Channel Maintenance Alternatives and Sediment-transport Studies for the Rio Grande Canalization Project:
Final Report

APPENDIX A

Statement of Work and Statement of Work Addendum for Channel Maintenance Alternatives and Sediment-transport Studies for the Rio Grande Canalization Project

October 20, 2015

Contract No. IBM09D0006
Order No. IBM14T0016

STATEMENT OF WORK:
CHANNEL MAINTENANCE ALTERNATIVES (CMA) AND SEDIMENT TRANSPORT STUDIES FOR THE RIO GRANDE CANALIZATION PROJECT

I. SUMMARY

This Statement of Work (SOW) proposes to evaluate channel maintenance options for the Rio Grande Canalization Project (RGCP) in Sierra and Doña Ana Counties, New Mexico and El Paso County, Texas. The Contractor shall conduct cross section surveys, hydraulic and sediment transport modeling, and evaluate channel maintenance strategies.

II. BACKGROUND

The Rio Grande Canalization Project was constructed between 1938 and 1943 as authorized by the Act of Congress approved June 4, 1936 (Public Law 648, 49 Stat 1463) "to facilitate compliance with the convention between the United States and Mexico concluded May 21, 1906, providing for the equitable division of the waters of the Rio Grande, and to properly regulate and control, to the fullest extent possible, the water supply for use in the two countries as provided by treaty." The Act authorizes the United States International Boundary and Water Commission (USIBWC) to construct, operate and maintain the RGCP in accordance with the plan in the Engineering Record of December 14, 1935, which covers the engineering works to implement the 1906 Convention. 22 U.S.C 277 provides the USIBWC with additional authorization to operate and maintain any projects or works provided for in a treaty entered into with Mexico. USIBWC must maintain the RGCP channel as stipulated in 22 U.S.C. 277b, which states that the USIBWC may make improvements to the RGCP, and that "such improvements may include all such works as may be needed to stabilize the Rio Grande" between Percha and American Dam. USIBWC must ensure that the requirements of the 1906 convention are met. The USIBWC objectives for the RGCP can be summarized by: Flood Conveyance and Flood Protection, Channel Conveyance Reliability, Delivery Efficiency, Compliance with U.S. Regulations, and Minimizing Costs.

Additionally, the 2009 Record of Decision (ROD) requires the USIBWC to improve river management in several ways including conducting studies and investigations to evaluate channel maintenance activities and levee protection using adaptive management strategies. The ROD stated, "To ensure efficient water delivery, the selected alternative allows for maintenance of the river, removal of obstructions from the river, and dredging under an adaptive management program." The ROD also stated that the over-excavation that has been practiced in the past when removing sediment plugs is likely unnecessary and short-lived, and that the question of the overall necessity of channel dredging shall be investigated through additional monitoring and modeling.

There is ongoing sediment inflow from the tributary arroyos resulting in sediment deposition forming sediment plugs at arroyo confluences along sections of the Rio Grande. Sediment inflow also results in island formations and raising of river beds. Sediment accumulation prevents draining of irrigation return flow to the Rio Grande and may result in increases in water surface

elevations which could impact levee freeboard and increase the flooding risk to adjoining communities. Example problem locations include the Rincon and Placitas arroyos, Tonuco drain, Montoya drain and upstream of Leasburg and Mesilla diversion dams. The efficiency of water deliveries to downstream U.S. stakeholders such as the Elephant Butte Irrigation District (EBID) and El Paso County Water Improvement District No. 1 (EPCWID), and Mexico may also be impacted. The irrigation districts have noted increased seepage of irrigation water released from the upstream Caballo reservoir resulting in decreased surface flow available downstream in the ongoing drought years, especially in 2013 and 2014.

Therefore, this SOW is intended to provide solutions to the issues presented above. USIBWC is interested in the most efficient method of channel maintenance to continue the USIBWC mission while being environmental-friendly and sustainable to the river corridor and meeting our obligations from the ROD. The results of this study will be incorporated into the USIBWC's updated River Management Plan for the RGCP and be implemented in operations and maintenance of the river corridor.

III. PURPOSE OF THE STUDY

The purpose of the Channel Maintenance Alternatives (CMA) study is to devise effective channel maintenance strategies in order to meet USIBWC goals along the RGCP while also being consistent with the requirements of the ROD. These strategies shall result in channel maintenance operations that improve conveyance and reduce sedimentation problems along the RGCP.

IV. STUDY DESCRIPTION

The CMA study shall have three tasks: (1) Targeted Cross Section Surveys; (2) Hydraulic and Sediment Transport Modeling; and (3) Evaluation of Channel Maintenance Strategies. The objectives of each task within this study are as follows:

- **Task 1 Targeted Cross Section Surveys**. These surveys shall be conducted to represent the existing condition in a problem area. Both pre- and post-project surveys may be required depending upon the location as described in more detail below. Water surface elevations and discharges shall also be recorded. Cross section surveys are anticipated at six (6) Problem Locations along the RGCP.
- **Task 2 Hydraulic and Sediment Transport Modeling**. Localized HEC-RAS hydraulic models shall be developed for the study locations. These models shall be run for the existing condition and in a predictive mode to evaluate the decrease in water surface elevations (WSEL) achieved by **five different CMAs**. **Three of these shall be sediment removal CMAs** and **two shall be non-sediment removal CMAs**. The three sediment removal CMAs include: Channel Excavation Short, Channel Excavation Long, and Sediment Removal at Drain Outlets. The two additional CMAs shall be non-sediment removal and shall be selected by the Contractor. For these two non-sediment removal CMAs, the Contractor shall research solutions applied in similar semi-arid environments

of the American southwest. Sediment transport calculations shall also be performed at these locations in order to understand the deposition and scour patterns.

- **Task 3 Evaluation of Channel Maintenance Strategies**. This task shall analyze hydraulic impacts and provide quantitative measures for the different channel maintenance alternatives. After the implementation of a selected channel maintenance alternative, the measured WSEL values shall be compared to the predicted HEC-RAS WSEL to evaluate the effectiveness of the CMA. The results shall be used to develop/improve upon the CMAs.

The Contractor shall perform the following tasks.

Task 1 – Targeted Cross Section Surveys

The Contractor shall conduct a field reconnaissance at the start of the project. They shall prepare a brief **Field Assessment Report** that includes photos describing the existing condition of the problem areas.

The Contractor shall conduct at least forty-three (43) field cross section surveys to define the existing condition geometry for hydraulic modeling at the following six (6) Problem Locations, described in detail in **Table 1** below. The term '**Pre-Work**' in Table 1 refers to locations where no sediment removal has been conducted recently. In such locations, the Contractor shall survey cross sections as needed. In other locations, the USIBWC has completed sediment removal in 2013. Before this sediment removal, the USIBWC surveyed cross sections at these locations and these cross sections shall be shared with the Contractor. At these locations, the Contractor shall survey cross sections after sediment removal, and these are termed '**Post-Work**' cross sections in Table 1. The channel work refers to the estimated channel excavation from the 2013 Draft River Management Plan. **Appendix A** includes figures of these Problem Locations.

1. Tierra Blanca Creek downstream to Sibley Arroyo (includes vortex weir below Tierra Blanca)
2. Salem Bridge downstream to Placitas Arroyo (includes Hatch Bridge, Thurman Arroyo, and numerous islands)
3. Rincon Siphon A Restoration Site downstream to Rincon Siphon (includes Garcia Arroyo)
4. Rincon Arroyo downstream to Bignell Arroyo (including Reed Arroyo)
5. Hersey Arroyo to 0.8 mile Below Rincon/Tonuco Drain Confluence (includes Horse Canyon Creek)
6. Montoya Drain downstream to American Dam

Minimum cross sections required at each location are listed in **Table 1** and shall include cross sections upstream and downstream of the confluence of each arroyo, as well as at the mouth of the arroyo. The Contractor shall determine if additional cross sections are needed to conduct the analysis in Task 2. Each cross section shall extend at least to elevations above the main channel banks of the Rio Grande. Surveys must be performed by a licensed surveyor.

The Contractor shall discuss the location and orientation of the cross sections to be surveyed

with the USIBWC before the start of the survey.

At each of the six Problem Locations, the Contractor shall measure the discharge and WSEL at one cross section. In locations with tributaries, the flow shall be measured downstream of the tributaries.

The coordinates of the surveyed cross sections shall be noted in latitude and longitude as well as in Northing and Easting. Elevations shall be referenced to the North American Vertical Datum (NAVD) of 1988. The information collection shall be easily displayed in ArcGIS. Monumentation shall be established at the ends of the cross sections to ensure that cross sections surveys can be repeated in future years along the previously surveyed alignment. Cross sections shall be surveyed in low flow conditions.

Table 1: Problem Locations and Survey Cross Sections (XS)

Problem Location	Representation	Project Sub-Area	Problem Area Minimum Length (miles)	Minimum Required XS	Condition Represented	Additional XS Provided by USIBWC	Channel Work (Cubic Yards)
1	VORTEX WEIR	Tierra Blanca Creek downstream to Sibley Arroyo (includes vortex weir below Tierra Blanca)	1.7	7	Pre-Work	None	20,000
2	ARROYOS AND ISLANDS	Salem Bridge downstream to Placitas Arroyo (includes Hatch Bridge, Thurman Arroyo, and numerous islands)	3.3	9	Placitas Arroyo Post Work, Rest Pre-Work	4 Placitas Arroyo Pre-Work 2013 XS	53,000
3	RESTORATION SITES AND SIPHON	Rincon Siphon A Restoration Site downstream to Rincon Siphon (Includes Garcia Arroyo)	0.5	5	Post Work	None	14,000
4	ARROYOS AND ISLANDS	Rincon Arroyo downstream to Bignell Arroyo (including Reed Arroyo)	2.9	9	Rincon Arroyo - Post Work; Reed and Bignell Arroyo - Pre Work	Rincon Arroyo Pre-Work 2013 XS	48,000
5	DRAIN AND MOUTH OF SELDON CANYON	Hersey Arroyo to 0.8 mi Below Rincon/Tonuco Drain Confluence (includes Horse Canyon Creek)	1.9	5	Pre-Work	None	33,000
6	DRAIN	Montoya Drain downstream to American Dam	2.2	8	Post Work	Pre-Work 2013 XS	55,600
		Total	12.5	43			

Task 2 – Hydraulic and Sediment Transport Modeling

The RGCP channel has a conveyance capacity that ranges between 2,500 cfs to 3,000 cfs in the Upper Rincon Valley to less than 2000 cfs in the Lower Mesilla and El Paso Valleys (USIBWC, 2001). The average annual spring hydrograph is about 2,350 cfs in the upper reach and about 1,400 cfs in the lower reach. Bankfull discharge ranges between 2,500 cfs and 3,500 cfs. Annual average irrigation flow is 2,500 cfs.

The latest version of the USACE HEC-RAS software (currently version 4.1.0) shall be used for the modeling. All models shall be analyzed for the following discharges:

- 2,350 cfs in the upper reach or 1,400 cfs in the lower reach
- 3,000 cfs

- 3,500 cfs
- 100-year 24-hour storm event

The Contractor shall perform the following modeling activities. The various modeling scenarios are summarized in **Table 2**.

For the channel excavation alternatives, the volume of excavation shall be calculated and documented. This modeling shall also attempt to answer review comments of previous modeling studies if they can be addressed within the Scope of Work of this study.

2.1. The Contractor shall evaluate the effects of sediment build up at the six Problem Locations on WSEL values using the hydraulic model of the entire reach of the RGCP.

> 2.1.a The Contractor shall obtain the HEC-RAS **Base Model (BM)** from the USIBWC. This model is based on the survey cross sections of 2004 and the LiDAR data of 2005. The Base Model shall be run using the discharge variations provided in the model with the current version of HEC-RAS to obtain the WSEL values.
>
> 2.1.b The Contractor shall update the **Base Model** with survey cross sections collected in Task 1 for each of the six Problem Locations and any additional cross sections provided by the USIBWC from their survey of 2013. This **Base Model Updated (BMU)** shall be run using the discharge variations provided in the model to obtain the WSEL values. Using the results from the BM and BMU models, WSEL comparisons shall be made at each of the six Problem Locations and documented. Because of sediment deposition in the six Problem Locations, this analysis may show elevated WSEL values with the **Base Model Updated** as compared to the **Base Model**.

2.2. The Contractor shall also develop new localized HEC-RAS models for each of the six Problem Locations using the newly surveyed cross sections, surveyed cross sections from 2013 and cross sections from the **Base Model**. The Contractor shall determine a reasonable length for each localized model that shall be long enough to conduct a hydraulic analysis to determine WSEL values and evaluate sediment transport. If additional cross sections are required in order to have shorter reach lengths, they shall be obtained from the LiDAR 2010 data. The LiDAR data shall also be useful to extend the survey cross sections to a higher elevation on either bank for containing the 100-year 24-hour flow. In such cases the main channel geometry shall be interpolated from adjacent cross sections. The Contractor shall conduct hydraulic modeling to determine water surface elevations at the six Problem Locations for the following scenarios (**Table 2**):

> 2.2.a. Localized Base Models – Each of the localized models with the Base Model cross sections updated with surveyed cross sections and any additional LiDAR cross sections shall be run for the various discharges listed above to obtain the WSEL values. These models are termed **L1Base**, **L2Base**, **L3Base**, **L4Base, L5Base** and **L6Base** for the six Problem Locations, respectively.
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> 2.2.b. CMA Models – For a Problem Location, the Contractor shall include HEC-RAS

plans for the five CMAs in the localized base model. For example, for Problem Location 1, the CMA models are termed **L1CMA1**, **L1CMA2**, **L1CMA3**, **L1CMA4** and **L1CMA5** as shown in **Table 2**.

The **five CMAs** are as listed below.

Three Sediment Removal CMAs include:

Channel Excavation Short
Channel Excavation Long
Sediment Removal at Drain Outlets

Two Non-Sediment Removal CMAs shall be selected by the Contractor.

For these two additional CMAs, the Contractor shall research solutions applied in similar semi-arid environments of the American southwest. These additional CMAs may include, but are not limited to: V-weir (or V-weir enhancements); embayments; inset floodplains, terraces or overbank lowering; bank destabilization; revetments or toe revetment plantings; oxbow re-establishment; channel realignment; native material bank stabilization; groins or bendway weirs; training dikes; removal or movement of lateral confinements; creation of constructed wetlands.

It is important to note that the Contractor may select different CMAs for each of the six Problem Locations to address different issues at each particular location.

For each CMA, the model plan shall be run for the various discharges to obtain the WSEL values. Similarly, the modeling is repeated for all other Problem Locations. **If the option chosen by the Contractor for CMA4 or CMA5 at a Problem Locations is not amenable for hydraulic modeling, a HEC-RAS model for that scenario need not be developed.**

2.2.c. The Contractor shall compare WSEL values between each localized base model and the corresponding CMA models. This comparison shall be made for all the six Problem Locations and for all the discharges.

Table 2: Modeling Scenarios

MODELS	Notation					
RGCP Models						
Base Model	BM					
Base Model + Updated Survey XS (all 5 Problem Locations)	BMU					
Localized Models						
	Problem Location					
	1	2	3	4	5	6
Localized Base	L1BASE	L2BASE	L3BASE	L4BASE	L5BASE	L6BASE
Localized Base + CMA 1	L1CMA1	L2CMA1	L3CMA1	L4CMA1	L5CMA1	L6CMA1
Localized Base + CMA 2	L1CMA2	L2CMA2	L3CMA2	L4CMA2	L5CMA2	L6CMA2
Localized Base + CMA 3	L1CMA3	L2CMA3	L3CMA3	L4CMA3	L5CMA3	L6CMA3
Localized Base + CMA 4	L1CMA4	L2CMA4	L3CMA4	L4CMA4	L5CMA4	L6CMA4
Localized Base + CMA 5	L1CMA5	L2CMA5	L3CMA5	L4CMA5	L5CMA5	L6CMA5

2.3 The Contractor shall conduct sediment transport analysis using the localized HEC-RAS models to study sediment aggradation and degradation patterns at the six Problem Locations. The sediment transport analysis is not required for the full RGCP reach. The sediment transport modeling shall analyze: (1) normal operations 2,350 cfs for upper reach and 1,400 for lower reach and (2) the 100-year 24-hour storm event. **At each Problem Location, the sediment transport analysis shall analyze both the localized base and the CMA conditions.** The Contractor shall make suitable assumptions for the sediment transport analysis regarding quasi-unsteady flow with the peak discharges stated above, soil properties, upstream sediment inflow and other required data. Data and hydrographs from previous studies shall be consulted as well as any available geotechnical information. The data sources and justification for adopting the data used shall be documented.

Task 3 – Evaluation of Channel Maintenance Strategies

The Contractor shall evaluate the CMAs at each of the six Problem Locations by comparing the following:

(1) Reduction in WSEL achieved;
(2) Reduction in sediment load;
(3) Durability of the solution;
(4) Improvement in irrigation drain return flow;
(5) Implementation Consequences (such as potential impacts to levee freeboard; potential impacts to bank erosion as inferred from horizontal variation of cross section velocities in base vs CMA models; estimated effect on local groundwater levels); and
(6) Estimated Cost.

The durability refers to the length of time before the CMA is rendered ineffective as, for example, a graded channel becoming filled with sediment. The effect on local groundwater level refers to the potential for reduction or increase of these levels using a particular CMA in a Problem Location. A reduction is desirable where irrigation return flow has been restricted by accumulated sediment resulting in water logged conditions on surrounding farmland. In other locations where restoration is intended, an increase in groundwater levels would be a desirable outcome from a CMA.

If the option chosen by the Contractor for CMA4 or CMA5 at a Problem Locations is not amenable for hydraulic modeling, the Contractor shall use suitable criteria for assessing its preference as compared to the other CMA options, which are evaluated based on the above list.

The two best CMAs shall be recommended for each of the six Problem Locations. The justification for selecting these two CMAs shall be explained in detail. All results of the evaluation process shall be clearly presented in tables and figures.

Based on the sediment transport analysis for a particular Problem Location, the geomorphic trends of importance to river maintenance, such as sediment aggradation and degradation patterns shall be described. Also, relevant factors being addressed by the two selected CMAs for the Problem Location such as channel narrowing, vegetation encroachment, incision or channel bed degradation, increased bank height, bank erosion, channel plugging with sediment, and perched channel conditions shall be described qualitatively.

V. DELIVERABLES

The Contractor shall deliver the following items to the USIBWC's Headquarters Office, which is located at 4171 N. Mesa, Suite C-100 in El Paso, TX:

All submittals shall be digital except the final report which shall be hard copies plus digital.

- Field Assessment Report
- Cross Sections (minimum of 43) in hard copy and digital form
- Updated hydraulic models and six (6) Problem Location models
- 30%, 60% and 90% drafts of the project report for USIBWC review (See Section VII)
- Six (6) hard copies of the final project report. The report shall ideally not exceed 100 pages. Additional material can be included in DVDs. The report shall include:
    - an Executive Summary,
    - a detailed description of the sources of data used,
    - assumptions made,
    - analyses conducted, and
    - results with tables and figures, discussion, recommendations on best two CMAs to be adopted at each of the six (6) Problem Locations.
    - Based on the results of the analysis, the Contractor shall also provide

recommendations on continued data collection and additional CMAs that can be considered in future studies.

- Photos of the Problem Locations with clear descriptions of site features shall be included. Each HEC-RAS model output shall include at a minimum, the model name, profile plot, Standard Table 1 and cross section plots. Similarly, detailed output shall be included for the sediment transport models. Each report shall ideally not exceed 100 pages. Additional material can be included in DVDs.
- The report shall include a DVD with digital copies of the models, calculations, CAD and ArcGIS files, and also a pdf file of the entire project report and appendices. A DVD Readme file shall be included both in the report and in the DVD providing a description of the DVD contents.

VI. ADMINISTRATIVE WORK REQUIREMENTS

a. The Contractor shall attend a project kickoff meeting with USIBWC. The date and time of the meeting shall be scheduled with the USIBWC's Contracting Officer (CO). The Contractor shall prepare an agenda and minutes of the kickoff meeting.

b. The Contractor shall prepare a project schedule for presentation and discussion at the kickoff meeting. The Contractor shall update and present the schedule monthly, and as needed throughout the duration of the project.

c. The Contractor shall prepare and submit to the USIBWC a biweekly update report on work performed. The report shall include major accomplishments for the reported period, significant problems and proposed solutions, and any issues with contractual requirements. The report, along with an updated schedule, shall be submitted by e-mail no later than the sixth day and the twentieth day of the following month.

d. The Contractor shall submit the draft minutes of all meetings and conference calls to the USIBWC within three (3) calendar days after the day of the meeting. The USIBWC will provide comments within three (3) calendar days of receipt of the draft minutes. The Contractor shall address the comments and submit the final minutes to the USIBWC within three (3) calendar days after receipt of USIBWC's comments.

e. The Contractor shall make a presentation on the results and findings from the study after the 90% report at a venue to be determined by the USIBWC.

VII. PERIOD OF PERFORMANCE AND DELIVERABLE DEADLINES

a. The Contractor shall schedule a kick-off meeting within fourteen (14) days of the Date of Award (DOA).

b. The Contractor shall submit the Field Assessment Report thirty (30) calendar days after the DOA.

c. The Contractor shall complete the survey and submit the survey data with map(s) showing locations of survey points and figures with cross section plots within sixty (60) calendar days from DOA.

d. The Contractor shall submit the 30% progress report seventy five (75) calendar days from DOA. This submittal shall include the RGCP models – base model and base model with updated survey cross section – listed in Table 2. The submittal shall also include a description of the proposed CMAs for the six (6) Problem Locations. The USIBWC will provide comments within fourteen (14) calendar days of receipt of these deliverables. If there are comments that the Contractor does not concur with, then the Contractor shall inform the USIBWC within seven (7) calendar days after receipt of comments.

e. The Contractor shall submit the 60% progress report one hundred and thirty five (135) calendar days from DOA. This submittal shall include all the hydraulic modeling listed in Table 2 with a descriptive report. The report shall also include a discussion on the WSEL differences between the base model and the respective CMAs for each of the six (6) Problem Locations. The submittal shall include responses to previous review comments. The USIBWC will provide comments within fourteen (14) calendar days of receipt of these deliverables. If there are comments that the Contractor does not concur with, then the Contractor shall inform the USIBWC within seven (7) calendar days after receipt of comments.

f. The Contractor shall submit the 90% progress report two hundred and ten (210) calendar days from DOA. This submittal shall include all the sediment transport modeling with a descriptive report. The report shall also include the calculation of sediment volume differences between the CMAs, a review of the CMAs and recommendations for the two best CMAs for each of the six (6) Problem Locations. The submittal shall include responses to previous review comments. The USIBWC will provide comments within fourteen (14) calendar days of receipt of these deliverables. If there are comments that the Contractor does not concur with, then the Contractor shall inform the USIBWC within seven (7) calendar days after receipt of comments.

g. The Contractor shall incorporate USIBWC's comments and submit the Final Report and project material (report, drawings, digital models) to the Government within fifteen (15) calendar days from the receipt of USIBWC comments or two hundred and forty five (245) days from the DOA. The final deliverables shall include the Contractor's responses to all previous review comments. If the Contractor does not concur with any of USIBWC's comments, then the Contractor shall notify the CO and COR of the issue prior to submission of the final deliverables. Concurrence on all issues must be reached between the USIBWC and the Contractor prior to the submission of final deliverables.

VIII. INFORMATION PROVIDED BY THE USIBWC (the Government)

The USIBWC will provide the following existing project documents or data to the Contractor:

a. Previous relevant reports and models of the RGCP. Some of these reports can be located at http://www.ibwc.gov/EMD/Project_Documentation.html

b. 2010 LiDAR data.

c. Problem Locations in ArcGIS and/or Google Earth.

d. Some cross section surveys as noted in Table 1.

All of the documents provided to the Contractor are/will remain property of the USIBWC and shall be returned at the end of the project. Information provided by the USIBWC in the form of reports or data cannot be used for work outside of the current scope without written consent of the USIBWC.

IX. QUALITY ASSURANCE

The Contractor performance and deliverables shall be subject to review by USIBWC technical staff and management to ensure adequacy, accuracy, and completeness. If project performance and deliverables do not meet the USIBWC acceptance criteria, the USIBWC reserves the right to issue corrective action to remedy the deficiencies. Corrective action may include withholding of payment and denial of schedule modifications until project deliverables are met. The USIBWC acceptance criteria includes: degree of technical accuracy & coverage of subject; timeliness of scheduled deliverables; completeness; legibility; punctuation and grammar; in requested format; adequate number of copies. In limited circumstances the USIBWC may request that advance copies of specific sections of the field reports or survey reports be provided for review prior to completion of the full deliverable.

X. PAYMENTS & INVOICING

Payment shall be made consistent with contract clause 52.232-10 Payments under Fixed-Price Architect-Engineer Contracts. The Contractor shall submit monthly invoices with supporting documentation for amount of payment requested. Electronic invoices shall be emailed to the USIBWC's Financial Services Division at invoices@ibwc.gov with a copy to the Contracting Officer's Representative and the Contracting Officer.

XI. REFERENCES

Parsons, "2004 River Management Plan, Rio Grande Canalization Project", Prepared for USIBWC, 2004. http://www.ibwc.gov/Files/Final_RMP_May2004.pdf

U. S. Army Corps of Engineers, *Baseline Report Rio Grande – Caballo Dam to American Dam*

FLO-2D Modeling, New Mexico and Texas, Prepared by the U. S. Army Corps of Engineers, Albuquerque District, Mussetter Engineering, Inc., Fort Collins, Colorado and Riado Engineering, Inc., Nutruiso, Arizona. Prepared for the United States Section, International Boundary and Water Commission (USIBWC), September 4, 2007.

U. S. Army Corps of Engineers, *Conceptual Restoration Plan and Cumulative Effects Analysis, Rio Grande – Caballo Dam to American Dam, New Mexico and Texas*, Prepared by the U. S. Army Corps of Engineers, Albuquerque District, Mussetter Engineering, Inc., Fort Collins, Colorado and Riado Engineering, Inc., Nutruiso, Arizona. Prepared for the United States Section, International Boundary and Water Commission (USIBWC), March 15, 2009.

U. S. Army Corps of Engineers, *River Analysis System, User's Manual, Version 4.1*, Hydrologic Engineering Center, Davis, California, January, 2010.

USIBWC, "Record of Decision – River Management Alternatives for the Rio Grande Canalization Project." , 2009. http://www.ibwc.gov/EMD/CanalizationWebpage/ROD_EIS%20June2009.pdf.

Appendix A

STATEMENT OF WORK ADDENDUM FOR IBM14T0016: CHANNEL MAINTENANCE ALTERNATIVES (CMA) AND SEDIMENT TRANSPORT STUDIES FOR THE RIO GRANDE CANALIZATION PROJECT ADDITION OF MESILLA DAM, VINTON, & COUNTRY CLUB PROBLEM AREAS NOVEMBER 2014

I. SUMMARY

This Statement of Work (SOW) addendum proposes to add three (3) additional Problem Locations, Picacho Drain to downstream of Mesilla Dam, East Drain to downstream of Vinton Bridge, and Upstream of Country Club to NeMexas Siphon to the task order IBM14T0016 to evaluate channel maintenance options for the Rio Grande Canalization Project (RGCP) in Sierra and Doña Ana Counties, New Mexico and El Paso County, Texas. The Contractor shall conduct hydraulic and sediment transport modeling and evaluate channel maintenance strategies for the additional Problem Locations. The following SOW addendum represents work that the Contractor is responsible for *in addition to* the original SOW.

II. BACKGROUND

Upstream and downstream of Mesilla Dam, and the Anthony to Vinton Bridge, and the Country Club Bridge are areas of the Rio Grande Canalization Project which usually accumulate sediment at a fast rate. The USIBWC would historically excavate tens of thousands of cubic yards every few years; however, after the signing of the Record of Decision (ROD) in 2009, the USIBWC decreased the frequency of sediment excavation.

In 2013, the Elephant Butte Irrigation District (EBID) met with USIBWC to discuss sediment issues at Mesilla dam, because accumulated sediment in the riverbed was entering the Eastside and Westside Main Canals, and the irrigation districts were incurring additional costs to maintain their infrastructure, as well as impeding with the operation of the Mesilla dam. The area is now one of the priority areas for channel maintenance in USIBWC's draft Channel Maintenance Plan.

In 2013, the EBID proposed that the USIBWC implement specific sediment management infrastructure alternatives for the dam and its canals that would help alleviate sediment issues plaguing the area, reduce annual sediment removal costs for both the Government and the irrigation districts, increase efficiency of deliveries, and assist the USIBWC to meet channel maintenance alternative goals outlined in the ROD. The EBID submitted a proposal to the USIBWC in July 2014, portions of which are attached in Appendix A. USIBWC is interested in analyzing the proposed infrastructure at Mesilla Dam to determine its feasibility and effectiveness in comparison to typical mechanical sediment removal or other channel maintenance alternatives.

In 2014, both irrigation districts also expressed concern about the East Drain and Country Club areas.

In 2014, both the El Paso County Water Improvement District #1 (EP#1) and EBID expressed concern over the area upstream of the East Drain to the Vinton Bridge area and the Country Club area, the latter of which is a priority area in the USIBWC draft Channel Maintenance Plan. The East Drain area is known to accumulate sediment and is an area prone to flooding as major arroyos enter the area. The Country Club area does not have any arroyo or drain inputs, but is also an area with sediment accumulation. Furthermore, the sediment accumulation introduced by upstream alternatives may affect levee freeboard which in turn may disqualify the levee FEMA certification. The USIBWC is interested in evaluating channel maintenance options for these areas as stated in the original SOW.

III. STUDY DESCRIPTION

The original CMA study has three tasks: (1) Targeted Cross Section Surveys; (2) Hydraulic and Sediment Transport Modeling; and (3) Evaluation of Channel Maintenance Strategies. This SOW modification, however, will only require Tasks 2 and 3, the objectives of each task within this study are as follows:

- **Task 1 Targeted Cross Section Surveys**. Surveys for Picacho Drain to downstream of Mesilla Dam, East Drain to downstream of Vinton Bridge, and Upstream of Country Club to NeMexas Siphon Problem Areas will be conducted by the USIBWC and provided to Tetra Tech.
- **Task 2 Hydraulic and Sediment Transport Modeling**. Localized HEC-RAS hydraulic models shall be developed for the study locations. These models shall be run for the existing condition and in a predictive mode to evaluate the water surface elevations (WSEL) achieved by **five different CMAs**.
    - For the Picacho Drain to downstream of Mesilla Dam Problem Area, two **of these shall be sediment removal CMAs** and **three shall be non-sediment removal CMAs**. The two sediment removal CMAs include: Channel Excavation Short and Channel Excavation Long. The three additional CMAs shall be non-sediment removal; two of these are provided and the third shall be selected by the Contractor. The first two non-sediment CMAs include 1) installation of automatic gate controllers on the dam and 2) construction of sluiceways in the irrigation infrastructure and are described in detail in 2.2.b. For the last non-sediment removal CMAs, the Contractor shall research solutions applied in similar semi-arid environments of the American southwest. Sediment transport calculations shall also be performed at these locations in order to understand the deposition and scour patterns.
    - For the East Drain to downstream of Vinton Bridge and Upstream of Country Club to NeMexas Siphon Problem Areas, three **of these shall be sediment removal CMAs** and **two shall be non-sediment removal CMAs**. The three sediment removal CMAs include: Channel Excavation Short, Channel Excavation Long and sediment removal at drain outlets, or sediment removal at Country Club Bridge for the Country Club problem Area. The two additional CMAs shall be non-sediment removal. The non-sediment removal CMAs, the Contractor shall research solutions applied in similar semi-arid environments of the American southwest. Sediment

transport calculations shall also be performed at these locations in order to understand the deposition and scour patterns.

- **Task 3 Evaluation of Channel Maintenance Strategies**. This task shall analyze hydraulic impacts and provide quantitative measures for the different channel maintenance alternatives. After the implementation of a selected channel maintenance alternative, the measured WSEL values shall be compared to the predicted HEC-RAS WSEL to evaluate the effectiveness of the CMA. The results shall be used to develop/improve upon the CMAs.

Task 1 – Targeted Cross Section Surveys

The Problem Area #7, Picacho Drain to downstream of Mesilla Dam, is discussed in Table 1b and shown in Figure 1. The USIBWC will conduct cross sections upstream and downstream of Mesilla Dam and approximately a third of a mile into the East and West Canals, as displayed Table 1b and will provide those to Tetra Tech for inputs to the Task 2 and Task 3 modeling. The term '**Pre-Work**' in Table 1b refers to locations where no sediment removal has been conducted recently. The Contractor shall determine if additional cross sections are needed to conduct the analysis in Task 2, and those shall be extracted from available Lidar data.

The Problem Area #8, East Drain to downstream of Vinton Bridge, and Problem Area #9, Upstream of Country Club Bridget to NeMexas Siphon, are discussed in Table 1b and shown in Figures 2 and 3, respectively. The USIBWC will conduct cross section surveys as stated in Table 1b and provide those to Tetra Tech for inputs to the Task 2 and Task 3 modeling. The term '**Pre-Work**' in Table 1b refers to locations where no sediment removal has been conducted recently. The Contractor shall determine if additional cross sections are needed to conduct the analysis in Task 2, and those shall be extracted from available Lidar data.

A field assessment is not required.

Table 1b: Problem Location and Survey Cross Sections (XS)

Problem Location	Representation	Project Sub-Area	Problem Area Minimum Length (miles)	USIBWC XS	Condition Represented	Channel Work (Cubic Yards)
7	DRAIN, CANALSAND DAM	Picacho Drain to D/S Mesilla Dam	2.4	34	Pre Work	58,333
8	DRAIN AND ARROYO	East Drain to D/S Vinton Bridge	1.8	12	Pre Work	N/A
9	No Inputs, Bridge,	Upstream of Country	1.5	11	Pre Work	Rip Rap 800 linear

	Populated Area, Levee Encroachments	Club Bridge to NeMexas Siphon				feet

Figure 1. Picacho Drain to Downstream of Mesilla Dam Problem Area

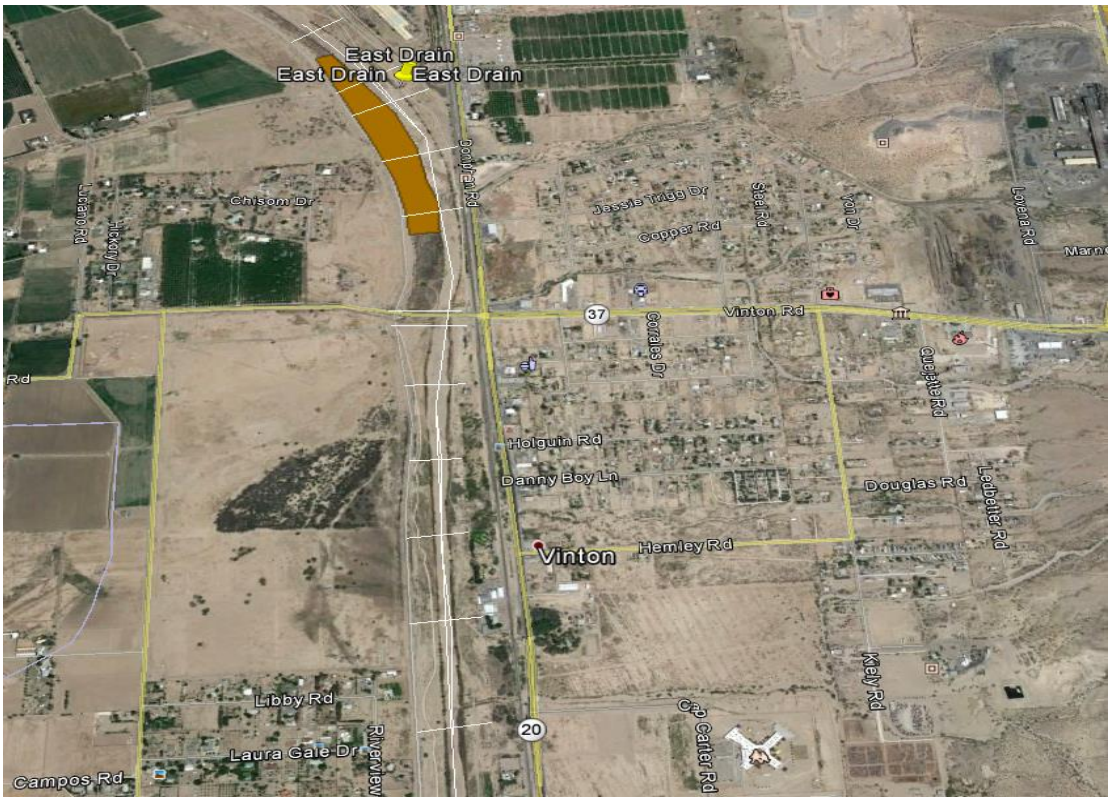

Figure 2. East Drain to Downstream of Vinton Bridge Problem Area

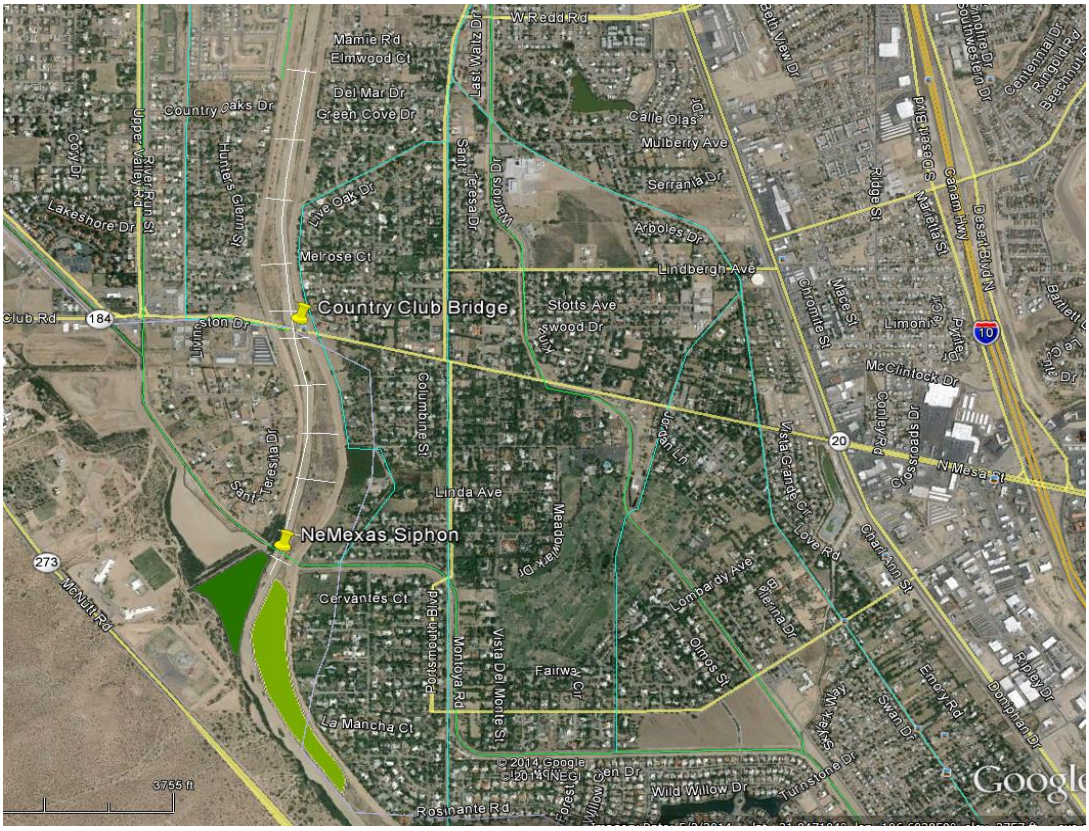

Figure 3. Upstream of Country Club Bridge to NeMexas Siphon Problem Area

The Contractor shall perform the following tasks:

Task 2 – Hydraulic and Sediment Transport Modeling

The RGCP channel has a conveyance capacity that ranges between 2,500 cfs to 3,000 cfs in the Upper Rincon Valley to less than 2000 cfs in the Lower Mesilla and El Paso Valleys (USIBWC, 2001). The average annual spring hydrograph is about 2,350 cfs in the upper reach and about 1,400 cfs in the lower reach. Bankfull discharge ranges between 2,500 cfs and 3,500 cfs. Annual average irrigation flow is 2,500 cfs.

The latest version of the USACE HEC-RAS software (currently version 4.1.0) shall be used for the modeling, similar to the models for the original SOW. All models shall be analyzed for the following discharges:

- 2,350 cfs in the upper reach or 1,400 cfs in the lower reach
- 3,000 cfs
- 3,500 cfs
- 100-year 24-hour storm event

The Contractor shall perform the following modeling activities. The various modeling scenarios

are summarized in **Table 2b**.

For the channel excavation alternatives, the volume of excavation shall be calculated and documented. This modeling shall also attempt to answer review comments of previous modeling (USACE, 2009) studies if they can be addressed within the Scope of Work of this study.

2.1. This task is the same as the original SOW for the additional Problem Locations.

2.1.a This task is the same as the original SOW for the additional Problem Locations.

2.1.b This task is the same as the original SOW for the additional Problem Locations.

2.2. This task is the same as the original SOW for the additional Problem Locations. The Contractor shall conduct hydraulic modeling to determine water surface elevations at the additional Problem Locations for the following scenarios (**Table 2b**):

2.2.a. This task is the same as the original SOW for the additional Problem Locations.

2.2.b. CMA Models – For a Problem Location, the Contractor shall include HEC-RAS plans for the five CMAs in the localized base model. For example, for Problem Location 1, the CMA models are termed **L7CMA1**, **L7CMA2**, **L7CMA3**, **L7CMA4** and **L7CMA5** as shown in **Table 2b**. The CMAs for the Mesilla Dam area Problem Location have been modified from the original SOW.

The **five CMAs for Mesilla Dam area** are as listed below.

Two Sediment Removal CMAs include:

1) Channel Excavation Short
2) Channel Excavation Long

Three Non-Sediment Removal CMAs:

3) Sluice structures on Westside and Eastside Main Canals
   Installation of new check structures downstream of the headings of the EBID Westside and Eastside Main Canals to reduce the sediment load into the main canals by actively ejecting sediment immediately upstream of the checks. See pages 6-12 (and Appendix 3) of **Appendix A** for conceptual information.
4) Mesilla Dam Gate Automation – Gates 5 and 9 numbered from east to west, are proposed to have automated functions similarly to gates 2 and 12. Installation of automatic control operations on two dam gates to better distribute the sluicing and sediment transport past the dam. See pages 17-18 of **Appendix A** for conceptual information.
5) A CMA selected by the Contractor.
   For this last CMA, the Contractor shall research solutions applied in similar semi-arid environments of the American southwest. This CMAs may include, but is not limited to: V-weir (or V-weir enhancements); embayments; inset floodplains,

terraces or overbank lowering; bank destabilization; revetments or toe revetment plantings; oxbow re-establishment; channel realignment; native material bank stabilization; groins or bendway weirs; training dikes; removal or movement of lateral confinements; creation of constructed wetlands.

For the Mesilla Dam hydraulic model, it is anticipated that a looped system will be developed to model flow and sediment transport. The HEC-RAS software has the capability to model looped systems. This looped system will have a Rio Grande central branch and two side branches for the east and west irrigation canals. At the proposed sluice gate, the flow from each irrigation canal will be brought back into the Rio Grande. If numerical instabilities are encountered during the modeling of either flow or sediment transport, then reasonable simplifications can be made to the modeling. This may include, for example, modeling the Rio Grande flow together with the west irrigation canal flow. And then repeating the same for the east irrigation canal. Regardless of the modeling procedure followed, the hydrographs generated at the various locations including in the irrigation canals shall be reasonable and reflect what is observed to occur. The sediment deposition in the irrigation canals shall also reflect what is observed to occur.

The **five CMAs for Problem Areas #8 and #9** are as listed below.

Three Sediment Removal CMAs include:

1) Channel Excavation Short
2) Channel Excavation Long
3) Excavation at East Drain outlet, or at Country Club Bridge

Two Non-Sediment Removal CMAs:

4) For the Country Club Area, the Contractor will evaluate the installation of Rip Rap (estimated minimum linear footage of 800 feet) to protect levee encroachment from the river in narrow floodplain areas.
5) For the East Drain area, the Contractor shall select two CMAs, and for the Country Club Area, the Contractor will select the last CMA.
   The Contractor shall research solutions applied in similar semi-arid environments of the American southwest. This CMAs may include, but is not limited to: V-weir (or V-weir enhancements); embayments; inset floodplains, terraces or overbank lowering; bank destabilization; revetments or toe revetment plantings; oxbow re-establishment; channel realignment; native material bank stabilization; groins or bendway weirs; training dikes; removal or movement of lateral confinements; creation of constructed wetlands.

It is important to note that the Contractor may select different CMAs for each of the Problem Locations to address different issues at each particular location.

For each of the three (3) Problem Locations, for each CMA, the model plan shall be run for the various discharges to obtain the WSEL values. **If the option chosen by the**

Contractor for non-sediment CMAs at any of the Problem Locations is not amenable for hydraulic modeling with HEC-RAS, a HEC-RAS model for that scenario need not be developed. However, for this Problem Location, a model shall be selected that will assist with quantifying the evaluation in Task 3.

2.2.c. This task is the same as the original SOW for the additional Problem Locations.

Table 2b: Modeling Scenarios

Models	Notation		
RGCP Models			
Base Model	BM		
Base Model + Updated Survey XS (all 5 problem areas)	BMU		
Localized Models			
	Problem Location		
	7	**8**	**9**
Localized Base	L7Base	L8Base	L9Base
Localized Base + CMA 1	L7CMA1	L8CMA1	L9CMA1
Localized Base + CMA 2	L7CMA2	L8CMA2	L9CMA2
Localized Base + CMA 3	L7CMA3	L8CMA3	L9CMA3
Localized Base + CMA 4	L7CMA4	L8CMA4	L9CMA4
Localized Base + CMA 5	L7CMA5	L8CMA5	L9CMA5

2.3 This task is the same as the original SOW for the additional Problem Locations.

Task 3 – Evaluation of Channel Maintenance Strategies

The Contractor shall evaluate the CMAs at the additional Problem Locations by comparing the following (Note there are additional factors for the Mesilla Dam Problem Location than other areas in the original SOW):

(1) Reduction in WSEL achieved;
(2) Reduction in sediment load;
(3) Durability of the solution;
(4) Improvement in irrigation drain return flow;
(5) Implementation Consequences (such as potential impacts to levee freeboard; potential impacts to bank erosion as inferred from horizontal variation of cross section velocities in base vs CMA models; estimated effect on local groundwater levels, downstream effects);
(6) Estimated Cost;

For Mesilla Dam area only:
(7) Reduction of irrigation canal sediment maintenance

(8) Reduction of main channel sediment maintenance

For the Country Club Area only:
(9) Difference in height between the Country Club Bridge and the floodway

The durability refers to the length of time before the CMA is rendered ineffective as, for example, a graded channel becoming filled with sediment. The effect on local groundwater level refers to the potential for reduction or increase of these levels using a particular CMA in a Problem Location. A reduction is desirable where irrigation return flow has been restricted by accumulated sediment resulting in water logged conditions on surrounding farmland. In other locations where restoration is intended, an increase in groundwater levels would be a desirable outcome from a CMA.

If the option chosen by the Contractor for CMA3, CMA4 or CMA5 at a Problem Location is not amenable for HEC-RAS hydraulic modeling, the Contractor shall use suitable criteria or other models for assessing its preference as compared to the other CMA options, which are evaluated based on the above list.

The best CMAs shall be recommended for the Problem Locations. Individual non-sediment CMAs can be evaluated as described in the SOW such as sluice gate structures and gate automation. For example, in the Mesilla Dam area, more than one CMA could be selected to be implemented simultaneously. The justification for selecting the CMAs shall be explained in detail. All results of the evaluation process shall be clearly presented in tables and figures.

Based on the sediment transport analysis for the Problem Locations, the geomorphic trends of importance to river maintenance, such as sediment aggradation and degradation patterns shall be described. Also, relevant factors being addressed by the two selected CMAs for the Problem Locations such as channel narrowing, vegetation encroachment, incision or channel bed degradation, increased bank height, bank erosion, channel plugging with sediment, and perched channel conditions shall be described qualitatively.

V. DELIVERABLES

- The six (6) hard copies of the final project report shall ideally not exceed 140 pages.
- All other deliverables are the same for the original SOW and will incorporate the results of the modeling for additional Problem Locations, #7, #8 and #9.

VI. ADMINISTRATIVE WORK REQUIREMENTS

The administrative work requirements are the same as the original SOW for the additional Problem Locations.

VII. PERIOD OF PERFORMANCE AND DELIVERABLE DEADLINES

Deliverables are the same as the original SOW but must include the three additional Problem Locations. The following deliverables: 30% project report, 60% project report, the 90% project report, and the Final Report, as well as any dependent deliverables, are each extended as follows:

Deliverables	Extension
30% Project Report	45 Calendar Days
60% Project Report	15 Calendar Days
90% Project Report	15 Calendar Days
Final Project Report	15 Calendar Days

The total period of performance is extended 90 calendar days from 245 calendar days to 335 calendar days.

VIII. INFORMATION PROVIDED BY THE USIBWC (the Government)

The USIBWC will provide the following existing project documents or data to the Contractor:

a. EBID proposal for sediment structures

b. Cross section surveys as noted in Table 1b.

All of the documents provided to the Contractor are/will remain property of the USIBWC and shall be returned at the end of the project. Information provided by the USIBWC in the form of reports or data cannot be used for work outside of the current scope without written consent of the USIBWC.

IX. QUALITY ASSURANCE

Quality assurance is the same as the original SOW for the additional Problem Locations.

X. PAYMENTS & INVOICING

Payments and Invoicing is the same as the original SOW for the additional Problem Locations.

Appendix A

EBID Proposal

for Mesilla Dam Sluicing and Automatic Gate Operators

(Problem Location #7 CMAs 4 and 5)

Channel Maintenance Alternatives and Sediment-transport Studies for the Rio Grande Canalization Project:
Final Report

APPENDIX B

Field Assessment Report

October 20, 2015

Contract No. IBM09D0006
Order No. IBM14T0016

Channel Maintenance Alternatives and Sediment-transport Studies for the Rio Grande Canalization Project: Field Assessment Report

Submitted to:

International Boundary and Water Commission, U.S. Section
4171 North Mesa, Suite C-100
El Paso, Texas 79902-1441

Submitted by:

TETRA TECH
3801 Automation Way, Suite 100
Fort Collins, Colorado 80525

January 9, 2015
Updated April 15, 2015

Contract No. IBM09D0006
Order No. IBM14T0016

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1 INTRODUCTION

The United States Section of the International Boundary and Water Commission (USIBWC) is evaluating channel maintenance alternatives for the Rio Grande Canalization Project (RGCP), a narrow river corridor that extends 105.4 miles from Percha Dam at River Mile (RM) 105.4 in Sierra County, New Mexico to American Dam at RM 0 in El Paso, Texas (Parsons, 2004; **Figure 1.1**). The RGCP reach is contained within the Lower Bioregion (Caballo Dam, NM to Candelaria, TX) geomorphic subreach of the Rio Grande (Fullerton and Batts, 2003). The RGCP was constructed between 1938 and 1943 under the authority of an Act of Congress approved June 4, 1936 (49 Stat. 1463), to facilitate compliance with the 1906 convention between the United States and Mexico, and to properly regulate and control, to the fullest extent possible, the water supply for use of the two countries as provided by the treaty (Parsons, 2004). The 1936 Act authorized the construction, operation, and maintenance of the RGCP in agreement with the Engineering Record Plan of December 14, 1935 (Baker, 1943, cited in Parsons, 2003). The five primary USIBWC objectives for the RGCP are (1) flood conveyance and flood protection, (2) channel conveyance reliability, (3) delivery efficiency, (4) compliance with U.S. regulations, and (5) minimizing costs.

Of the many challenges that the USIBWC faces in operating the RGCP, ongoing sediment delivery from the tributary arroyos has historically been among the most significant. Sediment deposition on the alluvial fans can result in sediment plugs, island formation, and aggradation that prevents draining of irrigation return flow that could result in increased water-surface elevations and associated impacts to levee freeboard and flood conditions. The sedimentation may also be affecting the delivery of water to U.S. stakeholders and Mexico. One of the primary requirements of the USIBWC from the 2009 Record of Decision (ROD) involved identification of methods to improve river management through an evaluation of adaptive management strategies aimed at channel maintenance activities and levee protection.

USIBWC retained Tetra Tech, Inc. to perform channel maintenance alternatives and sediment-transport studies of the RGCP. As part of this work, Tetra Tech performed a field reconnaissance of the six representative problem locations as identified in Figure 1.1 and **Table 1.1**. This report presents background information regarding the geomorphic setting of the problem locations and summarizes the findings of the field reconnaissance.

1.1. Project Objectives

This channel maintenance alternatives (CMA) and sediment-transport study is intended to build upon previously developed conceptual restoration plans (USACE, 2009) and river management plans (Parsons, 2004) to specifically address issues associated with sediment delivery from the tributaries (sediment plugs, island formation, raising of the river bed, reduced irrigation drain efficiency, and increased threats to levee freeboard and flooding). These problems occur at the six representative problem locations that are evaluated in this study (Figure 1.1; Table 1.1). Results from the study will provide a suite of alternatives to reduce or minimize these issues, and identify the most efficient, sustainable and environmentally effective methods. Once identified, the alternatives can then be applied to other locations that have similar issues to the problem locations evaluated in this study.

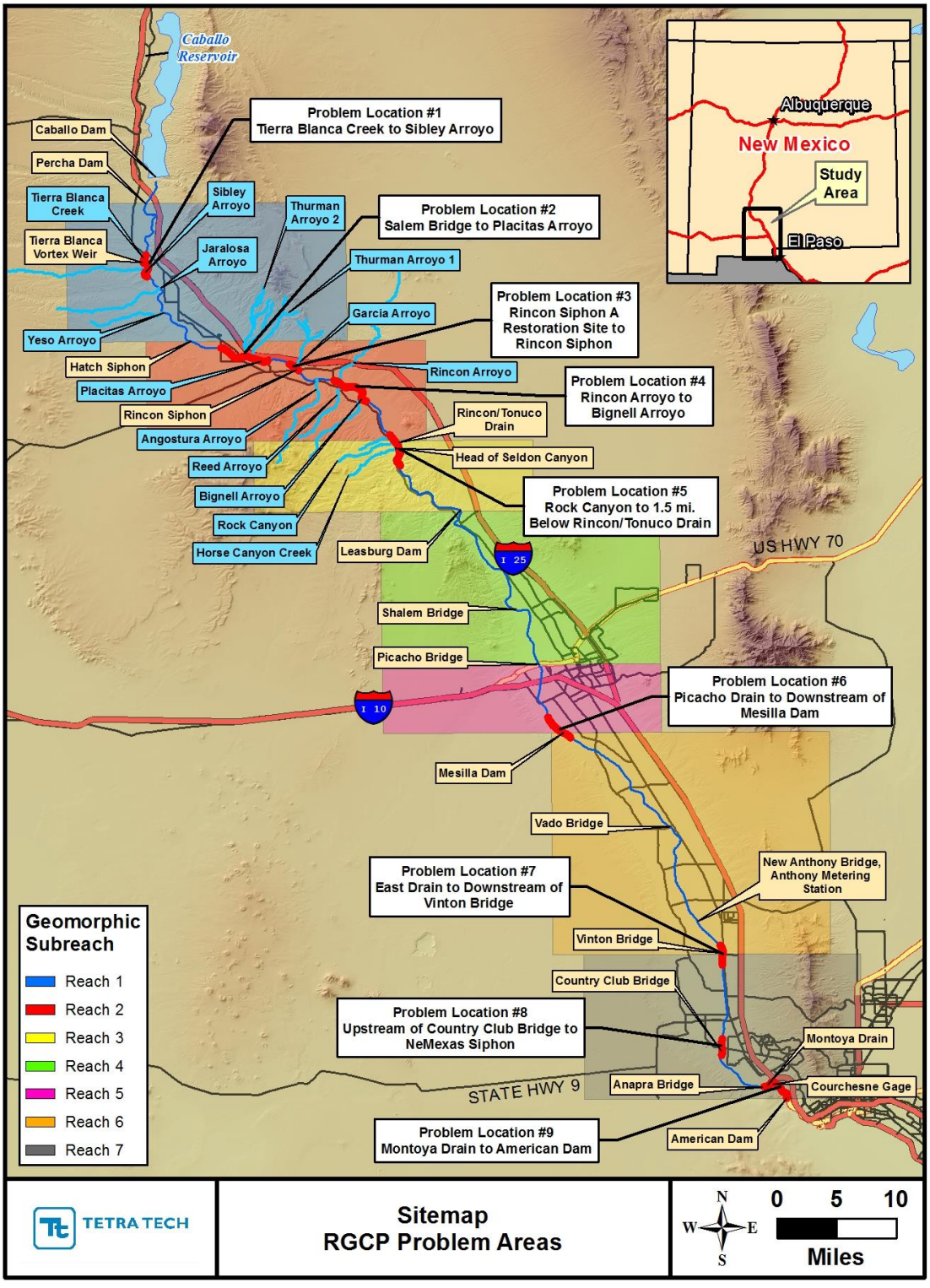

Figure 1.1. Map of the Rio Grande Canalization Project reach showing the locations of the problem locations that are considered in this Channel Maintenance Alternatives and Sediment-transport Studies project. Also shown are the Geomorphic Subreaches that were developed as part of the USACE (2007) study.

Table 1.1. Summary of the six problem locations evaluated in this study.

Problem Location	Identification	Representation	Geomorphic Subreach[1]	D/S Station	U/S Station	RM Range	Length (miles)	Comment
1	Tierra Blanca Creek to Sibley Arroyo	Vortex Weir	1	5168+00	5288+50	97.8 - 100.1	2.3	Includes vortex weir below Tierra Blanca Creek.
2	Salem Bridge to Placitas Arroyo	Arroyos and Islands	2	4459+10	4658+80	84.4 - 88.2	3.8	Includes Hatch Bridge, Thurman Arroyo and numerous islands.
3	Rincon Siphon A Restoration Site to Rincon Siphon	Restoration Sites and Siphon	2	4329+20	4371+40	82 - 82.8	0.8	Includes Garcia Arroyo.
4	Rincon Arroyo to Bignell Arroyo	Arroyos and Islands	2	3986+60	4169+40	75.5 - 79	3.5	Includes Reed Arroyo.
5	Rock Canyon to 1.4 mi below Rincon/Tonuco Drain Confluence	Drain and Mouth of Seldon Canyon	3	3643+50	3798+30	68.9 - 71.8	2.9	Includes Horse Canyon Creek.
6	Montoya Drain to American Dam	Drain	7	0	139+90	0 - 2.7	2.7	Below Anapra Bridge.

[1]From USACE (2007) Study.

1.2. Authorizations

This study of channel maintenance alternatives and sediment-transport along the RGCP was conducted by Tetra Tech, Inc. for the US Section of the International Boundary Commission under Contract No. IBM09D0006, Order No. IBM14T0016. The USIBWC Contracting Officer was Ms. Laura Baker. At the onset of the study, the USIBWC Contracting Officers Representative was Dr. Padinare Unnikrishna, who was replaced by Mr. Dereck O'Hara in October 2014. The USIBWC Alternate Contracting Officers Representative was Ms. Elizabeth Verdecchia. Tetra Tech's Program Manager for this study was Dr. Robert Mussetter, PE, and Tetra Tech's Project Manager was Mr. Stuart Trabant, PE.

1.3. Scope of Work Summary

The scope of work for this study involved three primary tasks, each of which included numerous subtasks, as follows:

Task1. Targeted Cross-section Surveys

- This task involves first performing a field reconnaissance of the six problem locations to assess the existing hydraulic conditions and geomorphic setting of the project reaches and preparation of this field assessment report. As discussed below, sediment sampling was also conducted during the field reconnaissance. This report summarizes the findings from this subtask.
- The next phase of this task involves surveying selected cross sections at each of the problem locations. Discharge measurements will be made at the time of the cross section surveys at each of the six problem locations.

Task 2. Hydraulic and Sediment-transport Modeling. This task involves three subtasks:

- Evaluation of the existing base (HEC-RAS) model of the RGCP (USACE, 2007), and updating the model using information collected during the targeted cross-section surveys. The base model and updated base model will be executed over steady-state discharges representing average annual conditions (2,350 cfs above Mesilla Diversion Dam and 1,400 cfs below the dam), representative bankfull conditions (3,000 and 3,500 cfs) and the 100-year, 24-hour storm event that varies along the reach. Results from this modeling will be used to evaluate the changes in water-surface elevation that have occurred since the base model condition (i.e., since the 2004 to 2007 period).
- Localized base models will then be developed that represent existing conditions at each of the sites. The localized base models will then be adjusted to represent with CMA conditions for five alternatives. Three of the alternatives will be sediment removal alternatives ("Channel Excavation Short", "Channel Excavation Long", and "Sediment Removal at Drain/Arroyo Outlets"). Two non-sediment removal CMAs will also be developed at each of the sites. These models will be executed over the same discharges to evaluate the effects of the CMAs on water-surface elevation.
- Sediment-transport modeling. The localized base and with-alternative HEC-RAS models will be converted to mobile boundary sediment-transport models by first developing representative bed-material gradations using information from the sediment sampling conducted under Task 1 and sediment gradation information from previous studies. Results from this task will provide estimates of the benefits of the CMAs on sediment transport, and can also be used to evaluate the sustainability and durability of the alternatives.

Task 3. Evaluate Channel Maintenance Alternatives

Results from the hydraulic and sediment-transport modeling at each of the six problem locations will be used to evaluate the benefits associated with the five CMAs relative to the base condition. This evaluation requires an assessment of the durability and sustainability of the alternative and preparation of estimated costs for the CMA implementation. Consequences of the CMA actions will also be evaluated with respect to potential impacts on levee freeboard, future bank erosion (to be inferred from changes in hydraulic conditions and increased degradation levels predicted by the sediment-transport models), and groundwater levels. Other benefits that may be evaluated include the potential for reductions to riparian evapotranspiration (ET), decreases to channel seepage, area of habitat restoration, increased flow conveyance for purposes of downstream deliveries, improved hydrologic connectivity to the floodplain, increased hydraulic and aquatic habitat diversity, and general improvements to the overall morphology of the river/tributary system. Other potential consequences that may be evaluated, at least qualitatively, include the potential for channel narrowing, vegetation encroachment, general bed degradation, increased bank heights, channel plugging, and creation of a perched channel condition. This information will be used to assign an overall rank to each of the CMAs, and the two CMAs receiving the highest rank at each problem location will be identified.

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2 GEOMORPHIC SUBREACH DESCRIPTIONS

The overall study reach has been previously divided into three primary subreaches: Upper (above Leasburg Dam), Middle (Leasburg Dam to Mesilla Dam) and Lower (Mesilla Dam to American Dam). The USIBWC further subdivided the RGCP reach using the seven River Management Units (RMUs) that were previously identified for the RGCP by Parsons (2003) as a guide (**Table 2.1**). The major geographic subreach boundaries (Rincon Valley, Selden Canyon and Mesilla Valley), coincide with the geologic structure and lithologic boundaries (Seager et al., 1975; Mack, 1997) which influence the volume and caliber of the arroyo sediment supply to the RGCP. The six problem locations fall within Geomorphic Subreaches 1 through 3 and 7 (Table 1.1). A brief description of these subreaches is provided in the following sections that summarize the geomorphic setting and geologic structure as presented in USACE (2007) to provide overall context for the specific problem locations, followed by a detailed discussion of the problem locations in Section 3.

Table 2.1. Subreach boundaries for the RGCP (from USACE, 2007).

Subreach No.	Subreach Name	Upstream Boundary (RM and Station)	Downstream Boundary (RM and Station)	Subreach Length (mi)	Upstream Location	Downstream Location
1	Upper Rincon	105.4 5576+00	92 4768+00	13.4	Percha Diversion Dam	Hatch Siphon
2	Lower Rincon	92 4768+00	72 3730+00	20	Hatch Siphon	Head of Selden Canyon
3	Selden Canyon	72 3730+00	63 3280+00	9	Head of Selden Canyon	Leasburg Diversion Dam
4	Upper Mesilla	63 3280+00	46.5 2416+00	16.5	Leasburg Diversion Dam	Picacho Bridge
5	Las Cruces	46.5 2416+00	40 2076+00	6.5	Picacho Bridge	Mesilla Diversion Dam
6	Lower Mesilla	40 2076+00	16 832+00	24	Mesilla Diversion Dam	Vinton Bridge
7	El Paso	16 832+00	0 0+00	16	Vinton Bridge	American Diversion Dam

2.1 Geomorphic Subreach 1 (Problem Location 1)

Subreach 1 extends from Percha Dam to the Hatch Siphon, a distance of 13.4 miles. The channel has degraded between 4 and 6 feet since the canalization in 1943 (**Figure 2.1**), and the bed material has coarsened as a result. The bed slope in the subreach is 0.00083 (4.4 ft/mi), and the bankfull capacity of the channel varies from 3,500 cfs to greater than 6,000 cfs. Based on the existing base model of the RGCP (USACE, 2007), at a flow of 5,000 cfs in the subreach, the average channel top width is about 180 feet, the average hydraulic depth is 6.2 feet, and the average velocity is 4 fps. The distance between the levees in the subreach varies from 750 to 800 feet.

The Caballo Mountains and Rincon Hills are the most important sediment source for this reach of the RGCP. The headwaters of the west side arroyos primarily drain areas that are underlain by the Lower Pleistocene-age Upper Santa Fe Group (Camp Rice Fm.) that is composed of unconsolidated to poorly consolidated, erodible, and relatively fine-grained basin-fill sediments. The downstream portions of the arroyos traverse areas underlain by the Lower Santa Fe Group that include conglomeratic sediments with interbedded basalts that produce coarser-grained sediments. The eastside tributaries drain areas underlain by Paleozoic interbedded shales, sandstones and limestones that make up the lower portion of the Caballo Mountains and Rincon Hills, but the east side tributary arroyos also traverse the Camp Rice Fm. basin fill sediments.

2.2 Geomorphic Subreach 2 (Problem Locations 2, 3 and 4)

Subreach 2 extends from the Hatch Siphon to the head of Selden Canyon, a distance of 20 miles. Immediately downstream of the Hatch Siphon, the channel has degraded about 10 feet since 1943 (Figure 2.1). For the remainder of the upper part of the subreach, the degradation reduces from about 6 feet in the upstream end to about 1 foot upstream of the Rincon Siphon. Downstream of the Rincon Siphon, there has been about 9 feet of degradation, but the degradation diminishes in the downstream direction to about 2 feet. Upstream of Bignell Arroyo there has been about 2 feet of aggradation since 1943. Depending on the location within the subreach the bed material varies from sand to gravel. The bed slope in the subreach is 0.00074 (3.9 ft/mi), and the bankfull capacity of the channel varies from 3,500 to 4,500 cfs. At a flow of 4,000 cfs in the subreach, the average channel top width is about 270 feet, the average hydraulic depth is 4.4 feet, and the average velocity is 3 fps. The distance between the levees in the subreach varies from 750 to 800 feet.

The important sediment source areas in the upper portion of Geomorphic Subreach 2 (upstream from Hatch) are the same as those for Subreach 1, so the types of sediment delivered by the east side and west side tributaries are also consistent with the upstream subreach. The headwaters of the more southerly tributaries in the lower Rincon Valley on the west side of the Rio Grande are located within the Sierra de las Uvas Mountains that are underlain by Tertiary-age basaltic andesites and volcaniclastic sedimentary units (Scholle, 2003). These geologic features produce coarse-grained sediments that are ultimately delivered to the RGCP by the tributary arroyos including Placitas, Reed and Bignell Arroyos.

2.3 Geomorphic Subreach 3 (Problem Location 5)

Subreach 3 extends from the head of Selden Canyon to Leasburg Diversion Dam, a distance of 9 miles. There are no comparative thalweg data for this subreach, but under low-flow conditions the bed of the channel is braided and appears to be mildly aggradational. The bed slope in the subreach is 0.00066 (3.5 ft/mi), and the bankfull capacity of the channel varies from 3,500 to 4,500 cfs. At a flow of 4,000 cfs in the subreach, the average channel top width is about 230 feet, the average hydraulic depth is 4.7 feet, and the average velocity is 3.2 fps. There are no RGCP

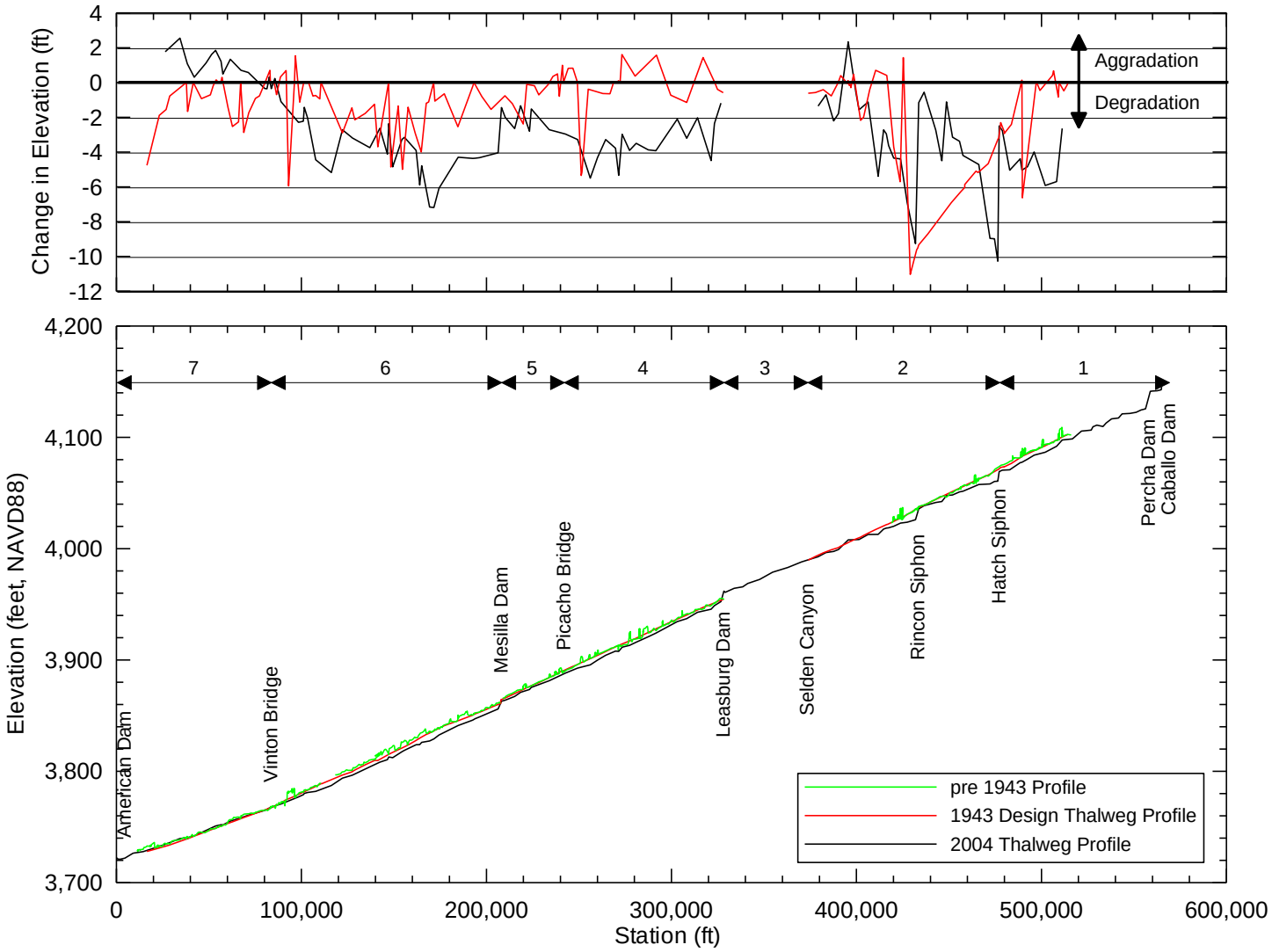


Figure 2.1. Pre-canalization, 1943 design and 2004 thalweg profiles of the RGCP. Also shown are the changes in elevation between the pre-canalization and 1943 profiles (green line) and between the 1943 profile and the 2004 profile (red line) [from USACE (2009)].

levees in the subreach. A large number of arroyos on both the east and west side of the river deliver sediment to the Rio Grande in this subreach. Because of the presence of Highway 185 on the west side of the river through the canyon, many of the west side arroyos have been channelized in the vicinity of the highway. Selden Canyon has formed where the Rio Grande cuts through the eastern portion of the Sierra de las Uvas Mountains. The canyon is bounded by the Tertiary-age basaltic andesites and volcaniclastic sedimentary units and the Lower Santa Fe Group sediments, all of which tend to produce coarse-grained sediments.

2.4 Geomorphic Subreach 5 (Problem Location 6)

Subreach 5 extends from the Picacho Bridge to the Mesilla Diversion Dam, a distance of 6.5 miles. The comparative thalweg data (Figure 2.1) indicate that there has been 2 to 3 feet of historical degradation in this subreach since 1943. However, USIBWC has historically performed extensive sediment-removal activities in the vicinity of Mesilla Diversion Dam, so the thalweg profiles do not show the aggradational tendencies at the downstream limit of this subreach. The bed slope in the subreach is 0.00074 (3.9 ft/mi), and the bankfull capacity of the channel ranges between 3,500 and 4,500 cfs. At a flow of 4,000 cfs in the subreach, the average channel top width is about 360 feet, the average hydraulic depth is 3.3 feet, and the average velocity is 2.9 fps. The bed material in the subreach is sand and under low-flow conditions the bed of the channel is braided. The distance between the levees in the subreach varies from 750 to 800 feet. A considerable percentage of both banks within the subreach is revetted. A number of west side arroyos that drain the Upper Santa Fe Group deliver sediment to the Rio Grande between the Picacho Drain (~Sta 2160+00) and the Mesilla Diversion Dam.

2.5 Geomorphic Subreach 6 (Problem Locations 6 and 7)

Subreach 6 extends from the Mesilla Diversion Dam to the Vinton Bridge, a distance of 24 miles. The comparative thalweg data (Figure 2.1) indicate that there has been up to 8 feet of historical degradation downstream of the Mesilla Diversion Dam, but the amount of degradation diminishes in the downstream direction to about 1 foot. The bed slope in the subreach is 0.00074 (3.9 ft/mi), and the bankfull capacity of the channel is about 3,000 cfs. At this discharge, the average channel top width is about 245 feet, the average hydraulic depth is 3.3 feet, and the average velocity is 3 fps. The bed material in the subreach is sand and under low-flow conditions the bed of the channel is braided. The average distance between the levees in the subreach is 600 feet. Bank revetment along both banks is intermittent but considerable. This subreach is bounded by the Upper Santa Fe Group that consists of poorly consolidated, fine-grained, basin fill sediments of the Mesilla Bolson (Hawley, 1981). There are no significant sources of sediment delivery to the Rio Grande within the subreach, although numerous small arroyos deliver relatively small quantities of mostly fine-grained sediments.

2.6 Geomorphic Subreach 7 (Problem Locations 7, 8 and 9)

Subreach 7 extends from the Vinton Bridge to the American Diversion Dam, a distance of 16 miles. The comparative thalweg data (Figure 2.1) indicate that there has been up to 2 feet of aggradation since 1943. The bed slope in the subreach is 0.00056 (3 ft/mi), and the bankfull capacity of the channel is about 2,500 cfs. At a flow of 2,000 cfs in the subreach, the average channel top width is about 240 feet, the average hydraulic depth is 2.8 feet, and the average velocity is 2.5 fps. The bed material in the subreach is sand and under low-flow conditions the bed of the channel is braided. The distance between the levees in the subreach is 600 feet. A considerable percentage of both banks within the subreach are revetted. This subreach is bounded by the Upper Santa Fe Group that consists of poorly consolidated, fine-grained, basin fill sediments of the Mesilla bolson (Hawley, 1981). Unlike the upstream subreaches, there are no significant sources of sediment delivery to this subreach of the RGCP.

3 DESCRIPTION OF THE PROBLEM LOCATIONS

A field reconnaissance of the six problem locations was carried out during the week of October 6, 2014. The six problem locations were selected because they demonstrate the types of problems that are occurring along the overall RGCP (Table 1.1).

3.1 Problem Location 1

Problem Location 1 extends from the confluence with Tierra Blanca Creek downstream to Sibley Arroyo over a distance of about 1.7 miles (**Figure 3.1**). For purposes of updating the base model of the RGCP and development of the localized base model, the reach was extended about 1,100 feet upstream from the confluence with Tierra Blanca Creek and about 2,500 feet downstream from the confluence with Sibley Arroyo, resulting in a reach length of 2.3 miles. Garfield Bridge (New Mexico Highway 187) is located just upstream from this reach, about 1,700 feet upstream from the confluence with Tierra Blanca Creek (**Photo A.1**). The Tierra Blanca Vortex Weir is located about 2,000 feet downstream from the confluence with Tierra Blanca Creek. Sediment has deposited along the main channel portion of the weir, burying the majority of the crest (**Photo A.2**).

This problem location experiences sediment loading from 3 significant tributaries. Tierra Blanca Creek and Sibley Arroyo are west side tributaries and Green Arroyo is an east side tributary with its mouth adjacent to the mouth of Tierra Blanca Creek. During recent monsoon season tributary flow events (i.e., 2006 and 2013), Tierra Blanca Creek and Sibley Arroyo delivered significant quantities of sediment to the RGCP (**Photos A.3 and A.4**). The damage to the existing bank protection on the east (left) bank of the river opposite the Tierra Blanca fan has not been repaired, and no sediment has been removed from the fan (Photos A.3 and **A.5**). The bank erosion along the left bank that is being caused by the Sibley Arroyo fan is not as significant (**Photo A.6**). The fans for both of these tributaries results in significant backwater effects in the upstream reaches (**Photos A.7 and A.8**). The NRCS flood control and sediment detention dam on Green Arroyo has significantly reduced the amount of sediment delivered to the RGCP (**Photo A.9**). The USIBWC has not performed any channel maintenance activities at this location since 2007.

Five sediment samples were collected in the vicinity of Problem Location 1. Pebble Count PC1 represents the fan-derived armor material along the bed of the Rio Grande and was collected from the riffle that has formed along the downstream fringe of the Tierra Blanca Creek fan (**Photo A.10**) and has a median grain size (D_{50}) of about 34 mm (**Figure 3.2**). Bulk Sample S1 (D_{50} = 2.1 mm; **Figure 3.3**; **Photo A.11**) was collected from the subsurface materials in the vicinity of Pebble Count PC1 and includes about 50 percent gravel. Pebble Count PC2 was collected from the distal portion of the Sibley Arroyo fan (**Photo A.12**) and has a D_{50} of about 42 mm. Bulk Sample S2 (D_{50} = 1.8 mm; Figure 3.2; **Photo A.13**) was collected from the subsurface materials in the vicinity of Pebble Count PC2 and has a gradation that is very similar to that of Sample S1. Bulk Sample S3 (D_{50} = 6.9 mm; Figure 3.2; **Photo A.14**) was collected from the channel bed upstream from the backwater effects of the Tierra Blanca Creek fan about 2,000 feet upstream from the Garfield (New Mexico Highway 187) Bridge after first removing about 2 inches of muddy deposits, and is representative of the upstream sediment supply to the Problem Location 1 reach.

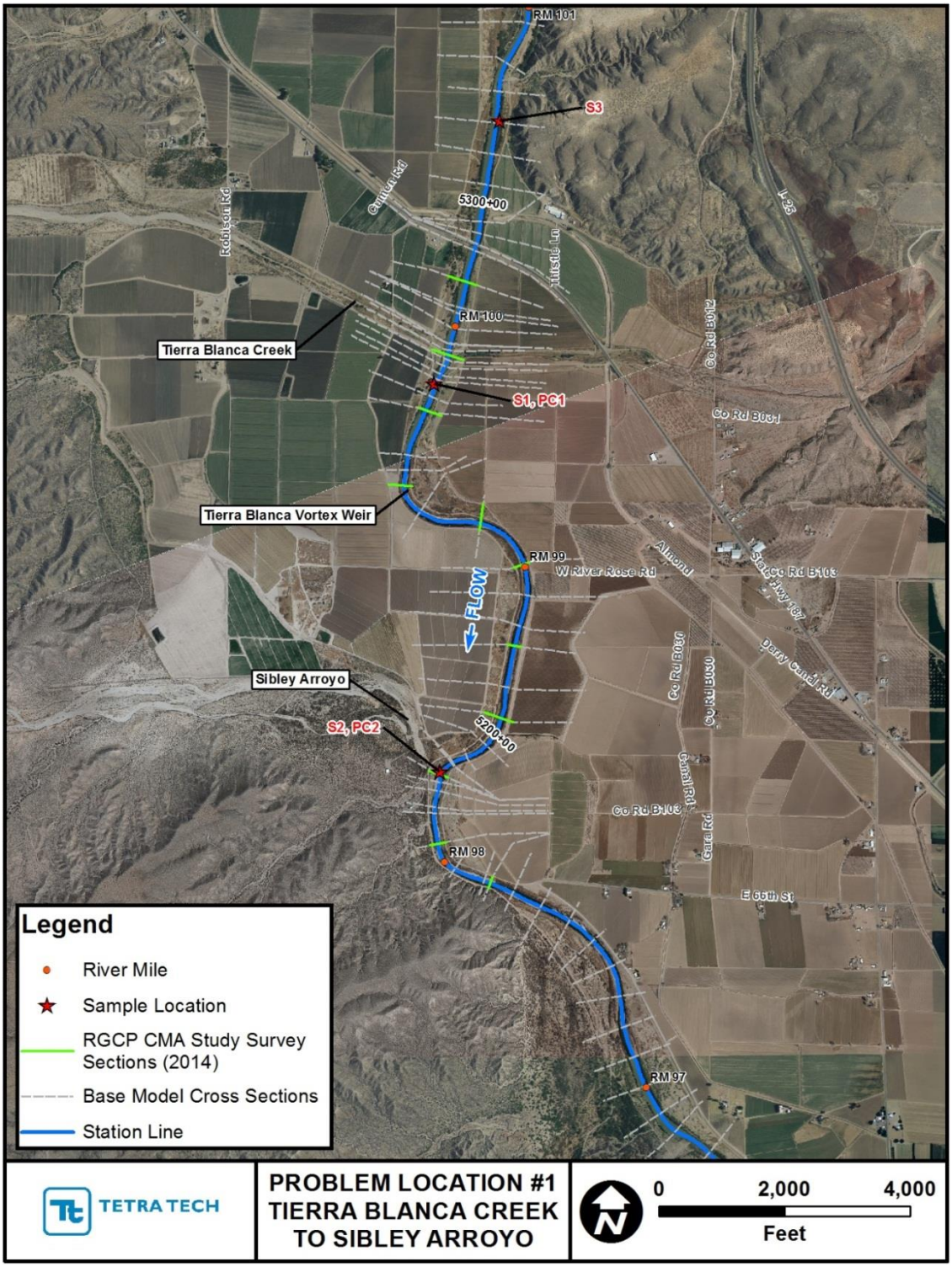


Figure 3.1. Aerial photograph showing key features at Problem Location #1 (Tierra Blanca Creek to Sibley Arroyo).

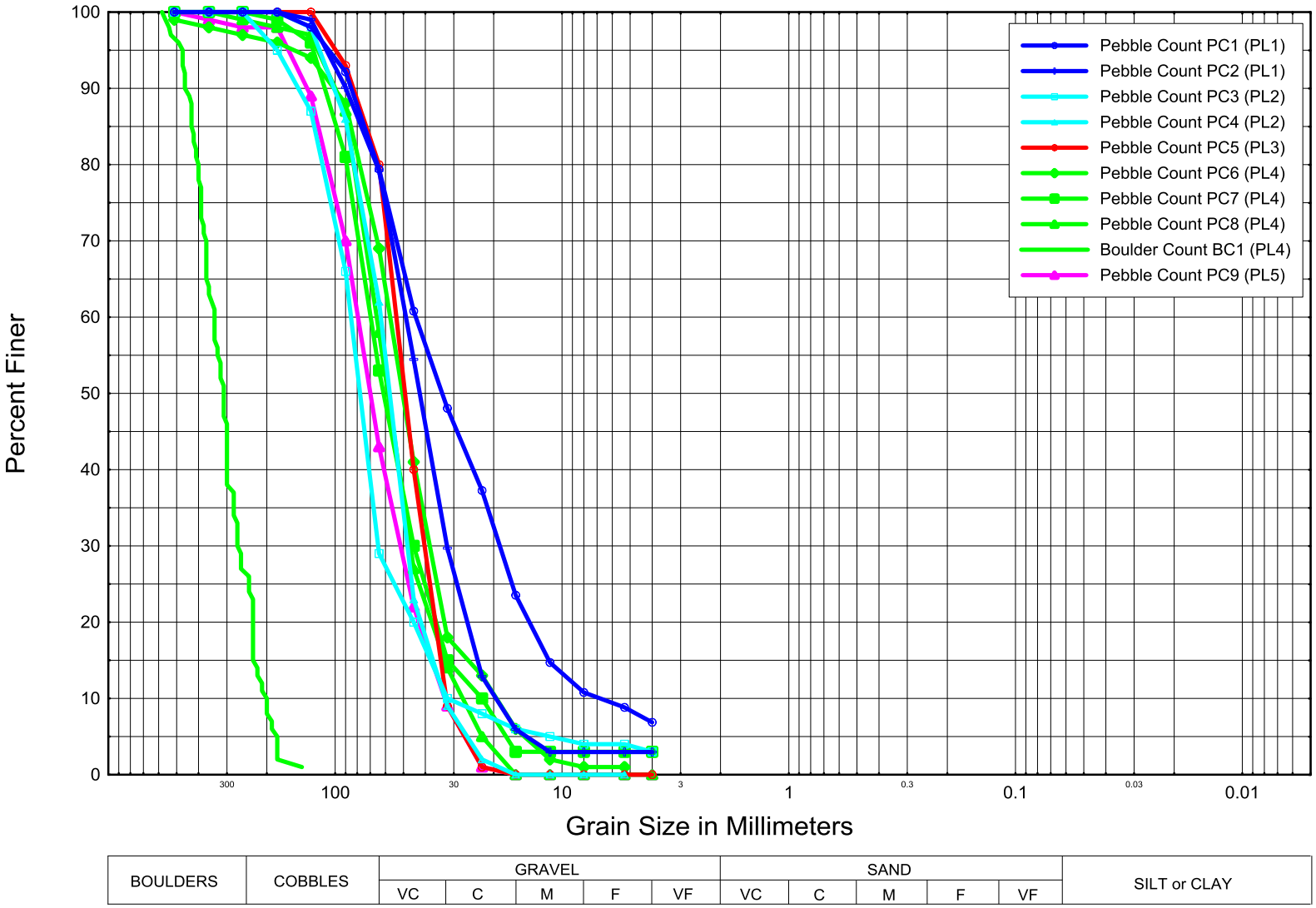
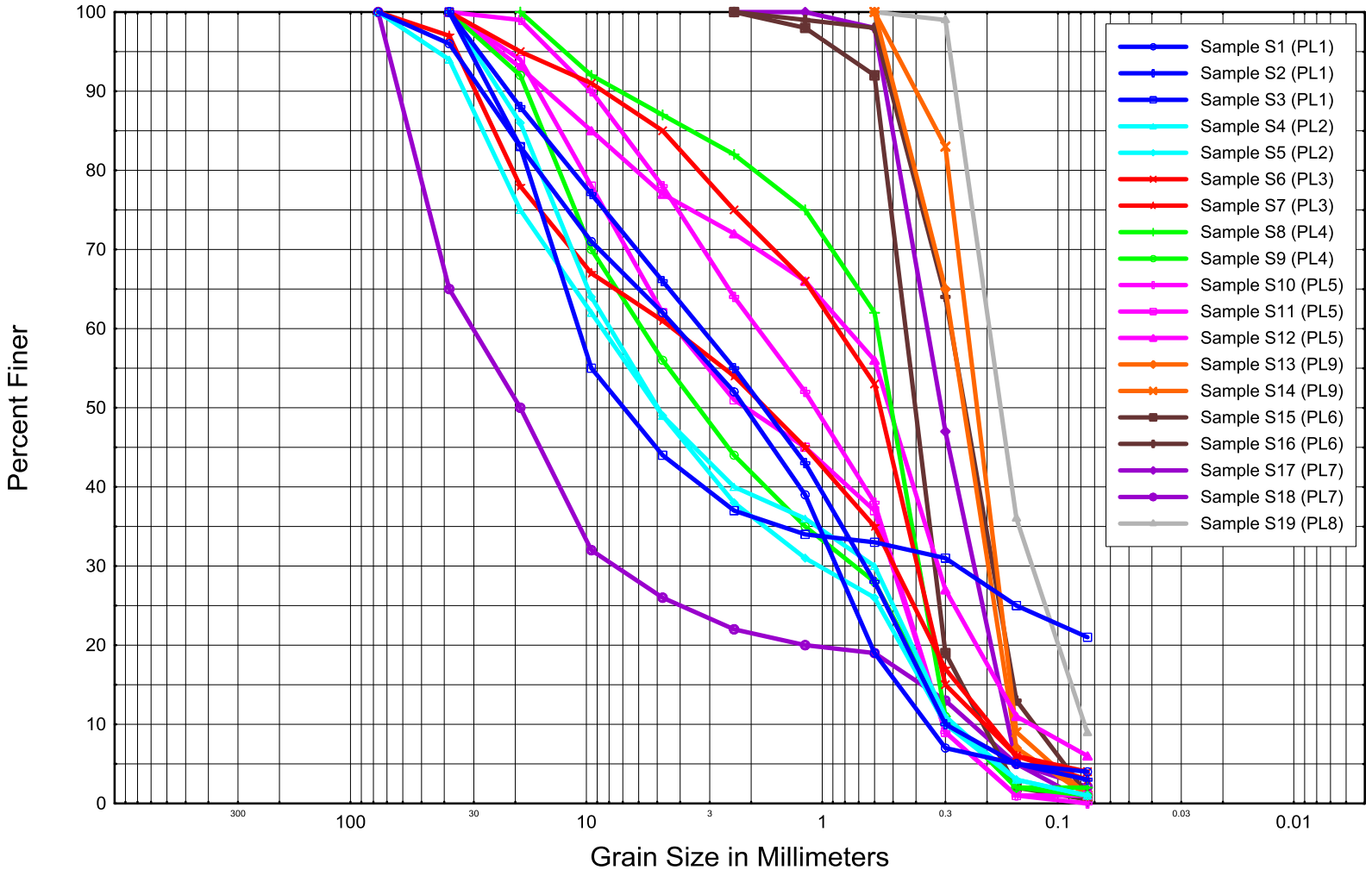


Figure 3.2. Gradation curves for the pebble count samples collected from the five problem locations with coarse bed material.



BOULDERS	COBBLES	GRAVEL					SAND					SILT or CLAY
		VC	C	M	F	VF	VC	C	M	F	VF	

Figure 3.3. Gradation curves for the bulk sediment samples.

3.2 Problem Location 2

Problem Location 2 extends from the Salem Bridge (BB Romig Drive; New Mexico Highway 391) downstream to the confluence with Placitas Arroyo over a distance of about 3.3 miles (**Figure 3.4**). For purposes of updating the base model of the RGCP and development of the localized base model, the reach was extended about 1,200 feet downstream from the confluence with Placitas Arroyo with a resulting reach length of 3.8 miles based on the MEI (USACE, 2007) Station Line. In addition to the Salem Bridge (**Photo A.15**), other infrastructure along the reach includes the upper Hatch Bridge (New Mexico Highway 187) (**Photo A.16**), and the lower Hatch Bridge (New Mexico Highway 26) is located just downstream from the problem location reach about 2,700 feet downstream from the confluence with Placitas Arroyo. Numerous vegetated islands have formed along the reach, many of which appear to have formed over the recent drought period as evidenced by the relatively young (4- to 5-year old) vegetation.

Placitas Arroyo is a very large west side tributary that enters the RGCP on the south (right) bank. This arroyo drains areas underlain by the Lower Santa Fe Group and the Tertiary-age volcaniclastic sedimentary units and delivered significant amounts of coarse material and sand during recent monsoon seasons (**Photo A.17**). Although the coarse material provides the framework for the fan, the large volume of sand that overlays the coarse material results in significant backwater effects that extend over a distance of about 2,700 feet upstream from the fan (**Photo A.18**). After the 2006 monsoon events and as recently as in 2013, USIBWC excavated the lower reaches of the arroyo channel and bed of the Rio Grande and the east bank of the Rio Grande was reconstructed. The relatively large amount of sand that currently resides at the mouth of the arroyo and along the fan surface indicates that this material was delivered by Placitas Arroyo relatively recently during the period since the USIBWC maintenance activities.

In addition to the west side draining Placitas Arroyo, two east side draining tributaries (Thurman I Arroyo at Sta 4524+00 and Thurman II Arroyo at Sta 4541+00) enter the RGCP on the north (left) bank. During recent monsoon season tributary flow events (i.e., 2006 and 2013), each of these tributaries delivered significant quantities of sediment to the RGCP, and appear to have delivered additional sediment since that time (**Photos A.19 and A.20**). After the 2006 events, USIBWC removed sediment from the river, reconstructed the opposite bank and excavated the mouth of the Thurman I Arroyo, but there does not appear to have been any work undertaken since that time. Evidence of bank protection along the right bank opposite Thurman II Arroyo suggests that similar activities were undertaken at this tributary (**Photo A.21**). Islands have formed along the downstream portions of both of the Thurman Arroyo fans, along with numerous other islands and vegetated bars along the reach.

Two bulk samples were collected from the Problem Location 2 reach, including Bulk Sample S4 of the channel bed material near the Salem Bridge (New Mexico Highway 391) that represents the sediment supply to the reach (D_{50} = 5.0 mm; Figure 3.2; **Photo A.22**) and Bulk Sample S5 (D_{50} = 5.0 mm; Figure 3.2) of the channel bed material near the upstream limit of the backwater effects from Placitas Arroyo (**Photo A.23**). Pebble counts of the coarser material delivered by the tributaries included Pebble Count PC3 that was taken from the surface of the Thurman I Arroyo fan (**Photo A.24**) and Pebble Count PC4 that was taken from a riffle at the downstream fringe of the Placitas Arroyo fan (**Photo A.25**).

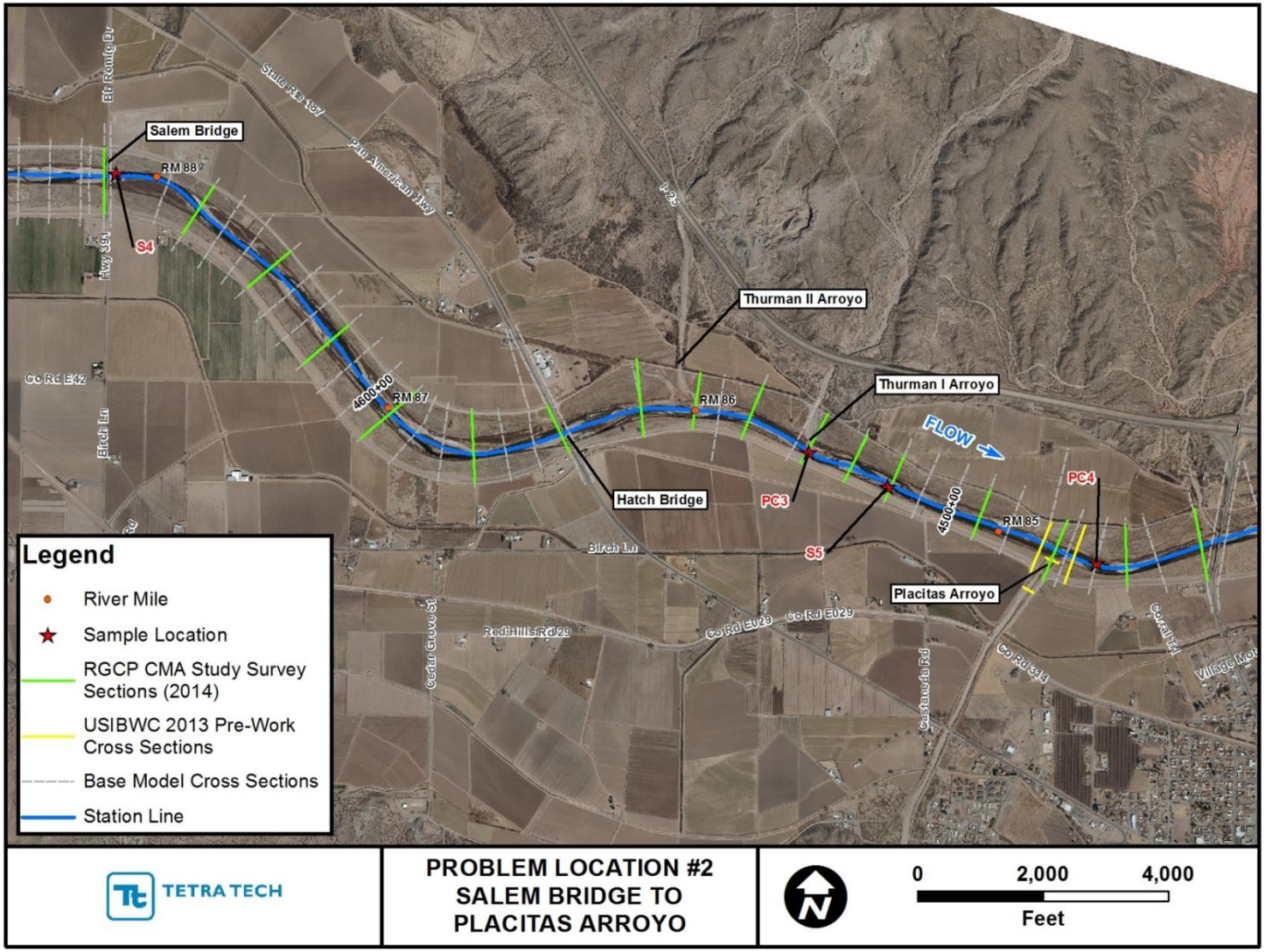


Figure 3.4. Aerial photograph showing key features at Problem Location #2 (Salem Bridge to Placitas Arroyo).

3.3 Problem Location 3

Problem Location 3 extends from the Rincon Siphon A Restoration Site downstream to Rincon Siphon over a distance of about 0.5 miles (**Figure 3.5**). For purposes of updating the base model of the RGCP and development of the localized base model, the reach was extended about 1,800 feet upstream from the Rincon Siphon A Restoration Site with a resulting reach length of 0.8 miles based on the MEI (USACE, 2007) Station Line. Infrastructure along the reach includes the BNSF Railroad Bridge (**Photo A.26**), the New Mexico Route 154 Bridge (**Photo A.27**), and the grade control structure at the Rincon Siphon crossing (**Photo A.28**). The bridge piers for the railroad bridge are not skewed to be parallel with the direction of flow and create substantial flow blockage (Photo A.26). The grade control structure for the Rincon Siphon includes driven sheet pile along the downstream side of the siphon, and large riprap bed protection that extends about 200 feet downstream from the siphon crossing (Photo A.28).

Garcia Arroyo is an east side tributary that drains the Rincon Hills. The confluence with this tributary is located about 700 feet upstream from the BNSF Railroad Bridge, and although the bulk of the fan extends about 300 feet downstream from the mouth (**Photo A.29**), some fan materials are transported through the bridge structures as indicated in Bulk Sample S7 that includes about 50 percent gravel (D_{50} = 1.7 mm; Figure 3.2; **Photo A.30**). Material sampled in Pebble Count PC5 that was collected from the surface of the fan had a D_{50} of about 50 mm (Figure 3.2; **Photo A.31**). The upstream sediment supply to the reach that was sampled in Bulk Sample S6 (D_{50} = 0.6 mm) is somewhat finer than the supply to the more upstream reaches, likely due to the locally flatter gradient upstream from the Rincon Siphon (Figure 3.2; **Photo A.32**).

3.4 Problem Location 4

Problem Location 4 extends from the confluence with Rincon Arroyo downstream to the confluence with Bignell Arroyo over a distance of about 2.9 miles (**Figure 3.6**). For purposes of updating the base model of the RGCP and development of the localized base model, the reach was extended about 1,500 feet upstream from Rincon Arroyo to the New Mexico Route 140 Bridge and about 2,000 feet downstream from the confluence with Bignell Arroyo, resulting in a reach length of 3.5 miles based on the MEI (USACE, 2007) Station Line. Other than the New Mexico Route 140 Bridge (**Photo A.33**) at the upstream limit of the reach, no infrastructure is present along the reach. Numerous islands and vegetated alternating bars have formed along the reach.

Rincon Arroyo is an east side tributary that drains the Rincon Hills with its mouth located about 1,500 feet downstream from the New Mexico Highway 140 Bridge (**Photo A.34**). After the 2006 monsoon season, USIBWC graded the arroyo bed and fan surface, and relocated some of the very large material in the fan along the toe of the west bank to counteract the bank erosion that has occurred over a distance of about 500 feet, and appears to be effective toe protection (**Photo A.35**). Additional material was excavated in 2013 to remove sediment that has been delivered by the arroyo since that time. Remnant material in the downstream portion of the fan is very coarse. Pebble Count PC6 was conducted along the distal portion of the fan from material that represents the bi-modal (sand and gravel) fractions of the fan sediments, and has a D_{50} of about 50 mm (Figure 3.2; **Photo A.36**). The coarsest fractions of the fan materials was measured using the boulder count method by measuring the intermediate axis of 100 randomly selected boulders from a location that was downstream from mechanical activities, and indicates the boulders have a median diameter of about 310 mm (Figure 3.2; **Photo A.37**).

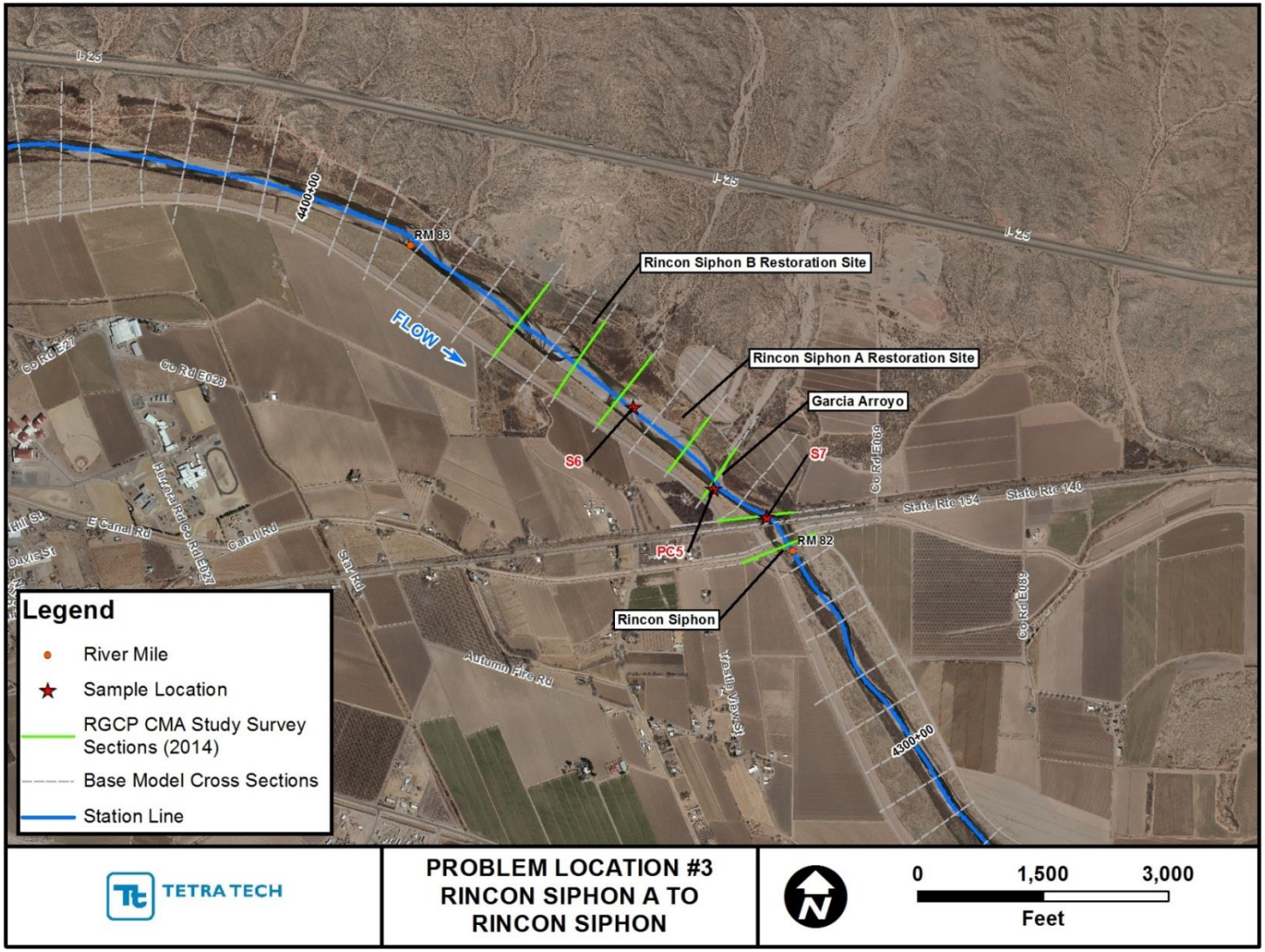


Figure 3.5. Aerial photograph showing key features at Problem Location #3 (Rincon Siphon A Restoration Site to Rincon Siphon).

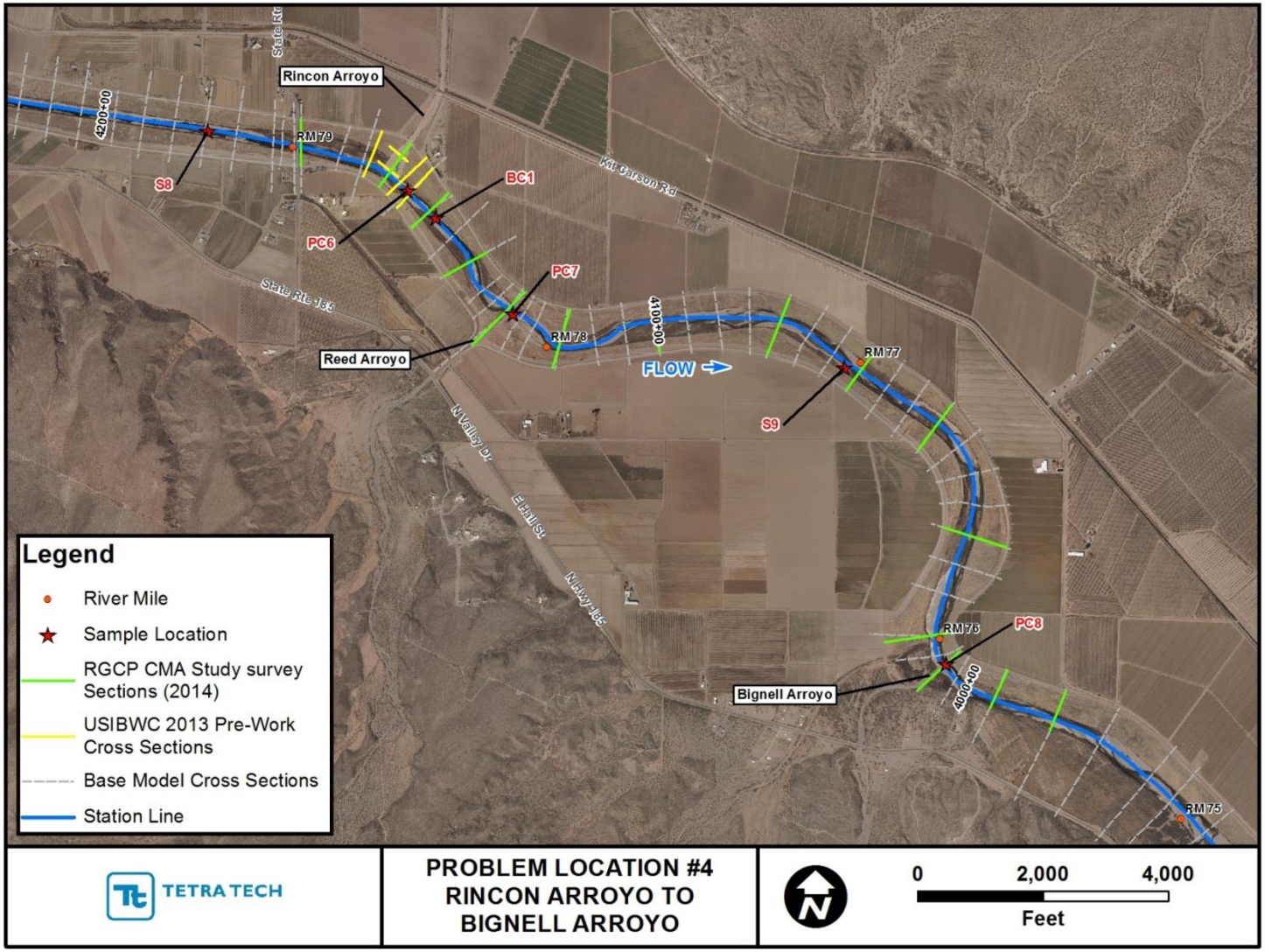


Figure 3.6. Aerial photograph showing key features at Problem Location #4 (Rincon Arroyo to Bignell Arroyo).

At Reed Arroyo (**Photo A.38**) and Bignell Arroyo (**Photo A.39**) the coarse tributary fans have displaced the Rio Grande towards the east and the RGCP levee. The material along the surface of both fans has a D_{50} of about 60 mm (Pebble Counts PC7 and PC8; **Photos A.40 and A.41**). Relatively thick vegetation has colonized the interior portions of both fans. Downstream from the Reed Arroyo fan, the bed material becomes significantly finer as indicated by Sample S9 (D_{50} = 3.3 mm; Figure 3.3; **Photo A.42**). The gradation of the upstream sediment supply was estimated by collecting Sample S8 (D_{50} = 0.5 mm) from the channel bed about 1,500 feet upstream from the New Mexico Highway 140 Bridge near the upstream limit of the backwater zone upstream from Rincon Arroyo (Figure 3.3; **Photo A.43**).

3.5 Problem Location 5

Problem Location 5 extends from the confluence with Rock Canyon downstream to a location that is about 0.8 miles below the outlet of the Tonuco/Rincon Drain over a distance of about 1.9 miles (**Figure 3.7**). For purposes of updating the base model of the RGCP and development of the localized base model (and as requested by USIBWC), the reach was extended about 3,000 feet upstream from the confluence with Rock Canyon and about 1.3 miles downstream from the Tonuco/Rincon Drain outlet, resulting in a reach length of 2.9 miles based on the MEI (USACE, 2007) Station Line. No infrastructure is present along the reach.

The upstream sediment supply to the reach may be affected by locally lower channel gradients that are associated with the high-flow backwater effects from Seldon Canyon. The bed material in the upstream portion of the reach that was collected in Sample S10 (D_{50} = 1.1 mm; Figure 3.3; **Photo A.44**) is sand and gravel that likely includes gravel material delivered by the upstream tributaries such as Hersey Arroyo.

Rock Canyon Arroyo is a west side tributary to the Rio Grande that delivered large volumes of coarse sediment to the river in 2006, and has continued to do so over the past 8 years (**Photo A.45**). Ongoing prograding of the fan has resulted in at least 25 feet of lateral bank erosion on the opposite east bank over a longitudinal distance of about 200 feet, resulting in significant loss to private property (**Photo A.46**). Material on the Rock Canyon fan surface has a D_{50} of about 70 mm (Pebble Count PC9; **Photo A.47**). The height of the fan ranges from between 4 and 5 feet, and the surface has become vegetated and appears relatively stable. Downstream from Rock Canyon near Sta 3750+00, the channel widens somewhat and the frequency of vegetated islands increases (**Photo A.48**). Many of the islands have probably formed during the recent drought period as indicated by the relatively young vegetation (4 to 5 years). Although the expansion at Sta 3750+00 results in reduced sediment-transport capacities, there is still sufficient energy to transport gravel materials to the area in the vicinity of the Rincon/Tonuco Drain, as evidenced by the more than 50-percent gravel in Sample S11 (D_{50} = 2.1 mm; Figure 3.3; **Photo A.49**).

The Rincon/Tonuco Drain is located along the east bank of the RGCP opposite the Horse Creek Canyon fan. The drain is currently blocked by a 3.5-foot-high beaver dam that significantly reduces drain efficiency (**Photo A.50**). Downstream from the drain, the east bank is protected by riprap along the railroad embankment that extends over a longitudinal distance of at least 1,000 feet (**Photo A.51**). No discernable alluvial fan was identified at the mouth of Horse Canyon Creek, where the tributary is perched about 2 feet above the bar surface along the bed of the Rio Grande (**Photo A.52**). Although this tributary does not appear to have delivered significant amounts of material to the river over the recent past, the bed material represented by Sample S12 is sandy gravel (D_{50} = 0.5 mm; Figure 3.3; **Photo A.53**).

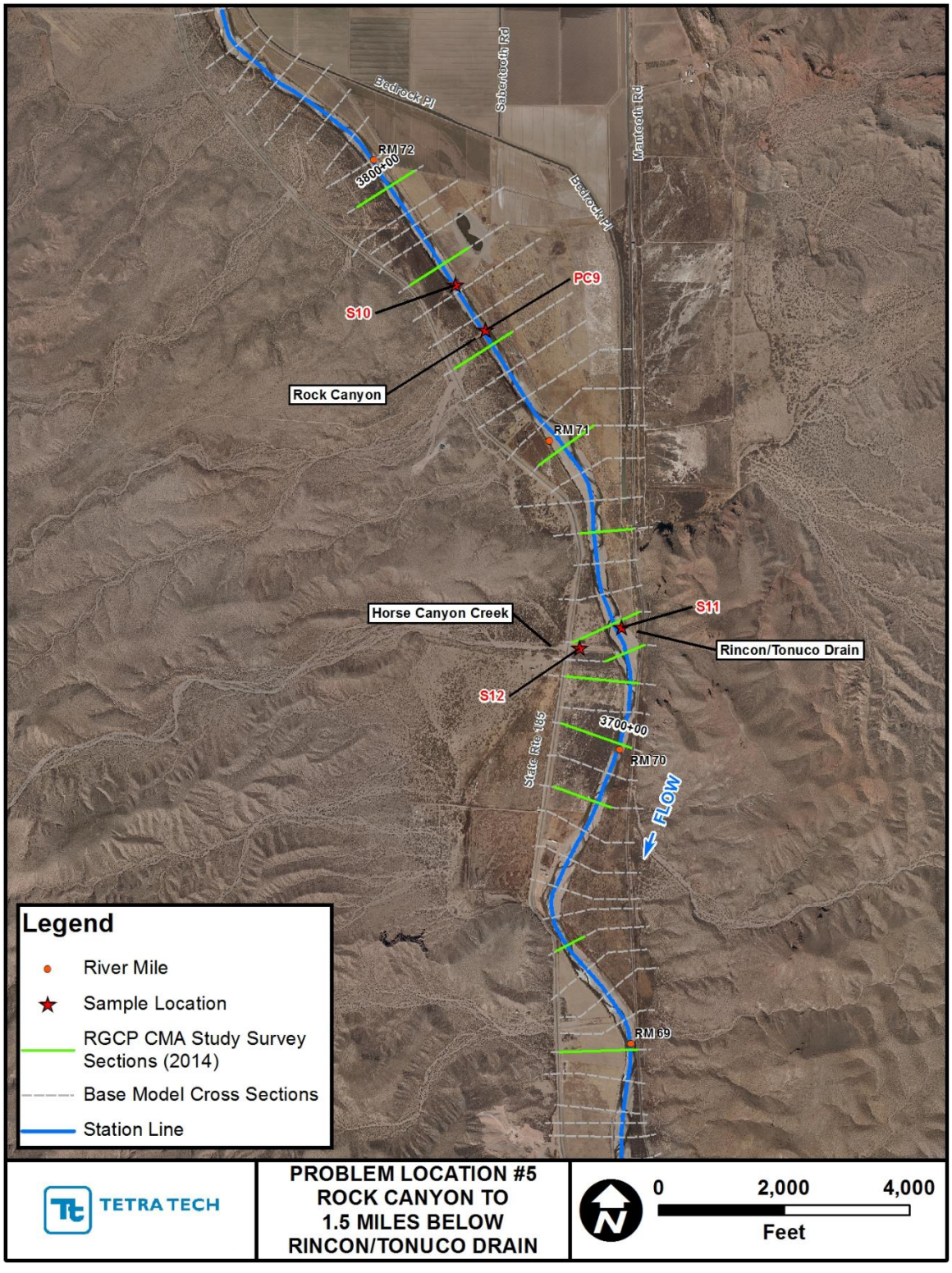


Figure 3.7. Aerial photograph showing key features at Problem Location #5 (Rock Canyon to below Rincon/Tonuco Drain).

3.5.1 Problem Location 6

Problem Location 6 extends from just upstream from the Placitas Drain to about 3,500 feet below Mesilla Dam over a distance of about 2.4 miles (**Figure 3.8**). In addition to the Picacho Drain that enters along the right (west) bank (**Photo A.54**), the drain for the California Lateral also enters near the upstream limit of the project reach along the left (east) bank (**Photo A.55**). At the mouth of the Picacho Drain, the drain invert is perched about 2 feet above the river bed, indicating that the river has recently incised or sedimentation has occurred along the downstream reaches of the drain. Considering that the California Lateral drain invert is not perched, the latter explanation appears to be the case. The infrastructure at Mesilla Dam includes a single gate that delivers flow to the Del Rio Lateral, the three bays with two gates each at the headworks for the Eastside Main Canal, the thirteen radial gates at the dam that deliver flows to the downstream river, and the four bays with two gates each at the headworks for the Westside Main Canal (**Photo A.56**). The metering stations for the Eastside and Westside main canals are located a short distance downstream from the headgates (less than 900 feet based on the canal station lines), and the river gage ("River Below Mesilla Dam") is located about 2 miles downstream from the dam.

Sample S15, located near the upstream limit of the site and representative of the upstream sediment supply to the reach, is primarily sand with D_{50} = 0.40 mm (Figure 3.3; **Photo A.57**). Trace gravels are present in the bed material (**Photo A.58**). Numerous relatively small arroyos and one larger arroyo drain the non-leveed west bank upstream from the dam and deliver sand and gravel to the reach (**Photos A.59 and A.60**). The backwater zone upstream from Mesilla Dam does not extend over a distance of more than 2,000 feet, at least under recent flow and operating conditions, and has resulted in the deposition of significant amounts of material (**Photo A.61**). The surface depositional material appears to progressively fine in the downstream direction in the backwater zone above the dam. Based on Sample S16 (D_{50} = 0.25 mm; Figure 3.3; **Photo A.62**) that was collected downstream from the dam, the sediment-trapping effects of the dam results in some minor fining of the bed material below the dam. Upstream from the dam, the banks are at least intermittently protected by riprap over significant distances, and in many cases several feet of bank accretion has buried the riprap. Except for the relatively large, vegetated mid-channel bar immediately downstream from the dam, the reach is mostly void of vegetated bar surfaces.

3.5.2 Problem Location 7

Problem Location 7 extends about 1.8 miles from just upstream from the mouth of the East Drain to about 5,000 feet below the Vinton Bridge (**Figure 3.9**). The only infrastructure along this reach is the Vinton Bridge (**Photo A.63**), although a metering station is located about 2,000 feet from the bridge (**Photo A.64**). The mouth of the East Drain has become overgrown with cattails where backwater from the RGCP extends up the drain to the control structure (**Photos A.65 and A.66**). The invert elevation of the drain is consistent with the elevation of the river bed, so any aggradation along the river at this location has resulted in similar depths of deposition in the drain. At the drain-control structure, about 8 inches of deposition has occurred based on the difference between the invert of the control structure and the bed of the drain immediately downstream from the control structure. Progressively lower drain bank heights in the downstream direction indicate that the degree of deposition also increases in the downstream direction.

Sample S17, collected from the bed of the channel near the upstream limit of the problem location reach, indicates the bed-material sediment supply is primarily sand with a median grain size of 0.3 mm (Figure 3.3; **Photo A.67**). The widest main channel sections occur along the approximately 2,300-foot-long reach at and downstream from the East Drain and along the approximately 1,300-foot-long reach below Vinton Bridge. A few low-elevation, grassy mid-channel bars have formed below the expansion zones in the wider reaches (**Photo A.68**). Four relatively small arroyos enter the reach from the left bank along the reach. Each of the arroyos

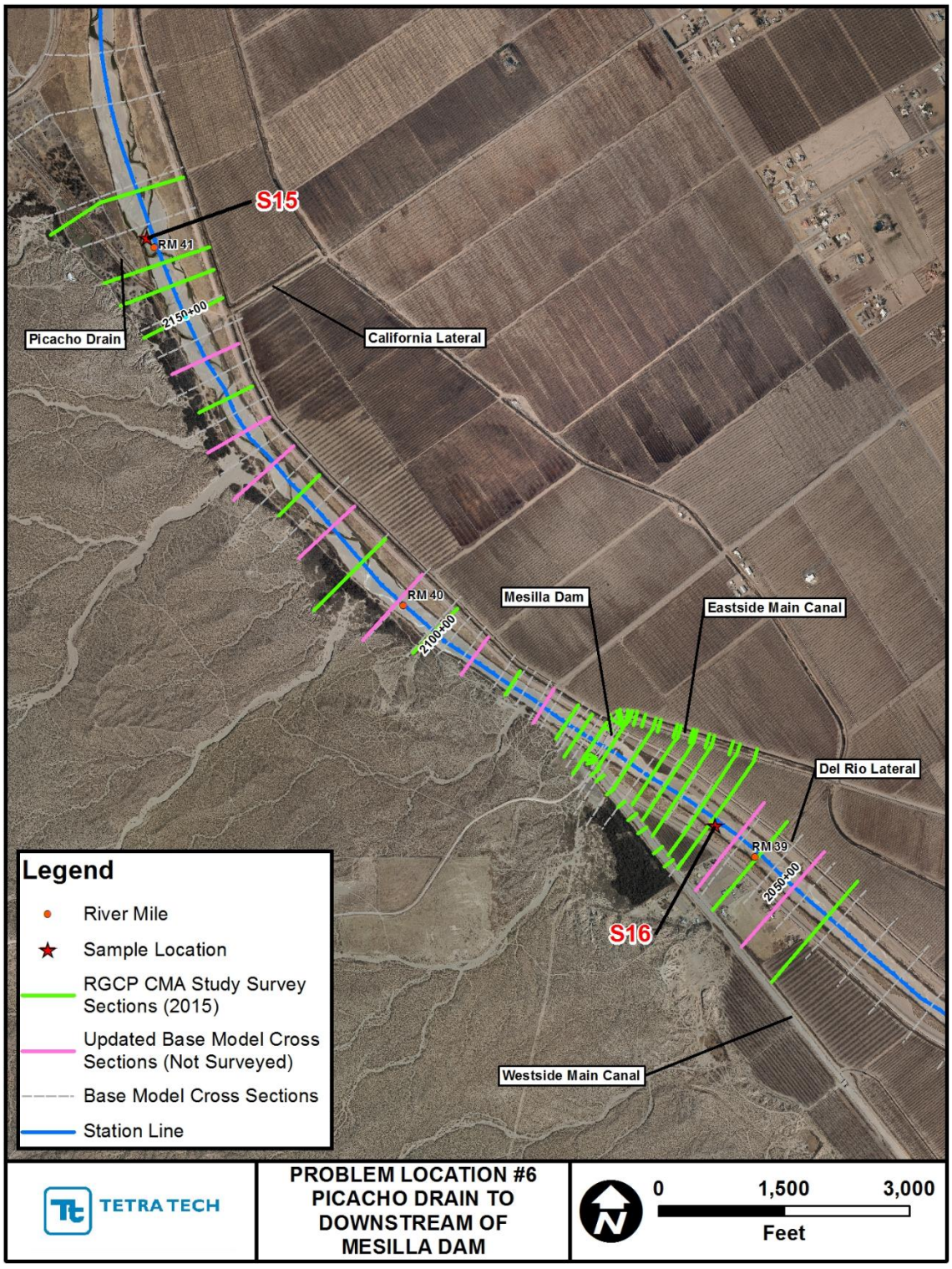


Figure 3.8. Aerial photograph showing key features at Problem Location #6 (Picacho Drain to downstream of Mesilla Dam).

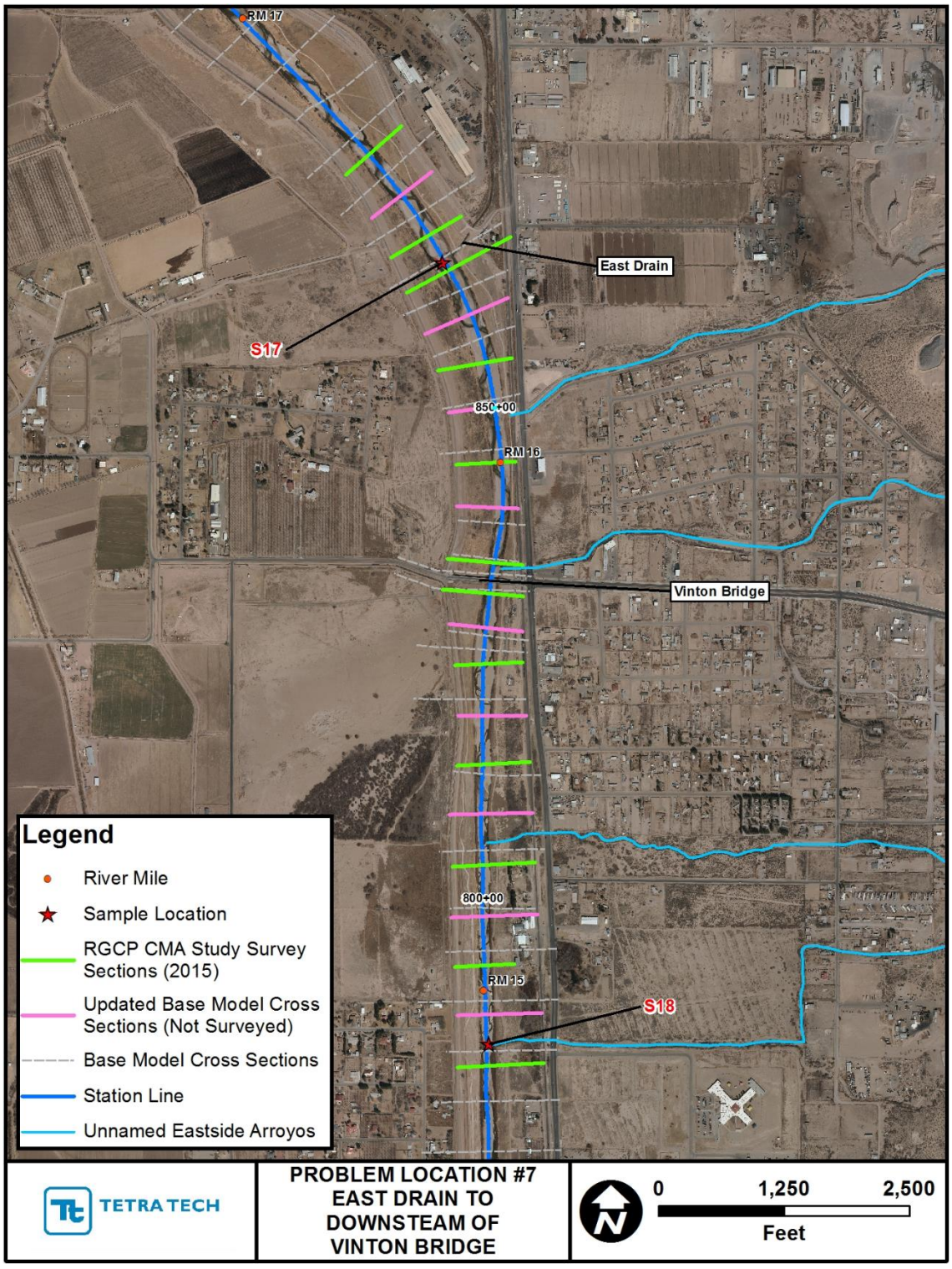


Figure 3.9. Aerial photograph showing key features at Problem Location #7 (East Drain to downstream of Mesilla Dam).

has been channelized to various degrees at some point along their course and have subsequently incised. The arroyos drain the eastern lying Franklin Mountains that deliver mostly fine-grained materials, although the sediment-loading includes some gravels. Sample S18, collected from the subsurface of the fan of the arroyo at Sta 786+50, is representative of the materials delivered by each of the arroyos and has a median grain size of 19.1 mm (Figure 3.3; **Photo A.69**). Although the material supplied by the arroyos is significantly coarser than the dominant sediment supply, the volume of material does not appear to be significant as evidenced by the relatively localized sediment deposits in the fans. Surface gravels persist for less than 200 feet downstream from the mouths of the arroyos at Sta 786+50 and Sta 834+00 (**Photos A.70 and A.71**), while there was no evidence of recent loading from the arroyos at Sta 806+50 and Sta 849+50.

3.5.3 Problem Location 8

Problem Location 8 extends from about 4,200 feet upstream from the Country Club Bridge to just downstream from the Nemexas Siphon crossing over a distance of about 1.5 miles (**Figure 3.10**). Country Club Bridge is skewed to the main channel by about 20 degrees (**Photo A.72**). Both the bridge abutments and bridge piers are also skewed by this amount; however, because each of the six pier sets are made up of ten 16-inch-wide columns, the effective pier width is about 13.3 feet. Vegetated islands are forming upstream from Pier Sets Nos. 2, 3 and 4 (Photo A.72). Some minor bank erosion along the left (west) bank has occurred under the bridge deck as a result of flows being defected away from debris that collects at the face of Pier Set No. 2 (**Photo A.73**). Other than this localized bank erosion, the banks appear to be stable along the remaining extent of the reach. Vegetation along the banks varies along the reach, with intermittent grass and light shrubs along the upstream portion of the reach and more dense, older woody vegetation near the Nemexas Siphon, especially along the right (east) bank (**Photos A.74 and A.75**).

The bed material is almost entirely sand and does not vary along the project reach. Sample S19 was collected from the channel bed near the upstream limit of the project and has a median grain size of 0.17 mm (Figure 3.3; **Photo A.76**). The main channel top width is about 210 feet along the upstream 2,000 feet of the reach, decreasing to about 180 feet above the bridge and further decreasing to about 170 feet over the downstream 3,000 feet of the reach, with a locally wider reach below the bridge where the main channel top width increases to as much as 250 feet. The width of the floodplain (i.e., the width between the levees) generally increases in the downstream direct from about 470 feet in the upper reach to more than 600 feet in the lower portion of the reach, although the floodplain is locally narrower (~500 feet) in the vicinity of the siphon. Riprap bank protection was identified along the left (east) main channel bank at the siphon crossing (**Photo A.77**), but it was not possible to determine if other areas are protected because of the bank vegetation and unknown degrees of bank accretion. Bank heights measured from the thalweg vary from 5 to 6 feet.

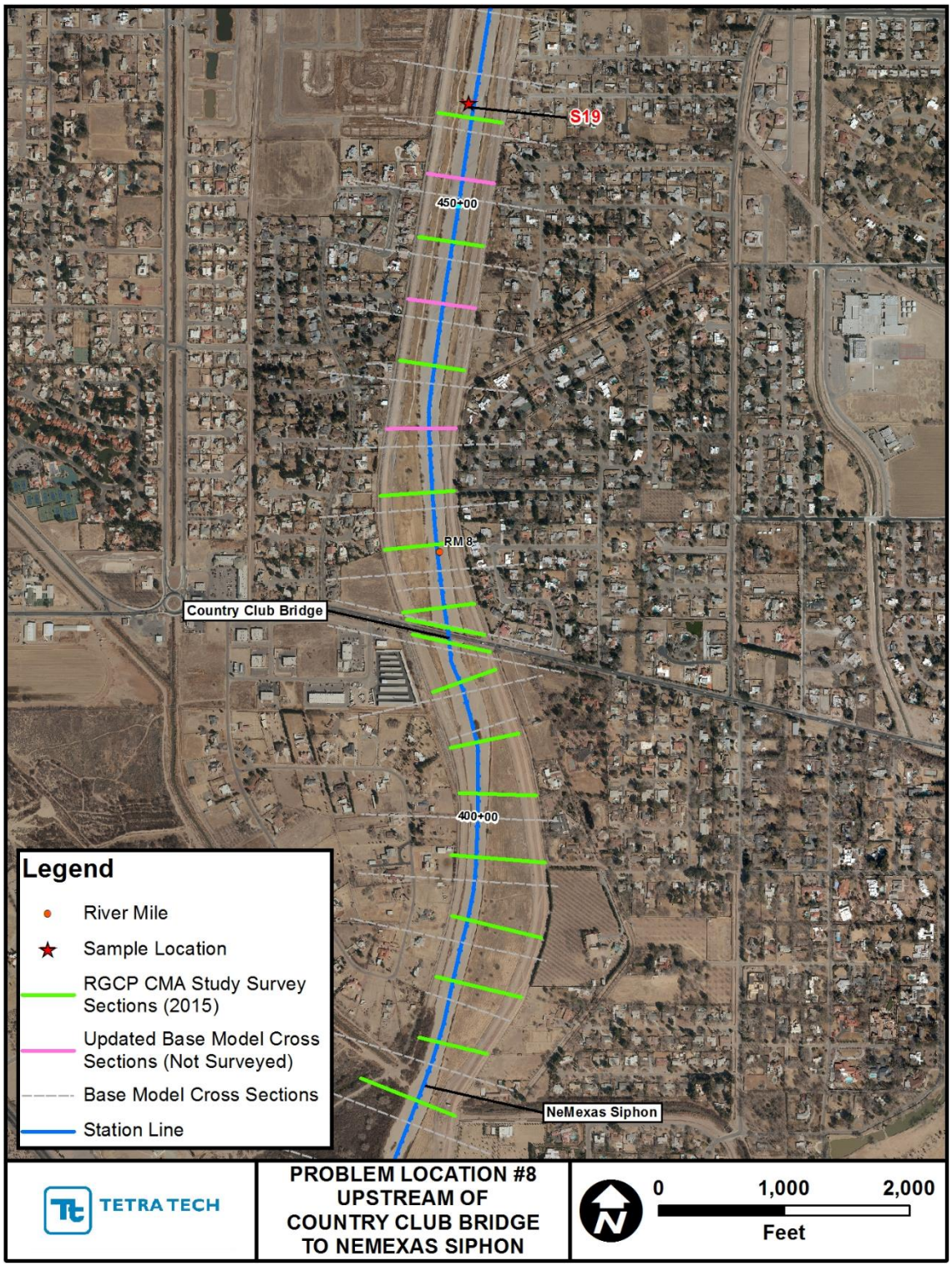


Figure 3.10. Aerial photograph showing key features at Problem Location #8 (upstream of Country Club ridge to NeMexas Siphon).

3.6 Problem Location 9

Problem Location 9 extends from the Montoya Drain outlet downstream to American Dam over a distance of about 2.2 miles (**Figure 3.11**). For purposes of updating the base model of the RGCP and development of the localized base model, the reach was extended about 3,000 feet upstream to Anapra Bridge (Racetrack Drive), resulting in a reach length of 2.7 miles based on the MEI (USACE, 2007) Station Line. Infrastructure along the reach includes Anapra Bridge (**Photo A.78**), Courchesne Bridge (McNutt Road; **Photo A.79**), the two Southern Pacific Railroad Bridges above American Dam (**Photo A.80**) and American Dam (**Photo A.81**). The USIBWC Rio Grande at El Paso Gage (also referred to as the Courchesne Gage; USIBWC Gage No. 08-3640.00) is located just upstream from the Courchesne Bridge, and includes the automated gage house and gaging cable (**Photo A.82**).

The upstream sediment supply to the reach, represented by Sample S13, is much finer than the sediment supply to the upstream reaches and is sand material (D_{50} = 0.3 mm; Figure 3.3; **Photo A.83**). This material appears to be consistent along the entire reach and is not significantly affected by materials delivered by the Montoya Drain, as evidenced by Sample S14 (D_{50} = 0.2 mm; Figure 3.3; **Photo A.84**). A number of large, vegetated islands and alternate bars are present along the reach. Based on the relatively young vegetation that is present along the up- and downstream sides of the larger and older islands, the size of many of the islands has likely increased over the past 5 years. Of particular concern is the very large island that has formed upstream from the outlet of the Montoya Drain (**Photo A.85**). USIBWC has expressed interest in formulating a plan for removal of this island (pers. comm., Derrick O'Hara, USIBWC). Aggradation along the reach appears widespread, and has likely resulted in reduced efficiency of the Montoya Drain (**Photo A.86**). Riprap bank protection lines both banks along the entirety of the reach, although in many locations the riprap has become buried as a result of bank accretion and subsequently overgrown with vegetation (**Photo A.87**). Backwater effects from American Dam extend at least 1,200 feet upstream from the dam during low-flow conditions, but probably extend much farther during high flow periods (Photo A.80).

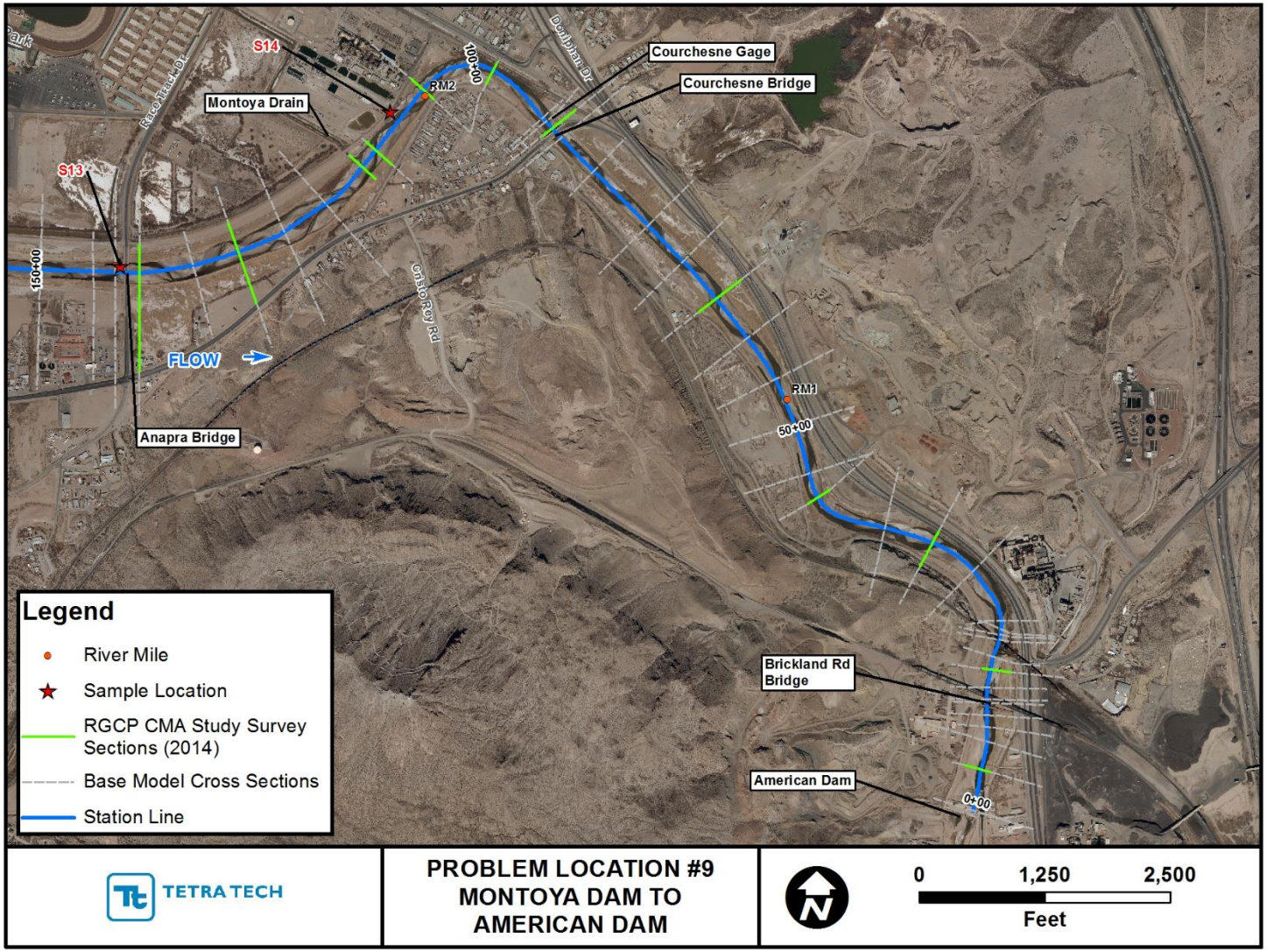


Figure 3.11. Aerial photograph showing key features at Problem Location #9 (Montoya Drain to American Dam).

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APPENDIX A

Field Reconnaissance Photographs

Photo A.1. View upstream to the Garfield Bridge (New Mexico Highway 187).

Photo A.2. View along the right bank crest portion of the Tierra Blanca Vortex Weir. Note the sediment deposition along the portion of the weir in the main channel.

Photo A.3. View across the Tierra Blanca Creek fan to the mouth of the tributary.

Photo A.4. View across the Sibley Arroyo fan surface to the mouth of the tributary.

Photo A.5. View downstream along the eroding left (east) bank opposite the Tierra Blanca Creek fan.

Photo A.6. View upstream along the eroding left (east) bank opposite the Sibley Arroyo fan.

Photo A.7. View downstream from the Garfield Bridge to the backwater affected reach above the Tierra Blanca Creek fan.

Photo A.8. View upstream to the backwater affected reach above the Sibley Arroyo fan.

Photo A.9. View upstream to the mouth of Green Arroyo. The coarser material in the foreground is sediments delivered by Tierra Blanca Creek.

Photo A.10. View of riffle material representative of sediments delivered by Tierra Blanca Creek that was sampled in Pebble Count PC1.

Photo A.11. View of material sampled in subsurface Sample S1 located near the riffle at Pebble Count PC1.

Photo A.12. View of surficial fan material representative of sediments delivered by Sibley Arroyo that was sampled in Pebble Count PC2.

Photo A.13. View of material sampled in the subsurface Sample S2.

Photo A.14. View upstream to the reach near the upstream limit of the backwater effects from the Tierra Blanca Creek fan in the vicinity of Sample S3 that represents the upstream sediment supply to the Problem Location 1 reach.

Photo A.15. View upstream to the Salem Bridge (New Mexico Highway 391).

Photo A.16. View downstream to the upper Hatch Bridge (New Mexico Highway 187).

Photo A.17. View downstream along the distal portion of the Placitas Arroyo fan showing the coarse material delivered by recent monsoon events overlain by sandy material that has been delivered more recently.

Photo A.18. View along upstream portion of the Placitas Arroyo fan to the zone of backwater effects.

Photo A.19. View across Thurman I Arroyo fan to the mouth of the tributary.

Photo A.20. View along distal portion of Thurman II Arroyo fan at the point of constriction.

Photo A.21. View downstream along right bank of RGCP opposite the Thurman II Arroyo where coarse fan materials appear to have been placed to protect the bank.

Photo A.22. View of material collected in Bulk Sample S4 near the Salem Bridge.

Photo A.23. View of material collected in Bulk Sample S5 upstream from the Salem Bridge.

Photo A.24. View of material along the Thurman I Arroyo fan surface that was sampled in Pebble Count PC3.

Photo A.25. View upstream of material in riffle along the distal portion of the Placitas Arroyo fan that was sampled in Pebble Count PC4.

Photo A.26. View downstream to the BNSF Railroad Bridge at the Problem Location 3 site.

Photo A.27. View upstream to the New Mexico Highway 154 Bridge at the Problem Location 3 site. Also shown is the BNSF Railroad Bridge in the background.

Photo A.28. View downstream along the rock riprap and sheetpile grade control structure for the Rincon Siphon.

Photo A.29. View downstream along the Garcia Arroyo fan surface.

Photo A.30. View of material collected in Sample S7 located near the BNSF Railroad Bridge at Problem Location 3.

Photo A.31. View upstream to the surficial material along the surface of the Garcia Arroyo fan that was sampled in Pebble Count PC5.

Photo A.32. View of material collected in Bulk Sample S6 near the upstream limit of the Problem Location 3 reach.

Photo A.33. View downstream to the New Mexico Highway 140 Bridge near the upstream limit of the Problem Location 4 reach.

Photo A.34. View downstream along the surface of the Rincon Arroyo fan.

Photo A.35. View upstream along the west bank opposite the Rincon Arroyo fan, where fan materials have been placed along the toe of the bank but erosion of the upper bank has continued.

Photo A.36. View of material sampled in Pebble Count PC 6 along the distal portion of the Rincon Arroyo fan.

Photo A.37. View of the boulder material in the Rincon Arroyo fan that was sampled in Boulder Count BC1.

Photo A.38. View downstream along the Reed Arroyo fan showing the right portion of the fan that has become vegetated.

Photo A.39. View from east bank across the Bignell Arroyo fan to the mouth of the tributary.

Photo A.40. View of the surface material along the Reed Arroyo fan that was sampled in Pebble Count PC7.

Photo A.41. View of the surface material along the Bignell Arroyo fan that was sampled in Pebble Count PC8.

Photo A.42. View of bed material collected in Sample S9 downstream from Reed Arroyo.

Photo A.43. View of bed material collected in Sample S8 near the upstream limit of the Problem Location 4 reach.

Photo A.44. View of bed material collected from a gravel bar near the upstream limit of Problem Location 5 in Sample S10.

Photo A.45. View from east bank looking across the Rock Canyon fan to the mouth of the tributary.

Photo A.46. View looking upstream along the eroding east bank of the river opposite the Rock Canyon fan.

Photo A.47. View of material on the surface of the Rock Canyon fan sampled in Pebble Count PC9.

Photo A.48. View upstream to the vegetated islands in the expansion zone through Problem Location 5. Note the relatively young vegetation on many of the islands that indicates the islands have formed during the recent drought period.

Photo A.49. View of sand and gravel bed material in the bar surface located upstream from the Rincon/Tonuco Drain collected in Sample S11.

Photo A.50. View to outlet of Rincon/Tonuco Drain that is affected by beaver activities.

Photo A.51. View downstream to the riprap-protected east bank downstream from the Rincon/Tonuco Drain.

Photo A.52. View looking across the channel to the mouth of Horse Canyon Creek where there is no discernable alluvial fan.

Photo A.53. View of bed material along the channel bed of Horse Canyon Creek that was collected in Sample S12.

Photo A.54. View of the mouth of Picacho Drain, where the bed of the drain is perched about 2 feet above the riverbed.

Photo A.55. View of the mouth of drain for the California Lateral, where the invert of the drain is at approximately the same elevation as the riverbed.

Photo A.56. Panoramic view downstream to the Messilla Dam structure, including from left to right the headgate for the Del Rio Lateral, the headgates for the Eastside Main Canal, the radial gates at Mesilla Dam, and the headgates for the Westside Main Canal.

Photo A.57. View of Sample S15 of the representative bed material sediment supply to the Problem Location 6 reach.

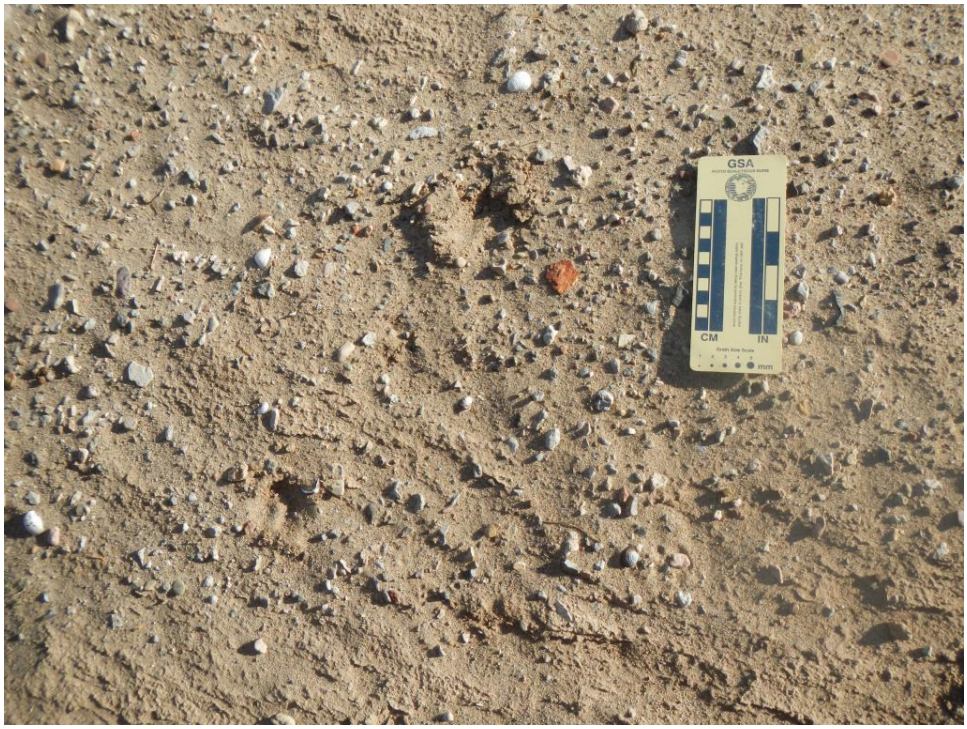

Photo A.58. View of trace gravels in the predominantly sand bed material along the Problem Location 6 reach.

Photo A.59. View upstream to the largest of the right (west) bank arroyos at Problem Location 6.

Photo A.60. View of alluvial fan stratigraphy showing the range of sediments delivered by the largest of the right (west) bank arroyos at Problem Location 6.

Photo A.61. View downstream to the depositional bars in the backwater zone upstream from Mesilla Dam.

Photo A.62. View of Sample S16 collected downstream from Mesilla Dam, where the bed material is very similar to that near the upstream limit of the Problem Location 6 reach.

Photo A.63. View downstream to the Vinton Bridge at Problem Location 7, where the bed material is locally coarse due to sediment contributions from the left (east) bank tributary just upstream from the bridge.

Photo A.64. View of metering station located about 2,000 feet downstream from the Vinton Bridge along Problem Location 7.

Photo A.65. View to mouth of the East Drain where the bed of the drain has become overgrown with cattails.

Photo A.66. View upstream along the lower end of the East Drain to the control structure.

Photo A.67. View of Sample S17 collected from the bed of the channel near the upstream limit of Problem Location 7.

Photo A.68. View downstream to a low-elevation, grassy mid-channel bar that has formed in the reach downstream from the East Drain where the main channel top width is relatively wide.

Photo A.69. View of Sample S18 collected from the subsurface of the alluvial fan of the arroyo at Sta 786+50 near the downstream limit of Problem Location 7.

Photo A.70. View downstream along alluvial fan at Sta 786+50 to the downstream limit of surface gravels located about 180 feet below the mouth of the arroyo.

Photo A.71. View downstream from the mouth of the arroyo at Sta 806+50 where there is no alluvial fan, suggesting this tributary has not recently delivered significant sediment loading to the Problem Location 7 reach.

Photo A.72. View downstream to the Country Club Bridge located about midway along the Problem Location 8 reach.

Photo A.73. View downstream to the eroding left bank under Country Club Bridge that is a result of flows deflecting off of the debris on Pier Set no. 2 (not shown in photograph).

Photo A.74. View upstream from Country Club Bridge showing the intermittent grass and light brush vegetation along the banks.

Photo A.75. View upstream from the Nemexas Siphon showing the more dense, older woody vegetation along the right (east) bank on photo left.

Photo A.76. View of Sample S19 collected from the bed of the channel near the upstream limit of the Problem Location 8 reach.

Photo A.77. View downstream to riprap bank protection along the left (east) bank in the vicinity of the Nemexas Siphon at the downstream limit of the Problem Location 8 reach.

Photo A.78. View upstream to Anapra Bridge (Racetrack Drive).

Photo A.79. View downstream to Courchesne Bridge (McNutt Road).

Photo A.80. View upstream to the pair of Southern Pacific Railroad Bridges above American Dam.

Photo A.81. View across American Dam and the American Canal headworks.

Photo A.82. View of the USIBWC Rio Grande at El Paso Gage (also referred to as the Courchesne Gage; USIBWC Gage No. 08-3640.00).

Photo A.83. View of the bed material along the alternate bar upstream from the Anapra Bridge that was collected in Sample S13.

Photo A.84. View of the bed material along the mid-channel bar near the Montoya Drain outlet that was collected in Sample S14.

Photo A.85. View downstream to the large island that has formed upstream from the Montoya Drain outlet.

Photo A.86. View across left side channel to the Montoya Drain outlet.

Photo A.87. View downstream along the left bank downstream from the Courchesne Bridge (McNutt Road) where riprap bank protection is visible.

Channel Maintenance Alternatives and Sediment-transport Studies for the Rio Grande Canalization Project:
Final Report

APPENDIX C

Del Sur Surveying Surveyor's Report

October 20, 2015

Contract No. IBM09D0006
Order No. IBM14T0016

Introduction

On September 26, 2014, Tetra Tech Inc., as prime contractor to the International Boundary and Water Commission (IBWC), sub-contracted Del Sur Surveying, LLC (DSS), to provide the horizontal and vertical control data for the "Channel Maintenance Alternatives and Sediment Transport Studies for the Rio Grande Canalization Project". This task included setting two control points per site and setting the end points of each cross-section (as determined by Tetra Tech). Additionally, DSS was contracted to provide oversight of Tetra Tech's personnel in the gathering of the bathymetric survey data needed for the hydrologic studies portion of the project.

The project consists of six separate areas, referred to as "Problem Location", extending from approximately Derry, New Mexico, to El Paso, Texas, along the Rio Grande corridor, with five of the six areas lying north of Las Cruces, New Mexico. Each of the locations is further identified as follows:

1. PL 1 – Tierra Blanca Creek to Sibley Arroyo
2. PL 2 – Salem Bridge to Placitas Arroyo
3. PL 3 – Rincon Siphon A Restoration Site to Rincon Siphon
4. PL 4 – Rincon Arroyo to Bignell Arroyo
5. PL 5 – Hersey Arroyo to 0.8 mil below Rincon/Tonuco Drain Confluence
6. PL 6 – Montoya Drain to American Dam

Basis of Survey, Instrumentation and Methodology

In 2012-2013, Del Sur Surveying, LLC, was previously sub-contracted to complete 95 miles of right-of-way surveys along the Rio Grande Canalization Project by S&B Infrastructure, Inc., for the IBWC. Through this project, DSS was provided with the base control datum as established by Frank X. Spencer and Associates, Inc., as published in the report to IBWC titled "Upper Rio Grande River NM (URGR) & Lower Rio Grande River (LRGR) TX mapping FXSA Project No. S0917EP", dated May 12, 2009. All point data as used by DSS was provided in New Mexico State Plane Coordinates, Central Zone (Geoid 03) in U.S. Feet with the vertical datum being NAVD 88. In order to maintain continuity and ease of reference for the IBWC between photogrammetry, right-of-way data and this project, this base data was utilized for this project as well.

All Spencer control points found for use in this survey were either a rebar set with a 1-1/2" aluminum cap or a 1-1/2" aluminum cap set in concrete.

For this project, DSS used a Leica 1230 Rover unit with GSM modem card using the Doña Ana County Flood Commission GPS Network. Fast static methods were used to check the existing control points and to set control points at each of the problem locations. The unit's data collector was loaded with the published coordinates of the control points were field collected by the Leica equipment with an error not exceeding 0.10 foot. To maintain quality assurance and control, DSS's standard practice is to check and verify control points at the beginning and ending of each field survey day and also during the course of the day. Also, various published NGS monuments were gathered at intervals.

Monumentation set as control points, are 5/8"ø x 24" rebar set with a 2" aluminum cap marked "U.S.I.B.W.C. R.O.W." with a center punch circumscribed by a triangle. The monumentation set for the end points of the cross sections are 5/8"ø x 24" rebar with a 2" aluminum cap marked "U.S.I.B.W.C. 2014, TP , NMPS 12800", with a center cross.

DSS set two control points per problem location for use by Tetra Tech.

Tetra Tech used a Leica Viva GPS base unit with two rovers to complete their bathymetric surveys. In observation of their daily procedures, the base unit was set over one of the problem location control points set by DSS, and both rover units were checked at the other control, both at the beginning of the day and end of day. Real Time Kinematic (RTK) procedures were utilized for gathering survey data along the project areas.

Survey Data

The following pages contain the coordinate data for the set survey control, verification points and set cross-section endpoints per each problem location. The topographic and bathymetric survey data collected by Tetra Tech are presented in Appendix A.

PL 1 - Tierra Blanca Creek to Sibley Arroyo

Del Sur Surveying, LLC Data

DSS Control Points Set

Point No.	Northing	Easting	Elevation	General Location
1000	654,389.267	1,317,595.555	4116.05	From intersection of NMSR 187 and West River Rose Road, travel west ±0.7 miles along West River Rose Road to intersection with levee road, monument lies west of levee, ± 10' from centerline of levee road
1001	649,619.530	1,316,891.694	4114.50	From intersection of West River Rose Road and levee road, travel south ±1.1 miles along east levee road, monument lies east of levee road, ±20' from centerline of levee road

Spencer & Other Published Control Points Used For Verification Check by DSS

Point No.	Northing	Easting	Elevation
Spencer – X-01	618,027.17	1,344,138.77	4076.92
Spencer – X-02	613,275.69	1,351.455.17	4073.36
NMSHD – CX1800	660,576.850	1,321,642.525	4302.07

DSS Cross-section End Points Set

Point No.	Northing	Easting	Elevation
1200	649,386.823	1,316,917.678	4109.05
1201	649,552.307	1,316,981.898	4114.34
1202	650,105.503	1,316,250.073	4111.04
1203	650,053.862	1,315,992.599	4126.49
1204	651,241.189	1,315,982.402	4111.70
1205	651,134.230	1,316,277.300	4114.96
1206	652,041.028	1,317,246.339	4114.46
1207	652,173.863	1,316,842.481	4114.37
1208	653,260.028	1,317,210.888	4114.87
1209	653,213.762	1,317,447.535	4116.60

1210	654,563.337	1,317,569.197	4116.60
1211	654,480.178	1,317,312.247	4113.68
1212	655,266.574	1,315,767.642	4118.36
1213	655,472.606	1,315,900.054	4115.28
1214	655,770.299	1,315,701.482	4115.49
1215	655,800.618	1,315,327.486	4122.58
1216	657,020.789	1,315,811.450	4116.04
1217	656,900.591	1,316,146.670	4121.88
1218	657,788.729	1,316,522.148	4117.94
1219	657,950.865	1,316,018.870	4120.36
1220	659,125.499	1,316,289.267	4120.37
1221	658,976.559	1,316,731.159	4122.16
1222	656,286.621	1,315,560.999	4115.89
1223	656,256.097	1,315,748.251	4117.15

PL 2 - Salem Bridge to Placitas Arroyo

Del Sur Surveying, LLC Data

DSS Control Points Set

Point No.	Northing	Easting	Elevation	General Location
2000	613,225.424	1,351,251.776	4062.49	From intersection of NMSR 187 and south levee road, travel west ±210' along south levee road, monument lies north of levee, ± 75' from centerline of levee road
2001	611,288.695	1,361,924.638	4052.40	From the corner of a white wooden fence located ±50' north of the west levee, and ±100' east of Franklin Street, monument lies ±35' in an east-northeast direction

Spencer & Other Published Control Points Used For Verification Check by DSS

Point No.	Northing	Easting	Elevation
Spencer – X-02	613,275.69	1,351.455.17	4073.36
Spencer – X-03	611,243.19	1,361,745.09	4066.20
NMSHD – CX1779	619417.755	1351420.479	4137.30

DSS Cross-section End Points Set

Point No.	Northing	Easting	Elevation
2200	611,180.998	1,361,621.345	4065.39
2201	612,306.164	1,361,415.755	4057.87
2202	611,120.430	1,360,339.616	4059.54
2203	612,001.021	1,360,314.062	4053.61
2204	612,045.334	1,359,670.894	4054.67
2205	611,142.026	1,359,343.595	4061.61
2206	611,180.286	1,358,992.927	4062.34
2207	612,075.562	1,359,366.845	4055.40
2208	612,096.603	1,359,123.992	4055.99
2209	611,322.805	1,358,797.132	4061.31

2210	611,874.995	1,357,866.622	4060.85
2211	612,581.067	1,358,139.439	4055.80
2212	613,131.010	1,356,766.705	4058.97
2213	612,473.534	1,356,478.321	4063.88
2214	612,759.112	1,355,821.839	4064.48
2215	613,445.028	1,356,169.909	4065.70
2216	613,808.339	1,355,550.858	4064.52
2217	613,041.722	1,355,129.909	4064.56
2218	613,468.598	1,354,193.563	4063.68
2219	614,222.148	1,354,505.153	4058.35
2220	614,445.442	1,353,522.150	4060.69
2221	613,598.204	1,353,395.015	4066.60
2222	613,496.583	1,352,615.161	4067.08
2223	614,650.747	1,352,515.403	4061.03
2224	613,978.112	1,351,068.873	4069.81
2225	613,228.338	1,351,437.444	4070.27
2226	612,746.050	1,349,928.629	4069.93
2227	613,873.858	1,349,883.684	4070.10
2228	614,179.031	1,348,975.397	4070.45
2229	613,431.438	1,348,100.821	4071.00
2230	614,632.667	1,347,197.516	4071.67
2231	615,255.937	1,347,926.401	4071.22
2234	616,707.872	1,345,269.122	4074.64
2235	617,467.659	1,345,768.426	4075.72

2236	618,079.527	1,344,017.666	4076.35
2237	617,019.149	1,344,011.929	4074.85

PL 3 - Rincon Siphon A Restoration Site to Rincon Siphon

Del Sur Surveying, LLC Data

DSS Control Points Set

Point No.	Northing	Easting	Elevation	General Location
3000	608,986.202	1,370,699.283	4051.87	From intersection of Franklin Street and west levee road, travel south ±1.4 miles along west levee road to levee ramp, monument lies north of levee, ± 3' from edge of levee road
3001	610,274.878	1,368,758.113	4053.55	From intersection of Franklin Street and west levee road, travel south ±1.9 miles along west levee road to levee ramp, monument lies north of levee, ± 3' from edge of levee road

Spencer & Other Published Control Points Used For Verification Check by DSS

Point No.	Northing	Easting	Elevation
Spencer – X-03	611,243.19	1,361,745.09	4066.20
Spencer – X-04	607,797.26	1,372,506.90	4050.33
NMSHD – CX1769	610,807.239	1,378,995.299	4130.54

DSS Cross-section End Points Set

Point No.	Northing	Easting	Elevation
3200	607,370.738	1,372,402.419	4047.96
3201	607,709.377	1,373,218.444	4045.40
3202	607,975.529	1,373,087.287	4045.57
3203	607854.257	1,372,064.996	4052.59
3204	608,126.642	1,371,878.479	4051.11
3205	608,728.785	1,372,286.794	4047.38
3206	609,061.616	1,371,936.777	4045.16
3207	608,442.925	1,371,467.811	4051.72
3208	609,024.440	1,370,644.367	4051.80

3209	609,844.787	1,371,292.246	4049.42
3210	610,290.818	1,370,746.540	4047.26
3211	609,359.786	1,370,119.299	4051.54
3212	609,827.771	1,369,380.055	4053.48
3213	610,689.424	1,370,034.834	4060.14

PL 4 - Rincon Arroyo to Bignell Arroyo

Del Sur Surveying, LLC Data

DSS Control Points Set

Point No.	Northing	Easting	Elevation	General Location
4000	599,674.877	1,393,342.830	4025.29	From intersection of NMSR 140 and west levee road, travel south ±1.7 miles along west levee road, monument lies north of centerline of levee ± 50'
4001	595,539.796	1,395,788.561	4018.59	From intersection of NMSR 140 and west levee road, travel south ±2.8 miles along west levee road, monument lies east of centerline of levee ± 60'

Spencer & Other Published Control Points Used For Verification Check by DSS

Point No.	Northing	Easting	Elevation
Spencer – X-04	607,797.26	1,372,506.90	4050.33
Spencer – X-05	602,736.35	1,386,113.58	4040.90
NMSHD – CX1771	609,378.453	1,397,183.682	4256.16

DSS Cross-section End Points Set

Point No.	Northing	Easting	Elevation
4200	593,601.222	1,398,110.233	4017.99
4201	594,227.626	1,398,358.229	4021.44
4202	594,551.491	1,397,423.023	4023.30
4203	593,948.452	1,397,143.256	4021.36
4204	594,858.087	1,396,668.728	4021.69
4205	594,233.888	1,395,985.967	4029.81
4206	595,162.975	1,396,563.497	4023.91
4207	595,003.822	1,395,475.201	4022.75
4208	596,832.384	1,396,403.462	4028.34
4209	596,511.508	1,397,403.391	4023.31

4210	598,781.128	1,396,536.255	4026.53
4211	598,070.353	1,396,005.893	4030.14
4212	599,022.608	1,394,858.682	4029.08
4213	599,676.315	1,395,340.147	4027.87
4214	600,486.188	1,393,949.651	4027.68
4215	599,577.984	1,393,592.200	4030.47
4216	599,619.921	1,391,878.208	4031.86
4217	600,443.513	1,391,760.192	4029.45
4218	600,307.744	1,390,446.789	4029.95
4219	599,376.502	1,390,169.019	4031.60
4220	599,733.698	1,388,890.101	4033.73
4221	600,588.122	1,389,731.491	4031.88
4222	601,210.979	1,389,112.032	4032.36
4223	600,835.295	1,388,439.893	4034.58
4224	601,606.519	1,387,913.972	4035.21
4225	602,167.154	1,388,523.023	4032.85
4226	602,558.837	1,388,267.702	4034.22
4227	601,923.638	1,387,681.229	4036.56
4228	602,131.175	1,387,525.338	4037.01
4229	602,733.925	1,388,161.218	4033.76
4230	602,949.701	1,387,909.730	4025.81
4231	602,257.072	1,387,398.470	4037.59
4232	602,426.460	1,387,152.740	4037.61
4233	603,149.250	1,387,452.595	4034.97

4234	603,341.700	1,386,154.495	4039.03
4235	602,583.770	1,386,156.898	4037.80

PL 5 – Hersey Arroyo to 0.8 mi Below Rincon/Tonuco Drain Confluence

Del Sur Surveying, LLC Data

DSS Control Points Set

Point No.	Northing	Easting	Elevation	General Location
5000	571,459.057	1,409,514.636	4008.46	From MM 23 along US 185, travel south ±0.3 miles to an arroyo crossing, monument lies at top of southwest bank, ± 70' west of centerline of highway
5001	578,695.455	1,405,220.733	4040.19	From MM 24 along US 185, travel north ±0.4 miles to a "55"mph traffic sign, monument lies on west side of highway, ± 47' west of centerline of highway and ±3' from right-of-way fence

Spencer & Other Published Control Points Used For Verification Check by DSS

Point No.	Northing	Easting	Elevation
Spencer – X-04	607,797.26	1,372,506.90	4050.33
Spencer – CP-07	539,362.01	1,435,947.08	3981.66
NGS – CX1743	584,271.081	1,425,450.501	4322.02

DSS Cross-section End Points Set

Point No.	Northing	Easting	Elevation
5200	565,093.167	1,409,488.154	3995.72
5201	565,130.341	1,410,735.304	3994.53
5202	566,872.577	1,409,750.285	3993.91
5203	566,706.826	1,409,426.813	4000.99
5204	569,341.131	1,409,313.851	3993.40
5205	568,971.182	1,410,331.467	3994.30
5206	569,952.520	1,410,562.573	3995.29
5207	571,077.412	1,409,572.408	3996.21
5208	570,343.556	1,409,460.267	3994.62

5209	570,966.148	1,410,747.056	3996.39
5210	571,572.911	1,410,797.356	3995.46
5211	571,058.919	1,409,566.304	3996.33
5212	571,618.124	1,409,680.617	4002.96
5213	572,065.534	1,410,648.033	3999.02
5214	573,401.584	1,410,255.276	3996.74
5215	573,360.900	1,409,794.966	3998.03
5216	574,386.316	1,409,047.986	3998.38
5217	575,075.284	1,410,010.058	3996.86
5218	576,573.505	1,408,703.103	3997.27
5219	575,988.308	1,407,798.977	4022.32
5220	577,315.282	1,407,089.546	3998.69
5221	577,693.706	1,407,673.165	4002.08
5222	578,946.199	1,406,849.651	4001.49
5223	578,561.112	1,406,241.795	4012.05

PL 6 – Montoya Drain to American Dam

Del Sur Surveying, LLC Data

DSS Control Points Set

Point No.	Northing	Easting	Elevation	General Location
6000	291,999.347	1,550,508.859	3731.02	Within eastern levee, south of Courchese bridge
6001	292,364.348	1,549,915.068	3731.46	Within eastern levee, northwest of Courchese bridge

Spencer & Other Published Control Points Used For Verification Check by DSS

Point No.	Northing	Easting	Elevation
Spencer – X-24	290,965.14	1,545,711.92	3746.93
Spencer – X-25	292,142.76	1,550,084.94	3746.93
Spencer – CP-22	295,416.40	1,549,549.56	3878.66
NGS – CEO689	285,648.906	1,541,060.823	3857.79

DSS Cross-section End Points Set

Point No.	Northing	Easting	Elevation
6200	285,799.157	1,554,031.680	3728.03
6201	285,731.584	1,554,283.671	3729.38
6202	286,725.496	1,554,490.184	3728.51
6203	286,757.668	1,554,205.428	3728.47
6204	287,840.084	1,553,615.615	3732.03
6205	288,189.149	1,553,803.036	3736.90
6206	288,535.465	1,552,682.394	3729.75
6207	288,395.877	1,552,462.798	3729.23
6208	290,302.461	1,551,375.852	3735.01
6209	290,629.560	1,551,800.831	3733.81
6210	292,315.781	1,550,150.869	3738.54

6211	292,060.210	1,549,824.421	3740.18
6212	292,578.375	1,549,263.683	3731.52
6213	292,803.240	1,549,379.459	3732.51
6214	292,627.242	1,548,513.498	3735.34
6215	292,420.139	1,548,744.675	3736.36
6216	291,770.577	1,548,327.890	3733.75
6217	292,004.489	1,548,065.946	3733.84
6218	291,900.732	1,547,863.124	3740.91
6219	291,630.202	1,548,166.088	3730.29
6220	290,969.914	1,547,649.884	3742.99
6221	291,510.231	1,547,266.500	3742.24
6222	291,192.442	1,546,696.780	3743.25
6223	290,396.420	1,546,974.919	3741.62
6224	289,715.099	1,545,806.463	3742.22
6225	290,979.333	1,545,811.657	3745.96

Certification

I, Roxanne C. Nimmer, a New Mexico Professional Surveyor, certify that I conducted and am responsible for this survey. That this survey is true and correct to the best of my knowledge and belief, and that this survey and report meet the minimum standards for surveying in the State of New Mexico.

Roxanne C. Nimmer, NMPS # 12800

Appendix A – Topographic and bathymetric survey data collected by Tetra Tech.

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
1	R1 1001	649619.56	1316891.66	4114.47
1	R1 1002	658724.49	1316678.68	4122.61
1	R1 1003	658974.54	1316735.28	4121.95
1	R1 1004	658983.79	1316702.68	4121.25
1	R1 1005	658998.46	1316670.92	4120.35
1	R1 1006	659000.13	1316648.69	4118.67
1	R1 1007	659008.14	1316624.81	4117.52
1	R1 1008	659018.31	1316611.95	4113.21
1	R1 1009	659018.48	1316612.87	4113.69
1	R1 1010	659018.39	1316613.10	4114.28
1	R1 1011	659018.72	1316610.52	4112.69
1	R1 1012	659019.73	1316604.27	4111.49
1	R1 1013	659020.29	1316593.39	4110.92
1	R1 1014	659024.21	1316586.48	4110.65
1	R1 1015	659024.81	1316579.75	4110.54
1	R1 1016	659028.28	1316574.38	4110.38
1	R1 1017	659028.95	1316567.58	4110.19
1	R1 1018	659030.42	1316558.26	4110.06
1	R1 1019	659035.81	1316551.01	4110.12
1	R1 1020	659038.65	1316543.59	4109.88
1	R1 1021	659040.11	1316535.93	4109.56
1	R1 1022	659041.70	1316525.89	4110.52
1	R1 1023	659043.73	1316521.97	4111.64
1	R1 1024	659049.49	1316517.13	4111.91
1	R1 1025	659049.56	1316511.07	4113.59
1	R1 1026	659049.27	1316511.37	4113.25
1	R1 1027	659048.08	1316512.78	4112.18
1	R1 1028	659052.92	1316506.47	4116.02
1	R1 1029	659054.05	1316499.46	4117.64
1	R1 1030	659076.06	1316427.81	4119.13
1	R1 1031	657931.99	1316073.75	4120.45
1	R1 1032	657913.14	1316118.64	4116.41
1	R1 1033	657912.35	1316135.19	4115.37
1	R1 1034	657902.31	1316160.32	4115.47
1	R1 1035	657897.40	1316178.55	4115.61
1	R1 1036	657890.81	1316202.77	4115.10
1	R1 1037	657885.44	1316226.14	4114.61
1	R1 1038	657883.49	1316235.34	4114.50
1	R1 1039	657881.74	1316236.88	4115.30
1	R1 1040	657875.08	1316250.41	4115.28

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
1	R1 1041	657871.04	1316265.74	4115.21
1	R1 1042	657866.03	1316279.67	4115.17
1	R1 1043	657860.85	1316295.28	4115.11
1	R1 1044	657857.58	1316306.11	4114.74
1	R1 1045	657857.04	1316310.11	4114.44
1	R1 1046	657857.60	1316312.67	4113.70
1	R1 1047	657853.71	1316317.01	4113.31
1	R1 1048	657851.61	1316324.49	4113.08
1	R1 1049	657850.18	1316328.27	4113.03
1	R1 1050	657848.58	1316330.58	4113.64
1	R1 1051	657848.61	1316331.01	4113.88
1	R1 1052	657847.93	1316333.35	4116.52
1	R1 1053	657847.67	1316332.65	4115.96
1	R1 1054	657847.10	1316340.65	4117.48
1	R1 1055	657840.39	1316357.60	4117.57
1	R1 1056	657837.15	1316366.24	4117.59
1	R1 1057	657834.07	1316369.29	4117.74
1	R1 1058	657829.02	1316396.73	4113.41
1	R1 1059	657829.78	1316400.82	4113.01
1	R1 1060	657829.54	1316400.97	4113.01
1	R1 1061	657824.89	1316417.64	4112.07
1	R1 1062	657820.83	1316426.06	4112.90
1	R1 1063	657820.58	1316427.39	4113.08
1	R1 1064	657817.64	1316433.67	4113.64
1	R1 1065	657812.99	1316449.05	4118.28
1	R1 1066	657807.55	1316456.89	4118.49
1	R1 1067	657802.10	1316476.62	4118.61
1	R1 1068	657796.73	1316494.17	4118.98
1	R1 1069	657788.15	1316514.56	4118.61
1	R1 1070	654560.85	1317560.61	4116.29
1	R1 1071	654559.43	1317555.67	4116.17
1	R1 1072	654554.57	1317543.70	4113.90
1	R1 1073	654551.40	1317535.79	4108.26
1	R1 1074	654551.15	1317535.59	4108.06
1	R1 1075	654551.79	1317531.20	4107.14
1	R1 1076	654551.11	1317529.08	4106.81
1	R1 1077	654547.30	1317518.95	4105.82
1	R1 1078	654544.44	1317509.09	4105.08
1	R1 1079	654539.74	1317498.08	4105.32
1	R1 1080	654536.78	1317484.75	4106.01

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
1	R1 1081	654534.29	1317473.92	4106.09
1	R1 1082	654529.86	1317464.43	4106.98
1	R1 1083	654526.48	1317455.50	4107.44
1	R1 1084	654525.18	1317447.83	4107.50
1	R1 1085	654520.63	1317438.04	4108.42
1	R1 1086	654521.17	1317435.67	4109.48
1	R1 1087	654521.01	1317433.36	4110.60
1	R1 1088	654520.02	1317426.68	4111.15
1	R1 1089	654519.12	1317417.07	4111.32
1	R1 1290	653247.40	1317271.08	4106.56
1	R1 1291	653248.46	1317270.37	4107.06
1	R1 1292	653248.40	1317270.25	4107.16
1	R1 1293	653249.46	1317263.78	4110.65
1	R1 1294	653247.99	1317255.02	4112.31
1	R1 1295	653252.69	1317249.42	4115.49
1	R1 1296	653253.35	1317246.30	4115.68
1	R1 1297	653257.75	1317218.44	4114.42
1	R1 1298	653246.74	1317273.89	4105.57
1	R1 1299	653245.01	1317280.91	4105.51
1	R1 1300	653242.97	1317289.23	4105.44
1	R1 1301	653240.93	1317297.99	4105.79
1	R1 1302	653238.74	1317308.59	4105.87
1	R1 1303	653237.34	1317319.13	4106.13
1	R1 1304	653236.36	1317330.06	4106.70
1	R1 1305	653236.26	1317334.35	4106.90
1	R1 1306	653234.24	1317344.69	4107.11
1	R1 1307	653230.58	1317357.80	4107.26
1	R1 1308	653228.47	1317371.99	4107.62
1	R1 1309	653226.04	1317385.78	4107.80
1	R1 1310	653222.18	1317399.11	4108.00
1	R1 1311	653224.37	1317404.59	4108.45
1	R1 1312	653223.95	1317406.24	4109.30
1	R1 1313	653222.28	1317421.69	4113.48
1	R1 1314	653217.11	1317427.70	4114.44
1	R1 1315	653215.46	1317444.18	4116.53
1	R1 1316	650100.76	1316225.71	4110.23
1	R1 1317	650093.77	1316188.26	4109.99
1	R1 1318	650094.82	1316179.81	4109.38
1	R1 1319	650088.90	1316171.71	4104.40
1	R1 1320	650088.98	1316172.17	4104.72

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
1	R1 1321	650087.86	1316163.11	4104.15
1	R1 1322	650086.36	1316154.85	4104.37
1	R1 1323	650086.01	1316152.06	4104.83
1	R1 1324	650086.20	1316145.25	4104.33
1	R1 1325	650080.21	1316132.30	4104.19
1	R1 1326	650079.96	1316119.88	4103.70
1	R1 1327	650079.21	1316112.64	4103.45
1	R1 1328	650076.20	1316103.50	4103.20
1	R1 1329	650074.23	1316091.40	4103.49
1	R1 1330	650071.43	1316081.46	4103.22
1	R1 1331	650070.28	1316071.45	4103.32
1	R1 1332	650068.95	1316063.89	4103.79
1	R1 1333	650065.89	1316056.71	4104.38
1	R1 1334	650066.02	1316054.44	4104.64
1	R1 1335	650066.24	1316039.91	4111.66
1	R1 1336	650060.85	1316016.56	4111.43
1	R1 1337	649404.83	1316925.83	4101.40
1	R1 1338	649399.57	1316924.78	4101.78
1	R1 1339	649397.55	1316923.89	4102.10
1	R1 1340	649388.88	1316920.33	4109.81
1	R1 1341	649372.75	1316911.15	4108.23
1	R2 10000	649619.56	1316891.66	4114.46
1	R2 10001	656938.71	1316043.82	4119.73
1	R2 10002	656947.60	1316013.43	4119.20
1	R2 10003	656953.23	1315997.95	4118.46
1	R2 10004	656957.74	1315984.12	4116.54
1	R2 10005	656960.30	1315981.40	4115.43
1	R2 10006	656962.44	1315975.01	4111.86
1	R2 10007	656964.56	1315970.65	4110.90
1	R2 10008	656966.17	1315966.03	4111.11
1	R2 10009	656970.82	1315952.86	4111.07
1	R2 10010	656973.48	1315942.85	4110.69
1	R2 10011	656978.79	1315934.90	4110.58
1	R2 10012	656978.55	1315928.14	4110.30
1	R2 10013	656978.77	1315925.36	4110.59
1	R2 10014	656979.08	1315923.73	4111.78
1	R2 10015	656983.55	1315917.41	4112.11
1	R2 10016	656983.66	1315912.60	4111.96
1	R2 10017	656987.88	1315904.28	4110.94
1	R2 10018	656990.11	1315900.30	4110.36

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
1	R2 10019	656991.55	1315896.22	4110.15
1	R2 10020	656991.42	1315891.88	4109.88
1	R2 10021	656993.98	1315887.31	4109.59
1	R2 10022	656996.58	1315881.24	4109.71
1	R2 10023	656997.20	1315875.40	4109.61
1	R2 10024	656998.01	1315870.30	4109.64
1	R2 10025	657001.52	1315864.43	4109.79
1	R2 10026	657002.99	1315861.16	4109.75
1	R2 10027	657003.77	1315858.51	4109.71
1	R2 10028	657003.60	1315856.47	4109.50
1	R2 10029	657004.10	1315855.31	4109.92
1	R2 10030	657004.65	1315854.12	4111.49
1	R2 10031	657006.33	1315849.42	4114.78
1	R2 10032	657008.73	1315842.58	4116.59
1	R2 10033	657019.44	1315812.13	4116.04
1	R2 10034	656268.09	1315657.09	4108.98
1	R2 10035	656270.97	1315648.86	4108.95
1	R2 10036	656272.74	1315644.75	4108.87
1	R2 10037	656273.20	1315641.90	4108.50
1	R2 10038	656274.60	1315637.62	4107.94
1	R2 10039	656275.64	1315633.83	4108.43
1	R2 10040	656274.57	1315631.61	4108.80
1	R2 10041	656274.54	1315629.36	4108.74
1	R2 10042	656275.32	1315626.17	4108.67
1	R2 10043	656276.01	1315622.35	4108.44
1	R2 10044	656277.00	1315618.99	4108.30
1	R2 10045	656277.78	1315615.47	4108.37
1	R2 10046	656278.17	1315613.05	4108.76
1	R2 10047	656278.86	1315610.19	4108.96
1	R2 10048	656279.25	1315606.33	4108.71
1	R2 10049	656279.55	1315603.84	4108.46
1	R2 10050	656279.75	1315600.17	4108.22
1	R2 10051	656280.05	1315597.33	4108.36
1	R2 10052	656278.94	1315590.87	4108.68
1	R2 10053	656280.81	1315587.30	4109.07
1	R2 10054	656281.34	1315585.45	4110.47
1	R2 10055	656283.90	1315576.53	4115.20
1	R2 10056	656286.65	1315564.43	4116.88
1	R2 10057	656290.71	1315543.20	4115.95
1	R2 10058	656269.58	1315663.60	4109.05

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
1	R2 10059	656268.84	1315668.55	4109.10
1	R2 10060	656267.90	1315672.09	4109.29
1	R2 10061	656267.38	1315675.99	4109.68
1	R2 10062	656265.14	1315682.72	4109.94
1	R2 10063	656266.32	1315687.00	4109.95
1	R2 10064	656266.20	1315688.85	4109.91
1	R2 10065	656266.94	1315691.72	4110.03
1	R2 10066	656266.85	1315693.96	4110.38
1	R2 10067	656263.87	1315699.03	4113.86
1	R2 10068	656262.71	1315704.70	4115.32
1	R2 10069	656260.65	1315723.98	4116.54
1	R2 10070	656252.22	1315758.77	4117.19
1	R2 10071	655772.36	1315687.36	4115.10
1	R2 10072	655772.81	1315676.68	4115.52
1	R2 10073	655774.65	1315637.15	4113.26
1	R2 10074	655774.51	1315628.12	4109.06
1	R2 10075	655774.55	1315628.09	4109.09
1	R2 10076	655776.95	1315623.87	4107.57
1	R2 10077	655777.86	1315620.86	4108.00
1	R2 10078	655776.84	1315614.35	4106.88
1	R2 10079	655778.63	1315610.27	4105.29
1	R2 10080	655778.47	1315607.07	4106.73
1	R2 10081	655778.25	1315604.99	4107.36
1	R2 10082	655778.14	1315600.54	4107.60
1	R2 10083	655778.42	1315592.79	4107.79
1	R2 10084	655779.00	1315585.85	4107.91
1	R2 10085	655780.92	1315579.12	4107.76
1	R2 10086	655782.21	1315575.06	4107.64
1	R2 10087	655781.34	1315571.97	4107.21
1	R2 10088	655781.44	1315568.05	4107.23
1	R2 10089	655781.42	1315564.27	4107.21
1	R2 10090	655782.18	1315561.58	4107.35
1	R2 10091	655782.85	1315559.21	4107.16
1	R2 10092	655781.85	1315556.61	4107.11
1	R2 10093	655782.17	1315553.43	4107.20
1	R2 10094	655782.48	1315549.56	4108.11
1	R2 10095	655782.87	1315548.42	4107.07
1	R2 10096	655783.52	1315545.12	4108.12
1	R2 10097	655782.15	1315538.46	4109.50
1	R2 10098	655782.27	1315534.53	4110.60

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
1	R2 10099	655782.94	1315529.47	4111.67
1	R2 10100	655786.95	1315478.12	4116.04
1	R2 10101	655280.17	1315775.90	4118.54
1	R2 10102	655299.79	1315789.45	4118.87
1	R2 10103	655309.40	1315793.08	4113.23
1	R2 10104	655310.84	1315794.46	4110.09
1	R2 10105	655324.32	1315806.78	4105.29
1	R2 10106	655329.74	1315807.85	4105.54
1	R2 10107	655331.46	1315811.57	4105.57
1	R2 10108	655345.99	1315816.63	4107.00
1	R2 10109	655349.49	1315821.68	4107.42
1	R2 10110	655355.87	1315827.20	4108.17
1	R2 10111	655362.49	1315829.37	4108.88
1	R2 10112	655370.80	1315834.43	4109.51
1	R2 10113	655381.03	1315840.65	4109.21
1	R2 10114	655384.59	1315843.55	4109.02
1	R2 10115	655387.75	1315846.45	4109.05
1	R2 10116	655392.48	1315850.16	4110.68
1	R2 10117	655399.38	1315851.87	4112.24
1	R2 10118	655406.55	1315857.02	4111.66
1	R2 10119	655414.57	1315860.70	4112.36
1	R2 10120	655419.57	1315868.01	4111.97
1	R2 10121	655426.94	1315872.54	4114.55
1	R2 10122	655451.70	1315885.57	4114.61
1	R2 10123	652048.33	1317222.98	4113.83
1	R2 10124	652052.75	1317207.99	4113.41
1	R2 10125	652059.36	1317194.08	4110.60
1	R2 10126	652064.45	1317187.73	4108.26
1	R2 10127	652062.26	1317183.25	4106.70
1	R2 10128	652062.42	1317180.34	4106.13
1	R2 10129	652062.98	1317177.30	4105.94
1	R2 10130	652063.95	1317171.35	4105.59
1	R2 10131	652066.66	1317167.53	4105.54
1	R2 10132	652069.01	1317162.38	4105.67
1	R2 10133	652071.07	1317156.64	4105.62
1	R2 10134	652073.01	1317150.60	4105.30
1	R2 10135	652074.41	1317143.90	4105.53
1	R2 10136	652075.68	1317139.19	4105.43
1	R2 10137	652076.79	1317134.30	4105.31
1	R2 10138	652077.87	1317131.19	4105.30

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
1	R2 10139	652080.01	1317126.62	4105.40
1	R2 10140	652081.70	1317122.67	4105.48
1	R2 10141	652084.74	1317110.84	4105.66
1	R2 10142	652086.14	1317105.97	4105.63
1	R2 10143	652090.72	1317096.63	4105.98
1	R2 10144	652092.89	1317089.99	4106.18
1	R2 10145	652095.55	1317080.60	4106.50
1	R2 10146	652096.87	1317074.76	4106.77
1	R2 10147	652098.20	1317068.52	4107.01
1	R2 10148	652101.38	1317064.63	4107.16
1	R2 10149	652103.47	1317059.97	4108.02
1	R2 10150	652105.42	1317054.92	4109.43
1	R2 10151	652105.36	1317054.49	4109.45
1	R2 10152	652104.57	1317047.63	4110.42
1	R2 10153	652108.47	1317040.67	4111.90
1	R2 10154	652112.89	1317024.64	4112.68
1	R2 10155	652122.09	1317001.21	4111.39
1	R2 10156	651204.64	1316082.48	4108.96
1	R2 10157	651208.01	1316073.68	4109.02
1	R2 10158	651212.25	1316066.39	4109.12
1	R2 10159	651202.68	1316088.76	4108.99
1	R2 10160	651197.70	1316102.67	4108.81
1	R2 10161	651213.08	1316063.82	4110.79
1	R2 10162	651192.86	1316113.81	4108.68
1	R2 10163	651192.73	1316116.30	4108.91
1	R2 10164	651192.28	1316119.36	4109.31
1	R2 10165	651189.73	1316123.53	4109.42
1	R2 10166	651187.31	1316129.35	4109.16
1	R2 10167	651184.96	1316133.92	4109.24
1	R2 10168	651183.68	1316139.19	4109.31
1	R2 10169	651180.62	1316143.50	4108.89
1	R2 10170	651180.97	1316148.71	4108.69
1	R2 10171	651180.22	1316151.83	4108.29
1	R2 10172	651178.54	1316157.11	4108.16
1	R2 10173	651177.68	1316162.14	4108.14
1	R2 10174	651173.06	1316166.52	4107.93
1	R2 10175	651173.76	1316170.44	4107.54
1	R2 10176	651172.57	1316173.80	4107.50
1	R2 10177	651169.36	1316176.21	4107.51
1	R2 10178	651169.64	1316180.17	4107.56

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
1	R2 10179	651165.88	1316184.17	4107.50
1	R2 10180	651166.23	1316190.12	4107.26
1	R2 10181	651164.52	1316193.64	4106.98
1	R2 10182	651162.65	1316197.31	4106.52
1	R2 10183	651160.71	1316201.54	4106.56
1	R2 10184	651159.06	1316205.92	4106.82
1	R2 10185	651157.98	1316208.80	4106.72
1	R2 10186	651156.75	1316212.19	4106.76
1	R2 10187	651156.96	1316215.45	4107.18
1	R2 10188	651155.65	1316219.26	4107.61
1	R2 10189	651154.17	1316223.90	4109.55
1	R2 10190	651147.08	1316240.44	4114.71
1	R2 10191	651139.84	1316260.99	4115.14
1	R2 10192	651131.76	1316281.65	4114.76
1	R2 10193	649532.61	1316972.39	4112.74
1	R2 10194	649543.63	1316982.61	4113.97
1	R2 10195	649514.90	1316966.81	4105.36
1	R2 10196	649512.35	1316966.76	4103.24
1	R2 10197	649508.66	1316966.08	4102.61
1	R2 10198	649505.19	1316963.97	4102.36
1	R2 10199	649498.95	1316961.66	4102.42
1	R2 10200	649492.79	1316958.74	4102.29
1	R2 10201	649485.55	1316956.10	4102.39
1	R2 10202	649478.51	1316952.27	4102.01
1	R2 10203	649472.59	1316951.38	4101.82
1	R2 10204	649468.36	1316949.18	4101.49
1	R2 10205	649463.30	1316947.11	4101.35
1	R2 10206	649457.82	1316944.63	4101.31
1	R2 10207	649450.03	1316941.90	4101.07
1	R2 10208	649444.07	1316939.72	4101.02
1	R2 10209	649437.61	1316937.29	4100.94
1	R2 10210	649432.75	1316935.38	4100.77
1	R2 10211	649428.40	1316934.42	4100.70
1	R2 10212	649423.26	1316932.74	4100.74
1	R2 10213	649417.86	1316929.93	4100.86
1	R2 10214	649412.25	1316927.37	4100.91
1	R2 10215	649408.24	1316925.57	4100.92
1	R2 10216	649405.95	1316924.79	4101.17
1	R2 10217	649404.12	1316923.53	4101.16
2	R1 2002	611296.72	1359114.87	4055.63

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R1 2003	611184.73	1359358.11	4055.45
2	R1 2004	611270.31	1359387.93	4054.65
2	R1 2005	611333.61	1359414.07	4053.91
2	R1 2006	611384.82	1359430.47	4054.84
2	R1 2007	611422.14	1359444.97	4055.55
2	R1 2008	611438.94	1359449.02	4055.30
2	R1 2009	611440.75	1359450.11	4055.32
2	R1 2010	611454.31	1359457.09	4049.27
2	R1 2011	611453.92	1359456.97	4049.14
2	R1 2012	611459.09	1359458.19	4049.54
2	R1 2013	611477.08	1359464.39	4049.70
2	R1 2014	611494.71	1359469.95	4049.66
2	R1 2015	611516.09	1359478.07	4049.72
2	R1 2016	611536.30	1359485.94	4049.75
2	R1 2017	611556.64	1359493.32	4049.71
2	R1 2018	611576.75	1359500.40	4049.47
2	R1 2019	611597.71	1359507.33	4049.07
2	R1 2020	611603.55	1359509.63	4048.89
2	R1 2021	611604.75	1359509.75	4048.57
2	R1 2022	611611.18	1359512.43	4048.31
2	R1 2023	611622.05	1359516.30	4048.43
2	R1 2024	611636.67	1359522.02	4048.25
2	R1 2025	611642.41	1359524.42	4048.18
2	R1 2026	611644.51	1359525.08	4049.35
2	R1 2027	611657.07	1359528.37	4054.38
2	R1 2028	611661.40	1359530.62	4054.91
2	R1 2029	611673.08	1359534.54	4055.26
2	R1 2030	611691.53	1359540.96	4055.39
2	R1 2031	611713.96	1359549.70	4054.56
2	R1 2032	611834.53	1359266.18	4056.33
2	R1 2033	611811.76	1359254.64	4056.13
2	R1 2034	611787.18	1359242.02	4055.88
2	R1 2035	611783.81	1359239.89	4056.06
2	R1 2036	611765.65	1359230.91	4048.34
2	R1 2037	611767.61	1359232.93	4049.89
2	R1 2038	611758.21	1359231.93	4048.33
2	R1 2039	611750.22	1359228.10	4048.69
2	R1 2040	611746.04	1359228.30	4050.56
2	R1 2041	611739.24	1359226.09	4050.70
2	R1 2042	611718.64	1359216.12	4050.45

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R1 2043	611694.10	1359207.03	4050.45
2	R1 2044	611664.98	1359194.24	4050.40
2	R1 2045	611645.60	1359185.62	4050.27
2	R1 2046	611621.51	1359175.81	4050.08
2	R1 2047	611600.41	1359167.34	4049.87
2	R1 2048	611583.78	1359160.11	4049.58
2	R1 2049	611567.64	1359153.08	4049.75
2	R1 2050	611550.87	1359146.05	4048.80
2	R1 2051	611545.64	1359144.12	4050.35
2	R1 2052	611524.95	1359135.65	4050.43
2	R1 2053	611497.11	1359124.68	4050.19
2	R1 2054	611457.74	1359106.74	4050.10
2	R1 2055	611391.79	1359080.20	4049.89
2	R1 2056	611324.84	1359050.41	4055.32
2	R1 2057	611297.56	1359040.58	4055.00
2	R1 2058	611287.82	1359036.80	4053.28
2	R1 2059	611266.32	1359027.66	4053.94
2	R1 2060	611234.43	1359013.95	4057.34
2	R1 2061	611208.52	1359002.95	4060.35
2	R1 2062	611179.64	1358990.64	4062.27
2	R1 2063	611460.22	1359229.27	4055.02
2	R1 2064	611468.79	1359213.23	4055.07
2	R1 2065	611469.90	1359212.26	4055.15
2	R1 2066	611480.75	1359205.76	4050.85
2	R1 2067	611479.84	1359186.56	4050.68
2	R1 2068	611482.62	1359178.38	4050.06
2	R1 2069	611489.24	1359164.11	4049.38
2	R1 2070	611499.35	1359139.83	4050.06
2	R1 2071	611503.14	1359123.07	4050.26
2	R1 2072	611517.38	1359104.62	4050.23
2	R1 2073	611525.24	1359084.76	4049.84
2	R1 2074	611527.45	1359083.18	4051.60
2	R1 2075	611528.68	1359081.25	4051.88
2	R1 2076	611536.77	1359063.92	4051.14
2	R1 2077	611541.60	1359052.73	4055.66
2	R1 2078	611540.72	1359055.45	4055.11
2	R1 2079	611542.81	1359039.78	4054.43
2	R1 2080	612550.52	1356473.18	4058.01
2	R1 2081	612536.13	1356506.28	4058.08
2	R1 2082	612567.46	1356519.11	4057.54

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R1 2083	612583.58	1356524.91	4056.74
2	R1 2084	612589.80	1356528.25	4054.27
2	R1 2085	612604.05	1356536.08	4051.72
2	R1 2086	612604.63	1356536.32	4051.45
2	R1 2087	612608.29	1356536.72	4049.21
2	R1 2088	612615.92	1356539.94	4049.40
2	R1 2089	612630.46	1356545.71	4049.44
2	R1 2090	612644.79	1356554.13	4049.43
2	R1 2091	612660.41	1356558.88	4049.00
2	R1 2092	612673.48	1356566.61	4048.89
2	R1 2093	612688.99	1356572.35	4049.16
2	R1 2094	612708.04	1356579.92	4049.77
2	R1 2095	612726.24	1356588.06	4050.29
2	R1 2096	612742.41	1356594.76	4050.70
2	R1 2097	612756.40	1356601.69	4050.27
2	R1 2098	612767.58	1356608.31	4049.54
2	R1 2099	612778.92	1356611.60	4049.06
2	R1 2100	612790.21	1356615.81	4048.80
2	R1 2101	612802.45	1356621.10	4048.77
2	R1 2102	612807.88	1356624.00	4048.70
2	R1 2103	612810.99	1356625.12	4049.62
2	R1 2104	612811.34	1356625.66	4049.93
2	R1 2105	612814.14	1356626.53	4051.86
2	R1 2106	612812.89	1356626.84	4051.57
2	R1 2107	612825.22	1356624.20	4052.66
2	R1 2108	612835.88	1356635.31	4055.94
2	R1 2109	612843.03	1356639.02	4056.31
2	R1 2110	612856.32	1356644.43	4056.44
2	R1 2111	612881.82	1356656.40	4056.42
2	R1 2112	613167.99	1356028.84	4059.87
2	R1 2113	613147.74	1356017.76	4059.29
2	R1 2114	613141.73	1356013.91	4058.79
2	R1 2115	613134.09	1356009.42	4057.54
2	R1 2116	613118.45	1356002.51	4050.09
2	R1 2117	613118.24	1356002.48	4050.00
2	R1 2118	613113.03	1356000.33	4049.89
2	R1 2119	613109.31	1355998.57	4049.62
2	R1 2120	613104.63	1355996.44	4049.49
2	R1 2121	613092.98	1355989.98	4049.46
2	R1 2122	613076.02	1355980.25	4049.57

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R1 2123	613064.86	1355975.82	4049.59
2	R1 2124	613059.89	1355974.32	4049.66
2	R1 2125	613053.76	1355970.06	4050.25
2	R1 2126	613047.95	1355966.33	4050.49
2	R1 2127	613046.17	1355965.38	4050.44
2	R1 2128	613037.27	1355961.01	4050.59
2	R1 2129	613031.52	1355958.44	4050.82
2	R1 2130	613026.39	1355956.25	4051.31
2	R1 2131	613018.80	1355952.68	4051.27
2	R1 2132	613011.14	1355949.18	4051.26
2	R1 2133	613002.94	1355944.47	4051.42
2	R1 2134	612994.94	1355941.26	4051.83
2	R1 2135	612992.98	1355940.44	4052.18
2	R1 2136	612986.48	1355937.71	4052.88
2	R1 2137	612981.35	1355936.11	4052.58
2	R1 2138	612975.41	1355931.25	4052.30
2	R1 2139	612972.14	1355929.60	4051.66
2	R1 2140	612968.31	1355926.16	4051.59
2	R1 2141	612963.25	1355923.61	4051.82
2	R1 2142	612956.29	1355921.72	4051.91
2	R1 2143	612953.57	1355920.35	4051.94
2	R1 2144	612948.85	1355918.28	4052.73
2	R1 2145	612944.12	1355916.03	4052.73
2	R1 2146	612938.88	1355912.01	4052.68
2	R1 2147	612937.66	1355911.09	4052.37
2	R1 2148	612934.79	1355909.35	4052.05
2	R1 2149	612933.66	1355908.69	4051.95
2	R1 2150	612929.88	1355908.05	4051.69
2	R1 2151	612921.65	1355902.84	4051.10
2	R1 2152	612912.83	1355898.08	4050.55
2	R1 2153	612905.76	1355894.62	4050.10
2	R1 2154	612898.88	1355891.73	4049.76
2	R1 2155	612897.59	1355890.21	4049.58
2	R1 2156	612892.71	1355888.84	4049.79
2	R1 2157	612888.25	1355885.74	4050.18
2	R1 2158	612886.68	1355885.01	4050.78
2	R1 2159	612875.30	1355878.59	4056.91
2	R1 2160	612873.08	1355876.94	4057.22
2	R1 2161	612850.93	1355866.67	4057.47
2	R1 2162	613654.89	1353401.36	4060.62

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R1 2163	613679.45	1353406.70	4060.52
2	R1 2164	613705.90	1353409.51	4060.46
2	R1 2165	613731.86	1353413.82	4060.50
2	R1 2166	613758.12	1353417.06	4059.82
2	R1 2167	613757.11	1353417.07	4059.98
2	R1 2168	613770.01	1353418.75	4050.53
2	R1 2169	613769.49	1353419.76	4051.26
2	R1 2170	613769.43	1353419.90	4051.61
2	R1 2171	613772.82	1353419.55	4049.69
2	R1 2172	613776.04	1353419.63	4049.66
2	R1 2173	613778.95	1353419.98	4049.74
2	R1 2174	613780.99	1353420.95	4050.45
2	R1 2175	613782.92	1353421.66	4051.14
2	R1 2176	613786.34	1353421.63	4052.09
2	R1 2177	613796.00	1353423.66	4052.75
2	R1 2178	613813.04	1353426.17	4052.44
2	R1 2179	613825.87	1353428.19	4052.29
2	R1 2180	613839.72	1353430.40	4052.22
2	R1 2181	613844.68	1353431.38	4052.27
2	R1 2182	613853.52	1353432.75	4052.65
2	R1 2183	613867.21	1353434.36	4052.77
2	R1 2184	613881.19	1353436.68	4052.71
2	R1 2185	613896.72	1353439.13	4052.96
2	R1 2186	613914.16	1353440.86	4053.10
2	R1 2187	613925.66	1353442.93	4052.98
2	R1 2188	613942.08	1353445.12	4053.31
2	R1 2189	613954.08	1353447.62	4053.43
2	R1 2190	613971.85	1353449.68	4053.50
2	R1 2191	613992.02	1353453.36	4053.53
2	R1 2192	614005.03	1353455.93	4053.49
2	R1 2193	614011.04	1353457.30	4054.24
2	R1 2194	614030.79	1353459.42	4054.67
2	R1 2195	614056.02	1353462.22	4054.95
2	R1 2196	614077.17	1353465.91	4054.57
2	R1 2197	614083.77	1353466.62	4053.92
2	R1 2198	614093.45	1353469.28	4054.73
2	R1 2199	614095.11	1353469.99	4055.30
2	R1 2200	614103.36	1353471.15	4059.41
2	R1 2201	614125.22	1353472.38	4059.71
2	R1 2202	614157.59	1353477.44	4059.63

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R1 2203	614174.33	1353480.78	4059.68
2	R1 2204	613984.91	1352570.56	4052.87
2	R1 2205	613989.07	1352569.23	4053.77
2	R1 2206	613993.64	1352568.10	4055.78
2	R1 2207	614011.19	1352566.43	4054.97
2	R1 2208	614021.13	1352563.52	4055.88
2	R1 2209	614026.18	1352561.10	4058.95
2	R1 2210	614029.34	1352559.17	4059.68
2	R1 2211	614051.92	1352564.16	4059.78
2	R1 2212	614103.01	1352561.84	4059.87
2	R1 2213	613982.71	1352571.90	4052.82
2	R1 2214	613969.65	1352572.39	4053.18
2	R1 2215	613944.03	1352574.22	4052.82
2	R1 2216	613926.35	1352577.34	4052.57
2	R1 2217	613908.94	1352577.70	4052.52
2	R1 2218	613900.55	1352577.80	4051.95
2	R1 2219	613877.99	1352581.41	4052.35
2	R1 2220	613864.60	1352582.85	4052.17
2	R1 2221	613853.37	1352583.83	4051.44
2	R1 2222	613843.94	1352583.96	4051.20
2	R1 2223	613836.38	1352585.66	4051.81
2	R1 2224	613831.27	1352584.67	4052.17
2	R1 2225	613826.52	1352585.83	4053.81
2	R1 2226	613822.88	1352585.46	4054.57
2	R1 2227	613810.15	1352588.41	4055.49
2	R1 2228	613790.89	1352591.15	4055.42
2	R1 2229	613775.87	1352591.16	4055.59
2	R1 2230	613756.00	1352587.92	4054.82
2	R1 2231	613739.64	1352591.27	4059.87
2	R1 2232	613725.16	1352594.26	4060.43
2	R1 2233	613701.02	1352596.79	4060.64
2	R1 2234	613275.66	1351454.89	4073.45
2	R1 2235	613282.68	1351409.88	4064.10
2	R1 2236	613303.52	1351398.80	4062.66
2	R1 2237	613321.95	1351390.30	4062.48
2	R1 2238	613323.67	1351390.03	4061.95
2	R1 2239	613334.69	1351384.50	4055.79
2	R1 2240	613342.32	1351380.63	4055.48
2	R1 2241	613360.95	1351370.88	4055.40
2	R1 2242	613368.82	1351367.62	4056.02

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R1 2243	613380.03	1351362.41	4056.37
2	R1 2244	613387.75	1351360.16	4056.32
2	R1 2245	613390.38	1351355.95	4053.30
2	R1 2246	613390.34	1351356.04	4054.01
2	R1 2247	613393.32	1351353.93	4052.87
2	R1 2248	613398.38	1351350.93	4052.61
2	R1 2249	613402.96	1351347.98	4052.64
2	R1 2250	613409.02	1351346.96	4053.27
2	R1 2251	613421.59	1351339.37	4053.69
2	R1 2252	613430.98	1351335.70	4054.18
2	R1 2253	613446.28	1351328.80	4054.34
2	R1 2254	613464.18	1351319.29	4054.36
2	R1 2255	613482.76	1351309.29	4054.49
2	R1 2256	613496.91	1351303.42	4053.77
2	R1 2257	613509.16	1351297.95	4054.09
2	R1 2258	613526.42	1351290.02	4053.49
2	R1 2259	613540.54	1351281.84	4053.33
2	R1 2260	613562.21	1351269.59	4052.63
2	R1 2261	613579.33	1351262.42	4052.41
2	R1 2262	613590.66	1351255.57	4052.89
2	R1 2263	613612.76	1351247.00	4053.24
2	R1 2264	613627.36	1351237.91	4053.61
2	R1 2265	613633.14	1351235.22	4054.26
2	R1 2266	613634.07	1351234.91	4054.49
2	R1 2267	613636.42	1351233.21	4055.02
2	R1 2268	613644.61	1351230.94	4055.31
2	R1 2269	613659.50	1351220.36	4055.65
2	R1 2270	613677.38	1351213.89	4056.20
2	R1 2271	613687.90	1351208.77	4061.04
2	R1 2272	613685.81	1351209.79	4060.25
2	R1 2273	613728.96	1351188.28	4061.36
2	R1 2274	613761.24	1351174.71	4061.24
2	R1 2275	613472.91	1348149.98	4064.31
2	R1 2276	613496.74	1348177.33	4062.58
2	R1 2277	613522.66	1348208.86	4062.07
2	R1 2278	613575.56	1348269.58	4062.28
2	R1 2279	613608.47	1348308.10	4061.93
2	R1 2280	613650.31	1348354.96	4062.55
2	R1 2281	613682.93	1348396.03	4062.55
2	R1 2282	613715.62	1348432.13	4063.33

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R1 2283	613732.68	1348452.83	4064.29
2	R1 2284	613737.13	1348460.50	4063.24
2	R1 2285	613748.61	1348466.58	4056.96
2	R1 2286	613751.88	1348470.94	4056.88
2	R1 2287	617377.53	1344011.77	4069.76
2	R1 2288	617411.09	1344013.50	4070.70
2	R1 2289	617432.86	1344011.81	4068.45
2	R1 2290	617447.23	1344013.71	4066.42
2	R1 2291	617458.60	1344013.08	4063.84
2	R1 2292	617467.89	1344009.45	4062.12
2	R1 2293	617263.50	1345633.37	4067.50
2	R1 2294	617279.75	1345643.41	4067.52
2	R1 2295	617252.75	1345626.50	4066.97
2	R1 2296	617248.20	1345623.74	4066.16
2	R1 2297	617240.37	1345620.29	4061.32
2	R1 2298	617215.72	1345606.72	4059.26
2	R1 2299	617211.79	1345597.49	4059.24
2	R1 2300	617196.11	1345591.61	4059.68
2	R1 2301	617193.98	1345585.55	4059.49
2	R1 2302	617189.75	1345580.01	4057.63
2	R1 2303	617191.66	1345582.42	4058.34
2	R1 2304	617183.69	1345580.73	4057.49
2	R1 2305	617170.53	1345571.54	4057.28
2	R1 2306	617149.03	1345557.52	4057.16
2	R1 2307	617132.20	1345547.17	4056.76
2	R1 2308	617116.92	1345535.94	4056.55
2	R1 2309	617100.78	1345525.57	4056.30
2	R1 2310	617083.97	1345514.57	4056.28
2	R1 2311	617067.10	1345504.06	4056.44
2	R1 2312	617048.19	1345491.25	4056.37
2	R1 2313	617033.59	1345481.27	4056.27
2	R1 2314	617024.55	1345474.49	4056.70
2	R1 2315	617014.97	1345469.41	4057.71
2	R1 2316	617014.24	1345468.50	4057.81
2	R1 2317	617011.04	1345465.72	4059.76
2	R1 2318	617001.64	1345463.95	4059.34
2	R1 2319	616998.68	1345458.99	4059.30
2	R1 2320	616983.95	1345442.97	4060.38
2	R1 2321	616967.93	1345440.25	4064.54
2	R1 2322	616962.71	1345435.75	4066.92

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R1 2323	616947.93	1345425.14	4067.11
2	R1 2324	616922.83	1345409.20	4066.84
2	R2 2000	611288.64	1361924.62	4052.41
2	R2 2001	611507.55	1361561.18	4052.13
2	R2 2002	611568.39	1361550.46	4052.04
2	R2 2003	611602.32	1361544.60	4052.37
2	R2 2004	611612.33	1361541.57	4052.38
2	R2 2005	611633.04	1361538.63	4045.34
2	R2 2006	611629.98	1361539.94	4046.59
2	R2 2007	611625.23	1361540.13	4047.40
2	R2 2008	611621.79	1361541.04	4048.38
2	R2 2009	611638.87	1361536.54	4045.04
2	R2 2010	611654.24	1361533.02	4045.03
2	R2 2011	611658.95	1361532.80	4044.45
2	R2 2012	611665.78	1361533.52	4044.62
2	R2 2013	611672.01	1361532.13	4044.56
2	R2 2014	611680.14	1361529.23	4044.57
2	R2 2015	611687.41	1361526.48	4044.39
2	R2 2016	611709.52	1361523.76	4045.58
2	R2 2017	611714.32	1361523.10	4045.60
2	R2 2018	611719.92	1361521.97	4045.78
2	R2 2019	611725.77	1361520.64	4045.69
2	R2 2020	611733.69	1361520.05	4045.63
2	R2 2021	611745.39	1361518.18	4045.73
2	R2 2022	611757.46	1361515.62	4045.79
2	R2 2023	611764.96	1361513.17	4045.88
2	R2 2024	611776.17	1361513.91	4045.86
2	R2 2025	611782.46	1361510.14	4045.89
2	R2 2026	611792.81	1361508.52	4046.13
2	R2 2027	611802.34	1361505.73	4046.53
2	R2 2028	611806.83	1361506.30	4046.55
2	R2 2029	611810.08	1361505.42	4046.57
2	R2 2030	611816.01	1361503.23	4047.62
2	R2 2031	611823.01	1361502.16	4048.88
2	R2 2032	611832.77	1361502.86	4048.89
2	R2 2033	611837.58	1361503.45	4048.97
2	R2 2034	611843.28	1361500.25	4050.43
2	R2 2035	611848.26	1361499.85	4050.91
2	R2 2036	611872.14	1361498.41	4051.70
2	R2 2037	611903.79	1361488.35	4051.87

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R2 2038	611540.70	1360328.38	4053.71
2	R2 2039	611549.12	1360327.37	4053.74
2	R2 2040	611524.52	1360326.98	4052.94
2	R2 2041	611506.16	1360329.24	4049.95
2	R2 2042	611484.01	1360327.80	4049.87
2	R2 2043	611464.85	1360330.28	4049.86
2	R2 2044	611453.49	1360328.55	4049.93
2	R2 2045	611442.90	1360331.62	4049.06
2	R2 2046	611433.25	1360329.68	4048.22
2	R2 2047	611419.91	1360328.70	4047.39
2	R2 2048	611408.40	1360330.79	4046.40
2	R2 2049	611395.46	1360332.69	4046.39
2	R2 2050	611390.49	1360331.47	4046.26
2	R2 2051	611382.67	1360332.50	4046.29
2	R2 2052	611377.40	1360332.52	4046.53
2	R2 2053	611369.97	1360333.56	4046.82
2	R2 2054	611360.44	1360332.39	4047.04
2	R2 2055	611351.87	1360332.74	4047.09
2	R2 2056	611340.70	1360333.60	4047.23
2	R2 2057	611332.55	1360334.75	4047.12
2	R2 2058	611322.33	1360335.88	4046.31
2	R2 2059	611317.90	1360333.02	4046.27
2	R2 2060	611315.63	1360333.44	4046.48
2	R2 2061	611309.66	1360334.86	4045.95
2	R2 2062	611302.79	1360334.39	4045.81
2	R2 2063	611285.14	1360335.02	4045.94
2	R2 2064	611283.15	1360335.28	4045.62
2	R2 2065	611280.78	1360335.75	4045.66
2	R2 2066	611278.57	1360336.19	4045.49
2	R2 2067	611264.92	1360333.91	4053.97
2	R2 2068	611240.71	1360335.05	4054.46
2	R2 2069	611213.17	1360337.19	4053.76
2	R2 2071	611034.47	1358754.89	4052.04
2	R2 2072	611031.02	1358760.29	4052.06
2	R2 2073	611025.14	1358767.53	4051.92
2	R2 2074	611022.68	1358770.72	4052.06
2	R2 2075	611022.77	1358777.35	4054.09
2	R2 2076	611021.68	1358778.80	4054.67
2	R2 2077	611019.32	1358781.23	4054.52
2	R2 2078	611016.80	1358785.31	4054.76

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R2 2079	611010.55	1358794.59	4059.41
2	R2 2080	610996.41	1358822.21	4060.64
2	R2 2081	611035.89	1358749.60	4052.00
2	R2 2082	611045.41	1358738.52	4051.95
2	R2 2083	611050.11	1358727.59	4051.58
2	R2 2084	611052.79	1358722.77	4051.27
2	R2 2085	611055.61	1358718.32	4051.42
2	R2 2086	611057.19	1358716.09	4051.93
2	R2 2087	611060.05	1358711.30	4054.54
2	R2 2088	611072.10	1358684.73	4060.76
2	R2 2089	611535.74	1358886.71	4054.97
2	R2 2090	611591.88	1358912.84	4054.42
2	R2 2091	611616.52	1358918.10	4054.63
2	R2 2092	611622.37	1358923.46	4054.35
2	R2 2093	611629.27	1358924.30	4050.99
2	R2 2094	611641.56	1358930.84	4051.20
2	R2 2095	611646.25	1358932.34	4050.96
2	R2 2096	611649.48	1358934.87	4049.27
2	R2 2097	611654.70	1358937.32	4048.31
2	R2 2098	611662.41	1358942.17	4048.20
2	R2 2099	611670.74	1358943.71	4048.22
2	R2 2100	611679.56	1358948.75	4048.05
2	R2 2101	611688.12	1358953.82	4048.03
2	R2 2102	611696.20	1358956.97	4047.99
2	R2 2103	611701.29	1358958.27	4047.91
2	R2 2104	611706.07	1358958.28	4047.96
2	R2 2105	611712.61	1358959.74	4047.96
2	R2 2106	611719.17	1358961.93	4048.00
2	R2 2107	611726.11	1358964.72	4048.05
2	R2 2108	611732.88	1358969.40	4048.27
2	R2 2109	611739.36	1358972.54	4048.47
2	R2 2110	611747.06	1358976.43	4048.62
2	R2 2111	611752.88	1358979.31	4048.61
2	R2 2112	611759.05	1358982.44	4048.81
2	R2 2113	611764.39	1358984.97	4048.71
2	R2 2114	611770.12	1358987.93	4048.56
2	R2 2115	611776.21	1358989.67	4048.56
2	R2 2116	611780.83	1358990.84	4048.79
2	R2 2117	611785.99	1358994.55	4048.81
2	R2 2118	611797.27	1358998.99	4048.87

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R2 2119	611808.61	1359003.86	4048.98
2	R2 2120	611811.06	1359004.99	4048.68
2	R2 2121	611816.05	1359005.81	4049.25
2	R2 2122	611834.75	1359013.27	4048.88
2	R2 2123	611845.89	1359018.25	4048.72
2	R2 2124	611850.67	1359020.95	4048.90
2	R2 2125	611853.36	1359021.06	4049.07
2	R2 2126	611857.36	1359023.63	4050.12
2	R2 2127	611867.67	1359029.00	4050.80
2	R2 2128	611873.34	1359032.98	4051.04
2	R2 2129	611882.72	1359033.28	4055.73
2	R2 2130	611921.06	1359051.20	4056.38
2	R2 2131	612298.38	1358030.11	4055.68
2	R2 2132	612284.00	1358024.91	4055.64
2	R2 2133	612272.18	1358018.28	4055.50
2	R2 2134	612242.89	1358009.18	4050.90
2	R2 2135	612251.89	1358013.53	4051.16
2	R2 2136	612232.71	1358003.85	4050.54
2	R2 2137	612215.21	1357996.15	4050.71
2	R2 2138	612205.25	1357994.53	4051.23
2	R2 2139	612205.44	1357994.65	4051.09
2	R2 2140	612200.12	1357992.68	4050.34
2	R2 2141	612192.37	1357989.48	4049.73
2	R2 2142	612188.73	1357989.29	4049.32
2	R2 2143	612184.60	1357986.66	4048.47
2	R2 2144	612179.79	1357985.02	4048.38
2	R2 2145	612174.15	1357982.48	4048.23
2	R2 2146	612167.97	1357979.80	4048.10
2	R2 2147	612161.79	1357977.09	4047.94
2	R2 2148	612155.92	1357975.02	4048.02
2	R2 2149	612149.55	1357972.58	4047.83
2	R2 2150	612140.14	1357967.77	4047.79
2	R2 2151	612133.07	1357964.43	4047.79
2	R2 2152	612124.13	1357963.04	4047.79
2	R2 2153	612115.13	1357959.47	4047.73
2	R2 2154	612105.60	1357956.14	4047.64
2	R2 2155	612097.53	1357952.64	4047.62
2	R2 2156	612090.69	1357949.81	4047.59
2	R2 2157	612081.75	1357946.35	4047.55
2	R2 2158	612073.11	1357943.47	4047.56

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R2 2159	612063.53	1357940.87	4047.43
2	R2 2160	612056.02	1357937.39	4047.58
2	R2 2161	612047.88	1357934.19	4047.73
2	R2 2162	612041.33	1357932.84	4047.96
2	R2 2165	612035.48	1357928.04	4048.79
2	R2 2166	612031.51	1357926.82	4050.33
2	R2 2167	612027.79	1357924.44	4050.66
2	R2 2168	612024.90	1357923.75	4051.06
2	R2 2169	612010.16	1357918.72	4055.57
2	R2 2170	611981.88	1357907.54	4055.88
2	R2 2171	611964.30	1357900.44	4056.07
2	R2 2172	611945.26	1357894.26	4056.31
2	R2 2173	613105.19	1355163.90	4058.88
2	R2 2174	613135.76	1355183.53	4058.72
2	R2 2175	613161.62	1355199.55	4058.10
2	R2 2176	613181.30	1355213.32	4058.89
2	R2 2177	613192.30	1355215.30	4050.87
2	R2 2178	613195.78	1355217.01	4050.38
2	R2 2179	613197.63	1355217.60	4050.13
2	R2 2180	613200.82	1355218.49	4050.56
2	R2 2181	613204.51	1355220.21	4050.68
2	R2 2182	613206.68	1355221.93	4051.11
2	R2 2183	613208.73	1355223.24	4051.29
2	R2 2184	613210.89	1355225.08	4050.74
2	R2 2185	613214.89	1355227.05	4050.72
2	R2 2186	613220.06	1355229.82	4051.13
2	R2 2187	613226.99	1355234.20	4051.35
2	R2 2188	613234.88	1355235.86	4051.25
2	R2 2189	613242.03	1355238.38	4051.45
2	R2 2190	613243.99	1355240.99	4051.85
2	R2 2191	613246.72	1355243.93	4051.90
2	R2 2192	613254.96	1355249.23	4051.61
2	R2 2193	613262.74	1355255.14	4051.96
2	R2 2194	613265.92	1355255.69	4052.27
2	R2 2195	613268.91	1355257.59	4052.57
2	R2 2196	613272.68	1355259.28	4052.17
2	R2 2197	613279.14	1355261.48	4052.05
2	R2 2198	613281.25	1355263.83	4051.77
2	R2 2199	613286.72	1355266.00	4052.84
2	R2 2200	613289.22	1355266.76	4052.14

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R2 2201	613294.05	1355269.22	4052.38
2	R2 2202	613297.97	1355273.06	4052.39
2	R2 2203	613303.53	1355276.09	4052.38
2	R2 2204	613306.72	1355280.09	4052.21
2	R2 2205	613308.41	1355281.91	4051.72
2	R2 2206	613312.41	1355282.80	4051.96
2	R2 2207	613317.50	1355283.52	4052.35
2	R2 2208	613323.68	1355286.86	4052.24
2	R2 2209	613329.29	1355289.87	4052.36
2	R2 2210	613334.18	1355289.13	4052.92
2	R2 2211	613338.05	1355292.07	4053.15
2	R2 2212	613340.28	1355293.57	4053.16
2	R2 2213	613344.64	1355298.04	4052.88
2	R2 2214	613347.24	1355299.58	4052.70
2	R2 2215	613349.90	1355301.28	4052.79
2	R2 2216	613351.83	1355303.00	4053.31
2	R2 2217	613356.03	1355303.50	4053.44
2	R2 2218	613367.90	1355307.62	4054.34
2	R2 2219	613388.61	1355322.17	4059.89
2	R2 2220	613396.76	1355324.90	4059.89
2	R2 2221	613904.05	1354372.56	4057.58
2	R2 2222	613878.40	1354360.58	4057.27
2	R2 2223	613869.18	1354357.64	4055.50
2	R2 2224	613864.71	1354358.11	4054.71
2	R2 2225	613859.99	1354355.85	4050.85
2	R2 2226	613861.95	1354356.27	4051.61
2	R2 2227	613855.89	1354354.26	4050.72
2	R2 2228	613852.36	1354352.45	4050.71
2	R2 2229	613847.90	1354349.35	4050.82
2	R2 2230	613842.38	1354350.80	4050.92
2	R2 2231	613840.00	1354348.34	4051.27
2	R2 2232	613828.95	1354344.39	4051.42
2	R2 2233	613821.29	1354339.32	4051.71
2	R2 2234	613814.85	1354336.63	4052.13
2	R2 2235	613807.59	1354333.93	4052.50
2	R2 2236	613801.81	1354332.35	4052.41
2	R2 2237	613799.88	1354331.64	4051.96
2	R2 2238	613792.72	1354330.27	4051.71
2	R2 2239	613783.06	1354325.05	4051.47
2	R2 2240	613781.04	1354324.42	4051.35

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R2 2241	613778.81	1354323.60	4051.61
2	R2 2242	613774.05	1354317.92	4051.50
2	R2 2243	613769.42	1354318.28	4051.64
2	R2 2244	613759.14	1354315.32	4051.65
2	R2 2245	613749.46	1354311.69	4051.90
2	R2 2246	613737.94	1354304.75	4052.04
2	R2 2247	613728.53	1354300.75	4052.13
2	R2 2248	613717.02	1354294.16	4051.85
2	R2 2249	613709.34	1354291.64	4051.47
2	R2 2250	613705.31	1354291.28	4051.37
2	R2 2251	613700.34	1354289.19	4051.42
2	R2 2252	613693.57	1354288.37	4051.31
2	R2 2253	613688.45	1354286.74	4051.46
2	R2 2254	613687.14	1354285.54	4051.82
2	R2 2255	613681.11	1354281.90	4051.45
2	R2 2256	613676.72	1354279.24	4051.57
2	R2 2257	613673.52	1354276.92	4053.65
2	R2 2258	613668.31	1354278.26	4055.27
2	R2 2259	613665.13	1354273.18	4055.18
2	R2 2260	613641.30	1354269.67	4054.45
2	R2 2261	613633.48	1354262.66	4054.10
2	R2 2262	613619.53	1354254.32	4059.26
2	R2 2263	613580.81	1354238.86	4058.72
2	R2 2264	613099.59	1349913.14	4061.97
2	R2 2265	613071.46	1349917.20	4062.53
2	R2 2266	613107.56	1349913.38	4056.42
2	R2 2267	613111.09	1349913.21	4053.99
2	R2 2268	613115.06	1349912.60	4051.71
2	R2 2269	613123.26	1349912.46	4052.22
2	R2 2270	613126.51	1349912.52	4052.48
2	R2 2271	613134.83	1349914.86	4052.47
2	R2 2272	613140.15	1349912.77	4052.54
2	R2 2273	613145.69	1349911.78	4052.64
2	R2 2274	613152.89	1349911.76	4052.61
2	R2 2275	613157.17	1349912.13	4052.96
2	R2 2276	613159.85	1349911.96	4052.87
2	R2 2277	613167.59	1349912.39	4052.59
2	R2 2278	613175.30	1349911.79	4052.57
2	R2 2279	613179.80	1349911.84	4052.29
2	R2 2280	613189.12	1349912.25	4052.35

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R2 2281	613195.00	1349912.35	4052.53
2	R2 2282	613201.78	1349910.76	4052.72
2	R2 2283	613206.67	1349909.77	4052.59
2	R2 2284	613211.37	1349909.61	4052.93
2	R2 2285	613214.64	1349908.89	4054.20
2	R2 2286	613224.66	1349910.69	4054.30
2	R2 2287	613231.01	1349912.55	4054.13
2	R2 2288	613238.49	1349912.27	4053.89
2	R2 2289	613245.51	1349909.46	4054.20
2	R2 2290	613253.22	1349907.79	4054.40
2	R2 2291	613258.39	1349910.22	4056.00
2	R2 2292	613265.19	1349911.78	4056.80
2	R2 2293	613272.48	1349909.70	4056.53
2	R2 2294	613282.31	1349910.24	4055.99
2	R2 2295	613295.06	1349909.21	4056.47
2	R2 2296	613308.09	1349908.63	4056.86
2	R2 2297	613320.56	1349909.58	4056.77
2	R2 2298	613333.46	1349902.70	4056.61
2	R2 2299	613339.31	1349905.17	4056.38
2	R2 2300	613357.93	1349906.08	4055.73
2	R2 2301	613384.69	1349904.51	4055.91
2	R2 2302	613393.68	1349903.83	4056.85
2	R2 2303	613418.58	1349905.40	4055.97
2	R2 2304	613446.88	1349904.81	4062.78
2	R2 2305	613473.44	1349897.20	4062.75
2	R2 2306	613992.10	1348755.52	4064.79
2	R2 2307	613976.39	1348741.90	4063.25
2	R2 2308	613961.82	1348726.06	4056.85
2	R2 2309	613946.62	1348707.17	4056.26
2	R2 2310	613940.52	1348699.55	4055.99
2	R2 2311	613936.51	1348690.48	4056.58
2	R2 2312	613922.99	1348682.58	4057.14
2	R2 2313	613914.40	1348668.62	4057.25
2	R2 2314	613909.12	1348659.40	4055.93
2	R2 2315	613904.07	1348653.92	4055.64
2	R2 2316	613896.34	1348647.48	4055.15
2	R2 2317	613894.01	1348641.40	4054.84
2	R2 2318	613887.71	1348635.75	4054.49
2	R2 2319	613883.53	1348626.96	4054.25
2	R2 2320	613880.75	1348626.38	4054.05

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R2 2321	613878.21	1348625.08	4053.18
2	R2 2322	613872.17	1348617.84	4053.21
2	R2 2323	613869.71	1348614.28	4053.24
2	R2 2324	613866.19	1348610.25	4053.37
2	R2 2325	613862.74	1348605.81	4053.54
2	R2 2326	613857.75	1348600.01	4053.54
2	R2 2327	613855.81	1348597.85	4053.62
2	R2 2328	613853.52	1348595.65	4053.59
2	R2 2329	613849.19	1348592.01	4053.79
2	R2 2330	613844.93	1348588.54	4053.53
2	R2 2331	613844.30	1348584.11	4053.59
2	R2 2332	613843.67	1348582.86	4053.88
2	R2 2333	613839.32	1348576.97	4053.77
2	R2 2334	613838.23	1348575.00	4054.25
2	R2 2335	613835.62	1348572.65	4055.14
2	R2 2336	613833.47	1348568.89	4055.32
2	R2 2337	613827.92	1348562.20	4055.24
2	R2 2338	613822.78	1348556.56	4055.16
2	R2 2339	613816.72	1348553.24	4055.24
2	R2 2340	613812.47	1348548.72	4055.16
2	R2 2341	613809.40	1348543.46	4055.09
2	R2 2342	613806.84	1348540.35	4054.62
2	R2 2343	613804.19	1348537.93	4054.22
2	R2 2344	613802.15	1348534.88	4054.08
2	R2 2345	613799.38	1348530.34	4053.99
2	R2 2346	613793.63	1348524.83	4054.13
2	R2 2347	613787.65	1348518.82	4054.03
2	R2 2348	613783.45	1348514.56	4054.13
2	R2 2349	613779.52	1348509.87	4054.34
2	R2 2350	613776.51	1348506.07	4054.52
2	R2 2351	613771.15	1348501.08	4054.63
2	R2 2352	613767.53	1348496.57	4054.63
2	R2 2353	613764.71	1348493.25	4054.64
2	R2 2354	613763.07	1348491.46	4055.17
2	R2 2355	613761.86	1348488.52	4056.35
2	R2 2356	613756.38	1348481.95	4057.38
2	R2 2357	614861.93	1347474.05	4065.08
2	R2 2358	614896.91	1347505.37	4063.26
2	R2 2359	614916.73	1347520.16	4057.53
2	R2 2360	614922.41	1347531.00	4058.19

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R2 2361	614926.66	1347540.23	4056.83
2	R2 2362	614923.98	1347535.34	4056.43
2	R2 2363	614929.68	1347544.66	4057.45
2	R2 2364	614931.10	1347550.08	4057.12
2	R2 2365	614937.62	1347554.31	4057.44
2	R2 2366	614940.76	1347560.85	4057.65
2	R2 2367	614944.92	1347564.09	4058.02
2	R2 2368	614949.30	1347568.79	4056.24
2	R2 2369	614950.53	1347574.35	4055.36
2	R2 2370	614957.02	1347578.27	4055.13
2	R2 2371	614968.77	1347592.60	4055.65
2	R2 2372	614978.01	1347602.75	4056.15
2	R2 2373	614986.05	1347610.83	4056.43
2	R2 2374	614993.32	1347617.30	4056.35
2	R2 2375	614996.35	1347620.82	4056.19
2	R2 2376	614997.90	1347623.95	4056.48
2	R2 2377	614997.89	1347625.76	4057.80
2	R2 2378	615001.42	1347633.69	4058.45
2	R2 2379	615031.24	1347664.23	4055.46
2	R2 2380	615028.38	1347658.85	4055.47
2	R2 2381	615025.38	1347655.20	4055.68
2	R2 2382	615022.57	1347652.25	4055.86
2	R2 2383	615019.27	1347649.93	4057.48
2	R2 2384	615036.64	1347671.48	4054.90
2	R2 2385	615039.20	1347674.82	4054.93
2	R2 2386	615042.96	1347679.42	4054.85
2	R2 2387	615051.48	1347689.87	4055.00
2	R2 2388	615060.48	1347698.26	4055.17
2	R2 2389	615070.95	1347708.40	4055.20
2	R2 2390	615078.68	1347719.50	4054.94
2	R2 2391	615085.73	1347731.17	4054.82
2	R2 2392	615093.85	1347736.95	4054.79
2	R2 2393	615097.35	1347745.88	4054.73
2	R2 2394	615104.52	1347750.45	4054.44
2	R2 2395	615108.19	1347754.46	4054.38
2	R2 2396	615112.08	1347759.29	4054.62
2	R2 2397	615115.16	1347763.41	4054.74
2	R2 2398	615116.86	1347764.59	4054.91
2	R2 2399	615118.90	1347767.74	4056.29
2	R2 2400	615122.05	1347770.46	4058.31

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
2	R2 2401	615140.52	1347788.63	4064.15
2	R2 2402	615152.24	1347808.17	4065.55
2	R2 2403	617775.23	1344015.22	4066.51
2	R2 2404	617746.37	1344016.59	4064.99
2	R2 2405	617738.85	1344016.85	4061.91
2	R2 2406	617705.07	1344014.01	4057.81
2	R2 2407	617710.44	1344014.62	4057.99
2	R2 2408	617712.97	1344015.79	4058.32
2	R2 2409	617714.44	1344016.54	4059.53
2	R2 2410	617718.33	1344017.57	4060.34
2	R2 2411	617691.37	1344013.96	4057.58
2	R2 2412	617675.62	1344015.44	4057.82
2	R2 2413	617662.84	1344016.61	4057.99
2	R2 2414	617656.34	1344014.44	4057.73
2	R2 2415	617651.43	1344014.95	4056.60
2	R2 2416	617645.40	1344015.85	4055.79
2	R2 2417	617638.03	1344016.46	4055.57
2	R2 2418	617630.15	1344017.41	4055.70
2	R2 2419	617625.38	1344016.54	4055.57
2	R2 2420	617618.17	1344015.53	4055.50
2	R2 2421	617612.49	1344015.25	4055.26
2	R2 2422	617603.80	1344014.87	4055.81
2	R2 2423	617595.90	1344014.39	4055.46
2	R2 2424	617589.36	1344016.81	4055.95
2	R2 2425	617579.96	1344015.42	4057.93
2	R2 2426	617574.55	1344014.03	4058.10
2	R2 2427	617555.90	1344014.82	4058.42
2	R2 2428	617545.56	1344016.72	4058.71
2	R2 2429	617539.77	1344015.07	4058.97
2	R2 2430	617537.12	1344015.23	4059.86
2	R2 2431	617530.83	1344016.88	4060.86
2	R2 2432	617519.68	1344015.87	4060.00
2	R2 2433	617513.60	1344017.09	4059.71
2	R2 2434	617436.76	1344013.25	4067.66
2	R2 2435	617453.98	1344014.55	4065.67
2	R2 2436	617461.10	1344013.93	4063.66
2	R2 2437	617467.04	1344014.17	4062.57
2	R2 2438	649619.56	1316891.66	4114.45
3	R1 3000	608986.11	1370699.25	4051.82
3	R1 3001	609856.86	1369403.51	4048.38

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
3	R1 3002	609867.41	1369411.02	4047.84
3	R1 3003	609889.60	1369425.77	4046.71
3	R1 3004	609905.81	1369438.49	4046.74
3	R1 3005	609933.92	1369461.99	4045.22
3	R1 3006	609953.74	1369475.78	4044.47
3	R1 3007	609989.89	1369503.86	4044.87
3	R1 3008	610005.71	1369514.08	4045.08
3	R1 3009	610028.30	1369532.07	4045.11
3	R1 3010	610052.98	1369549.84	4045.24
3	R1 3011	610067.74	1369561.82	4045.31
3	R1 3012	610088.47	1369577.18	4045.36
3	R1 3013	610100.72	1369587.71	4045.74
3	R1 3014	610118.76	1369601.27	4045.92
3	R1 3015	610127.40	1369607.79	4046.05
3	R1 3016	610129.45	1369608.64	4046.18
3	R1 3017	610138.83	1369616.07	4041.83
3	R1 3018	610139.51	1369616.32	4041.78
3	R1 3019	610140.73	1369617.54	4041.72
3	R1 3020	610157.40	1369630.12	4041.59
3	R1 3021	610174.25	1369642.41	4041.68
3	R1 3022	610189.15	1369653.06	4041.54
3	R1 3023	610205.16	1369667.61	4041.41
3	R1 3024	610220.87	1369679.94	4041.24
3	R1 3025	610234.16	1369691.31	4041.28
3	R1 3026	610252.27	1369702.51	4041.02
3	R1 3027	610259.28	1369707.97	4041.28
3	R1 3028	610264.15	1369711.36	4041.57
3	R1 3029	610268.17	1369714.02	4042.08
3	R1 3030	610272.16	1369717.41	4042.20
3	R1 3031	610277.14	1369720.69	4041.84
3	R1 3032	610281.30	1369723.39	4040.40
3	R1 3033	610294.17	1369733.92	4040.73
3	R1 3034	610307.66	1369744.17	4041.07
3	R1 3035	610324.47	1369756.19	4041.45
3	R1 3036	610340.37	1369769.56	4041.22
3	R1 3037	610350.57	1369776.97	4041.05
3	R1 3038	610351.59	1369778.07	4041.42
3	R1 3039	610359.46	1369783.20	4044.64
3	R1 3040	610439.86	1369844.73	4045.57
3	R1 3041	610439.14	1369843.80	4045.53

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
3	R1 3042	609859.44	1370447.58	4040.37
3	R1 3043	609859.76	1370448.14	4040.55
3	R1 3044	609865.45	1370455.43	4044.91
3	R1 3045	609908.66	1370651.06	4044.59
3	R1 3046	609928.80	1370699.89	4046.53
3	R1 3047	610027.24	1370585.35	4045.92
3	R1 3048	610045.50	1370576.09	4045.88
3	R1 3049	610089.37	1370607.39	4045.38
3	R1 3050	610124.19	1370629.44	4045.47
3	R1 3051	609974.52	1370530.26	4044.17
3	R1 3052	609962.61	1370502.71	4044.24
3	R1 3053	609851.26	1370440.50	4040.67
3	R1 3054	609838.76	1370432.96	4041.10
3	R1 3055	609820.95	1370421.91	4041.51
3	R1 3056	609801.61	1370407.75	4041.98
3	R1 3057	609781.64	1370394.86	4042.10
3	R1 3058	609768.31	1370384.13	4042.43
3	R1 3059	609764.56	1370381.38	4042.65
3	R1 3060	609761.12	1370380.57	4041.46
3	R1 3061	609753.20	1370374.59	4041.07
3	R1 3062	609743.12	1370367.56	4041.33
3	R1 3063	609736.69	1370362.23	4041.05
3	R1 3064	609731.55	1370361.07	4041.94
3	R1 3065	609729.29	1370359.98	4042.89
3	R1 3066	609727.05	1370358.20	4042.97
3	R1 3067	609720.33	1370351.65	4043.05
3	R1 3068	609713.32	1370345.84	4042.74
3	R1 3069	609707.59	1370345.68	4042.52
3	R1 3070	609701.79	1370340.32	4041.97
3	R1 3071	609685.88	1370330.25	4041.52
3	R1 3072	609669.90	1370319.13	4041.23
3	R1 3073	609652.49	1370305.98	4040.43
3	R1 3074	609637.74	1370297.67	4039.67
3	R1 3075	609625.77	1370289.81	4039.23
3	R1 3076	609621.41	1370286.36	4039.29
3	R1 3077	609614.19	1370279.76	4042.25
3	R1 3078	609609.73	1370276.76	4044.71
3	R1 3079	609596.00	1370269.49	4045.49
3	R1 3080	609599.48	1370269.61	4045.39
3	R1 3081	609540.99	1370232.86	4046.01

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
3	R1 3082	607505.88	1372727.13	4042.35
3	R1 3083	607513.33	1372745.00	4043.27
3	R1 3084	607519.53	1372756.35	4043.62
3	R1 3085	607522.42	1372760.98	4043.71
3	R1 3086	607524.55	1372766.36	4040.81
3	R1 3087	607523.28	1372770.67	4038.02
3	R1 3088	607525.86	1372775.82	4038.29
3	R1 3089	607529.51	1372782.32	4039.06
3	R1 3090	607531.76	1372785.68	4039.29
3	R1 3091	607532.79	1372787.42	4039.22
3	R1 3092	607531.85	1372789.94	4039.59
3	R1 3093	607532.13	1372792.26	4039.43
3	R1 3094	607532.51	1372793.75	4039.86
3	R1 3095	607532.93	1372794.49	4039.33
3	R1 3096	607535.53	1372797.37	4038.93
3	R1 3097	607536.11	1372798.62	4039.43
3	R1 3098	607536.75	1372800.05	4039.24
3	R1 3099	607537.51	1372801.80	4039.58
3	R1 3100	607538.55	1372803.85	4039.43
3	R1 3101	607539.62	1372805.63	4038.86
3	R1 3102	607540.34	1372806.95	4039.18
3	R1 3103	607541.10	1372808.42	4039.21
3	R1 3104	607542.45	1372810.09	4039.55
3	R1 3105	607542.71	1372811.81	4040.73
3	R1 3106	607542.72	1372813.78	4039.82
3	R1 3107	607542.65	1372814.44	4040.91
3	R1 3108	607543.09	1372816.65	4039.44
3	R1 3109	607543.30	1372816.91	4039.99
3	R1 3110	607544.50	1372817.96	4040.42
3	R1 3111	607545.06	1372819.34	4039.34
3	R1 3112	607545.55	1372820.20	4039.93
3	R1 3113	607545.32	1372822.29	4039.54
3	R1 3114	607545.05	1372823.27	4039.75
3	R1 3115	607545.44	1372823.94	4040.37
3	R1 3116	607545.78	1372824.46	4039.85
3	R1 3117	607546.96	1372825.83	4039.69
3	R1 3118	607547.60	1372826.58	4039.94
3	R1 3119	607549.16	1372827.82	4039.35
3	R1 3120	607549.66	1372828.65	4040.05
3	R1 3121	607550.61	1372833.38	4040.86

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
3	R1 3122	607550.68	1372834.75	4041.85
3	R1 3123	607551.06	1372838.13	4042.25
3	R1 3124	607552.47	1372840.84	4042.09
3	R1 3125	607554.48	1372843.80	4041.88
3	R1 3126	607556.01	1372846.82	4041.54
3	R1 3127	607556.61	1372847.45	4041.65
3	R1 3128	607557.69	1372849.05	4041.02
3	R1 3129	607558.39	1372851.17	4040.77
3	R1 3130	607559.11	1372852.66	4040.34
3	R1 3131	607559.26	1372855.12	4041.48
3	R1 3132	607559.49	1372856.92	4041.61
3	R1 3133	607560.16	1372858.02	4041.55
3	R1 3134	607560.96	1372860.44	4041.57
3	R1 3135	607563.02	1372863.04	4041.32
3	R1 3136	607564.28	1372866.89	4040.57
3	R1 3137	607565.51	1372869.87	4039.70
3	R1 3138	607563.94	1372872.73	4039.47
3	R1 3139	607567.59	1372874.06	4039.64
3	R1 3140	607569.25	1372875.75	4039.38
3	R1 3141	607569.90	1372877.19	4038.69
3	R1 3142	607570.86	1372878.14	4039.27
3	R1 3143	607569.61	1372882.04	4038.49
3	R1 3144	607571.73	1372886.06	4038.28
3	R1 3145	607574.40	1372887.77	4040.11
3	R1 3146	607573.99	1372892.84	4038.81
3	R1 3147	607574.70	1372895.53	4038.00
3	R1 3148	607574.77	1372897.63	4037.62
3	R1 3149	607576.49	1372899.54	4039.67
3	R1 3150	607578.06	1372902.12	4037.51
3	R1 3151	607578.67	1372903.68	4038.08
3	R1 3152	607579.88	1372904.33	4038.20
3	R1 3153	607580.19	1372905.00	4037.80
3	R2 3000	608986.13	1370699.22	4051.82
3	R2 3001	609102.93	1370706.87	4044.78
3	R2 3002	609152.50	1370746.88	4044.74
3	R2 3003	609174.55	1370764.96	4044.91
3	R2 3004	609197.72	1370781.28	4044.62
3	R2 3005	609203.97	1370786.51	4044.34
3	R2 3006	609212.49	1370792.57	4040.76
3	R2 3007	609209.65	1370789.99	4041.51

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
3	R2 3008	609221.89	1370800.50	4040.87
3	R2 3009	609218.02	1370797.05	4040.85
3	R2 3010	609232.70	1370809.77	4040.56
3	R2 3011	609242.00	1370814.43	4040.49
3	R2 3012	609246.15	1370817.80	4040.75
3	R2 3013	609246.97	1370819.20	4041.49
3	R2 3014	609252.01	1370824.28	4041.28
3	R2 3015	609253.28	1370825.44	4041.72
3	R2 3016	609254.87	1370826.58	4041.35
3	R2 3017	609257.04	1370828.48	4041.49
3	R2 3018	609258.49	1370829.37	4041.74
3	R2 3019	609262.45	1370832.35	4041.69
3	R2 3020	609266.05	1370834.54	4041.47
3	R2 3021	609270.69	1370837.43	4041.56
3	R2 3022	609271.49	1370837.76	4041.40
3	R2 3023	609282.38	1370849.68	4041.53
3	R2 3024	609292.45	1370855.02	4041.52
3	R2 3025	609301.02	1370860.81	4041.58
3	R2 3026	609307.87	1370869.65	4041.55
3	R2 3027	609318.67	1370878.68	4041.54
3	R2 3028	609328.43	1370885.58	4041.54
3	R2 3029	609340.31	1370893.10	4041.48
3	R2 3030	609354.25	1370904.03	4041.36
3	R2 3031	609372.09	1370919.80	4040.97
3	R2 3032	609385.90	1370927.37	4040.61
3	R2 3033	609399.02	1370941.50	4040.63
3	R2 3034	609413.33	1370950.46	4040.38
3	R2 3035	609423.60	1370962.48	4040.11
3	R2 3036	609434.37	1370969.25	4039.90
3	R2 3037	609437.87	1370971.20	4039.83
3	R2 3038	609439.57	1370972.34	4040.23
3	R2 3039	609442.92	1370975.15	4042.61
3	R2 3040	609446.17	1370977.86	4043.51
3	R2 3041	609466.05	1370994.21	4044.63
3	R2 3042	609488.78	1371014.17	4044.41
3	R2 3043	608835.09	1371766.31	4040.07
3	R2 3044	608836.97	1371768.88	4040.90
3	R2 3045	608839.87	1371771.40	4042.68
3	R2 3046	608847.23	1371777.53	4044.32
3	R2 3047	608857.05	1371784.36	4044.23

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
3	R2 3048	608871.08	1371795.90	4044.11
3	R2 3049	608831.78	1371764.76	4039.97
3	R2 3050	608819.76	1371753.25	4039.86
3	R2 3051	608809.52	1371745.60	4040.05
3	R2 3052	608804.36	1371741.45	4040.26
3	R2 3053	608788.63	1371729.68	4040.58
3	R2 3054	608770.27	1371715.71	4040.83
3	R2 3055	608752.70	1371702.24	4041.17
3	R2 3056	608739.72	1371694.61	4041.22
3	R2 3057	608734.77	1371687.85	4041.30
3	R2 3058	608730.92	1371684.83	4041.80
3	R2 3059	608714.58	1371673.10	4041.55
3	R2 3060	608699.97	1371663.49	4041.15
3	R2 3061	608684.46	1371652.73	4041.00
3	R2 3062	608692.61	1371658.67	4041.07
3	R2 3063	608672.62	1371643.41	4040.92
3	R2 3064	608660.98	1371632.87	4040.79
3	R2 3065	608651.13	1371626.92	4040.70
3	R2 3066	608640.98	1371618.80	4040.54
3	R2 3067	608632.99	1371612.29	4040.60
3	R2 3068	608623.25	1371605.82	4040.44
3	R2 3069	608614.83	1371599.81	4040.18
3	R2 3070	608609.42	1371596.07	4040.08
3	R2 3071	608607.61	1371591.52	4039.86
3	R2 3072	608605.34	1371590.93	4039.87
3	R2 3073	608597.63	1371586.84	4040.00
3	R2 3074	608595.21	1371582.85	4040.02
3	R2 3075	608590.86	1371580.41	4040.02
3	R2 3076	608587.95	1371577.96	4040.25
3	R2 3077	608580.78	1371577.48	4040.38
3	R2 3078	608579.23	1371574.78	4042.04
3	R2 3079	608577.76	1371570.09	4044.52
3	R2 3080	608549.25	1371548.42	4044.10
3	R2 3081	608523.27	1371528.45	4044.75
3	R2 3082	608161.30	1371902.60	4044.21
3	R2 3083	608200.08	1371928.34	4044.54
3	R2 3084	608224.92	1371944.98	4044.06
3	R2 3085	608244.35	1371958.94	4043.18
3	R2 3086	608252.19	1371965.74	4044.36
3	R2 3087	608259.97	1371972.66	4044.98

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
3	R2 3088	608277.31	1371982.49	4039.46
3	R2 3089	608275.75	1371981.08	4039.36
3	R2 3090	608273.03	1371979.81	4038.46
3	R2 3091	608271.35	1371978.82	4038.25
3	R2 3092	608268.44	1371976.99	4039.31
3	R2 3093	608267.24	1371975.77	4040.16
3	R2 3094	608281.07	1371985.73	4040.50
3	R2 3095	608287.94	1371990.11	4039.00
3	R2 3096	608289.57	1371990.63	4038.42
3	R2 3097	608293.62	1371993.39	4039.53
3	R2 3098	608297.35	1371995.48	4040.03
3	R2 3099	608300.94	1371997.33	4040.58
3	R2 3100	608313.15	1372008.24	4040.24
3	R2 3101	608322.85	1372013.51	4040.44
3	R2 3102	608320.44	1372011.34	4040.41
3	R2 3103	608332.67	1372020.11	4040.79
3	R2 3104	608340.23	1372026.31	4041.07
3	R2 3105	608348.20	1372028.76	4041.19
3	R2 3106	608358.25	1372035.14	4041.29
3	R2 3107	608368.35	1372043.59	4041.44
3	R2 3108	608373.51	1372047.69	4041.33
3	R2 3109	608377.49	1372050.72	4041.18
3	R2 3110	608385.97	1372055.56	4041.06
3	R2 3111	608393.64	1372060.82	4041.12
3	R2 3112	608391.14	1372058.75	4041.16
3	R2 3113	608403.10	1372066.69	4041.06
3	R2 3114	608411.06	1372070.74	4041.36
3	R2 3115	608417.35	1372076.38	4041.62
3	R2 3116	608419.82	1372078.43	4041.72
3	R2 3117	608420.84	1372080.63	4041.99
3	R2 3118	608422.35	1372082.07	4042.88
3	R2 3119	608438.91	1372093.40	4043.50
3	R2 3120	608426.98	1372081.99	4044.32
3	R2 3121	608428.54	1372084.30	4043.13
3	R2 3122	608448.92	1372101.49	4043.67
3	R2 3123	607939.96	1372769.91	4040.42
3	R2 3124	607942.35	1372773.02	4041.44
3	R2 3125	607940.57	1372771.42	4040.84
3	R2 3126	607941.47	1372772.29	4041.12
3	R2 3127	607940.63	1372785.91	4041.46

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
3	R2 3128	607942.67	1372808.93	4042.01
3	R2 3129	607946.83	1372821.64	4041.50
3	R2 3131	607936.69	1372763.84	4039.63
3	R2 3132	607938.21	1372769.25	4039.73
3	R2 3133	607933.64	1372744.25	4039.55
3	R2 3134	607935.93	1372749.31	4039.55
3	R2 3135	607935.75	1372755.17	4039.52
3	R2 3136	607931.81	1372730.24	4039.75
3	R2 3137	607931.97	1372715.36	4039.76
3	R2 3138	607927.82	1372703.48	4039.68
3	R2 3139	607925.96	1372684.75	4039.93
3	R2 3140	607925.98	1372667.60	4039.93
3	R2 3141	607923.08	1372659.65	4039.84
3	R2 3142	607922.69	1372641.92	4039.78
3	R2 3143	607920.86	1372625.89	4039.60
3	R2 3144	607918.32	1372615.23	4039.51
3	R2 3145	607916.94	1372604.59	4039.50
3	R2 3146	607915.27	1372591.95	4039.38
3	R2 3147	607913.25	1372583.27	4039.29
3	R2 3148	607913.09	1372565.33	4039.04
3	R2 3149	607910.43	1372552.85	4038.89
3	R2 3150	607908.96	1372543.26	4038.79
3	R2 3151	607907.75	1372534.52	4038.54
3	R2 3152	607907.27	1372525.97	4038.59
3	R2 3153	607906.41	1372518.15	4038.44
3	R2 3154	607906.37	1372506.58	4038.75
3	R2 3155	607908.40	1372511.99	4038.41
3	R2 3156	607905.41	1372502.86	4039.93
3	R2 3157	607904.53	1372493.47	4042.59
3	R2 3158	607901.90	1372463.92	4042.39
3	R2 3159	607896.67	1372440.60	4042.34
3	R2 3160	607897.17	1372423.46	4042.29
3	R2 3161	607627.57	1373020.08	4039.93
3	R2 3162	607627.72	1373021.67	4038.58
3	R2 3163	607627.88	1373022.13	4038.52
3	R2 3164	607627.85	1373023.11	4040.84
3	R2 3165	607628.71	1373025.21	4040.19
3	R2 3166	607628.83	1373026.52	4039.08
3	R2 3167	607629.50	1373027.65	4038.51
3	R2 3168	607630.56	1373029.87	4038.85

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
3	R2 3169	607630.17	1373029.20	4039.43
3	R2 3170	607631.32	1373031.44	4039.21
3	R2 3171	607636.84	1373043.20	4044.85
3	R2 3172	607642.54	1373057.01	4043.41
3	R2 3173	607643.83	1373062.06	4042.12
3	R2 3174	607652.48	1373084.40	4041.62
3	R2 3175	607635.55	1373038.81	4044.86
3	R2 3176	607634.21	1373036.05	4043.25
3	R2 3177	607626.64	1373017.80	4038.68
3	R2 3178	607625.19	1373015.08	4038.54
3	R2 3179	607624.67	1373016.32	4039.90
3	R2 3180	607623.88	1373013.01	4039.64
3	R2 3181	607623.16	1373011.44	4039.15
3	R2 3182	607622.06	1373009.85	4040.27
3	R2 3183	607622.14	1373008.02	4038.69
3	R2 3184	607621.41	1373007.15	4040.16
3	R2 3185	607621.67	1373005.18	4040.36
3	R2 3186	607619.53	1373002.50	4040.05
3	R2 3187	607619.05	1373000.05	4039.39
3	R2 3188	607616.73	1372997.63	4039.06
3	R2 3189	607615.23	1372993.66	4040.31
3	R2 3190	607613.89	1372991.22	4039.79
3	R2 3191	607613.83	1372989.59	4039.67
3	R2 3192	607613.86	1372986.46	4038.69
3	R2 3193	607613.32	1372984.36	4039.56
3	R2 3194	607611.34	1372980.94	4039.99
3	R2 3195	607610.09	1372979.38	4040.83
3	R2 3196	607609.18	1372977.08	4040.22
3	R2 3197	607608.23	1372973.89	4039.01
3	R2 3198	607606.97	1372972.29	4038.79
3	R2 3199	607606.23	1372970.15	4038.54
3	R2 3200	607604.37	1372967.75	4039.30
3	R2 3201	607604.15	1372965.06	4039.52
3	R2 3202	607602.92	1372963.56	4038.62
3	R2 3203	607602.37	1372961.34	4037.76
3	R2 3204	607601.51	1372960.00	4037.90
3	R2 3205	607601.42	1372957.88	4039.72
3	R2 3206	607600.51	1372956.23	4038.33
3	R2 3207	607600.10	1372955.02	4038.61
3	R2 3208	607598.75	1372952.64	4037.56

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
3	R2 3209	607597.81	1372950.14	4037.17
3	R2 3210	607596.81	1372947.63	4039.31
3	R2 3211	607596.36	1372945.96	4039.64
3	R2 3212	607595.47	1372944.11	4038.42
3	R2 3213	607594.59	1372942.25	4039.83
3	R2 3214	607593.85	1372940.91	4039.14
3	R2 3215	607592.66	1372936.48	4038.16
3	R2 3216	607591.82	1372934.95	4037.91
3	R2 3217	607589.96	1372932.02	4038.33
3	R2 3218	607589.44	1372929.00	4037.39
3	R2 3219	607587.67	1372925.63	4037.10
3	R2 3220	607587.07	1372922.67	4036.48
3	R2 3221	607586.64	1372921.38	4036.91
3	R2 3222	607586.33	1372919.62	4037.52
3	R2 3223	607584.99	1372918.31	4036.86
3	R2 3224	607583.79	1372916.79	4037.28
3	R2 3225	607582.76	1372914.81	4037.49
3	R2 3226	607581.53	1372913.15	4038.25
3	R2 3227	607580.90	1372910.60	4038.88
3	R2 3228	607581.07	1372909.11	4038.88
3	R2 3229	607580.26	1372906.95	4037.57
4	R1 4000	596815.03	1396451.73	4020.54
4	R1 4001	596779.64	1396566.02	4019.17
4	R1 4002	596752.95	1396643.57	4014.29
4	R1 4003	596747.55	1396675.10	4016.20
4	R1 4004	596743.11	1396694.56	4015.95
4	R1 4007	596707.45	1396789.11	4013.54
4	R1 4008	596708.83	1396787.82	4014.29
4	R1 4009	596710.61	1396785.64	4015.66
4	R1 4010	596706.50	1396791.15	4013.02
4	R1 4011	596704.82	1396800.89	4012.28
4	R1 4012	596700.02	1396813.12	4011.67
4	R1 4013	596695.79	1396827.29	4011.51
4	R1 4014	596689.87	1396842.65	4011.37
4	R1 4015	596686.12	1396857.78	4011.44
4	R1 4016	596682.09	1396869.74	4011.68
4	R1 4017	596677.24	1396883.46	4011.62
4	R1 4018	596673.84	1396896.99	4011.60
4	R1 4019	596669.04	1396910.07	4011.49
4	R1 4020	596667.99	1396914.73	4011.88

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R1 4021	596666.57	1396917.87	4014.23
4	R1 4022	596665.79	1396919.40	4016.59
4	R1 4023	596664.23	1396925.32	4018.47
4	R1 4024	596662.60	1396931.45	4018.52
4	R1 4025	596655.13	1396952.59	4018.32
4	R1 4026	596646.76	1396979.54	4017.96
4	R1 4027	598629.91	1396421.92	4019.91
4	R1 4028	598663.47	1396446.85	4019.63
4	R1 4029	598623.78	1396417.59	4020.00
4	R1 4030	598617.19	1396412.47	4020.04
4	R1 4031	598608.22	1396405.06	4015.46
4	R1 4032	598605.95	1396402.35	4014.61
4	R1 4033	598600.70	1396400.58	4014.50
4	R1 4034	598590.29	1396393.27	4014.64
4	R1 4035	598584.83	1396386.88	4015.25
4	R1 4036	598581.40	1396384.63	4016.34
4	R1 4037	598578.32	1396383.34	4014.94
4	R1 4038	598571.70	1396379.32	4014.77
4	R1 4039	598564.15	1396374.59	4014.59
4	R1 4040	598557.20	1396368.33	4014.80
4	R1 4041	598555.71	1396366.78	4015.29
4	R1 4042	598555.18	1396360.74	4016.69
4	R1 4043	598538.48	1396339.62	4016.83
4	R1 4044	598458.62	1396294.10	4011.97
4	R1 4045	598462.80	1396298.21	4012.23
4	R1 4046	598464.86	1396299.91	4013.21
4	R1 4047	598470.02	1396301.46	4017.55
4	R1 4048	598479.29	1396306.02	4017.70
4	R1 4049	598454.02	1396291.06	4012.01
4	R1 4050	598443.84	1396282.94	4012.35
4	R1 4051	598427.58	1396269.58	4012.10
4	R1 4052	598407.78	1396256.09	4012.39
4	R1 4053	598394.95	1396247.28	4012.63
4	R1 4054	598382.90	1396237.67	4012.81
4	R1 4055	598375.97	1396232.56	4013.07
4	R1 4056	598373.79	1396232.00	4013.92
4	R1 4057	598366.30	1396224.89	4020.12
4	R1 4058	598364.88	1396224.28	4020.21
4	R1 4059	598356.79	1396216.36	4020.48
4	R1 4060	598341.51	1396206.25	4020.44

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R1 4061	598323.81	1396194.47	4019.59
4	R1 4062	599220.14	1395002.89	4012.57
4	R1 4063	599214.28	1394996.83	4016.41
4	R1 4064	599207.99	1394997.00	4016.43
4	R1 4065	599201.27	1394988.66	4017.66
4	R1 4066	599190.95	1394980.04	4020.94
4	R1 4067	599174.33	1394969.61	4021.44
4	R1 4068	599221.37	1395004.03	4012.37
4	R1 4069	599232.78	1395012.34	4012.49
4	R1 4070	599247.12	1395023.69	4012.78
4	R1 4071	599261.60	1395033.38	4012.90
4	R1 4072	599275.18	1395044.50	4013.37
4	R1 4073	599290.59	1395055.70	4013.70
4	R1 4074	599302.26	1395065.09	4013.91
4	R1 4075	599317.75	1395075.39	4013.68
4	R1 4076	599329.57	1395084.71	4014.41
4	R1 4077	599342.35	1395093.68	4014.85
4	R1 4078	599348.40	1395098.60	4014.74
4	R1 4079	599351.33	1395100.87	4015.20
4	R1 4080	599360.43	1395108.07	4015.13
4	R1 4081	599371.40	1395115.51	4014.96
4	R1 4082	599381.41	1395123.97	4015.18
4	R1 4083	599382.65	1395124.78	4015.39
4	R1 4084	599386.86	1395126.11	4018.81
4	R1 4085	599403.98	1395142.92	4018.12
4	R1 4086	600229.01	1393849.39	4014.21
4	R1 4087	600230.02	1393850.26	4014.73
4	R1 4088	600243.15	1393852.81	4022.24
4	R1 4089	600246.37	1393853.66	4022.43
4	R1 4090	600259.55	1393859.47	4021.92
4	R1 4091	600276.43	1393866.85	4021.62
4	R1 4092	600315.74	1393881.57	4021.48
4	R1 4093	600223.73	1393844.41	4013.64
4	R1 4094	600212.22	1393839.03	4013.59
4	R1 4095	600199.83	1393834.34	4013.70
4	R1 4096	600185.35	1393829.97	4013.96
4	R1 4097	600169.86	1393824.23	4014.02
4	R1 4098	600160.26	1393820.48	4014.44
4	R1 4099	600157.14	1393819.37	4013.99
4	R1 4100	600140.61	1393816.00	4013.56

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R1 4101	600127.53	1393806.41	4013.58
4	R1 4102	600110.98	1393801.05	4014.03
4	R1 4103	600098.52	1393795.89	4014.67
4	R1 4104	600092.75	1393793.44	4015.16
4	R1 4105	600080.52	1393788.07	4015.74
4	R1 4106	600073.13	1393783.95	4016.10
4	R1 4107	600072.28	1393783.44	4016.16
4	R1 4108	600069.23	1393781.65	4017.11
4	R1 4109	600067.54	1393780.97	4017.10
4	R1 4110	600063.48	1393781.12	4017.51
4	R1 4111	600054.23	1393778.17	4017.61
4	R1 4112	600051.75	1393777.15	4018.25
4	R1 4113	600041.81	1393772.78	4017.24
4	R1 4114	600031.96	1393769.80	4017.03
4	R1 4115	600043.29	1393772.90	4017.29
4	R1 4116	600022.71	1393770.77	4017.37
4	R1 4117	600015.29	1393762.42	4017.44
4	R1 4118	600011.91	1393762.50	4019.74
4	R1 4119	599995.58	1393755.25	4018.69
4	R1 4120	599982.75	1393753.18	4018.39
4	R1 4121	599973.39	1393747.16	4018.40
4	R1 4122	599967.22	1393742.31	4022.17
4	R1 4123	599951.12	1393737.72	4022.66
4	R1 4124	599927.92	1393727.85	4022.30
4	R1 4125	599731.44	1388887.54	4033.77
4	R1 4126	599746.32	1388902.06	4032.49
4	R1 4127	599759.04	1388914.62	4031.32
4	R1 4128	599771.12	1388925.37	4029.81
4	R1 4129	599785.67	1388941.55	4029.12
4	R1 4130	599808.27	1388962.95	4028.29
4	R1 4131	599824.16	1388977.09	4026.21
4	R1 4132	599849.86	1389005.26	4025.65
4	R1 4133	599865.18	1389020.32	4025.31
4	R1 4134	599884.37	1389038.76	4024.70
4	R1 4135	599905.63	1389059.73	4024.02
4	R1 4136	599930.96	1389084.91	4023.42
4	R1 4137	599956.29	1389112.67	4023.06
4	R1 4138	599988.20	1389139.95	4022.52
4	R1 4139	600017.35	1389170.54	4022.11
4	R1 4140	600048.82	1389199.94	4021.63

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R1 4141	600071.75	1389224.21	4021.25
4	R1 4142	600094.01	1389244.84	4020.91
4	R1 4143	600114.13	1389266.22	4020.58
4	R1 4144	600140.98	1389292.44	4020.29
4	R1 4145	600160.77	1389315.52	4019.95
4	R1 4146	600187.63	1389349.74	4019.20
4	R1 4147	600222.69	1389391.18	4018.92
4	R1 4148	600269.25	1389418.02	4017.86
4	R1 4149	600265.29	1389417.58	4018.40
4	R1 4150	600258.51	1389414.36	4021.67
4	R1 4151	600261.02	1389416.04	4020.26
4	R1 4152	600257.95	1389411.54	4021.82
4	R1 4153	600277.31	1389426.37	4016.82
4	R1 4154	600280.27	1389427.20	4016.36
4	R1 4155	600289.23	1389437.04	4016.16
4	R1 4156	600295.59	1389444.69	4015.46
4	R1 4157	600304.38	1389450.18	4015.76
4	R1 4158	600312.78	1389462.44	4016.32
4	R1 4159	600327.34	1389474.40	4017.25
4	R1 4160	600336.59	1389483.29	4017.38
4	R1 4161	600339.99	1389486.20	4016.41
4	R1 4162	600342.65	1389488.67	4016.76
4	R1 4163	600345.31	1389492.04	4018.07
4	R1 4164	600349.34	1389496.02	4018.44
4	R1 4165	600362.54	1389509.68	4020.76
4	R1 4166	600369.27	1389516.65	4020.48
4	R1 4167	600375.27	1389525.06	4025.44
4	R1 4168	600396.12	1389542.86	4025.41
4	R1 4169	600382.66	1389529.71	4025.83
4	R1 4170	601122.71	1388946.85	4017.74
4	R1 4171	601124.13	1388949.66	4019.55
4	R1 4172	601122.49	1388954.08	4021.48
4	R1 4173	601124.95	1388962.32	4023.65
4	R1 4174	601147.33	1389000.44	4027.77
4	R1 4175	601160.42	1389020.47	4028.72
4	R1 4176	601171.61	1389041.96	4029.03
4	R1 4177	601189.61	1389072.35	4030.37
4	R1 4178	601197.40	1389088.54	4031.52
4	R1 4179	601115.67	1388943.80	4017.73
4	R1 4180	601112.28	1388933.08	4017.56

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R1 4181	601109.34	1388930.60	4017.08
4	R1 4182	601105.86	1388924.38	4017.05
4	R1 4183	601105.16	1388921.26	4017.16
4	R1 4184	601105.16	1388921.26	4017.14
4	R1 4185	601100.60	1388914.78	4017.14
4	R1 4186	601096.83	1388904.27	4017.20
4	R1 4187	601085.95	1388889.13	4017.82
4	R1 4188	601085.08	1388883.44	4018.07
4	R1 4189	601076.66	1388869.47	4018.17
4	R1 4190	601073.20	1388864.32	4018.79
4	R1 4191	601066.35	1388850.01	4019.03
4	R1 4192	601059.45	1388840.67	4019.54
4	R1 4193	601056.12	1388836.17	4020.16
4	R1 4194	601056.22	1388835.34	4020.42
4	R1 4195	601053.98	1388831.92	4021.51
4	R1 4196	601049.06	1388821.63	4021.60
4	R1 4197	601043.60	1388812.92	4020.70
4	R1 4198	601041.49	1388807.41	4021.40
4	R1 4199	601039.77	1388801.48	4022.61
4	R1 4200	601038.86	1388800.33	4022.53
4	R1 4201	601026.81	1388778.51	4021.69
4	R1 4202	602359.26	1387470.97	4021.73
4	R1 4203	602355.51	1387466.00	4024.19
4	R1 4204	602336.35	1387452.10	4028.98
4	R1 4205	602320.01	1387444.67	4029.63
4	R1 4206	602303.31	1387431.78	4030.77
4	R1 4207	602336.90	1387452.73	4028.94
4	R1 4208	602367.83	1387476.62	4020.99
4	R1 4209	602376.63	1387483.11	4020.93
4	R1 4210	602376.27	1387485.55	4020.64
4	R1 4211	602381.04	1387490.84	4020.20
4	R1 4212	602390.08	1387496.41	4019.96
4	R1 4213	602398.28	1387503.28	4019.99
4	R1 4214	602404.17	1387508.87	4020.00
4	R1 4215	602407.92	1387512.10	4020.51
4	R1 4216	602410.83	1387514.56	4020.15
4	R1 4217	602417.28	1387520.56	4020.62
4	R1 4218	602426.76	1387524.94	4020.98
4	R1 4219	602440.46	1387533.34	4022.01
4	R1 4220	602457.76	1387544.77	4022.53

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R1 4221	602472.95	1387558.32	4023.07
4	R1 4222	602486.36	1387568.80	4023.29
4	R1 4223	602505.86	1387583.06	4023.41
4	R1 4224	602520.70	1387593.03	4023.48
4	R1 4225	602973.89	1386153.42	4024.36
4	R1 4226	602975.29	1386154.10	4024.50
4	R1 4227	602982.15	1386154.35	4024.91
4	R1 4228	602993.84	1386155.18	4024.62
4	R1 4229	602968.36	1386152.06	4020.77
4	R1 4230	602965.52	1386151.88	4020.25
4	R1 4231	602955.45	1386150.89	4019.72
4	R1 4232	602951.71	1386150.95	4020.61
4	R1 4233	602946.59	1386153.95	4021.52
4	R1 4234	602942.79	1386153.57	4020.78
4	R1 4235	602940.49	1386153.23	4019.81
4	R1 4236	602934.33	1386153.57	4019.59
4	R1 4237	602928.78	1386153.34	4019.81
4	R1 4238	602922.46	1386152.54	4019.32
4	R1 4239	602916.72	1386153.54	4019.11
4	R1 4240	602909.86	1386153.30	4019.29
4	R1 4241	602904.48	1386154.51	4019.55
4	R1 4242	602895.28	1386153.64	4019.15
4	R1 4243	602886.85	1386154.80	4019.59
4	R1 4244	602880.82	1386153.22	4019.40
4	R1 4245	602873.16	1386153.51	4019.05
4	R1 4246	602864.08	1386153.57	4019.13
4	R1 4247	602857.87	1386154.71	4019.47
4	R1 4248	602850.81	1386155.29	4019.63
4	R1 4249	602843.47	1386155.26	4019.60
4	R1 4250	602837.93	1386153.69	4020.05
4	R1 4251	602834.85	1386154.06	4020.70
4	R1 4252	602824.92	1386152.84	4021.94
4	R1 4253	602822.04	1386155.80	4022.47
4	R1 4254	602817.82	1386157.51	4024.90
4	R1 4255	602808.83	1386156.18	4025.22
4	R1 4256	602793.99	1386156.73	4027.28
4	R1 4257	602785.73	1386155.81	4032.21
4	R1 4258	602769.65	1386155.38	4032.24
4	R1 4259	602784.53	1386156.21	4032.27
4	R1 4260	602457.66	1387164.84	4032.08

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R1 4261	595539.78	1395788.57	4018.60
4	R2 4000	594638.16	1396427.78	4011.83
4	R2 4001	594630.19	1396419.54	4011.90
4	R2 4002	594621.43	1396409.99	4012.27
4	R2 4003	594619.95	1396408.86	4012.40
4	R2 4004	594617.91	1396407.59	4012.83
4	R2 4005	594616.45	1396404.63	4012.85
4	R2 4006	594614.63	1396402.81	4012.77
4	R2 4007	594612.40	1396400.57	4012.56
4	R2 4008	594610.11	1396398.04	4012.62
4	R2 4009	594608.64	1396395.71	4012.68
4	R2 4010	594607.21	1396394.50	4013.14
4	R2 4011	594605.60	1396393.08	4013.63
4	R2 4012	594603.79	1396390.80	4014.07
4	R2 4013	594600.28	1396387.36	4014.25
4	R2 4014	594599.56	1396385.16	4014.42
4	R2 4015	594598.37	1396383.15	4013.64
4	R2 4016	594597.07	1396381.71	4013.63
4	R2 4017	594595.84	1396380.65	4013.92
4	R2 4018	594592.92	1396379.36	4013.85
4	R2 4019	594589.04	1396377.28	4014.02
4	R2 4020	594585.76	1396372.03	4014.18
4	R2 4021	594584.03	1396370.03	4014.37
4	R2 4022	594575.62	1396364.22	4014.68
4	R2 4023	594571.87	1396357.13	4014.64
4	R2 4024	594565.23	1396349.33	4014.85
4	R2 4025	594559.82	1396343.14	4015.22
4	R2 4026	594557.09	1396336.71	4014.99
4	R2 4027	594551.16	1396331.61	4015.86
4	R2 4028	594546.98	1396327.66	4015.34
4	R2 4029	594540.34	1396322.45	4016.00
4	R2 4030	594537.92	1396318.99	4015.83
4	R2 4031	594536.94	1396314.78	4016.38
4	R2 4032	594534.54	1396314.21	4016.50
4	R2 4033	594526.69	1396308.25	4016.53
4	R2 4034	594515.45	1396299.35	4017.06
4	R2 4035	594510.32	1396293.93	4017.12
4	R2 4036	594492.89	1396272.04	4017.67
4	R2 4037	594498.04	1396274.11	4017.60
4	R2 4038	594502.63	1396281.62	4017.46

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R2 4039	594488.57	1396268.90	4018.27
4	R2 4040	594486.09	1396259.66	4018.67
4	R2 4041	594641.05	1396432.73	4011.67
4	R2 4042	594645.28	1396436.06	4011.67
4	R2 4043	594647.47	1396438.09	4011.38
4	R2 4044	594649.27	1396440.72	4011.29
4	R2 4045	594651.08	1396442.49	4011.84
4	R2 4046	594653.33	1396445.20	4012.08
4	R2 4047	594655.32	1396447.10	4011.72
4	R2 4048	594656.61	1396448.35	4011.48
4	R2 4049	594659.24	1396452.80	4011.64
4	R2 4050	594661.47	1396454.66	4011.92
4	R2 4051	594663.88	1396456.50	4011.90
4	R2 4052	594665.00	1396458.22	4011.77
4	R2 4053	594666.50	1396459.28	4011.71
4	R2 4054	594668.27	1396460.98	4011.65
4	R2 4055	594670.12	1396463.43	4011.82
4	R2 4056	594671.67	1396464.93	4011.54
4	R2 4057	594673.11	1396466.36	4011.46
4	R2 4058	594674.67	1396468.06	4011.47
4	R2 4059	594676.21	1396469.85	4011.22
4	R2 4060	594678.46	1396472.08	4010.66
4	R2 4061	594679.27	1396473.66	4010.64
4	R2 4062	594680.66	1396475.02	4010.35
4	R2 4063	594680.97	1396475.91	4010.54
4	R2 4064	594682.71	1396478.04	4009.76
4	R2 4065	594684.32	1396479.82	4009.88
4	R2 4066	594685.68	1396480.93	4009.97
4	R2 4067	594687.37	1396483.04	4010.07
4	R2 4068	594688.77	1396484.77	4010.50
4	R2 4069	594689.88	1396485.47	4010.82
4	R2 4070	594690.53	1396486.77	4011.64
4	R2 4071	594692.01	1396488.09	4012.46
4	R2 4072	594693.52	1396489.29	4015.52
4	R2 4073	594700.74	1396497.59	4016.47
4	R2 4074	594712.85	1396509.88	4016.78
4	R2 4075	594722.97	1396521.82	4016.90
4	R2 4076	594086.13	1397207.87	4010.60
4	R2 4077	594094.42	1397211.92	4010.64
4	R2 4078	594105.06	1397215.34	4010.82

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R2 4079	594110.46	1397217.72	4010.93
4	R2 4080	594113.13	1397219.07	4011.60
4	R2 4081	594114.93	1397219.68	4011.50
4	R2 4082	594117.42	1397220.62	4011.72
4	R2 4083	594118.06	1397221.34	4012.01
4	R2 4084	594120.32	1397222.41	4013.24
4	R2 4085	594123.15	1397223.52	4014.34
4	R2 4086	594131.18	1397227.38	4014.13
4	R2 4087	594136.36	1397231.95	4014.08
4	R2 4088	594147.29	1397232.20	4013.96
4	R2 4089	594154.71	1397238.30	4013.94
4	R2 4090	594163.26	1397240.93	4013.95
4	R2 4091	594169.98	1397245.41	4013.87
4	R2 4092	594177.71	1397247.38	4013.88
4	R2 4093	594188.04	1397254.62	4013.98
4	R2 4094	594197.04	1397258.93	4013.91
4	R2 4095	594206.62	1397265.88	4012.66
4	R2 4096	594212.36	1397266.88	4012.65
4	R2 4097	594215.23	1397267.35	4013.29
4	R2 4098	594216.81	1397269.27	4014.26
4	R2 4099	594221.28	1397272.69	4014.36
4	R2 4100	594228.16	1397276.05	4016.97
4	R2 4101	594236.76	1397277.58	4017.21
4	R2 4102	594256.34	1397283.36	4017.16
4	R2 4103	594083.46	1397207.21	4010.58
4	R2 4104	594069.39	1397198.06	4010.39
4	R2 4105	594060.89	1397193.87	4010.22
4	R2 4106	594056.29	1397194.05	4010.17
4	R2 4107	594054.91	1397193.50	4009.91
4	R2 4108	594050.66	1397191.68	4009.71
4	R2 4109	594050.60	1397191.63	4009.68
4	R2 4110	594047.74	1397188.91	4009.52
4	R2 4111	594044.61	1397186.51	4009.19
4	R2 4112	594039.72	1397185.12	4009.08
4	R2 4113	594034.97	1397183.42	4008.73
4	R2 4114	594030.94	1397181.20	4008.75
4	R2 4115	594026.98	1397179.14	4008.45
4	R2 4116	594021.33	1397175.99	4007.93
4	R2 4117	594017.60	1397173.48	4007.71
4	R2 4118	594014.75	1397171.20	4007.68

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R2 4119	594008.32	1397171.04	4007.87
4	R2 4120	594002.03	1397170.11	4008.04
4	R2 4121	593997.91	1397167.00	4007.90
4	R2 4122	593994.38	1397164.85	4007.99
4	R2 4123	593990.78	1397162.87	4009.48
4	R2 4124	593990.28	1397162.18	4009.74
4	R2 4125	593988.83	1397161.32	4009.91
4	R2 4126	593985.81	1397158.49	4010.68
4	R2 4127	593982.32	1397159.17	4011.87
4	R2 4128	593981.78	1397158.39	4012.17
4	R2 4129	593972.70	1397154.27	4018.84
4	R2 4130	593965.79	1397152.22	4018.67
4	R2 4131	593947.32	1397141.79	4020.78
4	R2 4132	593776.48	1398180.40	4009.88
4	R2 4133	593780.67	1398182.11	4009.83
4	R2 4134	593782.31	1398182.60	4010.07
4	R2 4135	593790.70	1398186.19	4010.00
4	R2 4136	593792.95	1398186.78	4010.05
4	R2 4137	593794.97	1398187.66	4010.20
4	R2 4138	593797.52	1398188.50	4010.01
4	R2 4139	593801.39	1398189.83	4009.97
4	R2 4140	593802.10	1398190.03	4009.81
4	R2 4141	593804.88	1398190.71	4009.64
4	R2 4142	593806.86	1398191.17	4009.21
4	R2 4143	593808.00	1398191.41	4009.48
4	R2 4144	593811.35	1398191.99	4009.53
4	R2 4145	593814.27	1398193.95	4009.57
4	R2 4146	593817.23	1398195.75	4009.56
4	R2 4147	593819.97	1398197.26	4009.27
4	R2 4148	593822.91	1398198.16	4009.17
4	R2 4149	593825.18	1398199.00	4008.97
4	R2 4150	593828.10	1398200.29	4008.60
4	R2 4151	593831.56	1398201.82	4008.13
4	R2 4152	593836.24	1398203.49	4007.80
4	R2 4153	593840.31	1398205.20	4007.77
4	R2 4154	593844.75	1398207.07	4007.63
4	R2 4155	593848.01	1398208.44	4007.79
4	R2 4156	593850.26	1398209.72	4008.30
4	R2 4157	593852.72	1398210.41	4009.19
4	R2 4158	593856.18	1398211.77	4009.83

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R2 4159	593858.46	1398213.06	4010.53
4	R2 4160	593865.11	1398215.03	4014.25
4	R2 4161	593869.37	1398215.06	4015.62
4	R2 4162	593870.42	1398217.07	4015.72
4	R2 4163	593881.65	1398220.04	4015.52
4	R2 4164	593904.84	1398231.60	4015.18
4	R2 4165	593769.98	1398177.63	4010.00
4	R2 4166	593766.90	1398175.56	4010.10
4	R2 4167	593761.40	1398171.97	4009.94
4	R2 4168	593756.81	1398171.60	4009.81
4	R2 4169	593756.75	1398171.50	4009.81
4	R2 4170	593751.20	1398168.87	4009.87
4	R2 4171	593747.43	1398167.24	4009.72
4	R2 4172	593743.95	1398165.38	4010.25
4	R2 4173	593739.29	1398163.50	4010.19
4	R2 4174	593734.86	1398163.66	4010.05
4	R2 4175	593729.50	1398162.36	4010.16
4	R2 4176	593725.84	1398160.60	4010.30
4	R2 4177	593721.79	1398159.30	4010.69
4	R2 4178	593713.89	1398157.35	4011.25
4	R2 4179	593706.29	1398153.78	4011.45
4	R2 4180	593700.91	1398151.36	4011.68
4	R2 4181	593691.79	1398144.74	4011.80
4	R2 4182	593680.01	1398141.80	4011.90
4	R2 4183	593673.40	1398140.24	4011.84
4	R2 4184	593670.27	1398138.83	4012.19
4	R2 4185	593667.47	1398137.44	4013.49
4	R2 4186	593665.46	1398134.75	4013.24
4	R2 4187	593662.07	1398129.07	4012.72
4	R2 4188	593646.61	1398133.67	4015.32
4	R2 4189	593640.61	1398133.16	4018.58
4	R2 4190	595114.78	1396234.67	4013.47
4	R2 4191	595115.68	1396239.47	4013.48
4	R2 4192	595117.27	1396254.66	4013.05
4	R2 4193	595117.11	1396265.25	4012.61
4	R2 4194	595119.81	1396276.00	4012.29
4	R2 4195	595120.61	1396286.39	4012.01
4	R2 4196	595121.68	1396293.30	4011.82
4	R2 4197	595123.86	1396305.43	4011.62
4	R2 4198	595125.84	1396318.90	4011.42

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R2 4199	595128.67	1396333.86	4011.17
4	R2 4200	595130.36	1396348.69	4011.08
4	R2 4201	595133.13	1396364.36	4011.07
4	R2 4202	595134.83	1396376.06	4011.07
4	R2 4203	595137.33	1396387.44	4011.10
4	R2 4204	595137.89	1396392.49	4010.65
4	R2 4205	595138.11	1396395.34	4010.67
4	R2 4206	595138.28	1396396.46	4011.01
4	R2 4207	595138.48	1396399.82	4010.99
4	R2 4208	595138.86	1396402.93	4011.87
4	R2 4209	595139.25	1396407.90	4013.02
4	R2 4210	595139.49	1396410.11	4015.42
4	R2 4211	595139.63	1396417.23	4015.82
4	R2 4212	595143.75	1396430.62	4018.53
4	R2 4213	595147.42	1396453.97	4018.62
4	R2 4214	595114.99	1396228.77	4013.69
4	R2 4215	595110.92	1396219.37	4013.56
4	R2 4216	595109.68	1396211.54	4013.50
4	R2 4217	595109.25	1396201.34	4013.35
4	R2 4218	595109.47	1396193.40	4013.31
4	R2 4219	595106.73	1396186.35	4013.78
4	R2 4220	595106.91	1396182.63	4013.86
4	R2 4221	595107.19	1396181.45	4013.93
4	R2 4222	595106.70	1396179.49	4013.66
4	R2 4223	595106.01	1396176.47	4013.37
4	R2 4224	595105.23	1396173.36	4013.24
4	R2 4225	595104.14	1396167.87	4013.46
4	R2 4226	595103.74	1396166.31	4015.19
4	R2 4227	595102.35	1396161.30	4015.71
4	R2 4228	595101.02	1396157.52	4016.83
4	R2 4229	595101.44	1396152.29	4017.40
4	R2 4230	595099.51	1396141.71	4017.26
4	R2 4231	595099.47	1396121.77	4017.69
4	R2 4232	599693.91	1391867.77	4025.82
4	R2 4233	599758.03	1391856.22	4025.37
4	R2 4234	599786.29	1391853.06	4024.44
4	R2 4235	599825.62	1391848.71	4024.56
4	R2 4236	599835.05	1391845.10	4023.83
4	R2 4237	599839.34	1391844.11	4022.42
4	R2 4238	599853.25	1391842.32	4021.35

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R2 4239	599845.59	1391842.83	4020.96
4	R2 4240	599855.38	1391843.24	4021.30
4	R2 4241	599866.40	1391842.81	4020.13
4	R2 4242	599887.89	1391835.65	4019.61
4	R2 4243	599897.55	1391832.60	4019.55
4	R2 4244	599902.59	1391832.18	4020.59
4	R2 4245	599916.30	1391831.20	4018.66
4	R2 4246	599922.57	1391831.64	4018.98
4	R2 4247	599935.86	1391828.54	4019.37
4	R2 4248	599949.15	1391828.15	4019.48
4	R2 4249	599961.80	1391826.66	4019.12
4	R2 4250	599983.52	1391825.65	4019.18
4	R2 4251	599996.76	1391820.90	4018.75
4	R2 4252	600017.36	1391817.29	4019.15
4	R2 4253	600028.75	1391812.22	4019.31
4	R2 4254	600030.60	1391818.69	4019.41
4	R2 4255	600041.76	1391820.56	4019.97
4	R2 4256	600056.90	1391815.48	4016.46
4	R2 4257	600054.31	1391815.37	4017.07
4	R2 4258	600052.06	1391815.61	4018.65
4	R2 4259	600065.85	1391814.51	4015.79
4	R2 4260	600084.38	1391810.56	4015.53
4	R2 4261	600101.54	1391810.16	4015.00
4	R2 4262	600113.11	1391805.64	4014.68
4	R2 4263	600122.79	1391805.42	4014.30
4	R2 4264	600128.50	1391804.97	4014.03
4	R2 4265	600137.57	1391804.73	4013.71
4	R2 4266	600146.10	1391801.48	4013.31
4	R2 4267	600153.31	1391799.83	4013.01
4	R2 4268	600160.87	1391798.78	4012.62
4	R2 4269	600163.20	1391798.68	4012.65
4	R2 4270	600166.66	1391799.40	4012.89
4	R2 4271	600169.16	1391799.47	4014.36
4	R2 4272	600171.38	1391799.39	4015.65
4	R2 4273	600171.54	1391799.45	4015.63
4	R2 4274	600177.10	1391800.67	4020.60
4	R2 4275	600182.54	1391797.56	4024.04
4	R2 4276	600226.18	1391791.15	4024.12
4	R2 4277	600266.52	1391782.18	4023.04
4	R2 4278	600006.67	1390357.44	4024.73

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R2 4279	599971.06	1390346.91	4024.88
4	R2 4280	599936.88	1390337.13	4024.19
4	R2 4281	599902.56	1390324.17	4024.16
4	R2 4282	599888.75	1390317.33	4023.14
4	R2 4283	599880.23	1390317.98	4021.21
4	R2 4284	599872.87	1390315.98	4020.81
4	R2 4285	599865.46	1390312.60	4020.84
4	R2 4286	599847.55	1390313.35	4020.91
4	R2 4287	599813.25	1390305.36	4021.64
4	R2 4288	599795.45	1390295.77	4021.98
4	R2 4289	599786.91	1390290.53	4021.72
4	R2 4290	599780.66	1390288.67	4021.93
4	R2 4291	599777.87	1390286.65	4018.10
4	R2 4292	599772.54	1390288.09	4017.04
4	R2 4293	599767.82	1390286.71	4016.82
4	R2 4294	599757.43	1390282.63	4016.35
4	R2 4295	599750.15	1390279.38	4016.12
4	R2 4296	599743.03	1390277.82	4016.34
4	R2 4297	599735.28	1390275.18	4016.88
4	R2 4298	599732.28	1390273.84	4017.04
4	R2 4299	599726.06	1390273.44	4016.89
4	R2 4300	599722.78	1390271.45	4016.43
4	R2 4301	599709.29	1390269.45	4015.42
4	R2 4302	599697.48	1390265.88	4014.90
4	R2 4303	599689.69	1390262.69	4014.46
4	R2 4304	599680.69	1390259.08	4014.21
4	R2 4305	599671.53	1390257.30	4014.06
4	R2 4306	599665.01	1390256.18	4013.52
4	R2 4307	599662.29	1390255.01	4014.38
4	R2 4308	599659.23	1390254.48	4015.08
4	R2 4309	599656.36	1390254.17	4016.35
4	R2 4310	599651.12	1390250.46	4021.84
4	R2 4311	599644.33	1390250.45	4025.24
4	R2 4312	599614.44	1390241.55	4025.11
4	R2 4313	599596.44	1390235.60	4024.64
4	R2 4314	601695.48	1388012.37	4028.78
4	R2 4315	601713.18	1388031.44	4029.11
4	R2 4316	601734.60	1388056.48	4029.54
4	R2 4317	601744.61	1388069.27	4028.76
4	R2 4318	601751.73	1388073.87	4026.46

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R2 4319	601755.91	1388078.08	4023.47
4	R2 4320	601761.86	1388083.27	4023.31
4	R2 4321	601764.85	1388086.97	4023.85
4	R2 4322	601768.66	1388093.56	4023.61
4	R2 4323	601781.34	1388103.22	4021.50
4	R2 4324	601785.16	1388106.19	4021.76
4	R2 4325	601787.93	1388108.84	4023.64
4	R2 4326	601790.19	1388112.00	4024.05
4	R2 4327	601795.18	1388117.30	4023.32
4	R2 4328	601798.77	1388123.43	4023.27
4	R2 4329	601803.60	1388131.45	4023.55
4	R2 4330	601816.33	1388140.93	4024.28
4	R2 4331	601817.33	1388142.71	4023.87
4	R2 4332	601820.48	1388146.85	4019.66
4	R2 4333	601819.51	1388145.43	4020.17
4	R2 4334	601822.00	1388148.30	4019.64
4	R2 4335	601832.91	1388157.56	4020.13
4	R2 4336	601839.60	1388166.41	4020.80
4	R2 4337	601845.60	1388175.70	4020.58
4	R2 4338	601854.73	1388186.84	4020.84
4	R2 4339	601858.75	1388189.31	4020.88
4	R2 4340	601861.42	1388190.38	4021.03
4	R2 4341	601865.07	1388194.00	4020.51
4	R2 4342	601870.30	1388200.80	4019.81
4	R2 4343	601876.25	1388208.89	4019.76
4	R2 4344	601882.23	1388214.34	4019.78
4	R2 4345	601884.83	1388218.10	4019.47
4	R2 4346	601887.93	1388220.70	4019.23
4	R2 4347	601889.90	1388223.39	4018.80
4	R2 4348	601892.08	1388225.23	4018.61
4	R2 4349	601894.70	1388227.58	4018.58
4	R2 4350	601896.44	1388229.92	4018.34
4	R2 4351	601897.66	1388232.58	4018.32
4	R2 4352	601899.70	1388234.52	4018.46
4	R2 4353	601901.45	1388237.03	4018.62
4	R2 4354	601903.39	1388239.04	4018.77
4	R2 4355	601905.24	1388239.60	4018.94
4	R2 4356	601908.07	1388242.03	4019.03
4	R2 4357	601909.31	1388244.52	4019.83
4	R2 4358	601912.04	1388247.22	4019.97

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R2 4359	601914.79	1388250.09	4020.35
4	R2 4360	601917.24	1388252.41	4020.31
4	R2 4361	601918.72	1388255.93	4020.11
4	R2 4362	601920.76	1388256.78	4020.06
4	R2 4363	601922.75	1388257.82	4020.09
4	R2 4364	601924.00	1388261.03	4023.02
4	R2 4365	601934.95	1388269.78	4028.13
4	R2 4366	601932.43	1388266.00	4025.20
4	R2 4367	601941.99	1388280.58	4029.21
4	R2 4368	601964.98	1388304.65	4028.76
4	R2 4369	602282.62	1388013.84	4029.61
4	R2 4370	602255.45	1387986.44	4029.60
4	R2 4371	602229.62	1387963.05	4029.72
4	R2 4372	602218.22	1387953.28	4029.33
4	R2 4373	602214.77	1387949.35	4026.29
4	R2 4374	602209.38	1387946.96	4024.52
4	R2 4375	602205.32	1387943.02	4024.74
4	R2 4376	602204.29	1387942.20	4021.88
4	R2 4377	602202.33	1387939.99	4019.63
4	R2 4378	602200.23	1387937.69	4019.63
4	R2 4379	602193.43	1387928.77	4018.87
4	R2 4380	602186.57	1387923.43	4018.93
4	R2 4381	602184.94	1387922.95	4018.95
4	R2 4382	602183.12	1387921.37	4018.74
4	R2 4383	602180.73	1387919.10	4018.78
4	R2 4384	602178.89	1387917.06	4018.77
4	R2 4385	602176.86	1387916.25	4018.44
4	R2 4386	602174.25	1387914.47	4018.46
4	R2 4387	602170.73	1387910.37	4018.55
4	R2 4388	602168.37	1387907.45	4018.81
4	R2 4389	602166.53	1387905.60	4018.98
4	R2 4390	602163.75	1387903.37	4019.14
4	R2 4391	602161.34	1387901.04	4019.64
4	R2 4392	602159.24	1387898.88	4019.94
4	R2 4393	602157.25	1387897.65	4019.97
4	R2 4394	602155.94	1387896.40	4019.93
4	R2 4395	602153.51	1387894.78	4020.38
4	R2 4396	602152.58	1387894.40	4020.55
4	R2 4397	602150.40	1387892.28	4020.33
4	R2 4398	602149.56	1387890.96	4020.31

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R2 4399	602148.66	1387890.22	4020.60
4	R2 4400	602146.97	1387888.98	4021.65
4	R2 4401	602145.62	1387887.80	4021.39
4	R2 4402	602144.16	1387885.32	4021.24
4	R2 4403	602141.68	1387882.52	4021.20
4	R2 4404	602138.77	1387880.12	4021.40
4	R2 4405	602136.34	1387877.64	4021.67
4	R2 4406	602132.71	1387875.42	4021.53
4	R2 4407	602129.73	1387873.35	4021.69
4	R2 4408	602128.52	1387870.94	4021.34
4	R2 4409	602125.48	1387868.12	4021.46
4	R2 4410	602122.82	1387866.13	4021.49
4	R2 4411	602120.51	1387864.87	4021.64
4	R2 4412	602117.70	1387861.99	4021.75
4	R2 4413	602114.12	1387860.13	4021.75
4	R2 4414	602113.13	1387856.64	4021.66
4	R2 4415	602111.28	1387854.30	4021.87
4	R2 4416	602109.28	1387852.36	4022.13
4	R2 4417	602106.87	1387850.21	4022.42
4	R2 4418	602105.08	1387849.32	4022.54
4	R2 4419	602104.25	1387847.69	4022.40
4	R2 4420	602103.15	1387847.04	4022.67
4	R2 4421	602099.95	1387844.45	4023.05
4	R2 4422	602097.07	1387841.93	4023.36
4	R2 4423	602093.53	1387838.15	4023.82
4	R2 4424	602090.36	1387834.85	4023.88
4	R2 4425	602086.22	1387832.58	4023.81
4	R2 4426	602082.87	1387830.03	4023.71
4	R2 4427	602079.72	1387827.92	4023.32
4	R2 4428	602076.88	1387825.03	4022.85
4	R2 4429	602073.97	1387822.95	4024.50
4	R2 4430	602070.25	1387815.30	4023.78
4	R2 4431	602067.84	1387810.32	4024.03
4	R2 4432	602058.44	1387804.67	4028.79
4	R2 4433	602040.64	1387791.48	4028.96
4	R2 4434	602028.87	1387777.66	4029.20
4	R2 4435	602016.16	1387764.42	4029.41
4	R2 4436	602172.11	1387570.02	4031.38
4	R2 4437	602186.40	1387584.38	4030.88
4	R2 4438	602195.97	1387592.08	4030.43

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R2 4440	602206.32	1387610.03	4021.11
4	R2 4441	602205.55	1387605.53	4023.27
4	R2 4442	602201.99	1387604.16	4023.35
4	R2 4443	602202.83	1387599.24	4024.37
4	R2 4444	602211.65	1387608.18	4019.84
4	R2 4445	602214.28	1387610.43	4019.60
4	R2 4446	602216.82	1387613.27	4019.94
4	R2 4447	602219.37	1387615.50	4019.75
4	R2 4448	602219.68	1387618.57	4019.63
4	R2 4449	602219.99	1387619.17	4020.22
4	R2 4450	602225.98	1387625.85	4020.39
4	R2 4451	602234.15	1387635.06	4020.82
4	R2 4453	602245.19	1387643.28	4020.90
4	R2 4454	602251.60	1387652.17	4020.88
4	R2 4455	602256.82	1387656.66	4020.95
4	R2 4456	602259.78	1387658.43	4020.57
4	R2 4457	602262.46	1387663.99	4020.47
4	R2 4458	602267.79	1387669.21	4020.64
4	R2 4459	602268.94	1387670.13	4020.81
4	R2 4460	602271.61	1387673.23	4020.62
4	R2 4461	602274.56	1387675.09	4020.80
4	R2 4462	602277.09	1387676.32	4021.03
4	R2 4463	602279.11	1387677.71	4021.05
4	R2 4464	602281.32	1387682.90	4021.07
4	R2 4465	602282.42	1387683.88	4021.24
4	R2 4466	602288.31	1387689.60	4021.46
4	R2 4467	602292.10	1387692.69	4022.01
4	R2 4468	602295.53	1387700.04	4022.07
4	R2 4469	602298.60	1387703.81	4022.01
4	R2 4470	602306.51	1387707.25	4022.18
4	R2 4471	602311.62	1387710.03	4022.41
4	R2 4472	602312.84	1387713.89	4022.25
4	R2 4473	602314.96	1387718.45	4021.59
4	R2 4474	602326.88	1387731.19	4021.88
4	R2 4475	602338.61	1387741.68	4022.07
4	R2 4476	602342.05	1387745.34	4022.07
4	R2 4477	602343.35	1387746.83	4021.62
4	R2 4478	602347.62	1387751.50	4021.92
4	R2 4479	602349.82	1387755.81	4024.14
4	R2 4480	602354.86	1387763.58	4024.52

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R2 4481	602356.16	1387766.13	4025.54
4	R2 4482	602361.69	1387773.08	4025.56
4	R2 4483	602366.43	1387774.56	4025.91
4	R2 4484	602370.24	1387777.35	4025.56
4	R2 4485	602375.98	1387780.05	4025.68
4	R2 4486	602380.07	1387786.23	4025.47
4	R2 4487	602383.18	1387791.99	4025.44
4	R2 4490	602406.52	1387813.74	4030.46
4	R2 4491	602392.65	1387802.99	4030.23
4	R2 4492	602424.94	1387837.56	4030.25
4	R2 4493	602666.82	1387856.36	4031.69
4	R2 4494	602673.32	1387846.24	4032.08
4	R2 4495	602676.35	1387841.22	4029.79
4	R2 4496	602681.12	1387838.63	4028.93
4	R2 4497	602684.03	1387835.32	4028.49
4	R2 4498	602685.93	1387831.85	4027.65
4	R2 4499	602688.08	1387828.14	4026.73
4	R2 4500	602690.04	1387824.12	4025.85
4	R2 4501	602693.05	1387818.32	4025.03
4	R2 4502	602697.45	1387817.48	4024.48
4	R2 4503	602699.73	1387814.09	4024.11
4	R2 4504	602700.80	1387811.56	4023.88
4	R2 4505	602703.40	1387809.58	4024.16
4	R2 4506	602707.32	1387803.51	4024.31
4	R2 4507	602712.71	1387798.47	4024.40
4	R2 4508	602715.69	1387789.88	4024.38
4	R2 4509	602722.70	1387785.75	4024.38
4	R2 4510	602729.48	1387779.90	4024.33
4	R2 4511	602733.11	1387768.67	4024.25
4	R2 4512	602743.52	1387760.88	4024.22
4	R2 4513	602752.74	1387747.62	4024.08
4	R2 4514	602761.96	1387736.09	4024.02
4	R2 4515	602772.19	1387725.32	4023.84
4	R2 4516	602778.21	1387714.22	4023.81
4	R2 4517	602787.82	1387708.55	4023.77
4	R2 4518	602792.70	1387697.81	4023.80
4	R2 4519	602799.41	1387691.97	4023.81
4	R2 4520	602805.85	1387682.34	4023.80
4	R2 4521	602807.21	1387680.74	4024.19
4	R2 4522	602809.53	1387677.21	4024.32

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R2 4523	602813.55	1387671.80	4025.79
4	R2 4524	602814.60	1387669.88	4025.50
4	R2 4525	602815.99	1387668.52	4026.35
4	R2 4526	602819.10	1387664.93	4027.70
4	R2 4527	602823.72	1387659.45	4027.94
4	R2 4528	602826.72	1387656.11	4029.36
4	R2 4529	602836.98	1387646.73	4029.58
4	R2 4530	602858.39	1387620.13	4029.27
4	R2 4531	602875.08	1387856.79	4024.95
4	R2 4532	602862.72	1387846.23	4024.80
4	R2 4533	602851.77	1387836.85	4024.78
4	R2 4534	602835.20	1387824.95	4024.67
4	R2 4535	602816.08	1387810.47	4024.48
4	R2 4536	602796.22	1387797.93	4024.48
4	R2 4537	602776.33	1387781.86	4024.34
4	R2 4538	602761.08	1387769.37	4024.31
4	R2 4539	602740.93	1387755.04	4024.19
4	R2 4540	602723.21	1387742.89	4024.08
4	R2 4541	602706.98	1387732.73	4023.96
4	R2 4542	602693.06	1387723.16	4023.81
4	R2 4543	602676.13	1387710.60	4023.67
4	R2 4544	602657.45	1387696.14	4023.52
4	R2 4545	602644.44	1387685.31	4023.59
4	R2 4546	602630.69	1387676.02	4023.48
4	R2 4547	602616.10	1387666.45	4023.49
4	R2 4548	602605.23	1387657.46	4023.39
4	R2 4549	602593.17	1387648.72	4023.39
4	R2 4550	602578.26	1387637.20	4023.35
4	R2 4551	602563.44	1387626.00	4023.41
4	R2 4552	602548.83	1387614.78	4023.44
4	R2 4553	602536.17	1387605.12	4023.42
4	R2 4554	602527.79	1387598.00	4023.41
4	R2 4555	602515.89	1387589.03	4023.55
4	R2 4556	602500.99	1387578.64	4023.42
4	R2 4557	602496.96	1387599.16	4023.39
4	R2 4558	602487.55	1387608.75	4023.40
4	R2 4559	602475.70	1387626.15	4023.12
4	R2 4560	602464.82	1387641.76	4022.99
4	R2 4561	602447.80	1387664.67	4022.75
4	R2 4562	602438.04	1387676.24	4022.28

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R2 4563	602432.31	1387686.59	4022.09
4	R2 4564	602423.37	1387696.82	4022.35
4	R2 4565	602413.22	1387710.07	4022.64
4	R2 4566	602402.67	1387725.90	4022.72
4	R2 4567	602393.38	1387735.77	4022.33
4	R2 4568	602386.14	1387744.97	4022.02
4	R2 4569	602380.97	1387750.82	4022.51
4	R2 4570	602376.91	1387756.62	4024.92
4	R2 4571	602519.15	1387573.12	4023.49
4	R2 4572	602531.37	1387551.63	4023.49
4	R2 4573	602543.67	1387539.24	4023.56
4	R2 4574	602555.85	1387523.64	4023.55
4	R2 4575	602562.63	1387516.25	4023.45
4	R2 4576	602562.29	1387515.10	4022.48
4	R2 4577	602567.23	1387503.27	4022.53
4	R2 4578	602576.27	1387497.94	4023.37
4	R2 4579	602579.54	1387493.48	4023.25
4	R2 4580	602581.57	1387490.43	4023.04
4	R2 4581	602651.89	1387245.98	4020.94
4	R2 4582	602655.63	1387247.28	4021.83
4	R2 4583	602659.98	1387248.59	4023.62
4	R2 4584	602666.66	1387252.22	4024.02
4	R2 4585	602677.26	1387254.03	4023.65
4	R2 4586	602689.34	1387262.24	4023.30
4	R2 4587	602697.74	1387261.46	4023.41
4	R2 4588	602702.44	1387266.19	4023.30
4	R2 4589	602706.29	1387273.74	4023.32
4	R2 4590	602711.08	1387275.91	4023.20
4	R2 4591	602729.78	1387277.88	4024.21
4	R2 4592	602744.03	1387282.68	4024.05
4	R2 4593	602752.00	1387283.43	4024.41
4	R2 4594	602769.16	1387290.55	4024.63
4	R2 4595	602776.51	1387301.38	4024.63
4	R2 4596	602788.41	1387303.19	4024.39
4	R2 4597	602811.91	1387320.10	4023.85
4	R2 4598	602828.29	1387315.17	4024.51
4	R2 4599	602834.03	1387327.17	4024.51
4	R2 4600	602850.15	1387325.93	4025.52
4	R2 4601	602856.99	1387329.22	4029.04
4	R2 4602	602899.66	1387355.19	4028.88

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
4	R2 4603	602646.89	1387246.32	4020.71
4	R2 4604	602639.98	1387242.55	4020.30
4	R2 4605	602635.49	1387237.16	4019.71
4	R2 4606	602633.21	1387235.93	4019.61
4	R2 4607	602626.25	1387234.52	4019.71
4	R2 4608	602622.73	1387232.51	4019.69
4	R2 4609	602616.55	1387230.33	4019.70
4	R2 4610	602608.42	1387225.78	4019.70
4	R2 4611	602601.54	1387223.91	4019.88
4	R2 4612	602591.69	1387221.13	4020.02
4	R2 4613	602577.72	1387213.50	4019.92
4	R2 4614	602570.94	1387209.51	4020.07
4	R2 4615	602563.76	1387205.93	4020.18
4	R2 4616	602553.91	1387203.24	4020.15
4	R2 4617	602547.27	1387201.29	4020.38
4	R2 4618	602541.45	1387200.75	4020.32
4	R2 4619	602536.68	1387199.83	4020.23
4	R2 4620	602533.20	1387199.28	4020.45
4	R2 4621	602530.72	1387198.90	4020.52
4	R2 4622	602527.52	1387198.05	4021.72
4	R2 4623	602525.63	1387196.94	4022.46
4	R2 4624	602520.99	1387191.70	4025.11
4	R2 4625	602518.82	1387190.30	4028.00
4	R2 4626	602497.86	1387181.25	4029.72
4	R2 4627	602469.25	1387170.77	4031.76
4	R2 4628	595539.70	1395788.48	4018.58
5	R1 5000	578696.04	1405241.97	4038.99
5	R1 5001	578695.53	1405220.83	4040.10
5	R1 5002	571509.01	1409559.54	3999.21
5	R1 5003	571899.53	1410287.70	3989.99
5	R1 5004	571897.66	1410280.97	3989.76
5	R1 5005	571892.39	1410272.89	3990.27
5	R1 5006	571889.00	1410261.15	3990.02
5	R1 5007	571882.72	1410250.93	3990.24
5	R1 5008	571878.54	1410243.16	3989.98
5	R1 5009	571877.20	1410237.20	3989.43
5	R1 5010	571872.71	1410230.56	3989.95
5	R1 5011	571869.96	1410225.08	3990.06
5	R1 5012	571868.87	1410216.41	3990.49
5	R1 5013	571863.96	1410213.39	3990.74

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
5	R1 5014	571868.71	1410205.33	3993.38
5	R1 5015	571869.59	1410206.76	3992.98
5	R1 5016	571839.93	1410162.09	3996.28
5	R1 5017	571819.34	1410109.61	3996.22
5	R1 5018	571901.74	1410293.75	3990.42
5	R1 5019	571903.65	1410297.15	3991.36
5	R1 5020	571909.77	1410311.94	3991.60
5	R1 5021	571920.02	1410334.43	3991.58
5	R1 5022	571927.55	1410349.29	3992.11
5	R1 5023	571934.27	1410366.11	3992.45
5	R1 5024	571941.13	1410382.22	3992.57
5	R1 5025	571949.52	1410399.73	3991.93
5	R1 5026	571957.84	1410417.04	3991.91
5	R1 5027	571962.68	1410433.52	3991.80
5	R1 5028	571972.28	1410446.40	3991.70
5	R1 5029	571978.93	1410459.84	3991.96
5	R1 5030	571980.92	1410467.51	3990.05
5	R1 5031	571981.95	1410472.34	3989.75
5	R1 5032	571982.60	1410473.24	3990.48
5	R1 5033	571994.63	1410479.32	3996.42
5	R1 5034	571995.79	1410496.65	3995.90
5	R1 5035	573368.03	1409913.89	3992.32
5	R1 5036	573367.80	1409910.53	3994.14
5	R1 5037	573371.66	1409901.55	3998.17
5	R1 5038	573367.24	1409876.04	3997.12
5	R1 5039	573371.88	1409922.83	3992.23
5	R1 5040	573372.98	1409937.73	3992.34
5	R1 5041	573374.16	1409954.13	3992.38
5	R1 5042	573375.48	1409970.29	3992.65
5	R1 5043	573375.80	1409982.36	3992.81
5	R1 5044	573378.99	1409996.86	3992.37
5	R1 5045	573381.35	1410010.63	3992.44
5	R1 5046	573381.95	1410025.57	3992.69
5	R1 5047	573383.26	1410040.87	3992.63
5	R1 5048	573384.14	1410058.78	3992.22
5	R1 5049	573385.78	1410075.29	3991.66
5	R1 5050	573387.16	1410091.54	3991.30
5	R1 5051	573388.13	1410110.34	3991.10
5	R1 5052	573390.09	1410125.94	3991.35
5	R1 5053	573392.78	1410140.87	3991.48

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
5	R1 5054	573390.48	1410144.55	3990.73
5	R1 5055	573390.55	1410149.16	3991.06
5	R1 5056	573392.66	1410157.19	3997.73
5	R1 5057	573392.59	1410156.11	3997.11
5	R1 5058	573392.27	1410173.29	3998.80
5	R1 5059	573396.21	1410199.92	3998.73
5	R1 5060	573399.37	1410222.14	3997.51
5	R1 5061	573392.74	1410171.25	3998.81
5	R1 5062	574644.25	1409408.69	3993.48
5	R1 5063	574644.27	1409404.32	3993.36
5	R1 5064	574629.33	1409395.87	3998.06
5	R1 5065	574622.66	1409380.25	3998.04
5	R1 5066	574605.42	1409363.88	3998.16
5	R1 5067	574647.12	1409411.55	3993.62
5	R1 5068	574654.93	1409423.57	3993.47
5	R1 5069	574660.26	1409433.28	3993.21
5	R1 5070	574665.90	1409441.61	3993.86
5	R1 5071	574672.63	1409447.22	3993.76
5	R1 5072	574680.67	1409458.19	3993.39
5	R1 5073	574688.33	1409473.39	3993.18
5	R1 5074	574696.44	1409480.86	3993.82
5	R1 5075	574701.70	1409487.60	3994.75
5	R1 5076	574702.88	1409489.30	3995.63
5	R1 5077	574706.59	1409494.33	3994.97
5	R1 5078	574714.37	1409502.86	3993.92
5	R1 5079	574719.11	1409510.23	3993.91
5	R1 5080	574724.28	1409520.53	3994.66
5	R1 5081	574729.56	1409532.81	3994.97
5	R1 5082	574736.94	1409542.35	3996.06
5	R1 5083	574741.04	1409547.28	3995.85
5	R1 5084	574743.17	1409549.42	3995.04
5	R1 5085	574750.98	1409556.39	3995.04
5	R1 5086	574757.81	1409566.26	3994.53
5	R1 5087	574762.98	1409571.11	3994.04
5	R1 5088	574765.08	1409572.78	3993.95
5	R1 5089	574766.49	1409580.35	3996.12
5	R1 5090	574767.95	1409581.69	3996.01
5	R1 5091	574769.61	1409582.95	3994.90
5	R1 5092	574772.64	1409590.02	3994.74
5	R1 5093	574778.88	1409598.06	3994.66

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
5	R1 5094	574783.78	1409603.95	3994.07
5	R1 5095	574786.97	1409609.18	3993.46
5	R1 5096	574789.54	1409613.07	3992.71
5	R1 5097	574793.72	1409619.59	3992.75
5	R1 5098	574801.56	1409630.69	3992.83
5	R1 5099	574808.71	1409639.22	3992.61
5	R1 5100	574815.02	1409645.90	3992.34
5	R1 5101	574817.35	1409650.14	3991.90
5	R1 5102	574818.33	1409652.66	3991.42
5	R1 5103	574820.40	1409657.72	3990.91
5	R1 5104	574826.43	1409665.05	3990.50
5	R1 5105	574831.00	1409669.85	3990.48
5	R1 5106	574835.73	1409674.70	3990.66
5	R1 5107	574838.75	1409678.92	3990.96
5	R1 5108	574844.26	1409687.89	3997.49
5	R1 5109	574848.79	1409694.60	3997.77
5	R1 5110	576454.35	1408519.34	3991.37
5	R1 5111	576454.77	1408520.98	3992.39
5	R1 5112	576453.58	1408518.16	3990.98
5	R1 5113	576451.99	1408514.73	3991.43
5	R1 5114	576449.26	1408512.56	3991.54
5	R1 5115	576446.22	1408509.15	3991.91
5	R1 5116	576442.31	1408501.32	3992.43
5	R1 5117	576458.42	1408525.84	4000.22
5	R1 5118	576463.65	1408534.15	4000.06
5	R1 5119	576467.86	1408545.44	4000.01
5	R1 5120	576437.15	1408493.35	3992.52
5	R1 5121	576434.97	1408486.92	3992.63
5	R1 5122	576431.00	1408471.04	3993.08
5	R1 5123	576429.35	1408455.35	3993.20
5	R1 5124	576415.52	1408461.18	3993.22
5	R1 5125	576420.63	1408471.33	3993.15
5	R1 5126	576410.84	1408451.10	3993.20
5	R1 5127	576401.63	1408435.85	3993.24
5	R1 5128	576390.52	1408419.01	3993.68
5	R1 5129	576388.11	1408416.92	3993.85
5	R1 5130	576387.10	1408412.97	3995.50
5	R1 5131	576385.23	1408406.21	3996.32
5	R1 5132	576375.63	1408394.49	3995.96
5	R1 5133	576369.71	1408385.05	3995.73

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
5	R1 5134	576369.25	1408383.18	3996.03
5	R1 5135	576368.41	1408380.86	3997.32
5	R1 5136	576367.34	1408379.65	3997.46
5	R1 5137	576362.34	1408364.03	3997.60
5	R1 5138	577684.77	1407658.09	3995.58
5	R1 5139	577693.41	1407671.46	4001.89
5	R1 5140	577696.57	1407674.97	4002.23
5	R1 5141	577681.99	1407654.00	3995.31
5	R1 5142	577676.38	1407643.55	3995.52
5	R1 5143	577668.68	1407631.27	3995.42
5	R1 5144	577658.68	1407617.88	3995.35
5	R1 5145	577649.72	1407602.77	3995.20
5	R1 5146	577639.57	1407588.10	3994.94
5	R1 5147	577633.82	1407578.86	3994.97
5	R1 5148	577623.81	1407565.01	3994.50
5	R1 5149	577614.10	1407551.37	3994.60
5	R1 5150	577609.19	1407535.35	3994.37
5	R1 5151	577604.50	1407532.82	3994.43
5	R1 5152	577601.77	1407531.33	3993.50
5	R1 5153	577593.96	1407519.41	3992.66
5	R1 5154	577587.53	1407510.78	3992.61
5	R1 5155	577579.46	1407499.24	3992.49
5	R1 5157	577568.77	1407467.14	4005.00
5	R1 5158	577572.85	1407477.34	4001.28
5	R1 5159	578937.39	1406835.24	3995.97
5	R1 5160	578938.51	1406836.62	3996.38
5	R1 5161	578945.99	1406848.48	4000.97
5	R1 5162	578950.93	1406853.54	4002.76
5	R1 5163	578934.19	1406830.72	3995.92
5	R1 5164	578925.88	1406816.34	3995.97
5	R1 5165	578916.17	1406801.72	3996.09
5	R1 5166	578907.89	1406785.79	3995.74
5	R1 5167	578898.44	1406772.58	3995.47
5	R1 5168	578889.73	1406758.09	3995.19
5	R1 5169	578879.58	1406742.09	3994.71
5	R1 5170	578871.12	1406728.48	3994.89
5	R1 5171	578853.61	1406721.07	3994.41
5	R1 5172	578861.03	1406712.96	3994.47
5	R1 5173	578852.84	1406697.72	3994.30
5	R1 5174	578847.23	1406690.14	3993.95

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
5	R1 5175	578841.70	1406673.33	3994.55
5	R1 5179	578832.71	1406654.09	4003.87
5	R2 5000	565124.84	1410559.05	3986.95
5	R2 5001	565123.34	1410548.51	3986.94
5	R2 5002	565123.60	1410544.11	3986.68
5	R2 5003	565123.67	1410540.50	3986.72
5	R2 5004	565123.71	1410536.81	3986.65
5	R2 5005	565123.59	1410533.98	3986.86
5	R2 5006	565123.39	1410531.70	3986.98
5	R2 5007	565122.79	1410529.56	3987.46
5	R2 5008	565123.24	1410527.51	3987.85
5	R2 5009	565122.17	1410509.41	3993.02
5	R2 5010	565122.36	1410505.51	3993.77
5	R2 5011	565124.78	1410565.81	3986.80
5	R2 5012	565125.96	1410574.21	3986.56
5	R2 5013	565126.29	1410575.98	3986.35
5	R2 5014	565126.17	1410577.15	3986.54
5	R2 5015	565126.10	1410588.19	3986.30
5	R2 5016	565125.50	1410594.46	3986.42
5	R2 5017	565125.12	1410603.49	3986.54
5	R2 5018	565124.74	1410610.20	3986.39
5	R2 5019	565126.06	1410614.54	3986.27
5	R2 5020	565126.51	1410616.05	3985.68
5	R2 5021	565127.07	1410621.90	3985.69
5	R2 5022	565126.12	1410626.76	3985.60
5	R2 5023	565125.37	1410630.54	3985.53
5	R2 5024	565125.76	1410632.98	3985.55
5	R2 5025	565126.42	1410635.94	3985.72
5	R2 5026	565126.86	1410640.24	3985.86
5	R2 5027	565127.88	1410649.78	3986.11
5	R2 5028	565128.18	1410659.46	3986.00
5	R2 5029	565127.28	1410666.57	3985.78
5	R2 5030	565127.03	1410672.19	3985.87
5	R2 5031	565126.94	1410673.92	3985.12
5	R2 5032	565127.19	1410675.93	3985.56
5	R2 5033	565128.14	1410684.70	3991.00
5	R2 5034	565126.70	1410691.03	3992.70
5	R2 5035	565130.54	1410713.18	3996.86
5	R2 5036	566798.17	1409605.56	3987.55
5	R2 5037	566795.55	1409602.57	3987.21

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
5	R2 5038	566793.41	1409597.69	3986.76
5	R2 5039	566789.85	1409593.05	3986.59
5	R2 5040	566789.94	1409590.11	3986.69
5	R2 5041	566788.94	1409587.42	3987.68
5	R2 5042	566780.63	1409575.61	3987.70
5	R2 5043	566777.85	1409570.00	3988.08
5	R2 5044	566775.83	1409564.49	3988.63
5	R2 5045	566774.22	1409561.85	3988.76
5	R2 5046	566770.93	1409556.97	3988.68
5	R2 5047	566770.22	1409553.09	3988.23
5	R2 5048	566769.08	1409549.81	3988.21
5	R2 5049	566769.02	1409547.48	3988.36
5	R2 5050	566768.64	1409543.05	3988.35
5	R2 5051	566766.01	1409541.24	3987.56
5	R2 5052	566763.26	1409537.33	3987.42
5	R2 5053	566759.54	1409533.03	3986.85
5	R2 5054	566758.22	1409531.63	3986.61
5	R2 5055	566755.83	1409524.79	3987.13
5	R2 5056	566753.56	1409520.75	3987.24
5	R2 5057	566749.31	1409517.13	3986.34
5	R2 5058	566742.47	1409512.44	3991.43
5	R2 5059	566740.06	1409497.97	3994.05
5	R2 5060	566804.22	1409615.14	3987.57
5	R2 5061	566806.52	1409622.88	3987.55
5	R2 5062	566808.02	1409625.12	3986.98
5	R2 5063	566810.13	1409628.93	3987.84
5	R2 5064	566814.46	1409633.94	3987.95
5	R2 5065	566814.59	1409637.40	3987.64
5	R2 5066	566814.83	1409640.45	3987.59
5	R2 5067	566820.30	1409650.22	3987.59
5	R2 5068	566823.37	1409654.91	3987.42
5	R2 5069	566829.10	1409666.28	3987.54
5	R2 5070	566831.53	1409672.94	3987.36
5	R2 5071	566834.66	1409677.53	3987.59
5	R2 5072	566837.76	1409680.59	3988.48
5	R2 5073	566838.92	1409682.92	3989.52
5	R2 5074	566843.14	1409686.53	3992.96
5	R2 5075	566853.25	1409709.01	3993.61
5	R2 5076	569050.85	1410109.14	3989.85
5	R2 5077	569047.64	1410118.40	3989.97

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
5	R2 5078	569046.52	1410124.91	3989.68
5	R2 5079	569041.88	1410132.27	3989.66
5	R2 5080	569042.59	1410135.62	3989.57
5	R2 5081	569043.14	1410136.98	3989.27
5	R2 5082	569036.53	1410149.30	3989.01
5	R2 5083	569035.26	1410153.38	3988.25
5	R2 5084	569034.58	1410156.00	3987.47
5	R2 5085	569033.29	1410160.73	3986.80
5	R2 5086	569031.60	1410164.66	3987.01
5	R2 5087	569029.40	1410169.19	3986.31
5	R2 5088	569028.64	1410172.08	3985.82
5	R2 5089	569027.96	1410176.18	3986.33
5	R2 5090	569026.96	1410179.25	3986.07
5	R2 5091	569026.24	1410181.58	3986.51
5	R2 5092	569026.42	1410183.56	3986.85
5	R2 5093	569025.69	1410186.06	3989.14
5	R2 5094	569020.13	1410194.49	3994.39
5	R2 5095	569016.41	1410211.97	3994.87
5	R2 5096	569057.83	1410096.53	3990.01
5	R2 5097	569057.83	1410096.45	3990.00
5	R2 5098	569059.08	1410084.99	3989.96
5	R2 5099	569060.19	1410081.19	3989.87
5	R2 5100	569062.09	1410077.94	3990.12
5	R2 5101	569063.54	1410075.09	3990.06
5	R2 5102	569064.17	1410073.67	3989.88
5	R2 5103	569064.71	1410071.67	3990.34
5	R2 5104	569065.94	1410067.65	3990.37
5	R2 5105	569067.24	1410063.40	3990.36
5	R2 5106	569067.96	1410059.66	3990.32
5	R2 5107	569069.15	1410057.39	3990.02
5	R2 5108	569070.44	1410052.82	3990.17
5	R2 5109	569072.49	1410048.33	3990.41
5	R2 5110	569075.73	1410038.63	3990.38
5	R2 5111	569078.38	1410032.14	3990.17
5	R2 5112	569081.29	1410022.12	3990.00
5	R2 5113	569085.75	1410013.51	3989.78
5	R2 5114	569090.91	1410004.97	3989.72
5	R2 5115	569093.78	1409998.72	3989.64
5	R2 5116	569092.84	1409992.72	3989.43
5	R2 5117	569093.48	1409987.93	3989.44

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
5	R2 5118	569094.73	1409981.13	3989.52
5	R2 5119	569095.87	1409977.12	3990.37
5	R2 5120	569101.58	1409974.93	3991.79
5	R2 5121	569103.55	1409964.68	3994.24
5	R2 5122	569993.12	1410441.50	3990.08
5	R2 5123	569993.65	1410446.37	3990.17
5	R2 5124	569992.29	1410453.95	3989.95
5	R2 5125	569989.37	1410459.43	3989.66
5	R2 5126	569985.95	1410462.76	3989.62
5	R2 5127	569986.50	1410468.90	3989.29
5	R2 5128	569983.90	1410475.68	3989.08
5	R2 5129	569979.50	1410479.53	3988.98
5	R2 5130	569978.52	1410485.00	3988.76
5	R2 5131	569977.83	1410490.19	3988.75
5	R2 5132	569977.46	1410492.85	3987.91
5	R2 5133	569975.92	1410498.00	3987.28
5	R2 5134	569975.13	1410500.45	3987.35
5	R2 5135	569974.14	1410502.91	3987.15
5	R2 5136	569972.37	1410506.43	3987.39
5	R2 5137	569971.08	1410509.49	3987.25
5	R2 5138	569969.79	1410511.58	3987.18
5	R2 5139	569968.99	1410513.31	3987.76
5	R2 5140	569968.40	1410515.75	3989.38
5	R2 5141	569965.99	1410520.55	3994.16
5	R2 5142	569999.15	1410436.88	3990.13
5	R2 5143	570001.07	1410421.08	3990.05
5	R2 5144	570006.36	1410412.78	3990.12
5	R2 5145	570012.07	1410402.87	3990.47
5	R2 5146	570009.31	1410400.01	3990.48
5	R2 5147	570009.00	1410391.02	3990.57
5	R2 5148	570013.46	1410384.97	3990.71
5	R2 5149	570018.38	1410376.11	3990.78
5	R2 5150	570021.79	1410369.42	3990.81
5	R2 5151	570024.03	1410363.90	3990.43
5	R2 5152	570026.00	1410358.95	3990.03
5	R2 5153	570026.47	1410354.53	3989.99
5	R2 5154	570027.57	1410351.64	3989.42
5	R2 5155	570028.87	1410348.67	3989.26
5	R2 5156	570031.80	1410342.03	3991.52
5	R2 5157	570984.96	1410547.43	3990.92

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
5	R2 5158	570986.54	1410538.50	3991.00
5	R2 5159	570985.78	1410533.14	3991.12
5	R2 5160	570983.14	1410523.97	3990.97
5	R2 5161	570988.42	1410515.33	3990.94
5	R2 5162	570986.67	1410508.72	3991.24
5	R2 5163	570986.02	1410505.37	3991.19
5	R2 5164	570987.84	1410501.60	3992.87
5	R2 5165	570990.80	1410473.31	3995.88
5	R2 5166	570991.47	1410478.86	3996.43
5	R2 5167	570984.26	1410556.50	3990.97
5	R2 5168	570981.29	1410571.55	3990.76
5	R2 5169	570981.51	1410583.95	3991.09
5	R2 5170	570978.62	1410600.63	3990.76
5	R2 5171	570979.71	1410615.83	3990.87
5	R2 5172	570975.12	1410628.87	3990.83
5	R2 5173	570976.43	1410638.89	3990.44
5	R2 5174	570975.40	1410653.12	3990.54
5	R2 5175	570974.01	1410656.26	3990.16
5	R2 5176	570972.95	1410661.25	3989.62
5	R2 5177	570974.66	1410667.31	3989.27
5	R2 5178	570976.49	1410672.18	3988.92
5	R2 5179	570975.02	1410678.78	3988.63
5	R2 5180	570972.05	1410685.52	3988.56
5	R2 5181	570968.43	1410691.78	3988.32
5	R2 5182	570969.32	1410696.66	3988.38
5	R2 5183	570969.44	1410699.14	3989.13
5	R2 5184	570968.66	1410714.76	3998.04
5	R2 5185	571534.77	1410705.72	3990.93
5	R2 5186	571536.35	1410713.09	3990.41
5	R2 5187	571540.11	1410720.22	3990.55
5	R2 5188	571541.43	1410722.36	3990.84
5	R2 5189	571542.31	1410723.17	3991.27
5	R2 5190	571543.76	1410725.57	3990.80
5	R2 5191	571546.82	1410730.75	3990.17
5	R2 5192	571548.58	1410737.03	3990.03
5	R2 5193	571547.97	1410740.90	3989.56
5	R2 5194	571547.62	1410742.73	3988.94
5	R2 5195	571549.09	1410744.63	3987.87
5	R2 5196	571549.60	1410746.76	3988.90
5	R2 5197	571551.44	1410750.37	3988.35

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
5	R2 5198	571552.72	1410750.44	3988.37
5	R2 5199	571553.53	1410751.92	3988.94
5	R2 5200	571557.46	1410757.24	3994.32
5	R2 5201	571557.44	1410756.96	3994.27
5	R2 5202	571556.18	1410763.39	3998.15
5	R2 5203	571557.22	1410756.99	3994.30
5	R2 5204	571532.93	1410701.47	3991.02
5	R2 5205	571529.26	1410691.14	3991.03
5	R2 5206	571528.10	1410685.63	3990.38
5	R2 5207	571520.36	1410671.05	3990.77
5	R2 5208	571515.85	1410664.01	3991.05
5	R2 5209	571517.29	1410651.92	3991.26
5	R2 5210	571510.89	1410643.46	3991.60
5	R2 5211	571506.64	1410636.05	3992.33
5	R2 5212	571502.98	1410628.57	3992.58
5	R2 5213	571500.90	1410625.49	3992.27
5	R2 5214	571498.02	1410620.74	3992.35
5	R2 5215	571496.90	1410618.59	3992.73
5	R2 5216	571493.95	1410604.82	3992.69
5	R2 5217	571488.75	1410591.46	3992.69
5	R2 5218	571484.34	1410583.23	3992.37
5	R2 5219	571478.95	1410571.16	3992.32
5	R2 5220	571477.56	1410568.77	3992.66
5	R2 5221	571474.57	1410560.48	3992.86
5	R2 5222	571471.86	1410551.89	3992.86
5	R2 5223	571468.38	1410541.87	3993.07
5	R2 5224	571466.08	1410533.60	3993.18
5	R2 5225	571459.93	1410525.27	3993.06
5	R2 5226	571455.08	1410516.64	3992.99
5	R2 5227	571451.86	1410510.29	3993.01
5	R2 5228	571448.83	1410503.80	3993.08
5	R2 5229	571447.30	1410500.32	3993.06
5	R2 5230	571446.14	1410495.44	3993.55
5	R2 5231	571439.30	1410483.45	3994.29
5	R2 5232	571437.50	1410475.10	3992.89
5	R2 5233	571436.97	1410466.55	3992.73
5	R2 5234	571434.54	1410464.38	3992.26
5	R2 5235	571432.31	1410459.50	3991.99
5	R2 5236	571428.07	1410448.84	3992.02
5	R2 5237	571425.09	1410444.65	3991.91

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
5	R2 5238	571422.08	1410438.22	3991.62
5	R2 5239	571420.40	1410429.64	3991.30
5	R2 5240	571418.03	1410420.96	3991.02
5	R2 5241	571413.30	1410415.96	3991.01
5	R2 5242	571408.48	1410406.34	3991.10
5	R2 5243	571403.84	1410396.06	3990.87
5	R2 5244	571401.66	1410385.41	3990.74
5	R2 5245	571399.17	1410375.48	3990.43
5	R2 5246	571393.82	1410369.43	3990.53
5	R2 5247	571392.01	1410366.52	3990.45
5	R2 5248	571387.41	1410357.35	3990.57
5	R2 5249	571385.51	1410351.01	3990.55
5	R2 5250	571383.96	1410347.56	3990.36
5	R2 5251	571383.34	1410332.61	3996.09
6	R1 6000	292142.74	1550084.84	3740.27
6	R1 6001	292142.77	1550084.86	3740.27
6	R1 6002	292142.70	1550084.84	3740.25
6	R1 6003	292204.51	1550007.69	3735.42
6	R1 6004	292192.82	1549993.65	3735.07
6	R1 6005	292188.22	1549988.79	3734.47
6	R1 6006	292186.55	1549986.18	3732.44
6	R1 6007	292184.23	1549981.13	3727.89
6	R1 6008	292181.65	1549979.25	3727.23
6	R1 6009	292180.35	1549977.85	3726.75
6	R1 6010	292178.31	1549974.61	3726.63
6	R1 6011	292175.37	1549969.56	3726.86
6	R1 6012	292170.88	1549967.74	3726.93
6	R1 6013	292168.38	1549965.84	3726.99
6	R1 6014	292167.47	1549964.02	3727.09
6	R1 6015	292162.30	1549958.56	3727.10
6	R1 6016	292156.51	1549946.90	3727.23
6	R1 6017	292147.60	1549937.07	3727.50
6	R1 6018	292139.43	1549927.05	3727.44
6	R1 6019	292129.75	1549912.81	3727.30
6	R1 6020	292126.47	1549907.11	3727.14
6	R1 6021	292124.93	1549905.78	3727.12
6	R1 6022	292121.15	1549900.79	3727.00
6	R1 6023	292114.14	1549894.33	3726.95
6	R1 6024	292109.44	1549887.39	3726.30
6	R1 6025	292106.73	1549882.59	3726.35

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
6	R1 6026	292103.03	1549877.97	3725.99
6	R1 6027	292100.47	1549876.45	3725.68
6	R1 6028	292099.58	1549875.23	3726.44
6	R1 6029	292097.99	1549874.62	3727.21
6	R1 6030	292095.59	1549870.41	3731.42
6	R1 6031	292097.14	1549871.96	3729.77
6	R1 6032	292085.92	1549859.38	3730.91
6	R1 6033	292077.49	1549847.63	3730.84
6	R1 6034	292073.09	1549841.57	3732.41
6	R1 6035	292061.12	1549824.30	3740.17
6	R1 6036	292578.37	1549263.59	3731.54
6	R1 6037	292587.27	1549268.48	3731.56
6	R1 6038	292602.99	1549276.60	3730.82
6	R1 6039	292614.27	1549281.78	3730.62
6	R1 6040	292623.22	1549286.66	3731.11
6	R1 6041	292633.10	1549292.51	3732.03
6	R1 6042	292647.43	1549299.82	3731.84
6	R1 6043	292654.90	1549302.86	3732.00
6	R1 6044	292668.66	1549310.79	3731.38
6	R1 6045	292669.95	1549311.49	3729.84
6	R1 6046	292675.32	1549314.02	3729.45
6	R1 6047	292678.85	1549314.45	3727.78
6	R1 6048	292679.49	1549315.08	3727.58
6	R1 6049	292679.87	1549316.05	3727.22
6	R1 6050	292685.05	1549318.12	3726.85
6	R1 6051	292688.57	1549321.08	3727.18
6	R1 6052	292688.88	1549321.17	3727.54
6	R1 6053	292691.98	1549322.58	3727.59
6	R1 6054	292704.02	1549328.42	3727.58
6	R1 6055	292713.03	1549332.71	3727.63
6	R1 6056	292718.73	1549335.83	3727.45
6	R1 6057	292730.48	1549341.93	3727.23
6	R1 6058	292742.63	1549347.84	3726.69
6	R1 6059	292751.83	1549352.42	3726.35
6	R1 6060	292759.71	1549356.89	3726.79
6	R1 6061	292760.83	1549357.13	3727.61
6	R1 6062	292763.53	1549357.76	3728.11
6	R1 6063	292763.92	1549357.62	3728.12
6	R1 6064	292766.82	1549360.95	3733.14
6	R1 6065	292769.23	1549362.12	3733.20

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
6	R1 6066	292776.23	1549366.07	3733.62
6	R1 6067	292570.88	1548576.37	3726.95
6	R1 6068	292571.44	1548576.18	3727.88
6	R1 6069	292572.44	1548574.53	3730.95
6	R1 6070	292572.30	1548575.16	3730.55
6	R1 6071	292575.51	1548568.07	3731.96
6	R1 6072	292580.42	1548565.56	3732.02
6	R1 6073	292588.59	1548556.77	3732.90
6	R1 6074	292601.70	1548539.71	3732.88
6	R1 6075	292618.12	1548524.18	3733.55
6	R1 6076	292627.46	1548512.69	3735.48
6	R1 6077	292615.39	1548526.36	3733.06
6	R1 6078	292568.47	1548578.89	3726.57
6	R1 6079	292562.45	1548585.81	3726.92
6	R1 6080	292556.97	1548591.94	3727.00
6	R1 6081	292554.68	1548593.99	3727.65
6	R1 6082	292553.93	1548596.77	3727.84
6	R1 6083	292548.41	1548601.11	3727.86
6	R1 6084	292536.32	1548615.02	3728.14
6	R1 6085	292525.10	1548628.22	3728.30
6	R1 6086	292512.80	1548641.87	3728.35
6	R1 6087	292499.66	1548655.40	3728.11
6	R1 6088	292488.22	1548668.23	3728.06
6	R1 6089	292478.97	1548677.72	3728.05
6	R1 6090	292478.45	1548679.53	3728.91
6	R1 6091	292475.54	1548682.20	3728.65
6	R1 6092	292468.29	1548690.88	3728.68
6	R1 6093	292461.70	1548701.56	3728.11
6	R1 6094	292459.40	1548704.81	3727.58
6	R1 6095	292457.77	1548703.54	3727.25
6	R1 6096	292453.82	1548705.60	3727.39
6	R1 6097	292452.57	1548707.66	3728.98
6	R1 6098	292449.65	1548711.99	3732.70
6	R1 6099	292447.77	1548715.39	3732.83
6	R1 6100	292442.49	1548719.97	3732.35
6	R1 6101	292436.39	1548726.76	3731.99
6	R1 6102	292430.83	1548732.98	3732.11
6	R1 6103	292425.12	1548739.39	3734.40
6	R1 6104	292420.10	1548744.54	3736.30
6	R1 6105	291770.52	1548327.71	3733.80

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
6	R1 6106	291772.42	1548325.80	3733.25
6	R1 6107	291776.78	1548319.56	3732.30
6	R1 6108	291787.54	1548308.43	3731.51
6	R1 6109	291797.57	1548296.53	3731.85
6	R1 6110	291807.05	1548286.77	3731.96
6	R1 6111	291817.55	1548274.32	3732.15
6	R1 6112	291828.20	1548262.66	3732.25
6	R1 6113	291834.15	1548255.04	3732.68
6	R1 6114	291837.33	1548251.32	3732.91
6	R1 6115	291842.04	1548247.57	3728.01
6	R1 6116	291841.50	1548248.94	3729.27
6	R1 6117	291842.96	1548246.10	3727.36
6	R1 6118	291841.63	1548247.77	3728.21
6	R1 6119	291845.14	1548243.52	3727.19
6	R1 6120	291849.85	1548237.71	3727.23
6	R1 6121	291852.87	1548234.82	3727.57
6	R1 6122	291853.86	1548232.66	3728.09
6	R1 6123	291855.34	1548230.54	3728.35
6	R1 6124	291861.79	1548225.10	3728.73
6	R1 6125	291871.25	1548214.36	3728.88
6	R1 6126	291877.92	1548208.20	3728.97
6	R1 6127	291881.20	1548205.02	3728.78
6	R1 6128	291882.79	1548202.32	3729.67
6	R1 6129	291887.99	1548196.25	3729.57
6	R1 6130	291894.09	1548188.35	3730.08
6	R1 6131	291900.84	1548181.09	3729.94
6	R1 6132	291907.17	1548175.34	3730.19
6	R1 6133	291915.21	1548165.80	3730.30
6	R1 6134	291921.73	1548158.49	3730.15
6	R1 6135	291923.67	1548156.27	3730.68
6	R1 6136	291926.72	1548153.61	3730.43
6	R1 6137	291930.63	1548149.57	3730.58
6	R1 6138	291936.31	1548142.58	3730.67
6	R1 6139	291939.61	1548139.52	3730.65
6	R1 6140	291943.62	1548134.63	3728.68
6	R1 6141	291949.66	1548127.09	3728.49
6	R1 6142	291955.14	1548121.62	3728.26
6	R1 6143	291957.27	1548118.56	3728.19
6	R1 6144	291960.78	1548114.85	3727.89
6	R1 6145	291966.01	1548108.50	3727.55

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
6	R1 6146	291972.01	1548102.61	3727.01
6	R1 6147	291976.96	1548097.13	3726.65
6	R1 6148	291978.14	1548094.64	3727.58
6	R1 6149	291979.16	1548093.81	3728.30
6	R1 6150	291982.18	1548092.90	3730.43
6	R1 6151	291983.65	1548089.74	3732.19
6	R1 6152	291987.44	1548086.44	3732.72
6	R1 6153	291988.64	1548083.78	3732.46
6	R1 6154	291991.83	1548079.93	3732.73
6	R1 6155	291999.54	1548071.69	3733.44
6	R1 6156	292004.46	1548066.11	3733.68
6	R1 6157	291886.86	1547897.62	3733.99
6	R1 6158	291898.17	1547882.79	3735.49
6	R1 6159	291887.38	1547866.89	3735.44
6	R1 6160	291869.65	1547872.22	3734.01
6	R1 6161	291861.13	1547870.80	3732.93
6	R1 6162	291865.41	1547874.68	3728.69
6	R1 6163	291866.06	1547875.43	3728.53
6	R1 6164	291867.03	1547876.53	3727.81
6	R1 6165	291871.64	1547881.59	3726.91
6	R1 6166	291874.54	1547885.92	3726.90
6	R1 6167	291877.22	1547890.05	3726.92
6	R1 6168	291879.92	1547893.70	3726.35
6	R1 6169	291882.16	1547896.91	3727.51
6	R1 6170	291883.31	1547899.30	3727.83
6	R1 6171	291883.43	1547900.02	3728.62
6	R1 6172	291889.18	1547910.05	3733.46
6	R1 6173	291888.86	1547912.41	3733.38
6	R1 6174	291873.11	1547935.98	3733.22
6	R1 6175	291861.51	1547960.67	3732.27
6	R1 6176	291859.99	1547966.21	3731.95
6	R1 6177	291865.09	1547970.05	3732.40
6	R1 6178	291870.34	1547974.71	3732.54
6	R1 6179	291852.79	1547966.64	3727.44
6	R1 6180	291852.04	1547982.97	3727.85
6	R1 6181	291854.55	1547986.80	3727.46
6	R1 6182	291845.74	1547979.63	3727.21
6	R1 6183	291843.23	1547978.40	3726.49
6	R1 6184	291840.87	1547976.38	3726.01
6	R1 6185	291838.37	1547975.20	3726.50

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
6	R1 6186	291836.00	1547974.00	3726.97
6	R1 6187	291833.75	1547972.72	3727.17
6	R1 6188	291830.62	1547971.10	3727.09
6	R1 6189	291825.61	1547969.33	3726.66
6	R1 6190	291822.16	1547966.84	3726.53
6	R1 6191	291820.16	1547965.86	3727.13
6	R1 6192	291816.01	1547963.43	3729.61
6	R1 6193	291808.35	1547949.37	3731.26
6	R1 6194	291832.88	1547907.23	3731.20
6	R1 6195	291838.09	1547896.63	3732.05
6	R1 6196	291851.87	1547881.62	3732.17
6	R1 6197	291858.81	1547885.33	3728.57
6	R1 6198	291848.18	1547899.21	3728.65
6	R1 6199	291843.38	1547911.86	3728.50
6	R1 6200	291871.42	1547893.21	3727.38
6	R1 6201	291867.63	1547898.51	3727.18
6	R1 6202	291862.37	1547907.16	3727.33
6	R1 6203	291858.13	1547912.31	3727.27
6	R1 6204	291852.56	1547918.28	3727.34
6	R1 6205	291843.06	1547927.73	3727.75
6	R1 6206	291838.76	1547933.11	3727.16
6	R1 6207	291834.67	1547938.66	3726.94
6	R1 6208	291827.81	1547946.85	3726.96
6	R1 6209	291822.95	1547956.22	3727.15
6	R1 6210	291821.62	1547953.21	3728.27
6	R1 6211	291816.66	1547958.88	3730.14
6	R1 6212	291813.14	1547962.35	3729.28
6	R1 6213	291812.56	1547963.78	3728.42
6	R1 6214	291810.17	1547965.68	3727.45
6	R1 6215	291810.21	1547965.40	3727.79
6	R1 6216	291807.73	1547967.82	3727.45
6	R1 6217	291802.18	1547975.15	3727.77
6	R1 6218	291796.94	1547980.31	3728.13
6	R1 6219	291792.69	1547984.72	3727.96
6	R1 6220	291789.98	1547987.75	3727.93
6	R1 6221	291785.50	1547992.50	3727.70
6	R1 6222	291782.09	1547996.67	3727.62
6	R1 6223	291781.83	1547997.09	3728.31
6	R1 6224	291780.77	1547999.07	3730.66
6	R1 6225	291780.71	1547999.91	3730.68

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
6	R1 6226	291776.88	1548002.49	3730.84
6	R1 6227	291771.53	1548008.86	3730.80
6	R1 6228	291763.98	1548016.16	3730.29
6	R1 6229	291756.85	1548025.52	3730.21
6	R1 6230	291761.07	1548020.32	3730.33
6	R1 6231	291752.14	1548028.42	3730.17
6	R1 6232	291748.91	1548032.58	3730.45
6	R1 6233	291744.99	1548038.07	3730.61
6	R1 6234	291740.69	1548043.17	3730.89
6	R1 6235	291736.32	1548046.26	3727.42
6	R1 6236	291737.08	1548046.87	3728.19
6	R1 6237	291736.74	1548046.39	3727.92
6	R1 6238	291734.26	1548049.26	3727.25
6	R1 6239	291729.70	1548054.69	3727.55
6	R1 6240	291725.58	1548059.74	3727.74
6	R1 6241	291722.67	1548062.58	3727.88
6	R1 6242	291721.89	1548063.51	3728.16
6	R1 6243	291721.47	1548063.47	3728.18
6	R1 6244	291716.20	1548068.95	3728.36
6	R1 6245	291709.31	1548077.74	3728.65
6	R1 6246	291702.17	1548085.08	3728.60
6	R1 6247	291698.05	1548090.43	3729.20
6	R1 6248	291695.22	1548093.47	3729.67
6	R1 6249	291685.80	1548103.30	3729.08
6	R1 6250	291678.38	1548111.25	3729.12
6	R1 6251	291674.35	1548120.49	3728.16
6	R1 6252	291677.45	1548113.64	3728.62
6	R1 6253	291672.72	1548125.89	3732.27
6	R1 6254	291667.62	1548123.25	3731.02
6	R1 6255	291653.74	1548139.65	3730.62
6	R1 6256	291648.48	1548146.29	3730.38
6	R1 6257	291639.78	1548155.15	3730.32
6	R1 6258	291630.21	1548165.98	3730.30
6	R1 6259	290969.82	1547649.98	3742.93
6	R1 6260	290972.22	1547648.30	3742.24
6	R1 6261	290983.57	1547638.78	3737.25
6	R1 6262	290993.55	1547633.28	3734.97
6	R1 6263	291007.54	1547624.11	3734.59
6	R1 6264	291020.09	1547614.06	3734.24
6	R1 6265	291031.13	1547606.29	3733.90

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
6	R1 6266	291040.42	1547598.94	3733.89
6	R1 6267	291048.97	1547594.02	3733.82
6	R1 6268	291058.29	1547587.11	3733.50
6	R1 6269	291070.93	1547579.91	3733.22
6	R1 6270	291079.47	1547571.46	3732.86
6	R1 6271	291089.69	1547565.03	3732.80
6	R1 6272	291095.23	1547560.73	3732.51
6	R1 6273	291103.06	1547556.07	3731.21
6	R1 6274	291109.03	1547553.30	3727.42
6	R1 6275	291114.08	1547552.19	3725.31
6	R1 6276	291120.27	1547543.99	3728.69
6	R1 6277	291128.75	1547536.62	3728.77
6	R1 6278	291138.62	1547529.55	3728.77
6	R1 6279	291150.63	1547522.84	3728.57
6	R1 6280	291162.09	1547515.51	3728.51
6	R1 6281	291164.53	1547510.23	3727.94
6	R1 6282	291167.00	1547506.74	3730.04
6	R1 6283	291173.59	1547503.06	3730.80
6	R1 6284	291179.45	1547500.00	3730.20
6	R1 6285	285731.58	1554283.52	3729.32
6	R1 6286	285731.97	1554281.15	3729.20
6	R1 6287	285736.31	1554265.96	3728.63
6	R1 6288	285741.16	1554248.93	3726.32
6	R1 6289	285744.58	1554237.79	3724.55
6	R1 6290	285747.66	1554228.84	3722.66
6	R1 6291	285748.35	1554225.51	3722.56
6	R1 6292	285749.77	1554216.41	3722.09
6	R1 6293	285751.96	1554206.18	3721.89
6	R1 6294	285754.68	1554196.97	3721.46
6	R1 6295	285756.38	1554189.55	3720.81
6	R1 6296	285759.11	1554182.87	3720.51
6	R1 6297	285760.44	1554177.00	3720.45
6	R1 6298	285761.69	1554170.82	3720.29
6	R1 6299	285762.09	1554168.27	3720.22
6	R1 6300	285763.43	1554163.84	3722.54
6	R1 6301	285764.59	1554161.33	3724.06
6	R1 6302	285764.64	1554160.37	3723.99
6	R1 6303	285766.15	1554155.42	3723.82
6	R1 6304	285767.97	1554149.25	3723.69
6	R1 6305	285770.86	1554133.41	3724.17

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
6	R1 6306	285774.59	1554124.56	3724.49
6	R1 6307	285776.23	1554116.26	3724.31
6	R1 6308	285779.32	1554107.45	3724.43
6	R1 6309	285779.64	1554100.48	3723.98
6	R1 6310	285785.44	1554077.79	3723.28
6	R1 6311	285799.23	1554031.63	3728.18
6	R1 6312	285799.70	1554039.78	3724.63
6	R2 1000	291308.32	1550805.38	3726.42
6	R2 1001	290476.55	1551602.29	3726.08
6	R2 1002	290481.18	1551608.19	3725.88
6	R2 1003	290485.61	1551613.14	3725.64
6	R2 1004	290487.71	1551618.48	3725.20
6	R2 1005	290490.92	1551622.86	3724.51
6	R2 1006	290493.12	1551626.64	3723.32
6	R2 1007	290492.07	1551625.18	3724.00
6	R2 1008	290494.13	1551627.62	3722.93
6	R2 1009	290495.56	1551629.47	3722.41
6	R2 1010	290496.07	1551630.85	3722.65
6	R2 1011	290496.32	1551630.96	3722.65
6	R2 1012	290498.27	1551633.21	3724.27
6	R2 1013	290500.12	1551636.09	3725.49
6	R2 1014	290499.57	1551637.78	3725.99
6	R2 1015	290503.15	1551639.66	3727.06
6	R2 1016	290505.35	1551641.33	3729.99
6	R2 1017	290512.99	1551648.54	3730.08
6	R2 1018	290520.18	1551661.00	3729.64
6	R2 1019	290532.03	1551675.34	3730.01
6	R2 1020	290470.11	1551596.86	3726.39
6	R2 1021	290474.13	1551598.73	3726.26
6	R2 1022	290467.56	1551590.89	3726.69
6	R2 1023	290464.56	1551588.52	3726.57
6	R2 1024	290463.32	1551585.87	3726.77
6	R2 1025	290461.02	1551583.10	3728.04
6	R2 1026	290456.18	1551576.44	3727.68
6	R2 1027	290451.12	1551569.18	3727.87
6	R2 1028	290444.87	1551559.86	3727.81
6	R2 1029	290438.78	1551552.14	3727.75
6	R2 1030	290427.64	1551542.29	3727.66
6	R2 1031	290422.56	1551535.77	3728.41
6	R2 1032	290420.52	1551532.15	3727.61

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
6	R2 1033	290420.44	1551530.17	3726.88
6	R2 1034	290417.67	1551525.39	3726.59
6	R2 1035	290416.27	1551523.65	3726.79
6	R2 1036	290408.25	1551514.69	3726.90
6	R2 1037	290403.36	1551507.20	3726.81
6	R2 1038	290396.37	1551497.06	3726.62
6	R2 1039	290388.25	1551490.07	3726.51
6	R2 1040	290385.83	1551485.27	3726.65
6	R2 1041	290384.42	1551482.86	3727.07
6	R2 1042	290383.14	1551481.57	3728.50
6	R2 1043	290382.01	1551479.16	3730.76
6	R2 1044	290370.26	1551465.86	3730.22
6	R2 1045	290359.92	1551450.93	3729.89
6	R2 1046	288408.24	1552481.77	3729.25
6	R2 1047	288415.96	1552494.12	3729.54
6	R2 1048	288417.98	1552498.14	3729.66
6	R2 1049	288422.08	1552504.33	3724.74
6	R2 1050	288420.36	1552502.23	3726.29
6	R2 1051	288424.94	1552509.98	3724.80
6	R2 1052	288433.47	1552521.94	3724.91
6	R2 1053	288437.13	1552529.26	3724.95
6	R2 1054	288438.83	1552532.08	3724.65
6	R2 1055	288440.38	1552534.90	3724.74
6	R2 1056	288440.72	1552535.74	3725.30
6	R2 1057	288442.58	1552540.21	3725.29
6	R2 1058	288445.47	1552541.66	3725.73
6	R2 1059	288445.86	1552542.51	3726.57
6	R2 1060	288448.18	1552546.41	3727.39
6	R2 1061	288451.45	1552551.49	3727.18
6	R2 1062	288454.33	1552556.41	3726.99
6	R2 1063	288458.68	1552564.04	3726.80
6	R2 1064	288462.95	1552571.17	3727.24
6	R2 1065	288467.15	1552574.42	3727.23
6	R2 1066	288468.21	1552576.04	3726.49
6	R2 1067	288469.02	1552576.80	3724.93
6	R2 1068	288468.83	1552576.84	3724.76
6	R2 1069	288470.92	1552578.30	3723.34
6	R2 1070	288472.77	1552582.09	3723.78
6	R2 1071	288474.53	1552585.95	3724.55
6	R2 1072	288476.03	1552590.56	3724.38

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
6	R2 1073	288478.56	1552593.97	3724.21
6	R2 1074	288481.64	1552597.48	3724.04
6	R2 1075	288485.87	1552601.86	3723.96
6	R2 1076	288487.30	1552607.95	3724.04
6	R2 1077	288491.41	1552611.86	3724.03
6	R2 1078	288495.10	1552618.30	3724.13
6	R2 1079	288498.99	1552625.71	3724.26
6	R2 1080	288503.74	1552632.46	3724.31
6	R2 1081	288507.33	1552637.18	3724.41
6	R2 1082	288510.12	1552642.45	3724.80
6	R2 1083	288511.51	1552645.51	3725.10
6	R2 1084	288512.76	1552646.86	3725.59
6	R2 1085	288514.81	1552650.51	3726.37
6	R2 1086	288516.37	1552652.95	3726.35
6	R2 1087	288518.66	1552654.62	3726.38
6	R2 1088	288518.54	1552656.56	3728.35
6	R2 1089	288518.93	1552657.67	3729.02
6	R2 1090	288522.59	1552664.45	3729.41
6	R2 1091	288532.18	1552678.84	3729.54
6	R2 1092	288062.50	1553734.25	3724.56
6	R2 1093	288065.17	1553736.67	3724.13
6	R2 1094	288072.61	1553741.51	3723.36
6	R2 1095	288079.60	1553745.37	3722.57
6	R2 1096	288085.71	1553747.89	3722.54
6	R2 1097	288088.55	1553748.83	3722.91
6	R2 1098	288094.43	1553754.17	3728.04
6	R2 1099	288092.58	1553753.86	3726.19
6	R2 1100	288089.72	1553753.08	3724.49
6	R2 1101	288060.37	1553734.29	3724.69
6	R2 1102	288057.55	1553732.29	3725.09
6	R2 1103	288053.24	1553730.05	3725.17
6	R2 1104	288048.82	1553728.71	3725.80
6	R2 1105	288042.19	1553726.67	3725.80
6	R2 1106	288036.82	1553724.38	3725.22
6	R2 1107	288032.13	1553720.88	3725.35
6	R2 1108	288027.08	1553716.20	3725.13
6	R2 1109	288017.00	1553709.82	3725.36
6	R2 1110	288005.54	1553704.43	3725.85
6	R2 1111	287997.46	1553701.29	3726.03
6	R2 1112	287987.66	1553692.80	3725.85

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
6	R2 1113	287974.93	1553685.18	3725.94
6	R2 1114	287966.27	1553685.88	3725.68
6	R2 1115	287955.15	1553680.37	3726.23
6	R2 1116	287949.23	1553677.74	3725.93
6	R2 1117	287947.89	1553677.62	3724.63
6	R2 1118	287944.57	1553672.58	3723.54
6	R2 1119	287940.06	1553670.76	3723.65
6	R2 1120	287929.55	1553664.93	3723.48
6	R2 1121	287921.02	1553661.11	3723.43
6	R2 1122	287910.34	1553656.68	3723.20
6	R2 1123	287907.80	1553651.43	3723.27
6	R2 1124	287905.51	1553650.46	3723.56
6	R2 1125	287902.50	1553649.65	3724.60
6	R2 1126	287900.79	1553649.06	3725.88
6	R2 1127	287899.50	1553647.81	3728.83
6	R2 1128	287890.25	1553641.02	3728.39
6	R2 1129	287875.83	1553634.03	3728.58
6	R2 1130	290837.76	1545810.70	3733.25
6	R2 1131	290820.94	1545811.58	3733.68
6	R2 1132	290796.61	1545812.84	3733.57
6	R2 1133	290794.40	1545812.08	3731.44
6	R2 1134	290786.61	1545809.09	3731.09
6	R2 1135	290783.04	1545809.68	3729.62
6	R2 1136	290782.36	1545810.01	3728.92
6	R2 1137	290779.25	1545810.09	3728.21
6	R2 1138	290771.78	1545811.11	3728.44
6	R2 1139	290764.52	1545811.21	3728.67
6	R2 1140	290758.57	1545812.71	3728.87
6	R2 1141	290754.83	1545813.31	3729.00
6	R2 1142	290745.39	1545811.35	3729.21
6	R2 1143	290743.09	1545810.71	3729.22
6	R2 1144	290740.69	1545810.01	3730.26
6	R2 1145	290739.27	1545809.50	3731.29
6	R2 1146	290728.20	1545809.83	3731.41
6	R2 1147	290720.70	1545811.90	3731.91
6	R2 1148	290710.43	1545810.35	3731.93
6	R2 1149	290705.45	1545811.46	3731.89
6	R2 1150	290695.10	1545811.99	3731.83
6	R2 1151	290686.52	1545813.14	3731.86
6	R2 1152	290676.95	1545812.63	3731.49

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
6	R2 1153	290667.94	1545812.75	3730.18
6	R2 1154	290662.93	1545814.46	3732.20
6	R2 1155	290659.66	1545812.88	3731.72
6	R2 1156	290657.80	1545812.66	3730.45
6	R2 1157	290650.65	1545811.04	3730.19
6	R2 1158	290647.98	1545810.89	3729.88
6	R2 1159	290644.77	1545811.59	3729.69
6	R2 1160	290630.80	1545811.42	3730.10
6	R2 1161	290616.59	1545809.70	3730.19
6	R2 1162	290605.66	1545810.74	3730.17
6	R2 1163	290597.60	1545812.10	3730.07
6	R2 1164	290591.02	1545813.43	3730.18
6	R2 1165	290586.80	1545812.01	3733.88
6	R2 1166	290570.40	1545812.47	3733.84
6	R2 1167	290550.09	1545809.74	3734.06
6	R2 1168	290781.27	1546840.51	3732.77
6	R2 1169	290795.30	1546834.28	3733.48
6	R2 1170	290803.78	1546830.65	3734.09
6	R2 1171	290810.31	1546828.61	3728.56
6	R2 1172	290812.76	1546827.91	3727.35
6	R2 1173	290818.04	1546825.56	3727.43
6	R2 1174	290824.46	1546822.88	3727.59
6	R2 1175	290833.88	1546821.82	3727.63
6	R2 1176	290839.58	1546819.03	3727.14
6	R2 1177	290842.40	1546817.11	3727.90
6	R2 1178	290843.45	1546816.32	3728.43
6	R2 1179	290852.32	1546814.32	3729.14
6	R2 1180	290855.27	1546813.00	3729.39
6	R2 1181	290857.68	1546812.19	3729.91
6	R2 1182	290871.50	1546807.65	3729.86
6	R2 1183	290885.92	1546802.49	3729.39
6	R2 1184	290898.92	1546799.29	3728.88
6	R2 1185	290901.33	1546798.66	3729.03
6	R2 1186	290903.17	1546798.25	3730.06
6	R2 1187	290906.78	1546797.77	3731.05
6	R2 1188	290911.91	1546794.10	3731.36
6	R2 1189	290925.14	1546787.78	3731.17
6	R2 1190	290933.18	1546785.67	3731.42
6	R2 1191	290935.65	1546783.56	3730.07
6	R2 1192	290947.67	1546783.35	3729.98

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
6	R2 1193	290956.72	1546778.30	3730.00
6	R2 1194	290959.42	1546775.64	3730.50
6	R2 1195	290966.62	1546773.79	3730.72
6	R2 1196	290971.03	1546770.63	3729.86
6	R2 1197	290975.64	1546768.61	3730.96
6	R2 1198	290983.65	1546768.35	3730.95
6	R2 1199	290985.79	1546768.85	3730.56
6	R2 1200	290990.53	1546768.89	3730.67
6	R2 1201	290994.98	1546768.81	3730.68
6	R2 1202	290998.81	1546767.57	3730.45
6	R2 1203	291007.07	1546765.13	3730.10
6	R2 1204	291014.01	1546763.82	3729.87
6	R2 1205	291018.09	1546762.61	3731.25
6	R2 1206	291021.92	1546761.45	3731.45
6	R2 1207	291026.84	1546759.90	3733.50
6	R2 1208	291031.50	1546757.11	3733.56
6	R2 1209	291062.72	1546744.89	3733.32
6	R2 1210	291062.66	1546744.84	3733.31
6	R2 1211	291455.24	1547306.10	3733.66
6	R2 1212	291410.59	1547335.60	3733.32
6	R2 1213	291379.93	1547357.65	3733.01
6	R2 1214	291366.26	1547368.13	3733.02
6	R2 1215	291363.36	1547369.56	3732.61
6	R2 1216	291361.33	1547371.19	3730.09
6	R2 1217	291352.39	1547376.08	3729.24
6	R2 1218	291349.31	1547380.16	3729.29
6	R2 1219	291345.16	1547385.66	3729.72
6	R2 1220	291340.21	1547390.49	3729.99
6	R2 1221	291331.05	1547398.28	3730.14
6	R2 1222	291329.49	1547399.63	3729.24
6	R2 1223	291324.48	1547402.99	3729.21
6	R2 1224	291318.77	1547402.15	3728.59
6	R2 1225	291317.34	1547403.30	3728.19
6	R2 1226	291314.96	1547405.38	3727.94
6	R2 1227	291310.12	1547410.69	3727.79
6	R2 1228	291303.58	1547411.95	3727.41
6	R2 1229	291298.91	1547415.07	3726.97
6	R2 1230	291297.38	1547416.39	3727.14
6	R2 1231	291294.07	1547418.60	3728.44
6	R2 1232	291290.77	1547421.27	3731.00

Problem Location	Survey Point ID	Northing (ft, State Plane NM Central Zone)	Easting (ft, State Plane NM Central Zone)	Elevation (ft, NAVD 88)
6	R2 1233	291274.87	1547432.31	3730.81
6	R2 1234	291266.59	1547435.45	3730.44
6	R2 1235	291260.23	1547442.22	3729.88
6	R2 1236	291252.69	1547444.27	3731.78
6	R2 1237	285731.62	1554283.43	3729.34
6	R2 1238	286733.32	1554427.25	3727.90
6	R2 1239	286735.28	1554396.47	3728.17
6	R2 1240	286735.31	1554384.02	3727.40
6	R2 1241	286735.56	1554380.98	3725.08
6	R2 1242	286736.55	1554375.96	3724.16
6	R2 1243	286738.07	1554372.39	3723.94
6	R2 1244	286737.64	1554375.33	3724.11
6	R2 1245	286739.72	1554366.61	3723.28
6	R2 1246	286739.40	1554359.42	3723.69
6	R2 1247	286742.36	1554355.86	3723.75
6	R2 1248	286741.87	1554352.92	3724.26
6	R2 1249	286741.89	1554344.40	3724.84
6	R2 1250	286744.03	1554336.18	3724.82
6	R2 1251	286745.09	1554315.56	3724.92
6	R2 1252	286746.28	1554308.92	3724.08
6	R2 1253	286747.82	1554303.36	3723.37
6	R2 1254	286746.72	1554297.30	3723.11
6	R2 1255	286748.23	1554290.17	3723.19
6	R2 1256	286749.42	1554285.50	3722.93
6	R2 1257	286749.42	1554278.67	3722.75
6	R2 1258	286749.04	1554270.01	3722.31
6	R2 1259	286750.26	1554264.78	3722.17
6	R2 1260	286750.50	1554266.66	3721.90
6	R2 1261	286751.02	1554261.66	3722.46
6	R2 1262	286751.31	1554259.69	3722.91
6	R2 1263	286751.75	1554258.19	3723.35
6	R2 1264	286751.56	1554252.10	3727.99
6	R2 1265	286751.21	1554254.42	3726.94
6	R2 1266	286752.93	1554247.12	3727.81
6	R2 1267	286754.86	1554226.17	3728.31