Jared Kinziger RR comments on 9/16/19

1. We should redo the RPSP to update plans, date ext. These comments will reference the Designer Note (DN) to aid in review.
2. Plan view comments:
	1. DN 3, show RR ROW lines across the highway ROW lines.
	2. Label WCL RR vs Canadian National
	3. Shrink to 8.5”x11 paper (RR agreement size) and make sure all notes are still readable. Consider bigger notes. We will want to cover all staging notes to the RR on this sheet.
	4. DN 3, add existing RR Signals
	5. Dimension/label
		1. DN 3, 18
		2. Label 5’ shoulder behind signals.
	6. Add front lights over the pull out lane.
	7. Add temp RR special pavement markings and signing to staging plans.
	8. Add backlights to the three median Railroad signals. Shorten gate to the centerline for temp signal. Edit note on temporary RR signal to, “TEMPORARY RAILROAD SIGNAL AND GATE FOR STAGE 2A TO BE RELOCATED BY RR PRIOR TO THE START OF THE NEXT STAGE”. Add note to other median signal for WB, “Down or not operational during stage 2A”.
	9. Question. The signals are about 60’ apart. Can we move stage 2A traffic over to the pull-out lane and block the southern lane? Otherwise I can’t get the gates long enough. 39’ is too long.
	10. A question I need to give RHS. I would prefer that the median RR Signals be cantilevers. That way we don’t need 34’ double mast cantilevers. We only need 28’ or 30’ signal mast cantilevers. Also saves the need for backlight to make the temporary signals work listed in f. above.
	11. Make sure utilities are not in the way of the RR signals. With bad soils the excavation can get very deep 12’. There are different base types and the excavation is about 10’ by 10 or bigger if deeper. Also, no overhead. If you are not sure, please review with me. See DN 12.
	12. See DN 11. Project to build bungalow pad prior to the railroad needing to place the power drop. (1 to 2 months before the start of stage 1C). Draw the 6x6 bungalow pad parallel with the track. Place front edge of bungalow 30’ perpendicular off the HMA and 30’ perpendicular off the center of track. Top of pad 10’ around the bungalow and then strait at the highway parallel with the track. Cut new ditch around the pad. Start at edge of crossing with shallow ditch to the SW then meet deeper ditch around the pad and to the culvert to the east.
	13. Crash barrels?
	14. No need for permanent wider shoulder for temp RR signal in median. Please remove and just show it as if the signal wasn’t there.
	15. DN 18, show a 2 tie stagger on the southern crossing surface like the northern one. Add a #2 note to the plan with the crossing surface length, number of panels, and 2 tie stagger. Note, the crossing will be 8.5’ wide. CN will not build a 10’ wide crossing even though we have required them in our contracts with them.
	16. Question, are RxR/stop bars markings necessary for the multi-use path? It will have detectable warning fields. Add W10-1 signals on plan. Remove extra line on plan at the NE edge of trail.
3. Re-clear vision triangles for 6 lane highway and meet the OCR order requirements. Remove the hill in the SW quad.
4. Follow DN 15. P&P is wrong or not the one I need to review. Also, is the highway profile .38% to match the grade of the RR profile? Let’s relook at this to verify along the crown point. We also need to redo the RR profile. SW of the crossing to run it out more. In the crossing, I’m not sure if we will get the .5% as shown.
5. DN 19 and 20. Drainage and subgrade improvement comments:
	1. Cut ditch from the end of excavation on the NE end of the crossing to the deeper ditch to the west to maximize underdrain depth.
	2. End of underdrain should be 1’ above average sitting highwater in ditches.
	3. Maximize ditch depth starting at RR, under trail, under highway, along highway (east) and then parallel with the RR. We need this to drain underdrains and it help french drain out the RR ballast.
	4. Deepen the ditch along the RR and then along the trail on the east side. Also, the ditch along the railroad and around the bungalow.
	5. Start deep ditch at the edge of the ballast in the median and drain away. As deep as the underdrain or deeper. The underdrain should daylight on the NW side of each crossing to follow the .5% grade of the track. If we don’t want to go that deep in the median, then run the underdrain from one end to the other of the RR excavation cover the underdrain with open graded.
	6. Do we need to slow the water down in the south highway ditch running east to make the turn? If we are not daylighting the underdrain here, it is less of a concern. Show ditching right up to the track and removal of the old RR signal pad. Note, the bungalow was just wiped out by a vehicle and I’m moving it to make is less likely being of the far side of the track. This also makes the wires much shorter and balanced in length.
	7. Detail comments
		1. What is the minimum slope to the right of the underdrain?
		2. Select crushed can be flat across the top at 10” below bottom of tie. Use 26” from profile line (top of road).
		3. We don’t need slope line between select crushed and select crushed.
		4. DN 20. How thick is the select crushed? We should ask Neil.
		5. Schedule 80 PVC underdrain with cap on the upside and varmint cover on the low side.
	8. Sections along RR need to not show filling on top of the ballast. Show deeper ditches from comments above. The contractor will need more information to build the excavation of the grayed-out area. This may help the utilities too.
6. DN 24, undated crash information. Include old and new info.