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ALBUQUERQUE
NEW MEXICO
1706

CITY OF ALBUQUERQUE

CONSTRUCTION PLANS
FOR

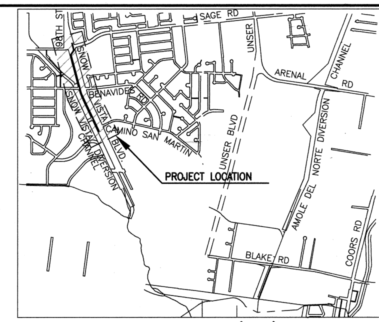
ZONE 2W-2WR
WATER TRANSMISSION LINE

JUNE 2000

INDEX OF SHEETS

APPROVAL OF RECORD DRAWINGS
CHIEF CONSTRUCTION ENGINEER
DATE 23 Jan 06
T. Shoemaker

RECORD DRAWING
THIS IS A RECORD DRAWING OF THE FACILITIES IDENTIFIED IN THE TITLE BLOCK ONLY AND HAS BEEN PREPARED IN PART ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS. THE ENGINEER/ARCHITECT AND OWNER (S) WILL NOT BE RESPONSIBLE FOR ANY ERROR (S) OR OMISSION (S) WHICH HAVE BEEN INCORPORATED INTO THIS DRAWING. ACTUAL CONDITIONS WILL VARY SOMEWHAT FROM THE CONDITIONS SHOWN HEREON AND AT SOME LOCATIONS THE VARIANCE MAY BE LARGE. IF THE PRECISE LOCATION OF ANY FACILITY IS REQUIRED, THE FACILITY SHOULD BE FIELD LOCATED IN THE PRESENCE OF AN EMPLOYEE OF THE DISTRICT OR THE OWNER (S) OF THE UTILITIES INVOLVED.



N

VICINITY MAP (M-9)
NOT TO SCALE

GENERAL NOTES

1. Two working days prior to any excavation, contractor must contact N.M. One-Call System, Inc., 260-1990, for location of existing utilities. Contractor shall also call traffic engineering at 857-8000 for location of traffic interconnect wiring and other traffic signal equipment.
2. All work detailed on these plans to be performed under contract shall, except as otherwise stated stated or provided for hereon, be constructed in accordance with the city of Albuquerque standard specifications for public works construction, 1986 (as amended through update #6.) referenced to herein as the "standard specifications".
3. The contractor shall be responsible for timing and coordination of water shut-off. At least five (5) working days prior to construction, contractor shall contact the water systems division, 857-8200, to initiate implementation of the non-pressurized connection plan.
4. Five (5) working days prior to beginning 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 construction coordination division. Contractor shall notify barricade engineer (768-2551) prior to occupying an intersection.
5. The location of existing underground utilities has been determined by information provided by others, and shall be considered approximate only. The contractor shall determine the exact location and size of all existing utility line prior to construction and shall be responsible for any and all damages resulting from failure to locate any and all utilities.
6. The contractor shall support and maintain operational all utilities exposed during trenching and other construction operations. All construction activities involving gas, power, water, fiber optic, traffic signal equipment, and/or other utility lines shall be coordinated with the owner of the utility prior to any disturbance. No utility service shall be disrupted without first notifying all affected parties 48 hours in advance.
7. The contractor shall notify water utility division of Public Works (ph. 857-8200) and the city of Albuquerque fire department at least five (5) working days in advance of any day that fire hydrants will be taken out of and returned to service. Refer to Section 18 (general conditions) of the specifications.
8. The contractor shall field verify all waterline connections to existing facilities sufficiently in advance of construction to allow obtaining correct adapters and other fittings.
9. The contractor shall assume responsibility for any damage to existing valve boxes, manholes, sewer services, pavements, pavement markings, curb & gutter, drive pads, wheel chair ramps, and sidewalks during construction, apart from these sections indicated for removal on the plans and shall repair or replace per C.O.A. standards at contractor's expense.
10. Contractor shall notify the city of Albuquerque Geodetic Survey not less than three (3) working days prior to starting work that will impact any existing ACS Geodetic Survey Monuments. All referencing and replacement of acs monuments shall be done by the city of Albuquerque Geodetic Survey. Any ACS monuments damaged or destroyed due to the failure of contractor to notify as stated above shall be replaced by the city of Albuquerque Geodetic Survey at contractor expense.
11. Contractor shall notify engineer no less than seven (7) days prior to starting work in order that the engineer may take necessary measures to ensure the preservation of all the permanent survey monuments. 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. Only the engineer shall do replacement. When a change is made in the finished elevation of the pavement of any roadway in which a permanent survey monument is located, contractor shall, at contractor's expense, adjust the monument cover to the new grade unless otherwise specified.
12. The contractor is responsible for removal and disposal of all demolition debris in an environmentally acceptable manner. All salvaged materials shall be handled in accordance with Section 801.15 of the standard specifications.
13. Temporary water service is to be provided for any residence, school or business which will be out of service more than four (4) hours.
14. Street centerline grades shall be restored by the contractor to the existing centerline grades unless otherwise directed by the engineer. Smooth transitions shall be made between existing pavement which remains in place and pavement which is being replaced.
15. All water valve boxes and sewer manholes within the new pavement are to be adjusted to finish grade per C.O.A. standard details or as shown in this plan set.
16. All street striping and marking altered or destroyed shall be replaced with plastic reflectorized pavement markings by the contractor to same location as existing.
17. All areas disturbed by the contractor shall be seeded with native grass seed for sandy soil. See Section 1011 of the specifications.
18. The contractor shall maintain all trenches in a safe condition protecting the workers and the general public. Trench protection shall be in accordance with O.S.H.A. 29cfr 1926.650 subpart p. Excavations shall be sloped, braced or shored as required by O.S.H.A. regulations. The contractor is solely responsible for job site safety, and for knowledge and compliance with applicable O.S.H.A. standards. No additional compensation will be made therefor.
19. All work affecting arterial roadway requires twenty four (24) hour construction.
20. Quantities shown for the various bid items are for contractor information only. Payment based on actual quantities as constructed.
21. The contractor shall not store or park equipment in front of private residences over night.
22. All open excavations shall be back-filled or adequately fenced at the end of each workday to prevent people and vehicles from entering the excavations. All open excavations shall be back-filled over weekends when the contractor is not working the following day.

Boyle Engineering Corporation
consulting engineers
Suite 600E
6400 UPTOWN BLVD. N.E.
ALBUQUERQUE, NM, 87110
(505) 883-7700

REV.	SHEETS	CITY ENGINEER	DATE	USER DEPARTMENT	DATE	USER DEPARTMENT	DATE

ENGINEERS STAMP & SIGNATURE
K. WAYNE WOLTY
NEW MEXICO
6574
REGISTERED PROFESSIONAL ENGINEER
5/8/00

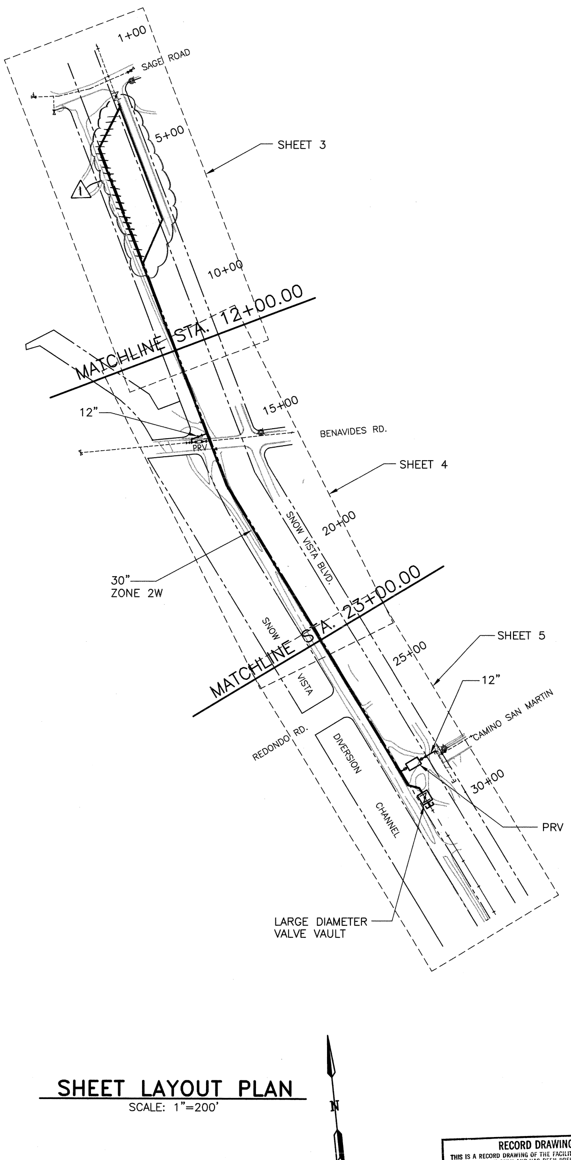
APPROVALS	ENGINEER	DATE
DRC Chairman	[signature]	5/24/00
Transportation	[signature]	5/17/00
Water/Wastewater	Rebecca C. Zook	5/17/00
Hydrology	[signature]	5/17/00
C.I.P.		
Constr. Mngmnt.		
Constr. Coord.	[signature]	5/17/00

* * * * * * * *
APPROVED FOR CONSTRUCTION
City Engineer [signature] Date 5/25/00

City Project No. 5432.91

Sheet 1 Of 12

AL-A01-148-02



SHEET LAYOUT PLAN

SCALE: 1"=200'

LEGEND

PROPOSED	EXISTING	DESCRIPTION
NA	8" CP SAS	SANITARY SEWERLINE W/ SIZE & MATERIAL
6"W	6" ST WL	WATER LINE W/ SIZE & MATERIAL
NA	24" RCP SD	STORM DRAIN W/ SIZE & MATERIAL
NA	SS	SANITARY SEWER MANHOLE
NA	SD	STORM DRAIN MANHOLE
		WATER LINE W/ GATE VALVE
		WATER LINE W/ BUTTERFLY VALVE & VAULT
PRV	PRV	WATER LINE W/ PRV STATION
		FIRE HYDRANT
		REDUCER
		TEE
		CROSS
		BEND
		CAP AND PLUGS
NA		POWER POLE
NA		SIGN
NA		LIGHT POLE
NA	UGT	UNDERGROUND TELEPHONE LINE
NA	G	UNDERGROUND GAS LINE
NA	OHE	OVERHEAD ELECTRIC
NA	UGE	UNDERGROUND ELECTRIC
NA	CATV UG	UNDERGROUND CABLE
NA		PRESSURE ZONE BOUNDARY
NA		RIGHT OF WAY LINE
NA	4300	INDEX CONTOUR
NA		INTERMEDIATE CONTOUR
NA		DEPRESSION CONTOUR
NA	BL-23 4285.18	CONTROL POINT
NA		GRAVEL/GRADED/UNPAVED ROAD
NA		PAVED ROAD
NA		CURB & GUTTER
NA		BUILDING
NA		VEGETATION
NA		CONCRETE SIDEWALK OR DRIVEWAY
NA		FENCE
NA		WALL
NA		GUARDRAIL
NA		DIKE
NA		POST
NA		POLE
NA		GUY ANCHOR
NA		STREETLIGHT
NA		SIGN
NA		TRAFFIC SIGNAL
NA		UTILITY BOX
NA		STORM DROP INLET
NA		TRAFFIC SIGNAL CONTROL BOX

RECORD DRAWING

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AS BUILT INFORMATION: CONTRACTOR Cordova; VERIFICATION BY COA; CORRECTED BY Boyle; MICRO-FILM INFORMATION

BENCH MARKS

SURVEY INFORMATION — FIELD NOTES | NO. | DATE

ENGINEERS SEAL

NO.	DATE	REMARKS
1	3/01	RECORD DRAWING
	8/00	REALIGNED AND LOWERED WATERLINE

REVISIONS

DESIGN		
DESIGNED BY	RCF	DATE 7/97
DRAWN BY	CAM	DATE 7/97
CHECKED BY	KWW	DATE 7/97

Boyle Engineering Corporation
consulting engineers

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DESIGN SECTION

TITLE: ZONE 2W-2WR WATER TRANSMISSION LINE
SHEET LAYOUT PLAN & LEGEND

Design Review Committee: APPROVED MAY 24 2000 DESIGN REVIEW COMMITTEE
City Engineer Approval: APPROVED MAY 25 2000 CITY ENGINEER

City Project No.	Zone Map No.	Sheet	of
5432.91	M-9	2	12

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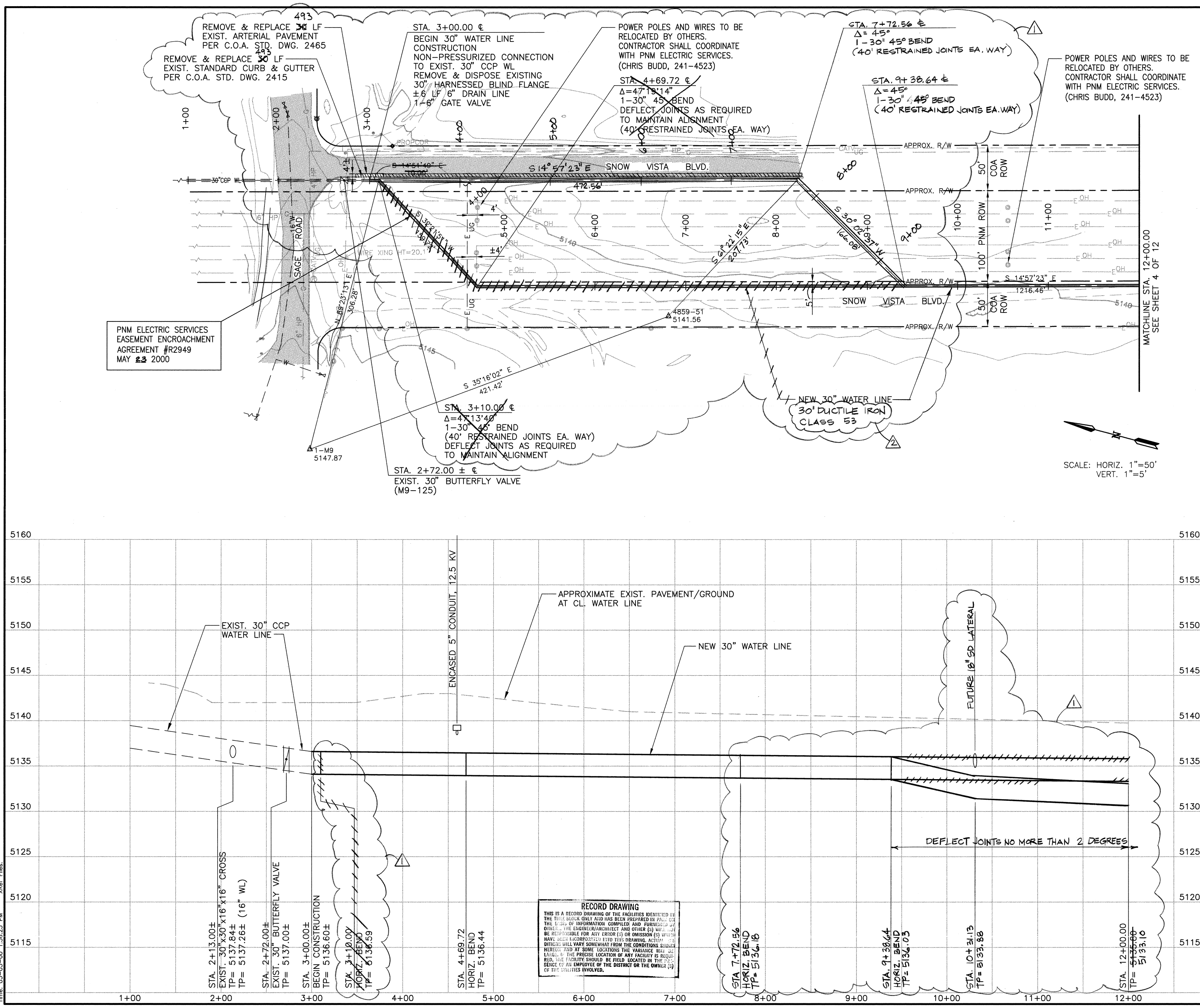

SCANNED BY MESA REPRO

DWG: d:\0898proj\zone2w-2wr\sht3 User: cmorgan Job #: ALA01148002
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NOTES:

1. RESTRAINED LENGTHS SHOWN ARE FOR DUCTILE IRON PIPE. IF CONCRETE CYLINDER PIPE IS USED, THRUST RESTRAINT SHALL BE PER SPECIFICATION SECTION 801.13.2 SEE SHEET 8 OF 12 FOR RESTRAINT REQUIREMENTS FOR WATER LINE LESS THAN OR EQUAL TO 12" IN DIAMETER.
2. 30' RESTRAINED JOINT MADE USING FASTITE JOINT (ROTATED LOCKING JOINT).

AS BUILT INFORMATION: CONTRACTOR; WORK STAKED BY; INSPECTOR'S ACCEPTANCE BY; FIELD VERIFICATION BY; DRAWINGS CORRECTED BY

MICRO-FILM INFORMATION: RECORDED BY; NO.; DATE

BENCH MARKS

"4859-51" #5 REBAR W/ ALUM. CAP
MODIFIED LOCAL GROUND COORDINATES:
75883.04, 53419.45 (EL.=5141.56)

"1-M9" ACS BRASS CAP IN CONCRETE
MODIFIED LOCAL GROUND COORDINATES:
76227.11, 53176.12 (EL.=5147.87)

SURVEY INFORMATION: NO. | FIELD NOTES | DATE

ENGINEERS SEAL

REVISIONS

NO.	DATE	REMARKS	DATE
1	8/00	REALIGNED AND LOWERED WATERLINE	
2	3/01	RECORD DRAWING	

DESIGN		
DESIGNED BY	RCF	DATE 7/97
DRAWN BY	CAM	DATE 7/97
CHECKED BY	KWW	DATE 7/97

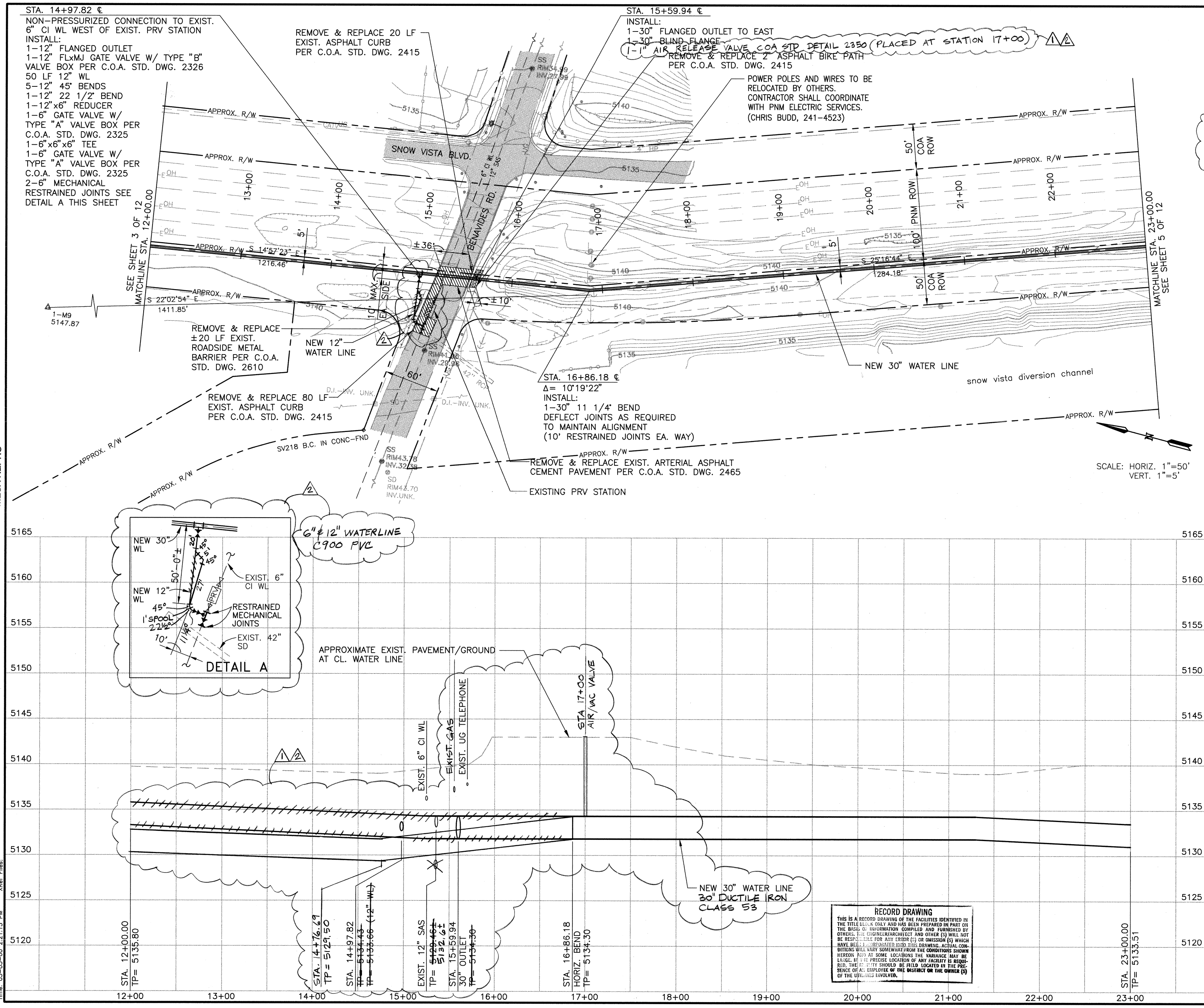
Boyle Engineering Corporation
consulting engineers

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DESIGN SECTION

TITLE: ZONE 2W-2WR WATER TRANSMISSION LINE
PLAN & PROFILE
STA. 1+00.00 TO STA. 12+00.00

Design Review Committee: APPROVED MAY 24 2000 DESIGN REVIEW COMMITTEE
City Engineer Approval: APPROVED MAY 25 2000 CITY ENGINEER
Last Design Update | Mo./Day/Yr. | Mo./Day/Yr.

City Project No. 5432.91 | Zone Map No. M-9 | Sheet 3 of 12



NOTES:

1. RESTRAINED LENGTHS SHOWN ARE FOR DUCTILE IRON PIPE. IF CONCRETE CYLINDER PIPE IS USED, THRUST RESTRAINT SHALL BE PER SPECIFICATION SECTION 801.13.2 SEE SHEET 8 OF 12 FOR RESTRAINT REQUIREMENTS FOR WATER LINE LESS THAN OR EQUAL TO 12" IN DIAMETER.
2. 30" RESTRAINED JOINT MADE USING FASTITE JOINT (ROTATED LOCKING JOINT).
3. 6" & 12" PIPE RESTRAINED JOINTS ARE MEGA LUG.

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AS BUILT INFORMATION: CONTRACTOR / WORK STARTED BY / WORK ACCEPTANCE / FIELD VERIFICATION BY / DRAWINGS CORRECTED BY

MICRO-FILM INFORMATION: RECORDED BY / DATE / NO.

BENCH MARKS: "1-M9" ACS BRASS CAP IN CONCRETE MODIFIED LOCAL GROUND COORDINATES: 76227.11, 53176.12 (EL.=5147.87)

SURVEY INFORMATION: NO. / FIELD NOTES / DATE

ENGINEERS SEAL

NO.	DATE	REVISIONS REMARKS	DATE
1		RECORD DRAWING	
2	8/00	REALIGNED AND LOWERED WATERLINE	

DESIGN		
DESIGNED BY	RCF	DATE 7/97
DRAWN BY	CAM	DATE 7/97
CHECKED BY	KWW	DATE 7/97

Boyle Engineering Corporation
consulting engineers

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DESIGN SECTION

TITLE: ZONE 2W-2WR WATER TRANSMISSION LINE PLAN & PROFILE STA. 12+00.00 TO STA. 23+00.00

Design Review Committee: APPROVED MAY 24 2000
City Engineer Approval: APPROVED MAY 25 2000 CITY ENGINEER

City Project No. 5432.91 | Zone Map No. M-9 | Sheet 4 of 12

SCANNED BY MESA REPRO

Job #: ALA0114802

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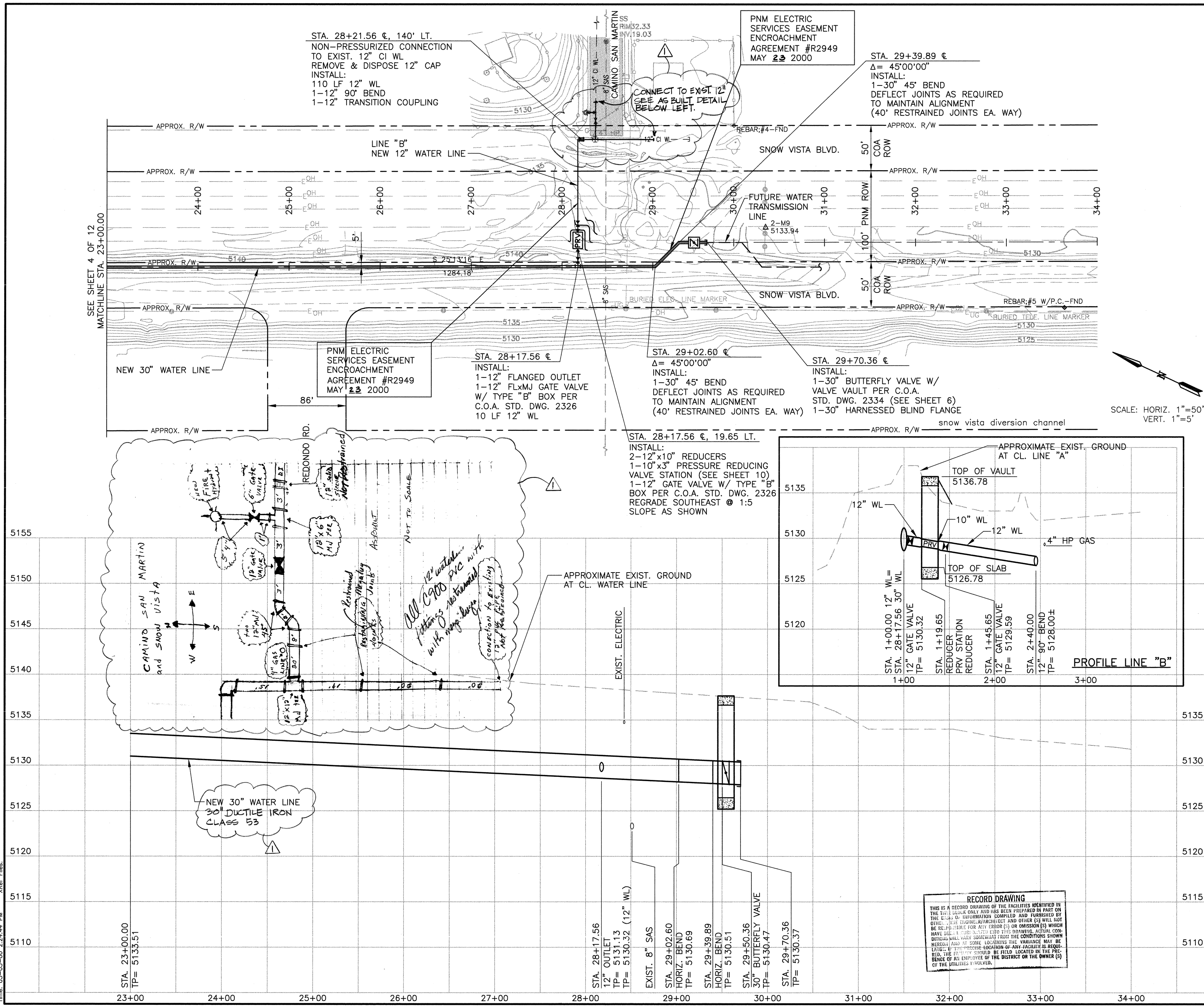

NOTES:

1. RESTRAINED LENGTHS SHOWN ARE FOR DUCTILE IRON PIPE. IF CONCRETE CYLINDER PIPE IS USED, THRUST RESTRAINT SHALL BE PER SPECIFICATION SECTION 801.13.2 SEE SHEET 8 OF 12 FOR RESTRAINT REQUIREMENTS FOR WATER LINE LESS THAN OR EQUAL TO 12" IN DIAMETER.
2. DETAILS SHOWN ON SHEET 10 (INCLUDING EXCAVATION, BACKFILL, VAULT, POWER AND TELEMETRY) ARE INCLUDED IN THE UNIT PRICE FOR THE PRV STATION. THE VAULT SHALL BE CONSTRUCTED FOR TRAFFIC.
3. 30" RESTRAINED JOINT MADE USING FASTITE JOINT (ROTATED LOCKING JOINT).
4. 12" RESTRAINED JOINTS ARE MEGA LUG.

AS BUILT INFORMATION — CONTRACTOR; WORK STARTED BY; INSPECTOR'S ACCEPTANCE BY; FIELD VERIFICATION BY; DRAWINGS CORRECTED BY

MICRO-FILM INFORMATION — RECORDED BY; DATE; NO.

BENCH MARKS: "2-M9" ACS BRASS CAP IN CONCRETE, MODIFIED LOCAL GROUND COORDINATES: 54320.72, 73728.66 (ELEV.= 5133.94)

SURVEY INFORMATION — FIELD NOTES; NO.; DATE

ENGINEERS SEAL

NO.	DATE	REMARKS	DATE
1	3/01	RECORD DRAWING	
		REVISIONS	
		DESIGN	

DESIGNED BY RCF DATE 7/97
DRAWN BY CAM DATE 7/97
CHECKED BY KWW DATE 7/97

Boyle Engineering Corporation, consulting engineers

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DESIGN SECTION

TITLE: ZONE 2W-2WR WATER TRANSMISSION LINE PLAN & PROFILE STA. 23+00.00 TO STA. 29+20.00

RECORD DRAWING — THIS IS A RECORD DRAWING OF THE FACILITIES IDENTIFIED IN THE TITLE BLOCK ONLY AND HAS BEEN PREPARED IN PART ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS.

Design Review Committee: APPROVED MAY 2 4 2000 DESIGN REVIEW COMMITTEE
City Engineer Approval: MAY 2 5 2000 CITY ENGINEER
Last Design Update; Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
5432.91	M-9	5	12

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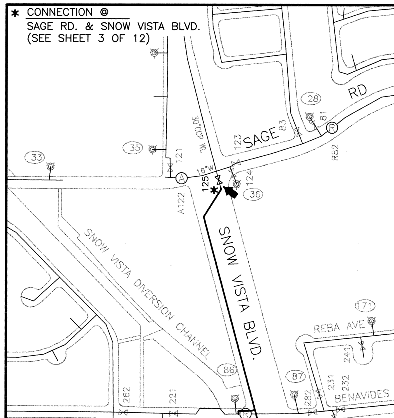
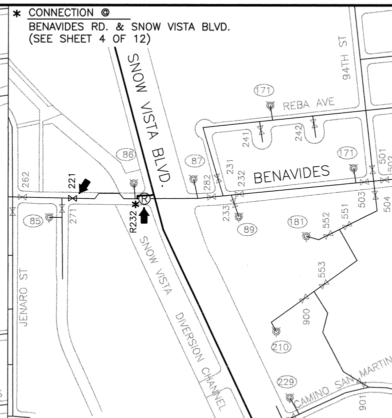
* CONNECTION @
SAGE RD. & SNOW VISTA BLVD.
(SEE SHEET 3 OF 12)



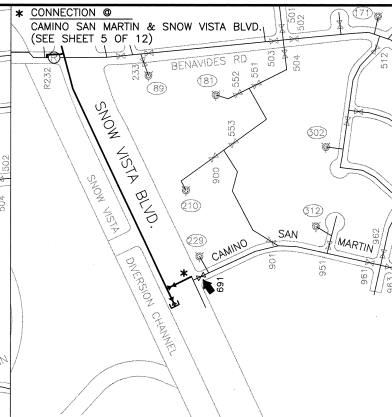
ZONE ATLAS SHEET: M-9

* CONNECTION @
BENAVIDES RD. & SNOW VISTA BLVD.
(SEE SHEET 4 OF 12)



ZONE ATLAS SHEET: M-9

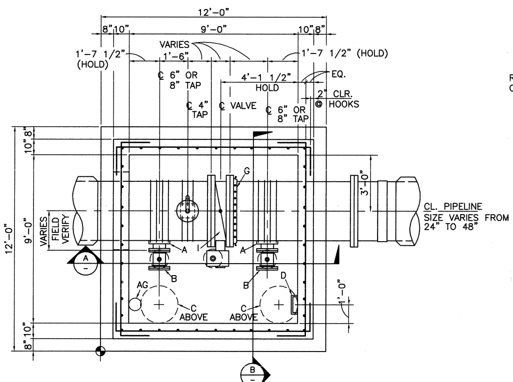
* CONNECTION @
CAMINO SAN MARTIN & SNOW VISTA BLVD.
(SEE SHEET 5 OF 12)



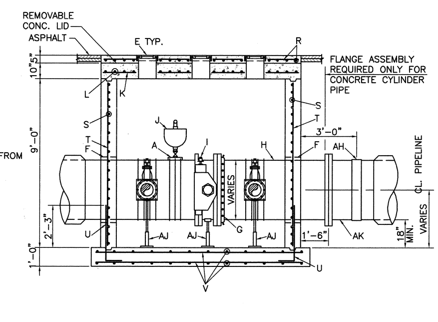
ZONE ATLAS SHEET: M-9

NOTES:

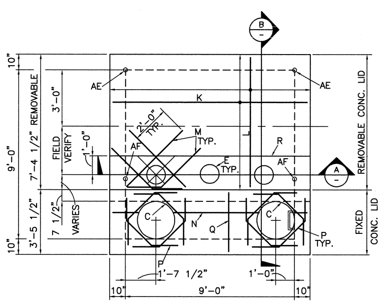
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TIMING AND COORDINATION OF WATER SHUT-OFF. AT LEAST FIVE (5) WORKING DAYS PRIOR TO CONSTRUCTION, CONTRACTOR SHALL CONTACT THE WATER SYSTEMS DIVISION, 857-8200, TO INITIATE IMPLEMENTATION OF THE NON-PRESSURIZED CONNECTION PLAN.
2. CONTRACTOR SHALL NOT OPERATE ANY CITY VALVES. CONTRACTOR SHALL CONTACT THE WATER SYSTEMS DIVISION, 857-8200, TO ARRANGE VALVE CLOSURES.



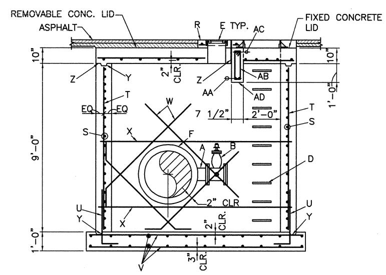
PLAN



SECTION A



REMOVABLE LID PLAN



SECTION B

GENERAL NOTES:

1. VALVE VAULT SHALL NOT BE USED IN GROUND WATER CONDITIONS OR IN CLAY SOILS.
2. CONCRETE SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 510 WITH F'c = 4000 PSI. REINFORCING SHALL BE GRADE 60.
3. DESIGN EQUIVALENT FLUID PRESSURE = 91.2 PCF, K = .5
4. BACKFILL MATERIAL SHALL BE CLASS II OR III IN ACCORDANCE WITH SPECIFICATION SECTION 501.
5. PIPE DIAMETER VARIES FROM 24" DIA. TO 48" DIA.
6. PIPELINE CENTERLINE IN THE HORIZONTAL PLANE IS FIXED. ASSOCIATED VALVE BOXES ADJUST IN LOCATION DUE TO PIPE SIZE. FIELD VERIFY THESE MEASUREMENTS.
7. PIPELINE VERTICAL CENTERLINE IS ADJUSTABLE WITH THE MINIMUM OF 18" BELOW PIPELINE AS THE ONLY LIMIT.
8. HOLD CENTERLINE OF TAP LOCATIONS AND CENTER OF BUTTERFLY VALVE.

CONSTRUCTION NOTES:

- A TAPPING SADDLE (D.I.P.) OR FLANGED OUTLETS (CCTL).
- B 6" GATE VALVE WITH BLIND FLANGE (24" TO 30"). 8" GATE VALVE WITH BLIND FLANGE (36" TO 48").
- C 2'-0" DIA. MANHOLE FRAME & COVER, SEE DWG 2110.
- D MANHOLE STEPS PER SPEC. SECTION 920.4.7
- E VALVE BOX, RING & COVER PER DWG. 2328 WITH VALVE STEM EXTENSION PER DWG. 2330.
- F LINK SEAL OR EQUAL.
- G "MEGA-FLANGE" ADAPTER, EBAA OR EQUAL.
- H DUCTILE IRON PIPE (FLxPE).
- I AWWA C503 BUTTERFLY VALVE (FL).
- J 2" COMBINATION AIR AND VACUUM VALVE W/ ISOLATION VALVE.
- K #8 @ 7 1/2" O.C.x10'-4". ADD BAR EACH SIDE OF OPENING.
- L #6 @ 6" O.C.x7'-0 1/2". ADD BAR EACH SIDE OF OPENING.
- M 4-#5 DIAGONALS AT EACH OPENING.
- N #5 @ 12" O.C.x10'-4". FIELD CUT AT OPENINGS.
- P #5 DIAGONALSx6'-0". BEND AS REQUIRED.
- Q #5 @ 12" O.C.x3'-1 1/2". FIELD CUT AT OPENINGS.
- R 5" CONCRETE TOPPING SLAB WITH #4@6" O.C. EACH WAY. SPREAD BARS AT OPENINGS.
- S #5 @ 6" O.C. HORIZ.x10'-4" WITH 10" HOOKS EACH END.
- T #4 @ 12" O.C. VERT. x 8'-10".
- U #5 FOOTING DOWELS @ 6" O.C. WITH 10" HOOK.
- V #6 @ 6" O.C.x11'-8" EACH WAY TOP & BOTTOM.
- W 2-#5 DIAGONALSx7'-0". BEND AS REQUIRED. (8 TOTAL EACH WALL)
- X 2-#6x10'-4" TOP & BOT. OF PIPE. PLACE OUTSIDE OF DIAGONALS.
- Y 2x4 KEY TYPICAL.
- Z 30# FELT MASTIC
- AA 2-#9x10'-4"
- AB #4 TIES @ 5 1/2" O.C. 1st TIE 1 3/4" FROM FACE OF WALL.
- AC 2-#5x10'-4"
- AD BLOCK OUT WALL FOR BEAM.
- AE COIL INSERT WITH 8000# CAPACITY EACH. PROVIDE GREASED BOLT AND ASPHALT OVER CONNECTION. PROVIDE SINGLE SWIVEL LIFT PLATES. WIRE TIE TO BOTTOM LADDER RUNG.
- AF PROVIDE COIL INSERT "AE" ABOVE IN 10" SLAB. PROVIDE PVC POCKET THROUGH 5" TOPPING SLAB. INSERT BOLT & FILL WITH ASPHALT.
- AG 8"⌀ HOLE WITH GRAVEL FILL. PROVIDE 1/2" C.Y. GRAVEL FILL BELOW FOUNDATION.
- AH BUTT STRAP TYP.
- AJ ADJUSTABLE PIPE SUPPORT.
- AK STEEL PIPE (FLxPE).

VAULT ORIENTATION ON CONSTRUCTION DRAWINGS

REVISIONS	CITY OF ALBUQUERQUE
	WATER LARGE DIAMETER VALVE VAULT
11/19/97	DWG. 2334 JANUARY 1996

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N
SCALE: 1"=300'

SCANNED BY MESA REPRO

DWG: d:\0898pro\zone2w-2wr\sht6 User: cmorgan Job #: AL40114802
Time: 05-05-00 2:56:08 PM XRef Files:

AS BUILT INFORMATION: CONTRACTOR / WORK STAKED BY / INSPECTOR'S ACCEPTANCE BY / FIELD VERIFICATION BY / DRAWINGS CORRECTED BY

MICRO-FILM INFORMATION: RECORDED BY / DATE / NO.

BENCH MARKS

SURVEY INFORMATION: NO. / FIELD NOTES / DATE

ENGINEERS SEAL

NO.	DATE	RECORD DRAWING REMARKS	DATE
1	3/01	RECORD DRAWING	

REVISIONS		
DESIGN		
DESIGNED BY	RCF	DATE 7/97
DRAWN BY	CAM	DATE 7/97
CHECKED BY	KWW	DATE 7/97

Boyle Engineering Corporation
consulting engineers

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DESIGN SECTION

TITLE: ZONE 2W-2WR WATER TRANSMISSION LINE
WATER VALVE SHUT-OFF PLAN &
LARGE DIAMETER VALVE VAULT DETAIL

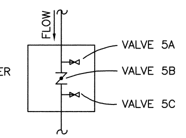
Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.
APPROVED MAY 2 4 2000	MAY 2 5 2000		

Last Design Update

City Project No.	Zone Map No.	Sheet	of
5432.91	N/A	6	12

LEGEND

VALVE OPEN/CLOSED OR THROTTLED
VALVE LABEL
VALVE SIZE



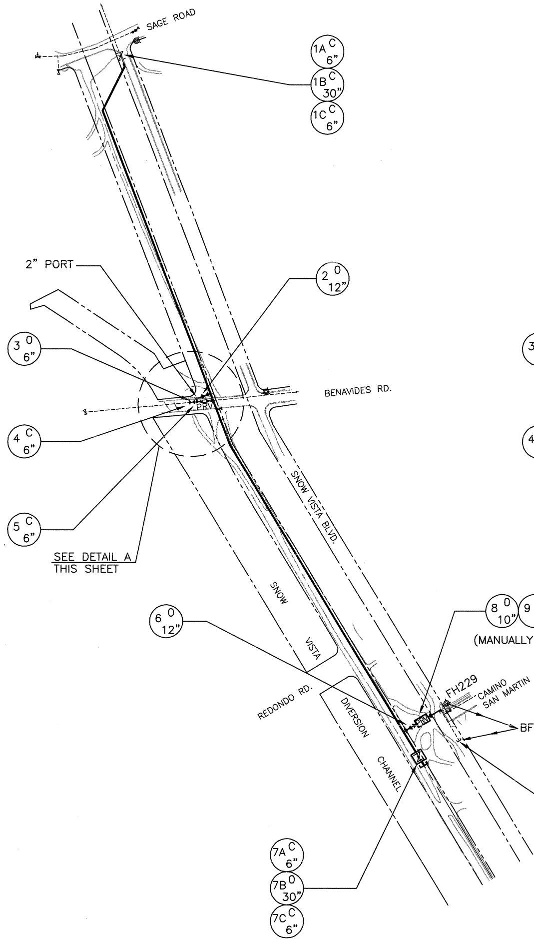
LARGE DIAMETER VALVE VAULT

FH1 = FIRE HYDRANT

BFP = APPROVED BACK FLOW PREVENTION DEVICE

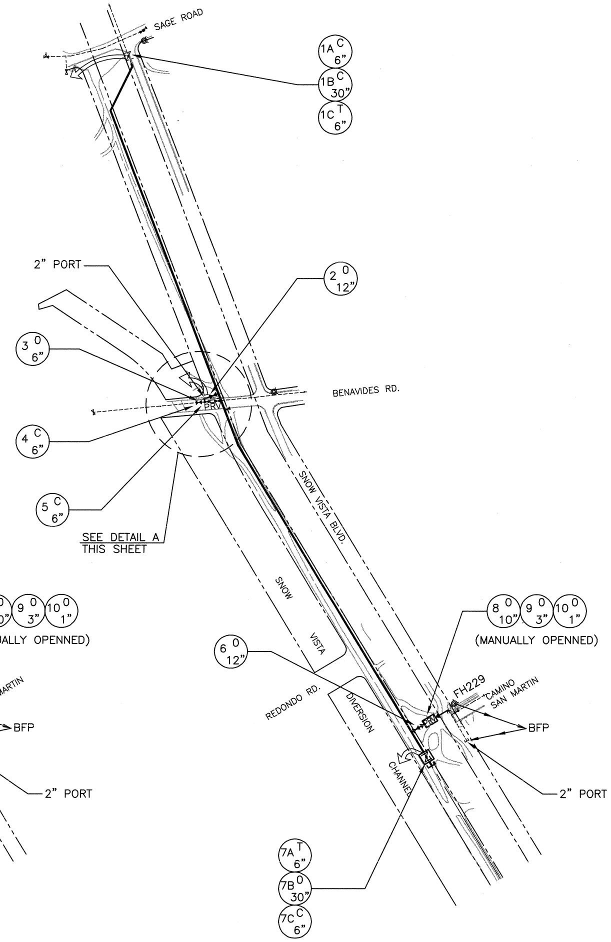
WATER LINE FILLING

WATER LINE FLUSHING



FILLING PLAN

SCALE: 1"=200'

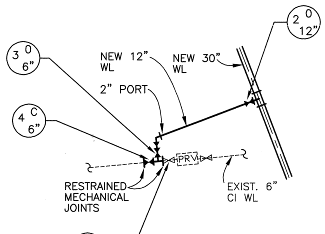


FLUSHING PLAN

SCALE: 1"=200'

WATER LINE SEQUENCE NOTES

INSTALL BACK FLOW PREVENTION DEVICE BETWEEN EXISTING FIRE HYDRANT FH229 AT CAMINO SAN MARTIN AND THE EXISTING 12" WL VIA A 2" PORT.
MANUALLY OPEN HYDRAULIC VALVES IN THE PRV.
OPEN ALL NEW VALVES EXCEPT 4, 7A, AND 7C.
CLOSE EXISTING VALVES 1A, 1B, 1C, AND 5.
FILL THE WATER LINE FROM FH229. AFTER PRESSURE TESTING, INTRODUCE CHLORINE BY THROTTLING THE UPSTREAM 6" BYPASS VALVE 7A. SUPPLYING WATER FROM FH229; DISCHARGE TO THE SNOW VISTA DIVERSION CHANNEL FOR FIVE (5) MINUTES. CLOSE VALVE 7A, AND BEGIN THROTTLING VALVE 1C. DISCHARGE TO THE SNOW VISTA DIVERSION CHANNEL AFTER THE SLUG HAS REACHED THE DISCHARGE POINT, INTRODUCE CHLORINE TO THE 12" WATER LINE IN BENAVIDAS ROAD THROUGH A 2" PORT FOR FIVE (5) MINUTES. DISCHARGE TO SNOW VISTA DIVERSION CHANNEL, USE THIS SAME PROCEDURE AFTER APPROPRIATE CONTACT TIME FOR FLUSHING UNTIL THE CHLORINE CONCENTRATION IS LESS THAN 2.0 mg/L.



DETAIL A

SCALE: N.T.S.

GENERAL NOTES

1. DISINFECTION AND FILLING OF WATER LINES SHALL CONFORM TO THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS 801.17 EXCEPT AS MODIFIED HEREIN.

2. ALL NECESSARY MEASURES SHALL BE TAKEN TO PREVENT CONTAMINATED MATERIALS FROM ENTERING THE WATER LINE DURING STORAGE, CONSTRUCTION, OR REPAIR INCLUDING CAPPING THE WATER LINE AT NIGHT AND DURING ALL BREAKS IN PIPE LAYING.

3. REMOVE ANY MATERIALS, DIRT OR DEBRIS THAT MAY HAVE ENTERED THE WATER LINE PRIOR TO DISINFECTION.

4. ADD A FLUSHING/DRAINING PORT TO ALL DEAD END LINES DISCHARGE POINTS AND FILLING POINTS WHICH ARE NOT FIRE HYDRANTS. PORT SHALL BE 2" MIN. UNLESS SHOWN OTHERWISE. PORT SHALL ALLOW PIPE TO FULLY DRAIN.

5. FILL THE WATER LINE PER THE PLAN SHOWN ON THIS SHEET THROUGH AN APPROVED BACK FLOW PREVENTION DEVICE. CONTRACTOR SHALL USE NECESSARY METHODS TO ALLOW ALL AIR IN THE WATER LINE TO RELEASE WITHOUT CONTAMINATING ANY EXISTING WATER LINES OR FIELD TAPPING CONCRETE CYLINDER PIPE.

6. PRESSURE TEST IN ACCORDANCE WITH CITY OF ALBUQUERQUE STANDARD SPECIFICATION 801.16.

7. DISINFECT THE WATER LINE PER CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS 801.17 AND AWWA C651 (LATEST EDITION). SODIUM OR CALCIUM HYPOCHLORITE ARE THE ONLY PERMISSIBLE FORMS OF CHLORINE TO BE USED. GRANULES OR TABLETS SHALL NOT BE PLACED IN THE WATER LINE, HOWEVER THEY MAY BE USED TO PREMIX A HIGHLY CHLORINATED SOLUTION. CONTRACTOR SHALL ENSURE THAT GRANULES OR TABLETS NOT DISSOLVED ARE NOT INTRODUCED INTO THE WATER LINE FROM THE HIGHLY CHLORINATED WATER BY SCREENING THE DISCHARGE FROM THE PRE-MIXING VESSEL OR BY OTHER PROVEN MEANS.

8. THE SLUG METHOD SHALL BE USED (WITH PRELIMINARY FLUSHING ON LINES LESS THAN 24" IN DIAMETER AND BROOM SWEEPING ON LINES 24" AND LARGER).

9. AFTER THE 3 HOUR RETENTION PERIOD, HEAVILY CHLORINATED WATER SHALL BE FLUSHED FROM THE WATER LINE PER THIS PLAN. INTRODUCE FLUSH WATER THROUGH AN APPROVED BACK FLOW DEVICE. DECHLORINATION IS REQUIRED WHEN NOTED ON THIS PLAN.

10. FLUSH THE WATER LINE BY CAREFULLY THROTTLING THE VALVE AT THE DISCHARGE END TO PREVENT A VACUUM IN THE WATER LINE AND TO PREVENT INUNDATING THE DISCHARGE STRUCTURE.

11. IF FLUSHING INTO A SANITARY SEWER NOTIFY THE WASTEWATER UTILITY DIVISION AT 873-7015 PRIOR TO FLUSHING. IF FLUSHING TO A CITY OF ALBUQUERQUE STORM SEWER OR DRAINAGE CHANNEL NOTIFY THE HYDROLOGY DIVISION AT 768-3654. IF FLUSHING TO AN AMAFCA STRUCTURE NOTIFY AMAFCA AT 884-2215 PRIOR TO FLUSHING. FLUSHING LINE SHALL BE SUPPORTED BY A STAND TO MAINTAIN AN 18" SEPARATION BETWEEN THE FLUSHING LINE AND THE DISCHARGE POINT OR MANHOLE RIM.

12. WHEN THE FLUSH WATER RESIDUAL CHLORINE IS LESS THAN 2.0 mg/L, THE CITY WILL TAKE A POTABILITY TEST. UPON PASSING THE CONTRACTOR SHALL REMOVE THE METER AND BACK FLOW PREVENTION DEVICE. IF LINE DOES NOT PASS, CONTRACTOR SHALL REPEAT DISINFECTION AND/OR FLUSHING UNTIL UNTIL LINE PASSES.

13. PROVIDE CITY WITH A RECORD OF THE WATER VOLUME USED TO FILL AND FLUSH THE WATER LINE BASED ON WATER METER READINGS.

14. CONTRACTOR MAY SUBMIT AN ALTERNATE FILLING, DISINFECTING, AND FLUSHING PLAN FOR REVIEW AND APPROVAL AT LEAST 5 WORKING DAYS PRIOR TO FILLING.

15. THROTTLING SHALL BE PERFORMED USING VALVES NOT FIRE HYDRANTS.

16. THE CONTRACTOR SHALL BE GRANTED FREE WATER FOR TESTING AND FLUSHING. IF THE WATER LINE FAILS THE HYDROSTATIC OR POTABILITY TEST, THE CONTRACTOR SHALL PAY FOR THE ADDITIONAL WATER REQUIRED FOR RETESTING.

AS BUILT INFORMATION: CONTRACTOR / WORK STAKED BY / INSPECTOR'S ACCEPTANCE BY / FIELD VERIFICATION BY / DRAWINGS CORRECTED BY

MICRO-FILM INFORMATION: RECORDED BY / DATE / NO.

BENCH MARKS

SURVEY INFORMATION: NO. / FIELD NOTES / DATE

ENGINEERS SEAL

NO.	DATE	REMARKS	DATE
1	3/01	RECORD DRAWING	

REVISIONS

DESIGN			
DESIGNED BY	RCO	DATE	2/98
DRAWN BY	CAM	DATE	2/98
CHECKED BY	KWW	DATE	2/98

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ALBUQUERQUE, NM, 87110
(505) 883-7700

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DESIGN SECTION

TITLE:

ZONE 2W-2WR WATER TRANSMISSION LINE
WATER LINE FILLING, DISINFECTION, & FILLING PLAN

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.
APPROVED MAY 24 2000	APPROVED MAY 25 2000 CITY ENGINEER			

City Project No.	Zone Map No.	Sheet	Of
5432.91	M-9	7	12

RECORD DRAWING
THIS IS A RECORD DRAWING OF THE FACILITIES IDENTIFIED IN THE TITLE ... BE FIELD LOCATED IN THE PRESENCE OF AN EMPLOYEE OF THE DISTRICT OR THE OWNER (S) OF THE UTILITIES INVOLVED.

SCANNED BY
MESA REPRO

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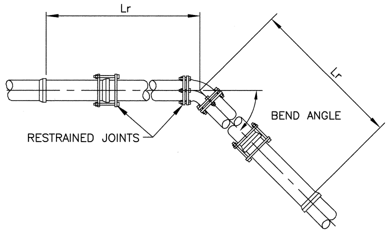
Time: 05-05-00 3:04:55 PM XRef Files:

RESTRAINED JOINTS FOR SMALL DIAMETER PVC WATER LINES

1. HORIZONTAL BEND

Lr					
BEND ANGLE	PIPE SIZE				
	4"	6"	8"	10"	12"
90°	14'	20'	26'	31'	36'
45°	6'	8'	11'	13'	15'
22 1/2°	3'	4'	5'	6'	7'
11 1/4°	1'	2'	3'	3'	4'

Lr = LENGTH OF PIPE TO BE RESTRAINED



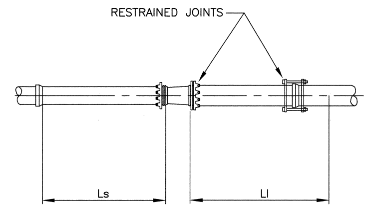
4. REDUCER

Ls/Ll				
SMALL END	LARGE END			
	6"	8"	10"	12"
4"	42'/28'	100'/52'	169'/70'	256'/88'
6"		39'/30'	87'/53'	146'/74'
8"			36'/29'	81'/54'
10"				36'/30'
12"				

NOTE: IF THE SMALLER SIDE OF THE REDUCER IS UN-OBSTRUCTED (FREE OF BENDS, VALVES, TEES OR OTHER FITTINGS) FOR A MINIMUM LENGTH OF Ls, THEN NO RESTRAINT IS REQUIRED; OTHERWISE THE PIPE MUST BE RESTRAINED FOR A LENGTH OF Ll, ON THE LARGER SIDE OF THE REDUCER.

Ls = UN-OBSTRUCTED STRAIGHT RUN LENGTH AVAILABLE ON THE SMALLER SIDE OF REDUCER

Ll = LENGTH OF PIPE TO BE RESTRAINED ON THE LARGER SIDE OF REDUCER

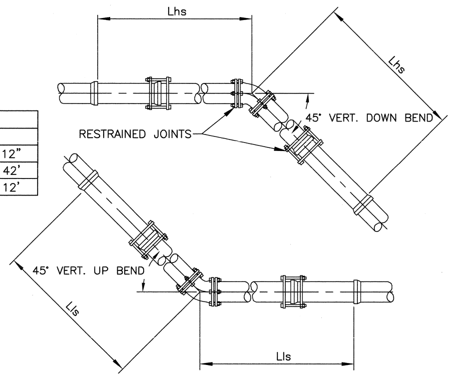


2. VERTICAL OFFSET (45°)

Lhs & Lls					
	PIPE SIZE				
	4"	6"	8"	10"	12"
Lhs	16'	23'	30'	36'	42'
Lls	5'	6'	8'	10'	12'

Lhs = LENGTH OF PIPE TO BE RESTRAINED ON VERTICAL DOWN BENDS

Lls = LENGTH OF PIPE TO BE RESTRAINED ON VERTICAL UP BENDS

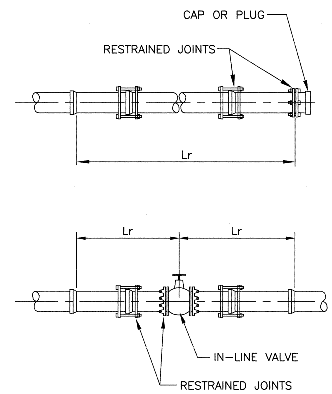


5. IN-LINE VALVES & DEAD ENDS

Lr					
	PIPE SIZE				
	4"	6"	8"	10"	12"
Lr	39'	55'	72'	86'	102'

NOTE: VALVES SHALL BE RESTRAINED ON BOTH SIDES.

Lr = LENGTH OF PIPE TO BE RESTRAINED



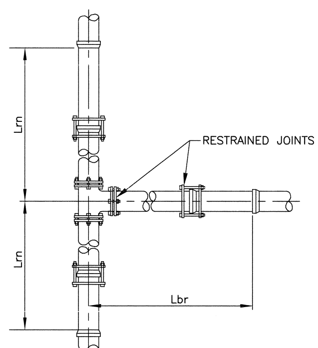
3. TEE

Lbr (Lrn=0.5') / Lbr (Lrn=10')					
BRANCH SIZE	RUN SIZE				
	4"	6"	8"	10"	12"
4"	36'/FO	35'/FO	34'/FO	32'/FO	31'/FO
6"		52'/3'	51'/FO	50'/FO	49'/FO
8"			69'/19'	69'/5'	68'/FO
10"				84'/33'	83'/21'
12"					99'/47'

NOTE: IF Lrn > 20', THEN ALL TEE SIZES NEED TO BE RESTRAINED AT THE FITTING ONLY (FO).

Lrn = SHORTEST LENGTH OF PIPE RESTRAINED ON EITHER SIDE OF THE TEE

Lbr = LENGTH OF PIPE TO BE RESTRAINED ON THE BRANCH



RECORD DRAWING

THIS IS A RECORD DRAWING OF THE FACILITIES IDENTIFIED IN THE TITLE BLOCK ONLY AND HAS BEEN PREPARED IN PART ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS. THE ENGINEER/ARCHITECT AND OTHER (S) WILL NOT BE RESPONSIBLE FOR ANY ERROR (S) OR OMISSION (S) WHICH HAVE BEEN INCORPORATED INTO THIS DRAWING. ACTUAL CONDITIONS WILL VARY SOMEWHAT FROM THE CONDITIONS SHOWN HEREON AND AT SOME LOCATIONS THE VARIANCE MAY BE LARGE. IF THE PRECISE LOCATION OF ANY FACILITY IS REQUIRED, THE FACILITY SHOULD BE FIELD LOCATED IN THE PRESENCE OF AN EMPLOYEE OF THE DISTRICT OR THE OWNER (S) OF THE UTILITIES INVOLVED.

NOTES:

1. ALL JOINTS AND FITTINGS WITHIN THE SPECIFIED RESTRAINED LENGTH, MUST BE RESTRAINED.
2. ALL LENGTHS ARE IN FEET.
3. ALL RESTRAINED JOINT LENGTHS ARE BASED ON THE CONDITIONS NOTED UNDER "BASIS OF DESIGN". ANY CHANGES TO THESE CONDITIONS MUST BE NOTED AND SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
4. THE CONTRACTOR SHALL NOTE THE LOCATION, TYPE AND EXTENT OF ALL RESTRAINED JOINTS INSTALLED ON THIS PROJECT AS PART OF THE AS-BUILT DRAWINGS.
5. THE CONTRACTOR SHALL SUBMIT THRUST RESTRAINT DESIGN FOR PIPE THAT IS NOT THE SIZE OR MATERIAL TYPE SHOWN IN THESE DETAILS.

BASIS OF DESIGN

1. PIPE MATERIAL = PVC
2. TEST PRESSURE = 150 PSI
3. SOIL TYPE - "SM" (ASTM STANDARD D2487)
4. TRENCH TYPE & BEDDING = TYPE 4, (ANSI/AWWA C150/A21.50)
5. PIPE COVER = 3' MINIMUM

AS BUILT INFORMATION: CONTRACTOR / WORK STAKED BY / INSPECTOR'S ACCEPTANCE BY / FIELD VERIFICATION BY / DRAWINGS CORRECTED BY

MICRO-FILM INFORMATION: RECORDED BY / NO. / DATE

BENCH MARKS

SURVEY INFORMATION: NO. / FIELD NOTES / DATE

ENGINEERS SEAL

REVISIONS: NO. | DATE | REMARKS
1 | 9/01 | RECORD DRAWING

DESIGN: DESIGNED BY RCF DATE 7/97; DRAWN BY CAM DATE 7/97; CHECKED BY KWW DATE 7/97

Boyle Engineering Corporation
consulting engineers

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DESIGN SECTION

TITLE: ZONE 2W-2WR WATER TRANSMISSION LINE RESTRAINED JOINT DETAILS

Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.
APPROVED MAY 2 4 2000 DESIGN REVIEW	APPROVED MAY 2 5 2000 CITY ENGINEER		
	Last Design Update		

City Project No. 5432.91 | Zone Map No. N/A | Sheet 8 of 12

SCANNED BY MESA REPRO

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SCANNED BY MESA REPRO

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Time: 05-05-00 3:18:51 PM User: cmorgan Job #: ALA0114802

KLEINFELDER BORING LOG — B-1

Sheet 1 of 1

Started	Completed	Backfilled	Project No.	Rig Type	Project	Boring No.	Groundwater
7-16-97	7-16-97	7-16-97	59-960043	CME-75	Zone 2W-0W Water Line	B-1	None

SAMPLE TYPE: A - Drill cuttings; S - 2" O.D. 1.38" I.D. tube sample; U - 3" O.D. 2.42" I.D. tube sample; T - 3" O.D. thin-walled Shelby tube; NR - No Recovery

Depth in Feet	Sample Type	Blows per foot 140 lb. 30" free-fall drop hammer
0–5	S	13
	S	6
5	S	7
10	S	13
15	S	6

Unified Soil Classification	Remarks	Visual Classification
SM	Sta. 4+76, 6' Right; moderately firm to soft	**SILTY SAND**, fine to medium, nonplastic, reddish-brown
SM	moderately firm to soft	**SILTY SAND**, occasional fine gravel, nonplastic, brown
		Stopped auger @ 14' 6"; Stopped sampler @ 16'

KLEINFELDER BORING LOG — B-2

Sheet 1 of 1

Started	Completed	Backfilled	Project No.	Rig Type	Project	Boring No.	Groundwater
7-16-97	7-16-97	7-16-97	59-960043	CME-75	Zone 2W-0W Water Line	B-2	None

SAMPLE TYPE: A - Drill cuttings; S - 2" O.D. 1.38" I.D. tube sample; U - 3" O.D. 2.42" I.D. tube sample; T - 3" O.D. thin-walled Shelby tube; NR - No Recovery

Depth in Feet	Sample Type	Blows per foot
0–5	S	15
	S	19
5	S	16
10	S	3
15	S	4

Unified Soil Classification	Remarks	Visual Classification
SM	Sta. 12+00, 3' Right; moderately firm to firm	**SILTY SAND**, fine to medium, trace of fine gravel, nonplastic, grayish-brown
SM		**SILTY SAND**, medium to coarse, considerable gravel, nonplastic, grayish-brown
SM	soft	**SILTY SAND**, very fine, nonplastic, brown
		Stopped auger @ 14' 6"; Stopped sampler @ 16'

KLEINFELDER BORING LOG — B-3

Sheet 1 of 1

Started	Completed	Backfilled	Project No.	Rig Type	Project	Boring No.	Groundwater
7-16-97	7-16-97	7-16-97	59-960043	CME-75	Zone 2W-0W Water Line	B-3	None

SAMPLE TYPE: A - Drill cuttings; S - 2" O.D. 1.38" I.D. tube sample; U - 3" O.D. 2.42" I.D. tube sample; T - 3" O.D. thin-walled Shelby tube; NR - No Recovery

Depth in Feet	Sample Type	Blows per foot
0–5	S	12
	S	19
5	S	10
10	S	4
15	S	19

Unified Soil Classification	Remarks	Visual Classification
SP-SM	Sta. 15+50, Centerline; medium dense to very loose	**SAND**, fine to medium, some silt, nonplastic, reddish-brown
ML	moderately firm	**SANDY SILT**, nonplastic, grayish-brown
SM	firm	**SILTY SAND**, predominantly fine, nonplastic, brown
		Stopped auger @ 14' 6"; Stopped sampler @ 16'

KLEINFELDER BORING LOG — B-4

Sheet 1 of 1

Started	Completed	Backfilled	Project No.	Rig Type	Project	Boring No.	Groundwater
7-18-97	7-18-97	7-18-97	59-960043	CME-75	Zone 2W-0W Water Line	B-4	None

SAMPLE TYPE: A - Drill cuttings; S - 2" O.D. 1.38" I.D. tube sample; U - 3" O.D. 2.42" I.D. tube sample; T - 3" O.D. thin-walled Shelby tube; NR - No Recovery

Depth in Feet	Sample Type	Blows per foot
0–5	S	19
	S	27
5	U	46
10	S	7
15	S	17

Unified Soil Classification	Remarks	Visual Classification
SM	Sta. 22+00, 2' Left; firm to soft	**SILTY SAND**, fine to medium, nonplastic, reddish-brown
ML	moderately firm	**SANDY SILT**, nonplastic, grayish-brown
		Stopped auger @ 14' 6"; Stopped sampler @ 16'

KLEINFELDER BORING LOG — B-5

Sheet 1 of 1

Started	Completed	Backfilled	Project No.	Rig Type	Project	Boring No.	Groundwater
7-16-97	7-16-97	7-16-97	59-960043	CME-75	Zone 2W-0W Water Line	B-5	None

SAMPLE TYPE: A - Drill cuttings; S - 2" O.D. 1.38" I.D. tube sample; U - 3" O.D. 2.42" I.D. tube sample; T - 3" O.D. thin-walled Shelby tube; NR - No Recovery

Depth in Feet	Sample Type	Blows per foot
0–5	S	22
	S	24
5	S	26
10	S	6
15	S	9

Unified Soil Classification	Remarks	Visual Classification
SM	Sta. 26+30, 2' Right; firm to soft	**SILTY SAND**, fine to medium, occasional fine gravel, nonplastic, brown
SM	moderately firm	**SILTY SAND**, predominantly fine, nonplastic, dark brown
		Stopped auger @ 14' 6"; Stopped sampler @ 16'

KLEINFELDER BORING LOG — B-6

Sheet 1 of 1

Started	Completed	Backfilled	Project No.	Rig Type	Project	Boring No.	Groundwater
7-16-97	7-16-97	7-16-97	59-960043	CME-75	Zone 2W-0W Water Line	B-6	None

SAMPLE TYPE: A - Drill cuttings; S - 2" O.D. 1.38" I.D. tube sample; U - 3" O.D. 2.42" I.D. tube sample; T - 3" O.D. thin-walled Shelby tube; NR - No Recovery

Depth in Feet	Sample Type	Blows per foot
0–5	S	20
	S	21
5	S	18
10	S	6
15	S	6

Unified Soil Classification	Remarks	Visual Classification
SM	Sta. 32+20, 6' Right; firm	**SILTY SAND**, fine to medium, trace of fine gravel, nonplastic, brown
SP	medium dense	**SAND**, fine to medium, nonplastic, grayish-brown
SM	soft	**SILTY SAND**, predominantly fine, nonplastic, dark brown
		Stopped auger @ 14' 6"; Stopped sampler @ 16'

KLEINFELDER BORING LOG — B-7

Sheet 1 of 1

Started	Completed	Backfilled	Project No.	Rig Type	Project	Boring No.	Groundwater
7-16-97	7-16-97	7-16-97	59-960043	CME-75	Zone 2W-0W Water Line	B-7	None

SAMPLE TYPE: A - Drill cuttings; S - 2" O.D. 1.38" I.D. tube sample; U - 3" O.D. 2.42" I.D. tube sample; T - 3" O.D. thin-walled Shelby tube; NR - No Recovery

Depth in Feet	Sample Type	Blows per foot
0–5	S	16
	S	25
5	S	31
10	S	8
15	S	8

Unified Soil Classification	Remarks	Visual Classification
SM	Sta. 38+00, 3' Right; firm to soft	**SILTY SAND**, fine to medium, nonplastic, brown
		Stopped auger @ 14' 6"; Stopped sampler @ 16'

KLEINFELDER BORING LOG — B-8

Sheet 1 of 1

Started	Completed	Backfilled	Project No.	Rig Type	Project	Boring No.	Groundwater
7-16-97	7-16-97	7-16-97	59-960043	CME-75	Zone 2W-0W Water Line	B-8	None

SAMPLE TYPE: A - Drill cuttings; S - 2" O.D. 1.38" I.D. tube sample; U - 3" O.D. 2.42" I.D. tube sample; T - 3" O.D. thin-walled Shelby tube; NR - No Recovery

Depth in Feet	Sample Type	Blows per foot
0–5	S	18
	S	8
5	S	4
10	S	8
15	S	14

Unified Soil Classification	Remarks	Visual Classification
SM	Sta. 48+00, 3' Right; moderately firm to soft	**SILTY SAND**, fine to medium, nonplastic, brown
SP	loose	**SAND**, medium to coarse, nonplastic, dark brown
SP	medium dense	**GRAVELLY SAND**, medium to coarse, nonplastic, dark brown
		Stopped auger @ 14' 6"; Stopped sampler @ 16'

KLEINFELDER BORING LOG — B-9

Sheet 1 of 1

Started	Completed	Backfilled	Project No.	Rig Type	Project	Boring No.	Groundwater
7-16-97	7-16-97	7-16-97	59-960043	CME-75	Zone 2W-0W Water Line	B-9	None

SAMPLE TYPE: A - Drill cuttings; S - 2" O.D. 1.38" I.D. tube sample; U - 3" O.D. 2.42" I.D. tube sample; T - 3" O.D. thin-walled Shelby tube; NR - No Recovery

Depth in Feet	Sample Type	Blows per foot
0–5	S	14
	S	9
5	S	9
10	S	15
15	S	14

Unified Soil Classification	Remarks	Visual Classification
SM	Sta. 49+90, 3' Left; moderately firm to soft	**SILTY SAND**, very fine, nonplastic, grayish-brown
SP	medium dense	**GRAVELLY SAND**, medium to coarse, nonplastic, grayish-brown
		Stopped auger @ 14' 6"; Stopped sampler @ 16'

KLEINFELDER BORING LOG — B-10

Sheet 1 of 1

Started	Completed	Backfilled	Project No.	Rig Type	Project	Boring No.	Groundwater
7-16-97	7-16-97	7-16-97	59-960043	CME-75	Zone 2W-0W Water Line	B-10	None

SAMPLE TYPE: A - Drill cuttings; S - 2" O.D. 1.38" I.D. tube sample; U - 3" O.D. 2.42" I.D. tube sample; T - 3" O.D. thin-walled Shelby tube; NR - No Recovery

Depth in Feet	Sample Type	Blows per foot
0–5	S	7
	S	5
5	S	12
10	S	8
15	S	15

Unified Soil Classification	Remarks	Visual Classification
SM	Sta. 61+00, 12' Left; soft to moderately firm	**SILTY SAND**, predominantly fine, nonplastic, brown
SP	loose to medium dense	**GRAVELLY SAND**, medium to coarse, nonplastic, grayish-brown
		Stopped auger @ 14' 6"; Stopped sampler @ 16'

KLEINFELDER BORING LOG — B-11

Sheet 1 of 1

Started	Completed	Backfilled	Project No.	Rig Type	Project	Boring No.	Groundwater
7-16-97	7-16-97	7-16-97	59-960043	CME-75	Zone 2W-0W Water Line	B-11	None

SAMPLE TYPE: A - Drill cuttings; S - 2" O.D. 1.38" I.D. tube sample; U - 3" O.D. 2.42" I.D. tube sample; T - 3" O.D. thin-walled Shelby tube; NR - No Recovery

Depth in Feet	Sample Type	Blows per foot
0–5	S	13
	S	6
5	S	4
10	S	3
15	S	4

Unified Soil Classification	Remarks	Visual Classification
SM	Sta. 69+10, 2' Right; moderately firm to very soft	**SILTY SAND**, fine to medium, nonplastic, brown
		Stopped auger @ 14' 6"; Stopped sampler @ 16'

KLEINFELDER BORING LOG — B-12

Sheet 1 of 1

Started	Completed	Backfilled	Project No.	Rig Type	Project	Boring No.	Groundwater
7-16-97	7-16-97	7-16-97	59-960043	CME-75	Zone 2W-0W Water Line	B-12	None

SAMPLE TYPE: A - Drill cuttings; S - 2" O.D. 1.38" I.D. tube sample; U - 3" O.D. 2.42" I.D. tube sample; T - 3" O.D. thin-walled Shelby tube; NR - No Recovery

Depth in Feet	Sample Type	Blows per foot
0–5	S	9
	S	3
5	S	4
10	S	5
15	S	5

Unified Soil Classification	Remarks	Visual Classification
SM	Sta. 77+00, Centerline; soft to very soft	**SILTY SAND**, fine to medium, occasional fine gravel, nonplastic, brown
		Stopped auger @ 14' 6"; Stopped sampler @ 16'

AS BUILT INFORMATION: CONTRACTOR; WORK STAKED BY; INSPECTOR'S ACCEPTANCE BY; FIELD VERIFICATION BY; DRAWINGS CORRECTED BY

MICRO-FILM INFORMATION: RECORDED BY; DATE; NO.

BENCH MARKS

SURVEY INFORMATION: NO.; FIELD NOTES; DATE

ENGINEERS SEAL

RECORD DRAWING

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NO.	DATE	REMARKS
1	3/01	RECORD DRAWING

REVISIONS

DESIGN		
DESIGNED BY KI	DATE	4/98
DRAWN BY RCO	DATE	4/98
CHECKED BY KWW	DATE	4/98

Boyle Engineering Corporation
consulting engineers
Suite 600E
6400 UPTOWN BLVD. N.E.
ALBUQUERQUE, NM, 87110
(505) 883-7700

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DESIGN SECTION

TITLE:

ZONE 2W-2WR WATER TRANSMISSION LINE BORING LOGS

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.
APPROVED MAY 24 20.. DESIGN REVIEW CO...	APPROVED MAY 25 2000 CITY ENGINEER			

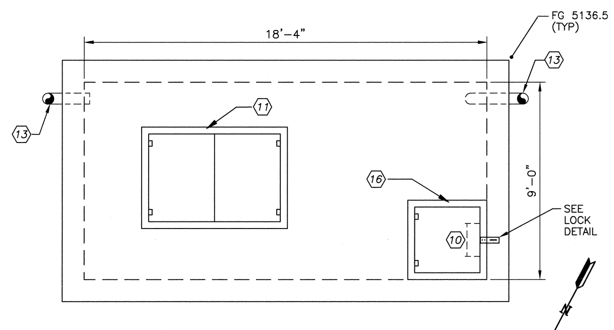
City Project No.	Zone Map No.	Sheet	Of
5432.91	N/A	9	12

NOTES:

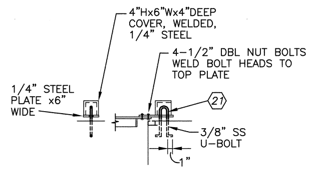
1. FOR 9'-0" X 18'-4" TRAFFIC VAULT STRUCTURAL DETAILS AND REINFORCING SEE STANDARD PRV STATION STRUCTURAL DETAILS DWG. 2357, AND THIS SHEET.
2. 6-INCH VENT PIPING SHALL BE ROUTED SUCH THAT THE ABOVE GROUND GOOSENECK AND INSECT SCREEN ARE LOCATED OUT OF VEHICULAR OR PEDESTRIAN TRAFFIC AREAS.
3. ALUMINUM FLOOR DOORS AND FRAME FOR LOCATIONS SUBJECT TO INTERMITTENT AND LIGHT DENSITY TRAFFIC SHALL BE DESIGNED TO WITHSTAND A LIVE LOAD OF THE AASHTO H-20 DESIGNATION AND SHALL BE FLUSH WITH THE TOP OF THE VAULT.

KEYED NOTES:

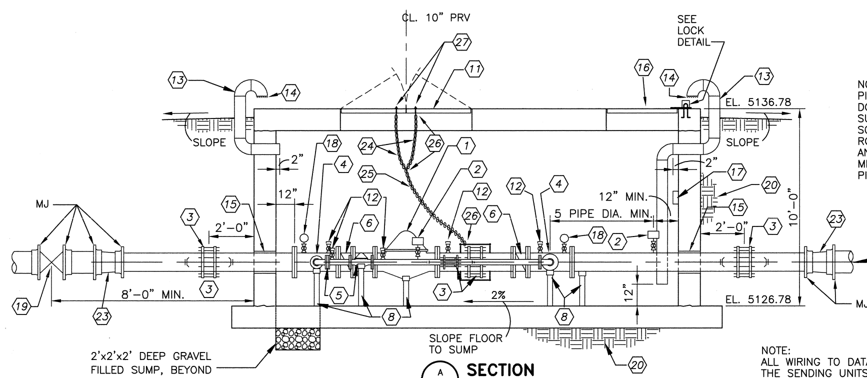
(1) 10" PRESSURE REDUCING VALVE. CLA-VAL MODEL 690-01 OR EQUAL.
(2) 1-1/2" PIPE TAP WITH 1-1/2" x 2" COPPER NIPPLE, 1-1/2" FULL PORT BRASS BALL VALVE, ERDCO TURBO FLO PROBE MODEL 25-3-12 B327 WITH TF15350 TRANSMITTER AND TF15288 SIGNAL BUFFER P.C.B. ASSEMBLY ON THE PROBE. CONNECT PROBE SIGNAL TO THE DATA LOGGER.
(3) FLEXIBLE COUPLING WITH THRUST TIES, SEE THRUST TIE DETAILS ON STD. DWG. 2355.
(4) 10"X10"X4" FLXFLXFL TEE.
(5) 3" COMBINATION PRESSURE REDUCING/FLOW CONTROL VALVE, CLA-VAL MODEL 649-01 OR EQUAL, AND ORIFICE PLATE WITH 2.6" ORIFICE.
(6) 10" FLXFL BUTTERFLY VALVE W/ HANDWHEEL.
(7) FLANGED SPOOL, LENGTH = 1'-0".
(8) ADJUSTABLE PIPE SADDLE SUPPORT LOCATION, GRINNELL FIG. 264, ELCEN FIG. 50 OR EQUAL.
(9) 4"X3" FLXFL REDUCER, 3" FLXFL GATE VALVE W/ HANDWHEEL, AND 3" FLXFL 90° BEND.
(10) 1'-6" WIDE ALUMINUM LADDER W/LADDER UP SAFETY POST.
(11) HALLIDAY W2R7248 (72"x48") WATERTIGHT REGULAR ACCESS DOOR. CENTER ACCESS DOOR OVER 10" PRV.
(12) 1/2" PIPE TAP WITH 1/2" BALL VALVE AND CAP.
(13) 6" STEEL PIPE, STANDARD WALL, WITH GOOSENECK. PREPARE PIPE SURFACE IN ACCORDANCE WITH PAINT MFR. REQUIREMENTS AND COAT WITH SAFETY YELLOW PAINT OR OTHER COLOR AS REQUESTED BY THE OWNER.
(14) EXPANDED METAL LATH, 1/4", NO. 18, STANDARD WEIGHT, WELD TO PIPE. GRIND OFF ROUGH EDGES AND PAINT SAME COLOR AS VENT PIPE. ENSURE OPENINGS ARE CLEAR OF PAINT.
(15) WALL PIPE WITH THRUST COLLAR, CENTER IN WALL. CLOSE WITH LINK SEAL OR EQUAL.
(16) HALLIDAY W2R3636 (36"x36") WATERTIGHT REGULAR ACCESS DOOR.
(17) DATA LOGGER W/NEMA 4X CABINET. DATA LOGGER SHALL BE R-3308 TELOGER AS MANUFACTURED BY TELOG W/EIGHT CHANNELS.
(18) 1/4" PIPE TAP WITH 1/4" BALL VALVE AND 4-1/2" DIAMETER PRESSURE GAGE, DWYER 7100 SERIES. DOWNSTREAM GAGE SHALL BE A MODEL G100 READING FROM 0 TO 100 PSI. UPSTREAM GAGE SHALL BE A MODEL G200 READING FROM 0 TO 200 PSI.
(19) 12" GATE VALVE, MJxMJ, RESTRAINED.
(20) COMPACT EARTH TO 95% MAXIMUM DENSITY.
(21) PROVIDE PADLOCK OF TYPE AND KEY PATTERN AS REQUESTED BY THE OWNER.
(22) PRESSURE TRANSMITTER DRUCK MODEL PTX520. PROVIDE PIPE TAP, 1/4" BALL VALVE AND TUBING TO CONNECT TRANSDUCER TO PIPE. CONNECT TRANSMITTER SIGNAL TO THE DATA LOGGER.
(23) 10"x12" REDUCER WITH RESTRAINED JOINTS.
(24) PROVIDE 3/16"x80" LONG STEEL CHAIN ON BOTH SIDES OF THE DOORS.
(25) 3/16" STEEL CHAIN TO SECURE DOORS.
(26) PROVIDE HOOKS ON END OF CHAIN.
(27) CONNECT 3/16" STEEL CHAINS TO UNDERSIDE OF DOOR FRAME USING 1/4" SS U-BOLTS, DOUBLE NUTTED.



TOP PLAN



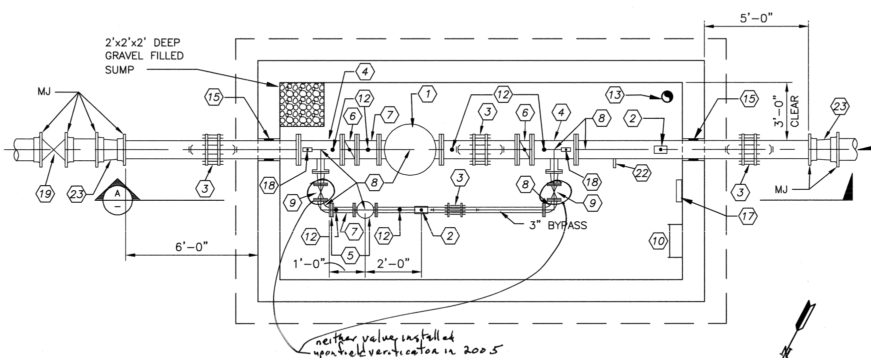
LOCK DETAIL
SCALE: NTS



SECTION A
SCALE: 3/8"=1'-0"

NOTE:
PIPE RUN-OFF FROM ACCESS DOOR DRAINS TO GRAVEL SUMP USING 1 1/2"ø SCHED 40 PVC PIPE. ROUTE PIPE ALONG ROOF AND WALLS MAINTAINING MIN. 2% GRADE. SECURE PIPE TO ROOF AND WALLS.

NOTE:
ALL WIRING TO DATA LOGGER TO BE IN CONDUIT FROM THE SENDING UNITS (PROBES AND TRANSMITTERS) TO CEILING, THEN ALONG CEILING PERPENDICULAR AND PARALLEL TO THE WALLS TO THE DATA LOGGER. TWELVE INCHES OF SLACK WIRE SHALL BE PROVIDED AT THE DATA LOGGER FOR MAINTENANCE. SECURE SLACK WITH PLASTIC WIRE TIES.



INTERIOR PLAN

RECORD DRAWING
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Boyle Engineering Corporation
consulting engineers

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DESIGN SECTION

TITLE: ZONE 2W-2WR WATER TRANSMISSION LINE
PRESSURE REDUCING VALVE STATION
SITE PLAN AND DETAILS

Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.
APPROVED MAY 2 4 2000 DESIGN REVIEW COMMITTEE	APPROVED MAY 2 5 2000 CITY ENGINEER		

City Project No.	Zone Map No.	Sheet	Of
5432.91	–	10	12

AS BUILT INFORMATION: CONTRACTOR / WORK STAKED BY / INSPECTOR'S ACCEPTANCE BY / FIELD VERIFICATION BY / DRAWINGS CORRECTED BY
MICRO-FILM INFORMATION: RECORDED BY / DATE / NO.
BENCH MARKS
SURVEY INFORMATION: FIELD NOTES / NO. / DATE
ENGINEERS SEAL

NO.	DATE	REMARKS	DATE
1	3/01	RECORD DRAWING	

REVISIONS

DESIGN		
DESIGNED BY AOB	DATE	4/98
DRAWN BY CAM	DATE	4/98
CHECKED BY KWW	DATE	4/98

SCANNED BY MESA REPRO

DWG: d:\0898pro\zone2w-2wr\sht10 User: cmorgan Job #: ALA0114802
Time: 05-05-00 3:14:30 PM Xref Files:

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 SEPERATE 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. ALL WORK IN ARTERIAL ROADWAYS SHALL BE ON A CONTINUOUS 24 HOUR PER DAY BASIS UNTIL COMPLETED.

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 TRAVELED 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. 48 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 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.

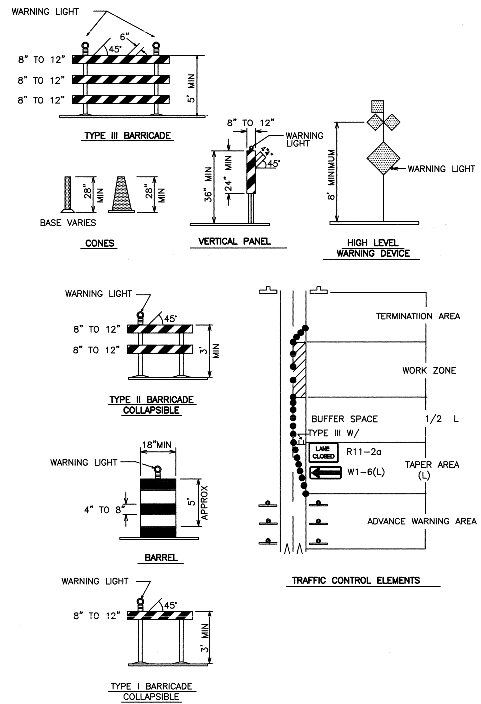
23. FAILURE TO COMPLY WITH ANY OF THE ABOVE MENTIONED, WILL BE ADEQUATE CAUSE TO CEASE ALL WORK ON ANY CONSTRUCTION PROJECT. WORK WILL NOT RESUME UNTIL ALL REQUIREMENTS ARE ADDRESSED AND APPROVED BY CONSTRUCTION COORDINATION.

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" MIN. WITH SUPER ENGINEERING GRADE SHEETING OR BETTER. MOUNTING HEIGHT AT TOP OF SIGN SHALL BE THE SAME AS FOR A 48" SIGN AS INDICATED IN THE M.U.T.C.D.

△27. CONTRACTOR SHALL MAINTAIN A GRAFFITI-FREE WORKSITE. ALL GRAFFITI SHALL BE PROMPTLY REMOVED FROM ALL EQUIPTMENT, BOTH PERMANENT AND TEMPORARY.



LEGEND

- WORK AREA
- BARRICADE – TYPE I, TYPE II, OR BARREL
- BARRICADE – TYPE III
- VERTICAL PANEL
- WARNING SIGN
- D — DISTANCE BETWEEN SIGNS – A DISTANCE MEASURED IN FEET EQUAL TO A VALUE OF TEN TIMES THE SPEED LIMIT OF THE STREET
- FLAGMAN POSITION
- S — SPACING BETWEEN BARRICADES – A DISTANCE MEASURED IN FEET EQUAL TO THE SPEED LIMIT OF THE STREET
- L — TAPER LENGTH – SEE CHART BELOW

THE TANGENT LENGTH IS EQUAL TO THE TAPER LENGTH FOR A GIVEN STREET.

TAPER REQUIREMENT

SPEED LIMIT (MPH)	TAPER LENGTH(L) (FEET) 10' LANE	11' LANE	12' LANE	MINIMUM NUMBER OF DEVICES FOR TAPER	MAXIMUM DEVICE SPACING IN FEET 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 MILES PER HOUR	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
DOWNSTREAM TAPERS	100 FEET PER LANE

TAPER LENGTH COMPUTATION

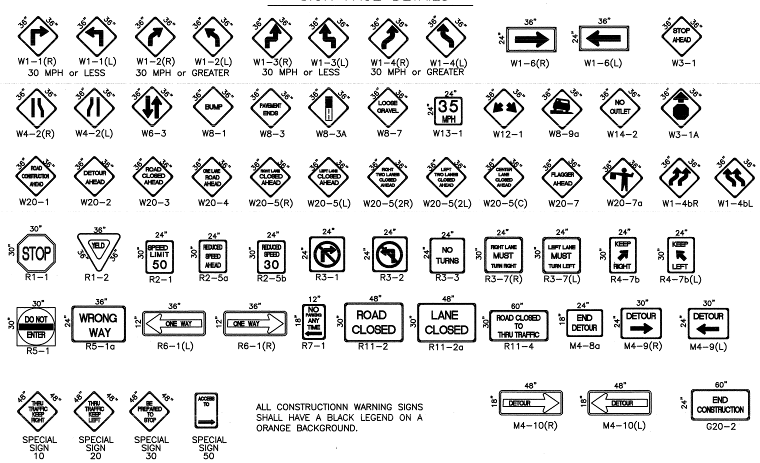
SPEED LIMIT

40 MPH OR LESS $L = \frac{WS^2}{60}$

40 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 CONSTRUCTIONN WARNING SIGNS SHALL HAVE A BLACK LEGEND ON A ORANGE BACKGROUND.

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NO.	DATE	REMARKS
5	3/01	RECORD DRAWING
4	9/25/97	ADD NOTE NO. 27
3	9/24/97	REVISED NOTE NO. 26
2	9/24/97	REVISED NOTE NO. 19
1	9/24/97	REVISED NOTE NO. 11

REVISIONS — BY: J.D.L.

DESIGN — DESIGNED BY BOHANNAN HUSTON DATE 5-97; DRAWN BY BOHANNAN HUSTON DATE 5-97; CHECKED BY BOHANNAN HUSTON DATE 5-97

AS-BUILT INFORMATION: CONTRACTOR / DATE; WORK STAKED BY / DATE; INSPECTOR'S ACCEPTANCE BY / DATE; FIELD VERIFICATION BY / DATE; DRAWINGS CORRECTED BY / DATE

MICRO-FILM INFORMATION: RECORDED BY / NO.

BENCH MARKS

SURVEY INFORMATION — FIELD NOTES: NO. / BY / DATE

ENGINEER'S SEAL

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

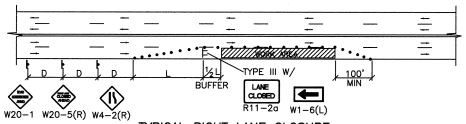
TITLE: TRAFFIC CONTROL
SIGNING AND CONSTRUCTION TRAFFIC CONTROL STANDARDS

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.
COA	STD			

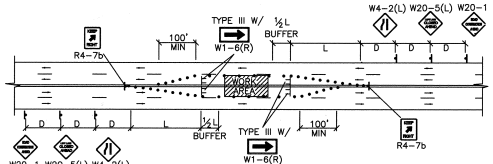
CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
5432.91		11	12

[BHI-MAIN\PROJECTS\97177\TRANS\DESIGN\SIGNAL\CITYSIGN.DWG

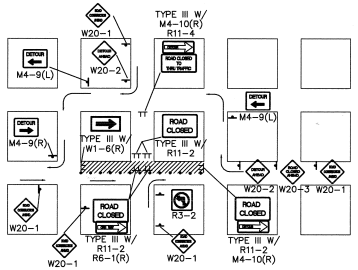
CITYSIGN.DWG 6-11-97



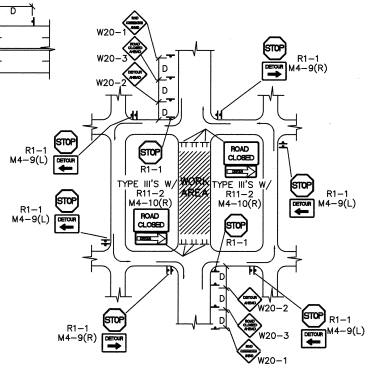
TYPICAL RIGHT LANE CLOSURE



TYPICAL LEFT LANE CLOSURE

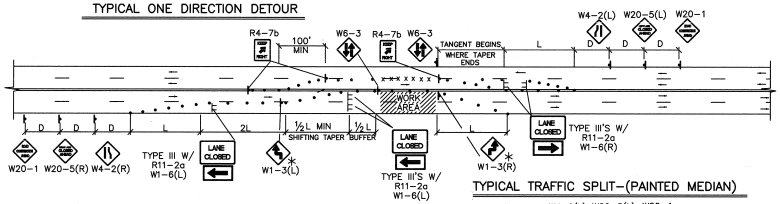


TYPICAL ONE DIRECTION DETOUR

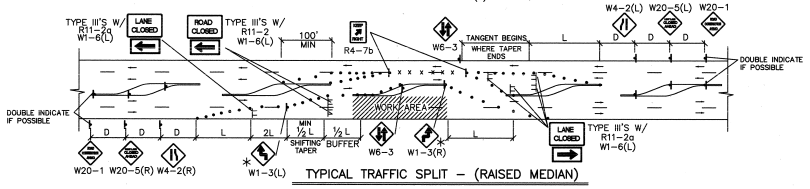


TYPICAL STREET CLOSURE

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



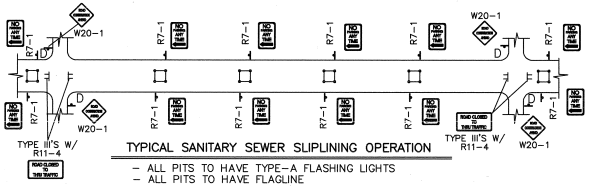
TYPICAL TRAFFIC SPLIT-(PAINTED MEDIAN)



TYPICAL TRAFFIC SPLIT – (RAISED MEDIAN)

TRAFFIC SPLIT NOTES:

1. THE OFFSET DISTANCE MUST BE CALCULATED IN ALL SHIFTING TAPERS. THE OFFSET DISTANCES SHALL INCLUDE LANE WIDTHS PLUS MEDIAN WIDTHS.
2. 1/2 L IS THE MINIMUM DISTANCE FOR SHIFTING TAPERS.
3. REVERSE CURVES MAY BE IMPLEMENTED. ALL CURVE DATA SHALL BE CALCULATED.
4. MEDIAN REMOVAL SHALL BE REQUIRED IF 1/2 L OR REVERSE CURVE IS NOT SUFFICIENT. MEDIAN REMOVAL SHALL TAKE PLACE BEFORE SPLITS.
5. REDUCED SPEED MAY BE CONSIDERED.
6. * USE W1-3 FOR 30 MPH OR LESS, W1-4 FOR SPEED 35 MPH OR GREATER.



TYPICAL SANITARY SEWER SLIPLINING OPERATION

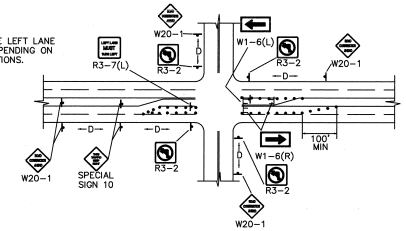
- ALL PITS TO HAVE TYPE-A FLASHING LIGHTS
- ALL PITS TO HAVE FLAGLINE

GENERAL NOTE:

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

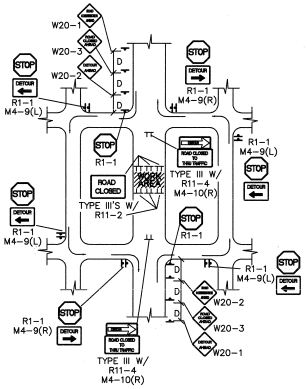
⚠ ALL ADVANCE WARNING SIGNS SHALL BE A MINIMUM OF 36" THIRTY SIX INCHES BY 36" THIRTY SIX INCHES IN SIZE AND SHALL HAVE ONE WARNING LIGHT.

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



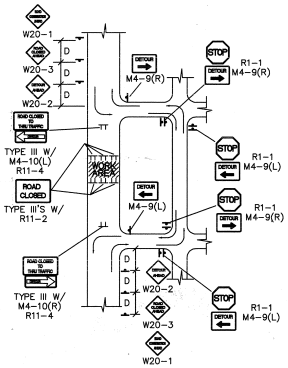
TYPICAL LANE CLOSURE AT INTERSECTION

NOTE: DEPENDING ON WORK ZONE LOCATION.



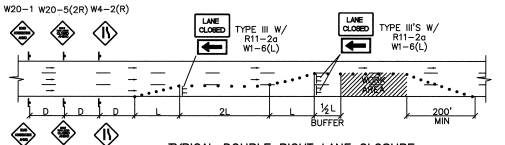
TYPICAL MID-BLOCK CLOSURE

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

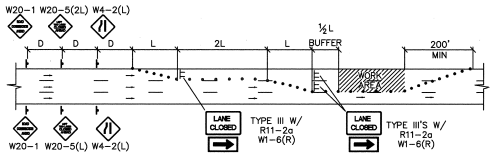


TYPICAL STREET CLOSURE

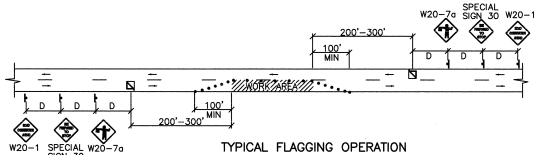
NOTE: (R1-1) BASED ON FIELD CONDITIONS.



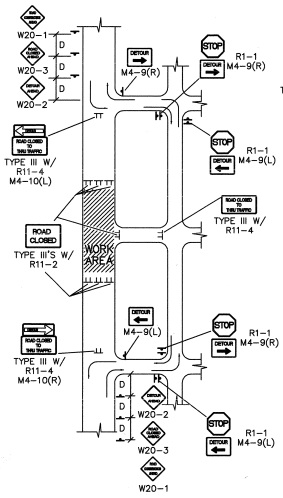
TYPICAL DOUBLE RIGHT LANE CLOSURE



TYPICAL DOUBLE LEFT LANE CLOSURE

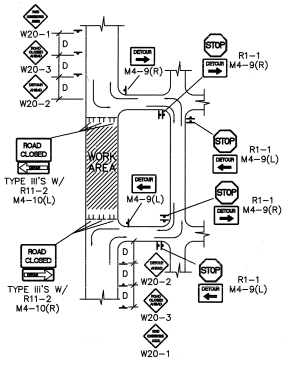


TYPICAL FLAGGING OPERATION



TYPICAL STREET CLOSURE

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



TYPICAL STREET CLOSURE

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

RECORD DRAWING

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AS-BUILT INFORMATION
CONTRACTOR DATE
STAKED BY DATE
INSPECTED BY DATE
ACCEPTANCE BY DATE
VERIFICATION BY DATE
CORRECTED BY DATE
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEER'S SEAL

3/01 RECORD DRAWING J.D.L.
NO. DATE REMARKS BY
REVISIONS

DESIGNED BY BOHANNAN HUSTON DATE 5-97
DRAWN BY BOHANNAN HUSTON DATE 5-97
CHECKED BY BOHANNAN HUSTON DATE 5-97

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TITLE: TYPICAL TRAFFIC CONTROL & SIGNING EXAMPLES (REF MUTCD)

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN DATE	MO./DAY/YR.	MO./DAY/YR.
COA	STN			

CITY PROJECT NO. 5432.91 | ZONE MAP NO. | SHEET 12 OF 12

SCANNED BY MESA REPRO

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