	Exception	
Large Main Line Crawler	**Yes**	**No**
1. Crawler must be Four Wheel Drive		
2. Tool-less quick connect and disconnect connections for pan/tilt Camera head and auxiliary lighting.		
3. Crawler must fit into a minimum 16” diameter pipe		
4. Must be steerable - The tractor shall have proportional left, right, forward and reverse capability via a joystick.		
5. Must have two speed transmission		
6. Must have electronic clutch		
7. Full sensor package with inclination, roll, sonde, pressure, and temperature.		
8. Integral rearview color Camera with high-lux tri-LED lighting to be positioned at the top rear of the crawler body and not to have any visible increase in the diameter of the crawler body or be integrated with the rear connector.		
9. Ability to remotely toggle between rear- and forward-viewing Cameras using the operator control pendant.		
10. Quick Change camera locking mechanism, the simple turn of which drives 3 stainless bearings into the rotate shaft of the Camera for secure, easy attachment with 1-bar waterproof rating.		
11. Keyway on Camera rotation shaft to ensure damage-free mating of electrical pins between crawler and Camera.		
12. Rear receptacle that allows cable attachment with 2 turns of the stainless-steel cable connector’s outer barrel. Not tools required.		
13. Minimum weight 70 lbs		
14. Length of no more than 27.5” for easy navigation through 90-degree inverts without rolling.		
15. A tilting rear cable connector that points vertically to protect cable during deployment into manhole, but which tilts to horizontal position during operation. Rear connectors that integrate a rear Camera will not be accepted.		
16. Strong stainless steel locking mechanism to augment the strain relief internal to the cable.		

	Exception	
Large Main Line Crawler	**Yes**	**No**
17. Waterproof design (when mounted) with ability to withstand 1 bar external pressure.		
18. Location sonde 512Hz / 640Hz switchable at the control unit		
19. Must be able to automatically center the camera in a pipe via one button push at control unit		
20. Includes two sets of wheels		
a. 8.7” diameter standard wheels		
b. 10.25” large wheels		
21. Crawler must be able to accept optional extension to allow centering in lines up to 72”.		
22. Crawler must be able to accept optional auxiliary light with additional rear view camera.		