Loomis Diversion Trunkline
Change Order No. 8

Additional Brace Road Paving and
Adjustment of Quantities for 15” Pipe

Eric Nielsen, P.E. November 1, 2018
OVERVIEW

- Rock
- Red = Controlled Blasting
- Yellow = Rock Hammer
# Change Order Summary

## Items in Change Order No. 8

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overlay Brace Road</td>
<td>$83,502.65</td>
</tr>
<tr>
<td>15” SS Pipe</td>
<td>$46,800.00</td>
</tr>
<tr>
<td>15” SS Pipe – Hard Rock Excavation</td>
<td>- $347,600.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>- $217,297.35</strong></td>
</tr>
</tbody>
</table>

Reimbursement from Town of Loomis for Overlay: - $56,412.10

## Summary of Change Orders

<table>
<thead>
<tr>
<th>Summary of Change Orders</th>
<th>Amount</th>
<th>% of Original Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original contact amount</td>
<td>$5,086,485.00</td>
<td>-</td>
</tr>
<tr>
<td>Total Change Orders to Date (#1- #8)</td>
<td>$3,918,614.95</td>
<td>77%</td>
</tr>
<tr>
<td>Total Project Cost</td>
<td>$9,005,099.95</td>
<td>177%</td>
</tr>
</tbody>
</table>
Questions?
Questions?
CHANGE ORDER

- Controlled Blasting on Brace Road
- Controlled Blasting on the Tulip LLC Property North of Horseshoe Bar Road
- Additional Laterals and Stubs on Brace Road and Dias Lane
BLASTING

- Brace Road
  - 49 Days of Drilling
  - 22 Days of Controlled Blasting
  - 2,832 Holes Drilled (Approx. 10.6 vertical miles)

- Tulip LLC (North)
  - 15 Days of Drilling
  - 5 Days of Controlled Blasting
  - 290 Holes Drilled (Approx. 1 vertical miles)
MOVING FORWARD

- Potential future change orders
- Brace Road surface restoration
ESTIMATED vs ACTUAL ROCK

- Quantity of Rock Estimated with
  - 12 Drill Holes
  - 6 Refraction Surveys
ESTIMATED vs ACTUAL ROCK

Results of Pre-Drilling Efforts

<table>
<thead>
<tr>
<th></th>
<th>Tulip</th>
<th>Dias</th>
<th>Brace</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (ft)</td>
<td>790</td>
<td>362</td>
<td>308</td>
<td>1460</td>
</tr>
<tr>
<td>Cubic Yards</td>
<td>1754</td>
<td>422</td>
<td>642</td>
<td>2818</td>
</tr>
</tbody>
</table>
Every blast is monitored

Report prepared

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**Summary of Loomis Trunk Line Blast: Production #5, 10/12/17**

Time of Blast Initiation: ~16:28:22

Weather Conditions: Cloudy, Clear (2-4 mph from Northwest), Warm (~75°F)

Maximum Pounds Per Delay: 9.77

<table>
<thead>
<tr>
<th>Monitor ID</th>
<th>Monitor Location</th>
<th>Distance from Blast</th>
<th>Maximum Recorded Vibration Level (in/s)</th>
<th>Freq. (Hz)</th>
<th>dB (L)</th>
<th>Acceleration (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE9708</td>
<td>3938 Betty Lane</td>
<td>~500 feet southwest</td>
<td>0.050 in/s</td>
<td>29</td>
<td>107.5</td>
<td>0.053</td>
</tr>
<tr>
<td>BE8352</td>
<td>3899 Martin Lane</td>
<td>~275 feet southwest</td>
<td>0.135 in/s</td>
<td>45</td>
<td>113.3</td>
<td>0.106</td>
</tr>
<tr>
<td>BE11334</td>
<td>at PCWA Water Tank</td>
<td>~265 feet northeast</td>
<td>0.095 in/s</td>
<td>34</td>
<td>109.5</td>
<td>0.080</td>
</tr>
<tr>
<td>BC8311</td>
<td>Above PCWA Pipeline</td>
<td>~160 feet east</td>
<td>0.165 in/s</td>
<td>35</td>
<td>110.6</td>
<td>0.239</td>
</tr>
<tr>
<td>BC8479</td>
<td>Between 3938 Betty Lane</td>
<td>~120 feet south</td>
<td>0.265 in/s</td>
<td>54</td>
<td>117.8</td>
<td>0.292</td>
</tr>
</tbody>
</table>

All monitoring instruments were placed on solid ground with 3-inch spike penetration, atop a hard surface and covered with a sandbag or bolted to a hard surface to ensure good coupling. Each instrument has a current calibration certificate and complies with the standards established by the Vibration Section of The International Society of Explosives Engineers (ISEE).

We trust that this is the information you require; however, should you have questions or comments, please feel free to contact our Rancho Cordova office at your convenience. Thank you for this opportunity to be of service.

Sincerely,

GASCH GEOPHYSICAL SERVICES, INC.

Kent L. Gasch
Professional Geophysicist #1061
- Each monitor is analyzed
- Ensures vibrations are within range set in specs
- Used for future blasts