

CONSTRUCTION PLANS FOR DEL NORTE PLAZA UTILITY IMPROVEMENTS ALBUQUERQUE BERNALILLO COUNTY, NEW MEXICO FEBRUARY 2008

FW

INDEX TO DRAWINGS

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2. PLAT
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7. UTILITY IMPROVEMENTS
STA. 10+00 - STA. 21+50
8. DETAILS

SURVEYOR'S CERTIFICATE
I, THOMAS W. PATRICK, A DULY QUALIFIED LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF NEW MEXICO, DO HEREBY CERTIFY THAT THE AS-BUILT INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM FIELD CONSTRUCTION AND "AS-BUILT" SURVEYS PERFORMED BY ME, OR UNDER MY SUPERVISION, THAT THE "AS-BUILT" INFORMATION SHOWN ON THESE DRAWINGS (UNLESS OTHERWISE NOTED) WAS ADDED BY ME, OR BY UNDER MY SUPERVISION, AND THAT THIS "AS-BUILT" INFORMATION IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. COMMUNITY SCIENCES CORPORATION IS NOT RESPONSIBLE FOR ANY OF THE DESIGN CONCEPTS, CALCULATIONS, ENGINEERING AND/OR INTENT OF THE RECORD DRAWINGS.

THOMAS W. PATRICK
NEW MEXICO
12651
PROFESSIONAL SURVEYOR
DATE 3.12.2009
THOMAS W. PATRICK
NEW MEXICO PROFESSIONAL SURVEYOR NO. 12651

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 as-built construction drawings. This Certification is based on site inspections by me, or personnel under my direction with survey information provided by Thomas W. Patrick, of Community Sciences Corp., NMPS number 12651.

Engineer's Seal
& Signature

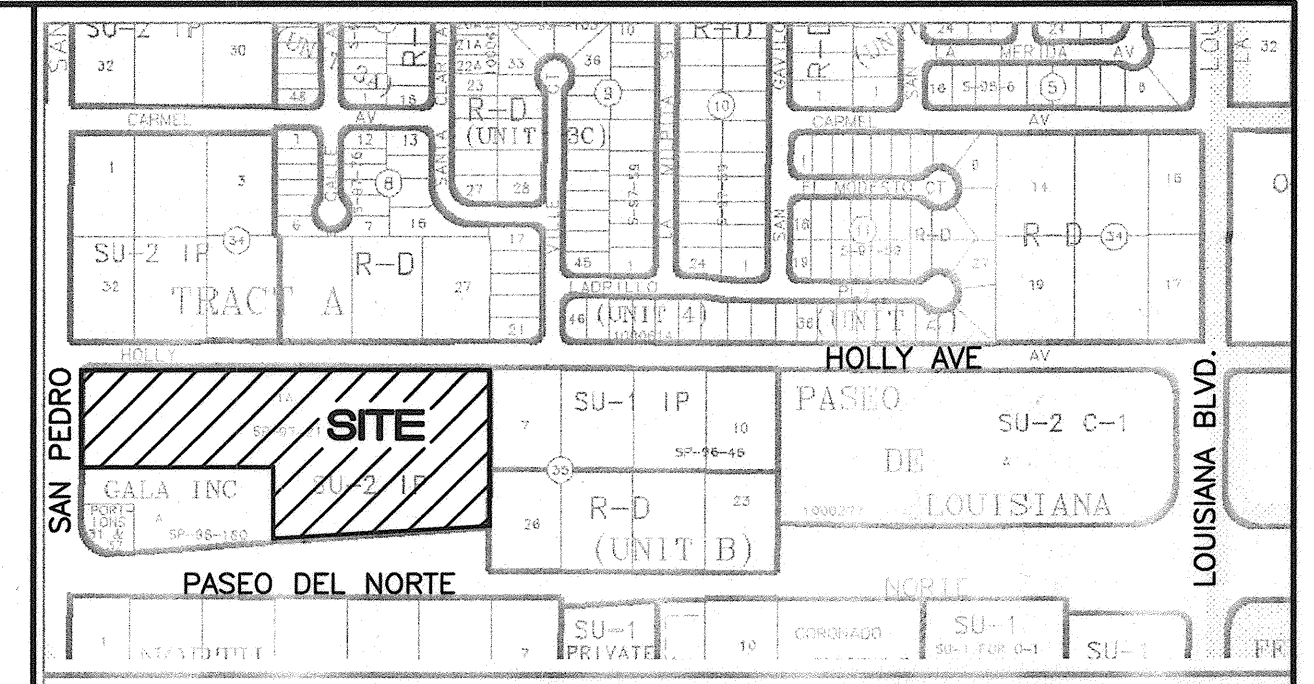
APPROVED AS RECORD DRAWINGS
DESIGN REVIEW SECTION
CITY CONSTRUCTION ENGINEER
DATE 07/15/09

RECORD DRAWING

DRB #1006868

TIERRA WEST, LLC
8509 JEFFERSON NE
ALBUQUERQUE, NEW MEXICO 87113
(505)858-3100

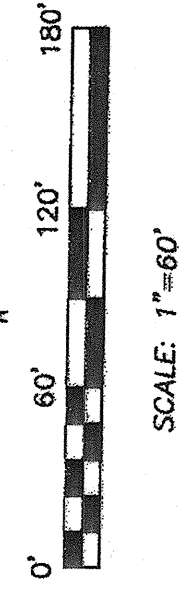
REV	SHEETS	CITY ENGINEER	DATE	USER DEPT.	DATE	USER DEPT.	DATE
ENGINEERS STAMP & SIGNATURE		APPROVALS		ENGINEER		DATE	
		DRC Chairman		3/19/09		APPROVED FOR CONSTRUCTION	
		Transportation		3/19/09			
		Water/Wastewater		3-11-09			
		Hydrology		3/11/09			
		AMAFCA					
Constr. Mngmt.							
Constr. Coord.							
CITY PROJECT NO.		868482		SHEET		OF	



VICINITY MAP C-18
SCALE NONE

- NOTICE TO CONTRACTORS**
1. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED 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 (UPDATE #7) INCLUDING ADDENDUM #1.
 2. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM (280-1990) FOR LOCATION OF EXISTING UTILITIES.
 3. ANY WORK AFFECTING AN ARTERIAL ROADWAY REQUIRES 24-HOUR CONSTRUCTION.
 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 OR SURVEYOR IMMEDIATELY SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
 5. SEVEN (7) WORKING DAYS PRIOR TO BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO CONSTRUCTION COORDINATION DIVISION A DETAILED CONSTRUCTION SCHEDULE. TWO(2) WORKING DAYS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A BARRICADING PERMIT FROM THE CONST. COORDINATION DIVISION. CONTRACTOR SHALL NOTIFY BARRICADE ENGINEER (924-3400) PRIOR TO OCCUPYING AN INTERSECTION. REFER TO STANDARD SPECIFICATIONS.
 6. ALL STREET STRIPING ALTERED OR DESTROYED SHALL BE REPLACED WITH PLASTIC REFLECTORIZED PAVEMENT MARKINGS BY THE CONTRACTOR TO LOCATION AS EXISTING OR AS INDICATED BY THIS PLAN SET.
 7. 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. ANY PERMANENT SURVEY MONUMENT LOCATED WITHIN 50' OF THIS PROJECT THAT IS NOT SHOWN ON THE PLAN AND IS DESTROYED DURING CONSTRUCTION WILL BE REPLACED AT THE CONTRACTORS EXPENSE.
 8. CONTRACTOR SHALL MAINTAIN A GRAFFITI-FREE WORK SITE. CONTRACTOR SHALL PROMPTLY REMOVE ANY AND ALL GRAFFITI FROM EQUIPMENT, WHETHER PERMANENT OR TEMPORARY.
 9. FOR STORM DRAIN CONSTRUCTION, RCP PIPE JOINTS SHALL NOT BE GROUTED PRIOR TO FINAL INSPECTION. FINAL INSPECTION WILL DETERMINE JOINTS TO BE GROUTED FOR FINAL ACCEPTANCE OF THE CONSTRUCTION.
 10. THE ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY (857-8200) WILL BE NOTIFIED BY THE CONTRACTOR SEVEN (7) WORKING DAYS IN ADVANCE OF ANY WORK WHICH MAY AFFECT THE EXISTING PUBLIC WATER FACILITIES. REFER TO SECTION 18 OF THE STANDARD SPECIFICATIONS.
 11. ALL EXCAVATION, TRENCHING, AND SHORING ACTIVITIES MUST BE CARRIED-OUT IN ACCORDANCE WITH OSHA 29 CFR 1926.650 SUBPART P.
 12. ELECTRONIC MARKER DISKS (EMD) WILL BE PLACED ACCORDING TO SECTION 170 OF THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION AS REVISED THROUGH UPDATE #7.
 13. CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL CONSTRUCTION SIGNING UNTIL PROJECT HAS BEEN ACCEPTED BY COA.

- 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.
 - ☒ TACK COAT REQUIREMENTS SHALL BE DETERMINED BY THE PROJECT ENGINEER.
 - ☒ SIDEWALKS AND WHEELCHAIR RAMPS WITHIN THE CURB RETURNS SHALL BE CONSTRUCTED WHEREVER A NEW CURB RETURN IS CONSTRUCTED.
 - ☒ IF CURB IS DEEPER 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.

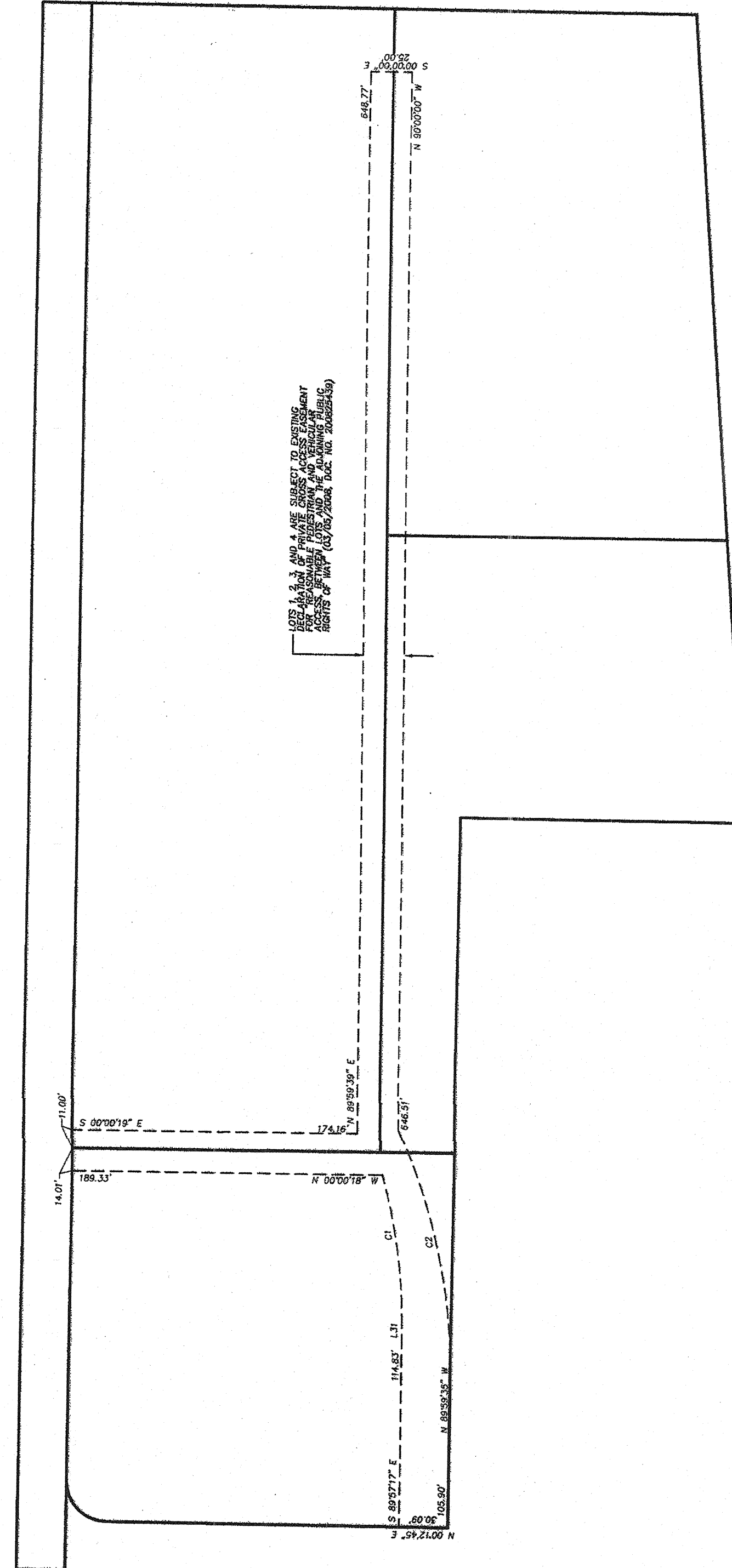


Curve Table

CURVE	RADIUS	ARC LENGTH	DELTA ANGLE	TANGENT	CHORD LENGTH	CHORD BEARING
C1	342.39'	93.05'	153°45'	49.81'	92.76'	N 81°41'54" E
C2	369.74'	144.29'	227°01'36"	73.00'	143.70'	S 11°20'00" W

Line Table

LANE	REFLECTION	W	DISTANCE
L1	S 89°59'41" E	16.00	16.00
L2	S 00°00'19" E	16.00	16.00
L3	S 89°59'41" E	16.00	16.00
L4	S 00°00'19" E	16.00	16.00
L5	S 89°59'41" E	16.00	16.00
L6	S 00°00'19" E	16.00	16.00
L7	S 89°59'41" E	16.00	16.00
L8	S 00°00'19" E	16.00	16.00
L9	S 89°59'41" E	16.00	16.00
L10	S 00°00'19" E	16.00	16.00
L11	S 89°59'41" E	16.00	16.00
L12	S 00°00'19" E	16.00	16.00
L13	S 89°59'41" E	16.00	16.00
L14	S 00°00'19" E	16.00	16.00
L15	S 89°59'41" E	16.00	16.00
L16	S 00°00'19" E	16.00	16.00
L17	N 89°59'41" E	16.00	16.00
L18	S 89°59'41" E	16.00	16.00
L19	S 00°00'19" E	16.00	16.00
L20	S 89°59'41" E	16.00	16.00
L21	N 89°59'41" E	16.00	16.00
L22	S 00°00'19" E	16.00	16.00
L23	S 89°59'41" E	16.00	16.00
L24	S 00°00'19" E	16.00	16.00
L25	S 89°59'41" E	16.00	16.00
L26	S 00°00'19" E	16.00	16.00
L27	N 89°59'41" E	16.00	16.00
L28	S 00°00'19" E	16.00	16.00
L29	N 89°59'41" E	16.00	16.00
L30	S 00°00'19" E	16.00	16.00
L31	S 89°59'41" E	16.00	16.00
L32	S 00°00'19" E	16.00	16.00
L33	S 89°59'41" E	16.00	16.00
L34	S 00°00'19" E	16.00	16.00
L35	S 89°59'41" E	16.00	16.00
L36	S 00°00'19" E	16.00	16.00
L37	S 89°59'41" E	16.00	16.00
L38	S 00°00'19" E	16.00	16.00
L39	S 89°59'41" E	16.00	16.00
L40	S 00°00'19" E	16.00	16.00
L41	S 89°59'41" E	16.00	16.00
L42	S 00°00'19" E	16.00	16.00
L43	S 89°59'41" E	16.00	16.00
L44	S 00°00'19" E	16.00	16.00
L45	S 89°59'41" E	16.00	16.00
L46	S 00°00'19" E	16.00	16.00
L47	S 89°59'41" E	16.00	16.00
L48	S 00°00'19" E	16.00	16.00
L49	S 89°59'41" E	16.00	16.00
L50	S 00°00'19" E	16.00	16.00
L51	S 89°59'41" E	16.00	16.00
L52	S 00°00'19" E	16.00	16.00
L53	S 89°59'41" E	16.00	16.00
L54	S 00°00'19" E	16.00	16.00
L55	S 89°59'41" E	16.00	16.00
L56	S 00°00'19" E	16.00	16.00
L57	S 89°59'41" E	16.00	16.00
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L61	S 89°59'41" E	16.00	16.00
L62	S 00°00'19" E	16.00	16.00
L63	S 89°59'41" E	16.00	16.00
L64	S 00°00'19" E	16.00	16.00
L65	S 89°59'41" E	16.00	16.00
L66	S 00°00'19" E	16.00	16.00
L67	S 89°59'41" E	16.00	16.00
L68	S 00°00'19" E	16.00	16.00
L69	S 89°59'41" E	16.00	16.00
L70	S 00°00'19" E	16.00	16.00
L71	S 89°59'41" E	16.00	16.00
L72	S 00°00'19" E	16.00	16.00
L73	S 89°59'41" E	16.00	16.00
L74	S 00°00'19" E	16.00	16.00
L75	S 89°59'41" E	16.00	16.00
L76	S 00°00'19" E	16.00	16.00
L77	S 89°59'41" E	16.00	16.00
L78	S 00°00'19" E	16.00	16.00
L79	S 89°59'41" E	16.00	16.00
L80	S 00°00'19" E	16.00	16.00
L81	S 89°59'41" E	16.00	16.00
L82	S 00°00'19" E	16.00	16.00
L83	S 89°59'41" E	16.00	1



PRECISION
SURVEYS, INC.

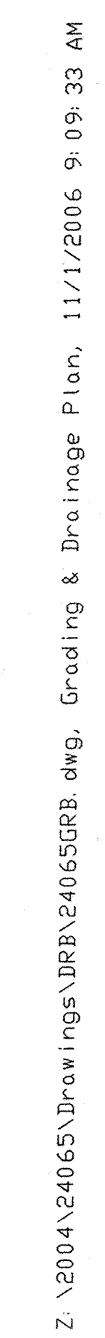
8500-A Jefferson Street, NE
Albuquerque, NM 87113

866.422.8011 TOLL FREE
505.856.5700 PHONE
505.856.7900 FAX

Sheet 3 of 3
068455P

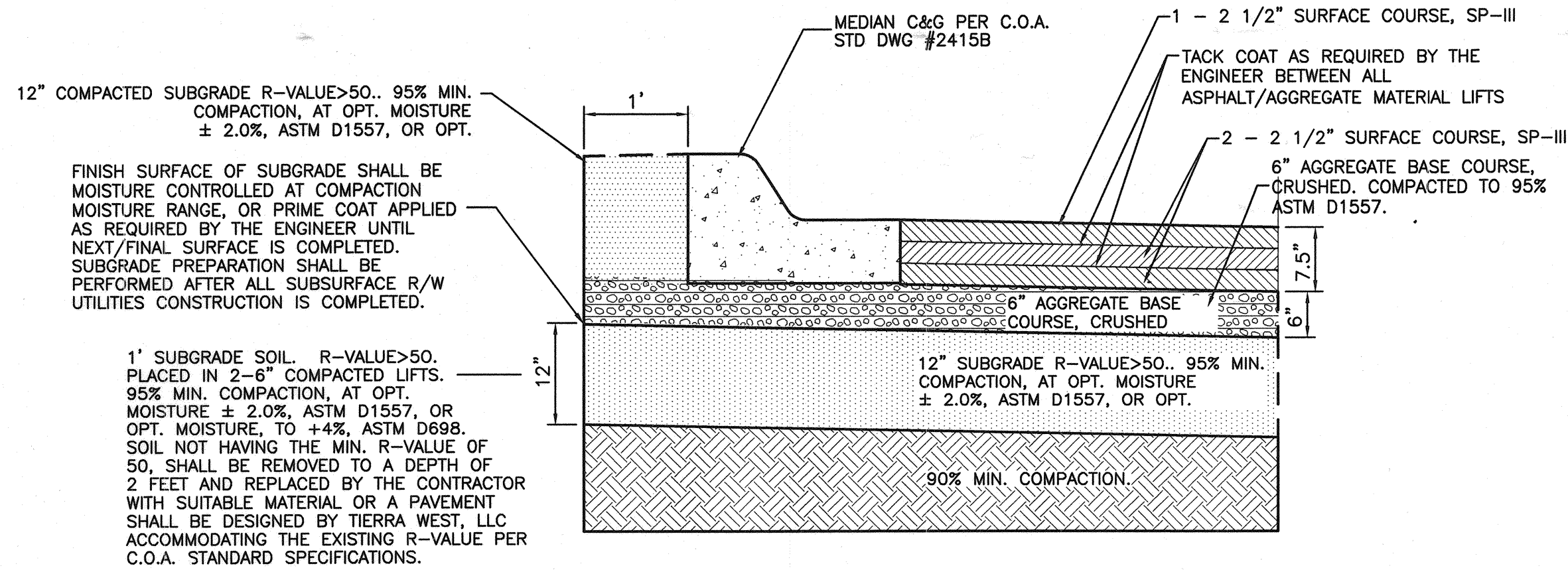
FOR REFERENCE ONLY

RECORD DRAWING



SCANNED BY
PLANNING

10+00 11+00 12+00 13+00 14+00

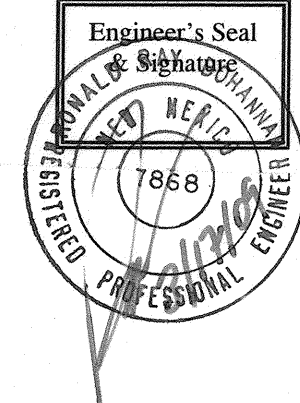


SAN PEDRO DR TYPICAL PAVING SECTION

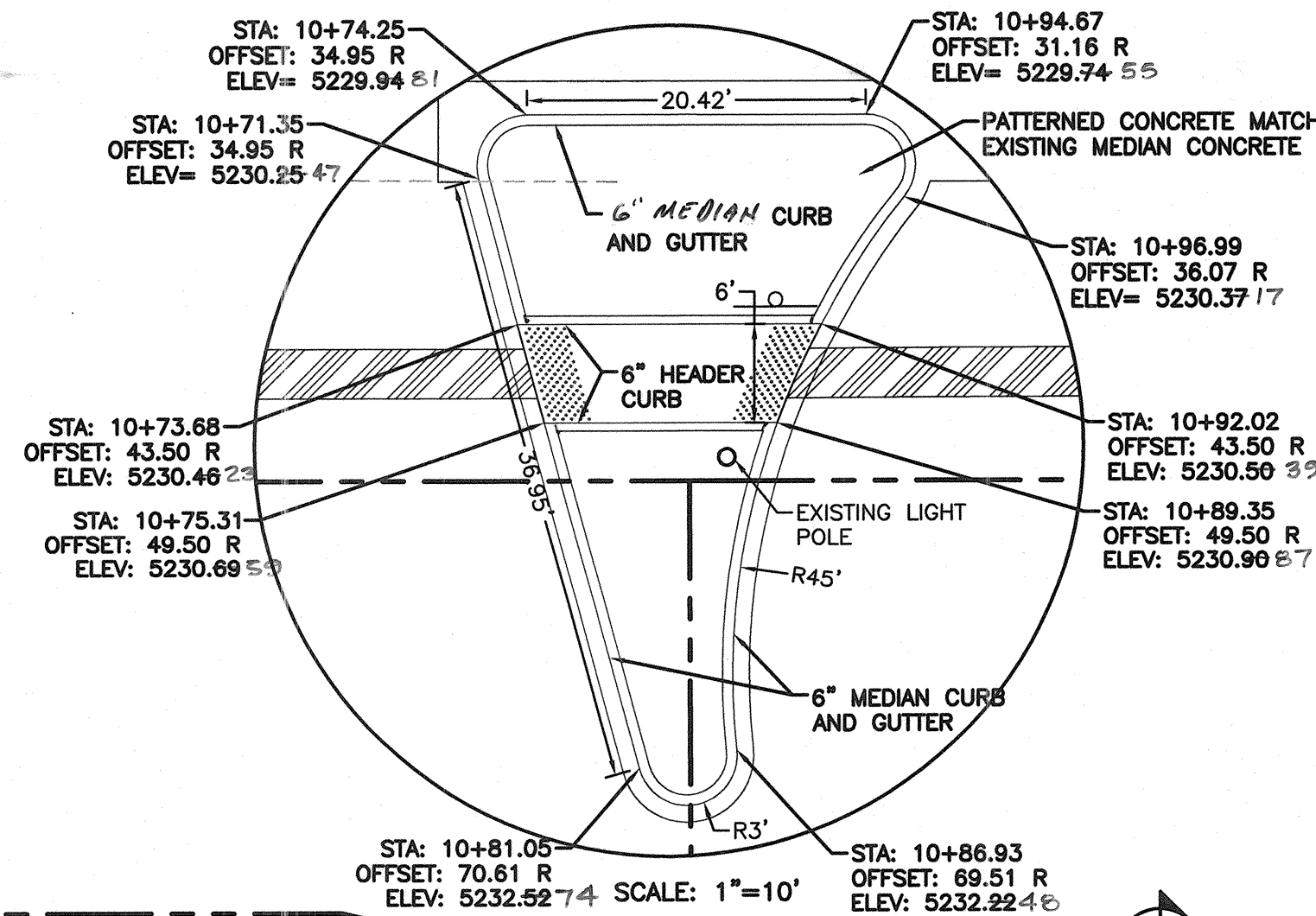
NTS REFERENCE CITY PROJECT #776981
AND CITY & TR. 016 & 2407

CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

I, Ronald R. Bohannon, 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 as-built construction drawings. This Certification is based on site inspections by me, or personnel under my direction with survey information provided by Thomas W. Patrick, of Community Sciences Corp., NMPS number 12651.



PASEO DEL NORTE

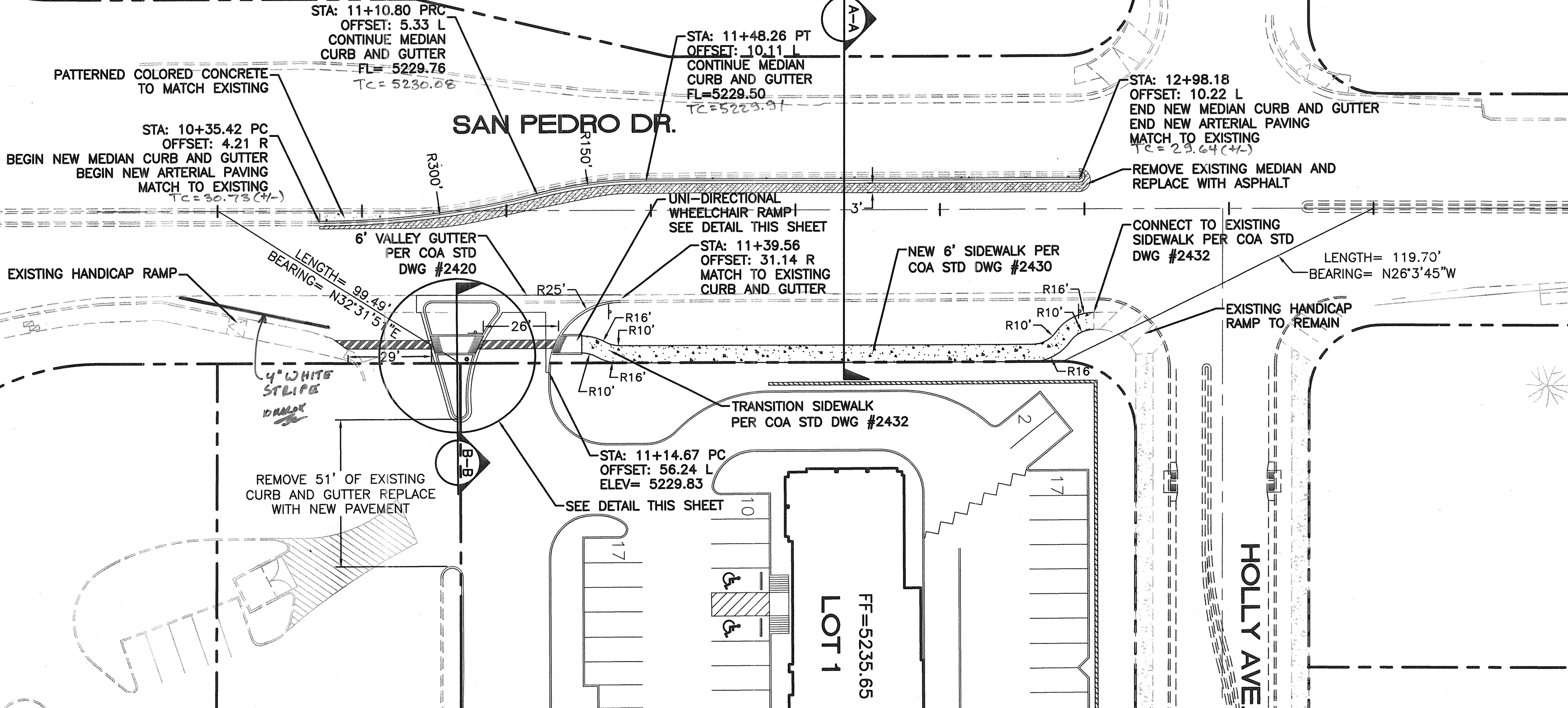


LEGEND

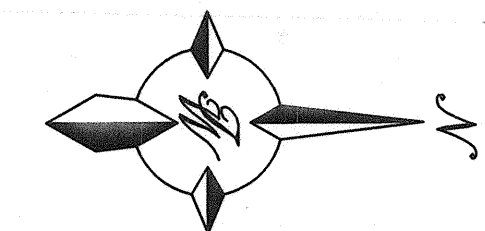
- EXISTING CURB & GUTTER
- PROPOSED CURB
- BOUNDARY LINE
- PROPOSED LOT LINE
- EASEMENT
- CENTERLINE
- PROPOSED PARKING LOT LIGHTING
- NEW PAVEMENT
- 36\"/>

GENERAL NOTE

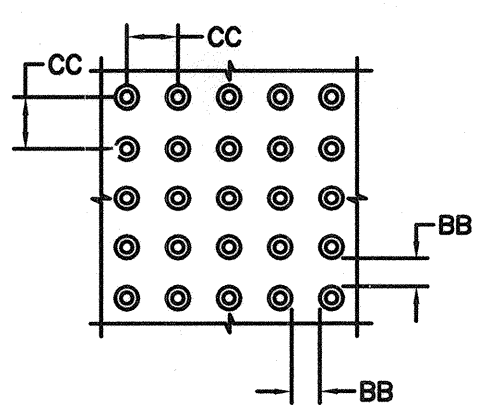
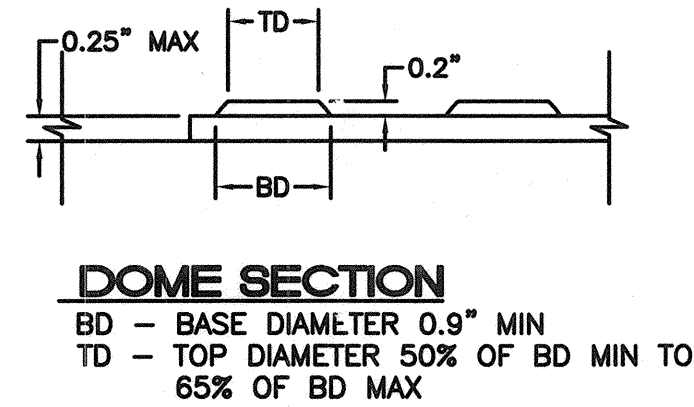
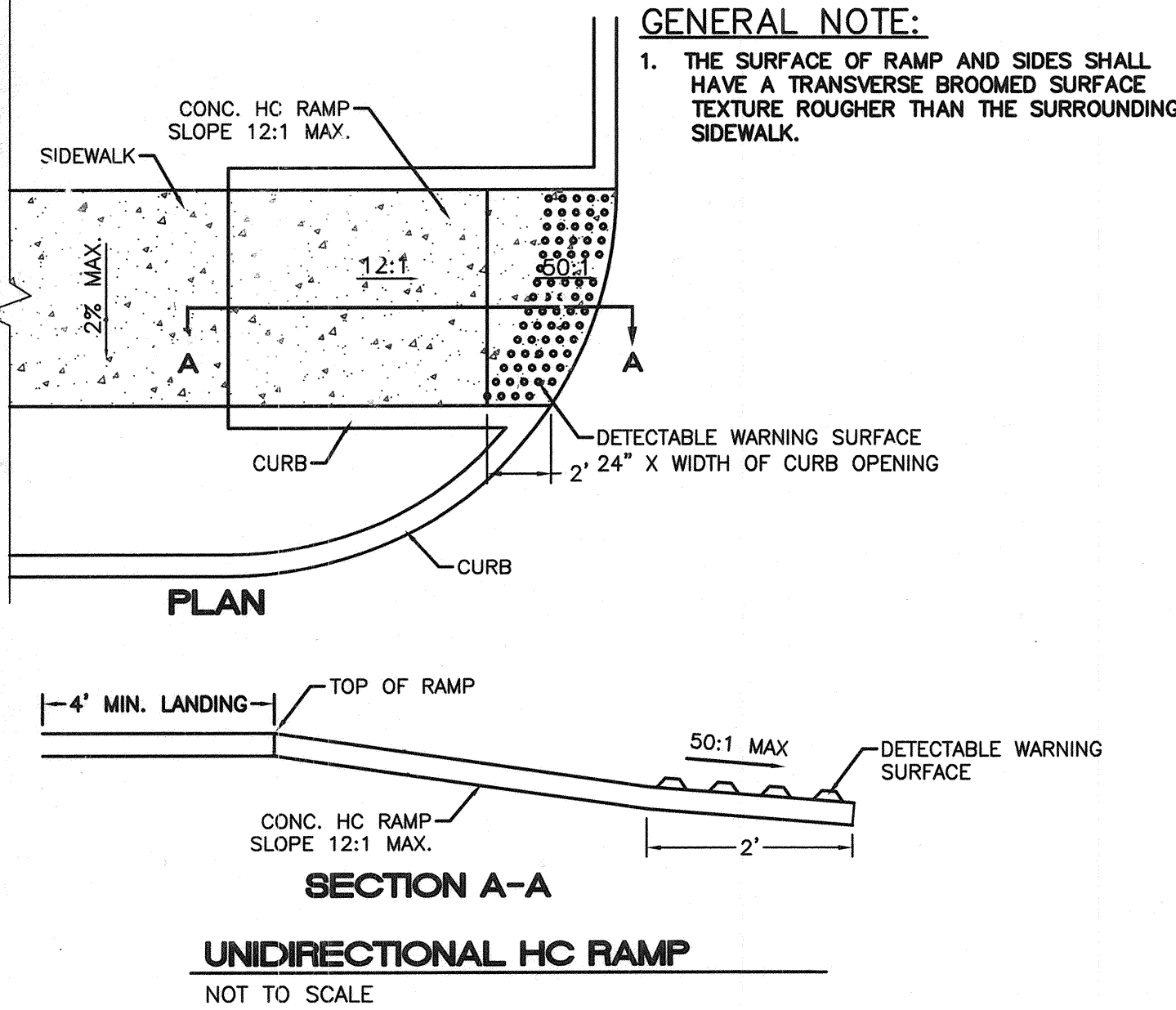
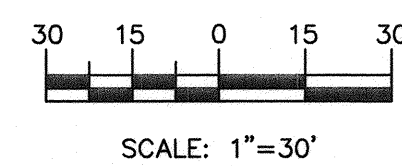
- ALL CONFLICTING STRIPING SHALL BE ERADICATED BY WATER BLASTING OR SURFACE PLANING OF THE ROADWAY TO A MAXIMUM DEPTH OF 0.25 INCHES AND A WIDTH TO EQUAL 2 TIMES THE WIDTH OF THE STRIPE OR MARKINGS TO BE REMOVED.
- ALL STRIPING TO BE PERFORMED THERMOPLASTIC.



RECORD DRAWING

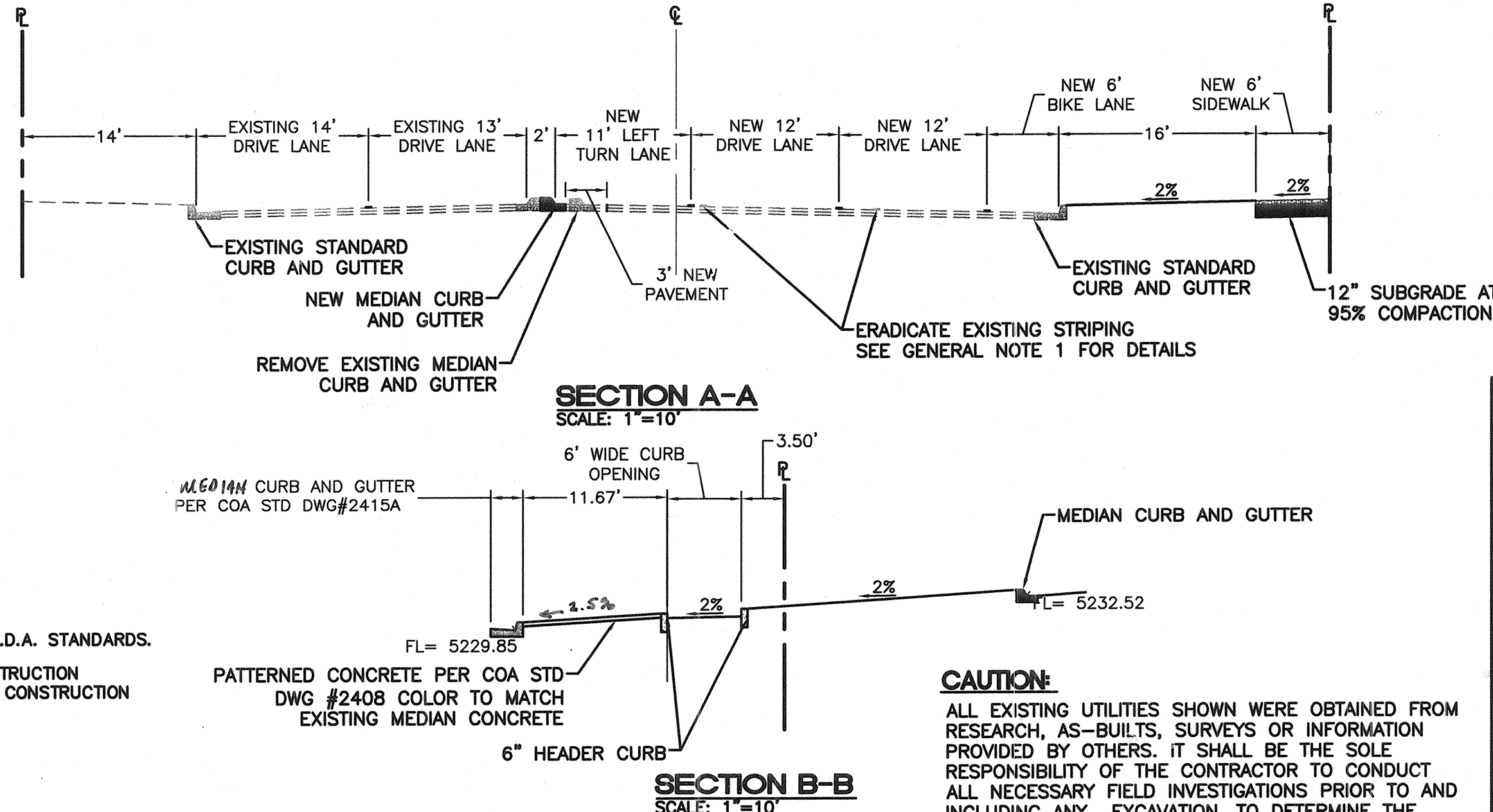


GRAPHIC SCALE



GENERAL NOTES:

- CONSTRUCT TRUNCATED DOMES PER A.D.A. STANDARDS.
- SUBMIT SPECIFICATIONS TO CITY CONSTRUCTION ENGINEER FOR EVALUATION PRIOR TO CONSTRUCTION (FOR TRUNCATED DOMES).



CAUTION:

ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

TERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NEW MEXICO 87109 (505)858-3100	
CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING GROUP	
TITLE: DEL NORTE PLAZA MASTER PAVING PLAN	
DESIGN REVIEW COMMITTEE APPROVED APR 03 2008	CITY ENGINEER APPROVAL APPROVED AUG 20 2008 CITY ENGINEER
DESIGNED BY: JN DRAWN BY: EMT DRAWN NAME: 24065-PV.dwg CHECKED BY: RRB	MO./DAY/YR. MO./DAY/YR.
CITY PROJECT NO. 686482	ZONE MAP NO. C-18-Z
SHEET 4 OF 8	

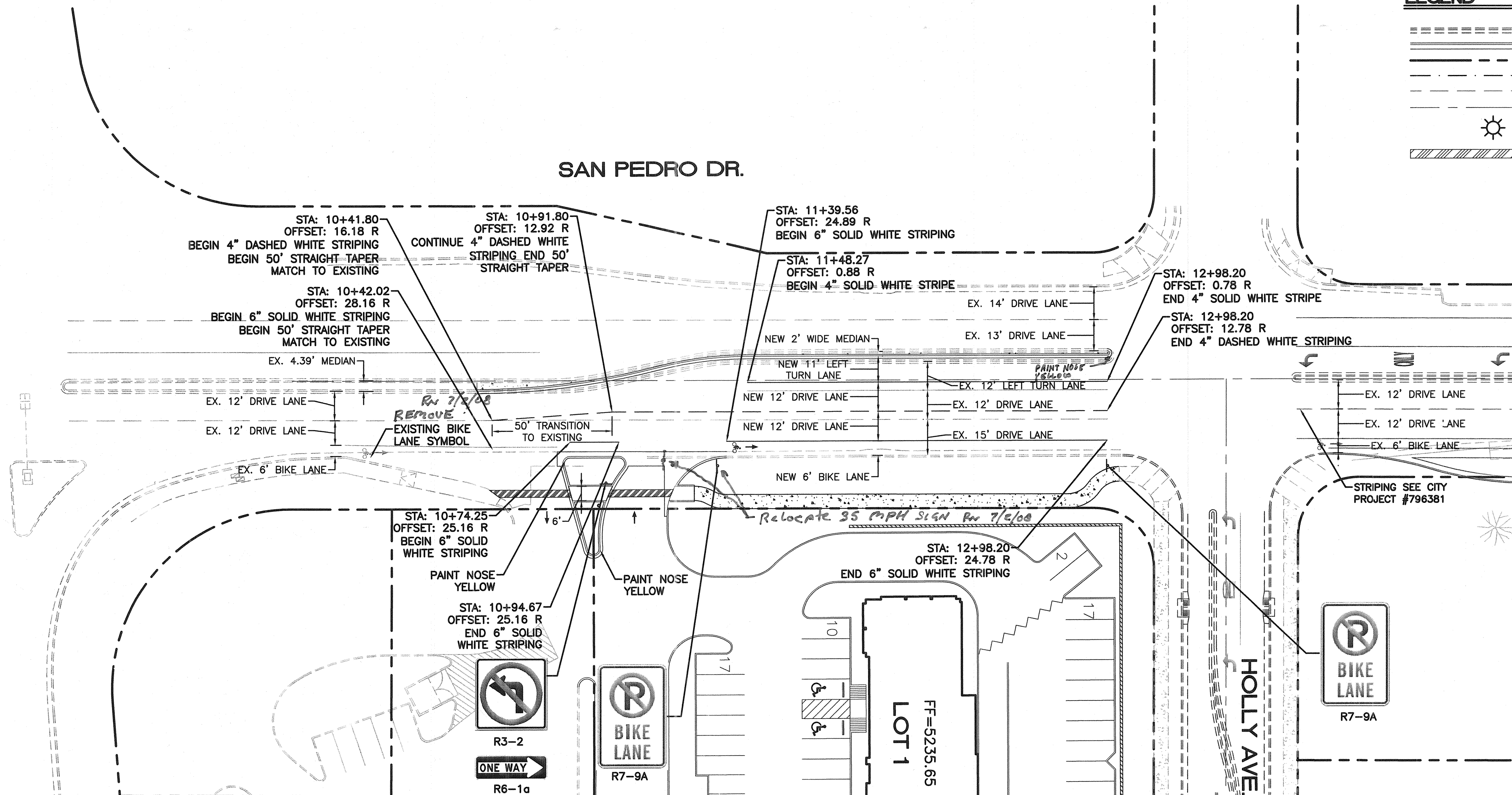
PASEO DEL NORTE

SAN PEDRO DR.

HOLLY AVE.

LEGEND

- EXISTING CURB & GUTTER
- PROPOSED CURB
- BOUNDARY LINE
- PROPOSED LOT LINE
- EASEMENT
- CENTERLINE
- PROPOSED PARKING LOT LIGHTING
- 36" WIDE MIN. 2% MAX CROSS SLOPE PEDESTRIAN SURFACE ACROSS DRIVEPAD



GENERAL NOTE

- ALL CONFLICTING STRIPING SHALL BE ERADICATED BY WATER BLASTING OR SURFACE PLANING OF THE ROADWAY TO A MAXIMUM DEPTH OF 0.25 INCHES AND A WIDTH TO EQUAL 2 TIMES THE WIDTH OF THE STRIPE OR MARKING TO BE REMOVED.
- ALL STRIPING TO BE PERFORMED THERMOPLASTIC.

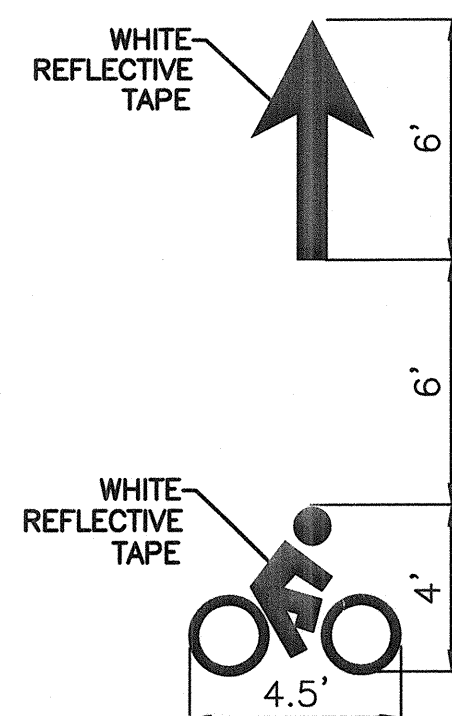
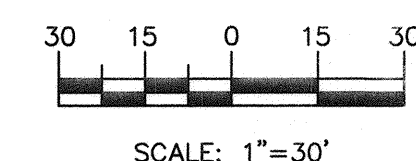
CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

I, Ronald R. Bohannon, 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 as-built construction drawings. This Certification is based on site inspections by me, or personnel under my direction with survey information provided by Thomas W. Patrick, of Community Sciences Corp., NMPS number 12651.

RECORD DRAWING



GRAPHIC SCALE



BIKE LANE SYMBOL DETAIL
NTS

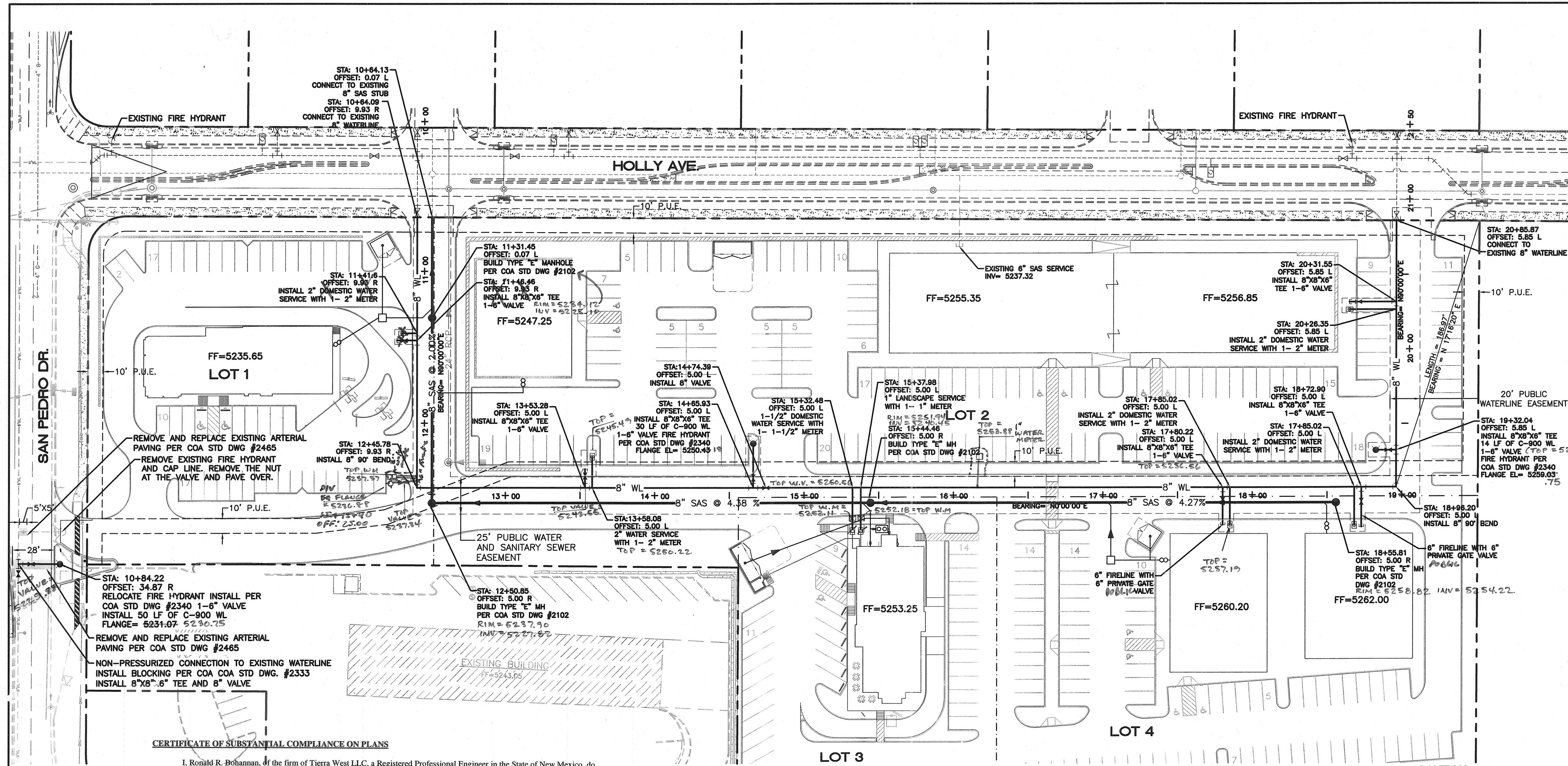
NOTE:
ALL SYMBOLS, STOP BARS AND CROSSWALKS SHALL BE PERFORMED THERMOPLASTIC TAPE.

CAUTION:

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AS BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL		REVISIONS	
CONTRACTOR	DATE	A.C.S. MONUMENT	DATE	NO.	BY	NO.	DATE	NO.	DATE
WORK STARTED BY	08/09/09	STANDARD A.C.S. BRASS TABLET	08/09/09						
INSPECTIONS BY	08/09/09	NM STATE PLANE COORDINATES	08/09/09						
FIELD VERIFICATION BY	08/09/09	Central Zone N.A.D. 1927	08/09/09						
DATE CORRECTED BY	08/09/09	X=407,051.31	08/09/09						
MICRO-FILM INFORMATION		Y=1,518,737.03							
RECORDED BY	DATE	G=0.99672639							
		Da= -0710'45"							
		ELEV= 5375.62							

TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NEW MEXICO 87109 (505)858-3100	
CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING GROUP	
TITLE: DEL NORTE PLAZA SIGNING AND STRIPING	
DESIGN REVIEW COMMITTEE APPROVE APR 09 2008 DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL APPROVE AUG 20 2008 CITY ENGINEER
CITY PROJECT NO. 686482	ZONE MAP NO. C-18-Z
SHEET 5 OF 8	MO./DAY/YR. MO./DAY/YR.



AS BUILT INFORMATION

CONTRACTOR: **CCM, Inc.**
DATE: **2/20/2008**
WORK: **RECONSTRUCTION OF DEL NORTE PLAZA**
APPROVED BY: **CCM, Inc.**
DATE: **2/20/2008**
DRAWN BY: **CCM, Inc.**
DATE: **2/20/2008**
CHECKED BY: **CCM, Inc.**
DATE: **2/20/2008**

BENCH MARKS

CONTRACTOR: **CCM, Inc.**
DATE: **2/20/2008**
WORK: **RECONSTRUCTION OF DEL NORTE PLAZA**
APPROVED BY: **CCM, Inc.**
DATE: **2/20/2008**
DRAWN BY: **CCM, Inc.**
DATE: **2/20/2008**
CHECKED BY: **CCM, Inc.**
DATE: **2/20/2008**

SURVEY INFORMATION

FIELD NOTES BY: **NO.**
DATE: **NO.**
BY: **NO.**

ENGINEER'S SEAL

DATE: **02-20-08**
DATE: **02-20-08**
DATE: **02-20-08**
DATE: **02-20-08**

REVISIONS

DESIGNED BY: **JN**
DRAWN BY: **EMT**
CHECKED BY: **RRB**

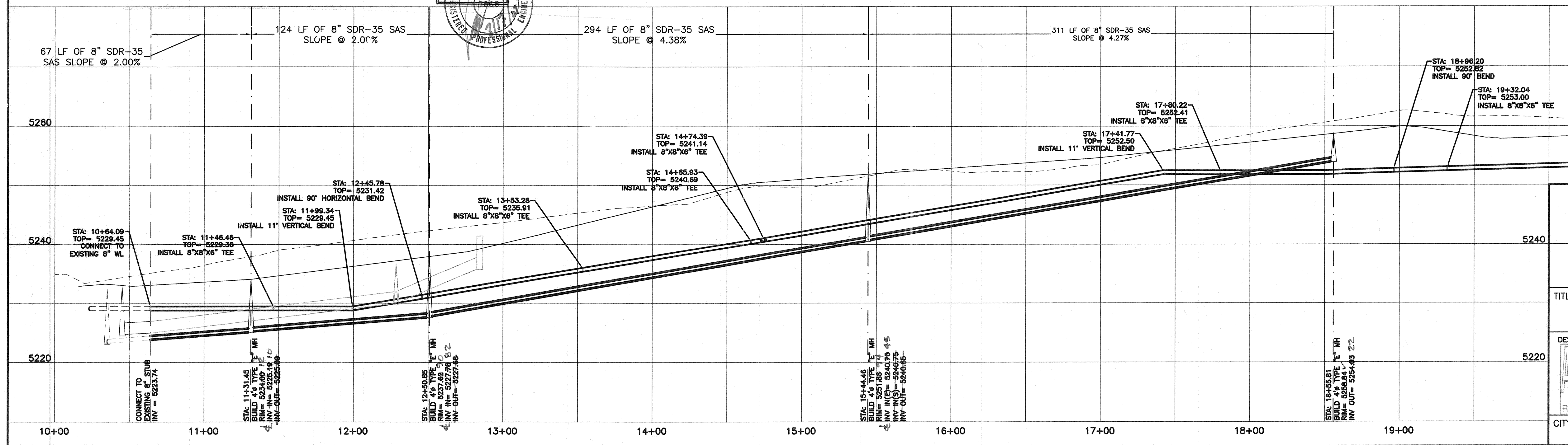
WL TABLE

LOT #	STATION	SERVICE
1	11+44.60	SINGLE
2	13+58.08	SINGLE
3	20+31.55	SINGLE
4	15+32.48	SINGLE
4	17+85.02	SINGLE
4	18+72.90	SINGLE

SAS TABLE

LOT #	STATION*	LF	INV.*	ELEV. @ EASEMENT
1	11+25.08	147	5224.96	5233.74
2	11+77.20	73	5226.10	5235.62
3	15+39.04	32	5240.41	5251.73
4	17+03.27	79	5247.52	5255.12
4	18+47.69	22	5253.68	5258.89

* END OF SERVICE LINE



TIERRA WEST, LLC
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(505)858-3100

**CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP**

**DEL NORTE PLAZA
UTILITY PLAN AND PROFILE**

TITLE:

DESIGN REVIEW COMMITTEE: **APPROVED**
APR 09 2008
DESIGN REVIEW COMMITTEE

CITY ENGINEER APPROVAL: **APPROVED**
AUG 20 2008
CITY ENGINEER

MO./DAY/YR. MO./DAY/YR.

CITY PROJECT NO. **686482** ZONE MAP NO. **C-18-Z** SHEET **7** OF **8**

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: PVC
SOIL TYPE: GM/SM-SILTY GRAVEL/SILTY SAND, GRAVEL-SAND MIXTURES
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**					
	10'	8'	6'	4'	2'	0'
12x12x12	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

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

RESTRAINED JOINT LENGTHS FOR HORIZONTAL BENDS, VALVES, AND DEAD ENDS (EACH SIDE)					
SIZE	HORIZONTAL BENDS				VALVES
	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

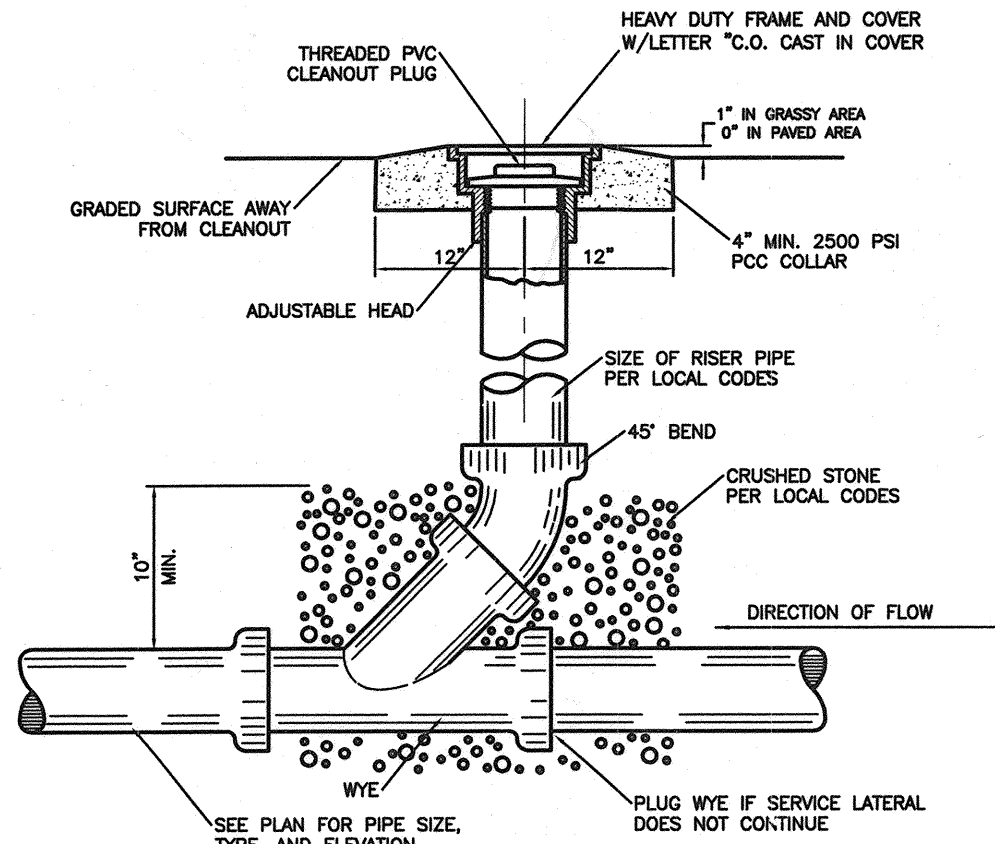
***RESTRAINTS ONLY PLACED ON LARGE SIDE

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

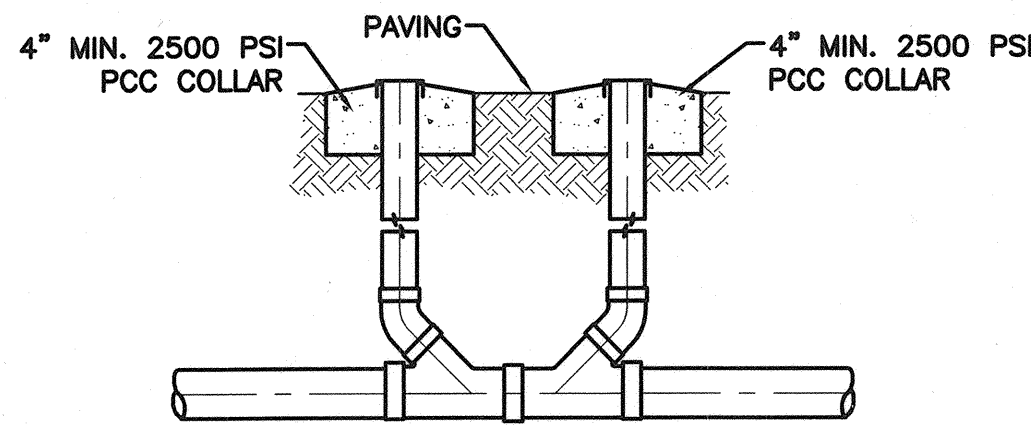
DEPTH OF BURY: 3.0' MINIMUM TO 6.0'
SAFETY FACTOR: 1.5 TO 1
PIPE MATERIAL: PVC
SOIL TYPE: GM/SM-SILTY GRAVEL/SILTY SAND, GRAVEL-SAND MIXTURES
TEST PRESSURE: 150 PSI
TRENCH TYPE 3: PIPE BEDDED IN 4" MINIMUM LOOSE SOIL BACKFILL LIGHTLY CONSOLIDATED TO TOP OF PIPE

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.

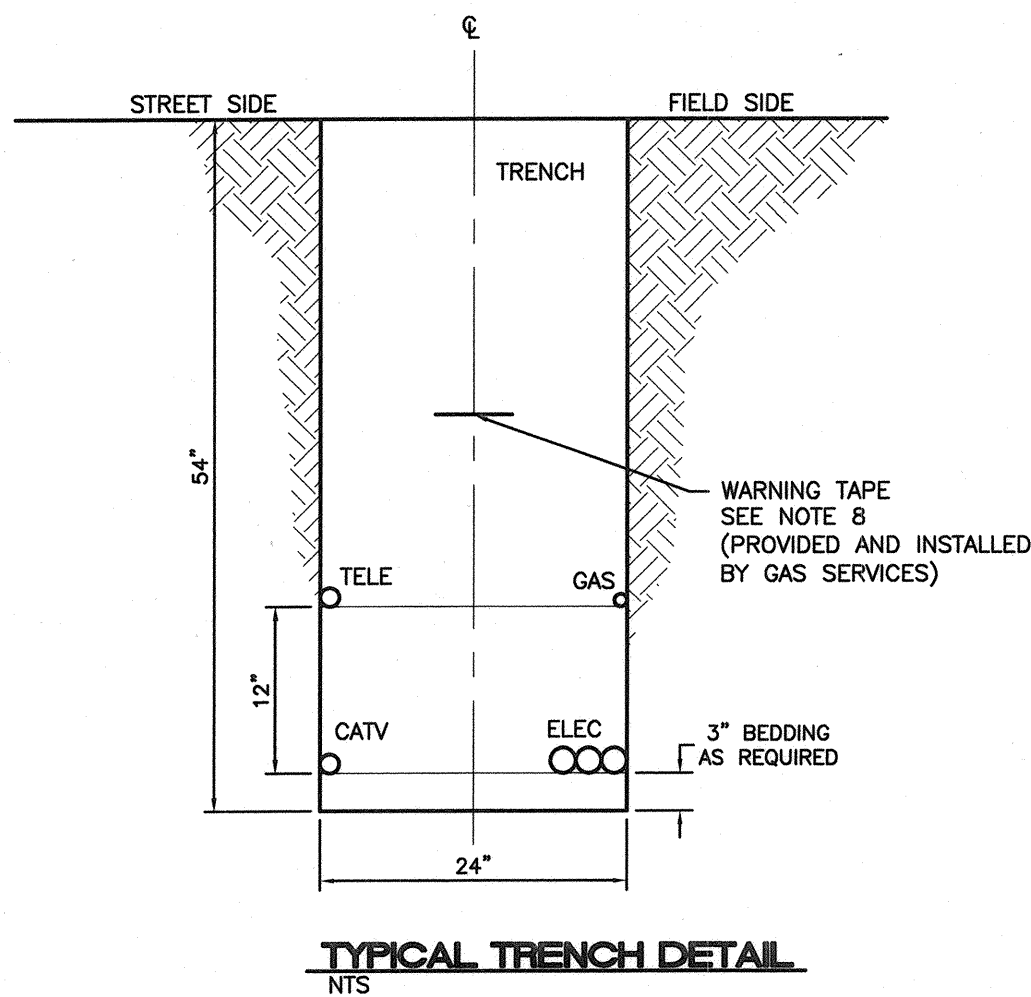
RESTRAINED JOINT LENGTHS FOR VERTICAL OFFSETS/BENDS (EACH SIDE)				
SIZE	HORIZONTAL BENDS			
	90°	45°	22-1/2°	11-1/4°
12 UPPER	DON'T USE	42	20	10
12 LOWER	DON'T USE	10	5	2
10 UPPER	DON'T USE	36	17	8
10 LOWER	DON'T USE	8	4	2
8 UPPER	DON'T USE	30	14	7
8 LOWER	DON'T USE	7	3	2
6 UPPER	DON'T USE	23	11	5
6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



SANITARY SEWER CLEAN-OUT
NTS



SANITARY SEWER DOUBLE CLEAN-OUT
NTS



TYPICAL TRENCH DETAIL
NTS

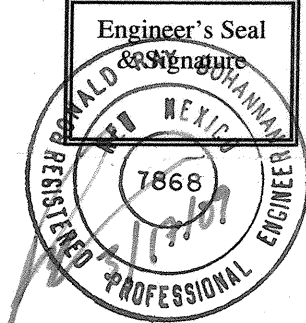
- GENERAL NOTES:
1. COMPACTION IN CITY OR STATE RIGHT-OF-WAYS SHALL MEET OR EXCEED MINIMUM SPECIFIED REQUIREMENTS
 2. SHADING AND BEDDING MATERIAL TO BE TYPE IV, CLASS 1 FOR DIRECT BURIED CABLE AND TYPE IV, CLASS 2 FOR CABLE IN CONDUIT, TYPE III MATERIAL IS SUITABLE FOR EITHER TYPE OF INSTALLATION. REFER TO DS-10-12.4 FOR FILL MATERIAL REQUIREMENTS.
 3. IF TRENCH-RUN MATERIAL MEETS BACK FILL MATERIAL REQUIREMENTS TYPE REQUIREMENTS, 3" BEDDING MAY BE OMITTED PROVIDED THE TRENCH BOTTOM IS SMOOTH, FLAT AND WITHOUT SURFACE IRREGULARITIES.
 4. SEPARATION BETWEEN JACKETED PRIMARY AND COMMUNICATION CABLE SHALL BE AT LEAST 12".
 5. SPOIL PILE SHALL BE PLACED ON THE FIELD SIDE A MINIMUM OF 2' FROM TRENCH EDGE.
 6. WATER LINES SHALL MAINTAIN 12" MINIMUM HORIZONTAL SEPARATION FROM OTHER UTILITIES AND MAY BE INSTALLED EITHER ABOVE OR BELOW OTHER UTILITIES DEPENDING ON FREEZE DEPTH.
 7. LATEST OSHA TRENCH SAFETY REQUIREMENTS SHALL BE STRICTLY OBSERVED
 8. WARNING TAPE SHALL BE PLACED A MINIMUM OF 12" ABOVE THE UPPER LEVEL OF UTILITIES AT THE CENTER OF TRENCH.

RECORD DRAWING

TERRA WEST, LLC
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CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
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TITLE: DEL NORTE PLAZA DETAILS	
DESIGN REVIEW COMMITTEE APPROVED APR 09 2008 DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL APPROVED AUG 20 2008 CITY ENGINEER
LAST DESIGN UPDATE	MO./DAY/YR. MO./DAY/YR.
CITY PROJECT NO. 686482	ZONE MAP NO. C-18-Z
SHEET 8	OF 8



CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

I, Ronald R. Bohannon, 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 as-built construction drawings. This Certification is based on site inspections by me, or personnel under my direction with survey information provided by Thomas W. Patrick, of Community Sciences Corp., NMPS number 12651.

