

PUBLIC IMPROVEMENT PLANS  
FOR  
**NICO TRAIL WATERLINE**  
VILLAGE OF LOS RANCHOS  
ALBUQUERQUE, NEW MEXICO

SEPTEMBER 2004

PREPARED FOR:  
**CROWN INC.**  
P.O. BOX 10295  
ALBUQUERQUE, NM 87184

PREPARED BY:  
**ISAACSON & ARFMAN, P.A.**  
128 MONROE ST. NE  
ALBUQUERQUE, NM 87108

INDEX TO DRAWINGS

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	UTILITY PLAN & PROFILE SHEETS
4	PROPOSED WATERLINE
5	DETAILS

APPROVED AS RECORD DRAWINGS  
DESIGN REVIEW SECTION  
CITY CONSTRUCTION ENGINEER  
DATE: 12/5/05  
DAVID WALK, P.E.

**AS-BUILT CERTIFICATION**  
SOUTHWEST 8686  
I, SCOTT M. MCGEE, A DULY QUALIFIED REGISTERED PROFESSIONAL ENGINEER 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 **ALBUQUERQUE LAND SURVEYING, NMLS NO. 7749**, THAT THE AS-BUILT INFORMATION SHOWN ON THESE DRAWINGS WAS ADDED BY ME OR UNDER MY SUPERVISION, AND THAT THIS AS-BUILT INFORMATION IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. **ALBUQUERQUE LAND SURVEYING** IS NOT RESPONSIBLE FOR ANY OF THE DESIGN CONCEPTS, CALCULATIONS, ENGINEERING, OR INTENT OF THE RECORD DRAWINGS.

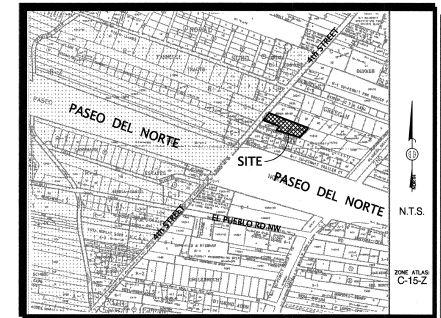
Scott M. McGee  
SCOTT M. MCGEE, NMPE NO. 10519



Nov. 14, 2005  
DATE

VILLAGE OF LOS RANCHOS  
FILE: S-04-05

ISAACSON & ARFMAN, P.A.  
Consulting Engineering Associates  
128 Monroe Street, N.E.  
Albuquerque, New Mexico  
08140

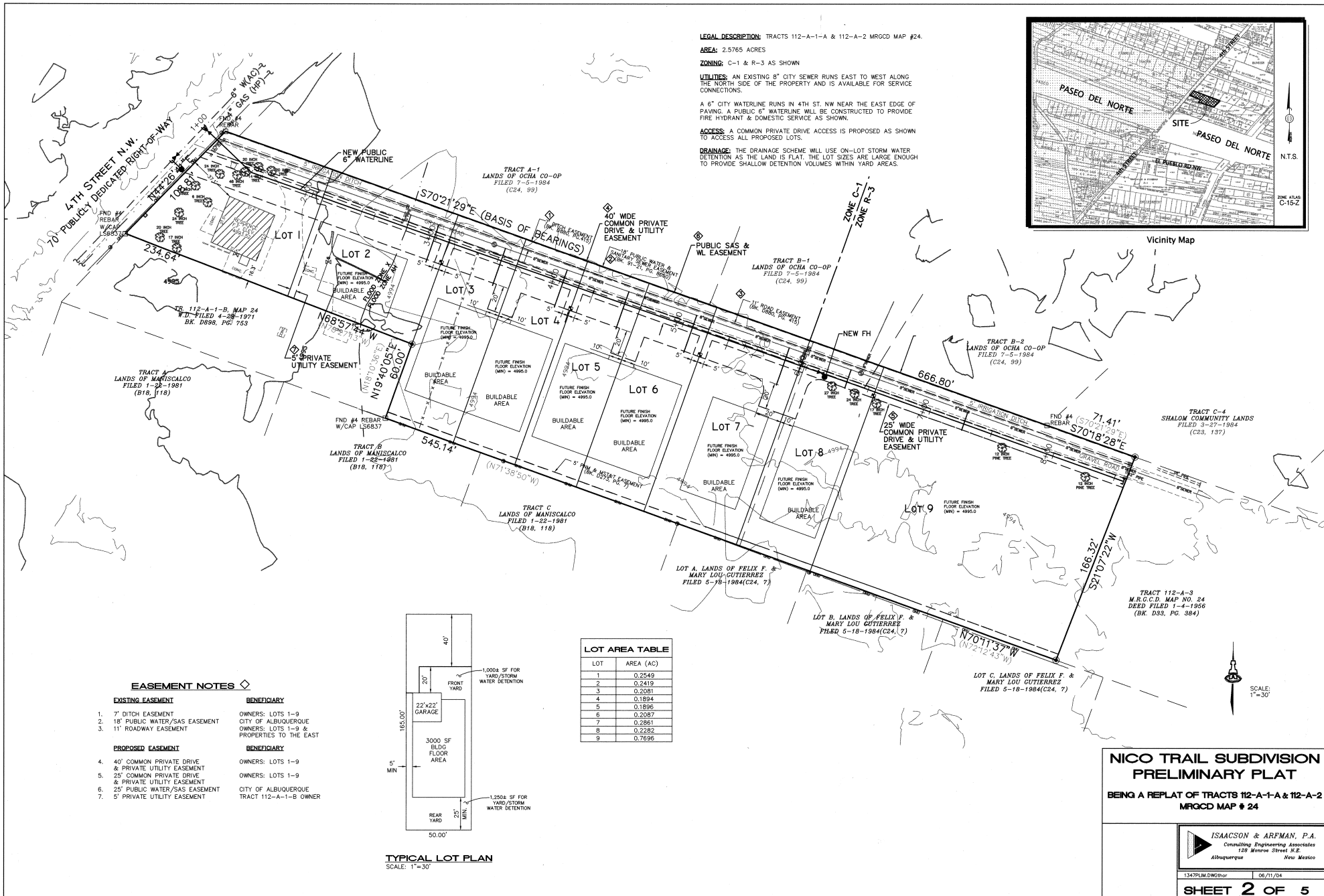


Vicinity Map

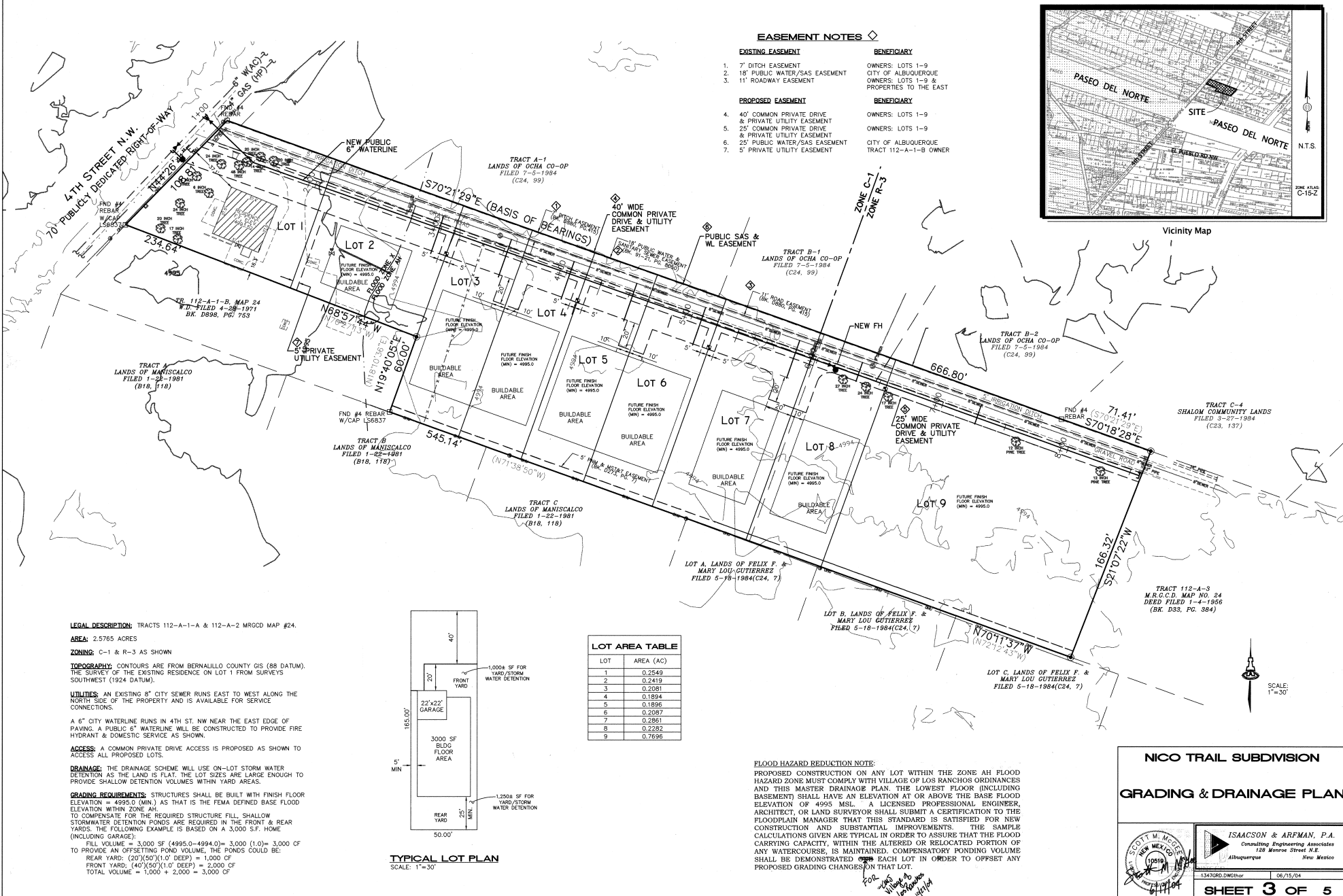
GENERAL NOTES

- 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 AS AMENDED WITH UPDATE NO. 7.
- ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES, AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE & VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH MINIMUM DELAY.
- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM, INC. @ 260-1990 FOR LOCATION OF EXISTING UTILITIES.
- CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER WHICH WILL MINIMIZE INTERFERENCE WITH LOCAL TRAFFIC. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS, AND ORDERS OF ANY PUBLIC BODY HAVING JURISDICTION FOR THE SAFETY OF PERSONS OR PROPERTY, AND TO PROTECT THEM FROM DAMAGE, INJURY, OR LOSS. CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY CONTINUOUSLY AND NOT LIMITED TO NORMAL WORKING HOURS, THROUGHOUT THE DURATION OF THE PROJECT. CONTRACTOR SHALL ADHERE TO SECTION 19 OF THE GENERAL CONDITIONS OF THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986, AS AMENDED WITH UPDATE NO. 7.
- THE CONTRACTOR AGREES THAT HE SHALL ASSUME THE SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD HARMLESS THE OWNER & ENGINEER FROM ANY AND ALL LIABILITY REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.
- TRAFFIC CONTROL: FIVE (5) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION THE CONTRACTOR SHALL SUBMIT TO THE CONSTRUCTION COORDINATION DIVISION A DETAILED CONSTRUCTION SCHEDULE. TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A BARRICADE PERMIT FROM THE CONSTRUCTION COORDINATION DIVISION. CONTRACTOR SHALL NOTIFY BARRICADE ENGINEER (924-3400) PRIOR TO OCCUPYING AN INTERSECTION. SEE SECTION 19 OF THE SPECIFICATIONS. ALL STREET STRIPING ALTERED OR DESTROYED SHALL BE REPLACED WITH PLASTIC REFLECTORIZED PAVEMENT MARKINGS BY CONTRACTOR TO LOCATION AS EXISTING OR AS SHOWN IN THIS PLAN SET.
- WHEN ADJUTING EXISTING PAVEMENT TO NEW SAWCUT EXISTING PAVEMENT TO A STRAIGHT EDGE AND AT A RIGHT ANGLE, OR AS APPROVED BY THE FIELD ENGINEER. REMOVAL OF BROKEN OR CRACKED PAVEMENT WILL ALSO BE REQUIRED.
- EXISTING CURB AND GUTTER NOT TO BE REMOVED UNDER THE CONTRACT WHICH IS DAMAGED OR DISPLACED BY THE CONTRACTOR SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT HIS EXPENSE.
- ALL FINAL BACKFILL FOR TRENCHES SHALL BE COMPACTED TO A MINIMUM 90% MAXIMUM DENSITY PER ASTM D-1557 AND AS DIRECTED BY SECTION 701.14.2 AND STANDARD DRAWING NUMBER 2315.
- THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY OR PRIVATE ROADWAY EASEMENTS SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET OR INTO ANY PUBLIC DRAINAGE FACILITY.
- PROPOSED WATERLINE MATERIALS SHALL BE EITHER PVC PIPE MEETING AWWA C900 REQUIREMENTS (6"-12") OR DUCTILE IRON PIPE, THICKNESS CLASS 50 (6"-16").
- ALL STATIONING REFERS TO WATERLINE CENTERLINE STATIONING.
- ALL FITTINGS ON WATERLINES SHALL HAVE RESTRAINED JOINTS AS NOTED ON THE PLANS.
- CONTRACTOR SHALL SUPPORT ALL EXISTING, UNDERGROUND UTILITY LINES WHICH BECOME EXPOSED DURING CONSTRUCTION. PAYMENT FOR SUPPORTING WORK SHALL BE INCIDENTAL TO WATER- LINE AND/OR SEWERLINE COSTS. 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 RECORD DRAWINGS. CONTRACTOR SHALL NOT COVER UTILITY LINES AND ACCESSORIES UNTIL ALL DATA HAS BEEN RECORDED.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER NOT LESS THAN SEVEN (7) DAYS PRIOR TO STARTING WORK IN ORDER THAT THE ENGINEER MAY TAKE NECESSARY MEASURES TO INSURE THE PRESERVATION OF SURVEY MONUMENTS WITHOUT THE CONSENT OF THE ENGINEER AND SHALL NOTIFY THE ENGINEER 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.
- 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 CABLES DURING CONSTRUCTION.
- WARNING--EXISTING UTILITY LINE LOCATIONS ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. THE LOCATION OF ANY SUCH EXISTING LINES IS BASED UPON INFORMATION PROVIDED BY THE UTILITY COMPANY, THE OWNER, OR BY OTHERS, AND THE INFORMATION MAY BE INCOMPLETE OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE ENGINEER HAS UNDERTAKEN NO FIELD VERIFICATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UNDERGROUND UTILITY LINES, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY, AND PRESERVE ANY AND ALL EXISTING UTILITIES. THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES, IN PLANNING AND CONDUCTING EXCAVATION, WHETHER BY CALLING OR NOTIFYING THE UTILITIES, COMPLYING WITH "BLUE STAKES" PROCEDURES, OR OTHERWISE. ANY WORK OCCURRING WITHIN AN ARTERIAL ROADWAY REQUIRES 24 HR. CONSTRUCTION.
- ALL EXCAVATION, TRENCHING AND SHORING ACTIVITIES MUST BE ACCOMPLISHED IN ACCORDANCE WITH OSHA 29CFR 1926.650 SUBPART P.
- CONTRACTOR SHALL MAINTAIN A GRAFFITI-FREE WORK SITE. CONTRACTOR SHALL PROMPTLY REMOVE ANY AND ALL GRAFFITI FROM EQUIPMENT, WHETHER PERMANENT OR TEMPORARY.
- FOR STORM DRAIN CONSTRUCTION, RCP PIPE JOINTS SHALL NOT BE GROUDED PRIOR TO FINAL INSPECTION. FINAL INSPECTION WILL DETERMINE JOINTS TO BE GROUDED FOR FINAL ACCEPTANCE OF THE CONSTRUCTION.

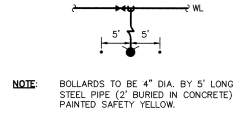
REV.	SHEETS	CITY ENGINEER	DATE	USER	DEPARTMENT	DATE	USER	DEPARTMENT	DATE
ENGINEERS STAMP & SIGNATURE		APPROVALS		ENGINEER		DATE		APPROVED FOR CONSTRUCTION	
 VILLAGE OF LOS RANCHOS FILE: S-04-05 ISAACSON & ARFMAN, P.A. Consulting Engineering Associates 128 Monroe Street, N.E. Albuquerque, New Mexico 08140		DRC Chairman		11-16-04		 City Engineer Date		741781 Sheet 1 of 5	
		Transportation		11-16-04					
		Water/Wastewater		11-16-04					
		Hydrology		11-16-04					
		AMAFCA							
		Const.		11-16-04					
		City Project No.		741781					



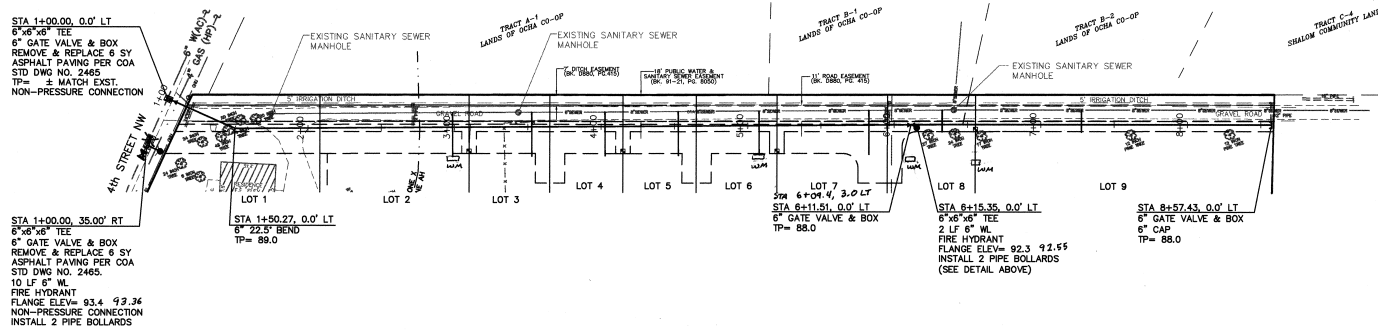
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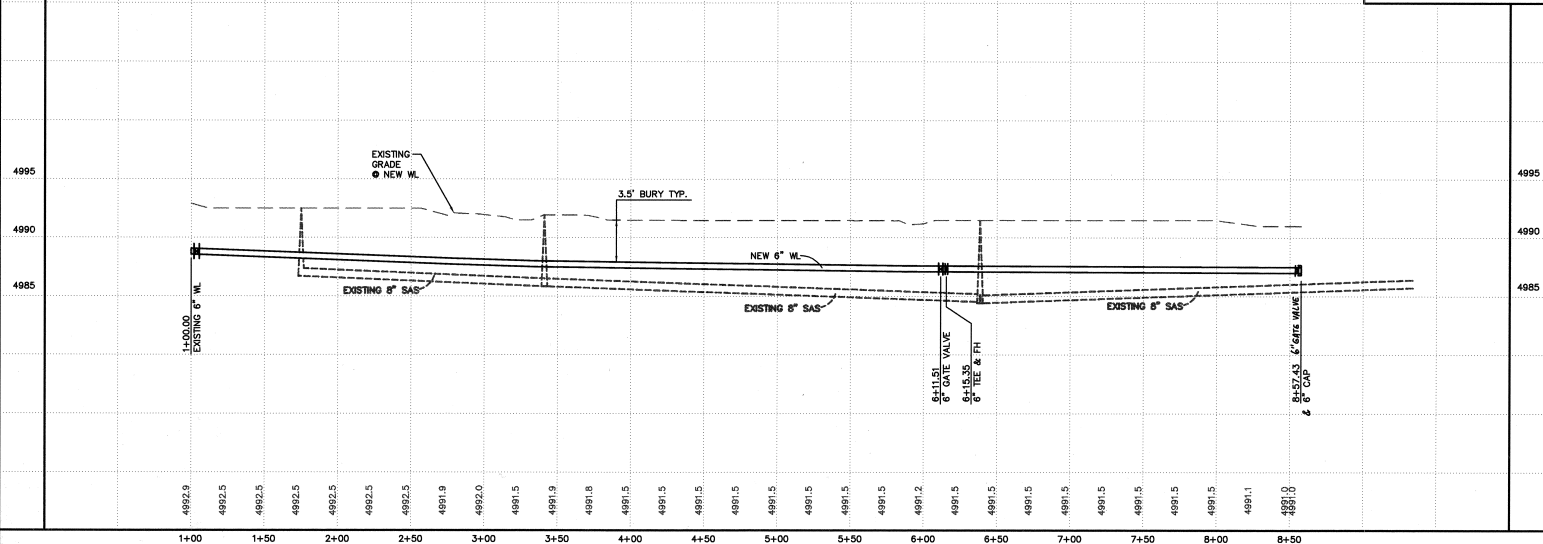


**HYDRANT BOLLARD DETAIL**  
NO SCALE



SCALES:  
1"=40' HOR.  
1"=5' VERT.

Elevation Datum: NGVD 29



**GENERAL NOTES**

- CONSTRUCT SAS SERVICES WITH ELECTRONIC MARKER DISC PER COA STD DWG #2125.
- CONSTRUCT ALL SINGLE & DOUBLE WATER SERVICES PER COA STD DWG #2361, #2362, & #2366.
- ALL WATER SERVICES SHALL HAVE COPPERSTIFFERS THAT INCLUDE A DUAL CHECK VALVE (CITY SPEC. SECTION 802.3.13) AND HEAVYWEIGHT METER BOX COVER & LID PER COA STD DWG #2369.
- SEE SHEET 5 FOR WATER SHUT-OFF PLAN.
- SEE SHEET 5 FOR RESTRAINED JOINT LENGTHS FOR WATER LINE FITTINGS.
- CONSTRUCT 4' BURY FIRE HYDRANT PER COA STD DWG #2340.
- SEE COA STD DWGS #2326 FOR VALVE BOX, #2328 FOR VALVE RING & COVER DETAIL, AND #2461 FOR VALVE CONCRETE COLLAR.

**WL SERVICE TABLE**

LOT NO.	STA.	TYPE	LENGTH
1	(EXISTING- 4th ST)	DS	19'
2	3+08.58	DS	19'
3	3+08.58	DS	19'
4	4+12.52	DS	19'
5	4+12.52	DS	19'
6	5+17.52	DS	19'
7	6+17.52	DS	19'
8	6+53.10	DS	4'
9	6+53.10	DS	4'

(SEE NOTE 2 & 3 ABOVE)

**SAS SERVICE TABLE**

LOT NO.	STA.	LENGTH	INV @ END
1	(EXISTING)	---	---
2	2+38.65	30'	87.6
3	3+52.65	30'	87.4
4	4+02.65	30'	87.2
5	4+52.65	30'	87.0
6	5+07.65	30'	87.0
7	6+52.65	30'	87.0
8	6+32.65	15'	87.0
9	7+27.59	15'	87.0

(SEE NOTE 1 ABOVE)

**LEGEND**

- GATE VALVE W/ VALVE BOX
- FIRE HYDRANT
- SAS MANHOLE
- WATER LINE W/ FITTING
- WATER METER SERVICE



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Albuquerque, New Mexico  
1347UL1.DWG/lor 05/14/04

CITY OF ALBUQUERQUE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING GROUP

**TITLE:** NICO TRAIL WATERLINE  
**PROPOSED WATERLINE**  
STA 1+00.00 TO STA 8+57.43  
**UTILITY PLAN & PROFILE**

Design Review Committee: [ ] City Engineer Approval: [ ]  
City Project No. 741781 Zone Map No. C-15-Z Sheet 4 of 5

**AS-BUILT INFORMATION**

DATE: 10/10/04  
BY: [Signature]  
REVISIONS: [Table]  
DESIGN: [Table]  
CHECKED BY: [Table]

<b>RESTRAINED JOINT LENGTHS, L<sub>r</sub>, FOR TEES, (FT.)</b> <b>ALL JOINTS AT THE TEE MUST BE RESTRAINED</b>		
<b>SIZE</b>	<b>RUN</b>	<b>BRANCH</b>
12x12x12	15	17
12x12x10	10	18
12x12x8	6	19
12x12x6	3	19
12x12x4	1	19
10x10x10	12	18
10x10x8	8	15
10x10x6	4	16
10x10x4	2	4
8x8x8	9	20
8x8x6	5	17
8x8x4	2	15
6x6x6	6	20
6x6x4	2	20

THIS TABLE IS BASED UPON THE FOLLOWING CRITERIA:

DEPTH OF BURY	3.0 FT. MINIMUM
GRADE OF SAFETY	1.25
MATERIAL	PVC PIPE
SOIL TYPE:	GM/SM - SILTY GRAVELS AND SILTY SANDS, GRADE-SAND-SILT MIXTURES.
TEST PRESSURE	150 PSI
TRENCH TYPE 4:	PIPE BEDDED IN SAND, GRAVEL, OR CRUSHED STONE TO DEPTH OF 1/8 PIPE DIAMETER, 4 INCH MINIMUM; BACKFILL COMPACTED TO TOP OF PIPE.

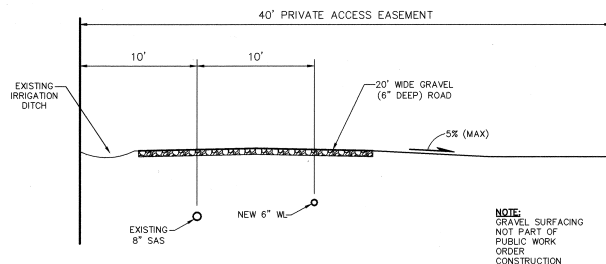
DIFFERENT CRITERIA, E.G., DUCTILE IRON PIPE, GREATER DEPTH OF BURY ETC. WILL REQUIRE DIFFERENT RESTRAINED LENGTHS. THESE MUST BE CALCULATED BY A QUALIFIED PROFESSIONAL ENGINEER AND APPROVED BY THE PUBLIC WORKS DEPARTMENT.

RESTRAINED JOINT LENGTHS, $L_r$ , FOR HORIZONTAL BENDS, VALVES, AND DEAD ENDS, (FT.)					
SIZE	HORZ. BENDS				VALVES & DEAD ENDS
	90°	45°	22 1/2°	11 1/4°	
12	30	12	6	3	85
10	26	11	5	3	72
8	22	9	4	2	60
6	17	7	3	2	48
4	12	5	2	1	32

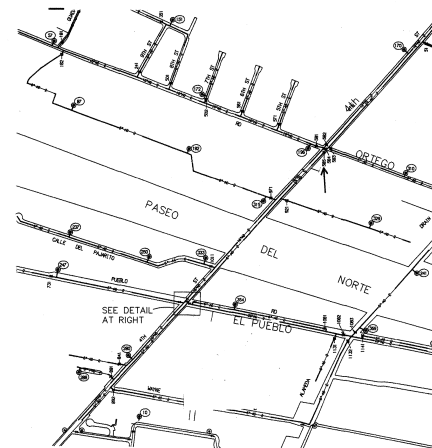
<b>RESTRAINED JOINT LENGTHS, L<sub>r</sub>, FOR REDUCERS, (FT.)</b> <b>MINIMUM UNOBSTRUCTED, STRAIGHT-RUN LENGTH:</b> <b>RESTRAIN EITHER LARGE PIPE, OR SMALL PIPE.</b>					
SIZE	LARGE SIDE	SMALL SIDE	SIZE	LARGE SIDE	SMALL SIDE
12x10	25	30	10x6	44	73
12x8	45	68	10x4	58	141
12x6	62	121	8x6	25	33
12x4	74	20	8x4	43	83
10x8	74	20	6x4	24	35

NOTES:

1. ALL MECHANICAL JOINTS SHALL BE RESTRAINED AT THE FITTING.
2. THE CONTRACTOR SHALL PROVIDE A MINIMUM PIPE LENGTH OF 20 LF FROM ALL MECHANICAL JOINTS. ALL PIPE JOINTS WITHIN 20 LF OF A MECHANICAL JOINT SHALL BE RESTRAINED AT THE CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR SHALL RESTRAIN ALL PIPE JOINTS IN THE SPECIFIED DISTANCE LISTED IN THE TABLE ON THIS SHEET.
4. THE CONTRACTOR SHALL RESTRAIN ALL FIRE HYDRANT JOINTS FROM THE TEE ON THE MAIN TO THE FIRE HYDRANT FLANGE.



**PRIVATE GRAVEL ROAD SECTION**  
SCALE: 1"=5'



## WATER SHUTOFF PLAN

NOTES:

1. ONLY CITY CREWS MAY OPERATE VALVES.
2. CONTRACTOR MUST NOTIFY WATER UTILITIES DIV. (857-8200) AT LEAST 7 WORKING DAYS IN ADVANCE OF CONSTRUCTION.
3. CLOSE VALVES No. 585, 1053, 1054, & 1056 TO COMPLETE SHUTOFF.



4th / EL PUEBLO DETAIL

[illegible]