

TABLE 2
RESOLUTION SUMMARY of AUGUST 6, 2019 CATE STREET EXTENSION ROADWAY DESIGN PEER REVIEW #4

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Comment #	Comment	Status	Response
1	Typical Sections on Sheet CS-001 end at Station 15+20. Add typical sections to the limit of work on Cate Street and for work on Bartlett Street as necessary	Addressed	
2	<p>Clarify limits of proposed pavement treatment throughout the work limits (e.g. full depth pavement, cold plane@ overlay, etc).</p> <p>Add notes on the Roadway Plans and/or with corresponding shading included in legend on Sheet CN-003. Also label/shade the section of median island to be removed on US Route 1 Bypass.</p> <p>The Applicant should provide notes or legend within the plans to describe the work being done to the pavement of US Route 1 Bypass, or reference to separate US Route 1 Bypass project plans that will be needed for permitting with NHDOT.</p>	Addressed	CS-101 through CS-106; the full depth vs overlay is delineated and added to the legend
3a	Recommend a 75-foot taper for the exclusive right-turn lane, per NHDOT Standard Plans.	Addressed	The suggested change has been made and is depicted on CS-101

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3b	Recommend continuing the eastbound widening beyond the U-Haul driveway to the next site driveway at Station 5+00. This would better accommodate the turning movement for U-Haul trucks right onto Cate Street Extension, and create a wider painted median for some separation between eastbound and westbound travel.	Addressed	The suggested change has been made and is depicted on CS-101
3c	Consider a painted island to protect the left turn lane approaching US Route 1 Bypass, with appropriate taper lengths per NHDOT Standard No. PM-6 (see attached sketch).	Addressed	The suggested change has been made and is depicted on CS-101
4a	Applicant should consider adjusting the roadway alignment and adjacent site design to provide a wider roadway with 5' shoulders and use horizontal curves of R=198' to meet a 25 mph design speed, as suggested in the initial peer review letter dated May 13, 2019. It appears that the tangents before and after the reverse curves may be adjusted to create an alignment consistent with a 25 mph design speed (see attached sketch).	Addressed	The suggested change has been made and are depicted on the roadway plans

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4b	We recommended flattening the centerline radius as much as possible (a radius of R=120' appears to be feasible with adjusted tangents) and match into the existing granite curb on both sides just prior to the bridge abutment at approximate Station 18+35. Consider using a short tangent parallel to the edge of the railroad bridge abutment instead of the reverse curve as shown. This option appears to accommodate 11' lanes and 4' shoulder on the west side. A minor amount of additional widening and sidewalk reconstruction may be necessary within the newly constructed residential development.	Addressed	The suggested change has been made and is depicted on CS-104 and CS-105
5ai	For the site driveway at Station 14+25, the sight distance provided for turns onto Cate Street is approximately 155 feet, which would meet the minimum for 25 mph.	Addressed	The suggested change has been made and is depicted on CT-104

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5aii	Plans should identify features in front of the town houses and the Applicant shall confirm that any vertical elements within the sight triangles will be low enough to not obstruct sight lines. Also provide note on Roadway Plans and Landscaping Plans indicating that only low height shrubs and ground cover shall be allowed within the sight triangles.	Addressed	The suggested change has been made and is depicted on CT-104. Easements have been added to the Easement plans.
5b	Sight distance easement(s) will be needed to ensure that clear sight triangles may be maintained. Applicant shall show the sight distance triangles and associated easements on Sheet CT-104 or other sheet as appropriate within the Roadway Plans.	Addressed	The suggested change has been made and is depicted on CT-104. Easements have been added to the Easement plans.
6	A minimum of 13 feet (lane plus outside shoulder) should be provided at the westbound right turn lane on Cate Street at US Route 1 Bypass to accommodate snow storage.	Addressed	The suggested change has been made and is depicted on CS-101

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7	A minimum of 13 feet (lane plus outside shoulder) should be provided for the eastbound lane adjacent to the median island on Cate Street Extension to accommodate snow storage. Note: If the recommendation in Comment #3.b is incorporated, this should provide the minimum 13' width required for snow removal; otherwise, the medium length may need to be reduced.	Addressed	The suggested change has been made and is depicted on CS-101

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8	<p>The turning path of a WB-62 appears to encroach on the entire width of the bike lane at the beginning of the multi-use path. A bicyclist could get caught and run over by a truck in this area if it doesn't realize that a truck will be coming into its lane. Truck encroachment into the bike lane will not be allowed. The Applicant should explore all options to provide additional lane widening and/or revised alignment.</p> <p>Applicant has addressed comment by adding "Sharrow" bicycle shared lane markings from the beginning of the multi-use path to Bartlett Street. However, Applicant shall correct the direction of the "Sharrow" symbols at approximate Station 15+00, as they are shown in the wrong direction.</p>	Addressed	<p>Bicycled Shared lane markings have been employed in place of "bicycle Lane" markings per MUTCD Section 9C.08 and Figure 9C-9</p> <p>The dirtection of SHARROW has been corrected</p>

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9	Please confirm at what speed the truck simulations were made. As currently shown, WB-62 vehicles are using the entire roadway width from curb to curb. If the modeled speed is not reflective of the actual driving conditions, trucks may need more room to navigate the roadway alignment. Note that software simulations typically default to low speeds for presumed intersection turning movements. Revised simulations should be provided for the reverse curve on Cate Street and the turns to/from the south leg of Bartlett Street utilizing the applicable design speed or advisory speed to show an accurate representation of actual driving conditions.	Addressed	The truck turns have been run along the proposed road for 25 mph
10	Please provide a truck turning simulation for the right turn into Ricci Lumber from Bartlett Street. Modifications may be needed to accommodate this turning movement (e.g. shorten the proposed left-turn lane on Bartlett Street).	Addressed	
11	The minimum length of vertical curves should be 3 times the desired design speed (30 mph). Adjust the profile vertical curve lengths accordingly.	Addressed	

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12a	The tangent grade of 0.37% should revised and a minimum grade of 0.5% provided for drainage purposes. It appears that the 50-foot vertical curve at Station 2+25 can be removed by combining the tangents before and after.	Addressed	
12b	The 50-foot vertical curve at Station 4+82.7 can also be removed by combining the tangents before and after.	Addressed	
13a	Prior to reverse curves in both directions - W1-3R with W13-1P Applicant shall revise W13-1P signs at Station 9+50 RT and Station 15+75 LT to indicate 25 mph, consistent with the newly revised horizontal geometry that meets a 25 mph design speed. This sign shall also be added to the Sign Details sheet in addition to the 20 mph plaque.	Addressed	Corrections have been made Sign schedule updated.
13b	The W1-1R & W13-1P signs are shown as requested; however, the sign assembly at Station 16+75 is shown on the left side of the road which is not MUTCD standard placement. Applicant shall relocate this sign assembly to the right side of the road.	Addressed	Corrections have been made

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13c	At mid-point of horizontal curve at Cate Street/Bartlett Street intersection, outside of curve facing each direction - W1-6R/L (as currently proposed).	Addressed	
13d	Eliminate currently proposed W1-6 signs at reverse curves, as these are optional if 25 mph design speed as accommodated.	Addressed	
14a	Station 5+40 RT - R1-1 sign not labeled	Addressed	
14b	Station 10+92 RT - R1-1 sign not shown or labeled	Addressed	
14c	Station 14+50 RT - R1-1 sign not labeled	Addressed	
15	The lane usage sign R3-8(145) at Station 2+60 LT is the appropriate sign; however, this lane use sign should be placed in advance of the lanes in the buffer strip between the roadway and the 10' side path, at approximate Station 3+50 LT.	Addressed	
16a	Sign at Station 16+65 LT appears to be on other property. Place this pedestrian sign in front of the existing utility pole and within City ROW.	Addressed	
16b	Show new stop sign at Station 23+10 RT outside of the proposed sidewalk.	Addressed	
16c	Move pedestrian sign at Station 19+26 into the ROW.	Addressed	

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17	The W11-1 and W16-5R signs at Station 16+70 should be green bike route signs. Revise signs to D11-1 and M6-2 and update sign summary sheet accordingly.	Addressed	
18	There is a NO LEFT TURN (R3-2) sign proposed on the site development plans at the easternmost site driveway onto Cate Street (approximate Station 14+40 RT); please clarify the purpose of this turn restriction. To effectively prohibit left turns, it should be done physically, with a raised island. Also, the R3-2 sign should be shown on the Roadway Plans and sign summary sheet.	Addressed	
19	The Sign Details, sign summary sheet, CD-551 & CD552 should have the signs in correct order per the MUTCD identification number.	Addressed	
20	A pedestrian curb tip-down should be added at a drive curb return at Station 22+90 LT on Bartlett Street.	Addressed	
21	The warning panel and crosswalk at Station 15+00 LT should line up; please revise accordingly.	Addressed	

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22	<p>The flashing beacons for the crosswalks should be rectangular rapid flashing beacons, not the circular style shown in the detail. Revise detail on Sheet CD-551.</p> <p>The flashing beacon detail is still incorrect as shown. The Applicant shall update the detail to meet MUTCD standards per Interim Approval 21.</p>	Addressed	Correction has been made
23	<p>A STOP AHEAD sign should be provided on Bartlett Street in advance of the reconfigured intersection with Cate Street at approximate Station 20+00 per MUTCD standards.</p> <p>A "Stop Ahead" sign (W3-1A) has been added to the plans at Station 22+00 RT; however, this is not an MUTCD standard sign. Applicant shall use a standard MUTCD sign (e.g. W3-1) as appropriate (see MUTCD figure 2A-4).</p>	Addressed	Correction has been made
24	<p>Applicant indicated that a curbing and striping plan is forthcoming; however, this is not yet included in the Roadway Plans. We recommend the Applicant add dimensions and labels to fully lay out the striping and curbing on the Roadway Plan and Profile sheets.</p>	Addressed	<p style="text-align: center;">Correction has been made</p> <p>Provided CS-120 through 123</p>

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25	<p>The Applicant should provide a proposed drainage design for the northwest corner of Bartlett Street and Cate Street to incorporate disposition of all impacted existing drainage structures and proposed drainage structures.</p> <p>CB 63 at Station 16+50 RT is shown incorrectly in the roadway and should be shown against the new curb line. Applicant should revise CB 63.</p> <p>It appears that there is an existing catch basin at Station 15+85 RT that would be impacted by the site driveway curb return. Applicant shall consider relocation of this catch basin to the new curb line.</p>	Addressed	A catch basin has been added at the low spot on Bartlett Street and a drainage analysis addendum is being provided.
26	<p>The Bartlett Street intersection is the downstream end of the closed drainage system for Cate Street. More exiting detail, flow arrows etc., should be shown to illustrate where the stormwater is going.</p>	Addressed	CG Sheets

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27	The drainage design for the Bartlett Street intersection should seek to reduce the number of drain manholes within the travelled way. The proposed drainage system modifications should remove DMHs and old pipe and construct new CBs along the new curb lines.	Addressed	CG Sheets
28	The traffic study needs to be updated to reflect the new proposed lane usage on Cate Street Extension at the US Route 1 Bypass intersection.	Addressed	
29	For construction details of drain manholes shown on Sheet CD-530, use NHDOT Standard Details.	Addressed	It was clarified that the Drain Manhole is on sheet CD-520
30a	Pavement mix designs in the ROW shall be approved by the Department of Public Works.	Addressed	
30b	No wire shall be used in concrete sidewalks. Use 4000 PSI cement concrete with fiber reinforcement.	Addressed	
30c	The bituminous path shall consist of 3" hot bituminous pavement, comprised of two lifts of asphalt; mix design shall be approved by the Department of Public Works.	Addressed	
30d	Truncated domes shall be cast iron; shape and configuration shall be approved by the Department of Public Works.	Addressed	

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31	Remove R3-XX sign at approximate Station 20+75 RT, as it appears to be redundant with the R3-8(15) sign at Station 21+00 RT.	Addressed	Redundant Sign removed
32	Remove the diagonal hatching from the painted median island at the U-Haul driveway intersection. Applicant shall show painted island design to meet NHDOT Standard PM-6.	Addressed	diagonal hatch removed
33	<p>The right-turning movement from Cate Street Extension onto US Route 1 Bypass is still problematic. On Sheet CT-101 the WB-62 truck turn encroaching into the southbound side of US Route 1 Bypass is not acceptable. The lanes and/or curb return radius should be modified to eliminate this potential right turn conflict and encroachment into opposing lanes.</p> <p>Applicant shall clarify if the existing mast arm is being relocated with the US Route 1 Bypass work associated with this Cate Street project and to be permitted through NHDOT.</p>	Addressed	This is a design element that will be determined by NHDOT. The project is pending review by NHDOT. Any revisions required by NHDOT will be shared with the City of Portsmouth.

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34	The parking spaces at the easternmost driveway on Cate Street are too close to the driveway intersection with Cate Street. At least one or two should be eliminated or located elsewhere, so as not to cause conflicts with traffic turning in and out of the driveway.	Addressed	The Spaces have been shifted south to provide more driveway
35	On CT-201, the truck backing in behind the retail building will be maneuvering within the pedestrian shared space area. Trucks should be restricted to hours when pedestrians are not expected to be present.	Addressed	The Client will provide time restrictions for the loading zone behind the Commercial building. These will be added to the plans on CS-002.
36	The Site Plans should include an inverted U-style bike rack detail.	Addressed	a U-style Bike rack has been added to the details.
37	The traffic analysis shows the left turn phasing on US Route 1 Bypass at the two intersections changing from a leading phase to a lead-lag phase. This change will require the approval of NHDOT, and may not be acceptable to them.	Addressed	This is a design element that will be determined by NHDOT. The project is pending review by NHDOT. Any revisions required by NHDOT will be shared with the City of Portsmouth.
38	Any changes to the signal operations, lane use, or alignment at the two US Route 1 Bypass intersections that arise during NHDOT review of the traffic study and require changes to the signal analysis should also be provided to the City for review.	Addressed	This is a design element that will be determined by NHDOT. The project is pending review by NHDOT. Any revisions required by NHDOT will be shared with the City of Portsmouth.