



118th Street Alignment Study

Amole Mesa Avenue to Eucariz Avenue

October 31, 2023



Bernalillo County

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Prepared for:

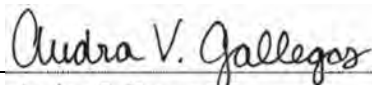


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Introduction

Project Summary

The project scope of work consists of establishing a centerline alignment of the proposed 118th Street from Amole Mesa Avenue to Eucariz Avenue, approximately 1.76 miles in length. This study discusses the existing conditions, and proposed alignments for 118th Street. The purpose of the study is to determine a typical section, alignment, right-of-way needs, and conceptual estimates. The study limits are 118th Street, from Amole Mesa Avenue to Eucariz Avenue, see [Figure 1](#).

In 2021, the City of Albuquerque completed the *118th Street Study, Dennis Chavez Boulevard to Amole Mesa Avenue*. The study looked at alternatives to improve multimodal facilities and potentially widening 118th Street to four-lanes. In 2019, Bernalillo County also completed the *118th Street Alignment Study* from Eucariz Avenue to I-40. The study determined an alignment for 118th Street and a future interchange.

Purpose and Need

The purpose of setting the 118th Street centerline alignment from Amole Mesa Avenue to Eucariz Avenue is to provide economic development and connectivity between Eucariz Avenue and Amole Mesa Avenue. Setting the 118th Street centerline alignment will allow the community to access I-40 from 118th Street and will relieve traffic on 98th Street. This connection will allow neighborhoods in the area to have another access I-40. Having a preferred alternative for the established centerline alignment will set parameters for future development and growth within the study area.



Figure 1: Study Limits

Existing Conditions

118th Street is an existing two-lane, community principal arterial, that spans from Dennis Chavez Boulevard to Amole Mesa Avenue. North of Amole Mesa Avenue to Eucariz Avenue, there is an unpaved access road that runs throughout most of the study limits, see [Figure 2](#).



Figure 2: 118th Existing Conditions

Right-of-Way

Majority if the right-of-way (ROW) within the study limits is privately owned. Bernalillo County GIS was used to determine property ownership, see [Figure 5](#). Existing plats were also provided that showed the unplatted lands within the town of Atrisco Grant. The plat showed the location of an existing drainage facility owned and operated by AMAFCA, formally known as the power line channel and AMAFCA ROW. AMAFCA has ROW in two locations within the study area. The first area is approximately 5.3407 acres and is located on the west side of the study area, the second area is approximately 2.7044 acres and is located near the existing drainage channel. These plats can also be found in [Appendix A](#).

Utilities

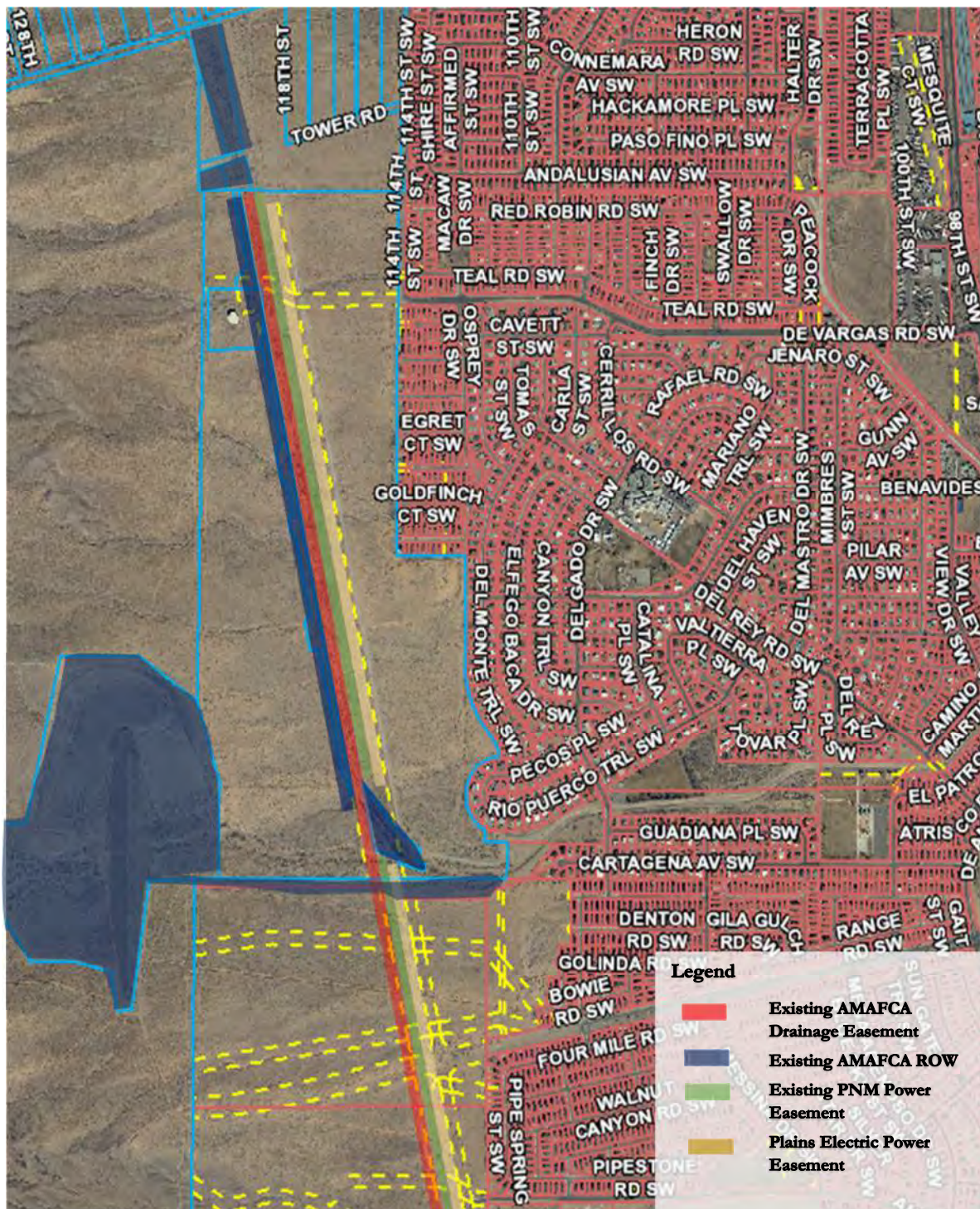
There are various utilities within the study limits. There is a sanitary sewer line within the study area which is owned by Albuquerque Bernalillo County Water Utility Authority (ABCWUA), see [Appendix D](#) for as-builts. There are Public Service Company of New Mexico (PNM) transmission lines that run along the west side of the study area from Amole Mesa Avenue to Eucariz Avenue. These lines are located within a 100-foot-wide PNM power line easement. AMAFCA has ROW within the study area that varies in width from 50-feet to 100-feet and is located on the west side of the existing AMAFCA drainage easement. AMAFCA also has ROW at the existing drainage channel. Plains Electric also has a power easement within the study area that is 100-feet wide and is located on the east side of the existing PNM power easement. [Figure 5](#) illustrates the utility easements that were found using Bernalillo County GIS, [Figure 3](#) shows the PNM transmission lines along the study limits [Figure 4](#) shows the existing sewer manhole.



Figure 3: PNM Transmission Lines along 118th Street



Figure 4: Existing Sewer Manhole



Source: Bernalillo County GIS

Figure 5: Utility Easements

Field Review

Wilson & Company conducted a field review on January 19, 2023. The team parked at five locations along the study area between Amole Mesa Avenue and Eucariz Avenue, see [Figure 6](#). The team looked at four tie-in points located at Amole Mesa Avenue, Gibson Boulevard, De Vargas Road, Eucariz Avenue, and an existing drainage crossing located on the west side of the Rio Puerco Trail. Below is a summary of the findings during the field review:

- The project will tie-in at Eucariz Avenue and 118th Street. Eucariz Avenue is a 27-ft to 34-ft asphalt roadway with no curb and gutter or sidewalk along the roadway, see [Figure 7](#).
- De Vargas Road is a 62-ft asphalt roadway with bike lanes, curb and gutter and a multi-use trail located on the north side of the roadway. The intersection of 114th Street and De Vargas Road has asphalt curb on the north side of the roadway, there are type-III barricades and concrete wall barrier that terminate the end of De Vargas Road. See [Figure 8](#).
- The intersection of Delgado Road and Gibson Boulevard has a roundabout and speed tables to slow down traffic as they cross the intersection. There are type-III barricades with road closed signs and concrete wall barrier, see [Figure 9](#). On the west side of the concrete wall barrier Gibson Boulevard turns into a divided roadway and then terminates, see [Figure 10](#).
- The project will tie-in at Amole Mesa Avenue and 118th Street, Amole Mesa Avenue is a 22-ft asphalt roadway with sidewalk and curb and gutter, see [Figure 11](#).
- The existing Powerline Channel is riprap lined, see [Figure 12](#).
- There are existing trails throughout the study area that run along the east side of the PNM transmission lines. The study area appears to be used for dumping, see [Figure 13](#).



Figure 6: Field Review Locations



Figure 7: Eucariz Avenue and 118th Street



Figure 8: De Vargas Road and 118th Street



Figure 9: Gibson Boulevard and Delgado Road



Figure 10: Gibson Boulevard and 118th Street



Figure 11: Amole Mesa Avenue and 118th Street



Figure 12: Existing Powerline Channel



Figure 13: Existing Trails

Stakeholders

The project team has identified the following stakeholders:

- City of Albuquerque
- Bernalillo County
- Public Service Company of New Mexico (PNM)
- Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA)
- Mid-Region Council of Governments (MRCOG)

A kick-off meeting was held on December 6, 2022, with Bernalillo County, City of Albuquerque, MRCOG, AMAFCA, and PNM. The meeting is summarized below, and the full meeting minutes can be found in [Appendix B](#).

- Wilson & Company introduced the project study area and background. MRCOG, AMAFCA, PNM, and City of Albuquerque discussed their agency needs/concerns for this corridor. Currently, 118th Street is designated as a community principal arterial. If the designation is changed to a regional arterial, then MRCOG would like for it to be justified as part of this study.
- AMAFCA stated that all development associated with this project needs to conform to requirements outlined in the Amole Hubble Drainage Master Plan (DMP). Additionally, the roadway drainage crossing structure must be adequately designed to accommodate the Powerline Channel and the outlet for Westgate Dam.
- PNM would like to have safety/collision protection to be considered in the design to protect the PNM poles. The lines are high voltage and would be very expensive to relocate. PNM is

usually open to having multiuse trails within the easement, but they need to be reviewed on a case-by-case bases. Bus stops/shelters should not be placed under the transmission line.

- For City of Albuquerque, the travel time for residents to get to I-40 has been a concern. This connection will allow a more direct route for neighborhoods in this area.

A coordination meeting was held on January 25th, 2023, with Bernalillo County, City of Albuquerque, MRCOG, AMAFCA and PNM. The project scope, study area, existing conditions, site visit, right-of-way/easements were discussed as well as the schedule and needs for easements from utility owners. Coordination between stakeholders will be on-going throughout the duration of the project.

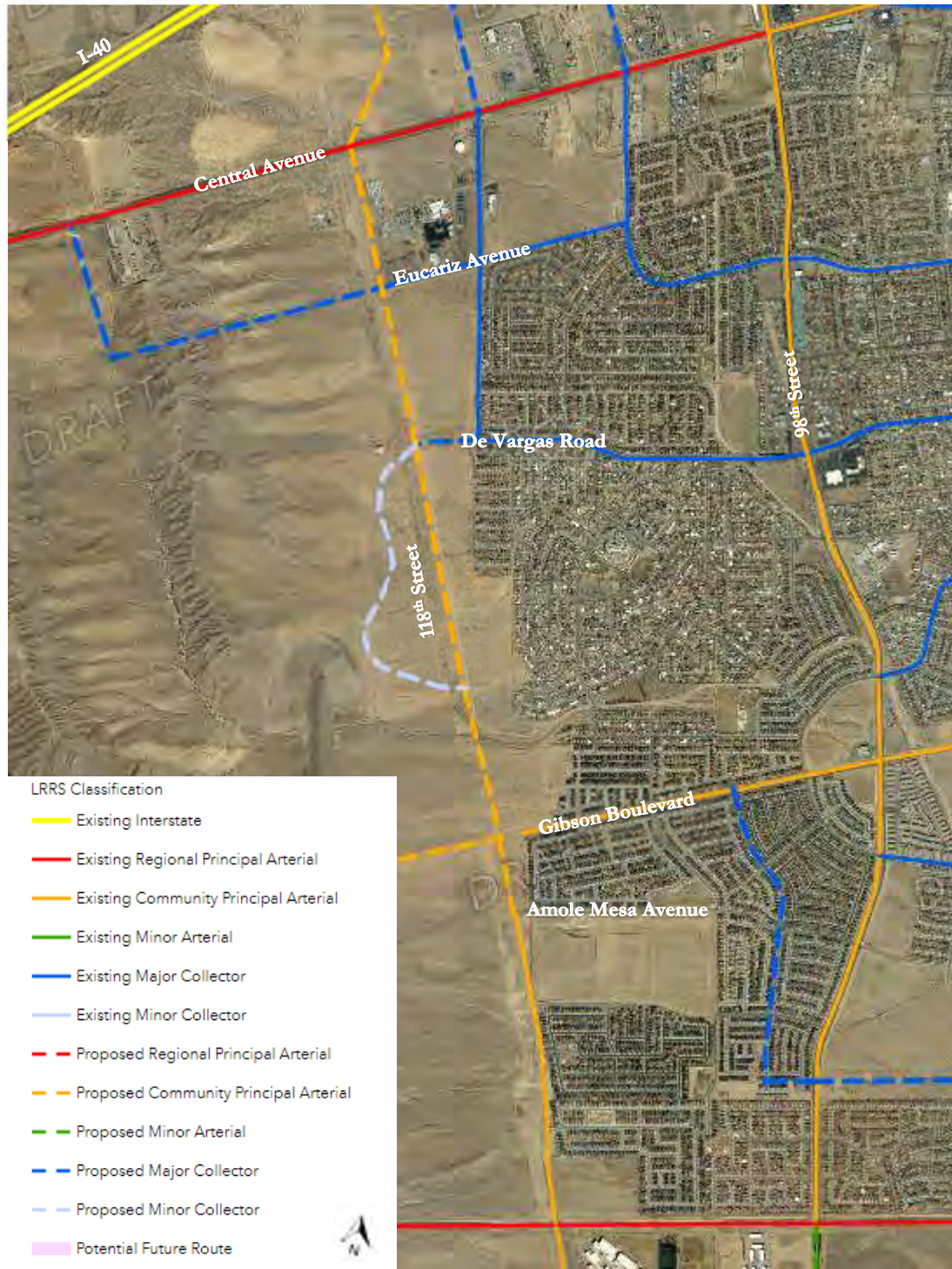
Proposed Conditions

Roadway Classification

According to the *MRMPO Long Range Roadway System (LRRS)*, 118th Street is classified as a Proposed Community Principal Arterial, see [Figure 14](#). A proposed Community Principal Arterial is defined in the *MRCOG Regional Transportation Plan* as,

“Though these roadways are given the functional classification of principal arterial, these corridors include many destinations with direct access from the arterial. Travel on community principal arterials tends to be over shorter distances than regional arterials and to destinations with access directly on that arterial. Community principal arterials tend to have lower speeds and fewer lanes than regional principal arterials. Community principal arterials do not prioritize one mode over another; instead, they strive to achieve a balance through several strategies that can include slowing down motorized traffic or improving walking and bicycling facilities. Higher levels of congestion on community principal arterials are acceptable compared to regional principal arterials since community principal arterials bring people to areas and regional principal arterials take people through.”

A Community Principal Arterial is a type of arterial designed to provide greater access to activity centers than a Regional Principal Arterial, which is intended to prioritize movement of traffic from one part of the region to another.



Source: MRCOG Long Range System Maps GIS

Figure 14: Long Range Roadway System

Future Development

There are plans for future development along 118th Street. The Talavera site plan, shown in [Figure 15](#), was developed by Mark Goodwin & Associates, P.A. Consulting Engineers in 2007. The proposed development shows a 124-foot ROW for 118th Street, which includes 5-ft buffers, 10-ft bike lanes, four 12-ft driving lanes, with a 6-ft sidewalk on one side, see [Figure 16](#). The typical section also includes two 12-ft future lanes, a left turn lane and a 4-foot future median. The Talavera site development can also be found in [Appendix E](#).

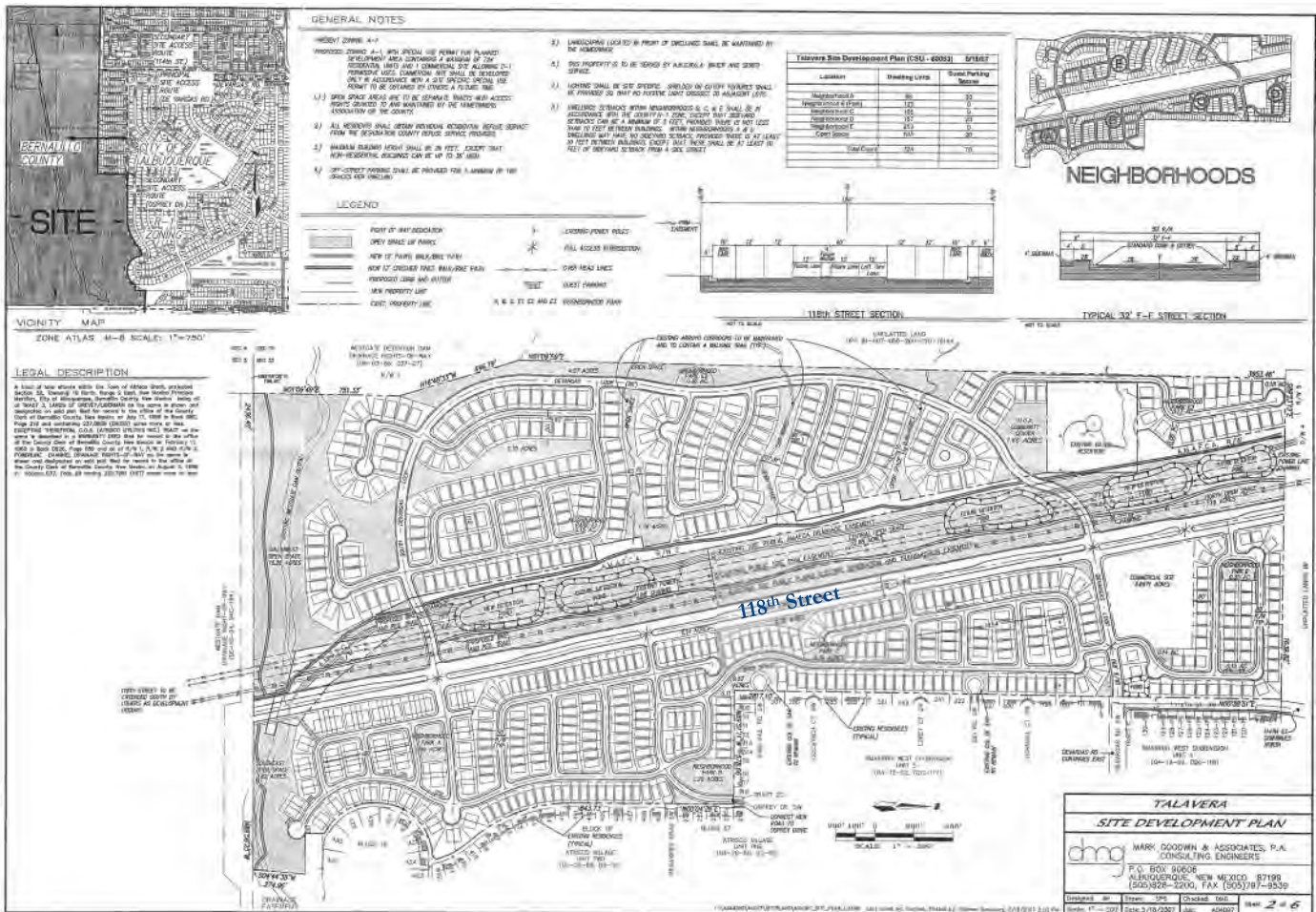


Figure 15: Talavera Site Development Plan

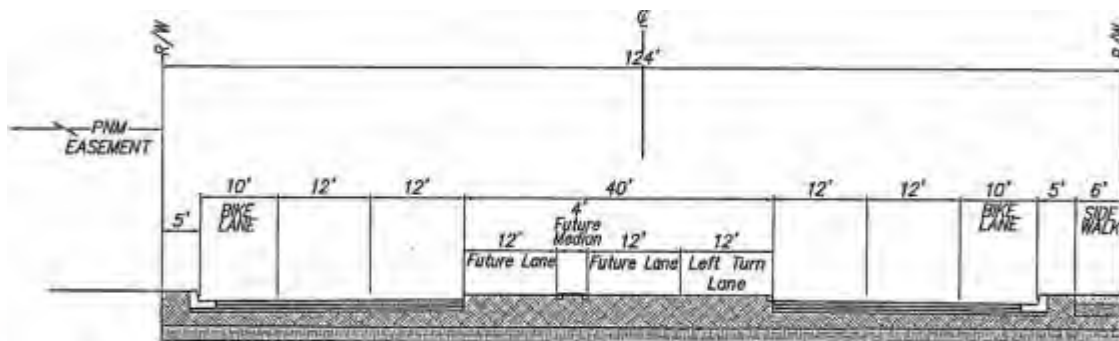
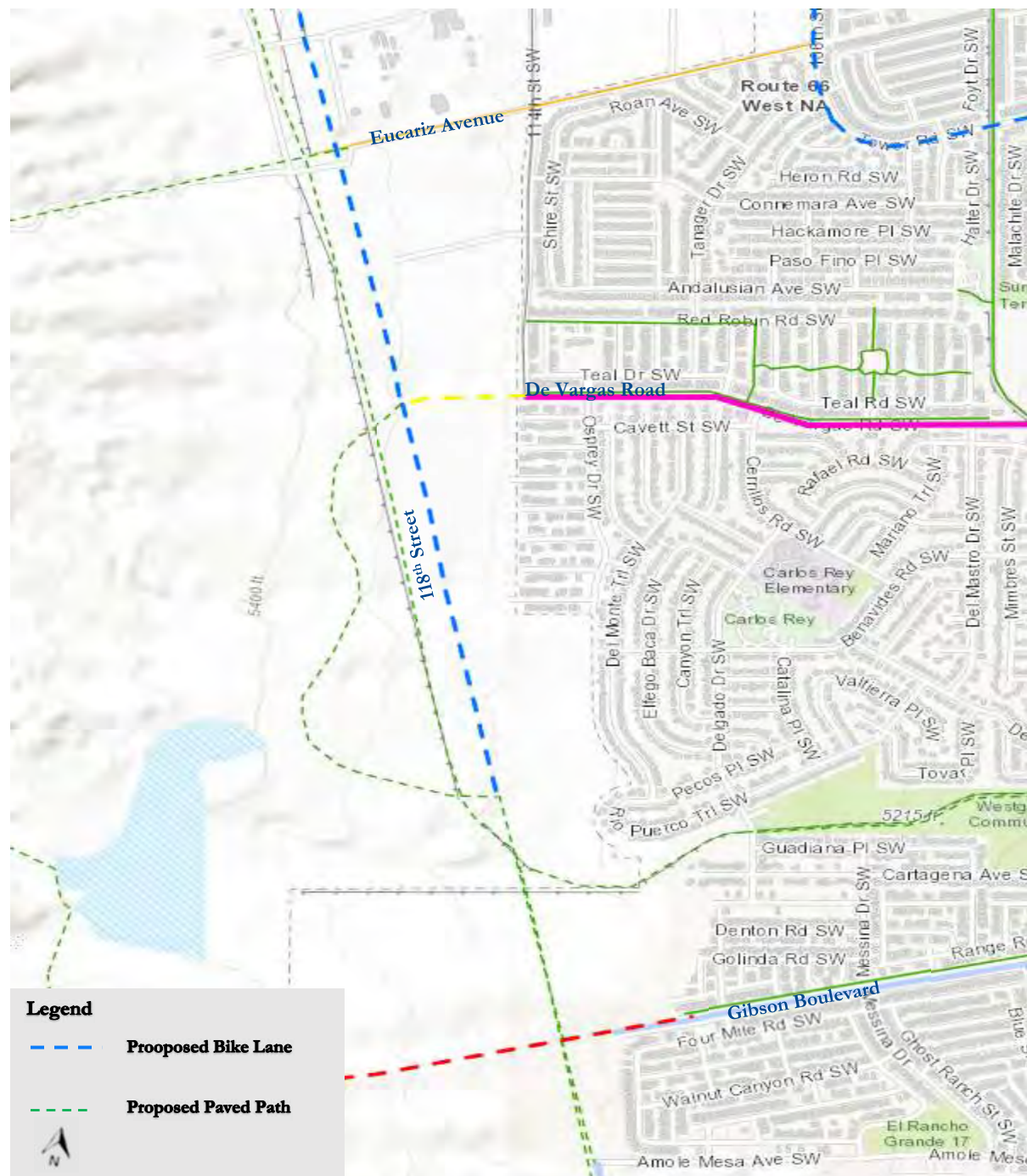


Figure 16: 118th Street Section

Multimodal

The MRMPO Long Range Bikeway System (LRBS) shows both existing and future bikeways and paved trails. This map shows recommended types of bicycle facilities based on the safest and best option. The MRMPO LRBS currently shows a proposed bike lane on the east side of 118th Street and a proposed paved path on the west side of 118th Street, see [Figure 17](#).



Source: MRCOG Long Range System Maps GIS

Figure 17: Long Range Bikeway System

Design Parameters

The proposed design for 118th Street is based on *AASHTO A Policy on Geometric Design of Highways and Streets*, *City of Albuquerque Development Process Manual*, and *MRCOG Regional Transportation Plan*. Design criteria and parameters were based off a design speed of 40 mph and can be found in [Table 1](#) below.

Table 1: Design Parameters for 40 mph Design Speed

Parameters	Design Criteria
Roadway Classification:	Community Principal Arterial
Design Speed:	40 mph (Posted: 35 mph)
Horizontal curve - e_{max} :	6.00% (5,230' min. CL radius)
Vertical Curve Minimum K (Crest):	44
Vertical Curve Minimum K (Sag):	64
Stopping Sight Distance:	305-ft
Crown Cross Slope	2.00%
Min. Travel Width	11-ft

Typical Section

118th Street is considered a Community Principal Arterial roadway, with a proposed ROW width of 124-ft. The proposed typical section includes a four-lane divided roadway, left-turn lanes, bike lanes, bike buffers, curb and gutter, sidewalk, and a multi-use path as shown in [Figure 18](#). The travel lanes, bike lanes, bike buffers and sidewalk widths were based off *Table 7.2.29 Street Element Dimensions* in the *City of Albuquerque Development Process Manual*, see [Figure 19](#). The stakeholders agreed that this typical section should be used from Amole Mesa Avenue to Central Avenue and the six-lane typical section from the previous 118th Street study should be used from Central Avenue to I-40.

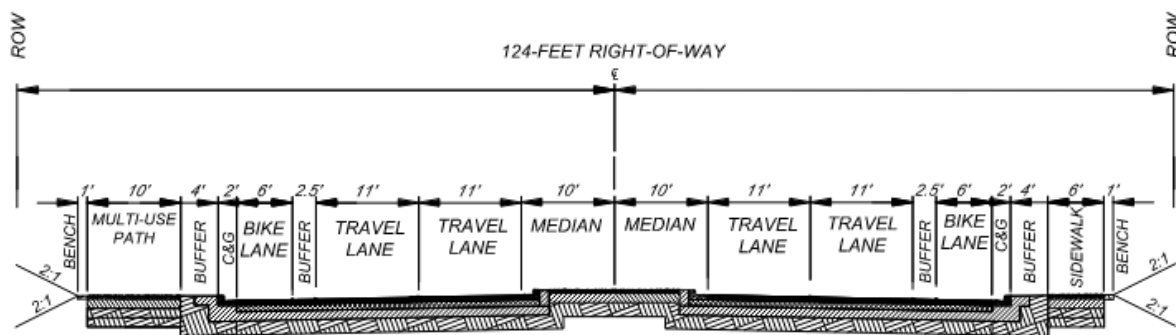


Figure 18: Proposed Typical Section

Corridor Type / Classification	Location	Design Speed (MPH)	Pedestrian Realm			Travel Way		
			Frontage Zone (ft.)	Sidewalk Width (ft.)	Landscape / Buffer Zone (ft.)	Bike Lane Width (ft.)	Bike Buffer (ft.)	Travel Lane Width (ft.) ^m
Premium Transit	Inside Center	30-35	1-2.5	10-12	6-8	6-6.5	0-3	10-12
	Outside Center	35-40	1-2.5	8-10	6-8	6-7	1.5-3	10-12
Major Transit	Inside Center	30-35	1-2.5	10-12	6-8	5-6.5	0-3	10-12
	Outside Center	35-40	N/A	6-10	6-8	6-7	1.5-3	10-12
Multi-modal	Inside Center	30-35	1-2.5	10-12	6-8	5-6.5	0-3	10-11
	Outside Center	35-40	N/A	6-10	6-8	6-7	1.5-3	10-11
Commuter	Inside Center	30-35	1-2.5	10	6-8	5-6.5	1.5-3	10-12
	Outside Center	40-50	N/A	6	6-8	6-7	3-5	10-12
Main Street	Main Street	25-30	1-2.5	10-12	6-8	5-6.5	0-3	10-11
Other Arterial	Inside Center	30-35	1-2.5	10	6-8	5-6.5	0-3	10-11
	Outside Center	35-40	N/A	6	5-6	6-7	1.5-3	10-11
Minor Arterial	Inside Center	30-35	1-2.5	10	6-8	5-6.5	0-3	10-11
	Outside Center	35-40	N/A	6	5-6	6-6.5	1.5-3	10-11

Figure 19: COA Street Element Dimensions

Description of Alternatives

Two proposed alternative alignments were created during the preliminary phase of this study (Alternative A and B), as shown in [Figure 20](#) and [Figure 21](#). See [Appendix C](#) for a larger exhibit of the alternative alignments.



Figure 20: Alternative A



Figure 21: Alternative B

No-Build Alternative

The No-Build Alternative will be considered in the evaluation process in order to compare the build alternatives to existing conditions. The alternative assumes that 118th Street from Amole Mesa Avenue to Eucariz Avenue will remain in its existing configuration and no improvements will be made.

Alternative A

Alternative A would be an ultimate build-out of 118th Street. The alignment is shown in [Figure 20](#) and [Figure 18](#) illustrates the typical cross section. Alternative A is a straight-line alignment and only has two curves located at the beginning of project (BOP) and the end of project (EOP). Alternative A follows the alignment laid out in the Talavera site development plan shown in [Figure 15](#).

Alternative B

Alternative B would also be an ultimate build-out of 118th Street. The alignment is shown in [Figure 21](#) and [Figure 18](#) illustrates the typical cross section. Alternative B has more horizontal curves throughout the roadway which are intended to help with traffic calming.

Impact of Alternatives

Traffic

No-Build Alternative

The No-Build Alternative would not address any existing traffic issues that occur within the study limits. The community would still use 98th Street as the major north-south corridor to access Central Avenue or I-40.

Alternative A and Alternative B

Both alternatives create another north-south roadway network connection, which will allow the community to access Central Avenue and I-40 from 118th Street. This may help relieve traffic on 98th Street.

Right-of-Way

No-Build Alternative

The No-Build Alternative would not require acquisition of new right-of-way along 118th Street.

Alignment A

Alignment A would require acquisition of new right-of-way. The total right-of-way widths and area needed for 118th Street, Gibson Boulevard, and De Vargas Road are listed in [Table 4](#).

Table 2: Right of Way Needs Alignment A

Roadway	Station	To Station	Length (FT)	Right of Way Width Needs (FT)	Right of Way Total Area (Acres)
118 th Street	10+00	124+36	11,436	124	32
Gibson Boulevard	10+81	20+07	926	150	3.2
De Vargas Road	10+62	18+92	830	120	2.3
Project Total:			13,192	394	37.5

Alignment B

Alignment B would require acquisition of new right-of-way. The total right-of-way widths and area needed for 118th Street, Gibson Boulevard, and De Vargas Road are listed in [Table 5](#).

Table 3: Right of Way Needs Alignment B

Roadway	Station	To Station	Length (FT)	Right of Way Width Needs (FT)	Right of Way Total Area (Acres)
118 th Street	10+00	124+36	11,436	124	32
Gibson Boulevard	10+81	20+07	926	150	3.2
De Vargas Road	10+62	18+92	830	120	2.3
Project Total:			13,192	394	37.5

Utilities

No-Build Alternative

The No-Build Alternative will not impact any existing utilities.

Alignment A

Alignment A would impact AMAFCA easements at the Powerline Channel drainage crossing located near the BOP. The existing sewer manholes would be impacted by the proposed 118th Street and would need to be adjusted to grade. The existing sewer line is approximately 5-ft to 10-ft deep and may need to be lowered in areas where the proposed 118th Street alignment is cutting. Coordination with ABCWUA will be needed throughout the duration of the project. As-builts for the sewer line and manholes can be found in [Appendix D](#).

The PNM transmission poles are located approximately 140-ft from the 118th Street centerline alignment and will not be impacted.

Alignment B

Alignment B would impact AMAFCA and PNM easements, similarly to Alignment A. The existing sewer manholes would be impacted by the proposed 118th Street and would need to be adjusted to grade. The existing sewer line is approximately 5-ft to 10-ft deep and may need to be lowered in areas where the proposed 118th alignment is cutting. Coordination with ABCWUA will be needed throughout the duration of the project. As-builts for the sewer line and manholes can be found in [Appendix D](#).

Alignment B would be crossing through parts of PNM's easement due to this alignment having more curves. An encroachment agreement would be needed as part of this project. The PNM transmission poles are located approximately 140-ft from the 118th Street centerline alignment and will not be impacted.

Drainage

A flow rate of 108 cfs was assumed to be conveyed by the 48-inch RCP trunkline. This flow is based on the approximate roadway width, for both lanes of traffic, of 100-ft and the total project length. A flow rate of 1.89 cfs was assumed to be draining to each inlet, for a total of 57 Type A catch basins. This flow rate is based on an inlet spacing of 400-ft and the approximate roadway width of 50-ft. The roadway geometry and a type A catch basin, from the COA standard drawings, were modeled in FlowMaster. The spread is 7.6-ft with a bypass flow of 0.63-cfs. 18-inch RCP laterals were assumed to convey the captured flow from each inlet to the 48-inch trunkline. The manhole quantity assumes one will be needed for each pair of inlets and additional were included for bends in the roadway alignment. This complies with the COA DPM Part 6-10(D)(1)(i) for a recommended manhole spacing of 450-ft. See [Appendix F](#) for FlowMaster calculations.

Based on the 2013 Amole-Hubbell Drainage Master Plan (DMP) Update, there is a flow of 73 cfs from the West Gate Dam and 486 cfs from the Powerline Canal, with a total flow of 587 cfs in the Amole Arroyo at the junction of the two channels. The proposed roadway alignment for 118th Street crosses directly over the confluence of these channels. Using 2018 MRCOG terrain data and the flow rates from the 2013 DMP, the confluence of the two channels was modeled in HEC-RAS. The

hydraulic model was used to size the proposed crossing options. Based on the model three options were presented:

- Bridge: 170' span
- Separate Crossings: 3-6'x6' and 2-48"
- Realignment: 3-6'x6'

With the proposed roadway crossing directly over the confluence the separate crossings option involves conveying the flow for each crossing separately until the downstream side of the road. Compared to the realignment option where upstream of the existing confluence the Powerline Canal will be realigned to enter the Amole Arroyo further upstream and allow for a singular, 3-6'x6', structure crossing. See [Appendix F](#) for exhibits with HEC-RAS output.

Two detention ponds, a 4.66 ac-ft pond and a 20.7 ac-ft pond would be needed. Both ponds were assumed to be 10 feet deep with 3:1 (H:V) side slopes. This geometry was used to calculate a combined ponding area, for ROW acquisition, of approximately three (3) acres, and an excavation volume of 41,027 cubic yards.

The storm drain system was quantified for the entire 11,436 ft of the project extents. The methodology from Chapter 6 of the COA Development Process Manual (DPM) was followed to calculate the flow rates using the rational equation. A rational coefficient of 0.9, corresponding to a land treatment type D, and a rainfall intensity of 4.58 in/hr, for the 100-YR storm in Zone 1, were used in the calculations.

Cost (Amole Mesa Avenue to Central Avenue)

Although the study limits for this report are from Amole Mesa Avenue to Eucariz Avenue, Bernalillo County and the stake holders requested that the estimate be from Amole Mesa Avenue to Central Avenue.

No-Build Alternative

There would be no costs associated with the No-Build Alternative.

Alignment A

The conceptual cost estimate for Alignment A would be approximately \$43,542,726, which includes a 30% contingency and New Mexico Gross Receipts Tax (NMGRT). The estimate assumes a roadway pavement section of 6-in asphalt concrete, 6-in aggregate base course, and 12-in subgrade preparation. The trail pavement section is assumed to be 3-in asphalt and 6-in aggregate base course. If a geotechnical report is done and the pavement section is changed, this could affect the costs substantially. The estimate also includes new signing and striping, lighting, signalization, drainage, landscaping, a bridge, sidewalk, curb and gutter, ADA ramps, ponds, and the required right-of-way acquisition, see [Table 6](#). Estimates are based on 2023 prices and are anticipated to increase by 4% annually.

Table 4: Alignment A Conceptual Cost Estimate

COA ITEM NO.	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUAN	COST
4.010	CONSTRUCTION STAKING & SURVEYING, PROJECT AS-BUILTS, COMPLETE	LS	\$ 393,900	1	\$ 393,900
6.010	MOUNTING, INSTALLATION & MAINTENANCE OF PROJECT IDENTIFICATION SIGN, INCL. PLYWOOD, POSTS, AND FOUNDATIONS, CIP.	EACH	\$ 822	2	\$ 1,643
19.010	CONSTRUCTION TRAFFIC CONTROL & BARRICADING, COMPLETE	LS	\$ 944,808	1	\$ 944,808
202.011	EXCAV & DISP, UNSUT MAT (DRAINAGE)	CU YD	\$ 15	41,027	\$ 615,406
202.011	EXCAV & DISP, UNSUT MAT (ROADWAY)	CU YD	\$ 15	89,550	\$ 1,343,250
204.01	FILL CONSTRUCTION, INCL. EXCAVATION, PLACEMENT & COMPACTION OF UNCLASSIFIED MATERIAL, OVER 2 FT. DEEP, CIP.	CU YD	\$ 19	45,350	\$ 850,313
301.020	SUBGRADE PREP. 12" AT 95% COMPACTION, CIP.	SQ YD	\$ 4	107,960	\$ 440,477
302.010	AGGREGATE BASE COURSE, CRUSHED, 6" THICK, PLACE AND COMPACT, CIP.	SQ YD	\$ 11	107,960	\$ 1,231,824
336.010	PRIME COAT, EMULSIFIED ASPHALT, CIP.	SQ YD	\$ 1	107,960	\$ 91,766
336.024	ASPHALT CONCRETE, 3 INCH THICK, SUPERPAVE	SQ YD	\$ 28	107,960	\$ 2,992,651
336.120	TACK COAT	SQ YD	\$ 0.5	107,960	\$ 52,900
340.010	SIDEWALK, 4" THICK, PORTLAND CEMENT CONCRETE, INCL. SUBGRADE COMPACTION, CIP.	SQ YD	\$ 65	9,700	\$ 632,634
340.023	WHEELCHAIR ACCESS RAMP, 4" PCC, STD. CURB., CIP	SQ YD	\$ 95	140	\$ 13,353
340.029	DETECTABLE WARNING SURFACES FOR ADA RAMPS	SQ FT	\$ 39	80	\$ 3,153
340.05	CURB & GUTTER, STANDARD, PORTLAND CEMENT CONCRETE, INCL. SUBGRADE PREPERATION, CIP. SD 2415	LIN FT	\$ 29	26,300	\$ 769,801
340.06	CURB & GUTTER, MEDIAN, PORTLAND CEMENT CONCRETE, CIP.	LIN FT	\$ 23	25,960	\$ 592,667
346.100	TEXTURED MEDIAN PAVEMENT, 4" THICK, COLORED PC CONCRETE, INCL. SUBGRADE COMPACTION, CIP.	SQ FT	\$ 12	470	\$ 5,593
421.XXX	LIGHTING	LS	\$ 550,000	1	\$ 550,000
422.XXX	SIGNALIZATION	LS	\$ 350,000	1	\$ 350,000

COA ITEM NO.	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUAN	COST
441.001	REFLECTORIZED PLASTIC PAVEMENT MARKINGS, 4" WIDTH, CIP.	LIN FT	\$ 2	99,000	\$ 153,450
441.002	REFLECTORIZED PLASTIC PAVEMENT MARKINGS, 6" WIDTH, CIP.	LIN FT	\$ 2	52,000	\$ 84,760
441.005	REFLECTORIZED PLASTIC PAVEMENT MARKINGS, 24" WIDTH, CIP.	LIN FT	\$ 7	110	\$ 717
441.010	REFLECTORIZED PLASTIC ARROW, RIGHT, CIP	EACH	\$ 212	6	\$ 1,269
441.011	REFLECTORIZED PLASTIC ARROW, LEFT, CIP	EACH	\$ 197	4	\$ 787
441.020	REFLECTORIZED PLASTIC WORD, ONLY, CIP	EACH	\$ 222	5	\$ 1,109
450.XXX	SIGNAGE	LS	\$ 15,000	1	\$ 15,000
621.410	MOBILIZATION	LS	\$ 2,754,542	1	\$ 2,754,542
910.022	48" RCP, IV	LF	\$ 310	11432	\$ 3,543,985
910.006	18" RCP, IV	LF	\$ 90	3420	\$ 307,800
915.020	CTH BSN, A, DG	EACH	\$ 9,000	57	\$ 513,000
920.140	MH, 6' DIA, C or E 6'-10' D	EACH	\$ 8,000	55	\$ 440,000
1000.XXX	LANDSCAPING	LS	\$ 40,000	1	\$ 40,000
XXX.XXX	BRIDGE	SQ FT	\$ 640	15810	\$ 10,118,400
XXX.XXX	RIGHT OF WAY-ROADWAY	ACRE	\$ 50,000	33	\$ 1,637,716
XXX.XXX	RIGHT OF WAY-PONDING	ACRE	\$ 50,000	3	\$ 150,000
	SUBTOTAL				\$ 31,638,675
	CONTINGENCY (30%)				\$ 9,491,602
	NMGRT (7.625%)				\$ 2,412,449
	PROJECT TOTAL				\$ 43,542,726

Alignment B

The conceptual cost estimate for Alignment B would be approximately \$43,318,623, which includes a 30% contingency and NMGRT. The estimate assumes a roadway pavement section of 6-in asphalt concrete, 6-in aggregate base course, and 12-in subgrade preparation and a trail pavement section of 3-in asphalt and 6-in aggregate base course. If a geotechnical report is done and the pavement section is changed, this could affect the costs substantially. The estimate also includes new signing and striping, lighting, signalization, drainage, landscaping, bridge, sidewalk, curb and gutter, ADA ramps, ponds, and the required right-of-way acquisition, see [Table 7](#). Estimates are based on 2023 prices and are anticipated to increase by 4% annually.

Table 5: Alignment B Conceptual Cost Estimate

COA ITEM NO.	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUAN	COST
4.010	CONSTRUCTION STAKING & SURVEYING, PROJECT AS-BUILTS, COMPLETE	LS	\$ 391,872	1	\$ 391,872
6.010	MOUNTING, INSTALLATION & MAINTENANCE OF PROJECT IDENTIFICATION SIGN, INCL. PLYWOOD, POSTS, AND FOUNDATIONS, CIP.	EACH	\$ 822	2	\$ 1,643
19.010	CONSTRUCTION TRAFFIC CONTROL & BARRICADING, COMPLETE	LS	\$ 939,945	1	\$ 939,945
202.011	EXCAV & DISP, UNSUT MAT (DRAINAGE)	CU YD	\$ 15	41027	\$ 615,406
202.011	EXCAV & DISP, UNSUT MAT (ROADWAY)	CU YD	\$ 15	92000	\$ 1,380,000
204.01	FILL CONSTRUCTION, INCL. EXCAVATION, PLACEMENT & COMPACTION OF UNCLASSIFIED MATERIAL, OVER 2 FT. DEEP, CIP.	CU YD	\$ 19	34950	\$ 655,313
301.020	SUBGRADE PREP. 12" AT 95% COMPACTION, CIP.	SQ YD	\$ 4	108130	\$ 441,170
302.010	AGGREGATE BASE COURSE, CRUSHED, 6" THICK, PLACE AND COMPACT, CIP.	SQ YD	\$ 11	108130	\$ 1,233,763
336.010	PRIME COAT, EMULSIFIED ASPHALT, CIP.	SQ YD	\$ 1	108130	\$ 91,911
336.024	ASPHALT CONCRETE, 3 INCH THICK, SUPERPAVE	SQ YD	\$ 28	108130	\$ 2,997,364
336.120	TACK COAT	SQ YD	\$ 0	108130	\$ 52,984
340.010	SIDEWALK, 4" THICK, PORTLAND CEMENT CONCRETE, INCL. SUBGRADE COMPACTION, CIP.	SQ YD	\$ 65	9800	\$ 639,156
340.023	WHEELCHAIR ACCESS RAMP, 4" PCC, STD. CURB., CIP	SQ YD	\$ 95	150	\$ 14,307
340.029	DETECTABLE WARNING SURFACES FOR ADA RAMPS	SQ FT	\$ 39	80	\$ 3,153
340.05	CURB & GUTTER, STANDARD, PORTLAND CEMENT CONCRETE, INCL. SUBGRADE PREPERATION, CIP. SD 2415	LIN FT	\$ 29	26300	\$ 769,801
340.06	CURB & GUTTER, MEDIAN, PORTLAND CEMENT CONCRETE, CIP.	LIN FT	\$ 23	25940	\$ 592,210
346.100	TEXTURED MEDIAN PAVEMENT, 4" THICK, COLORED PC CONCRETE,	SQ FT	\$ 12	450	\$ 5,355

COA ITEM NO.	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUAN	COST
	INCL. SUBGRADE COMPACTION, CIP.				
421.XXX	LIGHTING	LS	\$ 550,000	1	\$ 550,000
422.XXX	SIGNALIZATION	LS	\$ 350,000	1	\$ 350,000
441.001	REFLECTORIZED PLASTIC PAVEMENT MARKINGS, 4" WIDTH, CIP.	LIN FT	\$ 2	98000	\$ 151,900
441.002	REFLECTORIZED PLASTIC PAVEMENT MARKINGS, 6" WIDTH, CIP.	LIN FT	\$ 2	51000	\$ 83,130
441.005	REFLECTORIZED PLASTIC PAVEMENT MARKINGS, 24" WIDTH, CIP.	LIN FT	\$ 7	110	\$ 717
441.010	REFLECTORIZED PLASTIC ARROW, RIGHT, CIP	EACH	\$ 212	6	\$ 1,269
441.011	REFLECTORIZED PLASTIC ARROW, LEFT, CIP	EACH	\$ 197	4	\$ 787
441.020	REFLECTORIZED PLASTIC WORD, ONLY, CIP	EACH	\$ 222	5	\$ 1,109
450.XXX	SIGNAGE	LS	\$ 15,000	1	\$ 15,000
621.410	MOBILIZATION	LS	\$ 2,740,366	1	\$ 2,740,366
910.022	48" RCP, IV	LF	\$ 310	11432	\$ 3,543,985
910.006	18" RCP, IV	LF	\$ 90	3420	\$ 307,800
915.020	CTH BSN, A, DG	EACH	\$ 9,000	57	\$ 513,000
920.140	MH, 6' DIA, C or E 6'-10' D	EACH	\$ 8,000	55	\$ 440,000
1000.XXX	LANDSCAPING	LS	\$ 40,000	1	\$ 40,000
XXX.XXX	BRIDGE	SQ FT	\$ 640	15810	\$ 10,118,400
XXX.XXX	RIGHT OF WAY-ROADWAY	ACRE	\$ 50,000	33	\$ 1,643,023
XXX.XXX	RIGHT OF WAY-PONDING	ACRE	\$ 50,000	3	\$ 150,000
	SUBTOTAL				\$ 31,475,839
	CONTINGENCY (30%)				\$ 9,442,752
	NMGRT (7.625%)				\$ 2,400,033
	PROJECT TOTAL				\$ 43,318,623

Interim Build

Bernalillo County and stakeholders also requested a cost estimate for the construction of just the east side of 118th Street, from Amole Mesa Avenue to Central Avenue. This estimate assumes full right-of-way acquisition, the full bridge, storm drain, half of the raised medians, and earthwork. This cost estimate would be approximately \$36,648,020 which includes a 30% contingency and New Mexico Gross Receipts Tax (NMGRT), see [Appendix G](#). Estimates are based on 2023 prices and are anticipated to increase by 4% annually.

Appendix A – ROW Platts



COORDINATE AND DIMENSION INFORMATION			PLSS INFORMATION				PROJECT INFORMATION		INDEXING INFORMATION	
STATE PLANE ZONE:	GRID	TYPE	LAND GRANT				CREW/TECH:	DATE OF SURVEY	PROPERTY OWNER	
NM-C	GRID	STANDARD	TOWN OF ATRISCO GRANT				MT/MC/V/M	03/08/2019	ANDERSON HEIGHTS LLC C/O	
HORIZONTAL DATUM: NAD83	VERTICAL DATUM: NAVDS88	ROTATION ANGLE 0° 00' 00.00"	SECTION 32	TOWNSHIP 10 NORTH	RANGE 02 EAST	MERIDIAN NMPM	DRAWN BY: JK	CHECKED BY: LM	C/O PEORIA CAR WASH PARTNERS LLC	
CONTROL USED ALBUQUERQUE GEODETIC REFERENCE SYSTEM		SUBDIVISION NAME LANDS OF GREVEY/LIBERMAN								
COVERED SCALE FACTOR		DISTANCE ADJUSTMENT: GROUND	CITY N/A	COUNTY BERNALILLO	STATE NM	PSI JOB NO. 18-1030EX	SHEET NUMBER 1 OF 6	UPC		
GRID TO GROUND: 1.0003170855 GROUND TO GRID: 0.999683015		PRE ADJUS. ADJUSTMENT: GNDM						100805508032120217		

EXHIBIT "A-1"

Legend

N 90°00'00" E

(N 90°00'00" E)

MEASURED BEARING AND DISTANCES

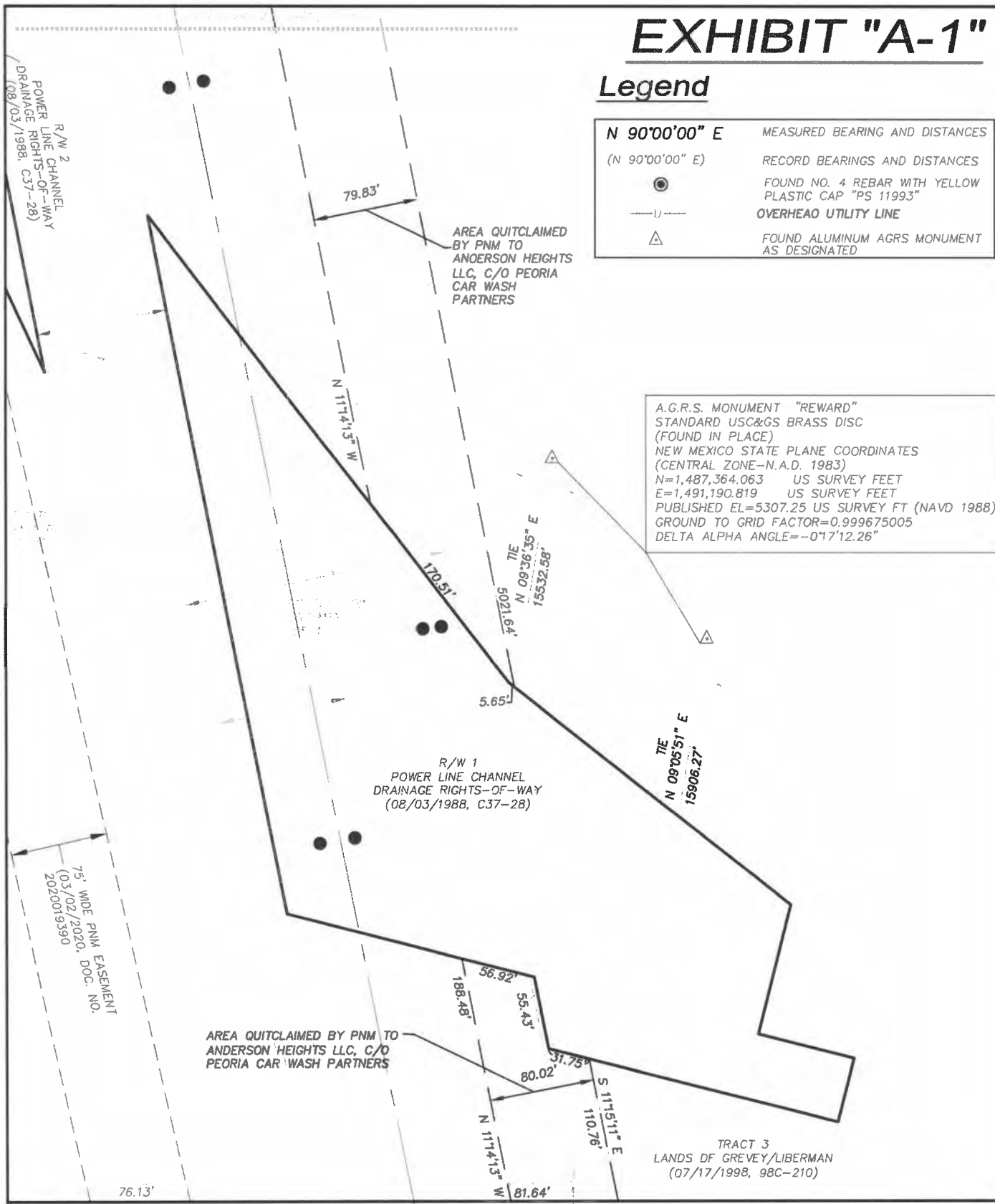
RECORD BEARINGS AND DISTANCES

FOUND NO. 4 REBAR WITH YELLOW PLASTIC CAP "PS 11993"

OVERHEAD UTILITY LINE

FOUND ALUMINUM AGRS MONUMENT AS DESIGNATED

A.G.R.S. MONUMENT "REWARD"
STANDARD USC&GS BRASS DISC
(FOUND IN PLACE)
NEW MEXICO STATE PLANE COORDINATES
(CENTRAL ZONE-N.A.D. 1983)
N=1,487,364.063 US SURVEY FEET
E=1,491,190.819 US SURVEY FEET
PUBLISHED EL=5307.25 US SURVEY FT (NAVD 1988)
GROUND TO GRID FACTOR=0.999675005
DELTA ALPHA ANGLE=-0°17'12.26"



SECTION 32 T. 10 N. R. 2 E.
SECTION 5 T. 9 N. R. 2 E.

BASIS OF BEARINGS BETWEEN AGRS MONUMENTS
"REWARD" AND "5_M6" IS N 69°34'12" E

PRECISION SURVEYS, INC.

OFFICE LOCATION:
9200 San Mateo Boulevard, NE
Albuquerque, NM 87113
505.856.5700 PHONE
505.856.7900 FAX



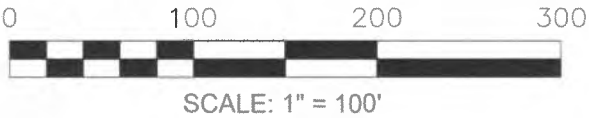
SCALE: 1" = 100'

COORDINATE AND DIMENSION INFORMATION				PLSS INFORMATION				PROJECT INFORMATION		INDEXING INFORMATION
STATE PLANE ZONE	GRID	TYPE		LAND GRANT				CREW/TECH:	DATE OF SURVEY	PROPERTY OWNER
NM-C	GRID	STANDARD		TOWN OF ATRISCO GRANT				MT/MC/VM	03/08/2019	ANDERSON HEIGHTS LLC C/O
HORIZONTAL DATUM:	VERTICAL DATUM:	ROTATION ANGLE:		SECTION	TOWNSHIP	RANGE	MERIDIAN	DRAWN BY:	CHECKED BY:	SUBDIVISION NAME
NAD83	NAVD88	0° 00' 00.00"		32	10 NORTH	02 EAST	NMPM	JK	LM	LANDS OF GREVEY/LIBERMAN
CONTROL USED:			BASE POINT	CITY	COUNTY	STATE	PSI JOB NO.	SHEET NUMBER	UPC	
ALBUQUERQUE GEODETIC REFERENCE SYSTEM			N = 0	N/A	BERNALILLO	NM	18-1030EX	2 OF 6	100805508032120217	
COMBINED SCALE FACTOR:			E = 0							
GRID TO GROUND: 1.0003170855			GROUND							
GROUND TO GRID: 0.999683015			BEARING ANNOTATION							
			GRID							

EXHIBIT "A-1"

Legend

N 90°00'00" E	MEASURED BEARING AND DISTANCES
(N 90°00'00" E)	RECORD BEARINGS AND DISTANCES
	FOUND NO. 4 REBAR WITH YELLOW PLASTIC CAP "PS 11993"
	OVERHEAD UTILITY LINE
	FOUND ALUMINUM AGRS MONUMENT AS DESIGNATED



AREA QUITCLAIMED BY PNM TO ANDERSON HEIGHTS LLC, C/O PEORIA CAR WASH PARTNERS

TRACT 3
LANDS OF GREVEY/LIBERMAN
(07/17/1998, 98C-210)

TRACT 3
LANDS OF GREVEY/LIBERMAN
(07/17/1998, 98C-210)

BASIS OF BEARINGS BETWEEN AGRS MONUMENTS
"REWARD" AND "5_M6" IS N 69°34'12" E

PRECISION
SURVEYS, INC.

OFFICE LOCATION:
9200 San Mateo Boulevard, NE
Albuquerque, NM 87113

505.856.5700 PHONE
505.856.7900 FAX

COORDINATE AND DIMENSION INFORMATION			PLSS INFORMATION				PROJECT INFORMATION		INDEXING INFORMATION
STATE PLANE ZONE: NM-C	GRID COORDINATES: GRID	TYPE: STANDARD	LAND GRANT TOWN OF ATRISCO GRANT				CREW/TECH: MT/MC/MM	DATE OF SURVEY 03/08/2019	PROPERTY OWNER ANDERSON HEIGHTS LLC C/O C/O PEORIA CAR WASH PARTNERS LLC
HORIZONTAL DATUM: NAD83	VERTICAL DATUM: NAVD88	ROTATION ANGLE: 0° 00' 00.00"	SECTION 32	TOWNSHIP 10 NORTH	RANGE 02 EAST	MERIDIAN NMPM	DRAWN BY: JK	CHECKED BY: LM	SUBDIVISION NAME LANDS OF GREVEY/LIBERMAN
CONTROL USED ALBUQUERQUE GEODETIC REFERENCE SYSTEM			CITY N/A	COUNTY BERNALILLO	STATE NM	PSI JOB NO. 18-1030EX	SHEET NUMBER 3 OF 6	UPC 100805508032120217	
CONTINUED SCALE FACTOR: GRID TO GROUND: 1.0003170855 GROUND TO GRID: 0.999683015			BASE POINT N = 0 E = 0				DISTANCE ANNOTATION: GROUND GRID		

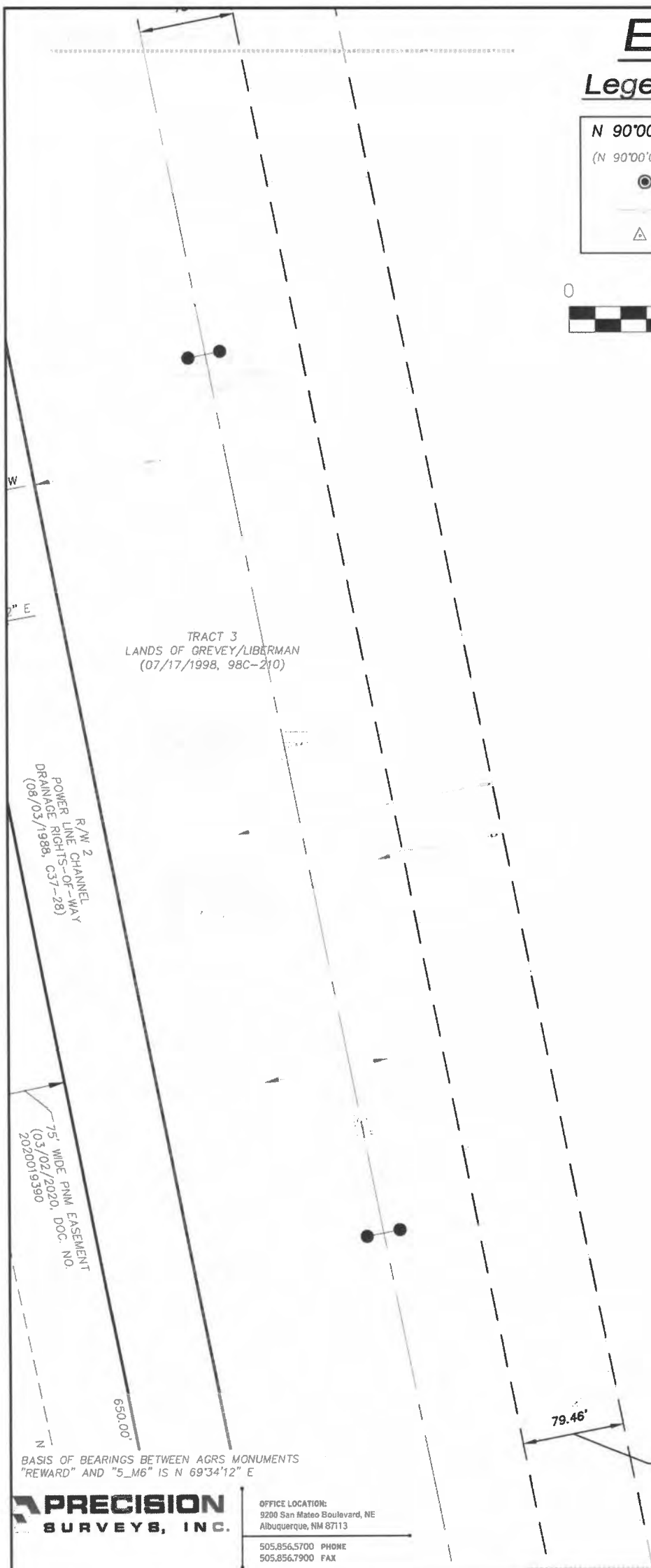
EXHIBIT "A-1"

Legend

N 90°00'00" E	MEASURED BEARING AND DISTANCES
(N 90°00'00" E)	RECORD BEARINGS AND DISTANCES
	FOUND NO. 4 REBAR WITH YELLOW PLASTIC CAP "PS 11993"
	OVERHEAD UTILITY LINE
	FOUND ALUMINUM AGRS MONUMENT AS DESIGNATED



SCALE: 1" = 100'



TRACT 3
LANDS OF GREVEY/LIBERMAN
(07/17/1998, 98C-210)

R/W 2
POWER LINE CHANNEL
DRAINAGE RIGHTS-OF-WAY
(08/03/1988, C37-28)

75' WIDE PNM EASEMENT
(03/02/2020, DOC. NO.
2020019390)

650.00'

79.46'

BASIS OF BEARINGS BETWEEN AGRS MONUMENTS
"REWARD" AND "5_M6" IS N 69°34'12" E

AREA QUITCLAIMED BY PNM TO ANDERSON
HEIGHTS LLC, C/O PEORIA CAR WASH
PARTNERS

PRECISION
SURVEYS, INC.

OFFICE LOCATION:
9200 San Mateo Boulevard, NE
Albuquerque, NM 87113

505.856.5700 PHONE
505.856.7900 FAX

COORDINATE AND DIMENSION INFORMATION			PLSS INFORMATION				PROJECT INFORMATION		INDEXING INFORMATION
STATE PLANE ZONE: NM-C	GRID AROUND COORDINATES GRID	TYPE STANDARD	LAND GRANT TOWN OF ATRISCO GRANT				CREW/TECH: MT/MC/VM	DATE OF SURVEY 03/08/2019	PROPERTY OWNER ANDERSON HEIGHTS LLC C/O C/O PEORIA CAR WASH PARTNERS LLC
HORIZONTAL DATUM: NAD83	VERTICAL DATUM: NAVD88	ROTATION ANGLE: 0° 00' 00.00"	SECTION 32	TOWNSHIP 10 NORTH	RANGE 02 EAST	MERIDIAN NMPM	DRAWN BY: JK	CHECKED BY: LM	SUBDIVISION NAME LANDS OF GREVEY/LIBERMAN
CONTROL USED ALBUQUERQUE GEODETIC REFERENCE SYSTEM			CITY N/A	COUNTY BERNALILLO	STATE NM	PSI JOB NO. 18-1030EX	SHEET NUMBER 4 OF 6	UPC 100805508032120217	
COMBINED SCALE FACTOR: GRID TO GROUND: 1.0003170855 GROUND TO GRID: 0.999683015									

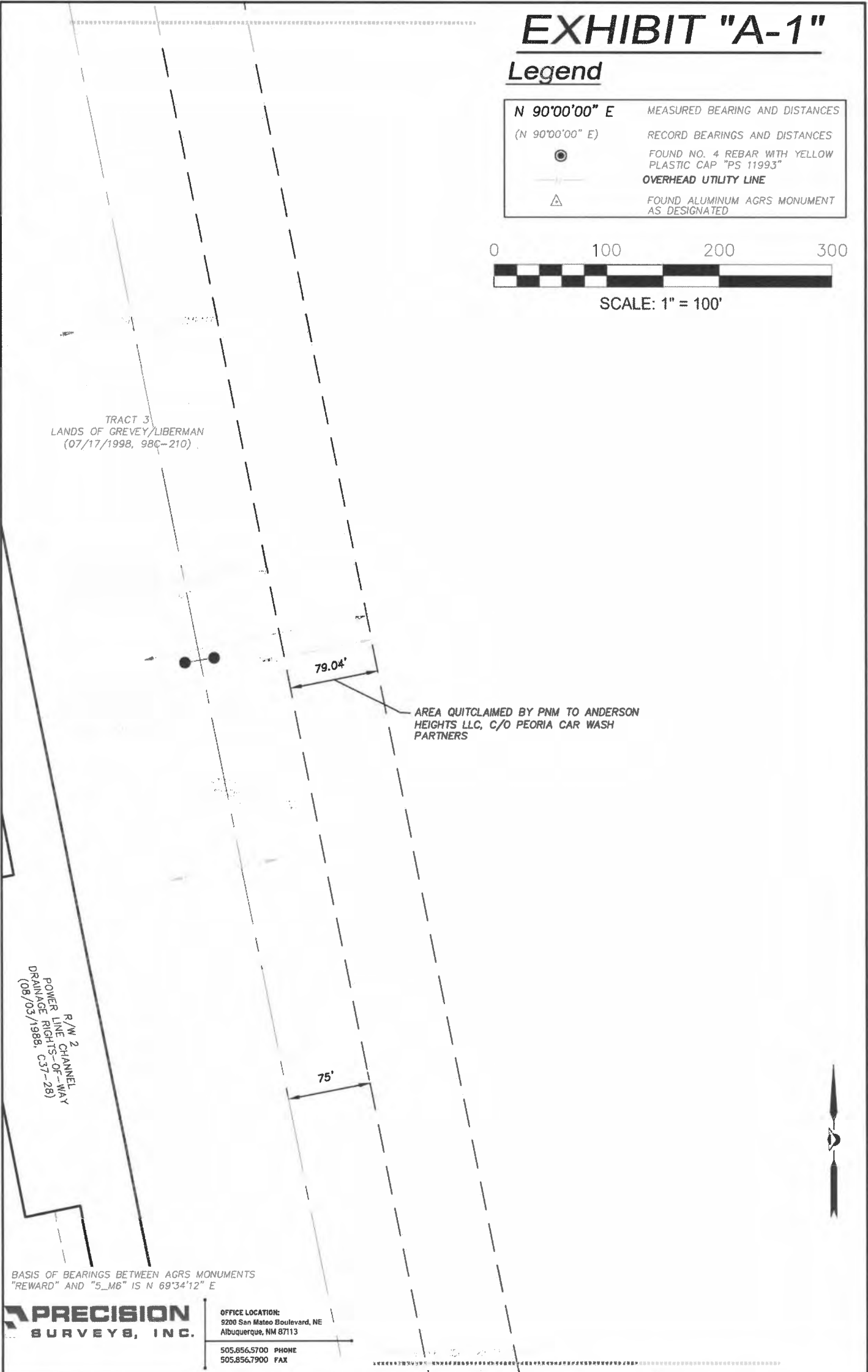
EXHIBIT "A-1"

Legend

N 90°00'00" E	MEASURED BEARING AND DISTANCES
(N 90°00'00" E)	RECORD BEARINGS AND DISTANCES
	FOUND NO. 4 REBAR WITH YELLOW PLASTIC CAP "PS 11993"
	OVERHEAD UTILITY LINE
	FOUND ALUMINUM AGRS MONUMENT AS DESIGNATED



SCALE: 1" = 100'



PRECISION
SURVEYS, INC.

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9200 San Mateo Boulevard, NE
Albuquerque, NM 87113

505.856.5700 PHONE
505.856.7900 FAX

COORDINATE AND DIMENSION INFORMATION				PLSS INFORMATION				PROJECT INFORMATION		INDEXING INFORMATION
STATE PLANE ZONE: NM-C	GRID NAVD88	TYPE STANDARD		LAND GRANT TOWN OF ATRISCO GRANT				CREW/TECH: MT/MC/VM	DATE OF SURVEY 03/08/2019	PROPERTY OWNER ANDERSON HEIGHTS LLC C/O C/O PEORIA CAR WASH PARTNERS LLC
HORIZONTAL DATUM: NAD83	VERTICAL DATUM: NAVD88	ROTATION ANGLE: 0° 00' 00.00"		SECTION 32	TOWNSHIP 10 NORTH	RANGE 02 EAST	MERIDIAN NMPM	DRAWN BY: JK	CHECKED BY: LM	SUBDIVISION NAME LANDS OF GREVEY/LIBERMAN
CONTROL USED ALBUQUERQUE GEODETIC REFERENCE SYSTEM				CITY N/A	COUNTY BERNALILLO	STATE NM	PSI JOB NO. 18-1030EX	SHEET NUMBER 5 OF 6	UPC 100805508032120217	
COMBINED SCALE FACTOR GRID TO GROUND: 1.0003170855 GROUND TO GRID: 0.999683015				DISTANCE ANNOTATION: GROUND GRID						

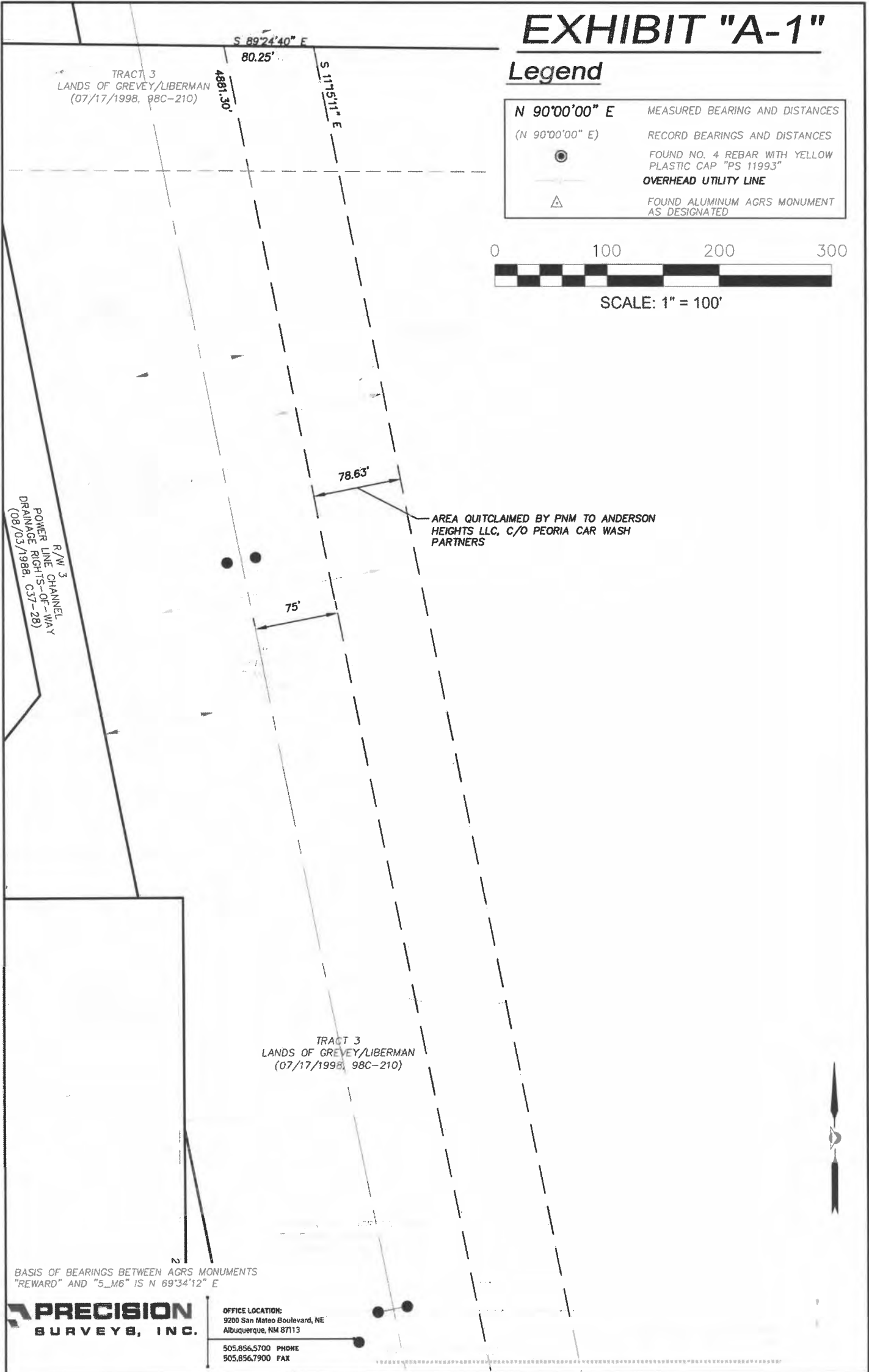
EXHIBIT "A-1"

Legend

N 90°00'00" E	MEASURED BEARING AND DISTANCES
(N 90°00'00" E)	RECORD BEARINGS AND DISTANCES
	FOUND NO. 4 REBAR WITH YELLOW PLASTIC CAP "PS 11993"
	OVERHEAD UTILITY LINE
	FOUND ALUMINUM AGRS MONUMENT AS DESIGNATED



SCALE: 1" = 100'



PRECISION
SURVEYS, INC.

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Albuquerque, NM 87113

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505.856.7900 FAX

COORDINATE AND DIMENSION INFORMATION			PLSS INFORMATION				PROJECT INFORMATION		INDEXING INFORMATION
STATE PLANE ZONE: NM-C	GRID GRID	TYPE STANDARD	LAND GRANT TOWN OF ATRISCO GRANT				CREW/TECH: MT/MC/VM	DATE OF SURVEY 03/08/2019	PROPERTY OWNER ANDERSON HEIGHTS LLC C/O C/O PEORIA CAR WASH PARTNERS LLC
HORIZONTAL DATUM: NAD83	VERTICAL DATUM: NAVD88	ROTATION ANGLE: 0° 0' 00.00"	SECTION 32	TOWNSHIP 10 NORTH	RANGE 02 EAST	MERIDIAN NMPM	DRAWN BY: JK	CHECKED BY: LM	SUBDIVISION NAME LANDS OF GREVEY/LIBERMAN
CONTROL USED: ALBUQUERQUE GEODETIC REFERENCE SYSTEM		BASE POINT: N = 0 E = 0							
COMBINED SCALE FACTOR: GRID TO GROUND: 1.0003170855 GROUND TO GRID: 0.999883015		DISTANCE ANNOTATION: GROUND DISTANCE ANNOTATION: GRID	CITY N/A	COUNTY BERNALILLO	STATE NM	PSI JOB NO. 18-1030EX	SHEET NUMBER 6 OF 6	UPC 100805508032120217	

COORDINATE AND DIMENSION INFORMATION				PLSS INFORMATION				PROJECT INFORMATION		INDEXING INFORMATION	
STATE PLANE ZONE		GRID GROUND COORDINATES		TYPE		LAND GRANT		CREW/TECH:		DATE OF SURVEY	
NM-C		GRID		STANDARD		TOWN OF ATRISCO GRANT		MT/MC/V		03/08/2019	
HORIZONTAL DATUM		VERTICAL DATUM		ROTATION ANGLE		SECTION		DRAWN BY:		CHECKED BY:	
NAD83		NAVD88		0° 00' 00.00"		5		JK		LM	
CONTROL USED				BASE POINT				TOWNSHIP		SUBDIVISION NAME	
ALBUQUERQUE GEODETIC REFERENCE SYSTEM				N = 0				9 NORTH		LANDS OF RIO BRAVO PARTNERS	
CONTINUED SCALE FACTOR				DISTANCE ANNOTATION				RANGE		UPC	
GRID TO GROUND: 1.0003170855				GROUND				02 EAST		100805412043830140	
GROUND TO GRID: 0.9996301015				RELATIVE ANNOTATION:				MERIDIAN		SHEET NUMBER	
				NONE				NMPM		1 OF 3	
				CITY		COUNTY		PSI JOB NO.		UPC	
				N/A		BERNALILLO		18-1030EX		100805412043830140	
				STATE		NM					

Legend

N 90°00'00" E MEASURED BEARING AND DISTANCES

(N 90°00'00" E) RECORD BEARINGS AND DISTANCES

 FOUND NO. 4 REBAR WITH YELLOW PLASTIC CAP "PS 11993"

 OVERHEAD UTILITY LINE

 FOUND ALUMINUM AGRS MONUMENT AS DESIGNATED



SCALE: 1" = 100'

LOT 2-A
LANDS OF RIO BRAVO PARTNERS
(04/17/1996, 96C-160)

EXISTING 75' WIDE
PNM EASEMENT
(03/02/2020, DOC.
NO. 2020019389)

75'

75'

WS ELECTRIC TRANSMISSION LINE

AREA QUITCLAIMED BY PNM
TO BLUFFS OF ALBUQUERQUE, LLC

2

174

Q7

W

—

CHANGE

2 EA

COUNTY
ERNAL

10

A.G.R.S. MONUMENT "REWARD"
STANDARD US&GS BRASS DISC
(FOUND IN PLACE)
NEW MEXICO STATE PLANE COORDINATES
(CENTRAL ZONE-N.A.D. 1983)
N=1,487,364.063 US SURVEY FEET
E=1,491,190.819 US SURVEY FEET
PUBLISHED EL=5307.25 US SURVEY FT (NAVD 1988)
GROUND TO GRID FACTOR=0.999675005
DELTA ALPHA ANGLE=-0°17'12.26"

S 89°58'48" E

2490.92'

N 89°58'48" W
48.04'

BASIS OF BEARINGS BETWEEN AGRS MONUMENTS
"REWARD" AND "5_M6" IS N 69°34'12" E

PRECISION
SURVEYS, INC.

OFFICE LOCATION:
9200 San Mateo Boulevard, NE
Albuquerque, NM 87113

505.856.5700 PHONE
505.856.7900 FAX

COORDINATE AND DIMENSION INFORMATION			PLSS INFORMATION				PROJECT INFORMATION		INDEXING INFORMATION							
STATE PLANE ZONE:	GRID COORDINATE COORDINATES		TYPE		LAND GRANT		CREW/TECH:		DATE OF SURVEY		PROPERTY OWNER					
NM-C			GRID		STANDARD		TOWN OF ATRISCO GRANT		MT/CA/VM		03/08/2019		PROPERTY OWNER BLUFFS OF ALBUQUERQUE, LLC			
HORIZONTAL DATUM:			ROTATION ANGLE:		SECTION 5	TOWNSHIP 9 NORTH	RANGE 02 EAST	MERIDIAN NM/PM	DRAWN BY: JK	CHECKED BY: LM	SUBDIVISION NAME LANDS OF RIO BRAVO PARTNERS					
NAD83			0° 00' 00.00"													
VERTICAL DATUM: NAVD88			BASE POINT N = 0 E = 0													
CONFIRMED USED ALBUQUERQUE GEODETIC REFERENCE SYSTEM																
CONFIRMED SCALE FACTOR			DISTANCE ANNOTATION: REFERRED ANNOTATION: C/BLP		CITY N/A		COUNTY BERNALILLO		STATE NM		PSI JOB NO. 18-1030EX		SHEET NUMBER 2 OF 3		UPC 100805412043830140	
GRID TO GROUND: 1.0003170855																
GROUND TO GRID: 0.999893015																

Appendix B – Stakeholder Meeting Minutes

Minutes

Meeting Title: Bernalillo County 118th Street Alignment Study Kickoff Meeting

Date: 12/6/2022

Time: 11:00 am – 12:00 pm

Location: Microsoft Teams Meeting

Attendees:

<u>Name:</u>	<u>Organization</u>	<u>Email</u>
Brian Lopez	Bernalillo County	bjlopez@bernco.gov
Richard Meadows	Bernalillo County	rmeadows@bernco.gov
Paula Dodge-Kwan	City of Albuquerque	pdodge-kwan@cabq.gov
Rachael Hernandez	City of Albuquerque	rmhernandez@cabq.gov
Tom Menicucci	City of Albuquerque	tmenicucci@cabq.gov
Nathan Masek	MRCOG	npmasek@mrcog-nm.gov
Nicole Friedt	AMAFCA	nfriedt@amafca.gov
Russell Brito	PNM	russell.brito@pnm.com
Edward Cordova	Wilson & Company, Inc.	edward.cordova@wilsonco.com
Audra Gallegos	Wilson & Company, Inc.	audra.gallegos@wilsonco.com
Lorenzo Cornejo	Wilson & Company, Inc.	Lorenzo.cornejo@wilsonco.com

Agenda Item

1. Introduction of Project and Team
 - a. The meeting was held via Microsoft Teams. It began with an introduction of the attendees.
2. Background and Objective
 - a. Audra then introduced the project study area and background. The purpose of this meeting was a kickoff meeting for the 118th Street Alignment Study. The project will determine the alignment needed for 118th Street to connect from Amole Mesa Avenue to Eucariz Avenue. The project will consist of an alignment, typical section, proposed right-of-way (ROW), and a conceptual estimate.
3. Business
 - a. Existing Conditions
 - i. MRCOG, AMAFCA, PNM, and the City of Albuquerque discussed their agency needs/concerns for this corridor.
 1. MRCOG – 118th Street is designated as a community principal arterial. If this designation is changed to a regional arterial, then it will need to be justified as part of this study. The study should reference the Long Range Transportation System Guide and review multimodal considerations per the long range bikeway system. The outcomes of the study can be updated in the 2045 MTP.
 2. AMAFCA – This area is part of the Amole-Hubbell drainage master plan. The powerline channel is located within the study limits as well as the outlet for the West Gate Dam.
 3. PNM – There is an existing easement for the transmission lines within the study limits. The lines are high voltage and would be very expensive to relocate. Safety/collision protection should be considered in design to protect the PNM poles. There should be no ponding areas around the

transmission poles. PNM is usually open to have multiuse trails within the easement, but they need to be reviewed on a case-by-case basis. Bus stops/shelters should not be placed under the transmission line.

4. City of Albuquerque – the travel time for residents to get to I-40 has been a concern. This connection will allow a more direct route for the neighborhoods in this area.
- ii. Existing documents and proposed developments
 1. Wilson & Company completed the City of Albuquerque 118th Street Study which reviewed the completion of the west half of 118th Street from Dennis Chavez Boulevard to Amole Mesa Avenue. Wilson & Company also completed the Bernalillo County 118th Street Interchange Alignment Study which determine the alignment for 118th Street from Eucariz Avenue to I-40. These studies will be referenced for this report.
- iii. Existing right-of-way/property owners will be identified for adjacent parcels.
- iv. A site visit will be conducted on 01.17.23. Audra will send out a meeting invite to the team.
- b. Proposed Conditions – Wilson & Company will evaluate the following:
 - i. Horizontal and vertical alignment
 - ii. Typical section
 - iii. Anticipated ROW
 - iv. Anticipated Earthwork
 - v. Conceptual cost estimate

4. Proposed schedule

Deliverable	Date
Site Visit	01.17.23
Draft Report	03.10.23
Agency Review	03.10.23 to 03.24.23
Final Report	05.12.23

5. Project Needs

- a. LiDAR

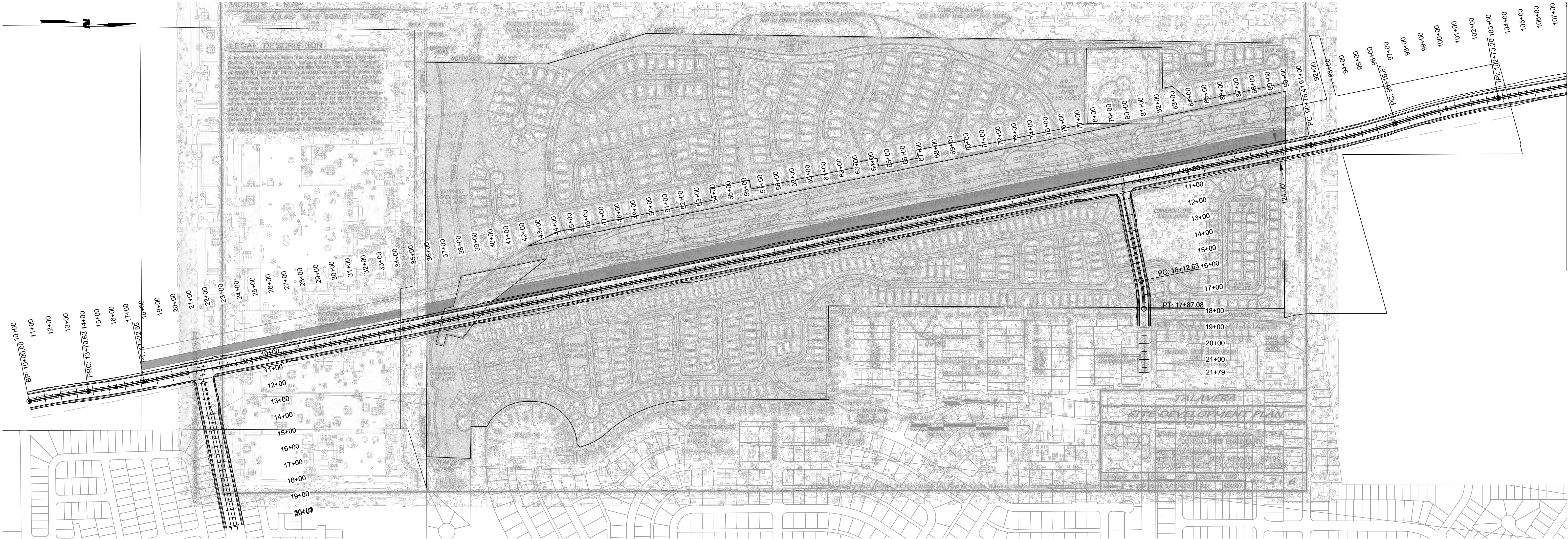
6. Open Discussion

- a. The study should incorporate any future roadway connections, multimodal facilities, and accessibility to commercial areas.
- b. Richard discussed the Talavera Master Plan that is planned near 118th Street. The development planned right-of-way for 118th Street is approximately 106-ft, which seems too narrow. Richard will send Audra the documents for the development.
- c. Tom said that Councilor Pena will try to get Capital Outlay funding if needed. If the team wants to go this route, an estimated cost will need to be provided.

7. Announcements

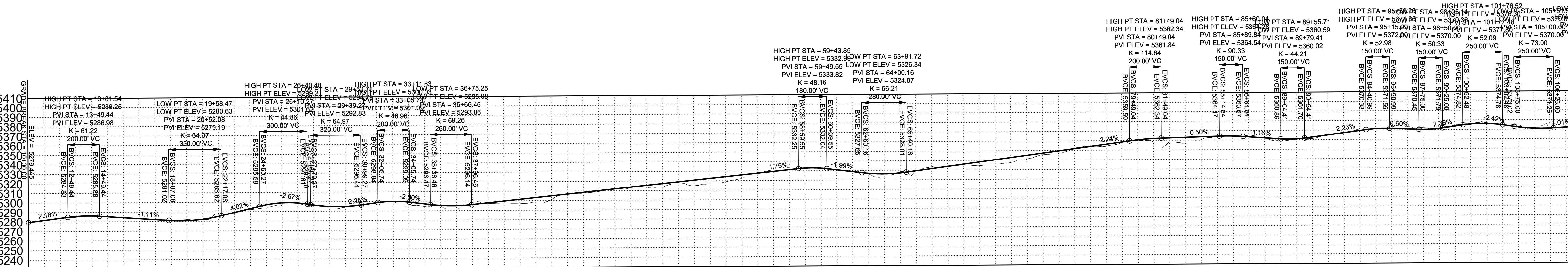
- a. The next monthly coordination meeting to discuss the status of the study will be held on January 11, 2023, at 11:00 am.
- b. Site visit is set to January 17, 2023 at 1:30 pm.

Appendix C – Alignment Plan and Profiles



1 ALIGNMENT A-118th St.CL AMOLE MESA TO CENTRAL PLAN - DESIGN SPEED 40-MPH

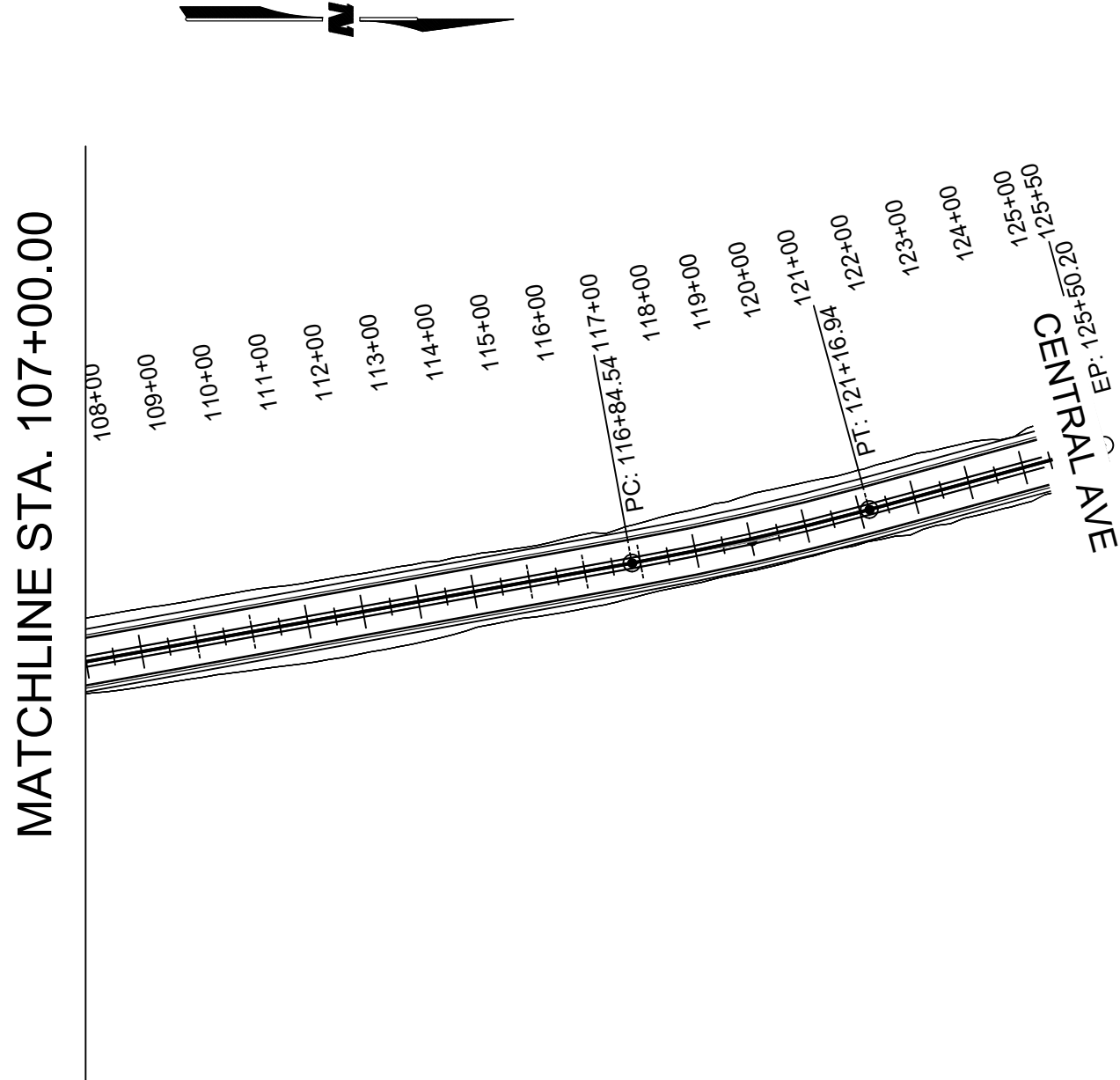
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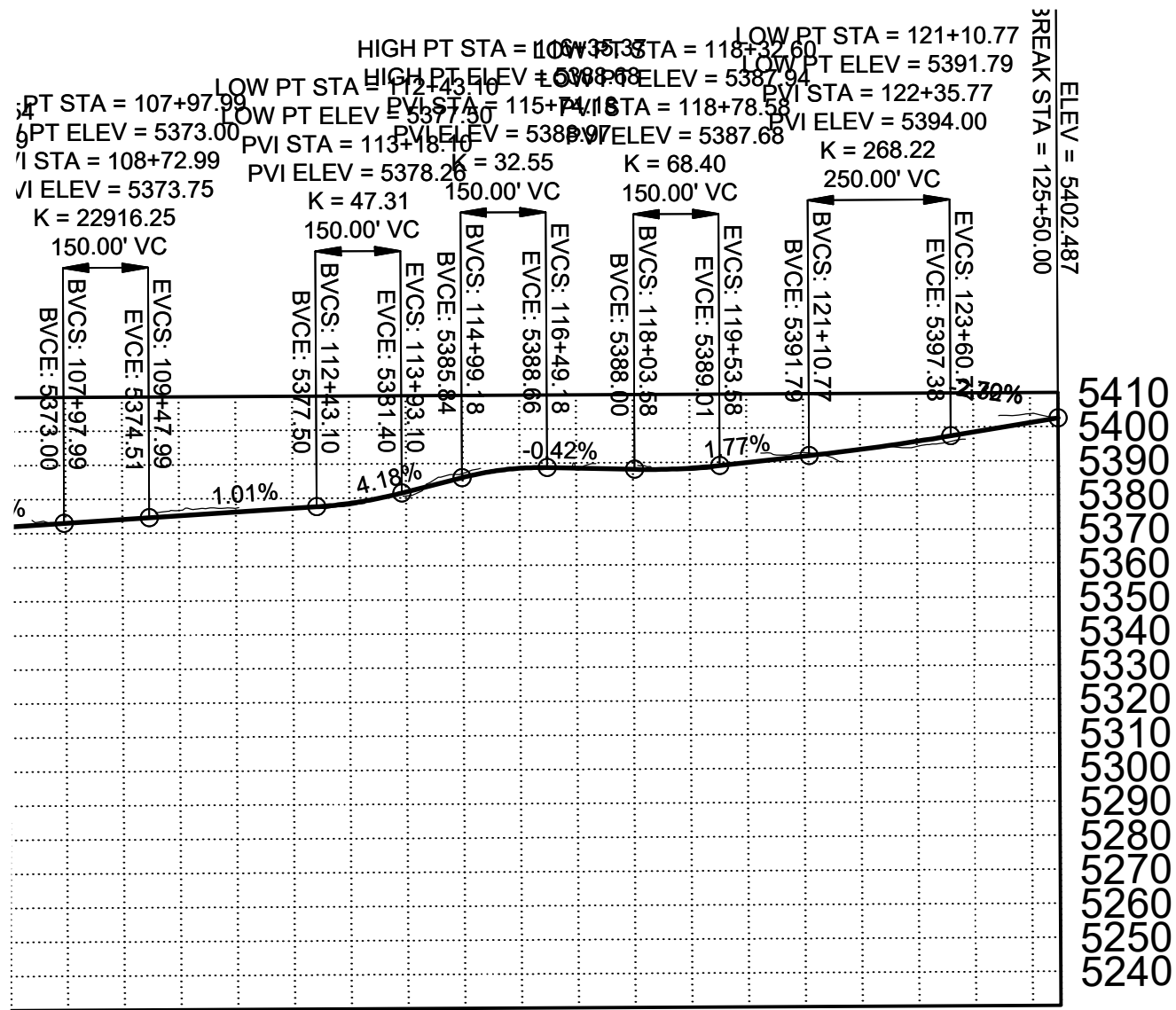
5279.45	5281.75	5283.60	5284.85	5285.08	5284.86	5284.14	5283.42	5282.01	5281.36	5281.87	5281.69	5287.75	5288.47	5292.16	5294.27	5297.13	5298.23	5296.31	5293.67	5294.23	5297.07	5298.16	5299.80	5295.00	5294.61	5294.91	5291.92	5300.04	5297.56	5297.42	5298.56	5301.09	5307.19	5307.55	5309.31	5311.70	5312.49	5312.77	5313.82	5317.34	5315.53	5316.83	5318.75	5322.36	5327.65	5330.84	5333.76	5332.15	5331.50	5331.02	5330.66	5326.46	5323.87	5328.39	5328.75	5333.50	5334.31	5335.03	5334.65	5336.02	5337.55	5340.92	5345.65	5346.83	5352.19	5353.78	5354.22	5357.60	5360.25	5368.23	5368.05	5366.86	5360.13	5363.24	5364.55	5365.01	5361.88	5359.78	5360.17	5361.09	5365.36	5367.30	5370.85	5371.37	5372.96	5373.12	5372.04	5372.67	5374.54	5376.99	5377.14	5375.37	5374.38	5370.00	5373.26	5374.18
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2 ALIGNMENT A-118th St. CL AMOLE MESA TO CENTRAL PROFILE - DESIGN SPEED 40-MPH

H: 1" = 300'
V: 1" = 50'

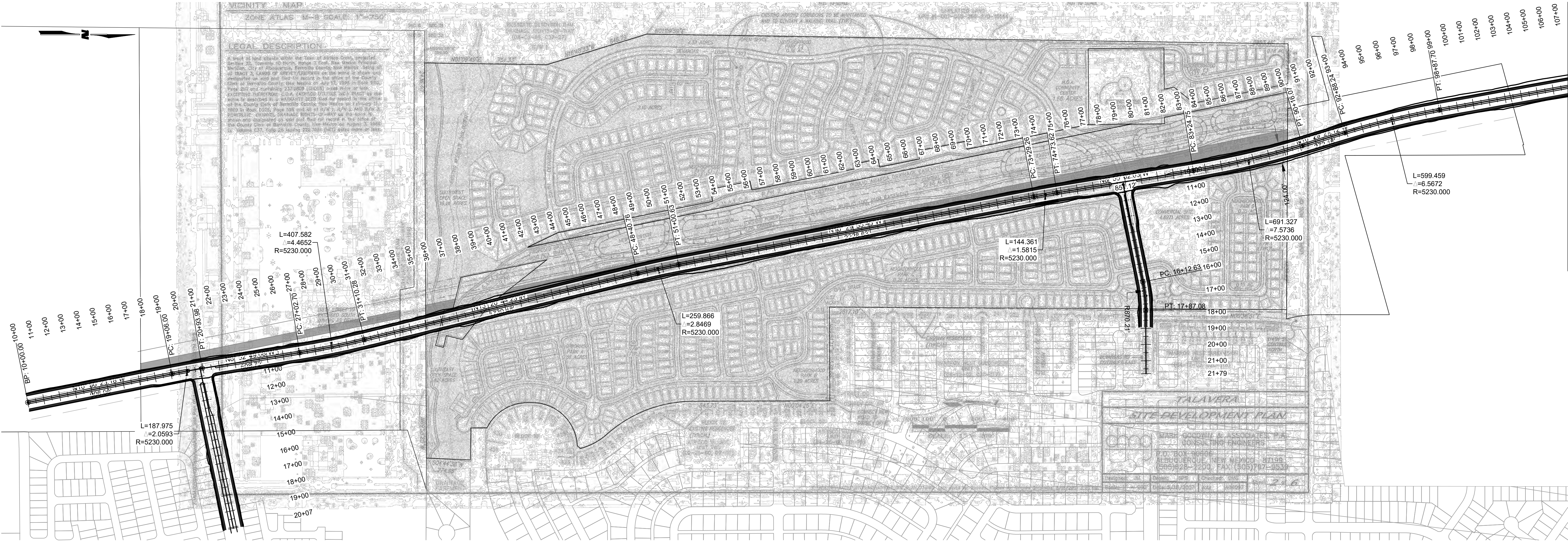


1 ALIGNMENT A-118th St.CL AMOLE MESA TO CENTRAL PLAN - DESIGN SPEED 40-MPH

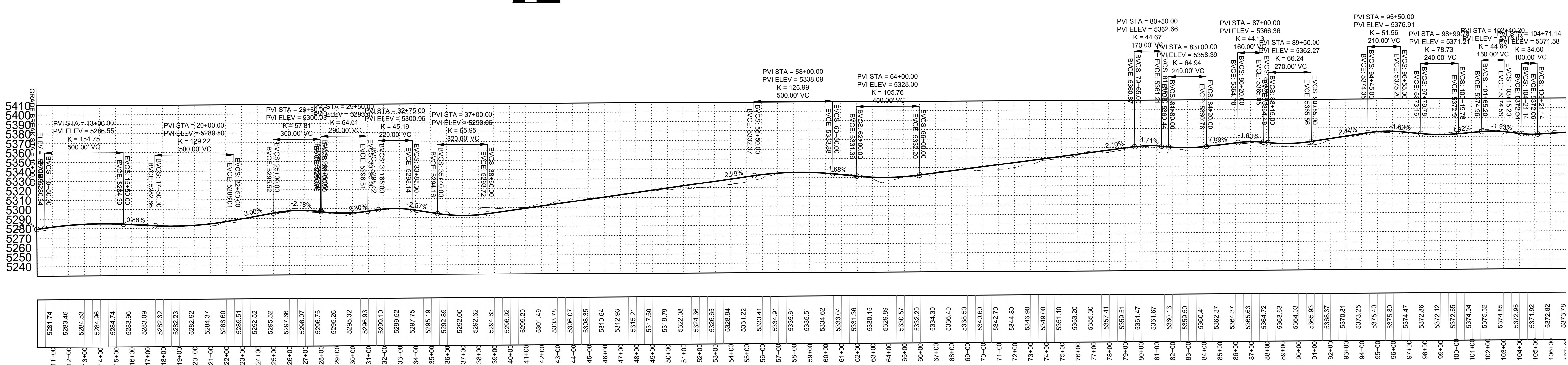


107+00	5373.06
108+00	5374.99
109+00	5376.59
110+00	5377.16
111+00	5377.41
112+00	5377.72
113+00	5378.53
114+00	5379.03
115+00	5379.99
116+00	5380.40
117+00	5380.64
118+00	5381.54
119+00	5382.72
120+00	5382.81
121+00	5384.27
122+00	5387.17
123+00	5403.81
124+00	
125+00	
125+50.00	

2 ALIGNMENT A-118th St. CL AMOLE MESA TO CENTRAL PROFILE - DESIGN SPEED 40-MPH



1 ALIGNMENT B-118th St. CL AMOLE MESA TO CENTRAL PLAN - DESIGN SPEED 40-MPH



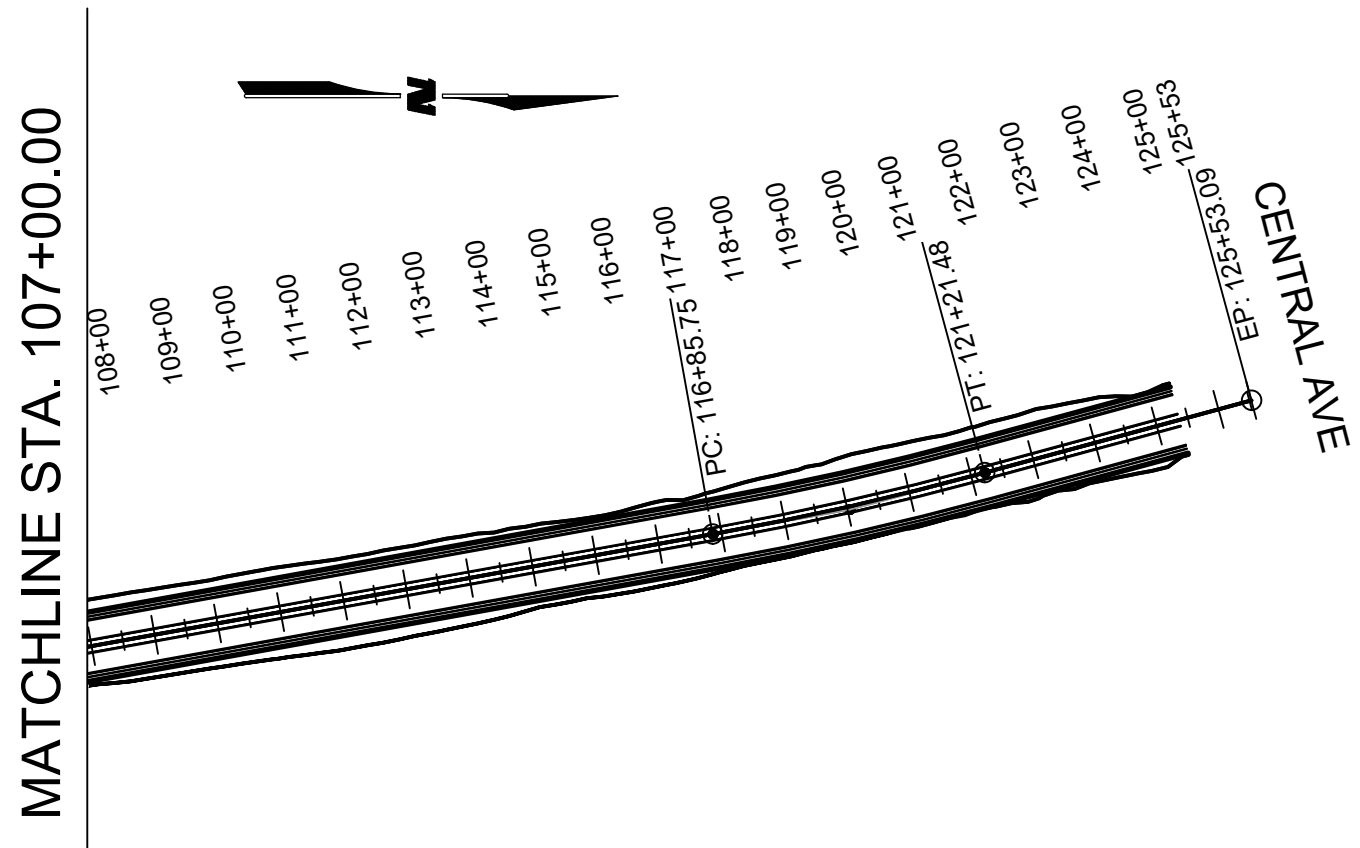
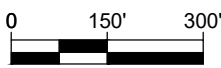
2 ALIGNMENT B-118th St. CL AMOLE MESA TO CENTRAL PROFILE - DESIGN SPEED 40-MPH

H: 1" = 300'
V: 1" = 50'

1

ALIGNMENT B-118th St.CL AMOLE MESA TO CENTRAL PLAN - DESIGN SPEED 40-MPH

SCALE: 1" = 300'

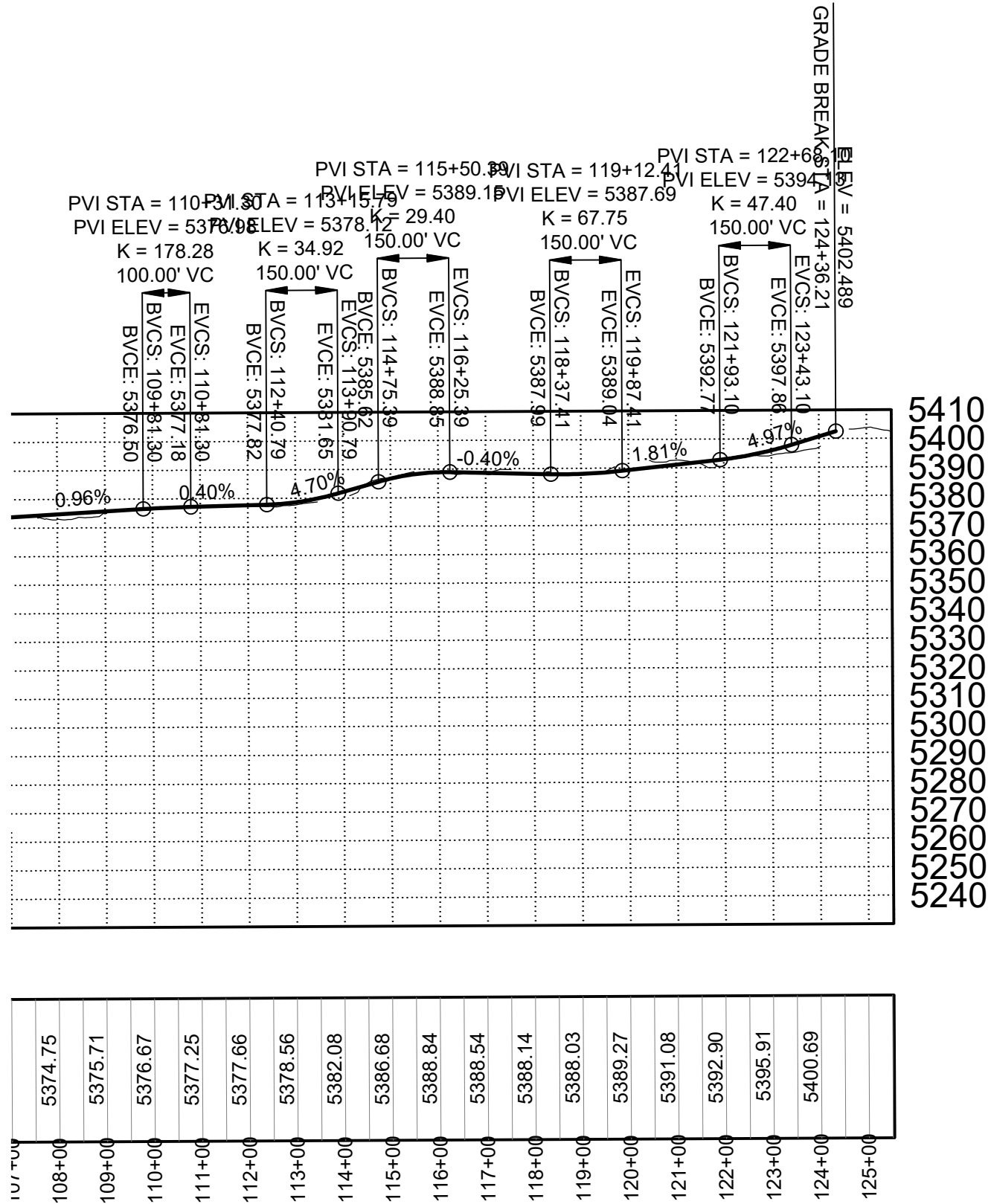


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ALIGNMENT B-118th St. CL AMOLE MESA TO CENTRAL PROFILE - DESIGN SPEED 40-MPH

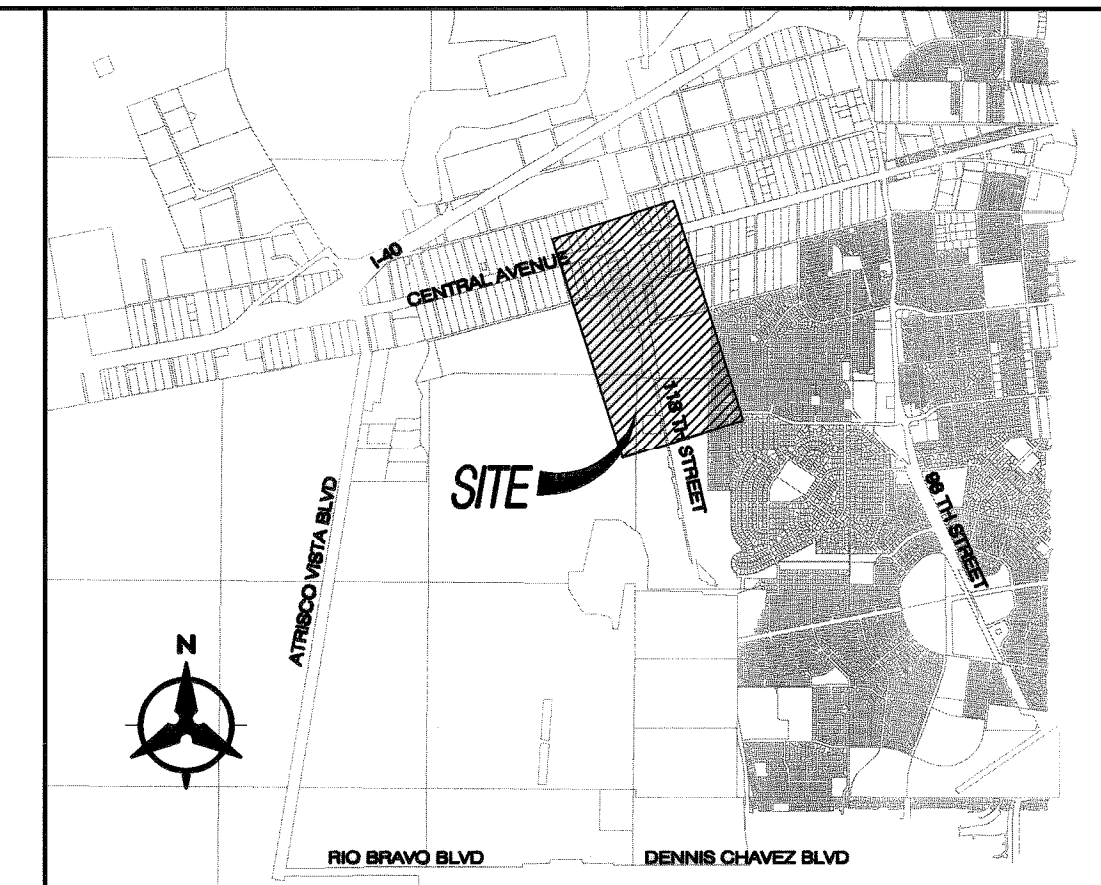
H: 1" = 300'

V: 1" = 50'



Appendix D– Sewer Line As-Builts

CONSTRUCTION PLANS
FOR
118TH STREET NORTH SANITARY SEWER INTERCEPTOR
WESTERN ALBUQUERQUE LAND HOLDINGS (WALH)
ALBUQUERQUE, NEW MEXICO



VICINITY MAP
K7, L7, L8,

NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMITS WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN THE CITY/COUNTY/NMDO RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE COMPLETED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION AS REVISED THROUGH UPDATE #8.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM (260-1990) FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS, SHOULD A CONFLICT EXIST. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. SEVEN (7) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO CONSTRUCTION COORDINATION DIVISION A DETAILED CONSTRUCTION SCHEDULE. TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A BARRICADING PERMIT FROM THE CONSTRUCTION COORDINATION DIVISION. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION COORDINATION ENGINEER (924-3400) PRIOR TO OCCUPYING AN INTERSECTION. REFER TO SECTION 19 OF THE GENERAL CONDITIONS OF THE STANDARD SPECIFICATIONS.
6. ALL WORK EFFECTING ARTERIAL ROADWAYS REQUIRES TWENTY-FOUR HOUR CONSTRUCTION.
7. ALL STREET STOPPING ALTERED OR DESTROYED SHALL BE REPLACED WITH PLASTIC RECTORFLECTORIZED PAVEMENT MARKING BY CONTRACTOR TO THE SAME LOCATION AS WAS EXISTING, OR AS INDICATED BY THIS PLAN SET.
8. CONTRACTOR SHALL NOTIFY THE ENGINEER NOT LESS THAN SEVEN (7) DAYS PRIOR TO STARTING WORK IN ORDER THAT THE CITY SURVEYOR MAY TAKE NECESSARY MEASURES TO INSURE THE PRESERVATION OF SURVEY MONUMENTS. CONTRACTOR SHALL NOT DISTURB PERMANENT SURVEY MONUMENTS WITHOUT THE CONSENT OF THE CITY SURVEYOR AND SHALL NOTIFY THE CITY SURVEYOR AND BEAR THE EXPENSE OF REPLACING ANY THAT MAY BE DISTURBED WITHOUT PERMISSION. REPLACEMENT SHALL BE DONE ONLY BY THE CITY SURVEYOR. WHEN A CHANGE IS MADE IN THE FINISHED ELEVATIONS OF THE PAVEMENT OF ANY ROADWAY IN WHICH A PERMANENT SURVEY MONUMENT IS LOCATED, CONTRACTOR SHALL, AT HIS OWN EXPENSE, ADJUST THE MONUMENT COVER TO THE NEW GRADE UNLESS OTHERWISE SPECIFIED. REFER TO SECTION 4.4 OF THE GENERAL CONDITIONS OF THE STANDARD SPECIFICATIONS.
9. CONTRACTOR SHALL RECORD DATA ON ALL EXISTING AND NEW UTILITY LINES AND ACCESSORIES AS REQUIRED BY ABOBMA FOR THE PREPARATION OF "AS CONSTRUCTED" DRAWINGS. CONTRACTOR SHALL NOT COVER UTILITY LINES AND ACCESSORIES UNTIL ALL DATA HAS BEEN RECORDED.
10. CONTRACTOR SHALL MAINTAIN A GRAFFITI-FREE WORK SITE. CONTRACTOR SHALL PROMPTLY REMOVE ANY GRAFFITI FROM ALL EQUIPMENT, WHETHER PERMANENT OR TEMPORARY.
11. THE CONTRACTOR SHALL COORDINATE WITH THE WATER AUTHORITY SEVEN (7) DAYS IN ADVANCE OF PERFORMING WORK THAT WILL AFFECT THE PUBLIC WATER OR SANITARY SEWER INFRASTRUCTURE. WORK REQUIRING SHUTOFF OF WELL COLLECTORS, TRANSMISSION LINES, OR FACILITIES DESIGNATED AS MASTER PLAN FACILITIES MUST BE COORDINATED WITH THE WATER AUTHORITY 14 DAYS IN ADVANCE OF PERFORMING SUCH WORK. ONLY WATER AUTHORITY CREWS ARE AUTHORIZED TO OPERATE PUBLIC VALVES. SHUTOFF REQUESTS MUST BE MADE ONLINE AT <http://abowma.org/content/view/full/463/129/>.

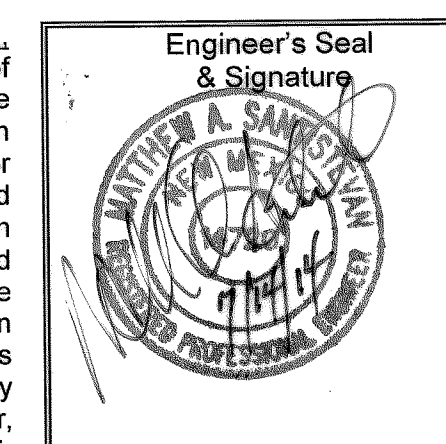
THE FOLLOWING NOTES ALSO APPLY WHEN CHECKED

- ☒ ALL UTILITIES AND UTILITY SERVICE LINES SHALL BE INSTALLED PRIOR TO PAVING.
- ☒ BACKFILL COMPACTION SHALL BE ACCORDING TO SPECIFIED STREET USE.
- ☐ SIDEWALKS AND WHEELCHAIR RAMPS WITHIN THE CURB RETURNS SHALL BE CONSTRUCTED WHEREVER A NEW CURB RETURN IS CONSTRUCTED.
- ☐ IF CURB IS DEPRESSED FOR A DRIVEPAD, THE DRIVEPAD SHALL BE CONSTRUCTED PRIOR TO ACCEPTANCE OF CURB AND GUTTER.
- ☐ ALL STORM DRAINAGE FACILITIES SHALL BE COMPLETED PRIOR TO FINAL ACCEPTANCE.
- ☐ THE REQUESTOR OR DEVELOPER SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ALL CURB AND GUTTER OR SIDEWALK DAMAGED AFTER APPROVAL BY THE CITY ENGINEER OF WORK COMPLETED BY THE CONTRACTOR.

INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	SURVEY CONTROL PLAN
3	OVERALL PROJECT PHASING LAYOUT
4	OVERALL INTERCEPTOR INDEX SHEET
5 - 12	INTERCEPTOR PLAN AND PROFILE
13	MISCELLANEOUS DETAILS
14	BORE-PIT SECTIONS
15	TEMPORARY TRAFFIC CONTROL PLAN

I, Matthew A. Sarinavest of the firm of Bohannan Huston, Inc., a Registered Professional Engineer in the State of New Mexico, do hereby certify, to the best of my knowledge and belief, that the infrastructure installed as shown on these drawings (118th Street North Sanitary Sewer Interceptor) has been inspected by me or by a qualified person under my direct supervision and has been constructed in accordance with the plans and specifications and that the original design intent of the approved plans has been met, except as noted by me on the drawings and as noted on the Certification is based on data obtained on site inspections by me or personnel under my direct supervision and survey information provided by the contractor New Mexico Underground Contractors, Inc. and my surveyor, Steven L. Youtsey, NMPS 7248.



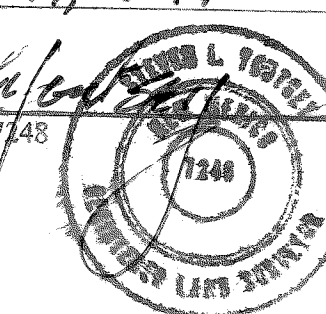
RECORD DRAWING

I, Steven L. Youtsey, NMPS 7248, hereby certify that the ~~above~~ ^{above} data have entered herein are true and correct to the best of my knowledge and belief, as surveyed in the field by me or under my direct supervision.

These data are informational only and are not to be used for design purposes without field verification.

Date of survey: June 17, 2014

Verification: _____
Date of survey: June 17, 2014
Steve L. Youtsey  June 27, 2014
Steven L. Youtsey NMPS 7148 _____ Date: _____



Tim Gnova 11-6-15
ABCWUA RECORD DRAWING APPROVAL DATE

AMAFCA GENERAL NOTES:

1. AMAFCA's FIELD ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY WORK WITHIN THE AMAFCA RIGHT-OF-WAY OR EASEMENT AT B44-2215.
2. NO WORK WILL BE PERFORMED IN THE AMAFCA RIGHT-OF-WAY OR EASEMENT BETWEEN MAY 15 AND OCTOBER 15 WITHOUT WRITTEN PERMISSION FROM AMAFCA.
3. ALL SUBGRADE, BACKFILL AND EMBANKMENT SHALL BE COMPACTED TO 90% (MODIFIED PROCTOR) WITHIN THE AMAFCA RIGHT-OF-WAY OR EASEMENT. TESTING REPORTS SHALL BE PROVIDED TO AMAFCA.
4. CERTIFIED AS-BUILT PLANS SHALL BE SUBMITTED TO AMAFCA FOR THE CONSTRUCTION WITHIN AMAFCA'S RIGHT-OF-WAY.
5. AMAFCA'S FIELD ENGINEER WILL BE NOTIFIED 48 HOURS PRIOR TO FINAL INSPECTION OF ANY FACILITIES WITHIN THE AMAFCA RIGHT-OF-WAY OR EASEMENT.
6. ALL DISTURBED GROUND AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SECTION 1012 NATIVE GRASS SEEDING, AS CURRENTLY UPDATED.
7. ANY EXISTING SURVEY CONTROL MONUMENTS THAT ARE MOVED OR DESTROYED AS A RESULT OF THE CONSTRUCTION SHALL BE REPLACED BY A LICENSED SURVEYOR AT THE OWNER'S EXPENSE.
8. CONTRACTOR SHALL CONTACT AMAFCA FOR A TEMPORARY CONSTRUCTION LICENSE AND PROVIDE PROOF OF APPROPRIATE NEW MEXICO CONTRACTOR'S LICENSE PRIOR TO CONSTRUCTION.

APPROVED FOR CONSTRUCTION WITHIN AMAFCA RIGHT-OF-WAY / EASEMENT:

Lynne M. Mazur 2-11-14
(FOR AMAFCA) DATE

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL ABIDE BY ALL CITY/COUNTY, STATE AND FEDERAL LAWS, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS.
2. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR CONSTRUCTION OBSERVER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
3. ALL ELECTRICAL, TELEPHONE, CABLE TV, GAS AND OTHER UTILITY LINES, CABLES AND APPURTENANCES ENCOUNTERED DURING CONSTRUCTION THAT REQUIRE RELOCATION, SHALL BE COORDINATED WITH THAT UTILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL NECESSARY UTILITY ADJUSTMENTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR DELAYS OR INCONVENIENCES CAUSED BY UTILITY COMPANY WORK CREWS. THE CONTRACTOR MAY BE REQUIRED TO RESCHEDULE HIS ACTIVITIES TO ALLOW UTILITY CREWS TO PERFORM THEIR REQUIRED WORK.
4. DISPOSAL SITE FOR ALL EXCESS EXCAVATION MATERIAL, AND UNSUITABLE MATERIAL SHALL BE OBTAINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS AND APPROVED BY THE CONSTRUCTION OBSERVER. ALL COSTS INCURRED IN OBTAINING A DISPOSAL SITE AND HAUL THEREO SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.

COUNTY OF BERNALILLO (BCPWD) NOTES:

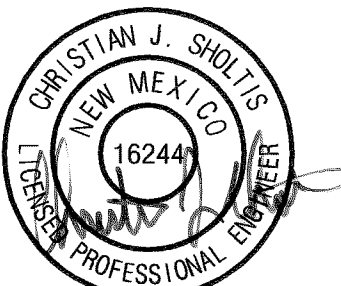
1. ALL CONSTRUCTION PERMITS MUST BE OBTAINED PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL NOTIFY BCPWD (848-1517) AT LEAST 72 HOURS PRIOR TO CONSTRUCTION START .
3. CONTRACTOR SHALL PROVIDE SWPPP TO BCPWD PRIOR TO CONSTRUCTION.

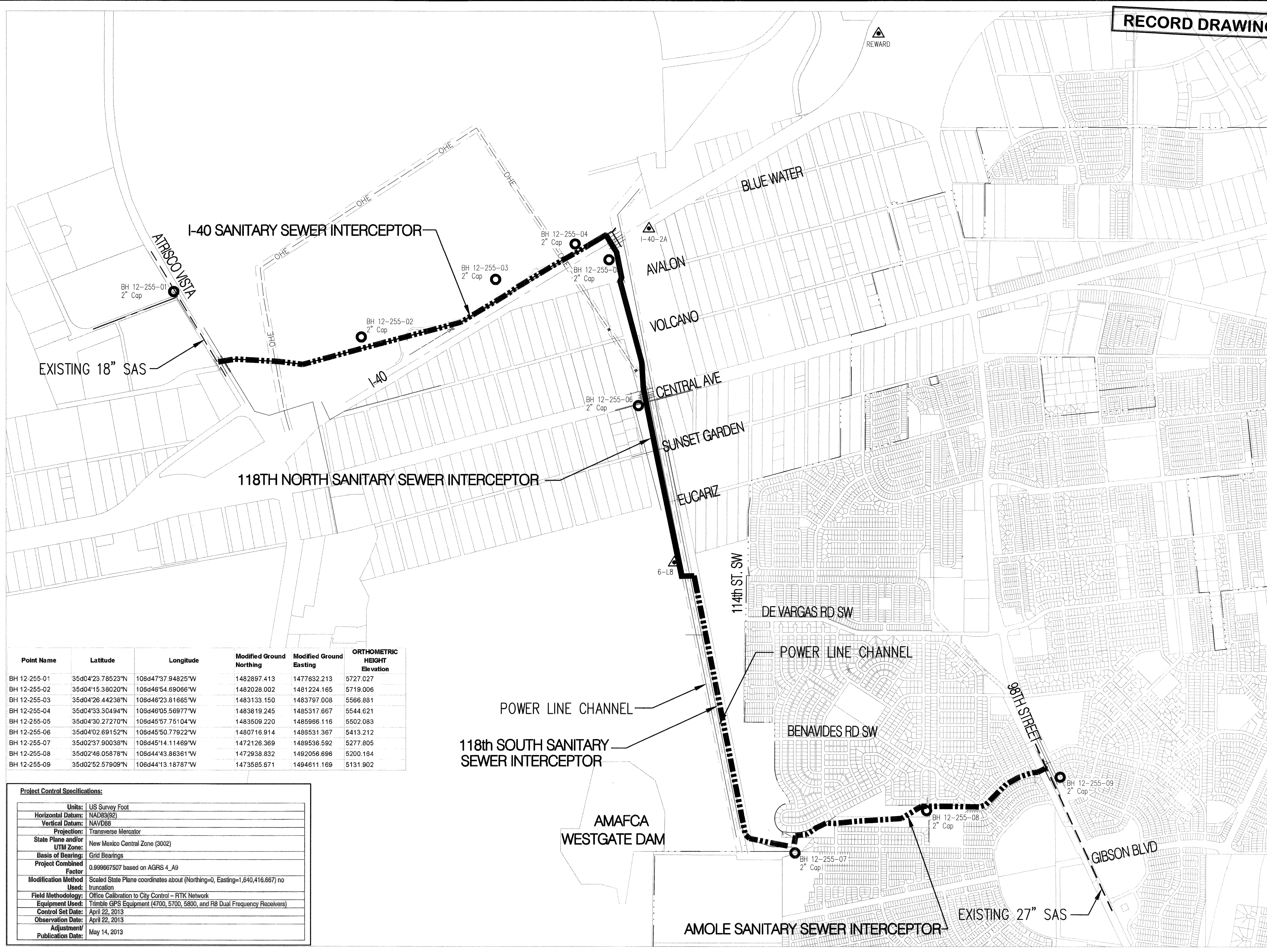
5. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE EXISTING UTILITY LINES WITHIN THE CONSTRUCTION AREA. ANY DAMAGE TO EXISTING FACILITIES CAUSED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AND APPROVED BY THE CONSTRUCTION OBSERVER.
6. CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE PROPERTY AND/OR PROJECT EASEMENT LIMITS. ANY DAMAGE TO ADJACENT PROPERTIES RESULTING FROM THE CONSTRUCTION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. ANY COSTS INCURRED FOR REPAIRS SHALL BE THE COST OF THE CONTRACTOR.
7. OVERNIGHT PARKING OF CONSTRUCTION EQUIPMENT SHALL NOT OBSTRUCT DRIVEWAYS OR DESIGNATED TRAFFIC LANES. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIAL WITHIN THE PUBLIC RIGHT-OF-WAY.
8. THE CONTRACTOR SHALL OBTAIN ALL THE NECESSARY PERMITS FOR THE PROJECT PRIOR TO COMMENCING CONSTRUCTION (I.E. BARRICAADING, SURFACE DISTURBANCE).
9. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE AT HIS EXPENSE ANY AND ALL PROPERTY CORNERS DESTROYED DURING CONSTRUCTION. ALL PROPERTY CORNERS MUST BE RESET BY A REGISTERED LAND SURVEYOR.

10. THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF ALBUQUERQUE, DAND CONSTRUCTION COORDINATION DIVISION, PRIOR TO BEGINNING ANY CONSTRUCTION WORK ON OR ADJACENT TO EXISTING STREETS.
11. ALL BARRICADES AND CONSTRUCTION SIGNING SHALL CONFORM TO APPLICABLE SECTIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), U.S. DEPARTMENT OF TRANSPORTATION, LATEST EDITION.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING CONSTRUCTION SIGNAGE THROUGHOUT THE PROJECT. IF SIGNAGE IS REQUESTED BY THE AECMA, THE CONTRACTOR SHALL VERIFY THE PROPER LOCATION OF ALL BARRICADE AT THE END AND BEGINNING OF EACH DAY.
13. ALL SAWCUT PAVEMENT SHALL HAVE A UNIFORM EDGE AND BE SPRAYED WITH TACK.
14. WHEN ABUTTING NEW CURB AND GUTTER TO EXISTING PAVEMENT, A 1" WIDE SECTION OF EXISTING PAVEMENT ADJACENT TO THE CURB AND GUTTER SHALL BE SAWCUT, REMOVED, AND REPLACED AS PER THE STANDARD SPECIFICATIONS.
15. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DAMAGE TO EXISTING PAVEMENTS, PAVEMENT MARKINGS, CURB & GUTTER, DRIVE PADS, WHEELCHAIR RAMPS, AND SIDEWALK DURING CONSTRUCTION, APART FROM THOSE SECTIONS INDICATED FOR REMOVAL ON THE PLANS AND SHALL REPAIR OR REPLACE PER COA STANDARDS, AT HIS OWN EXPENSE.

16. AN SO 19 PERMIT IS REQUIRED TO PLACE ANY MATERIAL ON OR AROUND A STORM DRAIN INLET IN THE CITY RIGHT-OF-WAY THAT WOULD INTERFERE WITH THE INLET RECEIVING STORM WATER PER THE ENGINEER'S DESIGN. CITY PERSONNEL MAY REMOVE THIS MATERIAL AT ANY TIME WITHOUT NOTICE. THE PREFERRED BMP IS TO REMOVE SEDIMENT/POLLUTANTS ON THE PROPERTY WHERE CONSTRUCTION ACTIVITY IS OCCURRING.
17. ALL EXCAVATION, TRENCHING, AND SHORING ACTIVITIES MUST BE CARRIED-OUT IN ACCORDANCE WITH OSHA 29 CFR 1926.650 SUBPART P.
18. GRADING/EARTHWORK IS INCIDENTAL TO TRENCHING BACKFILL AND COMPACTION.
19. ALL DISTURBED AREA SHALL BE DRILL SEEDED PER SEC. 1012, NATIVE GRASS SEEDING.
20. FINISHED GROUND SURFACE ELEVATIONS SHALL BE $\pm 2'$ OF EXISTING GROUND SURFACE ELEVATIONS UNLESS OTHERWISE NOTED. EXISTING DRAINAGE PATTERNS SHALL NOT BE ALTERED.

PWC0 # 20140008

REV.	SHEETS	CITY ENGINEER	DATE	USER DEPARTMENT	DATE	USER DEPARTMENT	DATE
ENGINEERS STAMP & SIGNATURE			APPROVALS	ENGINEER	DATE	*****	
			DRC Chairman			APPROVED FOR CONSTRUCTION  03/20/14 ABC-WUA Date	
			Transportation				
			Water/Wastewater		5/6/14		
			Hydrology				
			Parks				
			Const. Coord.				
			BCPWD		3/2/14		
City Project No.						Sheet Of	
						1 15	

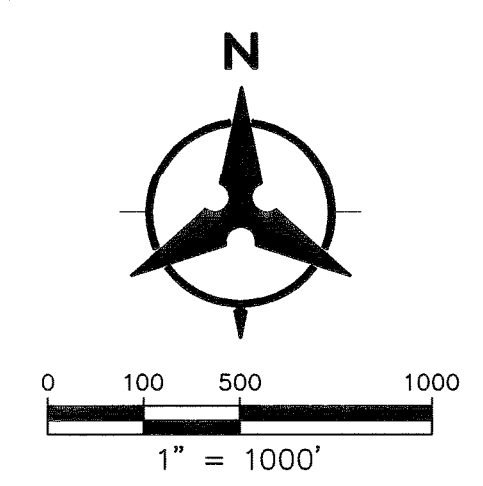


Point Name	Latitude	Longitude	Modified Ground Northing	Modified Ground Easting	ORTHOMETRIC HEIGHT Elevation
BH 12-255-01	35d04'23.78523"N	106d47'37.94825"W	1482897.413	1477832.213	5727.027
BH 12-255-02	35d04'15.38020"N	106d48'54.89066"W	1482028.002	1481224.165	5719.006
BH 12-255-03	35d04'26.44238"N	106d46'23.81665"W	1483133.150	1483797.008	5566.881
BH 12-255-04	35d04'33.30494"N	106d46'05.56977"W	1483819.245	1485317.667	5544.621
BH 12-255-05	35d04'30.27270"N	106d45'57.75104"W	1483509.220	1485966.116	5502.083
BH 12-255-06	35d04'02.69152"N	106d45'50.77922"W	1480716.914	1486531.367	5413.212
BH 12-255-07	35d02'37.90038"N	106d45'14.11469"W	1472126.369	1489536.592	5277.805
BH 12-255-08	35d02'46.05878"N	106d44'43.86361"W	1472938.832	1492056.696	5200.184
BH 12-255-09	35d02'52.57909"N	106d44'13.18787"W	1473585.871	1494611.169	5131.902

Project Control Specifications:	
Units:	US Survey Foot
Horizontal Datum:	NAD83(92)
Vertical Datum:	NAVD83
Projection:	Transverse Mercator
State Plane and/or UTM Zone:	New Mexico Central Zone (3002)
Basis of Bearing:	Grid Bearings
Project Combined Factor:	0.999967507 based on AGRS 4_A9
Modification Method Used:	Scaled State Plane coordinates about (Northing=0, Easting=1,640,416.667) no truncation
Field Methodology:	Office Calibration to City Control - RTK Network
Equipment Used:	Trimble GPS Equipment (4700, 5700, 5800, and R8 Dual Frequency Receivers)
Control Set Date:	April 22, 2013
Observation Date:	April 22, 2013
Adjustment/ Publication Date:	May 14, 2013

NOTE:
For more detailed information refer to "Control Surveying Report for WALH SAS", dated May 14, 2013. (Prepared by: Bohannon-Huston Inc.)

RECORD DRAWINGS



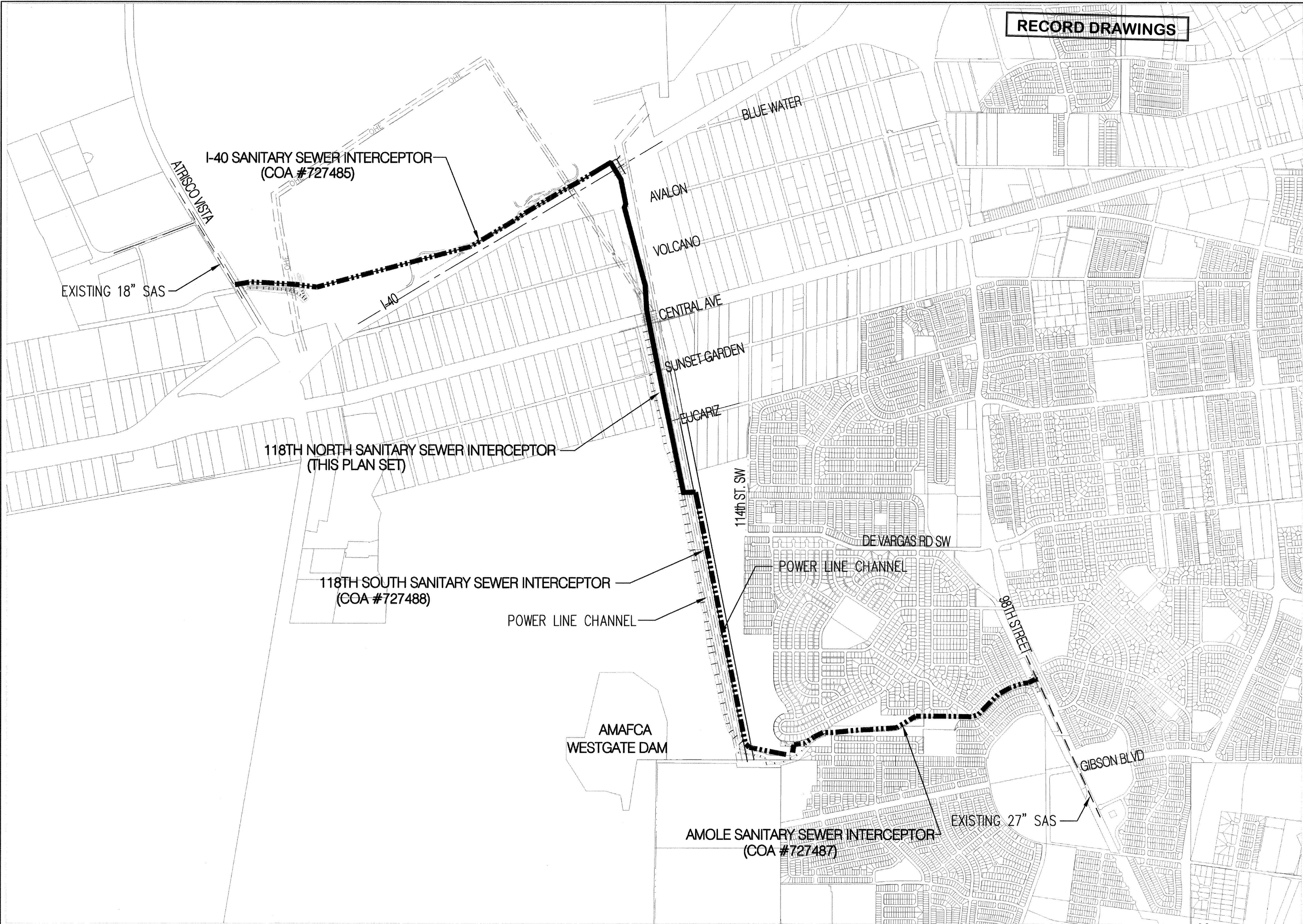
AS-BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL	
CONTRACTOR	MM Survey	USC&GS BRASS TABLET STAMPED "REWARD"		NO.	BY		
DATE	7/14	GEOGRAPHIC POSITION (NAD 83)		DATE			
INSPECTOR	MM Survey	N.M. STATE PLANE COORDINATES (CENTRAL ZONE)				REVISIONS	
DATE	7/14	X = 1,491,190.819 Y = 1,487,364.063					
VERIFICATION BY	MM Survey	GROUND-TO-GRID FACTOR = 0.999675005				DESIGN	
DATE	7/14	Δα = -00°17'12.26"					
MICROFILM INFORMATION		RECORDED BY		DATE: 5/2013		Designed By: CJS	
		NO.		DATE: 5/2013		Drawn By: BJC	
				DATE: 5/2013		Checked By: CJS	

Bohannon Huston

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

118TH NORTH OFF-SITE SANITARY SEWER
SURVEY CONTROL

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.
City Project No.	Zone Map No.	Sheet	Of	
727486	L7,L8,M7	2	15	



RECORD DRAWINGS

GENERAL NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
2. ALL CURVE DATA AND DIMENSIONS ARE CALCULATED FROM CENTERLINE OF PIPE OR MANHOLE. ALL SAS & SD SLOPES ARE CALCULATED TO TRUE PIPE DIMENSIONS FROM INVERT TO INVERT. (PAY ITEMS ARE SHOWN IN PARENTHESES)
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11. CONTRACTOR HAS THE OPTION OF INSTALLING PIPE UTILIZING DIRECTIONAL DRILLING, SEE SHEET 4 FOR PIPE MATERIALS.

LEGEND

- | | |
|-----|---------------------------------|
| --- | PROPERTY LINE |
| --- | NEW EASEMENT |
| --- | SAS |
| --- | EXISTING SANITARY SEWER |
| --- | EXISTING WATER LINE |
| --- | EXISTING STORM DRAIN |
| ■ | EXISTING WATER METER |
| ⊗ | EXISTING CAP |
| ⊗ | EXISTING VALVE |
| ⊗ | EXISTING FIRE HYDRANT |
| ⊗ | EXISTING SANITARY SEWER MANHOLE |
| ⊗ | EXISTING STORM DRAIN |
| --- | PROPOSED SANITARY SEWER |
| --- | PROPOSED WATER LINE |
| --- | PROPOSED VALVE |
| --- | PROPOSED HYDRANT |
| --- | PROPOSED CAP |
| --- | PROPOSED WATER METER |
| --- | PROPOSED SANITARY SEWER MANHOLE |
| --- | PROPOSED STORM DRAIN |

AS-BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL		REVISIONS		DESIGN	
CONTRACTOR	DATE	USC&GS BRASS TABLE STAMPED "REWARD"	DATE	NO.	BY			No.	Date	By	Date
INSPECTOR	DATE	GEOGRAPHIC POSITION (NAD 83)	DATE								
ACCEPTANCE BY	DATE	N.M. STATE PLANE COORDINATES (CENTRAL ZONE)									
DRAWINGS	DATE	X = 1,491,190.819 Y = 1,487,364.063									
REVISIONS	DATE	GROUND-TO-GRID FACTOR = 0.999875005									
MICROFILM INFORMATION		Δα = -00°17'12.26"									
		NAVD 1988 ELEVATION = 5319.691									

Bohannon & Huston



CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

118TH NORTH SANITARY SEWER INTERCEPTOR
OVERALL PROJECT PHASING LAYOUT

Design Review Committee	City Engineer Approval	Last Design Update		Mo./Day/Yr.	Mo./Day/Yr.
City Project No.	727486	Zone Map No.	L7,L8,M7	Sheet	3 Of 15

RECORD DRAWINGS

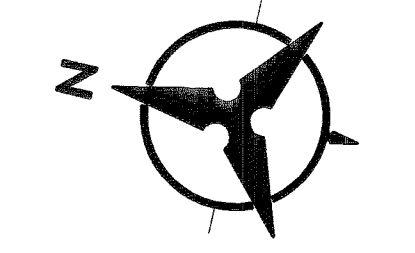


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 - CONTRACTOR HAS THE OPTION OF INSTALLING PIPE UTILIZING DIRECTIONAL DRILLING. SEE SHEET 4 FOR PIPE MATERIALS.

LEGEND

—	PROPERTY LINE
—	NEW EASEMENT
SAS	EXISTING SANITARY SEWER
W	EXISTING WATER LINE
—	EXISTING STORM DRAIN
■	EXISTING WATER METER
⊗	EXISTING CAP
⊗	EXISTING VALVE
⊗	EXISTING FIRE HYDRANT
⊗	EXISTING SANITARY SEWER MANHOLE
⊗	EXISTING STORM DRAIN
SAS	PROPOSED SANITARY SEWER
W	PROPOSED WATER LINE
—	PROPOSED VALVE
⊗	PROPOSED HYDRANT
⊗	PROPOSED CAP
■	PROPOSED WATER METER
●	PROPOSED SANITARY SEWER MANHOLE
⊗	PROPOSED STORM DRAIN
■	EXISTING POWERLINE CHANNEL LIMITS

- PIPE MATERIALS:**
- ASTM F679 PS115 PVC
 - ALL PIPE ON ABCWUA APPROVED PRODUCT LIST



300 150 0 300
1" = 300'

AS-BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL	
CONTRACTOR	DATE	USC&GS BRASS TABLET STAMPED "REWARD"	DATE	NO.	BY		
INSPECTOR	DATE	GEOGRAPHIC POSITION (NAD 83)	DATE				
FIELD	DATE	N.M. STATE PLANE COORDINATES (CENTRAL ZONE)	DATE			REVISIONS	
VERIFICATION BY	DATE	X = 1,491,190.819 Y = 1,487,364.063	DATE				
CONTRACTOR	DATE	GROUND-TO-GRID FACTOR = 0.999675005	DATE			No.	Date
FIELD	DATE	Δm = -00'17"12.26"	DATE				
VERIFICATION BY	DATE	NAVD 1988 ELEVATION = 5319.691	DATE			Designed By: CJS	DATE: 5/2013
CONTRACTOR	DATE		DATE			Drawn By: BJC	DATE: 5/2013
FIELD	DATE		DATE			Checked By: CJS	DATE: 5/2013

Bohannon & Huston

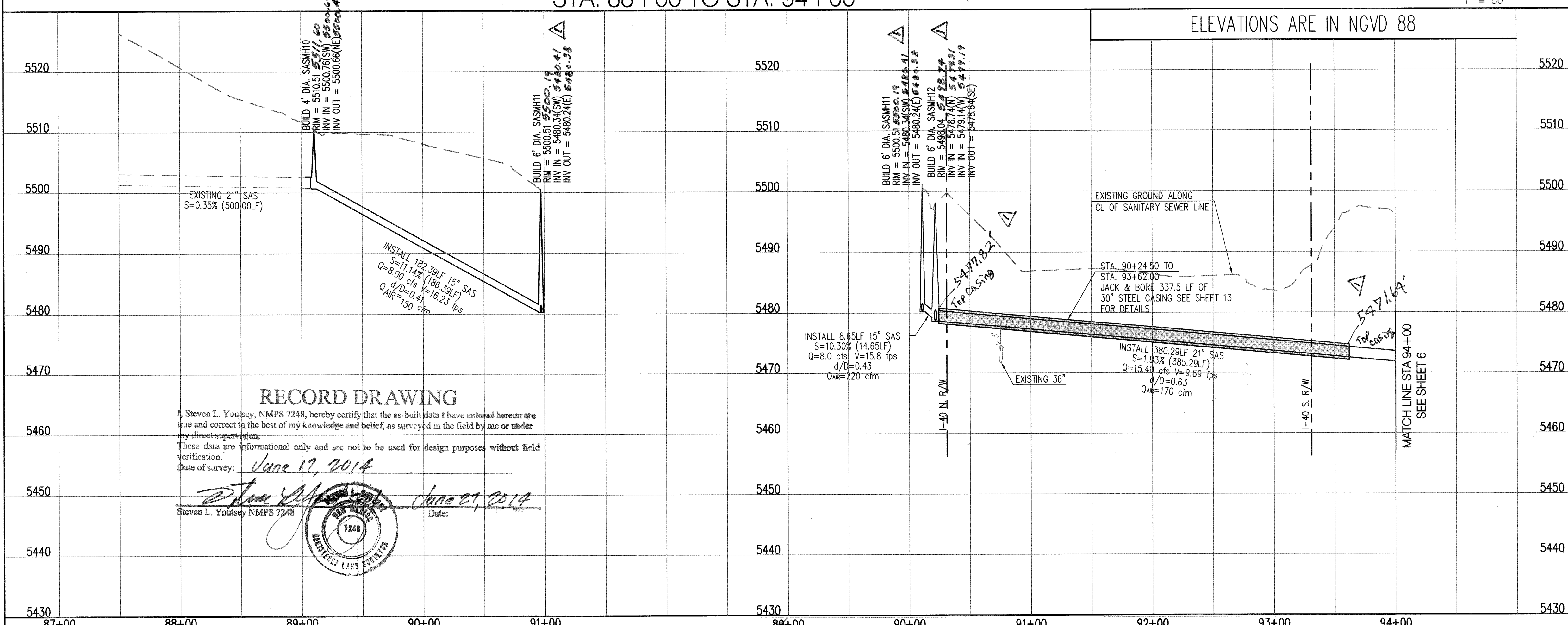
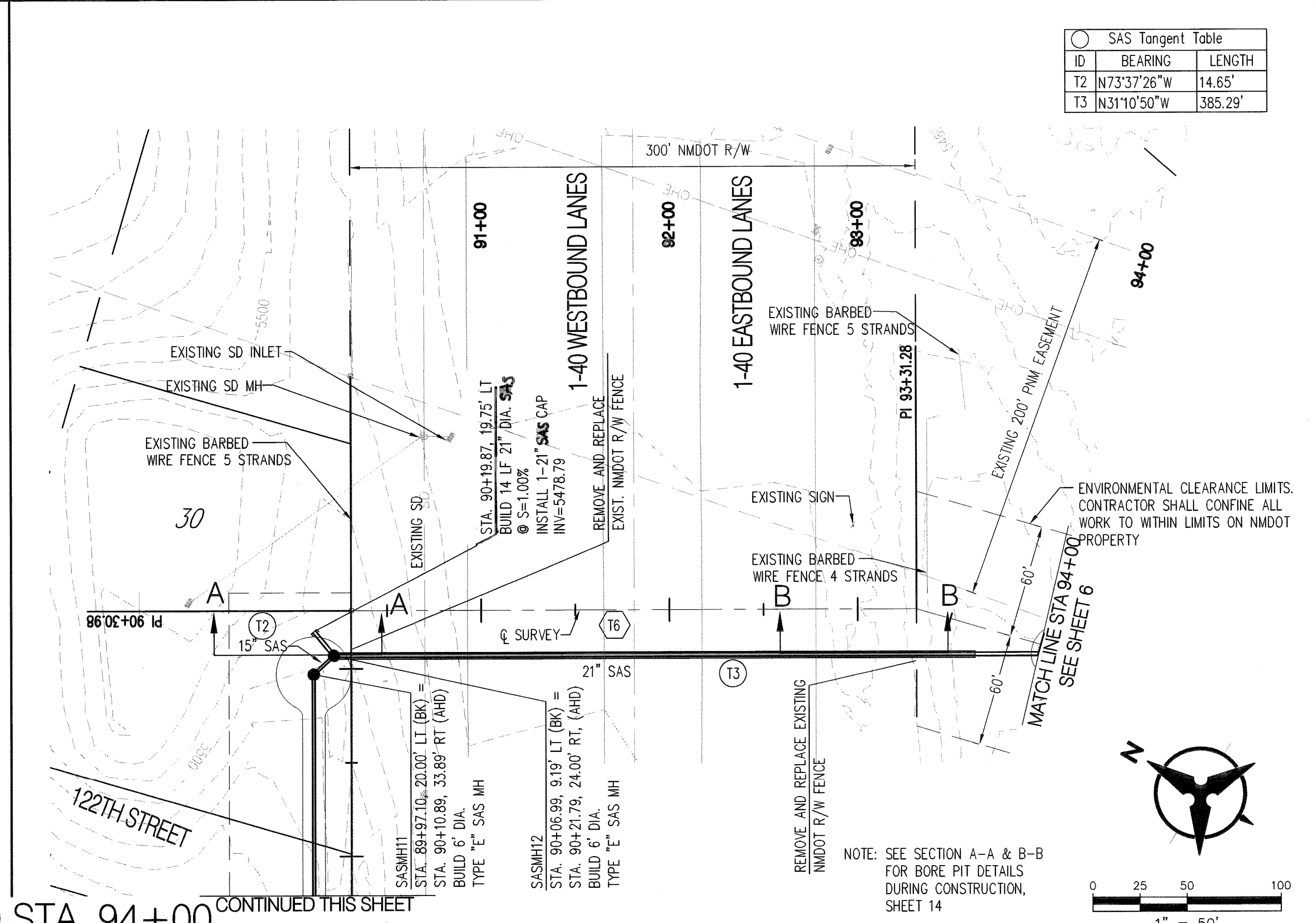
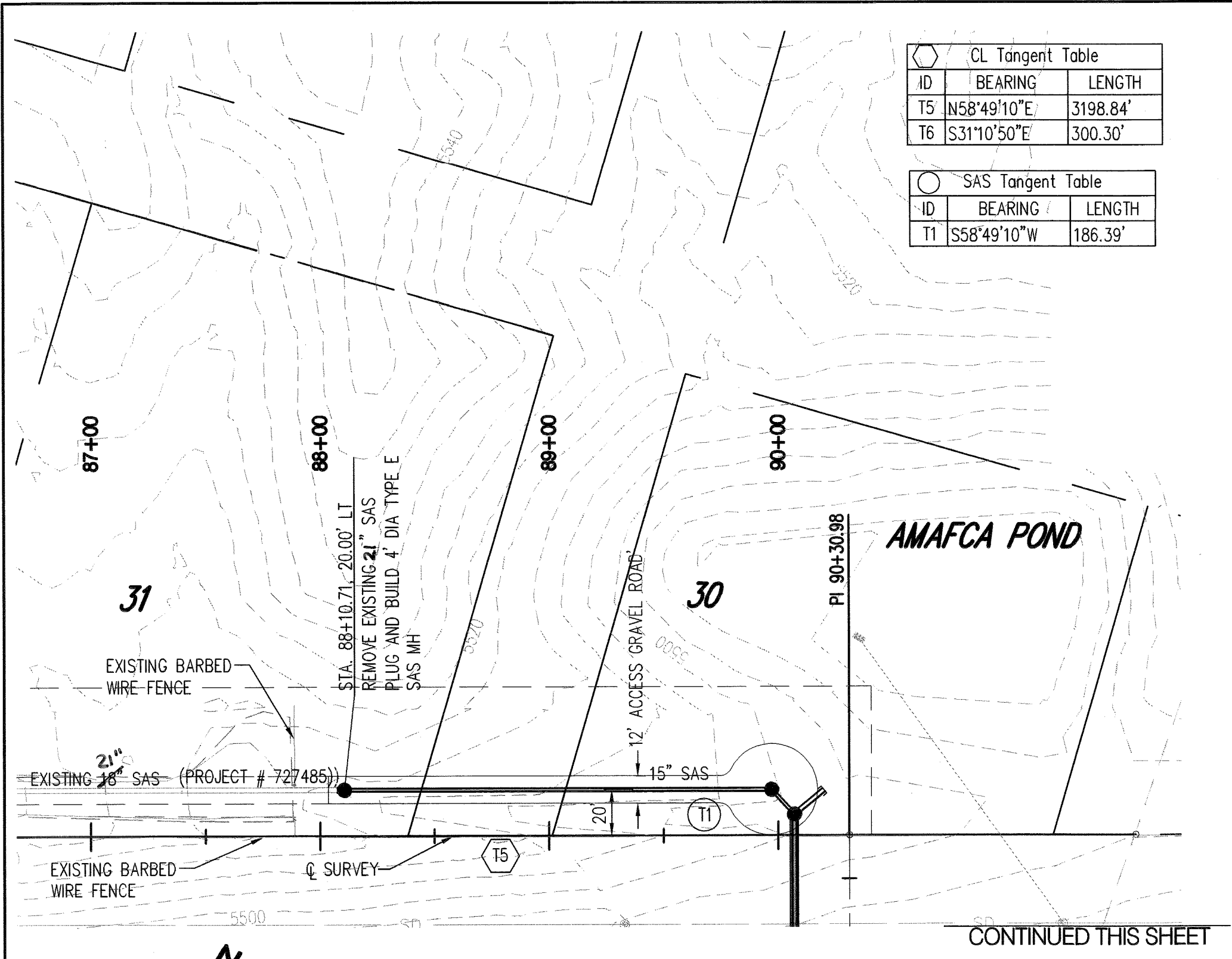


CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

118TH NORTH SANITARY SEWER INTERCEPTOR
OVERALL INTERCEPTOR SHEET INDEX

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.
City Project No.	Zone Map No.	Sheet	Of	
727486	L7,L8,M7	4	15	

RECORD DRAWINGS



RECORD DRAWING

I, Steven L. Youlsey, NMPS 7248, hereby certify that the as-built data I have entered herein are true and correct to the best of my knowledge and belief, as surveyed in the field by me or under my direct supervision.

These data are informational only and are not to be used for design purposes without field verification.

Date of survey: June 17, 2014

Steven L. Youlsey NMPS 7248

Date: June 27, 2014

- GENERAL NOTES**
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- LEGEND**
- DOUBLE WATER METER
 - SINGLE WATER METER
 - WATER LINE SHUTOFF VALVE
 - WATER LINE TEE
 - SAS LATERAL
 - SAS MANHOLE
 - STORM DRAIN MANHOLE
 - STORM DRAIN INLET
 - PROPOSED FIRE HYDRANT
 - EXISTING WATER VALVE

AS-BUILT LOCATION OF MANHOLES & VALVES

VALVE / MH	NORTHING	EASTING
MH 10	1483381.99	1485722.90
11	1483391.10	1485900.63
12	1483392.90	1485911.01

NOTE: TO BE COMPLETED BY CONTRACTOR PRIOR TO ACCEPTANCE

Bohannon & Huston

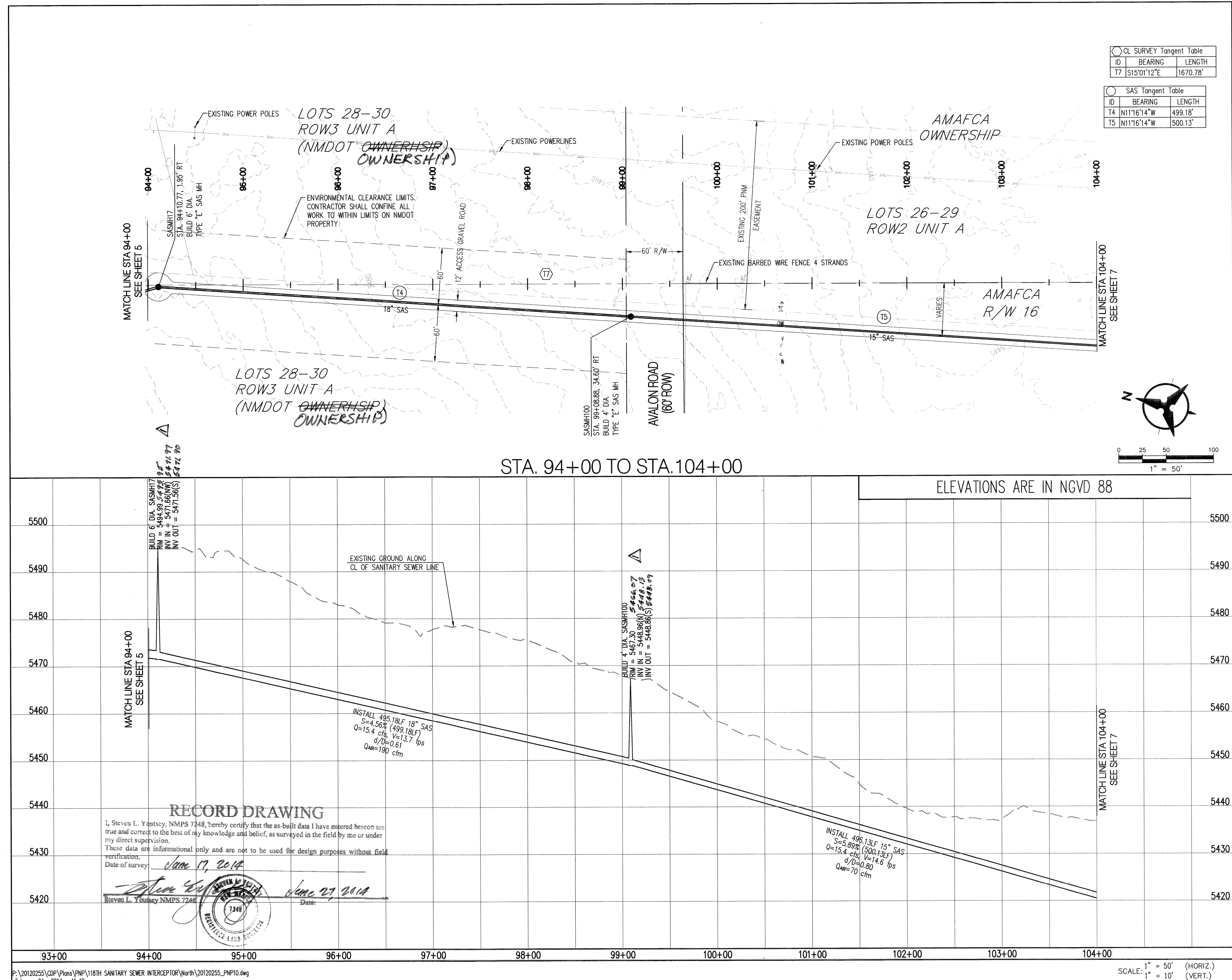
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

118TH NORTH STREET SEWER INTERCEPTOR
PLAN AND PROFILE
STA. 88+00 TO STA. 94+00

Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
727486	L7, L8, M7	5	15

RECORD DRAWINGS



CL SURVEY Tangent Table

ID	BEARING	LENGTH
T7	S15°01'12"E	1670.78'

SAS Tangent Table

ID	BEARING	LENGTH
T4	N11°16'14"W	499.18'
T5	N11°16'14"W	500.13'

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- DOUBLE WATER METER
 - SINGLE WATER METER
 - WATER LINE SHUTOFF VALVE
 - WATER LINE TEE
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 - SAS MANHOLE
 - STORM DRAIN MANHOLE
 - STORM DRAIN INLET
 - PROPOSED FIRE HYDRANT
 - EXISTING WATER VALVE

AS-BUILT LOCATION OF MANHOLES & VALVES

VALVE / MH	NORTHING	EASTING
MH 17	1483657.50	1486111.11
100	1483142.91	1486214.39

Bohannon & Huston

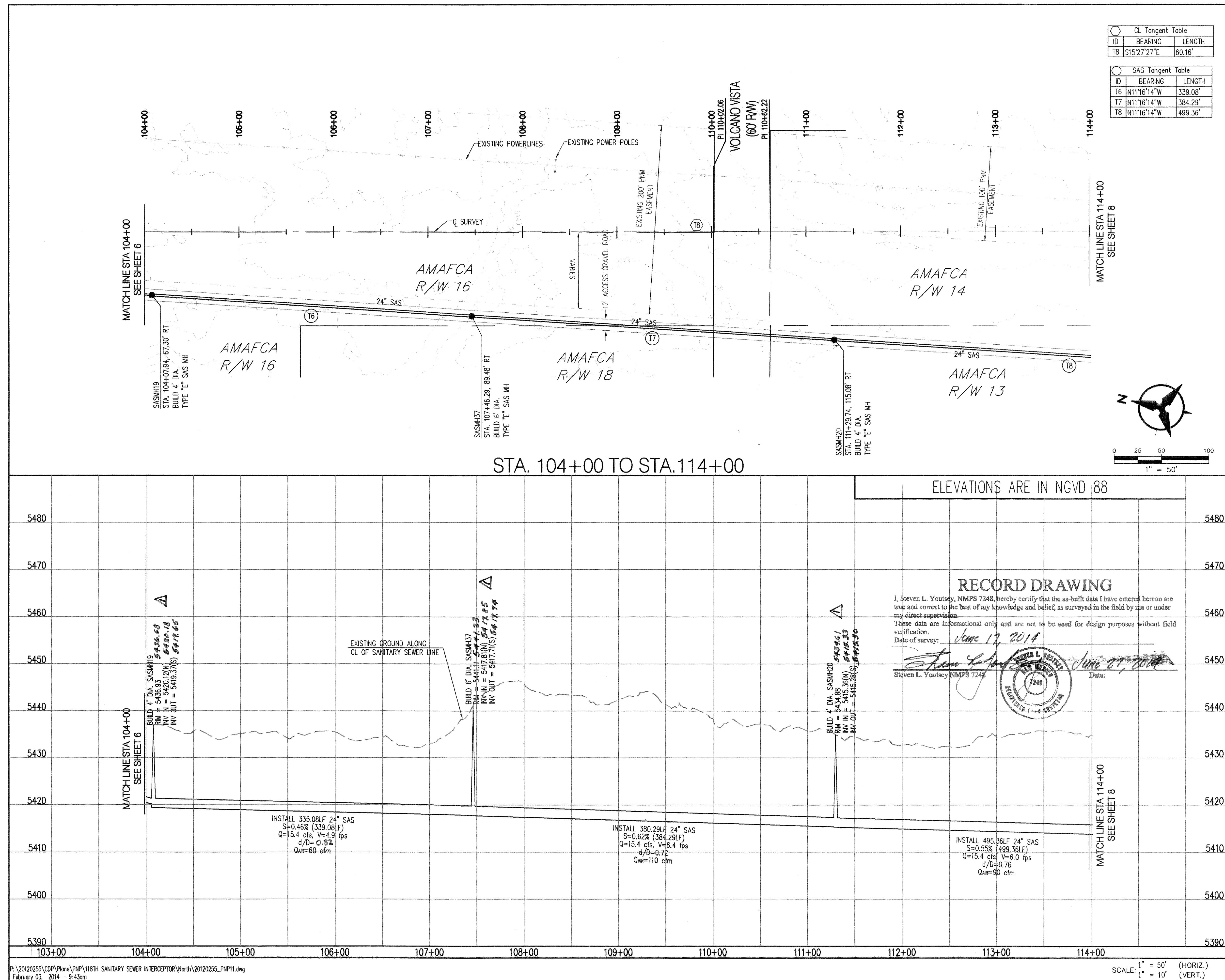
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

118TH NORTH STREET SANITARY SEWER INTERCEPTOR
PLAN AND PROFILE
STA. 94+00 TO STA. 104+00

Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.

AS-BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL	
CONTRACTOR	DATE	US&GS	BRASS	TABLET	STAMPED	DATE	BY
MM Surveys	6/17/14					6/17/14	MM Surveys
INSPECTOR'S	DATE	GEOGRAPHIC POSITION (NAD 83)		N.M. STATE PLANE COORDINATES (CENTRAL ZONE)		MICRO-FILM INFORMATION	
MM Surveys	6/17/14	X = 1,491,190.819 Y = 1,487,364.063				RECORDED BY	
FIELD	DATE	GROUND-TO-GRID FACTOR = 0.999675005				NO.	
MM Surveys	6/17/14	Δx = -0017.1226"				ELEVATION = 5319.691	
VERIFIED BY	DATE						
MM Surveys	6/17/14						

RECORD DRAWINGS



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LEGEND

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- WATER LINE SHUTOFF VALVE
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- SAS LATERAL
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- PROPOSED FIRE HYDRANT
- EXISTING WATER VALVE

***AS-BUILT* LOCATION OF MANHOLES & VALVES**

VALVE / MH	NORTHING	EASTING
MH 19	1482676.33	1486307.32
37	1482346.97	1486378.29
20	1481966.85	1486449.46

NOTE: TO BE COMPLETED BY CONTRACTOR PRIOR TO ACCEPTANCE

Bohannon & Huston

**CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT**

118TH NORTH STREET SANITARY SEWER INTERCEPTOR
PLAN AND PROFILE
STA. 104+00 TO STA. 114+00

Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.

City Project No. **727486** Zone Map No. **L7, L8, M7** Sheet **7** Of **15**

AS-BUILT INFORMATION

CONTRACTOR	DATE
NM Surveys	7/14

SURVEY INFORMATION

NO.	BY	DATE
1	NM Surveys	6-17-14

ENGINEER'S SEAL

STEVEN L. YOUTSEY
NMPS 7248
2-5-14

REVISIONS

No.	Date	By	Remarks

Designed By: CJS
Drawn By: BJC
Checked By: CJS

DATE: 04/2013
DATE: 04/2013
DATE: 4/2013

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LEGEND

- | | |
|---|--------------------------|
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|  | SINGLE WATER METER |
|  | WATER LINE SHUTOFF VALVE |
|  | WATER LINE TEE |
|  | SAS LATERAL |
|  | SAS MANHOLE |
|  | STORM DRAIN MANHOLE |
|  | STORM DRAIN INLET |
|  | PROPOSED FIRE HYDRANT |
|  | EXISTING WATER VALVE |

"AS-BUILT" LOCATION OF MANHOLES & VALVES

VALVE / MH	NORTHING	EASTING
MN 21	1481479.48	1486545.96
38	1480987.59	1486644.02

NOTE: TO BE COMPLETED BY CONTRACTOR PRIOR TO ACCEPTANCE

Bohannon ▲ Huston



CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

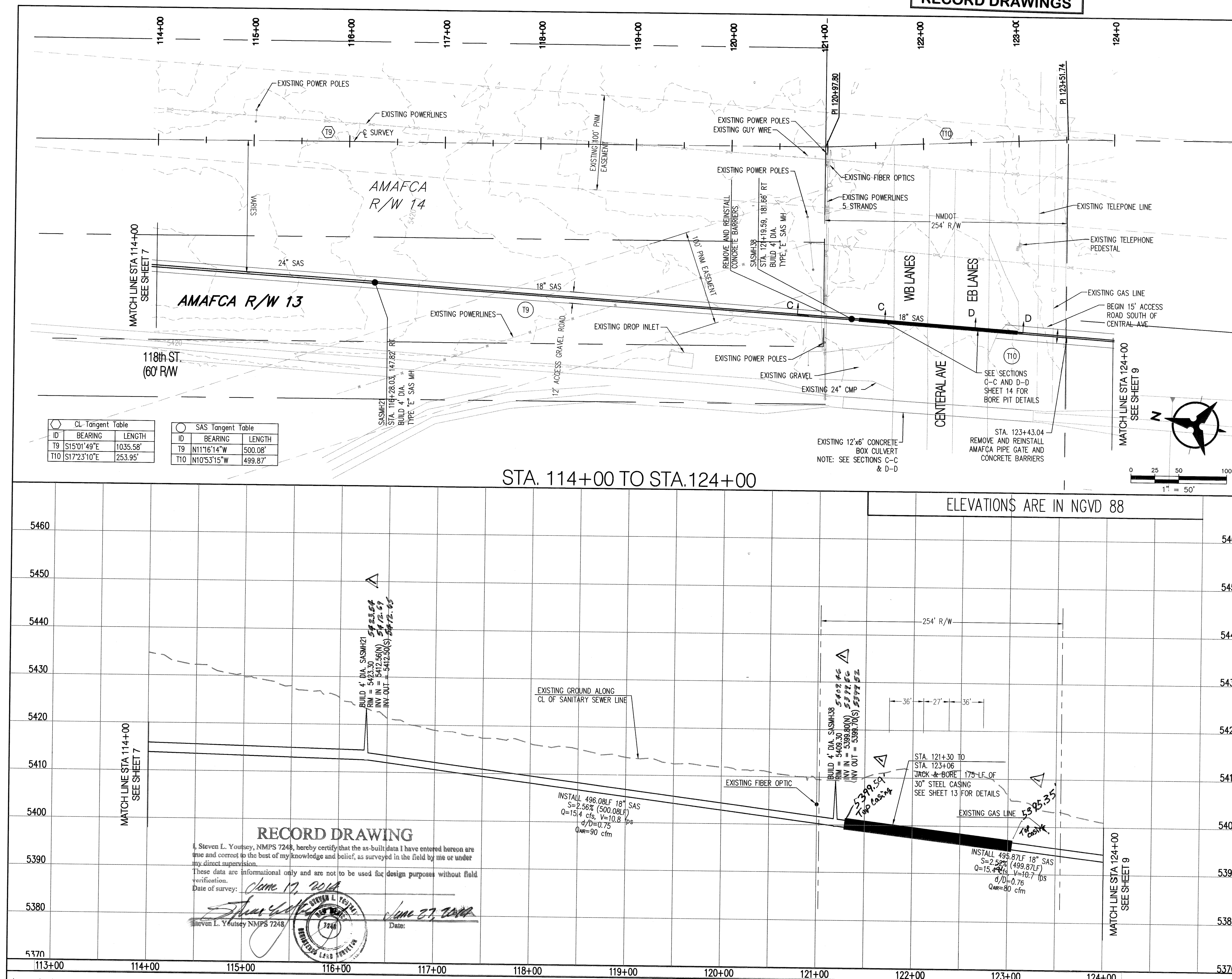
118TH NORTH STREET SANITARY SEWER INTERCEPTOR
PLAN AND PROFILE
STA. 114+00 TO STA. 124+00

0	Design Review Committee	City Engineer Approval
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	City Project No.
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Zone Map No.
L7, L8, M7

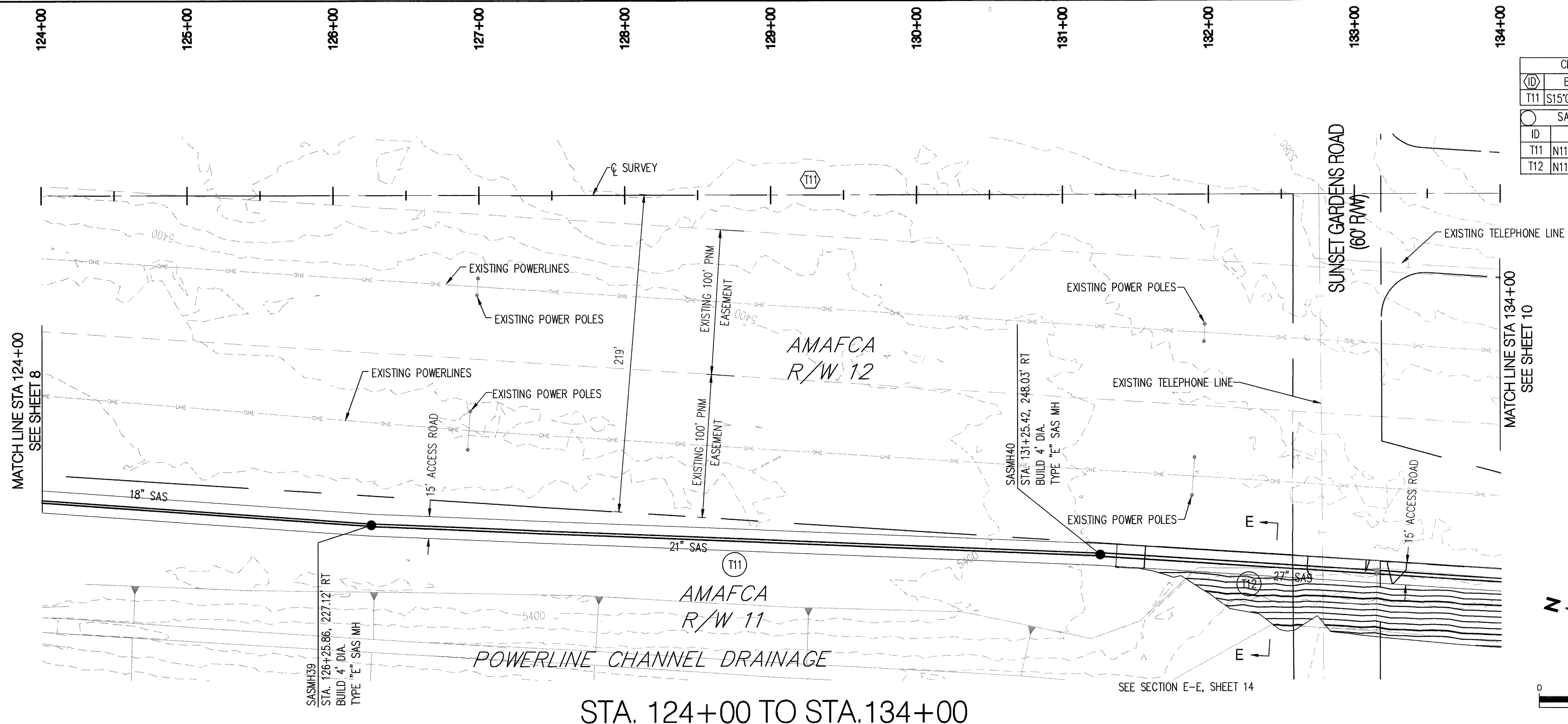
Sheet	Of
8	15



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February 25, 2014 - 4:56pm

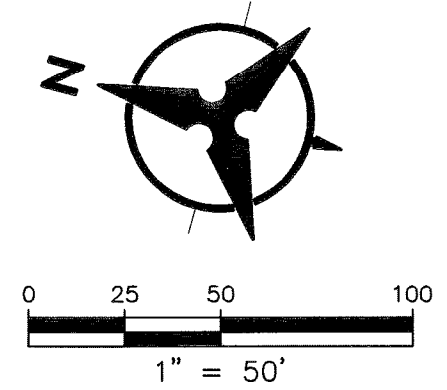
SCALE: $1'' = 50'$ (HORIZ.)
 $1'' = 10'$ (VERT.)

RECORD DRAWINGS



CL Tangent Table		
ID	BEARING	LENGTH
T11	S15°01'12\"E	1156.64'

SAS Tangent Table		
ID	BEARING	LENGTH
T11	N11°14'44\"W	500.00'
T12	N11°13'53\"W	500.00'



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- CONTRACTOR HAS THE OPTION OF INSTALLING PIPE UTILIZING DIRECTIONAL DRILLING, SEE SHEET 4 FOR PIPE MATERIALS.

LEGEND

- DOUBLE WATER METER
- SINGLE WATER METER
- WATER LINE SHUTOFF VALVE
- WATER LINE TEE
- SAS LATERAL
- SAS MANHOLE
- STORM DRAIN MANHOLE
- STORM DRAIN INLET
- PROPOSED FIRE HYDRANT
- EXISTING WATER VALVE

AS-BUILT LOCATION OF MANHOLES & VALVES

VALVE / MH	NORTHING	EASTING
MH39	1480494.97	1486735.88
40	1480005.37	1486845.32

NOTE: TO BE COMPLETED BY CONTRACTOR PRIOR TO ACCEPTANCE

Bohannon & Huston

**CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT**

118TH NORTH STREET SANITARY SEWER INTERCEPTOR
PLAN AND PROFILE
STA. 124+00 TO STA. 134+00

Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.

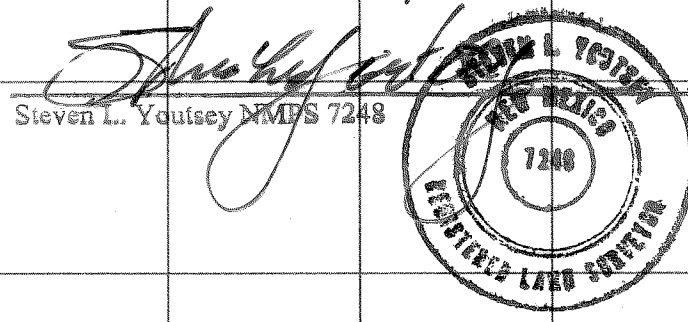
City Project No.	Zone Map No.	Sheet	Of
727486	L7, L8, M7	9	15

STA. 124+00 TO STA.134+00

ELEVATIONS ARE IN NGVD 88

RECORD DRAWING

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Date of survey: June 17, 2014



Date: June 27, 2014

BUILD 4' DIA. SASMH39
RM = 5402.78
INV IN = 5387.23(N) 5387.56
INV OUT = 5387.13(S) 5387.36

EXISTING GROUND ALONG
CL OF SANITARY SEWER LINE

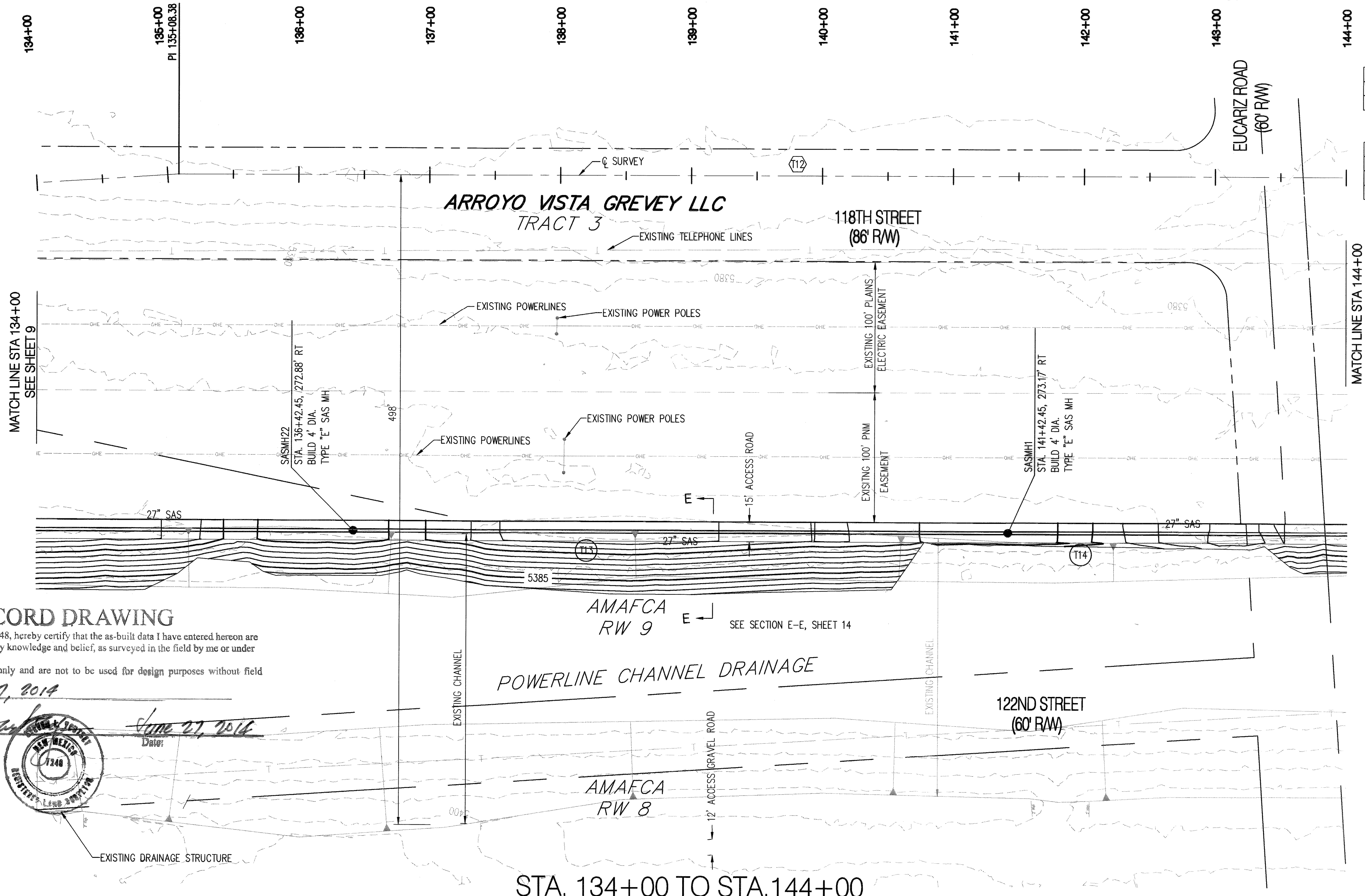
BUILD 4' DIA. SASMH40
RM = 5395.45
INV IN = 5377.96(N) 5378.14
INV OUT = 5377.46(S) 5377.90

PROPOSED GRADE ALONG
CL OF SANITARY SEWER LINE

INSTALL 496.00LF 21\"/>

INSTALL 496.00LF 27\"/>

RECORD DRAWINGS



CL Tangent Table		
ID	BEARING	LENGTH
T12	S11°16'14"E	7646.49'

SAS Tangent Table		
ID	BEARING	LENGTH
T13	N11°14'13"W	500.00'
T14	N11°14'03"W	500.00'

GENERAL NOTES

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LEGEND

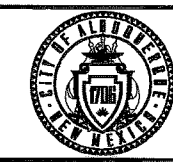
- DOUBLE WATER METER
- SINGLE WATER METER
- WATER LINE SHUTOFF VALVE
- WATER LINE TEE
- SAS LATERAL
- SAS MANHOLE
- STORM DRAIN MANHOLE
- STORM DRAIN INLET
- PROPOSED FIRE HYDRANT
- EXISTING WATER VALVE

"AS-BUILT" LOCATION OF MANHOLES & VALVES

VALVE / MH	NORTHING	EASTING
MH22	1479506.46	1486747.67
MH1	1479081.21	1487043.78

NOTE: TO BE COMPLETED BY CONTRACTOR PRIOR TO ACCEPTANCE

Bohannon & Huston



**CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT**

118TH NORTH STREET SANITARY SEWER INTERCEPTOR
PLAN AND PROFILE
STA. 134+00 TO STA. 144+00

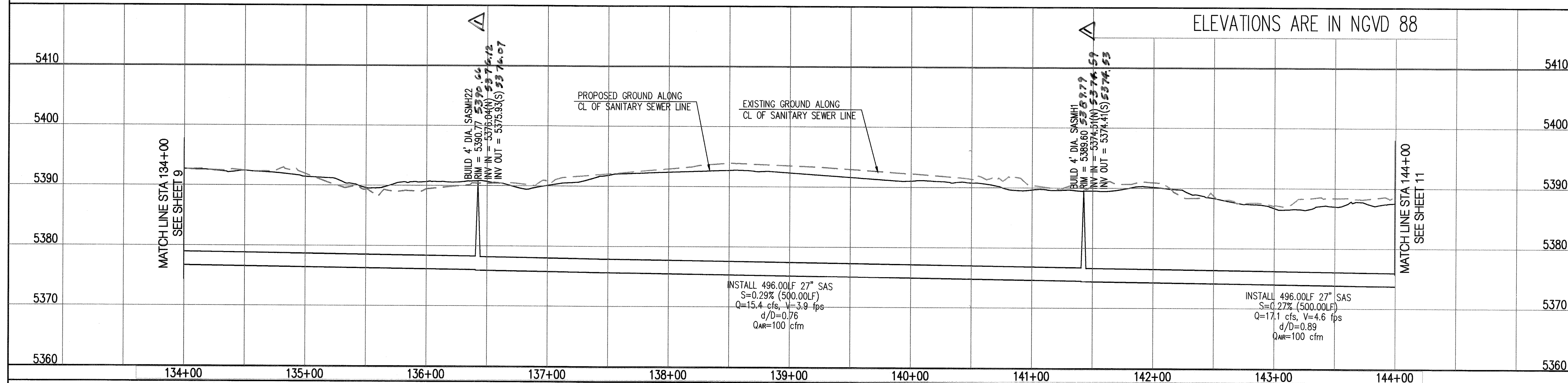
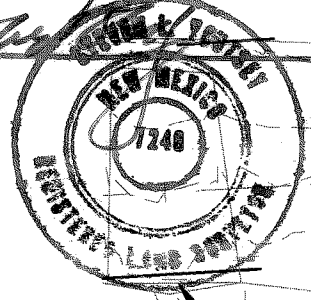
Design Review Committee	City Engineer Approval
Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
727486	L7, L8, M7	10	15

RECORD DRAWING

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Date of survey: June 17, 2014

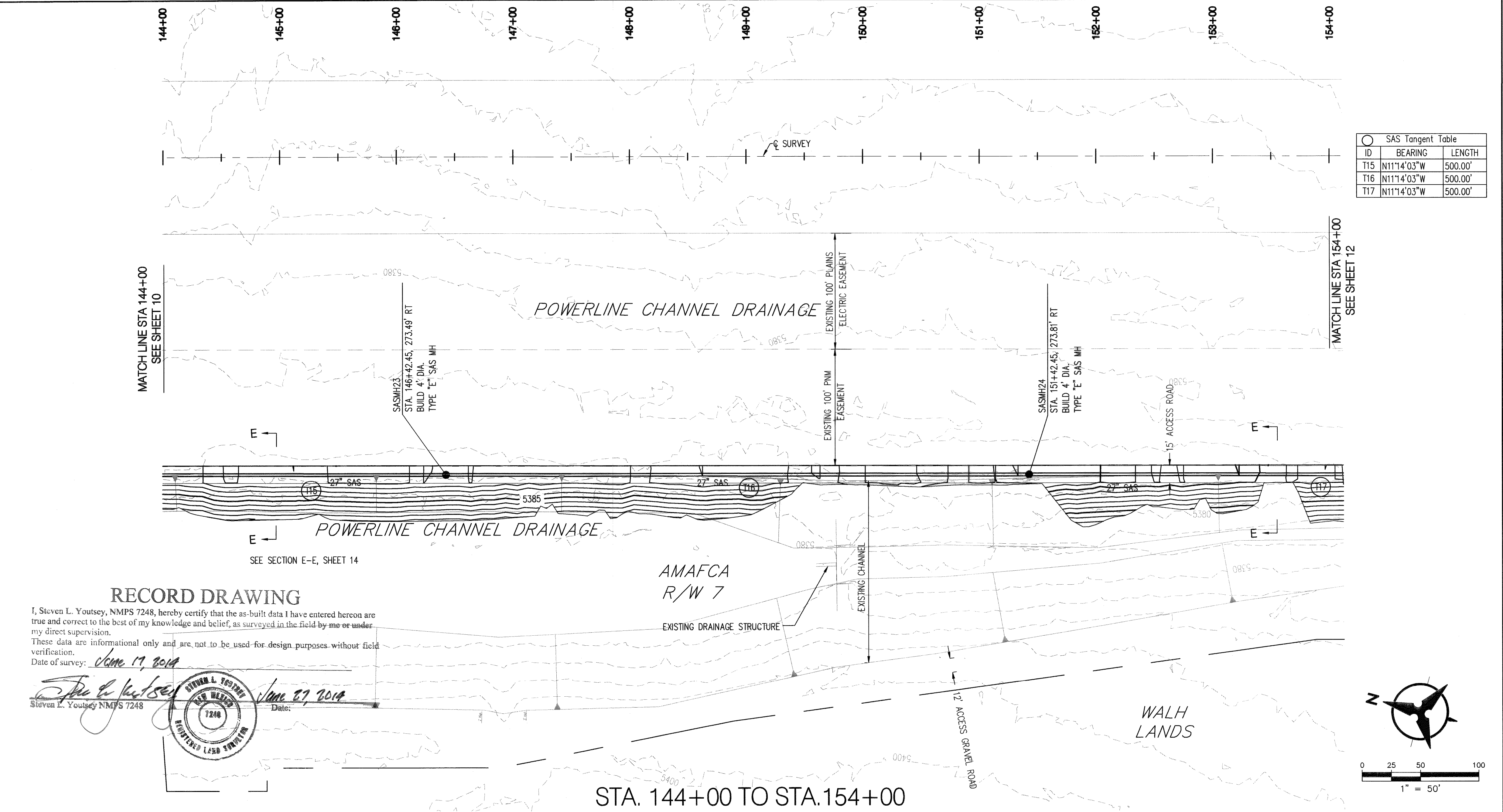
Steven L. Youtsey NMPS 7248
June 27, 2016
Date:



P:\20120255\CDP\Plans\PNP\118TH SANITARY SEWER INTERCEPTOR\North\20120255_PNP14.dwg
February 04, 2014 - 11:46am

1" = 50' (HORIZ.)
1" = 10' (VERT.)

RECORD DRAWINGS



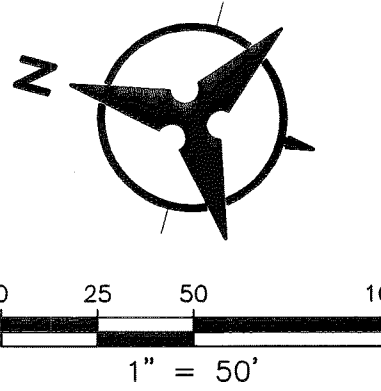
SAS Tangent Table		
ID	BEARING	LENGTH
T15	N11°14'03\"W	500.00'
T16	N11°14'03\"W	500.00'
T17	N11°14'03\"W	500.00'

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- LEGEND**
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 - SINGLE WATER METER
 - WATER LINE SHUTOFF VALVE
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 - SAS MANHOLE
 - STORM DRAIN MANHOLE
 - STORM DRAIN INLET
 - PROPOSED FIRE HYDRANT
 - EXISTING WATER VALVE

AS-BUILT LOCATION OF MANHOLES & VALVES

VALVE / MH	NORTHING	EASTING
MH 23	1478535.95	1487140.82
MH 24	1478044.82	1487237.44



RECORD DRAWING

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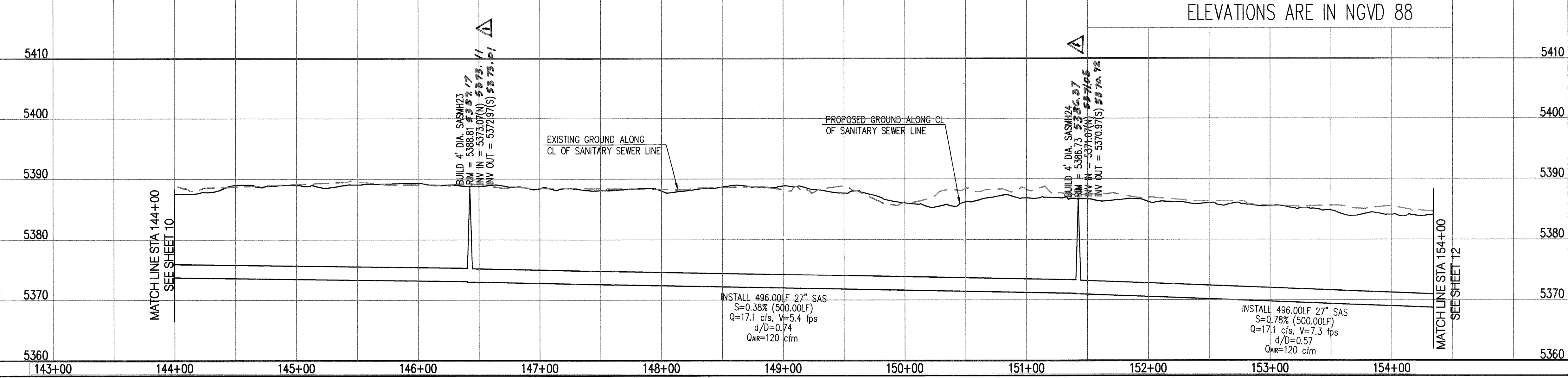
Date of survey: June 17, 2014

Steven L. Youtsey
Steven L. Youtsey NMPS 7248

Steven L. Youtsey
Steven L. Youtsey NMPS 7248

Date: June 17, 2014

Professional Engineer Seal: Steven L. Youtsey, NMPS 7248, State of New Mexico, License No. 16244.



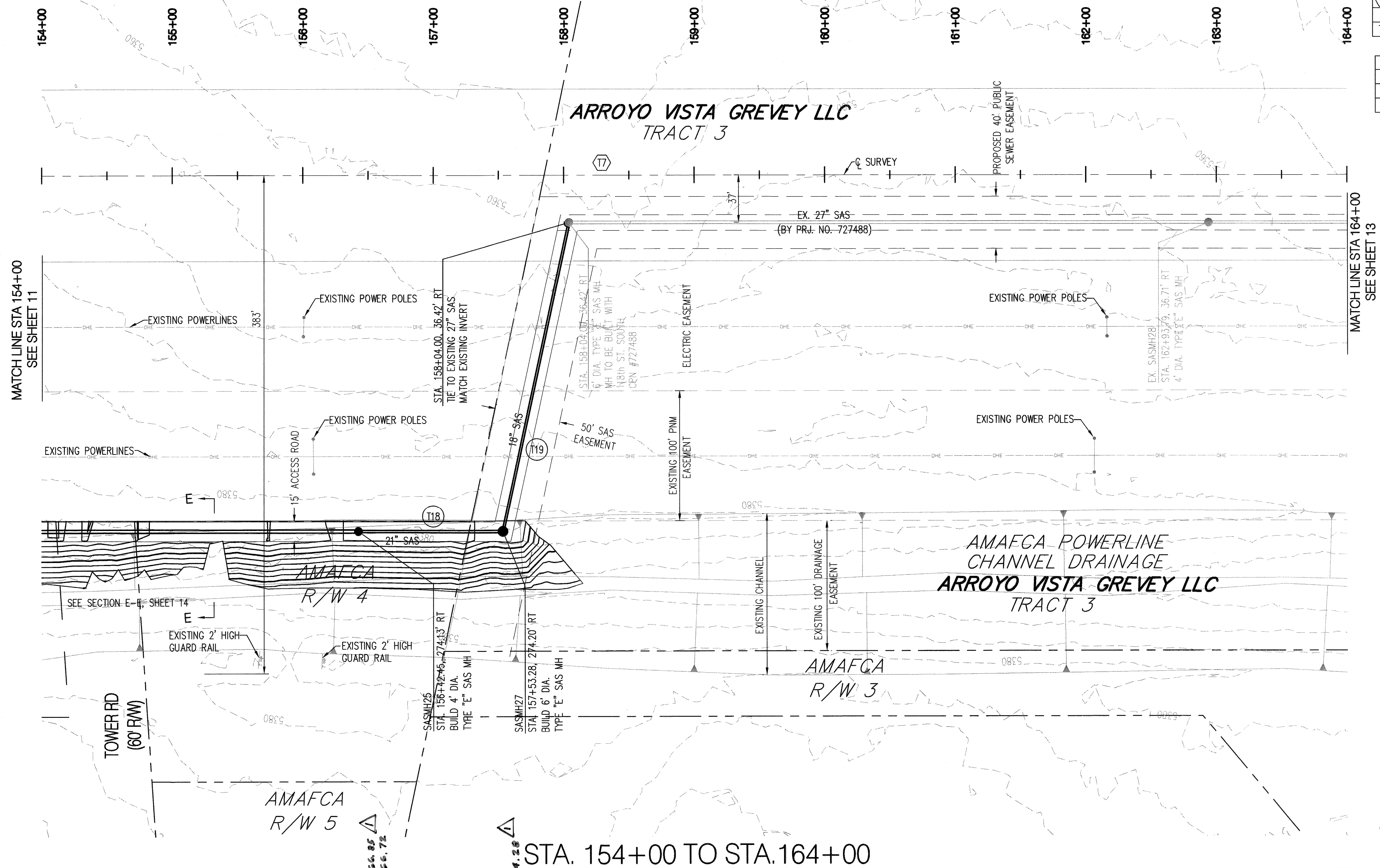
Bohannon & Huston

**CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT**

118TH NORTH STREET SEWER INTERCEPTOR
PLAN AND PROFILE
STA. 144+00 TO STA. 154+00

Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.

RECORD DRAWINGS



CL Tangent Table		
ID	BEARING	LENGTH
T7	S11°16'14"E	7646.49'

SAS Tangent Table		
ID	BEARING	LENGTH
T18	N10°07'01"W	110.82'
T19	N89°13'37"W	243.13'

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LEGEND

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- SINGLE WATER METER
- WATER LINE SHUTOFF VALVE
- WATER LINE TEE
- SAS LATERAL
- SAS MANHOLE
- STORM DRAIN MANHOLE
- STORM DRAIN INLET
- PROPOSED FIRE HYDRANT
- EXISTING WATER VALVE

"AS-BUILT" LOCATION OF MANHOLES & VALVES

VALVE / MH	NORTHING	EASTING
MH 25	1477552.99	1487335.37
MH 27	1477443.78	1487335.17

NOTE: TO BE COMPLETED BY CONTRACTOR PRIOR TO ACCEPTANCE

Bohannon & Huston



**CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT**

118TH NORTH STREET SANITARY SEWER INTERCEPTOR
PLAN AND PROFILE
STA. 154+00 TO STA. 164+00

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	727486	Zone Map No.	L7, L8, M7	Sheet	12	Of	15
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ELEVATIONS ARE IN NGVD 88

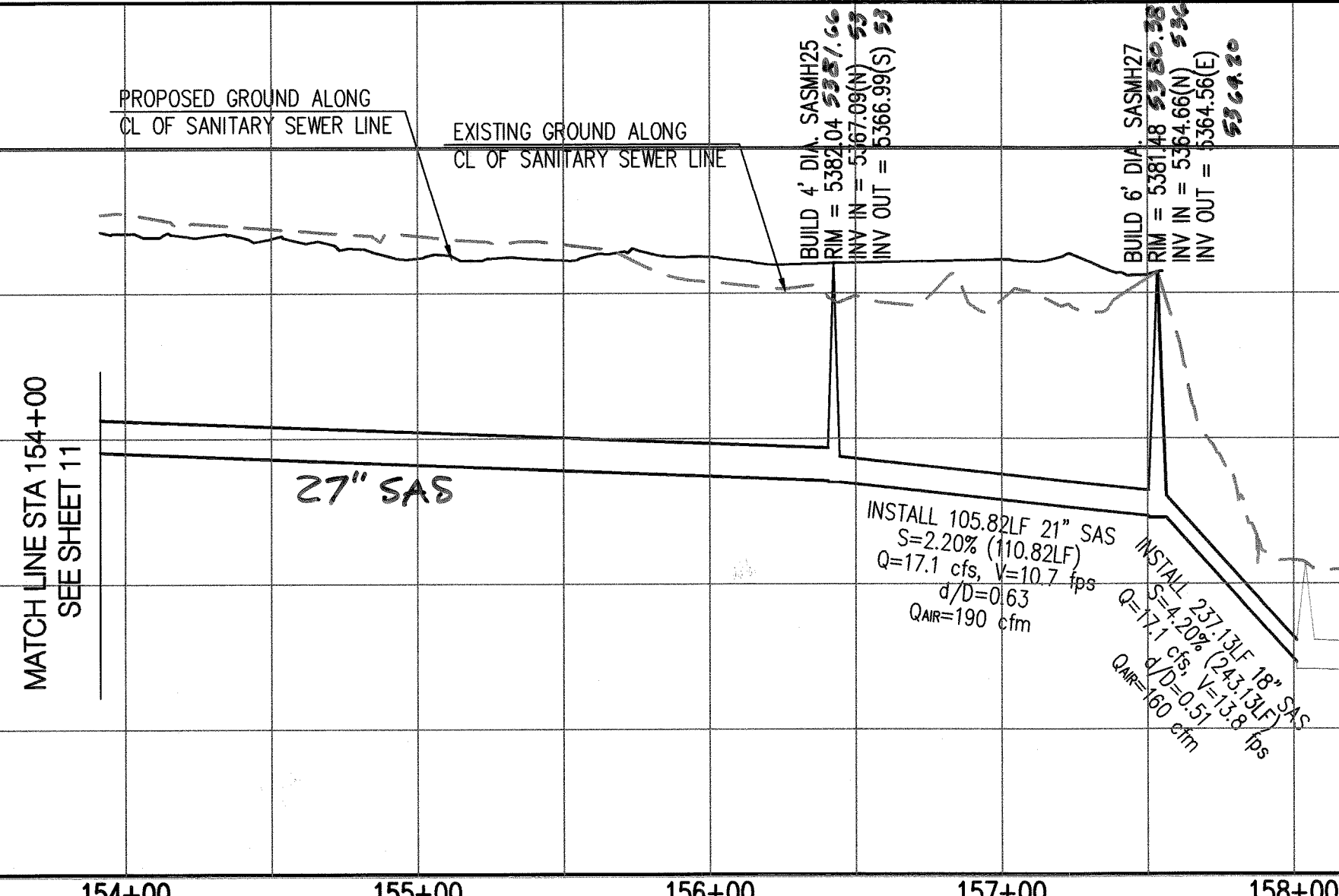
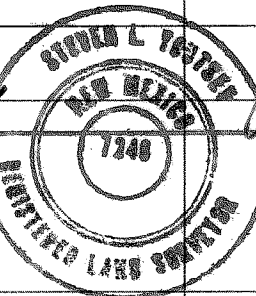
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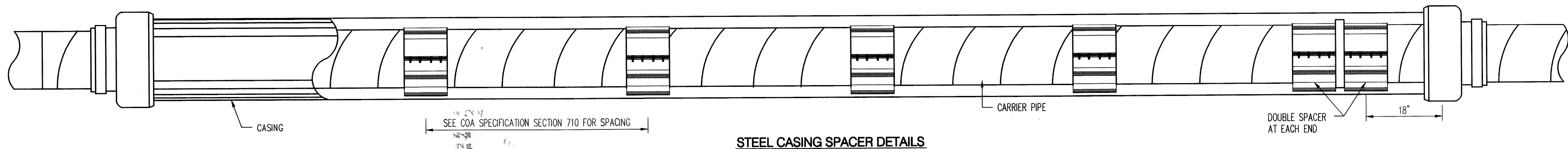
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Date of survey: June 17, 2014

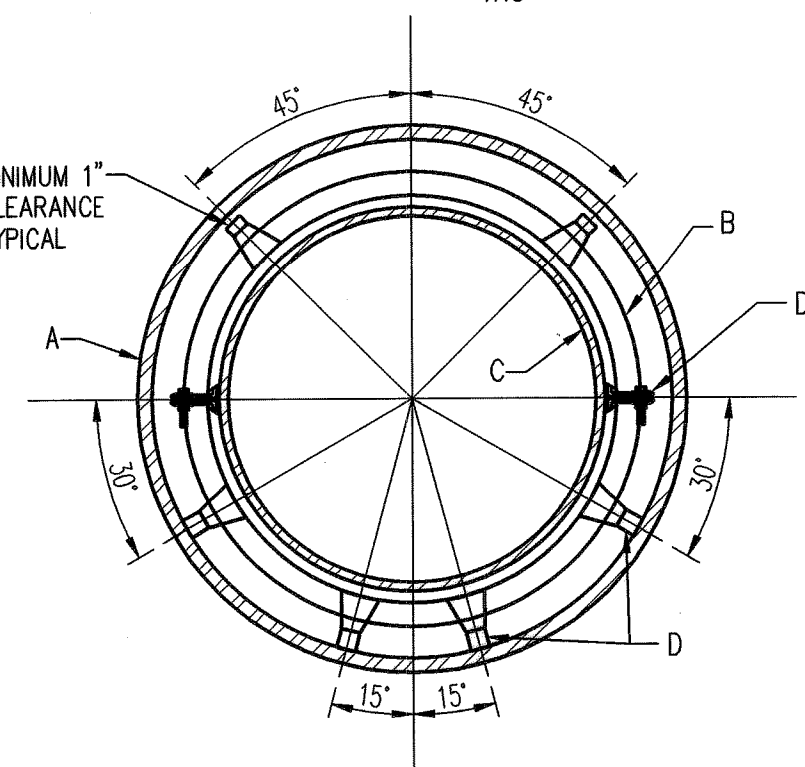
Steven L. Youtsey NMPS 7248 Date: June 27, 2014



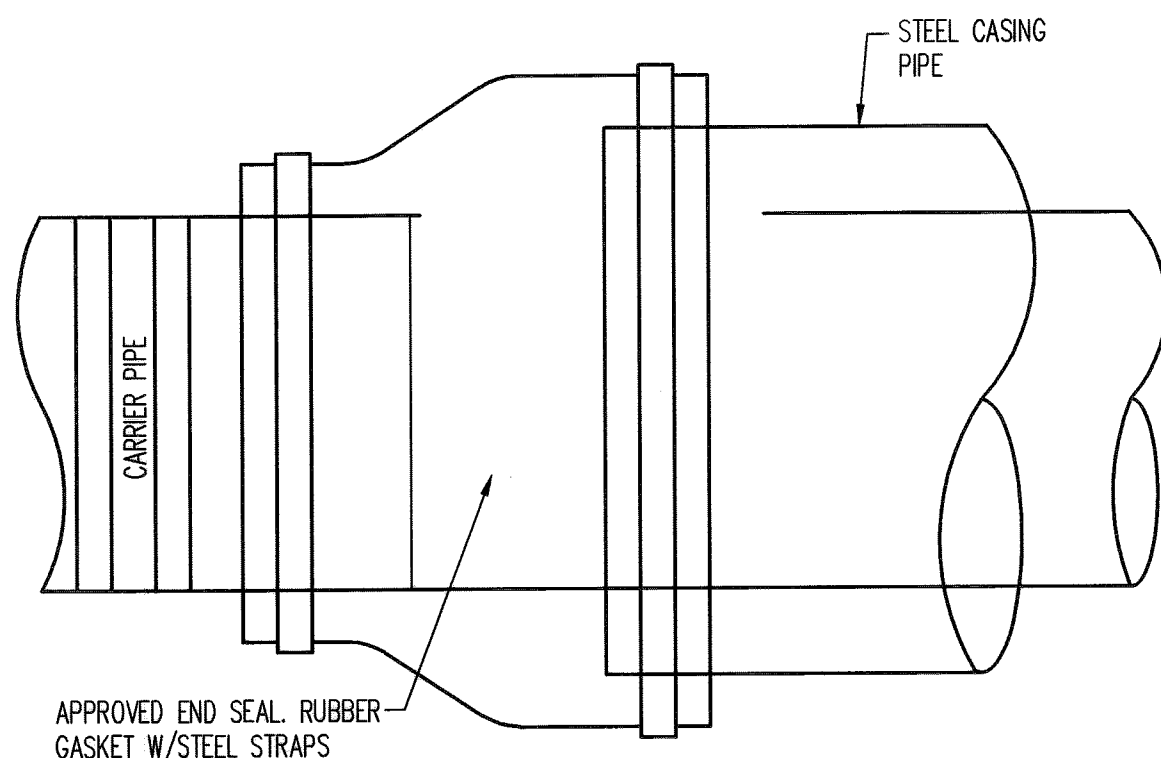
RECORD DRAWINGS



STEEL CASING SPACER DETAILS
NTS



TYPICAL SECTION
NTS



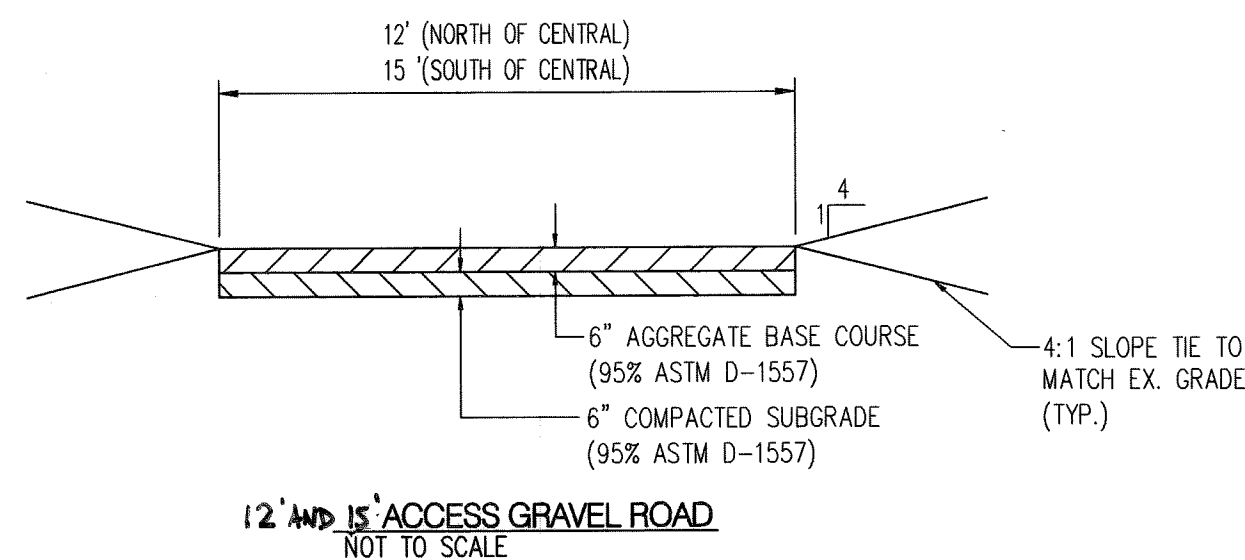
BORING INSTALLATION
NTS

CONSTRUCTION NOTES FOR SAS JACK AND BORE

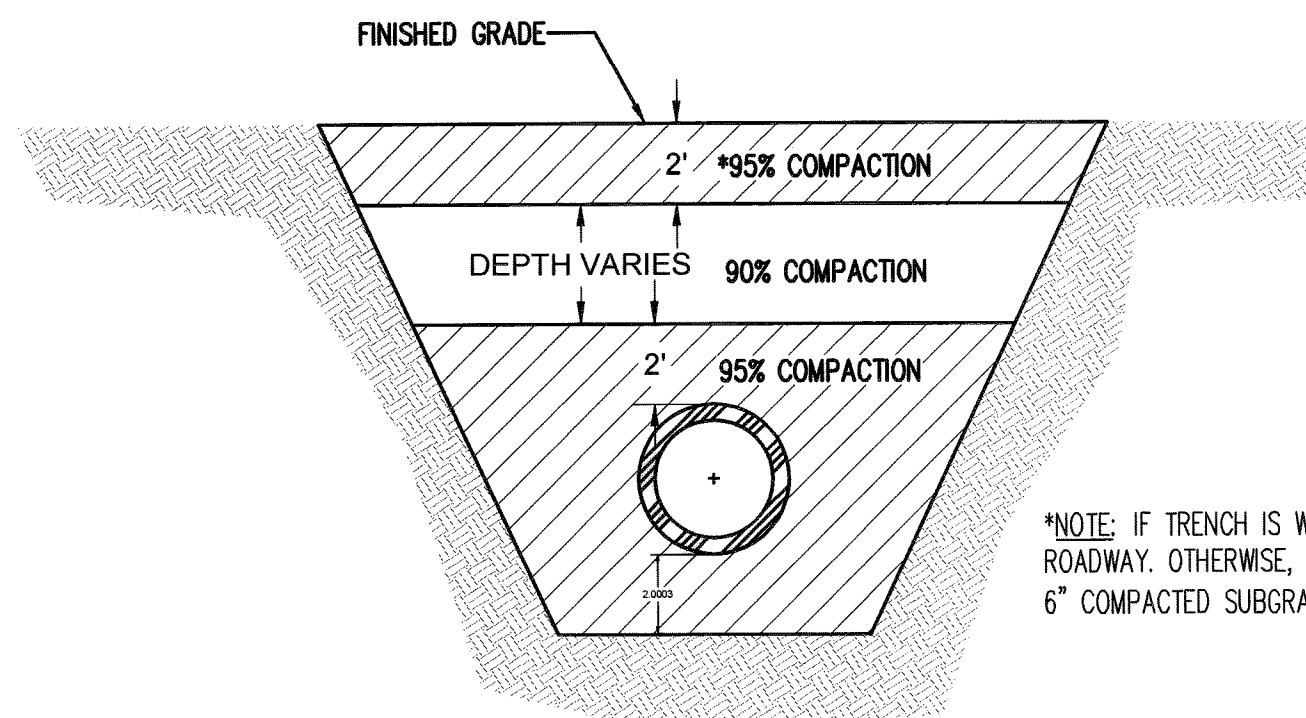
- DESIGN CRITERIA
A. PIPE CONTENTS: SANITARY SEWER
B. INSTALLATION METHOD: JACK & BORE
C. CASING PIPE SHALL BE DESIGNED TO CARRY TRAFFIC WITHIN ROADWAY
- MATERIALS OF CONSTRUCTION:
A. CASING PIPE
1) STEEL PIPE, MIN. YIELD STRENGTH 40,000 PSI, ASTM A1018
2) JOINTS - FULL PENETRATION BUTT-WELD
3) LONGITUDINAL JOINT FACTOR - 1.0.
B. CARRIER PIPE:
1) AS SHOWN ON PLAN AND PROFILE SHEETS.
- CONSTRUCTION SHALL BE BY JACK & BORE METHOD IN ACCORDANCE WITH COA SPECIFICATIONS SECTION 710 - BORING/JACKING. PIT MUST NOT BE OPEN MORE THAN 48 HOURS.

I-40 BORE & JACK
CONSTRUCTION NOTES:

- 30" STEEL CASING PIPE.
 - BELL DIA. OF CARRIER PIPE.
 - 21" CARRIER PIPE (PVC).
 - STEEL CASING SPACER AS MANUFACTURED BY PSI MODEL A12 W/G2 RUNNERS, BWM COMPANY, MODEL BWM S(12") OR EQUAL.
- CENTRAL AVE BORE & JACK
CONSTRUCTION NOTES:
- 30" STEEL CASING PIPE.
 - BELL DIA. OF CARRIER PIPE.
 - 18" CARRIER PIPE (PVC).
 - STEEL CASING SPACER AS MANUFACTURED BY PSI MODEL A12 W/G2 RUNNERS, BWM COMPANY, MODEL BWM S(12") OR EQUAL.



12' AND 15' ACCESS GRAVEL ROAD
NOT TO SCALE



TYPICAL TRENCH COMPACTION DETAIL
NOT TO SCALE

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LEGEND

---	PROPERTY LINE
---	NEW EASEMENT
---	SAS
---	EXISTING SANITARY SEWER
---	W
---	EXISTING WATER LINE
---	EXISTING STORM DRAIN
---	EXISTING WATER METER
---	EXISTING CAP
---	EXISTING VALVE
---	EXISTING FIRE HYDRANT
---	EXISTING SANITARY SEWER MANHOLE
---	EXISTING STORM DRAIN
---	SAS
---	PROPOSED SANITARY SEWER
---	WL
---	PROPOSED WATER LINE
---	PROPOSED VALVE
---	PROPOSED HYDRANT
---	PROPOSED CAP
---	PROPOSED WATER METER
---	PROPOSED SANITARY SEWER MANHOLE
---	PROPOSED STORM DRAIN

Bohannon & Huston

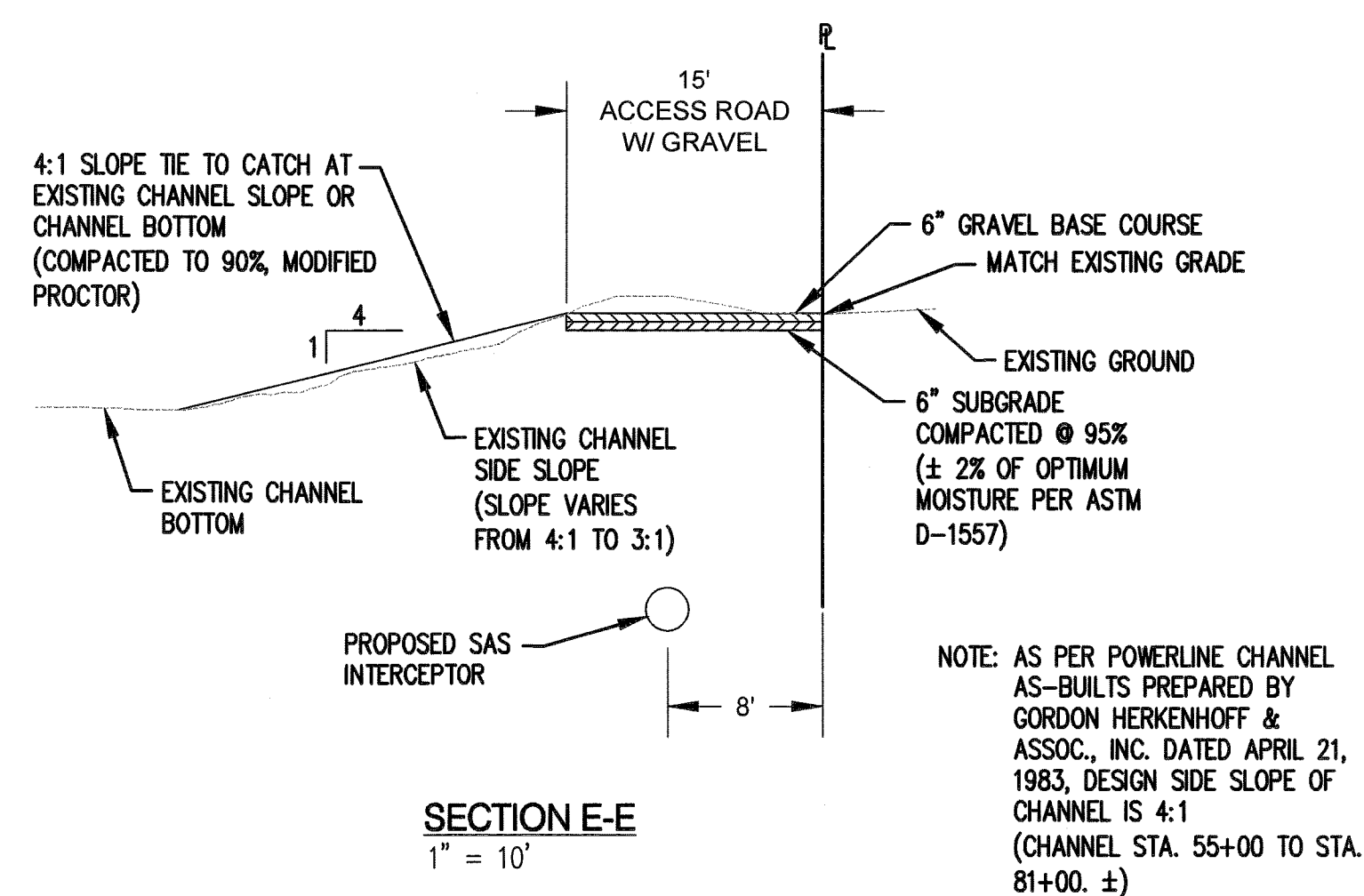
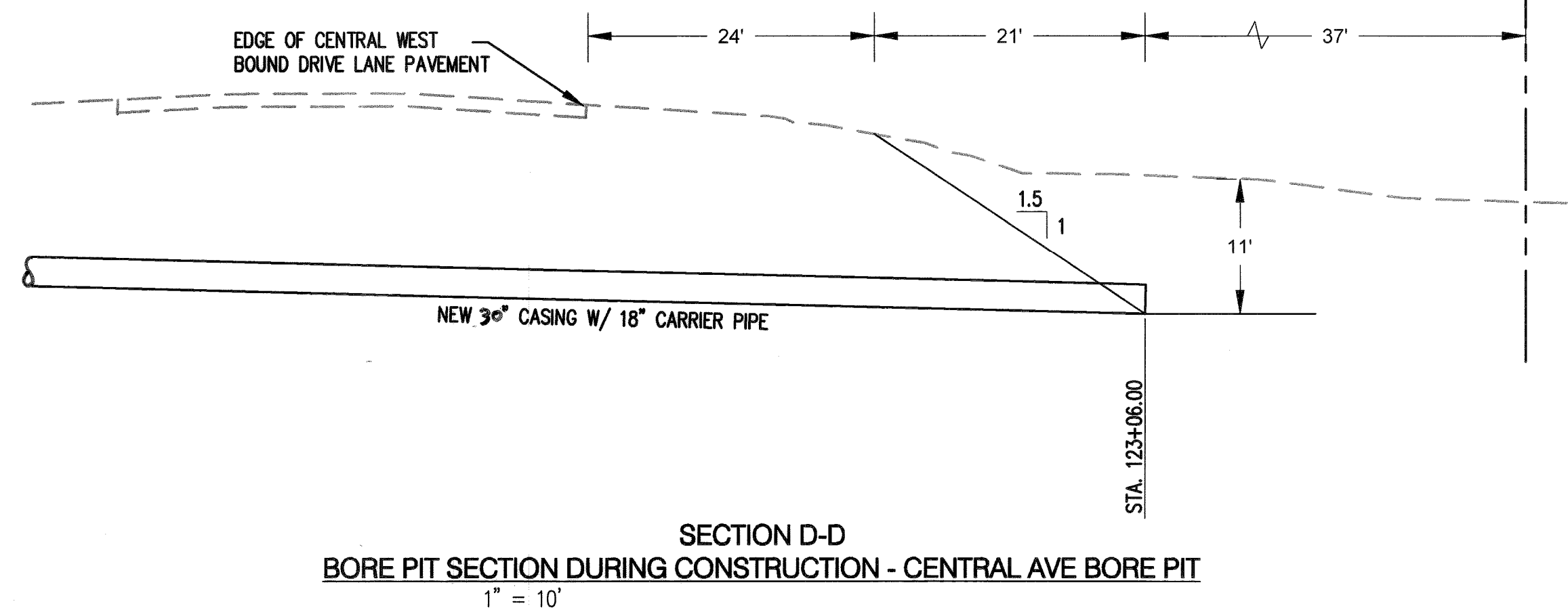
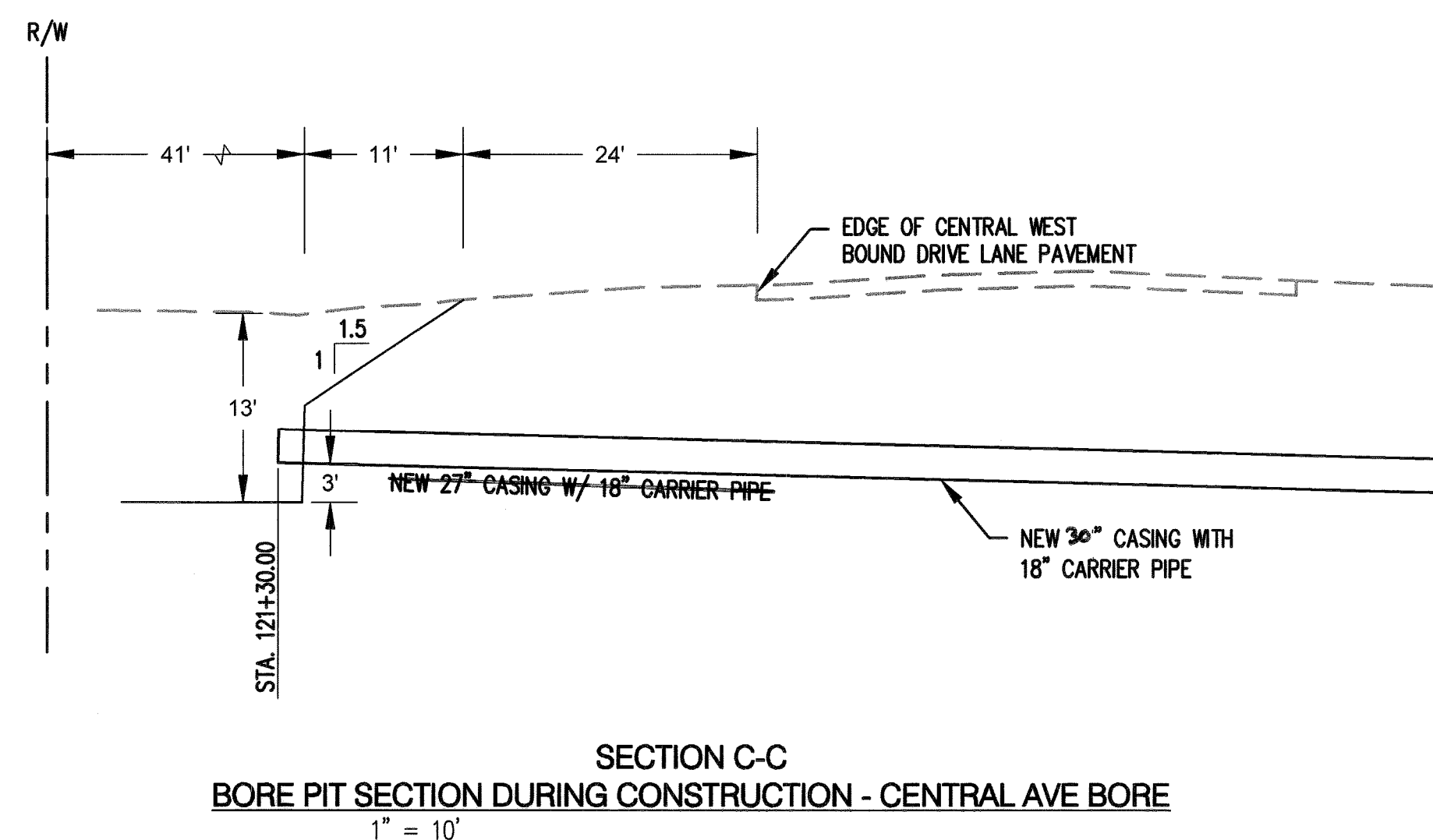
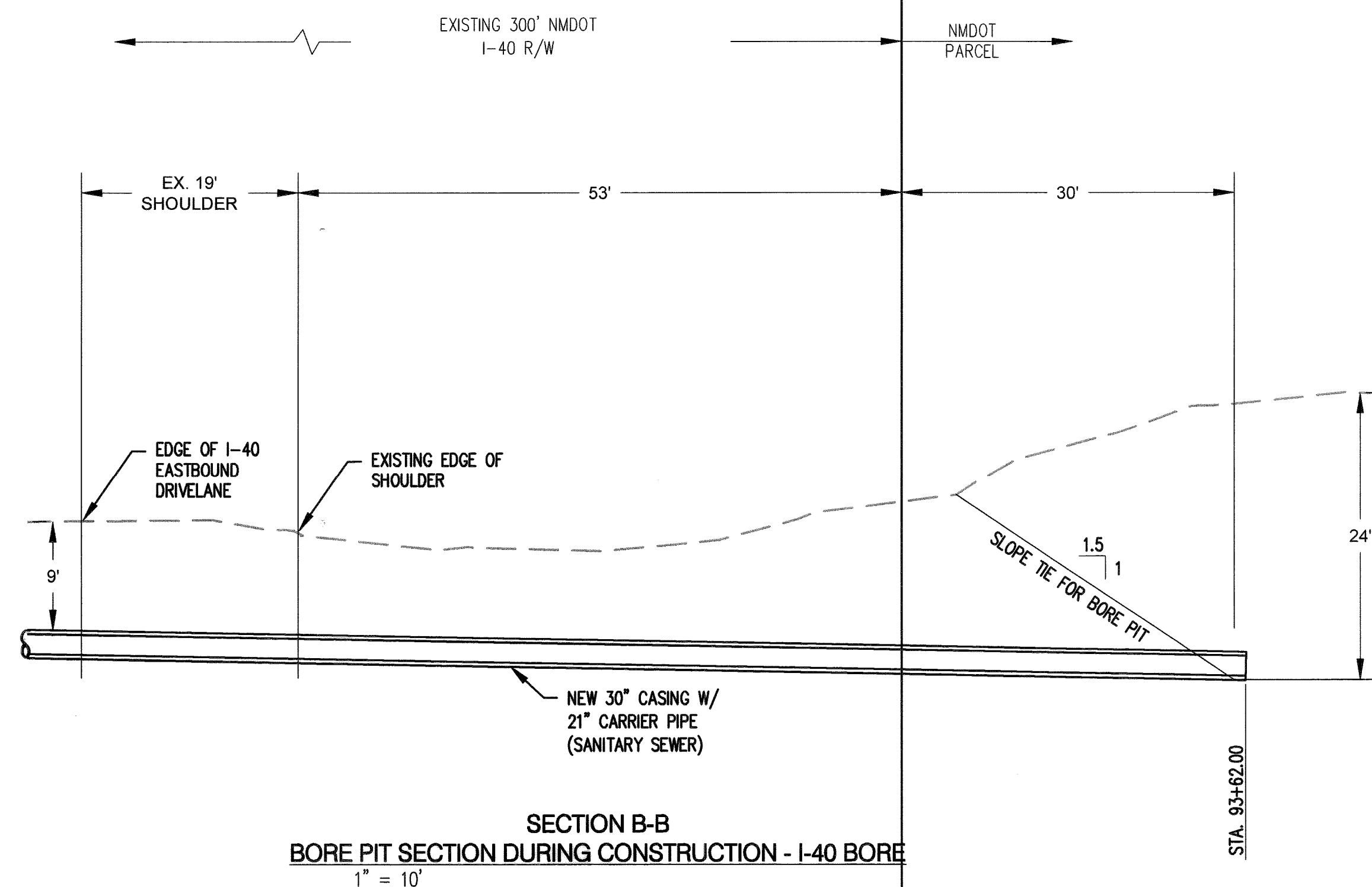
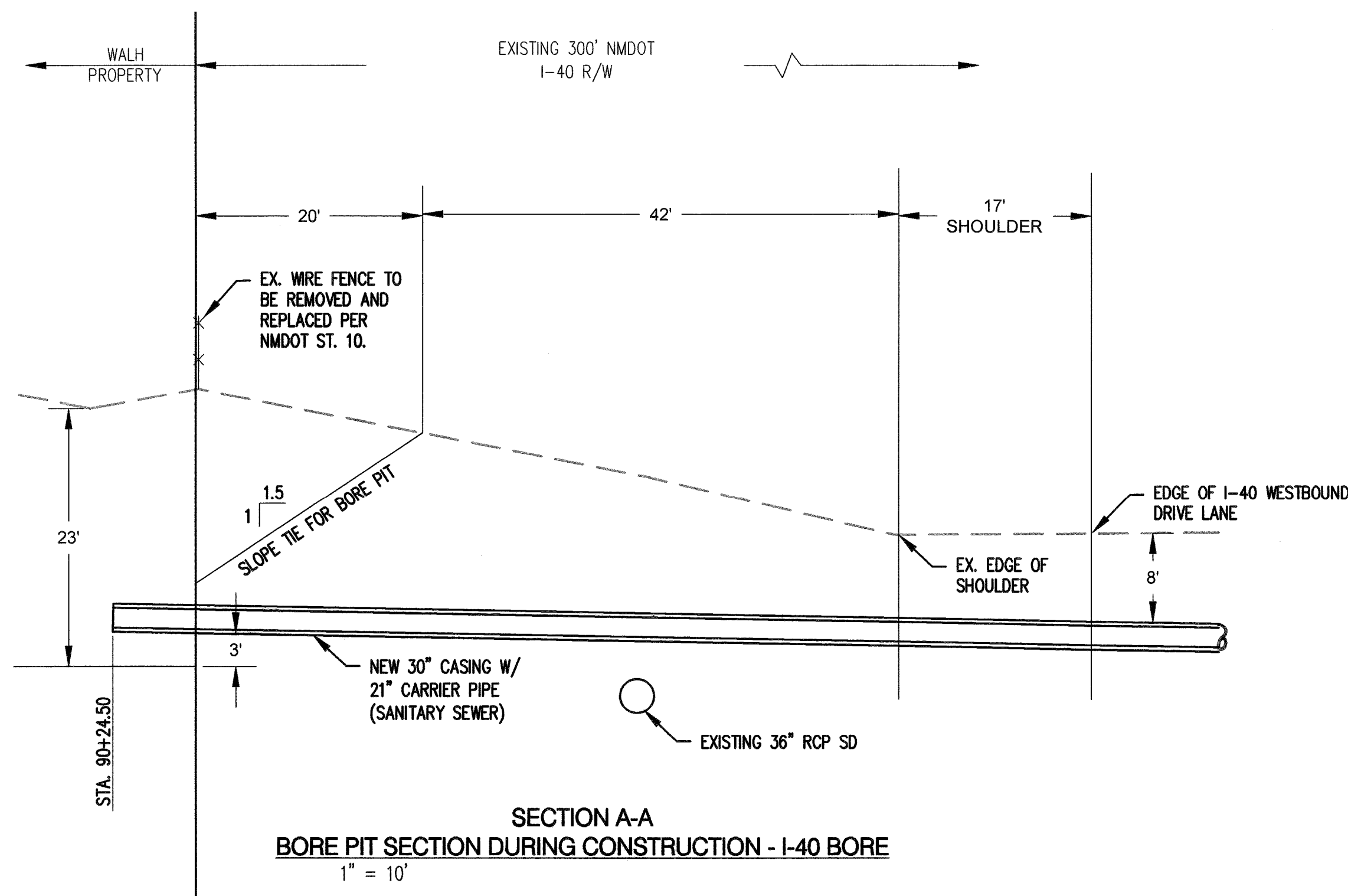


CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

118TH NORTH SANITARY SEWER INTERCEPTOR
MISCELLANEOUS DETAILS

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.
City Project No.	727486	Zone Map No.	L7,L8,M7	Sheet 13 Of 15

RECORD DRAWINGS



GENERAL NOTES

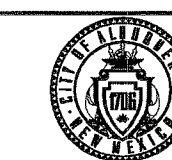
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- ALL CURVE DATA AND DIMENSIONS ARE CALCULATED FROM CENTERLINE OF PIPE OR MANHOLE. ALL SAS & SD SLOPES ARE CALCULATED TO TRUE PIPE DIMENSIONS FROM INVERT TO INVERT. (PAY ITEMS ARE SHOWN IN PARENTHESES)
- CONTRACTOR IS TO INSTALL A 4" X 4" X 5' POST AND E.M.S. AT THE END OF EACH SANITARY SEWER STUB.
- CONTRACTOR IS RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ALL DAMAGED EXISTING UTILITY CONDUITS AND EXISTING LINES.
- CONTRACTOR SHALL PROVIDE THE INSPECTORS WITH THE PROPOSED PRESSURE TESTING PLAN. THE PLAN MUST BE APPROVED BEFORE TESTING OPERATIONS BEGIN.
- CONTRACTOR SHALL PARK EQUIPMENT AND VEHICLES AS NOT TO INTERFERE WITH NORMAL ACTIVITIES OF RESIDENTS OR OTHER CONTRACTORS ON SITE.
- ANY DAMAGE TO THE EXISTING FACILITIES (CURB & GUTTER, PAVEMENT, LANDSCAPING, ETC.) DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS' EXPENSE.
- MH RIMS ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY AND ADJUST TO FINAL PAVEMENT OR SURFACE GRADES.
- SAS STATIONING FOLLOWS SURVEY BASELINE UNLESS OTHERWISE NOTED.
- AT UTILITY CROSSING WHERE LESS THAN 1 FOOT OF COVER OVER STORM DRAIN PIPE IS PRESENT LEAN FILL IS TO BE USED FOR A DISTANCE OF 5 FEET ON EACH SIDE OF THE SD & FROM TOP OF STORM DRAIN TO BOTTOM OF SANITARY SEWER OR WATER LINE.
- CONTRACTOR HAS THE OPTION OF INSTALLING PIPE UTILIZING DIRECTIONAL DRILLING. SEE SHEET 4 FOR PIPE MATERIALS.

LEGEND

---	PROPERTY LINE
---	NEW EASEMENT
---	SAS
---	EXISTING SANITARY SEWER
---	EXISTING WATER LINE
---	EXISTING STORM DRAIN
---	EXISTING WATER METER
---	EXISTING CAP
---	EXISTING VALVE
---	EXISTING FIRE HYDRANT
---	EXISTING SANITARY SEWER MANHOLE
---	EXISTING STORM DRAIN
---	PROPOSED SANITARY SEWER
---	PROPOSED WATER LINE
---	PROPOSED VALVE
---	PROPOSED HYDRANT
---	PROPOSED CAP
---	PROPOSED WATER METER
---	PROPOSED SANITARY SEWER MANHOLE
---	PROPOSED STORM DRAIN

AS-BUILT INFORMATION				BENCH MARKS				SURVEY INFORMATION				ENGINEER'S SEAL			
CONTRACTOR	DATE	BY	NO.	USC&GS	BRASS	TABLET	STAMPED	NO.	DATE	BY	NO.				
INSPECTOR'S	DATE	BY	NO.	GEOGRAPHIC	POSITION	(NAD 83)									
FIELD	DATE	BY	NO.	N.M.	STATE	PLANE	COORDINATES	(CENTRAL ZONE)				REVISIONS			
VERIFICATION	DATE	BY	NO.	X	Y	Z	GROUND-TO-GRID	FACTOR							
NO.	DATE	BY	NO.	Δα								DESIGN			
NO.	DATE	BY	NO.	NO.	DATE	BY	NO.	DATE	BY	NO.	DATE				

Bohannon & Huston



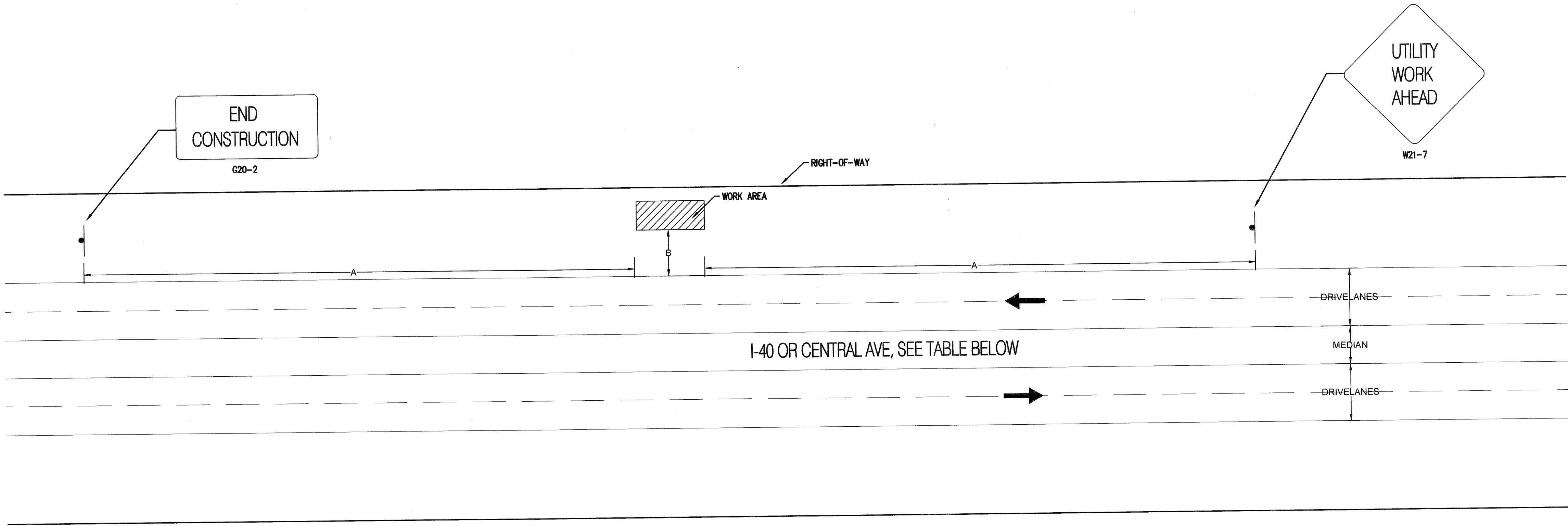
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

118TH NORTH SANITARY SEWER INTERCEPTOR
MISCELLANEOUS DETAILS

Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.
City Project No.	Zone Map No.	Sheet	Of
727486	L7,L8,M7	14	15

RECORD DRAWINGS

- NOTES:
1. ALL TEMPORARY TRAFFIC CONTROL SHALL COMPLY WITH THE LATEST EDITION OF THE MUTCD.
 2. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM NMDOT PRIOR TO CONSTRUCTION WITHIN NMDOT RIGHT-OF-WAY.



	DISTANCE	
	A	B (MIN)
I-40	1000'	57'
CENTRAL AVE	350'	24'

AS-BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL	
CONTRACTOR	DATE	USC&GS BRASS	TABLET STAMPED "REWARD"	NO.	BY		
INSPECTED BY	DATE	GEOGRAPHIC POSITION (NAD 83)		DATE			
INSPECTOR'S ACCEPTANCE	DATE	N.M. STATE PLANE COORDINATES (CENTRAL ZONE)				REMARKS	
DRAWN BY	DATE	X = 1,491,190.819 Y = 1,487,364.063					
REVISIONS	DATE	GROUND-TO-GRID FACTOR = 0.999675005				DESIGN	
REVISIONS	DATE	Δa = -00'17"12.26"					
MICROFILM INFORMATION		NAVD 1988 ELEVATION = 5319.691				Designed By: CJS	
						Drawn By: BJC	
						Checked By: CJS	
						DATE: 5/2013	
						DATE: 5/2013	
						DATE: 5/2013	

Bohannon & Huston

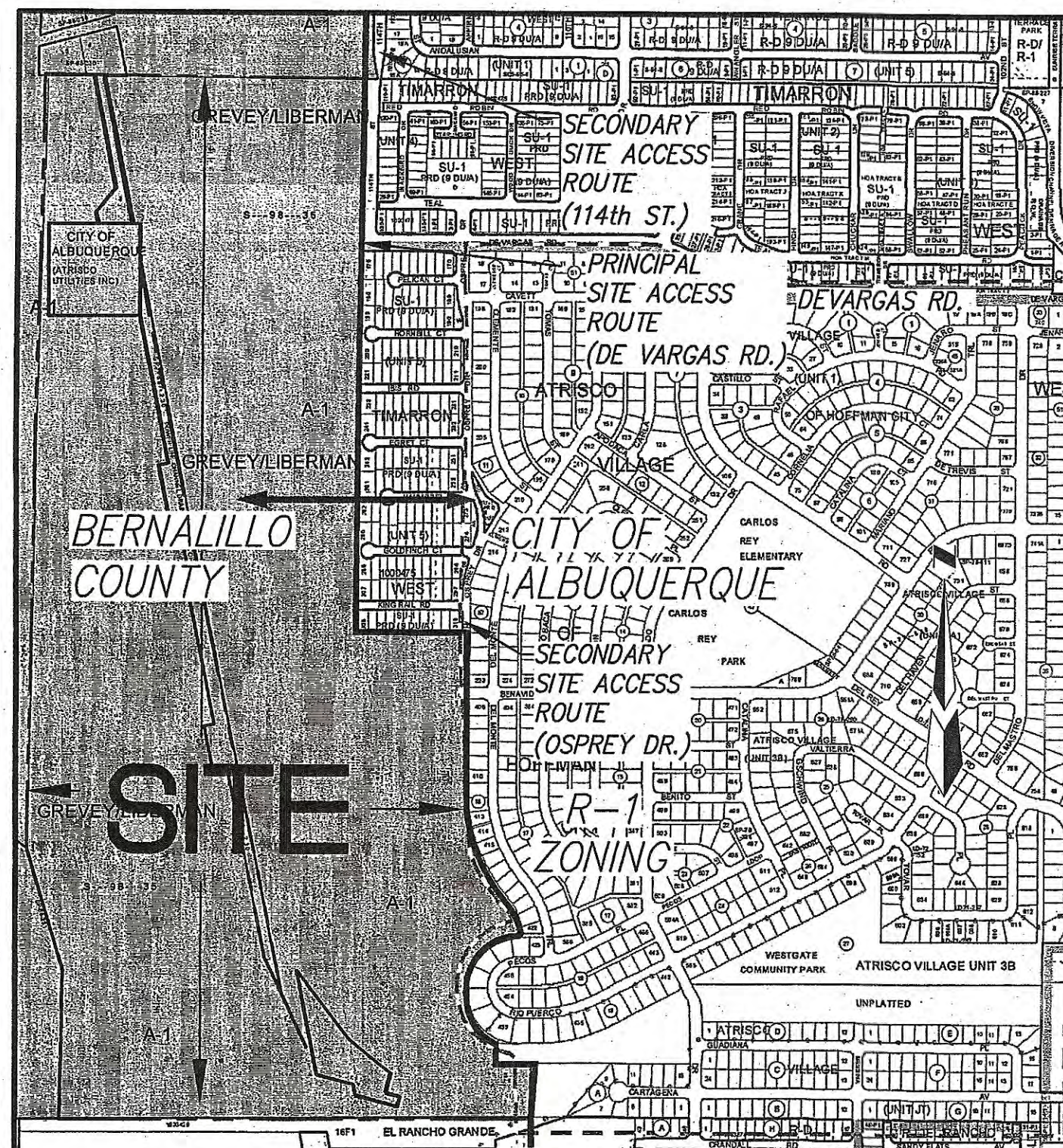


CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

118TH NORTH OFF-SITE SANITARY SEWER
TEMPORARY TRAFFIC CONTROL PLAN

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.
City Project No.		Zone Map No.	Sheet	Of
727486		L7,L8,M7	15	15

Appendix E– Talavera Site Development Plan



VICINITY MAP

ZONE ATLAS M-8 SCALE: 1"=750'

LEGAL DESCRIPTION

A tract of land situated within the Town of Atrisco Grant, projected Section 32, Township 10 North, Range 2 East, New Mexico Principal Meridian, City of Albuquerque, Bernalillo County, New Mexico being all of TRACT 3, LANDS OF GREVEY/LIBERMAN as the same is shown and designated on said plat filed for record in the office of the County Clerk of Bernalillo County, New Mexico on July 17, 1998 in Book 98C, Page 210 and containing 237.0809 (GROSS) acres more or less. EXCEPTING THEREFROM: C.O.A. (ATRISCO UTILITIES INC.) TRACT as the same is described in a WARRANTY DEED filed for record in the office of the County Clerk of Bernalillo County, New Mexico on February 11, 1960 in Book D526, Page 559 and all of R/W 1, R/W 2 AND R/W 3, POWERLINE CHANNEL DRAINAGE RIGHTS-OF-WAY as the same is shown and designated on said plat filed for record in the office of the County Clerk of Bernalillo County, New Mexico on August 3, 1988 in Volume C37, Folio 28 leaving 222.7981 (NET) acres more or less.

GENERAL NOTES

PRESENT ZONING: A-1

PROPOSED ZONING: A-1, WITH SPECIAL USE PERMIT FOR PLANNED DEVELOPMENT AREA CONTAINING A MAXIMUM OF 724 RESIDENTIAL UNITS AND 1 COMMERCIAL SITE ALLOWING C-1 PERMISSIVE USES. COMMERCIAL SITE SHALL BE DEVELOPED ONLY IN ACCORDANCE WITH A SITE SPECIFIC SPECIAL USE PERMIT TO BE OBTAINED BY OTHERS A FUTURE TIME.

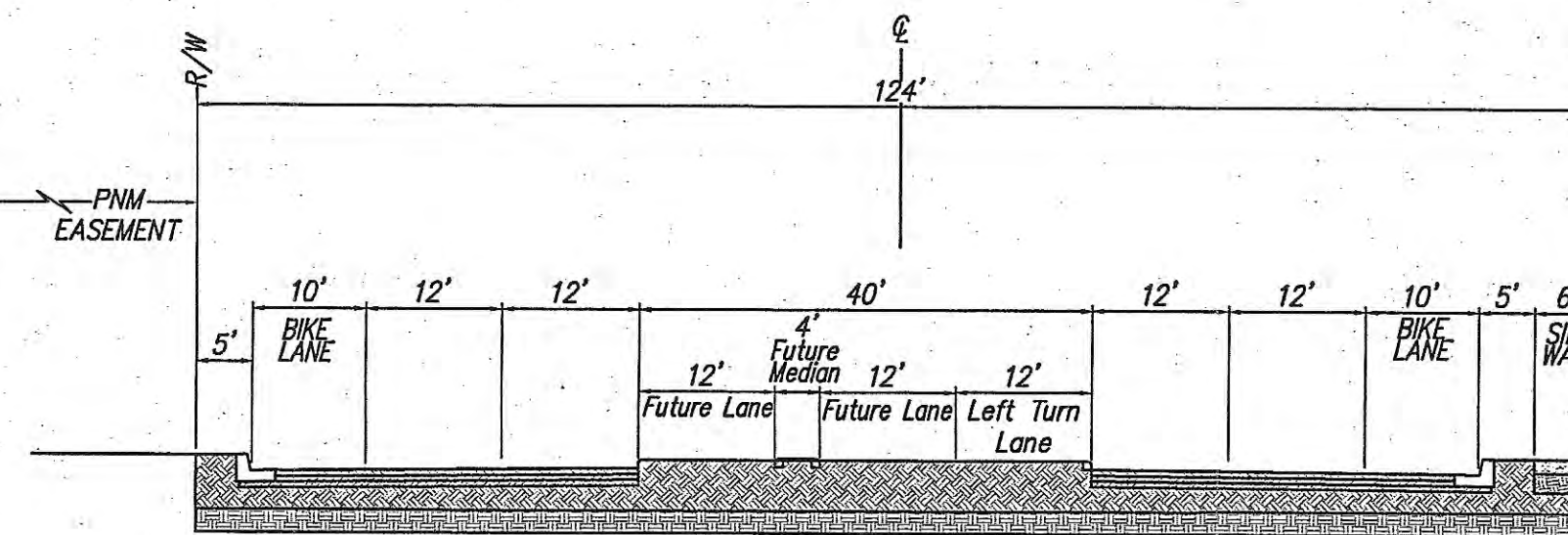
- 1.) OPEN SPACE AREAS ARE TO BE SEPARATE TRACTS WITH ACCESS RIGHTS GRANTED TO AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION OR THE COUNTY.
- 2.) ALL RESIDENTS SHALL OBTAIN INDIVIDUAL RESIDENTIAL REFUSE SERVICE FROM THE DESIGNATION COUNTY REFUSE SERVICE PROVIDER.
- 3.) MAXIMUM BUILDING HEIGHT SHALL BE 26 FEET. EXCEPT THAT NON-RESIDENTIAL BUILDINGS CAN BE UP TO 36' HIGH.
- 4.) OFF-STREET PARKING SHALL BE PROVIDED FOR A MINIMUM OF TWO SPACES PER DWELLING

- 5.) LANDSCAPING LOCATED IN FRONT OF DWELLINGS SHALL BE MAINTAINED BY THE HOMEOWNER.
- 5.) THIS PROPERTY IS TO BE SERVED BY A.B.C.W.U.A. WATER AND SEWER SERVICE.
- 7.) LIGHTING SHALL BE SITE SPECIFIC. SHIELDED OR CUTOFF FIXTURES SHALL BE PROVIDED SO THAT NO FUGITIVE LIGHT CROSSES TO ADJACENT LOTS.
- 8.) DWELLINGS SETBACKS WITHIN NEIGHBORHOODS B, C, & E SHALL BE IN ACCORDANCE WITH THE COUNTY R-1 ZONE. EXCEPT THAT SIDEYARD SETBACKS CAN BE A MINIMUM OF 5 FEET PROVIDED THERE IS NOT LESS THAN 10 FEET BETWEEN BUILDINGS. WITHIN NEIGHBORHOODS A & D DWELLINGS MAY HAVE NO SIDEYARD SETBACK, PROVIDED THERE IS AT LEAST 10 FEET BETWEEN BUILDINGS, EXCEPT THAT THERE SHALL BE AT LEAST 10 FEET OF SIDEYARD SETBACK FROM A SIDE STREET.

LEGEND

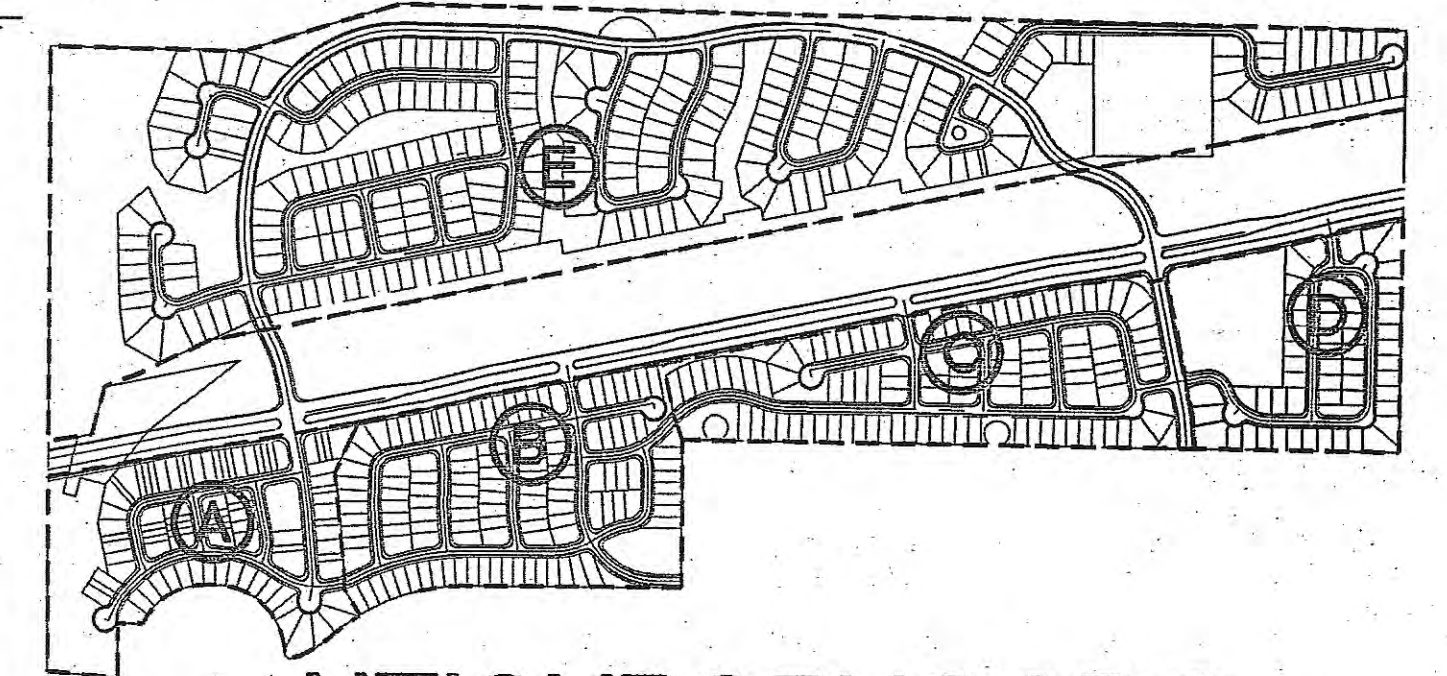
- RIGHT OF WAY DEDICATION
- OPEN SPACE OR PARKS
- NEW 12' PAVED WALK/BIKE PATH
- NEW 12' CRUSHER FINES WALK/BIKE PATH
- PROPOSED CURB AND GUTTER
- NEW PROPERTY LINE
- EXIST. PROPERTY LINE
- EXISTING POWER POLES
- FULL ACCESS INTERSECTION
- OVER HEAD LINES
- GUEST PARKING
- A, B, C, E1, E2 AND E3 NEIGHBORHOOD PARK

Talavera Site Development Plan (CSU - 60033) 5/18/07		
Location	Dwelling Units	Guest Parking Spaces
Neighborhood A	86	30
Neighborhood B (Park)	123	0
Neighborhood C	105	0
Neighborhood D	157	20
Neighborhood E	253	0
Open Space	N/A	20
Total Count	724	70

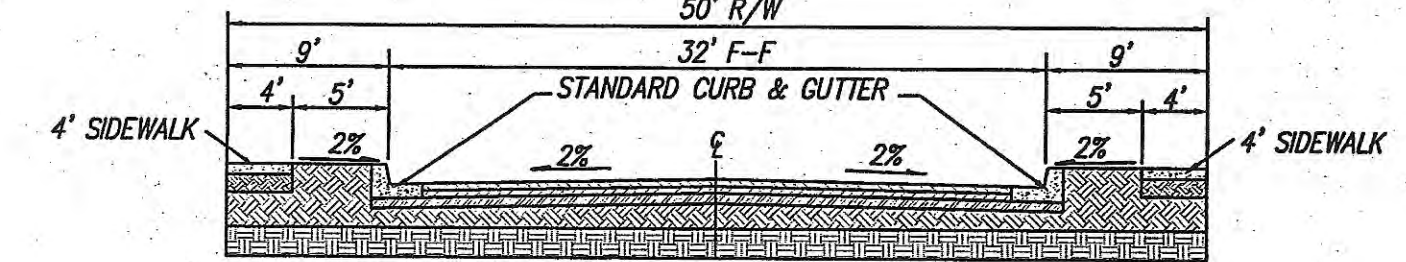


118th STREET SECTION

NOT TO SCALE

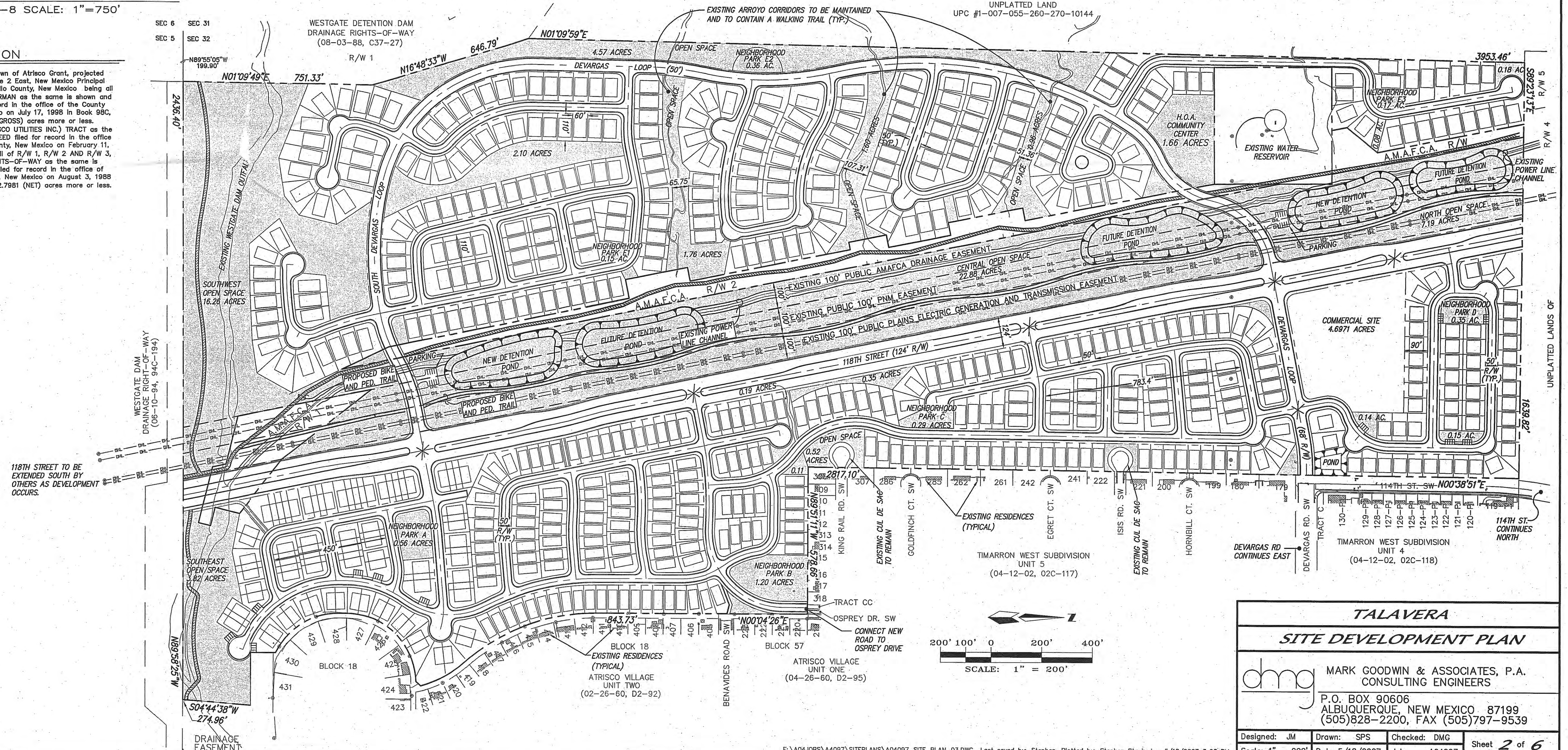


NEIGHBORHOODS



TYPICAL 32' F-F STREET SECTION

NOT TO SCALE



TALAVERA

SITE DEVELOPMENT PLAN

MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS

P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505)828-2200, FAX (505)797-9539

Designed: JM	Drawn: SPS	Checked: DMG	Scale: 1" = 200'
Date: 5/18/2007	Job: A04097	Sheet 2 of 6	

Appendix F– Drainage Calculations

48 inch Trunkline

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.013
Channel Slope	0.018 ft/ft
Diameter	48.0 in
Discharge	130.00 cfs
Results	
Normal Depth	29.1 in
Flow Area	8.0 ft ²
Wetted Perimeter	7.1 ft
Hydraulic Radius	13.4 in
Top Width	3.91 ft
Critical Depth	40.9 in
Percent Full	60.7 %
Critical Slope	0.008 ft/ft
Velocity	16.28 ft/s
Velocity Head	4.12 ft
Specific Energy	6.55 ft
Froude Number	2.008
Maximum Discharge	204.40 cfs
Discharge Full	190.01 cfs
Slope Full	0.008 ft/ft
Flow Type	Supercritical
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	60.7 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	29.1 in
Critical Depth	40.9 in
Channel Slope	0.018 ft/ft
Critical Slope	0.008 ft/ft

Type A Inlet

Project Description	
Solve For	Efficiency
Input Data	
Discharge	1.89 cfs
Slope	0.018 ft/ft
Gutter Width	2.00 ft
Gutter Cross Slope	0.020 ft/ft
Road Cross Slope	0.020 ft/ft
Roughness Coefficient	0.013
Local Depression	0.4 in
Local Depression Width	24.0 in
Grate Width	2.00 ft
Grate Length	4.0 ft
Grate Type	P-50 mm (P-1 -7/8")
Clogging	25.0 %
Curb Opening Length	4.0 ft
Options	
Calculation Option	Use Both
Grate Flow Option	Exclude None
Results	
Efficiency	66.52 %
Intercepted Flow	1.26 cfs
Bypass Flow	0.63 cfs
Spread	7.6 ft
Depth	1.8 in
Flow Area	0.6 ft ²
Gutter Depression	0.0 in
Total Depression	0.4 in
Velocity	3.25 ft/s
Splash Over Velocity	9.97 ft/s
Frontal Flow Factor	1.000
Side Flow Factor	0.166
Grate Flow Ratio	0.556
Equivalent Cross Slope	0.029 ft/ft
Active Grate Length	3.0 ft
Length Factor	0.038
Total Interception Length	26.2 ft

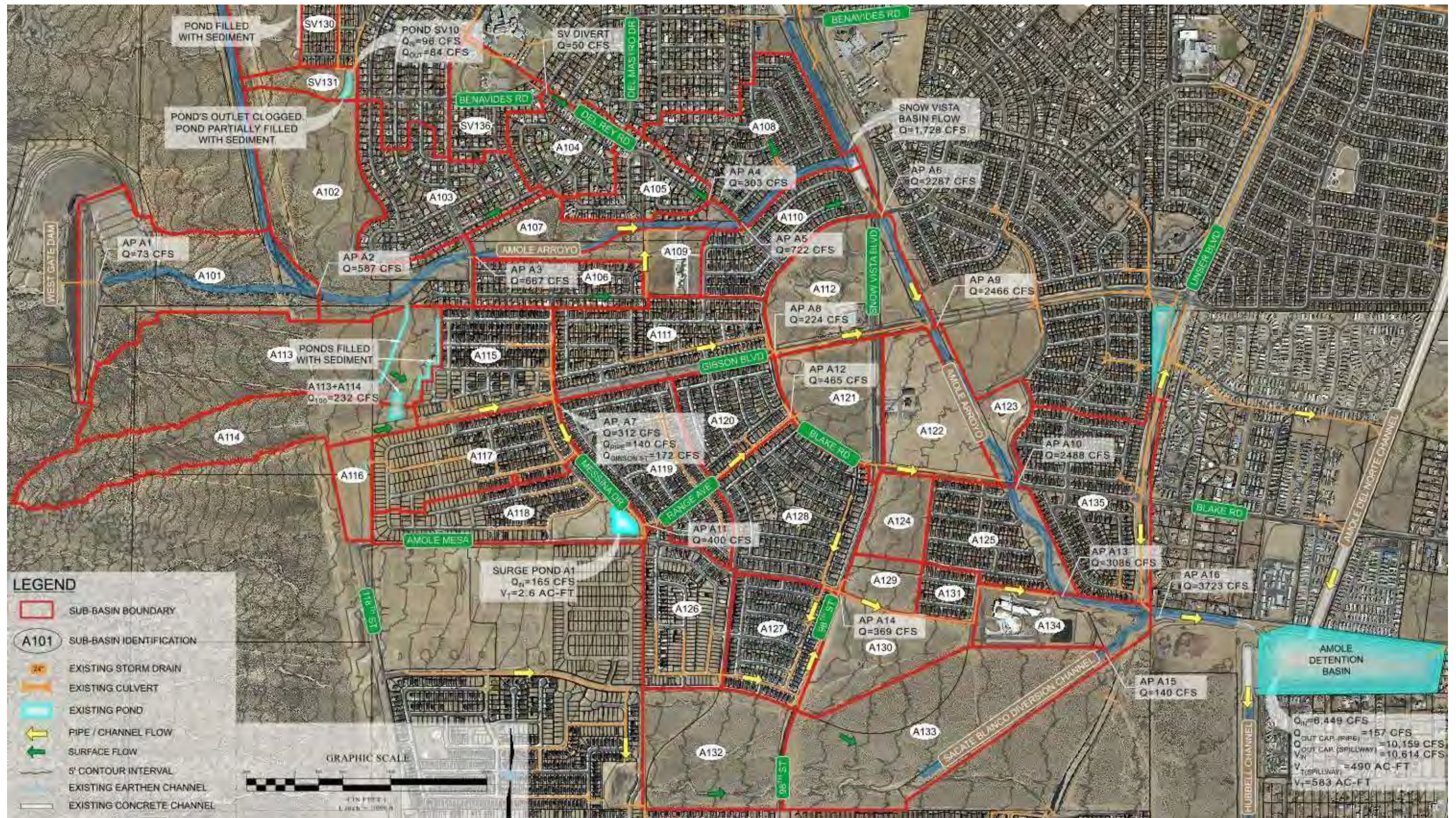
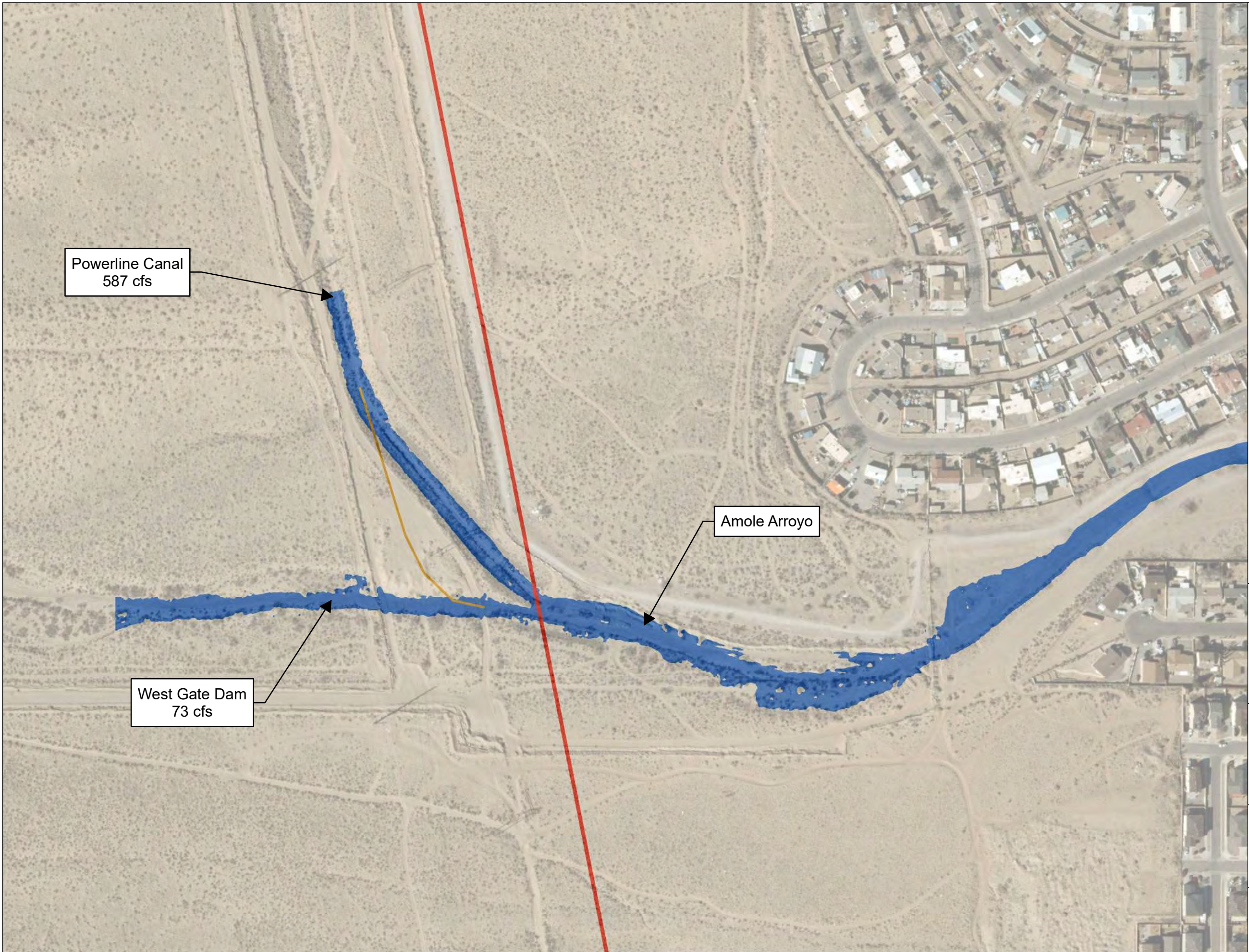


Figure A-9: Amole Basin - Existing Basin Map



Legend

-  Proposed Roadway Alignment
 -  Channel Realignment
 -  Existing 100-YR Inundation
- 0 100 200 400 Feet

**118th St
Alignment Study**

**HEC-RAS
Output**

**WILSON
& COMPANY**

Scale: 1 inch = 200 feet
Date: 8/31/2023

Rational Calculations

Basin	Rational Coefficient ¹	100-YR Rainfall Intensity ²	Area	Flow ³
		(in/hr)	(acres)	(cfs)
Trunkline ⁴	0.9	4.58	26.253	108.21
Inlet ⁵	0.9	4.58	0.459	1.89

¹Table 6.2.15 Coefficient C from CABQ DPM

²Table 6.2.8 Precipitation for Zones 1-4 from CABQ DPM

³Equation 6.7 Rational Method from CABQ DPM

⁴Total paved area for entire 118th St improvements

⁵Assumed area draining to each inlet

Appendix G– Cost Estimate (East)

Bernalillo County					
118th Street Study (Amole Mesa Avenue to Eucariz Avenue EAST SIDE)					
Alternative A Preliminary Estimate					
COA ITEM NO.	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUAN	COST
4.010	CONSTRUCTION STAKING & SURVEYING, PROJECT AS-BUILTS, COMPLETE	LS	\$ 338,694	1	\$ 338,694
6.010	MOUNTING, INSTALLATION & MAINTENANCE OF PROJECT IDENTIFICATION SIGN, INCL. PLYWOOD, POSTS, AND FOUNDATIONS, CIP.	EACH	\$ 822	2	\$ 1,643
19.010	CONSTRUCTION TRAFFIC CONTROL & BARRICADING, COMPLETE	LS	\$ 236,849	1	\$ 236,849
202.011	EXCAV & DISP, UNSUT MAT (DRAINAGE)	CU YD	\$ 15	41,027	\$ 615,406
202.011	EXCAV & DISP, UNSUT MAT (ROADWAY)	CU YD	\$ 15	89,550	\$ 1,343,250
204.01	FILL CONSTRUCTION, INCL. EXCAVATION, PLACEMENT & COMPACTION OF UNCLASSIFIED MATERIAL, OVER 2 FT. DEEP, CIP.	CU YD	\$ 19	45,350	\$ 850,313
301.020	SUBGRADE PREP. 12" AT 95% COMPACTION, CIP.	SQ YD	\$ 4	53,640	\$ 218,851
302.010	AGGREGATE BASE COURSE, CRUSHED, 6" THICK, PLACE AND COMPACT,CIP.	SQ YD	\$ 11	53,640	\$ 612,032
336.010	PRIME COAT, EMULSIFIED ASPHALT, CIP.	SQ YD	\$ 1	53,640	\$ 45,594
336.024	ASPHALT CONCRETE, 3 INCH THICK, SUPERPAVE	SQ YD	\$ 28	53,640	\$ 1,486,901
336.120	TACK COAT	SQ YD	\$ 0.5	53,640	\$ 26,284
340.010	SIDEWALK, 4" THICK, PORTLAND CEMENT CONCRETE, INCL. SUBGRADE COMPACTION, CIP.	SQ YD	\$ 65	9,700	\$ 632,634
340.023	WHEELCHAIR ACCESS RAMP, 4" PCC, STD. CURB.,CIP	SQ YD	\$ 95	140	\$ 13,353
340.029	DETECTABLE WARNING SURFACES FOR ADA RAMPS	SQ FT	\$ 39	80	\$ 3,153
340.05	CURB & GUTTER, STANDARD, PORTLAND CEMENT CONCRETE, INCL. SUBGRADE PREPERATION, CIP. SD 2415	LIN FT	\$ 29	14,800	\$ 433,196
340.06	CURB & GUTTER, MEDIAN, PORTLAND CEMENT CONCRETE, CIP.	LIN FT	\$ 23	12,980	\$ 296,333
346.100	TEXTURED MEDIAN PAVEMENT, 4" THICK, COLORED PC CONCRETE, INCL. SUBGRADE COMPACTION, CIP.	SQ FT	\$ 12	240	\$ 2,856
421.XXX	LIGHTING	LS	\$ 275,000	1	\$ 275,000
441.001	REFLECTORIZED PLASTIC PAVEMENT MARKINGS, 4" WIDTH, CIP.	LIN FT	\$ 2	53,000	\$ 82,150
441.002	REFLECTORIZED PLASTIC PAVEMENT MARKINGS, 6" WIDTH, CIP.	LIN FT	\$ 2	14,500	\$ 23,635
441.005	REFLECTORIZED PLASTIC PAVEMENT MARKINGS, 24" WIDTH, CIP.	LIN FT	\$ 7	110	\$ 717
441.010	REFLECTORIZED PLASTIC ARROW, RIGHT, CIP	EACH	\$ 212	6	\$ 1,269
441.011	REFLECTORIZED PLASTIC ARROW, LEFT, CIP	EACH	\$ 197	4	\$ 787
441.020	REFLECTORIZED PLASTIC WORD, ONLY, CIP	EACH	\$ 222	5	\$ 1,109
450.XXX	SIGNAGE	LS	\$ 7,500	1	\$ 7,500
621.410	MOBILIZATION	LS	\$ 2,368,487	1	\$ 2,368,487
910.022	48" RCP, IV	LF	\$ 310	11432	\$ 3,543,985
910.006	18" RCP, IV	LF	\$ 90	3420	\$ 307,800
915.020	CTH BSN, A, DG	EACH	\$ 9,000	57	\$ 513,000
920.140	MH, 6' DIA, C or E 6'-10' D	EACH	\$ 8,000	55	\$ 440,000
XXX.XXX	BRIDGE	SQ FT	\$ 640	15810	\$ 10,118,400
XXX.XXX	RIGHT OF WAY-ROADWAY	ACRE	\$ 50,000	33	\$ 1,637,716
XXX.XXX	RIGHT OF WAY-PONDING	ACRE	\$ 50,000	3	\$ 150,000
SUBTOTAL					\$ 26,628,897
CONTINGENCY (30%)					\$ 7,988,669
NMGRT (7.625%)					\$ 2,030,453
PROJECT TOTAL					\$ 36,648,020