



CIVIL ENGINEERING | LAND PLANNING  
CONSTRUCTION ADMINISTRATION

**TO:** Mr. Fletcher Lacock, Planner II  
City of Rapid City Community Planning and Development Services

**FROM:** Michael Towey, PE

**CC:** Nicole Lecy, PE  
Steve and Lynn Hammond  
Kent Hagg

**DATE:** March 07, 2016

**RE:** Steve and Lynn Hammond Property  
1224 Skyline Drive  
15PD029 Final Planned Development

RECEIVED

MAR 07 2016

RAPID CITY COMMUNITY PLANNING  
& DEVELOPMENT SERVICES

KTM Design Solutions (KTM) has reviewed the Planned Development submittal for the subject property in order to develop an alternative solution to the proposed changes as shown on the Owner's Site Plan submittal for this project.

KTM staff met with Mr. and Mrs. Hammond and their attorney Mr. Kent Hagg onsite on March 25<sup>th</sup> 2016 to discuss the project and potential solutions. Mr. and Mrs. Hammond are proposing to construct a 42' x 68' 5-stall garage that will store their motorhome, boat and trailer, water truck and personal vehicles. Changes also being proposed are to renovate the existing 3-stall attached garage into useable residential living space. In order to construct the proposed garage, the Hammond's have requested that an exception be granted to reduce the minimum required front yard setback for the proposed garage from 25 feet to 2 feet along with several other items.

KTM utilized AutoCAD AutoTurn to prepare a vehicle turning movement analysis within the limits of the existing driveway and property. The intent of our analysis was to show placement of the proposed garage on the lot based on accessible vehicular and pedestrian pathways while considering the recommended setback distances for the site. Using various setback distances, we modeled turning movements through the site including into and out of the proposed garage for the two larger vehicles. The following table compares setback distances and potential door opening necessary to provide accessibility.

Setback Distance from Property Line	Size of Motorhome Entrance	Size of Boat Entrance
2'	14'	14'
4'	14'	15'
5'	14'	15.5'
6'	14'	16'
7'	14'	16.5'
8'	Trouble Maneuvering	----

From the above table it should be noted that as the potential setbacks increase, the onsite maneuverability decreases. As this decrease occurs, the need for a larger door increases. The Hammonds were planning 12-foot standard doors; KTM will recommend they consider 14-foot doors. We have included with this memorandum, 4 exhibits based our turning movement analysis showing this change. Two of these exhibits show the maneuverability based on a 2-foot setback for both the motorhome and boat trailer, the other two exhibits show the limitations at 7' for the same two vehicles.

Based on our analysis and the existing site conditions, KTM believes the proposed location of the garage as shown in the Hammond's original Site Plan is the only place to set this garage within reason. We would also offer the following comments to support this statement:

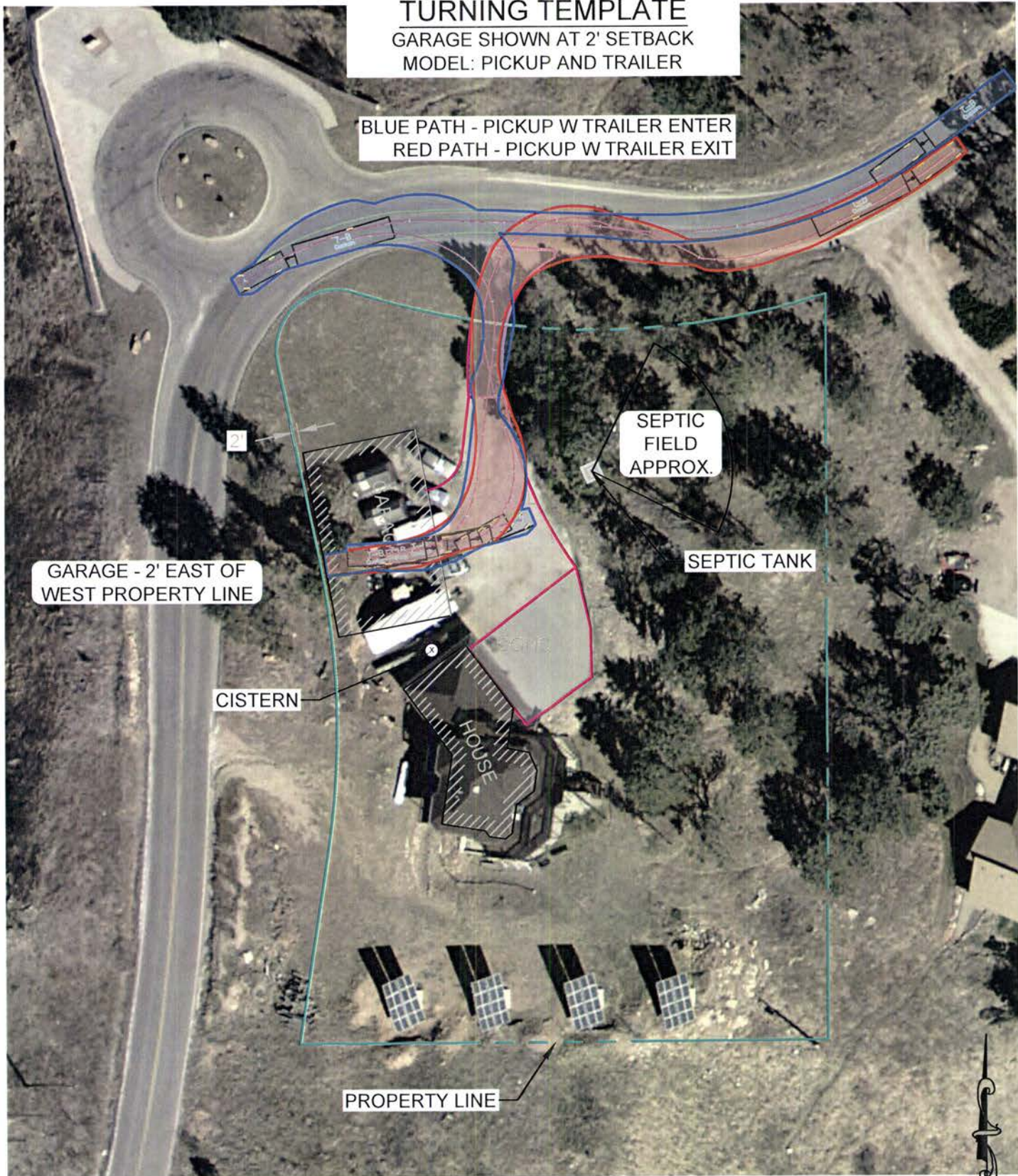
- The proposed garage will be set into the hillside along the western property line. Elevation change along the west property line ranges from the anticipated finish floor of 3586 +/- to 3599 +/-, therefore hiding most of the proposed garage. It could be anticipated that the new building will not be a visual distraction within the Skyline Drive Corridor.
- Building the proposed garage along the eastern side of the driveway is not realistic, in our opinion, due to the steep slopes falling away from the driveway. Anticipated fill depths could be 10 – 20 feet deep and could be easily estimated at 2,000 cubic yards +/-.
- Also considering the east side of the driveway, this would require the Hammonds to relocate their septic system as it exists today. The septic system was not located on the original survey, but the tank riser is noticeable along the eastern slopes from the driveway.
- Similar conditions to #2 above exist if the proposed garage was moved to the southeastern portion of the lot.

Other items discussed with the Hammonds include:

- KTM staff has discussed with Mr. Tim Behlings the concerns about fire safety in this area. Mr. Behlings has suggested a smaller sprinkler type system that RCFD has approved for similar situations. The Hammonds are very interested in this sprinkler system and would work with Mr. Behlings to achieve agreeable preventive measures.
- The two sheds, as noted in the City Staff Report would be moved (and permitted, if required) to a more permissible location.

Please feel free to contact me with questions concerning the item.





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**KTM**  
DESIGN SOLUTIONS, INC.  
CIVIL ENGINEERING | LAND PLANNING  
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**HAMMOND**  
**TURNING TEMPLATE**  
PICKUP AND TRAILER  
ACCESS TO GARAGE  
MARCH, 2016

**PRELIMINARY**  
**FOR REVIEW ONLY**






K:\750-799\774 Hammond Site Drawings\CH08015\Turning Exhibit - MOTORHOME - GARAGE - 1.dwg 3/17/2016 2:06pm

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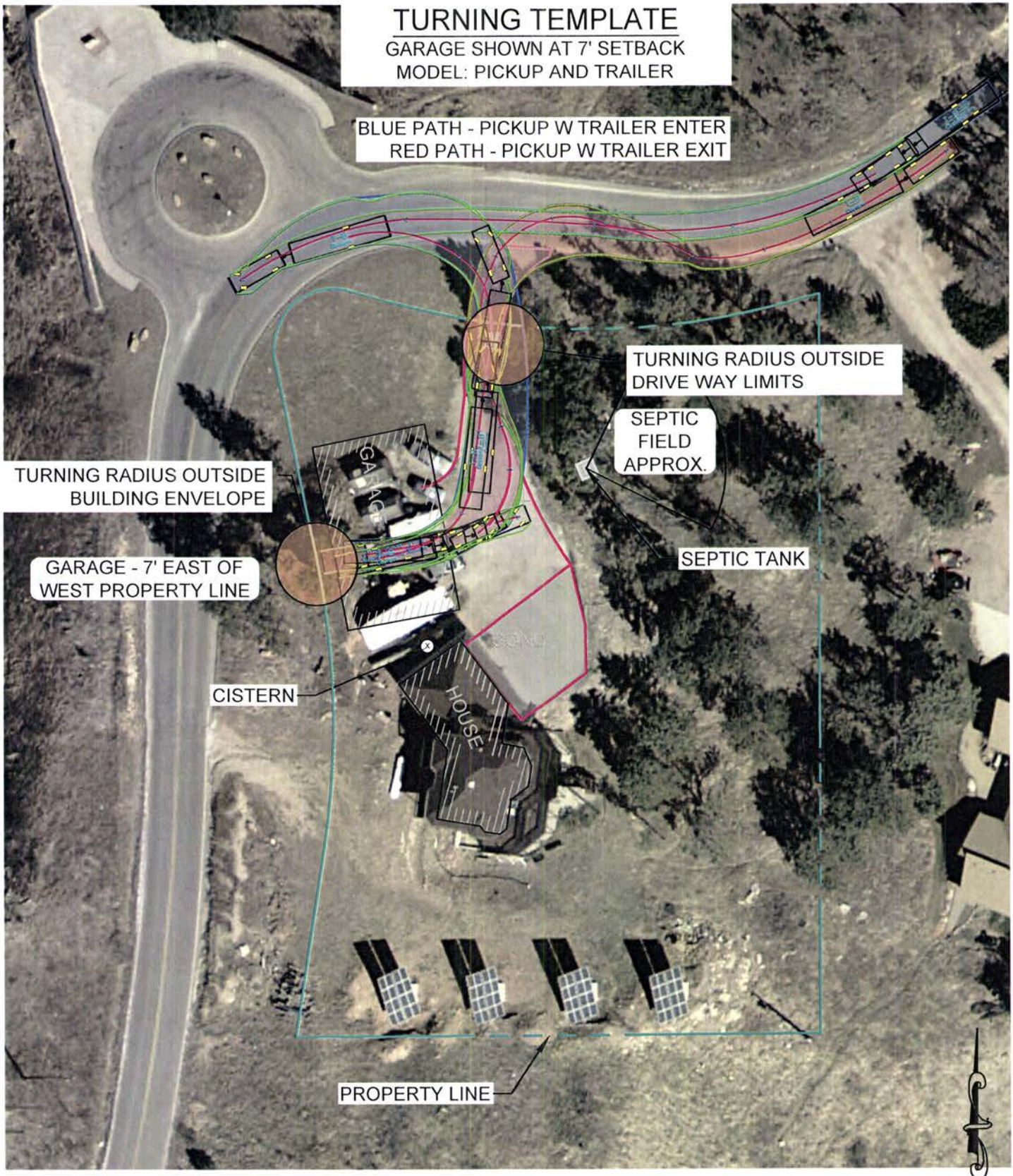
**HAMMOND  
TURNING TEMPLATE**  
MOTORHOME  
ACCESS TO GARAGE  
MARCH, 2016



25' 12.5' 0 25' 50'  
SCALE: 1" = 50'

**PRELIMINARY  
FOR REVIEW ONLY**






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**HAMMOND  
TURNING TEMPLATE**  
PICKUP AND TRAILER  
ACCESS TO GARAGE  
MARCH, 2016



SCALE: 1" = 50'

**PRELIMINARY  
FOR REVIEW ONLY**



TURNING TEMPLATE

GARAGE SHOWN AT 7' SETBACK  
MODEL: MOTORHOME

BLUE PATH - MOTORHOME ENTER  
RED PATH - MOTORHOME EXIT

TURNING RADIUS OUTSIDE  
BUILDING ENVELOPE

GARAGE - 7' EAST OF  
WEST PROPERTY LINE

SEPTIC  
FIELD  
APPROX.

SEPTIC TANK

CISTERN

HOUSE

PROPERTY LINE



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**HAMMOND  
TURNING TEMPLATE**

MOTORHOME  
ACCESS TO GARAGE  
MARCH, 2016



**PRELIMINARY  
FOR REVIEW ONLY**

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