



CITY OF  
**West Linn**  
 PLANNING AND DEVELOPMENT

**STAFF REPORT**

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

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

**REQUEST:** TO CONSTRUCT AN APPROXIMATELY 11,955-SQUARE FOOT FIRE STATION AT 1860 WILLAMETTE FALLS DRIVE AND 1841 8<sup>TH</sup> AVENUE, WITH A CONDITIONAL USE PERMIT, CLASS II DESIGN REVIEW, AND CLASS II VARIANCE FOR CLEAR VISION AREA

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**City of West Linn  
PLANNING DEPARTMENT  
LAND USE ACTION**

TO: West Linn Planning Commission (for November 19, 2008 meeting)  
FROM: West Linn Planning Staff (Tom Soppe, Associate Planner)  
DATE: Report completed November 5, 2008  
FILE NOS: CUP-08-01/DR-08-08/VAR-08-05  
SUBJECT: Construction of an approximately 11,995 square foot fire station replacing an existing fire station at the same location, involving a Conditional Use Permit, Class II Design Review, and a Class II Variance for clear vision area.

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

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**SPECIFIC DATA**

**OWNER/  
APPLICANT:**

Gary Wells, 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:** 1860 Willamette Falls Drive and 1841 8<sup>th</sup> Avenue

**SITE SIZE:** 0.5 acres

**DESCRIPTION:** Assessor's Map 3-1E-2BA, tax lots 1100 and 2000

**COMP PLAN**

**DESIGNATION**

1860 Willamette Falls Drive is Commercial, 1841 8<sup>th</sup> Avenue is Mixed Use

**ZONING:**

1860 Willamette Falls Drive is General Commercial (GC), 1841 8<sup>th</sup> Avenue is Mixed Use (MU)

**APPROVAL**



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**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:** These applications was completed on October 6, 2008. The 120-day period for making a decision will lapse on February 4, 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 October 30, 2008. Therefore, public notice requirements of Chapter 99 of the Community Development Code have been satisfied. In addition, the applicant met with the Willamette Neighborhood Association per CDC Section 99.038.

## **EXECUTIVE SUMMARY**

Tualatin Valley Fire and Rescue (TVFR) has been planning for several years to replace the existing station 59, currently on the southern half of the site (1860 Willamette Falls Drive). The existing station does not meet size needs for necessary facilities, including fire and rescue vehicles, especially since the addition of the water rescue apparatus. The water rescue apparatus is the only such facility in the TVFR district, which includes multiple communities in Washington and Clackamas counties.

TVFR plans to demolish the existing station and replace it with a new station straddling both of the taxlots comprising the site (1860 Willamette Falls Drive and 1841 8<sup>th</sup> Avenue). New landscaping and new paved parking areas will accompany the new station, as will a new community room on the second floor of the station. The new station will have two stories, and the historic bell has been worked into the design of the building in a cupola above the second floor. Most of the new building will be on the front lot, while the rear lot will contain the furthest north area of the building as well as the parking areas.

The front lot is in the General Commercial (GC) zone and the rear lot is in the Mixed Use (MU) zone. The front lot is also within the Willamette Historic Commercial Overlay. This is a public safety facility, not a commercial building; according to 58.030(A) the overlay is not applicable to new non-commercial buildings. However, the applicant has intentionally worked much of the historic style into the design, and the design was reviewed and supported by the Clackamas County Historic Review Board (CCHRB), which is assigned design review for all building remodels, building renovations, and new construction for applicable buildings in the Overlay zone by the City.

The only significant tree is proposed for preservation, while several other trees are proposed for removal.

The applicant requests a Class II Variance allowing for non-compliance with the provisions of Chapter 42, Clear Vision Areas. Section 19.070(A)(7) in CDC Chapter 19 General Commercial requires buildings in this zone to have a maximum front setback of 20 feet. The building as proposed is 20 feet back from the front property line, and a 30 foot wide driveway that is necessary for the fire and rescue vehicles connects the front of the building to Willamette Falls Drive. Even at this maximum setback, the building is proposed to be in violation of CDC Section 42.040, which sets the minimum clear vision area for driveways that are over 24 feet wide. The building would have to be moved several feet further back to avoid this variance, and that would create the need for another variance due to the maximum setback allowed in the GC zone.

## **PUBLIC COMMENTS**

As of November 5, 2008 staff had received no comments specific to this application.

## **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 pedestrian path along the east side of the rear parking lot shall be 8 feet wide.
2. All usable water must be on the metered water line, except for the sprinkler system water on the dedicated fire line.
3. Existing street light illumination level along the project frontages shall be analyzed. New street lights shall be required if there is a need.
4. All designs, materials, workmanships and construction 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

There is already a fire station on the site. The proposed larger station will replace the existing station. The combination of the two lots allows for an area of adequate space for the new station and its parking. The building was designed with respect to the Willamette Commercial Overlay Zone and its historic style, even though this building is exempt from the regulations of the overlay zone as it is a non-commercial building. The topography is flat with no intruding natural features. The location in an area with a significant amount of commercial and multi-family is appropriate. This is also an appropriate location because this is an arterial street with nearby freeway access. The proposal allows for a new fire station at the same location serving the same areas as the existing fire station. The community needs a new fire station that is larger and provides for better efficiency and response time. The new fire station will allow for better flow and response time as the vehicles will fit better in the new fire station. A new community room will be part of the new station and will allow a meeting space for the community. The criteria are met.

- 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 to provide service to the property at the time of occupancy. The property straddles the GC and MU zones. 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 or sidewalk uses proposed, so chapters 52 and 53 are not applicable. The provisions of Chapter 54 are met. For compliance with Chapter 55, see findings 7-22 below.

*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 7-22 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 (compiled 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 does not recommend further restrictions as listed above. There are no aggregate extraction uses proposed. The criteria are not applicable.

#### **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. A driveway must enter the front of the building as it is a fire station, but this driveway cannot meet the clear vision area as the GC zone requires a 20 foot maximum setback. A variance is requested for clear vision area; see Finding No. 23. The only projection that would be otherwise subject to the building height exceptions in Chapter 40 is a cupola with a bell, which is not subject to the building height limitations of the code according to CDC 40.010. No accessory structures or additional yard area are needed. The applicant is providing treatment and collection for runoff from the site and for runoff on the new 8<sup>th</sup> Avenue frontage. 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 meets the provisions of Chapter 48, Access, Chapter 54 Landscaping, and Chapter 44, Fences & Screening Outdoor Storage. While Chapter 58 does not apply to this chapter as it is not a commercial use, Section 46.140 does state that any property's location within the Willamette Falls Drive Commercial District/Overlay Zone does exempt the property from the requirements of Chapter 46.

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 one significant tree will be saved. The flat topography and the natural drainage will be preserved. There are no hazardous areas. There is adequate distance proposed between the proposed building and other buildings. The criteria are 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 will be brick and two story, fitting the historic fire station style. The structure is compatible with the surrounding architecture in size, scale, and massing. Transitions are not needed beyond what is proposed by the applicant. The building only contrasts to surrounding buildings substantially in that it is brick and not wood, but this is the historic style for fire stations from the era the neighborhood was built. Also, the existing fire station that this replaces is brick. The criteria are met.

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's massing, windows, doors, size, and other features all reflect human scale. 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 walls of 100 feet or more in length. Staff adopts the applicants findings regarding the variations provided on walls and the roof line, including the cupola and bell. Awnings will be provided. No sidewalk cafes, kiosks, or street furniture are proposed. There is a sidewalk on Willamette Falls Drive and one will be added on 8<sup>th</sup> Avenue. The criteria are 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 1 requires this to be 8 feet wide instead, which will fulfill criterion (d). Criterion (e) is met as the paths are direct and appropriately placed.

- 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 building is placed as far back from the street as the GC zone allows, which helps make the clear vision situation as compliant as possible. There is an entrance on the front of the building, which is as close as an entrance can be to the street. There is a bus stop part of a block away at 12<sup>th</sup> Street and Willamette Falls Drive. The front entrance provides a direct route to the bus stop via the sidewalk to the ROW sidewalk, and the ROW sidewalk to 12<sup>th</sup> Street. The height-to-width ratio is aided by the fact that this is a two story building with a cupola for the bell, but the building has been placed 20 feet back from the street to be as compliant as possible with Chapter 42 Clear Vision Area.

This fire station meets the architectural standards. There are no trailheads. The criteria are met.

***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**

There are commercial properties on each side of the site, and the residential properties behind the site (across 8<sup>th</sup> Avenue) will be over 100 feet from the station building. Rooftop utilities will be screened from view. The rear of the property already contains a parking lot with no further screening from uses across 8<sup>th</sup> Avenue.

### *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**

There are no new uses proposed as there is already a fire station here. Appropriate screening as been provided. 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 landscaping properly delineates 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 the other side of Willamette Falls Drive, eastbound. Staff adopts the applicants findings that 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**

On the 8<sup>th</sup> Avenue side the applicant will provide half street improvements in the form of 16 feet of roadway pavement, a curb and gutter, and an 8 foot wide curbtight sidewalk with cut outs for street trees. The 8 foot wide curb tight sidewalk matches the sidewalk already built further east on 8<sup>th</sup> Avenue, and is appropriate for a commercial atmosphere area such as this MU-zoned area. The applicant has dedicated 8 feet of ROW for these improvements on 8<sup>th</sup> Avenue. Street improvements are not needed along Willamette Falls Drive. The drainage plan is sufficient. The sanitary sewer and solid waste/recycling storage area plans are sufficient. The applicant will collect and treat runoff from the

site and the new frontage along 8<sup>th</sup> Avenue. The applicant proposes a private fire hydrant on site. The City requires all usable water to be on a metered water line, except for sprinkler system water which is allowed on a dedicated fire line. Therefore the private hydrant must be connected to the metered line for the site, if the hydrant is to be installed at all. Condition of Approval 2 requires this. The water plan is otherwise sufficient. The criteria are met upon the fulfillment of Condition of Approval 2.

***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 adopts the applicants finding regarding the provisions of (J). 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, and 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**

Chapter 42 requires any accessway over 24 feet in width to have clear vision areas. These are required to be measured from the intersection of the center of the accessway and the edge of the ROW, measuring 30 feet each way along the right of way and 30 feet back from the ROW along the accessway, forming a triangle. The triangle forms the required clear vision area, in which nothing over 3 feet tall is allowed to be built or installed.

The site is zoned GC, so the building must be only 20 feet back from the ROW at most. However, as a fire station, the front of the building must have a garage door. There is not room to have the garage doors on the sides instead of the front and back on this site already used for a fire station, and there are few other sites appropriate for this station in town. Therefore, the clear vision area must be violated on this site as the garage door cannot be 30 feet back per this zone's provisions. This is a unique situation, and criterion 1 is met. Because of the lack of other appropriate sites, the applicant must be able to exercise the property right to provide the fire station with its appropriate doors and driveway at this site. The authorization of the variance will not be detrimental to this Code, other regulatory requirements, or the Comprehensive Plan. The request is for the minimum variance as the building will be as far back from the street as is allowed by the zone, 20 feet. The circumstance does not arise from the violation of this ordinance. The variance will not impose physical limitations on other properties or uses in the area, as it only affects the clear vision area along this site. All variance criteria are met.

p:\devr\vw\staff reports\CUP-08-01

**MAILED**  
10-28-08/16

**AFFIDAVIT OF NOTICE**

We, the undersigned do hereby certify that, in the interest of the party (parties) initiating a proposed land use, the following took place on the dates indicated below:

**GENERAL**

File No. CUP-08-01 Applicant's Name Gary Wells - TVFR  
Development Name Fire Station  
Scheduled Meeting/Decision Date 11/19/08

**NOTICE:** Notices were sent at least 20 days prior to the scheduled hearing, meeting, or decision date per Section 99.080 of the Community Development Code. (check one below)

Type A

- A. The applicant (date) 10-28-08 (signed) CB
- B. Affected property owners (date) 10-28-08 (signed) CB
- C. School District/Board (date) \_\_\_\_\_ (signed) \_\_\_\_\_
- D. Other affected gov't. agencies (date) 10-28-08 (signed) CB
- E. Affected neighborhood assns. (date) 10-28-08 (signed) CB
- F. All parties to an appeal or review (date) \_\_\_\_\_ (signed) \_\_\_\_\_

At least 10 days prior to the scheduled hearing or meeting, notice was published/posted:  
Tidings (published date) 11/16/08 (signed) [Signature]  
City's website (posted date) 10/29/08 (signed) [Signature]

Type B \_\_\_\_\_

- A. The applicant (date) \_\_\_\_\_ (signed) \_\_\_\_\_
- B. Affected property owners (date) \_\_\_\_\_ (signed) \_\_\_\_\_
- C. School District/Board (date) \_\_\_\_\_ (signed) \_\_\_\_\_
- D. Other affected gov't. agencies (date) \_\_\_\_\_ (signed) \_\_\_\_\_
- E. Affected neighborhood assns. (date) \_\_\_\_\_ (signed) \_\_\_\_\_

Notice was posted on the City's website at least 10 days prior to the scheduled hearing or meeting.  
Date: \_\_\_\_\_ (signed) \_\_\_\_\_

Type C \_\_\_\_\_

- A. The applicant (date) \_\_\_\_\_ (signed) \_\_\_\_\_
- B. Affected property owners (date) \_\_\_\_\_ (signed) \_\_\_\_\_
- C. Affected neighborhood associations (date) \_\_\_\_\_ (signed) \_\_\_\_\_

Notice was posted on the City's website at least 10 days prior to the scheduled hearing or meeting.  
Date: \_\_\_\_\_ (signed) \_\_\_\_\_

**SIGN**

At least 10 days prior to the scheduled hearing, meeting or decision date, a sign was posted on the property per Section 99.080 of the Community Development Code.

(date) \_\_\_\_\_ (signed) \_\_\_\_\_

**STAFF REPORT** mailed to applicant, City Council/Planning Commission and any other applicable parties 10 days prior to the scheduled hearing.

(date) \_\_\_\_\_ (signed) \_\_\_\_\_

**FINAL DECISION** notice mailed to applicant, all other parties with standing, and, if zone change, the County surveyor's office.

(date) \_\_\_\_\_ (signed) \_\_\_\_\_

**CITY OF WEST LINN  
PLANNING COMMISSION  
PUBLIC HEARING NOTICE  
FILE NO. CUP-08-01/DR-08-08/VAR-08-05**

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 new fire station at 1860 Willamette Falls Drive/1841 8<sup>th</sup> Avenue, requiring a Conditional Use Permit and Class II Design Review in the General Commercial and Mixed Use zones, which the site straddles. The applicant is also applying for a Class II Variance to forgo from compliance from Chapter 42 Clear Vision Areas for the driveway at the front of the building. 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 Variance 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 1100 and 2000 of Clackamas County Assessor's Map 3-1E-02BA 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 at City Hall or on the City website Planning Department page [westlinnoregon.gov/planning/projects](http://westlinnoregon.gov/planning/projects). For further information, please contact Tom Soppe, Associate Planner, at City Hall, 22500 Salamo Road, West Linn, OR 97068, or by email at [tsoppe@ci.westlinn.or.us](mailto:tsoppe@ci.westlinn.or.us), or by telephone at 503-742-8660.

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



ADAMS STEPHEN  
4111 N LOCUST ST  
CANBY, OR 97013

ANDERSON IRENE  
1693 12TH ST  
WEST LINN, OR 97068

ARES RICHARD D & M JOYCE  
1920 NE COUNTRY CLUB DR  
CANBY, OR 97013

ARMOVIT HEIDI C  
1765 CHRISTY CT  
WEST LINN, OR 97068

BARTO HOWARD CHRISTIAN  
1818 6TH AVE  
WEST LINN, OR 97068

BECKER CLAIRE T  
25120 SW PETES MOUNTAIN RD  
WEST LINN, OR 97068

BECKER STEFANIE W & DAVID C  
1883 6TH AVE  
WEST LINN, OR 97068

BOBILLOT DIANE C  
1740 6TH AVE  
WEST LINN, OR 97068

BROWN RONALD G CO-TRUSTEE  
14204 S MUELLER RD  
OREGON CITY, OR 97045

BROWN WOODROW W TRUSTEE  
1773 CHRISTY CT  
WEST LINN, OR 97068

BUTLER GLENN KENT TRUSTEE  
11835 SW EBBERTS CT  
BEAVERTON, OR 97008

CHRISTIANSSEN ROGER M & JUDITH A  
1891 13TH ST  
WEST LINN, OR 97068

CLARK RICHARD K & ANGELA M  
1774 CHRISTY CT  
WEST LINN, OR 97068

CONKLIN REBEKAH A & TIMOTHY S  
1888 6TH AVE  
WEST LINN, OR 97068

CORRIGAN CHRISTOPHER M & LORI M  
1819 6TH AVE  
WEST LINN, OR 97068

CROPPER WALTER REUBEN & CHERYL  
1816 13TH ST  
WEST LINN, OR 97068

EDGINTON BETTE & ROY D LIFE  
24800 SW LABROUSSE RD  
SHERWOOD, OR 97140

FARZA JAVAD & MAFAR ZAHRA  
7110 SW CLINTON  
TIGARD, OR 97223

FIEDLER KEITH C  
1890 13TH ST  
WEST LINN, OR 97068

FITZPATRICK RYAN M  
1766 CHRISTY CT  
WEST LINN, OR 97068

FLOYD DANIEL T  
1831 6TH AVE  
WEST LINN, OR 97068

FORSETH DEANNA L  
1865 6TH AVE  
WEST LINN, OR 97068

GAMBLE LELAND E  
1769 CHRISTY CT  
WEST LINN, OR 97068

HANDRIS EDWARD & TERESA M  
2008 WILLAMETTE FALLS DR #B  
WEST LINN, OR 97068

HANDRIS MARK  
2008 WILLAMETTE FALLS DR #B  
WEST LINN, OR 97068

HART JULIA  
1755 8TH AVE  
WEST LINN, OR 97068

HIBBARD LORI  
1753 6TH AVE  
WEST LINN, OR 97068

HIEMSTRA JOHN M & SUSAN A  
17420 SW PARRETT MOUNTAIN RD  
SHERWOOD, OR 97140

HOFFNER DENISE  
2020 8TH AVE  
WEST LINN, OR 97068

KIM BYONG  
10354 HALFHITCH DR  
ANCHORAGE, AK 99515

LARSON PATRICIA L  
1752 8TH AVE  
WEST LINN, OR 97068

LIGHTOWLER JOHN W  
24900 SW BIG FIR RD  
WEST LINN, OR 97068

LORIAUX D LYNN & TERESA CHOATE  
1830 6TH AVE  
WEST LINN, OR 97068

MCFADDEN THOMAS A & SHARON L  
1850 6TH AVE  
WEST LINN, OR 97068

MERRITT-DENNIS JOSELLE L  
1492 13TH ST  
WEST LINN, OR 97068

MIXER JAMES W & BARBARA A  
1728 6TH AVE  
WEST LINN, OR 97068

MOLES CLEMENT C JR & PATRICIA A  
1995 8TH AVE  
WEST LINN, OR 97068

MORTON DON R & CYNTHIA SUE  
1970 8TH AVE  
WEST LINN, OR 97068

PAKULA JENNY & SCOT GELFAND  
2500 CRESTVIEW DR  
WEST LINN, OR 97068

PAZMOL WILLAMETTE PROPERTIES  
LLC  
1832 WILLAMETTE FALLS DR  
WEST LINN, OR 97068

PEAKE STEPHEN  
1027 SNIDOW DR  
WEST LINN, OR 97068

PERKINS BRIAN & TAMARA  
ARMSTRONG  
1492 13TH ST  
WEST LINN, OR 97068

PETER ANGELA J L-EST  
1840 13TH ST  
WEST LINN, OR 97068

PIOWATY THOMAS M  
1761 CHRISTY CT  
WEST LINN, OR 97068

POPE BARBARA L  
1790 6TH AVE  
WEST LINN, OR 97068

POTTER DONNA KAY & KENNETH C  
22841 SW STAFFORD RD  
TUALATIN, OR 97062

ROZES JAMES J  
1780 6TH AVE  
WEST LINN, OR 97068

SAKYS NICOLE H  
1697 19TH ST  
WEST LINN, OR 97068

SCHAEFER DONALD M & MILYNN  
18655 NE CHEHALEM DR  
NEWBERG, OR 97132

SCHREIBER DANIEL & NICOLE M  
1870 6TH AVE  
WEST LINN, OR 97068

SEBASTIAN RANDAL S & SANDRA A  
16771 BOONES FERRY RD  
LAKE OSWEGO, OR 97035

SECCHI ALBERT J JR & LAURA M  
1920 6TH AVE  
WEST LINN, OR 97068

SLIGER HAROLD M & DOT-AM  
1968 6TH AVE  
WEST LINN, OR 97068

SLOMA PAUL L & ETHEL V  
1992 6TH ST  
WEST LINN, OR 97068

SOUTHARDS WALTER E & DEBRA R  
1778 CHRISTY CT  
WEST LINN, OR 97068

SPARKS JERRY B & LEANNA E  
1796 8TH AVE  
WEST LINN, OR 97068

SWANSON RODNEY D & SUSAN V  
1731 6TH AVE  
WEST LINN, OR 97068

TEKANDER STEVE  
465 SW BORLAND RD  
WEST LINN, OR 97068

TRO LLC  
2726 NE 11TH AVE  
PORTLAND, OR 97212

TUALATIN VALLEY FIRE & RESCUE  
20665 SW BLANTON  
ALOHA, OR 97007

VAIL DAVID B & CARLA S  
1771 8TH AVE  
WEST LINN, OR 97068

VPC-OR WEST LINN LIMITED  
125 SIR FRANCIS DRAKE BLVD 3RD FLR  
LARKSPUR, CA 94939

WELLER RYAN R  
1741 8TH AVE  
WEST LINN, OR 97068

WERST DEAN C & JEAN A  
1785 WILLAMETTE FALLS DR STE 6  
WEST LINN, OR 97068

WEST LINN-WILS SCH DIST #3]  
PO BOX 35  
WEST LINN, OR 97068

WESTON CODY M  
1892 6TH AVE  
WEST LINN, OR 97068

WILLAMETTE CAPITAL INVESTMENTS  
510 MAIN ST  
OREGON CITY, OR 97045

WILLAMETTE CAPITAL INVESTMENTS  
2027 WELLINGTON CT  
WEST LINN, OR 97068

WILLAMETTE CAPITAL INVESTMENTS  
510 MAIN ST  
OREGON CITY, OR 97045

WILLAMETTE CHRISTIAN CHURCH  
2015 8TH AVE  
WEST LINN, OR 97068

WILLAMETTE FALLS ENTRPS LLC  
1919 WILLAMETTE FALLS DR  
WEST LINN, OR 97068

WILLAMETTE FALLS HOLDINGS LLC  
1980 WILLAMETTE FALLS DR #200  
WEST LINN, OR 97068

WILLIAMS RONALD M & TIFFANY A  
1763 CHRISTY CT  
WEST LINN, OR 97068

Tri-met  
Attn: Michael Kiser  
710 NE Holladay  
Portland, OR 97232

Gary Wells  
Director of Support Services TVFR  
20665 SW Blanton St.  
Aloha, OR 97007

Frank Angelo/Katherine Prew  
Angelo Planning Group  
921 SW Washington St. Ste: 468  
Portland, OR 97205

Willamette + ALL



October 15, 2008

CITY OF  
**West Linn**

**MAILED**  
10/15/08

Gary Wells  
Tualatin Valley Fire and Rescue  
20665 SW Blanton Street  
Aloha, OR 97007

Re: CUP-08-01/DR-08-08/VAR-08-05

Dear Mr. Wells,

Review of your land use application re-submittal received October 6, 2008 reveals that the application is complete. The City is now obliged to exhaust all local review within 120-days of this date which lapses on February 4, 2009. The application has been scheduled for a Planning Commission hearing on November 19, 2008.

In meeting with Public Works supervisors and City Engineers regarding the application, one of the only issues to arise so far is the private fire hydrant; this will have to be on the metered water line if it is to be installed.

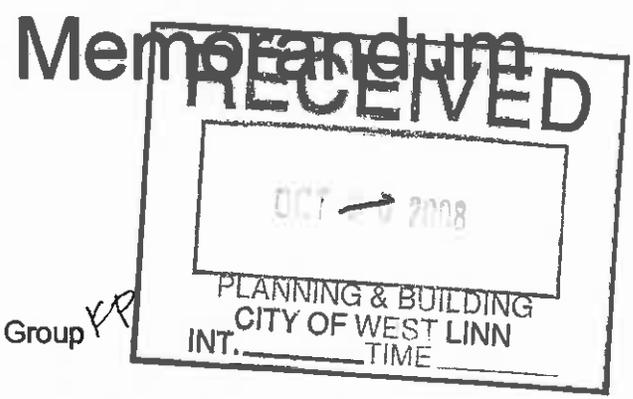
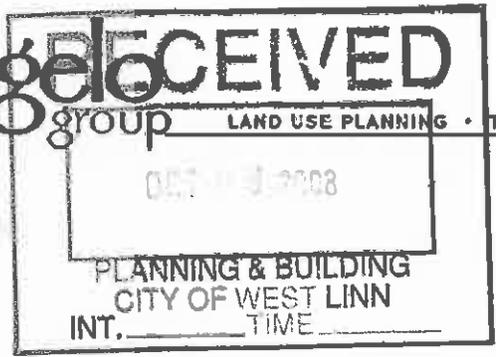
Please call me at 503-742-8660 if you have any planning related questions or, for faster response, e-mail me at [tsoppe@westlinnoregon.gov](mailto:tsoppe@westlinnoregon.gov). You may contact Khoi Le if you have any engineering questions at 503-722-5517 or at [kle@westlinnoregon.gov](mailto:kle@westlinnoregon.gov).

Sincerely,

Tom Soppe  
Associate Planner

C: Frank Angelo/Katherine Prew, Angelo Planning Group, 921 SW Washington St., Ste. 468,  
Portland, OR 97205

Devrev-completeness-complete-CUP-08-01



Date: October 6, 2008  
To: Tom Soppe, Associate Planner  
From: Katie Prew, AICP, Angelo Planning Group  
cc: Gary Wells, TVF&R  
Re: Response to Completeness Review – CUP-08-01/DR-08-08/VAR-08-05

Thank you for your continued assistance on getting the TVF&R Station 59 Development Application Complete. We have addressed the items identified by Khoi Le in the Completeness Review letter dated September 19, 2008 below in this memorandum and the attached exhibits. As with our last submittal of completeness items, any new or revised exhibits will be added to the TVF&R Station 59 Development Application and any future submittals of that application will include the information presented below.

**Street Improvement**

- Street section shall consist of the following:
  - 16' wide pavement,
  - Curb and gutter, and
  - 8' wide curb-tight sidewalk with cut outs for street trees.

**Response:** The attached revised Site Plan (Exhibit A) addresses the above listed items.

- Address the relocation of the wired guy pole located by the Northwest property corner on 8<sup>th</sup> Avenue.

**Response:** Please see Note 19 on the revised Site Plan (Exhibit A).

**Storm Improvement**

- Provide detention and flow control for the site including calculations to demonstrate how post developed discharges to match pre-developed discharges.
- Green concept will be welcome but must provide calculations to demonstrate to meet the City of West Linn detention requirements.
- Provide complete storm drainage report including all calculations for both treatment and detention.



- Provide public storm system and stub out for future development on 8<sup>th</sup> Avenue.

#### **Water Improvement**

- Provide a note indicating that the existing 2" water meter and lateral on Willamette Falls Drive is to be removed and a plug shall be done at the water main.

**Response:** The completeness items listed above under Storm Improvement and Water Improvement have been addressed on the revised Civil Plan Set (Sheets C0.0 through C2.5) and the Erosion Control Details (Sheet EC2, 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](mailto:kprew@angeloplanning.com).

#### **Attachments:**

- Exhibit A: Station 59 Plan Set Revised (One full-size set and three sets at the 12x18" reduced size)
  - A1.0 Site Plan
  - A1.1 Site Analysis
  - C0.0 Civil Cover Sheet
  - C1.0 Grading Plan
  - C1.1 Site Improvement Plan
  - C1.1 Site Improvement Plan
  - C1.2 Utility Plan
  - C2.1 Civil Details
  - C2.2 Water Details
  - C2.3 Street Details
  - C2.4 Sewer Details I
  - C2.5 Sewer Details II
- Exhibit D: Storm Report Revised

**Exhibit A: Plan Set at 12 x 18"\***  
**Tualatin Valley Fire & Rescue Station 59**

**REVISED**

- A1.0 Site Plan
- A1.1 Site Analysis
- C0.0 Civil Cover Sheet
- C1.0 Grading Plan
- C1.1 Site Improvement Plan
- C1.1 Site Improvement Plan
- C1.2 Utility Plan
- C2.1 Civil Details
- C2.2 Water Details
- C2.3 Street Details
- C2.4 Sewer Details I
- C2.5 Sewer Details II

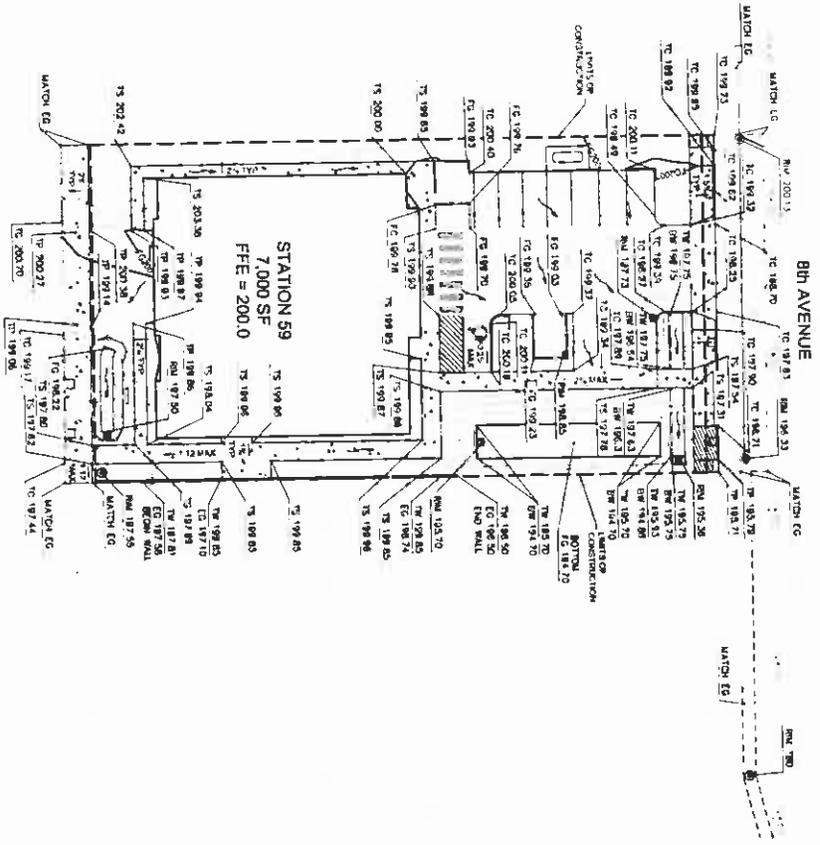
*\*The scale increases to 1"=40' when the plans are printed at the reduced 12x18" size.*







WILLAMETTE FALLS DRIVE  
(7th AVENUE)



8th AVENUE



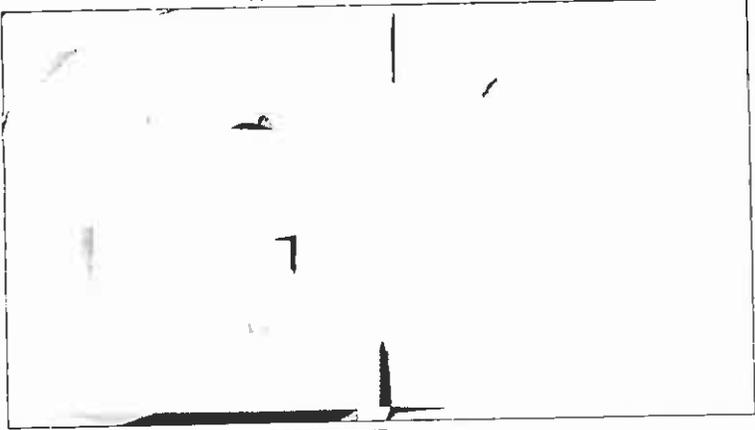
**GENERAL NOTES**

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 IBC AND THE 2018 IRC.
2. ALL GRADING SHALL BE IN ACCORDANCE WITH THE 2018 IBC AND THE 2018 IRC.
3. ALL GRADING SHALL BE IN ACCORDANCE WITH THE 2018 IBC AND THE 2018 IRC.
4. ALL GRADING SHALL BE IN ACCORDANCE WITH THE 2018 IBC AND THE 2018 IRC.
5. ALL GRADING SHALL BE IN ACCORDANCE WITH THE 2018 IBC AND THE 2018 IRC.
6. ALL GRADING SHALL BE IN ACCORDANCE WITH THE 2018 IBC AND THE 2018 IRC.
7. ALL GRADING SHALL BE IN ACCORDANCE WITH THE 2018 IBC AND THE 2018 IRC.
8. ALL GRADING SHALL BE IN ACCORDANCE WITH THE 2018 IBC AND THE 2018 IRC.
9. ALL GRADING SHALL BE IN ACCORDANCE WITH THE 2018 IBC AND THE 2018 IRC.
10. ALL GRADING SHALL BE IN ACCORDANCE WITH THE 2018 IBC AND THE 2018 IRC.
11. ALL GRADING SHALL BE IN ACCORDANCE WITH THE 2018 IBC AND THE 2018 IRC.
12. ALL GRADING SHALL BE IN ACCORDANCE WITH THE 2018 IBC AND THE 2018 IRC.
13. ALL GRADING SHALL BE IN ACCORDANCE WITH THE 2018 IBC AND THE 2018 IRC.
14. ALL GRADING SHALL BE IN ACCORDANCE WITH THE 2018 IBC AND THE 2018 IRC.

**GRADING LEGEND**

---	FINISH FLOOR
---	TOP OF CURB
---	TOP OF PATIENENT
---	TOP OF WALL
---	BOTTOM OF WALL
---	FINISH FLOOR
---	EXISTING GRADE
---	TOP OF SIDEWALK
---	DESIGN WALKER CONTOUR
---	DESIGN WALKER CONTOUR
---	RETAINING WALL
---	RETAINING WALL BOTTOM

PROPERTY LINE



PROPERTY LINE

Slopes Table

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

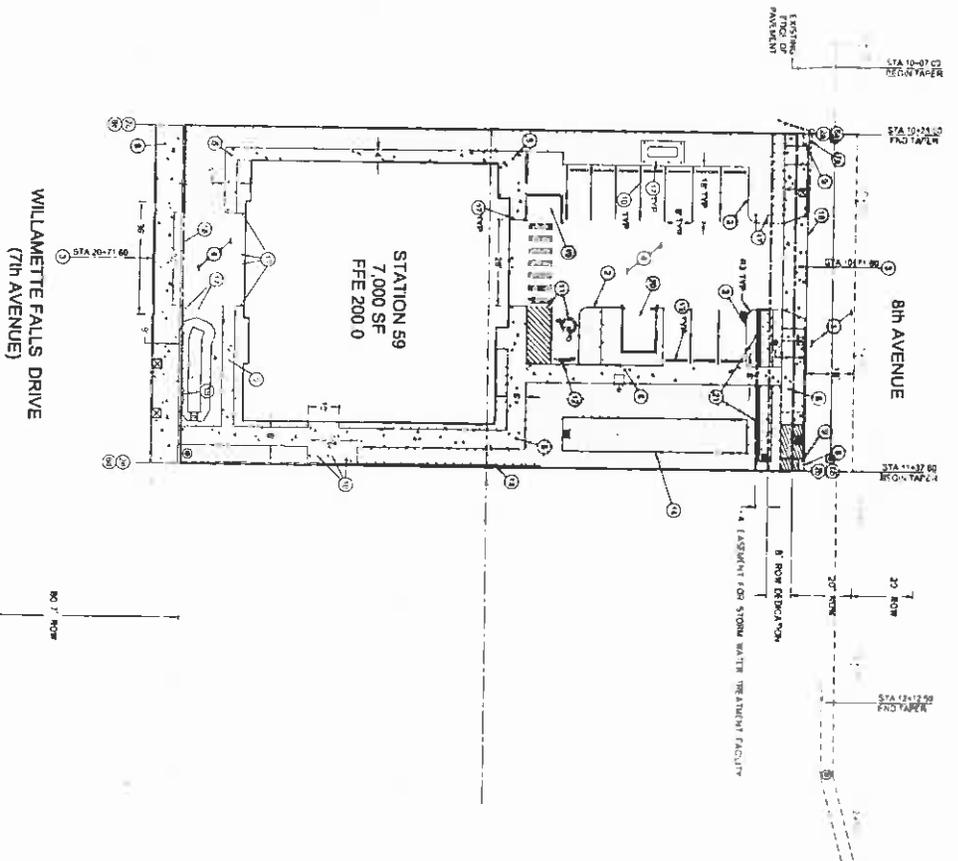
SLOPE ANALYSIS OF EXISTING CONDITIONS  
SCALE: NTS

STATION 59  
1860 WILLAMETTE FALLS DRIVE  
WEST LINN, OR

DATE: 02/21/2024  
PROJECT: 24-001-0000  
SCALE: 1/8" = 1'-0"

PROJECT: 24-001-0000  
DATE: 02/21/2024  
SCALE: 1/8" = 1'-0"

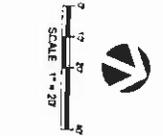
PROJECT: 24-001-0000  
DATE: 02/21/2024  
SCALE: 1/8" = 1'-0"



- ### GENERAL SITE IMPROVEMENT NOTES
1. THE DISTRICT HAS A TOTAL OF 11 BARRING STAKES TO STANDARD
  2. ALL DISTRICT BARRING STAKES
  3. SEE ARCHITECTURAL DRAWINGS FOR DETAILED INFORMATION OF SITE IMPROVEMENTS
  4. CONSTRUCTION SHALL PROTECT THE CONSTRUCTION FROM COLLISIONS OF CONSTRUCTION ACTIVITIES SEEN TO BE INVOLVED AND PLACED BY THE DISTRICT FOR THE PROJECT
  5. SEE SHEET C1.1 FOR FURTHER DETAILS
  6. CONSTRUCTION SHALL COMPLY WITH CHAPTER 33 OF THE INTERMOUNTAIN BUILDING CODE

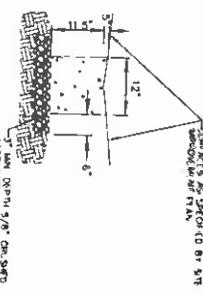
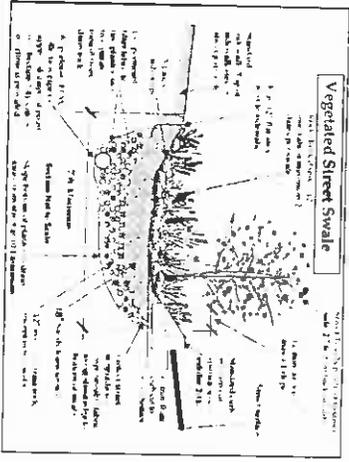
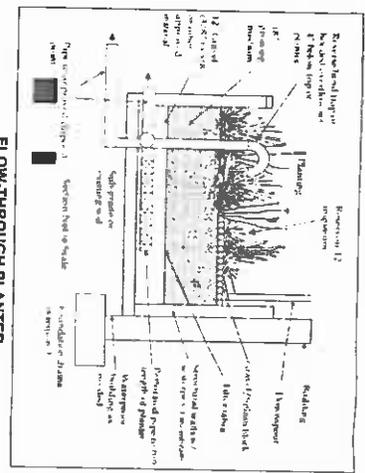
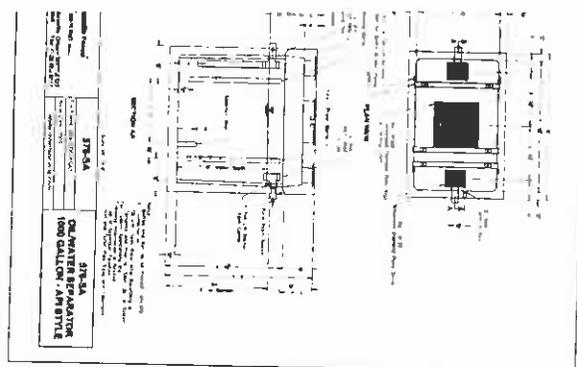
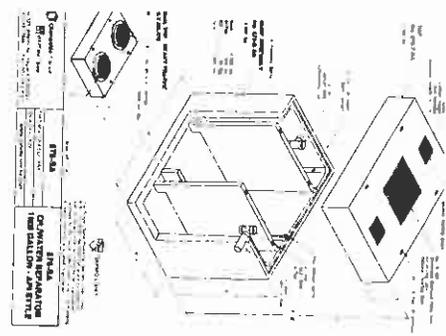
- ### SITE IMPROVEMENT NOTES
1. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  2. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  3. END CURB AND OUTER FINISH STA 10+21.00 TO 10+27.00
  4. END CURB AND OUTER FINISH STA 10+17.00 TO 10+27.00
  5. END CURB AND OUTER FINISH STA 10+17.00 TO 10+27.00
  6. END CURB AND OUTER FINISH STA 10+17.00 TO 10+27.00
  7. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  8. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  9. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  10. RETAIN WALL SHALL BE DETAIL SHEET C1.1
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  12. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  13. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  14. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  15. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  16. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  17. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  18. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  19. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  20. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  21. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  22. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  23. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  24. RETAIN WALL SHALL BE DETAIL SHEET C1.1
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  28. RETAIN WALL SHALL BE DETAIL SHEET C1.1
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  36. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  37. RETAIN WALL SHALL BE DETAIL SHEET C1.1
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  40. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  41. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  42. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  43. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  44. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  45. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  46. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  47. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  48. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  49. RETAIN WALL SHALL BE DETAIL SHEET C1.1
  50. RETAIN WALL SHALL BE DETAIL SHEET C1.1

SITE IMPROVEMENT LEGEND	
[Symbol]	CONCRETE PAVEMENT
[Symbol]	CONCRETE WALKWAY
[Symbol]	ORIENTABLE SIGNING PATTERN
[Symbol]	PROPOSED ASPHALT PAVEMENT
[Symbol]	PROPOSED GRASS
[Symbol]	LANDSCAPE AREA
[Symbol]	PROPOSED TREE WELLS
[Symbol]	LIMIT OF CONSTRUCTION
[Symbol]	EXISTING
[Symbol]	STANDARD

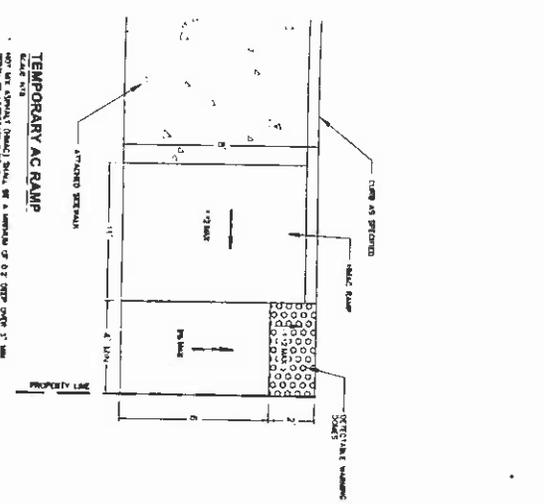
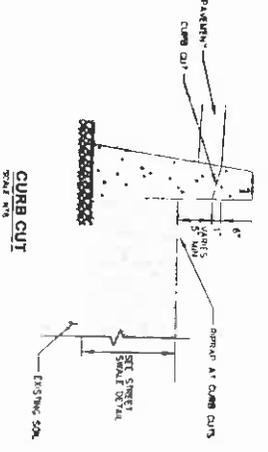


	P. C. C. K. S. W. L. E. Y. F. T. L. I. N. E. N. G. I. N. E. E. R. S. & A. R. C. H. I. T. E. C. T. S.
	1001 3rd COMMERCIAL AVE PORTLAND, OREGON 97202 PHONE (503) 248-8725 FAX (503) 248-0253
<b>STATION 59</b> <b>1850 WILLAMETTE FALLS DRIVE</b> <b>WEST LINN, OR</b>	
SHEET NO. C1.1	
DATE: OCTOBER 2008	
SCALE: 1" = 20'	
PROJECT NO. 2008	
DRAWN BY: [Name]	
CHECKED BY: [Name]	
APPROVED BY: [Name]	
TITLE: SITE IMPROVEMENT PLAN	

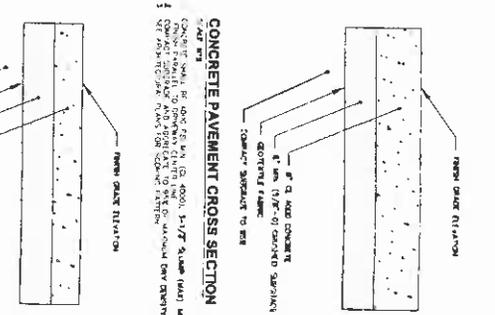




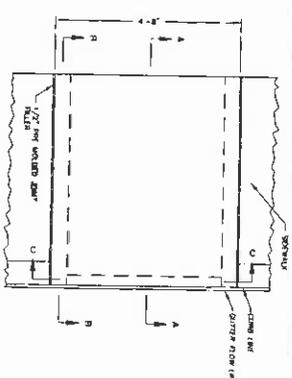
CONCRETE GUTTER



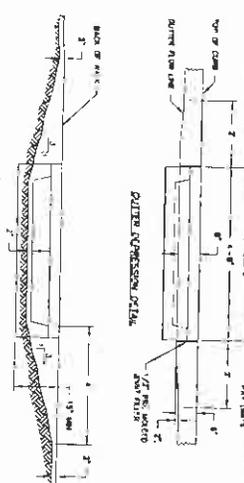
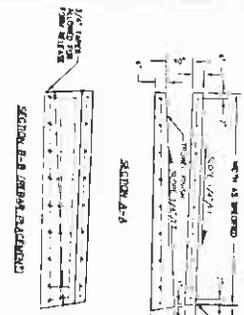
**TEMPORARY AC RAMP**  
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**CONCRETE PAVEMENT CROSS SECTION**  
SCALE: 1/8\"/>



**PRIVATE CONCRETE SIDEWALK CROSS SECTION**  
SCALE: 1/8\"/>



STATION 59  
1850 WILLAMETTE FALLS DRIVE  
WEST LINN, OR

PERKINS+WILL  
ARCHITECTS

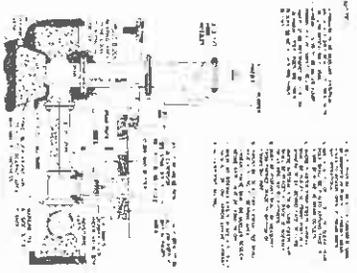
4110 N. GARDEN ST.  
SANTA ANA, CALIFORNIA 92705  
PHONE: (714) 246-8770  
FAX: (714) 246-8772

CONCRETE GUTTER

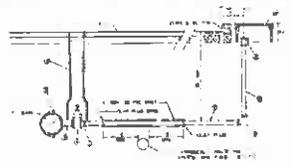
SCHEMATIC DESIGN

DATE: OCTOBER 2008

1



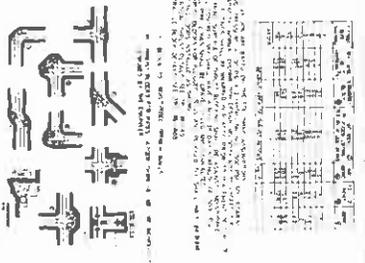
Standard Part Hydroplan Assembly



Standard 1/2" High Service



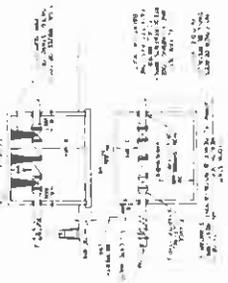
Standard Part Top



Horizontal Mount Bracket



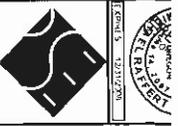
Standard Valve Box



Double Outlet Open Valve

Standard Part Hydroplan Assembly  
 Double Outlet Open Valve  
 Standard Part Top  
 Horizontal Mount Bracket

Standard Valve Box  
 Double Outlet Open Valve  
 Double Outlet Open Valve



4412 SW SHERBORN AVE  
 PORTLAND, OREGON 97206  
 TEL: (503) 248-0733  
 FAX: (503) 248-0733

STATION 59  
 1360 WILLAMETTE FALLS DRIVE  
 WEST LINN, OR

SCHEMATIC DESIGN	
WATER MAIN	
WATER	
DETAILS	
DATE	NOVEMBER 2003
BY	WJL
CHECKED BY	WJL
SCALE	AS SHOWN
PROJECT NO.	03-1118

C2.2





DESIGN  
SWITELY  
ENGINEERING

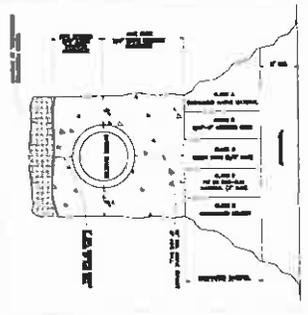
445 NW CORBET AVE  
PORTLAND, OREGON 97207  
PHONE (503) 248-1170  
FAX (503) 248-0123

STATION 59  
1360 WILLAMETTE FALLS DRIVE  
WEST LINN, OR

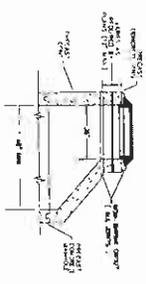
SCHEMATIC DESIGN  
WEST LINN  
SEWER DETAILS

DATE	DESCRIPTION
10/11/04	SCHEMATIC DESIGN
07/08/04	SCHEMATIC DESIGN
05/11/04	SCHEMATIC DESIGN
02/11/04	SCHEMATIC DESIGN

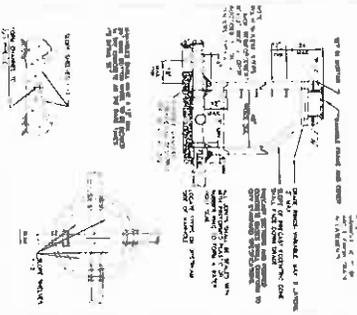
C2.4



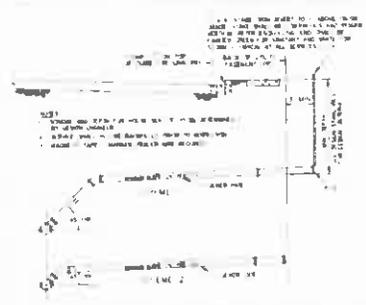
North Station, Schematic  
and 8' x 7' Zone  
10/11/04  
10/11/04  
10/11/04  
10/11/04



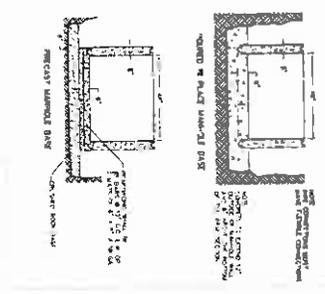
Rectangular Manhole Extension  
for Vertical Manhole  
10/11/04  
10/11/04  
10/11/04  
10/11/04



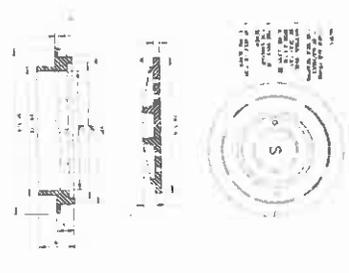
Standard Manhole  
for 48\"/>



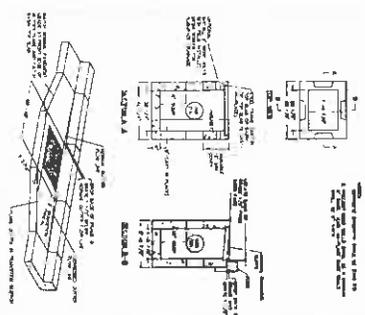
Sewer Branch  
10/11/04  
10/11/04  
10/11/04  
10/11/04



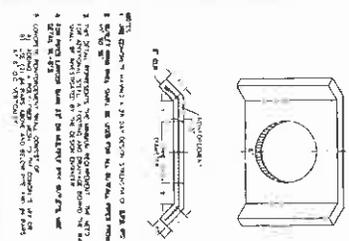
Manhole Frame  
10/11/04  
10/11/04  
10/11/04  
10/11/04



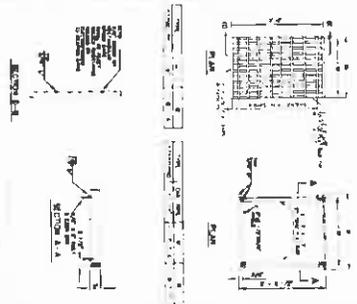
Solutions for Flow  
Front and Lower  
10/11/04  
10/11/04  
10/11/04  
10/11/04



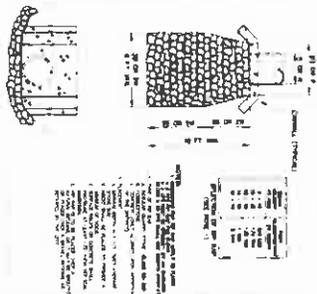
**Type C1 Ditch Basin with Pump**  
 Scale: 1/8" = 1'-0"  
 Date: 10/12/00  
 Author: [Signature]  
 Checked: [Signature]



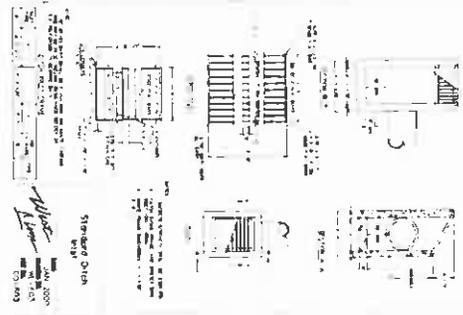
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 Author: [Signature]  
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**Storm Saver Outlet**  
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 Author: [Signature]  
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**Standard Drop Outlet**  
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 Date: 10/12/00  
 Author: [Signature]  
 Checked: [Signature]



**Standard Drop Outlet**  
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 Date: 10/12/00  
 Author: [Signature]  
 Checked: [Signature]

**STATION 59**  
**1650 WILLAMETTE FALLS DRIVE**  
**WEST LINN, OR**

4112 SW CORBELL AVE  
 PORTLAND, OREGON 97209  
 TEL: (503) 740-9223  
 FAX: (503) 740-9223

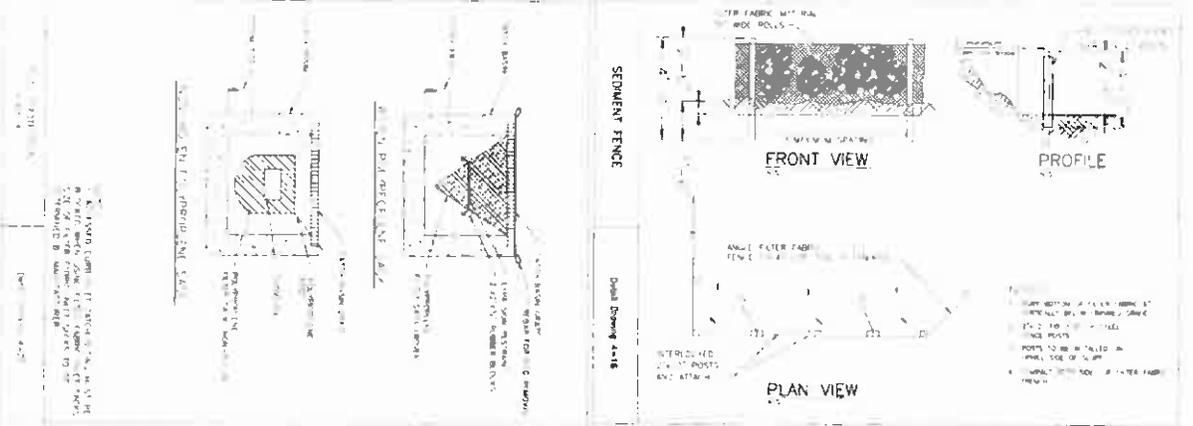
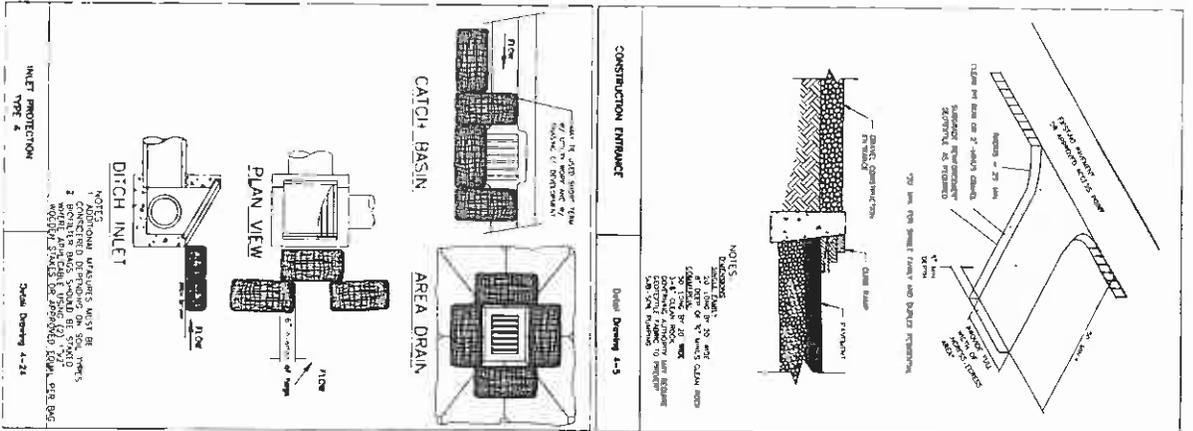
**PECK SWILEY FTILLIN TECHNICALS**

SYNTHESIS / 2/17/00

MAILED 10/12/00  
 10/12/00  
 PECK SWILEY FTILLIN

DATE	OCTOBER, 2000
DRAWN BY	TSC
CHECKED BY	[Signature]
SCALE	AS SHOWN
SCHEMATIC DESIGN	
WEST LINN	
SEWER DETAIL II	

C2.5



	4415 SW GOWAN AVE PORTLAND, OR 97209 PHONE: (503) 246-9170 FAX: (503) 746-0233	
	STATION 59 1850 WILLAMETTE FALLS DRIVE WEST LINN, OR	
SCHEDULED DESIGN EROSION CONTROL DETAILS	EC2	46

**Exhibit D: Stormwater Report  
Tualatin Valley Fire & Rescue Station 59**

REVISED





Engineering +  
Environmental

## Stormwater Report

Tualatin Valley Fire & Rescue Station No. 59  
1860 Willamette Falls Drive  
West Linn, Oregon

Prepared for:  
Tualatin Valley Fire & Rescue  
Attn: Gary Wells  
20665 SW Blanton Street  
Aloha, Oregon 97007

October 2008  
Project No. 70607.000

1310 Main Street, Vancouver, WA 98660  
360.690.4331 Main  
360.696.9064 Fax  
[www.pbsenv.com](http://www.pbsenv.com)

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**APPENDIX A – Simplified Approach Form *SIM***

**APPENDIX B – Conveyance Calculations**

**APPENDIX C – Geotechnical Investigation & Site Specific Seismic Analysis Report**

**APPENDIX D – Supporting Maps**

**APPENDIX E – Construction Drawings and Details**

**APPENDIX F – Operations and Maintenance Manual**

**APPENDIX G – Pre- and Post-Developed Runoff Calculations**

## 1.0 PROJECT DESCRIPTION

This report contains hydrologic and hydraulic design analyses for a proposed fire station redevelopment on a 0.50-acre site in West Linn, Oregon. The site consists of two separate parcels (Taxlot 1100 and 2000) and is located north of Willamette Falls Drive and south of 8<sup>th</sup> Street.

## 2.0 EXISTING CONDITIONS

Currently, the site has one building, asphalt pavement, a gravel parking lot and open grassy areas. The topography of the site has an average slope of 4.0% draining to the east toward the neighboring property. Stormwater on the existing site is not being collected or treated.

## 3.0 PROPOSED DRAINAGE

Stormwater on the developed site will be managed as follows:

### PUBLIC

- Public stormwater runoff along 8<sup>th</sup> Avenue will flow through a curb inlet into a 255 square foot vegetated street swale, which will treat 2,820 square feet of impervious public right-of-way improvements.
- After treatment by the public stormwater facility, stormwater will be collected and discharged to a proposed storm main extension in 8<sup>th</sup> Avenue.

### PRIVATE

- The catch basin in the north parking lot is connected to a pneumatic valve, which can divert the flow through an oil/water separator and into a sanitary sewer line when the fire trucks are being washed. During storm events, this catch basin will flow directly into a 660 square foot flow through planter adjacent to the north parking lot, which will treat the runoff from the 4,056 square foot concrete parking lot, 4,488 square foot of the building, 2,215 private concrete walkway.
- A second 330 square foot vegetated swale will treat the stormwater runoff from the 599 square foot south driveway, 2,526 square feet of the building roof, and 559 square feet of private concrete walkway.
- After treatment by the private treatment facilities, stormwater will be collected and discharged to an existing storm main in Willamette Falls Drive.

For additional details, refer to the civil plans and details in Appendix E.

## 4.0 WATER QUALITY DESIGN

### 4.1 Water Quality Design

Stormwater on the public street improvements along 8<sup>th</sup> Avenue will be treated for water quality by a vegetated swale. The runoff from the private improvements will be treated for water quality by a flow through planter and a vegetated swale.

Stormwater quality treatment facilities were sized using the Simplified Approach in the City of Portland Stormwater Management Manual. See Appendix A for Form SIM and Appendix E for civil drawings and details.

## 5.0 WATER QUANTITY DESIGN

### 5.1 Water Quantity Design

As shown in Table 1, the impervious area of the private post-developed site will increase by 5,818 square feet.

**Table 1: Impervious Areas**

Pre-Developed Conditions	
Impervious Surface	Area (sq ft)
Building	2,778
Asphalt Driveway & Sidewalks	6,089
<b>Total</b>	<b>8,867</b>
Post-Developed Conditions	
Impervious Surface	Area (sq ft)
Building	7,014
Concrete Driveway & Sidewalks	7,429
<b>Total</b>	<b>14,685</b>

The runoffs from both pre- and post-developed conditions were calculated in HydroCAD using the 24-hour rainfall depths from the Portland Stormwater Manual. A summary of the results are shown in Table 2 (below). See Appendix G for the HydroCAD runoff calculations of the pre- and post-developed conditions.

**Table 2: Pre- and Post-Developed Runoff**

Conditions	24-hour Rainfall Depths				
	2-year	5-year	10-year	25-year	100-year
Pre-developed (cfs)	0.18	0.24	0.30	0.35	0.41
Post-developed (cfs)	0.19	0.25	0.29	0.35	0.40

The calculations show that there is a negligible difference in the pre- and post-developed runoff. This is mostly attributed to the fact that there is 8,197 square feet of gravel on the existing site, which is not included as an impervious area in Table 1 (above). Therefore, detention is not necessary, but a proposed vegetated swale, a flow-through planter, and a 2,500 gallon rainwater cistern will be constructed.

## 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. The 100-year storm event is 4.4 inches in a 24-hour interval (City of Portland Stormwater Management Manual).

## 6.2 Hydraulic Computations/Capacities

All conveyance systems are sized to convey the 100-year stormwater event. HydroCAD was used to calculate the velocity and capacity of a 10-inch pipe at the minimum slope of 0.006 ft/ft. Conveyance calculations and hydrographs are found in Appendix B.

## 6.3 Summary

A 10-inch pipe at minimum slope has adequate capacity to convey the 100-year runoff from the proposed site.

## 7.0 SOILS EVALUATION

An on-site geotechnical engineering analysis was completed for this project on December 31, 2007. A copy is included in Appendix C.

### 7.1 On-site Soil Types

The USDA Soil Survey classifies the site soil type as Willamette Silt Loam, 0-3% slopes (88A), which belongs to the Hydrologic Soil Group C as classified by the Hydrologic soils groups for United States soils.

### 7.2 Seasonal High Water Table Elevations

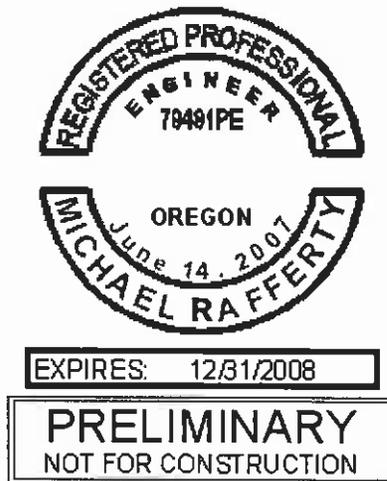
Groundwater was not encountered during testing and is not expected to impact stormwater facilities.

## 8.0 MAINTENANCE AND OPERATIONS MANUAL

The stormwater treatment system and conveyance system for the proposed development shall be privately owned and maintained. The Operations and Maintenance Manual for the vegetated swale and flow-through planter can be found in Appendix F.

**RESTRICTIONS**

This report is for the exclusive use of the client for design of the development as described in our proposal for this particular project 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 and Environmental.



Michael Rafferty, P.E.  
Civil Engineer  
PBS Engineering and Environmental

**APPENDIX A**

---

Simplified Approach Form *SIM*

## Form SIM: Simplified Approach for Stormwater Management

The city has produced this form to assist with a quick and simple approach to manage stormwater on-site. Facilities sized with this form are presumed to comply with pollution reduction and flow control requirements. Stormwater disposal requirements per Section 1.4 must still be met.

New or Redeveloped Impervious Site Area 10,759 Box 1  
 (do not include roof areas that will be infiltrated on-site with drywells or soakage trenches)

### INSTRUCTIONS

1. Enter square footage of new or redeveloped impervious site area in Box 1 at the top of this form.
2. Select impervious area reduction techniques from rows 1-3 to reduce the site's resulting stormwater management requirement. Tree credit can be calculated using the tree credit worksheet on the next page.
3. Select desired stormwater management facilities from rows 4-10. In Column 1, enter the square footage of impervious area that will flow into each facility type.
4. Multiply each impervious area from Column 1 by the corresponding sizing factor in Column 2, and enter the result in Column 3. This is the facility surface area needed to manage runoff from the impervious area.
5. Total Column 1 (Rows 1-10) and enter the resulting "Impervious Area Managed" in Box 2.
6. Subtract Box 2 from Box 1 and enter the result in Box 3. When this number reaches 0, stormwater pollution reduction and flow control requirements have been met. Submit this form with the application for permit.
7. If Box 3 is greater than 0 square feet, add square footage or facilities to Column 1 and recalculate, or use additional facilities from Chapter 2.0 of the Stormwater Management Manual to manage stormwater from these remaining impervious surfaces.

	Column 1	Column 2	Column 3
Impervious Area			
Area Reduced			
Facility Surface Area			
1) Eco-Roof / Roof Garden	_____ sf		
2) Contained Planter	_____ sf		
3) Tree Credit (See Next Page)	_____ sf		
Note: Pervious Pavement areas do not need to be included in Box 1			
Stormwater Management Facility	Impervious Area Managed	Sizing Factor	Facility Surface Area Unit
4) Infiltration Planter	_____ sf	x 0.06 =	_____ sf
5) Flow-Through Planter	10,759 sf	x 0.06 =	646 sf
6) Vegetated Swale	_____ sf	x 0.09 =	_____ sf
7) Grassy Swale	_____ sf	x 0.12 =	_____ sf
8) Vegetated Filter Strip	_____ sf	x 0.2 =	_____ sf
9) Vegetated Infil. Basin	_____ sf	x 0.09 =	_____ sf
10) Sand Filter	_____ sf	x 0.07 =	_____ sf

For drywell and soakage trench sizing and design requirements, see Section 2.9.

Total Impervious Area Managed 10,759 Box 2

Box 1 - Box 2 0 Box 3

**Form SIM Simplified Approach for Stormwater Management**

The city has produced this form to assist with a quick and simple approach to manage stormwater on-site. Facilities sized with this form are presumed to comply with pollution reduction and flow control requirements. Stormwater disposal requirements per Section 1.4 must still be met.

**New or Redeveloped Impervious Site Area** 3684 **Box 1**  
 (do not include roof areas that will be infiltrated on-site with drywells or soakage trenches)

Column 1      Column 2      Column 3

**INSTRUCTIONS**

1. Enter square footage of new or redeveloped impervious site area in Box 1 at the top of this form.
2. Select impervious area reduction techniques from rows 1-3 to reduce the site's resulting stormwater management requirement. Tree credit can be calculated using the tree credit worksheet on the next page.
3. Select desired stormwater management facilities from rows 4-10. In Column 1, enter the square footage of impervious area that will flow into each facility type.
4. Multiply each impervious area from Column 1 by the corresponding sizing factor in Column 2, and enter the result in Column 3. This is the facility surface area needed to manage runoff from the impervious area.
5. Total Column 1 (Rows 1-10) and enter the resulting "Impervious Area Managed" in Box 2.
6. Subtract Box 2 from Box 1 and enter the result in Box 3. When this number reaches 0, stormwater pollution reduction and flow control requirements have been met. Submit this form with the application for permit.
7. If Box 3 is greater than 0 square feet, add square footage or facilities to Column 1 and recalculate, or use additional facilities from Chapter 2.0 of the Stormwater Management Manual to manage stormwater from these remaining impervious surfaces.

Impervious Area	Sizing Factor	Facility Surface Area
-----------------	---------------	-----------------------

- |                                |       |    |
|--------------------------------|-------|----|
| 1) Eco-Roof / Roof Garden      | _____ | sf |
| 2) Contained Planter           | _____ | sf |
| 3) Tree Credit (See Next Page) | _____ | sf |

Note: Pervious Pavement areas do not need to be included in Box 1

Stormwater Management Facility	Impervious Area Managed	Sizing Factor	=	Facility Surface Area	Unit
4) Infiltration Planter	_____	sf x 0.06	=	[ ]	sf
5) Flow-Through Planter	_____	sf x 0.06	=	[ ]	sf
6) Vegetated Swale	3684	sf x 0.09	=	332	sf
7) Grassy Swale	_____	sf x 0.12	=	[ ]	sf
8) Vegetated Filter Strip	_____	sf x 0.2	=	[ ]	sf
9) Vegetated Infil. Basin	_____	sf x 0.09	=	[ ]	sf
10) Sand Filter	_____	sf x 0.07	=	[ ]	sf

For drywell and soakage trench sizing and design requirements, see Section 2.9.

**Total Impervious Area Managed** 3684 **Box 2**

**Box 1 - Box 2** 0 **Box 3**

**Form SIM: Simplified Approach for Stormwater Management**

The City has produced this form to assist with a quick and simple approach to manage stormwater on-site. Facilities sized with this form are presumed to comply with pollution reduction and flow control requirements. Stormwater disposal requirements per Section 1.4 must still be met.

**New or Redeveloped Impervious Site Area**

**2820** Box 1

(do not include roof areas that will be infiltrated on-site with drywells or soakage trenches)

**INSTRUCTIONS**

1. Enter square footage of new or redeveloped impervious site area in Box 1 at the top of this form.
2. Select impervious area reduction techniques from rows 1-3 to reduce the site's resulting stormwater management requirement. Tree credit can be calculated using the tree credit worksheet on the next page.
3. Select desired stormwater management facilities from rows 4-10. In Column 1, enter the square footage of impervious area that will flow into each facility type.
4. Multiply each impervious area from Column 1 by the corresponding sizing factor in Column 2, and enter the result in Column 3. This is the facility surface area needed to manage runoff from the impervious area.
5. Total Column 1 (Rows 1-10) and enter the resulting "Impervious Area Managed" in Box 2.
6. Subtract Box 2 from Box 1 and enter the result in Box 3. When this number reaches 0, stormwater pollution reduction and flow control requirements have been met. Submit this form with the application for permit.
7. If Box 3 is greater than 0 square feet, add square footage or facilities to Column 1 and recalculate, or use additional facilities from Chapter 2.0 of the Stormwater Management Manual to manage stormwater from these remaining impervious surfaces.

	Column 1	Column 2	Column 3
Impervious Area Managed			
Facility Surface Area			

- 1) Eco-Roof / Roof Garden \_\_\_\_\_ sf
- 2) Contained Planter \_\_\_\_\_ sf
- 3) Tree Credit (See Next Page) \_\_\_\_\_ sf

Note: Pervious Pavement areas do not need to be included in Box 1

Stormwater Management Facility	Impervious Area Managed	Sizing Factor	Facility Surface Area	Unit
4) Infiltration Planter	_____	sf x 0.06 =	_____	sf
5) Flow-Through Planter	_____	sf x 0.06 =	_____	sf
6) Vegetated Swale	<u>2820</u>	sf x 0.09 =	<u>254</u>	sf
7) Grassy Swale	_____	sf x 0.12 =	_____	sf
8) Vegetated Filter Strip	_____	sf x 0.2 =	_____	sf
9) Vegetated Infil. Basin	_____	sf x 0.09 =	_____	sf
10) Sand Filter	_____	sf x 0.07 =	_____	sf

For drywell and soakage trench sizing and design requirements, see Section 2.9.

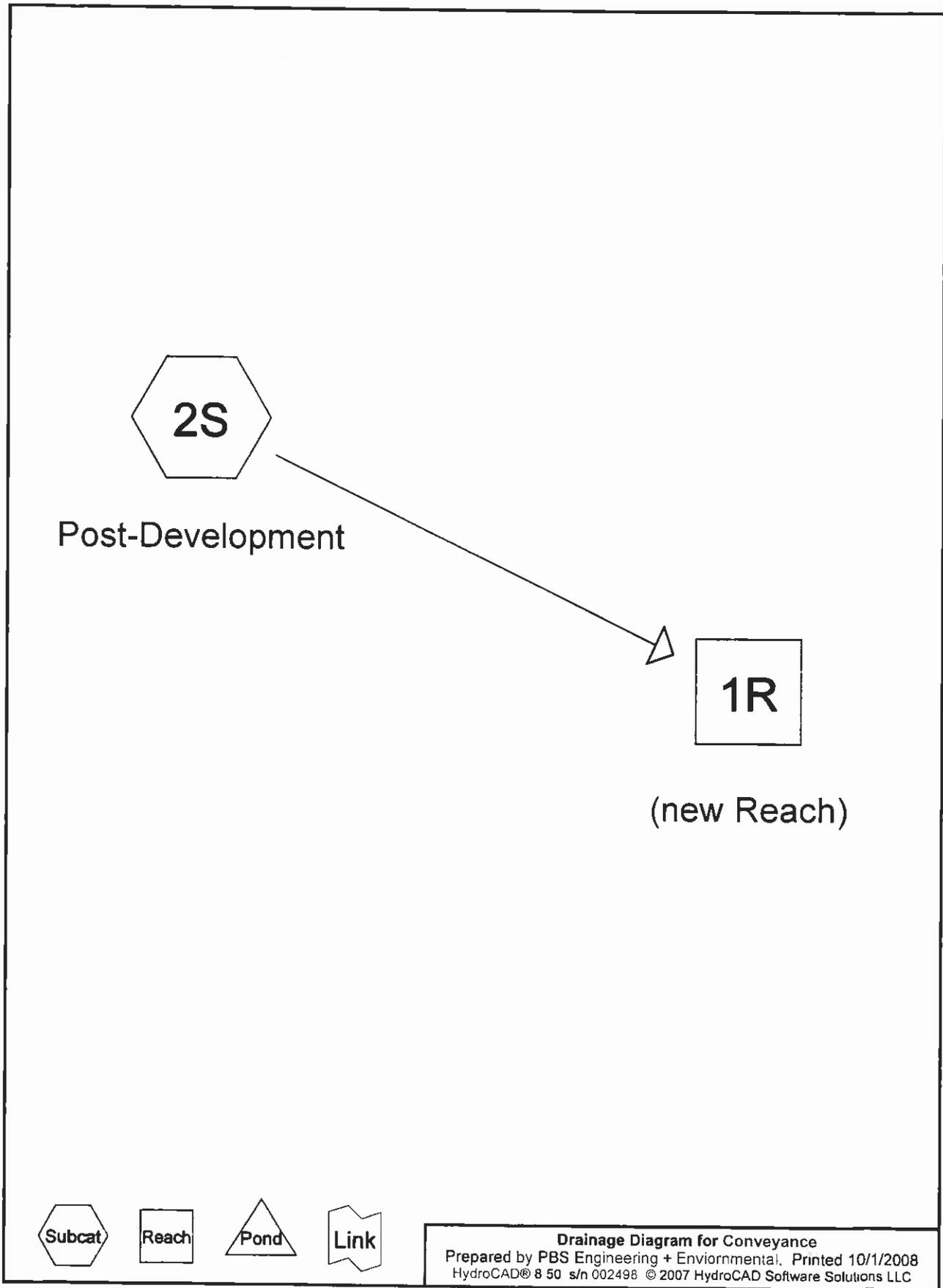
**Total Impervious Area Managed** **2820** Box 2

**Box 1 - Box 2** **0** Box 3

---

**APPENDIX B**

Conveyance Calculations



## Conveyance

Prepared by PBS Engineering + Environmental  
HydroCAD® 8.50 s/n 002498 © 2007 HydroCAD Software Solutions LLC

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Page 2

### Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
6,202	74	Landscape (2S)
7,014	98	Building (2S)
4,655	98	Parking lot/driveways (2S)
2,774	98	Walkways (2S)
<b>20,645</b>		<b>TOTAL AREA</b>

**Conveyance**

Type IA 24-hr 100 Year Rainfall=4.40"

Prepared by PBS Engineering + Environmental

Printed 10/1/2008

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Time span=0.00-25.00 hrs, dt=0.10 hrs, 251 points

Runoff by SBUH method, Split Pervious/Imperv.

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

**Subcatchment2S: Post-Development**

Runoff Area=20,645 sf 69.96% Impervious Runoff Depth=3.48"

Tc=5.0 min CN=74/98 Runoff=0.40 cfs 5,992 cf

**Reach 1R: (new Reach)**

Avg. Depth=0.28' Max Vel=2.54 fps Inflow=0.40 cfs 5,992 cf

D=10.0" n=0.013 L=100.0' S=0.0060 '/ Capacity=1.70 cfs Outflow=0.40 cfs 5,992 cf

**Total Runoff Area = 20,645 sf Runoff Volume = 5,992 cf Average Runoff Depth = 3.48"**

**30.04% Pervious = 6,202 sf 69.96% Impervious = 14,443 sf**

**Conveyance**

Prepared by PBS Engineering + Environmental  
 HydroCAD® 8.50 s/n 002498 © 2007 HydroCAD Software Solutions LLC

Type IA 24-hr 100 Year Rainfall=4.40"

Printed 10/1/2008

Page 4

**Summary for Subcatchment 2S: Post-Development**

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.40 cfs @ 7.94 hrs, Volume= 5,992 cf, Depth= 3.48"

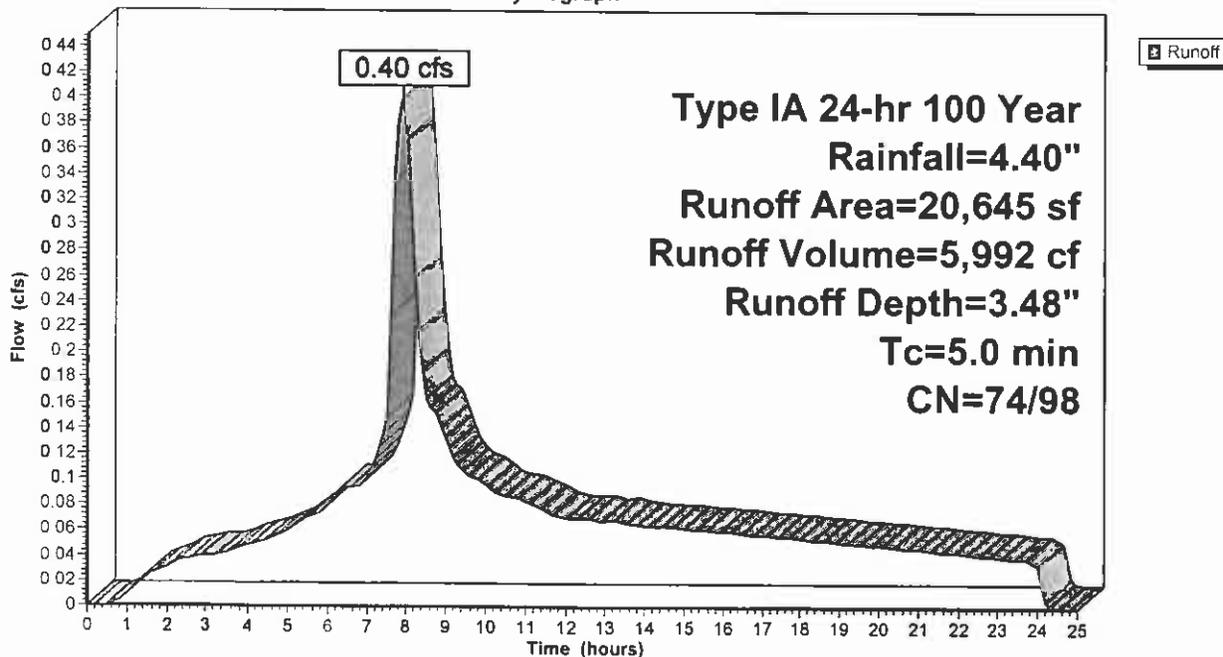
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-25.00 hrs, dt= 0.10 hrs  
 Type IA 24-hr 100 Year Rainfall=4.40"

	Area (sf)	CN	Description
*	7,014	98	Building
*	4,655	98	Parking lot/driveways
*	2,774	98	Walkways
*	6,202	74	Landscape
	20,645	91	Weighted Average
	6,202	74	Pervious Area
	14,443	98	Impervious Area

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

**Subcatchment 2S: Post-Development**

Hydrograph



# Conveyance

Prepared by PBS Engineering + Environmental  
HydroCAD® 8.50 s/n 002498 © 2007 HydroCAD Software Solutions LLC

Type IA 24-hr 100 Year Rainfall=4.40"

Printed 10/1/2008

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## Summary for Reach 1R: (new Reach)

[52] Hint: Inlet/Outlet conditions not evaluated

[90] Warning: Qout>Qin may require Finer Routing or smaller dt

Inflow Area = 20,645 sf, 69.96% Impervious, Inflow Depth = 3.48" for 100 Year event  
Inflow = 0.40 cfs @ 7.94 hrs, Volume= 5,992 cf  
Outflow = 0.40 cfs @ 7.95 hrs, Volume= 5,992 cf, Atten= 0%, Lag= 0.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-25.00 hrs, dt= 0.10 hrs  
Max. Velocity= 2.54 fps, Min. Travel Time= 0.7 min  
Avg. Velocity = 1.44 fps, Avg. Travel Time= 1.2 min

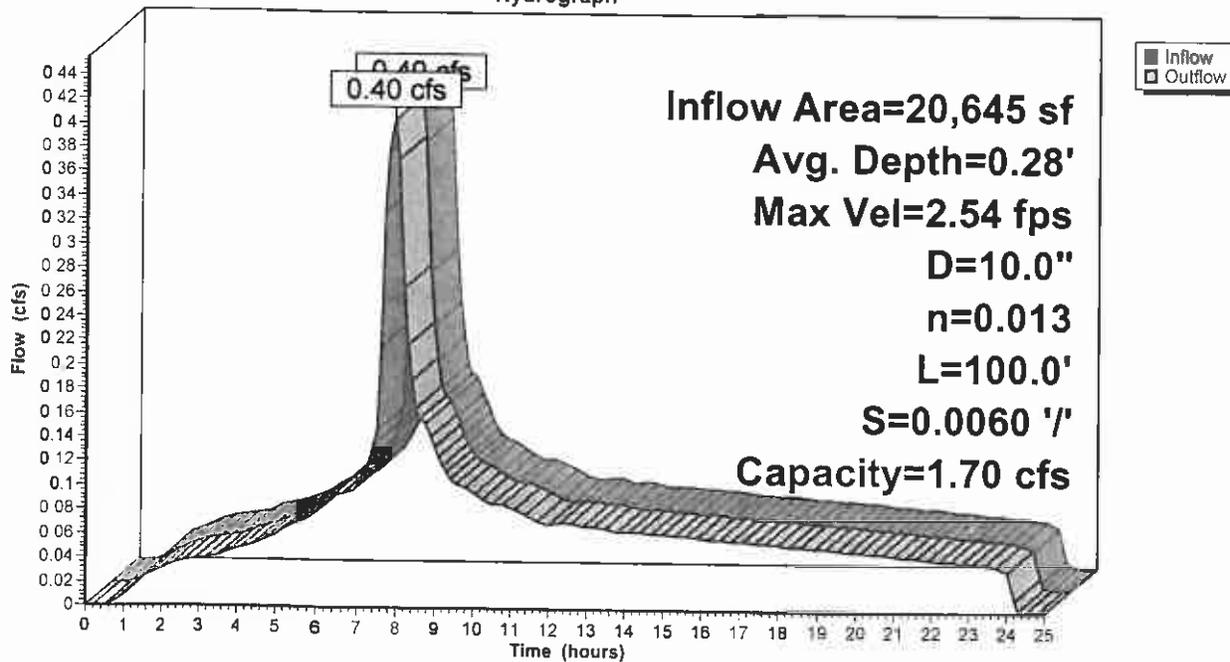
Peak Storage= 16 cf @ 7.95 hrs, Average Depth at Peak Storage= 0.28'  
Bank-Full Depth= 0.83', Capacity at Bank-Full= 1.70 cfs

10.0" Diameter Pipe, n= 0.013  
Length= 100.0' Slope= 0.0060 '/'  
Inlet Invert= 10.00', Outlet Invert= 9.40'



## Reach 1R: (new Reach)

Hydrograph



**APPENDIX C**

---

Geotechnical Investigation & Site Specific Seismic Analysis Report



Engineering +  
Environmental

# Geotechnical Investigation & Site-Specific Seismic Analysis Report

Tualatin Valley Fire & Rescue Station No. 59  
1860 Willamette Falls Drive  
West Linn, Oregon

Prepared for:  
Tualatin Valley Fire & Rescue  
Attn: Gary Wells  
20665 SW Blanton Street  
Aloha, Oregon 97007

December 31, 2007  
Project No. 72628 000

1310 Main Street, Vancouver, WA 98660  
360.690.4331 Main  
360.696.9064 Fax  
[www.pbsenv.com](http://www.pbsenv.com)

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## **SUPPORTING DATA**

### **Appendix A – Figures**

- Figure 1 Site Location Map
- Figure 2 Site Exploration Plan

### **Appendix B – Summary Logs**

- Key to Test Pit and Boring Log Symbols
- Logs for Borings B-1 through B-4

### **Appendix C – Site Specific Seismic Hazard Analysis**

- Figure C-1 Historical Seismicity
- Figure C-2 Site Fault and Fold Map
- Figure C-3 Crustal Model Response Spectra
- Figure C-4 Subduction Zone – Intraslab Model Response Spectra
- Figure C-5 Subduction Zone – Interface Model Response Spectra

### **Appendix D – General Construction Information**

### **Appendix E – Supporting Information**

- Table E-1 List of Applicable State and Local Regulations

## 1.0 INTRODUCTION

### 1.1 General

This report presents the results of PBS Engineering + Environmental's (PBS') geotechnical engineering evaluation and site-specific seismic analysis for the proposed Tualatin Fire & Rescue (TVF&R) Station No. 59 located at 1860 Willamette Falls Drive in West Linn, Oregon. A site location map is provided on Figure 1 of Appendix A. A site exploration plan is provided on Figure 2 of Appendix A.

### 1.2 Project Understanding

The proposed project consists of the demolition and construction of an approximate 10,000 square foot fire station with associated pavement, driveways, and utilities. We understand that the construction will be typical wood-framed construction with columns and perimeter footing supported on spread footings. Building loads are not known at this time. We have assumed maximum column and perimeter footing loads of 100 kips and 6 kips per linear foot. Based on a review of preliminary grading plans, fills will be on the order of 5 to 6 feet with cuts on the order of 2 to 5 feet.

## 2.0 SCOPE OF SERVICES

Our scope of work for this project included the following:

- **Subsurface Exploration:** Four borings were drilled by a local contractor to depths between 11.5 and 51.5 feet below the ground surface (bgs). The borings were logged and representative soil samples were collected by a PBS engineering geologist. Standard penetration tests were conducted at regular 2.5- and 5.0-foot intervals.
- **Soils Testing:** All samples were returned to our laboratory and classified in accordance with the American Society for Testing and Materials (ASTM) Manual-Visual Procedure. Laboratory tests included natural moisture contents, Atterberg Limits, and P200 washes.
- **Geologic Map Review:** Geologic maps of the site area were reviewed for information regarding geologic conditions and hazards at the site.
- **Site-specific Seismic Study:** A site-specific seismic study was completed in accordance with OSSC Section 1802.4.2.
- **Geotechnical Engineering Studies:** All data collected during the investigation, literature research, and testing was analyzed to develop project-specific geotechnical design criteria and construction guidelines.
- **Report:** This geotechnical report is prepared summarizing our field exploration, engineering analysis, geotechnical design criteria, and construction recommendations.

## 3.0 SITE CONDITIONS

### 3.1 Surface

The proposed fire station site is located at 1860 Willamette Falls Drive in West Linn, Oregon. The site includes the existing fire station and the adjacent gravel parking lot to the north. The site is bordered by 8<sup>th</sup> Avenue to the north, a residential building to the west, Willamette Falls Drive to the south, and a commercial building and residential building to the east. The subject property is generally flat.

### 3.2 Geologic

The site is located within the Portland Basin geologic province. The Portland basin is generally described as a northwest trending "pull-apart" basin, bound on the southwest margin by the Portland Hills/Tualatin Mountains and the Portland Hills Fault Zone and on the northeast by the Frontal Fault Zone at the edge of the Cascade Mountains. Mapping by

Schlicker and Finlayson (1979)<sup>1</sup> indicates the site is underlain by the Willamette Silt Formation (map unit Qws). The mapping describes the formation as lacustrine fine sandy silt and clay deposits. Review of well logs<sup>2</sup> in the area suggest Columbia River Basalt (map unit Tcr) underlies the Willamette silts at the site between approximately 100 to 150 feet bgs.

### 3.3 Subsurface

Our interpretation of the subsurface conditions is based on four borings drilled to depths between 11.5 and 51.5 feet bgs. The exploration locations are shown on Figure 2 - Site Exploration Plan. The borings were drilled on December 12, 2007, using mud rotary and hollow-stem auger drilling techniques with a truck-mounted drill rig by Western States Soil Conservation, Inc., of Aurora, Oregon. The subsurface materials encountered were logged in accordance with the Manual-Visual Classification Method (ASTM D2488). In-situ standard penetration tests (SPT, ASTM D1586) were performed at regular 2.5 and 5-foot intervals. The borings were backfilled with bentonite chips after completion of logging. Interpreted boring logs are presented in Appendix B.

Fill to a depth between 3 inches and 1.2 feet bgs was encountered in the borings. Fill materials included asphalt concrete and gravel fill. Very soft to stiff, fine sandy clayey silt to silty clay was encountered to depths between 3.0 to 6.0 feet bgs. Loose to medium dense, fine to medium sand was encountered to 30.0 feet bgs in boring B-1 and the termination depths of 21.5 feet bgs in boring B-2 and 11.5 feet bgs in borings B-3 and B-4. The fine to medium sand was medium dense to dense from 30.0 feet bgs to the termination depth of 51.5 feet bgs in boring B-1.

### 3.4 Groundwater

Groundwater seepage was not observed in any of the borings during the time of our exploration. Local well logs indicate groundwater levels to be around 140 feet bgs in the vicinity of the site. Given this depth range and the fact that groundwater seepage was not observed, groundwater is not anticipated to be a factor during construction on this site.

### 3.5 Laboratory Testing

Laboratory tests included natural moisture contents on the samples. Results are included on the boring logs presented in Appendix B. Additionally, one sample was tested for Atterberg Limits and three samples were tested for grain-size analysis. A summary of these test results is included in Table 1 below.

Table 1: Laboratory Testing Results

Sample ID	% Fines (Silts and Clays)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	USCS Classification
B-1 @ 2.5'	75	40	23	17	CL
B-1 @ 8.5'	54				
B-1 @ 15.0'	25				

<sup>1</sup> Schlicker, H.G. and Finlayson, C.T. (1979). *Geology and Geologic Hazards of Northwestern Clackamas County, Oregon*. Department of Geology and Mineral Industries B-99

<sup>2</sup> Oregon Well Logs (1986). Retrieved in December 2007 from [http://apps2.wrd.state.or.us/apps/gw/well\\_log/Default.aspx](http://apps2.wrd.state.or.us/apps/gw/well_log/Default.aspx).

## 4.0 DISCUSSION

Development of the site into the proposed fire station is feasible provided the work is conducted according to our recommendations below. We completed a site-specific seismic study for the site. Results of our analysis are presented in Appendix C. As discussed, liquefaction is not a concern at this site due to the relatively-deep groundwater table. The building can be supported on shallow spread footings designed for an allowable bearing capacity of 2,000 pounds per square foot (psf). Based on the subsurface conditions encountered and the depth of groundwater, excavation will not be a concern at this site. The new fire station is located at the existing fire station location. The presence of old undocumented fill, cesspools, sewer tanks, utilities, and other voids cannot be determined in the course of a usual geotechnical investigation. The project owners should be prepared for these and allow for contingency budgets if these conditions arise. The following report sections provide specific geotechnical design criteria and construction recommendations.

## 5.0 PERTINENT GEOTECHNICAL DESIGN RECOMMENDATIONS

### 5.1 Foundation Design

Based on our investigation and experience with similar soils, it is our opinion that the proposed building can be supported on conventional spread footings. All footings should be supported on firm, undisturbed, native soils or structural fill.

Continuous wall and isolated spread footings should be at least 18 and 24 inches wide, respectively. The bottom of exterior footings should be at least 24 inches below the lowest adjacent exterior grade. The bottom of interior footings should be established at least 18 inches below the base of the floor slab.

Footings bearing on firm native subgrade or structural fill should be sized for an allowable bearing capacity of 2,000 psf. This is a net bearing pressure. The weight of the footing and overlying backfill can be ignored in calculating footing sizes. The recommended allowable bearing pressure applies to the total of dead plus long-term live loads and may be doubled for short-term loads such as those resulting from wind or seismic forces.

Based on our analysis, the total post-construction settlement is calculated to be less than 1 inch, with post-construction differential settlement of less than a ½ inch over a 50-foot span for maximum column and perimeter footing loads of less than 100 kips and 6 kips per lineal foot.

Lateral loads on footings can be resisted by passive earth pressure on the sides of the structures and by friction at the base of the footings. An allowable passive earth pressure of 250 pounds per cubic foot (pcf) may be used for footings confined by native soils and new structural fills. Adjacent floor slabs, pavements or the upper 12-inch depth of adjacent, unpaved areas should not be considered when calculating passive resistance. For footings in contact with native soils, a coefficient of friction equal to 0.35 may be used when calculating resistance to sliding.

A geotechnical engineer from PBS or their representative should observe footing subgrades and confirm suitable bearing conditions. Observations should also confirm that loose or soft material, organics, unsuitable fill, and old topsoil zones have been removed. Localized deepening of footing excavations may be required to penetrate any deleterious materials.

If construction is undertaken during wet weather, we recommend a thin layer of compacted, crushed rock be placed over the footing subgrades to help protect them from disturbance due to the elements and foot traffic.

Footings should be founded below an imaginary line projecting at a 1H:1V slope from the base of any adjacent, parallel utility trenches. The footings must also be embedded so there is a minimum of 10 feet of horizontal distance between the face of the footings and any adjacent parallel slope.

## 5.2 Floor Slabs

Satisfactory subgrade support for concrete slabs can be obtained from the native subgrade prepared in accordance with our recommendations presented in Appendix D. A 6-inch layer of imported granular material should be placed and compacted over the prepared subgrade. Imported granular material should be crushed rock or crushed gravel that is fairly well-graded between fine and coarse, containing no deleterious materials, having a maximum particle size of 1 inch, and having less than 5 percent by weight passing the U.S. Standard No. 200 Sieve. A modulus of subgrade reaction of 125 pounds per cubic inch can be used for the structural design of the floor slabs.

## 5.3 Retaining Structures

Our retaining wall design recommendations are based on the following assumptions: (1) the walls consist of conventional, cantilevered retaining walls; (2) the walls are less than 10 feet in height; (3) the backfill is drained; and (4) the backfill has a slope flatter than 4H:1V. Evaluation of our recommendations will be required if the retaining wall design criteria for the project varies from these assumptions.

Unrestrained site walls that retain native soils should be designed to resist active equivalent earth pressures of 35 pcf where supporting slopes are flatter than 4H:1V. If retaining walls are restrained from rotation prior to being backfilled, the active earth pressure shall be increased to 55 pcf. For embedded building walls, a superimposed seismic lateral force should be calculated based on a dynamic force of  $6H^2$  pounds per lineal foot of wall, where H is the height of the wall in feet, and applied at 0.6H from the base of the wall. If other surcharges (e.g., slopes steeper than 4H:1V, foundations, vehicles, etc.) are located within a horizontal distance from the back of a wall equal to twice the height of the wall, then additional pressures will need to be accounted for in the wall design. Our office should be contacted for appropriate wall surcharges based upon actual magnitude and configuration of the applied loads.

The wall footings should be designed in accordance with the guidelines provided in the "Foundation Design" section of this report.

These design parameters have been provided assuming that back-of-wall drains will be installed to prevent buildup of hydrostatic pressures behind all walls. If a drainage system is not installed, then our office should be contacted for revised design forces.

The backfill material placed behind the walls and extending a horizontal distance equal to at least half of the height of the retaining wall should consist of granular retaining wall backfill as specified in the "Structural Fill" section of Appendix D.

A minimum 12-inch-wide zone of drain rock extending from the base of the wall to within 6 inches of finished grade should be placed against the back of all retaining wall. Perforated collector pipes should be embedded at the base of the drain rock. The drain rock should meet the requirements provided in the "Structural Fill" section of this report. The perforated collector pipes should discharge at an appropriate location away from the base of the wall. The discharge pipe(s) should not be tied directly into stormwater drain systems, unless measures are taken to prevent backflow into the wall's drainage system.

Settlements of up to 1 percent of the wall height commonly occur immediately adjacent to the wall as the wall rotates and develops active lateral earth pressures. Consequently, we recommend that construction of flat work adjacent to retaining walls be postponed at least 4 weeks after backfilling of the wall, unless survey data indicates that settlement is complete prior to that time.

#### 5.4 Seismic Design Criteria

We understand that the seismic design criteria for this project is based on the 2006 IBC, Section 1615. We completed a site-specific seismic analysis as presented in Appendix C. Based on our analysis, the IBC Spectra can be used for the seismic design of the single-story building in the period range where this building will fall. The seismic design criteria, in accordance with the 2006 IBC, are summarized in Table 2.

Table 2: IBC 2006 Seismic Design Parameters

	Short Period	1 Second
Maximum Credible Earthquake Spectral Acceleration	$S_s = 0.90 \text{ g}$	$S_1 = 0.32 \text{ g}$
Site Class	D	
Site Coefficient	$F_a = 1.14$	$F_v = 1.75$
Adjusted Spectral Acceleration	$S_{MS} = 1.03 \text{ g}$	$S_{M1} = 0.57 \text{ g}$
Design Spectral Response Acceleration Parameters	$S_{DS} = 0.69 \text{ g}$	$S_{D1} = 0.38 \text{ g}$
Design Spectral Peak Ground Acceleration	0.28 g	

#### 5.5 Pavement Design

Our pavement recommendations are based on the following assumptions:

- A resilient modulus of 4,500 pounds per square inch (psi) was assumed for the native site soils.
- A resilient modulus of 20,000 psi was estimated for the base rock.
- An initial and terminal serviceability index of 4.2 and 2.5, respectively.
- A reliability and standard deviation of 85 percent and 0.45, respectively.
- A structural coefficient of 0.42 and 0.10 for the asphalt and base rock, respectively.
- We have assumed the following equivalent single axle load (ESAL) values apply to the two proposed streets at the site:
  - Parking Lots – 10,000 ESALs
  - Driveways – 50,000 ESALs

If any of these assumptions are incorrect, our office should be contacted with the appropriate information so that the pavement designs can be revised.

Our pavement design recommendations are summarized in Table 3. The following pavement design was completed in accordance with the 2006 Oregon Department of Transportation (ODOT) Pavement Design Guide, Guide for Design of Pavement Structures, American Association of State Highway and Transportation Officials (AASHTO, 1993) and the AASHTO Darwin 3.1 Pavement Design Program.

**Table 3: Minimum Pavement Sections**

<b>Traffic Loading (ESALs)</b>	<b>AC (Inches)</b>	<b>Base Rock (inches)</b>
10,000 (Parking Lots)	3.0	8.0
50,000 (Driveways)	4.0	10.0

The pavement thickness shown in Table 3 is intended to be minimum acceptable values.

The asphalt and cement binder should be PG 70-22 Performance Grade Asphalt Cement according to Oregon Structural Specialty Code, 2004 (OSSC) 00744.11 – Asphalt and Cement Additives. The asphalt concrete (AC) should consist of ½-inch hot mix asphalt. The minimum lift thickness should be 2.0 inches. The AC should conform to OSSC 00744.13 and be compacted to 91 percent of the Rice Density of the mix, as determined in accordance with ASTM D2041. The pavement subgrade should be prepared in accordance with Appendix D of this report.

Construction traffic should be limited to non-building, unpaved portions of the project site or haul roads. Construction traffic should not be allowed on new pavements. If construction traffic is to be allowed on newly constructed road sections, an allowance for this additional traffic will need to be made in the design pavement section.

**6.0 CONSTRUCTION RECOMENDATIONS**

**6.1 Site Preparation**

The new structures will be constructed at the location of the existing fire station facility. Demolition should include removal of existing improvements throughout the project site including any remnant pavement and foundation elements. Underground utility lines, vaults, basement walls, or tanks should also be removed or grouted full if left in place. The voids resulting from removal of footings, buried tanks, etc. or loose soil in utility lines should be backfilled with compacted structural fill. The base of these excavations should be excavated to firm subgrade before filling with sides sloped at a minimum of 1H:1V to allow for uniform compaction.

The existing near-surface root zone should be stripped and removed from the project site in all proposed building, fill, and pavement areas and a 5-foot margin around such areas. Stripped material should be transported off-site for disposal or stockpiled for use in landscaped areas.

Trees and shrubs should be removed from all pavement and improvement areas. In addition, root balls should be grubbed out to the depth of the roots, which could exceed 3 feet bgs. Depending on the methods used to remove the root balls, considerable

disturbance and loosening of the subgrade could occur during site grubbing. We recommend that soil disturbed during grubbing operations be removed to expose firm undisturbed subgrade. The resulting excavations should be backfilled with structural fill.

Materials generated during demolition of existing improvements should be transported off-site or stockpiled in areas designated by the owner. Asphalt, concrete, gravel fill, and base rock materials may be crushed and recycled for use as general fill. Such recycled materials should meet the criteria described in the "Structural Fill" section in Appendix D of this report.

### 6.1.1 Proofrolling

Following stripping and prior to placing fill, pavement, or building improvements, the exposed subgrade should be evaluated by proofrolling. The subgrade should be proofrolled with a fully-loaded dump truck or similar heavy, rubber-tire construction equipment to identify soft, loose, or unsuitable areas. A member of our geotechnical staff should observe the proofrolling. Soft or loose zones identified during the field evaluation should be compacted to an unyielding condition or be excavated and replaced with structural fill, as discussed in the "Structural Fill" section of this report located in Appendix D.

### 6.1.2 Wet Weather/Wet Soil Conditions

Trafficability on the near-surface soils may be difficult during or after extended wet periods, or when the moisture content of the surface soil is more than a few percentage points above optimum. Soils that have been disturbed during site preparation activities, or soft or loose zones identified during probing or proofrolling, should be removed and replaced with compacted structural fill.

Track-mounted excavating equipment may be required during wet weather. The thickness of the granular material for haul roads and staging areas will depend on the amount and type of construction traffic. A 12- to 18-inch-thick mat of imported granular material is sufficient for light staging areas. The granular mat for haul roads and areas with repeated heavy construction traffic typically needs to be increased to between 18 to 24 inches. The actual thickness of haul roads and staging areas should be based on the contractor's approach to site development and the amount and type of construction traffic. The imported granular material should be placed in one lift over the prepared, undisturbed subgrade and compacted using a smooth-drum, non-vibratory roller. Additionally, a geotextile fabric should be placed as a barrier between the subgrade and imported granular material in areas of repeated construction traffic.

As an alternative to placing thick rock sections to support construction traffic, the subgrade can be stabilized using cement amendment. The depth of treatment and percentage of cement required depends on the site conditions at the time of construction. Additional recommendations will be provided during construction, if this approach is used.

## 6.2 Excavation

Subsurface conditions at the project site show predominately sandy soils to the depths explored (51.5 feet). Excavations in these soils may be readily accomplished with conventional earthwork equipment.

Trench cuts should stand vertical to a depth of approximately 4 feet—provided no groundwater seepage is present in the trench walls. Open excavation may be used to excavate trenches with depths between 4 and 8 feet, with the walls of the excavation cut at a slope of 1H:1V—provided groundwater seepage is not present and with the understanding that some sloughing may occur. The trenches should be flattened to 1.5H:1V if excessive sloughing occurs or seepage is present.

Groundwater was not encountered in our borings and should not be a concern during construction especially in dry weather. If shallow groundwater (perched) is observed during construction, use of a trench shield or other approved temporary shoring is recommended for cuts that extend below groundwater seepage or if vertical walls are desired for cuts deeper than 4 feet. If shoring or dewatering is used, we recommend that the type and design of the shoring and dewatering systems be the responsibility of the contractor, who is in the best position to choose systems that fit the overall plan of operation.

These excavations should be made in accordance with applicable Occupational Safety and Health Administration (OSHA) and state regulations.

## 7.0 CONSTRUCTION OBSERVATIONS

Satisfactory pavement and earthwork performance depends on the quality of construction. Sufficient monitoring of the contractors activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. We recommend that a geotechnical engineer from PBS be retained to observe general excavation, stripping, fill placement, footing subgrades, subgrades and base rock for floor slabs and pavements.

Subsurface conditions observed during construction should be compared with those encountered during the subsurface explorations. Recognition of changed conditions requires experience; therefore, qualified personnel should visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those anticipated.

## 8.0 LIMITATIONS

This report has been prepared for the exclusive use of the addressee, and their architects and engineers, for aiding in the design and construction of the proposed development. It is the addressee's responsibility to provide this report to the appropriate design professionals, building officials, and contractors to ensure correct implementation of the recommendations.

The opinions, comments, and conclusions presented in this report were based upon information derived from our literature review, field investigation, and laboratory testing. Conditions between, or beyond, our exploratory borings may vary from those encountered. Unanticipated soil conditions and seasonal soil moisture variations are commonly encountered and cannot be fully determined by merely taking soil samples or soil borings. Such variations may result in changes to our recommendations and may require that additional expenditures be made to attain a properly-constructed project. Therefore, some contingency fund is recommended to accommodate such potential extra costs.

If there is a substantial lapse of time between the submission of this report and the start of work at the site, if conditions have changed due to natural causes or construction operations at or adjacent to the site, or if the basic project scheme is significantly modified from that assumed, it is recommended this report be reviewed to determine the applicability of the conclusions and recommendations.

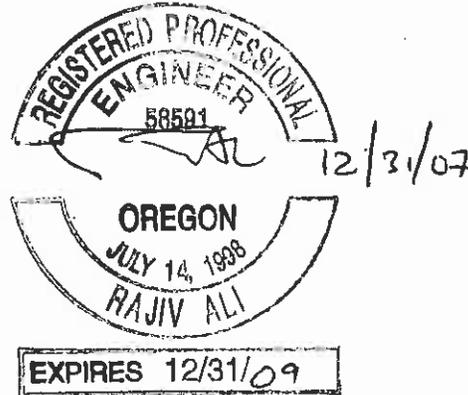
**9.0 RESTRICTIONS**

This report is for the exclusive use of the client for design of the development as described in our proposal for this particular project 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,  
PBS Engineering + Environmental



Andrea Scheele  
Project Geotechnical Engineer

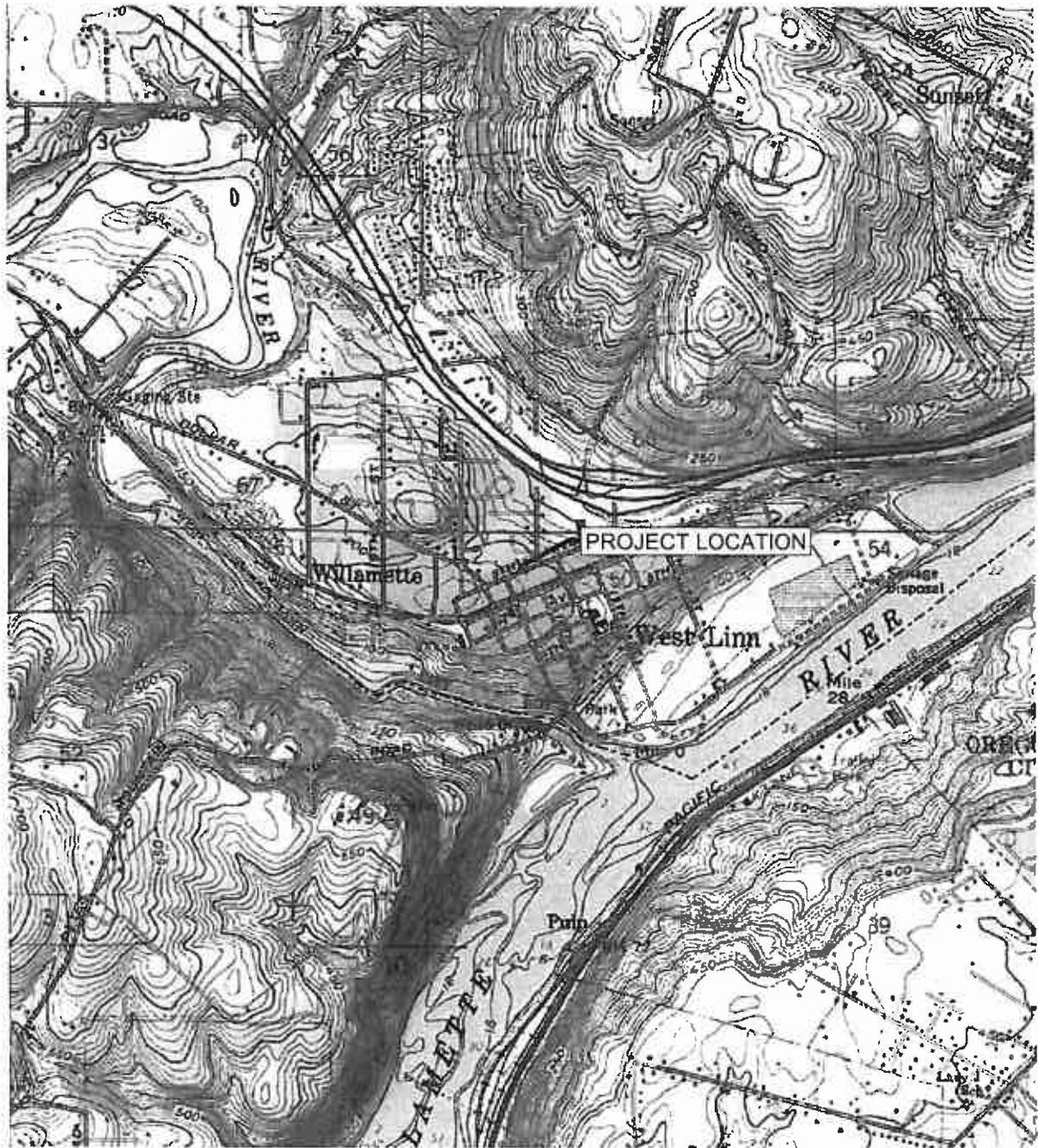


Rajiv Ali, P.E., G.E.  
Senior Geotechnical Engineer

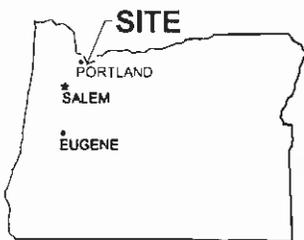
**APPENDIX A**

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Figures



SOURCE: USGS CANBY QUADRANGLE, OR 1981,  
PHOTO REVISED 1985.



OREGON



SCALE: 1" = 2,000'

PREPARED FOR: TUALATIN VALLEY FIRE AND RESCUE

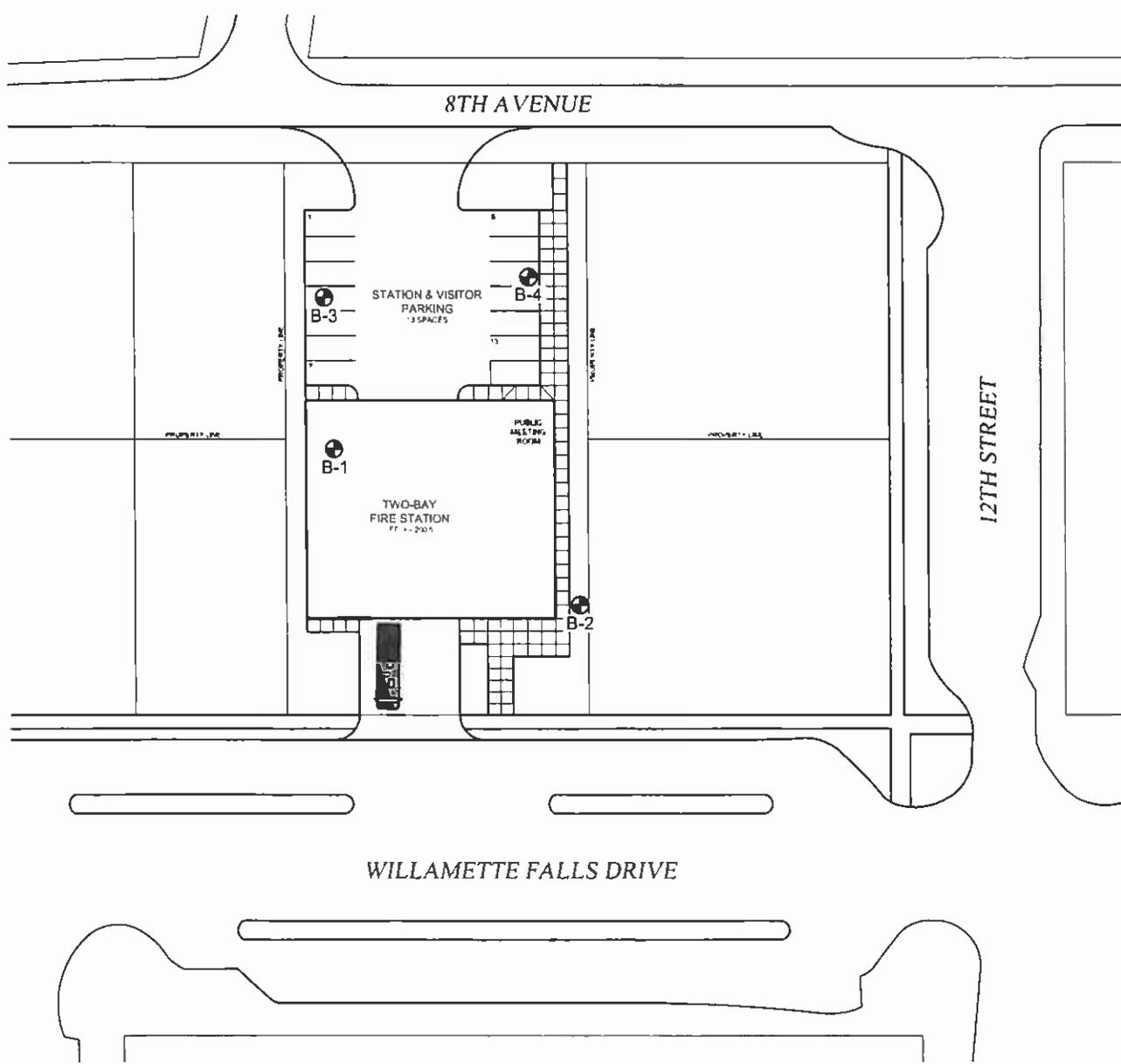


PROJECT #:  
72628.000  
DATE:  
DEC. 2007

**SITE VICINITY MAP**  
TVFR #59  
8TH AVENUE AND 12TH STREET  
WEST LINN, OREGON

FIGURE  
**1**

L:\PORTLAND\72628\72628.000\_Tualatin\_Valley\_Fire.dwg Dec 18, 2007 02:49pm



NOT TO SCALE

**LEGEND**

⊕ BORING NUMBER AND LOCATION  
B-1

PREPARED FOR: TUALATIN VALLEY FIRE AND RESCUE

	PROJECT # 72628.000	<b>SITE EXPLORATION PLAN</b> TVFR #59 8TH AVENUE AND 12TH STREET WEST LINN, OREGON	FIGURE
	DATE DEC. 2007		<b>2</b>

**APPENDIX B**  
Summary Logs

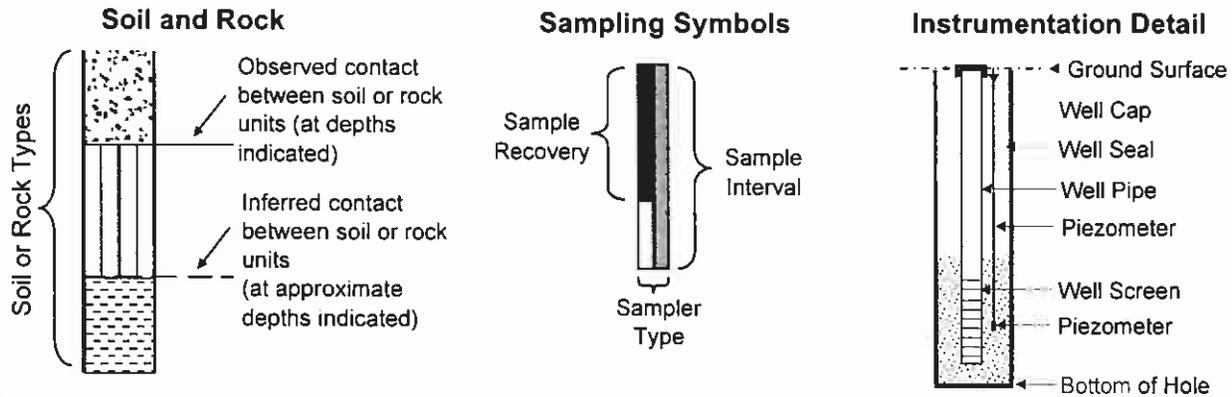
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## Key To Test Pit and Boring Log Symbols

### SAMPLING DESCRIPTIONS<sup>1</sup>

SPT Drive Sampler Standard Penetration Test ASTM D 1586	Shelby Tube Push Sampler ASTM D 1587	Specialized Drive Samplers (Details in Comments)	Specialized Drill or Push Sampler (Details in Comments)	Grab Sample	Rock Coring Interval	Other (Details in Comments)	Water Level During Drilling/Excavation	Water Level After Drilling/Excavation
								

### LOG GRAPHICS



### Geotechnical Testing/Acronym Explanations

PP	Pocket Penetrometer	SIEV	Sieve Gradation
DCP	Dynamic Cone Penetrometer	DD	Dry Density
SP	Static Penetrometer	ATT	Atterberg Limits
TOR	Torvane	CBR	California Bearing Ratio
CON	Consolidation	OC	Organic Content
DS	Direct Shear	RES	Resilient Modulus
P200	Percent Passing U.S. Standard No. 200 Sieve	VS	Vane Shear
HYD	Hydrometer Gradation	HCL	Hydrochloric Acid
UC	Unconfined Compressive Strength	kPa	kiloPascal
PL	Plasticity Limit	GPS	Global Positioning System
PI	Plasticity Index	bgs	Below ground surface
LL	Liquid Limit		

### Environmental Testing/Acronym Explanations

bgs	Below ground surface	NS	No Sheen
CA	Sample Submitted for Chemical Analysis	SS	Slight Sheen
PID	Photoionization Detector Headspace Analysis	MS	Moderate Sheen
PPM	Parts Per Million	HS	High Sheen
ND	Not Detected		

<sup>1</sup>Note. Details of soil and rock classification systems are available on request.



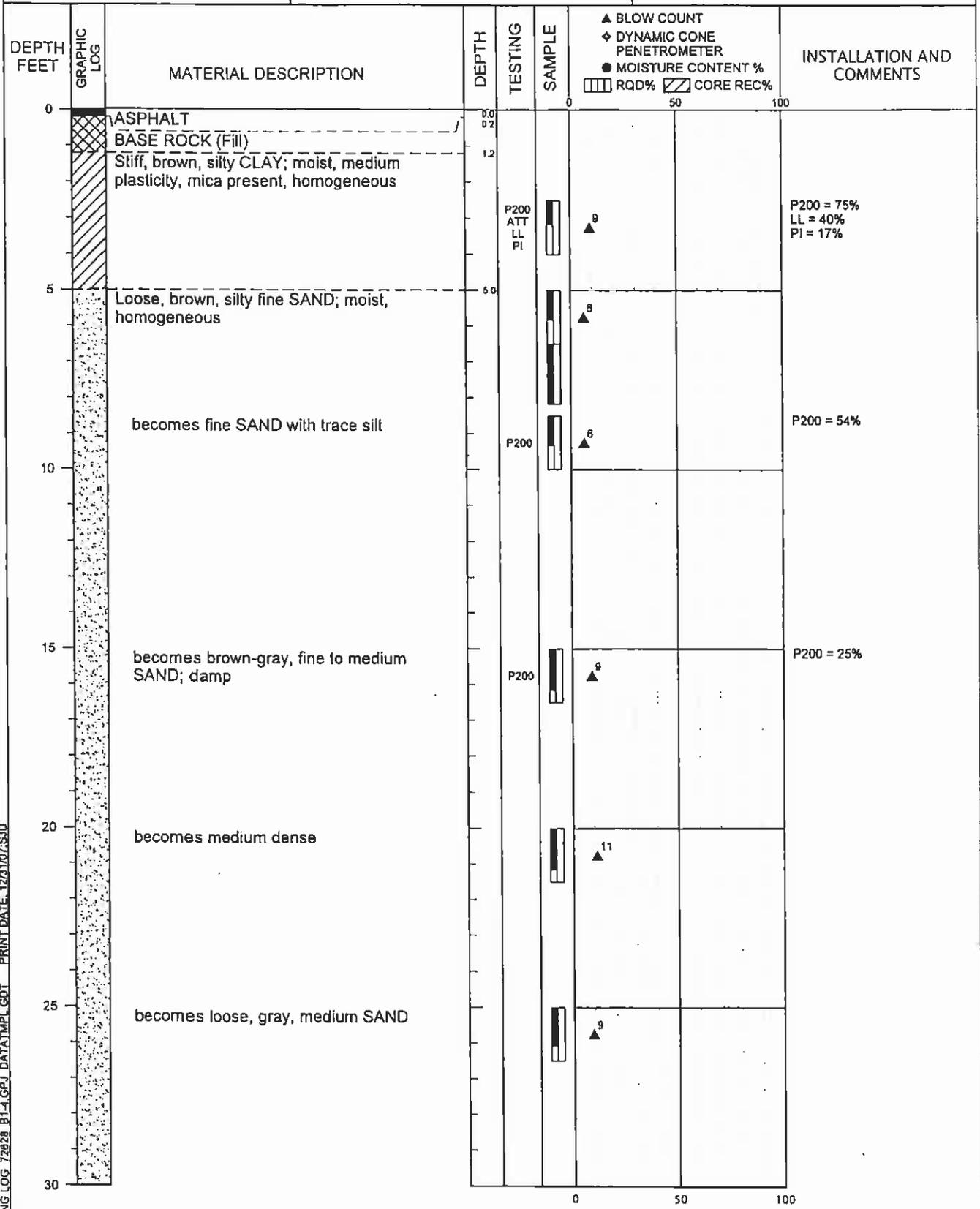
1310 Main St.  
Vancouver, WA 98660  
Phone: (360) 690-4331  
Fax: (360) 696-9064

TUALATIN VALLEY FIRE & RESCUE  
STATION #59 - WEST LINN, OR

BORING B-1

PBS PROJECT NUMBER:  
72628.000

BORING B-1 LOCATION:  
(See Figure 2)



BORING LOG 72628 B1-1.GPJ DATATMPL.GDT PRINT DATE: 12/31/07 8:10

BORING METHOD: Mud Rotary  
DRILLED BY: Western States Soil Conservation, Inc.

BORING BIT DIAMETER: 4 7/8-inch  
LOGGED BY: P. Hughes

COMPLETED: 12/12/07



1310 Main St.  
Vancouver, WA 98660  
Phone: (360) 690-4331  
Fax: (360) 696-9064

TUALATIN VALLEY FIRE & RESCUE  
STATION #59 - WEST LINN, OR

**BORING B-1**  
(continued)

PBS PROJECT NUMBER:  
72628.000

BORING B-1 LOCATION:  
(See Figure 2)

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH	TESTING	SAMPLE	TESTING		INSTALLATION AND COMMENTS
						▲ BLOW COUNT	◆ DYNAMIC CONE PENETROMETER	
						● MOISTURE CONTENT %	▨ RQD% ▨ CORE REC%	
30		becomes medium dense						
35		becomes dense, brown with few distinct orange mottles, silty fine SAND; moist becomes dense, gray, medium SAND; damp				18		
40		becomes medium dense				32		
45		becomes brown				27		
50						29		
51.5		Final depth 51.5 feet bgs; boring backfilled with bentonite chips	51.5			45		
55								
60								

BORING LOG 72628 B1-1.GPJ DATATMPL.GDT PRINT DATE: 12/31/07 SJD

BORING METHOD: Mud Rotary  
DRILLED BY: Western States Soil Conservation, Inc.

BORING BIT DIAMETER: 4 7/8-inch  
LOGGED BY: P. Hughes

COMPLETED: 12/12/07



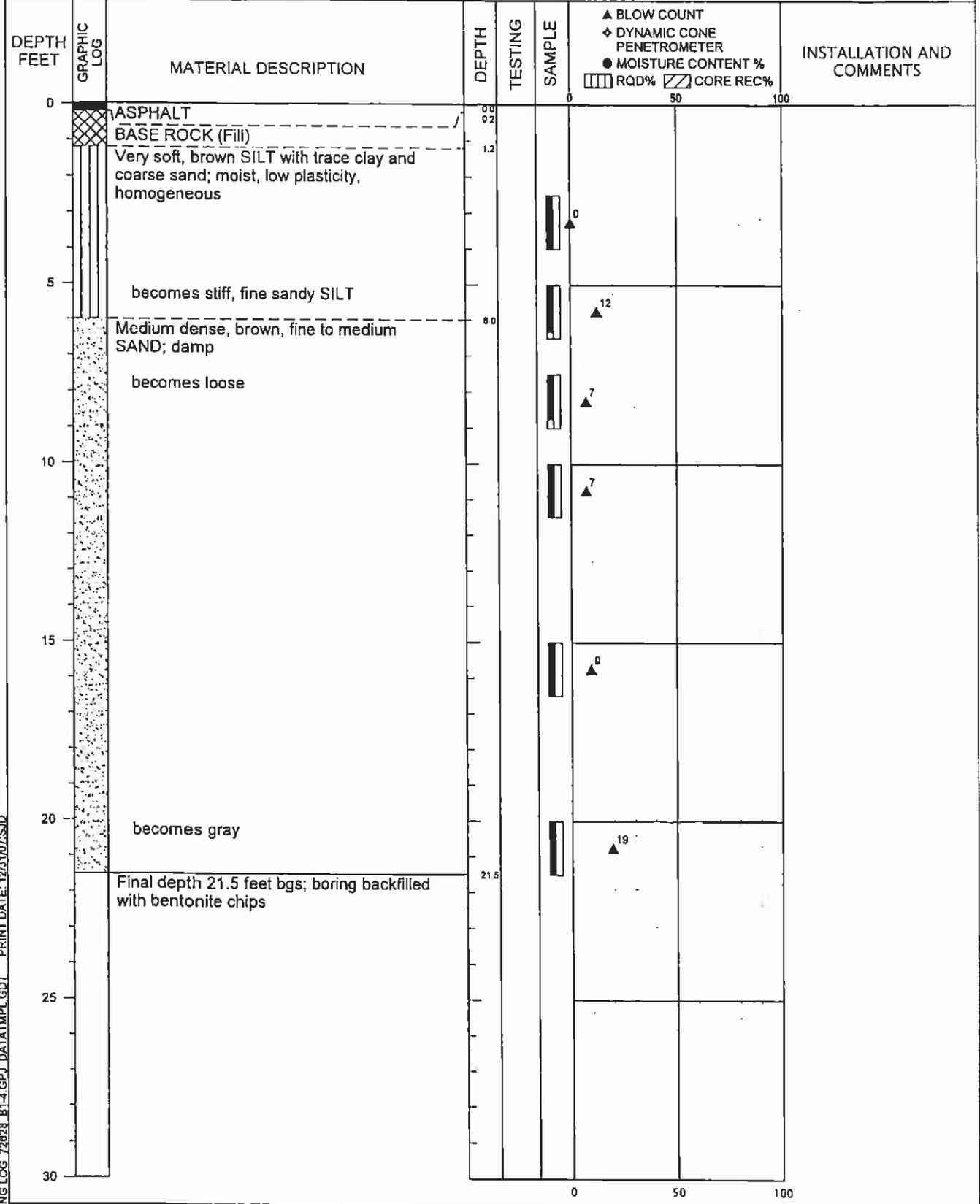
1310 Main St.  
Vancouver, WA 98660  
Phone: (360) 690-4331  
Fax: (360) 696-9064

TUALATIN VALLEY FIRE & RESCUE  
STATION #59 - WEST LINN, OR

**BORING B-2**

PBS PROJECT NUMBER:  
72628.000

BORING B-2 LOCATION.  
(See Figure 2)



BORING LOG 72628\_B1-4.GPJ DATATMPL.GDT PRINT DATE: 12/31/07/SJD

BORING METHOD: Hollow-Stem Auger  
DRILLED BY: Western States Soil Conservation, Inc.

BORING BIT DIAMETER: 8-inch  
LOGGED BY: P. Hughes

COMPLETED: 12/12/07



1310 Main St.  
Vancouver, WA 98660  
Phone: (360) 690-4331  
Fax: (360) 696-9064

TUALATIN VALLEY FIRE & RESCUE  
STATION #59 - WEST LINN, OR

**BORING B-3**

PBS PROJECT NUMBER:  
72628.000

BORING B-3 LOCATION:  
(See Figure 2)

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH	TESTING	SAMPLE	▲ BLOW COUNT ◆ DYNAMIC CONE PENETROMETER ● MOISTURE CONTENT % □ RQD%    ▨ CORE REC%	INSTALLATION AND COMMENTS
0		GRAVEL (4 inches thick, Fill)	0.0				
0.3		Stiff, brown, fine sandy clayey SILT; moist, low plasticity, homogeneous	0.3				
3.2		Loose, brown, silty fine SAND; moist, homogeneous	3.2		8		
5		becomes loose, fine to medium SAND alternating between fine and medium SAND layers	5		5		
10		becomes medium dense and gray; damp, homogeneous	10		11		
11.5		becomes medium sand with alternating layers of fine sand	11.5		12		
11.5		Final depth 11.5 feet bgs; boring backfilled with bentonite chips	11.5				
15			15				
20			20				
25			25				
30			30				

BORING LOG 72628 B14.GPJ DATATMPL.GDT PRINT DATE: 12/31/07.SJD

BORING METHOD: Hollow-Stem Auger  
DRILLED BY: Western States Soil Conservation, inc.

BORING BIT DIAMETER: 8-inch  
LOGGED BY: P. Hughes

COMPLETED: 12/12/07



1310 Main St.  
Vancouver, WA 98660  
Phone: (360) 690-4331  
Fax: (360) 696-9064

TUALATIN VALLEY FIRE & RESCUE  
STATION #59 - WEST LINN, OR

**BORING B-4**

PBS PROJECT NUMBER:  
72628.000

BORING B-4 LOCATION  
(See Figure 2)

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH	TESTING	SAMPLE	BLOW COUNT		INSTALLATION AND COMMENTS
						ROD%	CORE REC%	
0		GRAVEL (3 inches thick, Fill)	0.0					
0.3		Medium stiff, brown, fine sandy clayey SILT; moist, low plasticity	0.3					
3.0		Loose, brown, fine to medium SAND; moist, homogeneous	3.0		6			
5.0			5.0		5			
10.0		becomes dense, gray, medium SAND; damp	10.0		11			
11.5		becomes medium dense, gray and brown, fine to medium SAND	11.5		10			
11.5		Final depth 11.5 feet bgs; boring backfilled with bentonite chips	11.5					
15.0			15.0					
20.0			20.0					
25.0			25.0					
30.0			30.0					

BORING LOG 72628 B1-4.GPJ DATATMPL.GDT PRINT DATE: 12/11/07 SJD

BORING METHOD: Hollow-Stem Auger  
DRILLED BY: Western States Soil Conservation, Inc.

BORING BIT DIAMETER: 8-inch  
LOGGED BY: P. Hughes

COMPLETED: 12/12/07

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**APPENDIX C**

Site-Specific Seismic Study

## C1.0 INTRODUCTION

This appendix presents the results of PBS Engineering + Environmental's (PBS') site-specific seismic hazard analysis for the Tualatin Valley Fire & Rescue Station No. 59. The proposed site is located at 1860 Willamette Falls Drive in West Linn, Oregon. The site location relative to surrounding physical features is shown on Figure 1 (Appendix A). This facility qualifies as a "Special Occupancy Structure," in accordance with 2007 Oregon Structural Specialty Code (OSSC), Chapter 18. A site-specific seismic hazard analysis is therefore required and was conducted in general accordance with Section 1802.4.2.

## C2.0 SITE CONDITIONS

### C2.1 Geologic Setting

The site is located within the Portland Basin geologic province. The Portland basin is generally described as a northwest trending "pull-apart" basin, bound on the southwest margin by the Portland Hills/Tualatin Mountains and the Portland Hills Fault Zone and on the northeast by the Frontal Fault Zone at the edge of the Cascade Mountains. Mapping by Schlicker and Finlayson (1979)<sup>1</sup> indicates the site is underlain by the Willamette Silt Formation (map unit Qws). The mapping describes the formation as lacustrine fine sandy silt and clay deposits. Review of well logs<sup>2</sup> in the area suggests Columbia River Basalt (map unit Tcr) underlies the Willamette silts at the site between approximately 100 to 150 feet bgs.

### C2.2 Subsurface Conditions

PBS Engineering explored subsurface conditions by drilling four borings on December 12, 2007. Details of our field explorations and subsurface conditions are provided in Section 3.3 of this report. The interpreted geologic profile, shown in Table C-1, below, is based on our explorations and review of subsurface information summarized.

Table C-1: Estimated Geologic Profile

Profile Depth (feet bgs)	GEOLOGIC UNIT	Shear Wave Velocity (feet per second)
0 to 125	Fine to medium sand (Qws)	600 to 1,000
>125	Basalt of Columbia River Basalt Group (Tcr)	2,500 to 4,500

### C2.3 Groundwater Conditions

Groundwater seepage was not observed in any of the borings during the time of our exploration. Local well logs indicate groundwater levels to be around 140 feet bgs in the vicinity of the site. Given this depth range and the fact that groundwater seepage was not observed, groundwater is not anticipated to be a factor during construction on this site.

<sup>1</sup> Schlicker, H.G. and Finlayson, C.T. (1979) *Geology and Geologic Hazards of Northwestern Clackamas County, Oregon*. Oregon Department of Geology and Mineral Industries. B-99.

<sup>2</sup> Oregon Well Logs (1986). Retrieved in December 2007 from [http://apps2.wrd.state.or.us/apps/gw/well\\_log/Default.aspx](http://apps2.wrd.state.or.us/apps/gw/well_log/Default.aspx)

### C3.0 SEISMICITY

#### C3.1 Historic Seismicity

Information on the historical record of Oregon earthquakes dates back to approximately 1841. Prior to 1900, approximately 30 earthquakes had been recorded. Several hundred earthquakes have been recorded in the state since 1900, especially since the 1980s when the University of Washington established a recording station. Catalogues of earthquake events are available from Berg and Baker<sup>3</sup> (1963) and Johnson et. al.<sup>4</sup> (1994). Wong et. al.<sup>5</sup> (2000) also provided a summary of Oregon earthquakes.

Oregon as a region has a relatively low to medium record of historical seismicity. Clusters of earthquakes are recorded in the Klamath Falls region (M=6.0), northeast Oregon (M=5.0 Umatilla, M=6.5 Milton Freewater), and the Portland-Northern Willamette Valley (M=5.6 Mt. Angel). Figure C-1 shows historic earthquakes in the Portland region (50-mile radius).

The Portland region has the highest number of recorded events in the state with three events of M=5 or greater. The largest earthquake event to occur in the Pacific Northwest is postulated by Atwater et. al.<sup>6</sup> (1995) to be an event in 1700 of M=8 or 9 on the Cascadia Subduction Zone, more that 100 miles from the site.

#### C3.2 Seismic Sources

There are several types of seismic sources in the Pacific Northwest, which are outlined below (Wong and Silva 2006)<sup>7</sup>. Volcanic sources beneath the Cascade Range are not considered further in this study as they rarely exceed about M=5 in size and thus are not considered to pose significant ground-shaking hazard to the project site.

##### C3.2.1 Cascadia Subduction Zone – Interface Earthquakes

The Cascade Subduction Zone (CSZ) megathrust represents the boundary between the subducting Juan de Fuca tectonic plate and the overriding North American tectonic plates. Recurrence intervals for subduction zone earthquakes are based on studies of the geologic record. Based on these studies, recurrence interval estimates have been generated, ranging from about 300 to 600 years. Geologic evidence suggests that the most recent earthquake occurred in January 1700, probably ruptured much of the approximately 1200 km length of the CSZ, and was estimated at M=7.0 to 9.0. The OSSC recommends use of an M=8.5, which likely corresponds to a 10 percent chance of being exceeded in 50 years. A magnitude M=9.0 event likely corresponds to a 2 percent chance of being exceeded in 50 years. This study considers an M=9.0 earthquake.

The distance from the eastern edge of the CSZ megathrust to West Linn is approximately 150 kilometers (km) with an uncertainty of  $\pm 50$  km (Wong and Silva, 2000). We have used a conservative distance of 120 km with a depth of 30 km and a

<sup>3</sup> Berg, J.W. and Baker, C. D. (1963). Oregon Earthquakes, 1841 – 1958. *Seismological Society of America Bulletin*, v. 53 pp. 95-108.

<sup>4</sup> Johnson, et. al. (1994). *Earthquakes Database for Oregon, 1833 to 10/25/1993*. Oregon Department of Geology and Mineral Industries, Open File Report O-94-04

<sup>5</sup> Wong, I. et. al. (2000). *Earthquake scenario and probabilistic ground shaking maps for the Portland, Oregon, metropolitan area*. State of Oregon Department of Geology and Mineral Industries, IMS 16, 11 Sheets, scale 1:62,500.

<sup>6</sup> Atwater, B. F., et al. (1995). Summary of coastal geologic evidence for past great earthquakes at the Cascadia subduction zone, *Earthquake Spectra*, v 11. pp. 1-18 EERI.

<sup>7</sup> Atwater, B. F., et al. (1995). Summary of coastal geologic evidence for past great earthquakes at the Cascadia subduction zone. *Earthquake Spectra*, v 11. pp. 1-18 EERI.

magnitude  $M_w=9.0$  for our analysis. The peak bedrock acceleration using Young's et al. (1988)<sup>8</sup> attenuation relationship is calculated to be 0.14 g.

### C3.3 Intraslab Earthquakes

A number of researchers have noted the complete absence of intraslab seismicity in Western Oregon (Ludwin et. al., 1991<sup>9</sup>; Rogers et. al., 1996<sup>10</sup>). With the possible exception of 1873 Richter Magnitude 6.75 Crescent City Earthquake, no moderate to large intraslab earthquakes have occurred in the CSZ from south of Puget Sound to Cape Mendocino. These earthquakes are postulated to have a deep focus of 40 to 80 km in the subducted Juan de Fuca Plate, and theoretical magnitudes of up to 7.5. The peak bedrock acceleration using Young's et. al. (1988) attenuation relationship is calculated to be 0.08 to 0.10 acceleration due to gravity (g) and is lower than from either CSZ interface or crustal earthquakes. We have considered a peak ground acceleration of 0.09 for our analysis.

### C3.4 Crustal Earthquakes and Faults

Due to their proximity, the crustal faults are possibly the most significant seismic sources in the Portland metropolitan area. There are at least 44 faults or fault zones in northwestern Oregon and southwestern Washington (within 200 km of Portland). However, recorded seismicity due to crustal sources in the site vicinity is relatively limited, with only a few recorded earthquakes exceeding magnitude  $M_w=5.0$  in the Portland region. Studies (Yelin and Patton<sup>11</sup>) of small earthquakes in the region indicate that most crustal earthquake activity is occurring at depths of 10 to 20 km.

The nearest mapped fault (See Figure C-2) is the Bolton Fault. It is located approximately 5.5 km northeast of the site and consists of a northwest-trending fault. The fault is not listed as active or potentially active (Geomatrix, 1995; Wong, 2000). The fault zones within the vicinity of the site are listed in the table below and are shown on Figure C-2.

**Table C-2: Faults Within the Site Vicinity**

<b>Number</b>	<b>Fault Zone Name</b>	<b>Proximity to Site (Surface projection in km)</b>
874	Bolton Fault	5.5
716	Canby-Molalla Fault	8
875	Oatfield Fault	9.5
877	Portland Hills Fault	11

<sup>8</sup> Youngs et al. (1988). *Near field ground motions on rock for large subduction earthquakes, proceedings, earthquake engineering and soil dynamics II: Recent advances in ground motion evaluations*. GSP 20, New York: ASCE. pp 445-462.

<sup>9</sup> Ludwin, R.S., Weaver, C.S., and Crosson, R.S. (1991). Seismicity of Washington and Oregon, in Slemmons, D.B., Engdahl, E.R., Blackwell, E., and Schwartz, D., eds., *Neotectonics of North America, Decade of North American Geology, v. GSMV-1, Geological Society of America*. pp. 77-98.

<sup>10</sup> Rogers, A. M., Walsh, T. J., Kockelman, W. J., and Priest, G. R. (1996). Earthquake hazards in the Pacific Northwest: An overview, in Rogers, A. M., Walsh, T. J., Kockelman, W. J., and Priest, G. R., eds. *Assessing earthquake hazards and reducing risk in the Pacific Northwest: U.S. Geological Survey Professional Paper 1560*. pp. 1-67.

<sup>11</sup> Yelin, T. S. and Patton, H. J. (1991). Seismotectonics of the Portland, Oregon, region. *Bulletin of the Seismological Society of America; February 1991; v. 81; no. 1*. pp. 109-130.

All of the northwest striking crustal faults in the site vicinity offset Miocene and older bedrock units with evidence of activity in the Quaternary (<1.6 Million Years). According to the U.S. Geological Survey Fault and Fold Database<sup>12</sup> some studies show evidence that the Portland Hills and Canby Mollalla Faults offset Missoula Flood sediments and thus are active in Latest Quaternary (<15 thousand years).

Both of these faults may be capable of generating  $M_w=6.5$  or larger earthquakes although no such events have occurred in the historical record. For the purpose of this analysis, we have used a  $M_w=6.5$  on the Portland Hills Fault and the Canby-Molalla Fault. The Bolton Fault is closest to the site and a code-required magnitude of  $M_w=6.0$  is used for this fault. The peak bedrock acceleration using Boore et. al. (1993)<sup>13</sup> attenuation relationship is calculated as 0.21 and 0.27 g for these scenarios.

### C3.5 Earthquake Shaking Estimates

We have reviewed estimates of earthquake shaking in the area of the site from potential fault sources for an earthquake source from nearby Portland Hills Fault and the Cascadia Subduction Zone. PGAs are estimated by the US Geological Survey – National Mapping Program and Joyner and Boore (1993). These estimates are provided in the table below:

**Table C-3: Probabilistic Estimates of Earthquake Shaking**

<b>USGS – National Mapping Program</b>		
	10% probable exceedence in 50 years	2% probable exceedence in 50 years
PGA	500 year event	2500 - year event
	0.18	0.38
<b>Joyner and Boore (1993) Crustal Fault at 10km Depth</b>		
M=6.0	0.21	
M=6.5	0.27	

### C3.6 Input Earthquakes for Site Response Analysis

The design earthquake models used in our analyses, and peak horizontal ground acceleration (PHGA) on rock at the recording stations prior to modification in our model are provided below.

<sup>12</sup> *Quaternary fault and fold database of the United States: U.S. Geological Survey.* Retrieved on December 18, 2007, from <http://earthquakes.usgs.gov/regional/qfaults>.

<sup>13</sup> Boore et. al. 1993, Estimation of Response Spectra and Peak Accelerations from Western North American Earthquakes: An interim report, Open File Report 93-509, USGS Reston, Virginia, 72 pp.

Table C-4: Input Earthquake Parameters

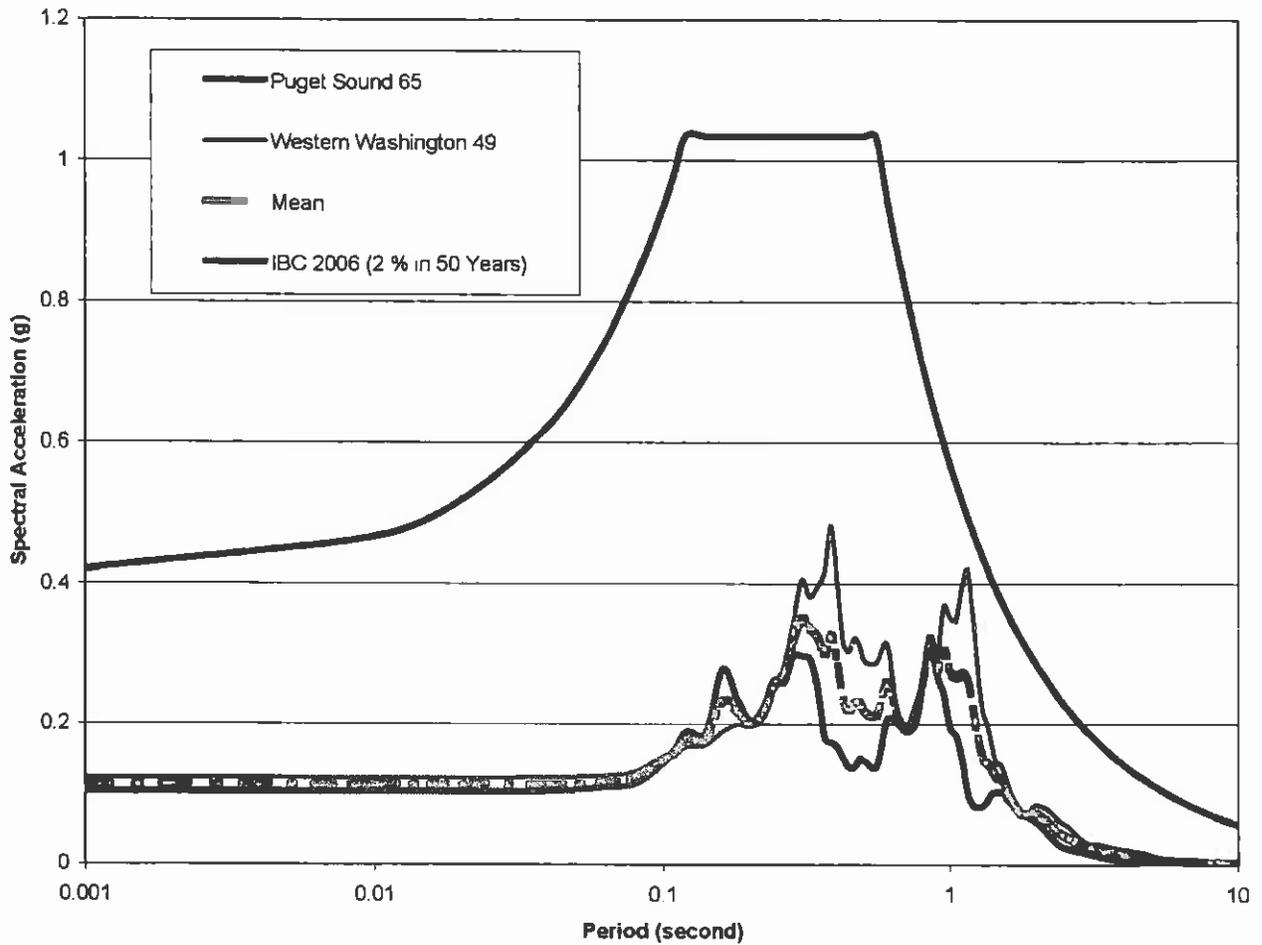
	PHGA Measured (g)	PHGA at Site Using Attenuation Relationships (g)	PHGA Used (g) (this analysis)
Crustal Earthquake Models			
El Centro	0.32	0.27	0.30
Taft	0.18	0.27	0.30
Topanga/Northridge	0.33	0.27	0.30
Intraslab Earthquake Models			
Puget Sound 1965	0.19	0.09	0.09
Western Washington 49	0.16	0.09	0.09
CSZ Interface Models			
Michoacan	0.16	0.14	0.14
Petrolia/Cape Mendocino	0.42	0.14	0.14

#### C4.0 SEISMIC HAZARDS

Based on our subsurface exploration, literature review, analysis and experience, a summary of the seismic hazards at the site are as follows:

- *Earthquake induced landslides* – The proposed building area has relatively flat slopes. Site soils are not susceptible to earthquake slope instability at these inclinations. Based on mapping conducted by DOGAMI (IMS-1), there is a low risk of earthquake-induced landslides at the site.
- *Liquefaction/Settlement* – The shallow site soils consist of sandy silt and fine to medium sand. Groundwater was not encountered during our exploration. Local well logs indicate groundwater levels to be around 100 feet bgs in the vicinity of the site. Based on analysis using 1998 NCEER<sup>14</sup> suggested methods, the liquefaction potential of the on site soils is low. This is primarily due to the relatively deep groundwater.
- *Fault surface rupture* – The nearest mapped fault (See Figure C-2) is the Bolton Fault. It is located approximately 5.5 km northeast of the site and consists of a northwest-trending fault (Madin, 1990). The fault is not listed as active or potentially active. The fault is primarily identified by aeromagnetic data anomalies (Blakely, et. al., 2000) and no recent seismic activity has been observed on this fault. Thus fault rupture at the project site is not a seismic hazard.
- *Tsunami inundation/seiche/subsidence* – The site is inland and elevated away from tsunami inundation and subsidence zones and away from large bodies of water that may develop seiches. Accordingly, tsunami or seiche events do not represent a seismic hazard to the site.
- *Amplification* – Analyses of average site response spectra with PROSHAKE (refer to Figures C-3 through C-5 for response spectra plots) with 5 percent damping and multiple crustal, intraslab and CSZ interface models were completed. The soil profile and input earthquake parameters discussed earlier were used. These analyses indicate that the site specific mean spectra's are generally bounded by the IBC Spectra for Soil profile D for a 2 percent in 50 year event. We therefore recommend that the 2006 IBC spectra be used for project design for the proposed building.

<sup>14</sup> NCEER (1998). Liquefaction resistance of soils: Summary report from the 1996 NCEER and 1998 NCEER/NSF workshops on evaluation of liquefaction resistance of soils. *Journal of Geotechnical and Geoenvironmental Engineering*, October 2001



NOT TO SCALE

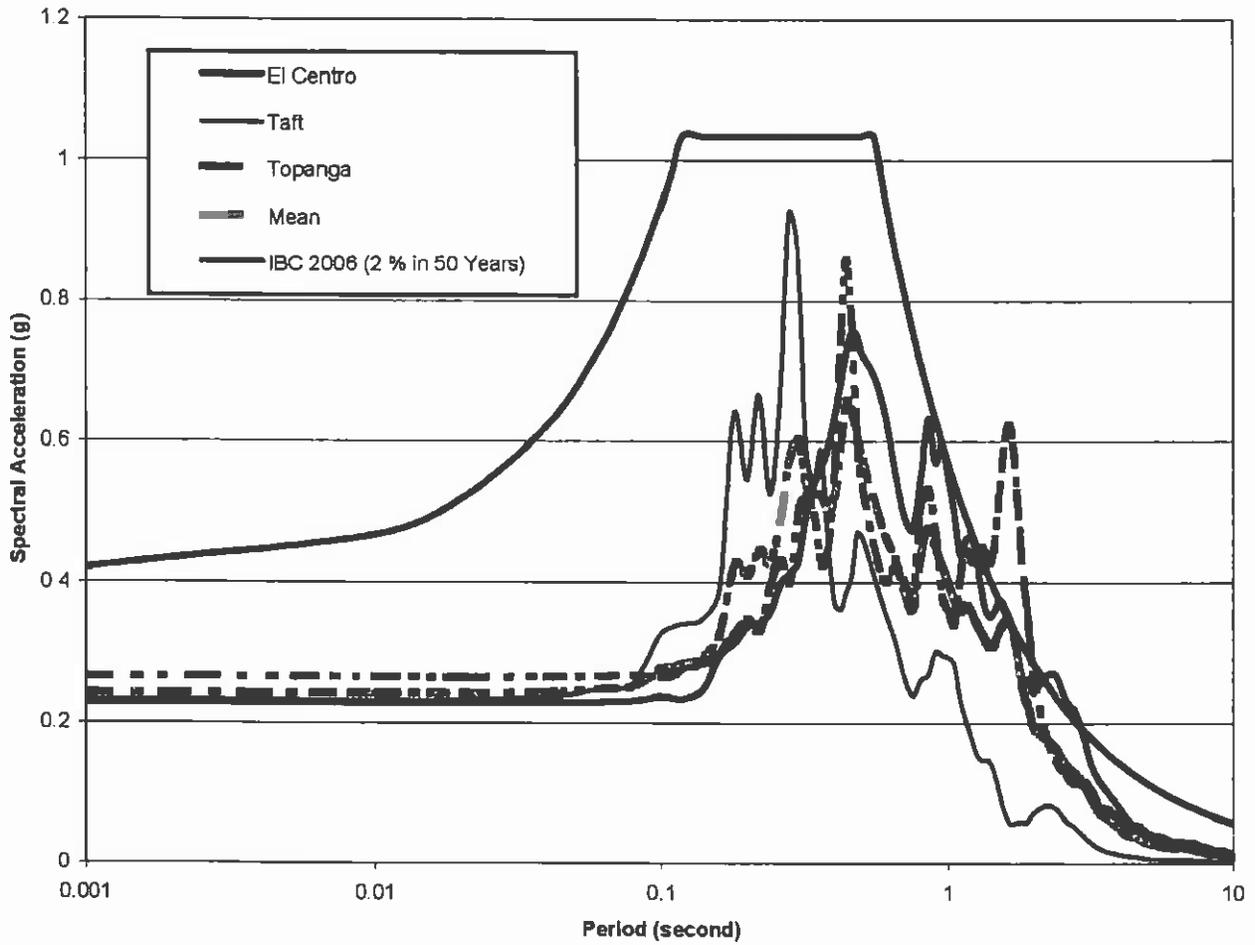
PREPARED FOR: TUALATIN VALLEY FIRE AND RESCUE



PROJECT #  
72628.000  
DATE  
DEC. 2007

SUBDUCTION ZONE - INTRASLAB MODEL RESPONSE SPECTRA  
TVFR #59  
8TH AVENUE AND 12TH STREET  
WEST LINN, OREGON

FIGURE  
**C4**



NOT TO SCALE

PREPARED FOR: TUALATIN VALLEY FIRE AND RESCUE

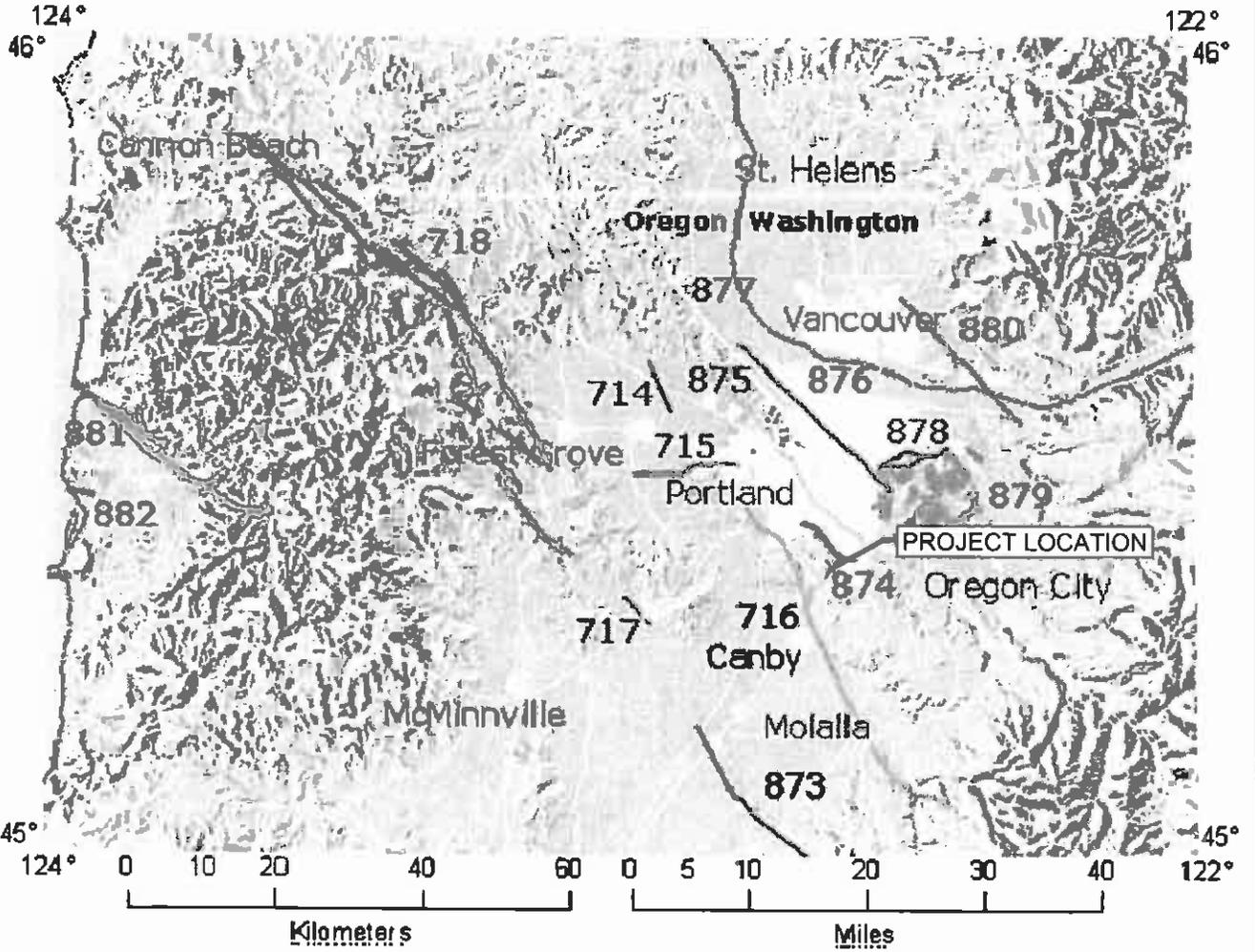


PROJECT #  
72628.000  
DATE  
DEC. 2007

**CRUSTAL MODEL RESPONSE SPECTRA**  
TVFR #59  
8TH AVENUE AND 12TH STREET  
WEST LINN, OREGON

FIGURE  
**C3**

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MAP SOURCE: U.S. GEOLOGICAL SURVEY 2007, QUATERNARY FAULT AND FOLD DATABASE FOR THE UNITED STATES, ACCESSED, DECEMBER 18, FROM USGS WEB SITE: <http://earthquake.usgs.gov/regional/q/fauls>

**LEGEND**

- 874 BOLTON FAULT
- 716 CANBY-MOLALLA FAULT
- 875 OATFIELD FAULT
- 877 PORTLAND HILLS FAULT



NOT TO SCALE

PREPARED FOR: TUALATIN VALLEY FIRE AND RESCUE

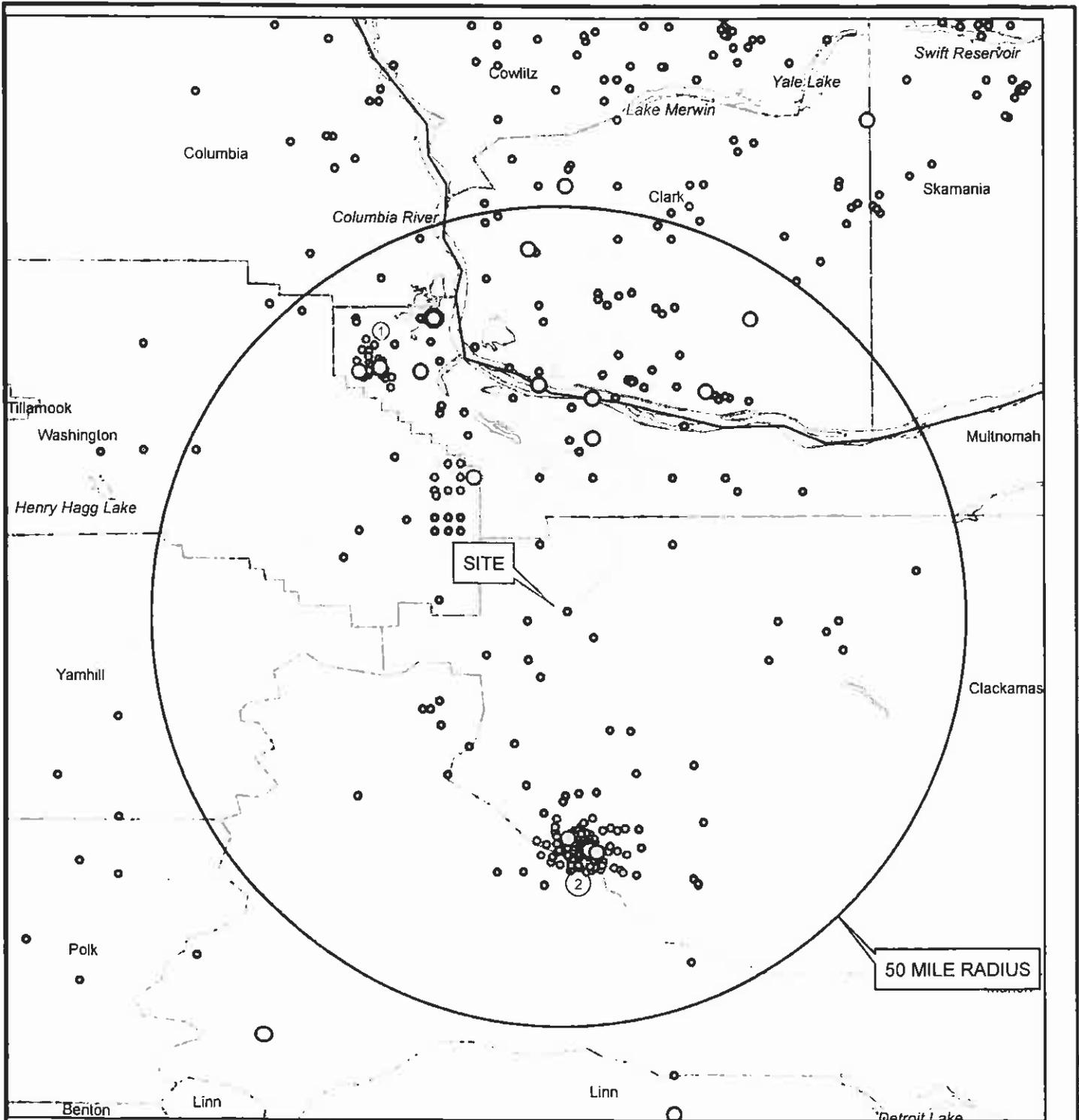


PROJECT #  
72628.000  
DATE  
DEC. 2007

**FAULT AND FOLD MAP**  
TVFR #59  
8TH AVENUE AND 12TH STREET  
WEST LINN, OREGON

FIGURE  
**C2**

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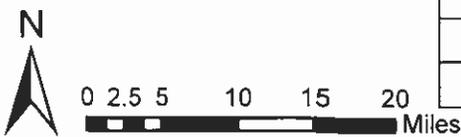


HISTORICAL EARTHQUAKE INFORMATION PROVIDED BY JOHNSON ET AL., 1994

**Legend**

- SEISMICITY STATE LINE
- MAGNITUDE COUNTIES
- Water bodies (Lakes Bays, )
- HIGHWAYS
- 6.1+
- 5.1 TO 6
- 3.1 TO 5
- 0 TO 3

	DATE	MAGNITUDE	DISTANCE (MILES)
1	1962	5.3	26.33
2	1993	5.6	24.10

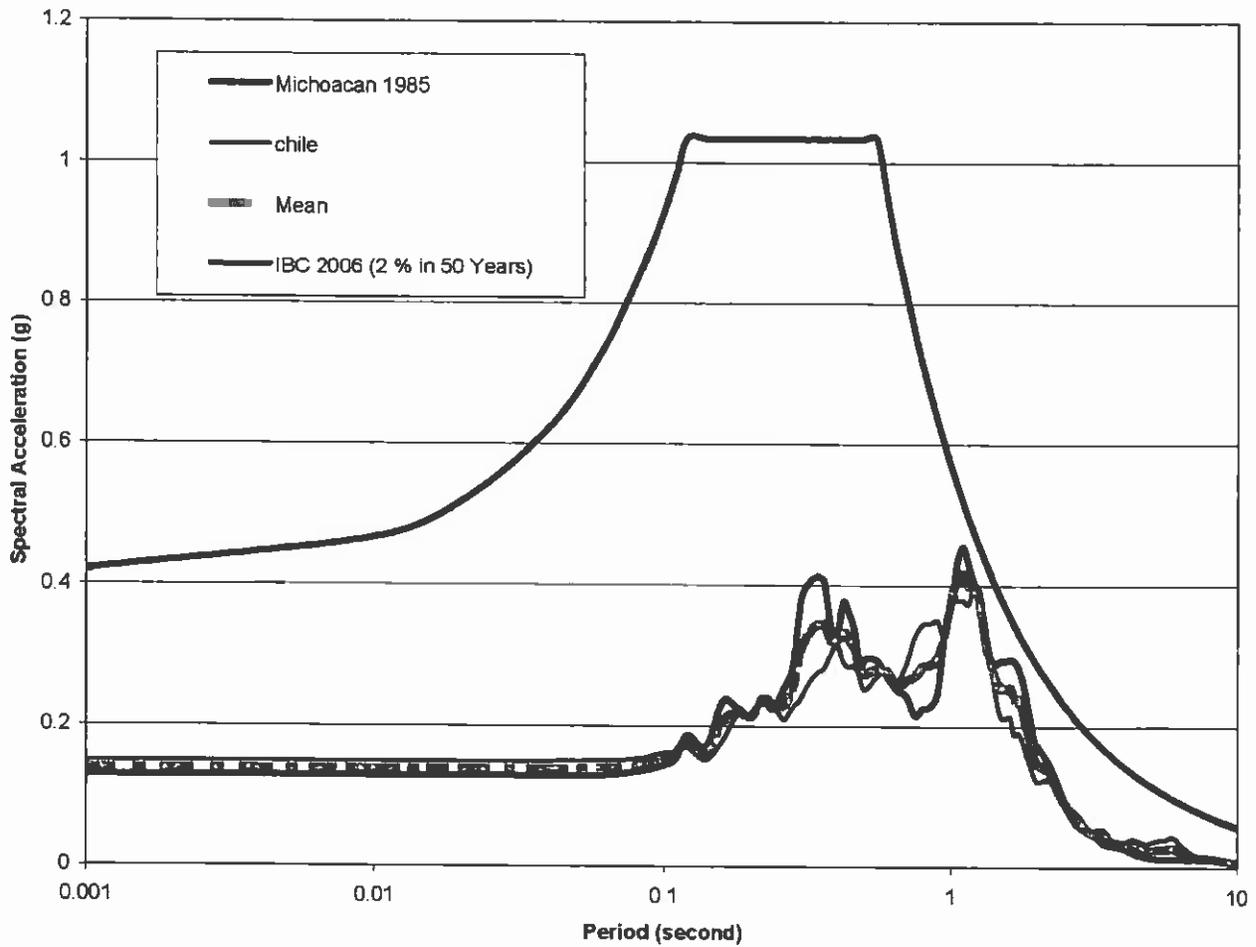


Project #  
72628.000

Date  
DEC. 2007

HISTORICAL SEISMICITY  
TFVR #59  
8TH AVENUE AND 12TH STREET  
WEST LINN, OREGON

FIGURE  
**C1**



NOT TO SCALE

PREPARED FOR: TUALATIN VALLEY FIRE AND RESCUE



PROJECT #  
72628.000  
DATE  
DEC. 2007

SUBDUCTION ZONE - INTERFACE MODEL RESPONSE SPECTRA  
TVFR #59  
8TH AVENUE AND 12TH STREET  
WEST LINN, OREGON

FIGURE  
**C5**

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**APPENDIX D**

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General Construction Information

## **D1.0 STRUCTURAL FILL**

Fills should be placed over subgrade that has been prepared in conformance with the "Site Preparation" and "Wet Weather/Wet Soil Considerations" sections of this report. A wide range of material may be used as structural fill; however, all material used should be free of organic matter or other unsuitable materials and should meet the specifications provided in the Oregon Standard Specifications for Construction, Oregon Department of Transportation, 2006, (OSSC) depending on the application. A brief characterization of some of the acceptable materials and our recommendations for their use as structural fill is provided below.

### **D1.1 Native Soils**

The native sand and silt deposits at the site are suitable for use as structural fill, provided they meet the requirements set forth in OSSC 00330.14 and 00330.15 – Borrow Material. In order to adequately compact the soil, moisture conditioning (drying) of the soil to within a few percentage points of the optimum moisture content will be required. This is significant drying and, depending on construction weather, may prove problematic. Drying may prove infeasible due to rainy weather. Soil amendments (e.g., portland cement) or the use of imported granular material may be necessary if the native soils cannot be properly moisture conditioned. When used as structural fill, native soils should be placed in lifts with a maximum uncompacted thickness of 6 to 8 inches and compacted to not less than 92 percent of the maximum dry density as determined by ASTM D1557.

### **D1.2 Imported Granular Material**

Imported granular material used during periods of wet weather or for haul roads, building pad subgrades, staging areas, etc. should be pit or quarry run rock, crushed rock, or crushed gravel and sand and should meet the specifications provided in OSSC 00330.12 – Borrow Material, and OSSC 00330.13 – Selected General Backfill. In addition, the imported granular material should also be fairly well graded between coarse and fine material.

Imported granular material should be placed in lifts with a maximum uncompacted thickness of 8 to 12 inches and be compacted to not less than 95 percent of the maximum dry density as determined by ASTM D1557. During the wet season or when wet subgrade conditions exist, the initial lift should be approximately 18 inches in uncompacted thickness and should be compacted by rolling with a smooth-drum roller without using vibratory action.

Where imported granular material is placed over soft soil subgrades, we recommend a geotextile be placed as a barrier between the subgrade and imported granular material. Depending on site conditions, the geotextile should meet OSSC 2320.10 for soil separation or stabilization. The geotextile should be installed in conformance with OSSC 0350.40 – Geosynthetic Construction.

### **D1.3 Trench Backfill**

Trench backfill placed beneath, adjacent to, and for at least 2 feet above utility lines (i.e., the pipe zone) should consist of well-graded granular material with a maximum particle size of 1½ inches and less than 10 percent by weight passing the U.S. Standard No. 200 Sieve, and should meet the standards prescribed by OSSC 405.12 – Pipe Zone Bedding. The pipe zone backfill should be compacted to at least 90 percent of the maximum dry density, as determined by ASTM D1557, or as required by the pipe manufacturer or local building department.

Within roadway alignments or beneath building pads, the remainder of the trench backfill should consist of well-graded granular material with a maximum particle size of 2½ inches, less than 10 percent by weight passing the U.S. Standard No. 200 Sieve, and should meet standards prescribed by OSSC 405.14 – Trench Backfill, Class A or B. This material should be compacted to at least 92 percent of the maximum dry density, as determined by ASTM D1557, or as required by the pipe manufacturer or local building department. The upper 2 feet of the trench backfill should be compacted to at least 95 percent of the maximum dry density, as determined by ASTM D1557.

Outside of structural improvement areas (e.g. roadway alignments or building pads), trench backfill placed above the pipe zone may consist of general fill materials that are free of organics and materials over 6 inches in diameter, and meet OSSC 00330.12 – Borrow Material and OSSC 405.14 – Trench Backfill, Class C, D, or E. This general trench backfill should be compacted to at least 90 percent of the maximum dry density, as determined by ASTM D1557, or as required by the pipe manufacturer or local building department.

#### **D1.4 Stabilization Material**

Stabilization rock should consist of imported granular material that is well-graded, angular, crushed rock consisting of 4- or 6-inch-minus material with less than 2 percent passing the U.S. Standard No. 4 Sieve. The material should be free of organic matter and other deleterious material.

#### **D1.5 Soil Amendment with Cement**

As an alternative to the use of imported granular material for wet-weather structural fill, an experienced contractor may be able to amend the on-site soils with Portland cement or with limekiln dust and cement to obtain suitable support properties. Successful use of amendments depends on the use of correct mixing techniques, soil moisture content, and amendment quantities. Specific recommendations, based upon exposed site conditions, for soil amending can be provided if necessary.

Portland cement-amended soils are hard and have low permeability. Therefore, these soils do not drain well, nor are they suitable for planting. Future planted areas should not be cement amended, if practical, or accommodations should be planned for drainage and planting.

#### **D1.6 Retaining Wall Backfill**

Backfill material placed behind retaining walls and extending a horizontal distance of ½H, where H is the height of the retaining wall, should consist of select granular material meeting OSSC 510.12. We recommend the select granular wall backfill be separated from general fill, native soil, and/or topsoil using a geotextile fabric that meets the requirements provided in OSSC 2320.10. The geotextile should be installed in conformance with OSSC 00350.40 – Geosynthetic Construction.

The wall backfill should be compacted to a minimum of 92 percent of the maximum dry density, as determined by ASTM D1557. However, backfill located within a horizontal distance of 3 feet from the retaining walls should only be compacted to approximately 90 percent of the maximum dry density, as determined by ASTM D1557. Backfill placed within 3 feet of the wall should be compacted in lifts less than 6 inches thick using hand-operated tamping equipment (such as jumping jack or vibratory plate compactors). If flat work

(sidewalks or pavements) will be placed atop the wall backfill, we recommend that the upper 2 feet of material be compacted to 95 percent of the maximum dry density, as determined by ASTM D1557.

#### **D1.7 Trench and Retaining Wall Drain Backfill**

Backfill in a 2-foot zone against the back of retaining walls and for subsurface trench drains should consist of drain rock meeting the specifications provided in OSSC 00430.11 – Granular Drain Backfill Material. The drain rock should be wrapped in a geotextile fabric that meets the specifications provided in OSSC 2320.10 for soil separation and/or stabilization. The geotextile should be installed in conformance with OSSC 00350.40 – Geosynthetic Construction.

#### **D1.8 Floor Slab Base and Footing Base Aggregate**

aggregate for floor slabs should be clean, crushed rock or crushed gravel. The base aggregate should contain no deleterious materials, meet specifications provided in OSSC 02630.10 – Dense Graded Aggregate 1"-0", and have less than 5 percent by weight passing the U.S. Standard No. 200 Sieve. The imported granular material should be placed in one lift and compacted to at least 95 percent of the maximum dry density, as determined by ASTM D1557.

#### **D1.9 Pavement Base Aggregate**

Imported granular material used as base aggregate (base rock) along roadway alignments should be clean, crushed rock or crushed gravel and sand that are fairly well graded between coarse and fine. The base aggregate should meet the gradation defined in OSSC 02630.10 – Dense Graded Aggregate 1"-0", depending upon application, with the exception that the aggregate has less than 5 percent passing a U.S. Standard No. 200 Sieve. The base aggregate should be compacted to not less than 95 percent of the maximum dry density as determined by ASTM D1557.

#### **D1.10 Recycled Concrete, Asphalt and Base Rock**

Asphalt pavement, concrete, and base rock from the existing site improvements can be used in general structural fills, provided no particles greater than 6 inches are present. It also must be thoroughly mixed with soil, sand, or gravel such that there are no voids between the fragments. The recycled materials should meet the requirements set forth in OSSC 00744.03 – Reclaimed Asphalt Pavement (RAP) Material.

### **D2.0 PERMANENT SLOPES**

Permanent cut and fill slopes up to 15 feet tall may be built to a gradient as steep as 2H:1V. However, cut slopes over 15 feet tall should be limited to a gradient of 2.5H:1V or should be partially retained by a retaining wall. Slopes that will be maintained by mowing should not be constructed steeper than 3H:1V. Newly constructed fill slopes should be over-built by at least 12 inches and then trimmed back to the required slope to maintain a firm face.

Access roads and pavements should be located at least 5 feet from the top of cut and fill slopes. The setback should be increased to 10 feet for buildings, unless special foundation considerations are implemented. Slopes should be planted with appropriate vegetation to provide protection against erosion as soon as possible after grading. Surface water runoff should be collected and directed away from slopes to prevent water from running down the face of the slope.

### **D3.0 DRAINAGE CONSIDERATIONS**

#### **D3.1 Surface and Subsurface Drainage Requirements**

The Contractor shall be made responsible for temporary drainage of surface water and groundwater as necessary to prevent standing water and/or erosion at the working surface. We recommend removing only the foliage necessary for construction to help minimize erosion.

The ground surface around the structures should be sloped to create a minimum gradient of 2 percent away from the building foundations for a distance of at least 5 feet. Surface water should be directed away from all buildings into drainage swales or into a storm drainage system. "Trapped" planting areas should not be created next to any building without providing means for drainage. The roof downspouts should discharge onto splash blocks or paving that direct water away from the buildings, or into smooth-walled underground drain lines that carry the water to appropriate discharge locations at least 10 feet away from any buildings.

#### **D3.2 Foundation Drains**

We recommend foundation drains around the perimeter foundations of all structures, including building and tanks. The foundation drains should be at least 12 inches below the base of the slab. The foundation drain should consist of perforated collector pipes embedded in a minimum 2-foot-wide zone of angular drain rock. The drain rock should meet specifications provided in the "Structural Fill" section of this report. The drain rock should be wrapped in a geotextile fabric. The collector pipes should discharge at an appropriate location away from the base of the footings. Unless measures are taken to prevent backflow into the wall's drainage system, the discharge pipe should not be tied directly into the stormwater drain system.

---

**APPENDIX E**

Supporting Information

## **TABLE E-1: OREGON STATE STANDARDS FOR CONSTRUCTION (OSSC)**

The contractor should refer to the following OSSCs with regard to backfill materials and geosynthetics. Local or municipal standards may also apply. The contractor should check with the jurisdictional permitting office to determine applicability of local or municipal standards.

- OSSC 00330.12** – Borrow Material
- OSSC 00330.14** – Select Granular Backfill
- OSSC 00350.40** – Geosynthetic Construction – General Requirements
- OSSC 00405.12** – Pipe Zone Bedding
- OSSC 00405.14** – Trench Backfill
- OSSC 00430.11** – Granular Drain Backfill Material
- OSSC 00510.12** – Granular Wall Backfill
- OSSC 00744.03** – Reclaimed Asphalt Material
- OSSC 00744.11** – Asphalt Cemented Additives
- OSSC 02320.10** – Geosynthetics – Acceptance
- OSSC 02630.10** – Dense Graded Aggregate

---

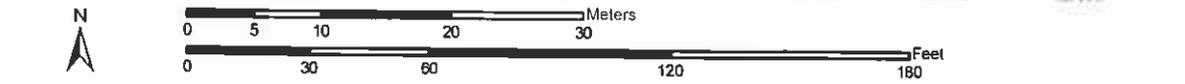
**APPENDIX D**  
Supporting Maps

# 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						
88A: Willamette, wet	C	---	January	2.5-3.5	>6.0	---	---	---	---	None	---	None
			February	2.5-3.5	>6.0	---	---	---	---	None	---	None
			March	2.5-3.5	>6.0	---	---	---	---	None	---	None
			December	2.5-3.5	>6.0	---	---	---	---	None	---	None

Soil Map—Clackamas County Area, Oregon  
(TVF&R Station 59)



## MAP LEGEND

- Area of Interest (AOI)
  - Area of Interest (AOI)
  - Soils
- 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
- Soil Map Units
  - Very Stony Spot
  - Wet Spot
  - Other
- 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; 8/3/2000

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

## Map Unit Legend

Clackamas County Area, Oregon (OR610)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
88A	Willamette silt loam, wet, 0 to 3 percent slopes	0.8	100.0%
Totals for Area of Interest (AOI)		0.8	100.0%

## **APPENDIX E**

---

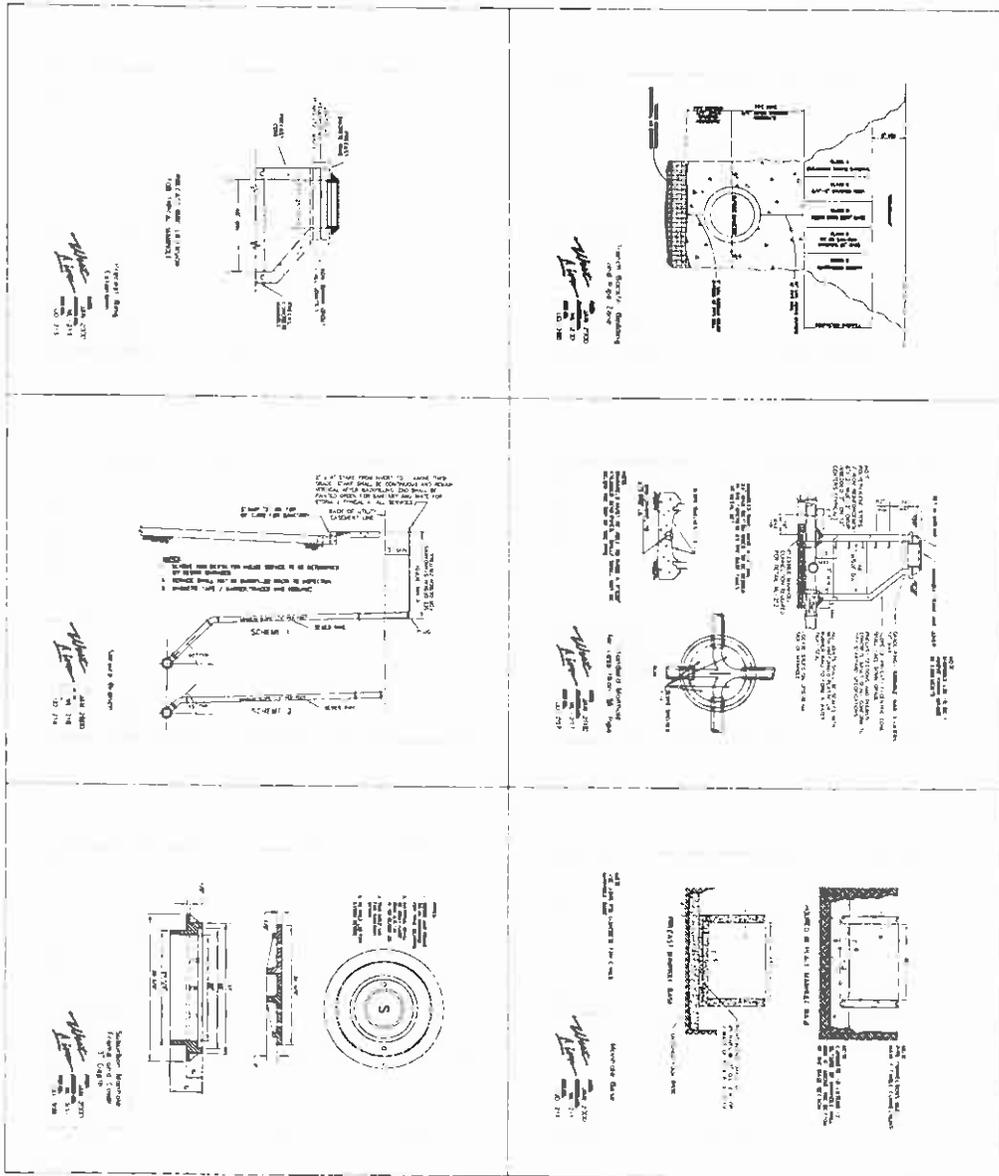
Construction Drawings and Details



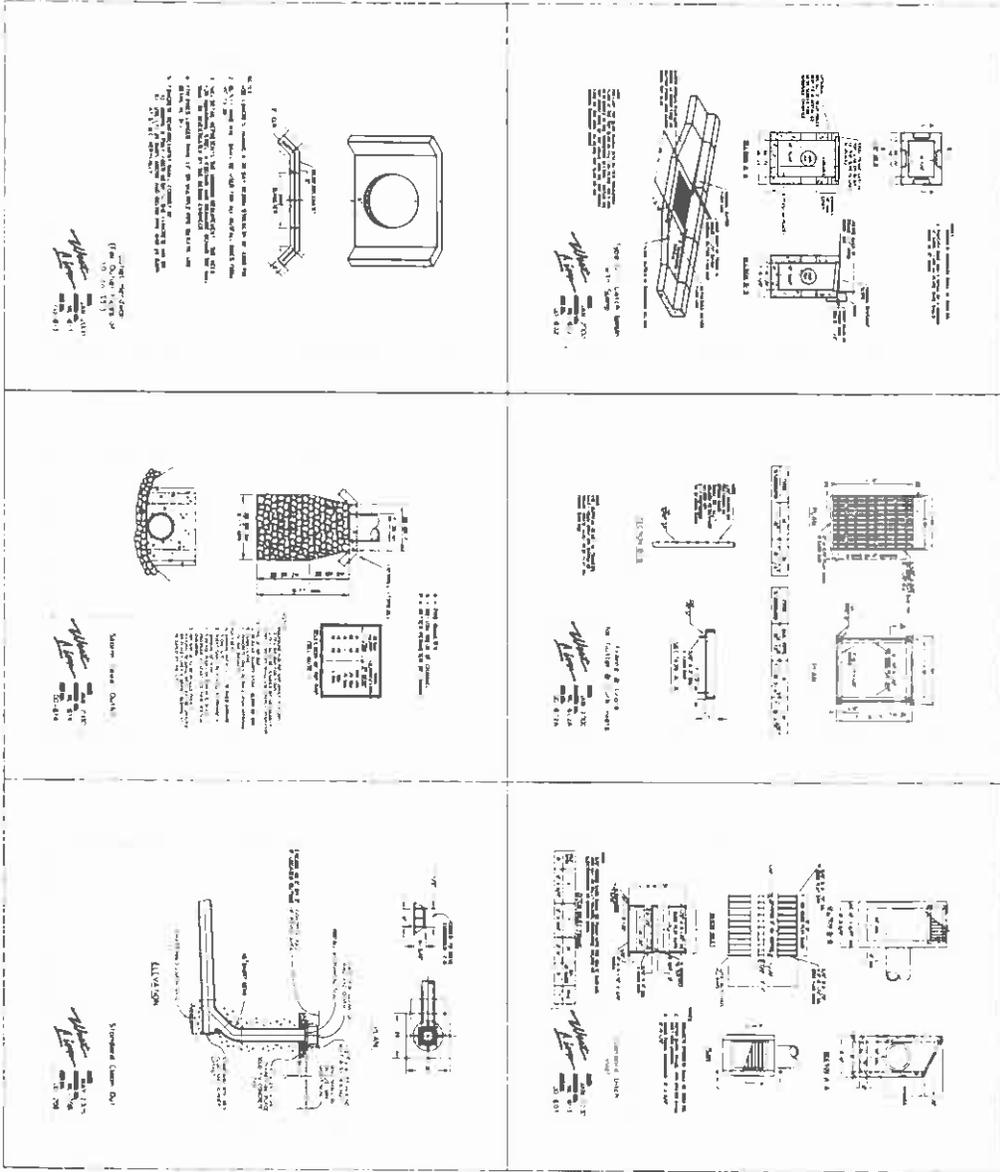








<b>C2.4</b>	<b>STATION 55</b> <b>1360 WILLAMETTE FALLS DRIVE</b> <b>WEST LINN, OR</b>		
	ARCHITECT NAME: [Redacted] ADDRESS: [Redacted] CITY: [Redacted]	DATE: [Redacted]	



<b>C2.5</b>	<p>STATION 55 1850 WILLAMETTE FALLS DRIVE WEST LINN, OR</p>		
<p>DATE: 12/31/2023          DRAWN BY: [Name]          CHECKED BY: [Name]          SCALE: 1/8" = 1'-0"          SHEET NO. C2.5 OF 10</p>			

**APPENDIX F**

---

Operations and Maintenance Manual

## 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.

**Vegetated, Grassy, and Street Swales  
Operations & Maintenance Plan**

Swales are planted or grassed open channels that trap pollutants by filtering and slowing flows, allowing particles to settle out. The swale should drain within 48 hours of a storm event. All facility components, vegetation, and source controls shall be inspected for proper operations and structural stability, 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 facility owner must keep a log, recording all inspection dates, observations, and maintenance activities. The following items shall be inspected and maintained as stated:

**Swale Inlet** (such as curb cuts or pipes) shall maintain a calm flow of water entering the swale.

- Source of erosion shall be identified and controlled when native soil is exposed or erosion channels are forming.
- 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" thick or so thick as to damage or kill vegetation.
- Inlet shall be cleared when conveyance capacity is plugged. Sources of sediment and debris shall be identified and corrected.
- Rock splash pads shall be replenished to prevent erosion.

**Side Slopes** shall be maintained to prevent erosion that introduces sediment into the swale.

- Slopes shall be stabilized and planted using appropriate erosion control measures when native soil is exposed or erosion channels are forming.

**Swale Media** shall allow stormwater to percolate uniformly through the landscape swale. If the swale does not drain within 48 hours, it shall be tilled and replanted according to design specifications.

- Annual or semi-annual tilling shall be implemented if compaction or clogging continues.
- Debris in quantities that inhibit operation shall be removed routinely (e.g., no less than quarterly), or upon discovery.

**Swale Outlet** shall maintain sheet flow of water exiting swale unless a collection drain is used. Source of erosion damage shall be identified and controlled when native soil is exposed or erosion channels are forming.

- Outlets such as drains and overland flow paths shall be cleared when 50% of the conveyance capacity is plugged.
- Sources of sediment and debris shall be identified and corrected.

**Vegetation** shall be healthy and dense enough to provide filtering while protecting underlying soils from erosion. Mulch shall be replenished as needed to ensure survival of vegetation.

- Vegetation, large shrubs or trees that interfere with landscape swale operation shall be pruned.
- Fallen leaves and debris from deciduous plant foliage shall be removed.
- Grassy swales shall be mowed to keep grass 4" to 9" in height.
- Nuisance and prohibited vegetation from the Portland Plant List (such as blackberries and English Ivy) shall be removed when discovered. Invasive vegetation contributing up to 25% of vegetation of all species shall be removed and replaced.
- Dead vegetation and woody material shall be removed to maintain less than 10% of area coverage or when swale function is impaired. Vegetation shall be replaced within 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 swales 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 swale** 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 swale 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 swale. 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 swale shall be filled.

***If used at this site, the following will be applicable:***

**Check Dams** shall control and distribute flow.

- Causes for altered water flow shall be identified, and obstructions cleared upon discovery.
- Causes for channelization shall be identified and repaired.

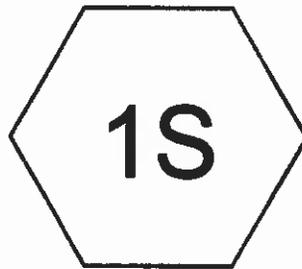
## **APPENDIX G**

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Pre- and Post-Development Runoff Calculations



Pre-Development



Post-Development



Drainage Diagram for TVF&R Station 59\_No Detention Required  
Prepared by PBS Engineering + Environmental, Printed 10/2/2008  
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**TVF&R Station 59\_No Detention Required**

Prepared by PBS Engineering + Environmental  
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Page 2

**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
0.142	74	Landscape (1S)
0.086	79	Landscape (2S)
0.188	89	Gravel (2S)
0.161	98	Building (1S)
0.064	98	Buildings (2S)
0.140	98	Parking lot/driveway (2S)
0.107	98	Parking lot/driveways (1S)
0.064	98	Walkways (1S)
<b>0.951</b>		<b>TOTAL AREA</b>

**TVF&R Station 59\_No Detention Required**

Type IA 24-hr 2-year Rainfall=2.40"

Prepared by PBS Engineering + Environmental

Printed 10/2/2008

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Page 3

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: Post-Development**

Runoff Area=20,645 sf 69.96% Impervious Runoff Depth>1.37"  
Tc=5.0 min CN=74/98 Runoff=0.19 cfs 0.054 af

**Subcatchment 2S: Pre-Development**

Runoff Area=20,798 sf 42.63% Impervious Runoff Depth>1.32"  
Tc=5.0 min CN=86/98 Runoff=0.18 cfs 0.053 af

**Total Runoff Area = 0.951 ac Runoff Volume = 0.106 af Average Runoff Depth = 1.34"**  
**43.75% Pervious = 0.416 ac 56.25% Impervious = 0.535 ac**

**TVF&R Station 59\_No Detention Required**

Prepared by PBS Engineering + Environmental

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Type IA 24-hr 2-year Rainfall=2.40"

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Page 4

**Summary for Subcatchment 1S: Post-Development**

[49] Hint:  $T_c < 2dt$  may require smaller  $dt$

Runoff = 0.19 cfs @ 7.92 hrs, Volume= 0.054 af, Depth> 1.37"

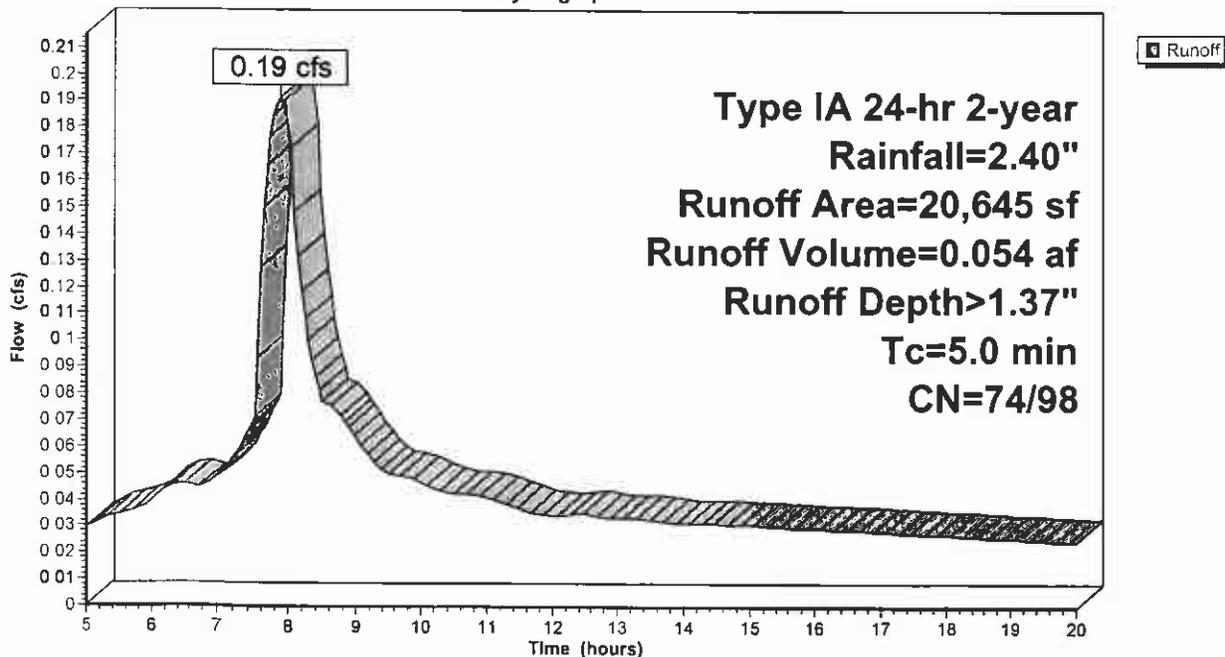
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs,  $dt=0.05$  hrs  
Type IA 24-hr 2-year Rainfall=2.40"

	Area (sf)	CN	Description
*	7,014	98	Building
*	4,655	98	Parking lot/driveways
*	2,774	98	Walkways
*	6,202	74	Landscape
	20,645	91	Weighted Average
	6,202	74	Pervious Area
	14,443	98	Impervious Area

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

**Subcatchment 1S: Post-Development**

Hydrograph



**TVF&R Station 59\_No Detention Required**

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Type IA 24-hr 2-year Rainfall=2.40"

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**Summary for Subcatchment 2S: Pre-Development**

[49] Hint:  $T_c < 2dt$  may require smaller  $dt$

Runoff = 0.18 cfs @ 7.94 hrs, Volume= 0.053 af, Depth> 1.32"

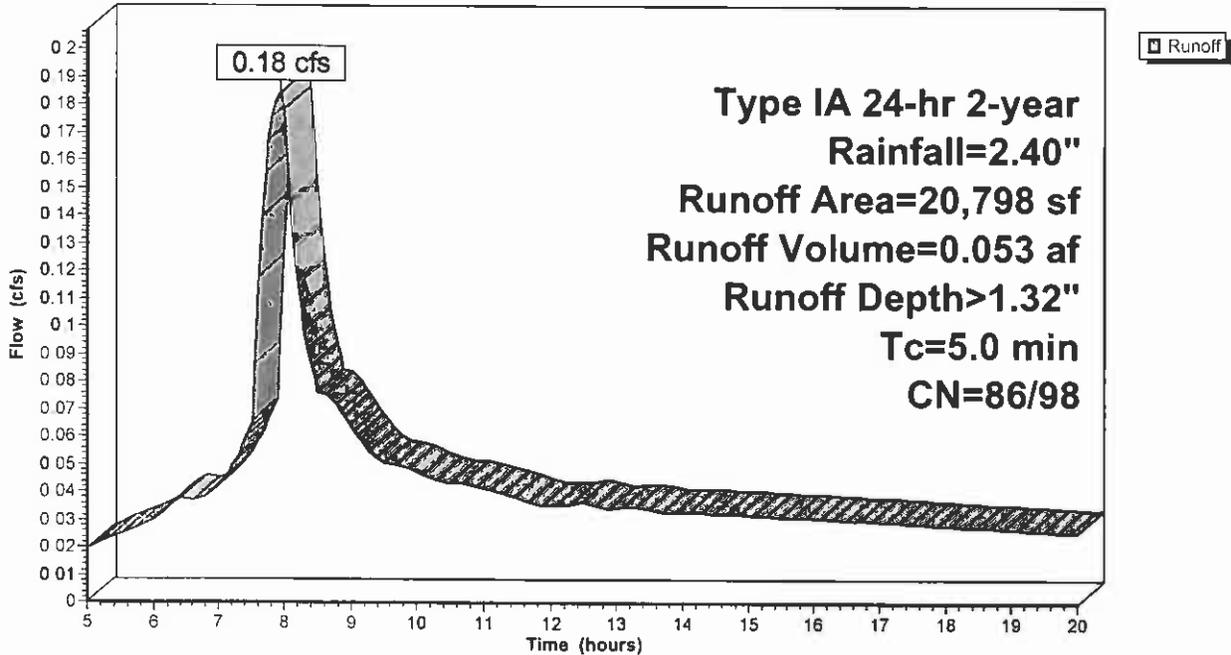
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs,  $dt= 0.05$  hrs  
 Type IA 24-hr 2-year Rainfall=2.40"

	Area (sf)	CN	Description
*	2,778	98	Buildings
*	6,089	98	Parking lot/driveway
*	8,197	89	Gravel
*	3,734	79	Landscape
	20,798	91	Weighted Average
	11,931	86	Pervious Area
	8,867	98	Impervious Area

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

**Subcatchment 2S: Pre-Development**

Hydrograph



**TVF&R Station 59\_No Detention Required**

Type IA 24-hr 5-year Rainfall=2.90"

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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: Post-Development**

Runoff Area=20,645 sf 69.96% Impervious Runoff Depth>1.71"  
Tc=5.0 min CN=74/98 Runoff=0.24 cfs 0.068 af

**Subcatchment2S: Pre-Development**

Runoff Area=20,798 sf 42.63% Impervious Runoff Depth>1.69"  
Tc=5.0 min CN=86/98 Runoff=0.24 cfs 0.067 af

**Total Runoff Area = 0.951 ac Runoff Volume = 0.135 af Average Runoff Depth = 1.70"**  
**43.75% Pervious = 0.416 ac 56.25% Impervious = 0.535 ac**

**TVF&R Station 59\_No Detention Required**

Type IA 24-hr 5-year Rainfall=2.90"

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**Summary for Subcatchment 1S: Post-Development**

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.24 cfs @ 7.92 hrs, Volume= 0.068 af, Depth> 1.71"

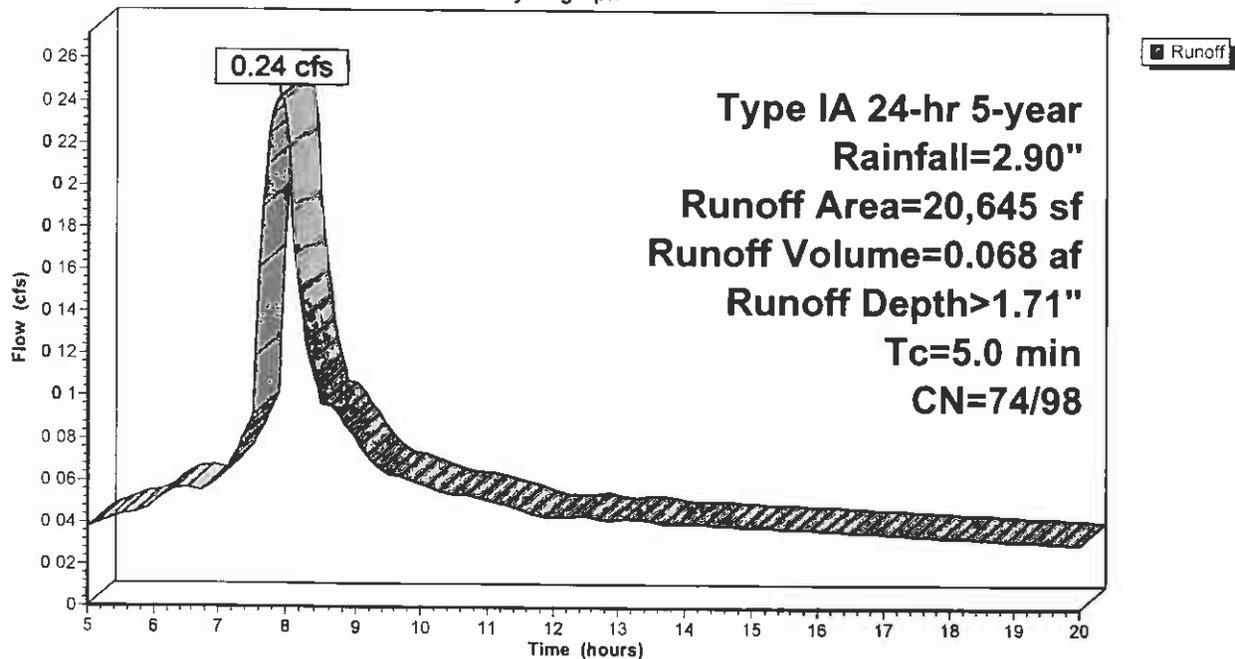
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 5-year Rainfall=2.90"

	Area (sf)	CN	Description
*	7,014	98	Building
*	4,655	98	Parking lot/driveways
*	2,774	98	Walkways
*	6,202	74	Landscape
	20,645	91	Weighted Average
	6,202	74	Pervious Area
	14,443	98	Impervious Area

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

**Subcatchment 1S: Post-Development**

Hydrograph



**Summary for Subcatchment 1S: Post-Development**

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.29 cfs @ 7.92 hrs, Volume= 0.082 af, Depth> 2.07"

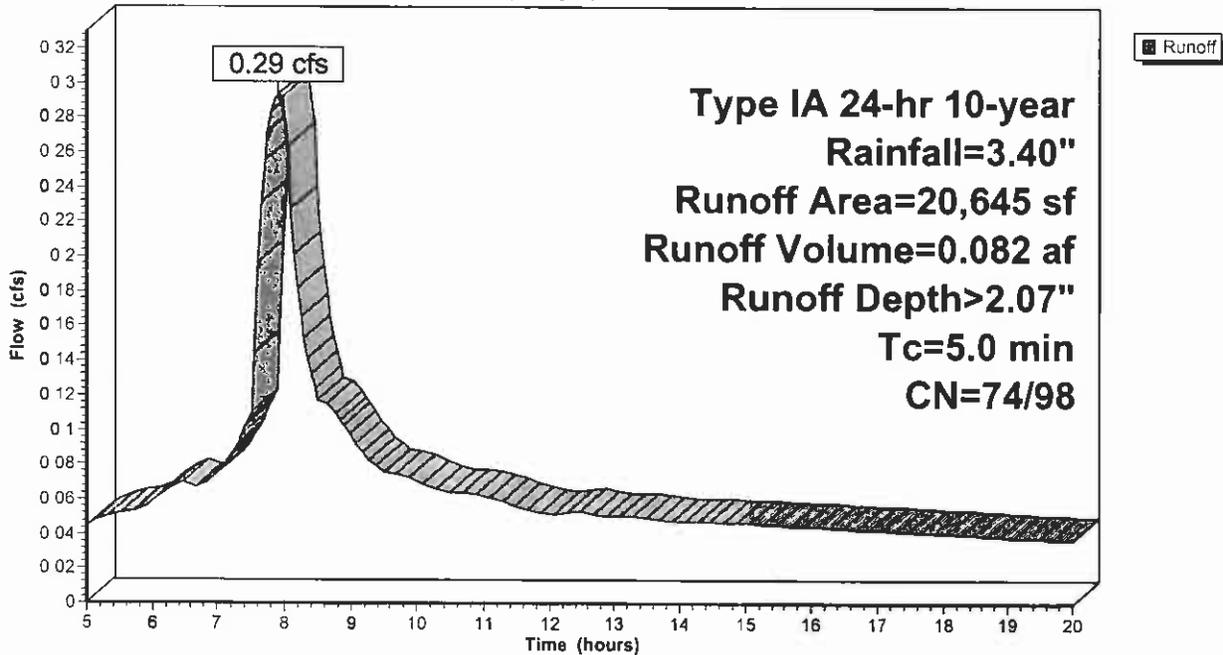
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 10-year Rainfall=3.40"

	Area (sf)	CN	Description
*	7,014	98	Building
*	4,655	98	Parking lot/driveways
*	2,774	98	Walkways
*	6,202	74	Landscape
	20,645	91	Weighted Average
	6,202	74	Pervious Area
	14,443	98	Impervious Area

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

**Subcatchment 1S: Post-Development**

Hydrograph



**Summary for Subcatchment 2S: Pre-Development**

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.30 cfs @ 7.93 hrs, Volume= 0.082 af, Depth> 2.07"

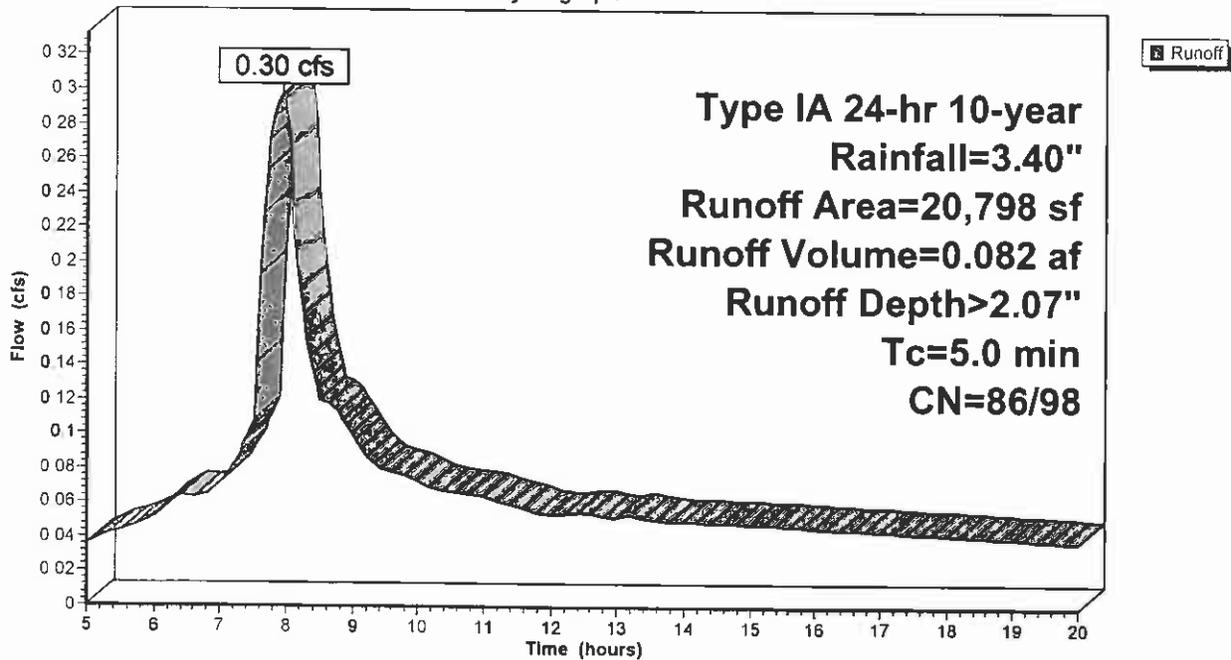
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 10-year Rainfall=3.40"

	Area (sf)	CN	Description
*	2,778	98	Buildings
*	6,089	98	Parking lot/driveway
*	8,197	89	Gravel
*	3,734	79	Landscape
	20,798	91	Weighted Average
	11,931	86	Pervious Area
	8,867	98	Impervious Area

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

**Subcatchment 2S: Pre-Development**

Hydrograph



**TVF&R Station 59\_No Detention Required**

Type IA 24-hr 25-year Rainfall=3.90"

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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: Post-Development**

Runoff Area=20,645 sf 69.96% Impervious Runoff Depth>2.43"  
Tc=5.0 min CN=74/98 Runoff=0.35 cfs 0.096 af

**Subcatchment 2S: Pre-Development**

Runoff Area=20,798 sf 42.63% Impervious Runoff Depth>2.45"  
Tc=5.0 min CN=86/98 Runoff=0.35 cfs 0.098 af

**Total Runoff Area = 0.951 ac Runoff Volume = 0.194 af Average Runoff Depth = 2.44"**  
**43.75% Pervious = 0.416 ac 56.25% Impervious = 0.535 ac**

**TVF&R Station 59\_No Detention Required**

Type IA 24-hr 25-year Rainfall=3.90"

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**Summary for Subcatchment 1S: Post-Development**

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.35 cfs @ 7.92 hrs, Volume= 0.096 af, Depth> 2.43"

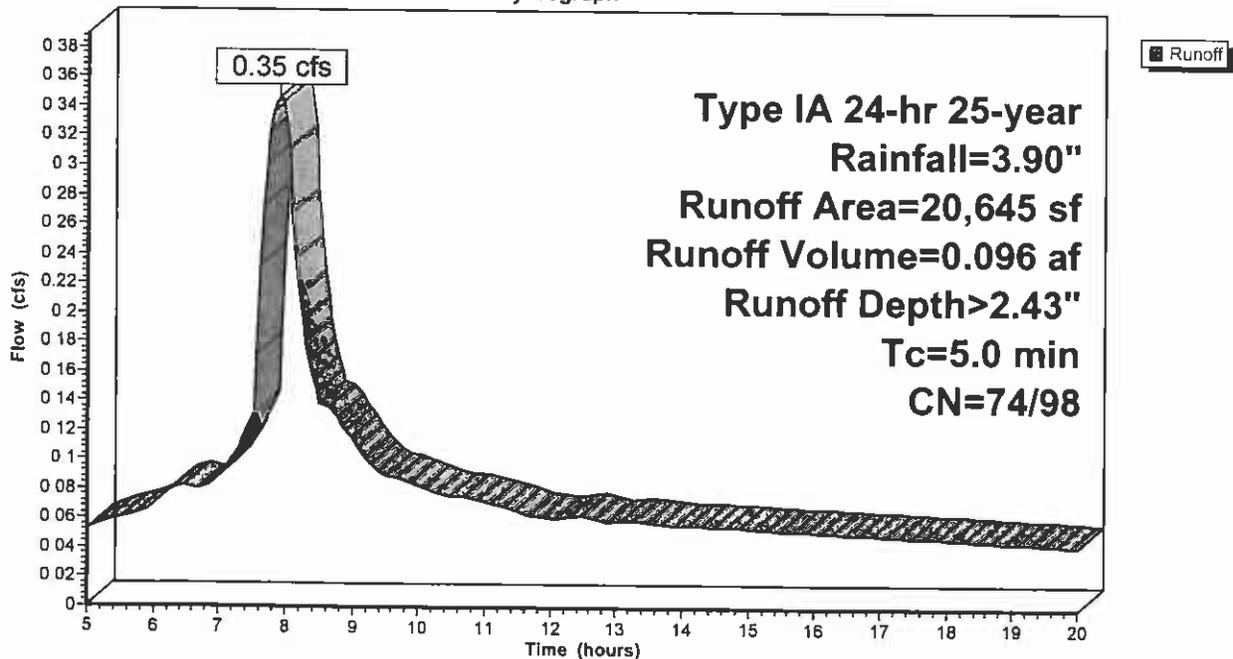
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 25-year Rainfall=3.90"

	Area (sf)	CN	Description
*	7,014	98	Building
*	4,655	98	Parking lot/driveways
*	2,774	98	Walkways
*	6,202	74	Landscape
	20,645	91	Weighted Average
	6,202	74	Pervious Area
	14,443	98	Impervious Area

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

**Subcatchment 1S: Post-Development**

Hydrograph



**Summary for Subcatchment 2S: Pre-Development**

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.35 cfs @ 7.93 hrs, Volume= 0.098 af, Depth> 2.45"

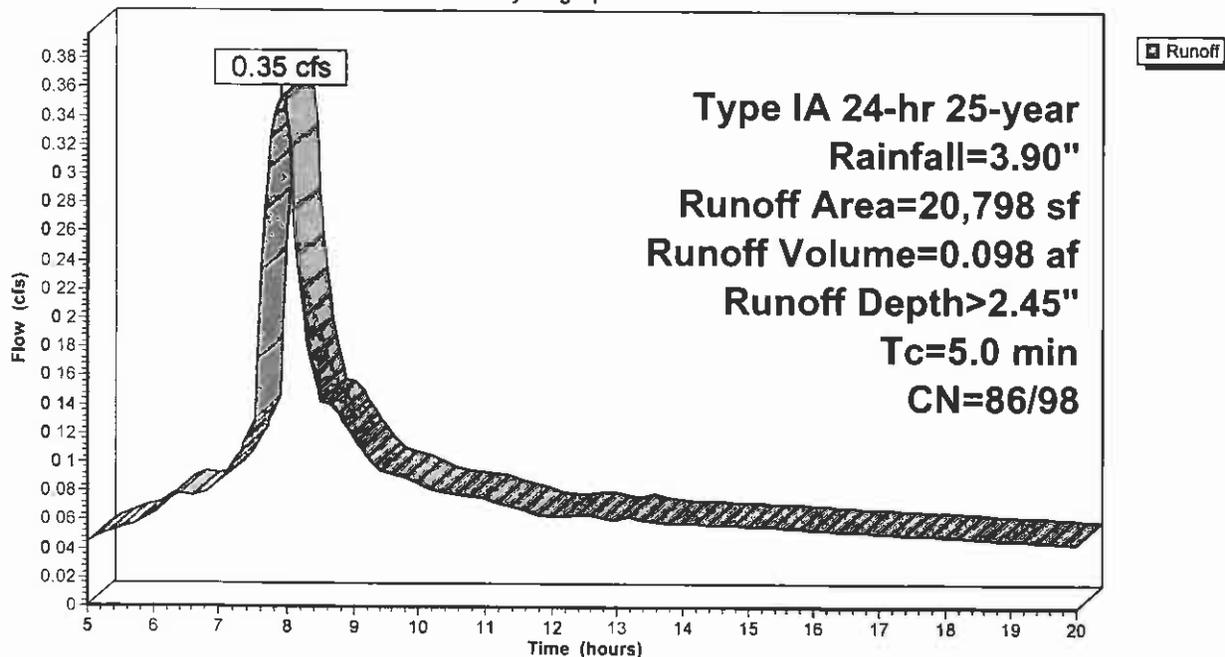
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 25-year Rainfall=3.90"

	Area (sf)	CN	Description
*	2,778	98	Buildings
*	6,089	98	Parking lot/driveway
*	8,197	89	Gravel
*	3,734	79	Landscape
	20,798	91	Weighted Average
	11,931	86	Pervious Area
	8,867	98	Impervious Area

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

**Subcatchment 2S: Pre-Development**

Hydrograph



**TVF&R Station 59\_No Detention Required**

Type IA 24-hr 100-year Rainfall=4.40"

Prepared by PBS Engineering + Environmental

Printed 10/2/2008

HydroCAD® 8.50 s/n 002498 © 2007 HydroCAD Software Solutions LLC

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: Post-Development**

Runoff Area=20,645 sf 69.96% Impervious Runoff Depth>2.79"  
Tc=5.0 min CN=74/98 Runoff=0.40 cfs 0.110 af

**Subcatchment2S: Pre-Development**

Runoff Area=20,798 sf 42.63% Impervious Runoff Depth>2.84"  
Tc=5.0 min CN=86/98 Runoff=0.41 cfs 0.113 af

**Total Runoff Area = 0.951 ac Runoff Volume = 0.223 af Average Runoff Depth = 2.82"**  
**43.75% Pervious = 0.416 ac 56.25% Impervious = 0.535 ac**

**Summary for Subcatchment 1S: Post-Development**

[49] Hint:  $T_c < 2dt$  may require smaller  $dt$

Runoff = 0.40 cfs @ 7.92 hrs, Volume= 0.110 af, Depth> 2.79"

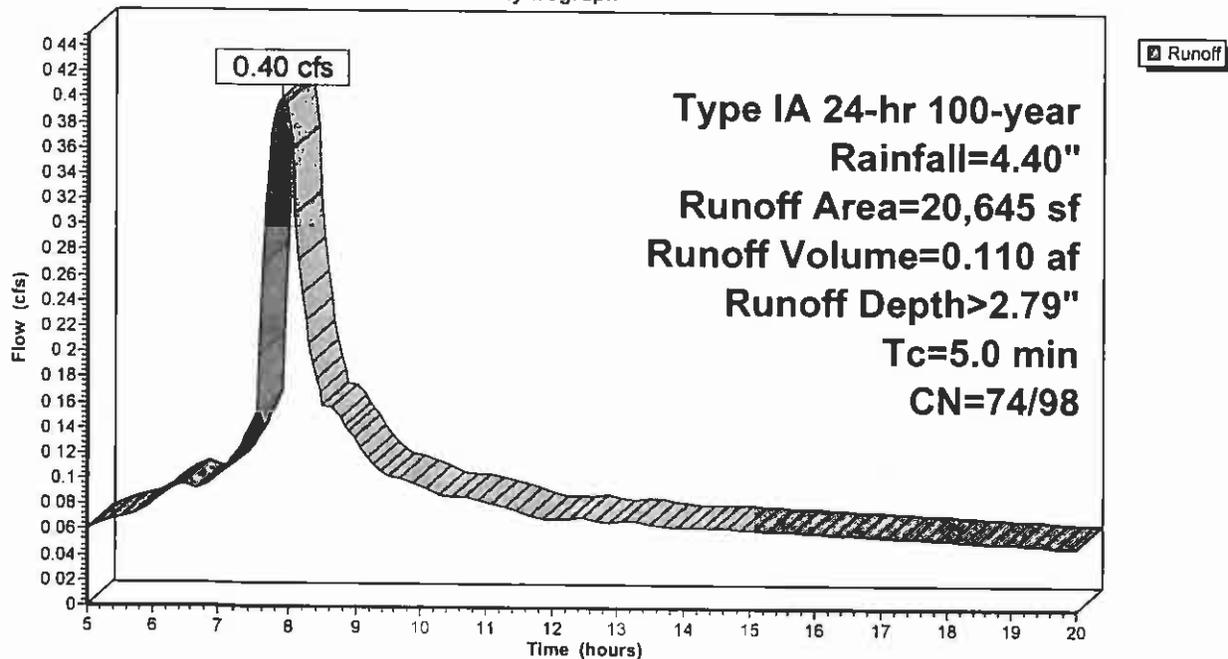
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs,  $dt = 0.05$  hrs  
 Type IA 24-hr 100-year Rainfall=4.40"

	Area (sf)	CN	Description
*	7,014	98	Building
*	4,655	98	Parking lot/driveways
*	2,774	98	Walkways
*	6,202	74	Landscape
	20,645	91	Weighted Average
	6,202	74	Pervious Area
	14,443	98	Impervious Area

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

**Subcatchment 1S: Post-Development**

Hydrograph



**TVF&R Station 59\_No Detention Required**

Type IA 24-hr 100-year Rainfall=4.40"

Prepared by PBS Engineering + Environmental

Printed 10/2/2008

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Page 17

**Summary for Subcatchment 2S: Pre-Development**

[49] Hint:  $T_c < 2dt$  may require smaller  $dt$

Runoff = 0.41 cfs @ 7.92 hrs, Volume= 0.113 af, Depth> 2.84"

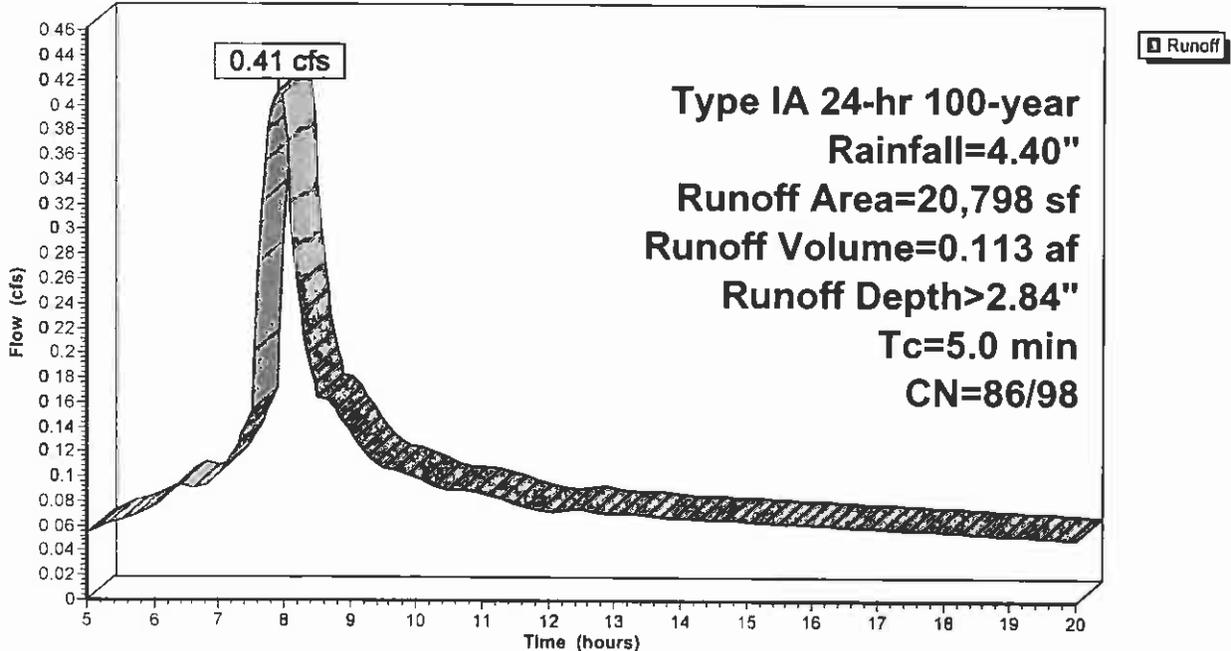
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs,  $dt= 0.05$  hrs  
 Type IA 24-hr 100-year Rainfall=4.40"

	Area (sf)	CN	Description
*	2,778	98	Buildings
*	6,089	98	Parking lot/driveway
*	8,197	89	Gravel
*	3,734	79	Landscape
	20,798	91	Weighted Average
	11,931	86	Pervious Area
	8,867	98	Impervious Area

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

**Subcatchment 2S: Pre-Development**

Hydrograph







# CITY OF West Linn

September 19, 2008

**MAILED**  
9/19/08

Gary Wells  
Director of Support Services  
Tualatin Valley Fire & Rescue  
20665 Blanton Street  
Aloha, OR 97007

SUBJECT: CUP-08-01/DR-08-08/VAR-08-05

Dear Mr. Wells:

You submitted this application on August 8, 2008, and you provided resubmittal materials on September 12 and September 15. The application is complete per the needs of the Planning Department, but the Engineering Department finds that the Conditional Use Permit, Class II Design Review, and Class II Variance application for West Linn Fire Station 59 remains **incomplete**. You have still have the remainder of 180 days (until February 4, 2009) to make this application complete.

Engineering Department comments are provided under a separate cover below. Please contact me at 503-742-8660, or by email at [tsoppe@westlinnoregon.gov](mailto:tsoppe@westlinnoregon.gov) if you have any questions or comments, or if you wish to meet with planning and engineering staff regarding these issues. You can contact Khoi Le in Engineering directly at [kle@westlinnoregon.gov](mailto:kle@westlinnoregon.gov) or (503) 722-5517

Sincerely,

Tom Soppe  
Associate Planner

c: Frank Angelo/Katherine Prew, Angelo Planning Group, 921 SW Washington St., Ste. 468, Portland, OR 97205

p:/devrvw/completeness check/incompl2-CUP-08-01

## Memorandum

Date: September 19, 2008  
To: Tom Soppe  
Planning Department  
From: Khoi Le, PE  
Public Works – Engineering Division  
Subject: Completeness Review

---

Project: Fire Station 59  
Project Number: CUP-08-01

---

Tom,

I reviewed the land uses application package for the Fire Station 59 and found it incomplete. Followings are incomplete items:

### **STREET IMPROVEMENT**

- Street section shall consist of the followings:
  - 16' wide pavement.
  - Curb and gutter.
  - 8' wide curb-tie sidewalk with cut outs for street tree.
- Address the relocation of the wired guy pole located by the Northwest property corner on 8<sup>th</sup> Avenue.

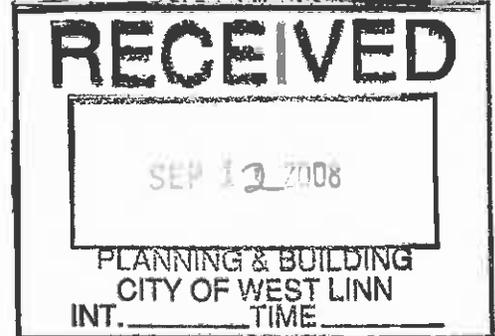
### **STORM IMPROVEMENT**

- Provide detention and flow control for the site including calculations to demonstrate how post developed discharges to match pre developed discharges.
- Green concept will be welcome but must provide calculations to demonstrate to meet the City of West Linn detention requirements.
- Provide complete storm drainage report including all calculations for both treatment and detention.
- Provide public storm system and stub out for future development on 8<sup>th</sup> Avenue.

### **WATER IMPROVEMENT**

- Provide a note indicating that the existing 2" water meter and lateral on Willamette Falls Drive to be removed and plug shall be done at the water main.

# Memorandum



Date: September 12, 2008  
 To: Tom Soppe, Associate Planner  
 From: Katie Prew, AICP, Angelo Planning Group *KP*  
 cc: Gary Wells, TVF&R  
 Re: Response to Completeness Review – CUP-08-01/DR-08-08/VAR-08-05

I appreciate your continued assistance on this important project. We have addressed the items identified by City staff in the Completeness Review letter dated August 21, 2008 below in this memorandum and the attached exhibits. The code sections, responses and exhibits will be added to the TVF&R Station 59 Development Application and any future submittals of that application will include the information presented below.

- **Section 48.040(C)** *All on-site maneuvering and/or access drives shall be maintained pursuant to Section 46.130 of this Code.*

**Response:** Section 46.130 of the West Linn Community Development Code states "Buildings or structures to be built or substantially altered which receive and distribute material or merchandise by truck, shall provide and maintain off-street loading and maneuvering space." The proposed fire station will not receive or distribute material or merchandise by truck; therefore, this criterion is not applicable.

- **Section 55.100(C)(3)** *Roof top air cooling and heating systems and other mechanical equipment shall be screened from view from adjoining properties.*

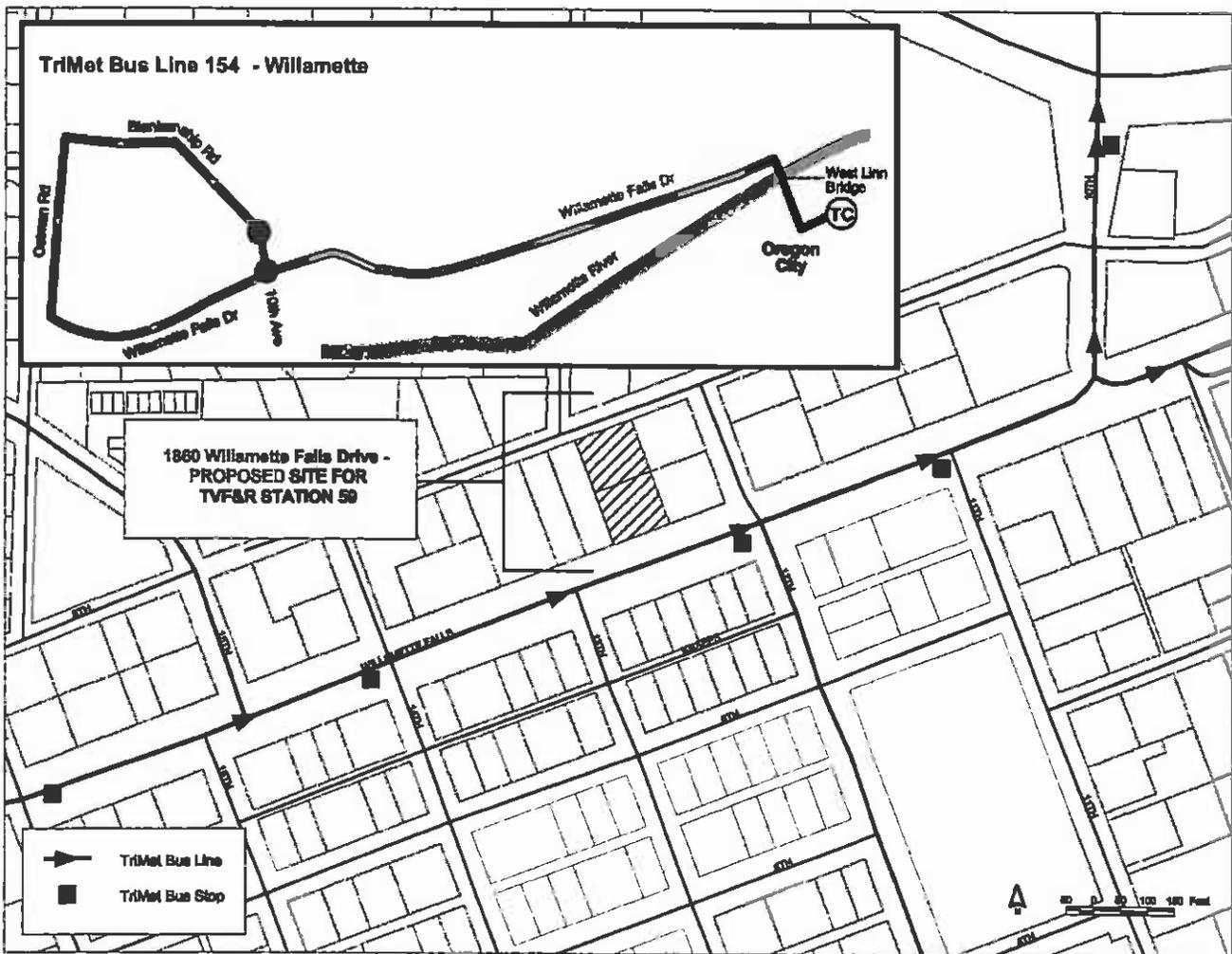
**Response:** A Roof Plan, Sheet 2.3, has been added to Exhibit A to illustrate how any roof top mechanical equipment will be screened from view from adjoining properties.

- **Section 55.100(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.*

**Response:** The proposed site for Station 59 does abut an existing public transit route (TriMet line 154 Willamette). The bus route begins at the Oregon City Transit Center, crosses the West Linn-Oregon City Bridge and turns onto Willamette Falls Drive (see Figure 1 insert below). The bus route then turns north onto 10<sup>th</sup> Avenue, before reaching the proposed station, and then follows Blankenship Road and then Ostman Road back to Willamette Falls Drive, past the proposed station, and back to the Oregon Transit Center. Currently, the bus does pass by the proposed station site but only on the opposite side of Willamette Falls Drive. There are two existing stops for the bus on the south side of Willamette Falls Drive (see Figure 1 below); one is located less than a block from the station at Willamette Falls Drive and 12<sup>th</sup> Avenue and the other at 14<sup>th</sup> Avenue (approximately 1.5 blocks from the station). It is unlikely that TriMet would re-route the bus to travel solely on Willamette Falls Drive as it would limit the passengers served and would make turning the bus around at the end of Willamette Falls Drive difficult. Because the bus line does not go along the north side of Willamette Falls Drive, nor will it likely, there is no need for these types of transit facilities on the property.

**Figure 1. Proposed Site and Abutting Public Transit Line**



- **Section 55.100(O) 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...*

**Response:** The proposed fire station, per Code Section 3.030, is classified as a Civic Use and not commercial, industrial or multifamily; therefore, this Code Section is not applicable.

- **Section 55.110(B)** *A site analysis on a drawing at a suitable scale (in order of preference 1" = 10' to 1" = 30') which shows:*

*10. The location of trees having a six-inch caliper at five feet and where the site is heavily wooded, an aerial photograph at the same scale as the site analysis may be submitted and only those trees that will be affected by the proposed development need be sited accurately; (e.g., construction activity within the dripline of the trees). All significant trees and tree clusters identified by the City Arborist using the criteria of CDC Section 55.100(B)(2) and all heritage trees, shall be delineated. Trees on non-Type I and II land shall have their "dripline plus 10 feet" protected area calculated per CDC Section 55.100(B)(2) and expressed in square feet, and also as a percentage of total non-Type I and II area.*

*11. Existing ambient noise levels shall be determined in the case of proposed land uses which may be reasonably expected to generate noise (e.g., automotive related uses), and for previously unused sites as described by DEQ. The determination of those levels shall be consistent with current DEQ standards.*

**Response:** The Tree Protection Plan (Sheet TP-1, Exhibit A) has been updated to provide the information required above by Section 55.110(B)(10). Per the submitted Noise Report (Exhibit H), "In that the project site is currently occupied by an 'industrial/commercial' source (the existing fire station), the proposed type of use will not be 'new.' Therefore, the allowable increase of ambient noise criteria for previously unused sites does not apply, and no existing condition noise measurement was required." (3.4, page 2)

- **Section 55.120** *The site plan shall be at the same scale as the site analysis (Section 55.110) and shall show:*

*K. The orientation of structures showing the location of windows and doors.*

**Response:** The Site Plan (Sheet A1.0 of Exhibit A) has been revised to show the location of windows and doors on the proposed fire station.

The following incomplete items were noted by City staff in the Engineering Department:

**Street Improvement**

- 8<sup>th</sup> Avenue shall need 8' of dedication
- Street section shall consist of the following:
  - 16' wide pavement,
  - Curb and gutter, and
  - 8' wide curb-tight sidewalk with cut outs for street trees.
- Proposed sidewalk shall extend to the property line.

- Driveway approach on Willamette Falls Drive shall be 36' max.
- Address the relocation of the wired guy pole located by the Northwest property corner on 8<sup>th</sup> Avenue.

**Response:** The attached revised Plan Set (Exhibit A) addresses the above listed items.

### Storm Improvement

- Collect and treat run-off along the project frontage on 8<sup>th</sup> Avenue.

**Response:** See attached revised Plan Set (Exhibit A).

- Gravel surface shall not be considered as impervious area. Revise drainage report to reflect this change and address detention 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.

- Provide public storm system and stub out for future development on 8<sup>th</sup> Avenue.

**Response:** Per discussions with City Staff, in lieu of a public storm system and stub out for future development, the public storm water from 8<sup>th</sup> Avenue will be brought onto the site, treated and then conveyed to Willamette Falls Drive and into the public stormwater system (see Exhibit A for revised plan sheets).

### Water Improvement

- Fire hydrant location and installation shall be done per West Linn detail WL-401.

**Response:** The existing public fire hydrant adjacent to the site will not be impacted by the proposed fire station construction. There is no new public hydrant proposed as part of this project, however, a private hydrant is proposed on-site for the station use only.

- Existing water meter located on 8<sup>th</sup> Avenue shall be removed and plugged.

**Response:** See attached revised Plan Set (Exhibit A).

- Utilize existing 2" water tap on Willamette Falls Drive.
- Relocate double check detector right behind water meter and outside of driveway approach.

**Response:** Per City of West Linn Planning staff these comments are not applicable. In order to protect the large significant tree on-site during construction the water improvement work will be required to occur as was originally shown on the Utility Plan.

Additionally, the Site Plan has been changed to allow for the addition of an enclosed fuel storage tank. This has required the removal of one parking space bringing the total from the 12 originally proposed to 11 parking spaces. As stated in the original submittal, per Code Section 46.160 Exemptions to Parking Requirements and the pre-application conference notes, because the site is within the Willamette Falls Drive Commercial District/Overlay Zone and the building fronts on



Willamette Falls Drive, it is exempt from the parking requirements of Chapter 46. Per the pre-application conference notes, City staff would prefer that there be enough parking to meet the "one space per peak shift employee and incidental visitors" standard and the applicant feels they can continue to meet this standard with 11 spaces. There will be four firefighters per shift leaving four spaces open for each additional fire fighter on-site at the time of the daily shift change at 7am, and three spaces for any visitors. The attached Exhibit A includes a complete set of updated plans illustrating this change. Any future required submittals of the Development Application will reflect this change.

The loss of one parking space and the reconfiguration of the parking area have changed the parking area square footage to 4,110 square feet and have also changed the following landscaping numbers:

<i>Area/Location</i>	<i>Landscaping Required</i>	<i>Landscaping Originally Proposed</i>	<i>Landscaping Currently Proposed</i>
1. Between parking lot and ROW	10 feet	11.5 feet	16 feet
5. Percentage of non-residential site to be landscaped	20%	29.3%	30.2% (6,543 square feet)
6. Percentage of 10-25 car parking lot to be landscaped (excluding perimeter)	5%	5.1%	6.2% (255 square feet, 13'9" x 18'6")

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](mailto:kprew@angeloplanning.com).

Attachments:

- Exhibit A: Station 59 Plan Set Revised
- Exhibit D: Storm Report Revised

**Exhibit A: Plan Set at Original Scale  
Tualatin Valley Fire & Rescue Station 59**

**REVISED**

- A1.0 Site Plan
- A1.1 Site Analysis
- A2.1 First Floor Plan
- A2.2 Second Floor Plan
- A3.1 Elevations (North and South)
- A3.2 Elevations (East and West)
- C0.0 Civil Cover Sheet
- Existing Conditions
- C1.0 Grading Plan
- C1.1 Site Improvement Plan
- C1.2 Utility Plan
- C2.1 Civil Details
- C2.2 Water Details
- C2.3 Street Details
- C2.4 Sewer Details I
- C2.5 Sewer Details II
- EC1 Erosion Control Plan
- EC2 Erosion Control Details
- E1.1 Electrical Site Plan
- L1.0 Landscape Plan
- TP-1 Tree Protection Plan



BECK  
SMILBY  
ETTLIN  
ARCHITECTS

ALL IN COMBINATION WITH  
THE CITY OF WEST LINN  
PLANNING & BUILDING  
DEPARTMENT

TV & R STATION 59  
WEST LINN, OR  
1860 WILLAMETTE FALLS DRIVE

DESIGN  
DEVELOPMENT  
SITE PLAN  
DESIGN REVIEW

A1.0

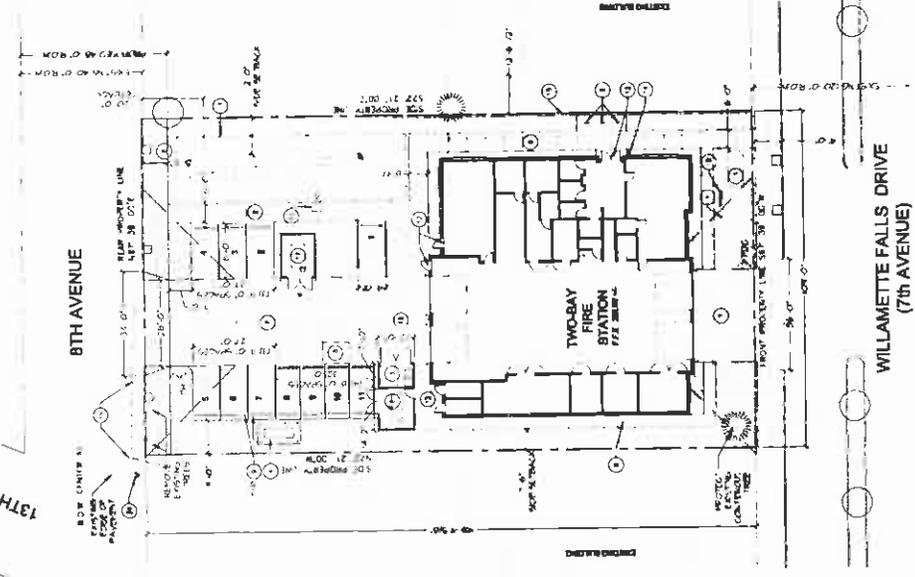
- PLAN NOTES
1. FLOOR
  2. RECYCLE PAVING
  3. 6" 0'-0" REAR WALL ON 1/4" PAINT
  4. PREPARE PAINT ON CONC TRAIL
  5. FINISH ON EXISTING CURBAGE
  6. REPAIR/REPLACE CONC DRIVE
  7. REPAIR/REPLACE CONC DRIVE
  8. REPAIR/REPLACE CONC DRIVE
  9. REPAIR/REPLACE CONC DRIVE
  10. REPAIR/REPLACE CONC DRIVE
  11. REPAIR/REPLACE CONC DRIVE
  12. REPAIR/REPLACE CONC DRIVE
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  15. REPAIR/REPLACE CONC DRIVE
  16. REPAIR/REPLACE CONC DRIVE
  17. REPAIR/REPLACE CONC DRIVE
  18. REPAIR/REPLACE CONC DRIVE
  19. REPAIR/REPLACE CONC DRIVE
  20. REPAIR/REPLACE CONC DRIVE

OWNER'S REPRESENTATIVE  
Director of Support Services  
City of West Linn  
1860 Willamette Falls Drive  
West Linn, Oregon 97147  
Phone: (503) 865-1000  
Fax: (503) 865-1001  
Email: greg@wlinn.gov

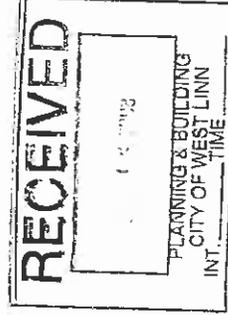
BUILDING AREA:  
15,714 S.F.  
2ND FLOOR AREA 4950 S.F.  
TOTAL AREA 11,855 S.F.

SITE INFORMATION:  
SITE AREA 48 ACRES (21,012 S.F.)  
ZONING COMMERCIAL / MDT 3 USE

LEGEND  
EXPOSED  
LANDSCAPING AREA  
TOTAL 8,543 S.F.  
CUBIC YARDS 4800



**SITE PLAN**  
1" = 20' 0"





**PECK  
SMILEY  
ETTLIN  
ARCHITECTS**

4155 DE FREYER AVE.  
PORTLAND, OREGON 97202  
PHONE: 503-251-1100  
FAX: 503-251-1101

**TV&R STATION 59  
WEST LINN, OR  
1860 WILLAMETTE FALLS DRIVE**

**DESIGN  
DEVELOPMENT  
SITE ANALYSIS  
PROJECT VICINITY  
DESIGN REVIEW**

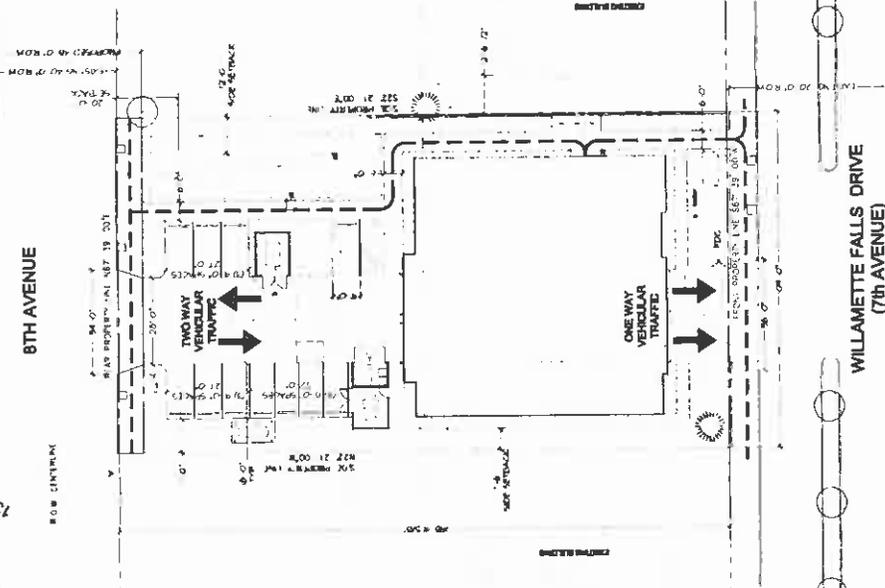
**A1.1**

UNIVERSITY REPRESENTATIVE

2700 West  
10000  
2005 3rd Avenue  
West Linn, Oregon 97148  
Phone: (503) 842-0331  
Fax: (503) 842-8970

**SITE ANALYSIS GENERAL NOTES**

1. THE SITE IS LOCATED IN THE UNINCORPORATED AREA OF WEST LINN, OREGON.
2. THE SITE IS ZONED COMMERCIAL / MIXED USE (CMU).
3. THE SITE DOES NOT HAVE A WASH OR ARCHING AREA.
4. THE SITE DOES NOT HAVE ANY SIGNIFICANT FEATURES.
5. THE SITE DOES NOT HAVE ANY SIGNIFICANT FEATURES.
6. THE SITE DOES NOT HAVE ANY SIGNIFICANT FEATURES.
7. THE SITE DOES NOT HAVE ANY SIGNIFICANT FEATURES.
8. THE SITE DOES NOT HAVE ANY SIGNIFICANT FEATURES.
9. THE SITE DOES NOT HAVE ANY SIGNIFICANT FEATURES.
10. THE SITE DOES NOT HAVE ANY SIGNIFICANT FEATURES.



**BUILDING AREA**

1ST FLOOR AREA	17000 S.F.
2ND FLOOR AREA	4800 S.F.
TOTAL AREA	11800 S.F.

**SITE INFORMATION**

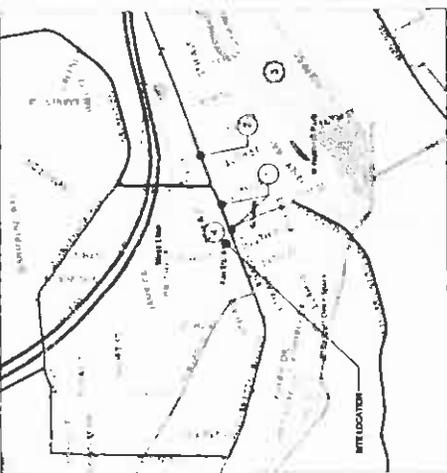
SITE AREA	49 ACRES (2,170,000 S.F.)
ZONING	COMMERCIAL / MIXED USE

- LEGEND**
- PROPOSED
  - EXISTING
  - PROPOSED CONTOUR
  - EXISTING CONTOUR
  - PLUMBING AND
  - BICYCLE ROUTE



**SITE ANALYSIS**

1" = 20' @



**VICINITY MAP AND NOTES**

1. TRANSIT STOP LOCATED IN WEST LINN, OREGON.
2. WILLAMETTE FALLS DRIVE IS A ONE-WAY STREET.
3. 100' TYPICAL SETBACK.
4. SEE OVERLAP WITH OTHER SHEETS.



PECK  
SMILEY  
STYLIN  
ARCHITECTS

4415 1ST AVENUE, N.W.  
SEASIDE, OREGON 97138  
PHONE: 503.325.4779  
FACSIMILE: 503.325.4779  
WWW.PSSA.COM

TF&R STATION 59  
1860 WILLAMETTE FALLS DRIVE  
WEST LINN, OR

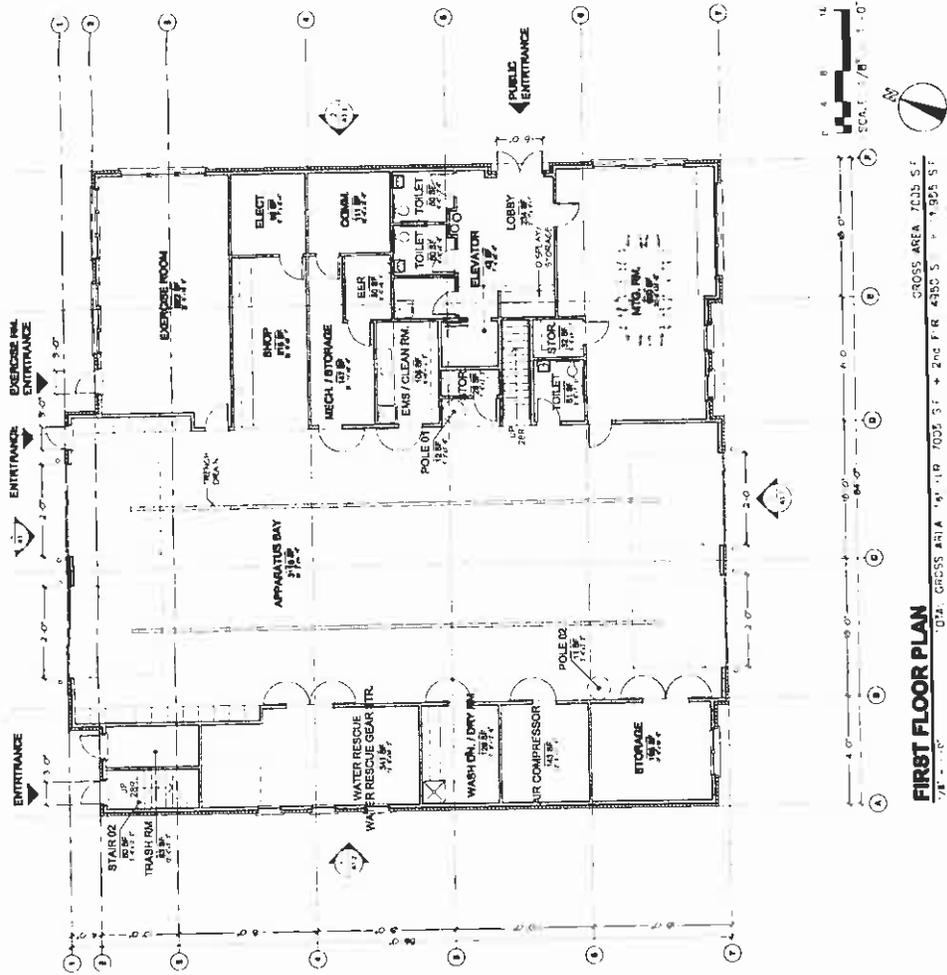
GENERAL

DEVELOPMENT

1ST FLOOR

PLAN

A2.1





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SMILEY  
EYTLIN  
ARCHITECTS

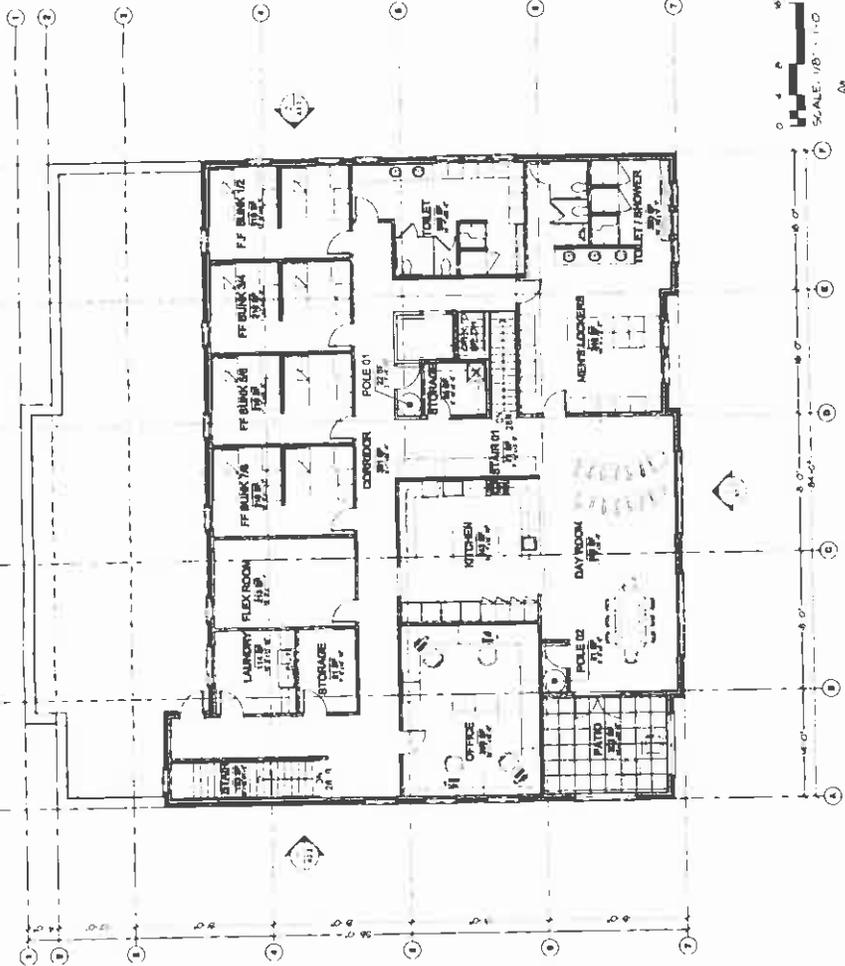
4413 SW COMBETT AVE.  
PORTLAND, OREGON 97209  
PHONE 503.241.8229

TV&R STATION 59  
1860 WILLAMETTE FALLS DRIVE  
WEST LINN, OR

DEVELOPMENT

2ND FLOOR  
PLAN

A2.2



**SECOND FLOOR PLAN**

TOTAL GROSS AREA: 7025 S.F. → 4935 S.F. → 11,940 S.F.  
GROSS AREA: 4935 S.F.



PECK  
SMILEY  
ETKIN  
ARCHITECTS

ALL DIMENSIONS ARE  
UNLESS OTHERWISE  
NOTED AND SHALL BE  
AS SHOWN ON DRAWING

TV&R STATION 59  
1860 WILLAMETTE FALLS DRIVE  
WEST LINN, OR

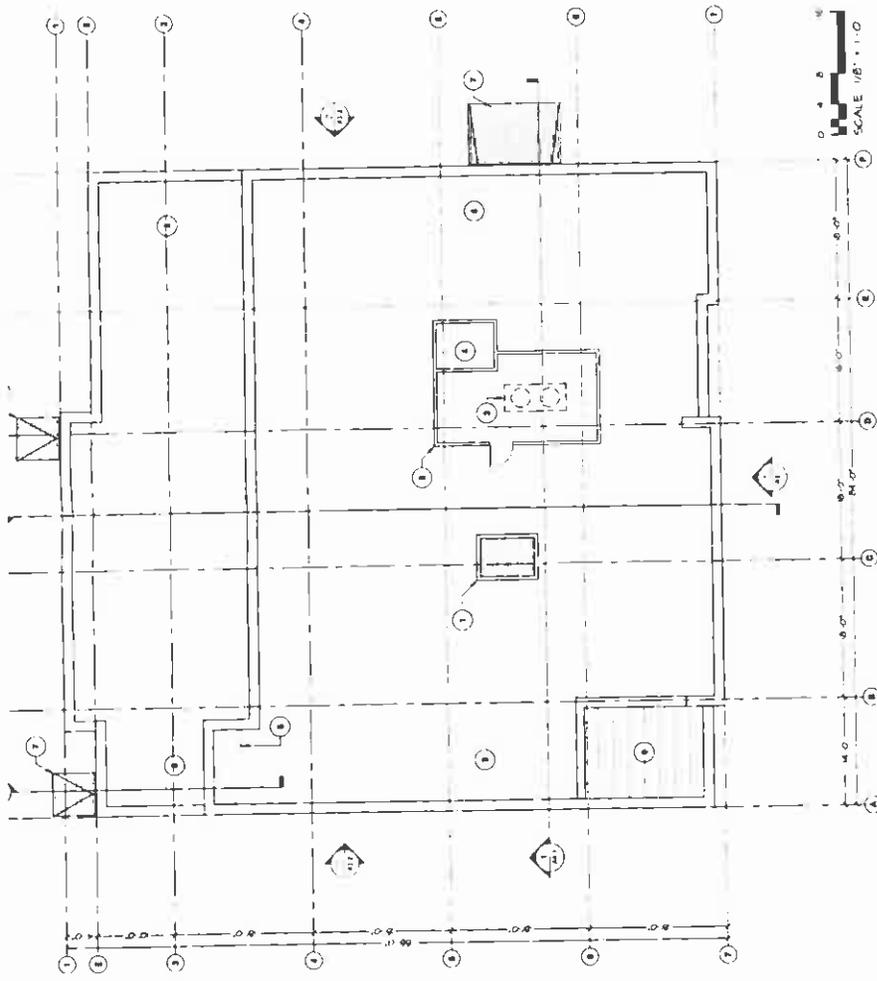
DEVELOPMENT

ROOF PLAN

A2.3

PLAN NOTES THIS SHEET

1. TERRAZZO FLOOR, 3/4" x 1/4" x 3/4" GRID
2. MECHANICAL EQUIPMENT SLABS
3. HVAC EQUIPMENT NOT MECHANICAL
4. ELEVATOR RELEVING
5. ROOF HVAC
6. SUPPORT FOR ROOF DECK
7. MECH. ENTRY CLOSET BENCH
8. ROOF DECK AND OVERLAY ON TOP



ROOF PLAN  
1/8" = 1'-0"





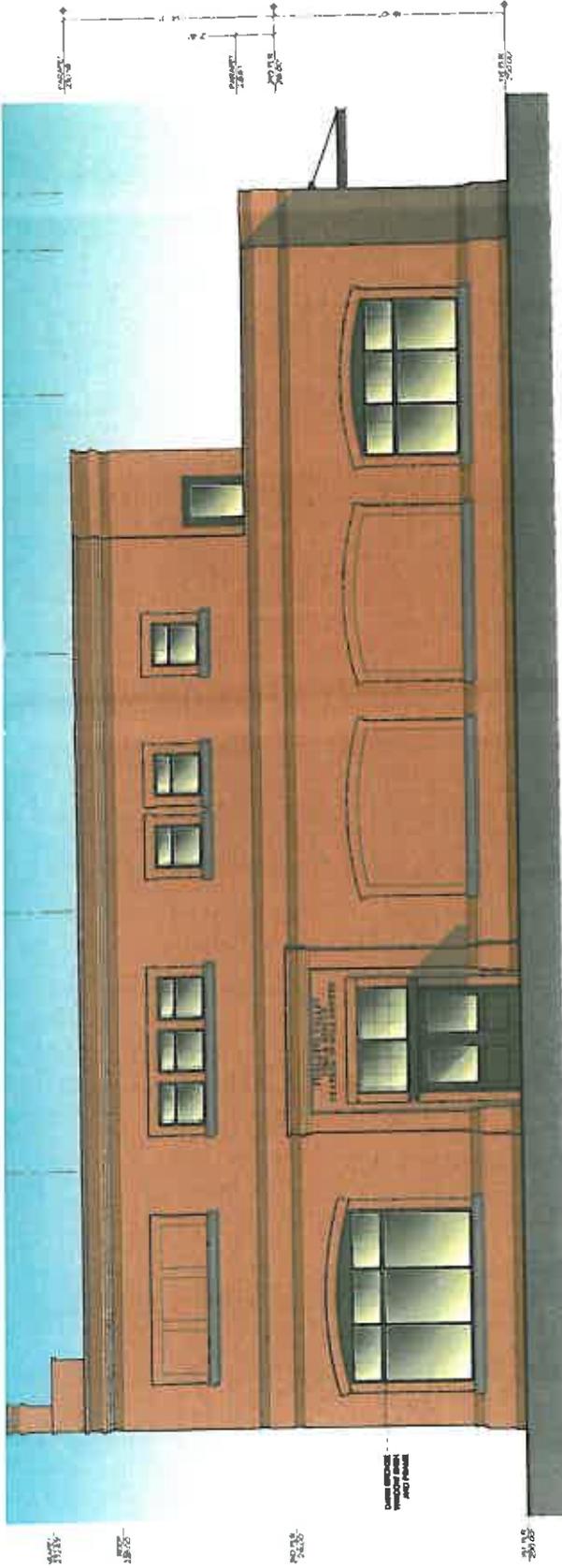
PECK  
SMILEY  
EYTELIN  
ARCHITECTS

ARCHITECTS  
1860 WILLAMETTE FALLS DRIVE  
WEST LINN, OREGON 97136  
TEL: 503.261.1100

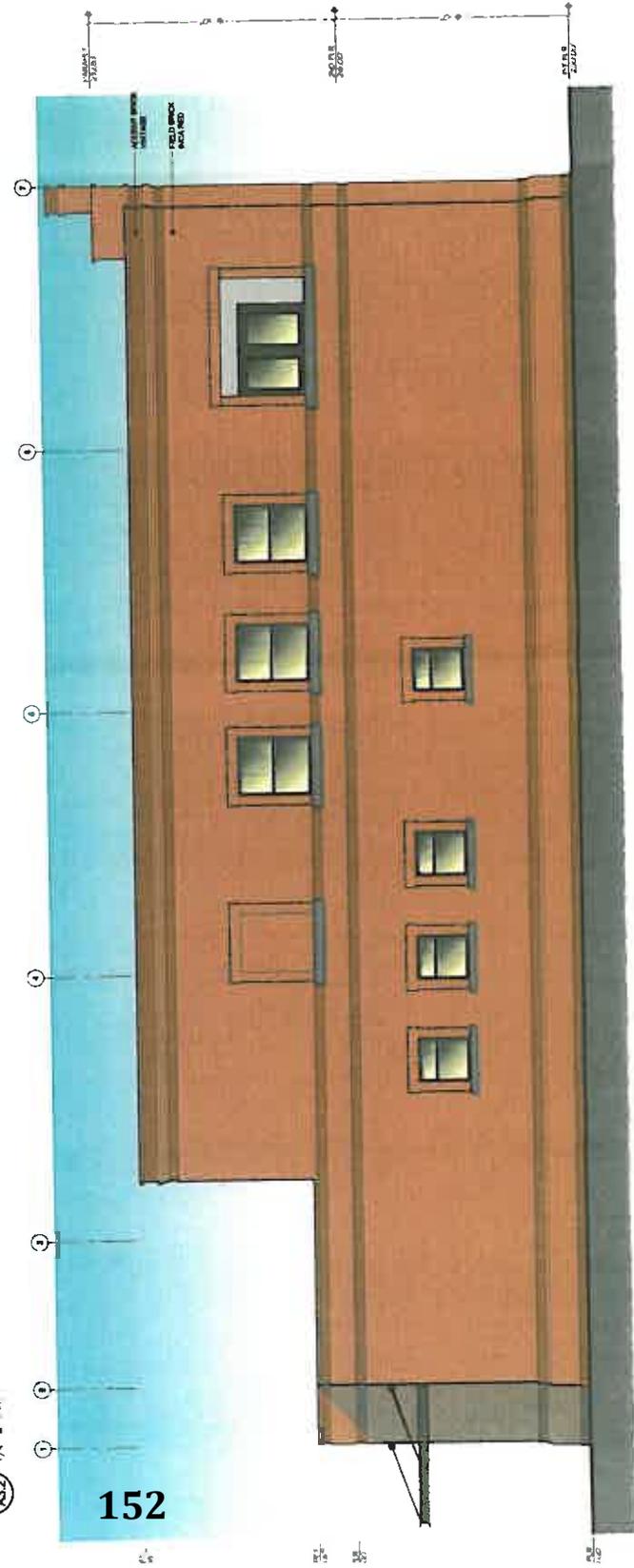
TV&R STATION 59  
1860 WILLAMETTE FALLS DRIVE  
WEST LINN, OR

DEVELOPMENT  
EAST AND WEST  
ELEVATIONS

A3.2



2 PROPOSED EAST ELEVATION



PROPOSED WEST ELEVATION







ALBA CONSULTANTS  
 1001228  
  
 S P E C K  
 S M I L E V  
 C O U N T Y  
 C O R P O R A T I O N  
 1835 W. CORBETT BLVD  
 SUITE 200  
 WEST LINN, OR 97146  
 PHONE: (503) 748-9170  
 FAX: (503) 748-9172  
 WWW: www.alba.com

STATION 59  
 1860 WILLAMETTE FALLS DRIVE  
 WEST LINN, OR

SCHEMATIC DESIGN	
SITE IMPROVEMENT	
PLAN	
PROJECT	STATION 59
DATE	04/11/20
DESIGNER	SMILEV
CHECKER	SMILEV
DATE	04/11/20

C1.1

- GENERAL SITE IMPROVEMENT NOTES**
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF WEST LINN, OR.
  2. ALL WORK SHALL BE LOCATED WITHIN THE 15' WIDE SIDEWALK AND 10' WIDE TRUNKING AREA.
  3. REFER ARCHITECTURAL PLANS FOR DIMENSIONS OF SITE IMPROVEMENTS.
  4. CONTRACTOR SHALL PROVIDE PROTECTION FOR ALL EXISTING UTILITIES AND STRUCTURES.
  5. CONTRACTOR SHALL PROVIDE PROTECTION FOR ALL EXISTING UTILITIES AND STRUCTURES.
  6. REFER SHEET C2 FOR PAVEMENT DETAILS.
  7. CONTRACTOR SHALL COMPLY WITH CHAPTER 33 OF THE INTERNATIONAL BUILDING CODE.

**SITE IMPROVEMENT NOTES**

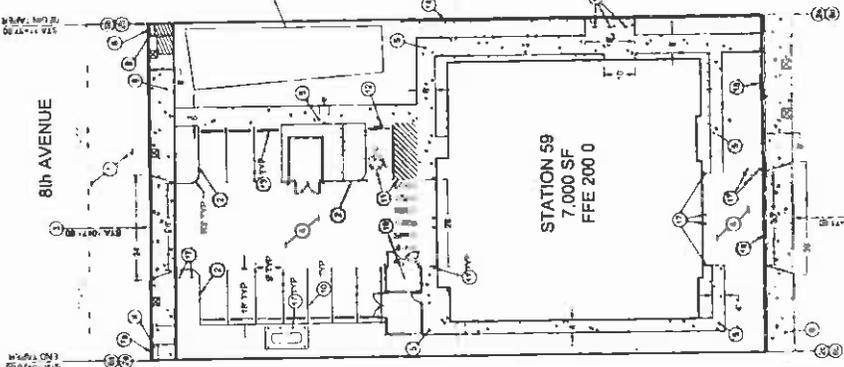
1. INSTALL ALL PAVEMENTS PER LOCAL STREET SECTION DETAIL SHEET C23.
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**SITE IMPROVEMENT LEGEND**

	CONCRETE PAVEMENT
	CONCRETE WALKWAY
	DETECTABLE WARNING PATTERN
	PROPOSED ASPHALT PAVEMENT
	TEMPORARY STRIP
	LANDSCAPE AREA
	PROPOSED TREE WELLS

STA 17+70.00  
END STATION

20' ROW  
20' ROW



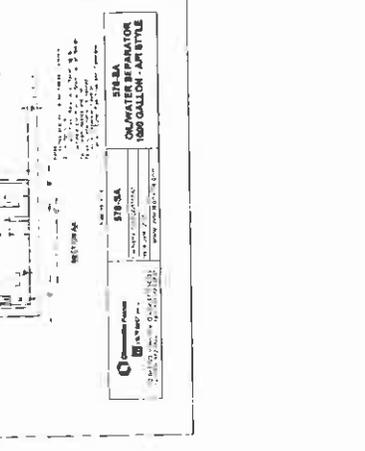
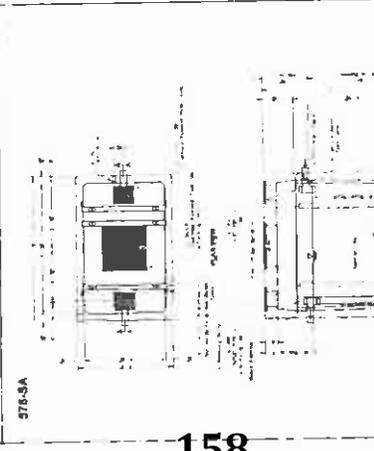
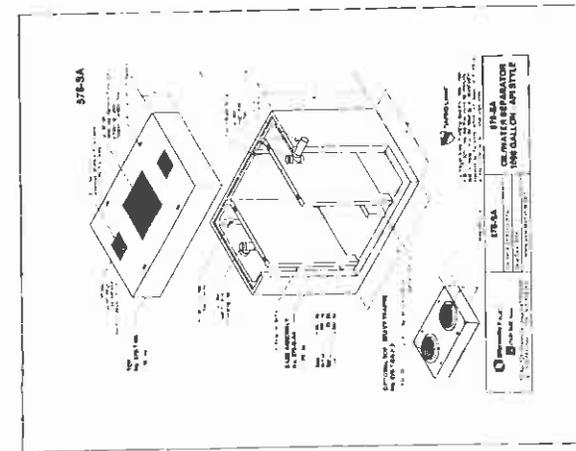
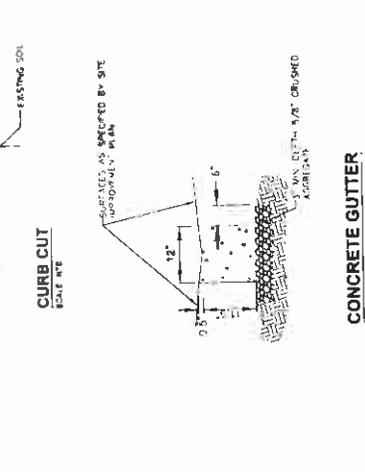
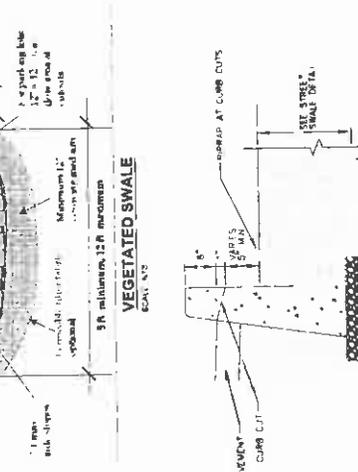
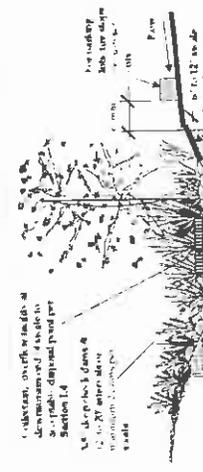
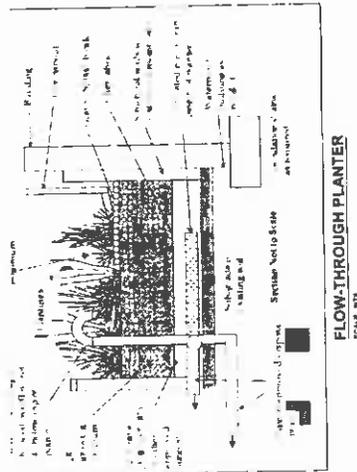
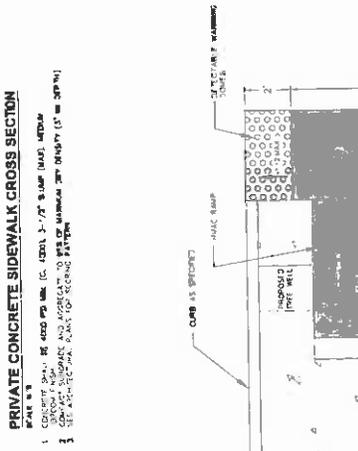
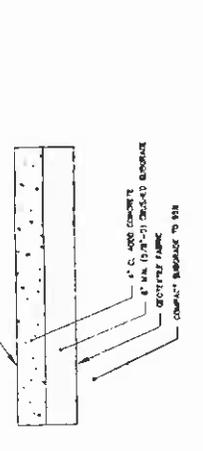
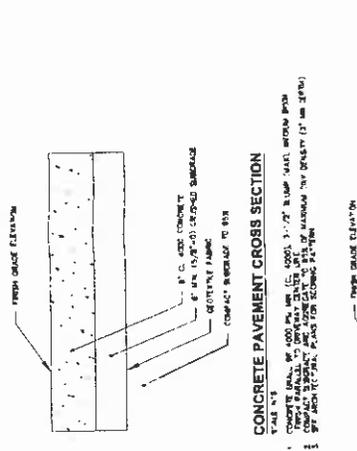
60' ROW  
40' ROW

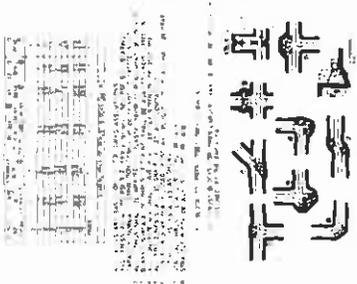




SCHEMATIC DESIGN
CIVIL
DETAIL
DATE
NO.
BY
CHK
APP
REV
NO.
DATE

**C2.1**

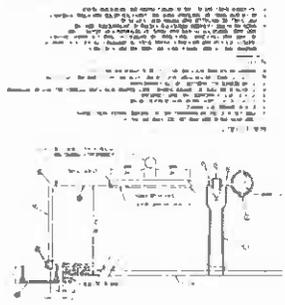




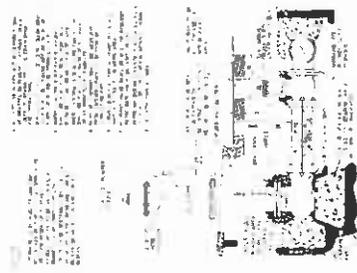
Horizontal Pipe Bending



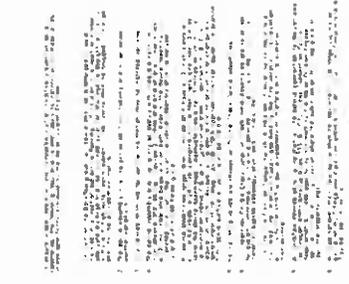
Storage Tank Top



Standard Fire Hydrant Assembly



Standard Fire Hydrant Assembly



Double Diameter



Double Diameter



Double Diameter



Standard Pipe



**STATION 55**  
**1850 WILLAMETTE FALLS DRIVE**  
**WEST LINN, OR**

SCHEMATIC DESIGN	
WEBB LINN	
SEWER DETAILS I	
DATE	10/20/00
BY	WJL
CHECKED BY	WJL
DATE	10/20/00

**C2.4**











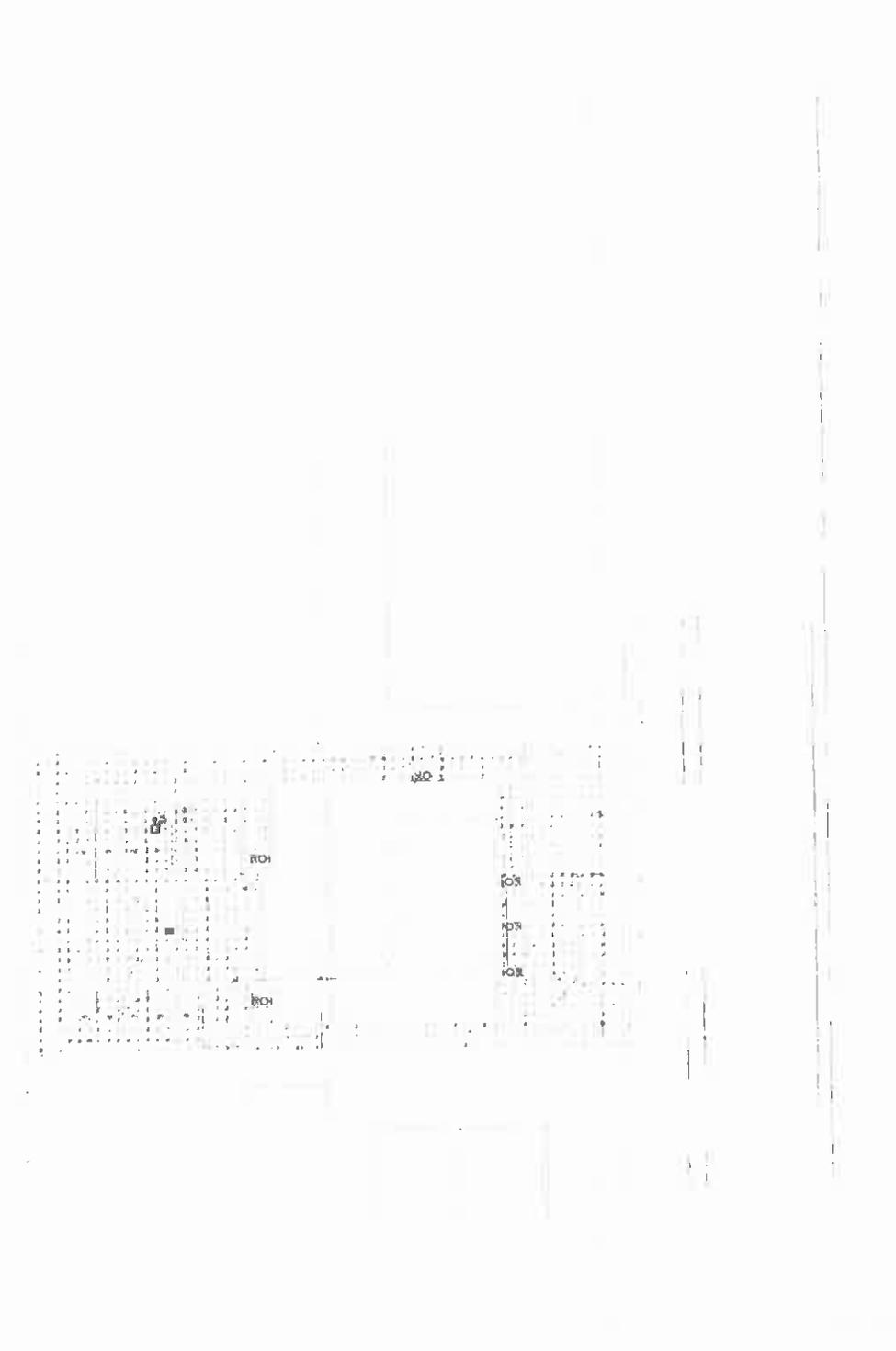
PECK  
SMILEY  
ET AL INC  
ARCHITECTS  
441 SW COMBET AV  
PORTLAND OREGON 97204  
PHONE 503 241 1119  
FAX 503 241 8331

STATION 59  
1860 WILLAMETTE FALLS DRIVE  
WEST LINN, OR

SITE PLAN -  
ELECTRICAL

DATE: 11/11/03  
DRAWN: JG  
CHECKED: JG  
SCALE: AS SHOWN

E1.1



1 SITE PLAN - ELECTRICAL



SEE EXHIBIT "I" FOR  
LIGHTING CUT SHEETS

Company  
Phone  
207-230-  
**INTERFACE**  
INC.



SITE AREA IN TREE DRIPLINE (%): 21%

ID	Species	DBH	Height
10000	ENGLISH WALNUT	22"	31'-0"
10001	ENGLISH WALNUT	22"	33'-0"
10217	LOGPOLE PINE	13"	22'-0"
10218	TREE-OF-HEAVEN	20"	28'-0"
10244	PORT-ORFORD-CEDAR	35"	23'-0"
10151	SILVER MAPLE	10"	30'-0"
10170	PORT-ORFORD-CEDAR	10"	20'-0"

\* DIAMETER AT BREAST HEIGHT - MEASURED 4 FEET ABOVE GROUND LEVEL.

**1.0 Tree Protection and Preservation Requirements**

**1.1 Before Construction**

- Tree Protection Zone.** The project arborist shall designate the Tree Protection Zone (TPZ) for each tree or group of trees to be protected. Where feasible, the size of the TPZ shall be established at the dripline of the tree or grove of trees. Alternatively, the standard for computing the size of the TPZ shall be 1/2-foot radius per caliper inch DBH, measured for the trunk of the tree. If infrastructure (roads, sidewalks, and utilities) must be installed closer to the tree(s), the TPZ may be established within the dripline area if the project arborist, in coordination with the City Arborist, determines that the tree(s) will not be unduly damaged. The location of TPZs shall be shown on construction sheets as a bold dashed line.
- Protection Fencing.** Protection fencing shall serve as the tree protection zone and shall be erected before demolition, grubbing, grading, or construction begins. All trees to be retained shall be protected by six-foot-high chain link fences installed at the edge of the TPZ. Protection fencing shall be secured to two-inch diameter galvanized iron posts, driven to a depth of at least two feet, placed no further than 10-feet apart. If fencing is located on pavement, posts may be supported by an appropriate grade level concrete base. Protection fencing shall remain in place until final inspection of the project permit, or in consultation with the project arborist.
- Signage.** An 8 5/8x11-inch sign stating, "WARNING: Tree Protection Zone," shall be displayed on each protection fence at all times.
- Designation of Cut Trees.** Trees to be removed shall be clearly marked with construction flagging, tree-marking paint, or other methods approved in advance 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.
- Preconstruction Conference.** The project arborist shall be on site to discuss methods of tree removal and tree protection prior to any construction. Prior to commencement of construction, the project arborist will verify in writing to the City Arborist that tree protection fencing has been satisfactorily installed.

**1.2 During Construction**

- Tree Protection Zone Maintenance.** The protection fencing shall not be moved, removed, or entered by equipment except under direction of the project arborist, in coordination with the City Arborist.
- Storage of Material or Equipment.** The contractor shall not store materials or equipment within the TPZ.
- Excavation within the TPZ.**
  - Excavation with the TPZ shall be avoided if alternatives are available.
  - If excavation within the TPZ is unavoidable, the project arborist shall evaluate the proposed excavation to determine methods to minimize impacts to trees. This can include tunneling, hand digging or other approaches.
  - All construction within the TPZ shall be under the on-site technical supervision of the project arborist, in coordination with the City Arborist.
- Tree Protection Zone.** The project arborist shall monitor construction activities and progress, and provide written reports to the developer and the City at regular intervals. Tree protection inspections will occur monthly, or more frequently if needed.

**1.3 Post Construction**

Final Report. After the project has been completed, the project arborist shall provide a final report to the developer and the City. The final report shall include concerns about any trees negatively impacted during construction, and describe the measures needed to maintain and protect the remaining trees for a minimum of two years after project completion.

**PLAN NOTES THIS SHEET**

- IMPORTANT TREE PROTECTION & TREE REMOVAL REQUIREMENTS ARE SHOWN ON THIS SHEET. CONSULT THE ARBORIST REPORT FOR ADDITIONAL INFORMATION.
- NO NEW CANT TREES OR EXISTING PROTECTED TREES SHALL BE REMOVED OR DAMAGED.
- PROTECT ALL TREES WITHIN THE TPZ. DO NOT CONVICT ON.

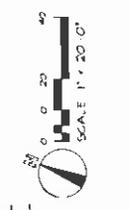
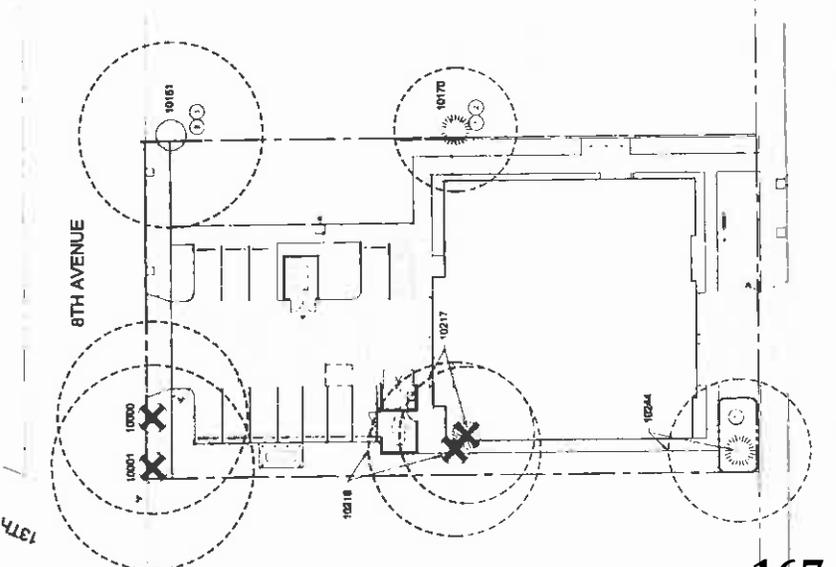
**SYMBOL LEGEND**

00000 TREE NUMBER

X REMOVE EXISTING TREE

--- TREE PROTECT OR FENCE 6' OR NEW CANAL 18" DEEP

○ TREE OR GROUP OF TREES



**TREE PROTECTION PLAN**

NOT TO SCALE

CITY OF  
**West Linn****MAILED**  
8/22/08

August 21, 2008

Gary Wells  
Director of Support Services  
Tualatin Valley Fire & Rescue  
20665 Blanton Street  
Aloha, OR 97007

SUBJECT: CUP-08-01/DR-08-08/VAR-08-05

Dear Mr. Wells:

You submitted this application on August 8, 2008. The Planning and Engineering Departments find that the Conditional Use Permit, Class II Design Review, and Class II Variance application for West Linn Fire Station 59 is **incomplete**. You have 180 days (until February 4, 2009) to make this application complete.

Engineering Department comments are provided under a separate cover below. The specific grounds for incompleteness from the Community Development Code as found by the Planning Department are as follows:

**Section 48.040(C)**

This says 46.130 applies to all non-residential uses (regardless of whether the rest of 46 otherwise applies). Respond to C in this context (this does not necessarily mean site plan changes, i.e. you can claim the facility doesn't generally receive merchandise by truck as the language here suggests it therefore doesn't need a separate berth despite its square footage).

**Section 55.100(C)(3)**

Respond to this criterion.

**Section 55.100(H)**

Site does abut transit route, so answer in this context.

**Section 55.100(O)**

Please respond to these criteria.

**Section 55.110(B)(10)**

Delineate the significant tree. For all trees combined, express the dripline + 10 foot area in square feet and as a percentage of the site's land.

**Section 55.110(B)(11)**

Show existing ambient noise levels on site analysis.

**Section 55.120(K)**

Show door and window locations on edge of building on site plan.

Please contact me at 503-742-8660, or by email at [tsoppe@ci.west-linn.or.us](mailto:tsoppe@ci.west-linn.or.us) if you have any questions or comments, or if you wish to meet with planning and engineering staff regarding these issues.

Sincerely,



Tom Soppe  
Associate Planner

c: Frank Angelo/Katherine Prew, Angelo Planning Group, 921 SW Washington St., Ste. 468, Portland, OR 97205

p:/devrvw/completeness check/incompl-CUP-08-01

# Memorandum

Date: August 21, 2008  
To: Tom Soppe  
Planning Department  
From: Khoi Le, PE  
Public Works – Engineering Division  
Subject: Completeness Review

---

Project: Fire Station 59  
Project Number: CUP-08-01

---

Tom,

I reviewed the land uses application package for the Fire Station 59 and found it incomplete. Followings are incomplete items:

## **STREET IMPROVEMENT**

- 8<sup>th</sup> Avenue shall need 8' of dedication.
- Street section shall consist of the followings:
  - 16' wide pavement.
  - Curb and gutter.
  - 8' wide curb-tie sidewalk with cut outs for street tree.
- Proposed sidewalk shall extend to the property line.
- Driveway approach on Willamette Falls Drive shall be 36' max.
- Address the relocation of the wired guy pole located by the Northwest property corner on 8<sup>th</sup> Avenue.

## **STORM IMPROVEMENT**

- Collect and treat run-off along the project frontage on 8<sup>th</sup> Avenue.
- Gravel surface shall not be considered as impervious area. Revise drainage report to reflect this change and address detention if additional impervious area is more than 5,000 square feet.
- Provide public storm system and stub out for future development on 8<sup>th</sup> Avenue.

## **WATER IMPROVEMENT**

- Fire hydrant location and installation shall be done per West Linn detail WL-401.
- Existing water meter located on 8<sup>th</sup> Avenue shall be removed and plugged.
- Utilize existing 2" water tap on Willamette Falls Drive.
- Relocate double check detector right behind water meter and outside of driveway approach.

# Memorandum

**Date:** August 8, 2008

**To:** Peter Spir, Associate Planner, City of West Linn

**cc:** Gary Wells, Director of Support Services, Tualatin Valley Fire & Rescue

**From:** Katie Prew, Planner, Angelo Planning Group

**Re:** Tualatin Valley Fire & Rescue Station 59 Development Application

---

We appreciate your continued assistance on the Tualatin Valley Fire & Rescue Station 59 project. Submitted with this memorandum are the three required copies of the application narrative and plan set (both at the original scale and reduced to 12x18"). It should be noted that the reduced plan set at 12x18" is scalable at 1"=40' rather than the 1"=20' noted on the plans due to the reduction of the original drawings. Additionally, the other required submittal items (including an audio recording of the neighborhood meeting, the materials board, an electronic copy of the application and a set of mailing labels) have been packaged together in the attached envelope.

Please contact me if you have any questions or concerns regarding the updated development application.

**Attachments:**

- o Three bound copies of the Tualatin Valley Fire & Rescue Station 59;
- o Three copies of the plan set full-sized;
- o Three copies of the plan set at 12x18";
- o One electronic copy of the application on CD;
- o One materials board;
- o One audio recording of the May 14, 2008 neighborhood meeting; and
- o One set of mailing labels

Angelo  
planning group

LAND USE PLANNING  
TRANSPORTATION PLANNING  
PROJECT MANAGEMENT

Frank Angelo  
Principal

tel 503.227.3664  
fax 503.227.3679  
fangelo@angeloplanning.com

921 SW Washington Street  
Suite 468  
Portland, OR 97205  
www.angeloplanning.com

Angelo  
planning group

LAND USE PLANNING  
TRANSPORTATION PLANNING  
PROJECT MANAGEMENT

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Planner

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Angelo  
A-2 planning group

**Tualatin Valley Fire & Rescue  
Station 59**

*Conditional Use, Design Review,  
And Variance Applications*

Submitted to the City of West Linn,  
Planning Department

**August 8, 2008**

**Development Application Summary Information for  
Tualatin Valley Fire & Rescue Station 59**

**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 Fax  
e-mail: gary.wells@tvfr.com

**Land Use Planning:** Frank Angelo  
Angelo Planning Group  
921 SW Washington Street, Suite 468  
Portland, OR 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

**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:** 31E02BA02000  
31E02BA01100

**Current Zoning:** Willamette Neighborhood Mixed Use Zone and  
General Commercial

**Applications Submitted for:** Conditional Use  
Class II Design Review  
Class II Variance

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Table 3. Tree Inventory.....	32

#### Section 3: Exhibits

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

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>▪ Plan Checklist</li> <li>▪ A1.0 Site Plan</li> <li>▪ A1.1 Site Analysis</li> <li>▪ A2.1 First Floor Plan</li> <li>▪ A2.2 Second Floor Plan</li> <li>▪ A3.1 Elevations (North and South)</li> <li>▪ A3.2 Elevations (East and West)</li> <li>▪ C0.0 Civil Cover Sheet</li> <li>▪ Existing Conditions</li> <li>▪ C1.0 Grading Plan</li> <li>▪ C1.1 Site Improvement Plan</li> <li>▪ C1.2 Utility Plan</li> </ul> | <ul style="list-style-type: none"> <li>▪ C2.1 Civil Details</li> <li>▪ C2.2 Water Details</li> <li>▪ C2.3 Street Details</li> <li>▪ C2.4 Sewer Details I</li> <li>▪ C2.5 Sewer Details II</li> <li>▪ EC1 Erosion Control Plan</li> <li>▪ EC2 Erosion Control Details</li> <li>▪ E1.1 Electrical Site Plan</li> <li>▪ L1.0 Landscape Plan</li> <li>▪ TP-1 Tree Protection Plan</li> <li>▪ Materials Board (<i>One copy only</i>)</li> </ul> |
|--|--|

- B. City of West Linn Memorandums and Historic Photographs
- C. Pre-Application Conference Notes
- D. Stormwater Report
- E. Clear Vision Area Letter
- F. Arborist Report
- G. Neighborhood Meeting Documentation
- H. Noise Study
- I. Lighting Cut Sheets

**Application Form**  
**Tualatin Valley Fire & Rescue Station 59**

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 1860 Willamette Falls Drive

Assessor's Map No.: 31E02BA Tax Lot(s): 2000 and 1100 Total Land Area: 0.5 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)  
 X [Signature] for TVEP Date 7/2/08  
 SIGNATURE OF APPLICANT(S)

X Same as Property Owner above Date N/A

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: 656-4247 FAX: 656-4106

**Application Narrative**  
**Tualatin Valley Fire & Rescue Station 59**

## Section 1: General Introduction

### Project Description

Tualatin Valley Fire & Rescue (TVF&R) is seeking Conditional Use and Design Review approval, along with a Variance to the clear vision area standards, from the City of West Linn to construct a new fire station located at 1860 Willamette Falls Drive (31E02BA02000 and 31E02BA01100). The existing Willamette Fire Station is on the southern parcel that fronts onto Willamette Falls Drive. The proposed fire station will also front on Willamette Falls Drive but will be larger and extend onto the parcel to the north. The new station will be approximately 11,955 square feet and will include a 600 square foot community room. The building will house the station's firefighters and have an interior two-space parking bay for fire trucks and other necessary emergency apparatus. This will include apparatus necessary for making water rescues. Currently there are twelve parking spaces proposed on-site to serve the proposed fire station; one for each fire fighter per shift (four), plus four for each additional fire fighter on-site at the time of the daily shift change, and four for any visitors.

The removal and construction of Station 59 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 location of the station works well 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 existing 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.

TVF&R is currently negotiating with several nearby property owners for the temporary relocation of the fire station as the new station is being constructed. The most likely outcome for this temporary situation appears to be a double-wide modular home for the crew and a temporary Quonset hut-style building for the fire apparatus. The temporary station will be placed as close to the current location as possible so response times should be very similar. The construction of the new station will not significantly impact the emergency response times.

### Site and Context

Station 59 is located in a transit oriented neighborhood within the Willamette Falls Drive Commercial Overlay District and neighbors the Willamette Historic District. The proposed station is located on two parcels, both approximately 0.25 acres in size. There is one driveway providing access to the site from 8<sup>th</sup> Avenue which passenger vehicles will also use to exit the site. Fire apparatus vehicles will access the site using the same driveway but pull forward into the two parking bays that are part of the station structure and then exit using the driveway onto Willamette Falls Drive.

The proposed architectural design for Station 59 incorporates the historic character of brick masonry buildings in the region built between the time period of 1880 to 1930 (see Exhibit B). This is the same period that has been established as significant to the Willamette Neighborhood that the station is in. The two bay station features brick detailing reflective of this period, particularly around the windows and doors and also incorporates features from existing buildings along Willamette Falls Drive such as a bell tower and a prominent cornice above the apparatus bays similar to adjacent building's 'false-front' gables. Additionally, the windows are primarily groups of double-hung sashes with divided panels which are also appropriate to the overall architectural context.

The areas directly to the south, east and west of the site are largely commercial. The area directly to the north is mixed use although future development will be commercial. Figure 1 on page 3 shows the location of the current and future TVF&R Station 59.

## 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 59 project complies with the requirements of the City of West Linn's Community Development Code. A Conditional Use and Class II Design Review application are both required and will be discussed in greater detail later in this application narrative. A Variance to the Clear Vision Area standards of Chapter 42 is also being applied for and is discussed in more detail beginning on page 54. This application is organized in the following manner:

### **Section 1 – Introduction and Project Overview**

- Provides a description of the Station 59 project, a brief description of the site and context, summary of the expected project timeframe, and an overview of the application format.

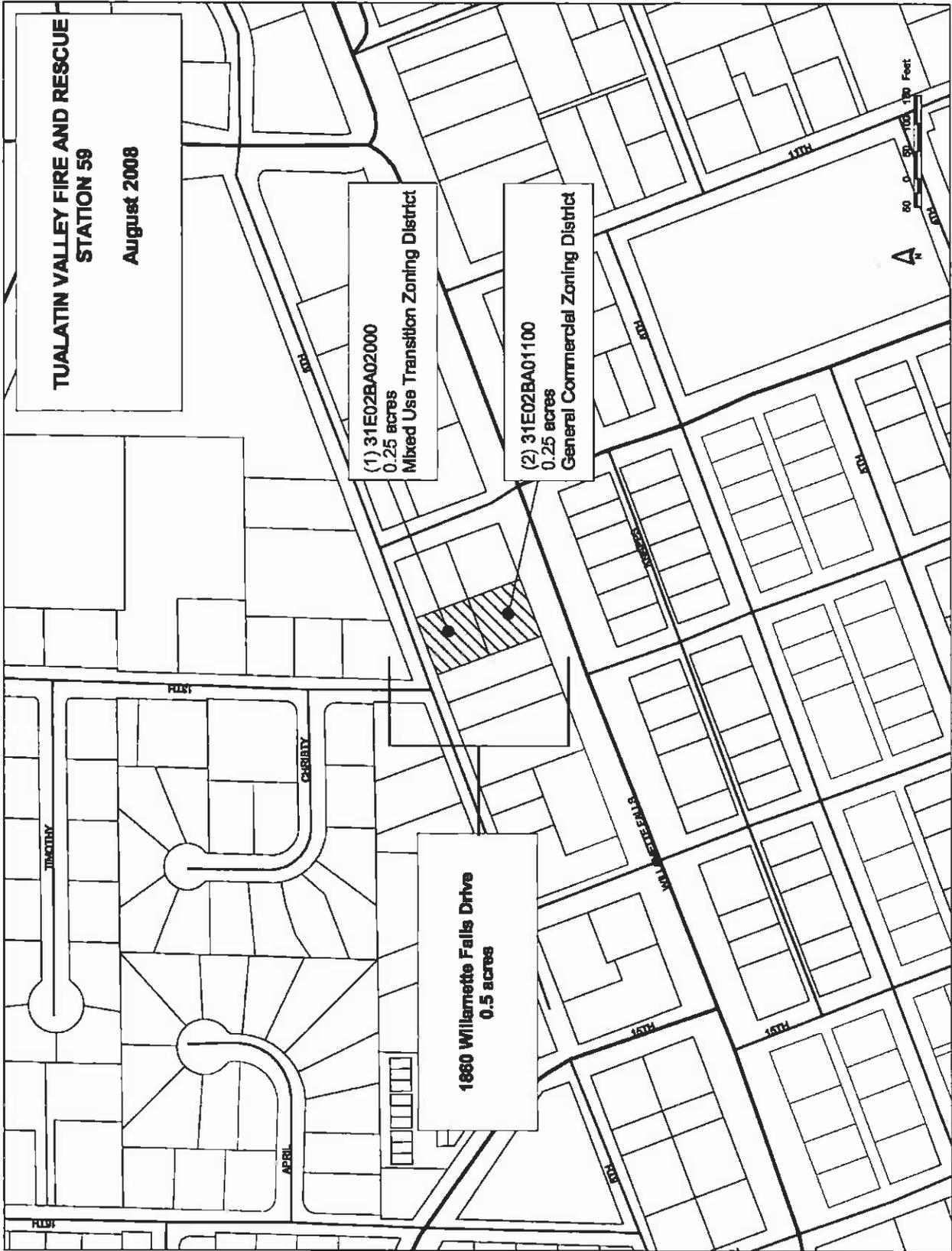
### **Section 2 – Applicable Review Criteria**

- **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 contains memorandums in support of the fire station final design along with copies of some historical photographs
- Exhibit C is the Pre-Application Conference Notes
- Exhibit D is the Stormwater Report
- Exhibit E contains a letter from PSE Architects regarding the Clear Vision Areas
- Exhibit F is the Arborist Report
- Exhibit G is the Neighborhood Meeting Documentation
- Exhibit H is the Noise Study
- Exhibit I contains the Lighting Cut Sheets noted on the Electrical Site Plan (Sheet E1.1, Exhibit A)

Figure 1. Vicinity Map



## Section 2: Conformance with the 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 19 General Commercial, GC

#### 19.020 Procedures and Approval Process

*C. A conditional use, Section 19.060 is a use, the approval of which 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 General Commercial 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 49.

#### 19.060 Conditional Uses

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

*18. 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 General Commercial zone.

#### 19.070 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 front lot line length or the minimum lot width at the front lot line shall be 35 feet.*

*2. The average minimum lot width shall be 50 feet.*

*3. The average minimum lot depth shall not be less than 90 feet.*

*4. Where the use abuts a residential district, the setback distance of the residential zone shall apply. For example, when the rear of a residential property abuts the side of a commercial property, the residential 20-foot setback shall apply to the commercial property. When the side of a residential property abuts the rear of a commercial property, the residential 5 to 7-1/2 foot setback shall apply to the commercial property. In addition, a buffer of up to 50 feet may be required.*

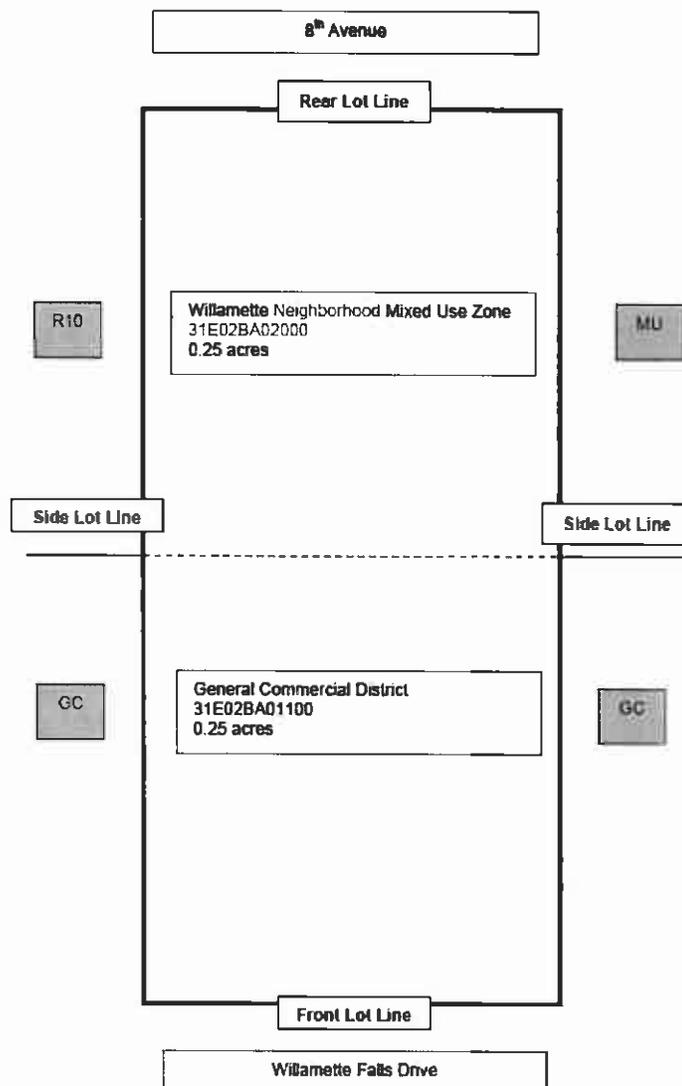
*5. The maximum lot coverage shall be 50 percent.*

6. The maximum building height shall be two and one-half stories or 35 feet for any structure located within 50 feet of a low or medium density residential zone, and three and one-half stories or 45 feet for any structure located 50 feet or more from a low or medium density residential zone.

7. For lot lines that abut an arterial, there shall be no minimum yard dimensions or minimum building setback area, and the maximum building setback shall be 20 feet. The front setback area between the street and the building line shall consist of landscaping or a combination of non-vehicular hardscape areas (covered with impervious surfaces) and landscaped areas, with at least 25 percent of the front setback area consisting of landscaped areas. If there are not street trees within the public right-of-way, the front setback area shall include such trees per the requirements of the City Arborist.

**Response:** The proposed fire station is sited on two contiguous parcels each within a different zoning district: the parcel to the north is zoned Willamette Neighborhood Mixed Use and the parcel to the south is zoned General Commercial. This is illustrated in Figure 2 below. Both parcels are under the ownership of TVF&R and are being developed together through this application. Per the City of West Linn Definitions chapter a lot is "a plot, parcel, or area of land owned by or under the lawful control and the lawful possession of one distinct ownership." Per that definition this application considers the two contiguous parcels as a lot or an area of land owned by one distinct ownership. Due to this unique situation this application looks at the two parcels as one lot with the front, back and side lot lines reflecting this. The lot dimensions and building requirements are addressed in Table 1 below.

**Figure 2. Lot Layout**



<b>Table 1. Lot Dimensional Requirements</b>			
<i>Dimension</i>	<i>GC Requirement</i>	<i>MU Requirement</i>	<i>Proposed</i>
Minimum Front Lot Line or Width	35'	35'	109'
Average Minimum Lot Width	50'	50'	109'
Average Minimum Lot Depth	90'	90'	Approximately 198.8' (approximately 99.4' per parcel)
Maximum Lot Coverage	50%	Not Applicable	32% (7,013 sq. ft. building footprint/21,669.2 sq. ft.)
Minimum/Maximum Lot Size	Not Applicable	4,500 sq. ft./ 10,000 sq. ft.	21,669.2 sq. ft. (see below)
Minimum Interior Side Yard Setback	There are no interior side or rear yard setbacks specified for lots that abut an arterial. Additionally there is no rear yard in the GC zone.	7'6"	East: 12' West: 7'6"
Rear Yard		20'	20'
<b>Building Requirements</b>			
Maximum Building Setback	20'	Not Applicable, there is no front yard in the MU zone.	20'
Maximum Building Height	35'	35'	Occupied building height: 28' Top of the bell tower: 36'
Maximum Building Size for all Floors	Not Applicable	6,000 sq. ft.	First floor: 385 sq. ft. of building area in the MU district Second floor: 0 sq. ft.
Maximum FAR	Not Applicable	0.4, ground floor should not exceed 5,000 sq. ft.	385 sq. ft. building area in the MU district

Per Code Sections 19.080 (below) and 59.090, Dimensional Requirements, Conditional Uses (see page 46), the appropriate lot size for a conditional use, such as a fire station in either zoning district, will be determined by the Planning Commission at the time of approval. Each parcel is approximately 10,834.6 square feet for a total lot size of 21,669.2 square feet. The larger lot size is necessary for the fire station to properly house the large fire apparatus, staff quarters, neighborhood meeting room and requested parking spaces. Therefore, the proposed lot size is appropriate for the proposed use and the applicant will request that the Planning Commission make that determination in accordance with Code Section 19.080. Additionally, although the fire station is 36 feet to the top of the bell tower, the bell tower is not subject to the height restrictions in Chapters 19 or 59 per Chapter 40 which states that projections such as towers, which cannot be used for human occupancy, are not subject to the building height limitation of this Code.

*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.*

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

## 19.080 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:** As discussed above, the proposed site for the fire station is made up of two parcels (31E02BA02000 and 31E02BA01100) each of which is approximately 0.25 acres (10,834.6 square feet) in size making an approximate lot size for the site of 0.5 acres (21,669.2 square feet). Although there is no minimum or maximum lot size in the General Commercial zone there is the Mixed Use zone. The proposed lot size is larger than allowed by the standard but is necessary for the fire station to properly house the large fire apparatus, staff quarters, neighborhood meeting room and requested parking spaces. Therefore, the proposed lot size is appropriate for the proposed use and the applicant will request that the Planning Commission make that determination in accordance with this Code Section.

## 19.090 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 42, Clear Vision Areas.*
- 6. Chapter 44, Fences; Screening of Outdoor Storage.*
- 7. Chapter 46, Off-street Parking and Loading.*
- 8. Chapter 48, Access.*
- 9. Chapter 52, Signs.*
- 10. 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 17
- Chapter 42, Clear Vision Areas: page 18
- Chapter 44, Fences; Screening Outdoor Storage: page 19
- Chapter 46, Off-Street Parking and Loading: page 20
- Chapter 48, Access: page 21
- Chapter 52, Signs: Not applicable, no signs are being proposed at this time.
- Chapter 54, Landscaping: page 24

## 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 the Erosion Control Plan has been submitted as Sheet EC1 of Exhibit A. A separate Erosion Control Details sheet (Sheet EC2, Exhibit A) has also been provided.

### 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;*

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:** The Erosion Control Plan is being submitted by TVF&R. All required fees will be paid at the appropriate time. The required plan, developed under the guidelines of the Erosion Prevention and Sediment Control Planning and Design Manual (December 2000), and containing the information required above, has been submitted as Sheet EC1 of Exhibit A. A separate Erosion Control Details sheet (Sheet EC2, Exhibit A) has also been provided. 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 (December 2000).

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

**Response:** The proposed development has been designed to minimize the disturbance of the natural topography, vegetation and soils on-site.

C. *Designs shall minimize cuts and fills.*

**Response:** The Erosion Control Plan has been designed to minimize cut and fill to the greatest extent possible. The primary cut and fill areas are the building pad and the stormwater quality facility.

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

**Response:** The Erosion Control Plan will contain inlet protection, silt fencing and stabilized construction entrances.

*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. Turbidity control techniques will be applied to prevent the increase of turbidity in any natural waterbodies downstream of the site.

*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 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 EC1, 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.

## 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. Per the pre-application conference notes (Exhibit C), stormwater detention will not be required because the improvements do not add more than 5,000 square feet of new impervious area. Stormwater from the proposed parking lot and building roof will be treated by a vegetated swale on the east side of the site. Runoff from the south driveway will be treated by a separate vegetated swale. Runoff from the improvements to 8th Avenue will be collected and treated by a storm swale and then will exit back onto the public road. All stormwater facilities were sized and designed per the City of Portland Stormwater Management Manual per the pre-application conference notes (see Exhibit D for the Stormwater Report).

### 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 form, 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:** An Existing Conditions Plan and a Site Plan (Sheet A1.0), which includes topographical information, have 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 D.

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

**Response:** A Landscape Plan, which includes planting details 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.*

**Response:** As shown detailed on the submitted plan sheets (Sheet C0.0 through C2.4, Exhibit A) and discussed in the Stormwater Report (Exhibit D) 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:** Per the pre-application conference notes (Exhibit C) stormwater detention is not required for the site because the improvements do not add more than 5,000 square feet of new impervious area. Stormwater pollution reduction facilities meet the City of West Linn standards and were designed by a professional engineer licensed in the State of Oregon (see the Stormwater Report, Exhibit D).

*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 detention and treatment facilities will be vegetated as specified in the Portland Stormwater Management Manual.

*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 will not be amended and topsoil will be imported to the site.

*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:*

*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 A1.0, 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.*

**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 Landscape Plan (Sheet L1.0, Exhibit A) 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.

**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 to the top of the bell tower. This is one foot greater in height than the restriction in Chapters 40 and 59. However, because the bell tower is a projection which cannot be used for human occupancy it is not subject to the building height limitation of those Code Sections. The occupied building height is 28 feet.

**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:** As required by Code Section 19.070.A(7) the maximum allowed building setback in the General Commercial zoning district is 20 feet. The proposed fire station, as shown on Sheet A1.0 of Exhibit A, currently meets this standard. The clear vision area requirements, as detailed below, require a triangular area that is 30 feet along the right-of-way and along the accessway or driveway that intersects with a public street. Given the Code's maximum setback requirement, it is impossible for the development to meet both standards required by the Code, therefore a Variance to the standards of this Chapter is being applied for as part of this development application beginning on page 54.

**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:** As discussed above the proposed fire station cannot meet both the required Clear Vision Areas and the required maximum building setback. The achievable triangular areas are shown on the submitted Site Plan (Sheet A1.0, Exhibit A). A Variance is being applied for as part of this application beginning on page 54.

**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:** There is a brick masonry wall with a locking metal gate proposed to enclose the trash and recycling area for the site which will be in accordance with all applicable provisions of Chapters 44 and 55.

**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 and maintained in accordance with this chapter, however, per Code Section 46.140 Exemptions to Parking Requirements and the pre-application conference notes (Exhibit C, page 4) because the site is within the Willamette Falls Drive Commercial District/Overlay Zone and the building fronts on Willamette Falls Drive it is exempt from the parking requirements of this Chapter. As shown on the Site Plan (Sheet A1.0, Exhibit A) the applicant is proposing twelve parking spaces which will include one ADA space. The initial Site Plan that was shown to City staff at the pre-application conference included thirteen parking spaces which were deemed acceptable as the number of spaces met the "one space per peak shift employee and incidental visitors" threshold. The number of parking spaces was reduced by one space to accommodate the following:

- An additional 10 feet of right-of-way required along 8<sup>th</sup> Avenue;
- An expansion of the building footprint in the north/south direction by approximately 7 feet; and
- Additional space needed to correctly site the trash enclosure.

Per the pre-application conference notes, the City would prefer that there be enough parking to meet the "one space per peak shift employee and incidental visitors" and the twelve parking spaces provide that. There will be four firefighters per shift leaving four spaces open for each additional fire fighter on-site at the time of the daily shift change (7am), and four for any visitors. Other than during the once-a-day shift change, there will typically be eight spaces open to incidental visitors. These parking spaces will be designed and installed per the dimensional standards of this Code. All disabled parking and maneuvering spaces have been designed to be consistent with the current ADA standards. Additionally, there will be six bicycle parking spaces provided along the eastern frontage.

**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 A1.0, Exhibit A) the site has access from a public street, 8<sup>th</sup> Avenue. All vehicles, including the fire apparatus, will enter the site from 8<sup>th</sup> Avenue and while the passenger vehicles will also exit onto 8<sup>th</sup> Avenue, the fire apparatus will pull forward and park in the two bays within the fire station and exit the site via Willamette Falls Drive. 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 for non-residential uses...*

*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. Additionally, per Code Section 46.140, off-street parking is not required for the site due to its inclusion in the Willamette Falls Drive Commercial District/Overlay Zone and because it fronts on Willamette Falls Drive, nor will the site be gated; therefore, criteria B through D above are not applicable

#### **48.060 Width and Location of Curb Cuts and Access Separation Requirements**

*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 34 feet wide and the egress onto Willamette Falls Drive is 36 feet wide; therefore, the criteria above are met.

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

*1. On an arterial when intersected by another arterial, 150 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 8<sup>th</sup> Avenue (a local street per Figure 3-1 of the West Linn Transportation System Plan) is approximately 160 feet from 12<sup>th</sup> Street (a minor arterial and the closest intersection). The egress on Willamette Falls Drive (a minor arterial) is also approximately 160 feet from 12<sup>th</sup> Street; 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.*

*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 8<sup>th</sup> Avenue and an egress on Willamette Falls Drive. The egress on Willamette Falls Drive, a minor arterial, is 50 feet from any adjacent curb cut to the east and approximately 30 to the west; however, this is a one-way exit for fire apparatus only. Additionally, it should be noted that while the station is considered to front along Willamette Falls Drive there is actually a frontage road approximately 20 feet in width that separates the front of the station from Willamette Falls Drive, in effect, providing an additional 20 feet buffer between the station and the arterial. The access/egress on 8<sup>th</sup> Avenue would be the only City standard curb cut on the street.

*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; one per street.

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

**Response:** Adequate lines of sight have been provided per PSE Architects (see Exhibit E) at each driveway pursuant to engineering standards.

#### **48.080 Bicycle and Pedestrian Circulation**

*A. Within all multi-family developments...*

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

*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.

## 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:** No heritage trees have been identified on-site. An Arborist Report which includes information regarding of the existing trees on-site has been included with this application as Exhibit F.

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.

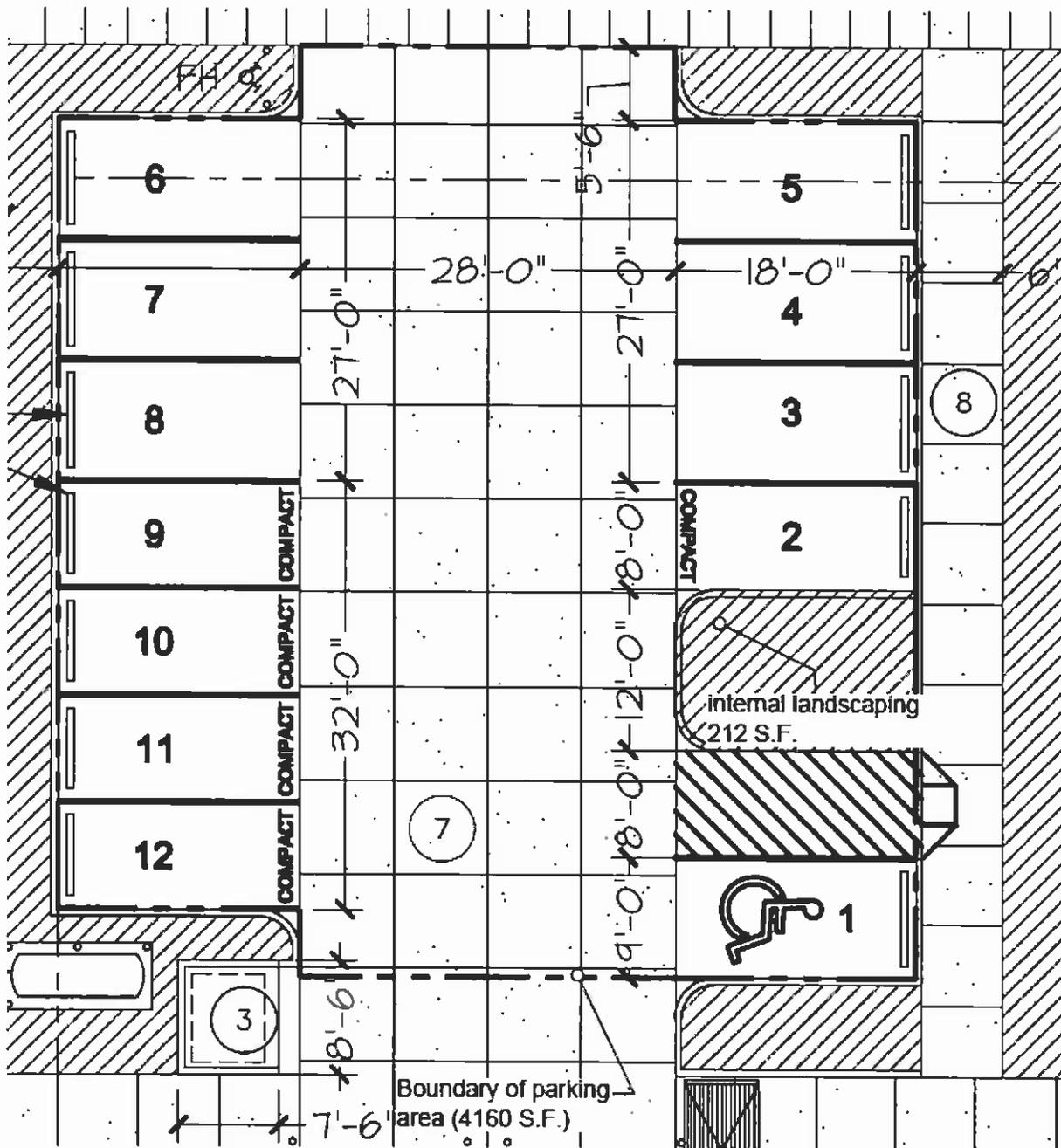
**Response:** The site has a total square footage of 21,669.2 square feet (approximately .5 acre); 20% of the site would be 4,333.84 square feet. Currently the landscaping on-site is equal to 6,352 square feet and does meet the standard.

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.

**Response:** As shown in Figure 3 below, the parking area measures approximately 4,160 square feet and contains 12 parking spaces. There is one internal landscaping area which measures 212 square feet, approximately 5.1% of the overall parking area.

**Figure 3. Parking Area Measurement**



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

**Response:** The internal landscaping area is approximately 18 feet by 12 feet; therefore this criterion is met.

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 and soil amendments. As noted on the Landscape Plan (Sheet L1.0, Exhibit A) the irrigation facilities will be design-build and will be appropriate for the healthy and long term maintenance of the proposed plant species.

*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 8<sup>th</sup> Avenue by 17.5 feet. There is landscaping within that buffer which consists of street trees, a 3 foot high hedge and groundcover (see Landscaping Plan, Sheet L1.0, Exhibit A).

*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 Willamette Falls Drive which does not contain a parking area; therefore the above 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 at the north of the site is buffered from the properties along the east by a 23.5 foot wide landscaped area and along the west by an 11 foot wide landscaped buffer.

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

**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 waste collection area 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:** The trees proposed for the site are Raywood Ash, Bowhall Mapes and Leyland Cypress. The Raywood Ash is proposed for the parking area and can reach 25 feet wide and 35 feet tall. Bowhall Maples are proposed for along the property line and are narrowly formed (40 feet by 15 feet) to help minimize leaf drop in the fall and to give clearance for fire apparatus. The Leyland Cypress on the South side and along the West property line is an evergreen and can reach 20 feet tall and 6 feet wide. All can be drought tolerant once established and are disease resistant. None are fruit-producing and all are attractive and have good fall color.

*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 planted 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 Code 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.*

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

#### 54.070 Specification Summary

<i>Area/Location</i>	<i>Landscaping Required</i>	<i>Landscaping Proposed</i>
1. Between parking lot and ROW	10 feet	11.5 feet
2. Between parking lot and other lot.	5 feet	East: 23.5 feet West: 11 feet
5. Percentage of non-residential site to be landscaped	20%	29.3 %
6. Percentage of 10-25 car parking lot to be landscaped (excluding perimeter)	5%	5.1%

## 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 14, 2008 and the required documentation is submitted as Exhibit G 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.*

*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.*

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 13
- 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 17
- Chapter 42, Clear Vision Areas: page 18
- Chapter 44, Fences; Screening Outdoor Storage: page 19
- Chapter 46, Off-Street Parking and Loading: page 20
- Chapter 48, Access: page 21
- Chapter 52, Signs: Not applicable, no signs are being proposed at this time.
- Chapter 54, Landscaping: page 24

*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 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 has been no heritage trees identified on-site. Exhibit C contains an Arborist Report detailing the trees identified on-site and discusses the one tree (see Table 3) determined by the City Arborist as being significant. The significant tree was determined to be in "Good" condition and will be protected during construction as detailed in the Arborist Report and on the Tree Protection Plan (Sheet TP-1, Exhibit A).

There are four trees that will be removed from the proposed site as detailed in the Table below which are not considered significant and, therefore, will not require any on-site mitigation.

<i>ID Number</i>	<i>Tree Type</i>	<i>DBH</i>	<i>Status</i>
10000	English Walnut	21"	Non-significant; remove
10001	English Walnut	23"	Non-significant; remove
10217	lodgepole Pine	12"	Non-significant; remove
10218	Tree-of-Heaven	20"	Non-significant; remove
10244	Port-Orford-cedar	35"	Significant; retain and protect
10151	Silver Maple	~10"	Non-significant; retain and protect
10170	Port-Orford-cedar	10"	Non-significant; retain and protect

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

**Response:** As detailed on the submitted Grading Plan (Sheet C1.0, Exhibit A) and in the Stormwater Report (Exhibit D) the topography and natural drainage have been 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.

**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:** The proposed fire station was designed using a traditional Inca Red brick masonry, which is detailed appropriately to incorporate and promote the design standards of the Willamette Commercial District Overlay. Although those standards are not specifically applicable to the fire station building, TVF&R respects the intent of the standards and has tried to remain as true to the time period and architectural style as possible.

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:** Station 59 is compatible in the context of Willamette Falls Drive with a similar scale to adjacent existing structures and design elements that reference the existing context, including the 'false front' façade that features the bell tower, grouped double hung windows with prominent brick jambs, jack arch headers and precast sills. The building line along Willamette Falls Drive varies in plan and elevation to create four smaller masses similar in width to adjacent structures.

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:** The proposed fire station reduces in scale from the south elevation to the north elevation from two stories to one story, in response to the residential neighborhood to the north. The building footprint is primarily sited on the southern portion of the lot, with the parking and landscaped area acting as a transition or buffer area between the scale of the General Commercial zone and the scale of the residential neighborhood to the north. The south elevation also steps down in scale from the highest point at the bell tower to the east and west elevations. On the west side of the building an outdoor patio reduces the overall scale of the station in response to the adjacent business in a converted two story residence.

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 and with the Willamette Commercial Overlay District. Although the use of brick as the main building material is generally advocated by the district's design standards, TVF&R feels the building is compatible because there is historic precedent within the region that civic buildings and fire stations in particular, were often constructed with brick masonry (see Exhibit B). Additionally the brick masonry is detailed in a manner that is consistent with historic masonry structures in the greater Metro area that are exemplary of architecture built in the late 1800's.

*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:** Station 59 is designed appropriately to human scale through the consistent use of relief in the detailing of the brick masonry, particularly around window and door openings, at each floor line and at the parapet line. Additionally, portions of the building mass step back from the prominent apparatus bay and bell tower giving the elevation additional depth.

*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:** Portions of the north and south elevations of Station 59 are setback in plan and reduced in elevation and there are multiple multi-lite windows that provide depth and visual relief to the street facing elevations. Continuous expanses of brick masonry on the east and west elevations are broken down with inset masonry panels that have head and sill details similar to window and door openings. Inset horizontal bands of masonry will create shadow lines that vary the appearance of all four elevations.

*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:** Awnings have been provided above doors on the north and east elevations of the building.

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

**Response:** There is an existing 9 foot sidewalk along Willamette Falls Drive which will be maintained or improved as appropriate during construction. Additionally, a sidewalk is being installed along 8<sup>th</sup> Avenue as shown on the submitted Site Plan (Sheet A1.0, Exhibit A).

*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. However, the fire station does front on an arterial, has the parking area in the rear of the lot and has been designed to meet the 20 foot maximum building setback required by the General Commercial zoning district.

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 A1.0, Exhibit A). The path along the eastern portion of the parking area is a seven and a half foot wide concrete walk and 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 east elevation (see Sheet A1.0, 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 Willamette Falls Drive, 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 154 at the corner of Willamette Falls Drive and 12<sup>th</sup> Street which is connected to the main entrance of the fire station via public sidewalk.

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 within the required maximum setback for buildings located along Willamette Falls Drive. The building is 36 feet in height and the right of way width for Willamette Falls Drive is approximately 120 feet. The station has been sited at the 20 foot setback line for public

safety. In the event of apparatus leaving the station on a call, a buffer between the sidewalk and apparatus bay helps protect pedestrians and passing vehicles, allowing people and vehicles to create a clear driving lane.

*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.*

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

**Response:** A mixed buffer consisting of an evergreen hedge, narrow evergreen trees and deciduous trees is proposed along the western property line. Along the eastern property line a buffer consisting of an evergreen hedge and deciduous trees is proposed. Both are shown on the Landscape Plan (Sheet L1.0, Exhibit A). The shrubs proposed for the buffers can reach 6 feet or more at maturity.

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 required noise study has been submitted as Exhibit H.

*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 Code 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.*

*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 Code 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. Per the pre-application conference notes (Exhibit C) additional right of way and improvements are required along 8<sup>th</sup> Avenue which is reflected on the submitted Site Plan (Sheet A1, Exhibit A).

*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:** Stormwater treatment facilities design details have been prepared by a registered Civil Engineer and have been provided in the Stormwater Report (Exhibit D).

*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 C1.2, 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 C1.2.

*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 additional square feet per 1,000 square feet of building area should be provided. The fire station is 11,955 square feet requiring a storage area of 57.82 square feet. The proposed storage area is approximately 7.5 feet by 8.5 feet or 63.75 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 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 E1.1, Exhibit A and Lighting Cut Sheets, Exhibit I). All laundry and service areas have been incorporated in the floor plan (Sheets A2.1 and 2.2, 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.

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 impacted by the proposed development and those 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 Code 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.

**55.170 Exceptions to Underlying Zone, Yard, Parking, Sign Provisions, and Landscaping Provisions...**

**Response:** The applicant is not requesting an exception to the underlying zone, yard, parking, sign provisions, or landscaping provisions; therefore, this Code Section is not applicable.

**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.

**Chapter 58**  
**Willamette Falls Drive Commercial District Design Standards**

**58.030 Applicability**

*A. The provisions of this chapter shall apply to all new commercial construction...*

**Response:** The proposed fire station, as a public safety building, is a civic use per Code Section 3.030 of this Development Code and not considered commercial construction; therefore, this Code Chapter is not applicable. A memorandum from City of West Linn planner Peter Spir, included here as part of Exhibit B, further supports that the design standards within this chapter are not applicable to the proposed fire station. An attempt has been made to meet the design standards when possible and where they do not conflict with the operational requirements of a fire station or adversely affect public safety. In keeping with the overall character of the district, the design of the fire station features a prominent, modified 'western false front' in the station's bell tower. Additionally, the detailing of the brick masonry is consistent with precedent examples of brick masonry structures in the region that date from the time period (1880 – 1915) that is cited in the design standards. These details include horizontal soldier course bands at the first and second floor lines, a prominent cornice, and prominent brick jambs and headers around window and door openings. There are also grouped double hung windows with divided upper panes, and large glazed overhead doors at the apparatus bays that will face Willamette Falls Drive. In addition, spaced between the bay doors are three exterior lights that are appropriate to the historic period. The overall building mass varies in plan implying four smaller volumes that are proportioned to meet the 1.5:1 height to width ratio.

On June 17, 2008, TVF&R attended a meeting of the Clackamas County/West Linn Historic Review Board (HRB) and presented this fire station design. As discussed in the attached memorandum (see Exhibit B), the HRB, although they are not the decision body for the application, was consulted because of their training and experience in examining the historic appropriateness of designs in the Willamette Falls Commercial District. The main issue for the HRB was whether the building should be brick as proposed by the applicant or wood as is required of commercial buildings in the district. As is stated in the memorandum, "typically buildings in Willamette were constructed of wood since it was predominantly a community of mill workers and farmers and money did not exist to pay for the more expensive brick buildings. The case for brick is rooted in the fact that societies have typically done their best to build their important buildings: governmental offices, churches and schools out of the more enduring materials of brick and stone." A brick fire station, it was noted, will provide an easily identifiable landmark for this street particularly since it will offer a neighborhood meeting room.

The HRB was pleased with the design of the brick station including the arched windows and incorporation of the old bell into the top of the front elevation. However, they recommended that the metal framed doors and windows be medium brown and not plain mill finished metal. Their recommendation has been incorporated into the final design (See Sheets A3.1 and A3.2, Exhibit A). The HRB voted unanimously to recommend that the Willamette Fire Station be constructed of brick with brown finished door and window framework (see Exhibit B).

**Chapter 59**  
**Willamette Neighborhood Mixed Use Zone**

**59.020 Procedures and Approval Process**

*C. The approval of a conditional use (Section 25.560) 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 Willamette Neighborhood Mixed Use 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 49.

**59.070 Dimensional Requirements, Uses Permitted Outright and Uses Permitted Under Prescribed Conditions**

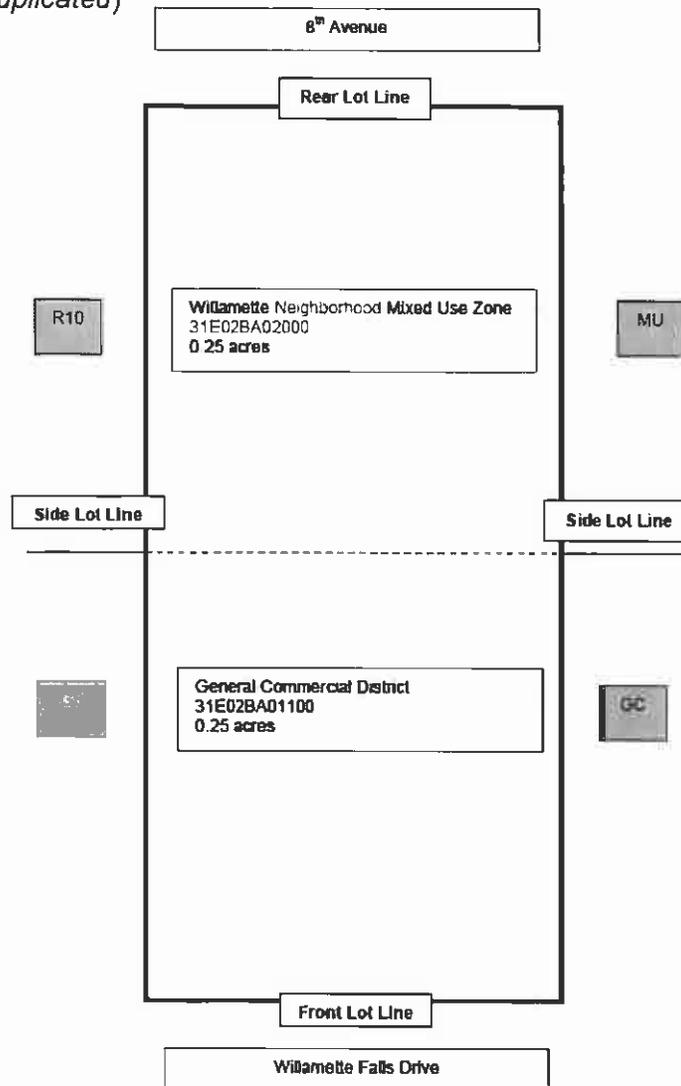
*A. Except as may be otherwise provided by the provisions of this Code, the following are the requirements for uses within this zone:*

- 1. The minimum front lot line length or the minimum lot width at the front lot line shall be 35 feet.*
- 2. The average minimum lot width shall be 50 feet.*
- 3. The average minimum lot depth shall not be less than 90 feet.*
- 4. The minimum yard dimensions or minimum building setback area from the lot line shall be:*
  - a. For a front yard, 12 feet minimum and 20 feet maximum to the structure, except that a porch, patio, or pedestrian amenity may be 6 feet from the front property line.*
  - b. For an interior side yard, 7-1/2 feet.*
  - d. For a rear yard, 20 feet. However, where the use abuts a residential district, the setback distance required in the residential district shall apply, and within the setback area a buffer of at least 10 feet of landscaping in addition to a fence is required.*
- 5. The maximum building height shall be two stories above grade, or 35 feet, whichever is less.*
- 6. Maximum building size for all floors shall not exceed 6,000 square feet above grade excluding porches.*
- 7. The building floor area ratio shall be .4, except that the ground floor of the building shall not exceed 5,000 square feet.*
- 8. The minimum lot size shall be 4,500 square feet and the maximum lot size shall be 10,000 square feet, unless defined as an existing lot of record.*

**Response:** The proposed fire station is sited on two contiguous parcels each within a different zoning district: the parcel to the north is zoned Willamette Neighborhood Mixed Use and the parcel to the south is zoned General Commercial. This is illustrated in Figure 2 below. Both parcels are under the ownership of TVF&R and are being developed together through this application. Per the City of West Linn Definitions chapter a lot is "a plot, parcel, or area of land owned by or under the lawful control and

the lawful possession of one distinct ownership." Per that definition this application considers the two contiguous parcels as a lot or an area of land owned by one distinct ownership. Due to this unique situation this application looks at the two parcels as one lot with the front, back and side lot lines reflecting this. The lot dimensions and building requirements are addressed in Table 1 below.

**Figure 2. Lot Layout (Duplicated)**



**Table 1. Lot Dimensional Requirements (Duplicated)**

<i>Dimension</i>	<i>GC Requirement</i>	<i>MU Requirement</i>	<i>Proposed</i>
Minimum Front Lot Line or Width	35'	35'	109'
Average Minimum Lot Width	50'	50'	109'
Average Minimum Lot Depth	90'	90'	Approximately 198.8' (approximately 99.4' per parcel)
Maximum Lot Coverage	50%	Not Applicable	32% (7,013 sq. ft. building footprint/21,669.2 sq. ft.)
Minimum/Maximum Lot Size	Not Applicable	4,500 sq. ft./ 10,000 sq. ft.	21,669.2 sq. ft. (see below)

<b>Table 1. Lot Dimensional Requirements (Duplicated)</b>			
<i>Dimension</i>	<i>GC Requirement</i>	<i>MU Requirement</i>	<i>Proposed</i>
Minimum Interior Side Yard Setback	There are no interior side or rear yard setbacks specified for lots that abut an arterial. Additionally there is no rear yard in the GC zone.	7'6"	East: 12' West: 7'6"
Rear Yard		20'	20'
<b>Building Requirements</b>			
Maximum Building Setback	20'	Not Applicable, there is no front yard in the MU zone.	20'
Maximum Building Height	35'	35'	Occupied building height: 28' Top of the bell tower: 36'
Maximum Building Size for all Floors	Not Applicable	6,000 sq. ft.	First floor: 385 sq. ft. of building area in the MU district Second floor: 0 sq. ft.
Maximum FAR	Not Applicable	0.4, ground floor should not exceed 5,000 sq. ft.	385 sq. ft. building area in the MU district

Per Code Sections 19.080 (see page 7) and 59.090, Dimensional Requirements, Conditional Uses (see below), the appropriate lot size for a conditional use, such as a fire station in either zoning district, will be determined by the Planning Commission at the time of approval. Each parcel is approximately 10,834.6 square feet for a total lot size of 21,669.2 square feet. The larger lot size is necessary for the fire station to properly house the large fire apparatus, staff quarters, neighborhood meeting room and requested parking spaces. Therefore, the proposed lot size is appropriate for the proposed use and the applicant will request that the Planning Commission make that determination in accordance with Code Section 19.080. Additionally, although the fire station is 36 feet to the top of the bell tower, the bell tower is not subject to the height restrictions in Chapters 19 or 59 per Chapter 40 which states that projections such as towers, which cannot be used for human occupancy, are not subject to the building height limitation of this Code.

*B. Design Standards. All uses in the mixed-use zone shall comply with the provisions of Chapter 55, except for Section 55.100 (7) (a, b, c, h, i, and j). Further, single family and duplex residential uses shall also comply with the Class I design review standards. In addition, the design standards described below apply to all uses.*

1. Residential style building with single story porch on the front, and on the side where it abuts a street.
2. New sidewalk construction shall be allowed to match the historical sidewalk standards in this zone.
3. Off-street parking shall be behind, under, or on the side of building.
4. Garages shall not extend any closer to the street than the street-facing façade of the house.
5. There shall be no illuminated outdoor advertising on accessory buildings, equipment, or vending machines.
6. These design standards, (B) (1) through (5) above, shall not 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 design standards. However, attempts shall be made to make the design sympathetic to surrounding properties through compatible architecture, enhanced landscaping, setbacks, buffers, and any other reasonable means.

**Response:** Per criteria number 6 above this Code Section is not applicable as the proposed development is a fire station.

### **59.060 Conditional Uses**

*Only the following conditional uses are allowed in this zone subject to the provisions of Chapter 60, Conditional Uses:*

*7. Public support and public safety facilities, including public parking lots.*

**Response:** Per Code Chapter 3.00 Definitions – Uses, public safety facilities includes fire station; therefore the proposed fire station is allowed as a Conditional Use in the Willamette Neighborhood Mixed Use Zone.

### **59.080 Additional Use Requirements**

*In addition to all other provisions of this section, the following additional requirements may apply:*

*1. Permitted uses may only be open from 6 a.m. to 10 p.m. and are subject to the noise provisions of Chapter 55.*

*2. Exterior business activity shall not take place beyond the rear wall of the building when the subject property abuts a residential district, except for parking and refuse storage. Refuse storage must be buffered or enclosed and may not abut a property line that adjoins a residential zone.*

*3. If a qualified historic residential landmark in the Willamette neighborhood is destroyed, it may be rebuilt on the original building footprint.*

**Response:** The proposed fire station is not a permitted use but a conditional use; nor will any exterior business take place or any historic residential landmark being destroyed; therefore, this Code Section is not applicable.

### **59.090 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:** As discussed previously, the proposed site for the fire station is made up of two parcels (31E02BA02000 and 31E02BA01100) each of which is approximately 0.25 acres making an approximate lot size for the site of 0.5 acres (21,669.2 square feet). Although there is no minimum or maximum lot size in the General Commercial zone there is the Mixed Use zone. The proposed lot size is larger than allowed by the standard but is necessary for the fire station to properly house the large fire apparatus, staff quarters, neighborhood meeting room and requested parking spaces. Therefore, the proposed lot size is appropriate for the proposed use and the applicant will request that the Planning Commission make that determination in accordance with this Code Section.

## 59.100 Other Applicable Development Standards

The provisions of Chapter 25, Sections 25.060, 25.070, 25.080, and 25.090, apply to properties currently identified in the West Linn historic inventory, Chapter 26, Historic Landmarks. The following standards apply to all development including permitted uses:

1. Chapter 28, Willamette River Greenway.
2. Chapter 36, Manufactured Homes.
3. Chapter 30, Wetlands and Riparian Area.
4. Chapter 34, Accessory Structures.
5. Chapter 35, Temporary Uses.
6. Chapter 37, Home Occupations.
7. Chapter 38, Additional Yard Area Required, Exceptions to Yard Requirements, Storage in Yards and Projections into Yards.
8. Chapter 40, Building Height Limitations and Exceptions.
9. Chapter 42, Clear Vision Areas.
10. Chapter 44, Fences, Screening of Outdoor Storage.
11. Chapter 48, Access.
12. Chapter 46, Off-Street Parking and Loading, except for the provisions of Section 46.140, apply to all uses.
13. Chapter 55, Design Review.
14. Chapter 54, Installation and Maintenance of Landscaping.
15. Chapter 53, Sidewalk Use.

**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 28, Willamette River Greenway: Not applicable; the proposed site is not within the Willamette River Greenway.
- Chapter 30, Wetlands and Riparian Areas: Not applicable; the proposed site does not contain any wetlands or riparian areas.
- Chapter 34, Accessory Structures: Not applicable; no accessory structures are being proposed.
- Chapter 35, Temporary Uses: Not applicable; no temporary uses are being proposed.
- Chapter 36, Manufactured Homes: Not applicable; no manufactured homes are being proposed.
- Chapter 37, Home Occupations: Not applicable; no home occupations 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 17
- Chapter 42, Clear Vision Areas: page 18
- Chapter 44, Fences & Screening Outdoor Storage: page 19

- Chapter 46, Off-Street Parking and Loading: page 20
- Chapter 48, Access: page 21
- Chapter 53, Sidewalk Use: Not applicable; no merchandise displays or food service are being proposed for the site's sidewalks.
- Chapter 54, Landscaping: page 24
- Chapter 55, Design Review: page 29

**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 conditional use application has been initiated by TVF&R, the owners of the subject site.

*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 Willamette Neighborhood Association on May 14, 2008. The required documentation has been submitted as Exhibit G.

*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 Code Section 60.070 beginning on the next page.

*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 A1.0. The required copies were submitted at 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 G.

*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 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 A1.0, 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 on a portion of the proposed site which has not impacted the surrounding properties or uses in a 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 site currently contains an existing fire station and is suitable for the new station as well. The station-site will be extended to the north and will occupy two parcels; some grading will be necessary but will not be extensive.

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 C1.2, 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 zones are met as shown in Table 1 (pages 6 and 44).

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

**Response:** There are no signs proposed as part of this development application; therefore, Chapter 52, Signs are not applicable. Additionally, there are no merchandise displays or food services being proposed for the site's sidewalks; therefore, Chapter 53, Sidewalk Use is not applicable. Any applicable requirements of Chapters 54 to 55 have been addressed by this application beginning on page 24.

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 Willamette 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 modern standards necessary to meet seismic and ADA standards, as well as be able to house the firefighters and necessary fire apparatus on-site.

- *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 29.

*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 Code 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 Code Sections.

*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.*

**Response:** The require Site Plan has been submitted as Sheet A1.0 of Exhibit A of this development application.

**Chapter 75  
Variance**

**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 42, Clear Vision Areas. As required by Code Section 19.070.A(7) the maximum allowed building setback in the General Commercial zoning district is 20 feet. The proposed fire station, as shown on Sheet A1.0 of Exhibit A, currently meets this standard. The clear vision area requirements, as detailed on page 18, require a triangular area that is 30 feet along the right-of-way and along the accessway or driveway that intersects with a public street. Given the Code's maximum setback requirement (20 feet), it is impossible for the development to meet both required standards; therefore, this Variance is being requested to allow the proposed fire station to project 10 feet into the required clear vision areas.

**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 initiated by TVF&R, the owner's of the subject property.

*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 A1.0 of 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 for TVF&R to properly site the proposed fire station as dictated by the standards of the General Commercial zone. The zoning district requires that the building be setback a maximum of 20 feet which results in the station being unable to meet the requirements of Chapter 42, Clear Vision Areas, as illustrated above.

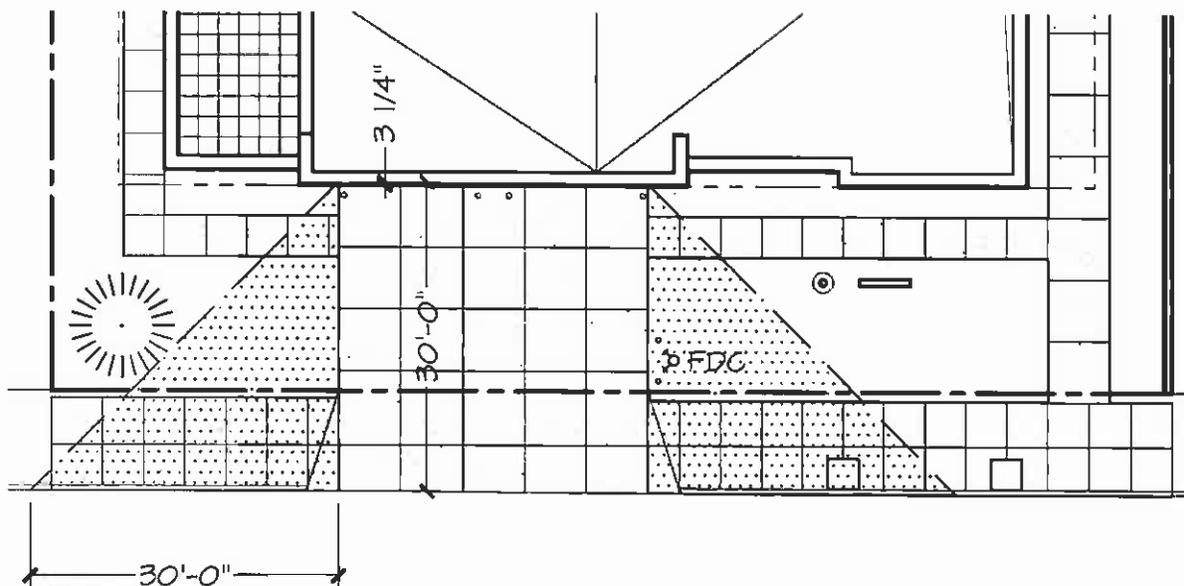
3. The authorization of the variance will not be materially detrimental to the purposes and standards of this Code, will not be inconsistent with all other regulatory requirements, and will not conflict with the goals and policies of the West Linn Comprehensive Plan.

**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 this arterial. The station will continue to meet all other regulatory standards of this Code and will not conflict with the goals and policies of the West Linn Comprehensive Plan. In fact, by maintaining the 20 foot setback, the new fire station will be more compatible with existing development along Willamette Falls Drive.

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

**Response:** This Variance request is the minimum which would alleviate the conflict between the maximum building setback of Code Section 19.070.A(7) and the Clear Vision Area requirements of Chapter 42. The proposed fire station has been setback as far as allowed from the property line and still has a 10 foot overlap into the clear vision area. If the clear vision areas were to include the sidewalk and curb along Willamette Falls Drive it would add an additional 9 feet to the length of the measurement along the accessway (see Figure 4 below). The additional 9 feet would result in a clear vision area that is only 1 foot under the requirement. Additionally, it should be noted that while the station is considered to front along Willamette Falls Drive there is actually a frontage road approximately 20 feet in width that separates the front of the station from Willamette Falls Drive, in effect, providing an additional 20 feet of vision clearance from the fire station driveway. This frontage road is used mainly for accessing sites along Willamette Falls Drive and on-street parking. Per PSE Architects, the resulting clear vision area will not negatively impact the safety of the overall site (see Exhibit E).

**Figure 5. Proposed Clear Vision Areas**



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 nor a violation of the ordinance but does require a variance to standards within this ordinance. As previously noted, the Clear Vision Area standards of Chapter 42 are in direct conflict with the requirements of the maximum building setback standards of the General Commercial Zoning District. The site cannot simultaneously meet both the 20 foot maximum setback and the 30 foot clear vision area requirement (see Figure 4 above).

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 clear vision area standards will be contained on-site and the building will continue to meet all 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.

**Exhibits**  
**Tualatin Valley Fire & Rescue Station 59**



**Exhibit A: Plan Set**  
**Tualatin Valley Fire & Rescue Station 59**  
*(Submitted Under Separate Cover)*

- Plan Checksheet
- A1.0 Site Plan
- A1.1 Site Analysis
- A2.1 First Floor Plan
- A2.2 Second Floor Plan
- A3.1 Elevations (North and South)
- A3.2 Elevations (East and West)
- C0.0 Civil Cover Sheet
- Existing Conditions
- C1.0 Grading Plan
- C1.1 Site Improvement Plan
- C1.2 Utility Plan
- C2.1 Civil Details
- C2.2 Water Details
- C2.3 Street Details
- C2.4 Sewer Details I
- C2.5 Sewer Details II
- EC1 Erosion Control Plan
- EC2 Erosion Control Details
- E1.1 Electrical Site Plan
- L1.0 Landscape Plan
- TP-1 Tree Protection Plan
- Materials Board *(One copy only)*

<b>Tualatin Valley Fire &amp; Rescue Station 59 Exhibit A</b>	
<b>Site Plan</b>	<i>Sheet A1.0</i>
Name, address, and telephone number of Owner, Developer, and Project Designer	✓
Lineal scale and north arrow	✓
Entire property and adjacent properties	✓
Boundary lines and dimensions for the perimeter of the property and proposed lot lines, section lines, corners, and monuments	✓
Location of at least one temporary benchmark and contours provided in slope analysis	<i>See A1.1 Site Analysis and Existing Conditions</i>
Streams and stream corridors	<i>Not Applicable.</i>
Location, names, and dimensions of all: <ul style="list-style-type: none"> <li>▪ Existing and platted streets, public ways, and easements on the site and adjacent property</li> <li>▪ Proposed streets, public ways, or easements on the site</li> </ul>	✓
Location, dimensions, setback distances of all: <ul style="list-style-type: none"> <li>▪ Existing structures, improvements, utility facilities on adjoining properties, on site, and to remain on site</li> </ul>	✓
Location and dimensions of: <ul style="list-style-type: none"> <li>▪ Entrances and exits</li> <li>▪ Parking and circulation areas</li> <li>▪ Loading and service areas for waste disposal, loading, delivery</li> <li>▪ Pedestrian/bike circulation areas</li> <li>▪ On-site outdoor recreation spaces and common areas</li> <li>▪ All utilities</li> <li>▪ Sign locations</li> <li>▪ Location of areas to be landscaped</li> </ul>	<i>Location shown on A1.0</i> <i>Dimensions shown on A2.1</i> ✓ ✓ ✓ <i>Not Applicable.</i> <i>Shown on C1.2, Utility Plan</i> ✓ ✓
Location and type of outdoor light; light coverage plan	<i>Shown on E1.1, Electrical Site Plan and Exhibit I: Lighting Cut Sheets</i>
Orientation of structures; location of windows and doors	<i>Shown on A2.1, First Floor Plan; A2.2, Second Floor Plan; A3.1 Elevations (North and South) and A3.2 Elevations (East and West)</i>
Location of mailboxes	✓
Engineering noise control plan	<i>See Exhibit H, Noise Study</i>
<b>Off-street Parking Submittal Requirements</b>	<i>Sheet A1.0</i>
Delineation of individual parking and loading spaces and their dimensions	✓
Identification of compact parking spaces	✓
Location of circulation area	✓
Access point(s) to streets, alleys, and properties served	✓
Location of curb cuts	✓
Location and dimensions of landscaping, including size and type of plant material	✓
Proposed grading and drainage plans and slope of parking lot	✓
Specifications as to signs and bumper guards	✓
Identification of disabled parking spaces	✓
Location of pedestrian walkways and crossings	✓
Location of bicycle racks	✓

<b>Tualatin Valley Fire &amp; Rescue Station 59 Exhibit A</b>	
<b>Site Analysis</b>	<b>Sheet A1.1</b>
Name, address, and telephone number of Owner, Developer, and Project Designer	✓
Lineal scale and north arrow	✓
Vicinity map with location of property in relation to adjacent property, roads, pedestrian/bike ways, transit stops and utility access	<i>Vicinity Map is shown on A1.1, Site Analysis; Utility Access is shown on C1.2, Utility Plan</i>
Plan to appropriate scale with: <ul style="list-style-type: none"> <li>▪ Parcel boundaries, dimensions and gross area</li> <li>▪ Existing and proposed contour lines (2' intervals for 0-25% slope, 5' or 10' intervals for &gt;25% slope)</li> <li>▪ Slope analysis (0-5%, 5-15%, 15-25%, 25-35%, 35-50%, 50+%)</li> <li>▪ Location and width of adjoining streets</li> <li>▪ Drainage patterns and courses on site and on adjacent lands</li> <li>▪ Potential natural hazard areas, including:               <ul style="list-style-type: none"> <li>○ flood plains</li> <li>○ high-water table</li> <li>○ landslide areas</li> <li>○ high erosion potential</li> </ul> </li> <li>▪ Resource areas including:               <ul style="list-style-type: none"> <li>○ marsh and wetland areas</li> <li>○ wildlife habitat areas identified in Comprehensive Plan</li> </ul> </li> <li>▪ Site features including:               <ul style="list-style-type: none"> <li>○ large rock outcroppings</li> <li>○ unique views</li> <li>○ streams and stream corridors</li> </ul> </li> <li>▪ Potential historic landmarks and registered archaeological sites</li> <li>▪ Location of trees with 6" or more caliper at 5', heritage trees, and significant trees and tree clusters identified by City Arborist</li>   <li>▪ Existing ambient noise levels</li> <li>▪ Identify Type I &amp; II lands</li> <li>▪ Table of square footage of Type I &amp; II lands and percentage of site area</li> </ul>	✓ ✓ <i>Shown on C1.0, Grading Plan</i> ✓ ✓ See note 1 ✓ See notes 2 through 4  ✓ See note 5  ✓ See note 6  ✓ See note 7 <i>Shown on TP-1, Tree Preservation Plan and discussed in the Arborist Report (Exhibit F)</i> <i>See Exhibit H, Noise Study</i> <i>Not applicable.</i> <i>Not applicable.</i>
<b>Architectural Drawings and Elevations</b>	<b>Sheets A3.1 and A3.2</b>
Name of architect or designer	✓
Building elevations and sections tied to curb elevation	✓
Building materials: color and type	✓
<b>Grading Plan</b>	<b>Sheet C1.0a</b>
Name, address, and telephone number of Owner, Developer, Project Designer and Engineer	<i>Shown on C0.0, Civil Cover Sheet</i>
Location and extent of grading: general contour lines, slope ratios, slope stabilization proposals, location & height of restraining walls (if any)	✓ See note 11
Plans and statements to demonstrate ability to meet Appendix 33 requirements of Uniform Building Code	✓ See note 13
Plan and statement from civil engineer about runoff	<i>See Exhibit D, Stormwater Report</i>

<b>Tualatin Valley Fire &amp; Rescue Station 59 Exhibit A</b>	
Storm detention and treatment plans may be required	<i>Shown on C1.2, Utility Plan and see Exhibit D, Stormwater Report</i>
<b>Erosion Control Plan</b>	<b>Sheet EC1</b>
Name, address, phone number, mobile phone number, fax number of site steward responsible for erosion control	<i>To be submitted with erosion control permit</i>
Name, address, 24-hour contact number(s) of designated emergency contact	<i>To be submitted with erosion control permit</i>
Description of existing topography and soil characteristics from Clackamas County Soil Survey	<i>See Exhibit D, Stormwater Report</i>
Plan to appropriate scale with: <ul style="list-style-type: none"> <li>▪ Existing &amp; proposed contour lines (2' intervals for 0-25% slope, 5' or 10' intervals for slopes greater than 25%)</li> <li>▪ Location of proposed stormwater facilities including cross-sections</li>   <li>▪ Location of all existing natural features (including Water Quality Resource Areas, trees greater than 6" caliper)</li> </ul>	✓  <i>Locations shown on C1.2, Utility Plan and in cross-sections on C2.1, Utility Details, C2.4, Sewer Details and C2.5 Sewer Details II</i> ✓
Locations of all existing and proposed channels, swales, or drainage pipes carrying off-site stormwater through or around the construction area. Identify the nearest receiving stream.	<i>Not Applicable.</i>
Locations and detailed designs of all proposed erosion and sedimentation control facilities	<i>Locations shown on C1.1, Site Improvement Plan and detailed designs on EC2, Erosion Control Details</i>
Phasing of proposed erosion and sedimentation control work, including activity schedule for each phase outlining specific BMPs for duration of project	✓
Details and notes on site plan for mulching and re-vegetation	<i>Shown on L1.0, Landscape Plan</i>
Detailed planting procedures, topsoil requirements, seed/plant specifications, and plant maintenance specifications	<i>Shown on L1.0, Landscape Plan</i>
<b>Landscape Plan</b>	<b>Sheet L1.0</b>
Shown on the plan: <ul style="list-style-type: none"> <li>▪ Preliminary underground irrigation system</li> <li>▪ Location and height of fences and other buffering/screening materials</li> <li>▪ Location of terraces, decks, patios, shelters, and play areas</li> <li>▪ Building and pavement outlines</li> </ul>	✓ <i>See Irrigation Note</i> ✓ <i>See also A1.0, Site Plan, note 3</i> <i>Not Applicable.</i> ✓
Accompanied by: <ul style="list-style-type: none"> <li>▪ Erosion controls proposed</li>   <li>▪ Planting schedule</li> <li>▪ Supplemental information as required by Planning Director or City Arborist</li> </ul>	<i>Shown on EC, Erosion Control Plan</i> ✓ <i>See Arborist Report (Exhibit F)</i>
<b>Stormwater Plan</b>	
Name, address, and telephone number of applicant	<i>Shown on C0.0, Civil Cover Sheet</i>
Scale of plan, north arrow and vicinity map	<i>Vicinity map shown on C0.0, Civil Cover Sheet and stormwater plan shown on C1.2, Utility Plan</i>

<b>Tualatin Valley Fire &amp; Rescue Station 59 Exhibit A</b>	
Plan to appropriate scale with: <ul style="list-style-type: none"> <li>▪ Existing &amp; proposed contour lines (2' intervals for 0-25% slope, 5' or 10' intervals for slopes greater than 25%)</li> </ul>	<i>Shown on C1.0, Grading Plan</i>
<ul style="list-style-type: none"> <li>▪ Location of proposed stormwater facilities including cross-sections</li> <li>▪ Location of all existing natural features (including Water Quality Resource Areas)</li> </ul>	<i>Locations shown on C1.2, Utility Plan and in cross-sections on C2.1, Civil Details; C2.4, Sewer Details, and C2.5 Sewer Details II Shown on C1.2, Utility Plan</i>
<ul style="list-style-type: none"> <li>▪ Tree inventory in impacted area:               <ul style="list-style-type: none"> <li>○ location of all trees 6"+ diameter at breast height &amp; description of existing vegetation species</li> <li>○ Outline canopy cover in remaining area</li> </ul> </li> <li>▪ Location, width, material of access road to facilities for maintenance</li> </ul>	<i>Shown on TP-1, Tree Preservation Plan</i>  <i>Shown on A1.0, Site Plan</i>
<b>Miscellaneous Items</b>	
Pedestrian and auto circulation plan	<i>Shown on A1.0, Site Plan</i>
Utility plan (respond to criteria on streets, drainage, municipal water, sanitary sewers, solid waste, and recycling storage)	<i>Shown on C1.2, Utility Plan</i>
Materials Board	✓

**Exhibit B: City of West Linn Memorandums and Historic Photographs**  
**Tualatin Valley Fire & Rescue Station 59**

**Portland**

**Fire & Rescue Vintage Photo Gallery**

<http://www.portlandonline.com/fire/index.cfm?c=44431>

**1436 SW Montgomery Street (494 SW Montgomery Street)**

Built - 1911



**5340 N. Interstate Avenue**

Built - 1911



**510 NW 3rd Avenue**  
Built - 1912



**1233 SW 1st Avenue (273 1st street)**  
Built - 1862



**6823 NE Durham Street**  
Built - 1913



**5540 NE Sandy Boulevard (currently Station #28)**  
Built - 1913



**45 NE Russell Street (303 Russell Street)**  
Built - 1903



**2 NE 82nd Avenue**  
Built - 1913



**3500 SE Belmont Street (162 E 35th Street)**  
**Historic Belmont Firehouse Safety Learning Center and Fire Museum**  
Built - 1897, Rebuilt - 1912



**Oregon City**

**John Adams (Station 15)**

<http://www.clackamasfire.com/johnadams.html>

Built – 1922, Remodeled – 1998



**Lake Oswego**

**214 Main Fire Station & Administration Offices**

[http://www.ci.oswego.or.us/fire/main\\_station.htm](http://www.ci.oswego.or.us/fire/main_station.htm)

Built – not listed (not necessarily a historic building, but a brick building)



**City of West Linn  
MEMORANDUM**

**TO:** West Linn Clackamas County Historic Review Board

**FROM:** Peter Spir, Associate Planner

**DATE:** May 29, 2008

**SUBJECT:** Non binding review/discussion of proposed Tualatin Valley Fire and Rescue (TVFR) fire station on Willamette Falls Drive.

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The purpose of discussing TVFR's proposed fire station at 1860 Willamette Falls Drive, is to recognize that even though the Planning Commission is the decision making body for the fire station design review, it is not trained or prepared for that task to the degree that the Historic Review Board (HRB) is. By discussing the fire station design and passing along comments to the Planning Commission, albeit informally, the Planning Commission can make a more educated decision.

The main issue would probably be whether the building should be brick as proposed or wood.

Why wood? Typically buildings in Willamette were constructed of wood since it was predominantly a community of mill workers and farmers. The money didn't exist to pay for the more expensive brick buildings. In terms of contextual design, all buildings constructed or rehabilitated since 1995 have been wood. A wooden TVFR fire station would easily fit in. What's more, the CDC standards for commercial buildings in this district requires that, *Wood shall be the principal building material. Horizontal wood siding in 1" X 8" dimensions shall be used for siding. Brick and certain concrete configurations are permitted only by a variance under Section 58.100.*

Why brick? The case for brick is rooted in the fact that societies have typically done their best to build their important buildings: governmental offices, churches and schools out of the more enduring materials of brick and stone. Brick would also have been favored since it's less likely to catch fire. Nearby Oregon City's dominant material on their main street was brick, reflective of its more affluent mercantile, government and established pedigree. It can also be stated that the CDC standard above that requires wood does not apply since the standards are only applicable to commercial buildings. This is not a commercial building.

In cases where an applicant proposes a seemingly incongruous building style or material in the Willamette Falls Drive Commercial Overlay Zone, the applicant has the opportunity under CDC 58.100 to demonstrate the following:

*In those circumstances where a design proposal cannot meet the standards, or proposes an alternative to the standard, the Historic Review Board may grant a variance in those cases where one of the following criteria is met:*

- 1. The applicant can demonstrate by review of historical records or photographs that the alternative is correct and appropriate to architecture in the region, and especially West Linn, in 1880-1915.*
- 2. The applicant is incorporating exceptional 1880-1915 architecture into the building which overcompensates for an omission. The emphasis is upon superior design, detail, or workmanship.*

Although within West Linn there are no examples of brick fire stations, regionally, the use of brick in fire stations during this period is evident and clear.

Fire stations still exist on NW 25<sup>th</sup> and on Belmont Street in Portland are two examples that come to mind. Closer to home, brick was the dominant building material in downtown Oregon City. A case can also be made that brick will provide an attractive break in the row of wooden office buildings on the north side of Willamette Falls Drive.

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**Why is the Planning Commission, not the HRB, deciding this case in the Willamette Falls Drive Commercial Overlay Zone?**

Recently there has been debate on how the proposed TVFR fire station on Willamette Falls Drive should be reviewed; in particular, who is the correct decision making body?

The front half of the proposed TVFR fire station is in the Willamette Falls Drive Commercial Overlay Zone. The underlying zone is General Commercial or GC. The rear of the proposed fire station is in the Mixed Use Transitional Zone (MU).

Willamette Falls Drive Commercial Overlay Zone CDC Section 58.030 (Applicability) states that the provisions of this chapter only apply to *commercial* uses. The fire station is a *public safety facility* not a *commercial* use. Therefore the standards of CDC Chapter 58 do not apply. Meanwhile, CDC 58.050 (Permitted Uses) states that all permitted uses in the underlying zone must go through the design standards of Chapter 59. Staff notes that a *public safety facility* is not a permitted use. Instead it is a conditional use.

Therefore, the front half of the fire station would be reviewed by the Planning Commission. Their decision would be based upon CDC Chapter 55: Design Review which is concerned about contextual design, and CDC Chapter 60: Conditional Use Permit (CUP).

The rear half is in the MU zone.

The MU zone, as originally written, did not allow *public safety facilities*.

Recently, the CDC was amended to allow them in the MU zone by CUP.

Thus the rear of the fire station must go through CUP and Design Review.

The application will be consolidated into one hearing by the Planning Commission.

As a sidebar, there is community dialogue supporting review by the Historic Review Board (HRB) on the grounds that they are the best trained to review the appropriateness of the design and make the fire station fit this streetscape. That may be true, but we are obliged to follow what the CDC requires. There will be opportunities at the Planning Commission hearing for members of the community to testify regarding the design and offer suggestions. It would also be acceptable for members of the HRB to testify at the Planning Commission hearing.

City staff has recommended that the applicant appear before the HRB for non-binding comments and recommendations. These comments will be noted and forwarded in the staff report to the Planning Commission who would, no doubt, give considerable weight to them in their final decision.



**CLACKAMAS COUNTY/WEST LINN  
HISTORIC REVIEW BOARD  
RECOMMENDATION**

**IN THE MATTER OF CONSTRUCTING A NEW FIRE STATION  
AT 1860 WILLAMETTE FALLS DRIVE**

At their meeting of June 17, 2008, the Clackamas County/West Linn Historic Review Board (HRB) met to discuss the Tualatin Valley Fire and Rescue's (TVFR) proposal to construct a new fire station.

Although the Planning Commission is the decision making body for the fire station design review, it is not trained or prepared for that task of examining the historic appropriateness of the design to the degree that the Historic Review Board (HRB) is. By discussing the fire station design and passing along comments to the Planning Commission, the Planning Commission can make a more educated decision.

For the HRB, the main issue was whether the building should be brick as proposed by the applicant or wood as suggested by some members of the Willamette neighborhood.

**Why wood?**

Typically buildings in Willamette were constructed of wood since it was predominantly a community of mill workers and farmers. The money didn't exist to pay for the more expensive brick buildings. In terms of contextual design, all buildings constructed or rehabilitated built in the last 15 years have been wood. A wooden TVFR fire station would easily fit in. Although CDC chapter 58 states that for commercial buildings "*Wood shall be the principal building material. Horizontal wood siding in 1" X 8" dimensions shall be used for siding. Brick and certain concrete configurations are permitted only by a variance under Section 58.100*", Staff noted that this CDC standard does not apply since the standards are only applicable to commercial buildings. A fire station is not a commercial building. The HRB agreed that the wood requirement did not apply.

**Why brick?**

The case for brick is rooted in the fact that societies have typically done their best to build their important buildings: governmental offices, churches and schools out of the more enduring materials of brick and stone. A brick fire station, it was noted, will provide an easily identifiable landmark for this street particularly since it will offer community/neighborhood meeting rooms.

Although it was found that CDC Chapter 58 does not apply to non-commercial buildings, staff went through the exercise of applying CDC 58.100 to the application:

*In those circumstances where a design proposal cannot meet the standards, or proposes an alternative to the standard, the Historic Review Board may grant a variance in those cases where one of the following criteria is met:*

- 1. The applicant can demonstrate by review of historical records or photographs that the alternative is correct and appropriate to architecture in the region, and especially West Linn, in 1880-1915.*
- 2. The applicant is incorporating exceptional 1880-1915 architecture into the building which overcompensates for an omission. The emphasis is upon superior design, detail, or workmanship.*

The HRB found that in West Linn and, especially, regionally, the use of brick in fire stations during this period is evident and clear. The applicant, TVFR, submitted a number of photographs of brick fire stations. Sunset and Bolton firehalls are brick. Certainly, wood fire stations did exist in the 1890-1915 period but as soon as resources were available, communities upgraded them to brick for the simple reason that it does not burn like wood. The HRB also found that brick will provide an attractive break in the row of wooden office buildings on the north side of Willamette Falls Drive.

Comments by HRB members reflected their support for the use of brick:

*"All buildings along Willamette Falls Drive look the same. Brick will break that up."*

*"If the fire station with driveways/bays is built of wood it will look like Oil Can Henry's."*

*"I can't imagine a fire station of wood here."*

*"The use of brick will make it look more like a fire station both historically and nostalgically."*

The HRB was also pleased with the design of the brick station including the arched windows and incorporation of the old bell into the top of the front elevation. They cautioned that the metal or aluminum framed doors and windows should be medium brown metal and not plain mill finished metal.

**The HRB closed with motion and voted unanimously to recommend that the Willamette fire station be constructed of brick with brown finished door and window framework.**

**Exhibit C: Pre-Application Conference Notes**  
**Tualatin Valley Fire & Rescue Station 53**

City of West Linn  
**PRE-APPLICATION CONFERENCE MEETING**  
**SUMMARY NOTES**  
December 6, 2007

SUBJECT: Proposed fire station at 1860 Willamette Falls Drive.

ATTENDEES: Applicants: TVFR  
Staff: Peter Spir (Planning Department); Dennis Wright (Engineering Division); Dave Davies (Building) Neighborhood Representative:  
Charles Awalt

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*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 demolish the existing fire station and build a new one on the same site and expand the building footprint north towards Eighth Avenue. By expanding the fire station north it goes into the Willamette Transitional/Mixed Use (MU) Zone. The MU zone does not allow "public safety buildings" which is the category that fire stations fall into. Therefore the proposed use is not allowed.

There are a few options:

**Option 1.) Apply for a zone change from MU to GC.** This would require a zone change and Comprehensive Plan amendment. This would entail hearings before the Planning Commission and then the City Council. Planning Staff could support this because the area seems ill suited to the new mixed-use zone. One problem with the MU zone is that it has design standards that assume that all the uses are utilizing existing homes or building new ones that can then be used for commercial or related purposes. Because of that assumption the design review standards make it virtually impossible to accommodate a reasonable range of land uses such as a fire station. The standards state:

**59.070 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 front lot line length or the minimum lot width at the front lot line shall be 35 feet.*
  2. *The average minimum lot width shall be 50 feet.*

3. *The average minimum lot depth shall not be less than 90 feet.*
  4. *The minimum yard dimensions or minimum building setback area from the lot line shall be:*
    - a. *For a front yard, 12 feet minimum and 20 feet maximum to the structure, except that a porch, patio, or pedestrian amenity may be 6 feet from the front property line.*
    - b. *For an interior side yard, 7-1/2 feet.*
    - c. *For a side yard abutting a street, 12 feet.*
    - d. *For a rear yard, 20 feet. However, where the use abuts a residential district, the setback distance required in the residential district shall apply, and within the setback area a buffer of at least 10 feet of landscaping in addition to a fence is required.*
  5. *The maximum building height shall be two stories above grade, or 35 feet, whichever is less.*
  6. *Maximum building size for all floors shall not exceed 6,000 square feet above grade excluding porches.*
  7. *The building floor area ratio shall be .4, except that the ground floor of the building shall not exceed 5,000 square feet.*
  8. *The minimum lot size shall be 4,500 square feet and the maximum lot size shall be 10,000 square feet, unless defined as an existing lot of record.*
- B. Design Standards.** *All uses in the mixed-use zone shall comply with the provisions of Chapter 55, except for Section 55.100 (7) (a, b, c, h, i, and j). Further, single-family and duplex residential uses shall also comply with the Class I design review standards. In addition, the design standards described below apply to all uses.*
1. *Residential style building with single story porch on the front, and on the side where it abuts a street.*
  2. *New sidewalk construction shall be allowed to match the historical sidewalk standards in this zone.*
  3. *Off-street parking shall be behind, under, or on the side of building.*
  4. *Garages shall not extend any closer to the street than the street-facing façade of the house.*
  5. *There shall be no illuminated outdoor advertising on accessory buildings, equipment, or vending machines. (ORD 1515)*

**59.080 ADDITIONAL USE REQUIREMENTS**

*In addition to all other provisions of this section, the following additional requirements may apply:*

1. *Permitted uses may only be open from 6 a.m. to 10 p.m. and are subject to the noise provisions of Chapter 55.*
2. *Exterior business activity shall not take place beyond the rear wall of the building when the subject property abuts a residential district, except for parking and refuse storage. Refuse storage must be buffered or enclosed and may not abut a property line that adjoins a residential zone.*

3. *If a qualified historic residential landmark in the Willamette neighborhood is destroyed, it may be rebuilt on the original building footprint. (ORD 1515)*

While the dimensional limitations make perfect sense for an antique store in a period bungalow they do not make sense for a fire station which has basic unavoidable functional needs to consider. The requirement that the fire station must have a front porch also shows that this language was crafted in a mono-dimensional environment. Needless to say, this approach would require numerous class II Variances per CDC Chapter 75 to avoid such standards.

**Option 2.) Amend MU Chapter 59** so that it allows “*public safety buildings*” in the MU zone. This would entail a hearing before the Planning Commission and City Council. This land use category is not the only land use that is unreasonably absent from uses allowed in the MU zone either outright or by conditional use permits. Other appropriate uses include “*major and minor utilities*”.

While this method is faster than option one it still leaves TVFR with having to design the station per the overly restrictive standards of the MU zone. There are two solutions: apply for a Class II Variance (CDC chapter 75) to eliminate the need for a front porch or allow a bigger FAR etc.; or, add language from CDC Chapter 55 to the MU language as follows: “*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.*”

**Option 3.) Apply for expansion of structure with non-conforming use.** If the over 50% of the existing fire station structure is retained (not demolished) then the applicant could apply for expansion of a non-conforming use in a structure per CDC 65.110 and 65.120. That would just entail a Planning Commission hearing.

### **Discussion of Options**

Option 3 is the simplest but it presumes that over 50% of the existing building will be kept. That is not expected to happen.

Regarding Option 1, which would change the zone from MU to GC, staff finds that it would be time consuming but it enjoys the advantage of eliminating the design constraints of the MU zone, which, according to staff, are inappropriate to public safety buildings.

**Option 2 is recommended by staff.** It would require a staff initiated amendment to the CDC to add “public safety offices” to the MU zone. Senior Planner Chris Kerr has already initiated that process. It is faster than option 1 but we are still left with the need

to either apply for variances from the MU design standards or add language from Design Review Chapter 55 to excuse public facilities etc from architectural compatibility. (Chris Kerr's proposed amendments include that language.) Nonetheless it seems to be the best solution.

All options will require design review per CDC Chapter 55 and/or 59 for that portion of the building at the rear (tax lot 1100). The review body would be the Planning Commission for Design Review (CDC chapter 55) and the Historic Review Board will be the review body for Design Review of the portion on tax lot 2000 per CDC Chapter 58 (Willamette Falls Drive Commercial Overlay Zone). For that portion of the fire station in the Willamette Drive Overlay Zone the applicant will have to design a fire station that uses as much of the CDC Chapter 58 standards as possible. It would a good idea to have the project architect meet with Associate Planner Peter Spir and Willamette resident Charles Awalt at the preliminary design stage to make sure the design fronting Willamette Falls Drive is on track.

### **Details**

Access to the site interior requires a 24 foot wide paved driveway for two-way traffic and a 15-foot wide driveway for one-way traffic. The driveway is to be separated from the property line by a five foot wide landscaped strip.

The preliminary drawing shows 13 station and visitor parking spaces. Because this building fronts on Willamette Falls Drive it is exempt from parking requirements of CDC Chapter 46. However, given the chronic parking shortages in some parts of this district, the responsible thing is to provide parking for station staff at least and TVFR visitors at the rear. The parking shown should be enough to meet the "one space per peak shift employee and incidental visitors." Users of the 500 square foot public meeting space can use on street parking along Willamette Falls Drive especially since parking is light in the evening when most meetings would occur.

CDC Chapter 46 has no established parking requirement for government or public safety buildings. Where the code is silent, the Planning Director may create a standard. Therefore one space per peak shift employee plus three visitor spaces including one ADA space.

The minimum landscaping for public facilities is 20% on tax lot 1100, but there is no landscaping required on tax lot 2000.

A noise study is required per CDC Chapter 55. Fences along the lot perimeter may be needed to mitigate glare/noise.

### **Engineering Comments**

Streets:

- 8<sup>th</sup> Avenue additional ROW required along frontage. Desire is 56-foot ROW to match existing ROW on 8<sup>th</sup> Ave near 10<sup>th</sup> Street. Existing ROW appears to be 46-feet; an additional 10-foot ROW dedication will be required.
- Half-street frontage improvements required on 8<sup>th</sup> Avenue possibly including structural upgrade.
- Is TVF&R considering drive-thru facility with equipment entering fire hall from 8<sup>th</sup> and leaving fire hall via WFD?
- Commercial zoning normally requires 8-12 foot sidewalks with planter insets.
- 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:

- If new impervious area is greater than 500 SF, treatment only will be required; if new impervious area is greater than 5,000 SF, treatment and detention will both be required. Treatment of storm runoff from existing impervious area will require treatment.
- 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: Willamette zone.
- Existing service from 8-inch ductile iron line in WFD. If meter upsize required, SDC will be required.
- Water SDC \$\$

Sanitary Sewer:

- System capacity sufficient to serve development.
- Service potentially available along 8<sup>th</sup> Avenue and WFD frontages.
- SS SDC \$\$

Other Utilities:

- Underground overhead utilities along property frontage unless (high voltage). If PGE unwilling to do short run, fee in-lieu will be accepted for the undergrounding. 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.

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.

### Process

A neighborhood meeting is required per CDC Section 99.038. Contact Ruth Offer, Neighborhood President, at 657-1350. Follow the instructions of that Code section explicitly.

Permits to be obtained are

- Conditional Use Permit per CDC Chapter 60,
- Willamette Falls Drive Overlay Zone Design Review per CDC Chapter 58,
- Class II Variances per CDC Chapter 75 (only if code amendments fail)
- Willamette Mixed Use Zone Standards per CDC Chapter 59.
- Zone Change per CDC Chapter 105 (option 1 only).

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 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. Assuming option 2 is used, the following timeline would apply:

- 1) Planning Commission then City Council review and decide the CDC text amendments to allow fire station and waive Ch 59 architectural standards
- 2) Historic Review Board would decide the design on tax lot 2000.
- 3) Planning Commission would decide the CUP and Willamette Mixed Use Design Review.

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-WF DRIVE FIRESTATION-11-29-07

**Exhibit E: Clear Vision Area Letter  
Tualatin Valley Fire & Rescue Station 59**

City of West Linn  
22500 Salamo Road  
West Linn, OR 97068

July 22, 2008

Attn: Planning Department

RE: Vision Clearances at the proposed new fire station TVF&R 59 on Willamette Falls Drive

Dear Planning Staff:

Peck Smiley Ettlín Architects have reviewed the apparatus vision clearances at the proposed new fire station at Station 59 – Willamette, 1860 Willamette Falls Drive, West Linn, OR. It is our opinion that the apparatus exiting the station complies with the 30 foot vision triangle as there is over 55 feet from the face of the building to the curb line of the nearest traffic lane on Willamette Falls Drive. There is over 29 feet from the face of the building to the inner parking lane curblin which has incidental local traffic only. Since the driver of the apparatus eye level is over 8 feet above the ground level, it is our opinion and experience that the firefighter's line of vision is uninterrupted and safe to both drivers and pedestrians on Willamette Falls Drive.

Peck Smiley Ettlín Architects have designed 55 new fire stations throughout Oregon and are professionally familiar with the heights, clearances and driving protocols of fire apparatus for TVF&R and fire other districts.

Sincerely,



Hans O. Ettlín  
President

**Exhibit F: Arborist Report  
Tualatin Valley Fire & Rescue Station 59**



Engineering +  
Environmental

August 1, 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. 59  
West Linn, Oregon  
PBS Project No.: 70607.000 Task 0002

Please find enclosed the Arborist Report and Tree Protection Plan for Tualatin Fire and Rescue Station No. 59 in West Linn, Oregon. Please contact me if you have any questions, concerns, or need for additional information.

Respectfully,

A handwritten signature in black ink that reads "Morgan E. Holen". The signature is written in a cursive, flowing style.

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



Engineering +  
Environmental

# Arborist Report and Tree Protection Plan

Tualatin Valley Fire & Rescue Station 59  
1860 SW Willamette Falls Drive  
West Linn, Oregon

Prepared for:  
Tualatin Valley Fire & Rescue  
20665 SW Blanton Street  
Aloha, Oregon 97007

July 2008  
Project No. 70607.000

4412 SW Corbett Avenue, Portland, OR 97239  
503.248.1939 Main  
503.248.0223 Fax  
888.248.1939 Toll-Free  
[www.pbseov.com](http://www.pbseov.com)

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2.0	Site Description and Discussion.....	1
3.0	Tree Protection and Preservation Requirements .....	3
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3.3	Post Construction .....	4
4.0	Summary.....	4

## 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. 59 property located at 1860 SW Willamette Falls Drive in West Linn, Oregon.

In December 2007, 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 23, 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 July 28, 2008 for a site visit to determine significant trees. Table 1 provides inventory data for all trees on site and two trees located on neighboring properties. 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

Five trees are located on site and two trees were surveyed on neighboring properties. A complete description of all seven inventoried trees is provided in Table 1.

**Table 1. Tree Inventory Data for Tualatin Valley Fire & Rescue Station No. 59.**

Point #	Species	DBH*	C-Rad^	Condition	Treatment Prescription
10000	English walnut	22	21	Dead and broken branches; decay	Non-significant; remove
10001	English walnut	22	23	Dead and broken branches; decay; crown in power lines	Non-significant; remove
10217	lodgepole pine	#13	12	Poor structure; marginal tree	Non-significant; remove
10218	Tree-of-Heaven	◆20	18	Poor structure; decay	Non-significant; remove
10244	Port-Orford-cedar	35	13	Large diameter scaffold branches; no major defects noted	Significant; retain & protect
10151	silver maple	~10	20	Located on neighboring property; extensive ivy, difficult to assess; generally poor condition	Non-significant; retain & protect
10170	Port-Orford-cedar	10	10	Located on neighboring property; no major defect noted	Non-significant; retain & protect

\*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 two codominant stems measuring 9 and 4 inches DBH

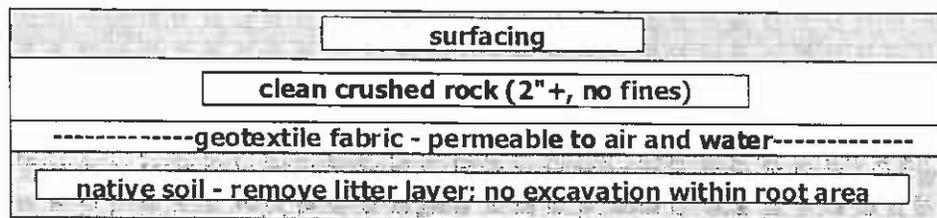
◆ Sum of two codominant stems measuring 11 and 9 inches DBH

One tree (10244) was determined to be significant based on species, size, and general condition. This tree will be retained during construction and protected as described below. Mike Perkins determined that four trees (10000, 10001, 10217, and 10218) meeting the minimum threshold diameter requirement for regulated trees were non-significant because of poor condition. Two (10151 and 10170) of the seven inventoried trees are located on neighboring properties. These two trees are non-significant based on size, but will nevertheless be retained and protected during construction with tree protection fencing established at the property line at a minimum.

No significant trees are planned for removal during construction; therefore, no mitigation for tree removal will be needed.

A power pole located in the crown of the significant tree (10244) must be relocated during construction. This work should proceed with care so as to avoid crown damage. The base of the pole is located outside of the tree protection area and no root impact is anticipated. If roots less than 2-inches in diameter are revealed during the power pole relocation work, they may be cut clean to the edge of dirt using a pruning saw or pruning shears. If roots larger than 2-inches are revealed, work should temporarily cease until the project arborist can be contacted for additional recommendations.

A new sidewalk will be constructed north of tree 10244 and is not expected to impact the tree protection area. If paving will occur beneath the dripline of tree 10244, a modified profile including a layer of permeable geotextile fabric is recommended (Figure 1).



**Figure 1. Modified profile for sidewalk construction within root protection zones. Depth of rock is dependent on grading. Technique based on best management practices.**

An existing retaining wall located along the south and east sides of tree 10244 will be removed and replaced during the landscaping phase of the project. The tree protection fencing should encompass the retaining wall during construction. When construction is complete, the tree protection fencing may be removed in order for landscaping to occur. At this time, the existing wall may be removed and replaced with a material of equivalent size so as to avoid the need for excavation or placement of fill material within the tree protection area. A non-engineered boulder wall is preferred.

Significant tree 10244 and one of the two trees located on neighboring properties are Port-Orford-cedar (*Chamaecyparis lawsoniana*) trees, which will require special tree protection during construction. Port-Orford-cedars are highly susceptible to Port-Orford-cedar root disease, caused by the fungus *Phytophthora lateralis*, which quickly kills trees. New infections occur on Port-Orford-cedar roots as spore-bearing water percolates into the soil, or when resting spores spread the fungus as they are moved with soil; construction is a major factor in the spread of the disease, as earth is moved during grading activities. In addition to standard tree protection fencing installed at the dripline of these trees, silt fencing should also be installed (to the outside of the tree protection fencing) so as to inhibit the transport of spores by surface water or earth movement into the protection area. Rather than bury the silt fence into a shallow trench (per the standard method of installation), we recommend wrapping the base of the fence in straw wattles and staking the wattles into the ground in order to help avoid root damage in the tree protection area. Additional recommendations for tree protection and preservation per City regulations are provided in the next section. The tree protection and preservation plan drawing is provided as Sheet TP-1 in the complete set of drawings.

### 3.0 TREE PROTECTION AND PRESERVATION REQUIREMENTS

#### 3.1 Before Construction

1. **Tree Protection Zone.** The project arborist shall designate the Tree Protection Zone (TPZ) for each tree or group of trees to be protected. Where feasible, the size of the TPZ shall be established at the dripline of the tree or grove of trees. Alternatively, the standard for computing the size of the TPZ shall be ½-foot radius per caliper inch DBH, measured for the trunk of the tree. If infrastructure (roads, sidewalks, and utilities) must be installed closer to the tree(s), the TPZ may be established within the dripline area if the project arborist, in coordination with the City Arborist, determines that the tree(s) will not be unduly damaged. The location of TPZs shall be shown on construction sheets as a bold dashed line.
2. **Protection Fencing.** Protection fencing shall serve as the tree protection zone and shall be erected before demolition, grubbing, grading, or construction begins. All trees to be retained shall be protected by six-foot-high chain link fences installed at the edge of the TPZ. Protection fencing shall be secured to two-inch diameter galvanized iron posts, driven to a depth of a least two feet, placed no further than 10-feet apart. If fencing is located on pavement, posts may be supported by an appropriate grade level concrete base. Protection fencing shall remain in place until final inspection of the project permit, or in consultation with the project arborist.
3. **Signage.** An 8.5x11 –inch sign stating, "WARNING: Tree Protection Zone," shall be displayed on each protection fence at all times.
4. **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.
5. **Preconstruction Conference.** The project arborist shall be on site to discuss methods of tree removal and tree protection prior to any construction. Prior to commencement of construction, the project arborist will verify in writing to the City Arborist that tree protection fencing has been satisfactorily installed.

#### 3.2 During Construction

1. **Tree Protection Zone Maintenance.** The protection fencing shall not be moved, removed, or entered by equipment except under direction of the project arborist, in coordination with the City Arborist.
2. **Storage of Material or Equipment.** The contractor shall not store materials or equipment within the TPZ.
3. **Excavation within the TPZ.**
  - Excavation within the TPZ shall be avoided if alternatives are available.

- If excavation within the TPZ is unavoidable, the project arborist shall evaluate the proposed excavation to determine methods to minimize impacts to trees. This can include tunneling, hand digging or other approaches.
  - All construction within the TPZ shall be under the on-site technical supervision of the project arborist, in coordination with the City Arborist.
4. **Tree Protection Zone.** The project arborist shall monitor construction activities and progress, and provide written reports to the developer and the City at regular intervals. Tree protection inspections will occur monthly, or more frequently if needed.

### 3.3 Post Construction

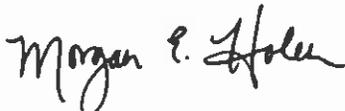
1. Final Report. After the project has been completed, the project arborist shall provide a final report to the developer and the City. The final report shall include concerns about any trees negatively impacted during construction, and describe the measures needed to maintain and protect the remaining trees for a minimum of two years after project completion.

## 4.0 SUMMARY

One significant tree located on site will be protected and retained during construction. Two non-significant trees located on neighboring properties will also be protected. No mitigation is required for the removal of four non-significant trees on site. Trees to be retained and preserved shall be protected in accordance 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. 59 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

TV&R STATION 59  
1860 WILLAMETTE FALLS DRIVE  
WEST LINN, OR



PECE  
SMILEY  
EITLLIN  
ARCHITECTS

ALL THE COUNTY AND  
CITY RECORDS FOR THE  
PROJECT SHALL BE  
MAINTAINED AT THE  
OFFICE OF THE  
ARCHITECT

DESIGN  
CONTRACT  
TREE PROTECTION  
PLAN

TP-1

SITE TREE DATA			
TREE #	SPECIES	DBH"	
10000	ENGLISH WALNUT	22"	
10001	ENGLISH WALNUT	22"	
10217	LODGEPOLE PINE	13"	
10218	TREE-OF-HEAVEN	20"	
10244	PORT-ORFORD-CEDAR	35"	
10151	SILVER MAPLE	10"	
10170	PORT-ORFORD-CEDAR	10"	

\* DIAMETER AT BREAST HEIGHT, MEASURED 4 FEET ABOVE GROUND LEVEL

1.0 Tree Protection and Preservation Requirements

1.1 Before Construction

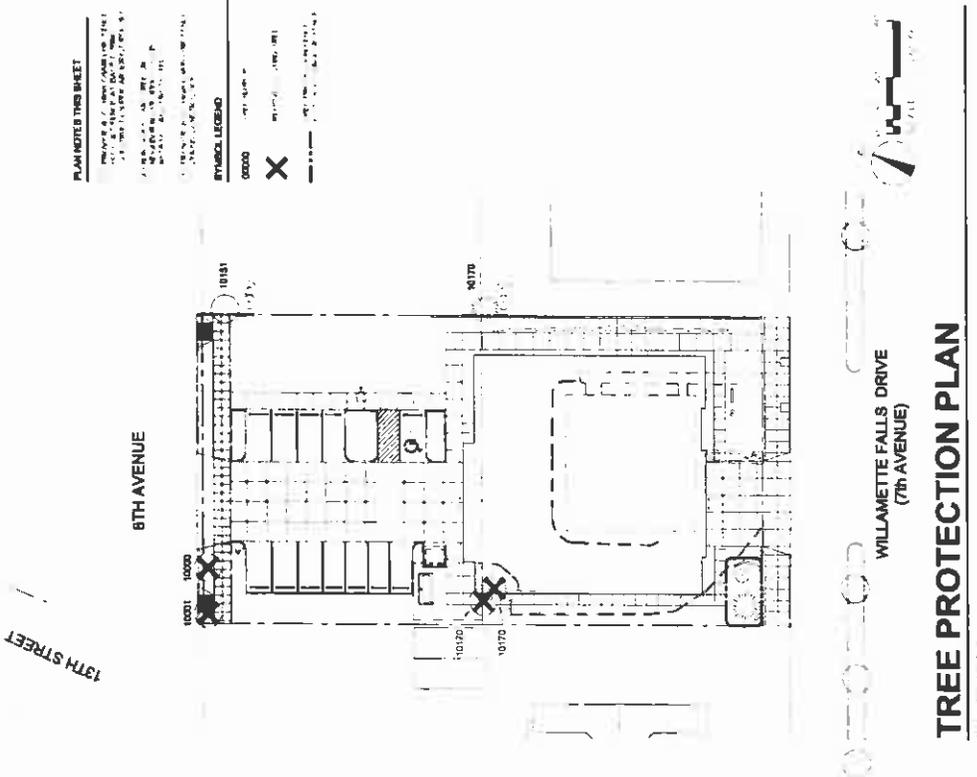
1. Tree Protection Zone. The project arborist shall designate the Tree Protection Zone (TPZ) for each tree or group of trees to be protected. Where feasible, the size of the TPZ shall be established at the dripline of the tree or grove of trees. Alternatively, the standard for computing the size of the TPZ shall be 1/2-foot radius per caliper inch DBH, measured for the trunk of the tree. If infrastructure (roads, sidewalks, and utilities) must be installed close to the tree(s), the TPZ may be established within the dripline area if the project arborist, in coordination with the City Arborist, determines that the tree(s) will not be unduly damaged. The location of TPZs shall be shown on construction sheets as a bold dashed line.
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1.2 During Construction

1. Tree Protection Zone Maintenance. The protection fencing shall not be moved, removed, or entered by equipment except under direction of the project arborist, in coordination with the City Arborist.
2. Storage of Material or Equipment. The contractor shall not store materials or equipment within the TPZ.
3. Excavation within the TPZ.
  - Excavation within the TPZ shall be avoided if alternatives are available.
  - If excavation within the TPZ is unavoidable, the project arborist shall evaluate the proposed excavation to determine methods to minimize impacts to trees. This can include unloading, hand digging or other approaches.
  - All construction within the TPZ shall be under the on-site technical supervision of the project arborist, in coordination with the City Arborist.
4. Tree Protection Zone. The project arborist shall monitor construction activities and progress, and provide written reports to the developer and the City at regular intervals. Tree protection inspections will occur monthly, or more frequently if needed.

1.3 Post Construction

Final Report. After the project has been completed, the project arborist shall provide a final report to the developer and the City. The final report shall include concerns about any trees negatively impacted during construction, and describe the measures needed to maintain and protect the remaining trees for a minimum of two years after project completion.



**Exhibit G: Neighborhood Meeting Documentation**  
**Tualatin Valley Fire & Rescue Station 59**

April 24, 2008

**Re: Proposed Development at Fire Station No. 59 – 1860 Willamette Falls Drive**

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 1860 Willamette Falls Drive and construct a new larger fire station on the existing site and the neighboring lot to the south. The new station will help to enhance the District's service capabilities in West Linn. The new proposed fire station will be approximately 12,8636 square feet to house the firefighters on duty and two fire trucks. The site for the fire station is on two separate lots which are in separate zoning districts. The lot with frontage on 8<sup>th</sup> Avenue is zoned Mixed Use Transition (MU) and the lot with frontage on Willamette Falls Drive is zoned General Commercial (GC) and is within the Commercial Historic Overlay Zone.

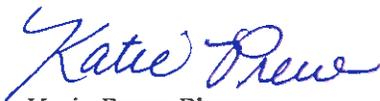
Prior to preparing specific engineering and site plans and submitting an application to the City of West Linn for the necessary review and approval, we would like to discuss the proposal in more detail with members of the Willamette Neighborhood Association and surrounding property owners and residents. Therefore, you are cordially invited to join us at the monthly Willamette Neighborhood Association meeting on:

**May 14, 2008  
Willamette Primary School Library  
1403 12<sup>th</sup> 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

# Responding to Today's (and Tomorrow's) Needs



Built sometime in the 1940s or 1950s, the **Willamette Fire Station** is located in the heart of West Linn. In addition to responding to fire, medical and rescue incidents, firefighters respond to a significant number of motor vehicle accidents on Interstate 205. The station is also home to the Fire District's Water Rescue Team, which performs swift-water and dive-rescue operations.

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 demolish the existing building and build a new station in its place. Construction is expected to begin in the Spring of 2009.

## *Why rebuild the fire station?*

While the current location works well from an emergency response perspective, concerns about soil stability, building layout, size of apparatus bays (which are too small for standard engines, water rescue craft and tow vehicles), and dated mechanical and electrical systems 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, two-bay station will be two stories tall and will meet all historical 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?*

TVF&R is currently negotiating with a nearby property owner for the temporary relocation of the fire station. The most likely outcome is that the crew will reside in a rented home along with a temporary Quonset hut-style building for the fire engine. **Because the temporary station will be very close to the current location, response times will not be adversely affected.**

### *What is the cost to rebuild the station?*

The estimated cost for the Willamette 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 Willamette and Bolton fire stations in West Linn. 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?*

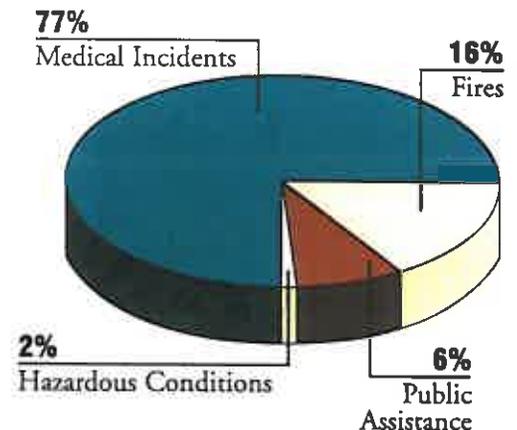
Future capital improvements funded by the bonds include:

- Correcting operational and safety deficiencies at 13 fire stations (including the Willamette and Bolton 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 Willamette 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

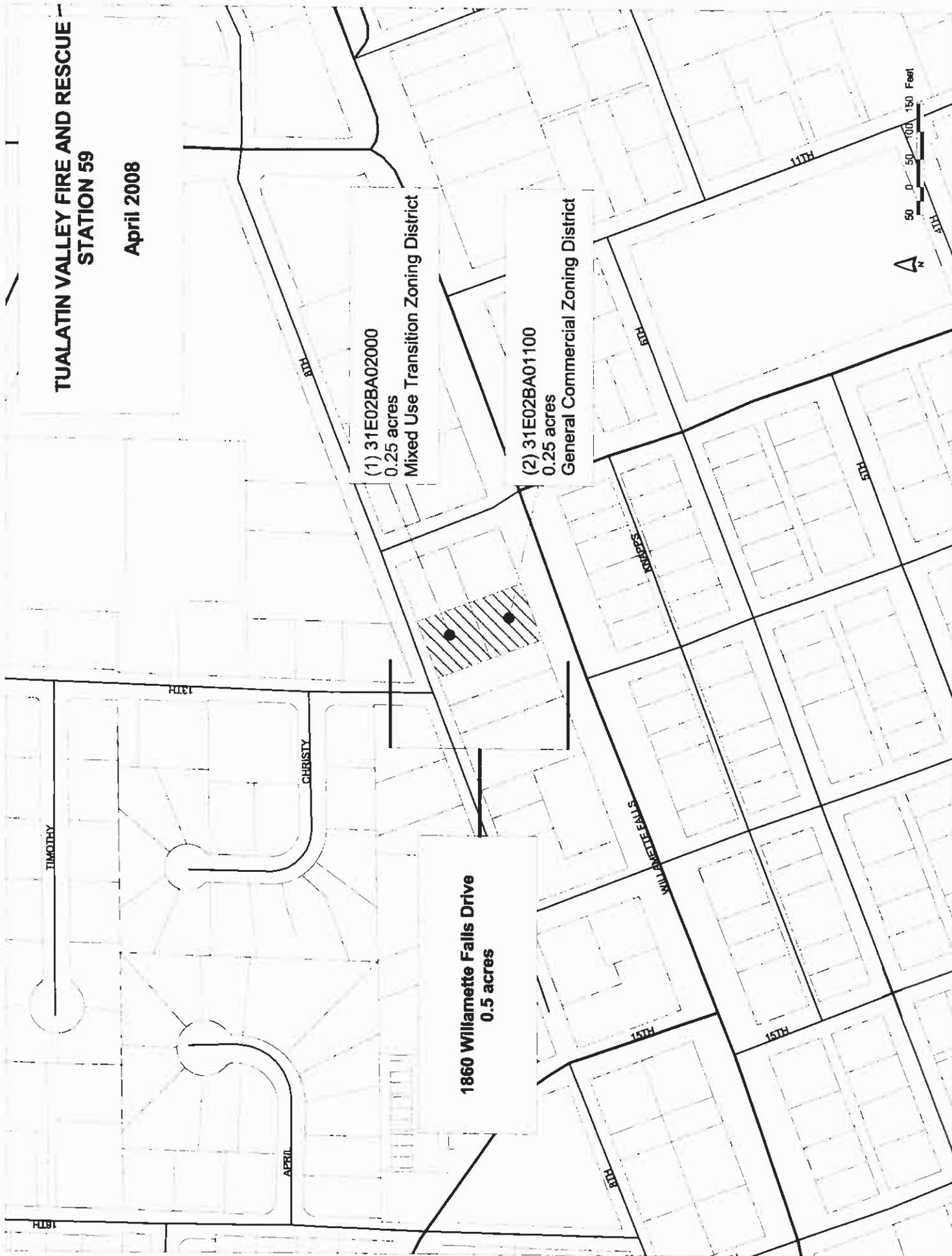
503.649.8577

[www.tvfr.com](http://www.tvfr.com)



**TUALATIN VALLEY FIRE AND RESCUE  
STATION 59**

**April 2008**





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For delivery information visit our website at [www.usps.com](http://www.usps.com)

WEST LINN OR 97068

9561 5254 4525 0000 01RE 5002

Postage	\$ 0.58
Certified Fee	\$2.65
Return Receipt Fee (Endorsement Required)	\$2.15
Restricted Delivery Fee (Endorsement Required)	\$0.00
<b>Total Postage &amp; Fees</b>	<b>\$5.38</b>



Sent To  
 RUTH OFFER, PRES. WNA  
 Street, Apt. No.,  
 or PO Box No. 1831 5TH AVENUE  
 City, State, ZIP+4 WEST LINN, OR 97068

PS Form 3800, June 2002

See Reverse for Instructions

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

RUTH OFFER, PRESIDENT  
 WILLAMETTE NEIGH. ASSOC.  
 1831 5TH AVENUE  
 WEST LINN, OR 97068

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  
 X *Ruth C. Offer*  Agent  Addressee

B. Received by (Printed Name) *Ruth C. Offer* C. Date of Delivery *5-6-08*

D. Is delivery address different from item 1?  Yes  No  
 If YES, enter delivery address below:

3. Service Type  
 Certified Mail  Express Mail  
 Registered  Return Receipt for Merchandise  
 Insured Mail  C.O.D.

7005 3110 0000 4525 1956 Delivery? (Extra Fee)  Yes

2. Article Number  
 (Transfer from service label) 7005 3110 0000 4525 1956

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

# AFFIDAVIT OF MAILING 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 AND DESIGN REVIEW affecting land located at 1860 WILLAMETTE FALLS DR, and that pursuant to the City of West Linn, Section 99.038.5.b, did on the 24<sup>TH</sup> 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 Prew

Dated this 24<sup>th</sup> day of April, 2008.

Subscribed and sworn to before me this 24<sup>th</sup> day of April, 2008.

Karen Siegel  
Notary Public for the State of Oregon

My Commission expires: June 5, 2012





21E35C 01700  
Vpc-or West Linn LP  
125 Sir Francis Drake Boulevard  
Larkspur, CA 94939

21E35C 01800  
Roger & Judith Christiansen  
1891 13th St  
West Linn, OR 97068

21E35C 01900  
Willamette Christian Church  
2015 8th Ave  
West Linn, OR 97068

21E35C 02000  
Willamette Christian Church  
2015 8th Ave  
West Linn, OR 97068

21E35C 02100  
Willamette Christian Church  
1800 8th Ave  
West Linn, OR 97068

21E35C 02200  
Willamette Christian Church  
2015 8th Ave  
West Linn, OR 97068

21E35C 02300  
Don & Cynthia Sue Morton  
Po Box 596  
Lake Oswego, OR 97034

21E35C 02500  
Vpc-or West Linn LP  
125 Sir Francis Drake Boulevard  
Larkspur, CA 94939

31E02BA00300  
Clement Jr & Patricia Moles  
1995 8th Ave  
West Linn, OR 97068

31E02BA00400  
Jenny & Scot Gelfand Pakula  
2500 Crestview Dr  
West Linn, OR 97068

31E02BA00500  
Irene Anderson  
1693 12th St  
West Linn, OR 97068

31E02BA00600  
Falls Holdings Llc Willamette  
1980 Willamette Falls Dr #200  
West Linn, OR 97068

31E02BA00800  
Falls Holdings Llc Willamette  
1980 Willamette Falls Dr #200  
West Linn, OR 97068

31E02BA00900  
Edward & Teresa Handris  
2008b Willamette Falls Dr  
West Linn, OR 97068

31E02BA01000  
Javad & Mafar Zahra Farza  
7110 SW Clinton St  
Tigard, OR 97223

31E02BA01100  
Tualatin Valley Fire & Rescue  
20665 SW Blanton St  
Aloha, OR 97007

31E02BA01200  
Pazmol Willamette Properties  
1832 Willamette Falls Dr  
West Linn, OR 97068

31E02BA01300  
Glenn Kent Butler  
11835 SW Ebberts Ct  
Beaverton, OR 97008

31E02BA01400  
Stephen Adams  
4111 N Locust St  
Canby, OR 97013

31E02BA01500  
Julia Hart  
1755 8th Ave  
West Linn, OR 97068

31E02BA01600  
Ryan Weller  
1741 8th Ave  
West Linn, OR 97068

31E02BA01800  
John Lightowler  
24900 SW Big Fir Rd  
West Linn, OR 97068

31E02BA01900  
Edginton Life Estate  
1754 Willamette Falls Dr  
West Linn, OR 97068

31E02BA02000  
Crew Corrigan Llp Ramis  
1727 NW Hoyt St  
Portland, OR 97209

31E02BA02100  
Falls Holdings Llc Willamette  
1980 Willamette Falls Dr #200  
West Linn, OR 97068

31E02BA02100E1  
Handris Enterprises Llc  
2008 Willamette Falls Dr  
West Linn, OR 97068

31E02BA02300  
Dean & Jean Werst  
1785 Willamette Falls Dr #6  
West Linn, OR 97068

31E02BA02301  
Willamette Capital Investments  
510 Main St  
Oregon City, OR 97045

31E02BA02400  
John & Susan Hiemstra  
16785 SW Parrett Mountain Rd  
Sherwood, OR 97140

31E02BA02500  
Willamette Capital Investments  
2027 Wellington Dr  
West Linn, OR 97068



31E02BA02600  
Willamette Capital Investments  
510 Main St  
Oregon City, OR 97045

31E02BA02700  
James & Barbara Mixer  
1728 6th Ave  
West Linn, OR 97068

31E02BA02701  
Denise Hoffner  
2445 Willamette Falls Dr  
West Linn, OR 97068

31E02BA02800  
Diane Bobillot  
1740 6th Ave  
West Linn, OR 97068

31E02BA02900  
James Rozes  
1780 6th Ave  
West Linn, OR 97068

31E02BA03000  
Barbara Pope  
1790 6th Ave  
West Linn, OR 97068

31E02BA03100  
Steve Tekander  
1980 Willamette Falls Dr  
West Linn, OR 97068

31E02BA03200  
Donald & Milynn Schaefer  
1877 Willamette Falls Dr  
West Linn, OR 97068

31E02BA03300  
Byong Kim  
5005 SW Murray Blvd  
Beaverton, OR 97005

31E02BA03400  
Llc Tro  
2726 NE 11th Ave  
Portland, OR 97212

31E02BA03500  
Llc Tro  
2726 NE 11th Ave  
Portland, OR 97212

31E02BA03600  
Mark Handris  
2008 Willamette Falls Dr #b  
West Linn, OR 97068

31E02BA03700  
Howard Christian Barto  
1818 6th Ave  
West Linn, OR 97068

31E02BA03800  
D Lynn & Teresa Choate Loriaux  
1830 6th Ave  
West Linn, OR 97068

31E02BA03900  
Daniel & Nicole Schreiber  
1870 6th Ave  
West Linn, OR 97068

31E02BA03901  
Thomas & Sharon Mcfadden  
1850 6th Ave  
West Linn, OR 97068

31E02BA04000  
Rebekah & Timothy Conklin  
1888 6th Ave  
West Linn, OR 97068

31E02BA04001  
Cody Weston  
1892 6th Ave  
West Linn, OR 97068

31E02BA04100  
Claire Becker  
2067 Riverknoll Ct  
West Linn, OR 97068

31E02BA04300  
Richard & M Joyce Ares  
1920 N Country Club Drive  
Canby, OR 97013

31E02BA04400  
Falls Entrps Llc Willamette  
1919 Willamette Falls Dr  
West Linn, OR 97068

31E02BA04500  
Donna Kay & Kenneth Potter  
22841 SW Stafford Rd  
Tualatin, OR 97062

31E02BA04600  
Albert Jr & Laura Secchi  
1920 6th Ave  
West Linn, OR 97068

31E02BA04700  
Harold & Dot-am Slinger  
1968 6th Ave  
West Linn, OR 97068

31E02BA04800  
Paul & Ethel Sloma  
1992 6th Ave  
West Linn, OR 97068

31E02BA06300  
West Linn-wils Sch Dist #3j  
Po Box 35  
West Linn, OR 97068

31E02BA06400  
Cody Weston  
1892 6th Ave  
West Linn, OR 97068

31E02BA06401  
David Becker  
1883 6th Ave  
West Linn, OR 97068

31E02BA06500  
Ronald Co-e Brown  
14204 S Mueller Rd  
Oregon City, OR 97045

31E02BA06501  
Deanna Forseth  
1865 6th Ave  
West Linn, OR 97068



31E02BA06600  
Daniel Floyd  
1831 6th Ave  
West Linn, OR 97068

31E02BA06700  
Christopher & Lori Corrigan  
1819 6th Ave  
West Linn, OR 97068

31E02BA07300  
Joselle Merritt-dennis  
1492 13th St  
West Linn, OR 97068

31E02BA07301  
Brian & Tamara Armstrong Perkins  
1492 13th St  
West Linn, OR 97068

31E02BA07400  
Lori Hibbard  
1753 6th Ave  
West Linn, OR 97068

31E02BA07500  
Rodney & V Hartford Swanson & Susan  
1731 6th Ave  
West Linn, OR 97068

31E02BB00101  
Keith Fiedler  
1890 13th St  
West Linn, OR 97068

31E02BB00102  
Ryan Fitzpatrick  
1766 Christy Ct  
West Linn, OR 97068

31E02BB00200  
Angela L-est Peter  
1840 13th St  
West Linn, OR 97068

31E02BB00302  
Walter Reuben & Cheryl Ann Cropper  
1816 13th St  
West Linn, OR 97068

31E02BB00303  
Woodrow Brown  
1773 Christy Ct  
West Linn, OR 97068

31E02BB00304  
Leland Gamble  
1769 Christy Ct  
West Linn, OR 97068

31E02BB00305  
Heidi Armovit  
1765 Christy Ct  
West Linn, OR 97068

31E02BB00306  
Ronald & Tiffany Williams  
1763 Christy Ct  
West Linn, OR 97068

31E02BB00307  
Thomas Piowaty  
1761 Christy Ct  
West Linn, OR 97068

31E02BB00309  
Walter & Debra Southards  
1778 Christy Ct  
West Linn, OR 97068

31E02BB00310  
Richard & Angela Clark  
1774 Christy Ct  
West Linn, OR 97068

31E02BB00400  
Jerry & Leanna Sparks  
1796 8th Ave  
West Linn, OR 97068

31E02BB00500  
David & Carla Vail  
1771 8th Ave  
West Linn, OR 97068

31E02BB00600  
Patricia Larson  
1752 8th Ave  
West Linn, OR 97068

31E02BB00700  
Jean James  
1722 8th Ave  
West Linn, OR 97068

31E02BB00800  
Nicole Sakys  
1697 19th St  
West Linn, OR 97068

31E02BB06200  
Stephen Peake  
1027 Snidow Dr  
West Linn, OR 97068

31E02BB06300  
Randal & Sandra Sebastian  
1672 Willamette Falls Dr  
West Linn, OR 97068

**MEETING NOTICE**

**NEW TVF&R FIRE STATION NO. 59**

**MEETING WEDNESDAY 5/14/08**

**7:00 PM WILLAMETTE PRIMARY SCHOOL  
LIBRARY  
1403 12<sup>TH</sup> 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 AND DESIGN REVIEW affecting land located at 1860 WILLAMETTE FALLS DR., and that pursuant to the City of West Linn, Section 99.038.5.c, did on the 24<sup>TH</sup> day of APRIL, 2008, personally post public notice(s).

**Sign and Date in the presence of a Notary Public.**

Signature: Katherine Prew

Dated this 24<sup>th</sup> day of April, 2008.

Subscribed and sworn to before me this 24<sup>th</sup> day of April, 2008.

Karen Siegel  
Notary Public for the State of Oregon

My Commission expires: June 5, 2012



May 14, 2008  
7 PM  
Willamette Primary School  
1403 12th Street

### Agenda

Introductions  
April 2008 Minutes  
Treasurers Report

Updates as available:   a)Tualatin Valley Fire and Rescue  
                                  b)Community Policing / Police Advisory Committee Report

### 2008-2009 Elections

Nominees: Beth Kieres, president; Elizabeth Rocchia, Treasurer.  
Solicitation of nominations for vice-president and secretary.

### New Business

1.    Alpha Community Development: Annexation at 1270 Rosemont Rd
2.    West Linn Merchant's Association: Discussion of A frame signage

### Ongoing Business

1.    2008 Centennial Celebration committee report
2.    Historic District Task Force: Update of National Historic Register application
3.    Pre applications
  - a.    May 15<sup>th</sup> - 1889 Willamette Falls Dr., Steve Tekander
4.    Planning Commission Hearings
  - a.    6-Lot PUD, Subdivision: 2590 Debok Road
5.    Planter Clean up this Saturday, May 17 from 9-11 am
6.    Announcements

Next Meeting: June 11, 2008 at Willamette Primary School, 7pm.

\* Please mark your calendars!

## **Willamette Neighborhood Assoc ...minutes May 14, 2008**

The meeting was called to order by chair Ruth Offer at 7pm in the Willamette Primary library. After introductions, the minutes of the April meeting were tabled for lack of a secretary.

**Treasurer's report:** The WNA has a balance of \$6,345.90 which represents monies of the WNA, the Willamette walking guide and the yoga class.

**Election of officers:** postponed until June when more residents will be present. Current Nominees: Beth Kieres, president and Elizabeth Rocchia, treasurer. Seeking nominees for vice-president and secretary.

**Annexation of 1270 Rosemont Rd:** This 16ac property has been gifted to the Terwilliger Plaza Foundation. The gift stipulated that monies realized from its sale would go to the Foundation for some specific purposes. It is zoned R10. The presenters encouraged those present to vote for this annexation to the City to facilitate development.

**Willamette merchants:** Several local merchants present requested support in their use of A frame signs on the public sidewalk during business hours. The City charges a \$50 fee for a 60day permit that can be renewed. Discussion ensued:

1. An abundance of signs at Cascade Summit seems to have triggered this concern of proliferation. The WLPD Community Service officer, Alexis Warwick, was present to answer questions.
2. Merchants felt their fascia signs needed to be supplemented.
3. One person spoke in favor of support thinking local merchants needed all the help they could get.
4. Other persons were more cautious and feared the obstruction of sidewalks and proliferation

The Chair suggested they come back next month with photos when more people would be present.

**Fire District presentation:** The TVFR representatives and their architect showed a rendering of the proposed new station and explained that current operational needs dictated this change. The facade of the existing station could not be incorporated into the design because of its size, varied level of the current bays and poor construction. The building will be of brick with a roof extension to accommodate a restored bell. The variance for the height needed to incorporate the bell was discussed at the April meeting with a vote in support of the variance taken. It was suggested that a darker shade of brick be used to offset the central extended bay to break up the visual impact of a large new

building and better suit the community architectural profile of the replaced station. A request was made to mount a photo of the old station in the new structure. This presentation is part of the application process. A public hearing before the Planning Commission has not yet been scheduled.

**Centennial report:** Beth showed the group a tee shirt with logo that will be for sale at the Tuesday market. Adult sizes are \$12 and child sizes are \$10. Also she produced a banner sign advertising the centennial that will have multiple uses. The next meeting will be Tuesday the 20th at 7pm at in Methodist church. The "Dine Out" event will be scheduled in June and July.

**Historic District Task Force:** The current consultants' contract expires June 30. Work will continue from the consultants findings. Grant application has been made with plans to hire a consultant to finish the application. Designation as a National Historic District does not conflict or alter current WL codes and will bring property tax advantages.

**Planter beds:** Work in the flower beds will be this Saturday, May 17, from 9 to 11 am. Elizabeth Rocchia has permission to buy several flats of annuals. Beth Kieres described the sale of engraved bricks for the median strips. A brick inscribed "Willamette Cove 1992-2005" will be purchased by the WNA. Also she suggested that the WNA purchase bricks with the centennial logo for each of the 18 brick pads in the median strips. A short discussion of cigarette butts in the planters ensued. Solutions are being considered.

The meeting adjourned at 8:45pm

Respectfully submitted,

Elizabeth Rocchia, secretary of the moment

**Exhibit H: Noise Study**  
**Tualatin Valley Fire & Rescue Station 59**

August 6, 2008

Peck Smiley Ettlin  
4412 SW Corbett  
Portland, OR 97201

Attention: Mr. Hans Ettlin

Rc: Tualatin Valley Fire and Rescue, West Linn  
Fire Station #59 - Willamette Falls Drive,  
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**

The project site is located in West Linn, Oregon between Willamette Falls Drive (7th Avenue) to the south and 8th Avenue to the north. The site is currently occupied by the existing fire station. Adjacent property to the west and east is commercial. Adjacent property to the northeast, northwest and north (across 8th Avenue) is 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

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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.
- 3.4 In that the project site is currently occupied by a "industrial/commercial" source (the existing fire station), the proposed type of use will not be "new." Therefore, the allowable increase of ambient noise criteria for previously unused sites does not apply, and no existing condition noise measurement was required.

### 4. Proposed Tenant Operation Noise Levels

- 4.1 Based on a previous and similar project, Tualatin Valley Fire and Rescue Station 50, designed by the same architect as station 59, 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.

#### 4.2. 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 1 below.

**TABLE 1**  
**Heat Pump Minimum Location Distances**  
**from Residential Dwellings**

Noise Level	Time Period	Distance
55 dBA	7 AM to 8 PM	17'-0"
50 dBA	10 PM to 7 AM	30'-0"

#### 4.3 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 2 below.

**TABLE 2**  
**Apparatus Bay Exhaust Fan Minimum Location Distances**  
**from Residential Dwellings**

Noise Level	Time Period	Distance
55 dBA	7 AM to 10 PM	24'-0"
50 dBA	10 PM to 7 AM	42'-0"

#### 4.4 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.

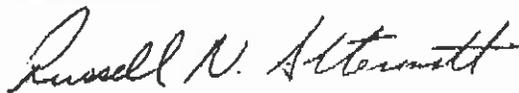
- 4.4 The recommendations above were for the individual sources. For concurrent operation, the minimum distances would increase slightly.

#### 5. 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 I: Lighting Cut Sheets**  
**Tualatin Valley Fire & Rescue Station 59**

# 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

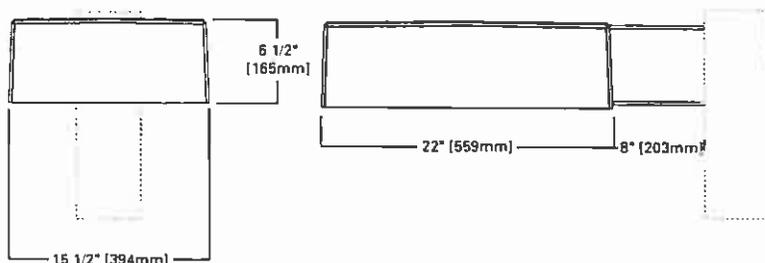
70 - 400W

High Pressure Sodium  
Pulse Start Metal Halide  
Metal Halide

AREA LUMINAIRE

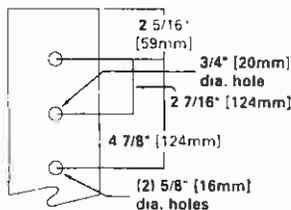
LAMP TYPE	WATTAGE
Metal Halide	70, 100, 175, 250, 400W
High Pressure Sodium	70, 100, 150, 250, 400W
Pulse Start Metal Halide	150, 175, 250, 320, 400W

## DIMENSIONS

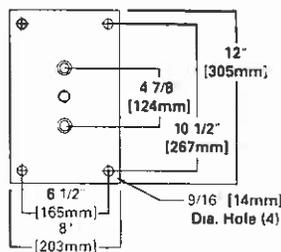


## DRILLING PATTERNS

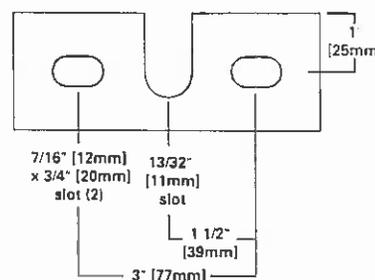
### TYPE "M"



### WALL MOUNT



### TRUNNION MOUNT



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)

### CWI Ballast Input Watts

250W HPS HPF (300 Watts)

### CWA Ballast Input Watts

175W MP HPF (208 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-MY-LL

<p><b>Lamp Type</b>                  HP: High Pressure Sodium                  MH: Metal Halide                  MP: Pulse Start MH (CWA)</p> <p><b>Series <sup>1</sup></b>                  TR: Tribute (Arm Included)</p>	<p><b>Distribution</b>                  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><b>Lamp Wattage <sup>2</sup></b>                  70: 70W                  100: 100W                  150: 150W                  175: 175W                  250: 250W                  320: 320W<sup>3</sup>                  400: 400W<sup>4</sup></p> <p><b>Voltage <sup>5</sup></b>                  120V: 120V                  208V: 208V                  240V: 240V                  277V: 277V                  347V: 347V                  480V: 480V                  DT: Dual-Tap<sup>6</sup>                  MT: Multi-Tap, <sup>6</sup> wired 277V                  TT: Triple-Tap, <sup>6</sup> wired 347V                  5T: 5 Tap Wired<sup>4</sup> 480V</p>	<p><b>Options <sup>7, 8</sup></b>  <b>F1:</b> Single Fuse (120, 277 or 347V<sup>9</sup> only)  <b>F2:</b> Double Fuse (208, 240 or 480V<sup>9</sup> only)  <b>Q:</b> Quartz Restrike (Hot Strike<sup>10</sup> Only)  <b>EM:</b> Quartz Restrike with "Delay Relay" (Quartz lamp strikes at both hot and cold starts)  <b>EM/SC:</b> Emergency Separate<sup>10</sup> Circuit  <b>LL:</b> Lamp Included  <b>S:</b> 1 1/4" - 2 3/8" Internal Mast Arm Mount  <b>TM:</b> Trunnion Mount  <b>PT:</b> Electrical Power Tray  <b>HS:</b> House Side Cutoff<sup>11</sup>  <b>LA:</b> Less Arm (Order Mounting Separately)  <b>PER:</b> NEMA Twistlock Photocontrol Receptacle  <b>PC:</b> Button Type Photocontrol  <b>WH:</b> White  <b>BK:</b> Black  <b>AP:</b> AP Grey  <b>DP:</b> Dark Platinum  <b>GM:</b> Graphite Metallic</p>	<p><b>Accessories <sup>12</sup></b>  <b>MA1201-XX:</b> Direct Wall Mount Kit  <b>MA1218-XX:</b> Direct Mount for Pole  <b>MA1219-XX:</b> Wall Mounting Plate  <b>OA1090-XX:</b> Adjustable Diffuser Arm for Tenon Mount 2 3/8" O.D.  <b>MA1221-XX:</b> External House Side Shield Kit (EPA= 0.35)  <b>MA1222:</b> External House Side Shield Kit for 2S/3S  <b>MA1223:</b> Internal House Side Shield Kit 14S  <b>MA1224:</b> Internal House Side Shield Kit for 2F/3F  <b>MA1225:</b> Internal House Side Shield Kit for 4F  <b>MA1010-XX:</b> Single Tenon Adapter for 1 1/2" O.D. Tenon  <b>MA1011-XX:</b> 2 @ 180 degrees Tenon Adapter for 3 1/2" O.D. Tenon  <b>MA1012-XX:</b> 3 @ 120 degrees Tenon Adapter for 3 1/2" O.D. Tenon  <b>MA1013-XX:</b> 4 @ 90 degrees Tenon Adapter for 3 1/2" O.D. Tenon  <b>MA1014-XX:</b> 2 @ 90 degrees Tenon Adapter for 3 1/2" O.D. Tenon  <b>MA1015-XX:</b> 2 @ 120 degrees Tenon Adapter for 3 1/2" O.D. Tenon  <b>MA1016-XX:</b> 3 @ 90 degrees Tenon Adapter for 3 1/2" O.D. Tenon  <b>MA1017-XX:</b> Single Tenon Adapter for 2 3/8" O.D. Tenon  <b>MA1018-XX:</b> 2 @ 180 degrees Tenon Adapter for 2 3/8" O.D. Tenon  <b>MA1019-XX:</b> 3 @ 120 degrees Tenon Adapter for 2 3/8" O.D. Tenon  <b>MA1045-XX:</b> 4 @ 90 degrees Tenon Adapter for 2 3/8" O.D. Tenon  <b>MA1046-XX:</b> 2 @ 90 degrees Tenon Adapter for 2 3/8" O.D. Tenon  <b>MA1048-XX:</b> 3 @ 90 degrees Tenon Adapter for 2 3/8" O.D. Tenon  <b>OARA1018:</b> Photoelectric Control 105-285V NEMA Type  <b>OARA1027:</b> Photoelectric Control 480V NEMA Type  <b>OARA1021:</b> Photoelectric Control 347V NEMA Type  <b>OARA1013:</b> Shorting Cap  <b>TRVS:</b> Field Installed Vandal Shield<sup>13</sup></p>
---	--	--	--	--

- Notes
- 8 Inch Arm and pole adapter included with fixture. Specify Less Arm "LA" option when mounting accessory is ordered separately
  - Standard with mogul base socket for 150-400W and medium base socket 100W and below
  - 320W Pulse Start Metal Halide lamps only
  - Requires reduced envelope lamp
  - Products also available in not US voltages and 50Hz for international markets. Consult factory for availability and ordering information
  - 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
  - Custom and RAL color matching available upon request. Consult Cooper Lighting Representative for further information
  - Add as a suffix
  - Must specify voltage
  - Quartz options not available with SL optics
  - House side shield not available on 5S, 5F, or SL optics
  - Order separately/replace XX with color specification
  - Not available with SLE or House Side Shield

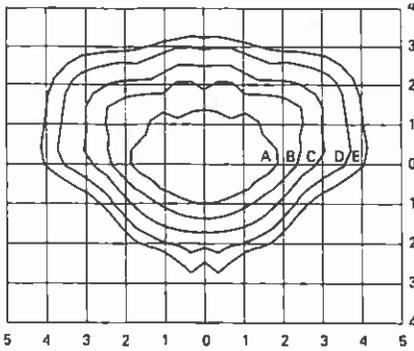
STOCK SAMPLE NUMBER (Lamp Included)

SAMPLE NUMBER: MHTR2340

<b>TR</b>	<b>23</b>
<p><b>Lamp Type</b>                  HP=High Pressure Sodium                  MH=Metal Halide<sup>2</sup>                  MP=Pulse Start Metal Halide<sup>2</sup></p>	<p><b>Lamp Wattage</b>                  15=150W                  17=175W                  25=250W                  40=400W</p>

NOTES

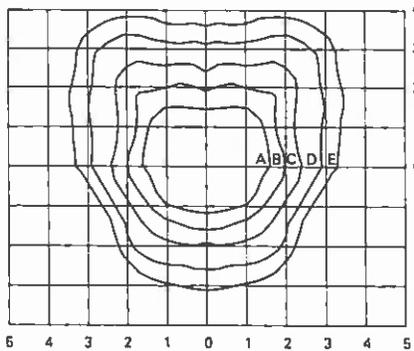
<sup>1</sup> Short logic fixtures are finished bronze include multi-tap ballast, lamp, arm and round pole adapter. Other options not available. Refer to standard ordering logic. <sup>4</sup> Available in 175, 250 and 400 Watt



**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.

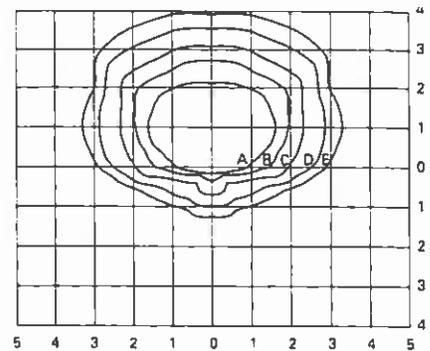
Mounting Height	Footcandle Values for Isofootcandle Lines				
	A	B	C	D	E
20'	3.00	1.50	0.75	0.30	0.15
25'	2.00	1.00	0.50	0.20	0.10
30'	1.38	0.69	0.34	0.13	0.06



**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

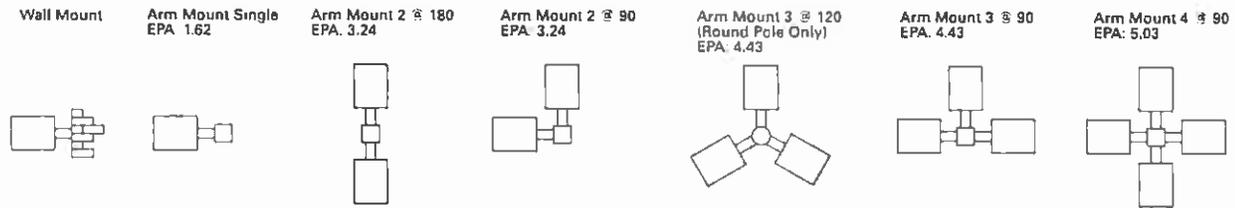


**MHTR-SL-400**  
400-Watt MH Spill Light Eliminator  
40,000-Lumen Clear Lamp

**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**

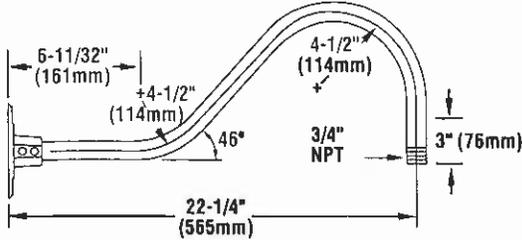


# ABOLITE GOOSENECK AND WALL BRACKETS

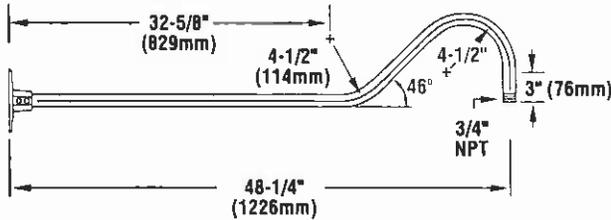
Brackets are finished in gloss white powder, other optional colors are available. All brackets suitable for use in wet locations, and mounts to recessed 4" octagon box (by others). Fixtures used in wet locations must be specified "WL" separately. To order, specify catalog number indicated.

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. CA5 wall plate included with all goosenecks.

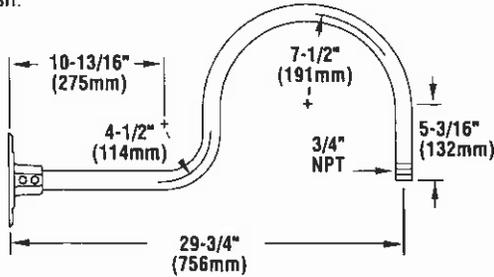
**GB A 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket.** Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.



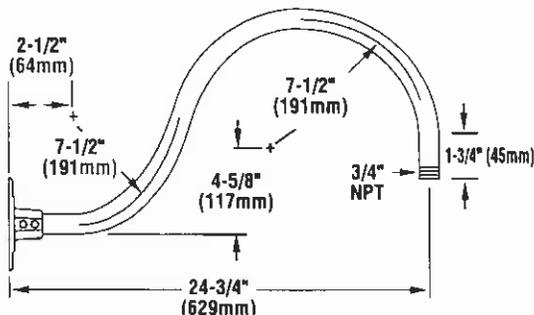
**GB B 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket.** Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.



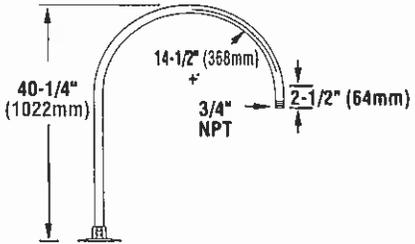
**GB C 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket.** Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.



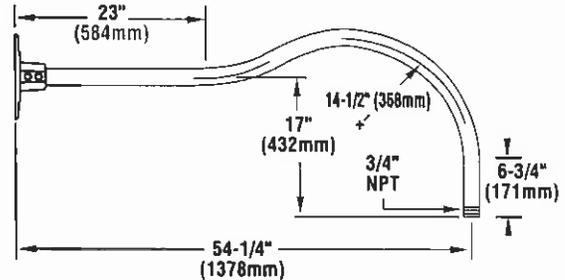
**GB D 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket.** Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.



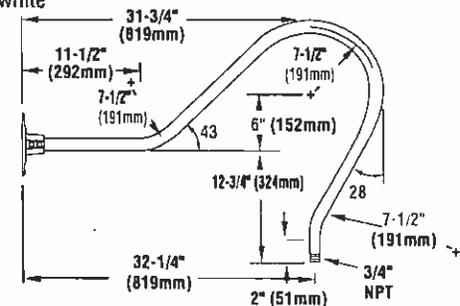
**GB E 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket.** Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket is designed to be mounted to a horizontal surface, but could also be mounted to a wall. The bracket features a gloss white powder finish.



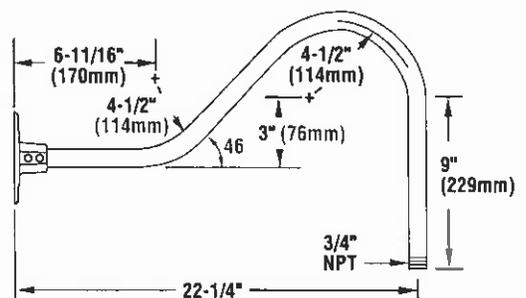
**GB F 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket.** Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.



**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.

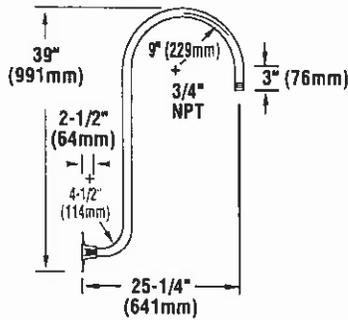


Project Name \_\_\_\_\_ Fixture Type \_\_\_\_\_  
 Catalog # \_\_\_\_\_

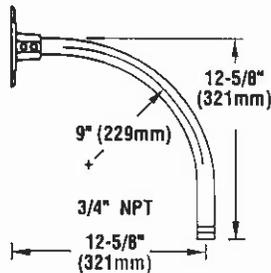
© 2007 LSI INDUSTRIES INC

# ABOLITE GOOSENECK AND WALL BRACKETS

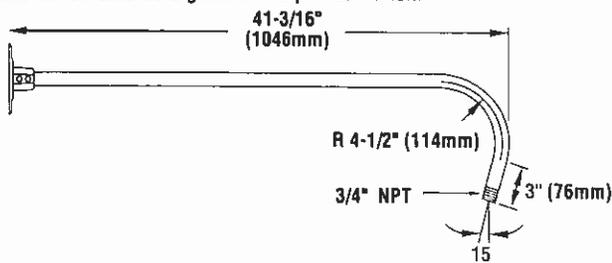
**GB J 3 GWT** - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.



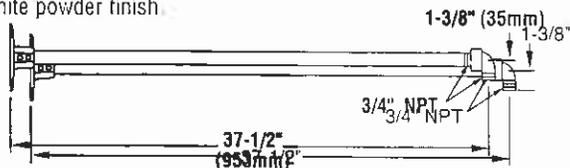
**GB K 3 GWT** - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.



**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.

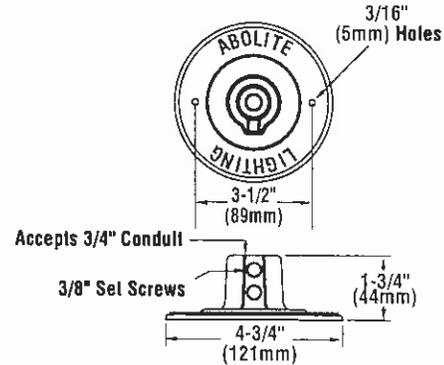


**GB U 3 GWT** - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.

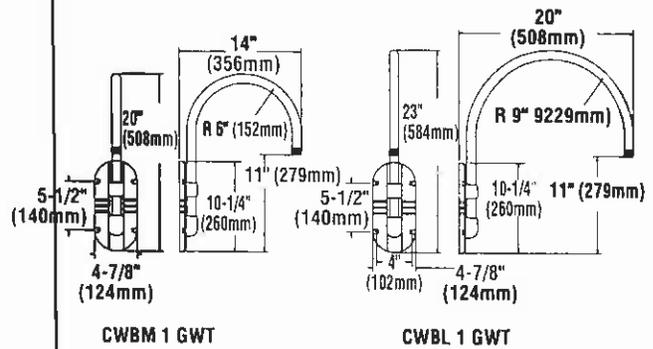


**Replacement CA 5** - Gloss white powder finish (other colors available)

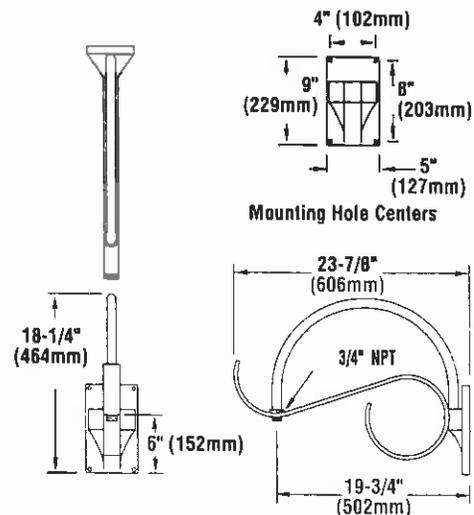
- Mounts to recessed 4" octagon box (by others).



**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.



## Vaporlight 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.

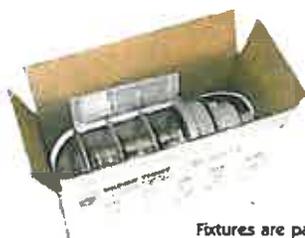
**APPROVALS:** Listed with Underwriter's Laboratories for WET LOCATIONS. C-UL Listed for Canada.



VP Series 300W



VP Series 150W

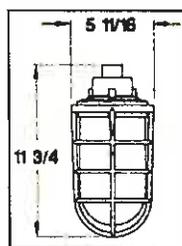


Fixtures are partially assembled for quick installation.

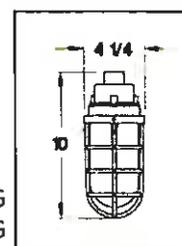
### GLASS GLOBES



### LEXAN GLOBES



VP230-42-G  
VP330-42-G

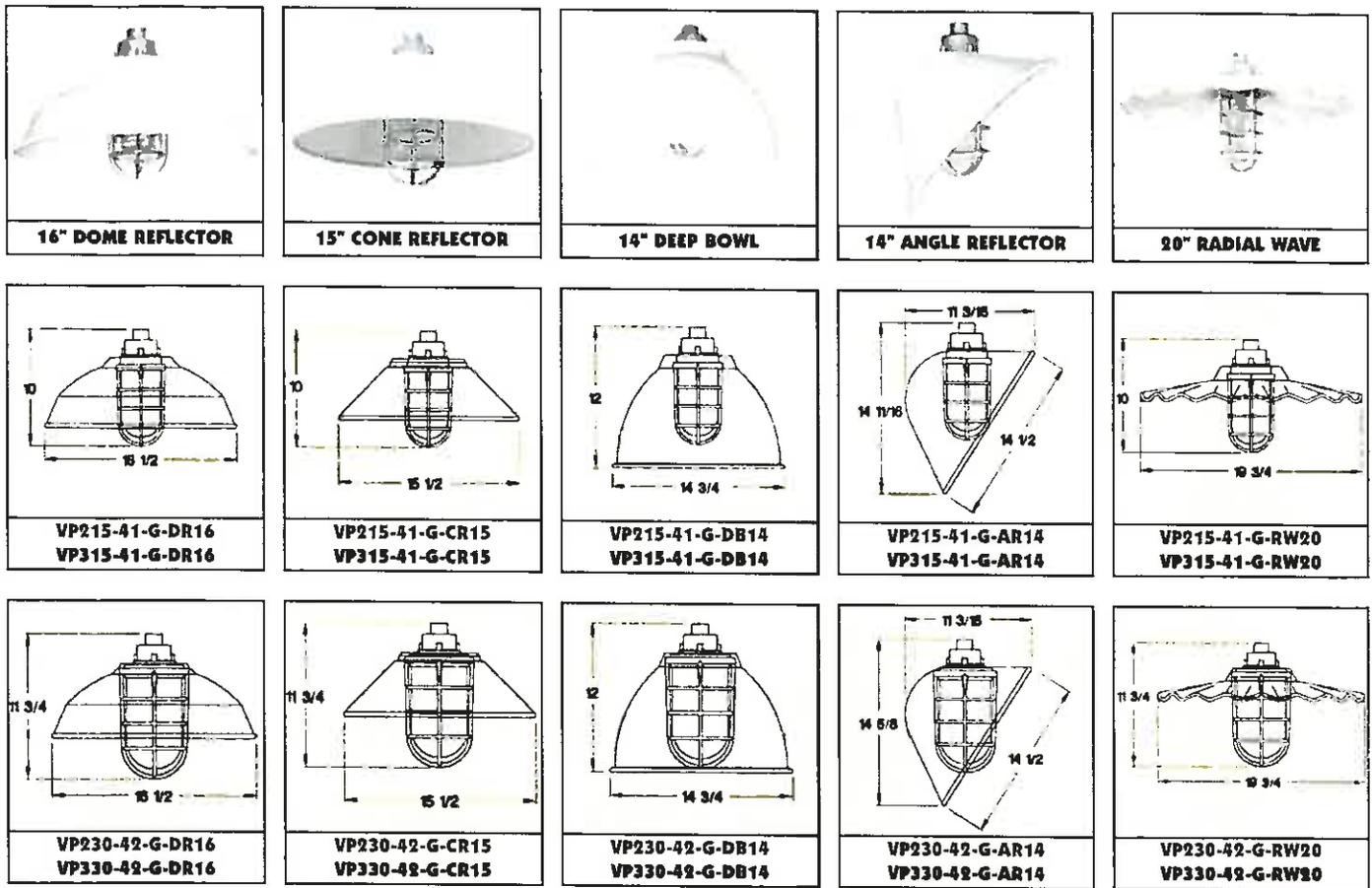


VP215-41-G  
VP315-41-G



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 REFLECTOR



# 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 3-1/2" Clear Glass Globe	No.	Description	Max. Watts	G Screw-On Die-Cast Guard  Guard Option is Not Available with Lexan Globe	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					
	3 1/4" Hub	30-42 300 Watt Max. with 4-1/2" Clear Glass Globe	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**



THE SPERO ELECTRIC CORPORATION 1705 NOBLE ROAD CLEVELAND, OHIO 44112  
 PHONE: (216) 851-3300 FAX: (216) 851-0300 <http://www.sperolighting.com> E-3

# Millenium Edge™

Architectural Lighting for High Abuse Environments

MRI3FFD Series  
13" Round Flat Face  
Ceiling/Wall Mount/Surface  
52 Watt Maximum – CFL  
50 Watt Maximum – HID



Height	Width	Depth
13.2"	13.2"	5.3"



## Specifications

**Lens:** UV stabilized high impact resistant, virgin injection molded polycarbonate. Close tolerance push/turn/lock-in-place mating of injection molded lens and lens base. Lens and lens base secured with one concealed captive POSIGRIP™ fastener.

**Lens Base:** High impact resistant, injection molded polycarbonate. Lens base shields lamp from viewing angles. Standard impact resistant finishes – black or white. Optional dark bronze (DB) chemically bonding, impact resistant finish.

**Housing:** Marine grade die-cast aluminum. Rib reinforced construction. Integral heat sinks. Housing flange interlocks and wraps around lens base producing maximum moisture deflection and resistance to prying. Housing provided with four-point mounting holes, one wireway hole and temporary junction box mounting drill points. Standard black or white exterior urethane powder coat finished – 5-step pre-treatment. Dark bronze optional finish.

**Reflector:** Compact Fluorescent Full reflector/wire cover – 92% reflectivity. HID. Full reflector/wire cover High efficiency semi specular aluminum.

**Electrical:** Fluorescent magnetic ballasts – 120V/177V power factor corrected. fluorescent electronic 120/277/347 and dual voltage ballasts high power factor (<10% THD). HID ballasts high power factor. Metal halide lamps utilize pulse start technology. Shock absorbing, medium base lamp sockets provided for HID lamps.

**Gasketing:** Die-cut, closed cell neoprene self adhesive gasket seals housing to mounting surface. Closed cell silicone "O" ring gaskets positioned and friction secured in gasket channels of lens base and housing.

**Hardware:** One stainless steel POSIGRIP™ fastener.

**Listings/Certifications:** UL and CUL listed for Wet Locations (listing includes Emergency Battery Pack "EL" option). UL Classified IP64 (E185326). IDA-Approved™ Dark-Sky Friendly Fixture when ceiling mounted.

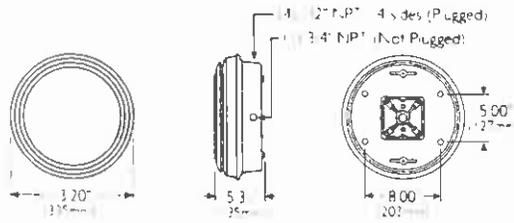
**Installation:** Standard four-point mounting required for Peace of Mind Lifetime Guarantee™. For wall mount installation, mount lamp base up on all HID lamp sources.

## Ordering Information

Series	Lens Type	Finish	Lamp Type	Lamp Qty	Voltage	Options	Accessories						
MRI3FFD	PP												
<b>Lens Type</b> PP Pearlescent Polycarbonate		<b>Finish</b> MB Matte Black (Standard) MW Matte White (Standard) DB Dark Bronze (Optional)		<b>Lamp (Qty/Ballast/Voltage/Starting Temp)</b> 7 7 Watt Twin (1.2/M3/120.277/0°F) 13 13 Watt Twin (1.2/MB/120.277/32°F) 13Q 13 Watt Quad (1.2/EB/120.277.347/0°F) 18Q 18 Watt Quad (1.2/EB/120.277.347/0°F) 26Q 26 Watt Quad (1.2/EB/120.277.347/0°F) 32P 32 Watt PLT (1/EB/120.277.347/0°F) 35S 35 Watt HPS (1/H/PF/120.277/-40°F) 50S 50 Watt HPS (1/H/PF/120.277.347/-40°F) 50M† 50 Watt MH (1/H/PF/120.277.347/-20°F)		<b>Lamp Qty</b> 1 One Lamp 2 Two Lamps		<b>Voltage</b> 120 120 Volts 277 277 Volts 347 347 Volts DV 120/277 Volts electronic ballasts only		<b>Options</b> EL One-Lamp WL Emergency Pack (32 F) (n/a with two 26Q lamps) FS Single Fuse & Holder QR Quartz restrike system for maximum 75-Watt DC bay quartz lamp (see C-0/96) QRC Hot/Cold Quartz restrike (n/a with 35S lamp) QS Quartz socket only NAT Natatorium Environment Option		<b>Accessories</b> BPC Photo Control - Shielded Button Type C-0796 75 Watt DC Bay Quartz Lamp 9500 POSIGRIP™ Screwdriver	

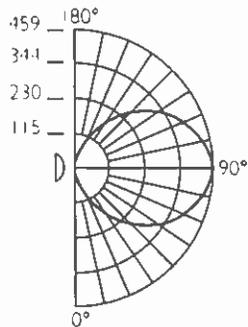
† UV shielding lamp supplied

### Cross Section / Details



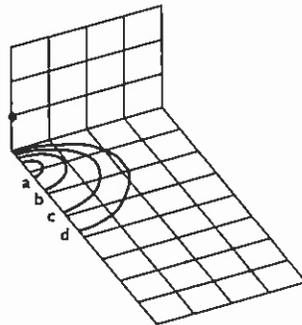
### Photometric Information

#### Wall



#### Candlepower Distribution

#### Isofootcandle Curves



#### Wall Mounting Height (in feet)

Horizontal Plane Isofootcandle Line				
	7	8	9	10
a	1.31	1.00	0.79	0.64
b	0.65	0.50	0.40	0.32
c	0.26	0.20	0.16	0.13
d	0.13	0.10	0.08	0.06

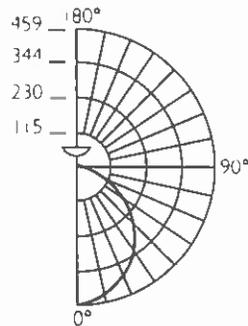
Report Number: ITL 58584

Lamp: Two 26 Watt Quad 1800 Lumens each

Lens: Pearlescent Polycarbonate

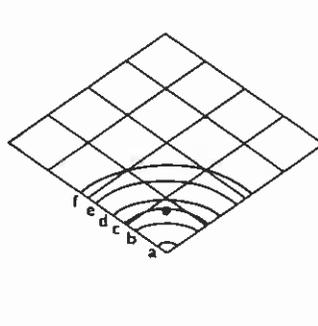
Grid lines in units of mounting height

#### Ceiling



#### Candlepower Distribution

#### Isofootcandle Curves



#### Ceiling Mounting Height (in feet)

Horizontal Plane Isofootcandle Line				
	7	8	9	10
a	6.53	5.00	3.95	3.20
b	2.61	2.00	1.58	1.28
c	1.31	1.00	0.79	0.64
d	0.65	0.50	0.40	0.32
e	0.26	0.20	0.16	0.13
f	0.13	0.10	0.08	0.06

### Peace of Mind Guarantee

Kenall high abuse luminaires are designed and built to take exceptional physical punishment. When installed according to our instructions, Kenall will repair or replace any Millenium fixture rendered inoperable due to physical abuse for the product life of the original installation.

## PEACE OF MIND

Lifetime Guarantee™

### Quick Specification

**Lens:** Precision injection molded polycarbonate, high impact resistant lens with lifetime breakage guarantee

**Lens Base:** Lens positioned in the silicone gasketed lens base channel and secured with one concealed captive POSIGRIP™ fastener

**Housing:** Marine grade die-cast aluminum

**Electrical:** Vibration absorbing IED lamp socket

**Listings:** UL and CUL listed for Wet Locations (listing includes Emergency Battery Pack "EL" option) UL Classified IP64 (E195326) IDA-Approved™ Dark-Sky Friendly Fixture

### Project Information

Job Name \_\_\_\_\_

Job Location \_\_\_\_\_

Fixture Type \_\_\_\_\_ Quantity \_\_\_\_\_

Catalog Number \_\_\_\_\_

Approved by \_\_\_\_\_

Date \_\_\_\_\_