CONSTRUCTION PLANS FOR MAVERIK, 3737 PRINCETON DR.

COMANCHE ROAD NE PAVING IMPROVEMENTS

	•
APPRO	VED RECORD DRAWINGS
City Inspector	Henry Blair
Contractor	TLC Plumbing
City Inspector Henry Blair	
Date	5/6/2020

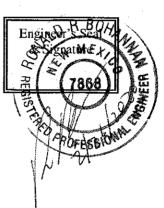
ALBUQUERQUE BERNALILLO COUNTY, NEW MEXICO APRIL 2019



INDEX TO DRAWINGS

CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

I, Ronald R. Bohannan, of the firm of Tierra West LLC, 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 part of this project 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 approved by the City Planning Department and that the original design intent of the approved plans has been met, except as noted by



- TITLE SHEET
- **PLAT**
- SITE PLAN (REFERENCE)
- GRADING PLAN (REFERENCE)
- PAVING IMPROVEMENTS (COMANCHE ROAD NE)
- PAVING IMPROVEMENTS (PRINCETON DR. NE)
- STRIPIING IMPROVEMENTS (COMANCHE ROAD NE)
- UTILITY IMPROVEMENTS
- CONSTRUCTION DETAILS
- TRACER WIRE DETAILS AND JOINT RESTRAINT TABLE
- TRACER WIRE DETAILS

hereby certify, to the best of my knowledge and belief, that the infrastructure installed as part of this project 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 approved by the City Engineer and that the original design intent of the approved plans has been met, except as noted by me on the asbuilt construction drawings. This Certification is based on site inspections by me, or personnel under my direction with survey

WATER & SEWER

- ALL UTILITIES AND UTILITY SERVICE LINES SHALL BE INSTALLED PRIOR TO PAVING. EXISTING VALVES AND MANHOLES SHALL NOT BE BURIED OR PAVED OVER BUT RIMS SHALL BE ADJUSTED TO MATCH NEW GRADE PER COA STANDARD DRAWINGS 2460 AND 2461.
- MANHOLE RIMS, FIRE HYDRANT ELEVATIONS, AND FLANGE ELEVATIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY AND ADJUST TO FINAL PAVEMENT OR SURFACE GRADES.
- 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 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://ABCWUA.ORG/WATER_SHUT_OFF_AND_TURN_ON_PROCEDURES.ASPX
- PROPOSED WATERLINE MATERIALS SHALL BE PVC PIPE MEETING AWWA C-900: DR18 REQUIREMENTS (6" 12") OR DUCTILE IRON PIPE MEETING AWWA C-150 REQUIREMENTS (6" - 48"),
- . ALL WATERLINE FITTINGS, VALVES, BENDS, TEES, CROSSES AND APPURTENANCES SHALL HAVE RESTRAINED JOINTS UNLESS OTHERWISE NOTED ON THE PLANS. REFER SHEET 10 FOR THE JOINT RESTRAINT TABLE.
- 6. ALL SANITARY SEWER LINE STATIONING REFERS TO SANITARY SEWER CENTERLINE STATIONING. EXCEPT WHEN PROFILED WITHIN A PROPOSED OR EXISTING STREET, WHERE STREET STATIONING SHALL GOVERN.
- ALL FINAL BACKFILL FOR TRENCHES SHALL BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DENSITY PER ASTM D-1557 AND AS DIRECTED BY STANDARD SPECIFICATIONS SECTION 701.14.2 AND STANDARD DRAWING NUMBER 2465.
- B. ELECTRONIC MARKER SPHERES (EMS) WILL BE PLACED ACCORDING TO THE CITY OF ALBUQUERQUE SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION AS REVISED THROUGH UPDATE #9. THE CONTRACTOR SHALL INSTALL A 4" X 4" X5' POST AND EMS AT THE END OF EACH SANITARY SEWER SERVICE.
- 9. TRACER WIRE SHALL BE INCLUDED FOR ALL PUBLIC WATER AND SEWER MAINS AND FOR WATER SERVICES IN ACCORDANCE WITH WATER AUTHORITY DETAILS.
- 10. CONTRACTOR SHALL PROVIDE THE PROPOSED HYDRO TESTING PLANS TO THE WUA INSPECTORS FOR APPROVAL PRIOR TO BEGINNING TESTING OPERATIONS.
- 1. AT UTILITY CROSSINGS, WHERE LESS THAN 18" OF VERTICAL SEPARATION FROM STORM DRAIN PIPING OR STRUCTURES IS PROPOSED, LEAN FILL CONSTRUCTION (PER SECTION 207 OF THE STANDARD SPECIFICATIONS) SHALL BE USED TO PROTECT THE WATER OR SEWER LINE. LEAN FILL SHALL EXTEND A PERPENDICULAR DISTANCE OF 5 FEET ON EACH SIDE OF THE STORM PIPE OR STRUCTURE.
- 2. ALL DESIGNS AND CONSTRUCTION OF ANY UNDERGROUND UTILITIES SHALL COMPLY WITH ADMINISTRATIVE INSTRUCTION NO. 9 FOR WORK NEARBY OR AFFECTING SAN JUAN CHAMA TRANSMISSION LINES AND APPURTENANCES. INFORMATION SHALL BE PROVIDED TO THE WATER AUTHORITY ONE (1) MONTH IN ADVANCE OF THE CONSTRUCTION START DATE. INFORMATION CAN BE FOUND AT HTTP://WWW.ABCWUA.ORG/WATER SHUT OFF AND TURN ON PROCEDURES.ASPX

TRANSPORTATION

- 1. ANY STREET STRIPING ALTERED OR DESTROYED SHALL BE REPLACED WITH THERMO-PLASTIC REFLECTORIZED PAVEMENT MARKING BY CONTRACTOR TO THE SAME LOCATION AS EXISTING OR AS INDICATED BY THIS PLAN
- 2. REMOVAL OF EXISTING CURB & GUTTER AND SIDEWALKS SHALL BE TO THE NEAREST JOINT.
- 3. 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
- 4. CURB AND GUTTER, SIDEWALKS, AND DRIVE PADS SHALL MATCH THE LINE AND GRADE OF ABUTTING EXISTING AREAS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE PROJECT ENGINEER.
- 5. THE SUBGRADE PREP SHALL EXTEND ONE FOOT BEYOND THE FREE EDGE OF NEW CURB AND GUTTER AND SIDEWALK.
- 6. CONTRACTOR TO TEST SUBGRADE R-VALUE PRIOR TO CONSTRUCTION. IN THE EVENT THE R-VALUE IS LESS THAN 50, REMOVE 2 FEET OF SUBGRADE MATERIAL AND IMPORT MATERIAL WITH R-VALUE GREATER THAN 50 OR CONTACT THE ENGINEER IMMEDIATELY SO THE PAVEMENT SECTION CAN BE MODIFIED.
- 7. AT ALL PAVEMENT REMOVAL AND REPLACEMENTS, SAW-CUT EDGES SHALL BE STRAIGHT AND CLEAN, AND LONGITUDINAL JOINTS SHALL NOT BE PLACED WITHIN WHEEL PATHS. PATCHES SHALL BE REGULAR AND SQUARE OR RECTANGULAR, WITH FOUR STRAIGHT SIDES. FINISHED PAVEMENT SURFACE SHALL BE FLUSH WITH EXISTING PAVEMENT SURFACE, WITH NO SPILLOVER OF ASPHALT OR TACK COAT. CARE MUST BE TAKEN TO AVOID DAMAGING THE INTEGRITY OR APPEARANCE OF SURROUNDING PAVEMENTS; IF DAMAGED, THE ENTIRE SURFACE PATCH MUST BE EXPANDED TO COVER DAMAGES.
- 8. CONTRACTOR WILL ENSURE THE ASPHALT HAS A SMOOTH, UNIFORM EDGE WHEN REMOVING AND REPLACING CURB AND GUTTER. IF THE ASPHALT EDGE IS NOT SMOOTH AND UNIFORM, CONTRACTOR WILL SAW CUT AND REPLACE A ONE-FOOT STRIP OF ASPHALT ALONG THE FULL SECTION BEING REPLACED; REFER TO C.O.A. STANDARD DRAWING # 2465 WITH THE APPROPRIATE PAVING SECTION BASED ON ROADWAY CLASSIFICATION.

OTHER COMMON NOTES

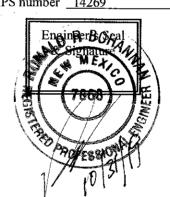
- 1. ALL EXCAVATION, TRENCHING, AND SHORING ACTIVITIES MUST BE ACCOMPLISHED IN ACCORDANCE WITH OSHA 29CFR 1926.650 SUBPART P.
- 2. WHEN DISTURBING MORE THAN ¾ ACRES, CONTRACTOR SHALL SECURE A "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.
- 3. IN ADVANCE OF CONSTRUCTION, CONTRACTOR SHALL DETERMINE IF OVERHEAD UTILITY LINES, SUPPORT STRUCTURES, POLES, GUYS, ETC. ARE AN OBSTRUCTION TO CONSTRUCTION OPERATIONS. IF ANY OBSTRUCTION TO CONSTRUCTION OPERATIONS IS EVIDENT, CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE APPROPRIATE UTILITY OWNER TO REMOVE OR SUPPORT THE UTILITY OBSTRUCTION.

ANY COST ASSOCIATED WITH THIS EFFORT SHALL BE THE RESPONSIBILITY OF CONTRACTOR.

- 4. PNM WILL PROVIDE AT NO COST TO THE CITY OR THE CONTRACTOR THE REQUIRED PERSONNEL FOR INSPECTION OR OBSERVATION DEEMED NECESSARY BY PNM WHILE THE CONTRACTOR IS EXPOSING PNM'S CABLES. HOWEVER, THE CONTRACTOR SHALL BE CHARGED THE TOTAL COST ASSOCIATED WITH REPAIRS TO ANY DAMAGED CABLES OR FOR ANY COST ASSOCIATED WITH SUPPORTING OR RELOCATING THE POLES AND CABLES
- 5. CONTRACTOR SHALL SUPPORT AND PROTECT ALL EXISTING, UNDERGROUND UTILITY LINES WHICH BECOME EXPOSED DURING CONSTRUCTION. PAYMENT FOR SUPPORTING WORK SHALL BE INCIDENTAL TO WATERLINE AND/OR SEWER LINE COSTS.
- 6. CONTRACTOR IS TO SUPPORT, PROTECT, AND MAINTAIN THE INTEGRITY OF ALL UNDERGROUND TELEPHONE, ELECTRIC CABLES AND CABLE TELEVISION UTILITIES AT NO ADDITIONAL COST TO THE OWNER. CABLE IS TO BE SUPPORTED AT A MAXIMUM SPACING OF FIFTEEN (15) FEET. CONTRACTOR SHALL COORDINATE WITH AND MAKE NECESSARY PAYMENT (IF ANY) TO UTILITY OWNER FOR DE-ENERGIZATION OF CABLES OR SUPPORT OF CABLES
- 7. CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY OR PRIVATE ROADWAY EASEMENTS TO PREVENT ANY EXCAVATED MATERIAL BEING WASHED DOWN THE STREET OR
- 8. CONTRACTOR SHALL CONDUCT ALL WORK IN A MANNER WHICH WILL MINIMIZE INTERFERENCE WITH LOCAL
- 9. ALL EXISTING SIGNS, MARKERS, DELINEATORS, ETC., WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED, STORED AND RE-SET BY THE CONTRACTOR.
- 10. DISPOSAL SITE FOR ALL EXCESS EXCAVATION MATERIAL AND UNSUITABLE MATERIAL SHALL BE ARRANGED BY THE CONTRACTOR IN COMPLIANCE WITH ALL APPLICABLE ENVIRONMENTAL REGULATIONS. NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE FOR COSTS ASSOCIATED WITH OBTAINING A DISPOSAL SITE AND HAUL THERETO.
- 11. IF CULTURAL RESOURCES, SUCH AS HISTORIC OR PREHISTORIC ARTIFACTS, OR HUMAN REMAINS ARE DISCOVERED DURING EXCAVATION OR CONSTRUCTION, WORK SHALL CEASE AND THE CONSTRUCTION ENGINEER SHALL NOTIFY THE COUNTY OFFICE OF THE MEDICAL EXAMINER AT (505) 272-3053. IF THE MEDICAL EXAMINER DETERMINES THAT HUMAN REMAINS ARE NOT PRESENT, THE CONSTRUCTION ENGINEER SHALL NOTIFY THE STATE HISTORIC PRESERVATION OFFICER (SHPO) AT 827-6320.

CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS (ANCLUVA CWLY)

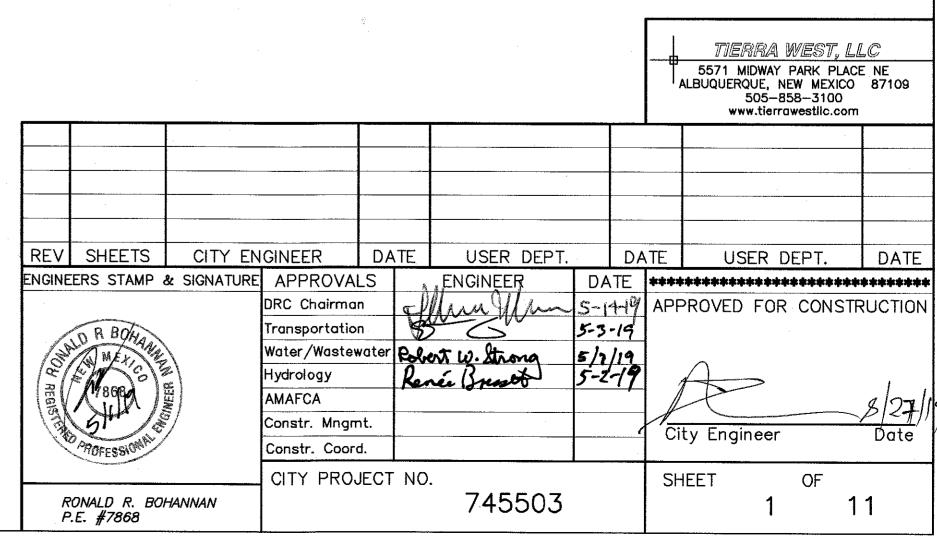
I, Ronald R. Bohannan, of the firm of Tierra West LLC, a Registered Professional Engineer in the State of New Mexico, do information provided by Thomas D. Johnston, of Wayjohn Surveying Inc, NMPS number 14269



RECORD DRAWINGS BRUCE D JOHNS P--99--161 INDIAN M-1 G - 16 - ZVICINITY MAP

- ALL WORK DETAILED ON THESE PLANS, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION THROUGH UPDATE #9. AND WILL BE REFERRED TO HEREIN AS "STANDARD SPECIFICATIONS".
- 2. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL STATE, AND LOCAL LAWS, ORDINANCES, RULES, AND REGULATIONS CONCERNING CONSTRUCTION
- 3. CONTRACTOR SHALL ASSUME THE SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALI TO NORMAL WORKING HOURS. CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD HARMLESS THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.
- 4. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN
- THAT MAY BE DISTURBED WITHOUT PERMISSION. ONLY THE CITY SURVEYOR SHALL REPLACE AT HIS OWN EXPENSE, ADJUST THE MONUMENT COVER TO THE NEW GRADE UNLESS OTHERWISE SPECIFIED. REFER TO STANDARD SPECIFICATIONS SECTION 4.4.
- EXIST WHERE NONE ARE SHOWN. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION. CONTRACTOR SHALL CONTACT NEW MEXICO ONE CALL SYSTEM (260-1990) FOR LOCATION OF EXISTING UTILITIES. CONTRACTOR SHALL THEN EXCAVATE AND VERIFY THE HORIZONTAL AND RESOLVED WITH A MINIMUM AMOUNT OF DELAY. CONTRACTOR SHALL THEN COORDINATE RELOCATION OF UTILITY LINES WITH UTILITY COMPANIES AS REQUIRED. ANY DAMAGE CAUSED BY
- 7. CONTRACTOR SHALL ASSIST THE ENGINEER/INSPECTOR IN THE RECORDING OF DATA ON ALL UTILITY LINES AND ACCESSORIES AS REQUIRED BY THE CITY OF ALBUQUERQUE FOR THE PREPARATION OF "AS BUILT" DRAWINGS. CONTRACTOR SHALL NOT COVER UTILITY LINES AND ACCESSORIES UNTIL ALL DATA HAS BEEN RECORDED.
- 8. CONTRACTOR SHALL ASSUME FINANCIAL RESPONSIBILITY FOR ANY DAMAGE TO EXISTING PAVEMENT, PAVEMENT MARKINGS, SIGNAGE, CURB AND GUTTER, HANDICAP RAMPS, AND SIDEWALK DURING CONSTRUCTION APART FROM THOSE SECTIONS INDICATED ON THE PLANS, AND SHALL REPAIR OR REPLACE, PER THE STANDARD SPECIFICATIONS, ANY SUCH DAMAGE.
- 9. CONTRACTOR SHALL MAINTAIN A GRAFFITI-FREE WORK SITE. CONTRACTOR SHALL PROMPTLY REMOVE ANY AND ALL GRAFFITI FROM EQUIPMENT, WHETHER PERMANENT OR TEMPORARY.
- 10. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND MAINTAIN ALL CONSTRUCTION SIGNING UNTIL THE PROJECT HAS BEEN ACCEPTED BY THE CITY AND OTHER JURISDICTIONAL AUTHORITIES
- 11. CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE PROPERTY AND/OR PROJECT LIMITS SHOWN. ANY DAMAGE TO ADJACENT PROPERTIES RESULTING FROM THE CONSTRUCTION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR, INCLUDING ANY SUCH COSTS INCURRED.
- 12. REMOVALS SHALL BE DISPOSED OF OFF-SITE AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

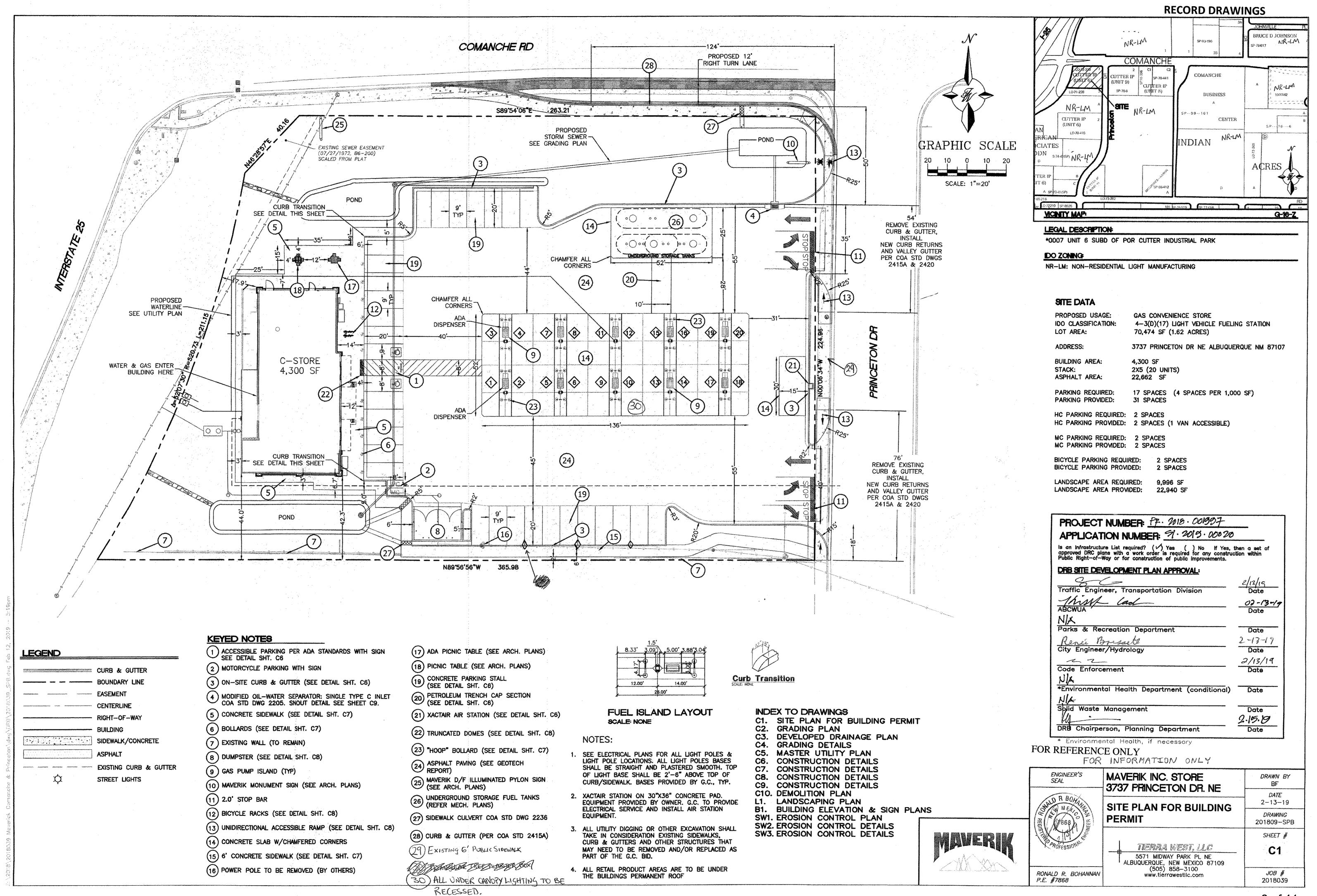
DRB NO. PR-2019-001997

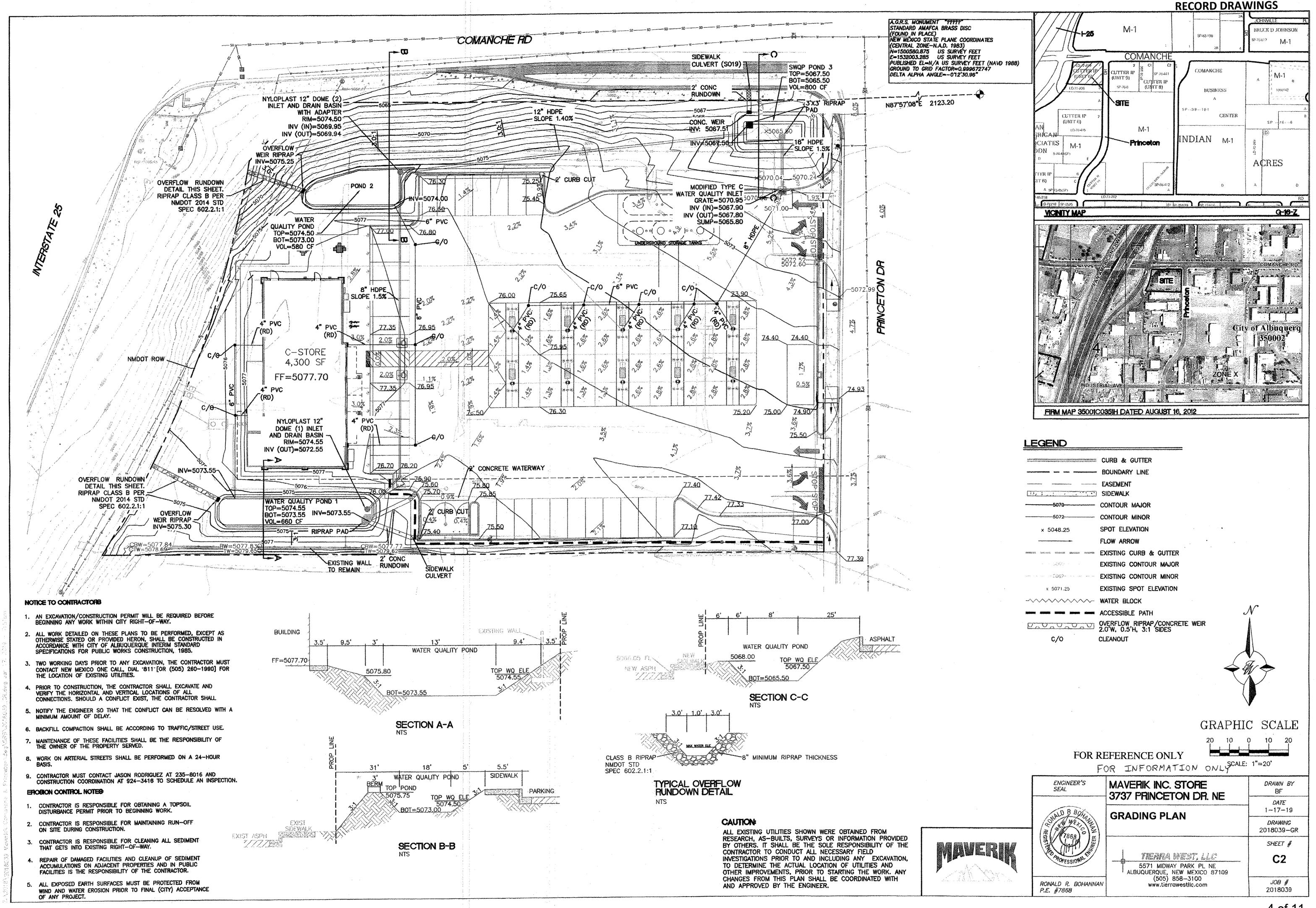


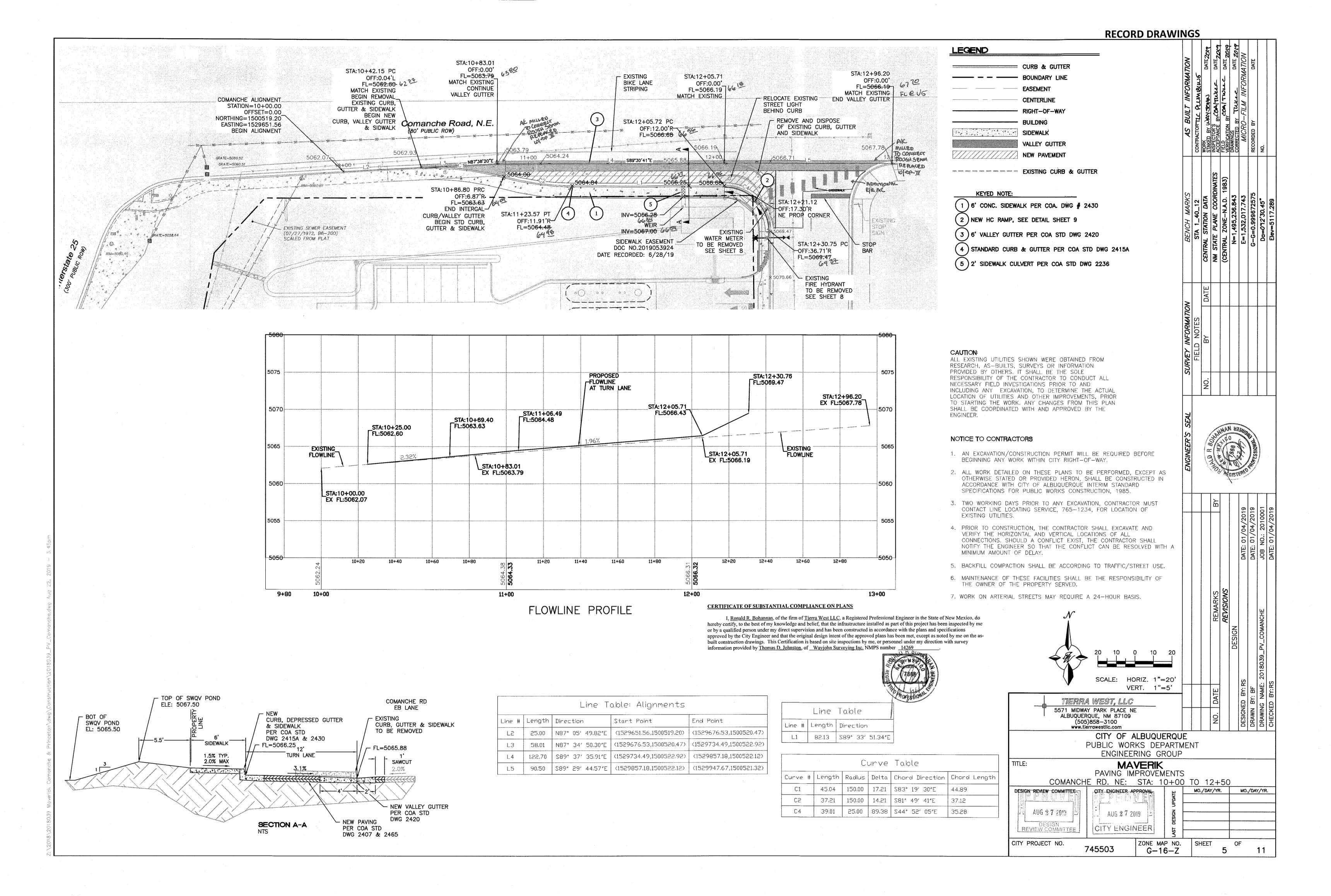
	LOT 7. UWIT 8
	. SECULIAR OF FORMS OF
	CUTTER INDUSTRIAL PARK
9 1	IL W ALBUQUERQUE, NEW MEXICO
O Apr	Pared _2-27-72_
2	Ll Lagran Cycl G-16
	COMANCHE RO NE Planning Department N. 55"45"50" E. J. 200-66"E. EGENT
. *	Sewer Easonout !
Ŀ	Charles T. Scannell, New Maxime Registered and Regreyor No. 3244, do horeby eartyfy the the survey and plat as show heres were
	At the same are true and extract to the
	W bulliof and knowledge.
: F :	N. OSTAGON SOCIETY
12:	
	is to cortify that, the taxes on the TIE-TO.SIN Con Sec. 3
	e last salf of 19 1/2.
	New Mences Title Cop
	Anne Offices
	A certain parcel of land siturts in Section), fewnohip 10 North, Range 3 East, Now Moxico Principal Meridian, Albuquerque, Burnelille County, New Maxico, together with the vacated Westerly Right (8) feet of Princeton Drive NB, as vacated by City Ordinance Ne.
	Beckening at the Southeast sersor of the remain terret described as fellows:
	the Westerly right of -wey lime of Princetes Drive EE, whence the Bouthwest turner of Scation), fewnship 10 Earth, Romes East, New Maxice Principal Merician, Bercalille Gousty, New Maxica heart \$150 To 100 W 2445 66 foot distance; themes
	described, being a point on the Easterly right-of-way line of the East during the
	State Highway No. 422; thence, Kortheasterly, 209.20 feet distance along the are of a curve bearing to the left along said Easterly right-of-way line of the East Access Soud of State Highway No. 422
	# 39° 42' 50° E. 41.05 feet distance to a point on the Southerly right-of-way line
ų	described; thence, 3 89° 46' E, 264.41 feet distance along the said Southerly right-of-way line of Gamenobe Read ME to its intersection with the Mosterly right-of-way line of Princeton
V -	Drive MB, being identical to the Morthaget corner of the parcel berein described; thouse,
	acres, more or less.
	Surveyed, platted and subdivided as shown hereon and comprising Let 7, Unit 6 of Subdivision of Portion of CUTTER INDUSTRIAL PARK, Albuquerque, New Maxico, is with the free comment of and in accordance with the wishes and desires of the undersigned commens
4	and proprietors thereof and the empers dedicate the casements as shows berees.
	Congris R. Cotto
	State of New Mexico SS County of Bernelille SS
	On this the 25th syday of 1010 1972 before the Maran Maran Maran
	said Gousty and State, personally appeared Virginia D. Cutter, to me known to be the person described, and who executed the foregoing instrument so his gen free act and deed.
	My exemission expires 10/1/13 Safemon & Externo
	Revmond T. Eyestone
	ASSOCIATED LAND SURVEYORS 192) San Matoe Blvd ME

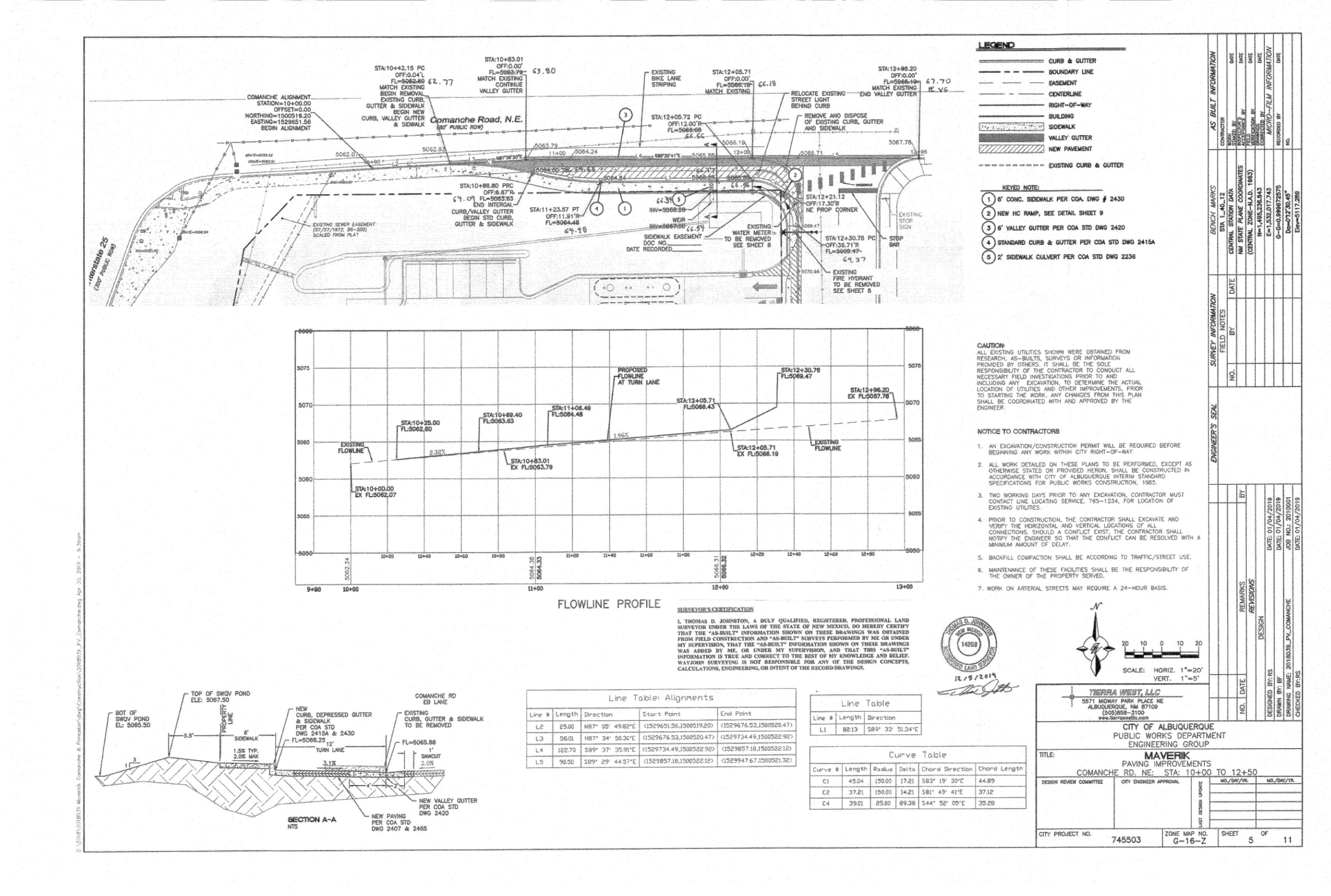
FOR REFERENCE ONLY
FOR INFORMATION ONLY

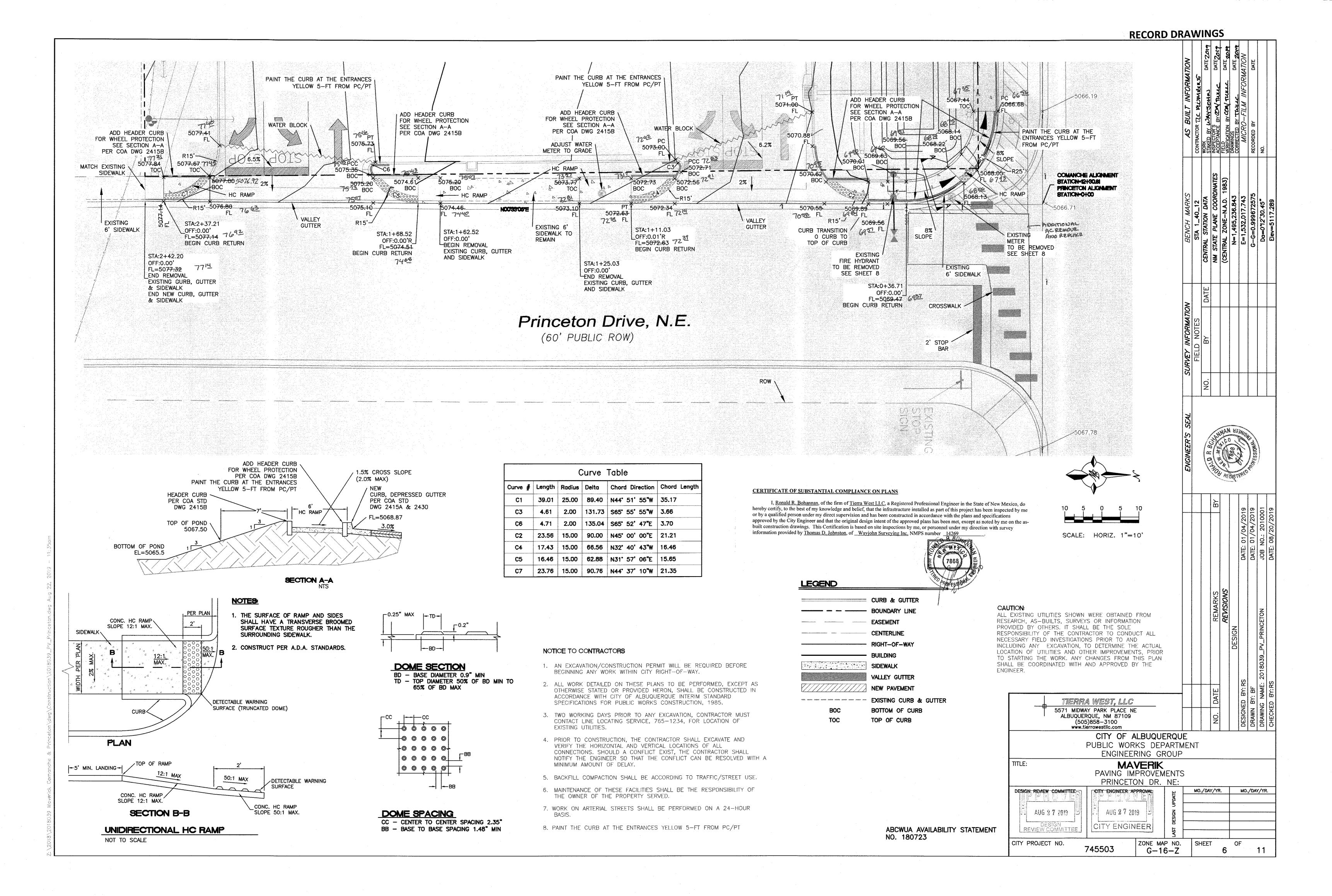
PLAT

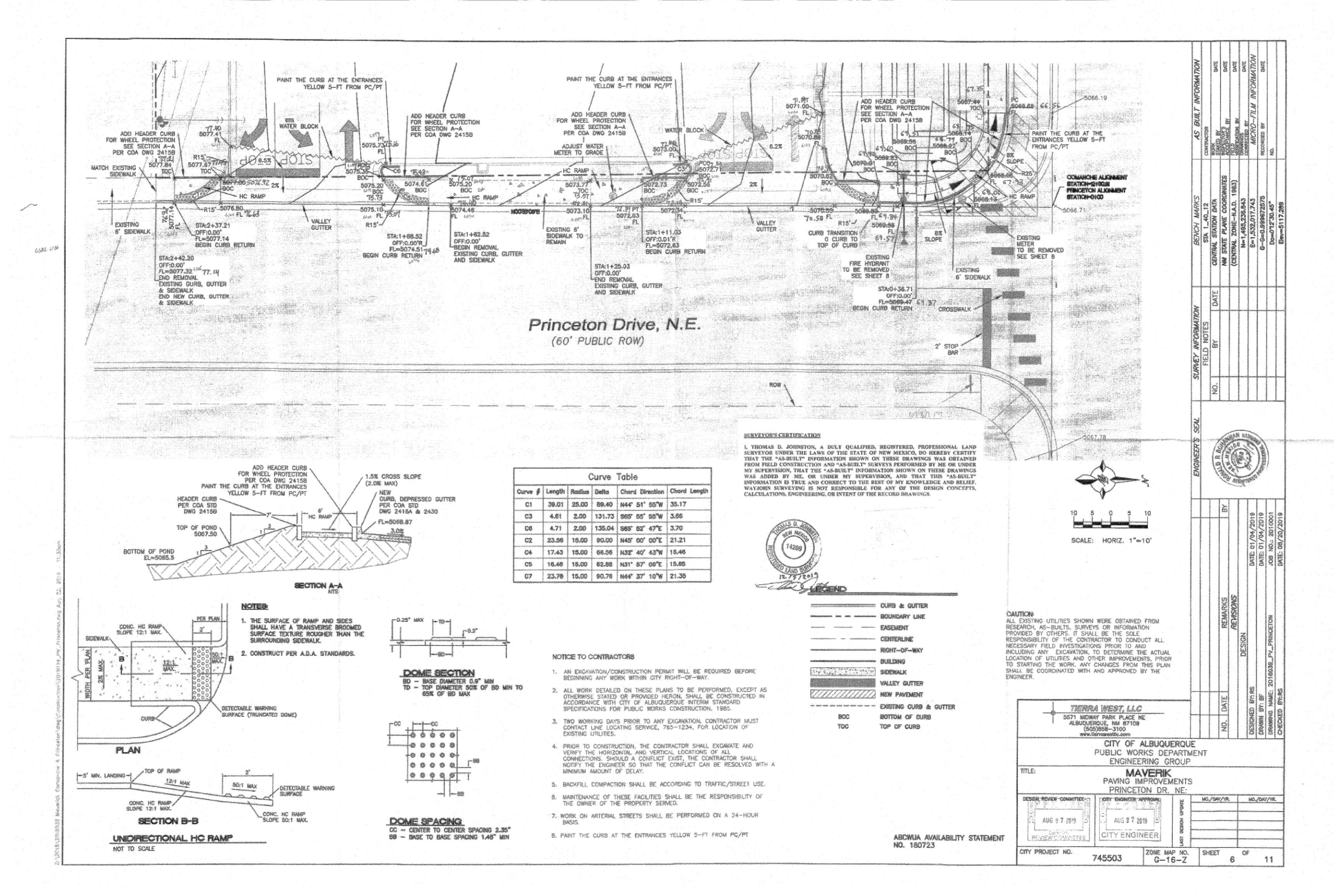


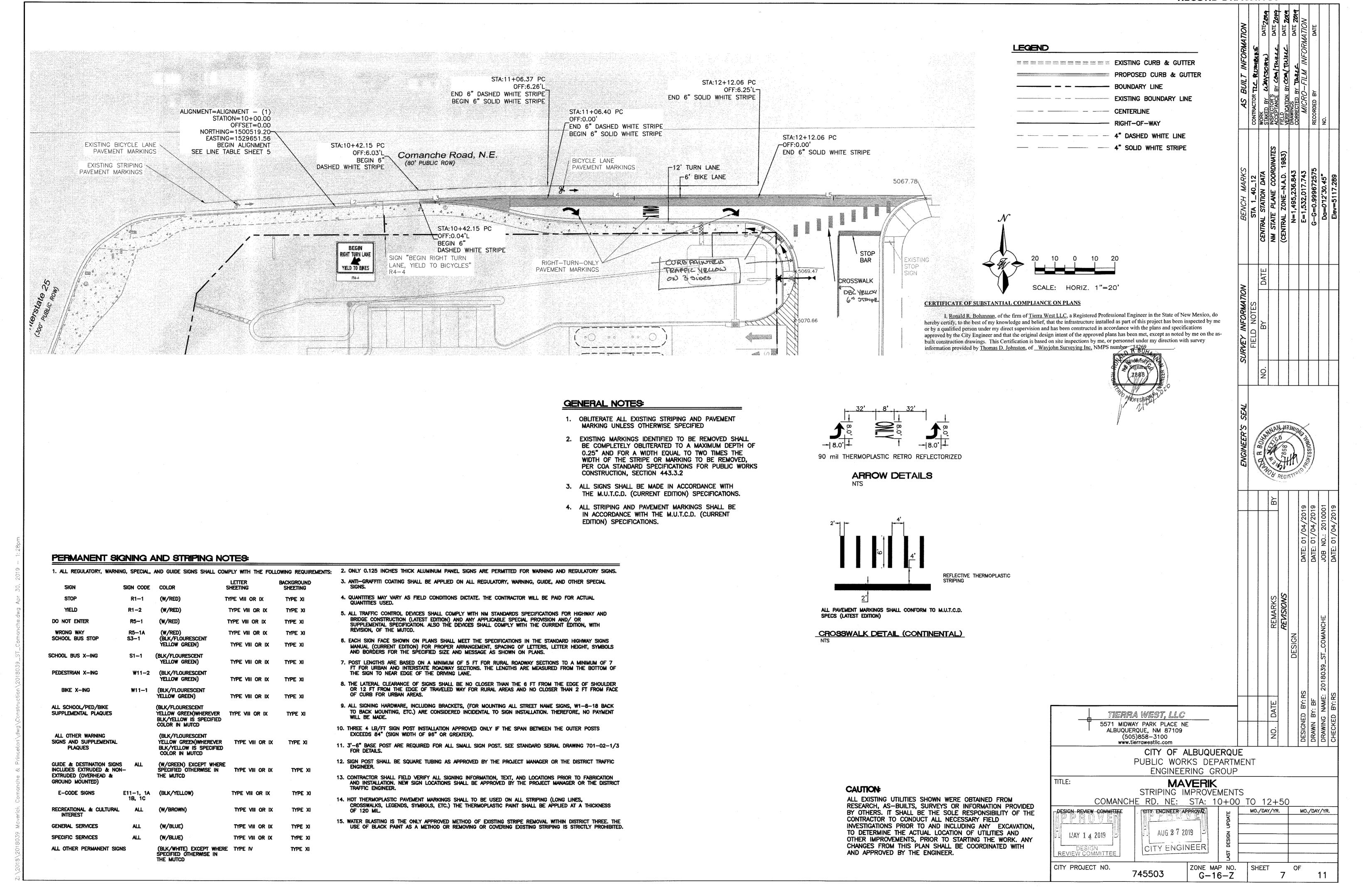












CITY PROJECT NO.

745503

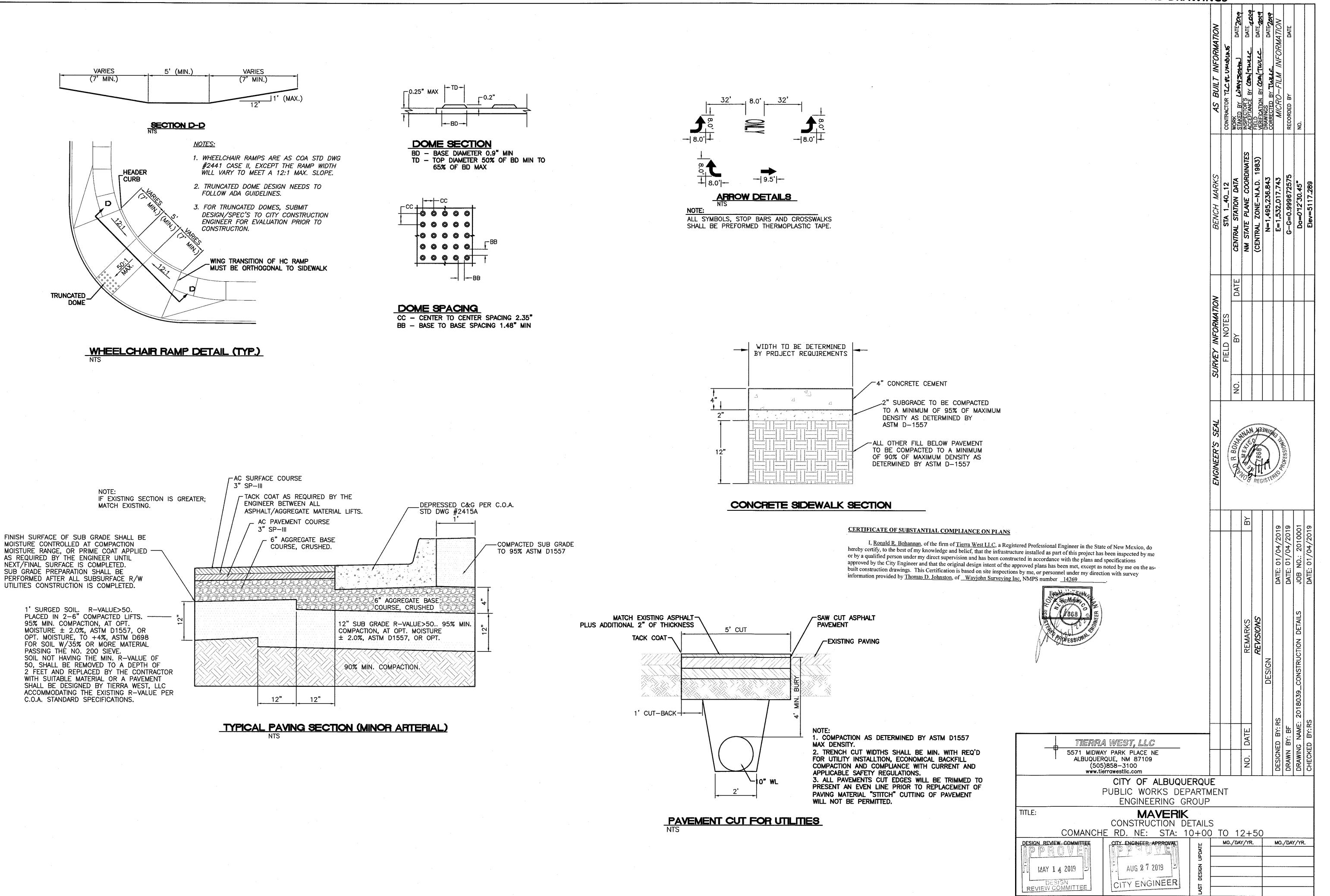
ZONE MAP NO.

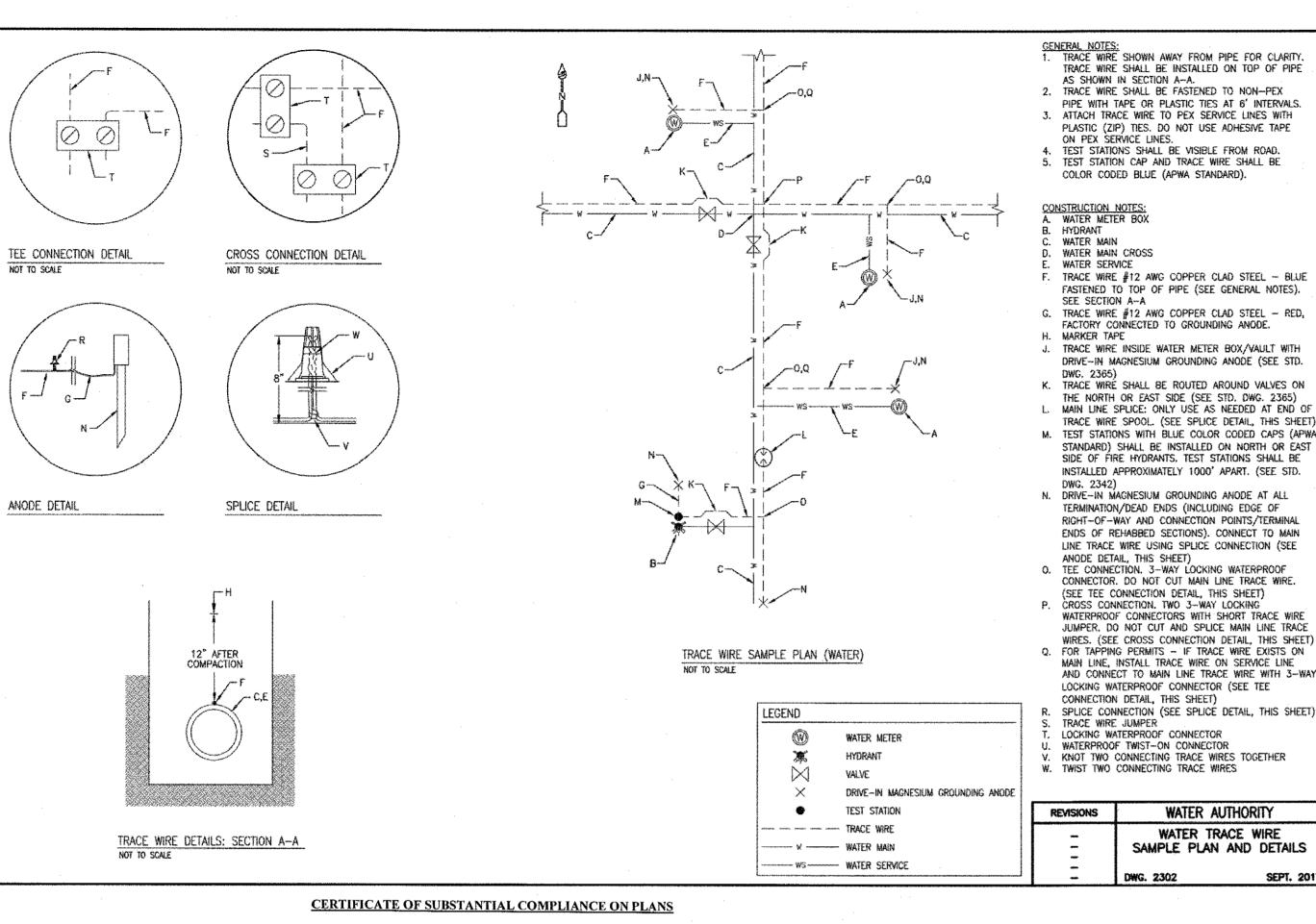
G-16-Z

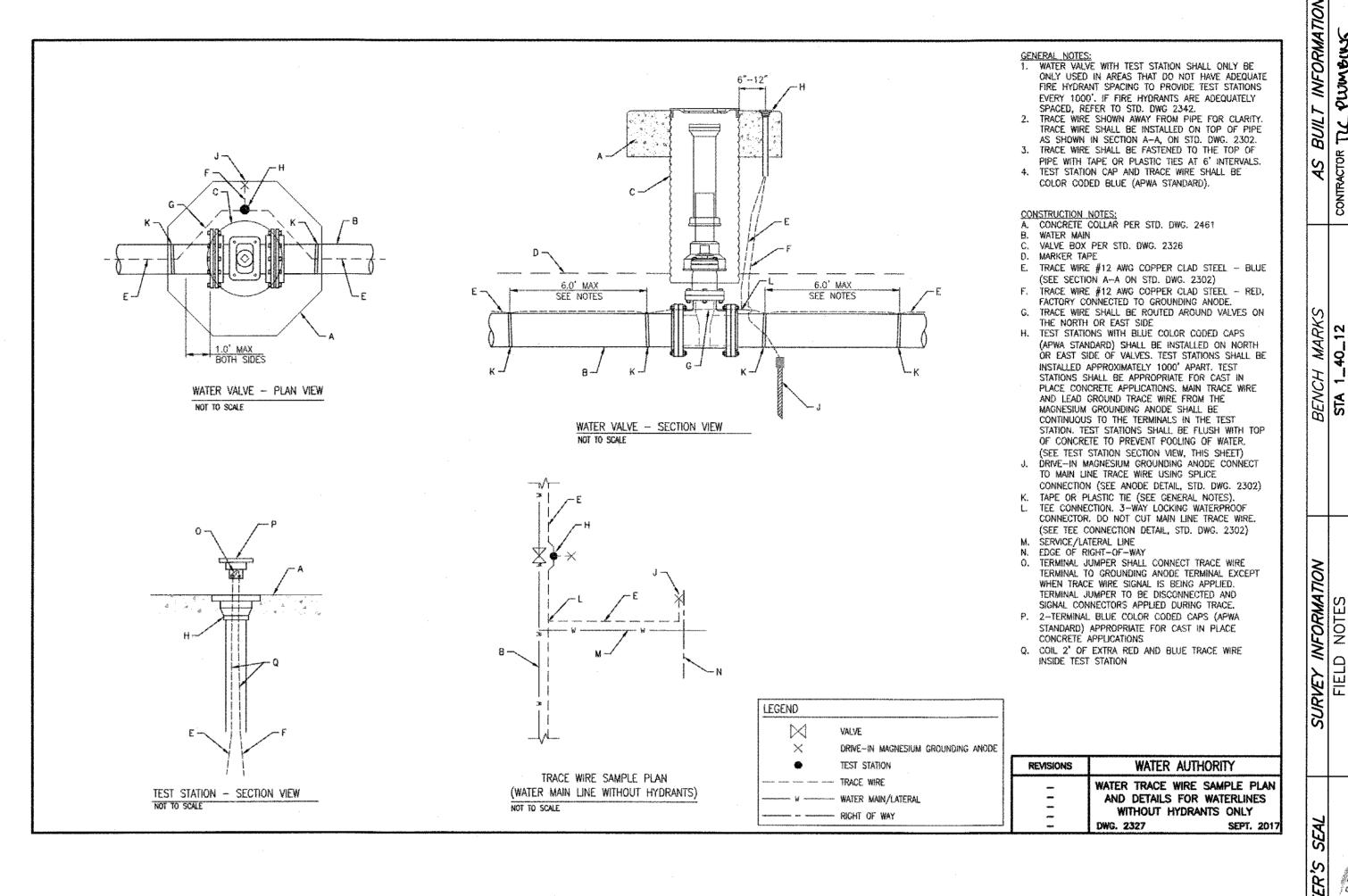
SHEET

OF

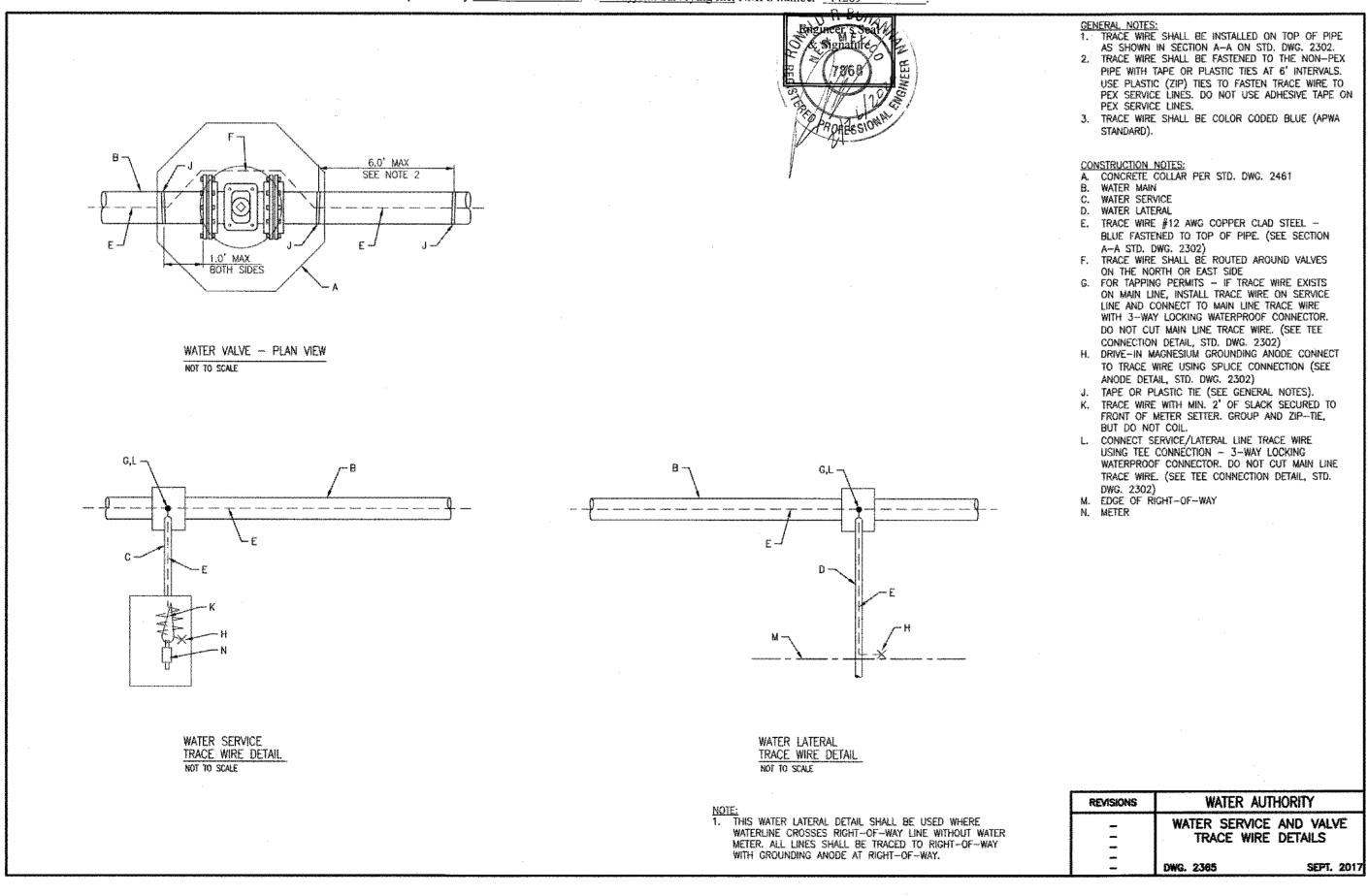
9







I, Ronald R. Bohannan, of the firm of Tierra West LLC, 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 part of this project 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 approved by the City Engineer and that the original design intent of the approved plans has been met, except as noted by me on the asbuilt construction drawings. This Certification is based on site inspections by me, or personnel under my direction with survey information provided by Thomas D. Johnston, of Wayjohn Surveying Inc. NMPS number 14269



THE FOLLOWING TABLES WERE CREATED USING EBAA IRON INC. SOFTWARE FOR RESTRAINING JOINTS WITH THESE CRITERIA:

DEPTH OF BURY: 3.0' MINIMUM SAFETY FACTOR: 1.5 TO 1

PIPE MATERIAL:

GM/SM-SILTY GRAVEL/SILTY SAND, GRAVEL-SAND MIXTURES SOIL TYPE: TEST PRESSURE: 150 PSI

TRENCH TYPE 3: PIPE BEDDED IN 4" MINIMUM LOOSE SOIL BACKFILL LIGHTLY CONSOLIDATED TO TOP OF PIPE

THESE LENGTHS WILL BE AFFECTED IF THE TYPE OF MATERIAL, GREATER DEPTH OF BURY, ETC. CHANGES. THESE MUST BE RECALCULATED BY THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.

RESTRAINED JOINT LENGTHS FOR TEES*								
SIZE LENGTH ALONG RUN**								
SIZE	10'	8,	6'	4'	2'	0'		
12×12×12	61	68	76	83	90	98		
12x12x10	39	48	56	65	74	83		
12x12x8	15	26	37	48	59	70		
12x12x6	1	1	9	24	38	53		
12x12x4	1	1	1	1	16	37		
10x10x10	46	54	61	68	76	83		
10x10x8	25	34	43	52	61	70		
10x10x6	1	5	17	29	41	53		
10x10x4	1	1	1	2	20	37		
8x8x8	34	42	49	56	63	70		
8x8x6	6	15	25	34	43	53		
8x8x4	1	1	1	10	24	37		
6x6x6	7	24	31	39	46	53		
6x6x4	1	1	6	17	27	37		
*RESTRAIN **LENGTH				BRANC		PIPE O		

**LENGTH ALONG RUN REFERS TO THE LENGTH OF PIPE ON EITHER SIDE OF THE TEE BEFORE THE NEXT JOINT.

RESTRA BENDS,	NNED JO VALVES	S, AND	NGTHS FO	DS (EACI	ZONTAL H SIDE)
SIZE		HORIZON	TAL BENDS		VALVES
SIZE	90•	45*	22-1/2	11-1/4	DEAD END
12	45	19	9	4	102
10	38	16	8	4	86
8	32	13	6	3	72
6	25	10	5	2	55
4	18	7	4	1	39

	RESTRAINED JOINT LENGTHS FOR REDUCERS***									
	SIZE	L. SIDE	SIZE	L. SIDE						
	12x10	50	10x6	53						
	12x8	54	10x4	70						
	12x6	74	8x6	30						
	12x4	88	8x4	52						
	10x8	29	6x4	28						
***RESTRA	NTS ONLY	PLACED (ON LARGE	SIDE						

THE FOLLOWING TABLES WERE CREATED USING EBAA IRON INC. SOFTWARE FOR RESTRAINING JOINTS WITH THESE CRITERIA:

DEPTH OF BURY: 3.0' MINIMUM TO 6.0'

SAFETY FACTOR: 1.5 TO 1

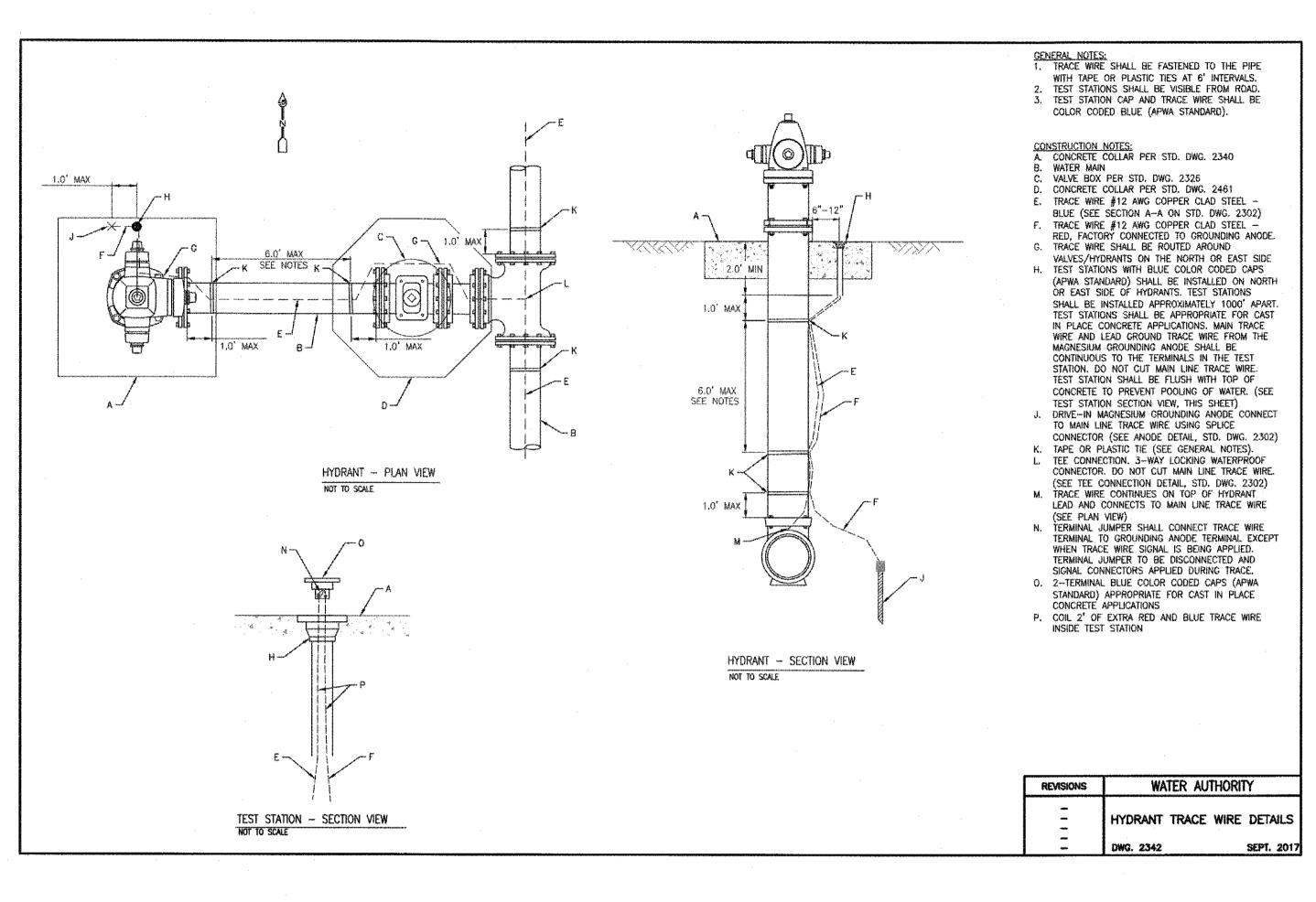
PIPE MATERIAL: PVC GM/SM-SILTY GRAVEL/SILTY SAND, GRAVEL-SAND MIXTURES SOIL TYPE: TEST PRESSURE: 150 PSI

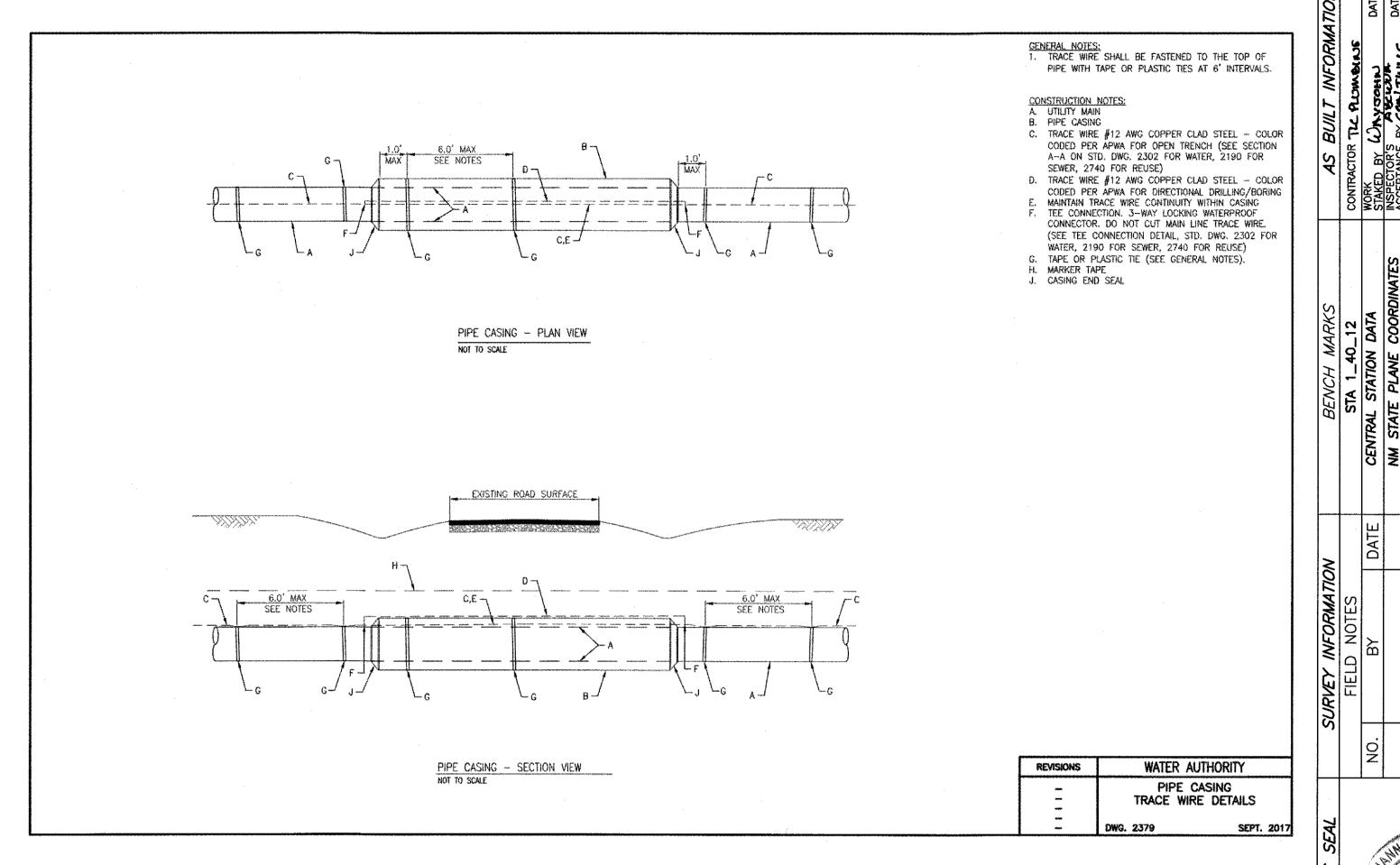
TRENCH TYPE 3: PIPE BEDDED IN 4" MINIMUM LOOSE SOIL BACKFILL LIGHTLY CONSOLIDATED TO TOP OF PIPE

THESE LENGTHS WILL BE AFFECTED IF THE TYPE OF MATERIAL, GREATER DEPTH OF BURY, ETC. CHANGES. THESE MUST BE RECALCULATED BY THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.

RESTRAINED JOINT LENGTHS FOR VERTICAL OFFSETS/BENDS (EACH SIDE)						
CIZE	•		HORIZON	TAL BENDS		
SIZE		90*	45°	22-1/2*	11-1/4	
12	UPPER LOWER	DON'T USE	42 10	20 5	10 2	
10	UPPER LOWER	DON'T USE	36 8	17 4	8 2	
8	UPPER LOWER	DON'T USE	30 7	14 3	7 2	
6	UPPER LOWER	DON'T USE	23 5	11 3	5 1	
4	UPPER LOWER	DON'T USE	16 4	8 2	4	

5571 MIDW. ALBUQUE	A WEST, LLC AY PARK PLACE NE RQUE, NM 87109 5)858-3100 ierrawestllc.com					NO. DA	DESIGNED E	DRAWN BY:	DRAWING N	CHECKED B
	CITY OF A PUBLIC WOR ENGINEER	KS DEP	ARTM		T					
TITLE:	MA' TRACER W	VERIK Vire de	TAILS							
DESIGN REVIEW COMMITTEE	GITY ENGINEER AF	PROVAE	Ħ	M	/O./DAY	/YR.	МО	./DAY	′/YR	
MPPROVEN			DESIGN UPDATE							\dashv
MAY 1 4 2019 🖳	AUG 2 7 20	019 4	N GN							
DESIGN	CITY ENGIN	VEER	1					·	····	
REVIEW COMMITTEE	U., I L.	and the state of t	LAST			······				\dashv
CITY PROJECT NO.	745503	ZONE MAI			SHEET	10	OF	•	11	





CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

I, Ronald R. Bohannan, of the firm of Tierra West LLC, 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 part of this project 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 approved by the City Engineer and that the original design intent of the approved plans has been met, except as noted by me on the asbuilt construction drawings. This Certification is based on site inspections by me, or personnel under my direction with survey information provided by Thomas D. Johnston, of Wayjohn Surveying Inc. NMPS number 14269



TITLE:

DESIGN REVIEW COMMITTEE

MAY 1 4 2019

REVIEW COMMITTEE

CITY PROJECT NO.

TIERRA WEST, LLC

5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109

(505)858-3100 www.tierrawestllc.com

PRA WEST, LLC DWAY PARK PLACE NE UERQUE, NM 87109 505)858-3100 rw.tierrawestllc.com	-			NO DATE REMARKS		DESIGN	DESIGNED BY: RS	DRAWN BY: BF	DRAWING NAME: 2018039_TRACER WIRE DETAILS	CHECKED BY:RS
CITY OF A PUBLIC WOR ENGINEER	KS DEP	ARTM						<u> </u>		
MA' Tracer w	VERIK Vire de	TAILS		***************************************						
CITY ENGINEER AF	PROVAL	PDATE	МС	O./DAY/Y	ҡ.		MO.	./DA	Y/YR	
Aug 2 7 2019		SIGN U								\dashv
CITY ENGIN	EER	LAST DESIGN UPDATE							,	
745503	ZONE MA		S	HEET	11	0	F		11	