SECTION 2000

STANDARD DETAIL DRAWINGS

2000.1 GENERAL

2000.1.1 This section contains City of Albuquerque Standard Detail Drawings which are related to the construction or installation of City utilities, streets, drainage improvements, paving cuts and repairs, landscaping and certain private facilities within a right-of-way or easement

2000.1.2 These details are not required to be included in a project set of construction drawings if the individual details are properly referenced on the plan set. If a particular project design warrants additional details or modification of these details, they shall be included in the project’s construction plans.

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GENERAL NOTES
1. USE TYPE "C" MANHOLE FOR DEPTHS OF LESS THAN 6' MEASURED FROM INVERT TO RMS.
2. CONTRACTOR HAS OPTION TO CONSTRUCT TYPE "C" MANHOLE IN LIEU OF TYPE "E" MANHOLE FOR DEPTHS OF 6' OR MORE.
3. DESIGN APPLIES TO 4' TO 6' I.D. MANHOLES.
4. MANHOLE GREATER THAN 12' IN DEPTH SHALL ONLY BE CONSTRUCTION PRECAST CONCRETE SECTIONS.
5. USE NON-SHRINK GROUT FOR JOINTS, FILLETS AND PENUMETRATIONS.
6. COMPACT ALL BACKFILL AROUND MANHOLE TO 95%.
7. POSITION MANHOLE OPENING OVER THE UPSTREAM SIDE OF MAIN LINE.

CONSTRUCTION NOTES
A. CONCRETE PIPE SUPPORTS SHALL EXTEND OUTSIDE OF MANHOLE TO BELL OF FIRST JOINT AND SMALL CRABBLE PIPE TO SPRING LINE NOT APPLICABLE FLEXIBLE PIPE.
B. PIPE PENETRATION INTO MANHOLE SHALL BE PLUGGED TO 2" MAX., MEASURED AT SPRINGLINE OF PIPE.
C. MANHOLE MAY BE CONSTRUCTED OF CONCRETE BLOCK, CR.
MS BRICK, Poured CONCRETE OR PRECAST REINFORCED CONCRETE IF BLOCK OR BRICK PLASTER INSIDE AND OUT WITH 1/2" MORTAR. SEE DWG. 2118 FOR DETAILS.
D. PRECAST CONCRETE COVER, SEE DWG. 2127.
E. USE MAX. 4 COURSES CR. MS BRICK OR UNPAVED STREET FOR FUTURE ADJUSTMENT OF MANHOLE FRAME TO PAVEMENT GRADE PLASTER INSIDE WITH 1/2" MORTAR.
F. CONCRETE BARS TO BE FOCUSED IN PLACE USING NO. 8 BARS AT 6" O.C. EA. WAY FOR MANHOLE DEPTH OF 16' OR GREATER, NO. 4 BARS AT 12" O.C. EA. WAY FOR MANHOLE LESS THAN 16' IN DEPTH.
G. INVERT ELEVATION OF STUB ON LATERAL AS SHOWN ON PLANS.
H. 6" GROUT FILLET ON UPPER HALF OF PIPE AND AROUND BASE.
I. USE A 5' X 5' CONCRETE PAD IN ALL AREAS.
J. FRAMES AND COVER, SEE DWG. 2110.
K. CONCRETE, SEE SECTION 101.
L. SLOPE 1" PER FT. FROM PIPE CROWN.
M. SHELF TO BE 9" WIDE MIN.
N. APPROVED WATERSTOP TO BE COMPATIBLE WITH TYPE OF PIPE.
O. STEPS TO BE INSTALLED AS PER SPEC. SECTION 920.
P. RMS (IN UNPAVED AREAS).
Q. IN UNPAVED AREAS SET FRAME TO GRADE AND SLOPE TOP OF PAD.

CITY OF ALBUQUERQUE
SEWER MANHOLE TYPE "C"
DWG. 2101
AUG. 1986
GENERAL NOTES
1. TYPE "E" MANHOLE NOT TO BE USED FOR DEPTHS LESS THAN 6' MEASURED FROM INVERT TO RIM.
2. MANHOLE GREATER THAN 18" IN DEPTH SHALL BE OF PRECAST CONCRETE SECTIONS ONLY.
3. DESIGN APPLIES TO 4" AND 6" I.D. MANHOLE.
4. USE NON-SHRINK CEMENT FOR JOINTS, FILLETS AND PIPE PENETRATIONS.
5. CONTACT ALL BACKFILL AROUND MANHOLE TO 9".
6. POSITION MANHOLE OPENING OVER THE UPSTREAM SIDE OF MAIN LINE.

CONSTRUCTION NOTES
A. CONCRETE PIPE SUPPORTS SMALL EXTEND OUTSIDE OF MANHOLE TO BELL OF FIRST JOINT AND SHALL CRADLE PIPE TO SPRING LINE NOT APPLICABLE FLEXIBLE PIPE.
B. PIPE PENETRATION INTO MANHOLE SHALL BE FLUSH TO 3" MAX., MEASURED AT SPRINGLINE OF PIPE.
C. MANHOLE MAY BE CONSTRUCTED OF CONCRETE BLOCK, GR. MS BRICK, POURED CONCRETE OR PRECAST REINFORCED CONCRETE, IF BLOCK OR BRICK PLASTER INSIDE AND OUT WITH 1/2" MORTAR, SEE DWG. 2114 FOR DETAILS.
D. PRECAST REINFORCED CONCRETE ECCENTRIC CORE. THE CONTRACTOR SHALL PROVIDE SHOP DWG. FOR APPROVAL.
E. USE MAX., A COURSES GR. MS BRICK ON UNPAVED STREET FOR FUTURE AJD. OF FRAME TO PAVEMENT GRADE PLASTER INSIDE WITH 1/2" MORTAR.
F. BASE TO BE Poured IN PLACE USING NO. 4 BARS AT 6" O.C. EA. WAT FOR MANHOLE DEPTH OF 16" OR GREATER NO. 4 BARS AT 12" O.C. EA. WAT FOR MANHOLE LESS THAN 16' DEEP.
G. INVERT ELEVATION OF STUB OR LATERAL AS SHOWN ON PLANS.
H. 6" CRETE FILLET ON UPPER HALF OF PIPE AND AROUND BASE.
I. USE A 5" X 5" CONCRETE PAD IN ALL AREAS.
J. MANHOLE FRAME AND COVER, SEE DWG. 2110.
K. CONCRETE, SEE SECTION 101.
L. SLOPE 1' PER FT. FROM PIPE CROWN.
M. SHELF TO BE 9" WIDE MIN.
N. APPROVED WATERSTOP TO BE WITH TYPE OF PIPE.
O. STEPS TO BE INSTALLED AS PER SPEC. SECTION 920.
P. END (IN UNPAVED AREAS).
Q. IN UNPAVED AREAS SET FRAME TO GRADE AND SLOPE TOP OF PAD.
GENERAL NOTES

1. ALL MANHOLES 20' DEEP OR DEEPER WILL REQUIRE AN INTERMEDIATE LANDING IN THE MANHOLE BARRIER. TYPE "C" MANHOLE COVERS SHALL BE USED AS INTERMEDIATE LANDINGS.

2. INTERMEDIATE LANDINGS SHALL BE LOCATED AT THE MID POINT OR 2 FEET OF THE HEIGHT OF THE MANHOLE. AT NO TIME SHALL A INTERMEDIATE LANDING OR A SIDE ADJUSTMENT TOP BE INSTALLED CLOSER THAN 8' UP FROM THE INERT OF THE MANHOLE.

CONSTRUCTION NOTES

A. PRECAST REINFORCED CONCRETE MANHOLE COVER.
B. ALL BARS TO HAVE 1-1/2" MIN. COVER.
C. 1" PIPE SLIPSE INVERT AND THROUGH COVER.
D. TEE BAR NO. 4 BARS 6" O.C. EA. VAT FOR 4, 6, AND 8 FT. I.D. MANHOLE.
E. NO. 4 BARS.
F. BOTTOM BAR NO. 4 BARS 6" O.C. EA. VAT FOR 4 AND 6 FT. I.D. MANHOLE, NO. 6 BARS 6" O.C. EA. VAT FOR 8 FT. I.D. MANHOLE.
G. NO. 6 BARS FOR 4 AND 6 FT. I.D. MANHOLE.
H. WHEN PRECAST MANHOLE SECTIONS ARE USED, COVER SHALL BE MODIFIED TO SHAPE OF APPROPRIATE SIZE T AND G JOINT.
I. CONCRETE, SEE SECTION 101.

CITY OF ALBUQUERQUE
SEWER
CONC. MH COVER TYPE "C"
DWG. 2107
AUG.1986

REVISIONS
11-14-91
24" GENERAL NOTES:
1. STANDARD: 24" CAST IRON N.H. FRAME AND DUCTILE IRON COVER. WEIGHTS: COVER = 127 LBS., FRAME = 150 LBS. TOTAL = 277 LBS. (TOLERANCE ± 5%)
2. REFERENCE SPEC. SECTION 130.
3. ONLY PRODUCTS CAST IN THE USA WILL BE ACCEPTABLE

36" GENERAL NOTES:
1. STANDARD: 36" CAST IRON N.H. FRAME AND COVER. WEIGHTS: COVER = 355 LBS., FRAME = 315 LBS. TOTAL = 670 LBS. (TOLERANCE ± 5%)
2. REFERENCE SPEC. SECTION 130.
3. ONLY PRODUCTS CAST IN THE USA WILL BE ACCEPTABLE

CONSTRUCTION NOTES:
A. MACHINED OR GROUND BEARING SURFACES.
B. "SANITARY" CAST ON COVER TO IDENTIFY SANitary SEWER.
C. LETTER SIZE TO BE 1 1/4" IN HEIGHT RAISED LETTERING.
D. LETTER SIZE TO BE 3/4" IN HEIGHT RAISED LETTERING.
E. LETTER SIZE TO BE 3/8" MIN. IN HEIGHT RAISED LETTERING.
F. 3/4" DIA VENT HOLE REQUIRED.
G. GUSSETS OPTIONAL IF REQUIRED BY MANUFACTURER.
H. 2" LETTERS (RECESSED FLUSH).

REVENSIONS | WATER AUTHORITY
--- | ---
SEWER MANHOLE FRAME AND COVERS | JANUARY 2011

DRAWING 2109
24" GENERAL NOTES:
1. STANDARD 24" CAST IRON M.H. FRAME AND COVER.
   WEIGHTS: COVER = 180 LBS., FRAME = 145 LBS.
   TOTAL = 325 LBS. (TOLERANCE = ±5%)
2. REFERENCESPEC. SECTION 130.
3. ONLY PRODUCTS CAST IN THE USA WILL BE ACCEPTABLE.

36" GENERAL NOTES:
1. STANDARD 36" CAST IRON M.H. FRAME AND COVER.
   WEIGHTS: COVER = 355 LBS., FRAME = 315 LBS.
   TOTAL = 670 LBS. (TOLERANCE = ±5%)
2. REFERENCESPEC. SECTION 130.
3. ONLY PRODUCTS CAST IN THE USA WILL BE ACCEPTABLE.

CONSTRUCTION NOTES:
A. MACHINED OR GROUND BEARING SURFACES.
B. "STORM" CAST ON COVER TO IDENTIFY STORM DRAINAGE.
C. LETTER SIZE TO BE 1 1/4" IN HEIGHT RAISED LETTERING.
D. LETTER SIZE TO BE 3/4" IN HEIGHT RAISED LETTERING.
E. LETTER SIZE TO BE 3/8" MIN. IN HEIGHT RAISED LETTERING.
F. 3/4" DIA VENT HOLE REQUIRED.
G. GUSSETS OPTIONAL IF REQUIRED BY MANUFACTURER.
H. 2" LETTERS (RECESSED FLUSH).
I. LETTER SIZE TO BE 1" IN HEIGHT RAISED LETTERING.
GENERAL NOTES

1. ADJUSTMENT RING MADE FROM STANDARD ALUMINUM CASTING, ALLOY 319.

2. I.D., O.D. AND DEPTH SHALL BE MACHINED TO REQUIRED DIMENSIONS.

3. DUE TO VARYING EXISTING FRAME AND COVER SIZES, ALL DIMENSIONS MUST BE FIELD VERIFIED PRIOR TO MACHINING.

4. ALL EDGES OF RING SHALL BE LIGHTLY GROUND AFTER MACHINING TO REMOVE SHARPNESS AND BURRS.

5. COAT ALL SURFACES OF RING WITH CLEAR ACRYLIC RESIN AFTER MACHINING.

CONSTRUCTION NOTES

A. DIMENSION-DEPTH OF EXISTING COVER EDGE.

B. DIMENSION-RING O.D.-FRAME TO AT SEAT.

C. DIMENSION-RING I.D.-FRAME O.D. AT RIM.

D. DIMENSION-HEIGHT OF RING ADJUSTMENT.

E. EXISTING FRAME AND COVER SHALL BE CLEANED AND REUSED.

F. TAPER+1/2X(C-B).

G. EXISTING FRAME.

CITY OF ALBUQUERQUE

SEWER
MANHOLE COVER
ADJUSTMENT RING
DWG.2111

AUG.1986
CONSTRUCTION NOTES

A. VERTICAL DROP.
B. FLOW THE INVERT IN SHELF.
C. SLOPE, 1' PER FT.
D. MANHOLE TYPE FOR UPPER PORTION WILL BE SPECIFIED ON DESIGN PROFILE.
E. USE I.D. OR P.V.C. (SDR 35) PIPE THROUGHOUT DROP.
F. USE WELL AND SPIGOT 45° SLOPE OR LONG RADIUS BEND.
G. CONCRETE SUPPORT WIDTH EQUALS PIPE O.D. PLUS 6" MIRE EACH SIDE.
H. CONCRETE, SEE SECTION 101.
I. REINFORCED CONCRETE BASE, SEE CONSTRUCTION NOTE F. OF DWG. 2101, 2102.
J. FOR NEW DROP ON EXISTING MANHOLE CONSTRUCT 3 X 3 CONCRETE BASE BEFORE CONSTRUCTING DROP SUPPORT.
K. 4" ABOVE SPRING LINE OR AS SHOWN ON PLAN.
L. 8" MIN DIAMETER. 2-22 1/2" OR 1-45° ELBOW.
M. INTERIOR OR DROP MANHOLE MUST BE COATED WITH APPROVED SEALANT IN ACCORDANCE WITH SPEC. SECTION 920.4.
N. CORE DRILL FOR ALL WALL PERFORATIONS ON EXISTING MANHOLE.
O. CROSS OR TEE. A TEE MAY BE USED ONLY WHEN THE VERTICAL DROP IS INSUFFICIENT FOR THE VERTICAL PIPING ABOVE THE SEWER LINE TO ENTER THE BAXEL OF THE MANHOLE.
GENERAL NOTES

1. ALL SERVICE LINES SHALL CONFORM TO THE PLUMBING CODE OF THE CITY OF ALBUQUERQUE.

CONSTRUCTION NOTES

A. RIGHT-OFT-WAY LINE.
B. CENTER LINE SERVICE LINE.
D. ELECTRONIC MARKER DISC. COLORED CODED GREEN, PLACED ONLY IF SERVICE BOOK-UP IS POSTPONED.
E. STAMP ON CURB L Size "5" ON TOP OF CURB OVER LOCATION OF SERVICE LINE, MIN. 1/4" DEEP.
F. CURB AND CURTAN.
G. 22.5° OR 45° BEND.
H. CORE DRILLED, USING POLYMER QUICK-WAY SKILL SYSTEM, OR PILOT HOLE CURTAN SYSTEM OR APPROVED EQUAL.
I. SERVICE LINE SHALL NOT PROTRUDE INTO SEWER MAIN.
J. SANITARY EDGER TAPPING TEE, USING PICKER OR GENERAL ENGINEERING CO. SADDLES OR APPROVED EQUAL. DO NOT OVER TIGHTEN SADDLE BOLTS WHICH WOULD PREVENT FREE PASSAGE OF REQUIRED FLOWERS.
K. SERVICE LINE, (C.I. SOIL PIPE, SERVICE WEIGHT).
L. FLOG OR CAP.
M. GROUND LEVEL.
N. SAME ELEVATION OR HIGHER.
O. APPROXIMATELY 6" BUT DEPTH OF BURIAL SHALL NOT BE MORE THAN 6'.
P. BACKFILL UNDER SERVICE WITH MIN. 1 CUBIC FOOT OF P.C. CONCRETE ("BACKFILL' OR EQUAL ALLOWABLE THIS INSTALLATION).
GENERAL NOTES:
1. IF DISTANCE A IS 5' OR LESS, ROTATE MAIN SERVICE TEE AND RECONNECT SERVICE AS PER DETAIL I. IF A IS GREATER THAN 5' INSTALL RISER AS PER DETAIL II.
2. WHERE DEPTH IS INSUFFICIENT TO ALLOW RE-CONNECTION AS SHOWN IN DETAIL I OR II, RE-CONNECT SERVICE AS DIRECTED BY ENGINEER.

CONSTRUCTION NOTES:
A. VARIABLE WITH A MAX. OF 5'.
B. 7' MIN., 15' MAX.
C. ELBOWS, 45° DEFLECTION MAX.
D. INSTALL CONCRETE CRADLE ON TEE AS PER DWG. 2135, RIGID PIPE ONLY.
E. SERVICE TEE.
F. EXIST. SERVICE LINE.
G. VARIABLE LENGTH.
H. BACKFILL UNDER SERVICE WITH MIN. 1 CUBIC FOOT OF PC CONCRETE (SACKCRETE OR EQUAL ALLOWABLE IN THIS INSTALLATION.)

DETAIL I

DETAIL II
GENERAL NOTES:
1. RISERS WILL BE USED WHERE SEWER IS OVER 14 FT. IN DEPTH OR WHERE WATER TABLE IS ABOVE SEWER LINE. TOP OF RISER SHALL BE 10 FT. BELOW THE PAVEMENT OR GROUND SURFACE WHEN SEWER MAINS ARE INSTALLED DEEPER THAN 14 FT. OR SHALL BE 2 FT. ABOVE WATER TABLE.
2. BRACE RISER PIPE SECURELY BEFORE BACKFILLING. LAY EACH JOINT OF RISER PIPE AS BACKFILLING PROGRESSES. CAREFULLY TAMP BACKFILL AROUND EACH JOINT OF RISER PIPE. EXTREME CARE MUST BE TAKEN IN ORDER TO PREVENT SHOVING OF PIPE OUT OF PLUMB.
3. ELECTRONIC MARKER DISK SHALL BE PROVIDED OVER RISER AT A DEPTH OF APPROX. 4 FT. TO LOCATE PIPE.

CONSTRUCTION NOTES:
A. TAPPING TEE, FOR CONNECTION TO EXIST LINES WHERE NO EXIST. TEE IS AVAILABLE OR STD. PIPE TEE FOR NEW CONSTRUCTION. SEE NOTE K, DWG. 2135.
B. PROVIDE CONC. OR CLAY PLUG.
C. 4" OR 6" RISER, (C.I.P.)
D. WATER TIGHT GASKET PRESSURE RING JOINT.
E. CONC. CRADLE & SUPPORT.
F. CORE DRILLED TAP.

CITY OF ALBUQUERQUE
SEWER
RISER DETAILS
RIGID PIPE MAIN
DWG. 2135
AUG. 1996
1. THESE DETAILS REFER ONLY TO INSTALLATIONS ON FLEXIBLE PIPE MAINS. REFER TO OTHER APPROPRIATE STANDARDS FOR RIGID PIPE MAINS.

2. DETAIL "A" SHALL BE USED WHEN A TRENCH NOSE, SHROUD OR OTHER MEANS OF EXCAVATION HEADING IS USED; OTHERWISE IT SHALL BE THE CONTRACTOR'S OPTION TO USE EITHER DETAIL "A" OR DETAIL "B".

3. REFERENCE TO SPECIFICATION SECTION 905 FOR MATERIAL REQUIREMENTS.

4. TRENCH SLOPES SHALL BE AS PER THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS.
GENERAL NOTES:

1. WHERE A WATER LINE PASSES BENEATH OR LESS THAN 18 IN. ABOVE AN EXIST. SEWER LINE, THE SEWER LINE SHALL BE ENGAGED IN CONCRETE, 6" THICK AS DETAILED, FOR AT LEAST 10FT. ON EACH SIDE OF THE WATER LINE, OR THE SEWER LINE SHALL BE D.I. OR C-900 PVC PIPE WITH PRESSURE-TYPE JOINTS FOR AT LEAST 10FT. ON EACH SIDE OF THE WATER LINE. THIS SHALL ALSO APPLY WHERE A PARALLEL WATER LINE IS LESS THAN 10FT. HORIZONTALLY AND LESS THAN 2FT. ABOVE THE SEWER LINE.

CONSTRUCTION NOTES:

A. SANITARY SEWER LINE AS SHOWN ON PLANS.

B. 4-NO. 4 BARS, CONT. WITH 3" CLEARANCE.

C. NO. 4 BARS, AT 36" O.C.
GENERAL NOTES

1. PRIOR TO BACKFILLING, INVERT ELEVATION AND LOCATION WILL BE MEASURED. THIS INFORMATION WILL BE RECORDED ON AS-BUILT DWG.

CONSTRUCTION NOTES

A. EXISTING GROUND.
B. NEW PAVING.
C. SEWER LINE.
D. FLUSH
E. ELECTRONIC MARKER DISK, COLOR-CODED GREEN.
F. WARNING TAPE TO BE INSTALLED ON ALL SEWER LINES.

ELEVATION
### Table I

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<td>4 in.</td>
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<td>8</td>
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<td>0.0018</td>
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### Notes

1. This design is applicable for manholes 6.5 ft. & less in depth measured from floor to concrete cover. Depths greater than 6.5 ft. will require the 8" diameter, round manhole per DWG. No. 2151.

2. Industrial manhole shall be located on private property outside of city right-of-way. City personnel shall have access to the manhole at all times of the day or night.

3. Not all installations will require the aluminum platforms. Sampler and flow metering apparatus to be provided by the industrial user. Final decisions relative to the requirement for monitoring equipment and the specific type of flow will be made by the pretreatment unit, waste water division (873-7004) for each individual case.

4. A parshall flume or Palmer bowlus flume shall be furnished and installed in accordance with this detail. The flume must be so constructed as to accurately measure all anticipated flow levels. Prior to installation the flume size and type must be approved by the pretreatment unit, waste water division.

5. In order to control velocities at a level that allows for accurate flow measurement, slopes on the inlet sewer lines for 20 ft. outside the manhole must be as specified in Table I for the various size lines. Outlet sewer lines must be designed to convey the maximum design flows without creating a surcharged condition in the flume.

### Construction Notes

**A.** All manhole bases, riser sections and flat slab top sections shall be precast reinforced concrete in accordance with Spec. Section 920.4.2.

**B.** Frame and cover for non-traffic areas shall be Meenan R.6661 vs or equal for traffic or parking areas. It shall be Meenan R.6663 or on equal.

**C.** Manhole steps per city of Albuquerque Spec. Section 920.4.2.

**D.** Concrete pipe supports shall extend outside the manhole to the first joint and shall grade pipe to the spring line.

**E.** Prefabricated monitoring flume to be installed according to manufacturer’s recommendations and shall be manufactured by Manning, Plasti-Fab or approved equal. A Parshall flume or a Palmer bowlus flume shall be installed as directed by the pretreatment unit, waste water division 873-7004.

**F.** Concrete filllets. Filllets to match top of flume and slope one inch per foot.

**G.** Manhole pipe connections to be per ASTM C 923, Standard Spec. for resilient connectors between reinforced concrete manhole structures and pipes. Resilient connectors to be a local or approved equal.

**H.** 6 in. Grout filllet on upper half of pipe and around base.

**I.** Backfill per section 501.

**J.** In gravel crushed stone leveling course.

**K.** Flume outlet end adapter, Plasti-Fab or approved equal.

**L.** Slope per Table 1.
GENERAL NOTES

1. THIS DESIGN IS ONLY APPLICABLE FOR MANHOLES GREATER THAN 6.5 FT. IN DEPTH MEASURED FROM FLOOR TO CONCRETE COVER. DEPTHS 6.5 FT. WILL REQUIRE THE 6 FT. X 8 FT. RECTANGULAR MANHOLE DESIGN PER STANDARD DWG. NO. 2150.

2. INDUSTRIAL MANHOLE SHELLS BE INSURED ON PRIVATE PROPERTY OUTSIDE OF CITY RIGHT-OF-WAY. CITY PERSONNEL SHALL HAVE ACCESS TO THE MANHOLE AT ALL TIMES OF THE DAY OR NIGHT.

3. NOT ALL INSTALLATIONS WILL REQUIRE THE ALUMINUM PLATFORMS. SAMPLER AND FLOW METERING APPARATUS TO BE PROVIDED BY THE INDUSTRIAL USES. FINAL DECISIONS RELATIVE TO THE REQUIREMENT FOR MONITORING EQUIPMENT AND THE SPECIFIC TYPE OF FLUME WILL BE MADE BY THE PRETREATMENT UNIT, WASTE WATER DIVISION (873-7004) FOR EACH INDIVIDUAL CASE.

4. A PAVILLON FLUME OR PALMER BOWLS FLUME SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THIS DETAIL. THE FLUME MUST BE SIZED TO ACCURATELY MEASURE ALL ANTICIPATED FLOW LEVELS PRIOR TO INSTALLATION THE FLUME SIZE, AND TYPE MUST BE APPROVED BY THE PRETREATMENT UNIT, WASTE WATER DIVISION.

5. IN ORDER TO CONTROL VELOCITIES AT A LEVEL THAT ALLOWS FOR ACCURATE FLOW MEASUREMENT, SLOPES ON THE INLET SEWER LINE FOR 20 FT. OUTSIDE THE MANHOLE MUST BE AS SPECIFIED IN TABLE 1 FOR THE VARIOUS SIZE LINES. OUTLET SEWER LINES MUST BE DESIGNED TO CONVEY THE MAXIMUM DESIGN FLOWS WITHOUT CREATING A SUNKEN CONDITION IN THE FLUME.

CONSTRUCTION NOTES

A. ALL MANHOLE BASES, BISECT SECTIONS, AND FLAT SLAB TOP SECTIONS SHALL BE FIBER (REINFORCED CONCRETE) IN ACCORDANCE SPEC. SECTION 920.4.2.

B. FIBER REINFORCED CONCRETE GRADE ADJUSTMENT RINGS OR GRADE 5M BRICK AS REQUIRED FOR GRADE ADJUSTMENT. WHEN USING BRICK, PLASTER INSIDE WITH 1/8" OF NORAAR.

C. MANHOLE STEPS PER CITY OF ALBUQUERQUE SPEC. SECTION 920.4.7.

D. CONCRETE PIPE SUPPORTS SHALL EXTEND OUTSIDE THE MANHOLE TO BELL OR FIRST JOINT AND SMALL CARRY PIPE TO THE SPRING LINE.

E. PREFABRICATED MONITORING FLUMES TO BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND SHALL BE MANUFACTURED BY MANUFACTURING. PLASTIC-TAN OR APPROVED EQUAL. A PAVILLON FLUME OR A PALMER BOWLS FLUME SHALL BE INSTALLED AS DIRECTED BY THE PRETREATMENT UNIT, WASTE WATER DIVISION (873-7004).

F. CONCRETE FILLETS. FILLETS TO MATCH TOP OF FLUMES SLOPE ONE INCH PER FOOT.

G. MANHOLE PIPE CONNECTIONS TO BE PER ASTM C-932; STANDARD SPEC. FOR REINFORCED CONCRETE PIPE STRUCTURES AND PIPES. REINFORCED CONNECTORS BETWEEN REINFORCED CONCRETE MANHOLE STRUCTURES AND PIPES. REINFORCED CONNECTORS TO BE A 1/4" APPROVED EQUAL.

H. 6 IN. GROUT FILLET ON UPPER HALF OF PIPE AND AROUND BASE.

I. BACKFILL PER SECTION 501.

J. 2 IN. GRAVEL CRUSHED STONE LEVELING COURSE.

K. FLUME OUTLET END ADAPTED, PLASTIC-TAN OR APPROVED EQUAL.

M. SLOPE PER TABLE 1.

CITY OF ALBUQUERQUE

SEWER SAMPLING & METERING MANHOLE 8 FOOT DIAMETER

DWG. 2151 AUG 1986
GENERAL NOTES:
1. All compaction for installation of ARV manhole to be 95% of maximum dry density per ASTM D 1557.
2. Interior of manhole shall be coated in accordance with section 920.4.5.2 of the specifications.

CONSTRUCTION NOTES:
A. See construction plans for depth B.E.D.
B. 2" tapping saddle
C. APDC sewage air release valve of approved equal, model no. per construction plans and specifications
D. Cast iron manhole, frame and cover, see C.O.A. Std. Dwg. 2110
E. Conc. collar per C.O.A. Std. Dwg. 21461
F. Precast concrete flat top for manhole with 2'-0" dia. opening per C.O.A. Std. Dwg. 2107
G. Force main
H. 12" deep 3/4" gravel, ASTM C33, no. 57 gravel.
I. Compacted subgrade, overexcavated to 12" below foundation.
J. Use 4"-0" I.D. concrete manhole sections (per sec. 101), 4-03 concrete f = 4000 psi @ 28 days.
K. Additional sections may be added.
L. Finish grade in paved areas
M. Slotted opening 1" larger than force main with approved gasket. Grout interior and exterior of opening.
N. Location of lid
O. Concrete anti-floaction collar halves.

Sanitary Sewer
Air Release Valve detail
Dwg. 2160
January 2003

CITY OF ALBUQUERQUE
GENERAL NOTES:
1. ONLY HOUSES AND APARTMENTS WHOSE LOWER FLOOR ELEVATION ARE THE SAME SHOULD BE CONNECTED TO A COMMON VACUUM VALVE FIT INSTALLATION.
2. MULTIPLE FLOOR APARTMENTS EACH FLOOR SHOULD BE SERVED BY ITS OWN VACUUM VALVE FIT INSTALLATION.
3. NOT LESS THAN 20" BETWEEN SUCCESSIVE LIFTS.
4. LOWER PORTION OF VALVE FIT IS A WASTE HOLDING TANK.

CONSTRUCTION NOTES:
A. 4"x6", 6"x8" OR 8"x8" 3" OR 6"x6"x3" OR 8"x4"x3" CHECK VALVE.
B. 3" NCHD 40 PVC.
C. SLOPE; CONSULT DESIGN MANUAL.
D. LONG TURN 45° BENDS IN TWO POSITIONS.
E. DO NOT MAKE ANY INLET CONNECTIONS IN THIS AREA.
F. VALVE FIT NAME placement IMPORTANT: WYE SHALL BE IN VERTICAL POSITION.
G. DRAIN.
H. SPACING OF VACUUM SERVICE LATERALS

DIAGRAMMATIC OF BRANCH CONNECTION TO MAIN

NOT LESS THAN 20° OF BRANCH WITH 25 FALL PRIOR TO MAIN.

RECOMMENDED POSITIONS FOR CONNECTIONS TO MAIN
GENERAL NOTES:
1. GRAVITY LINES - IN ALL INSTALLATIONS, SEWAGE SHALL FLOW BY GRAVITY TO THE HOLDING TANK.
2. INSTALL GRAVITY LINES IN ACCORDANCE WITH CITY OF ALBUQUERQUE STANDARDS AND LOCAL CODES.

CONSTRUCTION NOTES:
A. 45° ELL
B.水平安装
C. VACUUM SEWER MAIN

GRAVITY SERVICE LINES
GENERAL NOTES:
1. UNLESS SHOWN ON CONSTRUCTION DRAWINGS, DIVISION VALVES WILL NOT BE INSTALLED FOR SERVICE CONNECTIONS.

CONSTRUCTION NOTES:
A. 45° EYELET.
B. DIVISION VALVE AS SHOWN ON CONSTRUCTION DWGS.
C. REDUCTION WYE @ 45°.
D. 22 1/2° EYELET.
E. MAIN LINE WYE @ 45°.
F. BOTTOM OF BRANCH IS AT TOP OF MAIN.
G. BOTTOM OF BRANCH IS 1” - 2" ABOVE TOP OF MAIN.
H. VACUUM MAIN.
J. ELECTRONIC WARRIER DISK 12” ABOVE TOP OF PIPE.
GENERAL NOTES:
1. ALL LIFTS EXCEEDING 5' MUST BE ACCOED TO HEAD LOSSES ON VACUUM MAIN AND SERVICE LINE TO DETERMINE IF SUFFICIENT VACUUM HEAD IS AVAILABLE.
2. ALL MATERIALS AND HARDWARE FOR INSTALLING VALVE TO BE FURNISHED BY CONTRACTOR. ALL INSTALLATION AND TESTING BY CONTRACTOR. EXCEPT VALVE TO BE INSTALLED BY OWNER. ALL PVC FITTINGS TO BE SEIZED EXCEPT WHERE NOTED. DRILL HOLE IN WALL FOR MOUNTING SCREEN FOR SUMP BREATHING.

CONSTRUCTION NOTES:
A. SUMP BREATHING ASSEMBLY
B. CONCRETE COLLAR PER C.O.A. STD. DWG. 2461.
C. CONCRETE MANHOLE SECTION.
D. 3" VACUUM SERVICE LINE.
E. GRANITY POT MUST BE LOCATED BETWEEN THE VACUUM SERVICE LINE AND THE START OF SLOPE TO SUMP. MIN. 4" Capacity Screen With Watcher Diameter Vent. Min. 20" from Tank.
F. STANDARD FLEXIBLE CONNECTIONS. ALL CONNECTIONS TO SURFACE TANK MUST BE WATER TIGHT.
G. 1-1/2" ID. PVC PIPE 1-1/2" LONG MAY BE USED TO FORM SUMP AREA.
H. MASS CONCRETE.
I. SEWER FRAME & COVER PER C.O.A. STD. DWG. 2110
J. PRECAST CONCRETE FLAT TOP FOR MANHOLE WITH 4-1/2" MAC OPENING.
K. 3" 1/2" MODEL VALVE BY ARVAC OR EQUAL.
L. 2" PVC SENSOR CAP SUPPLIED WITH VALVE.
M. 2" PVC SENSOR PIPE.
N. PRECAST CONCRETE BOTTOM IN MANHOLE SECTION.
O. 3" STREET ELL TOUCHING BASE OF SUMP WITH PLAIN END NO CONNECTION.
P. VALVE AND FITTING REMOVED FOR CLARITY.
Q. SENSOR PIPE.
R. VALVE CONNECTION.
S. LOCATION OF LF.
T. SENSOR PIPE.
U. VALVE CONNECTION.
V. LOCATION OF LF.
W. VENT FABRICATED WITH 90' ELLS. HEIGHT MUST BE ABOVE FLOOR LEVEL OF LOWEST REFERENCE LEVEL.
X. VENT INLET DETAIL

REVISIONS
CITY OF ALBUQUERQUE
VACUUM SEWER STANDARDS
SINGLE BREATHER TANK
30 GALLON PER MINUTE MAX. FLOW
DWG. 2167 JANUARY 2003
GENERAL NOTES:
1. ANY LIFT EXCEEDING 30" MUST BE ADDED TO HEAD.
   LOSSES ON VACUUM MAIN AND SERVICE LINE TO
   DETERMINE IF SUFFICIENT VACUUM HEAD IS AVAILABLE.
2. ALL MATERIALS AND HARDWARE FOR INSTALLING VALVES,
   TO BE PURCHASED BY CONTRACTOR ALLO INSTALLATION
   AND TESTING BY CONTRACTOR, EXCEPT VALVE TO BE
   INSTALLED BY OWNER. ALL PVC FITTINGS TO BE GLUED
   EXCEPT WHERE NOTED. DRILL HOLE IN WALL FOR
   MOUNTING SCREW FOR SUMP BREATHER.

CONSTRUCTION NOTES:
A. SUMP BREATHER ASSEMBLY (ONE PER VALVE).
B. 1-1/2" ID PVC PIPE 1-1/2" LONG MAY BE
   USED TO FORM SUMP AREAS.
C. MASS CONCRETE.
D. SEWER MANHOLE FRAME & COVER PER C.O.A
   STD. DWG. 2110.
E. CONCRETE COLLAR PER C.O.A STD. DWG. 2461.
F. PRECAST CONCRETE FLAT TOP FOR MANHOLE WITH
   2" T. TH. OR CAPS.
G. 2" PVC SENSOR CAP SUPPLIED WITH VALVE.
H. 2" PVC SENSOR PIPE.
I. PRECAST CONCRETE BOTTOM IN MANHOLE SECTION
J. 3" STREET FILL TOUCHING BASE OF SUMP WITH PLAIN
   END, NO CONNECTION.
K. VALVE AND PIPING REMOVED FOR CLARITY.
L. 18" DIAMETER SUMP (2).
M. LOCATION OF LS.
N. USE 4" ID CONCRETE MANHOLE SECTIONS.
   ADDITIONAL SECTIONS MAY BE ADDED TO ALLOW
   CONNECTION OF DEEP GRAVITY LINES OR FOR ADDED
   ADDED STORAGE CAPACITY.
O. 3" VACUUM SERVICE LINES MUST (EACH) CONNECT
   DIRECTLY TO A 2" MINIMUM SEPARATION AT MAIN
   SEWER LINES FITTED WITH STANDARD FLEXIBLE
   CONNECTIONS AT THE MOUTH IN THE MANHOLE SECTION
   TO INSURE THAT THE SUMP AND WATER TANK.
P. MINIMUM 6" GRAVITY LINE WITH MATCHING VENT.
   MINIMUM 20' FROM BUFFER TANK. CONNECT 6" LINE
   TO 10" X 6" REDUCER. CONNECT REDUCER TO 10"
   PIPE ENTERING MANHOLE. CENTER TO CENTER
   DIAMETER WALL 12" LINE SHALL BE FITTED WITH STANDARD
   FLEXIBLE CONNECTIONS. 2" HOLE TO INSURE THAT
   BUFFER TANK IS WATERPROOF.
Q. SHAPED SLIPPED CONCRETE TO DISTRIBUTE FLOW
   EVENLY BETWEEN SUMPS.
R. GRAVITY INLET MUST BE LOCATED BETWEEN THE
   VACUUM SERVICE LINE AND THE START OF
   SLOPE TO SUMP.
S. 3" TO MODEL VALVE, BY 8" PVC OR EQUAL
   TO BE INSTALLED BY OWNER.

CITY OF ALBUQUERQUE
VACUUM SEWER STANDARDS
DUAL BUFFER TANK
60 GALLON PER MINUTE MAX. FLOW
DWG. 2166 JANUARY 2003
**GENERAL NOTES:**

1. THESE NUTS AND SOCKETS ARE A PART OF THE VALVE STEM EXTENSION. SEE VACUUM DIVISION VALVE BOX (DWG. 2170)

**CONSTRUCTION NOTES:**

A. 2" LONG M.R. STEEL BAR, 2" x 2"
B. 2" O.D. STEEL CIRCLE W/ PENTAGON CIRCumscribed ABOUT CIRCLE
C. 1" DIAMETER, SCH 40 PIPE x 2" (1.315 O.D. x 1.049 I.D.)
D. DRILL .3/8 DIAMETER HOLE THROUGH PIPE FOR .31 DIAMETER CLEVIS PIN/COTTER PIN
E. 3-1/4"
F. 1" DIAMETER EXTENSION BAR, 6 FEET LONG, W/ HANDLE
G. 1" DIAMETER, SCH 40 x 2" (1.315 O.D. x 1.049 I.D.)
H. PENTAGONAL SHAPED x 1/4" M.R. STEEL PLATE 1/2 LARGER THAN TUBULAR SECTION BELOW
J. 2" LONG M.R. STEEL PENTAGONAL SHAPED TUBULAR SECTION x .110 WALL W/ .125 TOTAL CLEARANCE T0 EXTENSION NUT.

**SECTION A-A**

EXTENSION NUT

**SECTION B-B**

EXTENSION SOCKET
CONSTRUCTION NOTES:

A. RESIDENT COATED METAL GATE VALVE AS MANUFACTURED BY WATERSIL OR EQUAL SUPPLY WITH 2"-1/2 REED NUT PER C.O.A. STD. DWG. 2169.

B. RING
C. COVER
D. 10" O.D. REBAR OR CORRUGATED PVC OR PEX PIPE WITH SMOOTH INTERIOR, 3-300.
E. CONCRETE COLLAR. INScribe CONCRETE SURFACE WITH SIZE OF VACUUM LINE AND DIRECTION OF FLOW (MIN. 2" LETTERING) IN PAVED AREAS. INSTALL COLLAR FLUSH WITH PAVEMENT. IN UNPaved AREAS, INSTALL COLLAR BEHIND PAVEMENT, TOP OF CONCRETE 1" BELOW GRADE.
F. MEALUG, OR EQUAL RESTRAINING CLAD.
G. VACUUM MAIN LINE
H. VALVE ANCHORAGE PER CITY STD. DWG. 2333.
J. ASPHALT PAVEMENT WHERE SPECIFIED
K. VALUE EXTENSION SHALL BE INSTALLED ONLY WHEN INDIcATED ON THE PLANS OR DIRECTED BY THE ENGINEER. WHEN INSTALLED, DEPTH TO OPERATING NUT SHALL BE MAXIMUM 24" EXTEND 1/2 MIN. WHEN EXTENSION IS REQUIRED.
L. 9" O.D. X 1/4" STEEL PLATE CENTERING BULB WELD NEAR TOP OF SHAFT WHEN EXTENSION IS REQUIRED.
M. SECURE EXTENSION SOCKET TO VALVE NUT WITH 3/4" S.S. THRU-BOLT AND NUT...
GENERAL NOTES:
1. ALL COMPARTMENTS OF SUBGRADE AND AND BACKFILL FOR INSTALLATION OF VACUUM VALVE PIT TO BE RIDE OF MAXIMUM DRY DENSITY PER ASTM D 1557.
2. AVOID EXCESSIVE EXPOSURE TO SUNSHINE OR OPEN VACUUM VALVE PIT. CLOSE & COMPLETE WITHIN 3 DAYS TO UNEAS INTEGRITY OF RUBBER O-RING.
3. SEE C.O.A. STD. Dwg. 2165 FOR ADDITIONAL DETAILS.

CONSTRUCTION NOTES:
A. 23" SQUARE CONCRETE ANTI-FLOATION COLLAR; WITH #4 REBAR @ 2' O.C. @ 3' FROM EDGE OF CONC. SEE TABLE 1 FOR THICKNESS. CONCRETE PER Sec. 107, HYDRAULIC STRUCTURAL CONCRETE, F'=3000 psi @ 28 DAYS.
B. CLEARANCE BETWEEN CONCRETE COLLAR AND FRANKLIN FRP.
C. 30" DIA. OPENING @ TOP OF SLAB.
D. 35-1/2" DIA. OPENING @ BOTTOM OF SLAB.
E. INSTALL CONCRETE COLLAR PER C.O.A. STD. Dwg. 2469.
F. CAST IRON MANHOLE FRAME AND COVER; SEE C.O.A. STD. Dwg. 2110.
G. 1" CLEARANCE TO BOTTOM OF SLAB.
H. 3" THICK 3/4" GRAVEL, ASTM C33, NO. 57 GRAVEL.
I. COMPACTED SUBGRADE.
J. FINISH PAVING SURFACE.

TABLE 1

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<th>DESCRIPTION</th>
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<tr>
<td>30&quot; SUMP PACKAGE</td>
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<td>54&quot; SUMP PACKAGE</td>
<td>9 1/2&quot;</td>
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(SEE STD. DWG. 2165)
GENERAL NOTES:
1. All compaction of subgrade and subbase for installation of vacuum valve pit to be 95% of maximum dry density per ASTM D-1557.
2. Avoid excessive exposure to sunlight of open vacuum valve pit. Close & complete within 2 days to preserve integrity of rubber O-ring.
3. See C.O.A. Std. Dwg. 2165 for additional details.

CONSTRUCTION NOTES:
A. 60" square conc. anti-rotation collar with #4 rebar @ 6" e.w. 3" from edge of conc. See Table 1 for thickness. Concrete per Sec. 101 Hydraulic Structural Concrete, Fc=4000 psi @ 28 days.
B. Clearance between concrete collar and precast slab.
C. 35" dia. opening in top of slab.
D. 35-1/2" dia. opening in bottom of slab.
E. Install concrete collar per C.O.A. Std. Dwg. 2461.
F. Cast reinforcement frame and cover; see C.O.A. Std. Dwg. 2165.
G. 1" clearance to bottom of 3" lateral.
H. 3" thick 3/4" gravel, ASTM C33, No. 57 gravel.
I. Compacted subgrade.
J. Finish grade.

### TABLE 1

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(See Std. Dwg. 2165)
GENERAL NOTES:
1. BENTONITE COLLAR TO BE INSTALLED EVERY 250’ ALONG VACUUM SEWER RUN AND FORCE MAIN.
2. BENTONITE SEEPAGE COLLARS ARE FOR VACUUM SEWER MAINS AND FORCE MANS INSTALLED IN WARRIORS IRRIGATION RIGHT-OF-WAY OR AS SHOWN ON CONSTRUCTION DRAWINGS.
3. COST OF COLLARS IS INCIDENTAL TO PIPE CONSTRUCTION.

CONSTRUCTION NOTES:
A. 4”, 6”, 8” ON 12” VACUUM SEWER.
B. DEPTH PER PLANS.
C. FINISH GRADE.
D. 80 LB Bag of RED-WAX CONCRETE WITH CUT ON TOP.
E. BENTONITE SEEPAGE COLLAR; SEE SPECS. BELOW.
F. MIN. DISTANCE FROM 45° BENDS.
G. UNDISTURBED EARTH.
H. 5’’ COMPACTED SUBGRADE.
J. ELECTRONIC MARKER DECK, 12’’ ABOVE TOP OF PIPES.

BENTONITE SPECIFICATIONS:
HYDROGEL BENTONITE
BY WY-DEW, INC. OR APPROVED EQUAL

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MIX 80 LBS PER 100 GALLONS OF MAKE-UP WATER.
GENERAL NOTES:
1. ALL SOIL COMPACTION FOR INSTALLATION OF SERVICE WYE TO BE AT MAXIMUM DRY DENSITY PER ASTM D 1557.

CONSTRUCTION NOTES:
A. EXISTING VACUUM SEWER MAIN
B. SCHR. 40 PVC PIPE-LENGTH TO BE GREATER THAN COMPRESSION COUPLING
C. SOLVENT WELD AT SHOP
D. 3" BRANCH (FOR 3" LATERAL FROM VALVE)
   SEE C.O.A. STD. DWG. 2163.
E. SCHR. 40 PVC WYE (P x P x P)
   SEE C.O.A. STD. DWG. 2163.
F. COMPRESSION COUPLING AS PER CITY SPEC.
G. SLIDE COMPRESSION COUPLING OVER THIS PIECE OF PIPE BEFORE INSERTING IN TRENCH
H. SOLVENT WELD IN FIELD

PIPE CUT IN FIELD

COMPLETED INSTALLATION IN FIELD
GENERAL NOTES:
1. SEE CONSTRUCTION PLANS AND SPECIFICATIONS FOR SIZED TYPE AND SECTION CONFIGURATION (STANDARD, CENTERED AND RESTRAINED) AS SHOWN PER SECTION A-A.

CONSTRUCTION NOTES:
A. CARRIER PIPE
B. PIPELINE SUPPORT SKS (SEE CONSTRUCTION PLANS AND SPECIFICATIONS FOR SIZES AND MODEL NUMBERS).
C. STEEL CASING (SIZE AND THICKNESS PER CONSTRUCTION PLANS AND SPECIFICATIONS).
D. CASING END SEAL (SEE CONSTRUCTION PLANS AND SPECIFICATIONS FOR SIZES AND MODEL NUMBERS).

SECTION A-A

PLAN

(12") MAX. B JOINT CONNECTION (TYP.)

12" MAX. SPACING (TYP.)

MAX. AT END

CITY OF ALBUQUERQUE

REVIEWS

CASING DETAIL
FOR SIKE AND JACK VACUUM SEWER SYSTEM

DWG. 2180 JANUARY 2003

A

B

C

D
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<td>STORM INLET TYPE &quot;B&quot;</td>
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<tr>
<td>2250</td>
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(Revised 12/92, Update No. 4)
GENERAL NOTES:
1. SEE DWG. 2202 FOR TYPE "A" INLET SECTIONS.
2. FOR STORM INLET GUTTER TRANSITION, SEE DWG. 2207.
3. OUTLET PIPE SIZE, PER DESIGN REQUIREMENT.
4. FOR FRAME & GRATING, SEE DWG. 2216, 2220 & 2221.

CONSTRUCTION NOTES:
A. FOR STORM INLET DEPTHS GREATER THAN 4", INSTALL STD. STEPS, SEE DWG. 2229. STEPS ARE TO BE INSTALLED ON DOWNSTREAM FACE OF INLET.
B. NO. 4 BARS AT 6" O.C. EACH WAT.
C. CONCRETE FILL, MINIMUM SLOPE SHOWN IN SECTION A-A.
D. GRATE.

CITY OF ALBUQUERQUE
DRAINAGE
STORM INLET TYPE "A"
PLAN AND SECTION A-A
DWG. 2201
12-21-92
REV. A-96

SECTION A-A
FLOW
GENERAL NOTES:
1. SEE DWG 2201 FOR PLAN AND SECTION A-A.
2. GENERAL NOTES 2, 3 & 4 ON DWG 2201 ALSO APPLY TO THIS DWG.
3. FOR ANCHOR DETAIL, SEE DWG 2205.

CONSTRUCTION NOTES:
A. STORM INLET STEPS, SEE DWG 2204 FOR SPACING.
B. 1'-10" MIN UNLESS OTHER WISE DIRECTED.
C. NO. 4 BARS AT 6" O.C. EACH WAY.
D. CONCRETE FILL, MINIMUM SLOPES SHOWN IN SECTIONS.
E. NORMAL GUTTER.
F. GRATE FRAME.
G. INVERT ELEVATION PER DESIGN.
H. TOP OF CURB.
J. FLOWLINE.
K. ANGLE ANCHOR.

CITY OF ALBUQUERQUE
DRAINAGE
STORM INLET TYPE "A"
SECTIONS B-B, C-C, D-D & E-E
DWG. 2202
AUG 1986
GENERAL NOTES:
1. FOR STORM INLET GUTTER TRANSITION, SEE DWG. 2207.
2. OUTLET PIPE SIZE, PER DESIGN REQUIREMENT.
3. FOR FRAME & GRATING, SEE DWG. 2216, 2220 & 2221.
4. FOR ANCHOR DETAIL, SEE DWG. 2205.

CONSTRUCTION NOTES:
A. GUTTER TRANSITION.
B. BACK OF CURB.
C. TOP OF CURB.
D. NORMAL GUTTER LINE.
E. CONSTRUCTION JOINT.
F. 1"-10" MIN. UNLESS OTHERWISE DIRECTED.
G. SLOPE GRATE TO PAVEMENT GRADE.
H. INVERT PER DESIGN.
J. CONCRETE FILL, MINIMUM SLOPES AS SHOWN.
K. FOR STORM INLET DEPTHS GREATER THAN 4', INSTALL STD STEPS, SEE DWG. 2229.
L. EATING NO. 4 REBAR 18" INTO CURB ON EACH SIDE OF STORM INLET.
M. NO. 4 BARS AT 6" O.C.
N. ANCHOR.
P. 3 1/2" X 3 1/2" X 1 1/2" X 4'-4".
Q. 3 1/2" X 1 1/2" X 3'-4 3/8".
R. 4" X 3" X 1 1/2" X 5'-2".
S. FRAME & GRATE.
T. STEPS ON DOWNSTREAM FACE.

CITY OF ALBUQUERQUE
DRAINAGE
STORM INLET TYPE "B"
DWG. 2203
AUG. 1986

SECTION A-A
SECTION B-B
GENERAL NOTES:
1. FOR SINGLE GRATE TYPE STORM INLET DELETE CENTER SUPPORT AND MOVE ONE END WALL TO FORM NEW SINGLE GRATE INLET.
2. FOR STORM INLET GUTTER TRANSITION, SEE DWG 2207.
3. OUTLET PIPE SIZE, PER DESIGN REQUIREMENT.
4. FOR FRAME & GRATING, SEE DWG 2216, 2220 & 2221.
5. FOR ANCHOR SEE DETAIL.
6. FOR CENTER SUPPORT ASSEMBLY, SEE DWG 2215.

CONSTRUCTION NOTES:
A. GUTTER TRANSITION.
B. TOP OF Curb.
C. CENTER SUPPORT ASSEMBLY.
D. FLOWLINE.
E. CONSTRUCTION JOINT.
F. NORMAL GUTTER LINE.
G. 1'-10" MIN, UNLESS OTHERWISE DIRECTED.
H. FRAME AND GRATE.
I. INVERT OF OUTLET PIPE.
J. CONCRETE FELL, MINIMUM SLOPES AS SHOWN.
K. FOR STORM INLET DEPTHS GREATER THAN 4' 3.5" MAX, STD STEPS, SEE DWG 2229, DOWNSTREAM FACE.
L. EXTEND NO 4 REBARS 18" INTO CURB ON EACH SIDE OF STORM INLET.
M. NO. 4 BARS AT 6" O.C.
N. 3 1/2" X 3 1/2" X 1/2" X 4' - 0" FOR SINGLE GRATE TYPE "C" STORM INLET.
O. 3 1/2" X 3 1/2" X 1/2" X 7' - 6" FOR DOUBLE GRATE TYPE "C" STORM INLET.
R. ANCHOR.

CITY OF ALBUQUERQUE
DRAINAGE
STORM INLET DOUBLE "C"
DWG.2205

REVISIONS
12-21-92
AUG.1996
GENERAL NOTES:
1. FOR SINGLE GRATE TYPE STORM INLET, DELETE CENTER SUPPORT AND MOVE ONE END WALL TO FORM NEW SINGLE GRATE INLET.
2. STORM INLET GUTTER TRANSITION WILL BE SHOWN ON THE CONSTRUCTION PLANS.
3. OUTLET PIPE Size PER DESIGN REQUIREMENTS.
4. FOR FRAME & GRATINGS, SEE DWG 2216, 2220 & 2221.
5. FOR CENTER SUPPORT ASSEMBLY, SEE DWG 2215.

CONSTRUCTION NOTES:
A. FRAME & GRATE
B. CENTER SUPPORT ASSEMBLY
C. CUT ONE HORIZONTAL AND ONE VERTICAL BAR MAX. AT PIPE OPENING.
D. NO. 4 BARS A 6" O.C. EACH WAY.
E. USE STANDARD STEPS, SEE DWG 2229.
F. CONC. FILL, SEE NOTE C, DWG 2201.
G. INVERT PER DESIGN.
H. INSTALL STEPS ON DOWNSTREAM FACE.

CITY OF ALBUQUERQUE
DRAINAGE
STORM INLET DOUBLE "D"
DWG. 2206
12-21-92
AUG. 1995
GENERAL NOTES:
1. DETAILS FOR PLACING CATCH BASINS.
   STANDARD CURB AND GUTTER.

CONSTRUCTION NOTES:
A. STANDARD CURB AND GUTTER.
B. STRAIGHT GRADE.
C. EXPANSION JOINT.
D. TOP OF CURB.
E. FLOWLINE.
F. FOR FRAME & GRATE SEE DWG 2216, 2220
   & 2221.
G. DIRECTION OF FLOW.
H. POINT OF MEASUREMENT FOR TOP OF
   GRATE ELEVATION.
J. PROVIDE 5 FEET TRANSITION EACH SIDE
   OF CATCH BASIN, WHEN INSTALLING
   AT SAG POINT IN INSTALLATIONS
   OTHER THAN AT CURB RETURN.
GENERAL NOTES:

1. ALL BOLTS USED IN CENTER SUPPORT ASSEMBLY SHALL BE 1/2.
2. FRAME MAY BE RIVETED OR WELDED.
3. BOLTS (NOT RIVETS OR WELDS) SHALL BE USED TO JOIN TWO OR MORE FRAMES TOGETHER AND TO THE W BEAM.
4. AFTER CLEANING SURFACE OF SCALE, RUST, ETC., GRATING, FRAME AND CENTER SUPPORT SHALL BE PAINTED WITH ONE SHOP COAT RED OXIDE, TWO FINISH COATS ALUMINUM PAINT (AASHTO M 69).
5. FOR SINGLE TYPE CATCH BASIN, MOVE ONE END WALL TO FORM NEW SINGLE GRADE CATCH BASIN.

CONSTRUCTION NOTES:

A. 4" X 5" X 7/8" X 36 1/2 X 2.
B. 3 1/8" X 3" X 7/8" X 40 1/2 X 2.
C. 5 X 5 W 18.5 FLANGE BEAM, FOR CATCH BASIN TYPE DOUBLE "C".
D. 5 X 5 W 18.5 FLANGE BEAM, FOR CATCH BASIN TYPE DOUBLE "D".
E. 1/2 BOLTS, WITH NUTS TO SECURE ANGLE TO BEAM.
F. FOR FRAME & GRADE SEE DWS. 2216, 2220, 2221.

CITY OF ALBUQUERQUE

DRAINAGE
STORM INLET
CENTER SUPPORT ASSEMBLY
DWG. 2215

AUG. 1986
GENERAL NOTES:
1. ALL EXPOSED METAL PARTS SHALL BE PAINTED PRIOR TO ASSEMBLY, WELDING, MACHINING AND DRILLING SHALL BE DONE PRIOR TO PAINTING. ALL DIMENSIONS ARE FINISH DIMENSIONS.
2. ALL PARTS SHALL BE OF STRUCTURAL STEEL, GRADE 56.
3. FOR CLEANING AND PAINTING OF FRAME SEE DWG. 2215, GENERAL NOTE NO. 4.
4. FRAME MAY BE WELDED OR RIVETED.

CONSTRUCTION NOTES:
A. 4" x 3" x 1/2" x 3'-1/2" @.
C. 4'-1/2" x 8" BOLTS WITH SQUARE HEAD & NUT AT EACH CORNER. FOR ANCHORING FRAME INTO CONCRETE WALL.
D. 3'-1/2" x 3" x 3'-0" x 3'-0" @.

CITY OF ALBUQUERQUE
DRAINAGE
STORM INLET FRAME
DWG. 2216
AUG.1966
GENERAL NOTES:

1. ALL BARS SHALL BE STRUCTURAL GRADE STEEL, GRADE A36.

2. THE GRATE SHALL BE WELDED WITH 1/8" FILLET WELD AROUND BOTH SIDES OF CROSS BARS, 1/4". FILLET WELD BOTH SIDES OF BEARING BARS TO END BARS.

3. AFTER CLEANING SURFACE OF SCALE, RUST, OILS, ETC., PAINT GRATE WITH ONE SHOP COAT RED OXIDE, TWO FINISH COATS ALUMINUM PAINT (AASHTO M 69).

4. TOP OF CROSS BARS SHALL BE FLUSH WITH TOP OF GRATE.

5. GRIND WELDS FLUSH WITH BEARING BARS.

6. WHEN INSTALLED IN FRAME, PUSH TIGHT TO ONE SIDE, OTHER SIDE SHALL HAVE 1/2" MAX. OPENING. SPACERS WELDED TO FRAME MAY BE USED IF REQUIRED TO KEEP 1/2" SPACE OR LESS.

CONSTRUCTION NOTES:

A. BEARING BARS, (13) 1/2" X 3 1/2" X 39".

B. END BARS, (2) 1/2" X 3" X 25".

C. CROSS BARS, (7) 1/2" OIA. X 24."
GENERAL NOTES:
1. ALL FITTINGS TO BE COMPATIBLE WITH C.M.P.
2. SPECIAL END CAPS AS (MANUFACTURED BY ARMCORP OR APPROVED EQUAL.) TO BE INSTALLED AT UPSTREAM ENDS OF DRAIN PIPE.
3. GRATE OPENING TO BE BLOCKED DURING CONSTRUCTION TO PREVENT DEBRIS FROM ENTERING DRAIN.

CONSTRUCTION NOTES:
A. SURFACE CONFIGURATION TO CONFORM WITH STANDARD CURB & GUTTER.
B. TOE OF GUTTER.
C. STANDARD CITY CURB & GUTTER AS SPECIFIED ON PLANS.
D. PAVEMENT.
E. SLOTTED DRAIN AS MANUFACTURED BY ARMCORP OR APPROVED EQUAL.
F. SUB BASE MATERIAL COMPACTED TO 95% MODIFIED PROCTOR.
G. UNDISTURBED EARTH.
H. BACK OF CURB.
I. GRATE AT FLOW LINE.
J. SOLID WEB SPACERS AT 6" O.C.

PLAN
12", 15" OR 18" SLOTTED DRAINS

ISOMETRIC

12" PIPE
15" PIPE
18" PIPE

SECTIONS A-A
GENERAL NOTES:

1. ALUMINUM STEP, ALCOA NO 12653A OR APPROVED EQUAL.
2. ALTERNATE STEP SHALL BE POLYPORENE - MOLDED OVER 1/2" STEEL REINFORCEMENT MODEL NO. 5S-2-PPS, M.A. INDUSTRIES INC., OR APPROVED EQUAL.
3. STORM INLETS: INLETS GREATER THAN 4" DEEP SHALL HAVE STEPS INSTALLED IN DOWNSTREAM FACE OR INLET WALLS. STEPS SHALL PROTRUDE 7" FROM THE WALL AND BE CENTERED 12" FROM FACE OF CURB. STEPS SHALL BE 12" APART, WITH THE TOP STEP 6" TO 18" FROM TOP OF CURB AND THE BOTTOM STEP NO MORE THAN 16" ABOVE THE CONCRETE FILL IN THE BOTTOM OF THE INLET.
4. DRAINAGE CHANNELS: CHANNELS SHALL HAVE STEPS FOR ACCESS AND RESCUE INSTALLED PER DETAILS ON DWG. 2561. STEPS SHALL BE INSTALLED ON BOTH SIDES OF THE CHANNEL AND SHALL BE LOCATED IMMEDIATELY BEFORE THE INLET AND AFTER OUTLET TRANSITIONS FOR CROSSING STRUCTURES OR AS NOTED ON THE PLANS.

CONSTRUCTION NOTES:

A. 1/2" GRADE 60 STEEL REINFORCEMENT.
GENERAL NOTES:
1. WHEN PLACING DRAIN THROUGH EXISTING CURB, REMOVE AND REPLACE ENTIRE STONE OF CURB AND GUTTER.
2. THE CITY DOES NOT ACCEPT RESPONSIBILITY FOR MAINTENANCE FOR ANY DRAIN LINES INSTALLED BY OR FOR PRIVATE PROPERTY OWNERS.

CONSTRUCTION NOTES:
A. DRAIN, D.I. OR SCH. 40 P.V.C. PIPE, 4" NOM. SIZE (MAX.) TO PROPERTY.
B. 2-NO. 3 BARS, 2'-4" LONG, PLACED AS SHOWN.
C. COLD JOINT.
D. DISTANCE FROM 6 OF DRAIN TO NEAREST JOINT, VARIABLE WITH 18" MIN.
E. SLOPE 1/2 PER FT. WITHIN R.O.W.
F. DRAIN PIPE NOT TO PROTRUDE BEYOND CURB FACE.
G. JOINT NEAREST TO DRAIN TO BE AN EXPANSION JOINT.
GENERAL NOTES:

1. PLACING OF DRAIN THRU EXIST. SIDEWALK AND CURB & GUTTER REQUIRE THAT ENTIRE SIDEWALK AND CURB & GUTTER BE REMOVED AND REPLACED AS DETAILED HEREIN.
2. BOTTOM SLAB OF CULVERT SHALL BE Poured MONOLITHICALLY WITH NEW CURB.
3. THE INVERT SHALL BE TREAT'ED TO PRODUCE A HARD POLISHED SURFACE OF MAX DENSITY AND SMOOTHNESS. INVERT SHALL BE V-SHAPED TO WITHIN 3' OF OUTLET, THEN WRAPPED TO PARALLEL FLOWLINE AT OUTLET, UNLESS OTHERWISE SHOWN.
4. ALL EXPOSED CURB SURFACE SHALL MATCH GRADE, COLOR, FINISH AND SCORING OF ADJACENT CURB AND SIDEWALK.
5. SIDEWALK REPLACED DURING CONSTRUCTION SHALL BE Poured MONOLITHICALLY WITH CULVERT WALLS.
6. IF EOD ANCHORS ARE USED, DRILL & TAP FOR H.N. MACHINE SCREW. ATTACH ANCHORS TO PLATE AND SECURE PLATE IN PLACE PRIOR TO POURING OF WALLS.
7. LENGTH OF EACH PLATE SHALL BE SUCH THAT THE WEIGHT WILL NOT EXCEED 300 LBS, AND SHALL BE STRESS RELIEVED AFTER FABRICATION, CLEAN SURFACE OF PLATE AND FRAME, HAMMER AND PAINT W/ ONE COAT RED OXIDE AND TWO FINISH COATS ALUMINUM PAINT.
8. THE CITY WILL NOT ASSUME RESPONSIBILITY FOR MAINTENANCE OF ANY SIDEWALK CULVERT INSTALLED BY OR FOR PRIVATE PROPERTY OWNERS.

CONSTRUCTION NOTES:

A. MATCH NEAREST CONTROL JOINT, INSTALL 1/2" EXPANSION JOINT.
B. EDGE OF SIDEWALK OR SETBACK (VARIABLE).
C. 3" RADIUS (TYPICAL).
D. 3/4" CHECKERED STEEL PLATE (PAINT PER NOTE F. ABOVE).
E. FOR SECURING PLATE USE 1" X 5" S.S. ROD ANCHOR, "RED HEAD MULTI-SET 11 SW-330 ANCHOR" OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S INSTRUCTIONS AT MAX. 24" O.C., A MINIMUM OF 2 PER SIDE AND ONE WITHIN 5" OF EACH END.
F. CONSTRUCTION JOINT IS OPTIONAL. IF USED SPACE DWELLS AT 10" O.C. MAX. 1 1/2" MINIMUM FROM FACE OF CONCRETE.
G. 3/8" - 16 X 1 1/4" COUNTERSUNK, F.N., STAINLESS STEEL MACHINE SCREW.
H. SLOPE 1/4" PER FT. MIN.
I. DRAIN WIDTH PER PLAN (12" MIN., 24" MAX).

CITY OF ALBUQUERQUE
DRAINAGE SIDEWALK CULVERT WITH STEEL PLATE TOP DWG. 2236 AUG. 1986
GENERAL NOTES:

1. THE CITY DOES NOT ACCEPT RESPONSIBILITY FOR MAINTENANCE FOR ANY DRAIN LINES INSTALLED BY OR FOR PRIVATE PROPERTY OWNERS.

2. FOR DOUBLE "C" OR "D" STORM INLETS THE PRIVATE DRAIN LINE CONNECTION MUST BE ALIGNED WITH THE LONGITUDINAL CENTER OF EITHER GRATE FRAME.

CONSTRUCTION NOTES:

A. CORE DRILL INTO BACK OF EXIST. CATCH BASIN WITH INVERT OF DRILLED OPENING 2" ABOVE EXIST. CONC. FILL. GROUT WITH NONSHRINK, NONMETALLIC GROUT.

B. NEW DRAIN LINE TO BE SCH. 40 P.V.C., REIN. CIRC. OR DUCTILE IRON PIPE. DRAIN SIZE TO BE AT LEAST ONE SIZE SMALLER THAN OUTLET PIPE WITH A MAX. SIZE OF 4".

C. EXIST. CONC. FILL.

D. SLOPE .02 FT./PER FT. MIN. WITHIN R.O.W.

E. FRAME A GRATE.
GENERAL NOTES:
1. FOR SLEEVE, USE GATES NO. 37 W WATER HOSE, DISCHARGE HOSE OR EQUIVALENT I.D. 6.825 IN. O.D. 7.29", 6 PLY WITH BLACK NEOPRENE COVER.
2. WELDS ARE TO BE GROUND SMOOTH.
3. EXPOSED STEEL AND SLEEVE TO BE PAINTED WITH AN OIL BASE ALKYD PRIMER AND AN OIL BASE ALKYD ENAMEL TOP COAT. COLOR TO BE BRIGHT YELLOW.

CONSTRUCTION NOTES:
A. 4" NOMINAL DIA. SCHEDULE 40 GALV. STEEL PIPE, 2'-0" TO BE FILLED W/CONC. PAINT PIPE BRIGHT YELLOW ABOVE FINISHED GRADE.
B. PAVEMENT OR FINISHED GRADE.
C. CONC. COLLAR, 5000 PSI AT 28 DAYS, W/SMOOTH OR BROOM FINISH WHERE PAVEMENT IS ADJACENT.
D. 5" NOMINAL DIA. SCHEDULE 40 GALV. STEEL PIPE, 3'-0" TO BE FILLED W/CONC. TO LEVEL SHOWN.
E. 6" NOMINAL DIA. SCHEDULE 40 GALV. STEEL PIPE, 2'-6" PAINT PIPE BRIGHT YELLOW (REMOVABLE).
F. 6" NOMINAL DIA. SCHEDULE 40 GALV. STEEL PIPE, 2'-0" (REMOVABLE).
G. SLEEVE, 2'-2" PAINT BRIGHT YELLOW, SEE NOTE NO. 1 THIS SHEET.
H. 2" WIDE REFLECTIVE TAPE, AS APPROVED BY ENGINEER, LOCATE AROUND PIPE AS SHOWN.
I. 1/4" THICK STEEL, SAFETY GUARD BOX, OPEN ON ONE SIDE & BOTTOM WELD ALL SEAMS.
J. 3/4" X 8" GALV. HEX. BOLT W/3/8" DIA. HOLE FOR PADLOCK (PADLOCK FURNISHED BY CITY).
K. 1/4" X 6 5/8" DIA. GALV. STEEL PLATE COVER, WELDED TO PIPE.
M. PLACEMENT OF POSTS SHOULD BE WELL AWAY FROM TRAFFIC ON MAJOR ROADWAYS & PREFERABLY AT THE R.O.W. LINE. TRAFFIC ENGINEERS SHOULD BE CONSULTED ON LOCATION WHEN NEAR TRAFFIC.
N. ALIGN WITH TRAFFIC FLOW IN EASEMENTS OR BIKEPATH TO AVOID TRIPPING HAZARDS WITH BOX.
P. PIPES ARE NOT TO BE FILLED W/CONC. WHEN PIPES ARE LOCATED WITHIN 15' OF STREET FLOWLINE. USE WELDED STEEL CAP INSTEAD.
Q. WHERE CONNECTING BOLLARDS ARE SPECIFIED, WELD 1/4" NOM. SCH. 40 PIPE BETWEEN BOLLARDS.

CITY OF ALBUQUERQUE
DRAINAGE STATIONARY & REMOVABLE POST DETAILS DWG. 2250 AUG 1986
GENERAL NOTES:

1. ALL WELDED AND CUT AREAS TO BE CLEANED THOROUGHLY WITH A WIRE BRUSH AND OR SAND BLAST AND REDAVERSALIZ.

2. REGALVANIZING SHALL BE WITH SHERWIN WILLIAMS ZINC CLAD 7 PRIMER OR EQUAL.

CONSTRUCTION NOTES:

A. 2" NOMINAL DIA. GALV. PIPE, MIN. WEIGHT PER FT. 3.65 LB.

B. 4" DIA. BLACK STEEL PIPE, MIN. 10.79 LB./FT.

C. CONC. FILLED, PAINT W/2 COATS ALUM. PAINT.

C. 5" DIA. BLACK STEEL PIPE, MIN. 14.62 LB./FT.

D. BUTT WELD ALL AROUND.

E. CONCRETE ROUNDED AT TOP OF POST.

F. 2" X 4" DIA. STEEL PLATE.

G. 2" STEEL PLATE FLANGE.

H. REFLECTIVE SIGN STATING, AUTHORIZED VEHICLES ONLY, WILL BE PROVIDED AND INSTALLED BY CITY.

J. STOP CONC. IN PIPE AT THIS POINT.

K. 2" SQ. STEEL BAR FOR HINGE SUPPORT: POSITION BAR TO ALLOW UNRESTRICTED GATE ROTATION THROUGH ENTIRE SWING OF GATE OPENING.

L. 1" DIA. FINGER HOLE.

M. MAKE A 3" X 4" CUT IN PIPE.

N. 3,000 PSI AIR ENTRAINEMENT FLY ASH CONC.

P. WELD ALL 2" PIPE & FIXTURE CONNECTIONS WITH <2 FILLET ALL AROUND.

Q. 1/2 X 5/8 SLOT FOR STEEL PLATE FLANGE.
GENERAL NOTES:
1. GATE TO BE USED AS SPECIFIED ON CONSTRUCTION DRAWINGS FOR DRAINAGE EASEMENT BARRIERS, SEE DWG. 2251 OR DWG. 2253.
2. SINGLE LEAF GATES WILL BE USED ON OPENINGS OF 12' OR LESS. FOR OPENINGS OF MORE THAN 12', DOUBLE LEAF GATES SHALL BE USED, WITH A CENTER LOCK POST INSERTED IN A PIPE SLEEVE IN CENTER OF DRAWING.
3. DIMENSIONS ABOVE OR BELOW GRADE LEVEL WILL BE ON CONSTRUCTION DRAWINGS. IF NONE ARE NOTED, MESHD TO PLUSH WITH GRADE LEVEL.
4. ALL METAL ITEMS, INCLUDING PIPE, SHALL BE GALV. STEEL. ALL PIPE SHALL BE NOMINAL SIZE, SCH. 40.

CONSTRUCTION NOTES:
A. GATE LATCH WITH VANDAL PROOF SKEWED & PINLOCK (PINLOCK TO BE FURNISHED BY THE CITY).
B. 2 3/8" TRUSS RODS, WELDED AT CORNERS.
C. 3 1/8" TREATED TRUSS RODS AND BRACKET ATTACHMENT.
D. 3/8" NO. 9 GAUGE CHAIN LINK GATE WIRE FABRIC.
E. STEEL TENSION BANDS AT 18" OR LESS O.C.
F. BRACE, 1 1/4" DIA., WELDED TO FRAME.
G. GATE FRAME, 2" DIA. (2.375 O.D.) WELDED.
H. MALLEABLE ACORN CAP.
I. 4" J-BOLT, TREATED.
J. 3 1/2" GATE POST (4" O.D.) WITH WELDED STEEL CAP.
K. TENSION BAR 1/4" X 3/4".
L. GATE ELAPD.
M. 12" DIA. HOLES, FILLED WITH PORTLAND CEMENT CONC.
N. CORNER POST 2 1/2" DIA. (2.875 O.D.).
O. LINE POST 2" DIA. (2.375 O.D.).
P. TOP AND BRACE RAILS 1 1/4" DIA. (1.640 O.D.).
Q. WIRE REINFORCEMENT, 9 GAUGE, INSTALL 3" ABOVE BOTTOM OR FABRIC.
R. TRUSS ROD 3/8" DIA.
S. FABRIC SHALL BE TACK WELDED TWO PLACES TO EACH TENSION BAR AND THREE PLACES TO ALL TOP AND BRACE RAILS BETWEEN POSTS.
T. ALL NUTS, BOLTS, AND OTHER CONNECTIONS SHALL BE TACK WELDED.
U. WIRE TIES, 9 GA. GALV. STEEL AT 18" O.C.
GENERAL NOTES:
1. WELDS TO BE CONTINUOUS ALL AROUND, 3/32" FILLET, TYPICAL FOR GATE TUBES AND GUSSETS.
2. REMOVE SLAG AND BURRS AFTER FABRICATION.
3. CITY TO FURNISH LOCK.
4. FINISH AS SPECIFIED BY THE PLANS. 1" NO FINISH SPEC'D, THEN PAINT WITH ONE SHIP COAT OF ZINC RICH PRIMER AND TWO COATS OF ALUMINUM PAINT. (AASHTO M-69)

CONSTRUCTION NOTES:
A. 4" STEEL POST W/ WELDED CAP ON TOP, FILL W/ CONC. TO BOTTOM OF LOCK POCKET.
B. LOCK POCKET B/GATE LATCH Per DETAIL, THIS DWG.
C. 2" x 2" @ STEEL TUBING x 1/8" WALL THICKNESS, VERTICAL FRAME, W/ 1/8" PLATE. CAP WELDED TO TOP.
D. 3/4" x 3/4" @ STEEL TUBING x 1/16" WALL THICKNESS @ 6" O.C. MAX.
E. 4" SCHEDULE 40 STEEL POST CONC. FLOOLED.
F. SLEEVE HINGES Per STD. DETAIL DWG 2251.
G. 2" x 2" @ STEEL TUBING x 1/8" WALL THICKNESS FOR HORIZONTAL.
H. 6" x 6" x 1/8" GUSSET PLATE B, 4 PLACES.
J. SAWCUT 1" MIN.
K. CONCRETE CHANNEL Per STD. DETAIL DWG.
L. 1 1/2" DIA. CONCRETE FINISH TOP TO MATCH CHANNEL SURFACE.
M. DRILL HOLE IN FIELD TO PROVIDE 1/8" MAX. "SLOP"
N. 1/8" STEEL STOP PLATE.
O. 1/8" STEEL GUSSET PLATE.
Q. 3/4" RADIUS.
R. 3" x 3" x 3/8" ANGLE "I" 5/8" LONG.
S. 2" @ TUBING.
T. 5/8" SLOT, ±75° OF POST CIRCUMFERENCE.
U. 4 X 1/8" FINGER HOLE, 1" ABOVE LOCK SLOT B.
V. 3" WIDE, x 4" HIGH @ ACCESS HOLE, LOCK POCKET TOP OF HOLE 1" BELOW LOCK SLOT, T.
GENERAL NOTES:

1. CHANNEL DEPTHS EXCEEDING 2'-0" WILL REQUIRE SEPARATE DESIGN FOR FLOOR AND
WALLS.

2. TYPE B LINING WILL BE USED ONLY WHERE NO UTILITIES ARE LOCATED OR PROPOSED.

3. UP TO 16'-0" WIDTH USE 4" INVERTED CROWN, 16'-0" WIDTH AND OVER USE 6" INVERTED CROWN.

4. WARNING: THESE WALLS ARE NOT DESIGNED TO SUPPORT THE ADDITION OF GARDEN OR
RETAILING TYPE OF WALLS. A SEPARATE DESIGN MUST BE SUBMITTED FOR THE
ENGINEER'S APPROVAL IN SUCH INSTALLATIONS.

5. THE OUTSIDE OF DRAINAGE WALLS SHALL NOT EXTEND BEYOND EASEMENT LINES OR
RIGHT-OF-WAY LINES.

6. UNLESS OTHERWISE DETAILED ON PLANS, ISOLATE UPSTREAM AND DOWNSTREAM ENDS OF
LINING FROM OTHER STRUCTURES AND FACILITIES USING THE EXPANSION JOINT
DETAIL, THIS SHEET.

7. 6" CONC. BLOCK WITH CORES FILLED WITH
CONC. AND NO. 4 REBARS INSERTED INTO
CORES AT 1'-6" O.C., MAY BE SUBSTITUTED
FOR FORMED CONC. WALLS.

CONSTRUCTION NOTES

A. EXPANSION JOINT, SEE DETAIL BELOW.

B. NO. 4 REBARS AT 6" O.C. LONG. AND 12" O.C. TRANSVERSE.

C. 6" COMPACTED SOIL 95% PER ASTM D 1557.

D. WIDTH OF CHANNEL.

E. URETHANE PRIMER AND SEALANT.

F. POLYETHYLENE FOAM FILLER TO DEPTH OF SLAB.

G. KEYED CONSTRUCTION JOINT, SEE DETAIL
BELOW.

H. WALL SURFACE.

J. CHANNEL SURFACE.
GENERAL NOTES:

1. CHANNEL DETAILS TO BE DEVELOPED AND SHOWN ON THE CONSTRUCTION Dwg.s FOR EACH SPECIFIC PROJECT DETAILS SHOWN HERE ARE INTENDED TO CONVEY SOME OF THE SAME CHANNEL CRITERIA THAT IS CONTAINED IN CHAPTER 22, SECTION 2, PART D OF THE DEVELOPMENT PROCESS MANUAL.

2. NEW CHANNEL CONSTRUCTION SHALL INCLUDE STATIONING, PAINTING ON CHANNEL AS SHOWN ON PLANS (200 FT. STATIONS TYPICAL).

3. WATER LEVEL DEPTH MARKS SHALL BE PAINTED AND LADLED ON BOTH SIDES OF CHANNEL IMMEDIATELY UPSTREAM AND DOWNSTREAM OF ANY CHANNEL STRUCTURE AS SHOWN ON PLANS.

CONSTRUCTION NOTES:

A. THICKNESS AS SPECIFIED ON CONSTRUCTION Dwg.s FOR CHANNEL BOTTOM AND SIDE SLOPE.

B. EXPANSION, CONTRACTION AND CONSTRUCTION JOINTS SHALL COMPLY WITH SECTION 602 AND AS APPROVED BY THE ENGINEER. WHERE SAW CUT JOINTS ARE PROVIDED, A JOINT SEALANT SHALL BE REQUIRED.

C. LONGITUDINAL STEEL AREA .005 TIMES CONCRETE AREA.

D. TRANSVERSE STEEL AREA .0025 TIMES CONCRETE AREA.

E. ACCESS AND RESCUE STEPS SHALL BE INSTALLED ON BOTH SIDES OF THE CHANNEL IMMEDIATELY BEFORE AND AFTER THE INLET AND OUTLET TRANSITION OF CHANNEL STRUCTURES. SEE Dwg. 2229 FOR STEPS DETAIL.

F. BOTTOM STEP APPROXIMATELY 18" VERTICAL ABOVE INVERT.

G. NEW CONCRETE CHANNEL LINING.

H. CHANNEL LINING SHALL BE PLACED WITH A CENTERLINE INVERT. THE CHANNEL BOTTOM SHALL HAVE A TRANSVERSE SLOPE OF 2% FROM EACH SIDE TO THE INVERT AT CENTERLINE.

I. NATIVE MATERIAL (USE AS SPECIFIED) COMPACTED TO 95% PER ASTM D-3557.

CITY OF ALBUQUERQUE

DRAINAGE CHANNEL DETAILS

DWG. 2261

REVISIONS
6/15/92

AUG 1986
CROSS SECTION DETAIL OF REPLACEMENT OR
NEW EXPANSION JOINT WITH CONCRETE SLEEPER

GENERAL NOTES:
1. EXPANSION JOINT WITH SLEEPER SHALL BE USED IN NEW CONSTRUCTION OR REHABILITATION CONSTRUCTION AS SPECIFIED BY THE ENGINEER. JOINT MATERIALS SHALL BE INSTALLATION PER MANUFACTURER'S INSTRUCTIONS.

2. FOR PARTIAL JOINT CONSTRUCTION, A 15 LF. FELT BOND BREAKER, THE WIDTH OF THE STEP JOINT SHALL BE APPLIED BETWEEN EXISTING AND REPLACEMENT JOINT MATERIALS.

3. REHABILITATION MAY BE REQUIRED AT EITHER OR BOTH SIDES OF STEP JOINT.

4. FOR NEW CONSTRUCTION DISREGARD REHABILITATION NOTES A COLD JOINT IS ALLOWED A MINIMUM OF 1/2" ON EITHER SIDE OF JOINT CENTERLINE WITH A TRANSVERSE JOINT IN CONCRETE TO BE PLACED BETWEEN JOINT SAWN AND CORED JOINTS BEFORE PLACING NEW CONC.

5. AS SOON AS THE STEP JOINT IS COMPLETE, THE EXPOSED EDGES OF THE STEP JOINT AT CHANNEL EDGE SHALL BE COVERED WITH A PROTECTIVE SHEET OF 6mil GALV STEEL WITH 1/2" CRIMPED EDGES AT ANGLES. STEEL TO THE TOP OF THE JOINT, AND EXTEND AT LEAST 2" PAST THE SEALANT, FILLERS AND LOADER BEARING PLATE.

CONSTRUCTION NOTES:
A. EXISTING CONCRETE CHANNEL LINING OR STRUCTURE.
B. EXISTING REINFORCED STEEL TO REMAIN.
C. SAW CUT EXISTING CONCRETE Lining AT MARKED IN FIELD 1" TO 1 1/2" DEEP. BREAK OUT AND REMOVE EXISTING LINING AND JOINTS. CAREFULLY PRESERVE REINFORCED STEEL 1/8 FT. FROM CUT.
D. SANDBLAST EDGE OF EXISTING CONCRETE JUST PRIOR TO PLACING NEW CONCRETE.
E. COMPACT SUBGRADE TO MINIMUM 90% PER ASH LR 1957
F. ALTERNATE 3" BAR LOCATIONS IN TWO POSITIONS SHOWN. SEE "Z" BAR DETAIL, INSERT SHEET METAL SECURITY, TIE ALL CONNECTIONS AND SUPPORT SLEEPER MAT WITH CHAIRS.
G. SEALANT SIZES AND SIZES PER D.P.M. LONGBURST, STEEL AREA, 900 TIMES CONCRETE AREA, 900 TIMES CONCRETE AREA, TIE REINFORCEMENT TOGETHER IN DOWNSTREAM SLAB WITH 1/2 STANDARD "Z" CHAIN, NUMBER 4 BAR AT 12" CENTER.

CITY OF ALBUQUERQUE
DRAINAGE
CHANNEL EXPANSION JOINT
WITH SLEEPER

FILLER AND SEALANT DIMENSION TABLE (INCHES)

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<tr>
<th>FILLER SIZE (M)</th>
<th>TOP (M)</th>
<th>SEALANT BLOCK-OUT</th>
<th>SEALANT ORDER SIZE</th>
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REVISIONS
5/12/92
CHANNEL EXPANSION JOINT
WITH SLEEPER
DWG. 2265
AUG. 1992
GENERAL NOTES:
1. THIS JOINT SHALL BE SPECIFIED FOR CONNECTING NEW OR RENOVATED CHANNEL LINING TO EXISTING CONCRETE STRUCTURES AS SPECIFIED BY THE ENGINEER. A SIMILAR JOINT MAY BE DETAILLED FOR JOINTS AT NEW STRUCTURES. JOINT MATERIALS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. BREAK OUT AND REMOVE EXISTING LINING AS REQUIRED BY THE ENGINEER.
3. FOR NEW LINING CONNECTION TO EXISTING STRUCTURE, DISREGARD REMOVAL/INSTALLATION NOTES.

CONSTRUCTION NOTES:
A. EXISTING CONCRETE CHANNEL LINING OR STRUCTURE.
B. SANDBLAST EDGE OF EXISTING CONCRETE JUST PRIOR TO PLACING NEW CONCRETE.
C. COMPACT SUBGRADE TO MINIMUM 95% PER ASTM D 1557.
D. NEW CONCRETE CHANNEL LINING, PLACE CONCRETE IN STEP SECTIONS FIRST, STEEL FRENCH LOCK ON STEP PARALLEL TO BOTTOM PLATE. DRY BONDER ON EXPOSED SURFACE.
E. 12" = BOTTOM JOINT WIDTH X TOTAL ANCHORED BAR LENGTH = E + 3".
F. STEEL SIZE AND SPACING PER C.P.M.,聯絡, CONTACT DEPARTMENT. STEEL AREA ___000 TIMES CONCRETE AREA, TRANSVERSE STEEL AREA ___000 TIMES CONCRETE AREA.
G. CORE DRILL 1 1/2" HOLES AT 12" O.C. 6" DEEP INTO EXISTING STRUCTURE. WITH CONTINUOUS WATER LUBRICATION AND COOLANT. NOTE: DO NOT USE IMPACT DRILL. BOND REBAR INTO PLACE WITH SOLID Z-PART, QUICK SETTING EPOXY.
H. INSTALL LOW DENSITY POLYURETHANE BEARING PLATE 1/4" X 1/2" COMPACT ALONG EARTH TO TOP PLANE OF PLATE TO PREVENT LOCKING WITH CONCRETE FILLED DEPRESSION.
I. PLACE 1/4" X 6" LOW DENSITY POLYURETHANE BEARING PLATE AS SHOWN BETWEEN THE TWO TIE SECTIONS.
J. PLACE POLYURETHANE FOAM FILLER AS SHOWN, PHYSICALLY OR APPROVED EQUAL, DO NOT INTERACT WITH WALLS OR BONDING AGENT. KEEP IN PLACE WITH FRESH CONCRETE WHEN PLACING SECOND SECTION. DO NOT ALLOW FRESH CONCRETE BETWEEN FILLER AND PREVIOUSLY CONCRETE. SEE TABLE FOR BOTTOM AND TOP FILLER SIZES.
K. PREPARE VERTICAL MOLDING FOR BINDER BY SANDBLASTING BONDER ALL SAND OUT OF THE JOINT BEFORE APPLYING BONDER.
L. IMMEDIATELY INSTALL STRETCH HINGE FLEXCOAT 10 OR APPROVED EQUAL, AS SHOWN, IMPROVE SEALANT BEFORE INSTALLATION SHALL BE PER MENTION TABLE. FORM SEALANT MUST BE COMPRESSED INTO JOINT. IMMEDIATELY REMOVE ALL BONDER FROM TOP SURFACE OF SEALANT.
M. SAND SURFACE OF SEALANT TO TOP OF CONCRETE. APPLY ULTRA VIOLET PROOFING, 2 COATS, FLEXCOAT 10 OR APPROVED EQUAL.
N. BINDER REAR IN GROOVE BETWEEN TOOLS NUTS AND SEALANT IS TO REMAIN.

FILLER AND SEALANT DIMENSION TABLE (INCHES)

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<thead>
<tr>
<th>FILLER SIZE (KB)</th>
<th>SEALANT BLOCK-OUT</th>
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CITY OF ALBUQUERQUE

DRAINAGE EXPANSION JOINT CONNECTION TO CONCRETE WALL

DWG. 2266

AUG 1986
1. STEP JOINT PROTECTION PLATE SHALL BE USED IN NEW AND REHABILITATION CONSTRUCTION AS SPECIFIED BY THE ENGINEER.

2. USE CITY OF ALBUQUERQUE STANDARD DETAIL DWG. NO. 2265 FOR CHANNEL EXPANSION JOINT WITH SLEEPER.

CONSTRUCTION NOTES:

A. CONCRETE CHANNEL LINING OR STRUCTURE.
B. ETHYLENE VINYL ACETATE FOAM SEALANT, EVA SEAL, OR APPROVED EQUAL.
C. POLYETHYLENE FOAM FILLER, PLASTAZONE OR APPROVED EQUAL.
D. LOW DENSITY POLYETHYLENE BEARING PLATE.
E. 1/8" X 24" GALVANIZED STEEL THREADPLATE. PLATE SHALL EXTEND FULL WIDTH ACROSS CHANNEL AND COVER BOTH EDGES AS SHOWN.
### GENERAL NOTES:

1. DETAIL FROM N.M.S.H.D. DETAIL, SERIAL BRR-001-05
2. WIRE FABRIC IS TO BE GALV. V-MESH, APPROX. WEIGHT: 48 LBS. PER 100 SQ. FT.
3. STEEL STAKES ARE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE WORK & NO DIRECT MEASUREMENT OR PAYMENT WILL BE MADE THEREFOR.
4. IF LENGTH OF SLOPE IS 15' OR LESS ONLY ONE ROW OF STEEL STAKES 2' FROM THE TOP EDGE OF THE RIPRAP WILL BE REQUIRED UNLESS OTHERWISE NOTED ON PLANS.

### CONSTRUCTION NOTES:

A, B, C & D DIMENSIONS TO BE SHOWN ON PLANS.
E. FILTER MATERIAL, 6" MIN. DEPTH AS SHOWN ON PLANS.
F. FILL B, COMPACT AFTER PLACEMENT OF RIPRAP.
G. STEEL STAKES MAY BE RAILROAD RAILS NOT LESS THAN 30 LBS. PER FT., 4" O.C. STANDARD STRENGTH GALV. ST. PIPE ON 4 X 4 X 3/8 STEEL ANGLES. STEEL STAKES SHALL BE 5' LONG AND 4' O.C. AND SHALL BE RECESSED TO A MAX. OF 3", BELOW TOP OF RIPRAP.
H. WIRE ENCLOSED RIPRAP.
J. FINISHED GROUND LINE.
K. NO. 9 GAGE GALV. WIRE TIES APPROX. 2" O.C. LONGITUDINALLY & TRANSVERSALLY.
L. MAIN WIRES TO BE PLACED PERPENDICULAR TO SLOPE.
M. WIRE FABRIC.
N. TRANVERSE SPLICE.
P. LONGITUDINAL SPLICE, NO. 9 GALV WIRE TIES (ONE WRAP ALTERNATE SPACES).
Q. CROSS WIRES SINGLE 12/2,GAGE WIRES SPACED AT 2" WITH NOT LESS THAN TWO TURNS AROUND MAIN WIRES.
R. MAIN WIRES TWO NO. 12 GAGE STRANDED WIRES SPACED AT 4".
S. SUBGRADE COMPACTED TO 90% MAX. DENSITY AS PER ASTM D1557, 6" MIN. DEPTH.
GENERAL NOTES
1. ALL EXPOSED METAL PARTS SHALL BE PAINTED PRIOR TO ASSEMBLY.
   WELDING, MACHINING AND DRILLING SHALL BE DONE PRIOR TO PAINTING.
   ALL DIMENSIONS ARE FINISH DIMENSIONS.
2. ALL PARTS SHALL BE OF STRUCTURE STEEL, GRADE 36.
3. FOR CLEANING AND PAINTING OF FRAME SEE DWG. 2213, GENERAL NOTE NO. A.
   FRAME MAY BE WELDED OR RIVETED.

CONSTRUCTION NOTES
A. NO. 4 BAR AT 6" O.C. EACH WAY.
B. TOP OF CURB.
C. CURB FOUNDATION.
D. ANGLE ANCHOR DETAIL, SEE DWG. 2205.
E. SEE CITY OF ALBUQUERQUE STD. DWG. 2207 FOR STORM INLET GUTTER TRANSITION.
F. GRATE PER CITY OF ALBUQUERQUE STD. DWG. 2220 (TPY) 16 TOTAL MODIFIED WITH 1" GAP COVER PLATE PER DETAIL.
   THIS SHEET.
G. 1/4" SPACE BETWEEN GRATES (TPY).
H. OUTLET STORM DRAINAGE HORIZONTAL AND VERTICAL LOCATION MAY VARY PER SPECIFIC PROJECT.
J. GRADE BREAK.
K. GRADE BREAK LOCATIONS AND SLOPE MAY VARY DEPENDING ON LOCATION OF INLET.
L. CONCRETE FILL MINIMUM LONGITUDINAL SLOPE 4:1.
M. CROWN.

SECTION A-A
NOTE: SEE DWG. 2272 FOR SECTIONS B-B, C-C, D-D, E-E, AND F-F.
1. All exposed metal parts shall be painted prior to assembly. Welding, machining, and drilling shall be done prior to painting. All dimensions are finish dimensions.

2. All parts shall be of structure steel, grade 36.

3. For clearing and painting of frame see DWG. 2215, general note no. 4.

4. Frame may be welded or riveted.

**Construction Notes**

A. For storm inlet depths greater than 4", install std. steps, see std. detail.

B. No. 4 bars at 4" O.C. each way.

C. Rough texture concrete surface (TTF.)

D. Grate.

E. Thicken asphalt pavement to 6" above grade. See note.

F. Grate frame.

G. 1" x 1/8" steel strap-weld to angle 6" O.C.

H. 4" x 3" x 1/2".

J. 2" clearance.

K. See Plan.

L. 2-1/2" x 3/8" x 3/8" x 3-1/2".

M. 2-3/4" rivets at each corner, see general note no. 4.

N. 1/8" fillet weld 2" long at 6" O.C. (TTF.)

O. 1/2" x 1/8" x 1/8" steel angle full length of grate one side only each grate.

P. Four (4) each 1/2" x 8" bolts with square heads and nuts. One bolt at each corner for anchoring the frame into the concrete wall.
GENERAL NOTES

1. ONE INCH LINE AND NUMBERS WIDTH TO BE USED IN ALL CASES.
2. STATIONING AND WATER DEPTH MARKS WITH CHANNEL NAME TO BE PLACED 10'-
   TO 20' ABOVE AND BELOW CROSSING STRUCTURES ON BOTH SIDES OF
   CHANNEL.
3. STATIONING TO BE PLACED ON BOTH SIDES OF CHANNEL EVERY 200 FEET, +
   OR - 1 FOOT.
4. STATIONING TO BE PLACED 6" DOWN FROM TOP OF CHANNEL.
5. WATER DEPTH MARKS TO EXTEND TO TOP OF CHANNEL WITH CHANNEL NAME
   PLACED TO THE RIGHT OF THE UPPER MARKED NUMBER AND 2" DOWN FROM TOP
   OF CHANNEL.
6. LETTERING AND NUMBERING TO BE WHITE.
7. PAINT TO BE AS SPECIFIED AND APPROVED BY ENGINEER.

CONSTRUCTION NOTES

A. TOP OF LINE TO BE AT INDICATED WATER LEVEL MEASURED FROM CHANNEL
   INVERT WITH BOTTOM OF NUMBER AT TOP OF LINE AS SHOWN.
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(REVISED January 2011, UPDATE NO. 8)
GENERAL NOTES:
1. All new pipe and fittings shall be provided with thrust control.
2. Thrust control shall be by restrained joints only unless directed otherwise by engineer.
3. End's are required at valves, tees, flanged outlets (on concrete cylinder pipes), and capped or plugged ends. See specification section 170 for locations.

CONSTRUCTION NOTES:
A. Existing steel pipe.
B. Reduce at tee, if existing line is smaller than new line.
C. M.J., C.J. Elbow with joint restraint.
D. New D.I. or P.V.C., with valve as directed.
E. Restrained transition coupling for A.C. restrained solid sleeve for D.I., C.J. and PVC.
F. Existing D.I., C.I., P.V.C., or A.C. If A.C., use adapter approved by engineer or as approved on the current water authority approved products list.
G. M.J. D.I. TEE with joint restraint.
H. M.J., C.I. Plug or cap with joint restraint.
J. Remove at least 10' of pipe to be abandoned and cap or plug.

TRANSITION COUPLING
FROM D.I., P.V.C., OR A.C.
TO D.I. OR P.V.C.

REPLACEMENT OF STEEL LINES 4"-12"
CONNECTION DETAILS

TEE INSERTION D.I., P.V.C. OR A.C. PIPE

WATER AUTHORITY
WATER
WATERLINE CONNECTION
DETAILS

REVISIONS

DWG. 2301
JANUARY 2011
GENERAL NOTES:
1 SEE PLAN AND PROFILE SHEETS FOR LENGTH IN FEET OF RIGID PIPE ON EITHER SIDE OF BEND.
2 CARE MUST BE EXERCISED NOT TO OVERHEAT RUBBER GASKET WHEN WELDING.

CONSTRUCTION NOTES:
A COMPLETE COIL PARALLEL TO END OF PIPE.
B FIELD WELD, CONTINUOUS.
C FIELD-APPLIED CEMENT MORTAR COATING.
D RUBBER GASKET.
E STEEL CYLINDER PORTION OF PIPE.
24" GENERAL NOTES:
1. STANDARD 24" CAST IRON M.H. FRAME AND DUCTILE IRON COVER. WEIGHTS: COVER = 127 LBS., FRAME = 150 LBS. TOTAL = 277 LBS. (TOLERANCE = ±5%)
2. REFERENCESPEC. SECTION 130.
3. ONLY PRODUCTS CAST IN THE USA WILL BE ACCEPTABLE.

36" GENERAL NOTES:
1. STANDARD 36" CAST IRON M.H. FRAME AND COVER. WEIGHTS: COVER = 355 LBS., FRAME = 315 LBS. TOTAL = 670 LBS. (TOLERANCE = ±5%)
2. REFERENCESPEC. SECTION 130.
3. ONLY PRODUCTS CAST IN THE USA WILL BE ACCEPTABLE.

CONSTRUCTION NOTES:
A. MACHINED OR GROUND BEARING SURFACES.
B. "WATER" CAST ON COVER TO IDENTIFY WATERLINE.
C. LETTER SIZE TO BE 1 1/4" IN HEIGHT RAISED LETTERING.
D. LETTER SIZE TO BE 3/4" IN HEIGHT RAISED LETTERING.
E. LETTER SIZE TO BE 3/8" MIN. IN HEIGHT RAISED LETTERING.
F. 3/4" DIA VENT HOLE REQUIRED.
G. GUSSETS OPTIONAL IF REQUIRED BY MANUFACTURER.
H. 2" LETTERS (RECESSED FLUSH).
GENERAL NOTES:
1. MECHANICAL TAMPER SHALL NOT BE USED IN THE INITIAL BACKFILL REGION FOR FLEXIBLE PIPE. WHEN FLEXIBLE PIPE IS USED, CONTRACTOR SHALL, PRIOR TO THE START OF CONSTRUCTION, PROVIDE THE PROPOSED COMPACTION METHOD IN THE INITIAL BACKFILL REGION TO THE WATER AUTHORITY FOR APPROVAL.
2. MINIMUM CLASS "C" BEDDING WILL BE USED.
3. ALL COMPACTION WILL BE TO 95% OF THE STANDARD PROCTOR.

TRENCH CROSS-SECTION SHOWING TERMINOLOGY
GENERAL NOTES:

1. All thrust control by restrained joints only, unless directed by engineer, and for "special" situations specified by the Water Authority.

2. Pipe size greater than 14" requires design by engineer to be submitted to the Water Authority for approval.

3. Concrete blocking per Sec. 101 Exterior Concrete, f'c=3000 psi © 28 days.

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CONSTRUCTION NOTES:

A. Undisturbed earth.

B. O.D. of pipe + 8".

C. O.D. of cap or plug, min. 12"x12".

D. Only for exceptional situations, use of mechanical restraints takes precedence.

REVISIONS

WATER AUTHORITY

WATER CONCRETE BLOCKING DESIGN

Dwg. 2320 January 2011
GENERAL NOTES:
A VALVE BOX RING AND COVER PER C.O.A. STD. DWG. 2328.
B 12" DIAMETER POLYMER COATED STEEL PIPE CMP.
C NEW OR EXISTING VALVE.
D COMPACTED BACKFILL, SOIL OR BASE COURSE MATERIAL (95% COMPACTION). SEE SECTION 701.
E CONCRETE COLLAR PER COA STANDARD DRAWING 2461. f'c = 4000 psi.
F TOP OF CONCRETE COLLAR SHALL BE STAMPED WITH LINE SIZE AND DIRECTION. MINIMUM LETTER SIZE SHALL BE 3" IN HEIGHT. INSTALL FIRE LINE RING AND COVER ON FIRE LINES PER COA STANDARD DRAWING 2329.
G ELECTRONIC MARKER DEVICE (EMD), SEE COA STANDARD SPECIFICATION SECTION 170.

LABEL REQUIREMENTS
GENERAL NOTES:
1. BEFORE THE WORK WILL BE ACCEPTED, WATER VALVE GPS COORDINATES SHALL BE PROVIDED ON THE RECORD DRAWINGS. GPS COORDINATES OBTAINED BY A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF NEW MEXICO SHALL BE TAKEN AT THE VALVE OPERATING NUT. USE THE NAD 1983 NM STATE PLANE CENTRAL ZONE FOR X AND Y COORDINATES AND NAVD 1988 FOR Z COORDINATE.
GENERAL NOTES — RING

1. ALBUQUERQUE VALVE BOX RING DESIGNED TO ACCEPT AN ALBUQUERQUE VALVE BOX COVER.
2. THE CASTING NUMBER, MANUFACTURER'S LOGO, DATE OF MANUFACTURE AND "USA" SHALL BE CAST IN A CONSPICUOUS LOCATION ON BOTH THE RING AND THE COVER.
3. FILLETS SHALL BE 1/4" UNLESS OTHERWISE SPECIFIED.
4. A DRAFT ANGLE OF 3°—5° SHALL BE APPLIED UNLESS OTHERWISE SPECIFIED.
5. FINISH: REMOVE EXCESS IRON AND FINS.
6. THIS DETAIL DOES NOT APPLY FOR VALVE BOX RING AND COVER TO BE USED ON REUSE OR NON-POTABLE WATER SYSTEMS.
7. SEE STANDARD DRAWING 2329 FOR FIRE LINE RING AND COVER.
8. ONLY PRODUCTS CAST IN THE USA WILL BE ACCEPTABLE.

GENERAL NOTES — COVER

1. ALBUQUERQUE VALVE BOX COVER DESIGNED TO FIT INTO AN ALBUQUERQUE VALVE BOX RING.
2. THE CASTING NUMBER, MANUFACTURER'S LOGO, DATE OF MANUFACTURE AND "USA" SHALL BE CAST IN A CONSPICUOUS LOCATION ON BOTH THE RING AND THE COVER.
3. FILLETS SHALL BE 1/4" UNLESS OTHERWISE SPECIFIED.
4. A DRAFT ANGLE OF 3°—5° SHALL BE APPLIED UNLESS OTHERWISE SPECIFIED.
5. FINISH: REMOVE EXCESS IRON AND FINS.
6. ONLY PRODUCTS CAST IN THE USA WILL BE ACCEPTABLE.
GENERAL NOTES — RING

1. ALBUQUERQUE FIRE VALVE BOX RING DESIGNED TO ACCEPT AN ALBUQUERQUE VALVE BOX COVER.
2. THE CASTING NUMBER, MANUFACTURER’S LOGO, DATE OF MANUFACTURE AND “USA” SHALL BE CAST IN A CONSPICUOUS LOCATION ON BOTH THE RING AND THE COVER.
3. FILLETS SHALL BE 1/4” UNLESS OTHERWISE SPECIFIED.
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5. FINISH: REMOVE EXCESS IRON AND FINS.
6. THIS DETAIL DOES NOT APPLY FOR VALVE BOX RING AND COVER TO BE USED ON REUSE OR NON–POTABLE WATER SYSTEMS.
7. SEE STANDARD DRAWING 2328 FOR WATER LINE RING AND COVER.
8. ONLY PRODUCTS CAST IN THE USA WILL BE ACCEPTABLE.

GENERAL NOTES — COVER

1. ALBUQUERQUE VALVE BOX COVER DESIGNED TO FIT INTO AN ALBUQUERQUE VALVE BOX RING.
2. THE CASTING NUMBER, MANUFACTURER’S LOGO, DATE OF MANUFACTURE AND “USA” SHALL BE CAST IN A CONSPICUOUS LOCATION ON BOTH THE RING AND THE COVER.
3. FILLETS SHALL BE 1/4” UNLESS OTHERWISE SPECIFIED.
4. A DRAFT ANGLE OF 3°-5° SHALL BE APPLIED UNLESS OTHERWISE SPECIFIED.
5. FINISH: REMOVE EXCESS IRON AND FINS.
6. ONLY PRODUCTS CAST IN THE USA WILL BE ACCEPTABLE.

REVISIONS
WATER AUTHORITY
FIRE LINE
RING AND COVER
FOR VALVE BOX

Dwg. 2329
JANUARY 2011
GENERAL NOTES:

1. The engineer shall provide design for all valves greater than 12" and butterfly valves.

2. All thrust control by restrained joints only unless otherwise directed by engineer.

3. Use for valve insertion into existing lines only.

4. Concrete used for valve anchorage per Sec. 101 hydraulic structural concrete, f'c=3000 psi @ 28 days.

5. All joints are to be mechanically restrained. The minimum restrained joint length shall be 5 feet on either side of the valve.

6. Not needed for E-Z valve or other valve insertion that does not cut through the entire section of pipe.

7. Before the work will be accepted, water valve GPS coordinates shall be provided on the record drawings. GPS coordinates obtained by a professional surveyor licensed in the state of New Mexico shall be taken at the valve operating nut. Use the NAD 1983 NM state plane central zone for x and y coordinates and NAVD 1988 for z coordinate.

CONSTRUCTION NOTES:

A. Two no. 4 bars for valve straps with 3" hooks. Hooks to be embedded below bottom of pipe. Bars to be coated with bituminous material to prevent corrosion.

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1. Valve vault shall not be used in ground water conditions or in clay soils.

2. Concrete shall meet specification Sec. 510 and Sec. 101. Hydrualic structural concrete, f'c = 3000 psi. Reinforcing shall be grade 60.

3. Design equivalent fluid pressure = 91.2 psf, K = .5

4. Backfill material shall be class II or III in accordance with specification Sec. 501.

5. Pipe diameter varies from 16" 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.

9. Do not construct drain pockets when constructing in shallow groundwater conditions. Engineer shall provide a waterproof manhole or vault design for approval by the water authority prior to installation.

CONSTRUCTION NOTES:

A. Tapping saddle (D.I.P. or C.C.P.) or flanged outlets (C.C.P.).

B. 6" gate valve with blind flange (16" to 30")

C. 8" gate valve with blind flange (36" to 48")

D. C. P. pipe (F.L. or P.L.) or F.L. flanged outlets (P.L.)

E. 6" gate valve with blind flange (36" to 48")

F. Steel pipe (F.L. or P.L.) cast all exposed steel surfaces with an approved product or as approved on the current water authority products list.

G. Electronic marker device (EDM) see C.O.A. Stan spec section 170.

H. 4" steel pipe w/ bleed valve and insect screen.

I. 4" dia. schedule 40 PVC pipe sleeve through manhole base.

J. 3'x3'x3' deep 1" clean gravel, astm c33, no. 57 gravel.
GENERAL NOTES:
1. LADDER AND SUPPORTS SHALL BE ALUMINUM.
2. DIMENSIONS SHOWN ARE MINIMUMS. CONTRACTOR SHALL COORDINATE DESIGN AND DIMENSIONS OF THE LADDER AND SUPPORTS WITH THE MANUFACTURER.

CONSTRUCTION NOTES:
A. SAF-T-CLIMB WITH REMOVABLE EXTENSION KIT AND STORAGE MOUNTING BRACKET.
B. 3/4" SMOOTH BAR WITH ADDED TRACTION RUNGS @ 12" OC PLUG WELD TO SIDE BARS (TYP)
C. 3" X 3/8" FLAT WALL STRAP
D. STAINLESS STEEL RAILLOCK RAIL OR EQUAL WITH EXTENSION ON ALL LADDERS.
E. 3" X 3/8" SIDE BARS ROUND ALL CORNERS SMOOTH 1/8" RADIUS
F. CHLOROPRENE PADS.
G. BILCO LADDER UP.
GENERAL NOTES:
1. NO OBSTRUCTIONS WILL BE PERMITTED WITHIN 3'-0" OF FIRE HYDRANT.
2. HYDRANT LEG SHALL BE VALVED.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR SETTING TOP FLANGE OF FIRE HYDRANT TO THE CONTROLLED ELEVATION LINE.
4. FOR FIRE HYDRANT LOCATIONS, SEE DWG. 2347.
5. WHEN NEW OR EXISTING SIDEWALK ABUTS CURB, RECONSTRUCT SIDEWALK PER DWG. 2430, 2431.
6. PUMPER NOZZLE TO BE SET FACING THE TRAVELED WAY, UNLESS OTHERWISE NOTED ON PLANS.
7. HYDRANTS INSTALLED IN SIDEWALK AREAS SHALL MAINTAIN A MIN. 36-INCH CLEAR PEDESTRIAN PATH PER ADA STANDARD.
8. BEFORE THE WORK WILL BE ACCEPTED, FIRE HYDRANT GPS COORDINATES SHALL BE PROVIDED ON THE RECORD DRAWINGS. GPS COORDINATES OBTAINED BY A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF NEW MEXICO SHALL BE TAKEN AT THE FLANGE. USE THE NAD 1983 NM STATE PLANE CENTRAL ZONE FOR X AND Y COORDINATES AND NAVD 1988 FOR Z COORDINATE.

CONSTRUCTION NOTES:
A. FIRE HYDRANT PER SPECIFICATIONS.
B. PUMPER NOZZLE 4 1/2".
C. HOSE NOZZLE 2 1/2".
D. 1/2" EXPANSION JOINT MATERIAL.
E. MATCH SIDEWALK SLOPE OR SLOPE 1/4" PER FOOT.
F. 3'x3'x6" CONCRETE SQUARE PAD, TO BE CONSTRUCTED AROUND FIRE HYDRANT'S CENTER LINE WHEN NOT LOCATED WITHIN SIDEWALK OR CONCRETE AREA. CONCRETE PER SEC. 101 EXTERIOR CONCRETE, f'c=3000 psi @ 28 DAYS.
G. BACK OF CURB.
H. CONTROLLED ELEVATION LINE, LEVEL IN ALL DIRECTIONS.
J. USE OF RESTRAINED JOINTS IS MANDATORY. ALL FIRE HYDRANT LEG PIPING AND FITTINGS INCLUDING TEE ON MAIN SHALL BE RESTRAINED JOINT.
K. GRAVEL DRAIN POCKET. USE FILTER FABRIC TO COVER AROUND GRAVEL DRAIN POCKET. ASTM C33, NO.57 GRAVEL.
L. CURB AND GUTTER. WHERE NO CURB AND GUTTER EXIST, BOLLARDS ARE REQUIRED.
M. FIRE HYDRANT ISOLATION VALVE.
N. ELECTRONIC MARKER DEVICE (EMD), SEE COA STANDARD SPECIFICATION SECTION 170.
GENERAL NOTES:
1 INSTALL AS REQUIRED BY CONSTRUCTION PLANS.

CONSTRUCTION NOTES:
A VALVE BOX PER STD. DWG. 2326.
B GATE VALVE FL- FL.
C WATER LINE TO AIR RELEASE IN SIDEWALK.
D DUCTILE IRON 90° BEND.
E FLANGED OUTLET OR MECHANICAL JOINT TEE.
F WATER MAIN.
G ELECTRONIC MARKER DEVICE (EMD), SEE CSA STANDARD SPECIFICATION SECTION 170.
H FIRE HYDRANT PER STD. DWG. 2340.
GENERAL NOTES:
1. Fire hydrants are not to be located within the curb return area. Fire hydrants located in the mid-block length shall be centered on adjoining property lines unless otherwise specified.

2. A minimum clearance of 3' shall be provided between fire hydrant and any permanent obstruction (utility pole, light standard, traffic signal, etc.).

3. For fire hydrant installation details see DWG. 2340.

CONSTRUCTION NOTES:
A. Fire hydrant
B. Right-of-way or easement line
C. Property line
D. Permanent obstruction
E. Parkway
F. Sidewalk
G. PC or PT of curb return
H. Maintain a minimum clearance of 3' radius from center of hydrant to any and all obstructions.
GENERAL NOTES

1G. ALL PIPING AND FITTINGS SHALL BE SCH. 40 THREADED STAINLESS STEEL. SIZE IS DETERMINED BY SPECIFIC AIR/VACUUM RELEASE VALVE TO BE INSTALLED.

2G. DO NOT CONSTRUCT DRAIN POCKETS WHEN CONSTRUCTING IN SHALLOW GROUNDWATER CONDITIONS. ENGINEER SHALL PROVIDE A WATERPROOF MANHOLE OR VAULT DESIGN FOR APPROVAL BY THE WATER AUTHORITY PRIOR TO INSTALLATION.

MATERIALS LIST

A COMBINATION AIR AND VACUUM RELEASE VALVE, SIZE AS SHOWN ON PLAN.

B GATE VALVE, SAME SIZE AS COMBINATION AIR AND VACUUM RELEASE VALVE INLET.

C MINIMUM 6" FLANGE NOZZLE OR FLANGE TAPPING SADDLE. PROVIDE BLIND FLANGE TAPPED FOR THREADED NIPPLE WHERE AIR/VAC VALVE IS SHOWN TO BE LESS THAN 6".

D STAINLESS STEEL NIPPLE.

E 1" BALL VALVE.

F 1" AIR RELEASE VALVE.

G THREADED CAP.

H THREADED NIPPLE FOR VENT AND HOSE CONNECTION.

J 90° ELBOW.

K 4" DIA. SCHEDULE 40 PVC PIPE SLEEVE THROUGH MANHOLE BASE.

L 12"x12"x18" DEEP 1" CLEAN GRAVEL. ASTM C33, NO. 57 GRAVEL.

M WATER MAIN.

N ELECTRONIC MARKER DEVICE (EMD) SEE STANDARD SPECIFICATION SECTION 170.

CONSTRUCTION NOTES:

1 MANHOLE MAY BE CONSTRUCTED OF CONCRETE BLOCK, OR, MS BRICK, POUR CONCRETE, OR PRECAST REINFORCED CONCRETE. IF BLOCK OR BRICK, PLASTER INSIDE AND OUT WITH 1/2" MORTAR. SEE DWG 2101.

2 USE 36" MH FRAME AND COVER. COVER MARKED "WATER", PER STANDARD DRAWING 2310.

3 CONCRETE COLLAR PER C.O.A. STD. DWG. 2461 + "ARV" STAMP.

4 USE ADJUSTMENT RINGS OR MAX. 2 COURSES OF MS BRICK FOR ADJUSTMENT OF MH FRAME TO PAVEMENT GRADE.

5 PRECAST CONCRETE COVER. SEE DWG 2107, EXCEPT OPENING SHALL BE 34" DIAMETER MINIMUM.

6 LADDER TO BE INSTALLED FOR 4' AND DEEPER MANHOLES PER STD DRAWING 2335.

7 CUT MANHOLE TO PROVIDE A 4" CLEARANCE AROUND WATER MAIN AND FILL ANNUAL SPACE WITH NON-SHRINK GROUT OR WATER AUTHORITY APPROVED EQUAL.

8 1" CLEAN GRAVEL TO TOP OF MAIN.

9 6" GROUT FILLET AROUND BASE.

10 CONCRETE BASE USING #4 BARS AT 12" OC EACH WAY.
GENERAL NOTES:
1. 2'-0" long steel spool and buttstrap omitted if existing flange exists at new valve location.
2. See standard drawing 2334 for valve vault details.

CONSTRUCTION NOTES:
A. Mega flange – flange adaptor, series 2100 as manufactured by EBAA iron sales, or approved equal.
B. Main pipeline (C.C.P) with flanged end.
C. Insulating flange kit.
D. Intentionally omitted.
E. Hand wheel with 3" square operating nut as specified by the engineer. See hand wheel detail for side view.
F. Butterfly valve (FLG x FLG), size as shown on drawings.
G. Ductile iron spool (FLG x PE).
H. Coat all exposed steel surfaces with an engineer approved product or as approved on the current water authority approved products list.
I. Existing C.C.P. pipe.
J. 2' - 0" long steel spool (FLG x PE).
K. BUTTSTRAP.
L. WELD 3" operating nut to hand wheel.

In vault installation

Butterfly valve installation detail in new C.C.P. pipeline

Butterfly valve installation detail in existing C.C.P. pipeline

Plan

Cut and remove existing C.C.P. pipe as required for valve installation

Side view
Hand wheel with 3" operating nut detail

In vault installation

Revisions
Water Authority
Water
Conc cyl. butterfly valve in vault installation
Dwg. 2351
January 2011
CONSTRUCTION NOTES:
1. This detail is to be used for new or existing ductile iron pipe only. Where existing pipe is of cast iron materials, valve installation details shall be submitted to and approved by the water authority.

CONSTRUCTION NOTES:
A. Mega flange – flange adapter, Series 2100 as manufactured by Eba Iron Sale, or approved equal.
B. Main pipeline (D.I.) with plain end.
C. Hand wheel with 3" square operating nut as specified by the engineer. See hand wheel detail for side view.
D. Main pipeline (D.I.) with flanged end.
E. Butterfly valve (FLGxFLG), size as shown on drawings.
F. Weld 3" operating nut to hand wheel.

BUTTERFLY VALVE INSTALLATION DETAIL IN NEW D.I. PIPELINE

BUTTERFLY VALVE INSTALLATION DETAIL IN EXISTING D.I. PIPELINE

CUT AND REMOVE EXISTING PIPE AS REQUIRED FOR VALVE INSTALLATION

SIDE VIEW
HAND WHEEL WITH 3" OPERATING NUT DETAIL

IN VAULT INSTALLATION

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<td>DUCTILE IRON BUTTERFLY VALVE IN VAULT INSTALLATION DETAILS</td>
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GENERAL NOTES:

1. SIZE, ELECTRIC AND MECHANICAL APPURTENANCES AND
   OUTLET DISCHARGE POINT AS REQUIRED BY THE
   WATER AUTHORITY.

2. ALL ABOVE SURFACE PIPING SHALL BE PAINTED SAFETY
   YELLOW.

3. BOLLARDS WILL BE REQUIRED WHEN REQUIRED BY THE
   ENGINEER OR THE WATER AUTHORITY.

4. NOT TO BE USED IN TRAFFIC AREAS.

5. DO NOT CONSTRUCT DRAIN POCKETS WHEN CONSTRUCTING IN
   SHALLOW GROUNDWATER CONDITIONS. ENGINEER SHALL PROVIDE
   PROVIDE A WATERPROOF MANHOLE OR VAULT DESIGN FOR
   APPROVAL BY THE WATER AUTHORITY PRIOR TO INSTALLATION.

CONSTRUCTION NOTES:

A. VALVE BOX PER C.O.A. STD. DWG. 2326.

B. VALVE BOX RING AND COVER PER C.O.A. STD. DWG. 2328.

C. GATE VALVE (FL—FL).

D. 1/2" CONNECTIONS WITH PETCOCK FOR PRESSURE
   MEASURING DEVICES.

E. 6" DIAMETER FLOOR DRAIN HOLE THROUGH SLAB.

F. 1/2 CU. YD. COARSE GRAVEL, ASTM C33, NO. 57 GRAVEL.

G. 2" SLEEVE FOR CONDUIT.

H. PAVEMENT.

J. REINFORCED CONCRETE SLAB, SLOPE TO DRAIN.
   CONCRETE PER SEC. 101, HYDRAULIC STRUCTURAL CONCRETE,
   Fc=3000 psi @ 28 DAYS.

K. REINFORCED CONCRETE PEDESTAL,
   CONCRETE PER SEC. 101, EXTERIOR CONCRETE,
   Fc=3000 psi @ 28 DAYS.

L. 30 LB. FELT BETWEEN FITTING OR VALVE AND PEDESTAL.

M. C.I./D.I. 45° ELL. (FL—FL).

N. C.I./D.I. PIPE (FL—FL).

P. PRECAST CONCRETE COVER, SEE DWG. 2107, EXCEPT
   OPENING SHALL BE 34" DIAMETER MINIMUM.


R. ANCHOR STRAPS 3/8"x2".

S. COVER OPENING WITH 1/2" HARDWARE CLOTH, SECURE TO
   END OF ELL WITH 6- 3/8"x2" BOLTS, NUTS, AND WASHERS.

T. CONCRETE SPLASH PAD TO BE DESIGNED FOR EACH SITE,
   WITH WELDED WIRE FABRIC REINFORCEMENT. CONCRETE PER
   SEC. 101, EXTERIOR CONCRETE, Fc=3000 psi @ 28 DAYS.

U. 4- 5/8"x10" ANCHOR BOLTS.

V. 6"—O" DIA. TYPE "C" MANHOLE, PER C.O.A. STD. DWG. 2101.

W. 4"x4" BILCO DOOR AS APPROVED BY THE ENGINEER OR
   THE WATER AUTHORITY.

X. 1" TAP AND VALVE FOR DRAIN.

Y. NON-SHRINK GROUT.

Z. ELECTRONIC MARKER DEVICE (EMD), SEE COA STANDARD
   SPECIFICATION SECTION 170.
GENERAL NOTES:
1. FOR STRUCTURAL DETAILS, VAULT DIMENSIONS AND REINFORCING SEE STANDARD PRV STATION STRUCTURAL DETAILS DWG. 2357.
2. ALL EXTERIOR PIPING SHALL BE PAINTED SAFETY YELLOW.
3. BOLLARDS WILL BE REQUIRED WHEN REQUIRED BY THE ENGINEER OR THE WATER AUTHORITY.
4. IN NON–TRAFFIC AREAS, THE TOP ELEVATION OF THE VAULT WILL BE 12" ABOVE FINISHED GRADE WITH BOLLARDS PAINTED SAFETY YELLOW AT EACH CORNER.
5. ALL PARTS WITHIN THE VAULT MUST COINCIDE WITH THE CURRENT WATER AUTHORITY APPROVED PRODUCTS LIST.
6. A PLATE SHALL BE INSTALLED ON THE VAULT WALL THAT SHOWS THE ELEVATION.
7. DO NOT CONSTRUCT DRAIN POCKETS WHEN CONSTRUCTING IN SHALLOW GROUNDWATER CONDITIONS, ENGINEER SHALL PROVIDE A WATERPROOF MANHOLE OR VAULT DESIGN FOR APPROVAL BY THE WATER AUTHORITY PRIOR TO INSTALLATION.

CONSTRUCTION NOTES:
1. PRV LOCATION, FINAL DESIGN AND LAYOUT SHALL BE APPROVED BY THE WATER AUTHORITY TO CONFORM WITH SPECIFIC SYSTEM AND SITE REQUIREMENTS.
2. PRV STATION ACCESS OPENING COVERS SHOWN ON THIS STANDARD DETAIL ARE SUITABLE FOR LOCATIONS NOT EXPOSED TO CONTINUOUS HIGH DENSITY TRAFFIC. IF PRV STATION MUST BE LOCATED IN AREAS OF CONTINUOUS HIGH DENSITY TRAFFIC THE ACCESS OPENING COVERS SHALL BE SPECIFICALLY DESIGNED TO WITHSTAND THE CONDITIONS AND LOADINGS TO BE ENCOUNTERED.
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 ANSI H–20 DESIGNATION AND SHALL BE FLUSH WITH TOP OF VAULT.
4. ALUMINUM FLOOR DOORS AND FRAMES FOR LOCATIONS OUT OF ROADWAYS AND NOT SUBJECT TO TRAFFIC LOADINGS SHALL BE DESIGNED TO WITHSTAND A LIVE LOAD OF 300 POUNDS PER SQUARE FOOT AND SHALL EXTEND 3–INCHES MINIMUM ABOVE TOP OF VAULT.
5. 6–INCH VENT PIPING SHALL BE ROUTED SUCH THAT THE ABOVE GROUND GROUSENECK AND INSECT SCREEN ARE LOCATED OUT OF VEHICULAR OR PEDESTRIAN TRAFFIC AREAS.
6. PRESSURE REDUCING VALVE, AS SPECIFIED
7. FLEXIBLE COUPLING WITH THRUST TIES, SEE THRUST TIE DETAIL ON DWG. 2358
8. FLANGED TEE, REQUIRED ONLY IF BYPASS SPECIFIED
9. BURIED BUTTERFLY VALVE (GATE VALVE FOR SIZE < 14")
10. BUTTERFLY VALVE WITH HAND WHEEL OPERATOR (GATE VALVE FOR SIZE < 14"), REQUIRED ONLY WHEN BYPASS IS SPECIFIED.
11. FLANGED SPOOL, LENGTH = 1′–0"
12. ADJUSTABLE PIPE SADDLE SUPPORT, GRINNELL FIG. 264, ELCEN FIG. 50 OR EQUAL, TYPICAL
13. GATE VALVE WITH HAND WHEEL OPERATOR, REQUIRED ONLY IF BYPASS SPECIFIED
14. LADDER PER COA STANDARD DRAWING 2335.
15. ALUMINUM FLOOR DOOR WITH RECESSED HASP COVERED BY A HINGED LID FLUSH WITH TOP SURFACE. DOOR SIZE SHALL BE 4′x4′ DOUBLE LEAF (WITHOUT BYPASS) AND 4′x6′ DOUBLE LEAF (WITH BYPASS). HARDWARE AND HINGES SHALL BE 304 STAINLESS STEEL. BILCO TYPE J, OR EQUAL.
16. 6″ STEEL PIPE W/GOOSENECK AND INSECT SCREEN
17. 2′–0" SD ALUMINUM FLOOR DOOR WITH RECESSED HASP COVERED BY A HINGED LID FLUSH WITH TOP SURFACE. HARDWARE AND HINGES SHALL BE 304 STAINLESS STEEL. BILCO TYPE J, OR EQUAL.
18. WALL PIPE, CENTERED IN WALL, WITH NON–SHRINK GROUT OR WATER AUTHORITY APPROVED EQUAL.
19. 1/2″ PIPE TAP WITH 1/2″ BALL VALVE AND CAP
20. D.I. SPOOL, FLG. x P.E.
21. MEGA FLANGE – FLANGE ADAPTER, AS MANUFACTURED BY EBAA IRON SALES, OR APPROVED EQUAL.
22. INSULATING FLANGE KIT.

WATER AUTHORITY
STANDARD PRV STATION NO METER
DWG. 2354 JANUARY 2011
GENERAL NOTES:
1. FOR STRUCTURAL DETAILS, VAULT DIMENSIONS AND REINFORCING SEE STANDARD PRV STATION STRUCTURAL DETAILS DWG. 2357.
2. SEE STANDARD PRV STATION METER, DWG. 2354 FOR ADDITIONAL CONSTRUCTION NOTES.
3. IN NON–TRAFFIC AREAS, THE TOP ELEVATION OF THE VAULT WILL BE 12" ABOVE FINISHED GRADE WITH BOLLARDS PAINTED SAFETY YELLOW AT EACH CORNER.
4. ALL PARTS WITHIN THE VAULT MUST COINCIDE WITH THE CURRENT WATER AUTHORITY APPROVED PRODUCTS LIST.
5. A PLATE SHALL BE INSTALLED ON THE VAULT WALL THAT SHOWS THE ELEVATION.
6. DO NOT CONSTRUCT DRAIN POCKETS WHEN CONSTRUCTING IN SHALLOW GROUNDWATER CONDITIONS. ENGINEERS SHALL PROVIDE A WATERPROOF MANHOLE OR VAULT DESIGN FOR APPROVAL BY THE WATER AUTHORITY PRIOR TO INSTALLATION.

CONSTRUCTION NOTES:
A. PRESSURE REDUCING VALVE, AS SPECIFIED
B. FLEXIBLE COUPLING WITH THRUST TIES, SEE THRUST TIE DETAIL ON DWG 2358.
C. FLANGED TEE, REQUIRED ONLY IF BYPASS SPECIFIED
D. BURIED BUTTERFLY VALVE (GATE VALVE FOR SIZE < 14")
E. BUTTERFLY VALVE WITH HAND WHEEL OPERATOR (GATE VALVE FOR SIZE < 14"), REQUIRED ONLY WHEN BYPASS SPECIFIED
F. FLANGED SPOOL, LENGTH = 1'-0"
G. ASTM C33, NO. 57 GRAVEL.
H. PROPELLER TYPE FLOW METER, SPARLING MODEL PDL-102 OR EQUAL, COMPLETE WITH TUBE, SADDLE AND STRAIGHTENING VANES.
J. ADJUSTABLE PIPE SADDLE SUPPORT, GRINNELL FIG. 264.
K. GATE VALVE WITH HAND WHEEL OPERATOR, REQUIRED ONLY IF BYPASS SPECIFIED
L. LADDER PER COA STANDARD DRAWING 2335.
M. ALUMINUM FLOOR DOOR WITH RECESSED HASP COVERED BY A HINGED LB FLUSH WITH TOP SURFACE. DOOR SIZE SHALL BE 4'x6' DOUBLE LEAF (WITHOUT BYPASS) AND 4'x6' DOUBLE LEAF (WITH BYPASS). HARDWARE AND HINGES SHALL BE 304 STAINLESS STEEL.
N. 6" STEEL PIPE W/GOOSENECK AND INSECT SCREEN.
P. WALL PIPE WITH THRUST COLLAR, CENTER IN WALL.
Q. 1/2" PIPE TAP WITH 1/2" BALL VALVE AND CAP
R. DJ. SPOOL FlG. x P.E.
S. MEGA FLANGE — FLANGE ADAPTOR, AS MANUFACTURED BY EBBA IRON SALES, OR APPROVED EQUAL.
T. INSULATING FLANGE KIT.

REVISIONS WATER AUTHORITY
WATER STANDARD PRV STATION WITH PROPELLER METER
DWG. 2355 JANUARY 2011
GENERAL NOTES:
1. FOR STRUCTURAL DETAILS, VAULT DIMENSIONS AND REINFORCING SEE STANDARD PRV STATION STRUCTURAL DETAILS DWG. 2357.
2. SEE STANDARD PRV STATION NO ME'ER, DWG. 2354 FOR ADDITIONAL CONSTRUCTION NOTES.
3. IN NON-TRAFFIC AREAS, THE TOP ELEVATION OF THE VAULT WILL BE 12" ABOVE FINISHED GRADE WITH BOLLARDS PAINTED SAFETY YELLOW AT EACH CORNER.
4. ALL PARTS WITHIN THE VAULT MUST COINCIDE WITH THE CURRENT WATER AUTHORITY APPROVED PRODUCTS LIST.
5. A PLATE SHALL BE INSTALLED ON THE VAULT WALL THAT SHOWS THE ELEVATION.
6. DO NOT CONSTRUCT DRAIN HOLES WHEN CONSTRUCTING IN SHALLOW GROUNDWATER CONDITIONS. ENGINEER SHALL PROVIDE A WATERPROOF MANHOLE OR VAULT DESIGN FOR APPROVAL BY THE WATER AUTHORITY prior to installation.

CONSTRUCTION NOTES:
A. PRESSURE REDUCING VALVE, AS SPECIFIED
B. MAGNETIC FLOW METER, KROHNE M440/960, OR AS APPROVED BY THE WATER AUTHORITY, COMPLETE WITH SIGNAL CONVERTER
C. FLEXIBLE COUPLING WITH THRUST TIES, SEE THRUST TIE DETAIL ON DWG. 2356.
D. FLANGED TEE
E. BURIED BUTTERFLY VALVE (GATE VALVE FOR SIZE < 14")
F. BUTTERFLY VALVE (GATE VALVE FOR SIZE < 14")
G. FLANGED SPOUT LENGTH = 1'-0"
H. ADJUSTABLE PIPE SADDLE SUPPORT, GRINNELL FIG. 264, ELDEN FIG. 50 OR EQUAL
J. GATE VALVE
K. LADDER PER COA STANDARD DRAWING 2365.
L. ALUMINUM FLOOR DOOR WITH RECESSED HASP COVERED BY A HINGED LEAF FLUSH WITH TOP SURFACE, DOOR SIZE SHALL BE 4'-0" DOUBLE LEAF HARDWARE AND HINGES SHALL BE TYPE 304 STAINLESS STEEL. BILCO TYPE J OR EQUAL.
M. GRAVEL PER ASTN C33, NO. 57 GRAVEL
N. 6" STEEL PIPE W/GOOSENECK AND INSECT SCREDD
O. 3'-0" 5 ALUMINUM FLOOR DOOR WITH RECESSED HASP COVERED BY A HINGED LEAF FLUSH WITH TOP SURFACE, HARDWARE AND HINGES SHALL BE TYPE 304 STAINLESS STEEL. BILCO TYPE J OR EQUAL.
Q. WALL PIPE WITH THRUST COLLAR, CENTER IN WALL
R. RCP CABINET FURNISHED BY THE WATER AUTHORITY
S. POWER SUPPLY AND TERMINAL CABINET
T. FLOW INDICATING TRANSMITTER
U. WEATHERPROOF JUNCTION BOX FOR CONNECTION OF VAULT FLOOD LEVEL ELEMENT
V. 100 AMP, 120/240 VOLTS, SINGLE PHASE THREE WIRE CIRCUIT BREAKER PANEL
W. RADIO AND TELEMETRY EQUIPMENT FURNISHED BY THE WATER AUTHORITY
X. WEATHERPROOF JUNCTION BOXES FOR CONNECTION TO TWO POLE MICROSWITCH FOR INTRUSION ALARM AND FOR CONNECTION TO OHP MICROSWITCH TO ENERGIZE LIGHTS AND EXHAUST FANS WHEN ACCESS DOOR IS OPENED
Y. WEATHERPROOF, GFI DUPLEX RECEPTACLE 24" ABOVE FINISH FLOOR
Z. 2-LAMP STRIP FLUORESCENT ENCLOSED SURFACE MOUNTED LIGHT FIXTURE
AA. PEDESTAL TYPE 120 AMP, 120/240 VOLT, SINGLE PHASE THREE WIRE CIRCUIT BREAKER. INSTALL ON 18"X18"X18" CONCRETE PAD PER PNM Dwg. 85-19-84.
BB. TELEMETRY SYSTEM MAST AND ANTEANNA LOCATION TO BE DETERMINED BY THE WATER AUTHORITY
CC. 1/2" PIPE TAP WITH 1/2" BALL VALVE AND CAP
DD. IN-LINE EXHAUST FAN W/SWITCH AND ACCESS DOOR CONTROLS
EE. PRESSURE TRANSUCER, HONEYWELL MODEL STG 644-EG-0000-DM. PROVIDE 1/2" CAP, 1/2" BALL VALVE AND TUBING TO CONNECT TRANSUCER TO PIPE BARREL.
FF. D.I. SPOOL FLG. X P.E.
GG. MEGA FLANGE - LARGE ADAPTOR, AS OR APPROVED EQUAL.
3. Concrete shall be in accordance with ASTM C150 and ASTM C 491 for hydraulic concrete. All reinforcing steel shall be Grade 60.

4. If the depth of vault exceeds the 11'-0" max. depth shown, the engineer shall design the reinforcement, wall & floor thickness to suit the specific conditions. All structural modifications shall be designed and stamped by a licensed New Mexico Professional Engineer.

5. Do not construct drain pockets when constructing in shallow groundwater conditions. Engineer shall provide a waterproof manhole or vault design for approval by the Water Authority prior to installation.

**WATER AUTHORITY**

**WATER STANDARD PRV STATION STRUCTURAL DETAILS**

DWG. 2357 JANUARY 2011

**GENERAL NOTES:**
1. **TYPICAL WALL REINFORCING SHALL BE #5 @ 12" O.C.**
2. **TYPICAL BASE SLAB REINFORCING SHALL BE #5 @ 12"**

**TOP PLAN**

- **#5@2'-6"**
- **#6@3'-0"**
- **#7@3'-6"**

**EXCEPT REPLACEMENT BARS FOR "W" BARS IN CENTERED OR BOTTOM MATS WILL BE FULL WIDTH OF VAULT.**

**OPENING NOTES:**
1. **TYPICAL FOR ALL OPENINGS IN CONCRETE WALLS AND SLABS.**
2. **DO NOT WELD REINFORCEMENT TO PIPE SLEEVES AND INSERTS.**

**OPENING:**

- **1#5 HOOP, DIA OF OPENING PLUS 8", IN EA LAYER OF REINF FOR OPENINGS LARGER THAN 8".**

**STEEL REINF CUT BAND "A" BARS CUT**

**AREA OF BARS EQUAL BAND "A" BARS CUT**

**STEEL REINF CUT BAND "B" STEEL REINF CUT BAND "B**

**AREA OF BARS EQUAL BAND "B" BARS CUT**

**ADJUST WATER AUTHORITY**

**WATER AUTHORITY**

**WATER STANDARD PRV STATION STRUCTURAL DETAILS**

DWG. 2357 JANUARY 2011
### Tie Rod Schedule

<table>
<thead>
<tr>
<th>Pipe Dia. (In.)</th>
<th>Minimum Pipe Wall Thickness (In.)*</th>
<th>Tie Rod Dia. (In.)</th>
<th>No. Req'd</th>
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<td>16</td>
<td>3/16</td>
<td>7/8</td>
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**NOTES:**

1. THE CONTRACTOR SHALL DETERMINE THE LENGTH "J" (COUPLING BOLT LENGTH) FROM MANUFACTURER'S CATALOGS USING THE SPECIFIED MIDDLE RING LENGTH.
2. "C" = MANUFACTURER'S RECOMMENDED SPACE BETWEEN ENDS OF PIPE.
3. "C" = J+2+1 INCH, ROUND THIS VALUE UP TO NEXT EVEN INCH. MINIMUM. (FOR Z DIMENSIONS, SEE LUG SCHEDULE.)
4. TIE ROD LENGTH = 2L+2C+G.

### Lug Schedule

<table>
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<tr>
<th>Stud Dia</th>
<th>T</th>
<th>W</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
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<td>3-1/8</td>
<td>1-3/4</td>
<td>4</td>
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</table>

**NOTES:**

1. LUG SCHEDULE DIMENSIONS IN INCHES.
2. TIE RODS SHALL CONFORM TO ASTM A193 GRADE B7.
3. NUTS SHALL CONFORM TO ASTM A194 GRADE 2H.
4. PLATE SHALL CONFORM TO ASTM A283 GRADE D.
5. TIE ROD NUTS SHALL BE TIGHTENED GRADUALLY AND EQUALLY IN STAGES TO PREVENT UNWATCHED ALIGNMENT AND TO ALLOW EQUAL STRESS ON ALL TIE RODS UNDER PRESSURE. TIGHTEN UNTIL SNUG. THREADS SHALL PROTRUDE FROM NUTS. PROPE THREADS AFTER TIGHTENING NUTS.
6. TIE ROD LUGS SHALL BE SPACED EQUALLY AROUND PIPE.
8. TIE RODS SHALL NOT BE ATTACHED TO A PIPE WHEN THE WALL THICKNESS IS LESS THAN THE MINIMUM SHOWN ON THE TIE ROD SCHEDULE.
9. FOR ALL BURIED ASSEMBLIES, COAT WITH AN ENGINEER APPROVED PRODUCT OR AS APPROVED ON THE CURRENT WATER AUTHORITY APPROVED PRODUCTS LIST.
CONSTRUCTION NOTES:
1. This detail is to be used for new or existing ductile iron pipe only. Where existing pipe is of cast iron materials, valve installation details shall be submitted to and approved by the water authority.

CONSTRUCTION NOTES:
A. Adapter, Series 2100 as manufactured by EBAA Iron Sale, or approved equal.
AA. Transition sleeve adapter, series 2100 as manufactured by EBAA Iron Sale, or approved equal.
B. Main pipeline (D.I.) with plain end.
C. Valve box and cover per C.O.A. Std. DWG 2328.
D. 3" square operating nut.
E. Main pipeline (D.I.) with flanged end.
F. Main pipeline (other) with plain end.
G. Butterfly valve (FLGxFLG), size as shown on drawings.

BUTTERFLY VALVE INSTALLATION DETAIL IN NEW D.I. PIPELINE

PLAN

INSTALLATION DETAIL FOR TRANSITION BETWEEN DIFFERENT PIPE MATERIALS

PLAN

DIRECT BURY INSTALLATION

<table>
<thead>
<tr>
<th>REVISIONS</th>
<th>WATER AUTHORITY</th>
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<tr>
<td>WATER</td>
<td>DUCTILE IRON BUTTERFLY VALVE DIRECT BURY INSTALLATION DETAILS</td>
</tr>
<tr>
<td>DWG. 2359</td>
<td>JANUARY 2011</td>
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</tbody>
</table>
CONSTRUCTION NOTES:
1. This detail is to be used for new or existing ductile iron pipe only. Where existing pipe is of cast iron materials, valve installation details shall be submitted to and approved by the Water Authority.
2. See standard drawing 2334 for valve vault details.

CONSTRUCTION NOTES:
A. Mega flange – flange adapter, series 2100 as manufactured by Ebma iron sale, or approved equal.
B. Main pipeline (D.I.) with plain end.
C. 3" square operating nut.
D. Main pipeline (D.I.) with flanged end.
E. Butterfly valve (FLGxFLG or FLGxMJ), size as shown on drawings.
F. Valve box and cover per C.O.A. std. DWG 2326.

DIRECT BURY INSTALLATION

WATER AUTHORITY

REVIEWS

Diatrle iron butterfly valve
IN VAULT INSTALLATION

DWG. 2360  JANUARY 2011
**GENERAL NOTES:**

1. For construction and dimensions of water meter box and concrete pad, see STD. DWG. 2362, 2363 & 2368.

2. Because of limited space, meter boxes may be rotated 90°. Connections to be made per water authority approval.

3. Double meter boxes shall be centered on adjoining property lines.

**CONSTRUCTION NOTES:**

A. Curb.

B. Back of curb.

C. Sidewalk.

D. Meter box cover, see STD. DWG. 2368.

E. 1/2" expansion joint.

F. Edge of uncurbed street or graded street.

G. Property line.

H. Drivepad.

J. Concrete pad see DWG. 2362

K. #4 rebar continuous all around meter box.

**CASE 1**

(Inside Parkway)

**CASE 2**

(In Sidewalk)

**CASE 3**

(In Narrow Parkway)

**CASE 4**

(In Wide Parkway)

**CASE 5**

(No Curb and Gutter or Sidewalk)

**CASE 6**

(In Drivepad)

**TYPICAL INSTALLATIONS 3/4" - 1" METERS**
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 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 shall conform to DWG. 2361.

4. When contractor does not install meter, contractor shall provide removable plugs for end of copper-setter.

5. Existing concrete shall be sawcut.

6. Cross connection control. See standard specification section 802.3.9.

7. The (private) tailpiece is to be installed by the contractor and is to be owned and maintained by the customer per water authority ordinance.

CONSTRUCTION NOTES:

A. STREET SURFACE.

B. BACK OF CURB.

C. METER BOX COVER AND LID. SEE DWG. 2568 OR 2369.

D. 1/2" EXPANSION JOINT.

E. CURB STOP, LOCATE INSIDE METER BOX.

F. SIDEWALK OR DRIVEPAD.

G. METER. TOP OF METER SHALL BE 12"–18" BELOW COVER.

H. CORP STOP.

J. MAIN WATER LINE.

K. TAPPING SADDLE.

L. COPPER SERVICE LINE.

M. COPPER SETTER. PROVIDE WITH DUAL CHECK VALVE IN PRESSURE ZONES OW, 1W, 1E AND FOR PRIVATE WELLS. SEE SPECIFICATION SECTION 802.3.9 FOR PRIVATE WELL PROVISIONS.

N. TAILPIECE 3' LONG, APPROVED COPPER TUBING WITH A CLEAN CUT AT END WITH A TEMPORARY PLUG. DUAL CHECK VALVE SHALL BE INSTALLED IN WATER ZONES OW, 1W, 1E AND FOR PRIVATE WELLS. SEE SPECIFICATION SECTION 802.3.9 FOR PRIVATE WELL PROVISIONS.

O. CONCRETE PAD REQUIRED IN ALL AREAS PER SEC. 101 EXTERIOR CONCRETE, Fc=3000 psi @ 28 DAYS.

R. #4 REBAR CONTINUOUS ALL AROUND METER BOX.

S. STABILIZER BAR. USE FOR SINGLE METER ONLY. 12" LONG x 1/2" DIA. GALV. STEEL PIPE.

T. METER BOX LID SHALL BE FLUSH WITH SURROUNDING SIDEWALK.

U. ELECTRONIC MARKER DEVICE (EMD) SEE STANDARD SPECIFICATION SECTION 170.
GENERAL NOTES:
1. Meter box location to conform to COA standard drawing 2361.
2. The (private) tailpiece is to be installed by the contractor and is to be owned and maintained by the customer per water authority ordinance.

CONSTRUCTION NOTES:
A. Street surface.
B. Back of curb.
C. Meter box, cover and lid, see drawing 2367. Cover flush with surface and centered over meter register.
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, provide with dual check valve in pressure zones OW, 1W, 1E and for private wells. See specification section 802.3.9 for private well provisions.
N. Tailpiece 3' long, approved copper tubing with a clean cut at end with a temporary plug. Dual check valve shall be installed in water zones OW, 1W, 1E and for private wells. See specification section 802.3.9 for private well provisions.
Q. Concrete pad required in all areas per Sec. 101 exterior concrete, f'c=3000 psi @ 28 days.
R. #4 Rebar continuous all around meter box.
S. Stabilizer bar. 1/2" X 12" Long galvanized steel pipe.
T. Meter box lid shall be flush with surrounding sidewalk.
U. Meter box extension as required.
W. 3" tall "W" stamp on curb where service line crosses.
V. Electronic marker device (EMD) see standard specification section 170.

PLAN
SERVICE LINE FOR 1 1/2" - 2" METER

SECTION
SERVICE LINE FOR 1 1/2" - 2" METER
GENERAL NOTES:
1 METER BOX LOCATION TO CONFORM TO DWG. 2361.
2 CONSTRUCTION OF METER BOX TO CONFORM TO SECTION 802 FOR WATER METER BOX, 3/4" AND 1" METERS.
3 SEE DWG 2368 FOR METER BOX COVER AND LID.

CONSTRUCTION NOTES:
A. PIPE HOLE, 1 AT EACH END, 9 1/4" WIDE BY 3 1/4" HIGH.
GENERAL NOTES:
1. MATERIAL: FIBERGLASS REINFORCED POLYMER CONCRETE AND FIBERGLASS REINFORCED POLYMER.
2. STANDARD COLOR: CONCRETE GRAY (OPTIONAL COLLARS ARE AVAILABLE FOR COVER AND COLLAR).
3. FLARED WALL BOXES ARE UNSTABLE.
4. OPTIONAL CAST IRON READER LIDS ARE AVAILABLE.

CONSTRUCTION NOTES:
A. COVER BOLTDOWN OPTION
B. SKID RESISTANT SURFACE
C. 5/8" x 4" LIFTING SLOTS
D. OPTIONAL KNOCKOUTS OR TERMINATORS
E. COVER
F. STAINLESS STEEL CAPTIVE BOLT
G. BOX
H. SELF-CENTERING CORROSION RESISTANT NUT
I. METER LID KEYHOLE
J. 1/2" THICK RIB
K. 1/2" RAISED LETTERING (FLUSH)
L. LID
GENERAL NOTES:
1. To be used in sidewalks, mountable curb or in unpaved areas.

COVER
2. Material—Ductile iron
3. Round all edges.
4. Top to be asphalt painted.
5. Top of cover shall have an integrated corrugated design to prevent slipping.

LID
6. Material—Ductile iron
7. Round all edges.
8. Top to be asphalt painted.
9. Top of lid shall have integrated corrugated design to prevent slipping.
10. Top of cover shall have integrated words "WATER AUTHORITY".
11. Lid shall not rock on cover and shall be easily opened.
12. The top surface of the lid shall be flush with top of cover.

CONSTRUCTION NOTES:
A. 3/8" x 2 3/8" Rib (Typical).
B. Lid opening.
C. Meter lid keyhole.
D. 1/2" thick rib.
E. 3/4" raised lettering (flush).
F. Flat area.

REVISIONS

WATER AUTHORITY

WATER

METER BOX COVER & LID
FOR 3/4" & 1" METERS

DWG. 2368
JANUARY 2011
GENERAL NOTES:
1. Compressive strength of all concrete shall be 3000 psi per exterior conc. Spec Sec. 101.
2. Compact subgrade under and 12" either side of footing to 95% maximum density, per ASTM D-1557 to 8" min. depth.
3. Precast concrete vaults may be used in lieu of OWM. Construction with water authority approval. Submit details for review.
4. Vault not to be placed in traffic areas.
5. The maximum depth is 4'.
6. No bypass is to be installed for irrigation water uses — parks, medians, landscaping, etc.
7. Do not construct drain pockets when constructing in shallow groundwater conditions. Engineer shall provide a waterproof manhole or vault design for approval by the water authority prior to installation.
8. Fill pipe penetration voids with non-shrink grout or water authority approved equal.

CONSTRUCTION NOTES:
A. Meter lay length varies depending on meter size. Coordinate with laying length required. Meter and strainer to be provided and installed by the water authority.
B. 1" saddle tap, 1" gate valve and 1" air release valve. Air release valve shall be APCD model no. 200A or approved equal.
C. D.J. spool (flange-PE) length as rec'd. Minimum length shall be 5 times the pipe diameter.
D. Gate valve (MJ) with megalugs with valve box per standard drawing 232B.
E. 90° elbow (MJ) with megalugs.
F. Main service line.
G. N.T. with megalugs.
H. Mega flange--flange adapter, series 2100 as manufactured by EBM iron sales, or approved equal.
I. Main distribution line.
J. Fill all OWM cores with 3000 psi concrete, typ. L. Roll tee up as required.
M. Roll 90° elbow down as required.
N. 3/4" gravel fill per ASTM C33, No. 57 gravel, 8" depth.
P. Continuous bond beam at bottom of wall with #4 cont. See foundation plan for additional reinforcing at corners.
Q. D.J. pipe (flange-PE) length as required.
R. Flange coupling adapter, (FCA).
S. 8" x 6" x 8" hollow core concrete block (CMU).
T. 6" concrete filled guard post, typical of 4. Sec. 101 exterior concrete, f'=3000 psi @ 28 days.

REVISIONS
WATER AUTHORITY
WATER LARGEDIAMETER METER VAULT 3'-6" SERVICE DWG. 2370 JANUARY 2011
GENERAL NOTES:
1. Compressive strength of all concrete shall be 3000 psi per exterior conc. Spec Sec. 101.
2. Compact subgrade under and 12" either side of footing to BS5 maximum density, per ASTM D-1557 to 6" min. depth.
3. Precast concrete vault may be used in lieu of cul construction. Consult Water Authority prior to approval. Submit details for review.
4. Vault not to be placed in traffic areas.
5. The maximum depth is 4'.
6. No bypasses is to be installed for irrigation water uses - parks, medians, landscaping, etc.
7. Do not construct drain pockets when constructing in shallow ground water conditions. Engineer shall provide a waterproof manhole design for approval by the Water Authority prior to installation.
8. Fill pipe penetration voids with non-shrink grout or Water Authority approved equal.

CONSTRUCTION NOTES:
A. Meter lay length varies depending on meter size. Coordinate with laying length required. Meter and Strainer to be provided and installed by the Water Authority.
B. 1" saddle tap, 1" gate valve and 1" air release valve. (Air release valve shall be APC model no. 200A or approved equal.
C. D.J. Spool (Flange-XPE) Length as req'd. Minimum length shall be 5 times the pipe diameter.
D. Gate valve (MJ) with megalugs with valve box per standard drawing 2328.
E. 90° elbow (MJ) with megalugs.
F. Main service line.
G. MJ tee with megalugs.
H. Mega Flange-Flange adapter, series 2100 as manufactured by EBBA iron sales, or approved equal.
I. Main distribution line.
J. Fill all CMU cores with 3000 psi concrete, typ.
K. Roll tee up as required.
L. Roll 90° elbow down as required.
M. 3/4" gravel fill per ASTM C33, No. 57 gravel, 6" depth.
N. Continuous bond beam at bottom of wall with megalugs. See foundation plan for additional reinforcing at corners.
O. D.I. pipe (Flange-XPE) length as required.
P. Flange coupling adapter, (FCG).
Q. 8"x16"x8" hollow core concrete block (CMU).
R. 6" concrete filled guard post, typical of A. Sec. 101 exterior concrete, f'c=3000 psi @ 28 days.

SECTION A-A

SECTION B-B

WATER AUTHORITY
WATER
LARGE DIAMETER METER VAULT
8"-12" SERVICE

Dwg. 2371
January 2011
GENERAL NOTES:

1. Top structural details, vault dimensions and reinforcing see standard PRV Station Structural Details DWG 2375.

2. All exterior piping shall be painted Safety Yellow.

3. See standard PRV Station, no meter, DWG 2354 for additional construction notes.

4. In non-traffic areas, the top elevation of the vault will be 12” above finished grade with bollards painted safety yellow at each corner.

5. All parts within the vault must coincide with the current Water Authority approved products list.

6. A plate shall be installed on the vault wall that shows the elevation.

7. PRV location, final design and layout shall be approved by the Water Authority to conform with specific system and site requirements.

8. PRV Station access opening covers shown are suitable for locations not exposed to continuous high density traffic. If the PRV station must be located in areas of continuous high density traffic, the access opening covers shall be specifically designed to withstand the conditions and loading to be encountered.

9. Do not construct drain pockets when constructing in shallow ground water conditions. Engineers shall provide a waterproof manhole or vault design for approval by the Water Authority prior to installation.

CONSTRUCTION NOTES:

A. Pressure reducing valve, as specified.

B. Flexible coupling with thrust ties, see standard drawing 2358 for thrust tie detail.

C. Mechanical joint tee, required only if bypass is specified.

D. Buried gate valve (butterfly valve for sizes greater than 14”), required only when bypass is specified.

E. butterfly valve with hand wheel operator (gate valve for sizes greater than 14”), required only when bypass is specified.

F. Flanged spool, length = 1’-0”

G. 2”x2”x2” deep gravel-filled sump. Gravel must conform to ASTM C33, No. 57 gravel.

H. Air relief valve.

I. Adjustable pipe saddle support, Grinnell Fig. 264, Elcen Fig. 50, or equal.

J. Gate valve with hand wheel operator, required only if bypass is specified.

K. Ladder per standard drawing 2335.

L. 6”x4” Bilco single leaf door rated for H20 traffic loads.

M. 6”x4” Bilco single leaf door rated for H20 traffic loads.

N. See standard drawing 2375 for structural design of precast/cast-in-place concrete vault.

O. 6” steel pipe with goose neck and insect screen. Piping should be routed such that the above ground goose neck and insect screen are located out of vehicular or pedestrian traffic areas.

P. Link seal with grout at wall penetration.

Q. 1/2” pipe tap with 1/2” ball valve and cap

R. C.I. spool flg. x p.e.

S. mega flange – flange adaptor, as manufactured by EBAI Iron Sales, or approved equal.

T. Insulating flange kit.

WATER AUTHORITY

WATER 6” PRV ASSEMBLY DETAILS

DWG 2372 JANUARY 2011
1. For structural details, vault dimensions and reinforcing see standard PRV station structural details DWG 2375.

2. All exterior piping shall be painted safety yellow.

3. See standard PRV station, no meter, DWG 2354 for additional construction notes.

4. In non-traffic areas, the top elevation of the vault will be 12” above finished grade with Bollards painted safety yellow at each corner.

5. All parts within the vault must coincide with the current Water Authority approved products list.

6. A plate shall be installed on the vault wall that shows the elevation.

7. PRV location, final design and layout shall be approved by the Water Authority to conform with specific system and site requirements.

8. PRV station access opening covers shown are suitable for locations not exposed to continuous high density traffic. If the PRV station must be located in areas of continuous high density traffic, the access opening covers shall be specifically designed to withstand the conditions and loadings to be encountered.

9. Do not construct drain pockets when constructing in shallow groundwater conditions. Engineers shall provide a waterproof manhole or vault design for approval by the Water Authority prior to installation.

Construction Notes:

A. Pressure reducing valve, as specified.

B. Flexible coupling with thrust tie, see standard drawing 2358 for thrust tie detail.

C. Mechanical joint tee, required only if bypass is specified.

D. Buried gate valve (butterfly valve for sizes greater than 14”).

E. Butterfly valve with hand wheel operator (gate valve for sizes greater than 14”), required only when bypass is specified.

F. Flanged spool, length = 1’=0”

G. 2’x2’x1’2” deep gravel filled sump. Gravel must conform to ASTM C33, No. 57 gravel.

H. Air relief valve.

I. Adjustable pipe saddle support, Grinnell Fig. 264, Elcen Fig. 50, or equal.

J. Gate valve with hand wheel operator, required only if bypass is specified.

K. Ladder per standard drawing 2335.

L. 6’x4’ BLCo single leaf door rated for H20 traffic loads.

M. 4’x4’ BLCo single leaf door rated for H20 traffic loads.

N. See standard drawing 2375 for structural design of precast/cast-in-place concrete vault.

O. 6” steel pipe with gooseneck and insect screen. Piping should be located such that the above ground gooseneck and insect screen are located out of vehicular or pedestrian traffic areas.

P. Link seal with grout at wall penetration.

Q. 1/2” pipe tap with 1/2” ball valve and cap

R. D.I. spool Fig. x P.E.

S. Mega flange – flange adapter, as manufactured by Elcen Iron Sales, or approved equal.

T. Insulating flange kit.
A. Insulating Flange Kit.
B. Air Relief Valve.
C. Adjustable Pipe Saddle Support, Grinnel Fig. 264, ELCEV Fig. 50, or equal.
D. Gate Valve with Hand Wheel Operator, Required only if Bypass is Specified.
E. Ladder per Standard Drawing 2335.
F. 6'x4' Bilco Single Leaf Door Rated for H2O Traffic Loads.
G. 4.5'x4' Bilco Single Leaf Door Rated for H2O Traffic Loads.
H. See Standard Drawing 2375 for Structural Design of Precast/Cast-In-Place Concrete Vault.
I. 6'Bilco Pipe with Gooseneck and Insect Screen. Piping should be routed such that the Above Ground Gooseneck and Insect Screen are Located Out of Vehicular or Pedestrian Traffic Areas.
J. Link Seal With Grout at Wall Penetration.
K. 1/2' Pipe Tap With 1/2' Ball Valve and Cap.
L. MRI Spool Flg. x P.E.
M. 10" Megaflange – Flange Adaptor, As Manufactured by Ebra Iron Sales, or approved equal.
N. Insulating Flange Kit.

GENERAL NOTES:
1. For Structural Details, Vault Dimensions and Reinforcing See Standard PRV Station Structural Details DWG 2375.
2. All exterior piping shall be painted safety yellow.
3. See Standard PRV Station, No Meter, DWG 2354 for Additional Construction Notes.
4. In non-traffic areas, the top elevation of the vault will be 12" above finished grade with ballast painted safety yellow at each corner.
5. All parts within the vault must coincide with the current water authority approved products list.
6. A plate shall be installed on the vault wall that shows the elevation.
7. PRV location, final design and layout shall be approved by the water authority to conform with specific system and site requirements.
8. PRV station access opening covers shown are suitable for locations not exposed to continuous high density traffic. If the PRV station must be located in areas of continuous high density traffic, the access opening covers shall be specifically designed to withstand the conditions and loads to be encountered.
9. Do not construct drain pockets when constructing in shallow groundwater conditions. Engineer shall provide a waterproof manhole or vault design for approval by the water authority prior to installation.

CONSTRUCTION NOTES:
A. Pressure reducing valve, as specified.
B. Flexible coupling with thrust ties, see standard drawing 2358 for thrust tie detail.
C. Mechanical joint tee, required only if bypass is specified.
D. Buried gate valve (burly valve for sizes greater than 14').
E. Butterfly valve with hand wheel operator (gate valve for sizes greater than 14'), required only when bypass is specified.
F. Flanged spool, length = 1'-0".
G. 2'x2'x2' deep gravel-filled sump. Gravel must conform to ASTM C33, No. 57 gravel.
H. Air Relief Valve.
I. Adjustable Pipe Saddle Support, Grinnel Fig. 264, ELCEV Fig. 50, or equal.
J. Gate Valve with Hand Wheel Operator, Required only if Bypass is Specified.
K. Ladder per Standard Drawing 2335.
L. 6'x4' Bilco Single Leaf Door Rated for H2O Traffic Loads.
M. 4.5'x4' Bilco Single Leaf Door Rated for H2O Traffic Loads.
N. See Standard Drawing 2375 for Structural Design of Precast/Cast-In-Place Concrete Vault.
O. 6'Bilco Pipe with Gooseneck and Insect Screen. Piping should be routed such that the Above Ground Gooseneck and Insect Screen are Located Out of Vehicular or Pedestrian Traffic Areas.
P. Link Seal With Grout at Wall Penetration.
Q. 1/2' Pipe Tap With 1/2' Ball Valve and Cap.
R. MRI Spool Flg. x P.E.
S. 10" Megaflange – Flange Adaptor, As Manufactured by Ebra Iron Sales, or approved equal.
T. Insulating Flange Kit.

WATER 10" PRV ASSEMBLY DETAILS
DWG. 2376
JANUARY 2011
GENERAL NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO "CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION". DESIGN IS IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE, (IBC) 2006 WITH TRAFFIC LOADS DEFINED PER AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION, 2002.

2. CONCRETE SHALL BE IN ACCORDANCE WITH STD SPEC SEC. 510 AND SEC. 101 FOR HYDRAULIC CONCRETE WITH MIN COMP. STRENGTH f'c = 4000 PSI @ 28 DAYS. ALL REINFORCING STEEL SHALL BE BLACK, GRADE 60 CONFORMING TO ASTMA615. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER FOR PRIMARY REINFORCEMENT UNLESS OTHERWISE NOTED.

3. DESIGN LOADS ON VAULT
   - PRV EQUIPMENT 1000 LBS.
   - BILCO HATCH 1300 LBS.
   - LIVE LOAD AASHTO, H20 AXLE LOAD

4. DESIGN SOIL PROPERTIES
   - ALLOWABLE BEARING CAPACITY 2000 PSF
   - EFFECTIVE FRICTION ANGLE 20°
   - WEIGHT OF SOIL 130 PFS
   - TRAFFIC SURCHARGE 2 FT. SOIL
   - WATER TABLE DEPTH BELOW BOTTOM OF SLAB

5. FOR ANY VAULTS INSTALLED DEEPER THAN 4'-0" BELOW FINISH GRADE, CALCULATIONS ENSURING THE STRUCTURAL INTEGRITY OF THE VAULT SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF NEW MEXICO SHALL BE SUBMITTED TO THE OWNER.

6. DO NOT CONSTRUCT DRAIN POCKETS WHEN CONSTRUCTING IN SHALLOW GROUNDWATER CONDITIONS. ENGINEER SHALL PROVIDE A WATERPROOF MANHOLE OR VAULT DESIGN FOR APPROVAL BY THE WATER AUTHORITY PRIOR TO INSTALLATION.

CONSTRUCTION NOTES

A. 2'x2'x2' DEEP SQUARE SUMP FILLED WITH 1" INCH GRAVEL (CONTRACTOR TO CONFIRM THAT WATER TABLE IS BELOW BOTTOM OF SLAB)
B. STAGGER SPACES (TYP).
C. TYPICAL WALL REINFORCING.
D. WALL PIPE, (TYP) FOR SIZE AND LOCATION SEE PRV ASSEMBLY DETAILS.
E. CONTINUOUS CORNER REINFORCING.
F. COORDINATE HATCH BEARING SEAT, ANCHORAGE AND DRAINAGE REQUIREMENTS FOR DOOR WITH MANUFACTURER SPECIFICATIONS.
G. BILCO DOUBLE LEAF DOOR OR EQUIVALENT RATED FOR H2O TRAFFIC LOADS. SEE TABLE FOR SIZE & MODEL.
H. TYPICAL WALL REINFORCING #5 @ 12" EA. WAY, EA. FACE.
I. TYPICAL SLAB REINFORCING.
J. #5 @ 12" EA. WAY, EA. FACE.
K. OPTIONAL CONSTRUCTION JOINT (TYP).
L. GRAVEL, CRUSHED STONE 6" MINIMUM.
M. STEEL REINF CUT BAND "A."
N. STEEL REINF CUT BAND "B."
O. AREA OF BARS EQUAL BAND "A" BARS CUT (MIN. 1-#6 EA. SIDE).
P. AREA OF BARS EQUAL BAND "B" BARS CUT (MIN. 1 #6 EA. SIDE).
Q. 1-#6 HOOP, DIA OF OPENING +8", IN EA LAYER OF REINF FOR OPENINGS LARGER THAN 8".
R. ADD 1-#6 DIAG AT EA CORNER FOR EA LAYER OF REINF.

OPENING NOTES

1. TYPICAL FOR ALL OPENINGS IN CONCRETE WALLS AND SLABS.
2. DO NOT WELD REINFORCEMENT TO PIPE SLEEVES AND INSERTS.

WATER AUTHORITY

STANDARD PRV STATION STRUCTURAL DETAILS

REVISIONS

DWG. 2375  JANUARY 2011
GENERAL NOTES:
1. METHOD OF END CLOSURE TO BE DESIGNED TO SUIT CONDITIONS.
2. FOR A METALLIC CARRIER PIPE (OTHER THAN DUCTILE IRON), CONTRACTOR SHALL ADD CORROSION MONITORING AND PROTECTION STATION PER STANDARD DRAWINGS 2396, 2397, AND 2398.
3. USE FULLY RESTRAINED PIPE JOINTS THROUGH THE CASING OR USE APPROPRIATE PIPE MATERIALS WITH INTERNAL RESTRAINTS AS APPROVED ON THE CURRENT WATER AUTHORITY APPROVED PRODUCTS LIST.

CONSTRUCTION NOTES:
A. WELDED STEEL PIPE CASING. DIAMETER AND WALL THICKNESS TO BE DESIGNED PER STANDARD SPECIFICATION SECTION 700 TO SUIT CONDITIONS.
B. BELL DIA. OF CARRIER PIPE.
C. CARRIER PIPE.
D. MANUFACTURED CASING SPACER. INSTALLATION AND SPACING PER MANUFACTURER’S RECOMMENDATIONS.
GENERAL NOTES:
1. ENTIRE ASSEMBLY MUST HAVE ADEQUATE THRUST RESTRAINT PER STANDARD DRAWING 3230. CONCRETE BLOCKING SHALL BE INSTALLED ONLY WHEN MECHANICAL RESTRAINT IS NOT POSSIBLE.

CONSTRUCTION NOTES:
A. EXISTING WATERLINE.
B. RELOCATED WATERLINE.
C. NEW LINE.
D. LEAN FILL.
E. LEAN FILL 24" OVER PIPE
F. ELECTRONIC MARKER DEVICE (EMD), SEE COA STANDARD SPECIFICATION SECTION 178.
G. IF ANY EXISTING CCP JOINTS FALL WITHIN 10' OF THE PLANNED CUT, REMOVE CCP TO THE JOINT AND REPLACE WITH DIP.
GENERAL NOTES:
1. HORIZONTAL RPBA INSTALLATION REQUIRED.
2. ABOVE GRADE RPBA INSTALLATION REQUIRED.
3. WATER LINE PRESSURE AND TEMPERATURE MUST NOT EXCEED RATED CAPACITY OF RPBA.
4. PROTECT FROM FREEZING WITH POSITIVE HEAT SOURCE AND INSULATION.
5. MINIMUM RPBA SIZE MUST BE THE BUILDING SERVICE LINE SIZE.
6. DO NOT INSTALL IN FLOOD PRONE AREAS OR IN STORM RETENTION OR DETENTION BASINS.
7. INSTALL WATER HAMMER ARRESTORS & THERMO EXPANSION PROTECTION, AS NECESSARY.
8. METALLIC RISER PIPING REQUIRED.
9. JOINTS TO BE ADEQUATELY RESTRAINED.
10. DEVIATIONS FROM THESE SPECIFICATIONS MUST HAVE PRIOR WRITTEN APPROVAL FROM THE WATER AUTHORITY CROSSED CONNECTION OFFICE.
11. THE INSTALLATION OF A BACKFLOW ASSEMBLY MAY CREATE A CLOSED LOOP SYSTEM. THE CUSTOMER IS RESPONSIBLE FOR COMPLIANCE WITH CURRENT PLUMBING CODES WHICH MAY REQUIRE INSTALLATION OF (PRIVATE) PRESSURE RELIEF DEVICES AND/OR EXPANSION TANKS.

CONSTRUCTION NOTES:
A. METER BOX PER STANDARD DRAWING 2362 OR 2363.
B. PROPERTY LINE.
C. SERVICE LINE WITHOUT TAPS OR TEES BETWEEN THE METER AND THE BACKFLOW PREVENTION ASSEMBLY.
D. ADEQUATE SLEEVE & INSULATION. INSULATION SHALL BE (AT MINIMUM) 1" THICK.
E. MINIMUM 4" CONCRETE (3000 PSI) SLAB.
F. UNION OR FLANGED FITTINGS INSTALLED A MINIMUM OF 4" ABOVE GRADE.
G. 36" MAXIMUM, 12" MINIMUM (FROM LOWEST POINT OF ASSEMBLY TO TOP OF CONCRETE SLAB).
H. PROVIDE ADJUSTABLE METALLIC SUPPORTS ON UNITS 2.5" AND GREATER DIAMETER (TYPICAL).
I. USC APPROVED RPBA, AS SHOWN
J. PROTECTIVE ENCLOSURE, SEE STANDARD DRAWING 2389 FOR DESIGN CRITERIA.
K. DRAIN: SIZE DRAIN TO HANDLE FULL DISCHARGE OF RELIEF VALVE, DRAIN TO DAYLIGHT, SCREEN RECOMMENDED TO PREVENT RODENT AND INSECT ENTRY.
L. BUILDING SERVICE LINE.
M. RELIEF VALVE.

WATER AUTHORITY

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<td>REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (RPBA)</td>
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GENERAL NOTES:
1. DCVA's are not approved for landscape irrigation systems.
2. Horizontal DCVA installation required.
3. Above grade DCVA installation required.
4. Water line pressure and temperature must not exceed rated capacity of DCVA.
5. Protect from freezing with positive heat source and insulation.
6. Minimum DCVA size must be the building service line size.
7. Do not install in flood prone areas or in storm retention or detention basins.
8. Install water hammer arrestors & thermo expansion protection, as necessary.
9. Joints to be adequately restrained.
10. Metallic riser piping required.
11. Deviations from these specifications must have prior written approval from the water authority cross connection office.
12. The installation of a backflow assembly may create a closed loop system. The customer is responsible for compliance with current plumbing codes which may require installation of (private) pressure relief devices and/or expansion tanks.

CONSTRUCTION NOTES:
A. Meter box per standard drawing 2362 or 2363.
B. Property line.
C. Service line without taps or tees between the meter and the backflow prevention assembly.
D. Adequate sleeve & insulation. Insulation shall be (at minimum) 1" thick.
E. Minimum 4" concrete (3000 PSI) slab.
F. Union or flanged fittings installed a minimum of 4" above grade.
G. 36" maximum, 12" minimum (from lowest point of assembly to top of concrete slab).
H. Provide adjustable metallic supports on units 2.5" and greater diameter (typical).
I. USC approved DCVA, as shown.
J. Protective enclosure, see standard drawing 2389 for design criteria.
K. Drain: drain to daylight. Screen recommended to prevent rodent and insect entry.
L. Building service line.

WATER AUTHORITY

WATER DOUBLE CHECK VALVE ASSEMBLY (DCVA)

Dwg. 2386 January 2011
GENERAL NOTES:
1. SEE MANUAL OF PROCEDURES FOR THE TYPE OF BACKFLOW PREVENTION ASSEMBLY REQUIRED ON PRIVATE FIRE PROTECTION SYSTEMS.
2. HORIZONTAL DCDA INSTALLATION REQUIRED.
3. PROTECT FROM FREEZING WITH A POSITIVE HEAT SOURCE AND INSULATION.
4. MINIMUM DCDA SIZE MUST BE THE BUILDING SERVICE LINE SIZE.
5. METALLIC RISER PIPING REQUIRED.
6. ABOVE GRADE DCDA INSTALLATION REQUIRED.
7. FLANGED FITTINGS REQUIRED. JOINTS TO BE ADEQUATELY RESTRAINED.
8. WATER LINE PRESSURE AND TEMPERATURE MUST NOT EXCEED THE CAPACITY OF DCDA.
9. INSTALL WATER HAMMER ARRESTORS & THERM EXPANSION PROTECTION, AS NECESSARY.
10. DEVIATIONS FROM THESE SPECIFICATIONS MUST HAVE PRIOR WRITTEN APPROVAL FROM THE WATER AUTHORITY CROSS CONNECTION OFFICE.
11. THE INSTALLATION OF A BACKFLOW ASSEMBLY MAY CREATE A CLOSED LOOP SYSTEM. THE CUSTOMER IS RESPONSIBLE FOR COMPLIANCE WITH CURRENT PLUMBING CODES WHICH MAY REQUIRE INSTALLATION OF PRIVATE PRESSURE RELIEF DEVICES AND/OR EXPANSION TANKS.

CONSTRUCTION NOTES:
A. ADEQUATE SLEEVE & INSULATION. INSULATION SHALL BE (AT MINIMUM) 1" THICK.
B. MINIMUM 4" CONCRETE (3000 PSI) SLAB.
C. 36" MAXIMUM, 12" MINIMUM (FROM LOWEST POINT OF ASSEMBLY TO TOP OF CONCRETE SLAB).
D. PIPE SPOOL (OPTIONAL).
E. PROVIDE ADJUSTABLE METALLIC SUPPORTS..
F. USC APPROVED DCDA, AS SHOWN.
G. PROTECTIVE ENCLOSURE, SEE STANDARD DRAWING 2389 FOR DESIGN CRITERIA.
H. DRAIN: DRAIN TO DAYLIGHT. SCREEN RECOMMENDED TO PREVENT RODENT OR INSECT ENTRY.
I. BUILDING SERVICE LINE.
GENERAL NOTES:
1. PVB's unapproved for containment protection, except for lawn irrigation systems.
2. Do not install in flood prone areas or in storm retention or detention basins.
3. Do not install PVB's > 5' above ground level.
4. Protect PVB's from freezing with a positive heat source.
5. Horizontal installation required as shown.
6. Joints to be adequately restrained.
7. Metallic riser piping required.
8. The installation of a backflow assembly may create a closed loop system. The customer is responsible for compliance with current plumbing codes which may require installation of (private) pressure relief devices and/or expansion tanks.

CONSTRUCTION NOTES:
A. Meter box per standard drawing 2362 or 2363.
B. Property line.
C. Service line without taps or tees between the meter and the backflow prevention assembly.
D. Isolation valve (gate valve or ball valve).
E. Unions, minimum 4" above grade.
F. Tee with drain plug or ball drain valve, minimum 6" above grade.
G. USC approved PVB, as shown.
H. Spool, 12" maximum length.
I. Enclosure, optional. See water standard drawing 2389 for design criteria if enclosure is used.
J. Control valve (electric or manual), optional.
K. 12" minimum above all downstream piping & outlets.
L. Sprinkler.
HINGED COVER

GENERAL NOTES:
1. ENCLOSURE DESIGN: CONSTRUCTION AND MAINTENANCE IS THE RESPONSIBILITY OF THE CONSUMER. THE DESIGN ENCLOSURES MUST MEET THESE MINIMUM SPECIFICATIONS. CONSUMER MAY SELECT THE USE OF TYPE A, B, OR C ENCLOSURE.
2. INSTALLATION MUST BE PROTECTED FROM FREEZING.
3. ENCLOSURES MUST BE INSTALLED AND MAINTAINED SO THAT UNITS ARE SAFELY & READILY ACCESSIBLE FOR TESTING, MAINTENANCE & REPAIRS.
4. FOR TYPE B ENCLOSURE, THE HINGE MAY BE LOCATED AT OPTION A OR B AS SHOWN.
5. ALTERNATE DESIGNS MAY BE USED WITH PRIOR WRITTEN APPROVAL FROM THE WATER AUTHORITY CROSS CONNECTION OFFICE.
6. IF FLOOR DRAIN IS USED, FLOOR SLAB SHALL BE SLOPED TOWARD DRAIN HOLE.

CONSTRUCTION NOTES:
A. USE APPROVED RPBA, DCVA, DDCA OR PPV.
B. DRAIN: DRAIN OF ADEQUATE SIZE TO ALLOW FOR PROPER DRAINAGE. SHEILD IS RECOMMENDED FOR SIDE DISCHARGING RELIEF VALVES. FOR TYPE C ENCLOSURE, SWING CHECK IS RECOMMENDED WHEN DRAINING TO DAYLIGHT.
C. ADEQUATE CLEARANCES REQUIRED FOR TESTING, MAINTENANCE & REPAIR.
D. 5' MAXIMUM FROM HANDWHEEL TO FINISH FLOOR, AS SHOWN. UNITS INSTALLED HIGHER THAN 2', CONSUMER MUST PROVIDE PERMANENT ACCESS PLATFORM/LADDER.

PLAN VIEW
TYPE A. ENCLOSURE: WITH PERMANENT SIDE WALLS

SECTION A-A

PROFILE

REMOVEABLE LID FOR ENCLOSURE A
INSULATION

FRONT VIEW
HINGED COVER

PROFILE

12" MIN
TO W/P SYSTEM
S OF MAX
TO PRIVATE WATER SYSTEM

SIDE VIEW
HINGE

WALL
FINISH FLOOR

SIDE VIEW
HINGE (OPTION A)

WALL
FINISH FLOOR

SIDE VIEW
HINGE (OPTION B)

WALL
FINISH FLOOR

PLAN VIEW
TYPE B ENCLOSURE: WITH HINGED COVER

TYPE C. ENCLOSURE: AND TYPICAL INSTALLATION INDOOR STRUCTURE

REVISIONS
WATER AUTHORITY
WATER ENCLOSURES

Dwg. 2399
JANUARY 2011
GENERAL NOTES:
1. SEE STANDARD DRAWINGS 2385, 2386 AND 2387.
2. THE INSTALLATION OF A BACKFLOW ASSEMBLY MAY CREATE A CLOSED LOOP SYSTEM. THE CUSTOMER IS RESPONSIBLE FOR COMPLIANCE WITH CURRENT PLUMBING CODES WHICH MAY REQUIRE INSTALLATION OF (PRIVATE) PRESSURE RELIEF DEVICES AND/OR EXPANSION TANKS.

CONSTRUCTION NOTES:
A. METER BOX PER STANDARD DRAWING 2362 OR 2363.
B. PROPERTY LINE.
C. SERVICE LINE WITHOUT TAPS OR TEES BETWEEN THE METER AND THE BACKFLOW PREVENTION ASSEMBLY.
D. USC APPROVED RPBA, DCVA OR DCDA.
E. ADEQUATE CLEARANCE REQUIRED FOR TESTING & MAINTENANCE.
F. PROTECTIVE ENCLOSURE. SEE STANDARD DRAWING 2389 FOR DESIGN CRITERIA.
G. PIPING AND FITTINGS MAY BE ABOVE OR BELOW GRADE.
H. GATE VALVE WITH HAND WHEEL.
CROSS-CONNECTION CONTROL CONTAINMENT
WITH MULTI-USE DOMESTIC & FIRE SERVICE LINE

1. If metered multi-use system is used, the RPBA must be the first connection from the meter. No taps will be allowed between the meter and the RPBA.

2. The backflow prevention assembly may be installed indoors or outdoors.

3. It is the responsibility of the customer to adequately size the meter for the service to sustain simultaneously the private fire protection system and the domestic water demands. The meter should be appropriately sized to accommodate low (domestic) and high (fire + domestic) flows.

4. The installation of a backflow assembly may create a closed loop system. The customer is responsible for compliance with current plumbing codes which may require installation of (private) pressure relief devices and/or expansion tanks.

CONSTRUCTION NOTES:
A. WATER MAIN.
B. METER.
C. CURB AND GUTTER.
D. RPBA.
E. UNMETERED FIRE LINE.
F. SERVICE LINE FOR DOMESTIC FIRE.
G. DOMESTIC SERVICE LINE.
H. PRIVATE FIRE HYDRANT.
I. BUILDING STRUCTURE.
J. INTERNAL FIRE PROTECTION SYSTEM.
K. PUBLIC GATE VALVE PER STANDARD DRAWING 2326.
L. PRIVATE VALVE TO BE OWNED AND MAINTAINED BY THE CUSTOMER.
M. METER WITH DUAL CHECK VALVE (PRIVATE) TO OWNED AND MAINTAINED BY THE CUSTOMER.
GENERAL NOTES:
1. THERE SHALL BE NO TAPS OR TEES BETWEEN THE HYDRANT AND THE RPBA.
2. IN ALL CASES, A FIRE HYDRANT METER MUST BE USED AT ALL TIMES.
3. FIRE HYDRANT METER PERMIT MUST BE PRESENT WITH THE METER AT ALL TIMES.
4. ONLY APPROVED HYDRANTS CAN BE USED AS STATED IN THE FIRE HYDRANT METER PERMIT.

KEYED NOTES:
A. FILL PIPE. PERMANENTLY MOUNTED ON TANK. SEE FILL PIPE DETAIL.
B. AIR GAP. AIR GAP IS TWICE THE DIAMETER OF FILL PIPE ABOVE FLOOD RIM.
C. HOSE CONNECTION.
D. FLOOD RIM.
E. FIRE HYDRANT METER.
F. USC APPROVED RPBA.
G. SUPPORTS REQUIRED.

RPBA = REDUCED PRESSURE BACKFLOW ASSEMBLY
**TEST LEAD CABLE**

- Copper solderless lug
- Test lead cable
- 1/8" brass tag with 3/16" min. stamped pipe identification
- Nylon tie strap

**CABLE IDENTIFIER**

- Curb and sidewalk
- Test station housing
- PVC conduit
- Transmission pipeline

**TEST STATION INSTALLATION (TYP.)**

**ISOLATION FLANGE DETAIL**

- Insulating gasket, full face "O" ring
- Insulating sleeve
- Insulating washer

**NOTES:**

1. Hardware quantities in insulating flange kit will vary based on gasket pattern and pipe size.
2. See specifications for isolation gasket, sleeve and washer materials.
3. For connections to foreign installations, install single-washer kits with the isolating washers only on the foreign side of the flanges.
4. For non-foreign install double washer kits with isolating washers on both sides of the flanges.
5. Do not apply metallic or other non-insulating paints to insulating parts or other edges of flanges.
6. Insulating sleeve to be 1/64" shorter than distance between SST washers when bolt is fully tightened.

**ABBREVIATIONS:**

- THHN = Thermoplastic High Heat-Resistant Nylon
- AWG = American Wire Gauge
- HMW/PE = High Molecular Weight Polyethylene
- SST = Stainless Steel

**REVISIONS**

WATER AUTHORITY

Water Corrosion Monitoring Details - 1

Dwg. 2396 January 2011
1) File structure to bare metal and clean surface.
2) Strip insulation from wire and attach sleeve.
3) Hold mold firmly with opening away from operator, ignite with flint gun.
4) Remove slag from connection with chipping hammer.
5) Cover connection with bituminous coating over all exposed metal.

CCP or CML/AC STEEL
PIPE BONDING INSTALLATION

EXOTHERMIC WELD DETAIL

BONDING CLIPS

TEST STATION HOUSING

ABBRIVATIONS:
THHN = THERMOPLASTIC HIGH HEAT-RESISTANT NYLON
AWG = AMERICAN WIRE GAUGE

WATER AUTHORITY

REVISIONS
WATER CORROSION MONITORING DETAILS - 2
DWG. 2397 JANUARY 2011
ISOLATION JOINT TEST STATION

NOTES:
1. ENGRAVE LABEL ON MACATA BOARD 3/16" THICK MIN.
2. FOR CASING TEST STATIONS SCREEN PRINT LABEL 1/2" MIN. ON TEST STATION CAP.

PROJECT # 6811-03
STATION # XXX+XX

TEST BOARD LABEL

CASING TEST STATION

ABBREVIATIONS:
• THHN = THERMOPLASTIC HIGH HEAT-RESISTANT NYLON
• AWG = AMERICAN WIRE GAUGE

REVISIONS

WATER AUTHORITY

WATER CORROSION MONITORING DETAILS - 3

DWC. 2398
JANUARY 2011
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(REVISED Jan., 2003, UPDATE NO. 7)
1. Transverse limits of paving subgrade prep shall extend to a min of 1 foot beyond the back of curb.

2. For transverse pavement structure extending below bottom of curb:
   a. Aggregate base course (ABC), treated ABC, treated subgrade soils, and asphalt concrete (AC) structure extending more than 1/2 inch below the bottom of a curb or curb & gutter shall extend transversely under and behind the curb or curb & gutter to a min of 1 foot beyond the back of curb.
   b. See Table for lift material requirements.

3. City Standard Pavement Designs Based on an R-value (%) and maximum traffic volumes defined below:
   a. Local residential streets (see std. dwg 2405)
      Roadway provides access to a maximum of 50 residential lots or has a maximum AADT of 500.
      Lift Thickness
      AC surface course 1 1/2"
      AC base course 1 1/2"
   b. Major local streets (see std. dwg 2405 b)
      Roadway to have a maximum AADT of 3000.
      Lift Thickness
      AC surface course 2"
      AC base course 2"
   c. Roads classified on the long range major street plan require a pavement design in accordance with section 20 of the development process manual.

4. The pavement structure section shall be selected such that the lifts of material module to 1/2 inch of the bottom of curb and comply with material limits specified below. (See std. dwgs 2407 & 2408)

5. All pavement material that extends more than 1/2 inch below the bottom of the curb shall be extended to 1 foot beyond the back of curb.

### Material Lift Thickness Requirements

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<td><strong>Min</strong></td>
<td><strong>Max</strong></td>
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<tr>
<td>Fill</td>
<td>4&quot;</td>
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<tr>
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<td>2&quot;</td>
<td>3&quot;</td>
<td>± 1/4&quot; (0.02 ft)</td>
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<tr>
<td>TYPE C, SP-IV</td>
<td>1 1/2&quot;</td>
<td>2 1/2&quot;</td>
<td>± 1/4&quot; (0.02 ft)</td>
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<td>1&quot;</td>
<td>2&quot;</td>
<td>± 1/4&quot; (0.02 ft)</td>
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<td>Treated soils</td>
<td>4&quot;</td>
<td>8&quot;</td>
<td>SEC: Section 304, 342 for construction requirements</td>
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1(1) The lift thickness/depths for a pavement section shall be identified in typical pavement sections on a project's plans and in a project's specifications.

2(2) Aggregate base course may be used if proper drainage can be provided.

3(3) Measured with a 10-foot straight edge in any direction.

Revisions: City of Albuquerque
4/26/04 Paving Pavement Design Standards DWG 2400 January 2003
GENERAL NOTES:

1. Reduce normal crown to no crown section when approaching perpendicular to valley gutter.

2. Reduce normal crown to half crown section when street is parallel to valley gutter.

3. For "T" intersections the through street will retain normal crown & the leg of the "T" will reduce normal crown to no crown section when approaching perpendicular to valley gutter.

4. Constr. plans will detail "T" intersection when drainage flows across through street of intersection.

5. Constr. plans will specify radius of curb returns.

CONSTRUCTION NOTES:

A. Normal 2% crown for residential street.

B. Transition section from full crown to no crown section.

C. No crown section.

D. Half crown section.

E. Transition section from full crown to half crown section.

F. Curb return.

G. Property return.

H. Flow line of valley gutter.
GENERAL NOTES:
1. CROWN ON STREET SHALL BE AS FOLLOWS:
   a. 32' STREET = 4"
   b. 40' STREET = 5"
   c. LESS THAN 32' STREET, PAVEMENT SLOPE = 2%.
2. ALL SUBGRADE COMPACTATION FOR C & G SHALL EXTEND 12" MIN. ON EITHER SIDE OF C & G OR CURB SECTION.
3. SUBGRADE PREPARATION UNDER SIDEWALK AND DRIVE PADS SHALL BE INCIDENTAL TO ITEM.
4. FINISH GRADE AT PROPERTY LINE SHALL BE BASED ON A MIN 2% SLOPE FROM TOP OF CURB.
5. ALL ASPHALT CONCRETE (AC) PAVEMENT SHALL COMPLY WITH SECTION 116.
6. ALL PORTLAND CEMENT CONCRETE (PCC) PAVEMENT SHALL COMPLY WITH SECTION 101.
7. IN ACCORDANCE WITH COA DPM THE FOLLOWING APPLIES UNLESS AUTHORIZED OTHERWISE BY THE CITY ENGINEER:
   a. RESIDENTIAL STREETS SERVING 50 LOTS OR LESS SHALL BE DESIGNED AS LOCAL RESIDENTIAL STREETS.
   b. RESIDENTIAL STREETS SERVING MORE THAN 50 LOTS WITH AN ANTICIPATED AWD > 3000 SHALL BE DESIGNED AS MAJOR LOCALS.
8. FOR SUBGRADE R-VALUE < 50, PAVEMENT SECTION SHALL BE DESIGNED IN ACCORDANCE WITH DPM CH. 23
9. SUBGRADE PREPARATION SHALL BE PERFORMED AFTER ALL SUBSURFACE UTILITIES ARE CONSTRUCTED.

CONSTRUCTION NOTES:
A. SIDEWALK AT STANDARD SETBACK.
B. SIDEWALK ADJACENT TO CURB. (NON-STANDARD, VARIANCE REQUIRED.)
C. STANDARD CURB AND GUTTER.
D. ASPHALT CONCRETE (AC) OR PORTLAND CEMENT (PCC) PAVEMENT.
E. 12" COMPACTED SUBGRADE PREP, 95% COMPACTION.

REVISIONS
CITY OF ALBUQUERQUE
1/19
12/15/92
8/29/94
LOCAL - RESIDENTIAL STREET SECTION
Dwg. 24054 JANUARY 2003
GENERAL NOTES:

1. CROWN ON STREET SHALL BE AS FOLLOWS:
   a. 32" STREET = 6"
   b. 40" STREET = 5"
   c. LESS THAN 32" STREET, PAVEMENT SLOPE = 2%

2. ALL SUBGRADE COMPACTON FOR C & G SHALL EXTEND 12" MIN ON EITHER SIDE OF C & G OR CURB SECTION.

3. SUBGRADE PREPARATION UNDER SIDEWALK AND DRIVE PADS SHALL BE INCLUDED WITH THE PARTICULAR ITEM.

4. FINISH GRADE AT PROPERTY LINE SHALL BE BASED ON A MIN 2% SLOPE FROM TOP OF CURB.

5. ALL ASPHALT CONCRETE (AC) PAVEMENT SHALL COMPLY WITH SECTION 116.

6. ALL PORTLAND CEMENT CONCRETE (PCC) PAVEMENT SHALL COMPLY WITH SECTION 101.

7. IN ACCORDANCE WITH CPA DPM THE FOLLOWING APPLIES UNLESS AUTHORIZED OTHERWISE BY THE CITY ENGINEER:
   - RESIDENTIAL STREETS SERVING 50 LOTS OR LESS SHALL BE DESIGNED AS LOCAL RESIDENTIAL STREETS.
   - RESIDENTIAL STREETS SERVING MORE THAN 50 LOTS AND AN ANTICIPATED AADT < 3000 SHALL BE DESIGNED AS MAJOR LOCAL STREETS.

8. FOR SUBGRADE R-VALUE < 5.0, PAVEMENT SECTION SHALL BE DESIGNED IN ACCORDANCE WITH DPM CH. 23.

9. SUBGRADE PREPARATION SHALL BE PERFORMED AFTER ALL SUBSURFACE UTILITIES ARE CONSTRUCTED.

CONSTRUCTION NOTES:

A. SIDEWALK AT STANDARD SETBACK.

B. SIDEWALK ADJACENT TO CURB. (NON-STANDARD, VARIANCE REQUIRED).

C. STANDARD CURB AND GUTTER.

D. ASPHALT CONCRETE (AC) OR PORTLAND CEMENT (PCC) PAVEMENT.

E. 12" COMPACTED SUBGRADE PREP, 95% COMPACTION.
GENERAL NOTES:
1. ESTATE TYPE STREET SECTION TO BE USED ONLY WHEN PERMITTED IN THE APPROVED DRAINAGE PLANS.
2. RIGHT-OF-WAY REQUIREMENTS TO BE ESTABLISHED BY THE DBE, DESIGN OF SIDEWALK CONFIGURATION, DRAINAGE REQUIREMENTS & OTHER APPURtenances LOCATIONS SHALL BE APPROVED ON AN INDIVIDUAL SITE BASIS AND SHALL BE SHOWN ON THE PROJECT CONSTRUCTION PLANS.
3. ALL ASPHALT CONCRETE (AC) PAVEMENT SHALL COMPLY WITH SECTION 118.
4. IN ACCORDANCE WITH CDA DPM THE FOLLOWING APPLIES UNLESS AUTHORIZED OTHERWISE BY THE CITY ENGINEER:
   - RESIDENTIAL STREETS SERVING 50 LOTS OR LESS SHALL BE DESIGNED AS LOCAL RESIDENTIAL STREETS.
   - RESIDENTIAL STREETS SERVING MORE THAN 50 LOTS AND WITH AWD GREATER THAN 10000 SHALL BE DESIGNED AS MAJOR LOCAL STREETS.
5. FOR SUBGRADE R-VALUE <50, PAVEMENT SECTION SHALL BE DESIGNED IN ACCORDANCE WITH DPM, CH 2.3.
6. SUBGRADE PREPARATION SHALL BE PERFORMED AFTER ALL SUBSURFACE UTILITIES ARE CONSTRUCTED.

CONSTRUCTION NOTES:
A. ASPHALT CONCRETE (AC) PAVEMENT.
B. PROJECT-DESIGNED SWALE.
C. COMPACTED SUBGRADE, 95% COMPACTATION.
D. MOUNTABLE CURB ESTATE TYPE.
E. THEORETICAL FACE OF CURB OR FLOWLINE.
F. SIDEWALK

Flexible Pavement Section

1-1/2" AC Typical Surface Course - Type C placed after all manhole, value covers/curbs are set to grade (Sections 116, 330).

Finish surface of subgrade shall be moisture controlled at compaction moisture range and/or prime coat applied as required by the engineer.

1-1/2" AC Type C Pavement Course (Sections 116, 330).

12" Subgrade Soil, R-Value > 50, 95% Min. Compaction per Section 301.

See Sections 202, 204, and 301 for cut, fill, and subgrade construction requirements.

Tack coat as required by the engineer.
GENERAL NOTES:

1. STRUCTURAL THICKNESS OF PAVEMENT COMPONENTS WILL BE PER PAVEMENT DESIGN.

2. ALL SUBGRADE COMPACTION FOR C & G SHALL EXTEND 12" MIN. ON BOTH SIDES OF C & G OR CURB SECTION.

3. SUBGRADE PREPARATION UNDER SIDEWALK AND DRIVE PADS SHALL BE INCLUDED WITH THE PARTICULAR ITEM.

4. FINISH GRADE AT PROPERTY LINE SHALL BE BASED ON A MIN 2% SLOPE FROM TOP OF CURB.

5. SLOPE EASEMENT REQUIREMENTS WILL BE SHOWN ON PROJECT CONSTRUCTION PLANS.

6. TRANSVERSE SLOPE FOR PAVEMENT SHALL BE 2% TYPICAL.

7. PAVEMENT FINISH GRADES MAY BE MODIFIED PER ASPHALT CONCRETE (AC) SURFACE COURSE.

8. PLANT MIX SEAL SHALL BE PLACES ABOVE THE TOE OF THE GUTTER.

9. PORTLAND CEMENT CONCRETE (PCC) MEDIAN PAVEMENT SHALL BE TEXTURED CONCRETE RUNNING BOND PATTERN TRANSVERSE TO CENTERLINE COLOR AS SPECIFIED.

10. SEE STANDARD DWG. 2407 FOR ARTESIAL/COLLECTOR, FLEXIBLE OR RIGID PAVEMENT SECTION.

CONSTRUCTION NOTES:

A. ASPHALT CONCRETE (AC) SURFACE COURSE.

B. ASPHALT CONCRETE (AC) PAVEMENT.

C. COMPACTED BASE.

D. COMPACTED SUBGRADE, 95% MIN.

E. CURB & GUTTER MEDIAN.

F. CURB & GUTTER STANDARD.

G. SIDEWALK ADJACENT TO CURB (NON-STANDARD, VARIANCE REQUIRED).

H. SIDEWALK AT STANDARD SETBACK.

J. MEDIAN.

K. 1/2" EXPANSION JOINT MATERIAL.

L. SAW & SEAL JOINT PER STD. DETAIL.

M. TYPICAL MEDIAN PAVING (SEE DETAIL).

N. SEAL JOINT TO TOP OF CURB.

P. 4 X 30" H. BAR @ 2", O.C.

Q. EXTENSION NOT REQUIRED AT INTERNAL CAST CURB.

Q. EXTENSION NOT REQUIRED AT INTERNAL CAST CURB.

REV/SNOS CITY OF ALBUQUERQUE
9/91 PAVING
12/15/92 ART./COLL. ST SECTIONS
9/29/94 WITH MEDIAN
DWG. 2405
JANUARY 2003.
GENERAL NOTES:
1. REQUIREMENT FOR COMMERCIAL OR RESIDENTIAL PAVEMENT SECTION SHALL BE DETERMINED BY THE ENGINEER.
2. TRANSVERSE SLOPE OF ALLEY PAVEMENT SURFACE SHALL BE 2% MAX.
3. TYPE AND LOCATION OF JOINTS SHALL BE DEFINED ON THE PROJECT CONSTRUCTION PLANS, SEE SECTION 337.

CONSTRUCTION NOTES:
A. ALLEY GUTTER, SEE DWG. 2415.
B. WALL OR BUILDING FOUNDATION AT PROPERTY LINE.
C. USE 6" x 18" PORTLAND CEMENT CONCRETE (PCC) CUT-OFF WALL.
D. RIGHT-OF-WAY ADJACENT TO OPEN AREA.
E. USE RESIDENTIAL SECTION FOR RESIDENTIAL ALLEY USE, SEE DWG. 2405.
F. USE COMMERCIAL SECTION FOR COMMERCIAL ALLEY USE, SEE DWG. 2407.
G. USE 1/2" EXPANSION JOINT WHERE PCC PAVEMENT ADJACENT WALLS, RIGID PAVEMENT, POLES, TRANSFORMERS, ETC.
H. TYPE 4 TIED JOINT, SEE DWG. 2450.
I. SAWCUT AND SEAL JOINT, SEE DWG. 2450.
GENERAL NOTES:
1. CONCRETE PAVING SHALL BE INSTALLED IN A MODULAR RF HERRINGBONE PATTERN.
2. ERODE RETENTIVE CURB SHALL HAVE CONTROL JOINTS INSTALLED AT LINE LINES AND THE END OF EACH TRAFFIC LANE CROSSED. IF TRAFFIC LANES ARE NOT DEFINED OF A NON-STANDARD WIDTH CONTROL JOINTS SHALL BE EQUITABLY SPACED THE LENGTH OF THE RESTRANT CURB AT 6' (NOW) INTERVALS.
3. BEDDING AND JOINT SAND SHALL BE DRY, WASHED CONCRETE SAND COMPLYING WITH REQUIREMENTS OF ASTM C33, STANDARD SPECIFICATIONS FOR CONCRETE AGGREGATE.
4. WIDTH OF CROSSWALK SHALL BE ADJUSTED SO THAT NO TRIMMING OF CONCRETE PAVING IS REQUIRED BETWEEN RESTRAINT CURBS.
5. OTHER TYPES OF ACCEPTABLE CONTAINMENT WALLS MAY BE USED WHEN DETAILED ON THE CONSTRUCTION PLANS AND APPROVED BY THE ENGINEER.

INSTALLATION PROCESS:
1. PLACE DRY CONCRETE SAND ON COMPACTED ASPHALT CONCRETE, AND SCREED TO A UNIFORM DEPTH NOT LESS THAN 1".
2. PLACE BRICK PAVING ON THE CONCRETE SAND IN PATTERN AND JOINT WIDTH(S) SPECIFIED.
3. VIBRATE PAVING INTO THE SAND BEDDING WITH A PLATE VIBRATOR. A MINIMUM OF TWO PASSES OF THE VIBRATOR SHALL BE MADE ACROSS THE BRICK SURFACE, VIBRATOR SHALL BE CAPABLE OF 3,000 TO 5,000 LBS. CENTRIFUGAL COMPACTON FORCE, OPERATED AT A FREQUENCY OF 80 TO 90 HERTZ.
4. SWEET FILL DRY CONCRETE SAND INTO THE JOINTS AND VIBRATE ACROSS THE BRICK PAVING SURFACE. REPEAT SAND SWEET FILL UNTIL ALL JOINTS WILL NO LONGER TAKE SAND UNDER THE VIBRATOR ACTION.
5. VIBRATION SHALL NOT OCCUR WITHIN 3 FEET OF AN UNRESTRAINED EDGE OR LAYING FACES OF THE BRICK SURFACE. ALL BRICK PAVING PLACED 5 FEET OR GREATER FROM THE LAYING EDGE SHALL BE COMPACTED WITH SAND-FILLED JOINTS AT THE COMPLETION OF THE DAY'S WORK.
6. COVER THE REMAINING UNCOMPACTED AREA EXPOSED SAND BEDDING WITH WATERPROOF COVERING.

CONSTRUCTION NOTES:
A. 4x8" (NOW) x 3 1/8" CONCRETE BRICK PAVING, 1"=8000 psf, COMPLYING WITH REQUIREMENTS OF ASTM C935, STANDARD SPECIFICATIONS FOR SOLID CONCRETE INTERLOCKING PAVING UNITS, COLOR AS SPECIFIED BY THE ENGINEER.
B. PORTLAND CEMENT CONCRETE EDGE RETENTIVE CURB, 3" x 3" x 3" (NOW) BETWEEN CONTROL JOINTS.
C. WIDTH OF CROSSWALK BETWEEN RESTRAINT CURBS SHALL BE ADJUSTED SO THAT THE TRIMMING OF CONCRETE BRICK PAVERS WILL NOT BE REQUIRED ADJACENT TO RESTRAINT CURBS.
D. JOINTS BETWEEN BRICKS SHALL BE APPROX. 1/16" TO ALLOW FOR SAND FILLER.
E. BEDDING SAND 1" (NOW) WIN.
F. 2-3" (NOW) LIFT, TYPE C OR S-IV ASPHALT CONCRETE (SECTIONS 116, 336)
G. 1-2" (NOW) LIFT, TYPE B OR S-III ASPHALT CONCRETE (SECTIONS 116, 336)
H. 12" COMPACTED SUBGRADE, 95% COMPACTION.
I. STREET PAVEMENT SECTION.
J. TRAFFIC LANE LINE (YFP).
K. CONTROL JOINT.
L. CURB & GUTTER.
M. GAPS OCCURRING AT THE INTERFAC BETWEEN THE CONCRETE BRICK PAVING AND ADJACENT CURB & GUTTER AND OTHER MATERIALS SHALL BE FILLED WITH convex CURB PAVING WITH A MINIMUM COMBINATION OF THE PAVING NOT LESS THAN 2", GAPS LESS THAN 3/8" SHALL BE FILLED WITH SAND.
GENERAL NOTES:
1. CURB, GUTTER AND CUT-OFF WALL WILL BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE (PCC).
2. FOR STANDARD AND MEDIUM C & G ADJACENT TO ASPHALT CONCRETE (AC) PAVEMENT, PROVIDE CONTRACTION JOINTS AT 12' MAX. SPACING. CONTRACTION JOINTS SHALL BE EITHER SAWED OR TOOLED A MINIMUM OF 1" DEEP AT FINISHED FACES. 1/2" EXPANSION JOINTS TO BE INSTALLED AT CURB RETURNS & AT A MAXIMUM SPACING OF 200' BETWEEN CURB RETURNS AND SEPARATELY CONSTRUCTED DRIVEWAYS.
3. FOR ALL OTHER C & G CUT-OFF WALLS PROVIDE CONTRACTION JOINTS AT 12' MAX SPACING, 1/2" EXP. JTS. AT CURB RETURNS & AT A MAXIMUM SPACING OF 100' BETWEEN CURB RETURNS & EACH SIDE OF SEPARATELY CONSTRUCTED DRIVEWAYS. CONTRACTION JOINTS SHALL BE EITHER SAWED OR TOOLED A MINIMUM OF 1" DEEP AT ALL FINISHED FACES. REINFORCEMENT SHALL NOT BE USED IN CUT-OFF WALLS.
4. FOR C & G CONSTRUCTED WITH PCC PAVEMENT, CONTRACTION JOINTS AND EXPANSION JOINTS SHALL BE THE SAME AS THE PAVEMENT JOINTS.
5. ALL EDGES SHALL BE EDED WITH A 3/8" RADIUS EDGING TOOL.
6. STANDARD C & G SHALL BE USED FOR NEW CONSTRUCTION UNLESS OTHERWISE AUTHORIZED BY THE CITY ENGINEER.
7. REMOVE & REPLACE PAVEMENT 1" WIDE ADJACENT TO CURB TO PREVENT CURB FROM EXCEEDING THE LIMITS OF CURB. CURB TO MATCH EXISTING AC PAVEMENT.
8. 1/4" ISOLATION JOINT SHALL BE PLACED BETWEEN SIDEWALK AND C & G WHEN CAST ADJACENT TO EACH OTHER.
9. ADA — AMERICANS WITH DISABILITY ACT.

CONSTRUCTION NOTES:
SEE COA DRAWING 2415B

REVISIONS
9/91  
11/14/91  
12/15/92  
3/30/98

CITY OF ALBUQUERQUE
PAVING
CURB AND GUTTER & CURB CUT DETAILS
DWG 2415A  JANUARY 2003
CONSTRUCTION NOTES

A. RED CONC CHANNEL LINING OR CUT-OFF WALL PROVIDE 1/4" EXP JOINT BETWEEN BACK OF CURB & CHANNEL LINING AND/OR WALL.
B. VARIABLE DEPRESS AS NEEDED.
C. DRIVE NO. 4 PIN 18" DEEP IN HOLES DRILLED @ 2" O.C. IN EXISTING PAVEMENT SEAL WITH EPOXY
D. EXISTING ASPHALT CONCRETE (AC) OR PORTLAND CEMENT CONCRETE (PCC) PAVEMENT.
E. THEORETICAL FACE OF CURB OR FLOWLINE.
F. TRAFFIC SIDE.
G. 3/4" RADIUS.
H. 1-1/2" RADIUS.
I. 2" RADIUS.
J. 28" RADIUS.
K. TACK COAT.
L. DIMENSIONS AT ROUNDED CORNERS MEASURED TO INTERSECTION OF STRAIGHT LINES.
M. 4" AC MAJOR LOCAL OR BETTER (SF=118)
N. 3" AC LOCAL RESIDENTIAL STREET (TYPE C)
O. 2" AC BICYCLE PATH (TYPE D RESIDENTIAL)
P. 8" SCARRIFIED AND COMPACTED SUBGRADE 95% MINIMUM COMPACTION PER SECTION 301.
Q. 4.5" AC PAVEMENT.
R. #4 CONT. BETWEEN JOINTS 3" COVER AT JOINTS.
S. #3 PINS @ 3'-0" O.C. W/STD. HOOK.

GENERAL NOTES
SEE COA DRAWING 2415A

REVISIONS
9/91 11/14/91 12/15/92
3/20/94 CITY OF ALBUQUERQUE
PAVING
CURB AND GUTTER & TEMPORARY PAVING SECTION
Dwg. 24159 JANUARY 2003
CONSTRUCTION NOTES:

A. MOUNTABLE CURB, ROLL TYPE.
B. CURB TRANSITION, TRANSITION LENGTH BETWEEN DIFFERENT CURB TYPES SHALL BE 10 FT.
C. STANDARD CURB & GUTTER.
D. TOP OF CURB PROFILE (AT BACK OF CURB).
E. FLOWLINE.
F. (WHEELCHAIR RAMP) = CURB ACCESS.
G. 1/2" EXPANSION JOINT.
H. HEADER CURB, SEE STD. DWG. 2441 & 2415.
J. HEADER CURB MAY BE INTEGRAL CURB WITH RAMP (SEE ALTERNATE SECTION A-A ON STD. DWG. 2441).
K. FOR CURB ACCESS (WHEELCHAIR) RAMPS AT LOCATIONS NOT INVOLVING CURB TRANSITIONS, SEE STD. DWGS. 2440 & 2414.
L. 50.1 MAX SLOPE ALL DIRECTIONS.
M. 12:1 MAX SLOPE.
N. ACCESS RAMP FLUSH WITH FILLT.

CURB TRANSITION WITH CURB ACCESS
(WHEELCHAIR) RAMP

Profile at back of curb
CURB TRANSITION WITH CURB ACCESS RAMP PER DETAIL

REVISIONS CITY OF ALBUQUERQUE
1/91 PAVING
11/14/91 MOUNTABLE TO STANDARD
3/30/94 CURB TRANSITION
DWG. 2419 JANUARY 2003
GENERAL NOTES

1. DESIGN ELEVATIONS TO BE GIVEN AT EACH END OF THE CURB RETURN (TOP OF CURB ELEV.) AND AT INTERSECTIONS OF PROJECTED FLOWLINES (FLOWLINE ELEV.).

2. ON UPSTREAM AND DOWNSTREAM ENDS OF THE INTERSECTION, VALLEY GUTTER CONSTRUCTION SHALL EXTEND TO THE END OF RETURN.

3. THE VALLEY GUTTER TO BE REINFORCED WITH 6" X 6" X NO. 6 GA. WIRE MESH.

4. INVERT OF VALLEY GUTTER TO EXTEND FROM FLOWLINE OF UPSTREAM CURB RETURN TO FLOWLINE OF DOWNSTREAM CURB RETURN.

5. CURB FLOWLINE AND TOP OF CURB ELEV. SHOWN IN THE BOX CORRESPOND TO QUADRANTS INDICATED ON THE CURB RETURN IN THE CLOCKWISE DIRECTION.

6. -------- DENOTES 1/2" EXPANSION JOINT.

7. FOR NEW CONSTRUCTION, VALLEY GUTTER SHALL BE CONSTRUCTED PRIOR TO ADJACENT PAVEMENT. ASPHALT CONCRETE SHALL BE INSTALLED MONOLITHICALLY TO MEET NEW VALLEY GUTTER.

8. PRIOR TO CONSTRUCTION OF NEW VALLEY GUTTER ON EXISTING ACCEPTED STREETS, PAVEMENT SHALL BE REMOVED AS SHOWN ON PLANS.

CONSTRUCTION NOTES

A. END OF CURB RETURN, SEE NOTE 1.

B. FOR RAMP DETAILS, SEE DWG. 2440, 2441.

C. INTERSECTION OF FLOWLINES, SEE NOTE 1.

D. VALLEY GUTTER (CURB RETURN/FILLET)

E. DIRECTION OF FLOW.

F. FLOWLINE.

G. PROJECTED FLOWLINE OF 1-1/2" INVERT, SEE NOTE 2.

H. 6" X 6" X NO. 6 GA. WIRE MESH.

I. BEGIN CROWN WARP TO NO CROWN SECTION AS PER DWG 2441 OR AS SPECIFIED ON PLANS OR AS INSTRUCTED BY THE ENGINEER.

J. NO. 4 RASH 3'-0" LONG AT 16" O.C.

K. ALTERNATE A, WITH FILLET AS PER PLANS.

L. ALTERNATE B, NO FILLET AS PER PLANS.

M. THE 1-1/2" INVERT DEPTH MAY BE REDUCED TO IMPROVE RIDEABILITY WITH APPROVAL OF ENGINEER.

CITY OF ALBUQUERQUE

PAVING

CONCRETE VALLEY GUTTER

DWG. 2420

AUG. 1986
GENERAL NOTES
1. PLAINLINE AND T.C. ELEV. TO BE GIVEN AT QUARTERPOINTS FROM CURB RETURN "A" TO CURB RETURN "B" IN THE COUNTERCLOCKWISE DIRECTION.
2. INV. OF VALLEY GUTTER TO EXTEND FROM PLAINLINE OF UPSTREAM CURB RETURN TO PLAINLINE OF DOWNSTREAM CURB RETURN.
3. ENTIRE VALLEY GUTTER TO BE REINFORCED WITH 6" X 6" X NO. 6 GA. WIRE MESH.
4. " " DENOTES 1/2" PEDMOLDED BIT. EXPANSION JOINT.

CONSTRUCTION NOTES
A. EXPANSION JOINT (MAX. 18 FT, O.C.).
B. VALLEY GUTTER.
C. PLAINLINE.
D. MONOLITHIC CONSTRUCTION (INCLUDING CURB).
E. CURB RETURN "A".
F. CURB RETURN "B".
G. 6" X 6" X NO. 6 GA. WIRE MESH.
H. SLIP PAVING TO VALLEY GUTTER.
I. GUTTER WILL BE DEPRESSED FROM POINT 1 TO POINT 2.

PLAN
CUL-DE-SAC

SECTION A-A
SECTION B-B
GENERAL NOTES

1. VALLEY GUTTERS SHOWN IN THIS DRAWING ARE TO BE USED WHERE THERE IS A NON-STOPPING CONDITION FOR VEHICLES CROSSING THE VALLEY GUTTERS.

2. VALLEY GUTTERS ARE NOT TO BE USED AS STANDARD DESIGN FOR CROSSING WATERS ACROSS COLLECTOR OR ARTERIAL ROADWAYS EXCEPT WITH WRITTEN AUTHORIZATION FROM THE CITY TRAFFIC ENGINEER.

3. REFER TO OTHER CITY OF ALBUQUERQUE STANDARD DRAWINGS FOR CURB & GUTTER AND PAVING CONSTRUCTION DETAILS.

4. SPECIAL VALLEY GUTTERS SHALL BE F.C.C. (SEE SECTION 101).

CONSTRUCTION NOTES

A. FOUNDATION FOR SPECIAL VALLEY GUTTERS SHALL BE EQUAL TO BASE AND SUBGRADE REQUIREMENTS FOR ADJACENT PAVEMENT SECTION BELOW BOTTOM OF GUTTER, EXCEPT IN NO CASE SHALL IT BE LESS THAN 12" OF COMPACTED SUBGRADE (SEE SECTION 801).

B. SPECIAL VALLEY GUTTERS SHALL BE COMPLETED PRIOR TO PLACEMENT OF ADJACENT ASPHALT SURFACE COURSE.

C. TRANSITION LENGTHS TO BE CALCULATED PER TABLE.

SECTION X-X

DEPRESSED CURB

DEPRESSED CURB

LOCAL STREET (25 MPH DESIGN SPEED)

SECTION Y-Y

PAVING

SPECIAL VALLEY GUTTERS

CITY OF ALBUQUERQUE

REVISIONS

1/9/91
1/14/91

DWG. 2422
AUG 1986
GENERAL NOTES:
1. THESE DETAILS ARE PROVIDED FOR HIGH TRAFFIC VOLUME PRIVATE ENTRANCES TO COMMERCIAL SITES AND THE LINE, IN LIEU OF STANDARD DRIVEWAYS.

CONSTRUCTION NOTES:
A. INCLUDE QUARTER POINT ELEVATIONS, SEE STD. DETAIL DWG. 2420.
B. WHERE INTERIOR SIDEWALK CONNECTION IS TO BE PROVIDED - CONSTRUCT CURB ACCESS RAMPS AS PER STD. DETAIL DWG. 2448.
C. INITIAL GRADE TO BE 4% OR LESS WHEN CONNECTING TO COLLECTOR OR MINOR STREETS. 6% OR LESS WHEN CONNECTING TO LOCAL STREETS.
D. INCLUDE ELEVATIONS AT EACH END OF CURB RETURN AND INTERSECTIONS OF PROJECTED FLOWLINES. SEE STD. DWG. 2420.
E. AT PROPERTY LINE, CONSTRUCT HEADER CURB. SEE STD. DWG. 2405.
F. IF SIDEWALK IS AGAINST CURB, THE SIDEWALK SHOULD BE TRANSITIONED TO KEEP THE CURB ACCESS RAMP IN THE LOCATION SHOWN.
G. 1/2" EXPANSION JOINT MATERIAL.
H. THEORETICAL FACE OF CURB OR FLOWLINE.

PRIVATE ENTRANCE
1. Deviations from these standards shall be submitted to the city engineer and/or city traffic engineer for approval prior to construction.

2. Subgrade under sidewalks and driveways shall be compacted in accordance with Section 303.

**Construction Notes**

A. Slope (vertical to horizontal).

B. Sidewalk widths shall be in accordance with Chapter 23 of the Development Process Manual.


D. See drive-pavement details, DWG 2425.

E. Walkway variable.

F. Property line.

G. 3" expansion joints where sidewalk or drive-pavement abuts buildings, fences, walls or other immovable objects.

H. 12 ft. min., 22 ft. max. - Residential.

12 ft. min., 25 ft. max. - Light Commercial.

20 ft. min., 35 ft. max. - Heavy Commercial.

I. Contraction joints.

J. See curb access ramps, DWG 2440 & 2441.

K. Check dimension from both property line and sidewalk. Use in areas where drive-pavement is farthest from intersection.
GENERAL NOTES:
1. FOR SIDEWALK CONSTRUCTION DETAILS, SEE DWG. 2430.
2. USE WHERE AVAILABLE R/W EXIST, TO BE DETERMINED BY THE ENGINEER.
3. PROVIDE E X-REAR EXPANSION JOINT MATERIAL AROUND ALL POWER POLES AND FIRE HYDRANTS WITHIN THE SIDEWALK AREA.

CONSTRUCTION NOTES:
A. POWER POLE.
B. LEAVE 6" CLEARANCE ALL AROUND TREE TRUNK.
C. TOP OF CURB.
D. FIRE HYDRANT.
E. SIDEWALK.
F. BACK OF CURB.
G. EXTERIOR EDGE OF SIDEWALK TO BE TANGENT TO ARCS.
H. EXPANSION JOINT MATERIAL.

ON STRAIGHT STRETCH
4'-0" SIDEWALK ENCLOSING A FIRE HYDRANT

AT CURB RETURN
GENERAL NOTES:
1. FOR SIDEWALK CONSTRUCTION DETAILS SEE DWG. 2430.
2. SETBACK TO BE DETERMINED BY AVAILABLE R/W.

CONSTRUCTION NOTES:
A. WEAKENED PLANE JOINT ALIGNMENT TO BE RADIAL.
B. 3/8 EXPANSION JOINT.
C. WEAKENED PLANE JOINTS SHALL NOT BE GREATER THAN 6 FT. O.C. BETWEEN EXPANSION JOINTS, MEASURED ALONG E OF SIDEWALK.

Curb Type to Offset Type

Curb Type with Varying Widths
GENERAL NOTES:
1. CURB ACCESS RAMPS ARE NORMALLY TO BE LOCATED AT THE CENTER OF THE RETURN OR AS DIRECTED BY THE CITY TRAFFIC ENGINEER.
2. SURFACE TEXTURE OF CURB ACCESS RAMPS SHALL BE OBTAINED BY HEAVY BROOMING (TEXTURE DEPTH .0625'), TRAVERSE TO THE SLOPE OF THE RAMP.
3. CURTAIN FLOW-LINE PROFILE SHALL BE MAINTAINED THROUGHOUT THE AREA OF THE RAMP, DRAINAGE CATCH BASIN STRUCTURES SHALL NOT BE PLACED IN LINE WITH RAMPS.
4. WIDTH OF SIDEWALK AND RAMP MUST BE MAINTAINED AT A MINIMUM OF 5'-0" THROUGH ENTIRE RAMP LENGTH.

CONSTRUCTION NOTES:
A. SLOPE OF GUTTER DEPENDENT ON REQUIREMENTS FOR VALLEY GUTTER.
B. Flush with ramp and gutter.
C. CURB & GUTTER (SEE STD. DWG. 2415-GUTTER AT CURB ACCESS RAMPS).
D. 1/2" EXPANSION JOINT.
E. PARALLEL LINES-TOP AND BOTTOM OF RAMP.
F. 12:1 MAX SLOPE OF RAMP.
G. CONTRACTOR JOINT.
H. CURB & GUTTER, SEE DWG. 2415.
J. HEADER CURB, SEE DWG. 2440.
K. BACK OF SIDEWALK.
L. BACK OF SIDEWALK RADIUS TO BE ESTABLISHED AS TO MAINTAIN A 5'-0" RAMP WIDTH (MINIMUM) OR NONE THROUGHOUT, SEE STD. DWG. 2440 (NOTE 5) IF LESS THAN 5'-0" IS AVAILABLE DUE TO UNINTIMELY UNRESOLVABLE CONSTRAINTS.
N. 1/2" MAP.
O. ANY PRIVATE LANDSCAPING OR DR SOD 330.006 80122440 DE BE RESTORED TO ORIGINAL CONDITION. SHOULD ANY PRIVATE IMPROVEMENT NEED TO BE REMOVED, OWNER MUST BE NOTIFIED.
**JOINT DIMENSIONS**

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<th>b</th>
<th>c</th>
<th>d</th>
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<th>f - min.</th>
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**GENERAL NOTES:**

1. THICKNESS OF SLAB SHALL BE AS INDICATED ON DRAWINGS. SEE TABLE ABOVE.
2. DAILY CONCRETE PLACEMENT SHALL TERMINATE AT A JOINT.

**CONSTRUCTION NOTES:**

A. JOINT FILLER, INSTALL PER MANF. INSTR.
B. OVER BACER ROD OR JOINT TAP.
C. 3/4" X 16" SMOOTH DOWELL BAR @ 12" O.C., 1/2 GREASED 1/2 PAINTED.
D. KEY JOINT, INSTALL PER MANF. INSTR.
E. 2'-0" O.C.
F. THICKNESS OF SLAB.
### Joint Dimensions

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### Type 5 Expansion Joint

**Concrete Pavement**

**Asphalt Concrete**

**Typical Asphalt Section**

**Type 6 Transition Joint**

**Concrete to Asphalt**

### General Notes:

1. Thickness of slab shall be as indicated on drawings. See table above.
2. Daily concrete placement shall terminate at a joint.

### Construction Notes:

A. Joint filler, install per manf. instr.
   over backer rod or joint tape.
B. 3/4" @ 16" smooth dowel bar @ 12" o.c., 1/2 greased 1/2 painted.
C. No. 4 deformed bars, 3'-0" long at 2'-0" o.c.
D. Thickness of slab.
E. Compressible filler full height.

### City of Albuquerque

Revisions

Concrete Joints Types 5 & 6

DWG.2451

Dec 1992
GENERAL NOTES:

1. MAXIMUM DISTANCE BETWEEN JOINTS L, SHALL NOT EXCEED THE FOLLOWING CRITERIA:
   a. 2.5" PER INCH OF SLAB DEPTH TIMES THE SLAB DEPTH IN INCHES. (2.5"/" X D)
      WHEN THE SLAB DEPTH IS LESS THAN 10".
   b. 2" PER INCH OF SLAB DEPTH TIMES THE SLAB DEPTH IN INCHES. (2.0"/" X D)
      WHEN THE SLAB DEPTH IS 10" OR MORE.
   c. 15".

2. THE RATIO OF THE LONG SIDE, L, TO THE SHORT SIDE, S, L/S, OF A PAVEMENT PANEL SHALL
   RANGE FROM 1.1 TO 1.5:1.

3. JOINT LENGTH SHALL NOT BE SHORTER THAN 1.5'.

4. TYPE 3 JOINTS ARE REQUIRED ON COLLECTOR/ARTERIAL STREETS ONLY.

CONSTRUCTION NOTES:

A. THE CONTRACTOR SHALL SUBMIT A PAVEMENT JOINT PLAN TO THE ENGINEER FOR HIS REVIEW AND
   APPROVAL PRIOR TO THE PLACEMENT OF ANY CONCRETE PAVEMENT. IF THE PLAN DIFFERS FROM
   THE JOINT PATTERN SHOWN ON THE CONSTRUCTION PLANS, THE CHANGES SHALL BE CALLED OUT. THE
   JOINT PLAN SHALL INCLUDE THE LOCATIONS OF MANHOLES, VALVE BOXES AND DRAIN INLETS, AND
   THE TYPE OF JOINT TO BE CONSTRUCTED. (SEE FIG. 2453).

B. JOINT 1 MAY BE ALTERNATED WITH JOINT 3 IF THE CONTRACTOR CAN PLACE THREE (3) OR MORE
   LAMES IN A SINGLE PASS.

C. CONCRETE PLACEMENT SHALL TERMINATE AT A PAVEMENT JOINT.

D. ALL LONGITUDINAL JOINTS SHALL BE SAWN TO A MINIMUM DEPTH OF D/3.

E. ALL TRANSVERSE JOINTS SHALL BE SAWN TO A MINIMUM DEPTH OF D/4.

F. JOINTS SHALL BE SAWN AS SOON AS THE CONCRETE WILL CUT WITHOUT LEAVING A RAVENED
   EDGE. SAW CUTS SHALL BE CURED SAME AS THE ADJACENT CONCRETE.

G. ARTERIAL/COLLECTOR PC PAVEMENT IN INTERSECTIONS SHALL BE FINISHED WITH A TRANSVERSE "BARE TIMED" TEXTURE. THE TIMING
   SHALL EXTEND A MINIMUM OF 100' AWAY FROM THE INTERSECTION ON THE APPROACHES AND
   DEPARTURES OF ALL LEGS OF THE INTERSECTION OR THE LENGTH OF THE APPROACH AND DEPARTURE
   OF THE SIDE STREETS IF LESS THAN 100'.

H. PC PAVEMENT BETWEEN INTERSECTIONS AND RESIDENTIAL STREETS/INTERSECTIONS SHALL BE
   FINISHED WITH A FULL WIDTH LONGITUDINAL CHISEL TEXTURE STABILIZED DRY.

J. END OF DAY WORK.

K. PLACE 1/2" EXPANSION JOINT FILLER IN CURB AT ALL RADIUS POINTS.

L. ASPHALT PAVING.

M. FIRST STREET PAVED.

TYPICAL CONCRETE PAVEMENT JOINT PATTERN

CITY OF ALBUQUERQUE

PAVING

TYPICAL CONCRETE PAVEMENT

JOINT PATTERN

DWG. 2452

REV 107020
FIGURES

TYPE 4
PANELS WITH 2 (TWO) OR MORE PenETRATIONS IN A SINGLE PANEL, THE PANEL SHALL BE REINFORCED BETWEEN BOTH TRANSVERSE AND LONGITUDINAL JOINTS WITH #5 EACH AT 6" O.C. CONTINUOUS BETWEEN JOINTS

TYPE 1
JOINTS INTERSECT Penetration

TYPE 2
SINGLE JOINT INTERSECT Penetration

TYPE 3
SINGLE Penetration NOT AT A JOINT
GENERAL NOTES:
1. GRADE ADJUSTMENTS OF MANHOLE FRAME AND COVER SHALL BE MADE BY ADDING BRICK COURSES OR STEEL/CONCRETE ADJUSTMENT RINGS DIRECTLY UNDER THE FRAME. THE ADJUSTMENT MAY BE MADE IN THIS FASHION TO A MAXIMUM HEIGHT OF 24" FOR THE ADJUSTMENT BRICKS/RINGS. IF ADJUSTMENTS REQUIRE GREATER THAN A 24" ADJUSTMENT, THE CONE SHALL BE REMOVED, THE BARREL HEIGHT ADJUSTED AND CONE REPLACED. IF LESS THAN ONE COURSE OF BRICKS (6") IS REQUIRED, GROUT MAY BE USED. THE USE OF CONCRETE AND STEEL ADJUSTMENT RINGS IS PREFERRED.

2. ALL MATERIALS MUST COMPLY WITH THE CURRENT WATER AUTHORITY APPROVED PRODUCTS LIST.

3. NEW RINGS AND COVERS, REMOVAL AND REPLACEMENT OF CONCRETE COLLARS, INSTALLATION OF EMD'S AND THE INSTALLATION OF NEW POLYMER COATED CORRUGATED METAL PIPE FOR VALVE CANS SHALL BE CONSIDERED INCIDENTAL TO THE ADJUSTMENT PAY ITEM.

4. NEW RINGS AND COVERS WILL BE REQUIRED IF CURRENT RINGS AND COVERS DO NOT MEET CURRENT STANDARD SPECIFICATIONS.

5. INSTALLATION MUST COMPLY WITH THE FOLLOWING STANDARD DRAWINGS:
5.1. 2109 — SANITARY SEWER MANHOLE COVERS
5.2. 2110 — STORM MANHOLE COVERS
5.3. 2128 — VACUUM SEWER VALVE RINGS AND COVERS
5.4. 2310 — WATER MANHOLE COVERS
5.5. 2328 — WATER VALVE AND HYDRANT RINGS AND COVERS
5.6. 2329 — FIRE LINE RINGS AND COVERS

6. TO ENSURE THE SPECIFIED QUALITY OF CASTINGS WILL BE GUARANTEED, ONLY CASTINGS MANUFACTURED IN THE UNITED STATES OF AMERICA WILL BE ACCEPTABLE.

7. EMD PLACEMENT MUST COMPLY WITH THE FOLLOWING:
7.1. SANITARY SEWER MANHOLES — EMD SHALL BE PLACED 1 FOOT UPSTREAM OF THE MANHOLE OVER THE MAIN
7.2. WATER VALVE AND SANITARY SEWER VALVE CANS — EMD SHALL BE PLACED 1 FOOT NORTH OR WEST (DEPENDING ON LINE DIRECTION) OF THE VALVE OVER THE WATER MAIN OR VACUUM SEWER MAIN
7.3. STORM SEWER MANHOLES — EMD'S ARE NOT REQUIRED AND SHALL NOT BE PLACED AT STORM SEWER MANHOLES

CONSTRUCTION NOTES:
A. BRICKS OR ADJUSTMENT RINGS, 24" MAXIMUM.
B. OVERLAY.
C. USE A CONCRETE PAD PER STANDARD DRAWING 2461.
D. MANHOLE FRAME AND COVER PER STANDARD DRAWINGS 2109, 2110 AND 2310.
E. EXISTING PAVING SECTION.
F. SUBGRADE SHALL BE COMPACTED TO 95%.
G. SEWER LINE.
H. NEW PORTLAND CEMENT CONCRETE COLLAR (4000 PSI). ALL ADJUSTMENTS SHALL BE INSTALLED WITH A NEW CONCRETE COLLAR. THE OLD COLLAR(S) SHALL BE REMOVED AND DISPOSED OF PROPERLY. REFER TO STANDARD DRAWINGS 2328 & 2461 FOR PROPER LINE IDENTIFICATION ON THE COLLAR.
I. ELECTRONIC MARKER DEVICE (EMD), SEE COA STANDARD SPECIFICATION SECTION 170. EMD'S ARE REQUIRED ON ALL WATER AND SANITARY SEWER ADJUSTMENT, THEY ARE NOT TO BE INSTALLED ON STORM SEWER MANHOLES.
J. POLYMER COATED STEEL PIPE CMP.
K. WATER LINE.

REVISIONS
WATER AUTHORITY
PAVING
MANHOLE AND VALVE
BOX REGRADING
DWG. 2460 JANUARY 2011
GENERAL NOTES:
A. MANHOLE OR VALVE BOX RING AND COVER PER CITY STANDARDS.
B. MANHOLE CONE/EXTENSION OR VALVE PIPE PER CITY STANDARDS. PIPE WITH SMOOTH INTERIOR.
C. 12" SUBGRADE, 95% COMPACTION (ASTM).
D. PAYING SECTION PER APPROVED DRAWINGS.
E. CONCRETE COLLAR IN PAVED AREAS – TYPICAL INSTALLATION.
F. CONCRETE COLLAR IN PAVED AREAS WITH ASPHALT CAP. TO BE USED WHEN CALLED FOR ON PLANS OR AS DIRECTED BY THE ENGINEER. WATER AUTHORITY APPROVAL MUST BE OBTAINED PRIOR TO INSTALLATION ON SANITARY SEWER AND/OR WATER APPLICATIONS.
G. CONCRETE COLLAR IN DIRT AREAS – SET RING 1" ABOVE GRADE AND SLOPE CONCRETE DOWN AS SHOWN TO 1" BELOW GRADE.
H. WATER VALVE INSTALLATIONS SHALL HAVE SURFACE STAMPED WITH LINE INFORMATION PER CITY STANDARD DWG 2326.
I. ELECTRONIC MARKER DEVICE (EMD) REQUIRED FOR ALL SANITARY SEWER MANHOLES AND WATER VALVES. SEE CA Standard Specification Section 170.

STANDARD INSTALLATION

PAVED AREAS

OPTIONAL INSTALLATION

DIRT AREAS

TOP PLAN

REVISIONS
WATER AUTHORITY
MANHOLE/VALVE
CONCRETE COLLAR DETAIL

DWG. 2461
JANUARY 2011
GENERAL NOTES:
1. COMPACTATION AS DETERMINED BY ASTM D1557 MAX DENSITY.
2. TRENCH CUT WIDTHS SHALL BE MIN. WIDTH plus 5 FEET FOR UTILITY INSTALLATION, ECONOMICAL BACKFILL, COMPACTATION AND COMPLIANCE WITH CURRENT AND APPLICABLE SAFETY REGULATIONS.
3. ALL PAVEMENT CUT EDGES WILL BE TRIMMED TO PRESENT AN EVEN LINE PRIOR TO REPLACEMENT OF PAVING MATERIAL. "STITCH" CUTTING OF PAVEMENT WILL NOT BE PERMITTED.
4. ADDITIONAL 2" THICKNESS OF ASPHALT CONC. REQ'D ON PAVEMENT CUTS LESS THAN 8" WIDE FOR ASPHALT CONC. PAVEMENT CUTS 8" OR MORE IN WIDTH AND LONGER THAN 100' SHALL BE PLACED WITH LAYDOWN MACHINE TO A DEPTH EQUAL TO THAT OF ASPHALT CONC. REMOVED.

CONSTRUCTION NOTES:
A. EXISTING ASPHALT PAVEMENT.
B. EXISTING BASE MATERIAL (ABC, BFB, CFB)
C. EXISTING SUBGRADE
D. COMPACTED FULL 95% COMPACTION
E. COMPACTED SUBGRADE, 95% COMPACTION
F. SUBGRADE TO WEST OR EAST APPARENT R -VALUE OF ADJACENT SOIL BY SOIL CLASSIFICATION (2 FEET MIN).
G. MATCH EXISTING BASE MATERIAL PLUS AN ADDITIONS 2" OF THICKNESS + 95% COMPACTION
H. MATCH EXISTING ASPHALT CONCRETE SECTION PLUS AN ADDITIONAL 1/2" OF THICKNESS
   a) FOR RESIDENTIAL STREETS, SURFACE COURSE SHAL BE 1 1/2" THICK, TYPE C
   b) FOR MAJOR LOCAL STREETS, SURFACE COURSE SHAL BE 2" THICK, TYPE B
   c) FOR ALL OTHER STREETS, SURFACE COURSE SHAL BE 2" THICK, S-11
I. SAW CUT OR BLADE-CUT ASPHALT PAVEMENT. SAW CUT ONLY ONE THIRD CONC. DEPTH
J. TACK COAT
K. 1/2" CUT-BACK
L. MATCH EXISTING CONCRETE PAVEMENT THICKNESS, 8" MINIMUM, 4000 PSI
M. EXISTING CONCRETE PAVEMENT
N. JOINTS TO BE TOOLED & SEAL IN ACCORDANCE WITH ENGINEERS REQUIREMENTS
O. 6" CONC. TREATED BASE (C.T.B).
### SECTION 2500

**STANDARD DETAILS FOR Traffic**

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<tr>
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<td>BUS SHIELD &quot;D&quot; - ELEVATION / SECTION</td>
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<td>2535.8</td>
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<td>2562B</td>
<td>TRAFFIC SIGNAL MASTARM DETAILS, TYPE II STANDARD</td>
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<tr>
<td>2562C</td>
<td>TRAFFIC SIGNAL MASTARM DETAILS, TYPE III STANDARD</td>
</tr>
<tr>
<td>2562D</td>
<td>TRAFFIC SIGNAL TYPE III STANDARD MISCELLANEOUS DETAILS</td>
</tr>
<tr>
<td>2565</td>
<td>TRAFFIC SIGNAL SCHOOL BEACON DETAILS, PEDESTAL</td>
</tr>
<tr>
<td>2566A</td>
<td>TRAFFIC SIGNAL SCHOOL BEACON DETAILS, PEDESTAL</td>
</tr>
<tr>
<td>2566B</td>
<td>TRAFFIC SIGNAL WARNING TRAFFIC BEACON DETAILS</td>
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<td>2574</td>
<td>STREET LIGHTING CONTROL CABINET SIX CIRCUIT UNMETERED</td>
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<tr>
<td>2580</td>
<td>STREET LIGHTING FOUNDATION &amp; MISCELLANEOUS DETAILS</td>
</tr>
<tr>
<td>2581</td>
<td>STREET LIGHTING INSTALLATION &amp; POLE DETAILS</td>
</tr>
</tbody>
</table>

REVISED January 2011, UPDATE NO.8)  2500-1
GENERAL NOTES:

1. INTERSECTIONS WITH SKEWS GREATER THAN 10° SHALL BE INDIVIDUALLY DESIGNED AND DETAILED IN THE PLANS. DESIGN CRITERIA SHALL BE ESTABLISHED BY THE TRAFFIC ENGINEERING DIV. AND THE ACTUAL DESIGN APPROVED BY THE TRAFFIC ENGINEER.

2. ALL DIMENSIONS ARE FROM FLOW LINE TO FLOW LINE.

3. PAVE ALL MEDIANs 5' OR LESS IN WIDTH, FL TO FL, WITH 4" PORTLAND CEMENT PATTERNED CONC. SIDEWALK, END PAVING WHERE MEDIAN WIDENS PAST 5.

4. MEDIANs GREATER THAN 5' IN WIDTH FL TO FL, THE MEDIAN END WILL BE PAVED 10' BACK FROM THE NOSE WITH 4" PORTLAND CEMENT PATTERNED CONC. SIDEWALK (3/16 PATTERNED DEPTH).

MEDIAN OPENING DIMENSIONS

<table>
<thead>
<tr>
<th>STREET WIDTH &quot;A&quot;</th>
<th>MEDIAN OPENING &quot;B&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>LESS THAN 46'</td>
<td>75'</td>
</tr>
<tr>
<td>46' TO 64'</td>
<td>96'</td>
</tr>
<tr>
<td>66'</td>
<td>98'</td>
</tr>
<tr>
<td>84'</td>
<td>118'</td>
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</table>

CURVE DATA

<table>
<thead>
<tr>
<th>R</th>
<th>Δ</th>
<th>T</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>150'</td>
<td>16°</td>
<td>37°</td>
<td>21.43'</td>
</tr>
<tr>
<td>160'</td>
<td>15°</td>
<td>35°</td>
<td>22.35'</td>
</tr>
<tr>
<td>170'</td>
<td>14°</td>
<td>33°</td>
<td>23.26'</td>
</tr>
<tr>
<td>180'</td>
<td>13°</td>
<td>31°</td>
<td>24.17'</td>
</tr>
<tr>
<td>190'</td>
<td>12°</td>
<td>29°</td>
<td>25.08'</td>
</tr>
</tbody>
</table>

* FOR 15' MEDIAN WIDTH.
### STANDARD CURB RETURN RADIUS (AT FLOWLINE) AND RIGHT-OF-WAY AT INTERSECTIONS

<table>
<thead>
<tr>
<th>INTERSECTING STREETS</th>
<th>PRINCIPAL ARTERIAL</th>
<th>MINOR ARTERIAL</th>
<th>COLLECTOR</th>
<th>MAJOR LOCAL</th>
<th>LOCAL RESIDENTIAL</th>
<th>LOCAL-INDUSTRIAL COMMERCIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRINCIPAL ARTERIAL</td>
<td>(1) min. *</td>
<td>(1)*</td>
<td>(1)*</td>
<td>30'</td>
<td>30'</td>
<td>30'</td>
</tr>
<tr>
<td>MINOR ARTERIAL</td>
<td>(1)*</td>
<td>35'</td>
<td>30'</td>
<td>30'</td>
<td>30'</td>
<td>30'</td>
</tr>
<tr>
<td>COLLECTOR</td>
<td>(1)*</td>
<td>30'</td>
<td>25'</td>
<td>25'</td>
<td>25'</td>
<td>30'</td>
</tr>
<tr>
<td>MAJOR LOCAL</td>
<td>50'</td>
<td>30'</td>
<td>25'</td>
<td>20'</td>
<td>20'</td>
<td>30'</td>
</tr>
<tr>
<td>LOCAL RESIDENTIAL</td>
<td>50'</td>
<td>30'</td>
<td>25'</td>
<td>20'</td>
<td>20'</td>
<td>N/A</td>
</tr>
<tr>
<td>LOCAL INDUSTRIAL COMMERCIAL</td>
<td>30'</td>
<td>30'</td>
<td>30'</td>
<td>30'</td>
<td>N/A</td>
<td>30'</td>
</tr>
<tr>
<td>ALLEY RETURNS</td>
<td>Shall match the radii requirements for design vehicles expected - 35' minimum.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

* May be increased at discretion of the Traffic Engineer.

Radius needs to be evaluated in terms of design vehicle where significant percentages of WB-40, 50, and 60 vehicles are probable. 2-centered or 3-centered curves should be used to provide adequate turning paths.

**Notes:**

1. Accessing property lines at intersections must be designed to allow construction of full-sized standard landscaped access ramps wholly within the public right-of-way. Ramps must conform to the Standard Details.

2. Planned transitions must be provided where local residential streets having less than 32 feet wide paving intersect other streets. The transition must provide for a 25:1 taper from the narrower street width to a full 32 feet pavement width at the edge of the curb outside the narrow street leg of the intersection. Curb return radii will normally be 35 feet measured to the flowline.

3. Use three centered symmetric curves with channelized right-turn lane. Island shall be large enough for pedestrian facilities and Traffic Control devices.
GENERAL NOTES:

1. ANY DESIGN CALLING FOR A CUL-DE-SAC WITH LESS THAN A 40 FT. PAVING RADIUS MUST BE INDIVIDUALLY APPROVED BY TRAFFIC ENG. DIVISION.
GENERAL NOTES:
1. SEE GENERAL NOTES DWG. 2510.
CASE I

CASE II

CASE III

GENERAL NOTES:
1. SEE GENERAL NOTES DWG. 2510.
GENERAL NOTES:
1. PARKING METER POLES TO BE SPACED AS SHOWN ON PLANS.
2. MATERIAL: BLACK STEEL PIPE WITH TWO COATS OF SILVER PAINT.

CONSTRUCTION NOTES:
A. 6" MIN. Dia. CORE DRILL IN EXISTING SLAB OR BLOCK OUT IN NEW CONSTRUCTION.
B. CONCRETE OR NON-SHRINK GROUT. FINISH TOP TO MATCH SIDEWALK.
C. REAM AND DE-BURR EXPOSED END OF PIPE AFTER CUTTING.
D. PLUMB POLE IN ALL DIRECTIONS, REGARDLESS OF SLOPE OF STREET.
E. METER HEAD FURNISHED AND INSTALLED BY CITY.
F. 4" P.C.C. SIDEWALK.
CONSTRUCTION NOTES:

A. EXISTING SIDEWALK, CURB & GUTTER (WIDTH VARIES).

B. EXISTING STREET.

C. SHALE, ADJUST EXISTING GRADE AS REQUIRED TO PROVIDE DRAINAGE AWAY FROM SLAB.

D. FILL AND COMPACT TO DRAIN AWAY FROM SHELTER AS REQUIRED.

E. EXISTING GRADE (VARIES)

F. FINISHED GRADE, (VARIES) (NOTE: EXISTING DRAINAGE PATTERNS SHALL BE MAINTAINED).

G. NEW CONCRETE SLAB.

H. 16GA METAL END PANEL.


GENERAL NOTES:

1. SEE BUS BAY C.O.A. STD. DWG. 2466 – IF NEW BUS BAY IS REQUIRED.

2. VERIFY EXISTING SITE CONDITIONS AND CONTACT TRANSIT DEPT. BEFORE COMMENCING WORK.

3. THE CONTRACTOR SHALL, AT THE TIME OF EXCAVATION AND PRIOR TO ANY CONCRETE WORK, CALL FOR FIELD INSPECTION AND WRITTEN REPORT BY A REGISTERED TECHNICAL ENGINEER TO DETERMINE THAT THE FOUNDATION SOIL IS NON-EXPANSIVE AND CAPABLE OF 1500 PSF BEARING. THE OWNER SHALL PAY THE COST OF SUCH INSPECTION AND REPORT, AND SHALL PROVIDE THE CITY OF ALBUQUERQUE WITH A COPY OF THE REPORT. THE GRADES SHALL BE ADJUSTED WITH SUITABLE FILL AS REQUIRED TO ACCOMMODATE SPECIFIED SLAB SIZE.

4. MARK FABRICATED ITEMS TO BE INSTALLED IN FIELD AFTER PAINTING FOR PROPER INSTALLATION.

5. VERIFY THAT FABRICATION ITEMS FIT PROPERLY BEFORE PAINTING.

6. EXACT LOCATION OF THE BUS SHELTER WILL BE DETERMINED BY THE TRANSIT DEPARTMENT. CONTACT THE TRANSIT BUS STOP COORDINATOR PRIOR TO COMMENCING WITH CONSTRUCTION.

7. PRIOR TO CONSTRUCTION IN THE PUBLIC RIGHT-OF-WAY, CONTRACTOR SHALL OBTAIN ALL PERMITS FROM THE PUBLIC WORKS DEPARTMENT.

8. STEEL PIPE SIZES ARE NOMINAL, THE OUTSIDE DIAMETERS ARE AS FOLLOWS:
   - 6" SCHEDULE STANDARD PIPE, O.D. = 8.625"
   - 3" SCHEDULE 40 STANDARD PIPE, O.D. = 3.500"
   - 2" SCHEDULE 40 STANDARD PIPE, O.D. = 2.375"

9. 1 1/4" SCHEDULE 40 STANDARD PIPE, O.D. = 1.660"

10. ALL METAL ITEMS EXCEPT ANY FACTORY FINISHED ITEMS SHALL BE FIELD OR SHIP PAINTED WITH ONE COAT OF "COPOL" STEEL PRIMER AND TWO COATS OF "SYN-LUSTRO" COLOR #012-64U, "BLUE GROOVE" MARRIED ARCS SHALL BE RE-PIPED & RE-PAINTED AFTER CONSTRUCTION IS COMPLETE. PAINT AND PRIMER TO BE APPLIED PER MANUFACTURER'S SPECIFICATIONS.

11. SHOP APPLY POWER COAT TO PAINT FINISH TO ALL SURFACES OF SHELTER, BENCH, TRASH RECEPTACLE, TOUCH UP ONLY IN FIELD.

12. CONCRETE PER SECTION 101, EXTERIOR CONCRETE.
    Y's = 3000 psf AT 28 DAYS.
CONSTRUCTION NOTES:
A. FRAME 3 3/4" O.D. STEEL PIPE, COPE & WELD PIPE, GRIND SMOOTH.
B. 2 1/2" O.D. STEEL PIPE COPE & WELD PIPE TO CHARGEE, GRIND SMOOTH.
C. 18 g9 PERFORATED STEEL PANELS OR TEMPER PROOF SCREENS FASTENED AT 18" O.C. TO 1/2" x 1" CHANNEL.
D. ROOF LINE ABOVE.
E. NOT USED.
F. NOT USED.
G. 1/2" EXPANSION JOINT.
H. TRASH RECEPTACLE (SEE STD. DWG. 2535.10) I. 4" SLAB WITH 4x4 = 4" x 4" USE 12" DEEP TURNOVERS AT PERIMETER, BROWN FINISH.
J. EXISTING CURB (SHADED).
K. MATCH SLOPE OF CURB.
L. BENCH (SEE STD. DWG. 2535.09).
M. THICKENED SLAB (TYP.) 6"/6".
N. BUS STOP SIGN (TYP.) O. NEW CONCRETE INFILL IF SIDEWALK IS SET BACK FROM CURB. SIZE AND SHAPE OF INFILL MAY VARY.
P. MATCH SIDEWALK WIDTH.
CONSTRUCTION NOTES:
A. FRAME 3 1/2" O.D. STEEL PIPE, COPE & WELD PIPE, GRIND SMOOTH.
B. 2 1/2" O.D. STEEL PIPE COPE & WELD PIPE TO CHASSIS, GRIND SMOOTH.
C. 10 3/4" PERFORATED STEEL PANEL W/ METAL OR TEMPER PROOF SCREWS FASTENED AT 8" O.C. TO 1/2" X 1" CHANNEL.
D. ROOF LINE ABOVE.
E. ROOF, HIGH-STRENGTH F.R.P. SMOOTH SURFACE TOP AND BOTTOM. FASTENED TO 1/2" X 2" CHANNEL WITH RIVETS OR TEMPER PROOF SCREWS AT 8" O.C. PAINT TO MATCH SHELTER.
F. BENCH (SEE DETAILS ON STD. DWG. 2535.09).
G. 1/2" EXPANSION JOINT.
H. TRASH RECEPTACLE (SEE STD. DWG. 2535.10).
I. 4" SLAB WITH 4X4 - W4.5 WWF, USE 10" DEEP TURNDOWN AT PERIMETER, BROWN FINISH.
J. EXISTING CURB & SIDEWALK (SHADOWED).
K. THICKENED SLAB (TYP).
L. BUS STOP SIGN (TYP).

PLAN WITH SIDEWALK

ROOF PLAN
CONSTRUCTION NOTES:

A. FRAME 3 1/2" O.D. STEEL PIPE, COPE & WELD PIPE, GRIND SMOOTH.

B. 2 1/2" O.D. STEEL PIPE COPE & WELD PIPE TO CHASIS, GRIND SMOOTH.

C. 16 ga PERFORATED STEEL PANEL, RIVETS OR TEMPER PROOF SCREWS FASTENED AT 8" O.C. TO 1/2" x 1" CHANNEL.

D. ROOF LINE ABOVE.

E. ROOF, HIGH STRENGTH F.R.P., SMOOTH SURFACE TOP AND BOTTOM, FASTENED TO 1/2" x 2" CHANNEL WITH RIVETS OR TEMPER PROOF SCREWS AT 8" O.C. PAINT TO MATCH SHELTER.

F. BENCH (SEE DETAILS ON STD. DWG. 2535.09).

G. 1/2" EXPANSION JOINT.

H. TRASH RECEPTACLE (SEE STD. DWG. 2535.10).

I. 4" SLAB WITH 4" X 4" WWF, USE 10' DEEP TURNDOWN AT PERIMETER, BROWN FINISH.

J. EXISTING CURB (SHARED).

K. THICKENED SLAB (TYP.10"

L. BUS STOP SIGN (TYP.)

M. NEW CONCRETE INFILL IF SIDEWALK IS SET BACK FROM CURB, SIZE AND SHAPE OF INFILL MAY VARY.

N. MATCH SIDEWALK WIDTH.
CONSTRUCTION NOTES:

A. FRAME 3 1/2" STANDARD STEEL PIPE, COPED WELD PIPE CHASSIS.

B. 2 1/2" STANDARD STEEL PIPE COPED, WELD PIPE TO CHASSIS.

C. 16 GA. PERFORATED STEEL PANEL, RIVETS OR TAMPER PROOF SCREWS AT 8" O.C. FASTENED TO 1/2" x 1" CHANNEL.

D. STEEL ANCHOR PLATE W 1/2" DIAMETER RED HEAD ANCHOR BOLT. SEE DETAIL 4/B.

E. ROOF: HIGH STRENGTH F.R.P. SMOOTH SURFACE TOP AND BOTTOM, FASTEN TO 1/2"x1" CHANNEL WITH RIVETS OR TAMPER PROOF SCREWS AT 8" O.C.

F. OPTIONAL FLUORESCENT DC LIGHT WITH PHOTO VOLTAIC SOLAR COLLECTOR AND BATTERY IN VENT SECURITY HOUSING LACOR MODEL NO. 5414. SEE EQUAL LACOR STREET SCAPES, PHOENIX, ARIZONA, (602) 371-3110.

G. BENCH (SEE DETAILS ON ST. SWG. 2535.06).

H. 1/2" EXPANSION JOINT.

I. 4" SLAB WITH 9"X9" WOOD HDG. USE 10" DEEP TURNDOWN AT PERIMETER, BROOM FINISH.

J. 1/2" STEEL BRACKET, WELD TO PIPE FRAME, GRIND SMOOTH.

K. 16 GA. SHEET METAL PANEL (REVERS). ATTACH WITH RIVETS OR TAMPER PROOF SCREWS (8 PER PANEL).
CONSTRUCTION NOTES:

A. FRAME 3 1/2" STANDARD STEEL PIPE, COPED WELD PIPE CHASSIS.

B. 2 1/2" STANDARD STEEL PIPE COPED, WELD PIPE TO CHASSIS.

C. 16 GA. PERFORATED STEEL PANEL, RIVETS OR TAMPER PROOF SCREWS AT 8" O.C. FASTENED TO 1/2" x 1" CHANNEL.

D. STEEL ANCHOR PLATE W 1/2" DIAMETER RED HEAD ANCHOR BOLT, SEE DETAIL 4/B.

E. ROOF: HIGH STRENGTH F.R.P. SMOOTH SURFACE TOP AND BOTTOM, FASTEN TO 1/2" x 1" CHANNEL WITH RIVETS OR TAMPER PROOF SCREWS AT 8" O.C.

F. BENCH (SEE DETAILS ON STD. DWG. 2535.09).

G. 1/2" EXPANSION JOINT.

H. 4" SLAB W/ 4X4 - W4.0(W4.0 CF) WWF, USE 10" DEEP TURNDOWN AT PERIMETER, BROOM FINISH.

I. 1/2" STEEL BRACKET, WELD TO PIPE FRAME, GRIND SMOOTH.

J. 16 GA. SHEET METAL PANEL (BEYOND), ATTACH WITH RIVETS OR TAMPER PROOF SCREWS (8 PER PANEL).
CONSTRUCTION NOTES:
A. FRAME 3’ SCHEDULE 40 STANDARD STEEL PIPE. COPE & WELD PIPE CHASSIS.
B. 2” SCHEDULE 40 STANDARD STEEL PIPE. COPE & WELD PIPE TO CHASSIS.
C. 16 GA. PERFORATED STEEL PANEL, RIVET OR SCREWS AT 8” o.c. TO 1/2” x 1” CHANNEL.
D. 1/4” STEEL ANCHOR PLATE W/ 1/2” ANCHOR BOLTS.
E. ROOF WITH STRENGTH F.R.P. SMOOTH SURFACE TOP AND BOTTOM, FASTEN TO 1/2” x 2” CHANNEL WITH RIVETS FOR TAPERED PROOF SCREWS AT 8” o.c.
F. 16 ga. SHEET METAL SOLID END PANEL ATTACH TO CHANNELS WITH RIVETS OR TAMPER PROOF SCREWS (8 PER PANEL).
G. CORROSION RESISTANT 1/2”x3” 1/2” REHEAT BOLTS (TYP.)
H. 5” x 1/2” x 1/4” CHANNEL WELD TO PIPE FRAME GRIND SMOOTH.
I. 1/4” STEEL BRACKET WELD TO PIPE FRAME GRIND SMOOTH.
J. CONCRETE SLAB.
K. 1” x 1/2” x 1/4” CHANNEL WELD TO PIPE GRIND SMOOTH.

REVIEWS
CITY OF ALBUQUERQUE
BUS SHelter "C" & "O" DETAILS

Dwg. 2535.08 JANUARY 2003
CONSTRUCTION NOTES:
A. BENCH FRAME: 1-1/2" O.D. COPED, WELDED PIPE CHASED PAINT FINISH.
B. 10 GA. PERFORATED STEEL AND WELD PIPE.
C. WELDED 3/8" STEEL FOOTING PLATES WITH HOLES FOR 1/2" DIAMETER ANCHOR BOLTS.
D. 1/4" THICK BASE PLATE.
E. 1/2" DIA. x 3 1/2" RED HEAD BOLTS.
TYPICAL TRAFFIC SPLIT - (PAINTED MEDIAN)

TYPICAL TRAFFIC SPLIT - (RAISED MEDIAN)

TRAFFIC SPLIT NOTES:
1. THE OFFSET DISTANCE MUST BE CALCULATED IN ALL SHIFTING TAPESTRIES. THE OFFSET DISTANCES SHALL INCLUDE LANE WIDTH PLUS MEDIAN WIDTHS.
2. 1/2 L IS THE MINIMUM DISTANCE FOR SHIFITNG TAPESTRIES.
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.
5. MEDIAN REMOVAL SHALL TAKE PLACE BEFORE SPLITS. REDUCED SPEED MAY BE CONSIDERED.
6. USE W1-3 FOR 30 MPH OR LESS, W1-4 FOR SPEED 35 MPH OR GREATER.
24" DIAMETER-14 GAUGE CORRUGATED METAL PIPE CHIPPED IN COAL TAR ENAMEL OR COATED WITH POLYURETHANE LIKE MATERIAL AS APPROVED BY THE ENGINEER. 3 MILS THICK MEETING REQUIREMENTS SET BY ASME W 246

5'-0" SQUARE CONCRETE PAD

ROUND METAL MANHOLE COVER AS APPROVED BY THE ENGINEER

CONCRETE COLLAR PER SEC-101 INT. CONCRETE F' = 3500 PSI AT 28 DAYS

COMPACTED FILL

EXISTING RIGID ELECTRICAL CONDUIT TO REMAIN

EXISTING RIGID ELECTRICAL CONDUIT TO REMAIN

EXISTING RIGID ELECTRICAL CONDUIT TO REMAIN

EXISTING RIGID ELECTRICAL CONDUIT TO REMAIN

INSTALL NEW RIGID ELECTRICAL CONDUIT

INSTALL NEW RIGID ELECTRICAL CONDUIT

INSTALL NEW RIGID ELECTRICAL CONDUIT

INSTALL NEW RIGID ELECTRICAL CONDUIT

REMOVE & REPLACE IN KIND EXISTING SIDEWALK AND LANDSCAPING AS REQUIRED TO REPAIR CONDUIT

NOTES:

1. TRAFFIC SIGNAL MANHOLE TO BE CONSTRUCTED IN AREAS NOT NATURALLY ACCESSIBLE TO VEHICULAR TRAFFIC.

CITY OF ALBUQUERQUE

TRAFFIC

TRAFFIC SIGNAL

MANHOLE DETAILS

REVISIONS

DWG. 2351

JANUARY 2003
TYPICAL ROADWAY LOOP SAW CUT DETAIL

EXTEND CALL LOOP WIRING DETAIL

SYSTEM LOOP WIRING DETAIL

STRIPE LOOP WIRING DETAIL

LOOP WIRE TERMINATION DETAILS

LOOP DETECTOR NOTES


2. ALL LOOP LEAD IN CABLES SHALL BE TAGGED AT CABINET TO IDENTIFY EACH CABLE BY LOOP AND PAGE NUMBER.

3. GROUND LOOP LEAD IN CABLE SHIELING IN CONTROL CABINET.

4. SEPARATE 1" RIGID ELECTRICAL CONDUITS ARE REQUIRED FOR EACH PAIR OF DETECTOR WIRES.

NOTES

1. WIRES MUST BE WOUND IN THE DIRECTION SHOWN.

2. QUADRUPLE LOOPs SHALL HAVE 3 TURNS.

3. EXTEND CALL LOOPs SHALL HAVE 3 TURNS.

4. SYSTEM DETECTOR LOOPS SHALL HAVE 4 TURNS.

5. LARGE RECTANGULAR LOOPs SHALL HAVE 3 TURNS.

REVISIONS

CITY OF ALBUQUERQUE

TRAFFIC SIGNAL

LOOP DETECTOR DETAILS

DWG. 2552

JANUARY 2003
TRAFFIC SIGNAL FOUNDATION NOTES

1. All foundations shall include copperweld ground rods. All ground rods shall be 3/4" x 10' and will be considered incidental to the foundation bid items.

2. Finishing grade for all foundations to be determined in the field by the project engineer. Foundations may be sloped to match seedheads. Slopes shall conform to the Americans with Disabilities Act requirements.

3. Top 6" of foundations must be formed.

4. Concrete per Sec. 101. Exterior concrete f28=3500 psi at 28 days.

ESTIMATED QUANTITIES

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<tr>
<th>FOUNDATION TYPE</th>
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<tr>
<td>SPICE CABINET FOUNDATION</td>
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(For contractors information only)
ESTIMATED QUANTITIES FOR NEW FOUNDATION MODIFICATIONS

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<th>51000 STRUCTURAL CONCRETE CLASS A</th>
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<td>12&quot;x24&quot;x12&quot; (NEW)</td>
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<td>&quot;P&quot; CABINET</td>
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<td>NEW &quot;P&quot; CABINET</td>
<td>24&quot;x24&quot;x35&quot; (EXISTING)</td>
<td>4&quot;x24&quot;x12&quot; (NEW)</td>
</tr>
</tbody>
</table>

NOTES:
1. CONCRETE PER SEC. 101, EXTERIOR CONCRETE
f'c=3500 PSI AT 28 DAYS.

CITY OF ALBUQUERQUE
TRAFFIC
CABINET FOUNDATION CONVERSION
Dwg. 2556
JANUARY 2003
CONSTRUCTION MATERIALS AND FINISH

- 10 GA HD GALVANIZED SHEET STEEL
- POWDER COATED

- 14 GA 304/304 STAINLESS STEEL SHEET
- POWDER COATED COLOR: NATURAL

- 0.030 ALUMINUM SHEET
- POWDER COATED COLOR: ANODIZED

POWDER COAT COLORS

- WHITE
- RANCH GREEN
- MAUI GREEN
- OTHER
- DUNE

SPLICE CABINET CONSTRUCTION NOTES

1. SPLICE CABINET SHALL BE UL LISTED "INDUSTRIAL CONTROL PANEL" PER UL 508.
2. CONSTRUCTION SHALL BE HEAVY 36 AND 12 GAHN TIGHT AND DUST TIGHT.
   ELECTRICALLY WELDED AND REINFORCED WHERE REQUIRED.
3. ALL NUTS, BOLTS, SCREWS AND MOUNTING NIPPLES SHALL BE STAINLESS STEEL.
   ELECTRICALLY WELDED AND REINFORCED WHERE REQUIRED.
4. NUTS, BOLTS, AND SCREWS SHALL NOT BE VISIBLE FROM OUTSIDE OF SPLICE CABINET.
5. PHOTOCHEMICAL NAME PLATES SHALL BE PROVIDED AS REQUIRED.
6. ALL POWDER COATED CABINETS SHALL HAVE A CORROSION RESISTANT COATING
   WHICH INCLUDES A FIVE STEP OF TANK METAL PREPARATION PROCESS:
   A. ALKALINE CLEANER 1600°F
   B. CLEAR WATER RINSE
   C. IRON PHOSPHATE APPLICATION 1500°F
   D. CLEAR WATER RINSE
   E. PIGMENT RINSE TO SEAL PHOSPHATED
   SURFACES 1200°F
   FINISHED WITH AN ELECTROSTATICALLY APPLIED DRY POLYESTER POWDER COATING
   THEN BAKED @ 380°F TO CURE.
7. FOUNDATIONS, INCLUDING EXCAVATION, CONCRETE AND ANCHOR BOLTS, COMPLETE
   IN PLACE AND BACK FILLED, SHALL BE CONSIDERED INCIDENTAL TO THE SPLICE CABINET.

REVISIONS

CITY OF ALBUQUERQUE
TRAFFIC
TRAFFIC SIGNAL
SPLICE CABINET GROUND MOUNT (LARGE)

DRAW: 2005
JANUARY 2003
PEDESTRIAN POLE DETAILS

NOTES:
1. STREET NAME SIGNS REQUIRED AS SHOWN ON PLANS.
2. STREET NAME SIGN SHALL BE 18" WIDE WITH 8" SERIES "C" LETTERING. SIGN SHALL BE NO MORE THAN 10" SQUARE FEET TOTAL AREA AND SHALL HAVE HIGH INTENSITY REFLECTIVE LETTERING. SIGNS SHALL BE BLACK BACKGROUND AND BACKGROUND COLORS. WHITE ON BLACK, SIGN PANELS SHALL BE SINGLE SHEET 6061-T6 ALUMINUM .125 MINIMUM THICKNESS.
3. PEDESTRIAN ACTUATED CROSSING SHALL BE A MAXIMUM OF 42" ABOVE THE FINISHED PUBLIC SIDEWALK. A STABLE, FIRM, AND SLIP-RESISTANT AREA 30" x 48" SHALL BE PROVIDED TO ALLOW FOR A FORWARD OR A PARALLEL APPROACH TO THE CROSSING. WHERE A PARALLEL IS PROVIDED, CONTROLS SHALL BE WITHIN 10' HORIZONTALLY OF AND CENTERED ON "A" CLEAR GROUND SPACE.
4. FOR INSTALLATIONS WITH ONLY PEDESTRIAN SIGNALS, CUT SHAFT TO 8'. USE 15' SHAFT FOR PEDESTRIAN POLES REQUIRING BOTH S-SECTION SIGNAL ASSEMBLIES AND PEDESTRIAN SIGNALS.

STREET NAME SIGN DETAILS

AS SHOWN ON PLANS
Traffic Signal Mastarm Notes:

1. Design in accordance with 1985 ANSI/SHD specifications for structural supports for highway signs, luminaires, and traffic signals for an 80 mph wind zone.

2. Poles and mastarms shafts shall conform to ASTM A-595 Grade A (MIN. YIELD 36 KSI).


5. Signal arm connecting bolts shall be ASTM A-325.

6. Welding shall conform to the requirements of the American Welding Society Specifications AWS D1.1. Latest edition of all welds shall be free from cracks, excessive undercut, and porosity. Any weld defects shall be repaired by removing the defective material and replacing it with sound weld material.

7. All holes shall be drilled and deburred.

8. All poles, mastarms, and bolts shall be galvanized to ASTM A-123 & A-153.

9. Mastarm is to be described which is top and which is bottom. Pole plate cover shall be marked in mated parts. Pole shafts shall be marked "ALT 15-25" or "50-40," and date of fabrication (month/year).

10. Details shown are for steel poles. Aluminum poles may be used only when pre-approved by the city of Albuquerque traffic engineering operations division.

11. Bolts for Type II extensions shall be furnished by the manufacturer for all poles including Type II standards with no extensions.

Note: For sections A-A through G-G & details, see Std. Doc. 2562b.
Camera shall be rotated inside the enclosure after installation, to align horizon at horizontal plane.
TYPICAL OPTICAL DETECTOR INSTALLATION – PEDESTAL POLE

Note: Optical detectors shall only be mounted on pedestal poles when there is no mastarm.

TYPICAL OPTICAL DETECTOR INSTALLATION – MASTARM

NOTES:
1. All optical detector mounting hardware shall conform to optical detector manufacturer's requirements.

OPTICAL DETECTOR MOUNTING - DETAIL "A"

OPTICAL DETECTOR MOUNTING - DETAIL "B"
METER BASE CONSTRUCTION NOTES:

1. METER BASE SHALL BE UL LISTED "INDUSTRIAL CONTROL PANEL" PER UL 508.
2. METER BASE SHALL MEET THE ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE (EUSEC) GUIDELINES.
3. CONSTRUCTION SHALL BE NEMA 3R AND 12, RAIN TIGHT AND DUST TIGHT. ELECTRICALLY WELDED AND REINFORCED WHERE REQUIRED.
4. ALL NUTS, BOLTS, SCREWS AND BUSHINGS SHALL BE STAINLESS STEEL.
5. NUTS, BOLTS, AND SCREWS SHALL NOT BE VISIBLE FROM OUTSIDE OF METER BASE.
6. PHENOLIC NAMEPLATES SHALL BE PROVIDED AS REQUIRED.
7. CIRCUIT BREAKERS SHALL BE CABINET-INSTALL TYPE WITH LINE ON TOP & LOAD ON THE BOTTOM. HANDLE POSITIONS UP=ON, DOWN=OFF.
8. A PLASTIC COVERED WIRING DIAGRAM SHALL BE ATTACHED TO THE INSIDE OF THE METER BASE.
9. METER BASE SHALL BE FACTORY WIPED AND CONFORM TO REQUIRED NEMA STANDARDS.
10. ALL POWDER COATED METER BASES SHALL HAVE A CORROSION RESISTANT COATING WHICH INCLUDES THE STEEL RIP-DIP TRIP PROCESS:
   A. ALKALINE CLEANER 165°F
   B. CLEAR WATER RINSE
   C. FROST PHOSPHATE APPLICATION 150°F
   D. CLEAR WATER RINSE
   E. PASSIVE RINSE TO SEAL PHOSPHATIZED SURFACES 120°F
   F. FINISH COAT APPLIED DRY POLYESTER POWDER COATING THEN BAKED @ 380°F TO CUR."
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<td>METAL RAILING TYPE D</td>
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<td>2610</td>
<td>METAL BARRIER MATERIALS &amp; PLACEMENT PROCEDURES</td>
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<td>METAL BARRIER DETAIL TYPE A END ANCHORAGE</td>
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<td>THREE BEAM METAL BARRIER OVER CBC &amp; UNDERPASSES</td>
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<td>METAL BARRIER THREE BEAM ROADSIDE &amp; BOX CULVERT</td>
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<td>SPECIAL METAL BARRIER TRANSITION DETAILS</td>
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<td>METAL BARRIER AT BRIDGE APPROACHES</td>
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<td>APPROACH SLOPE PREPARATION FOR METAL BARRIER</td>
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<td>STEEL POSTS (SOIL PLATE)</td>
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**ELEVATION**

**DETAILS OF POSTS ON SUPERSTRUCTURE**

Details for posts on wingwalls are identical except W8x24 shall be used in place of W8x24 and anchors are to be embedded in wingwall concrete.

- Top of Rail
- Tension Bars
- Chain Link Fence
- Bottom Tension Wire (Continuous Thru Posts)

**SECTION B-B**

**TRANSVERSE SECTION THRU POST**

Details for attaching chain link fence

**ANCHOR FOR RAIL POST ON WINGWALL**

- Notes: See sheet 3 of 5 for details of "Elevation At Abutments," "Elevation of Rail Post," and "Spacing of Rail Post." For General Notes and details not shown on this sheet, see sheet 1 of 5.
- Tension wires to be 7/8 ga. galvanized cold spring wire.
- Fabric is to be attached to tension wires with 7/8 ga. galvanized hog rings spaced 24" o.c.

**POST SHIMS ~ TYPE D RAIL**

P + f1' f2' & f-0.52'' ~ Q + 10.5'' & 7.5''. One shim P + f1' f2' & one shim P + f-0.52'' for each Type D rail post required. Post shims are to be used between post and concrete where necessary.

**THIS SERIAL REVISED 3-6-85**

- STATE HIGHWAY DEPARTMENT
- METAL RAILING
- TYPE D

Serial BWR-004 must accompany this sheet.

CITY OF ALBUQUERQUE DWG. 2604
NOTES:
1. Materials and workmanship shall conform to New Mexico State Highway Department Specifications.
2. Structural steel items in anchor system shall be equal to AASHTO designation M-185.
3. Bolts, nuts, washers, anchor posts and other fittings shall be galvanized steel, in accordance with AASHTO designation M-222, except where otherwise specified.
4. For additional metal barrier details, see New Mexico Standard M-21-62 and M-21-73.
5. Class "A" Concrete required for anchors.
NOTE: Use metal barrier when parapets are closer than 30' from edge of main traveled lane.

PART VIEW E-E

Reinforcing Details For Type C Posts

Weight: 62 lbs. per post
Reinforcement Schedule For Type C Posts:

SECTION A-A

SECTION B-B

SECTION C-C

SECTION A-A

SECTION C-C

SECTION D-D

SECTION A-A

SECTION D-D

GENERAL NOTES

1. Workmanship and materials shall conform to New Mexico State Highway Department Specifications.
2. Structural steel shall be carbon steel conforming to AASHTO Specification M-83.
3. Post, post plate, and exposed surfaces of anchor bolts shall be painted in accordance with the Specifications.
4. Cost of steel posts and connections in place of timber posts, concrete blocks in place to include in the unit price bid per linear foot of metal barrier.
6. Rail posts (TS 8 x 6 x 325) designed for bridge railing load in accordance with 1973 AASHTO Specifications.

THREE BEAM METAL BARRIER OVER CVC & UNDERPASSES

NEW MEXICO STATE HIGHWAY DEPARTMENT

THREE BEAM METAL BARRIER OVER CVC & UNDERPASSES

CITY OF ALBUQUERQUE DWG. 2620

This is a sample diagram for a three beam metal barrier over CVC and underpasses.
NOTES

1. A 25' section may be 2 - 12'-6" rails or 1 - 25' rail.

2. The second B.C.T. steel post does not require holes to accommodate anchor cable.

3. Anchor Plate may be formed in single unit or welded fabrication.

4. Anchor Cable Assembly shall conform to AASHTO M-30 with Type II wire reps.

5. Torque slip plate bolts to be 150 - 170 ft. lbs.

6. Anchor bolts and slip plate bolts, nuts and washers shall conform to ASTM A-325 and galvanized in accordance with ASTM A-155.

7. B.C.T. must be installed on level surface (10'-1 or flatter) with metal barrier system for optimum performance.

8. Use 1' inch long backup plate at posts where W-Beam splice does not occur.

9. To provide a parabolic flare, the posts in the last 3'-12" of metal barrier shall be completely backfilled and tamped before the W-Beam rail is attached. In addition, the last two posts (steel tubes) shall be embedded by inverting the backfill material in twelve-inch increments with compaction applied to each layer through the use of a pneumatic device until maximum density is achieved to the satisfaction of the engineer for the type of backfill material used.

10. Cable tension at B.C.T. shall be snug with re-usable stock.

CITY OF ALBUQUERQUE DWG. 2637
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<td>IRRIGATION BUDDLER HEAD AT SHRUB</td>
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<td>BUDDLER DETAIL IN FLOWER BED</td>
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<td>IRRIGATION BUDDLER HEAD IN TREE GRATE</td>
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<td>TURN DOWN SLAB AT PLAN AREA</td>
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<td>MEDIAN PLANTER W/ROADBED WATERPROOFING</td>
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(Revised 12/92, Update No. 4)
GENERAL NOTES:
1. HORIZONTAL RPBA INSTALLATION REQ'D.
2. ABOVE GRADE RPBA INSTALLATION REQ'D.
3. WATER LINE PRESSURE AND TEMPERATURE MUST NOT EXCEED RATED CAPACITY OF RPBA.
4. PROTECT FROM FREEZING WITH POSITIVE HEAT SOURCE AND INSULATION.
5. MIN. RPBA SIZE MUST BE THE BLDG. SERVICE LINE SIZE.
6. DO NOT INSTALL IN FLOOD PRONE AREAS.
7. INSTALL WATER HAMMER ARRESTORS & THERMO EXPANSION PROTECTION AS NECESSARY.
8. METALLIC RISER PIPING REQ'D.
9. JOINTS TO BE ADEQUATELY RESTRAINED.
10. DEVIATION FROM THESE SPECIFICATIONS MUST HAVE PRIOR WRITTEN APPROVAL FROM THE ADMINISTRATIVE AUTHORITY.
11. CONCRETE MOW STRIP SHALL BE INSTALLED AROUND THE ENTIRE PERIMETER OF THE MASTERVALVE AND RPBA ASSEMBLY. MOWSTRIP SHALL BE A MIN OF 12" FROM PIPING AND VALVE BOX. (OPTIONAL, DEPENDING ON APPLICATION.

CONSTRUCTION NOTES:
A. SERVICE LINE TO WATER METER, NO OUTLETS ALLOWED.
B. F.I.N.I.S.H GRADE, MATERIAL VARIES REFERENCE PLANS.
C. BROOK PRODUCTS INC., 1730 PB-18 BODY (ABS) VALVE BOX W/BOLT DOWN COVER (ABS) AND ONE 3' EXTENSION.
D. SPEARS TRUE UNION SCHEDULE 80 PVC BALL VALVE.
E. 24' WIRE EXPANSION COIL.
F. 3M SKOTCH LOK.
G. SCHEDULE 80 PVC 4" NIPPLE.
H. ELECTRIC VALVE (REFERENCE DRAWINGS FOR SIZE).
I. SPEARS SCHEDULE 80 PVC UNION.
J. SCHEDULE 80 PVC NIPPLE 3' MIN.
K. 1" DIAMETER WASHED ROCK.
L. 8"X8"X16" SOLID CMU BLOCK.
M. GALVANIZED ELL.
N. GALVANIZED NIPPLE.
O. GALVANIZED UNION (MIN. 4" ABOVE GRADE).
P. GALVANIZED TEE.
Q. BALL DRAIN, CHAMPION DV059 1/2".
R. RPBA BACKFLOW PREVENTER (REFERENCE DRAWINGS).
S. PVC MIP ADAPTER.
T. NON-CONSTANT PRESSURE IRRIGATION MAINLINE.
U. COMPACTED SUBGRADE.
V. ADEQUATE SLEEVING & INSULATION (MIN. 1" THICK).
W. MIN. 4" CONCRETE SLAB.
X. 30" MAX., 12" MIN. (FROM LOWEST POINT OF ASSEMBLY TO TOP OF SLAB).
Y. PROVIDE METALLIC OR REIN. CONCRETE SUPPORTS ON UNITS GREATER THAN 2".
Z. PROTECTIVE ENCLOSURE, SEE CITY STANDARD DWG. 2389 FOR CRITERIA.
AA. DRAIN, SIZE TO HANDLE FULL DISCHARGE OF RELIEF VALVE.
BB. ELECTRIC OUTLET FOR HEATED PROTECTIVE ENCLOSURE.
GENERAL NOTES:
1. HORIZONTAL RPBA INSTALLATION REQ'D.
2. ABOVE GRADE RPBA INSTALLATION REQ'D.
3. WATER LINE PRESSURE AND TEMP. MUST NOT EXCEED RATED CAPACITY OF RPBA.
4. PROTECT FROM FREEZING WITH POSITIVE HEAT SOURCE AND INSULATION.
5. MIN. RPBA SIZE MUST BE THE BLDG. SERVICE LINE SIZE.
6. DO NOT INSTALL IN FLOOD PRONE AREAS.
7. INSTALL WATER HAMMER ARRESTORS & THERMO EXPANSION PROTECTION AS NECESSARY.
8. METALLIC RISER PIPING REQ'D.
9. JOINTS TO BE ADEQUATELY RESTRAINED.
10. DEVIATION FROM THESE SPECIFICATIONS MUST HAVE PRIOR WRITTEN APPROVAL FROM THE ADMINISTRATIVE AUTHORITY.
11. CONCRETE MOW STRIP SHALL BE INSTALLED AROUND THE ENTIRE PERIMETER OF THE MASTervalve AND RPBA ASSEMBLY. MOW STRIP SHALL BE A MIN. OF 12" FROM PIPING AND VALVE BOX. (OPTIONAL, DEPENDING ON APPLICATION).

CONSTRUCTION NOTES:
A. SERVICE LINE TO WATER METER, NO OUTLETS ALLOWED.
B. FINISH GRADE, MATERIAL VARIES REFERENCE PLANS.
C. BROOK PRODUCTS INC, 1720 FRI 18 BODY (ABS VALVE BOX W BOLT DOWN COVER (ABS) AND ONE 8" EXTENSION.
D. SPEARS TRUE UNION SCHEDULE 80 PVC BALL VALVE.
E. SCHEDULE 80 PVC 4" NIPPLE.
F. BERMAD FLOWMETER, REFERENCE IRRIGATION LEGEND FOR SIZE.
G. SPEARS SCHEDULE 80 PVC UNION.
H. SCHEDULE 80 PVC NIPPLE 3" MIN.
I. 1" DIAMETER WASHED ROCK.
J. 4"x6"x16" SOLID CMU BLOCK.
K. GALVANIZED ELL.
L. GALVANIZED NIPPLE.
M. GALVANIZED UNION (MIN. 4" ABOVE GRADE).
N. GALVANIZED TEE.
O. BALL DRAIN, CHAMPION D5051/2".
P. RPBA BACKFLOW PREVENTER (REFERENCE DRAWINGS).
Q. PVC MIP ADAPTOR.
R. NON-CONSTANT PRESSURE IRRIGATION MAINLINE.
S. COMPACTED SUBGRADE.
CONSTRUCTION NOTES:

A. SERVICE LINE TO WATER METER, NO OUTLETS ALLOWED.
B. FINISH GRADE, MATERIAL VARIES REFERENCE PLANS.
C. BROOK PRODUCTS INC., 1730 PB-18 BODY (ABS) VALVE BOX W/BOLT DOWN COVER (ABS) AND ONE 8" EXTENSION.
D. SPEARS TRUE UNION SCHEDULE 80 PVC BALL VALVE.
E. 24" WIRE EXPANSION COIL.
F. 3M SKOTCH LOK.
G. SCHEDULE 80 PVC 4" NIPPLE.
H. ELECTRIC VALVE (REFERENCE DRAWINGS FOR SIZE).
I. SPEARS SCHEDULE 80 PVC UNION.
J. SCHEDULE 80 PVC NIPPLE 3" MIN.
K. 1" DIAMETER WASHED ROCK.
L. 8"X8"X16" SOLID CMU BLOCK.
M. GALVANIZED ELL.
N. GALVANIZED NIPPLE.
O. GALVANIZED UNION (MIN. 4" ABOVE GRADE).
P. GALVANIZED TEE.
Q. BALL DRAIN, CHAMPION DV050 1/2".
R. PVB BACKFLOW PREVENTER (REFERENCE DRAWINGS).
S. PVC MIP ADAPTER.
T. NON-CONSTANT PRESSURE IRRIGATION MAINLINE.

GENERAL NOTES:

1. PVB'S ARE UNAPPROVED FOR containment protection, except for lawn irrigation system.
2. DO NOT INSTALL IN FLOOD PRONE AREAS.
3. DO NOT INSTALL PVB'S MORE THAN 5" ABOVE GROUND LEVEL. PVB'S MUST BE 12" MIN. ABOVE HIGHEST POINT OF ALL DOWNSTREAM PIPING AND OUTLETS.
4. PROTECT PVB'S FROM FREEZING W/POSITIVE HEAT ELEMENT. (OTHER MEANS MAY BE USED WITH PRIOR APPROVAL BY ADMINISTRATIVE AUTHORITY).
5. HORIZONTAL PVB INSTALLATION REQUIRED. (POSITIONED AS SHOWN).
6. JOINT'S TO BE ADEQUATELY RESTRAINED.
7. METALLIC RISER PIPING REQUIRED.
8. INSTALL A 8"X8"X16" SOLID CMU BLOCK AT EACH CORNER OF THE VALVE BOX.
9. WASH ROCK SHALL BE INSTALLED FLUSH WITH BOTTOM OF PIPE.
10. CONCRETE MOWSTRIP SHALL BE INSTALLED AROUND THE ENTIRE PERIMETER OF THE MASTERVALVE AND PVB ASSEMBLY. MOWSTRIP SHALL BE A MIN. OF 12" FROM PIPING AND VALVE BOX. (OPTIONAL, DEPENDING ON APPLICATION).

CITY OF ALBUQUERQUE

REVISED
12/91
LANDSCAPE
MASTervalve w/ PVB
3/92
DWG. 2702
12/92
JAN. 1991
GENERAL NOTES:

1. PVBS ARE UNAPPROVED FOR CONTAINMENT PROTECTION, EXCEPT FOR LAWN IRRIGATION SYSTEM.
2. DO NOT INSTALL IN FLOOD PRONE AREAS.
3. DO NOT INSTALL PVBS MORE THAN 5" ABOVE GROUND LEVEL. PVBS MUST BE 12" MIN. ABOVE HIGHEST POINT OF ALL DOWNSTREAM PIPING A OUTLETS.
4. PROTECT PVBS FROM FREEZING WITH/POSITIVE HEAT ELEMENT. (OTHER MEANS MAY BE USED WITH PRIOR APPROVAL BY ADMINISTRATIVE AUTHORITY).
5. HORIZONTAL PVBS INSTALLATION REQUIRED. (POSITIONED AS SHOWN).
6. JOINTS TO BE ADEQUATELY RESTRAINED.
7. METALLIC RISER PIPING REQUIRED.
8. INSTALL A 8"X8"X16" SOLID CMU BLOCK AT EACH CORNER OF THE VALVE BOX.
9. WASH ROCK SHALL BE INSTALLED FLUSH WITH BOTTOM OF PIPE.
10. CONCRETE MOWSTRIP SHALL BE INSTALLED AROUND THE ENTIRE PERIMETER OF THE MASTER VALVE AND PVBS ASSEMBLY. MOWSTRIP SHALL BE A MIN. OF 12" FROM PIPING AND VALVE BOX. (OPTIONAL, DEPENDING ON APPLICATION).

CONSTRUCTION NOTES:

A. SERVICE LINE TO WATER METER, NO OUTLETS ALLOWED.
B. FINISH GRADE, MATERIAL VARIES REFERENCE PLANS.
C. BROOK PRODUCTS INC., 1750 PB-18 BODY (ABS) VALVE BOX W/BOLT DOWN COVER (ABS) AND ONE 8" EXTENSION.
D. SPEARS TRUE UNION SCHEDULE 80 PVC BALL VALVE.
E. SCHEDULE 80 PVC 4" NIPPLE.
F. BERMAD FLOWMETER. REFERENCE IRRIGATION LEGEND FOR SIZE.
G. SPEARS SCHEDULE 80 PVC UNION.
H. SCHEDULE 80 PVC NIPPLE 3" MIN.
I. 1" DIAMETER WASHED ROCK.
J. 8"X8"X16" SOLID CMU BLOCK.

K. GALVANIZED ELL.
L. GALVANIZED NIPPLE.
M. GALVANIZED UNION MIN. 4" ABOVE GRADE.
N. GALVANIZED TEE.
O. BALL DRAIN, CHAMPION DY050 1/2".
P. PVBS BACKFLOW PREVENTER (REFERENCE DRAWINGS).
Q. PVC MIP ADAPTER.
R. NON-CONSTANT PRESSURE IRRIGATION MAINLINE.
S. COMPACTED SUBGRADE.

CITY OF ALBUQUERQUE

LANDSCAPE

BERMAD FLOWMETER
MASTER VALVE W/PVBS

REV: 12/92

DWG. 2702-A

JAN. 1991
GENERAL NOTES
1. See Landscape DWG 2701, 2702, 2702-B, 2703-2712 and Water DWG 2385.

CONSTRUCTION NOTES
A. Meter
B. Valve (electric or manual) (Reference Drawing)
C. Approved Reduced Pressure Backflow Assembly (RPBA)
D. Approved pressure vacuum breaker (PVB)
E. Control valve
F. Sprinkler

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY
EXAMPLE 2

CITY OF ALBUQUERQUE
LANDSCAPE EXAMPLES OF IRRIGATION SYSTEMS
DWG. 2702-B JAN. 1994
GENERAL NOTES:
1. See LANDSCAPE DWGS. 2701, 2702-A, and 2703-2712. Also See WATER DWG. 2385

CONSTRUCTION NOTES:
A. Meter.
B. Valve (Electric or Manual, Reference Dwg.)
C. Approved Reduced Pressure Backflow Assembly (RPBA).
D. Control valve.
E. Injector pump.

CITY OF ALBUQUERQUE

LANDSCAPE
EXAMPLES OF IRRIGATION SYSTEMS
WITH CHEMICAL INJECTION
DWG. 2702-C

REVISIONS

JAN. 1991
GENERAL NOTES:
1. INSTALL AN 8"X8"X14" SOLID CMU BLOCK AT EACH END OF THE VALVE FLANGE.
2. WASH ROCK SHALL BE INSTALLED FLUSH WITH BOTTOM OF PIPE AND VALVE.

CONSTRUCTION NOTES:
A. FINISH GRADE.
B. BROOKS PRODUCTS INC., 1720 PB-18 BODY (ABS) VALVE BOX WITH 1730 BOLT DOWN COVER (ABS) AND ONE 9" EXTENSION.
C. 3M SCOTCH LOK CONNECTORS.
D. IRRIGATION MAINLINE.
E. IRRIGATION MAINLINE SERVICE TEE OR ELL.
F. SCHEDULE 80 PVC 1½" NIPPLE.
G. SPEARS TRUE UNION SCHEDULED 80 PVC BALL VALVE.
H. SCHEDULE 80 PVC 4" NIPPLE.
I. ELECTRIC VALVE. REFERENCE THE DRAWING FOR SIZE.
J. SPEARS SCHEDULE 80 PVC UNION.
K. LATERAL LINE.
L. 1" DIAMETER WASHEDD ROCK.
M. 6"X6"X16" SOLID CMU BLOCK.
N. 24" WIRE EXPANSION COIL.

GENERAL NOTES
1. PVC FITTINGS SHALL BE PROTECTED FROM CONCRETE BY PLACING 10 MIL. PLASTIC SHEETING BETWEEN CONCRETE AND FITTING.

CONSTRUCTION NOTES
A. CONCRETE THRUAST BLOCK PLACED AGAINST SOLID UNDISTURBED SOIL.
B. PVC FITTING.
C. PIPE TRENCH.
D. 10 MIL. PLASTIC SHEETING.
GENERAL NOTES:
1. INSTALL AN 8"X8"X16" SOLID CMU BLOCK AT EACH END OF THE VALVE BOX.
2. WASH ROCK SHALL BE INSTALLED FLUSH WITH BOTTOM OF GATE VALVE.
3. AIR RELIEF VALVE SHALL BE INSTALLED DOWNSTREAM OF THE MASTER VALVE.

CONSTRUCTION NOTES:
A. FINISH GRADE.
B. BROOKS PRODUCTS INC., 1730 PE-18 BODY (ABS) VALVE BOX WITH 1730 BOLT DOWN COVER (ABS) AND ONE 9" EXTENSION, WHEN AIR RELIEF VALVE IS INSTALLED DISCONNECT BEFORE INSTALLATION USE 4" PIPE WITH PLASTIC LID.
C. AIR RELIEF VALVE (REFERENCE THE DRAWINGS).
D. SCHEDULE 40 PVC NIPPLE.
E. GATE VALVE.
F. SCHEDULE 40 PVC ST. ELL.
G. SCHEDULE 40 PVC ELL.
H. IRRIGATION MAINLINE TEE.
I. IRRIGATION MAINLINE.
J. #3/4"X16" SOLID CMU BLOCK.
K. 1" DIAMETER WASHED ROCK.

GENERAL NOTES:
1. INSTALL AN 8"X8"X16" SOLID CMU BLOCK AT EACH END OF THE VALVE BOX.
2. WASH ROCK SHALL BE INSTALLED FLUSH WITH BOTTOM OF PIPE AND VALVE.

CONSTRUCTION NOTES:
A. FINISH GRADE.
B. BROOKS PRODUCTS INC., 1730 PE-18 BODY (ABS) VALVE BOX WITH 1730 BOLT DOWN COVER (ABS) AND ONE 9" EXTENSION.
C. SPEARS TRUE UNION SCHEDULED 80 PVC BALL VALVE.
D. 1" DIAMETER WASHED ROCK.
E. PVC MIP ADAPTER.
F. #3/4"X16" SOLID CMU BLOCK.
G. SCHEDULE 80 PVC 4" NIPPLE.
H. SPEARS SCHEDULE 80 PVC UNION.
GENERAL NOTES:
1. INSTALL AN 8"X8"X16" CMU BLOCK AT EACH CORNER OF THE VALVE BOX.

CONSTRUCTION NOTES:
A. FINISH GRADE.
B. BROOKS PRODUCTS INC., 1730 PB-18 BODY (ABS) VALVE BOX WITH 1730 BOLT DOWN COVER (ABS) AND ONE 8" EXTENSION.
C. 2" OPERATING NUT.
D. FEOLER "O" RING GASKET VALVE 704 A (LINE SIZE).
E. NO. 4 RED AR.
F. THRUST BLOCK-4000 PSI CONCRETE PLACED AGAINST UNDISTURBED SOIL.
G. IRRIGATION MAINLINE.
H. 8"X8"X16" CMU BLOCK.
I. 1" DIAMETER WASHED ROCK.

GENERAL NOTES:
1. INSTALL AN 8"X8"X16" SOLID CMU BLOCK AT EACH CORNER OF THE VALVE BOX.
2. INSTALL 1" DIAMETER WASHED ROCK BELOW THE VALVE BOX. EXTEND WASHED ROCK UP TO COLLAR OF QUICK COUPLER VALVE.
3. INSTALL A GATE VALVE IMMEDIATELY UPSTREAM OF QUICK COUPLER VALVE.

CONSTRUCTION NOTES:
A. FINISH GRADE.
B. BROOKS PRODUCTS INC., 1730 PB-18 BODY (ABS) VALVE BOX WITH 1730 BOLT DOWN COVER (ABS) AND ONE 8" EXTENSION WHEN QUICK COUPLER VALVE IS INSTALLED IN PLAYING FIELD USE 4" PIPING WITH PLASTIC LID.
C. RAINBIRD 33 DTC QUICK COUPLER VALVE.
D. 1" DIAMETER WASHED ROCK.
E. 12" SCH. 80 PVC RISER.
F. IRRIGATION MAINLINE.
G. SCHEDULE 40 PVC ELL 90°.
H. 8"X8"X16" SOLID CMU BLOCK.
GENERAL NOTES:
1. THIS DETAIL SHALL BE USED FOR POP-UP SHRUB SPRAY, POP-UP LAWN SPRAY, GEAR DRIVEN AND ROTARY SPRINKLER HEADS.
2. LATERAL LINE PRESSURE TESTING SHALL BE COMPLETED PRIOR TO INSTALLATION OF FLEX PIPE ASSEMBLY. LATERAL LINE TESTING SHALL BE ACCOMPLISHED BY INSTALLING A PLUG IN THE OUTLET OF LATERAL LINE TERS AND ELVES.
3. TOP OF SPRINKLER HEAD SHALL BE SET FLUSH WITH FINISH GRADE.

CONSTRUCTION NOTES:
A. FINISH GRADE.
B. SPRINKLER HEAD (REFERENCE THE DRAWINGS FOR TYPE).
C. SCH. 80 PVC NIPPLE. LENGTH VARIES DEPENDING UPON SIZE OF SPRINKLES HEAD.
D. SCH. 40 PVC TREADED ELL.
E. SCH. 40 PVC MIP ADAPTER.
F. PVC FLEXIBLE VINYL PIPE. IPS FROM AGRICULTURAL PRODUCTS INC. (818-768-3303).
G. LATERAL PIPE.
H. SCH. 40 PVC SXXT TEE OR SXT ELL.
CONSTRUCTION NOTES:

A. DRINKING FOUNTAIN (SEE PRODUCT SCHEDULE) ASSEMBLE ACCORDING TO MANUFACTURER'S SPECS. INSTALL VERTICAL.
B. DOOR FOR OPENING TO BALL DRAIN AREA.
C. BALL DRAIN, CHAMPION DN800 1/2".
D. GALVANIZED TEE.
E. 1/2" NYLON REINFORCED TUBING.
F. CONCRETE PAVING.
G. COMPACTED BACKFILL.
H. WATER SUPPLY LINE TO VALVE BOX W/ GATE VALVE. SEE IRRIGATION PLAN FOR VALVE LOCATION.
I. 1 1/2" PVC DRAIN TO DRINKING FOUNTAIN SUMP.

GENERAL NOTES:

1. LATERAL LINE PRESSURE TESTING SHALL BE COMPLETED PRIOR TO INSTALLATION OF FLEX PIPE ASSEMBLY. LATERAL LINE TESTING SHALL BE ACCOMPLISHED BY INSTALLING A PLUG IN THE OUTLET OF LATERAL LINE TIES AND ELLS.

2. BUBBLER SHALL ALWAYS BE INSTALLED ON THE UPHILL SIDE OF THE TREE.

CONSTRUCTION NOTES:

A. TREE.
B. FINISH GRADE.
C. BUBBLER HEAD (REFERENCE IRRIGATION LEGEND).
D. SCH. 80 PVC NIPPLE.
E. SCH. 40 PVC THREADED COUPLER.
F. SCH. 40 PVC THREADED ELL.
G. SCH. 40 PVC MIP ADAPTER.
H. PVC FLEXIBLE VINYL PIPE, STD., IPS FROM AGRICULTURAL PRODUCTS INC. (818-746-3303).
I. SCH. 40 PVC SXT/TEES OR SXT ELL.
J. LATERAL PIPE.
K. TOP OF BUBBLER LEVEL WITH TOP OF BARK MULCH OR MAX. 1" ABOVE TOP OF BARK MULCH.
L. 4" BARK MULCH.
GENERAL NOTES:
1. LATERAL LINE PRESSURE TESTING SHALL BE COMPLETED PRIOR TO INSTALLATION OF FLEX PIPE ASSEMBLY. LATERAL LINE TESTING SHALL BE ACCOMPLISHED BY INSTALLING A PLUG IN THE OUTLET OF LATERAL LINE TEES AND ELLS.
2. BUBBLER SHALL ALWAYS BE INSTALLED ON THE UPHILL SIDE OF THE SHRUB.

CONSTRUCTION NOTES:
A. SHRUB.
B. FINISH GRADE.
C. BUBBLER HEAD (REFERENCE IRRIGATION LEGEND).
D. SCH. 40 PVC NIPPLE.
E. SCH. 40 PVC THREADED COUPLER.
F. SCH. 40 PVC THREADED ELL.
G. SCH. 40 PVC MIP ADAPTER.
H. PVC FLEXIBLE VINYL PIPE STD. IPS FROM AGRICULTURAL PRODUCTS INC. (818-768-3303).
I. LATERAL PIPE.
J. SCH. 40 PVC 3X5X5 TEE OR 5X5 ELL.
K. TOP OF BUBBLER LEVEL WITH TOP OF BARK MULCH OR 1" ABOVE TOP OF BARK MULCH.
L. 4" BARK MULCH.

CONSTRUCTION NOTES:
A. BUBBLER HEAD REFERENCE IRRIGATION LEGEND.
   TOP OF BUBBLER LEVEL WITH TOP OF PLANTING MIX OR MAX. 1" ABOVE TOP OF PLANTING MIX.
B. SCH. 40 PVC NIPPLE
C. FINISH GRADE.
D. 4000 PSI CONCRETE MOW STRIP.
E. SCH. 40 PVC THREADED COUPLER.
F. SCH. 40 PVC THREADED ELL.
G. SCH. 40 PVC MIP ADAPTER.
H. SCH. 40 PVC 5X5X5 TEE OR 5X5 ELL.
I. PVC FLEXIBLE VINYL PIPE STD. IPS FROM AGRICULTURAL PRODUCTS INC. (818-768-3303)
GENERAL NOTES:
1. LATERAL LINE PRESSURE TESTING SHALL BE COMPLETED PRIOR TO INSTALLATION OF FLEX PIPE ASSEMBLY. LATERAL LINE TESTING SHALL BE ACCOMPLISHED BY INSTALLING A PLUG IN THE OUTLET OF LATERAL LINES AND ELLS.
2. BUBBLER SHALL ALWAYS BE INSTALLED ON THE UPHILL SIDE OF THE TREE.
3. PVC PIPE SHALL NOT BE INSTALLED UNDER THE LOCATION OF THE TREE BALL.

CONSTRUCTION NOTES:
A. TREE GRATE.
B. 4000 PSI CONCRETE.
C. TREE GRATE FRAME.
D. TREE.
E. 4" BARK MULCH.
F. FINISH GRADE.
G. BUBBLER HEAD (REFERENCE IRRIGATION LEGEND).
H. SCH. 80 PVC NIPPLE.
I. SCH. 40 PVC THREADED COUPLER.
J. SCH. 40 PVC EXIST TEE OR EXT ELL.
K. LATERAL PIPE.

GENERAL NOTES:
1. ROOTBALL SHALL BE PLACED ON UNDISTURBED SOIL TO PREVENT TREE FROM SETTLING.
2. TOP OF ROOTBALL INDICATES LEVEL AT WHICH TREE WAS GROWN AND DUG. THIS REPRESENTS THE LEVEL AT WHICH THE TREE SHOULD BE INSTALLED. THAT LEVEL MAY BE EXCEEDED BY ONLY A ONE INCH LAYER OF SOIL.
3. PRIOR TO BACKFILLING TREE, ALL WIRE, ROPE AND SYNTHETIC MATERIALS SHALL BE REMOVED FROM THE TREE AND THE PLANTING PIT.
4. PRIOR TO BACKFILLING ALL BURLAP SHALL BE CUT AWAY EXCEPT FROM BOTTOM OF THE ROOTBALL.

CONSTRUCTION NOTES:
A. TREE.
B. BACKFILL WITH EXISTING SOIL.
C. 4" DEPTH OF BARK MULCH.
D. TURF AT FINISH GRADE.
E. UNDISTURBED SOIL.
GENERAL NOTES:
1. ROOTBALL SHALL BE PLACED ON UNDISTURBED SOIL TO PREVENT TREE FROM SETTLING.
2. TOP OF ROOTBALL INDICATES LEVEL AT WHICH TREE WAS GROWN AND DUG. THIS
   REPRESENTS THE LEVEL AT WHICH THE TREE SHOULD BE INSTALLED. THAT LEVEL
   MAY BE EXCEEDED BY ONLY A ONE INCH LAYER OF SOIL.
3. PRIOR TO BACKFILLING, ALL WIRE, ROPE AND SYNTHETIC MATERIALS
   SHALL BE REMOVED FROM THE TREE AND THE PLANTING PIT.
4. PRIOR TO BACKFILLING ALL BURLAP SHALL BE CUT AWAY EXCEPT FROM
   BOTTOM OF THE ROOTBALL.

CONSTRUCTION NOTES:
A. TREE.
B. BACKFILL WITH EXISTING SOIL.
C. EARTH BERM AROUND WATER RETENTION BASIN.
D. 4" DEPTH OF BARK MULCH.
E. FINISH GRADE.
F. WATER RETENTION BASIN.
G. UNDISTURBED SOIL.

GENERAL NOTES:
1. EXISTING SOIL WITHIN THE SHRUB & TREE PLANTER SHALL BE REMOVED
   AND REPLACED WITH THE SPECIFIED PLANTING SOIL MIXTURE.
2. ROOTBALL SHALL BE PLACED ON UNDISTURBED SOIL TO PREVENT TREE FROM SETTLING.
3. TOP OF ROOTBALL INDICATES LEVEL AT WHICH TREE WAS GROWN AND DUG. THIS
   REPRESENTS THE LEVEL AT WHICH THE TREE SHOULD BE INSTALLED. THAT LEVEL
   MAY BE EXCEEDED BY ONLY A ONE INCH LAYER OF SOIL.
4. PRIOR TO BACKFILLING TREE, ALL WIRE, ROPE AND SYNTHETIC MATERIALS SHALL
   BE REMOVED FROM THE TREE AND THE PLANTING PIT.
5. PRIOR TO BACKFILLING, ALL BURLAP SHALL BE CUT AWAY EXCEPT FROM BOTTOM
   OF THE ROOTBALL.

CONSTRUCTION NOTES:
A. TREE.
B. PLANTING SOIL MIXTURE (REFERENCE THE SPECIFICATION).
C. 4" DEPTH OF BARK MULCH.
D. MATERIAL VARIES (REFERENCE THE DRAWING).
E. UNDISTURBED SOIL.
GENERAL NOTES:
1. ROOTBALL SHALL BE PLACED ON UNDISTURBED SOIL TO PREVENT TREE FROM SETTLING.
2. TOP OF ROOTBALL INDICATES LEVEL AT WHICH TREE WAS GROWN AND DUG. THIS REPRESENTS THE LEVEL AT WHICH THE TREE SHOULD BE INSTALLED. THAT LEVEL MAY BE EXCEEDED BY ONLY A ONE INCH LAYER OF SOIL.
3. PRIOR TO BACKFILLING TREE, ALL WIRE, ROPE AND SYNTHETIC MATERIALS SHALL BE REMOVED FROM THE TREE AND THE PLANTING PIT.
4. PRIOR TO BACKFILLING, ALL BURLAP SHALL BE CUT AWAY EXCEPT FROM BOTTOM OF THE ROOTBALL.
5. THE BARK MULCH SHALL BE INSTALLED TWO INCHES BELOW FINISH GRADE AT THE PERIMETER OF PLANTING PIT AND FOUR INCHES THICK ABOVE THE PLANTING PIT AND ROOTBALL.
7. AFTER THE TREE IS PLANTED, THE DEGREE OF SLOPE ABOVE AND BELOW THE TREE SHALL NOT EXCEED THE EXISTING DEGREE OF SLOPE PRIOR TO PLANTING.

CONSTRUCTION NOTES:
A. TREE.
B. BACKFILL WITH EXISTING SOIL.
C. 4" DEPTH OF BARK MULCH.
D. TURF AT FINISH GRADE.
E. UNDISTURBED SOIL.

GENERAL NOTES:
1. THE OUTSIDE DIAMETER OF THE WATER RETENTION BASIN SHALL BE TWICE THE DIAMETER OF THE SHRUB PLANTING PIT.

CONSTRUCTION NOTES:
A. SHRUB.
B. BACKFILL WITH EXISTING SOIL.
C. EARTH BERM AROUND WATER RETENTION BASIN.
D. 4" DEPTH OF BARK MULCH.
E. FINISH GRADE.
F. UNDISTURBED SOIL.
GENERAL NOTES:
1. EXISTING SOIL WITHIN THE FLOWER BED SHALL BE REMOVED AND REPLACED WITH THE SPECIFIED PLANTING SOIL MIXTURE.

CONSTRUCTION NOTES:
A. MATERIAL VARIES (REFERENCE THE DRAWINGS).
B. LOOSEN SOIL TO DEPTH OF 6".
C. PLANTING SOIL MIXTURE (REFERENCE THE SPECIFICATIONS).
D. BARK MULCH.
GENERAL NOTES:
1. CONTROL JOINTS SHALL BE PLACED AT 5" O.C.
2. EXPANSION JOINTS SHALL BE PLACED AT 20" O.C., AND WHERE THE CONCRETE WALK ABUTS ANOTHER HARD SURFACE.
3. THE CONCRETE WALK SHALL BE SLOPED AT 1/4" PER FOOT ACROSS THE WIDTH OF THE WALK. REFERENCE THE GRADING PLAN FOR DIRECTION OF SLOPE.

CONSTRUCTION NOTES:
A. 4000 PSI CONCRETE SIDEWALK WITH MEDIUM BRUSH FINISH. (SEE SECTION 340).
B. SUBGRADE COMPACTED TO 95%. (SEE SECTION 301).
C. MATERIAL VAXES (REFERENCE THE DRAWINGS).
D. TOOLLED EDGE (TYP).

GENERAL NOTES:
1. CONTROL JOINTS SHALL BE PLACED AT 5" O.C.
2. EXPANSION JOINTS SHALL BE PLACED AT 20" O.C., AND WHERE THE MOWSTRIP ABUTS ANOTHER HARD SURFACE.
3. THE CONCRETE MOWSTRIP MAY BE EXCESSED, BUT SHALL MEET THE STANDARD OF THIS DETAIL.
4. A SAMPLE OF THE CRUSHED SAND SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO INSTALLATION.

CONSTRUCTION NOTES:
A. SOD OR SEEDED TURF (REFERENCE THE DRAWING).
B. TOOLLED EDGE (TYP)
C. #3 REBAR, HORIZONTAL AND CONTINUOUS.
D. CRUSHED SAND ROLLED FOR COMPACTION.
E. 4000 PSI CONCRETE MOWSTRIP WITH BRUSH FINISH. (SEE SECTION 101).
F. SUBGRADE COMPACTED TO 95%. (SEE SECTION 301).
GENERAL NOTES:
1. CONTROL JOINTS SHALL BE PLACED AT 5" O.C.
2. EXPANSION JOINTS SHALL BE PLACED AT 20" O.C., AND WHERE THE MOWSTRIP ABUTS ANOTHER HARD SURFACE.
3. THE CONCRETE MOWSTRIP MAY BE EXTENDED, BUT SHALL MEET THE STANDARD OF THIS DETAIL.
4. THE ASPHALT PATH SHALL BE SLOPED AT 1/4" PER FOOT ACROSS THE WIDTH OF THE PATH. REFERENCE THE GRADING PLAN FOR DIRECTION OF SLOPE.

CONSTRUCTION NOTES:
A. SOD OR SEEDED TURF (REFERENCE THE DRAWING).
B. TOOL EDGED.
C. #3 REBAR, HORIZONTAL, AND CONTINUOUS.
D. 2" ASPHALT SURFACE COURSE WITH 1500 LBS. STABILITY.
E. 4000 PSI CONCRETE MOWSTRIP WITH BRUSH FINISH. (SEE SECTION 101).
F. SUBGRADE COMPACTED TO 95%. (SEE SECTION 101).

GENERAL NOTES:
1. BOLLARD SHALL BE PONDEROSA PINE TREATED WITH COPPER ARSENATE IN ACCORDANCE WITH THE REQUIREMENTS OF AWPA C-14. WOOD PRESERVATIVES SHALL CONFORM WITH THE REQUIREMENTS OF ASHFTO M-333.
2. BOLLARD SHALL BE INSTALLED IN A HOLE EXCAVATED TO A MINIMUM SIZE OF 24"X24"X30". BACKFILL AROUND BOLLARD SHALL BE COMPACTED TO 95%.

CONSTRUCTION NOTES:
A. WOOD BOLLARD, 6"X6"X5'-0".
B. SUBGRADE COMPACTED TO 95%. (SEE SECTION 101).
C. MATERIAL VARIES (REFERENCE THE DRAWING).
GENERAL NOTES:

1. BOLLARD SHALL BE PONDEROSA PINE TREATED WITH COPPER ARSENUDE IN ACCORDANCE WITH THE REQUIREMENTS OF AWPA C-14. WOOD PRESERVATIVES SHALL CONFORM WITH THE REQUIREMENTS OF AASHTO M-133.
2. BOLLARD SHALL BE INSTALLED IN A HOLE EXCAVATED TO A MINIMUM SIZE OF 2'-0"X2'-0". BACKFILL AROUND BOLLARD SHALL BE COMPACTED TO 95%.

CONSTRUCTION NOTES:
A. WOOD BOLLARD: 8"X6"X5'-0".
B. SUBGRADE COMPACTED TO 95%. (SEE SECTION 301).
C. 4000 PSI STANDARD CONCRETE WALK
D. 1/2" ASPHALT IMPREGNATED EXPANSION JOINT.

GENERAL NOTES:

1. A 12" CONCRETE EDGER SHALL BE PLACED ON THE TURF SIDE OF THE FENCE AND A 6" EDGER SHALL BE PLACED ON THE NON-TURF SIDE OF THE FENCE.
2. CONTROL JOINTS SHALL BE PLACED AT 5'-0" O.C.
3. EXPANSION JOINTS SHALL BE PLACED AT 20'-0" O.C., AND WHERE THE MOWSTRIP ABUTS ANOTHER HARD SURFACE.
4. TOP OF EDGER SHALL BE LEVEL WITH THE TURF AT FINISH GRADE.
5. REFER TO THE CITY STANDARD FENCING DETAILS FOR FENCE INSTALLATION INFORMATION.

CONSTRUCTION NOTES:
A. FINISH GRADING.
B. TOOL EDGE.
C. #3 REBAR, HORIZONTAL AND CONTINUOUS.
D. MATERIAL VARIATION (REFERENCE THE DRAWINGS).
E. 4000 PSI CONCRETE EDGER WITH BRUSH FINISH. (SEE SECTION 101).
F. 6" SUBGRADE COMPACT. (SEE SECTION 301).
G. SOD OR SEEDED TURF. (REFERENCE THE DRAWINGS).
H. CONTROL JOINT.
I. POST.
GENERAL NOTES:
1. CONTROL JOINTS SHALL BE PLACED AT 5' O.C.
2. EXPANSION JOINTS SHALL BE PLACED AT 20' O.C., AND WHERE THE MOWSTRIP ABUTS ANOTHER HARD SURFACE.
3. TOP OF MOWSTRIP SHALL BE LEVEL WITH THE FINISH GRADE.

CONSTRUCTION NOTES:
A. FINISH GRADE.
B. SOD OR SEEDED TURF (REFERENCE THE DRAWING).
C. #3 REBAR, HORIZONTAL AND CONTINUOUS.
D. MATERIAL VARIES (REFERENCE THE DRAWING).
E. 4000 PSI CONCRETE MOWSTRIP. (SEE SECTION 101).
F. SUBGRADE COMPACTED TO 95%. (SEE SECTION 301).
G. TOOLED EDGE. (TYP.)

GENERAL NOTES:
1. CONTROL JOINTS SHALL BE PLACED AT 5' O.C.
2. EXPANSION JOINTS SHALL BE PLACED AT 20' O.C., AND WHERE THE EDGER ABUTS ANOTHER HARD SURFACE.
3. TOP OF EDGER SHALL BE LEVEL WITH THE FINISH GRADE OUTSIDE THE TREE WELL/PANNER.

CONSTRUCTION NOTES:
A. FINISH GRADE AT TREE WELL OR PLANTER.
B. TOOLED EDGE. (TYP.)
C. #3 REBAR, HORIZONTAL AND CONTINUOUS.
D. MATERIAL VARIES (REFERENCE THE DRAWING).
E. 4000 PSI CONCRETE EDGER WITH BRUSH FINISH. (SEE SECTION 101).
F. SUBGRADE COMPACTED TO 95%. (SEE SECTION 301).
G. BARK MULCH.
GENERAL NOTES:
1. CONTROL JOINTS SHALL BE PLACED AT 5' O.C.
2. EXPANSION JOINTS SHALL BE PLACED AT 20' O.C.

CONSTRUCTION NOTES:
A. TOOLEO EDGE.
B. BRICK SAND.
C. SUBGRADE COMPACTED TO 95%. (SEE SECTION 301).
D. #4 REBAR AT 12" O.C.
E. 4000 PSI CONCRETE WITH BRUSH FINISH. (SEE SECTION 101).
F. #4 REBAR, HORIZONTAL AND CONTINUOUS.
GENERAL NOTES:
1. THE WATERPROOF MEMBRANE SHALL BE A 30 MIL PVC LINER MATERIAL.
2. THE WATERPROOF MEMBRANE SHALL BE ADHERED TO THE BACK OF THE CURB PER THE MANUFACTURER'S SPECIFICATIONS.
3. THE EXISTING SOIL WITHIN THE MEDIAN SHALL BE REMOVED AND REPLACED WITH THE SPECIFIED PLANTING SOIL MIXTURE.

CONSTRUCTION NOTES:
A. EXISTING CURB AND GUTTER.
B. ADHESIVE PER MANUFACTURER'S SPECIFICATIONS.
C. WATERPROOF MEMBRANE, 38".
D. SUBGRADE COMPACTED TO 95%. (SEE SECTION 3011).
E. BARK MULCH.
F. PLANTING SOIL MIXTURE, (REFERENCE THE SPECIFICATIONS).
G. LOOSEN THE SOIL TO A DEPTH OF 6".
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TEMPORARY TRAFFIC CONTROL GENERAL NOTES

1. CONTRACTOR MUST OBTAIN FROM CONSTRUCTION COORDINATION AN EXCAVATION/BARRIERS PERMIT AT LEAST TWO WORKING DAYS BEFORE ENGAGING IN ANY CONSTRUCTION, MAINTENANCE OR REPAIR WORK IN ANY OF THE CITY OF ALBUQUERQUE’S RIGHTS-OF-WAY. EMERGENCY WORK THAT WOULD PREVENT LIFE OR PROPERTY IS EXCLUDED WITH THE UNDERSTANDING THAT A PERMIT SHALL BE OBTAINED WITHIN 24 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 ACCESS. 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 ACCESS. 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 5A-4 OF THE MUTCD, LATEST EDITION.

7. THE CONSTRUCTION TRAFFIC INITIAL SETUP SHALL BE BY AN AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) OR EQUIVALENT, CERTIFIED WORK SITE TRAFFIC SUPERVISOR. THE MAINTENANCE AND SERVICING SHALL ALSO BE DONE BY AN ATSSA CERTIFIED WORK SITE TRAFFIC SUPERVISOR OR EQUIVALENT.

8. CONTRACTOR IS RESPONSIBLE TO MAINTAIN AND SERVICE ALL TRAFFIC CONTROL DEVICES 24 HOURS A DAY, 7 DAYS A WEEK. TRAFFIC CONTROLS DEVICES SHALL NOT BE REMOVED OR ALTERED IN ANY WAY WITHOUT THE APPROVAL OF CONSTRUCTION COORDINATION PER SECTION 5A-4 OF THE MUTCD, LATEST EDITION.

9. ALL ADVANCE WARNING SIGNS SHALL BE DOUBLE INDICATED WHenever THERE ARE MULTILANE TRAFFIC IN ANY ONE GIVEN DIRECTION AND THERE IS SUFFICIENT MEGAN SPACE.

10. ALL BARRIERS IN ALL LANE SETUPS SHALL BE PLACED APART, A DISTANCE MEASURED IN FEET, EQUAL TO THAT OF THE POSTED SPEED LIMIT, WITH EXCEPTIONS UNLESS APPROVED BY CONSTRUCTION COORDINATION PER MUTCD SECTION 5A-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 BARRIERS 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 DEPENDABLE ACCESS OF CARRIERS, PEDESTRIAN, AND BICYCLE TRAFFIC AROUND AND THROUGH THE CONSTRUCTION AREA.

15. CONTRACTOR IS RESPONSIBLE FOR OBLIGATION OF ANY COMPLETING STRIPPING AND RESPONSIBLE FOR ALL TEMPORARY STRIPPING.

16. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL FACILITIES, BUSINESSES AND/OR RESIDENCES 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 (WHITE 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 5A-4 OF THE MUTCD, LATEST EDITION.

19. 48 HOURS PRIOR TO OCCUPANCY OR CLOSING A RIGHT-OF-WAY, CONTRACTOR SHALL NOTIFY: POLICE, FIRE DEPARTMENT, SCHOOLS, HOSPITALS, TRANSPORT 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 PLANTED 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) SECTIONS 19, 1200, AND 2800 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 THE 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 ITS PLACEMENT AND MAINTENANCE.

25. TRAFFIC CONTROL STANDARDS APPLY ONLY WHERE THE TEMPORARY TRAFFIC CONTROL PLANS ARE NOT SPECIFIED.

26. ADVANCE WARNING SIGNS SHALL BE 36”x36” WITH SUPER ENGINEERING GRADE SHEETING OR BETTER. MOUNTING HEIGHT AT TOP OF SIGN SHALL BE THE SAME AS FOR A 46” SIGN AS INDICATED IN THE MUTCD.

27. CONTRACTOR SHALL MAINTAIN A GRAFFITI FREE WORK SITE. ALL GRAFFITI SHALL BE PROMPTLY REMOVED FROM ALL EQUIPMENT, BOTH PERMANENT AND TEMPORARY.
### Taper Requirement

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<th>Minimum Number of</th>
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### Taper Criteria

**Type of Taper**
- **Upstream Taper**: L Minimum
- **Shoving Taper**: 1/2 L Minimum
- **Shoulder Taper**: 1/2 L Minimum
- **Two-Way Traffic Taper**: 100 Feet Maximum
- **Downstream Taper**: 100 Feet Per Lane

**Taper Length Computation**

- **L = L - W**
- **L = L - W x 5**

**Recommended Sign Spacing(s)**

- **Minimum Distance in Feet**
  - 0-20: 10 x Speed Limit
  - 25-30: 10 x Speed Limit
  - 30-35: 10 x Speed Limit
  - 40-45: 10 x Speed Limit
  - 50-60: 10 x Speed Limit

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**Revisions**

- CITY OF ALBUQUERQUE

**Temporary Traffic Control**

- Construction Traffic Control Standards

**DMC 2803**

**January 2003**
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 WIDTH.
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.
5. MEDIAN REMOVAL SHALL TAKE PLACE BEFORE SPLIT. REDUCED SPEED MAY BE CONSIDERED.
6. USE W1-3 FOR 30 MPH OR LESS, W1-4 FOR SPEEDS 35-44 MPH OR GREATER.
7. CLOSE ALL LEFT TURN ACCESS AT ALL CROSS STREETS IN SHIFTING TAPER AREAS.
8. TRAFFIC SPLITS NOT RECOMMENDED ON ROADWAYS W/POSTED SPEEDS GREATER THAN 35 MPH.
9. FOR EXTENDED PERIODS (OVER 3 DAYS), DOUBLE YELLOW CENTERLINE TAPE SHALL BE ADDED ADJACENT TO VERTICAL PANELS ALONG ROADWAY CENTERLINE.

GENERAL NOTE:
1. ALL CONSTRUCTION WARNING SIGNS SHALL HAVE A BLOCK LEGEND ON A ORANGE BACKGROUND.
2. ALL ADVANCE WARNING SIGNS SHALL BE A MINIMUM OF 15" BY 36" IN SIZE AND SHALL HAVE ONE WARNING LIGHT.
3. SEE DGN 2905 FOR DEFINITION OF "0" AND "L".
4. ARROW PANEL REQUIRED FOR EACH LANE CLOSURE WITH MULTIPLE LANE CLOSURES ON ARTERIAL AND COLLECTOR STREETS.

REVIEWS
CITY OF ALBUQUERQUE
TEMPORARY TRAFFIC CONTROL
TYPICAL TRAFFIC CONTROL
& SIGNING EXAMPLES (REF. MUTCD)
DGN: 2807
JANUARY 2003