

PLANS FOR CONSTRUCTION OF

VOLCANO RD. WATERLINE EXTENSION

ALBUQUERQUE, NEW MEXICO

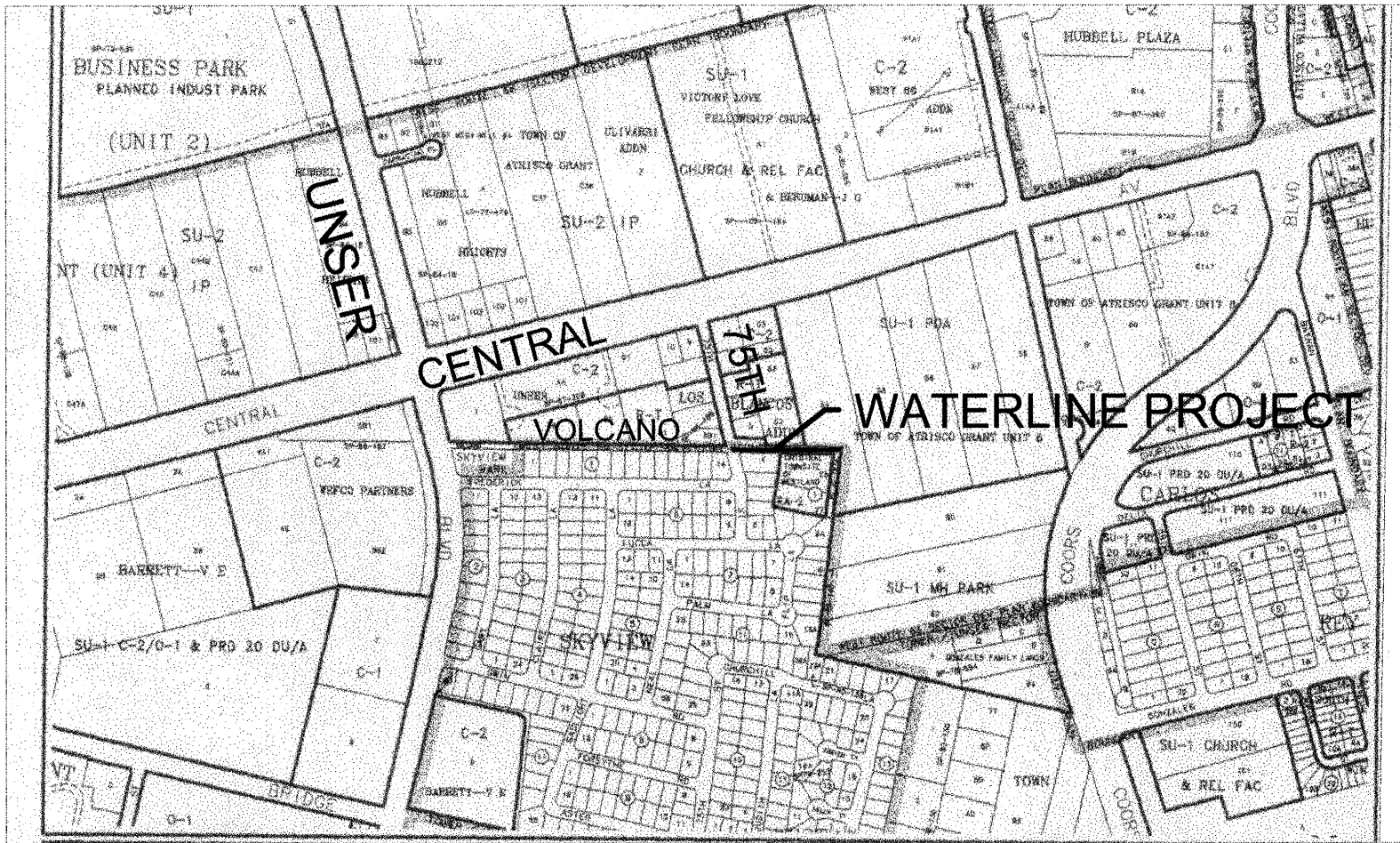
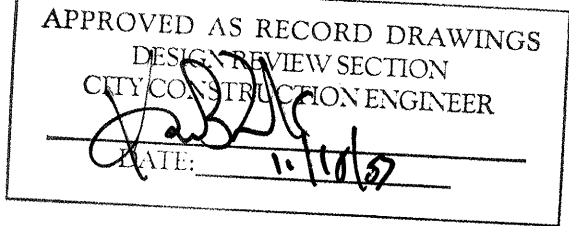
AUGUST, 2002

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CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

I, Steven K. Morrow, of the firm of Brasher and Lorenz, 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 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 and survey information provided by Jim Aldrich, NMPS# 7719.



VICINITY MAP: K - 10

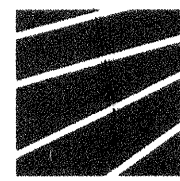
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GENERAL NOTES:

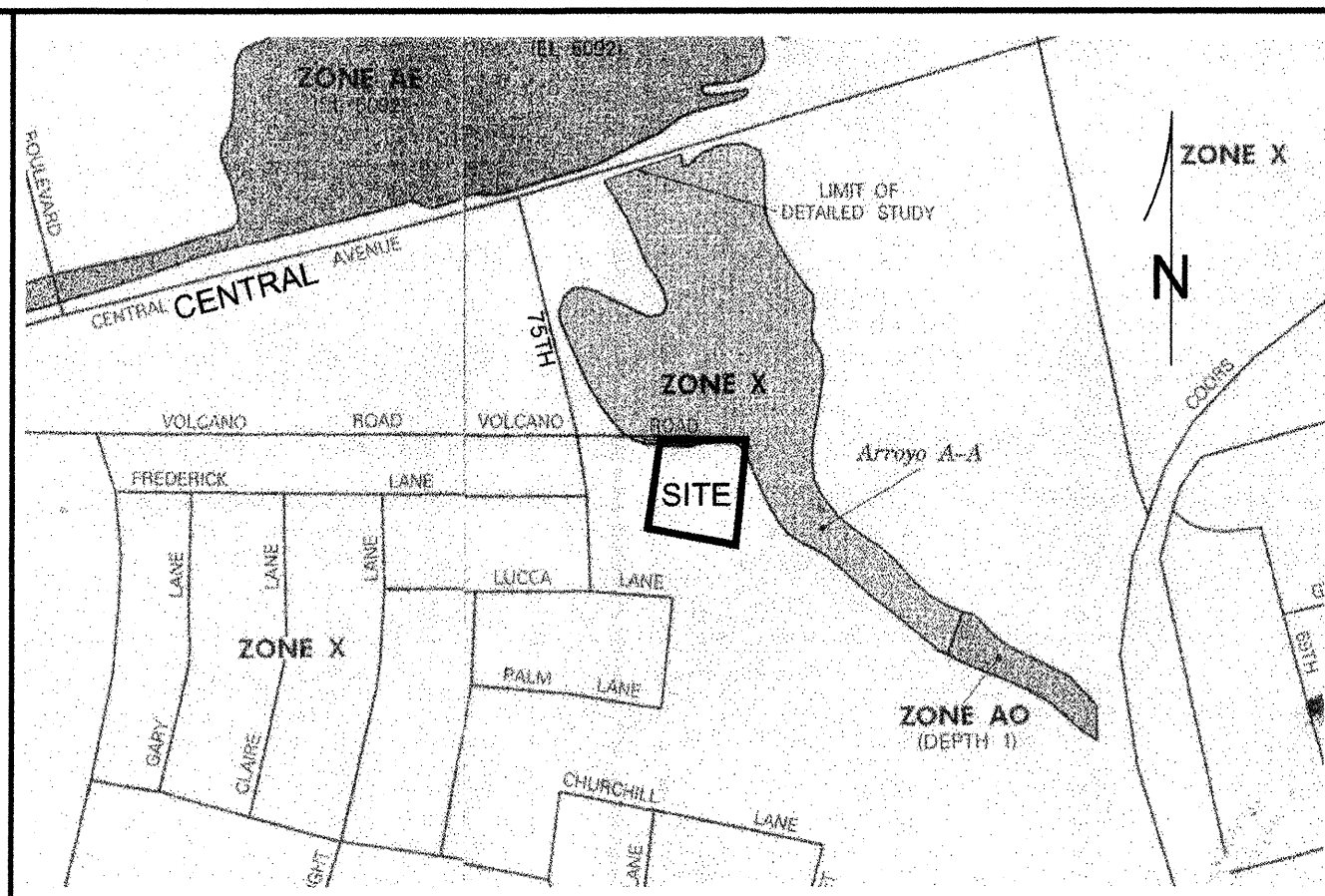
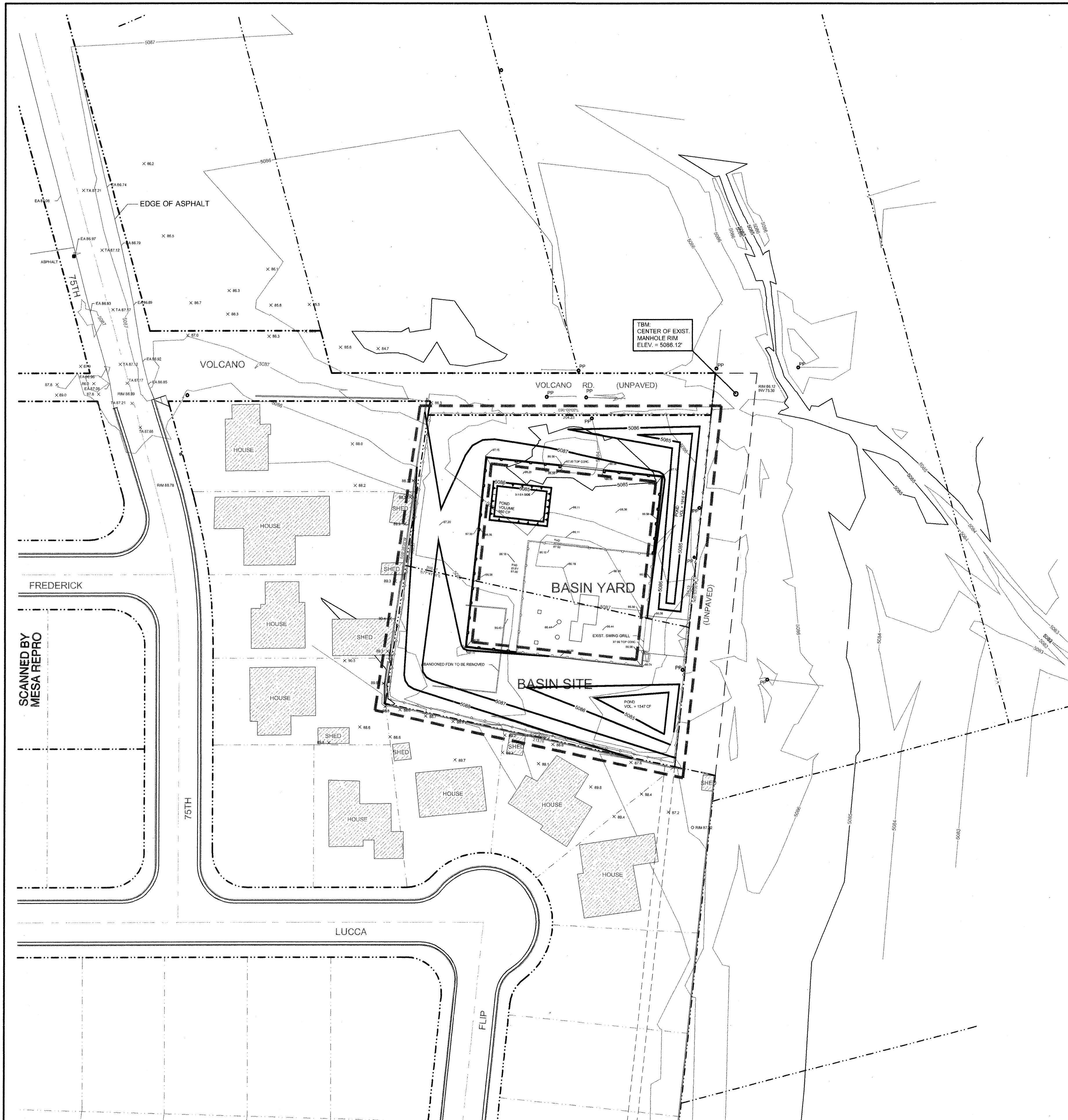
- CITY OF ALBUQUERQUE SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION AS AMENDED THROUGH UPDATE 6, WILL BE REFERRED TO HEREIN AS THE "STANDARD SPECIFICATIONS." ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- THREE WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM (260-1990) AND DETERMINE LOCATION OF EXISTING UTILITIES.
- PRIOR TO ANY 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 THE SURVEYOR SO THAT THE CONFLICT CAN BE RESOLVED WITHOUT DELAY.
- ALL EXISTING SIGNS, MARKERS, DELINEATORS, ETC., WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED, STORED AND RE-SET BY THE CONTRACTOR.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER NOT LESS THAN SEVEN (7) WORKING DAYS PRIOR TO STARTING WORK IN ORDER THAT THE ENGINEER MAY TAKE NECESSARY MEASURES TO INSURE THE PRESERVATION OF SURVEY MONUMENTS. THE CONTRACTOR SHALL NOT DISTURB PERMANENT SURVEY MONUMENTS WITHOUT THE CONSENT OF 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 MARKER 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.
- 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 BARRICADING PERMIT FROM THE CONSTRUCTION COORDINATION DIVISION. CONTRACTOR SHALL NOTIFY BARRICADE ENGINEER ~~888-888-8888~~ (924-3400) PRIOR TO OCCUPYING AN INTERSECTION. REFER TO SECTION 19 OF THE STANDARD SPECIFICATIONS.
- ANY WORK OCCURRING WITHIN AN ARTERIAL ROADWAY REQUIRES 24 HOUR CONSTRUCTION.
- ALL UTILITIES AND UTILITY SERVICE LINES SHALL BE INSTALLED PRIOR TO PAVING.
- ALL STREET STRIPING ALTERED OR DESTROYED SHALL BE REPLACED BY THE CONTRACTOR WITH HOT THERMOPLASTIC REFLECTORIZED PAVEMENT MARKING. ALL NEW STRIPING SHALL BE HOT THERMOPLASTIC REFLECTORIZED PAVEMENT MARKING.
- THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DAMAGE TO EXISTING PAVEMENTS, PAVEMENT MARKINGS, CURB AND GUTTER, DRIVEPADS, WHEELCHAIR RAMPS AND SIDEWALKS DURING CONSTRUCTION, APART FROM THOSE SECTIONS INDICATED FOR REMOVAL ON THE PLANS AND SHALL REPAIR OR REPLACE PER THE STANDARD SPECIFICATIONS AT HIS OWN EXPENSE.
- EXISTING UTILITY LINES AND PIPELINES SHOWN ON THESE DRAWINGS ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. UTILITIES MAY EXIST WHERE NONE ARE SHOWN. THE ENGINEER HAS UNDERTAKEN NO FIELD VERIFICATION OF THE LOCATION, DEPTH, SIZE OR TYPE OF EXISTING UTILITY LINES AND PIPELINES. THE CONTRACTOR IS FULLY RESPONSIBLE FOR DAMAGE CAUSED BY FAILURE TO LOCATE AND PRESERVE EXISTING UTILITY LINES AND PIPELINES.
- THE CONTRACTOR SHALL SECURE A "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.
- THE CONTRACTOR SHALL ASSIST THE ENGINEER/INSPECTOR IN THE RECORDING OF DATA ON ALL UTILITY LINES AND ACCESSORIES AS REQUIRED BY THE OWNERS FOR THE PREPARATION OF "RECORD DRAWINGS." THE CONTRACTOR SHALL NOT COVER UTILITY LINES AND ACCESSORIES UNTIL ALL DATA HAS BEEN RECORDED.
- ALL CONSTRUCTION WITHIN CITY RIGHT-OF-WAY OR EASEMENTS MUST BE DONE FROM APPROVED WORK ORDER DOCUMENTS FROM THE CITY AND PREPARED BY BRASHER AND LORENZ, INC.
- THE CONTRACTOR SHALL DETERMINE IN ADVANCE OF HIS CONSTRUCTION IF OVERHEAD UTILITY LINES, SUPPORT STRUCTURES, POLES, GUYS, ETC. ARE AN OBSTRUCTION TO CONSTRUCTION OPERATIONS. IF ANY OBSTRUCTION TO CONSTRUCTION OPERATIONS IS EVIDENT, THE 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 THE CONTRACTOR.
- THE CONTRACTOR IS TO SUPPORT AND MAINTAIN THE INTEGRITY OF ALL UNDERGROUND TELEPHONE, ELECTRIC CABLES AND CABLE TELEVISION UTILITIES AT NO ADDITIONAL COST THE OWNER. CABLE IS TO BE SUPPORTED EVERY 15 FEET (MINIMUM). CONTRACTOR SHALL COORDINATE WITH AND MAKE NECESSARY PAYMENT (IF ANY) TO UTILITY OWNER FOR DE-ENERGIZATION OF CABLES OR SUPPORT OF CABLES BY THE UTILITY OWNER.

REV.	SHEETS	CITY ENGINEER	DATE	USER DEPARTMENT	DATE	USER DEPARTMENT	DATE
ENGINEER'S STAMP & SIGNATURE		APPROVALS	ENGINEER	DATE	APPROVED FOR CONSTRUCTION		
		DRC Chair		10-11-02			
		Transportation		10/9/02			
		Water/Wastewater		10/10/02			
		Hydrology		10/10/02			
		CIP					
		Constr. Mgmt.					
		Constr. Coord.		10-11-02			
		City Project No.		6911.81	Zone Map No.		Sheet 1 of 6
				K - 10			

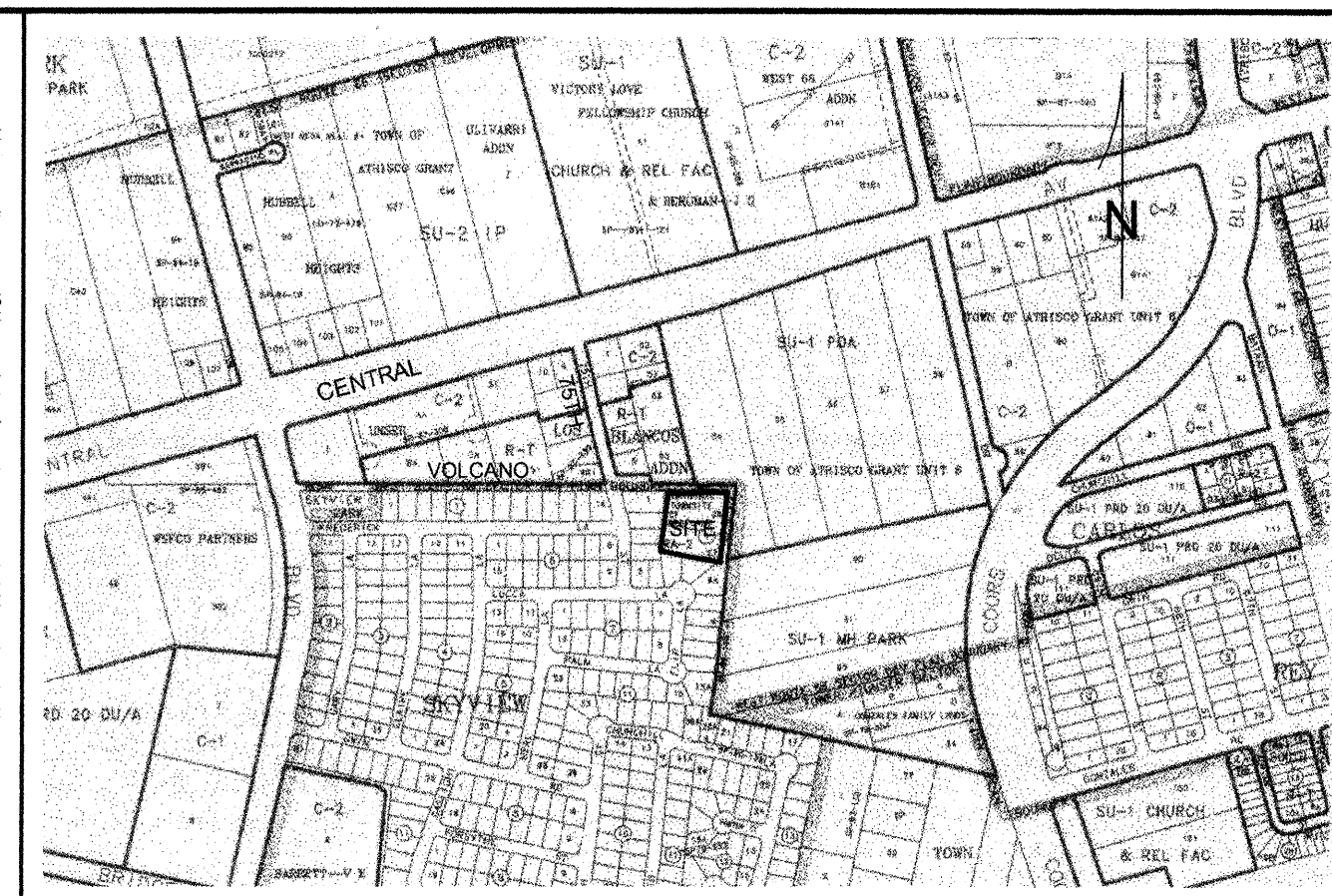
DRB # 1001762



BRASHER & LORENZ
CONSULTING ENGINEERS
2201 San Pedro Blvd. NE Bldg. 1, Suite 1200
Albuquerque, New Mexico 87110
Phone: (505) 888-6088 Fax: (505) 888-6188



FLOOD HAZARD ZONE



LOCATION MAP

K - 10

PURPOSE AND SCOPE

Pursuant to the established Drainage Ordinance for the City of Albuquerque and the Development Process Manual, this Drainage Report outlines the drainage management criteria for controlling developed runoff from the project site. The purpose of this plan is to define the grading for a small expansion of the existing substation yard.

EXISTING CONDITIONS

The project site consists of Volcano Substation, 1.1058 acres owned and operated by the Public Service Company of New Mexico, located on the east end of Volcano Rd., east of 75th St., all south of Central Ave. It is bounded on the south and west by existing single-family residential development, and on the east and north by vacant land. The site is platted as the easterly portion of Lots 27 and 28 of the Original Townsite of Westland within the Town of Atrisco Grant. These two lots are remnants of the original platting from 1935. The existing substation electric facilities are situated on a nearly-flat gravelled ground surface enclosed by a 12' high wall. The gate openings through the wall are elevated approximately 5' above the yard surface, therefore, runoff generated within the yard remains within the yard. The yard is higher in elevation than the surrounding site and adjoining vacant properties. The residential properties south and west of the site are separated by a 4-foot wall, and do not drain on to the substation property. With the exception of a small depression on the north side of the site, the site drains generally toward the east. The substation property outside the walled enclosure is vegetated with native desert shrubs and grasses. The FEMA Flood Insurance Rate Map, Panel 329, indicates that the site is not encumbered by a designated 100-year flood hazard zone, but its northernmost portion is subject to inundation under 500-year precipitation conditions.

PROPOSED CONDITIONS

Under this plan, the existing substation yard and wall enclosure will be expanded to the north by 57', and to the west by 37'. The expanded yard will contain runoff generated within itself, and will be graded with a gravel surface to drain to a small area designated for ponding. Because the east and south walls of the existing enclosure will remain, the elevation of the yard will not change, and the surface within the wall will be graded toward the small pond. The remainder of the site outside the yard will be shaped to drain to two on-site ponds outside the enclosed yard. The site outside the yard wall will be landscaped. This plan does not alter the existing drainage patterns of the area in either basin boundaries or flow rates.

CALCULATIONS

The site has been analyzed as two basins: one within the yard; and one consisting of the remainder of the site. The calculations shown hereon define the 100-year/6-hour design storm falling within the project area under existing and developed conditions. The hydrology is per Chapter 22, Development Process Manual, Vol. 2, 1997 Revision. The ponding requirements shown reflect the historical retention of runoff on site. The results of the calculations reflect the minimal effect this minor station expansion has on the quantity of runoff generated by the site.

HYDROLOGY							
PRECIPITATION ZONE 1						P ₁₀₀ = 2.20	
BASIN	AREA AC	LAND TREATMENT				V ₁₀₀ AF	Q ₁₀₀ CFS
		A	B	C	D		
EXISTING CONDITIONS							
SITE	0.9353	- 0 -	0.9353	- 0 -	- 0 -	0.0520	1.65
YARD	0.1705	- 0 -	- 0 -	0.1705	- 0 -	0.0152	0.47
PROPOSED CONDITIONS							
SITE	0.7003	- 0 -	- 0 -	0.7003	- 0 -	0.0580	1.79
YARD	0.4055	- 0 -	- 0 -	0.4055	- 0 -	0.0336	1.04

YARD RUNOFF VOL. = 0.0336 AF

REQUIRED POND VOL. = 1464 CF

POND VOLUME PROVIDED: 960 CF (YARD POND) + 20,070 CF (YARD SURFACE) = 21,030 CF

SITE RUNOFF VOL. = 0.0580 AF

REQUIRED POND VOL. = 2526 CF

POND VOLUME PROVIDED: 1547 CF (SOUTH) + 1916 CF (NORTH) = 3463 CF

LEGEND

- 6601 — EXIST. CONTOUR / ELEV.
- 02.5 × EXIST. SPOT ELEV.
- 01 — PROPOSED CONT. / ELEV.
- — — — — RIGHT-OF-WAY
- 01.5 — PROPOSED SPOT ELEV.
- ← DIRECTION OF FLOW
- ← DRAINAGE SWALE
- — — — — DRAINAGE BASIN DIVIDE
- — EXIST. POLE W/ GUY
- — — — — EXIST. FENCE
- — — — — EXIST. ROAD
- — — — — EXIST. CMU WALL
- — — — — PROPOSED CMU WALL

PROPERTY ADDRESS

7400 VOLCANO RD. SW

PROJECT LOCATION

EAST END OF VOLCANO RD.,
EAST OF 75TH ST.,
SOUTH OF CENTRAL AVE. MAP K-10

SURVEY:

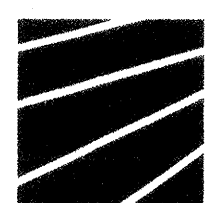
Topographic and field measurements by
Brasher & Lorenz, Inc.
Dated December 21, 2001
PROJECT BENCHMARK:
CENTER OF RIM OF EXISTING
MANHOLE AT EAST END OF VOLCANO RD.
ELEVATION 5086.12 MSL (DATUM 1929)
Property lines shown are based on plats of record.

I, Paul Brasher do hereby certify that I personally
inspected the site shown on this plan on December 26,
2001, and as of that date, it appeared that no filling
grading, or excavation had occurred thereon, since
completion of the topographic survey used to prepare
this plan

PAUL BRASHER, NMPE

4-9-02
DATE

APPROVED GRADING AND DRAINAGE PLAN



BRASHER & LORENZ
CONSULTING ENGINEERS

2201 San Pedro NE, Building 1 Suite 220
Albuquerque, New Mexico 87110
Ph: 505-888-0088 Fax: 505-888-0108

PNM PUBLIC SERVICE COMPANY
OF NEW MEXICO

VOLCANO SUBSTATION
GRADING & DRAINAGE PLAN

SHT: 2 OF 6

DRW: R.M

CKD: P.T.B

APP:

REV. NO.

TR:

OK:

ACAD FILE:

SITEDEVPLAN

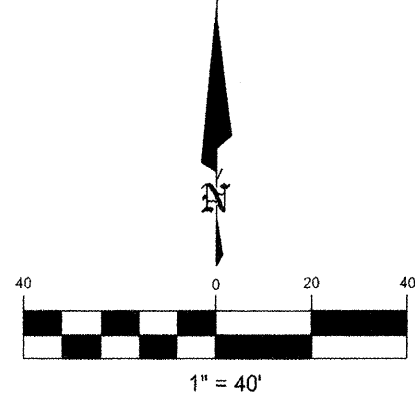
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USS-

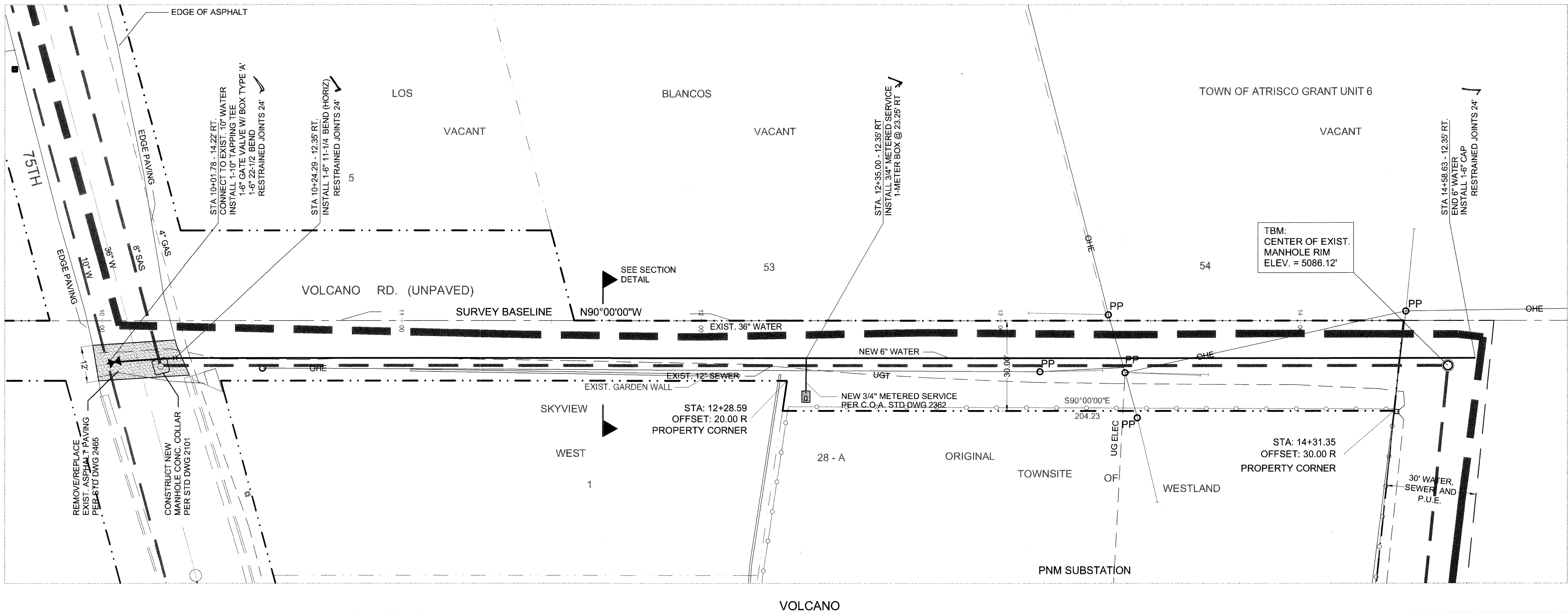
REVISION

NO. DATE BY



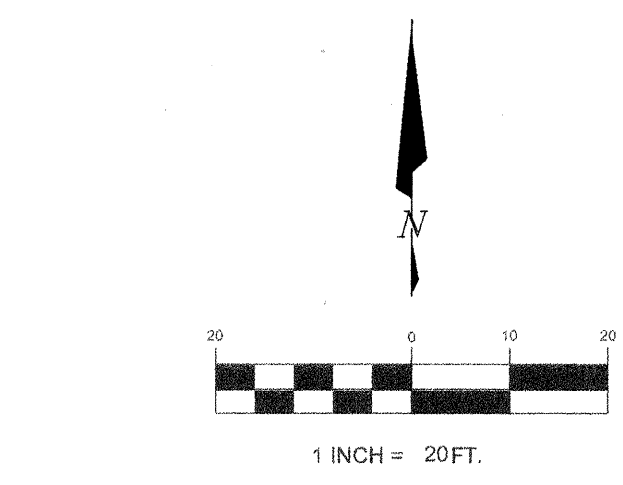
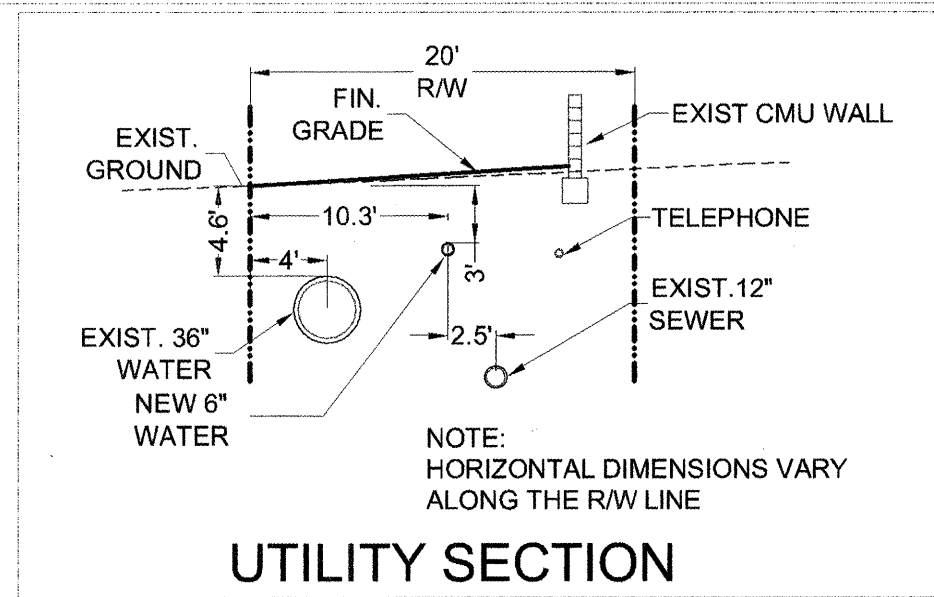
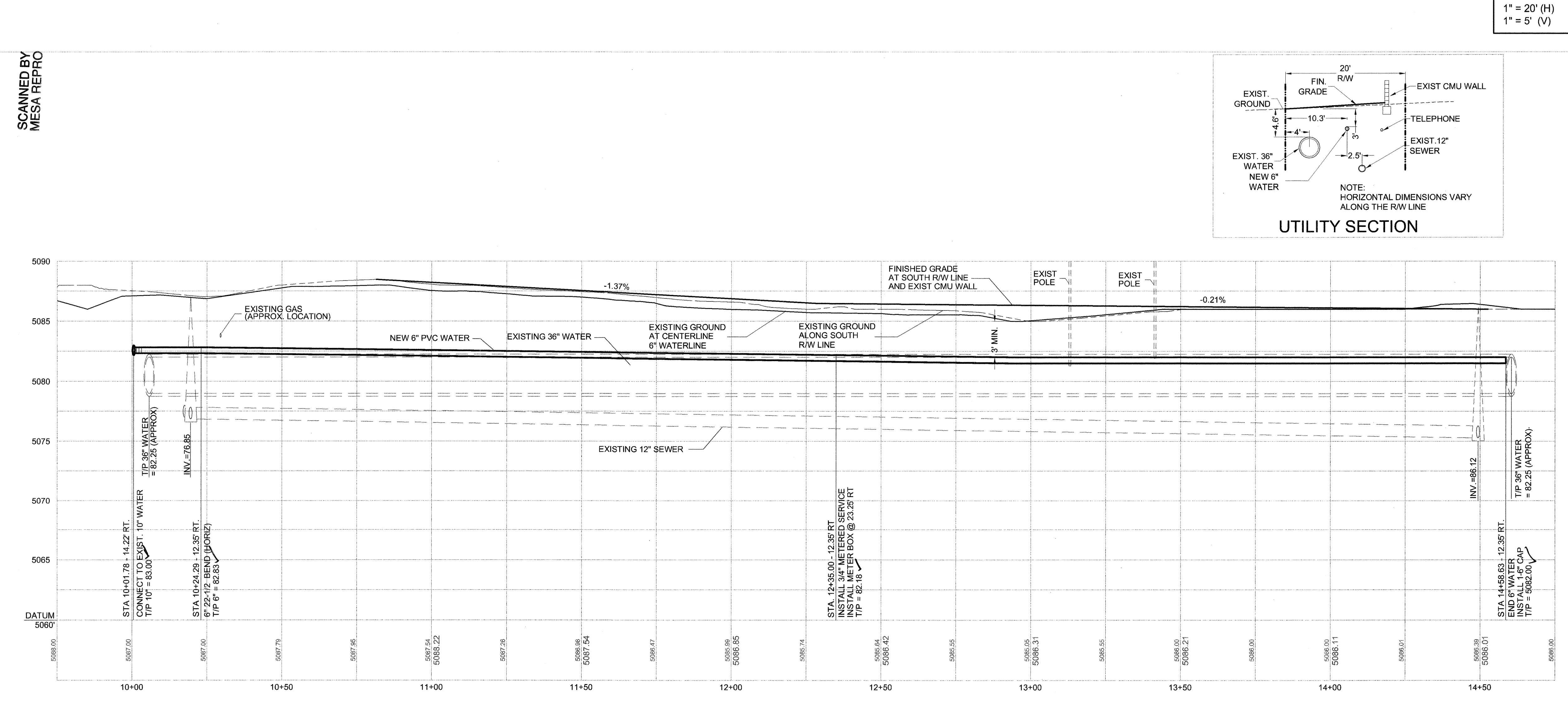
ASSOCIATED LAYERS

LAYER NAME	DESCRIPTION
0	STANDARD
TBBL	TITLE BLOCK
DRAW	LINE WORK
TEXT	ALL TEXT



LEGEND		
ITEM	EXISTING	PROPOSED
WATERLINE	6" W	6" W
SANITARY SEWER	8" SAS	8" SAS
STORM SEWER	36" STS	36" STS
FIRE HYDRANT		
VALVE		
METERED WATER SERVICE		
MANHOLE		
CURB AND GUTTER		
HEADER CURB		
DROP INLET		
OVERHEAD ELEC WITH POWER POLE	OHE	OHE
UNDERGROUND ELEC, GAS, TEL, TV	UGT	UGT
CURB ELEVATIONS		
SPOT ELEV.	16.7	16.7
SEWER SERVICE		
RIGHT OF WAY		
EASEMENT		
POWER POLE (GUYED)	PP	PP
CENTERLINE		
TOP OF ASPHALT ELEV.	TA 16.2	TA 16.2

- GENERAL NOTES:
- HORIZONTAL LOCATIONS AND ALIGNMENTS OF EXISTING UNDERGROUND UTILITIES ARE BASED ON LINE SPOTS BY NEW MEXICO ONE-CALL.
 - PROFILE OF THE EXISTING 36" WATERLINE IS SHOWN BASED ON AS-BUILT RECORDS.
 - HORIZONTAL LOCATION OF THE EXISTING 10" WATERLINE IS SHOWN BASED ON AS-BUILT RECORDS; NO RECORD PROFILE IS AVAILABLE, 4' DEPTH IS ASSUMED.
 - CONTRACTOR SHALL MAINTAIN LATERAL SUPPORT FOR THE EXISTING 36" WATERLINE AND ANY OTHER UTILITIES EXPOSED WHILE THE TRENCH IS OPEN FOR INSTALLATION OF THE NEW 6" WATERLINE.
 - PROPERTY LINES, BEARINGS, AND DISTANCES SHOWN ARE BASED ON PLATS OF RECORD, AND ARE SHOWN FOR REFERENCE ONLY.



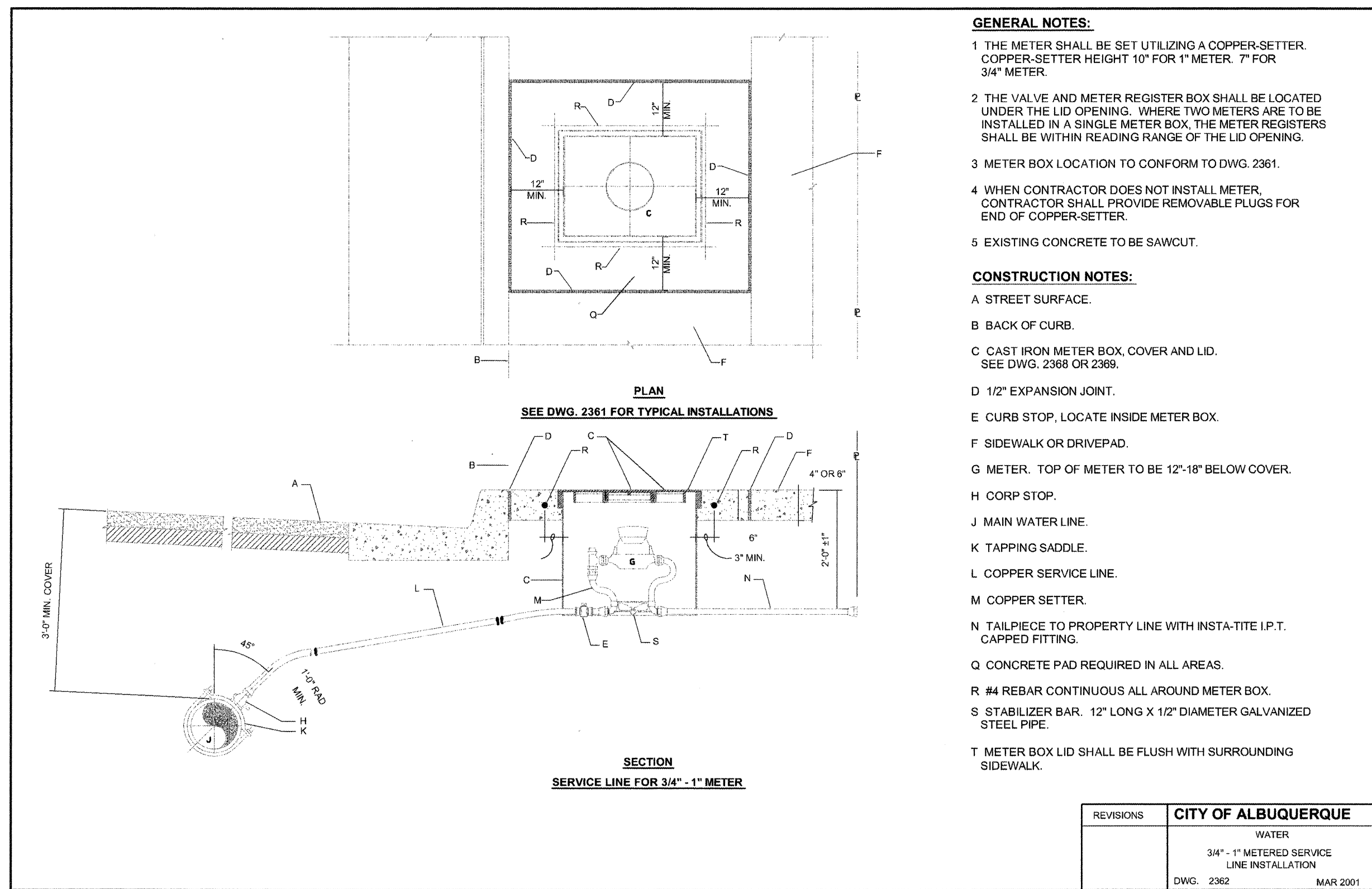
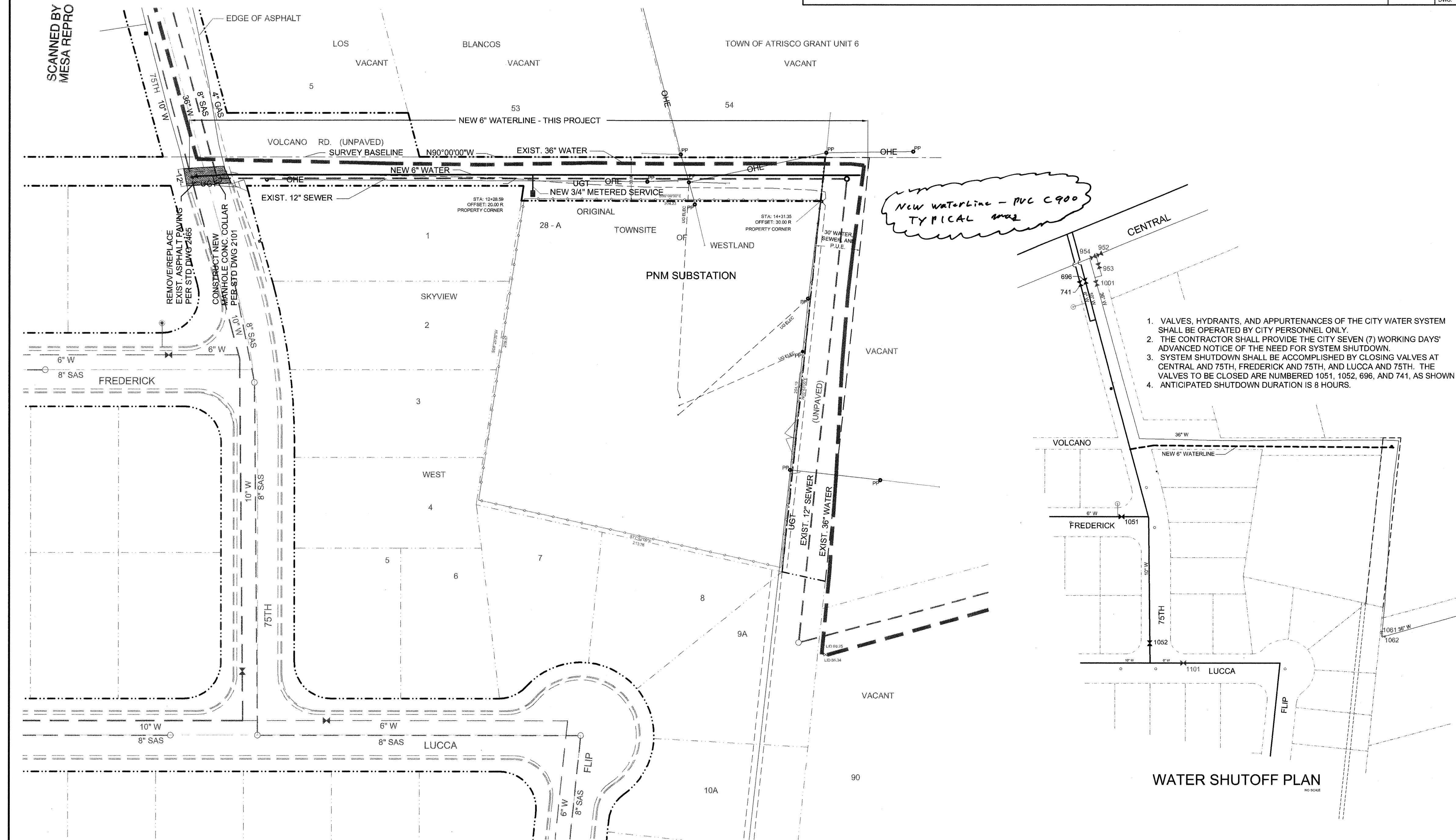
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CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP
TITLE: **VOLCANO WATERLINE EXTENSION**
VOLCANO RD. PROFILE

APPROVED OCT 11 2002 DESIGN REVIEW COMMITTEE	City Engineer Approval APPROVED AUG 27 2002 CITY ENGINEER
--	--

AS-BUILT INFORMATION			BENCHMARKS			SURVEY INFORMATION			ENGINEER'S SEAL		
CONTRACTOR	TRIAID	DATE	T.B.M.: EXISTING MANHOLE RIM AT EAST END OF VOLCANO RD.	DATE		FIELD NOTES	BY	NO.	REMARKS	BY	NO.
WORKS BY	ALDRICH	DATE	450' EAST OF 75TH STREET	DATE					DESIGNED BY	P.B.	DATE 8-2002
INSPECTORS	BRASHER AND LORENZ	DATE	RIM ELEVATION = 5086.12 FT MSL NAVD 1983	DATE					DRAWN BY	R.M.	DATE 8-2002
ACCEPTANCE BY	BRASHER AND LORENZ	DATE		DATE					CHECKED BY	P.B.	DATE 8-2002
VERIFICATION BY	BRASHER AND LORENZ	DATE	ALBUQUERQUE SURVEY CONTROL MONUMENT B&10								
DRAWING BY	BRASHER AND LORENZ	DATE	N.M. STATE PLANE COORDINATES - CENTRAL ZONE NAD 27								
CONTRACTED BY	BRASHER AND LORENZ	DATE	X = 381512.75 Y = 1483233.46 G.G. = 0.9997883								
			ELEVATION = 5082.145								
			DELTA ALPHA = 0-15-58								

SCANNED BY
MESA REPRO

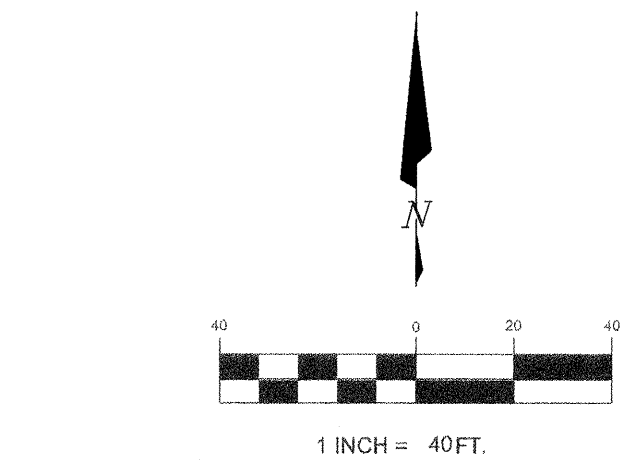


- GENERAL NOTES:**
- 1 THE METER SHALL BE SET UTILIZING A COPPER-SETTER. COPPER-SETTER HEIGHT 10" FOR 1" METER. 7" FOR 3/4" METER.
 - 2 THE VALVE AND METER REGISTER BOX SHALL BE LOCATED UNDER THE LID OPENING. WHERE TWO METERS ARE TO BE INSTALLED IN A SINGLE METER BOX, THE METER REGISTERS SHALL BE WITHIN READING RANGE OF THE LID OPENING.
 - 3 METER BOX LOCATION TO CONFORM TO DWG. 2361.
 - 4 WHEN CONTRACTOR DOES NOT INSTALL METER, CONTRACTOR SHALL PROVIDE REMOVABLE PLUGS FOR END OF COPPER-SETTER.
 - 5 EXISTING CONCRETE TO BE SAWCUT.
- CONSTRUCTION NOTES:**
- A STREET SURFACE.
- B BACK OF CURB.
- C CAST IRON METER BOX, COVER AND LID. SEE DWG. 2366 OR 2369.
- D 1/2" EXPANSION JOINT.
- E CURB STOP, LOCATE INSIDE METER BOX.
- F SIDEWALK OR DRIVEPAD.
- G METER. TOP OF METER TO BE 12"-18" BELOW COVER.
- H CORP STOP.
- J MAIN WATER LINE.
- K TAPPING SADDLE.
- L COPPER SERVICE LINE.
- M COPPER SETTER.
- N TAILPIECE TO PROPERTY LINE WITH INSTA-TITE I.P.T. CAPPED FITTING.
- Q CONCRETE PAD REQUIRED IN ALL AREAS.
- R #4 REBAR CONTINUOUS ALL AROUND METER BOX.
- S STABILIZER BAR. 12" LONG X 1/2" DIAMETER GALVANIZED STEEL PIPE.
- T METER BOX LID SHALL BE FLUSH WITH SURROUNDING SIDEWALK.

REVISIONS	CITY OF ALBUQUERQUE
	WATER
	3/4" - 1" METERED SERVICE LINE INSTALLATION
	DWG. 2362 MAR 2001

LEGEND		
ITEM	EXISTING	PROPOSED
WATERLINE	6" W	6" W
SANITARY SEWER	8" SAS	8" SAS
STORM SEWER	36" STS	36" STS
FIRE HYDRANT		
VALVE		
METERED WATER SERVICE		
MANHOLE		
CURB AND GUTTER		
HEADER CURB		
DROP INLET		
OVERHEAD ELEC WITH POWER POLE	GHE	OHE
UNDERGROUND ELEC, GAS, TEL, TV	UGT	UGT
CURB ELEVATIONS		
SPOT ELEV.	x 16.7	16.7
SEWER SERVICE		
RIGHT OF WAY		
EASEMENT		
POWER POLE (GUYYED)	PP	PP
CENTERLINE		
TOP OF ASPHALT ELEV.	TA 16.2	TA 16.2

- GENERAL NOTES:**
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 2. PROFILE OF THE EXISTING 36" WATERLINE IS SHOWN BASED ON AS-BUILT RECORDS.
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CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP
TITLE: **VOLCANO WATERLINE EXTENSION**
OVERALL WATER PLAN

APPROVED DESIGN REVIEW COMMITTEE OCT 11 2002	City Engineer Approval APPROVED CITY ENGINEER AUG 27 2002	Mo./Day/Yr.	Mo./Day/Yr.
DESIGNED BY P.B.	DRAWN BY R.M.	CHECKED BY P.B.	

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City Inspector: M. Sticker

CONSTRUCTION TRAFFIC CONTROL GENERAL NOTES

1. CONTRACTOR MUST OBTAIN FROM CONSTRUCTION COORDINATION AN EXCAVATION/BARRICADING PERMIT BEFORE ENGAGING IN ANY CONSTRUCTION, MAINTENANCE OR REPAIR WORK IN ANY OF THE CITY OF ALBUQUERQUE'S RIGHTS-OF-WAY. EMERGENCY WORK THAT WOULD PRESERVE LIFE OR PROPERTY IS EXCLUDED WITH THE UNDERSTANDING, THAT A PERMIT SHALL BE OBTAINED WITHIN 24 TO 48 HOURS.

2. CONTRACTOR SHALL AT THE TIME OF PERMIT REQUEST, SUBMIT FOR APPROVAL BY CONSTRUCTION COORDINATION, A TRAFFIC CONTROL PLAN DETAILING ALL EXISTING TOPOGRAPHY SUCH AS LANE WIDTHS, DRIVEWAYS, AND BUSINESS/RESIDENTIAL ACCESSES. THE TRAFFIC CONTROL PLAN SHALL INCLUDE ALL PHASES OF WORK AND SCHEDULES INVOLVED IN THE CONSTRUCTION PROJECT. ANY SEPARATE PHASES OF A CONSTRUCTION PROJECT SHALL BE GIVEN AN INDIVIDUAL PERMIT EACH. BLANKET PERMITS WILL NOT BE ISSUED.

3. THESE TYPICAL TRAFFIC CONTROL PLANS DO NOT REFLECT THE EXISTING TOPOGRAPHY SUCH AS DRIVEWAYS, LANE WIDTHS, AND BUSINESS/RESIDENTIAL ACCESSES. EVERY LOCATION THAT REQUIRES CONSTRUCTION TRAFFIC CONTROL SHALL HAVE A DETAILED TRAFFIC CONTROL PLAN SHOWING ALL EXISTING TOPOGRAPHY.

4. CONSTRUCTION SHALL NOT BEGIN UNLESS A TRAFFIC CONTROL PLAN HAS BEEN APPROVED AND VERIFIED BY CONSTRUCTION COORDINATION.

5. CONSTRUCTION COORDINATION SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY TRAFFIC CONTROL CHANGES NEEDED BY CONTRACTOR, THAT WERE NOT PREVIOUSLY APPROVED. THESE TRAFFIC CONTROL CHANGES SHALL BE REQUESTED IN WRITING ACCOMPANIED WITH A TRAFFIC CONTROL PLAN REFLECTING SUCH CHANGES.

6. ALL CONSTRUCTION TRAFFIC CONTROL DEVICES SHALL COMPLY TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL, SERVICE AND MAINTAIN ALL TRAFFIC CONTROL DEVICES. TRAFFIC CONTROL DEVICES SHALL NOT BE REMOVED OR ALTERED IN ANY WAY WITHOUT THE APPROVAL OF CONSTRUCTION COORDINATION, PER SECTION 6A-4 OF THE MUTCD, LATEST EDITION.

7. THE CONSTRUCTION TRAFFIC CONTROL INITIAL SET-UP SHALL BE BY AN AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) CERTIFIED WORKSITE TRAFFIC SUPERVISOR. THE MAINTENANCE AND SERVICING SHALL ALSO BE DONE BY AN ATSSA CERTIFIED WORKSITE TRAFFIC SUPERVISOR OR EQUIVALENT.

8. CONTRACTOR IS RESPONSIBLE TO MAINTAIN AND SERVICE ALL TRAFFIC CONTROL DEVICES 24 HOURS A DAY, 7 DAYS A WEEK THROUGHOUT LENGTH OF PROJECT. CONTRACTOR IS RESPONSIBLE THAT ALL TRAFFIC CONTROL DEVICES COMPLY WITH THE MUTCD, LATEST EDITION.

9. ALL ADVANCE WARNING SIGNS SHALL BE DOUBLE INDICATED WHENEVER THERE ARE MULTI-LANE TRAFFIC IN ANY ONE GIVEN DIRECTION AND THERE IS SUFFICIENT MEDIAN SPACE.

10. ALL BARRICADES IN ALL TAPERS AND TANGENTS SHALL BE PLACED APART, A DISTANCE MEASURED IN FEET, EQUAL TO THAT OF THE POSTED SPEED LIMIT. NO EXCEPTIONS UNLESS APPROVED BY CONSTRUCTION COORDINATION PER MUTCD SECTION 6A-4.

11. CONTRACTOR SHALL NOT BEGIN WORK BEFORE 7:00 A.M. OR END WORK AFTER 7:00 P.M. WITHOUT THE APPROVAL OF CONSTRUCTION COORDINATION.

12. CONTRACTOR IS RESPONSIBLE TO PROVIDE CONSTRUCTION COORDINATION, A WEEKLY LOG OF DAILY INSPECTIONS OF BARRICADE AND MAINTENANCE SCHEDULES ON PROJECTS THAT ARE OVER ONE WEEK DURATION.

13. EQUIPMENT OR MATERIALS SHALL NOT BE STORED WITHIN 15 FEET OF A TRAVELLED TRAFFIC LANE DURING NON-WORKING HOURS WITHOUT THE APPROVAL OF CONSTRUCTION COORDINATION.

14. CONTRACTOR SHALL PROVIDE AND MAINTAIN A SAFE AND ADEQUATE MEANS OF CHANNELIZING PEDESTRIAN TRAFFIC AROUND AND THROUGH THE CONSTRUCTION AREA.

15. CONTRACTOR IS RESPONSIBLE FOR OBLITERATION OF ANY CONFLICTING STRIPING AND RESPONSIBLE FOR ALL TEMPORARY STRIPING.

16. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL FACILITIES, BUSINESSES AND/OR RESIDENTS AT ALL TIMES.

17. CONTRACTOR SHALL PROVIDE ACCESS SIGNS FOR BUSINESSES LOCATED WITHIN THE CONSTRUCTION AREA UNDER THE SUPERVISION OF CONSTRUCTION COORDINATION. EACH ACCESS SIGN SHALL HAVE 5 INCH, WHITE OPAQUE LETTERING ON BLUE REFLECTORIZED BACKGROUND. ACCESS SIGNS SHALL BE CONSIDERED INCIDENTAL TO THE BID AND NOT PART OF THE CONTRACT UNLESS OTHERWISE STATED. NO MORE THAN 3 BUSINESSES SHALL BE LISTED ON A ACCESS SIGN. SHOPPING CENTERS AND MALLS SHALL BE LISTED AS SUCH.

18. ALL ADVANCE WARNING SIGNS SHALL MEET THE MINIMUM REFLECTIVE INTENSITY REQUIREMENTS SET FORTH BY THE CITY OF ALBUQUERQUE. CONSTRUCTION COORDINATION SHALL DETERMINE ALL REQUIREMENTS AND APPROVE OR DISAPPROVE ANY ADVANCE WARNING SIGN PER SECTION 6A-4 OF THE MUTCD, LATEST EDITION.

19. 24 HOURS PRIOR TO OCCUPYING OR CLOSING OF A RIGHT-OF-WAY, CONTRACTOR SHALL NOTIFY: POLICE, FIRE DEPARTMENT, SCHOOLS, HOSPITALS, TRANSIT AUTHORITY, BUSINESSES AND/OR RESIDENTS THAT WILL BE AFFECTED BY THE CONSTRUCTION.

20. ANY FIELD ADJUSTMENTS SHALL BE APPROVED BY CONSTRUCTION COORDINATION.

21. EXCAVATIONS SHALL BE PLATED, TEMPORARILY PATCHED OR RESURFACED PRIOR TO OPENING OF TRAFFIC. A MINIMUM OF 11 FEET SHALL BE PROVIDED FOR TRAFFIC IN ANY GIVEN DIRECTION. CONTRACTOR IS RESPONSIBLE FOR ANY WORK INVOLVED IN SATISFYING THESE REQUIREMENTS.

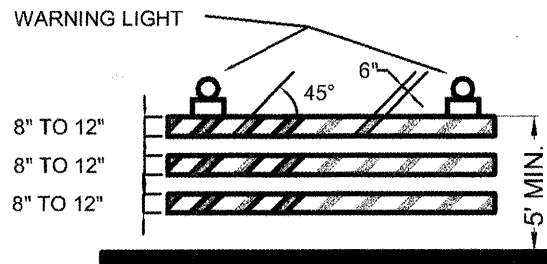
22. CONTRACTOR SHALL AT ALL TIMES COMPLY WITH THE FOLLOWING:
1. STANDARDS AND REQUIREMENTS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
2. THE CITY OF ALBUQUERQUE TRAFFIC CODE, LATEST EDITION.
3. SECTION 19 OF THE CITY OF ALBUQUERQUE'S STANDARD SPECIFICATIONS FOR PUBLIC WORK CONSTRUCTION, AS WELL AS OTHER SECTIONS.

23. FAILURE TO COMPLY WITH ANY OF THE ABOVE MENTIONED, WILL BE ADEQUATE CAUSE TO CEASE ALL WORK ON ANY CONSTRUCTION PROJECT. WORK WILL NOT RESUME UNTIL ALL REQUIREMENTS ARE ADDRESSED AND APPROVED BY CONSTRUCTION COORDINATION.

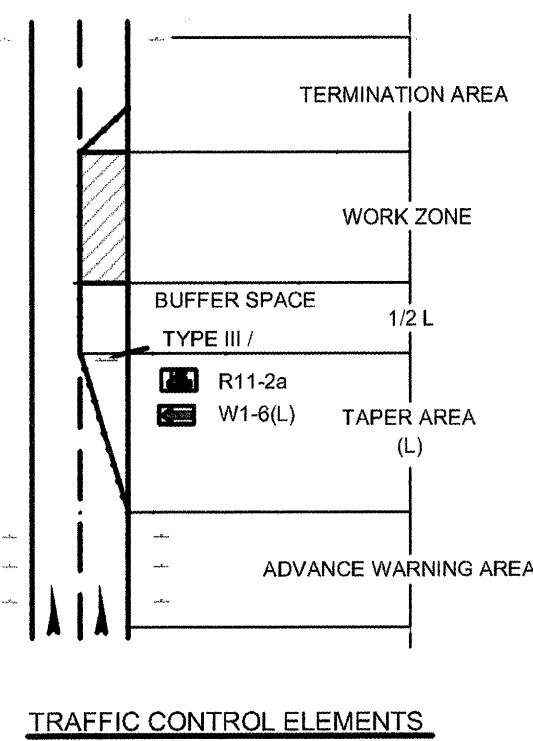
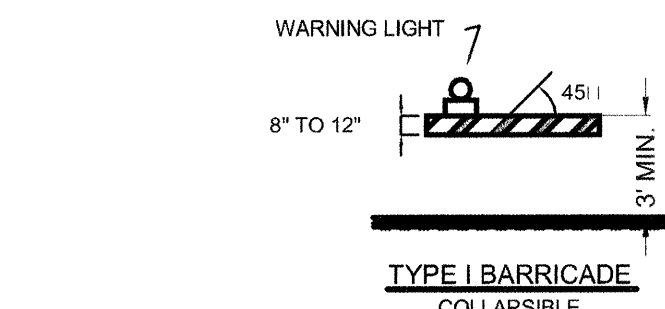
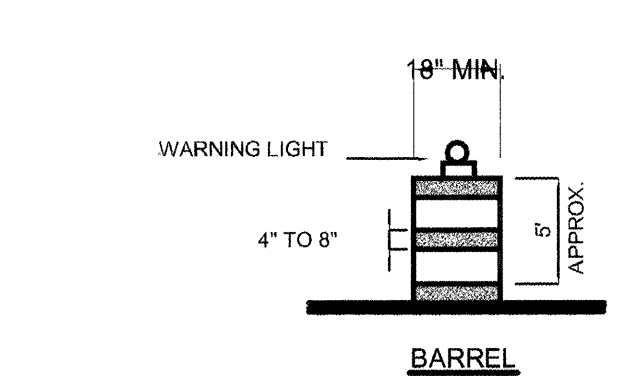
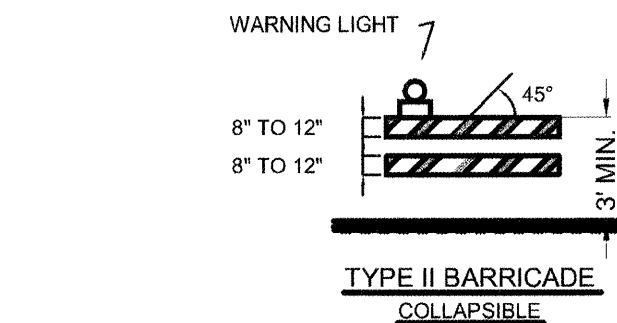
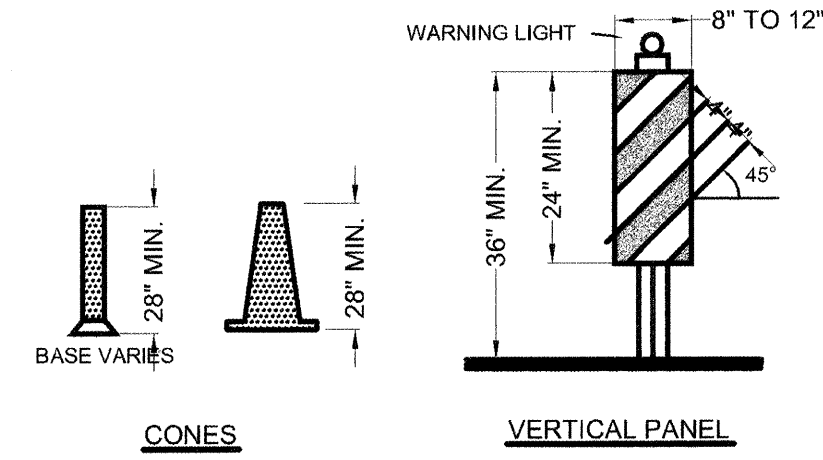
24. ALL TRAFFIC CONTROL DEVICES SHALL BE KEPT IN NEW-CLEAN CONDITION. WASHING OF EQUIPMENT IS INCIDENTAL TO IT'S PLACEMENT AND MAINTENANCE.

25. TRAFFIC CONTROL STANDARDS APPLY ONLY WHERE THE CONSTRUCTION TRAFFIC CONTROL PLANS ARE NOT SPECIFIC.

26. ADVANCE WARNING SIGNS SHALL BE 36"x36" WITH SUPER ENGINEERING GRADE SHEETING OR BETTER.



TYPE III BARRICADE



- LEGEND**
- WORK AREA
 - BARRICADE - TYPE I, TYPE II, OR BARREL
 - BARRICADE - TYPE III
 - VERTICAL PANEL
 - WARNING SIGN
 - DISTANCE BETWEEN SIGNS - A DISTANCE MEASURED IN FEET EQUAL TO A VALUE OF TEN TIMES THE SPEED LIMIT OF THE STREET
 - FLAGMAN POSITION
 - SPACING BETWEEN BARRICADES- A DISTANCE MEASURED IN FEET EQUAL TO THE SPEED LIMIT OF THE STREET
 - TAPER LENGTH - SEE CHART BELOW
 - THE TANGENT LENGTH IS EQUAL TO THE TAPER LENGTH FOR A GIVEN STREET.

TAPER REQUIREMENTS

SPEED LIMIT (MPH)	TAPER LENGTH (L) (FEET)			MINIMUM NUMBER OF DEVICES FOR TAPER	MAXIMUM DEVICE SPACING IN FEET	
	10' LANE	11' LANE	12' LANE		ALONG TAPER	AFTER TAPER
20	70	75	80	5	20	20
25	105	115	125	6	25	25
30	150	165	180	7	30	30
35	205	225	245	8	35	35
40	270	295	320	9	40	40
45	450	495	540	13	45	45
50	500	550	600	13	50	50
55	550	605	660	13	55	55

RECOMMENDED SIGN SPACING(D) FOR ADVANCE WARNING SIGN SERIES

SPEED LIMIT (MPH)	MINIMUM DISTANCE IN FEET	
	BETWEEN SIGNS	FROM LAST SIGN TO TAPER
0-20	10 X SPEED LIMIT	10 X SPEED LIMIT
25-30	10 X SPEED LIMIT	10 X SPEED LIMIT
30-35	10 X SPEED LIMIT	10 X SPEED LIMIT
40-45	10 X SPEED LIMIT	10 X SPEED LIMIT
50-60	10 X SPEED LIMIT	10 X SPEED LIMIT

TAPER CRITERIA

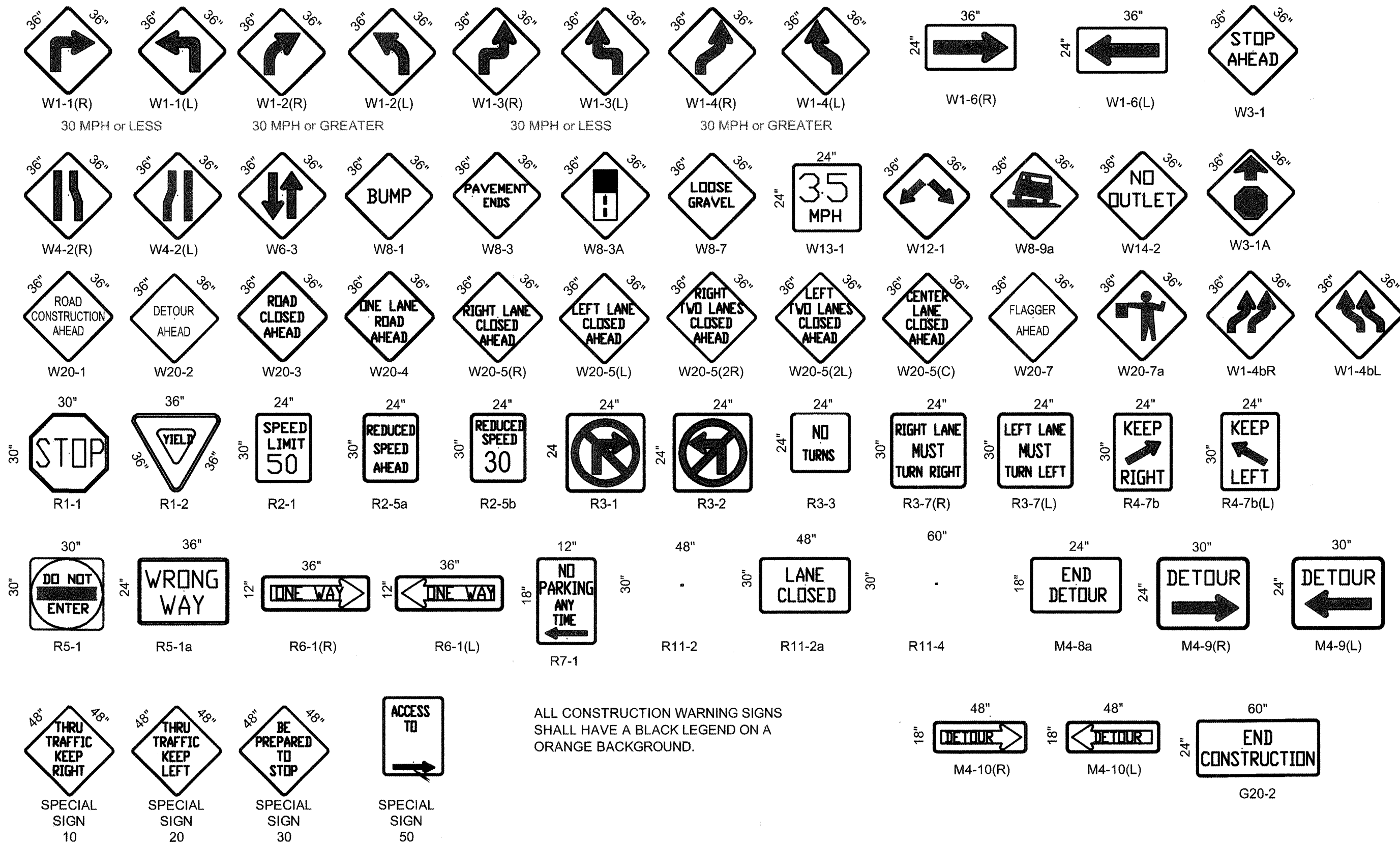
TYPE OF TAPER	TAPER LENGTH
UPSTREAM TAPER:	
MERGING TAPER	L MINIMUM
SHIFTING TAPER	1/2 L MINIMUM
SHOULDER TAPER	1/2 L MINIMUM
TWO-WAY TRAFFIC TAPER	100 FEET MAXIMUM
DOWNSTEAM TAPERS	100 FEET PER LANE

TAPER LENGTH COMPUTATION

SPEED LIMIT	
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR GREATER	$L = W \times S$

L = TAPER LENGTH
W = WIDTH OF OFFSET IN FEET
S = POSTED SPEED OR OFF-PEAK 85-PERCENTILE SPEED IN MPH

SIGN FACE DETAILS

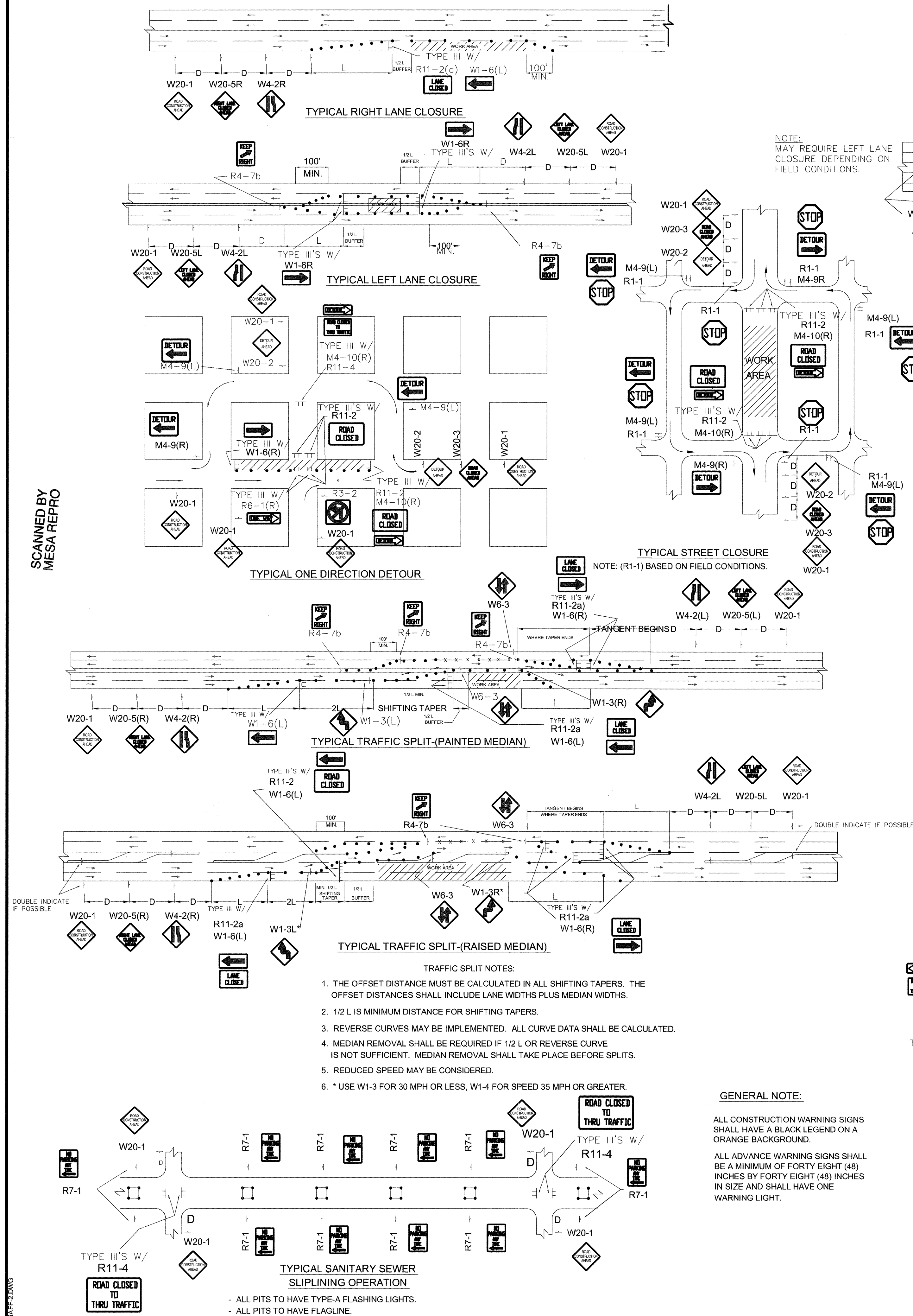


ALL CONSTRUCTION WARNING SIGNS SHALL HAVE A BLACK LEGEND ON A ORANGE BACKGROUND.

AS BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL		REMARKS		BY		NO. DATE	
CONTRACTOR: <u>TR/AD</u>		BENCH MARKS: <u>7.6</u>		FIELD NOTES: <u>DATE</u>		NO. <u>COA</u>		BY <u>STD</u>		REVISIONS		DESIGNED BY <u>DATE</u>	
WORK: <u>ALBUQUERQUE</u>		BENCH MARKS: <u>7.6</u>		FIELD NOTES: <u>DATE</u>		NO. <u>COA</u>		BY <u>STD</u>		REVISIONS		DESIGNED BY <u>DATE</u>	
ACCEPTANCE BY: <u>DATE</u>		BENCH MARKS: <u>7.6</u>		FIELD NOTES: <u>DATE</u>		NO. <u>COA</u>		BY <u>STD</u>		REVISIONS		DESIGNED BY <u>DATE</u>	
DRAWINGS: <u>DATE</u>		BENCH MARKS: <u>7.6</u>		FIELD NOTES: <u>DATE</u>		NO. <u>COA</u>		BY <u>STD</u>		REVISIONS		DESIGNED BY <u>DATE</u>	
CHECKED BY: <u>DATE</u>		BENCH MARKS: <u>7.6</u>		FIELD NOTES: <u>DATE</u>		NO. <u>COA</u>		BY <u>STD</u>		REVISIONS		DESIGNED BY <u>DATE</u>	
RECORDED BY: <u>DATE</u>		BENCH MARKS: <u>7.6</u>		FIELD NOTES: <u>DATE</u>		NO. <u>COA</u>		BY <u>STD</u>		REVISIONS		DESIGNED BY <u>DATE</u>	

CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING DEVELOPMENT GROUP			
TITLE: TRAFIC CNTRL DETAILS			
DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	MO./DAY/YR	MO./DAY/YR
COA STD		LAST UPDATE	
PROJECT NO. 6911.81	MAP NO. K-10	SHEET 5	OF 6

SCANNED BY
MESA REPRO



NOTE:
MAY REQUIRE LEFT LANE
CLOSURE DEPENDING ON
FIELD CONDITIONS.

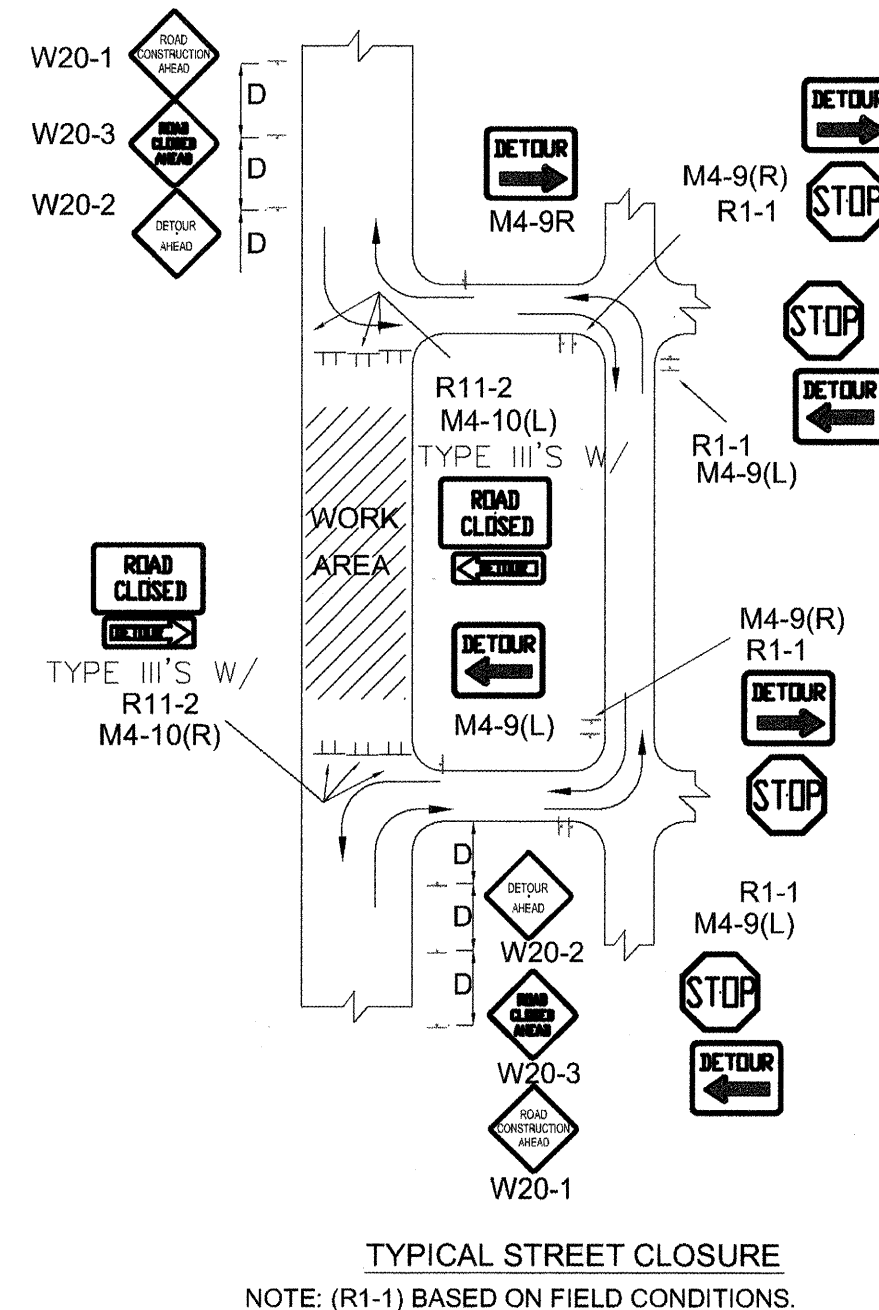
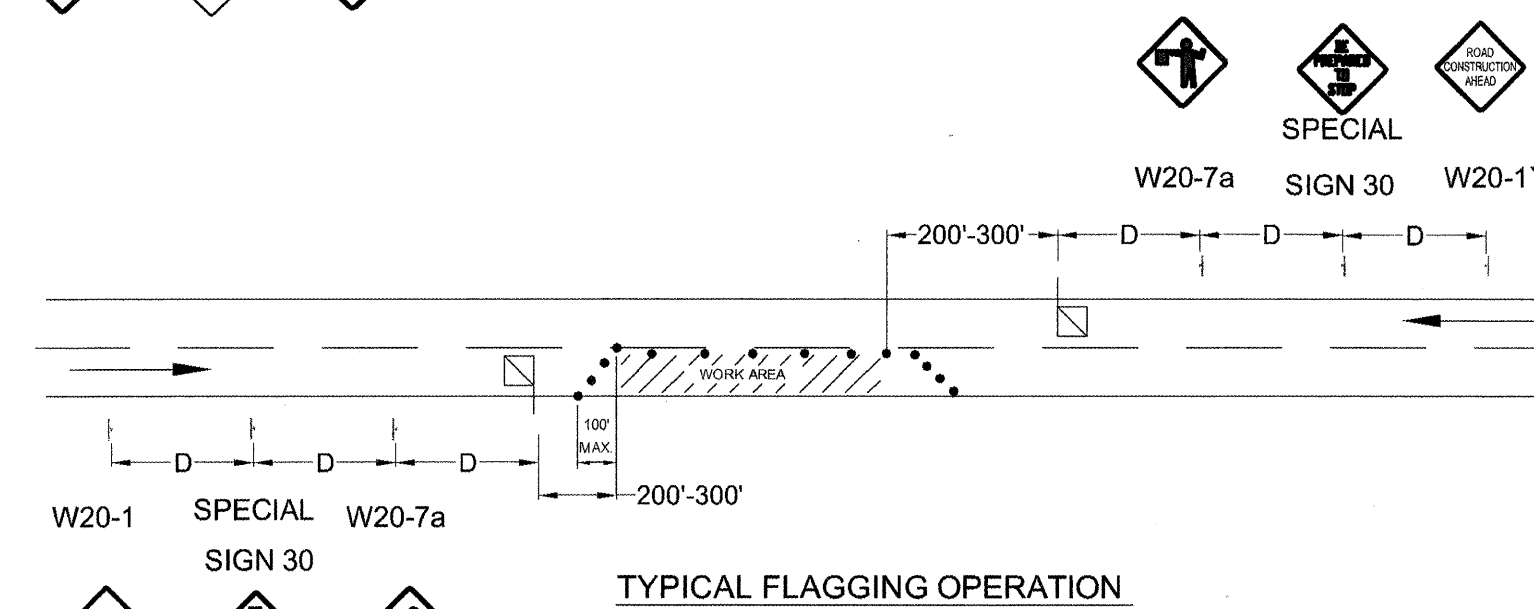
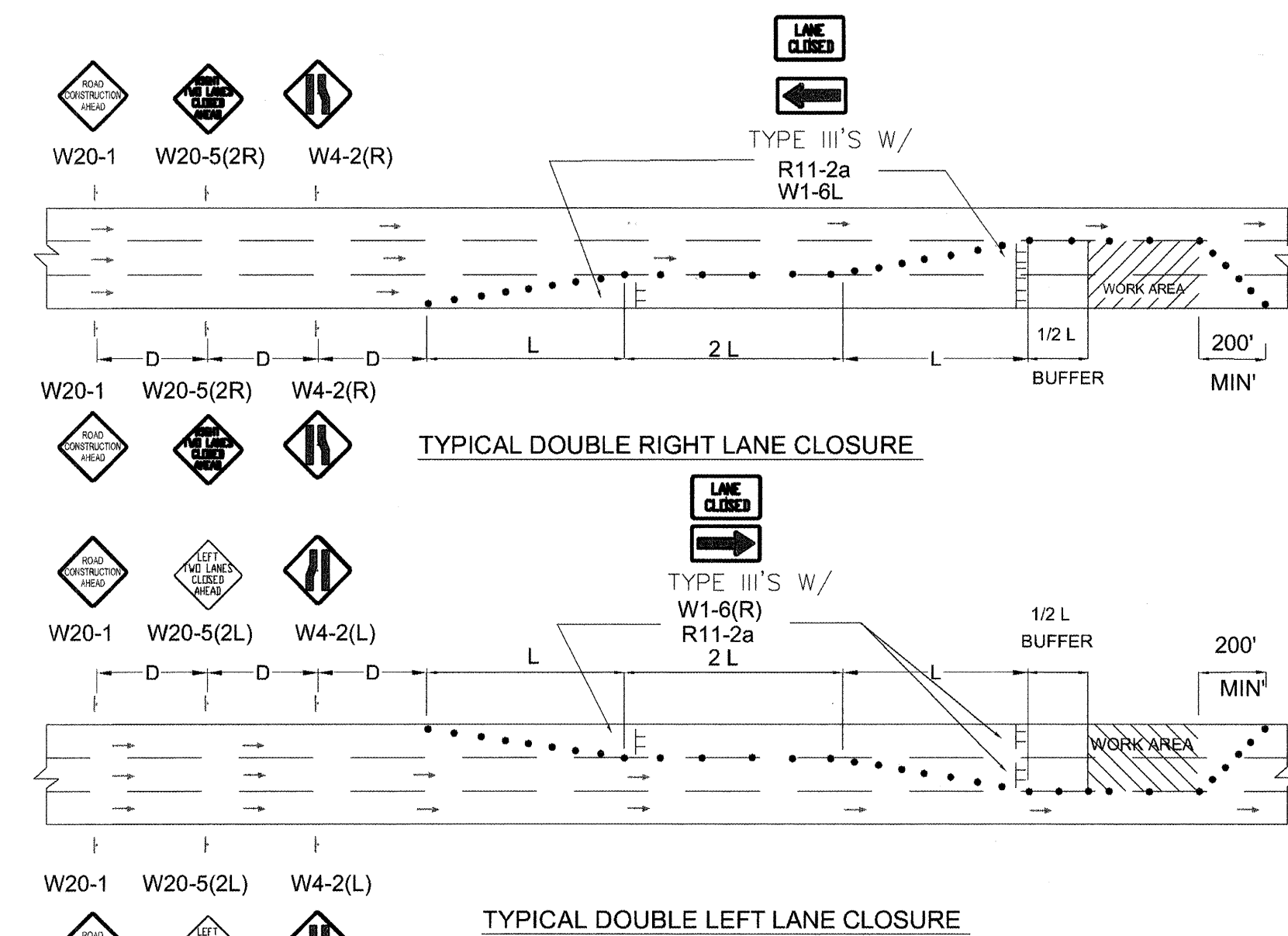
TYPICAL LANE CLOSURE AT INTERSECTION
NOTE: DEPENDING ON WORK ZONE LOCATION

TYPICAL STREET CLOSURE
NOTE: (R1-1) BASED ON FIELD CONDITIONS.

TYPICAL MID-BLOCK CLOSURE
NOTE: (R1-1) BASED ON FIELD CONDITIONS.

TYPICAL STREET CLOSURE
NOTE: (R1-1) BASED ON FIELD CONDITIONS.

TYPICAL STREET CLOSURE
NOTE: (R1-1) BASED ON FIELD CONDITIONS.



CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING DEVELOPMENT GROUP			
TITLE: TYPICAL TRAFFIC CONTROL & SIGNING EXAMPLES (REF. M.U.T.C.D.)			
DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	MO./DAY/YR	MO./DAY/YR
COA STD		LAST UPDATE	
PROJECT NO.	6911.81	MAP NO.	K-10
SHEET 6		OF 6	

COA
STD

AS BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL	
CONTRACTOR	DATE	NO.	BY	NO.	DATE	NO.	DATE
STANDARD	DATE						
ADDITION	DATE						
REVISION	DATE						
CORRECTION	DATE						
MICRO-FILM INFORMATION							
RECORDED BY	DATE						
NO.							