

EMERIO

Design

CIVIL ENGINEERS & PLANNERS

April 16, 2014

RE: Cedar Brook, 66-Lot Subdivision & PUD
Tax Map T2S R1W 30CD, Tax Lot 13400, Sherwood, Oregon
City File #: 4193 Date: March 26, 2014

Design Modification Request for private street, nonstandard bulb out, intersection of SW "A" Street and SW Meinecke Parkway (Layout and Spacing) and curb tight sidewalk on east side of SW "A" Street.

To: Bob Galati, P.E. – City Engineer
Through: Craig Christensen, P.E. – City Project Manager
From: Rafael Gaeta, P.E. – Project Manager / Design Engineer

Location of Requested Design Modification

1. Private Street
2. Nonstandard bulb out
3. Intersection of SW "A" Street and SW Meinecke Parkway (Layout and Spacing)
4. Curb tight sidewalk on east side of SW "A" Street

Current standards

1. Private Street

The City of Sherwood Engineering Design and Standard Details Manual, Drawing Number RD-56A PRIVATE ACCESS ROADS, identifies the road width for a private road to be 12 feet for 1 or 2 lots and 20 feet for 3 to 5 lots.

2. Nonstandard Bulb Out

Section 210.7.E states that the outside minimum curb radius of an eyebrow corner is 36 feet; minimum right-of-way radius is 48 feet. According to the attached RD-12 Standard Drawing dated June, 2013, the inside curb radius is also 36 feet.

3. Intersection of SW "A" Street and SW Meinecke Parkway

a. Layout

Section 210.6.A of the City of Sherwood Engineering Manual states that the interior angle at intersecting streets shall be kept as near to 90 degrees as possible and in no case shall it be less than 75 degrees. A straight horizontal alignment (no curves, no angle points) shall be used through the intersection and for a minimum of 25 feet each side of intersecting right-of-way lines.

b. Spacing

Section 210.6.E of the City of Sherwood Engineering Manual states that the minimum distance between intersections of Collector and Local roads shall be 400 feet.

4. Curb tight sidewalk on east side of SW "A" Street

The City of Sherwood Engineering Design and Standard Details Manual, Drawing Number RD-1 STANDARD LOCAL & NEIGHBORHOOD STREET SECTIONS, identifies that Landscape strips are required on both sides of the street.

Design Modification Being Requested

1. Private Street

Lots 29 through 66 are served with a 20 foot wide private alley. Section 16.44.010.E.3 requires an alley either public or private if access on a street is not recommended by city staff. In this case, driveways on Cedar Brook Way and Meinecke Parkway are not recommended by city staff. The use of an alley is allowed with a PUD. This option was approved with the Arbor Terrace Row Houses located on the west side of Langer Farms Parkway between Century Drive and Langer Drive.

2. Nonstandard Bulb Out

Because the private street will function as an alley, the bulb out standard for local streets does not apply. The alley inside curb radius at the 90 degree turn is 28 feet and the outside radius is 48 feet in accordance with fire department requirements. The outside curb is widened to allow swing distance for larger vehicles. Additionally, fire hydrants will be provided in accordance with fire department requirements.

3. Intersection of SW "A" Street and SW Meinecke Parkway

a. Layout

I am proposing the intersection of SW "A" Street and SW Meinecke Parkway along the curve of SW Meinecke Parkway. The existing traffic circle at the intersection of Meinecke and Cedar Brook Way creates design challenges. Driveway access close to the traffic circle is not practical. Therefore, all the driveways are interior to the site. Meinecke Parkway is a collector street and Cedar Brook Way is a local street, but designed as a neighborhood route with 64 feet of right-of way and 36 feet of pavement with 8 foot sidewalks. The property has an unusual shape which limits the development potential. Many alternative plans were prepared. The proposed plan was the best alternative to meet the minimum density requirement of 65 units. A through street is provided from Meinecke Parkway to Cedar Brook Way. The Meinecke entrance is a right-in and right-out intersection because the existing median island prevents left turns. The traffic study prepared by Charbonneau Engineering indicates the surrounding intersections currently operate at an adequate level of service and into the future. Traffic levels were studied to the year 2035 to comply with the Oregon Transportation Planning Rule (TRP) requirements and rules because the property was recently rezoned from commercial to HDR. This property is isolated with no adjacent developable property. Therefore no street stubs are necessary.

b. Spacing

The right-of-way distance from Street "A" to Highway 99 is 260 feet and 280 to the projection of the Cedar Brook right-of-way. Since Meinecke is a collector street, the intersection spacing is 400 feet. The Street "A" intersection is generally half way between Highway 99 and Cedar Brook Way. This access should not be moved closer to either Highway 99 or Cedar Brook Way. The city requested two accesses into the site. The fire department requested two accesses at opposite ends of the site. This is the reason for the access on Meinecke Parkway. Since Street "A" is limited to right-in and right-out access, conflicting turning movements will not occur. The 400 foot spacing is meant for 4-way intersections with full left turns which is not the case with the Street "A" access. The property has an unusual shape which limits the development potential. Many alternative plans were prepared. The proposed plan was the best alternative to meet the minimum density requirement of 65 units. A through street is provided from Meinecke parkway to Cedar Brook Way. The Meinecke entrance is a right-in and right-out intersection because the existing median island prevents left turns.

4. Curb tight sidewalk on east side of SW "A" street

The local Street "A" is requested to be modified by the use of rolled curbs and curb tight sidewalks on the east side in front of the one car garage row houses. This design eliminates the small planters between the sidewalk and the curb resulting from multiple driveways. Curb tight sidewalks were used successfully in Arbor Terrace off Langer Farms Parkway. The west side of this north/south road will not have driveway drops and the typical planter between the sidewalk and curb will be provided.

Result of Meeting Standards

1. Private Street

The proposed private street serves as an alley to access lots 29 – 66. Section 16.44.010.E.3 requires and alley either public or private if access on a street is not recommended by city staff. In this case, driveways on Cedar Brook Way and Meinecke Parkway are not be recommended by city staff. The use of an alley is allowed with a PUD. Allowing the use of an alley complies with Section 16.44.010.E.3.

2. Nonstandard Bulb Out

Because the private street will function as an alley, the bulb out standard for local streets does not apply. The inside radius of the roll curb is 28 feet and the outside radius is 48 feet in compliance with fire department requirements. Fire trucks can drive on the curbs because they will be only 3 inches in height. The 20 foot fire department width includes the one foot wide curbs. Additionally, fire hydrants will be provided in accordance with fire department requirements.

3. Intersection of SW "A" Street and SW Meinecke Parkway

a. Layout

The existing traffic circle at the intersection of Meinecke and Cedar Brook Way create design challenges. The property has an unusual shape which limits the development potential. Many alternative plans

were prepared. The proposed plan was the best alternative to meet the minimum density requirement of 65 units.

b. Spacing

Because of the existing traffic circle at the intersection of Meinecke and Cedar Brook and the properties unusual shape, the proposed plan is the best alternative to meet minimum density requirements of 65 units.

4. Curb tight sidewalk on east side of Street "A"

The proposed layout eliminates the small planters between the sidewalk and the curb resulting from multiple driveways. A landscape strip would push the houses back reducing the backyard setbacks. No room is available to move Street "A" to the west to create this 5 foot planter unless additional lots are removed. This option is not possible because the minimum density will not be achieved. Landscaping is proposed between driveways behind the curb tight sidewalk.

Reason Why Design Request Should be Approved

1. Private Street

The proposed Private Street serves as an alley to access lots 29 – 66. Section 16.44.010.E.3 requires an alley, either public or private, if access on a street is not recommended by city staff. In this case, driveways on Cedar Brook Way and Meinecke Parkway are not recommended by city staff. The use of an alley is allowed with a PUD and in compliance with Section 16.44.010.E.3.

2. Nonstandard Bulb Out

Because the private street is to function as an alley the bulb out standard for local streets does not apply. The inside radius of the roll curb is 28 feet and the outside radius is 48 feet in compliance with fire department requirements. The fire trucks can drive on the curbs because they will be only 3 inches in height. The 20 foot fire department width includes the one foot wide curbs. Additionally, fire hydrants will be provided in accordance with fire department requirements.

3. Intersection of SW "A" Street and SW Meinecke Parkway

a. Layout

A through street is provided from the existing Meinecke Parkway to Cedar Brook Way. The Meinecke entrance is a right-in and right-out intersection because the existing median island prevents left turns. The traffic study prepared by Charbonneau Engineering indicates the surrounding intersections currently operate at an adequate level of service and into the future. Traffic levels were studied to the year 2035 to comply with the Oregon Transportation Planning Rule (TPR) requirements and rules because the property was recently rezoned from commercial to HDR. This property is isolated with no adjacent developable property. Therefore no street stubs are necessary.

b. Spacing

A through street is provided from Meinecke Parkway to Cedar Brook Way. The Meinecke entrance is a right-in and right-out intersection because the

existing median island prevents left turns. The traffic study prepared by Charbonneau Engineering indicates the surrounding intersections currently operate at an adequate level of service and into the future. Traffic levels were studied to the year 2035 to comply with the Oregon Transportation Planning Rule (TPR) requirements and rules because the property was recently rezoned from commercial to HDR. This property is isolated with no adjacent developable property.

4. Curb tight sidewalk on east side of Street "A"

This design eliminates the small planters between the sidewalk and the curb resulting from multiple driveways. Curb tight sidewalks were used successfully in Arbor Terrace off Langer Farms Parkway. The west side of this north/south road will not have driveway drops and the typical planter between the sidewalk and curb will be provided.



Rafael Gaeta, P.E. – Design Engineer

4.16.14

Date



Craig Christensen, P.E. – City Project Manager

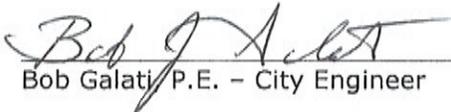
4.28.14

Date

Approved

Approved with Conditions (conditions below or on attached sheet)

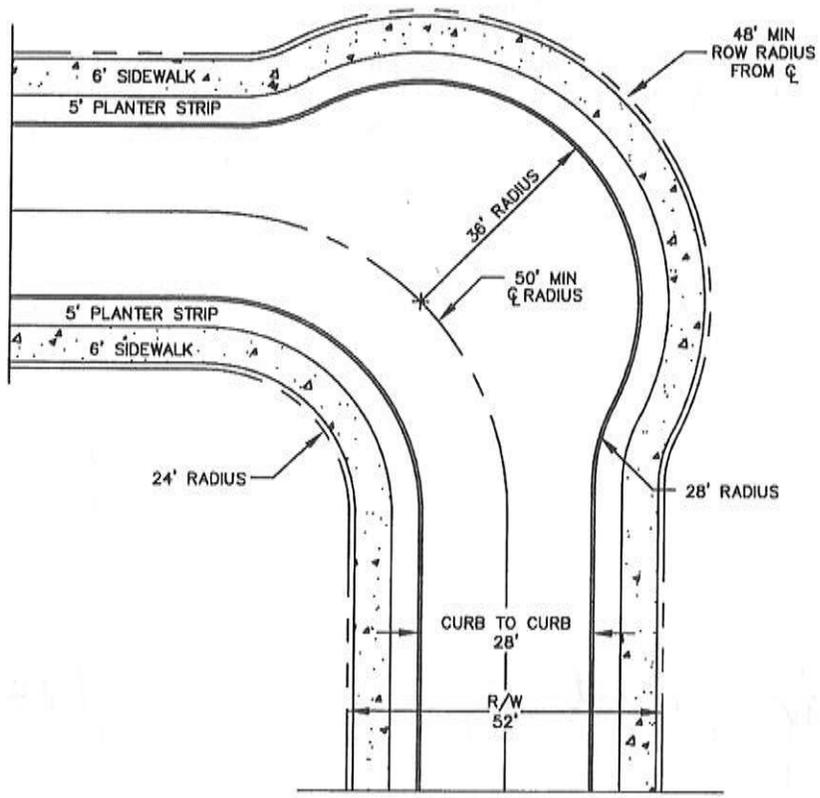
Denied



Bob Galati, P.E. – City Engineer

4.28.14

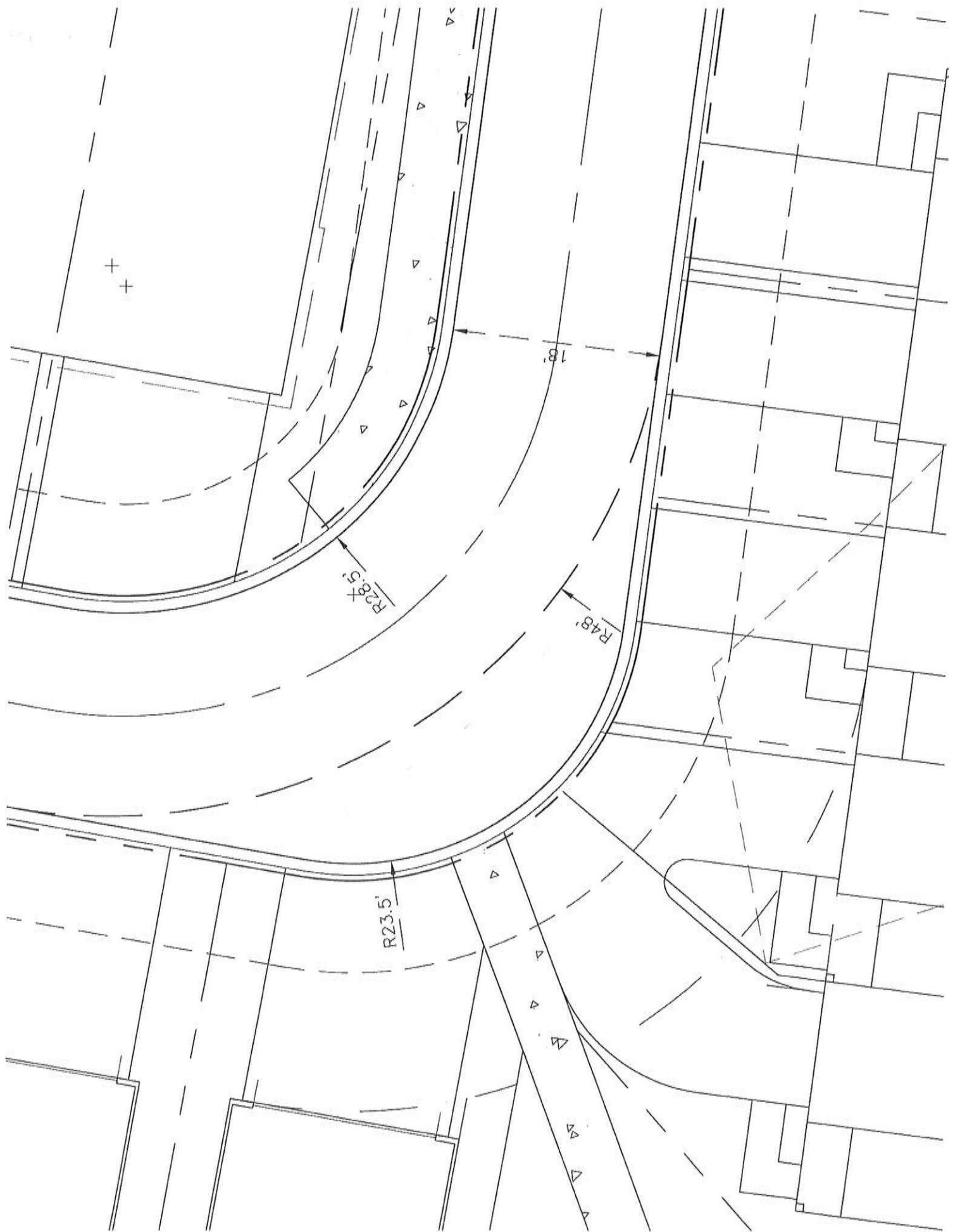
Date



NOTES

1. EYEBROWS ALLOWED ON LOCAL STREETS ONLY.
2. A STANDARD CATCHBASIN SHALL BE LOCATED ALONG THE EYEBROW CURBLINE FOR STREET STORM DRAINAGE.
3. PLANTER STRIPS ARE REQUIRED ON BOTH SIDES OF STREET.
4. PAVED WIDTH AND PLANTER STRIPS ARE MEASURED FROM FACE OF CURB.
5. STREET TREES AND STREET LIGHTS ARE REQUIRED AND SHALL BE LOCATED WITHIN THE PLANTING STRIPS.

	STANDARD DRAWING TITLE		DRAWING NUMBER
	STANDARD LOCAL STREET EYEBROW		RD-12
	Any alteration of this drawing may not be associated in any way with the City of Sherwood Standard Drawings.	SCALE	DATE
		N.T.S.	JUN' 13





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Memorandum

Date: April 28, 2014

Project: 4193 – Cedar Brook PUD

To: Bob Galati, P.E.

From: Craig Christensen, P.E.

Topic: Design Modification Requests.

Item #1 – Private Street

The developer has requested a 20-foot wide (back of rolled curb to back of rolled curb) private roadway within a 21-foot wide private tract (Tract 'G'). Due to the issues with the geometric layout of the property, it was determined during the planning phase that a private street serving the western side of the development was appropriate to reach required zoning density. However, the layout shown on the preliminary plan shows centerline curve radii of approximately 50 feet (15mph), 100 feet (20mph) and 38 feet at bulb out (see Item #2). The 50-foot radius curve occurs near the private street intersection with SW "A" Street (stop condition). The developer has proposed a rolled curb that would provide 18 feet gutter to gutter and 20 feet between back of rolled curbs. The rolled curb is proposed to have a height of 3 inches over 1 foot.

I believe that the request is acceptable with the following conditions:

- "No Parking" signs, speed limit signs and "Stop" signs should be posted for the private alley.
- Since there is not enough room within the Tract 'G' for the required street signs, a sign easement will be needed along the frontage of Tract 'G' for signs.
- The private street shall meet the approval of Tualatin Valley Fire and Rescue.
- The driveway apron and private street width will be widened as necessary to allow for emergency vehicular and truck movement into and out of the private street.
- There are 38 lots that will access the proposed private street. Visibility at the intersections of the private street with SW "A" Street is a concern, especially with parking near the intersections. The developer shall provide data showing that vehicles stopped on the private street waiting to turn onto SW "A" street have adequate visibility to turn onto SW "A" Street without incident.
- Since the proposed rolled curbs will be driven on regularly, the thickness of the curb and gutter shall be a minimum of 8-inches in thickness.
- Street trees shall meet the approval of the Sherwood Planning Department.
- The pavement structure shall be in accordance with that of a Local Street Classification on Sherwood Standard Drawing RD-20.
- A Maintenance Agreement meeting the approval of the Sherwood Engineering Department shall be recorded with the county with a copy being sent to the Sherwood Engineering Department.

Item #2 – Nonstandard Bulb Out

The developer has proposed a bulb out within the private street that will meet emergency access in place of the standard city bulb out (detail RD-12). Since this is a PUD with higher density the standard bulb out would make it considerably difficult to obtain densities since it is beyond the width of the standard right-of-way. The standard bulb out is meant more for standard single family home subdivisions in corner areas of the property to obtain access to the corner. The bulb out proposed appears to give adequate width for a vehicle to pull over for an emergency vehicle. Since the standard bulb out is impractical for use in this situation, I recommend acceptance of the request with the following conditions:

- The inside radius to the back of the rolled curb shall be 28-feet minimum.
- Advanced warning signage be installed due to the sharpness of the curve and potential lack of sight distance due to vehicular parking in the driveway of lot 63.
- The bulb out shall meet the approval of Tualatin Valley Fire and Rescue.

Item #3 – SW “A” Street/SW Meineke Parkway Intersection

The developer is proposing a right in/right out intersection between SW “A” Street and SW Meineke Parkway due to SW Meineke Parkway being a divided street. Due to the spacing of Highway 99 in relation to SW Cedar Brook Way, the 400-foot spacing between intersections can't be obtained for SW “A” Street to connect to SW Meineke Parkway. The proposed intersection does appear to give adequate sight distance for a vehicle stopped on SW “A” Street to see vehicles within the right turn lane of Highway 99 that are turning onto this section of SW Meineke Parkway. The intersection would have better sight distance looking east if it were further to the west, however, due to the layout of the developing parcel, it would be impractical. Therefore, I recommend approval of the intersection with the following conditions:

- The engineering plans shall show signage to direct that vehicles on SW “A” Street can only turn right onto SW Meineke Parkway.
- Any island within the intersection shall allow for emergency vehicle and truck turning movements (either by being outside of turning movements, being mountable, etc.).
- The curb return radii shall be in accordance with the Sherwood Engineering Design Manual (25 feet minimum).
- The intersection shall meet the approval of Tualatin Valley Fire and Rescue.

Item #4 – Curb Tight Sidewalk and Reduced Right-Of-Way on SW “A” Street.

The developer is proposing eliminating the landscape strip on the east side of SW “A” Street and reducing the right-of-way accordingly. The developer is also proposing using rolled curb on the east side of SW “A” Street and reducing the amount of right-of-way behind the sidewalks on SW “A” Street from 1 foot to 0.5 foot. The requested right-of-way reduction is from 52 feet (city standard) to 47.5 feet (proposed). I recommend approval of the requested design modifications to SW “A” Street with the following conditions.

- The landscape strip shown in the preliminary plan is 5.5 feet in width. The landscape strip shall be 5.0 feet in width.
- The buffer strip shall be 1.0 feet in width behind the sidewalk per standards. When combined with the change in the landscape strip, this condition will only widen the right-of-way from the

47.5 feet proposed by the developer to 48 feet. It appears that this can be accommodated without significant impact to the development.

- The thickness of the rolled curb and gutter should be a minimum of 8-inches in thickness.
- Since the sidewalk on the east side of SW "A" Street is abutting rolled (mountable) curb, the sidewalk shall have a minimum thickness of 6 inches.
- "No Parking" signs shall be located within the buffer strip behind the sidewalk.
- Street trees shall meet the approval of the Sherwood Planning Department.
- The preliminary plan currently shows the sidewalk at the southeastern corner of SW "A" Street and SW Cedar Brook Way with too narrow of a clear sidewalk distance to obstructions. Sidewalk shall have a minimum of 6 feet clear around "Stop" sign and sidewalk ramp.

Please review the design modification request and contact me with any conditions that you feel that we need to add. Once you are satisfied with the conditions of the design modification requests, please sign.

Thank you.