



November 6, 2017

Mr. Nate Garza, Capital Projects Manager

City of New Braunfels

550 Landa Street

New Braunfels, TX 78130

RE: Klein Road Reconstruction Project – Change Order No. 1 Request (Revised)

Dear Mr. Garza:

Trihydro Corporation (Trihydro) has prepared this revised Change Order No. 1 request for the Klein Road Reconstruction project. This second revised version updates our revised change order request dated September 5, 2017. This version is provided based on recent discussions with you, which removes the value engineering budget request and adds preparation of underground fiber conduit plans. We will pursue a change order for the additional value engineering separately. At our meeting on August 9, 2017, we reviewed the comments the City of New Braunfels (City) provided in an email dated August 1, 2017 regarding our original change order request dated July 26, 2017. We discussed the items that the City agreed to, items not needed, and items that need more information.

The items that we understand the City agrees to include the following:

**Additional Services: Right-of-Way and Easement Mapping and Legal Descriptions  
(\$74,260)**

- The original scope of work and fee estimate includes preparation of preliminary ROW parcels for the City's review and ROW/easement legal descriptions and exhibits for 13 parcels. An additional 18 parcels were identified for a total of 31 that required boundary resolution, legal descriptions and exhibits. Additional work also included preparation of several ROW mapping figure iterations for the City's reference along with preparation of an existing ROW map from the Klein Road/Walnut Avenue intersection to the Klein Road/FM 725 intersection. **(\$67,170)**
- Work remaining for the Additional Services task includes setting ½" iron rods with plastic stamped caps at all ROW points of intersection, points of curvature, points of tangency, and property line

New Braunfels Office | 1011 West County Line Road | New Braunfels, TX 78130 | phone 830/626.3588 | fax 830/626.3601

Home Office | 1252 Commerce Drive | Laramie, WY 82070 | phone 307/745.7474 | fax 307/745.7729 | www.trihydro.com



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intersections. This work requires extra effort due to the additional 18 parcels identified during the ROW engineering. **(\$7,090)**

**Design Phase: Final (100%) – Landscaping Add Alternative (\$4,930)**

- Additional landscaping plan sheet edits were made and an add-alternative landscape design was added based on an email from the City dated July 10, 2017. This work also requires updates to the construction cost estimate, bid form and specifications.

**Design Phase: Final (100%) – Prepare Underground Fiber Conduit Plan Sheets (\$3,840)**

- Per our meeting on October 25, 2017, we understand the City would like to add underground fiber optics conduit plan view sheets to the roadway plan set. The City provided an example plan set with the details to incorporate and specifications that can be included as notes on the underground fiber conduit plan sheets. This work will also include calculation of quantities and a construction cost estimate.

**Update Legal Descriptions, If Any, Based on Landowner Negotiations (\$975/each - to be used as needed)**

- Based on the outcome of landowner negotiations for ROW/easements, Trihydro will update legal descriptions and accompanying exhibits, if required. We understand that the City doesn't foresee concerns with the negotiations at this time; however, we have provided a per parcel fee, if this service is needed.

We understand the City **does not** need the following items at this time:



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#### **Utility Relocation Conflict Review and Resolution (\$2,640...not needed at this time)**

- As part of the original scope, design phase plans have been distributed to affected utility companies for their review and use in preparing their utility relocation plans. Utility coordination meetings have also occurred been held as part of the original scope of services to answer questions and coordinate between utilities regarding easements, permitting, separation requirements, etc. An additional task is proposed to provide a review of each affected utility company's relocation plans, incorporate proposed utilities locations into the plans, and provide utilities conflict resolution. A conflict matrix will be prepared and provided at a coordination meeting to review and discuss with the utility companies and City.

Lastly, the items we have provided additional information for your consideration are as follows:

#### **Design Phase: Task 5 Final (100%) Design – Additional Drainage (\$10,115)**

Additional drainage calculations and designs were performed. Due to the ongoing adjacent land development occurring along Klein Road since the inception of this project, stormwater drainage analyses have required several iterations and updates above the original estimated effort. Storm drain designs and plan sheets were prepared to accommodate adjacent development and were verified and modified several times.

Trihydro received drainage reports for the Ridgemont Unit 1 (dated August 22, 2016) and Dean Subdivision (dated August 8, 2016). We found the Ridgemont Unit 1 drainage report was not complete, as a figure showing watershed basins delineated for peak flow calculations was not included in the report. Drainage basins were shown on the final plat documents provided on April 21, 2015; however, weren't verified in the report. Within the Ridgemont Unit 1 drainage report there is no discussion or calculations shown for the Ridgemont detention pond discharge point verifying that the Klein Road Drainage ditch has capacity to accommodate the discharge from the detention pond. This report indicates that the pond discharges to the historical outfall for the site. This discharge is now a concentrated point discharge and not historical overland sheet flow. The runoff coefficient used in the



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report is listed as 0.53 for residential, which matches the coefficient used in earlier developments and the previous version of the City's drainage criteria manual; however, in 2016 the City updated the its drainage criteria manual requiring a composite runoff coefficient, which requires calculation. This composite runoff coefficient was not reflected in the August 2016 drainage reports.

The 90% plans were submitted on May 13, 2016, about 2 months prior to the date of the two subdivision drainage reports. Receiving this drainage information late in the design process, required additional effort and a domino effect to update storm drain design. The Ridgemont detention pond created the most concern with a large point discharge located at a point in the Klein Road profile that is constrained by the existing elevation of the Walnut Avenue intersection. Provisions have been incorporated into the plans to accommodate discharge from the Ridgemont detention and maintain one lane of traffic during the design storm event; however, this was a challenge and required labor hours above our original estimate in 2015.

#### **OPTIONAL ADD-ON PROFESSIONAL SERVICES HAVE BEEN IDENTIFIED AS FOLLOWS:**

##### **Stormwater Management Option Study (\$13,415)**

- Based on the current drainage calculations and roadway profile design constraints as described above, there is potential for flooding to occur where the Ridgemont pond discharges onto Klein Road during large storm events, exceeding the design storm. The profile of Klein Road is constrained in the segment where the Ridgemont detention pond discharges and the intersection of Walnut Avenue is located. The profile cannot be easily raised without raising the intersection of Walnut Avenue. Flooding may occur along Klein Road and at the downstream discharge channel during large rain events exceeding the required design storm. Currently, Trihydro is incorporating provisions in the final plans to maintain a minimum of one lane of traffic for the design storm requirement. This will include a berm behind back of sidewalk and in front of the storm inlet at the Ridgemont pond discharge structure.
- We recommend a more detailed stormwater management study to take into consideration a regional flood control structure located downstream of the Ridgemont detention pond or extended storm drain that takes into consideration future improvements to Klein Road, a future extension of



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Walnut Avenue, and future growth and development. Our fee estimate for this study includes a design analysis report addressing up to 3 design options with corresponding conceptual design figures, construction cost estimates, and a recommended alternative.

**Design of Stormwater Management Preferred Alternative (we removed this item from our request, since it will likely be designed during the Walnut Avenue extension)**

Based on the information presented above, our change order request is itemized as follows:

1. Items agreed to:

Additional Services ROW and Survey:	\$74,260 ✓
Landscaping Add Alternative:	\$ 4,930 ✓
Underground Fiber Conduit Plan Sheets	\$ 3,840 ✓
<u>Additional Drainage Calculations:</u>	<u>\$10,115</u> ✓
<b>Total</b>	<b>\$93,145</b> ✓

*OK [Signature]*

2. Items with more clarification: **(As Needed)**

Update Legal Descriptions	\$975/each
Stormwater Management Option Study:	\$13,415
Utility Conflict Services:	\$ 2,640

As always, we will strive to meet the City's expectations and goals. We appreciate your consideration of this change order request. Please let us know if you have questions or comments regarding this requested contract change order.



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Sincerely,

Trihydro Corporation

A handwritten signature in black ink, appearing to read "Pat Lackey".

Pat Lackey, P.E.

Project Manager

A handwritten signature in black ink, appearing to read "Tammy Reed".

Tammy Reed, P.E.

Assistant Project Manager

999-702-401

Attachment

ATTACHMENT A



October 31, 2017  
 Project No: 702-407-000  
 Invoice No: 0124356

**Invoice Total \$82,215.00**

City of New Braunfels  
 550 Landa St.  
 New Braunfels, TX 78130

Project 702-407-000 Klein Road - Street and Drainage Project  
 Trihydro PM: Pat Lackey

**Professional Services through October 28, 2017**

Task	A000	Design Phase		
<b>Fee</b>				
Total Fee		16,323.56		
Overall Percent Complete	100.00	Total Earned	16,323.56	
		Previous Fee Billing	16,323.56	
		Current Fee Billing	0.00	
		<b>Total Fee</b>		<b>0.00</b>
		<b>Total this Task</b>		<b>0.00</b>

Task	A011	Drainage Design		
<b>Fee</b>				
Total Fee		10,115.00		
Overall Percent Complete	100.00	Total Earned	10,115.00	
		Previous Fee Billing	0.00	
		Current Fee Billing	10,115.00	
		<b>Total Fee</b>		<b>10,115.00</b>
		<b>Total this Task</b>		<b>\$10,115.00</b>

Task	A017	Survey - ROW		
<b>Fee</b>				
Total Fee		67,170.00		
Overall Percent Complete	100.00	Total Earned	67,170.00	
		Previous Fee Billing	0.00	
		Current Fee Billing	67,170.00	
		<b>Total Fee</b>		<b>67,170.00</b>
		<b>Total this Task</b>		<b>\$67,170.00</b>

Task	A018	Survey - Easements and Replats		
<b>Fee</b>				
Total Fee		7,090.00		
Overall Percent Complete	0.00	Total Earned	0.00	

Project	702-407-000	Klein Road - Street and Drainage Project	Invoice	0124356
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Previous Fee Billing	0.00
Current Fee Billing	0.00
<b>Total Fee</b>	<b>0.00</b>

**Total this Task 0.00**

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Task	A020	Landscape Design
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<b>Fee</b>			
Total Fee	4,930.00		
Overall Percent Complete	100.00	Total Earned	4,930.00
		Previous Fee Billing	0.00
		Current Fee Billing	4,930.00
		<b>Total Fee</b>	<b>4,930.00</b>

**Total this Task \$4,930.00**

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Task	B000	Bid Phase
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<b>Fee</b>			
Total Fee	22,310.00		
Overall Percent Complete	0.00	Total Earned	0.00
		Previous Fee Billing	0.00
		Current Fee Billing	0.00
		<b>Total Fee</b>	<b>0.00</b>

**Total this Task 0.00**

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Task	C000	Construction Phase
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<b>Fee</b>			
Total Fee	87,921.61		
Overall Percent Complete	0.00	Total Earned	0.00
		Previous Fee Billing	0.00
		Current Fee Billing	0.00
		<b>Total Fee</b>	<b>0.00</b>

**Total this Task 0.00**

<b>Billing Limits</b>	<b>Current</b>	<b>Prior</b>	<b>To-Date</b>
Total Billings	82,215.00	16,323.65	98,538.65
Limit			777,150.58
Remaining			678,611.93
		<b>Total this Invoice</b>	<b>\$82,215.00</b>

TERMS: Net 30 Days from invoice date. Amounts remaining unpaid for more than 30 days after the date of the invoice shall be subject to a finance charge of one and a half percent (1 ½ %) per month.

Remit / Make Check Payable To:  
 Trihydro Corporation  
 1252 Commerce Drive  
 Laramie, WY 82070  
 accounting@trihydro.com

TABLE 1. FEE ESTIMATE CHANGE ORDER NO. 1 - KLEIN ROAD RECONSTRUCTION,  
CITY OF NEW BRAUNFELS, TEXAS

		Trihydro Corporation								
		Principal	Sr. Project Manager	Project Engineer	Graduate Engineer	CAD Technician	Clerical	RPLS	Survey Crew	Labor Subtotal
TASK	DESCRIPTION	\$180	\$150	\$125	\$100	\$85	\$45	\$125	\$145	
	<b>Out-of-Scope Services</b>									
5	<b>Design Phase: Final (100%) Design</b>									
	Additional Drainage Calculations and Design	1	10	28	30	20	2		1	\$10,115
	Landscaping Design for Add Alternative	1	2	16	10	16	2			\$4,930
	Prepare Underground Fiber Conduit Plan	1	2	16		16				\$3,840
	<b>Additional Services: Right-of-Way and Easement Mapping/Legal Descriptions</b>									
	Additional work required for 18 additional parcels (13 in original est)	4	60			75	30	305	80	\$67,170
	Additional survey required to set caps for 18 additional parcels							8	42	\$7,090
	<b>Subtotal (hours)</b>	<b>7</b>	<b>74</b>	<b>60</b>	<b>40</b>	<b>127</b>	<b>34</b>	<b>313</b>	<b>123</b>	<b>778</b>
	<b>Subtotal (\$)</b>	<b>\$1,260</b>	<b>\$11,100</b>	<b>\$7,500</b>	<b>\$4,000</b>	<b>\$10,795</b>	<b>\$1,530</b>	<b>\$39,125</b>	<b>\$17,835</b>	<b>\$93,145</b>
	<b>Optional Add-On Services</b>									
A	Stormwater Management Option Study	2	4	60	35	15	4			\$13,415
B	Update Legal Descriptions, if any (per each)	1		2		2		3		\$975
	<b>Optional Add-On Services - Total (hours)</b>	<b>3</b>	<b>4</b>	<b>62</b>	<b>35</b>	<b>17</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>128</b>
	<b>Optional Add-On Services - Total (\$)</b>	<b>\$540</b>	<b>\$600</b>	<b>\$7,750</b>	<b>\$3,500</b>	<b>\$1,445</b>	<b>\$180</b>	<b>\$375</b>	<b>\$0</b>	<b>\$14,390</b>