



City of Grand Junction, Colorado 81501

XXXXXXXXXX  
244-1554

March 25, 1981

**RECEIVED**

MAR 27 1981

WATER QUALITY

D. E. \_\_\_\_\_

Mr. Robert P. Gerlofs  
Paragon Engineering, Inc.  
2784 Crossroads Blvd.  
Suite 104  
Grand Junction, CO 81501

Dear Bob:

Re: Connection of Valley West Water and Sanitation District to the  
River Road Interceptor Sewer

As requested, I have reviewed the construction plan for the above as submitted  
March 5, 1981, and have the following comments:

1. Since I have been directed to bring requests for any connections to  
Interceptor Manholes 1 through 7 to the attention of the Public Works  
and Utilities Director, I have done this. His direction based in part  
on consultation with the City Attorney, is to allow the above connec-  
tion to Manhole 1 provided three things are done.
  - a. The connection is located vertically to fit the hydraulic gradient  
for the Interceptor as furnished us by HDR Engineers on January 14,  
1981. I furnished you a copy of that gradient several weeks ago  
when you visited our offices.
  - b. Valley West Water and Sanitation District should provide a "hold-harm-  
less" agreement to the City concerning potential surcharge backups  
from the Interceptor into the District's sewers and/or into buildings.
  - c. An agreement from the District that if surcharge backups become an  
operational or nuisance problem to such an extent that some other  
routing from the District's sewer system to the Interceptor becomes  
necessary, the District will design and construct the required al-  
ternative system at no cost to the City.
2. The hydraulic gradient at Interceptor Manhole 1 is 4512.64 according to  
the HDR information. Assuming the hydraulic gradient of your proposed  
15 inch sewer is 0.8 x diameter, yields a minimum allowed flowline ele-  
vation of 4511.64. Your plan labels a (12 inch?) flowline at 4511.16.  
The plan view shows a 15 inch. Assuming you intend a 15 inch line,  
the flowline elevation at the Interceptor should be at least 4511.64.

3. The plan shows a proposed 15 inch sewer at 0.10% grade crossing under the D & GRW Railroad and U.S. Highway 50, and then two 12 inch sewers at 0.22% grade feeding into the 15 inch pipe. The Pipe Jacking Detail shows a "12 inch ductile iron" pipe in a 24 inch steel pipe casing. The Highway and Railroad Crossing Details show a "15 inch sanitary sewer" in a 28 inch steel pipe casing. What size pipe is proposed? What size casing is proposed? What pipe material is proposed?
4. If the pipe crossing under the railroad and highway is a 15" ductile iron pipe at 0.10%, the velocities of flow will be as follows:  

1/4 full = 1.39 fps
1/2 full = 1.80 fps
3/4 full = 2.02 fps
full = 1.80 fps

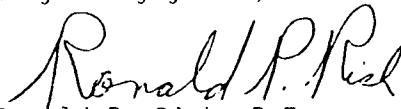
Colorado Health Department criteria requires that sewer slopes be sufficient as to transport "average" sewage flows at mean velocities of 2.0 fps.

5. I assume the sewer sizes and slopes proposed will be of adequate capacity to handle the anticipated design flows for the District's system. No sewer demand estimate calculations were submitted to this office.
6. The proposed details of pipe jacking and casings for the crossings under the D&RGW Railroad and U.S. Highway 50 must be approved by the railroad and Colorado Division of Highways. It is my opinion the wood skids should be redwood or some treated wood which is less likely to deteriorate, that the skids should be around the entire circumference of the pipe and that they should be banded to the pipe. I have not checked the structural adequacy of the proposed steel pipe casing.
7. Add the following note to the plan sheet:  

"All construction shall be in accordance with City of Grand Junction Standard Sanitary Sewer Details Drawing SS-1 and shall conform to City of Grand Junction Standard Specifications for Construction of Waterlines, Sanitary Sewers, Storm Drainage and Irrigation Systems, 1981, and City of Grand Junction General Contract Conditions for Public Works and Utilities Construction GC-37, GC-50 and GC-65."
8. The enclosed letter and two (2) details of February 5, 1981, from HDR Engineers are our criteria for the details of connection to the Interceptor. The manhole (or pipe) must be core drilled. Another detail not shown but discussed with HDR and with you is that the connecting pipe must be cut off flush with the inside of the Interceptor manhole or pipe and then sealed with an acceptable material to insure the sealed integrity of the Interceptor sewer and manholes. I suggest you contact HDR concerning what sealing material(s) will be accepted.

When the above comments have been addressed, submit the revised plan sheet and other documentation for approval prior to construction.

Very truly yours,

  
Ronald P. Rish, P.E.  
City Engineer

RPR/hm

Enclosures

cc - District Engineer, Colorado Dept. of Health, w/enc ✓  
Jim Franklin, HDR  
Jim Patterson, CBW  
Jim Patterson  
Ralph Sterry



City of Grand Junction, Colorado 81501

XXXXXXXXXX  
244-1566

March 26, 1981

**RECEIVED**

MAR 30 1981

WATER QUALITY

D. E. \_\_\_\_\_

Mr. Robert P. Gerlofs  
Paragon Engineering, Inc.  
2784 Crossroads Blvd.  
Suite 104  
Grand Junction, CO 81501

Dear Bob:

Re: Connection of 6 inch Force Main from Railhead Industrial Park  
to Manhole No. 8 of the River Road Interceptor Sewer

As requested, I have reviewed the "Manhole Connection Details" sheet for the above as submitted on March 16, 1981, and have the following comments:

1. Plans in our office prepared by HDR Engineers show a flowline elevation of 4513.39 on the 54 inch Interceptor Manhole No. 8. Assuming a hydraulic gradient at  $0.8 \times$  diameter of the proposed 6 inch force main yields a minimum allowed flowline elevation of 4516.59 which is what your plan proposes.
2. The enclosed letters of January 14, 1981, and February 5, 1981, and the attached two (2) details from HDR Engineers are our criteria for the details of connection to the Interceptor sewer. The manhole (or pipe) must be core drilled. Another detail not shown but discussed with HDR is that the connecting pipe must be cut off flush with the inside of the Interceptor manhole or pipe and then sealed with an acceptable material to insure the sealed integrity of the Interceptor sewer and manholes. In the interest of time, I suggest you contact HDR directly concerning what sealing material(s) will be accepted and if your proposed method of sleeving and sealing as shown on these details is acceptable. I definitely recommend against the proposed elbow intrusion into the 54 inch Interceptor as shown on the detail.
3. I assume the 6 inch force main proposed will be of adequate capacity to handle the proposed flows from the lift station. No information concerning type, size or details of the lift station were submitted to this office. No estimated sewage flows calculations were submitted to this office.
4. The details shows a "22 $\frac{1}{2}$ " cast iron bend". I don't understand why you propose to use a cast iron bend on a PVC pipe. The bearings on the plan result in an 18" bend. Will the 22 $\frac{1}{2}$ " bend give the required alignment? I assume the core through the manhole will be angled slightly to insure the desired alignment on the force main back to the lift station site without stressing the pipe joints or curving the pipe.

5. Add the following note to plan sheet:

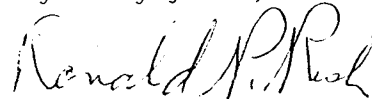
"All construction shall be in accordance with City of Grand Junction Standard Sanitary Sewer Details Drawing SS-1 and shall conform to City of Grand Junction Standard Specifications for Construction of Waterlines, Sanitary Sewers, Storm Drainage, and Irrigation Systems, 1981, and City of Grand Junction General Contract Conditions for Public Works and Utilities Construction GC-37, GC-50 and GC-65."

6. A set of two (2) prints for Railhead Industrial Park appeared on my desk on March 20, 1981. (Note: These do not include pipe profiles or lift station plans.) Some of the above comments apply to the details shown on sheet 2 of that set. The prints also show a Grand Junction West Water and Sanitation District sewer routed into the Railhead Subdivision system and through the lift station. I assume you will submit a complete set of documents for Railhead Industrial Park sewage collection system for my review and approval prior to construction of those facilities. That submittal should include:

- (a) Plan and profiles for the sewer lines.
- (b) Detailed plans and specifications for the lift station.
- (c) Estimated sewage flows calculations for all sewage routed through the lift station.

When the above comments have been addressed, submit the revised plan sheet for approval prior to construction.

Very truly yours,



Ronald P. Rish, P.E.  
City Engineer

RPR/hm

Enclosures

cc - District Engineer, Colorado Dept. of Health-w/encl.-  
Jim Franklin, HDR  
Jim Patterson, CBW  
Jim Patterson  
Ralph Sterry