Job:	300197 - South Park Bridge Replacement		
Job Number:	45647		
Alignment:	Orr		
Designed By:	Eric Evans	Date:	6/8/2008
Checked By:	Monty Freas	Date:	6/15/2009
Backchecked By:	EE/MF	Date:	6/17/2009

Notes: 2% cross slope used to contol drainage.

Criteria	Design Element	Station From	Station To	Offset	Calculation	2007 King County Design and Construction Standards	2008 City of Seattle Right-Of-Way Improvements Manual	2004 AASHTO	Design Deviation
Design Speed									
Functional Classification	Urban Local Roadway Subaccess	10+00.00	14+25.00	-	-	Urban Local Roadway Subaccess (KC;2-9)	Collector Arterial (COS; 4.2.1)	Low-Speed Urban (Pg 148)	No
Design Speed	20 mph	-	-	-	Posted = 15 mph	30 mph (KC;2-11)	Design speed is 5 mph greater than posted (COS;4.4.2)	30 mph (Pg 430)	No
Horizontal Alignment									
Minimum Radius With 2% Cross Slope	R = 111.01 ft	10+74.73	12+33.35	RT	-	Not Specified	Not Specified	99 ft for 0%; 105 ft for -1.5% (Pg 151)	No
	R = 111.01 ft	12+33.35	13+57.42	LT	-				No
Horizontal Stopping Sight Distance	HSSD=68'	10+74.73	12+33.35	LT	See HSSD Calc Sheet "Horizontal Alignment: Orr" in SPB Design Calculations notebook	Not Specified	Not Specified	$HSSD_{min}$=115 ft (Pg 112)	Yes
	HSSD=68'	12+33.35	13+57.42	RT					Yes
Horizontal Stopping Sight Distance/Horizontal Sightline Offset	No Obstruction (See Exhibit)	10+74.73	12+33.35	LT	HSO=R((1-COS 28.65*S/R)) S = 115 ft (Pg 112) R = 94.5 HSO = 17'	Not Specified	Not Specified	HSO=R((1-COS 28.65*S/R)) S = Stopping Sight Distance R = CL Radius (AASHTO PG 227)	No
	17 ft (See Exhibit)	12+33.35	13+57.42	RT					No
Taper Length	N/A	-	-	-	-	L=WS (KC; 4-13)	$L=WS^2/60$ (COS;4.6.2)	L=WS (Pg 253)	N/A
Lane Width	11 ft NB	10+00.00	14+25.00	RT	-	11 ft (KC;2-10)	12 ft (CL)(COS;4.6.2)	11 ft for Urban Arterials (Pg 472)	No
	11 ft SB	10+00.00	14+25.00	LT	-				No
Bike Lane Width	N/A	-	-	-	-	5 ft (KC; 2-10)	5 ft (COS;4.13.2)	5 ft (AASHTO Bicycle Manual 1999;Pg 23)	N/A
Vertical Alignment									
Grade	0.22%	10+00.00	13+00.00	-		12% Max (KC;2-11)	10% Max (COS;4.4.2)	9% Max (Pg 432)	No
	0.41%	13+00.00	14+00.00	-	Match Existing				No
Grade Break	N/A	-	-	-	-	1% (KC 2-20)	Not Specified	Not Specified	N/A
Vertical Clearance	14.7 ft	-	-	-	Vert = 36.5 ft (FG) - 7.77' (Str Depth) - 14 ft (Orr) Vert = 14.7 ft	16.5 ft (KC; 6.02) 14.5 ft (Per KC PM)	20 ft (COS; 4.20.2)	14 ft (Pg 472)	No

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Notes: 2% cross slope used to contol drainage.

Criteria	Design Element	Station From	Station To	Offset	Calculation	2007 King County Design and Construction Standards	2008 City of Seattle Right-Of-Way Improvements Manual	2004 AASHTO	Design Deviation
Cross Section									
Superelevation	+2%/-2% Shed Section	10+00.00	14+25.00	-	-	6% max (KC;2-10)	4% max (COS;4.4.2)	4%	No
Begin PT Trans Right	13+38.00	13+57.42		-	$L_r=we_d/\Delta$ L_r=(11ft)(2)/(0.74)=30 ft Lt=(e_{NC}/e_d)*L_r L_t=(2/2)*30=30 =(13+57.42)-(2/3)30=13+38	Not Specified	Not Specified	$L_r=we_d/\Delta$ L_r=Min. Runoff; e_d=Design super rate Δ=Max rel. gradient Lt=(e_{NC}/e_d)*L_r L_t=Min. Runoff; e_{NC}=Normal Crown (Pg 175-184)	No
End PT Trans Right	13+68.00				(13+58)+(1/3)30=13+68				No
Min Radii w/out Superelevation	N/A	-	-	-	-	Not Specified	Not Specified	R_{min} = 105 ft for -1.5%; 99 ft for 0 % (Pg 151)	N/A
Sidewalk Width	N/A			LT	-	6.5 ft min (KC;3-3)	6 ft (COS;4.11.2)	4 ft to 8 ft (Pg 358)	N/A
Cut/Fill Slope	2:1	-	-	RT	-	2:1 Max (KC;5.03)	2:1 Max (COS;4.4.2)	4:1 (No C/G) (Pg 326)	No
Intersection									
Entering Sight Distance at Intersections	N/A	-	-	-	-	Not Specified	Not Specified	225 ft(Pg 661)	N/A
Cross Street Angle	121°38'56"	13+94.30	Boat Access	-	-	85° to 95° (KC;2-19)	Not Specified	60° to 120° (Pg 400)	Yes
Curb Radius	N/A	-	-	-	-	25 ft (KC;2.10)	25 ft (COS;4.8.2)	25 ft (Pg 611-612	N/A
Spacing Between Adjacent Intersecting Streets	N/A	-	-	-	-	150 ft - Neighboorhood Collector (KC;2-19)	Not Specified	Not Specified	N/A