criterion, as conditioned in the Staff Report, and for the following reasons:

1.1 The Oregon Department of Transportation ("ODOT") submitted written testimony on October 6, 2008, proposing changes to proposed conditions of approval so that necessary ODOT processes to review and approve construction plans, and to issue permits for construction on state highways, are resolved in a timely manner.

1.2 The applicant submitted written testimony on October 8, 2008, requesting changes to many of the same conditions of approval to allow some on-site construction to start before all of the off-site improvements have been fully designed and permitted by the City and ODOT. The applicant argued that delaying the issuance of any building permit for the construction of on-site improvements until after the design and permitting of off-site improvements would introduce an unreasonable delay in project construction.

1.3 No additional evidence was received with respect to these conditions. City Engineer Ron Irish advised Council during its deliberations that the language in the proposed conditions regarding the timing and sequencing of the on-site and off-site improvements was not unlike other conditions routinely imposed by the City.

1.4 The City finds that the conditions proposed by the applicant and ODOT will ensure that all parties can properly plan for and ensure the completion of off-site road improvements so that the transportation system can safely and adequately accommodate the proposed development.

1.5 The City amends and restates Conditions 1.2 and 1.3 to the approval and adds new Conditions 1.5 and 1.6 to the approval:

Condition 1.2 Prior to issuance of building permits for the shopping center buildings, the property owner/developer must dedicate the public right-of-way for the new east/west collector street from Goldfish Farm Road to the west boundary of the shopping center property. The property owner

must also secure any fill slope and construction easements necessary for the construction of the new street. Fill, grading, foundation, or underground site utility permits, may be issued before the right-of-way is dedicated.

In the event that the applicant cannot secure the necessary off-site right-of-way and easements from the adjoining parcel at 4196 Santiam Highway, the property owner must pay all City costs for condemnation of the right-of-way. The applicant must provide a financial assurance acceptable to the City Attorney for the costs of condemnation.

Condition 1.3 Prior to issuance of a fill, grading, foundation, or underground site utility permit, the property owner/developer shall provide a financial assurance satisfactory to the City engineer for the improvements described below. Prior to issuance of any other building permits for the shopping center project, the property owner/developer must obtain construction permits from the agency with jurisdiction over the facility (ODOT or City) and then construct or financially assure the improvements listed below. (Santiam Highway is referred to as US-20 below). Occupancy permits for buildings in the shopping center will not be issued until all of the street improvements required by ODOT are complete and operational.

- a. US-20 Site Frontage: Curb, gutter, sidewalk and pavement improvements shall be constructed as part of the improvements, consistent with the construction plans authorized by ODOT as part of the ODOT approach road permit.
- b. US-20/Airport Road: Construct roadway and traffic signal improvements as called for in the March 2008 Transportation Impact Analysis as amended May 2008 (collectively, "TIA"). Although ODOT has agreed that the proposed mitigation actions are conceptually feasible, should review of construction plans indicate the need for changes, changes to allow for constructability will be made to meet ODOT requirements, with ODOT and the applicant acting reasonably.
- c. US-20/Fescue Street: Construct roadway and traffic signal improvements as called for in the TIA. Although ODOT has agreed that the proposed mitigation actions are conceptually feasible, should review of construction plans indicate the need for changes, changes to allow for constructability will be made to meet ODOT requirements, with ODOT and the applicant acting reasonably.
- d. US-20/Goldfish Farm Road: Construct roadway and traffic signal improvements at the US-20/Goldfish Farm Road intersection as called for in the TIA. Although ODOT has agreed that the proposed mitigation actions are conceptually feasible, should review of construction plans indicate the need for changes, changes to allow for constructability will be made to meet ODOT requirements, with ODOT and the applicant acting reasonably. ODOT construction permits must be obtained and the improvements constructed as called for in the ODOT approach road permit.
- e. Goldfish Farm Road/New Collector Street: Construct a southbound right turn lane from Goldfish Farm Road onto the new collector street together with a transition on the south side of the intersection as shown on the Site Plan. Improvements must include the new curb, gutter, sidewalk, pavement, and striping needed to accomplish the road widening.
- f. New Collector Street: Construct a new collector street from Goldfish Farm Road to the west boundary of the shopping center property (except as noted in the paragraph below). Improvements shall be generally as shown on the Site Plan and include curb, gutter, and sidewalk; a vehicle travel lane in each direction; a center left turn lane; and a bike lane in each direction. A two-foot-wide concrete median island must be included from Goldfish Farm Road

west to the eastern edge of the first driveway on the south side of the road. The sidewalk along the collector street must be setback from the curb by a landscape strip at least six feet in width. The new collector street may be constructed at the same time the owner/developer performs on-site fill, grading, foundation, and underground utility work (pursuant to applicable permits) and prior to dedication of right-of-way under Condition 1.2 above.

The last 50 feet (approximately) of the collector street on the site will not be built at this time. The grade of this section of street must be constructed to the grade shown on the street profile submitted by the applicants to the City and attached to the email from Alan Lee to Jeff Woodward on August 15, 2008. Before any building permits are issued for the shopping center buildings, the applicant must pay to the City the estimated cost of constructing this last 50 feet of the street. The estimate must be prepared by the applicant and must be approved by the City Engineer.

Condition 1.5: The property owner/developer shall provide all information needed by ODOT to authorize modification of the traffic signals, and shall construct all signal modifications required by ODOT prior to issuance of an occupancy permit.

Condition 1.6: The property owner/developer shall submit all application materials required by ODOT to indenture a right-of-access to the emergency access approach road shown on the site plan unless it is determined by the City and ODOT that this emergency access is not necessary or that the indenture is not necessary to obtain the emergency access approach road. If the emergency access approach road is necessary, an ODOT approach road permit for the emergency access shall be obtained and the approach road constructed as called for in the ODOT permit.

1.6 On October 8, 2008, Linn County submitted written testimony requesting that any approval by the City of the applications be contingent upon the applicant adequately addressing and mitigating, to the County's satisfaction, the traffic impacts to: (1) Goldfish Farm Road from US 20 to Knox Butte Road; and (2) Three Lakes Road from Grand Prairie Road to Spicer Road.

1.7 The applicant responded to the County's testimony by explaining that the TIA indicated that these sections of County roads had adequate capacity to operate within acceptable standards even after full build-out of the development. City staff testified that Three Lakes Road was a greater distance from the site than Goldfish Farm Road.

1.8 It is well-settled that the choice between conflicting evidence is up to the Council if a reasonable person could believe the evidence the Council relied upon in reaching its decision. *Dodd v. Hood River County*, 317 Or 172, 179, 855 P2d 608 (1993). The Council finds that a reasonable person could rely upon testimony from the County that this section of Goldfish Farm Road could be adversely affected due to traffic generated by the development and, if left unmitigated, could threaten public safety. The Council finds that a reasonable person could rely upon the TIA and the testimony from City staff and the applicant to determine that development of the site will not negatively impact Three Lakes Road.

1.9 The Council adds the following Condition 1.7 to the approval, with the consent of the applicant:

Condition 1.7: Prior to the County's issuance of a Right-of-Way Encroachment Permit for work in the Goldfish Farm Road right-of-way, the applicant shall pay the amount of \$175,000 to the Linn County general fund in full satisfaction of any liability the applicant may have for traffic mitigation measures on Goldfish Farm Road between US-20 and Knox Butte Road and any other improvements to County roads.

1.10 Public Comments: Opponents of the applications provided testimony regarding traffic. Their testimony is summarized below. Findings responding to that testimony follow each of the concerns expressed by the opponents. The findings below supplement the findings contained in the Staff Report, which are incorporated herein by reference.

a. *Trip Cap.* Opponents expressed concern regarding the trip cap relating to the site and how it would be enforced. They also testified that it was impossible to determine trip numbers without knowing which entities would be using the site.

Response: The applicant's March 2008 TIA utilized Institute of Traffic Engineer ("ITE") estimates to project that development on the site as proposed by the applicant would generate about 730 new vehicle trips at the peak hour, well below the 800 peak hour trips authorized by the Council in a condition imposed on the zone change for the site. Marc Butorac, P.E. of Kittelson and Associates testified that, in his professional opinion, he was confident that the proposed development would produce traffic levels below the trip cap for the following reasons: (1) ITE trip rates are inherently conservative in their assumptions with regard to trip generation; and (2) The trip cap itself was derived from ITE land use 820, the same land use used to estimate trips for the proposed development. Because the proposed development assumes less overall development than the trip cap did, the trip generation cannot exceed the trip cap.

City staff presented testimony that reminded the Council that at the time the Council approved the zone change for the site (Files CP-01-3 and ZC-01-03), the Council rejected the possibility of requiring: (1) Counts of the actual volume of traffic that is generated by development on the site; and (2) Additional mitigation of traffic impact if the volume exceeded what was estimated using ITE rates. The reason the Council rejected these requirements was because a traffic count on a particular day might not be representative of the longer term volume of traffic that is actually generated by a particular development, particularly given fluctuations in the economy and levels of competition. Staff further noted that the City does not rely on actual traffic counts at any development in the City.

Finally, City staff rebutted the argument that it was impossible to determine trip numbers without knowing for certain the identities of the end users of the site. Staff explained that the City relied on traffic counts in the ITE Manual, 7th Edition, which were objective in nature and based upon the category of the use, not the identity of the user. City staff further testified that the ITE Manual establishes models and rates that are widely accepted in the field.

There is substantial evidence in the whole record that the development will comply with the trip cap. Consistent with the Council's prior approval of the zone change decision (Files CP-01-3 and ZC-01-3), the Council finds that there is no basis to enforce this standard over time and declines to do so in this case. The Council further finds that the evidence establishes that the City does not need a tenant list from the applicant in order to determine compliance with the trip cap, so long as the category of use is known (as in this case). Finally, the Council finds that, consistent with the approval in the zone change decision (Files CP-01-3 and ZC-01-03), no development permits on the site will be applied for or approved until the applicant records a restrictive covenant memorializing the trip cap in the Deed Records of Linn County, Oregon. A copy of the restrictive covenant was included as an exhibit to the staff report for File Nos. CP-01-3 and ZC-01-03.

b. *Secondary Access to Coastal Crossing Subdivision.* Opponents requested a second accessway to the Coastal Farms subdivision located south of the site to serve as an alternative to the single existing accessway. The second accessway could accommodate emergency vehicles and serve as an alternative to Goldfish Farm Road.



Response: Mr. Butorac testified that according to the City's adopted Transportation System Plan and Figure 5 of the May 16, 2008, memorandum prepared by Kittelson and Associates, Goldfish Farm Road will ultimately be extended south and the new east/west collector street on the site will be extended west to Timber Street, which will also be extended to the south. Mr. Butorac testified that these street extensions will provide long-term alternative access to the subdivision. In the interim, Mr. Butorac testified, the applicant had coordinated with the City's Fire Department to identify (and show on the site plan) an emergency access from Highway 20 to the site in the area northwest of Building E. Emergency vehicles can utilize this access if needed to cross the site and reach the subdivision. Finally, Mr. Butorac noted that the applicant was proposing transportation improvements to mitigate the projected impacts of the development such that traffic operations in the surrounding area would not be negatively impacted and in some cases would improve upon full build-out of the development and the off-site improvements.

On the basis of this testimony, the Council finds that there is no basis to require the applicant to complete additional improvements to provide an alternative means to access the subdivision, particularly when the subdivision was built with only a single point of access and applicant's development will not take away that access. As a result, the Council finds that any access problems identified by subdivision residents were not being caused by the proposed shopping center development.

***(2) Parking areas and entrance-exit points are designed to facilitate traffic and pedestrian safety and avoid congestion.***

The Council finds that the proposed site plan complies with this criterion for the reasons stated in the Staff Report's Findings of Fact and Conclusions regarding this criterion, as conditioned in the Staff Report, and for the following reasons:

2.1 The applicant requests clarification of Condition 2.6, which purports to require the applicant to create and extend a shared cross-access driveway onto the neighboring property.

2.2 The City finds that this condition needs clarification to note that the applicant can only complete improvements on its property and neither the City nor the applicant can compel the neighboring property owner to participate in conjunction with these applications.

2.3 The City amends and restates Condition 2.6 to read as follows:

Condition 2.6 Provision for a two-way driveway connection must be accommodated in the form of a curb cut from the shopping center property/parking lot on the northern parcel and stubbed out to the adjoining parcel to the west to allow for a future driveway connection between the properties when the adjoining property to the west redevelops.

***(3) Public utilities can accommodate the proposed development.***

The Council finds that the proposed site plan complies with this criterion for the reasons stated in the Staff Report's Findings of Fact and Conclusions regarding this criterion, as conditioned in the Staff Report, and for the following reasons:

3.1 The applicant submitted a letter dated October 8, 2008, from Kevin Russell, P.E. at WRG Design explaining that it is feasible for the applicant to comply with the City's engineering standards as set forth in the Staff Report such that the site can be served by public utilities. Specifically, Mr. Russell stated that, in his professional opinion, it is feasible for the applicant to design and construct a storm drainage system to accommodate the proposed development, consistent with the requirements of ADC 12.530 and applicable engineering standards. Further, Mr. Russell stated that, in his professional opinion, it is

feasible to design and construct all required public improvements consistent with the City's applicable engineering standards.

3.2 No one offered substantial evidence to rebut this testimony.

3.3 Public Comments: Opponents of the development provided testimony regarding storm drainage. Their testimony is summarized below. Findings responding to that testimony follow each of the concerns expressed by the opponents. The findings below supplement the findings contained in the Staff Report, which are incorporated herein by this reference.

a. *Stormwater Drainage.* Written and oral testimony was received expressing concern whether the site's stormwater management system would function properly. Opponents inquired whether stormwater run-off from the site would drain onto or flood adjacent properties (potentially carrying contaminants from vehicles on the site). Opponents offered no substantial evidence in support of their arguments but raised the questions.

Response: During the rebuttal period at the hearing on October 8, 2008, Mr. Russell responded to these concerns and explained that the site's stormwater management system would be designed and constructed consistent with City standards. As set forth in the applicant's stormwater management plans, the applicant is constructing two on-site stormwater detention facilities that can detain runoff to handle a 25-year event and to include additional dead storage. Further, the system includes overflows in place to account for a 100-year event.

With respect to possible contaminants entering the stormwater system from vehicles on the site, Mr. Russell explained that the system would be designed and constructed to exceed City standards, which do not include mandatory water quality standards. Mr. Russell noted that the detention pond as designed would include water quality capabilities. He further explained that any contaminants introduced into the parking field would be mitigated by catch basins that would collect the water and related contaminants and convey them underground into the water quality pond.

With respect to drainage onto off-site properties, Mr. Russell explained that the site would not drain onto off-site properties. Instead, the applicant will install a french drain on the southern and western (south of the roadway) property lines. The drain on the southern property line will collect the existing water runoff flowing onto the site from the south and release it into the existing ditch located to the west and north of the site. The drain on the western (south of the new roadway) property line will collect the water runoff that will flow from the slopes along the western edge of the site and release it into the existing ditch to the west and north of the site. A wall drain will be installed along the western (north of the new roadway) property line that will collect the water runoff and release it to the existing ditch to the west and north of the site. The slopes along the western property line are necessary to accommodate comments received by the applicant from the City during its review of the applications. Water runoff from the site into the existing ditch to the west and north of the site will be minimal.

City staff testified that some storm drainage from the site will be channeled into Cox Creek. Based upon staff's analysis of information submitted by the applicant, Cox Creek can accommodate the storm drainage from the shopping center.

3.4 The Council finds that the analysis regarding the design and function of the site's stormwater management system is extensive and credible. The Council finds that the evidence demonstrates that the drainage plan, including the stormwater detention and water quality treatment facilities, is designed in a manner satisfying the City's standards. This finding is based upon the written and oral testimony described above of both the applicant's engineer and the City's engineering staff.

3.5 The Council finds that language in Condition 3.6 allowing the City to issue building permits for the project before all of the public improvements have been made if the owner/developer provides an improvement assurance, also applies to Conditions 3.1 and 3.2 of the Staff Report. With its reference to the "public improvements described above," Condition 3.6 is intended to be more general in nature and encompass the situations discussed in Conditions 3.1 and 3.2.

3.6 The Council amends and restates Conditions of Approval 3.1 and 3.2 to the approval:

Condition 3.1 The property owner/developer must construct a 12-inch public water main in the proposed east/west collector street through the property. This public water main must be extended from Goldfish Farm Road to the termination of the new east/west collector road approximately 50 feet east of the western property line.

Condition 3.2 The property owner/developer must construct private and public storm drainage facilities as shown on the Storm Sewer Plan that was submitted. However, alternate configurations to the proposed routing of pipes at the intersection of Goldfish Farm Road and Highway 20, and potentially along Highway 20 to the east, must be considered to avoid potential utility conflicts and so that parallel systems are not constructed.

***(4) Any special features of the site (such as topography, hazards, vegetation, wildlife habitat, archaeological sites, historic sites, etc.) have been adequately considered and utilized.***

The Council finds that the proposed site plan complies with this criterion for the reasons stated in the Staff Report's Findings of Fact and Conclusions regarding this criterion, and as conditioned in the Staff Report.

***(5) The design and operating characteristics of the proposed development are reasonably compatible with surrounding development and land uses, and any negative impacts have been sufficiently minimized.***

The Council finds that the proposed Site Plan Review application complies with this criterion for the reasons stated in the Staff Report's Findings of Fact and Conclusions regarding this criterion, as conditioned in the Staff Report, and for the following reasons:

5.1 A neighbor requested that the applicant provide a public pocket park in the buffer area along the southern boundary of the property. The applicant testified that the area in question could not safely or effectively function as a park, because it is part of the applicant's on-site stormwater management system and at certain times, could have standing water within the pond area.

5.2 The Council finds that the applicant is not obligated to provide a pocket park, and under these circumstances, a park in this location will not be safe for public use.

5.3 The applicant submitted a letter dated October 8, 2008, from Mike Andrews, Landscape Architect at WRG Design, explaining that it is feasible, in Mr. Andrews' professional opinion, for the applicant to comply with the City's landscape standards as set forth in ADC 9.150 when developing the site. No substantial evidence to the contrary was presented. The City finds that it is feasible for the applicant to comply with the applicable landscape standards as conditioned in the Staff Report.

5.4 The applicant submitted a supplemental noise analysis dated September 30, 2008, prepared by Kerrie G. Standlee, P.E. of DSA Engineers into the record. The purpose of this analysis was to measure

impacts to vacant properties located in unincorporated Linn County. This analysis determined that the presence of refrigerated trailer trucks operating their refrigeration units could exceed the applicable noise standards for the site during nighttime hours. To mitigate these noise impacts, this study proposed requiring the end user of Building A to shut off all refrigeration equipment within 6 minutes after arrival at the south loading docks during nighttime hours.

5.5 The applicant also offered to require that all refrigerated truck deliveries occur during daytime hours as an alternative form of mitigation.

5.6 The Council finds that the mitigation proposed in the supplemental noise analysis will be difficult for both the applicant and the City to enforce. The City further finds that the site will comply with the applicable noise standards during the hours of 10:00 p.m. and 7:00 a.m. if there are no refrigerated trucks operating their refrigeration units at Building A during these hours.

5.7 The Council adds the following condition to the approval:

Refrigerated truck-trailers will not be allowed to make deliveries at Building A between 10:00 p.m. and 7:00 a.m. The owner of the shopping center and/or tenant of Building A must provide conspicuous signage on the site to notify truck drivers of this restriction. Contractual agreements between the owner of the shopping center and/or tenant of Building A and suppliers must require this restriction.

#### **B. Design Standards [ADC 8.330-8.390]**

The Council supplements the Staff Report with the following findings and conclusions regarding the City's design standards:

***8.330 Building Orientation. Building orientation and maximum setback standards are established to help create an attractive streetscape and pleasant pedestrian environment.***

***(1) New commercial buildings shall be oriented to existing or new public streets. Building orientation is demonstrated by placing buildings and their public entrances close to streets so that pedestrians have a direct and convenient route from the street sidewalk to building entrances.***

***(a) On sites smaller than 3 acres, commercial buildings shall be oriented to the public street/sidewalk and off-street parking shall be located to the side or rear of the building(s), except where it is not feasible due to limited or no street frontage or where there are access restrictions.***

***(b) Buildings on larger sites may be setback from the public street and oriented to traffic aisles on private property, if the on-site circulation system is developed like a public street with pedestrian access, landscape strips and street trees.***

The Council finds that the proposed development complies with this criterion for the reasons stated in the Staff Report's Findings of Fact and Conclusions regarding this criterion and as conditioned in the Staff Report.

***(2) At least one major public entrance shall be visible from the abutting public street. Corner entrances may be used to provide orientation to two streets. Customer entrances should be clearly defined, highly visible, using features such as canopies, porticos, arcades, arches, wing walls, and planters.***

The Council finds that the proposed development complies with this criterion for the reasons stated in the Staff Report's Findings of Fact and Conclusions regarding this criterion, as conditioned in the Staff Report, and for the following reasons:

1.1 The applicant testified that it is unreasonable for the City to impose a condition that prohibits locating public entrances on the parking lot (back) sides of Buildings B, C, D, E, and F, because it is not required (or supported) by the requirements of the ADC, and its implementation in practice is not compatible with market realities and customer expectations. The ADC's building orientation standards specifically envision that new commercial buildings will have more than one "major public entrance," in that ADC 8.330(2) only requires that "at least one" major public entrance be visible from the abutting public street.

Second, the applicant testified that the Regional Center zone (as opposed to the City Village Center zones) is primarily intended for developments that serve the wider Albany region and for developments that require large sites near Interstate 5. These legislative statements of purpose make it clear that the RC zone is primarily an auto-dependent zone where the primary mode of transportation will be automobile related. The City's parking standards in this zoning district are consistent with that purpose. However, even in that context, after parking their automobiles in the on-site parking lot, those drivers become pedestrians. Staff's concern that parking lot entrances would dominate the design or limit the operational importance of the major entrance on the street can be dealt with through other types of conditions that impose a better balance of access for customers arriving by different modes of transportation.

Third, the applicant testified that, contrary to the Staff Report, multiple entrances to the same business can be "clearly defined," provided the applicant implements the features identified in ADC 8.330(2) at each entrance. Finally, the applicant argued that market realities dictate a need for public entrances on the parking lot side of the buildings. If the City's approval does not allow some flexibility in this regard, it may prevent the leasing of the retail spaces altogether, which would lead to unsightly vacancies along one of the City's primary thoroughfares.

1.2 No evidence was offered to rebut this testimony. Staff expressed support for allowing secondary customer entrances on the parking lot side of these buildings, subject to design review by the Community Development Director and provided that the primary customer entrances remained unlocked during regular business hours.

1.3 The Council amends and restates Condition 1 (under this criterion) to the approval:

Major public entrances may not be located on the parking lot (back) sides of Buildings B, C, D, E, and F. Secondary customer entrances are allowed on the parking lot sides of those buildings. The design of secondary customer entrances must be approved by the Community Development Director at the time building permits are issued for each building, or at the time a remodel project is proposed for any of the buildings. Lease agreements must prohibit tenants from locking or limiting entry to the major public entrances that abut the public street during regular business hours.

**8.340 General Building Design. New commercial buildings shall provide architectural relief and interest, with emphasis at building entrances and along sidewalks, to promote and enhance a comfortable pedestrian scale and orientation. Blank walls shall be avoided except when not feasible. (1) Ground floor windows shall be provided along frontages adjacent to sidewalks. The main front elevation(s) of buildings shall provide windows or transparency at the pedestrian level in the following minimum proportions:**

<i>District</i>	<i>% Transparency</i>
<i>RC, CC, NC, OP, MUC</i>	<i>25%</i>
<i>MS, LE, PB, ES, MUR, WF</i>	<i>50%</i>
<i>HD, CB</i>	<i>75%</i>

*The minimum window and door requirements are measured between 2 and 8 feet from the ground. Only the glass portion of doors may be used in the calculation. If there are upper floor windows, they shall continue the vertical and horizontal character of the ground level windows.*

*(2) Walls that are visible from a public street shall include a combination of architectural elements and features such as offsets, windows, entry treatments, wood siding, brick stucco, synthetic stucco, textured concrete block, textured concrete, and landscaping.*

The Council finds that the proposed development complies with this criterion for the reasons stated in the Staff Report's Findings of Fact and Conclusions regarding this criterion and as conditioned in the Staff Report.

**8.350 Street Connectivity and Internal Circulation.** *The following standards emphasize the importance of connections and circulation between uses and properties. The standards apply to both public and private streets.*

*(1) New commercial buildings may be required to provide street or driveway stubs and reciprocal access easements to promote efficient circulation between uses and properties, and to promote connectivity and dispersal of traffic.*

*(2) The internal vehicle circulation system of a commercial development shall be a continuation of the adjacent public street pattern wherever possible and promote street connectivity. The vehicle circulation system shall mimic a traditional local street network and break the development into numerous smaller blocks.*

*(3) Traffic lanes shall be internal to the site and shall not be located between the building(s) and the sidewalk(s), except as provided in (4) below.*

*(4) Where drop off facilities are provided, they shall be designed to meet the requirements of the American with Disabilities Act but still provide for direct pedestrian circulation.*

*(5) Internal roadways shall be designed to slow traffic speeds. This can be achieved by keeping road widths to a minimum, allowing parallel parking, and planting street trees to visually narrow the road.*

The Council finds that the proposed development complies with this criterion for the reasons stated in the Staff Report's Findings of Fact and Conclusions regarding this criterion and as conditioned in the Staff Report.

**8.360 Pedestrian Amenities.** *Amenities such as awnings, seating, special paving and planters can have a dramatic affect on the pedestrian environment. Commercial developers should give as much thought to the pedestrian environment as they give to vehicle access, circulation and parking. The standards for pedestrian amenities are related to the scale of the development and also provide the flexibility for the developer to select the most appropriate amenities for the particular site and use.*

*(1) All new commercial structures and improvements to existing sites shall provide pedestrian amenities.*

*The number of pedestrian amenities shall comply with the following sliding scale.*

*Size of Structure or Improvement Number of Amenities*

*Less than 5,000 sf 1*

*5,000 – 10,000 sf 2*

*10,001 – 50,000 sf 3*

*More than 50,000 sf 4*

*(2) Acceptable pedestrian amenities include the following improvements. No more than two of any item may be used to fulfill the requirement:*

*(a) Sidewalks at least 10 feet wide with ornamental treatments (e.g., brick pavers), or sidewalks which are 50% wider than required by the Code.*

*(b) Benches and public outdoors seating for at least four people.*

*(c) Sidewalk planter(s) enclosing a total of 8 square feet.*

- (d) Pocket parks or decorative gardens (minimum usable area of 300 square feet).*
- (e) Plazas (minimum usable area of 300 square feet).*
- (f) Street trees that are 50 percent larger than required by the Code.*
- (g) Weather protection (awnings, etc.).*
- (h) Other pedestrian amenities that are not listed but are similar in scale and benefit.*
- (3) Pedestrian amenities shall comply with the following standards:*
  - (a) Amenities shall be located outside the building main entrance, along pedestrian corridors, or near transit stops. Amenities shall be visible and accessible to the general public from an improved public or private street. Access to pocket parks, plazas, and sidewalks must be provided via a public right-of-way or a public access easement.*
  - (b) Amenities are not subject to setback requirements.*
  - (c) Amenities are consistent with the character and scale of surrounding developments. For example, similarity in awning height, bench style, planter materials, street trees, and pavers is recommended to foster continuity in the design of pedestrian areas. Materials should be suitable for outdoor use, easily maintained, and have a reasonably long life cycle (e.g., 10 years before replacement).*

The Council finds that the proposed development complies with this criterion for the reasons stated in the Staff Report's Findings of Fact and Conclusions regarding this criterion and as conditioned in the Staff Report.

#### **8.370 Pedestrian Connections.**

- (1) New retail, office and institutional buildings at or near existing or planned transit stops shall provide for convenient pedestrian access to transit.*
- (2) Walkways shall be provided connecting building entrances and streets adjoining the site.*
- (3) Pedestrian connections to adjoining properties shall be provided except where such a connection is impractical. Pedestrian connections shall connect the on site circulation system to existing or proposed streets, walkways, and driveways that abut the property. Where adjacent properties are undeveloped or have potential of redevelopment, streets, accessways and walkways on site shall be laid out or stubbed to allow for extension the adjoining property. For the purposes of this section, "impractical" means where one or more of the following conditions exist:*
  - (a) Physical or topographic conditions make a connection impracticable. Such conditions include but are not limited to freeways, railroads, steep slopes, wetlands or other bodies of water where a connection could not reasonable be provided;*
  - (b) Buildings or other existing development on adjacent lands physically preclude a connection now or in the future considering the potential for redevelopment; or*
  - (c) Where streets or accessways would violate provisions of leases, easement, covenants, restrictions or other agreements existing as of May 1, 1995 which preclude a required street or accessway connection.*
- (4) On sites at major transit stops provide the following:*
  - (a) Either locate buildings within 20 feet of the transit stop, a transit street or an intersecting street or provide a pedestrian plaza at the transit stop or a street intersection.*
  - (b) A reasonable direct pedestrian connection between the transit stop and building entrances on the site.*
  - (c) A transit passenger landing pad accessible to disabled person.*
  - (d) An easement or dedication for a passenger shelter if requested by the transit provider.*
  - (e) Lighting at the transit stop.*

The Council finds that the proposed development complies with this criterion for the reasons stated in the Staff Report's Findings of Fact and Conclusions regarding this criterion and as conditioned in the Staff Report.

**8.380 Large Parking Areas.** *The amount of parking needed for larger commercial development can result in a large expanse of pavement. Landscaping within a parking area shall be incorporated in a manner that is both attractive and easy to maintain, minimizes the visual impact of surface parking, and improves environmental and climatic impacts. In addition to the provisions of Article 9, the following standards apply to commercial development where more than 75 parking spaces are proposed.*

*(1) Walkways are necessary for persons who will access the site by walking, biking or transit. A continuous pedestrian walkway at least 7 feet wide shall be provided from the primary frontage sidewalk to the customer entrance for each building. This internal walkway shall incorporate a mix of landscaping, benches, drop-off bays and bicycle facilities for at least 50 percent of the length of the walkway. The walkways must be designed for access by disabled persons. If the walkway crosses a parking area or vehicle aisle, the standards in subsection (2) below apply.*

*(2) For the safety of pedestrians, parking lots shall be designed to separate pedestrians from vehicles and include protected pedestrian walkways from parking areas to building entrances. Walkways shall be protected by landscaping or parking bumpers. Walkways shall have a minimum width of 7 feet with no car overhang or other obstruction; 9' 6" for car overhang on one side; 12 feet for car overhang on both sides. Walkways may cross a vehicle aisle if distinguished by a color, texture or elevation different from the parking and driving areas. Walkways shall not share a vehicle aisle.*

*(3) The parking area shall be divided into pods of no more than 50 spaces each with landscape strips, peninsulas, or grade separations to reduce the visual impact of large expanses of paving, to direct vehicular traffic through the parking lot, and to provide a location for pedestrian walkways.*

*(4) Pods may have access at one or both ends. A pod may be U-shaped with double access at one end.*

*(5) Pods shall be separated with physical breaks by providing one or more of the following:*

*(a) Landscape strips between parallel parking rows that are a minimum 5 feet in width with no car overhang and 10 feet in width with a car overhang. When incorporating pedestrian walkways, such strips shall be a minimum of 20 feet in width to accommodate vehicular overhangs, walkways, lights, posts and other appurtenances.*

*(b) Building pads, landscaped pedestrian walkways, interior streets or other site features.*

*(6) Landscaping for large parking areas shall consist of a minimum of seven percent of the total parking area plus a ratio of one tree per eight parking spaces to create a canopy effect. The total parking area includes parking spaces, travel aisles, sidewalks and abutting landscaped areas.*

The Council finds that the proposed development complies with this criterion for the reasons stated in the Staff Report's Findings of Fact and Conclusions regarding this criterion, as conditioned in the Staff Report, and for the following reasons:

1.1 The Oregon Specialty Structural Code 1103.1 requires only one route designed for access by disabled persons, provided that it is the most practical, direct route.

1.2 The Council adds the following condition to the approval:

At least one route designed for access by disabled persons shall be provided between each building in the proposed development from public transportation stop(s), accessible parking spaces, passenger loading and drop-off zones, and public streets or sidewalks. The accessible route shall be the most practical, direct route.

**8.390 Compatibility Details.** *Attention to detail can significantly increase the compatibility of commercial development with adjacent uses. Commercial development shall be designed to comply with the following applicable details and any other details warranted by the local conditions:*

*(1) On-site lighting is arranged so that light is reflected away from adjoining properties and/or streets.*



- (2) Any undesirable impacts produced on the site, such as noise, glare, odors, dust or vibrations have been adequately screened from adjacent properties.*
- (3) The site is protected from any undesirable impacts that are generated on abutting properties.*
- (4) Unightly exterior improvements and items such as trash receptacles, exterior vents and mechanical devices have been adequately screened.*
- (5) Storage areas, trash collection facilities and noise generating equipment are located away from public streets, abutting residential districts or development, or sight obscuring fencing has been provided.*
- (6) Where needed, loading facilities are provided on-site and are of sufficient size and number to adequately handle the delivery or shipping of goods or people. Where possible, loading areas should be designed so that vehicles enter and exit the site in a forward motion.*

The Council finds that the proposed development complies with this criterion for the reasons stated in the Staff Report's Findings of Fact and Conclusions regarding this criterion and as conditioned in the Staff Report.

**C. Adjustment Criteria (ADC 2.080)**

ADC 2.080 provides review criteria for an adjustment application as follows: *Alternative setbacks in developed areas are addressed in Sections 3.240, 4.130, and 5.130. All other adjustment requests will be approved if the Director finds that the applicant has shown that the following criteria have been met:*

- (1) The requested adjustment is for 10 percent or less of the numerical development standard.*

The Council finds that the proposed adjustment complies with this criterion for the reasons stated in the Staff Report's Findings of Fact and Conclusions regarding this criterion and as conditioned in the Staff Report.

- (2) The need for the requested adjustment is created by the configuration of an existing or proposed structure on the site.*

The Council finds that the proposed adjustment complies with this criterion for the reasons stated in the Staff Report's Findings of Fact and Conclusions regarding this criterion and as conditioned in the Staff Report.

**D. Response to Additional Testimony**

The applicant and opponents presented additional oral and written testimony after the preparation of the Staff Report. Their testimony is summarized below by issue. Findings responding to that testimony follow each issue.

- 1. **Issue:** An opponent argued that the proposed development would include a Wal-Mart. The opponent further argued against allowing this user to locate in the development and requested that the applicant agree not to allow Wal-Mart to operate on the site.

**Response:**

The Council finds that there is no evidence in the record indicating who will ultimately use the site. In fact, the Staff Report specifically states that this information is not known. Further, the Council concludes that the identity of a tenant(s) is not within the scope of the mandatory approval criteria

applicable to these applications. Accordingly, the Council has no legal basis to condition approval of the development on the inclusion or exclusion of any particular users or to request the applicant to agree to same.

- Issue:** The applicant requested confirmation that ADC 12.070 would allow the applicant to create the east/west collector street by deed and that no partition is required for this site.

**Response:**

ADC 12.070 states as follows:

***Creation of Streets.*** Streets are usually created through the approval of a subdivision or partition plat. However, the City Council may also approve the creation of a street by acceptance of a deed. If the creation of a street unintentionally results in a land partition, the owner is not required to apply for partition approval as long as the resulting parcels comply with Code standards.

The Council agrees to approve the creation of the east/west collector street by acceptance of a deed from the applicant in the City's standard form. The Council finds that creation of the east/west collector street will unintentionally and completely divide the property in half, leaving an independent parcel north of the road and another independent parcel south of the road. Thus, the Council finds that the creation of the street unintentionally results in a partition of the site. ADC 4.090 establishes minimum and maximum development standards, including that there is no required minimum lot width, lot depth, or minimum or maximum lot size. ADC 12.060 requires that no development may occur unless the development has frontage on or approved access to a public street currently open to traffic. After dedication and construction of the east/west collector street, each of the independent parcels on the site will comply with these standards. Accordingly, the Council finds that the applicant is not required to apply for partition approval in order to develop the site.

- Issue:** Opponents contend in various written testimony that ADC 2.600, 2.650(5) and 2.660 require the City to condition development of the site to require that it be carried out in a manner that minimizes impacts to homes in the Coastal Crossing subdivision, some of which are exhibiting signs of structural deficiencies. Specifically, opponents express particular concern for shifting ground and soils, water run-off, and vibration.

**Response:**

ADC 2.600 states the following:

***Purpose.*** Site Plan Review is intended to promote functional, safe, and attractive developments, which maximize compatibility with surrounding developments and uses and with the natural environment. Site Plan Review mitigates potential land use conflicts resulting from proposed development through specific conditions attached by the review body. Site Plan Review is not intended to evaluate the proposed use or the structural design of the proposal. Rather, the review focuses on the layout of a proposed development, including building placement, setbacks, parking areas, external storage areas, open areas, and landscaping.

For the reasons set forth below, ADC 2.600 is only a purpose statement, is not a development standard, and is therefore not applicable. LUBA has consistently held that where a purpose statement is a generally worded expression of the motivation for adopting the regulation or the goals the local government hopes to achieve by adopting the regulation, it does not play a direct role in reviewing the applications for permits under the land use regulations. See, e.g., *McKnight v. City of Portland*, 51 Or

LUBA 394, 399 (2006) (purpose statement of a Plan District was not a "regulation" and therefore did not need to be considered in the same manner as actual regulations); *Watts v. Clackamas County*, 51 Or LUBA 166, 172 (2006) (county did not err in failing to consider zoning code purpose statement when the statement did not provide approval criteria directly applicable to the request); *Home Builders Assoc. v. City of Eugene*, 41 Or LUBA 370, 385-86 (2002) ("[C]ode provisions that do not apply as approval criteria, such as purpose and applicability provisions are not 'approval standards' within the meaning of ORS 197.307(6)."); *Baker v. City of Garibaldi*, 49 Or LUBA 437, 450 (2005) (purpose statement stating in general terms "the basis and motivation for the PUD ordinance" did not require any additional actions by the City, so no error for the City in not considering whether the purpose statement had been met); *Mace Cadwell and Union Lumber Co. v. Union County*, 48 Or LUBA 500, 517 (2005) (when zoning code provided a purpose statement, separate approval standards, and a specific requirement that any conditional use "comply with standards of the zone for uses permitted outright," purpose statement was not an approval standard); *Bauer v. City of Portland*, 47 Or LUBA 459 (2004) (purpose provisions from zoning code were not mandatory approval criteria). ADC 2.600 is a generally worded statement of the City's intentions and objectives for the site plan review process. It is not a directive to the City to take or refrain from taking a particular action. Moreover, it does not mention any factors that must be satisfied before an approval can become final. The Council finds that this is not a mandatory approval criterion or a basis to impose the condition requested by opponents.

ADC 2.650(5) is an applicable review criterion for the site plan and requires the following: ***"The design and operating characteristics of the proposed development are reasonably compatible with surrounding development and land uses, and any negative impacts have been sufficiently minimized."*** As explained above, the Council finds that the proposed development complies with this criterion for the reasons stated in the Staff Report's Findings of Fact and Conclusions regarding this criterion, as conditioned in the Staff Report, for the reasons stated in these Supplemental Findings in response to this criterion, and as conditioned in these Supplemental Findings. Opponents have not presented substantial evidence to establish otherwise or to require the imposition of additional conditions. Moreover, the Council finds that this section is intended to control impacts arising from the operation and use of the site once developed, not those speculatively associated with the interim development activities of preparing the site for the use. Therefore, although ADC 2.660 permits the City to attach conditions to the approval of a Site Plan Review application in order to ensure that the proposal will conform to the applicable review criteria, the Council finds that no additional conditions are necessary in this case.

4. **Issue:** Opponents contend that the requested adjustment is unnecessary.

**Response:**

This is a restatement of a concern previously addressed by the applicant in a letter from WRG Design dated June 27, 2008, included as Attachment 5 to the Staff Report. The letter states as follows:

"The adjustment requested for the width of the drive aisles in the northern half of the development is created by the required configuration of proposed Buildings B, D and E. ADC 8.330(1) requires that these buildings be placed close to surrounding streets in order to create an attractive streetscape and pleasant pedestrian environment. The Applicant has designed the project to conform to these requirements as depicted in Exhibit A. The site has additional constraints, including the existing and proposed street network, which includes a 10 ft setback on the east-west collector street and along US 20 that creates a narrow development site surrounded by public streets on three sides, the need to locate a stormwater facility in the northeast corner of the site, and the lack of direct access onto either Goldfish Farm Road or US 20.

The site's pedestrian and vehicular circulation system is designed with the goal of providing safe, convenient, and attractive ingress to and egress from the site and each of the individual buildings on the site. However, in light of the site's constraints and the required configuration of the buildings, it is infeasible to design a parking and circulation system that complies with all of the City's standards. Rather than sacrifice the attractive configuration of the buildings, reduce parking lot landscaping, or minimize pedestrian connections, the Applicant has proposed to slightly reduce parking lot aisle widths for interior portions of the northern parcel. This reduction will not reduce the use or functionality of the parking field or jeopardize the safety of pedestrians, bicyclists, or vehicles on the site and will meet the intent of the ADC."

The Staff Report adopts the responses in this letter by reference as findings in support of the decision to approve the applications with conditions.

Since the date of this letter, the applicant has modified the site plan to include five (5) buildings (B, C, D, E, and F) on the northern portion of the property. These buildings are subject to the siting requirements of ADC 8.330(1). In addition, the record reflects the continued existence of the remaining site constraints described in the letter. Accordingly, on the basis of this evidence and the further findings made in response to ADC 2.080, the Council finds that the application satisfies the applicable standards for approval of the requested adjustment to the minimum drive aisle width.

5. **Issue:** Opponents contend that the on-site truck route should be placed to minimize the impact of truck traffic (frequency, noise, and pollution) on residents.

**Response:**

This is a restatement of a concern previously addressed by the applicant in a letter from WRG Design dated June 27, 2008, included as Attachment 5 to the Staff Report. The letter states as follows:

"The driveway that runs parallel to the southern property line will be located a minimum of 30 feet and up to 56 feet from the property line. In between the southern edge of the driveway and the south property line will be a densely planted vegetative screen consisting of large evergreen trees and shrubs. In addition, a solid six-foot screen wall will be located on the southern property line to enhance screening of truck noise and pollution.

The Applicant commissioned a noise study to verify that the six-foot screen wall will mitigate the anticipated truck noise. The study evaluated a worst case scenario that assumed refrigerated and dry good delivery trucks could arrive at Building A at any hour of the day or night. The analysis concluded that the most significant amount of noise to impact residents will be generated by the chillers on top of the Building A roof — not trucks. In order to off-set the noise from chillers, individual eight (8) feet high barriers could be constructed along side the chillers to effectively reduce their noise. Once the mitigation measures are included with the development, all noise produced by the shopping center will satisfy all DEQ noise regulation requirements. As verified by the noise study, the combination of distance, vegetative screening, and the solid screen wall adequately addresses the concern expressed about the potential negative impact of truck traffic on the residential neighborhood to the south of the project site."

The Staff Report adopts the response from this letter by reference as findings in support of the decision to approve the applications with conditions. The Council finds that this testimony establishes that the on-site truck route has been designed to mitigate impacts on residents.

6. **Issue:** Opponents contend that the lack of an access on Highway 20 will create congestion on Goldfish Farm Road.

**Response:**

This is a restatement of a concern previously addressed by the applicant in a letter from WRG Design dated June 27, 2008, included as Attachment 5 to the Staff Report. The letter states as follows:

"An ingress/egress point along Highway 20 will not be necessary for the proposed development. The nearby road network (including Goldfish Farm Road) will require certain improvements to mitigate anticipated traffic impacts of the proposed development. Details of these improvements are included in the Traffic Impact Analysis (TIA) submitted with the application. When all of the mitigation measures proposed by the Applicant are implemented, Goldfish Farm Road and Highway 20 will have enough capacity to accommodate the increased volume of traffic. This is supported by the letter submitted by ODOT dated June 2, 2008 that indicates an acceptable package of mitigation can be provided with the development.

The Applicant is also proposing improvements to the freeway off-ramps in the area as part of the mitigation measures included with the development as detailed in the TIA. The proposed improvements will extend the functional life of the ramp terminal and improve operating conditions."

The Staff Report adopts the responses in this letter by reference as findings in support of the decision to approve the applications with conditions. The Council likewise adopts these findings in response to opponents' restated contention.

7. **Issue:** Opponents expressed concern regarding the type of trees that will be installed in the buffer along the southern property line.

**Response:**

This is a restatement of a concern previously addressed by the applicant in a letter from WRG Design dated June 27, 2008, included as Attachment 5 to the Staff Report. That letter states as follows:

"The trees within the landscaped area along the southern property line are coniferous trees which will establish an evergreen visual buffer. The trees were selected primarily with non-needled foliage to minimize the impact of falling leaves or needles. No pine trees have been specified and the trees which were selected are varieties which will not get too tall or broad, thereby minimizing overhang into the adjoining properties. In addition, the trees were selected based on site-specific conditions, including a high water table. The trees will be staked at the time of planting, and the solid screen wall will offer some degree of a windbreak for the trees."

The Staff Report adopts the responses in this letter by reference as findings in support of the decision to approve the applications with conditions. The Council likewise adopts these findings in response to opponents' restated contention.

8. **Issue:** Opponents expressed concern that the stormwater ponds may have stagnant water, which will produce mosquitoes.

**Response:**

This is a restatement of a concern previously addressed by the applicant in a letter from WRG Design dated June 27, 2008, included as Attachment 5 to the Staff Report. That letter states as follows:

"A side effect of these ponds is the creation of some standing water. However, a significant amount of stagnant water will not occur with the proposed plan, and it will be far less than the existing 4 acre pond on site. At most, twelve inches of water will pond at the eastern portion of the southern pond, and within the northern pond, during winter months when mosquito habitat is not supported. During the summer months, when breeding occurs, when there is significant breeding, there is minimal storm water run-off and minimal standing water to support mosquito habitat."

The Staff Report adopts the responses in this letter by reference as findings in support of the decision to approve the applications with conditions. The Council likewise adopts these findings in response to opponents' restated contention.

9. **Issue:** An opponent contends that the entire City process is flawed and biased, because the City relies on plans and studies prepared by the applicant's consultants.

**Response:**

Pursuant to Oregon law, the applicant bears the burden of proof in this matter. Thus, it is typical (and consistent with the ADC) that the applicant retains consultants to prepare plans and studies to establish that the applicant satisfies its burden in this case. City staff and other applicable regulatory agencies (e.g., ODOT) have reviewed the methodologies and conclusions of these studies and have approved them, subject to conditions stated herein and in the Staff Report. Opponents have not presented any substantial evidence, such as an alternative traffic study or evidence explaining in what specific ways the applicant's studies are flawed, to lead to any other reasonable conclusion or to require the imposition of additional conditions by the Council. Instead, as explained above, the Council finds that the studies and plans in the record establish that the proposed development complies with the applicable approval criteria for the reasons stated in the Staff Report's Findings of Fact and Conclusions, as conditioned in the Staff Report, for the reasons stated in these Supplemental Findings, and as conditioned in these Supplemental Findings. Thus, the Council finds that the City's process is not flawed or biased.

10. **Issue:** An opponent contends that the City's procedures are flawed, because they only require disclosure of ex parte contacts that might bear negatively on the applicant.

**Response:**

The applicable provisions of state and local law are the following:

ORS 227.180(3) requires that in the event of *any* ex parte contact or bias resulting from such contact with the member of a decision-making body, the member of the decision-making body must disclose the substance of the contact or bias on the record and provide an opportunity for rebuttal.

ADC 1.460, which states:

***Ex Parte Contacts.*** *The general public has a right to have review body members free from prehearing or ex parte contacts on matters heard by them. It is recognized that a countervailing public right is free access to public officials on any matter. Should ex parte communications occur at the beginning of the hearing, the review body member shall reveal the source and substance of any significant prehearing or ex parte contacts regarding any matter at the commencement of the public hearing on such and the Chair shall allow for rebuttal of any information received through ex parte contact. If such contacts have not impaired the member's impartiality or ability to vote on the matter, the member shall so state and shall participate or abstain in accordance with the following section.*

Both state and local laws provide for disclosure of any ex parte contact, regardless of who initiates it or which side is potentially affected by it. Thus, the Council finds that the opponent has misstated the applicable law in this area. Moreover, in this case, at the commencement of the public hearing in this matter, Mayor Bedore provided an opportunity for Council members to declare ex parte contacts and for members of the public to rebut same. Thus, the Council finds that its procedures complied with applicable law in this case and there has been no error.

11. **Issue:** An opponent requested that the City postpone its decision in this matter until it has received a "full and complete study of the economic impact on the City."

**Response:**

The applicant testified at the hearing in this matter that development of the project would represent an investment of approximately \$45 million in the community (including approximately \$3 million in public infrastructure improvements) and would likely generate 250 to 300 construction jobs and 500 long-term service-sector positions. Moreover, the project is expected to produce \$800,000 per year in ad valorem tax revenue. The applicant will also pay System Development Charges in accordance with standard City rates and procedures at the time that building permits are issued on the site. No substantial evidence was offered to rebut this testimony, to identify any specific costs that the development may impose on the City, or to explain how this issue relates to any applicable mandatory approval criteria. The Council finds that this evidence establishes that the development of the site in accordance with the applications, as conditioned, will provide a substantial fiscal benefit to the community. For these reasons, the Council finds that there is no reason to complete an additional study on this issue.

12. **Issue:** An opponent contends that development of the shopping center project will negatively impact property values in the Coastal Crossing subdivision.

**Response:**

The opponent has not offered any evidence to substantiate this contention. Accordingly, the Council finds that there is no substantial evidence in the whole record to support this contention.

ORDINANCE NO. \_\_\_\_\_

AN ORDINANCE TO LEVY ASSESSMENTS AGAINST PROPERTY SPECIFICALLY BENEFITED BY SEWER AND WATER CONNECTIONS AND THE ASSESSMENT OF SEWER, WATER, PARKS, AND TRANSPORTATION SYSTEM DEVELOPMENT CHARGES FOR PROPERTY DESCRIBED AS TAX LOT 400, OF PARCEL 11S-03W-08CC, AND SITE ADDRESS 1910 GEARY ST SE; AND DECLARING AN EMERGENCY.

WHEREAS, the Sewer and Water System Development Charges, as referred to in this ordinance, are to provide sewer and water connections to serve the structures on this property; and

WHEREAS, the Transportation System Development Charge is intended to assess charges for future expansion or capacity increases to the system. This expansion is aimed at providing additional levels of services to the existing road network; and

WHEREAS, the Parks System Development Charge is intended to impose a portion of the public cost of capital improvements for parks upon properties where developments create the need, or increase the demand for park improvements; and

WHEREAS, these charges will be assessed on the property described as Tax Lot 400, of Parcel number 11S-03W-08CC, and site address 1910 Geary St SE. This property is being developed as Geary Street Apartments, which will include six apartment buildings, SP-18-08.

THEREFORE, THE PEOPLE OF THE CITY OF ALBANY DO ORDAIN AS FOLLOWS:

Section 1: The Sewer, Water, and Transportation System Development Charges and the assessments for the same will be levied according to the provisions of Albany Municipal Code, Chapter 15.16. The Parks System Development Charge and the assessment for the same will be levied according to the provision of Albany Municipal Code, Chapter 15.20.

Section 2: The total cost of the Sewer, Water, Transportation, and Parks System Development Charges is \$228,451.58.

(See attached assessment sheet)

Section 3: The City Recorder is hereby directed to enter a statement of the assessments as provided above in the docket of the City liens and give notice thereof as provided by law.

Section 4: Inasmuch as this ordinance is necessary for the immediate preservation of the peace, health, and safety of the City of Albany, Oregon, an emergency is hereby declared to exist; and this ordinance will be in full force and effect immediately upon passage by the Council and approval by the Mayor.

Passed by the Council: \_\_\_\_\_

Approved by the Mayor: \_\_\_\_\_

Effective Date: \_\_\_\_\_

\_\_\_\_\_  
Mayor

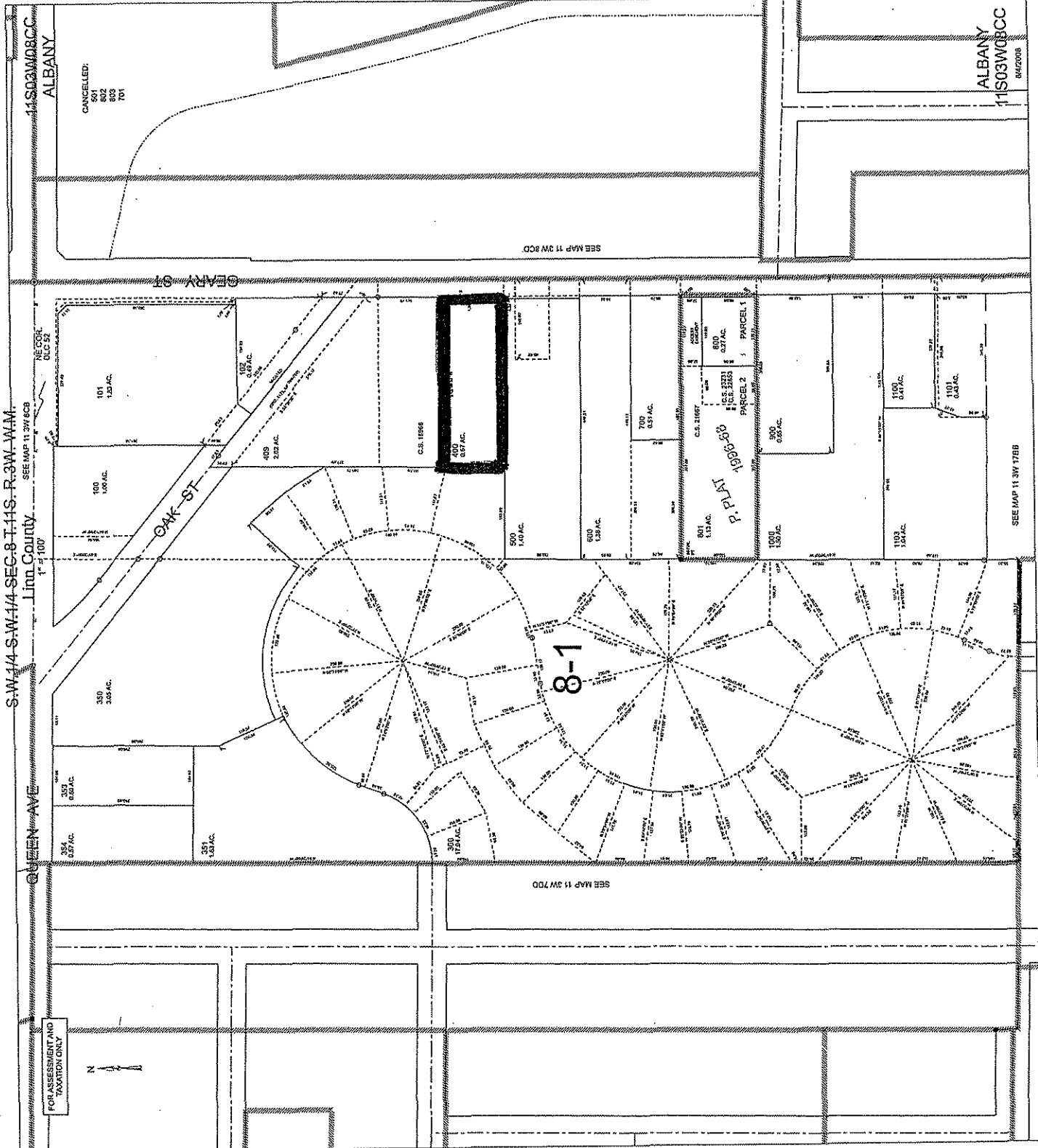
ATTEST:

\_\_\_\_\_  
City Clerk



<u>Owner of Record</u>	<u>Property Description</u>	<u>Assessment Description</u>
KCH Enterprises, LLC Kevin Harrison 10355 Liberty Rd S Salem, OR 97306	Acreage 1910 Geary St SE Albany, OR 97322 11S 03W 08CC 00400	Parks SDC Amount: \$ 50,314.58 Acct # psdc0000-5659-001 Geary Street Apartments
KCH Enterprises, LLC Kevin Harrison 10355 Liberty Rd S Salem, OR 97306	Acreage 1910 Geary St SE Albany, OR 97322 11S 03W 08CC 00400	Sewer SDC Amount: \$102,168.00 Acct # ssdc5700-0001-000 Geary Street Apartments
KCH Enterprises, LLC Kevin Harrison 10355 Liberty Rd S Salem, OR 97306	Acreage 1910 Geary St SE Albany, OR 97322 11S 03W 08CC 00400	Transportation SDC Amount: \$ 49,670.00 Acct # stsd5700-0001-000 Geary Street Apartments
KCH Enterprises, LLC Kevin Harrison 10355 Liberty Rd S Salem, OR 97306	Acreage 1910 Geary St SE Albany, OR 97322 11S 03W 08CC 00400	Water SDC Amount: \$ 26,299.00 Acct # wsdc5700-0001-001 Geary Street Apartments

Report Total: \$228,451.58





TO: Albany City Council  
VIA: Wes Hare, City Manager  
FROM: Jim Delapoer, City Attorney JD MS  
DATE: November 6, 2008, for the November 12, 2008, City Council Meeting  
SUBJECT: Changes in Downtown Parking Enforcement

RELATES TO STRATEGIC PLAN THEME: • An Effective Government

Action Requested:

Adopt changes to AMC 13.21 regulating parking in the downtown enforcement area.

Discussion:

The current provisions of AMC Chapter 13, which allow Parkwise to enforce downtown parking regulations, need to be updated to address concerns raised by Circuit Judge Glen Baisinger and to bring our ordinance format into complete compliance with Parkwise's current enforcement efforts. In the past, Parkwise enforcement officers would issue citations which, if not paid, were then turned over to a collection agency. In a small claims proceeding in 2006, Judge Baisinger questioned whether Parkwise actually had sufficient ordinance authority to impose fines which could then be collected as civil judgments.

In order to address this concern, staff proposes to change the enforcement procedures so that offenders who disregard their parking citations or refuse to resolve the issue with the Parkwise Board of Parking Reconciliation will be cited into Municipal Court and subject to the infraction penalties available there. Essentially, the ordinance changes allow Parkwise to benefit from the enforcement strength of our Municipal Court in the relatively rare cases where citizens refuse to pay their citations.

City staff met with Parkwise staff several times in 2007 and 2008 to review existing code language and prepare new language to clarify the Parkwise role.

In brief, the amending ordinance:

- Makes it clear that employees of the Downtown Association or Parkwise are issuing officers entitled to issue parking citations under the Albany Municipal Code.
- Specifies an alternative procedure for issuing citations. The current procedure does not follow the Code since Parkwise cites violators to appear before a committee of the Downtown Association Board rather than into Municipal Court. The revised ordinance formally establishes the Board of Parking Reconciliation and allows that board to try to compromise and settle parking violations. The ordinance also prescribes a process for the enforcement officer to issue citations into Municipal Court if the violator does not appear before the Board of Parking Reconciliation or does not pay the fine.
- Provides alternative citation options. If a police officer issues a parking citation, s/he follow customary practice by citing into Municipal Court. Parkwise staff would only cite into Municipal Court if the Reconciliation Board option fails.
- Makes it clear that Parkwise citations into Municipal Court must meet the minimum requirements of ORS 221.333. The existing Code cites an out-of-date statute.

- Establishes an affirmative defense for people to avoid a citation if they are a patron of a downtown business or office or a downtown resident.

Budget Impact:

None.

JVBD: mms:de

Attachment

c: Ed Boyd, Chief of Police

Rick Rogers, Albany Downtown Association

*U:\Administrative Services\City Manager's Office\Resolution\Parkwise changes ccmo 11-08.doc*

ORDINANCE NO. \_\_\_\_\_

AN ORDINANCE AMENDING CHAPTER 13.21 OF THE ALBANY MUNICIPAL CODE CONCERNING PARKING REGULATIONS AND DECLARING AN EMERGENCY.

THE PEOPLE OF THE CITY OF ALBANY DO ORDAIN AS FOLLOWS:

Section 1: AMC 13.21.115 (3)(a) is amended to read as follows replaced with the following:

- (3)(a) Except as provided in subsection (3)(b) and (c) of this section, no person shall:**
- (i) at an area designated for limited time parking or for customer parking;**
  - (ii) cause, allow, suffer or permit any motor vehicle owned, operated or controlled by that person to be parked in violation of a sign limiting parking beyond the limitations applicable to customer-only parking as provided in subsection (v) below**
  - (iii) cause, allow, suffer or permit any motor vehicle owned, operated or controlled by that person to be parked in a manner which occupies more than one designated parking space.**
  - (iv) cause, allow, suffer or permit any motor vehicle owned, operated or controlled by that person to be parked in a city-owned parking space leased by the Albany Downtown Association or Parkwise to someone other than the violator.**
  - (v) cause, allow, suffer or permit any motor vehicle owned, operated or controlled by that person to be parked longer than the time designated for customer-only parking.**

Section 2: Section AMC 13.21.130 of the Albany Municipal Code is amended to read as follows replaced with the following:

**13.21.130 Enforcement responsibility.**

**The Chief of Police and police officers employed by the City shall have the responsibility for the enforcement of the provisions of this chapter. In addition, other persons or corporations including, but not limited to, individuals employed by the Albany Downtown Association or Parkwise to perform parking enforcement duties shall have authority and responsibility to enforce the parking regulation set forth at AMC 13.21.115. Both police officers, having general enforcement authority, and person or corporations contracted to manage parking within the downtown area as noted above, shall be considered "issuing officers" for the purposes of ORS 221.333.**

Section 3: AMC 13. 21.140 is amended to read as follows:

**13.21.140 Responsibility of owner for parking violations.**

- (1) The owner of a vehicle parked in violation of AMC 13.21.010 through 13.21.120 shall be responsible for the offense, except where the use of the vehicle was secured by the operator without the owner's consent.**
- (2) In a prosecution of a vehicle owner charged with a violation of AMC 13.21.010 through 13.21.120, proof that at the time of the alleged violation the vehicle was registered with the appropriate motor vehicle licensing authority of any state as belonging to the defendant shall raise a disputable presumption that he/she was the owner at the time of the violation in question.**
- (3) In any prosecution of a vehicle owner charged with a violation of AMC 13.21.115, it shall be an affirmative defense if the violator establishes that, at the time the vehicle is parked in a customer only area, the offender was a customer, patron, or guest, of a business, office, or resident owning or occupying property within the downtown parking area."**

Section 4: AMC 13.21.160 is amended to read as follows:

13.21.160 Methods of charging parking violations.

- (1) Whenever any officer having enforcement responsibility as provided in AMC 13.21.130 shall have reasonable cause to believe that a vehicle is parked in violation of any of the provisions of AMC 13.21.010 through 13.21.120, **excluding 13.21.115**, he/she shall issue a citation in conformance with ORS 221.340, and file the original thereof with the Municipal Court Clerk or such other person as the Clerk may designate to receive such citations.
- (2) Whenever any officer having enforcement responsibility as provided in AMC 13.21.130 shall have reasonable cause to believe that a vehicle is parked in violation of any of the provisions of AMC 13.21.115, he/she shall issue a citation as set forth below.
  - (a) The citation shall cite the violator to appear before a board of parking reconciliation which shall be established by the Albany Downtown Association or Parkwise to provide initial adjudication and resolution of parking violations. The Board of Parking Reconciliation is authorized to compromise and settle parking violations with the person charged with a violation upon such terms as the board deems just. If the forfeiture is not paid pursuant to the schedule and amount set forth herein or if the penalty determined by the Board of Parking Reconciliation is not paid, as prescribed by the Board, the enforcement officer who initiated the original citation shall cause a citation to be filed with the Albany Municipal Court and delivered to the Defendant by first-class mail, postage prepaid, addressed to the Defendant at his/her address as shown by the records then maintained by the Oregon Department of Motor Vehicles. The parking citation shall conform to the requirements of section (2) hereof. The penalty established by the forfeiture schedule set forth herein or the Board of Parking Reconciliation, whichever is greater, shall be noted on the parking citation.
  - (b) In order to file a parking citation with the Albany Municipal Court, the original thereof shall be filed with the Municipal Court Clerk or such other person the clerk may designate to receive such citations. The citation shall be in conformance with the requirements of ORS 222.333.”
  - (c) Before midnight on the tenth day following the date of the alleged violation, any person charged with a violation of AMC 13.21.115(3)(a)(i-iv) may, without personal appearance before the Board of Parking Reconciliation, make a forfeiture deposit in the amount shown on the citation charging such offense, which amount shall be \$25.00. Thereafter, the forfeiture amount shall increase to \$30.00 if paid before midnight on the 30<sup>th</sup> day following the alleged violation. If not paid by such date, the forfeiture amount shall increase to \$60.00
  - (d) Before midnight on the tenth day following the date of the alleged violation, any person charged with a violation of AMC 13.21.115(3)(a)(v) may, without personal appearance before the Board of Parking Reconciliation, make a forfeiture deposit in the amount shown on the citation charging such offense, which amount shall be \$5.00. Thereafter, the forfeiture amount shall increase to \$10.00 if paid before midnight on the 30<sup>th</sup> day following the alleged violation. If not paid by such date, the forfeiture amount shall increase to \$20.00.

Section 5: AMC 13.21.170 (1) Forfeiture is amended to read as follows:

(1) Before midnight on the fourteenth day following the date of the alleged violation, any person charged with a violation of AMC 13.21.010 through 13.21.120, **excluding AMC 13.21.115**, may, without personal appearance before the Municipal Judge, make a forfeiture deposit in the amount shown on the citation charging such offense, which amount shall be for an alleged violation of:

(a) AMC 13.21.020(1), 13.21.030 (1) through (14), 13.21.050(1), 13.21.070, 13.21.080, 13.21.090, 13.21.100, and any other violation of 13.21.010 through 13.21.120, **excluding AMC 13.21.115**, and any other parking regulations for which a specific forfeiture deposit is not set forth below, [\_\_\_\_].

(b) AMC 13.21.020(2), 13.21.040, [\_\_\_\_].

(c) AMC 13.21.030(12), [\_\_\_\_].

(d) AMC 13.21.050(2) and (3), [\_\_\_\_].

Emergency Clause. In as much as this ordinance is necessary for the immediate preservation of the public peace, health, and safety of the city of Albany, and an emergency is hereby declared to exist; and this Ordinance shall take effect and be in full force and effect when signed by the Mayor.

Passed by the Council: \_\_\_\_\_

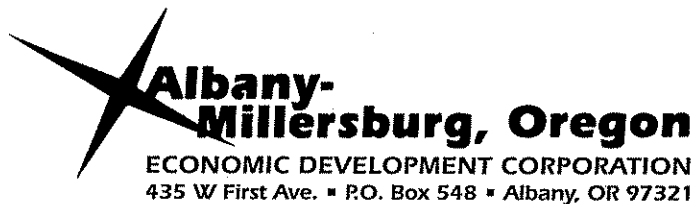
Approved by the Mayor: \_\_\_\_\_

Effective Date: \_\_\_\_\_

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk



## Memo

Date: October 29, 2008

To: Albany City Council

From: John Pascone, South Santiam Enterprise Zone  
On behalf of John Hitt, City of Lebanon, Zone Co-Manager

Subject: Request for Approval  
Entek Membranes, LLC  
Agreement for Extended Enterprise Zone Benefits

### Reason for Request

Entek has submitted an Enterprise Zone Authorization Application and has requested Extended Benefits beyond the regular three year tax exemption. Regulations require that the company enter into an Agreement with the city and other enterprise zone sponsors. In order to qualify for the additional two years, the company must pay 150% of Linn County's Average Annual Wage to the new employees; which they have agreed to do.

The project is a \$12.9 million expansion adding another production line; 8 new jobs will be created.

Since the company is planning on expanding in the City of Lebanon, the Lebanon city council has already approved the agreement. The approval of the other sponsors; City of Albany, Millersburg and Linn County is now required.

The City of Millersburg council and Linn County commissioners have already approved the agreement.

Thank you for your support.



RESOLUTION NO. \_\_\_\_\_

A RESOLUTION APPROVING AN EXTENDED PROPERTY TAX ABATEMENT AGREEMENT BETWEEN THE CITY OF ALBANY, A COSPONSOR OF THE SOUTH SANTIAM ENTERPRISE ZONE, AND ENTEK MEMBRANES, LLC

WHEREAS, Entek Membranes, LLC, is investing in construction of a third product line; and

WHEREAS, Entek Membranes, LLC, intends to add eight new employees; and

WHEREAS, Entek Membranes, LLC, anticipates providing average pay and benefits to these employees equal to or greater than 150 percent of the Linn County average, as required under ORS 285C.160; and

WHEREAS, Entek Membranes, LLC,, which is located in the city of Lebanon, has applied to extend the property tax abatement for which it qualifies through its inclusion in the South Santiam Enterprise Zone; and

WHEREAS, the City of Lebanon has requested support of this agreement from the other cosponsors of the South Santiam Enterprise Zone; and

WHEREAS, the City of Albany is a cosponsor of the South Santiam Enterprise Zone.

NOW, THEREFORE, BE IT RESOLVED that the attached Extended Abatement Agreement is hereby approved by the Albany City Council.

DATED AND EFFECTIVE THIS 12<sup>TH</sup> DAY OF NOVEMBER 2008.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

## **AGREEMENT FOR OREGON ENTERPRISE ZONE EXTENDED ABATEMENT**

### **AGREEMENT WITH THE SOUTH SANTIAM ENTERPRISE ZONE SPONSORS TO EXTEND PROPERTY TAX EXEMPTION TO FIVE CONSECUTIVE YEARS IN TOTAL FOR CAPITAL INVESTMENT BY ENTEK MEMBRANES, LLC.**

The sponsors of the South Santiam Enterprise Zone comprising the governing bodies of the City of Albany, City of Lebanon, City of Millersburg and Linn County (hereinafter "The Zone Sponsor") and ENTEK Membranes, Lebanon (hereinafter "The Firm") do hereby enter into an agreement for extending the period of time in which The Firm shall receive an exemption on its investment in qualified property in the South Santiam Enterprise Zone contingent on certain special requirements, under ORS 285C.160 (2003).

The Zone Sponsor and The Firm jointly acknowledge: that subject to submission and approval of an application for authorization and the satisfaction of other requirements under ORS 285C.050 to 285C.250, The Firm is eligible for three years of complete exemption on its qualified property; that nothing in this agreement shall modify or infringe on this three-year exemption or the requirements thereof, and that this agreement becomes null and void if The Firm does not qualify for these three years of the exemption.

The Zone Sponsor extends The Firm's property tax exemption an additional two years on all property that initially qualifies in the South Santiam Enterprise Zone in the assessment year beginning on January 1, 2010 and, thus, sets a total period of exemption of five consecutive years during which statutory requirements for the standard three-year enterprise zone exemption must also be satisfied and maintained.

#### **CONFIRMATION OF STATUTORY PROVISIONS**

In order to receive the additional two years of enterprise zone exemption granted herein, The Firm agrees herewith under 285C.160 (3) (a) (A) that for each year of the entire exemption period, all of The Firm's new employees shall receive an average level of compensation equal to or greater than 150 percent of the county average annual wage, in accordance with the specific definitions and guidelines in Oregon Administrative Rules (OAR), Chapter 123, Division 065, which provides that:

1. Such compensation may include non-mandatory benefits that can be monetized;
2. The county average annual wage is set at the time of authorization, except as pursuant to ORS 285C.160 (4), according to the 2006 Linn County average annual wage rate of \$33,486 for which 150 percent equals \$50,229.

3. Only employees working at jobs filled for the first time after the application for authorization but by December 31 of the first full year of the initial exemption and performed within the current boundaries of the South Santiam Enterprise Zone are counted; and

4. Only full-time, year-round and non-temporary employees engaged a majority of their time in The Firm's eligible operations consistent with ORS 285C.135 & 285C.200(3) are counted, regardless if such employees are leased, contracted for or otherwise obtained through an external agency or are employed directly by The Firm.

**LOCAL ADDITIONAL REQUIREMENTS**

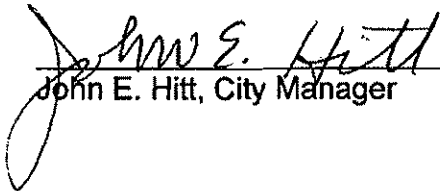
For The Firm to receive the additional two years of enterprise zone exemption granted herein, the Zone Sponsor and The Firm agree that there are no additional requirements besides the statutory requirements.

ACCEPTING FOR THE CITY OF LEBANON,  
A ZONE SPONSOR OF THE SOUTH  
SANTIAM ENTERPRISE ZONE:

ACCEPTING FOR ENTEK  
MEMBRANES, LLC:

  
\_\_\_\_\_  
Kenneth I. Toombs, Mayor

\_\_\_\_\_  
Daniel T. Powell, Chief Financial Officer

  
\_\_\_\_\_  
John E. Hitt, City Manager

*The City of Albany, City of Millersburg and Linn County, zone co-sponsors, approve this Agreement by passing separate Resolutions. Copies of which are attached.*

A RESOLUTION APPROVING AN EXTENDED ) RESOLUTION NO. 32  
PROPERTY TAX ABATEMENT AGREEMENT )  
BETWEEN THE CITY OF LEBANON, A CO- ) for 2008  
SPONSOR OF THE SOUTH SANTIAM ENTERPRISE )  
ZONE, AND ENTEK MEMBRANES, LLC )

WHEREAS, Entek Membranes, LLC is investing in construction of a third production line, and

WHEREAS, Entek Membranes, LLC intends to add eight new employees; and

WHEREAS, Entek Membranes, LLC anticipates providing average pay and benefits to these employees equal to or greater than 150 percent of the Linn County average, as required under ORS 285C.160; and

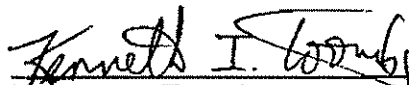
WHEREAS, Entek Membranes, LLC, which is located in the City of Lebanon, has applied to extend the property tax abatement for which it qualifies through its inclusion in the South Santiam Enterprise Zone; and

WHEREAS, the City of Lebanon is a cosponsor of the South Santiam Enterprise Zone.

NOW, THEREFORE, BE IT RESOLVED that the attached Extended Abatement Agreement of September 24, 2008 is herein approved.

Section 1. This Resolution becomes effective October 24, 2008.

Passed by the Lebanon City Council by a vote of 12 for and 0 against and approved by the Mayor this 24<sup>th</sup> day of September, 2008.

  
\_\_\_\_\_  
Kenneth I. Toombs, Mayor   
Bob Elliott, Council President

ATTEST:

  
\_\_\_\_\_  
Linda G. Kaser, City Clerk/Recorder



TO: Albany City Council

VIA: Wes Hare, City Manager  
Diane Taniguchi-Dennis, P.E., Public Works Director *Diane Dennis*

FROM: Mark Shepard, P.E., Assistant Public Works Director/City Engineer *MWS*  
Ron Irish, Transportation Systems Analyst *R. Irish*

DATE: October 23, 2008, for the November 12, 2008 , City Council Meeting

SUBJECT: Parking Restriction Request for 1290 Industrial Way

RELATES TO STRATEGIC PLAN THEME: • A Safe City

Action Requested:

Staff recommends Council approve, by resolution, a 50-foot parking restriction on the west side of Industrial Way just north of the driveway exit from 1290 Industrial Way.

Discussion:

Staff received a request (attached) from Synthetech, 1290 Industrial Way, for implementation of a parking restriction on the north side of the facility's exit onto Industrial Way. The request is for 50 feet of yellow curb.

Industrial Way is a two-lane local street with parking allowed on both sides of the street. The speed limit is 25 mph. Industrial land uses occupy both sides of the road, and on street parking is heavily utilized. Cars are often parked very close to driveways, and restrict the sight distance for drivers attempting to exit driveways. Synthetech has separate driveways for entering and exiting vehicles. The driveways are used by both passenger vehicles and trucks. Synthetech has requested installation of 50 feet of yellow curb on the north side of their exit driveway in order to assure drivers exiting the facility with adequate sight distance. The area where parking would be removed is along the street frontage of the Synthetech property.

Budget Impact:

None.

RGI:kw  
Attachments (3)

**Irish, Ron**

---

**From:** Deron Neukomm [deron.neukomm@synthetech.com]  
**Sent:** Tuesday, October 14, 2008 3:54 PM  
**To:** Irish, Ron  
**Subject:** Curb painting at Synthetech, 1290 Industrial Way, Albany

Hello Ron,

As a follow-up to our telephone conversation yesterday, I would like to submit a request to the City to paint the sidewalk curbing at Synthetech. In order to safety exit our site, we need to have an unobstructed view of oncoming traffic. To accommodate this by keeping vehicles from parking up to the exit gate, we would like to have 50 feet of curbing painted yellow to the left (northeast) side of our vehicle exit gate.

Please let me know if the City could help us with this request.

Best regards,

Deron

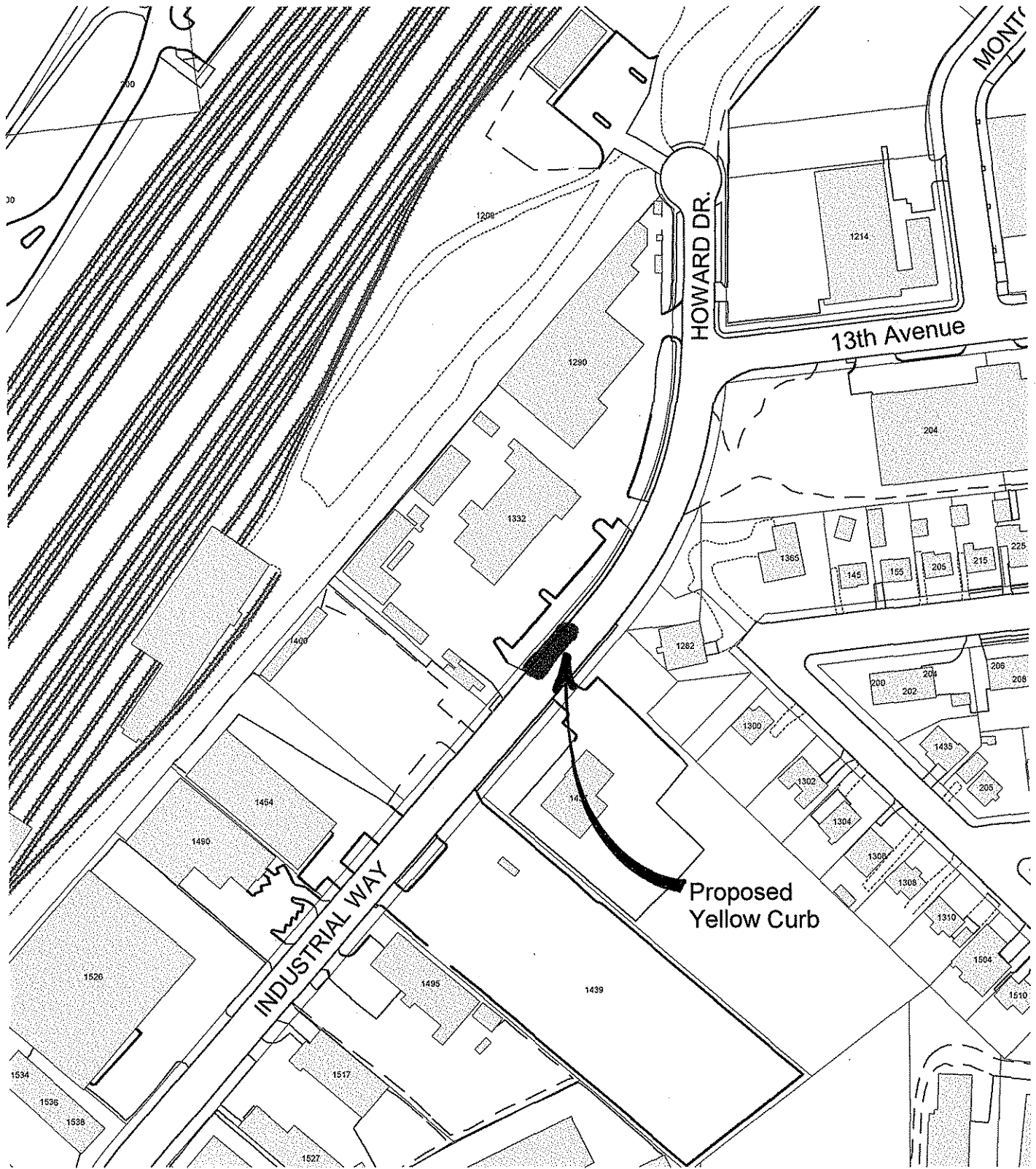
Deron Neukomm, ASQ-CQM, CQA  
QA / EHS&S Manager  
Synthetech, Inc.

[www.synthetech.com](http://www.synthetech.com)

1290 Industrial Way  
Albany, OR 97322

Phone: 541-967-6575 x255  
Fax: 541-967-9424

\*\*\*\*\*



# 1290 Industrial Way



Engineering

roni nil

Ron Irish

Oct 22, 2008

0 100 Feet

The City of Albany's infrastructure records, drawings, and other documents have been gathered over many decades, using differing standards for quality control, documentation, and verification. All the information provided represents current information in a readily available format. While the information provided is generally believed to be accurate, occasionally this information proves to be incorrect, and thus its accuracy is not warranted. Prior to making any property purchases or other investments based in full or in part upon the information provided, it is specifically advised that you independently verify the information contained within our records.



RESOLUTION NO. \_\_\_\_\_

RESOLUTION ESTABLISHING A 50-FOOT PARKING RESTRICTION AT 1290 INDUSTRIAL WAY.

WHEREAS, the City has received a request for a parking restriction from the owner of the property at 1290 Industrial Way; and

WHEREAS, the restriction would be for a length of 50 feet and be located on the frontage of and immediately adjacent to the driveway exiting the site; and

WHEREAS, the parking restriction is intended to improve sight distance and safety for drivers exiting the site by preventing vehicles from being parked immediately adjacent to the driveway.

NOW, THEREFORE, BE IT RESOLVED that the City Council does hereby authorize the following parking restrictions:

1. Creation of a 50-foot parking restriction on the west south side of Industrial Way just north of the driveway exit from 1290 Industrial Way.

DATED AND EFFECTIVE THIS 12<sup>th</sup> DAY OF NOVEMBER 2008.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk





TO: Albany City Council

VIA: Wes Hare, City Manager  
Diane Taniguchi-Dennis, P.E., Public Works Director *Diane Dennis*

FROM: Mark Shepard, P.E., Assistant Public Works Director/City Engineer *MWS*  
Ron Irish, Transportation Systems Analyst *R.I.*

DATE: October 23, 2008, for the November 12, 2008 , City Council Meeting

SUBJECT: Parking Restriction Request for 36th Avenue

RELATES TO STRATEGIC PLAN THEME: • A Safe City

Action Requested:

Staff recommends Council approve, by resolution, a parking restriction on the south side of 36th Avenue east of Columbus Street that would prohibit parking "On School Days between 7:00 a.m. and 4:00 p.m."

Discussion:

The School District has requested (letter attached) implementation of a parking restriction on the south side of 36th Avenue along South Albany High School. The restriction would extend from Columbus Street 975 feet to the east, and would prohibit parking on school days between the hours of 7:00 a.m. and 4:00 p.m.

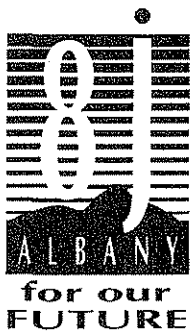
Currently 36th Avenue is constructed as a partial width street along the requested parking restriction. The north side of the street lacks curb, gutter, and sidewalk. The pavement width is approximately 26 feet. When cars are parked along the south side of the road, the remaining pavement width is only about 18 feet, allowing for a nine-foot travel lane in each direction. A female student was involved in a vehicle-pedestrian crash on this section of 36th Avenue on the first day of school this year. The student walked around the back of a stopped westbound vehicle and was struck while attempting to cross the eastbound travel lane. The congestion on the road and narrowness of the travel lanes (because of the parked cars) may have contributed to the crash.

South Albany High School has adequate on-site parking to accommodate the students who attend the school. Students park along 36th Avenue because it is closer and more convenient to classes, not because of a lack of spaces in the on-site parking lots.

Budget Impact:

None.

RGI:  
Attachments (3)



Greater Albany  
Public School District 8J

RECEIVED

OCT 2 2008

PUBLIC WORKS/ENGINEERING 18 Seventh Avenue SW  
Albany, Oregon 97321-2399  
www.albany.k12.or.us

Phone (541) 967-4501  
Business FAX (541) 967-4587  
Instruction FAX (541) 967-4584

September 29, 2008

Mr. Ron Irish, Systems Analyst  
Public Works Department  
City of Albany  
P.O. Box 49  
Albany, OR 97321

Dear Mr. Irish,

I am requesting a restriction to parking on the south side of 36th Avenue adjacent to South Albany High School.

On September 3, 2008, a South Albany High School student was struck by a vehicle on 36th Avenue adjacent to the school. I believe that the narrow dimension of the street combined with the congestion caused by parked vehicles and the heavy traffic flow at the beginning of school hours were contributing factors to the incident. South Albany High School principal Chris Equinoa reported that congestion in the area also caused a delay to emergency vehicles attempting to reach the student. Although the student was not seriously injured, I wish to take steps to reduce the possibility of a reoccurrence.

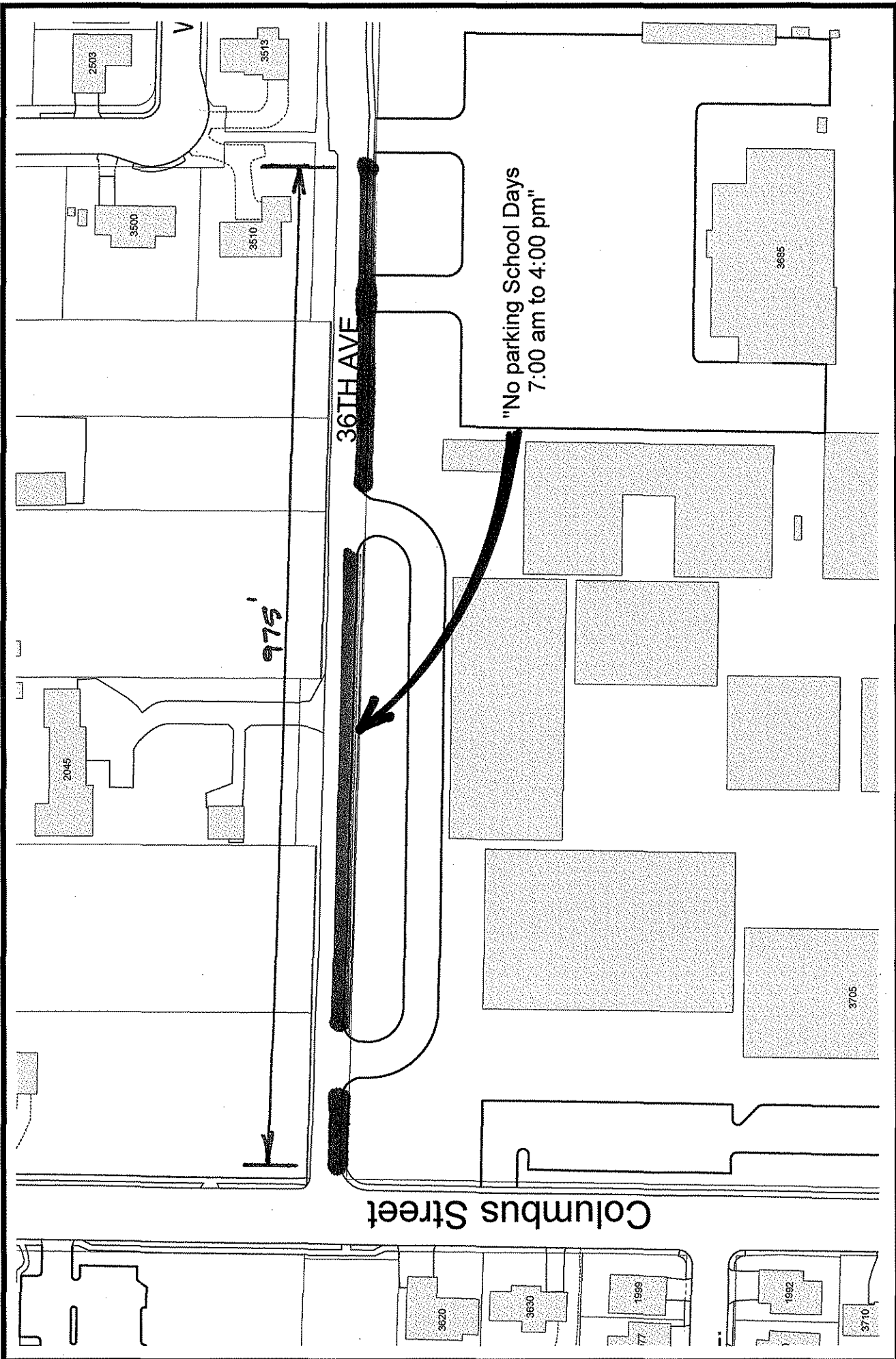
I request that the south side of 36<sup>th</sup> Avenue from Columbus Street east to the eastern entrance to the pool parking lot be designated as a no parking area during school hours of operation. Those hours would be Monday through Friday from 7:00 a.m. to 4:00 p.m. each day. This restriction would eliminate approximately 30 street parking spaces for nine hours per day during the school week. The restriction would not adversely affect school parking capacity as the school has more than enough spaces in two parking lots to absorb those vehicles. There would be no affect on after-school activities attended by the public as after-school events usually begin after 4:00 p.m.

South Albany High School principal Chris Equinoa spoke with Deputy Fire Marshall Bob Brooks who surveyed the scene and is fully supportive of a parking restriction.

Thank you for your continued support of the Greater Albany Public School District.

Sincerely,

Maria Delapoer  
Superintendent of Schools



# South Albany High School



The City of Albany's infrastructure records, drawings, and other documents have been gathered over many decades, using differing standards for quality control, accuracy, and verification. All the information provided is generally believed to be accurate, occasionally this information may be incorrect, and there is no warranty in its use. Prior to use, it is recommended that users independently verify the information contained within our records.

Oct 14, 2008

Ron Irish

Engineering

roni.rli



RESOLUTION NO. \_\_\_\_\_

RESOLUTION ESTABLISHING A PARKING RESTRICTION ON 36<sup>TH</sup> AVENUE ADJACENT TO SOUTH ALBANY HIGH SCHOOL.

WHEREAS, the Greater Albany Public School District 8J has requested implementation of a parking restriction along the south side of 36th Avenue adjoining South Albany High School, and

WHEREAS, due to the narrowness of the road an on-street parking restriction would improve the safety of the road for all users.

NOW, THEREFORE, BE IT RESOLVED that the City Council does hereby authorize the following parking restrictions:

1. Creation of a parking restriction on the south side of 36th Avenue from Columbus Street 975 feet to the east that will prohibit parking "On School Days between 7:00 a.m. and 4:00 p.m."

DATED AND EFFECTIVE THIS 12<sup>th</sup> DAY OF NOVEMBER 2008.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk



TO: Albany City Council  
FROM: Diane Taniguchi-Dennis, P.E., Public Works Director *DSTD*  
DATE: November 5, 2008, for the November 12, 2008, City Council Meeting  
SUBJECT: Ratification of the Sale of City-Owned Property at 38159 Scravel Hill Road

RELATES TO STRATEGIC PLAN THEME: • A Safe City

Action Requested:

Staff requests that Council adopt the attached resolutions and authorize staff to ratify the attached warranty deed to finalize the sale of property located at 38159 Scravel Hill Road. This property has been known as “the Archibald Property” in other discussions.

Discussion:

The City acquired the Archibald Property several years ago for the construction of a water uptake pumping station. The station needed to be located along the bank of the Santiam River adjacent to the Archibald Property and was constructed to uptake water from the river and pump it to the Albany-Millersburg Water Treatment Plant on Scravel Hill.

After the construction of the Water Treatment Plant and the uptake station was completed, the Archibald Property was offered for sale. Several people viewed the property, but ultimately the two highest offers for the property were brought to council on January 23, 2008. Ralph and Diane Nauman offered \$1,100,000 for the property while Kim and Cory Koos offered \$1,101,000.

The offer from Kim and Cory Koos was the highest offer, and council authorized the City Manager to negotiate the sale of the property and the final easements needed by the City. The property was officially conveyed to the Koos family when the warranty deed was signed by the City Manager on June 25, 2008. The amount of money received for the property was higher than the appraised value of the property.

Resolutions for easements attached to this staff report are:

- A conservation easement – 100 feet along the length of the Santiam River to protect the area and ensure it will be retained forever, predominantly in its natural, scenic, and open space condition and to prevent any use that would significantly impair or interfere with the conservation values of the protected area, except for current uses.
- A construction easement – temporary easement for purposes of constructing a diversion structure near the intersection of Burkhart Creek and Santiam-Albany Canal; terminates November 1, 2012.
- A perpetual easement – an easement allowing access for maintenance of a diversion structure.
- A perpetual easement – an easement on the south side of the Santiam-Albany Canal for canal maintenance.
- Noise easement – a perpetual easement for the benefit of the grantee for the operation and maintenance of a water intake and pumping facility located on city property, operated by grantee between certain hours.
- Warranty deed to George and Cory Koos for Parcel 2, Partition Plat No 2005-54, Map 10S-03W-23, Tax Lot 800, recorded 6-30-08, for \$1,101,000, 38159 Scravel Hill

Albany City Council

Page 2 of 2

November 5, 2008, for the November 12, 2008, City Council Meeting

Road NE., first public hearing November 15, 2006, second public hearing on December 3, 2007, accepted an amended offer made by George and Cory Koos on December 4, 2007.

Budget Impact:

The negotiated purchase price of the parcel is \$1,101,000. The net proceeds from the sale has been credited to Water Fund-Water Revenue-Sale of City Property (615-50-2201-47023).

WL:prj

Attachments (6)

RESOLUTION NO. \_\_\_\_\_

A RESOLUTION ACCEPTING THE FOLLOWING EASEMENT:

Grantor

George K. Koos and Cory H. Koos

Purpose

Conservation easement over the land within 100 feet of the Santiam River on the "Archibald Property"

NOW, THEREFORE, BE IT RESOLVED by the Albany City Council that it does hereby accept this easement.

DATED AND EFFECTIVE THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ 2008.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

**Grantor:**  
George K. and Cory H. Koos  
33953 Langmack Rd.  
Lebanon, OR 97355

**Grantee:**  
City of Albany  
333 Broadalbin St.  
P.O. Box 490  
Albany, OR 97321

✓ **After Recording, Return To:**  
Matthew L. Jarvis  
Attorney at Law  
PO Box 40  
Albany, OR 97321

LINN COUNTY, OREGON      2008-13155  
E-EAS  
Cnt#1 Str#1 COUNTER    08/30/2008 03:55:25 PM  
\$15.00 \$11.00 \$10.00      \$38.00



I, Steve Druckenmiller, County Clerk for Linn County, Oregon, certify that the instrument identified herein was recorded in the Clerk records.

Steve Druckenmiller - County Clerk



## CONSERVATION EASEMENT AGREEMENT

### RECITALS:

WHEREAS, George K. and Cory H. Koos (Grantors) have purchased that certain real property in Linn County, Oregon, particularly described in Exhibit "A," attached hereto and by this reference incorporated herein (the "Property") from the City of Albany (Grantee); and

WHEREAS, as part of the consideration for the purchase of the Property, Grantors agreed to grant a perpetual conservation easement to the Grantee as set forth herein.

### AGREEMENT:

NOW THEREFORE, in partial consideration for Grantors' purchase of the Property, Grantors grant to Grantee a non-exclusive, perpetual easement over the Property as follows:

1. This easement shall cover a width of 100 feet along the length of the Santiam River frontage of the Property, measured from the high water mark of the Santiam River (the "Protected Area").
2. The easement granted herein shall assure that the Protected Area will be retained forever predominantly in its natural, scenic, and open space condition and to prevent any use that would significantly impair or interfere with the conservation values of the Protected Area, except for such uses that exist at the time of the creation of this easement.
3. The Protected Area may not be used for any activity that would harm the quality of water for downstream property owners. No use may be made of the Protected Area that would be in conflict with any federal, state, or county statutes, rules, or regulations that apply to riparian buffer zones.
4. This easement shall run with the land and shall be binding upon Grantors' heirs, successors and assigns and is intended for the benefit of the Grantee and its successors and assigns.
5. In the event suit or action is instituted by either party to enforce any of the terms or conditions of this easement, the prevailing party shall be entitled to recover their reasonable attorney fees and costs in such suit, action or appeal. Costs shall include costs as allowed by law and such other costs as are reasonably required, including, but not limited to, the cost of taking and transcribing depositions and procuring expert testimony.
6. This easement may be recorded in the deed records of Linn County, Oregon.

First American Title 1204947



IN WITNESS WHEREOF the parties have executed this Easement as of the 26<sup>th</sup> day of June 2008.

GRANTOR:

GRANTEE:

[Signature]  
George K. Koos

CITY OF ALBANY

[Signature]  
By:

[Signature]  
Cory H. Koos

Its: CITY MANAGER

STATE OF OREGON )  
County of Linn ) ss.

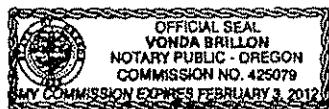
On this 26<sup>th</sup> day of June, 2008, personally appeared before me the above-named George K. Koos and Cory H. Koos, husband and wife, and acknowledged the foregoing to be their voluntary act and deed.



[Signature]  
NOTARY PUBLIC FOR OREGON  
My Commission Expires: 6-6-12

STATE OF OREGON )  
County of Linn ) ss.

On this 25<sup>th</sup> day of June, 2008, personally appeared before me Westfare as City Manager of the City of Albany, and acknowledged the foregoing to be his/her voluntary act and deed.



[Signature]  
NOTARY PUBLIC FOR OREGON  
My Commission Expires: 2/3/12

**EXHIBIT A**

**LEGAL DESCRIPTION:**

**PARCEL 2, PARTITION PLAT NO. 2005-54, RECORD OF PARTITION PLATS, COUNTY OF LINN,  
STATE OF OREGON.**

RESOLUTION NO. \_\_\_\_\_

A RESOLUTION ACCEPTING THE FOLLOWING EASEMENT:

Grantor

George K. Koos and Cory H. Koos

Purpose

Construction Easement for the purpose of constructing a diversion structure near the intersection of Burkhart Creek and the Albany-Lebanon canal

NOW, THEREFORE, BE IT RESOLVED by the Albany City Council that it does hereby accept this easement.

DATED AND EFFECTIVE THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ 2008.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

**Grantor:**  
George and Cory Koos  
33953 Langmack Rd.  
Lebanon, OR 97355

**Grantee:**  
City of Albany  
333 Broadalbin St.  
P.O. Box 490  
Albany, OR 97321

**After Recording, Return To:**  
Same As Above Grantee

LINN COUNTY, OREGON      2008-13159  
E-EAS  
Cnt#1 Str#1 COUNTER      06/30/2008 03:55:25 PM  
\$25.00 \$11.00 \$10.00      \$46.00



I, Steve Druckenmiller, County Clerk for Linn County, Oregon, certify that the instrument identified herein was recorded in the Clerk's records.

Steve Druckenmiller - County Clerk



## CONSTRUCTION EASEMENT

### RECITALS:

WHEREAS, Grantor owns real property in Linn County, Oregon, commonly known as 33953 Langmack Rd., which contains portions of the Albany-Lebanon canal and Burkhart Creek; and

WHEREAS, Grantee needs a temporary easement for purposes of constructing a diversion structure near the intersection of Burkhart Creek and the Albany-Lebanon canal.

### AGREEMENT:

NOW THEREFORE, in partial consideration for Grantor's purchase of real property, commonly known as the Archibald Property, from Grantee, George K. and Cory H. Koos (Grantor), grant to the City of Albany and its successors (Grantee), a nonexclusive easement over Grantor's Property for access, that easement being more particularly described in Exhibit "A" attached hereto.

1. During those years in which the Easement remains in effect, this Easement may be used by Grantee only for access to construct a diversion structure. Such access shall only be allowed between September 1 and November 1.

2. This Easement shall terminate on November 1, 2012. However, if substantial work towards construction of a diversion structure near the confluence of Burkhart Creek and the Albany-Lebanon canal has not begun by November 1, 2010, this Easement shall terminate on November 1, 2010.

3. Grantee shall remove no vegetation, particularly trees, from this Easement unless absolutely necessary for the use of the easement. A substantial number of trees have been nurtured along the watercourses on Grantor's property for purposes of acting as a buffer between farm uses and the watercourses. It is the intent of the parties to avoid destroying those buffers. The parties agree that there will be no clear-cutting of trees from within this Easement and Grantee shall replace any trees that are removed from this Easement with similar trees in a location intended to replace resulting gaps in the buffer between farm use and watercourse.

4. Grantee acknowledges that Grantor's property is farm property and is subject to common, customary and accepted farm or forest management activities for the operation of a commercial farm or forest. These practices ordinarily and necessarily produce noise, dust, smoke and other types of visual, odor, or noise impacts which Grantee accepts as normal and necessary farming or forestry management activities and holds Grantor harmless for any such use of Grantor's property that is conducted in accordance with federal and state laws.

5. Grantee shall compensate Grantor for any damage to Grantor's crops or property that may result from Grantee's use of this Easement.

NOTE: FIRST AMERICAN TITLE  
IS RECORDING THIS DOCUMENT AS AN  
ACCOMMODATION TO CLIENT ONLY AND  
WILL NOT ASSUME ANY RESPONSIBILITY  
AS TO ITS' VALIDITY.

12-04947 (A.C.W.)  
First American Title

6. Grantee assumes all liability for the transfer of water between the Albany-Lebanon canal and Burkhart Creek.

7. The parties in no way intend this Easement to allow public access to Grantor's property, the Albany-Lebanon canal, or Burkhart Creek.

8. In the event suit or action is instituted by either party to enforce any of the terms or conditions of this Easement, the prevailing party shall be entitled to recover their reasonable attorney fees and costs in such suit, action or appeal. Costs shall include costs as allowed by law and such other costs as are reasonably required, including, but not limited to, the cost of taking and transcribing depositions and procuring of any expert testimony.

9. If any clause, phrase, or paragraph, or any part thereof, of this Easement is found to be unenforceable, that clause, phrase, or paragraph, or any part thereof, shall be deemed severed, and the remainder of this Easement shall continue in full force and effect.

IN WITNESS WHEREOF the parties have executed this Easement as of the 26 day of June, 2008.

GRANTOR:

GRANTEE:

[Signature]  
George K. Koos  
[Signature]  
Cory H. Koos

CITY OF ALBANY  
[Signature]  
By: \_\_\_\_\_  
Its: \_\_\_\_\_

STATE OF OREGON )  
County of Linn ) ss.

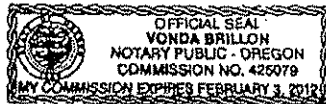
On this 26 day of June, 2008, personally appeared before me the above-named George K. Koos and Cory H. Koos, husband and wife, and acknowledged the foregoing to be their voluntary act and deed.



[Signature]  
NOTARY PUBLIC FOR OREGON  
My Commission Expires: 6-6-12

STATE OF OREGON )  
County of Linn ) ss.

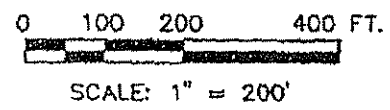
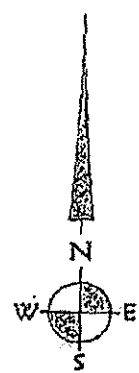
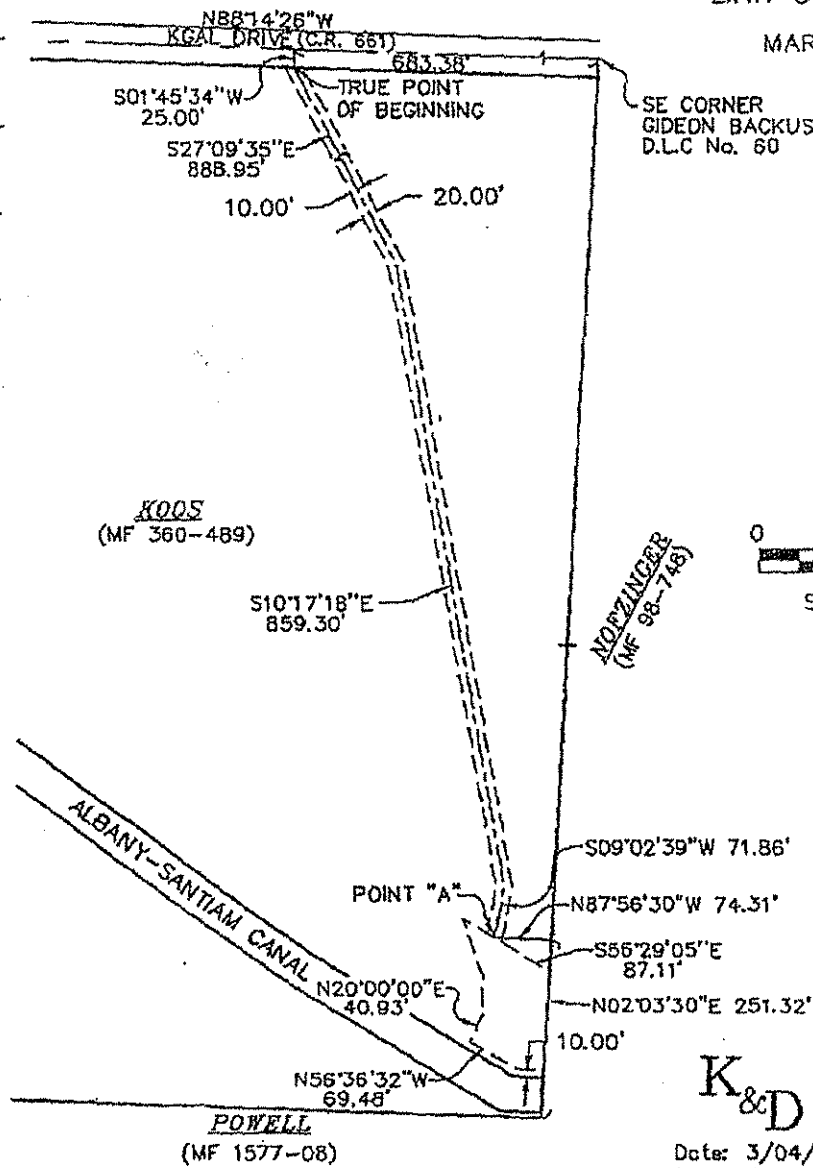
On this 25<sup>th</sup> day of June, 2008, personally appeared before me Wes Hare as City Manager of the City of Albany, and acknowledged the foregoing to be his/her voluntary act and deed.



[Signature]  
NOTARY PUBLIC FOR OREGON  
My Commission Expires: 2/3/12

**EXHIBIT "B"**  
**TEMPORARY CONSTRUCTION EASEMENT**  
**FOR**  
**CITY OF ALBANY**  
 LOCATED IN  
 E 1/2 SEC. 32, T. 11 S., R. 2. W., W.M.,  
 LINN COUNTY, OREGON

MARCH 4, 2008



**K & D ENGINEERING, Inc.**  
 276 N.W. Hickory Street P.O. Box 726  
 Albany, Oregon 97321  
 (541) 928-2683

Date: 3/04/2008  
 Scale: 1=200(PS)  
 File: dvg\2008\08-27-A\27-a exh.dwg (Jamey M)

**K & D ENGINEERING, Inc.***Engineers • Planners • Surveyors***Exhibit "A"**  
(Temporary Easement)

A tract of land lying in the East 1/2 of Section 32, Township 11 South, Range 2 West, Willamette Meridian, Linn County Oregon, said tract being a portion of that property conveyed to George K. Koos and Cory H. Koos by deed recorded in Vol. 360, Pg. 489, Linn County Deed Records, said tract being a strip of land 20 feet in width, lying 10 feet on each side of the following described centerline:

Commencing at the Southeast corner of the Gideon Backus Donation Land Claim No. 60 in said Township and Range; thence North  $88^{\circ}14'26''$  West, on the South line of said land claim, a distance of 683.38 feet; thence leaving said line, South  $01^{\circ}45'34''$  West 25.00 feet, to the South right of way line of KGAL Drive (County Rd. No. 661), and the **TRUE POINT OF BEGINNING** for this description; thence leaving said right of way, South  $27^{\circ}09'35''$  East 888.95 feet; thence South  $10^{\circ}17'18''$  East 859.30 feet; thence South  $09^{\circ}02'39''$  West 71.86 feet to a point designated as Point "A" for the purpose of this description, said point bears North  $02^{\circ}03'30''$  East 251.32 feet, and North  $87^{\circ}56'30''$  West 74.31 feet, from the Southeast corner of the previously described Koos property, said Point "A" also being the southerly terminus of described centerline, the sidelines of which to be lengthened or shortened on the North end to terminate at the South right of way line of KGAL Drive.

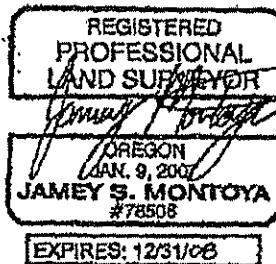
**TOGETHER WITH:**

Beginning at Point "A", as previously described above; thence South  $56^{\circ}29'05''$  East 87.11 feet to the East boundary line of said Koos property; thence South  $02^{\circ}03'30''$  West, on said East line, a distance of 138.77 feet to a point 10.00 feet distant, when measured at right angles, to the Northerly line of the Albany-Santiam canal right of way as recorded in Book L, Page 499, Linn County Deed Records, and located on the ground by County Survey No. 22134 and also by County Survey No. 24536; thence North  $87^{\circ}00'45''$  West, parallel with said right of way, a distance of 37.78 feet; thence continuing parallel, North  $56^{\circ}36'32''$

Exhibit "A" Temporary Easement  
Page 2 of 2

West 69.48 feet; thence North 20°00'00" East 40.93 feet; thence North 00°41'15"  
West 54.27 feet; thence North 18°17'52" West 85.79 feet; thence South  
56°29'05" East 50.00 feet to the Point of beginning.

The bearings used for this description were based on County Survey No. 24536. The easement described herein contains 51,063 square feet (1.17 acres), more or less.



March 4, 2008  
EXHIBIT "A"  
TEMPORARY EASEMENT  
(08-27-A) JSM:nmm  
File: Titan\projects\2008\08-27-a\tempbase2.doc



RESOLUTION NO. \_\_\_\_\_

A RESOLUTION ACCEPTING THE FOLLOWING EASEMENT:

Grantor

Purpose

George K. Koos and Cory H. Koos

Access/maintenance easement along the Santiam-Albany Canal and Burkhart Creek northwest of Lebanon

NOW, THEREFORE, BE IT RESOLVED by the Albany City Council that it does hereby accept this easement.

DATED AND EFFECTIVE THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ 2008.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

Grantor:  
George and Cory Koos  
33953 Langmack Rd.  
Lebanon, OR 97355

Grantee:  
City of Albany  
333 Broadalbin St.  
P.O. Box 490  
Albany, OR 97321

After Recording, Return To:  
Same As Above Grantee

LINN COUNTY, OREGON 2008-13160  
E-EAS  
Cnt=1 Sin=1 COUNTER 06/30/2008 03:55:25 PM  
\$26.00 \$11.00 \$10.00 \$48.00



I, Steve Druckenmiller, County Clerk for Linn County, Oregon, certify that the instrument identified herein was recorded in the Clerk's records.

Steve Druckenmiller - County Clerk



## EASEMENT AGREEMENT

### RECITALS:

WHEREAS, Grantor owns real property in Linn County, Oregon, which contains portions of the Albany-Lebanon canal and Burkhart Creek; and

WHEREAS, Grantee needs an easement on the East side of Burkhart Creek for purposes of allowing access for maintenance of a diversion structure to be constructed by the Grantee.

### AGREEMENT:

NOW THEREFORE, in partial consideration for Grantor's purchase of real property, commonly known as the Archibald Property, from Grantee, George K. and Cory H. Koos (Grantor), grant to the City of Albany and its successors (Grantee), a nonexclusive easement over Grantor's Property for access, that easement being more particularly described in Exhibit "A" attached hereto.

1. This Easement is perpetual.
2. Grantee shall remove no vegetation, particularly trees, from this Easement unless absolutely necessary for the use of this Easement. A substantial number of trees have been nurtured along the watercourses on Grantor's property for purposes of acting as a buffer between farm uses and the watercourses. It is the intent of the parties to avoid destroying those buffers. The parties agree that there will be no clear-cutting of trees from within the easement and Grantee shall replace any trees that are removed from this Easement with similar trees in a location intended to replace resulting gaps in the buffer between farm use and watercourse.
3. Grantee acknowledges that Grantor's property is farm property and is subject to common, customary and accepted farm or forest management activities for the operation of a commercial farm or forest. These practices ordinarily and necessarily produce noise, dust, smoke and other types of visual, odor, or noise impacts which Grantee accepts as normal and necessary farming or forestry management activities and holds Grantor harmless for any such use of Grantor's property that is conducted in accordance with federal and state laws.
4. Grantee shall compensate Grantor for any damage to Grantor's crops or property that may result from Grantee's use of this Easement.
5. The parties in no way intend this Easement to allow public access to Grantor's property, the Albany-Lebanon canal, or Burkhart Creek.
6. In the event suit or action is instituted by either party to enforce any of the terms or conditions of this Easement, the prevailing party shall be entitled to recover their reasonable attorney fees and costs in such suit, action or appeal. Costs shall include costs as allowed by law

NOTE: FIRST AMERICAN TITLE  
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ACCOMMODATION TO CLIENT ONLY AND  
WILL NOT ASSUME ANY RESPONSIBILITY  
AS TO ITS VALIDITY.

1204947 (Acco)  
First American Title

and such other costs as are reasonably required, including, but not limited to, the cost of taking and transcribing depositions and procuring of any expert testimony.

7. If any clause, phrase, or paragraph, or any part thereof, of this Easement is found to be unenforceable, that clause, phrase, or paragraph, or any part thereof, shall be deemed severed, and the remainder of this Easement shall continue in full force and effect.

IN WITNESS WHEREOF the parties have executed this Easement as of the 26 day of June, 2008.

GRANTOR:

GRANTEE:

[Signature]  
George K. Koos

CITY OF ALBANY

[Signature]  
Cory H. Koos

[Signature]  
By: \_\_\_\_\_  
Its: \_\_\_\_\_

STATE OF OREGON )  
County of Lincoln ) ss.

On this 26<sup>th</sup> day of June, 2008, personally appeared before me the above-named George K. Koos and Cory H. Koos, husband and wife, and acknowledged the foregoing to be their voluntary act and deed.

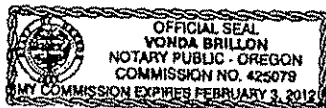
[Signature]  
NOTARY PUBLIC FOR OREGON  
My Commission Expires: 6-6-12



STATE OF OREGON )  
County of Lincoln ) ss.

On this 25<sup>th</sup> day of June, 2008, personally appeared before me Wes Hare as City Manager of the City of Albany, and acknowledged the foregoing to be his/her voluntary act and deed.

[Signature]  
NOTARY PUBLIC FOR OREGON  
My Commission Expires: 2/3/12



**K & D ENGINEERING, Inc.***Engineers • Planners • Surveyors***Exhibit "C"**  
(Basement along Burkhart Creek)

A tract of land lying in the East 1/2 of Section 32, Township 11 South, Range 2 West, Willamette Meridian, Linn County, Oregon, said tract being a portion of that property conveyed to George K. Koos and Cory H. Koos by deed recorded in Vol. 360, Pg. 489, Linn County Deed Records, said tract being a strip of land 10 feet wide, lying Easterly and Northeasterly of the East bank of Burkhart creek, said East bank being generally described as follows:

Beginning at a point where the East bank of Burkhart Creek intersects the Southerly right of way line of KGAL Drive (County Rd. No. 661), said point being North 88°14'26" West 940.95 feet, and South 01°45'34" West 25.00 feet, from the Southeast corner of the Gideon Backus Donation Land Claim No. 60; thence South 41°26'34" East 535.04 feet; thence South 34°53'13" East 362.74 feet; thence South 10°17'13" East 156.61 feet; thence South 04°20'43" East 279.41 feet; thence South 15°17'31" East 508.96 feet; thence South 07°32'51" East 68.25 feet; thence South 18°17'52" East 85.18 feet; thence South 00°41'15" East 50.90 feet; thence South 20°00'00" West 47.00 feet to a point on the North line of the Albany-Santiam canal right of way as recorded in Book L, Page 499, Linn County Deed Records, and located on the ground by County Survey No. 22134 and also by County Survey No. 24536, said point being the Southerly terminus of this description, the sideline of which to be shortened or lengthened to terminate at respective boundaries.

It is the intent of this description for the 10 foot wide strip to move if Burkhart Creek moves, and for this strip to be contiguous with the East bank of Burkhart Creek.

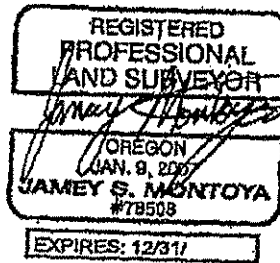
**TOGETHER WITH:**

Commencing at the Southeast corner of said Koos property; thence North 02°03'30" East, on the East line of said property, a distance of 57.09 feet to a point on the North line of said Albany-Santiam canal, said point being the **TRUE POINT OF BEGINNING** of this description; thence North 87°00'45" West, on said North line, a distance of 40.66 feet; thence continuing on said line, North 56°36'32" West 207.81 feet; thence leaving said line, North 44°15'34" East

Burkhart Creek Easement  
Page 2 of 2

150.66 feet; thence South 18°17'52" East 85.79 feet; thence South 00°41'15" East 54.27 feet; thence South 20°00'00" West 40.93 feet to a point 10.00 feet distant, when measured at right angles, to the North line of the previously described Albany-Santiam canal right of way; thence South 56°36'32" East, parallel with said right of way, a distance of 69.48 feet; thence continuing parallel, South 87°00'45" East 37.78 feet to a point on the East line of said Koos property; thence South 02°03'30" West, on said East line, a distance of 10.00 feet to the Point of Beginning.

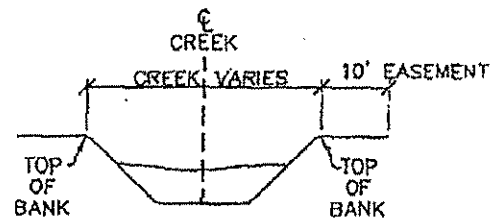
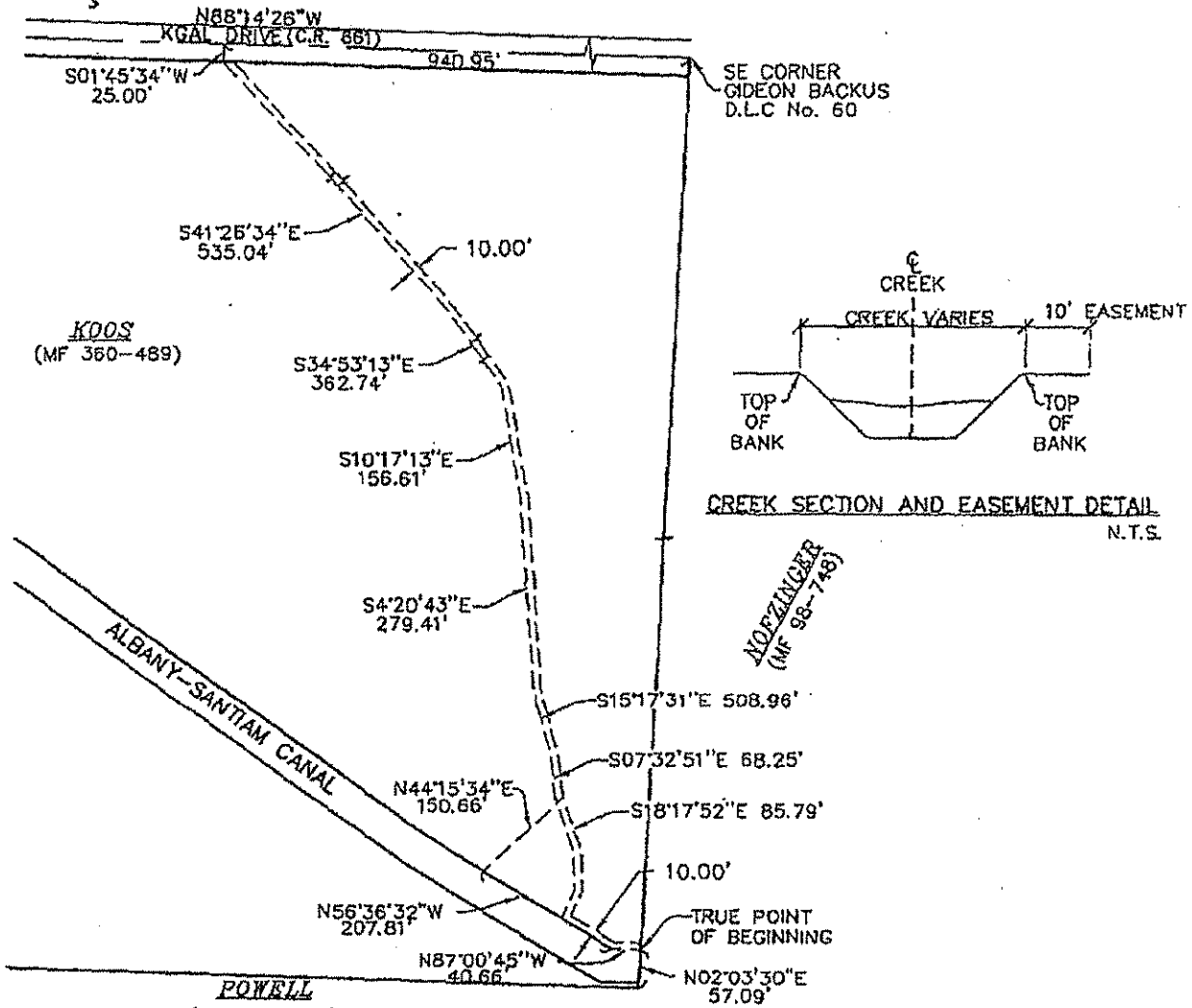
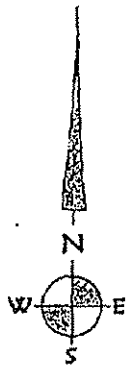
The bearings used for this description were based on County Survey No. 24536. The easement described herein contains 32,972 square feet (0.76 acres), more or less.



March 4, 2008  
EXHIBIT "C"  
BURKHART CREEK EASEMENT  
(08-27-A) JSM:mm  
File: Titan\projects\2008\08-27-a\creekseas2.doc

**EXHIBIT "D"**  
**ACCESS/MAINTENANCE EASEMENT**  
**FOR**  
**CITY OF ALBANY**  
 LOCATED IN  
 E 1/2 SEC. 32, T. 11 S., R. 2. W., W.M.,  
 LINN COUNTY, OREGON

MARCH 4, 2008



**KOOS**  
(MF 360-489)

**HOPFINGER**  
(MF 98-748)

Date: 3/04/2008 Time: 11:19  
 Scale: 1=200(PS)  
 File: d:\2008\08-27-A\27-a exh.dwg (Jamey M)

**K & D ENGINEERING, Inc.**  
 275 N.W. Hickory Street P.O. Box 725  
 Albany, Oregon 97321  
 (541) 928-2583

RESOLUTION NO. \_\_\_\_\_

A RESOLUTION ACCEPTING THE FOLLOWING EASEMENT:

Grantor

Purpose

George K. Koos and Cory H. Koos

Access/maintenance easement along the Santiam-Albany Canal and Burkhart Creek northwest of Lebanon

NOW, THEREFORE, BE IT RESOLVED by the Albany City Council that it does hereby accept this easement.

DATED AND EFFECTIVE THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ 2008.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

Grantor:  
George and Cory Koos  
33953 Langmack Rd.  
Lebanon, OR 97355

Grantee:  
City of Albany  
333 Broadalbin St.  
P.O. Box 490  
Albany, OR 97321

After Recording, Return To:  
Same As Above Grantee

LINN COUNTY, OREGON 2008-13161  
E-EAS  
Cnt#1 Str#1 COUNTER 06/30/2008 03:55:25 PM  
\$20.00 \$11.00 \$10.00 \$41.00



I, Steve Druckenmiller, County Clerk for Linn County, Oregon, certify that the instrument identified herein was recorded in the Clerk records.  
Steve Druckenmiller - County Clerk



### EASEMENT AGREEMENT

#### RECITALS:

WHEREAS, Grantor owns real property in Linn County, Oregon, which contains portions of the Albany-Lebanon canal and Burkhart Creek; and

WHEREAS, Grantee needs an easement on the South side of the Albany-Lebanon canal for purposes of maintaining the canal.

#### AGREEMENT:

NOW THEREFORE, in partial consideration for Grantor's purchase of real property, commonly known as the Archibald Property, from Grantee, George K. and Cory H. Koos (Grantor), grant to the City of Albany and its successors (Grantee), a nonexclusive easement over Grantor's Property for access, that easement being more particularly described in Exhibit "A" attached hereto.

1. This Easement is perpetual.
2. Grantee shall remove no vegetation, particularly trees, from this Easement unless absolutely necessary for the use of this Easement. A substantial number of trees have been nurtured along the watercourses on Grantor's property for purposes of acting as a buffer between farm uses and the watercourses. It is the intent of the parties to avoid destroying those buffers. The parties agree that there will be no clear-cutting of trees from within the easement and Grantee shall replace any trees that are removed from this Easement with similar trees in a location intended to replace resulting gaps in the buffer between farm use and watercourse.
3. Grantee acknowledges that Grantor's property is farm property and is subject to common, customary and accepted farm or forest management activities for the operation of a commercial farm or forest. These practices ordinarily and necessarily produce noise, dust, smoke and other types of visual, odor, or noise impacts which Grantee accepts as normal and necessary farming or forestry management activities and holds Grantor harmless for any such use of Grantor's property that is conducted in accordance with federal and state laws.
4. Grantee shall compensate Grantor for any damage to Grantor's crops or property that may result from Grantee's use of this Easement.
5. The parties in no way intend this Easement to allow public access to Grantor's property, the Albany-Lebanon canal, or Burkhart Creek.
6. This easement is intended only to provide pedestrian and ATV access by Grantee. Larger vehicles may only make use of this easement with prior written approval of the Grantors.
7. In the event suit or action is instituted by either party to enforce any of the terms or conditions of this Easement, the prevailing party shall be entitled to recover their reasonable

First American Title 1704947 (A660)

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attorney fees and costs in such suit, action or appeal. Costs shall include costs as allowed by law and such other costs as are reasonably required, including, but not limited to, the cost of taking and transcribing depositions and procuring of any expert testimony.

8. If any clause, phrase, or paragraph, or any part thereof, of this Easement is found to be unenforceable, that clause, phrase, or paragraph, or any part thereof, shall be deemed severed, and the remainder of this Easement shall continue in full force and effect.

IN WITNESS WHEREOF the parties have executed this Easement as of the 26 day of June, 2008.

GRANTOR:

GRANTEE:

[Signature]  
George K. Koos

CITY OF ALBANY

[Signature]  
Cory H. Koos

[Signature]  
By: \_\_\_\_\_  
Its: \_\_\_\_\_

STATE OF OREGON )  
County of Linn ) ss.

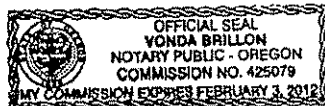
On this 26 day of June, 2008, personally appeared before me the above-named George K. Koos and Cory H. Koos, husband and wife, and acknowledged the foregoing to be their voluntary act and deed.



[Signature]  
NOTARY PUBLIC FOR OREGON  
My Commission Expires: 6-6-12

STATE OF OREGON )  
County of Linn ) ss.

On this 25<sup>th</sup> day of June, 2008, personally appeared before me Wes Hare as City Manager of the City of Albany, and acknowledged the foregoing to be his/her voluntary act and deed.



[Signature]  
NOTARY PUBLIC FOR OREGON  
My Commission Expires: 2/3/12

**K & D ENGINEERING, Inc.**

*Engineers • Planners • Surveyors*

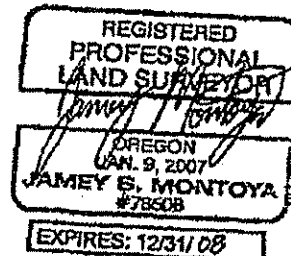
**Exhibit "A"**  
(Easement South of Canal)

A tract of land lying in the East 1/2 of Section 32, Township 11 South, Range 2 West, Willamette Meridian, Linn County, Oregon, said tract being a portion of that property conveyed to George K. Koos and Cory H. Koos by deed recorded in Vol. 360, Pg. 489, Linn County Deed Records, said tract being more particularly described as follows:

Commencing at the Southeast corner of said Koos property, said corner being coincident with the South line of the John Settle Donation Land Claim No. 64; thence North 88°02'47" West, on said South line, a distance of 41.83 feet to the **TRUE POINT OF BEGINNING**; thence leaving said South line, North 56°36'32" West 15.48 feet to the South line of the Albany-Santiam canal right of way as recorded in Book L, Page 499, Linn County Deed Records, and located on the ground by County Survey No. 22134 and also by County Survey No. 24536; thence continuing on said South right of way line the following courses: North 56°36'32" West 322.89 feet; thence North 52°43'34" West 1583.61 feet to a point coincident with the East right of way line of Langmack Road (County Rd. No. 662); thence leaving said South line, South 01°55'25" West, on said East right of way line, a distance of 12.26 feet to a point 10.00 feet distant, when measured at right angles, to the previously described South line of the Albany-Santiam canal right of way; thence running parallel and 10.00 feet distant therefrom said right of way line the following two courses: 1.) South 52°43'34" East 1576.36 feet; 2.) thence South 56°34'18" East 51.93 feet; thence discontinuing said parallelism, South 17°39'01" East, a distance of 150.00 feet to a point on the South line of said Koos property; thence South 88°02'47" East, a distance of 200.00 feet to the Point of Beginning.

The bearings used for this description were based on County Survey No. 24536. The easement contained herein contains 31,882 square feet (0.73 acres), more or less.

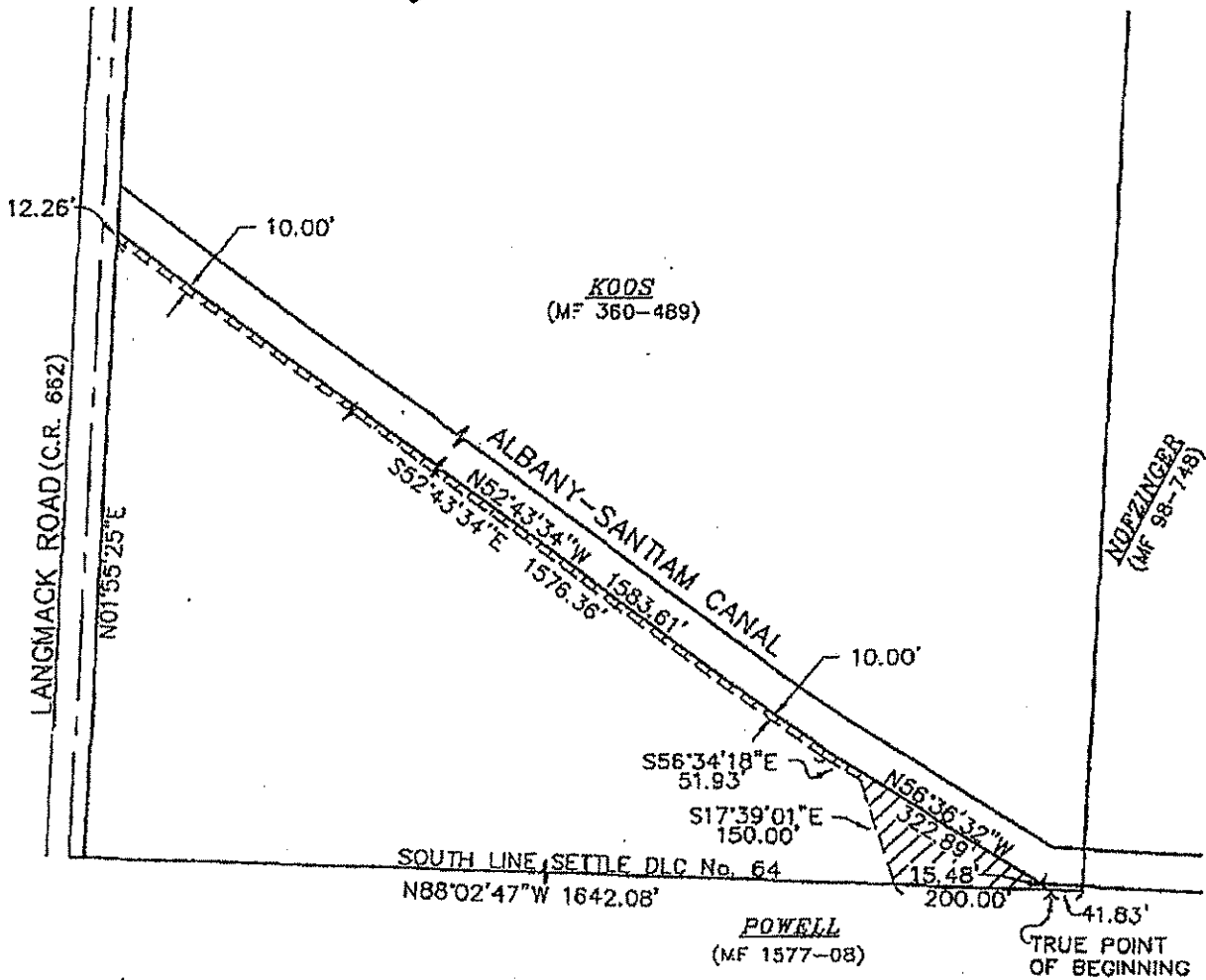
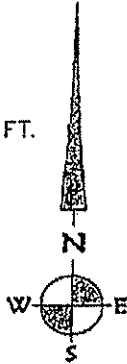
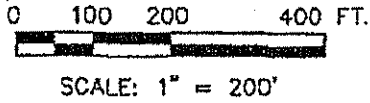
March 4, 2008  
EXHIBIT "A"  
BURKHART CREEK EASEMENT  
(08-27-A) JSM:nm  
File: T:\km\projects\2008\08-27-a\canal\case.doc



**EXHIBIT "B"**  
**ACCESS/MAINTENANCE EASEMENT**  
**FOR**  
**CITY OF ALBANY**  
**LOCATED IN**

**E 1/2 SEC. 32, T. 11 S., R. 2. W., W.M.,**  
**LINN COUNTY, OREGON**

**FEBRUARY 14, 2008**



Date: 2/14/2008 Time: 16:16  
 Scale: 1=200(PS)  
 File: dwg\2008\08-27-A\27-o exh.dwg (Jeff D)



**K & D ENGINEERING, Inc.**  
 276 N.W. Hickory Street P.O. Box 726  
 Albany, Oregon 97321  
 (541) 928-2583

RESOLUTION NO. \_\_\_\_\_

A RESOLUTION ACCEPTING THE FOLLOWING EASEMENT:

Grantor

Purpose

George K. Koos and Cory H. Koos

Noise Easement for the operation and maintenance  
of water intake and pumping facilities

NOW, THEREFORE, BE IT RESOLVED by the Albany City Council that it does hereby accept this  
easement.

DATED AND EFFECTIVE THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ 2008.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

**Grantor:**  
George and Cory Koos  
33953 Langmack Rd.  
Lebanon, OR 97355

**Grantee:**  
City of Albany  
333 Broadalbin St.  
P.O. Box 490  
Albany, OR 97321

✓ **After Recording, Return To:**  
Matthew L. Jarvis  
Attorney at Law  
PO Box 40  
Albany, OR 97321

LINN COUNTY, OREGON 2008-13156  
E-EAS  
Ckr=1 Str=1 COUNTER 06/30/2008 03:55:25 PM  
\$15.00 \$11.00 \$10.00 \$38.00



I, Steve Druckenmiller, County Clerk for Linn County, Oregon, certify that the instrument identified herein was recorded in the Clerk's records.  
Steve Druckenmiller - County Clerk



## NOISE EASEMENT

### RECITALS:

WHEREAS, George K. and Cory H. Koos (Grantors) have purchased that certain real property in Linn County, Oregon, particularly described in Exhibit "A," attached hereto and by this reference incorporated herein (the "Property") from the City of Albany (Grantee); and

WHEREAS, as part of the consideration for the purchase of the Property, Grantors agreed to grant a perpetual noise easement for the benefit of Grantee's property particularly described in Exhibit "B," attached hereto and by this reference incorporated herein (the "City Property").

### AGREEMENT:

NOW THEREFORE, in partial consideration for Grantors' purchase of the Property, Grantors grant to Grantee a non-exclusive, perpetual easement over the Property as follows:

1. The easement granted herein shall be for the operation and maintenance of a water intake and pumping facility located on the City Property, operated by Grantee, its successors, and assignees, and their licensees and permittees.

3. It is understood by the parties that the operation of a water intake and pumping facility ordinarily and necessarily produces noise and other conditions that may conflict with Grantors' use of the Property for residential or other purposes. Grantors hereby waive all common law rights to object to normal and necessary maintenance activities conducted by Grantee on the Protected Property for purposes of operating the water intake and pumping facility between the hours of 6:00 a.m. and 10:00 p.m. Grantors further waive their rights to object to emergency activities that take place at anytime that are for the purposes of unforeseen repairs that are necessary to get the water intake and pumping facility back into operation.

4. This easement does not apply to expanded uses of the Protected Property for purposes other than water intake and pumping.

5. This easement shall run with the land and shall be binding upon Grantors' heirs, successors and assigns and is intended for the benefit of the Grantee and its successors and assigns.

6. In the event suit or action is instituted by either party to enforce any of the terms or conditions of this easement, the prevailing party shall be entitled to recover their reasonable attorney fees and costs in such suit, action or appeal. Costs shall include costs as allowed by law and such other costs as are reasonably required, including, but not limited to, the cost of taking and transcribing depositions and procuring expert testimony.

First American Title 1204947

7. This easement may be recorded in the deed records of Linn County, Oregon.

IN WITNESS WHEREOF the parties have executed this Easement as of the 26<sup>th</sup> day of June, 2008.

GRANTOR:

GRANTEE:

[Signature]  
George K. Koos  
[Signature]  
Cory H. Koos

CITY OF ALBANY

Wes Hare  
By: \_\_\_\_\_  
Its: \_\_\_\_\_

STATE OF OREGON )  
County of Linn ) ss.

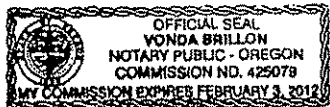
On this 26<sup>th</sup> day of June, 2008, personally appeared before me the above-named George K. Koos and Cory H. Koos, husband and wife, and acknowledged the foregoing to be their voluntary act and deed.



Cindy L. Hurst  
NOTARY PUBLIC FOR OREGON  
My Commission Expires: 6-6-12

STATE OF OREGON )  
County of Linn ) ss.

On this 25<sup>th</sup> day of June, 2008, personally appeared before me Wes Hare as City manager of the City of Albany, and acknowledged the foregoing to be his/her voluntary act and deed.



Yonda Brillion  
NOTARY PUBLIC FOR OREGON  
My Commission Expires: 2/3/12

**EXHIBIT A**

**LEGAL DESCRIPTION:**

PARCEL 2, PARTITION PLAT NO. 2005-54, RECORD OF PARTITION PLATS, COUNTY OF LINN,  
STATE OF OREGON.

**EXHIBIT B**

**Legal Description:**

PARCEL 1, PARTITION PLAT NO. 2005-54, RECORD OF PARTITION PLATS,  
COUNTY OF LINN, STATE OF OREGON.

RESOLUTION NO. \_\_\_\_\_

A RESOLUTION RATIFYING THE SALE OF EXCESS PROPERTY COMMONLY KNOWN AS THE ARCHIBALD PROPERTY:

Grantor

**CITY OF ALBANY**

Purpose

Ratify the warranty deed transferring ownership of an excess parcel of City property to George and Cory Koos.

Grantee

**GEORGE K. AND CORY H. KOOS**

NOW, THEREFORE, BE IT RESOLVED that the Albany City Council ratifies the sale of Parcel 2, Partition Plat No. 2005-54, Record of Partition Plats, County of Linn, State of Oregon, as executed by the City Manager with the attached warranty deed to George and Cory Koos.

BE IT FURTHER RESOLVED that this resolution shall take effect immediately upon passage by the Council and approval by the Mayor.

DATED AND EFFECTIVE THIS 12TH DAY OF NOVEMBER 2008.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk





✓ After recording return to:  
 George K. Koos and Cory H. Koos  
 33953 Langmac Road  
 Lebanon, OR 97355

Until a change is requested all tax statements shall be sent to the following address:  
 George K. Koos and Cory H. Koos  
 33953 Langmac Road  
 Lebanon, OR 97355

File No.: 7081-1204947 (ALS)  
 Date: June 23, 2008

THIS SPACE RESERVED FOR RECORDER'S USE

LINN COUNTY, OREGON 2008-13157  
 D-WD  
 Cnt=1 SIn=1 COUNTER 06/30/2008 03:55:25 PM  
 \$10.00 \$11.00 \$10.00 \$31.00



I, Steve Druckenmiller, County Clerk for Linn County, Oregon, certify that the instrument identified herein was recorded in the Clerk records.

Steve Druckenmiller - County Clerk



**STATUTORY WARRANTY DEED**

The City of Albany, a municipal corporation, Grantor, conveys and warrants to **George K. Koos and Cory H. Koos, husband and wife**, Grantee, the following described real property free of liens and encumbrances, except as specifically set forth herein:

**PARCEL 2, PARTITION PLAT NO. 2005-54, RECORD OF PARTITION PLATS, COUNTY OF LINN, STATE OF OREGON.**

**Subject to:**

1. Covenants, conditions, restrictions and/or easements, if any, affecting title, which may appear in the public record, including those shown on any recorded plat or survey.

The true consideration for this conveyance is **\$1,101,000.00**. (Here comply with requirements of ORS 93.030)

First American Title 1204947  
 10-3W - 23 / 800



CITY OF ALBANY  
 CITY COUNCIL  
 Council Chambers  
 Wednesday, October 8, 2008  
 7:15 p.m.

**MINUTES**

**CALL TO ORDER**

Mayor Bedore called the meeting to order at 7:15 p.m.

**PLEDGE OF ALLEGIANCE TO THE FLAG**

Mayor Bedore led the pledge of allegiance to the flag.

**ROLL CALL**

Councilors present: Sharon Konopa, Ralph Reid, Jr., Floyd Collins, Dick Olsen, Bessie Johnson, and Jeff Christman

**SPECIAL PRESENTATION**

OSU 4-H and Extension Service.

Dan McGrath, Linn County OSU Extension Service, is a professor in the OSU Department of Horticulture and provided information regarding Measure 22-81 (in agenda file). He gave a PowerPoint presentation explaining services the Extension Service provides for farmers and growers, forestry, master gardeners, and small farms. He explained the Land Grant University System, gave a brief history of the Extension Service, and said they have a three-fold mission: Research, Teaching, and Service. He explained that on a \$200,000 home the new Extension Service tax would be \$14.00 and that he could make available details regarding their budget upon request.

Oregon Main Street Program

Rick Rogers, Albany Downtown Association Director, and Kate Porsche, Urban Renewal Manager, said they applied in early September for the Oregon Main Street Program and went to Salem for an oral presentation. Albany has received the "Performing Main Street" level, which is the highest national level designation. The City received a plaque and signs to put on the entrances to the City. Porsche added that the program has been around for 30 years and will help the City.

**SCHEDULED BUSINESS**

Communication

Accepting Pat Kight's resignation from the Arts Commission.

MOTION: Councilor Christman moved to accept the resignation of Pat Kight from the Arts Commission and send a letter of thank you for her service. Councilor Johnson seconded the motion and it passed 6-0.

Quasi-Judicial Public Hearing

SP-12-08 and AD-01-08, Site Plan Review for construction of a shopping center with six buildings on 25.67 acres of land.

Bedore said, next on the agenda is a consolidated Quasi-Judicial Public Hearing regarding a Site Plan Review application for construction of a shopping center with six buildings on 25.67 acres of land; and an Adjustment Application that would allow 24-foot-wide travel aisles in the parking lots on the northern parcel of the shopping center where 26-foot-wide travel aisles are usually required. The applicant is Oregon Acquisition One LLC.

Bedore called the hearing to order at 7:34 p.m.

Bedore asked if any members of the Council wished to abstain.

City Attorney Jim Delapoe explained to the audience that the Council made a decision to call this issue up to this governing body to decide the outcome. During the course of doing that, two Councilors abstained. In land use decisions the Council acts like a judge and they are required to make a decision. There are rules stating that when the Council is acting like a judge they must make decisions like a judge, based solely on the land use laws and rules. The Albany City Charter, Section 20, requires the concurrence of four members to decide any question. If two of the six Councilors recused themselves, and the Site Plan application fails to receive a unanimous vote, either for approval or denial, it will result in a procedural problem because the Mayor will not be allowed to participate either to break a 2-2 tie, or to provide a fourth vote for or against the motion. If a Councilor has a bias or conflict of interest, land use laws allow them to declare it and they

don't participate in the discussion. The Council continues with the hearing and sees if there are four votes to make a decision. If there are not four votes to make a decision, the Councilor who abstained is required to re-qualify himself or herself and vote, in order to get a four-vote decision.

Councilor Konopa said that she had been advised by the City Attorney to publicly state her reasons for abstaining from the SmartCentre land use application hearing. She submitted a letter for the record explaining her reasons (in the agenda file). She believes that the SmartCentre application is for a Wal-Mart Super Store, since SmartCentres/First Pro has built many Wal-Marts in Canada. The SmartCentre applicant could state that she had a conflict of interest and/or bias due to her husband's employment as Staff Director for the United Food and Commercial Workers Union (UFCW), Local 555, which is the main source of their household income. Nationally, UFCW's fight the siting of new and existing Wal-Marts. She has assisted neighborhoods in other cities in Oregon with their fight against Wal-Mart. She also disclosed that recently she received a campaign contribution from the UFCW. Fearing she may be taken to court by Wal-Mart for her vote, she has chosen to abstain from voting unless her vote is required for a decision.

Konopa stepped down from the dais.

Councilor Olsen said at the last meeting he indicated that he may be biased and therefore should abstain from discussion and voting. But, after conversations with the City Attorney he no longer believes that he should abstain so will participate in the discussion and vote.

Bedore asked if any member of the City Council wished to declare a conflict of interest, report any significant ex parte contact, or a site visit.

Christman received a letter and everyone on the Council has a copy. Johnson received the same letter.

Bedore said, for all those wishing to testify, please be aware that you must raise an issue with enough detail to afford the Council and parties an opportunity to respond to the issue if you later want to raise that issue on appeal to the Land Use Board of Appeals. Testimony and evidence must be directed towards the approval standards staff will describe or other criteria in the plan or development code which you believe apply to the decision. If additional documents or evidence are provided by any party, the City Council may allow a continuance or leave the record open to allow the parties a reasonable opportunity to respond. Any continuance or extension of the record requested by the applicant shall result in a corresponding extension to the 120-day limit. Failure of the applicant to raise constitutional or other issues relating to proposed conditions of approval with enough detail to allow the local government or its designee to respond to the issue precludes an action for damages in circuit court.

#### Staff Report

Planning Manager Don Donovan said Oregon Acquisition One LLC has submitted Site Plan Review and Adjustment applications to build a shopping center on the east side of Interstate 5, on the south side of Santiam Highway west of Goldfish Farm Road. Oregon Acquisition One is the land acquisition part of a company called SmartCentres, a shopping center developer based in Canada. Staff refers to this project as "the SmartCentres project." The cover of the application says SC Retail Center.

#### Review Process

Donovan explained that the site plan submitted with the applications shows that there would be six buildings in the shopping center. One of the buildings would be 187,000 square feet. The other buildings would range in size from 4,000 square feet to 18,185 square feet. The square footage of all the buildings would total 235,480 square feet. A new street would divide the north side of the shopping center from the south side. There would be no accesses to the shopping center on Santiam Highway. There would be three accesses on Goldfish Farm Road – the new street that will run across the property and two driveways. Building A, which is the largest building, would be on the south side of the new street and the other five buildings, designated Buildings B through F, would be on the north side of the new street. Tenants for the buildings have not been identified yet. The applicants submitted a set of drawings with the applications. There are 22 sheets in the set of drawings. The drawings include a site plan, landscape plans, a grading plan, utility plans, a lighting plan, and multiple other drawings that show other details of the proposed shopping center construction. The applicants also submitted supporting studies and other documents with the application. These documents include a Traffic Impact Analysis, Transportation Memorandum, Preliminary Drainage Report, Storm Water Memorandum, Noise Study, Geotechnical Report, Arborist Memorandum, and an Architectural Memorandum. The City Council has all of these documents in a binder before them. Donovan provided overheads of the property and explained the surrounding development.

The Site Plan Review and Adjustment applications submitted by SmartCentres were reviewed first by the Planning staff. The staff made a decision to approve the applications. In September 2007, the City Council decided that they would "call up" the staff decision when the staff decision was made. The Council thought it was appropriate for them to make the decision on the proposed development because they had made the decision to change the zoning of the property creating the large regional commercial site. So, this is the City Council public hearing on the SmartCentres applications. The City's

Development Code lists review criteria that we use to review each kind of application. The City's decision on an application must be based on the review criteria, and only on the review criteria. This helps frame the discussion about an application and provides predictability to people in that they know what the decision will be based on. The written staff report on the SmartCentres applications is 48 pages long. Donovan said he would not be going into all the details that are in the written staff report.

#### Review Criteria

Donovan said there are five review criteria that have to be met if the Site Plan Review application is to be approved.

First review criterion: "The transportation system can safely and adequately accommodate the proposed development." He explained that one of the conditions of approval of a zone change for this property, approved in 2006, was that development on the property generates no more than 800 new vehicle trips at the peak traffic hour, or a "trip cap." The peak hour for traffic is typically in the afternoon. The applicants submitted a Traffic Impact Analysis with the Site Plan Review application. The Traffic Impact Analysis assumes that the development will generate the maximum 800 trips allowed with the zone change. City staff uses Institute of Transportation Engineers ITE estimates of traffic generation to estimate the number of vehicle trips that will be generated by a particular development. Using the ITE rates for the square footage of the proposed shopping center and the traffic impact study, staff estimated that the actual number of vehicle trips that will be generated will be 730 peak hour vehicle trips. So, the TIA actually overestimated the impact of traffic from the shopping center on the street system by using the 800 trips at the peak hour allowed by the trip cap. The TIA looked at street intersections, and at traffic impact at the time the shopping center opens and impacts at 15 years out. The Analysis evaluated eight public street intersections and the two driveways on Goldfish Farm Road. The intersections it looked at were Santiam Highway and the intersections of Waverly Drive; Airport Road; Fescue Street; Timber Street; Goldfish Farm Road; Scrael Hill Road; the intersection of Goldfish Farm Road and the new street; and the intersection of Timber Street and the new street. The TIA found that improvements would be necessary at the intersections of Santiam Highway and Airport Road, Fescue Street, and Goldfish Farm Road for the intersections to operate at acceptable levels of service with construction of the shopping center. Conditions of approval of the shopping center would require these improvements and the applicants have agreed to make them. An eastbound turn lane is needed on Santiam Highway at Waverly Drive with construction of the shopping center, but this intersection needs more than the turn lane to accommodate current traffic and future traffic. A condition of approval would require the applicants to pay their share of the larger project and they have agreed to do this.

Second review criterion: "Parking areas and entrance/exit points are designed to facilitate traffic and pedestrian safety and avoid congestion." Donovan said the City's Development Code requires a certain number of off-street parking spaces for most kinds of uses. The Code requires one parking space for every 200 square feet of sales floor area for a shopping center. The proposed shopping center is required to have 1,100 parking spaces and that is the number the site plan shows would be provided. Bicycle parking would be provided and a network of pedestrian walkways would be provided in accordance with Code requirements. The staff report lists conditions of approval related to the parking lots.

Third review criterion: "Public utilities can accommodate the proposed development." Donovan said there are existing sewer lines in Santiam Highway and in Goldfish Farm Road that can provide sewer service to all of the buildings in the shopping center. A new waterline will be extended in the new street that will run across the shopping center property to provide water service for the buildings in the shopping center. The existing sewer and water lines have the capacity to serve the buildings. Storm drainage from the shopping center would drain to Cox Creek. The private storm drainage system in the shopping center would include two storm drainage detention ponds that will also clean the water to some extent before it discharges into the public storm drainage system. In most storms, Cox Creek stays within its banks and can accommodate the storm drainage from the shopping center within the banks. In a 100-year storm, Cox Creek floods and spreads out. The applicants submitted a drainage study that shows the additional storm drainage from the shopping center will raise the elevation of the flood waters an insignificant amount, in the range of 100ths of an inch. Storm drain lines designed to collect runoff from the adjacent property to the south that may now run towards the shopping center are included in the design of the storm drainage system. Storm drain lines that are designed to collect runoff from the fill slopes along the west boundary of the shopping center are also included so that no runoff reaches the property adjacent to the west. The City's Engineering Division asked for and received a considerable amount of follow-up information about storm drainage and flooding before the City Engineer approved the plans that were submitted, with the conditions listed in the staff report.

Fourth review criterion: "Any special features of the site (such as topography, hazards, vegetation, wildlife habitat, archaeological sites, historic sites, etc.) have been adequately considered and utilized." Donovan explained that there are two special features of the shopping center property. Part of the property is within the 100-year floodplain of Cox Creek and there are some wetlands on the property. The Oregon Department of State Lands administers the applicable wetlands regulations. They determined that the wetlands on this property are not subject to the regulations. The applicants propose to fill some areas of the shopping center property to get the property and buildings above the 100-year flood elevation as required by the City's Development Code and to provide storm drainage. The applicants provided a

grading plan that includes enough information for City staff to evaluate the effect that fill and grading will have on the 100-year flood elevation and on adjacent properties. Filling and grading are specifically excluded from the definition of development in the Development Code and are not reviewed with a Site Plan Review application, except to the point that staff can determine whether the plans will work without creating drainage problems for adjacent properties. A separate grading permit is required before the property can be filled. Owners of adjacent properties will get notice that a grading permit application has been submitted and get an opportunity to review the plans and comment. City engineering staff is here and can answer questions related to public utilities or streets.

Fifth review criterion: "The design and operating characteristics of the proposed development are reasonably compatible with surrounding development and land uses, and any negative impacts have been sufficiently minimized." Donovan explained that buffering and screening must be provided between commercial developments and residential developments. There is an existing residential subdivision on the property south of the proposed shopping center, and vacant property to the south and west which could be developed with houses in the future. A 10-foot wide buffer area and screening are required along the south and west property lines adjacent to the existing subdivision and the property that may be residential in the future. The plans submitted by the applicants show that a buffer area that ranges in width from 30 feet to 56 feet wide will be provided along the south property line. The landscape plans show that the required landscaping will be provided. A 15-foot wide buffer area and the required landscaping will be provided along the west property line adjacent to the property that may be developed with houses in the future. Staff identified the area along the south property line adjacent to the existing houses as an area that was important to pay attention to early in the development review process. The width of the buffer area that will be provided exceeds the required 10 feet. A 6-foot tall fence made of concrete that looks like wood will be provided. The landscaping along the south property line would include a thick screen of Leyland Cypress, Nordman Fir, and Western Red Cedar trees. Donovan provided an overhead of the Landscape Plan (in agenda file). He said that noise was also something that was identified early on. The applicants had a consultant do a noise study that evaluates the level of noise that may be generated by the shopping center. Noise generating activities may include parking lot sweepers, refrigeration units on the roof the building, and trucks. For the sake of evaluation, the noise study assumes that all of the noise generating equipment is operating at once. The State Department of Environmental Quality limits the level of noise that commercial developments can generate during the day and at night. The noise study concludes the noise generated at the shopping center can meet the DEQ standards if certain mitigation measures are provided. The mitigation measures would require that barriers would have to be built around the refrigeration units on the roof of the large building at the shopping center, or refrigeration units that don't generate as much noise as the standard units would have to be installed. The conditions of approval listed in the staff report require one or the other of these mitigation measures. Staff also asked the applicants to provide information about noise along the vacant property to the south and west. These properties are currently outside the City limits, but will be annexed someday, and could be zoned for residential development. Staff received a memorandum from the consultant that did the first noise study for the applicants that describes the level of noise that would be generated at the now vacant properties to the south and west. The memorandum concludes that noise from the refrigeration units on trucks with frozen food will exceed the allowable DEQ standards. The applicants have a couple of ways they proposed to deal with this situation. The Planning staff did not have time to review and provide comments on the memo to the City Council, but did discuss a couple of options for dealing with the noise from the refrigeration units on the trucks with the applicants.

#### Design Standards

Donovan explained that design standards include requirements that buildings be constructed near streets and that walls along streets have windows. Doors must be clearly defined and must be placed in locations convenient for pedestrians. Parking lots must not be located between buildings and sidewalks. The purpose of the requirements is to create developments that are accessible and attractive for pedestrians. The applicants originally submitted a site plan that showed buildings near Santiam Highway. They explained that the buildings were oriented to Santiam Highway with doors and windows on the Santiam Highway side of the buildings. It was staff's opinion that, although the buildings were near Santiam Highway and may have had doors on that side, the buildings were actually oriented toward parking lots on the interior of the property. With a modified design, the applicants provided doors both along the street and along the backs of the buildings on the parking lots. The modified design meets all of the commercial design standards, except that staff found that the intent of the design standards was compromised by placing identical public entrances and building features on the fronts and backs of the buildings. To accomplish what the design standards require, staff included a condition of approval that says public entrances may not be located on the back sides of the buildings. The doors will be on the new street that will be built through the shopping center property.

The applicants requested that they be allowed to have secondary doors on the backs of the buildings that are secondary doors. Staff agrees with this in concept, but has not had time to come up with language that would make clear what the secondary doors would look like.

### Adjustment Application

Donovan said the applicants also submitted a second application - an Adjustment application. The Adjustment application is to allow some vehicle travel aisles in parking lots in the north area of the shopping center to be 24 feet wide where 26 feet is usually required. There are two review criteria that have to be met if the Adjustment application is to be approved.

The first review criterion requires that the proposed adjustment be for 10 percent or less of a numerical standard. Twenty-four feet is less than 10 percent of 26 feet, so that review criterion is met.

The second review criterion requires that "The need for the requested adjustment is created by the configuration of the structure on the site." The placement of the proposed buildings, a storm water detention facility, pedestrian walkways, and landscape strips on the site leave only 24 feet for the width of some of the vehicle travel aisles. The written staff report concludes that this review criterion is met.

### Letters

Donovan mentioned that when staff mailed out the Notice of Public Hearing, they received four letters with comments about the applications for the shopping center. The letters are from John Hartman; Paul and Kimberly Shreve; Barry and Janet Ruebenson; and Norm and Lynn Kellogg. Mr. Hartman also wrote a letter to Councilor Christman. The letters raise questions about traffic, noise, storm drainage, the review process, and landscaping. Staff provided the letters to the applicants for responses. Donovan said, we also believe that the questions have been addressed in the staff report. One new issue that was raised in the letters concerns the effect of shifting ground and vibration on the houses to the south during construction of the shopping center. They left those questions to the applicant because staff is not familiar with the all of the details of the construction activities that will be involved.

Staff had also received three letters prior to the staff decision. Those letters and a letter from the Oregon Department of Transportation (ODOT) are also attached to the City Council staff report with responses to the questions raised in the letters. They got another letter from ODOT yesterday and that letter is in front of the City Council tonight (in agenda file). The Engineering staff agrees that the City can make the revisions suggested by ODOT in their letter and recommend the City Council direct staff to do so at the appropriate time.

Donovan said, at 4:00 p.m. today, the applicants submitted a letter to staff that asks for a few changes in the language included in conditions of approval, and other matters. Staff talked with the applicants about some of their requests and think we can include language that addresses their concerns in the final decision for these applications, following City Council direction and review of the requested revisions. The letter is on the dais before the City Council (see agenda file).

Donovan said, at 4:45 p.m. today, the City received a letter from Linn County that says if the City approves the shopping center, approval must be contingent on adequately addressing and mitigating traffic impact on Goldfish Farm Road to Knox Butte Road, and Three Lakes Road from Grand Prairie to Spicer Road. A copy of that letter is in front of each of the City Councilors too (see agenda file). The applicants will want to address this letter.

### Applicant

Andrew Sinclair, 201-11130 Horseshoe Way, British Columbia, Canada, representing SmartCentres, introduced his staff. He thanked the City staff for their cooperation and the thorough report Donovan just gave. He said that part of the property was annexed into the City in 2002, and the Council rezoned all the property for commercial use. They have been working with the City's Planning and Engineering Departments for around two years and essentially have an approval from ODOT. City staff made a decision on September 9 to approve with conditions. He mentioned that the size is well below the 275,000-foot permitted through the trip-cap analysis. This project will bring construction jobs and retail jobs, and the Site Plan and Adjustment applications meet all the criteria.

Mark Whitlow, Attorney for the applicants, submitted into the record a letter with comments regarding the conditions. It includes letters from their engineer and landscaper, and renderings (in agenda file). Basically the letters say that they could comply with the storm water and landscaping conditions. He said changes they would like to see for the conditions of the regional center include that they think it is important to have a secondary customer entrance on the parking lot side. Regarding timing of on-site construction, they want the opportunity to do site prep work and foundation work before off-site permits are obtained as those take a lot of time. Condition 3.6 also is for timing of on-site and off-site and they would like it clarified that it relates to the conditions above. Condition 2.6 says that even though they are putting a new collector street through the middle of the shopping center, staff wants them to provide access to the property on the northwest corner of the shopping center by stubbing out a two way driveway so that when the property is developed, they can match their stub and they would have driveway connection between the two properties and not have to use the new street. They have agreed with the understanding that it cannot be punched through now, but would be when the other property develops. Condition 5.11 relates to noise and the ability to mitigate during night time hours on those vacant lands to the southwest currently unincorporated in the

City but subject to future annexation. That property could yet come into the City and be zoned commercial. If so, there is no need for this condition as the noise regulations apply to residential. Also, the City's Code goes beyond the DEQ regulations and they are conforming to City Code.

Sinclair said the noise concerns were regarding the mitigation of the vacant property and weren't about the subdivision. They currently meet all noise standards regarding the subdivision.

Whitlow added there is a condition regarding an access way that doesn't conform to the American Disability Act (ADA), because it has a step. Not all access ways need to be ADA compliant. They offer language that allows for one access way with a step because of the grades on the site.

Sinclair provided renderings of the retail center (in the agenda file) on an easel for the Council and audience. He said there could be minor changes regarding color schemes, specific plantings, etc. He said they are proposing significant planting along the fence between commercial and residential areas for noise and aesthetics.

#### Support

Ray Kopczynsky, 1303 Tamarack Court, representing himself, said any organization willing to meet the stringent requirements of Albany's land use, should be approved. He said the Council should be inviting economic development into the community.

Janet Steele, 1540 Patrick Court, representing their Government Affairs Committee of the Albany Chamber of Commerce, said the applicants presented the proposal to the Government Affairs Committee and answered questions centered on meeting the requirements of the City and state. After the presentation the Committee unanimously approved supporting their application. The Chamber represents 700 businesses and we live in economic times in which employees are continually at risk of losing their jobs. Regional commercial development is another option for the community. Approving this project will provide jobs, provide retail options in east Albany, help stop retail leakage, and provide \$800,000 in tax revenues, with a total investment of \$45,000,000. She encouraged the Council to support the project.

John Pascone, 2667 Crocker Lane, from AMEDC, said the City is lucky to have the history to be located where we are in the middle of the valley along the I-5 corridor, and to have this investment. The Council should encourage investment in the community. This project creates construction jobs, retail jobs, and meets the requirements of the Planning Department. He encouraged the Council to approve the application.

Nick Pisani, 3821 Oranda Street, said he is in favor but concerned about development to the street. He said there is only one way out of his community now and with increased traffic in the area they will need another access out of the neighborhood.

#### Neither in favor or against:

Wayne Rackam, 3005 Chicago Street, was curious when the zoning change was approved and what kind of discussion took place regarding the trip count.

#### Opposed

Erin Johnson, 3849 Rankin Street, said she lives behind the development and a lot of her questions have been answered tonight. She is still concerned about storm water treatment. Where are oil drips, parking lot debris, and other contaminants going to run; into the community or Cox Creek? She likes the buffer zone and suggested they incorporate a pocket park there to assure the community that they are willing to give back.

Diane Hunsaker, 1565 Waverly Drive, asked how there would be enforcement of the trip cap? She said SmartCentres has a history of building for Wal-Mart. She suggested the Council go on line to read about Wal-Mart's reputation. She would like the Council to make it part of the agreement that it not be a Wal-Mart. They have too much of an impact on social services.

Michal Tolely, 1008 31<sup>st</sup> Avenue, believes that the trip cap totals are too low. There will be much more traffic during Thanksgiving and Christmas.

#### Favor

Edward Wright, 3111 Millersburg Drive, provided photos (in the agenda file), taken within the last five days, of the site and pictures of businesses north and east of the site. He said the property is hideous, and has been a neighborhood problem for years. There is garbage, junk, and people living around the lake. He asked, could it possibly be worse than this, while lifting up a photograph. He agrees with Janet Steele and others in favor of this project. He believes they will bring jobs. His business is across the street from the property and he has been in business for 25 years. He has never had to work so hard, seven days a week, 14 hours a day because of the slowing economy. He believes it is good for the City.



Bedore asked, does anyone wish to respond in opposition to Mr. Wright's testimony and/or want the opportunity to review the photos? No one wished to respond or view the photos.

Applicant Rebuttal

Whitlow said he understands the issues to be storm water, trip cap, and noise. They would like a few minutes to gather their information together.

Recess

Bedore recessed the public hearing at 8:55 p.m.

Reconvene

The public hearing was reconvened at 9:05 p.m.

Applicant Rebuttal

Sinclair said the issues they heard were regarding storm water, the southern pond, transportation and the trip cap, and an issue as related to the approval criteria.

Kevin Russell, WRG Design, 415 SW Westgate, Portland, a Civil Engineer, said he laid out the preliminary storm water drain design in the report. Concerns raised were water quality and contamination, and drain off. He said the City has no standards for storm water quality, but it does encourage storm water quality. They have two detention facilities on site that can contain up to the 25-year event, the required standard of the City. They have overflows to account for 100-year storm possibilities. Regarding contamination in the parking lot, they would install catch basins converging underground to the water quality pond.

Johnson asked, will the drainage be towards the neighborhood of Coastal Crossings? Russell said they will be installing drains along the south and east edge of the parking lot and they will release into the existing ditch on the west.

Sinclair added that the suggested dog/pocket park area may have standing water on it, so it could not be developed.

Mark Butorac, Kittleson & Associates, 610 Alder Street, Suite 700, Portland, Transportation Engineer for the project, said there was a question if streets would be punched through in the future. According to the Albany Transportation System Plan (TSP) Goldfish Farm Road will be extended to Spicer and the east/west collector provided in their plan will come out to Timber Street. So, long term there will be three public streets serving that development. During the interim, emergency access is from Santiam Hwy on northwest of building "E" to get into the residential area on the south. He explained how a trip cap analysis is done. The trip generation rates are conservative in nature in this study. The rate is an outside rate and both ODOT and City staff have reviewed them. The worst condition or highest hour of the year is used for traffic studies. The streets system has been sized for that and is adequate with additional capacity.

Christman asked, was there any consideration of Goldfish Farm Road, north of Santiam Highway, when doing the studies? Butorac said it was considered and the capacity at the intersection as constructed is at 10,000 trips. After full development they will be at 3,500 trips. That road is well within its capacity. They have met the road capacity and the intersection capacity for the road north of the intersection.

City Manager Wes Hare asked, if you were operating near capacity, what would that look like as far as delays in traffic? Butorac said at capacity, it would be a 30-40 second delay.

Christman asked, how will the City enforce the trip cap? Donovan read from the staff memo (page 4 of the agenda document) saying "The Institute of Transportation Engineers (ITE) estimates of vehicle trip generation are based on studies of actual developments, so the data is generally considered reliable. There was discussion during the hearing on the zone change about how to measure the number of trips that would be generated by development on the 26 acres when development was proposed. Specifically, one City Councilor asked about the possibility of requiring the developer to do counts of the actual volume of traffic that is generated by commercial development on the property when the development is complete, and requiring additional mitigation of traffic impact if the volume exceeded what was estimated using ITE rates."

Delapoer explained that a traffic count on a particular day might not be representative of the longer term volume of traffic that is actually generated by a particular development. The City Engineer agreed and a representative of ODOT further explained that factors such as economic cycles and competition influence the number of customers that visit a particular development. The City does not use actual traffic counts for any proposed development. We use the ITE trip generation estimates. Delapoer added that the trip cap is a design standard that comes from the ITE Manuals. It's used now to see if the proposed development meets the standards of the cap; it is not used for enforcement of traffic flow.

Hare said the main concerns are how long a citizen will have to wait at an intersection. Mitigation improvements may make traffic better, rather than worse.

Olsen said he recalls that the Council was told that if the development attracted too much business, it would back up traffic on Santiam Hwy to the lights at the I-5 interchange, possibly causing continuing backup on to the freeway. He asked, if this actually happens, will something be done by ODOT? Hare said typically that takes some time to happen and you do get warnings in time to discuss funding strategies. SDCs will be paid for this project which would go for additional capacity in the future.

Butorac said when the zoning change review took place, there was discussion about a 20-year horizon, including the intersection improvements on Goldfish Farm Road and others, which are significant improvements. Adding additional lanes can make a significant change in traffic flow.

Councilor Collins asked if the applicant could explain volume-to-capacity ratio and if that standard is an absolute standard or a guideline from ODOT. Butorac explained volume to capacity as like a pitcher of water. When you have a volume to capacity of 70% at an intersection it is like a pitcher being 70% full. You still have 30% that you can add to the pitcher of water before the pitcher is full. Same with an intersection, you have 30% more traffic volume that you can add to the intersection before it is "full". ODOT has two standards that they apply to intersection capacity. First, if the intersection is operating below ODOT's maximum volume to capacity ratio, then development must mitigate its impacts such that the intersection does not exceed the maximum volume to capacity ratio. Second, if an intersection is already operating in excess of the volume to capacity ratio prior to the development, the development must mitigate its impacts so that the volume to capacity ration after the development meets the volume to capacity ration prior to the development. Collins said that in the analysis that he read, in some cases our v/c ratios currently exceed the standard, but with the improvements you're proposing, in some cases it brings it back below the standard and in other places it brings it to the current v/c. Over time, as it got worse, it would get worse from growth within the community not associated with the improvements. Butorac said that is correct.

Councilor Reid was concerned that noise control from 10:00 p.m. to 6:00 a.m. would be only with signs for refrigerated delivery trucks to turn their motors off. They will not obey for fear of destroying their load. It needs more than that. Sinclair responded that they would require, as part of the agreement with the delivery trucks, that refrigerated trucks would not be on site between 10 p.m. and 6 a.m. The side of the property where the trucks would be loading currently is bordered by vacant property.

Collins said, in the staff report it says you are attempting to acquire right-of-ways west of the property and if unable to acquire, the City would consider condemnation. He asked, at the time that right-of-way would be acquired, would the company pay for the extension to Timber Street? Sinclair said yes. Collins said, but it's not paying for the intersection of Timber and Highway 20? Sinclair said, no they are required to build the road to our west property line. Collins said that would leave it to the City, SDCs, and ODOT to develop. He said there are concerns about the intersection from the neighborhood. Sinclair said they will place no extra burden on the transportation system than what was permitted previously. Butorac said they do not own any other property in order to build out to the other corridors. They meet the City's operational standard now and 15 years in the future.

Olsen asked, how long do you project it will meet the standards? Butorac said, long-term it will meet the intersection requirements. Donovan referred to page 16 in the packet as an example of how the transportation will change. There will be a fair amount of congestion that will be relieved when connection to Timber Street is made.

Whitlow said that they meet all the review criteria. Use is not a criterion. They meet requirements for the TSP and have mitigated impacts. Streets and roads are built by the development. The conditions need some adjustments to make them more reasonable. They would appreciate a vote of approval.

Delapoer said the applicant has indicated that they intend to waive the seven day written response.

Olsen commented on asking the City to condemn property. He thinks they should get it for themselves. Sinclair said they understand; they are making every effort to acquire the property. That portion of the road is not required to allow the shopping center to function. They don't have total control over that process. They will pay the cost, if necessary.

Bedore asked, since they have offered new evidence, is there any response from anyone in the audience? There was none.

The Quasi-Judicial Public Hearing was closed at 9:47 p.m.

Olsen said with so much new information to review, he would like extra time.

MOTION: Olsen moved to table deliberation and any tentative decision by the Council to date certain, Wednesday, October 22, 2008. Christman seconded the motion and it passed 5-0.

Public Hearing

SS-07-03, adopting Engineering and Financial Investigation Reports for Ellingson Road Sewer Extension Project.

Bedore opened the public hearing.

Shepard said, action here would form the Local Improvement District including the SVC Manufacturing Company for the sewer extension.

Testimony

No one wished to speak.

Bedore closed the public hearing at 9:52 p.m.

MOTION: Collins moved to adopt the Engineering and Financial Investigation Reports for SS-07-03, Ellingson Road Sewer Extension Project. Reid seconded the motion and it passed 6-0, and was designated Resolution No. 5674.

Business from the Public

Bill Root, 2634 Valley View, representing the North Albany Neighborhood Association (NANA), read a letter they wrote to the Oregon Water Enhancement Board supporting the East Thornton Lake Natural Area and Park (in the agenda file).

Michael Quinn, 4455 Sunset Ridge NW, asked the Council to consider including a solar powered crosswalk on Geary Street at 12<sup>th</sup> Avenue as an additional project in the Capital Improvement Projects (CIP) plan. There is a residential neighborhood behind the Panda Express on that street that includes many children. The kids get off school buses and cross there. He suggested using SDCs, as it is a safety issue.

Johnson agreed with Quinn, saying that there are a lot of kids in the area and a crosswalk is needed.

Public Works Director Diane Taniguchi-Dennis said it is a valid project. If the Council is interested in considering it, staff can bring information to a Council meeting.

Konopa agreed and suggested that whole section of Geary Street be evaluated for an appropriate crossing spot.

Quinn said he estimates the costs would be around \$14,800.

CONSENSUS: There was Council consensus to have staff bring information regarding creating a pedestrian crosswalk across Geary Street in the 12<sup>th</sup> Avenue vicinity.

Adoption of Resolutions

Waiving competitive bidding and awarding a sole source contract to SunGard Public Sector.

MOTION: Christman moved to adopt the resolution having the Albany City Council, acting as the Local Contract Review Board, waive competitive bidding and award a Sole Source Contract to SunGard Public Sector for the Albany Police records management system software. Johnson seconded the motion and it passed 6-0, and was designated Resolution No. 5675.

Transferring appropriation for BR-06-01, Periwinkle Creek Bridge at Second Avenue, from the Capital Projects Fund to the Street Capital and Restoration Fund.

MOTION: Reid moved to adopt the resolution transferring appropriation for BR-06-01, from the Capital Projects Fund: Periwinkle Creek Bridge at Second Avenue, to the Street Capital and Restoration Fund. Collins seconded the motion and it passed 6-0, and was designated Resolution No. 5676.

Adoption of Consent Calendar

- 1) Approval of Minutes
  - a) August 27, 2008, City Council Meeting
  - b) September 8, 2008, Work Session
- 2) Adopting an updated investment policy. RES. NO. 5677
- 3) Revising language regarding appointments to City boards, commissions, and committees. RES. NO. 5678
- 4) Revising the City of Albany Public Safety Commission Resolution. RES. NO. 5679
- 5) Authorizing a grant application for acquisition of property on East Thornton Lake.
- 6) Approving a liquor license for Cascade Grill & Bar, LLC, 110 Opal Court NE.

- 7) Applying for and accepting the Oregon Association Chiefs of Police grants for:
  - a) Safety Belt/Three Flags Traffic Safety Grant to enforce safety belt, speeding, and DUII laws. RES. NO. 5680
  - b) DUII Overtime Grant for the detection and removal of impaired drivers from our streets. RES. NO. 5681
- 8) Accepting easements from:
  - a) Jack Utterback, 20-foot wide public utility easement. RES. NO. 5683
  - b) Leroy Laack Trust, 15-foot wide easement over a public storm drainage line. RES. NO. 5683
  - c) Leroy Laack Trust, variable width sidewalk and utility easement. RES. NO. 5684
- 9) Executing a Quitclaim Deed to release a sewer easement to Property Investment Group of Albany. RES. NO. 5685

There was a new resolution for item 4) on the dais for the Council. The resolution revises the wording to the bylaws of the Public Safety Commission to reflect the intent and practice since 2004.

Christman asked that item 5) be pulled for discussion.

MOTION: Christman moved to adopt the Consent Calendar with item 5) pulled for discussion. Reid seconded the motion and it passed 6-0.

Christman explained that he is in favor of item 5), "Authorizing a grant application for acquisition of property on East Thornton Lake", being done without City funds. He believes the property should be acquired with grants and community funds. He wants the Council to consider language that will state that the grants would not be matched or augmented from tax dollars.

Parks & Recreation Director Ed Hodney said the City's share can come from any or all other sources. Parks CDCs were mentioned because, potentially, there is a park planned in the area. This isn't a commitment. If the Council wants to direct staff to include no use of tax dollars, they will do that.

Hare commented that it would be a mistake to put "no use of tax dollars" in the application. He understands that the Councilor doesn't want to use General Fund monies, but the interpretation of what is tax dollars could include monies the City is willing to use.

Christman said the park will be small and the benefit to the community will be minimal.

Hodney said the park will encompass five acres of the 24 acres. It is a traditional neighborhood park which also doubles as open-space-educational. Staff may receive more details regarding funding options before the grant application is approved. They will keep the Council up to date as that process goes along. The application deadline to the Oregon Watershed Enhancement Board (OWEB) is October 20. Currently, there is no financial obligation except staff time.

Collins believes there is significant community benefit from this park and open space area; educational as well as recreational.

Johnson asked, will the City own the five acres? Hodney said the City will own the entire 24 acres.

Hodney added that the City will be working with others regarding restoration management of the open space and a development plan. OWEB would have the conservation easement over the property. Hodney brought the Council up to date, including letters of support from partners that will bring in other resources to get the project going.

Olsen said he would prefer to submit the best application possible with no caveats.

Warren Harrington, 2326 Holly Place NW, asked, is the park for everybody? The Council replied, yes. Harrington asked, can the public use the lake? Hare explained that the portion owned by City of Albany is public property and open to the public. Parts of the open space may be sensitive and require some use restrictions. Harrington said he had been told by homeowners on the lake that he couldn't fish there. Collins said there is private property along the west side of the lake in which the lot lines extend into the center of the lake. That is true of portions of the east side of the lake as well. The City will acquire only the portion that borders these 24 acres. There will still be private property along a portion of the lake.

Collins said there may be a problems opening public access to the lake. Hodney said they will develop a management plan that would include the neighbors.

Hodney suggested he get together with Mr. Harrington to answer his questions one on one.

MOTION: Collins moved to adopt item 5) of the Consent Calendar. Konopa seconded the motion and it passed 4-2, with Christman and Johnson voting no.

Award of Contract

Kinder Park Development.

Hodney explained that there were 15 bids submitted for this project, ranging from a low base bid of \$584,327.70 to a high base bid of \$873,800. The total construction budget is \$781,000. He provided a bid summary for the Council (in the agenda file). Staff would like a tentative award to R&R General Contractors, Inc. in the amount of \$680,681.52, the low bidder. The project was budget in FY 2008-2009 and will be funded from the Grant Fund.

MOTION: Johnson moved to tentatively award the construction contract in the amount of \$680,681.52 to the low bidder, R&R General contractors, Inc. of Wilsonville, Oregon. Collins seconded the motion and it passed 6-0.

Radio Frequency Identification Tracking and Materials Handling System (RFID)

Bedore explained that this item was discussion at the Monday, October 6, Council Work Session.

MOTION: Collins moved to adopt the resolution appropriating a Special Purpose Grant and authorizing the Library Director to sign a contract between the City of Albany and SirsiDynix for a Radio Frequency Identification Tracking and Materials Handling System (RFID) beginning October 9, 2008. Reid seconded the motion and it passed 6-0, and was designated Resolution No. 5686.

BUSINESS FROM THE COUNCIL

Johnson provided a spreadsheet of value changes of assessed valuation for properties in Linn County (in agenda file).

Reid would like an update on the sale of the Archibald property. Taniguchi-Dennis said the sale has closed and the money is in a revenue account as proceeds from property. There will be a Council discussion scheduled for the use of the funds.

RECESS TO EXECUTIVE SESSION TO DISCUSS LABOR NEGOTIATIONS AND PROPERTY NEGOTIATIONS IN ACCORDANCE WITH ORS 192.660(2)(d)(e)

The Regular Session was recessed into Executive Session at 10:36 p.m.

RECONVENE

The Regular Session was reconvened at 11:00 p.m.

MOTION: Konopa moved to ratify the City of Albany and Albany Police Association 2008-2011 Collective Bargaining Agreement. Johnson seconded the motion and it passed 6-0.

MOTION: Konopa moved to give authority to the City Manager to conduct negotiations for the sale of the Library building at 1390 Waverly Drive, sign all documents regarding the same, conduct negotiations, and secure a temporary lease of the building until the new Library building is move-in ready. Reid seconded the motion and it passed 6-0.

NEXT MEETING DATE

The next Work Session of the City Council is scheduled for Monday, October 20, 2008, at 4:00 p.m., in the Municipal Court Room, at City Hall, and the next Regular Session is scheduled for Wednesday, October 22, 2008, at 7:15 p.m., in the Council Chambers, at City Hall.

ADJOURNMENT

There being no other business, the meeting was adjourned at 11:02 p.m.

Respectfully submitted by,

Reviewed by,

Betty Langwell, CMC  
City Clerk

Stewart Taylor  
Finance Director

CITY OF ALBANY  
 CITY COUNCIL  
 Council Chambers  
 Wednesday, October 22, 2008  
 7:15 p.m.

**MINUTES**

CALL TO ORDER

Mayor Bedore called the meeting to order at 7:15 p.m.

PLEDGE OF ALLEGIANCE TO THE FLAG

Mayor Bedore led the pledge of allegiance to the flag.

ROLL CALL

Councilors present: Sharon Konopa, Ralph Reid, Jr., Floyd Collins, Dick Olsen, Bessie Johnson, and Jeff Christman

SPECIAL PRESENTATIONS

Community Before & After School Child Care Program (CAP).

Cass Templeton, 11<sup>th</sup> Street, and Wayne Goetz, representing the Community After School Program (CAP), gave some history of the program and explained that it is a latch key program run by donations and grants, not by the City or school district. They updated the Council on their programs and thanked them for the support they receive through the Outside Agency Grant Program. They handed out packets that included their annual report, descriptions and locations of their buildings, attendance records, and enrollments (in agenda file).

Procession of the Species.

Tiah Swanson, 6339 Chapman Court SW, showed a video of Albany's 2008 procession and mentioned that it was created by a South Albany High School student.

Patty Evans, 1556 Otter Court, said the parade celebrates harmony and unity and the one thing everyone has in common, the world we live in. She invited the Council to join in the vision, on April 25, 2009. They could also use some money. She read an endorsement from Librarian I Doris Hicks regarding the Library's involvement in supporting costume workshops (full letter in agenda file).

Oregon Bicycle Racing Association.

Rob Hughes, 3921 Sitka Place, Corvallis, said he would provide a video of the 2008 Albany race at a later Council meeting. The race was very successful and the Association would like to hold the 2009 race in downtown Albany as well. In 2009 the scheduled day would be a Saturday, August 15, rather than a Sunday as was held this past April. He is asking for City support for closing the streets. He provided a map of the route for the race (in the agenda file). He needs a decision tonight because the executive board for the Association is designating the route this week.

MOTION: Councilor Reid moved to have staff work with the Oregon Bicycle Racing Association and the Albany Downtown Association to coordinate the proposed race in downtown Albany on Saturday, August 15, 2009. Councilor Konopa seconded the motion and it passed 6-0.

SCHEDULED BUSINESS

Business from the Public

No one wished to speak.

City Council Deliberation and Tentative Decision

SP-12-08 and AD-01-08, applications for construction of a shopping center on the south side of Santiam Highway, west of Goldfish Farm Road SE.

Konopa left the dais.

Bedore explained that the Council deliberation and tentative decision regarding a Site Plan Review application is for construction of a shopping center with six buildings on 25.67 acres of land; and an Adjustment application that would allow 24-foot-wide travel aisles in the parking lots on the northern parcel of the shopping center where 26-foot-wide travel aisles are usually required. The applicant is Oregon Acquisition One, LLC. This is city of Albany case files SP-12-08 and AD-01-08. Bedore said, on October 8, 2008, the Council held a public hearing on these applications. Following the public hearing, the City

Council decided to table deliberation and decision on the applications until tonight's meeting. Also, Councilor Konopa decided to abstain from participating in the public hearing and decision.

Councilor Christman said that in the information presented at the hearing Goldfish Farm Road, north of Highway-20, was said to be able to handle 10,000 trips. He recently traveled on that road and doesn't believe it can. He asked, what can we do about that part of the road?

City Attorney Jim Delapoer cautioned the Council that their decision tonight must be dependent on information given at the public hearing. Staff can recommend wording for conditions, but can't put into the record any new information. If the concern is the letter the County introduced, the Council can ask staff to have a condition for approval to be a satisfactory resolution of Linn County's concerns. We cannot consider whether the County's concerns have been addressed or not outside of the record. Tonight's motion will be to tentatively approve or deny; and concerns can be addressed by giving a condition. Rules on land use hearings require a decision based only on what was on the record on the day of the hearing.

Christman said this reemphasizes his belief that the process is flawed. After receiving so much information during the public hearing, they are expected to make a decision without receiving answers to their questions.

Councilor Collins was also concerned about Goldfish Farm Road, and thought there was conflicting information regarding the Oregon Department of Transportation's (ODOT) timeliness of issuing permits for occupancy and the applicant's request for allowing on site work prior to the actual permits being issued. How will that be resolved? Planning Manager Don Donovan said their request was to allow some grading and foundation work prior to getting some permits from ODOT. We can allow them to do that. We are requiring, and the applicants are willing, to put the financial assurances up front for the street improvements. They would not be issued the permits for the buildings until they got the permits from ODOT.

Collins was concerned about the developer's request for occupancy before fulfilling all of the permit requirements. Transportation Systems Analysis Ron Irish said the original condition was to have all ODOT permits before construction or occupancy. The new conditions require the public improvements to be done before occupancy.

Councilor Olsen asked, what is ODOT requesting? Irish said there are a series of improvements including capacity at Goldfish Farm Road and US Highway-20 and turn lane and intersection improvements at US-20 and Fescue Street, as well as US-20 and Airport Road, and US-20 and Spicer Road. Basically, both sides of the Interstate-5 interchange as well as Goldfish Farm Road. There is also a condition involving the intersection of US-20 and Waverly Drive, which is a condition for financial contribution.

**MOTION:** Christman moved to grant tentative approval, with conditions, of the Site Plan Review application for construction of a shopping center with six building on 25.67 acres of land; and the Adjustment application to allow some 24-foot-wide travel aisles in the parking lots on the northern parcel of the shopping center where 26-foot-wide travel aisles are usually required; and to have staff prepare additional findings that address the new information presented at the public hearing, in particular the condition of a satisfactory resolution of Linn County's concern regarding Goldfish Farm Road, for consideration at the next meeting. Johnson seconded the motion.

Collins said he has heard from the community that new construction should comply with the development code. Staff has said that this project has met the conditions of the code and after extensive research, he agrees that they have. He has concerns beyond the requirements of the code, which probably could be addressed with revisions to the code. Part of his concerns has to do with secondary access and pedestrian and bike access. His conclusion is that the applicant has met the requirements of the code.

Olsen asked, does this development use up all of the sewer capacity in the area? Assistant City Engineer Jeff Blaine said yes, that is correct. Staff would likely have to do site specific evaluations if other development comes in to evaluate the existing piping between the development and the Sewer Treatment Plant.

Collins asked, what would be the remediation if there were a problem? Blaine answered that if there were a problem, there could be a potential reroute of a lift station, or piping improvements that are scheduled a few years out in the Capital Improvement Program could be constructed.

**VOTE:** A vote was taken on the motion and it passed 4-1, with Olsen voting no.

Second Reading of Ordinance

VC-03-07, vacating a portion of Ferry Street SW, between Queen Avenue and the Southern Pacific Transportation Company Railroad right-of-way, and adopting findings.

City Attorney Jim Delapoe read for the second time in title only "AN ORDINANCE VACATING A PORTION OF FERRY STREET SW, BETWEEN QUEEN AVENUE AND THE SOUTHERN PACIFIC TRANSPORTATION COMPANY RAILROAD RIGHT-OF-WAY; AND ADOPTING FINDINGS."

MOTION: Reid moved to adopt the ordinance. Christman seconded the motion and it passed 5-1, with Johnson voting no, and was designated Ordinance No. 5704.

Adoption of Resolutions

Approving exemption from the competitive bidding process for the purchase of one International Life Line Highliner ambulance through an existing contract with the city of Eugene and Hughes Fire Equipment.

MOTION: Reid moved to adopt the resolution approving exemption from the competitive bidding process for the purchase of one International Life Line Highliner ambulance through an existing contract with the city of Eugene, Oregon, and Hughes Fire Equipment, Inc.; to issue a notice of intent to award contract with Hughes Fire Equipment, Inc.; and authorizing the City Manager to enter into a contract for \$199,211 with Hughes Fire Equipment, Inc. to purchase one International Life Line Highliner ambulance. Christman seconded the motion and it passed 6-0, and was designated Resolution No. 5687.

Appropriating a special purpose grant and authorizing the Library Director to sign a contract between the City of Albany and SirsiDynix for a radio frequency identification tracking and materials handling system.

MOTION: Collins moved to adopt the resolution appropriating a special purpose grant and authorizing the Library Director to sign a contract between the City of Albany and SirsiDynix for a radio frequency identification tracking and materials handling system (RFID) beginning October 9, 2008, and repealing Resolution No. 5686. Reid seconded the motion and it passed 6-0, and was designated Resolution No. 5688.

PA-01-08/VR-05-08, Orezona Building Company LLC, rescinding the approval of tentative partition plat and variance applications granted by the Albany City Council on June 11, 2008.

MOTION: Konopa moved to adopt the resolution rescinding the approval of tentative partition plat and variance applications granted by the Albany City Council on June 11, 2008. Reid seconded the motion and it passed 6-0, and was designated Resolution No. 5689.

Adoption of Consent Calendar

- 1) Approval of Minutes
  - a) August 25, 2008, City Council Work Session
  - b) September 10, 2008, City Council Meeting
  - c) September 22, 2008, City Council Work Session
  - d) September 24, 2008, City Council Meeting
- 2) Adopting the Identity Theft Protection policy for the City of Albany. RES. NO. 5690
- 3) Authorizing short-term operation loans from available cash reserves to the General Fund and Public Transit Fund. RES. NO. 5691
- 4) Accepting easements from:
  - a) Mary Hubler. RES. NO. 5692
  - b) Deena Frishkorn. RES. NO. 5693
  - c) Earl Stutzman. RES. NO. 5694
- 5) Accepting and appropriating a special purpose grant from the Oregon Department of Land Conservation and Development to assist with completion of Goal 5 tasks in the City's Periodic Review Work Program. RES. NO. 5695

MOTION: Councilor Johnson moved to adopt the Consent Calendar as presented. Reid seconded the motion and it passed 6-0.

Award of Bid

Awarding a contract to PetroCard Systems, Inc., for commercial fuel for police vehicles.

Collins asked, is the fuel priced fixed? Capt. Atchley explained that it is based on the following formula: (wholesale price) plus (taxes) plus (their markup of six cents). The actual cost will fluctuate as wholesale prices fluctuate, but their markup of six cents is fixed. They were the sole bidder.



MOTION: Reid moved to award the contract for commercial fuel for police vehicles in the annual amount of \$147,868.80 to the only bidder, PetroCard Systems, Inc. Johnson seconded the motion and it passed 6-0.  
Appointment

Appointing John Hartman to the Human Relations Commission.

MOTION: Reid moved to appoint John Hartman to the Human Relations Commission. Konopa seconded the motion and it passed 5-1, with Christman voting no.

Report

SD-07-07, Fabian Estates, LUBA remand public hearing.

MOTION: Collins moved to set the public hearing for the Land Use Board of Appeals (LUBA) remand regarding Fabian Estates on November 12. Christman seconded the motion and it passed 6-0.

BUSINESS FROM THE COUNCIL

Reid provided a spread sheet regarding Albany's increasing water rates and the water fund (in agenda file). It included his projections following three scenarios: 1), follow current practice of a 3.3% increase in 2009 and 4.7% increase for the next four years; 2), no increase in 2009 and then continue increases of 4.7% in 2010 and for the next four years; and 3), no increase in 2009 and continue increases of 2.5% for the next four years. Reid said he doesn't like the third scenario because the reserve isn't enough. He is recommending the Council consider the second scenario, or use it as a guideline.

Bedore suggested that the Council review the spreadsheets, have discussion, and have staff bring back an ordinance for them to adopt.

Johnson thinks it is a good idea not to raise rates in 2009.

Collins said, if we don't raise the rates, we don't need an ordinance.

City Manager Wes Hare suggested that Public Works Director Diane Taniguchi-Dennis and Finance Director Stewart Taylor review the information provided and give their opinion. He asked, does deciding not to raise rates mean that the City would forgo capital projects currently in the CIP?

The Council agreed to wait to make a decision until they could hear from staff regarding the impacts of changing the current structure.

Collins mentioned that he would like to have staff do this type of analysis on an annual basis.

Collins provided the City with a check for \$750 from the Takena Kiwanis Club for costs associated with fencing erected at the Gibson Hill Park.

Olsen was concerned that Periodic Review as mentioned on the Consent Calendar takes so long to complete. He noted that it has been 10 years since the City started Periodic Review. Hare said it is a long process and mentioned that when all cities are required to do it, there is not enough staff hours available at the Oregon Department of Land Conservation and Development (DLCD) to help. Since the threshold requirement has been raised it frees up more hours and there is better staff support from the state. There are many variables that the law requires and it is highly technical work, which takes time to complete.

Community Development Director Greg Byrne said some miscommunication took place between the City and DLCD that caused a delay. Delapoer added that Measure 37 changed the rules in the middle of this long process because of local property rights.

Hare said the City would have to go through the same noticing process that is required for all land use issues.

Byrne added that the City does have some problems with open space boundaries, including extension into floodplains and in some cases, beyond the flood plains. He understood that the Council wanted those boundaries to be more rational and for staff to resolve some of those concerns as a result of work on Goal 5. That may lead to some zone changes. He said the Council will have a heads-up regarding those changes.

Hare said when the City does legislative changes such as these, property owners do receive notice.

Collins said, the staff report said that there would be public meetings but there was no reference to the advisory board that was used in the past. Donovan said the advisory body that was in place will be involved. Byrne added that they will meet the letter, spirit, and intent of the law and go beyond it. They will be meeting with neighborhoods, interest groups, and individual property owners.

Konopa asked if previous plans that have been completed through periodic review were adopted. Donovan said no, they haven't been adopted. The plan was to adopt all of them together. It was partly because of the property rights issues.

Johnson asked if the City Council meetings could be shown on television on Thursdays rather than Sundays.

Hare said he would be gone November 1-5. He alerted the Council to the proposed revised building inspection fee schedule that the City is going to be submitting to the state. The hearing is scheduled in December.

Bedore said the Linn Library League would like the Council to make it clear whether the resolution supporting the League ballot measure issues is continuous or is no longer in effect. The Council instructed staff to bring this issue to a work session.

#### NEXT MEETING DATE

The next Work Session of the City Council is scheduled for Monday, November 10, 2008, at 4:00 p.m., in the Municipal Court Room, at City Hall, and the next Regular Session is scheduled for Wednesday, November 12, 2008, at 7:15 p.m., in the Council Chambers, at City Hall.

#### ADJOURNMENT

There being no other business, the meeting was adjourned at 8:53 p.m.

Respectfully submitted by,

Reviewed by,

Betty Langwell, CMC  
City Clerk

John Stahl  
Assistant Finance Director



TO: Albany City Council  
VIA: Wes Hare, City Manager  
FROM: Ed Hodney, Director of Parks and Recreation *CPN*  
DATE: November 5, 2008, for the November 12, 2008 City Council Meeting  
SUBJECT: Senior Center/Council of Governments Lease

RELATES TO STRATEGIC PLAN THEME: ● Great Neighborhoods  
● An Effective Government

Action Requested:

Approve a Motion authorizing the City Manager to sign a lease agreement with the District 4 Council of Governments (COG) for usage of the Albany Senior Center.

Discussion:

For over 20 years, the City of Albany has leased portions of the Albany Senior Center to the Council of Governments for the COG's Senior Meals program. The original lease has expired and COG wishes to renew on a year-to-year basis with a review each year before the lease is extended. The COG proposes to pay rent at the sum of \$25 per day.

Staff recommends approval of the new lease.

Budget Impact:

The current Parks & Recreation Department budget includes the projected revenues related to this lease.

Attachment: Proposed Lease Agreement

**Senior Center Kitchen and Dining Room Lease  
489 Water Ave NW**

This agreement is made and entered into this 12 day of November, 2008, by and between the City of Albany, Oregon, hereinafter referred to as "City" and District 4 Council of Governments hereinafter referred to as Council of Governments.

WHEREAS, the City is the owner of the Albany Senior Center building at 489 Water Ave NW, Albany, Oregon; and

WHEREAS, the City desires to lease to the Council of Governments and the Council of Governments desires to lease from the City certain portions of said building for the operation of a nutrition program for the elderly.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained, the parties agree as follows:

Section 1: Leased Premises. The City does hereby lease and let unto the Council of Governments the following portions of the Albany Senior Center at 489 Water Avenue, Albany, Oregon, for the Council of Governments use during the following times:

- a. Kitchen – Monday through Friday, from 8:00 a.m. to 1:30 p.m., except for those days described in Section 12, by facility closure or except by mutual agreement when the City desires access prior to 1:30 p.m. for class or meal preparation.
- b. Dining Area – (Bay 3 of the multipurpose room which is adjacent to the kitchen) – Monday through Friday from 10:30 a.m. to 1:00 p.m. except for those days described in Section 12, Use of Space and Equipment by Others, and Section 13, Facility closure.
- c. Cafeteria Line Serving Area – Monday through Friday from 8:00 a.m. to 1:00 p.m. on days when using the kitchen. Service area window between kitchen and dining area.
- d. Desk Space in Kitchen Area – Throughout the term of this Lease.
- e. Kitchen Storeroom – Shelving units located on the North and West walls of the Storeroom throughout the term of this lease.

Section 2: Term. The term of this lease shall be on a year to year basis beginning on July 1, 2008 and reviewed annually prior to renewal. If contract review is not complete by July 1<sup>st</sup> the previous year's terms shall stay in effect until review is complete

Section 3: Consideration. The Council of Governments shall pay the City for rent of the space leased hereunder the sum of \$25 per day. Rent shall be paid in advance and is due on the date hereof and on the first day of each month thereafter for all rent which will accrue in the following month. Checks should be mailed to City of Albany Senior Center, P.O. Box 490, Albany, Oregon 97321.

Section 4: Use of Property. In connection with the use of the premises, the Council of Governments will conform to all applicable laws and regulations of any public authority affecting the premises and the use, and will correct, at the Council of Governments own expense, any failure of compliance created should it be by the Council of Governments fault or by reason of the Council of Governments use. The use of the facility will be consistent with typical uses required in providing on site and delivered meals to senior adults.

Section 5: Reporting. The Council of Governments shall submit monthly to the City a report of the number of home-delivered, congregate and total meals served daily by the Council of Governments' nutrition program.

Section 6: Assignment. The Council of Governments shall not assign this Lease or any interest hereunder and shall not permit any assignment hereof by operation of law without the express written consent of the City. In the absence of written consent, any such assignment shall be void and shall terminate this Agreement.

Section 7: Subleasing. The Council of Governments shall not further sublease any portion of the premises.

Section 8: Council of Governments' Cleaning Responsibilities. The Council of Governments shall be responsible for the following cleaning and janitorial services:

- a. To clean the floor, equipment and counter areas in the kitchen and serving area after each Council of Governments' use thereof; Floor cleaning will include debris pickup and sweeping as necessary. Equipment and counter clean up include wiping down as necessary and sanitizing.
- b. To set-up and take-down tables and chairs, to wash tables and spot clean the dining area floor after each Council of Governments' use thereof;
- c. To keep the serving area, desk area and kitchen storeroom in a neat, clean, safe and sanitary condition;
- d. To maintain the cleanliness of kitchen equipment including daily cleaning of all food prep areas including but not limited to counter, sinks, refrigerator, freezer, stove, ovens, dishwasher, floor, storage closet.

Section 9: City Cleaning Responsibilities. City shall be responsible for the following cleaning and janitorial services;

- a. To clean the floor, equipment and counter areas in the kitchen and serving area after each use thereof, other than Council of Governments' use;

- b. To wash down the tables in the dining area after each use thereof, except Council of Governments' use;
- c. To sweep the floors of the dining area.

**Section 10: Council of Governments' Equipment Responsibilities.** The Council of Governments shall be responsible for the following equipment and equipment maintenance and repair services.

- a. To provide all utensils, dishes, pots, pans, and other small equipment used in the preparation and service of meals;
- b. To repair damage or provide maintenance due to negligence or abuse by the Council of Governments.
- c. To notify City of needed repairs or maintenance of equipment owned by City in a timely manner;
- d. To conduct repairs of an emergency nature necessary to prevent disruption of Council of Government's services.
- e. Cleanout designated refrigerator, freezer and storage space as necessary and at least quarterly.
- f. Damage beyond normal wear and tear that is caused by the Council of Governments staff, volunteers or clients is the responsibility of the Council of Governments.

**Section 11: City's Equipment Responsibilities.** City shall be responsible for the following equipment and equipment maintenance and repair services:

- a. To provide initial major equipment for preparation and service of meals;
- b. To provide designated space in the freezer for use by the Council of Governments:
- c. To provide the serving counter and designated space in the refrigerator for use by the Council of Governments during serving times;
- d. To maintain and repair all equipment owned by the City, including, but not limited to, heating, ventilation and air conditioning system, hot water and steam equipment, plumbing and drainage system, and cooking and dishwashing equipment;
- e. To repair equipment in a timely manner, so as to avoid safety hazards as much as possible.

**Section 12: Use of Space and Equipment by Others.** City shall have the right to use and permit the use by others of the kitchen and dining areas and the equipment under the following terms and conditions:

- a. The City shall have the option to use the dining area and kitchen up to four days per month which shall be designated in writing and provided by the City to the Council of Governments no less than 30 days in advance of use;

- b. Other uses shall not interfere with the daily use of the dining area by the Council of Governments;
- c. Groups and individuals shall have access to the refrigerator, freezer and other equipment for food storage and beverage preparation on a daily basis.

Section 13: Facility Closure. The Albany Senior Center facility shall be closed by the City and not available for congregate meal service as follows:

- a. On those days observed as holidays by the City or any day declared a legal holiday by order of the City Council of Albany the premises shall not be available for use by the Council of Governments.
- b. During closures because of inclement weather, unforeseen hazards or threats to health and safety the premises shall not be available for use by the Council of Governments.
- c. Access to the kitchen and serving area by the Council of Governments shall be permitted through the kitchen back door for the preparation and distribution of home-delivered meals as long as Section 14, Building Security is adhered to.

Section 14: Building Security. The Council of Governments assumes full responsibility for the protection and security of the Senior Center facility at any time that Council of Governments staff enters the building apart from hours that the building is under City supervision. City shall provide instruction in security features of the building to persons mutually agreed upon to act as building attendants.

Section 15: Owner of Personal Property. Each of the parties hereto shall retain ownership of any equipment, pots, pans, dishes, utensils, and other personal property acquired by its own funds, by funds received from grants and donations to such party for the purpose of acquiring such personal property, or such personal property as may be donated to such party.

Section 16: License, Sanitation, Fire Safety and Emergency Procedures. The Council of Governments and City shall be responsible for licenses, sanitation, fire safety and emergency procedures as follows':

- a. The Council of Governments shall obtain any and all licenses or permits which may be required for the operation of a nutrition program at the Albany Senior Center;
- b. The Council of Governments shall maintain standards of sanitation and cleanliness required for the operation of a nutrition program by appropriate health and sanitation official;
- c. City shall provide and maintain fire safety equipment and procedures required by appropriate fire officials and each party's insurance carrier including, but not limited to, appropriate fire extinguisher, testing of fire extinguisher, and annual fire drills.

Section 17: Fundraising. The Council of Governments' fundraising activities shall be limited to four (4) fundraising events per year on the leased premises to be conducted on mutually agreed upon dates. Other fundraising activities are permitted only with express, written, mutual agreement by both parties.

Section 18: Telephones, Transportation and Mailing Address. The Council of Governments shall install and maintain a separate telephone line for use by Council of Governments staff and clients. The Council of Governments shall be responsible for the transportation of clients to and from the congregate meal. The Council of Governments shall utilize a mailing address or post office box other than 489 Water Avenue NW, Albany, Oregon.

Section 19: Indemnification. Either party shall indemnify and save the other party harmless against and from any and all claims by or on behalf of any person, firm, or corporation arising from the conduct or management or from any work or things whatsoever done by that party or its agents, contractors, servants, employees, or volunteers in or about the leased premises of the building, and shall further indemnify and save the other party harmless against and from any and all claims arising from any breach or default on the part of that party in the performance of any covenant or agreement on the part of that party to be performed, pursuant to the terms of this Agreement, or arising from any act of negligence of that party or any of its agent, contractors, servants, employees, or volunteer employees, occurring during the term of this Lease in or about the leased premises of the building, and from any and all costs. Counsel fees, expenses, and liabilities incurred in or about any such claim or action or proceeding brought thereon. In case any action or proceeding be brought against any party by reason of any such claim, that party may, at its option, require that the other party resist or defend such action or proceeding at that party's own cost and expense and by counsel reasonably satisfactory to the other party.

Section 20: Insurance.

A. MINIMUM SCOPE OF INSURANCE

Coverage shall be at least as broad as:

1. Commercial General Liability: Insurance Services Office (ISO) form CG 001 with an edition date of 10-2001 or later, providing Commercial General Liability Occurrence Form. With CG 25-03 (Amendment Aggregate Limits of Insurance per Project) attached.
2. Automobile Liability: Insurance Services office (ISO) form CA 0001, providing Business Automobile Coverage on Owned, Non-Owned and Hired vehicles.
3. Workers' Compensation insurance as required by Oregon Revised Statutes and including Employers Liability Insurance.

B. MINIMUM LIMITS OF INSURANCE

Council of Governments shall maintain limits no less than:

1. Commercial General Liability; \$1,000,000 Each Occurrence  
\$2,000,000 General Aggregate  
\$2,000,000 Products Aggregate  
\$1,000,000 Personal Injury



The General Aggregate shall apply separately to this project.

- 2. Automobile Liability:               \$1,000,000 Per Occurrence
  
- 3. Employers Liability:               \$ 500,000 Per Accident  
  \$ 500,000 Disease Aggregate  
  \$ 500,000 Disease Each Employee

C. DEDUCTIBLES AND SELF-INSURED RETENTIONS

Any deductible or self-insured retention must be declared to and approved by the City. At the option of the City, either: the insurer shall reduce or eliminate such deductible or self-insured retention as respect the City, its officers, employees and agents; or the Council of Governments shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

D. OTHER INSURANCE PROVISIONS

The policies are to contain, or be endorsed to contain, the following provisions:

- 1. Commercial General Liability and Automobile Liability Coverage's.
  - a. The City of Albany, its officers, employees and agents are to be covered as additional named insured's as respects: liability arising out of activities performed by or on behalf of the Council of Governments including the Insured's general supervision of the Council of Governments, products and completed operation of the Council of Governments; premises owned, occupied or used by the Council of Governments, or automobiles owned, leased, hired or borrowed by the Council of Governments. The coverage shall contain no special limitations on the scope of protection afforded to the City, its officers, officials, employees or volunteers.
  - b. The Council of Governments' insurance coverage shall be primary insurance as respects the City, its officers, employees and agents. Any insurance or self-insurance maintain by the City, its officers, employees or agents shall be excess of the Council of Governments' insurance and shall not contribute to it.
  - c. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the City, its officers, employees or agents.
  - d. The Council of Governments' insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
  
- 2. Workers' Compensation and Employers Liability Coverage

The insurer shall agree to waive all rights of subrogation against the City of Albany, its officers, employees and agents for losses arising from work performed by the Council of Governments for the City.

### 3. All Coverage's

Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, cancelled by either party, reduced in coverage or in limits except after thirty (30) day's prior written notice by certified mail, return receipt requested, has been given to the City.

#### E. ACCEPTABILITY OF INSURERS

Insurance is to be placed with insurers with an A.M. Best rating of no less than A-VII. Exception to this requirement is given to SAIF Corporation for Workers' Compensation. Any other carriers with lower ratings may be given prior written approval.

#### F. VERIFICATION OF COVERAGE

The Council of Governments shall furnish the City of Albany with Certificates of Insurance and with original endorsements for each insurance policy here to be signed by a person authorized by that insurer to bind coverage on its behalf. All certificates and endorsements are to be received and approved by the City before work commences.

Section 21: Fire Insurance, Waiver of Subrogation. The parties shall obtain from their respective insurance carriers waiver of subrogation against the other party, its agents, employees, volunteers, and invitees. Neither party shall be liable to the other for any loss or damage caused by fire or any of the risks enumerated in standard fire insurance policy with an extended coverage endorsement if such insurance was obtainable at the time of such loss or damage.

Section 22: Termination. Either party may terminate this Lease if the other party defaults in the performance of any of the provision of this Lease and such default continues for thirty (30) days after the non-defaulting party has given the defaulting party written notice of the non-defaulting party's intention to terminate this Lease, or if a bankruptcy or insolvency proceeding is filed by or against either party, or if a receiver is appointed for either party's property, or if either party makes and assignment for the benefit of its creditors, or if any legal process is instituted against either party or its property whereby the leased premises are attempted to be occupied or taken, or if either party is unable to continue its services due to lack of funds. Either party may terminate this Lease at any time without cause with sixty (60) days written notice, or at the July 1<sup>st</sup> annual renewal date with 30 days written notice.

Section 23: Severability. If any terms or provision of this Lease shall be held invalid, the remaining terms and provisions hereof shall have full force and effect to extent that they remain reasonably practicable.

Section 24: Other Conditions. Policies and procedures of the City shall govern conditions not addressed in this Lease Agreement.

Section 25: Arbitration. All disputes concerning this agreement or allegation of violation thereof, shall be submitted to arbitration. Either party may initiate the arbitration process by mailing to the other a written demand for arbitration. Thereafter, the parties shall attempt to agree upon a single arbitrator who will determine all matters in dispute. In the event that the parties cannot agree upon a single arbitrator, then each party shall designate an arbitrator and the two arbitrators thus selected shall designate the third arbitrator. The three arbitrators thus selected shall serve as a panel and shall decide all matters in dispute. The parties shall select the single arbitrator or their respective arbitrators within thirty (30) days of the demand for arbitration. Should either party fail to select an arbitrator within the time set forth above, the arbitrator selected by the other shall solely decide all issues in dispute. If the single arbitrator is used, the parties shall each pay one-half (1/2) of that arbitrator's fees. If a panel of arbitrators is used, each party shall pay his or her own arbitrator and shall each pay one-half (1/2) of the fees of the third arbitrator. The decision of the arbitrator(s) shall be binding.

**COUNCIL OF GOVERNMENTS:**

Date: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Mailing  
Address: \_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

Facsimile: \_\_\_\_\_

Tax ID # \_\_\_\_\_

**CITY OF ALBANY, OREGON:**

Date: \_\_\_\_\_

By: \_\_\_\_\_

Ed Hodney  
Parks & Recreation Department



TO: Albany City Council

VIA: Wes Hare, City Manager

FROM: *Edward Boyd*  
Edward Boyd, Chief of Police

DATE: November 3, 2008, for November 12, 2008, City Council Meeting

SUBJECT: Full On-Premises Sales, Commercial Establishment, New Outlet Liquor License Application for Mexico Lindo II, Inc., D/B/A Mexico Lindo II, 637 Hickory Street, Suite 130.

Action Requested:

I recommend the Full On-Premises Sales, Commercial Establishment, New Outlet Liquor License Application for Mexico Lindo II, Inc., D/B/A Mexico Lindo II, be approved.

Discussion:

Erik Garcia, on behalf of Mexico Lindo II, Inc., D/B/A Mexico Lindo II, has applied for a Full On-Premises Sales, Commercial Establishment, New Outlet liquor license. Based on a background and criminal history investigation through Albany Police Department records, I recommend approval of this request.

Budget Impact:

None.

MR

RESOLUTION NO. \_\_\_\_\_

A RESOLUTION ACCEPTING THE FOLLOWING EASEMENT:

Grantor

Purpose

P & F GEARY SQUARE LLC

A 20 foot-wide public sewer line easement for the Petco project.

NOW, THEREFORE, BE IT RESOLVED by the Albany City Council that it does hereby accept this easement.

DATED AND EFFECTIVE THIS 12TH DAY OF NOVEMBER 2008.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

## EASEMENT FOR PUBLIC UTILITIES

THIS AGREEMENT, made and entered into this 22<sup>nd</sup> day of OCTOBER, 2008, by and between P & F GEARY SQUARE LLC, hereinafter called Grantor, and the CITY OF ALBANY, a Municipal Corporation, herein called "City."

### WITNESSETH:

That for and in consideration of the total compensation to be paid by the City, the grantor has this day bargained and sold and by these presents does bargain, sell, convey, and transfer unto the City of Albany, an easement and right-of-way, including the right to enter upon the real property hereinafter described, and to maintain and repair public utilities for the purpose of conveying public utilities services over, across, through, and under the lands hereinafter described, together with the right to excavate and refill ditches and/or trenches for the location of the said public utilities and the further right to remove trees, bushes, under-growth, and other obstructions interfering with the location and maintenance of the said public utilities.

This agreement is subject to the following terms and conditions:

1. The right-of-way hereby granted consists of:
  - A 20 foot-wide public sewer line easement for the Petco project. See legal description on attached Exhibit A and maps on attached Exhibits B and C.
2. The permanent easement described herein grants to the City, and to its successors, assigns, authorized agents, or contractors, the perpetual right to enter upon said easement at any time that it may see fit, for construction, maintenance, evaluation and/or repair purposes.
3. The easement granted is in consideration of \$1.00, receipt of which is acknowledged by the Grantor, and in further consideration of the public improvements to be placed upon said property and the benefits grantors may obtain therefrom.
4. The Grantor does hereby covenant with the City that they are lawfully seized and possessed of the real property above-described and that they have a good and lawful right to convey it or any part thereof and that they will forever warrant and defend the title thereto against the lawful claims of all persons whomsoever.
5. Upon performing any maintenance, the City shall return the site to original or better condition.
6. No permanent structure shall be constructed on this easement.

IN WITNESS WHEREOF, the Grantor has hereunto fixed their hand and seal the day and year written below.

**GRANTOR:**

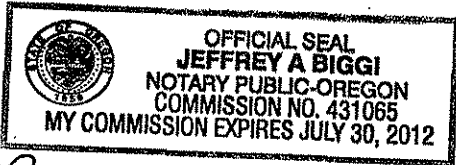
P & F Geary Square LLC

[Signature]  
Signature

Managing member  
Title

STATE OF OR )  
County of Multnomah ) ss.  
City of Portland )

The instrument was acknowledged before me this 22 day of October, 2008, by WILLIAM C FLOBERG (Title) Managing member, as a representative of P & F Geary Square LLC.



[Signature]  
Notary Public for OR  
My Commission Expires: July 30 2012

**CITY OF ALBANY:**

STATE OF OREGON )  
County of Linn ) ss.  
City of Albany )

I, Wes Hare, as City Manager of the City of Albany, Oregon, pursuant to Resolution Number do hereby accept on behalf of the City of Albany, the above instrument pursuant to the terms thereof this \_\_\_\_\_ day of \_\_\_\_\_, 2008.

\_\_\_\_\_  
City Manager

ATTEST:

\_\_\_\_\_  
City Clerk

~~\_\_\_\_\_  
Signature  
\_\_\_\_\_  
Title~~

~~STATE OF \_\_\_\_\_ )  
County of \_\_\_\_\_ ) ss.  
City of \_\_\_\_\_ )~~

~~The instrument was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_, 2008, by \_\_\_\_\_ (Title) \_\_\_\_\_, as a representative of P & F Geary Square LLC.~~

~~\_\_\_\_\_  
Notary Public for \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_~~

# Exhibit A

K & D ENGINEERING, Inc.

*Engineers • Planners • Surveyors*

Legal Description

20.00 foot wide City of Albany Sanitary Sewer Easement

Located on

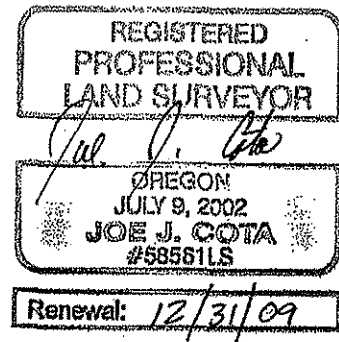
Parcel 1 of Partition Plat 2008-32

Tax Lot 4400 of Assessor map 11S-3W-8BA

A 20.00 foot wide strip of land, for easement purposes, located on Parcel 1 of Partition Plat 2008-32, a partition plat recorded in Linn County, Oregon, said strip of land being more particularly described as follows:

Beginning at a point on the east line of said Parcel 1 that is South 00°52'15" West 112.81 feet from the northeast corner of said Parcel 1; thence North 89°08'50" West 217.40 feet to a point on the west line of said Parcel 1; thence South 00°44'53" West, along the west line of said Parcel 1, a distance of 20.00 feet; thence South 89°08'50" East 217.36 feet to a point on the east line of said Parcel 1; thence North 00°52'15" East 20.00 feet to the Point of Beginning.

End Description.



10/14/2008  
Project # 07-166-A  
file path: titan/projects/2007/07-166/surveying/documents/20'easement.doc  
by: JJC



# EXHIBIT MAP

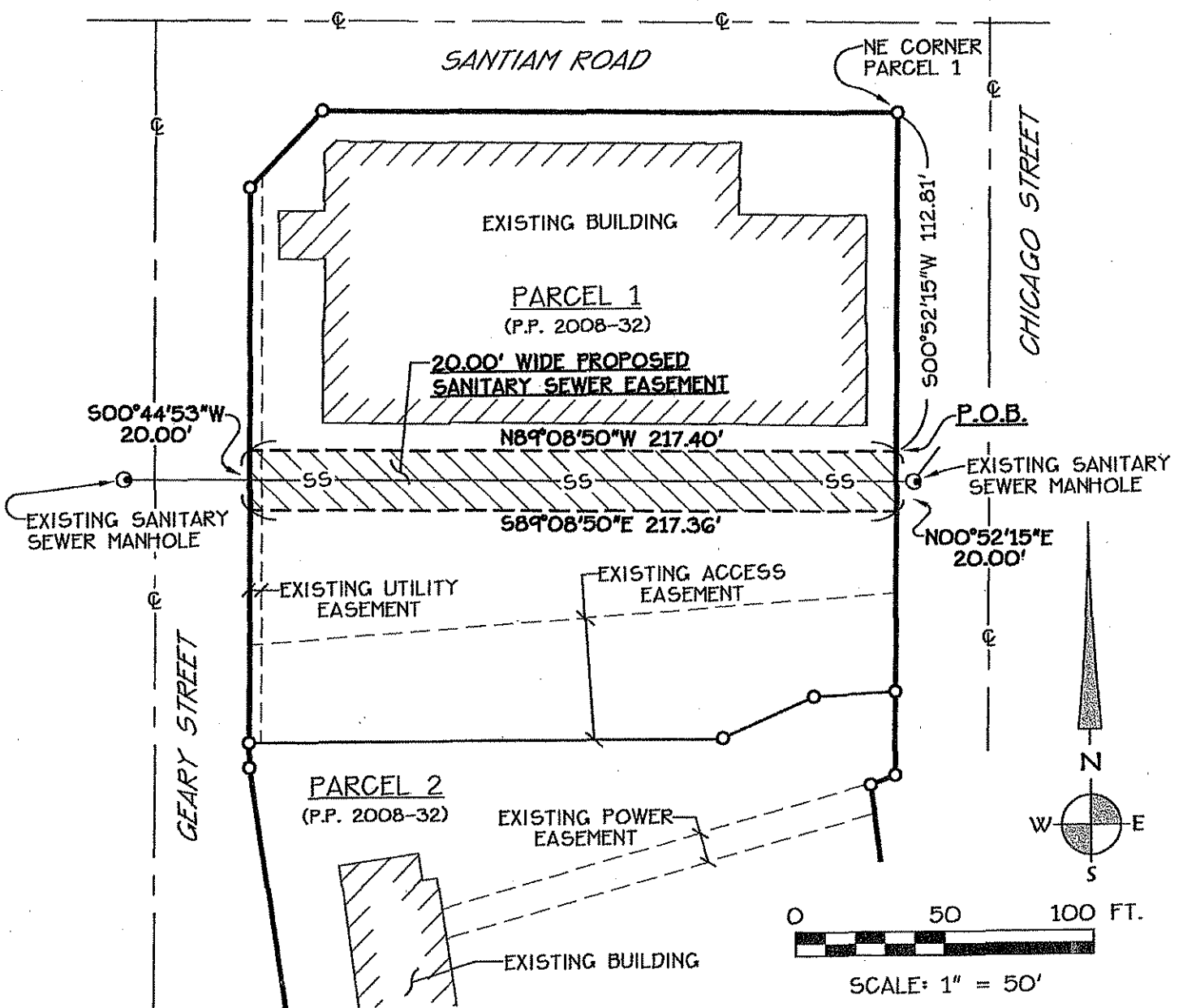
## FOR

# 20' WIDE CITY OF ALBANY SANITARY SEWER EASEMENT

Exhibit B

LOCATED IN  
**PARCEL 1 OF PARTITION PLAT 2008-32**  
**TAX LOT 4400 MAP 105-3W-8BA**  
 IN THE  
**CITY OF ALBANY, LINN COUNTY, OREGON**

OCTOBER 14, 2008



**K & D ENGINEERING, Inc.**  
 276 N.W. Hickory Street P.O. Box 725  
 Albany, Oregon 97321  
 (541) 928-2583

Date: 10/14/2008

Time: 13:39

Scale: 1=50(P5)

File: dwg\2007\07-166-a\166a-exhibit.dwg (lan)

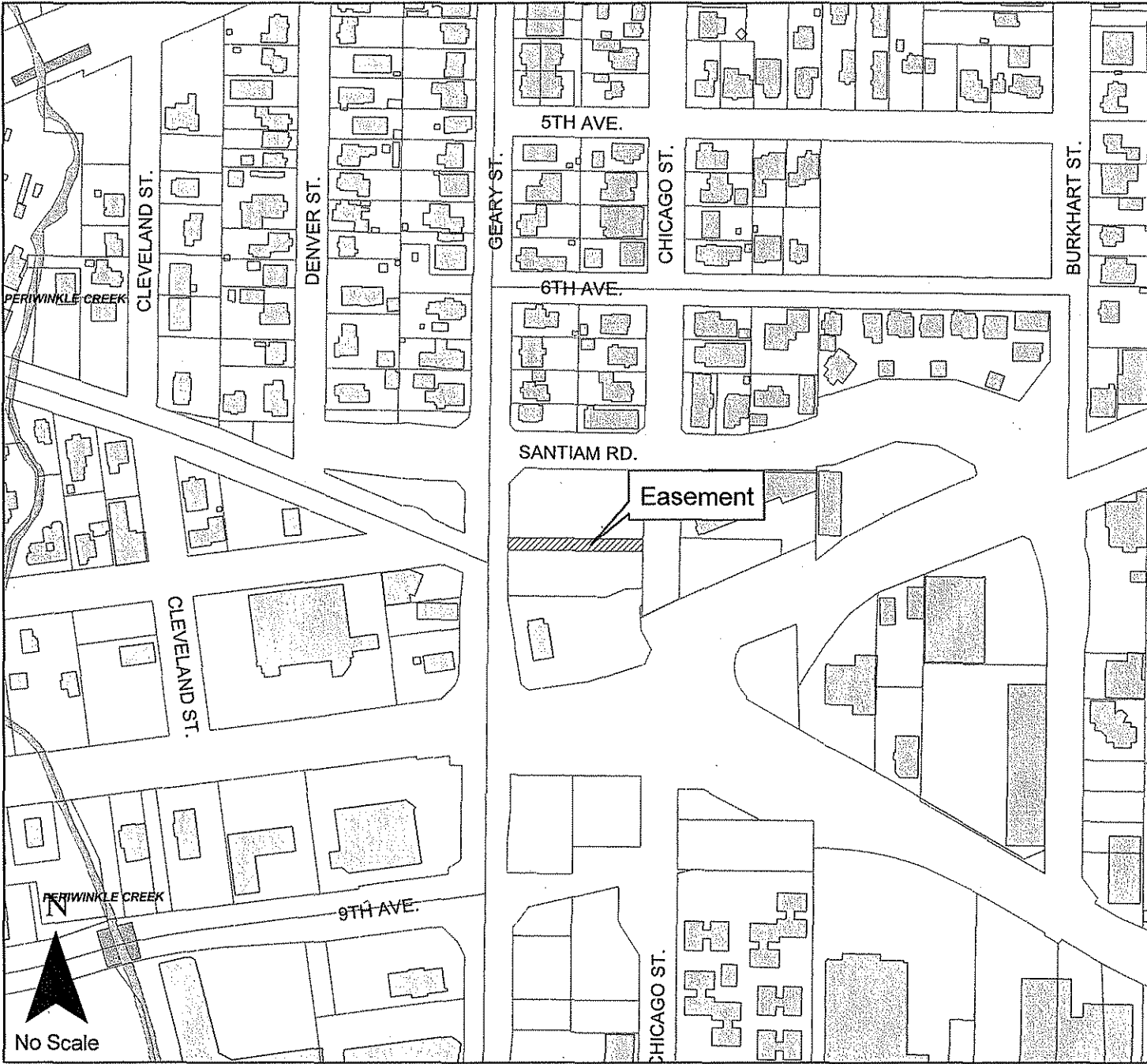
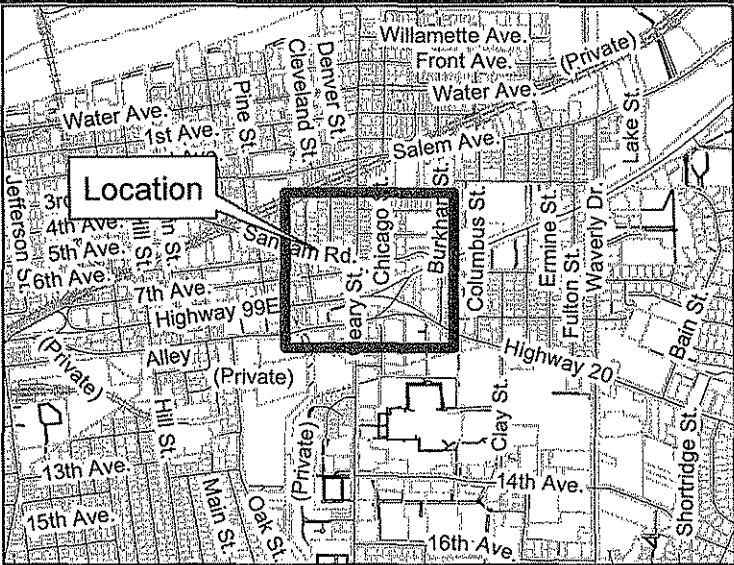
# EXHIBIT C

11SO3W08BA04400

A 20-foot wide public sewer line easement for the Petco project.



Geographic Information Services





TO: Albany City Council

VIA: Wes Hare, City Manager  
 Diane Taniguchi-Dennis, P.E., Public Works Director *DSTD*

FROM: Mark W. Shepard, P.E., City Engineer *MWS*  
 Staci Belcastro, Civil Engineer III *SB*

DATE: October 29, 2008, for the November 12, 2008, City Council Meeting

SUBJECT: Award of Bid for WL-09-01, Eighth Avenue Water Line Replacement

RELATES TO STRATEGIC PLAN THEME: • A Safe City

Action Requested:

Staff requests that Council award this contract in the amount of \$223,040.00 to the low bidder, Emery & Sons Construction, Inc., of Stayton, OR 97383.

Discussion:

On Tuesday, October 28, 2008, bids were opened for WL-09-01, Eighth Avenue Water Line Replacement. There were 19 bids submitted for this project, ranging from \$223,040.00 to \$380,070.00. The Engineer's estimate was \$280,850. A bid summary is included as Attachment 1.

*Project Description*

This project includes construction of approximately 900 lineal feet of 8-inch and 900 lineal feet of 12-inch Ductile Iron (D.I.) water line. The construction of the new water line will replace existing 2-inch and 4-inch water lines that frequently require maintenance to repair leaks. In addition to the new water line construction, this project will include construction of new water services and fire hydrants. Attachment 2 is a project vicinity map.

*Summary of Total Estimated Project Costs*

Based on the project bid and anticipated related costs, a summary of the total estimated project cost is shown in the table below. The amounts have been rounded to the nearest \$100.

Project Components	Estimated Cost
<b>I. Costs</b>	
a. Engineering	\$ 5,600
b. Construction Management	\$ 6,000
<i>Engineering Subtotal</i>	\$ 11,600
<b>II. Construction Costs</b>	
a. Construction Contract	\$ 223,000
b. Contingency (10%)	\$ 22,300
<i>Construction Subtotal</i>	\$ 245,300
<i>Total Estimated Project Cost</i>	\$ 256,900
<i>Project Budget</i>	\$ 288,000
<i>Under/(Over) Project Budget</i>	\$ 31,100

Albany City Council

Page 2

October 29, 2008, for the November 12, 2008, City Council Meeting

Budget Impact:

This project will be funded from Water System Capital Projects (615-50-2308-86040).

SLB:prj

Attachment

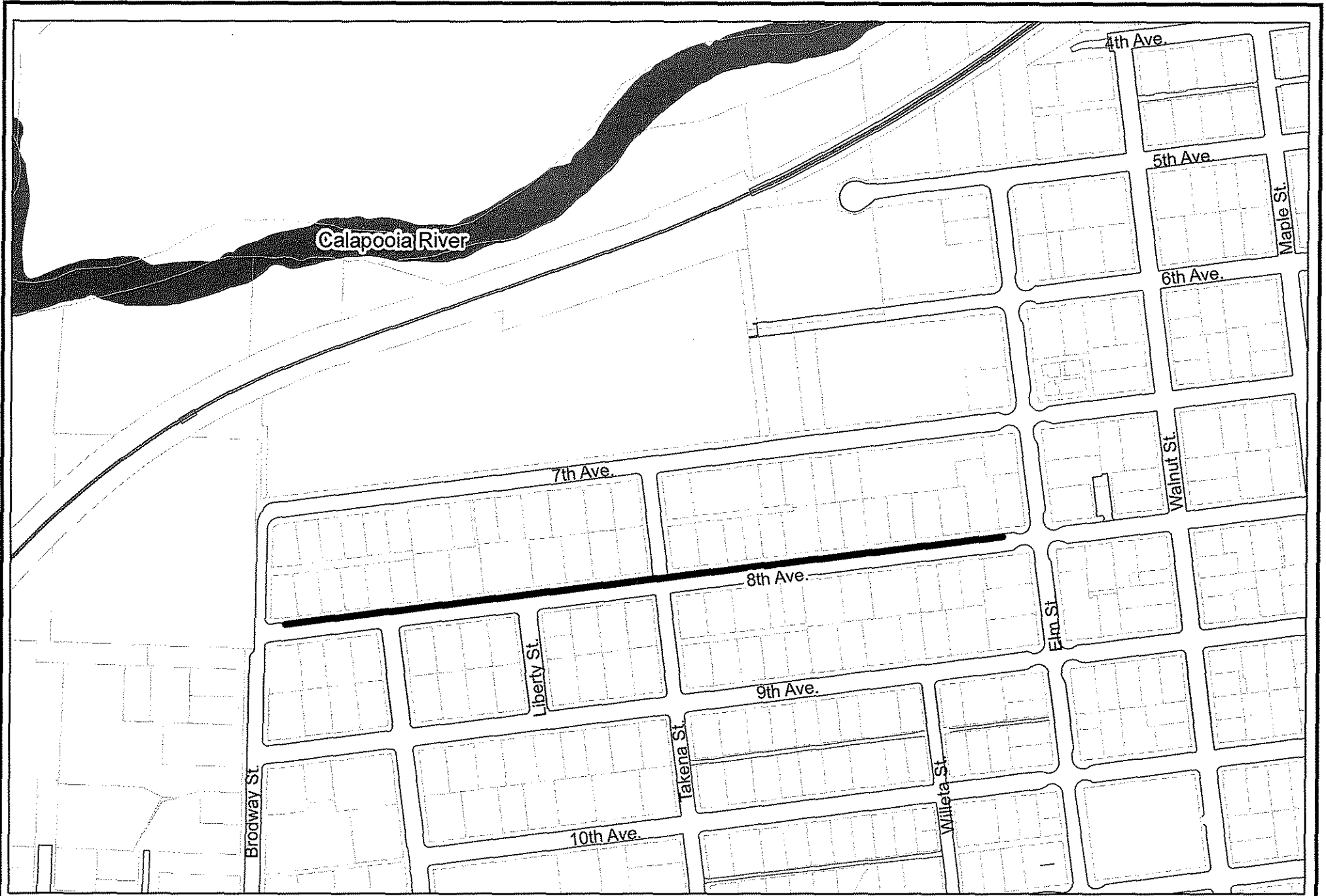


**CITY OF ALBANY, OREGON**  
**Public Works Department**  
**Construction Contract Bids**

**Project:** WL-09-01, Eighth Avenue Water Line Replacement

**Bid Opening:** Tuesday, October 28, 2008

<b>Engineer's Estimate</b>	<b>Emery and Sons Construction</b>	<b>Pacific Excavation</b>	<b>RJ Armstrong and Associates</b>	<b>HSC Harry Stanley</b>	<b>Alpine Construction</b>	<b>North Santiam Paving</b>
\$280,000.00	\$223,040.00	\$237,990.00	\$242,738.00	\$249,981.90	\$258,625.00	\$264,658.00
<b>CPM Development</b>	<b>Lauzon Contracting</b>	<b>Kamph Construction</b>	<b>NW Kodiak Construction</b>	<b>D and T Excavation</b>	<b>Professional Underground</b>	<b>Migson Contracting</b>
\$265,958.29	\$266,136.00	\$270,850.00	\$277,877.00	\$290,307.93	\$298,971.60	\$302,085.73
<b>Mid-Valley Gravel</b>	<b>Gelco Construction</b>	<b>Harold Primrose Excavating</b>	<b>ML Houck Construction</b>	<b>George Schmid and Sons</b>	<b>R and R General Contractors</b>	
\$302,725.00	\$309,500.00	\$309,590.00	\$356,771.00	\$377,201.87	\$380,070.00	



**WL-09-01, EIGHTH AVENUE WATER LINE REPLACEMENT**

**Attachment 2 - Project Vicinity Map**

Project File Location:

City of Albany - 333 Broadalbin St. SW, Albany, Oregon 97321 (541) 917-7676

The City of Albany's Information records, drawings, and other documents have been prepared and made available using electronic means for quality control, preservation, and public access. All data included in provided reports, maps, and information is a property of the City of Albany. All data is provided as a courtesy and is not to be used for any other purpose without the express written consent of the City of Albany. All information contained herein is for informational purposes only and does not constitute a contract or warranty of any kind. The City of Albany is not responsible for any errors or omissions that may appear in this document.

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N



TO: Albany City Council  
VIA: Wes Hare, City Manager  
FROM: David Shaw, Human Resources Director  
DATE: November 5, 2008, for the November 12, 2008, City Council Meeting  
SUBJECT: Increase in Pay Range for Non-bargaining Confidential Administrative Assistant 1  
RELATES TO STRATEGIC PLAN THEME: • Effective Government

Action Requested:

Approve a one range increase in pay for the non-bargaining classification of Administrative Assistant 1 (AA1) effective December 1, 2008.

Discussion:

During a review of the City's salary plan for non-bargaining employees, we identified an anomaly in the salary relationship of the non-bargaining Administrative Assistant-I (AA-I) as compared to the represented AA-I. The first step of the non-bargaining AA-I salary range is \$108.00 more than the first step of the represented AA-I. This is a difference of approximately 3.6%. We believe this is appropriate based on the generally more complex confidential duties performed by the non-bargaining AA-I. However, at the top step of the salary range, the salary of the non-bargaining AA I is \$6.00 *less* than the represented AA-I.

To highlight the anomaly, compare the relationship between the non-bargaining Administrative Assistant (AA) and the represented AA. The non-bargaining AA at the first step is approximately 8% above the first step of the represented AA. At the top step the non-bargaining AA is approximately 4% above the represented AA.

To remedy this situation, we are proposing a one salary range increase for the non-bargaining AA-I from range N210 to range N211. At range N211, the non-bargaining AA-I will be approximately 7% above the first step of the represented AA-I. At the top step the non-bargaining AA-I will be approximately 3% above the represented AA-I.

Budget Impact:

There are three positions in the non-bargaining AA-I classification. They are located in Police, Library and the City Manager's Office. The combined cost of this salary increase would be \$2184.00 for the remainder of the fiscal year.

c: E. Boyd  
E. Gallagher  
L. Hyde



TO: Albany City Council  
VIA: Wes Hare, City Manager  
FROM: Ed Hodney, Director of Parks and Recreation *EH*  
DATE: November 5, 2008 for the November 12, 2008 City Council Meeting  
SUBJECT: Parks and Recreation Summer Recreation Statistics

RELATES TO STRATEGIC PLAN THEME: ● Great Neighborhoods  
● Healthy Economy  
● Effective Government

Action Requested:

Information only. No other action is required

Discussion:

Throughout the year the City Council is made aware of Albany Parks and Recreation department activities on an as-needed basis, when making policy choices, establishing budgetary and other operating parameters, or authorizing significant expenditures. These decisions are typically brought to the Council, one at a time, and outside the context of the other work the department is engaged. We are providing you with a report on the Parks and Recreation Department's summer recreation programs and events. This will present you with a broader view of our services as well as an overview of the number of customers we reach and the non-tax dollars we leverage.

Attached is a report entitled *2008 Summer & Event Statistics*. The majority of the information is from May 1, 2008 through August 30, 2008. The Council should be familiar with most of the programs. These results represent efforts to promote healthy living through recreational experiences. Of significant note:

- Programs, services and events reached over 227,000 people in the community.
- Over 280 local businesses were able to showcase their services and reach their target markets through sponsorships and advertising opportunities provided by our programs and events.
- Our programs were able to leverage \$864, 279 in non-tax dollars, fees, sponsorships and in-kind services that helped us provide the recreational experiences wants and needs.
- The program provided the opportunity for local agencies and groups (Boys and Girls Club, youth soccer, Timber Carnival) to reach an additional 22,500 community members through fee waivers and co-sponsorships totaling \$62,750.

We hope that this information is useful to you. If desired, we will provide the Council with a periodic update of the spreadsheet. Please feel free to share your questions or comments with us.

Budget Impact:

None

EH/ts

Attachments



## 2008 Summer & Event Statistics Report

Albany Parks & Recreation Event or Program	Number of Participants	# in Series	# of Teams or Leagues	# of Sponsors	Cash Sponsorship Total	In-Kind Sponsorship Total	Fees & Charges/ Donations/ Merchandise Sales	Comments
<b>Adult Classes/Fitness Classes</b>	539	54	n/a	n/a	n/a	n/a	\$14,620	Represents June-August 2008. Increased participation by 17%. Increased revenue by 18%.
<b>Albany Community Pool</b>	14,507	62	n/a	1	included in Teen/Family Aquatic Events	n/a	\$43,069	5% revenue increase over last summer. 5% increase in participation for summer. 9% increase in Recreation swim.
<b>Aquatic Swim Meets</b>	1,946	3	71	n/a	n/a	n/a	\$3,825	Offered in partnership with Albany Aquatics Association. These events not only provide City revenue but draw regional visitors to Albany who use restaurants, gas stations, stores, lodging, etc.
<b>Camps</b>	151	13 camps	n/a	3	\$165	\$1,650	\$15,863	90% increase in camp participation. Rosie the Riveter sponsored by AAUW, Parr Lumber, and the Public Works Department particularly effective. Camp structure revised to provide a significant physical component to each camp regardless of camp theme. Camps expanded to full day-three day per week offerings. Camps well received with early interest expressed in next summer's offerings. Challenges: Transportation and camp locations.

## 2008 Summer & Event Statistics Report

Albany Parks & Recreation Event or Program	Number of Participants	# in Series	# of Teams or Leagues	# of Sponsors	Cash Sponsorship Total	In-Kind Sponsorship Total	Fees & Charges/ Donations/ Merchandise Sales	Comments
<b>Children, Youth, &amp; Family Classes</b>	151	30	n/a	n/a	n/a	n/a	\$8,179	Classes offered for children and youth ages 2-18.
<b>Children's Village NW Art &amp; Air Festival</b>	686	3 days	n/a	1	\$3,000	\$3,456	\$340	Volunteer labor provided by Central Willamette Credit Union which was key to this area's success.
<b>Community Picnics</b>	1,900	4	n/a	3	n/a	\$3,750	n/a	Provided opportunity for Council, P&R Commission, and staff to connect with community, identify needs, promote activities and services, and respond to questions and concerns. First year offered. Very successful program.
<b>COOL! Facility Rentals</b>	1,245	45	n/a	n/a	n/a	n/a	\$10,234	Rentals down 20% this summer. Due to economic downturn more users joined general swim times for birthday parties rather than renting facility.
<b>COOL! Pool</b>	29,120	80 days	n/a	1	\$3,000	n/a	\$89,220	9% increase in revenue over last year. 2% decrease in overall attendance due to poor weather in August along with economic downturn.

## 2008 Summer & Event Statistics Report

Albany Parks & Recreation Event or Program	Number of Participants	# in Series	# of Teams or Leagues	# of Sponsors	Cash Sponsorship Total	In-Kind Sponsorship Total	Fees & Charges/ Donations/ Merchandise Sales	Comments
<b>Co-Sponsored or Waivered Park Events</b>	21,105	21	n/a	n/a	n/a	n/a	n/a	Provided \$19,165 worth of in-kind service to community events.
<b>CPAS</b>	4,012	15	n/a	14	\$10,800	\$2,000	\$100	Changed timing of programming to better meet community needs. Have received expanded sponsorship commitments for next year.
<b>Festival Latinos</b>	534	1 day	n/a	8	\$1,450	\$3,250	n/a	Hispanic Advisory Council partnership. Significant increase in participation.
<b>Fun in the Park</b>	642	6	n/a	1	\$2,000	n/a	n/a	One held in cooperation with Central Willamette Credit Union in parking lot.
<b>Mondays at Monteith</b>	4,625	6 concerts	n/a	8	\$6,630	\$4,500	\$3,750	Food and ice-cream service well received. Donations up slightly from past. Challenges: Need to expand and solidify sponsorship base. Need to secure food vendor for next year. Options considered include offering 5 concerts or one "no direct cost" concert.

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<b>Northwest Art &amp; Air Festival</b>	39,174	3 days	n/a	49	\$72,650	\$65,798	\$36,438	Very successful year both in terms of presentation, participation, and sponsorship. Revised parking plan and laser light show successful. Challenges: Need to expand laser light show, beer/wine garden area, and solidify partnership agreements with all festival areas. Need to secure quality entertainment for both mainstage and festival stage. Need to create a "Sunday draw" to build success on the third festival day. Have already expanded next year's sponsorship base with early pledges and commitments.
<b>Park Rentals</b>	52,840	228	n/a	n/a	n/a	n/a	\$19,908	Does not include co-sponsored events such as Timber Carnival (which requires significant staff time and resources). Does not include Softball tournaments or City sponsored events. Reflects rentals during regular season April 1-October 1. During peak rental times (mid-May through mid September) shelter rental was at 97% capacity on weekends and holidays based on one rental per day. Challenge: Expand availability of shelter usage.

## 2008 Summer & Event Statistics Report

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<b>Post Season BBQ Softball Event</b>	250	1 day	n/a	2	\$0	\$3,000	n/a	This was a first time event to recognize sponsors and members of the program. It was a well-received family event.
<b>River Rhythms</b>	32,678	6 concerts	n/a	31	\$59,100	\$17,200	\$34,517	Changes made to 2008 series layout were effective and mitigated problems previously experienced. Revised VIP hospitality area very successful. Revised childrens and sponsor area successful. Increased security successful. Delayed blanket run and designated smoking area successful.
<b>River Rhythms Pre-Concert Children's Area</b>	664	6	n/a	Included in River Rhythms Sponsorship Information	Included in River Rhythms Sponsorship Information	\$1,300	\$95	New location provided better visibility and reduced safety hazards.
<b>Senior BBQ</b>	98	1	n/a	1	n/a	\$1,370	\$544	Enhanced social interaction and family relationships in community building atmosphere.

## 2008 Summer & Event Statistics Report

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Senior Center Rentals	1,257	98 rental hours	n/a	n/a	n/a	n/a	\$5,475	This number does not include usage by partners such as Meals on Wheels or interdepartmental usage.
Senior Center Unstructured Participation	4,910	63 days	n/a	n/a	n/a	\$105,536	n/a	Includes volunteers in-kind services.
Senior Classes	139	11	n/a	n/a	n/a	n/a	\$245	Includes classes co-sponsored with LBCC and Tuesday talks.
Softball & Team Sponsors	3,556	5 nights/ 12 weeks	127	132	n/a	n/a	\$89,210	These numbers represent all the teams within the softball program that are sponsored by community businesses. Since 2006 the softball program has grown by a total of 15% in participation.
Softball League/Custom Programs	n/a	n/a	5	5	\$2,500	\$56,250	\$2,250	These numbers represent league and custom program sponsors. The \$56,250 in-kind donations and the \$2,500 in cash sponsorships are new to the program in 2008.

## 2008 Summer & Event Statistics Report

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<b>Softball Tournaments</b>	2,640	9 tournaments 18 days	100+	n/a	n/a	n/a	n/a	Tournaments brought in substantial number of out-of-town visitors with impact on hotels, restaurants, gas stations, etc. 60% of participants from out of town. Two tournaments were held as fundraisers for a family whose father and son had been killed in a car accident.
<b>Sports Classes</b>	116	13	n/a	1	n/a	\$900	\$6,006	Tennis experienced a 216% increase in participation and a 116% in revenue. Sticks for Kids golf classes experienced a 46% increase in participation.
<b>Swanson Recreation Room Rental</b>	725	30	n/a	n/a	n/a	n/a	\$580	Doubled the number of rentals from summer of 2007.
<b>Takena Wading Pool</b>	1,251	30 days	n/a	n/a	n/a	n/a	n/a	Highest attendance day was 102 children in July due to heat. Challenges: State regulations will require closure of present site on 12/31/09.
<b>Teen/Family Special Aquatic Events</b>	315	4 events	n/a	3	\$5,000	\$1,500	\$525	Movie night successfully attracted families. Fridays best day for teen activities. Wednesdays worked well for families.

## 2008 Summer & Event Statistics Report

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<b>Trips &amp; Tours</b>	298	22 trips	n/a	n/a	n/a	n/a	\$11,429	Built trip and outdoor participant base.
<b>Waverly Lake Boathouse</b>	2,371	50 days	n/a	1	\$4,600	n/a	\$4,502	Number of participants comparable to last year despite heavy publicity provided last year.
<b>Young Eagle Flights</b>	301	n/a	n/a	15	n/a	\$21,000	n/a	Pilots provided airplane, fuel, and labor at no cost to participants (valued at \$175 per hour).
<b>Youth Sports Park Usage: Fee Waivered</b>	2,412	1068	151	n/a	n/a	n/a	n/a	This includes Albany Youth Soccer, Albany Little League, Pop Warner Football, and a portion of Albany Boys & Girls Club ball and soccer programs. The value for the waived facility usage is \$51,230. This does not include costs associated with the 250 days of use in neighborhood parks for AYSO.
<b>Totals</b>	<b>227,158</b>			<b>280</b>	<b>\$170,895</b>	<b>\$292,460</b>	<b>\$400,924</b>	





TO: Albany City Council  
VIA: Wes Hare, City Manager  
FROM: Marilyn Smith, Management Assistant/Public Information Officer MMS  
DATE: November 5, 2008, for the November 12, 2008, City Council Meeting  
SUBJECT: Code Enforcement Team First Quarter Report, Fiscal Year 2008-2009

RELATES TO STRATEGIC PLAN THEME:

- Great Neighborhoods
- A Safe City
- An Effective Government

The Code Enforcement Team has begun its tenth year.

A subcommittee has begun planning for additional neighborhood cleanups in the spring in conjunction with the Oregon sesquicentennial celebration's "Take Care of Oregon Days," in May. We will have more information about this after the first of the year.

Here is the summary of activity for the first quarter:

1. 337/338 Sixth Avenue SE (July 28, 2008) – Hackleman neighborhood residents filed a petition of complaint about these derelict rentals after the most recent drug raid (June 26, 2008) there. Police are preparing enforcement under the City's specified crimes property ordinance (AMC 7.84). **Status: Open.**
2. 1095 16<sup>th</sup> Avenue SW (January 16, 2008; March 24, 2008) – Inoperable van stuffed with belongings; old refrigerator in yard. Occupant cited for keeping junk, pleaded no contest, fined \$300, which was worked off on work crew. Remodeling now underway. **Status: Open.**
3. Jackson Street under the overpass (January 14, 2008) – Fence erected along railroad tracks to stop trespassing has been partially knocked down. Railroad officials are waiting for arbitration of the Union Pacific suit against the City to settle before replacing the fence. **Status: Open.**
4. 135 Onyx Street NE (received September 14, 2007) – Report of "sky-high" piles of trash and household garbage, derelict vehicles, and people living in an RV. **Status: Open.**
5. 1555 Oak Street SE/1605 Oak Street SE (received October 18, 2007) – Report of junk left behind in abandoned homeless camp in brush on adjacent vacant parcels. Brush removed from north parcel; cleanup attempted, but incomplete on south parcel. Property owner has been elusive. **Status: Open.**
6. 1250 Shortridge Street SE (original complaint in 2004; reopened complaint February 28, 2007) – Property owner living in a storage building without sanitation or other utilities; accumulated junk and trash. Building Division has issued a second notice and order under the property maintenance/dangerous buildings code requiring the owner to vacate the building until it is rendered habitable. **Status: Open.**
7. 3476 Bernard Avenue NE (received November 14, 2006) – Property owner has been cited for keeping junk and trash. **Status: Ongoing.**
8. 629 Fulton Street SE (received August 10, 2006) – Yard full of cars. Letter sent with dates for compliance. Situation has improved. **Status: Monitor.**
9. 2030 Geary Street SE (received September 12, 2006; new complaint March 26, 2008) – Chronic case of junk and trash and possibly dangerous residence in disrepair and perpetual state of remodeling. Property was purchased for back taxes in September 2008; former owner remains as the occupant and has been cited for keeping junk. **Status: Open.**

10. 3083 Highway 20 NW (received January 4, 2007) – Assorted derelict vehicles, blown down fence, major appliances. The property was abandoned following a drug raid. Initial actions to seize the property through federal forfeiture laws were dropped; property went to a bank. New occupants cited for reckless burning and other offenses in late summer. Property is now cleaned up and for sale. **Status: CLOSED.**
11. 330 Marilyn Street NE (February 29, 2008) – Decades of junk, household garbage, rats, piles of yard debris. Sent a 30-day letter to owner-occupant on March 3 ordering cleanup. Property owner unable to clean up site without help; on August 15, 2008, a Linn County Sheriff’s work crew, volunteers from Oxford House, Park Maintenance staff, Mayor Bedore, and others filled two 40-yard and one 30-yard dumpster with junk and yard debris. **Status: CLOSED.**
12. 2225 Oak Street SE (received December 22, 2006) – House damaged by fire and abandoned; property cleaned up and security fence erected; Linn County is foreclosing. **Status: CLOSED.**
13. Vehicles for sale or being parted out, corner of Knox Butte Road and Clover Ridge Road (July 17, 2008) – Contacted property owner, property was posted for no trespassing, and the lot was cleared. **Status: CLOSED.**
14. SKATE sign, 705 Montgomery Street SE (April 17, 2008) – Sign for defunct skating rink molders away above the Hackleman neighborhood; sign removed in late October. **Status: CLOSED.**

Budget Impact:

Beginning Budget	\$22,100.00
Expenditures as of 9-30-08	<u>\$6,435.52</u>
<b>Balance</b>	<b>\$15,664.48</b>

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