

Pierce College Puyallup New STEM Building
 Absher + Integrus
 Comment Response for 10/11/22 Comments

Review	Reviewer	No.	Comment	Response
Engineering Civil Review	Anthony Hulse	9	Re-evaluate this section as necessary after further infiltration testing is conducted. [drainage report, pg 8]	(Response unchanged from last submittal) Further infiltration testing has confirmed that infiltration is infeasible at the site. The geotechnical report has been provided with the building permit submittal and will be provided with the next engineering submittal detailing infiltration testing and results done at the site.
Engineering Civil Review	Anthony Hulse	146	Provide the datum information on the cover sheet. It is not intuitive to search to the last page to for this information. [civil plans, pg C1.0]	The vertical and horizontal datums have been added to the cover sheet.
Engineering Civil Review	Anthony Hulse	158	Fill out and include the Runoff Treatment BMP Selection flow chart as part of the drainage report.	The Runoff Treatment BMP Selection Flow Chart has been added to the storm report as Appendix A-14, and is referred to in Section 4.4 of the report.
Engineering Civil Review	Anthony Hulse	159	The WWHM calculation and bioretention detail do not match. The detail is proposing an 18" BSM layer and a 12" gravel backfill layer. The WWHM calculation shows 18" for the BSM and 18" for the gravel. Additionally, the Soil Layer 1 should be the 3" depth coarse compost, soil layer 2 being the BSM soil layer and soil layer 3 being the gravel layer. [drainage report, pg 64/256]	The drawings have been updated to show an 18" gravel layer to match the WWHM calculation. As discussed in our meeting on 10/19/2022, it is not typical nor required by the SWMM to model the 3-inch coarse compost layer in the WWHM bioretention model, so it is not provided. WWHM does not have the ability to model the 3-inch coarse compost layer.
Engineering Civil Review	Anthony Hulse	160	The project determined a feasible corrected infiltration rate based on the PIT-1 test (greater than 0.3in/hr). The CF _v correction factor per the Ecology manual accounts for site variability and number of test pits. Additional infiltration testing is warranted if the Geotech is concerned with the location/depth of the PIT test.	As discussed in the 10/19/22 meeting with City of Puyallup, GeoEngineers comments and conclusions remain unchanged from section 3.6.2.3 in the Geotechnical Report Addendum (June 29, 2022) and we recommend that infiltration generally be considered infeasible for this project. Test pits were excavated across the area of the stormwater facility. PIT-1 was the only one completed with in-situ infiltration testing. Other explorations encountered groundwater seepage and/or glacial till and PIT studies could not be conducted as envisioned or described in the code. We believe that the gravel in PIT-1, where we were able to conduct the testing, is more of an anomaly for the area, or possibly the beginning of a geologic change beginning north of this project site. Some additional comments:
				Variable and more limiting (relatively impermeable) soil layers were documented in the majority of the other test pit explorations completed below the stormwater facility, including at, about Elevation 512. We noted silt contents (percent passing #200 sieve) at design elevations ranging from 10% at PIT-1 to 19%, 31%, 44%, and 38% in the other test pits at similar elevations.



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				Perched water seepage was documented almost all of the explorations, ranging from slow to rapid and at variable depths. This could indicate that seepage may be present at wetter times of year in PIT-1. The presence of seepage, different depths encountered, and the rate of seepage supports the variability noted and also supports general infeasibility of infiltration.
				The infiltration bottom of the facility design is somewhat deep. By not relying on this more granular material throughout the area of the facility as a whole, as well as below the test elevation in test pit TP-1/PIT-1 it is our opinion that this results in a more conservative design.
				Because of the above, GeoEngineers does not recommend long term reliance on this more gravelly layer in TP-1/PIT-1 to accommodate stormwater infiltration design for this project.
Engineering Civil Review	Anthony Hulse	161	Why was a length of 52 inches used instead of the 79.2 inches which the Stormtech MC-7200 chamber detail 3 states on sheet C5.5 of the civil plans? [drainage report, pg 40]	The composite porosity calculations have been updated to reflect the 83.4-inch chamber length shown on Detail 1, Sheet C5.5. The flow control calculations have been updated to show this change as well.
Engineering Civil Review	Anthony Hulse	162	Update the volume of a single chamber. [drainage report, pg 40]	The change has been made.
Engineering Civil Review	Anthony Hulse	163	142 chambers X 404.5CF = 57,439CF, not including the end caps. Provide a calculation converting volume to linear feet or provide the WHMM calc showing this to verify the calculation and what is proposed on the civil plans match. [civils, pg 40]	As stated in the last comment response checklist, it is not possible to convert volume to linear feet of chambers necessary since WWHM was able to directly calculate the total feet of chambers required. An exhibit was included in Appendix B titled "Composite Porosity Calculation for Stormtech Chamber MC-7200". This exhibit shows how the bottom width, the material thicknesses, pore spaces for each layer, and riser height were determined. Using the numbers in that exhibit, WWHM determined that 1000 linear feet of chambers were required. A total of 1000 linear feet of chambers are provided on the plans. As discussed during our meeting on October 19, 2022, the number of individual chambers required is provided on Detail 2, Sheet C5.5.
Engineering Civil Review	Anthony Hulse	164	Keynote 8 not shown on the plans. [Civils, C2.1]	The note has been changed to "NOT USED".



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Engineering Civil Review	Anthony Hulse	166	It appears that water will pond in this section of the parking lot. How will this be mitigated? [civil plans, C3.1]	Curb drainage openings have been added to these locations. On C3.1, elevation labels have been added to these low points. As stated on the note to the left of the Keynotes, curb cut locations are shown on C4.1. On C4.1, Keynote 4 has been added referring to the curb drainage openings. A detail for the curb drainage openings has been added as Detail 4, Sheet C5.4.
Engineering Civil Review	Anthony Hulse	167	Is this bold line a contour without the elevation? [civil plans, pg C3.1]	Elevation labels have been added to this contour. In addition, the contours run along the curb line between the two labeled contours. The contours on the curb makes the curb line appear bolder.
Engineering Civil Review	Anthony Hulse	168	The detail and calculation for the bioretention provides a 6" underdrain, is an 8" underdrain also proposed for the bioretention? Provide clarity. [civils, pg C3.1]	Keynote 1 has been corrected to specify a 6-inch PVC perforated under-drain pipe.
Engineering Civil Review	Anthony Hulse	169	Where is keynote 3 on the plans? [civil plans, pg C3.1]	The note has been changed to "NOT USED".
Engineering Civil Review	Anthony Hulse	170	Provide pipe crossing information for the proposed power and storm piping. [civils, pg C3.1]	Pipe crossing information has been added at this location.
Engineering Civil Review	Anthony Hulse	171	Add this hatch to the legend. Ensure this sheet matches View A on sheet C3.5	The intention of sheets C3.2 and C3.5 is to show grading and drainage in this area. Hatching is detailed and called out on the paving sheet, Sheet C4.2. Most of the hatching was frozen on Sheet C3.5 to clean up the sheet, and make it easier to read elevation labels. The noted hatch is removed
Engineering Civil Review	Anthony Hulse	172	Building overhang? Add a note? [civils, pg C3.5]	A note has been added clarifying this is a building overhang.
Engineering Civil Review	Anthony Hulse	173	It appears SDCB 1 should be shifted to the SE to avoid ponding near this location. [civil plans, pg C3.5]	Noted. As discussed with the City on October 19, 2022, ponding will not occur in this area. The dashed line and elevation FG: 532.91 are not low points. The low point is located at SDCB 2
Engineering Civil Review	Anthony Hulse	174	What is going on with stormwater here? [civils, pg C3.5]	The concrete walkway is designed so that stormwater flows north into the raingardens. As shown by the finished grade labels, the point labeled "FG: 531.32" is the lowest point on the concrete panel, so stormwater from the surrounding area discharges towards the raingardens from this point. The concrete walkway shown in View B on this sheet has been revised to provide a 1% cross slope to ensure positive drainage towards the raingardens.
Engineering Civil Review	Anthony Hulse	175	What is the dark gray hatch representing in View A? [civils, pg C3.5]	The intention of sheets C3.2 and C3.5 is to show grading and drainage in this area. Hatching is detailed and called out on the paving sheet, Sheet C4.2. Most of the hatching was frozen on Sheet C3.5 to clean up the sheet, and make it easier to read elevation labels.



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Engineering Civil Review	Anthony Hulse	176	Stormwater does not appear to be collected within this area and conveyed to the detention system [civils, pg C3.6]	A valley gutter aligned with the catch basins has been added to ensure runoff is directed into the catch basins. Additionally, SDCB 23 has been added at the low point along the valley gutter.
Engineering Civil Review	Anthony Hulse	177	What are these outlines? [civils, pg C3.6]	As discussed with the City on October 19, 2022, this is a repeat comment for the mechanical structures in service yard. This comment was resolved with the last submittal.
Engineering Civil Review	Anthony Hulse	178	How is stormwater being collected and mitigated for these areas? [civils, pg C3.6]	A valley gutter aligned with the catch basins has been added to ensure runoff is directed into the catch basins. Additionally, SDCB 23 has been added at the low point along the valley gutter.
Engineering Civil Review	Anthony Hulse	179	What is this dark hatch representing? Define it in the legend. [civil plans, pg C4.2]	The dark hatch is a concrete finish, and is a landscape item. It will be frozen from the civil sheets.
Engineering Civil Review	Anthony Hulse	180	What are the X keynotes representing? [civils, pg C4.2]	As shown in the legend, the X keynote represents a change in curb type or the end of a curb. This X keynote is the 11th item in the legend.
Engineering Civil Review	Anthony Hulse	182	Add the number of nominal chambers to the parts required list. This appears to be 142 based on this depiction. [civils, pg C5.5]	This has been added.
Engineering Civil Review	Anthony Hulse	183	Ensure that Kenton dates his signature during the next submission on his stamped sheets. [civils, C6.1]	This has been added.
Engineering Civil Review	Anthony Hulse	184	Why is the 8" ductile iron pipe being shown with a curve in the pipe? [civil plans, pg C6.4]	This was discussed with the City on 10/19 and resolved. (OK as is; This is a schematic representation, as typically shown in profile views, that looks curved due to the horiz/vert profile layout and it will not actually be curved)
Engineering Civil Review	Anthony Hulse	185	Create a note to install a reducer on the gate valve and tee as the water service line this is being installed is 3" [civil plans, pg C6.5]	This has been added.
Engineering Civil Review	Anthony Hulse	186	Create a note on this sheet stating that the contractor should exercise caution due to utility pipe crossings. [civil plans, pg C6.5]	This has been added.
Engineering Civil Review	Anthony Hulse	187	The plans show this is an 8" line. Revise accordingly. [civil plans, pg C6.5]	This has been revised
Engineering Civil Review	Anthony Hulse	188	Replace the Development Engineering approval block with the Planning Division approval block on the landscape plans. The block can be found here: https://www.cityofpuyallup.org/DocumentCenter/View/6921/Section-10-Engineering-Services-Review-Process?bidId= [civils, pg L1.00]	Development Engineering approval block has been replaced with Planning Division approval block on all landscape sheets.
Engineering Civil Review	Anthony Hulse	189	What are the "x" keynotes representing on this sheet? [civils, pg C4.1]	As shown in the legend, the X keynote represents a change in curb type or the end of a curb. This X keynote is the 11th item in the legend.
Engineering Civil Review	Anthony Hulse	190	Indicate what the asterisks within the crossing table on this plan sheet and C6.3 [civils, pg C6.2]	The asterisk note has been added to all sheets.



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Engineering Civil Review	Anthony Hulse	191	Provide a basic conveyance calculation using Uniform Flow Analysis (Manning's Equation) showing the pipes convey stormwater to the detention system without surcharging. A single calculation showing the worst case condition (flattest, smallest diameter pipe) will suffice. This requirement comes from design standard 204.3(1). [drainage report]	The conveyance calculations have been provided as Appendix B-3 in the storm report. Section 4.5 of the report explains our assumptions and design parameters.
Engineering Traffic Review	Bryan Roberts	5	Per previous discussion, centerline striping needs to be yellow to separate opposing directions of traffic. Needs to be updated throughout college to avoid confusion and increase safety C4.1	The work will be completed as routine maintenance by the college in the Summer of 2023
Engineering Traffic Review	Bryan Roberts	6	Do not stripe centerline on College Way through this intersection. Transition between one-way and two way traffic. C4.1	In the existing condition, the centerline striping does not extend through this intersection. The centerline stripe has been revised to reflect this.
Engineering Traffic Review	Bryan Roberts	7	Unclear what signage is being proposed for the NB approach. MUTCD R3-5L LEFT TURN ONLY sign would be appropriate here. C4.1	An "MUTCD R3-5L LEFT TURN ONLY" sign has been added at this location.
Engineering Traffic Review	Bryan Roberts	8	Centerline striping needs to be yellow to separate opposing directions of traffic. C4.1	The work will be completed as routine maintenance by the college in the Summer of 2023
Engineering Traffic Review	Bryan Roberts	9	MUTCD R5-1 DO NOT ENTER signs (facing west) would be appropriate here. C4.1	There are two existing "DO NOT ENTER SIGNS" at these locations. Labels have been added to the drawing to clarify this.
Engineering Traffic Review	Bryan Roberts	10	Pavement arrow should be thermoplastic C4.1	The callout has been updated to specify a thermoplastic arrow.
Engineering Traffic Review	Bryan Roberts	11	Comment responses indicate driveway meets AASHTO ESD standards for a 20 mph road. Please show site lines at this driveway and narrative for why 20 mph design speed is warranted. C4.1	The site line exhibit was sent to Bryan Roberts on October 19, 2022. A narrative justifying the 20 mile per hour design speed is provided with this submittal.
Planning Review	Chris Beale	2	Please provide a archeological site survey, consistent with DAHP and Puyallup Tribe review and consultation.	Please see attached for Cultural Resource Review of Pierce College PY STEM Building and Parking Development, Puyallup, Washington, by Drayton Archaeology, dated January 11, 2022.
Planning Review	Chris Beale	3	All parking lot landscape islands required to be 15 feet wide (interior curb). All three interior landscape islands must have Silva cells (or eqv.) along interior under parking stalls only. [Planning comment, sheet C3.1]	Revisions have been made to parking lot landscape islands per requirements discussed in meeting with the City on July 28, 2022: in an effort to retain large existing trees and reduce the footprint of the new parking lot, internal landscape islands may be a minimum width of 6-7' with silva cells provided to meet soil volume requirements, and islands shall be added to long runs of consecutive stalls with runs of 9-10 consecutive stalls considered acceptable. See sheet L1.10 and refer to Parking Memo.



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		3	SEPT 2022 UPDATED COMMENT: The reduced island dimensions will be accepted if the reduced above ground planting area is replaced with Silva Cells. For example, perimeter landscape islands are required to be 12 feet wide with one silva cell around the perimeter. For perimeter islands reduced to 6 feet planter area, a total of six (3 on each side) silva cells must be provided as mitigation. Please show on the landscape sheets. This assumes each cell is 2 feet wide. Apply the same ratio to interior landscape islands as well. Silva cells can only be used under parking spaces and not drive aisles, per manf. specs. All parking lot landscape islands required to be 15 feet wide (interior curb). All three interior landscape islands must have Silva cells (or eqv.) along interior under parking stalls only. [Planning comment, sheet C3.1]	Silva Cells have been added to parking lot islands to meet requirements described in comment. See sheet L1.10 for updated Silva Cell layout.
Planning Review	Chris Beale	7	The parking lot landscaping islands appear to have a mix of emergent wildflowers; city standards for type IV require woody stemmed shrubs and ground cover for those landscape islands to prevent soil compaction and pedestrians walking in the islands. Please revise plant selection or provide a response as to how the selected plants will meet the performance standards.	Plant selection in the parking lot landscape islands has been revised, replacing the 'Prairie Planting' seed mix with a palette made up of primarily woody stemmed shrubs and groundcover, to meet City Standards. Some perennial and grass species are still included to provide ground coverage and seasonal interest, but plants have been laid out to avoid large massings of these species and to discourage pedestrians from cutting through planting areas. See updated plant layout at parking lot on sheet L5.11 and updated plant schedule on new sheet L5.14.
Planning Review	Chris Beale	8	Planning is coordinating with the Puyallup Tribal staff on the archeological study to ensure all information is available for their review. Its not clear based on the submittal if PTI staff has reviewed the report as of yet. City staff routed that report to them as a response to the previous SEPA comment and is awaiting a response as of the date of this comment (09/12/22).	Please see attached for Cultural Resource Review of Pierce College PY STEM Building and Parking Development, Puyallup, Washington, by Drayton Archaeology, dated January 11, 2022. Also, please see attached for correspondence from Pierce College to Nisqually Indian Tribe, Puyallup Tribe of Indians, Muckleshoot Indian Tribe, Squaxin Island Tribe, Snoqualmie Indian Tribe, Suquamish Tribe, Confederated Tribes and Bands of the Yakama Nation and correspondence from DAHP and Nisqually Indian Tribe to Pierce College.
Public Works Water Review	Brian Johnson	3	Utility and Landscape Plans Sheet C6.5: Add 2-inch RPBA 3-feet behind meter. Add City Standard detail 03.04.02 to this plan set.	An incorrect detail was added previously; The correct one has been added.
Public Works Water Review	Brian Johnson	10	Landscape-Utility Plans R1 Sheet C6.5 The COP Standard detail 03.04.02 has not been added to the plan set.	An incorrect detail was added previously; The correct one has been added.