Project:	**C9727 - I-405, Brickyard to SR 527 Improvement Project**
Document Name:	**BY-CRE-02327_009727_SUB_17.01_Package 8 Preliminary Structures FP5 West Portal**
Submittal Date:	**4/2/2025**
Due Date:	**4/16/2025 COB**
Reviewer:	**Jeff S. Bruce (JSB), Delia Lacson (DL). Jason Pang (XL/JP)**
Document Lead:	

Formal Design Review
Form RCSR (Review Comment Summary and Resolution)

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COMMENT (WSDOT, City, Checker)					RESPONSE TO COMMENT (Skanska, Originator of Document)			RESPONSE TO RESPONSE (WSDOT, City, Checker)		Skanska CLOSE
No.	Report or Sheet No.	Comment By	TR/Spec Section	Comment	Disposition Code	Response By	ACTION TAKEN / Remarks	WSDOT Disposition Code	Comments / Action Items	Final Disposition Code
1	Table 5 of Calcs	JSB	2.6.1	At-rest earth pressure parameters were not provided in the geotechnical report. Please provide calculation backup for all at-rest earth pressure parameters if utilized in the analysis or confirm that only active parameters were used.						
2	Table 5 of Calcs	JSB	2.28	Passive Earth Pressure Coefficient for level ground is listed as 9.2 for ESU 6B in Table 5. This conflicts with the recommended value in the Package 9 Geotechnical Report (Table 6.32). Please update to conform to recommendations provided by the geotechnical engineer.						
3	Table 7 of Calcs	JSB	2.28	Juanita is Site Class D per DP9 Geotech report section 6.4. I'm not sure this impacts any subsequent analyses as the PGA is appropriate per 6.1.						
4	Section 7.3	JSB	2.28	Sentence refers to Plaxis which I think is leftover text from East Portal. Please confirm if any plaxis results were used for the west portal structure design.						
5	Appendix B	JSB	2.6.1 and 2.28	Please include PYWall input parameters to confirm the proper geotechnical inputs were used.						
6	FP5-26	DL	Appendix L1	Fish Passage Tunnel Structure Callout: What extent will tunnel liner extend out to the exterior face of headwall? Provide callout, note or reference sheet that outlines any additional requirements for this transition to ensure aesthetic compliance of highly visible headwall. i.e. smooth finish and match to headwall color.						
7	FP5 - 25	DL	2.15.4.2.2; 2.15.4.8 and Appendix L2	Note 3: Reconstructed MSE walls must also comply with Urban Design Aesthetic Requirements - form liner and finish. Please confirm.						
8	FP5-26	DL	2.15.4.8 and A	Note 5: Same as above.						
9	All	XL/JP	BDM 15.11.1.I	Add bridge name and number to title block on all sheets.						
10	All	XL/JP	BDM 15.11.1.H	Revision number and notes are not needed on preliminary plans						
11	FP5-25	XL/JP	Question	It seems the fascia at headwall is thicker than the wingwalls. Is that intentional due to the inclination horizontal angle? If so, please specify the required min. thickness of the headwall fascia on soldier pile wall typical section on sheet FP5-13.						
12	FP5-25	XL/JP	RFP 2.28.3.4	Verify/update the station callout at center of the headwall. It seems to be pointing at the back of wall fascia.						
13	FP5-26	XL/JP	RFP 2.28.3.4	Is there will be also a premolded joint filler between headwall and wingwall 1. Verify/add a callout.						
14	FP5-25	XL/JP	RFP 2.28.3.4	Add elevation labels on the major contours of existing ground and finish ground, respectively.						
15	FP5-25	XL/JP	RFP 2.28.3.4	Update the line color to be dark for proposed features for utilities, such as geosynthetic wall, gas line, junction box, etc.						
16	FP5-25	XL/JP	RFP 2.28.3.4	Show contours of finish grading (behind the walls and in front of the walls) in dark lines.						
17	FP5-25	XL/JP	RFP 2.28.3.4	Add legend for the existing and proposed features.						
18	FP5-25	XL/JP		Note 2: Please revise the wording "should" into "shall" if it will be required or "may" if it will be left to the contractor to decide.						
19	FP5-25	XL/JP	RFP 2.28.3.4	Add legend for the existing and proposed features.						
20	FP5-25	XL/JP	RFP 2.28.3.4	Update the line color to be gray for existing features for utilities, such as underdrain at existing MSE wall.						
21	FP5-25	XL/JP	RFP 2.28.3.4	Please specify the removal limit of the existing fence at the existing MSE wall. After removing the fence to construct the geosynthetic wall, will there be new fence along the R/W to tie in with the remaining existing fence?						
22	FP5-25	XL/JP	RFP 2.28.3.4	Verify/update the line type/color for existing grade and finish grade. typically we have EG dashed in gray color and FG solid in dark color.						
23	FP5-26	XL/JP	RFP 2.28.3.4	Please show finish grade in front of all walls. The grading behind the new walls and on top of the tunnel will be restored to existing grade? If not, please show the finish grade behind the walls as well. 4ft bench and gutter is required per GDM 15-4						
24	FP5-26	XL/JP	BDM 7.1.7	Please show scour line within the hydraulic width and its beyond portion that extends up at angle of repose (per geotech recommendation) outside check flood extents.						
25	FP5-26	XL/JP	BDM 7.1.7	At the joint between the wingwall and existing MSE wall at both wingwall ends scour requirements for the new and old portion of the MSE apply.						
26	FP5-25	XL/JP	RFP 2.28.3.4	Please specify the removal limit of the existing MSE wall.						
27	FP5-25 and FP5-26	XL/JP	Question	Is the existing culvert 40" CMP culvert going to be remain and protect in place? If so, please noted as such in its callout.						
28	FP5-25	XL/JP	Question	It seems that the geosynthetics of the new geosynthetic wall and soil reinforcement of the existing MSE wall would overlap. Will there be enough clearance between layers of geosynthetic and soil reinforcement?						
29	FP5-26	XL/JP	Question	I suppose the entire MSE within the length of geosynthetic layers would need to be reconstructed. For the portion of reconstructed MSE that have the same bottom elevation as the geosynthetic wall, is it long enough for the geosynthetic length? FP5-29 reads 23' minimum long geosynthetic layers adjacent to the existing MSE wall.						
30	FP5-25	XL/JP	Question	At the lower right corner near the junction box, there is a half circle, verify if it's intentional.						
31	FP5-33	XL/JP	Question	Are the required anchor forces at headwall 1-05 and 1-08 extracted from the model? By observation, the anchor at these two location would need to cover longer span horizontally and vertically, I would presume they would see larger force than the adjacent anchors.						
32	FP5-26	XL/JP	Suggestion	Note 4: Suggest to revise the wording "should" into "shall" if it will be required or "may" if it will be left to the contractor to decide.						
33	FP5-28	XL/JP	RFP 2.28.3.4	Is the "top elevation (ft)" referring to the top of soldier pile or top of controlled density fill (3" above the steel pile top)? May clarify the "top elevation" on the typical section shown on FP5-13.						
34	FP5-28	XL/JP	RFP 2.28.3.4	Pile schedule: show solider pile length as well.						
35	FP5-33	XL/JP	RFP 2.28.3.4	Update the unit for factored design load "kipf" to "kips".						

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36	General	XL/JP	. Specs 6-17.3(	Specify which production anchors that shall have performance testing conducted on.						
37	FP5-25	XL/JP	BDM App 2.2-A4	Show borings, and add other applicable items on the checklist per the BDM.						
38	FP5-26	XL/JP	BDM App 2.2-A4	Show Datum (NAVD88 I assume?), and add other applicable items on the checklist.						
39	FP5-29	XL/JP	Question	Is wall workline at ashlar stone finish or face of structural fascia? It shows at ashlar stone surface for the geosynthetic wall and other typical section seems to indicate at the face of structural fascial for soldier pile wall. Verify/update for clarification and consistency.						
40	FP5-33	XL/JP	Question	Note 6 indicates there will be permanent pipe going through the wall(s). Will there be any pipe needing to go through the new wall at the portal? If so, blockout detail in the wall may be needed.						
41	FP5-29	XL/JP	RFP App. L02	Typical geosynthetic wall section: I suppose the entire cap would have one color, instead of cutting of at the top of the wall facing. Verify/update.						
42	FP5-33	XL/JP	Question	Section calls out a protection slab over culverts and utilities as required in geosynthetic wall design. Will this be designed/detailed by the wall manufacturer/provider?						
43	FP5-33	XL/JP	Question	It shows the bonded anchor would go through the freeze pipe and initial tunnel liner. Will it be feasible? What's estimated required bond length?						
44	FP5-33	XL/JP	Question	Has vertical inclination angle and length of the anchor be verified for feasibility?						
45	General	XL/JP	RFP 2.28.3.4	Please include general notes sheet and show the loading diagram on the walls. With geosynthetic wall on top of soldier pile wall, would the loading diagrams be different than soldier pile wall only for the entire height?						
46	General	XL/JP	RFP 2.28.3.4	Please add construction sequencing of constructing all the element of the tunnel and portal walls.						
47	General	XL/JP	Question	About the construction sequence, my understanding is that the plan is to install the portal walls first as excavating the stream side at both tunnel ends, then construct the initial tunnel lining, then cut off or remove the soldier piles at the tunnel, then construct final tunnel lining, and last install the concrete fascia. It seems the initial lining would need to case around the soldier piles and cut the pile at the bottom of initial lining after the entire initial lining is complete and gains enough strength to support the soil on top. Would the soldier pile stay in place via the friction, after its bottom gets cut off?						
48	FP5-26	XL/JP	RFP 2.28.3.4	Please use color gray for the portion of the soldier piles (and anchors if any) that will be removed during tunnel construction. Also show the cut line of the piles required to construct the tunnel.						
49	Calcs general	XL/JP	RFP 2.28.3.4	Even though the driller will eventually determine/provide the hole size and bond length, has the wall designer estimated the required bond length and assessed its feasibility based on the number of anchors, bond transfer stress and required anchor tension, assuming say 6" hole common seen (available hole size can confirm with potential driller during the design). feasibility includes, but not limited to, the feasible length of bond length can provide the required capacity, the anchor won't hit tunnel and will have enough clearance to the tunnel with the designed angle and required length, any conflicts between the anchors from east portal and west portal, etc.						
50	Calcs general	XL/JP	RFP 2.13.7.1.4	Please also include the verification calcs (spreadsheet and/or other hand calcs) in the final submittal.						
51	Calcs general	XL/JP	Question	Has the entire wall at this portal (with the piles layout and anchors layout) been checked ok (geotechnical and structural) as well for the temporary condition for the entire construction of wingwalls, headwall and tunnel? No temporary anchor or deadman required at the piles HW1-06 and 07, prior to the permanent concrete fascia gets installed? is the pile sizes at the tunnel portion ok with no anchors or reduced number of anchors?						
52	Calcs 14/93	XL/JP	BDM 7.1.7	About the load combos, were the two extreme cases referenced in BDM 7.1.7 evaluated? Extreme Case I – 50% of the total scour design flood depth plus seismic; extreme Case II – 100% of the scour check flood depth.						
53	Calcs general	XL/JP	Question	What's the estimated longest bond length of all the anchors? Some anchor forces seem high for gravity grout, like 320kip, etc.						
54	Calcs 18/93	XL/JP	RFP 2.28.3.4	Second paragraph read that drilled hole backfilled with 4000psi concrete below excavation, while the typical section on FP5-13 used CDF. Verify/update for consistency.						
55	Calcs 21/93	XL/JP	RFP 2.28.3.4	Since calcs (the third paragraph this page) read that the reinforcement will not continue through the expansion joint, may add a note in the plan so the contractor would know to stop the reinforcement w/ 2" clear cover at the expansion joint.						
56	FP5-26	XL/JP	Question	No expansion joints at the headwall? If so, are the joints between the headwall and wingwall large enough for thermal expansion?						
57	Calcs 5/93	XL/JP	RFP 2.28.3.4	Aware that some calcs (shaft embedment under axial loads and tieback pockets and cover plates) are deferred to the final submittal. Want to make sure the final submittal will also include the evaluation of the weld studs under tension/shear, pullout, concrete breakout, etc. related failure modes.						
58	Calcs 83/93	XL/JP	RFP 2.28.3.4	Based on the calcs, reinforcement update would be required on FP5-15 that was submitted in the final tunnel package.						
59		XL/JP	2.13.4.3.2	The Design-Builder shall remove all portions of temporary retaining walls before Substantial Completion of the Project. Temporary walls are shown outside of the ROW. Should WSDOT consider allowing elements to be left in place, easements also need to allow elements to be abandoned. Suggest closer review.						
60		XL/JP	2.28.3.4.3	Temporary works design needs to advance so that this design can be reviewed for contract compliance. For example, tie backs are shown anchored into what we understand is the frozen ground.						

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