



STAFF REPORT

**PLANNING COMMISSION PUBLIC HEARING
DATE: NOVEMBER 19, 2008**

FILE NOS.: CUP-08-02/DR-08-09/VAR-08-06/07/08

**REQUEST: TO CONSTRUCT A FIRE STATION AT THE BLOCK OF 6174
FAILING STREET REQUIRING A CONDITIONAL USE PERMIT,
DESIGN REVIEW AND THREE VARIANCES**

TABLE OF CONTENTS

	<u>Page</u>
STAFF ANALYSIS AND RECOMMENDATION	
SPECIFIC DATA.....	2
SPECIFIC PROPOSAL.....	3
MAJOR ISSUES.....	3
PUBLIC COMMENTS.....	4
RECOMMENDATION.....	4-5
ADDENDUM	
STAFF FINDINGS.....	6-29
EXHIBITS	
PC-1 PUBLIC NOTICE.....	30-34
PC-2 RECOMMENDED PEDESTIAN FACILITIES.....	35
PC-3 APPLICANT'S SUBMITTAL.....	A-1-A-289

**CITY OF WEST LINN
PLANNING DEPARTMENT
LAND USE ACTION**

TO: West Linn Planning Commission (for November 19, 2008 meeting)
FROM: West Linn Planning Staff (Peter Spir, Associate Planner)
DATE: October 15, 2008
FILE NOS.: CUP-08-02/DR-08-09/VAR-08-06/07/08
REQUEST: TO CONSTRUCT A FIRE STATION AT THE BLOCK OF 6174
FAILING STREET REQUIRING A CONDITIONAL USE PERMIT,
DESIGN REVIEW AND THREE VARIANCES

Planning Director's Initials PSB City Engineer's Initials KQL

SPECIFIC DATA

**OWNER/
APPLICANT:**

Karen Mohling, Director of Support Services, Tualatin Valley Fire & Rescue, 20665 SW Blanton Street, Aloha, OR 97007

CONSULTANT:

Frank Angelo, Angelo Planning Group, 921 SW Washington St., Ste. 468, Portland, OR 97205

SITE LOCATION:

The block of 6174 Failing Street

SITE SIZE:

0.59 acres

DESCRIPTION:

Assessor's Map 2-1E-25AD, tax lots 1000, 1100, 1200, 1400 and 1500

**COMP PLAN
DESIGNATION**

Medium Density Residential

ZONING:

R-4.5

**APPROVAL
CRITERIA:**

Community Development Code provisions relating to Conditional Uses are contained in Chapter 60; Class II Design Review, Chapter 55; Class II Variance, Chapter 75.

120-DAY RULE: This application was complete on September 30, 2008. The 120-day period for making a decision will lapse on January 28, 2009.

PUBLIC NOTICE: Public notice was mailed to property owners in the affected area on October 28, 2008. At least 10 days prior to the hearing, notice was published in the West Linn Tidings and the site was posted on November 5, 2008. Therefore, public notice requirements of Chapter 99 of the Community Development Code have been satisfied. In addition, the applicant met with the Bolton Neighborhood Association per CDC Section 99.038.

SPECIFIC PROPOSAL

Tualatin Valley Fire and Rescue (TVFR) have been planning for several years to replace the existing Bolton fire station at the block of 6174 Failing Street. The existing station does not meet the functional requirements. The building also fails in terms of meeting seismic standards and there are questions about soil stability at that location. Rather than build the new station on the old site, TVFR proposes to construct the new station on the property to the north of the current site. The City of West Linn owns all the properties that the station development will occupy. Under an intergovernmental agreement, the City will convey these properties to TVFR and TVFR will then transfer their property to the south (that includes the existing old fire station) to the City of West Linn.

Per the applicant's submittal, the proposed fire station 58 will have a main entrance on the south side facing Highway 43 but the points of ingress and egress for the fire apparatus will be on the east and west elevations respectively. The new station will be approximately 12,760 square feet in size and will include a 639 square foot community room. The building will house the station's firefighters and have an interior three space parking bay for fire trucks and other necessary emergency apparatus.

The right of way to the south of the existing fire station was vacated on September 22, 2008 (MISC-07-21) and assimilated into properties owned by the City of West Linn and TVFR on either side of the ROW.

MAJOR ISSUES

Demolition of Historic Landmark Structure

To accommodate the new fire station five houses will be demolished including a historic landmark structure at 1850 Buck Street. The Greave's House, as it is known, was built circa 1900 in the Queen Anne Vernacular style. Both this house and the other homes (none of which are historic) are owned by the City of West Linn. The applicant has applied for a demolition permit for all homes including the landmark home at 1850 Buck Street. Approval of a demolition permit of a landmark house must come from the Clackamas County Historic Review Board (HRB). That board is expected to meet on

November 20, 2008, one day after the Planning Commission hearing. A related issue is whether the HRB can approve the demolition permit without first going through a review process known as Section 106. Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires Federal agencies to take into account the effects of their undertakings on historic properties. As of this date, the State Historic Preservation Office (SHPO) has not responded to numerous requests from the applicant, staff and the city attorney's office to make a definitive determination as to Section 106's applicability. Staff is in agreement with the applicant's consultants that Section 106 is not applicable to this project as no federal funds are being used by TVFR on this project. Ultimately TVFR is responsible for addressing Section 106 applicability. TVFR has satisfied all expectations of due diligence to our satisfaction. It is not the City or County's call to make the applicability determination.

The bottom line is that the Planning Commission should proceed with the CUP and DR hearing and leave the issue of the demolition permit to the HRB which is the board specifically responsible to hear this issue and, most importantly, is the best qualified.

Variations

There are other issues. Two trees are classified as significant. They are located in the parking lot and slated for removal. The applicant has requested a variance to waive the "20% rule" that says that if a site has significant trees then up to 20% of the land shall be set aside to protect the trees per CDC 55.100(B)(2)(b).

The applicant requested two other variances. One would allow a 42 foot wide curb cut despite a code limit of 36 feet per CDC 48.060(B). The wider curb cut is deemed justified because of the size of the emergency vehicles and the need to access the street directly from the three bays in the station without driving through a "choke point". The third variance is to seek relief from the requirement that the parking lot interior devote 10% of its interior square footage to landscaping per CDC 54.020(E)(3).

PUBLIC COMMENTS

As of October 29, 2008 staff has received no public comments specific to the design of this application but has received comments from West Linn Historic Advisory Board, its members and SHPO relating exclusively to Section 106 applicability.

RECOMMENDATION

Based upon the findings submitted by the applicant, and as modified in the attached addendum, staff recommends approval according to the submitted plans and materials, except as modified by the following recommended conditions of approval. The applicant shall conform to all federal, state, and city codes, policies, and standards unless granted a city code-permitted waiver, exemption, or other modification by the appropriate deciding body.

RECOMMENDED CONDITIONS OF APPROVAL:

1. The applicant shall obtain approval from the HRB to demolish the house at 1850 Buck Street or shall move the house to a suitable alternate location.
2. All exterior lighting shall be to dark sky design standards and shall not produce off site glare. Design and placement to be approved by Planning Director.
3. A six foot wide water permeable sidewalk shall connect the sidewalk on Elliot Street directly towards (at right angle) the main entrance through a landscaped area. Pedestrian access from Failing Street requires a marked walkway constructed of contrasting paving material across the parking lot from Failing Street sidewalk connecting with the sidewalk at the east end of the main entrance. This will entail the elimination of a landscaping island at the east end of the row of parking. Hardscape in the landscaped area shall be constructed with water permeable materials unless none are available to handle axle weight of fire trucks.
4. The applicant shall pay for and install a six foot high solid wood fence along the east side of 1912 Buck Street unless that property owner declines the fence in writing.
5. Interior sidewalks shall be eight feet wide.
6. HVAC shall not exceed noise levels allowed by CDC Chapter 55.
7. The retaining walls on the north and east sides of the site shall be constructed of split or rough faced concrete or facsimile. The actual product must be reviewed and approved by the Planning Director prior to installation.
8. Deviations in the curbline on Buck Street shall be corrected to produce a straight curbline between Elliot and Failing Streets.
9. Street improvements shall be installed per City Engineer.
10. All existing power poles and anchor poles along the project must be removed.
11. All utilities consisting of existing and new utilities must be placed underground.
12. Existing street light illumination level along the project frontages shall be analyzed. New street lights shall be required if there is a need.
13. All designs, materials, workmanships and constructions shall be done per the existing City of West Linn Public Works Design and Construction Standards.

ADDENDUM

FILE NOS. CUP-08-01/DR-08-08/VAR-08-05

APPROVAL CRITERIA AND FINDINGS

60.070 APPROVAL STANDARDS AND CONDITIONS

A. The Planning Commission shall approve, approve with conditions, or deny an application for a conditional use, except for a manufactured home subdivision in which case the approval standards and conditions shall be those specified in Section 36.030, or to enlarge or alter a conditional use based on findings of fact with respect to each of the following criteria:

1. The site size and dimensions provide:

a. Adequate area for the needs of the proposed use; and,

b. Adequate area for aesthetic design treatment to mitigate any possible adverse effect from the use on surrounding properties and uses. (ORD. 1291)

2. The characteristics of the site are suitable for the proposed use considering size, shape, location, topography, and natural features.

3. The granting of the proposal will provide for a facility that is consistent with the overall needs of the community.

FINDING NO. 1

The functional requirements of a fire station drive the design and spatial needs of this application. The fire station has to have large interior garage areas for emergency vehicles and equipment and maintenance thereof. The garages and driveways must be big enough to allow vehicles fast and efficient ingress and egress. The building must accommodate TVFR offices and crew quarters. Additionally the building must accommodate a modest sized community meeting hall which can also be used by TVFR for staff instruction. Parking for TVFR staff and public must also be provided. Adding those components means that a space of at least half an acre is required. This site is .59 acres. Thus staff finds that the site size and dimension are adequate for the needs of the proposed use.

Staff also finds that the location of the building and orientation of the exit doors towards Elliot Street means that emergency response vehicles can quickly exit the building, get onto Willamette Drive and continue to their destination in a quick and efficient manner. Thus staff finds that the location of the site is appropriate to the needs of TVFR. The fact that the original Bolton station successfully operated from a location 100 feet away

makes it clear that the site is a good one. Also, given the fact that there is a TVFR station in Willamette covering the south and west half of the city, it is appropriate that a station be located on the east side of the city to respond to emergencies in this area and along the Willamette Drive axis.

Staff recommends mitigating glare from the headlights of exiting fire/emergency vehicles by imposing a condition that a six foot tall wooden fence be installed for the property across the street.

As to whether or not the use meets the needs of the community, it should go without saying that emergency services (fire, police and ambulance) are perhaps the most critically needed services any community can provide.

4. Adequate public facilities will be available to provide service to the property at the time of occupancy. (ORD. 1544)

5. The applicable requirements of the zone are met, except as modified by this chapter.

FINDING NO. 2

There are adequate public facilities and utilities to provide service to the property at the time of occupancy. The applicable requirements of each zone are met.

6. The supplementary requirements set forth in Chapters 52 to 55, if applicable, are met.

FINDING NO. 3

There are no signs proposed at this time, so Chapter 52 is not applicable. Chapter 54 applies insofar as landscaping is required at 20% of the total site and because a variance is being sought to relieve the applicant of the need to landscape 10% of the parking lot interior. On these subjects, the applicant states that 12,471 square feet or 31.1% of the site is landscaped and thus the standard is met. The variance on the parking lot landscaping will be discussed in the variance section as will the variance to remove a significant tree. Thus the provisions of Chapter 54 are met. Compliance with Chapter 55 Design Review will be discussed later.

7. The use will comply with the applicable policies of the Comprehensive Plan.

FINDING NO. 4

Staff adopts the applicant's finding and agrees that the criterion is met.

B. An approved conditional use or enlargement or alteration of an existing conditional use shall be subject to the development review provisions set forth in Chapter 55.

FINDING NO. 5

See findings related to design review by the applicant for compliance with Chapter 55.

C. The Planning Commission may impose conditions on its approval of a conditional use which it finds are necessary to assure the use is compatible with other uses in the vicinity. These conditions may include, but are not limited to, the following:

- 1. Limiting the hours, days, place, and manner of operation.*
- 2. Requiring design features which minimize environmental impacts such as noise, vibration, air pollution, glare, odor, and dust.*
- 3. Requiring additional setback areas, lot area, or lot depth, or width.*
- 4. Limiting the building height, size or lot coverage, or location on the site.*
- 5. Designating the size, number, location and design of vehicle access points.*
- 6. Requiring street right-of-way to be dedicated and the street to be improved including all steps necessary to address future street improvements identified in the adopted Transportation System Plan. (ORD. 1544)*

7. Requiring participation in making the intersection improvement or improvements identified in the Transportation System Plan when a traffic analysis (conplied as an element of a condition use application for the property) indicates the application should contribute toward. (ORD. 1544)

8. Requiring landscaping, screening, drainage, and surfacing of parking and loading areas.

9. Limiting the number, size, location, height, and lighting of signs.

10. Limiting or setting standards for the location and intensity of outdoor lighting.

11. Requiring berming, screening, or landscaping and the establishment of standards for their installation and maintenance.

12. Requiring and designating the size, height, location, and materials for fences.

13. Requiring the protection and preservation of existing trees, soils, vegetation, watercourses, habitat areas, and drainage areas.

D. Aggregate extraction uses shall also be subject to the provisions of ORS 541.605.

FINDING NO. 6

Staff is recommending conditions to deal with lighting and to mitigate glare in order to meet this criterion. Findings to justify these conditions are found elsewhere in this report.

55.100 APPROVAL STANDARDS - CLASS II DESIGN REVIEW

A. The provisions of the following chapters shall be met:

1. Chapter 33, Storm Water Quality and Detention. (OR D.)

2. Chapter 34, Accessory Structures.

3. Chapter 38, Additional Yard Area Required.

4. Chapter 40, Building Height Limitations and Exceptions.

5. *Chapter 42, Clear Vision Areas.*

FINDING NO. 7

Chapter 42 Clear Vision Areas requires a clear vision triangle of 30 feet along the right of way on either side of the driveway and 30 feet back along the centerline of the driveway. All driveways are setback from intersections and provide adequate CVAs per code. The building meets the maximum allowed height of 35 feet. No accessory structures or additional yard area are needed or proposed. Thus the criteria are met.

6. *Chapter 44, Fences & Screening Outdoor Storage.*

7. *Chapter 46, Off-Street Parking and Loading.*

8. *Chapter 48, Access.*

9. *Chapter 52, Signs.*

10. *Chapter 54, Landscaping.*

FINDING NO. 8

No signs are proposed at this time. The proposal can meet the provisions of Chapter 48, Access and Chapter 54 Landscaping by variances and Chapter 44, Fences & Screening Outdoor Storage by condition of approval.

Design Review 55.100

B. *Relationship to the natural and physical environment.*

1. *The buildings and other site elements shall be designed and located so that all heritage trees, as defined in the Municipal Code, shall be saved. Diseased heritage trees, as determined by the City Arborist, may be removed at his/her direction.*

2. *All heritage trees, as defined in the Municipal Code, all trees and clusters of trees (cluster is defined as three or more trees with overlapping driplines; however, native oaks need not have an overlapping dripline) that are considered significant by the City Arborist, either individually or in consultation with certified arborists or similarly qualified professionals,*

based on accepted arboricultural standards including consideration of their size, type, location, health, long term survivability, and/or numbers, shall be protected pursuant to the criteria of subsections 2(a-f) below. In cases where there is a difference of opinion on the significance of a tree or tree cluster, the City Arborist's findings shall prevail. It is important to acknowledge that all trees are not significant and, further, that this code section will not necessarily protect all trees deemed significant.

a. Non-residential and residential projects on Type I and II lands shall protect all heritage trees and all significant trees and tree clusters by either the dedication of these areas or establishing tree conservation easements. Development of Type I and II lands shall require the careful layout of streets, driveways, building pads, lots, and utilities to avoid heritage trees and significant trees and tree clusters, and other natural resources pursuant to this code. The method for delineating the protected trees or tree clusters ("dripline + 10 feet") is explained in subsection (b) below. Exemptions of subsections (c), (e), and (f) below shall apply.

b. Non-residential and residential projects on non-Type I and II lands shall set aside up to 20 percent of the area to protect trees and tree clusters that are determined to be significant, plus any heritage trees. Therefore, in the event that the City Arborist determines that a significant tree cluster exists at a development site, then up to 20 percent of the non-Type I and II lands shall be devoted to the protection of those trees, either by dedication or easement. The exact percentage is determined by establishing the driplines of the trees or tree clusters that are to be protected. In order to protect the roots which typically extend further, an additional 10-foot measurement beyond the dripline shall be added. The square footage of the area inside this "dripline plus 10 feet" measurement shall be the basis for calculating the percentage (see figure below). The City Arborist will identify which tree(s) are to be protected. Development of non-Type I and II lands shall also require the careful layout of streets, driveways, building pads, lots, and utilities to avoid significant trees, tree clusters, heritage trees, and other natural resources pursuant to this code. Exemptions of subsections (c), (e), and (f) below shall apply. Please note that in the event that more than 20 percent of the non-Type I and II lands comprise significant trees or tree clusters, the developer shall not be required to save the excess trees, but is encouraged to do so.

c. Where stubouts of streets occur on abutting properties, and the extension of those streets will mean the loss of significant trees, tree clusters, or heritage trees, it is understood that tree loss may be inevitable. In these cases, the objective shall be to minimize tree loss. These provisions shall also apply in those cases where

access, per construction code standards, to a parcel is blocked by a row or screen of significant trees or tree clusters.

d. For both non-residential and residential development, the layout shall achieve at least 70 percent of maximum density for the developable net area. The developable net area excludes all Type I and II lands and up to 20 percent of the remainder of the site for the purpose of protection of stands or clusters of trees as defined in CDC Section 55.100(B)(2).

e. For arterial and collector street projects, including Oregon Department of Transportation street improvements, the roads and graded areas shall avoid tree clusters where possible. Significant trees, tree clusters, and heritage tree loss may occur, however, but shall be minimized.

f. If the protection of significant tree(s) or tree clusters is to occur in an area of grading that is necessary for the development of street grades, per City construction codes, which will result in an adjustment in the grade of over or under two feet, which will then threaten the health of the tree(s), the applicant will submit evidence to the Planning Director that all reasonable alternative grading plans have been considered and cannot work. The applicant will then submit a mitigation plan to the City Arborist to compensate for the removal of the tree(s) on an "inch by inch" basis (e.g., a 48-inch Douglas Fir could be replaced by 12 trees, each 4-inch). The mix of tree sizes and types shall be approved by the City Arborist.

3. The topography and natural drainage shall be preserved to the greatest degree possible.)

4. The structures shall not be located in areas subject to slumping and sliding. The Comprehensive Plan Background Report's Hazard Map, or updated material as available and as deemed acceptable by the Planning Director, shall be the basis for preliminary determination.

5. There shall be adequate distance between on site buildings and on site and off site buildings on adjoining properties to provide for adequate light and air circulation and for fire protection.

FINDING NO. 9

There are no heritage trees on site. The two significant trees are located in the middle of the parking lot. The functional requirements of the fire station require their removal. More discussion on this matter is seen in the applicant's variance findings. Thus the criterion is met.

6. *Architecture.*

a. *The predominant architecture of West Linn identified in the West Linn vision process was contemporary vernacular residential designs emphasizing natural materials: wood with brick and stone detail. Colors are subdued earth tones: greys, brown, off-whites, slate, and greens. Pitched roofs with overhanging eaves, decks, and details like generous multi-light windows with oversized trim are common. Also in evidence are the 1890s Queen Anne style homes of the Willamette neighborhood. Neo-traditional homes of the newer subdivisions feature large front porches with detailed porch supports, dormers, bracketed overhanging eaves, and rear parking for cars. Many of these design elements have already been incorporated in commercial and office architecture.*

b. *The proposed structure(s) scale shall be compatible with the existing structure(s) on site and on adjoining sites. Contextual design is required. Contextual design means respecting and incorporating prominent architectural styles, building lines, roof forms, rhythm of windows, building scale and massing, materials and colors of surrounding buildings in the proposed structure.*

c. *While there has been discussion in Chapter 24 about transition, it is appropriate that new buildings should architecturally transition in terms of bulk and mass to work with, or fit, adjacent existing buildings. This transition can be accomplished by selecting designs that "step down" or "step up" from small to big structures and vice versa (see figure below). Transitions may also take the form of carrying building patterns and lines (e.g., parapets, windows, etc.) from the existing building to the new one.*

d. *Contrasting architecture shall only be permitted when the design is manifestly superior to adjacent architecture in terms of creativity, design, and workmanship, and/or it is adequately separated from other buildings by distance, screening, grade variations, or is part of a development site that is large enough to set its own style of architecture.*

FINDING NO. 10

The building has a large almost barn-like design with the main building material being horizontal wood siding. The mansard roof is clad in metal. Brickwork embellishes the south and north elevations. The building is 35 feet tall per code. The generously sized one over one windows and second floor dormers provide a

design respectful of the older homes strung along Buck Street. The mass of the building is broken up by doorways, fenestration and different building materials but the constant 70 foot long gable ridgeline makes it next to impossible to be compatible with the surrounding architecture in terms of scale and massing. Staff would defer to section (i) which states: “ *It is recognized that many of these facilities (fire stations), due to their functional requirements, cannot readily be configured to meet these architectural standards. However, attempts shall be made to make the design sympathetic to surrounding properties by landscaping, setbacks, buffers, and all reasonable architectural means.*” Staff is satisfied that the applicant has satisfied this requirement to the degree possible given the functional requirements of the fire station.

Transitions are satisfied not so much by design but by distance: the building is surrounded by streets which provide lateral or horizontal transition. Vertical transition is unnecessary since the station is the same height as homes elsewhere on the street. Thus the criterion is met.

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- e. *Human scale is a term that seeks to accommodate the users of the building and the notion that buildings should be designed around the human scale (e.g., his/her size and the average range of their perception). Human scale shall be accommodated in all designs by, for example, multi-light windows that are broken up into numerous panes, intimately scaled entryways, visual breaks (exaggerated eaves, indentations, ledges, parapets, awnings, engaged columns, etc.) in the facades of buildings, both vertically and horizontally.*

The human scale is enhanced by bringing the building and its main entrance up to the edge of the sidewalk. It creates a more dramatic and interesting streetscape and improves the "height and width" ratio referenced in this section.

- f. *The main front elevation of commercial and office buildings shall provide at least 60 percent windows or transparency at the pedestrian level to create more interesting streetscape and window shopping opportunities. One side elevation shall provide at least 30 percent transparency. Transparency on other elevations is optional. The transparency is measured in lineal fashion. For example, a 100-foot long building elevation shall have at least 60 feet (60% of 100) in length of*

windows. The window height shall be, at minimum, three feet tall. The exception to transparency would be cases where demonstrated functional constraints or topography restrict that elevation from being used. When this exemption is applied to the main front elevation, the square footage of transparency that would ordinarily be required by the above formula shall be installed on the remaining elevations at pedestrian level in addition to any transparency required by a side elevation, and vice versa. The rear of the building is not required to include transparency. The transparency must be flush with the building elevation.

FINDING NO. 11

The building fenestration, doors and brickwork provide interesting detail at the human level and break the building into discrete elements. Criterion (e) is met. This is not a commercial or office building so (f) does not apply.

- g. Variations in depth and roof line are encouraged for all elevations.*

To vary the otherwise blank wall of most rear elevations, continuous flat elevations of over 100 feet in length should be avoided by indents or variations in the wall. The use of decorative brick, masonry, or stone insets and/or designs is encouraged. Another way to vary or soften this elevation is through terrain variations such as an undulating grass area with trees to provide vertical relief.
- h. Consideration of the micro-climate (e.g., sensitivity to wind, sun angles, shade, etc.) shall be made for building users, pedestrians, and transit users, including features like awnings.*
- i. The Vision Statement identified a strong commitment to developing safe and attractive pedestrian environments with broad sidewalks, canopied with trees and awnings.*
- j. Sidewalk cafes, kiosks, vendors, and street furniture are encouraged. However, at least a four-foot wide pedestrian accessway must be maintained per Chapter 53, Sidewalk Use.*

FINDING NO. 12

There are no continuous walls of 100 feet or more in length. That issue aside, the design makes good use of brick and wood to break up and define different elements of the

building. The need to focus on pedestrians and sensitivity to micro-climates is not critical since this is not a commercial or office project. Still, there is a need to offer shelter at the main entrance and this is done effectively with the overarching brick entryway. The pedestrian element needs some work since there it is difficult to walk to the main entrance from Willamette Drive down Elliot Street without going 50 feet beyond the main entrance and having to access via the driveway. A sidewalk should be extended as shown in a staff exhibit to connect the sidewalk on Elliot Street directly towards (at right angle) the main entrance. Pedestrian access from Failing Street can also be improved by installing a marked walkway angled across the parking lot from Failing Street sidewalk connecting with the sidewalk at the east end of the main entrance. This will entail the elimination of a landscaping island at the east end of the row of parking. Thus by condition the criterion is met.

7. *Transportation Planning Rule (TPR) compliance. The automobile shall be shifted from a dominant role, relative to other modes of transportation, by the following means:*

- a. *Commercial and office development shall be oriented to the street. At least one public entrance shall be located facing an arterial street; or, if the project does not front on an arterial, facing a collector street; or, if the project does not front on a collector, the local street with highest traffic levels. Parking lots shall placed behind or to the side of commercial and office development. When a large and/or multi-building development is occurring on a large undeveloped tract (3+ acres), it is acceptable to focus internally; however, at least 20 percent of the main adjacent right-of-way shall have buildings contiguous to it unless waived per CDC Section 55.100(B)(7)(c). These buildings shall be oriented to the adjacent street and include pedestrian-oriented transparencies on those elevations. For individual buildings on smaller individual lots, at least 30 lineal feet or 50 percent of the building must be adjacent to the right-of-way unless waived per CDC Section 55.100(B)(7)(c). The elevations oriented to the right-of-way must incorporate pedestrian-oriented transparency.*

- b. *Multi-family projects shall be required to keep the parking at the side or rear of the buildings or behind the building line of the structure as it would appear from the right-of-way inside the multi-family project. For any garage which is located behind the building line of the structure, but still facing the front of the structure, architectural features such as patios, patio walls, trellis, porch roofs, overhangs, pergolas, etc. shall be used to downplay the visual impact of the garage, and to emphasize the rest of the house and front entry. The parking may be positioned inside small courtyard areas around which the units are built. These courtyard*

spaces encourage socialization, defensible space, and can provide a central location for landscaping, particularly trees, which can provide an effective canopy and softening effect on the courtyard in only a few years. Vehicular access and driveways through these courtyard areas is permitted.

- c. *Commercial, office, and multi-family projects shall be built as close to the adjacent main right-of-way as practical to facilitate safe pedestrian and transit access. Reduced frontages by buildings on public right-of-ways (a, b, c, above) may be allowed due to extreme topographic (e.g., slope, creek, wetlands, etc.) conditions or compelling functional limitations, not just inconveniences or design challenges.*

FINDING NO. 13

This is not a commercial, office, or multi-family project. These criteria do not apply.

- d. *Accessways, parking lots, and internal driveways shall accommodate pedestrian circulation and access by specially textured, colored, or clearly defined foot paths at least six feet wide. Paths shall be eight feet wide when abutting parking areas or travel lanes. Paths shall be separated from parking or travel lanes by either landscaping, planters, curbs, bollards, or raised surfaces. Sidewalks in front of storefronts on the arterials and main store entrances on the arterials identified in CDC Section 85.200(A)(3)(e) shall be 12 feet wide to accommodate pedestrians, sidewalk sales, sidewalk cafes, etc. Sidewalks in front of storefronts and main store entrances in commercial/OBC zone development on local streets and collectors shall be eight feet wide.*
- e. *Paths shall provide direct routes that pedestrians will use between buildings, adjacent rights-of-way, and adjacent commercial developments. They shall be clearly identified. They shall be laid out to attract use and to discourage people from cutting through parking lots and impacting environmentally sensitive areas.*

FINDING NO. 14

This is not a storefront, so the regulations in this section on front sidewalks do not apply. However this section does require sidewalks abutting parking areas to be 8 feet wide and

separated from the parking area by at least a curb. According to the applicant's finding on this criterion, the sidewalk along the east edge of the rear parking lot will be separated by a curb but will be only 7.5 feet wide. Condition of Approval 5 requires this to be 8 feet wide instead.

- f. *At least one entrance to the building shall be on the main street, or as close as possible to the main street. The entrance shall be designed to identify itself as a main point of ingress/egress.*
- g. *Where transit service exists, or is expected to exist, there shall be a main entrance within a safe and reasonable distance of the transit stop. A pathway shall be provided to facilitate a direct connection.*
- h. *Projects shall bring at least part of the project adjacent to, or near the main street right-of-way in order to enhance the height-to-width ratio along that particular street. (The height-to-width ratio is an architectural term that emphasizes height or vertical dimension of buildings adjacent to streets. The higher and closer the building is, and the narrower the width of the street, the more attractive and intimate the streetscape becomes.) For every one foot in street width, the adjacent building ideally should be one to two feet higher. This ratio is considered ideal in framing and defining the streetscape.*
- i. *These architectural standards shall apply to public facilities such as reservoirs, water towers, treatment plants, fire stations, pump stations, power transmission facilities, etc. It is recognized that many of these facilities, due to their functional requirements, cannot readily be configured to meet these architectural standards. However, attempts shall be made to make the design sympathetic to surrounding properties by landscaping, setbacks, buffers, and all reasonable architectural means. (ORD. 1408)*
- j. *Parking spaces at trailheads shall be located so as to preserve the view of, and access to, the trailhead entrance from the roadway. The entrance apron to the trailhead shall be marked: "No Parking," and include design features to foster trail recognition.*

FINDING NO. 15

The functional requirements of the fire station mean that the waiver provisions of subsection (i) apply. The imperatives with the fire station are internal circulation and

access issues associated with emergency vehicles. The fact that the main entrance does not face a main street is therefore excused.

But the problem is that there are limited means of pedestrian access to the community room from the neighborhood without detouring or walking up the driveway and between cars in the parking lot. There should be a direct pedestrian link from Elliot Street with the main fire station entrance for pedestrians coming from the direction of Willamette Drive. A pedestrian link from Failing Street to the main entrance should also be provided. A striped sidewalk or route from Failing Street connecting with the east end of the sidewalk on the south side of the station is appropriate. This may mean the elimination of some landscaping in the landscape island at the east end of the parking lot. Therefore the criterion is met by condition.

C. Compatibility between adjoining uses, buffering, and screening.

1. In addition to the compatibility requirements contained in Chapter 24, buffering shall be provided between different types of land uses; for example, buffering between single-family homes and apartment blocks. However, no buffering is required between single-family homes and duplexes or single-family attached units. The following factors shall be considered in determining the adequacy of the type and extent of the buffer:

a. The purpose of the buffer, for example to decrease noise levels, absorb air pollution, filter dust, or to provide a visual barrier.

b. The size of the buffer required to achieve the purpose in terms of width and height.

c. The direction(s) from which buffering is needed.

d. The required density of the buffering.

e. Whether the viewer is stationary or mobile.

2. On-site screening from view from adjoining properties of such things as service areas, storage areas, and parking lots shall be provided and the following factors will be considered in determining the adequacy of the type and extent of the screening:

a. What needs to be screened?

b. The direction from which it is needed.

c. How dense the screen needs to be.

d. Whether the viewer is stationary or mobile.

e. Whether the screening needs to be year around.

3. Roof top air cooling and heating systems and other mechanical equipment shall be screened from view from adjoining properties

FINDING NO. 16

Noise is the obvious impact of a fire station. Nearby homeowners should anticipate emergency vehicle response at any hour of any day. Typically, emergency vehicles do not activate sirens until they reach Willamette Drive: to warn traffic or at intersections where they would not otherwise have the right of way. This planner lives 1.5 blocks from Lake Oswego's main fire station and can report that despite initial concerns, the fire station has been a very good neighbor of the neighborhood. The majority of emergency calls are medical related and these are often noticed from 7AM onwards. The frequency of night time response is low: maybe twice a week. Staff's comments aside, the fact that there is an existing fire station next to the proposed site and it has been operational for decades means that the neighbors at this site are very familiar with fire response and associated noise and have invariably adapted to it. Staff sees no need for noise mitigation other than standard requirements for screening and buffering HVAC units. That can be addressed by condition and thus the criterion is met.

D. Privacy and noise.

1. Structures which include residential dwelling units shall provide private outdoor areas for each ground floor unit which is screened from view by adjoining units.

2. Residential dwelling units shall be placed on the site in areas having minimal noise exposure to the extent possible. Natural appearing sound barriers shall be used to lessen noise impacts where noise levels exceed the design standards of Table 1 below.

3. Structures or on site activity areas which generate noise, lights, or glare shall be buffered from adjoining residential uses in accordance with the standards in Section 55.100(C) where applicable. Businesses or activities that can reasonably be expected to generate noise shall undertake and submit appropriate noise studies and mitigate as necessary. (See Sections 55.110(B)(11) and 55.120(M).)

To protect the health, safety, and welfare of the citizens of West Linn, the following design standards are established in Tables 1 and 2. In the case of land uses that are expected to be close to adopted noise standards, followup studies in the first year of operation may be required by a conditional of approval or required by the Planning Director as appropriate in order to monitor compliance. (ORD. 1442)

Ambient degradation associated with new noise sources. Any new commercial or industrial development to be built on a vacant or previously unused industrial or commercial site shall not cause or permit the operation of a noise source if the noise levels generated, or indirectly caused by that noise source, would increase the ambient statistical noise levels, L50 or L10, by more than 5 dBA in any one hour. In some instances, the ambient degradation standard may establish lower allowable dBA levels than those established in Table 1, and in those instances, the lower level shall apply. Ambient noise levels shall be determined by a licensed acoustical engineer.

FINDING NO. 17

The issue of privacy has not been discussed yet. Loss of privacy could be an issue for homeowners across the street who may now be looked down upon from the second floor windows of the fire station. Staff is satisfied that the distance from the fire station, across the street, to those homes adequately reduces any privacy concerns. Probably the most significant impact though is the headlights of emergency vehicles exiting the building at night and the impact of the headlight glare on the residents of 1912 Elliot Street. Screens on the station site are not possible. The applicant should therefore provide a solid wood fence along the east side of 1912 Elliot Street, if that property owner agrees, as a means to mitigate that glare. Also, all exterior lighting fixtures shall meet dark sky design standards and not produce off site glare. Thus by condition the criterion is met.

G. Demarcation of public, semi-public, and private spaces. The structures and site improvements shall be designed so that public areas such as streets or public gathering places, semi-public areas, and private outdoor areas are clearly defined in order to establish persons having a right to be in the space, to provide for crime prevention, and to establish maintenance responsibility. These areas may be defined by:

- 1. A deck, patio, fence, low wall, hedge, or draping vine;*
- 2. A trellis or arbor;*

3. *A change in level;*
4. *A change in the texture of the path material;*
5. *Sign; or,*
6. *Landscaping.*

Use of gates to demarcate the boundary between a public street and a private access driveway is prohibited. (ORD. 1463)

FINDING NO. 18

The perimeter landscaping and retaining walls/grade changes on the north and east edges properly delineate public, semi-public and private areas. The criterion is met.

H. Public transit.

1. Provisions for public transit may be required where the site abuts an existing or planned public transit route. The required facilities shall be based on the following:

- a. The location of other transit facilities in the area.*
- b. The size and type of the proposed development.*
- c. The rough proportionality between the impacts from the development and the required facility. (ORD. 1442)*

2. The required facilities shall be limited to such facilities as the following:

- a. A waiting shelter with a bench surrounded by a three-sided covered structure, with transparency to allow easy surveillance of approaching buses.*
- b. A turnout area for loading and unloading designed per regional transit agency standards. (ORD. 1442)*
- c. Hard-surface paths connecting the development to the waiting and boarding areas.*
- d. Regional transit agency standards shall, however, prevail if they supersede these standards. (ORD. 1442)*

3. *The transit stop shall be located as close as possible to the main entrance to the shopping center, public or office building, or multifamily project. The entrance shall not be more than 200 feet from the transit stop with a clearly identified pedestrian link.*

4. *All commercial business centers (over 3 acres) and multi-family projects (over 40 units) may be required to provide for the relocation of transit stops to the front of the site if the existing stop is within 200-400 yards of the site and the exaction is roughly proportional to the impact of the development. The commercial or multi-family project may be required to provide new facilities in those cases where the nearest stop is over 400 yards away. The transit stop shall be built per 8(b) above. (ORD. 1442)*

5. *If a commercial business center or multi-family project is adjacent to an existing or planned public transit, the parking requirement may be reduced by the multiplier of .9 or ten percent. If a commercial center is within 200 feet of a multi-family project, with over 80 units and pedestrian access, the parking requirement may be reduced by ten percent or by a .90 multiplier. (ORD. 1425)*

6. *Standards of Section 85.200(D), "Transit Facilities," shall also apply.*

FINDING NO. 19

The transit line runs along Willamette Drive. There is not a need or nexus for the station to contribute new transit facilities for this line.

I. Public facilities.

An application may only be approved only if adequate public facilities will be available to provide service to the property prior to occupancy. (ORD.1544)

1. Streets. Sufficient right-of-way and slope easement shall be dedicated to accommodate all abutting streets to be improved to City's Improvement Standards and Specifications. The City Engineer shall determine the appropriate level of street and traffic control improvements to be required, including any off-site street and traffic control improvements based upon the transportation analysis submitted. The City Engineer's determination of developer obligation, the extent of road improvement and City's share, if any, of improvements and the timing of improvements shall be made

based upon the City's systems development charge ordinance and capital improvement program, and the rough proportionality between the impact of the development and the street improvements. (ORD. 1442) (ORD. 1526)

In determining the appropriate sizing of the street in commercial, office, multi-family, and public settings, the street should be the minimum necessary to accommodate anticipated traffic load and needs and should provide substantial accommodations for pedestrians and bicyclists. Road and driveway alignment should consider and mitigate impacts on adjacent properties and in neighborhoods in terms of increased traffic loads, noise, vibrations, and glare. (ORD. 1442)

The realignment or redesign of roads shall consider how the proposal meets accepted engineering standards, enhances public safety, and favorably relates to adjacent lands and land uses. Consideration should also be given to selecting an alignment or design that minimizes or avoids hazard areas and loss of significant natural features (drainageways, wetlands, heavily forested areas, etc.) unless site mitigation can clearly produce a superior landscape in terms of shape, grades, reforestation, and is fully consistent with applicable code restrictions regarding resource areas. Streets shall be installed per Chapter 85 standards. City Engineer has the authority to require that street widths match adjacent street widths. Sidewalks shall be installed per Section 85.200(A)(3)(e) for commercial and office projects, and Sections 85.200(A)(16) and 92.010(H) for residential projects, and applicable provisions of Chapter 55, Design Review.

Based upon the City Manager or Manager's designee determination, the applicant shall construct or cause to be constructed, or contribute a proportionate share of the costs, for all necessary off-site improvements identified by the transportation analysis commissioned to address CDC 55.125 that are required to mitigate impacts from the proposed development. Proportionate share of the costs shall be determined by the City Manager or Manager's designee who shall assume that the proposed development provides improvements in rough proportion to identified impacts of the development. (ORD. 1544)

2. Drainage. A registered civil engineer shall prepare a plan and statement which shall be supported by factual data that clearly shows that there will be no adverse impacts from increased intensity of runoff off site or the plan and statement shall identify all off-site impacts and measures to mitigate those impacts. The plan and

statement shall, at a minimum, determine off site impacts from a 25-year storm. The City Engineer shall adjust storm drainage facilities for applications which contain permeable parking surfaces based upon a quantitative analysis of the increased water retention and water quality characteristics of the permeable parking surface.

Catch basins shall be installed and connected to pipelines leading to storm sewers or drainageways.

All plans will then be reviewed by the City Engineer.

3. Municipal water. A registered civil engineer shall prepare a plan for the provision of water which demonstrates to City Engineer's satisfaction, the availability of sufficient volume, capacity, and pressure to serve the proposed development's domestic, commercial, and industrial fire flows. All plans will then be reviewed by the City Engineer.

4. Sanitary sewers. A registered civil engineer shall prepare a sewerage collection system plan which demonstrates sufficient onsite capacity to serve the proposed development. The City Engineer shall determine whether the existing City system has sufficient capacity to serve the development.

5. Solid waste and recycling storage areas. Appropriately sized and located solid waste and recycling storage areas shall be provided. Metro standards shall be used.

FINDING NO. 20

No street improvements are proposed. Storm water facilities have been engineered and submitted per code to the extent that the applicant will collect and treat runoff from the site. Both water and sewerage facilities are sufficient for the needs of this project. The criteria are met.

J. Crime prevention and safety/defensible space.

1. Windows shall be located so that areas vulnerable to crime can be surveyed by the occupants.

2. Interior laundry and service areas shall be located in a way that they can be observed by others.

3. Mail boxes, recycling, and solid waste facilities shall be located in lighted areas having vehicular or pedestrian traffic.

4. *The exterior lighting levels shall be selected and the angles shall be oriented towards areas vulnerable to crime.*

5. *Light fixtures shall be provided in areas having heavy pedestrian or vehicular traffic and in potentially dangerous areas such as parking lots, stairs, ramps, and abrupt grade changes.*

6. *Fixtures shall be placed at a height so that light patterns overlap at a height of seven feet which is sufficient to illuminate a person. All commercial, industrial, residential, and public facility projects undergoing design review shall use low or high pressure sodium bulbs and be able to demonstrate effective shielding so that the light is directed downwards rather than omni-directional. Omni directional lights of an ornamental nature may be used in general commercial districts only.*

7. *Lines of sight shall be reasonably established so that the development site is visible to police and residents.*

8. *Security fences for utilities (e.g., power transformers, pump stations, pipeline control equipment, etc.) or wireless communication facilities may be up to eight feet tall in order to protect public safety. No variances are required regardless of location. (ORD. 1408)*

K. Provisions for persons with disabilities.

1. *The needs of a person with a disability shall be provided for. Accessible routes shall be provided between all buildings and accessible site facilities. The accessible route shall be the most practical direct route between accessible building entries, accessible site facilities, and the accessible entry to the site. An accessible route shall connect to the public right-of-way to at least one on-site or adjacent transit stop (if the area is served by transit). All facilities shall conform to, or exceed, the Americans with Disabilities Act (ADA) standards, including those included in the Uniform Building Code.*

L. Signs.

1. *Based on considerations of crime prevention and the needs of emergency vehicles, a system of signs for identifying the location of each residential unit, store, or industry shall be established. **buildings shall be numbered for emergency identification***

2. *The signs, graphics, and letter styles shall be designed to be compatible with surrounding development, to contribute to a sense of project identity, or, when appropriate, to reflect a sense of the history of the area and the architectural style.*
3. *The sign graphics and letter styles shall announce, inform, and designate particular areas or uses as simply and clearly as possible.*
4. *The signs shall not obscure vehicle driver's sight distance.*
5. *Signs indicating future use shall be installed on land dedicated for public facilities (e.g. parks, water reservoir, fire halls, etc.).*
6. *Signs and appropriate traffic control devices and markings shall be installed or painted in the driveway and parking lot areas to identify bicycle and pedestrian routes.*

FINDING NO. 21

Staff finds that crime prevention and surveillance are facilitated through perimeter lighting, 24 hour seven day a week staffing of the station and numerous windows around the building allowing for good “outward” surveillance. Meanwhile the building and perimeter can be easily surveilled by passing police and citizens. No signs are proposed, and any signs proposed in the future will have to meet Chapter 52 Signs criteria as part of the sign permitting process. City code criteria and ADA requirements will be satisfied during the final building and facility design for the addition. The station and site have been designed to be applicable with all ADA standards. The criteria are met.

*M. **Utilities.** The developer shall make necessary arrangements with utility companies or other persons or corporations affected for the installation of underground lines and facilities. Electrical lines and other wires, including but not limited to communication, street lighting, and cable television, shall be placed underground, as practical. The design standards of Tables 1 and 2 above, and of sub-section 5.484(C) of the West Linn Municipal Code relative to existing high ambient noise levels shall apply to this section.*

*N. **Wireless Communication Facilities (WCF).** This section only applicable to WCFs.) WCFs as defined in CDC Chapter 57 may be required to go through Class I or Class II design review. The approval criteria for Class I design review is that the visual impact of the WCF shall be minimal to the extent allowed by CDC Chapter 57. Stealth designs shall be sufficiently camouflaged so that they are not easily seen by passersby in the public right-of-way or from any adjoining residential unit. WCFs that are classified as Class II design review must respond to all of the approval criteria of this chapter.*

O. Refuse and Recycling Standards

1. All commercial, industrial and multifamily developments over five units requiring Class II Design Review shall comply with the standards set forth in these provisions. Modifications to these provisions may be permitted if the Planning Commission determines that the changes are consistent with the purpose of these provisions and the City receives written evidence from the local franchised solid waste and recycling firm that they are in agreement with the proposed modifications.

FINDING NO. 22

Utilities will be provided and undergrounded in accordance with this provision. The utility criterion is met. There are no WCFs, so (N) criterion is not applicable. This is a civic use, not a commercial, industrial, or multifamily development. Therefore (O) is also not applicable.

75.000 VARIANCE
75.060 THE APPROVAL CRITERIA

The appropriate approval authority shall approve a variance request if all the following criteria are met and corresponding findings of fact prepared. The approval authority may impose appropriate conditions to ensure compliance with the criteria. The approval authority shall deny the variance if any of the criteria are not met.

- 1. Exceptional or extraordinary circumstances apply to the property which do not apply generally to other properties in the same zone or vicinity, and result from lot size or shape, legally existing prior to the date of this ordinance, topography, or other circumstances over which the applicant has no control.*
- 2. The variance is necessary for the preservation of a property right of the applicant, which is substantially the same as owners of the property in the same zone or vicinity.*
- 3. The authorization of the variance will not be materially detrimental to the purposes and standards of this Code, will not be inconsistent with all other regulatory requirements, and will not conflict with the goals and policies of the West Linn Comprehensive Plan.*
- 4. The variance request is the minimum variance, which would alleviate the exceptional and extraordinary circumstance.*
- 5. The exceptional and extraordinary circumstance does not arise from the violation of this ordinance.*

6. *The variance will not impose physical limitations on other properties or uses in the area, and will not impose physical limitations on future use of neighboring vacant or underdeveloped properties as authorized by the underlying zoning classification.*

FINDING NO. 23

Staff adopts the applicant's findings regarding the variances. Staff notes that the code standards for width of curb cut were originally written with residential development in mind. In the early 1990's the three and even four car garage became increasingly popular in some neighborhoods and the concern was that without a limit on curb cut, some builders and homeowners would have half or more of their front yard turned into a driveway/hardscape. The code limit stopped that but did not envision the functional and necessary needs of fire stations when the code language was crafted otherwise a waiver would have been built into the code.

Regarding the removal of the two significant trees, staff supports their removal given that every alternative design that could have saved the trees compromised the functional requirements of the fire station.

Regarding the variance to waive the 10 percent landscaping for the interior of the parking lot staff finds that the site is constrained in size and that the total landscaping in excess of the required 20% mitigates for that loss. Also, by deleting one or two parking stalls to meet the landscape standard would push cars onto the surrounding streets. This could sew discord between the homeowners in front of whose homes the cars were parked and the fire station.

LIST OF EXHIBITS

	<u>Page</u>
PC-1	PUBLIC NOTICE 30-34
PC-2	RECOMMENDED PEDESTIAN FACILITIES.....35
PC-3	APPLICANT'S SUBMITTAL.....A-1-A-289

**CITY OF WEST LINN
PLANNING COMMISSION
PUBLIC HEARING NOTICE
FILE NO. CUP-08-02/DR-08-09/VAR-08-06/VAR-08-07/VAR-08-08**

The West Linn Planning Commission is scheduled to hold a public hearing, on **Wednesday, November 19, 2008, starting at 7:00 p.m.** in the Council Chambers of City Hall (located at 22500 Salamo Road, West Linn, OR,) to consider the request of Tualatin Valley Fire and Rescue to construct a fire station at 6050 Failing Street, requiring a Conditional Use Permit and Class II Design Review in the R-4.5 zone. The applicant is also applying for three Class II Variances. One is to allow a curb cut of 46 feet which is in excess of the allowable 36 foot width. The second is to forgo any landscaping in the interior of the parking lot despite the fact that the CDC Chapter 54 requires that 10 percent of the parking lot interior is supposed to be landscaped. The third variance seeks to relief from the 20% rule which requires that up to 20% of the site be set aside to protect significant trees. The two significant trees are in the middle of the parking lot making their preservation problematic. The approval criteria for Conditional Use Permit are contained in Community Development Code (CDC) Chapter 60. The approval criteria for the Class II Design Review are contained in CDC Chapter 55. The approval criteria for the Class II Variances are contained in CDC Chapter 75. Approval or disapproval of the request by the Planning Commission will be based upon these criteria and these criteria only. At the hearing, it is important that comments relate specifically to the applicable criteria listed.

You have been notified of this proposal because County records indicate that you own property within 500 feet of the proposed site located at tax lots 1000, 1100, 1200, 1400 and 1500 of Clackamas County Assessor's Map 2-1E-25AD and/or as required by Chapter 99 of the West Linn Community Development Code.

The complete application in the above noted file is available for inspection at no cost, or copies can be obtained for a minimal charge per page. At least ten days prior to the hearing, a copy of the staff report will be available for inspection. For further information, please contact Peter Spir, Associate Planner, at City Hall, 22500 Salamo Road, West Linn, OR 97068, or by email at pspir@westlinnoregon.gov or by telephone at 503-656-4211.

The hearing will be conducted in accordance with the rules of Section 99.170 of the Community Development Code, adopted December 14, 1987, Ordinance 1129. Anyone wishing to present written testimony on this proposed action may do so in writing prior to, or at the public hearing. Oral testimony may be presented at the public hearing. At the public hearing, the Planning Commission will receive a staff report presentation from the City Planner; and invite both oral and written testimony. The Planning Commission may continue the public hearing to another meeting to obtain additional information, or close the public hearing and take action on the application. If a person submits evidence in support of the application, any party is entitled to request a continuance of the hearing. If there is no continuance granted at the hearing, any participant in the hearing may request that the record remain open for at least seven days after the hearing. Failure to raise an issue in person or by letter at some point prior to the close of the hearing, or failure to provide sufficient specificity to afford the decision maker an opportunity to respond to the issue, precludes an appeal to the Land Use Board of Appeals (LUBA) based on that issue.

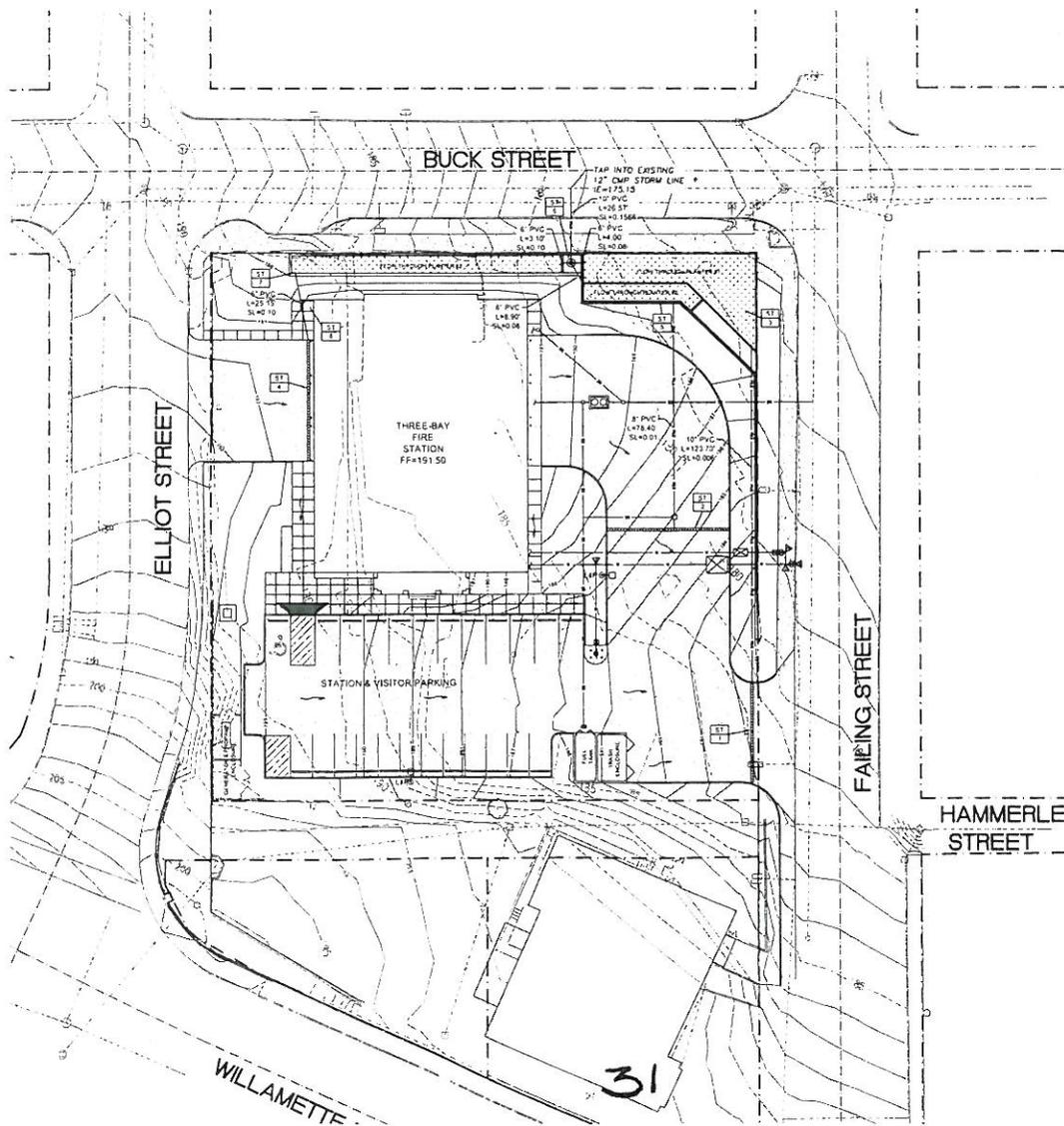
TERESA ZAK
Planning Administrative Assistant



MAIN ENTRY ELEVATION - SOUTH

SEE WEST ELEVATION FOR TYP. MATERIALS

1" 3" 5" 10" 20" SCALE: 1/8" = 1'-0"



A04TXPAYER	A05MAILADD	A06MAILCIT	A08MAILZIP
ALLMEYER LYNN MICHAEL & DEBOR	6070 HOLMES ST	WEST LINN	OF 97068
ARMSTRONG COREY & CAMERON	6285 GEER ST	WEST LINN	OF 97068
BERTRAND SHELTON R & REBECCA	1941 BUCK ST	WEST LINN	OF 97068
BLAKLEY STEVEN	340 RIDGEWAY RD	LAKE OSWEGO	OF 97034
BORGMEIER TODD S	745 E FAIRFIELD ST	GLADSTONE	OF 97027
BRADY SUSAN A	1792 BUCK ST	WEST LINN	OF 97068
BROOKS JILL S	1651 BUCK ST	WEST LINN	OF 97068
BROOKSHIRE JEANNE L	2095 BUCK ST	WEST LINN	OF 97068
BURKE DOUGLAS L	16829 GREENBRIER RD	LAKE OSWEGO	OF 97034
CAUFIELD PARK APARTMENTS LLC	PO BOX 859	MOLALLA	OF 97038
CONN JANET M	6255 FAILING ST	WEST LINN	OF 97068
CORDELL ROBERT J & GAIL B	17370 S POTTER RD	OREGON CITY	OF 97045
CORONA MARCO & STEFANI M	1691 BUCK ST	WEST LINN	OF 97068
CORTHELL DARLENE	6242 DAVENPORT ST	WEST LINN	OF 97068
CROSSE GLENN D & MARY C	1880 TOMPKINS ST	WEST LINN	OF 97068
CULL JOHN P & WENDY D	6042 WEST A ST	WEST LINN	OF 97068
DAVISSON CAROL J	PO BOX 1116	CANBY	OF 97013
DAVISSON GISELA A	737 ASH ST	LAKE OSWEGO	OF 97034
DAVISSON PAUL	PO BOX 1116	CANBY	OF 97013
DAVISSON UJAHN B & TARA T	1715 BUCK ST	WEST LINN	OF 97068
DELANO MICHAEL F CO-TRUSTEE	1765 BUCK ST	WEST LINN	OF 97068
DEMURO RICHARD & VICTORIA	6340 FAILING ST	WEST LINN	OF 97068
DRAYTON TED HENRY	6094 WEST A ST	WEST LINN	OF 97068
DUNAWAY MARILYN	1207 KEYSTONE LOOP NE	KEIZER	OF 97303
EDENS-SMITH GLADYS S	6288 ELLIOTT ST	WEST LINN	OF 97068
EDWARDS MICHAEL J	6055 WEST A ST	WEST LINN	OF 97068
ESSIG WILLIAM R	11620 SW PALERMO ST	WILSONVILLE	OF 97070
FARLEIGH DELL S & LOIS MAE	6090 HOLMES ST	WEST LINN	OF 97068
FLANNERY THOMAS M & VELMA K RE	6081 CAUFIELD ST	WEST LINN	OF 97068
FUNG GLENN W & PHAN CAM DANG	6056 WEST A ST	WEST LINN	OF 97068
GANEY JESSICA	6317 FAILING ST	WEST LINN	OF 97068
GETTEL RANDALL J & LORINDA L	2041 BUCK ST	WEST LINN	OF 97068
GOODRICH STEVEN E	6255 ELLIOTT ST	WEST LINN	OF 97068
HANSEN SAMANTHA FORD	1670 BUCK ST	WEST LINN	OF 97068
HARDING BRIAN E & MOLLY A	5855 BIRDSONG WAY	GLADSTONE	OF 97027
HERGET JAMES L & ILENE M	1615 BUCK ST	WEST LINN	OF 97068

HERMENS LAWRENCE C & ELAINE D	5989 WEST A ST	WEST LINN	OF 97068
HICKS ROBERT & MARILYN	4500 N PASEO DE LOS RANCHEROS	TUCSON	AZ 85745
HIMEL DIANNE S	6320 FAILING ST	WEST LINN	OF 97068
HMF LLC	21420 WILLAMETTE DR	WEST LINN	OF 97068
HUDSON JESSE	1741 BUCK ST	WEST LINN	OF 97068
HUTCHIN JULIE R	1942 BUCK ST	WEST LINN	OF 97068
IRVING PETER J	6285 DAVENPORT ST	WEST LINN	OF 97068
JENNINGS RICHARD V JR & MARIE E	1764 BUCK ST	WEST LINN	OF 97068
JOSEY ANNE C	6024 HOLMES ST	WEST LINN	OF 97068
KINGSTON DEBI V	1895 BUCK ST	WEST LINN	OF 97068
KOLLER DANIEL	3150 NE 82ND AVE	PORTLAND	OF 97220
KOZIOL JOSEPH W	5990 WEST A ST	WEST LINN	OF 97068
LACY PETER M & LISA C	1712 BUCK ST	WEST LINN	OF 97068
LICHTENSTEIN SHERI	1912 BUCK ST	WEST LINN	OF 97068
MACOM MOLLY THURSTON	21420 WILLAMETTE DR	WEST LINN	OF 97068
MACOM THURSTON H & BRITTNAY	21420 WILLAMETTE DR	WEST LINN	OF 97068
MARCOTTE JOLENE	6204 FAILING ST	WEST LINN	OF 97068
MCLARTY MATHEW & ANNA	19575 RIVER RD SPACE 64	GLADSTONE	OF 97027
MILLER GERI ANN	33371 OCEAN HILL DR	DANA POINT	CA 92629
MOLINA SERGIO	PO BOX 859	MOLALLA	OF 97038
MORTON JAMES C & JUDITH G	6280 GEER ST	WEST LINN	OF 97068
MOYER JOHN T	1000 MARINA VILLAGE PKWY STE 110	ALAMEDA	CA 94501
NELSON KENT	6282 HOLMES ST	WEST LINN	OF 97068
OLSON JOHN R JR & ANNE	6114 WEST A ST	WEST LINN	OF 97068
ORME ERICA	1993 BUCK ST	WEST LINN	OF 97068
PANICHELLO JOHNNY S TRUSTEE	3000 STONEBRIDGE WAY	LAKE OSWEGO	OF 97034
PANICHELLO MARK	27205 SW PETES MOUNTAIN RD	WEST LINN	OF 97068
PEARCE DALE R	6061 CAUFIELD ST	WEST LINN	OF 97068
PIXTON J THOMAS & KAAREN	5070 LINN LN	WEST LINN	OF 97068
RAETHKE MARY E	6210 FAILING ST	WEST LINN	OF 97068
RICH CHRISTOPHER A & HEATHER B	6280 HOLMES ST	WEST LINN	OF 97068
RIGOTTI JEFFERY S TRUSTEE	6343 FAILING ST	WEST LINN	OF 97068
ROOK RONALD L & TINA O L	1950 TOMPKINS ST	WEST LINN	OF 97068
ROSS NANCY J	6254 FAILING ST	WEST LINN	OF 97068
ROTHENHOEFER JANICE L	6101 CAUFIELD ST	WEST LINN	OF 97068
SALINAS MIGUEL A & LIDIA S	20765 WILLAMETTE DR	WEST LINN	OF 97068
SANFORD FRED E	5983 WEST A ST	WEST LINN	OF 97068

33

SNOW JENNIFER E	6275 DAVENPORT ST	WEST LINN	OF 97068
SWEHLA VERONICA A	6291 ELLIOTT ST	WEST LINN	OF 97068
TAIT ERIC J & THERESA A	1980 TOMPKINS ST	WEST LINN	OF 97068
TALBERT LARRY K	3421 SW TURNER RD	WEST LINN	OF 97068
TOMA BENYAMEN & LINDA RAMZI	6020 HOLMES ST	WEST LINN	OF 97068
TOOLE DARLENE K TRUSTEE	3350 N MAPLE ST	CANBY	OF 97013
TROST ANGELA A	6270 DAVENPORT ST	WEST LINN	OF 97068
TUALATIN VALLEY FIRE & RESCUE	20665 SW BLANTON	ALOHA	OF 97007
UNION PACIFIC RAILROAD CO	1400 DOUGLAS STOP 1640	OMAHA	NE 68179
VANMOURIK JASON & JENNIFER M	6021 GEER ST	WEST LINN	OF 97068
VOIGT UWE & PATRICIA E	6381 FAILING ST	WEST LINN	OF 97068
WAINSCOTT JANICE L	6043 GEER ST	WEST LINN	OF 97068
WENZINGER GLEN & JACQUELYN	1954 BUCK ST	WEST LINN	OF 97068
WILLIAMS JIM & MARTA	1797 BUCK ST	WEST LINN	OF 97068

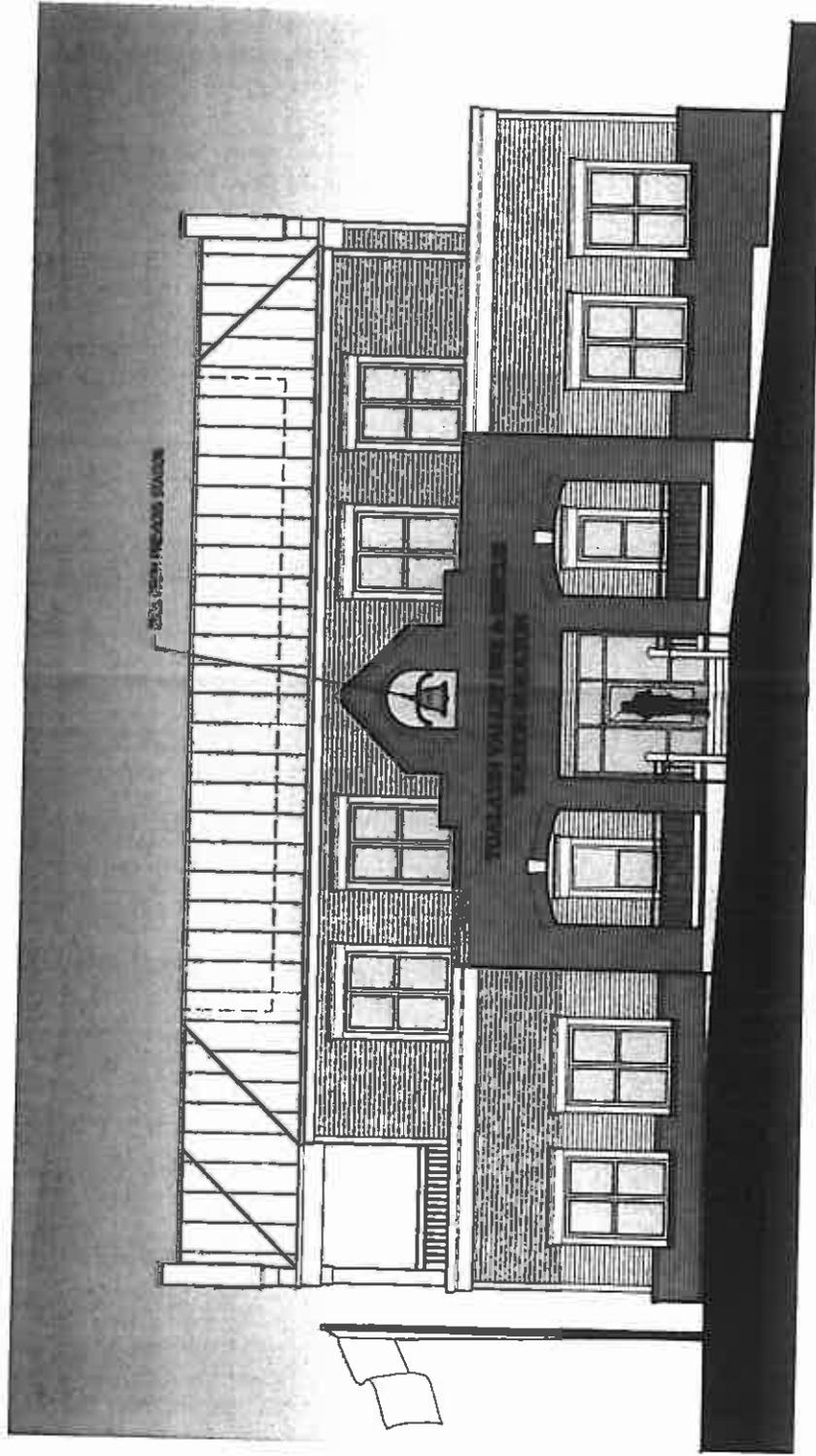
CITY OF WEST LINN
PLANNING AND DEVELOPMENT

EXHIBIT PC-3

APPLICANT'S SUBMITTAL

FILE NOS.: CUP-08-02/DR-08-09/VAR-08-06/07/08

REQUEST: TO CONSTRUCT A FIRE STATION AT THE BLOCK
OF 6174 FAILING STREET REQUIRING A
CONDITIONAL USE PERMIT, DESIGN REVIEW AND
THREE VARIANCES



MAIN ENTRY ELEVATION - SOUTH

SCALE: 1/8" = 1'-0"

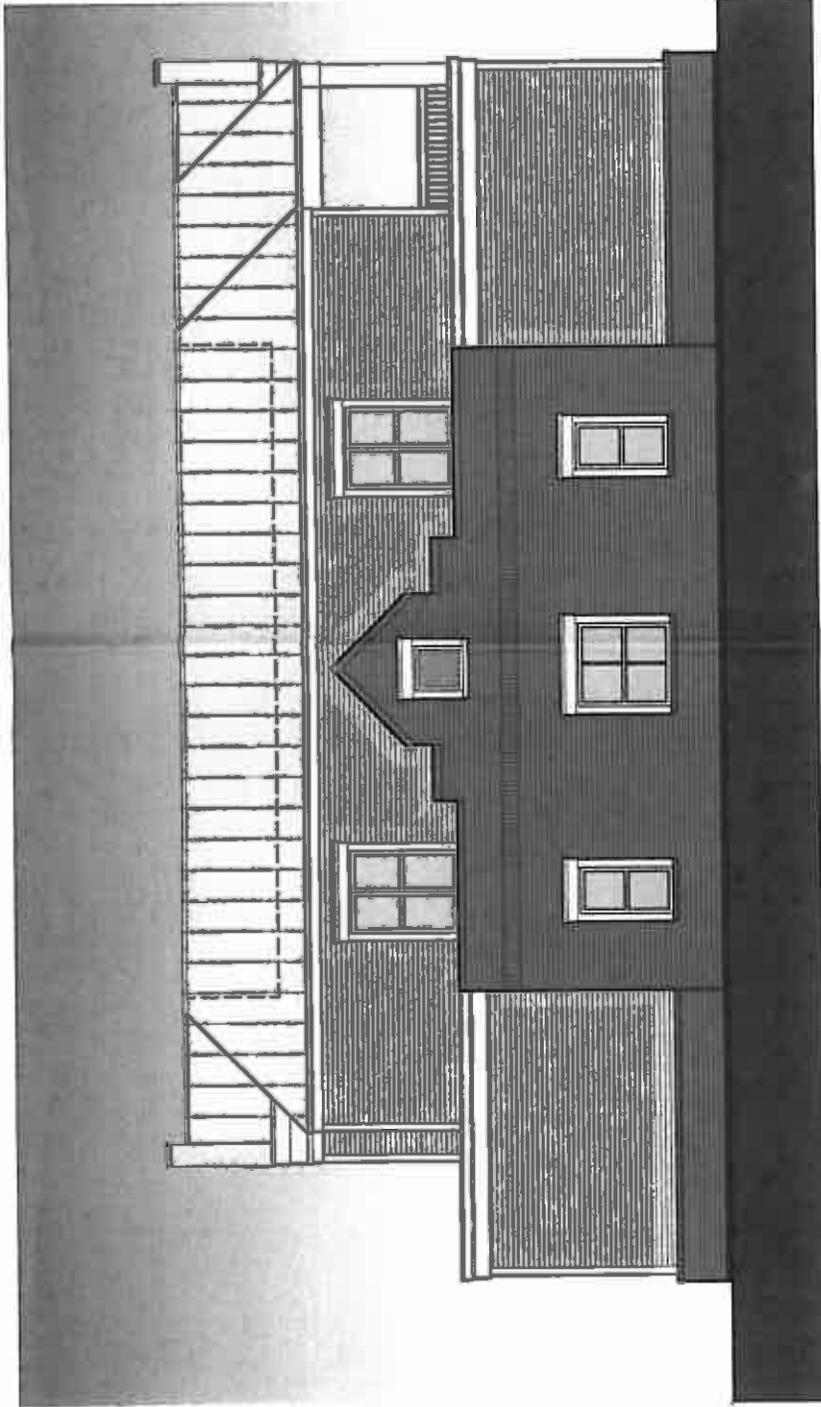
SEE NEXT ELEVATION FOR TYP. MATERIALS

A-1

TVF&RW
STATION 5
6050 FAILING STRE

DESIGN
DEVELOPMENT
PROPOSED
ELEVATIONS
PROJECT
DRAWN
SCG
CHECKED
DATE
AUG 19
REVISIONS

A3

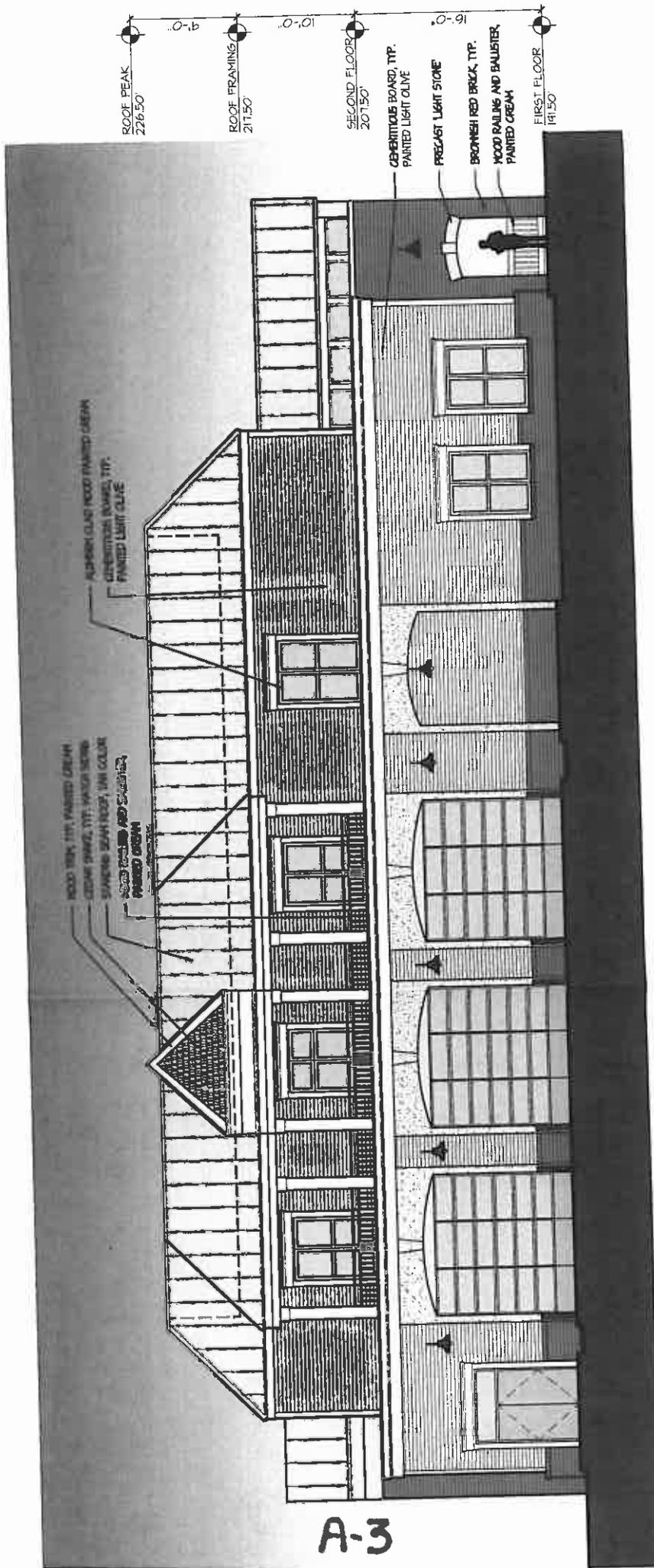


BUCK STREET ELEVATION - NORTH

SEE NEXT ELEVATION FOR TYP. MATERIALS

SCALE 1/8" = 1'-0"

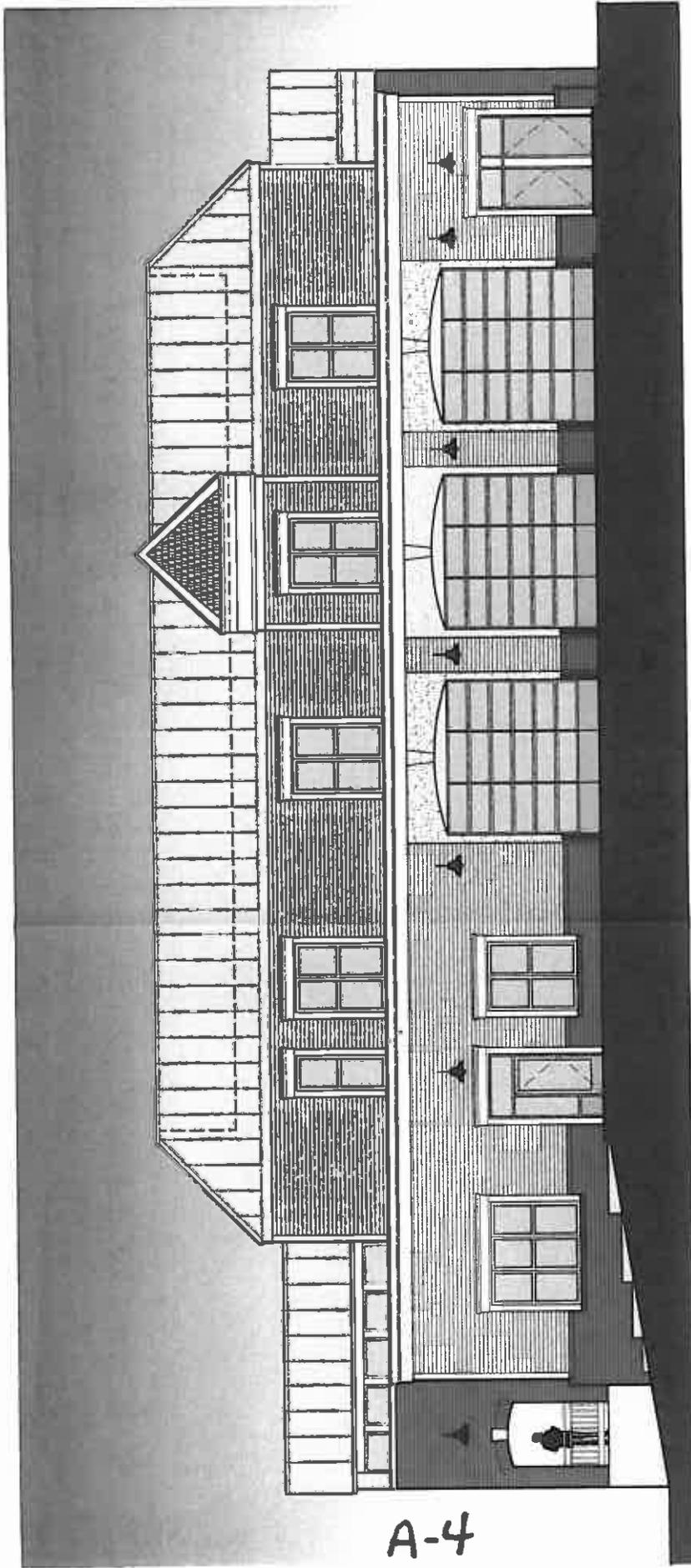
A-2



A-3

ELLIOTT STREET ELEVATION - WEST

1" = 10' SCALE



A-4

FAILING STREET ELEVATION - EAST

SCALE: 1/8" = 1'-0"



SEE NEXT ELEVATION FOR TYP. MATERIALS

**Tualatin Valley Fire & Rescue
Station 58**

*Conditional Use, Design Review,
And Variance Applications*

Submitted to the City of West Linn,
Planning Department

August 22, 2008

**Development Application Summary Information for
Tualatin Valley Fire & Rescue Station 58**

Applicant: Gary Wells
Director of Support Services
Tualatin Valley Fire & Rescue
20665 SW Blanton Street
Aloha, Oregon 97007
Phone: (503) 642-0331
Fax: (503) 642-9655
E-mail: gary.wells@tvfr.com

Applicant's Representative: Frank Angelo
Angelo Planning Group
921 SW Washington Street, Suite 468
Portland, Oregon 97205
Phone: (503) 227-3664
Fax: (503) 227-3679
E-mail: fangelo@angeloplanning.com

Architecture: Hans Ettlin
Peck Smiley Ettlin Architects
4412 SW Corbett
Portland, Oregon 97201
Phone: (503) 248-9170
Email: hans@psearchs.com

**Civil Engineering and
Environmental Evaluation:** PBS Engineering and Environmental
4412 SW Corbett
Portland, Oregon 97201
Phone: (503) 248-1939

Landscape Architect: Janet Otten
Otten Landscape Architects, Inc.
3933 SW Kelly Street Suite B
Portland, Oregon 97239
Phone: (503) 972-0311

Legal Description: 21E25AD01000
21E25AD01100
21E25AD01200
21E25AD01400
21E25AD01500

Current Zoning: Single-Family Residential Detached and
Attached/Duplex, R-4.5

Applications Submitted for: Conditional Use
Class II Design Review
Class II Variance (3)

TABLE OF CONTENTS
Development Application for West Linn Fire Station 58

Application Forms

Section 1: Project Introduction

A. Project Description	1
B. Site and Context.....	1
C. Project Time Frame.....	2
D. Overview of the City of West Linn Combined Application	2

Section 2: Applicable Review Criteria

West Linn Community Development Code

Chapter 14 – Residential Detached and Attached/Duplex, R-4.5.....	4
Chapter 31 – Erosion Control.....	8
Chapter 33 – Stormwater Quality and Detention	12
Chapter 40 – Building Height Limitation, Exceptions	16
Chapter 42 – Clear Vision Areas	17
Chapter 44 – Fences.....	18
Chapter 46 – Off-Street Parking, Loading and Reservoir Areas.....	19
Chapter 48 – Access, Egress and Circulation.....	27
Chapter 54 – Landscaping	30
Chapter 55 – Design Review.....	35
Chapter 60 – Conditional Use.....	48
Chapter 75 – Variance: Chapter 48 Access, Egress, and Circulation	53
Chapter 75 – Variance: Chapter 54 Landscaping	56
Chapter 75 – Variance: Chapter 55 Design Review.....	59

List of Figures

Figure 1. Vicinity Map.....	3
Figure 2. Lot Layout.....	6

List of Tables

Table 1. Dimensional Requirements	6
Table 2. Required and Proposed Landscaping Areas	34
Table 3. Tree Inventory	38

Section 3: Exhibits

A. Plan Set (*Submitted Under Separate Cover*)

- | | |
|-------------------------------|--|
| ▪ Plan Checksheet | ▪ C2.0 Erosion Control Details |
| ▪ A1 Site Plan | ▪ C2.1 Site Improvement Details |
| ▪ A1.1 Site Analysis | ▪ C2.2 Water Details |
| ▪ A2 Floor Plans | ▪ C2.3 Sanitary Details |
| ▪ A3 Architectural Elevations | ▪ C2.4 Stormwater Details |
| ▪ SUR Existing Conditions | ▪ EPM1.1 Photometrics |
| ▪ C1.0 Utility Plan | ▪ L1.0 Landscape Plan |
| ▪ C1.1 Stormwater Plan | ▪ TP-1 Tree Protection Plan |
| ▪ C1.2 Grading Plan | ▪ Materials Board (<i>One copy only</i>) |
| ▪ C1.3 Erosion Control Plan | |

- B. Stormwater Report
- C. Pre-Application Conference Notes
- D. Arborist Report
- E. Neighborhood Meeting Documentation
- F. Noise Study
- G. Lighting Cut Sheets
- H. Bicycle Rack Design

Application Forms
Tualatin Valley Fire & Rescue Station 58

West Linn

DEVELOPMENT REVIEW APPLICATION

TYPE OF REVIEW (Please check all boxes that apply):

- | | | | |
|-------------------------------------|--|-------------------------------------|--|
| <input type="checkbox"/> | Annexation | <input type="checkbox"/> | Non-Conforming Lots, Uses & Structures |
| <input type="checkbox"/> | Appeal and Review * | <input type="checkbox"/> | One-Year Extension * |
| <input checked="" type="checkbox"/> | Conditional Use | <input type="checkbox"/> | Planned Unit Development |
| <input checked="" type="checkbox"/> | Design Review | <input type="checkbox"/> | Pre-Application Meeting * |
| <input type="checkbox"/> | Easement Vacation | <input type="checkbox"/> | Quasi-Judicial Plan or Zone Change |
| <input type="checkbox"/> | Extraterritorial Ext. of Utilities | <input type="checkbox"/> | Street Vacation |
| <input type="checkbox"/> | Final Plat or Plan | <input type="checkbox"/> | Subdivision |
| <input type="checkbox"/> | Flood Plain Construction | <input type="checkbox"/> | Temporary Uses * |
| <input type="checkbox"/> | Hillside Protection and Erosion Control | <input type="checkbox"/> | Tualatin River Greenway |
| <input type="checkbox"/> | Historic District Review | <input checked="" type="checkbox"/> | Variance |
| <input type="checkbox"/> | Legislative Plan or Change | <input type="checkbox"/> | Water Resource Area Protection/Wetland |
| <input type="checkbox"/> | Lot Line Adjustment * / ** | <input type="checkbox"/> | Willamette River Greenway |
| <input type="checkbox"/> | Minor Partition (Preliminary Plat or Plan) | <input type="checkbox"/> | Other/Misc |

Home Occupation / Pre-Application / Sidewalk Use Application * / Permanent Sign Review * / Temporary Sign Application require individual application forms available in the forms and application section of the City Website or at City Hall.

TOTAL FEES/DEPOSIT \$ 25,450.00 * No CD required / ** Only one copy needed

Chris Jordan, City of West Linn, 22500 Salamo Road, West Linn, OR 97068 (503) 657-0331

OWNER'S	ADDRESS	CITY	ZIP	PHONE(res.& bus.)
Gary Wells,	Tualatin Valley Fire & Rescue, 20665 SW Blanton ST,	Aloha,	OR 97007	(503) 642-0331

APPLICANT'S	ADDRESS	CITY	ZIP	PHONE(res.& bus.)
Frank Angelo,	Angelo Planning Group, 921 SW Washington ST, Suite 468,	Portland,	OR 97205	(503) 227-3664

CONSULTANT	ADDRESS	CITY	ZIP	PHONE
------------	---------	------	-----	-------

SITE LOCATION 6050 Failing Street

Assessor's Map No.: 21E25AD Tax Lot(s): 1000, 1400 and 1500

Total Land Area: 0.59 acres

- All application fees are non-refundable (excluding deposit).
- The owner/applicant or their representative should be present at all public hearings.
- A denial or grant may be reversed on appeal. No permit will be in effect until the appeal period has expired.
- Three (3) complete hard-copy sets (single sided) of application materials must be submitted with this application. One (1) complete set of digital application materials must also be submitted on CD in PDF format.**

The undersigned property owner(s) hereby authorizes the filing of this application, and authorizes on site review by authorized staff. I hereby agree to comply with all code requirements applicable to my application.

SIGNATURE OF PROPERTY OWNER(S) [Signature] Date 8/12/08

SIGNATURE OF APPLICANT(S) [Signature] FOR TVE? Date 8/7/08

BY SIGNING THIS APPLICATION, THE CITY IS AUTHORIZED REASONABLE ACCESS TO THE PROPERTY. ACCEPTANCE OF THIS APPLICATION DOES NOT INFER A COMPLETE SUBMITTAL. COMPLETENESS WILL BE DETERMINED WITHIN 30 DAYS OF SUBMITTAL.

PLANNING AND BUILDING; 22500 SALAMO RD #1000; WEST LINN, OR 97068;

PHONE: 656-4211 FAX: 656-4106

A-9

West
Linn

DEVELOPMENT REVIEW APPLICATION

TYPE OF REVIEW (Please check all boxes that apply):

- | | | | |
|-------------------------------------|--|-------------------------------------|--|
| <input type="checkbox"/> | Annexation | <input type="checkbox"/> | Non-Conforming Lots, Uses & Structures |
| <input type="checkbox"/> | Appeal and Review * | <input type="checkbox"/> | One-Year Extension * |
| <input checked="" type="checkbox"/> | Conditional Use | <input type="checkbox"/> | Planned Unit Development |
| <input checked="" type="checkbox"/> | Design Review | <input type="checkbox"/> | Pre-Application Meeting * |
| <input type="checkbox"/> | Easement Vacation | <input type="checkbox"/> | Quasi-Judicial Plan or Zone Change |
| <input type="checkbox"/> | Extraterritorial Ext. of Utilities | <input type="checkbox"/> | Street Vacation |
| <input type="checkbox"/> | Final Plat or Plan | <input type="checkbox"/> | Subdivision |
| <input type="checkbox"/> | Flood Plain Construction | <input type="checkbox"/> | Temporary Uses * |
| <input type="checkbox"/> | Hillside Protection and Erosion Control | <input type="checkbox"/> | Tualatin River Greenway |
| <input type="checkbox"/> | Historic District Review | <input checked="" type="checkbox"/> | Variance |
| <input type="checkbox"/> | Legislative Plan or Change | <input type="checkbox"/> | Water Resource Area Protection/Wetland |
| <input type="checkbox"/> | Lot Line Adjustment * /** | <input type="checkbox"/> | Willamette River Greenway |
| <input type="checkbox"/> | Minor Partition (Preliminary Plat or Plan) | <input type="checkbox"/> | Other/Misc |

Home Occupation / Pre-Application / Sidewalk Use Application * / Permanent Sign Review * / Temporary Sign Application require individual application forms available in the forms and application section of the City Website or at City Hall.

TOTAL FEES/DEPOSIT \$ 25,450.00 * No CD required / ** Only one copy needed

Gary Wells, Tualatin Valley Fire & Rescue, 20665 SW Blanton ST, Aloha, OR 97007 (503) 642-0331

OWNER'S	ADDRESS	CITY	ZIP	PHONE(res.& bus.)
Same as Owner above.				

APPLICANT'S	ADDRESS	CITY	ZIP	PHONE(res.& bus.)
Frank Angelo, Angelo Planning Group,	921 SW Washington ST, Suite 468,	Portland,	OR 97205	(503) 227-3664

CONSULTANT	ADDRESS	CITY	ZIP	PHONE

SITE LOCATION 6050 Failing Street

Assessor's Map No.: 21E25AD Tax Lot(s): 1100 and 1200

Total Land Area: 0.33 acres

- All application fees are non-refundable (excluding deposit).
- The owner/applicant or their representative should be present at all public hearings.
- A denial or grant may be reversed on appeal. No permit will be in effect until the appeal period has expired.
- Three (3) complete hard-copy sets (single sided) of application materials must be submitted with this application. One (1) complete set of digital application materials must also be submitted on CD in PDF format.**

The undersigned property owner(s) hereby authorizes the filing of this application, and authorizes on site review by authorized staff. I hereby agree to comply with all code requirements applicable to my application.

SIGNATURE OF PROPERTY OWNER(S)
 Date 7/30/08
 SIGNATURE OF APPLICANT(S)

X Same as Property Owner above Date _____

BY SIGNING THIS APPLICATION, THE CITY IS AUTHORIZED REASONABLE ACCESS TO THE PROPERTY.
ACCEPTANCE OF THIS APPLICATION DOES NOT INFER A COMPLETE SUBMITTAL.
COMPLETENESS WILL BE DETERMINED WITHIN 30 DAYS OF SUBMITTAL.

PLANNING AND BUILDING; 22500 SALAMO RD #1000; WEST LINN, OR 97068;

PHONE: 656-4211 FAX: 656-4106

A-10

Application Narrative
Tualatin Valley Fire & Rescue Station 58

A-11

Section 1: Project Introduction

Project Description

Tualatin Valley Fire & Rescue (TVF&R) is seeking Conditional Use and Design Review approval, along with three variances, from the City of West Linn to construct a new fire station located at 6050 Failing Street (21E25AD01000, 21E25AD01100, 21E25AD01200, 21E25AD01400, and 21E25AD01500). The existing Bolton Fire Station is located on tax lot 21E25AD02700, directly to the south of the cluster of lots where the new station will be sited. There is currently a vacated street between the existing fire station site and the proposed station. As part of a property exchange agreement between the City of West Linn, which currently owns three of the five lots proposed for construction (21E25AD01000, 21E25AD01400, and 21E25AD01500), and TVF&R, the proposed site for the new station will be consolidated into one lot and total ownership transferred to the fire department. The existing station and its tax lot will be transferred to the ownership of the City of West Linn. The residential structures currently on the proposed site have been declared surplus property by the City and offered for sale.

The house located at 1850 Buck Street (21E25AD01400) is listed on the Clackamas County Cultural Resource Inventory and the City of West Linn Historic Resource Inventory, ranked as a West Linn Historic Landmark. The "R.I. Greaves House" was built in circa 1900 in the Queen Anne Vernacular style. The house is currently in fair condition and was recently purchased by the City of West Linn. As with the other residential homes on-site, this house has been declared surplus property by the City and a neighborhood resident has expressed interest in moving the building to a nearby lot within the Bolton Neighborhood. TVF&R will submit a Historic District Review application, requesting permission to relocate the house.

The proposed Station 58 will have a main entrance on the south side facing Highway 43 but the site will front onto Elliott Street where the fire apparatus will exit the building's parking bays. The new station will be approximately 12,760 square feet and will include a 639 square foot community room. The building will house the station's firefighters and have an interior three-space parking bay for fire trucks and other necessary emergency apparatus.

The construction of the proposed Station 58 is funded as part of a bond measure approved by voters in 2006 to upgrade and improve the safety and operations of TVF&R's fire stations. The existing Station 58 works well in its current location from an emergency response perspective but concerns about soil stability, building layout, size of apparatus bays (too small for the necessary fire apparatus), and dated mechanical and electrical systems make the facility deficient. In addition, a lack of compliance with current seismic standards for public safety response buildings makes the station a liability in the event of an earthquake. These concerns will all be addressed by the construction of the new station.

The construction of the new station should not significantly impact the emergency response times. The fire station employees and equipment will remain in the existing Station 58 while the new station is constructed.

Site and Context

Station 58 is located in a transit oriented neighborhood within the Bolton Neighborhood. As previously discussed, the proposed station is located on five tax lots, each between approximately 0.12 and 0.23 acres in size for a total site area of 0.92 acres. There is one driveway giving access to the site from Failing Street which passenger vehicles will also use to exit the site. Fire apparatus vehicles will access the site using the same driveway but will pull forward into the parking bays that are part the station structure and then exit using the driveway onto Elliott Street.

The areas surrounding the proposed fire station to the north, east and west are largely residential. South of the site is the existing Bolton Fire Station and there is some nearby commercial along

Highway 43. As noted above, the existing fire station ownership will transfer to the City of West Linn and the building will be demolished at a future date. Figure 1 on page 3 shows the location of the future TVF&R Station 58.

Project Time Frame

Construction of the new fire station is expected to begin in early 2009 after all necessary land use and building permits have been acquired. Construction is expected to last through the rest of the year with completion in late 2009.

Overview of the City of West Linn Combined Application

This application demonstrates how the Station 58 project complies with the requirements of the City of West Linn's Community Development Code. A Conditional Use and a Class II Design Review application are both required and will be discussed in greater detail later in this application narrative. Additionally, three Class II Variances are being requested: one to the maximum curb cut width standards of Chapter 48, one to the interior parking lot landscaping standards of Chapter 54 and one to the tree preservation standards of Chapter 55. These are discussed in more detail beginning on page 53. This application is organized in the following manner:

Section 1 – Project Introduction

- Provides a description of the Station 58 project, a brief description of the site and context, summary of the expected project timeframe, and an overview of the application format.

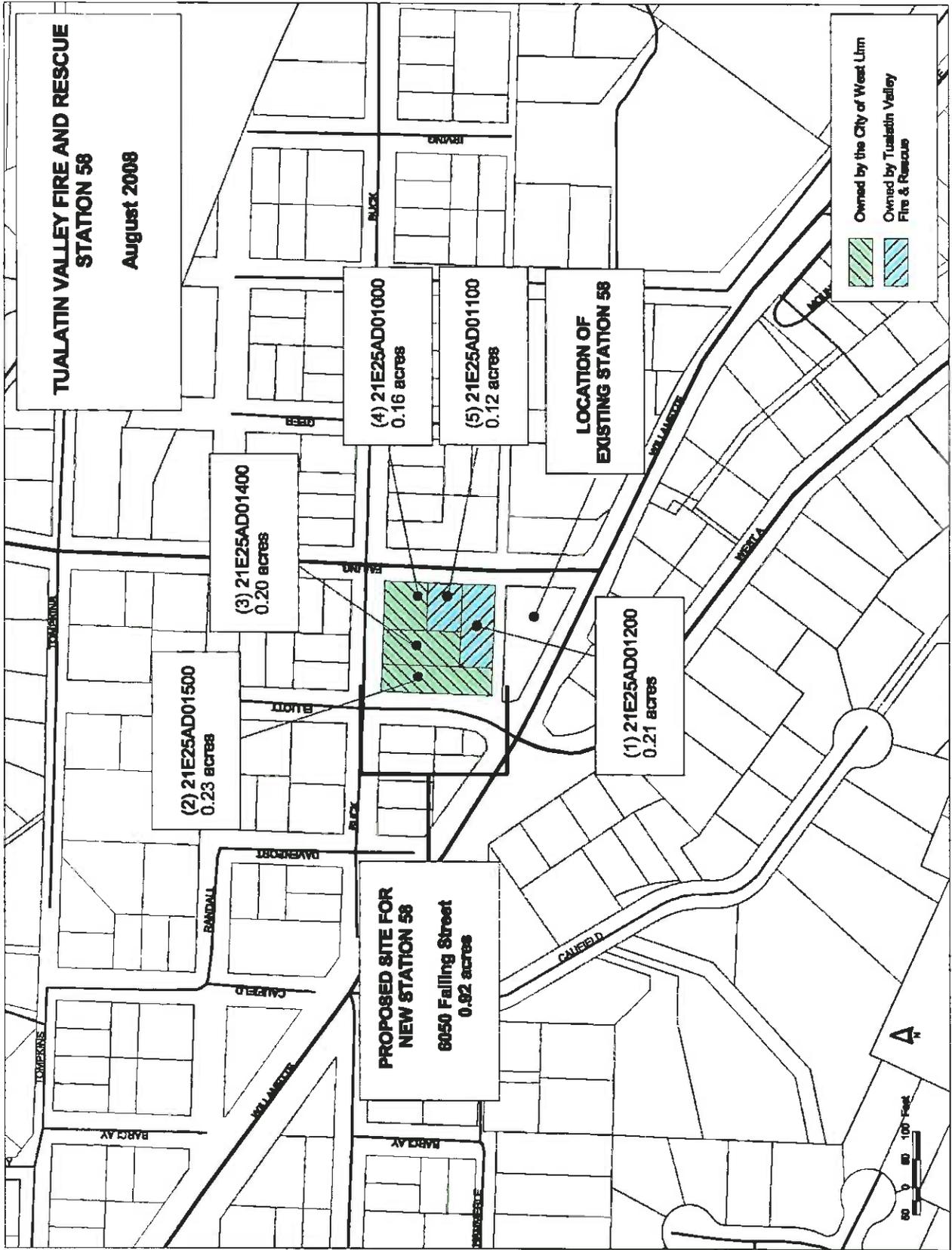
Section 2 – Applicable Review Criteria

- **Conformance with the City of West Linn Community Development Code** Describes how the TVF&R station complies with the standards of the Development Code including Zoning Districts, Supplemental Provisions and Exceptions, Design Review and Discretionary Provisions.

Exhibits

- Exhibit A is the required Plan Set
- Exhibit B is the Stormwater Report
- Exhibit C is the Pre-Application Conference Notes
- Exhibit D is the Arborist Report
- Exhibit E is the Neighborhood Meeting Documentation
- Exhibit F is the Noise Study
- Exhibit G contains the Lighting Cut Sheets
- Exhibit H illustrates the Bicycle Rack Design (Model 2172, painted Brown) chosen for the site

Figure 1. Vicinity Map



A-14

Section 2: Applicable Review Criteria

This section of the application contains responses that illustrate how this development application conforms to the applicable standards and regulations of the City of West Linn's Community Development Code. Only code text that contains applicable approval criteria or otherwise requires a response related to the requested land use actions have been included.

Chapter 14

Single-Family Residential Detached and Attached/Duplex, R-4.5

14.020 Procedures and Approval Process

C. The approval of a conditional use (Section 14.060) is discretionary with the Planning Commission. The approval process and criteria for approval are set forth in Chapter 60, Conditional Uses. If a use is not listed as a conditional use, it may be held to be a similar unlisted use under the provisions of Chapter 80.

Response: The applicant understands that a conditional use, such as a public safety facility in the R-4.5 zone, is subject to a discretionary review by the Planning Commission and is also subject to the approval process and criteria in Chapter 60 which are addressed in this application beginning on page 48.

14.060 Conditional Uses

The following are conditional uses which may be allowed in this zone subject to the provisions of Chapter 60, Conditional Uses:

8. Public safety facilities.

Response: Per Code Chapter 3.00 Definitions – Uses, Public safety facilities includes fire stations; therefore the proposed fire station is allowed as a Conditional Use in the R-4.5 zone.

14.070 Dimensional Requirements, Uses Permitted Outright and Uses Permitted Under Prescribed Conditions

A. Except as may be otherwise provided by the provisions of this Code, the following are the requirements for uses within this zone:

1. The minimum lot size shall be:

a. For a single-family detached unit, 4,500 square feet.

b. For each attached single-family unit, 4,000 square feet.

c. For a duplex, 8,000 square feet or 4,000 square feet for each unit.

Response: The proposed fire station is not a residential development; therefore, these criteria are not applicable. Per Code section 14.080, "the appropriate lot size for a conditional use shall be determined by the approval authority at the time of consideration". The proposed site size is approximately 0.92 acres which the applicant feels is appropriate to the proposed use.

2. The minimum front lot line length or the minimum lot width at the front lot line shall be 35 feet.

3. The average minimum lot width shall be 50 feet.

4. *The minimum average lot depth shall be 90 feet.*
5. *The minimum yard dimensions or minimum building setback areas from the lot line shall be:*
 - a. *For a front yard, 20 feet; except for steeply sloped lots where the provisions of Section 41.010 shall apply.*
 - b. *For an interior side yard, 5 feet.*
 - c. *For a side yard abutting a street, 15 feet.*
 - d. *For a rear yard, 20 feet.*
6. *The maximum building height shall be 35 feet except for steeply sloped lots in which case the provisions of Chapter 41 shall apply.*
7. *The maximum lot coverage shall be 40 percent.*
8. *The minimum width of an accessway to a lot which does not abut a street or a flag lot shall be 15 feet.*
9. *The floor area ratio shall be .45. Type I and II lands shall not be counted toward lot area when determining allowable floor area ratio, except that a minimum floor area ratio of .30 shall be allowed regardless of the classification of lands within the property. That 30 percent shall be based upon the entire property including Type I and II lands. Existing residences in excess of this standard may be replaced to their prior dimensions when damaged without the requirement that the homeowner obtain a "non-conforming structures" permit under CDC Chapter 66.*
10. *The sidewall provisions of CDC Chapter 43 shall apply. (ORD 1538)*

Response: The proposed fire station is sited on five adjacent lots with the same R-4.5 zoning. This is illustrated in Figure 2 below. Three of the five lots are currently under the ownership of the City of West Linn (see Figure 1, page 3) but ownership will be transferred through a property exchange to TVF&R and all of the lots are being developed together through this application. Due to this unique situation, this application looks at the five tax lots as one site with the front, back and side lot lines reflecting this. The dimensional requirements are addressed in Table 1 below.

A-16

Figure 2. Lot Layout

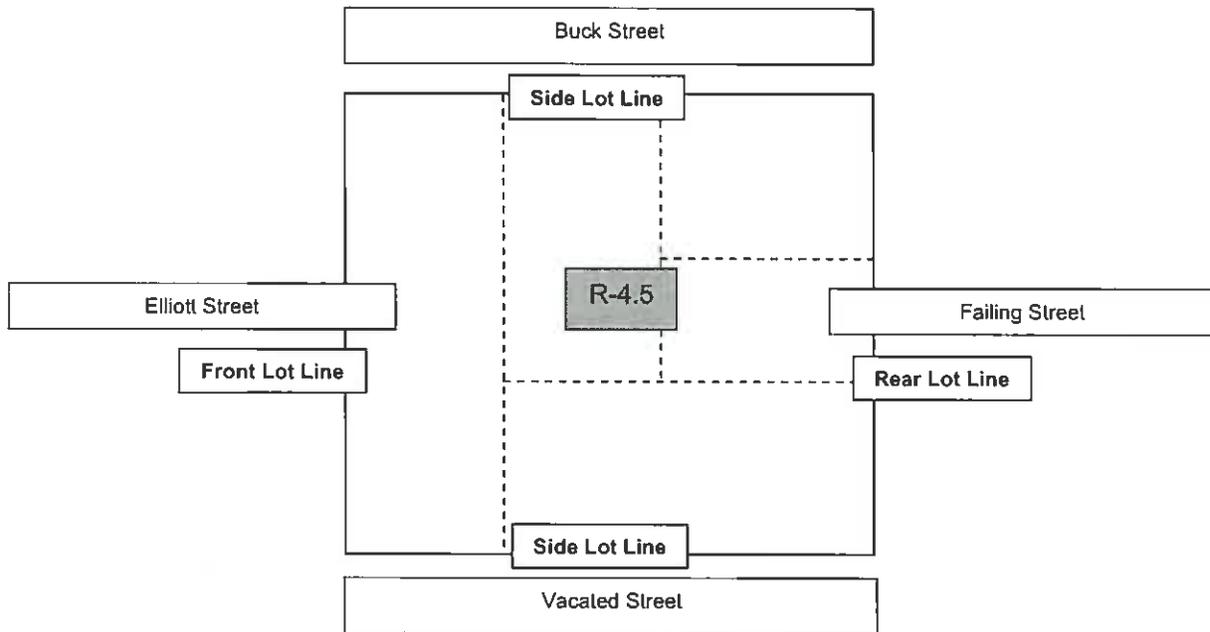


Table 1. Dimensional Requirements		
<i>Dimension</i>	<i>R-4.5 Requirement</i>	<i>Proposed</i>
Minimum Front Lot Line or Width	35'	200'
Average Minimum Lot Width	50'	200'
Average Minimum Lot Depth	90'	200'
Minimum Yard Dimensions or Setbacks		
Front Yard	20'	37' 9"
Interior Side Yard	5'	75' 6"
Side Yard Abutting a Street	15'	15'
Rear Yard	20'	143' 4"
Maximum Building Height	35'	Occupied building height: 35' Top of the second story bay roof projection: 36' 2.25"
Maximum Lot Coverage	40%	Maximum Lot Coverage: (8,227 building footprint square feet)/(40,016 site square feet)*100=20.6%

Although the fire station is approximately 36 feet to the top of the second story bay roof projection, the projection is not subject to the height restrictions in Chapters 14 per Chapter 40 which states that projections which cannot be used for human occupancy are not subject to the building height limitation of this code. The portion of the building which can be occupied is 35 feet.

B. The requirements of Section 19.070(A) 1 through 5 (above) may be modified for developments under the planned unit development provisions of Chapter 24.

A-17

Response: The proposed development does not contain a planned unit development; therefore, the above criterion is not applicable.

14.080 Dimensional Requirements, Conditional Uses

Except as may otherwise be established by this Code, the appropriate lot size for a conditional use shall be determined by the approval authority at the time of consideration of the application based upon the criteria set forth in Section 60.070(1) and (2).

Response: The proposed site for the fire station is made up of five tax lots (21E25AD01000, 21E25AD01100, 21E25AD01200, 21E25AD01400, and 21E25AD01500) each between 0.12 and 0.23 acres in size for a total site area of approximately 0.92 acres (40,016 square feet). The process to consolidate these lots into one has been started by the applicant. The applicant feels that the proposed lot size is appropriate to the use and will request that the Planning Commission make that determination in accordance with this Code Section.

14.090 Other Applicable Development Standards

A. The following standards apply to all development including permitted uses:

- 1. Chapter 34, Accessory Structures.*
- 2. Chapter 36, Temporary Uses.*
- 3. Chapter 38, Additional Yard Area Required, Exceptions to Yard Requirements, Storage in Yards and Projections into Yards.*
- 4. Chapter 40, Building Height Limitations and Exceptions.*
- 5. Chapter 41, Structures on Steep Lots, Exceptions.*
- 6. Chapter 42, Clear Vision Areas.*
- 7. Chapter 44, Fences; Screening of Outdoor Storage.*
- 8. Chapter 46, Off-street Parking and Loading.*
- 9. Chapter 48, Access.*
- 10. Chapter 52, Signs.*
- 11. Chapter 54, Installation and Maintenance of Landscaping.*

B. The provisions of Chapter 55, Design Review, apply to all uses except detached single-family dwellings.

Response: The applicant understands that the above code sections may be applicable to the development. They each have been reviewed and those that are applicable are addressed as follows in this development application:

- Chapter 34, Accessory Structures: Not applicable; no accessory structures are being proposed.
- Chapter 36, Temporary Uses: Not applicable; no temporary uses are being proposed.
- Chapter 38, Additional Yard Area Required: Not applicable; no additional yard area is required.
- Chapter 40, Building Height Limitations and Exceptions: page 16
- Chapter 41, Structures on Steep Lots, Exceptions: Not applicable; no exceptions due to structures on steep slopes are being applied for.
- Chapter 42, Clear Vision Areas: page 17
- Chapter 44, Fences & Screening Outdoor Storage: page 18
- Chapter 46, Off-Street Parking and Loading: page 19
- Chapter 48, Access: page 27
- Chapter 52, Signs: Not applicable, no signs are being proposed at this time.
- Chapter 54, Landscaping: page 30

A-18

Chapter 31 Erosion Control

31.020 Applicability

This document applies to development that may cause visible or measurable erosion on any property within the City of West Linn. In instances where this chapter conflicts with other applicable City codes, the more restrictive provision shall apply.

Response: The construction of the proposed fire station may cause erosion on the proposed site within the City of West Linn; therefore this chapter is applicable to the proposed development.

31.030 Permit Required

An erosion and sediment control permit is required prior to, or concurrently with, approval of development that may cause visible or measurable erosion. To obtain an erosion and sediment control permit, an Erosion and Sediment Control Plan shall be required. For areas within the Tualatin River Basin, the Erosion and Sediment Control Plan shall comply with the Oregon Administrative Rules relating to water quality in the Tualatin River Basin (OAR Chapter 340).

Response: An erosion prevention and sediment control permit will be applied for the proposed development and an Erosion Control Plan has been submitted as Sheet C1.3 of Exhibit A.

31.040 The Application

A. An application shall be initiated by the property owner, or the owner's authorized agent, and shall be accompanied by the appropriate fee.

B. An application submittal shall include the completed application form and 3 copies of responses to the approval criteria, except for any plans which shall include 3 copies at the original scale and 3 copies reduced to a paper size not greater than 11 X 17 inches.

C. The Erosion and Sediment Control Plan shall follow the guidelines of the Erosion Prevention and Sediment Control Plans, Technical Guidance Handbook. (Clackamas County Department of Utilities, August 1994). The following information shall be submitted on the plan:

1. The name, address, phone number, mobile phone number, and fax number of the site steward responsible for erosion control at the project site throughout project duration.

2. The name, address, and 24-hour contact number(s) of the designated emergency contact person.

3. A description of existing topography and soil characteristics described in the Clackamas County Soil Survey.

4. The applicant shall submit a plan drawn to an appropriate scale (in order of preference; 1" = 10' to 1" = 30'), which contains the following information:

a. Existing and proposed contour lines at the following minimum intervals:

1) Two-foot intervals for slopes 0 – 25 percent; and,

2) Five-or-ten foot intervals for slopes in excess of 25 percent slope.

b. Location of proposed stormwater facilities including cross sections;

A-19

c. The location of all existing natural features including, but not limited to, delineation of Water Quality Resource Areas (if applicable) and trees of a caliper greater than six inches in diameter at breast height (DBH);

5. Locations of all existing and proposed channels, swales, or drainage pipes which either convey off-site stormwater through, or route stormwater around, the construction area. Identify the nearest receiving stream.

6. Locations and detailed designs of all proposed erosion and sedimentation control facilities as required by CDC Chapter 32.

7. Phasing of any proposed erosion and sedimentation control work clearly indicated on the plan. Include an activity schedule for each phase outlining specific Best Management Practices for the duration of the project.

8. Details and notes on the site plan for mulching and revegetation. Also include detailed planting procedures, topsoil requirements, seed/plant specifications, and plant maintenance specifications.

Response: This application is being submitted by TVF&R with the permission of the City of West Linn and all fees were paid at the time of submittal. The required plan, developed under the guidelines of the Erosion Prevention and Sediment Control Planning and Design Manual, and containing the information required above, has been submitted as Sheet C1.3 of Exhibit A. Additionally, all required copies were submitted along with this application.

31.060 Approval Criteria

The City Engineer or designee shall make a written finding, as applicable, with respect to the following criteria when approving, approving with conditions, or denying an Erosion Control Permit.

A. *The Erosion and Sediment Control plan shall follow the guidelines of the Erosion Prevention and Sediment Control Plans, Technical Guidance Handbook (Clackamas County Department of Utilities most current edition).*

Response: As noted previously, the Erosion Control plan was developed under the guidelines of the Erosion Prevention and Sediment Control Planning and Design Manual.

B. *All developments shall be designed to minimize the disturbance of natural topography, vegetation, and soils.*

Response: The topography of the site will be altered to accommodate the new fire station layout, but existing vegetation and soils will remain where possible.

C. *Designs shall minimize cuts and fills.*

Response: The cuts and fills have been minimized as much as possible. The southern half of the site will remain relatively the same, while the northern half will be filled and retaining walls constructed to accommodate the driveways for the fire trucks.

D. *The plan shall prevent erosion by employing prevention practices such as non-disturbance, construction phasing, seeding and mulch covers.*

Response: Seeding and mulching will be utilized on disturbed soils.

A-20

E. The plan shall be designed to allow no more than 10 percent cumulative increase in natural stream turbidities, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction, or other legitimate activities, and that cause the standard to be exceeded, may be authorized provided all practicable turbidity control techniques have been applied.

Response: There are no streams on-site that will be impacted by the construction; therefore, this criterion is not applicable.

F. The applicant shall actively manage and maintain erosion control measures and utilize techniques described in the permit to prevent erosion and control sediment during and following development. Erosion prevention and sediment control measures required by the permit shall remain in place until disturbed soil areas are permanently stabilized by landscaping, grass, approved mulch, or other permanent soil stabilizing measure.

Response: The applicant understands that erosion prevention and sediment control measures required by the permit shall remain in place until disturbed soil areas are permanently stabilized by landscaping, grass, approved mulch, or other permanent soil stabilizing measure. Additionally, the applicant will actively manage and maintain erosion control measures and utilize techniques described in the permit to prevent erosion and control sediment during and following development.

G. No mud, dirt, rock, or other debris shall be deposited upon a public street or any part of the public stormwater system, surface water system, Water Quality Resource Area, or any part of a private stormwater system or surface water system that drains or connects to the public stormwater or surface water system.

Response: The applicant understands that no mud, dirt, rock, or other debris shall be deposited upon a public street or any part of the public stormwater system, surface water system, Water Quality Resource Area, or any part of a private stormwater system or surface water system that drains or connects to the public stormwater or surface water system.

H. Projects with a minimum development size of one acre...

Response: The site of the proposed development is less than one acre; therefore, this criterion is not applicable.

31.070 Erosion and Sediment Control Design Standards

The following specific methods of soil erosion and sediment control shall be used during construction to control visible and measurable erosion. These methods shall be consistent with the Erosion Prevention and Sediment Control Plans, Technical Guidance Handbook (Clackamas County Department of Utilities most current edition).

A. All land area proposed for excavation, vegetation removal, soil stockpiling, or which will have exposed soil shall be considered part of the development site.

B. May 1 through September 30, the duration of soil exposure shall be kept to a maximum of 21 days. All disturbed soil that remains exposed for 21 days or more during construction shall be treated with an erosion control cover (i.e., plastic, seeding or mulching), following grading or construction, until soils are revegetated or otherwise stabilized.

C. October 1 through April 30, the duration of soil exposure shall be kept to a maximum of 7 days. All disturbed soil that remains exposed for 7 days or more during construction shall be treated with an

A-21

erosion control cover (i.e., plastic, seeding or mulching), following grading or construction, until soils are revegetated or otherwise stabilized.

D. During construction, runoff from the development site shall be controlled, and runoff and sediment resulting therefrom shall be retained on site.

E. A stabilized pad of gravel shall be laid and maintained at all entrances and exits to any development site from which vehicular traffic may track soil or debris onto the public right-of-way. The gravel pad(s) shall be installed and inspected by city staff prior to any development or site preparation. No other vehicular entrance or exit may be used to access the development site.

F. Gravel pads shall be maintained to function properly. If the gravel pad does not adequately remove dirt and mud from the vehicle wheels, such that mud tracking is evident off site, additional measures must be taken.

G. Topsoil removed for development shall be stockpiled and reused to the degree necessary to restore disturbed areas to their original or enhanced condition, or to assure a minimum of six inches of stable topsoil for revegetation. Additional soil shall be provided if necessary, to support revegetation. Soil shall be stockpiled outside of tree dripline, so as not to affect existing tree health.

H. The owner shall be responsible for the prompt clean-up of all sediments that are carried onto any public or private streets, or onto adjacent property as soon as the owner becomes aware of such problems or within the time required by the City. The owner shall be responsible for cleaning and repairing streets, catch basins, drainageways, storm water drainage facilities, and adjacent properties contaminated or damaged by sediment. Failure to do so will be in violation of this Code.

Response: The applicant has reviewed the Erosion Prevention and Sediment Control Design Standards above and they are reflected in the Erosion Control Plan (Sheet C1.3, Exhibit A) submitted with this application.

31.080 Penalties and Enforcement

The City is authorized to make inspections and take such actions as required to enforce the provisions of this document as outlined in CDC Chapter 106.040 and the City of West Linn Municipal Code. Failure to comply with any provision of this Chapter or with any term of an Erosion Control Permit shall be deemed a violation of this ordinance and subject to enforcement action pursuant to applicable Agency and City ordinance.

Response: The applicant understands that the City is authorized to make inspections and take such actions as required to enforce the provisions of this Chapter and that failure to comply with any provision of this Chapter or with any term of an Erosion Control Permit shall be deemed a violation of this ordinance and subject to enforcement action.

31.090 Procedures and Approval Process

A. An erosion control permit subject to City approval, is a permit for which approval will be granted by the City Engineer or designee provided all conditions are satisfied; and

- 1. The City Engineer or designee shall make the decision in the manner provided by Section 99.060.*
- 2. The decision may be appealed to the Planning Commission as proscribed by Section 99.240(A).*

Response: The applicant understands that an erosion control permit is subject to City approval, granted by the City Engineer or designee and appealable to the Planning Commission.

A-22

Chapter 33
Storm Water Quality and Detention

33.020 Applicability

CDC Chapter 33 applies to all new development and redevelopment sites, as required by the City's Public Works Design Standards, except one- and two family dwellings that do not involve a land division.

Response: The proposed fire station is new development; therefore this Code Chapter is applicable.

33.030 The Application

In conjunction with a Design Review or Land Division application, the following materials shall be submitted:

A. An application submittal shall include the completed application form and three copies of responses to the approval criteria, except for any plans which shall include three copies at the original scale and three copies reduced to a paper size not greater than 11 X 17 inches.

Response: This development application includes the completed application forms (signed by both TVF&R and the City of West Linn), a narrative which responds to the applicable approval criteria and the required plan set (see Exhibit A). The necessary copies have been submitted as required.

B. A site plan and topographic map consistent with CDC Section 33.070 shall be submitted with the application.

Response: A Site Plan (Sheet A1) which depicts the site's topography has been included as part of Exhibit A.

C. The design details of the stormwater detention and treatment facilities shall be submitted per the standards set forth in the Public Works Design Standards. The application submittal shall include an operation and maintenance plan per the standards set forth in the Public Works Design Standards.

Response: The stormwater treatment facilities design details, along with an operation and maintenance plan, have been submitted as Exhibit B. Stormwater detention is not required for this project per the pre-application conference notes (Exhibit C).

D. The application submittal shall include a planting plan consistent with CDC Section 33.070.

Response: A Landscape Plan, consistent with CDC Section 33.070, has been submitted as Sheet L1.0, Exhibit A.

33.040 Approval Criteria

The Planning Director and City Engineer shall make written findings with respect to the following criteria when approving, approving with conditions, or denying applications for stormwater detention permits and stormwater quality permits.

A. Stormwater quality facilities shall meet non-point source pollution control standards required by the Public Works Design Standards.

A-23

Response: As shown detailed on the submitted plan sheets (Sheet C1.1, Exhibit A) and discussed in the Stormwater Report (Exhibit B) the stormwater quality facilities meet the non-point source pollution standards required by the Public Works Design Standards.

B. Design of stormwater detention and pollution reduction facilities and related detention and water quality calculations shall meet Public Works Design Standards and shall be prepared by a professional engineer licensed to practice in the state of Oregon.

Response: The pollution reduction facilities and water quality calculations meet the Public Works Design Standards as noted previously and were prepared by a professional engineer licensed in the state of Oregon. Stormwater detention is not required for this project and therefore design and calculations are not included.

C. Soil stabilization techniques, erosion control, and adequate improvements to accommodate the intended drainage through the drainage basin shall be used. Storm drainage shall not be diverted from its natural watercourse unless no feasible alternatives exist. Interbasin transfers of storm drainage will not be permitted.

Response: Soil stabilization techniques, erosion control, and adequate improvements to accommodate the intended drainage through the drainage basin shall be used. Additionally, the storm drainage was not diverted from its natural watercourse and no interbasin transfers of storm drainage are proposed.

D. Stormwater detention and treatment facilities shall encroach no further than 25 feet into the outside boundary of a water quality resource area. The area of encroachment must be replaced by adding an equal area to the water quality resource area on the subject property.

Response: There are no water quality resource areas on-site; therefore this criterion is not applicable.

E. Stormwater detention and treatment facilities shall be vegetated with plants from the Metro's native plant list as described in Section 33.070.

Response: As shown on the submitted Landscape Plan (Sheet L1.0, Exhibit A) the stormwater treatment facilities will be vegetated with plants from the City of Portland's native plant list.

F. Projects must either stockpile existing topsoil for re-use on the site or import topsoil, rather than amend subsoils. Soil amendments are allowed only where the applicant can demonstrate they are the only practical alternative for enabling the soil to support healthy plantings, promoting better stormwater treatment, or improving soil infiltration capacity (where appropriate).

Response: The soils on-site have not been amended; topsoil was stockpiled on-site for re-use.

G. Interim erosion control measures, such as mulching, shall be placed immediately upon completion of grading of the facilities.

Response: Interim erosion control measures will be placed immediately upon completion of grading of the site.

33.050 Site Plan

A. All site plans and maps shall include the name, address, and telephone number of the applicant, the scale of the plan, a north arrow, and a vicinity map.

B. The applicant shall submit a site plan drawn to a 1"=10' or other approved scale, which contains the following information:

A-24

1. Existing and proposed contour lines at the following minimum intervals:
 - a. Two-foot intervals for slopes from 0-25 percent; and,
 - b. Five-foot intervals for slopes in excess of 25 percent.
2. Location of proposed stormwater facilities including cross sections;
3. Location of all existing natural features including, but not limited to, delineation of water quality resource areas.
4. Location of all trees measured at six-inch diameter at breast height or greater and a description of existing vegetation species. Where only a portion of a water quality resource area is to be disturbed by a stormwater facility, the tree inventory need only apply to the impacted area. The remaining treed area shall be depicted by outlining the canopy cover.
5. Location, width, and material of access road to facilities for maintenance purposes according to Public Works Design Standards.

Response: The applicant has reviewed the above requirements and designed the Site Plan (Sheet A1, Exhibit A) to fulfill the requirements.

33.060 Maintenance and Access Requirements

Maintenance and access requirements shall meet Public Works Design Standards.

Response: Maintenance and access requirements will meet the applicable Public Works Design Standards (see Exhibit A).

33.070 Plant Material for Water Quality Facilities

Metro's native plant list is incorporated by reference as a part of this chapter. The applicant shall submit a detailed planting plan using species from Metro's native plant list. The intent of this plan is to establish native vegetation to protect against erosion and sediment infiltration. A mix of low maintenance trees, shrubs, and groundcover is preferred with an even distribution.

A. The planting plan shall be prepared by a professional landscape architect if the development site contains more than 5,000 square feet of impervious area. The planting plan shall include a table listing the scientific names, size, and quantity of plants.

B. The plan shall include plant location, species, size, and quantity for stormwater detention and treatment facilities. Evergreen trees shall have a minimum height of four feet and deciduous trees shall be at least one-inch caliper in size at the time of planting. Shrubs shall be a minimum of one gallon in size at the time of planting. Spaces shall be filled at mature growth but not so that over planting occurs and overcrowding results. Temporary irrigation systems or other means of ensuring establishment of the plantings must be specified.

Response: The Landscape Plan (Sheet L1.0, Exhibit A) was prepared by a professional landscape architect to meet the standards listed in the criteria above.

C. Plantings shall be designed to minimize or eliminate the need for herbicides, fertilizers, pesticides, or soil amendments at any time before, during, or after construction, or on a long-term basis. Plantings shall be designed to minimize or eliminate the need for frequent mowing and irrigation.

A-25

Response: The plantings have been designed to minimize the need for herbicides, fertilizers, pesticides, or soil amendments and have also been designed to minimize the need for frequent mowing and irrigation.

D. The applicant is responsible for implementing the planting plan during the next fall or spring planting season following permit approval. Prior to planting, noxious vegetation shall be removed. All soil areas must be covered with specified plants and mulch to prevent erosion.

Response: The applicant understands their responsibility for implementing the proposed planting plan during the planting season following permit approval and that all noxious vegetation should be removed prior to planting.

E. Plantings shall be incorporated into a Public Improvement Guarantee agreement, which includes a maintenance bond as required by CDC Section 91.010(C). The maintenance bond is required for any project involving stormwater quality and detention facilities.

Response: The applicant understands that the plantings are to be incorporated as part of a Public Improvement Guarantee agreement and that a maintenance bond will also be required.

A-26

Chapter 40
Building Height Limitations, Exceptions

40.010 Projections Not Used for Human Habitation

Projections such as chimneys, spires, domes, elevator shaft housings, towers, aerials, flag poles, and other similar objects not used for human occupancy, are not subject to the building height limitations of this Code.

Response: The proposed fire station is approximately 36 feet and 2.25 inches to the top of the at the second story bay roof projection. This is over 1 foot greater in height than the height standard (35 feet) in Chapter 14. However, because the projection cannot be used for human occupancy it is not subject to the building height limitation of those Code sections. The occupiable building height is 35 feet.

A-27

Chapter 42
Clear Vision Areas

42.020 Clear Vision Areas Required, Uses Prohibited

A. A clear vision area shall be maintained on the corners of all property adjacent to an intersection as provided by Section 42.040 through 42.050.

B. A clear vision area shall contain no planting, fence, wall, structure or temporary or permanent obstruction (except for an occasional utility pole or tree) exceeding three feet in height, measured from the top of the curb, or where no curb exists, from the street centerline grade, except that trees exceeding this height may be located in this area, provided all branches below eight feet are removed.

Response: The applicant understand that a clear vision area is to be maintained on the corners of all property adjacent to an intersection and that such an area will not contain any plantings, fences, walls, structures or temporary obstructions which exceed three feet in height. The applicant further understands that trees that exceed three feet in height may be planted in clear vision areas but that all branches below eight feet in height must be removed.

42.040 Computation; Street and Accessway 24 feet or more in Width

The clear vision area for all street intersections and street and accessway intersections (accessways having 24 feet or more in width) shall be that triangular area formed by the right-of-way or property lines along such lots and a straight line joining the right-of-way or property line at points which are 30 feet distance from the intersection of the right-of-way line and measured along such lines.

Response: The site for Station 58 has access and egress on Failing Street and fire apparatus egress on Elliott Street. Failing Street is approximately 31 feet in width while Elliott Street is 43 feet and 4.5 inches in width; therefore the site must meet the clear vision area standards detailed above. The clear vision areas measuring 30 feet along the lines detailed above are shown on the submitted Site Plan (Sheet A1, Exhibit A).

A-28

**Chapter 44
Fences**

44.030 Screening of Outdoor Storage

A. All service, repair, and storage activities carried on in connection with any commercial, business or industrial activity and not conducted within an enclosed building, shall be screened from view of all adjacent properties and adjacent streets by a sight obscuring fence.

B. The sight obscuring fence shall be in accordance with provisions of Chapter 44, Clear Vision Areas, and shall be subject to the provisions of Chapter 55, Development Review.

Response: As detailed on the Site Plan (Sheet A1, Exhibit A) there is a screen wall proposed to enclose the trash and recycling area proposed for the site which will be in accordance with all applicable provisions of Chapters 44 and 55.

A 29

Chapter 46
Off-Street Parking, Loading and Reservoir Areas

46.020 Applicability and General Provisions

A. At the time a structure is erected or enlarged, or the use of a structure or parcel of land is changed within any zone, off-street parking spaces, loading areas and reservoir areas shall be provided in accordance with the requirements of this chapter unless other requirements are otherwise established as a part of the development approval process.

B. The provision and maintenance of off-street parking and loading spaces are the continuing obligation of the property owner.

C. No building or other permit shall be issued until plans are approved that show the property that is and will remain available for exclusive use as off-street parking and loading space as required by this chapter. The use of property for which the building permit is issued shall be conditional upon the unqualified continuance and availability of the amount of parking and loading space required by this chapter.

D. Required parking spaces and loading areas shall be improved to the standards contained in this chapter and shall be available for use at the time of the final building inspection except as provided in Section 46.150.

Response: The applicant understands that when a structure is erected off-street parking spaces are to be provided to the standards of this chapter and maintained by the property owner in accordance with this chapter and that no permits will be issued until the required off-street parking is shown to be adequate on the submitted plans.

46.030 Submittal Requirements

For any application requiring design review approval, which includes parking areas, the applicant shall submit, within the design review package, a plan drawn to scale showing all the elements necessary to indicate that the requirements of Chapter 55 are met and it shall include but not be limited to:

- 1. The delineation of individual parking and loading spaces and their dimensions;*
- 2. The identification of compact parking spaces;*
- 3. The location of the circulation area necessary to serve spaces;*
- 4. The access point(s) to streets, alleys, and properties to be served;*
- 5. The location of curb cuts;*
- 6. The location and dimensions of all landscaping, including the type and size of plant material to be used, as well as any other landscape material incorporated into the overall plan;*
- 7. The proposed grading and drainage plans and the slope (percentage) of parking lot;*
- 8. Specifications as to signs and bumper guards;*
- 9. Identification of disabled parking spaces;*
- 10. Location of pedestrian walkways and crossings; and,*
- 11. Location of bicycle racks.*

Response: The Site Plan (Sheet A1, Exhibit A) has been included with the submittal of this application and includes the illustration of the above required information.

46.040 Approval Standards

Approval shall be based on the standards set forth in this chapter and Chapters 48, Access and Circulation; 52, Signs; and 54, Landscaping.

A-30

Response: The applicant understands that approval will be based on the standards within this chapter and chapters 48, 52 and 54. Narrative responding to Chapters 48 and 54 can be found on pages 27 and 30, respectively. There are no signs proposed at this time for the development; therefore, Chapter 52 is not applicable.

46.070 Maximum Distance allowed between Parking Area and Use

B. Off-street parking spaces for uses not listed in "A" above shall be located not farther than 200 feet from an entryway to the building or use they are required to serve, measured in a straight line from the building with the following exceptions:

- 1. Shared parking areas for commercial uses which require more than 40 parking spaces may provide for the spaces in excess of the required 40 spaces up to a distance of 300 feet from the entryway to the commercial building or use.*
- 2. Industrial and manufacturing uses which require in excess of 40 spaces may locate the required spaces in excess of the 40 spaces up to a distance of 300 feet from the entryway to the building.*
- 3. Employee parking areas for car pools and van pools shall be located closer to the entryway to the building than general employee parking.*
- 4. Stacked or valet parking is allowed if an attendant is present to move vehicles. If stacked parking is used for required parking spaces, the applicant shall ensure that an attendant will always be present when the lot is in operation. The requirements for minimum or maximum spaces and all parking area development standards continue to apply for stacked parking.*
- 5. All disabled parking shall be placed closest to building entrances than all other parking. Appropriate ADA curb cuts and ramps to go from the parking lot to the ADA accessible entrance shall be provided unless exempted by ADA code.*

Response: The parking proposed for the fire station is located less than 200 feet from the main entry way to the building as shown on the Site Plan (Sheet A1, Exhibit A). Additionally, all disabled parking has been designed to meet the ADA code requirements. There are no shared parking areas for commercial uses, industrial or manufacturing uses, employee parking areas or stacked or valet parking; therefore, those criteria above relating to those items are not applicable.

46.080 Computation of Required Parking Spaces and Loading Area

A. Where several uses occupy a single structure or parcel of land or a combination of uses are included in one business, or a combination of uses in the same or separate buildings share a common parking area as in the case of a shopping center, the total off-street parking spaces and loading area shall be the sum of the requirements of the several uses, computed separately. For example, parking for an auto sales and repair business would be calculated using the "retail-bulky" calculation for the sales area and the "service and repair" calculation for the repair area. In another example, parking for a shopping center with a grocery store, a restaurant, and a medical office would be calculated using the "general retail store" calculation for the grocery store, the "restaurant" calculation for the restaurant, and the "medical/dental clinics" calculation for the medical office. The total number of required parking spaces may be reduced by up to 10 percent to account for cross-patronage (when a customer visits several commercial establishments during one visit to the commercial center) of adjacent businesses or services in a commercial center with five or more separate commercial establishments.

B. To calculate building square footage as a basis for determining how many parking spaces are needed, the area measured shall be gross floor area under the roof measured from the faces of the

A-31

structure, including all habitable floors and excluding only space devoted to covered off-street parking or loading.

C. Where employees are specified, the employees counted are the persons who work on the premises including proprietors, executives, professional people, production, sales, and distribution employees, during the largest shift.

D. Fractional space requirements shall be counted as a whole space.

E. Parking spaces in the public street shall not be eligible as fulfilling any part of the parking requirement except open space/park areas with adjacent street frontage.

F. When an office or commercial development is proposed which has yet to identify its tenants, the parking requirement shall be based upon the "office" or "general retail" categories, respectively.

G. As permitted uses are replaced with new permitted uses within an existing commercial or business center, modification of the number of parking spaces relative to the new mix of uses is not required unless other modifications of the site which require design review approval pursuant to Chapter 55 are proposed.

Response: The proposed fire station will include a community room and will be a total of 12,760 square feet. There will be four employees per 24-hour shift and no customers will visit the site. The station will be "open" 24-hours a day with a shift change at 7:00am every day when four employees will arrive and four will leave.

46.090 Minimum Off-Street Parking Space Requirements

B. Public and Semi-public Buildings/Uses:

4. Religious institutions and community meeting rooms. One space for every 4 fixed seats or every 8 feet of bench length or every 28 square feet where no permanent seats or benches are maintained (in main auditorium, sanctuary, or place of worship).

Response: The community meeting room within the fire station is 639 square feet and, per the requirement above (one space for every 28 square feet), 23 off-street parking spaces would be required. Per the pre-application conference notes (Exhibit C) staff proposed that for the fire station one space be provided per peak shift employee, three for visitors and one ADA accessible space. As noted previously there would be four employees per shift, combined with the three visitors and one ADA space that equals eight spaces recommended for the fire station. Per Code section 46.080.A,

"where several uses occupy a single structure or parcel of land or a combination of uses are included in one business, or a combination of uses in the same or separate buildings share a common parking area as in the case of a shopping center, the total off-street parking spaces and loading area shall be the sum of the requirements of the several uses, computed separately."

By adding the requirements for the community room (23) together with the recommended spaces for the fire station (8) there would be a total of 31 parking spaces required. This application proposes 24 total parking spaces on the site. Per Code section 46.050.A,

"Owners of two or more uses, structures, or parcels of land may agree to utilize jointly the same parking and loading spaces when the hours of operation do not overlap, and a finding can be made that parking can be accommodated for all uses..."

A-32

TVF&R will own the fire station which the community meeting room is within. The fire station will be "open" 24-hours a day but will receive few, if any, visitors. The station's greatest demand for parking would be at 7am when the employees have their shift change which would require eight parking spaces at most (four parking spaces for the fire fighters going off shift and four for the employees going on shift). Given that the community meeting room will be open 8am to 8pm then this would be prior to the room's availability and would not impact any community members' ability to park. In effect, there will be at least 20 parking spaces available for the community room at all times which will be adequate given that the community room was designed to accommodate 20 people.

As shown on the Site Plan (Sheet A1, Exhibit A), the applicant is proposing a total of 24 parking spaces which would include one ADA accessible space. Due to both uses being in the same building, the infrequency of visitors to the site and the limited number of employees, the applicant feels that the joint use of 24 off-street parking spaces will be more than adequate to serve the site as well as minimize the amount of parking on-site per Metro's Title 2 requirements for more efficient use of land. In addition, it is impossible to move or expand the parking as it is the only area on-site which is appropriate in size and grade for the parking area.

F. Maximum parking...

G. Parking reductions. CDC Section 55.100(H)(5) explains reductions of up to 10 percent for development sites next to transit stops...

H. For office, industrial, and public uses where there are more than 20 parking spaces for employees...

I. Existing developments along transit streets...

Response: The applicant is not exceeding the minimum parking requirement, is not next to a transit stop, does not include more than 20 parking spaces for employees and is not an existing development along a transit street; therefore, the criteria above are not applicable.

46.100 Parking Requirements for Unlisted Uses

A. Upon application and payment of fees, the decision-making authority, as provided by Section 99.060(B), may rule that a use not specifically listed in Section 46.080 is a use similar to a listed use and that the same parking standards shall apply. The ruling on parking requirements shall be based on the requirements of Chapter 99 and findings that:

- 1. The use is similar to and of the same general type as a listed use;*
- 2. The use has similar intensity, density and off-site impacts as the listed use; and,*
- 3. The use has similar impacts on the community facilities as the listed use.*

B. This section does not authorize the inclusion of a use in a zone where it is not listed, or a use which is specifically listed in another zone or which is of the same general type, and is similar to a use specifically listed in another zone.

Response: A fire station is not a use that is specifically listed in Section 46.080, however, per the pre-application conference notes (Exhibit C), the staff of West Linn has proposed the one space per peak shift employee and three for visitors plus an ADA accessible space be provided. The applicant understands that this section does not authorize the inclusion of a use in a zone where it is not listed, or a use which is specifically listed in another zone or which is of the same general type, and is similar to a use specifically listed in another zone.

46.120 Driveways Required On Site

Any school or other meeting place which is designed to accommodate more than 25 people...

A 33

Response: The proposed community room was designed to accommodate approximately 20 people; therefore, this criterion is not applicable.

46.150 Design and Standards

The following standards apply to the design and improvement of areas used for vehicle parking, storage, loading, and circulation:

A. Design Standards:

- 1. "One standard parking space" means a minimum for a parking stall of 8 feet in width and 16 feet in length. These stalls shall be identified as "compact." To accommodate larger cars, 50 percent of the required parking spaces shall have a minimum dimension of 9 feet in width and 18 feet in length (9' X 18'). When multi-family parking stalls back onto a main driveway, the stalls shall be 9' X 20'.*
- 2. Disabled parking and maneuvering spaces shall be consistent with current federal dimensional standards and Section 46.150(B) and placed nearest to accessible building entryways and ramps.*
- 3. Parking spaces located in the public right-of-way that require backing movements or other maneuvering within a street or right-of-way are permitted with City Engineer approval as is in the case of Willamette Falls Drive parking facilities.*
- 4. Service drives shall be designed and constructed to facilitate the flow of traffic, provide maximum safety of traffic access and egress, and maximum safety of pedestrians and vehicular traffic on the site.*
- 5. Each parking and/or loading space shall have clear access, whereby the relocation of other vehicles to utilize the parking space is not required.*
- 6. Except for single and two-family residences, any area intended to be used to meet the off-street parking requirements as contained in this chapter shall have all parking spaces clearly marked using a permanent paint. All interior drives and access aisles shall be clearly marked and signed to show direction of flow and maintain vehicular and pedestrian safety. Permeable parking surface spaces may have an alternative delineation for parking spaces.*
- 7. Except for residential parking, and parking for public parks and trailheads, at least 50 percent of all areas used for the parking and/or storage and/or maneuvering of any vehicle, boat and/or trailer shall be improved with asphalt or concrete surfaces according to the same standards required for the construction and acceptance of city streets. The remainder of the areas used for parking may use a permeable paving surface designed to reduce surface runoff. Parking for public parks or trailheads may use a permeable paving surface designed to reduce surface runoff for all parking areas. Where a parking lot contains both paved and unpaved areas, the paved areas shall be located closest to the use which they serve.*
- 8. Off-street parking spaces for single and two-family residences shall be improved with an asphalt or concrete surface, or a permeable parking surface designed to reduce surface runoff, to specifications as approved by the Building Official. Other parking facilities for two and single-family homes that are to accommodate additional vehicles, boats, recreational vehicles, and trailers, etc. need not be paved. All parking for multi-family residential development shall be paved with concrete or asphalt. Driveways shall measure at least 20 feet from the back of sidewalk to garage or the end of the parking pad to accommodate cars and sport utility vehicles without the vehicles blocking the public sidewalk.*
- 9. Access drives from the street to off-street parking or loading areas shall be designed and constructed to facilitate the flow of traffic and provide maximum safety for pedestrian and vehicular traffic on the*

A-34

site. The number of access drives shall be limited to the minimum that will allow the property to accommodate and service the anticipated traffic. Access drives shall be clearly and permanently marked and defined through use of rails, fences, walls, or other barriers or markers on frontage not occupied by service drives.

10. Access drives shall have a minimum vision clearance as provided in Chapter 42, Clear Vision Areas.

11. Parking spaces along the boundaries of a parking lot or adjacent to interior landscaped areas or sidewalks shall be provided with a wheel stop at least 4 inches high located 2 feet back from the front of the parking stall. Alternately, landscaped areas or sidewalks adjacent to the parking stalls without wheel stops shall be two feet wider.

12. Off-street parking and loading areas shall be drained in accordance with plans and specifications approved by the City Engineer. Storm drainage at commercial sites may also have to be collected to treat oils and other residue.

13. Artificial lighting on all off-street parking facilities shall be designed to deflect all light downward away from surrounding residences and so as not to create a hazard to the public use of any road or street.

14. Directional arrows and traffic control devices, which are placed on parking lots shall be identified and installed.

15. The maximum driveway grade for single-family housing shall be 15 percent. The 15 percent shall be measured along the centerline of the driveway only. Grades elsewhere along the driveway shall not apply. Variations require approval of a Class II variance by the Planning Commission pursuant to Chapter 75. Regardless, the last 18 feet in front of the garage must maintain a maximum grade of 12 percent as measured along the centerline of the driveway only. Grades elsewhere along the driveway shall not apply.

16. Visitor or guest parking must be identified by painted "GUEST" or "VISITOR."

17. The parking area shall have less than a five percent grade. No drainage across adjacent sidewalks or walkways is allowed.

18. Commercial, office, industrial, and public parking lots may not occupy more than 50 percent of the main lot frontage of a development site. The remaining frontage shall comprise buildings or landscaping. If over 50 percent of the lineal frontage comprises parking lot, the landscape strip between the right-of-way and parking lot shall be increased to 15 feet wide and shall include terrain variations (e.g., 1-foot high berm) plus landscaping. The defensible space of the parking lot should not be compromised.

19. Areas of the parking lot improved with asphalt or concrete surfaces shall be designed into areas of 12 or less spaces through the use of defined landscaped area. Groups of 12 or less spaces are defined as:

a. Twelve spaces in a row, provided there are no abutting parking spaces, as in the case when the spaces are abutting the perimeter of the lot; or,

b. Twelve spaces in a group with six spaces abutting together; or,

c. Two groups of twelve spaces abutting each other, but separated by a 15-foot wide landscape area including a six-foot wide walkway.

A-35

d. Parking areas improved with a permeable parking surface may be designed using the configurations shown in a, b, and c, above except that groups of up to 18 spaces are allowed.

20. Pedestrian walkways shall be provided in parking areas having 20 or more spaces. Walkways or sidewalks shall be constructed between major buildings/activity areas (an example in multi-family housing: between recreation center, swimming pool, manager's office, park or open space areas, parking lots, etc.) within a development, between adjacent developments and the new development, as feasible, and between major buildings/activity areas within the development and adjacent streets and all adjacent transit stops. Internal parking lot circulation and design should maintain ease of access for pedestrians from streets and transit stops. Walkways shall be constructed using a material that visually contrasts with the parking lot and driveway surface. Walkways shall be further identifiable to pedestrians and motorists by grade separation, walls, curbs, surface texture, (surface texture shall not interfere with safe use of wheelchairs, baby carriages, shopping carts, etc.) and/or landscaping. Walkways shall be six feet wide. The arrangement and layout of the paths shall depend on functional requirements.

21. The parking and circulation patterns are easily comprehended and defined. The patterns shall be clear to minimize traffic hazards and congestion and to facilitate emergency vehicles.

22. The parking spaces shall be close to the related use.

23. Permeable parking spaces shall be designed and built to City standards.

Response: Of the 24 parking spaces on-site 12 spaces are 8 feet by 16 feet in size and 12 spaces are 9 feet by 18 feet in size. All parking spaces have been designed to have clear access and are being permanently marked. The parking area will be paved with asphalt. The access drive from the street to the off-street parking has been designed to facilitate the flow of traffic and provide maximum safety with the appropriate levels of vision clearance. As shown on the Site Plan (Sheet A1, Exhibit A) wheel stops have been provided for all stalls that abut a sidewalk or landscaping. The overall parking area will be drained, lighted and marked as required. Additionally, the spaces have been grouped appropriately with walkways provided, comprehensible parking and circulation patterns, and is near to the fire station structure.

B. Accessible Parking Standards for Persons with Disabilities: If any parking is provided for the public or visitors, or both, the needs of the people with disabilities shall be based upon the following standards or current applicable federal standards, whichever is more stringent:

1. Minimum number of accessible parking space requirements...

2. Location of parking spaces. Parking spaces for the individual with a disability that serve a particular building shall be located on the shortest possible accessible circulation route to an accessible entrance to a building. In separate parking structures or lots that do not serve a particular building, parking spaces for the persons with disabilities shall be located on the shortest possible circulation route to an accessible pedestrian entrance of the parking facility.

3. Accessible parking space and aisle shall meet ADA vertical and horizontal slope standards.

4. Where any differences exist between this section and current federal standards, those standards shall prevail over this Code section.

5. One in every eight accessible spaces, but not less than one, shall be served by an access aisle 96 inches wide. The van stall shall have an adjacent 8-foot wide aisle. All other accessible stalls shall have

A-36

a 6-foot wide aisle. Two vehicles may share the same aisle if it is between them. The vertical clearance of the van space shall be 96 inches.

Response: The proposed parking area contains one ADA accessible parking space as required that has been located near the main entrance of the building along a pedestrian route and is designed to the appropriate standards.

C. Landscaping in Parking Areas: Reference Chapter 54, "Landscaping."

Response: The parking area landscaping is addressed in this application beginning on page 30.

D. Bicycle Facilities and Parking:

1. Provisions shall be made for pedestrian and bicycle ways if such facilities are shown on an adopted plan.

2. Bicycle parking facilities shall either be lockable enclosures in which the bicycle is stored, or secure stationary racks which accommodate bicyclist's locks securing the frame and both wheels. The bicycle parking shall be no more than 50 feet from the entrance to the building, well lit, observable, and properly signed.

3. Bicycle parking must be provided in the following amounts...

Response: There is no bicycle parking required for fire stations, however, there are six bicycle parking spaces provide at the southwest corner of the building within 50 feet of the building entrance. The six bicycle parking facilities will be stationary racks (see Exhibit H Model 2172, painted Brown) chosen for the site that are well lit, observable and properly signed.

E. Office or industrial developments...

Response: This project does not contain an office or industrial development; therefore, this section is not applicable.

A-37

Chapter 48
Access, Egress and Circulation

48.020 Applicability and General Provisions

- A. The provisions of this chapter do not apply where the provisions of the Land Division chapter are applicable and set forth differing standards.*
- B. All lots shall have access from a public street or from a platted private street approved under the Land Division chapter.*
- C. No building or other permit shall be issued until scaled plans are presented to the City and approved by the City as provided by this chapter, and show how the access, egress, and circulation requirements are to be fulfilled. Access to state or county roads may require review, approval, and permits from the appropriate authority.*
- D. Should the owner or occupant of a lot or building enlarge or change the use to which the lot or building is put, resulting in increasing any of the requirements of this chapter, it shall be unlawful and a violation of this Code to begin or maintain such altered use until the provisions of this chapter have been met, and, if required, until the appropriate approval authority under Chapter 99 has approved the change.*
- E. Owners of two or more uses, structures, or parcels of land may agree to utilize jointly the same access and egress when the combined access and egress of both uses, structures, or parcels of land satisfies the requirements as designated in this Code provided that satisfactory legal evidence is presented to the City Attorney in the form of deeds, easements, leases, or contracts to establish joint use. Copies of said instrument shall be placed on permanent file with the City Recorder.*
- F. Property owners shall not be compelled to access their homes via platted stems of flag lots if other driveways and easements are available and approved by the City Engineer.*

Response: As shown on the submitted Site Plan (Sheet A1, Exhibit A) the site has access from a public street, Failing Street. All vehicles, including the fire apparatus, will enter the site from Failing Street and while the passenger vehicles will also exit onto Failing Street the fire apparatus will enter and park in the bays of the fire station and exit the site via Elliott Street. There are no land divisions, residential dwellings or shared access proposed for the site; therefore the criteria above dealing with those are not applicable. Furthermore, the applicant understands that no permits will be issued until scaled plans are submitted (see Exhibit A) and approved and that any change to the site will require an additional review under this chapter.

48.040 Minimum Vehicle Requirements for Non-Residential Uses

Access, egress, and circulation system for all non-residential uses shall not be less than the following:

- A. Service drives...*
- B. All non-residential uses shall be served by one or more service drives as determined necessary...*
- C. All on-site maneuvering and/or access drives shall be maintained pursuant to Section 46.130...*
- D. Gated accessways to non-residential uses...*

Response: The proposed development is a fire station and a service drive will not be necessary nor is one proposed. The site does not contain any off-street loading spaces per Section 46,130 nor will the site be gated; therefore criteria A through D above are not applicable

48.060 Width and Location of Curb Cuts and Access Separation Requirements

A-38

A. Minimum curb cut width shall be 16 feet.

B. Maximum curb cut width shall be 36 feet, except along Highway 43 in which case the maximum curb cut shall be 40 feet.

Response: The curb cut proposed for the fire station access is 36 feet wide and meets the criteria above. The egress onto Elliott Street is approximately 46 feet wide and does not meet the criteria. The additional 10 feet of width is necessary to allow the fire apparatus to pull straight out of the parking bays and onto Elliott Street with enough room to maneuver up the hill to Highway 43. A Variance to the maximum allowed curb cut width is being requested as part of this application beginning on page 53.

C. No curb cuts shall be allowed any closer to an intersecting street right-of-way line than the following:

4. On a collector when intersecting an arterial street, 100 feet.

5. On a collector when intersected by another collector or local street, 35 feet.

6. On a local street when intersecting any other street, 35 feet.

Response: The site has one access and one egress. The access on Failing Street (a collector per Figure 3-1 of the West Linn Transportation System Plan) is approximately 179 feet from Highway 43 (a major arterial/principal route) and 170 feet from Buck Street (a local street). The egress on Elliott Street (a local street) is approximately 44 feet from Buck Street and 88 feet from Highway 43; therefore the above criteria are met.

D. There shall be a minimum distance between any two adjacent curb cuts on the same side of a public street except for one-way entrance and exits, as follows:

1. On an arterial street, 150 feet.

2. On a collector street, 75 feet.

3. Between any two curb cuts on the same lot on a local street, 30 feet.

Response: As noted previously there are two curb cuts on the site: an access/egress on Failing Street and an egress on Elliott Street. The only adjacent curb cut is along Failing Street (a collector), 63 feet to the south at the site of the old fire station.

E. A rolled curb may be installed...

F. Curb cuts shall be kept to the minimum, particularly Highway 43...

Response: The proposed fire station does not include a rolled curb nor is it along Highway 43 although the curb cuts have been kept to a minimum.

G. Adequate line of sight pursuant to engineering standards should be afforded at each driveway or accessway.

48.080 Bicycle and Pedestrian Circulation

A. Within all multi-family developments...

B. Bicycle and pedestrian ways within a subdivision...

A-39

C. Bicycle and pedestrian ways at commercial or industrial sites...

Response: The proposed fire station is not a multi-family development, subdivision, or a commercial or industrial site; therefore the above criteria are not applicable.

A-40

**Chapter 54
Landscaping**

54.020 Approval Criteria

A. Every development proposal requires inventorying existing site conditions which include trees and landscaping. In designing the new project, every reasonable attempt should be made to preserve and protect existing trees and to incorporate them into the new landscape plan. Similarly, significant landscaping (e.g., bushes, shrubs) should be integrated. The rationale is that saving a 30-foot tall mature tree helps maintain the continuity of the site, they are qualitatively superior to two or three 2-inch caliper street trees, they provide immediate micro-climate benefits (e.g., shade), they soften views of the street, and they can increase the attractiveness, marketability, and value of the development.

B. To encourage tree preservation, the parking requirement may be reduced by one space for every significant tree that is preserved in the parking lot area for a maximum reduction of 10 percent of the required parking. The City Parks supervisor or arborist shall determine the significance of the tree and/or landscaping to determine eligibility for these reductions.

C. Developers must also comply with the Municipal Code chapter on tree protection.

D. Heritage trees. Heritage trees are trees which, because of their age, type, notability, or historical association are of special importance. Heritage trees are trees designated by the City Council following review of a nomination. A heritage tree may not be removed without a public hearing at least 30 days prior to the proposed date of removal. Development proposals involving land with heritage tree(s) shall be required to protect and save the tree(s). Further discussion of Heritage trees is found in the Municipal Code.

Response: There have been no heritage trees designated on-site; therefore, this criterion is not applicable (see Arborist Report, Exhibit D).

E. Landscaping - by type, location and amount.

2. Non-residential uses. A minimum of 20 percent of the gross site area shall be landscaped. Parking lot landscaping may be counted in the percentage.

Response: The site has a total square footage of 40,016 square feet; 20 percent of the site would be 8,003.2 square feet. Currently the landscaping on-site is equal to approximately 12,471 square feet or 31.1 percent and does meet the standard.

3. All uses (residential uses [non-single family] and non-residential uses):

a. The landscaping shall be located in defined landscaped areas which are uniformly distributed throughout the parking or loading area. There shall be one shade tree planted for every eight parking spaces. These trees shall be evenly distributed throughout the parking lot to provide shade. Parking lots with over 20 spaces shall have a minimum 10 percent of the interior of the parking lot devoted to landscaping. Pedestrian walkways in the landscaped areas are not to be counted in the percentage. The perimeter landscaping, explained in Section 54.020(E)(3)(d), shall not be included in the 10 percent figure. Parking lots with 10-20 spaces shall have a minimum 5 percent of interior of the parking lot devoted to landscaping. The perimeter landscaping, as explained above, shall not be included in the 5 percent. Parking lots with fewer than 10 spaces shall have the standard perimeter landscaping and at least two shade trees. Non-residential parking areas paved with a permeable parking surface may reduce the required minimum interior landscaping by one third for the area with the permeable parking surface only.

A-41

Response: The parking area contains 24 parking spaces and measures 6,759 square feet, requiring approximately 10 percent or 675.9 square feet of internal landscaping. However, the proposed parking contains no internal landscaping and a Variance to this standard is being requested beginning on page 56 of this application.

b. The landscaped areas shall not have a width of less than five feet.

Response: There are no internal landscaping areas proposed for the parking area; a Variance has been applied for beginning on page 56 of this application.

c. The soils, site, proposed soil amendments, and proposed irrigation system shall be appropriate for the healthy and long term maintenance of the proposed plant species.

Response: The plant species proposed for the site's landscaping areas are appropriate for the soil, soil amendments and irrigation system on-site.

d. A parking, loading, or service area which abuts a street shall be set back from the right-of-way line by perimeter landscaping in the form of a landscaped strip at least 10 feet in width. When a parking, loading, or service area, or driveway is contiguous to an adjoining parcel, there shall be an intervening five-foot wide landscape strip. The landscaped area shall contain:

- 1) Street trees spaced as appropriate to the species, not to exceed 50 feet apart on the average;*
- 2) Shrubs, not to reach a height greater than three feet six inches, spaced no more than five feet apart on the average; or,*
- 3) Vegetative ground cover such as grass, wild flowers, or other landscape material to cover 100 percent of the exposed ground within two growing seasons. No bark mulch shall be allowed except under the canopy of low level shrubs.*

Response: The parking area is set back from Elliott Street by approximately 28 feet. There is landscaping within that buffer which consists of mixed shrubs, trees and groundcover to help screen the parking area from view. Additionally, the parking area is set back from the parcel to the south by approximately 7 feet and that landscaping buffer is an evergreen hedge which will grow to a height of 3 feet and will help to screen the parking area.

e. If over 50 percent of the lineal frontage of the main street or arterial adjacent to the development site comprises parking lot, the landscape strip between the right-of-way and parking lot shall be increased to 15 feet in width and shall include terrain variations (e.g., 1-foot high berm) plus landscaping. This extra requirement only applies to one street frontage.

Response: The main street frontage for the site is along Elliott Street and measures 200 lineal feet. The portion of the parking areas along Elliott Street measures 59 lineal feet or 29.5 percent of the total frontage; therefore, this criterion is not applicable.

f. A parking, loading, or a service area which abuts a property line shall be separated from the property line by a landscaped area at least five feet in width and which shall act as a screen and noise buffer and the adequacy of the screen and buffer shall be determined by the criteria set forth in Section 55.100(C) and (D) except where shared parking is approved under Section 46.040.

Response: The parking area is buffered from the property line at the south by approximately 7 feet which contains landscaping consisting of an evergreen hedge (see above).

g. All areas in a parking lot not used for parking, maneuvering, or circulation shall be landscaped.

A-42

Response: The applicant understands that any area within the parking area not used for parking, maneuvering, or circulation is to be landscaped and has done so.

h. The landscaping in parking areas shall not obstruct lines of sight for safe traffic operation.

Response: The applicant understands that landscaping in parking areas is not to obstruct sight lines for safe traffic operation.

i. Outdoor storage areas, service areas (loading docks, refuse deposits, and delivery areas), and above-ground utility facilities shall be buffered and screened to obscure their view from adjoining properties and to reduce noise levels to acceptable levels at the property line. The adequacy of the buffer and screening shall be determined by the criteria set forth in Section 55.100(C)(1).

Response: The storage area for the propane tank and waste collection has been buffered and screened as required by the applicable criteria set forth in Section 55.100(C)(1).

j. Crime prevention shall be considered and plant materials shall not be located in a manner which prohibits surveillance of public and semi-public areas (shared or common areas).

Response: As shown on the submitted Landscape Plan (Sheet L1.0, Exhibit A) no plant materials have been located in a manner which would prohibit surveillance of the site's public or semi-public areas.

k. Irrigation facilities shall be located so that landscaped areas can be properly maintained and so that the facilities do not interfere with vehicular or pedestrian circulation.

Response: As noted on the Landscape Plan (Sheet L1.0, Exhibit A) the irrigation facilities will be design-build but will not interfere with vehicular or pedestrian circulation. Additionally, most of the plants selected for the landscape areas are drought resistant.

l. For commercial, office, multi-family, and other sites, the developer shall select trees that possess the following characteristics:

- 1) Provide generous "spreading" canopy for shade.*
- 2) Roots do not break up adjacent paving.*
- 3) Tree canopy spread starts at least six feet up from grade in, or adjacent to, parking lots, roads, or sidewalks unless the tree is columnar in nature.*
- 4) No sticky leaves or sap dripping trees (no honey dew excretion).*
- 5) No seed pods or fruit bearing trees (flowering trees are acceptable).*
- 6) Disease resistant.*
- 7) Compatible to planter size.*
- 8) Drought tolerant unless irrigation is provided.*
- 9) Attractive foliage or form all seasons.*

Response: As shown on the Landscape Plan (Sheet L1.0, Exhibit A), there are three different types of trees proposed for the site: Raywood Ash, the 'Princeton Sentry' Gingko and Flowering Crabapple

A-43

trees. The Raywood Ash will be mainly in the parking area and can grow to a height of 30 feet or more with a spread of 25 feet. The Ginkgo tree can grow up to 50 feet in height with a spread between 20-30 feet and will be along the fire apparatus driveway and Failing Street. The ornamental trees can grow to between 15-25 feet high with a 15-20 foot spread. All trees are moderately sized; therefore aggressive roots should not be a problem. All species are drought tolerant and disease resistant and will provide seasonal interest. Trees can be pruned to start branching at six feet if needed. Crabapples will produce small fruit, but they are persistent on the tree and will not be planted in a location where falling fruit will interfere with walkways or parking lots.

n. Plant materials (shrubs, ground cover, etc.) shall be selected for their appropriateness to the site, drought tolerance, year round greenery and coverage, staggered flowering periods, and avoidance of nuisance plants (Scotch broom, etc.).

Response: All plant materials are appropriate to the site and drought tolerant. The plants will provide year round greenery and coverage as well as staggered flowering periods. No nuisance plants will be provided on-site.

54.040 Installation

A. All landscaping shall be installed according to accepted planting procedures.

B. The soil and plant materials shall be of good quality.

C. Landscaping shall be installed in accordance with the provisions of this code.

D. Certificates of occupancy shall not be issued unless the landscaping requirements have been met or other arrangements have been made and approved by the City such as the posting of a bond.

Response: All landscaping installed will be done so according to accepted planting procedures and in accordance with this code. Additionally, all plant materials and soil will be of good quality. The applicant understands that any certificates of occupancy will not be issued unless these landscaping requirements have been met.

54.050 Protection of Street Trees

Street trees may not be topped or trimmed...

Response: The applicant is not proposing to top or trim any street trees; therefore this section is not applicable.

54.060 Maintenance

A. The owner, tenant and their agent, if any, shall be jointly and severally responsible for the maintenance of all landscaping which shall be maintained in good condition so as to present a healthy, neat, and orderly appearance and shall be kept free from refuse and debris.

B. All plant growth in interior landscaped areas shall be controlled by pruning, trimming, or otherwise so that:

1. It will not interfere with the maintenance or repair of any public utility;

2. It will not restrict pedestrian or vehicular access; and,

3. It will not constitute a traffic hazard because of reduced visibility.

A-44

Response: The applicant understands that they will be responsible for the maintenance of all landscaping and that interior landscaping call be controlled so that it will not interfere with utilities, restrict pedestrian or vehicular access and not reduce visibility.

54.070 Specification Summary

Table 2. Required and Proposed Landscaping Areas		
<i>Area/Location</i>	<i>Landscaping Required</i>	<i>Landscaping Proposed</i>
1. Between parking lot and ROW	10 feet	12.5'
2. Between parking lot and other lot.	5 feet	7 feet
5. Percentage of non-residential site to be landscaped	20%	31.1%
6. Percentage of parking area (over 20 spaces) to be landscaped (excluding perimeter)	10%	0 See Variance request beginning on page 56.

A-45

**Chapter 55
Design Review**

55.020 Applicability

Class II design review applies to all uses/activities except those uses/activities listed under Class I design review, and the exceptions of Section 55.025. Class I design review shall apply to non-subdivided single-family detached dwelling projects.

Response: The proposed fire station is not a use or activity listed under the Class I design review; therefore it is subject to a Class II design review.

55.070 Submittal Requirements

A. The design review application shall be initiated by the property owner or the owner's agent, or condemner.

Response: This application is being submitted by the property owners, Tualatin Valley Fire & Rescue.

B. A pre-application conference shall be a prerequisite to the filing of an application.

Response: A pre-application conference was held on December 6, 2007 and the summary notes have been included with this application as Exhibit C.

C. A pre-requisite to the filing of an application for development proposals that include greater than 10 multi-family units or commercial/industrial buildings greater than 1500 square feet in size, a 4-lot or more planned unit development, a 10-lot or greater subdivision, or a zone change that requires a Comprehensive Plan amendment, is a meeting with the respective City recognized neighborhood association, per CDC Section 99.038, at which time the applicant will present their proposal and receive comments. Wireless communication facilities (WCF) shall also fulfill co-location protocol of CDC Section 57.090.

Response: A neighborhood meeting was held on May 19, 2008 and the required documentation is submitted as Exhibit E of this application.

D. The applicant shall submit a completed application form and:

2. The development plan for a Class II design review shall contain the following elements:

a. A site analysis (Section 55.110);

b. A site plan (Section 55.120);

c. A grading plan (Section 55.130);

d. Architectural drawings, indicating floor plan and elevation (Section 55.140);

e. A landscape plan (Section 55.150);

f. A sign plan (Section 55.160); and,

g. A pedestrian and automobile circulation plan.

A-46

h. The utility plan: The application shall include a submittal appropriate to respond to the approval criteria of CDC Section 55.100(l)(1-5) relating to streets, drainage, municipal water, sanitary sewers, solid waste, and recycling storage.

Response: The required plans have been submitted as Exhibit A of this development application.

3. A narrative, based on the standards contained in this Code, which supports any requested exceptions as provided under Section 55.170.

Response: The applicant is not requesting an exception under Code Section 55.170; therefore, this criterion is not applicable.

4. Submit full written responses to approval criteria of Section 55.100 for Class II design review, or Section 55.090 for Class I design review, plus all applicable referenced approval criteria.

Response: Written responses have been provided for Section 55.100 beginning on this page.

E. The applicant shall submit samples of all exterior building materials and colors in the case of new buildings or building remodeling.

Response: A materials board has been submitted with this application which contains samples of all exterior building materials and colors.

F. The applicant shall pay the required fee.

Response: The application fee was paid by the applicant at the time of submittal.

55.085 Additional Information Required and Waiver of Requirements

A. The Planning Director may require additional information as part of the application subject to the provisions of Section 99.035(A).

B. The Planning Director may waive any requirements for the application subject to the provisions of Section 99.035(B) and (C).

Response: The applicant understands that the Planning Director may require or waive requirements for information per the provisions of Section 99.035.

55.100 Approval Standards – Class II Design Review

The approval authority shall make findings with respect to the following criteria when approving, approving with conditions, or denying a Class II design review application.

A. The provisions of the following chapters shall be met:

- 1. Chapter 33, Storm Water Quality and Detention.*
- 2. Chapter 34, Accessory Structures.*
- 3. Chapter 38, Additional Yard Area Required.*
- 4. Chapter 40, Building Height Limitations and Exceptions.*
- 5. Chapter 42, Clear Vision Areas.*

A-47

6. Chapter 44, Fences & Screening Outdoor Storage.

7. Chapter 46, Off-Street Parking and Loading.

8. Chapter 48, Access.

9. Chapter 52, Signs.

10. Chapter 54, Landscaping.

Response: The applicable sections of the above Chapters have been met through this development application as follows:

- Chapter 33, Storm Water Quality and Detention: page 12
- Chapter 34, Accessory Structures: Not applicable; no accessory structures are being proposed.
- Chapter 38, Additional Yard Area Required: Not applicable; no additional yard area is required.
- Chapter 40, Building Height Limitations and Exceptions: page 16
- Chapter 42, Clear Vision Areas: page 17
- Chapter 44, Fences & Screening Outdoor Storage: page 18
- Chapter 46, Off-Street Parking and Loading: page 19
- Chapter 48, Access: page 27
- Chapter 52, Signs: Not applicable, no signs are being proposed at this time.
- Chapter 54, Landscaping: page 30

B. Relationship to the natural and physical environment.

1. The buildings and other site elements shall be designed and located so that all heritage trees...

Response: There are no heritage trees identified on this site; therefore, this criterion is not applicable.

2. All heritage trees, as defined in the Municipal Code, all trees and clusters of trees (cluster is defined as three or more trees with overlapping driplines; however, native oaks need not have an overlapping dripline) that are considered significant by the City Arborist, either individually or in consultation with certified arborists or similarly qualified professionals, based on accepted arboricultural standards including consideration of their size, type, location, health, long term survivability, and/or numbers, shall be protected pursuant to the criteria of subsections 2(a-f) below. In cases where there is a difference of opinion on the significance of a tree or tree cluster, the City Arborist's findings shall prevail. It is important to acknowledge that all trees are not significant and, further, that this code section will not necessarily protect all trees deemed significant.

b. Non-residential and residential projects on non-Type I and II lands shall set aside up to 20 percent of the area to protect trees and tree clusters that are determined to be significant, plus any heritage trees. Therefore, in the event that the City Arborist determines that a significant tree cluster exists at a development site, then up to 20 percent of the non-Type I and II lands shall be devoted to the protection of those trees, either by dedication or easement. The exact percentage is determined by establishing the driplines of the trees or tree clusters that are to be protected. In order to protect the roots which typically extend further, an additional 10-foot measurement beyond the dripline shall be added. The square footage of the area inside this "dripline plus 10 feet" measurement shall be the basis for calculating the percentage (see figure below). The City Arborist will identify which tree(s) are to be protected. Development of non-Type I and II lands shall also require the careful layout of streets, driveways, building pads, lots, and utilities to avoid significant trees, tree clusters, heritage trees, and other natural resources pursuant to this code. Exemptions of subsections (c), (e), and (f) below shall apply. Please note that in the event that more than 20 percent of the non-Type I and II lands comprise

A-48

significant trees or tree clusters, the developer shall not be required to save the excess trees, but is encouraged to do so.

c. Where stubouts of streets occur on abutting properties...

d. For both non-residential and residential development, the layout shall achieve at least 70 percent of maximum density for the developable net area. The developable net area excludes all Type I and II lands and up to 20 percent of the remainder of the site for the purpose of protection of stands or clusters of trees as defined in CDC Section 55.100(B)(2).

e. For arterial and collector street projects...

Response: There are no heritage trees identified on-site. Exhibit D contains an Arborist Report detailing the trees identified on-site and discusses the two trees (see Table 3) determined by the City Arborist as being significant. The significant trees were determined to be in "Good" condition but will need to be removed during construction because of their location in the proposed parking area. It is impossible to move the parking as it is the area on-site which is appropriate in size and grade for the parking area. A Variance has been requested to Code Section 55.100.B.2.b because the significant trees are not being retained and there will be no dedication or tree easement. The Variance can be found on page 59 of this application.

There are eleven trees that will be removed from the proposed site as detailed in the Table below. Nine of the trees are considered "non-significant" and, therefore, will not require any on-site mitigation. The two trees that are being removed and are significant will require mitigation on an "inch-by-inch" basis. Together the diameter at breast height of those trees is 40 inches and, as detailed on the Landscape Plan (Sheet L1.0, Exhibit A), 40 inches of trees are being planted on-site for mitigation.

ID Number	Tree Type	DBH	Status
10261	Douglas-fir	11	Non-significant; remove
10404	Hawthorn	10	Non-significant; remove
10405	Hawthorn	6	Non-significant; remove
10406	Hawthorn	6	Non-significant; remove
10407	Hawthorn	20	Non-significant; remove
10807	Willow	48	Non-significant; remove
10815	Norway Maple	18	Significant; remove.
10816	Norway Maple	22	Significant; remove.
10870	Magnolia	24	Non-significant; remove
10936	Scotch Pine	21	Non-significant; remove
11051	Douglas-fir	14	Non-significant; remove

3. The topography and natural drainage shall be preserved to the greatest degree possible.

Response: As detailed on the submitted Grading and Erosion Control Plans (Sheets C1.2 and C1.3, Exhibit A) and discussed in the Erosion Control (page 8) and Stormwater Quality and Detention (page 12) sections of this application, the topography of the site will be altered to accommodate the new fire station layout, but existing vegetation and soils will remain where possible. Additionally, the storm drainage was not diverted from its natural watercourse and no interbasin transfers of storm drainage are proposed (see Stormwater Report, Exhibit B).

4. The structures shall not be located in areas subject to slumping and sliding. The Comprehensive Plan Background Report's Hazard Map, or updated material as available and as deemed acceptable by the Planning Director, shall be the basis for preliminary determination.

A-49

Response: The proposed fire station will not be in an area subject to slumping and sliding per City staff.

5. *There shall be adequate distance between on site buildings and on site and off site buildings on adjoining properties to provide for adequate light and air circulation and for fire protection.*

Response: Adequate distance has been provided between the station on-site and off-site buildings to allow adequate light and air circulation as well as fire protection to all sites.

6. *Architecture.*

a. *The predominant architecture of West Linn identified in the West Linn vision process was contemporary vernacular residential designs emphasizing natural materials: wood with brick and stone detail. Colors are subdued earth tones: grays, brown, off-whites, slate, and greens. Pitched roofs with overhanging eaves, decks, and details like generous multi-light windows with oversized trim are common. Also in evidence are the 1890s Queen Anne style homes of the Willamette neighborhood. Neo-traditional homes of the newer subdivisions feature large front porches with detailed porch supports, dormers, bracketed overhanging eaves, and rear parking for cars. Many of these design elements have already been incorporated in commercial and office architecture.*

Response: This fire station is designed in the Italianate Victorian style with vertical proportions featuring tall double hung windows. The style emulates the neighboring houses also within the Bolton Neighborhood. The station has been designed to reflect West Linn's predominant architectural style using Khaki lap siding, red-brown bricks, cedar shakes and pre-cast stone. The station has a pitched Mansard roof, a large covered porch, covered entry and generous windows with oversized trim to blend in with, and compliment, other structures in the Bolton Neighborhood. See the Architectural Elevations provided as Sheet A3, Exhibit A.

b. *The proposed structure(s) scale shall be compatible with the existing structure(s) on site and on adjoining sites. Contextual design is required. Contextual design means respecting and incorporating prominent architectural styles, building lines, roof forms, rhythm of windows, building scale and massing, materials and colors of surrounding buildings in the proposed structure.*

Response: The station is designed to echo the existing neighborhood's predominant Victorian style. Specifically, Station 58 is in the Italianate Victorian style with square bays, tall vertical double hung windows and built-up fascia wood trim. The massing required to accommodate the fire apparatus is slightly taller than the typical residence height but the overall massing of the building makes the station appear proportional to the surrounding residences.

c. *While there has been discussion in Chapter 24 about transition, it is appropriate that new buildings should architecturally transition in terms of bulk and mass to work with, or fit, adjacent existing buildings. This transition can be accomplished by selecting designs that "step down" or "step up" from small to big structures and vice versa (see figure below). Transitions may also take the form of carrying building patterns and lines (e.g., parapets, windows, etc.) from the existing building to the new one.*

Response: There is a smooth architectural transition between the proposed station and the adjacent existing buildings. The second story of the station is offset inward approximately 10 feet from the first story providing a step down of the mass to pay tribute to the scale of the Bolton Neighborhood. A Mansard roof minimizes the roof's height and attractively conceals any mechanical equipment that may be placed on the roof. This effort has been extended to the site so that the built-up gradation is gently terraced down to the human scale at the northeast sidewalk through the use of terraced retaining walls containing plants. This not only serves to break down the mass of the retaining wall but also provides the neighborhood with an attractive corner feature.

A-50

d. Contrasting architecture shall only be permitted when the design is manifestly superior to adjacent architecture in terms of creativity, design, and workmanship, and/or it is adequately separated from other buildings by distance, screening, grade variations, or is part of a development site that is large enough to set its own style of architecture.

Response: The fire station has been designed to be compatible with adjacent architecture through the use of scale, materials and architectural features and has not pursued any contrasting architecture.

e. Human scale is a term that seeks to accommodate the users of the building and the notion that buildings should be designed around the human scale (e.g., his/her size and the average range of their perception). Human scale shall be accommodated in all designs by, for example, multi-light windows that are broken up into numerous panes, intimately scaled entryways, visual breaks (exaggerated eaves, indentations, ledges, parapets, awnings, engaged columns, etc.) in the facades of buildings, both vertically and horizontally. The human scale is enhanced by bringing the building and its main entrance up to the edge of the sidewalk. It creates a more dramatic and interesting streetscape and improves the "height and width" ratio referenced in this section.

Response: Visual breaks, through the use of mass, voids and materials, and terraced walls bring the building and site to human scale. The building has an intimately scaled entryway with balusters giving visual breaks to the mass of the traditional brick. This is repeated on the west elevation at the covered balcony. Columns along with balusters create depth and detail to the western facade. The eastern facade of the building has a second-story bay window pop-out adorned with cedar shakes giving a visual break to the horizontal siding.

f. The main front elevation of commercial and office buildings...

Response: The proposed building is not a commercial or office building; therefore this criterion is not applicable.

g. Variations in depth and roof line are encouraged for all elevations. To vary the otherwise blank wall of most rear elevations, continuous flat elevations of over 100 feet in length should be avoided by indents or variations in the wall. The use of decorative brick, masonry, or stone insets and/or designs is encouraged. Another way to vary or soften this elevation is through terrain variations such as an undulating grass area with trees to provide vertical relief.

Response: The building has variation in depth and roof lines. As shown on the Architectural Elevations (Sheet A3, Exhibit A), the elevations have been softened with the use stepped backed second story massing and the use of smaller masonry elements at the northern and southern facades. Also trees provide vertical relief. None of the elevations are "flat" each contains the use of different materials, pop outs, balconies or step downs.

h. Consideration of the micro-climate (e.g., sensitivity to wind, sun angles, shade, etc.) shall be made for building users, pedestrians, and transit users, including features like awnings.

Response: The main entrance to the fire station is under a large covered porch and will be protected from the climate. Additionally, building users will have access to a covered balcony along the western elevation as well.

i. The Vision Statement identified a strong commitment to developing safe and attractive pedestrian environments with broad sidewalks, canopied with trees and awnings.

Response: Sidewalks have been proposed for the site for all the frontages along public streets.

A-51

j. Sidewalk cafes, kiosks, vendors, and street furniture are encouraged. However, at least a four foot wide pedestrian accessway must be maintained per Chapter 53, Sidewalk Use.

Response: The proposed fire station does not include a sidewalk café, kiosks, vendor or street furniture; therefore, this criterion is not applicable.

7. Transportation Planning Rule (TPR) compliance. The automobile shall be shifted from a dominant role, relative to other modes of transportation, by the following means:

a. Commercial and office development...

b. Multi-family projects...

c. Commercial, office, and multi-family projects...

Response: The proposed fire station is not a commercial, office or multi-family development; therefore these criteria are not applicable.

d. Accessways, parking lots, and internal driveways shall accommodate pedestrian circulation and access by specially textured, colored, or clearly defined foot paths at least six feet wide. Paths shall be eight feet wide when abutting parking areas or travel lanes. Paths shall be separated from parking or travel lanes by either landscaping, planters, curbs, bollards, or raised surfaces. Sidewalks in front of storefronts on the arterials and main store entrances on the arterials identified in CDC Section 85.200(A)(3)(e) shall be 12 feet wide to accommodate pedestrians, sidewalk sales, sidewalk cafes, etc. Sidewalks in front of storefronts and main store entrances in commercial/OBC zone development on local streets and collectors shall be eight feet wide.

Response: Paths have been provided leading from the parking area to the fire station allowing for safe pedestrian circulation (see Sheet A1, Exhibit A). The path along the northern portion of the parking area is seven and a half feet wide and is clearly defined by the use of curbing, scored pattern and color. The path abutting the parking area is separated from any vehicles by a curb.

e. Paths shall provide direct routes that pedestrians will use between buildings, adjacent rights-of-way, and adjacent commercial developments. They shall be clearly identified. They shall be laid out to attract use and to discourage people from cutting through parking lots and impacting environmentally sensitive areas.

Response: Paths have been provided which link the public sidewalk system to the main entrance of the fire station along the south elevation (see Sheet A1, Exhibit A).

f. At least one entrance to the building shall be on the main street, or as close as possible to the main street. The entrance shall be designed to identify itself as a main point of ingress/egress.

Response: There is an entrance to the fire station on Elliott Street, the main street frontage of the development.

g. Where transit service exists, or is expected to exist, there shall be a main entrance within a safe and reasonable distance of the transit stop. A pathway shall be provided to facilitate a direct connection.

Response: There is a TriMet bus stop for line 35 along Willamette Drive (less than a quarter of a mile from the proposed station) which is connected to the main entrance of the fire station via public sidewalk.

A-52

h. Projects shall bring at least part of the project adjacent to, or near the main street right-of-way in order to enhance the height-to-width ratio along that particular street. (The height-to-width ratio is an architectural term that emphasizes height or vertical dimension of buildings adjacent to streets. The higher and closer the building is, and the narrower the width of the street, the more attractive and intimate the streetscape becomes.) For every one foot in street width, the adjacent building ideally should be one to two feet higher. This ratio is considered ideal in framing and defining the streetscape.

Response: The fire station has been sited as near to Elliott Street as possible while still adequate area for the fire apparatus to maneuver. The building is 36.5 feet in height and the right of way width for Elliott Street is approximately 43 feet.

i. These architectural standards shall apply to public facilities such as reservoirs, water towers, treatment plants, fire stations, pump stations, power transmission facilities, etc. It is recognized that many of these facilities, due to their functional requirements, cannot readily be configured to meet these architectural standards. However, attempts shall be made to make the design sympathetic to surrounding properties by landscaping, setbacks, buffers, and all reasonable architectural means.

Response: The proposed development is a fire station and it has been designed to meet these design standards whenever possible as detailed in the responses above.

j. Parking spaces at trailheads...

Response: The site does not include a trailhead; therefore, this criterion is not applicable.

C. Compatibility between adjoining uses, buffering, and screening.

1. In addition to the compatibility requirements contained in Chapter 24, buffering shall be provided between different types of land uses; for example, buffering between single-family homes and apartment blocks. However, no buffering is required between single-family homes and duplexes or single-family attached units. The following factors shall be considered in determining the adequacy of the type and extent of the buffer:

a. The purpose of the buffer, for example to decrease noise levels, absorb air pollution, filter dust, or to provide a visual barrier.

b. The size of the buffer required to achieve the purpose in terms of width and height.

c. The direction(s) from which buffering is needed.

d. The required density of the buffering.

e. Whether the viewer is stationary or mobile.

2. On-site screening from view from adjoining properties of such things as service areas, storage areas, and parking lots shall be provided and the following factors will be considered in determining the adequacy of the type and extent of the screening:

a. What needs to be screened?

b. The direction from which it is needed.

c. How dense the screen needs to be.

d. Whether the viewer is stationary or mobile.

A-53

e. *Whether the screening needs to be year around.*

Response: A 3 foot evergreen hedge is being proposed for the length of the southern boundary of the site along with deciduous trees planted 50 feet on center to help shade the parking area (see Landscape Plan, Sheet L1.0, Exhibit A).

3. *Roof top air cooling and heating systems and other mechanical equipment shall be screened from view from adjoining properties.*

D. *Privacy and noise.*

1. *Structures which include residential dwelling...*
2. *Residential dwelling units...*

Response: The proposed development does not include any residential units; therefore these criteria are not applicable.

3. *Structures or on site activity areas which generate noise, lights, or glare shall be buffered from adjoining residential uses in accordance with the standards in Section 55.100(C) where applicable. Businesses or activities that can reasonably be expected to generate noise shall undertake and submit appropriate noise studies and mitigate as necessary. (See Sections 55.110(B)(11) and 55.120(M).) To protect the health, safety, and welfare of the citizens of West Linn, the following design standards are established in Tables 1 and 2. In the case of land uses that are expected to be close to adopted noise standards, follow up studies in the first year of operation may be required by a conditional of approval or required by the Planning Director as appropriate in order to monitor compliance.*

Response: Buffering and screening has been provided as required in Section 55.100(C) and the require noise study has been submitted as Exhibit F.

E. *Private outdoor area. This section only applies to multi-family projects...*

F. *Shared outdoor recreation areas. This section only applies to multifamily projects...*

Response: The proposed fire station is not a multi-family project; therefore these sections are not applicable.

G. *Demarcation of public, semi-public, and private spaces. The structures and site improvements shall be designed so that public areas such as streets or public gathering places, semi-public areas, and private outdoor areas are clearly defined in order to establish persons having a right to be in the space, to provide for crime prevention, and to establish maintenance responsibility. These areas may be defined by:*

1. *A deck, patio, fence, low wall, hedge, or draping vine;*
2. *A trellis or arbor;*
3. *A change in level;*
4. *A change in the texture of the path material;*
5. *Sign; or,*
6. *Landscaping.*

A-54

Use of gates to demarcate the boundary between a public street and a private access driveway is prohibited.

Response: The landscaping proposed for the site has been designed to demarcate between the public off-site areas and the private on-site areas. There is a public meeting space on-site, within the station, but there is no outdoor public gathering space on-site.

H. Public transit.

1. Provisions for public transit may be required where the site abuts an existing or planned public transit route...

Response: The site does not abut an existing or planned public transit route; therefore, this section is not applicable.

I. Public facilities. An application may only be approved only if adequate public facilities will be available to provide service to the property prior to occupancy.

1. Streets. Sufficient right-of-way and slope easement shall be dedicated to accommodate all abutting streets to be improved to City's Improvement Standards and Specifications. The City Engineer shall determine the appropriate level of street and traffic control improvements to be required, including any off-site street and traffic control improvements based upon the transportation analysis submitted. The City Engineer's determination of developer obligation, the extent of road improvement and City's share, if any, of improvements and the timing of improvements shall be made based upon the City's systems development charge ordinance and capital improvement program, and the rough proportionality between the impact of the development and the street improvements.

In determining the appropriate sizing of the street in commercial, office, multi-family, and public settings, the street should be the minimum necessary to accommodate anticipated traffic load and needs and should provide substantial accommodations for pedestrians and bicyclists. Road and driveway alignment should consider and mitigate impacts on adjacent properties and in neighborhoods in terms of increased traffic loads, noise, vibrations, and glare.

The realignment or redesign of roads shall consider how the proposal meets accepted engineering standards, enhances public safety, and favorably relates to adjacent lands and land uses. Consideration should also be given to selecting an alignment or design that minimizes or avoids hazard areas and loss of significant natural features (drainageways, wetlands, heavily forested areas, etc.) unless site mitigation can clearly produce a superior landscape in terms of shape, grades, reforestation, and is fully consistent with applicable code restrictions regarding resource areas. Streets shall be installed per Chapter 85 standards. City Engineer has the authority to require that street widths match adjacent street widths. Sidewalks shall be installed per Section 85.200(A)(3)(e) for commercial and office projects, and Sections 85.200(A)(16) and 92.010(H) for residential projects, and applicable provisions of Chapter 55, Design Review.

Based upon the City Manager or Manager's designee determination, the applicant shall construct or cause to be constructed, or contribute a proportionate share of the costs, for all necessary off-site improvements identified by the transportation analysis commissioned to address CDC 55.125 that are required to mitigate impacts from the proposed development. Proportionate share of the costs shall be determined by the City Manager or Manager's designee who shall assume that the proposed development provides improvements in rough proportion to identified impacts of the development.

Response: There are no new or re-designed streets proposed through this development application; therefore this section is not applicable.

A-55

2. *Drainage.* A registered civil engineer shall prepare a plan and statement which shall be supported by factual data that clearly shows that there will be no adverse impacts from increased intensity of runoff off site or the plan and statement shall identify all off-site impacts and measures to mitigate those impacts. The plan and statement shall, at a minimum, determine off site impacts from a 25- year storm. The City Engineer shall adjust storm drainage facilities for applications which contain permeable parking surfaces based upon a quantitative analysis of the increased water retention and water quality characteristics of the permeable parking surface. Catch basins shall be installed and connected to pipelines leading to storm sewers or drainageways. All plans will then be reviewed by the City Engineer.

Response: Storm water treatment facilities design details have been prepared by a registered Civil Engineer and have been provided as Exhibit B.

3. *Municipal water.* A registered civil engineer shall prepare a plan for the provision of water which demonstrates to City Engineer's satisfaction, the availability of sufficient volume, capacity, and pressure to serve the proposed development's domestic, commercial, and industrial fire flows. All plans will then be reviewed by the City Engineer.

Response: The Utility Plan (Sheet C1.0, Exhibit A) includes the adequate provision of water service to the proposed fire station.

4. *Sanitary sewers.* A registered civil engineer shall prepare a sewerage collection system plan which demonstrates sufficient onsite capacity to serve the proposed development. The City Engineer shall determine whether the existing City system has sufficient capacity to serve the development.

Response: The Utility Plan which demonstrates sufficient on-site sewerage collection system capacity to serve the proposed fire station is included in Exhibit A as Sheet C1.0.

5. *Solid waste and recycling storage areas.* Appropriately sized and located solid waste and recycling storage areas shall be provided. Metro standards shall be used.

Response: Per the Metro standards for a public development, such as a fire station, a minimum solid waste storage and recycling storage area of 10 square feet plus 4 square feet per 1,000 square feet should be provided. The fire station is 12,760 square feet requiring a storage area of 61.04 square feet. The proposed storage area is approximately 200 square feet; therefore the standard is met.

J. *Crime prevention and safety/defensible space.*

1. *Windows shall be located so that areas vulnerable to crime can be surveyed by the occupants.*

2. *Interior laundry and service areas shall be located in a way that they can be observed by others.*

3. *Mail boxes, recycling, and solid waste facilities shall be located in lighted areas having vehicular or pedestrian traffic.*

4. *The exterior lighting levels shall be selected and the angles shall be oriented towards areas vulnerable to crime.*

5. *Light fixtures shall be provided in areas having heavy pedestrian or vehicular traffic and in potentially dangerous areas such as parking lots, stairs, ramps, and abrupt grade changes.*

6. *Fixtures shall be placed at a height so that light patterns overlap at a height of seven feet which is sufficient to illuminate a person. All commercial, industrial, residential, and public facility projects undergoing design review shall use low or high pressure sodium bulbs and be able to demonstrate*

A-56

effective shielding so that the light is directed downwards rather than omni-directional. Omni-directional lights of an ornamental nature may be used in general commercial districts only.

7. Lines of sight shall be reasonably established so that the development site is visible to police and residents.

8. Security fences for utilities (e.g., power transformers, pump stations, pipeline control equipment, etc.) or wireless communication facilities may be up to eight feet tall in order to protect public safety. No variances are required regardless of location.

Response: The windows of the fire station have been located as appropriate to provide easy visual access to the exterior of the site and lighting has also been placed to illuminate the site and provide an additional level of safety (see Sheet EPM1.1, Exhibit A and Lighting Cut Sheets, Exhibit G). All laundry and service areas have been incorporated in the floor plan (Sheet A2, Exhibit A) to be visible and accessible. Additionally, appropriate lines of sight have been established to keep the site open to neighborhood residents and police.

K. Provisions for persons with disabilities.

1. The needs of a person with a disability shall be provided for. Accessible routes shall be provided between all buildings and accessible site facilities. The accessible route shall be the most practical direct route between accessible building entries, accessible site facilities, and the accessible entry to the site. An accessible route shall connect to the public right-of-way to at least one on-site or adjacent transit stop (if the area is served by transit). All facilities shall conform to, or exceed, the Americans with Disabilities Act (ADA) standards, including those included in the Uniform Building Code.

Response: The fire station and site have been designed to be applicable with all ADA standards, including those in the Uniform Building Code.

L. Signs.

1. Based on considerations of crime prevention and the needs of emergency vehicles, a system of signs for identifying the location of each residential unit, store, or industry shall be established.

2. The signs, graphics, and letter styles shall be designed to be compatible with surrounding development, to contribute to a sense of project identity, or, when appropriate, to reflect a sense of the history of the area and the architectural style.

3. The sign graphics and letter styles shall announce, inform, and designate particular areas or uses as simply and clearly as possible.

4. The signs shall not obscure vehicle driver's sight distance.

5. Signs indicating future use shall be installed on land dedicated for public facilities (e.g. parks, water reservoir, fire halls, etc.).

6. Signs and appropriate traffic control devices and markings shall be installed or painted in the driveway and parking lot areas to identify bicycle and pedestrian routes.

Response: The site of the proposed fire station will contain a public meeting room which will be appropriately signed. There are no areas dedicated to any future uses; therefore those criteria above relating to those items are not applicable. The fire station will have signs and appropriate traffic control devices or markings installed as appropriate within the parking area.

A-57

M. Utilities. The developer shall make necessary arrangements with utility companies or other persons or corporations affected for the installation of underground lines and facilities. Electrical lines and other wires, including but not limited to communication, street lighting, and cable television, shall be placed underground, as practical. The design standards of Tables 1 and 2 above, and of sub-section 5.484(C) of the West Linn Municipal Code relative to existing high ambient noise levels shall apply to this section.

Response: All utilities that are required to be installed as a result of the proposed development will be placed underground as required by this Code.

N. Wireless Communication Facilities (WCF)...

Response: The proposed development is not a WCF; therefore this section is not applicable.

55.110 The Site Analysis

55.120 The Site Plan

55.130 Grading Plan

55.140 Architectural Drawings

55.150 The Landscape Plan

Response: The above required plans have been submitted as Exhibit A of this application.

55.180 Maintenance

All on-site improvements shall be the ongoing responsibility of the property owner or occupant.

Response: The applicant understands that all on-site improvements will be the responsibility of the property owner.

A-58

Chapter 60
Conditional Uses

60.060 The Application

A. A conditional use application shall be initiated by the property owner or the owner's authorized agent.

Response: This application is being submitted by TVF&R with the permission of the City of West Linn (see "Applications" section of this submittal).

B. A prerequisite to the filing of an application is a pre-application conference at which time the Director shall explain the requirements and provide the appropriate forms as specified in Section 99.030(B) and (C).

Response: A pre-application conference was held with City staff on December 6, 2007.

C. A pre-requisite to the filing of an application is a meeting with the respective City recognized neighborhood association, per CDC Section 99.038, at which time the applicant will present his/her proposal and receive comments.

Response: A neighborhood meeting was held with the Bolton Neighborhood Association on May 19, 2008. The required documentation has been submitted as Exhibit E.

D. An application for a conditional use shall include the completed application form and:

1. A narrative which addresses the approval criteria set forth in Section 60.070 and which sustains the applicant's burden of proof; and,

Response: This application provides responses to the approval criteria in Section 60.070 below.

2. A site plan as provided by Section 60.080. One original application form must be submitted. Three copies at the original scale and three copies reduced to 11 X 17 or smaller of all drawings and plans must be submitted. Three copies of all other items must be submitted. When the application submittal is determined to be complete, additional copies may be required as determined by the Planning Department.

Response: The required Site Plan can be found in Exhibit A of this application as Sheet A1. The required copies were submitted as the time of application submittal.

E. Names and addresses of all who are property owners of record within 300 feet of the site shall be determined by the Director.

Response: The required mailing labels have been provided as part of Exhibit D.

F. The applicant shall pay the requisite fee.

Response: The requisite fee will be paid at the time of the application submittal.

60.070 Approval Standards and Conditions

A. The Planning Commission shall approve, approve with conditions, or deny an application for a conditional use, except for a manufactured home subdivision in which case the approval standards and

A-59

conditions shall be those specified in Section 36.030, or to enlarge or alter a conditional use based on findings of fact with respect to each of the following criteria:

1. *The site size and dimensions provide:*

a. *Adequate area for the needs of the proposed use; and,*

b. *Adequate area for aesthetic design treatment to mitigate any possible adverse effect from the use on surrounding properties and uses.*

Response: As exhibited on the submitted Site Plan (Sheet A1, Exhibit A) there is sufficient area on-site to adequately site the station and the necessary design treatments. There is currently an existing fire station adjacent to the proposed site which has not impacted the surrounding properties or uses in an adverse or negative way nor is the proposed station expected to.

2. *The characteristics of the site are suitable for the proposed use considering size, shape, location, topography, and natural features.*

Response: As noted above, the proposed site is suitable for the proposed fire station given its size, shape and location. There will be some grading taking place at the site; however the topography and the existing natural features will not exclude the station from being sited there.

3. *The granting of the proposal will provide for a facility that is consistent with the overall needs of the community.*

4. *Adequate public facilities will be available to provide service to the property at the time of occupancy.*

Response: As noted on the pre-application conference notes (Exhibit C) and shown on the Utility Plan (Sheet C1.1, Exhibit A), there are adequate public facilities to serve the site at the time of occupancy or the applicant will ensure they are in place prior to occupancy.

5. *The applicable requirements of the zone are met, except as modified by this chapter.*

Response: The applicable requirements of the zone is met as shown beginning on page 4 of this application.

6. *The supplementary requirements set forth in Chapters 52 to 55, if applicable, are met.*

Response: Any applicable requirements of Chapter 55 have been addressed by this application beginning on page 35. There are no signs being proposed at this time; therefore, Chapter 52 has not been addressed.

7. *The use will comply with the applicable policies of the Comprehensive Plan.*

Response: The approval of the proposed fire station will comply with the applicable goals and policies within the West Linn Comprehensive Plan as detailed below:

- *Section 4: Fire and Police Goal: "Provide a high level of fire, emergency, and police services to protect life and property within the City."*

Response: TVF&R has maintained the existing Bolton Fire Station to the best of their abilities but to continue to offer the high quality of protection to the City of West Linn the station must be brought up to the standards necessary to meet seismic and ADA standards, as well as be able to house the firefighters and necessary fire apparatus on-site.

A60

- *Section 5: Intergovernmental Coordination contains a provision for "obtaining fire protection services from the Tualatin Valley Fire and Rescue District."*

Response: TVF&R is the applicant for this proposed fire station. Under the agreement between the City of West Linn and TVF&R, the fire district agreed to supply the City with fire protection services including the construction of a new station which was required to be built at this site.

B. An approved conditional use or enlargement or alteration of an existing conditional use shall be subject to the development review provisions set forth in Chapter 55.

Response: The development review provisions of Chapter 55 are addressed in this application beginning on page 35.

C. The Planning Commission may impose conditions on its approval of a conditional use which it finds are necessary to assure the use is compatible with other uses in the vicinity. These conditions may include, but are not limited to, the following:

- 1. Limiting the hours, days, place, and manner of operation.*
- 2. Requiring design features which minimize environmental impacts such as noise, vibration, air pollution, glare, odor, and dust.*
- 3. Requiring additional setback areas, lot area, or lot depth, or width.*
- 4. Limiting the building height, size or lot coverage, or location on the site.*
- 5. Designating the size, number, location and design of vehicle access points.*
- 6. Requiring street right-of-way to be dedicated and the street to be improved including all steps necessary to address future street improvements identified in the adopted Transportation System Plan.*
- 7. Requiring participation in making the intersection improvement or improvements identified in the Transportation System Plan when a traffic analysis (compiled as an element of a condition use application for the property) indicates the application should contribute toward.*
- 8. Requiring landscaping, screening, drainage, and surfacing of parking and loading areas.*
- 9. Limiting the number, size, location, height, and lighting of signs.*
- 10. Limiting or setting standards for the location and intensity of outdoor lighting.*
- 11. Requiring berming, screening, or landscaping and the establishment of standards for their installation and maintenance.*
- 12. Requiring and designating the size, height, location, and materials for fences.*
- 13. Requiring the protection and preservation of existing trees, soils, vegetation, watercourses, habitat areas, and drainage areas.*

Response: The applicant has reviewed Sections 60.070.C.1-13 and understands that the Planning Commission can place conditions on the approval of this conditional use application as relating to those sections.

A-61

D. Aggregate extraction uses shall also be subject to the provisions of ORS 541.605.

Response: There is no aggregate extraction proposed for the site; therefore this criterion is not applicable.

60.080 Site Plan and Map

A. All site plans and maps shall include the name, address, and telephone number of the applicant, the scale of the site plan, north arrow, and a vicinity map.

B. The applicant shall submit a site plan drawn to an appropriate scale (in order of preference, 1" = 10' to 1" = 30') which contains the following information:

- 1. The subdivision name, block, and lot number or the section, township, range, and tax lot number.*
- 2. The parcel boundaries, dimensions, and gross area.*
- 3. The applicant's property and the surrounding property to a distance sufficient to determine the relationship between the applicant's property and proposed development to the adjacent property and development.*
- 4. The location, dimensions, and names of all existing and platted streets and other public ways and easements on adjacent property and on the site.*
- 5. The location, dimensions, and setback distances of all:*
 - a. Existing structures, improvements, utilities, and drainage facilities on adjoining properties;*
 - b. Existing structures, improvements, utilities, and drainage facilities to remain on the site; and,*
 - c. Proposed structures or changes to existing structures, improvements, utilities, and drainage facilities.*
- 6. The existing and proposed dimensions of:*
 - a. The entrances and exits to the site;*
 - b. The parking and circulation areas;*
 - c. Loading and service areas for waste disposal, loading and delivery;*
 - d. Pedestrian and bicycle circulation area;*
 - e. On-site outdoor recreation spaces and common areas; and,*
 - f. Above ground utilities.*
- 7. The location of areas to be landscaped and the proposed landscape plan.*
- 8. The location of all trees having a six-inch caliper at a height of five feet.*

C. The applicant shall submit the site plan on a map showing two-foot contours up to 20 percent grade and 10-foot contours on grades above 20 percent.

A-62

Response: The required Site Plan has been submitted as Sheet A1 of Exhibit A of this development application.

A-63

Chapter 75

Variance: Chapter 48 Access, Egress and Circulation

75.020 Classification of Variances

B. A Class II variance will involve a significant change from the zoning requirements and may create adverse impacts on adjacent property or occupants, and includes the following variances:

3. A variance to any of the other zoning provisions including, but not limited to, the lot coverage and building height.

Response: The applicant is requesting a Variance to the standards of Chapter 48, Access, Egress and Circulation. As required by Code Section 48.060.B the maximum curb cut width allowed is 36 feet, except along Highway 43. The proposed fire station, as shown on Sheet A1 of Exhibit A, currently meets this standard for the access along Failing Street. However, the egress on Elliott Street cannot meet this standard and has a curb cut of approximately 46 feet. The additional 10 feet of width is necessary to allow the fire apparatus to pull straight out of the parking bays and onto Elliott Street with enough room to maneuver up the hill to Highway 43.

75.040 Time Limit on a Variance

Approval of a variance shall be void after three years unless substantial construction pursuant thereto has taken place.

Response: The applicant understands that an approval of a variance shall be void after three years unless substantial construction pursuant thereto has taken place.

75.050 The Application

A. A variance request shall be initiated by the property owner or the owner's authorized agent.

Response: This Variance application is being submitted by TVF&R with the permission of the City of West Linn and all fees were paid at the time of submittal (see "Applications" section of this submittal).

B. A prerequisite to the filing of an application is a pre-application conference at which time the Planning Director shall explain the requirements and provide the appropriate form(s).

Response: A pre-application conference was held with the City of West Linn staff on December 6, 2007.

C. An application for a variance shall include the completed application form and:

1. A narrative which addresses the approval criteria set forth in Section 75.060, and which sustains the applicant's burden of proof.

2. A site plan as provided by Section 75.070. One original application form must be submitted. Three copies at the original scale and three copies reduced to 11 X 17 inches or smaller of all drawings and plans must be submitted. Three copies of all other items must be submitted. When the application submittal is determined to be complete, additional copies may be required as determined by the Planning Department.

Response: A completed application form can be found at the beginning of this development application. The responses to Code Section 75.060 begin on the next page of this application and the required Site Plan has been provided as Sheet A1 of Exhibit A.

A-64

D. *The applicant shall pay the requisite fee.*

Response: All required application fees will be paid at the time of submittal.

75.060 The Approval Criteria

The appropriate approval authority shall approve a variance request if all the following criteria are met and corresponding findings of fact prepared. The approval authority may impose appropriate conditions to ensure compliance with the criteria. The approval authority shall deny the variance if any of the criteria are not met.

1. *Exceptional or extraordinary circumstances apply to the property which do not apply generally to other properties in the same zone or vicinity, and result from lot size or shape, legally existing prior to the date of this ordinance, topography, or other circumstances over which the applicant has no control.*

Response: As required by Code Section 48.060.B, the maximum allowed width of a curb cut is 36 feet. The proposed fire station has an egress onto Elliott Street which is 46 feet. The additional 10 feet of width is necessary to allow the fire apparatus to pull straight out of the parking bays and onto Elliott Street with enough room to maneuver up the hill to Highway 43. This is an exceptional circumstance as it is the only fire station in the area with three parking bays which would necessitate the additional curb cut width. The additional driveway width is necessary because of the size and nature of the emergency apparatus exiting the bays and using the driveway.

2. *The variance is necessary for the preservation of a property right of the applicant, which is substantially the same as a right possessed by owners of other property in the same zone or vicinity.*

Response: This Variance is necessary to allow TVF&R's fire apparatus to safely exit the parking bays and onto Elliott Street with enough room to maneuver up the hill to Highway 43. The additional 10 feet of curb cut width will allow the trucks and other apparatus to safely maneuver and exit the site as quickly as possible.

3. *The authorization of the variance will not be materially detrimental to the purposes and standards of this Code, will not be inconsistent with all other regulatory requirements, and will not conflict with the goals and policies of the West Linn Comprehensive Plan.*

Response: The approval of this Variance will not be detrimental to the purpose or standard of the Code. The fire station is a unique use in this zone and is unique along Elliott Street. The station will not conflict with the goals and policies of the West Linn Comprehensive Plan.

4. *The variance request is the minimum variance, which would alleviate the exceptional and extraordinary circumstance.*

Response: This Variance is requesting that the maximum curb cut width of 36 feet be increased by approximately 10 feet to 46 feet. This is the minimum necessary to allow the fire trucks to pull straight out of the parking bays and maneuver safely onto Elliott Street and up the hill to Highway 43. The curb cut width has been narrowed to reflect the width of the three parking bays from which the fire apparatus will exit the station. If the curb cut were narrowed any further the trucks and other apparatus would not be able to pull straight out of the bays.

5. *The exceptional and extraordinary circumstance does not arise from the violation of this ordinance.*

Response: The requested variance is not reflective of an existing situation or a violation of the ordinance but does require a variance to standards within this ordinance. As previously noted, the

A-65

requirements of Chapter 48 state that the maximum curb cut width are 36 feet, however the egress on Elliott Street cannot meet this standard and has a curb cut of approximately 46 feet. The additional 10 feet of width is necessary to allow the fire apparatus to pull straight out of the parking bays and onto Elliott Street with enough room to maneuver up the hill to Highway 43.

6. The variance will not impose physical limitations on other properties or uses in the area, and will not impose physical limitations on future use of neighboring vacant or underdeveloped properties as authorized by the underlying zoning classification.

Response: The approval of this Variance request will not impose physical limitations on other properties or uses in the area. The Variance to the maximum curb cut width will be contained on-site and the building will continue to meet all other Code requirements.

75.070 Site Plans and Map

A. All plot plans and maps shall include the name, address, and telephone number of the applicant; the scale; north arrow; and a vicinity map.

B. The applicant shall submit a plot plan drawn to an appropriate scale (in order of preference; 1" = 10' to 1" = 30') which shows the following:

1. The subdivision name, block, and lot number or the section, township, range, and tax lot number.

2. In the case of a request for a variance to a lot dimensional or building setback requirement:

a. The lot configuration and dimensions, and the location of all existing structures on the lot; the setback distances and the location of all structures on abutting lots, and the setback distances; and,

b. The proposed variances.

Response: The required plans and maps can be found in Exhibit A of this application.

3. In the case of a request for a variance to the building height provisions...

Response: The applicant is not requesting a variance to the building height provisions; therefore this criterion is not applicable.

A-66

Chapter 75

Variance: Chapter 54 Landscaping

75.020 Classification of Variances

B. A Class II variance will involve a significant change from the zoning requirements and may create adverse impacts on adjacent property or occupants, and includes the following variances:

3. A variance to any of the other zoning provisions including, but not limited to, the lot coverage and building height.

Response: The applicant is requesting a Variance to the standards of Chapter 54, Landscaping. Specifically, this Variance is to Section 54.020.E(3) which states that parking areas with over 20 spaces must have a minimum of 10 percent interior landscaping within the parking area. The proposed parking area has 24 parking spaces and no interior landscaping for the parking area is proposed. To add any interior landscaping to the parking area would require the removal of parking spaces which would then effect how the fire station can meet the parking area requirements.

75.040 Time Limit on a Variance

Approval of a variance shall be void after three years unless substantial construction pursuant thereto has taken place.

Response: The applicant understands that an approval of a variance shall be void after three years unless substantial construction pursuant thereto has taken place.

75.050 The Application

A. A variance request shall be initiated by the property owner or the owner's authorized agent.

Response: This Variance application is being submitted by TVF&R with the permission of the City of West Linn and all fees were paid at the time of submittal (see "Applications" section of this submittal).

B. A prerequisite to the filing of an application is a pre-application conference at which time the Planning Director shall explain the requirements and provide the appropriate form(s).

Response: A pre-application conference was held with the City of West Linn staff on December 6, 2007.

C. An application for a variance shall include the completed application form and:

1. A narrative which addresses the approval criteria set forth in Section 75.060, and which sustains the applicant's burden of proof.

2. A site plan as provided by Section 75.070. One original application form must be submitted. Three copies at the original scale and three copies reduced to 11 X 17 inches or smaller of all drawings and plans must be submitted. Three copies of all other items must be submitted. When the application submittal is determined to be complete, additional copies may be required as determined by the Planning Department.

Response: A completed application form can be found at the beginning of this development application. The responses to Code Section 75.060 begin on the next page of this application and the required Site Plan has been provided as Sheet A1 of Exhibit A.

A-67

D. The applicant shall pay the requisite fee.

Response: All required application fees will be paid at the time of submittal.

75.060 The Approval Criteria

The appropriate approval authority shall approve a variance request if all the following criteria are met and corresponding findings of fact prepared. The approval authority may impose appropriate conditions to ensure compliance with the criteria. The approval authority shall deny the variance if any of the criteria are not met.

1. *Exceptional or extraordinary circumstances apply to the property which do not apply generally to other properties in the same zone or vicinity, and result from lot size or shape, legally existing prior to the date of this ordinance, topography, or other circumstances over which the applicant has no control.*

Response: As part of the annexation of the City of West Linn into the TVF&R service district, the two entered into an inter-governmental agreement (December 23, 2003) that required TVF&R to build on this specific site and to include a community room within the station. As obligated, TVF&R has developed a station design that includes a community room which requires a substantial amount of parking that a typical fire station would not require. It is impossible to move or increase the parking as it is currently proposed for the only area on-site which is appropriate in size and grade for the parking area. Additionally, while the proposed development cannot meet the internal landscaping requirement for the parking area, the site does contain approximately 31 percent landscaping which is 11 percent over the required 20. The additional 11 percent overall site landscaping is more than equal to the internal landscaping requirement of 10 percent.

2. *The variance is necessary for the preservation of a property right of the applicant, which is substantially the same as a right possessed by owners of other property in the same zone or vicinity.*

Response: This Variance is necessary to allow TVF&R to develop the new Station 58 on the site required by the City of West Linn. If the Station is to maintain the necessary amount of parking for the required community room then, due to topographical constraints, the parking area must be located as proposed which does not allow for any increased expansion or area for internal landscaping.

3. *The authorization of the variance will not be materially detrimental to the purposes and standards of this Code, will not be inconsistent with all other regulatory requirements, and will not conflict with the goals and policies of the West Linn Comprehensive Plan.*

Response: The approval of this Variance will not be detrimental to the purpose or standard of the Code. The fire station is a unique use in this zone and is unique along Elliott Street. The station will not conflict with the goals and policies of the West Linn Comprehensive Plan.

4. *The variance request is the minimum variance, which would alleviate the exceptional and extraordinary circumstance.*

Response: As stated previously, TVF&R is obligated by an inter-governmental agreement with the City of West Linn to develop the new Station 58 in this location with a community room. The addition of the community room increases the parking spaces required to such that the parking spaces and internal landscaping required cannot both fit on-site due to grade and size constraints. This Variance is requesting that there be no internal landscaping required which would allow the station to develop as proposed. This is the minimum variance which would allow the alleviation of these unique circumstances. Currently, the site is proposing joint parking between the station and the community room to keep the on-site spaces to a minimum. In addition, while the proposed development cannot meet the internal landscaping requirement for the parking area, the site does contain approximately 31

A-68

percent landscaping which is 11 percent over the required 20 percent. The additional 11 percent overall site landscaping is more than equal to the internal landscaping requirement of 10 percent.

5. *The exceptional and extraordinary circumstance does not arise from the violation of this ordinance.*

Response: The requested variance is not reflective of an existing situation or a violation of the ordinance but does require a variance to standards within this ordinance.

6. *The variance will not impose physical limitations on other properties or uses in the area, and will not impose physical limitations on future use of neighboring vacant or underdeveloped properties as authorized by the underlying zoning classification.*

Response: The approval of this Variance request will not impose physical limitations on other properties or uses in the area. The Variance to the internal landscaping requirements will be contained on-site and the building will continue to meet all other Code requirements.

75.070 Site Plans and Map

A. *All plot plans and maps shall include the name, address, and telephone number of the applicant; the scale; north arrow; and a vicinity map.*

B. *The applicant shall submit a plot plan drawn to an appropriate scale (in order of preference; 1" = 10' to 1" = 30') which shows the following:*

1. *The subdivision name, block, and lot number or the section, township, range, and tax lot number.*

2. *In the case of a request for a variance to a lot dimensional or building setback requirement:*

a. *The lot configuration and dimensions, and the location of all existing structures on the lot; the setback distances and the location of all structures on abutting lots, and the setback distances; and,*

b. *The proposed variances.*

Response: The required plans and maps can be found in Exhibit A of this application.

3. *In the case of a request for a variance to the building height provisions...*

Response: The applicant is not requesting a variance to the building height provisions; therefore this criterion is not applicable.

A-69

Chapter 75
Variance: Chapter 55 Design Review

75.020 Classification of Variances

B. A Class II variance will involve a significant change from the zoning requirements and may create adverse impacts on adjacent property or occupants, and includes the following variances:

3. A variance to any of the other zoning provisions including, but not limited to, the lot coverage and building height.

Response: The applicant is requesting a Variance to the standards of Chapter 55, Design Review. This Variance is specifically to Section 55.100.B.2.b which states that "non-residential and residential projects on non-Type I and II lands shall set aside up to 20 percent of the area to protect trees and tree clusters that are determined to be significant." Currently there are two trees on-site which have been determined to be significant by the City Arborist (see Arborist Report, Exhibit C). However, due to the location of these trees on the site of the future parking area they must be removed. The two trees together measure 40 inches at breast height and there will be 40 inches of new trees planted on-site for mitigation (see Landscape Plan, Sheet L1.0, Exhibit A). The parking area cannot be re-designed or re-located on-site due to topographical constraints. The parking area is currently proposed for a level portion of the site which is both safe and practical for the purpose. Additionally, due to an inter-governmental agreement made between the City of West Linn and TVF&R, Station 58 must be developed on this site with a community room which requires an increased amount of parking.

75.040 Time Limit on a Variance

Approval of a variance shall be void after three years unless substantial construction pursuant thereto has taken place.

Response: The applicant understands that an approval of a variance shall be void after three years unless substantial construction pursuant thereto has taken place.

75.050 The Application

A. A variance request shall be initiated by the property owner or the owner's authorized agent.

Response: This Variance application is being submitted by TVF&R with the permission of the City of West Linn and all fees were paid at the time of submittal (see "Applications" section of this submittal).

B. A prerequisite to the filing of an application is a pre-application conference at which time the Planning Director shall explain the requirements and provide the appropriate form(s).

Response: A pre-application conference was held with the City of West Linn staff on December 6, 2007.

C. An application for a variance shall include the completed application form and:

1. A narrative which addresses the approval criteria set forth in Section 75.060, and which sustains the applicant's burden of proof.

2. A site plan as provided by Section 75.070. One original application form must be submitted. Three copies at the original scale and three copies reduced to 11 X 17 inches or smaller of all drawings and plans must be submitted. Three copies of all other items must be submitted. When the application

A-70

submittal is determined to be complete, additional copies may be required as determined by the Planning Department.

Response: A completed application form can be found at the beginning of this development application. The responses to Code Section 75.060 follow below and the required Site Plan has been provided as Sheet A1 of Exhibit A.

D. The applicant shall pay the requisite fee.

Response: All required application fees will be paid at the time of submittal.

75.060 The Approval Criteria

The appropriate approval authority shall approve a variance request if all the following criteria are met and corresponding findings of fact prepared. The approval authority may impose appropriate conditions to ensure compliance with the criteria. The approval authority shall deny the variance if any of the criteria are not met.

1. Exceptional or extraordinary circumstances apply to the property which do not apply generally to other properties in the same zone or vicinity, and result from lot size or shape, legally existing prior to the date of this ordinance, topography, or other circumstances over which the applicant has no control.

Response: As part of the annexation of the City of West Linn into the TVF&R service district, the two entered into an inter-governmental agreement (December 23, 2003) that required TVF&R to build on this specific site and to include a community room within the station. As obligated, TVF&R has developed a station design that includes a community room which requires a substantial amount of parking that a typical fire station would not. As stated previously, the parking has been located as proposed as it is the ideal location on-site for the parking to be safe and accessible, however it will require the removal of the two significant trees on-site. These two trees, which measure a total of 40 inches at breast height, will be mitigated for as shown on the submitted Landscape Plan (Sheet L1.0, Exhibit A).

2. The variance is necessary for the preservation of a property right of the applicant, which is substantially the same as a right possessed by owners of other property in the same zone or vicinity.

Response: This Variance is necessary to allow TVF&R to develop the new Station 58 on the site required by the City of West Linn. If the Station is to maintain the necessary amount of parking for the required community room then, due to topographical constraints, the parking area must be located as proposed which will require the removal of the two significant trees on-site. Removal of these two trees will keep the development from meeting the requirement in Section 55.100.B.2.b for 20 percent of the area of the site be dedicated to protect significant trees. The removal of the two trees will be fully mitigated for.

3. The authorization of the variance will not be materially detrimental to the purposes and standards of this Code, will not be inconsistent with all other regulatory requirements, and will not conflict with the goals and policies of the West Linn Comprehensive Plan.

Response: The approval of this Variance will not be detrimental to the purpose or standard of the Code. The fire station is a unique use in this zone and is unique along Elliott Street. The station will not conflict with the goals and policies of the West Linn Comprehensive Plan.

4. The variance request is the minimum variance, which would alleviate the exceptional and extraordinary circumstance.

A-71

Response: As stated previously, TVF&R is obligated by an inter-governmental agreement with the City of West Linn to develop the new Station 58 in this location with a community room. If the Station is to maintain the necessary amount of parking for the required community room then, due to topographical constraints, the parking area must be located as proposed which will require the removal of the two significant trees on-site. This Variance is requesting that the two significant trees be removed and that the requirements of 55.100.B.2.b be waived. This is the minimum variance which would allow the alleviation of these unique circumstances. The two trees being removed will be mitigated for, as shown on the Landscape Plan (Sheet L1.0, Exhibit A), with 40 caliper inches of trees being planted on-site.

5. The exceptional and extraordinary circumstance does not arise from the violation of this ordinance.

Response: The requested variance is not reflective of an existing situation or a violation of the ordinance but does require a variance to standards within this ordinance.

6. The variance will not impose physical limitations on other properties or uses in the area, and will not impose physical limitations on future use of neighboring vacant or underdeveloped properties as authorized by the underlying zoning classification.

Response: The approval of this Variance request will not impose physical limitations on other properties or uses in the area. The Variance to the maximum curb cut width will be contained on-site and the building will continue to meet all other Code requirements.

75.070 Site Plans and Map

A. All plot plans and maps shall include the name, address, and telephone number of the applicant; the scale; north arrow; and a vicinity map.

B. The applicant shall submit a plot plan drawn to an appropriate scale (in order of preference; 1" = 10' to 1" = 30') which shows the following:

1. The subdivision name, block, and lot number or the section, township, range, and tax lot number.

2. In the case of a request for a variance to a lot dimensional or building setback requirement:

a. The lot configuration and dimensions, and the location of all existing structures on the lot; the setback distances and the location of all structures on abutting lots, and the setback distances; and,

b. The proposed variances.

Response: The required plans and maps can be found in Exhibit A of this application.

3. In the case of a request for a variance to the building height provisions...

Response: The applicant is not requesting a variance to the building height provisions; therefore this criterion is not applicable.

A-72

Exhibits
Tualatin Valley Fire & Rescue Station 58

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PG

A-73

Exhibit A: Plan Set
Tualatin Valley Fire & Rescue Station 58
(Submitted Under Separate Cover)

- Plan Checksheet
- A1 Site Plan
- A1.1 Site Analysis
- A2 Floor Plans
- A3 Architectural Elevations
- SUR Existing Conditions
- C1.0 Utility Plan
- C1.1 Stormwater Plan
- C1.2 Grading Plan
- C1.3 Erosion Control Plan
- C2.0 Erosion Control Details
- C2.1 Site Improvement Details
- C2.2 Water Details
- C2.3 Sanitary Details
- C2.4 Stormwater Details
- EPM1.1 Photometrics
- L1.0 Landscape Plan
- TP-1 Tree Protection Plan
- Materials Board *(One copy only)*

A-74

**Exhibit B: Stormwater Report
Tualatin Valley Fire & Rescue Station 58**

A-75



Engineering +
Environmental

Preliminary Stormwater Report

TVF&R Station 58
6050 Failing Street
West Linn, Oregon

Prepared for:
PSE Architects
4412 SW Corbett Avenue
Portland, OR 97239

August 15, 2008
Project No. 70606.000

4412 SW Corbett Avenue, Portland, OR 97239
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A-76

TABLE OF CONTENTS

1.0 PROJECT DESCRIPTION 1
2.0 EXISTING CONDITIONS 1
3.0 PROPOSED DRAINAGE 1
4.0 GENERAL HYDROLOGIC ANALYSIS, EXISTING AND DEVELOPED CONDITIONS 1
 4.1.1 Analysis Criteria and Sources 1
 4.1.2 Analysis Assumptions 2
 4.2 Quantity Control 2
 4.2.1 Water Quantity Design 2
5.0 WATER QUALITY DESIGN 2
 5.1 Water Quality Design 2
 5.2 Best Management Practices Utilized in Final Design 2
 5.3 Initial Conditions 2
 5.4 Assumptions Used in Completing Analysis 3
 5.5 Hydraulic Analysis 3
 5.6 Summary 3
6.0 CONVEYANCE SYSTEMS ANALYSIS AND DESIGN 3
 6.1 Design Criteria Utilized for Final Design 3
 6.2 Initial Conditions 3
 6.3 Hydraulic Computations/Capacities 3
 6.4 Summary 3
7.0 SOILS EVALUATION 3
 7.1 On-site Soil Types 3
 7.2 Seasonal High Water Table Elevations 3
 7.3 Soil Parameters and Design Methods 3
8.0 OPERATIONS AND MAINTENANCE MANUAL 3
9.0 RESTRICTIONS 4

TECHNICAL APPENDIX

- Appendix A – Stormwater System Worksheet**
- Appendix B – Water Quality Design**
- Appendix C – Conveyance System Calculations**
- Appendix D – Drainage Basin Map**
- Appendix E – Construction Plans**
- Appendix F – Supporting Maps and Design Material**
- Appendix G – Operations and Maintenance Plan**

1.0 PROJECT DESCRIPTION

This report contains hydrologic and hydraulic design analyses for a fire station on a 0.92-acre site proposed for location in West Linn, Oregon. The site consists of six parcels (Tax Lot 1000, 1100, 1200, 1400, 1500 and 2700). The site is located north of Buck Street, east of Elliot Street, west of Failing Street and south of the Willamette Drive.

2.0 EXISTING CONDITIONS

Currently, the site has six existing buildings, asphalt pavement, gravel driveways and grassy areas. The topography of the site has an average slope of 5.7% draining toward the northeast corner of the property at the intersection of Buck Street and Failing Street.

The Soil Survey of Clackamas County classifies soil type as Aloha Silt Loam (1B), 3 to 6 percent slopes and belongs to the Hydrologic Soil Groups C. Soil background information is contained in Appendix F.

3.0 PROPOSED DRAINAGE

The proposed storm system layout is included in the construction plans in Appendix E. Stormwater on the developed site will be managed as follows:

- Stormwater runoff from roof areas, sidewalks and paved improvements will be discharged to flow-through planters.
- After treatment, stormwater will be discharged into the existing 12" CMP storm line located to the north of the property.
- Three trench drains are to be installed on-site. One will be installed at the west truck bay entrance and will be connected to flow-through planter #3. The second trench drain will be located at the eastern entrance along Failing Street. This trench drain will pick-up flows from the parking area and driveways. This trench will discharge to flow-through planter #1. The third trench drain will be located to the east of the truck bay and connected to an oil/water separator with a pneumatic valve. The pneumatic valve will be connected to sanitary sewer and storm. For the majority of the time, runoff will be released to the storm system. When the fire trucks are being washed the runoff collected by the trench drain will be switched to release to the sanitary sewer. The stormline from this trench will discharge to flow-through planter #2.

4.0 GENERAL HYDROLOGIC ANALYSIS, EXISTING AND DEVELOPED CONDITIONS

4.1.1 Analysis Criteria and Sources

The hydrologic and hydraulic analysis is in accordance with criteria and guidelines of the City of West Linn Design Standards and the City of Portland Stormwater Management Manual. Tabulations for acreage; imperviousness; curve number; pipe and channel flow; and other hydrologic parameters used in completing analysis are tabulated on the basin map in Appendix D.

Stormwater flows were determined using the Santa Barbara Urban Hydrograph Method (SBUHYD). Criteria used in completing analyses are the following:

Design storms: 2-year storm = 2.40 inches
 10-year storm = 3.40 inches
 25-year storm = 3.90 inches
 100-year storm = 4.40 inches

This information was taken from the City of Portland Stormwater Management Manual.

4.1.2 Analysis Assumptions

- Storms follow Type 1A distribution and have 24-hour duration
- The following curve numbers were utilized for on-site conditions:

Pre-developed conditions

Curve Number (CN) = 79	Grass cover, Fair condition
Curve Number (CN) = 98	Gravel
Curve Number (CN) = 98	Paved/impervious surfaces

Post-developed conditions

Curve Number (CN) = 74	Grass cover, Good condition
Curve Number (CN) = 98	Paved/impervious surfaces

4.2 Quantity Control

4.2.1 Water Quantity Design

Water quantity design is not required for this project since it is an existing developed site and there is not an increase in imperviousness.

5.0 WATER QUALITY DESIGN

5.1 Water Quality Design

The design includes water quality treatment via flow-through planters.

5.2 Best Management Practices Utilized in Final Design

BMP's included in the final design are:

- 1) Flow-through Planters
- 2) Rainwater Harvesting

5.3 Initial Conditions

Initial water elevations in the flow-through planters are assumed to be zero prior to the beginning of subsequent and distinct storm events.

5.4 Assumptions Used in Completing Analysis

It is assumed that the flow-through planters will be constructed per the engineers specifications. Construction observation and as-built documentation will verify these assumptions.

5.5 Hydraulic Analysis

Complete detailed analysis, calculations and references are found in the Appendix A and B.

5.6 Summary

The flow-through planters have been designed and located to treat the runoff from the new and existing impervious paved surfaces as shown on the Basin Map in the appendix D.

6.0 CONVEYANCE SYSTEMS ANALYSIS AND DESIGN

6.1 Design Criteria Utilized for Final Design

Conveyance of the 100-year storm flow was used for design.

6.2 Initial Conditions

All conveyance systems are empty at time of 100-year storm flow.

6.3 Hydraulic Computations/Capacities

All conveyance systems are sized to convey the 100-year stormwater event. Conveyance calculations and hydrographs are found in Appendix C.

6.4 Summary

All stormwater conveyance appurtenances have been designed to convey the 100-year storm event. Pipe sizes vary in diameter from 4"-12".

7.0 SOILS EVALUATION

7.1 On-site Soil Types

The on-site soil group is Aloha Silt Loam, 3-6% slopes (1B) a type C soil.

7.2 Seasonal High Water Table Elevations

Groundwater is not expected to impact stormwater facilities.

7.3 Soil Parameters and Design Methods

Hydrologic soil group C is located on this site. Table C-2 of the City of Portland Stormwater Management Manual was used to determine curve numbers for the group C soil ground cover.

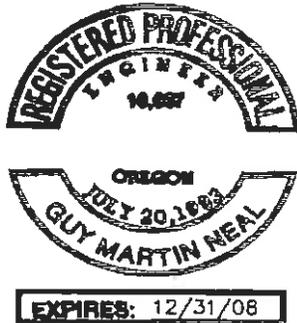
8.0 OPERATIONS AND MAINTENANCE MANUAL

The stormwater facilities will be privately maintained and funded after completion by TVF&R. A general operations and maintenance plan for flow-through planters from the City of Portland is included in Appendix G.

9.0 RESTRICTIONS

This report is for the exclusive use of the client and is not to be relied upon by other parties. It is not to be photographed, photocopied, or similarly reproduced in total or in part without the expressed written consent of the client and PBS Engineering + Environmental.

Sincerely,



Guy Neal, P.E.
Principal Engineer

Kendra Laminack, EIT, LEED-AP®
Project Civil Designer

APPENDIX A

Stormwater System Worksheet

A-83

Santa Barbara Urban Hydrograph Method

Reference: City of West Linn Design Standards, May 2000

Reference: City of Portland Stormwater Management Manual, September 2004

Reference: SBUHYD Program

Project: TVF&R Station 58 (PBS #70606.000)

By: Kendra Laminack

1 Area Calculations (Pervious & Impervious)

ft²/43560 = Ac

Pre-Development

Pervious Area =	25,745 ft ²	0.59 Ac
Impervious Area =	14,280 ft ²	0.33 Ac
Gravel =	2,747 ft ²	0.06 Ac
Building/Concrete =	11,533 ft ²	0.26 Ac
Area =	40,025 ft ²	0.92 Ac
Total Area =	40,025 ft²	0.92 Ac

Post-Development

Pervious Area =	12,150 ft ²	0.28 Ac
Impervious Area =	27,875 ft ²	0.64 Ac
Building =	8,227	0.19 Ac
Concrete/AC =	19,576	0.45 Ac
Area =	40,025 ft ²	0.92 Ac
Total Area =	40,025 ft²	0.92 Ac

Water Quality

Pervious Area =	0 ft ²	0.00 Ac
Impervious Area =	27,803 ft ²	0.64 Ac
Area =	27,803 ft ²	0.64 Ac
Total Area =	27,803 ft²	0.64 Ac

2 CN Values

Pre Development

Pervious CN (Class C soil: Grass Cover, Fair Condition) 79

Semi-Impervious CN (Class C soil: Gravel) 89

Impervious CN 98

Post Development

Pervious CN (Class C soil: Grass Cover, Good Condition) 74

Impervious CN 98

APPENDIX B
Water Quality Design

A 85

Form SIM

Simplified Approach for Stormwater Management Facilities

This form facilitates a relatively quick and simple approach for stormwater management. Facilities designed according to the required criteria are presumed to comply with pollution reduction and flow control requirements. Designers must use the sizing factor and facility surface area on this form in conjunction with the facility design criteria on the following pages. Alternative design and sizing will not be considered.

FLOW-THROUGH PLANTER #1

New or Redeveloped Impervious Site Area Box 1

INSTRUCTIONS

1 Enter square footage on non-mitigated impervious area (from Form MIT, Box C) in Box 1 at the bottom of column 1

2 Enter the appropriate square footage of non-mitigated impervious area in the space next to the selected facility(s) in column 1

3 Add all facility impervious areas in column 1 and enter in Box 2. Note: Box 1 and Box 2 areas must be equal.

4 Multiply the non-mitigated sf in column 1 by the sizing factor in column 2 for each facility

5 Use the required facility surface area sf in column 3 to design the facility(s)

6 Go to the "Simplified Approach Design Criteria" for facility descriptions and specifications

Stormwater Management Facility	Column 1		Column 2		Column 3	
	Impervious Area Managed	Unit	Sizing Factor		Required Facility Surface Area	Unit
1) Infiltration Planter	<input type="text"/>	sf	x	0.06	= <input type="text" value="0"/>	sf
2) Flow-Through Planter	<input type="text" value="13479"/>	sf	x	0.06	= <input type="text" value="808.74"/>	sf
3) Vegetated Swale	<input type="text"/>	sf	x	0.09	= <input type="text" value="0"/>	sf
4) Grassy Swale	<input type="text"/>	sf	x	0.12	= <input type="text" value="0"/>	sf
5) Vegetated Filter Strip	<input type="text"/>	sf	x	0.2	= <input type="text" value="0"/>	sf
6) Vegetated Infiltration Basin	<input type="text"/>	sf	x	0.09	= <input type="text" value="0"/>	sf
Total Impervious Area Managed	<input type="text" value="13479"/>					Box 2
Box 1 - Box 2	<input type="text" value="0"/>					Box 3

A86

Form SIM

Simplified Approach for Stormwater Management Facilities

This form facilitates a relatively quick and simple approach for stormwater management. Facilities designed according to the required criteria are presumed to comply with pollution reduction and flow control requirements. Designers must use the sizing factor and facility surface area on this form in conjunction with the facility design criteria on the following pages. Alternative design and sizing will not be considered.

FLOW-THROUGH PLANTER #2

New or Redeveloped Impervious Site Area Box 1

INSTRUCTIONS

1 Enter square footage on non-mitigated impervious area (from Form MIT, Box C) in Box 1 at the bottom of column 1.

2 Enter the appropriate square footage of non-mitigated impervious area in the space next to the selected facility(s) in column 1.

3 Add all facility impervious areas in column 1 and enter in Box 2. Note: Box 1 and Box 2 areas must be equal.

4 Multiply the non-mitigated sf in column 1 by the sizing factor in column 2 for each facility.

5 Use the required facility surface area sf in column 3 to design the facility(s).

6 Go the "Simplified Approach Design Criteria" for facility descriptions and specifications.

Stormwater Management Facility	Column 1		Column 2			Column 3	
	Impervious Area Managed	Unit	Sizing Factor		Required Facility Surface Area	Unit	
1) Infiltration Planter		sf	x	0.06	=	<input type="text" value="0"/>	sf
2) Flow-Through Planter	4284	sf	x	0.06	=	<input type="text" value="257.04"/>	sf
3) Vegetated Swale		sf	x	0.09	=	<input type="text" value="0"/>	sf
4) Grassy Swale		sf	x	0.12	=	<input type="text" value="0"/>	sf
5) Vegetated Filter Strip		sf	x	0.2	=	<input type="text" value="0"/>	sf
6) Vegetated Infiltration Basin		sf	x	0.09	=	<input type="text" value="0"/>	sf
Total Impervious Area Managed	<input type="text" value="4284"/>					<input type="text" value="4284"/>	Box 2
Box 1 - Box 2	<input type="text" value="0"/>					<input type="text" value="0"/>	Box 3

A-87

Form SIM

Simplified Approach for Stormwater Management Facilities

This form facilitates a relatively quick and simple approach for stormwater management. Facilities designed according to the required criteria are presumed to comply with pollution reduction and flow control requirements. Designers must use the sizing factor and facility surface area on this form in conjunction with the facility design criteria on the following pages. Alternative design and sizing will not be considered.

FLOW-THROUGH PLANTER #3

New or Redeveloped Impervious Site Area Box 1

INSTRUCTIONS

1. Enter square footage on non-mitigated impervious area (from Form MIT, Box C) in Box 1 at the bottom of column 1.

2. Enter the appropriate square footage of non-mitigated impervious area in the space next to the selected facility(s) in column 1.

3. Add all facility impervious areas in column 1 and enter in Box 2. Note: Box 1 and Box 2 areas must be equal.

4. Multiply the non-mitigated sf in column 1 by the sizing factor in column 2 for each facility.

5. Use the required facility surface area sf in column 3 to design the facility(s).

6. Go to the "Simplified Approach Design Criteria" for facility descriptions and specifications.

Stormwater Management Facility	Column 1		Column 2		Column 3	
	Impervious Area Managed	Unit	Sizing Factor		Required Facility Surface Area	Unit
1) Infiltration Planter	_____	sf	x	0.06	= <input type="text" value="0"/>	sf
2) Flow-Through Planter	10112	sf	x	0.06	= <input type="text" value="606.72"/>	sf
3) Vegetated Swale	_____	sf	x	0.09	= <input type="text" value="0"/>	sf
4) Grassy Swale	_____	sf	x	0.12	= <input type="text" value="0"/>	sf
5) Vegetated Filter Strip	_____	sf	x	0.2	= <input type="text" value="0"/>	sf
6) Vegetated Infiltration Basin	_____	sf	x	0.09	= <input type="text" value="0"/>	sf
Total Impervious Area Managed	<input type="text" value="10112"/>				<input type="text" value="10112"/>	Box 2
Box 1 - Box 2	<input type="text" value="0"/>				<input type="text" value="0"/>	Box 3

APPENDIX C

Conveyance System Calculations

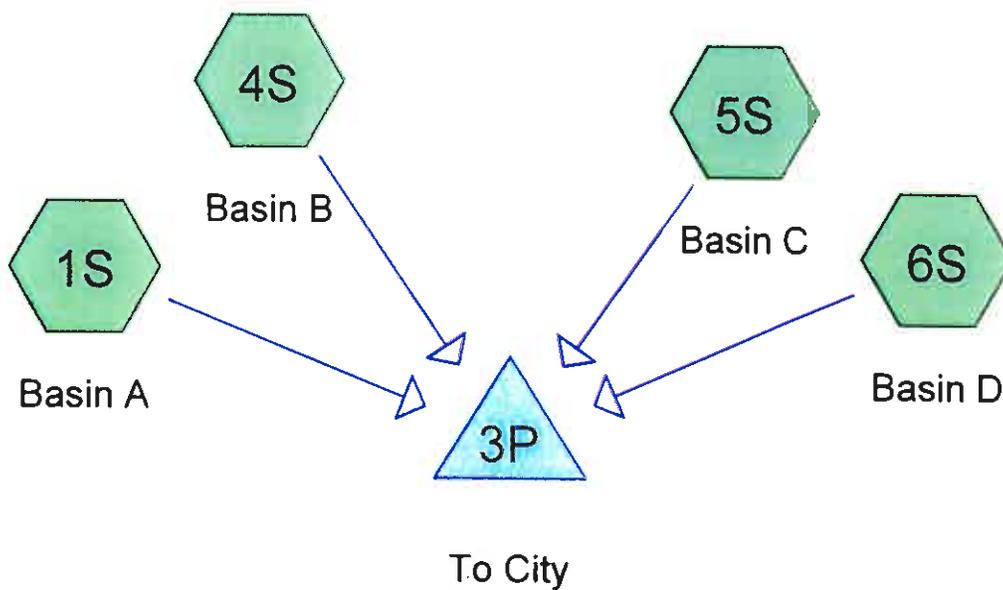
Project: TVF&R Station 58
 PBS#: 70606.000
 Date: 08/15/08

Conveyance Design - Pipe Sizing

Pipe Run	From Basins	Peak Flow Q (cfs)	Pipe Dia. (in.)	Slope (ft./ft.)	Manning "n"	Full Velocity V (fps)	Full Capacity Q (cfs)	% of Capacity
1	A	0.05	6	0.1000	0.013	9.06	1.78	2.81%
2	D	0.20	4	0.0500	0.013	4.89	0.43	46.87%
3	B	0.33	10	0.0060	0.013	3.12	1.70	19.39%
4	C	0.10	6	0.0100	0.013	2.87	0.56	17.77%
5	C	0.10	6	0.0800	0.013	8.10	1.59	6.28%
6	B	0.33	6	0.0800	0.013	8.10	1.59	20.74%
7	A, D	0.25	6	0.1000	0.013	9.06	1.78	14.05%
8	A, B, C, D	0.69	10	0.1566	0.013	15.94	8.69	7.94%

Front Apron - Basin A
 Driveway, Parking & Sidewalk - Basin B
 Back Apron - Basin C
 Roof - Basin D

A-90



Drainage Diagram for TVF&R Station 58_Conveyance
 Prepared by PBS Engineering + Environmental, Printed 8/13/2008
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A-92

TVF&R Station 58_Conveyance

Prepared by PBS Engineering + Environmental

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.189	98	Building (6S)
0.451	98	Concrete, AC (1S,4S,5S)
0.640		TOTAL AREA

A-93

TVF&R Station 58_Conveyance

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Page 3

Soil Listing (all nodes)

Area (acres)	Soil Goup	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.640	Other	1S, 4S, 5S, 6S
0.640		TOTAL AREA

A-94

TVF&R Station 58_Conveyance

Type IA 24-hr 100-year Rainfall=4.50"

Prepared by PBS Engineering + Environmental

Printed 8/13/2008

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Page 4

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Basin A Runoff Area=1,885 sf 100.00% Impervious Runoff Depth>3.38"
Tc=5.0 min CN=0/98 Runoff=0.05 cfs 0.012 af

Subcatchment4S: Basin B Runoff Area=13,479 sf 100.00% Impervious Runoff Depth>3.38"
Tc=5.0 min CN=0/98 Runoff=0.33 cfs 0.087 af

Subcatchment5S: Basin C Runoff Area=4,284 sf 100.00% Impervious Runoff Depth>3.38"
Tc=5.0 min CN=0/98 Runoff=0.10 cfs 0.028 af

Subcatchment6S: Basin D Runoff Area=8,227 sf 100.00% Impervious Runoff Depth>3.38"
Tc=5.0 min CN=0/98 Runoff=0.20 cfs 0.053 af

Pond 3P: To City Inflow=0.68 cfs 0.180 af
Primary=0.68 cfs 0.180 af

Total Runoff Area = 0.640 ac Runoff Volume = 0.180 af Average Runoff Depth = 3.38"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.640 ac

A-95

TVF&R Station 58_Conveyance

Type IA 24-hr 100-year Rainfall=4.50"

Prepared by PBS Engineering + Environmental

Printed 8/13/2008

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Page 5

Summary for Subcatchment 1S: Basin A

Runoff = 0.05 cfs @ 7.90 hrs, Volume= 0.012 af, Depth> 3.38"

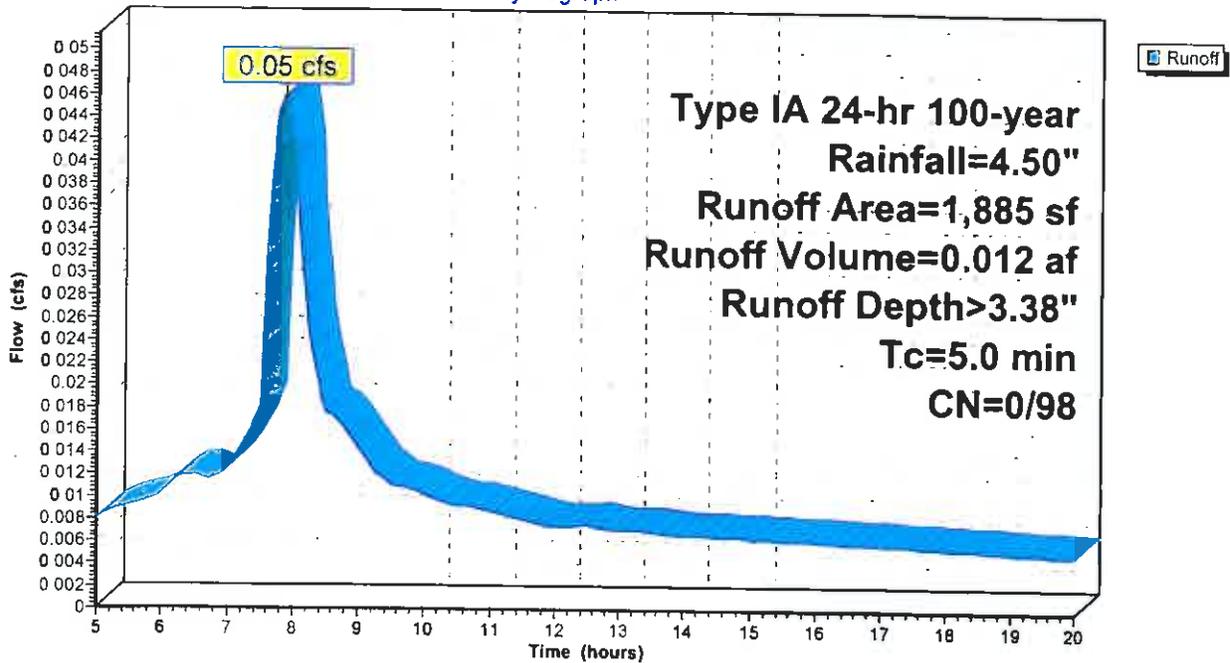
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100-year Rainfall=4.50"

Area (sf)	CN	Description
1,885	98	Concrete, AC
1,885	98	Impervious Area

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

Subcatchment 1S: Basin A

Hydrograph



A-96

TVF&R Station 58_Conveyance

Type IA 24-hr 100-year Rainfall=4.50"

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Printed 8/13/2008

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Page 6

Summary for Subcatchment 4S: Basin B

Runoff = 0.33 cfs @ 7.90 hrs, Volume= 0.087 af, Depth> 3.38"

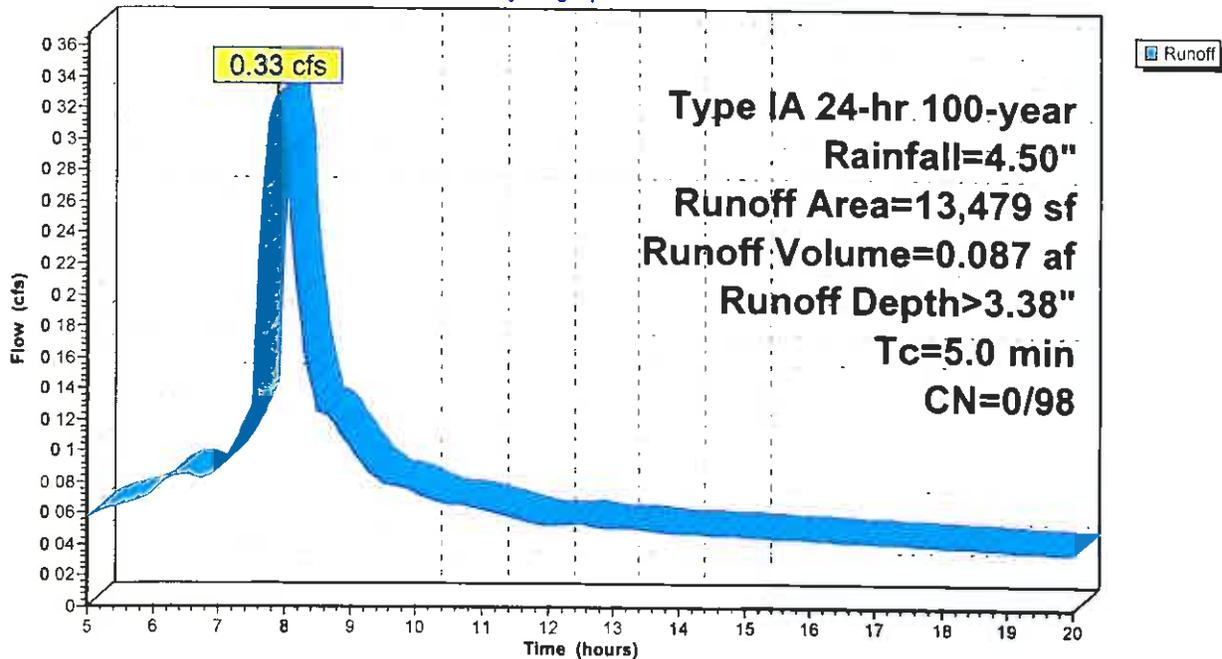
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100-year Rainfall=4.50"

Area (sf)	CN	Description
13,479	98	Concrete, AC
13,479	98	Impervious Area

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

Subcatchment 4S: Basin B

Hydrograph



A97

TVF&R Station 58_Conveyance

Type IA 24-hr 100-year Rainfall=4.50"

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Page 7

Summary for Subcatchment 5S: Basin C

Runoff = 0.10 cfs @ 7.90 hrs, Volume= 0.028 af, Depth> 3.38"

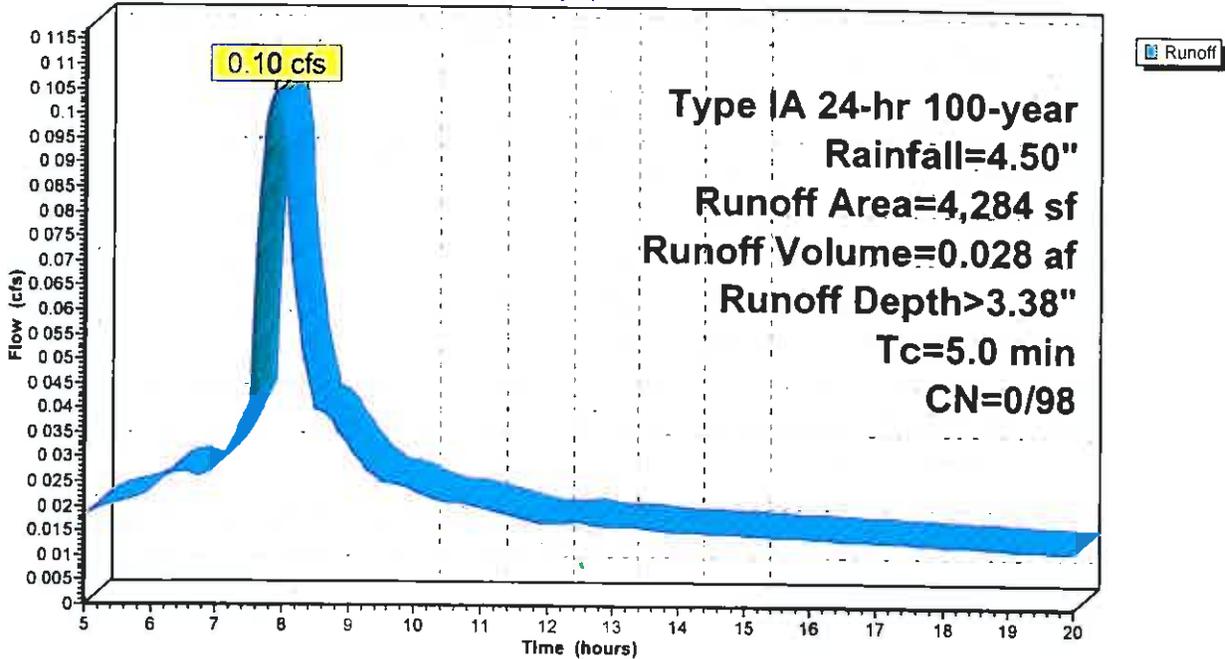
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100-year Rainfall=4.50"

Area (sf)	CN	Description
* 4,284	98	Concrete, AC
4,284	98	Impervious Area

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

Subcatchment 5S: Basin C

Hydrograph



A-98

TVF&R Station 58_Conveyance

Type IA 24-hr 100-year Rainfall=4.50"

Prepared by PBS Engineering + Environmental

Printed 8/13/2008

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Page 8

Summary for Subcatchment 6S: Basin D

Runoff = 0.20 cfs @ 7.90 hrs, Volume= 0.053 af, Depth> 3.38"

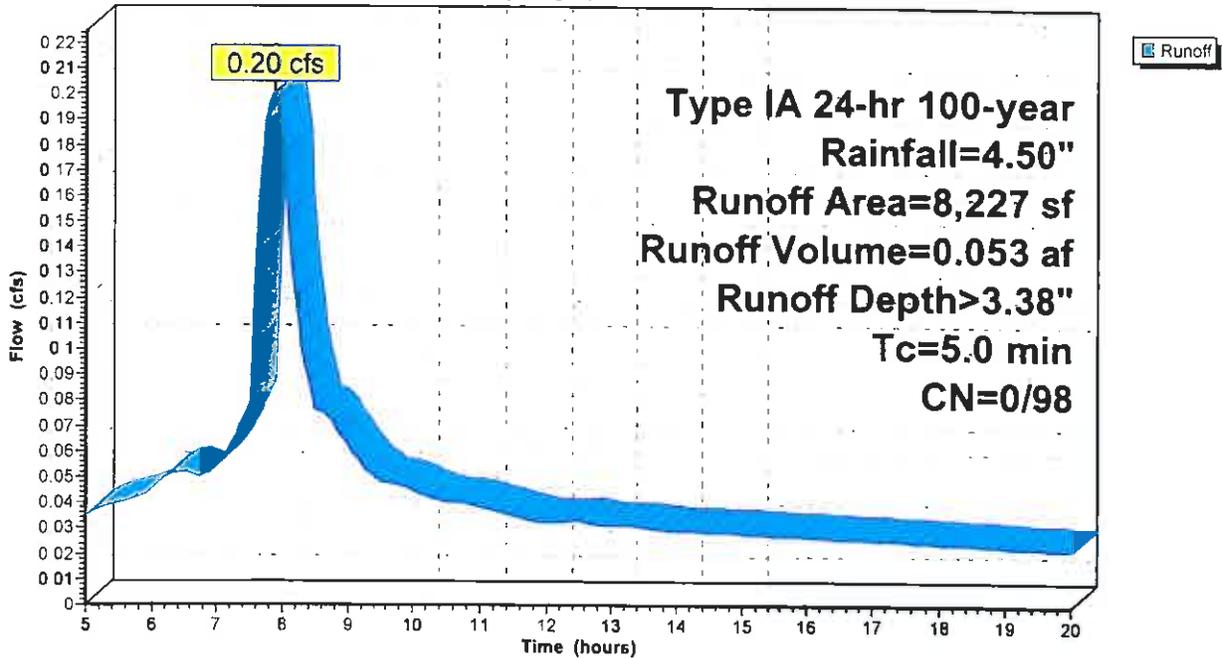
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100-year Rainfall=4.50"

Area (sf)	CN	Description
8,227	98	Building
8,227	98	Impervious Area

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

Subcatchment 6S: Basin D

Hydrograph



A99

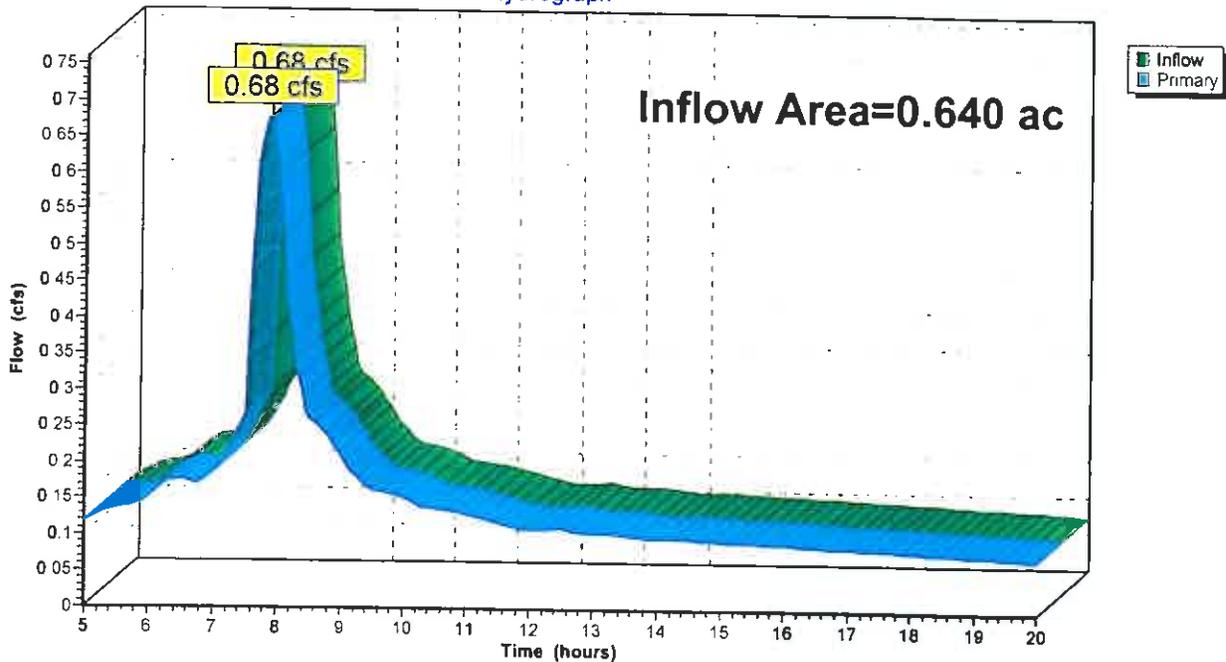
Summary for Pond 3P: To City

Inflow Area = 0.640 ac, 100.00% Impervious, Inflow Depth > 3.38" for 100-year event
Inflow = 0.68 cfs @ 7.90 hrs, Volume= 0.180 af
Primary = 0.68 cfs @ 7.90 hrs, Volume= 0.180 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 3P: To City

Hydrograph

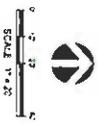
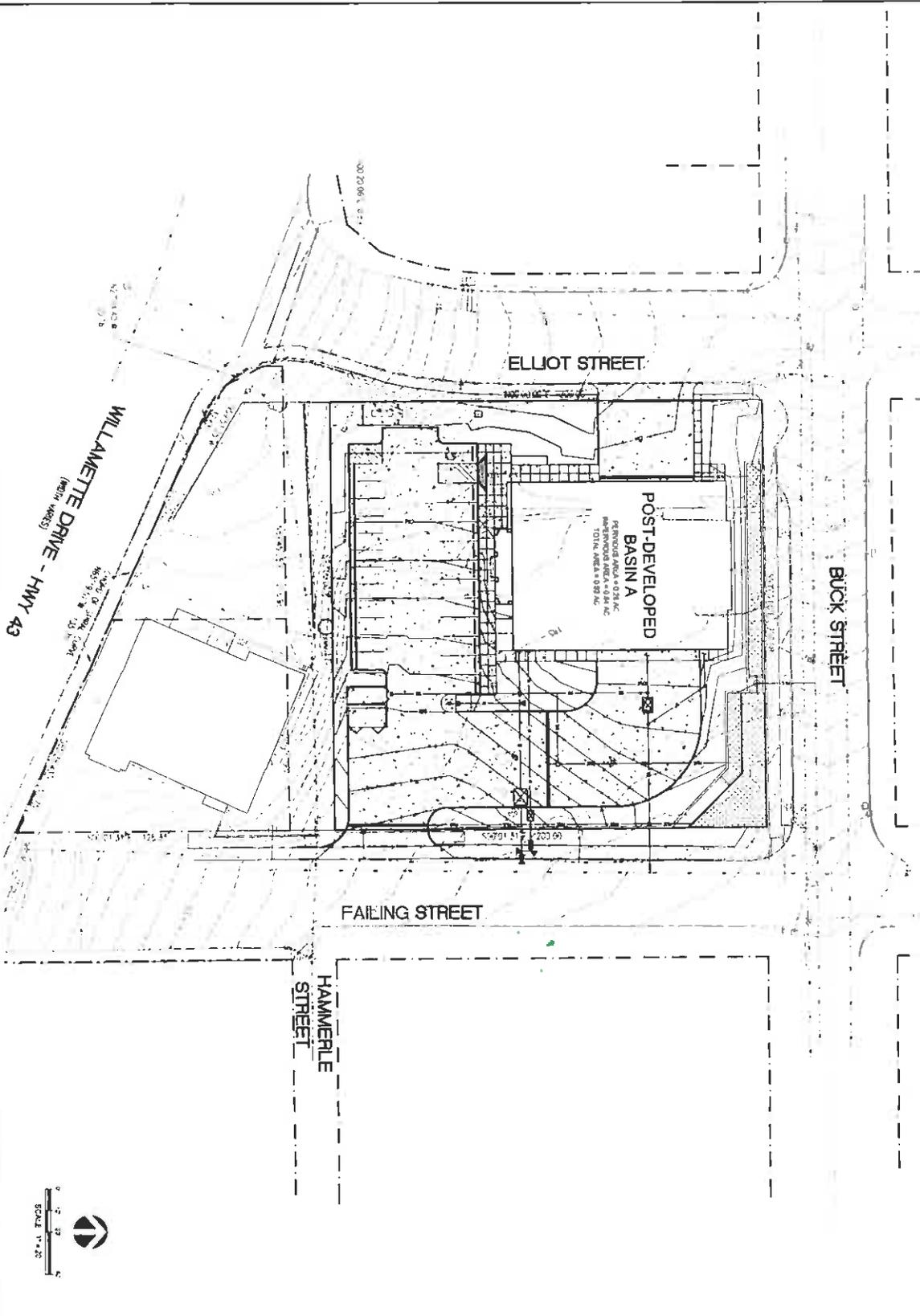


A-100

APPENDIX D
Drainage Basin Maps

A-101

TVF&R STATION 58
WEST LINN, OREGON



PBS
PUBLIC BUILDING SERVICES
1301 AVENUE
WEST LINN, OREGON

TVF&R STATION 58
6050 FAILING STREET
WEST LINN, OREGON

POST-DEVELOPED	DATE	BY
DRAINAGE		
BASIN		
MAP		

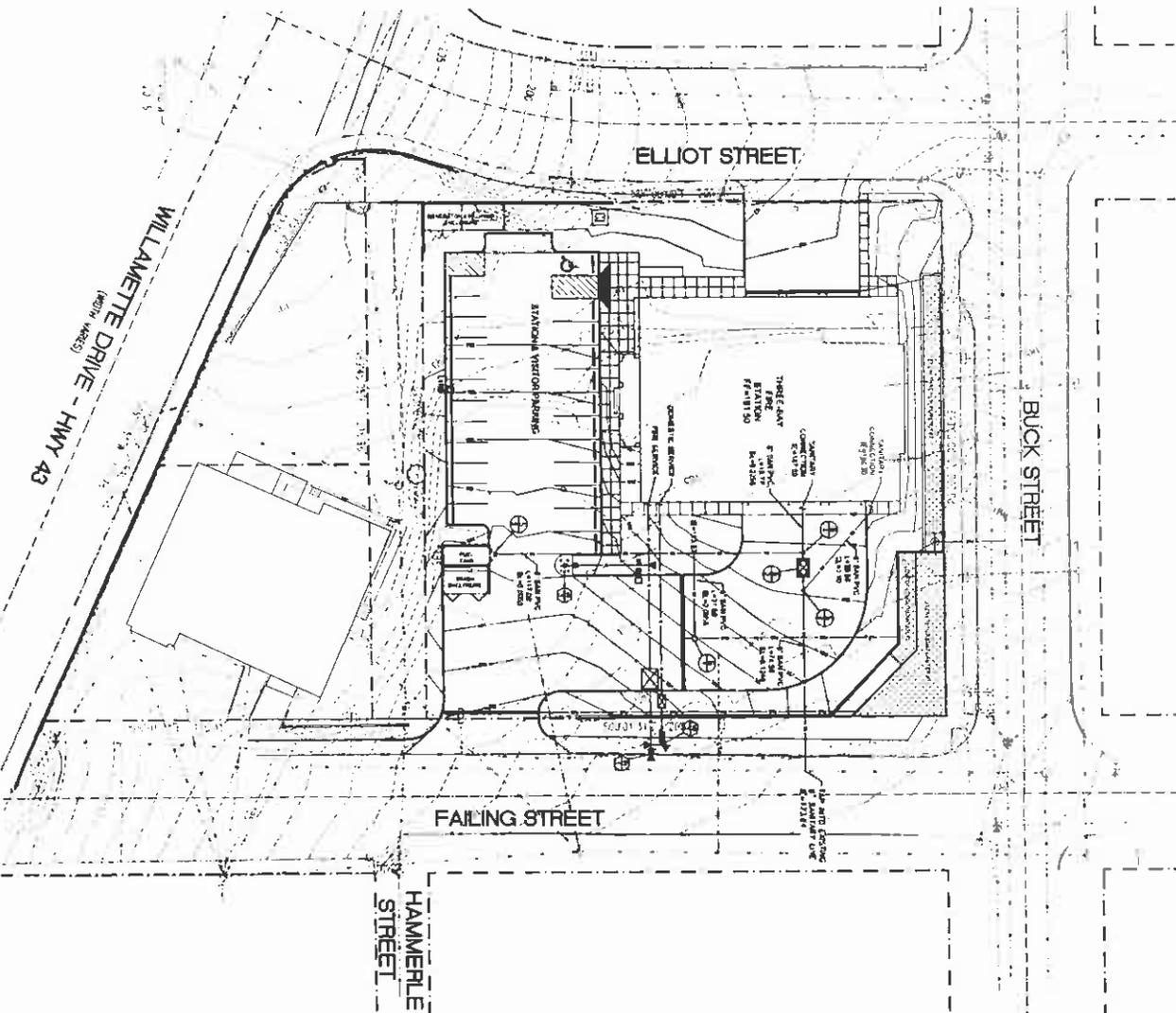
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SHEET 2 OF 3

A-103

APPENDIX E
Construction Plans

A 104



UTILITY LEGEND	
	MANHOLE BLOCK
	WATER VALVE
	WATER METER
	FIRE DEPARTMENT CONNECTION
	SEWER MANHOLE
	SANITARY SEWER MANHOLE
	WATER METER
	SANITARY SEWER MANHOLE

GENERAL NOTES

1. CONSULT WITH THE CITY OF BOSTON FOR ALL NECESSARY PERMITS AND REGULATIONS.
2. ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF BOSTON STANDARDS AND SPECIFICATIONS.
3. ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF BOSTON STANDARDS AND SPECIFICATIONS.
4. ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF BOSTON STANDARDS AND SPECIFICATIONS.
5. ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF BOSTON STANDARDS AND SPECIFICATIONS.
6. ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF BOSTON STANDARDS AND SPECIFICATIONS.
7. ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF BOSTON STANDARDS AND SPECIFICATIONS.
8. ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF BOSTON STANDARDS AND SPECIFICATIONS.
9. ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF BOSTON STANDARDS AND SPECIFICATIONS.
10. ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF BOSTON STANDARDS AND SPECIFICATIONS.

SANITARY SEWER INSTALLATION NOTES

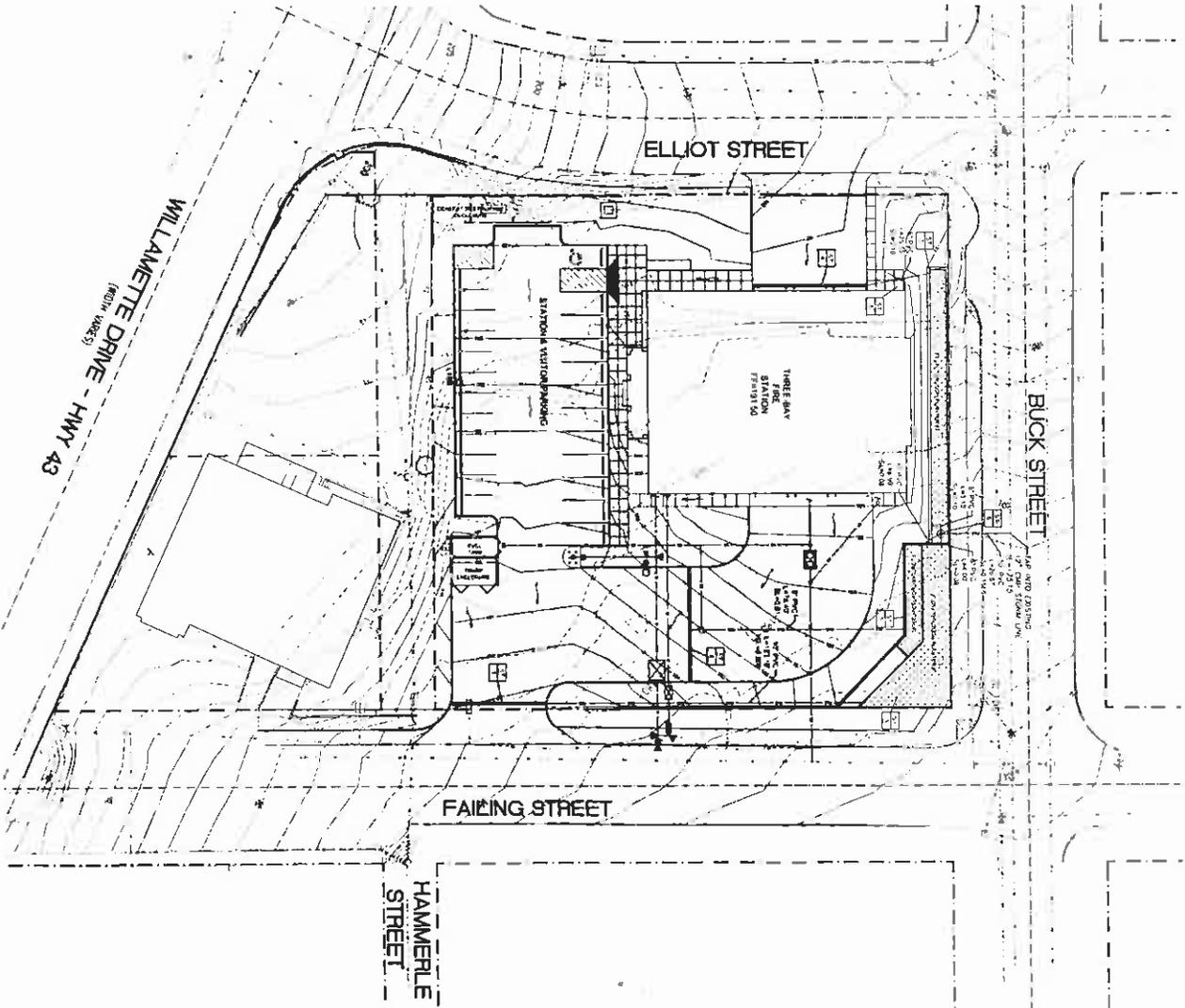
1. SEE LIST FOR MANHOLE SIZES.
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3. SEE LIST FOR MANHOLE SIZES.
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7. SEE LIST FOR MANHOLE SIZES.
8. SEE LIST FOR MANHOLE SIZES.
9. SEE LIST FOR MANHOLE SIZES.
10. SEE LIST FOR MANHOLE SIZES.

WATER INSTALLATION NOTES

1. SEE LIST FOR MANHOLE SIZES.
2. SEE LIST FOR MANHOLE SIZES.
3. SEE LIST FOR MANHOLE SIZES.
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<p>C1.0</p>	<p>TVF&R WEST LINN STATION 58 - BOLTON 6050 FAILING STREET WEST LINN, OR</p>	<p>440 2nd Street, NE BOSTON, MA 02111 TEL: 617.552.1234 FAX: 617.552.1235</p>		<p>PRELIMINARY</p>

A-105



WILLAMETTE DRIVE - HWY 43
(RIDGE WALKS)

ELLIOT STREET

BUCK STREET

FAILING STREET

HAMMERLE STREET

STORMWATER LEGEND

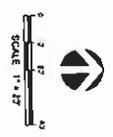
- ADS DRAIN
- STORM CLEANOUT
- STORM MANHOLE
- CATCH BASIN
- DRAINAGE MANHOLE
- STORM PLAIN LINE
- ADS PLAIN LINE
- ADS - INVERTICAL PLANTS

GENERAL NOTES

1. LOCATION OF STORMWATER SYSTEM SHALL BE AS SHOWN UNLESS OTHERWISE NOTED BY ANNOTATIONS.
 2. ALL STORMWATER SHALL BE COLLECTED AND CONVEYED TO THE STATION.
 3. ALL STORMWATER SHALL BE CONVEYED TO THE STATION THROUGH THE STATION STRUCTURE.
 4. ALL STORMWATER SHALL BE CONVEYED TO THE STATION THROUGH THE STATION STRUCTURE.
 5. ALL STORMWATER SHALL BE CONVEYED TO THE STATION THROUGH THE STATION STRUCTURE.

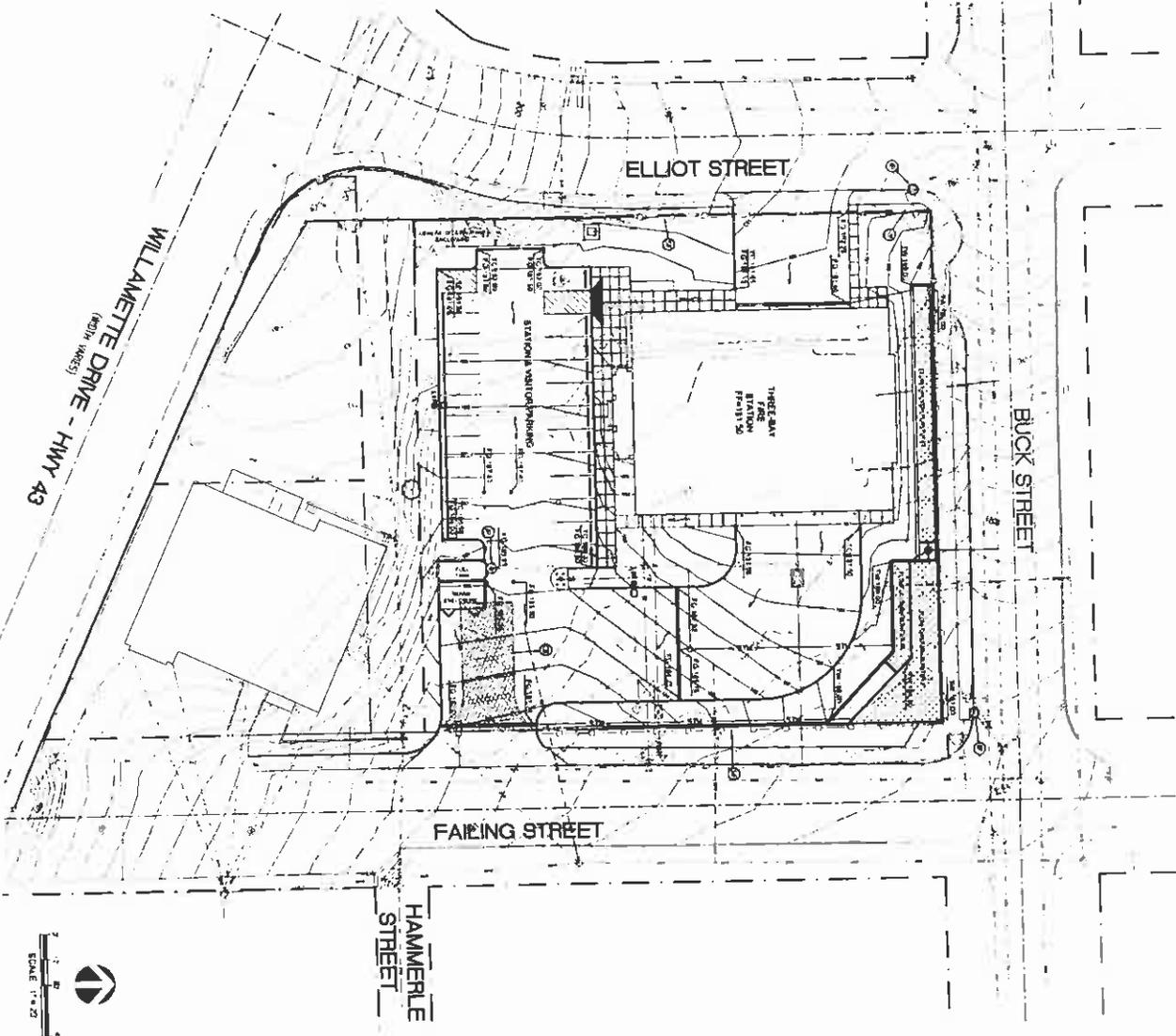
STORMWATER INSTALLATION NOTES

- 1. ALL STORMWATER SHALL BE CONVEYED TO THE STATION THROUGH THE STATION STRUCTURE.
- 2. ALL STORMWATER SHALL BE CONVEYED TO THE STATION THROUGH THE STATION STRUCTURE.
- 3. ALL STORMWATER SHALL BE CONVEYED TO THE STATION THROUGH THE STATION STRUCTURE.
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- 8. ALL STORMWATER SHALL BE CONVEYED TO THE STATION THROUGH THE STATION STRUCTURE.
- 9. ALL STORMWATER SHALL BE CONVEYED TO THE STATION THROUGH THE STATION STRUCTURE.
- 10. ALL STORMWATER SHALL BE CONVEYED TO THE STATION THROUGH THE STATION STRUCTURE.



<p>C1.1</p>	<p>TVF&R WEST LINN STATION 58 - BOLTON 6050 FAILING STREET WEST LINN, OR</p>	<p>ALL RIGHTS RESERVED NO PART OF THIS DOCUMENT SHALL BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION SYSTEM, WITHOUT PERMISSION IN WRITING FROM THE AUTHOR.</p>		<p>PRELIMINARY</p>
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A-106



EROSION CONTROL AND GRADING LEGEND

1	STORM DRAIN
2	GRAVEL CONSTRUCTION ENTRANCE
3	RAPIE PROTECTOR
4	ROCK RIPPED SLOPE
5	FLOW DIRECTOR
6	FLOW GATE
7	TOP OF CURB
8	TOP OF PAUL
9	PAVING FLOOR
10	SET POINT
11	DESIGN CONTROL
12	GRAVEL CONSTRUCTION ENTRANCE

APPLICANT/OWNER: TVF&R WEST LINN STATION 58 - BOLTON
CONTACT: CARL WILSON
 6050 FAILING STREET
 WEST LINN, OR 97141
 PHONE: 503.762.0001

DESIGNER: J. B. BROWN
 1000 N. W. 10TH AVE.
 SUITE 100
 PORTLAND, OREGON 97228
 PHONE: 503.241.0011

PROPERTY DESCRIPTION:
 1.00 AC. INDUSTRIAL ZONING, 11.50 AC. ZONING
 1.00 AC. INDUSTRIAL ZONING (CONCRETE DRIVE) 1.00 AC.

MATERIALS DESCRIPTIONS:
 1. FINE SAND (40% SANDS) / ASSIGNED UNIFORMS A-1/2/3/4
 2. CONSTRUCTION OF NEW 18" STORM PIPING LOT 11.50 AC.
 3. QUALITY FILL AND ASSOCIATED VULNER
 4. 18" STORM PIPING
 5. 18" STORM PIPING

SITE SOIL CLASSIFICATION:
 U8 - ASHES AND SLUDGES 2 TO 60.00 AC.
 U9 - ASHES AND SLUDGES 60 TO 100.00 AC.
 U10 - ASHES AND SLUDGES 100 TO 150.00 AC.

DESIGNER: J. B. BROWN

EROSION AND SEDIMENT CONTROL NOTES:

1. ALL LAND AREA SUBJECT TO EXCAVATION, DISTURBANCE, OR STORAGE OF SOIL SHALL BE PROTECTED BY EROSION CONTROL MEASURES. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF EXCAVATION, DISTURBANCE, OR STORAGE OF SOIL. EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD AND SHALL BE REMOVED OR MODIFIED AS NECESSARY.
2. THE USE OF SLOPE PROTECTORS SHALL BE LIMITED TO SLOPES OF 3:1 OR FLATTER. SLOPE PROTECTORS SHALL BE INSTALLED PRIOR TO THE START OF EXCAVATION, DISTURBANCE, OR STORAGE OF SOIL. SLOPE PROTECTORS SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD AND SHALL BE REMOVED OR MODIFIED AS NECESSARY.
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TEMPORARY & PERMANENT SEEDING NOTES:

1. SEEDING SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF EXCAVATION, DISTURBANCE, OR STORAGE OF SOIL.
2. SEEDING SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF EXCAVATION, DISTURBANCE, OR STORAGE OF SOIL.
3. SEEDING SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF EXCAVATION, DISTURBANCE, OR STORAGE OF SOIL.
4. SEEDING SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF EXCAVATION, DISTURBANCE, OR STORAGE OF SOIL.
5. SEEDING SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF EXCAVATION, DISTURBANCE, OR STORAGE OF SOIL.

BMP MATRIX FOR CONSTRUCTION PHASES

PHASE	STABILIZATION	EXCAVATION	FOUNDATION	FRAMEWORK	ROOFING	INTERIOR FINISHES	EXTERIOR FINISHES
1. SITE PREP	1	1	1	1	1	1	1
2. EXCAVATION	1	1	1	1	1	1	1
3. FOUNDATION	1	1	1	1	1	1	1
4. FRAMEWORK	1	1	1	1	1	1	1
5. ROOFING	1	1	1	1	1	1	1
6. INTERIOR FINISHES	1	1	1	1	1	1	1
7. EXTERIOR FINISHES	1	1	1	1	1	1	1

PRELIMINARY

TVF&R
 6050 FAILING STREET
 WEST LINN, OR 97141
 PHONE: 503.762.0001

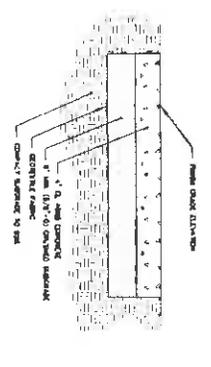
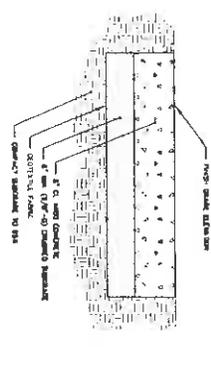
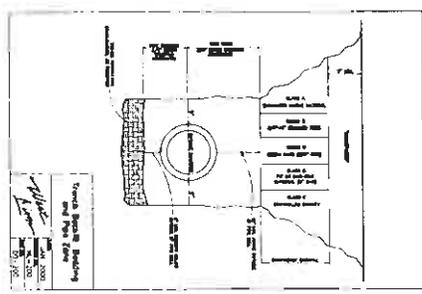
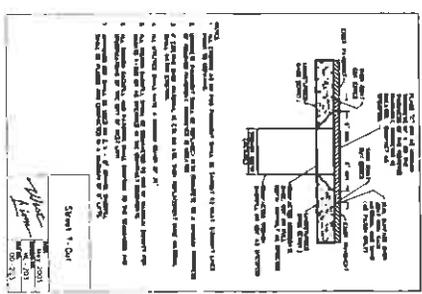
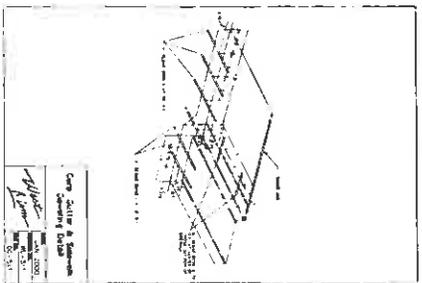
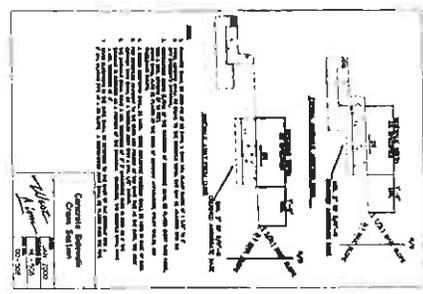
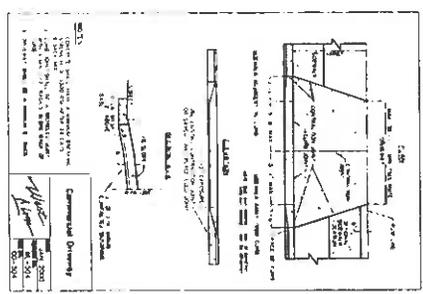
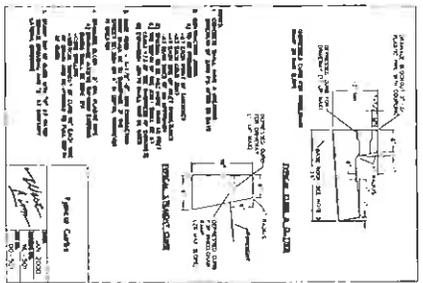
**TVF&R WEST LINN
 STATION 58 - BOLTON**
 6050 FAILING STREET | WEST LINN, OR

A-107

DESIGN DEVELOPMENT
 GRADING AND
 EROSION CONTROL
 PLAN

DATE: 10/15/2024
 SCALE: 1" = 20'

C1.2



CONCRETE WALKWAY CROSS SECTION
 1. MINIMUM SLAB THICKNESS SHALL BE 4" UNLESS OTHERWISE NOTED.
 2. REINFORCEMENT SHALL BE #4 BARS @ 18" ON CENTER.
 3. ALL REINFORCEMENT SHALL BE LAPPED WITH 1.5 TIMES THE BAR LENGTH.
 4. SLAB SHALL BE FINISHED TO A FINISH FLOOR ELEVATION.
 5. PROVIDE CURBS AT ALL PERIMETERS.
 6. PROVIDE DRAINAGE AT ALL PERIMETERS.
 7. PROVIDE PROTECTIVE COATING AT ALL PERIMETERS.
 8. PROVIDE PROTECTIVE COATING AT ALL JOINTS.
 9. PROVIDE PROTECTIVE COATING AT ALL REINFORCEMENT EXPOSURES.
 10. PROVIDE PROTECTIVE COATING AT ALL REINFORCEMENT EXPOSURES.

C2.1	TVF&R WEST LINN STATION 58 - BOLTON		PRELIMINARY
	6050 FAILING STREET WEST LINN, OR		440 7th Street, NE West Linn, OR 97148 Tel: (503) 251-1212

A-109

PRELIMINARY



PIECES
SHEETS
DETAILS

DATE: 08/20/2009
BY: [Signature]

TVF&R WEST LINN
STATION 58 - BOLTON
6050 FAILING STREET | WEST LINN, OR

DESIGN: [Signature]

WATER

DETAILS

NO. 1

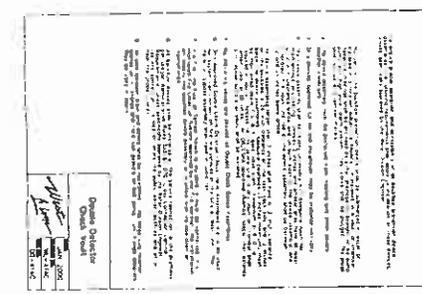
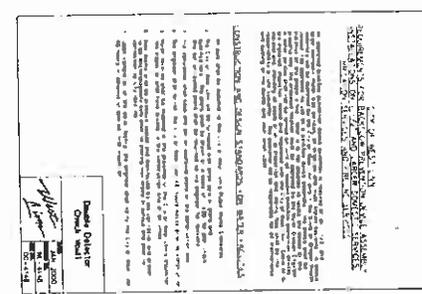
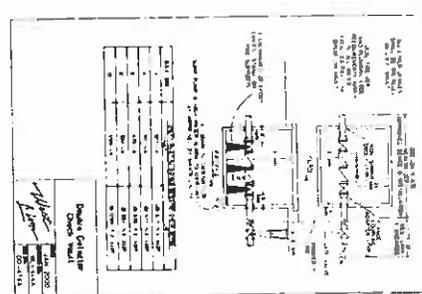
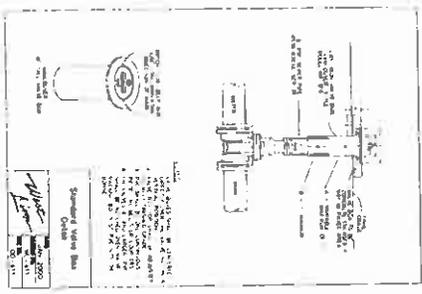
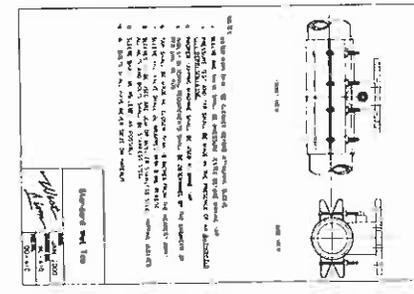
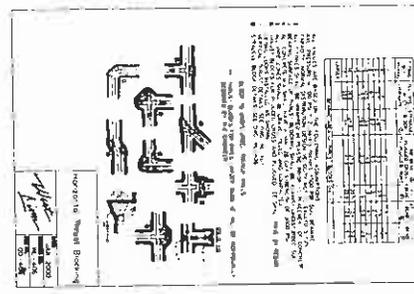
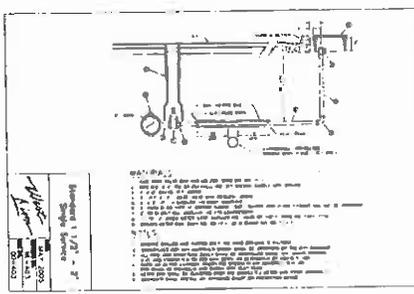
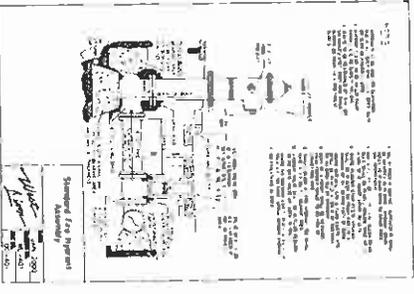
DATE: 08/20/2009

BY: [Signature]

PROJECT: TVF&R WEST LINN

NO. 1

C2.2



PRELIMINARY



PROJECT
NO. 1111
DATE 11/11/11

1111 S. COMMERCE
BOLTON, OR 97108
TEL: (503) 444-0222

TVF&R WEST LINN
STATION 58 - BOLTON
6050 FAILING STREET | WEST LINN, OR

DESIGN DEVELOPMENT

DATE/REV

NO.

BY

CHKD

DATE

REVISION

DESCRIPTION

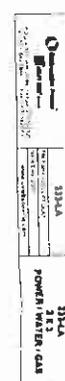
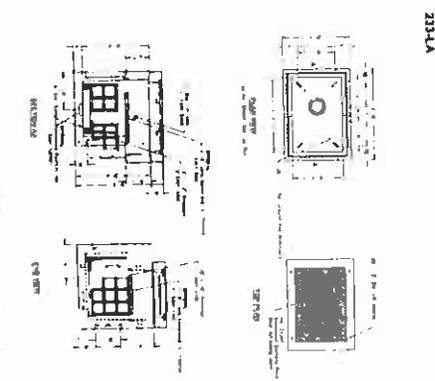
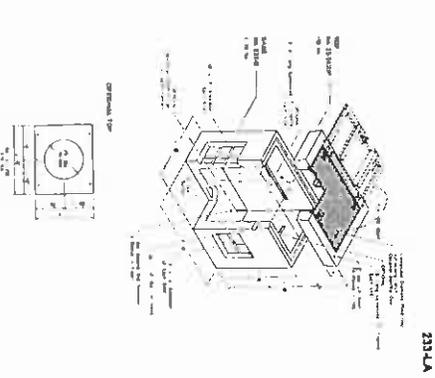
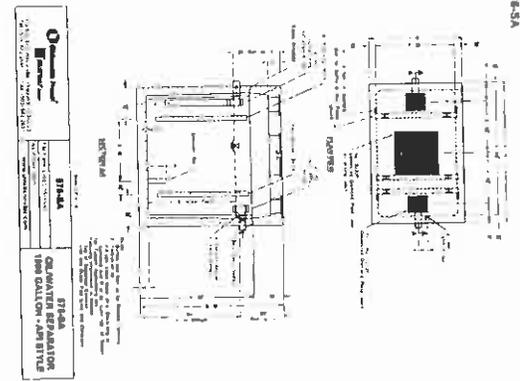
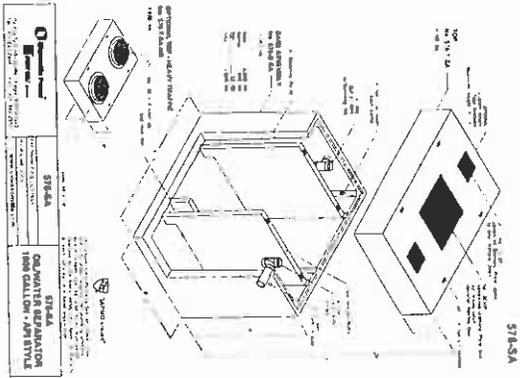
DATE

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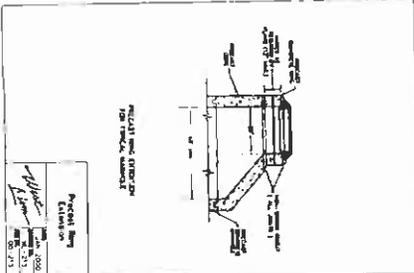
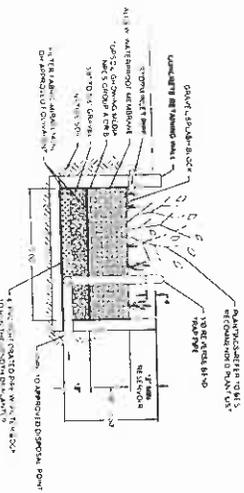
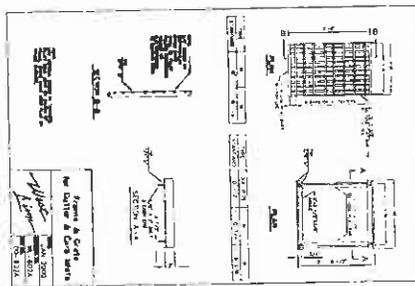
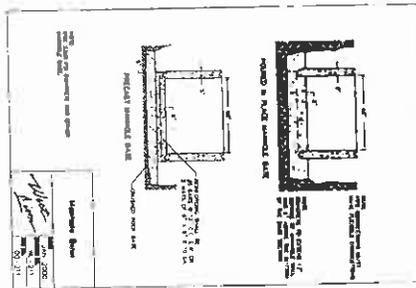
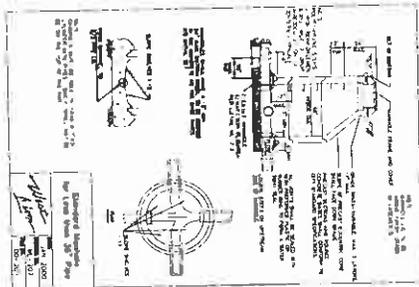
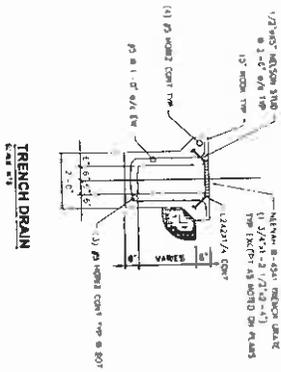
CHKD

DATE

C2.3



A-111



	PRELIMINARY
	TVF&R WEST LINN STATION 58 - BOLTON 6050 FAILING STREET WEST LINN, OR
PROJECT NO. 2020-001 DATE: 05/11/2020 DRAWN BY: [Signature] CHECKED BY: [Signature]	PROJECT NO. 2020-001 DATE: 05/11/2020 DRAWN BY: [Signature] CHECKED BY: [Signature]
C2.4	A-112

APPENDIX F

Supporting Maps and Design Material

MAP LEGEND

- Area of Interest (AOI)
 - Area of Interest (AOI)
- Soils
- Soil Map Units
- Special Point Features
 - Blowout
 - Borrow Pit
 - Clay Spot
 - Closed Depression
 - Gravel Pit
 - Gravelly Spot
 - Landfill
 - Lava Flow
 - Marsh
 - Mine or Quarry
 - Miscellaneous Water
 - Perennial Water
 - Rock Outcrop
 - Saline Spot
 - Sandy Spot
 - Severely Eroded Spot
 - Sinkhole
 - Slide or Slip
 - Sodic Spot
 - Spoil Area
 - Stony Spot
- Special Line Features
 - Gully
 - Short Steep Slope
 - Other
- Political Features
 - Municipalities
 - Cities
 - Urban Areas
- Water Features
 - Oceans
 - Streams and Canals
- Transportation
 - Rails
- Roads
 - Interstate Highways
 - US Routes
 - State Highways
 - Local Roads
 - Other Roads

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: UTM Zone 10N

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

Soil Survey Area: Clackamas County Area, Oregon
 Survey Area Data: Version 4, Dec 22, 2006

Date(s) aerial images were photographed: 7/29/2000; 7/13/2001

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

A114

Map Unit Legend

Clackamas County Area, Oregon (OR610)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1B	Aloha silt loam, 3 to 6 percent slopes	1.1	100.0%
Totals for Area of Interest (AOI)		1.1	100.0%

Water Features

Clackamas County Area, Oregon

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
1B: Aloha	C	--	January	1.5-2.0	1.7-3.3	--	--	None	--	None
			February	1.5-2.0	1.7-3.3	--	--	None	--	None
			March	1.5-2.0	1.7-3.3	--	--	None	--	None
			April	1.5-2.0	1.7-3.3	--	--	None	--	None
			December	1.5-2.0	1.7-3.3	--	--	None	--	None

A-116

APPENDIX G

Operations and Maintenance Plan

A 117

Infiltration and Flow-Through Planters

Operations & Maintenance Plan

Planters are designed to allow runoff to filter through layers of topsoil (thus capturing pollutants) and then either infiltrate into the native soils (infiltration planter) or be collected in a pipe to be discharged off-site (flow-through planter). The planter is sized to accept runoff and temporarily store the water in a reservoir on top of the soil. The flow-through planter is designed with an impervious bottom or is placed on an impervious surface. Water should drain through the planter within 3-4 hours after a storm event. All facility components and vegetation shall be inspected for proper operations and structural stability. These inspections shall occur, at a minimum, quarterly for the first 2 years from the date of installation, 2 times per year thereafter, and within 48 hours after each major storm event. The facility owner must keep a log, recording all inspection dates, observations, and maintenance activities. The following items shall be inspected and maintained as stated:

Downspout from rooftop or sheet flow from paving allows unimpeded stormwater flow to the planter.

- Debris shall be removed routinely (e.g., no less than every 6 months) and upon discovery.
- Damaged pipe shall be repaired upon discovery.

Splash Blocks prevent splashing against adjacent structures and convey water without disrupting media.

- Any deficiencies in structure such as cracking, rotting, and failure shall be repaired.

Planter Reservoir receives and detains storm water prior to infiltration. Water should drain from reservoir within 3-4 hours of storm event.

- Sources of clogging shall be identified and corrected.
- Topsoil may need to be amended with sand or replaced all together.

Filter Media consisting of sand, gravel, and topsoil shall allow stormwater to percolate uniformly through the planter. The planter shall be excavated and cleaned, and gravel or soil shall be replaced to correct low infiltration rates.

- Holes that are not consistent with the design and allow water to flow directly through the planter to the ground shall be plugged.
- Sediment accumulation shall be hand removed with minimum damage to vegetation using proper erosion control measures. Sediment shall be removed if it is more than 4 inches thick or so thick as to damage or kill vegetation.
- Litter and debris shall be removed routinely (e.g., no less than quarterly) and upon discovery.

Planter shall contain filter media and vegetation.

- Structural deficiencies in the planter including rot, cracks, and failure shall be repaired.

Overflow Pipe safely conveys flow exceeding reservoir capacity to an approved stormwater receiving system.

- Overflow pipe shall be cleared of sediment and debris when 50% of the conveyance capacity is plugged.
- Damaged pipe shall be repaired or replaced upon discovery.

Vegetation shall be healthy and dense enough to provide filtering while protecting underlying soils from erosion.

- Mulch shall be replenished at least annually.
- Vegetation, large shrubs or trees that limit access or interfere with planter operation shall be pruned or removed.
- Fallen leaves and debris from deciduous plant foliage shall be raked and removed.
- Nuisance or prohibited vegetation from the Portland Plant List shall be removed when discovered. Invasive vegetation contributing up to 25% of vegetation of all species shall be removed and replaced.
- Dead vegetation shall be removed to maintain less than 10% of area coverage or when planter function is impaired. Vegetation shall be replaced within a specific timeframe, e.g., 3 months, or immediately if required to maintain cover density and control erosion where soils are exposed.

Spill Prevention measures shall be exercised when handling substances that contaminate stormwater.

Releases of pollutants shall be corrected as soon as identified.

Training and/or written guidance information for operating and maintaining stormwater planters shall be provided to all property owners and tenants. A copy of the O&M Plan shall be provided to all property owners and tenants.

Access to the stormwater planter shall be safe and efficient. Egress and ingress routes shall be maintained to design standards. Roadways shall be maintained to accommodate size and weight of vehicles, if applicable.

- Obstacles preventing maintenance personnel and/or equipment access to the stormwater planter shall be removed.
- Gravel or ground cover shall be added if erosion occurs, e.g., due to vehicular or pedestrian traffic.

Insects & Rodents shall not be harbored in the stormwater planter.

Pest control measures shall be taken when insects/rodents are found to be present.

If sprays are considered, then a mosquito larvicide, such as Bacillus thurensensis or Altoside formulations can be applied only if absolutely necessary, and only by a licensed individual or contractor.

Holes in the ground located in and around the stormwater planter shall be filled and compacted.

Exhibit C: Pre-Application Conference Notes
Tualatin Valley Fire & Rescue Station 58

City of West Linn
PRE-APPLICATION CONFERENCE MEETING
SUMMARY NOTES
December 6, 2007

SUBJECT: Proposed fire station at 6050 Failing Street.

ATTENDEES: Applicants: Gary Wells, TVFR; Hans Ettlin and Jeff Bringenberg, Peck Smiley Ettlin Architects; Katie Prew, Angelo Planning Group
Staff: Tom Soppe (Planning Department); Shaun Rohret (Engineering Division)
Neighborhood Representatives: Sally McLarty, Alma Coston (Bolton NA)

The following is a summary of the meeting discussion provided to you from staff meeting notes. Additional information may be provided to address any "follow-up" items identified during the meeting. These comments are PRELIMINARY in nature. Please contact the Planning Department with any questions regarding approval criteria, submittal requirements, or any other planning-related items. Please note disclaimer statement below.

Project Details

The proposal is to move the TVFR fire station from the existing old one at Failing Street and Willamette Drive to a new station at mid-block of Buck Street between Failing and Elliot Streets. Hardscapes dominate the site. Driveways for ingress and egress to the station constitute a large part of the plan plus 35 visitor and 8 station employee parking spaces. The R-4.5 zone allows public safety facilities by Conditional Use Permit. Additionally, Class II Design Review is required. Because one of six homes to be demolished to make way for the project is a West Linn Historic Landmark, the applicant will be required to get a demolition permit through the Clackamas County/West Linn Historic Review Board.

At first blush the parking allocation seems high. Staff proposed one space per peak shift employee and three for visitors plus an ADA accessible space. CDC Chapter 46 deals with parking and allows the following:

- | | |
|---|--|
| 4. Religious institutions and community meeting rooms | One space for every 4 fixed seats or every 8 feet of bench length or every 28 square feet where no permanent seats or benches are maintained (in main auditorium, sanctuary, or place of worship). |
|---|--|

Assuming the plan shows 900 square feet of public meeting room requires 33 spaces. 35 spaces (including two ADA accessible spaces) does not exceed the maximum 10% over the minimum amount so it would be permitted. The 8 spaces for staff sounds reasonable.

The minimum landscaping for public facilities is 20%. Parking areas need to be buffered from the ROW by a ten foot wide landscaped strip. The narrow landscaped strip at the south edge of the site may have to be widened to ten feet or a Class II Variance must be applied for. Another Class II variance would be needed for the exit driveway from the fire station. The driveway must be 35 feet from the intersection of the Elliot and Buck Streets.

Demolition Permit

The house on site at 1850 Buck Street is a designated West Linn Historic Landmark Home known as the R. L. Greaves House. Built in 1900, it displays Queen Anne vernacular architecture with wide shiplap corner boards, a multi-gable roof, paneled and glazed doors with rope detail around panels, and elongated 1/1 double-hung windows with architrave molding. There are only 29 such designated buildings in West Linn.

Demolition or moving of this building requires complying with the standards of CDC 26.080 and review by the Clackamas County/West Linn Historic Review Board. Moving is preferred. The demolition standards are as follows:

26.080 DEMOLITION

- A. **Purpose.** The intent of this sub-section is to protect Historic Landmarks from destructive acts and to provide the citizens of the City time to review the significance of an Historic Landmark, and to pursue options to preserve such building(s) if historic preservation is deemed in the best interest of the community.
- B. **Review required.** No building identified as an Historic Landmark, shall be intentionally destroyed or demolished unless such action is approved by the Historic Review Board. Application for a permit to demolish or otherwise destroy such building shall be made to the Department of Planning and Development, when applicable.
- C. **Public hearing review.** The Historic Review Board shall hold a public hearing, under the provisions and procedures in Chapter 98 to review the request to demolish or destroy an Historic Landmark,

and shall make written findings supporting its decision to approve or deny the request.

D. **Criteria and findings.** In determining the appropriateness of the request to destroy or demolish an Historic Landmark, the Historic Review Board shall consider the following:

1. All plans, drawings, and photographs submitted by the applicant.
2. Information presented at the public hearing concerning the proposed work.
3. The West Linn Comprehensive Plan.
4. The purposes of this Ordinance as set forth in Section 26.010.
5. The criteria used in the original designation of the Historic Landmark in which the property under consideration is situated.
6. The historical and architectural style, the general design, arrangement, materials of the structure in question, or its appurtenant fixtures; the relationship of such features to the other buildings within the district; and the position of the building in relation to public rights-of-way and to other buildings and structures in the area.
7. The effects of the proposed work upon the protection, enhancement, perpetuation and use of the district which cause it to possess a special character or special historical or aesthetic interest or value.
8. Whether denial of the permit will involve substantial hardship to the applicant, and whether approval of the request would act to the substantial detriment of the public welfare, and would be contrary to the intent and purposes of this chapter.

A-122

9. When applicable, the findings of the Building Official in determining the status of the subject building as a "dangerous building" under the most recent Uniform Code for the Abatement of Dangerous Buildings, and the feasibility of correcting the deficiencies to meet the requirements of the Building Official rather than demolishing the building.
- E. **Approval of demolition request/appeals.** The Historic Review Board may approve the demolition request in consideration of the provisions under Section 26.090(D), above. The action of the Historic Review Board shall be transmitted to the applicant in writing within 10 days of the decision on the request, and shall be final on the 15th day from the date of mailing of the notice of final decision pursuant to Section 99.150, unless a notice of appeal is filed by any aggrieved party, pursuant to Section 99.250.
- F. **Denial/appeals.** The Historic Review Board may deny the request for demolition or destruction of an Historic Landmark if it determines that in the interest of preserving historic values, the building should not be demolished or destroyed. Written findings supporting the denial of the request shall be transmitted to the applicant on the request. The action of the Historic Review Board denying the request may be appealed to the City Council within 30 days of the date of the letter and written findings denying the request. This extended appeal period is provided to allow time for evaluation of the alternatives to destruction or demolition of the subject building by the applicant and/or the Historic Review Board.
- G. **Stay of demolition.** If the subject of the demolition request is under a Notice and Order of the Building Official, as provided under Chapter 4 of the Uniform Code for the Abatement of Dangerous Buildings, and the application is denied by the Historic

Review Board, the written findings supporting the action to deny the request shall be transmitted to the Building Official along with a request that the enforcement of the Notice and Order for the Building Official be stayed during the pendency of an appeal, or for a period of not more than 60 days from the date of the letter and findings supporting the denial. During this stay of demolition period, the following actions may be taken:

1. The Building Official may require the owner or other party responsible for the subject building to take appropriate actions, other than demolition, to protect the public from hazardous conditions associated with the building.
2. The Historic Review Board may research programs or projects underway which could result in public or private acquisition of the subject building and site, and assess the potential for the success of these programs or projects:
 - a. If the Board determines that there is reasonable grounds to believe that such program or project may be successful, it may extend the suspension period up to 30 additional days per extension, not to exceed more than a total of 120 days from the date of the letter and finding denying the request.
 - b. If the Board determines that all such programs or projects are unlikely to be successful, and the applicant has not withdrawn his application for a demolition permit or taken appropriate alternative action to correct the hazards associated with the subject building as provided in the Notice and Order of the Building Official, then, at the end of the stay of demolition period, the Building Official may issue such a permit, subject to all other applicable codes and ordinances.

3. Action of the Historic Review Board, in suspending issuance of the permit for demolition, may be appealed by the applicant to the City Council by filing a notice of appeal as provided in Section 99.250.

Possible outcomes of the hearing may include denial, approval, approval with condition that the house be re-located, etc. No historic landmark demolition permit has been applied for in West Linn in the last 20 years so there is no local precedent for this proposal. Another possibility is to apply for a street vacation and move the entire plan south so it contains part of the current site plan as well as the location of the existing fire station; this could preserve the Greaves House as it is at the north end of the site. Such a redesign would also involve applying for a street vacation due to the right-of-way between the site of the existing station and the site to the north where the station is currently proposed.

The West Linn Historic Resources Advisory Board has voted to have the next SHPO grant study in part the Buck Street area as a potential conservation/historic district, in which case the other early 1900's houses scheduled for demolition by this plan may also be deemed valuable to the integrity of the potential district, should the study occur before demolition is applied for and granted.

Trees

The applicant shall provide an inventory of trees, which will be reviewed by the City Arborist. (*Please note: No trees at this site may be removed without permit or land use application approval.*) Contact the City Arborist, Mike Perkins, at (503) 557-4700, to conduct a site visit and identify significant trees, which may need to be protected through tree easements. No site clearing, grubbing, or grading is permitted without approval. Up to 20 percent of the site may be set aside for protection of significant trees.

Culverted Creek

Bolton Creek is culverted through this area, and a survey will reveal whether the culvert is under the site or under the ROW south of the site. If under the site, it will need to be daylighted, and a Water Resources Area permit acquired. A Class II Variance (Chapter 75) would also have to be acquired if it is daylighted as there would be no way to reasonably meet the setbacks that a daylighted stream would require under Chapter 32.

Engineering Comments

Streets:

- Applicant should provide improved/direct access for fire trucks from facility to Hwy 43.
- Frontage ROWs sufficient at 60 feet

- Commercial zoning normally requires 8-12 foot sidewalks with planter inlets.
- Street lighting plan required along property frontages to ensure development's improvements provide street lighting to City standards.
- Street SDC based upon Trip Generation Manual

Storm:

- Treatment only will be required. Alternative designs from City of Portland Stormwater Manual (as allowed by City codes) to mitigate storm drainage impact; must be approved by City Engineer prior to construction.
- Stormwater SDC

Water:

- Water pressure zones: Bolton zone.
- Water service available in Failing Street frontage via 6-inch ductile iron waterline.
- Water SDC \$\$

Sanitary Sewer:

- System capacity sufficient to serve development.
- Service potentially available along in Failing Street.
- SS SDC \$\$

Other Utilities:

- Underground overhead utilities along property frontage (unless high voltage). All new utilities shall be undergrounded.

All public improvements must be constructed in accordance with City of West Linn Public Works Design and Construction Standards.

A noise study is required per CDC Chapter 55. Fences along the lot perimeter may be needed to mitigate glare/noise.

Process

A neighborhood meeting is required per CDC Section 99.038. Contact Sally McLarty, Bolton Neighborhood President, at 657-4883. Follow the instructions of that Code section explicitly.

Permits to be obtained are

- Conditional Use Permit per CDC Chapter 60
- Class II Design Review per CDC Chapter 55
- Historic landmark Demolition Permit per CDC Chapter 26
- Class II Variance per CDC Chapter 75 if needed

The submittal requirements and approval criteria of the applicable Community Development Code Chapters must be addressed on a point-by-point basis. Waivers of specific submittal requirements can be granted but the applicant must first state to the

A-126

Planning Director the grounds for the waiver. No waivers of the approval criteria are allowed. Deposit fees are based on valuation of the project. Please refer to Development Permit charge list to determine amount owed.

Prepare the application and submit to the Planning Department with deposit fees. The City has 30 days to determine if the application is complete or not (most applications are incomplete). The applicant has 180 days to make it complete, although usually it is complete within three months of the original submittal. Once complete, the City has 120 days to exhaust all local review and appeals.

Staff prepares public notice and schedules the hearing. The first hearing is usually four weeks from the date the application is deemed complete. The following timeline would apply:

- 1) Historic Review Board would decide the demolition permit application.
- 2) Planning Commission would decide the CUP, Class II Design Review and any Class II Variances for amount/width of landscaping, driveway locations etc.

The decisions may be appealed to the City Council. If appealed, the City Council hearing is 6-8 weeks from the Planning Commission hearing date. Subsequent appeals go to LUBA.

Once approved, the applicant has three years to commence substantial construction before approval lapses and is void.

Typical land use applications can take 8-10 months from beginning to end. Street and utility improvements typically increase the amount of time required.

DISCLAIMER: This summary discussion covers issues identified to date. It does not imply that these are the only issues. The burden of proof is on the applicant to demonstrate that all approval criteria have been met. These notes do not constitute an endorsement of the proposed application. Staff responses are based on limited material presented at this pre-application meeting. New issues, requirements, etc. could emerge as the application is developed.

preapp-sumry-BUCK ST.FIRESTATION-12-06-07

A-127

**Exhibit D: Arborist Report
Tualatin Valley Fire & Rescue Station 58**

A-128



Engineering +
Environmental

August 4, 2008

Planning and Building
City of West Linn
22500 Salamo Road #1000
West Linn, Oregon 97068

Re: Arborist Report and Tree Protection Plan for TVF&R Station No. 58
West Linn, Oregon
PBS Project No.: 70606.000 Task 0002

Please find enclosed the Arborist Report and Tree Protection Plan for Tualatin Fire and Rescue Station No. 58 in West Linn, Oregon. Please contact me if you have any questions, concerns, or need for additional information.

Respectfully,

Morgan E. Holen
Certified Arborist (ISA PN-6145A)
Forest Biologist

Bandon | Bend | Boise | Eugene | Portland | Seattle | Tri-Cities | Vancouver

4412 SW Corbett Avenue, Portland, OR 97239

503.248.1939 Main

503.248.0223 Fax

888.248.1939 Toll-Free

www.pbsenv.com

A-129



Engineering +
Environmental

Arborist Report and Tree Protection Plan

Tualatin Valley Fire & Rescue Station No. 58
1860 SW Willamette Falls Drive
West Linn, Oregon

Prepared for:
Tualatin Valley Fire & Rescue
20665 SW Blanton Street
Aloha, Oregon 97007

August 2008
Project No. 70606.000

4412 SW Corbett Avenue, Portland, OR 97239
503.248.1939 Main
503.248.0223 Fax
888.248.1939 Toll-Free
www.pbsenv.com

A-130

TABLE OF CONTENTS

1.0	Introduction	1
2.0	Site Description and Discussion.....	1
3.0	Tree Protection and Preservation Requirements	2
3.1	Before Construction.....	2
4.0	Summary.....	3

1.0 INTRODUCTION

This Arborist Report and Tree Protection Plan, prepared in compliance with the *West Linn Tree Technical Manual*, is for the Tualatin Valley Fire & Rescue Station No. 58 property located at the intersection of Willamette Drive (Highway 43) and Failing Street in West Linn, Oregon.

In January 2008, surveyors from AKS Engineering & Forestry located all trees existing on the site. Certified Arborist Morgan Holen (ISA PN-6145A) with PBS Engineering and Environmental, visited the site on July 30, 2008 to conduct a tree inventory. Morgan verified the locations of each tree per the tree survey, and collected data for each tree, including species, diameter and overall condition (structure, health, etc.). Morgan met Mike Perkins (City Arborist) on August 1, 2008 for a site visit to determine significant trees. Table 1 provides inventory data for all surveyed trees on site. The tree protection and preservation plan drawing is provided as Sheet TP-1 in the complete set of drawings. Given the collected data and correspondence with City personnel, this report provides accurate and detailed information and professional opinion regarding the condition, preservation, protection and maintenance of trees on site.

2.0 SITE DESCRIPTION AND DISCUSSION

Eleven individual trees were surveyed and inventoried across the site (Table 1). The trees are in variable condition, but primarily of low quality or marginal condition.

Table 1. Tree Inventory for Tualatin Valley Fire & Rescue Station No. 58.

Point #	Species	DBH*	C-Rad [^]	Condition	Treatment Prescription
10261	Douglas-fir	11	14	No major defects; marginal tree; previously pruned to raise crown	Non-significant; remove
10404	hawthorn	10	12	Topped with new growth; undesirable species	Non-significant; remove
10405	hawthorn	6	12	Topped with new growth; undesirable species	Non-significant; remove
10406	hawthorn	6	12	Topped with new growth; undesirable species	Non-significant; remove
10407	hawthorn	*20	12	Topped with new growth; undesirable species	Non-significant; remove
10807	willow	♦48	14	Poor structure; base covered in ivy – difficult to assess	Non-significant; remove
10815	Norway maple	22	23	No major defects; few dead and broken branches	Significant; remove
10816	Norway maple	18	16	No major defects; few dead and broken branches	Significant; remove
10870	magnolia	*24	14	Stem decay	Non-significant; remove
10936	Scotch pine	21	16	Forked top; marginal tree	Non-significant; remove
11051	Douglas-fir	14	16	No major defects; marginal tree; previously pruned to raise crown	Non-significant; remove

*Diameter at standard height, measured 4.5-feet above ground level (measured in *inches*)

[^]Crown radius, the distance from the center of the tree trunk to the vertical projection of the edge of the tree crown (distance to dripline, measured in *feet*)

* Sum of three codominant stems measuring 10, 6, and 4 inches DBH

♦Sum of four codominant stems each measuring 12 inches DBH

*Sum of two codominant stems each measuring 12 inches DBH

Of the 11 inventoried trees, four trees (10261, 10404, 10405, and 10406) are non-significant because they do not meet the minimum threshold diameter for regulated trees. These trees will be removed for construction.

Five trees (10407, 10807, 10870, 10936, 11051) are significant based on size, but are non-significant because they are in poor condition or are an undesirable species. Four of these five trees must be removed for construction, and Tree 10807 located outside of the proposed limits of disturbance is not recommended for retention with development.

The remaining two trees are 22- and 18-inch diameter Norway maples in mostly good condition. These trees (10815 and 10816) are significant, but will most likely be removed to allow for the construction of a parking area. This report assumes removal of all trees on site. However, the two Norway maples may be preserved if an alternative parking area can be designed to allow for no less than 10-feet of protection from the center of each tree to the edge of pavement. If such a design is feasible, the project arborist should be contacted to provide specific recommendations for tree protection before, during, and following construction.

The City requires a mitigation program of no net loss of trees by the replanting of suitable trees on site or in an approved location, or payment in lieu. The two significant trees currently planned for removal because of construction total 40 diameter inches. Therefore, 40 diameter inches will be needed for mitigation. This is the equivalent of planting 20 trees of 2-inch caliper.

3.0 TREE PROTECTION AND PRESERVATION REQUIREMENTS

The tree protection and preservation requirements provided herein are minimal since no trees are planned for retention during construction. If it becomes feasible to preserve significant trees currently scheduled for removal, the trees to be retained shall be re-evaluated by the project arborist in order to assess possible changes to tree condition. If the trees are determined to be suitable for retention with development, retained trees shall be protected in accordance with the *West Linn Tree Technical Manual Specifications for Tree Protection During Construction*, at a minimum.

3.1 Before Construction

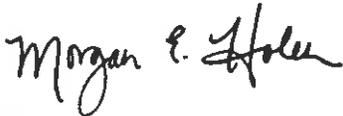
1. **Designation of Cut Trees.** Trees to be removed shall be clearly marked with construction flagging, tree-marking paint, or other methods approved in advanced by the project arborist. Trees shall be carefully removed so as to avoid either above or below ground damage to those trees to be preserved. Roots of stumps that are adjacent to retained trees shall be carefully severed prior to stump extraction.
2. **Preconstruction Conference.** The project arborist shall be on site to discuss methods of tree removal prior to any construction. Prior to commencement of construction, the project arborist will verify in writing to the City Arborist that tree removal occurred satisfactorily.

4.0 SUMMARY

Eleven trees are located on site and planned for removal for poor condition or construction, including nine non-significant trees, and two significant trees requiring a total of 40 diameter inches of mitigation. The two significant trees could potentially be retained if an alternative parking area can be designed to allow for no less than 10-feet of protection from the center of each tree to the edge of pavement. If these trees can be preserved, the project arborist should be contacted to provide specific recommendations for tree protection in compliance with the *West Linn Tree Technical Manual Specifications for Tree Protection During Construction*.

PBS Engineering + Environmental is pleased to provide this Arborist Report and Tree Protection Plan for the Tualatin Valley Fire & Rescue Station No. 58 project. If we can be of further assistance, please call us at 503.248.1939. We look forward to working with you again on future projects.

Sincerely,
PBS Engineering + Environmental



Morgan E. Holen
Certified Arborist, ISA PN-6145A
Forest Biologist, PBS Engineering + Environmental

PRELIMINARY



PECE
SMILEY
EITTLIN
ARCHITECTS

401 FIVE CREEKS AVE
SUITE 200
PORTLAND, OR 97208-1879
TEL: 503.288.8177
FAX: 503.288.8177

6050 FAILING STREET | WEST LINN, OR
STATION 58 - BOLTON
TV&R WEST LINN

SCHEMATIC DESIGN

TREE PROTECTION
PLAN

DATE: 11/11/2011
SCALE: AS SHOWN
PROJECT: TV&R WEST LINN

TP-1

SITE TREE DATA

TREE #	Species	DBH*
10804	DOUGLAS FIR	11
10805	HAWTHORN	10
10806	HAWTHORN	6
10807	HAWTHORN	4
10808	HAWTHORN	7.0
10809	WILLOW	4.4
10810	NORWAY MAPLE	22
10811	NORWAY MAPLE	18
10812	MAGNOLIA	8.4
10813	SCOTCH PINE	21
10814	DOUGLAS FIR	14

*Measurements taken from highest measured diameter of trunk above irregularities
 **Measurements taken from lowest measured diameter of trunk
 ***Sum of tree calipers taken at maximum diameter of trunk

TREE PROTECTION AND PRESERVATION REQUIREMENTS

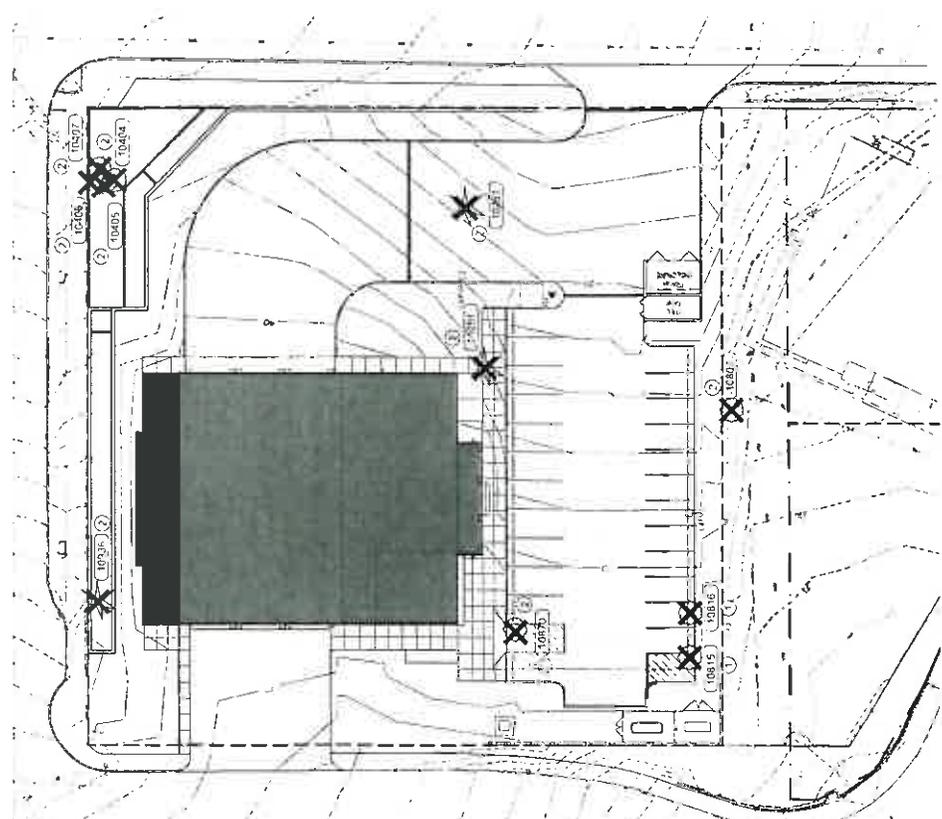
The tree protection and preservation requirements are as follows:
 1. All trees to be preserved shall be marked with a tree protection sign. The sign shall be placed in the ground adjacent to the tree trunk at a height of 4 feet above the ground. The sign shall be made of durable material and shall be clearly visible from the street. The sign shall be replaced if it becomes illegible or damaged.
 2. All trees to be preserved shall be protected by a tree protection zone. The tree protection zone shall be established by a tree protection fence. The fence shall be made of durable material and shall be clearly visible from the street. The fence shall be replaced if it becomes illegible or damaged.
 3. All trees to be preserved shall be protected by a tree protection canopy. The tree protection canopy shall be made of durable material and shall be clearly visible from the street. The canopy shall be replaced if it becomes illegible or damaged.

SYMBOL LEGEND

- Tree to be preserved
- Tree to be removed
- Tree to be protected
- Tree to be marked

PLAN NOTES

1. All trees to be preserved shall be marked with a tree protection sign.
2. All trees to be preserved shall be protected by a tree protection zone.



TREE PROTECTION SITE PLAN

SCALE: AS SHOWN

A-135

Exhibit E: Neighborhood Meeting Documentation
Tualatin Valley Fire & Rescue Station 58

A-136

April 29, 2008

Re: Proposed Development at Fire Station No. 58 – 6050 Failing Street

To Interested Parties:

I am writing this letter on behalf of Tualatin Valley Fire & Rescue, who is seeking approval to remove the existing fire station at 6050 Failing Street and construct a new larger fire station on the neighboring lots to south. The new station will help to enhance the District's service capabilities in West Linn. The new proposed fire station will be approximately 12,295 square feet to house the firefighters on duty and three fire trucks. The site for the fire station is on five separate lots which are in all zoned Single Family Residential Detached and Attached/Duplex R-4.5.

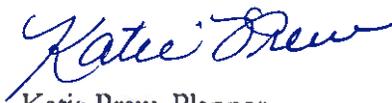
Prior to preparing specific engineering and site plans and submitting an application to the City of West Linn for the necessary review and approval, we would like to discuss the proposal in more detail with members of the Bolton Neighborhood Association and surrounding property owners and residents. Therefore, you are cordially invited to join us at the monthly Bolton Neighborhood Association meeting on:

**May 19, 2008
Bolton Primary School
5933 Holmes Street
7:00 PM**

Please note that this will be an informal meeting on preliminary development plans with the developer and representative and is not intended to take the place of a public hearing before the Planning Commission or Board of Design Review. You will have an opportunity to present testimony to these bodies when an application is submitted to the City for review. There will be signs posted at the School pointing you to the classroom where the meeting will be held.

I look forward to seeing you at the meeting and discussing the proposed project. If you have any questions, feel free to call me at 503.224.8225.

Sincerely,



Katie Prew, Planner
Angelo Planning Group

Enclosures: Location Map
Proposed Site Plan

A-137

**TUALATIN VALLEY FIRE AND RESCUE
STATION 58**

April 2008

(2) 21E25AD01500
0.23 acres

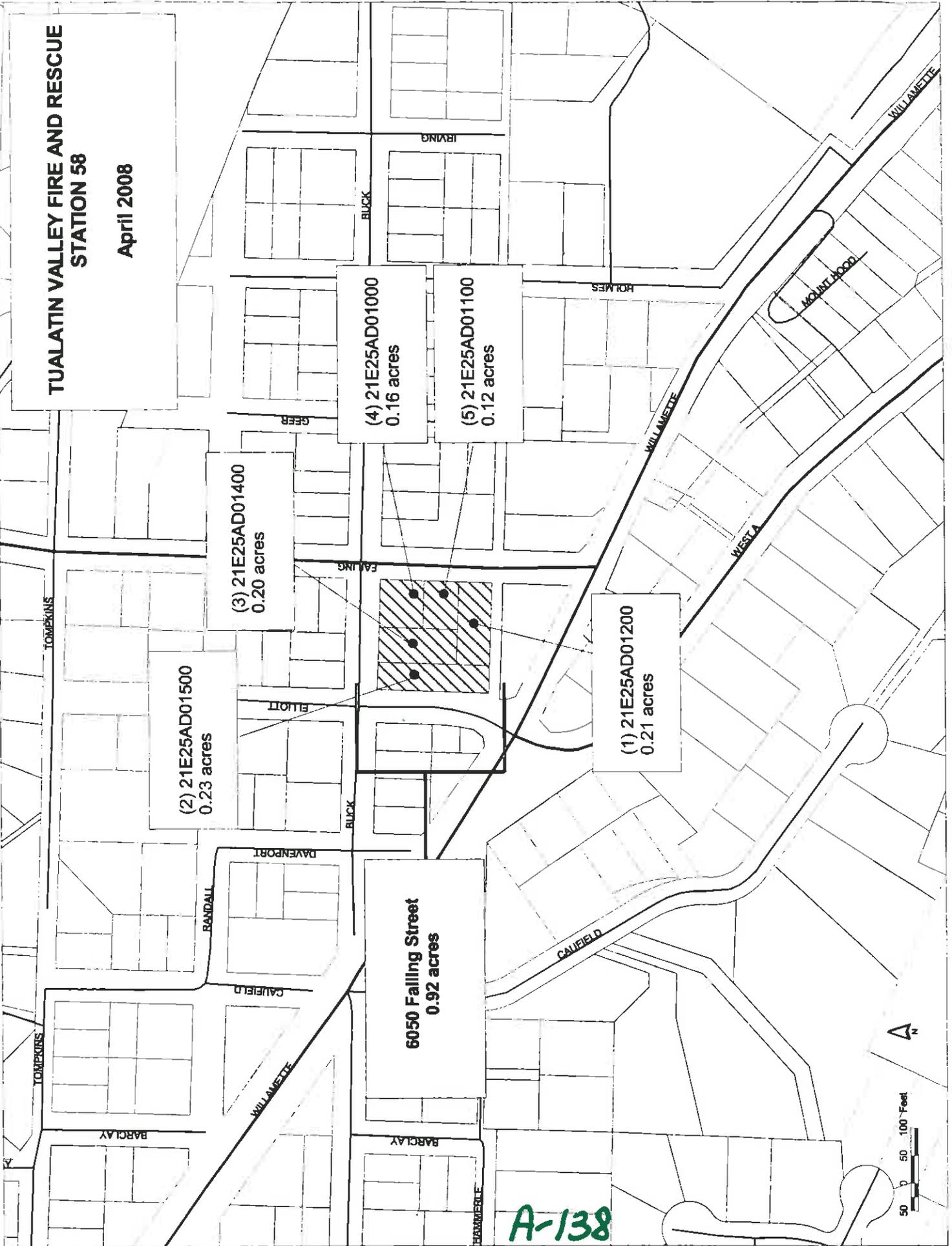
(3) 21E25AD01400
0.20 acres

(4) 21E25AD01000
0.16 acres

(5) 21E25AD01100
0.12 acres

(1) 21E25AD01200
0.21 acres

**6050 Falling Street
0.92 acres**



A-138

Responding to Today's (and Tomorrow's) Needs



Built in the 1950s, the Bolton Fire Station is located on the east side of West Linn near Highway 43. In addition to responding to fire, medical and rescue incidents, firefighters respond to a significant number of motor vehicle accidents on Interstate 205.

As part of a bond measure approved by voters in 2006 to upgrade and improve the safety and operations of our fire stations, Tualatin Valley Fire & Rescue plans to build a new Bolton fire station. Though several steps, including property purchases, have already been undertaken towards that goal, construction is expected to begin in the Spring of 2009.

Why rebuild the fire station?

While the current location in the Bolton neighborhood works well from an emergency response perspective, concerns about soil stability, building layout, size of apparatus bays, dated mechanical and electrical systems, and highway access make the current facility deficient. In addition, a lack of compliance with ADA requirements and current seismic standards for public safety response buildings makes the station difficult for public access and a liability in the event of an earthquake.

What will the new station look like?

The 11,800 square-foot, three-bay station will be two stories tall and will meet all design standards to ensure that it reflects the same character of nearby buildings. A variety of environmental features will also be incorporated to reduce utility consumption.



Will the construction process impact emergency response?

No. Firefighters will remain in the existing fire station until the new station has been constructed. Once the new station is complete and firefighters have moved all of their equipment and apparatus into their new quarters, the previous building will be demolished

What is the cost to rebuild the station?

The estimated cost for the Bolton Fire Station is \$3.5 million. As part of the voter-approved bond, the Fire District will issue \$77.5-million in bonds to replace aging fire engines and pay for capital improvements throughout TVF&R's 220 square-mile service area. A portion of the proceeds from the sale of the bonds will pay for both the Bolton and Willamette fire stations. The owner of a typical home (assessed value of \$200,000 in 2007) is currently paying about \$14 a year, and an average of \$29 a year over the 20-year life of the bonds.

Are there more projects under way?

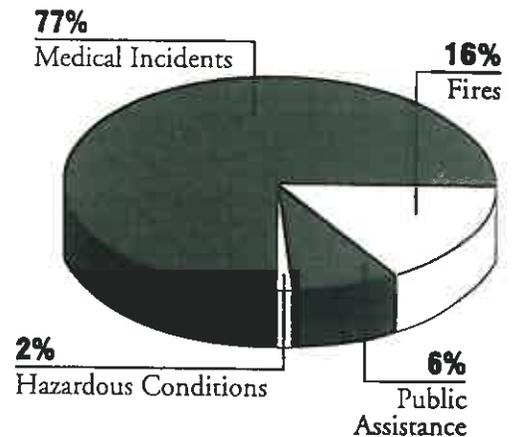
Future capital improvements funded by the bonds include:

- Correcting operational and safety deficiencies at 13 fire stations (including the Bolton and Willamette sites);
- Purchasing 23 engines (including West Linn apparatus);
- Building two additional fire stations;
- Relocating the District Command and Business Operations Center; and
- Purchasing land for future fire stations.

Tualatin Valley Fire & Rescue serves approximately 435,000 citizens in nine cities and portions of unincorporated Clackamas, Multnomah, and Washington counties. We respond to more than 31,000 requests for service each year. Since medical emergencies constitute the largest percentage of our calls, each of our firefighters is certified as a paramedic or emergency medical technician (EMT).

Additionally, we handle emergencies requiring specialized skills and equipment including: hazardous materials, water rescue, and technical rescue (such as confined-spaces, vehicle entrapment, building collapses, etc.).

Annual Incident Summary



For more information on the rebuilding of the Bolton Fire Station and other planned capital improvement projects, please don't hesitate to contact us.

COMMAND AND BUSINESS OPERATIONS CENTER

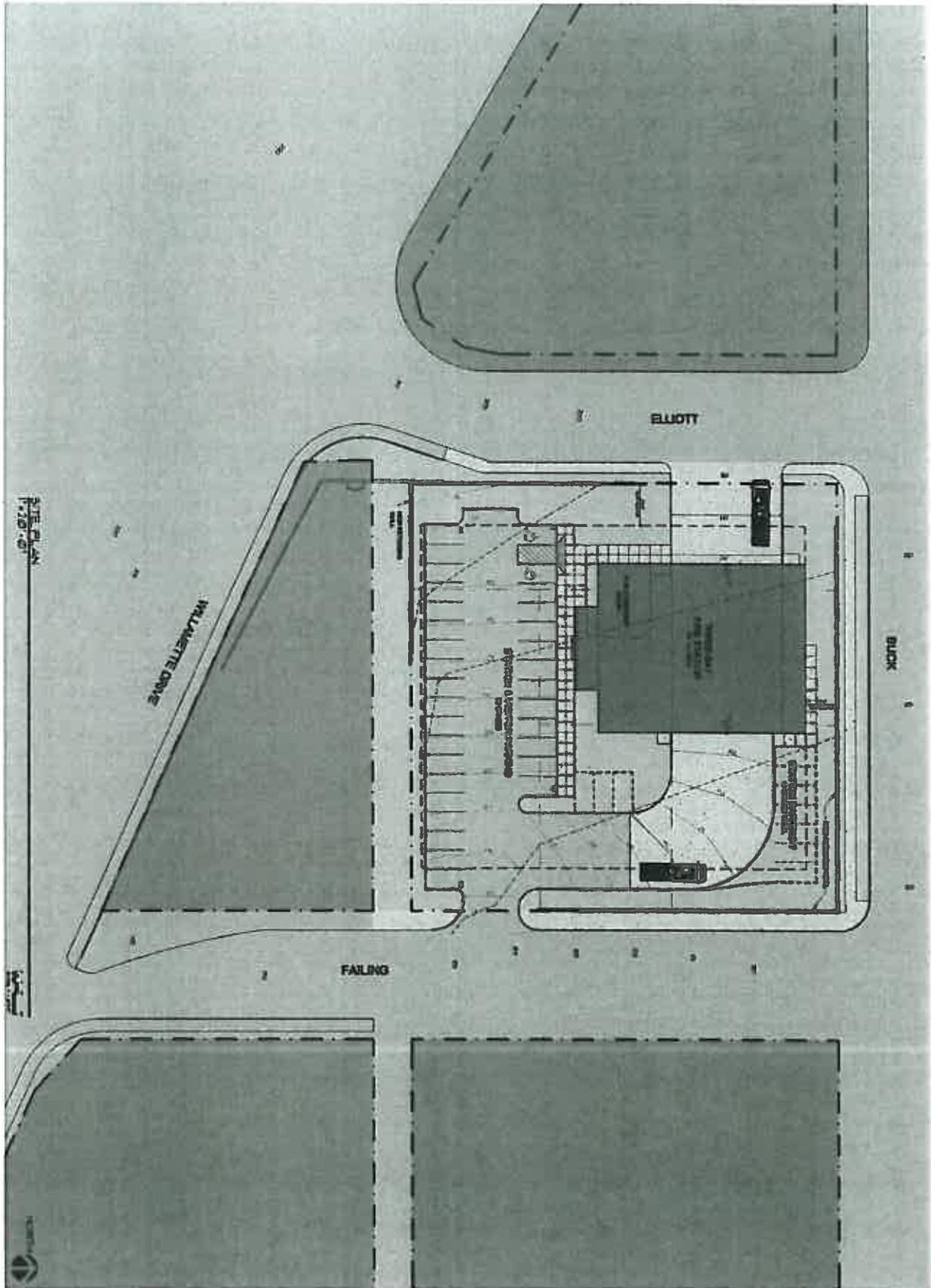
20665 SW Blanton Street, Aloha, Oregon 97007

503.649.8577

www.tvfr.com



A-140



SITE PLAN
11/10/01

WILLAMETTE DRIVE

ELLIOTT

BLOCK

FAILING



<p>SCHEMATIC</p>	<p>PROJECT: STATION 58</p> <p>DATE: 11/10/01</p> <p>BY: [Signature]</p> <p>SCALE: AS SHOWN</p>	<p>STATION 58 6050 FAILING STREET WEST LINN, OR</p> <p>A-141</p>	<p>DATE OF CONSTRUCTION: [Blank]</p> <p>DATE OF PERMITTING: [Blank]</p> <p>DATE OF RECORDING: [Blank]</p>	
	<p>PRELIMINARY SITE PLAN</p>			



Additional Background on Contact with Bolton Neighborhood Association

As required by Chapter 99, For Decision-making: Quasi-Judicial, of the City of West Linn's Community Development Code, prior to the submittal of an application for a conditional use permit, the applicant must contact and discuss the proposed development with any affected neighborhood. Additionally, a certified letter must be sent to the chair of the affected neighborhood association 20 days prior to the regularly scheduled neighborhood meeting where the applicant plans to present the project which briefly describes the proposed land use action and inviting any interested parties to a meeting. Station 58, which does require a conditional use permit, is within the Bolton Neighborhood Association (BNA) and Tualatin Valley Fire & Rescue (TVF&R) has met with the association on multiple occasions beginning at least a year prior to the May 19th neighborhood meeting, including the neighborhood meetings on February 18th, March 17th, and April 21st, to discuss the new fire station.

On April 16, 2008, Sally McLarty, chair of the BNA was contacted by Cassandra Ulven of TVF&R and she agreed that TVF&R could attend the May 19, 2008 neighborhood association meeting and that space on the agenda would be reserved for them to present the latest Station 58 designs. In addition, in accordance with Code section 99.038.2 and 3, a notice of the meeting was sent via certified mail on April 29, 2008 to Ms. McLarty, 20 days prior to the May 19th meeting. However, that letter was returned to the sender due to an incomplete address.

Upon receipt of the returned letter, Katie Prew of Angelo Planning Group contacted Ms. McLarty on May 6, 2008 and received the correct address and mailed a duplicate letter that same day. A confirmation that the letter was delivered was received by Angelo Planning Group (see the following page). During the May 6th phone call Ms. McLarty stated that she knew that TVF&R would be making a presentation at the regularly schedule neighborhood meeting on May 19, 2008 and that they were confirmed as part of the night's agenda.

TVF&R attended the Bolton Neighborhood Association meeting on May 19, 2008 and presented the architectural and site design for Station 58. There were approximately 37 people in attendance and the meeting minutes and sign-in sheet have been provided.

A-142

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A-143

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- Attach this card to the back of the mailpiece, or on the front if space permits.

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 SALLY MCLARTY, PRESIDENT
 BOLTON NEIGH. ASSOC.
 19575 RIVER ROAD, #6H
 GLADSTONE OR 97027

2. Article Number
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 PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

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 Sally J. McLarty Agent
 B. Received by (Printed Name) C. Date of Delivery
 5-8-08

D. Is delivery address different from item 17 Yes
 If YES, enter delivery address below: No

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- Certified Mail
 - Express Mail
 - Registered
 - Return Receipt for Merchandise
 - Insured Mail
 - C.O.D.
4. Restricted Delivery? (Extra Fee) Yes

Angelo
planning group

921 SW Washington Street
Suite 468
Portland, Oregon 97205

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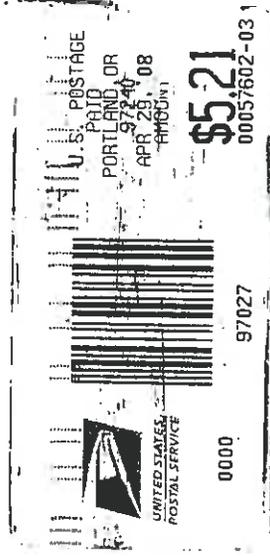
7005 3110 0000 4525 4063

A144

**RETURN RECEIPT
REQUESTED**

JK

Sally McLarty, President
Bolton Neighborhood Association
19575 River Road, # 6
Gladstone, OR 97027



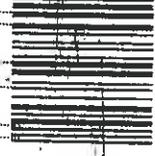
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9720502022



AFFIDAVIT OF MAILING NOTICE

I, KATHERINE FREW, being first duly sworn; say that I am/represent the party intended to submit an application to the City of West Linn for a proposed CONDITIONAL USE # DESIGN REVIEW affecting land located at 6050 FAILING ST, and that pursuant to the City of West Linn, Section 99.038.5.b, did on the 29TH day of APRIL, 2008, personally mail notice to the officers of the neighborhood association and all affected property owners within 500 feet of the proposed development site.

Sign and Date in the presence of a Notary Public.

Signature: Katherine Frew

Dated this 29th day of April, 2008.

Subscribed and sworn to before me this 29th day of April, 2008.

Karen Siegel
Notary Public for the State of Oregon

My Commission expires: June 5, 2012



A-145



21E25AA06200
Mark Panichello
27205 SW Petes Mountain Rd
West Linn, OR 97068

21E25AA06300
William Essig
1596 Buck St
West Linn, OR 97068

21E25AA06400
Angela Trost
6270 Davenport St
West Linn, OR 97068

21E25AA06500
Jeanne Brookshire
2095 Buck St
West Linn, OR 97068

21E25AA06600
Randall & Lorinda Gettel
2041 Buck St
West Linn, OR 97068

21E25AA06700
Darlene Corthell
6242 Davenport St
West Linn, OR 97068

21E25AA06800
Erica Orme
1993 Buck St
West Linn, OR 97068

21E25AA06900
Shelton & Rebecca Bertrand
1941 Buck St
West Linn, OR 97068

21E25AA07000
Gladys Edens-smith
6288 Elliott St
West Linn, OR 97068

21E25AA07100
Jennifer Snow
6275 Davenport St
West Linn, OR 97068

21E25AA07200
Peter Irving
6285 Davenport St
West Linn, OR 97068

21E25AA07300
Eric & Theresa Tait
1980 Tompkins St
West Linn, OR 97068

21E25AA07301
Daniel Koller
3150 NE 82nd Ave
Portland, OR 97220

21E25AA07302
Ronald & O Rook & Tina
1950 Tompkins St
West Linn, OR 97068

21E25AA07400
Glenn & Mary Crosse
1151 Cherry Cir
Lake Oswego, OR 97034

21E25AA07500
Richard & Victoria Demuro
6340 Failing St
West Linn, OR 97068

21E25AA07501
Robert & Gail Cordell
6380 Failing St
West Linn, OR 97068

21E25AA07600
Douglas Burke
16829 Greenbriar Rd
Lake Oswego, OR 97034

21E25AA07601
Dianne Himel
6320 Failing St
West Linn, OR 97068

21E25AA07700
Nancy Ross
6254 Failing St
West Linn, OR 97068

21E25AA07800
Veronica Swehla
6291 Elliott St
West Linn, OR 97068

21E25AA07801
Steven Goodrich
6255 Elliott St
West Linn, OR 97068

21E25AA07900
William Essig
1596 Buck St
West Linn, OR 97068

21E25AA07901
Debi Kingston
1895 Buck St
West Linn, OR 97068

21E25AA08000
Mary Raethke
6210 Failing St
West Linn, OR 97068

21E25AA08001
Jolene Marcotte
6204 Failing St
West Linn, OR 97068

21E25AA08100
Jim & Marta Williams
1797 Buck St
West Linn, OR 97068

21E25AA08200
Ujahn & Tara Davisson
1715 Buck St
West Linn, OR 97068

21E25AA08300
James & Judith Morton
6280 Geer St
West Linn, OR 97068

21E25AA08400
Jesse Hudson
1741 Buck st
West Linn, OR 97068

A 146



21E25AA08500
Michael Co-e Delano
6547 Beam St
West Linn, OR 97068

21E25AA08600
Janet Conn
6255 Failing St
West Linn, OR 97068

21E25AA08700
Rodney & Jessica Ganey
6317 Failing St
West Linn, OR 97068

21E25AA08701
Uwe & Patricia Voigt
6381 Failing St
West Linn, OR 97068

21E25AA08702
Jeffery Rigotti
6343 Failing St
West Linn, OR 97068

21E25AA08800
Union Pacific Railroad Co
1400 Douglas St #1640
Omaha, NE 68179

21E25AA08900
Christopher & Heather Rich
6280 Holmes St
West Linn, OR 97068

21E25AA09000
Kent Nelson
6282 Holmes St
West Linn, OR 97068

21E25AA09100
Corey & Cameron Scofield Armstrong
6285 Geer St
West Linn, OR 97068

21E25AA09200
Dlj Mortgage Capital Inc
3815 SW Temple
Salt Lake City, UT 84115

21E25AA09300
Marco & Stefani Corona
1691 Buck St
West Linn, OR 97068

21E25AA09400
Katherine Brooks
1651 Buck St
West Linn, OR 97068

21E25AA09500
James & Ilene Herget
1615 Buck St
West Linn, OR 97068

21E25AD00100
Carol Davisson
Po Box 1116
Canby, OR 97013

21E25AD00101
Gisela Davisson
1715 Buck St
West Linn, OR 97068

21E25AD00200
J Thomas & Kaaren Pixton
6116 Holmes St
West Linn, OR 97068

21E25AD00300
Llc Hmf
21420 Willamette Dr
West Linn, OR 97068

21E25AD00301
Llc Hmf
21420 Willamette Dr
West Linn, OR 97068

21E25AD00400
Samantha Ford Hansen
1670 Buck St
West Linn, OR 97068

21E25AD00500
Gisela Davisson
737 Ash St
Lake Oswego, OR 97034

21E25AD00600
Peter & Lisa Lacy
1712 Buck St
West Linn, OR 97068

21E25AD00601
Larry Talbert
3421 SW Turner Rd
West Linn, OR 97068

21E25AD00700
Thurston & Brittney Diane Macom
21420 Willamette Dr
West Linn, OR 97068

21E25AD00701
Paul Davisson
Po Box 1116
Canby, OR 97013

21E25AD00800
Richard Jr & Marie Jennings
1764 Buck St
West Linn, OR 97068

21E25AD00900
Susan Brady
1792 Buck St
West Linn, OR 97068

21E25AD01000
City Of West Linn
22500 S Salamo Rd #600
West Linn, OR 97068

21E25AD01100
Valley Fire & Rescue Tualatin
20665 SW Blanton St
Aloha, OR 97007

21E25AD01200
Tualatin Valley Fire & Rescue
20665 SW Blanton St
Aloha, OR 97007

21E25AD01400
City Of West Linn
22500 S Salamo Rd #600
West Linn, OR 97068

A-147



21E25AD01500
City Of West Linn
22500 S Salamo Rd #600
West Linn, OR 97068

21E25AD01600
Sheri Lichtenstein
1912 Buck St
West Linn, OR 97068

21E25AD01700
Molly Macom
21420 Willamette Dr
West Linn, OR 97068

21E25AD01800
Molly Macom
21420 Willamette Dr
West Linn, OR 97068

21E25AD02000
Julie; Hutchin
1942 Buck St
West Linn, OR 97068

21E25AD02100
Glen & Jacquelyn Wenzinger
1954 Buck St
West Linn, OR 97068

21E25AD02300
Molly Thurston Macom
21420 Willamette Dr
West Linn, OR 97068

21E25AD02400
Molly Thurston Macom
21420 Willamette Dr
West Linn, OR 97068

21E25AD02500
Miguel & Lidia Salinas
20765 Willamette Dr
West Linn, OR 97068

21E25AD02700
City Of West Linn
22500 S Salamo Rd #600
West Linn, OR 97068

21E25AD02800
John Moyer
1000 Marina Village Pkwy #110
Alameda, CA 94501

21E25AD02801
John Moyer
1000 Marina Village Pkwy #110
Alameda, CA 94501

21E25AD02900
Janice Wainscott
6043 Geer St
West Linn, OR 97068

21E25AD02902
Jason & Jennifer Vanmourik
6021 Geer St
West Linn, OR 97068

21E25AD03000
Dell & Lois Mae Farleigh
6090 Holmes St
West Linn, OR 97068

21E25AD03100
Lynn Michael & Deborah Ann Allmeyer
6070 Holmes St
West Linn, OR 97068

21E25AD03200
Anne Josey
6024 Holmes St
West Linn, OR 97068

21E25AD03300
Benyamen & Linda Ramzi Toma
6020 Holmes St
West Linn, OR 97068

21E25AD03400
Marilyn Dunaway
1207 Keystone Loop NE
Keizer, OR 97303

21E25AD03700
Fredrick Co-trste Sanford
5983 W A St
West Linn, OR 97068

21E25AD03800
Robert & Marilyn Hicks
4500 N Paseo De Los Rancheros
Tucson, AZ 85745

21E25AD03801
Robert & Marilyn Hicks
4500 N Paseo De Los Rancheros
Tucson, AZ 85745

21E25AD04000
City Of West Linn
22500 S Salamo Rd #600
West Linn, OR 97068

21E25AD04001
City Of West Linn
22500 S Salamo Rd #600
West Linn, OR 97068

21E25AD04100
Steven Blakley
340 Ridgeway Rd
Lake Oswego, OR 97034

21E25AD04102
Steven Blakley
340 Ridgeway Rd
Lake Oswego, OR 97034

21E25AD04600
Darlene Toole
3350 N Maple St
Canby, OR 97013

21E25AD04700
Darlene Toole
3350 N Maple St
Canby, OR 97013

21E25AD04800
Johnny Panichello
3000 Stonebridge Way
Lake Oswego, OR 97034

21E25AD04900
Brian & Molly Harding
5855 Bird Song Way
Gladstone, OR 97027

A-148



21E25AD05000
Michael Edwards
6055 W A St
West Linn, OR 97068

21E25AD05100
City Of West Linn
22500 S Salamo Rd #600
West Linn, OR 97068

21E25AD05200
Lawrence & Elaine Hermens
5989 W A St
West Linn, OR 97068

21E25AD05300
Fredrick Co-trste Sanford
5983 W A St
West Linn, OR 97068

21E25AD06000
Joseph Koziol
5990 W A St
West Linn, OR 97068

21E25AD06100
John & Wendy Cull
6042 W A St
West Linn, OR 97068

21E25AD06200
Glenn & Cam Dang Fung & Phan
6056 W A St
West Linn, OR 97068

21E25AD06300
Todd Borgmeier
6090 W A St
West Linn, OR 97068

21E25AD06400
Ted Henry Drayton
6094 W A St
West Linn, OR 97068

21E25AD06500
Caufield Park Apartments Llc
Po Box 859
Molalla, OR 97038

21E25AD06501
Caufield Park Apartments Llc
Po Box 859
Molalla, OR 97038

21E25AD06502
Caufield Park Apartments Llc
Po Box 859
Molalla, OR 97038

21E25AD06503
Caufield Park Apartments Llc
Po Box 859
Molalla, OR 97038

21E25AD06504
Caufield Park Apartments Llc
Po Box 859
Molalla, OR 97038

21E25AD06600
Mathew & Anna Mclarty
19575 River Rd #64
Gladstone, OR 97027

21E25AD06700
John Olson Jr & Anne Dodge-Schwanz
6114 W A St
West Linn, OR 97068

21E25AD06800
Sally Jo Mclarty
19575 River Rd #64
Gladstone, OR 97027

21E25AD06900
City Of West Linn
22500 S Salamo Rd
West Linn, OR 97068

21E25AD07000
Sergio Molina
PO Box 859
Molalla, OR 97038

21E25AD07001
Janice Rothenhoefer
6101 Caufield St
West Linn, OR 97068

21E25AD08202
Steven Blakley
340 Ridgeway Rd
Lake Oswego, OR 97034

21E25AD08206
Fred Sanford
5983 W A St
West Linn, OR 97068

21E25AD09600
Dale Pearce
6061 Caufield St
West Linn, OR 97068

21E25AD09700
Thomas & K Rev Flannery & Velma
6081 Caufield St
West Linn, OR 97068

21E25AD10000
Molly Macom
21420 Willamette Dr
West Linn, OR 97068

A-149

MEETING NOTICE

NEW TVF&R FIRE STATION NO. 58

MEETING MONDAY 5/19/08

A-150

**7:00 PM AT BOLTON PRIMARY SCHOOL
5933 HOLMES STREET**

**CONTACT KATIE PREW
503-224-8225**

AFFIDAVIT OF POSTING NOTICE

I, KATHERINE PREW, being first duly sworn; say that I am/represent the party intended to submit an application to the City of West Linn for a proposed CONDITIONAL USE & DESIGN REVIEW affecting land located at 6050 FALLING ST, and that pursuant to the City of West Linn, Section 99.038.5.c, did on the 29TH day of APRIL, 2008, personally post public notice(s).

Sign and Date in the presence of a Notary Public.

Signature: Katherine Prew

Dated this 29th day of April, 2008.

Subscribed and sworn to before me this 29th day of April, 2008.

Karen Siegel
Notary Public for the State of Oregon



My Commission expires: June 5, 2012

A-151

BOLTON NEIGHBORHOOD ASSOCIATION May 19, 2008 Meeting Minutes

The meeting was called to order soon after 7 PM in the Bolton Primary School Cafetorium.

Shawn Andreas stopped by to introduce himself and let us know he is running for City Council.

Katy Frew of Angelo Planning Group spoke in regard to the process leading up to design review of Tualatin Valley Fire and Rescue's plans for the new Bolton Fire Station. During the design review process citizens may comment to the planning department in writing, e-mail, phone or stopping by the office. Those who received written notice of this presentation will receive notice when the plans go to the Planning Commission.

Cassandra Ulven gave us the background of the current Bolton Fire Station and history of the project and introduced the architect who discussed the plans for the approximately 12,000 square foot building. There will be 21 parking spaces on site, a 600 sq. ft. Community Room (free of charge to the citizens). The style will be Victorian Italianate to reflect the areas early structures.

Concerns: Traffic control at Elliot and Buck when Fire Trucks are making a call

Unfriendly presence on Buck Street side of the building.

What about houses on Buck Street

Construction time will be 8-10 months and will not involve extending Right-of-ways. Curbs and sidewalks will be installed. A January '09 start is hoped for. Gables on the Buck Street side were suggested as they are on the other 3 sides, to soften the appearance. Surface water will be treated on site. The building will be built to LEED Gold standards.

The minutes of the April Meeting were approved as printed.

Roger Shepherd spoke to us about our Bolton brochure. Money is available from the Tourism fund. It is thought we should print a small number to begin with, seek comments and corrections and then print in volume. Permission from the city to use one side of the "kiosk" in Hammerle Park as a Trail Head will be requested. Similar kiosks at Maddax Woods, McLean House and Territorial road might be considered. (June 7 Trails Group Walk on National Trails Day at 9 AM at Hammerle Park)

A-152

Gordon Bryck distributed some of our new Neighborhood Association meeting signs and encouraged others who have a good spot to let him know.

BNA will vote in June on whether we need a July meeting.(we can not use the regular meeting place in the Summer). Help was solicited for our Hammerle Park Concert-Ice Cream Sundaes project.

Ken Worcester was not able to be present for discussion on the planning of West Bridge Park so we discussed some ideas and designated some stakeholders: McLean House, Territorial Rd. Residents, Maddax Woods, River, Holly and Grove St. residents. Written comments and ideas from these entities will be submitted to Ken.

It was pointed out that the City of Lake Oswego water plan includes items that will affect West Linn. A motion was passed unanimously to send a letter to City Council that West Linn not relinquish any of our Water Equity ownership.

Roger Shepherd invited us to stop by McLean House to see the new water feature they have recently installed.

Submitted by Sally McLarty, Pres.

42 people signed in

NEXT MEETING June 16, 2008

Bolton Neighborhood Meeting

May 19, 2008

(42)

Name	Address	Tele. No.
Betty Osburn	5910 West A St.	656-4046
Sally McHarty	19575 River Rd. #64	722-2137
KATIE PREW ANGELO PLANNING GRP	921 EW WASHINGTON ST #468 PORTLAND OR 97205	224-8225
HANS BIRLIN PSE ARCHITECTS	4412 SW CORBETT PORT. OR	248 9170
Hart Johnson Family	1524 Holly St	709-1866
Gerda Edwards	5749 Terrace Drive	656-4658
Ted Ehrenborg	" " "	" " "
Nancy Ross	6254 Failing St.	503-655-5320
Ellen Williams	5714 Terrace Dr	650-0720
Angela R. Duber	5767 Terrace Dr.	656-2491
Shawn Andreas	1907 Sunbuck Tr.	957-0176
DEA KATLYNN POLICH	1828 BUCK ST	728-6447
ALAN LEWIS	2700 RAINIER PC.	655-1448
Darleen Deasee	2145 Webb St WL	722-7417
Cliff Johnson	6605 Lowry Dr	655-2143
GRAY WAYO	1503 Holly 97060	789-9782
Alison Benisk	5577 River St	656-9874
City + Gordon Bryce	5888 West A St	722-3868
Miguel + Lidia Sahias	20765 Willamette Dr.	657-8290
Jamie Eisele	6500 Failing	656-3122
SUE SMITH	6288 Elliott	503-74383
PAROL SPENCER	5734 WEST A ST	503-459-9476
Kathryn Ernst	6540 Lowry Drive	503-657-8
Kesley Kullerall	1825 Webb St.	503-557-058
Kathy Delano	1765 Buck St	503 657-6751
Susan Brady	1792 Buck	503-656-878
Hannah Berkowitz	1519 Holly St.	503-655-0689
TAM 35	5714 Holly	503 655-0777

A-154

Glady Hein		
ROGER SHAW	5845 West A St WL	557-8905
Sue Thelma	2301 Tulare St	
Sandy Streeter	1310 Heater Ct. W.L.	503-655-6071
Roy Cochran	5891 West A	503-656-3636
Molly & Kip Macom	21420 Willamette Dr	656-0322
Alma Costom	P.O. Box 387	656-3546
Constance Wacker	5796 Robert Moore Ct. W.L.	970-970-689
Peter Sutton	1912 Buck St West Linn, Or	970-08 655-2432

Exhibit F: Noise Study
Tualatin Valley Fire & Rescue Station 58

A-156

August 6, 2008

Peck Smiley Ettlin
4412 SW Corbett
Portland, OR 97201

Attention: Mr. Hans Ettlin

Re: Tualatin Valley Fire and Rescue, West Linn
Fire Station #58 - Bolton, Pre-Development Noise Study

Project 08072

Dear Mr. Ettlin:

This letter summarizes review of noise sources and potential noise impacts at nearby noise sensitive properties relative to the building equipment proposed for the referenced project.

1. Site Description and Operation

The project site is located in West Linn, Oregon in the north two-third of the block bounded by Highway 43 to the south, Elliott Street to the west, Buck Street to the north, and Failing Street to the east. The project will be a new fire station with drive through bays entering from Failing Street and leaving to Elliott Street. The property is currently occupied by single family residences. The surrounding properties to the west, north and east are also residential.

2. Noise Descriptors

- 2.1 Human response to sound is a function of the magnitude of the sound, the frequency spectrum of the sound (the pitch of the sound), the duration of the sound and the time when it occurs. It is difficult to describe a sound with a single number because of all these parameters that influence human response.
- 2.2 The A-weighting network of a sound measuring instrument adjusts the indicated overall sound pressure level in much the same manner that the human ear responds to sound at different frequencies. Thus the A-weighted sound level (read as "dBA") becomes a single number that defines the level of a sound with some indication as to the human response to that sound.

- 2.3 The A-weighted sound level alone is not sufficient to describe the noise environment at any given location because environmental sound levels tend to constantly change with time. Therefore, an environmental noise descriptor needs to address the length of time sound is present as well as the level of the sound. One environmental noise descriptor used widely throughout the United States is the "Statistical Sound Level". The statistical sound level is generally given in terms of the level exceeded a percentage of time during a specified time period" and read "L##". For example, the L50 would be that level exceeded 50% of the time during a specified time period. The specified time period is usually one hour in most regulations and standards.
- 2.4 Subjectively, an increase in sound level of 1 dBA is not perceptible by most people and would be judged insignificant. An increase of 3 dBA would be perceptible by most people, and an increase of 10 dBA would generally be judged as twice as loud.

3. Criteria

- 3.1 Potential noise levels were evaluated in this analysis using the City of West Linn noise ordinance. For issues not addressed in the West Linn code, guidelines are taken from the Oregon State Department of Environmental Quality (DEQ), Chapter 340 of the Oregon Administrative Rules.
- 3.2 The City of West Linn provides noise level limits at a noise sensitive property (including residential) for daytime and nighttime hours. The noise standards are defined in terms of L01, L10 and L50 levels. Relative to the current project, the L50 criteria was used for comparison in that it applies to levels that are present 50% or more of a given hour. The proposed equipment is expected to operate continuously for 50% of an hour or more.
- 3.3 The West Linn noise limits within 25 feet of a noise sensitive property for in a given hour are an L50 of 55 dBA, L10 of 60 dBA, and an L1 of 75 dBA in daytime hours (7 AM to 7 PM), and an L50 of 50 dBA, and L10 of 55 dBA, and an L1 of 60 dBA at night (7 PM to 7 AM). In addition, new sources on previously unused industrial or commercial sites must not produce noise levels that will raise the existing ambient noise conditions by more than 5 dBA. Noise sensitive property includes real property normally used for sleeping, or normally used as schools, churches, hospitals, or public libraries.

4. Noise Measurements

- 4.1 The Oregon DEQ regulations defines a "previously unused industrial or commercial site" as "property that has not been used by any industrial or commercial noise source during the 20 years immediately preceding commencement of construction." Since the current site is occupied only by residences, it seems that it would be defined as a previously

unused industrial or commercial site. Therefore, the 5 dBA limit to the increase in existing, or, ambient noise levels would apply.

- 4.2 To determine the applicability West Linn noise limits for a new source to the project, existing condition noise levels were measured at 10:00 PM on July 30, and at 2 AM and 6 AM on July 31. Since the proposed use of the site will be 24 hours a day, operation of the project equipment during the quieter overnight hours would be the worst case application of the limits.
- 4.3 Noise levels were measured using a Quest Model 2900 Sound Level Meter which meets American National Standards Institute (ANSI) requirements for a Type 2A sound level meter. The microphone was approximately 5' above the ground. The meter had a built-in microprocessor and memory capability that allowed calculations and storage of a variety of statistical data. Of importance to this project were the L50, L10 and L1 levels. The sound level meter was field calibrated prior to each measurement. Weather conditions for both measurements include dry streets and winds less than 5 mph.
- 4.4 Measurements were made at two locations for each measurement period. Location 1 was at the north side of Buck Street adjacent to the residence at 6204 Failing Street. This location is representative of the current noise conditions north of the project across Buck Street. Location 2 was at the north side of Buck Street adjacent to the residence at 1941 Buck Street. This location is representative of the current noise conditions northwest of the project across Elliott Street and Buck Street, west of Elliott Street. Measurements were made for 15 minute sampling period.

TABLE 1
EXISTING NOISE LEVELS
(in dBA re 20 micro-Pascals pressure)

	Location	L50	L10
10 PM			
	1	42	47
	2	46	53
2 AM			
	1	43	49
	2	42	46
6 AM			
	1	50	52
	2	51	54

- 4.5 In that both the sum of existing L50 and L10 noise levels, plus the allowable increase of 5 dBA would exceed the maximum nighttime levels for the 6 AM to 7 AM time period for both sites and the 10 PM period for Location 2, the allowable increase for a new source on a previously unused site does not apply at those time periods and locations.
- 4.6 The 5 dBA allowable increases to existing levels do apply to the 10 PM and 2 AM time periods. The overall noise levels expected to be applied to the project include the following:

TABLE 2
ALLOWABLE NOISE LEVEL LIMITS
(in dBA re 20 micro-Pascals pressure)

Time	L50	L10
Location 1 (residences north of the site, on the north side of Buck Street)		
6 AM to 7 AM	50	55
7 AM to 8 PM	55	60
8 PM to 10 PM	52	56
10 PM to midnight	47	52
midnight to 3 AM	48	54
3 AM to 6 AM	49	54
Location 2 (residences east of the site, on the east side of Failing Street and west of the site on the west side of Elliott Street)		
6 AM to 7 AM	50	55
7 AM to 8 PM	55	60
8 PM to 10 PM	53	58
10 PM to midnight	50	55
midnight to 3 AM	47	51
3 AM to 6 AM	49	54

5. Proposed Tenant Operation Noise Levels

- 5.1 Based on a previous and similar project, Tualatin Valley Fire and Rescue Station 50, designed by the same architect as station 58, primary noise sources of the project that will have potential impact on nearby residences include 1) the exterior heat pump unit, 2) the exhaust fan for the apparatus bay, and 3) an 80 kilowatt emergency generator.

5.2. Heat Pump Unit

The heat pump unit used for the Station 50 project was a Mitsubishi model PURY-P204TGMU. Since the heat pump would typically operate for more than 30 minutes in a given hour, the L50 noise level limits would apply. Assuming the use of this same unit, and based on the sound data for this unit provided by the manufacturer, if the unit is located on the ground adjacent to the station building, it should be the following minimum distances away from the indicated residences to achieve the maximum noise levels in Table 3 below.

TABLE 3
Heat Pump Minimum Location Distances
from Residential Dwellings

Noise Level	Time Period	Distance
50 dBA	6 AM to 7 AM	24'-0"
55 dBA	7 AM to 8 PM	17'-0"
52 dBA	8 PM to 10 PM	24'-0"
50 dBA	10 PM to midnight	30'-0"
47 dBA	midnight to 3 AM	17'-0" (night mode)
49 dBA	3 AM to 6 AM	14'-0" (night mode)

5.3 Apparatus Bay Exhaust Fan

The exhaust fan for the apparatus bay used for Station 50 was a model SBE-2L24-7 manufactured by Greenheck. Since the exhaust fan would typically operate for more than 30 minutes in a given hour, the L50 noise level limits would apply. Assuming use of this same unit, and based on the sound data for this unit provided by the manufacturer, the unit should be located at the following minimum distances away from the indicated residences to achieve the maximum noise levels in Table 4 below.

TABLE 4
Apparatus Bay Exhaust Fan Minimum Location Distances
from Residential Dwellings

Noise Level	Time Period	Distance
50 dBA	6 AM to 7 AM	42'-0"
55 dBA	7 AM to 8 PM	24'-0"
52 dBA	8 PM to 10 PM	34'-0"
50 dBA	10 PM to midnight	42'-0"
47 dBA	midnight to 3 AM	60'-0"
49 dBA	3 AM to 6 AM	47'-0"

5.4 Emergency Generator

The emergency generator is planned to be a "housed" unit. Normally, operation of the generator during actual emergency power conditions is exempt from noise level limits. However, typically, the "exercise" of the unit for normal maintenance should meet the applicable noise limits at that time. Therefore, the generator should be "exercised" only between the hours of 7 AM and 5 PM. If it is operated for a period of 30 minutes or more in the test hour, a unit should be chosen that will achieve a maximum 55 dBA noise level at a distance equal to that between the generator and the nearest residence. If the unit is operated for less than 30 minutes in the test hour, the L10 limit applies, and a unit can be chosen that will achieve a maximum 60 dBA noise level at a distance equal to that between the generator and the nearest residence.

- 5.4 The recommendations above were for the individual equipment sources. For concurrent operation, the minimum distances would increase slightly.

6. Conclusions

Based on the above analysis, and assuming that the recommendations above are followed, equipment noise levels are expected to meet the City of West Linn noise limits. Change of proposed equipment, location, or building design subsequent to this review may result in noise levels different from the above analysis, and may require further noise control treatment.

If you have any questions, please contact us.

Sincerely,
ALTERMATT ASSOCIATES, INC.



Russell N. Altermatt, P.E.
Principal Engineer

RA:sa

Exhibit G: Lighting Cut Sheets
Tualatin Valley Fire & Rescue Station 58

A-163

COOPER LIGHTING - LUMARK®

DESCRIPTION

The Lumark Tribute is the most versatile, functionally designed, universally adaptable outdoor luminaire available. The Tribute brings outstanding performance to walkways, parking lots, roadways, loading docks, building areas, and any security lighting application. U.L. listed and CSA certified for wet locations. IP55 Rating.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction

Rugged one-piece die-cast aluminum housing and door frame. One-piece silicone gasket protects the optical chamber from performance degrading contaminants. One (1) stainless spring latch and two (2) stainless hinges allow toolless opening and removal of door frame.

Reflector

Choice of nine (9) high efficiency optical distributions, including five (5) segmented optical systems constructed of premium 95% reflective anodized aluminum sheet. Optical segments are rigidly mounted inside a thick gauge aluminum housing for superior protection. All segment faces are clean of rivet heads, tabs or other means of attachment which may cause streaking in the light distribution. Optical modules are field rotatable in 90° increments and offered standard with mogul-

base lampholders for 150-400W assemblies or medium-base lampholders for 100W and below.

Electrical

Ballast and related electrical componentry are hard mounted to die-cast housing for optimal heat transfer and operating efficiency. Optional swing-down galvanized steel power tray with integral handle and quick disconnects allows tray to be completely removed from housing providing ample room for fixture installation and maintenance.

Mounting

Extruded 8" aluminum arm features internal bolt guides for easy positioning of fixture during installation to pole or wall surface. Standard single carton packaging of housing, square pole arm and

round pole adapter allow for consolidated product arrival to site. Optional internal mast arm mount accepts a 1 1/4" to 2 3/8" O.D. horizontal tenon, while a 4-bolt clamping mechanism secures fixture. Cast-in leveling guides provide +/-5° vertical leveling adjustment.

Finish

Housing and arm finished in a 5 stage premium TGIC bronze polyester powder coat paint. Optional colors include black, grey, white, dark platinum and graphite metallic. RAL and custom color matches available.



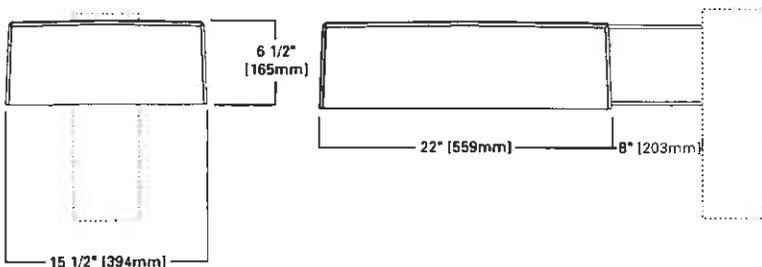
TR TRIBUTE

70 - 400W
High Pressure Sodium
Pulse Start Metal Halide
Metal Halide

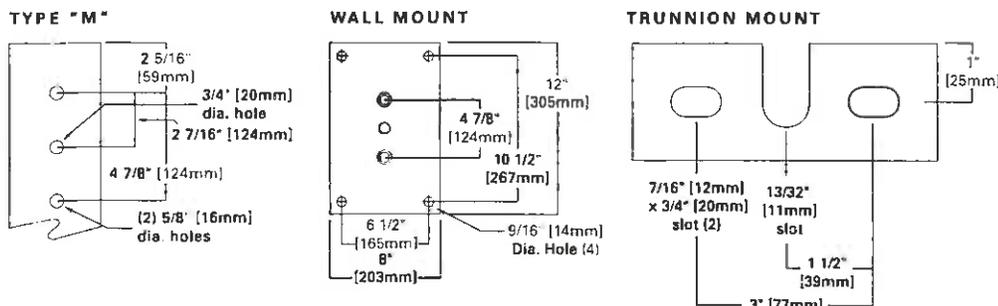
AREA LUMINAIRE

LAMP TYPE	WATTAGE
Metal Halide	70, 100, 175, 250, 400W
High Pressure Sodium	70, 100, 150, 250, 400W
Pulse Start Metal Halide	150, 175, 250, 320, 400W

DIMENSIONS



DRILLING PATTERNS



**DARK SKY
COMPLIANT** FCO Full Cutoff

ENERGY DATA

HI-Reactance Ballast Input Watts

70W HPS HPF (95 Watts)
100W HPS HPF (130 Watts)
150W HPS HPF (190 Watts)
150W MH HPF (185 Watts)

CW Ballast Input Watts

250W HPS HPF (300 Watts)

CWA Ballast Input Watts

175W MP HPF (206 Watts)
175W MH HPF (210 Watts)
200W HPS HPF (250 Watts)
250W MH HPF (295 Watts)
250W MP HPF (291 Watts)
320W MP HPF (368 Watts)
400W MP HPF (452 Watts)
400W MH HPF (455 Watts)
400W HPS HPF (465 Watts)

EPA

Effective Projected Area: (Sq. Ft.)
Without Arm: 1.19

SHIPPING DATA

Approximate Net Weight:
39 lbs (17.73 kgs.)



ORDERING INFORMATION

Sample Number: MHTR-SL-400-MT-LL

<p>Lamp Type HP: High Pressure Sodium MH: Metal Halide MP: Pulse Start MH (CWA)</p> <p>Series ¹ TR: Tribute (Arm Included)</p>	<p>Distribution 2F: Type II Formed 2S: Type II Segmented 3F: Type III Formed 3S: Type III Segmented 4F: Type IV Formed 4S: Type IV Segmented 5F: Type V Formed 5S: Type V Segmented SL: Spill Light Eliminator</p>	<p>Lamp Wattage ² 70: 70W 100: 100W 150: 150W 175: 175W 250: 250W 320: 320W³ 400: 400W⁴</p> <p>Voltage ⁵ 120V: 120V 208V: 208V 240V: 240V 277V: 277V 347V: 347V 480V: 480V</p> <p>DT: Dual-Tap⁶ MT: Multi-Tap, ⁴ wired 277V TT: Triple-Tap, ⁶ wired 347V ST: 5 Tap Wired⁵ 480V</p>	<p>Options ^{7, 8} F1: Single Fuse (120, 277 or 347V⁹ only) F2: Double Fuse (208, 240 or 480V⁹ only) Q: Quartz Resincke (Hot Strike¹⁰ Only) EM: Quartz Resincke with "Delay Relay" (Quartz lamp strikes at both hot and cold starts) EM/SC: Emergency Separate¹⁰ Circuit LL: Lamp Included S: 1 1/4" - 2 3/8" Internal Mast Arm Mount TM: Trunnion Mount PT: Electrical Power Tray HS: House Side Cutoff¹¹ LA: Less Arm (Order Mounting Separately) PER: NEMA Twistlock Photocontrol Receptacle PC: Button Type Photocontrol WH: White BK: Black AP: AP Grey DP: Dark Platinum GM: Graphite Metallic</p>	<p>Accessories ¹² MA1201-XX: Direct Wall Mount Kit MA1218-XX: Direct Mount for Pole MA1219-XX: Wall Mounting Plate OA1090-XX: Adjustable slipfiter Arm for Tenon Mount 2 3/8" O D 1 MA1221-XX: External House Side Shield Kit (EPA: 0.38) MA1222: External House Side Shield Kit for 2S/3S MA1223: Internal House Side Shield Kit 4S MA1224: Internal House Side Shield Kit for 2F/3F MA1225: Internal House Side Shield Kit for 4F MA1010-XX: Single Tenon Adapter for 3 1/2" O D Tenon MA1011-XX: 2 @ 180 degrees Tenon Adapter for 3 1/2" O D Tenon MA1012-XX: 3 @ 120 degrees Tenon Adapter for 3 1/2" O D Tenon MA1013-XX: 4 @ 90 degrees Tenon Adapter for 3 1/2" O D Tenon MA1014-XX: 2 @ 90 degrees Tenon Adapter for 3 1/2" O D Tenon MA1015-XX: 2 @ 120 degrees Tenon Adapter for 3 1/2" O D Tenon MA1016-XX: 3 @ 90 degrees Tenon Adapter for 3 1/2" O D Tenon MA1017-XX: Single Tenon Adapter for 2 3/8" O D Tenon MA1018-XX: 2 @ 180 degrees Tenon Adapter for 2 3/8" O D Tenon MA1019-XX: 3 @ 120 degrees Tenon Adapter for 2 3/8" O D Tenon MA1045-XX: 4 @ 90 degrees Tenon Adapter for 2 3/8" O D Tenon MA1048-XX: 2 @ 90 degrees Tenon Adapter for 2 3/8" O D Tenon MA1049-XX: 3 @ 90 degrees Tenon Adapter for 2 3/8" O D Tenon OARA1016: Photoelectric Control 105-285V NEMA Type OARA1027: Photoelectric Control 480V NEMA Type OARA1024: Photoelectric Control 347V NEMA Type OARA1013: Shorting Cap TR/V6: Field Installed Vandal Shield¹³</p>
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- Notes
- 1 8 Inch Arm and pole adapter included with fixture. Specify Less Arm "LA" option when mounting accessory is ordered separately.
 - 2 Standard with mogul base socket for 150-400W and medium base socket 100W and below.
 - 3 320W Pulse Start Metal Halide lamps only.
 - 4 Requires reduced envelope lamp.
 - 5 Products also available in non-US voltages and 50HZ for international markets. Consult factory for availability and ordering information.
 - 6 Dual Tap is 120/277V wired 277V. Multi Tap is 120/208/240/277V wired 277V. Triple-Tap ballast is 120/277/347V wired 347V. 5 Tap is 120/208/240/277/480V wired 480V.
 - 7 Custom and RAL color matching available upon request. Consult Cooper Lighting Representative for further information.
 - 8 Add as a suffix.
 - 9 Must specify voltage.
 - 10 Quartz options not available with SL optics.
 - 11 House side shield not available on 5S, 5F, or SL optics.
 - 12 Order separately/replace XX with color specifier.
 - 13 Not available with SLE or House Side Shield.

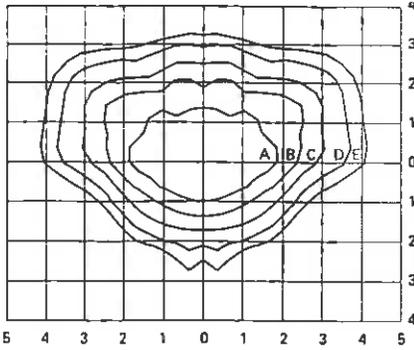
STOCK SAMPLE NUMBER (Lamp Included)

SAMPLE NUMBER: MHTR2340

	TR	23	
<p>Lamp Type HP=High Pressure Sodium MH=Metal Halide² MP=Pulse Start Metal Halide²</p>	<p>Series ¹ TR=Tribute</p>	<p>Distribution 23=Type II/III Formed</p>	<p>Lamp Wattage 15=150W 17=175W 25=250W 40=400W</p>

NOTES
¹ Short logic fixtures are finished bronze include multi tap ballast, lamp, arm and round pole adapter. Other options not available. Refer to standard ordering logic. ² Available in 175, 250 and 400 Watt.

A-165

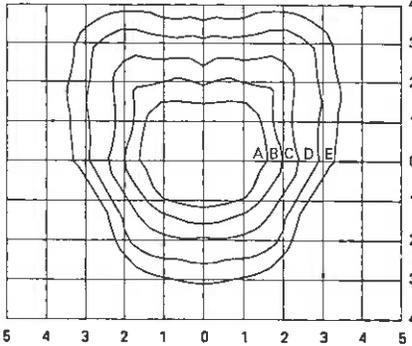


MHTR-3S-400
400-Watt MH Type III Segmented
40,000-Lumen Clear Lamp

Footcandle Table

Select mounting height and read across for footcandle values of each isofootcandle line. Distance in units of mounting height.

Mounting Height	Footcandle Values for Isofootcandle Lines				
	A	B	C	D	E
20'	3.00	1.50	0.75	0.30	0.15
25'	2.00	1.00	0.50	0.20	0.10
30'	1.38	0.69	0.34	0.13	0.06

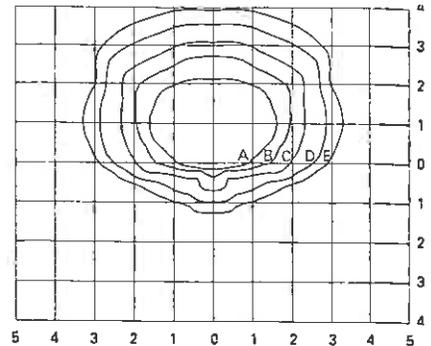


MHTR-4S-400
400-Watt MH Type IV Segmented
40,000-Lumen Clear Lamp

Footcandle Table

Select mounting height and read across for footcandle values of each isofootcandle line. Distance in units of mounting height.

Mounting Height	Footcandle Values for Isofootcandle Lines				
	A	B	C	D	E
20'	3.00	1.50	0.75	0.30	0.15
25'	2.00	1.00	0.50	0.20	0.10
30'	1.38	0.69	0.34	0.13	0.06



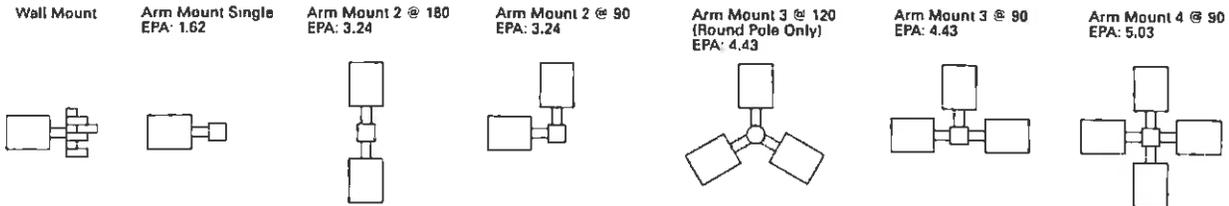
MHTR-SL-400
400-Watt MH Spill Light Eliminator
40,000-Lumen Clear Lamp

Footcandle Table

Select mounting height and read across for footcandle values of each isofootcandle line. Distance in units of mounting height.

Mounting Height	Footcandle Values for Isofootcandle Lines				
	A	B	C	D	E
20'	3.00	1.50	0.75	0.30	0.15
25'	2.00	1.00	0.50	0.20	0.10
30'	1.38	0.69	0.34	0.13	0.06

MOUNTING CONFIGURATIONS



A166

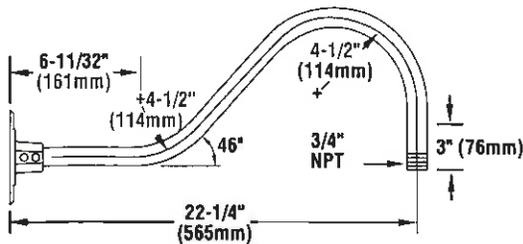
ABOLITE GOOSENECK AND WALL BRACKETS

Brackets are finished in gloss white powder, other optional colors are available. All brackets suitable for use in wet locations, and mounts to recessed 4" octagon box (by others). Fixtures used in wet locations must be specified "WL" separately. To order, specify catalog number indicated.

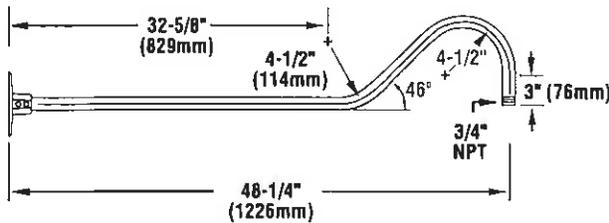
NOTE: Brackets feature 3/4" stems which slip fit into wall plate (wall end is unthreaded). Conduit may be cut down (in the field by other) to shorten bracket length.

CAS wall plate included with all goosenecks.

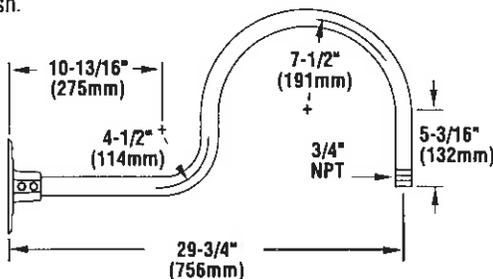
GB A 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.



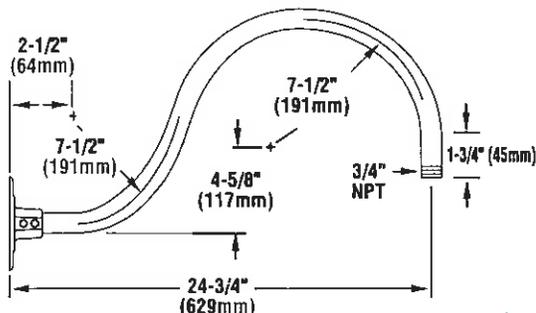
GB B 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.



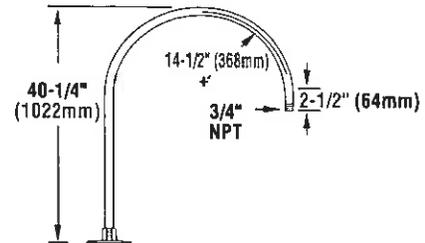
GB C 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.



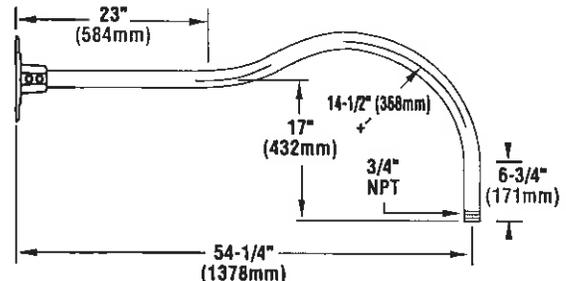
GB D 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.



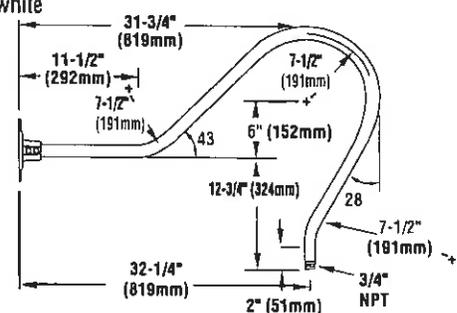
GB E 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket is designed to be mounted to a horizontal surface, but could also be mounted to a wall. The bracket features a gloss white powder finish.



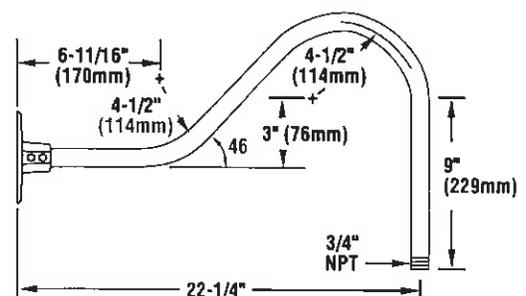
GB F 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.



GB G 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.

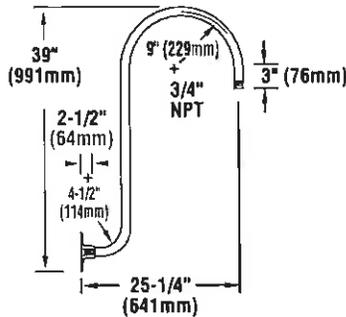


GB H 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.

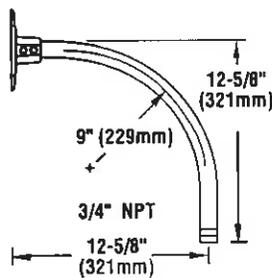


ABOLITE GOOSENECK AND WALL BRACKETS

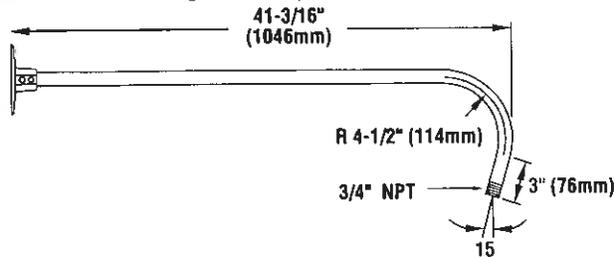
GB J 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.



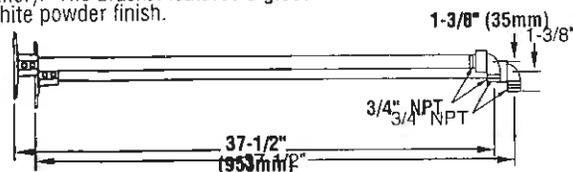
GB K 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.



GB P 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.

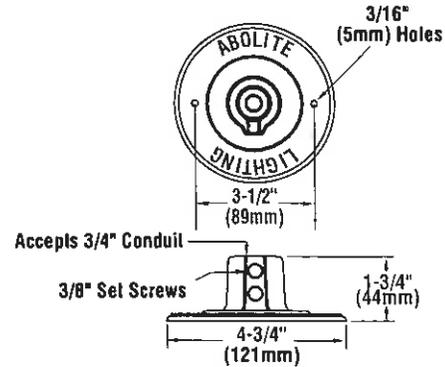


GB U 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.

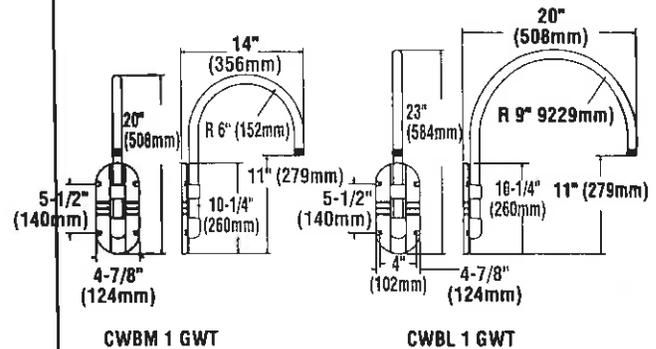


Replacement CA 5 - Gloss white powder finish (other colors available).

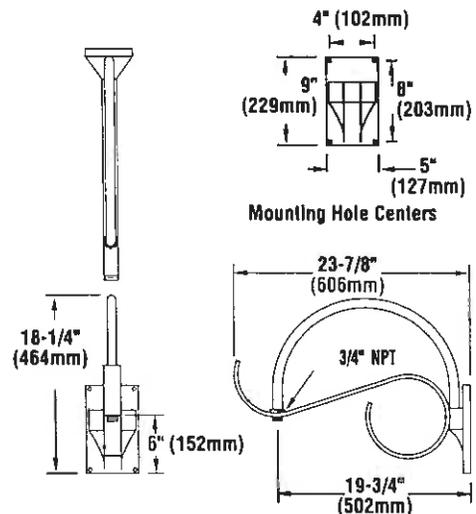
- Mounts to recessed 4" octagon box (by others).



CWBM 1 GWT and CWBL 1 GWT - Contemporary Wall Bracket with gloss white powder finish.



DWB 1 GWT - Single Reflector Wall Bracket. Four 5/16" diameter holes are provided for wall mounting. The bracket features a gloss white powder finish.



Spero lighting

SINCE 1918

Vaportight Pendant Mount

VP SERIES SPECIFICATIONS

APPLICATION: Approved for use in all indoor and outdoor locations exposed to moisture and rain, corrosive fumes, non-explosive vapors and gases or non-combustible dusts. Vapor tight and rain tight. Pendant type with heavy die-cast aluminum body, tapped 1/2" or 3/4" with conduit stop. May be mounted to a variety of Spero mounting systems including stems, cord sets, gooseneck type wall brackets and pole top brackets (sold separately).

LIGHT SOURCE: Standard incandescent fixture for medium base "A" lamp. Fixtures can be equipped with an optional ballast housing for up to 42 watt compact fluorescent or 150 watt metal halide or high pressure sodium. See ballast option on page E-14.

HOUSING CONSTRUCTION: Heavy die-cast copper free aluminum body, tapped 1/2" or 3/4" with conduit stop. Die-cast threaded aluminum globe fitter assembly with exterior threads for optional die-cast aluminum screw on guard.

FINISH: Standard finish is textured natural aluminum. Optional powder coat finishes are available at an additional cost. See ordering guide for complete list of finishes.

GUARD: Threaded, die-cast aluminum with stainless steel, headless hex type set-screw.

GLOBE: Threaded for easy lamp replacement. Standard globe is clear glass. Optional glass globes include prismatic, opal, blue, green, amber or red. Lexan globes in clear or colors are also available. Cast guard option is not available with Lexan globes. See ordering guide for complete list of globes.

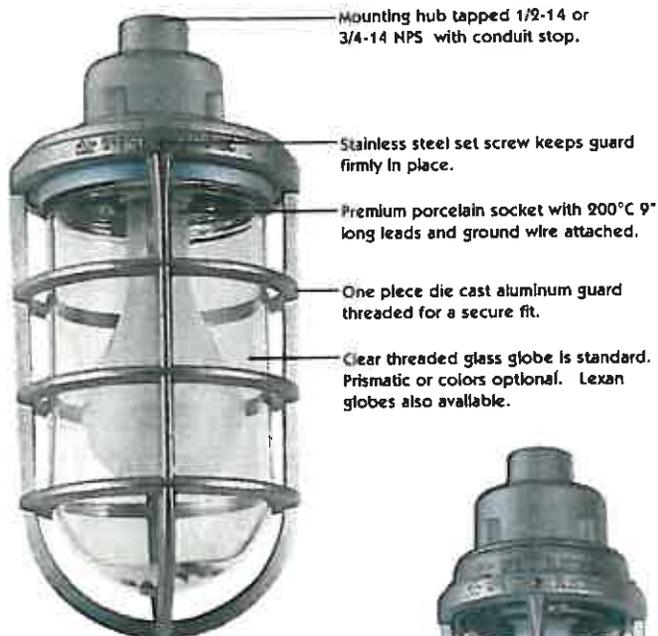
REFLECTOR: Optional reflector choices include Dome, Cone, Angle, Deep Bowl and Radial Wave. Standard finish is white. Optional powder coat color choices are available. See ordering guide for all options.

SOCKET: Standard units include a medium base, glazed porcelain, 4KV pulse rated lampholder with nickel plated screw shell and spring loaded center contact. Compact fluorescent ballast option includes GX24Q-3 / GX24Q-4 universal 4-pin socket for 26, 32 or 42 watt triple tube lamps.

HARDWARE: All fasteners are stainless steel.

GASKETS: Memory retentive, die-cut silicone for superior sealing and heat resistance.

APPROVALS: Listed with Underwriter's Laboratories for WET LOCATIONS. C-UL Listed for Canada.



VP Series 300W

Mounting hub tapped 1/2-14 or 3/4-14 NPS with conduit stop.

Stainless steel set screw keeps guard firmly in place.

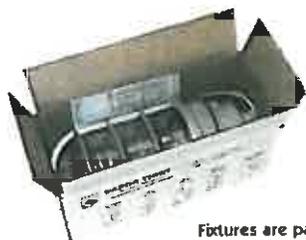
Premium porcelain socket with 200°C 9" long leads and ground wire attached.

One piece die cast aluminum guard threaded for a secure fit.

Clear threaded glass globe is standard. Prismatic or colors optional. Lexan globes also available.



VP Series 150W



Fixtures are partially assembled for quick installation.

GLASS GLOBES

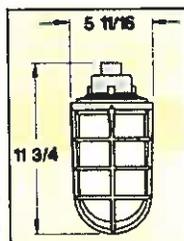


Clear Prismatic Opal Amber Blue Green Red

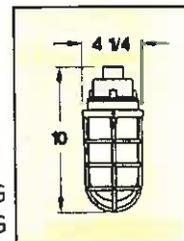
LEXAN GLOBES



Clear Prismatic Opal Amber Blue Green Red



VP230-42-G
VP330-42-G



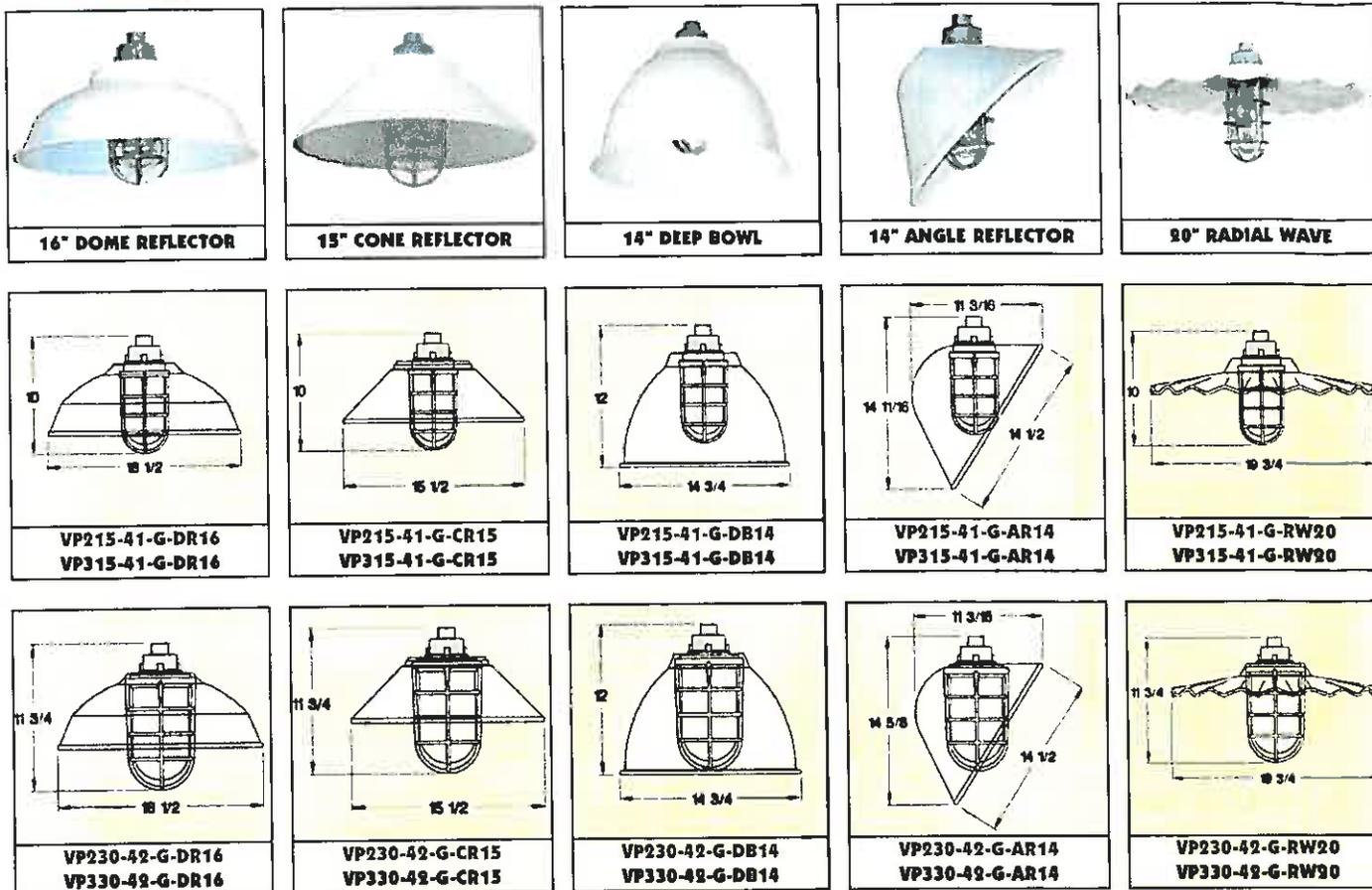
VP215-41-G
VP315-41-G



Art 169

THE SPERO ELECTRIC CORPORATION 1705 NOBLE ROAD CLEVELAND, OHIO 44112
PHONE: (216) 851-3300 FAX: (216) 851-0300 <http://www.sperolighting.com> E-2

VAPORTIGHT PENDANT MOUNT WITH OPTIONAL REFLECTORS



VAPORTIGHT PENDANT MOUNT ORDERING GUIDE

Series	Hub Size	Fixture Size	Optional Globe Type		Guard Option	Color Finish Option	Reflector Option	Reflector Color	
VP	2 1/4" Hub	15-41 150 Watt Max. with 3-1/4" Clear Glass Globe	No.	Description	Max. Watts	G Screw-On Die-Cast Guard Guard Option is Not Available with Lexan Globe	G0 Black G1 White G2 Red G3 Yellow G4 Blue G5 Green G6 Brown G7 Verdigris G8 Dark Bronze G9 Silver G10 Dark Green Consult factory for custom colors or color matching services.	DR16 16" Dome CR15 15" Cone Reflector DB14 14" Deep Bowl AR14 14" Angle RW20 20" Radial Wave	G0 Black G1 White G2 Red G3 Yellow G4 Blue G5 Green G6 Brown G7 Verdigris G8 Dark Bronze G9 Silver G10 Dark Green Consult factory for custom colors or color matching services.
			P	Prismatic Glass	150 / 300				
			O	Opal Glass	100 / 200				
			A	Amber Glass	100 / 200				
			B	Blue Glass	100 / 200				
			G	Green Glass	100 / 200				
			R	Red Glass	100 / 200				
	L	Clear Lexan	75 / 150						
	LP	Prismatic Lexan	75 / 150						
	LO	Opal Lexan	60 / 100						
	LA	Amber Lexan	60 / 100						
	LB	Blue Lexan	60 / 100						
	LG	Green Lexan	60 / 100						
	LR	Red Lexan	60 / 100						

EXAMPLE OF A
TYPICAL ORDER

VP - 2 - 15 - 41 - O - G - GO - AR14 - G1



A-170

THE SPERO ELECTRIC CORPORATION 1705 NOBLE ROAD CLEVELAND, OHIO 44112
PHONE: (216) 851-3300 FAX: (216) 851-0300 <http://www.sperolighting.com> E-3

Exhibit H: Bicycle Rack Design
Tualatin Valley Fire & Rescue Station 58

A-171



"For Signature Projects"

www.cycloops.info

CycLoops® & CycLocker®

Bicycle Management Products Catalog



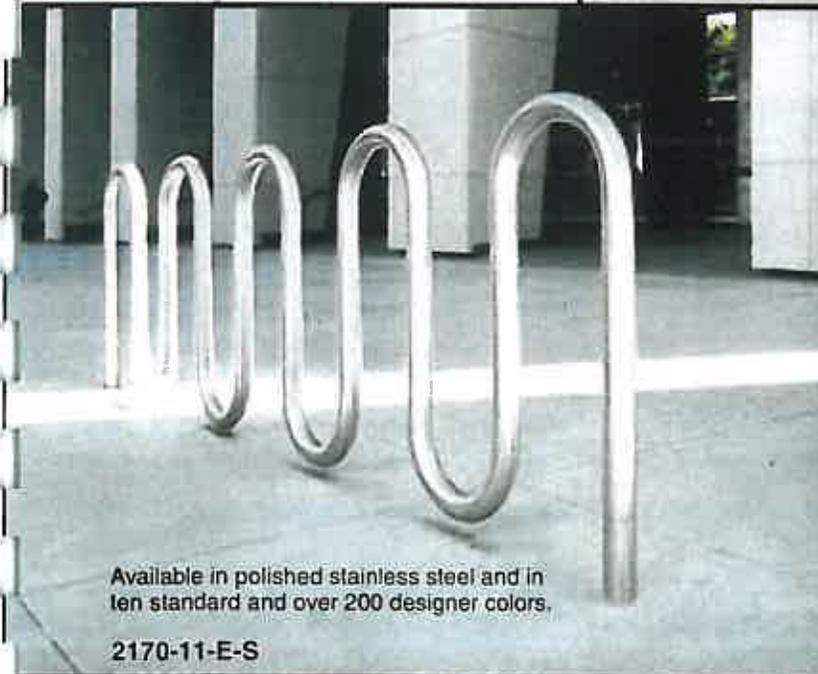
2176-2-S



2172-P-S



2178-52-E-C



Available in polished stainless steel and in ten standard and over 200 designer colors.

2170-11-E-S



2170-7-P-C



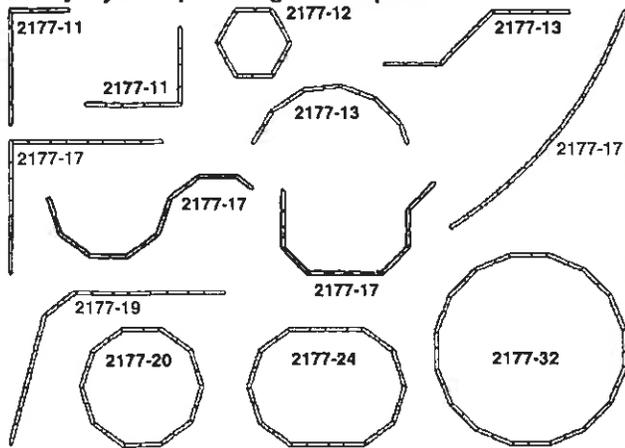
2175-8-P-C

A-172



2178-50-F-C

Curvy CycLoops Design Examples



Curvy CycLoops Variations

The final shape of Curvy CycLoops is to be determined by the owner's representative at the jobsite.



2177-15-P-C

Curvy CycLoops can be configured in almost any shape to fit jobsite architecture — *circle, oval, arc, angle, square, polygon or serpentine*. The possibilities are almost unlimited — some variations are illustrated above. Material specifications are the same as Original CycLoops and either embedment (-E) or pedestal (-P) mounting with matching base covers are offered. Available in all powder coating colors (-C) [see page 7] plus polished stainless steel (-S). Protected by U.S. Patent: Des. 372,889.

Model	Maximum Bikes	Length or Circumference
2177-11	Eleven	9'-0"
2177-12	Twelve	12'-0"
2177-13	Thirteen	11'-0"
2177-17	Seventeen	15'-0"
2177-19	Nineteen	17'-0"
2177-20	Twenty	20'-0"
2177-24	Twenty-four	24'-0"
2177-32	Thirty-two	32'-0"

Bollard CycLoops

Bollard CycLoops are domed 4-1/2" (115mm) diameter ASTM schedule 40 steel posts that are 3' (915mm) tall. Integral steel loop(s) are at bike height. Select from one, two or three loop models. Polyester color powder coating, polished stainless steel or galvanizing are finish options. Mounting is pedestal (surface) mount with matching base cover or embedment. A removable version is offered for special applications. See additional information and standard colors on page 7.



2172-P-C



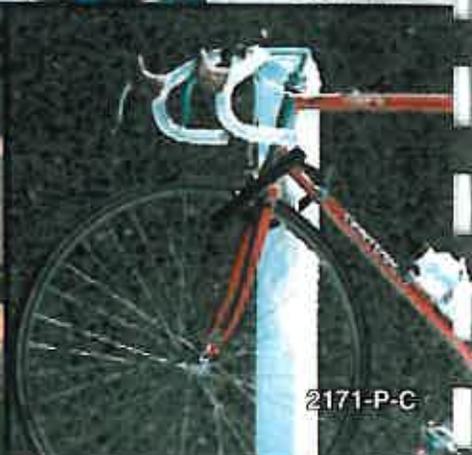
2173-C



2172-01-C

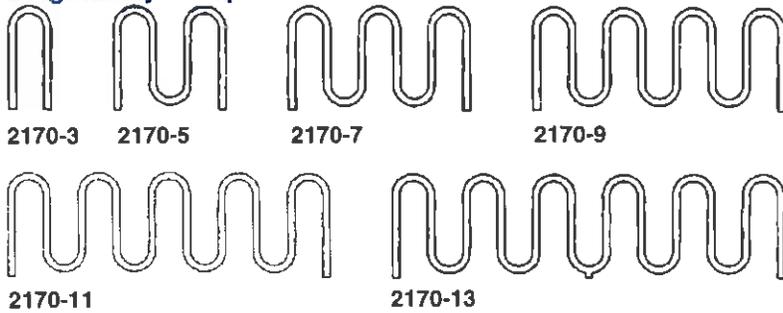


2172-P-C



2171-P-C

Original CycLoops

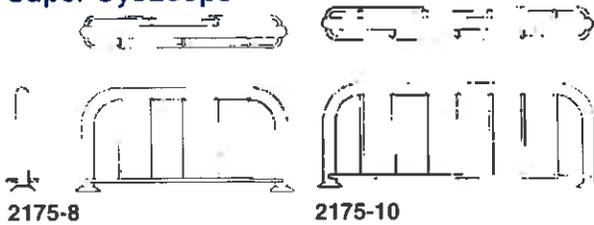


Original CycLoops Specifications

Model	Length	Width	Height	Maximum Bikes
2170-3	1' 3"	3"	3' 0"	Three
2170-5	3' 3"	3"	3' 0"	Five
2170-7	5' 3"	3"	3' 0"	Seven
2170-9	7' 3"	3"	3' 0"	Nine
2170-11	9' 3"	3"	3' 0"	Eleven
2170-13	11' 3"	3"	3' 0"	Thirteen

Supplied as standard for embedment (permanent) mounting.
 -P Suffix for pedestal (fixed surface) mounting option.
 -C Suffix for powder-coated steel version.
 -G Suffix for galvanized version.
 -S Suffix for stainless steel version.
 Notes: Includes matching base covers on -P pedestal mounting option only.

Super CycLoops



Super CycLoops Specifications

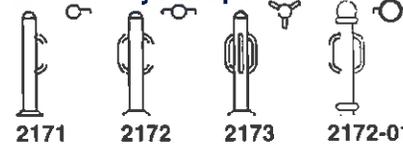
Model	Length	Width	Height	Maximum Bikes
2175-8	6' 5"	1' 0"	3' 3"	Eight
2175-10	8' 5"	1' 0"	3' 3"	Ten

-E Suffix for embedment (permanent) mounting option.
 -P Suffix for pedestal (fixed surface) mounting option.
 -C Suffix for powder-coated steel version.
 -G Suffix for galvanized version.
 -S Suffix for stainless steel version.

Notes: Includes matching base covers, as shown, on -P pedestal mounting option only.



Bollard CycLoops



Bollard CycLoops Specifications

Model	Length	Width	Height	Maximum Bikes
2171	9"	5"	3' 0"	One
2172	12"	5"	3' 0"	Two
2173	11"	10"	3' 0"	Three
2172-01	12"	8"	3' 3"	Two

-E Suffix for embedment (permanent) mounting option.
 -P Suffix for pedestal (fixed surface) mounting option.
 -R Suffix for removable mounting option.
 -C Suffix for powder-coated steel version.
 -G Suffix for galvanized version. (n/a 2172-01)
 -S Suffix for stainless steel version. (n/a 2172-01)
 Notes: Includes matching base cover, on -P pedestal mounting option only.

Wall CycLoops

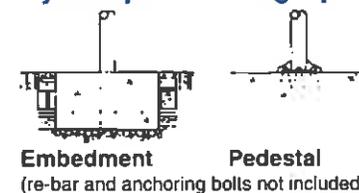


Wall CycLoops Specifications

Model	Length	Width	Height	Maximum Bikes
2174	1' 2"	2"	4"	One

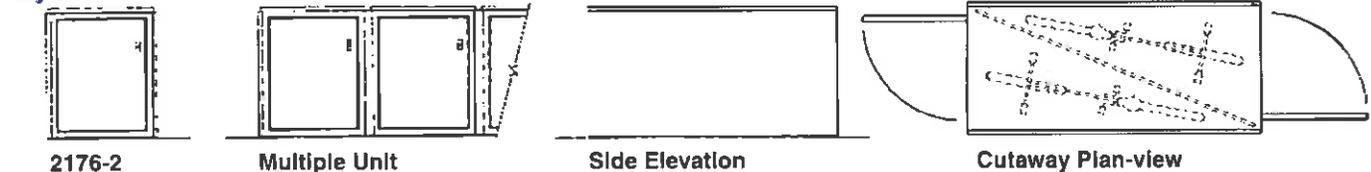
-C Suffix for powder-coated steel version.
 -G Suffix for galvanized version.
 -S Suffix for stainless steel version.
 Notes: Wall mounting bolts by others.

CycLoops Mounting Options



Embedment Pedestal
 (re-bar and anchoring bolts not included)

CycLocker



CycLocker Specifications

Model	Length	w/Doors Open	Width	Height	Maximum Bikes
2176-2	7' 4"	12' 7"	3' 3"	3' 10"	Two
2176-4	7' 4"	12' 7"	6' 6"	3' 10"	Four
2176-6	7' 4"	12' 7"	9' 9"	3' 10"	Six
2176-8	7' 4"	12' 7"	13' 0"	3' 10"	Eight
2176-10	7' 4"	12' 7"	16' 3"	3' 10"	Ten
2176-12	7' 4"	12' 7"	19' 6"	3' 10"	Twelve

-C Suffix for powder-coated steel version (standard).
 -S Suffix for stainless steel version.
 Four bolt-down, leveling feet are supplied with each locker.
 Factory installed dual-latch lock on each door is included.
 Interior manual safety lock release.

Curvy CycLoops Specifications

For Curvy CycLoops specifications please see page 5.

CASPAX-7™ Standard Powder-Coating Colors

Choose from these standard hues or from a wide spectrum of nearly 200 special designer colors.



Due to variations in the printing process the colors shown above are only a guide to the actual powder-coating colors.

A-174



Scale: 100 Feet

City of West Linn GIS (Geographic Information System), SnapMap Date: 10/24/2008

MAP DISCLAIMER:

This product is for informational purposes and may not have been prepared for, or be suitable for, legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

PRELIMINARY



PECK
SMILEY
ETTL
architects

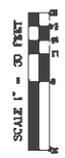
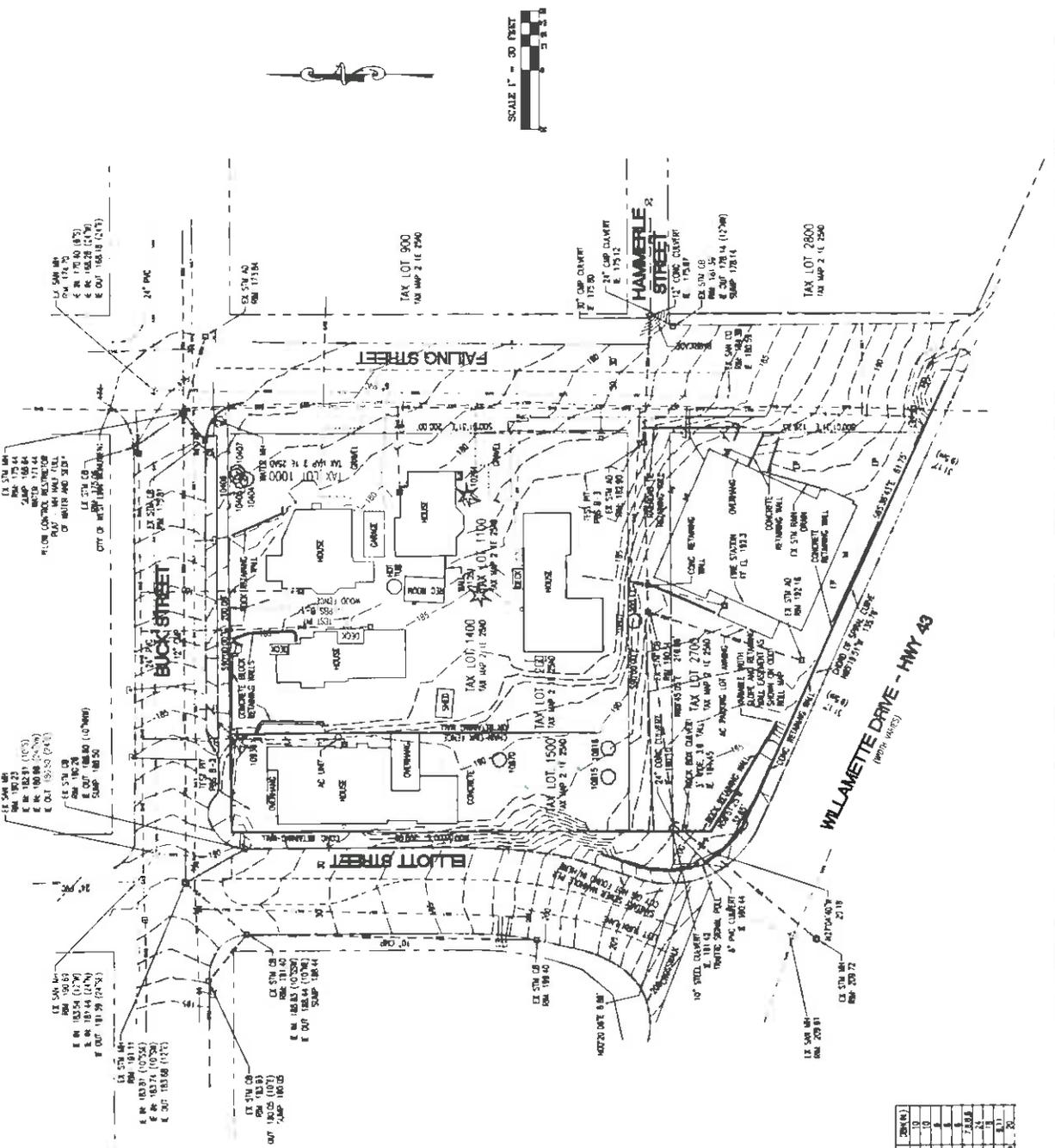
4415 SW COMBURY AVE
PORTLAND, OREGON 97202
PHONE: (503) 244-1170
FAX: (503) 244-0221

TV&R WEST LINN
STATION 58 - BOLTON
6050 FAILING STREET | WEST LINN, OR

DESIGN
DEVELOPMENT
SURVEY/EXISTING
CONDITIONS

SUR

12.14.2004 PER ARCHITECTS



A-176

LEGEND

- STORM SEWER CLEAN OUT
- STORM SEWER DRAIN BASIN
- STORM SEWER MANHOLE
- GAS METER
- GAS VALVE
- OIL FIRE MANSION
- POWER POLE
- POWER MOUNTING BOX
- POWER MOUNTING BOX
- POWER MOUNTING BOX
- TELEPHONE/TELEVISION POLE
- TELEPHONE/TELEVISION MOUNT
- TELEPHONE/TELEVISION JUNCTION BOX
- TELEPHONE/TELEVISION MOUNT

SHOWN IS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY PECK, SMILEY, ETTL, ARCHITECTS, INC. (P.E. 10000) ON 04/14/04. THE SURVEY WAS CONDUCTED BY STAKE AS A REFERENCE POINT. THE SURVEY WAS CONDUCTED BY STAKE AS A REFERENCE POINT. THE SURVEY WAS CONDUCTED BY STAKE AS A REFERENCE POINT.

THIS PLAN IS BASED ON THE WEST LINN SURVEY (MOUNTAIN VIEW) AND THE WEST LINN SURVEY (MOUNTAIN VIEW) AND THE WEST LINN SURVEY (MOUNTAIN VIEW).

JOB NUMBER
SHEET

FAILING STREET
TV&R
WEST LINN
CLATSOP COUNTY TAX MAP 2 1E 2540

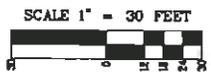
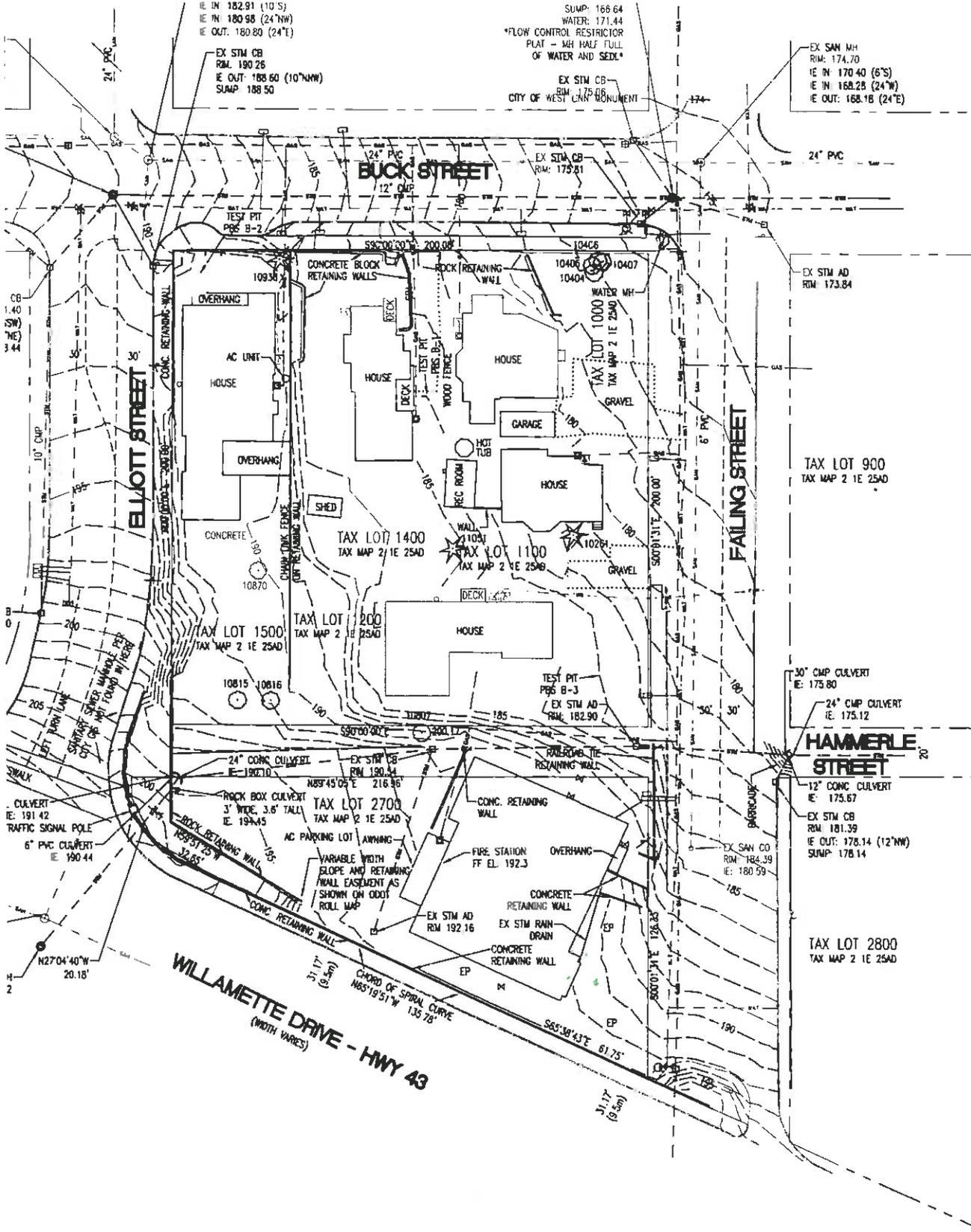
AKS
ARCHITECTURE & CIVIL ENGINEERING
13710 SW WARREN, JR. DR. SUITE 100
PORTLAND, OREGON 97224
PHONE: (503) 252-8888
FAX: (503) 252-8888

EXISTING CONDITIONS
PLAN

EX STM CB
 RIM: 180.26
 IE OUT: 188.60 (10°NW)
 SUMP: 188.50

SUMP: 166.64
 WATER: 171.44
 *FLOW CONTROL RESTRICTOR
 FLAT = 1/4" HALF FULL
 OF WATER AND SEDE*
 EX STM CB
 RIM: 176.17
 CITY OF WEST LINN MONUMENT

EX SAN MH
 RIM: 174.70
 IE IN: 170.40 (6°S)
 IE IN: 168.28 (24°W)
 IE OUT: 168.16 (24°E)



FORESTRY Located in: WOOD, OREGON 2ND, OREGON JUVEN, WASHINGTON For: ams.com	DESIGNED BY:	DRAWING NO.
	DRAWN BY: MSK	1964XMPL
	CHECKED BY: RDR	SCALE: AS NOTED
PREPARED FOR: TVFR 20665 SW BLANTON ALPHA, OR 97007-1042		

DATE:

FAILING STREET TVFR

WEST LINN
TAX LOTS 1000, 1100, 1200, 1500, 2700

OREGON
CLACKAMAS COUNTY TAX MAP 2 1E 25AD

JOB NUA
TFR
SHEET
1

A-177

and stormwater runoff

on November 15.
must be installed

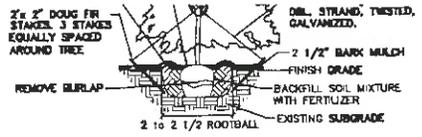
3-A (or approved equals)

onship to adjacent plants
balls. Cut off cleanly all
hole with soil mix white

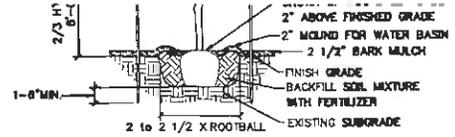
is compost, bark mulch,
inert materials, applied
round cover plantings,
surge weed growth
ted. Care should be
ng the leaching of
ways. Manure mulching

actor. Flow-through
I provide full coverage for

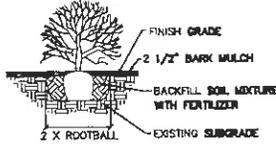
intained for the life of



EVERGREEN TREE STAKING DETAIL
NOT TO SCALE



DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE

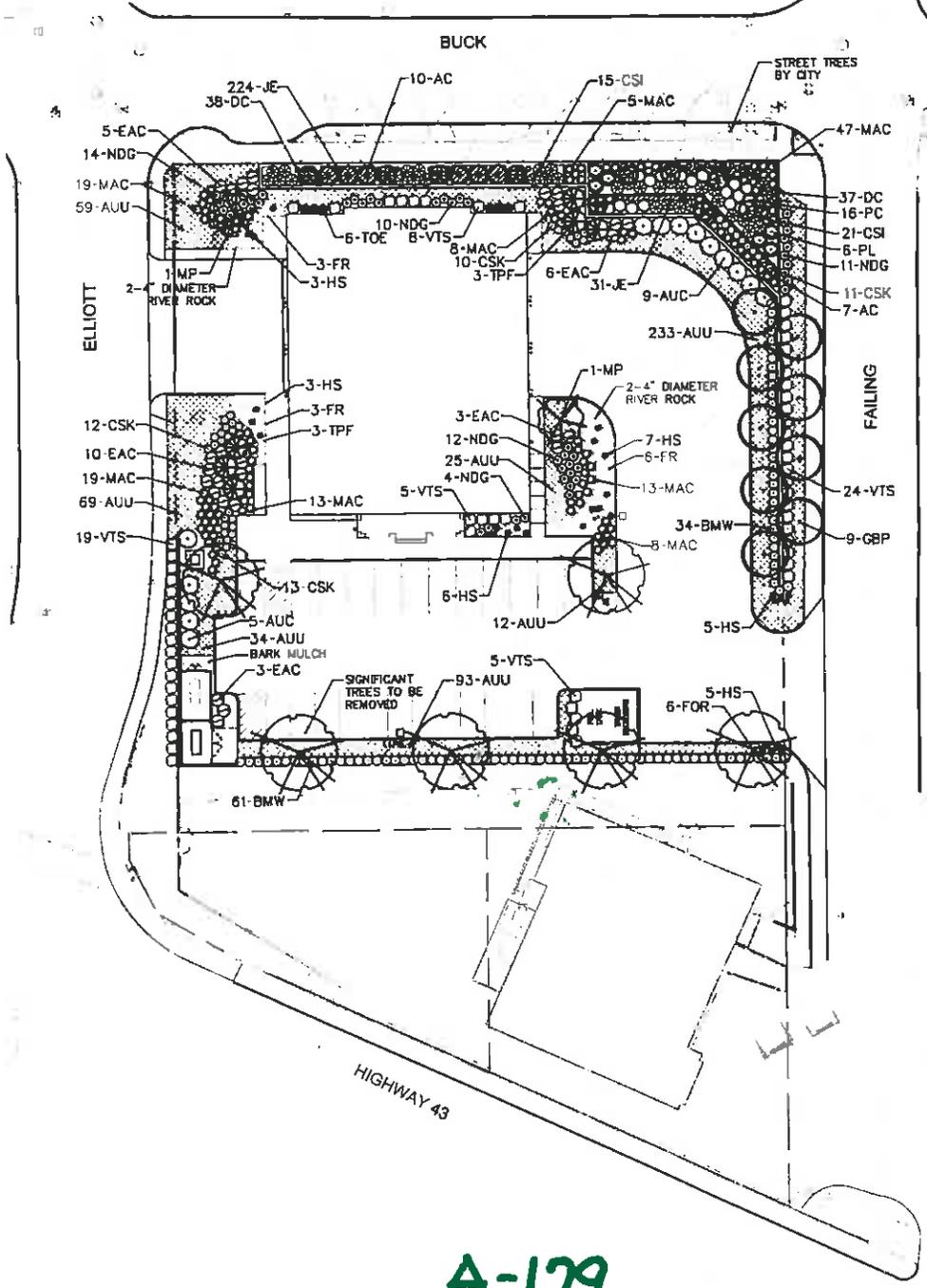


SHRUB PLANTING DETAIL
NOT TO SCALE

PLANTERS		
Plant Name	SIZE	SPACING
SES		
1 TOSA	1 gal.	2' o.c.
	Bareroot	1 per sf
1 "COMPACTA"	1 gal.	3' o.c.
pe		
	4-5'	6' o.c.
(em) ANTI	3 gal.	4' o.c.
ood		
ATUS	3 gal.	4' o.c.
il	3 gal.	5' o.c.

FACILITY CALCULATIONS (IREMENTS)	
WATER #1:	
28 SF	
REQUIRED = 25	
REQUIRED = 38	
WATER #2:	
167 SF	
REQUIRED = 39	
REQUIRED = 58	
WATER #3:	
160 SF	
REQUIRED = 10	
REQUIRED = 18	
HRUBS REQUIRED = 74	
HRUBS PROPOSED = 74	
HRUBS REQUIRED = 112	
HRUBS PROPOSED = 112	

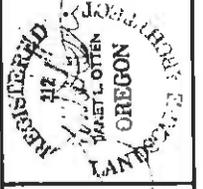
GRANT PLANTS TO REDUCE WATER NEEDS.
AS
RING DRY PERIODS AND
BUSHMENT ONLY.
E FERTILIZER AND PRUNING.
RE IMPLEMENTED TO SATISFY THE
USE IN THE LANDSCAPE BY 50%



A-179
LANDSCAPE PLAN
SCALE 1" = 30'-0"



NO.	DATE	REVISION



OTTEN LANDSCAPE ARCHITECTS Inc. OIO
3933 SW Kelly Avenue • Suite B • Portland, Oregon 97239-4393
Phone (503) 972-0311 • Fax (503) 972-0314 • www.ottenla.com

TVF+R FIRESTATION #58
6050 FAILING STREET
WEST LINN, OR
LANDSCAPE PLAN

DATE	8-13-08
SCALE	NOTED
DRAWN	CHECKED
EH	JLO
SHEET NO	L1.0
	1 OF 1



PECK
SMILE
ETILL
1 1 1 1

4412 SW CORBETT
PORTLAND, OREGON
PHONE (503) 241-1111
FAX (503) 248-1111

TV&R WEST LINN
STATION 58 - BOLTON

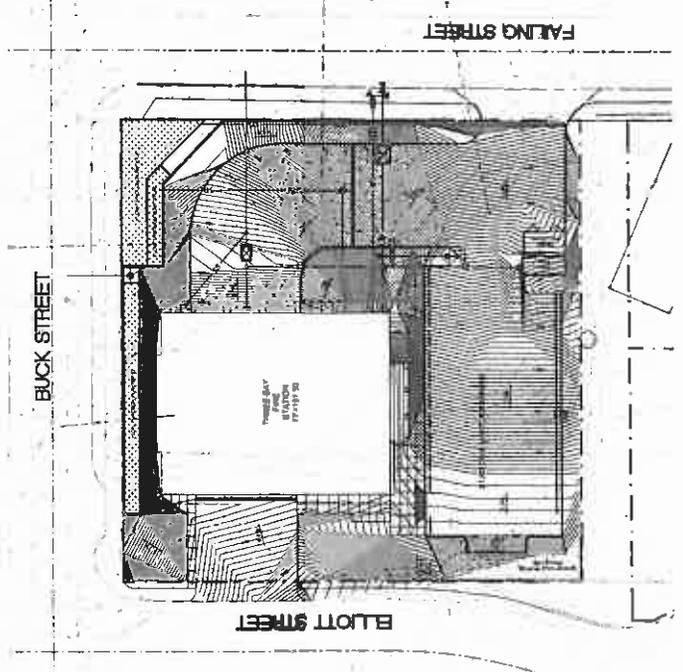
DESIGN DEVELOP
GRADING PLAN
PROJECT
DATE
SCALE

C1..

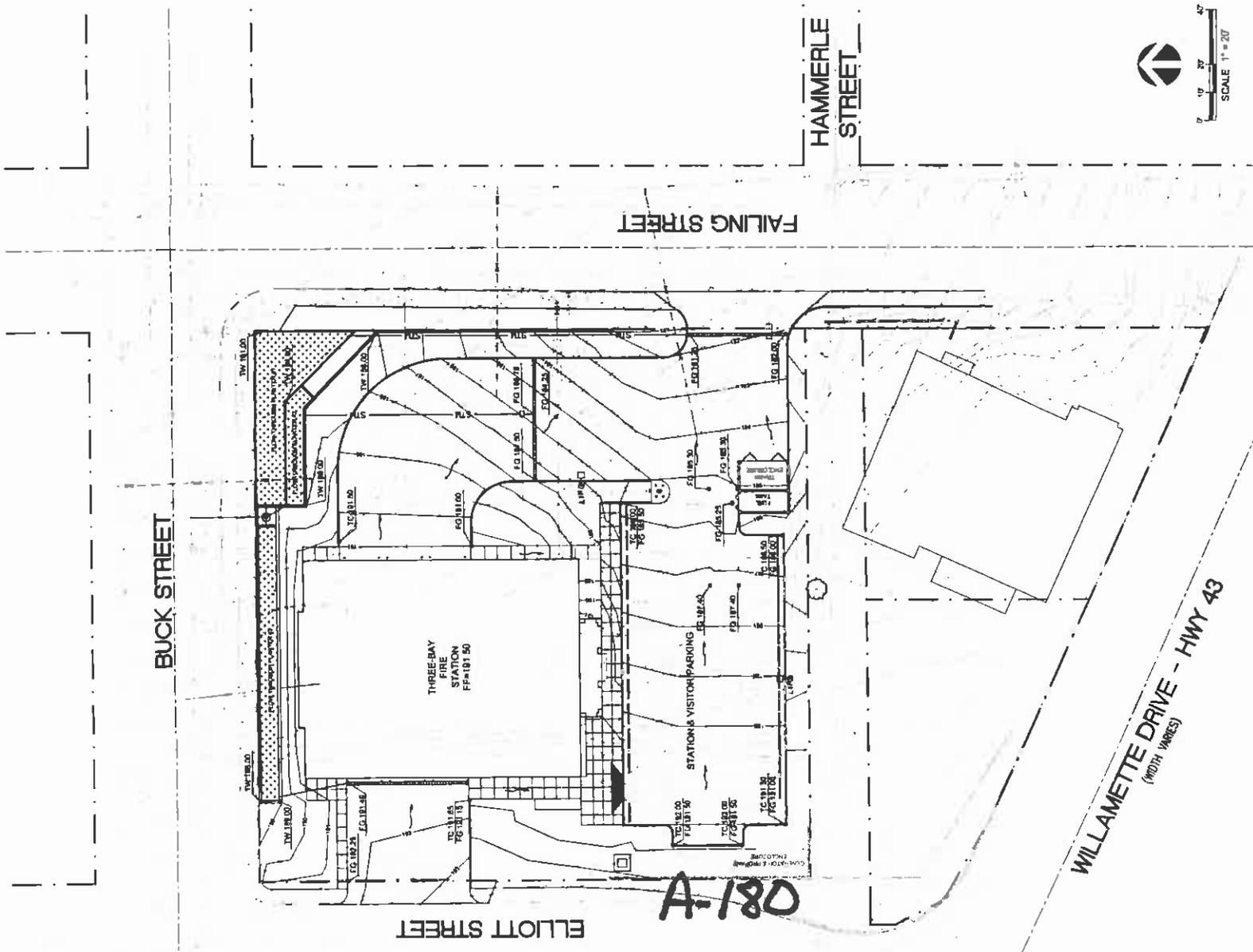
GRADING LEGEND	
—	FLOW DIRECTION
—	FINISH GRADE
—	TOP OF CURB
—	TOP OF WALL
—	FINISH FLOOR
—	EXISTING CONTOUR
—123	PROPOSED CONTOUR

GRADING NOTES:

1. PLEASE READ STATEMENTS TO DEMONSTRATE ABILITY TO MEET APPROXIMATE REQUIREMENTS OF UNIFORM BUILDING CODE



SLOPE ANALYSIS



WILLAMETTE DRIVE - HWY 43
(WIDTH VARIES)

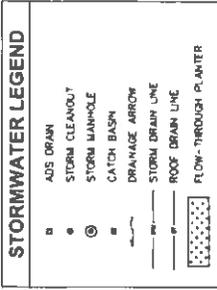
BUCK STREET

ELLIOTT STREET

FALLING STREET

HAMMERLE STREET

WILLAMETTE DRIVE - HWY 43
(WIDTH VARIES)

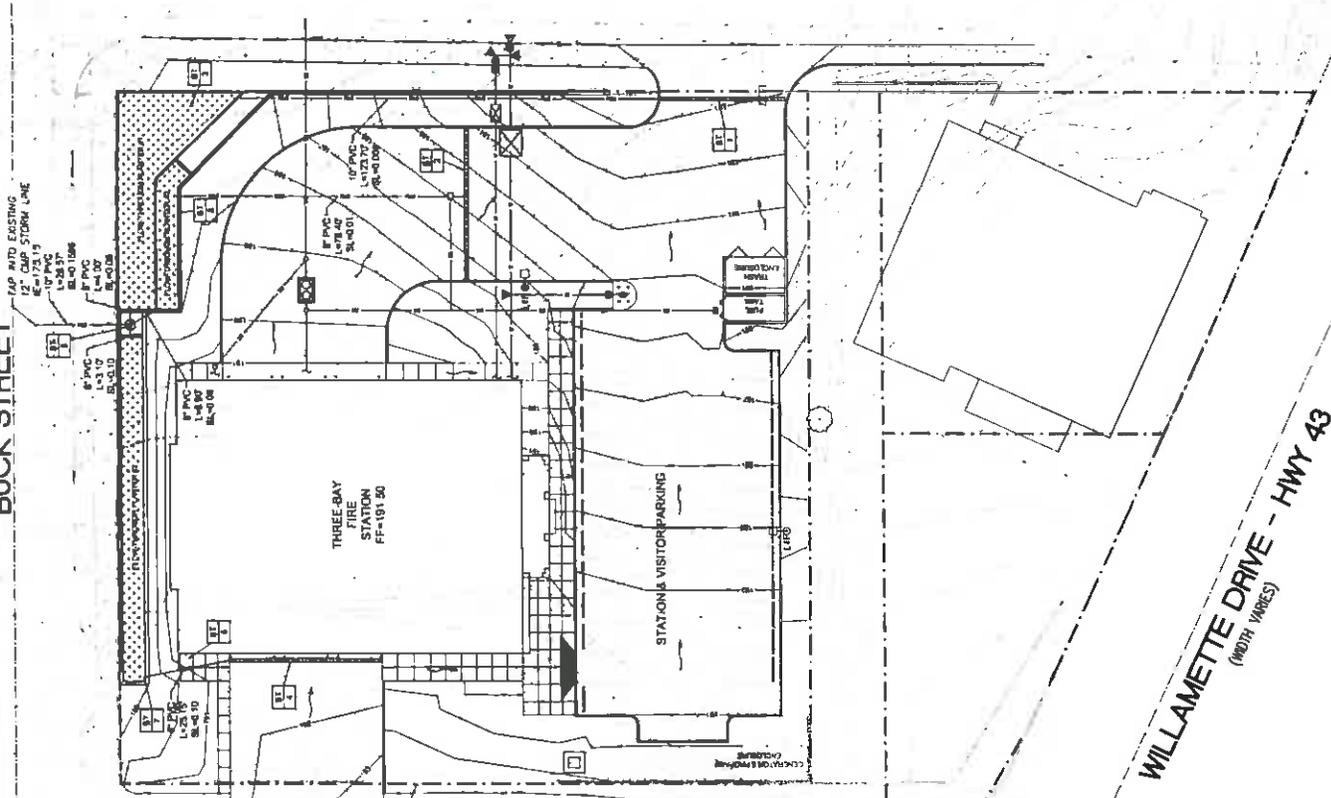


GENERAL NOTES

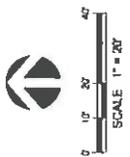
1. LOCATION OF EXISTING UTILITIES IS APPROXIMATE BASED OFF OF VARIOUS RECORD DRAWINGS AND FIELD SURVEY. THE CONTRACTOR SHALL VERIFY THE LOCATION, DEPTH AND INVERTS OF ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION AND OBTAINING MATERIALS. NOTIFY OWNER IMMEDIATELY OF ANY DISCREPANCIES WITH THESE CONSTRUCTION STANDARDS. CONSTRUCTION SHALL BE AS PER THE STANDARD DETAILS CONTAINED HEREIN.

STORMWATER INSTALLATION NOTES

1. SEE PLAN FOR THE PIPE TYPE, SIZE AND LENGTH
 2. SEE C2.1 FOR STORMWATER DETAILS
- EL 1 (1) INSTALL TRENCH DRAIN #1
RIM = 181.20
E OUT (N) = 181.20
BOTTOM SLOPE = 1% TO NORTH
 - EL 2 (1) TRENCH DRAIN #2
RIM = 182.15 AT CENTER
LENGTH = 44 FEET
BOTTOM SLOPE = 1% TO CENTER
 - EL 3 (1) FLOW THROUGH PLANTER #1
RIM = 181.20
E OUT (N) = 179.83
 - EL 4 (1) TRENCH DRAIN #3
RIM = 182.00
LENGTH = 44 FEET
BOTTOM SLOPE = 1% TO NORTH
 - EL 5 (1) FLOW THROUGH PLANTER #2
RIM = 182.00
E IN (S) = 182.75
E OUT (N) = 182.54
 - EL 6 (1) STANDARD MANHOLE #1
RIM = 182.00
E IN (E) = 178.31
E IN (S) = 181.83
E OUT (N) = 179.31
 - EL 7 (1) FLOW THROUGH PLANTER #3
RIM = 182.00
E IN (S) TRENCH DRAIN = 187.50
E OUT (E) = 183.00
 - EL 8 (1) ROOF DOWNSPOUT



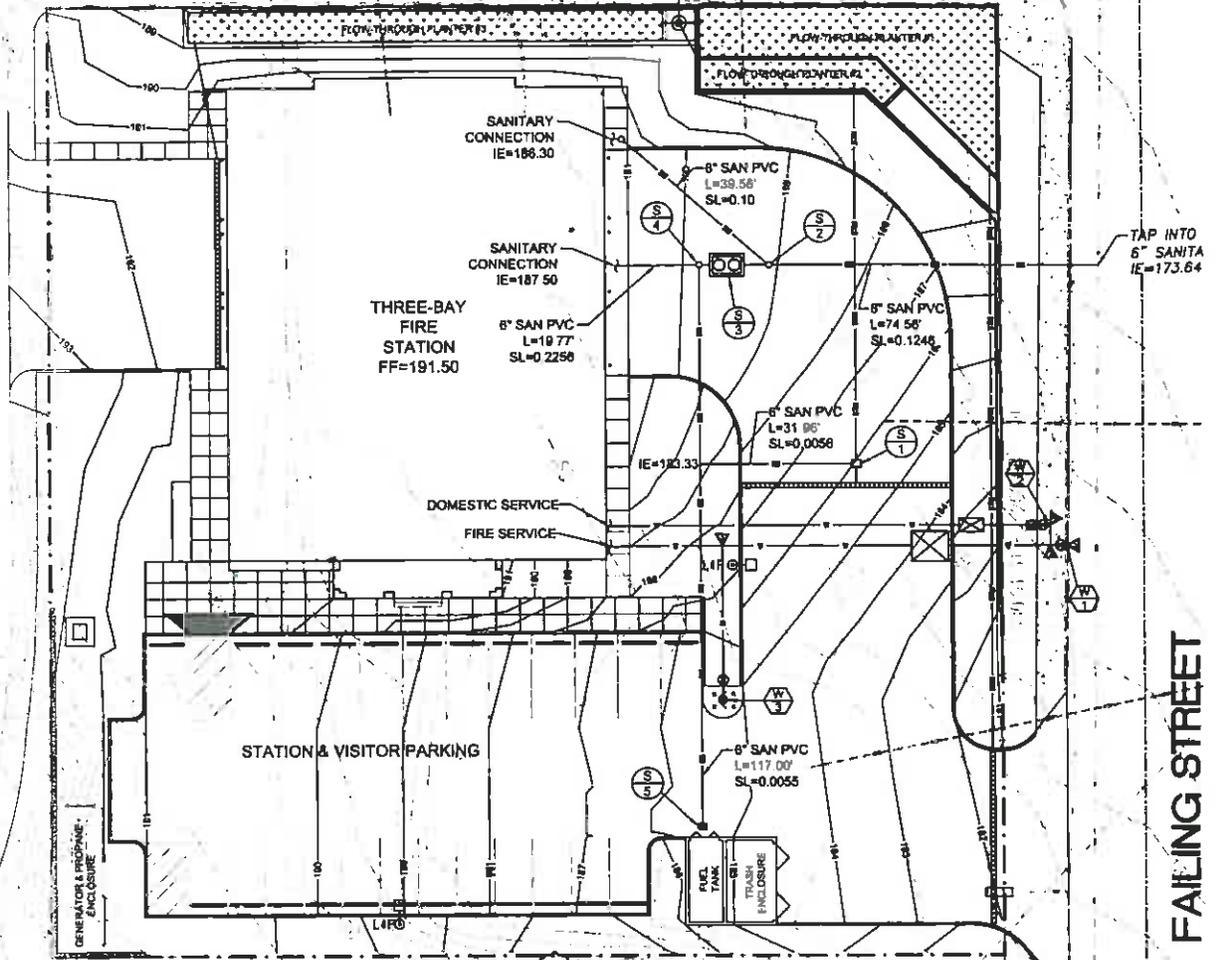
181A



BUCK STREET

ELLIOTT STREET

FAILING STREET



THREE-BAY
FIRE
STATION
FF=191.50

STATION & VISITOR PARKING

GENERATOR & PROPANE
ENCLOSURE

FUEL
TANK

TRASH
ENCLOSURE

SANITARY
CONNECTION
IE=186.30

SANITARY
CONNECTION
IE=187.50

8" SAN PVC
L=19.77
SL=0.2258

DOMESTIC SERVICE
FIRE SERVICE

8" SAN PVC
L=31.95'
SL=0.0058

8" SAN PVC
L=117.00'
SL=0.0055

8" SAN PVC
L=39.58'
SL=0.10

8" SAN PVC
L=74.56'
SL=0.1248

TAP INTO
6" SANITA
IE=173.64

WILLAMETTE DRIVE
(WIDTH VARIES)

A-182



ES/MS/CS/03/2



PECK
SMILE
ETTL
ARCHILE

4113 W. COMBET
PHOENIX, AZ 85018
PHONE: (602) 241-1111
FAX: (602) 241-1111

TV&R WEST LINN
STATION 58 - BOLTON

SITE PLAN
PHOTOMETRIC

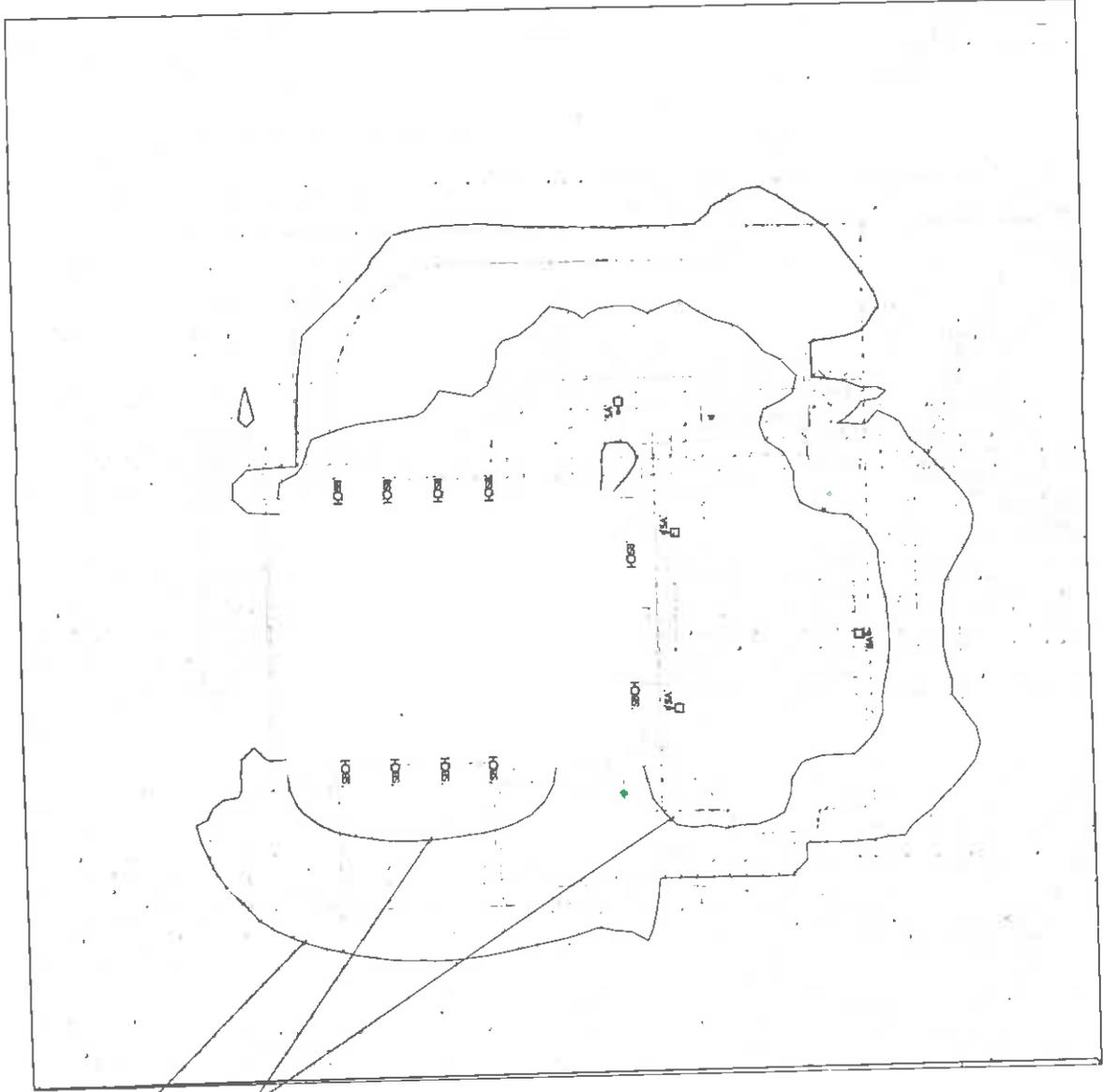
DATE: _____
SCALE: _____
PROJECT: _____

EPN

Copyright
2005-2014

INTERFACE
ENGINEERING

14515 W. GREENWAY, SUITE 100, PHOENIX, AZ 85044
PHOENIX, AZ 85044



1 SITE PLAN - PHOTOMETRICS

0 20 40
SCALE: 1"=200'-0"

50-FT LINE INDICATES 0.1 FC
MAXIMUM ALLOWED 15'
BEYOND LEED BOUNDARY BY
SITE CREDIT &

100-FT LINE INDICATES 0.2 FC
MAXIMUM ALLOWED 15'
BEYOND LEED BOUNDARY BY
SITE CREDIT &

A-184

SITE TREE DATA

TREE #	Species	DBH*
10281	DOUGLAS-FIR	11
10404	HAWTHORN	10
10405	HAWTHORN	6
10406	HAWTHORN	6
10407	HAWTHORN	20
10807	WILLOW	4.8
10815	NORWAY MAPLE	22
10316	NORWAY MAPLE	16
10870	MAGNOLIA	#24
10336	SCOTCH PINE	21
11051	DOUGLAS-FIR	14

*Diameter at standard height measured 4.5-feet above ground level (measured in inches)
 #Sum of three circumference diameters measuring 10, 6 and 4 inches DBH
 #Sum of four circumference diameters measuring 10, 6, 4 and 2 inches DBH
 #Sum of two circumference diameters measuring 12 inches DBH

TREE PROTECTION AND PRESERVATION REQUIREMENTS

The tree protection and preservation requirements provided herein are minimal since no trees are planned for retention during construction. If any trees existing on the project site are determined to be significant trees, the trees to be retained shall be re-surveyed by the project engineer in order to maintain accurate tree location data. If the trees are determined to be suitable for retention with development, retained trees shall be protected in accordance with the West Linn Tree Protection Manual Specifications for Tree Protection During Construction at a minimum.

Before Construction

1. Identification of Cut Trees: Trees to be removed shall be clearly marked with construction flags, tree-removal paint, or other methods approved in advance by the project engineer. Trees shall be carefully removed as to avoid soil erosion or lateral ground damage to trees to be preserved. Roots of stumps that are subject to retained trees shall be carefully stumped prior to stump extraction.
2. Preconstruction Conference: The project engineer shall be on site to discuss methods of tree removal prior to any construction. Prior to commencement of construction, the project engineer will verify in writing to the City Architect that tree removal occurred satisfactorily.

SUMMARY

Remove trees are located on site and planned for removal for site condition or construction. Retain trees are located on site and planned for retention for site condition or construction. Retain trees are located on site and planned for retention for site condition or construction. Retain trees are located on site and planned for retention for site condition or construction. Retain trees are located on site and planned for retention for site condition or construction.

SYMBOL LEGEND

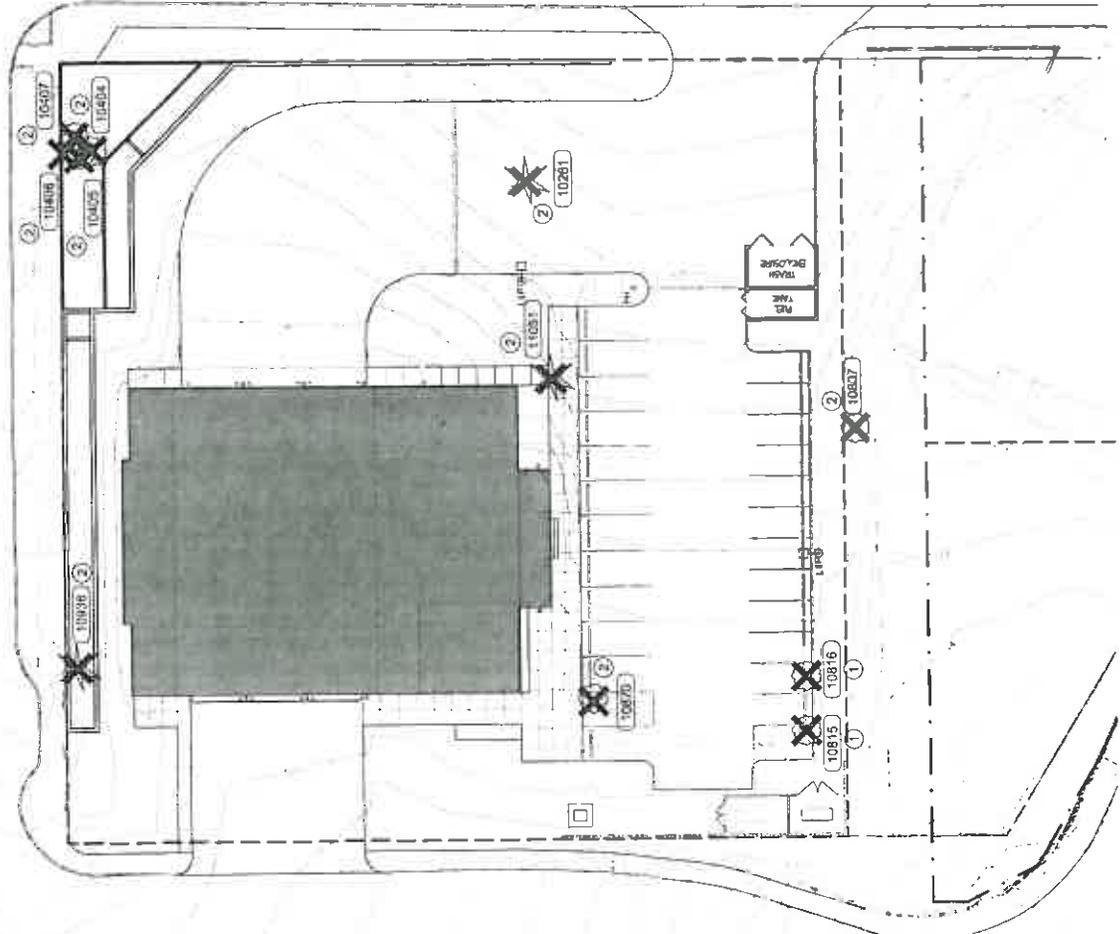
00000 TREE NUMBER



REMOVE EXISTING TREE

PLAN NOTES

- 1 SIGNIFICANT TREE TO BE REMOVED
- 2 SIGNIFICANT TREE TO BE REMOVED



TREE PROTECTION SITE PLAN

SCALE: 1/8" = 1'-0"

A-185

PRELIMINARY



PECK
SMILEY
ETTLIN
architects

4415 SW CORBETT AVE
PORTLAND, OREGON 97209
PHONE: (503) 248-1110
FAX: (503) 248-0223

6050 FAILING STREET | WEST LINN, OR
TV&R WEST LINN
STATION 58 - BOLTON

SCHEMATIC DESIGN
TREE PROTECTION
PLAN

TP-1

PBS
 Project & Review
 Design: [Name]
 Check: [Name]
 Date: [Date]
 Project: [Project Name]
 Address: [Address]
 City: [City] OR [State] [Zip]

UTILITY LEGEND

- ▲ THRUST BLOCK
- WATER VALVE
- WATER METER
- ◆ FIRE HYDRANT
- ◇ FIRE DEPARTMENT CONNECTION
- ⊗ DODD VAULT
- SANITARY SEWER CLEANOUT
- ⊗ DL/WATER SEPARATOR
- WATER LINE
- SANITARY SEWER LINE

GENERAL NOTES

- LOCATION OF EXISTING UTILITIES IS APPROXIMATE BASED OFF OF VARIOUS EXISTING AS-BUILT INFORMATION. SURVEY PROVIDED BY THE SURVEYOR AND UTILITY INFORMATION. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION, DEPTH AND TYPE OF ALL UTILITIES PRIOR TO CONSTRUCTION. IMMEDIATELY UPON EXISTING UTILITY CONFLICTS WITH NEW CONSTRUCTION MATERIALS AND METHODS OF CONSTRUCTION AND INSTALLATION FOR SEWER AND STORMWATER FACILITIES SHALL CONFORM TO CITY OF WEST LINDEN STANDARD CONSTRUCTION SHALL BE AS PER THE STANDARD DETAILS CONTAINED HEREIN.

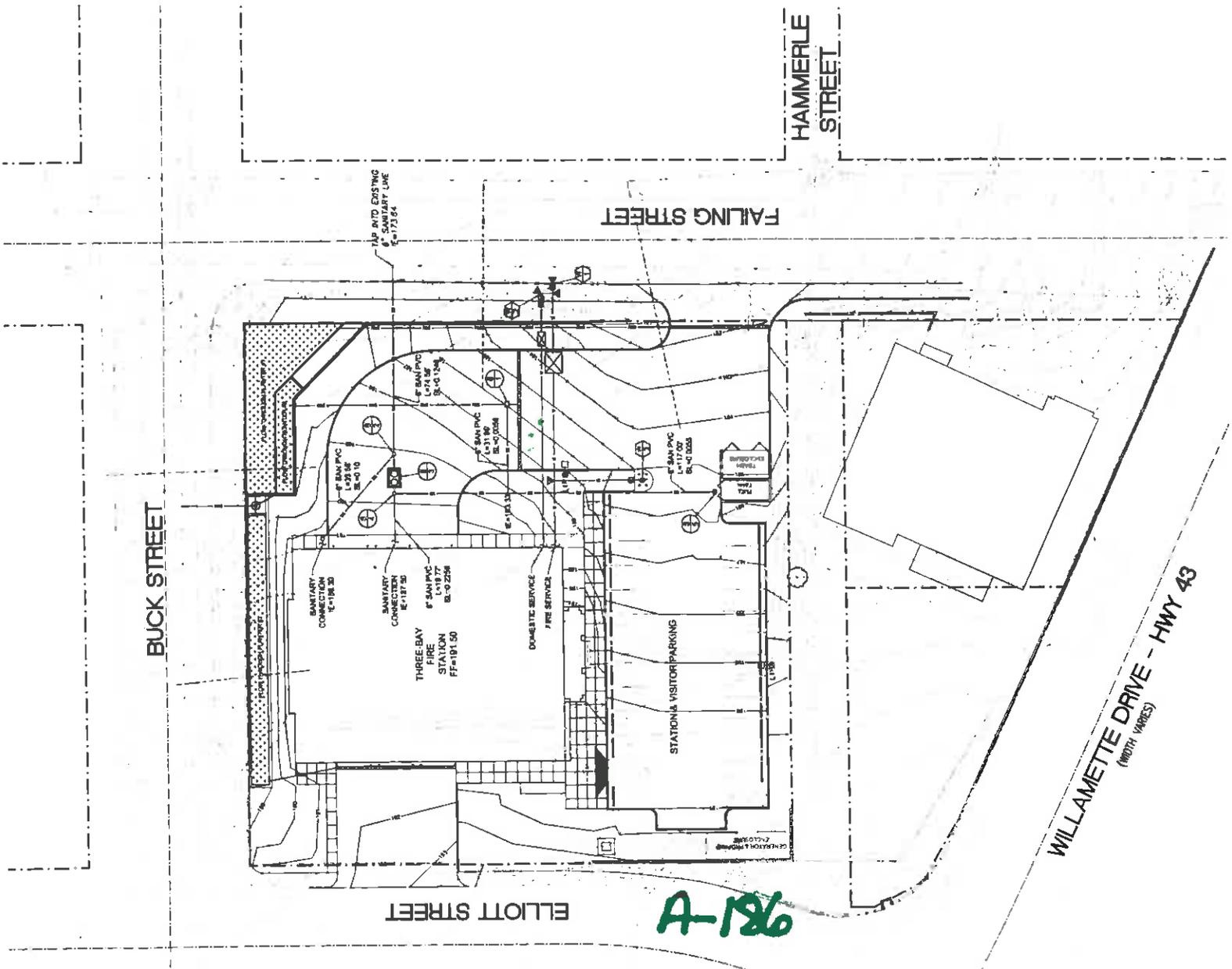
SANITARY SEWER INSTALLATION NOTES

- SEE PLAN FOR PIPE TYPE, SIZE AND LENGTH
- SEE C3 FOR SANITARY SEWER DETAILS

- ⊕ INSTALL (1) 3" X 3" CAST IRON PRELIMINARILY ACTIVATED BUTTERFLY VALVE UTILITY VAULT 233.14 W/ DIAMOND PLATE
 - ⊕ IN (N) = 133.81
 - ⊕ OUT (W) SANITARY = 133.91
 - ⊕ OUT (N) STORM = 133.51
 - ⊕ PUMP PUMP
- ⊕ INSTALL (1) STANDARD CLEANOUT #1
 - ⊕ IN (N) = 130.10
 - ⊕ OUT (N) = 132.13
- ⊕ INSTALL (1) STANDARD CLEANOUT #2
 - ⊕ IN (N) = 130.10
 - ⊕ OUT (N) = 132.13
- ⊕ INSTALL (1) STANDARD CLEANOUT #3
 - ⊕ IN (N) = 130.10
 - ⊕ OUT (N) = 132.13
- ⊕ INSTALL (1) STANDARD CLEANOUT #4
 - ⊕ IN (N) = 130.10
 - ⊕ OUT (N) = 132.13
- ⊕ INSTALL (1) DL/WATER SEPARATOR
 - ⊕ UTILITY VAULT 216.54 W/ 2.0" CAST IRON ROUND COVER (D)
 - ⊕ SLOPE UP TO SLOPE CORNER TO MATCH DRAINWAY GRADE
 - ⊕ IN (N) = 133.10
 - ⊕ OUT (E) = 132.13
- ⊕ INSTALL (1) STANDARD CLEANOUT #5
 - ⊕ IN (N) = 130.10
 - ⊕ OUT (N) = 132.13
- ⊕ INSTALL (1) STANDARD CLEANOUT #6
 - ⊕ IN (N) = 130.10
 - ⊕ OUT (N) = 132.13

WATER INSTALLATION NOTES

- SEE C3 FOR WATER DETAILS
- TAP IN TO EXISTING 6" WATER LINE USING A 6"x4" TAPING SADDLE
 - ⊕ 1" 6" x 4" VALVE WITH VALVE BOX
 - ⊕ THRUST BLOCK
 - ⊕ DISCONNECT UTILITY VAULT
 - ⊕ DODD IN UTILITY VAULT 978.14 - DRAWING NO. WL-414
 - ⊕ 90 FEET 8" DI. PIPE TO BUILDING SPRINKLER SYSTEM
- INSTALL (1) WATER METER
 - ⊕ 1" 2" X 2" BEND
 - ⊕ 1" 1/2" WATER METER - DRAWING NO. WL-403
 - ⊕ DISCONNECT UTILITY VAULT
 - ⊕ 1" 1/2" TYPE COPPER PIPE
 - ⊕ 1" 1/2" TYPE COPPER PIPE TO DOMESTIC SYSTEM
- INSTALL (1) 1/2" VALVE WITH VALVE BOX
 - ⊕ THRUST BLOCK
 - ⊕ STANDARD FIRE HYDRANT ASSEMBLY - DRAWING NO. WL-401
 - ⊕ 1" 1/2" FEET OF 8" DI. PIPE





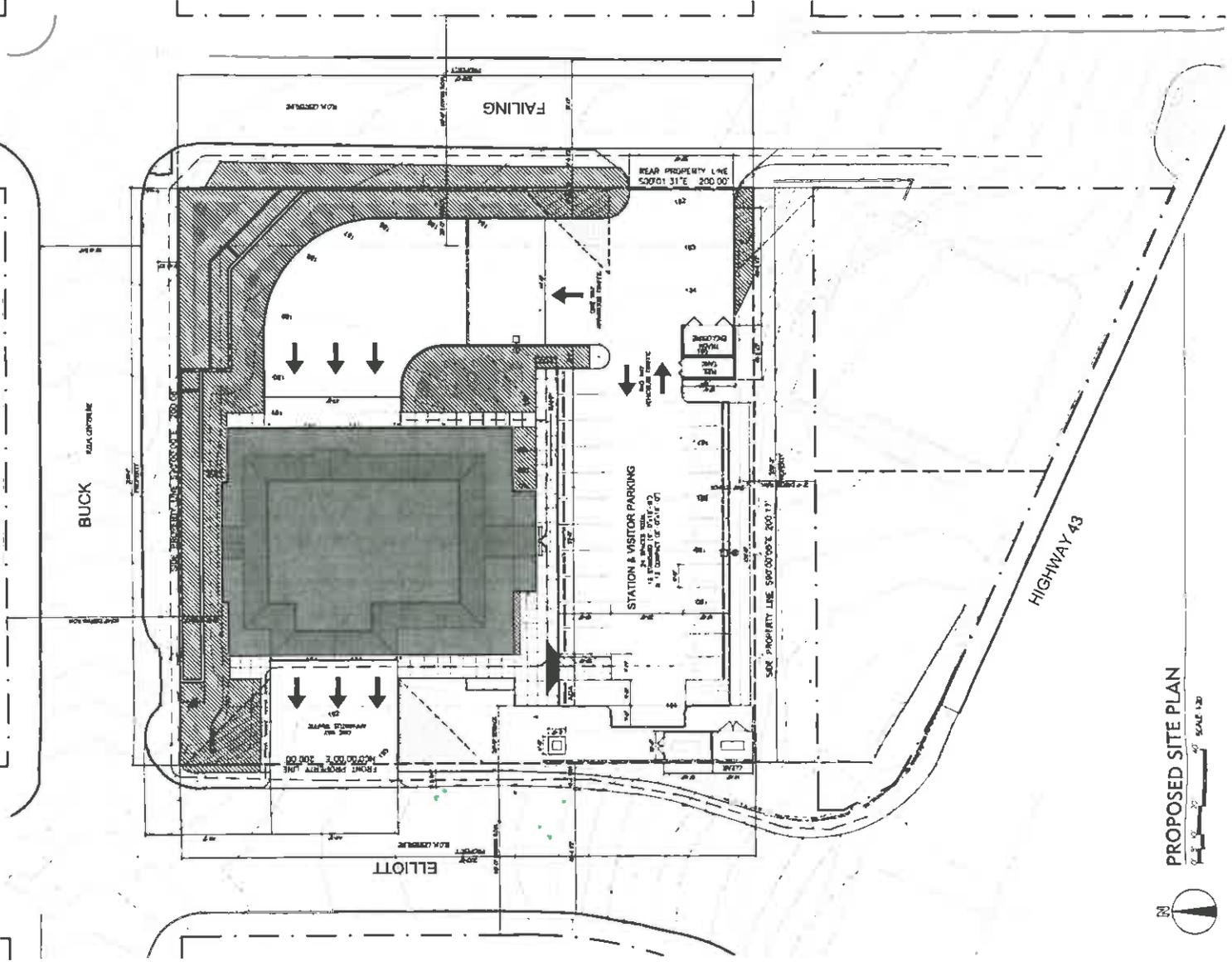
PECK
SMILEY
ETTLIN
ARCHITECTS

4112 SW CORBETT AVE
PORTLAND, OREGON 97221
TEL: (503) 241-1111
FAX: (503) 241-8422

TV&R WEST LINN
STATION 58 - BOLTON
6050 FAILING STREET | WEST LINN, OR

DESIGN
DEVELOPMENT
SITE ANALYSIS
PROJECT VICINITY

A1.1



PROPOSED SITE PLAN

SCALE 1/8" = 1'-0"



VICINITY MAP AND NOTES

- 1. TRUCK STOPS OCCUR ON WILAMETTE DRIVE/HPY 43
- 2. I-5 STOPS AT ELLIOTT AND WEST A
- 3. HPY 43/AVENUE DRIVE HAS BKE JAMES & HAVING STREET IS A MODERATE WIDTC STREET PER BKE MAP OF WEST LINN
- 4. SIDEWAYS EXIST ON BUCK, FAILING, ELLIOTT & HPY 43
- 5. SEE OWN FOR UTILITY ACCESS

OWNER'S REPRESENTATIVE

Gary Wink
Director of Support Services
Tualatin Valley Fire & Rescue
20480 SW Blanton Street
Astoria, Oregon 97103
Phone: (503) 842-0333 Phone
Fax: (503) 842-8555 Fax
e-mail: gwy@tvaliafire.com

SITE ANALYSIS GENERAL NOTES

1. THE SITE DRAWS GENERALLY TO THE SOUTH
2. THE SITE DOES NOT SIT IN A FLOOD PLAIN AREA
3. PER CITY OF WEST LINN COMPREHENSIVE PLAN
4. THE SITE DOES NOT HAVE A HIGH WATER TABLE
5. THE SITE DOES NOT SIT ON A SLEEP SLURP AND IS NOT SUBJECT TO LANDSLIDE HAZARDS OR HAVE A HIGH EROSION POTENTIAL
6. THE SITE IS NOT IN A MARSH OR WETLAND AREA AND DOES NOT HAVE A PER CITY AND WEST LINN COMPREHENSIVE PLAN
7. INCLUDING LARGE ROCK OUTCROPPINGS SIGNIFICANT VIEWS OR STREAMS AND STREAM CORRIDORS
8. THE SITE IS NOT A REGIONAL OR NATIONAL GEOLOGICAL SITE AND DOES NOT HAVE A SIGNIFICANT GEOLOGICAL SITE AND
9. SEE TRITE PROTECTION PLAN AND AIRBORNS REPORT FOR TREE LOCATIONS AND SPACING
10. SEE NOISE STUDY FOR EXISTING AND PREDICTED AMBIENT NOISE LEVELS

BUILDING AREA

FIRST FLOOR	7,891 SF
SECOND FLOOR	4,812 SF
TOTAL	12,703 SF

SITE INFORMATION

SITE AREA	0.82 ACRES (40,018 SF)
ZONING	SINGLE-FAMILY RESIDENTIAL (C) (MAPS AND ATTACHED)
SETBACKS	FRONT 20'-0" (WEST)
	SIDE 15'-0" (NORTH)
	SIDE 5'-0" (SOUTH)
	REAR 20'-0" (EAST)

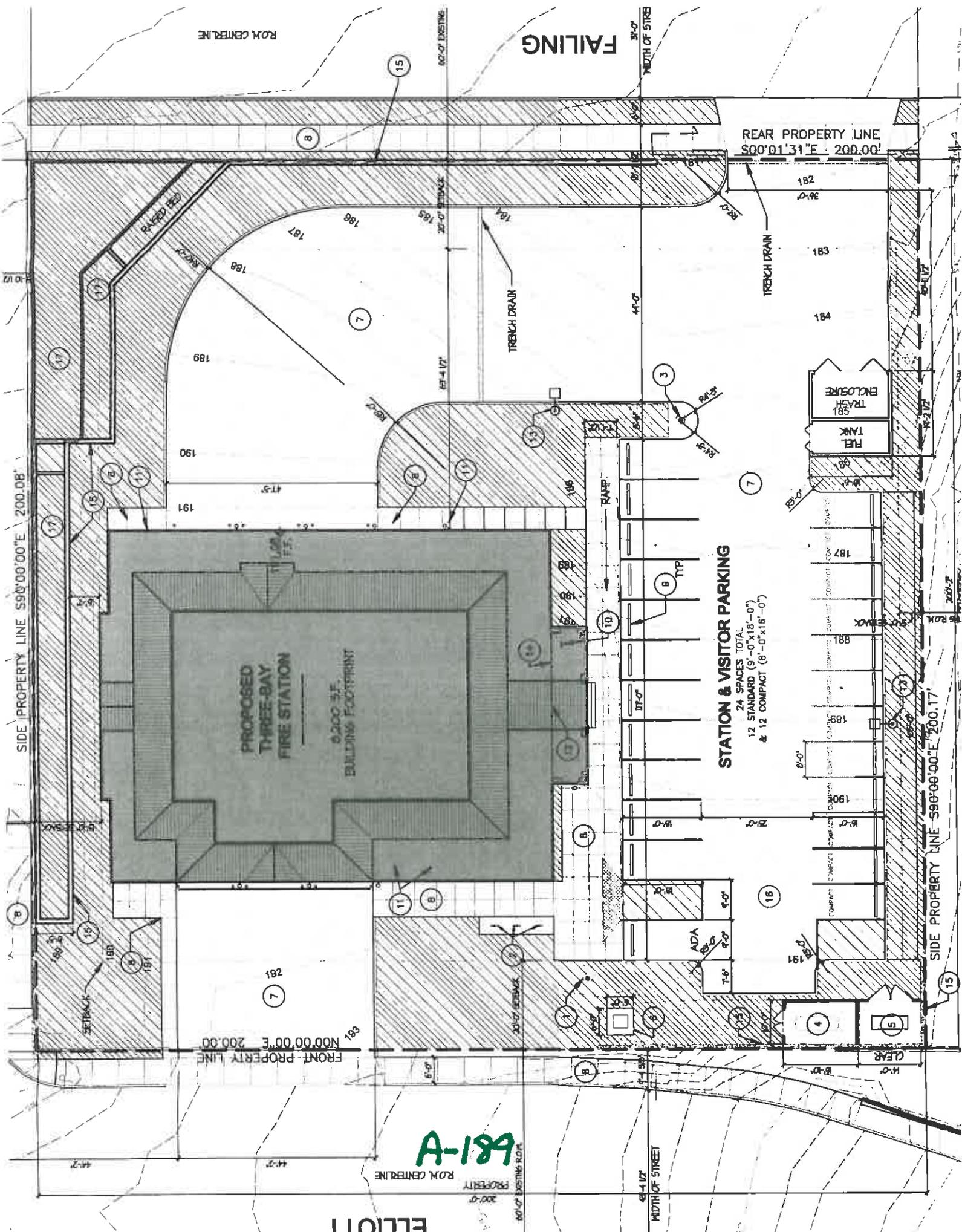
LEGEND

- PROPOSED UNDISCARDED AREA 12,080 SF
- CLEAR WASH AREA
- EXISTING CONTOURS
- PROPOSED CONTOUR

A-187

ELLIOTT

A-189



ROOM CENTRALINE

FALLING

REAR PROPERTY LINE
500'01'31"E 200.00'

SIDE PROPERTY LINE S90°00'00"E 200.08'

FRONT PROPERTY LINE
N00°00'00"E 200.00'

STATION & VISITOR PARKING
24 SPACES TOTAL
12 STANDARD (9'-0" X 18'-0")
& 12 COMPACT (8'-0" X 16'-0")

SIDE PROPERTY LINE S90°00'00"E 200.17'

ROOM CENTRALINE

MIDTH OF STREET

PROPERTY

200'-0"

ROOM CENTRALINE

ROOM CENTRALINE

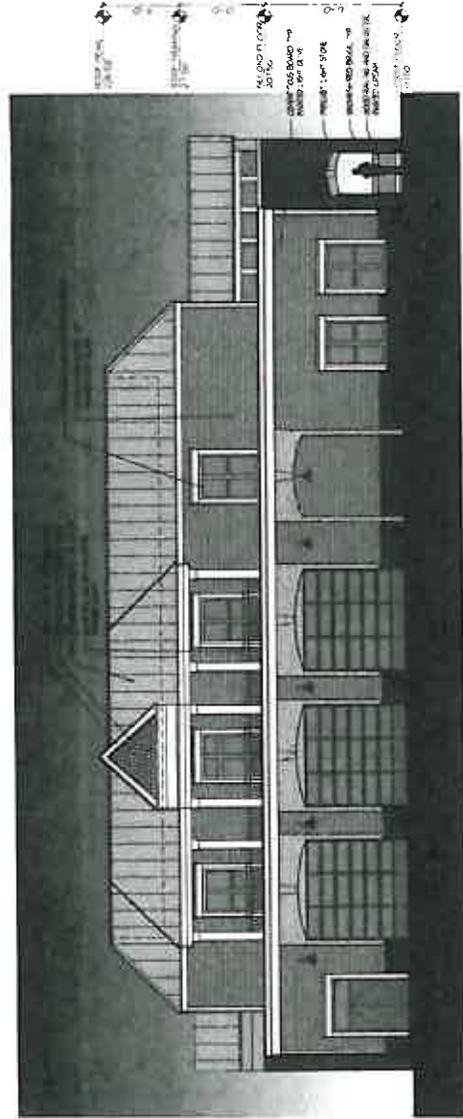
200'-0"

PROPERTY

200'-0"

ROOM CENTRALINE

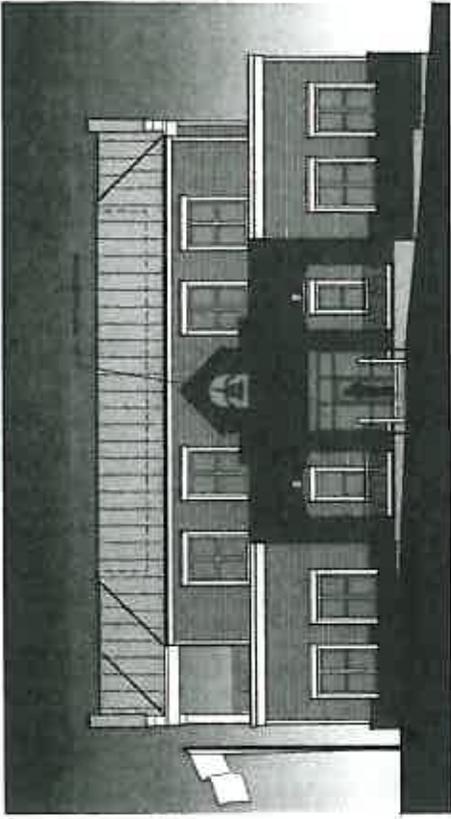
200'-0"



ELLIOTT STREET ELEVATION - WEST

SCALE 1/8" = 1'-0"

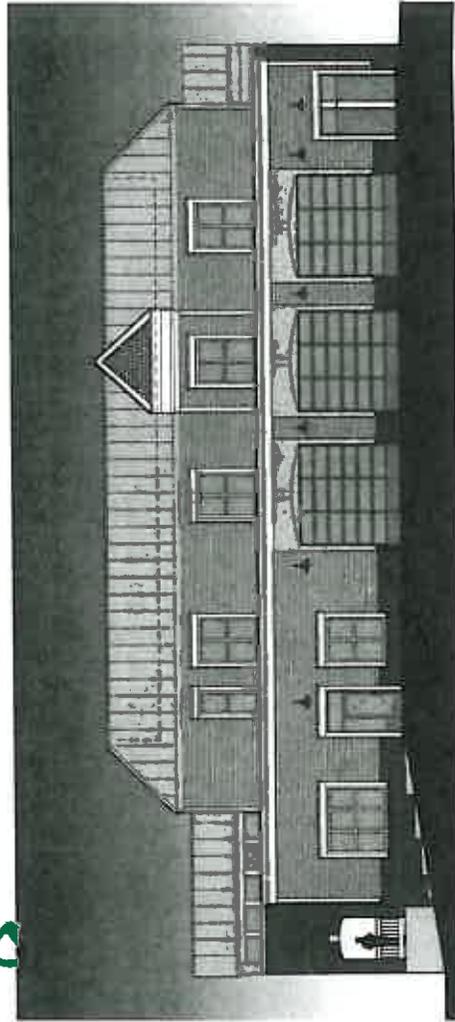
A 190



MAIN ENTRY ELEVATION - SOUTH

SCALE 1/8" = 1'-0"

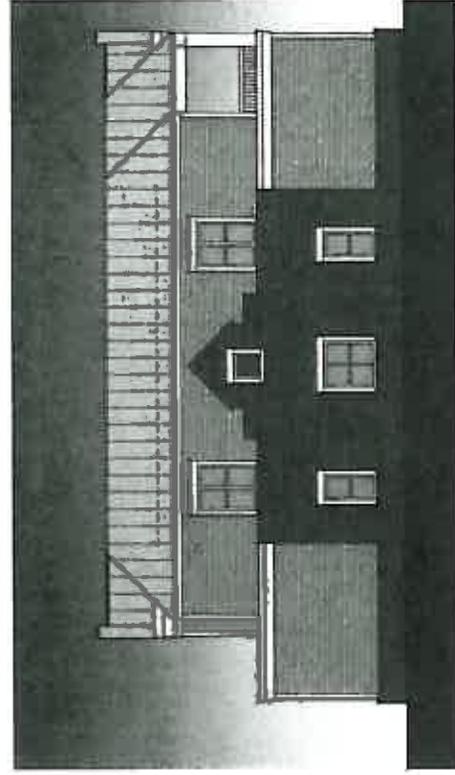
SEE 405 SECTION FOR MATERIALS



FAILING STREET ELEVATION - EAST

SCALE 1/8" = 1'-0"

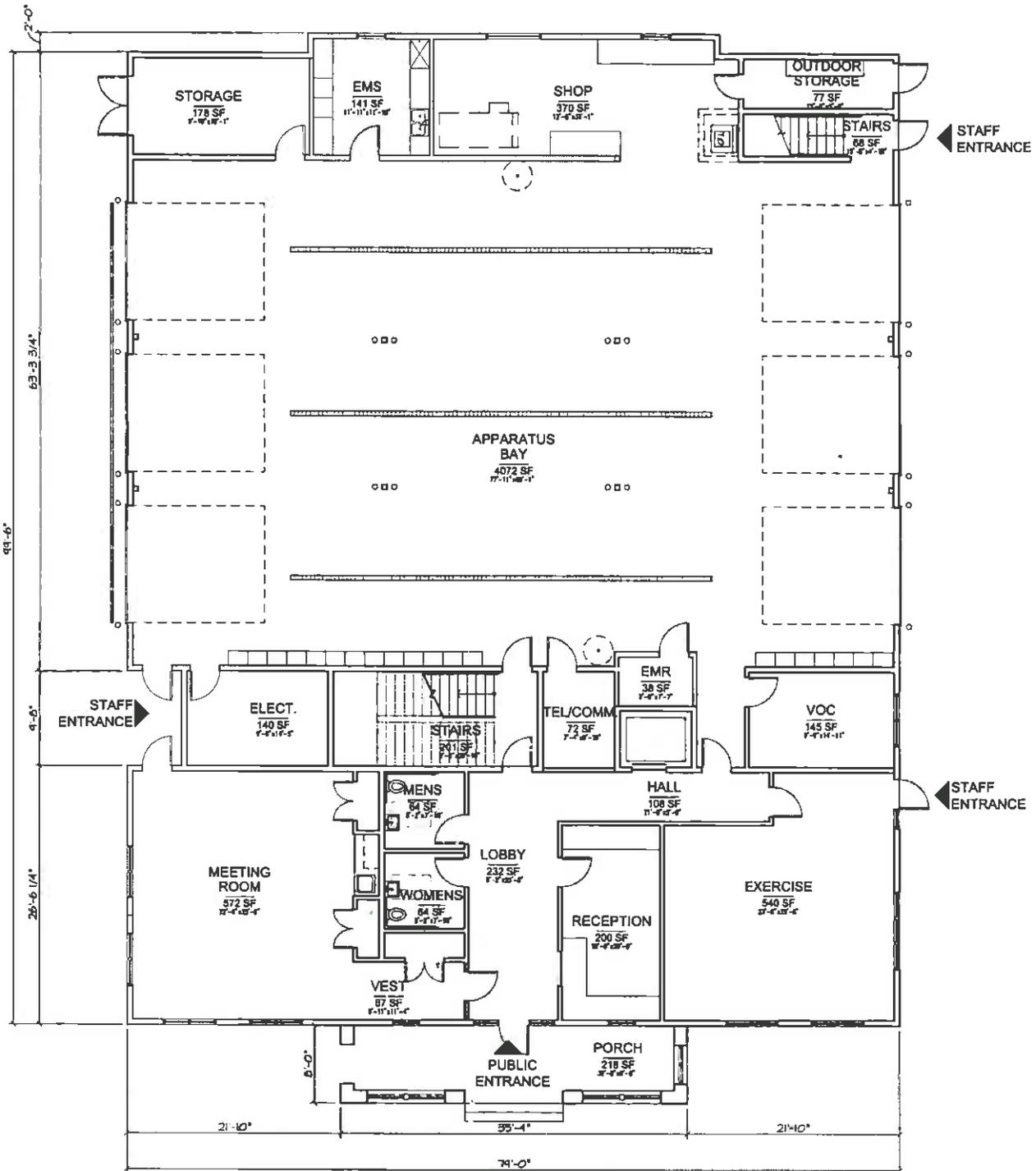
SEE 405 SECTION FOR MATERIALS



BUCK STREET ELEVATION - NORTH

SCALE 1/8" = 1'-0"

SEE 405 SECTION FOR MATERIALS



PROPOSED FIRST FLOOR PLAN

1" = 3' 9"
SCALE 1/8" = 1'-0"

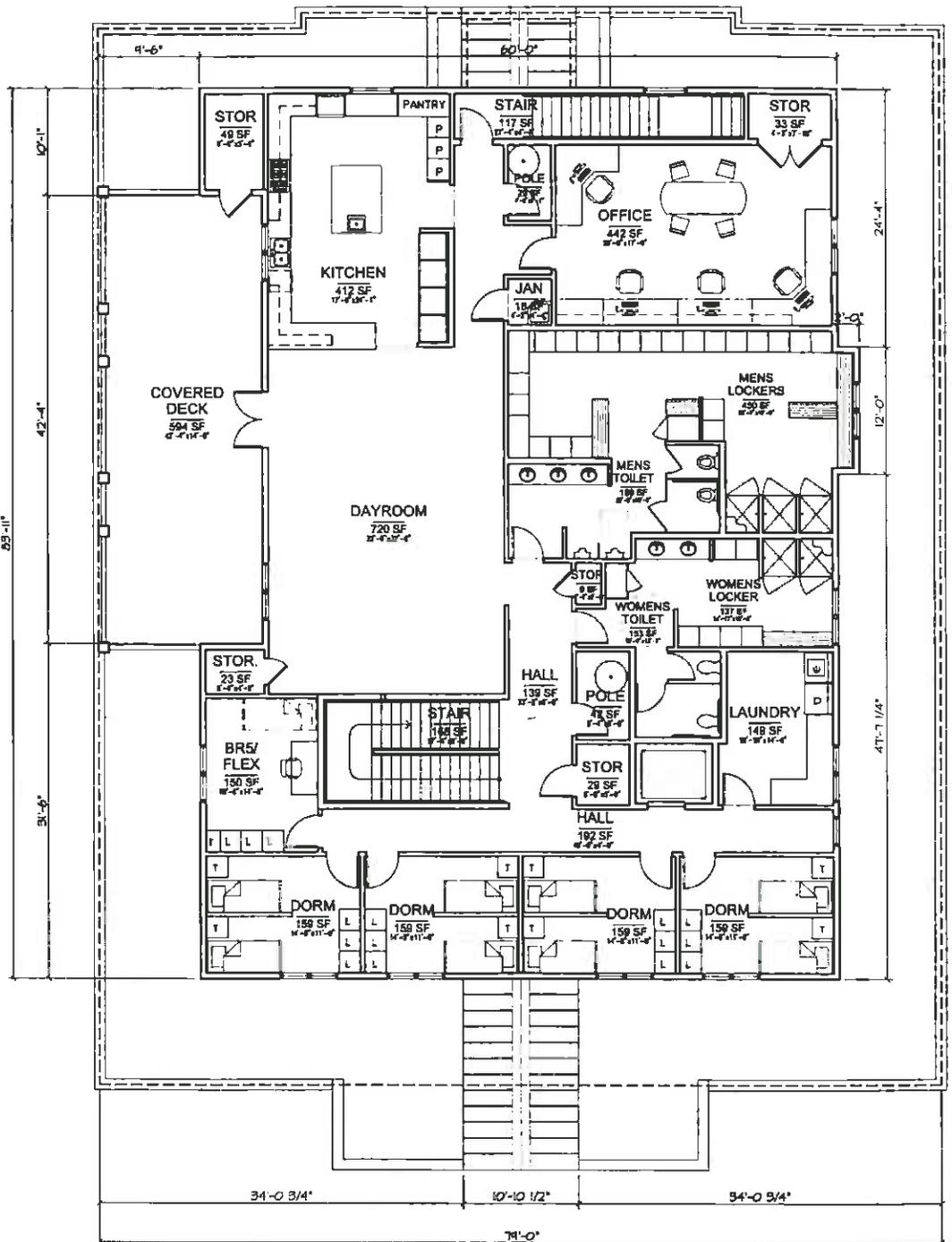
FIRST FLOOR 7,891 SF
SECOND FLOOR 4,812 SF
TOTAL 12,599 SF



DESIGN
DEVELOPM
PROPOSE
FLOOR PU
PREP
DATE
BY

A2

A-192



PROPOSED SECOND FLOOR PLAN

1" = 3' 5"
SCALE: 1/8" = 1'-0"

A-193

FIRST FLOOR 7,891 SF
SECOND FLOOR 4,812 SF
TOTAL 12,900 SF

Received
9-30-08
[Signature]

Memorandum

Date: September 30, 2008
To: Peter Spir, Associate Planner, City of West Linn
From: Katie Prew, AICP, Angelo Planning Group *KP*
cc: Gary Wells, TVF&R
Re: Response to Completeness Review – CUP-08-02

I appreciate your continued assistance on this important project. We have addressed the items identified by City staff in the Completeness Review letter dated September 15, 2008 below in this memorandum and the attached exhibits. The code sections, responses and exhibits will be added to the TVF&R Station 58 Development Application and any future submittals of that application will include the information presented below.

Street Improvement

- Provide half street improvement on Failing Street along the project frontage.
- Provide 4" overlay on Elliot along the project frontage.

Sanitary Sewer Improvement

- Plug all existing sanitary sewer services at the right of way.

Water Improvement

- Provide separate taps for domestic and fire line.
- Remove all unused existing water meters and provide plugs at the water main.

Response: The completeness items listed above under Street Improvement, Sanitary Sewer Improvement and Water Improvement have been addressed on the revised Civil Plan Set (Sheets C1.0 through C2.4) including the Site Improvement Plan (Sheet C1.4, Exhibit A).

Storm Improvement

- Gravel surface shall not be considered as impervious area. Revise drainage report to reflect this change and address detention requirements if additional impervious area is more than 5,000 square feet.

Response: The Stormwater Report (Exhibit D of the original application) has been revised and attached to this memorandum.

A-194

Planning Issues

- CDC Chapter 40 cannot be used to allow buildings over 35 feet tall. Chapter 40 only applies to chimneys, spires, etc that extend above the dominant roof/ridgeline and not to unused attic area.

Response: The Architectural Elevations (Sheet A3, Exhibit A) have been revised to show that the proposed Station 58 to has a uniform height of 35 feet (the maximum allowed within the R-4.5 zoning district).

- CDC Chapter 46.150(D) requires that 25% of the bike parking be covered.

Response: Please see revised Site Plan (Sheets A, Note 10, Exhibit A).

- Chapter 55.150(A)(1) requires an irrigation plan. None provided.

Response: An Irrigation Plan (Sheet IR1.0) has been provided as part of the attached Exhibit A.

- Chapter 55.110(B)(3) slope analysis required. None provided.

Response: Please see the attached Grading Plan (Sheet C1.2, Exhibit A).

If you would prefer an entirely revised copy of the development application which includes the revised information in this memorandum, please let me know. Additionally, if you need copies of any plans, those can be provided. Please feel free to contact me if you have any questions or comments. I can be reached by telephone at (503) 224-8225 or by email at kprew@angeloplanning.com.

Attachments:

- Exhibit A: Station 58 Plan Set Revisions and Additions(One full-size set and three sets at the 12x18" reduced size):
 - A1 Site Plan
 - A3 Architectural Elevations
 - C1.0 Utility Plan
 - C1.1 Stormwater Plan
 - C1.2 Grading Plan
 - C1.3 Erosion Control Plan
 - C1.4 Site Improvement Plan
 - C2.0 Erosion Control Details
 - C2.1 Site Improvement Details
 - C2.2 Water Details
 - C2.3 Sanitary Details
 - C2.3 Stormwater Details
 - IR1.0 Irrigation Plan
- Exhibit B: Storm Report Revised

A-195

**Exhibit B: Stormwater Report
Tualatin Valley Fire & Rescue Station 58**

REVISED

Please
return

Peter

A-196



Engineering +
Environmental

Preliminary Stormwater Report

TVF&R Station 58
6050 Failing Street
West Linn, Oregon

Prepared for:
PSE Architects
4412 SW Corbett Avenue
Portland, OR 97239

September 19, 2008
Project No. 70606.000

4412 SW Corbett Avenue, Portland, OR 97239
503.248.1939 Main
503.248.0223 Fax
888.248.1939 Toll-Free
www.pbseenv.com

A-197

TABLE OF CONTENTS

1.0 PROJECT DESCRIPTION 1

2.0 EXISTING CONDITIONS 1

3.0 PROPOSED DRAINAGE 1

4.0 GENERAL HYDROLOGIC ANALYSIS, EXISTING AND DEVELOPED CONDITIONS 1

 4.1 Analysis Criteria and Sources 1

 4.2 Analysis Assumptions 2

 4.3 Quantity Control System Design 2

 4.3.1 Conceptual Design Stormwater Plan 2

 4.3.2 Analysis Criteria and Sources 2

 4.3.3 Initial Conditions 2

 4.3.4 Completed Detailed Analysis 2

 4.3.5 Tabulate Analysis Results 3

 4.3.6 Maps, Exhibits, etc. to complete Design 3

5.0 WATER QUALITY DESIGN 3

 5.1 Water Quality Design 3

 5.2 Best Management Practices Utilized in Final Design 3

 5.3 Initial Conditions 3

 5.4 Assumptions Used in Completing Analysis 4

 5.5 Hydraulic Analysis 4

 5.6 Summary 4

6.0 CONVEYANCE SYSTEMS ANALYSIS AND DESIGN 4

 6.1 Design Criteria Utilized for Final Design 4

 6.2 Initial Conditions 4

 6.3 Hydraulic Computations/Capacities 4

 6.4 Summary 4

7.0 SOILS EVALUATION 4

 7.1 On-site Soil Types 4

 7.2 Seasonal High Water Table Elevations 4

 7.3 Soil Parameters and Design Methods 4

8.0 OPERATIONS AND MAINTENANCE MANUAL 4

9.0 RESTRICTIONS 5

TECHNICAL APPENDIX

- Appendix A – Stormwater System Worksheet**
- Appendix B – Water Quantity Design**
- Appendix C – Water Quality Design**
- Appendix D – Conveyance System Calculations**
- Appendix E – Drainage Basin Map**
- Appendix F – Construction Plans**
- Appendix G – Supporting Maps and Design Material**
- Appendix H – Operations and Maintenance Plan**

1.0 PROJECT DESCRIPTION

This report contains hydrologic and hydraulic design analyses for a fire station on a 0.92-acre site proposed for location in West Linn, Oregon. The site consists of six parcels (Tax Lot 1000, 1100, 1200, 1400, 1500 and 2700). The site is located north of Buck Street, east of Elliot Street, west of Failing Street and south of the Willamette Drive.

2.0 EXISTING CONDITIONS

Currently, the site has six existing buildings, asphalt pavement, gravel driveways and grassy areas. The topography of the site has an average slope of 5.7% draining toward the northeast corner of the property at the intersection of Buck Street and Failing Street.

The Soil Survey of Clackamas County classifies soil type as Aloha Silt Loam (1B), 3 to 6 percent slopes and belongs to the Hydrologic Soil Groups C. Soil background information is contained in Appendix G.

3.0 PROPOSED DRAINAGE

The proposed storm system layout is included in the construction plans in Appendix F. Stormwater on the developed site will be managed as follows:

- Stormwater runoff from roof areas, sidewalks and paved improvements will be discharged to flow-through planters for treatment and detention.
- From the flow-through planters, stormwater will be discharged into the existing 12" CMP storm line located to the north of the property.
- Three trench drains are to be installed on-site. One will be installed at the west truck bay entrance and will be connected to flow-through planter #3. The second trench drain will be located at the eastern entrance along Failing Street. This trench drain will pick-up flows from the parking area and driveways. This trench will discharge to flow-through planter #1. The third trench drain will be located to the east of the truck bay and connected to an oil/water separator with a pneumatic valve. The pneumatic valve will be connected to sanitary sewer and storm. For the majority of the time, runoff will be released to the storm system. When the fire trucks are being washed the runoff collected by the trench drain will be switched to release to the sanitary sewer. The stormline from this trench will discharge to flow-through planter #2.

4.0 GENERAL HYDROLOGIC ANALYSIS, EXISTING AND DEVELOPED CONDITIONS

4.1 Analysis Criteria and Sources

The hydrologic and hydraulic analysis is in accordance with criteria and guidelines of the City of West Linn Design Standards and the City of Portland Stormwater Management Manual. Tabulations for acreage; imperviousness; curve number; pipe and channel flow; and other hydrologic parameters used in completing analysis are tabulated on the basin map in Appendix E.

Stormwater flows were determined using the Santa Barbara Urban Hydrograph Method (SBUHYD). Criteria used in completing analyses are the following:

Design storms: 2-year storm = 2.40 inches
 5-year storm = 3.00 inches
 10-year storm = 3.40 inches
 25-year storm = 3.90 inches
 100-year storm = 4.40 inches

This information was taken from the City of Portland Stormwater Management Manual.

4.2 Analysis Assumptions

- Storms follow Type 1A distribution and have 24-hour duration
- The following curve numbers were utilized for on-site conditions:

Pre-developed conditions

Curve Number (CN) = 86	Grass cover, Good condition
Curve Number (CN) = 89	Gravel
Curve Number (CN) = 98	Paved/impervious surfaces

Post-developed conditions

Curve Number (CN) = 86	Grass cover, Good condition
Curve Number (CN) = 98	Paved/impervious surfaces

4.3 Quantity Control System Design

4.3.1 Conceptual Design Stormwater Plan

The stormwater drainage plan includes water quantity mitigation of the roof and pavement runoff via flow-through planters which are designed to release flows at pre-developed conditions.

4.3.2 Analysis Criteria and Sources

Stormwater quantity control analysis was done in accordance with the City of West Linn.

4.3.3 Initial Conditions

The stormwater control facilities were assumed to be empty at the beginning of each storm event.

4.3.4 Completed Detailed Analysis

Complete and detailed hydrologic and hydraulic analysis, volume and peak flows, and references used for design of the quantity control system are found in the Appendix A and B.

5.4 Assumptions Used in Completing Analysis

It is assumed that the flow-through planters will be constructed per the engineers specifications. Construction observation and as-built documentation will verify these assumptions.

5.5 Hydraulic Analysis

Complete detailed analysis, calculations and references are found in the Appendix A and C.

5.6 Summary

The flow-through planters have been designed and located to treat the runoff from the roof and new paved surfaces as shown on the Basin Map in the Appendix E.

6.0 CONVEYANCE SYSTEMS ANALYSIS AND DESIGN

6.1 Design Criteria Utilized for Final Design

Conveyance of the 100-year storm flow was used for design.

6.2 Initial Conditions

All conveyance systems are empty at time of 100-year storm flow.

6.3 Hydraulic Computations/Capacities

All conveyance systems are sized to convey the 100-year stormwater event. Conveyance calculations and hydrographs are found in Appendix D.

6.4 Summary

All stormwater conveyance appurtenances have been designed to convey the 100-year storm event. Pipe sizes vary in diameter from 4"-12".

7.0 SOILS EVALUATION

7.1 On-site Soil Types

The on-site soil group is Aloha Silt Loam, 3-6% slopes (1B) a type C soil.

7.2 Seasonal High Water Table Elevations

Groundwater is not expected to impact stormwater facilities.

7.3 Soil Parameters and Design Methods

Hydrologic soil group C is located on this site. Table C-2 of the City of Portland Stormwater Management Manual was used to determine curve numbers for the group C soil ground cover.

8.0 OPERATIONS AND MAINTENANCE MANUAL

The stormwater facilities will be privately maintained and funded after completion by TVF&R. A general operations and maintenance plan for flow-through planters from the City of Portland is included in Appendix H.

9.0 RESTRICTIONS

This report is for the exclusive use of the client and is not to be relied upon by other parties. It is not to be photographed, photocopied, or similarly reproduced in total or in part without the expressed written consent of the client and PBS Engineering + Environmental.

Sincerely,



Guy Neal, P.E.
Principal Engineer

A handwritten signature in cursive script that reads "Kendra Laminack".

Kendra Laminack, EIT, LEED-AP®
Project Civil Designer

APPENDIX A

Stormwater System Worksheet

A-205

Santa Barbara Urban Hydrograph Method

Reference: City of West Linn Design Standards, May 2000

Reference: City of Portland Stormwater Management Manual, September 2004

Reference: SBUHYD Program

Project: TVF&R Station 58 (PBS #70606.000)

By: Kendra Laminack

1 Area Calculations (Pervious & Impervious)

ft²/43560 = Ac

Pre-Development

Pervious Area =	28,492 ft ²	0.65 Ac
Impervious Area =	11,533 ft ²	0.26 Ac
Building/Concrete =	11,533 ft ²	0.26 Ac
Area =	40,025 ft ²	0.92 Ac
Total Area =	40,025 ft²	0.92 Ac

Post-Development

Pervious Area =	12,150 ft ²	0.28 Ac
Impervious Area =	27,875 ft ²	0.64 Ac
Building =	8,227	0.19 Ac
Concrete/AC =	19,576	0.45 Ac
Area =	40,025 ft ²	0.92 Ac
Total Area =	40,025 ft²	0.92 Ac

Water Quality

Pervious Area =	0 ft ²	0.00 Ac
Impervious Area =	27,803 ft ²	0.64 Ac
Area =	27,803 ft ²	0.64 Ac
Total Area =	27,803 ft²	0.64 Ac

2 CN Values

Pre Development

Pervious CN (Class C soil: Grass Cover, Fair Condition)	79
Semi-impervious CN (Class C soil: Gravel)	89
Impervious CN	98

Post Development

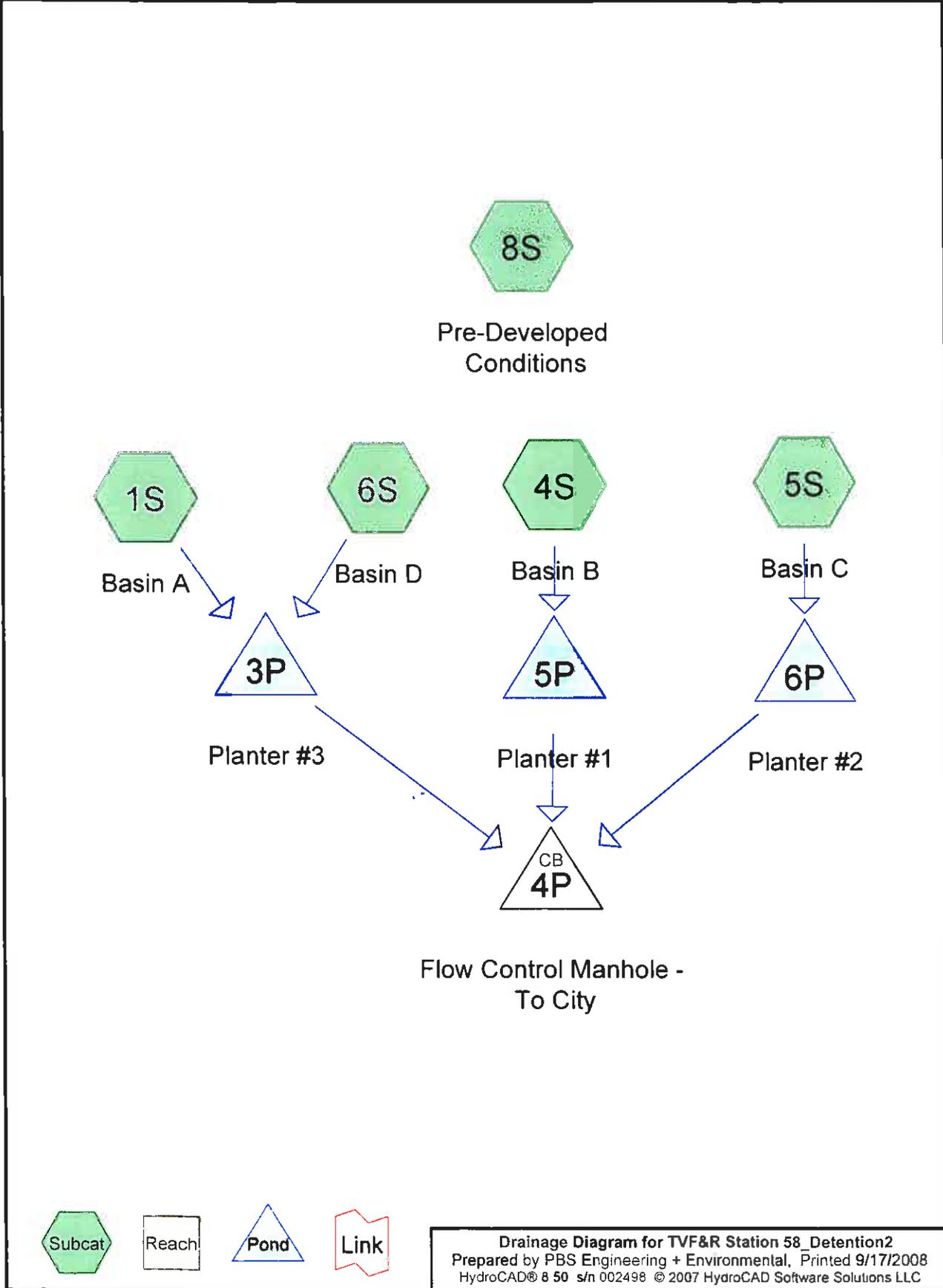
Pervious CN (Class C soil: Grass Cover, Good Condition)	74
Impervious CN	98

A-206

APPENDIX B

Water Quantity Design

A-207



A-208

TVF&R Station 58_Detention2

Type IA 24-hr 2-year Rainfall=2.50"

Prepared by PBS Engineering + Environmental

Printed 9/17/2008

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Page 2

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Basin A	Runoff Area=3,487 sf 54.06% Impervious Runoff Depth>1.48" Tc=5.0 min CN=86/98 Runoff=0.04 cfs 0.010 af
Subcatchment4S: Basin B	Runoff Area=18,255 sf 73.84% Impervious Runoff Depth>1.64" Tc=5.0 min CN=86/98 Runoff=0.21 cfs 0.057 af
Subcatchment5S: Basin C	Runoff Area=5,872 sf 72.96% Impervious Runoff Depth>1.63" Tc=5.0 min CN=86/98 Runoff=0.07 cfs 0.018 af
Subcatchment6S: Basin D	Runoff Area=8,227 sf 100.00% Impervious Runoff Depth>1.84" Tc=5.0 min CN=0/98 Runoff=0.11 cfs 0.029 af
Subcatchment8S: Pre-Developed	Runoff Area=40,025 sf 28.81% Impervious Runoff Depth>1.29" Tc=5.0 min CN=86/98 Runoff=0.34 cfs 0.098 af
Pond 3P: Planter #3	Peak Elev=0.26' Storage=163 cf Inflow=0.14 cfs 0.039 af Outflow=0.12 cfs 0.038 af
Pond 4P: Flow Control Manhole - To City	Peak Elev=0.12' Inflow=0.35 cfs 0.110 af Outflow=0.35 cfs 0.110 af
Pond 5P: Planter #1	Peak Elev=0.31' Storage=299 cf Inflow=0.21 cfs 0.057 af Outflow=0.16 cfs 0.055 af
Pond 6P: Planter #2	Peak Elev=0.17' Storage=45 cf Inflow=0.07 cfs 0.018 af Outflow=0.06 cfs 0.018 af

Total Runoff Area = 1.742 ac Runoff Volume = 0.213 af Average Runoff Depth = 1.47"
48.06% Pervious = 0.837 ac 51.94% Impervious = 0.905 ac

A-209

TVF&R Station 58_Detention2

Prepared by PBS Engineering + Environmental

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Type IA 24-hr 2-year Rainfall=2.50"

Printed 9/17/2008

Page 3

Summary for Subcatchment 1S: Basin A

Runoff = 0.04 cfs @ 7.93 hrs, Volume= 0.010 af, Depth>1.48"

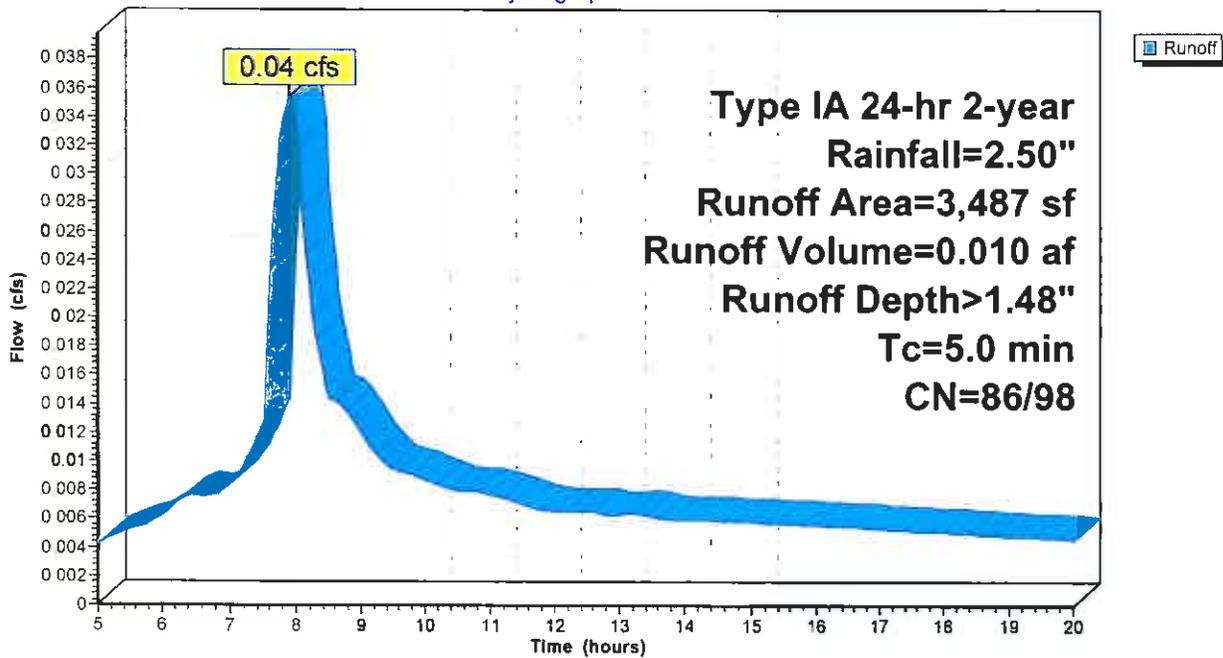
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2-year Rainfall=2.50"

	Area (sf)	CN	Description
*	1,885	98	Concrete, AC
*	1,602	86	Landscaping
	3,487	92	Weighted Average
	1,602	86	Pervious Area
	1,885	98	Impervious Area

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

Subcatchment 1S: Basin A

Hydrograph



A-210

TVF&R Station 58_Detention2

Type IA 24-hr 2-year Rainfall=2.50"

Prepared by PBS Engineering + Environmental

Printed 9/17/2008

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Page 4

Summary for Subcatchment 4S: Basin B

Runoff = 0.21 cfs @ 7.92 hrs, Volume= 0.057 af, Depth> 1.64"

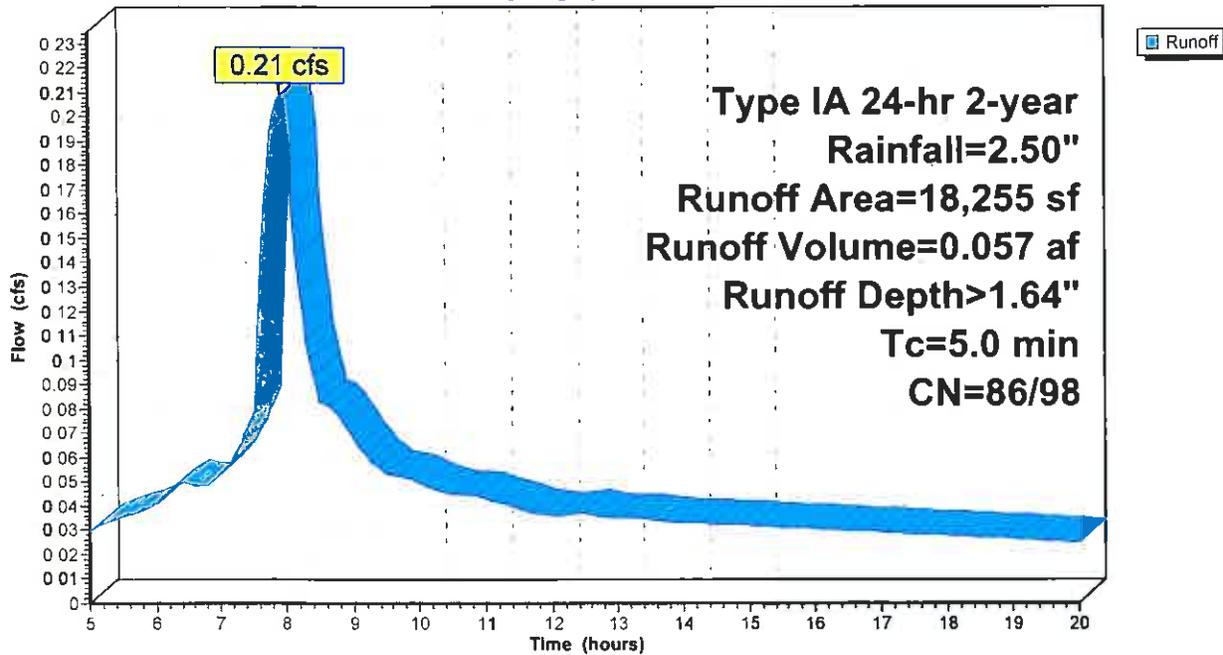
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2-year Rainfall=2.50"

	Area (sf)	CN	Description
*	13,479	98	Concrete, AC
*	4,776	86	Landscaping
	18,255	95	Weighted Average
	4,776	86	Pervious Area
	13,479	98	Impervious Area

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

Subcatchment 4S: Basin B

Hydrograph



A-211

TVF&R Station 58_Detention2

Type IA 24-hr 2-year Rainfall=2.50"

Prepared by PBS Engineering + Environmental

Printed 9/17/2008

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Page 5

Summary for Subcatchment 5S: Basin C

Runoff = 0.07 cfs @ 7.92 hrs, Volume= 0.018 af, Depth> 1.63"

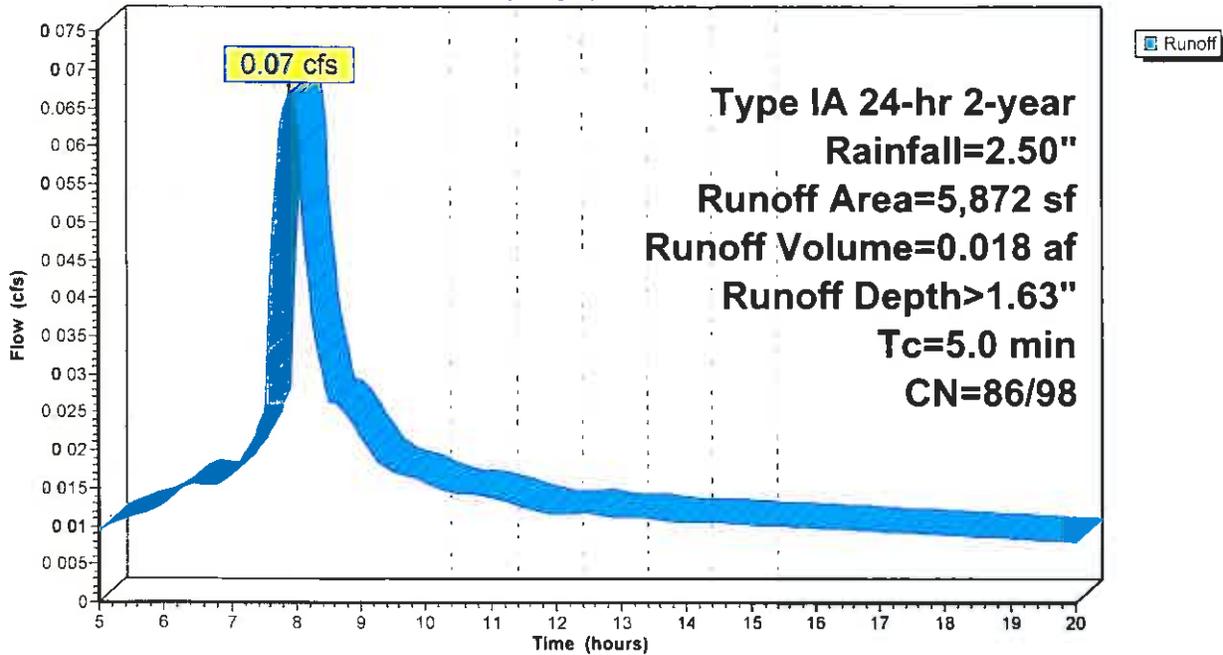
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2-year Rainfall=2.50"

	Area (sf)	CN	Description
*	4,284	98	Concrete, AC
*	1,588	86	Landscaping
	5,872	95	Weighted Average
	1,588	86	Pervious Area
	4,284	98	Impervious Area

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

Subcatchment 5S: Basin C

Hydrograph



A-212

TVF&R Station 58_Detention2

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Type IA 24-hr 2-year Rainfall=2.50"

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Page 6

Summary for Subcatchment 6S: Basin D

Runoff = 0.11 cfs @ 7.90 hrs, Volume= 0.029 af, Depth> 1.84"

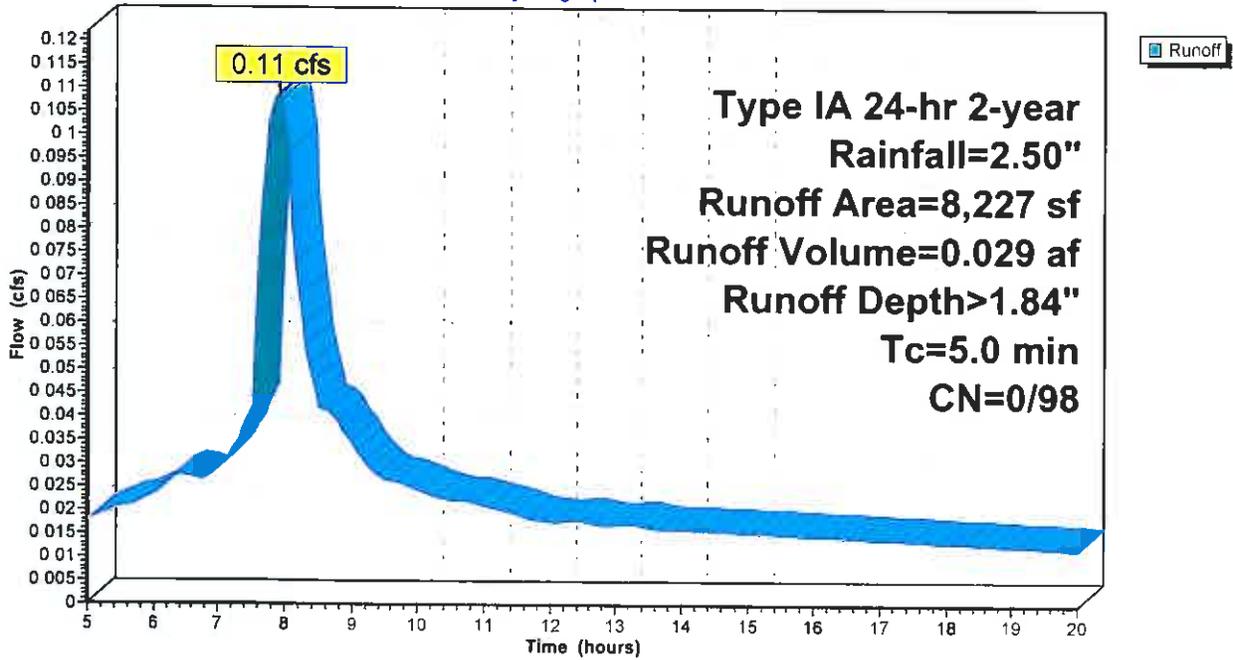
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2-year Rainfall=2.50"

Area (sf)	CN	Description
8,227	98	Building
8,227	98	Impervious Area

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

Subcatchment 6S: Basin D

Hydrograph



A-213

TVF&R Station 58_Detention2

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Type IA 24-hr 2-year Rainfall=2.50"

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Page 7

Summary for Subcatchment 8S: Pre-Developed Conditions

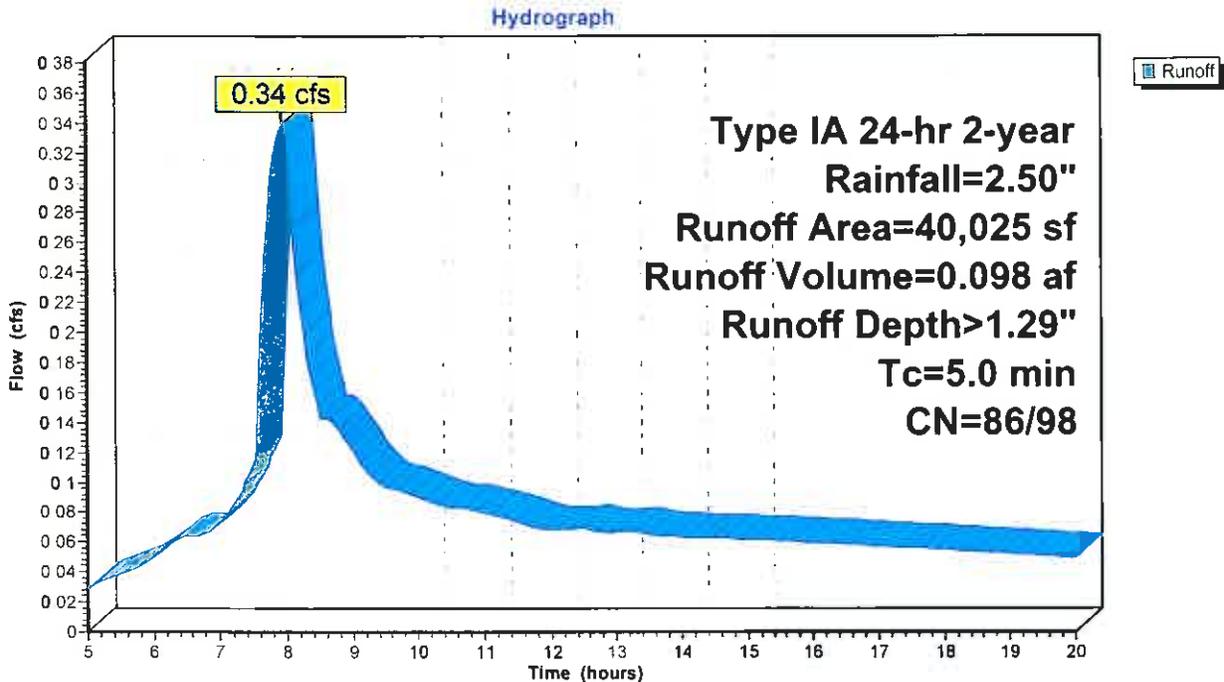
Runoff = 0.34 cfs @ 7.95 hrs, Volume= 0.098 af, Depth> 1.29"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2-year Rainfall=2.50"

	Area (sf)	CN	Description
*	11,533	98	Concrete, AC
*	25,745	86	Landscape
*	2,747	89	Gravel
	40,025	90	Weighted Average
	28,492	86	Pervious Area
	11,533	98	Impervious Area

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

Subcatchment 8S: Pre-Developed Conditions



A-214

TVF&R Station 58_Detention2

Type IA 24-hr 2-year Rainfall=2.50"

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Page 8

Summary for Pond 3P: Planter #3

Inflow Area = 0.269 ac, 86.32% Impervious, Inflow Depth > 1.73" for 2-year event
 Inflow = 0.14 cfs @ 7.91 hrs, Volume= 0.039 af
 Outflow = 0.12 cfs @ 8.06 hrs, Volume= 0.038 af, Atten= 14%, Lag= 9.4 min
 Primary = 0.12 cfs @ 8.06 hrs, Volume= 0.038 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.26' @ 8.06 hrs Surf.Area= 639 sf Storage= 163 cf

Plug-Flow detention time= 38.5 min calculated for 0.037 af (96% of inflow)
 Center-of-Mass det. time= 20.7 min (674.8 - 654.1)

Volume #1	Invert 0.00'	Avail.Storage 1,278 cf	Storage Description
Custom Stage Data (Prismatic) Listed below (Recalc)			

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	639	0	0
1.00	639	639	639
2.00	639	639	1,278

Device #1	Routing Primary	Invert 0.00'	Outlet Devices
4.0" Vert. Orifice/Grate C= 0.600			

Primary OutFlow Max=0.12 cfs @ 8.06 hrs HW=0.26' (Free Discharge)
 ↑1=Orifice/Grate (Orifice Controls 0.12 cfs @ 1.72 fps)

A-215

TVF&R Station 58_Detention2

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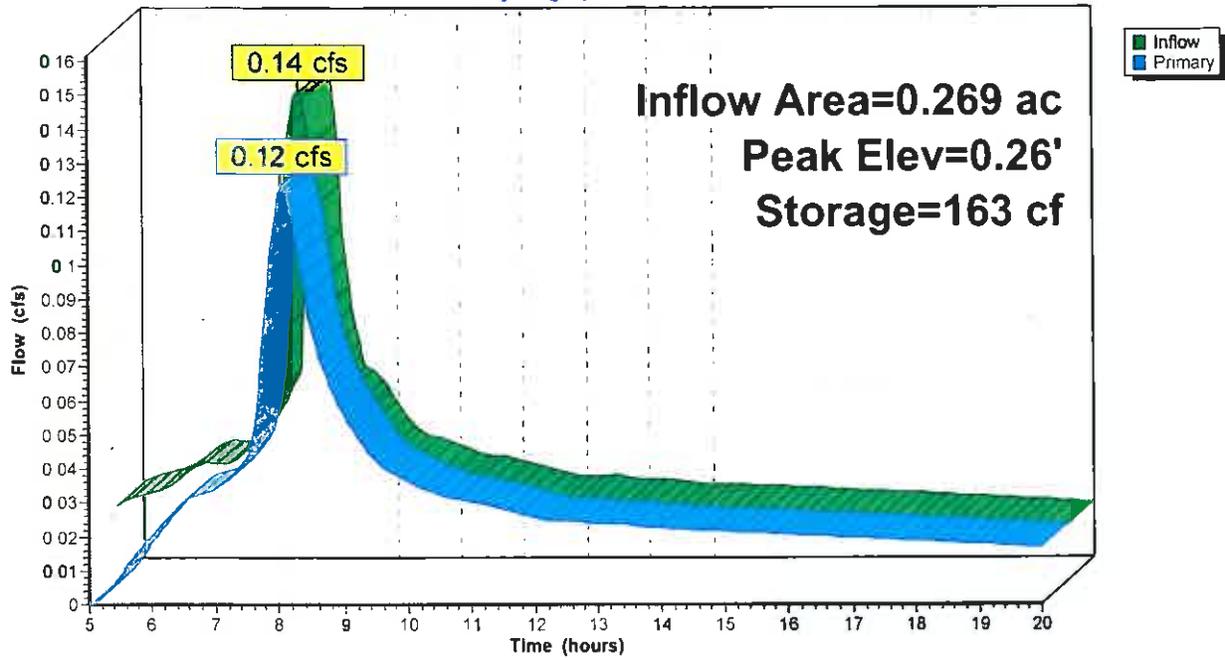
Type IA 24-hr 2-year Rainfall=2.50"

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Page 9

Pond 3P: Planter #3

Hydrograph



A216

TVF&R Station 58_Detention2

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Type IA 24-hr 2-year Rainfall=2.50"

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Page 10

Summary for Pond 4P: Flow Control Manhole - To City

Inflow Area = 0.823 ac, 77.77% Impervious, Inflow Depth > 1.61" for 2-year event
Inflow = 0.35 cfs @ 8.06 hrs, Volume= 0.110 af
Outflow = 0.35 cfs @ 8.06 hrs, Volume= 0.110 af, Atten= 0%, Lag= 0.0 min
Primary = 0.35 cfs @ 8.06 hrs, Volume= 0.110 af

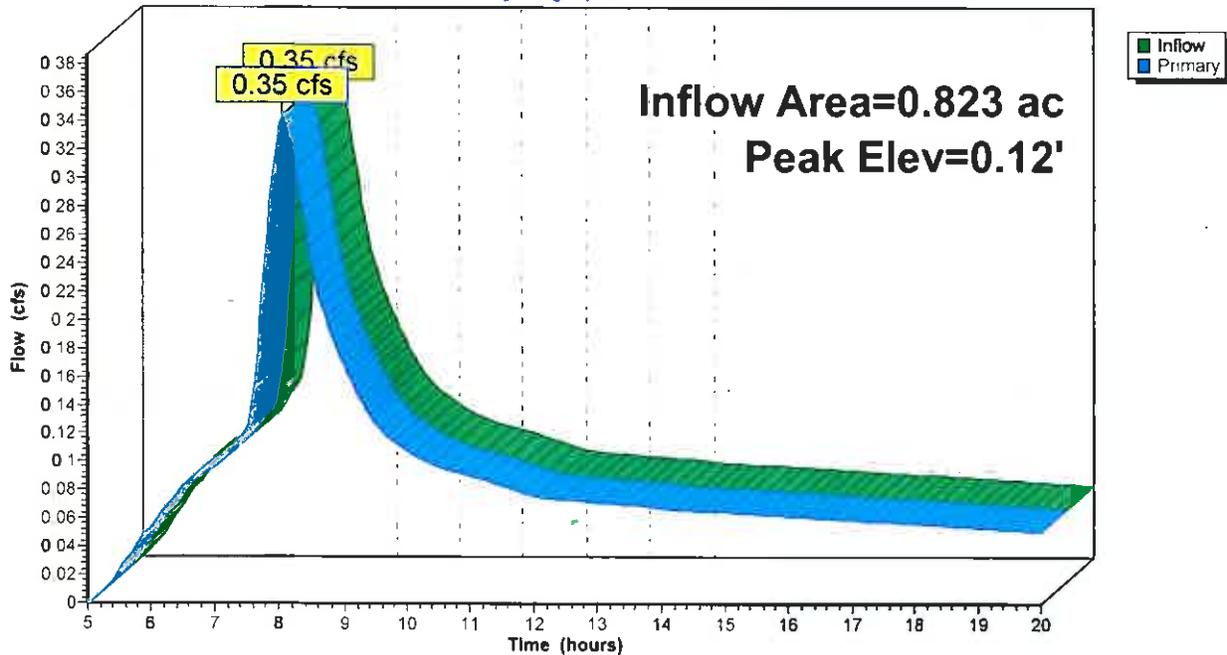
Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.12' @ 8.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	10.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.34 cfs @ 8.06 hrs HW=0.12' (Free Discharge)
1=Orifice/Grate (Weir Controls 0.34 cfs @ 1.12 fps)

Pond 4P: Flow Control Manhole - To City

Hydrograph



A-217

TVF&R Station 58_Detention2

Type IA 24-hr 2-year Rainfall=2.50"

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Page 11

Summary for Pond 5P: Planter #1

Inflow Area = 0.419 ac, 73.84% Impervious, Inflow Depth > 1.64" for 2-year event
 Inflow = 0.21 cfs @ 7.92 hrs, Volume= 0.057 af
 Outflow = 0.16 cfs @ 8.11 hrs, Volume= 0.055 af, Atten= 24%, Lag= 11.7 min
 Primary = 0.16 cfs @ 8.11 hrs, Volume= 0.055 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.31' @ 8.11 hrs Surf.Area= 967 sf Storage= 299 cf

Plug-Flow detention time= 48.7 min calculated for 0.055 af (96% of inflow)
 Center-of-Mass det. time= 26.4 min (686.3 - 659.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	1,934 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	967	0	0
1.00	967	967	967
2.00	967	967	1,934

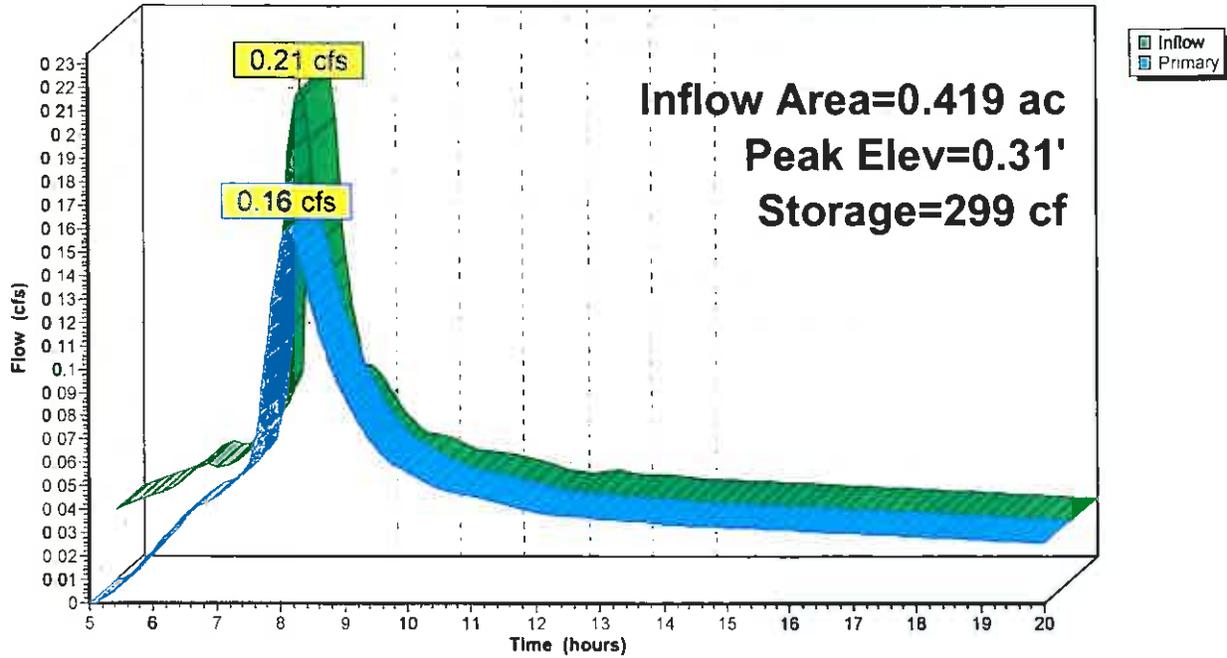
Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	4.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.16 cfs @ 8.11 hrs HW=0.31' (Free Discharge)
 ↑1=Orifice/Grate (Orifice Controls 0.16 cfs @ 1.89 fps)

A-218

Pond 5P: Planter #1

Hydrograph



A-219

TVF&R Station 58_Detention2

Type IA 24-hr 2-year Rainfall=2.50"

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Page 13

Summary for Pond 6P: Planter #2

Inflow Area = 0.135 ac, 72.96% Impervious, Inflow Depth > 1.63" for 2-year event
 Inflow = 0.07 cfs @ 7.92 hrs, Volume= 0.018 af
 Outflow = 0.06 cfs @ 8.01 hrs, Volume= 0.018 af, Atten= 4%, Lag= 5.7 min
 Primary = 0.06 cfs @ 8.01 hrs, Volume= 0.018 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.17' @ 8.01 hrs Surf.Area= 261 sf Storage= 45 cf

Plug-Flow detention time= 22.8 min calculated for 0.018 af (98% of inflow)
 Center-of-Mass det. time= 12.0 min (672.3 - 660.4)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	522 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	261	0	0
1.00	261	261	261
2.00	261	261	522

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	4.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.06 cfs @ 8.01 hrs HW=0.17' (Free Discharge)
 ↑1=Orifice/Grate (Orifice Controls 0.06 cfs @ 1.41 fps)

A-220

TVF&R Station 58_Detention2

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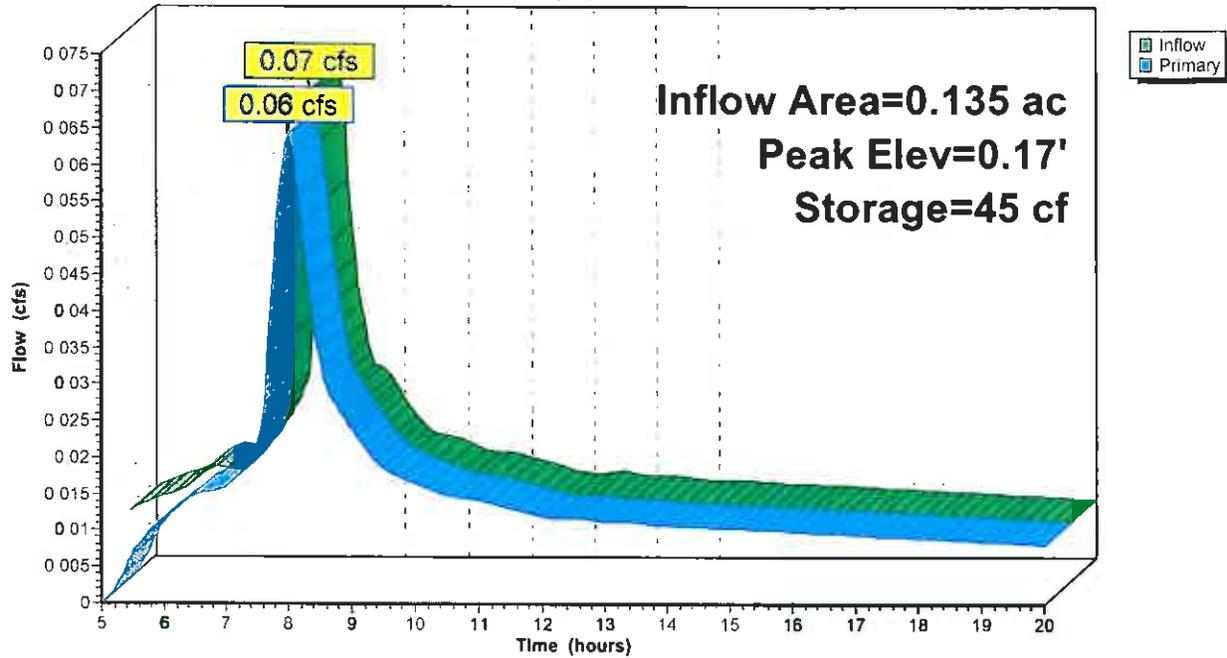
Type IA 24-hr 2-year Rainfall=2.50"

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Page 14

Pond 6P: Planter #2

Hydrograph



A-221

TVF&R Station 58_Detention2

Type IA 24-hr 5-year Rainfall=3.00"

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Page 15

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Basin A	Runoff Area=3,487 sf 54.06% Impervious Runoff Depth>1.86" Tc=5.0 min CN=86/98 Runoff=0.04 cfs 0.012 af
Subcatchment4S: Basin B	Runoff Area=18,255 sf 73.84% Impervious Runoff Depth>2.02" Tc=5.0 min CN=86/98 Runoff=0.26 cfs 0.070 af
Subcatchment5S: Basin C	Runoff Area=5,872 sf 72.96% Impervious Runoff Depth>2.01" Tc=5.0 min CN=86/98 Runoff=0.08 cfs 0.023 af
Subcatchment6S: Basin D	Runoff Area=8,227 sf 100.00% Impervious Runoff Depth>2.23" Tc=5.0 min CN=0/98 Runoff=0.13 cfs 0.035 af
Subcatchment8S: Pre-Developed	Runoff Area=40,025 sf 28.81% Impervious Runoff Depth>1.66" Tc=5.0 min CN=86/98 Runoff=0.45 cfs 0.127 af
Pond 3P: Planter #3	Peak Elev=0.30' Storage=189 cf Inflow=0.18 cfs 0.047 af Outflow=0.15 cfs 0.046 af
Pond 4P: Flow Control Manhole - To City	Peak Elev=0.13' Inflow=0.42 cfs 0.136 af Outflow=0.42 cfs 0.136 af
Pond 5P: Planter #1	Peak Elev=0.37' Storage=359 cf Inflow=0.26 cfs 0.070 af Outflow=0.19 cfs 0.068 af
Pond 6P: Planter #2	Peak Elev=0.20' Storage=51 cf Inflow=0.08 cfs 0.023 af Outflow=0.08 cfs 0.022 af

Total Runoff Area = 1.742 ac Runoff Volume = 0.267 af Average Runoff Depth = 1.84"
48.06% Pervious = 0.837 ac 51.94% Impervious = 0.905 ac

A-222

TVF&R Station 58_Detention2

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Type IA 24-hr 5-year Rainfall=3.00"

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Page 16

Summary for Subcatchment 1S: Basin A

Runoff = 0.04 cfs @ 7.92 hrs, Volume= 0.012 af, Depth> 1.86"

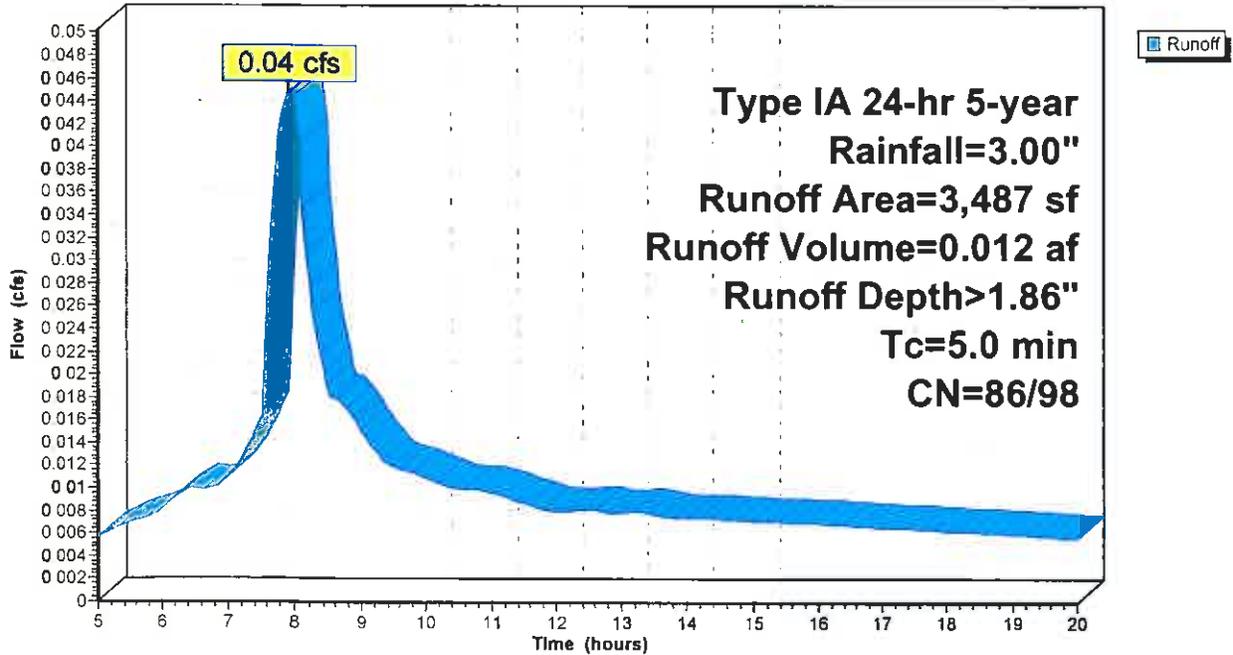
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 5-year Rainfall=3.00"

Area (sf)	CN	Description
1,885	98	Concrete, AC
1,602	86	Landscaping
3,487	92	Weighted Average
1,602	86	Pervious Area
1,885	98	Impervious Area

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

Subcatchment 1S: Basin A

Hydrograph



A-223

TVF&R Station 58_Detention2

Type IA 24-hr 5-year Rainfall=3.00"

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Page 17

Summary for Subcatchment 4S: Basin B

Runoff = 0.26 cfs @ 7.91 hrs, Volume= 0.070 af, Depth> 2.02"

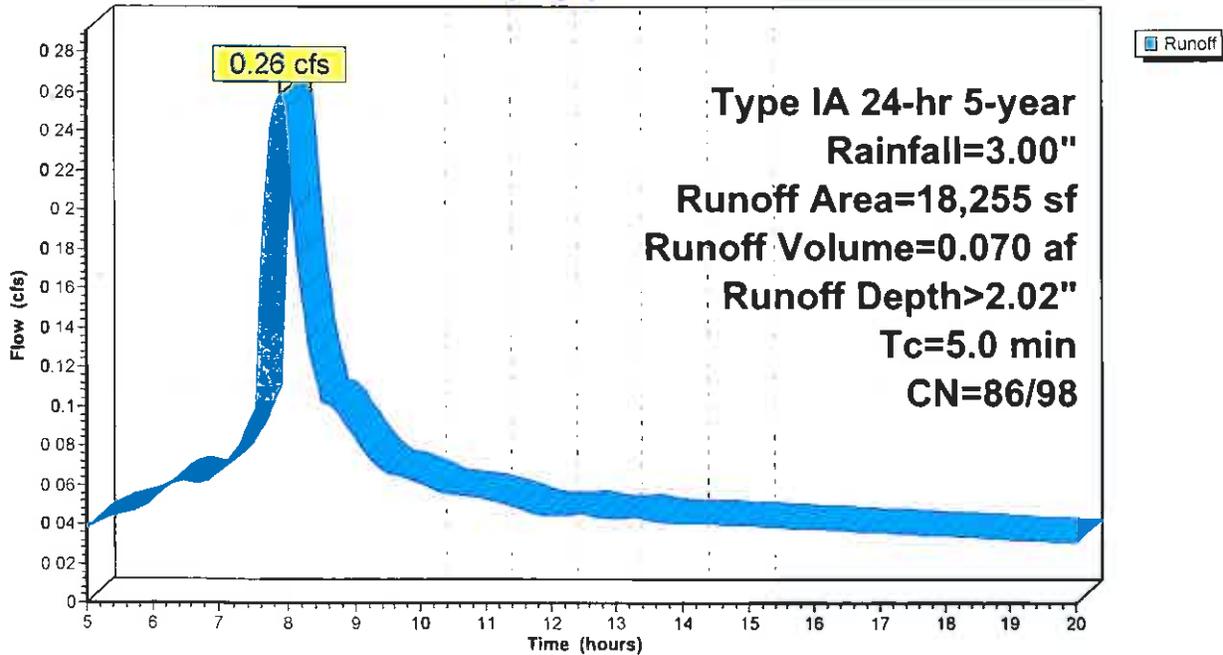
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 5-year Rainfall=3.00"

	Area (sf)	CN	Description
*	13,479	98	Concrete, AC
*	4,776	86	Landscaping
	18,255	95	Weighted Average
	4,776	86	Pervious Area
	13,479	98	Impervious Area

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

Subcatchment 4S: Basin B

Hydrograph



A-224

TVF&R Station 58_Detention2

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Type IA 24-hr 5-year Rainfall=3.00"

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Page 18

Summary for Subcatchment 5S: Basin C

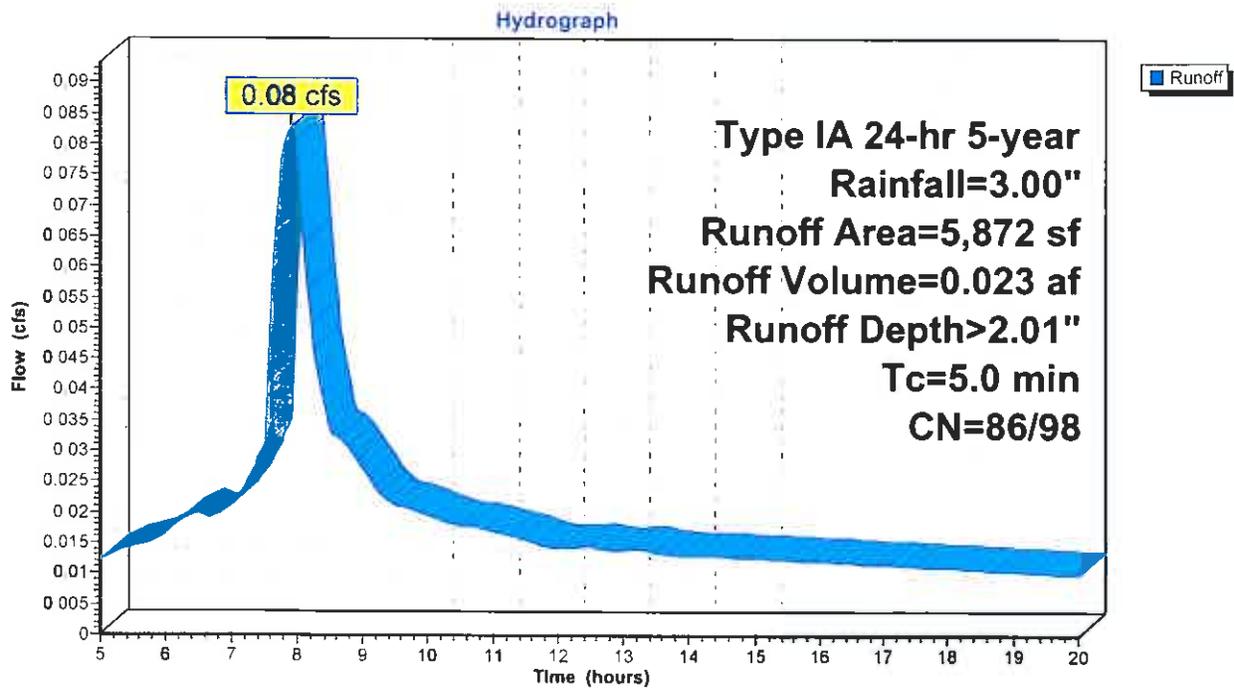
Runoff = 0.08 cfs @ 7.91 hrs, Volume= 0.023 af, Depth> 2.01"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 5-year Rainfall=3.00"

	Area (sf)	CN	Description
*	4,284	98	Concrete, AC
*	1,588	86	Landscaping
	5,872	95	Weighted Average
	1,588	86	Pervious Area
	4,284	98	Impervious Area

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

Subcatchment 5S: Basin C



A-225

TVF&R Station 58_Detention2

Type IA 24-hr 5-year Rainfall=3.00"

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Page 19

Summary for Subcatchment 6S: Basin D

Runoff = 0.13 cfs @ 7.90 hrs, Volume= 0.035 af, Depth> 2.23"

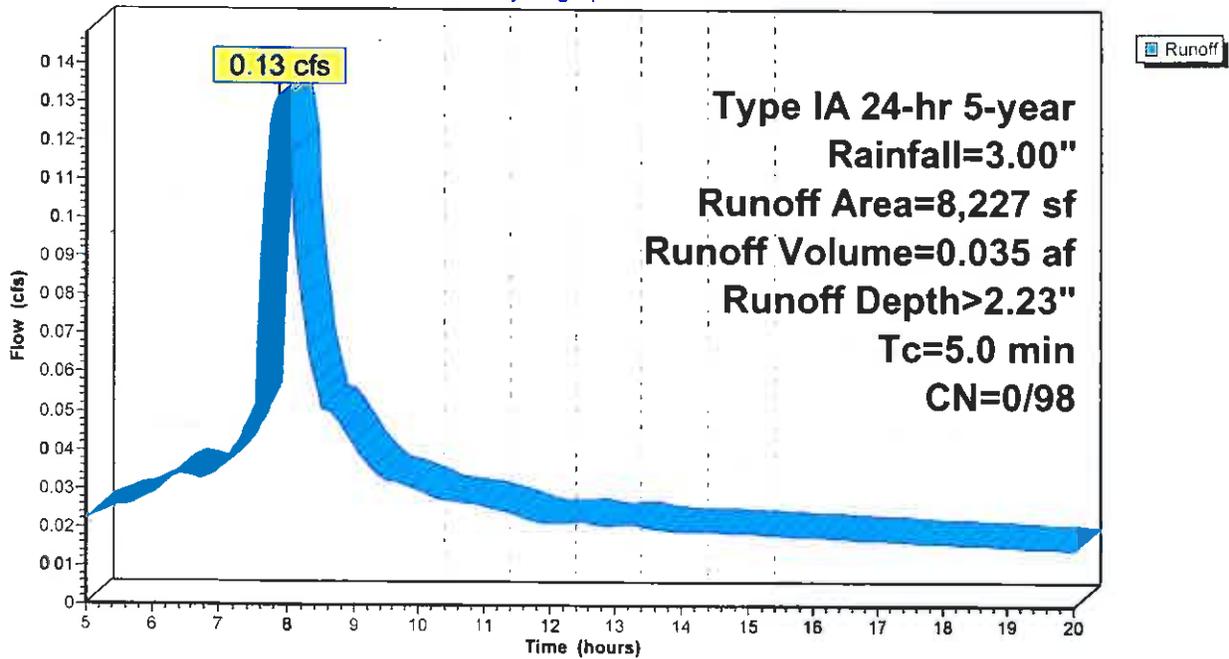
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 5-year Rainfall=3.00"

Area (sf)	CN	Description
8,227	98	Building
8,227	98	Impervious Area

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

Subcatchment 6S: Basin D

Hydrograph



A-226

TVF&R Station 58_Detention2

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Type IA 24-hr 5-year Rainfall=3.00"

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Page 20

Summary for Subcatchment 8S: Pre-Developed Conditions

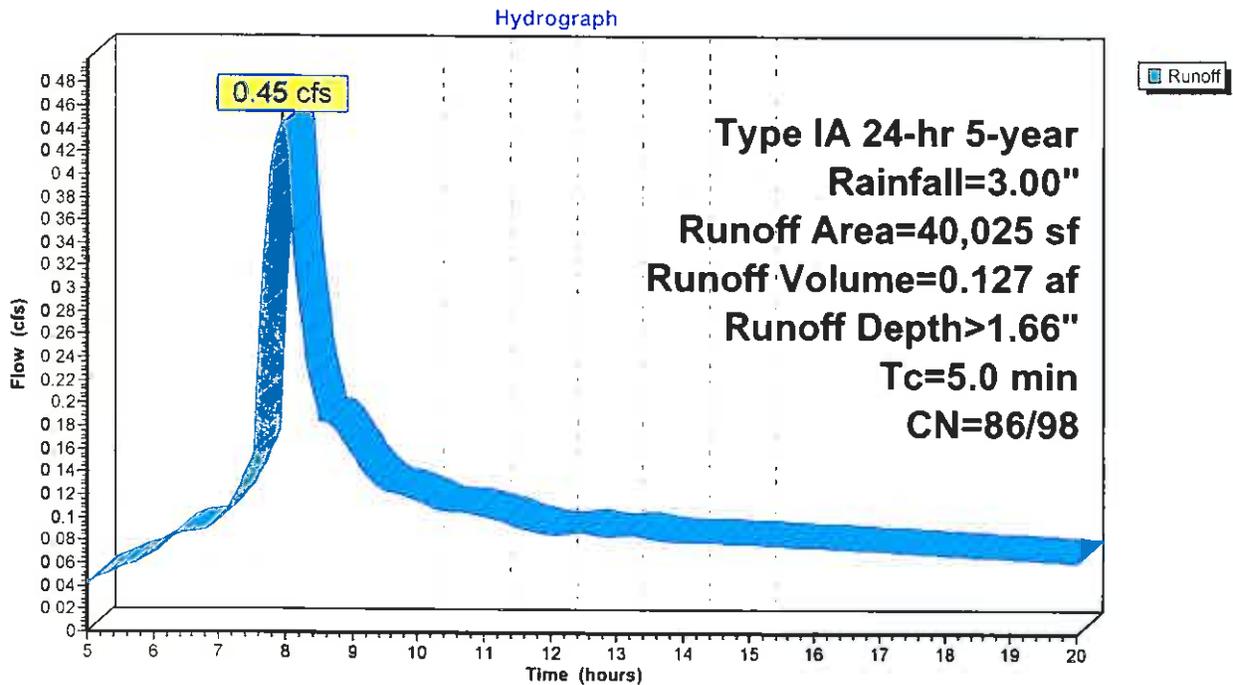
Runoff = 0.45 cfs @ 7.95 hrs, Volume= 0.127 af, Depth> 1.66"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 5-year Rainfall=3.00"

	Area (sf)	CN	Description
*	11,533	98	Concrete, AC
*	25,745	86	Landscape
*	2,747	89	Gravel
	40,025	90	Weighted Average
	28,492	86	Pervious Area
	11,533	98	Impervious Area

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

Subcatchment 8S: Pre-Developed Conditions



A-227

TVF&R Station 58_Detention2

Type IA 24-hr 5-year Rainfall=3.00"

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Page 21

Summary for Pond 3P: Planter #3

Inflow Area = 0.269 ac, 86.32% Impervious, Inflow Depth > 2.12" for 5-year event
 Inflow = 0.18 cfs @ 7.91 hrs, Volume= 0.047 af
 Outflow = 0.15 cfs @ 8.06 hrs, Volume= 0.046 af, Atten= 14%, Lag= 9.5 min
 Primary = 0.15 cfs @ 8.06 hrs, Volume= 0.046 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.30' @ 8.06 hrs Surf.Area= 639 sf Storage= 189 cf

Plug-Flow detention time= 35.5 min calculated for 0.046 af (97% of inflow)
 Center-of-Mass det. time= 19.1 min (671.4 - 652.3)

Volume #1	Invert 0.00'	Avail.Storage 1,278 cf	Storage Description Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	639	0	0
1.00	639	639	639
2.00	639	639	1,278

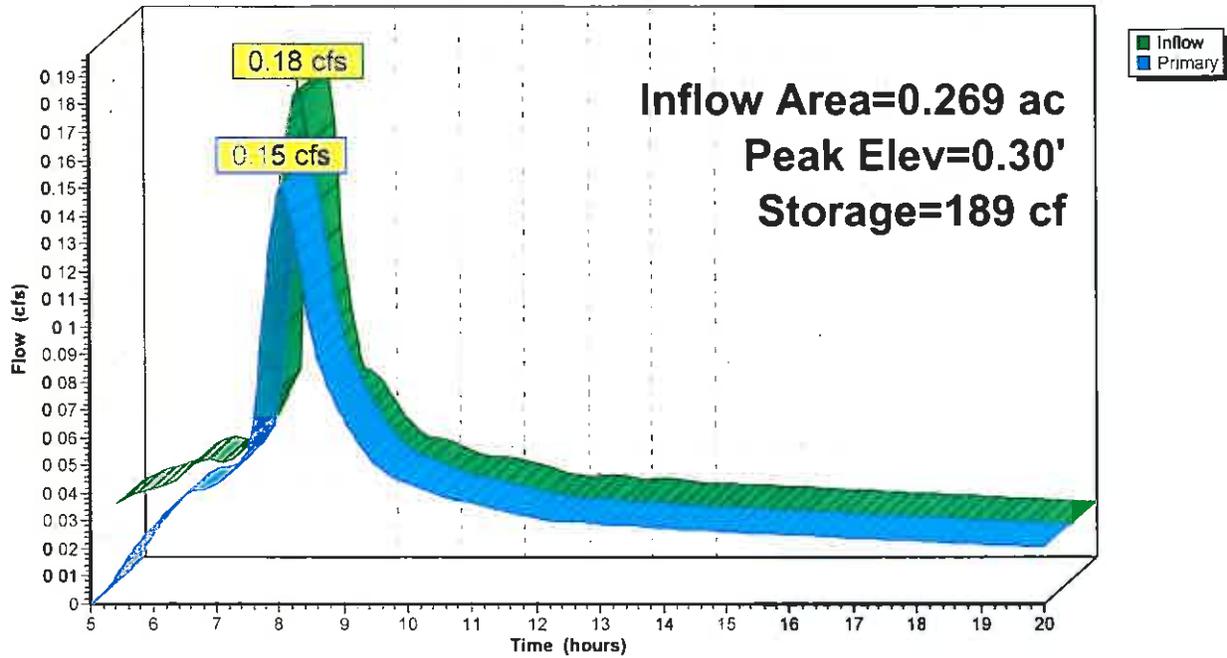
Device #1	Routing Primary	Invert 0.00'	Outlet Devices 4.0" Vert. Orifice/Grate C= 0.600
-----------	-----------------	--------------	--

Primary OutFlow Max=0.15 cfs @ 8.06 hrs HW=0.29' (Free Discharge)
 ↑1=Orifice/Grate (Orifice Controls 0.15 cfs @ 1.85 fps)

A-528

Pond 3P: Planter #3

Hydrograph



A-229

TVF&R Station 58_Detention2

Type IA 24-hr 5-year Rainfall=3.00"

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Page 23

Summary for Pond 4P: Flow Control Manhole - To City

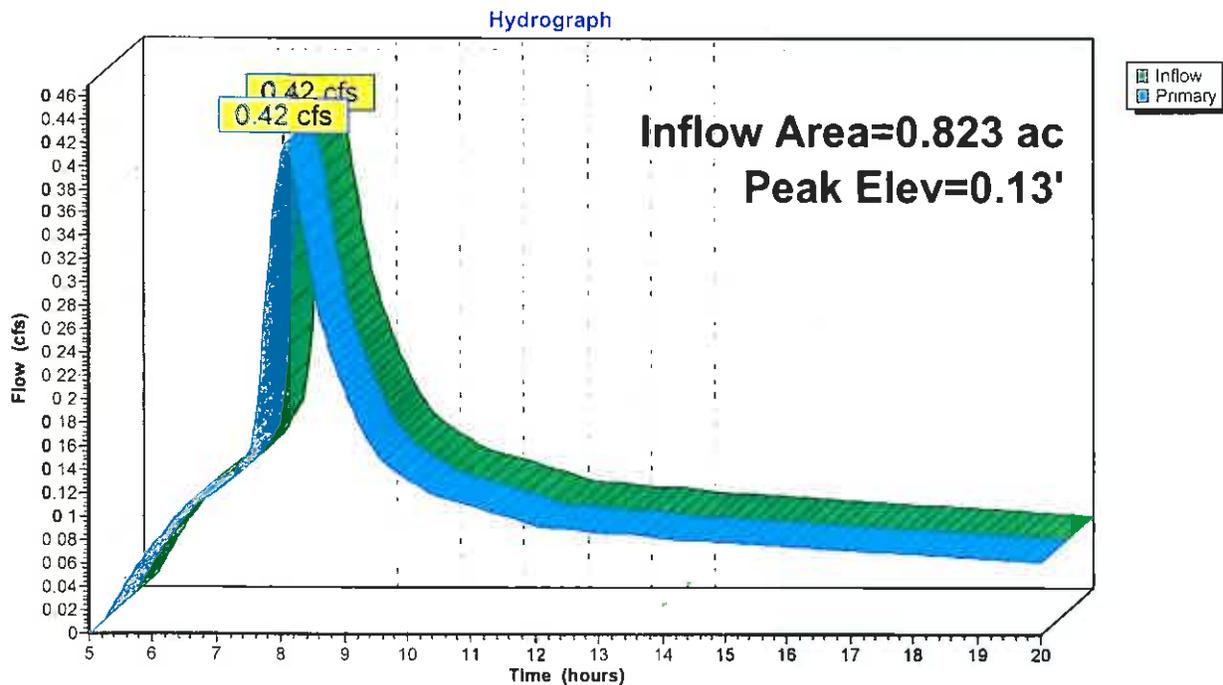
Inflow Area = 0.823 ac, 77.77% Impervious, Inflow Depth > 1.99" for 5-year event
 Inflow = 0.42 cfs @ 8.06 hrs, Volume= 0.136 af
 Outflow = 0.42 cfs @ 8.06 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.42 cfs @ 8.06 hrs, Volume= 0.136 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.13' @ 8.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	10.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.42 cfs @ 8.06 hrs HW=0.13' (Free Discharge)
 ↳1=Orifice/Grate (Weir Controls 0.42 cfs @ 1.19 fps)

Pond 4P: Flow Control Manhole - To City



A-230

TVF&R Station 58_Detention2

Type IA 24-hr 5-year Rainfall=3.00"

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Page 24

Summary for Pond 5P: Planter #1

Inflow Area = 0.419 ac, 73.84% Impervious, Inflow Depth > 2.02" for 5-year event
 Inflow = 0.26 cfs @ 7.91 hrs, Volume= 0.070 af
 Outflow = 0.19 cfs @ 8.12 hrs, Volume= 0.068 af, Atten= 27%, Lag= 12.6 min
 Primary = 0.19 cfs @ 8.12 hrs, Volume= 0.068 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.37' @ 8.12 hrs Surf.Area= 967 sf Storage= 359 cf

Plug-Flow detention time= 45.0 min calculated for 0.068 af (96% of inflow)
 Center-of-Mass det. time= 24.6 min (682.1 - 657.5)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	1,934 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	967	0	0
1.00	967	967	967
2.00	967	967	1,934

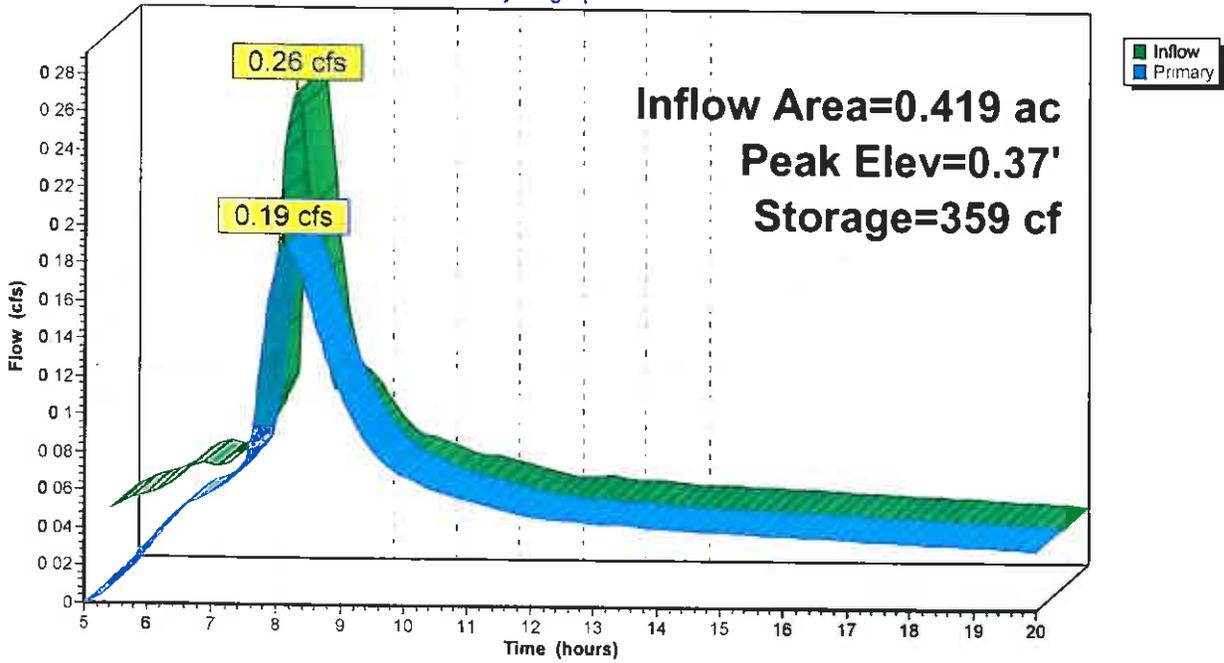
Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	4.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.19 cfs @ 8.12 hrs HW=0.37' (Free Discharge)
 ↑1=Orifice/Grate (Orifice Controls 0.19 cfs @ 2.17 fps)

A-231

Pond 5P: Planter #1

Hydrograph



A-232

TVF&R Station 58_Detention2

Type IA 24-hr 5-year Rainfall=3.00"

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Page 26

Summary for Pond 6P: Planter #2

Inflow Area = 0.135 ac, 72.96% Impervious, Inflow Depth > 2.01" for 5-year event
 Inflow = 0.08 cfs @ 7.91 hrs, Volume= 0.023 af
 Outflow = 0.08 cfs @ 8.00 hrs, Volume= 0.022 af, Atten= 4%, Lag= 5.5 min
 Primary = 0.08 cfs @ 8.00 hrs, Volume= 0.022 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.20' @ 8.00 hrs Surf.Area= 261 sf Storage= 51 cf

Plug-Flow detention time= 20.8 min calculated for 0.022 af (98% of inflow)
 Center-of-Mass det. time= 10.9 min (668.7 - 657.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	522 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	261	0	0
1.00	261	261	261
2.00	261	261	522

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	4.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.08 cfs @ 8.00 hrs HW=0.20' (Free Discharge)
 ↳1=Orifice/Grate (Orifice Controls 0.08 cfs @ 1.51 fps)

A-233

TVF&R Station 58_Detention2

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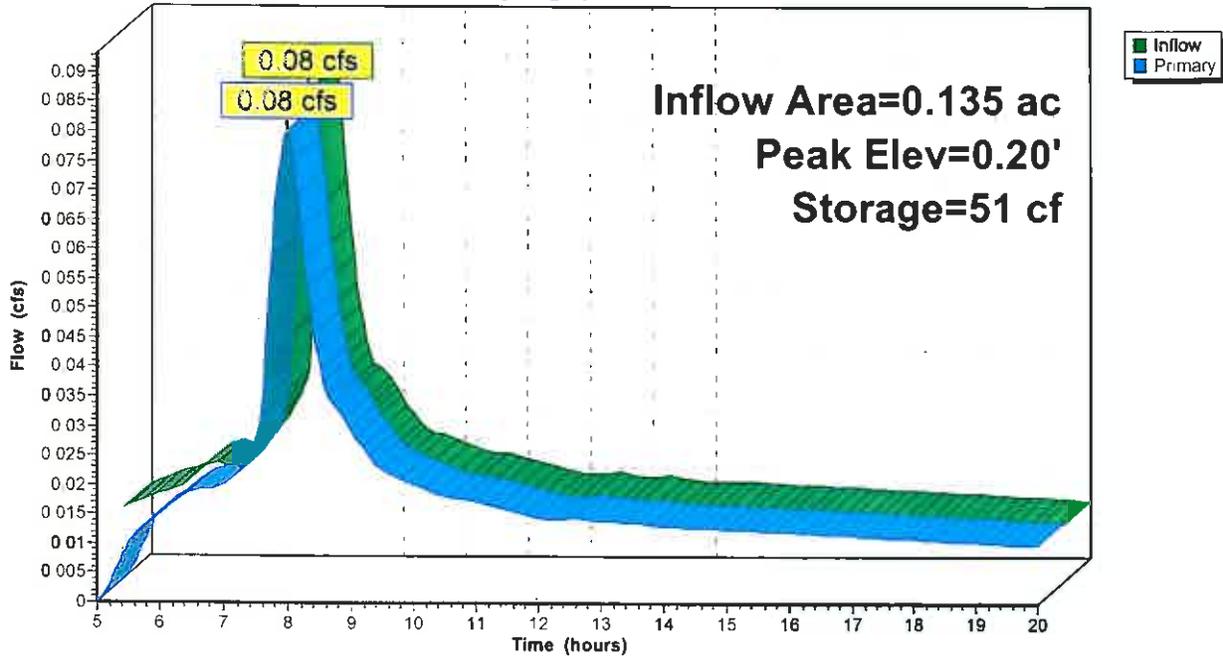
Type IA 24-hr 5-year Rainfall=3.00"

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Page 27

Pond 6P: Planter #2

Hydrograph



A-234

TVF&R Station 58_Detention2

Type IA 24-hr 10-year Rainfall=3.40"

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Page 28

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Basin A	Runoff Area=3,487 sf 54.06% Impervious Runoff Depth>2.16" Tc=5.0 min CN=86/98 Runoff=0.05 cfs 0.014 af
Subcatchment 4S: Basin B	Runoff Area=18,255 sf 73.84% Impervious Runoff Depth>2.32" Tc=5.0 min CN=86/98 Runoff=0.30 cfs 0.081 af
Subcatchment 5S: Basin C	Runoff Area=5,872 sf 72.96% Impervious Runoff Depth>2.32" Tc=5.0 min CN=86/98 Runoff=0.10 cfs 0.026 af
Subcatchment 6S: Basin D	Runoff Area=8,227 sf 100.00% Impervious Runoff Depth>2.54" Tc=5.0 min CN=0/98 Runoff=0.15 cfs 0.040 af
Subcatchment 8S: Pre-Developed	Runoff Area=40,025 sf 28.81% Impervious Runoff Depth>1.96" Tc=5.0 min CN=86/98 Runoff=0.53 cfs 0.150 af
Pond 3P: Planter #3	Peak Elev=0.33' Storage=211 cf Inflow=0.20 cfs 0.054 af Outflow=0.17 cfs 0.053 af
Pond 4P: Flow Control Manhole - To City	Peak Elev=0.14' Inflow=0.47 cfs 0.157 af Outflow=0.47 cfs 0.157 af
Pond 5P: Planter #1	Peak Elev=0.42' Storage=410 cf Inflow=0.30 cfs 0.081 af Outflow=0.21 cfs 0.078 af
Pond 6P: Planter #2	Peak Elev=0.21' Storage=56 cf Inflow=0.10 cfs 0.026 af Outflow=0.09 cfs 0.026 af

Total Runoff Area = 1.742 ac Runoff Volume = 0.312 af Average Runoff Depth = 2.15"
48.06% Pervious = 0.837 ac 51.94% Impervious = 0.905 ac

A-235

TVF&R Station 58_Detention2

Type IA 24-hr 10-year Rainfall=3.40"

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Page 29

Summary for Subcatchment 1S: Basin A

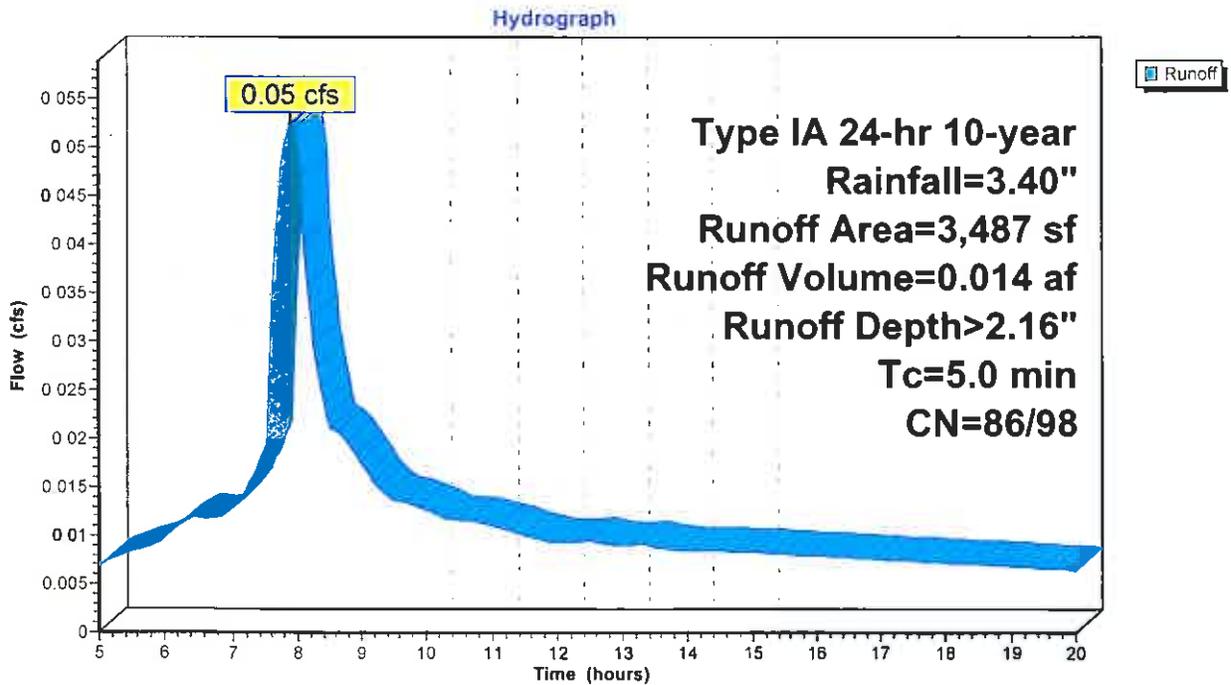
Runoff = 0.05 cfs @ 7.92 hrs, Volume= 0.014 af, Depth> 2.16"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-year Rainfall=3.40"

	Area (sf)	CN	Description
*	1,885	98	Concrete, AC
*	1,602	86	Landscaping
	3,487	92	Weighted Average
	1,602	86	Pervious Area
	1,885	98	Impervious Area

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

Subcatchment 1S: Basin A



A-236

TVF&R Station 58_Detention2

Type IA 24-hr 10-year Rainfall=3.40"

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Page 30

Summary for Subcatchment 4S: Basin B

Runoff = 0.30 cfs @ 7.91 hrs, Volume= 0.081 af, Depth> 2.32"

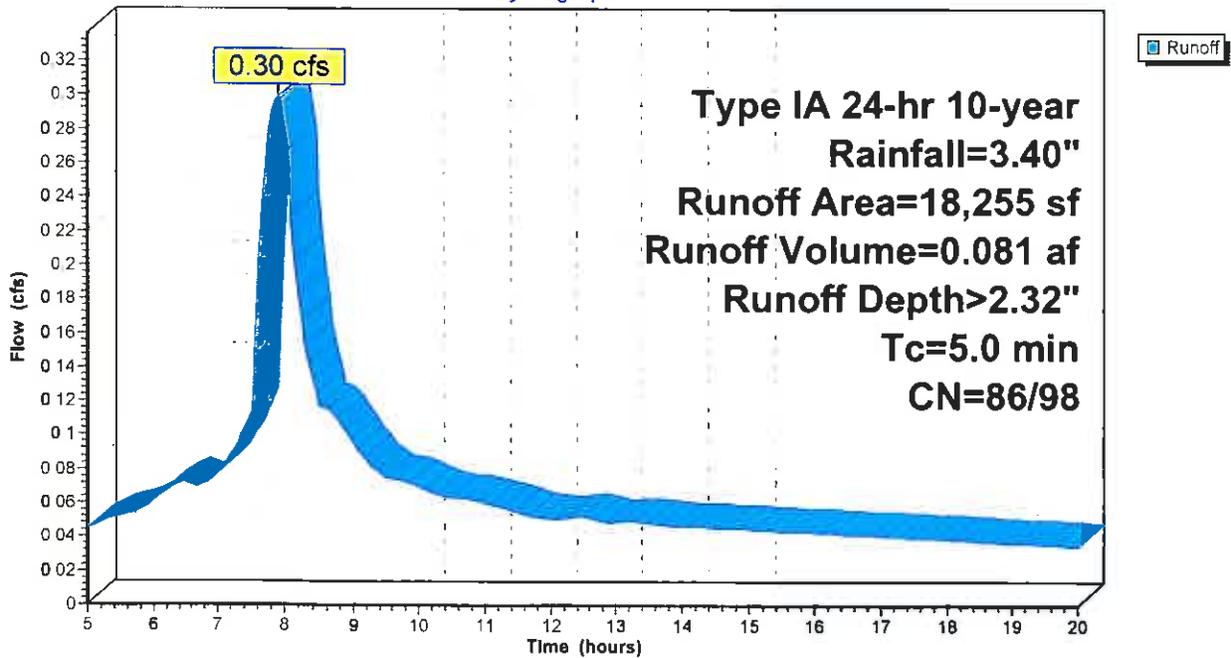
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-year Rainfall=3.40"

	Area (sf)	CN	Description
*	13,479	98	Concrete, AC
*	4,776	86	Landscaping
	18,255	95	Weighted Average
	4,776	86	Pervious Area
	13,479	98	Impervious Area

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

Subcatchment 4S: Basin B

Hydrograph



A-237

TVF&R Station 58_Detention2

Type IA 24-hr 10-year Rainfall=3.40"

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Page 31

Summary for Subcatchment 5S: Basin C

Runoff = 0.10 cfs @ 7.91 hrs, Volume= 0.026 af, Depth> 2.32"

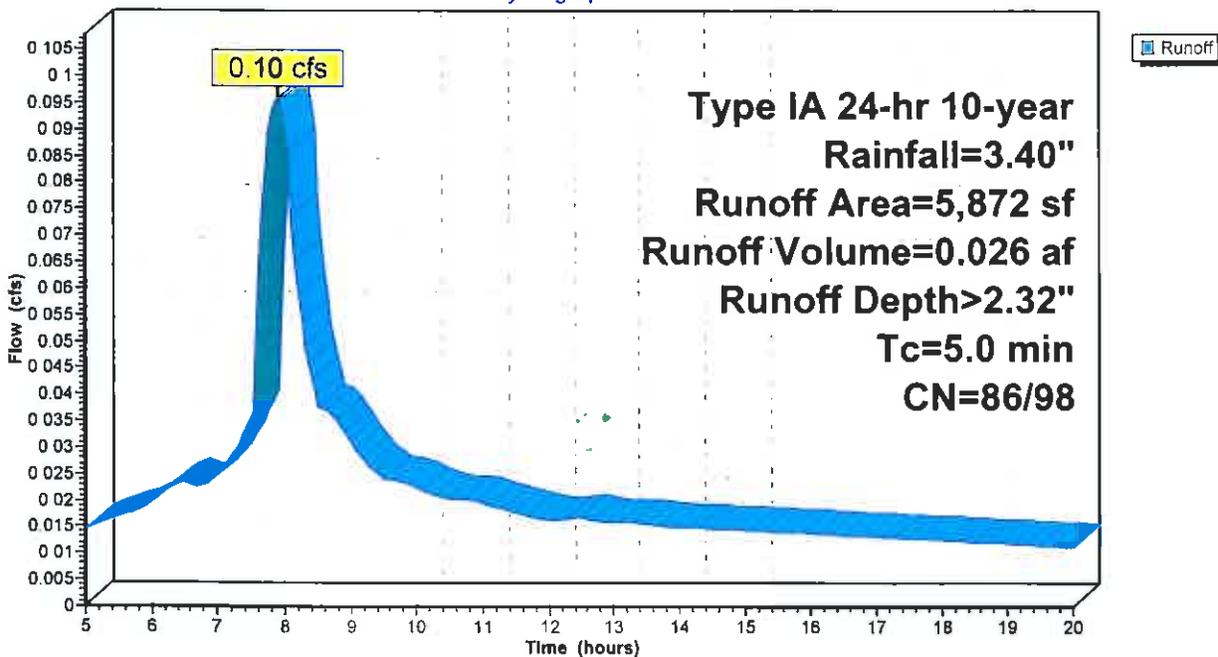
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-year Rainfall=3.40"

Area (sf)	CN	Description
* 4,284	98	Concrete, AC
* 1,588	86	Landscaping
5,872	95	Weighted Average
1,588	86	Pervious Area
4,284	98	Impervious Area

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

Subcatchment 5S: Basin C

Hydrograph



A-238

TVF&R Station 58_Detention2

Type IA 24-hr 10-year Rainfall=3.40"

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Page 32

Summary for Subcatchment 6S: Basin D

Runoff = 0.15 cfs @ 7.90 hrs, Volume= 0.040 af, Depth> 2.54"

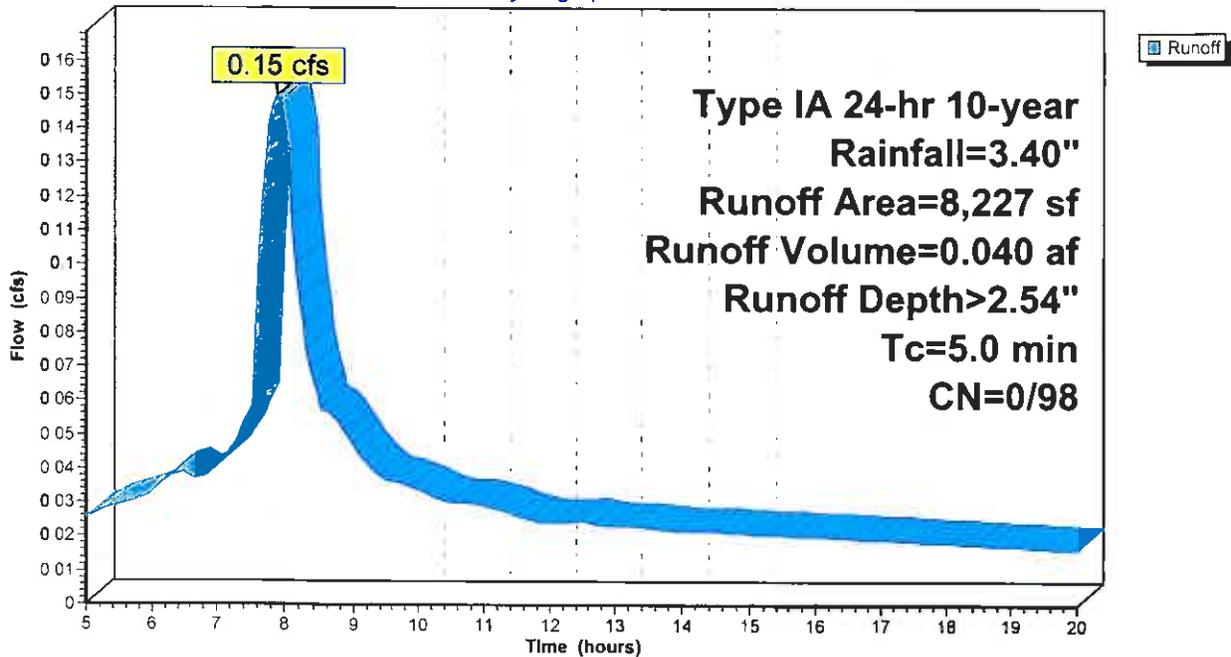
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-year Rainfall=3.40"

Area (sf)	CN	Description
* 8,227	98	Building
8,227	98	Impervious Area

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

Subcatchment 6S: Basin D

Hydrograph



A-239

TVF&R Station 58_Detention2

Type IA 24-hr 10-year Rainfall=3.40"

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Page 33

Summary for Subcatchment 8S: Pre-Developed Conditions

Runoff = 0.53 cfs @ 7.94 hrs, Volume= 0.150 af, Depth> 1.96"

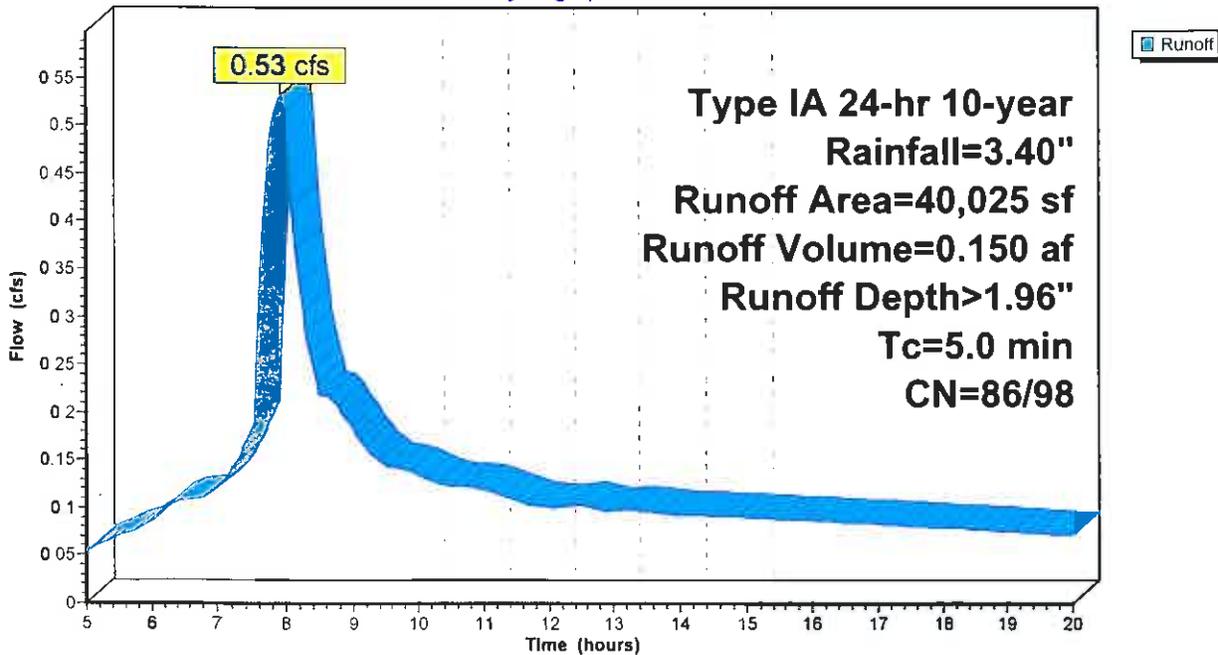
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-year Rainfall=3.40"

	Area (sf)	CN	Description
*	11,533	98	Concrete, AC
*	25,745	86	Landscape
*	2,747	89	Gravel
	40,025	90	Weighted Average
	28,492	86	Pervious Area
	11,533	98	Impervious Area

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

Subcatchment 8S: Pre-Developed Conditions

Hydrograph



A-240

TVF&R Station 58_Detention2

Type IA 24-hr 10-year Rainfall=3.40"

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Page 34

Summary for Pond 3P: Planter #3

Inflow Area = 0.269 ac, 86.32% Impervious, Inflow Depth > 2.43" for 10-year event
 Inflow = 0.20 cfs @ 7.90 hrs, Volume= 0.054 af
 Outflow = 0.17 cfs @ 8.07 hrs, Volume= 0.053 af, Atten= 16%, Lag= 10.0 min
 Primary = 0.17 cfs @ 8.07 hrs, Volume= 0.053 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.33' @ 8.07 hrs Surf.Area= 639 sf Storage= 211 cf

Plug-Flow detention time= 33.5 min calculated for 0.053 af (97% of inflow)
 Center-of-Mass det. time= 18.1 min (669.3 - 651.2)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	1,278 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

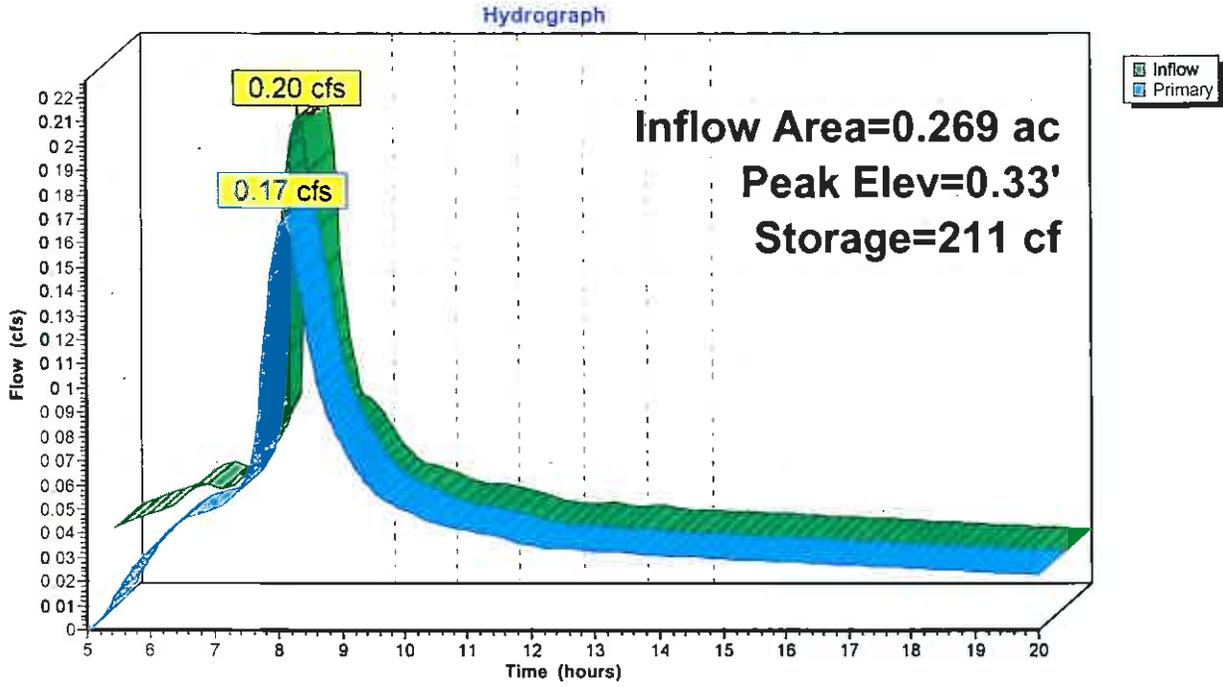
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	639	0	0
1.00	639	639	639
2.00	639	639	1,278

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	4.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.17 cfs @ 8.07 hrs HW=0.33' (Free Discharge)
 ↑1=Orifice/Grate (Orifice Controls 0.17 cfs @ 1.95 fps)

A-241

Pond 3P: Planter #3



A242

TVF&R Station 58_Detention2

Type IA 24-hr 10-year Rainfall=3.40"

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Page 36

Summary for Pond 4P: Flow Control Manhole - To City

Inflow Area = 0.823 ac, 77.77% Impervious, Inflow Depth > 2.29" for 10-year event
Inflow = 0.47 cfs @ 8.06 hrs, Volume= 0.157 af
Outflow = 0.47 cfs @ 8.06 hrs, Volume= 0.157 af, Atten= 0%, Lag= 0.0 min
Primary = 0.47 cfs @ 8.06 hrs, Volume= 0.157 af

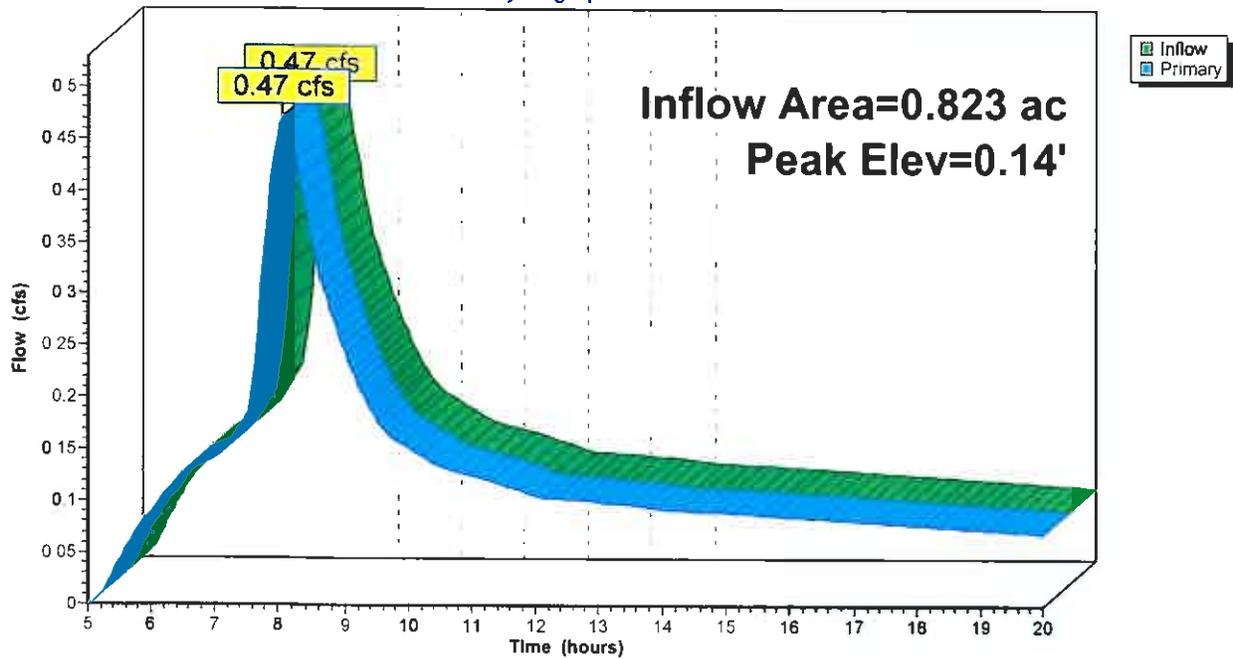
Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.14' @ 8.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	10.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.47 cfs @ 8.06 hrs HW=0.14' (Free Discharge)
↑1=Orifice/Grate (Weir Controls 0.47 cfs @ 1.24 fps)

Pond 4P: Flow Control Manhole - To City

Hydrograph



A-243

TVF&R Station 58_Detention2

Type IA 24-hr 10-year Rainfall=3.40"

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Page 37

Summary for Pond 5P: Planter #1

Inflow Area = 0.419 ac, 73.84% Impervious, Inflow Depth > 2.32" for 10-year event
 Inflow = 0.30 cfs @ 7.91 hrs, Volume= 0.081 af
 Outflow = 0.21 cfs @ 8.13 hrs, Volume= 0.078 af, Atten= 29%, Lag= 13.3 min
 Primary = 0.21 cfs @ 8.13 hrs, Volume= 0.078 af

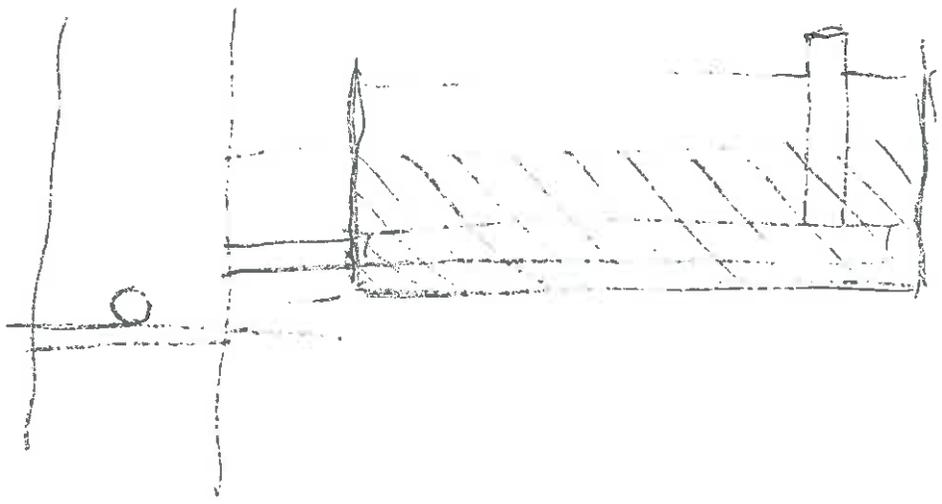
Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.42' @ 8.13 hrs Surf.Area= 967 sf Storage= 410 cf

Plug-Flow detention time= 42.8 min calculated for 0.078 af (96% of inflow)
 Center-of-Mass det. time= 23.7 min (679.7 - 656.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	1,934 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	967	0	0
1.00	967	967	967
2.00	967	967	1,934

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	4.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.21 cfs @ 8.13 hrs HW=0.42' (Free Discharge)
 ↑1=Orifice/Grate (Orifice Controls 0.21 cfs @ 2.44 fps)



A-244

TVF&R Station 58_Detention2

Type IA 24-hr 10-year Rainfall=3.40"

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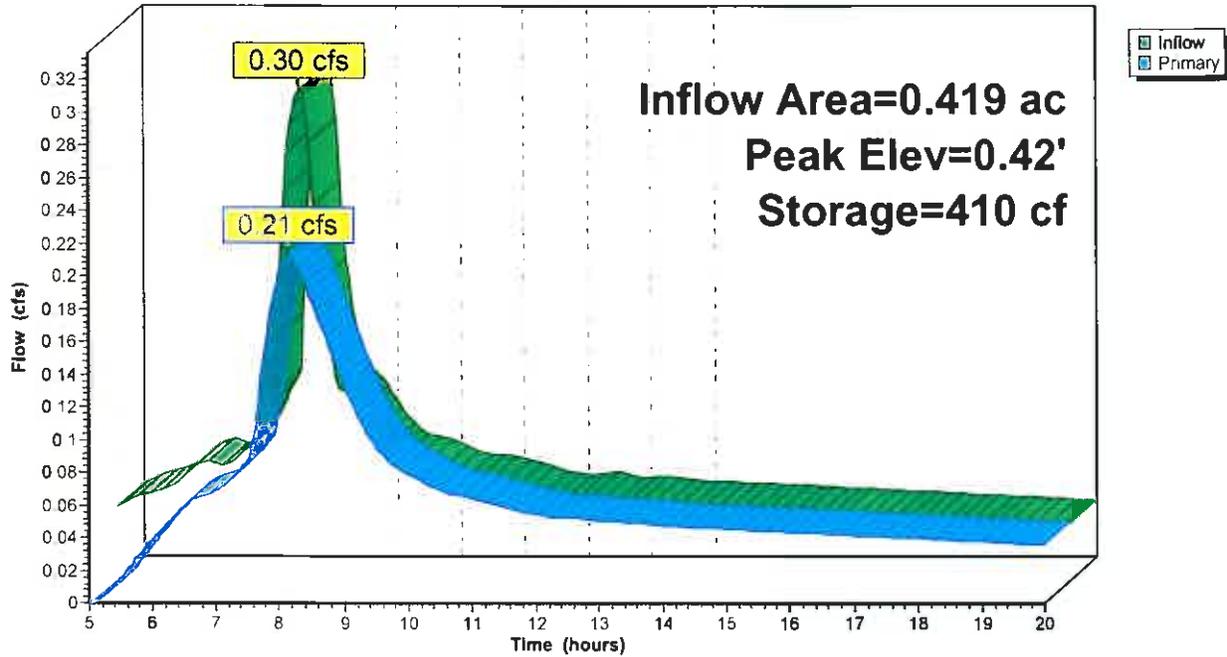
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Page 38

Pond 5P: Planter #1

Hydrograph



A-245

TVF&R Station 58_Detention2

Type IA 24-hr 10-year Rainfall=3.40"

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Page 39

Summary for Pond 6P: Planter #2

Inflow Area = 0.135 ac, 72.96% Impervious, Inflow Depth > 2.32" for 10-year event
 Inflow = 0.10 cfs @ 7.91 hrs, Volume= 0.026 af
 Outflow = 0.09 cfs @ 8.00 hrs, Volume= 0.026 af, Atten= 3%, Lag= 5.4 min
 Primary = 0.09 cfs @ 8.00 hrs, Volume= 0.026 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.21' @ 8.00 hrs Surf.Area= 261 sf Storage= 56 cf

Plug-Flow detention time= 19.6 min calculated for 0.026 af (98% of inflow)
 Center-of-Mass det. time= 10.2 min (666.6 - 656.3)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	522 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	261	0	0
1.00	261	261	261
2.00	261	261	522

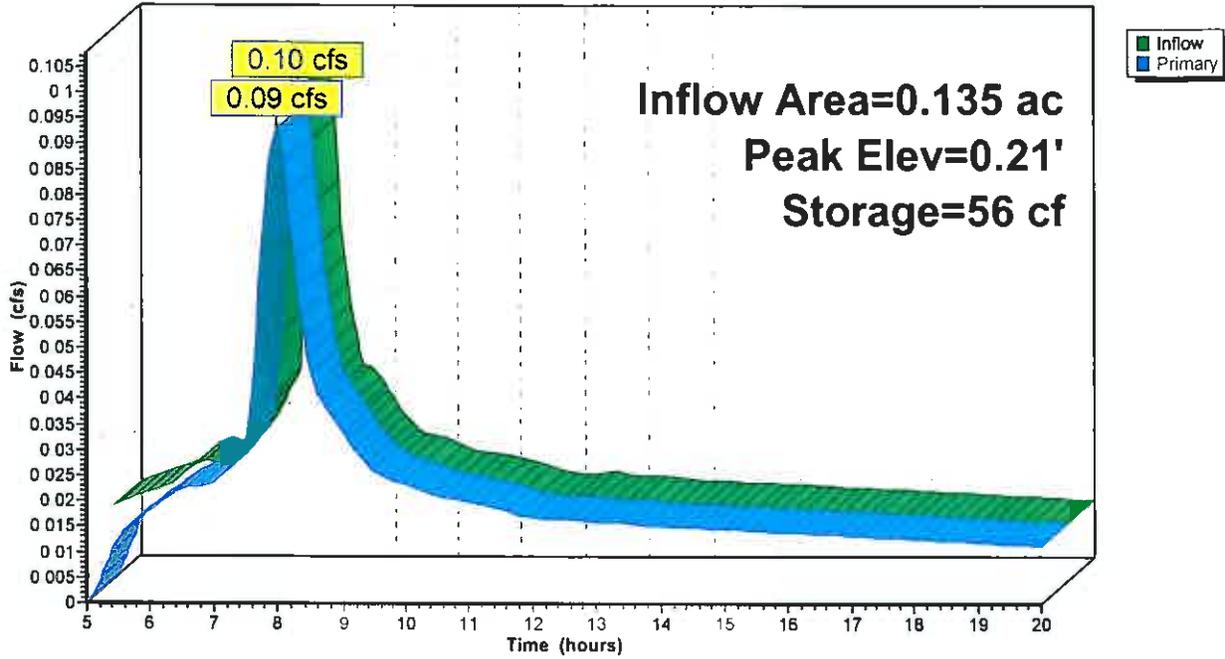
Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	4.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.09 cfs @ 8.00 hrs HW=0.21' (Free Discharge)
 ↑1=Orifice/Grate (Orifice Controls 0.09 cfs @ 1.57 fps)

A-246

Pond 6P: Planter #2

Hydrograph



A-247

TVF&R Station 58_Detention2

Type IA 24-hr 25-year Rainfall=3.90"

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Page 41

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Basin A	Runoff Area=3,487 sf 54.06% Impervious Runoff Depth>2.55" Tc=5.0 min CN=86/98 Runoff=0.06 cfs 0.017 af
Subcatchment4S: Basin B	Runoff Area=18,255 sf 73.84% Impervious Runoff Depth>2.71" Tc=5.0 min CN=86/98 Runoff=0.35 cfs 0.095 af
Subcatchment5S: Basin C	Runoff Area=5,872 sf 72.96% Impervious Runoff Depth>2.70" Tc=5.0 min CN=86/98 Runoff=0.11 cfs 0.030 af
Subcatchment6S: Basin D	Runoff Area=8,227 sf 100.00% Impervious Runoff Depth>2.92" Tc=5.0 min CN=0/98 Runoff=0.17 cfs 0.046 af
Subcatchment8S: Pre-Developed	Runoff Area=40,025 sf 28.81% Impervious Runoff Depth>2.34" Tc=5.0 min CN=86/98 Runoff=0.64 cfs 0.179 af
Pond 3P: Planter #3	Peak Elev=0.38' Storage=241 cf Inflow=0.24 cfs 0.063 af Outflow=0.19 cfs 0.061 af
Pond 4P: Flow Control Manhole - To City	Peak Elev=0.16' Inflow=0.54 cfs 0.183 af Outflow=0.54 cfs 0.183 af
Pond 5P: Planter #1	Peak Elev=0.50' Storage=479 cf Inflow=0.35 cfs 0.095 af Outflow=0.24 cfs 0.092 af
Pond 6P: Planter #2	Peak Elev=0.24' Storage=62 cf Inflow=0.11 cfs 0.030 af Outflow=0.11 cfs 0.030 af

Total Runoff Area = 1.742 ac Runoff Volume = 0.367 af Average Runoff Depth = 2.53"
48.06% Pervious = 0.837 ac 51.94% Impervious = 0.905 ac

A-248

TVF&R Station 58_Detention2

Type IA 24-hr 25-year Rainfall=3.90"

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Page 42

Summary for Subcatchment 1S: Basin A

Runoff = 0.06 cfs @ 7.92 hrs, Volume= 0.017 af, Depth> 2.55"

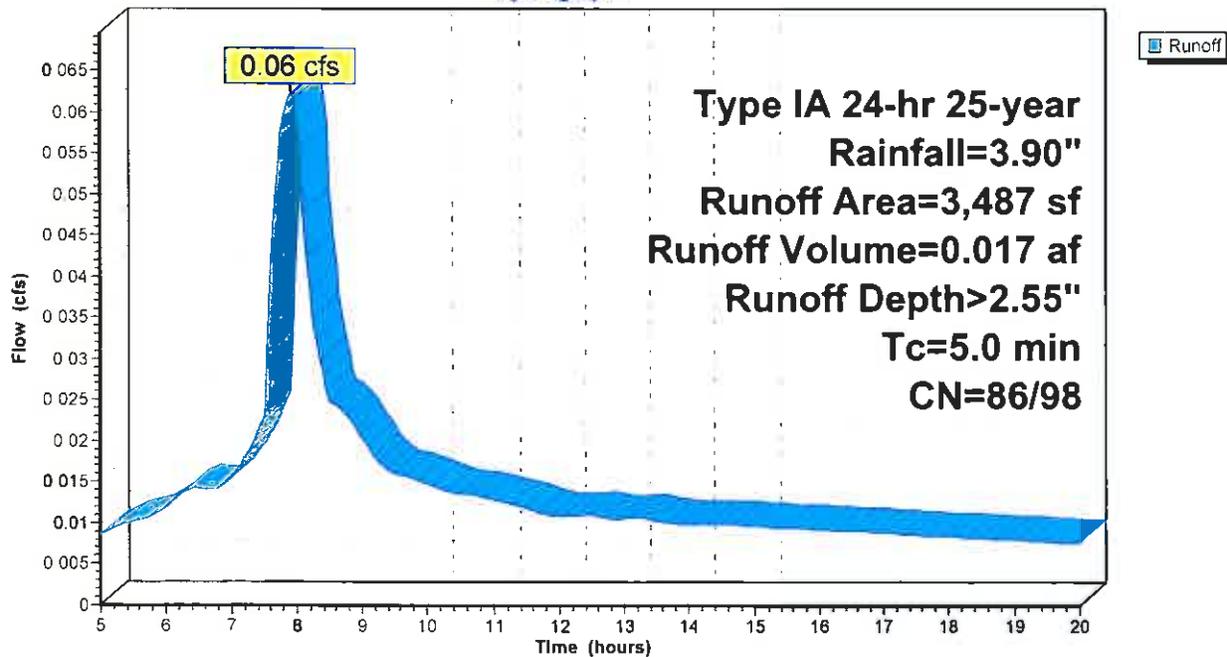
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25-year Rainfall=3.90"

	Area (sf)	CN	Description
*	1,885	98	Concrete, AC
*	1,602	86	Landscaping
	3,487	92	Weighted Average
	1,602	86	Pervious Area
	1,885	98	Impervious Area

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

Subcatchment 1S: Basin A

Hydrograph



A-249

TVF&R Station 58_Detention2

Type IA 24-hr 25-year Rainfall=3.90"

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Page 43

Summary for Subcatchment 4S: Basin B

Runoff = 0.35 cfs @ 7.91 hrs, Volume= 0.095 af, Depth> 2.71"

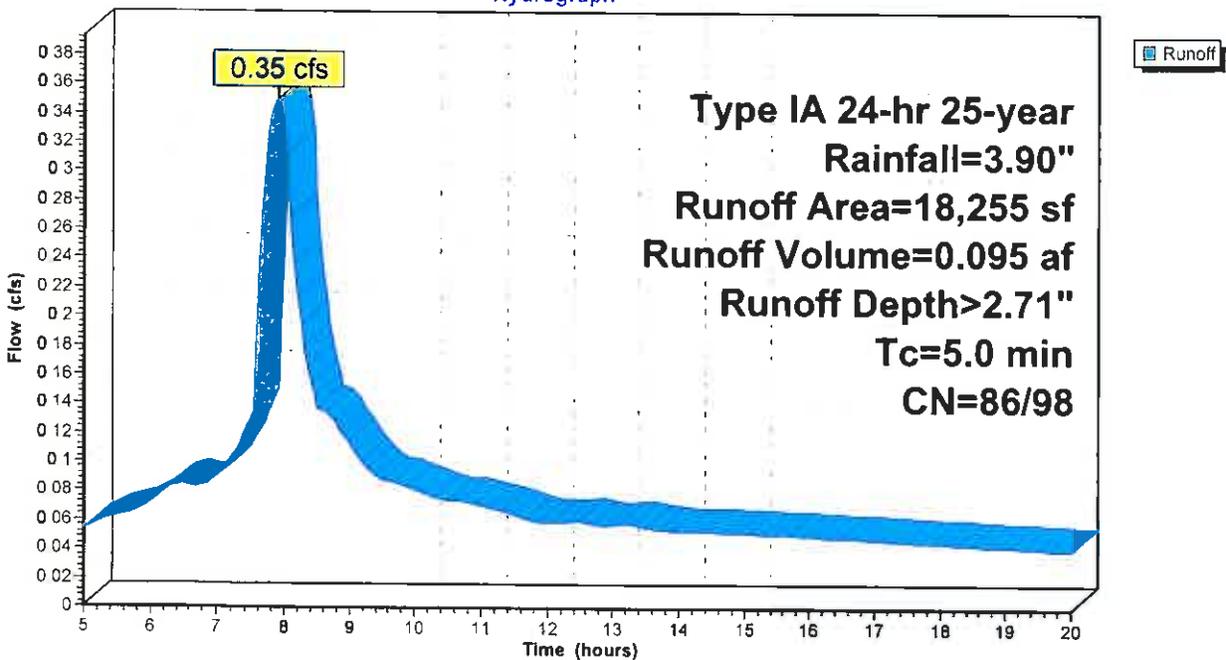
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25-year Rainfall=3.90"

	Area (sf)	CN	Description
*	13,479	98	Concrete, AC
*	4,776	86	Landscaping
	18,255	95	Weighted Average
	4,776	86	Pervious Area
	13,479	98	Impervious Area

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

Subcatchment 4S: Basin B

Hydrograph



A-250

TVF&R Station 58_Detention2

Type IA 24-hr 25-year Rainfall=3.90"

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Page 44

Summary for Subcatchment 5S: Basin C

Runoff = 0.11 cfs @ 7.91 hrs, Volume= 0.030 af, Depth> 2.70"

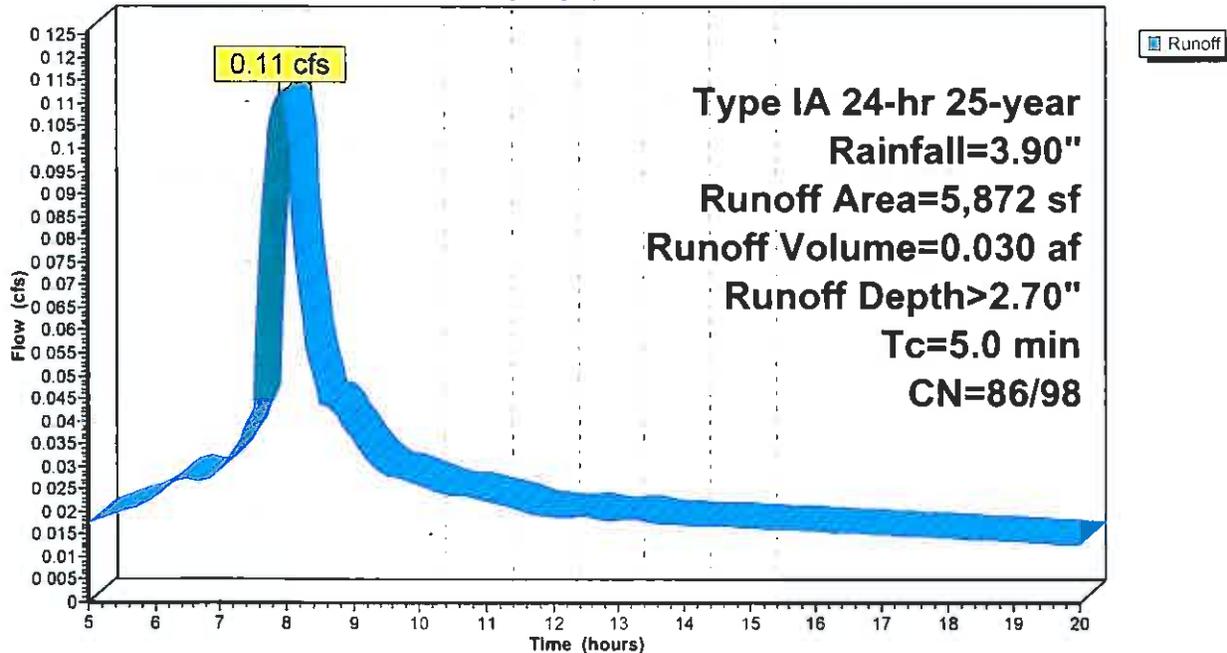
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25-year Rainfall=3.90"

	Area (sf)	CN	Description
*	4,284	98	Concrete, AC
*	1,588	86	Landscaping
	5,872	95	Weighted Average
	1,588	86	Pervious Area
	4,284	98	Impervious Area

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

Subcatchment 5S: Basin C

Hydrograph



A-251

TVF&R Station 58_Detention2

Type IA 24-hr 25-year Rainfall=3.90"

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Page 45

Summary for Subcatchment 6S: Basin D

Runoff = 0.17 cfs @ 7.90 hrs, Volume= 0.046 af, Depth> 2.92"

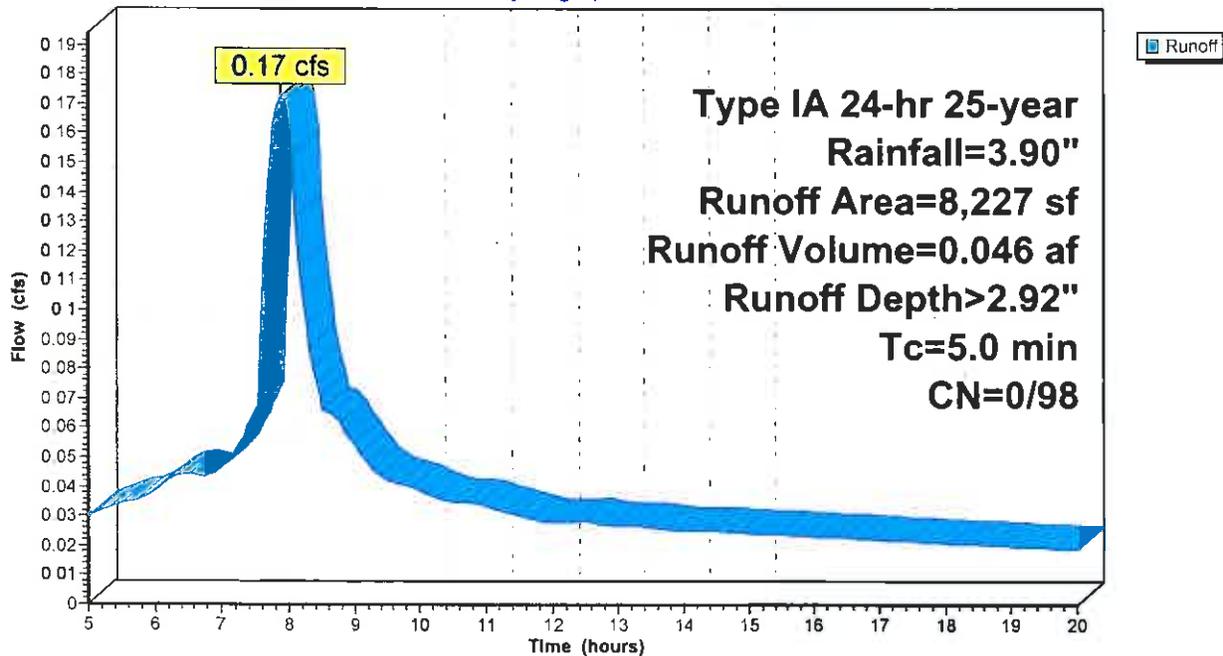
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25-year Rainfall=3.90"

Area (sf)	CN	Description
8,227	98	Building
8,227	98	Impervious Area

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

Subcatchment 6S: Basin D

Hydrograph



A-252

TVF&R Station 58_Detention2

Type IA 24-hr 25-year Rainfall=3.90"

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Page 47

Summary for Pond 3P: Planter #3

Inflow Area = 0.269 ac, 86.32% Impervious, Inflow Depth > 2.81" for 25-year event
 Inflow = 0.24 cfs @ 7.90 hrs, Volume= 0.063 af
 Outflow = 0.19 cfs @ 8.08 hrs, Volume= 0.061 af, Atten= 18%, Lag= 10.6 min
 Primary = 0.19 cfs @ 8.08 hrs, Volume= 0.061 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.38' @ 8.08 hrs Surf.Area= 639 sf Storage= 241 cf

Plug-Flow detention time= 31.7 min calculated for 0.061 af (97% of inflow)
 Center-of-Mass det. time= 17.2 min (667.3 - 650.1)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	1,278 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	639	0	0
1.00	639	639	639
2.00	639	639	1,278

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	4.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.19 cfs @ 8.08 hrs HW=0.38' (Free Discharge)
 ↑1=Orifice/Grate (Orifice Controls 0.19 cfs @ 2.20 fps)

A-253

TVF&R Station 58_Detention2

Type IA 24-hr 25-year Rainfall=3.90"

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Page 46

Summary for Subcatchment 8S: Pre-Developed Conditions

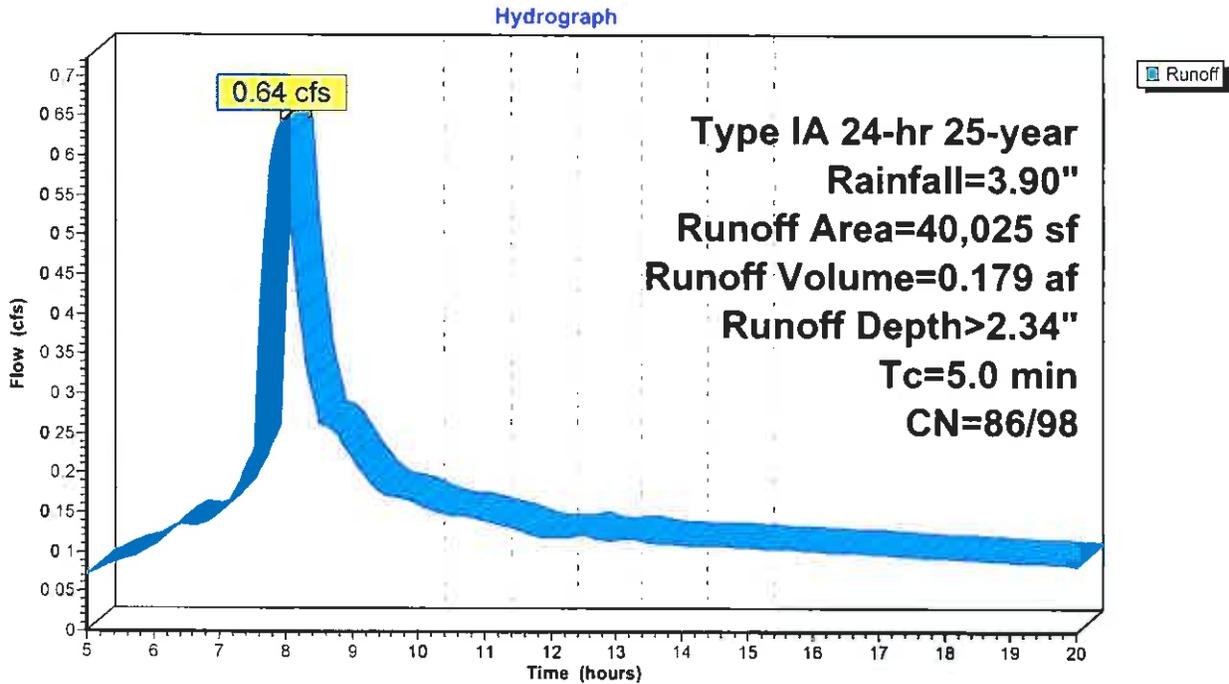
Runoff = 0.64 cfs @ 7.93 hrs, Volume= 0.179 af, Depth> 2.34"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25-year Rainfall=3.90"

	Area (sf)	CN	Description
*	11,533	98	Concrete, AC
*	25,745	86	Landscape
*	2,747	89	Gravel
	40,025	90	Weighted Average
	28,492	86	Pervious Area
	11,533	98	Impervious Area

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

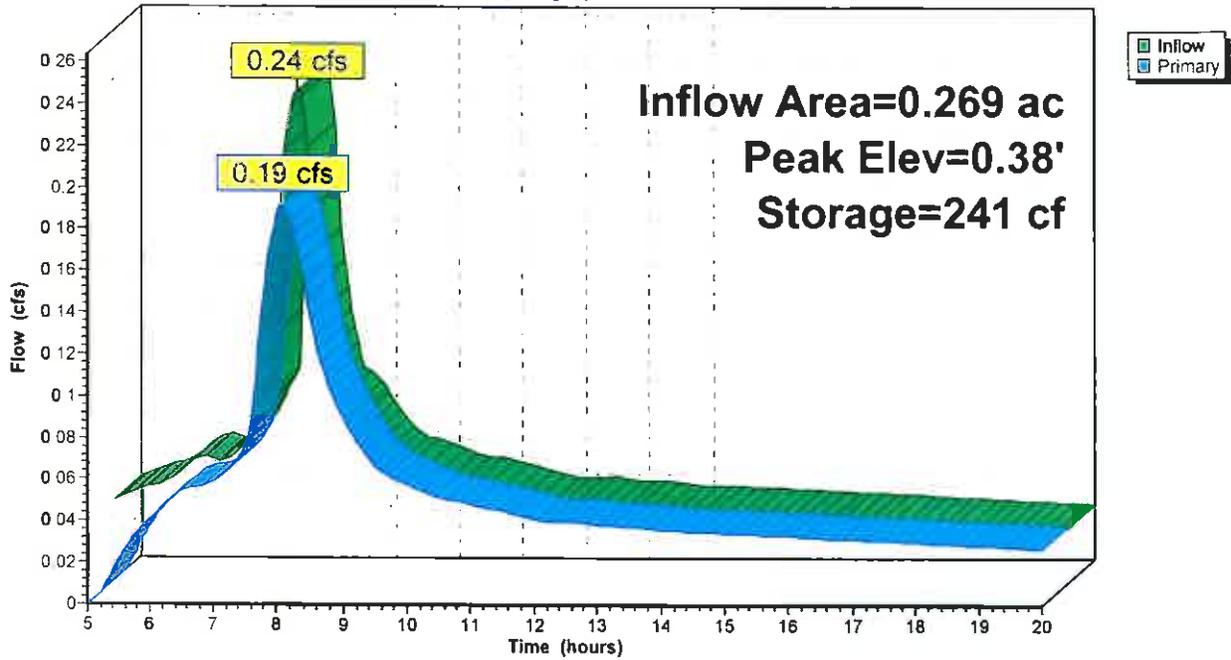
Subcatchment 8S: Pre-Developed Conditions



A-254

Pond 3P: Planter #3

Hydrograph



TVF&R Station 58_Detention2

Type IA 24-hr 25-year Rainfall=3.90"

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Page 49

Summary for Pond 4P: Flow Control Manhole - To City

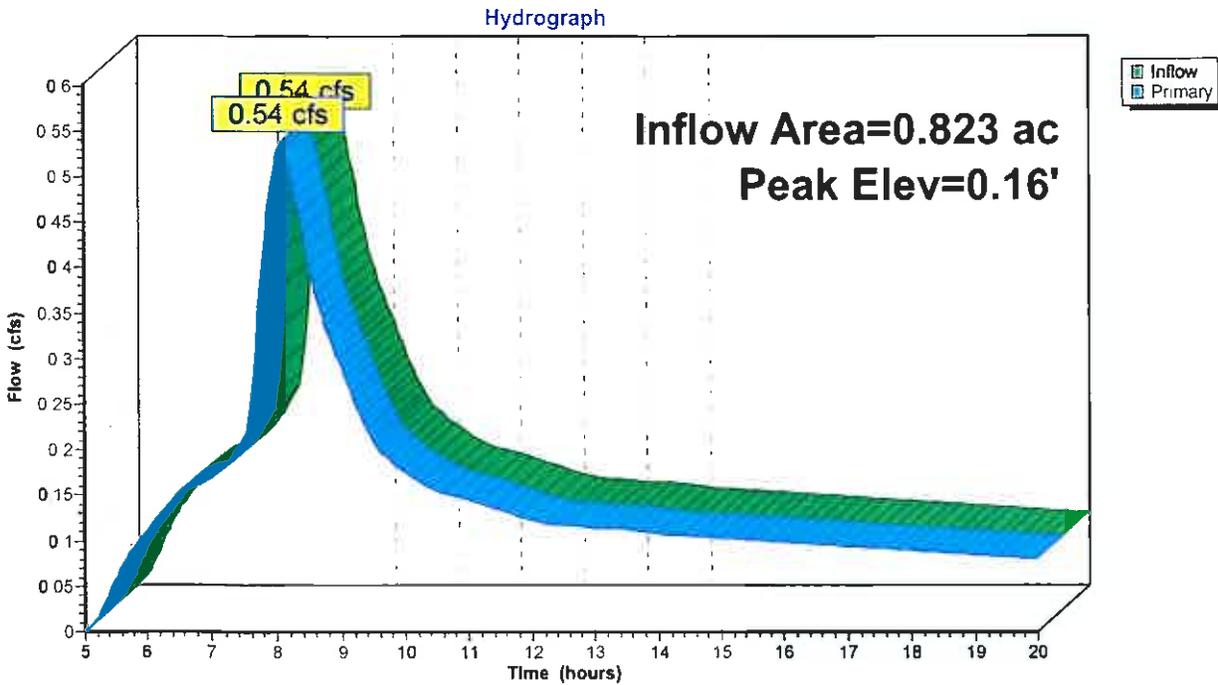
Inflow Area = 0.823 ac, 77.77% Impervious, Inflow Depth > 2.67" for 25-year event
Inflow = 0.54 cfs @ 8.07 hrs, Volume= 0.183 af
Outflow = 0.54 cfs @ 8.07 hrs, Volume= 0.183 af, Atten= 0%, Lag= 0.0 min
Primary = 0.54 cfs @ 8.07 hrs, Volume= 0.183 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.16' @ 8.07 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	0.00'	10.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.54 cfs @ 8.07 hrs HW=0.16' (Free Discharge)
←1=Orifice/Grate (Weir Controls 0.54 cfs @ 1.30 fps)

Pond 4P: Flow Control Manhole - To City



A-256

TVF&R Station 58_Detention2

Type IA 24-hr 25-year Rainfall=3.90"

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Page 50

Summary for Pond 5P: Planter #1

Inflow Area = 0.419 ac, 73.84% Impervious, Inflow Depth > 2.71" for 25-year event
 Inflow = 0.35 cfs @ 7.91 hrs, Volume= 0.095 af
 Outflow = 0.24 cfs @ 8.15 hrs, Volume= 0.092 af, Atten= 31%, Lag= 14.3 min
 Primary = 0.24 cfs @ 8.15 hrs, Volume= 0.092 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.50' @ 8.15 hrs Surf.Area= 967 sf Storage= 479 cf

Plug-Flow detention time= 40.9 min calculated for 0.091 af (97% of inflow)
 Center-of-Mass det. time= 22.9 min (677.3 - 654.5)

Volume #1	Invert 0.00'	Avail.Storage 1,934 cf	Storage Description Custom Stage Data (Prismatic) Listed below (Recalc)
-----------	--------------	------------------------	---

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	967	0	0
1.00	967	967	967
2.00	967	967	1,934

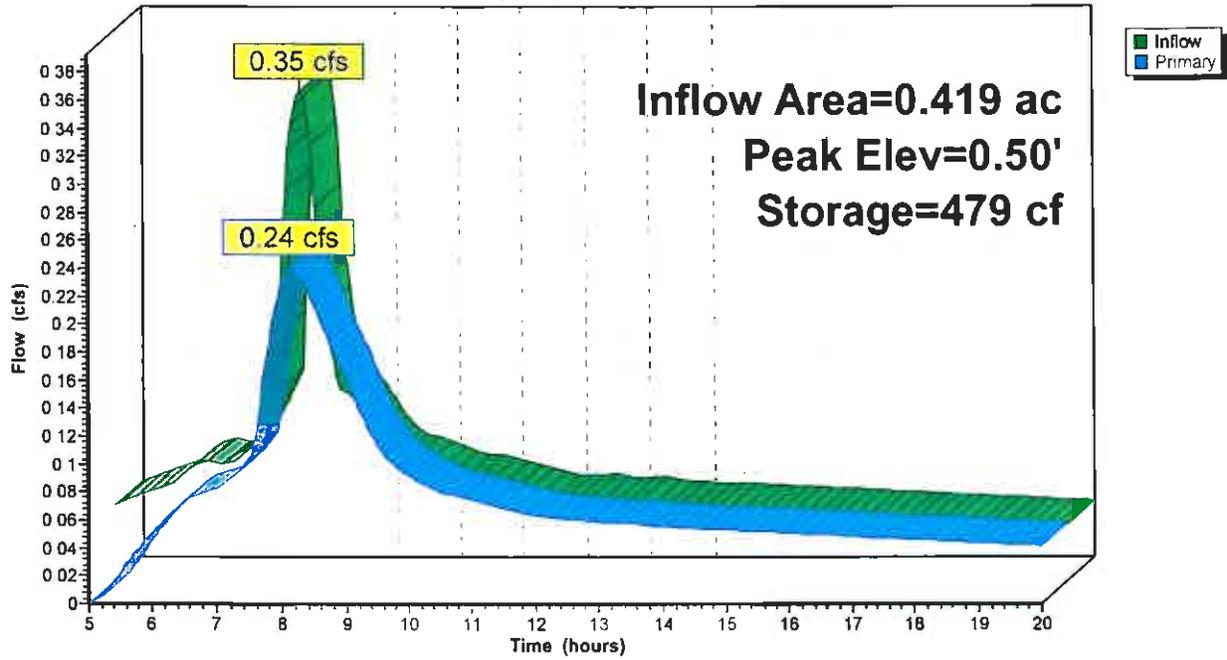
Device #1	Routing Primary	Invert 0.00'	Outlet Devices 4.0" Vert. Orifice/Grate C= 0.600
-----------	-----------------	--------------	--

Primary OutFlow Max=0.24 cfs @ 8.15 hrs HW=0.50' (Free Discharge)
 ↑1=Orifice/Grate (Orifice Controls 0.24 cfs @ 2.76 fps)

A-257

Pond 5P: Planter #1

Hydrograph



A 258

TVF&R Station 58_Detention2

Type IA 24-hr 25-year Rainfall=3.90"

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Page 52

Summary for Pond 6P: Planter #2

Inflow Area = 0.135 ac, 72.96% Impervious, Inflow Depth > 2.70" for 25-year event
 Inflow = 0.11 cfs @ 7.91 hrs, Volume= 0.030 af
 Outflow = 0.11 cfs @ 8.00 hrs, Volume= 0.030 af, Atten= 3%, Lag= 5.3 min
 Primary = 0.11 cfs @ 8.00 hrs, Volume= 0.030 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.24' @ 8.00 hrs Surf.Area= 261 sf Storage= 62 cf

Plug-Flow detention time= 18.4 min calculated for 0.030 af (98% of inflow)
 Center-of-Mass det. time= 9.6 min (664.3 - 654.8)

Volume #1	Invert 0.00'	Avail.Storage 522 cf	Storage Description
Custom Stage Data (Prismatic) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	261	0	0
1.00	261	261	261
2.00	261	261	522

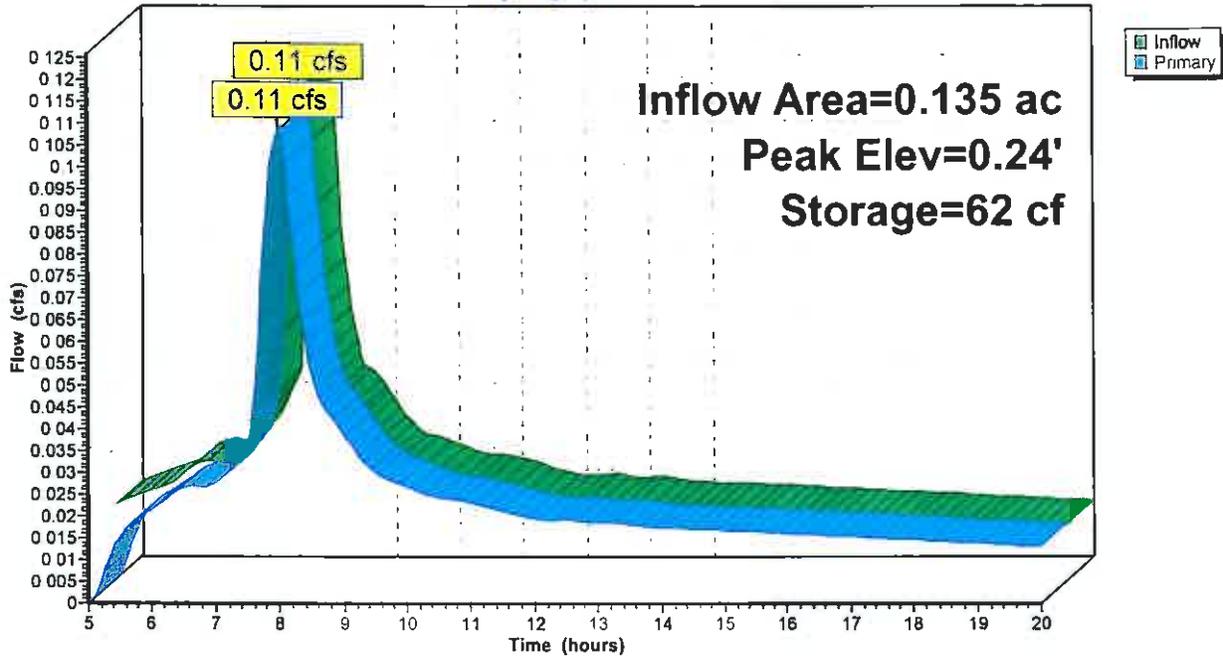
Device #1	Routing Primary	Invert 0.00'	Outlet Devices
4.0" Vert. Orifice/Grate C= 0.600			

Primary OutFlow Max=0.11 cfs @ 8.00 hrs HW=0.24' (Free Discharge)
 ↑1=Orifice/Grate (Orifice Controls 0.11 cfs @ 1.65 fps)

A-259

Pond 6P: Planter #2

Hydrograph



A-260

TVF&R Station 58_Detention2

Type IA 24-hr 100-year Rainfall=4.50"

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Page 54

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Basin A	Runoff Area=3,487 sf 54.06% Impervious Runoff Depth>3.01" Tc=5.0 min CN=86/98 Runoff=0.07 cfs 0.020 af
Subcatchment4S: Basin B	Runoff Area=18,255 sf 73.84% Impervious Runoff Depth>3.17" Tc=5.0 min CN=86/98 Runoff=0.41 cfs 0.111 af
Subcatchment5S: Basin C	Runoff Area=5,872 sf 72.96% Impervious Runoff Depth>3.16" Tc=5.0 min CN=86/98 Runoff=0.13 cfs 0.036 af
Subcatchment6S: Basin D	Runoff Area=8,227 sf 100.00% Impervious Runoff Depth>3.38" Tc=5.0 min CN=0/98 Runoff=0.20 cfs 0.053 af
Subcatchment8S: Pre-Developed	Runoff Area=40,025 sf 28.81% Impervious Runoff Depth>2.81" Tc=5.0 min CN=86/98 Runoff=0.78 cfs 0.215 af
Pond 3P: Planter #3	Peak Elev=0.44' Storage=280 cf Inflow=0.27 cfs 0.073 af Outflow=0.22 cfs 0.072 af
Pond 4P: Flow Control Manhole - To City	Peak Elev=0.17' Inflow=0.61 cfs 0.214 af Outflow=0.61 cfs 0.214 af
Pond 5P: Planter #1	Peak Elev=0.59' Storage=567 cf Inflow=0.41 cfs 0.111 af Outflow=0.27 cfs 0.107 af
Pond 6P: Planter #2	Peak Elev=0.26' Storage=68 cf Inflow=0.13 cfs 0.036 af Outflow=0.13 cfs 0.035 af

Total Runoff Area = 1.742 ac Runoff Volume = 0.434 af Average Runoff Depth = 2.99"
48.06% Pervious = 0.837 ac 51.94% Impervious = 0.905 ac

A 261

TVF&R Station 58_Detention2

Type IA 24-hr 100-year Rainfall=4.50"

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Page 55

Summary for Subcatchment 1S: Basin A

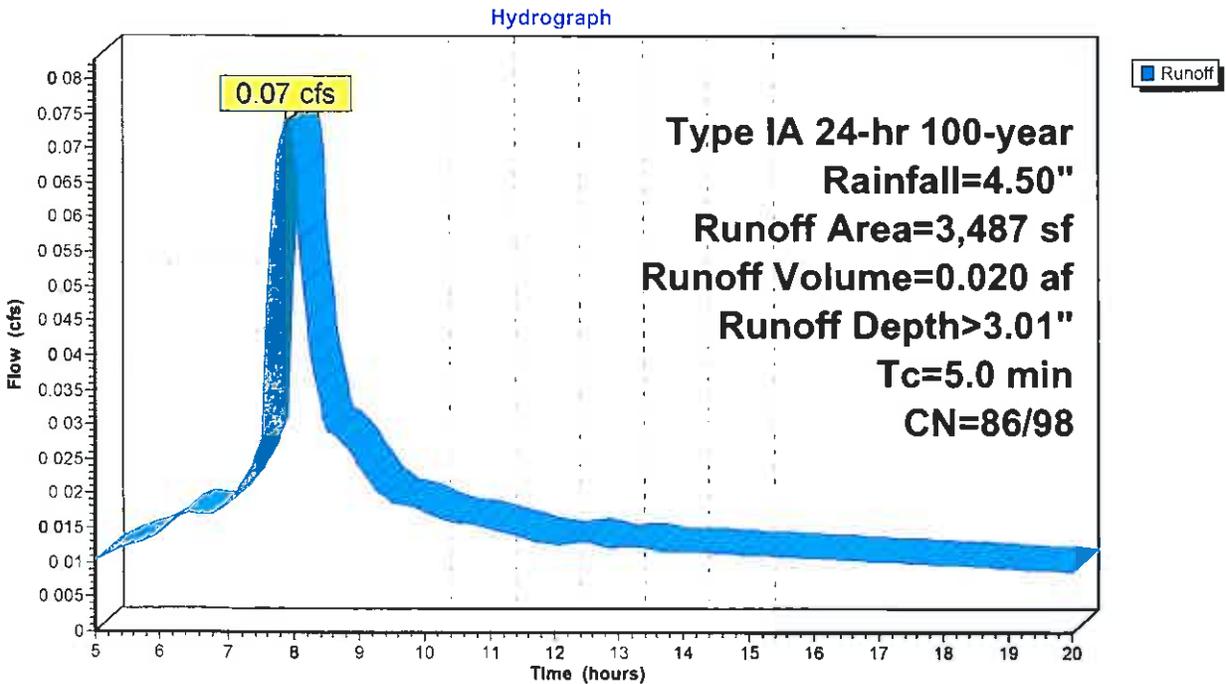
Runoff = 0.07 cfs @ 7.92 hrs, Volume= 0.020 af, Depth> 3.01"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100-year Rainfall=4.50"

	Area (sf)	CN	Description
*	1,885	98	Concrete, AC
*	1,602	86	Landscaping
	3,487	92	Weighted Average
	1,602	86	Pervious Area
	1,885	98	Impervious Area

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

Subcatchment 1S: Basin A



A-262

Summary for Subcatchment 4S: Basin B

Runoff = 0.41 cfs @ 7.91 hrs, Volume= 0.111 af, Depth> 3.17"

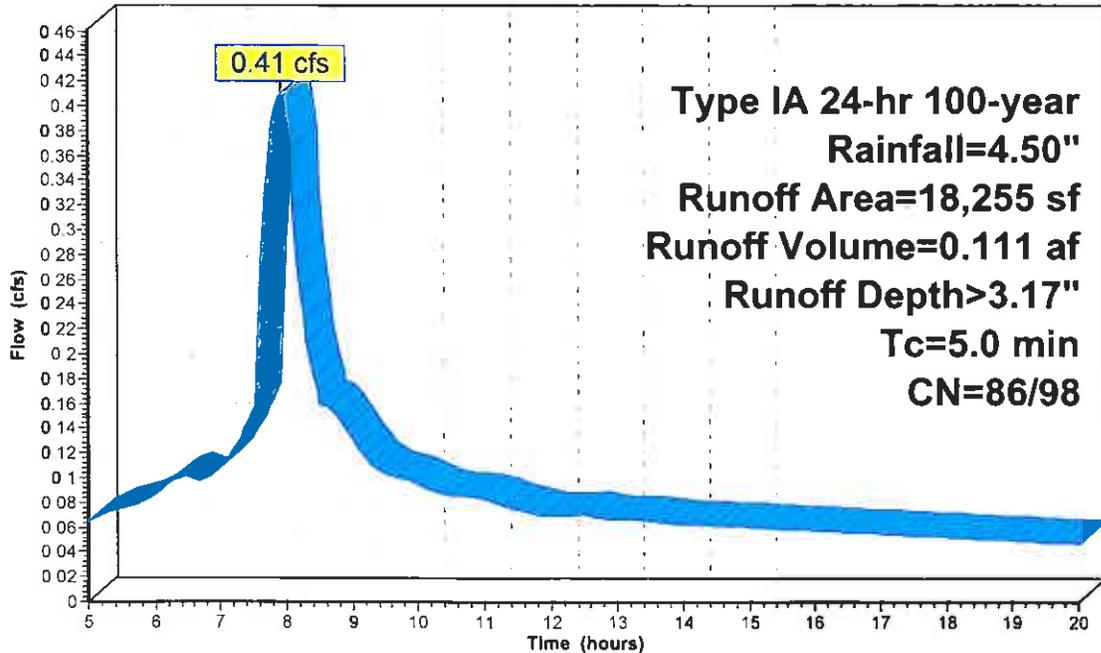
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-year Rainfall=4.50"

Area (sf)	CN	Description
* 13,479	98	Concrete, AC
* 4,776	86	Landscaping
18,255	95	Weighted Average
4,776	86	Pervious Area
13,479	98	Impervious Area

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

Subcatchment 4S: Basin B

Hydrograph



A263

TVF&R Station 58_Detention2

Type IA 24-hr 100-year Rainfall=4.50"

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Page 57

Summary for Subcatchment 5S: Basin C

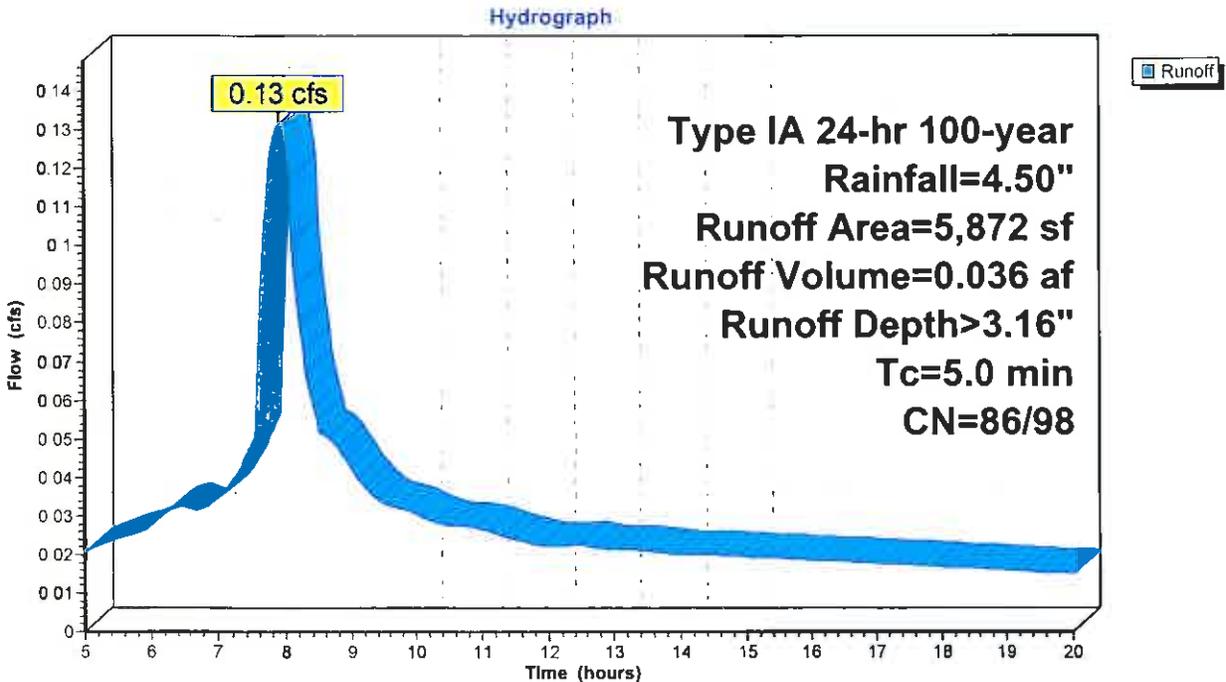
Runoff = 0.13 cfs @ 7.91 hrs, Volume= 0.036 af, Depth> 3.16"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-year Rainfall=4.50"

Area (sf)	CN	Description
* 4,284	98	Concrete, AC
* 1,588	86	Landscaping
5,872	95	Weighted Average
1,588	86	Pervious Area
4,284	98	Impervious Area

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

Subcatchment 5S: Basin C



A-264

TVF&R Station 58_Detention2

Type IA 24-hr 100-year Rainfall=4.50"

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Page 58

Summary for Subcatchment 6S: Basin D

Runoff = 0.20 cfs @ 7.90 hrs, Volume= 0.053 af, Depth> 3.38"

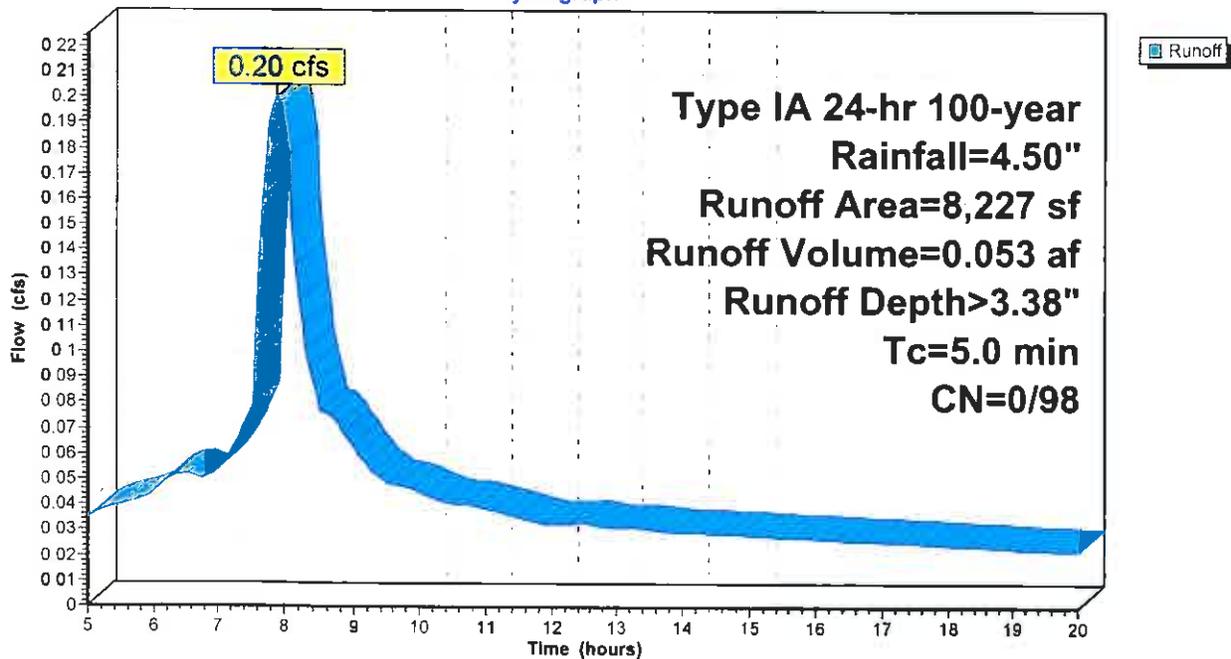
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100-year Rainfall=4.50"

Area (sf)	CN	Description
8,227	98	Building
8,227	98	Impervious Area

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

Subcatchment 6S: Basin D

Hydrograph



A-265

TVF&R Station 58_Detention2

Type IA 24-hr 100-year Rainfall=4.50"

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Page 59

Summary for Subcatchment 8S: Pre-Developed Conditions

Runoff = 0.78 cfs @ 7.93 hrs, Volume= 0.215 af, Depth> 2.81"

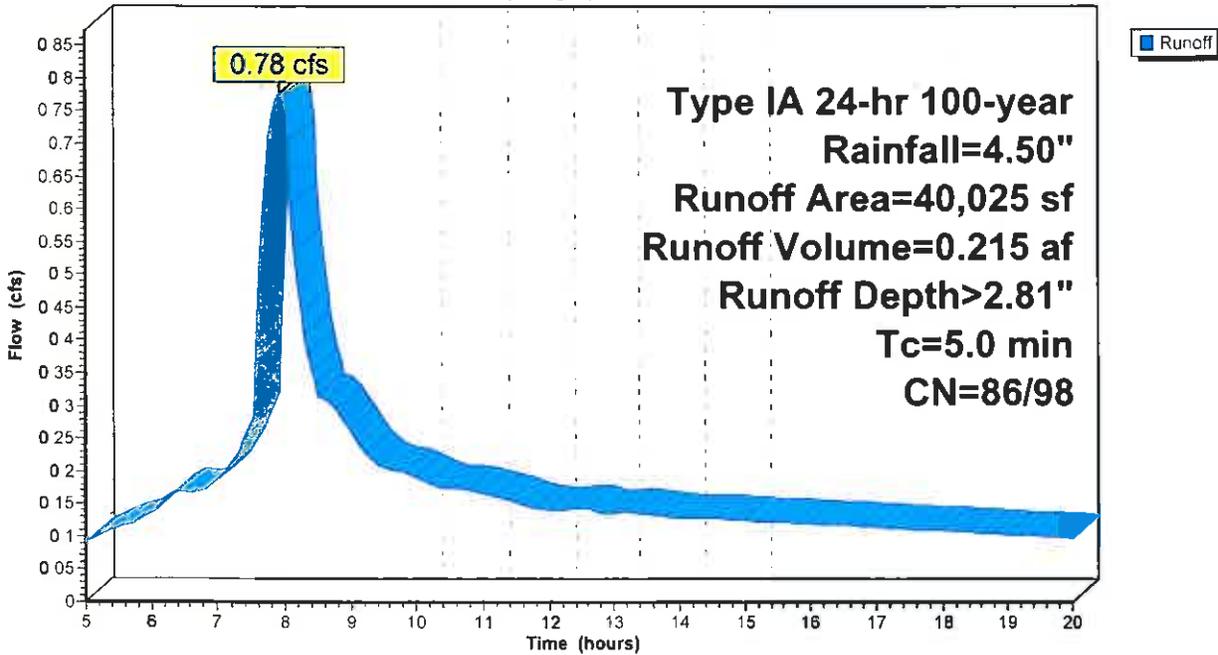
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100-year Rainfall=4.50"

Area (sf)	CN	Description
* 11,533	98	Concrete, AC
* 25,745	86	Landscape
* 2,747	89	Gravel
40,025	90	Weighted Average
28,492	86	Pervious Area
11,533	98	Impervious Area

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

Subcatchment 8S: Pre-Developed Conditions

Hydrograph



A-265

TVF&R Station 58_Detention2

Type IA 24-hr 100-year Rainfall=4.50"

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Page 60

Summary for Pond 3P: Planter #3

Inflow Area = 0.269 ac, 86.32% Impervious, Inflow Depth > 3.27" for 100-year event
 Inflow = 0.27 cfs @ 7.90 hrs, Volume= 0.073 af
 Outflow = 0.22 cfs @ 8.09 hrs, Volume= 0.072 af, Atten= 20%, Lag= 11.2 min
 Primary = 0.22 cfs @ 8.09 hrs, Volume= 0.072 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.44' @ 8.09 hrs Surf.Area= 639 sf Storage= 280 cf

Plug-Flow detention time= 30.0 min calculated for 0.071 af (97% of inflow)
 Center-of-Mass det. time= 16.4 min (665.6 - 649.1)

Volume #1	Invert 0.00'	Avail.Storage 1,278 cf	Storage Description
Custom Stage Data (Prismatic) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	639	0	0
1.00	639	639	639
2.00	639	639	1,278

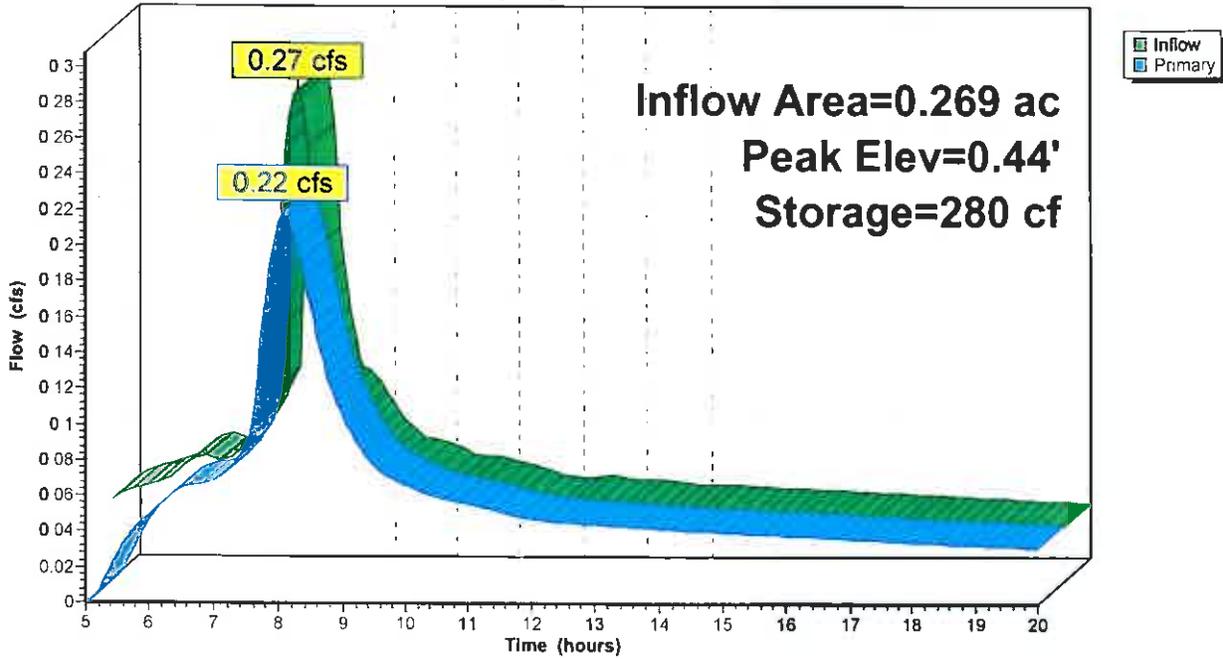
Device #1	Routing Primary	Invert 0.00'	Outlet Devices
			4.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.22 cfs @ 8.09 hrs HW=0.44' (Free Discharge)
 ↳1=Orifice/Grate (Orifice Controls 0.22 cfs @ 2.51 fps)

A-267

Pond 3P: Planter #3

Hydrograph



A-268

TVF&R Station 58_Detention2

Type IA 24-hr 100-year Rainfall=4.50"

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Page 62

Summary for Pond 4P: Flow Control Manhole - To City

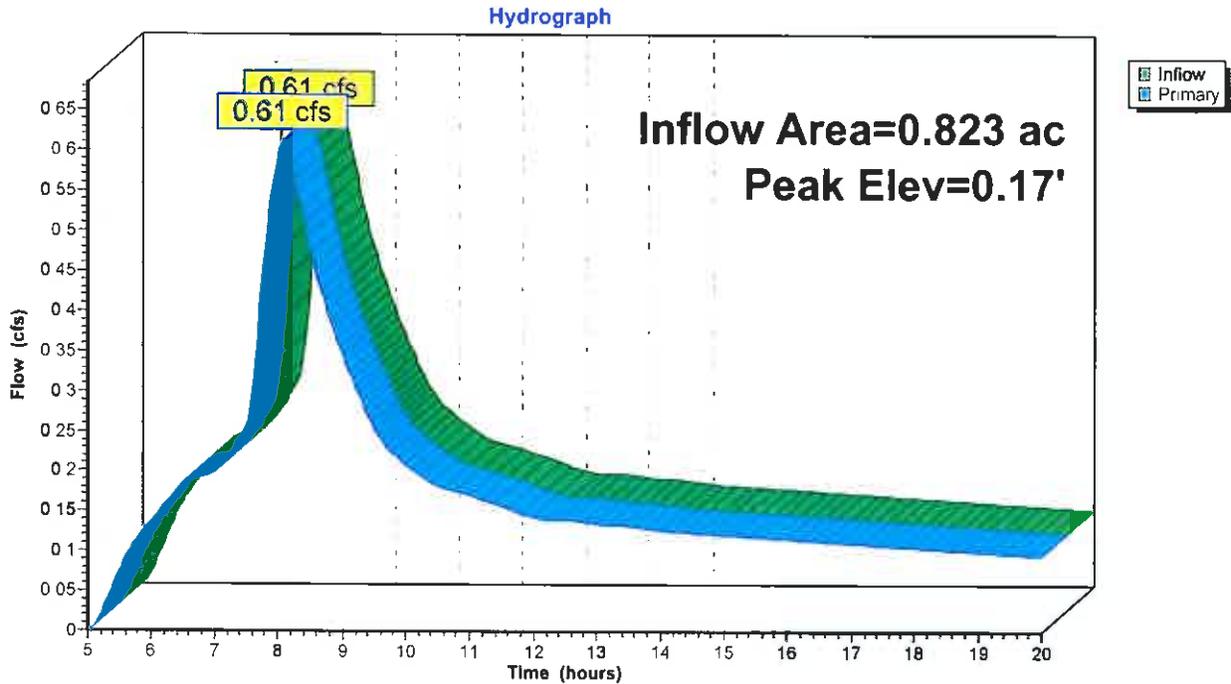
Inflow Area = 0.823 ac, 77.77% Impervious, Inflow Depth > 3.12" for 100-year event
Inflow = 0.61 cfs @ 8.07 hrs, Volume= 0.214 af
Outflow = 0.61 cfs @ 8.07 hrs, Volume= 0.214 af, Atten= 0%, Lag= 0.0 min
Primary = 0.61 cfs @ 8.07 hrs, Volume= 0.214 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.17' @ 8.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	10.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.61 cfs @ 8.07 hrs HW=0.17' (Free Discharge)
↑1=Orifice/Grate (Weir Controls 0.61 cfs @ 1.36 fps)

Pond 4P: Flow Control Manhole - To City



A-269

TVF&R Station 58_Detention2

Type IA 24-hr 100-year Rainfall=4.50"

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Page 65

Summary for Pond 6P: Planter #2

Inflow Area = 0.135 ac, 72.96% Impervious, Inflow Depth > 3.16" for 100-year event
 Inflow = 0.13 cfs @ 7.91 hrs, Volume= 0.036 af
 Outflow = 0.13 cfs @ 8.00 hrs, Volume= 0.035 af, Atten= 3%, Lag= 5.3 min
 Primary = 0.13 cfs @ 8.00 hrs, Volume= 0.035 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.26' @ 8.00 hrs Surf.Area= 261 sf Storage= 68 cf

Plug-Flow detention time= 17.2 min calculated for 0.035 af (99% of inflow)
 Center-of-Mass det. time= 8.9 min (662.2 - 653.3)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	522 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	261	0	0
1.00	261	261	261
2.00	261	261	522

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	4.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.13 cfs @ 8.00 hrs HW=0.26' (Free Discharge)
 ↑1=Orifice/Grate (Orifice Controls 0.13 cfs @ 1.74 fps)

A-270

TVF&R Station 58_Detention2

Type IA 24-hr 100-year Rainfall=4.50"

Prepared by PBS Engineering + Environmental

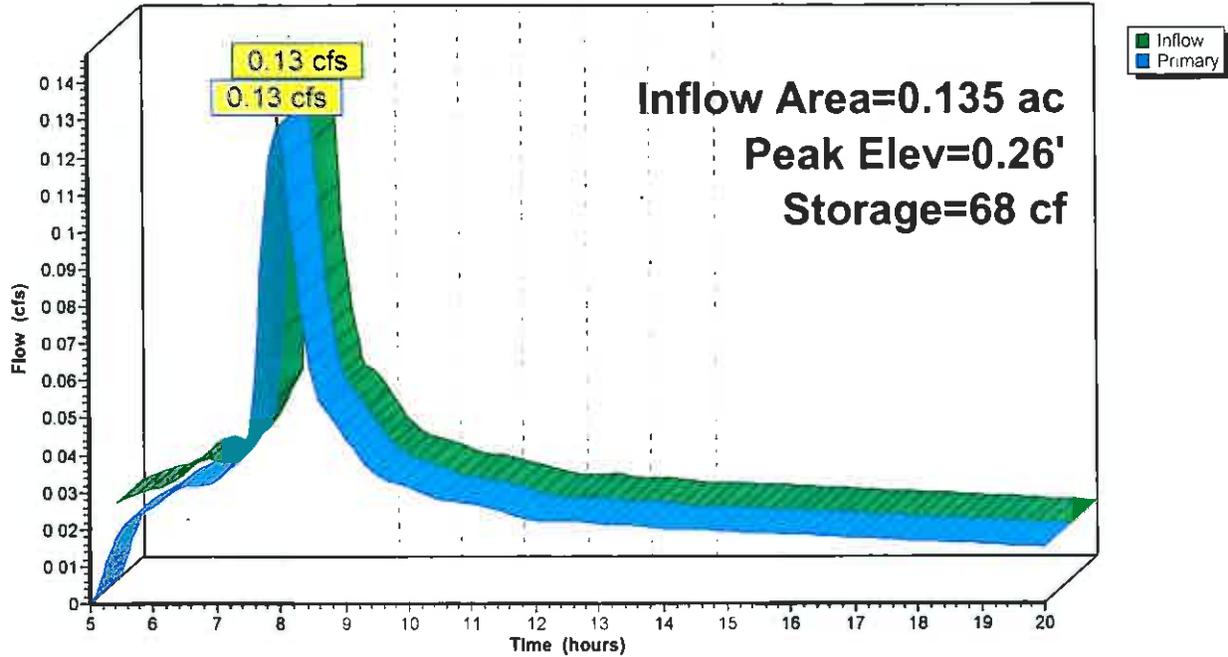
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Page 66

Pond 6P: Planter #2

Hydrograph



A-271

Form SIM

Simplified Approach for Stormwater Management Facilities

This form facilitates a relatively quick and simple approach for stormwater management. Facilities designed according to the required criteria are presumed to comply with pollution reduction and flow control requirements. Designers must use the sizing factor and facility surface area on this form in conjunction with the facility design criteria on the following pages. Alternative design and sizing will not be considered.

FLOW-THROUGH PLANTER #2

New or Redeveloped Impervious Site Area Box 1

INSTRUCTIONS

1 Enter square footage on non-mitigated impervious area (from Form MIT, Box C) in Box 1 at the bottom of column 1

2 Enter the appropriate square footage of non-mitigated impervious area in the space next to the selected facility(s) in column 1

3 Add all facility impervious areas in column 1 and enter in Box 2. Note: Box 1 and Box 2 areas must be equal.

4 Multiply the non-mitigated sf in column 1 by the sizing factor in column 2 for each facility.

5 Use the required facility surface area sf in column 3 to design the facility(s).

6 Go the "Simplified Approach Design Criteria" for facility descriptions and specifications.

Stormwater Management Facility	Column 1		Column 2			Column 3	
	Impervious Area Managed	Unit	Sizing Factor		Required Facility Surface Area	Unit	
1) Infiltration Planter	<input type="text"/>	sf	x	0.06	= <input type="text" value="0"/>	sf	
2) Flow-Through Planter	<input type="text" value="4284"/>	sf	x	0.06	= <input type="text" value="257.04"/>	sf	
3) Vegetated Swale	<input type="text"/>	sf	x	0.09	= <input type="text" value="0"/>	sf	
4) Grassy Swale	<input type="text"/>	sf	x	0.12	= <input type="text" value="0"/>	sf	
5) Vegetated Filter Strip	<input type="text"/>	sf	x	0.2	= <input type="text" value="0"/>	sf	
6) Vegetated Infiltration Basin	<input type="text"/>	sf	x	0.09	= <input type="text" value="0"/>	sf	
Total Impervious Area Managed	<input type="text" value="4284"/>					Box 2	
Box 1 - Box 2	<input type="text" value="0"/>					Box 3	

A-272

Form SIM

Simplified Approach for Stormwater Management Facilities

This form facilitates a relatively quick and simple approach for stormwater management. Facilities designed according to the required criteria are presumed to comply with pollution reduction and flow control requirements. Designers must use the sizing factor and facility surface area on this form in conjunction with the facility design criteria on the following pages. Alternative design and sizing will not be considered.

FLOW-THROUGH PLANTER #3

New or Redeveloped Impervious Site Area Box 1

INSTRUCTIONS

1 Enter square footage on non-mitigated impervious area (from Form MIT, Box C) in Box 1 at the bottom of column 1

2 Enter the appropriate square footage of non-mitigated impervious area in the space next to the selected facility(s) in column 1

3 Add all facility impervious areas in column 1 and enter in Box 2. Note Box 1 and Box 2 areas must be equal

4 Multiply the non-mitigated sf in column 1 by the sizing factor in column 2 for each facility

5 Use the required facility surface area sf in column 3 to design the facility(s)

6 Go the "Simplified Approach Design Criteria" for facility descriptions and specifications

Stormwater Management Facility	Column 1	Column 2			Column 3	
	Impervious Area Managed	Unit	Sizing Factor		Required Facility Surface Area	Unit
1) Infiltration Planter	_____	sf	x	0.06	= <input type="text" value="0"/>	sf
2) Flow-Through Planter	<u>10112</u>	sf	x	0.06	= <input type="text" value="606.72"/>	sf
3) Vegetated Swale	_____	sf	x	0.09	= <input type="text" value="0"/>	sf
4) Grassy Swale	_____	sf	x	0.12	= <input type="text" value="0"/>	sf
5) Vegetated Filter Strip	_____	sf	x	0.2	= <input type="text" value="0"/>	sf
6) Vegetated Infiltration Basin	_____	sf	x	0.09	= <input type="text" value="0"/>	sf

Total Impervious Area Managed Box 2

Box 1 - Box 2 Box 3

APPENDIX D

Conveyance System Calculations

A-274

Project: TVF&R Station 58
PBS#: 70606.000
Date: 09/15/08

Conveyance Design - Pipe Sizing

Pipe Run	From Basins	Peak Flow Q (cfs)	Pipe Dia. (in.)	Slope (ft./ft.)	Manning "n"	Full Velocity V (fps)	Full Capacity Q (cfs)	% of Capacity
1	A	0.05	6	0.1000	0.013	9.06	1.78	2.81%
2	D	0.20	4	0.0500	0.013	4.89	0.43	46.87%
3	B	0.33	10	0.0060	0.013	3.12	1.70	19.39%
4	C	0.10	8	0.0100	0.013	3.47	1.21	8.25%
5	C	0.10	6	0.0800	0.013	8.10	1.59	6.28%
6	B	0.33	6	0.0800	0.013	8.10	1.59	20.74%
7	A, D	0.25	6	0.1000	0.013	9.06	1.78	14.05%
8	A, B, C, D	0.69	10	0.1566	0.013	15.94	8.69	7.94%

Front Apron - Basin A
 Driveway, Parking & Sidewalk - Basin B
 Back Apron - Basin C
 Roof - Basin D

APPENDIX F
Construction Plans

A-276

UTILITY LEGEND

▲	TRUNK BLOCK
●	WATER VALVE
○	WATER METER
■	FIRE HYDRANT
◆	FIRE DEPARTMENT CONNECTION
◇	LOWVOLTAGE / LANDSCAPE OVERHEAD WALK
⊠	SEWER CLEANOUT
⊞	OUTLET WATER SEPARATION
⊞	WATER LINE
—	SANITARY SEWER LINE

GENERAL UTILITY NOTES

- LOCATIONS OF UTILITIES REFERRED TO HEREIN ARE BASED ON RECORD DRAWINGS AND FIELD SURVEY DATA. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE UTILITIES AND HAS FOUND THEM TO BE IN ACCORDANCE WITH THE CITY OF PORTLAND'S UTILITY RECORDS.
- ALL UTILITIES AND METHODS OF CONNECTION ARE TO BE INSTALLED IN ACCORDANCE WITH THE CITY OF PORTLAND'S UTILITY RECORDS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF UTILITIES.
- ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PORTLAND'S UTILITY RECORDS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF UTILITIES.
- ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PORTLAND'S UTILITY RECORDS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF UTILITIES.

SANITARY SEWER INSTALLATION NOTES

- SEE PLAN FOR THE EXISTING SANITARY SEWER LINE AND CONNECTIONS.
- ALL NEW SANITARY SEWER LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PORTLAND'S UTILITY RECORDS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF UTILITIES.
- ALL NEW SANITARY SEWER LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PORTLAND'S UTILITY RECORDS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF UTILITIES.
- ALL NEW SANITARY SEWER LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PORTLAND'S UTILITY RECORDS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF UTILITIES.

WATER INSTALLATION NOTES

- SEE PLAN FOR THE EXISTING WATER MAIN AND CONNECTIONS.
- ALL NEW WATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PORTLAND'S UTILITY RECORDS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF UTILITIES.
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CONNECTIONS

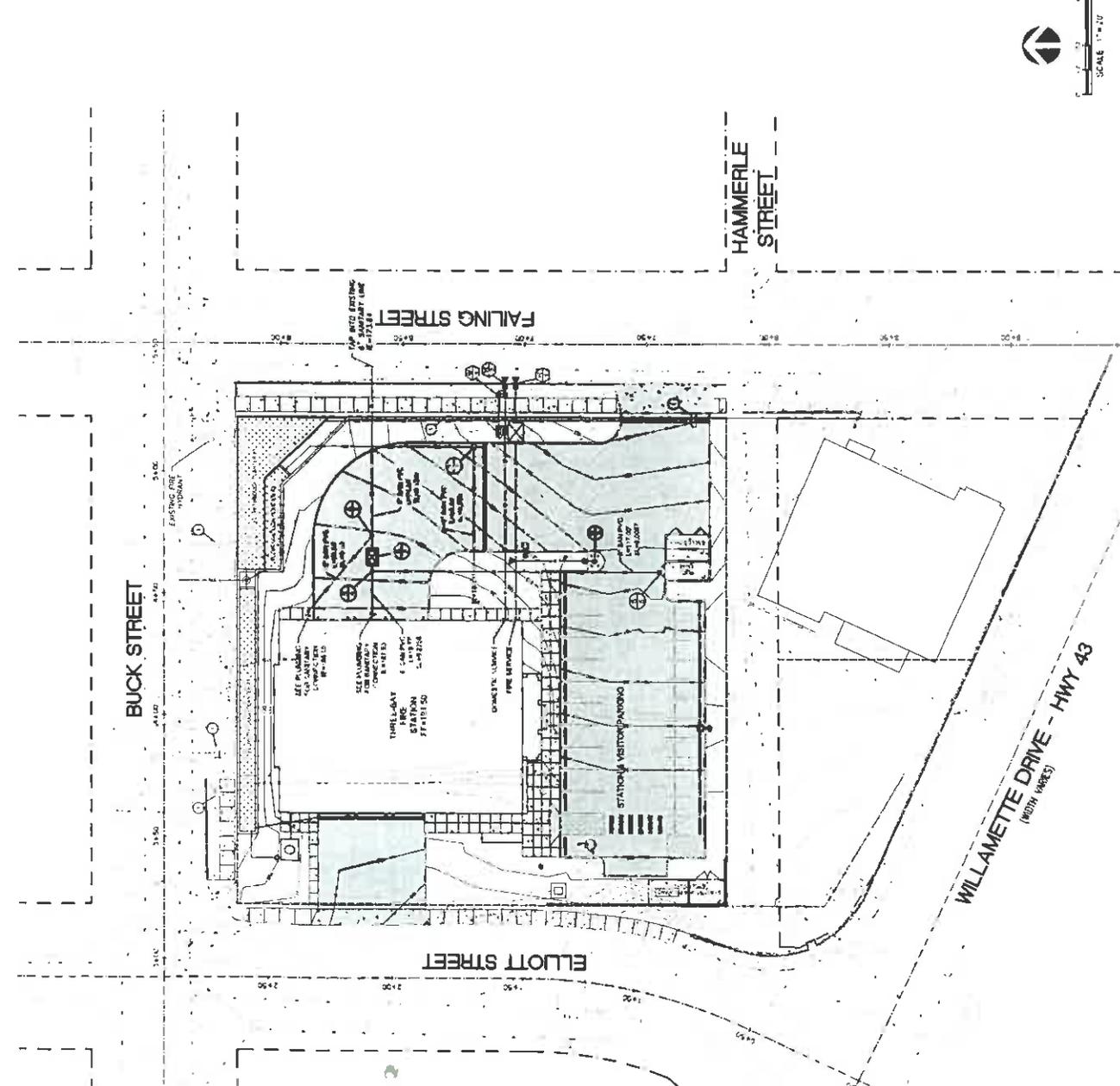
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A-277

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 Portland, OR 97232
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 503.248.0222 Fax



STATION 58 - BOLTON
 6050 FAILING STREET | WEST LINN, OR

DESIGN DEVELOPMENT
STORMWATER
PLAN
DATE: 11/15/2017
BY: [Signature]
CHECKED: [Signature]
SCALE: 1" = 12'

C1.1



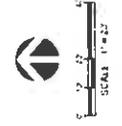
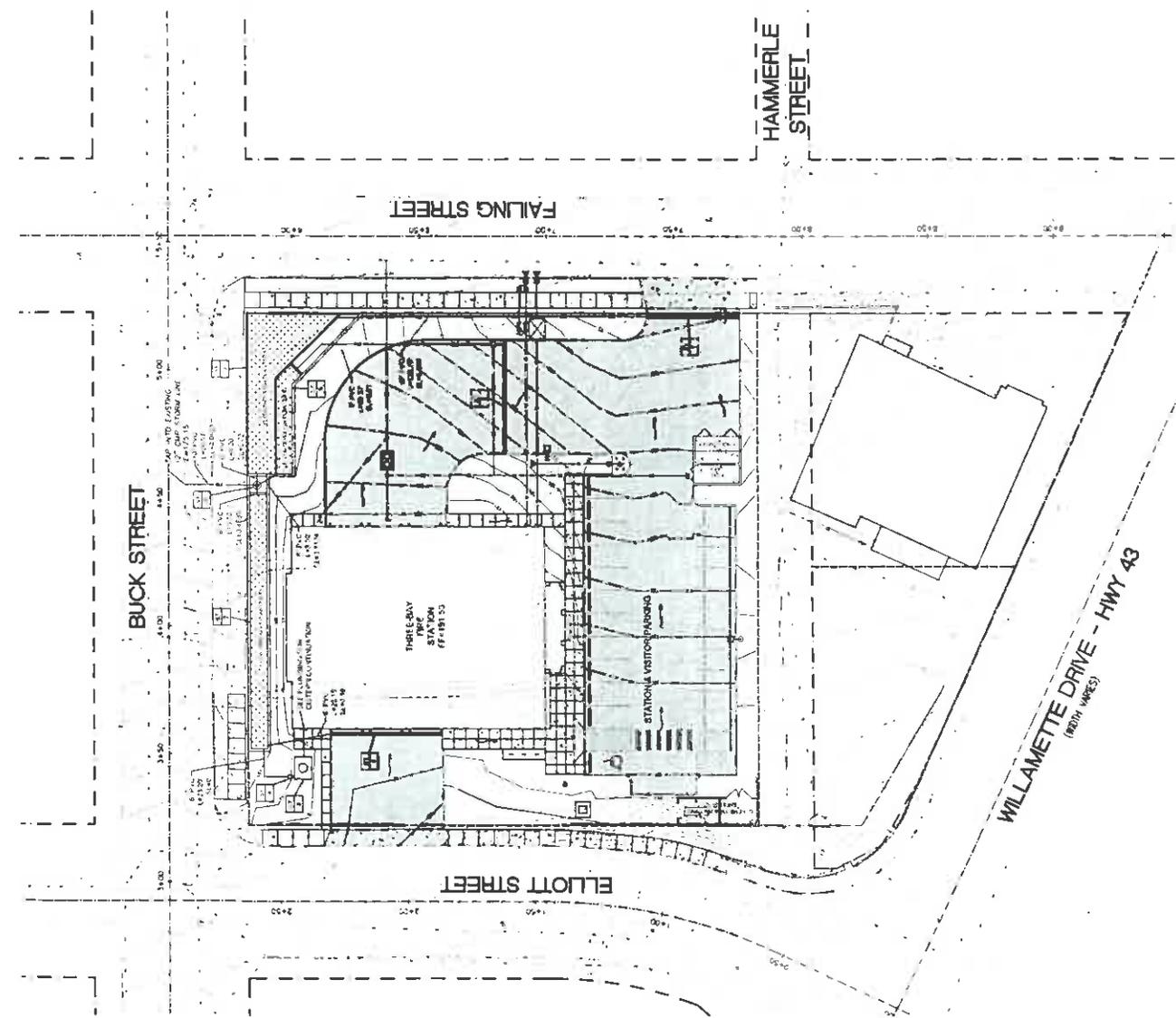
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STORM MANHOLE	●
CATCH BASIN	□
BASEWATER MARKETING SYSTEM	□
SEWERAGE JUNCTION	○
ROOF DRAIN LINE	---
ROOF DRAIN LINE	---
ROOF THROUGH PLANTER	□

GENERAL NOTES

1. LOCATION OF EXISTING UTILITIES IS APPROXIMATE BASED ON PREVIOUS RECORD DRAWINGS AND FIELD SURVEY. ALL UTILITIES SHOULD BE LOCATED AND MARKED PRIOR TO CONSTRUCTION. ALL UTILITIES SHOULD BE PROTECTED AND DEEPENED AS NECESSARY TO MAINTAIN PROPER CLEARANCE AND GRADE. ALL UTILITIES SHOULD BE PROTECTED AND DEEPENED AS NECESSARY TO MAINTAIN PROPER CLEARANCE AND GRADE.
2. ALL MATERIALS AND METHODS OF CONSTRUCTION AND INSTALLATION FOR SEWER AND STORMWATER FACILITIES SHALL COMPLY WITH CITY OF WEST LINN SPECIFICATIONS AND SHALL BE AS PER THE SPECIFICATIONS AND STANDARDS NECESSARY.

STORMWATER INSTALLATION NOTES

1. SEE PLAN FOR EXISTING UTILITIES AND PROPOSED NEW.
2. SEE CITY OF WEST LINN SPECIFICATIONS FOR ALL.
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A-278



PEEK
SMITH
LITTLE
ARCHITECTS

4111 DE CONITAS
TUALUMNE COUNTY
PLACENTIA, CA 95667-1719
TEL: (916) 244-0215

6050 FAILING STREET | WEST LINN, OR
STATION 58 - BOLTON
TV&R WEST LINN

DESIGN DEVELOPMENT

SANITARY

DETAILS

DATE: 8/17/16 BY: JPK

SCALE:

PROJECT:

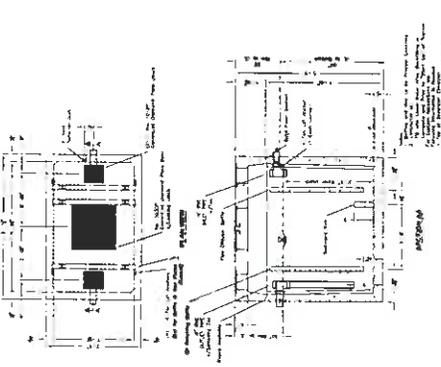
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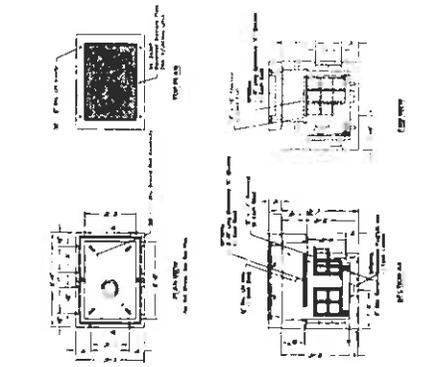
PBS
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4112 SW Commercial
Portland, OR 97239
503.244.1979 Main
503.244.0237 Fax

576-SA



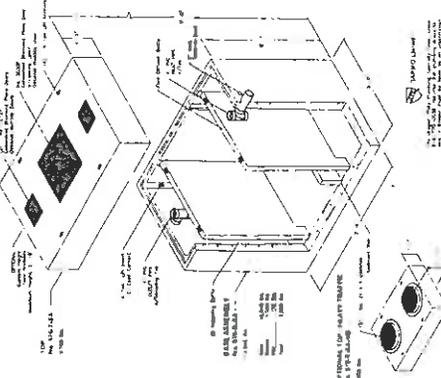
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DATE: 8/17/16	BY: JPK

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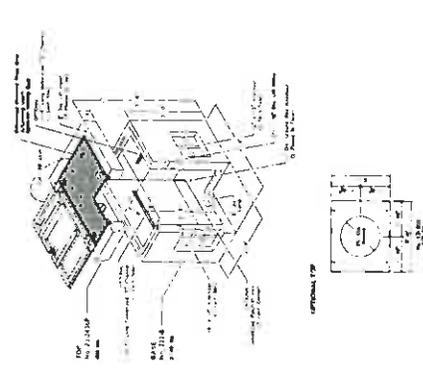
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100 Gallon - API Style	100 Gallon - API Style
DATE: 8/17/16	BY: JPK

576-LA



576-LA	576-LA
Oil/Water Separator	Oil/Water Separator
100 Gallon - API Style	100 Gallon - API Style
DATE: 8/17/16	BY: JPK

233-LA



233-LA	233-LA
Oil/Water Separator	Oil/Water Separator
100 Gallon - API Style	100 Gallon - API Style
DATE: 8/17/16	BY: JPK

A-281

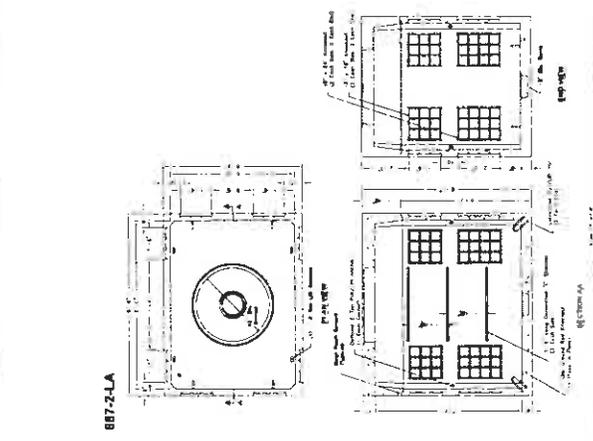
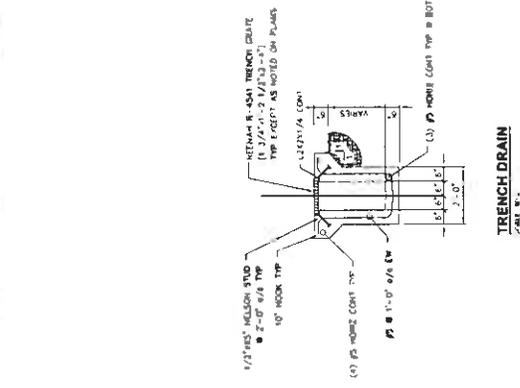
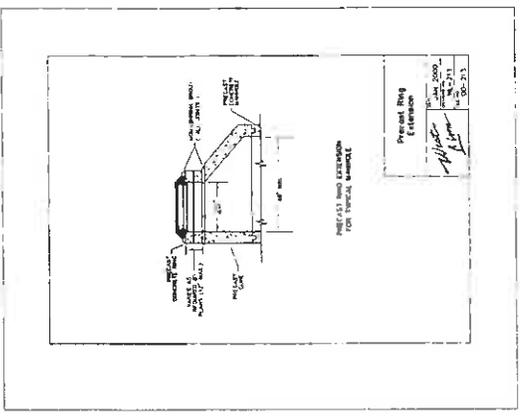
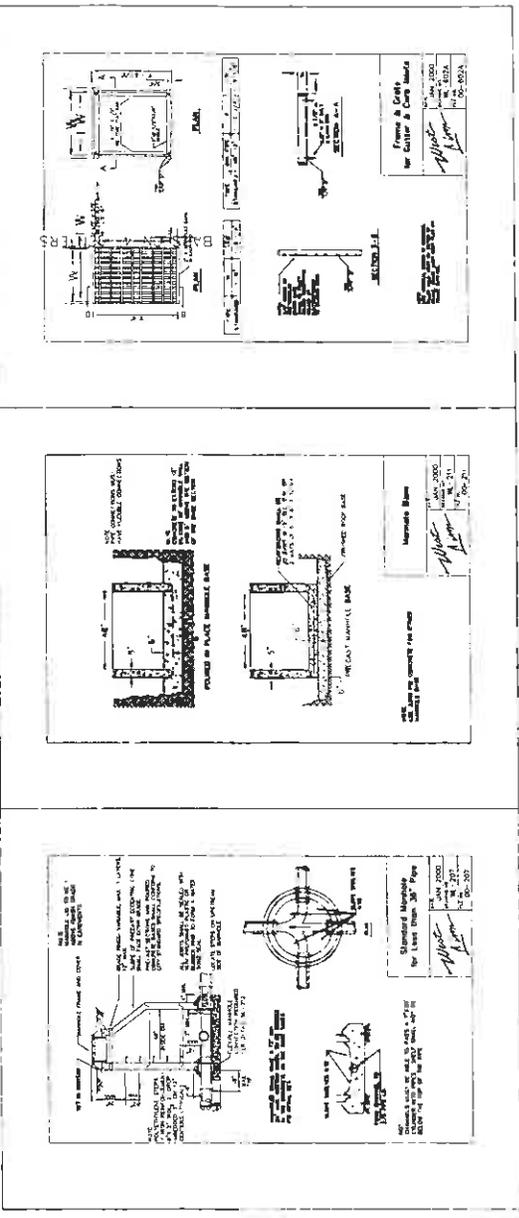


T&R WEST LINN
 STATION 58 - BOLTON
 6050 FAILING STREET | WEST LINN, OR

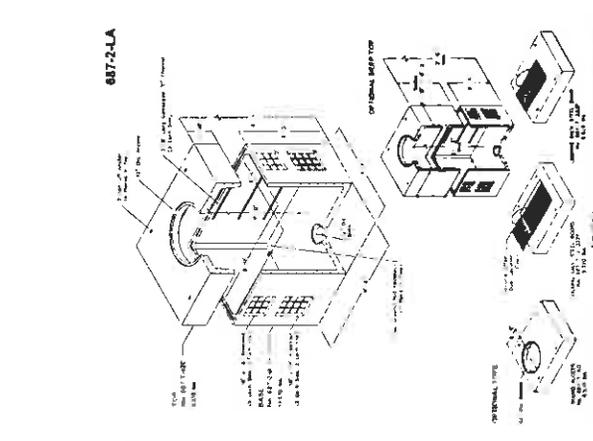
DESIGN DEVELOPMENT
STORMWATER
DETAILS
DATE: 01/27/2009
PROJECT: 09-0001
DRW: 09-0001-01

C2.4

PBS
 Engineering +
 Environmental
 4112 SW Corporate Avenue
 Portland, OR 97224
 503.243.0233 Fax



887-2-1A	887-2-1A
POWER / WATER / GAS	POWER / WATER / GAS



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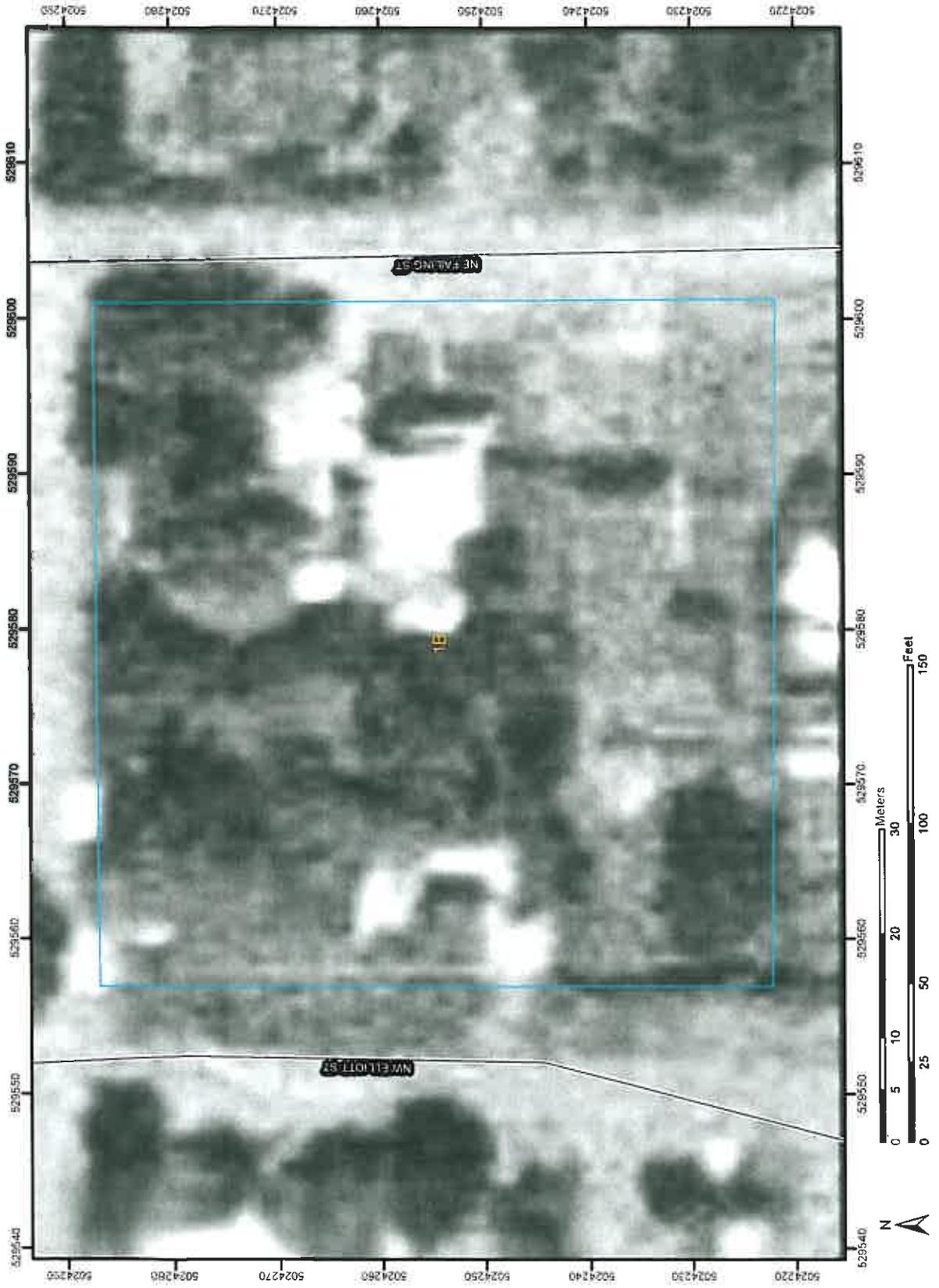
A-282

APPENDIX G

Supporting Maps and Design Material

A-283

Soil Map—Clackamas County Area, Oregon
(TVF&R Station 58)



A-284

MAP LEGEND

Area of Interest (AOI)	Very Stony Spot
Soils	Wet Spot
Soil Map Units	Other
Special Point Features	Special Line Features
Blowout	Gully
Borrow Pit	Short Steep Slope
Clay Spot	Other
Closed Depression	Political Features
Gravel Pit	Municipalities
Gravelly Spot	Cities
Landfill	Urban Areas
Lava Flow	Water Features
Marsh	Oceans
Mine or Quarry	Streams and Canals
Miscellaneous Water	Transportation
Perennial Water	Ralls
Rock Outcrop	Roads
Saline Spot	Interstate Highways
Sandy Spot	US Routes
Severely Eroded Spot	State Highways
Sinkhole	Local Roads
Slide or Slip	Other Roads
Sodic Spot	
Spoil Area	
Stony Spot	

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 10N

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

Soil Survey Area: Clackamas County Area, Oregon
Survey Area Data: Version 4, Dec 22, 2006

Date(s) aerial images were photographed: 7/29/2000; 7/13/2001

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

A-285

Map Unit Legend

Clackamas County Area, Oregon (OR610)			
Map Unit Symbol	Map Unit Name	Acres In AOI	Percent of AOI
1B	Aloha silt loam, 3 to 6 percent slopes	1.1	100.0%
Totals for Area of Interest (AOI)		1.1	100.0%

A-286

Water Features

Clackamas County Area, Oregon

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Surface depth	Ponding		Flooding	
				Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
				Fl	Fl	Ft				
1B: Aloha	C	--	January	1.5-2.0	1.7-3.3	--	--	None	--	None
			February	1.5-2.0	1.7-3.3	--	--	None	--	None
			March	1.5-2.0	1.7-3.3	--	--	None	--	None
			April	1.5-2.0	1.7-3.3	--	--	None	--	None
			December	1.5-2.0	1.7-3.3	--	--	None	--	None

A-287

This report shows only the major soils in each map unit. Others may exist.

APPENDIX H

Operations and Maintenance Plan

A-288 .

Infiltration and Flow-Through Planters

Operations & Maintenance Plan

Planters are designed to allow runoff to filter through layers of topsoil (thus capturing pollutants) and then either infiltrate into the native soils (infiltration planter) or be collected in a pipe to be discharged off-site (flow-through planter). The planter is sized to accept runoff and temporarily store the water in a reservoir on top of the soil. The flow-through planter is designed with an impervious bottom or is placed on an impervious surface. Water should drain through the planter within 3-4 hours after a storm event. All facility components and vegetation shall be inspected for proper operations and structural stability. These inspections shall occur, at a minimum, quarterly for the first 2 years from the date of installation, 2 times per year thereafter, and within 48 hours after each major storm event. The facility owner must keep a log, recording all inspection dates, observations, and maintenance activities. The following items shall be inspected and maintained as stated:

Downspout from rooftop or sheet flow from paving allows unimpeded stormwater flow to the planter.

- Debris shall be removed routinely (e.g., no less than every 6 months) and upon discovery.
- Damaged pipe shall be repaired upon discovery.

Splash Blocks prevent splashing against adjacent structures and convey water without disrupting media.

- Any deficiencies in structure such as cracking, rotting, and failure shall be repaired.

Planter Reservoir receives and detains storm water prior to infiltration. Water should drain from reservoir within 3-4 hours of storm event.

- Sources of clogging shall be identified and corrected.
- Topsoil may need to be amended with sand or replaced all together.

Filter Media consisting of sand, gravel, and topsoil shall allow stormwater to percolate uniformly through the planter. The planter shall be excavated and cleaned, and gravel or soil shall be replaced to correct low infiltration rates.

- Holes that are not consistent with the design and allow water to flow directly through the planter to the ground shall be plugged.
- Sediment accumulation shall be hand removed with minimum damage to vegetation using proper erosion control measures. Sediment shall be removed if it is more than 4 inches thick or so thick as to damage or kill vegetation.
- Litter and debris shall be removed routinely (e.g., no less than quarterly) and upon discovery.

Planter shall contain filter media and vegetation.

- Structural deficiencies in the planter including rot, cracks, and failure shall be repaired.

Overflow Pipe safely conveys flow exceeding reservoir capacity to an approved stormwater receiving system.

- Overflow pipe shall be cleared of sediment and debris when 50% of the conveyance capacity is plugged.
- Damaged pipe shall be repaired or replaced upon discovery.

Vegetation shall be healthy and dense enough to provide filtering while protecting underlying soils from erosion.

- Mulch shall be replenished at least annually.
- Vegetation, large shrubs or trees that limit access or interfere with planter operation shall be pruned or removed.
- Fallen leaves and debris from deciduous plant foliage shall be raked and removed.
- Nuisance or prohibited vegetation from the Portland Plant List shall be removed when discovered. Invasive vegetation contributing up to 25% of vegetation of all species shall be removed and replaced.
- Dead vegetation shall be removed to maintain less than 10% of area coverage or when planter function is impaired. Vegetation shall be replaced within a specific timeframe, e.g., 3 months, or immediately if required to maintain cover density and control erosion where soils are exposed.

Spill Prevention measures shall be exercised when handling substances that contaminate stormwater.

Releases of pollutants shall be corrected as soon as identified.

Training and/or written guidance information for operating and maintaining stormwater planters shall be provided to all property owners and tenants. A copy of the O&M Plan shall be provided to all property owners and tenants.

Access to the stormwater planter shall be safe and efficient. Egress and ingress routes shall be maintained to design standards. Roadways shall be maintained to accommodate size and weight of vehicles, if applicable.

- Obstacles preventing maintenance personnel and/or equipment access to the stormwater planter shall be removed.
- Gravel or ground cover shall be added if erosion occurs, e.g., due to vehicular or pedestrian traffic.

Insects & Rodents shall not be harbored in the stormwater planter.

Pest control measures shall be taken when insects/rodents are found to be present.

If sprays are considered, then a mosquito larvicide, such as Bacillus thurensensis or Altoside formulations can be applied only if absolutely necessary, and only by a licensed individual or contractor.

Holes in the ground located in and around the stormwater planter shall be filled and compacted.