Standard Specifications For Public Works Construction - 1986
Incorporating Update No. 8

Volume 2 of 2
Standard Detail Drawings
January 2011

Sewer – Section 2100
Drainage – Section 2200
Water – Section 2300
Paving – Section 2400
Traffic – Section 2500
NM DOT – Section 2600
Landscaping – Section 2700
Temporary Traffic Control – Section 2800

City of Albuquerque
Planning Department

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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.

2000.2 CONTENTS

SECTION NO.	TITLE
2100	Standard Details for Sewer
2200	Standard Details for Drainage
2300	Standard Details for Water
2400	Standard Details for Paving
2500	Standard Details for Traffic
2600	Standard Details for N.M.S.H.T.D.
2700	Standard Details for Landscaping
2800	Standard Details for Temporary Traffic Control

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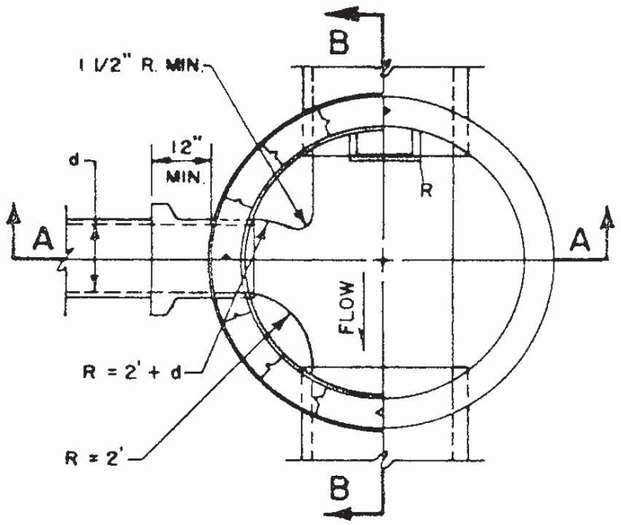
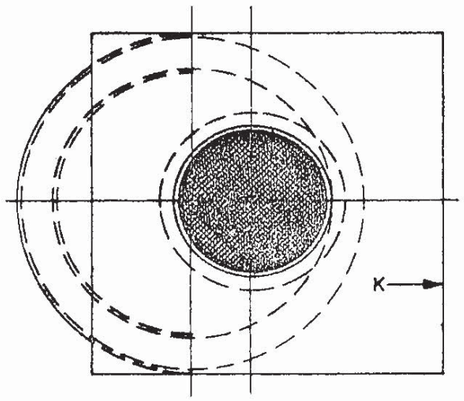
SECTION 2100

STANDARD DETAILS FOR SEWER

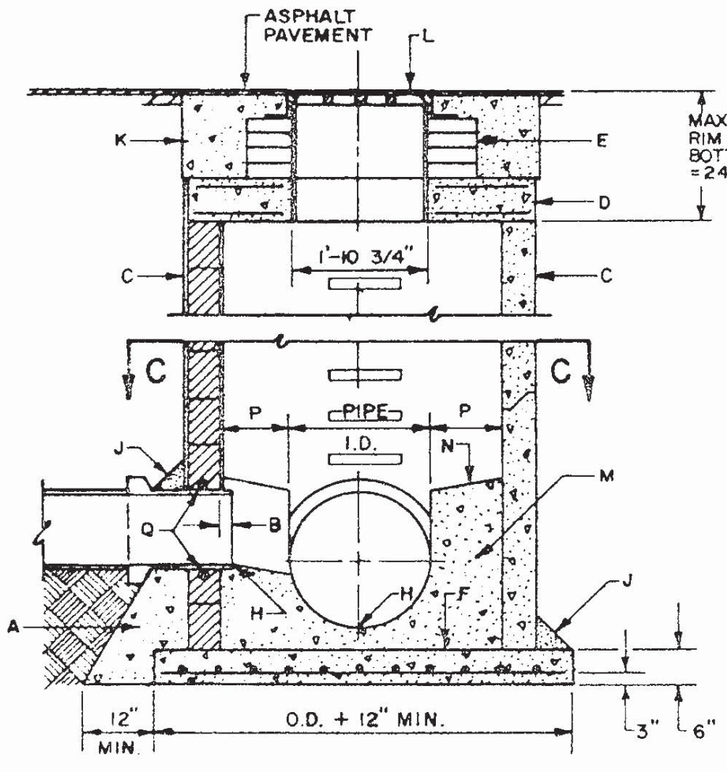
DWG. NO.	TITLE
2101	MANHOLE TYPE “C’’
2102	MANHOLE TYPE “E’’
2107	CONCRETE MANHOLE COVER TYPE “C’’
2109	SEWER MANHOLE FRAME AND COVERS
2110	STORM MANHOLE FRAME AND COVERS
2111	MANHOLE ADJUSTMENT RING
2116	VERTICAL DROP AT MANHOLE
2118	SERVICE LINE CONNECTIONS AT MANHOLE
2125	SERVICE LINE DETAILES
2134	SEWER SERVICE REPLACEMENT DETAIL
2135	RISER DETAILES RIGID PIPE MAIN
2136	RISER DETAILES FLEXIBLE PIPE MAIN
2140	ENCASEMENT DETAILES
2145	SEWER LINE DEAD-END MARKER
2150	SAMPLING AND METERING MH, 6’x 8’ RECTANGULAR
2151	SAMPLING AND METERING MANHOLE, 8’ DIAMETER
2160	SANITARY SEWER AIR RELEASE VALVE DETAIL
2162	VACUUM SEWER STANDARDS - STANDARD DETAILES
2163	VACUUM SEWER STANDARDS VALVE AND PIT INSTALLATION WITH LIFT IN VACUUM SERVICE LATERAL
2164	VACUUM SEWER STANDARDS TYPICAL VACUUM BRANCH LINE CONNECTION
2165	VACUUM SEWER STANDARDS 3” VALVE AND PIT INSTALLATION WITH INTERNAL BREATHER
2167	VACUUM SEWER STANDARDS SINGLE BUFFER TANK, 30 GAL PER MINUTE MAX. FLOW
2168	VACUUM SEWER STANDARDS DUAL BUFFER TANK 60 GALLON PER MINUTE MAX. FLOW
2169	VACUUM SEWER STANDARDS VACUUM DIVISION VALVE - STEM NUT AND SOCKET DETAIL
2170	VACUUM SEWER STANDARDS VACUUM DIVISION VALVE - VALVE BOX
2171	VACUUM SEWER STANDARDS VACUUM VALVE PIT-TYPE “A’’
2172	VACUUM SEWER STANDARDS VACUUM VALVE PIT-TYPE “B’’
2173	VACUUM SEWER STANDARDS BLOCKING AND SEEPAGE COLLAR DETAILES
2174	VACUUM SEWER STANDARDS SERVICE WYE ON EXISTING VACUUM MAIN
2180	VACUUM SEWER STANDARDS CASING DETAIL FOR BORE AND JACK



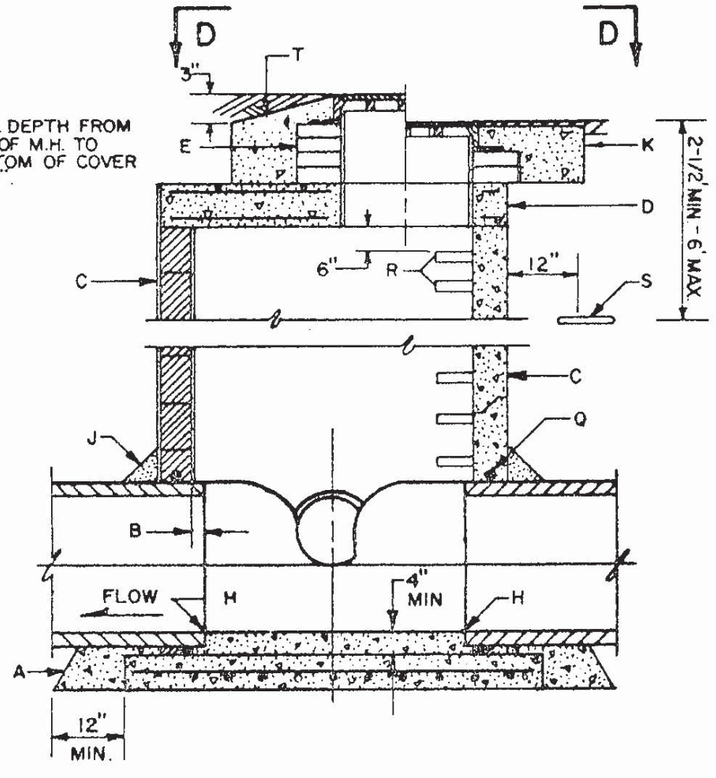
PLAN AT C-C



PLAN AT D-D



CROSS SECTION A - A



CROSS SECTION B - B

GENERAL NOTES

1. USE TYPE "C" MANHOLE FOR DEPTHS OF LESS THAN 6' MEASURED FROM INVERT TO RIM.
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 18' IN DEPTH SHALL ONLY BE CONSTRUCTION PRECAST CONCRETE SECTIONS.
5. USE NON-SHRINK GROUT FOR JOINTS, FILLETS AND PENETRATIONS.
6. COMPACT ALL BACKFILL AROUND MANHOLE TO 95%.
7. POSITION MANHOLE OPENING OVER THE UPSTREAM SIDE OF MAIN LINE.

CONSTRUCTION NOTES

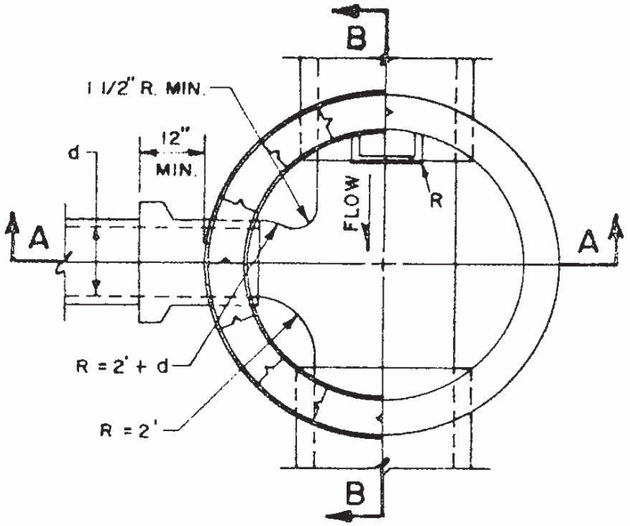
A. CONCRETE PIPE SUPPORTS SHALL EXTEND OUTSIDE OF MANHOLE TO BELL OF FIRST JOINT AND SHALL CRADLE PIPE TO SPRING LINE NOT APPLICABLE FLEXIBLE PIPE.
B. PIPE PENETRATION INTO MANHOLE SHALL BE FLUSH TO 2" MAX., MEASURED AT SPRINGLINE OF PIPE.
C. MANHOLE MAY BE CONSTRUCTED OF CONCRETE BLOCK, GR. MS BRICK, POURED CONCRETE OR PRECAST REINFORCED CONCRETE IF BLOCK OR BRICK PLASTER INSIDE AND OUT WITH 1/2" MORTAR. SEE DWG. 2118 FOR DETAILS.
D. PRECAST CONCRETE COVER, SEE DWG. 2107.
E. USE MAX., 4 COURSES GR. MS BRICK ON UNPAVED STREET FOR FUTURE ADJUSTMENT OF MANHOLE FRAME TO PAVEMENT GRADE PLASTER INSIDE WITH 1/2" MORTAR.
F. CONCRETE BASE TO BE POURED IN PLACE USING NO. 4 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.
H. INVERT ELEVATION OF STUB OR LATERAL AS SHOWN ON PLANS.
J. 6" GROUT FILLET ON UPPER HALF OF PIPE AND AROUND BASE.
K. USE A 5' X 5' CONCRETE PAD IN ALL AREAS.
L. FRAME AND COVER, SEE DWG. 2110.
M. CONCRETE, SEE SECTION 101.
N. SLOPE 1" PER FT. FROM PIPE CROWN.
P. SHELF TO BE 9" WIDE MIN.
Q. APPROVED WATERSTOP TO BE COMPATIBLE WITH TYPE OF PIPE.
R. STEPS TO BE INSTALLED AS PER SPEC. SECTION 920.
S. EMD (IN UNPAVED AREAS).
T. IN UNPAVED AREAS SET FRAME TO GRADE AND SLOPE TOP OF PAD.

REVISIONS
11-14-91

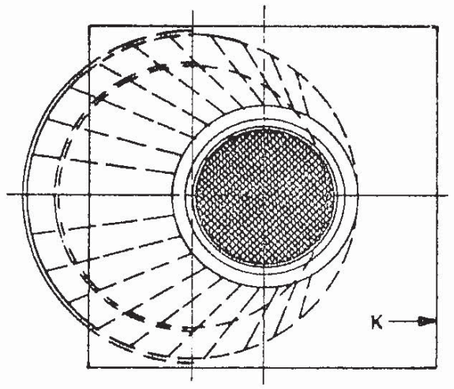
CITY OF ALBUQERQUE

SEWER
MANHOLE TYPE "C"

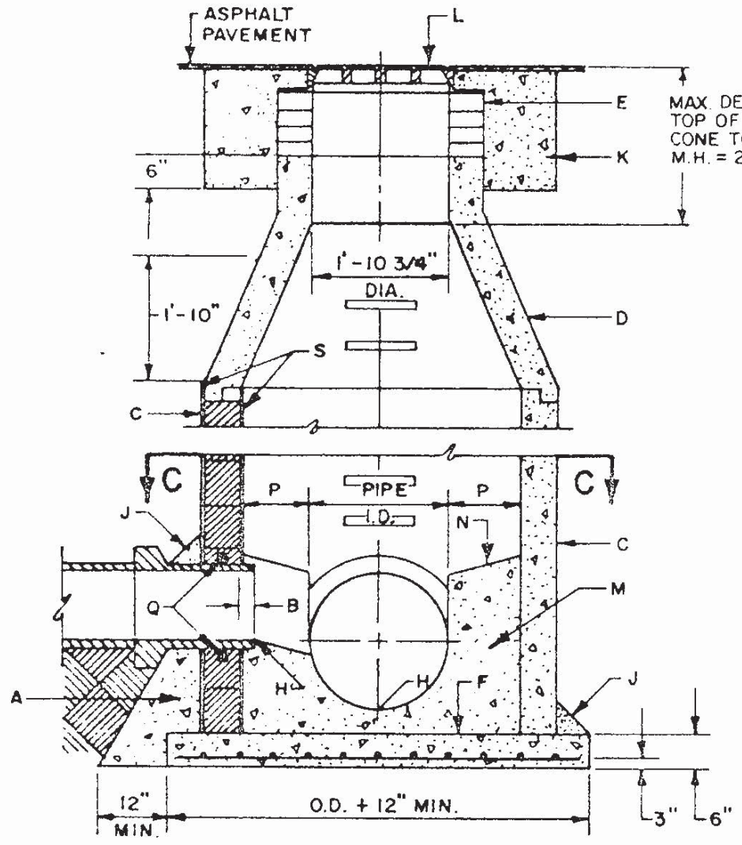
DWG. 2101 AUG. 1986



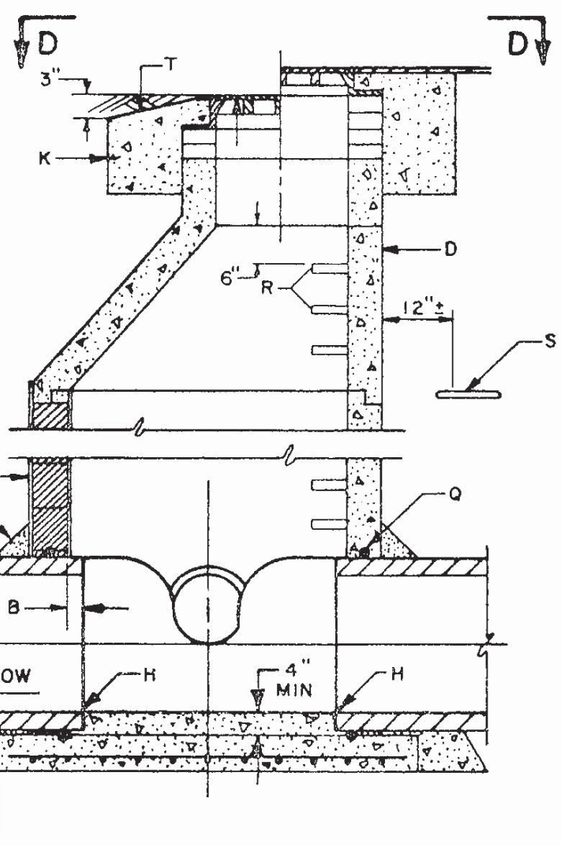
PLAN AT C-C



PLAN AT D-D



CROSS SECTION A-A



CROSS SECTION B-B

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. MANHOLES.
4. USE NON-SHRINK GROUT FOR JOINTS, FILLETS AND PIPE PENETRATIONS.
5. COMPACT ALL BACKFILL AROUND MANHOLES TO 95%.
6. POSITION MANHOLE OPENING OVER THE UPSTREAM SIDE OF MAIN LINE.

CONSTRUCTION NOTES

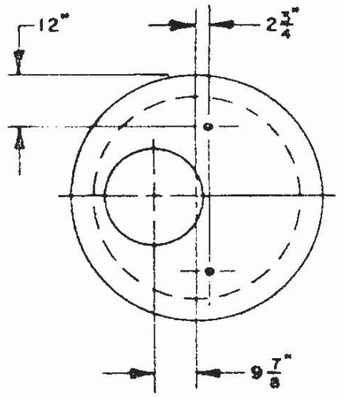
A. CONCRETE PIPE SUPPORTS SHALL EXTEND OUTSIDE OF MANHOLE TO BELL OF FIRST JOINT AND SHALL CRADLE PIPE TO SPRING LINE NOT APPLICABLE FLEXIBLE PIPE.
B. PIPE PENETRATION INTO MANHOLE SHALL BE FLUSH TO 2" MAX., MEASURED AT SPRINGLINE OF PIPE.
C. MANHOLE MAY BE CONSTRUCTED OF CONCRETE BLOCK, GR. MS BRICK, POURED CONCRETE OR PRECAST REINFORCED CONCRETE, IF BLOCK OR BRICK PLASTER INSIDE AND OUT WITH 1/2" MORTAR, SEE DWG. 2118 FOR DETAILS.
D. PRECAST REINFORCED CONCRETE ECCENTRIC CONE. THE CONTRACTOR SHALL PROVIDE SHOP DWGS. FOR APPROVAL.
E. USE MAX., 4 COURSES GR. MS BRICK ON UNPAVED STREET FOR FUTURE ADJ. 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. WAY FOR MANHOLE DEPTH OF 16' OR GREATER NO. 4 BARS AT 12" O.C. EA. WAY FOR MANHOLE LESS THAN 16' DEEP.
H. INVERT ELEVATION OF STUB OR LATERAL AS SHOWN ON PLANS.
J. 6" GROUT FILLET ON UPPER HALF OF PIPE AND AROUND BASE.
K. USE A 5' X 5' CONCRETE PAD IN ALL AREAS.
L. MANHOLE FRAME AND COVER, SEE DWG. 2110.
M. CONCRETE, SEE SECTION 101.
N. SLOPE 1' PER FT. FROM PIPE CROWN.
P. SHELF TO BE 9" WIDE MIN.
Q. APPROVED WATERSTOP TO BE WITH TYPE OF PIPE.
R. STEPS TO BE INSTALLED AS PER SPEC. SECTION 920.
S. EMD (IN UNPAVED AREAS).
T. IN UNPAVED AREAS SET FRAME TO GRADE AND SLOPE TOP OF PAD.

2'-1/2" MIN - 6' MAX.

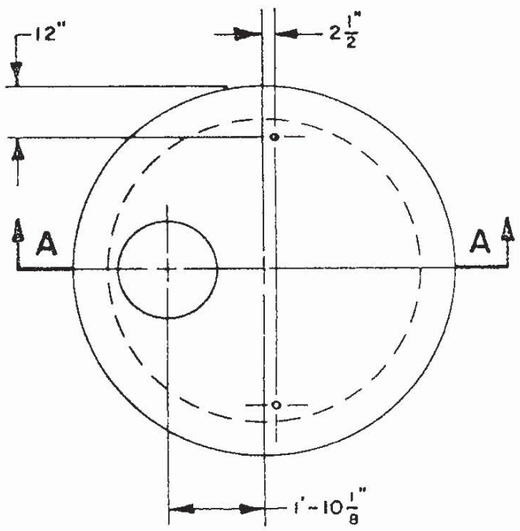
CITY OF ALBUQUERQUE

REVISIONS
11-14-91

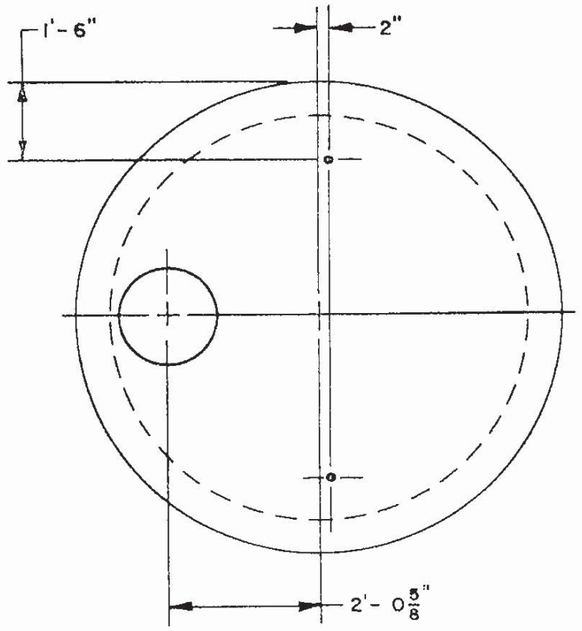
SEWER
MANHOLE TYPE "E"
DWG. 2102
AUG. 1986



4' I.D. MH



6' I.D. MH



8' I.D. MH

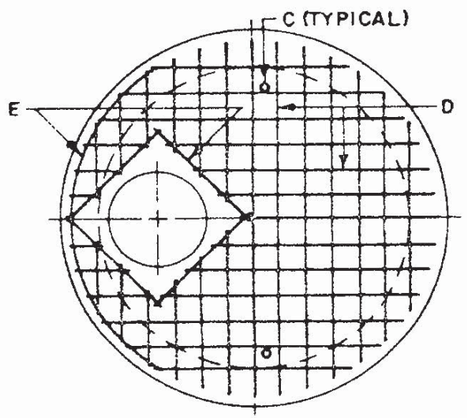
PLAN

GENERAL NOTES

1. ALL MANHOLES 20' DEEP OR DEEPER WILL REQUIRE A INTERMEDIATE LANDING IN THE MANHOLE BARREL. 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 SIZE ADJUSTMENT TOP BE INSTALLED CLOSER THAN 8' UP FROM THE INVERT OF THE MANHOLE.

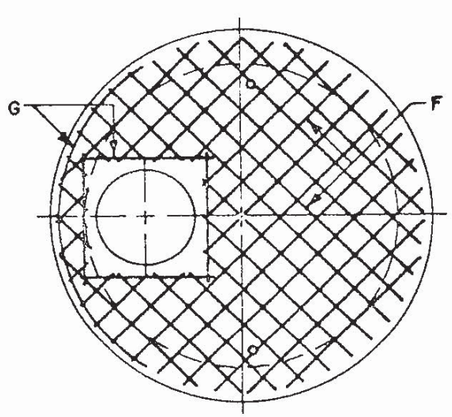
CONSTRUCTION NOTES

A. PRECAST REINFORCED CONCRETE MANHOLE COVER.
B. ALL BARS TO HAVE 1-1/2" MIN. COVER.
C. 1" PIPE SLEEVE VERTICALLY THROUGH COVER.
D. TOP MAT NO. 4 BARS 6" O.C. EA. WAY FOR 4,6, AND 8 FT. I.D. MANHOLES.
E. NO. 4 BARS.
F. BOTTOM MAT NO. 4 BARS 6" O.C. EA. WAY FOR 4 AND 6 FT. I.D. MANHOLES, NO. 8 BARS 8" O.C. EA. WAY FOR 8 FT. I.D. MANHOLES.
G. NO. 4 BARS FOR 4 AND 6 FT. I.D. MANHOLES.
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.



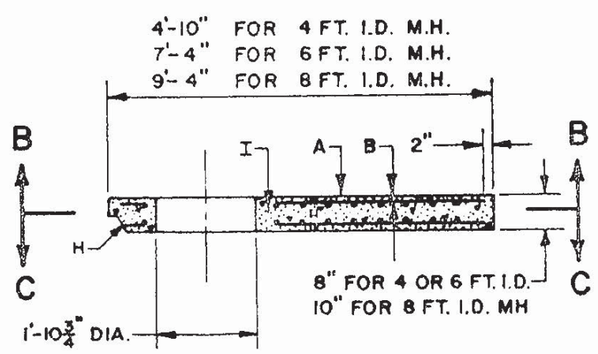
SECTION B-B

TOP MAT



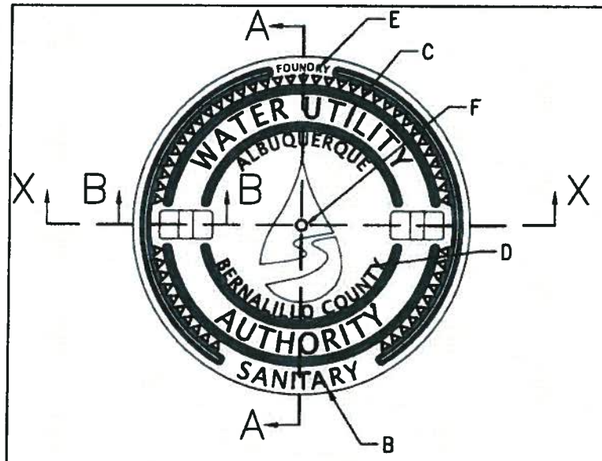
SECTION C-C

BOTTOM MAT

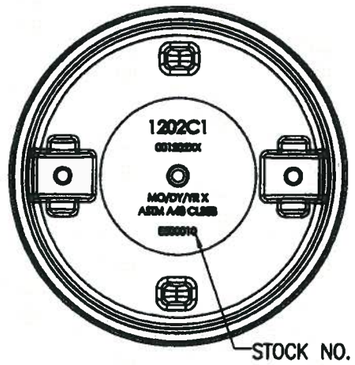


SECTION A-A

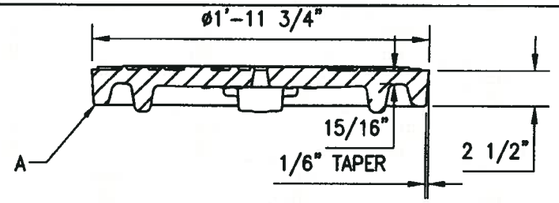
REVISIONS	CITY OF ALBUQUERQUE
11-14-91	SEWER CONC. MH COVER TYPE "C" DWG. 2107 AUG. 1986



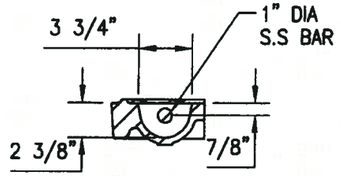
24" MANHOLE
TOP VIEW



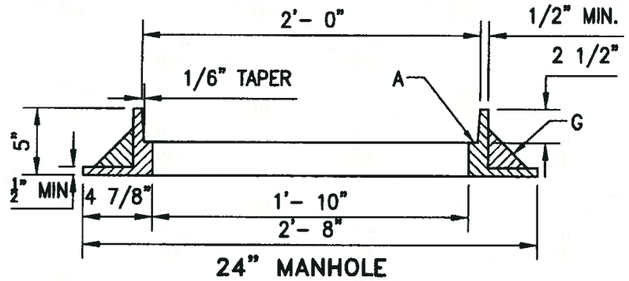
24" MANHOLE
BOTTOM VIEW



24" MANHOLE
SECTION A-A



24" MANHOLE
SECTION B-B



24" MANHOLE
FRAME SECTION

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. REFERENCE SPEC. 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. 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.

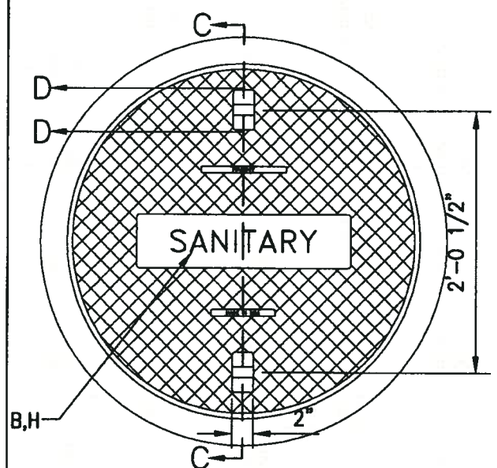
D. LETTER SIZE TO BE 3/4" IN HEIGHT RAISED LETTERING.

E. LETTER SIZE TO BE 3/8" MIN. IN HEIGHT RAISED LETTERING.

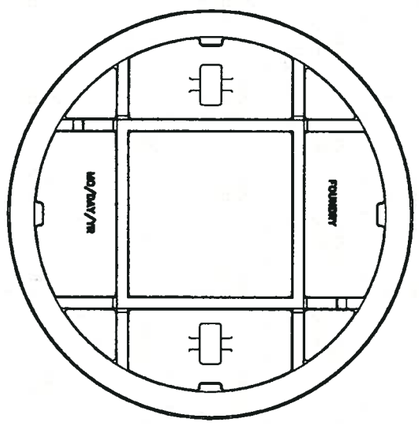
F. 3/4" DIA VENT HOLE REQUIRED.

G. GUSSETS OPTIONAL IF REQUIRED BY MANUFACTURER.

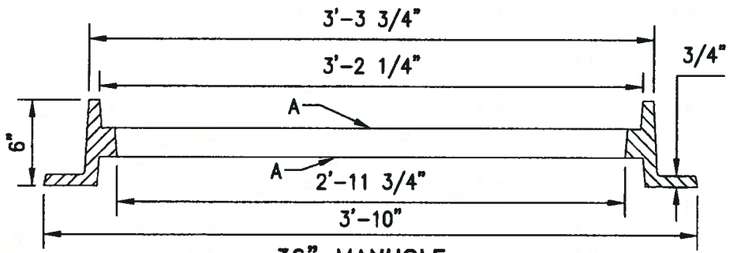
H. 2" LETTERS (RECESSED FLUSH).



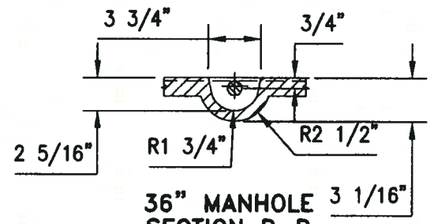
36" MANHOLE
TOP VIEW



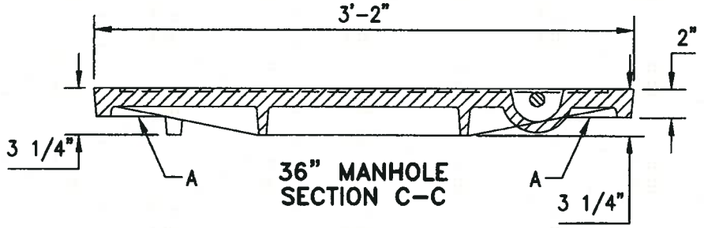
36" MANHOLE
BOTTOM VIEW



36" MANHOLE
FRAME SECTION

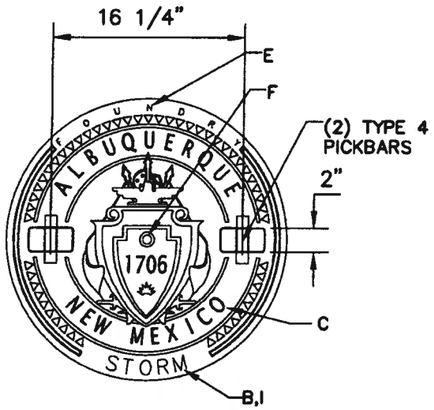


36" MANHOLE
SECTION D-D

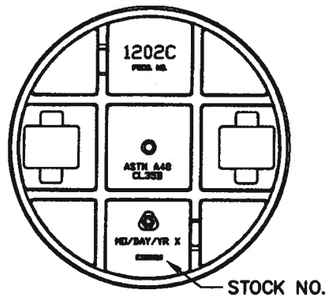


36" MANHOLE
SECTION C-C

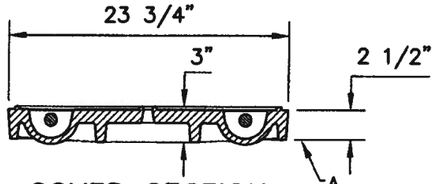
REVISIONS	WATER AUTHORITY
	SEWER MANHOLE FRAME AND COVERS
	DWG. 2109 JANUARY 2011



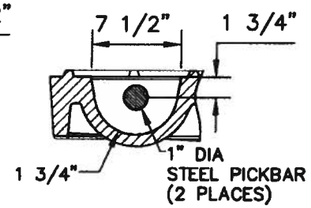
24" MANHOLE
TOP VIEW



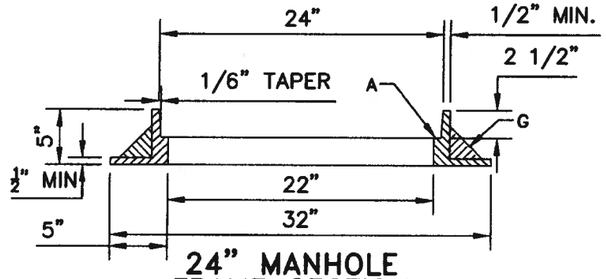
24" MANHOLE
BOTTOM VIEW



COVER SECTION



PICKBAR DETAIL



24" MANHOLE
FRAME SECTION

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. REFERENCE SPEC. 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. REFERENCE SPEC. 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.

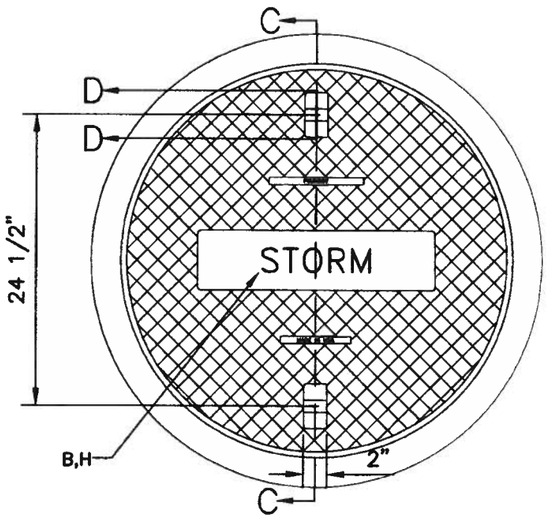
E. LETTER SIZE TO BE 3/8" MIN. IN HEIGHT RAISED LETTERING.

F. 3/4" DIA VENT HOLE REQUIRED.

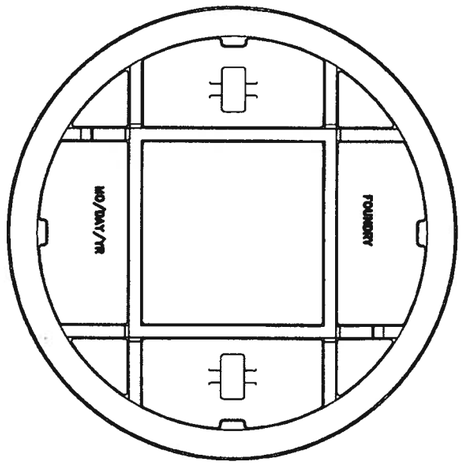
G. GUSSETS OPTIONAL IF REQUIRED BY MANUFACTURER.

H. 2" LETTERS (RECESSED FLUSH).

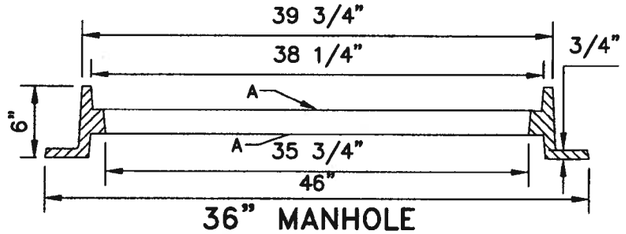
I. LETTER SIZE TO BE 1" IN HEIGHT RAISED LETTERING.



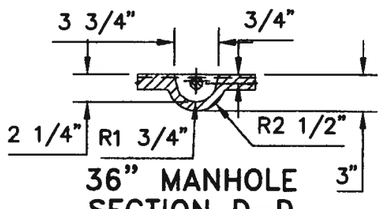
36" MANHOLE
TOP VIEW



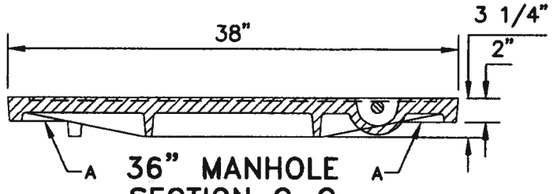
36" MANHOLE
BOTTOM VIEW



36" MANHOLE
FRAME SECTION

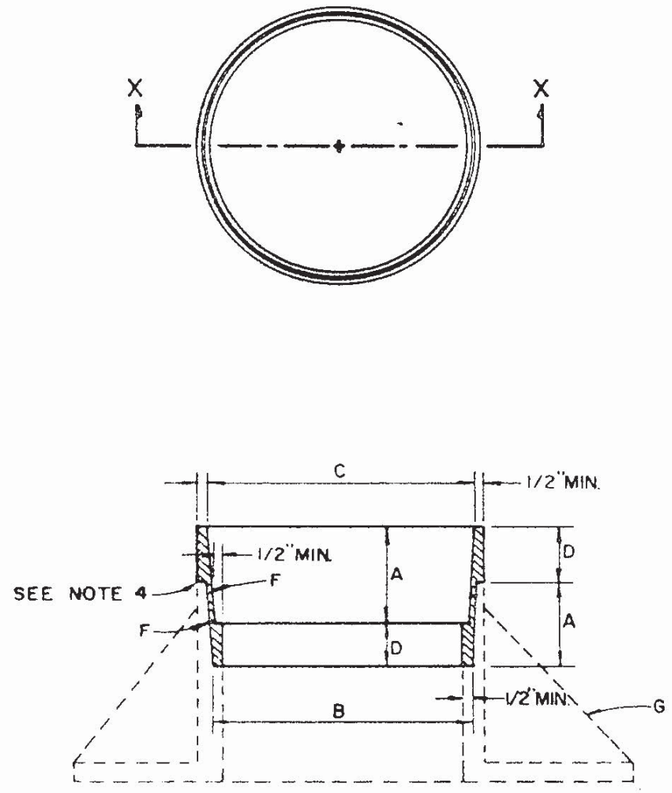


36" MANHOLE
SECTION D-D



36" MANHOLE
SECTION C-C

REVISIONS	CITY OF ALBUQUERQUE
	STORM
	MANHOLE FRAME AND COVERS
	DWG. 2110 JANUARY 2011



SECTION X-X

NOT TO SCALE
VERTICAL SCALE EXAGERATED FOR CLARITY

COMMON C.O.A. MH FRAME SIZES

A	B	C	D
$2\frac{3}{8}$	$23\frac{1}{2}$	$23\frac{3}{8}$	
$2\frac{1}{2}$	$23\frac{5}{8}$	$23\frac{3}{4}$	
$2\frac{5}{8}$	$23\frac{5}{8}$	$23\frac{3}{4}$	
2	$23\frac{3}{4}$	$23\frac{7}{8}$	
$2\frac{1}{4}$	$23\frac{3}{4}$	$23\frac{7}{8}$	
$2\frac{3}{8}$	$23\frac{3}{4}$	$23\frac{7}{8}$	
$2\frac{1}{2}$	$23\frac{3}{4}$	$23\frac{7}{8}$	
$2\frac{5}{8}$	$23\frac{3}{4}$	$23\frac{7}{8}$	
$2\frac{3}{4}$	$23\frac{3}{4}$	$23\frac{7}{8}$	
$2\frac{1}{2}$	$23\frac{7}{8}$	24	
1	$24\frac{7}{8}$	25	$1\frac{1}{4}$

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 ID 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.

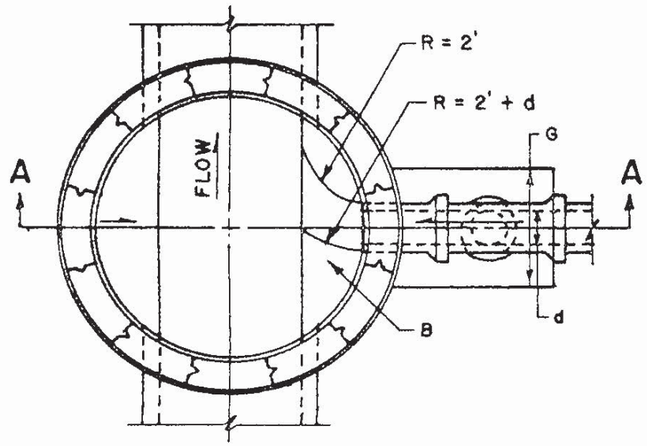
CITY OF ALBUQUERQUE

REVISIONS

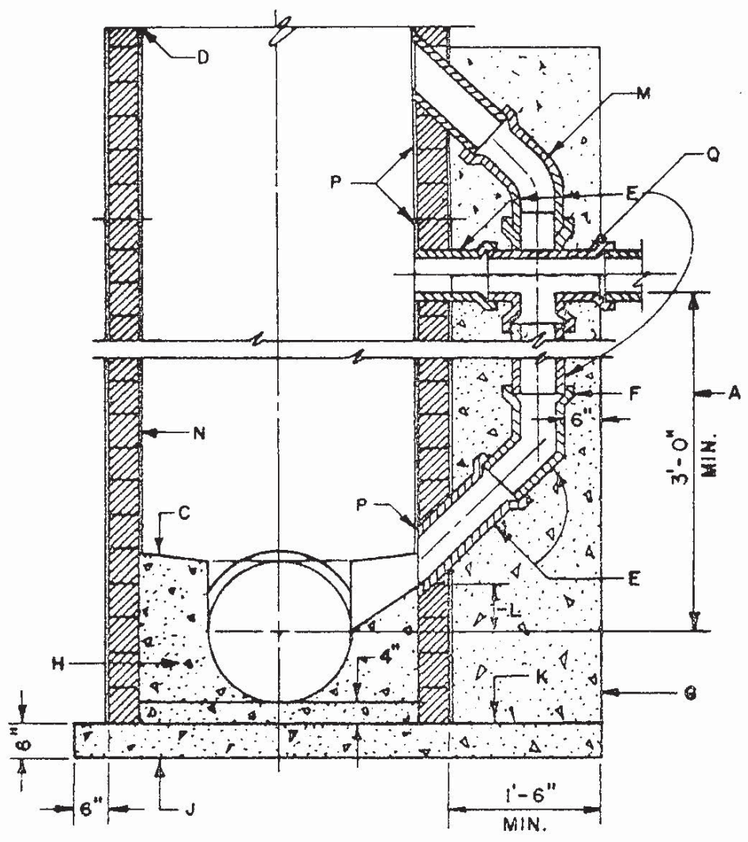
SEWER MANHOLE COVER ADJUSTMENT RING

DWG. 2111

AUG. 1986



FLOOR PLAN



SECTION A-A

CONSTRUCTION NOTES

A. VERTICAL DROP.
B. FORM 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 BELL AND SPIGOT 45° SHORT OR LONG RADIUS BEND
G. CONCRETE SUPPORT WIDTH EQUALS PIPE O.D. PLUS 6" MIN EACH SIDE.
H. CONCRETE, SEE SECTION 101.
J. REINFORCED CONCRETE BASE. SEE CONSTRUCTION NOTE F. OF DWG. 2101, 2102.
K. FOR NEW DROP ON EXISTING MANHOLE CONSTRUCT 3 X 3 CONCRETE BASE BEFORE CONSTRUCTING DROP SUPPORT.
L. 4" ABOVE SPRING LINE OR AS SHOWN ON PLAN.
M. 8" MIN. DIAMETER. 2-22 1/2° OR 1-45° ELBOW.
N. INTERIOR OR DROP MANHOLE MUST BE COATED WITH APPROVED SEALER IN ACCORDANCE WITH SPEC. SECTION 920.4.
P. CORE DRILL FOR ALL WALL PENETRATIONS ON EXISTING MANHOLES.
Q. CROSS OR TEE. A TEE MAY BE USED ONLY WHEN THE VERTICAL HIGH IS INSUFFICIENT FOR THE VERTICAL PIPING ABOVE THE SEWER LINE TO ENTER THE BARREL OF THE MANHOLE.

REVISIONS
11-14-91

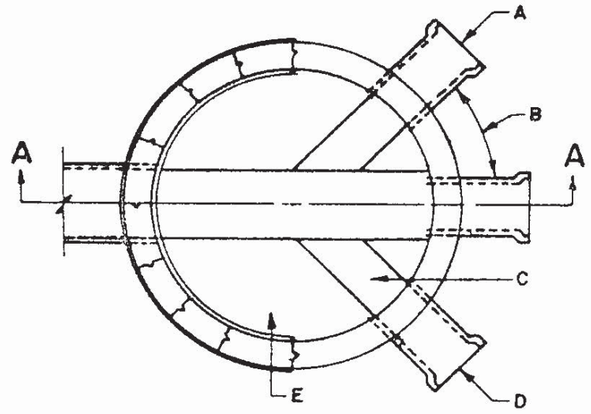
CITY OF ALBUQUERQUE

SEWER

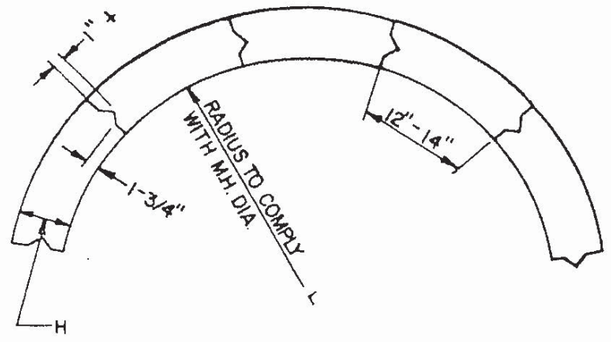
VERTICAL DROP AT MH

DWG. 2116

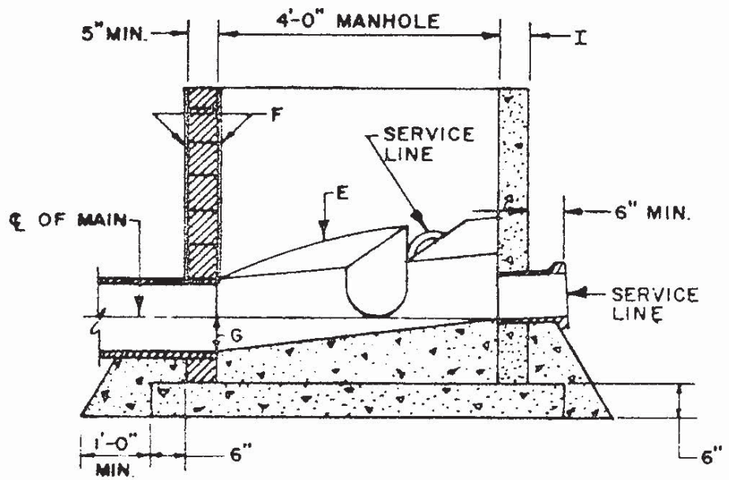
AUG. 1986



SERVICE LINE AT DEAD END
OR CUL-DE-SAC



TYPICAL CONCRETE BLOCK DETAIL



SECTION A-A

GENERAL NOTES

1. ALL CONCRETE SHELF SLOPES TO BE ONE INCH PER FT.
2. ONE FOURTH INCH PER FT. MIN SLOPE FOR 4" OR 6" SERVICE LINE.
3. NEW SERVICE CONNECTIONS TO EXISTING MANHOLE'S MUST BE CORE DRILLED.
4. 8" OR LARGER SERVICE CONNECTIONS MUST BE MADE TO A MANHOLE.

CONSTRUCTION NOTES

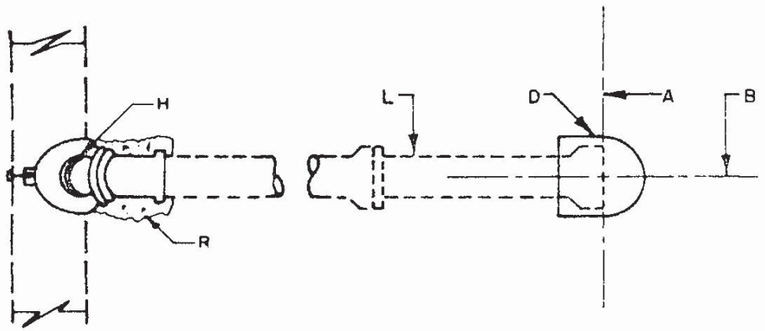
A. CAST IRON SERVICE STUB.
B. VARIABLE WITH MAX. ANGLE OF 90%.
C. FORM INVERT IN SHELF.
D. BELL END.
E. CONCRETE, SEE SECTION 101.
F. PLASTER INSIDE AND OUTSIDE WITH 1/2" MORTAR.
G. INVERT ELEVATIONS OF SERVICE LINES SHALL BE THE SAME AS THE SPRING LINE ELEVATIONS OF THE SEWER MAIN.
H. MIN. 5" BLOCK FOR 4' I.D. M.H., 8" BLOCK OR DOUBLEWALL OF 2-5" BLOCKS FOR 6' OR 8' DIAMETER MANHOLE'S
I. PRECAST WALL THICKNESS:
   4' I.D. M.H. - 5" MIN.
   6' I.D. M.H. - 7" MIN.
   8' I.D. M.H. - 9" MIN.

CITY OF ALBUQUERQUE

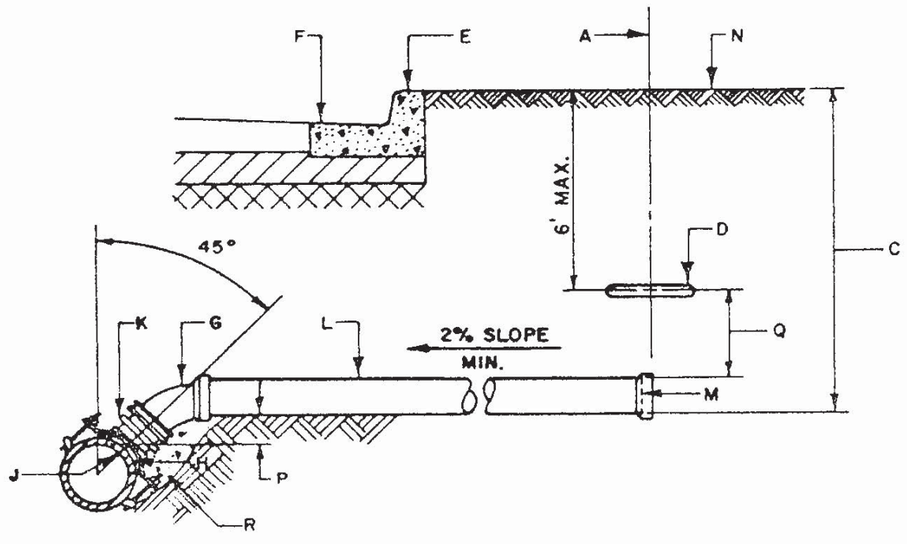
REVISIONS
11-14-91

SEWER
SERVICE LINE CONNECTIONS
AT MANHOLE
DWG. 2118

AUG. 1986



SERVICE LINE PLAN



CROSS SECTION

GENERAL NOTES

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

CONSTRUCTION NOTES

A. RIGHT-OF-WAY LINE.
B. CENTER LINE SERVICE LINE.
C. MIN. OF 4FT. TO 6FT. FROM INVERT TO TOP OF CURB AT RIGHT-OF-WAY LINE. MIN. DEPTH WILL DEPEND ON THE DEPTH OF THE MAIN SEWER LINE, THE MIN. SERVICE LINE SLOPE, THE DEPTH OF THE LOT BEING SERVED, LOCATION OF THE HOUSE ON THE LOT, AND THE GRADE OF THE LOT.
D. ELECTRONIC MARKER DISC., COLOR CODED GREEN, PLACED ONLY IF SERVICE HOOK-UP IS POSTPONED.
E. STAMP OR CHISEL 3" SIZE "S" ON TOP OF CURB OVER LOCATION OF SERVICE LINE, MIN. 1/4" DEEP.
F. CURB AND GUTTER.
G. 22.5° OR 45° BEND.
H. CORE DRILLED, USING FOWLER QUIK-WAY DRILL SYSTEM, OR PILOT HOLE CUTTER SYSTEM OR APPROVED EQUAL.
J. SERVICE LINE SHALL NOT PROTRUDE INTO SEWER MAIN.
K. SANITARY SEWER TAPPING TEE, USING PIONEER OR GENERAL ENGINEERING CO. SADDLES OR APPROVED EQUAL. DO NOT OVER TIGHTEN SADDLE BOLTS WHICH WOULD PREVENT FREE PASSAGE OF REQUIRED MANDREL.
L. SERVICE LINE, (C.I. SOIL PIPE, SERVICE WEIGHT).
M. PLUG OR CAP.
N. GROUND LEVEL.
P. SAME ELEVATION OR HIGHER.
Q. APPROXIMATELY 6" BUT DEPTH OF BURIAL SHALL NOT BE MORE THAN 6'.
R. BACKFILL UNDER SERVICE WITH MIN. 1 CUBIC FOOT OF P.C. CONCRETE ("SACKCRETE" OR EQUAL ALLOWABLE THIS INSTALLATION).

REVISIONS
11-14-91

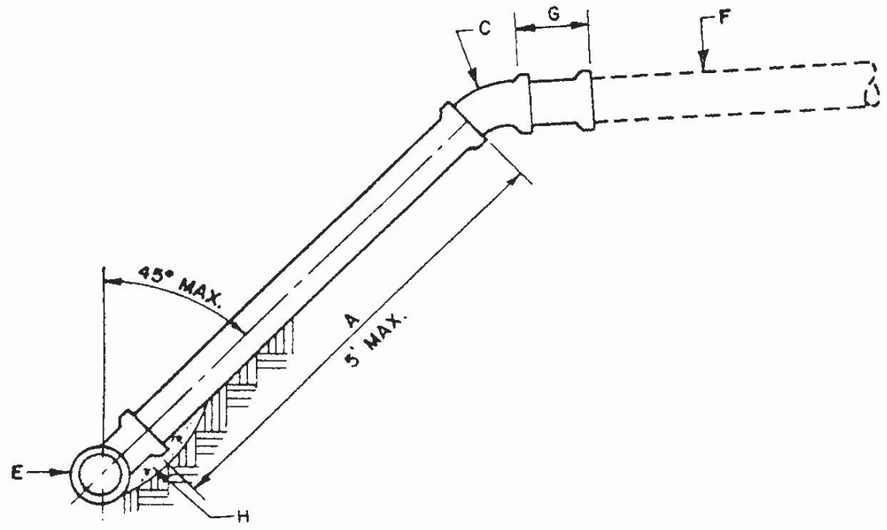
CITY OF ALBUQUERQUE

SEWER

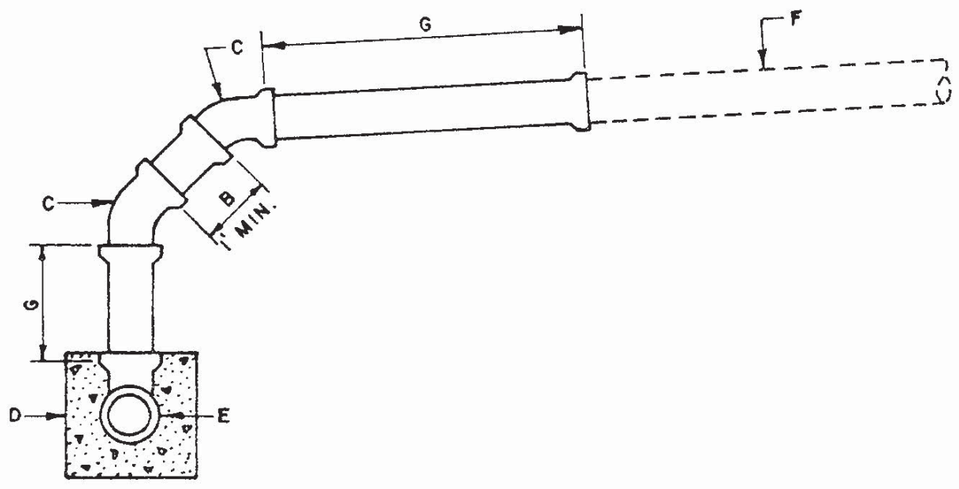
SERVICE LINE DETAILS

DWG. 2125

AUG. 1986



DETAIL I



DETAIL II

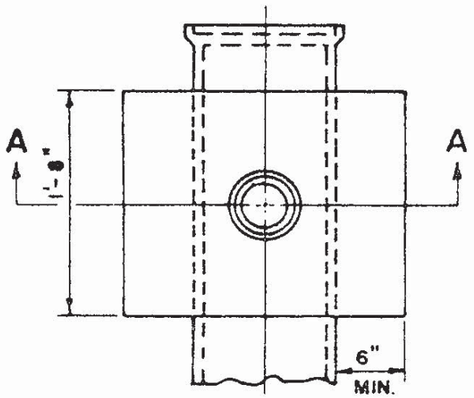
GENERAL NOTES:

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.

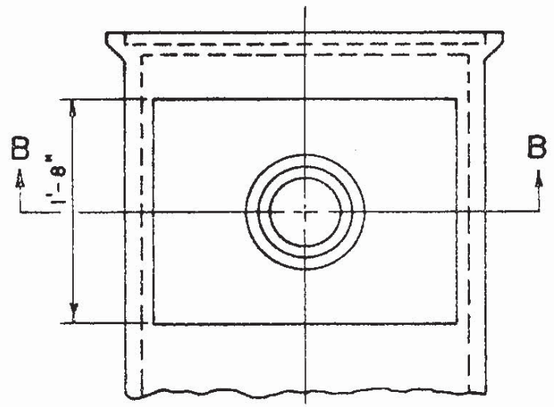
CONSTRUCTION NOTES:

A. VARIABLE WITH A MAX. OF 5'.
B. 1' MIN., 1.5' 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 P.C. CONCRETE ("SACKCRETE" OR EQUAL ALLOWABLE IN THIS INSTALLATION.)

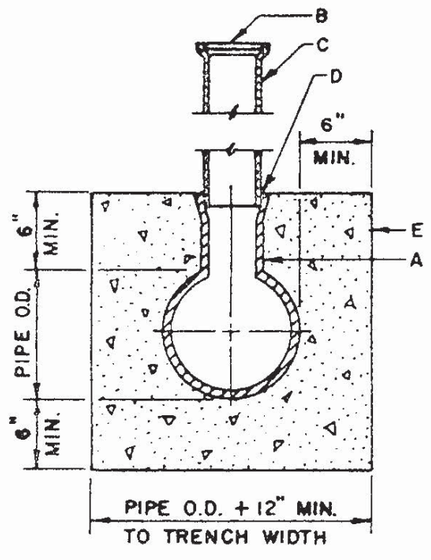
REVISIONS	CITY OF ALBUQUERQUE
	SEWER SEWER SERVICE REPLACEMENT DETAIL DWG. 2134 AUG. 1986



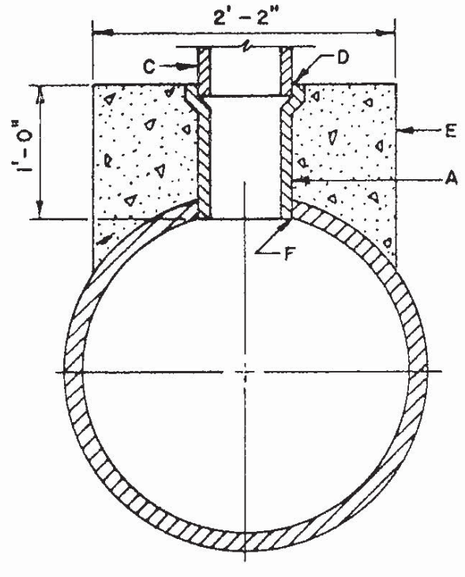
PLAN
FOR 8" TO 24" PIPE



PLAN
FOR GREATER THAN 24" PIPE



SECTION A-A



SECTION B-B

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 BACK-FILLING. 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. 2125.

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.

REVISIONS

CITY OF ALBUQUERQUE

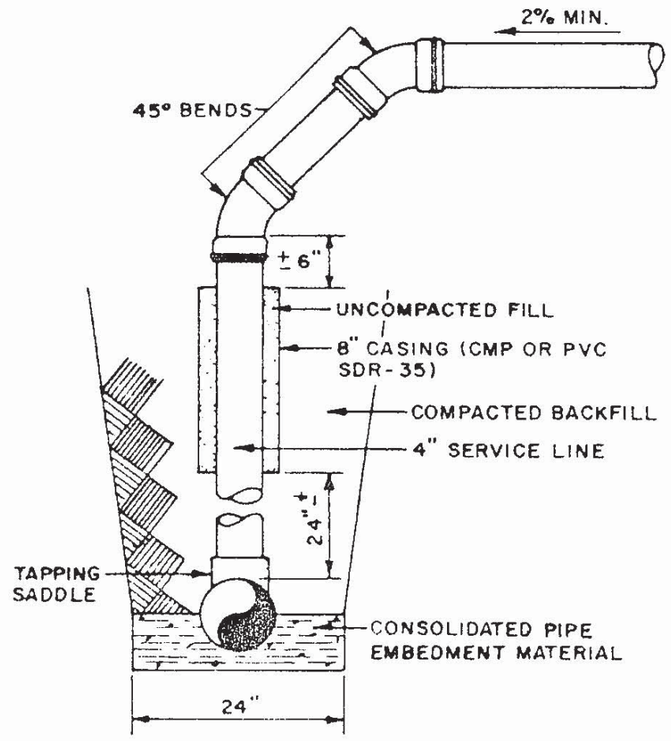
SEWER
RISER DETAILS
RIGID PIPE MAIN

DWG. 2135

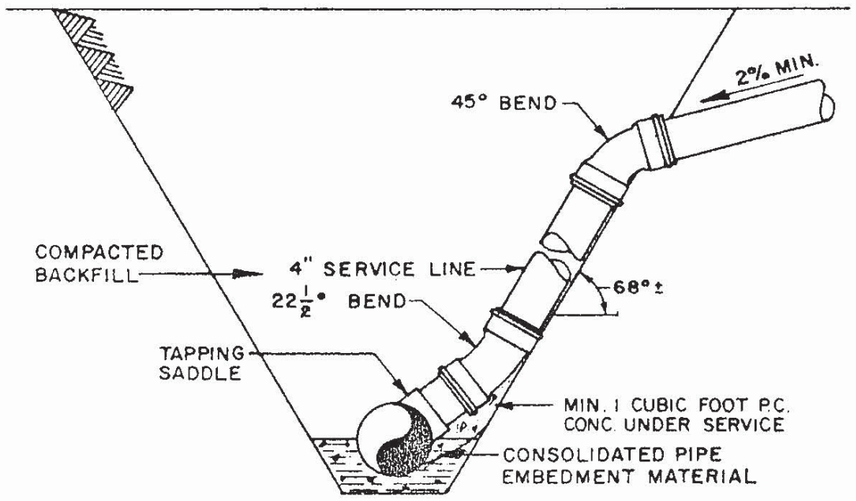
AUG. 1986

GENERAL NOTES

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 BOX, SHORING OR OTHER MEANS OF EXCAVATION BRACING IS USED, OTHERWISE IT SHALL BE THE CONTRACTOR'S OPTION TO USE EITHER DETAIL "A" OR DETAIL "B".
3. REFER TO SPECIFICATION SECTION 905 FOR MATERIAL REQUIREMENTS.
4. TRENCH SLOPES SHALL BE AS PER THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS.



DETAIL "A"



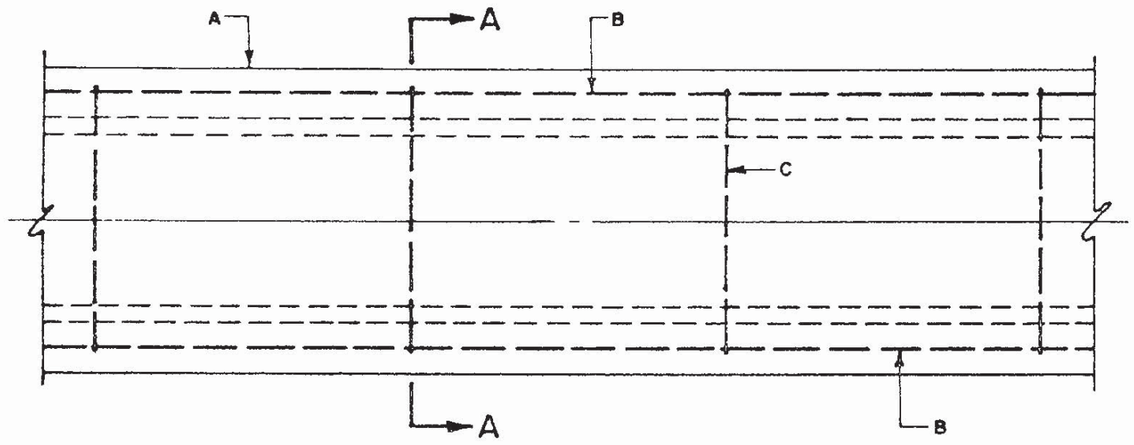
DETAIL "B"

REVISIONS
11-14-91

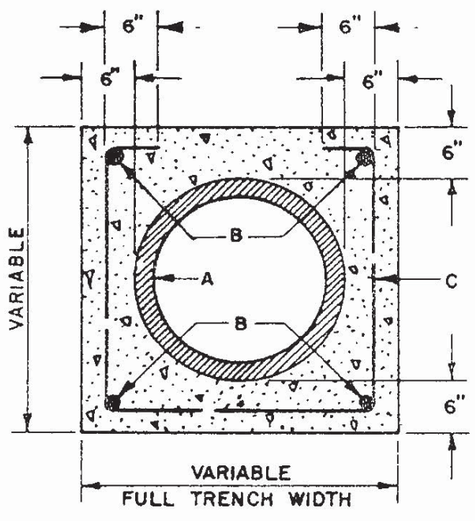
CITY OF ALBUQUERQUE

SEWER
RISER DETAILS
FLEXIBLE PIPE MAIN
DWG. 2136

AUG. 1986



PLAN
CONCRETE ENCASEMENT



SECTION A-A

GENERAL NOTES:

1. WHERE A WATER LINE PASSES BENEATH OR LESS THAN 18 IN. ABOVE AN EXIST. SEWER LINE, THE SEWER LINE SHALL BE ENCASED IN CONC. 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.

REVISIONS

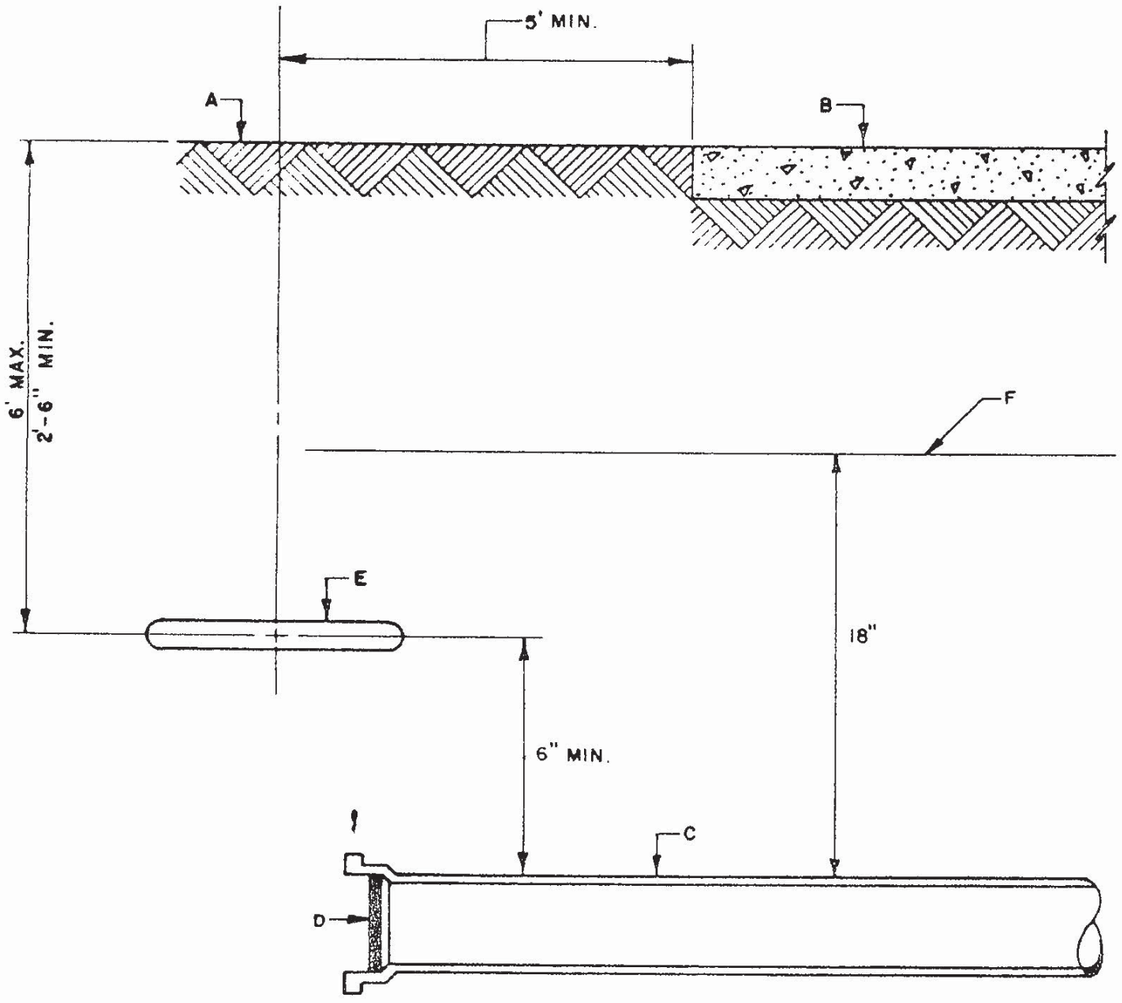
CITY OF ALBUQUERQUE

SEWER

ENCASEMENT DETAILS

DWG. 2140

AUG. 1986



ELEVATION

GENERAL NOTES

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

CONSTRUCTION NOTES

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

REVISIONS
11-14-91

CITY OF ALBUQUERQUE

SEWER
SEWER LINE
DEAD-END MARKER
DWG. 2145

AUG. 1996

PLAN AT C-C

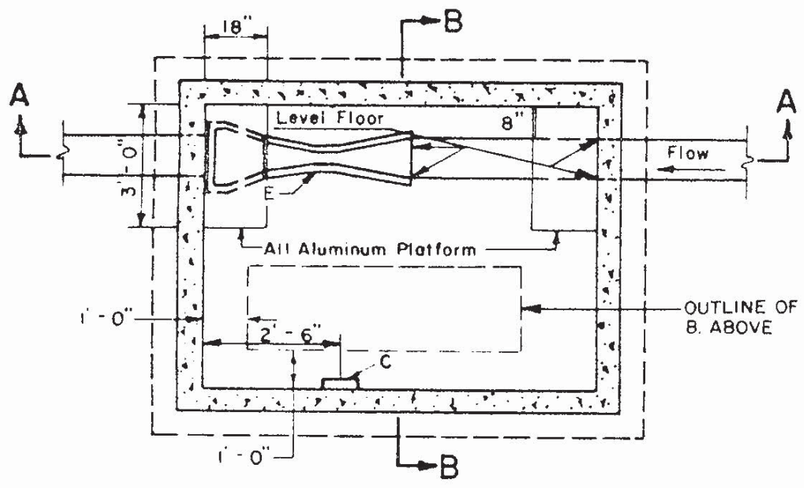
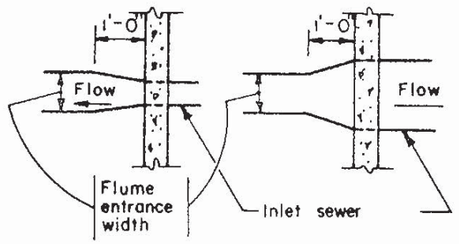


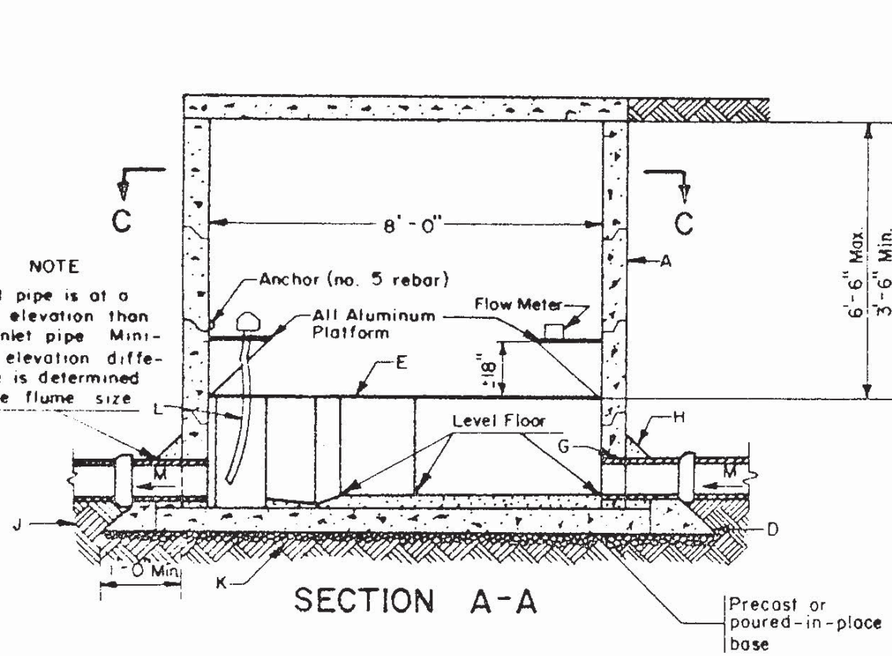
TABLE 1

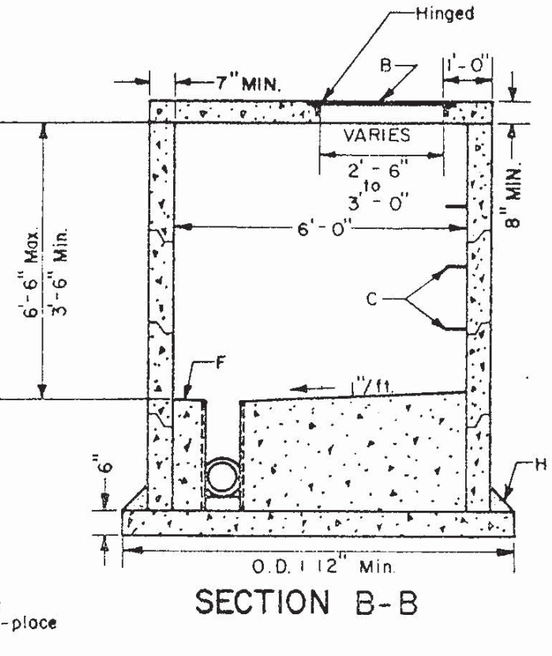
Pipe Size	Required Inlet Slope
4 in.	0.0060 ft./ft.
6	0.0050
8	0.0040
10	0.0028
12	0.0022
15	0.0015
18	0.0012

NOTE

WHEN THE INLET SEWER IS SMALLER OR LARGER, IN DIAMETER THAN THE FLUME ENTRANCE WIDTH, A SMOOTH TRANSITION SHALL BE PROVIDED CHANGING FROM THE INLET SEWER DIAMETER TO THE FLUME ENTRANCE CHANNEL WIDTH OVER THE FIRST FOOT INSIDE THE MH.







GENERAL 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 FLUME 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 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 LINES 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 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 NEENAH R.6661 V1 OR EQUAL FOR TRAFFIC OR PARKING AREAS. IT SHALL BE NEENAH R.6663 OH OR EQUAL.
C. MANHOLE STEPS PER CITY OF ALBUQUERQUE SPEC. SECTION 920.4.7.
D. CONCRETE PIPE SUPPORTS SHALL EXTEND OUTSIDE THE MANHOLE TO BELL OF FIRST JOINT AND SHALL CRADLE 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 FILLETS. FILLETS 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 LOK OR APPROVED EQUAL.
H. 6 IN. GROUT FILLET ON UPPER HALF OF PIPE AND AROUND BASE.
J. BACKFILL PER SECTION 501.
K. 2 IN. GRAVEL CRUSHED STONE LEVELING COURSE.
L. FLUME OUTLET END ADAPTER, PLASTI-FAB OR APPROVED EQUAL.
M. SLOPE PER TABLE 1.

CITY OF ALBUQUERQUE

REVISIONS
6-1-87
11-14-91

SEWER SAMPLING & METERING MANHOLE 6'x 8' RECTANGULAR

DWG. 2150

AUG. 1986

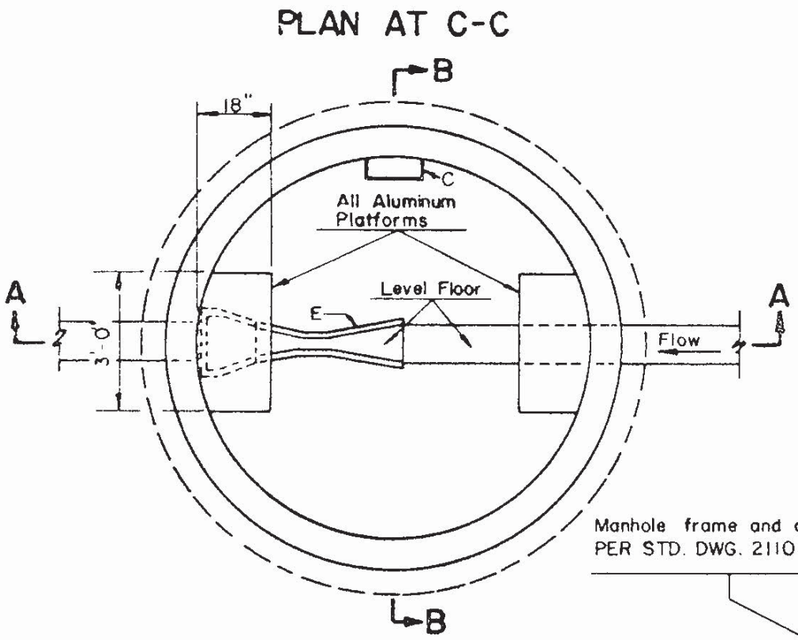
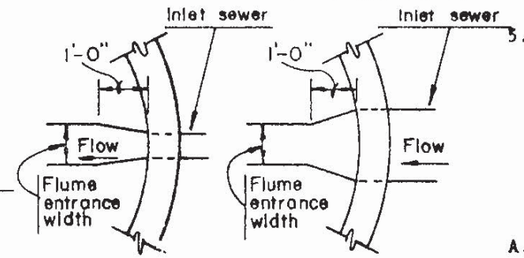


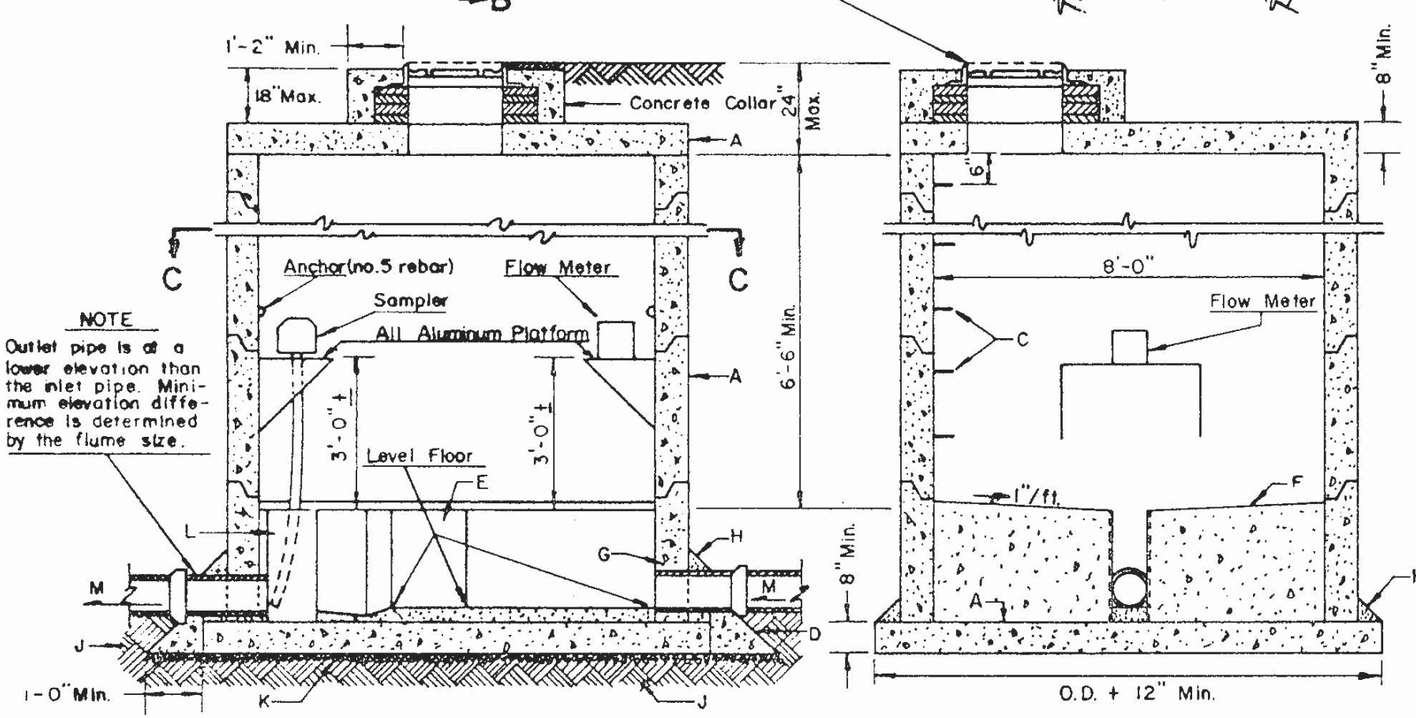
TABLE I

Pipe Size	Required Inlet Slope
4 in.	0.0060 ft./ft.
6	0.0050
8	0.0040
10	0.0028
12	0.0022
15	0.0015
18	0.0012

NOTE

WHEN THE INLET SEWER IS SMALLER OR LARGER, IN DIAMETER THAN THE FLUME ENTRANCE WIDTH, A SMOOTH TRANSITION SHALL BE PROVIDED CHANGING FROM THE INLET SEWER DIAMETER TO THE FLUME ENTRANCE CHANNEL WIDTH OVER THE FIRST FOOT INSIDE THE MH.





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 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 FLUME 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 SIZED TO ACCURATELY MEASURE ALL ANTICIPATED FLOW LEVELS. PRIOR TO INSTALLATION THE FLUME SIZE, AND TYPE MUST BE APPROVED BY THE PRETREATMENT UNIT, WASTER 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 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. PRECAST CONCRETE GRADE ADJUSTMENT RINGS OR GRADE MS BRICK AS REQUIRED FOR GRADE ADJUSTMENT. WHEN USING BRICK, PLASTER INSIDE WITH 1/2" OF MORTAR.
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 SHALL CRADLE 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 FILLETS. FILLETS TO MATCH TOP OF FLUME 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 LOK OR APPROVED EQUAL.
H. 6 IN. GROUT FILLET ON UPPER HALF OF PIPE AND AROUND BASE.
J. BACKFILL PER SECTION 501.
K. 2 IN. GRAVEL CRUSHED STONE LEVELING COURSE.
L. FLUME OUTLET END ADAPTER, PLASTI-FAB OR APPROVED EQUAL.
M. SLOPE PER TABLE 1.

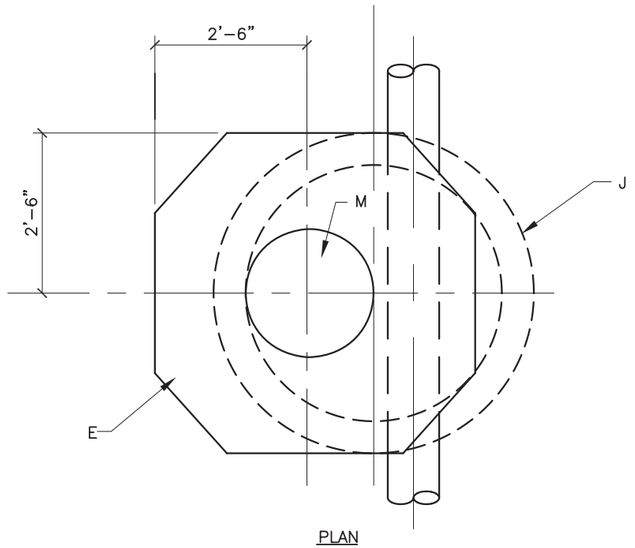
CITY OF ALBUQUERQUE

REVISIONS
6-1-87
11-14-91

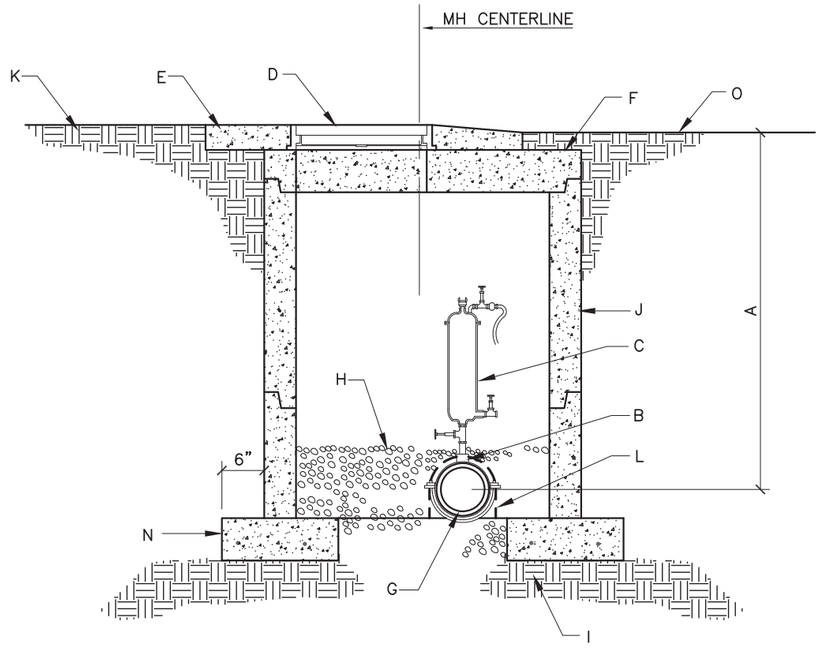
SEWER SAMPLING & METERING MANHOLE 8 FOOT DIAMETER

DWG. 2151

AUG. 1986



PLAN



SECTION

GENERAL NOTES:

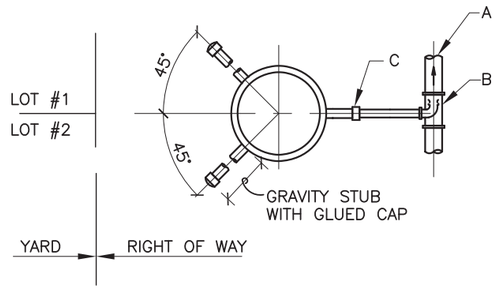
1. ALL COMPACTION FOR INSTALLATION OF ARV MANHOLE TO BE 95% OF MAXIMUM DRY DENSITY PER ASTM D 1557.
2. INTERIOR OF MANHOLE SHALL BE COATED IN ACCORDANCE WITH SECTION 920.4.6.2 OF THE SPECIFICATIONS.

CONSTRUCTION NOTES:

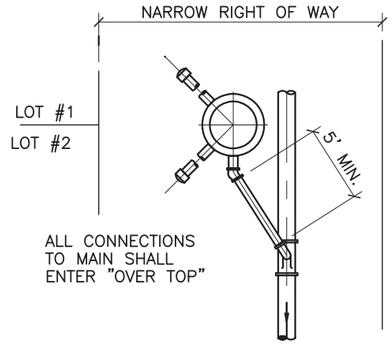
A. SEE CONSTRUCTION PLANS FOR DEPTH REQ'D.
B. 2" TAPPING SADDLE
C. APCO SEWAGE AIR RELEASE VALVE OR APPROVED EQUAL, MODEL NO. PER CONSTRUCTION PLANS AND SPECIFICATIONS
D. CAST IRON MANHOLE FRAME AND COVER; SEE C.O.A. STD. DWG. 2110.
E. CONC. COLLAR PER C.O.A. STD. DWG. 2461.
F. PRECAST CONCRETE FLAT 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, SAS CONCRETE f'c=400 psi @ 28 DAYS). ADDITIONAL SECTIONS MAY BE ADDED.
K. FINISH GRADE IN PAVED AREAS
L. SLOTTED OPENING 1" LARGER THAN FORCE MAIN WITH APPROVED GASKET. GROUT INTERIOR AND EXTERIOR OF OPENING.
M. LOCATION OF LID.
N. 2–CONCRETE ANTI–FLOATATION COLLAR HALVES. SEE STANDARD DWG. 2171, OR CAST–IN–PLACE CONCRETE OF SIMILAR DESIGN
O. FINISH GRADE IN UNPAVED AREAS

REVISIONS	CITY OF ALBUQUERQUE
	SANITARY SEWER AIR RELEASE VALVE DETAIL DWG. 2160 JANUARY 2003

NOTE:
EACH HOUSE GRAVITY LATERAL MUST BE DIRECTLY CONNECTED TO HOLDING TANK.



PLAN SHOWING HOLDING TANK WITH TWO HOUSE CONNECTIONS



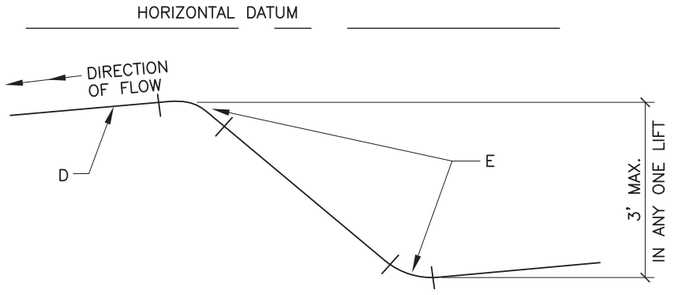
VALVE PIT INSTALLATION IN NARROW RIGHT OF WAY

GENERAL NOTES:

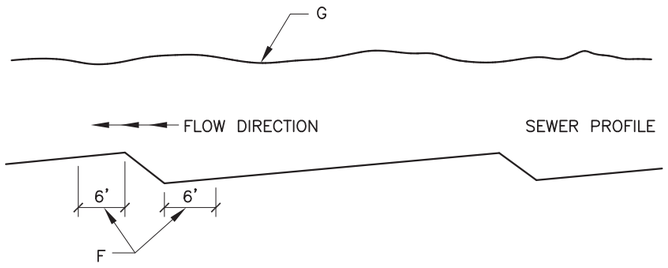
1. ONLY HOMES AND APARTMENTS WHOSE LOWER FLOOR ELEVATION ARE THE SAME SHOULD BE CONNECTED TO A COMMON VACUUM VALVE PIT INSTALLATION.
   WITH MULTIPLE FLOOR APARTMENTS EACH FLOOR SHOULD BE SERVICED BY ITS OWN VACUUM VALVE PIT INSTALLATION.
2. NOT LESS THAN 20' BETWEEN SUCCESSIVE LIFTS.
3. LOWER PORTION OF VALVE PIT IS A WASTE HOLDING TANK.

CONSTRUCTION NOTES:

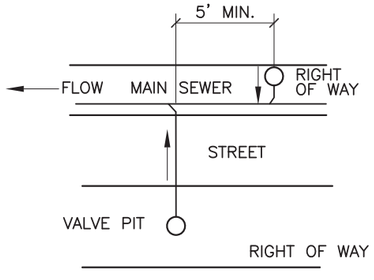
A. 4", 6", 8" OR 10" VACUUM SEWER.
B. 10"x10"x3" OR 8"x8"x3" OR 6"x6"x3" OR 4"x4"x3" D.W.V. WYE.
C. 3" SCHD. 40 PVC.
D. SLOPE: CONSULT DESIGN MANUAL
E. LONG TURN 45° BENDS IN TWO POSITIONS.
F. DO NOT MAKE ANY INLET CONNECTIONS IN THIS AREA.
G. GRADE.
H. ELL 90° AND WYE. IMPORTANT: WYE SHALL BE IN VERTICAL POSITION.
I. DIVISION VALVE.
J. LIFT.
K. WYE AND ST. 45° IN VERTICAL POSITION.



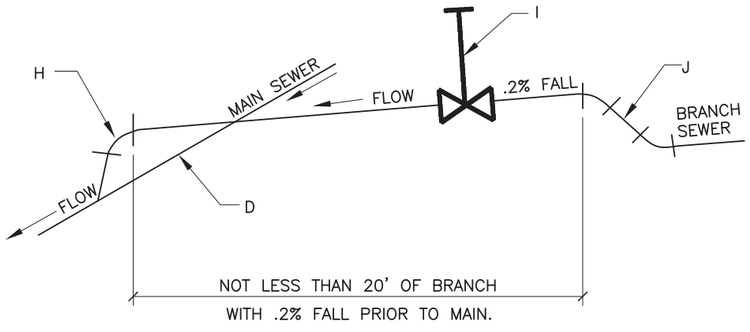
LIFT DETAILS



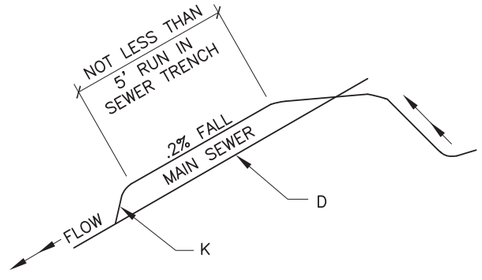
RECOMMENDED POSITIONS FOR CONNECTIONS TO MAIN



SKETCH SHOWING MINIMUM SPACING OF VACUUM SERVICE LATERALS



DIAGRAMMATIC OF BRANCH CONNECTION TO MAIN



ALTERNATE METHOD OF CONNECTING BRANCH OR VACUUM SERVICE LATERAL TO MAIN

REVISIONS	CITY OF ALBUQUERQUE
	VACUUM SEWER STANDARDS STANDARD DETAILS DWG. 2162 JANUARY 2003

GENERAL NOTES:

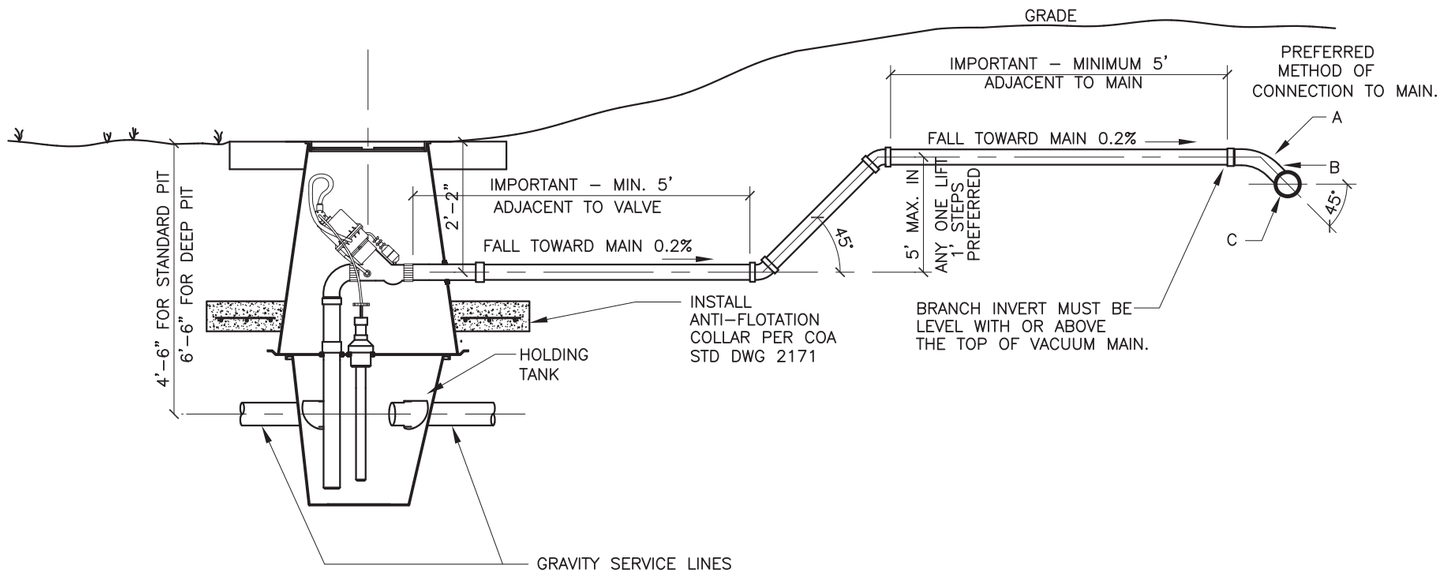
1. GRAVITY LINES – IN ALL INSTALLATIONS, SEWAGE SHALL FLOW BY GRAVITY TO THE HOLDING TANK.
2. INSTALL GRAVITY LINES IN ACCORDANCE WITH CITY OF ALBUQUERQUE STANDARDS AND LOCAL CODES.

CONSTRUCTION NOTES:

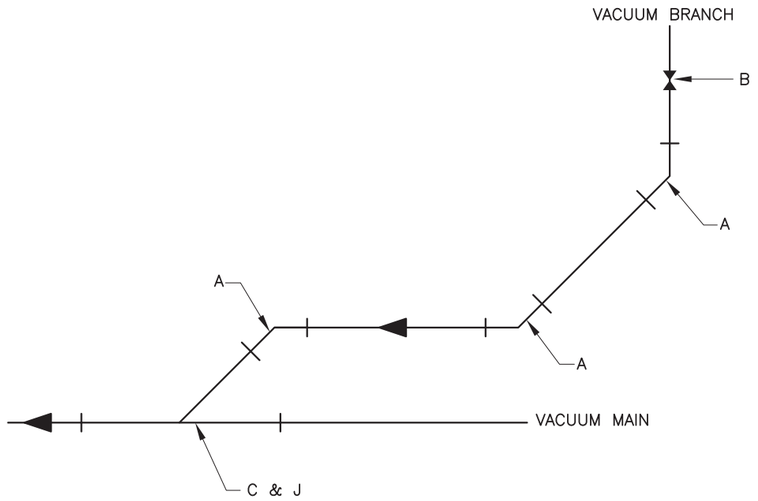
A. 45° ELL.

B. WYE IN VERTICAL POSITION.

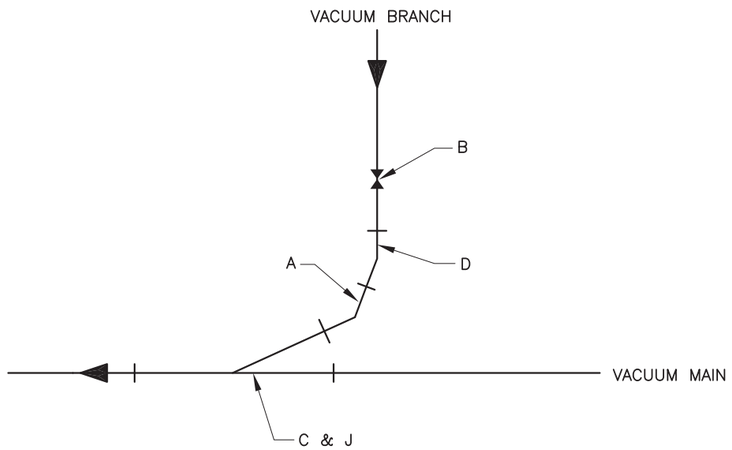
C. VACUUM SEWER MAIN



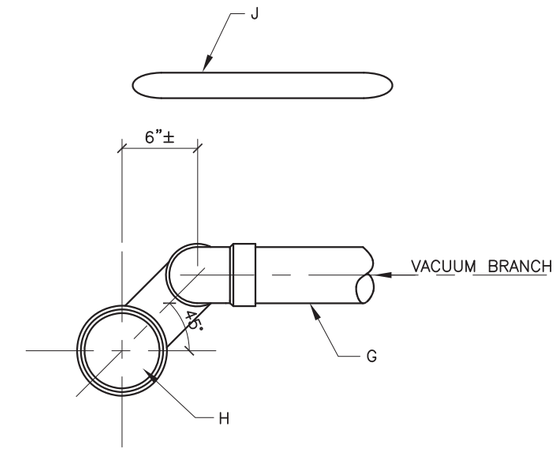
REVISIONS	CITY OF ALBUQUERQUE
	VACUUM SEWER STANDARDS VALVE AND PIT INSTALLATION WITH LIFT IN VACUUM SERVICE LATERAL DWG. 2163 JANUARY 2003

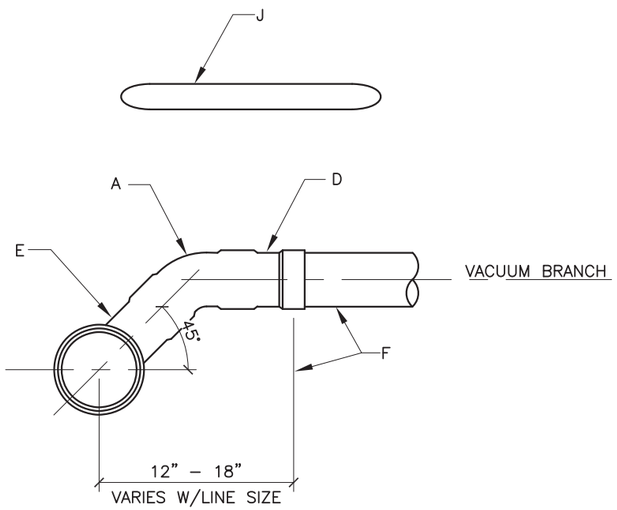


ALTERNATE "A"



ALTERNATE "B"





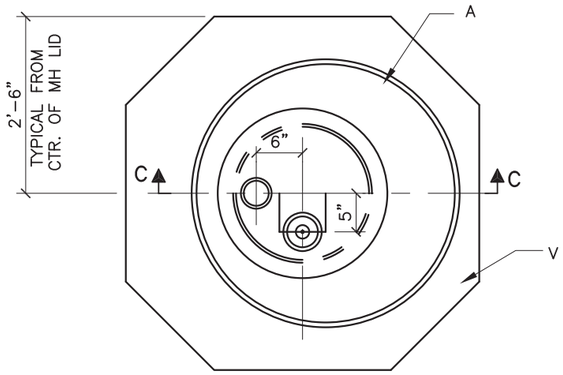
GENERAL NOTES:

1. UNLESS SHOWN ON CONSTRUCTION DRAWINGS, DIVISION VALVES WILL NOT BE INSTALLED FOR SERVICE CONNECTIONS.

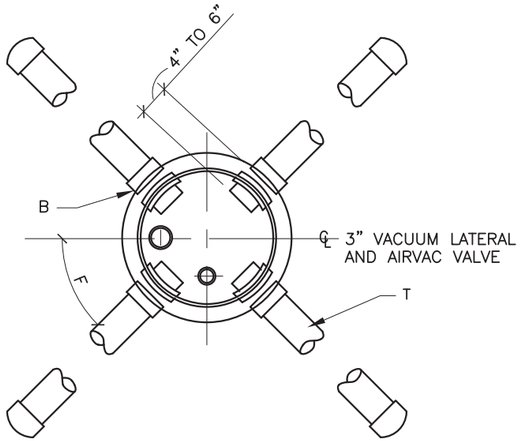
CONSTRUCTION NOTES:

A. 45° ELBOW.
B. DIVISION VALVE AS SHOWN ON CONSTRUCTION DWGS.
C. REDUCTION WYE @ 45°.
D. 22 1/2° ELBOW.
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 MARKER DISK 12" ABOVE TOP OF PIPE.

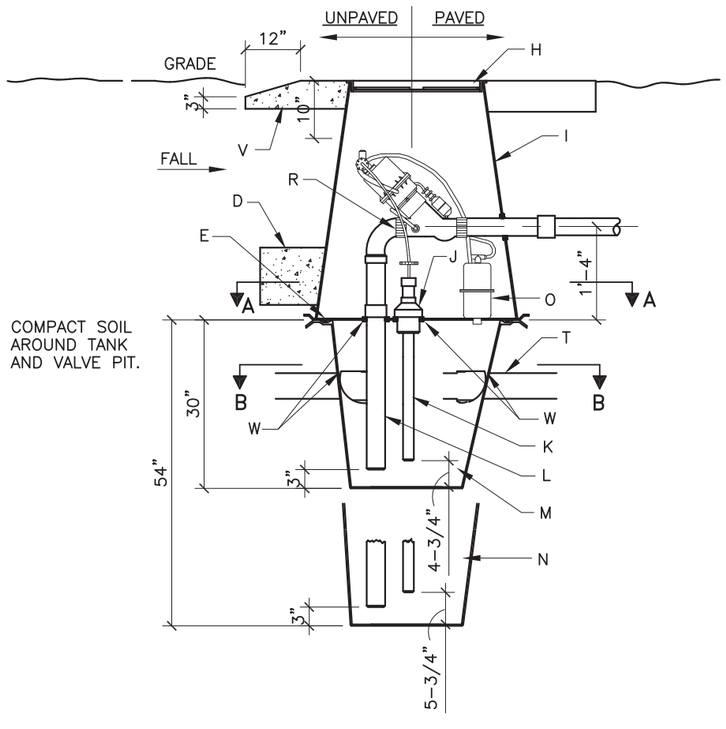
REVISIONS	CITY OF ALBUQUERQUE
	VACUUM SEWER STANDARDS TYPICAL VACUUM BRANCH LINE CONNECTION DWG. 2164 JANUARY 2003



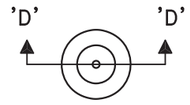
SECTION 'A-A'

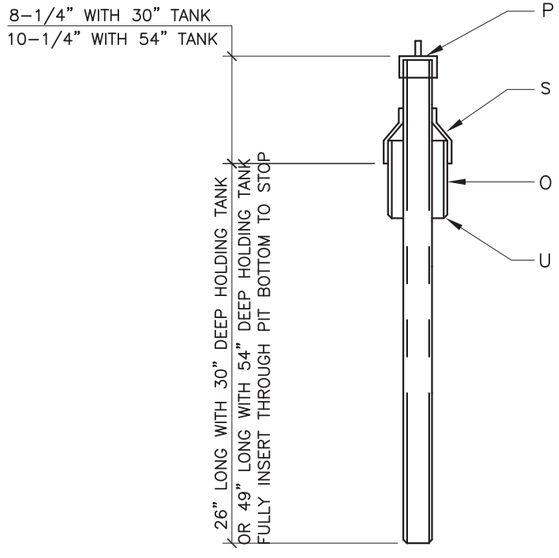


SECTION 'B-B'
SHOWING UP TO
4 GRAVITY
CONNECTIONS
TO SUMP



SECTION 'C-C'





SECTION 'D-D'
COMBINATION CLEAN OUT-SENSOR PIPE DETAIL

GENERAL NOTES:

1. THE FOLLOWING HOLES IN VALVE PIT AND SUMP TO BE FIELD CUT: 5" GRAVITY (SUMP)
2. ONLY HOMES OR APARTMENTS WHOSE LOWER FLOOR ELEVATIONS ARE THE SAME SHOULD BE CONNECTED TO TO A COMMON VACUUM VALVE PIT INSTALLATION. WITH MULTIPLE FLOOR APARTMENTS, EACH FLOOR SHOULD BE SERVICED BY ITS OWN VACUUM VALVE PIT PKG.
3. FOR ANTI-FLOATATION RING, GRADE-LEVEL PAD, PIPING FROM VALVE PIT TO VACUUM MAIN AND GRAVITY SERVICE STUBS. VALVE TO BE INSTALLED BY OWNER. ALL OTHER INSTALLATION AND TESTING BY CONTRACTOR.

CONSTRUCTION NOTES:

A. RTM MOLDED FIBERGLASS VALVE PIT BOTTOM WITH HOLES FACTORY CUT.

B. GLUE HALF OF A SLIP COUPLING IN PLACE AT 4" TO 6" FROM END OF GRAVITY LINE TO ACT AS A STOP.

C. NOT USED

D. ANTI-FLOTATION RING (TYP), SEE PIT DETAILS.

E. JOINT SEALED WITH NEOPRENE RUBBER O-RING. HOLDING TANK BOLTED TO VALVE PIT BOTTOM WITH 6 S.S. NUTS, BOLTS AND WASHERS.

F. OFFSET 45 DEGREES TO AVOID CONFLICT BETWEEN PIPES

G. NOT USED

H. CAST IRON FRAME & SOLID LID RATED FOR H20 LOADING. NEENAH MODEL R-5900-F W/SOLID LID OR APPROVED EQUAL.

I. SPIRAL WOUND, H20 LOADING RATED, FIBERGLASS VALVE PIT. 27" I.D. AT TOP, 36" I.D. AT BOTTOM.

J. 4" CLEANOUT/SENSOR ASSEMBLY

K. 2" SENSOR LINE.

L. 3" SUCTION LINE.

M. FIBERGLASS SUMP 30" DEEP. SUMP 30" I.D. AT TOP, 16" I.D. AT BOTTOM.

N. FIBERGLASS SUMP 54" DEEP TO ALLOW CONNECTION OF DEEP GRAVITY LINES. DIAMETERS SAME AS 30" SUMP.

O. SUMP BREATHER ASSEMBLY

P. 2" AIRVAC PVC SENSOR CAP.

Q. NOT USED

R. 3" NO-HUB COUPLINGS.

S. 2"x4" REDUCER COUPLING W/INDEX REMOVED.(GLUE JOINTS) 4" PVC GRAVITY STUB. EXTEND TO PROPERTY LINE

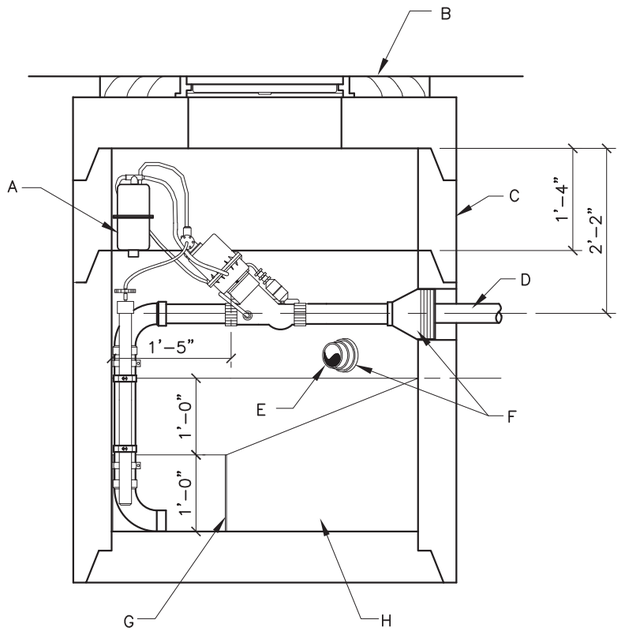
T. UNLESS OTHERWISE DIRECTED AND GLUE CAP.

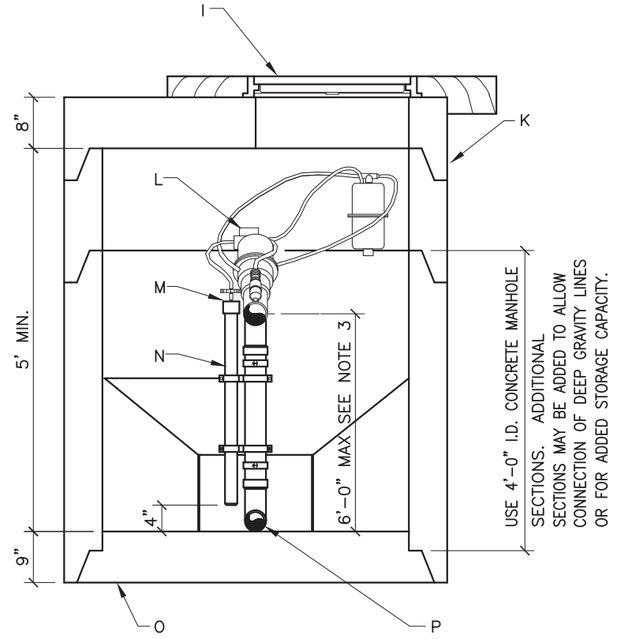
U. END BEVELED.

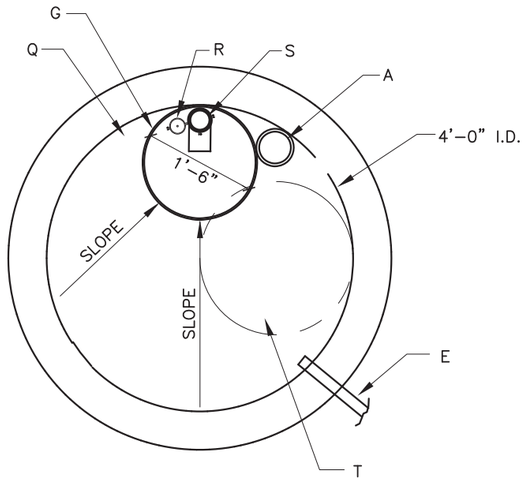
V. CONCRETE COLLAR PER C.O.A. STD. DWG. 2461.

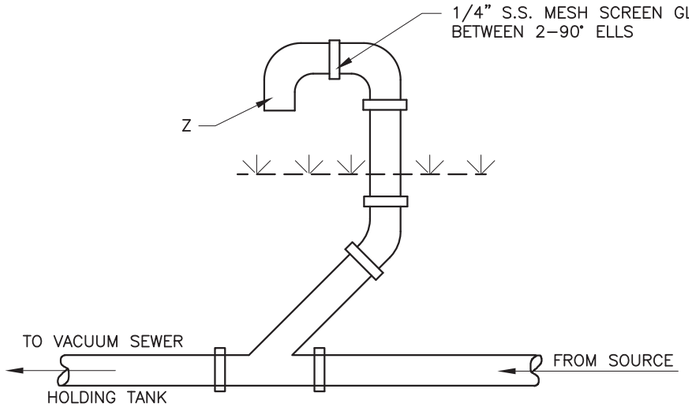
W. GROMMET

REVISIONS	CITY OF ALBUQUERQUE
	VACUUM SEWER STANDARDS 3" VALVE AND PIT INSTALLATION WITH INTERNAL BREATHER DWG. 2165 JANUARY 2003









VENT INLET DETAIL

GENERAL NOTES:

1. ANY LIFT EXCEEDING 6' 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 VALVE, TO BE FURNISHED BY CONTRACTOR. ALL 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

B. CONCRETE COLLAR, PER C.O.A. STD DWG. 2461.

C. CONCRETE MANHOLE SECTION.

D. 3" VACUUM SERVICE LINE.

E. GRAVITY INLET MUST BE LOCATED BETWEEN THE VACUUM SERVICE LINE AND THE START OF SLOPE TO SUMP. MIN. 4" GRAVITY SEWER WITH MATCHING DIAMETER VENT, MIN. 20' FROM TANK.

F. STANDARD FLEXIBLE CONNECTIONS. ALL CONNECTIONS TO BUFFER TANK MUST BE WATER TIGHT.

G. 1'–6" I.D. PVC PIPE 1'–0" LONG MAY BE USED TO FORM SUMP AREA.

H. MASS CONCRETE.

I. SEWER FRAME & COVER PER C.O.A. STD. DWG. 2110

K. PRECAST CONCRETE FLAT TOP FOR MANHOLE WITH 2'–0" DIA. OPENING.

L. 3" "D" MODEL VALVE. BY AIRVAC OR EQUAL.

M. 2" PVC SENSOR CAP SUPPLIED WITH VALVE.

N. 2" PVC SENSOR PIPE.

O. PRECAST CONCRETE BOTTOM IN MANHOLE SECTION.

P. 3" STREET ELL TOUCHING BASE OF SUMP WITH PLAIN END. NO CONNECTION.

Q. VALVE AND PIPING REMOVED FOR CLARITY.

R. SENSOR PIPE.

S. VALVE CONNECTION.

T. LOCATION OF LID.

R. SENSOR PIPE.

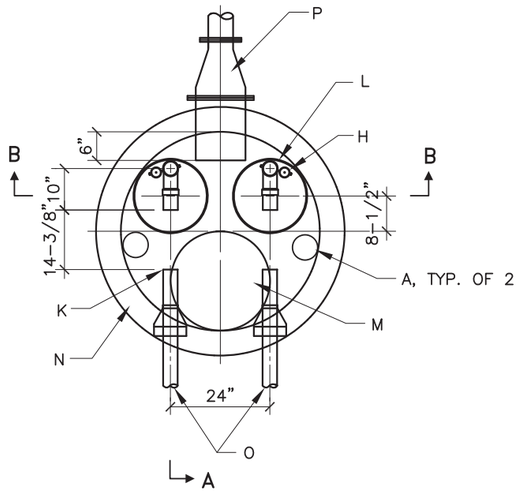
S. VALVE CONNECTION.

T. LOCATION OF LID.

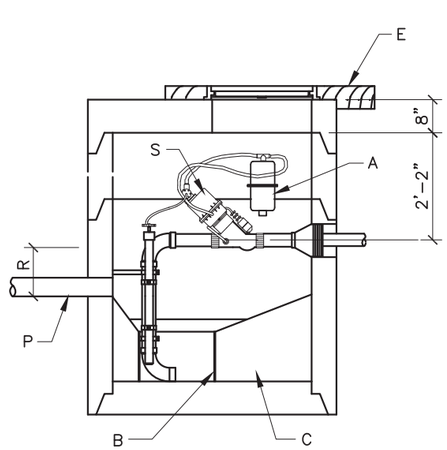
Y. LOCATE VENT BY POLE OR FENCE FOR PROTECTION

Z. VENT FABRICATED WITH 90° ELLS.; HEIGHT MUST BE ABOVE FLOOD WATER LEVEL, BUT BELOW FINISHED FLOOR LEVEL OF LOWEST RESIDENCE SERVED.

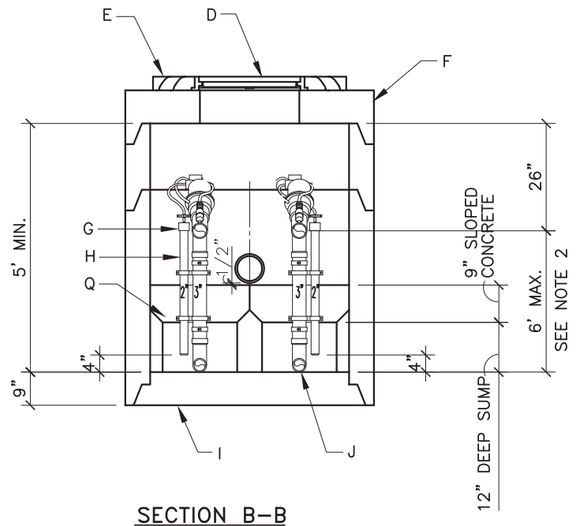
REVISIONS	CITY OF ALBUQUERQUE
	VACUUM SEWER STANDARDS SINGLE BUFFER TANK 30 GALLON PER MINUTE MAX. FLOW DWG. 2167 JANUARY 2003



PLAN



SECTION A–A



SECTION B–B

GENERAL NOTES:

1. ANY LIFT EXCEEDING 6' 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 VALVE, TO BE FURNISHED BY CONTRACTOR. ALL 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'–6" I.D. PVC PIPE 1'–0" 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'–0" DIA. OPENING.

G. 2" PVC SENSOR CAP SUPPLIED WITH VALVE.

H. 2" PVC SENSOR PIPE.

I. PRECAST CONCRETE BOTTOM IN MANHOLE SECTION

J. 3" STREET ELL TOUCHING BASE OF SUMP WITH PLAIN END. NO CONNECTION.

K. VALVE AND PIPING REMOVED FOR CLARITY.

L. 18" DIAMETER SUMP (2).

M. LOCATION OF LID.

N. USE 4'–0" I.D. 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 6" MINIMUM SEPARATION AT MAIN. SERVICE LINES FITTED WITH STANDARD FLEXIBLE CONNECTORS AT THE HOLE IN THE MANHOLE SECTION TO INSURE THAT THE BUFFER TANK IS WATER TIGHT.

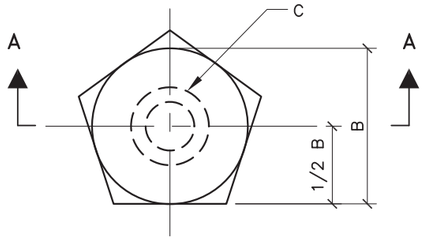
P. MINIMUM 6" GRAVITY LINE WITH MATCHING VENT, MINIMUM 20' FROM BUFFER TANK. CONNECT 6" LINE TO 12" X 6" REDUCER. CONNECT REDUCER TO 12" PIPE ENTERING MANHOLE. CENTER 12" PIPE OVER CENTER DIVIDER WALL C. 12" LINE SHALL BE FITTED WITH STANDARD FLEXIBLE CONNECTORS AT THE HOLE TO INSURE THAT BUFFER TANK IS WATERTIGHT.

Q. SHAPE SLOPED CONCRETE TO DISTRIBUTE FLOW EVENLY BETWEEN SUMPS.

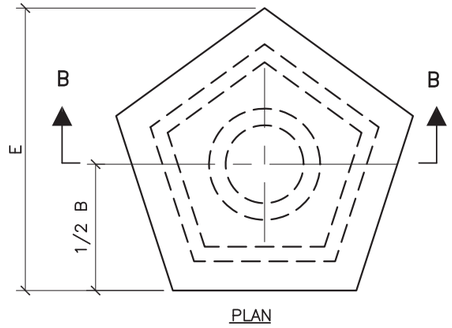
R. GRAVITY INLET MUST BE LOCATED BETWEEN THE VACUUM SERVICE LINE AND THE START OF SLOPE TO SUMP.

S. 3" "D" MODEL VALVE, BY AIRVAC OR EQUAL, TO BE INSTALLED BY OWNER

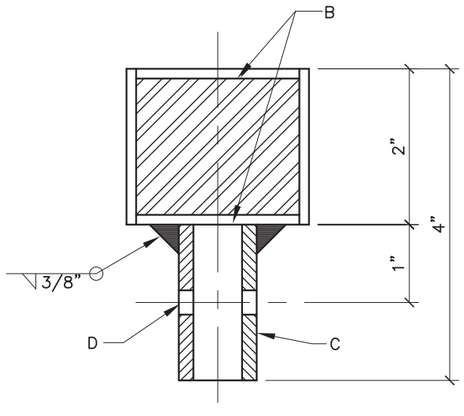
REVISIONS	CITY OF ALBUQUERQUE
	VACUUM SEWER STANDARDS DUAL BUFFER TANK 60 GALLON PER MINUTE MAX. FLOW DWG. 2168 JANUARY 2003



PLAN

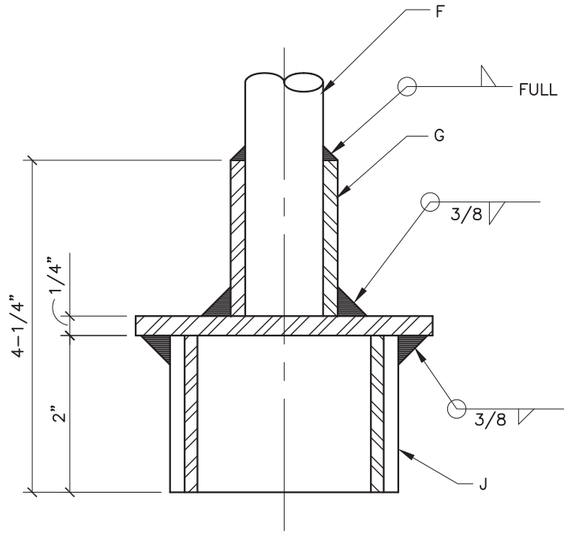


PLAN



SECTION A–A

EXTENSION NUT



SECTION B–B

EXTENSION SOCKET

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 H.R. STEEL BAR, 2" x 2"

B. 2" DIA. 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 .312 DIAMETER HOLE THROUGH PIPE FOR .31 DIAMETER CLEVIS PIN/COTTER PIN.

E. 3–1/4"

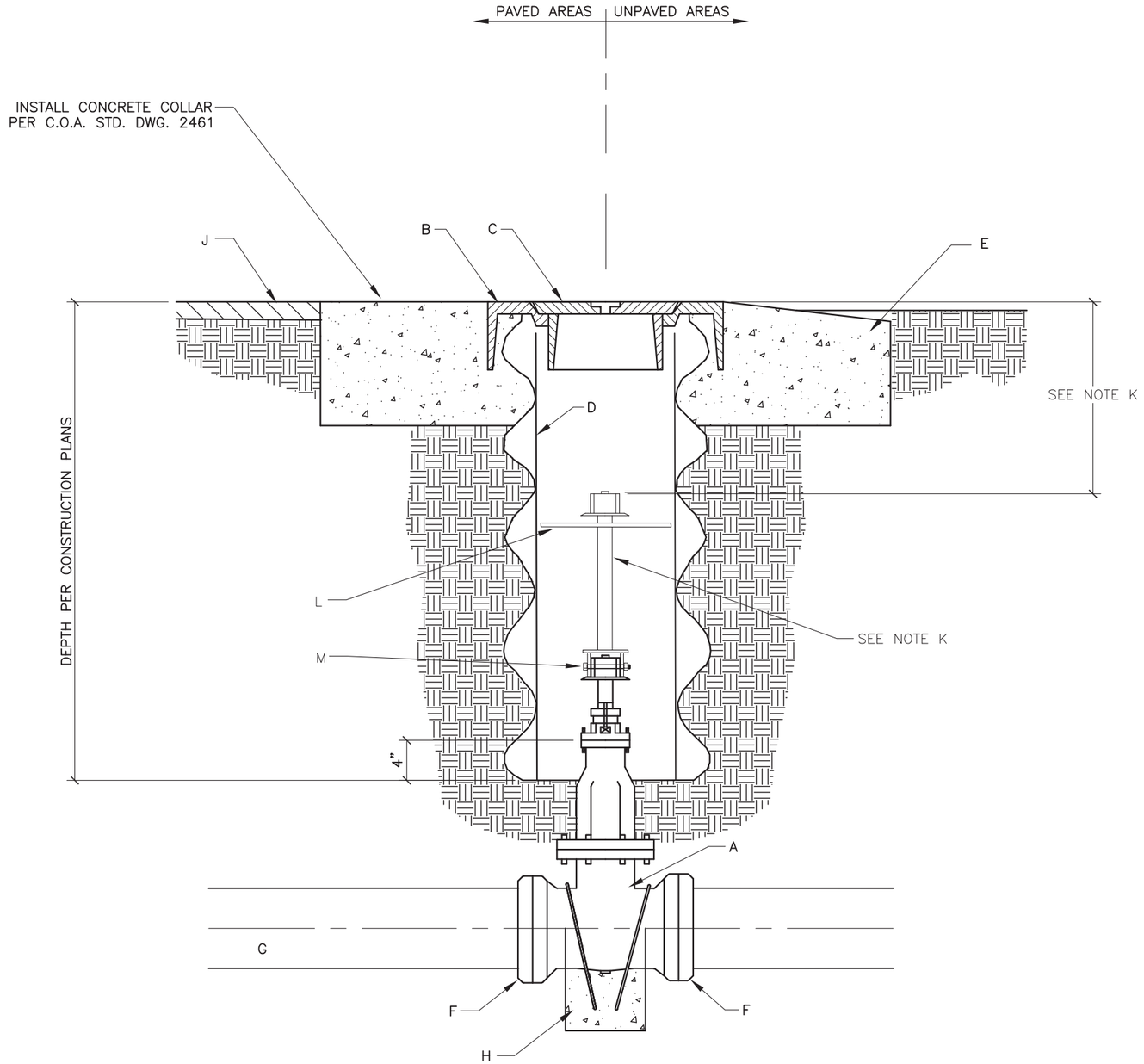
F. 1" DIAMETER EXTENSION BAR, 6 FEET LONG. W/ T HANDLE.

G. 1" DIAMETER, SCH 40 x 2" (1.315 O.D. x 1.049 I.D.)

H. PENTAGONAL SHAPED x 1/4" H.R. STEEL PLATE 1/2" LARGER THAN TUBULAR SECTION BELOW

J. 2" LONG H.R. STEEL PENTAGONAL SHAPED TUBULAR SECTION x .1875 WALL W/ 1/8" TOTAL CLEARANCE TO EXTENSION NUT.

REVISIONS	CITY OF ALBUQUERQUE
	VACUUM SEWER STANDARDS VACUUM DIVISION VALVE STEM NUT AND SOCKET DETAILS DWG. 2169 JANUARY 2003



CONSTRUCTION NOTES:

A. RESILIENT COATED WEDGE GATE VALVE AS MANUFACTURED BY WATEROUS OR EQUAL. SUPPLY WITH 2"–5 SIDED NUT PER C.O.A. STD. DWG. 2169.

B. RING

C. COVER

D. 10" DIA. RIBBED OR CORRUGATED PVC OR PE PIPE WITH SMOOTH INTERIOR, C–900.

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, SET RING 1" ABOVE GRADE AND SLOPE TOP OF CONCRETE DOWN TO 1" BELOW GRADE.

F. MEGALUG, OR EQUAL, RESTRAINING GLAND.

G. VACUUM MAIN LINE.

H. VALVE ANCHORAGE PER CITY STD. DWG. 2333.

J. ASPHALT PAVEMENT WHERE SPECIFIED

K. VALVE 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 12" MIN. WHEN EXTENSION IS REQUIRED.

L. 9" DIA. X 1/4" STEEL PLATE CENTERING DISK. WELD NEAR TOP OF SHAFT WHEN EXTENSION IS REQUIRED.

M. SECURE EXTENSION SOCKET TO VALVE NUT WITH 1/4" S.S. THRU–BOLT AND NUT

REVISIONS	CITY OF ALBUQUERQUE
	VACUUM SEWER STANDARDS VACUUM DIVISION VALVE VALVE BOX DWG. 2170 JANUARY 2003

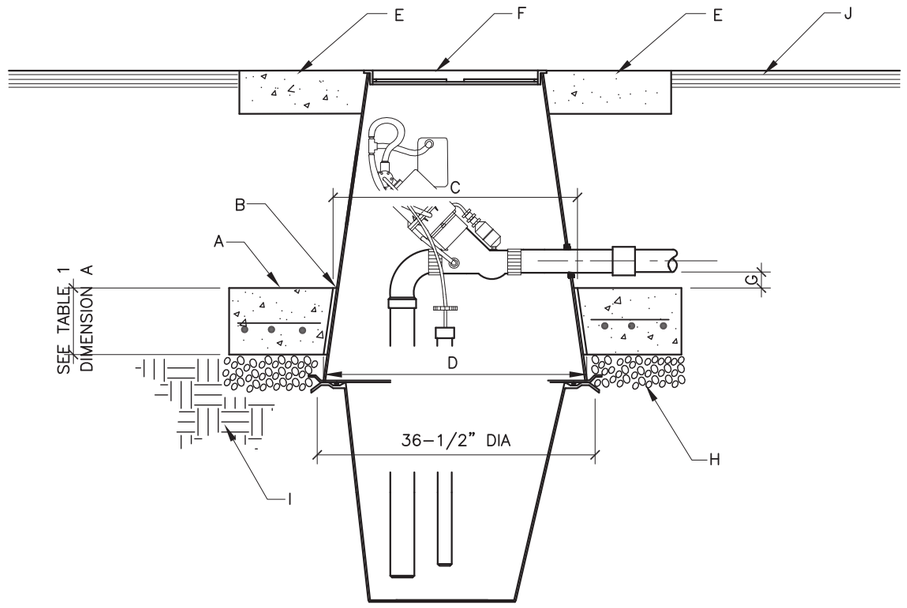


TABLE 1

DESCRIPTION	DIM. A
30" SUMP PACKAGE	7 1/2"
54" SUMP PACKAGE	9 1/2"

(SEE STD. DWG. 2165)

GENERAL NOTES:

1. ALL COMPACTION OF SUBGRADE AND AND BACKFILL 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 PITS. CLOSE & COMPLETE WITHIN 3 DAYS TO INSURE INTEGRITY OF RUBBER O-RING.
3. SEE C.O.A. STD. DWG. 2165 FOR ADDITIONAL DETAILS.

CONSTRUCTION NOTES:

A. 62" SQUARE CONCRETE ANTI-FLOATATION COLLAR; WITH #4 REBAR @ 6" E.W. 3" FROM EDGE OF CONC. SEE TABLE 1 FOR THICKNESS. CONCRETE PER SEC. 101, HYDRAULIC STRUCTURAL CONCRETE, f'c=4000 psi @ 28 DAYS.

B. CLEARANCE BETWEEN CONCRETE COLLAR AND FIBERGLASS PIT.

C. 35" DIA. OPENING @ TOP OF SLAB.

D. 35-1/2" DIA. OPENING @ BOTTOM OF SLAB.

E. INSTALL CONCRETE COLLAR PER C.O.A. STD. DWG. 2461.

F. CAST IRON MANHOLE FRAME AND COVER; SEE C.O.A. STD. DWG. 2110.

G. 1" CLEARANCE TO BOTTOM OF 3" LATERAL

H. 3" THICK 3/4" GRAVEL, ASTM C33, NO. 57 GRAVEL.

I. COMPACTED SUBGRADE

J. FINISH PAVING SURFACE

REVISIONS	CITY OF ALBUQUERQUE
	VACUUM SEWER STANDARDS VACUUM VALVE PIT – TYPE "A" FOR USE IN PAVED AREAS DWG. 2171 JANUARY 2003

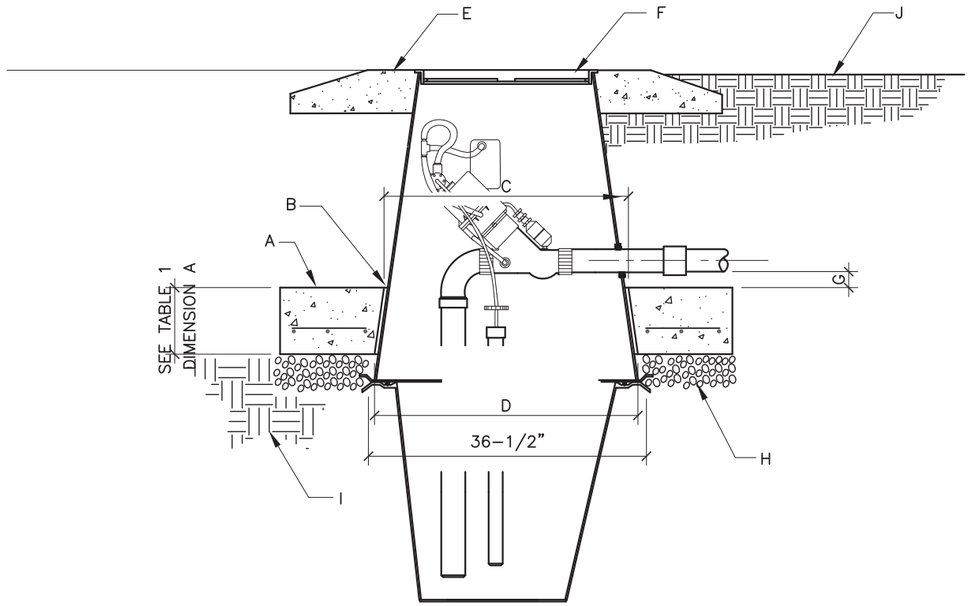


TABLE 1

DESCRIPTION	DIM. A
30" SUMP PACKAGE	7 1/2"
54" SUMP PACKAGE	9 1/2"

(SEE STD. DWG. 2165)

GENERAL NOTES:

1. ALL COMPACTION OF SUBGRADE AND BACKFILL 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 PITS. CLOSE & COMPLETE WITHIN 3 DAYS TO INSURE INTEGRITY OF RUBBER O–RING.
3. SEE C.O.A. STD. DWG. 2165 FOR ADDITIONAL DETAILS.

CONSTRUCTION NOTES:

A. 62" SQUARE CONC. ANTI–FLOATATION COLLAR; WITH #4 REBAR @ 6" E.W. 3" FROM EDGE OF CONC. SEE TABLE 1 FOR THICKNESS. CONCRETE PER SEC. 101 HYDRAULIC STRUCTURAL CONCRETE, f'c=4000 psi @ 28 DAYS.

B. CLEARANCE BETWEEN CONCRETE COLLAR AND FIBERGLASS PIT.

C. 35" DIA. OPENING @ TOP OF SLAB.

D. 35–1/2" DIA. OPENING @ BOTTOM OF SLAB.

E. INSTALL CONCRETE COLLAR PER C.O.A. STD. DWG. 2461.

F. CAST IRON MANHOLE FRAME AND COVER; SEE C.O.A. STD. DWG. 2165

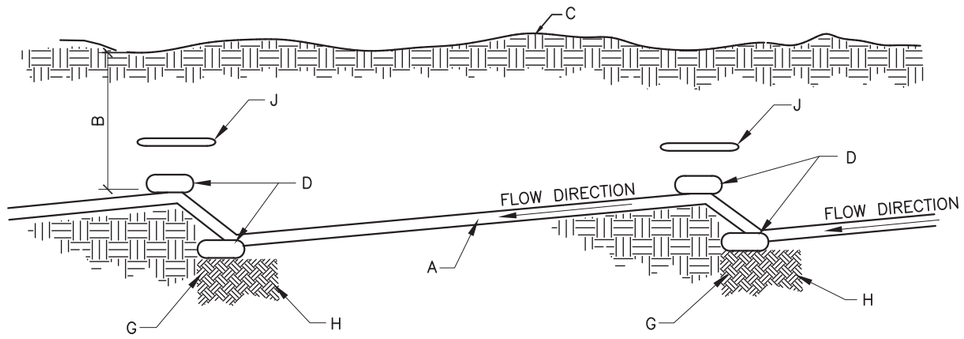
G. 1" CLEARANCE TO BOTTOM OF 3" LATERAL

H. 3" THICK 3/4" GRAVEL, ASTM C33, NO. 57 GRAVEL.

I. COMPACTED SUBGRADE

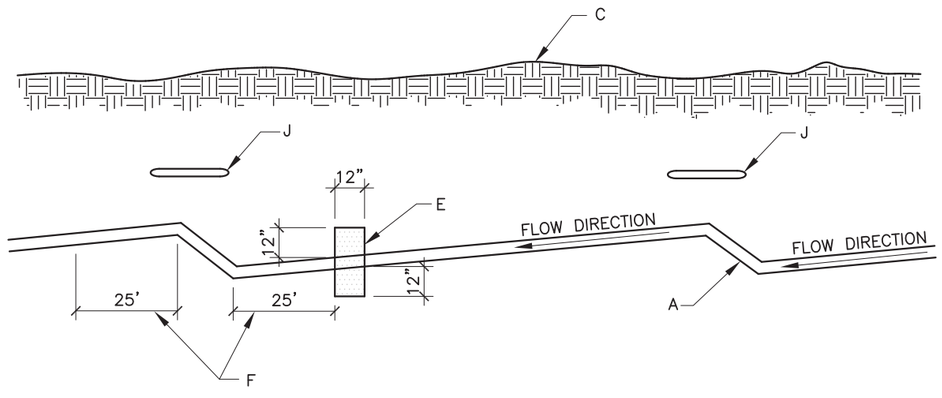
J. FINISH GRADE

REVISIONS	CITY OF ALBUQUERQUE
	VACUUM SEWER STANDARDS VACUUM VALVE PIT – TYPE "B" FOR USE IN UNPAVED AREAS DWG. 2172 JANUARY 2003



BLOCKING DETAIL

SEWER PROFILE



SEEPAGE COLLAR DETAIL

SEWER PROFILE

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 MAINS INSTALLED IN MRGCD 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" OR 10" VACUUM SEWER.
B. DEPTH PER PLANS
C. FINISH GRADE
D. 80 LB BAG OF REDI-MIX CONCRETE WITH CUT ON TOP.
E. BENTONITE SEEPAGE COLLAR; SEE SPECS. BELOW
F. MIN. DISTANCE FROM 45° BENDS
G. UNDISTURBED EARTH
H. 95% COMPACTED SUBGRADE
J. ELECTRONIC MARKER DISK, 12" ABOVE TOP OF PIPE

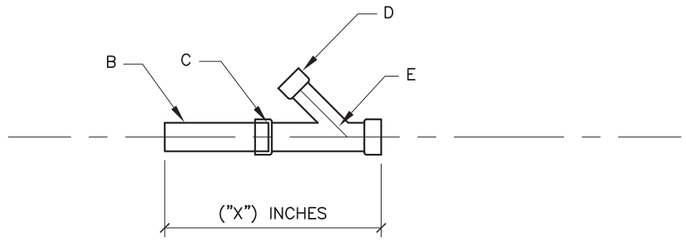
BENTONITE SPECIFICATIONS:

HYDROGEL BENTONITE
BY WYO-BEN, INC. OR
APPROVED EQUAL

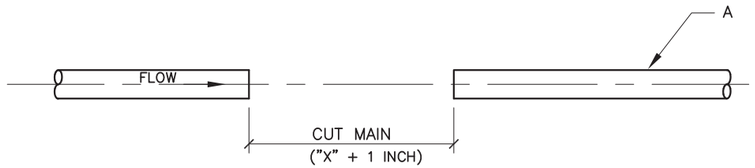
BARREL YIELD	92
VISCOMETER READING AT 600 R.P.M.	39 +/- 5
WATER LOSS	13.5 +/- 1
% THRU 200 MESH SCREEN	80 +/- 2
WET SCREEN ANALYSIS RESIDUE ON U.S. SIEVE NO. 200	3.0 +/- .5
% MOISTURE	7 +/- 1
pH	9.1 .+/- .1
GEL STRENGTH-10SEC.	18 +/- 2
GEL STRENGTH-10 MIN.	
PLASTIC VISCOSITY	14 +/- 2
YIELD POINT, LB/200 ft.	16 +/- 4

MIX 80 LBS. PER 100 GALLONS OF MAKE-UP WATER.

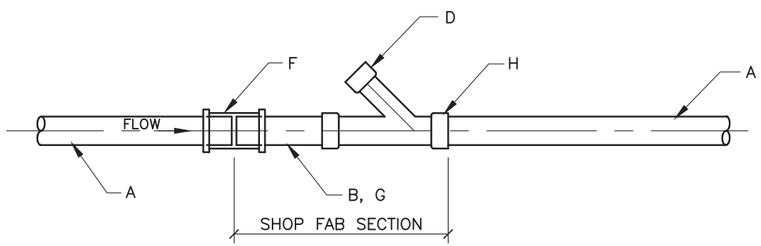
REVISIONS	CITY OF ALBUQUERQUE
	VACUUM SEWER STANDARDS BLOCKING AND SEEPAGE COLLAR DETAILS DWG. 2173 JANUARY 2003



SHOP FAB SECTION



PIPE CUT IN FIELD



COMPLETED INSTALLATION IN FIELD

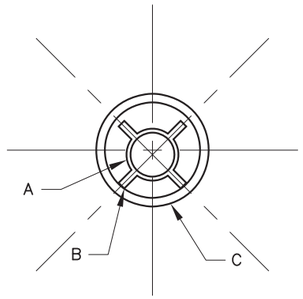
GENERAL NOTES:

1. ALL SOIL COMPACTION FOR INSTALLATION OF SERVICE WYE TO BE 95% OF MAXIMUM DRY DENSITY PER ASTM D 1557.

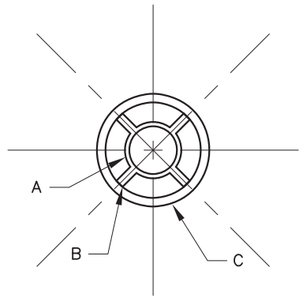
CONSTRUCTION NOTES:

A. EXISTING VACUUM SEWER MAIN
B. SCHD. 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. SCHD. 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 ONTO THIS PIECE OF PIPE BEFORE INSERTING IN TRENCH
H. SOLVENT WELD IN FIELD

REVISIONS	CITY OF ALBUQUERQUE
	VACUUM SEWER STANDARDS SERVICE WYE INSTALLATION ON EXISTING VACUUM MAIN DWG. 2174 JANUARY 2003



STANDARD



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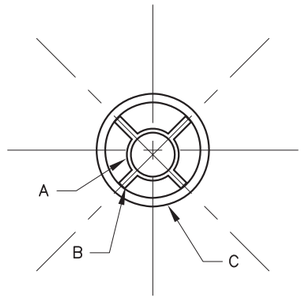
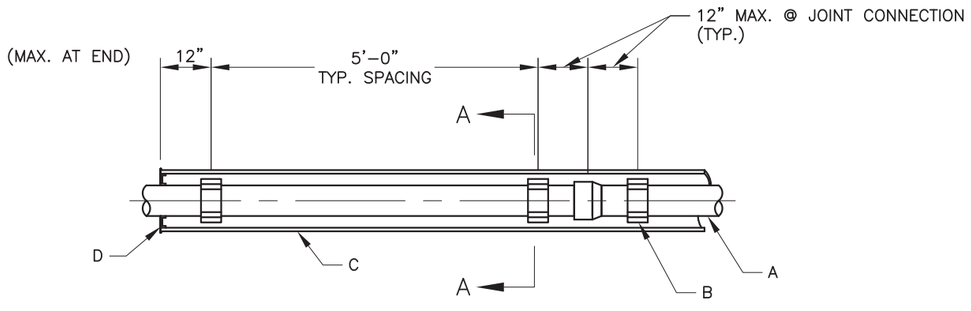


RESTRAINED

SECTION A–A



PLAN

GENERAL NOTES:

1. SEE CONSTRUCTION PLANS AND SPECIFICATIONS FOR SKID TYPE AND SECTION CONFIGURATION (STANDARD, CENTERED AND RESTRAINED) AS SHOWN PER SECTION A–A.

CONSTRUCTION NOTES:

A. CARRIER PIPE.

B. PIPELINE SUPPORT SKID (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).

REVISIONS	CITY OF ALBUQUERQUE
	CASING DETAIL FOR BORE AND JACK VACUUM SEWER SYSTEM DWG. 2180 JANUARY 2003

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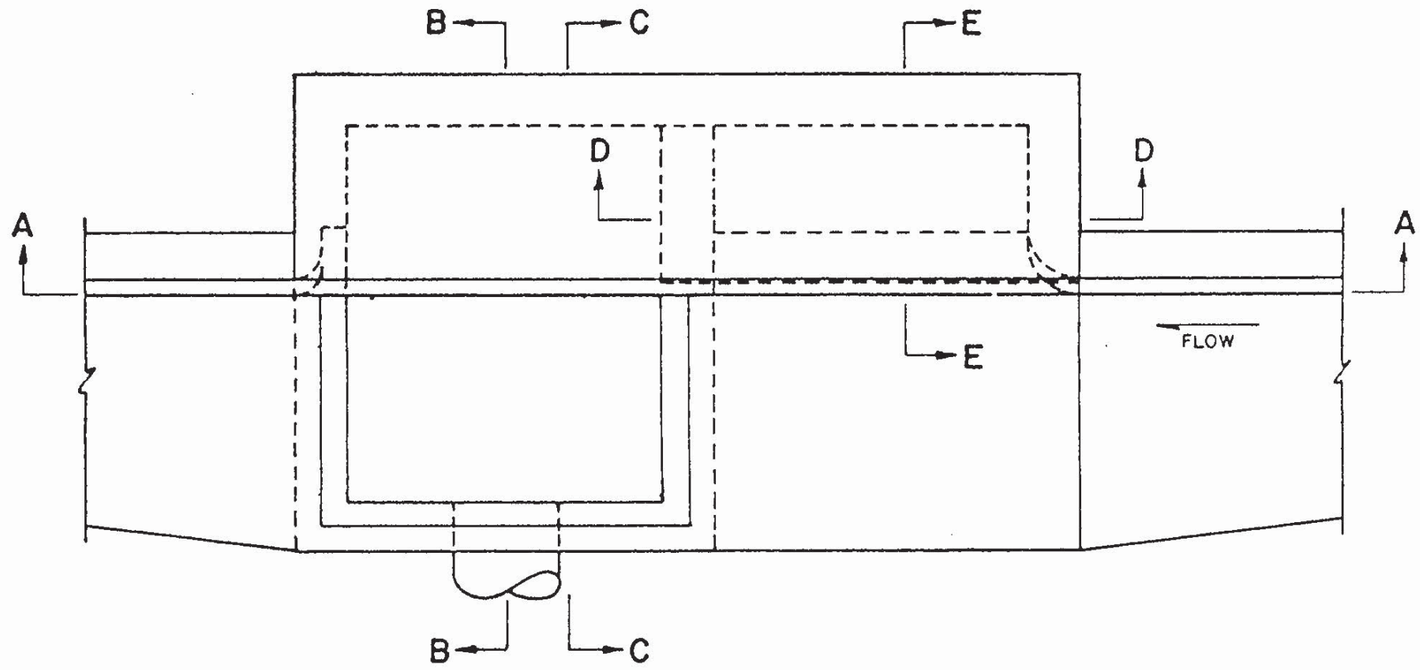
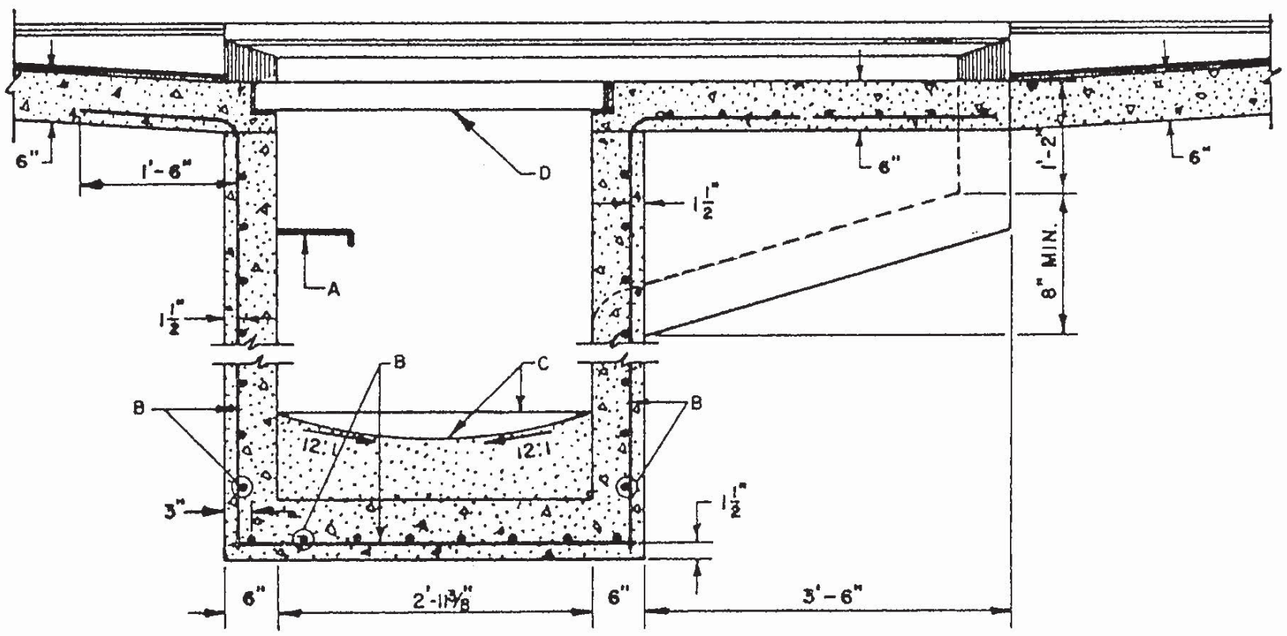
SECTION 2200
STANDARD DETAILS FOR DRAINAGE

DWG. NO.	TITLE
2201	STORM INLET TYPE"A" PLAN AND SECTION A-A
2202	STORM INLET TYPE "A" SECTIONS B-B, C-C, D-D, E-E
2203	STORM INLET TYPE "B"
2205	STORM INLET DOUBLE "C" AND SINGLE "C"
2206	STORM INLET DOUBLE "D" AND SINGLE "D"
2207	STORM INLET GUTTER TRANSITION
2215	STORM INLET CENTER SUPPORT ASSEMBLY
2216	STORM INLET FRAME
2220	STORM INLET ALBUQUERQUE GRATE
2221	STORM INLET ALTERNATE GRATE
2225	SLOTTED DRAIN
2229	STEP DETAILS
2235	DRAIN LINE THROUGH CURB
2236	SIDEWALK CULVERT WITH STEEL PLATE TOP
2237	DRAIN LINE CONNECTION TO EXISTING STORM INLET
2250	STATIONARY & REMOVABLE POST DETAILS
2251	PIPE GATE DETAIL
2252	STANDARD CHAIN LINK GATE AND FENCE DETAIL
2253	SQUARE TUBE GATE DETAIL
2260	TYPICAL LINING FOR DRAINAGE EASEMENTS
2261	CHANNEL DETAILS
2265	CHANNEL EXPANSION JOINT WITH SLEEPER
2266	EXPANSION JOINT CONNECTION TO CONCRETE WALL
2267	CHANNEL EXPANSION JOINT REPAIR
2268	STEP JOINT PROTECTION PLATE
2270	WIRE ENCLOSED RIPRAP
2271	CATTLE GUARD INLET
2272	CATTLE GUARD INLET
2273	MEDIAN STORM INLET
2274	STA. & WATER DEPTH MARKS IN CONC. LINED CHANNEL

(Revised 12/92, Update No. 4)



PLAN



SECTION A-A

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:

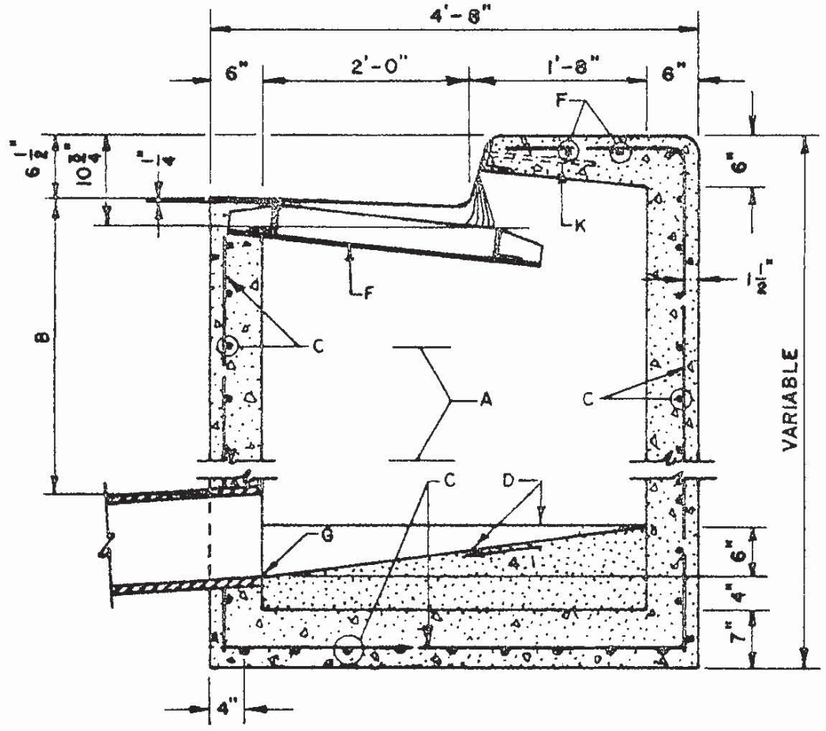
A. FOR STORM INLET DEPTHS GREATER THAN 4', INSTALL STD. STEPS, SEE DWG. 2229. STEPS ARE TO BE INSTALLED ON DOWNSTREAM FACE OF INLET.
B. NO. 4 BARS AT 6" O.C. EACH WAY.
C. CONCRETE FILL, MINIMUM SLOPE SHOWN IN SECTION A-A.
D. GRATE.

CITY OF ALBUQUERQUE

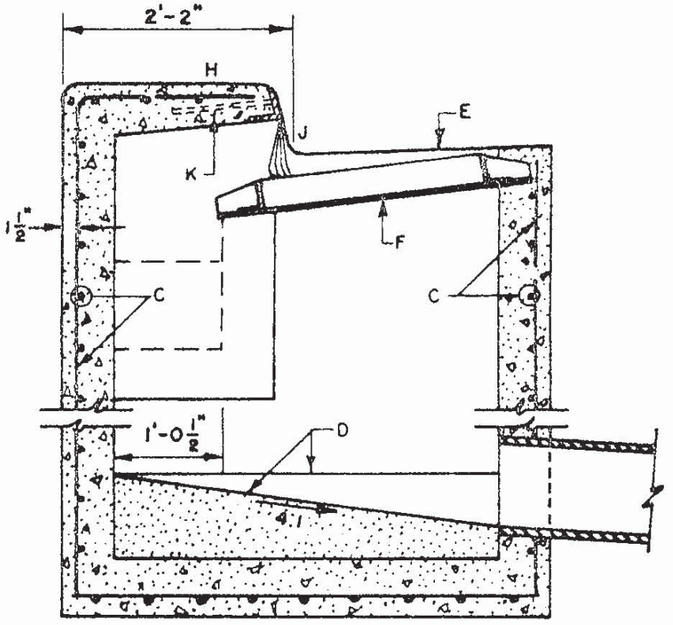
REVISIONS
12-21-92

DRAINAGE
STORM INLET TYPE "A"
PLAN AND SECTION A-A
DWG. 2201

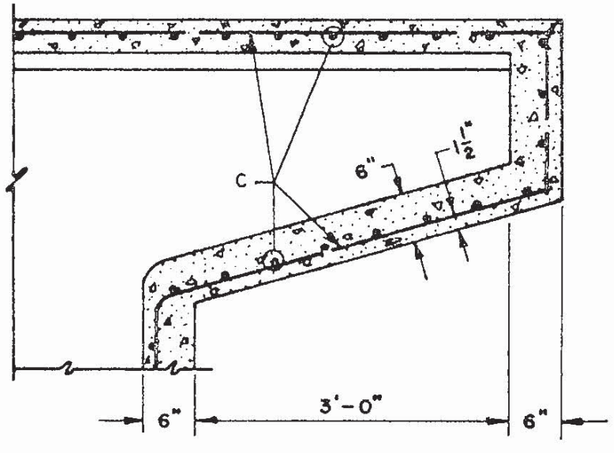
AUG. 1986



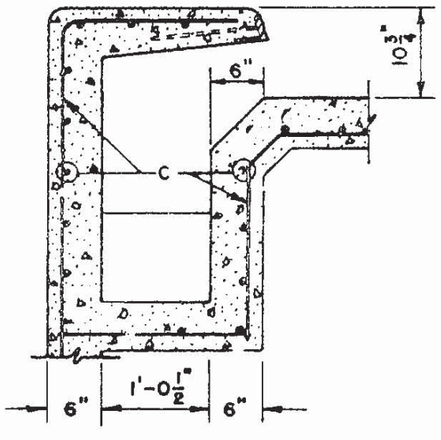
SECTION B-B



SECTION C-C



SECTION D-D



SECTION E-E

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 2229 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.

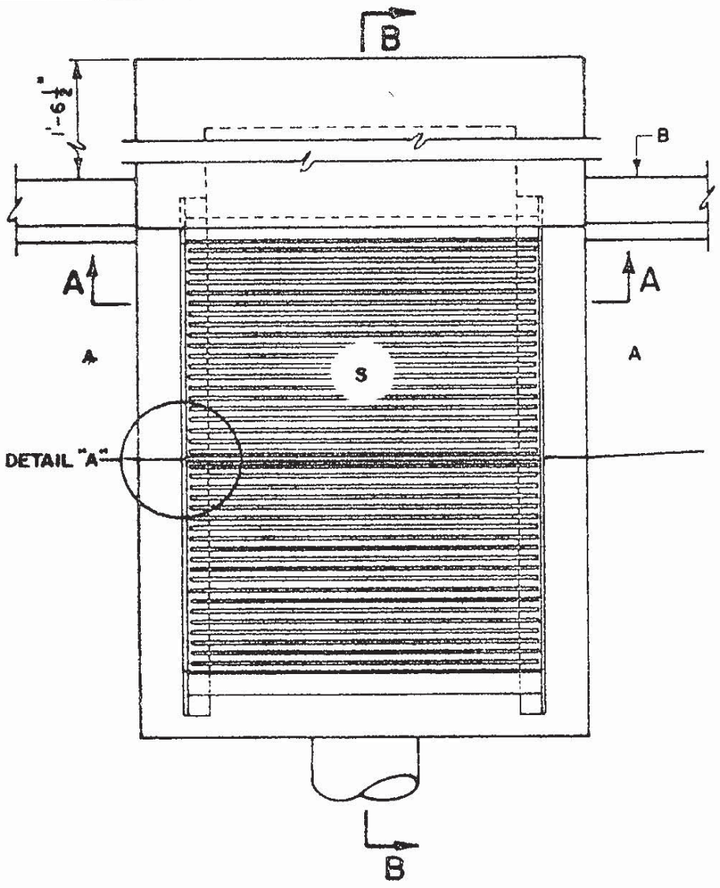
K. ANGLE ANCHOR.

CITY OF ALBUQUERQUE

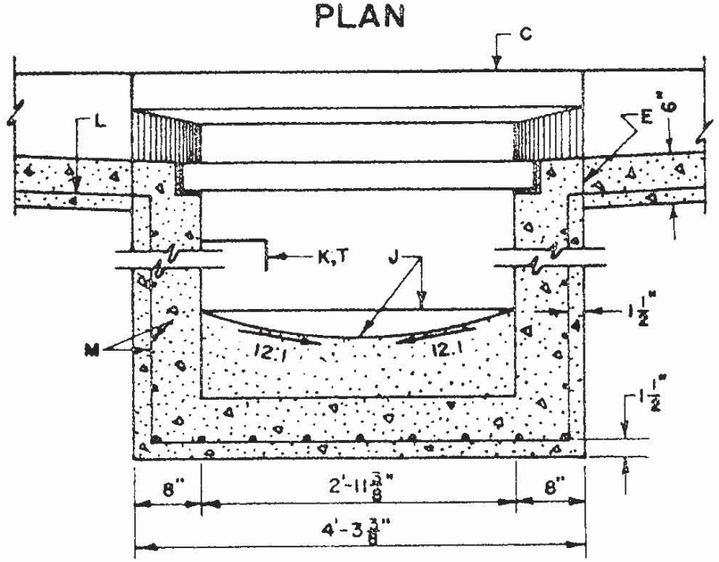
REVISIONS

DRAINAGE
STORM INLET TYPE "A"
SECTIONS B-B, C-C, D-D & E-E
DWG. 2202

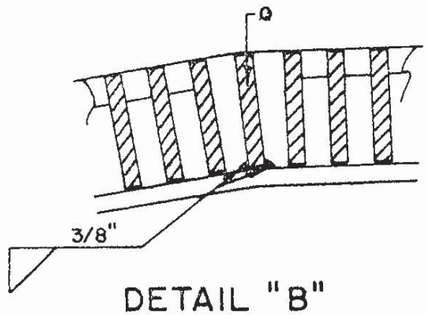
AUG. 1986



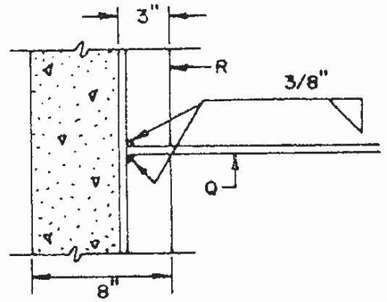
PLAN



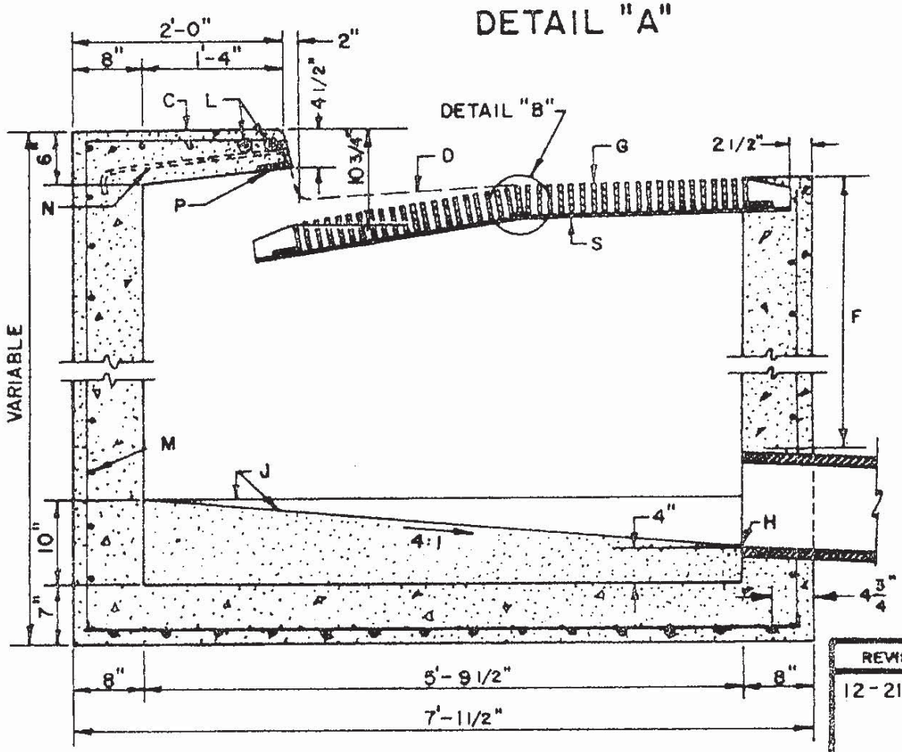
SECTION A-A



DETAIL "B"



DETAIL "A"



SECTION B-B

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. EXTEND NO. 4 REBARS 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 1/2" X 4'-4".

Q. 3 1/2" X 1/2" X 3'-4 3/8".

R. 4" X 3" X 1/2" X 5'-2".

S. FRAME AND GRATE.

T. STEPS ON DOWNSTREAM FACE.

CITY OF ALBUQUERQUE

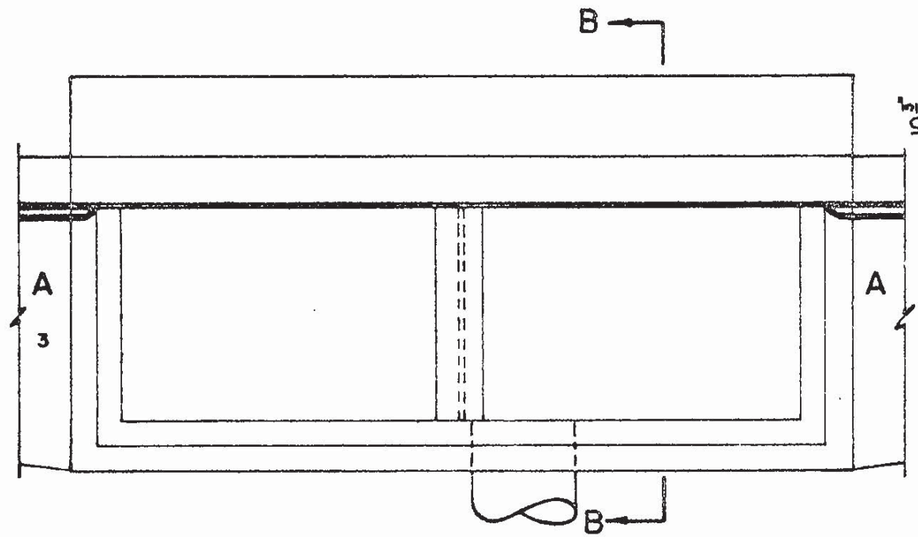
REVISIONS
12-21-92

DRAINAGE

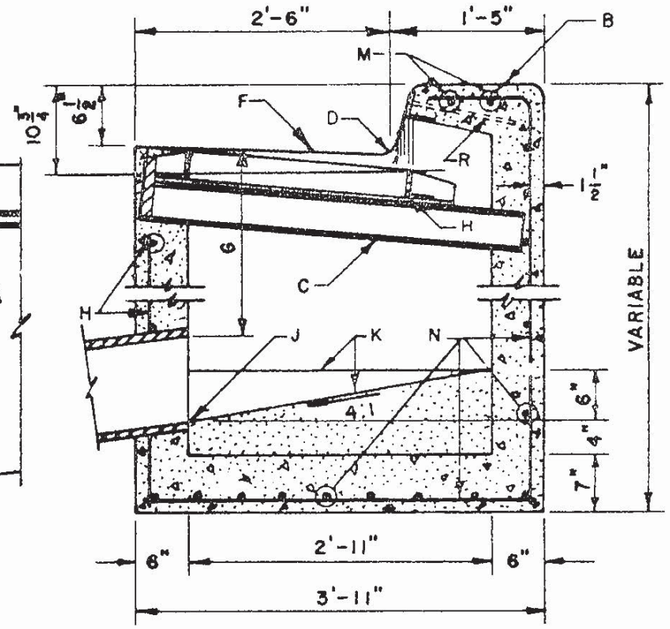
STORM INLET TYPE "B"

DWG. 2203

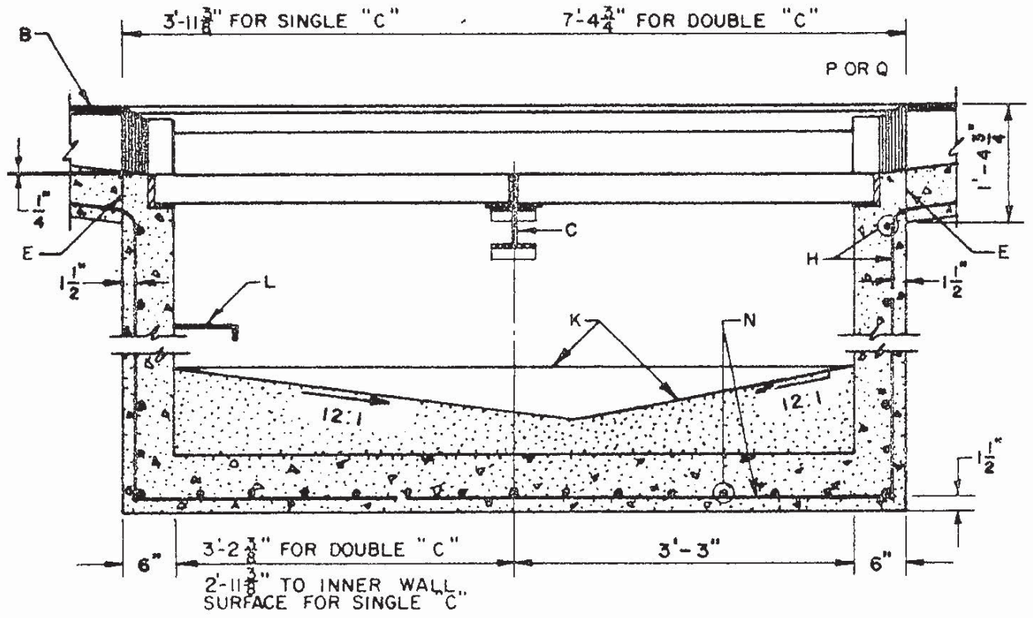
AUG. 1986



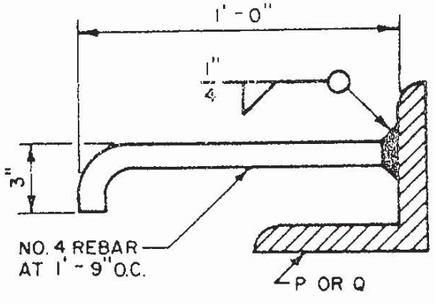
PLAN



SECTION B-B



SECTION A-A



ANCHOR DETAIL

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.

J. INVERT OF OUTLET PIPE.

K. CONCRETE FILL, MINIMUM SLOPES AS SHOWN.

L. FOR STORM INLET DEPTHS GREATER THAN 4' INSTALL STD STEPS, SEE DWG 2229, DOWNSTREAM FACE.

M. EXTEND NO 4 REBARS 18" INTO CURB ON EACH SIDE OF STORM INLET.

N. NO. 4 BARS AT 6" O.C.

P. 3 1/2" X 3 1/2" X 1/2" X 4' - 0" FOR SINGLE GRATE TYPE "C" STORM INLET.

Q. 3 1/2" X 3 1/2" X 1/2" X 7' - 6" FOR DOUBLE GRATE TYPE "C" STORM INLET.

R. ANCHOR.

REVISIONS
12-21-92

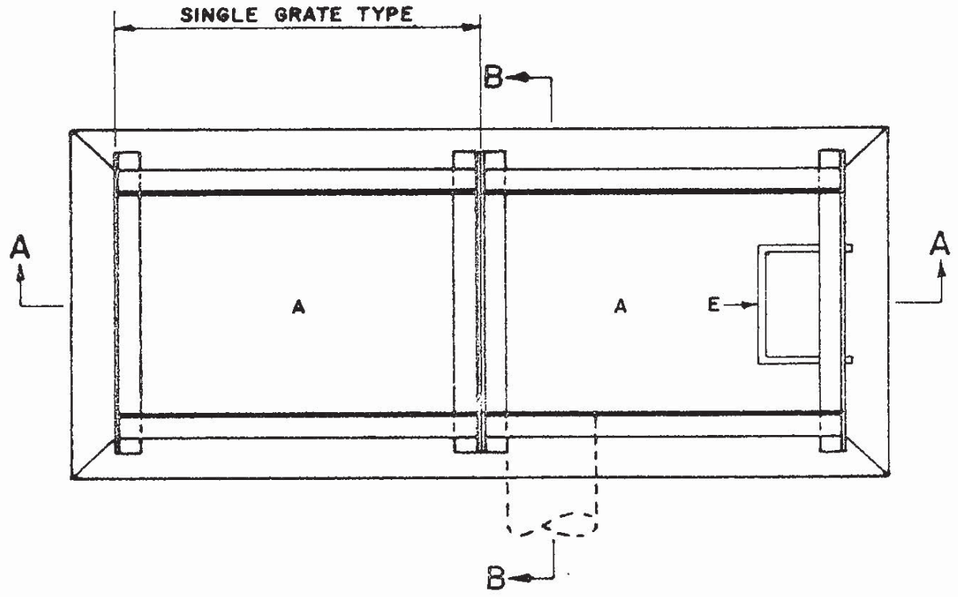
CITY OF ALBUQUERQUE

DRAINAGE

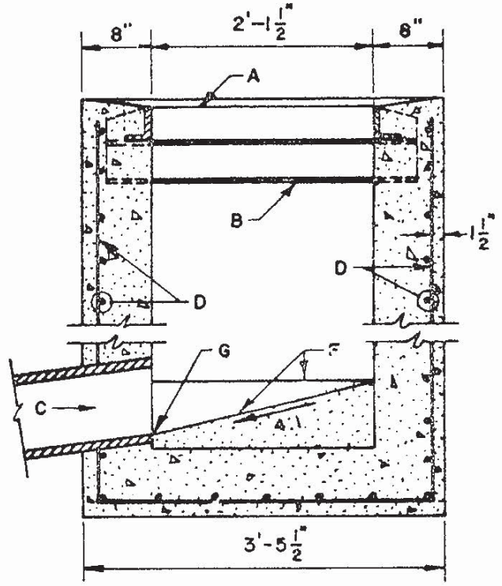
STORM INLET DOUBLE "C"

DWG. 2205

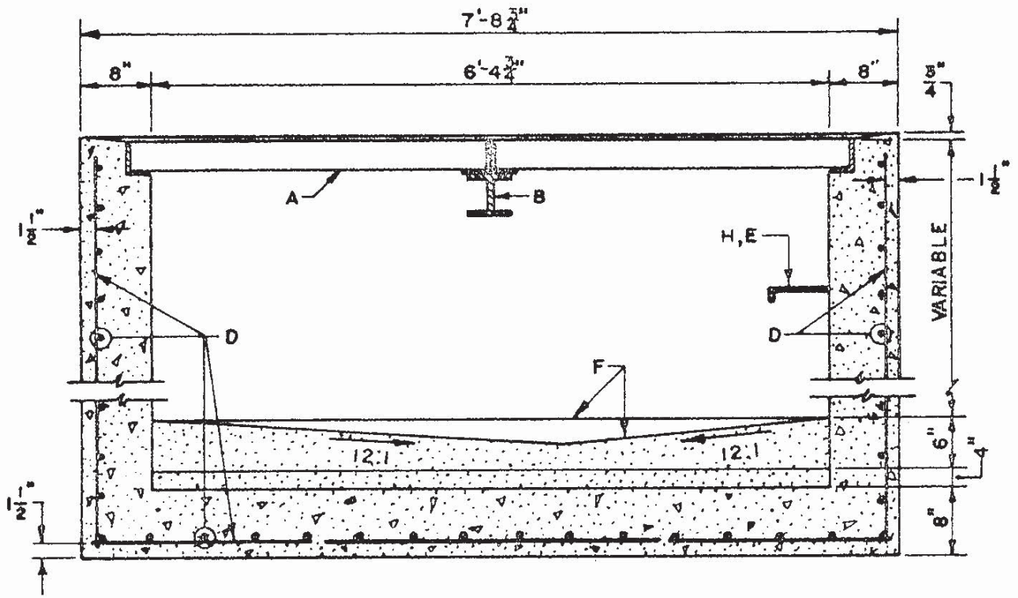
AUG. 1986



PLAN



SECTION B-B



SECTION A-A

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 REQUIREMENT.
4. FOR FRAME & GRATING, 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

REVISIONS
12-21-92

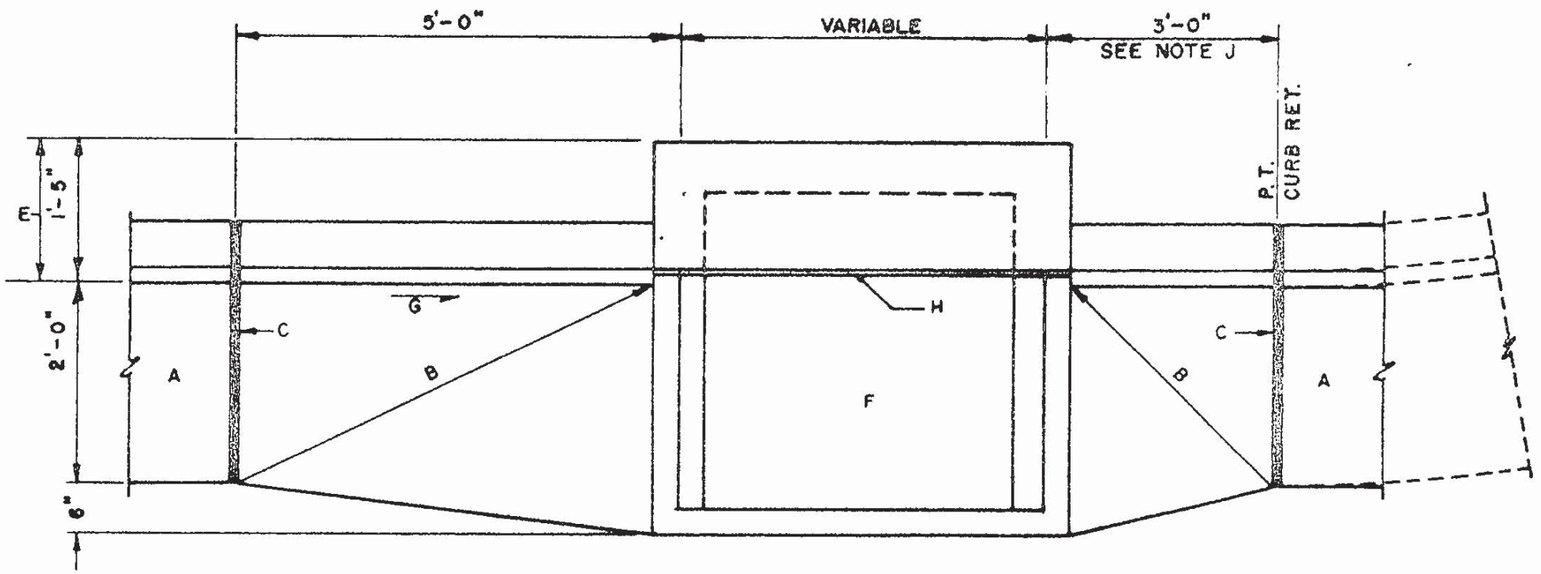
CITY OF ALBUQUERQUE

DRAINAGE

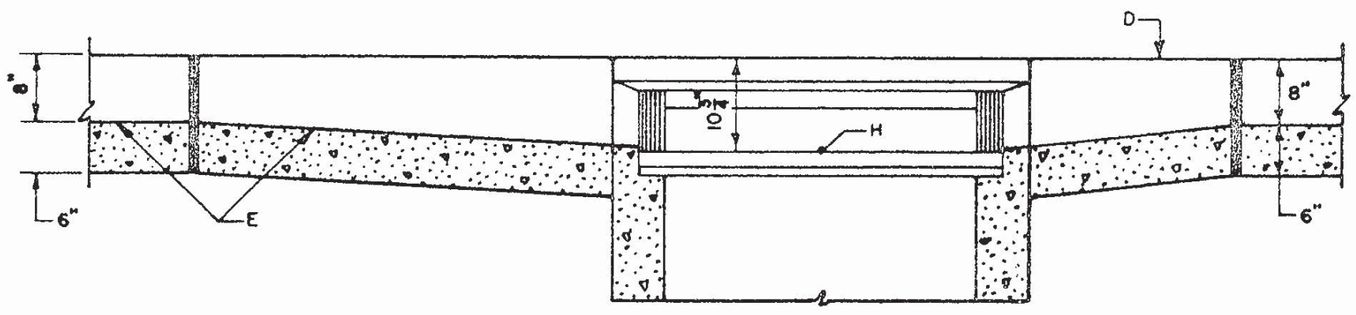
STORM INLET DOUBLE "D"

DWG. 2206

AUG. 1986



PLAN



LONGITUDINAL SECTION
ALONG FLOWLINE

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.

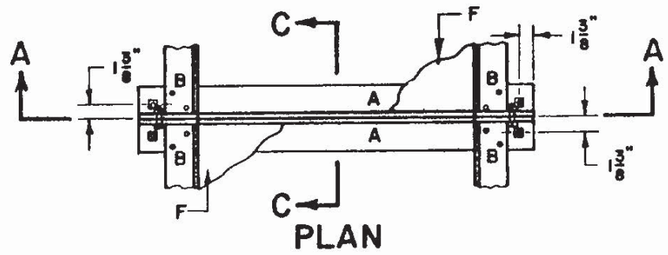
CITY OF ALBUQUERQUE

REVISIONS

DRAINAGE
STORM INLET
GUTTER TRANSITION

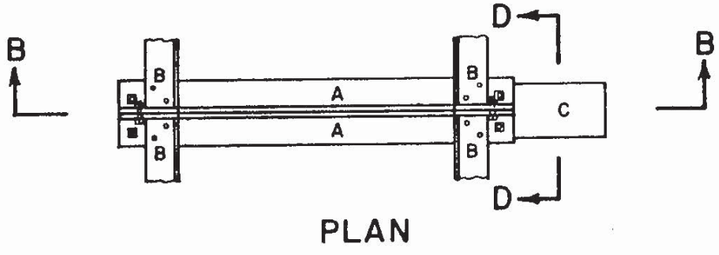
DWG. 2207

AUG. 1986



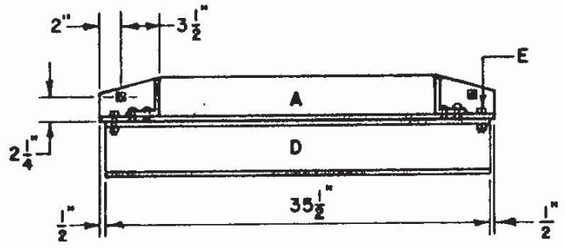
PLAN

ASSEMBLY FOR DOUBLE "D" CATCH BASIN

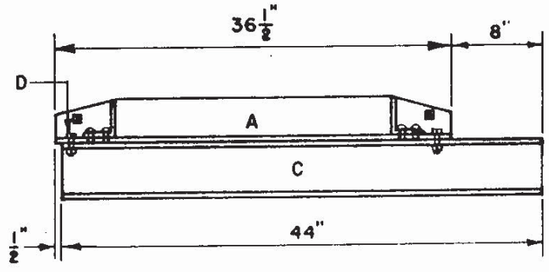


PLAN

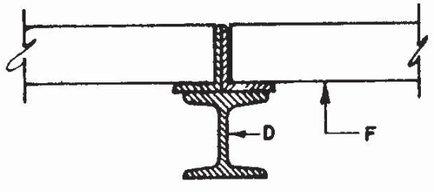
ASSEMBLY FOR DOUBLE "C" CATCH BASIN



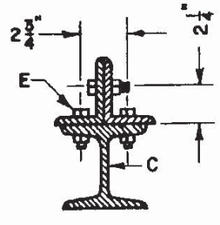
SECTION A A



SECTION B-B



SECTION C-C



SECTION D-D

GENERAL NOTES:

1. ALL BOLTS USED IN CENTER SUPPORT ASSEMBLY SHALL BE $\frac{1}{2}$".
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 WF 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 GRATE CATCH BASIN.

CONSTRUCTION NOTES:

A. 4" X 3" X $\frac{1}{2}$" X 36$\frac{1}{2}$" ∠.

B. 3$\frac{1}{2}$" X 3" X $\frac{3}{8}$" X 40$\frac{3}{8}$" ∠.

C. 5 X 5 WF 18.5 FLANGE BEAM, FOR CATCH BASIN TYPE DOUBLE "C."

D. 5 X 5 WF 18.5 FLANGE BEAM, FOR CATCH BASIN TYPE DOUBLE "D."

E. $\frac{1}{2}$" BOLTS, WITH NUTS TO SECURE ANGLE TO BEAM.

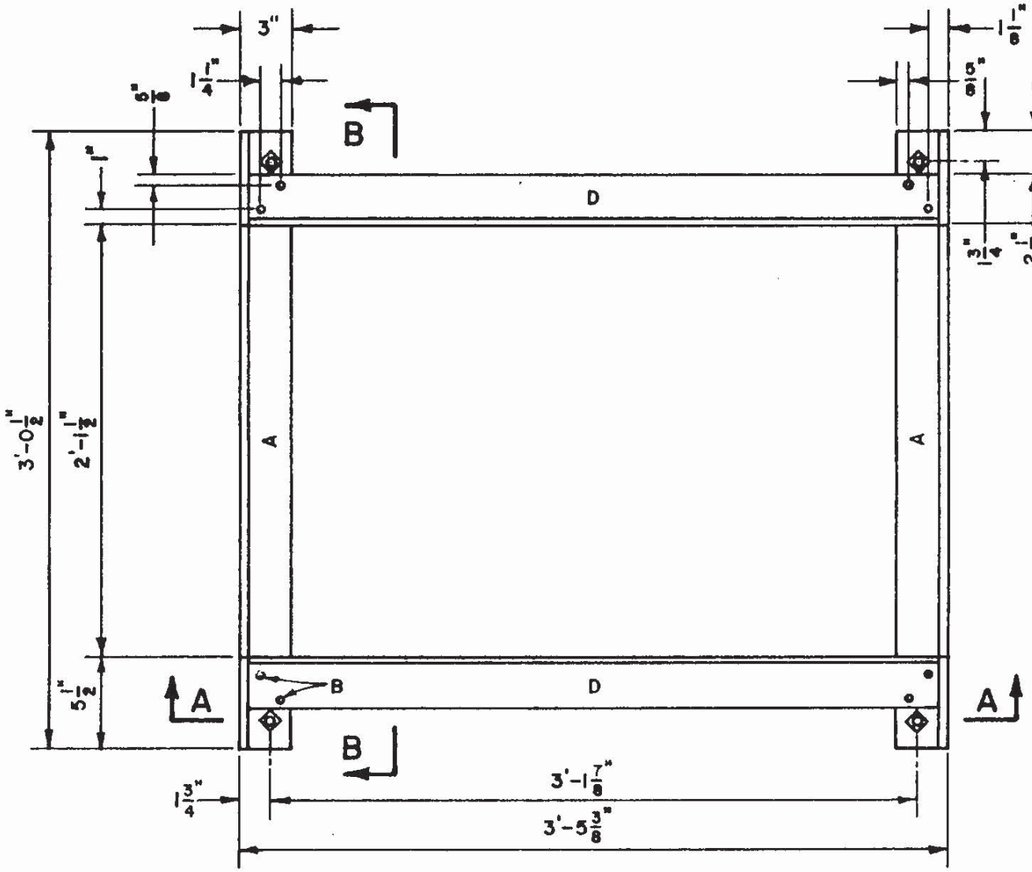
F. FOR FRAME & GRATE SEE DWGS. 2216, 2220, 2221.

CITY OF ALBUQUERQUE

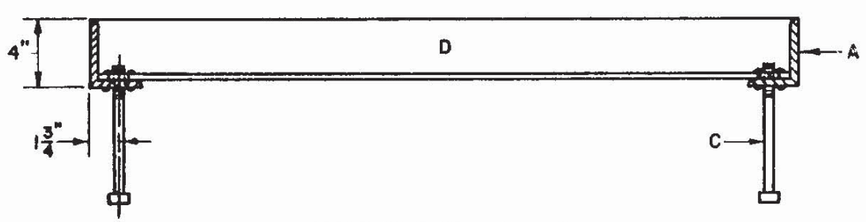
REVISIONS

DRAINAGE
STORM INLET
CENTER SUPPORT ASSEMBLY
DWG. 2215

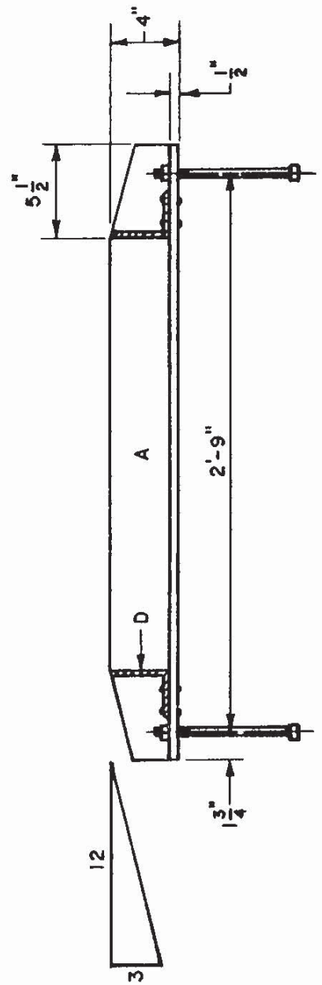
AUG. 1986



PLAN



SECTION A-A



SECTION B-B

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 36.
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" ∠.

B. 2-3/8" RIVETS AT EACH CORNER, SEE GENERAL NOTE NO. 5.

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 3/8" x 3'-4-3/8" ∠.

CITY OF ALBUQUERQUE

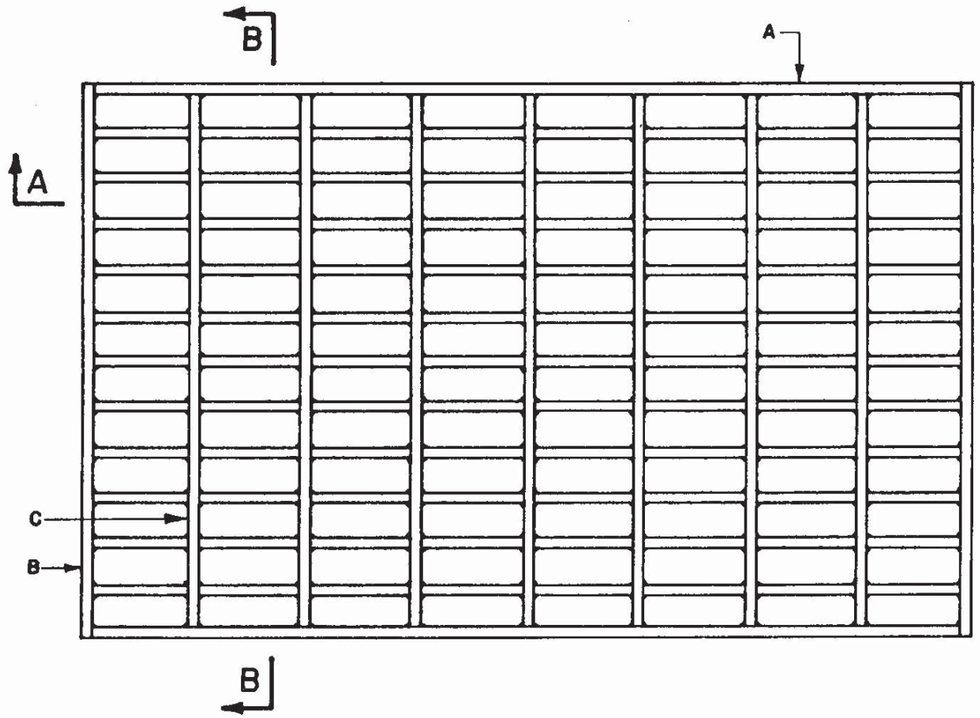
REVISIONS

DRAINAGE

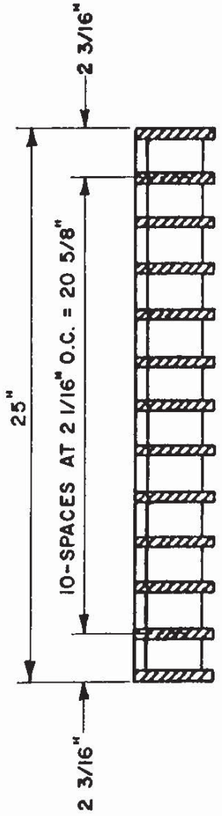
STORM INLET FRAME

DWG. 2216

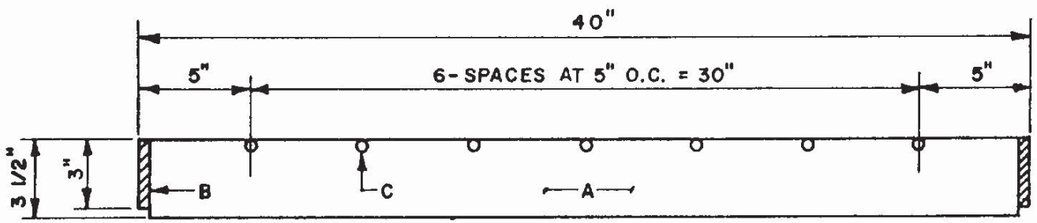
AUG. 1986



PLAN



SECTION B-B



SECTION A-A

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" DIA. X 24.

CITY OF ALBUQUERQUE

REVISIONS

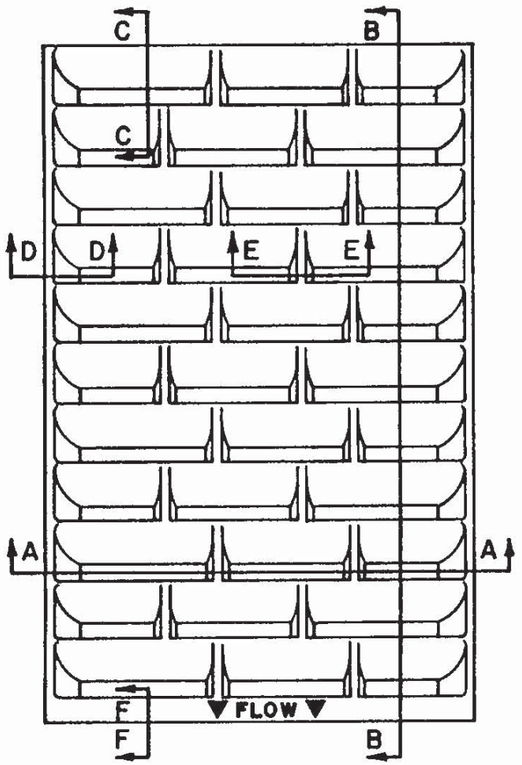
DRAINAGE
STORM INLET
ALBUQUERQUE GRATE

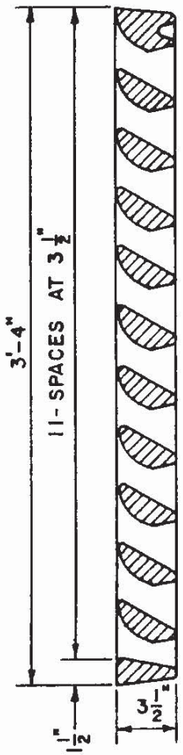
DWG. 2220

AUG. 1986

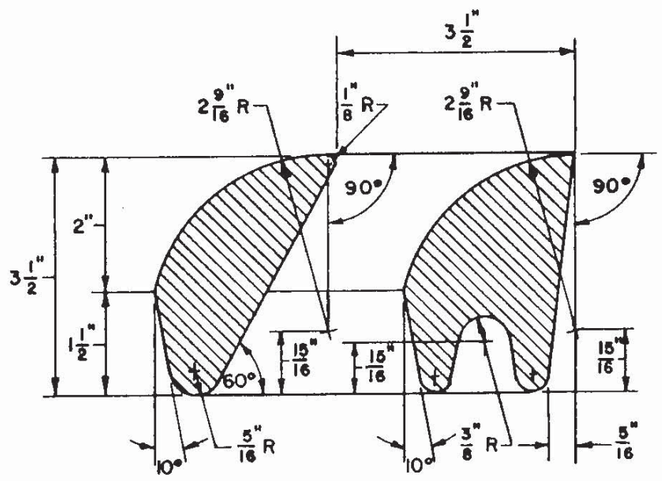
GENERAL NOTES:

1. GRATE SHALL BE CONSTRUCTED OF CAST GRAY IRON PER ASTM A 48, CLASS 35 B.
2. ALL DIMENSIONS ARE FINISH DIMENSIONS.

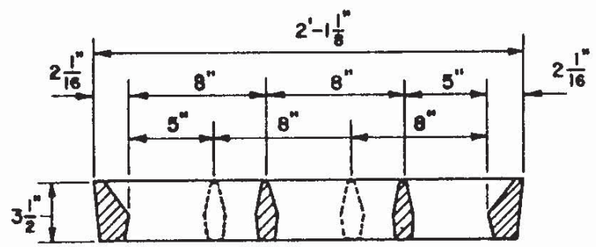




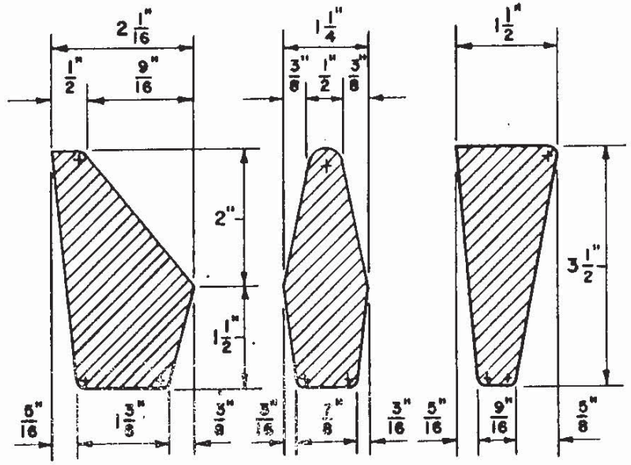
SECT. B-B



SECT. C-C



SECT. A-A



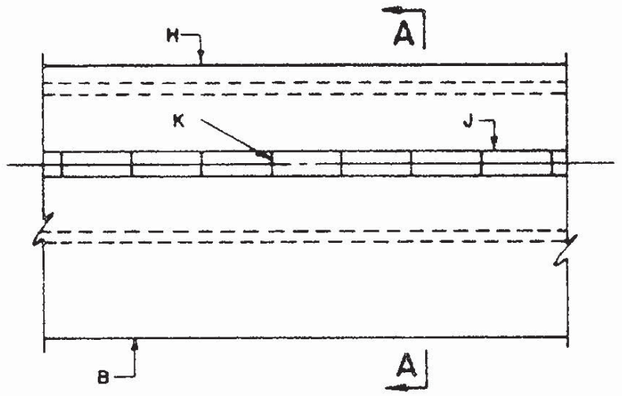
SECT. D-D SECT. E-E SECT. F-F

CITY OF ALBUQUERQUE

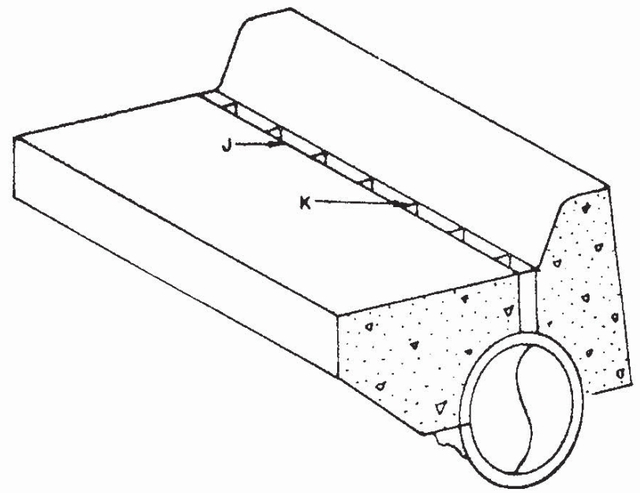
REVISIONS

DRAINAGE
STORM INLET
ALTERNATE GRATE

DWG. 2221 AUG. 1986



PLAN
12", 15" OR 18" SLOTTED DRAINS



ISOMETRIC

GENERAL NOTES:

1. ALL FITTINGS TO BE COMPATIBLE WITH C.M.P.
2. SPECIAL END CAPS AS (MANUFACTURED BY ARMCO CORP. 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 ARMCO CORP. OR APPROVED EQUAL.

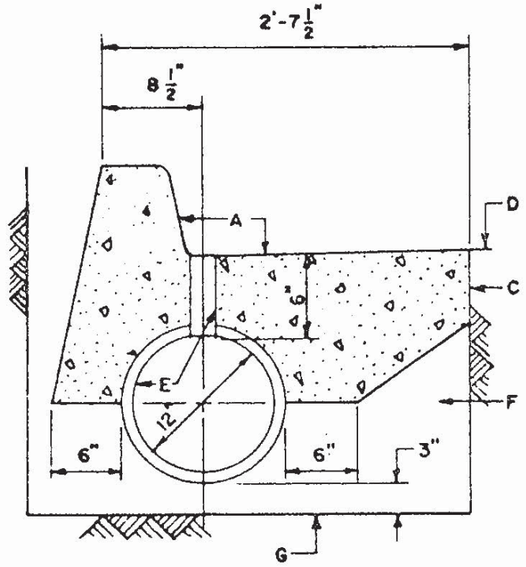
F. SUB BASE MATERIAL COMPACTED TO 95% MODIFIED PROCTOR.

G. UNDISTURBED EARTH.

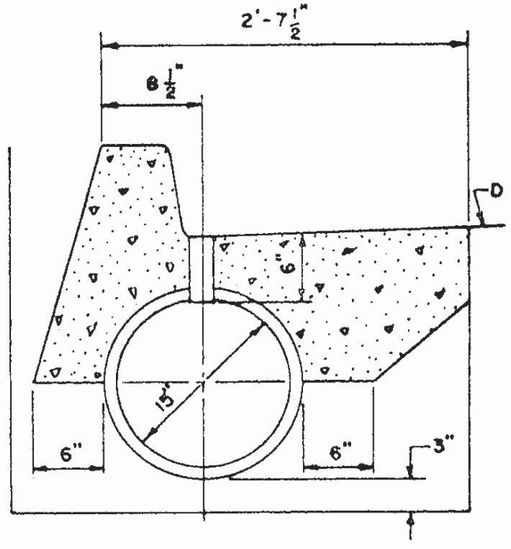
H. BACK OF CURB.

J. GRATE AT FLOW LINE.

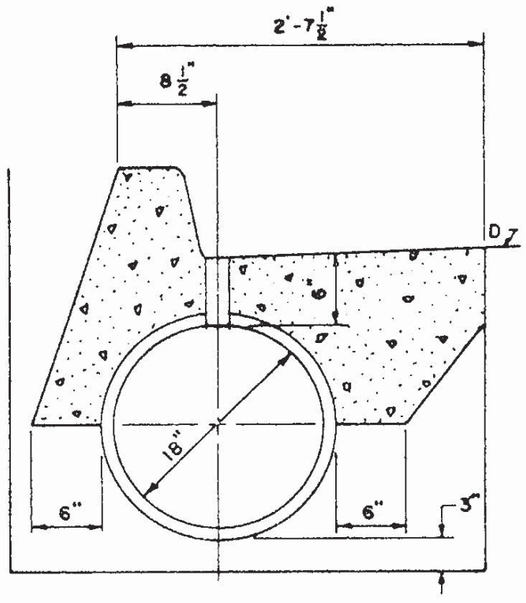
K. SOLID WEB SPACERS AT 6" O.C.



12" PIPE



15" PIPE



18" PIPE

SECTIONS A-A

CITY OF ALBUQUERQUE

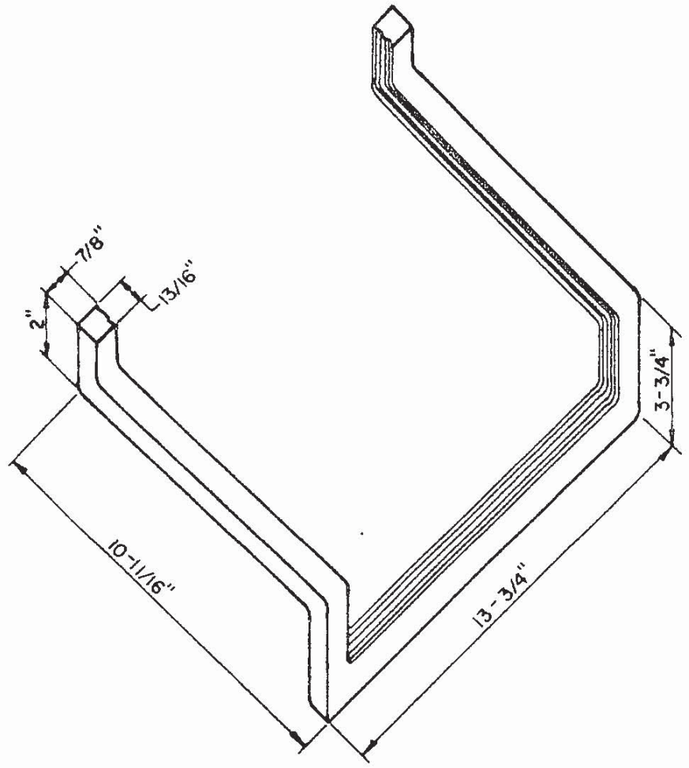
REVISIONS

DRAINAGE

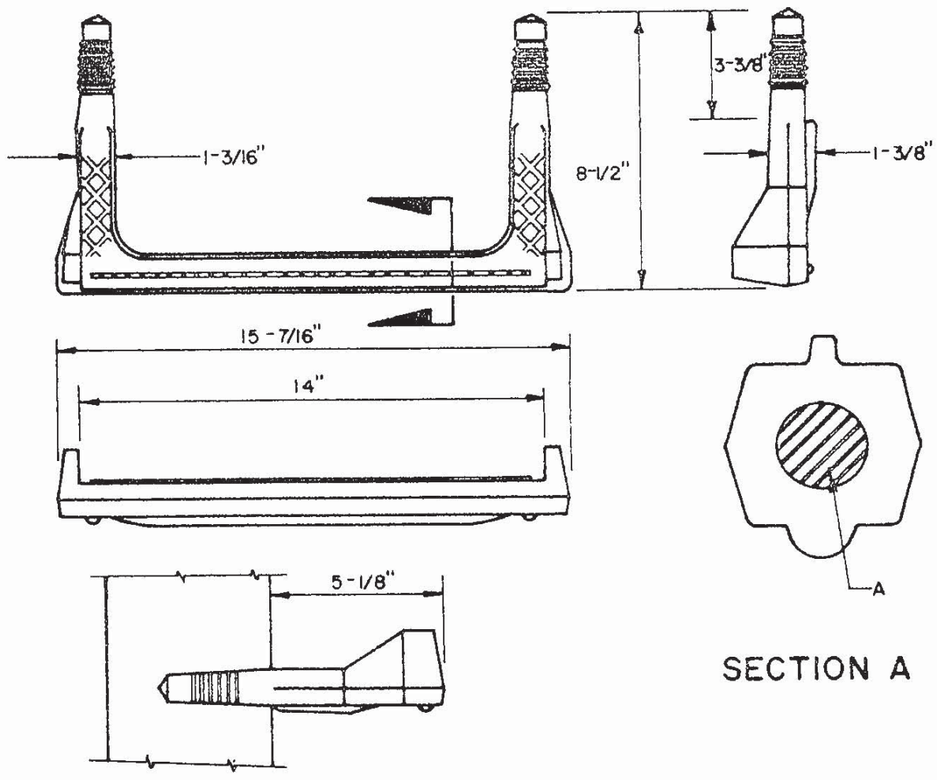
SLOTTED DRAIN

DWG. 2225

AUG 1966



ALUMINUM STEP DETAIL



SECTION A

ALTERNATE STEP DETAIL

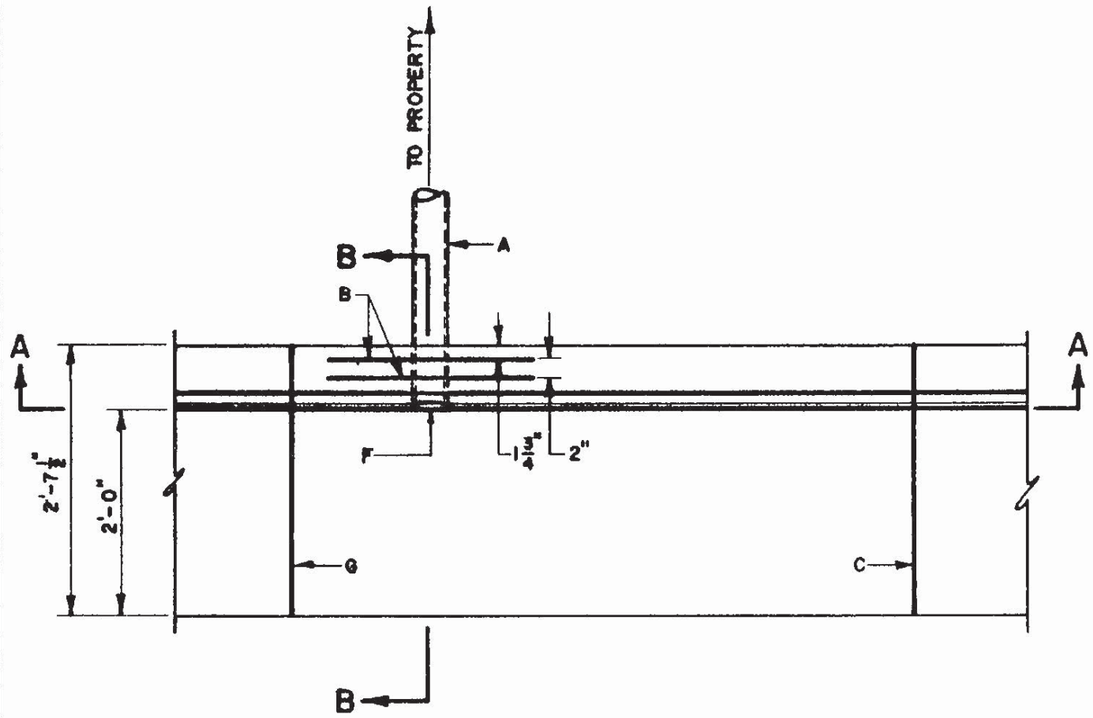
GENERAL NOTES:

1. ALUMINUM STEP, ALCOA NO 12653A OR APPROVED EQUAL.
2. ALTERNATE STEP SHALL BE POLYROPOLENE - MOLDED OVER 1/2" STEEL REINFORCEMENT MODEL NO. PS-2-PFS, 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 +/- 18" FROM TOP OF GRATE 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. 2261. 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 NOTES ON THE PLANS.

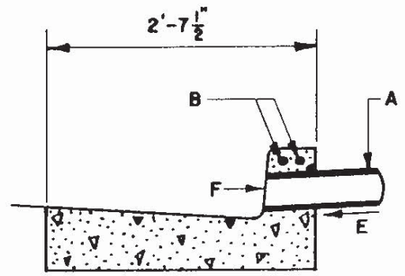
CONSTRUCTION NOTES:

A. 1/2" GRADE 60 STEEL REINFORCEMENT.

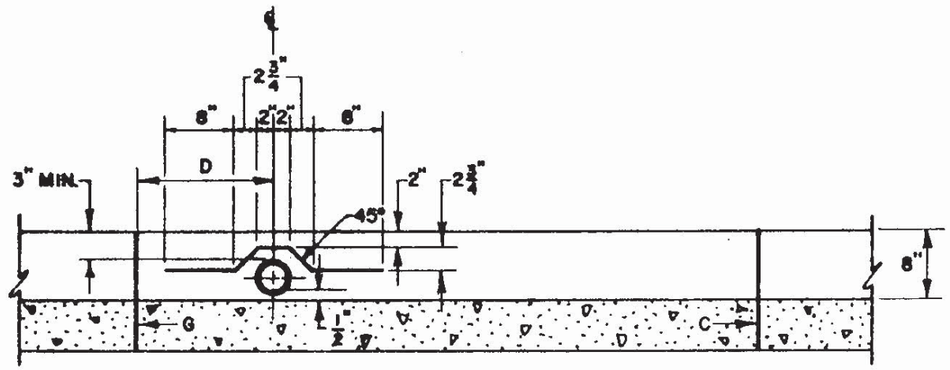
REVISIONS	CITY OF ALBUQUERQUE
8/20/92	DRAINAGE STEP DETAILS
	DWG. 2229 — AUGUST 1986



PLAN



SECTION B-B



SECTION A-A

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 ℄ OF DRAIN TO NEAREST JOINT, VARIABLE WITH 16" MIN.
E. SLOPE ¼" 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.

CITY OF ALBUQUERQUE

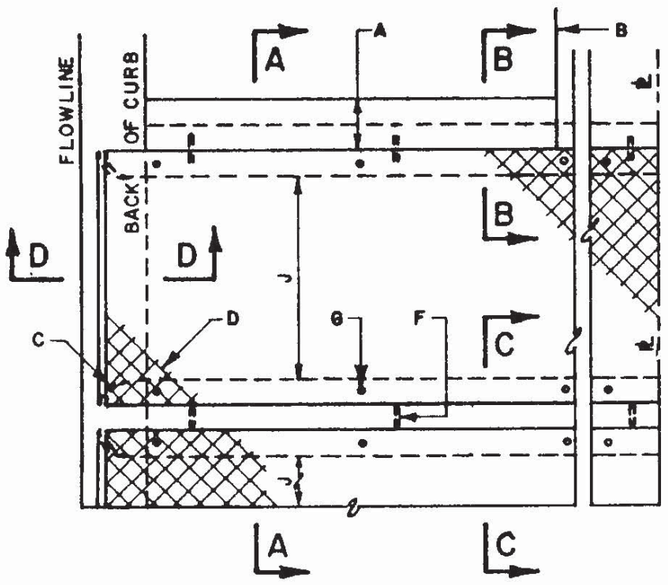
REVISIONS

DRAINAGE

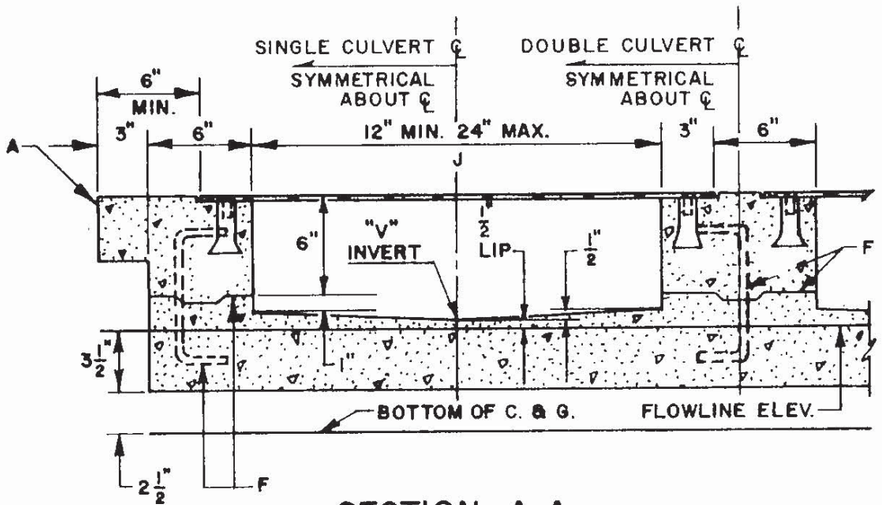
DRAIN LINE THROUGH CURB

DWG. 2235

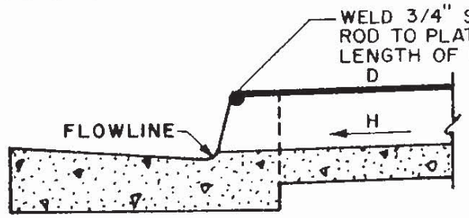
AUG. 1986



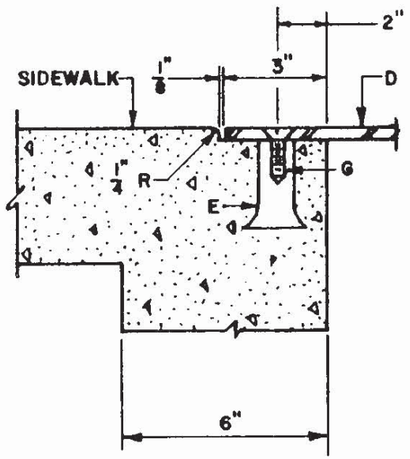
PLAN
SINGLE AND OR MULTIPLE CULVERT



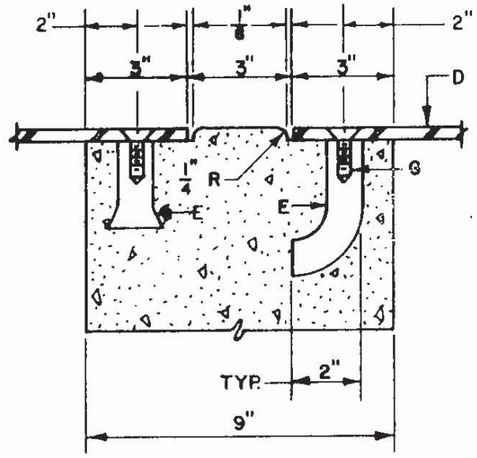
SECTION A-A



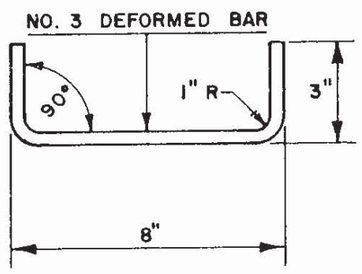
SECTION D-D



SECTION B-B



SECTION C-C



DOWEL DETAIL

GENERAL NOTES:

1. PLACING OF DRAIN THRU EXIST. SIDEWALK AND CURB & GUTTER REQUIRES THAT ENTIRE SIDEWALK AND C & G STONES BE REMOVED AND REPLACED AS DETAILED HEREIN.
2. BOTTOM SLAB OF CULVERT SHALL BE POURED MONOLITHICALLY WITH NEW GUTTER.
3. THE INVERT SHALL BE TROWELED TO PRODUCE A HARD POLISHED SURFACE OF MAX DENSITY AND SMOOTHNESS. INVERT SHALL BE V-SHAPED TO WITHIN 3" OF OUTLET, THEN WARPED TO PARALLEL FLOWLINE AT OUTLET, UNLESS OTHERWISE SHOWN.
4. ALL EXPOSED CONC. 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 ROD ANCHORS ARE USED, DRILL & TAP FOR F.H. 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 FRAMING MEMBERS AND PAINT W/ ONE SHOP COAT RED OXIDE AND TWO FINISH COATS ALUMINUM PAINT (AASHTO M 69).
8. THE CITY WILL NOT ASSUME RESPONSIBILITY FOR MAINTENANCE OF ANY SIDEWALK CULVERT INSTALLED BY OR FOR PRIVATE PROPERTY OWNERS.

CONSTRUCTION NOTES:

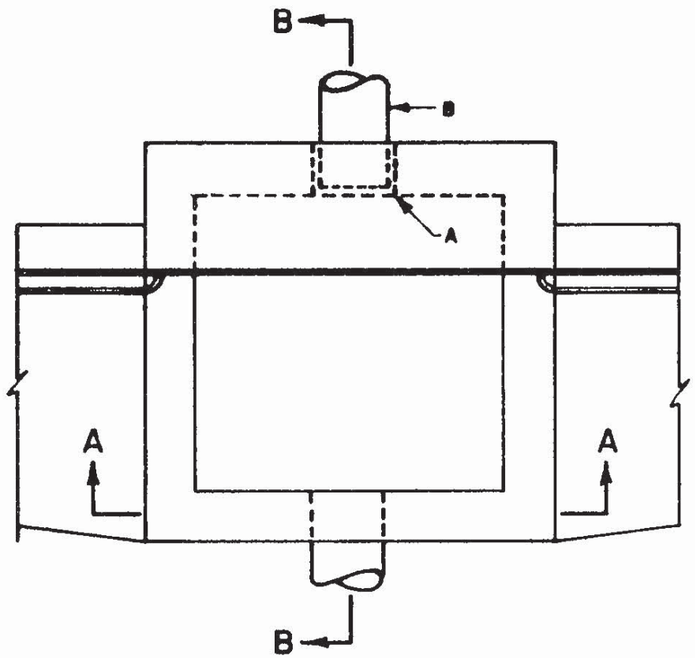
A. MATCH NEAREST CONTROL JOINT, INSTALL 1/2" EXPANSION JOINT.
B. EDGE OF SIDEWALK OR SETBACK (VARIABLE).
C. 3" RADIUS (TYPICAL).
D. 3/8" CHECKERED STEEL PLATE (PAINT PER NOTE 7, ABOVE).
E. FOR SECURING PLATE USE 1"X 5" S.S. ROD ANCHOR, "RED HEAD MULTI-SET II SRM-38 ANCHOR" OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S INSTRUCTIONS AT MAX. 24" O.C., A MINIMUM OF 2 PER SIDE AND ONE WITHIN 6" OF EACH END.
F. CONSTRUCTION JOINT IS OPTIONAL. IF USED, SPACE DOWELS AT 18" O.C. MAX., 1 1/2" MINIMUM FROM FACE OF CONCRETE.
G. 3/8" - 16 x 1 1/4" COUNTERSUNK, F.H., STAINLESS STEEL, MACHINE SCREW.
H. SLOPE 1/4" PER FT. MIN.
J. DRAIN WIDTH PER PLAN (12" MIN., 24" MAX).

CITY OF ALBUQUERQUE

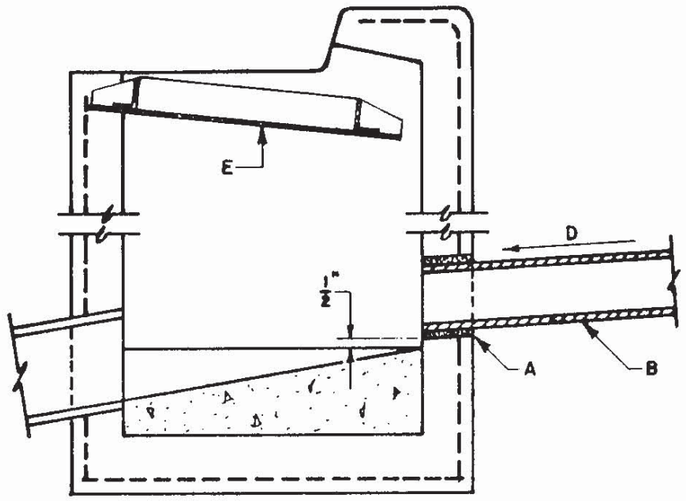
REVISIONS

DRAINAGE
SIDEWALK CULVERT
WITH STEEL PLATE TOP

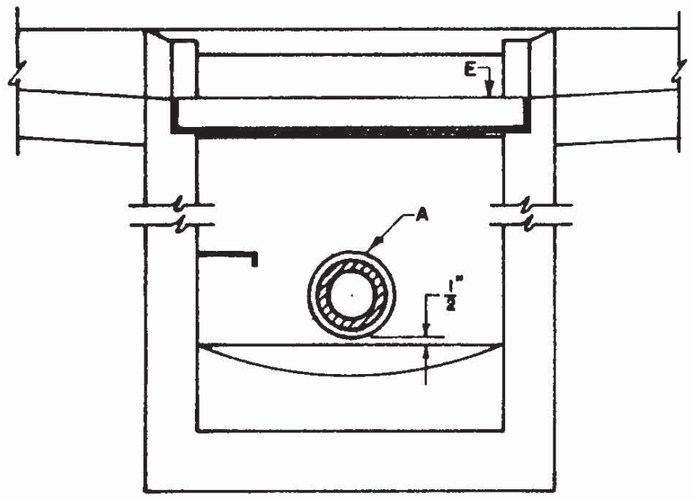
DWG. 2236 AUG. 1986



PLAN



SECTION B-B



SECTION A-A

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. CONC. OR DUCTILE IRON PIPE. DRAIN SIZE TO BE AT LEAST ONE SIZE SMALLER THAN OUTLET PIPE WITH A MAX. SIZE OF 12".

C. EXIST. CONC. FILL.

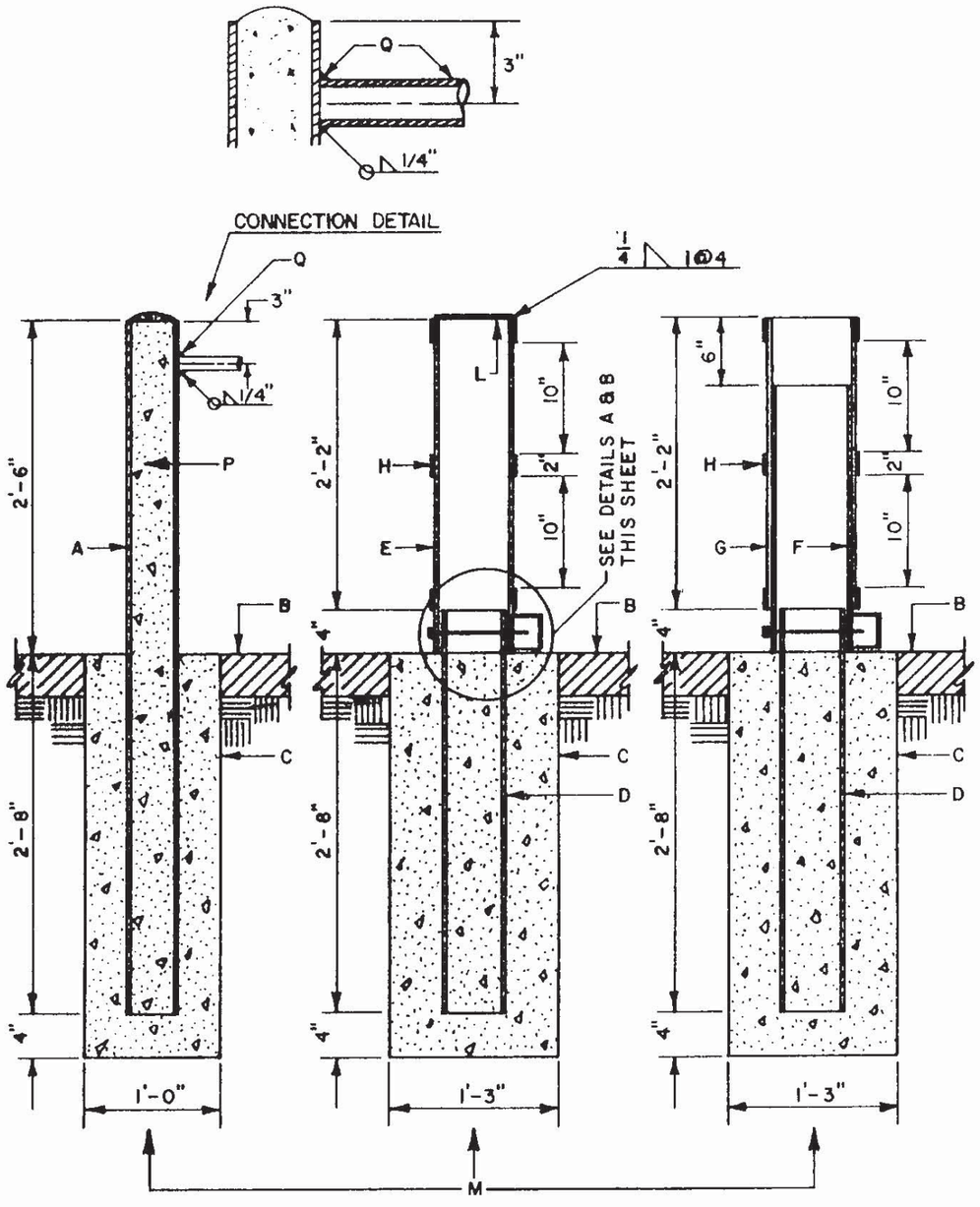
D. SLOPE .02 FT.PER FT.MIN.WITHIN R.O.W.

E. FRAME & GRATE.

CITY OF ALBUQUERQUE

REVISIONS

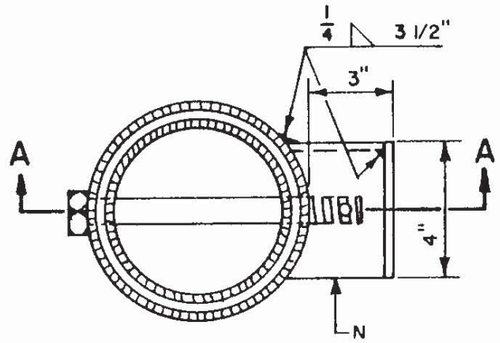
DRAINAGE
DRAIN LINE CONNECTION
TO EXIST. STORM INLET
DWG. 2237 AUG. 1986.



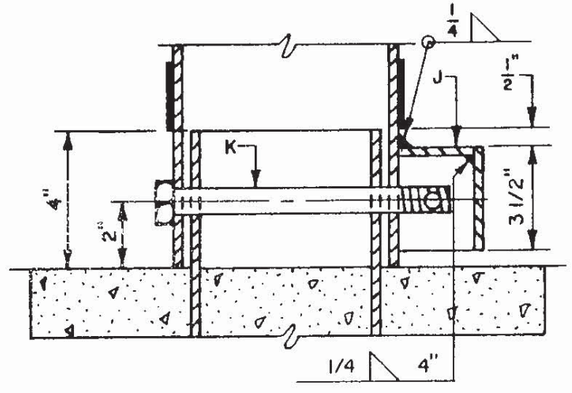
STATIONARY POST

REMOVABLE POST

REMOVABLE POST WITH RUBBER SLEEVE



DETAIL A PLAN



DETAIL B SECTION A-A

GENERAL NOTES:

1. FOR SLEEVE, USE GATES NO. 37 W WATER HOSE, DISCHARGE HOSE OR EQUIVALENT. I.D. 6.625" 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, 5'-2" TO BE FILLED W/CONC. PAINT PIPE BRIGHT YELLOW ABOVE FINISHED GRADE.

B. PAVEMENT OR FINISHED GRADE.

C. CONC. COLLAR, 3000 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'-8" 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.

J. 1/4" THICK STEEL SAFETY GUARD BOX. OPEN ON ONE SIDE & BOTTOM. WELD ALL SEAMS.

K. 3/4" X 8" GALV. HEX. BOLT W/A 3/8" DIA. HOLE FOR PADLOCK. (PADLOCK FURNISHED BY CITY).

L. 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 ENGINEERING 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 1-1/4" NOM., SCH. 40 PIPE BETWEEN BOLLARDS.

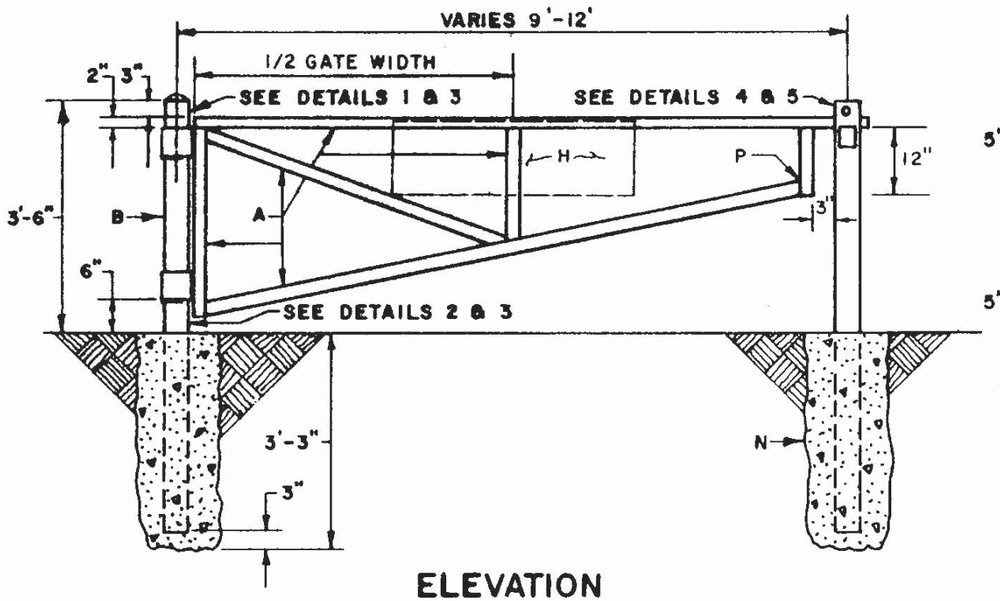
CITY OF ALBUQUERQUE

REVISIONS

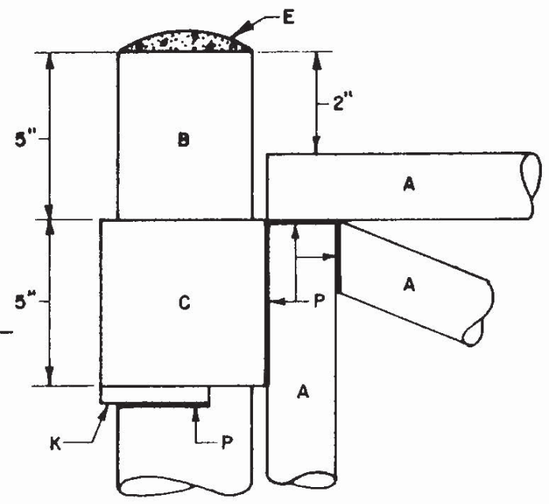
DRAINAGE STATIONARY & REMOVABLE POST DETAILS

DWG. 2250

AUG. 1986



ELEVATION



DETAIL 1

GENERAL NOTES:

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

B. 4" DIA. BLACK STEEL PIPE, MIN. 10.79 LBS./FT., CONC. FILLED, PAINT W/2 COATS ALUM. PAINT.

C. 5" DIA. BLACK STEEL PIPE, MIN. 14.62 LBS./FT., PAINT W/2 COATS ALUM. PAINT.

D. $\frac{1}{4}$" BUTT WELD ALL AROUND.

E. CONCRETE ROUNDED AT TOP OF POST.

F. $\frac{3}{8}$" X $4\frac{1}{4}$" DIA. STEEL PLATE.

G. $\frac{3}{8}$" 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. $\frac{1}{2}$" SQ. STEEL BAR FOR HINGE SUPPORT. POSITION BAR TO ALLOW UNRESTRICTED GATE ROTATION THROUGH ENTIRE SWING OF GATE OPENING.

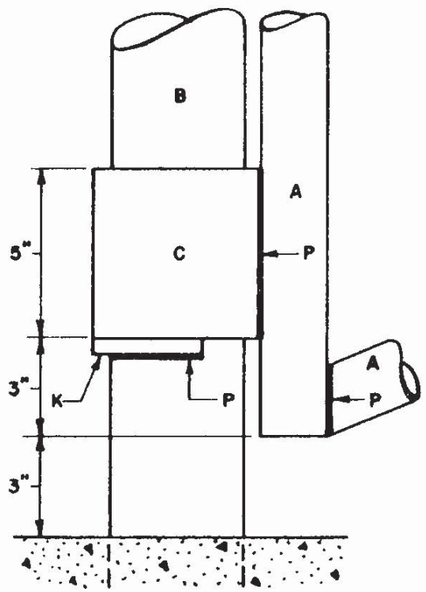
L. 1" DIA. FINGER HOLE.

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

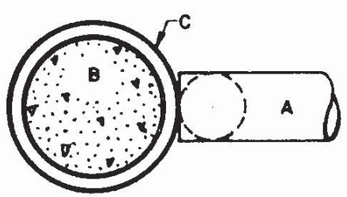
N. 3,000 PSI AIR ENTRAINED FLY ASH CONC.

P. WELD ALL 2" PIPE & FIXTURE CONNECTIONS WITH $\frac{3}{8}$" FILLET ALL AROUND.

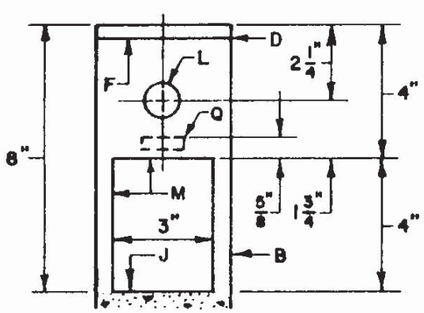
Q. $1\frac{1}{2}$" X $\frac{5}{8}$" SLOT FOR STEEL PLATE FLANGE.



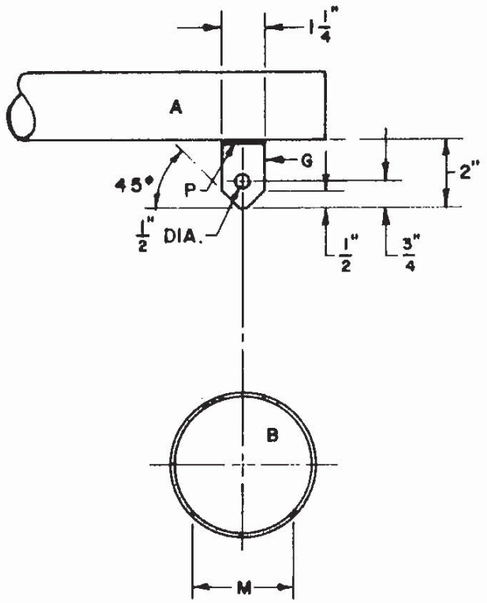
DETAIL 2



DETAIL 3



DETAIL 4



DETAIL 5

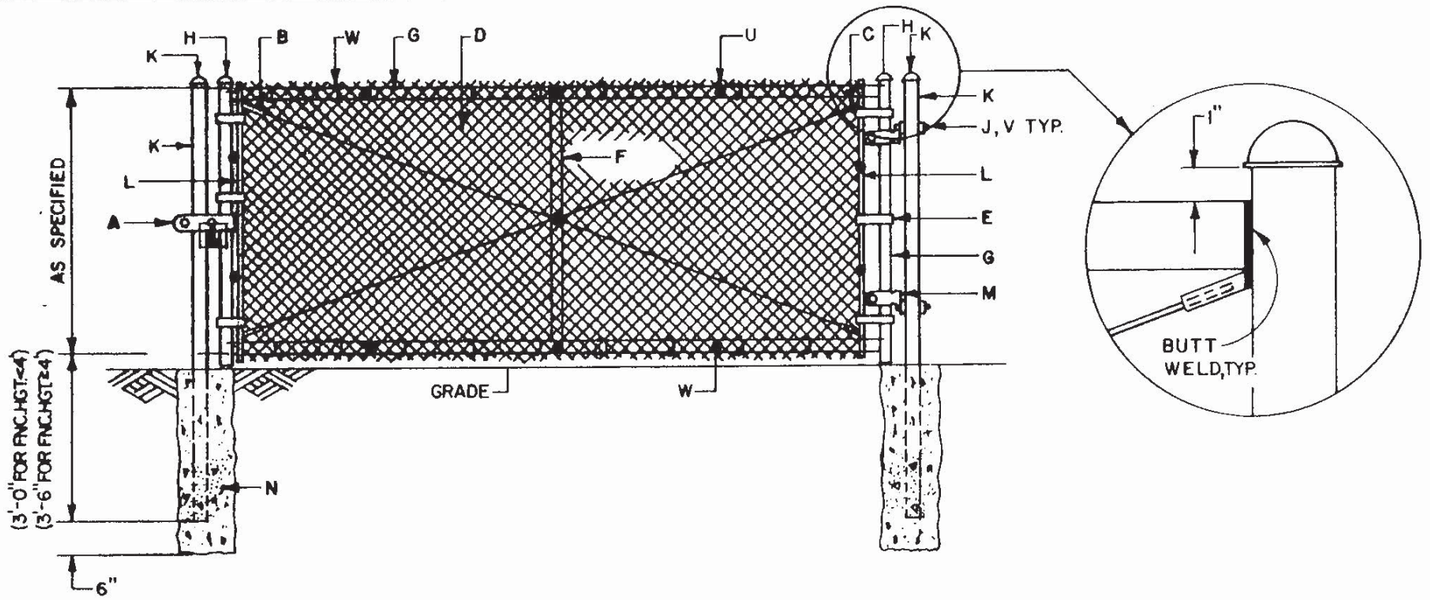
CITY OF ALBUQUERQUE

REVISIONS

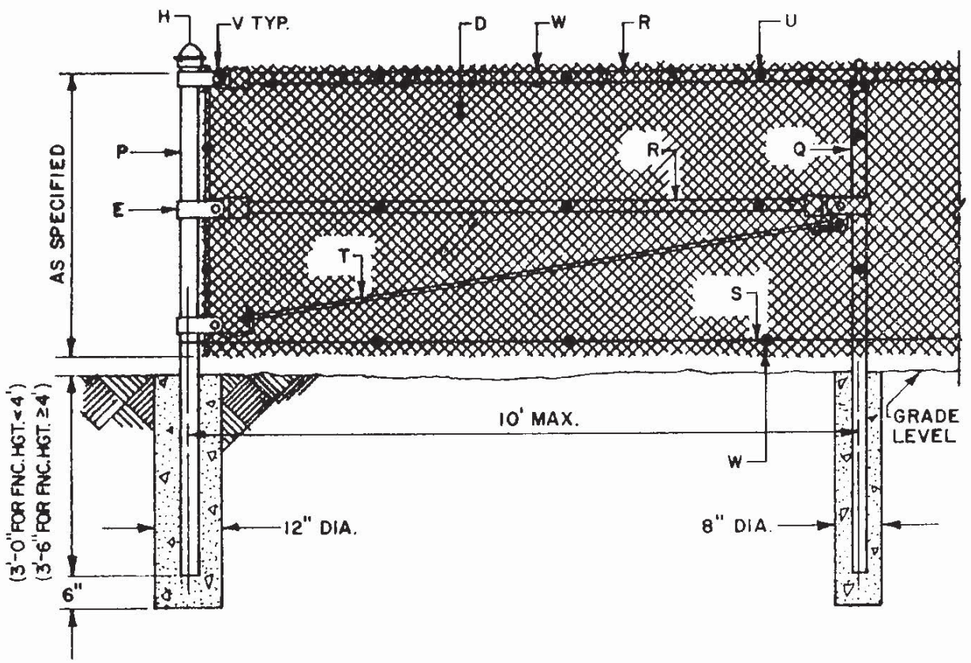
DRAINAGE

PIPE GATE DETAIL

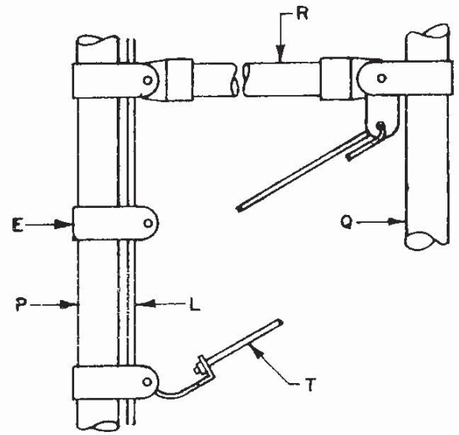
DWG. 2251 AUG. 1986



STANDARD CHAIN LINK GATE



CHAIN LINK FENCE



BRACE DETAIL

GENERAL NOTES:

1. GATE TO BE USED AS SPECIFIED ON CONSTRUCTION DRAWINGS FOR DRAINAGE EASEMENT BARRICADE, SEE DWG. 2251 OR DWG. 2253.
2. SINGLE LEAF GATES WILL BE USED ON OPENINGS OF 12' OR LESS. FOR MORE THAN 12', DOUBLE LEAF GATES SHALL BE USED, WITH A CENTER LOCK POST INSERTED IN A PIPE SLEEVE IN CENTER OF OPENING.
3. DIMENSIONS ABOVE OR BELOW GRADE LEVEL WILL BE ON CONSTRUCTION DRAWINGS. IF NONE ARE NOTED, MESH IS FLUSH 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 SHIELD & PADLOCK (PADLOCK TO BE FURNISHED BY THE CITY).

B. 2-3/8" TRUSS RODS, WELDED AT CORNERS.

C. 2-3/8" THREADED TRUSS RODS AND BRACKET ATTACHMENT.

D. 2" NO. 9 GAUGE CHAIN LINK GALV. 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.

J. 4" J-BOLT, THREADED.

K. 3 1/2" GATE POST (4" O.D.) WITH WELDED STEEL CAP.

L. TENSION BAR 1/4" X 3/4".

M. GATE CLAMP.

N. 12" DIA. HOLES, FILLED W/PORTLAND CEMENT CONC.

P. CORNER POST 2 1/2" DIA. (2.875 O.D.).

Q. LINE POST 2" DIA. (2.375 O.D.).

R. TOP AND BRACE RAILS 1 1/4" DIA. (1.660 O.D.).

S. WIRE REINFORCEMENT, 9 GAUGE, INSTALL 3" ABOVE BOTTOM OF FABRIC.

T. TRUSS ROD 3/8" DIA.

U. FABRIC SHALL BE TACK WELDED TWO PLACES TO EACH TENSION BAR AND THREE PLACES TO ALL TOP AND BRACE RAILS BETWEEN POSTS.

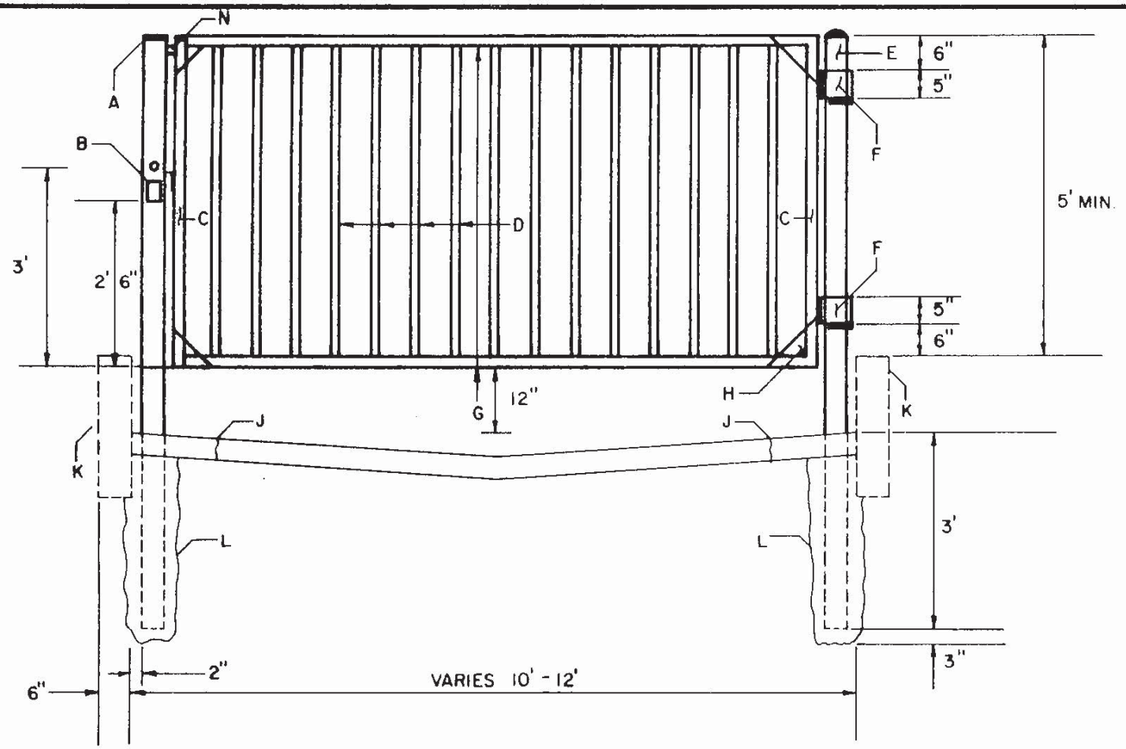
V. ALL NUTS, BOLTS, AND OTHER CONNECTIONS SHALL BE TACK WELDED.

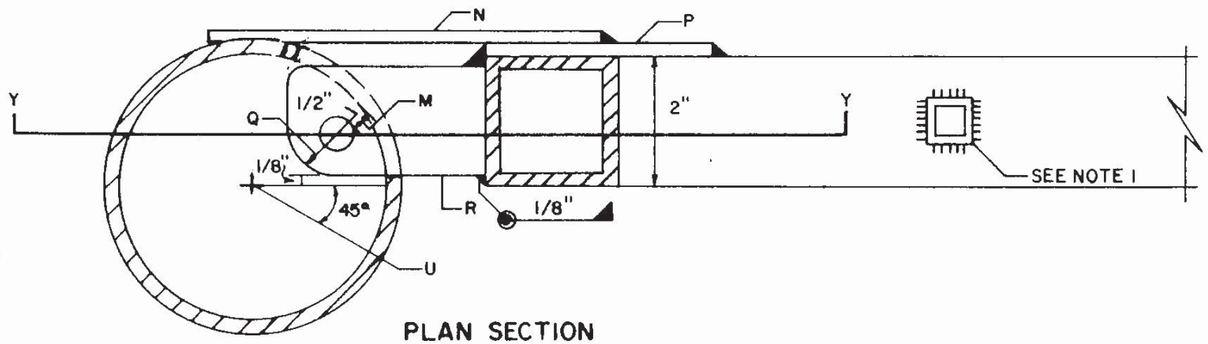
W. WIRE TIES, 9 GA. GALV. STEEL AT 18" O.C.

CITY OF ALBUQUERQUE

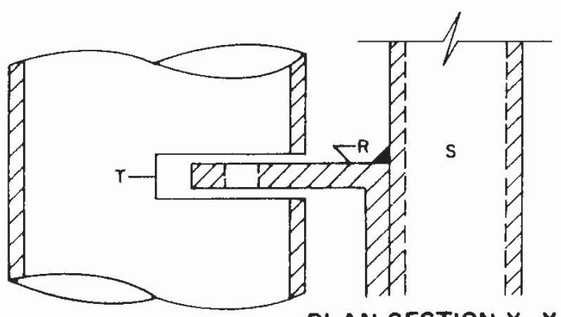
REVISIONS

DRAINAGE
STANDARD CHAIN LINK GATE AND FENCE DETAILS
DWG. 2252 AUG. 1986





PLAN SECTION



PLAN SECTION Y - Y

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. IF NO FINISH SPEC'D. THEN PAINT WITH ONE SHOP 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 & 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. FILLED.

F. SLEEVE HINGES PER. STD. DETAIL DWG. 2251.

G. 2"x2" □ STEEL TUBING x 1/8" WALL THICKNESS FOR HORIZONTAL.

H. 6" x 6" x 1/8" GUSSETT PLATE. ◣, 4 PLACES.

J. SAWCUT 1" MIN.

K. CONCRETE CHANNEL PER STD. DETAIL DWG.

L. 16" 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.

P. 1/8" STEEL GUSSET PLATE.

Q. 3/4" RADIUS.

R. 3" x 3" x 3/8" ANGLE - 1 - 5/8" LONG.

S. 2" □ TUBING.

T. 5/8" SLOT, ± 75° OF POST CIRCUMFERANCE.

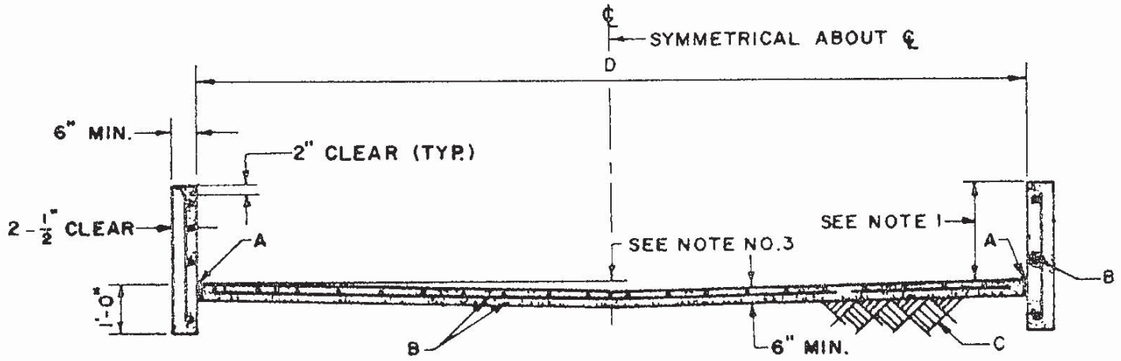
U. ℄ OF 1" Ø FINGER HOLE, ℄ 1" ABOVE LOCK SLOT & ℄ OF 3" WIDE x 4" HIGH □ ACCESS HOLE; LOCK POCKET TOP OF HOLE 1" BELOW LOCK SLOT, T.

CITY OF ALBUQUERQUE

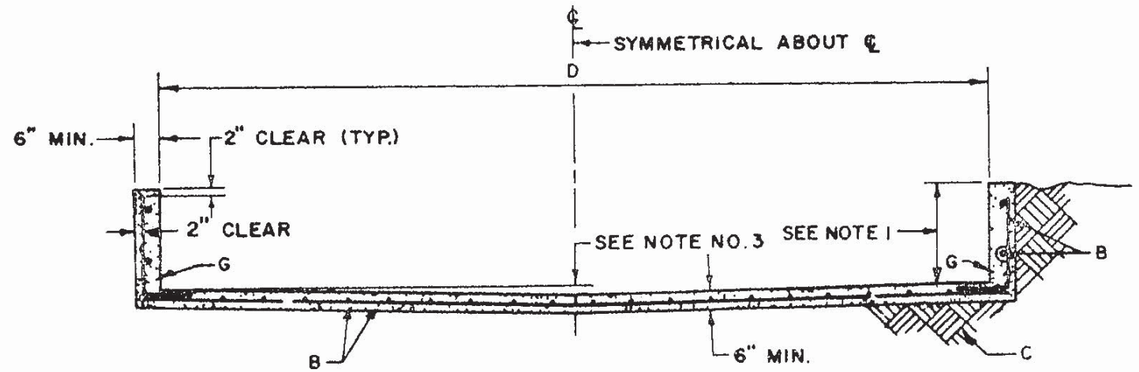
REVISIONS

DRAINAGE
SQUARE TUBE GATE DETAIL

DWG. 2253 AUG. 1986



TYPE A



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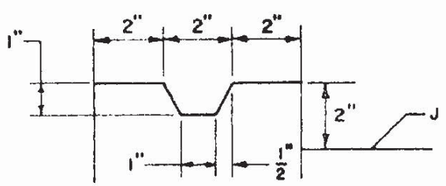
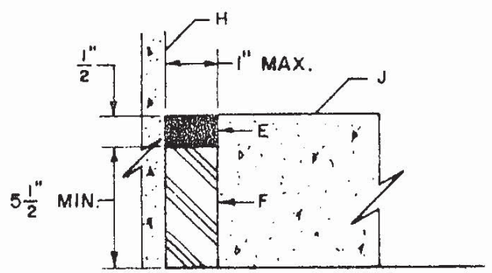


KEYWAY DETAIL



EXPANSION JOINT DETAIL

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 RETAINING 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.

CONTRUCTION 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.

CITY OF ALBUQUERQUE

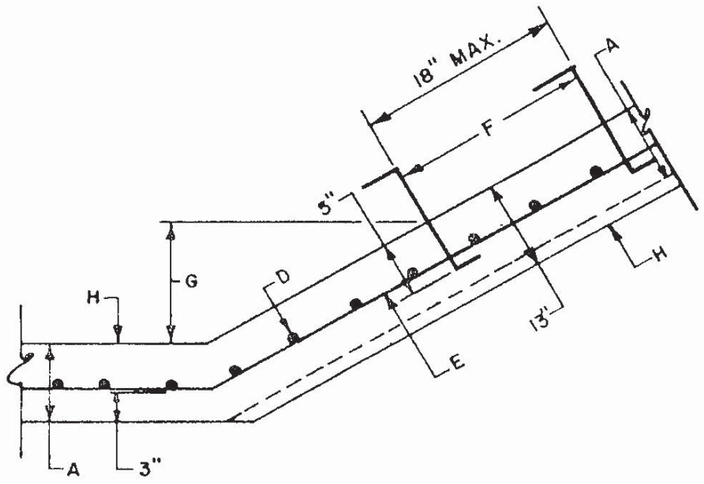
REVISIONS
12-21-92

DRAINAGE

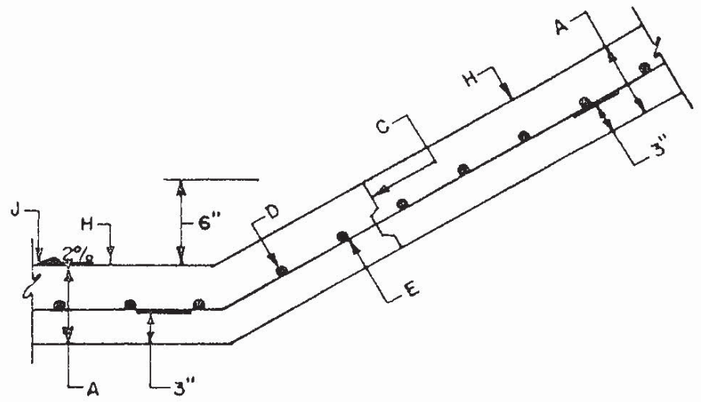
TYPICAL LINING FOR DRAINAGE EASEMENTS

DWG. 2260

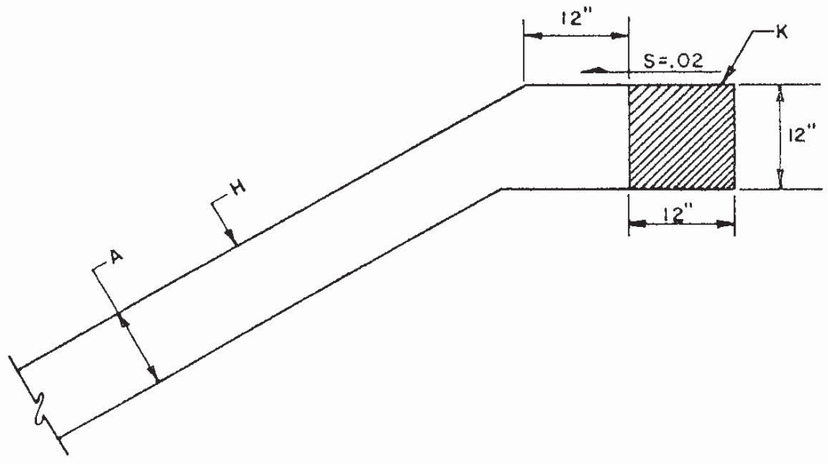
AUG. 1986



CHANNEL STEP
PLACEMENT DETAILS



CHANNEL INVERT - SIDE SLOPE
INTERSECTION



THICKENED EDGE

GENERAL NOTES:

1. CHANNEL DETAILS TO BE DEVELOPED AND SHOWN ON THE CONSTRUCTION DWG'S FOR EACH SPECIFIC PROJECT DETAILS SHOWN HERE ARE MEANT TO CONVEY SOME OF THE SAME CHANNEL CRITERIA THAT IS CONTAINED IN CHAPTER 22, SECTION 8, PART D OF THE DEVELOPMENT PROCESS MANUAL.
2. NEW CHANNEL CONSTRUCTION SHALL INCLUDE STATIONING PAINTED ON CHANNEL AS SHOWN ON PLANS (200 FT. STATIONS TYPICAL).
3. WATER LEVEL DEPTH MARKS SHALL BE PAINTED AND LABELED ON BOTH SIDES OF CHANNEL IMMEDIATELY UPSTREAM AND DOWNSTREAM OF ANY CHANNEL STRUCTURE AS SHOWN ON PLANS.

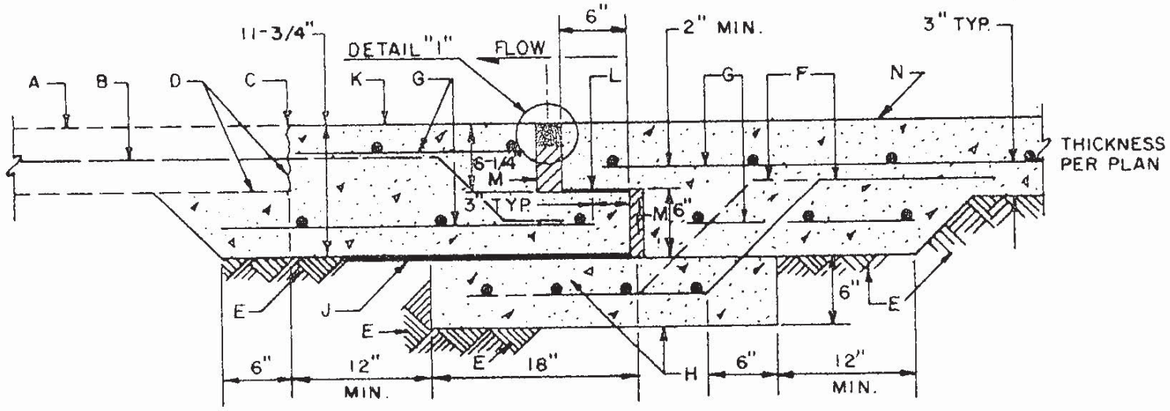
CONSTRUCTION NOTES:

A. THICKNESS AS SPECIFIED ON CONSTRUCTION DWG'S FOR CHANNEL BOTTOM AND SIDE SLOPE.
C. 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.
D. LONGITUDINAL STEEL AREA .005 TIMES CONCRETE AREA.
E. TRANSVERSE STEEL AREA .0025 TIMES CONCRETE AREA.
F. ACCESS AND RESCUE STEPS SHALL BE INSTALLED ON BOTH SIDES OF THE CHANNEL IMMEDIATELY BEFORE AND AFTER THE INLET AND OUTLET TRANSITION OF CHANNEL STRUCTURE. SEE DWG. 2229 FOR STEP DETAILS.
G. BOTTOM STEP APPROXIMATELY 18" VERTICAL ABOVE INVERT.
H. NEW CONCRETE CHANNEL LINING.
J. 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.
K. NATIVE MATERIAL (OR AS SPECIFIED) COMPACTED TO 95% PER ASTM D-1557.

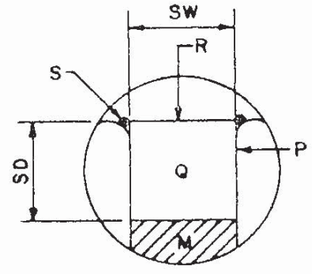
REVISIONS
6/15/92

CITY OF ALBUQUERQUE

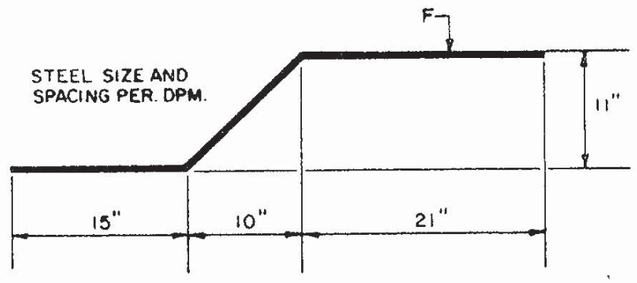
DRAINAGE
CHANNEL DETAILS
DWG. 2261 AUG. 1986



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



DETAIL "I"



"Z" BAR DETAIL

FILLER AND SEALANT DIMENSION TABLE (INCHES)

FILLER SIZE (M)				SEALANT BLOCK-OUT		SEALANT ORDER SIZE	
BOTTOM (MB)		TOP (MT)		(SW)	(SD)		
WIDTH	DEPTH	WIDTH	DEPTH	WIDTH	DEPTH	WIDTH	DEPTH
1"	6"	2"	4 1/4"	2"	2"	2 1/2"	2"
2"	6"	3"	3 3/4"	3"	2 1/2"	3 3/4"	2 1/2"
3"	6"	4"	2 3/4"	4"	3 1/2"	5"	3 1/2"
4"	6"	5"	2 1/4"	5"	4"	6 1/4"	4"

GENERAL NOTES:

1. EXPANSION JOINT WITH SLEEPER SHALL BE USED IN NEW AND REHABILITATION CONSTRUCTION. AS SPECIFIED BY THE ENGINEER. JOINT MATERIALS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
2. FOR PARTIAL JOINT CONSTRUCTION. A 15 LB. 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 5' ON EITHER SIDE OF JOINT CENTERLINE WITH REBAR CONTINUOUS THROUGH COLD JOINT. SANDBLAST COLD JOINTS BEFORE PLACING NEW CONC.
5. AS SOON AS THE STEP JOINT IS COMPLETE, THE EXPOSED ENDS OF THE STEP JOINT AT CHANNEL EDGE SHALL BE COVERED WITH A PROTECTIVE SHEET OF 16 GA GALV. STEEL WITH 1/2" CRIMPED EDGES ANCHOR AT TWO CORNERS ON ONE SIDE OF THE JOINT, FLUSH TO THE TOP OF THE JOINT, AND EXTEND AT LEAST 3" PAST THE SEALANT, FILLERS AND LOWER BEARING PLATE.

CONSTRUCTION NOTES:

A. EXISTING CONCRETE CHANNEL LINING OR STRUCTURE.

B. EXISTING REINFORCING STEEL TO REMAIN.

C. SAW CUT EXISTING CONCRETE LINING AS MARKED IN FIELD, 1" TO 1 1/2" DEEP. BREAK OUT AND REMOVE EXISTING LINING AND JOINT. CAREFULLY PRESERVE REINFORCING STEEL 18" FROM CUT.

D. SANDBLAST EDGE OF EXISTING CONCRETE JUST PRIOR TO PLACING NEW CONCRETE.

E. COMPACT SUBGRADE TO MINIMUM 90% PER ASTM D 1557.

F. ALTERNATE Z-BAR LOCATIONS IN TWO POSITIONS SHOWN. SEE "Z" BAR DETAIL THIS SHEET, SECURELY TIE ALL CONNECTIONS AND SUPPORT SLEEPER MAT WITH CHAIRS.

G. STEEL SIZE AND SPACING PER D.P.M., LONGITUDINAL STEEL AREA ____.005 TIMES CONCRETE AREA; TRANSVERSE STEEL AREA ____.0025 TIMES CONCRETE AREA. TIE REINFORCEMENT MATS TOGETHER IN DOWNSTREAM SLAB WITH 6" STANDARD "Z-CHAIRS", NUMBER 4 BAR AT 12" CENTER-CENTER.

H. FORM AND POUR CONCRETE SLEEPER, STEEL TROWEL BEARING SURFACE SIDE ONLY. RECOMPACT ADJACENT SOIL.

J. LOW DENSITY POLYETHYLENE BEARING PLATE, 1/4" X 24", PLACED FLAT ON SAME GRADE AS CHANNEL. CARE SHALL BE TAKEN NOT TO LOCK EDGE OF PLATE WITH CONCRETE FILLED HOLES OR FLASHING. COMPACT SOIL TO TOP PLANE OF PLATE.

K. FORM AND POUR DOWN STREAM CONCRETE SECTION AS SHOWN WITH ALUMINUM FLOAT AND DRY BROOM FINISH. APPLY STEEL TROWEL FINISH TO BEARING PLATE SURFACE ONLY. BEARING PLATE SURFACE MUST BE PARALLEL TO BEARING PLATE SURFACE ON SLEEPER. FORMS MUST REMAIN IN PLACE AT LEAST 12 HOURS FOLLOWING POUR.

L. PLACE 1/4" X 6' LOW DENSITY POLYETHYLENE BEARING PLATE AS SHOWN BETWEEN THE TWO FILLER SECTIONS.

M. PLACE POLYETHYLENE FOAM FILLERS AS SHOWN, PLASTAZONE OR APPROVED EQUAL. DO NOT ANCHOR WITH NAILS OR BONDING AGENT. KEEP IN PLACE WITH FRESH CONCRETE WHEN POURING UPSTREAM SECTION. DO NOT ALLOW FRESH CONCRETE BETWEEN FILLER AND PREVIOUS CONCRETE. SEE TABLE FOR BOTTOM AND TOP FILLER SIZES.

N. POUR UPSTREAM SECTION WITH FLY ASH CONCRETE. SEE DWG. 2261 FOR CHANNEL LINING THICKNESS. VERTICAL SIDES OF FORM USED TO BLOCK OUT SPACE FOR SEALANT SHALL BE SMOOTH, CLEAN MATERIAL TO AVOID CAUSING CONTAMINATION AND FOR EASE OF REMOVAL. CONCRETE SHALL BE CURED TO MINIMUM 80% OF DESIGN STRENGTH BEFORE INSTALLING SEALANT.

P. PREPARE VERTICAL NOSING FOR BONDER BY SANDBLASTING. BLOW ALL SAND OUT OF THE JOINT BEFORE APPLYING BONDER.

Q. IMMEDIATELY INSTALL ETHYLENE VINYL ACETATE FOAM SEALANT, EVA-SEAL OR APPROVED EQUAL, AS SHOWN. DIMENSION OF FOAM SEALANT BEFORE INSTALLATION SHALL BE PER DIMENSION TABLE. FOAM SEALANT MUST BE COMPRESSED INTO JOINT. IMMEDIATELY REMOVE ALL BONDER FROM TOP SURFACE OF SEALANT.

R. SAND SURFACE OF SEALANT FLUSH TO TOP OF CONCRETE. APPLY ULTRA VIOLET PROOFING, 2 COATS, FLEXCOAT 19 OR APPROVED EQUAL.

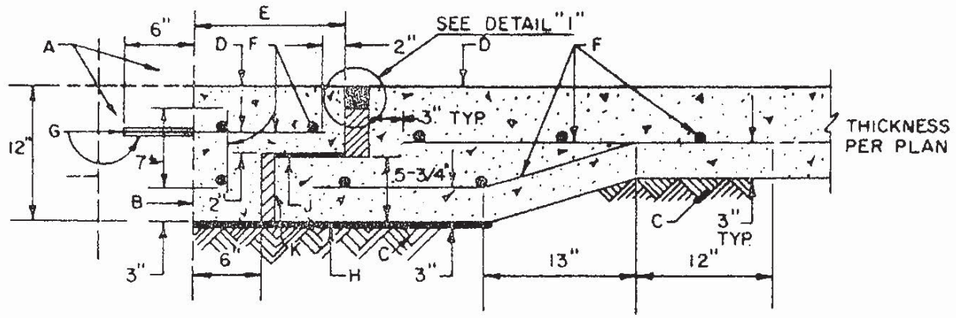
S. BONDER BEAD IN GROOVE BETWEEN TOOLED RADIUS AND SEALANT IS TO REMAIN.

CITY OF ALBUQUERQUE

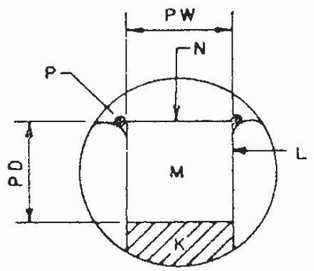
REVISIONS
9/21/92

DRAINAGE
CHANNEL EXPANSION JOINT WITH SLEEPER
DWG. 2265

AUG. 1986



EXPANSION JOINT TIE TO EXISTING CONCRETE WALL



DETAIL "I"

GENERAL NOTES:

1. THIS JOINT SHALL BE SPECIFIED FOR CONNECTING NEW OR REHABILITATED CHANNEL LINING TO EXISTING CONCRETE STRUCTURES AS SPECIFIED BY THE ENGINEER. A SIMILAR JOINT MAY BE DETAILED 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 REHABILITATION 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 90% PER ASTM D 1557.

D. NEW CONCRETE CHANNEL LINING, POUR LOWER STEP SECTION FIRST, STEEL TROWEL FINISH ON STEP PARALLEL TO BOTTOM PLATE. DRY BROOM FINISH ON EXPOSED SURFACE.

E. 12" + BOTTOM JOINT WIDTH K. TOTAL ANCHORED BAR LENGTH = E + 3".

F. STEEL SIZE AND SPACING PER D.P.M., LONGITUDINAL STEEL AREA ____.005 TIMES CONCRETE AREA; TRANSVERSE STEEL AREA ___.0025 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 2 PART, QUICK SETTING EPOXY.

H. INSTALL LOW DENSITY POLYETHYLENE BEARING PLATE 1/4" X (24" COMPACT ADJACENT EARTH TO TOP PLANE OF PLATE TO PREVENT LOCKING WITH CONCRETE FILLED DEPRESSIONS).

J. PLACE 1/4" X 6" LOW DENSITY POLYETHYLENE BEARING PLATE AS SHOWN BETWEEN THE TWO FILLER SECTIONS.

K. PLACE POLYETHYLENE FOAM FILLERS AS SHOWN, PLASTAZONE OR APPROVED EQUAL. DO NOT ANCHOR WITH NAILS 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.

L. PREPARE VERTICAL NOSING FOR BONDER BY SANDBLASTING. BLOW ALL SAND OUT OF THE JOINT BEFORE APPLYING BONDER.

M. IMMEDIATELY INSTALL ETHYLENE VINYL ACETATE FOAM SEALANT, EVA-SEAL OR APPROVED EQUAL, AS SHOWN. DIMENSION OF FOAM SEALANT BEFORE INSTALLATION SHALL BE PER DIMENSION TABLE. FOAM SEALANT MUST BE COMPRESSED INTO JOINT. IMMEDIATELY REMOVE ALL BONDER FROM TOP SURFACE OF SEALANT.

N. SAND SURFACE OF SEALANT FLUSH TO TOP OF CONCRETE. APPLY ULTRA VIOLET PROOFING, 2 COATS, FLEXCOAT 19 OR APPROVED EQUAL.

P. BONDER BEAD IN GROOVE BETWEEN TOOLED RADIUS AND SEALANT IS TO REMAIN.

FILLER AND SEALANT DIMENSION TABLE (INCHES)

FILLER SIZE (K)				SEALANT BLOCK-OUT		SEALANT ORDER SIZE	
BOTTOM (KB)		TOP (KT)		(PW)	(PD)		
WIDTH	DEPTH	WIDTH	DEPTH	WIDTH	DEPTH	WIDTH	DEPTH
1"	6"	2"	4 1/4"	2"	2"	2 1/2"	2"
2"	6"	3"	3 3/4"	3"	2 1/2"	3 3/4"	2 1/2"
3"	6"	4"	2 3/4"	4"	3 1/2"	5"	3 1/2"
4"	6"	5"	2 1/4"	5"	4"	6 1/4"	4"

CITY OF ALBUQUERQUE

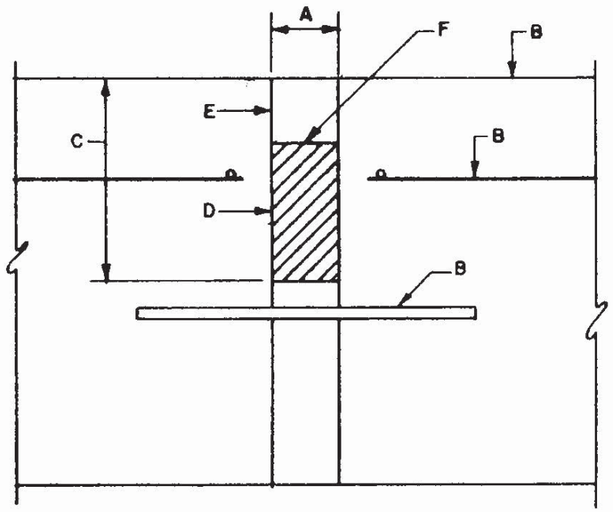
REVISIONS

DRAINAGE

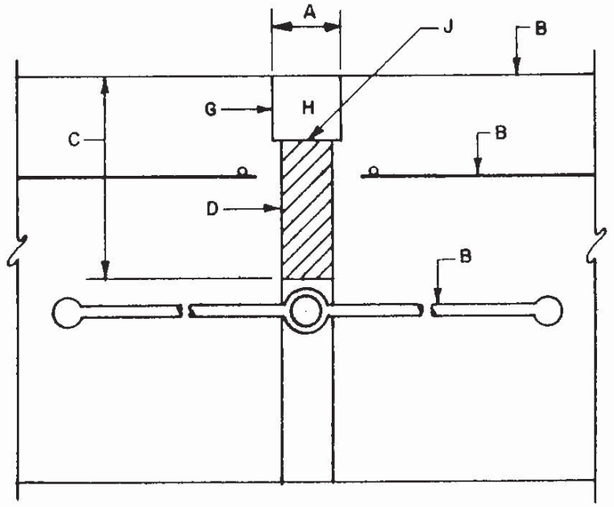
EXPANSION JOINT CONNECTION TO CONCRETE WALL.

DWG. 2266

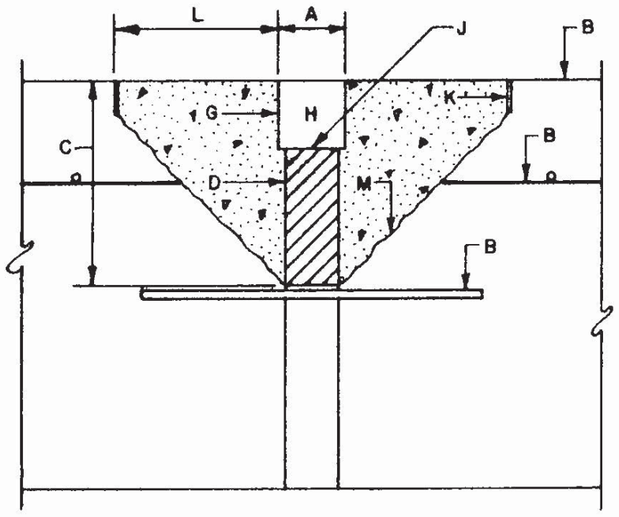
AUG. 1986



EXIST. EXPANSION JNT. REPAIR
ROUT & SEAL



EXIST. EXPANSION JNT. REPAIR
SAW-ROUT & SEAL



EXIST. EXPANSION JNT. REPAIR
SPALLED AREA
CHIP-SAW-ROUT & SEAL

GENERAL NOTES:

1. THESE DETAILS OF EXIST. JNT. REPAIRS ARE GUIDELINES & MIN. REQUIREMENTS FOR FAILED EXPANSION JNT. & SPALLED CHANNEL LINING REPAIRS.

CONSTRUCTION NOTES:

A. JNT. WIDTH: JNTS. IN GOOD CONDITION, OF UNIFORM WIDTH, ROUT & SEAL ONLY. JNTS. IN NEED OF REPAIR SHALL BE CUT W/A WHEEL MOUNTED, DOUBLE BLADED SAW OR TRACK MOUNTED ADJ. ARBOR SAW TO OPEN JNT. TO A 1" MIN. WIDTH. SEE SECT. 602.5.1 CITY STANDARD SPECIFICATIONS.

B. EXIST. CHANNEL LINING, REINF. STEEL, DOWELS OR WATERSTOPS TO REMAIN.

C. JNT. TO BE ROUTED OUT TO 3" MIN. DEPTH OR TO DOWEL AND/OR WATERSTOP, IF LESS THAN 3"

D. POLYETHYLENE FOAM FILLER, SECT. 107.3.3.

E. BONDING AGENT, SECT. 107.4.2.1.2.

F. PREPARATION & APPLICATION WITH TWO COMPONENT URETHANE SEALANT. JNTS. LESS THAN 1" WIDE, SEALANT DEPTH WILL EQUAL 1/2 THE WIDTH. SEE SECTS. 107.4.1.2 & 107.4.2.

G. SEE SECT. 107.4.1.2 FOR PREPARATION & APPLICATION & 107.4.1.1.2 FOR BONDING AGENT.

H. FOAM SEALANT (EVA-FOAM) SECT. 107.4.1, MATERIAL SECT. 107.4.1.1.

J. SURFACE FINISH & ULTRA-VIOLET PROOFING SECT. 107.4.1.2.3.

K. EDGES OF SPALLED AREAS SHALL BE SAWED OR CHIPPED TO 1/2" MIN. DEPTH.

L. WIDTH SHALL BE BROKEN OUT TO 4" MIN. WHETHER NEXT TO EXPANSION JNT. OR NOT.

M. SPALLED AREA TO BE PATCHED SHALL BE CHIPPED & SANDBLASTED TO SOUND, CLEAN CONC. & BONDED OR PRIMED & GROUTED PER MANUFACTURER'S RECOMMENDATIONS. SECT. 106.9.

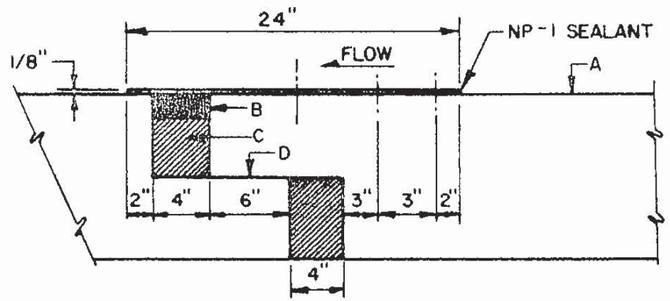
REVISIONS

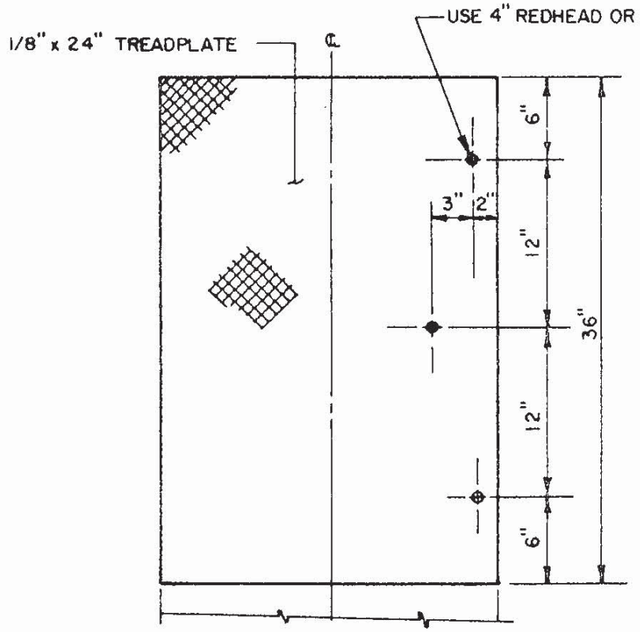
CITY OF ALBUQUERQUE

DRAINAGE
CHANNEL EXPANSION JOINT REPAIR

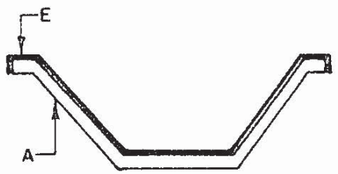
DWG. 2267

AUG. 1986





VANDAL PROTECTION PLATE DETAIL



GENERAL NOTES:

1. STEP JOINT PROTECTION PLATE SHALL BE USED IN NEW AND REHABILITATION CONSTRUCTION AS SPECIFIED BY THE ENGINEER.
2. SEE 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 TREADPLATE. PLATE SHALL EXTEND FULL WIDTH ACROSS CHANNEL AND COVER BOTH EDGES AS SHOWN.

REVISIONS

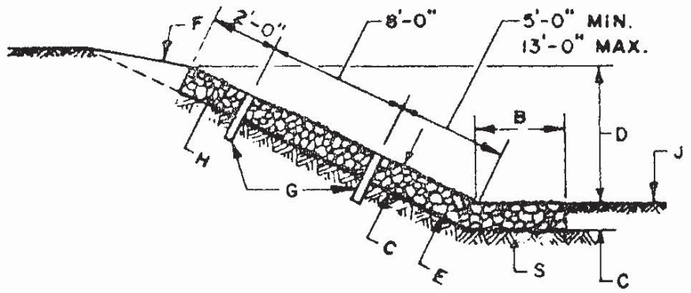
CITY OF ALBUQUERQUE

DRAINAGE

STEP JOINT PROTECTION PLATE

DWG. 2268

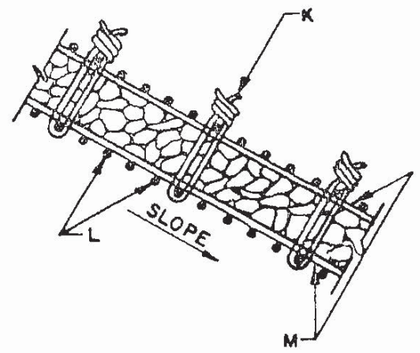
AUGUST 1992



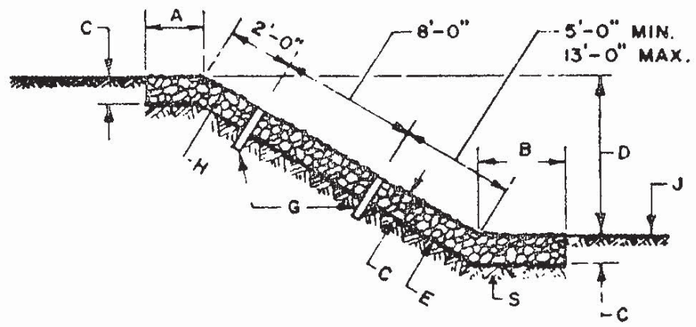
SECTION TYPE A

QUANTITIES PER LIN. FT.

SLOPE	RIPRAP CU. YDS.
$1\frac{1}{2}$:1	$\frac{C}{27}(B+1.803D+0.303C)$
$1\frac{3}{4}$:1	$\frac{C}{27}(B+2.016D+0.266C)$
2 :1	$\frac{C}{27}(B+2.236D+0.236C)$
3 :1	$\frac{C}{27}(B+3.162D+0.162C)$
4 :1	$\frac{C}{27}(B+4.123D+0.123C)$



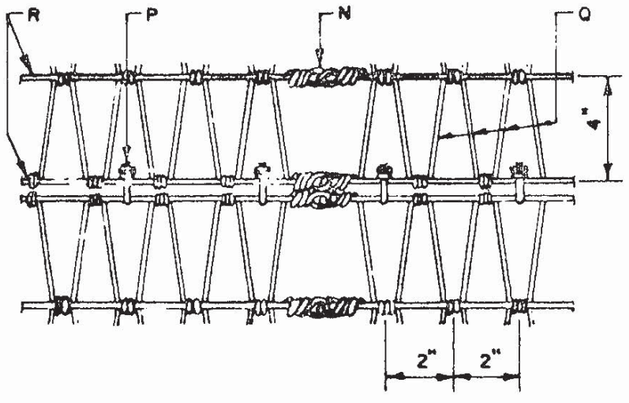
TYPICAL SECTION



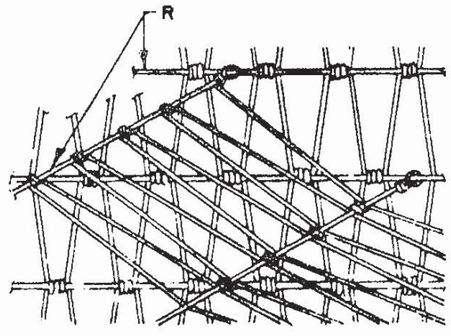
SECTION TYPE B

QUANTITIES PER LIN. FT.

SLOPE	RIPRAP CU. YDS.
1 :1	$\frac{C}{27}(A+B+1.414D)$
$1\frac{1}{2}$:1	$\frac{C}{27}(A+B+1.803D)$
$1\frac{3}{4}$:1	$\frac{C}{27}(A+B+2.016D)$
2 :1	$\frac{C}{27}(A+B+2.236D)$
3 :1	$\frac{C}{27}(A+B+3.162D)$
4 :1	$\frac{C}{27}(A+B+4.123D)$



DETAIL OF WIRE FABRIC AND NORMAL SPLICE



DETAIL OF SPLICE AT SKEWED INTERSECTIONS

"V" MESH

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 & COMPACT AFTER PLACEMENT OF RIPRAP.

G. STEEL STAKES MAY BE RAILROAD RAILS NOT LESS THAN 30 LBS. PER FT., 4" O.D. STANDARD STRENGTH GALV. ST. PIPE OR 4 X 4 X $\frac{3}{8}$ STEEL ANGLES. STEEL STAKES SHALL BE 5' LONG AND 8' 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 & TRANSVERSLEY.

L. MAIN WIRES TO BE PLACED PERPENDICULAR TO SLOPE.

M. WIRE FABRIC.

N. TRANSVERSE SPLICE.

P. LONGITUDINAL SPLICE, NO. 9 GALV. WIRE TIES (ONE WRAP ALTERNATE SPACES).

Q CROSS WIRES: SINGLE $12\frac{1}{2}$ GAGE WIRES SPACED AT 2" WITH NOT LESS THAN TWO TURNS AROUND MAIN WIRES.

R. MAIN WIRES: TWO NO. $12\frac{1}{2}$ GAGE STRANDED WIRES SPACED AT 4".

S SUBGRADE COMPACTED TO 90% MAX. DENSITY AS PER ASTM D 1557, 6" MIN. DEPTH.

CITY OF ALBUQUERQUE

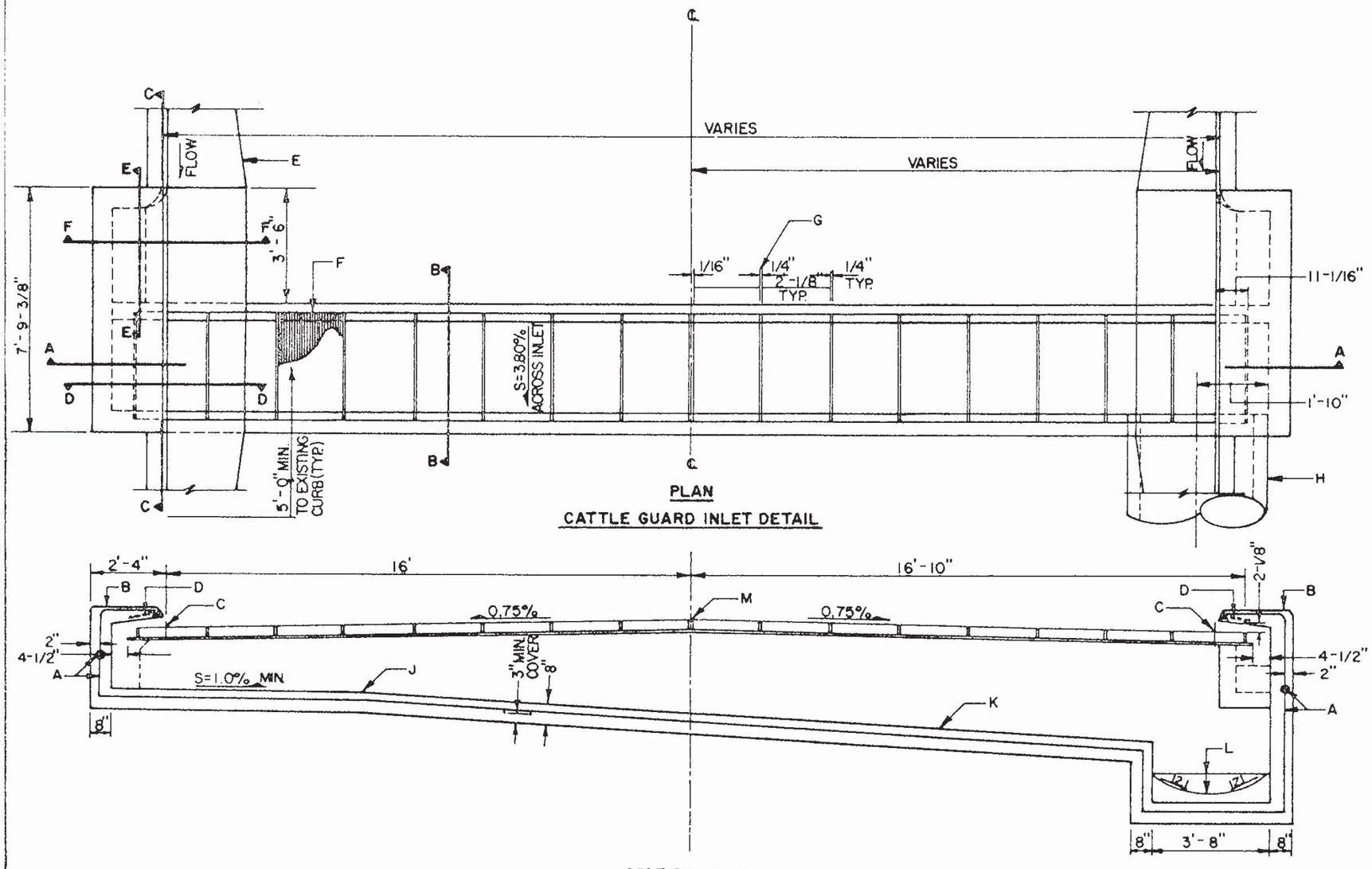
REVISIONS

DRAINAGE

WIRE ENCLOSED RIPRAP

DWG. 2270

AUG. 1986



PLAN

CATTLE GUARD INLET DETAIL

SECTION A-A

NOTE: SEE DWG. 2272 FOR SECTIONS B-B, C-C, D-D, E-E, AND F-F.

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. 2215, GENERAL NOTE NO. 4.
4. FRAME MAY BE WELDED OR RIVETED.

CONSTRUCTION NOTES

A. NO. 4 BARS AT 6" O.C. EACH WAY.
B. TOP OF CURB.
C. CURB FLOWLINE.
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 (TYP.) 16 TOTAL MODIFIED WITH 1" GAP COVER PLATE PER DETAIL THIS SHEET.
G. 1/4" SPACE BETWEEN GRATER (TYP.).
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.

REVISIONS

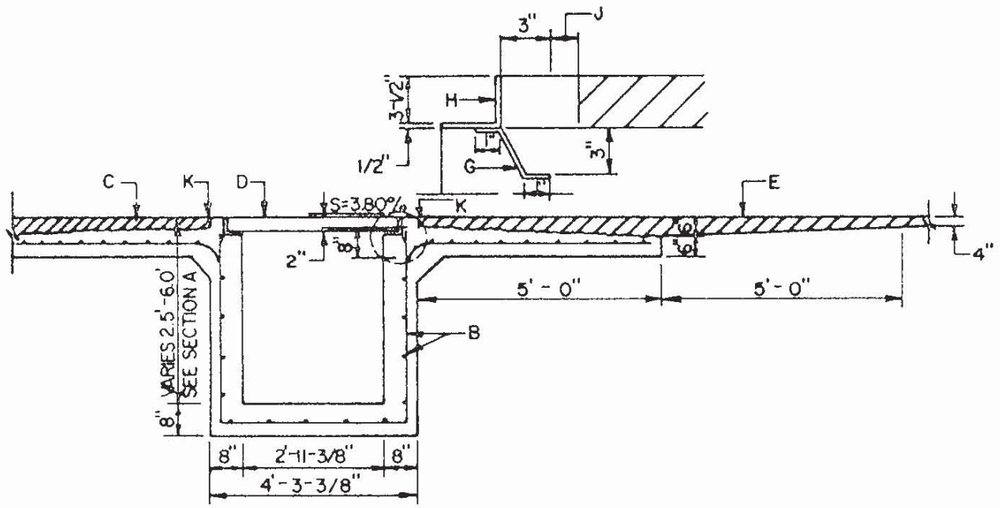
CITY OF ALBUQUERQUE

DRAINAGE

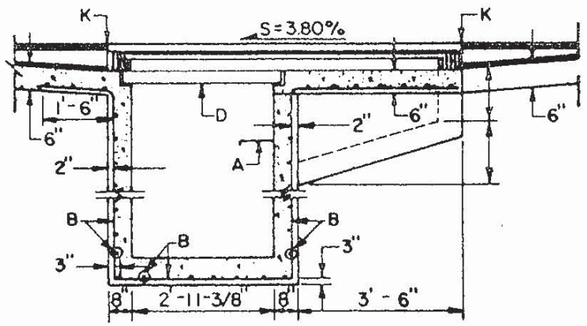
CATTLE GUARD INLET

DWG. 2271

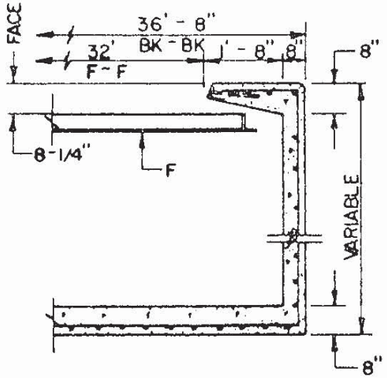
APRIL 1992



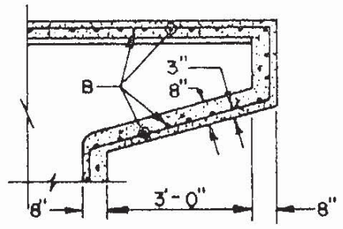
SECTION B-B



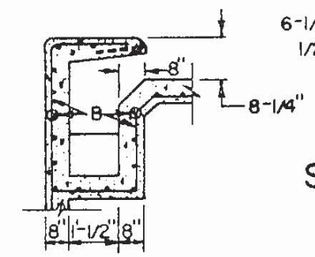
SECTION C-C



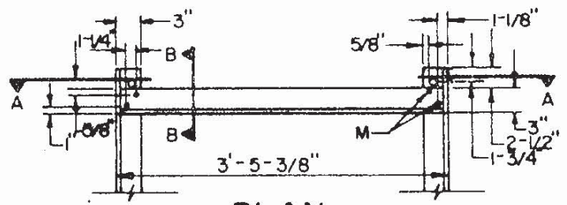
SECTION D-D



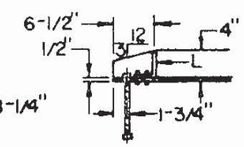
SECTION E-E



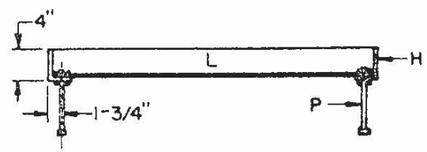
SECTION F-F



PLAN

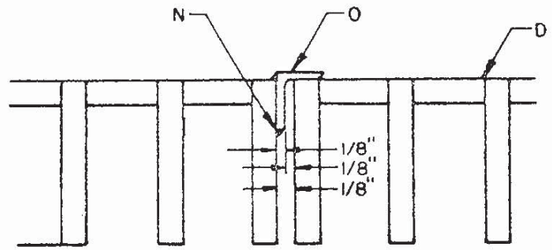


SECTION B-B



SECTION A-A

GRATE FRAME END DETAIL



GRATE CAP COVER PLATE DETAIL

NOTE:
SEE DWG. 2271 FOR ADDITIONAL CATTLE GUARD INLET DETAIL

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. 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 6" O.C. EACH WAY.
C. ROUGH TEXTURE CONCRETE SURFACE (TYP.)
D. GRATE.
E. THICKEN ASPHALT PAVEMENT TO 6" AT EDGE OF APRON BOTH SIDES OF INLET (TYP.)
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. 3-1/2" X 3" X 3/8" X 3'-4"-3/8".
M. 2-3/8" RIVETS AT EACH CORNER, SEE GENERAL NOTE NO. 4.
N. 1/8" FILLET WELD 2" LONG AT 6" O.C. (TYP.)
O. 1/2" X 1" 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.

CITY OF ALBUQUERQUE

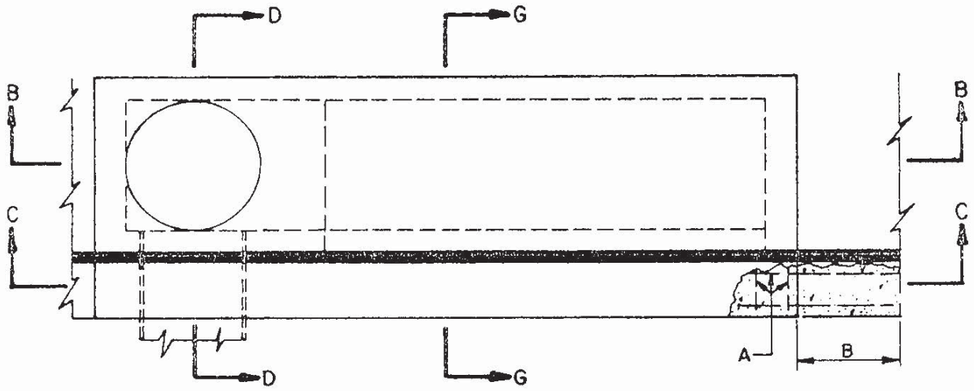
REVISIONS

DRAINAGE

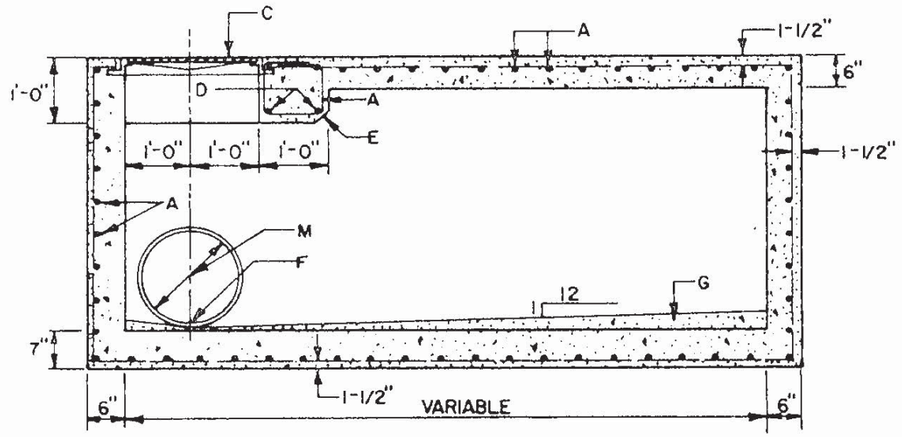
CATTLE GUARD INLET

DWG. 2272

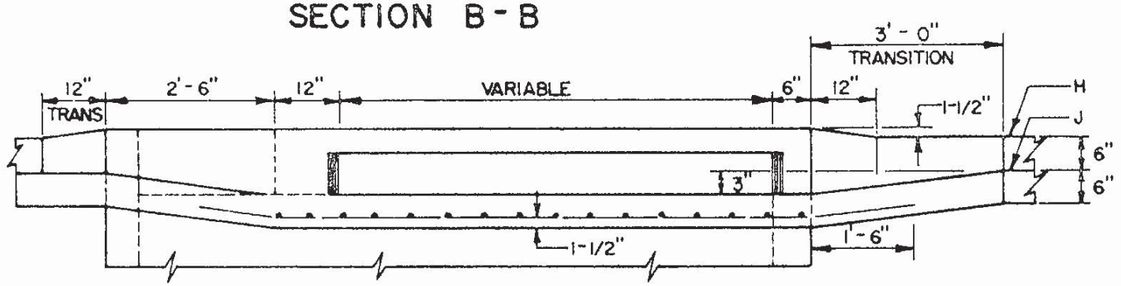
APRIL 1992



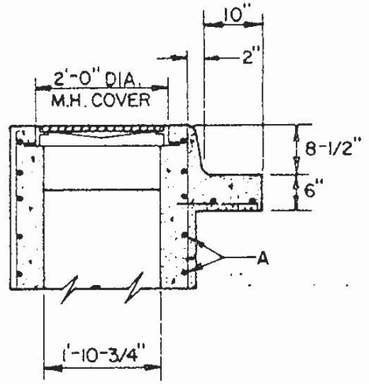
PLAN OF SPECIAL DROP INLET AT MEDIAN



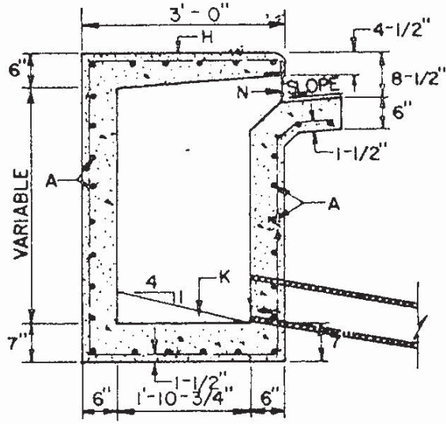
SECTION B-B



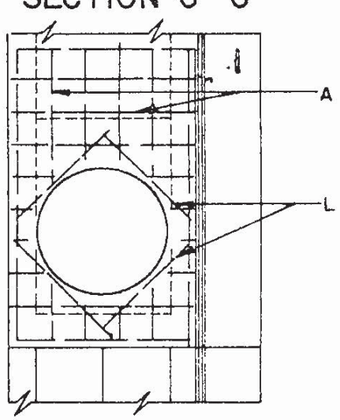
SECTION C-C



SECTION D-D



SECTION G-G



TOP MAT OF REINFORCEMENT

GENERAL NOTES

1. FOR STORM INLET GUTTER TRANSITION, SEE STD. DETAIL DWG. 2207.
2. OUTLET PIPE SIZE, PER DESIGN REQUIREMENT.

CONSTRUCTION NOTES

A. NO. 4 REBAR @ 6" O.C. EACH WAY.
B. EXTEND REBARS 1'-6" (TYP.)
C. MANHOLE FRAME AND COVER PER. CITY OF ALBUQUERQUE STD. DETAIL DWG. 2110.
D. 2 EACH, NO. 5 REBAR @ 6" O.C.
E. 2" CHAMFER.
F. INVERT PER PLAN.
G. CONCRETE FILL.
H. TOP OF MEDIAN CURB.
J. FLOWLINE.
K. CONCRETE FILL 4:1 MINIMUM SLOPE TOWARDS OUTLET AND 12:1 TRANSVERSE.
L. NO. 4 REBARS, 8 EACH.
M. OUTLET STORM DRAIN.
N. 6" MINIMUM OPENING

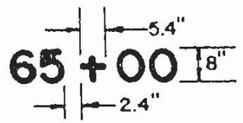
CITY OF ALBUQUERQUE

DRAINAGE
MEDIAN STORM INLET

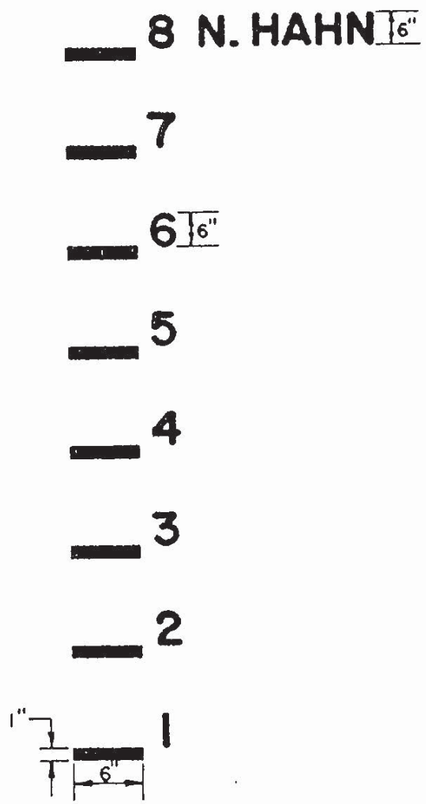
DWG. 2273

JUNE 1992

CHANNEL STATIONING



WATER DEPTH MARKS



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.

REVISIONS

CITY OF ALBUQUERQUE

DRAINAGE
STATIONING AND WATER DEPTH MARKS IN CONCRETE LINED CHANN

DWG. 2274

SEPT. 1992

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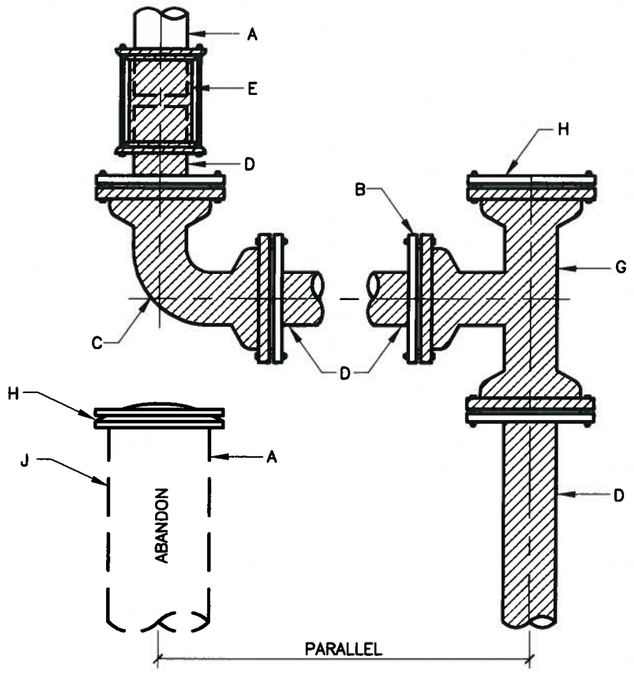
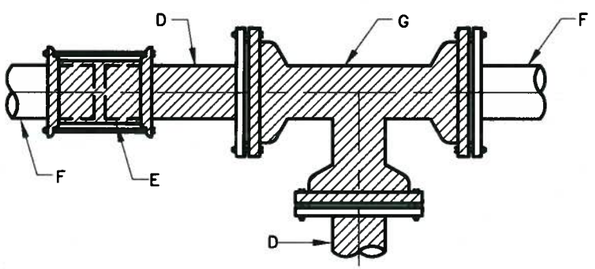
SECTION 2300

STANDARD DETAILS FOR WATER

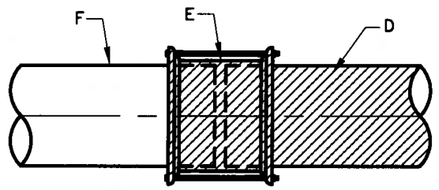
DWG. NO.	TITLE
2301	WATERLINE CONNECTION DETAILS
2305	CONCRETE CYLINDER PIPE RIGID JOINT DETAIL
2310	WATER MANHOLE FRAME AND COVERS
2315	PIPE TRENCH TERMINOLOGY
2320	CONCRETE BLOCKING DESIGN
2326	WATER VALVE BOX
2328	RING &COVER FOR VALVE BOX
2329	FIRE LINE RING AND COVER FOR VALVE BOX
2333	WATER VALVE ANCHORAGE
2334	LARGE DIAMETER VALVE VAULT
2335	LADDER DETAIL
2340	FIRE HYDRANT INSTALLATION
2344	AIR RELEASE FIRE HYDRANT CONNECTION
2347	DETAILS ON TYPICAL FIRE HYDRANT LOCATIONS
2350	AIR / VACUUM RELEASE VALVE
2351	CONC. CYL. BUTTERFLY VALVE IN VAULT INSTALLATION
2352	DUCTILE IRON BUTTERFLY VALVE IN VAULT INSTALLATION DETAILS
2353	SURGE RELIEF VALVE STATION
2354	STANDARD PRV STATION, NO METER
2355	STANDARD PRV STATION WITH PROPELLER METER
2356	STANDARD PRV STATION WITH POWER/TELEMETRY
2357	STANDARD PRV STATION STRUCTURAL DETAILS
2358	THRUST TIE DETAILS
2359	DUCTILE IRON BUTTERFLY VALVE DIRECT BURY INSTALLATION DETAILS
2360	DUCTILE IRON BUTTERFLY VALVE IN VAULT INSTALLATION
2361	TYPICAL METER BOX INSTALLATIONS
2362	¾" – 1" METER SERVICE LINE INSTALLATION
2363	1 ½" – 2" METERED SERVICE LINE INSTALLATION
2366	METER BOX FOR ¾" AND 1" METERS
2367	METER BOX COVER AND LID FOR 1½" - 2" METERS
2368	METER BOX COVER AND LID FOR ¾" & 1" METERS
2370	LARGE DIAMETER METER VAULT FOR 3" – 6" SERVICE
2371	LARGE DIAMETER METER VAULT FOR 8" – 12" SERVICE
2372	6" PRV ASSEMBLY DETAILS
2373	8" PRV ASSEMBLY DETAILS
2374	10" PRV ASSEMBLY DETAILS
2375	STANDARD PRV STATION STRUCTURAL DETAILS
2380	BORING INSTALLATION
2381	TYPICAL LINE RELOCATION
2385	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (RPBA)
2386	DOUBLE CHECK VALVE ASSEMBLY (DCVA)
2387	DOUBLE CHECK – DETECTOR CHECK ASSEMBLY (DCDA)
2388	LANDSCAPE PRESSURE VACUUM BREAKER (PVB)
2389	ENCLOSURES
2390	INSTALLATION FOR CONTINUOUS SERVICE
2394	RESIDENTIAL WATER PRIVATE FIRE PROTECTION SYSTEMS
2395	APPROVED METHODS FOR FILLING TANKS
2396	CORROSION MONITORING DETAILS – 1
2397	CORROSION MONITORING DETAILS – 2
2398	CORROSION MONITORING DETAILS – 3



REPLACEMENT OF STEEL LINES 4"–12"
CONNECTION DETAILS



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



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

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 EMD'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.I. 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.I. 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.

REVISIONS	WATER AUTHORITY
	WATER WATERLINE CONNECTION DETAILS
	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:

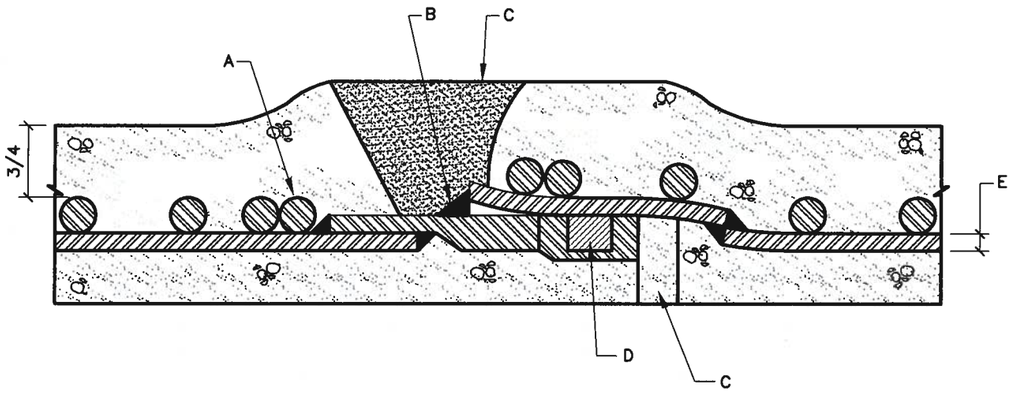
A COMPLETE COIL PARALLEL TO END OF PIPE.

B FIELD WELD, CONTINUOUS.

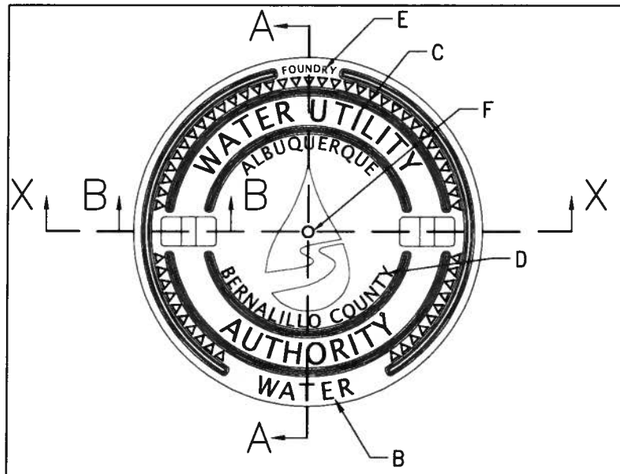
C FIELD–APPLIED CEMENT MORTAR COATING.

D RUBBER GASKET.

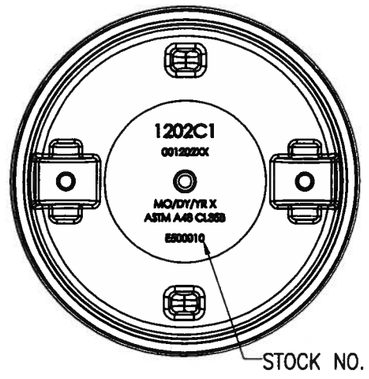
E STEEL CYLINDER PORTION OF PIPE.



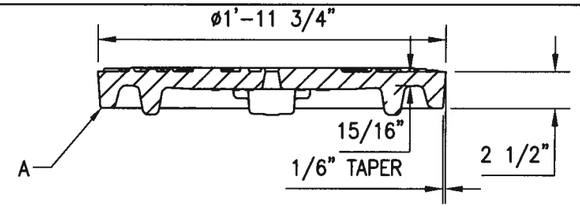
REVISIONS	WATER AUTHORITY
	WATER CONCRETE CYLINDER PIPE RIGID JOINT DETAIL DWG. 2305 JANUARY 2011



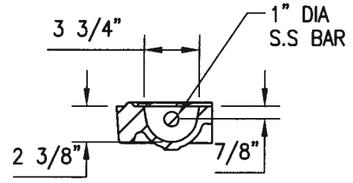
24" MANHOLE
TOP VIEW



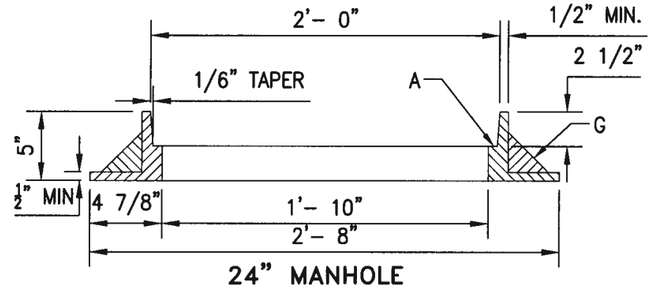
24" MANHOLE
BOTTOM VIEW



24" MANHOLE
SECTION A-A



24" MANHOLE
SECTION B-B



24" MANHOLE
FRAME SECTION

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. REFERENCE SPEC. 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. REFERENCE SPEC. 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.

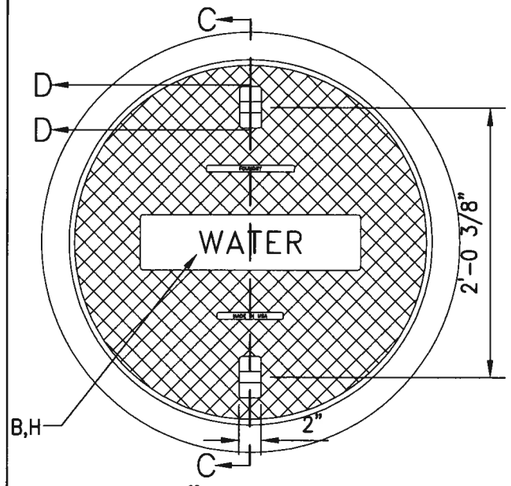
D. LETTER SIZE TO BE 3/4" IN HEIGHT RAISED LETTERING.

E. LETTER SIZE TO BE 3/8" MIN. IN HEIGHT RAISED LETTERING.

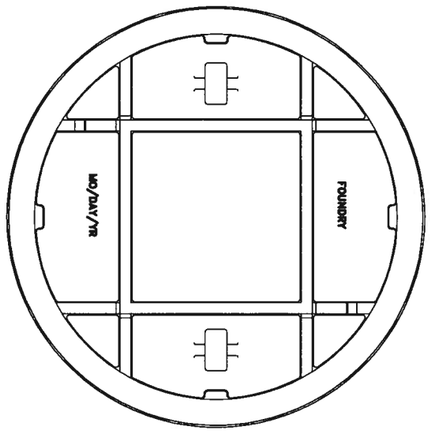
F. 3/4" DIA VENT HOLE REQUIRED.

G. GUSSETS OPTIONAL IF REQUIRED BY MANUFACTURER.

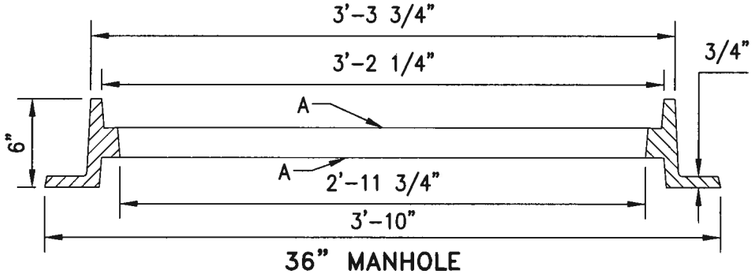
H. 2" LETTERS (RECESSED FLUSH).



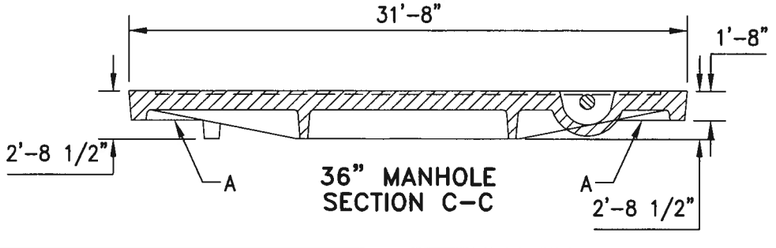
36" MANHOLE
TOP VIEW



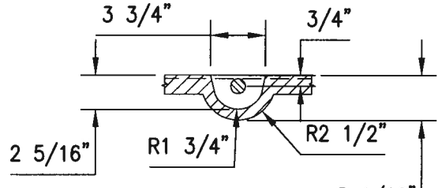
36" MANHOLE
BOTTOM VIEW



36" MANHOLE
FRAME SECTION

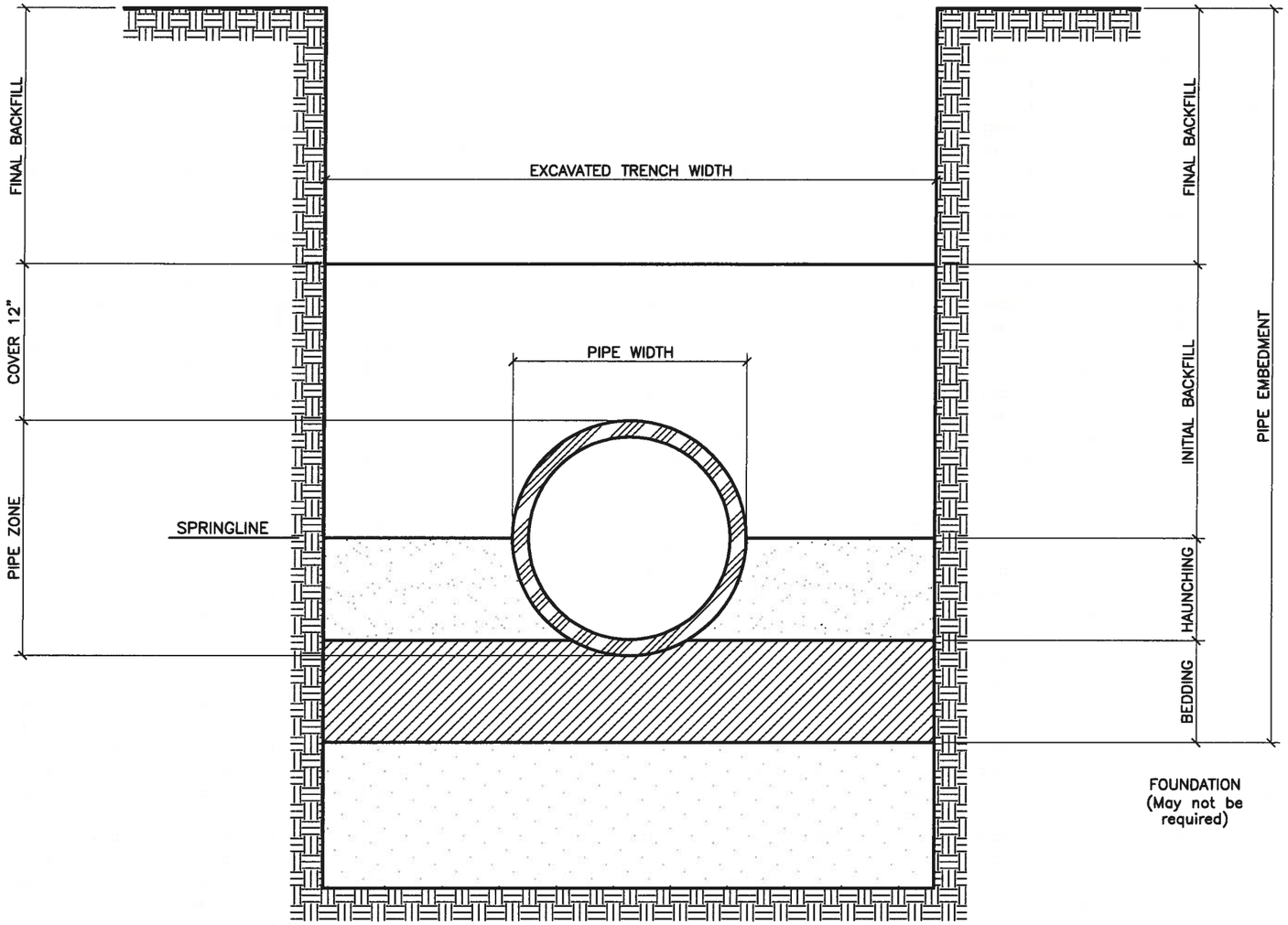


36" MANHOLE
SECTION C-C



36" MANHOLE
SECTION D-D

REVISIONS	WATER AUTHORITY
	WATER MANHOLE FRAME AND COVERS
	DWG. 2310 JANUARY 2011



TRENCH CROSS-SECTION
SHOWING TERMINOLOGY

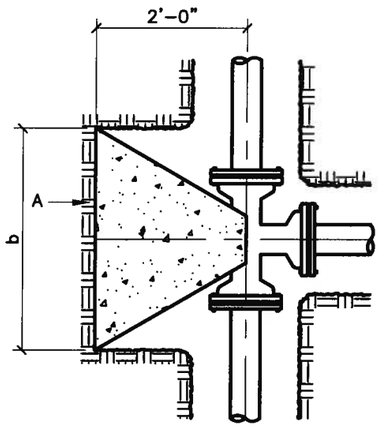
GENERAL NOTES:

1 MECHANICAL TAMPERS 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.

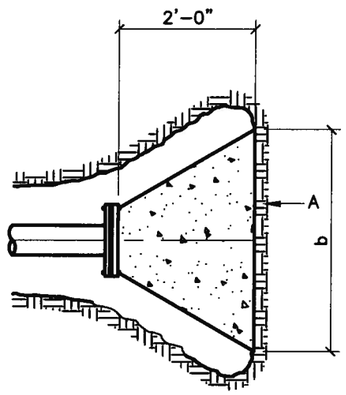
2 MINIMUM CLASS "C" BEDDING WILL BE USED.

3 ALL COMPACTION WILL BE TO 95% OF THE STANDARD PROCTOR.

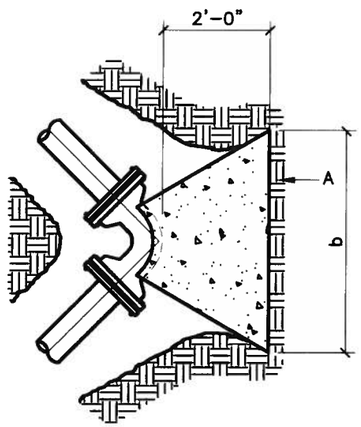
REVISIONS	WATER AUTHORITY
	WATER PIPE TRENCH TERMINOLOGY
	DWG. 2315 JANUARY 2011



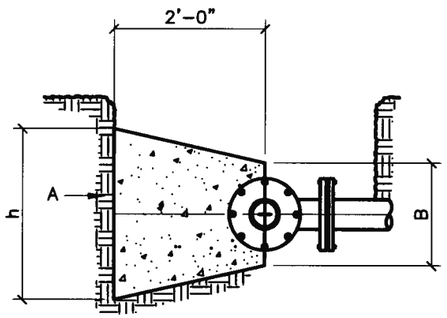
PLAN



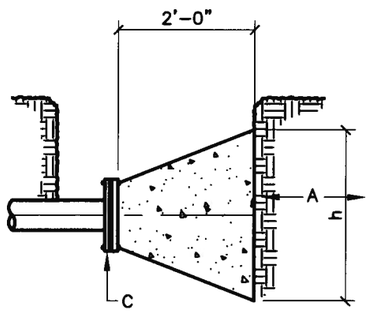
PLAN



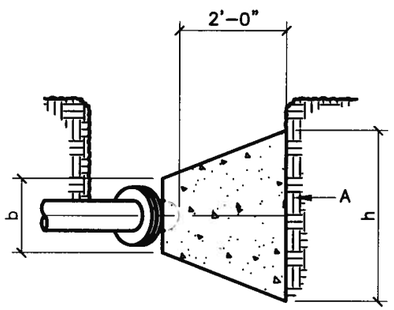
PLAN



ELEVATION
CONCRETE BLOCKING
FOR TEE



ELEVATION
CONCRETE BLOCKING
FOR PLUG OR CAP



ELEVATION
CONCRETE BLOCKING
FOR ELBOW

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.

PIPE SIZE	ELBOW ANGLE	ELBOW (b) DIM.	ELBOW (h) DIM.	TEE OR PLUG (b) DIM.	TEE OR PLUG (h) DIM.
4"				2'	1'
4"	90° 45°	2'	2'		
4"	22 1/2° 11 1/4°	2'	2'		
6"				2'	2'
6"	90° 45°	2'	2'		
6"	22 1/2° 11 1/4°	2'	2'		
8"				3'	3'
8"	90°	3'	3'		
8"	45°	2'	2'		
8"	22 1/2° 11 1/4°	2'	2'		
10"				3'	3'
10"	90°	3'-6"	3'-6"		
10"	45°	3'	3'		
10"	22 1/2° 11 1/4°	2'	2'		
12"				3'-6"	3'-6"
12"	90°	4'	4'		
12"	45°	3'-6"	3'-6"		
12"	22 1/2° 11 1/4°	2'	2'		
14"				4'	4'
14"	90°	5'	5'		
14"	45°	3'-6"	3'-6"		
14"	22 1/2° 11 1/4°	3'	3'		

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.

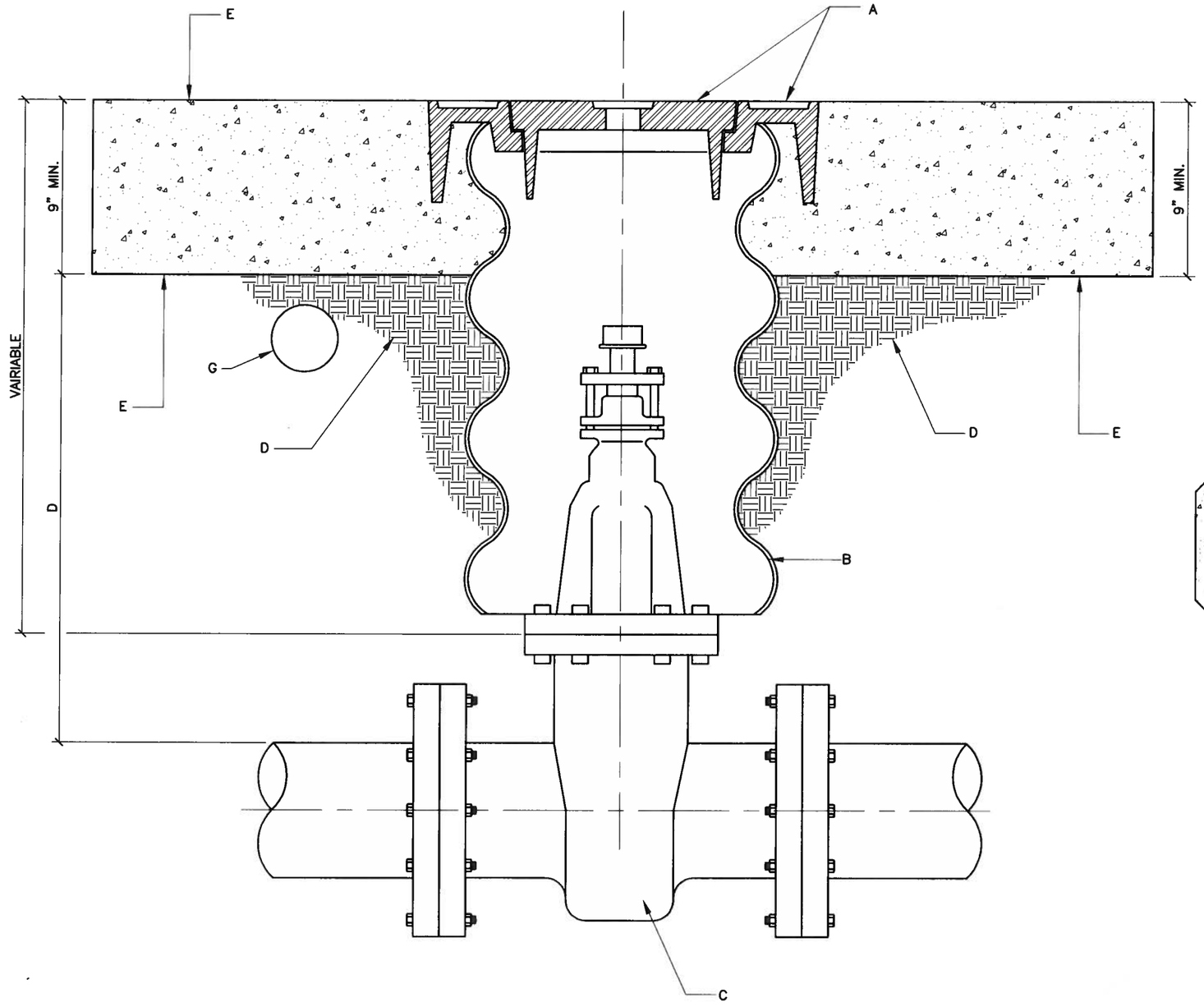
C NEW OR EXISTING VALVE.

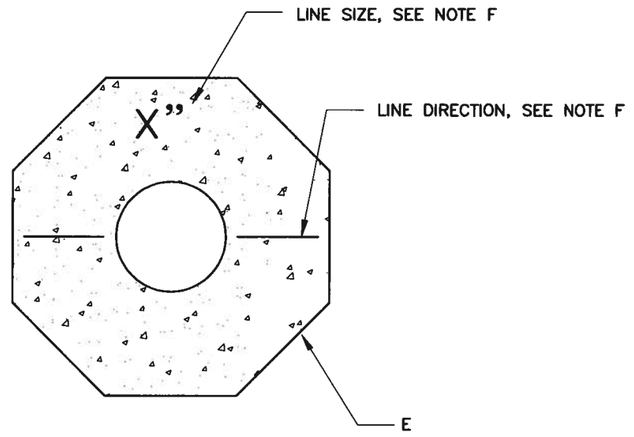
D COMPACTED BACKFILL. SOIL OR BASE COURSE MATERIAL (95% COMPACTION). SEE SECTION 701.

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.



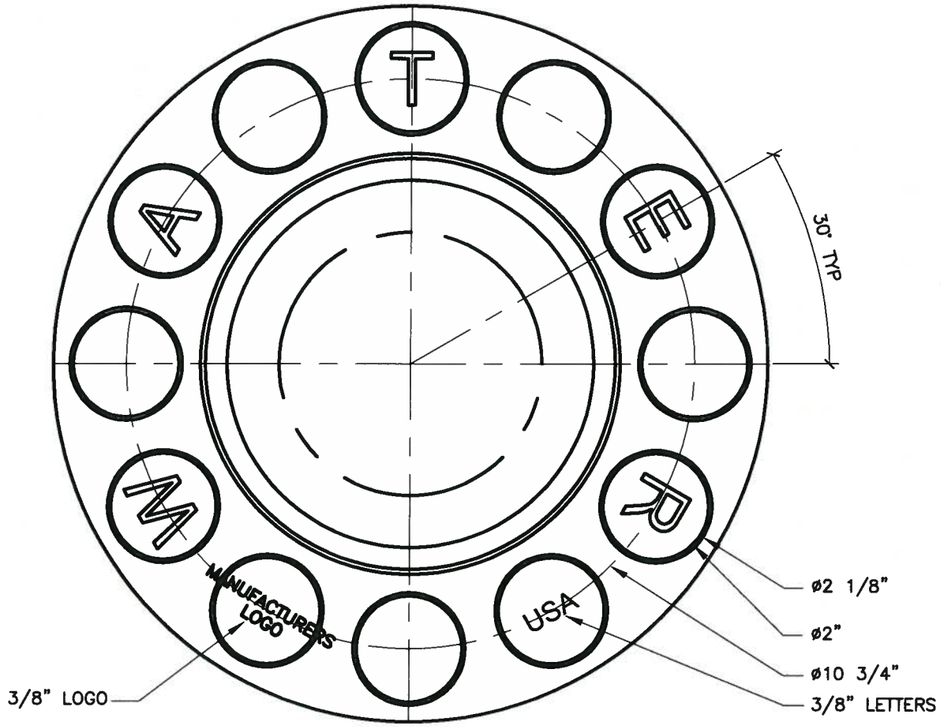


LABEL REQUIREMENTS

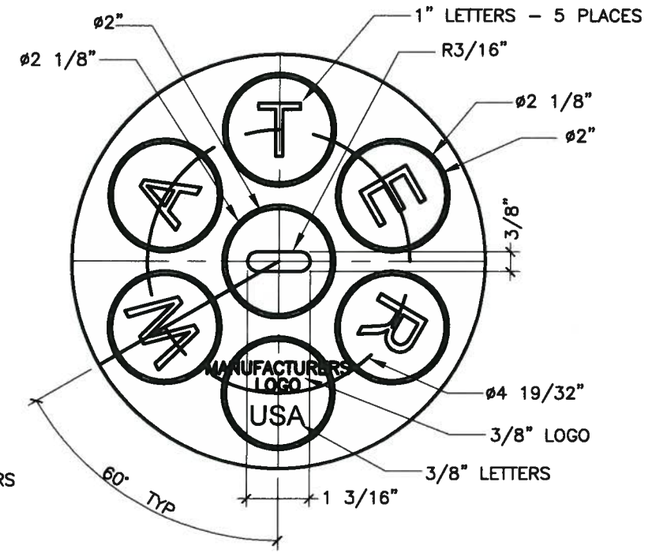
GENERAL NOTES:

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.

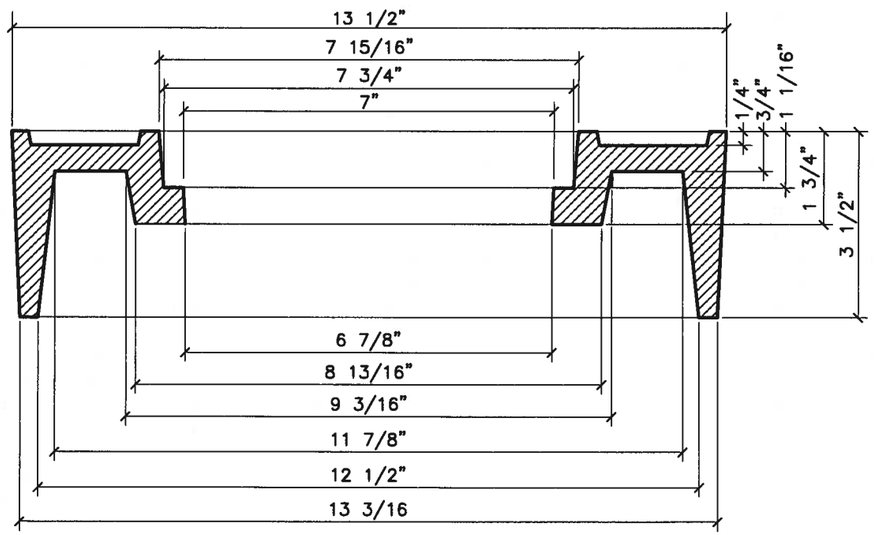
REVISIONS	WATER AUTHORITY
	WATER VALVE BOX
	DWG. 2326 JANUARY 2011



TOP VIEW

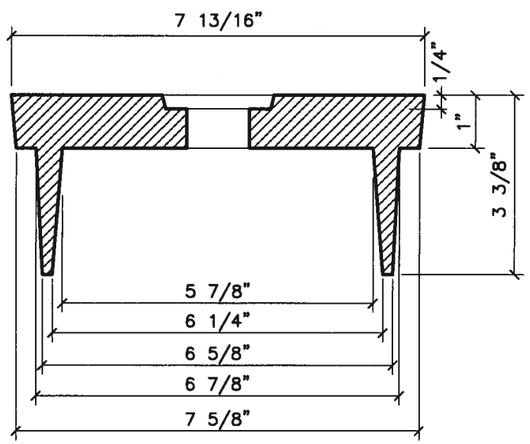


TOP VIEW



SECTION

VALVE BOX RING



SECTION

VALVE BOX COVER

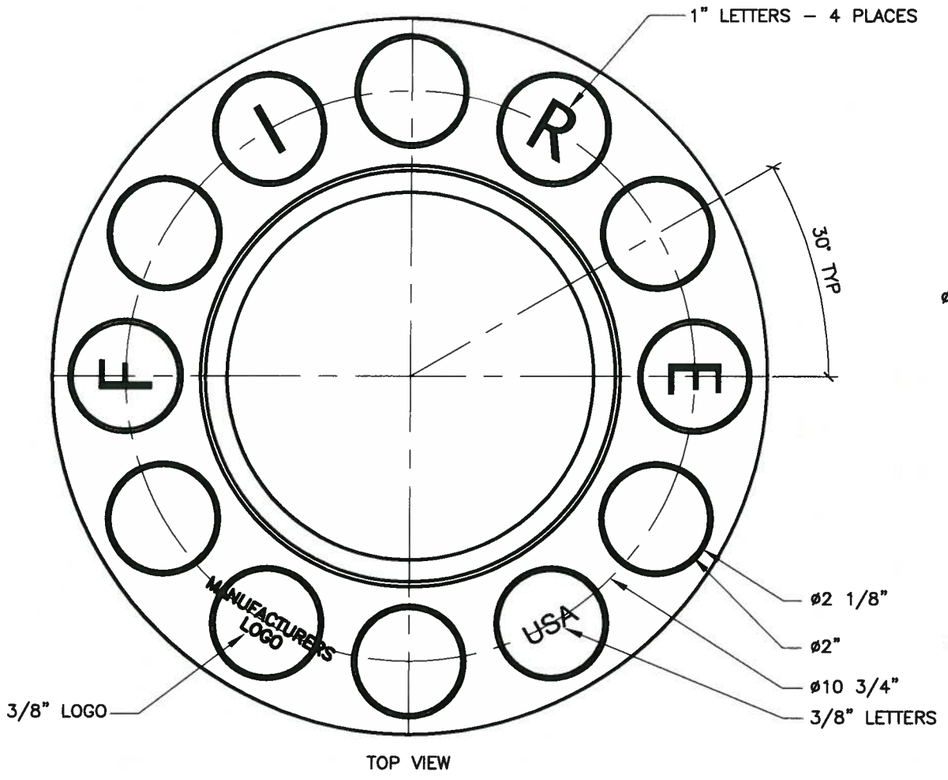
GENERAL NOTES – RING

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"R 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.

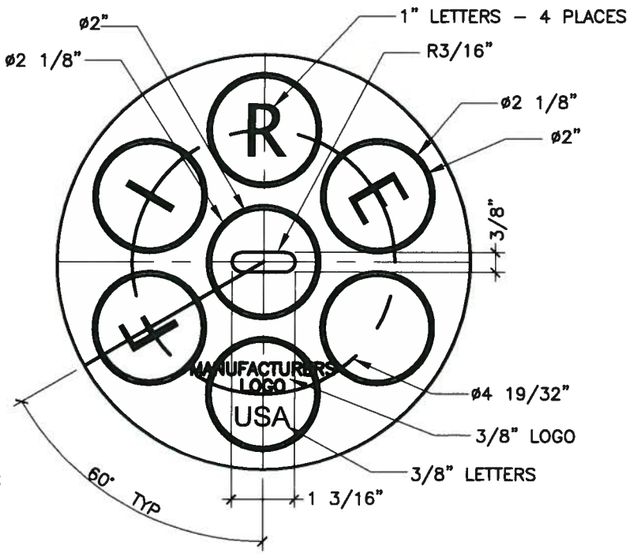
GENERAL NOTES – COVER

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"R 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.

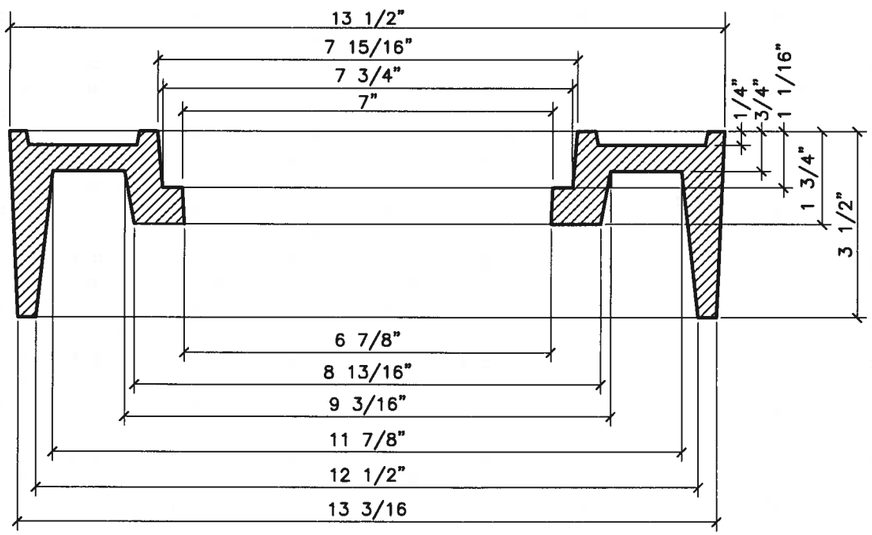
REVISIONS	WATER AUTHORITY
	WATER RING AND COVER FOR VALVE BOX
	DWG. 2328 JANUARY 2011



TOP VIEW

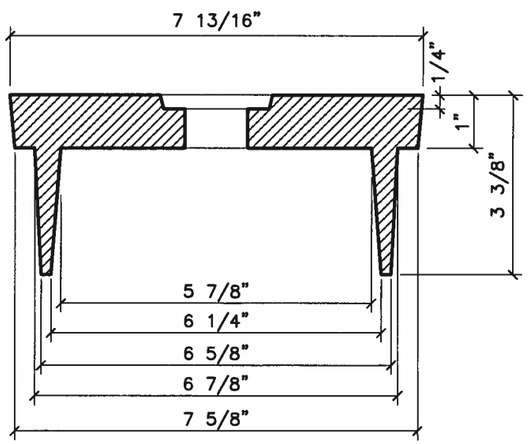


TOP VIEW



SECTION

VALVE BOX RING



SECTION

VALVE BOX COVER

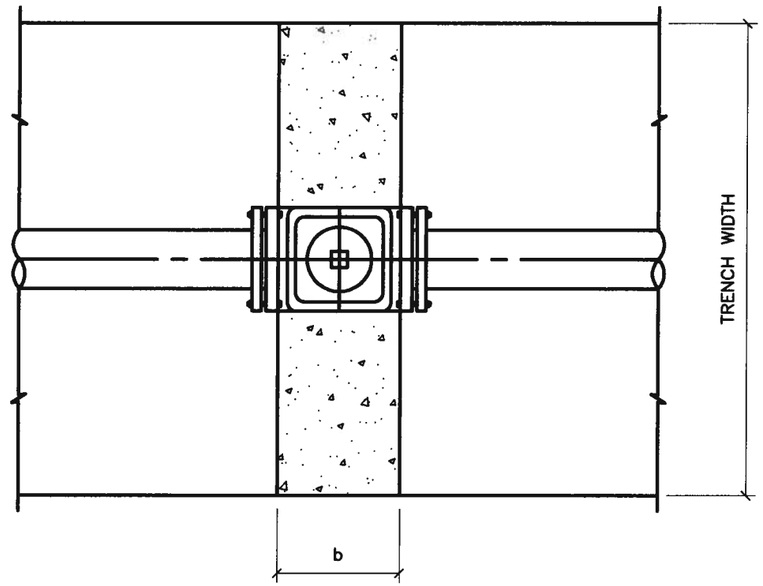
GENERAL NOTES – RING

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"R 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 2328 FOR WATER LINE RING AND COVER.
8. ONLY PRODUCTS CAST IN THE USA WILL BE ACCEPTABLE.

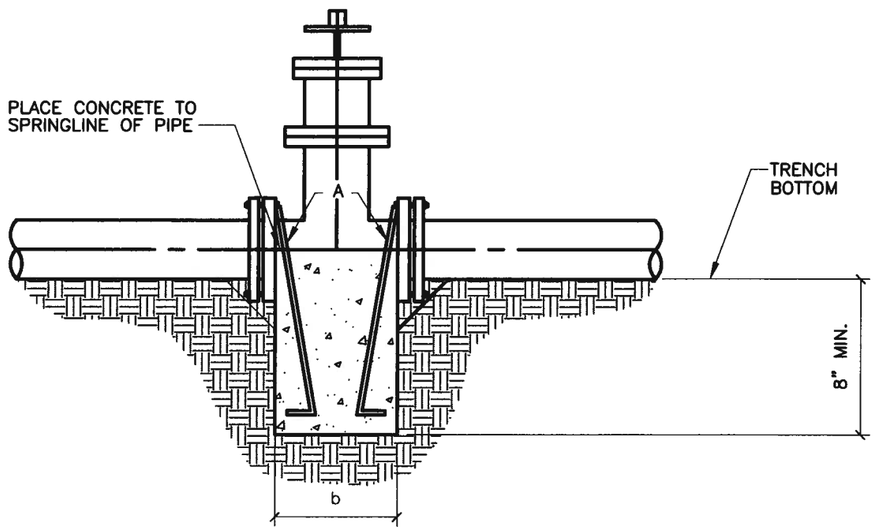
GENERAL NOTES – COVER

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"R 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



PLAN



SECTION

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:

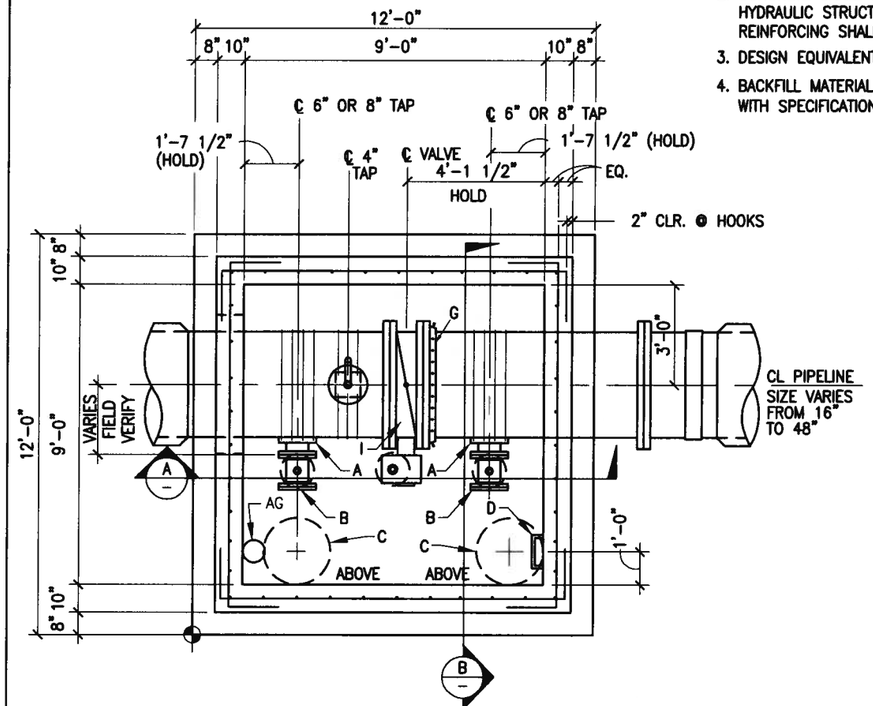
A TWO NO. 4 BARS FOR VALVE STRAPS WITH 3" HOOKS. HOOKS TO BE EMBEDDED BELOW BOTTOM OF PIPE. BARS TO BE COATED WITH BITUMINOUS MATERIAL TO PREVENT CORROSION.

PIPE SIZE	DIM. b
6"	8"
8"	9"
10"	10"
12"	10"

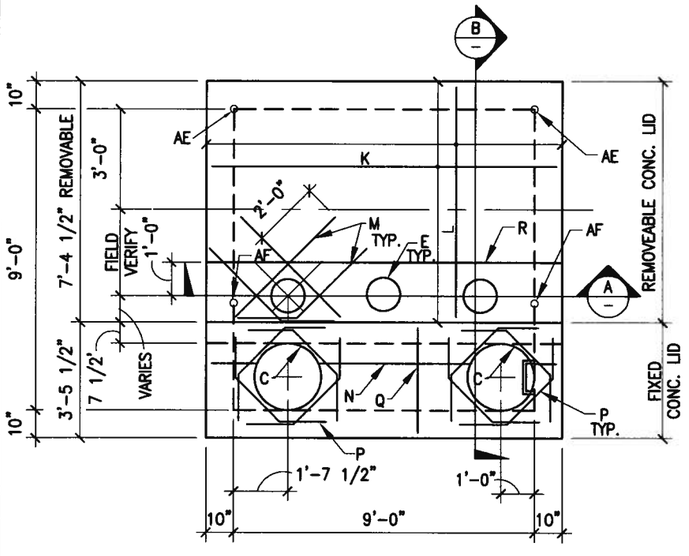
REVISIONS	WATER AUTHORITY
	WATER WATER VALVE INSERTION ANCHORAGE
	DWG. 2333 JANUARY 2011

GENERAL NOTES:

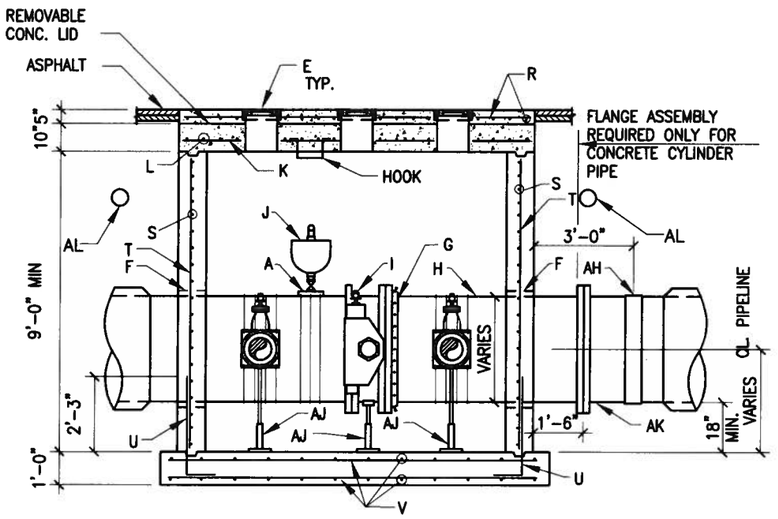
1. VALVE VAULT SHALL NOT BE USED IN GROUND WATER CONDITIONS OR IN CLAY SOILS.
2. CONCRETE SHALL MEET SPECIFICATION SEC. 510 AND SEC. 101 HYDRAULIC STRUCTURAL CONCRETE, f'c = 3000 psi. REINFORCING SHALL BE GRADE 60.
3. DESIGN EQUIVALENT FLUID PRESSURE = 91.2 pcf, K = .5
4. BACKFILL MATERIAL SHALL BE CLASS II OR III IN ACCORDANCE WITH SPECIFICATION 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.

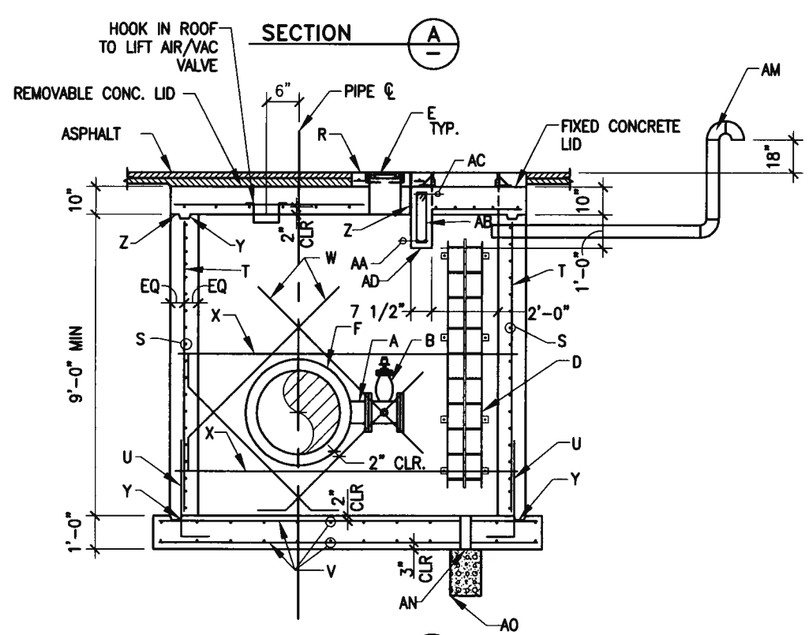


PLAN



REMOVABLE LID PLAN



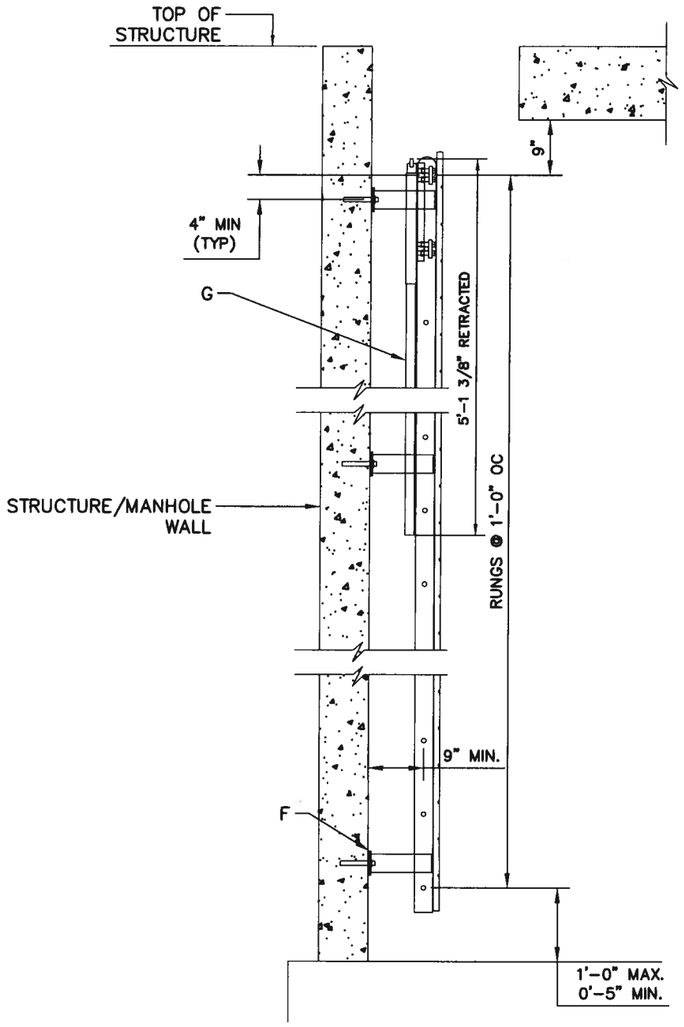


VAULT ORIENTATION ON CONSTRUCTION DRAWINGS

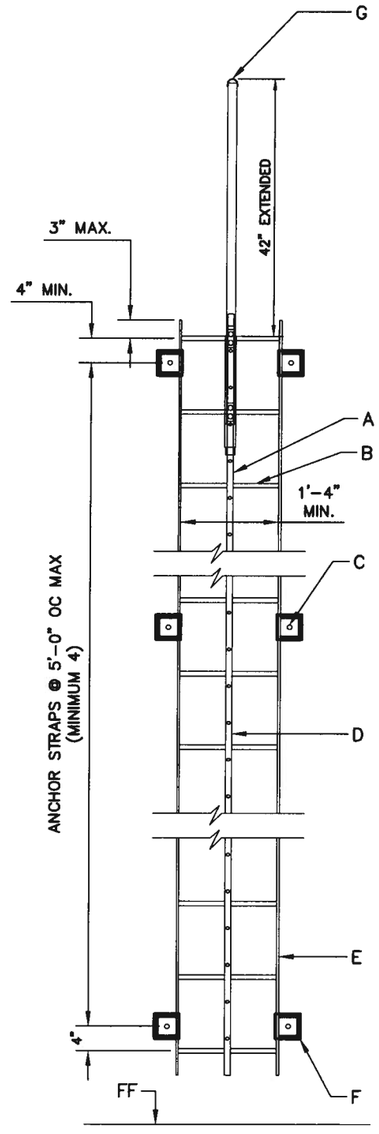
CONSTRUCTION NOTES:

- 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"). 8" GATE VALVE WITH BLIND FLANGE (36" TO 48").
- C 3'-0" DIA. MANHOLE FRAME & COVER PER STANDARD DRAWING 2310.
- D LADDER TO BE INSTALLED PER STD DRAWING 2335.
- E VALVE BOX, RING & COVER PER DWG. 2328.
- F LINK SEAL OR EQUAL.
- G "MEGA-FLANGE" ADAPTER, EBAA OR EQUAL.
- H DUCTILE IRON PIPE (FLxPE).
- I AWWA C504 BUTTERFLY VALVE (FL) PER 801.3.4, SEE STD. DWG. 2360.
- J COMBINATION AIR AND VACUUM VALVE W/ ISOLATION VALVE. SIZE SHOWN IN CONSTRUCTION PLANS.
- K #8 @ 7 1/2" O.C.x10'-4". ADD BAR EACH SIDE OF OPENING.
- L #6 @ 6" O.C.x7'-0 1/2". ADD BAR EACH SIDE OF OPENING.
- M 4-#5 DIAGONALS AT EACH OPENING.
- N #5 @ 12" O.C.x10'-4". FIELD CUT AT OPENINGS.
- P #5 DIAGONALSx6'-0". BEND AS REQUIRED.
- Q #5 @ 12" O.C.x3'-1 1/2". FIELD CUT AT OPENINGS.
- R 5" CONCRETE TOPPING SLAB WITH #4@6" O.C. EACH WAY. SPREAD BARS AT OPENINGS.
- S #5 @ 6" O.C. HORIZ.x10'-4" WITH 10" HOOKS EACH END.
- T #4 @ 12" O.C. VERT. x 8'-10".
- U #5 FOOTING DOWELS @ 6" O.C. WITH 10" HOOK.
- V #6 @ 6" O.C.x11'-8" EACH WAY TOP & BOTTOM.
- W 2-#5 DIAGONALSx7'-0". BEND AS REQUIRED. (8 TOTAL EACH WALL)
- X 2-#6x10'-4" TOP & BOT. OF PIPE. PLACE OUTSIDE OF DIAGONALS.
- Y 2x4 KEY TYPICAL.
- Z 30# FELT MASTIC
- AA 2-#9x10'-4"
- AB #4 TIES @ 5 1/2" O.C. 1st TIE 1 3/4" FROM FACE OF WALL.
- AC 2-#5x10'-4"
- AD BLOCK OUT WALL FOR BEAM.
- AE COIL INSERT WITH 8000# CAPACITY EACH. PROVIDE GREASED BOLT AND ASPHALT OVER CONNECTION. PROVIDE SINGLE SWIVEL LIFT PLATES. WIRE TIE TO BOTTOM LADDER RUNG.
- AF PROVIDE COIL INSERT "AE" ABOVE IN 10" SLAB. PROVIDE PVC POCKET THROUGH 5" TOPPING SLAB. INSERT BOLT & FILL WITH ASPHALT.
- AG 8"ø HOLE WITH GRAVEL FILL. PROVIDE 1/2" C.Y. GRAVEL FILL BELOW FOUNDATION.
- AH BUTT STRAP TYP.
- AJ ADJUSTABLE PIPE SUPPORT.
- AK STEEL PIPE (FLxPE). COAT ALL EXPOSED STEEL SURFACES WITH AN APPROVED PRODUCT OR AS APPROVED ON THE CURRENT WATER AUTHORITY PRODUCTS LIST
- AL ELECTRONIC MARKER DEVICE (EMD) SEE COA STD SPEC SECTION 170.
- AM 6" STEEL PIPE W/GOOSENECK AND INSECT SCREEN
- AN 8" DIA. SCHEDULE 40 PVC PIPE SLEEVE THROUGH MANHOLE BASE.
- AO 3'x3'x3' DEEP 1" CLEAN GRAVEL. ASTM C33, NO. 57 GRAVEL.

REVISIONS	WATER AUTHORITY
	WATER LARGE DIAMETER VALVE VAULT
	DWG. 2334 JANUARY 2011



SIDE VIEW



ELEVATION

LADDER DETAIL

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" ø SMOOTH BAR WITH ADDED TRACTION RUNGS @ 12" OC PLUG WELD TO SIDE BARS (TYP)

C. 3" X 3/8" FLAT WALL STRAP

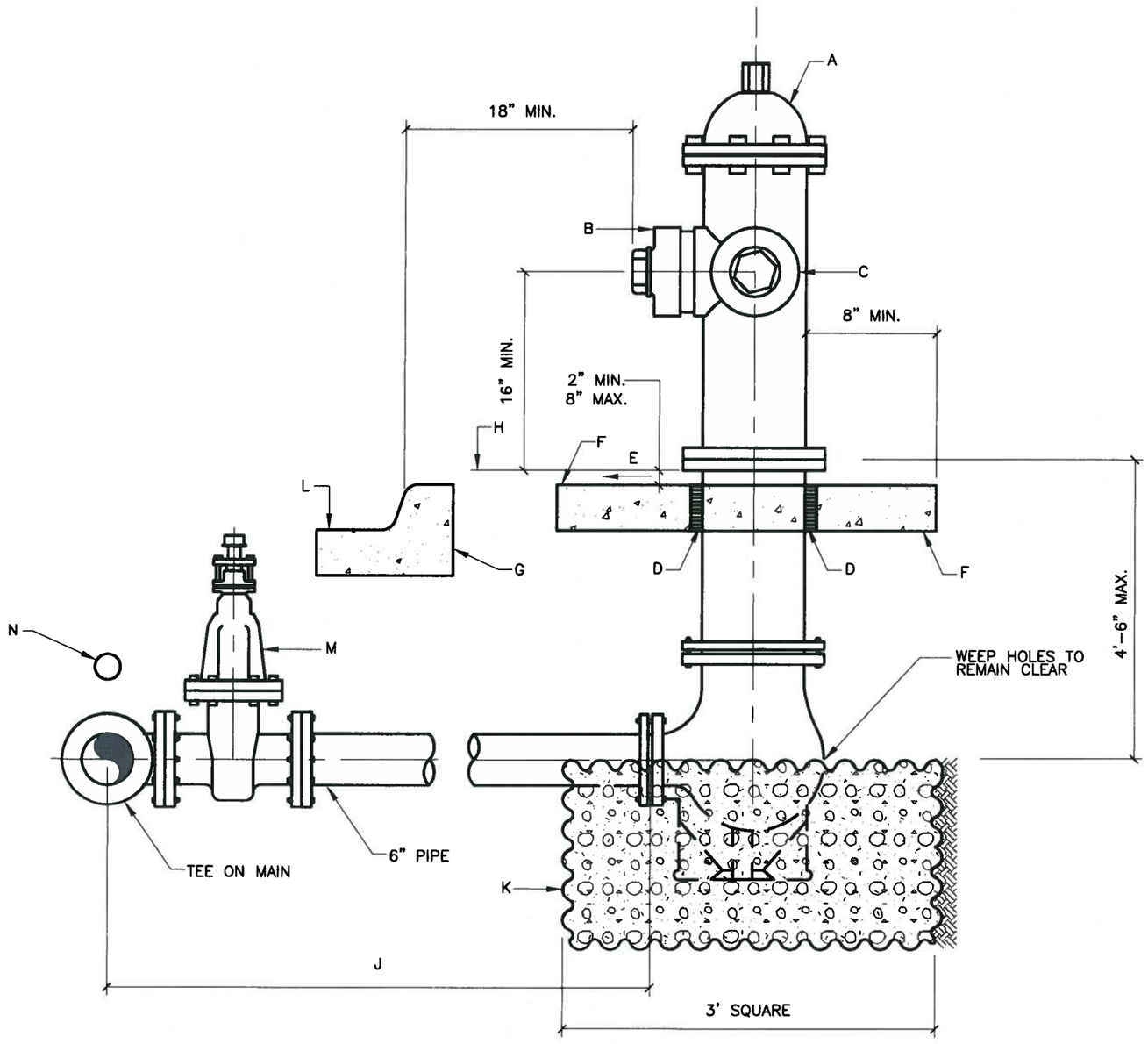
D. STAINLESS STEEL RAILOCK RAIL OR EQUAL WITH EXTENSION ON ALL LADDERS.

E. 3" X 3/8" SIDEBARS ROUND ALL CORNERS SMOOTH 1/8" RADIUS

F. CHLOROPRENE PADS.

G. BILCO LADDER UP.

REVISIONS	WATER AUTHORITY
	WATER LADDER DETAIL DWG. 2335 JANUARY 2011



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.

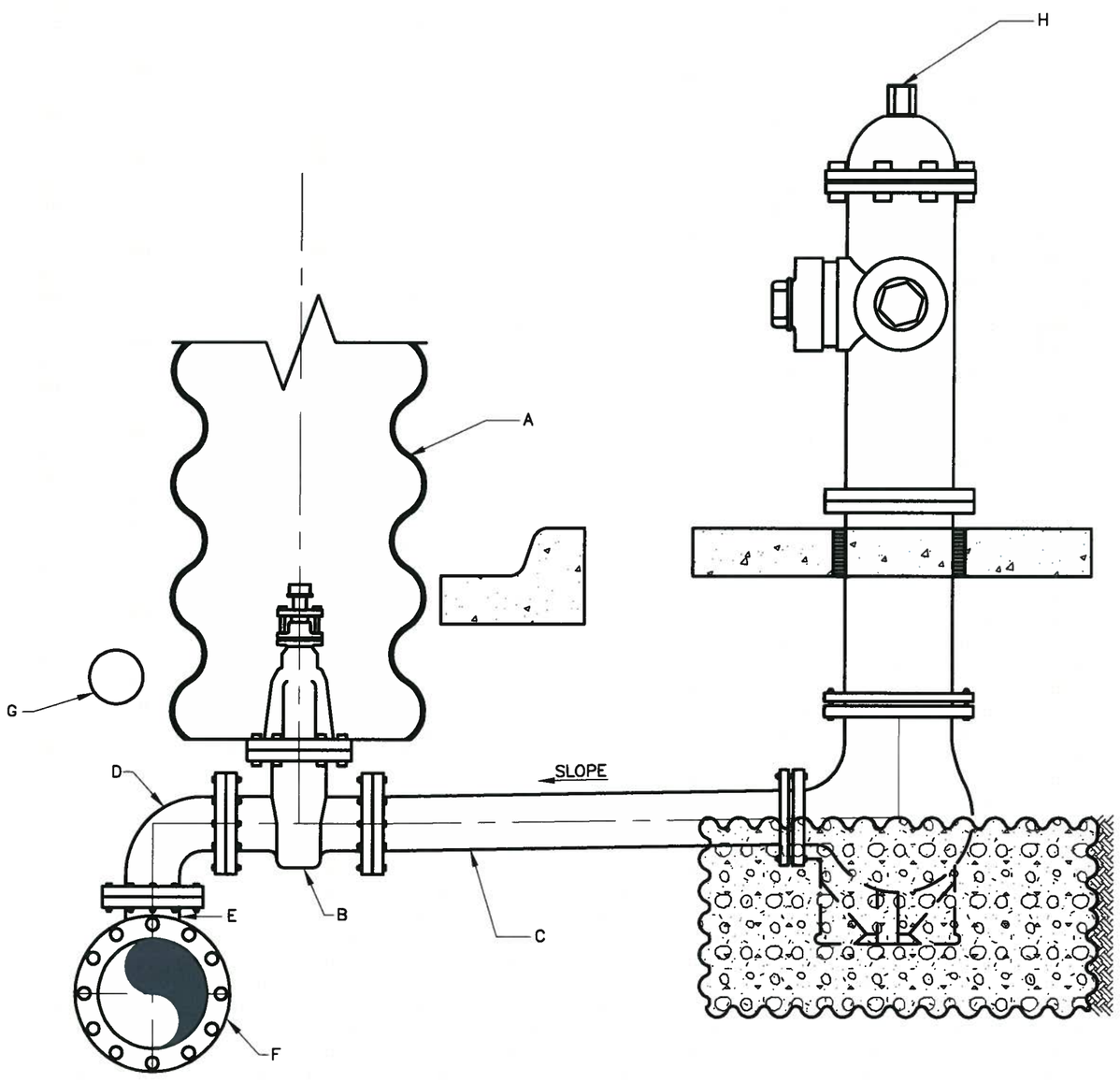
K GRAVEL DRAIN POCKET. USE FILTER FABRIC TO COVER AROUND GRAVEL DRAIN POCKET. ASTM C33, NO.57 GRAVEL.

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.

REVISIONS	WATER AUTHORITY
	WATER FIRE HYDRANT INSTALLATION
	DWG. 2340 JANUARY 2011



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 DUCTILIE IRON 90° BEND.

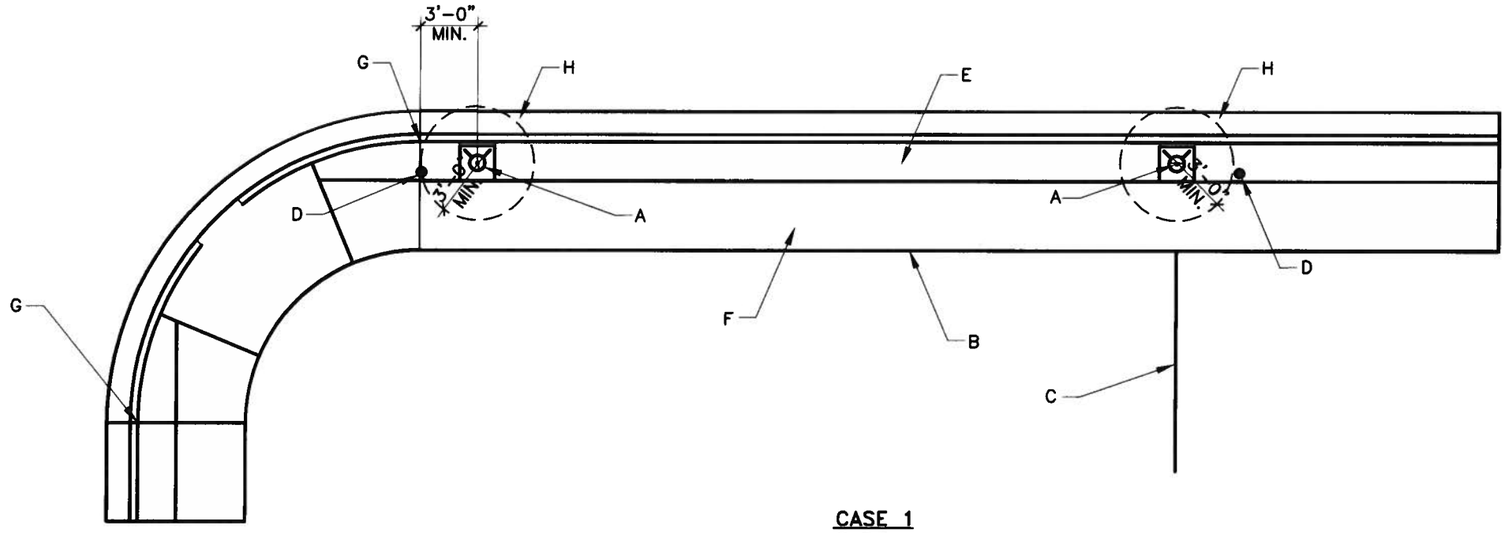
E FLANGED OUTLET OR MECHANICAL JOINT TEE.

F WATER MAIN.

G ELECTRONIC MARKER DEVICE (EMD), SEE COA STANDARD SPECIFICATION SECTION 170.

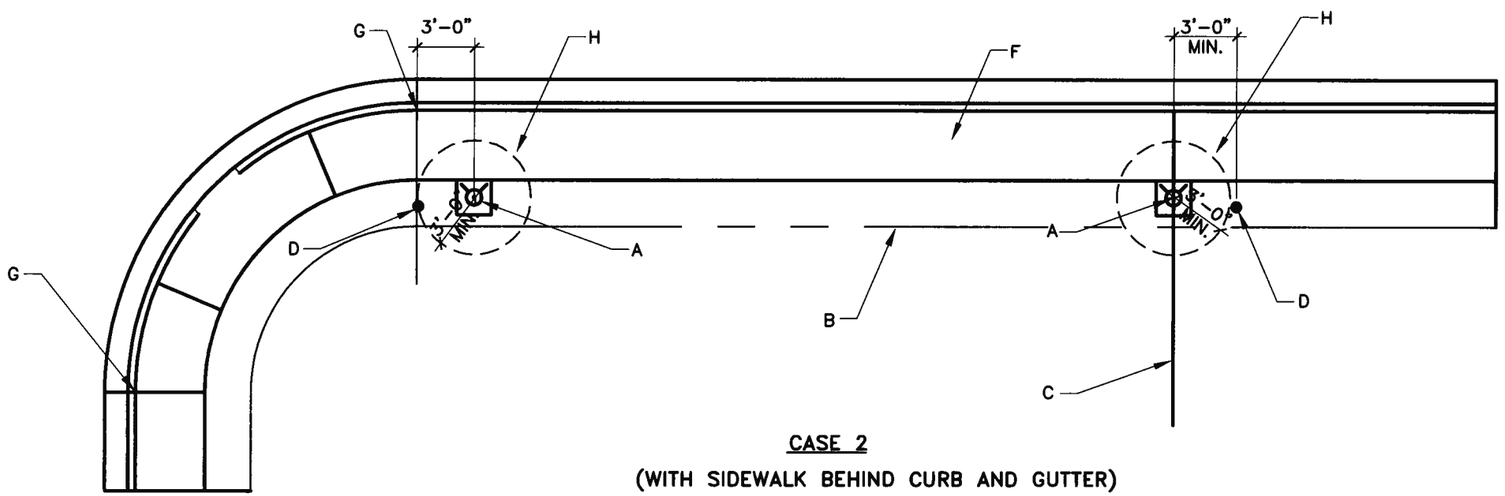
H FIRE HYDRANT PER STD. DWG. 2340.

REVISIONS	WATER AUTHORITY
	WATER AIR RELEASE FIRE HYDRANT CONNECTION
	DWG. 2344 JANUARY 2011



CASE 1

(WITH PARKWAY BEHIND CURB AND GUTTER)



CASE 2

(WITH SIDEWALK BEHIND CURB AND GUTTER)

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

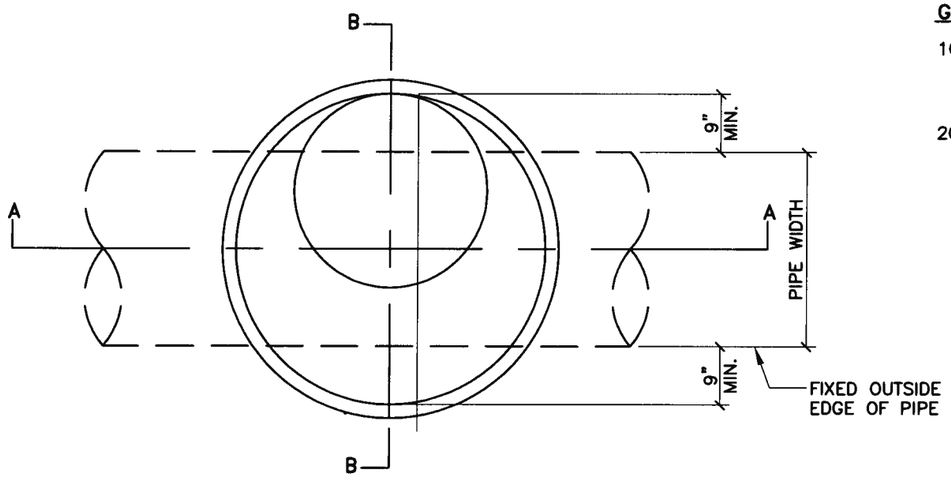
E PARKWAY

F SIDEWALK

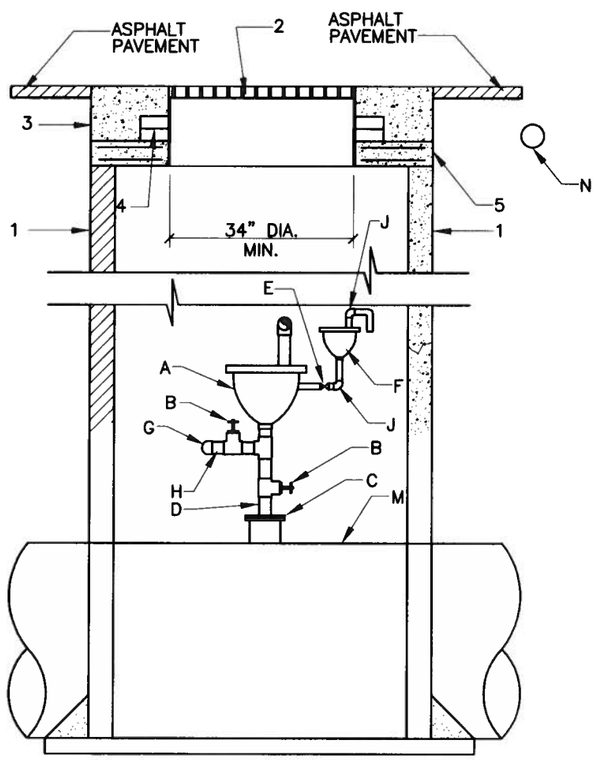
G PC OR PT OF CURB RETURN

H MAINTAIN A MINIMUM CLEARANCE OF 3' RADIUS FROM CENTER OF HYDRANT TO ANY AND ALL OBSTRUCTIONS.

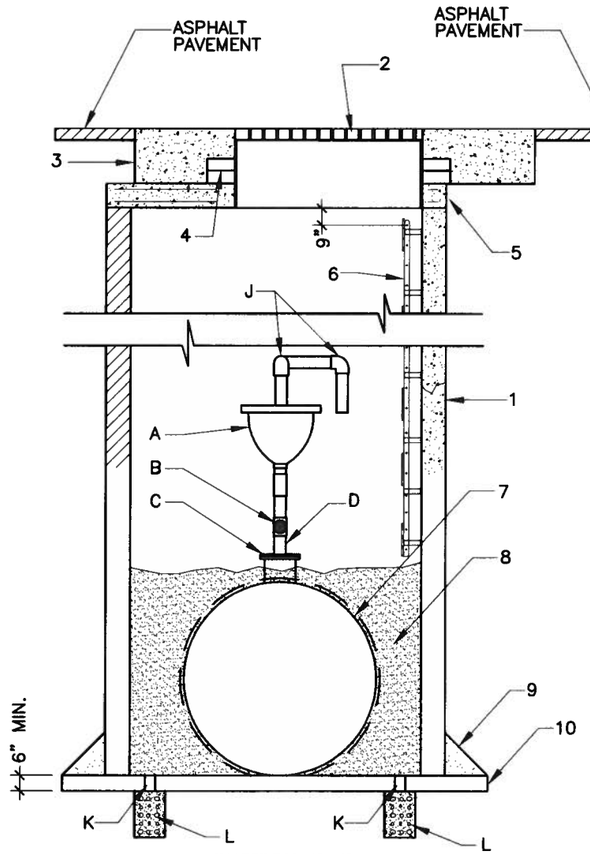
REVISIONS	WATER AUTHORITY
	WATER DETAILS ON TYPICAL FIRE HYDRANT LOCATIONS DWG. 2347 JANUARY 2011



PLAN



SECTION A–A



SECTION B–B

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, GR, MS BRICK, POURED CONCRETE, OR PRECAST REIN-FORCED 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 GR 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.

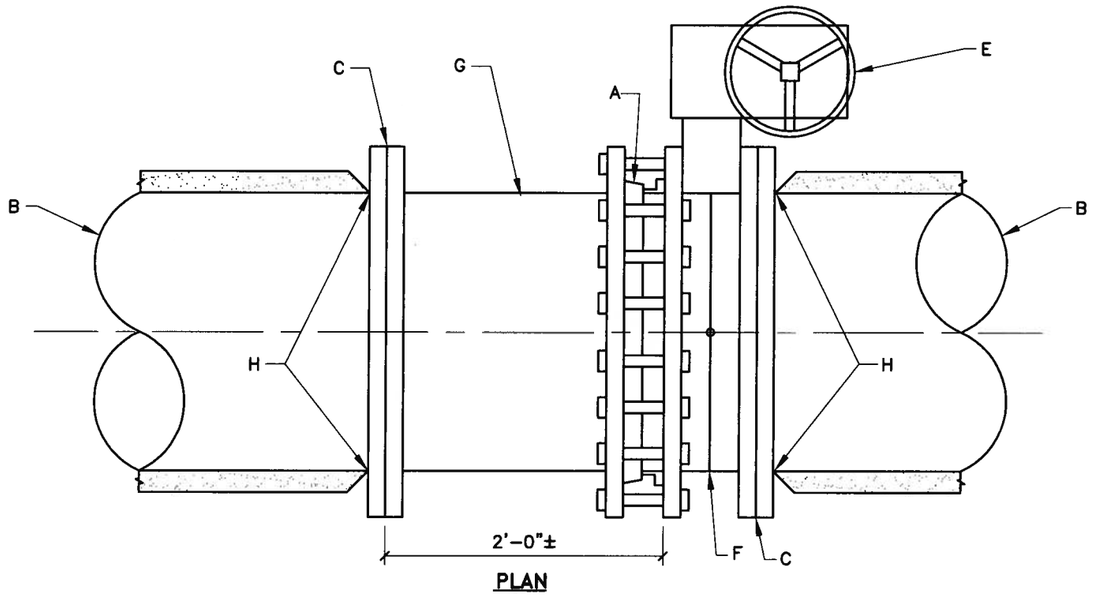
7 CUT MANHOLE TO PROVIDE A 4" CLEARANCE AROUND WATER MAIN AND FILL ANNULAR SPACE WITH NON-SHRINK GROUT OR WATER AUTHORITY APPROVED EQUAL.

8 1" CLEAN GRAVEL TO TOP OF MAIN.

9 6" GROUT FILLET AROUND BASE.

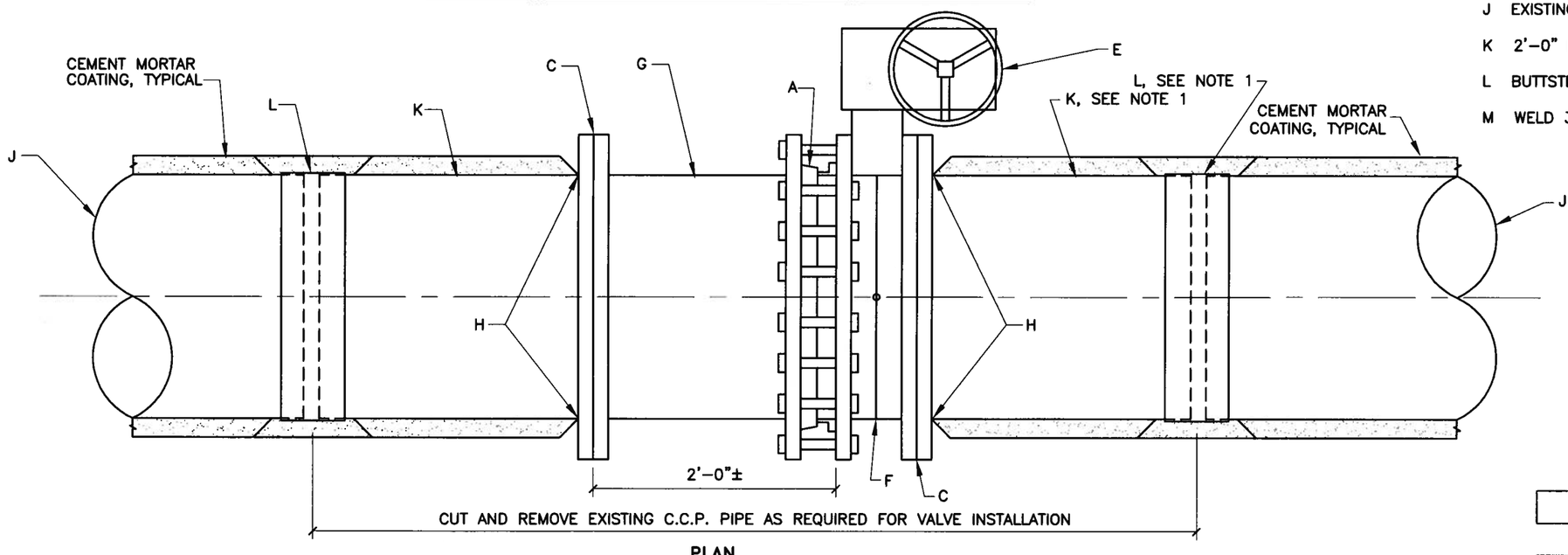
10 CONCRETE BASE USING #4 BARS AT 12" OC EACH WAY.

REVISIONS	WATER AUTHORITY
	WATER AIR/VACUUM RELEASE VALVE
	DWG. 2350 JANUARY 2011



PLAN

BUTTERFLY VALVE INSTALLATION DETAIL IN NEW C.C.P. PIPELINE



PLAN

BUTTERFLY VALVE INSTALLATION DETAIL IN EXISTING C.C.P. PIPELINE

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 (FLGxFLG), SIZE AS SHOWN ON DRAWINGS.

G DUCTILE IRON SPOOL (FLGxPE).

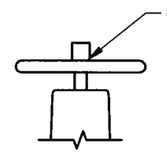
H COAT ALL EXPOSED STEEL SURFACES WITH AN ENGINEER APPROVED PRODUCT OR AS APPROVED ON THE CURRENT WATER AUTHORITY APPROVED PRODUCTS LIST.

J EXISTING C.C.P. PIPE.

K 2'–0" LONG STEEL SPOOL (FLGxPE).

L BUTTSTRAP.

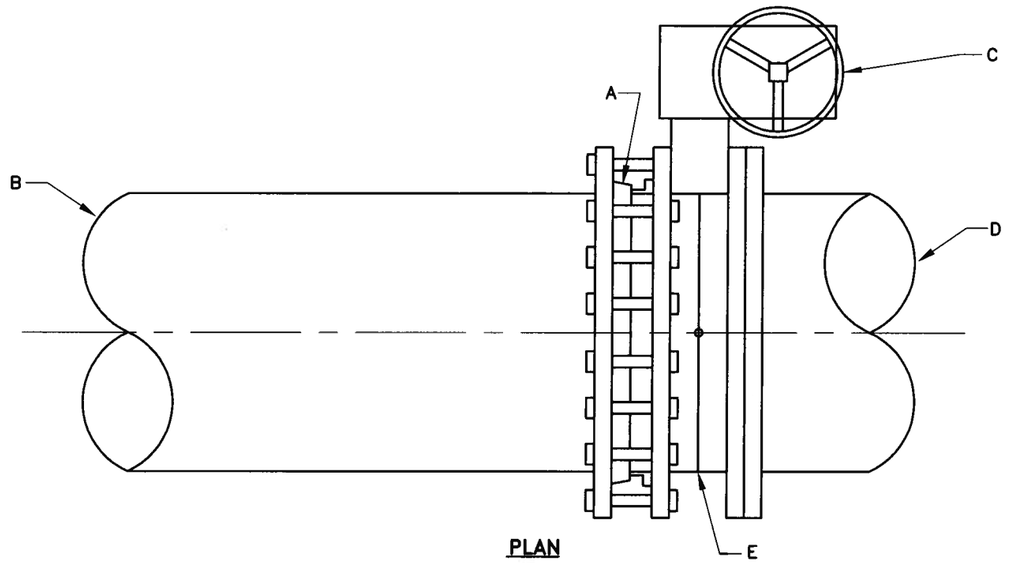
M WELD 3" OPERATING NUT TO HAND WHEEL.



SIDE VIEW
HAND WHEEL WITH
3" OPERATING NUT DETAIL

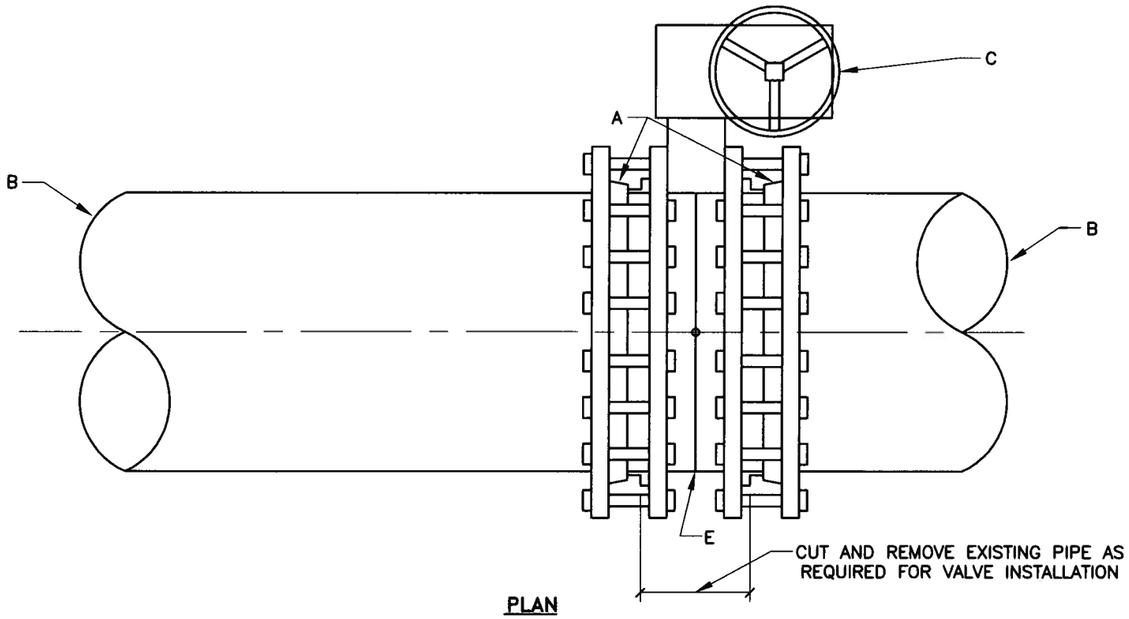
IN VAULT INSTALLATION

REVISIONS	WATER AUTHORITY
	WATER CONC CYL BUTTERFLY VALVE IN VAULT INSTALLATION DWG. 2351 JANUARY 2011



PLAN

BUTTERFLY VALVE INSTALLATION DETAIL IN NEW D.I. PIPELINE



PLAN

BUTTERFLY VALVE INSTALLATION DETAIL IN EXISTING D.I. PIPELINE

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 EBAA IRON SALE, OR APPROVED EQUAL.

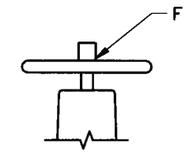
B MAIN PIPELINE (D.I.) WITH PLAIN END.

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.

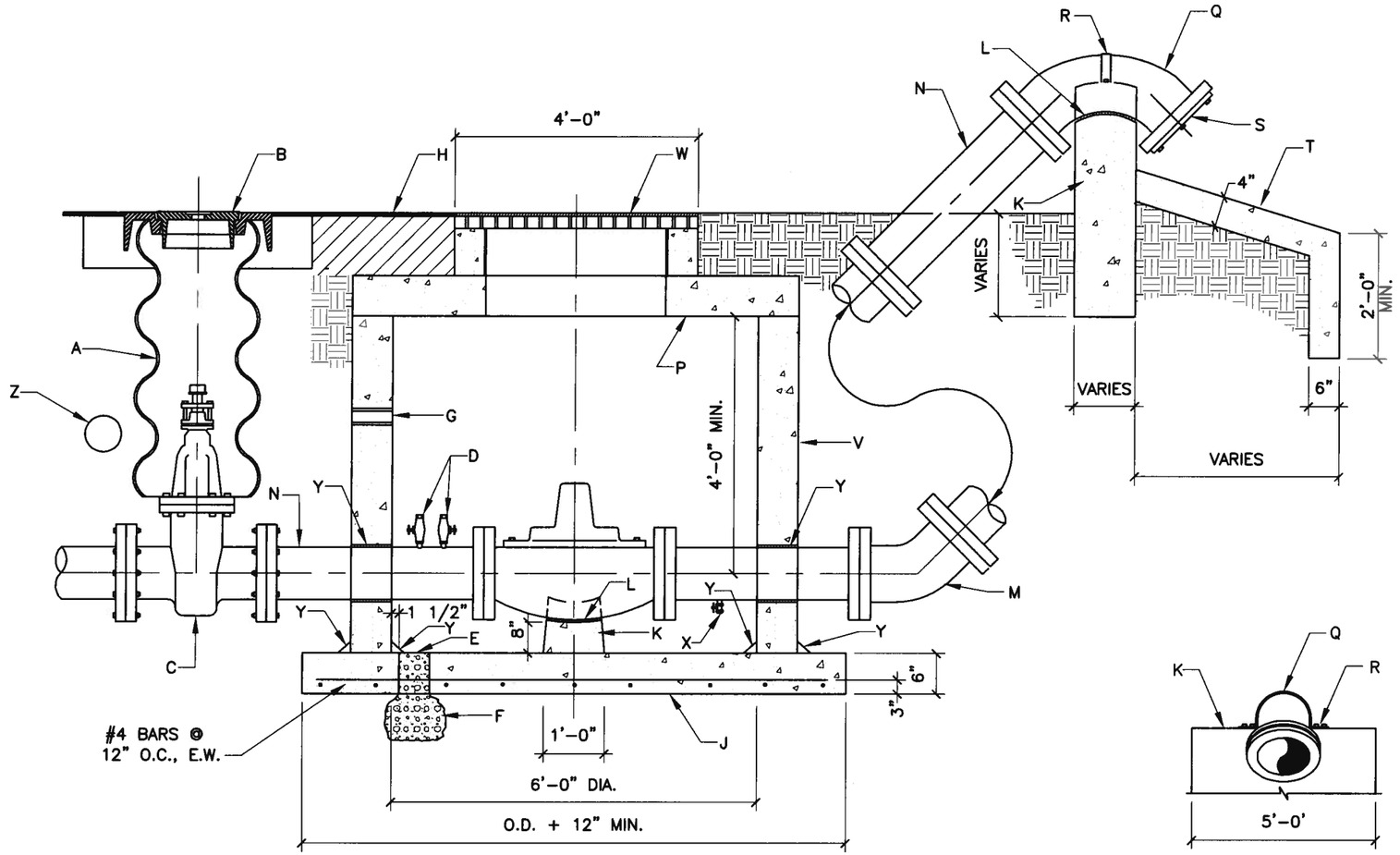
F WELD 3" OPERATING NUT TO HAND WHEEL.



SIDE VIEW
HAND WHEEL WITH
3" OPERATING NUT DETAIL

IN VAULT INSTALLATION

REVISIONS	WATER AUTHORITY
	WATER DUCTILE IRON BUTTERFLY VALVE IN VAULT INSTALLATION DETAILS DWG. 2352 JANUARY 2011



ELEVATION
TYPICAL

FRONT VIEW

PIPE OUTLET PLAN VIEW

ANCHOR DETAILS

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, f'c=3000 psi @ 28 DAYS.

K REINFORCED CONCRETE PEDESTAL. CONCRETE PER SEC. 101, EXTERIOR CONCRETE, f'c=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.

Q C.I./D.I. 90° ELL. (FL. – FL.).

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, f'c=3000 psi @ 28 DAYS.

U 4– 5/8"x10" ANCHOR BOLTS.

V 6'–0" DIA. TYPE "C" MANHOLE, PER C.O.A. STD. DWG. 2101.

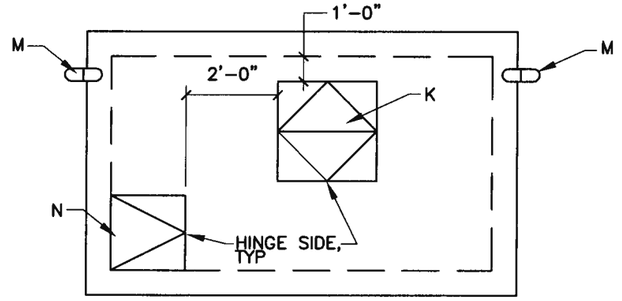
W 4'x4' BILCO DOOR AS APPROVED BY THE ENGINEER OR THE WATER AUTHORITY.

X 1" TAP AND VALVE FOR DRAIN.

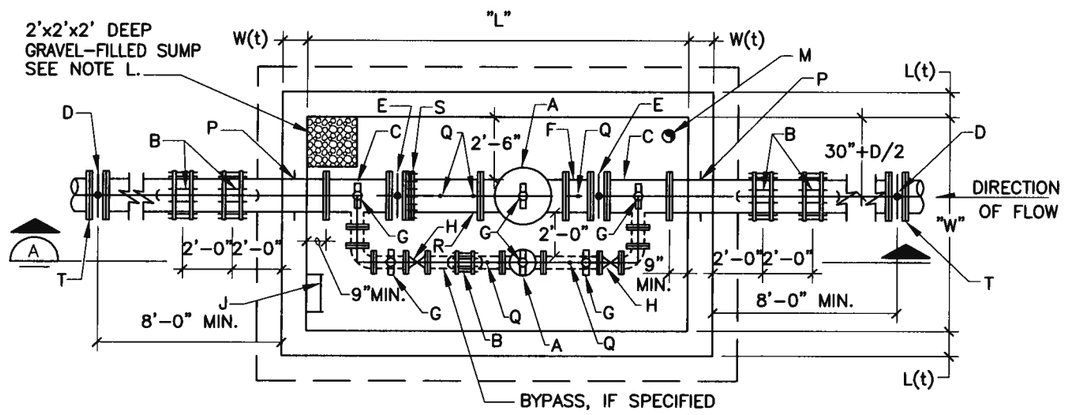
Y NON–SHRINK GROUT.

Z ELECTRONIC MARKER DEVICE (EMD), SEE COA STANDARD SPECIFICATION SECTION 170.

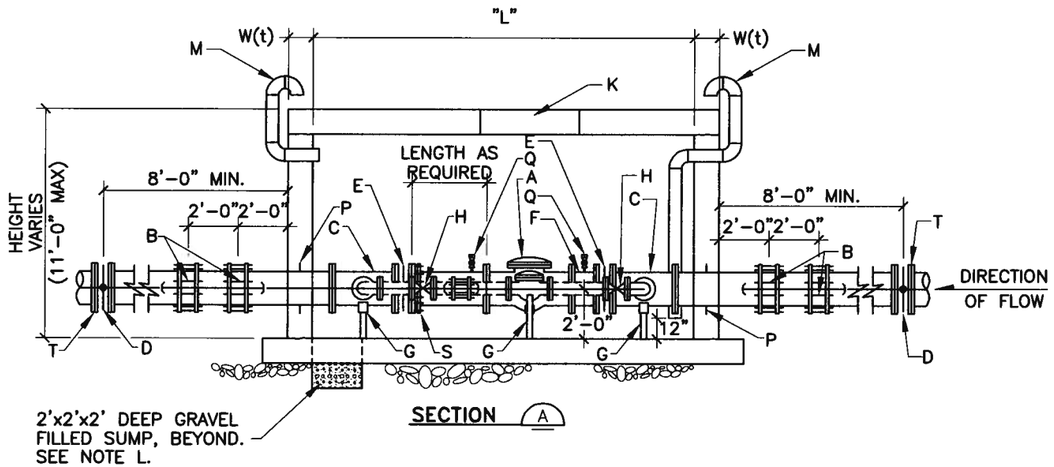
REVISIONS	WATER AUTHORITY
	WATER SURGE RELIEF VALVE STATION
	DWG. 2353 JANUARY 2011



TOP PLAN



INTERIOR PLAN



SECTION A

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 AASHTO 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 GOOSENECK AND INSECT SCREEN ARE LOCATED OUT OF VEHICULAR OR PEDESTRIAN TRAFFIC AREAS.

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 IS SPECIFIED.

F FLANGED SPOOL, LENGTH = 1'-0"

G ADJUSTABLE PIPE SADDLE SUPPORT, GRINNELL FIG. 264, ELCEN FIG. 50 OR EQUAL, TYPICAL

H GATE VALVE WITH HAND WHEEL OPERATOR, REQUIRED ONLY IF BYPASS SPECIFIED

J LADDER PER COA STANDARD DRAWING 2335.

K 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 JD, OR EQUAL.

L GRAVEL PER ASTM C33, NO. 57 GRAVEL.

M 6" STEEL PIPE W/GOOSENECK AND INSECT SCREEN

N 3'-0" SQ 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.

P WALL PIPE, CENTERED IN WALL, WITH NON-SHRINK GROUT OR WATER AUTHORITY APPROVED EQUAL.

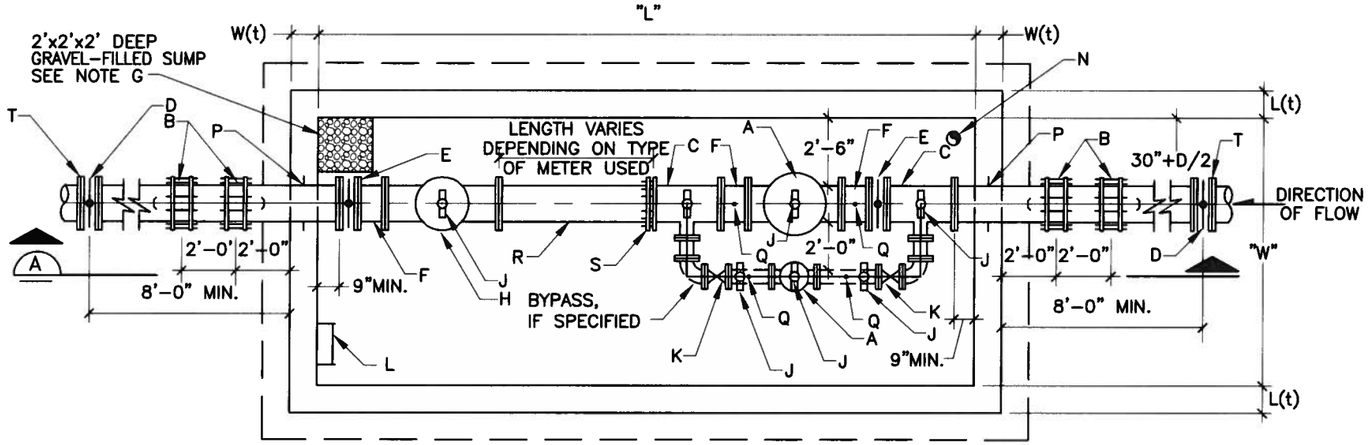
Q 1/2" PIPE TAP WITH 1/2" BALL VALVE AND CAP

R D.I. SPOOL FLG. x P.E.

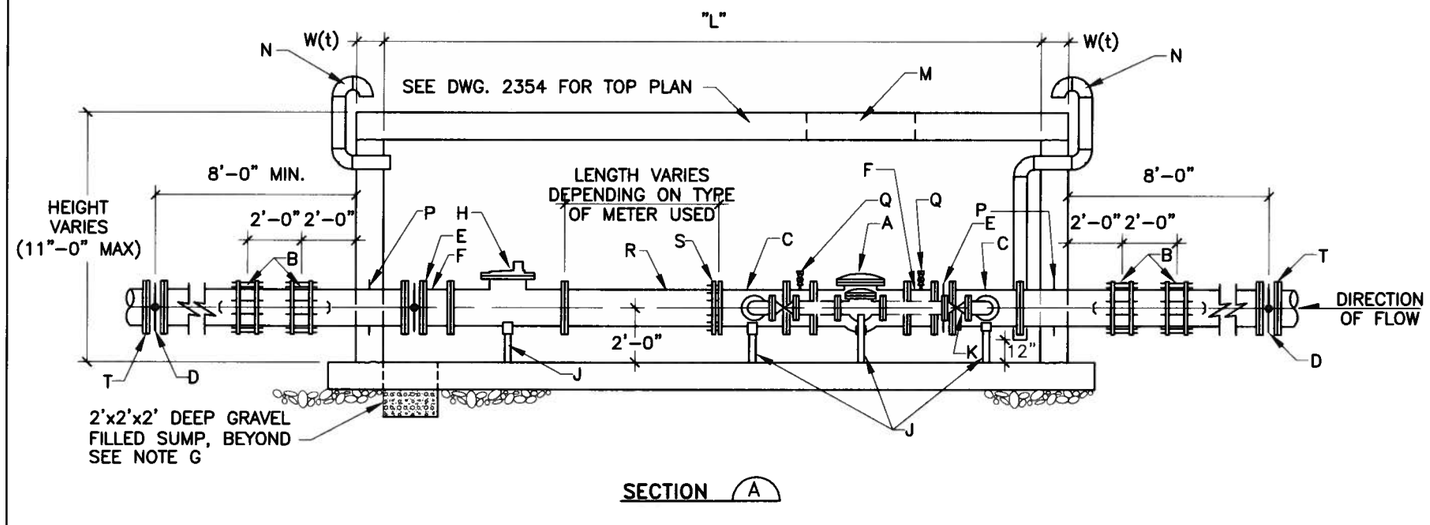
S MEGA FLANGE - FLANGE ADAPTER, AS MANUFACTURED BY EBAA IRON SALES, OR APPROVED EQUAL.

T INSULATING FLANGE KIT.

REVISIONS	WATER AUTHORITY
	WATER **STANDARD PRV STATION** **NO METER**
	DWG. 2354 JANUARY 2011



INTERIOR PLAN



SECTION (A)

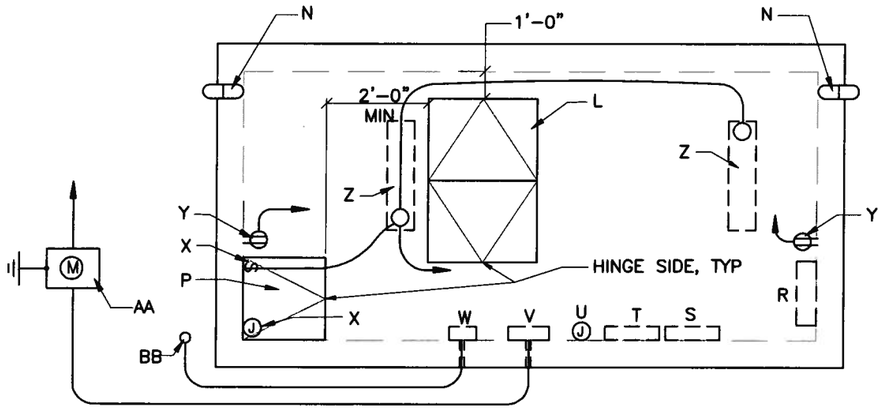
GENERAL NOTES:

1. FOR STRUCTURAL DETAILS, VAULT DIMENSIONS AND REINFORCING SEE STANDARD PRV STATION STRUCTURAL DETAILS DWG. 2357
2. SEE STANDARD PRV STATION,NO 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. ENGINEER SHALL PROVIDE A WATERPROOF MANHOLE OR VAULT DESIGN FOR APPROVAL BY THE WATER AUTHORITY PRIOR TO INSTALLATION.

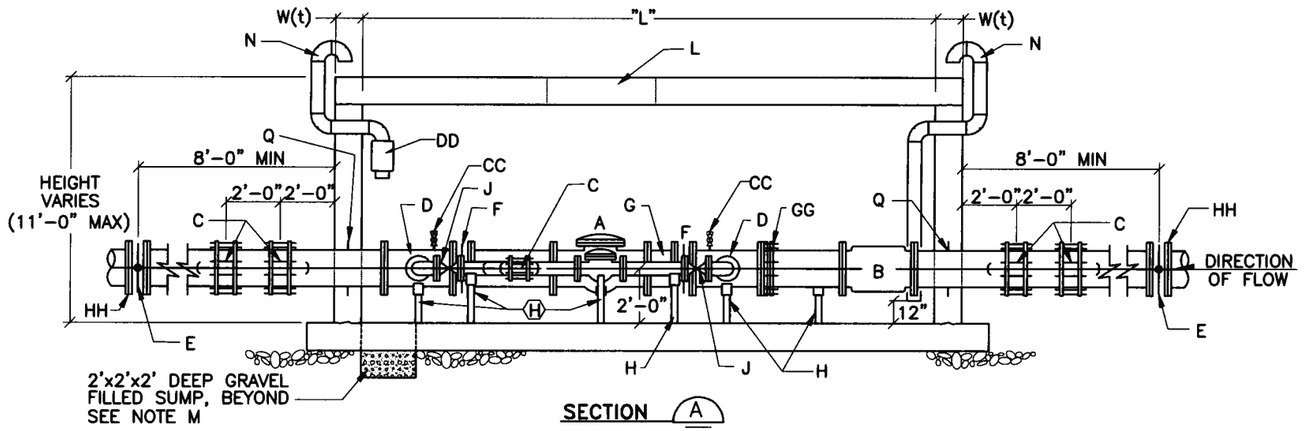
CONSTRUCTION NOTES:

- A PRESSURE REDUCING VALVE, AS SPECIFIED
- B FLEXIBLE COUPLING WITH THRUST TIES, SEE 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 PDS-102 OR EQUAL, COMPLETE WITH TUBE, SADDLE AND STRAIGHTENING VANES.
- J ADJUSTABLE PIPE SADDLE SUPPORT, GRINNEL FIG. 264, ELCEN FIG. 50, OR EQUAL.
- 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 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 JD, OR EQUAL.
- 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 D.I. SPOOL FLG. x P.E.
- S MEGA FLANGE – FLANGE ADAPTOR, AS MANUFACTURED BY EBAA IRON SALES, OR APPROVED EQUAL.
- T INSULATING FLANGE KIT.

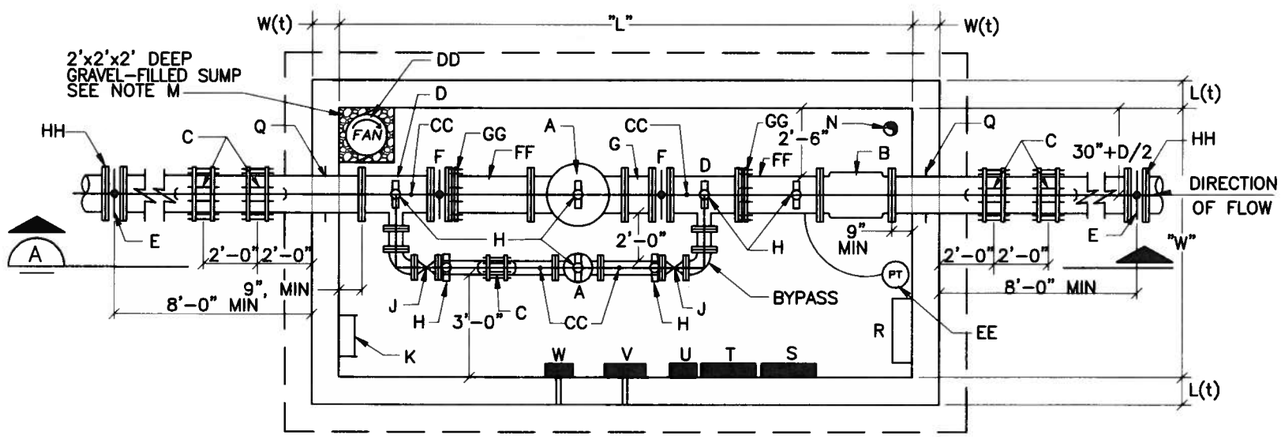
REVISIONS	WATER AUTHORITY
	WATER STANDARD PRV STATION WITH PROPELLER METER
	DWG. 2355 JANUARY 2011



TOP PLAN



SECTION A



INTERIOR PLAN

GENERAL NOTES:

1. FOR STRUCTURAL DETAILS, VAULT DIMENSIONS AND REINFORCING SEE STANDARD PRV STATION STRUCTURAL DETAILS DWG. 2357.
2. SEE STANDARD PRV STATION NO 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.
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.

CONSTRUCTION NOTES:

A	PRESSURE REDUCING VALVE, AS SPECIFIED
B	MAGNETIC FLOW METER, KROHNE M940/960, OR AS APPROVED BY THE WATER AUTHORITY, COMPLETE WITH SIGNAL CONVERTER
C	FLEXIBLE COUPLING WITH THRUST TIES, SEE THRUST TIE DETAIL ON DWG. 2358.
D	FLANGED TEE
E	BURIED BUTTERFLY VALVE (GATE VALVE FOR SIZE < 14")
F	BUTTERFLY VALVE (GATE VALVE FOR SIZE < 14")
G	FLANGED SPOOL, LENGTH = 1'-0"
H	ADJUSTABLE PIPE SADDLE SUPPORT, GRINNELL FIG. 264, ELCEN FIG. 50 OR EQUAL
J	GATE VALVE
K	LADDER PER COA STANDARD DRAWING 2335.
L	ALUMINUM FLOOR DOOR WITH RECESSED HASP COVERED BY A HINGED LID FLUSH WITH TOP SURFACE. DOOR SIZE SHALL BE 4'x6' DOUBLE LEAF. HARDWARE AND HINGES SHALL BE TYPE 304 STAINLESS STEEL. BILCO TYPE JD OR EQUAL.
M	GRAVEL PER ASTM C33, NO. 57 GRAVEL.
N	6" STEEL PIPE W/GOOSENECK AND INSECT SCREEN
P	3'-0" SQ ALUMINUM FLOOR DOOR WITH RECESSED HASP COVERED BY A HINGED LID 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 VOLT, 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 DPDT MICROSWITCH TO ENERGIZE LIGHTS AND EXHAUST FAN 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 100 AMP, 120/240 VOLT, SINGLE PHASE METER AND MAIN CIRCUIT BREAKER. INSTALL ON 16"x16"x6" CONCRETE PAD PER PNM DWG #DS-19-84.0
BB	TELEMETRY SYSTEM MAST AND ANTENNA LOCATION TO BE DETERMINED BY THE WATER AUTHORITY
CC	1/2" PIPE TAP WITH 1/2" BALL VALVE AND CAP
DD	INLINE EXHAUST FAN W/SWITCH AND ACCESS DOOR CONTROLS
EE	PRESSURE TRANSDUCER, HONEYWELL MODEL STG 644-EIG-0000-DM. PROVIDE 1/2" PIPE TAP, 1/2" BALL VALVE AND TUBING TO CONNECT TRANSDUCER TO PIPE BARREL
FF	D.I. SPOOL FLG. x P.E.
GG	MEGA FLANGE - FLANGE ADAPTER, AS MANUFACTURED BY EBAA IRON SALES, OR APPROVED EQUAL.
HH	INSULATING FLANGE KIT.

REVISIONS	WATER AUTHORITY
	WATER STANDARD PRV STATION WITH POWER/TELEMETRY
	DWG. 2356 JANUARY 2011

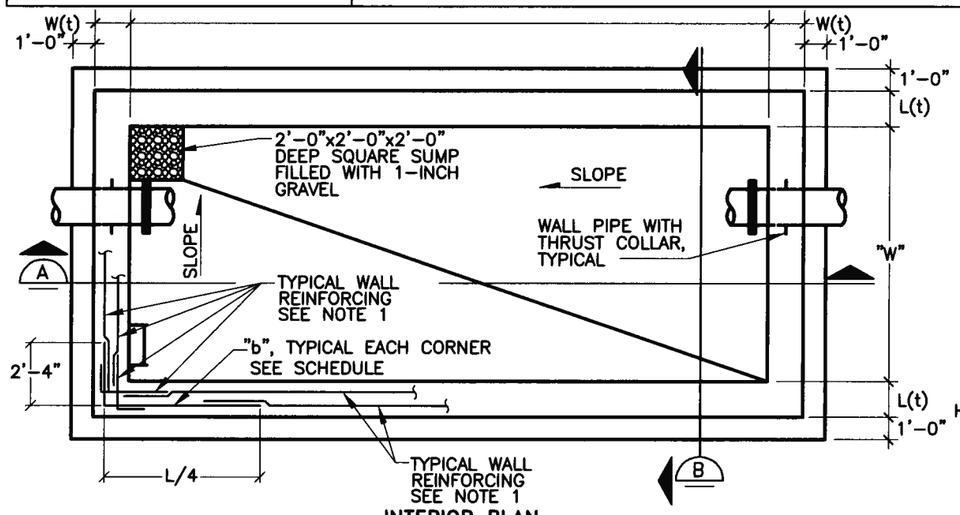
PRV VAULT DIMENSION AND REINFORCING SCHEDULE

"L"=VAULT LENGTH
"W"=VAULT WIDTH

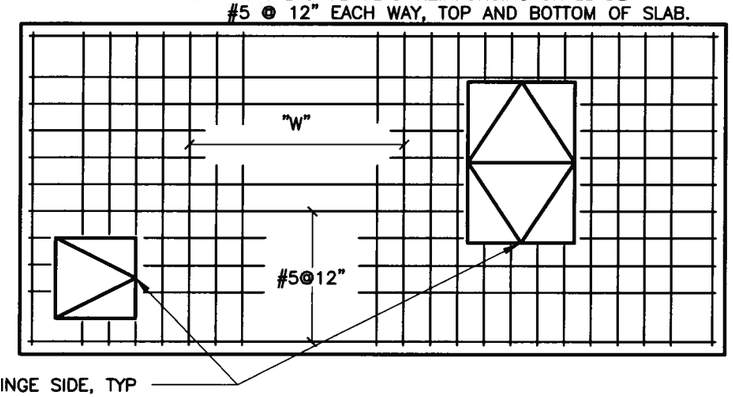
PIPE SIZE	STANDARD PRV NO METER, NO BYPASS		STANDARD PRV NO METER, W/BYPASS		WITH PROPELLER METER AND NO BYPASS		WITH PROPELLER METER AND BYPASS		WITH MAGNETIC FLOW METER AND BYPASS		WALL THICKNESS		TOP THICKNESS		WALL REINFORCING					
													TRAFFIC	NONTRAFFIC	WITHOUT BYPASS			WITH BYPASS		
(IN)	"L"	"W"	"L"	"W"	"L"	"W"	"L"	"W"	"L"	"W"	L(t)	W(t)	T(t)	T(t)	"L" a	"W" a	b	"L" a	"W" a	b
6	10'-6"	5'-6"	11'-8"	8'-0"	10'-6"	5'-6"	14'-6"	8'-0"	15'-8"	8'-6""	1'-0"	1'-0"	1'-0"	0'-8"	#6 @ 12"	TYPICAL	TYPICAL	#5 @ 6"	TYPICAL	#6 @ 12"
8	10'-6"	5'-8"	12'-0"	8'-2"	10'-6"	5'-8"	15'-4"	8'-2"	16'-2"	8'-8"	1'-0"	1'-0"	1'-0"	0'-8"	#6 @ 12"	TYPICAL	TYPICAL	#5 @ 6"	TYPICAL	#6 @ 12"
10	10'-6"	5'-10"	13'-0"	8'-4"	11'-4"	5'-10"	17'-4"	8'-4"	17'-4"	8'-10"	1'-0"	1'-0"	1'-0"	0'-8"	#6 @ 12"	#6 @ 12"	TYPICAL	#5 @ 6"	#6 @ 12"	#6 @ 12"
12	10'-6"	6'-0"	13'-8"	8'-6"	12'-8"	6'-0"	19'-0"	8'-6"	18'-4"	9'-0"	1'-0"	1'-0"	1'-0"	0'-8"	#6 @ 12"	#6 @ 12"	TYPICAL	#5 @ 6"	#6 @ 12"	#6 @ 12"
14	10'-6"	6'-2"	14'-9"	8'-8"	14'-3"	6'-2"	21'-6"	8'-8"	20'-2"	9'-2"	1'-0"	1'-2"	1'-0"	0'-8"	#5 @ 6"	#5 @ 6"	#6 @ 12"	#5 @ 6"	#5 @ 6"	#6 @ 12"
16	10'-6"	6'-4"	15'-4"	8'-10"	16'-6"	6'-4"	24'-2"	8'-10"	21'-0"	9'-4"	1'-0"	1'-2"	1'-0"	0'-8"	#5 @ 6"	#5 @ 6"	#6 @ 12"	#5 @ 6"	#5 @ 6"	#6 @ 12"

DIMENSIONAL NOTES:
"L" = VAULT LENGTH
"W" = VAULT WIDTH
L(t) = WALL THICKNESS(LENGTH)
W(t) = WALL THICKNESS(WIDTH)
T(t) = TOP SLAB THICKNESS

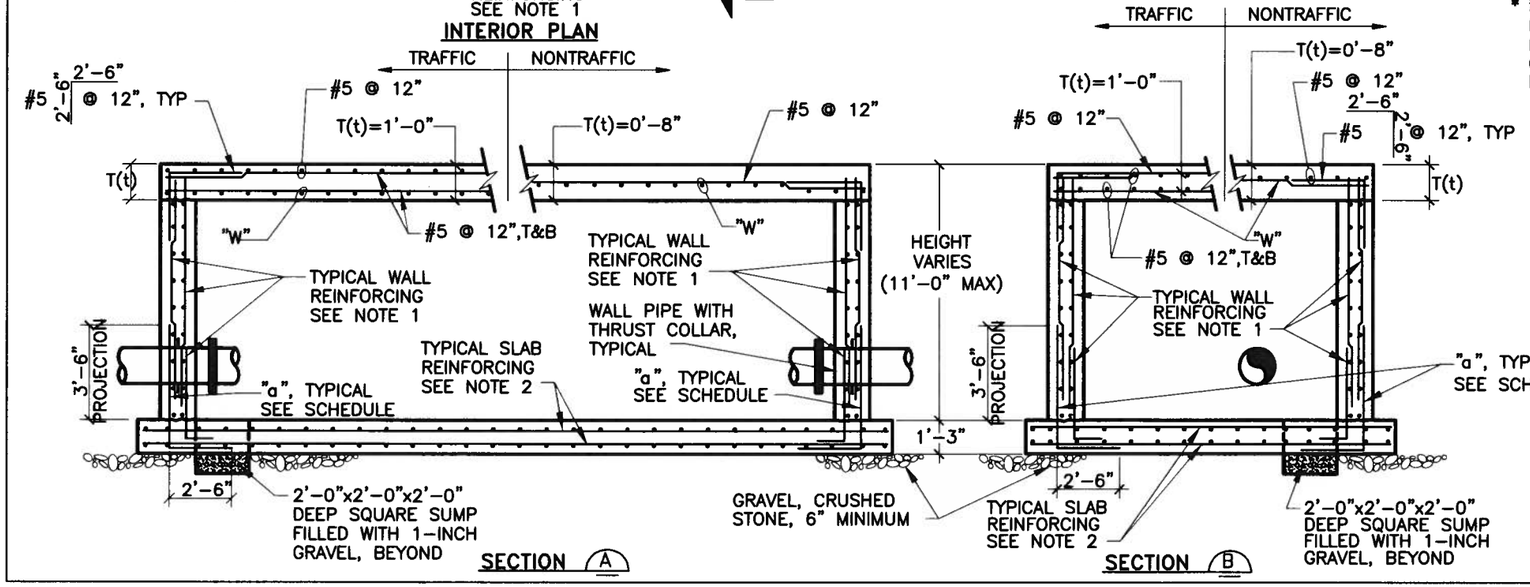
WALL REINFORCING NOTES:
1. "a" BAR DESIGNATION REPRESENTS WALL DOWELS PROTRUDING VERTICALLY FROM BASE SLAB ALONG LENGTHWISE DIMENSION "L" OR WIDTH DIMENSION "W".
2. "b" BAR DESIGNATION REPRESENTS ADDITIONAL HORIZONTAL WALL CORNER REINFORCING.



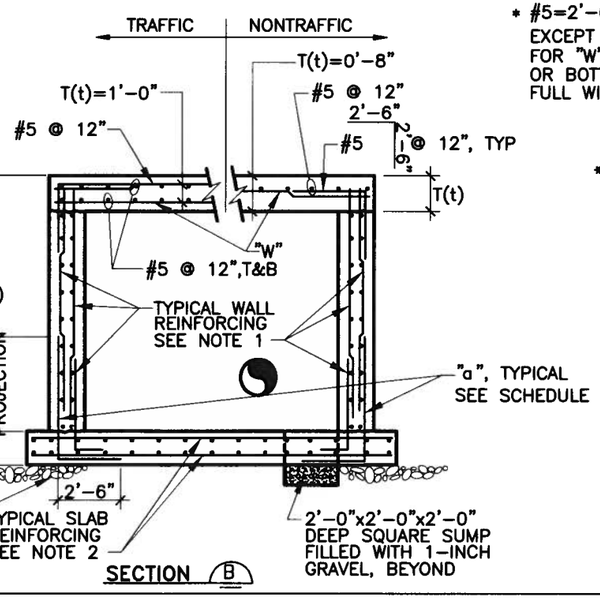
INTERIOR PLAN



TOP PLAN



SECTION A



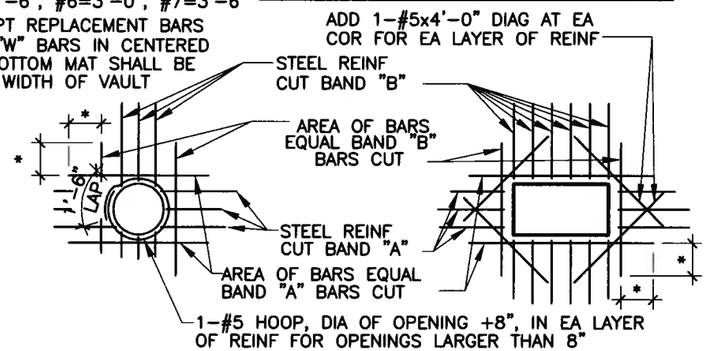
SECTION B

GENERAL NOTES:
1. TYPICAL WALL REINFORCING SHALL BE #5 @ 12" O.C., EACH WAY, EACH FACE UNLESS SHOWN OTHERWISE ON THE SCHEDULE. PROVIDE BARS AS INDICATED ON THE SCHEDULE AND LAP W/ #5 @ 12" FOR REMAINDER OF WALL HT. OR LENGTH.
2. TYPICAL BASE SLAB REINFORCING SHALL BE #5 @ 12" EACH WAY, TOP AND BOTTOM OF SLAB.
3. CONCRETE SHALL BE IN ACCORDANCE WITH STD SPEC SEC. 510 AND SEC. 101 FOR HYDRAULIC CONCRETE f'c=3000 psi @ 28 DAYS. 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.

VAULT TOP REINFORCING		
VAULT DIMENSION	REINFORCING T(t)=0'-8" CENTERED MAT	REINFORCING T(t)=1'-0" BOTTOM MAT
"W"	"W"	"W"
≤6'-0"	#5 @ 12"	#5 @ 12"
>6'-0" ≤7'-0"	#5 @ 12"	#6 @ 12"
>7'-0" ≤9'-0"	#6 @ 12"	#7 @ 12"
>9'-0" ≤10'-0"	#7 @ 12"	#7 @ 12"

* #5=2'-6", #6=3'-0", #7=3'-6" EXCEPT REPLACEMENT BARS FOR "W" BARS IN CENTERED OR BOTTOM MAT SHALL BE FULL WIDTH OF VAULT

ADD 1-#5x4'-0" DIAG AT EA COR 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.

REVISIONS	WATER AUTHORITY
	WATER STANDARD PRV STATION STRUCTURAL DETAILS
	DWG. 2357 JANUARY 2011

*SEE NOTES TIE ROD SCHEDULE			
TEST PRESSURE		150 PSI	
PIPE DIA. (IN.)	MINIMUM PIPE WALL THICKNESS (IN.)*	TIE RODS	
		DIA. (IN.)	NO. REQ'D
6	3/16	5/8	2
8	3/16	5/8	2
10	3/16	5/8	2
12	3/16	5/8	2
14	3/16	3/4	2
16	3/16	7/8	2

NOTES:

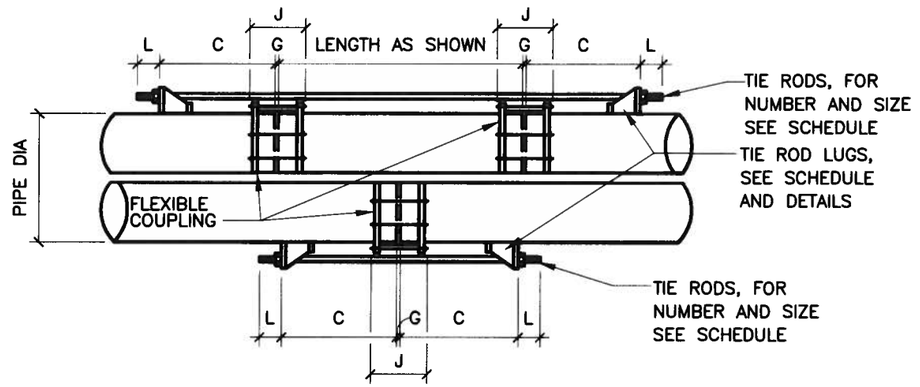
1. THE CONTRACTOR SHALL DETERMINE THE LENGTH "J" (COUPLING BOLT LENGTH) FROM MANUFACTURER'S CATALOGS USING THE SPECIFIED MIDDLE RING LENGTH.
2. "G" = MANUFACTURER'S RECOMMENDED SPACE BETWEEN ENDS OF PIPE.
3. "C" = J+Z+1 INCH, (ROUND THIS VALUE UP TO NEXT EVEN INCH), MINIMUM. (FOR Z DIMENSIONS, SEE LUG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

LUG SCHEDULE									
STUD DIA	T	W	X	Y	Z	HB	E	HF	L
5/8	3/8	1-3/8	4-1/16	4-1/2	3-3/8	3-7/8	3	1-3/4	3
3/4	3/8	1-1/2	5	4-1/2	5	4-1/8	3-1/8	1-3/4	3
7/8	1/2	1-5/8	5-1/2	4-1/2	5-1/8	4-1/4	3-1/8	1-3/4	4

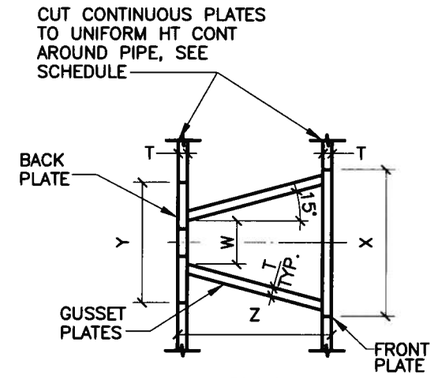
NOTES:

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 UNEVEN ALIGNMENT AND TO ALLOW EQUAL STRESS ON ALL TIE RODS UNDER PRESSURE. TIGHTEN UNTIL SNUG. THREADS SHALL PROTRUDE FROM NUTS. PEEN THREADS AFTER TIGHTENING NUTS.
6. TIE ROD LUGS SHALL BE SPACED EQUALLY AROUND PIPE.
7. FILLET WELDS SHALL MEET THE MINIMUM REQUIREMENTS OF THE AISC SPECIFICATION EXCEPT AS FOLLOWS: FILLET WELDS SHALL BE 1/4-INCH MINIMUM EXCEPT WHEN WELDING 3/16-INCH PLATE WHERE THEY SHALL BE 3/16-INCH.
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.

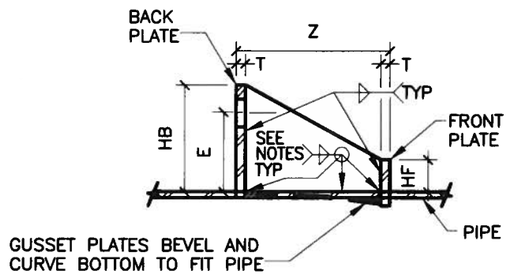
DOUBLE COUPLING



SINGLE COUPLING

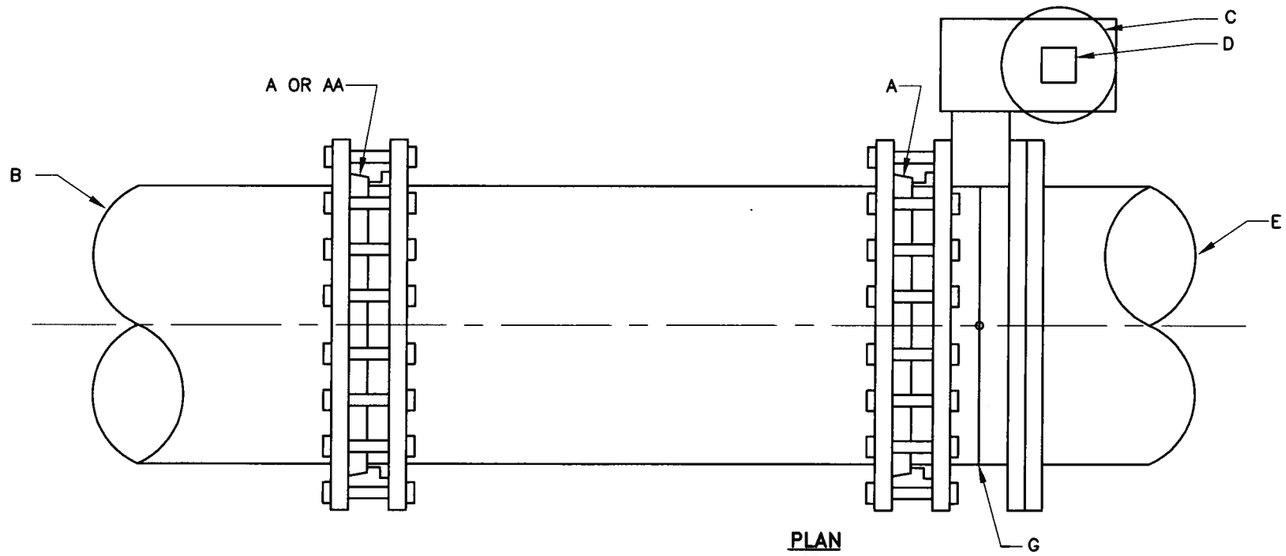


PLAN



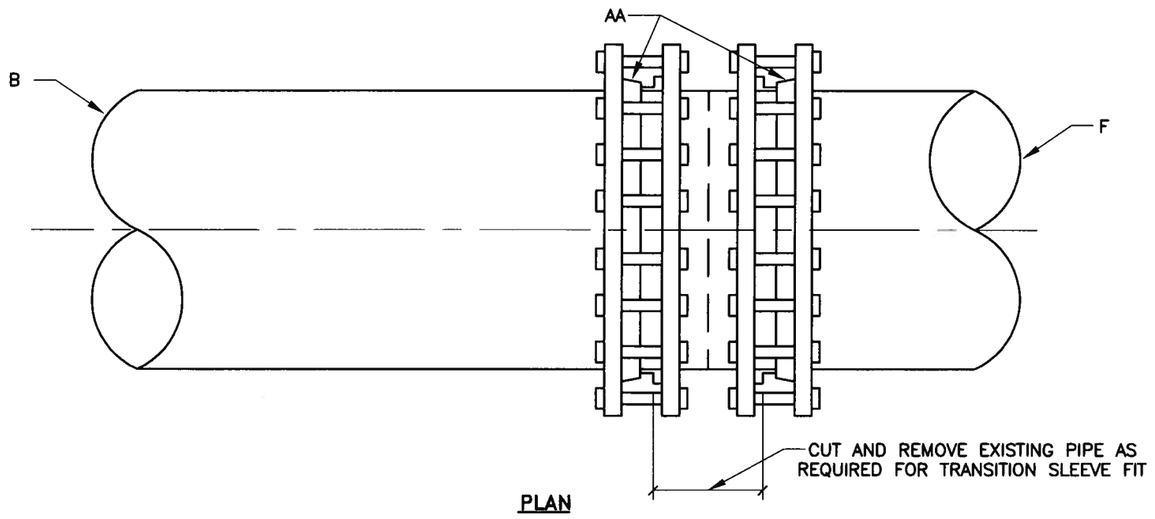
SECTION

REVISIONS	WATER AUTHORITY
	WATER
	THRUST TIE DETAIL
	DWG. 2358 JANUARY 2011



PLAN

BUTTERFLY VALVE INSTALLATION DETAIL IN NEW D.I. PIPELINE



PLAN

INSTALLATION DETAIL FOR TRANSITION BETWEEN DIFFERENT PIPE MATERIALS

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 IRONSALE, 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.

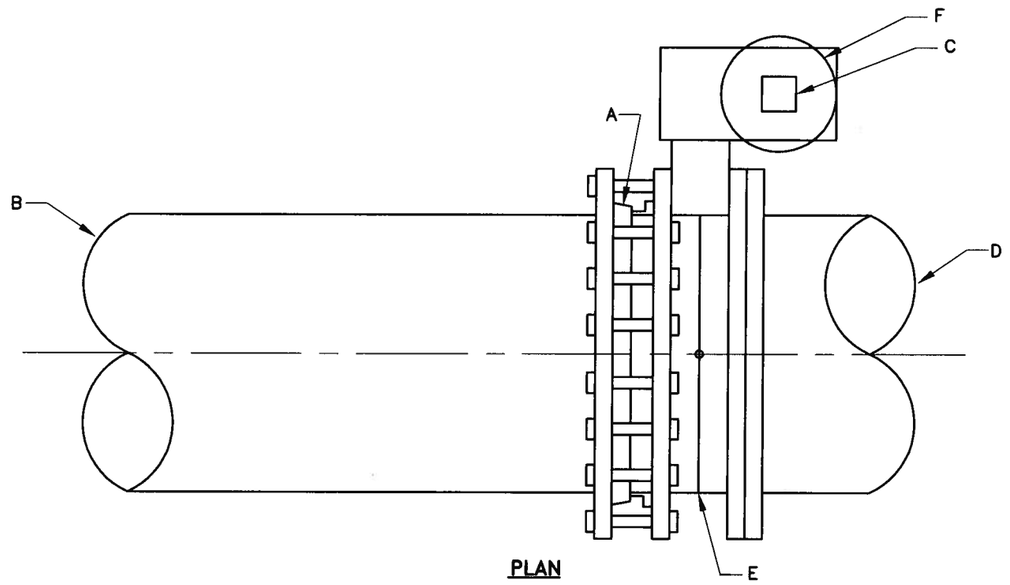
E MAIN PIPELINE (D.I.) WITH FLANGED END.

F MAIN PIPELINE (OTHER) WITH PLAIN END.

G BUTTERFLY VALVE (FLGxFLG), SIZE AS SHOWN ON DRAWINGS.

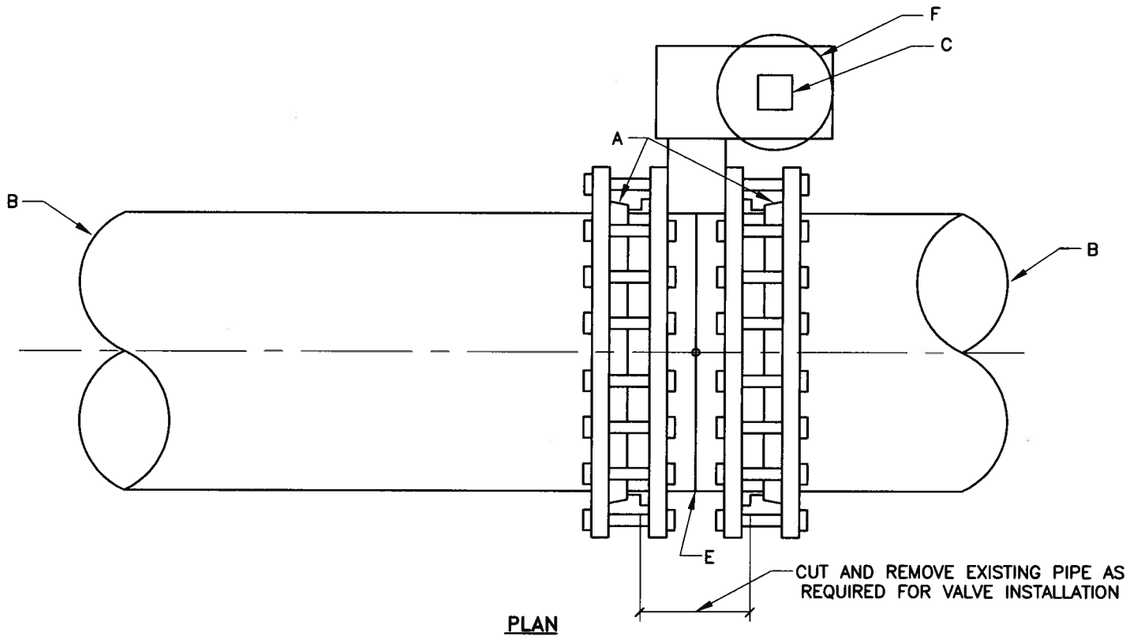
DIRECT BURY INSTALLATION

REVISIONS	WATER AUTHORITY
	WATER DUCTILE IRON BUTTERFLY VALVE DIRECT BURY INSTALLATION DETAILS DWG. 2359 JANUARY 2011



PLAN

BUTTERFLY VALVE INSTALLATION DETAIL IN NEW D.I. PIPELINE



PLAN

BUTTERFLY VALVE INSTALLATION DETAIL IN EXISTING D.I. PIPELINE

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 EBAA IRON SALE, OR APPROVED EQUAL.

B MAIN PIPELINE (D.I.) WITH PLAIN END.

C 3" SQUARE OPERATING NUT.

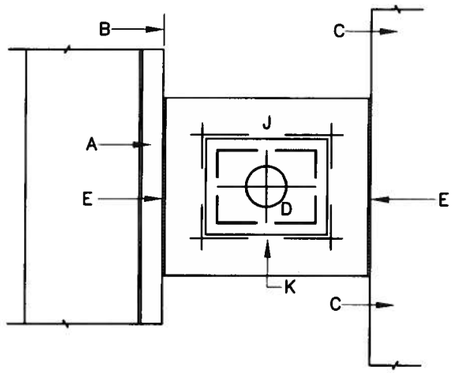
D MAIN PIPELINE (D.I.) WITH FLANGED END.

E BUTTERFLY VALVE (FLGxFLG OR FLGxMJ), SIZE AS SHOWN ON DRAWINGS.

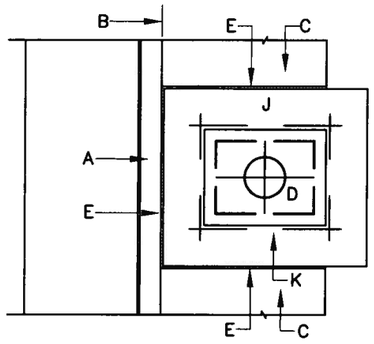
F VALVE BOX AND COVER PER C.O.A. STD. DWG 2326.

DIRECT BURY INSTALLATION

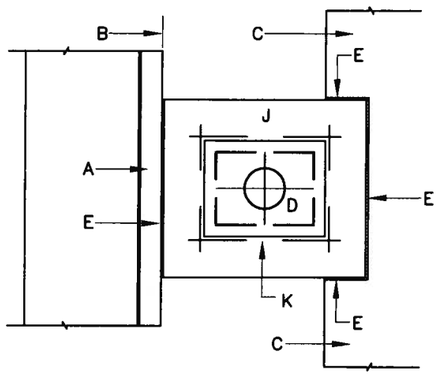
REVISIONS	WATER AUTHORITY
	WATER ~~DUCTILE IRON BUTTERFLY VALVE~~ IN VAULT INSTALLATION DWG. 2360 JANUARY 2011



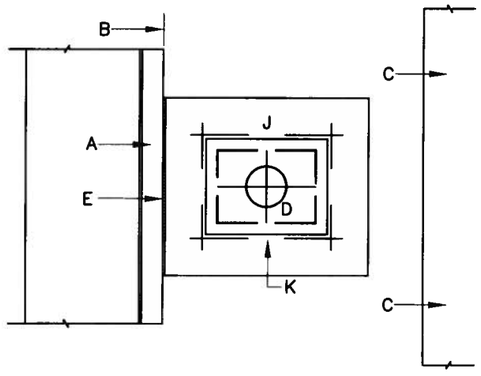
CASE 1
(IN PARKWAY)



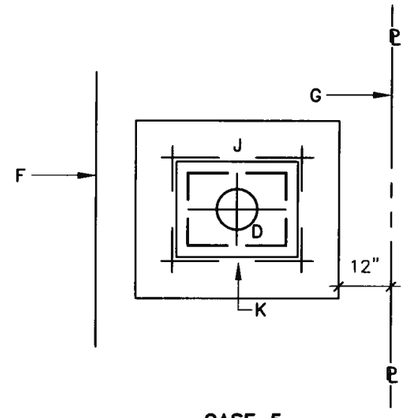
CASE 2
(IN SIDEWALK)



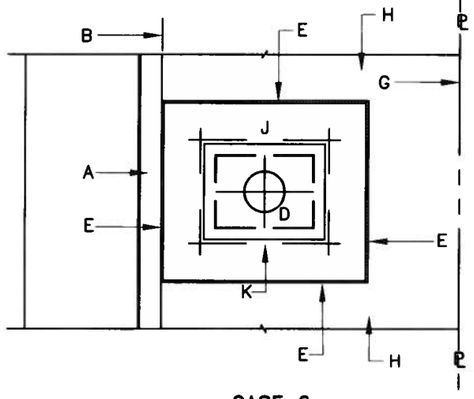
CASE 3
(IN NARROW PARKWAY)



CASE 4
(IN WIDE PARKWAY)



CASE 5
(NO CURB AND GUTTER OR SIDEWALK)



CASE 6
(IN DRIVEPAD)

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.

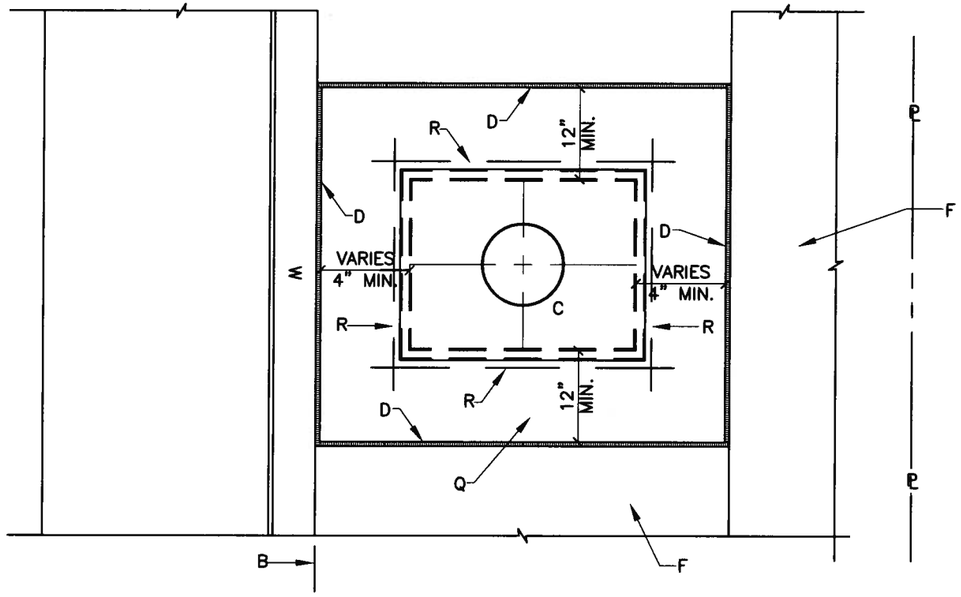
H DRIVEPAD.

J CONCRETE PAD SEE DWG. 2362

K #4 REBAR CONTINUOUS ALL AROUND METER BOX.

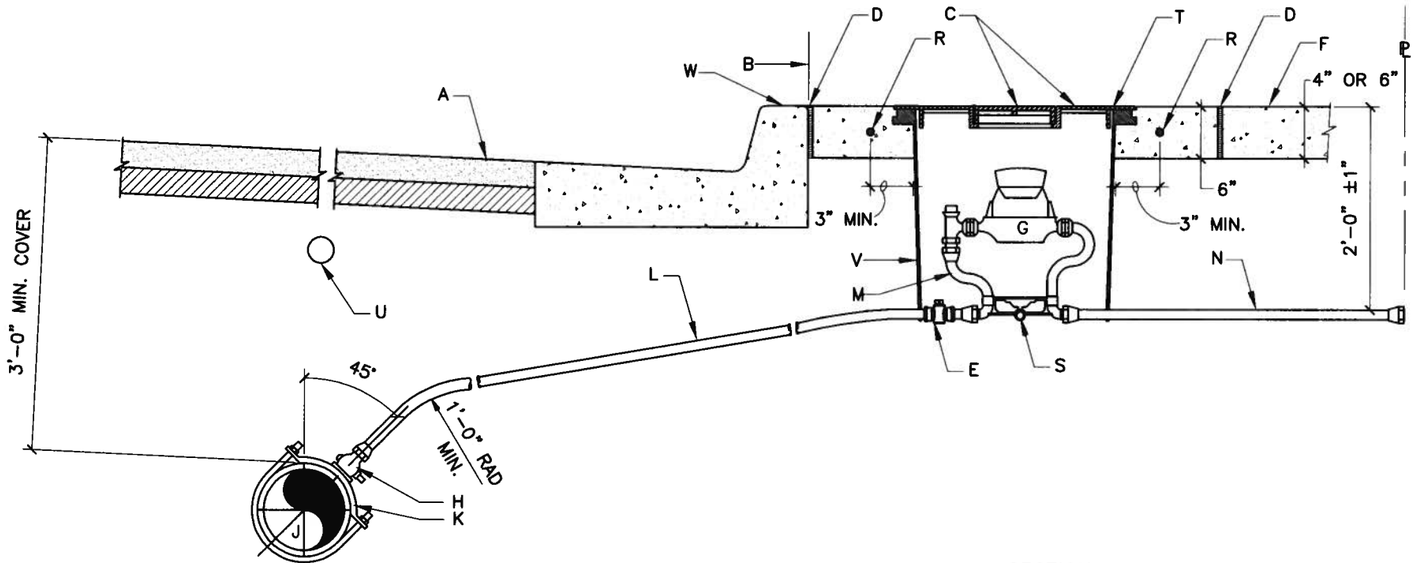
TYPICAL INSTALLATIONS 3/4" – 1" METERS

REVISIONS	WATER AUTHORITY
	WATER TYPICAL METER BOX INSTALLATIONS
	DWG. 2361 JANUARY 2011



PLAN

SEE DWG. 2361 FOR TYPICAL INSTALLATIONS



SECTION

SERVICE LINE FOR 3/4" – 1" METER

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. 2368 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 0W, 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 0W, 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. USE FOR SINGLE METER ONLY. 12" LONG x 1/2" DIA. GALV. STEEL PIPE.

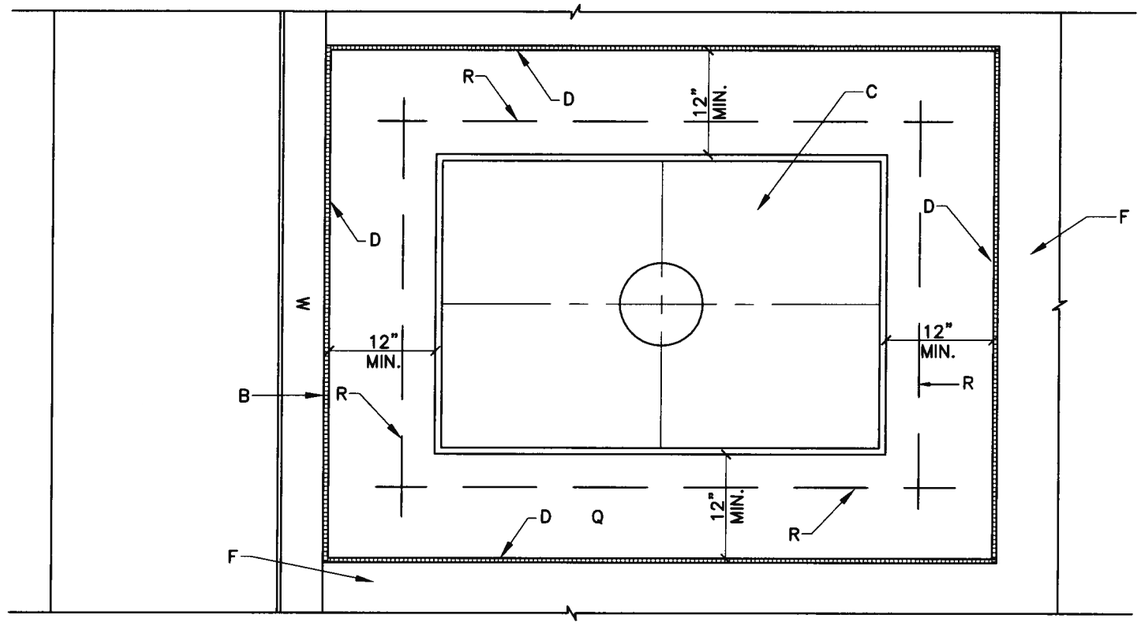
T METER BOX LID SHALL BE FLUSH WITH SURROUNDING SIDEWALK.

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

V METER BOX PER STANDARD DRAWING 2366.

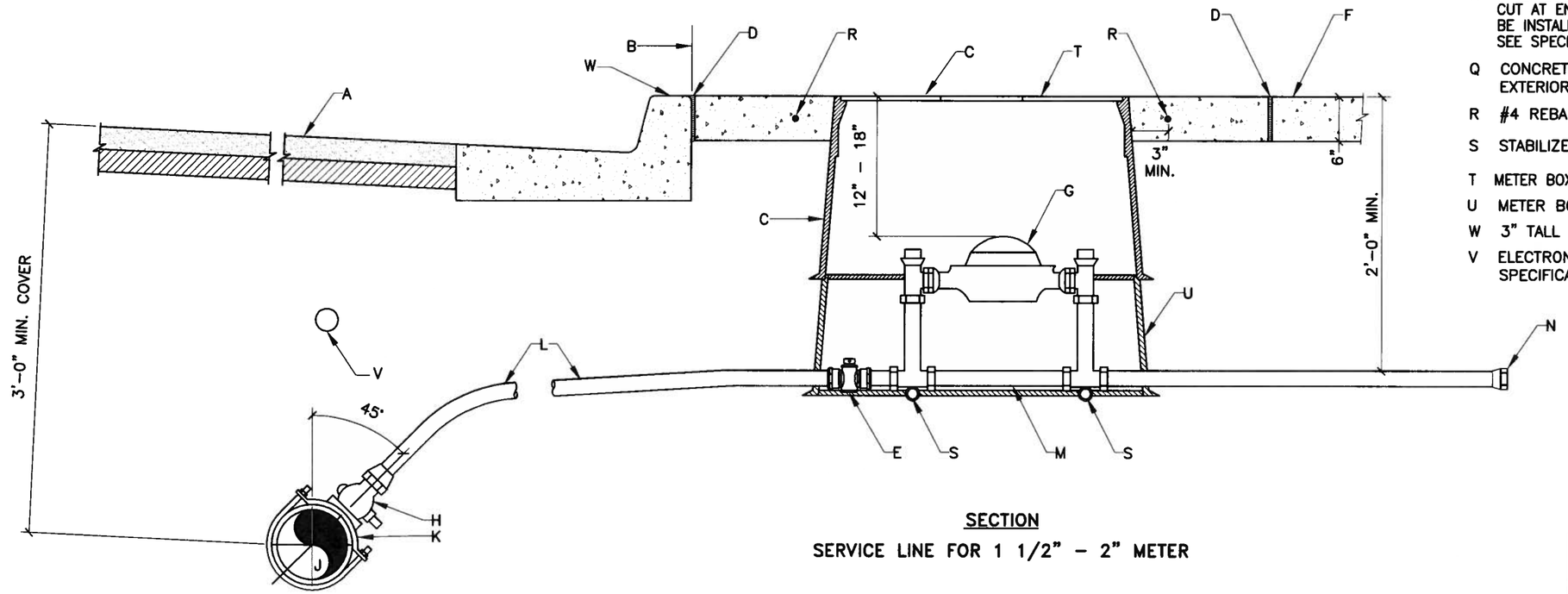
W "W" STAMP ON CURB WHERE SERVICE LINE CROSSES.

REVISIONS	WATER AUTHORITY
	WATER 3/4" – 1" METER SERVICE LINE INSTALLATION
	DWG. 2362 JANUARY 2011



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 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 0W, 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 0W, 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.

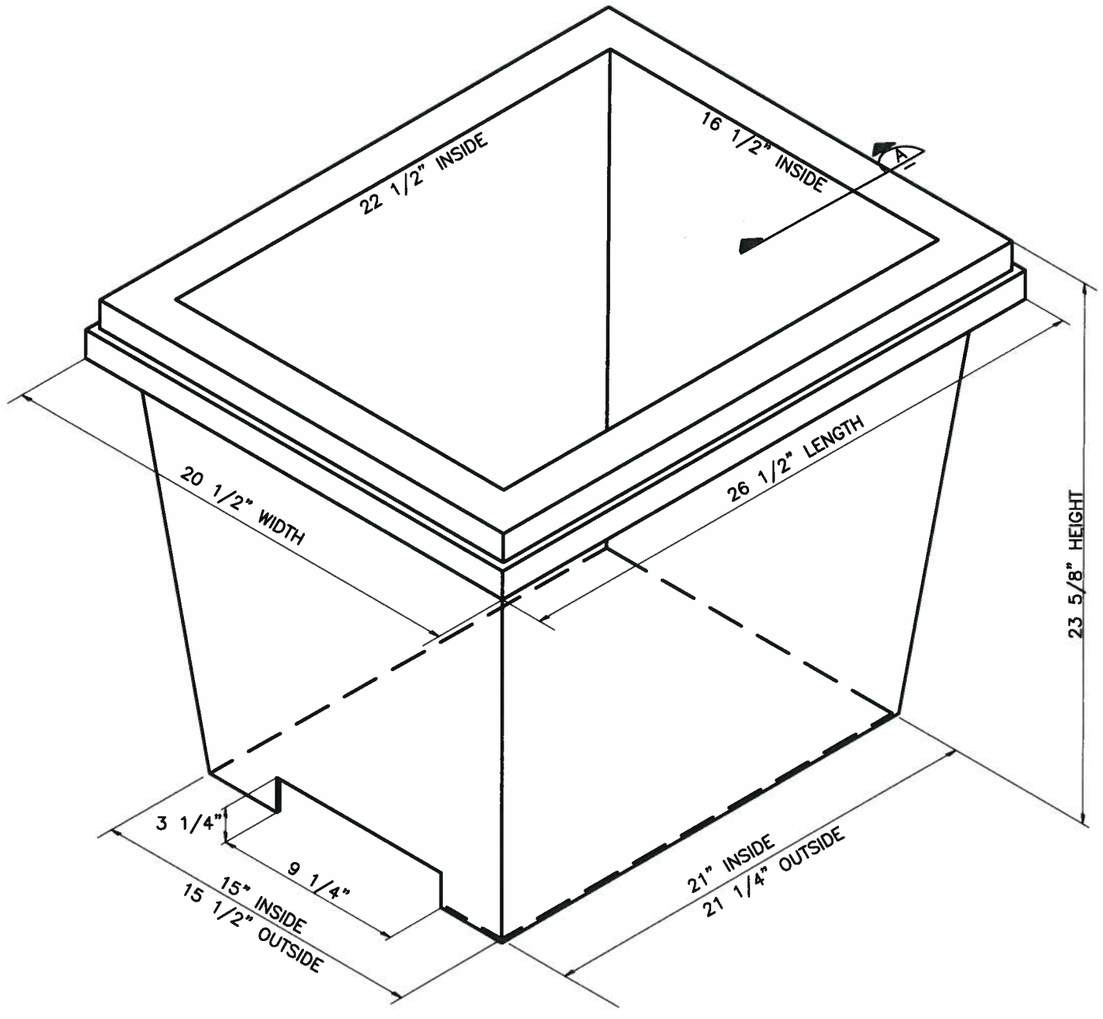
T METER BOX LID SHALL BE FLUSH WITH SURROUNDING SIDEWALK.

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.

REVISIONS	WATER AUTHORITY
	WATER 1–1/2" TO 2" METERED SERVICE LINE INSTALLATION DWG. 2363 JANUARY 2011



BOX
N.T.S.

GENERAL NOTES:

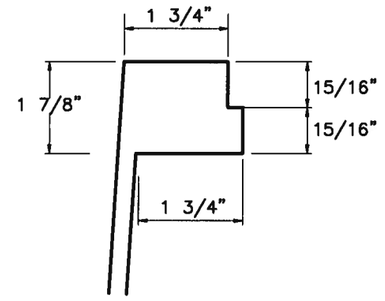
1 METER BOX LOCATION TO CONFORM TO DWG. 2361.

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:

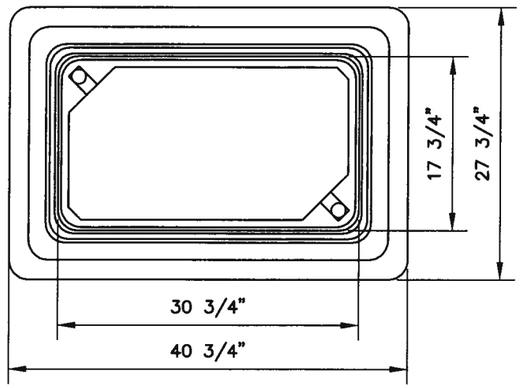
A PIPE HOLE, 1 AT EACH END, 9 1/4" WIDE BY 3 1/4" HIGH.



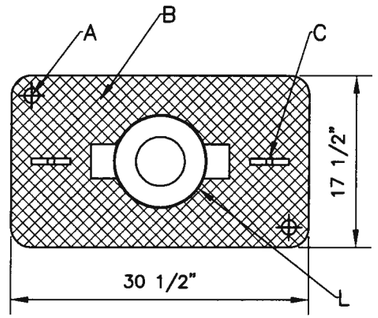
SECTION A
N.T.S.

*METER BOX FOR ONE OR TWO METER INSTALLATIONS

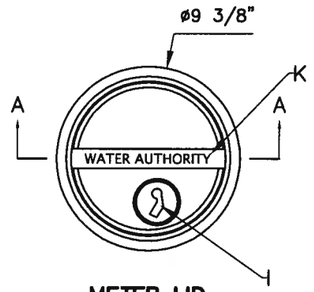
REVISIONS	WATER AUTHORITY
	WATER METER BOX FOR 3/4" AND 1" METERS
	DWG. 2366 JANUARY 2011



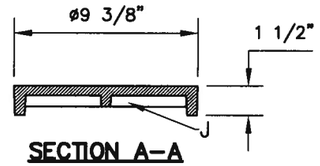
TOP VIEW



COVER



METER LID



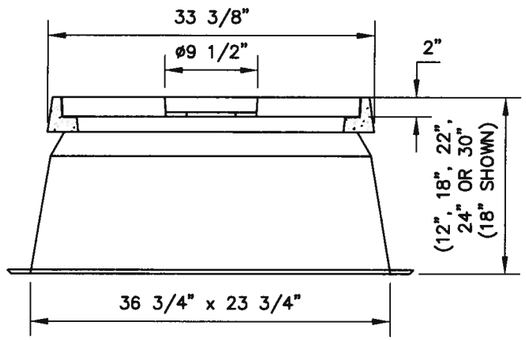
SECTION A–A

GENERAL NOTES:

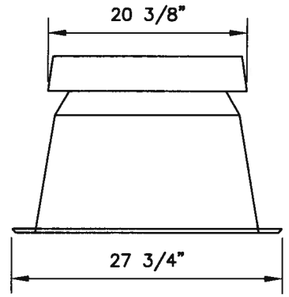
1. MATERIAL: FIBERGLASS REINFORCED POLYMER CONCRETE AND FIBERGLASS REINFORCED POLYMER.
2. STANDARD COLOR: CONCRETE GRAY (OPTIONAL COLLARS ARE AVAILABLE FOR COVER AND COLLAR).
3. FLARED WALL BOXES ARE NESTABLE.
4. OPTIONAL CAST IRON READER LIDS ARE AVAILABLE.

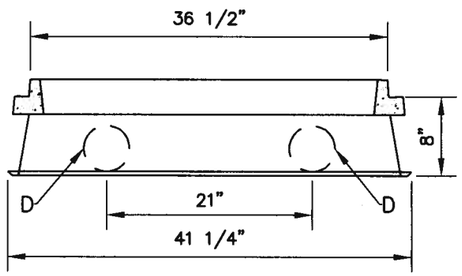
CONSTRUCTION NOTES:

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

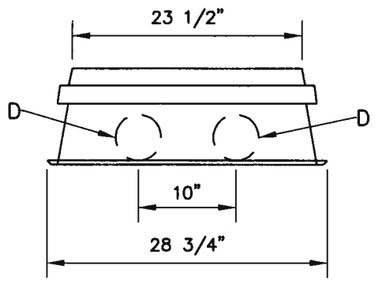


BOX & COVER SECTION

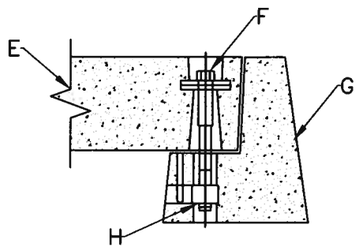




EXTENSION SECTION

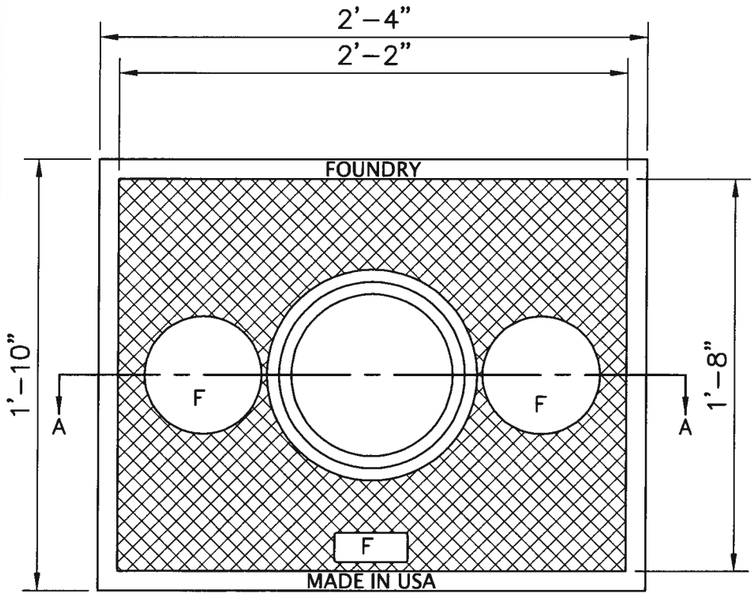


END VIEWS



COVER BOLTDOWN OPTION

REVISIONS	WATER AUTHORITY
	WATER METER BOX COVER & LID FOR 1–1/2" – 2" METERS DWG. 2367 JANUARY 2011



PLAN VIEW
BOX COVER FOR 3/4" – 1" METERS

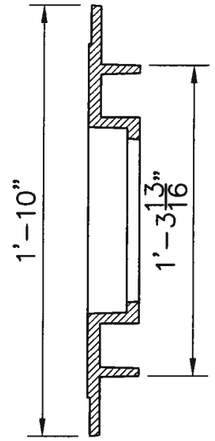


PLATE SECTION

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.

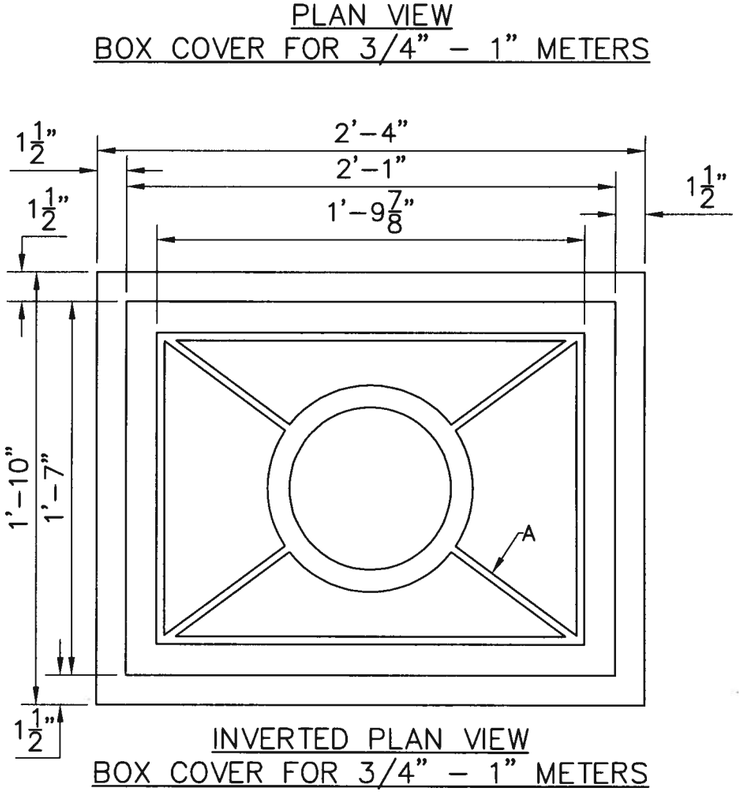
8 TOP TO BE ASPHALT PAINTED.

9 TOP OF LID SHALL HAVE INTEGRATED CORRUGATED DESIGN TO PREVENT SLIPPING.

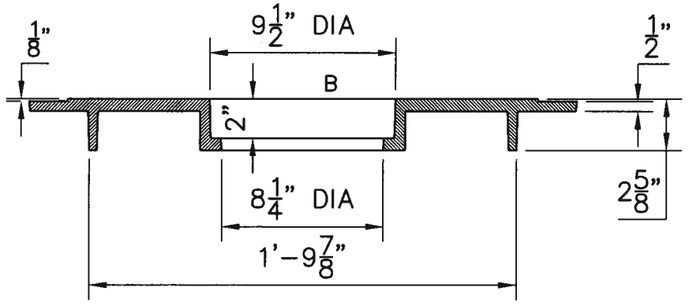
10 TOP OF COVER SHALL HAVE INTEGRATED WORDS "WATER AUTHORITY".

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.



INVERTED PLAN VIEW
BOX COVER FOR 3/4" – 1" METERS



SECTION A–A

CONSTRUCTION NOTES:

A 3/8"x2 3/8" RIB (TYPICAL).

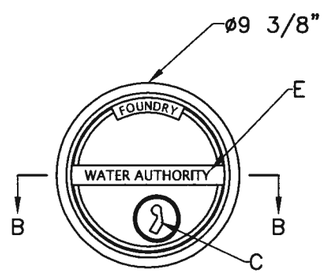
B LID OPENING.

C METER LID KEYHOLE.

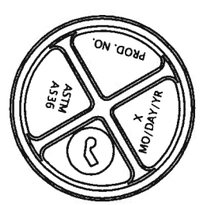
D 1/2" THICK RIB.

E 3/4" RAISED LETTERING (FLUSH).

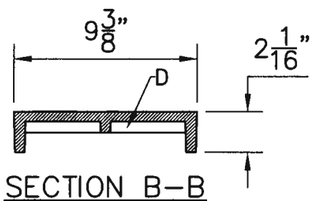
F FLAT AREA.



PLAN VIEW
WATER
METER LID

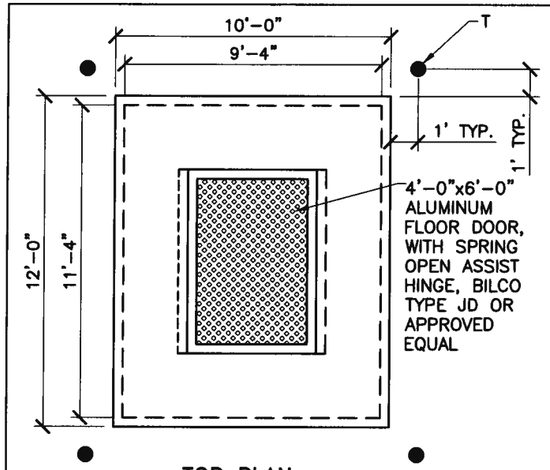


BOTTOM VIEW

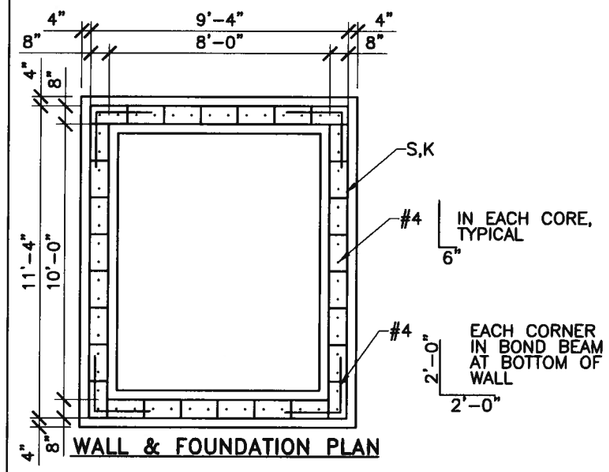


SECTION B–B

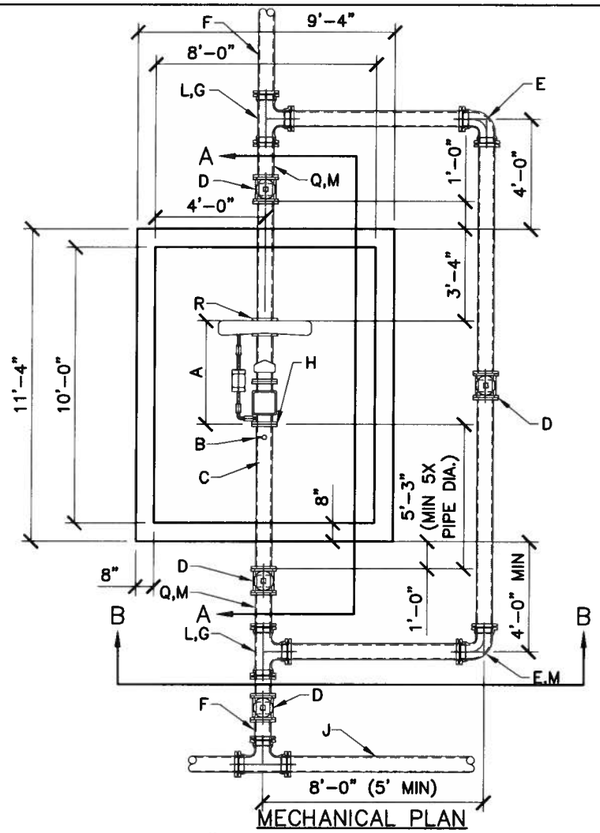
REVISIONS	WATER AUTHORITY
	WATER METER BOX COVER & LID FOR 3/4" & 1" METERS
	DWG. 2368 JANUARY 2011



TOP PLAN

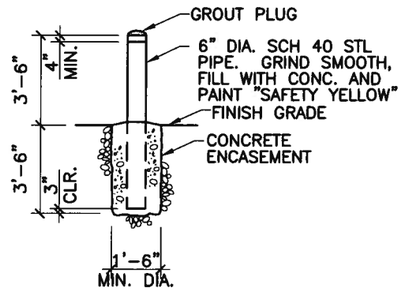


WALL & FOUNDATION PLAN



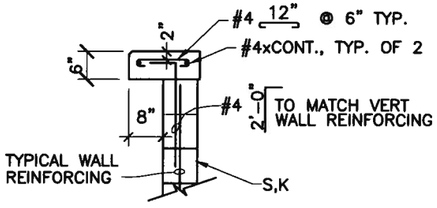
MECHANICAL PLAN

6" MECHANICAL PLAN SHOWN

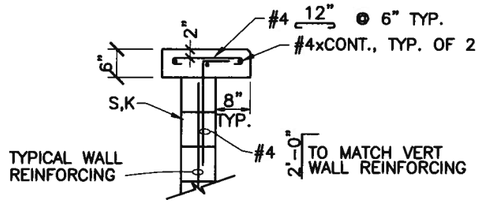


GUARD POST

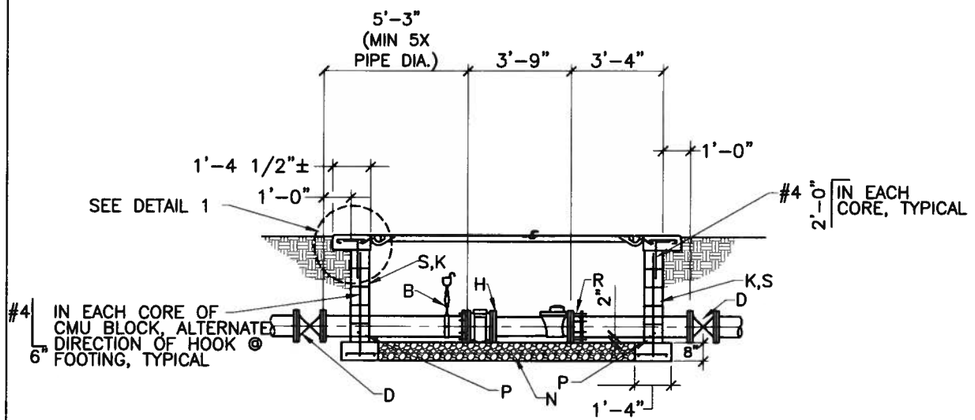
N T S



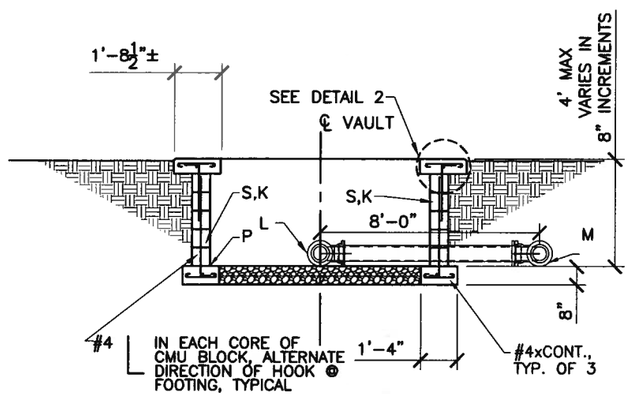
DETAIL 1



DETAIL 2



SECTION A-A



SECTION B-B

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 6" MIN. DEPTH.

3 PRECAST CONCRETE VAULT MAY BE USED IN LIEU OF CMU. 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 APCO MODEL NO. 200A OR APPROVED EQUAL.

C D.I. SPOOL (FLANGExPE) 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 2326.

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 EBAA IRON SALES, OR APPROVED EQUAL.

J MAIN DISTRIBUTION LINE.

K FILL ALL CMU 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 #4xCONT. SEE FOUNDATION PLAN FOR ADDITIONAL REINFORCING AT CORNERS.

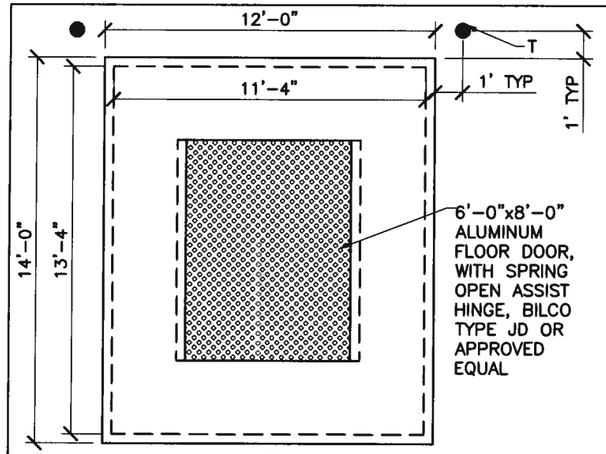
Q D.I. PIPE (FLANGExPE) LENGTH AS REQUIRED.

R FLANGE COUPLING ADAPTER, (FCA).

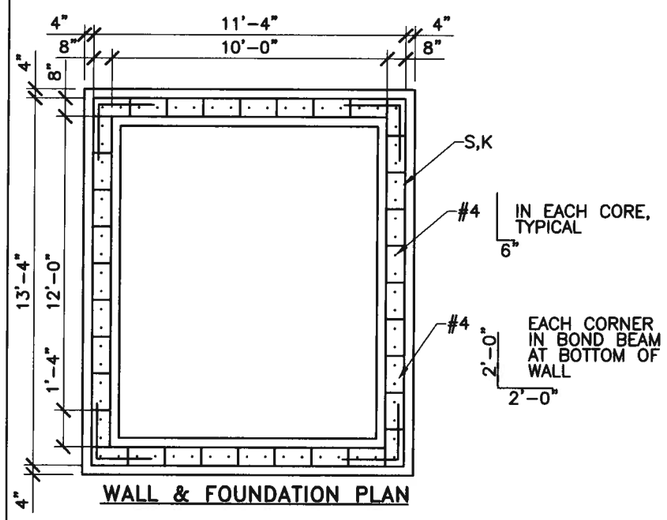
S 8"x16"x8" HOLLOW CORE CONCRETE BLOCK (CMU).

T 6" CONCRETE FILLED GUARD POST, TYPICAL OF 4. SEC. 101 EXTERIOR CONCRETE, f'c=3000 psi @ 28 DAYS.

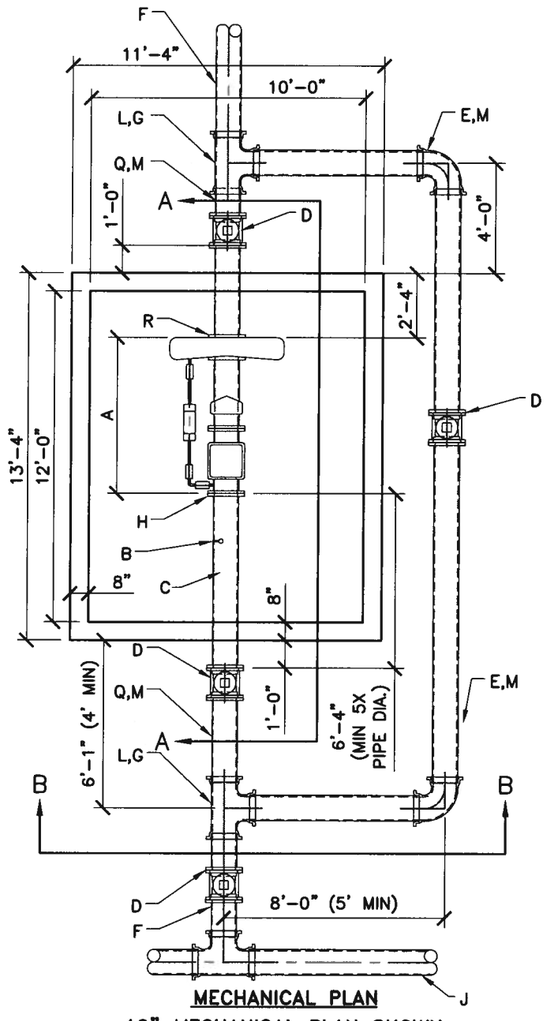
REVISIONS	WATER AUTHORITY
	WATER **LARGE DIAMETER METER VAULT 3"-6" SERVICE** DWG. 2370 JANUARY 2011



TOP PLAN

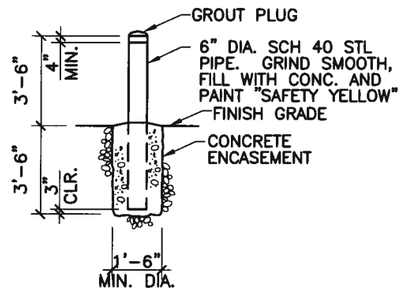


WALL & FOUNDATION PLAN



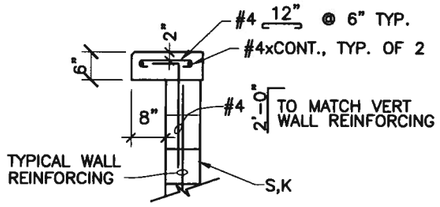
MECHANICAL PLAN

10" MECHANICAL PLAN SHOWN

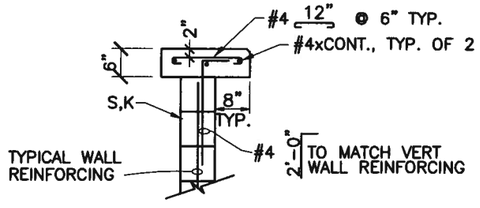


GUARD POST

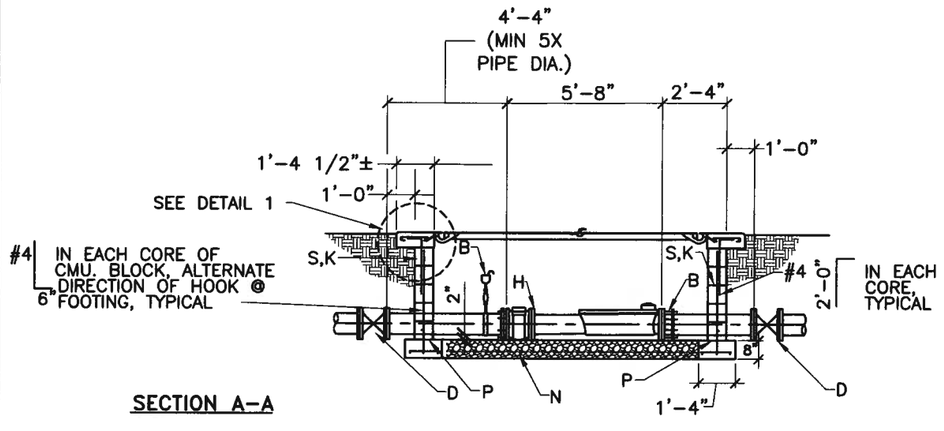
N T S



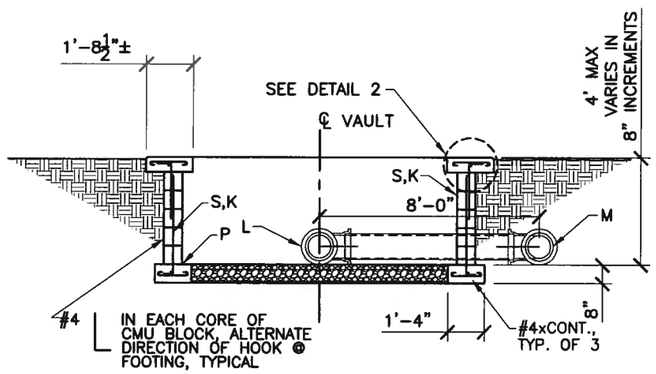
DETAIL 1



DETAIL 2



SECTION A-A



SECTION B-B

SCALE 3/16" = 1'

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 6" MIN. DEPTH.

3 PRECAST CONCRETE VAULT MAY BE USED IN LIEU OF CMU. 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 APCO MODEL NO. 200A OR APPROVED EQUAL.

C D.I. SPOOL (FLANGExPE) 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 2326.

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 EBAA IRON SALES, OR APPROVED EQUAL.

J MAIN DISTRIBUTION LINE.

K FILL ALL CMU 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 #4xCONT. SEE FOUNDATION PLAN FOR ADDITIONAL REINFORCING AT CORNERS.

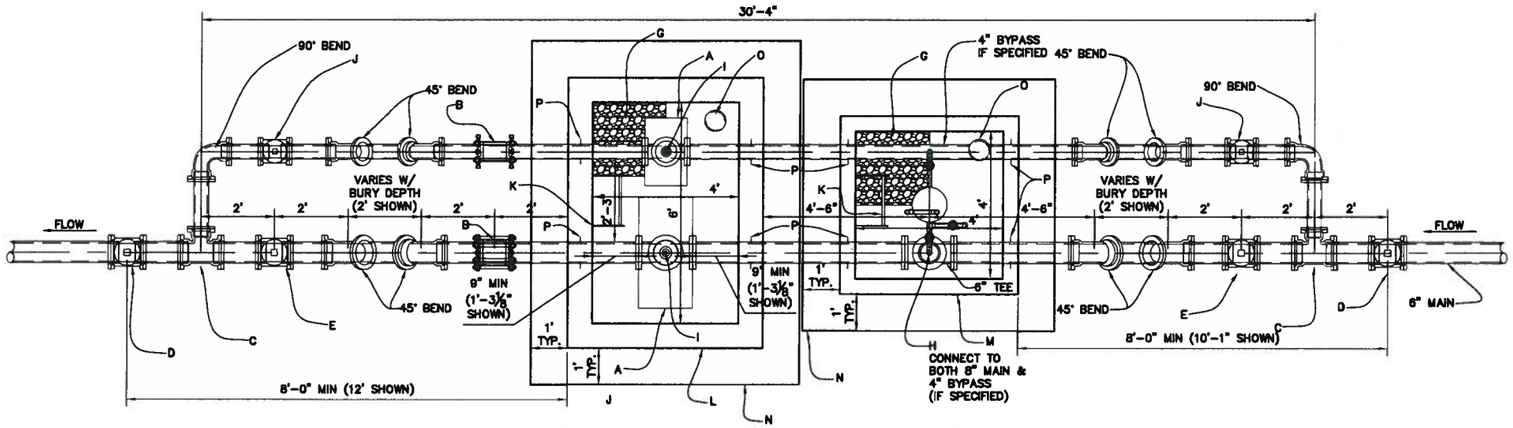
Q D.I. PIPE (FLANGExPE) LENGTH AS REQUIRED.

R FLANGE COUPLING ADAPTER, (FCA).

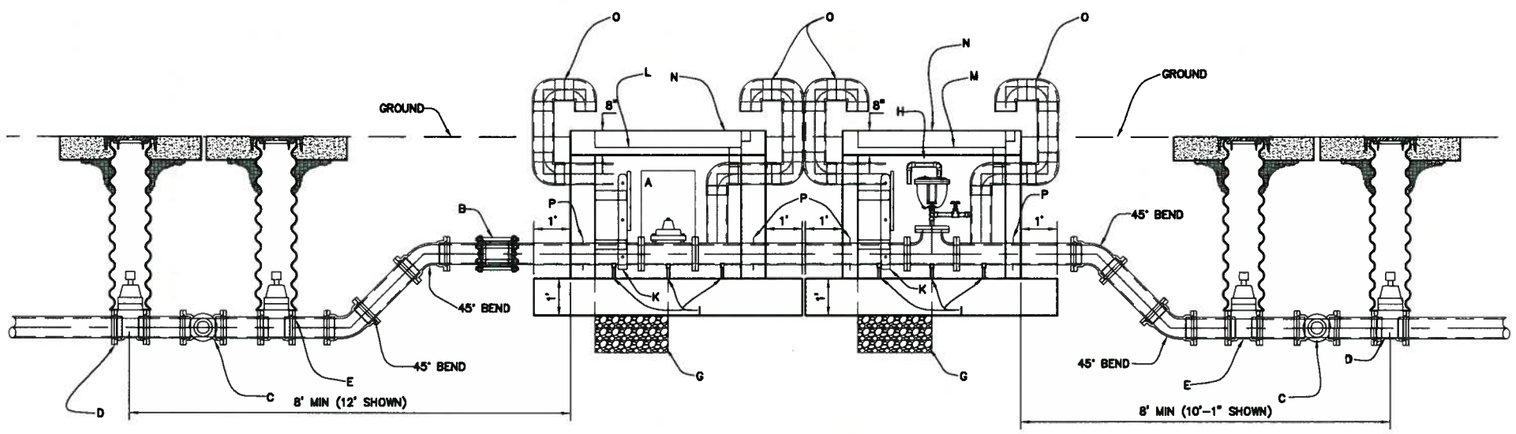
S 8"x16"x8" HOLLOW CORE CONCRETE BLOCK (CMU).

T 6" CONCRETE FILLED GUARD POST, TYPICAL OF 4. SEC. 101 EXTERIOR CONCRETE, f'c=3000 psi @ 28 DAYS.

REVISIONS	WATER AUTHORITY
	WATER LARGE DIAMETER METER VAULT 8"-12" SERVICE DWG. 2371 JANUARY 2011



PRV ASSEMBLY PLAN VIEW
SCALE 1/4" = 1'-0"



PRV ASSEMBLY PROFILE VIEW
SCALE 1/4" = 1'-0"

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 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. 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 (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'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, 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. 4'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 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.

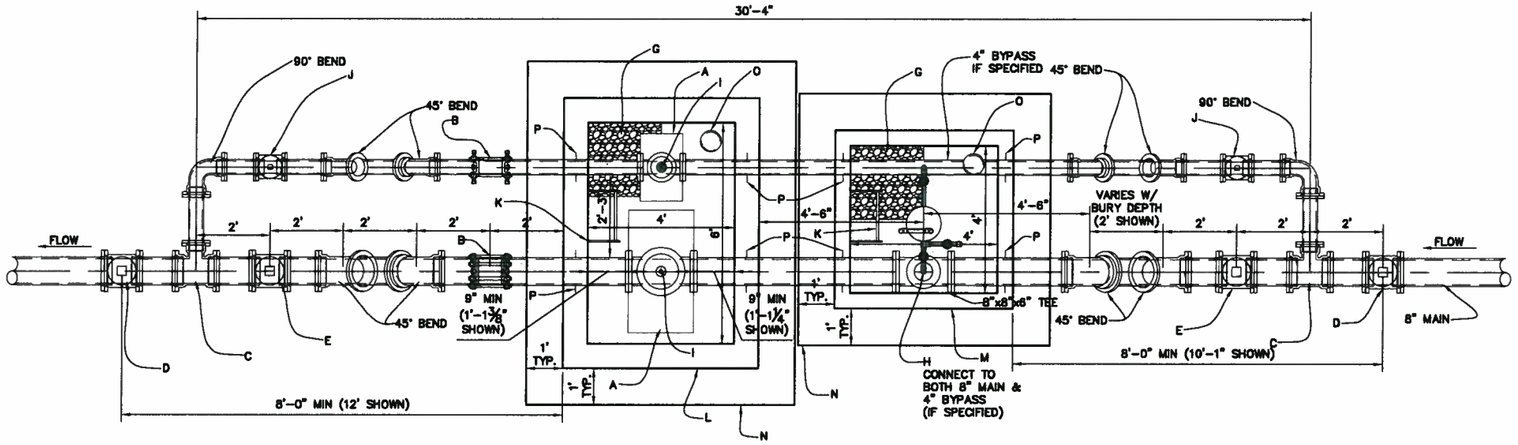
Q. 1/2" PIPE TAP WITH 1/2" BALL VALVE AND CAP

R. D.I. SPOOL FLG. x P.E.

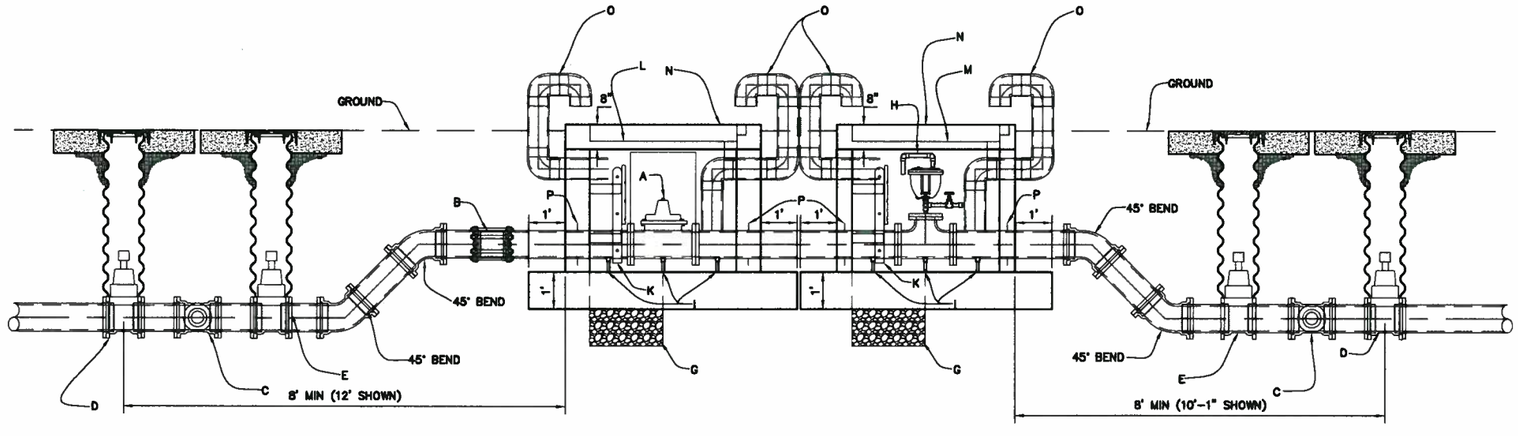
S. MEGA FLANGE – FLANGE ADAPTOR, AS MANUFACTURED BY EBAA IRON SALES, OR APPROVED EQUAL.

T. INSULATING FLANGE KIT.

REVISIONS	WATER AUTHORITY
	WATER **6" PRV** **ASSEMBLY DETAILS**
	DWG. 2372 JANUARY 2011



PRV ASSEMBLY PLAN VIEW
SCALE: 1/4" = 1'-0"



PRV ASSEMBLY PROFILE VIEW
SCALE: 1/4" = 1'-0"

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 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.
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CONSTRUCTION NOTES:

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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").

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, ELCEN FIG. 50, OR EQUAL.

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K. LADDER PER STANDARD DRAWING 2335.

L. 6'x4' BILCO SINGLE LEAF DOOR RATED FOR H20 TRAFFIC LOADS.

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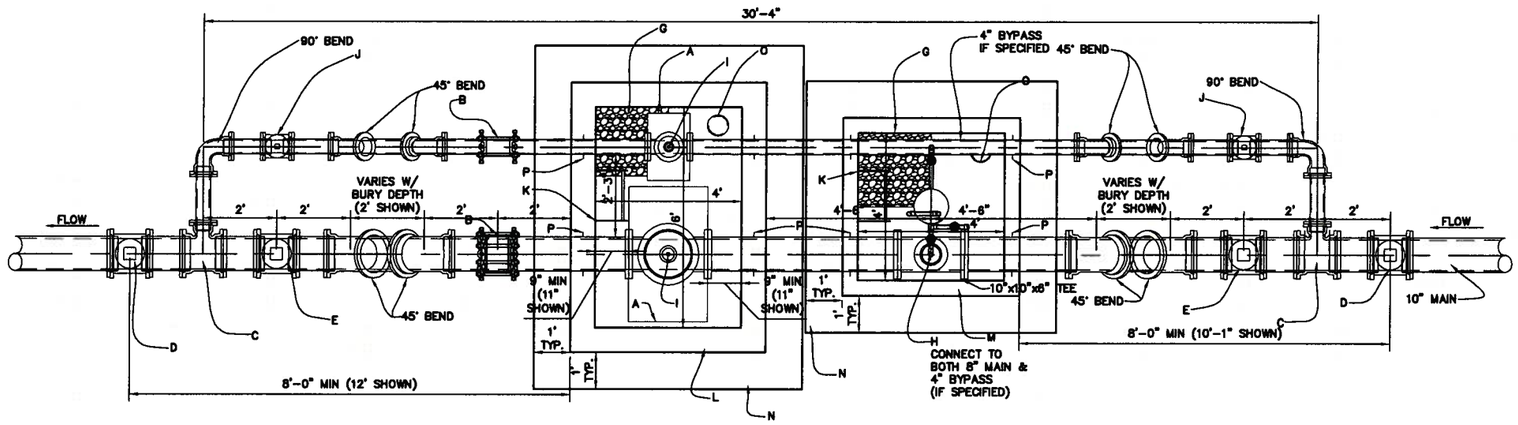
Q. 1/2" PIPE TAP WITH 1/2" BALL VALVE AND CAP

R. D.I. SPOOL FLG. x P.E.

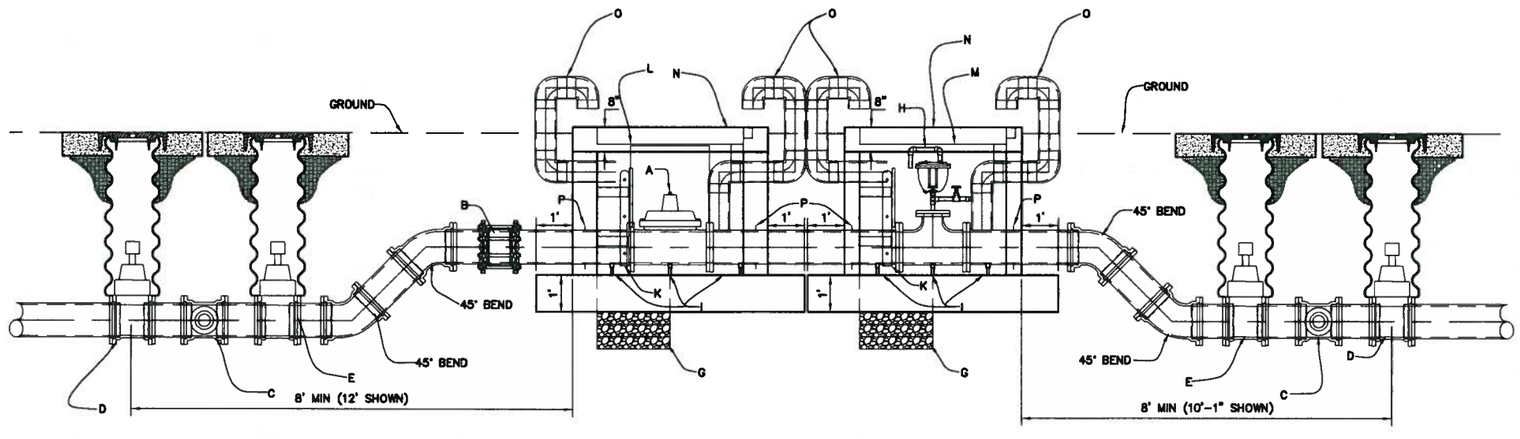
S. MEGA FLANGE – FLANGE ADAPTOR, AS MANUFACTURED BY EBAA IRON SALES, OR APPROVED EQUAL.

T. INSULATING FLANGE KIT.

REVISIONS	WATER AUTHORITY
	WATER 8" PRV ASSEMBLY DETAILS
	DWG. 2373 JANUARY 2011



PRV ASSEMBLY PLAN VIEW
SCALE: 1/4" = 1'-0"



PRV ASSEMBLY PROFILE VIEW
SCALE: 1/4" = 1'-0"

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B. FLEXIBLE COUPLING WITH THRUST TIES, SEE STANDARD DRAWING 2358 FOR THRUST TIE DETAIL.

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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'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, ELCEN FIG. 50, OR EQUAL.

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K. LADDER PER STANDARD DRAWING 2335.

L. 6'x4' BILCO SINGLE LEAF DOOR RATED FOR H20 TRAFFIC LOADS.

M. 4'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.

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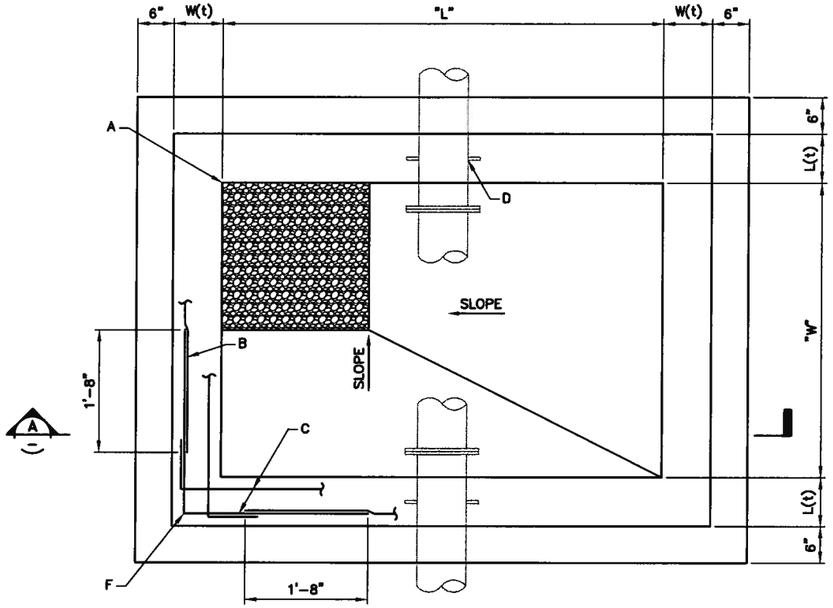
Q. 1/2" PIPE TAP WITH 1/2" BALL VALVE AND CAP

R. D.I. SPOOL FLG. x P.E.

S. MEGA FLANGE – FLANGE ADAPTOR, AS MANUFACTURED BY EBAA IRON SALES, OR APPROVED EQUAL.

T. INSULATING FLANGE KIT.

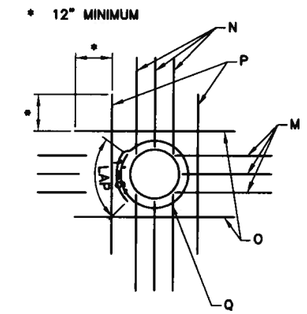
REVISIONS	WATER AUTHORITY
	WATER **10" PRV** **ASSEMBLY DETAILS**
	DWG. 2374 JANUARY 2011

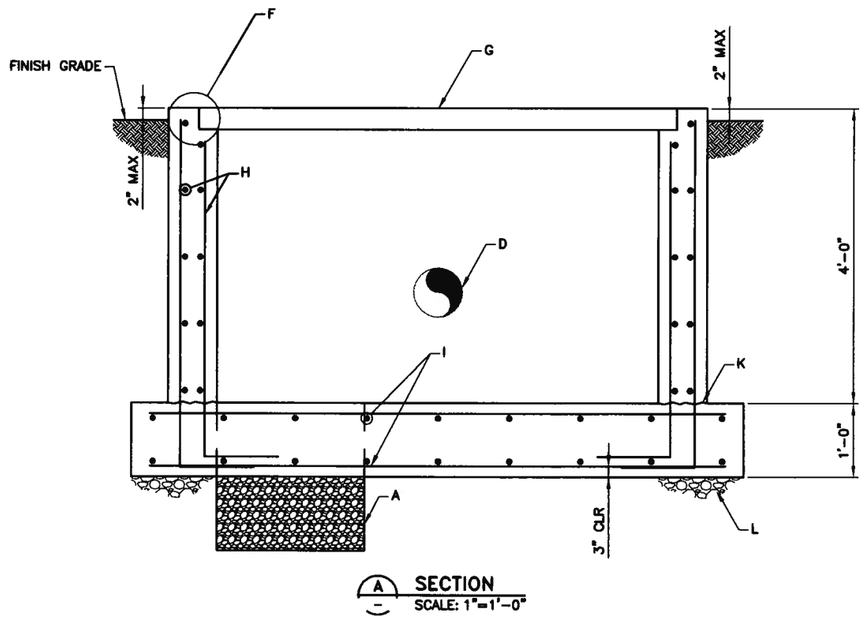


1 INTERIOR PLAN
SCALE: 1"=1'-0"

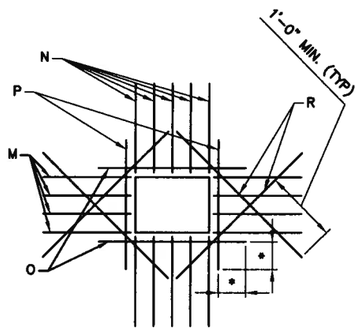
PRV VAULT DIMENSIONS AND HATCH SIZES					
VAULT INNER DIMENSIONS		WALL THICKNESS		BILCO HATCH	
"L"	"W"	L(t)	W(t)	SIZE	MODEL #
4'-0"	4'-0"	8"	8"	48"X48"	JD-2 H20
6'-0"	4'-0"	8"	8"	48"X72"	JD-3 H20

"L" = VAULT LENGTH
"W" = VAULT WIDTH





A SECTION
SCALE: 1"=1'-0"



OPENING NOTES

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

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 ASTM A615. 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 PCF
   - 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 SPLICES (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, ANCHORAGES AND DRAINAGE REQUIREMENTS FOR DOOR WITH MANUFACTURER SPECIFICATIONS.

G. BILCO DOUBLE LEAF DOOR OR EQUIVALENT RATED FOR H20 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."

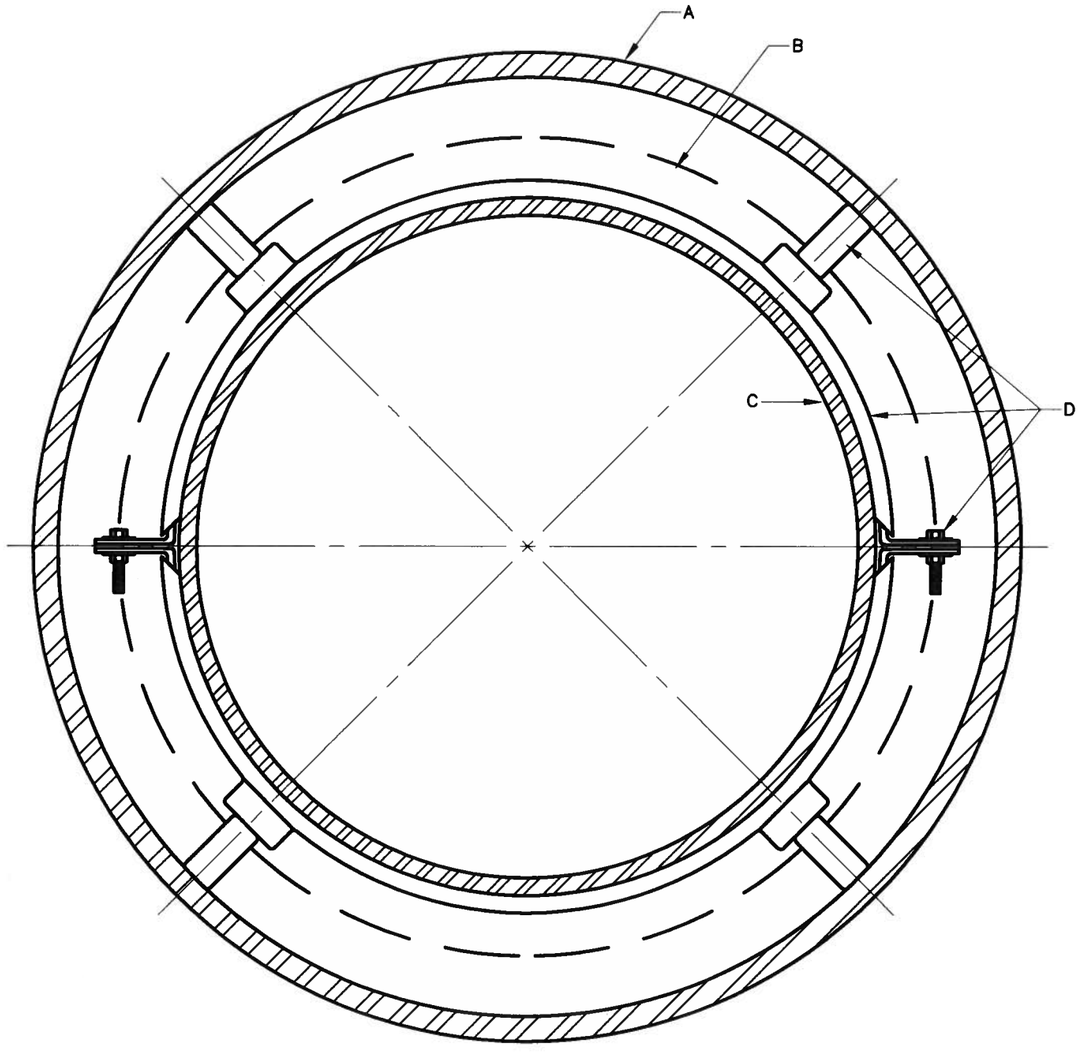
O. AREA OF BARS EQUAL BAND "A" BARS CUT (MIN. 1-#5 EA. SIDE).

P. AREA OF BARS EQUAL BAND "B" BARS CUT (MIN. 1-#5 EA. SIDE).

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

R. ADD 1-#5 DIAG AT EA CORNER FOR EA LAYER OF REINF.

REVISIONS	WATER AUTHORITY
	WATER STANDARD PRV STATION STRUCTURAL DETAILS
	DWG. 2375 JANUARY 2011



TYPICAL SECTION

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:

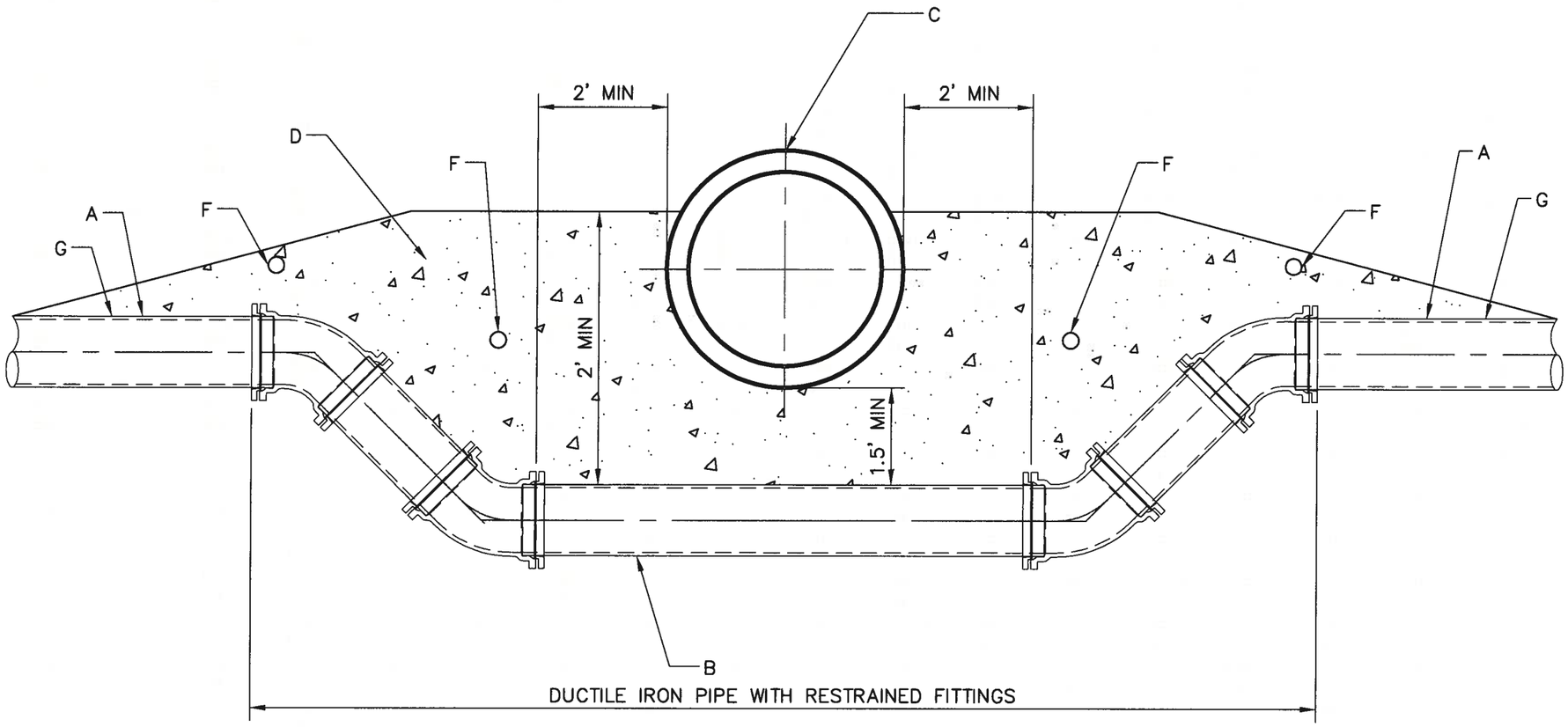
A WELDED STEEL PIPE CASING. DIAMETER AND WALL THICKNESS TO BE DESIGNED PER STANDARD SPECIFICATION SECTION 700 TO SUIT CONDITIONS.

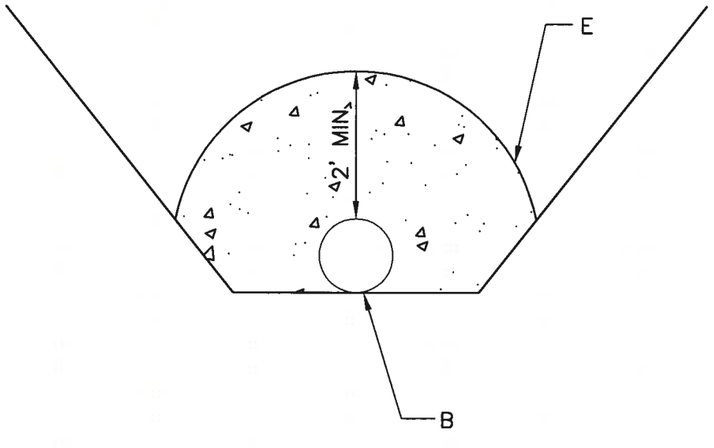
B BELL DIA. OF CARRIER PIPE.

C CARRIER PIPE.

D MANUFACTURED CASING SPACER. INSTALLATION AND SPACING PER MANUFACTURER'S RECOMMENDATIONS.

REVISIONS	WATER AUTHORITY
	WATER
	BORING INSTALLATION
	DWG. 2380 JANUARY 2011





GENERAL NOTES:

1. ENTIRE ASSEMBLY MUST HAVE ADEQUATE THRUST RESTRAINT PER STANDARD DRAWING 2320. CONCRETE BLOCKING SHALL BE INSTALLED ONLY WHEN MECHANICAL RESTRAINT IS NOT POSSIBLE.

CONSTRUCTION NOTES:

A. EXISTING WATERLINE.

B. RELOCATED WATERLINE.

C. NEW LINE.

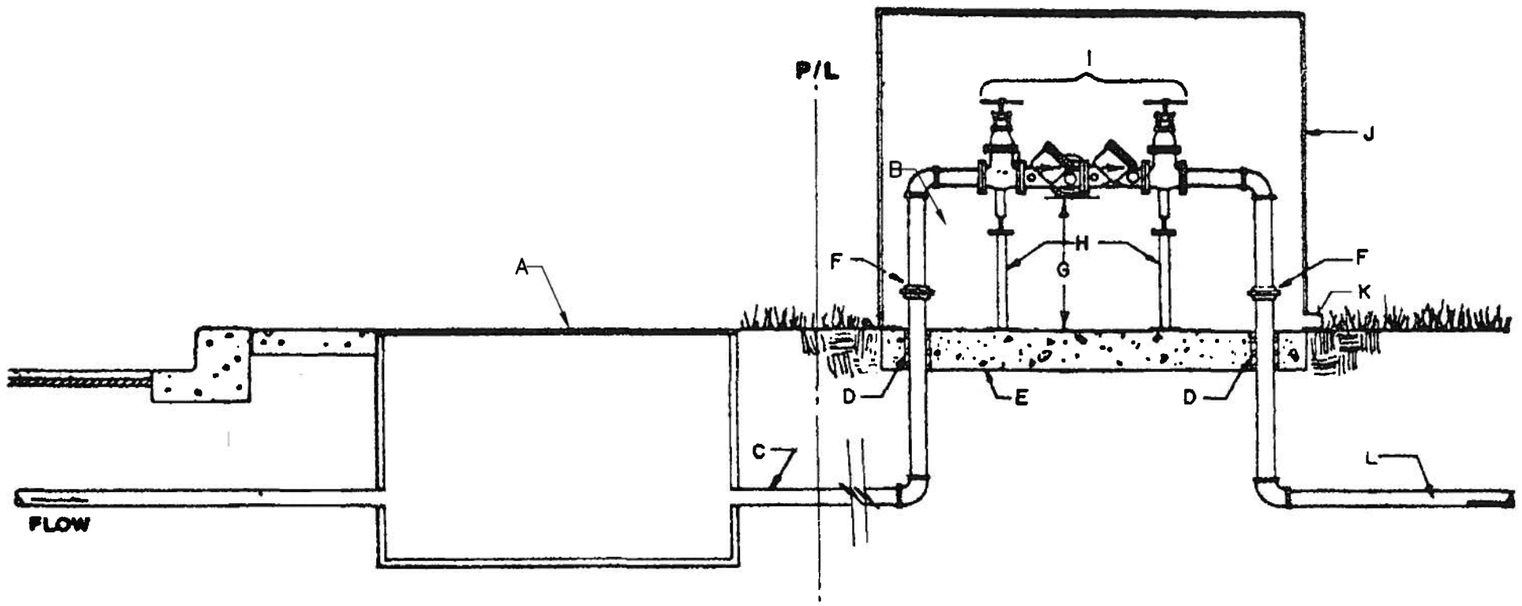
D. LEAN FILL.

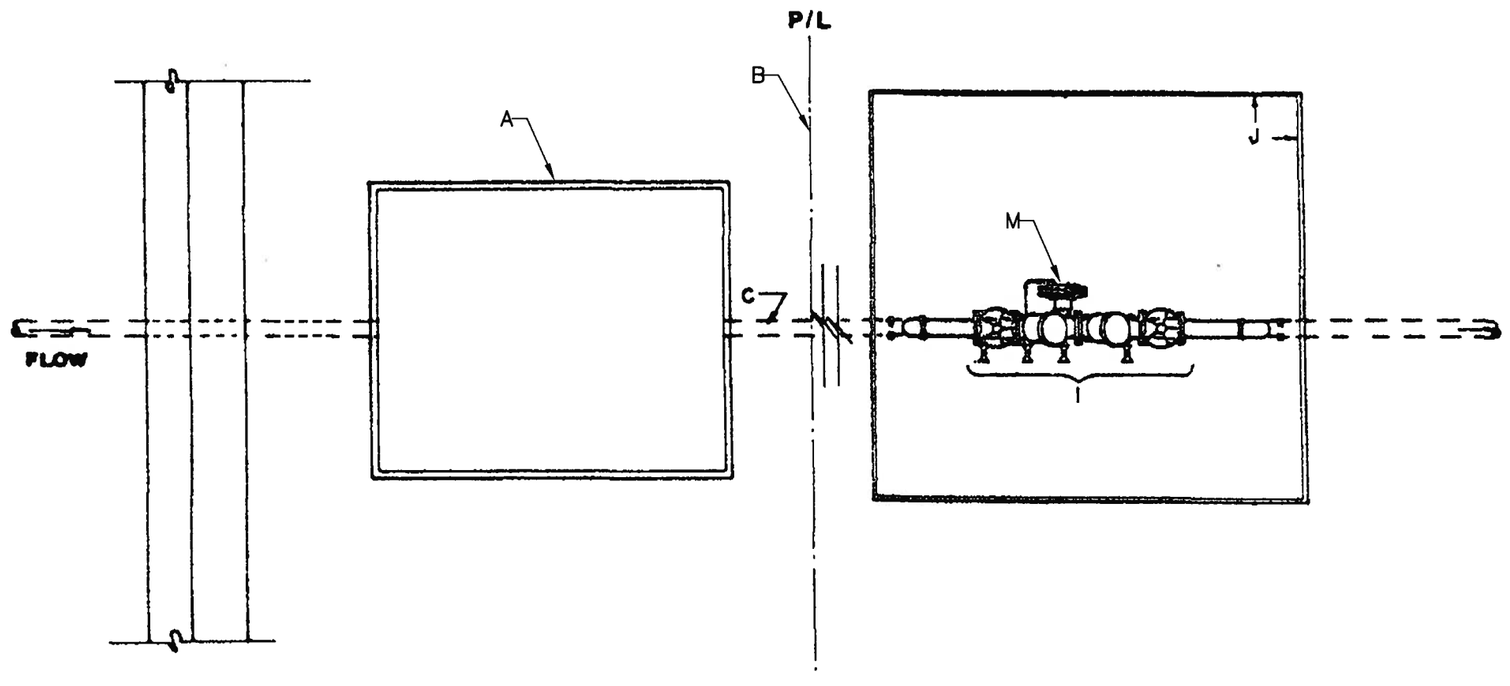
E. LEAN FILL 24" OVER PIPE

F. ELECTRONIC MARKER DEVICE (EMD), SEE COA STANDARD SPECIFICATION SECTION 170.

G. IF ANY EXISTING CCP JOINTS FALL WITHIN 10' OF THE PLANNED CUT, REMOVE CCP TO THE JOINT AND REPLACE WITH DIP.

REVISIONS	WATER AUTHORITY
	WATER TYPICAL LINE RELOCATION DWG. 2381 JANUARY 2011





PLAN

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 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. 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. UNIONS 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

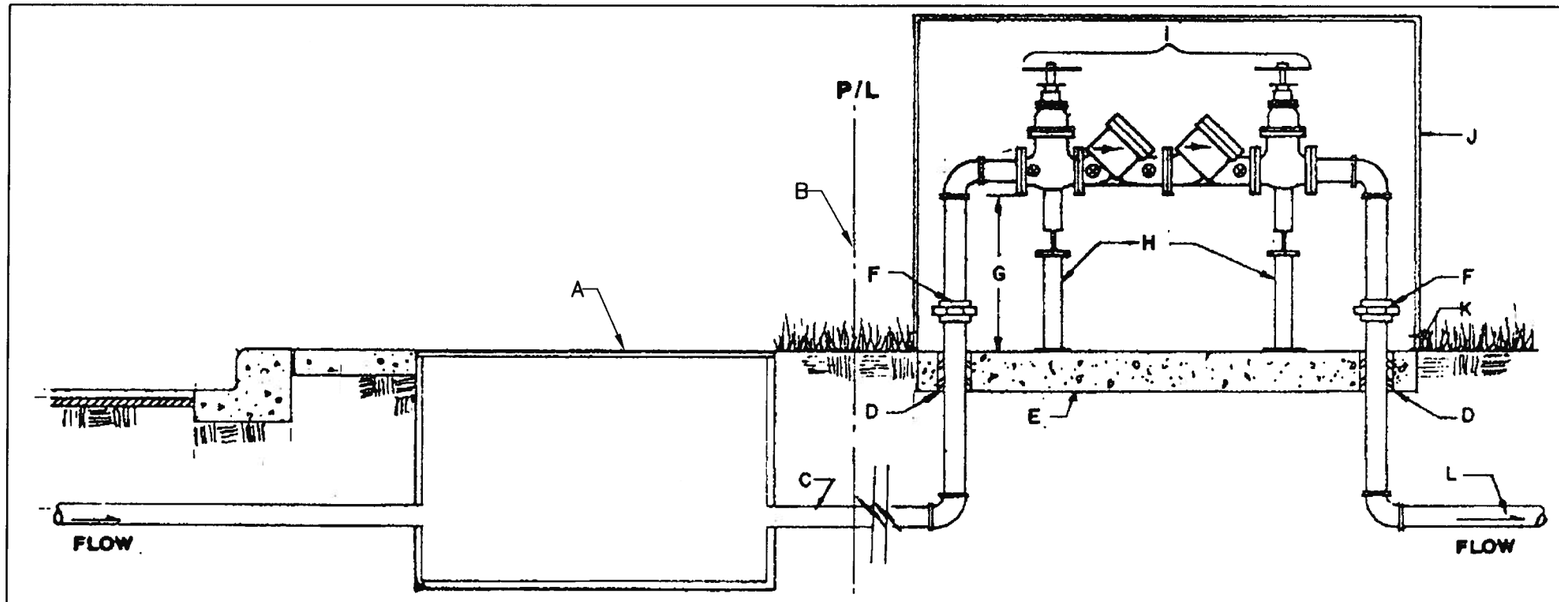
J. PROTECTIVE ENCLOSURE, SEE STANDARD DRAWING 2389 FOR DESIGN CRITERIA.

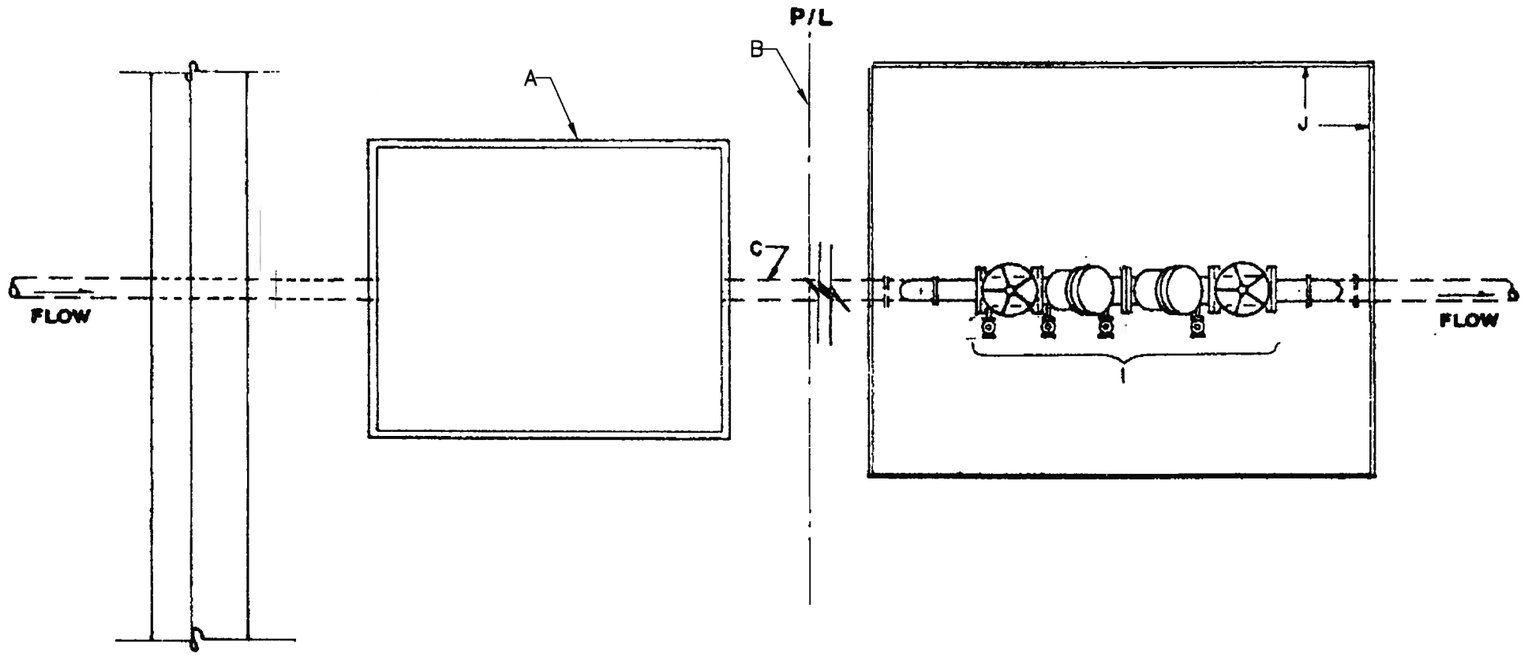
K. DRAIN: SIZE DRAIN TO HANDLE FULL DISCHARGE OF RELIEF VALVE. DRAIN TO DAYLIGHT. SCREEN RECOMMENDED TO PREVENT RODENT AND INSECT ENTRY.

L. BUILDING SERVICE LINE.

M. RELIEF VALVE.

REVISIONS	WATER AUTHORITY
	WATER REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (RPBA) DWG. 2385 JANUARY 2011





PLAN

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 DENTENTION BASINS.
8. INSTALL WATER HAMMER ARRESTORS & THERMO EXPANSION PROTECTION, AS NECESSARY.
9. JOINTS TO BE ADEQUATELY RESTRAINED.
10. METALIC 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 METALIC SUPPORTS ON UNITS 2.5" AND GREATER DIAMETER (TYPICAL).

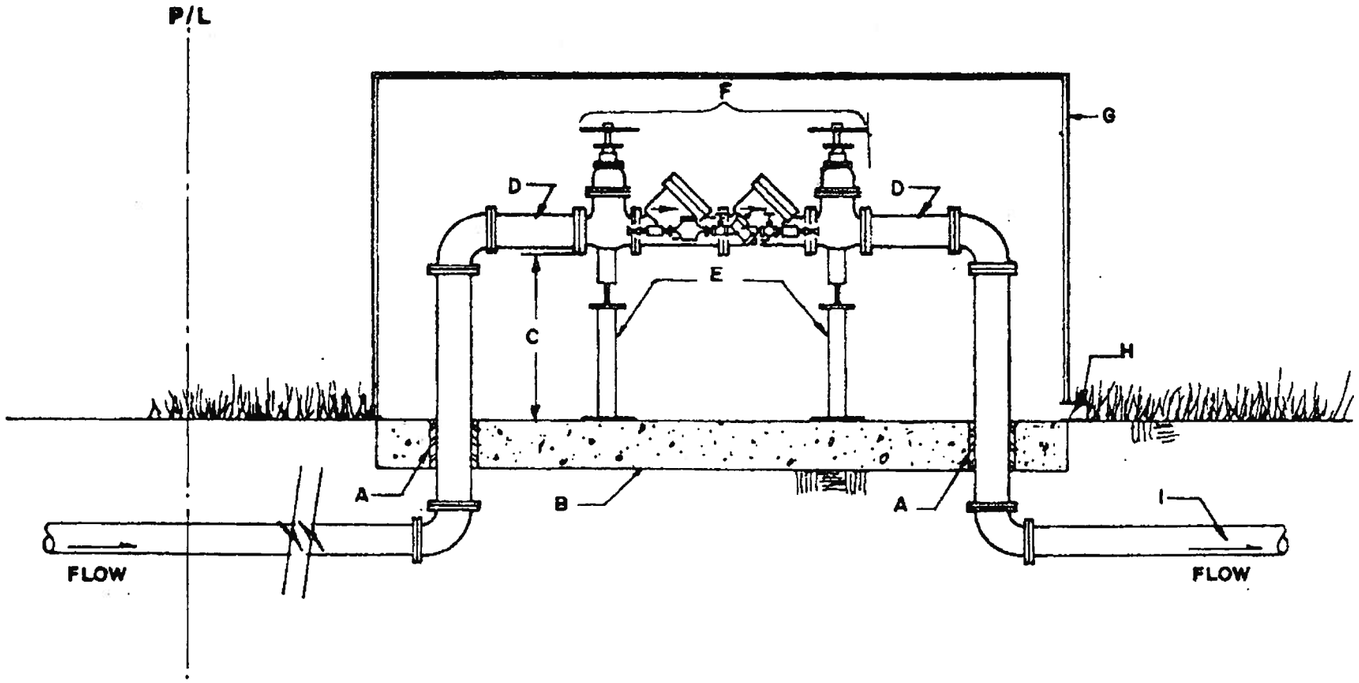
I. USC APPROVED DCVA, AS SHOWN

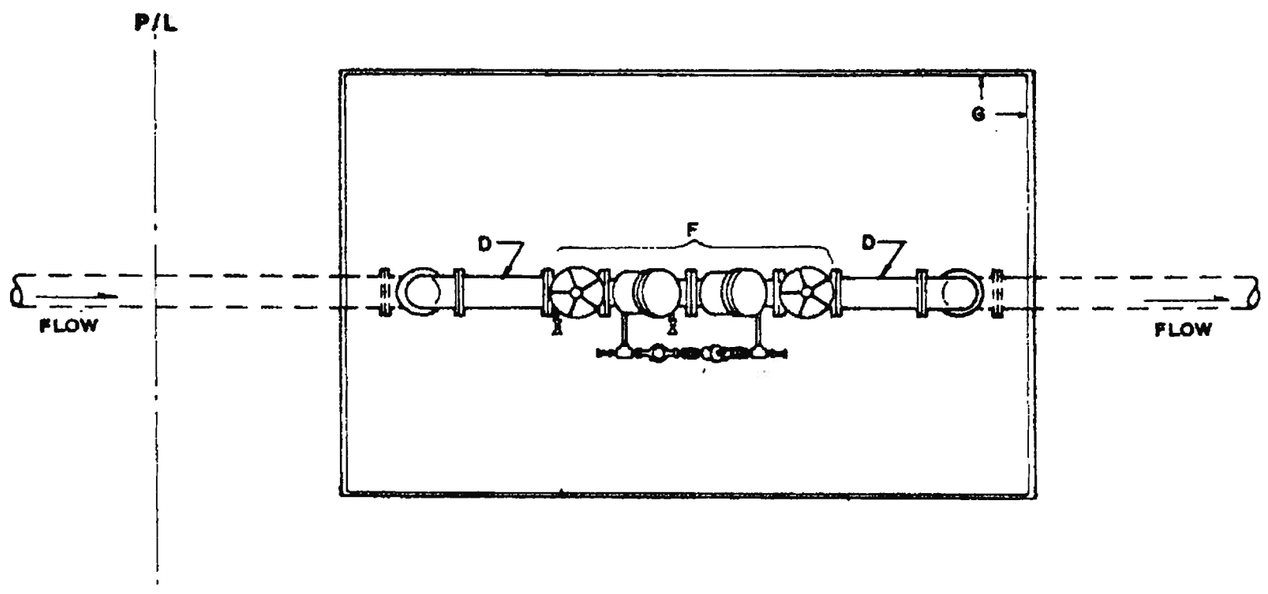
J. PROTECTIVE ENCLOSURE, SEE STANDARD DRAWING 2389 FOR DESIGN CRITERIA.

K. DRAIN: DRAIN TO DAYLIGHT. SCREEN RECOMMENDED TO PREVENT RODENT AND INSECT ENTRY.

L. BUILDING SERVICE LINE.

REVISIONS	WATER AUTHORITY
	WATER **DOUBLE CHECK VALVE ASSEMBLY (DCVA)** DWG. 2386 JANUARY 2011





PLAN

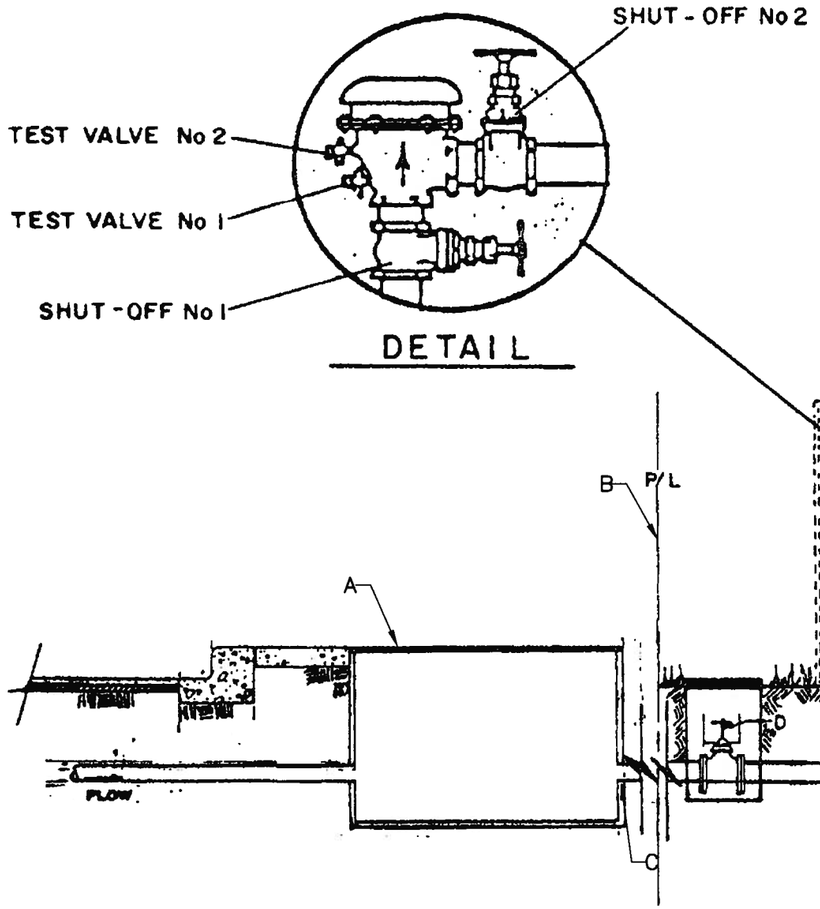
GENERAL NOTES:

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 & THERMO 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.

REVISIONS	WATER AUTHORITY
	WATER **DOUBLE CHECK-DETECTOR CHECK ASSEMBLY (DCDA)** DWG. 2387 JANUARY 2011



¾" THRU 2"

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.

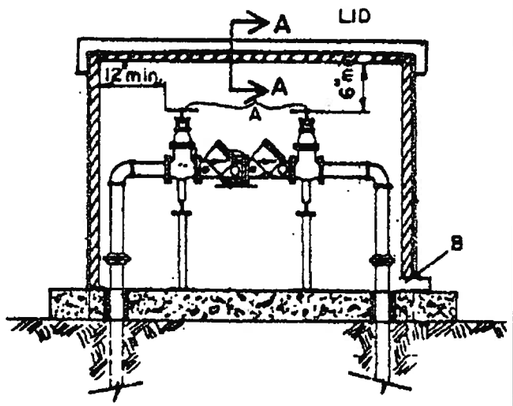
I. ENCLOSURE, OPTIONAL. SEE WATER STANDARD DRAWING 2389 FOR DESIGN CRITERIA IF ENCLOSURE IS USED.

J. CONTROL VALVE (ELECTRIC OR MANUAL), OPTIONAL.

K. 12" MINIMUM ABOVE ALL DOWNSTREAM PIPING & OUTLETS.

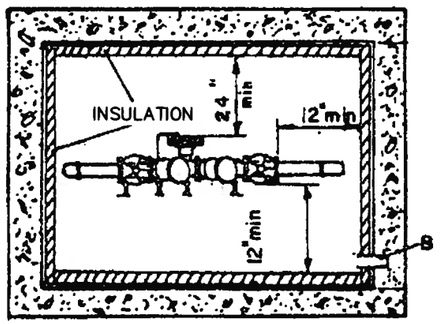
L. SPRINKLER.

REVISIONS	WATER AUTHORITY
	LANDSCAPE PRESSURE VACUUM BREAKER (PVB)
	DWG. 2388 JANUARY 2011



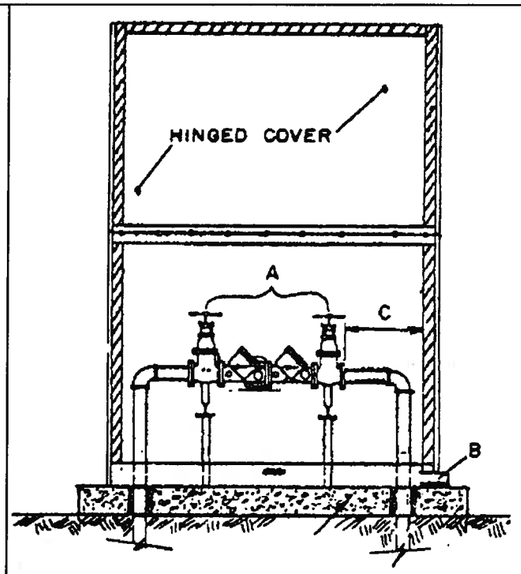
PROFILE

SECTION A-A

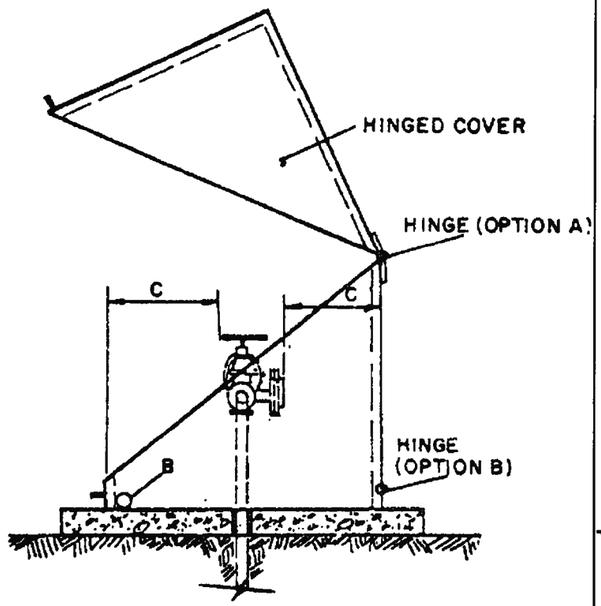


PLAN VIEW

TYPE A. ENCLOSURE: WITH PERMANENT SIDE WALLS

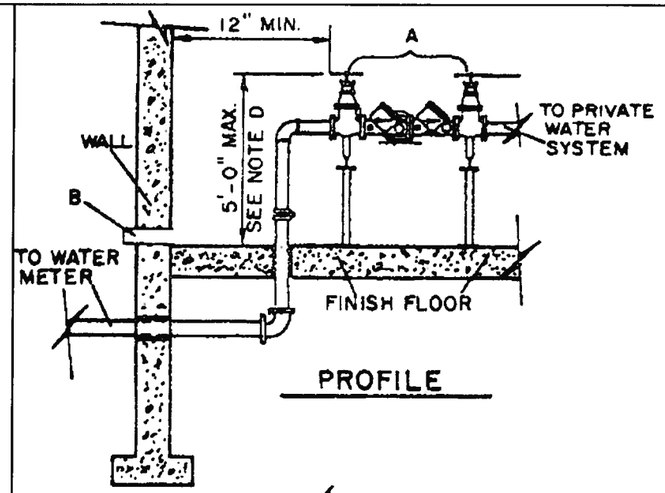


FRONT VIEW

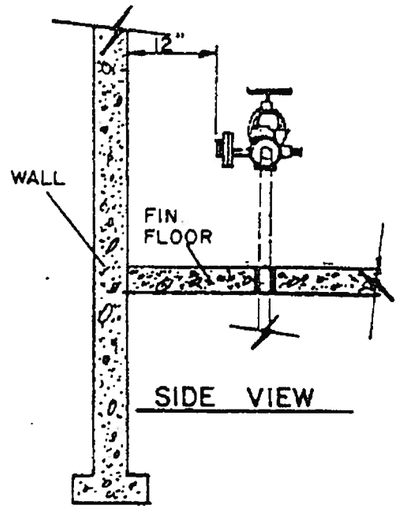


SIDE VIEW

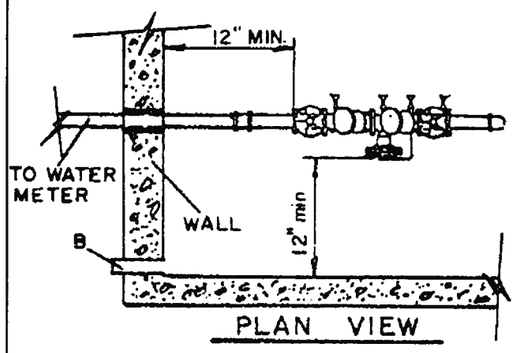
TYPE B. ENCLOSURE: WITH HINGED COVER



PROFILE



SIDE VIEW



PLAN VIEW

TYPE C. ENCLOSURE: AND TYPICAL INSTALLATION INDOOR STRUCTURE

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:

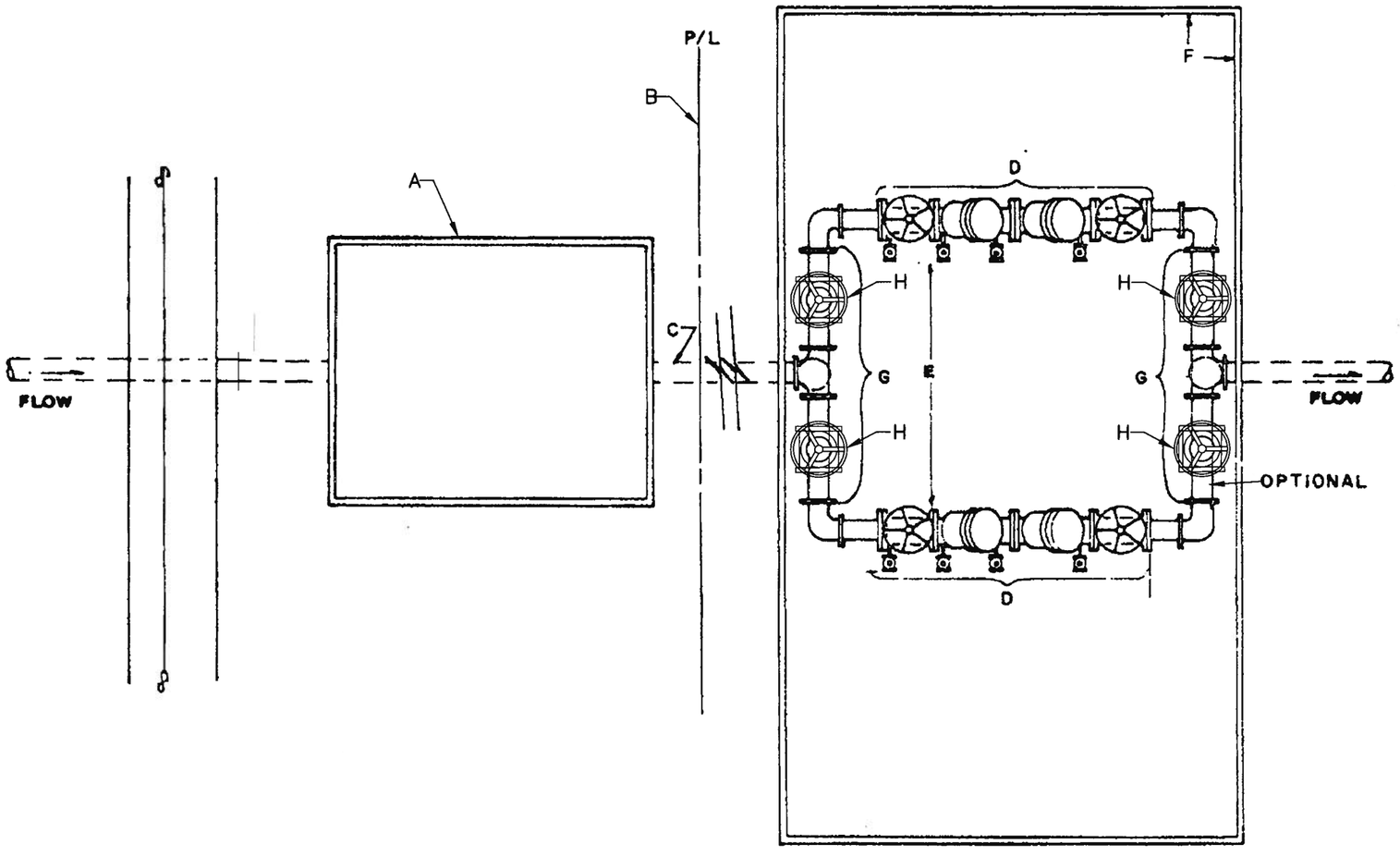
A. USC APPROVED RPBA, DCVA, DCDA OR PVB.

B. DRAIN: DRAIN OF ADEQUATE SIZE TO ALLOW FOR PROPER DRAINAGE. SHIELD 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 5', CONSUMER MUST PROVIDE PERMANENT ACCESS PLATFORM/LADDER.

REVISIONS	WATER AUTHORITY
	WATER ENCLOSURES
	DWG. 2389 JANUARY 2011



PLAN

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.

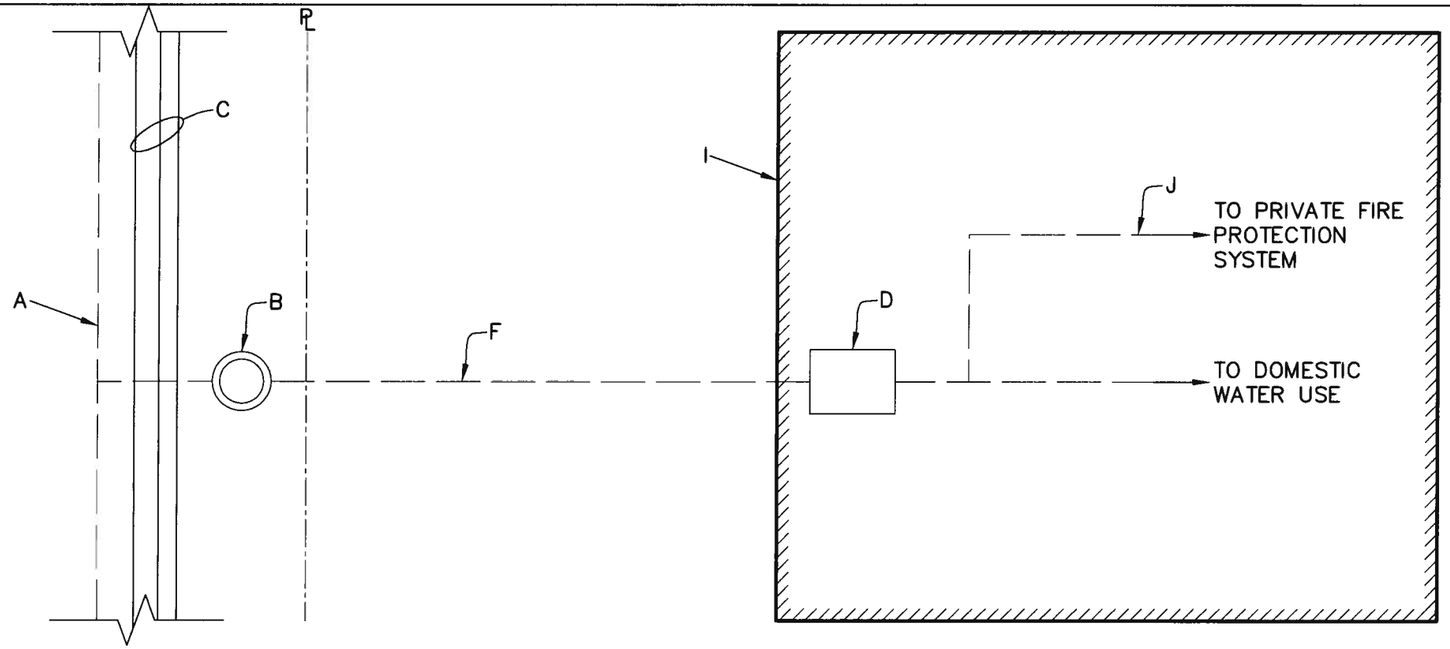
E. ADEQUATE CLEARANCE REQUIRED FOR TESTING & MAINTENANCE.

F. PROTECTIVE ENCLOSURE. SEE STANDARD DRAWING 2389 FOR DESIGN CRITERIA.

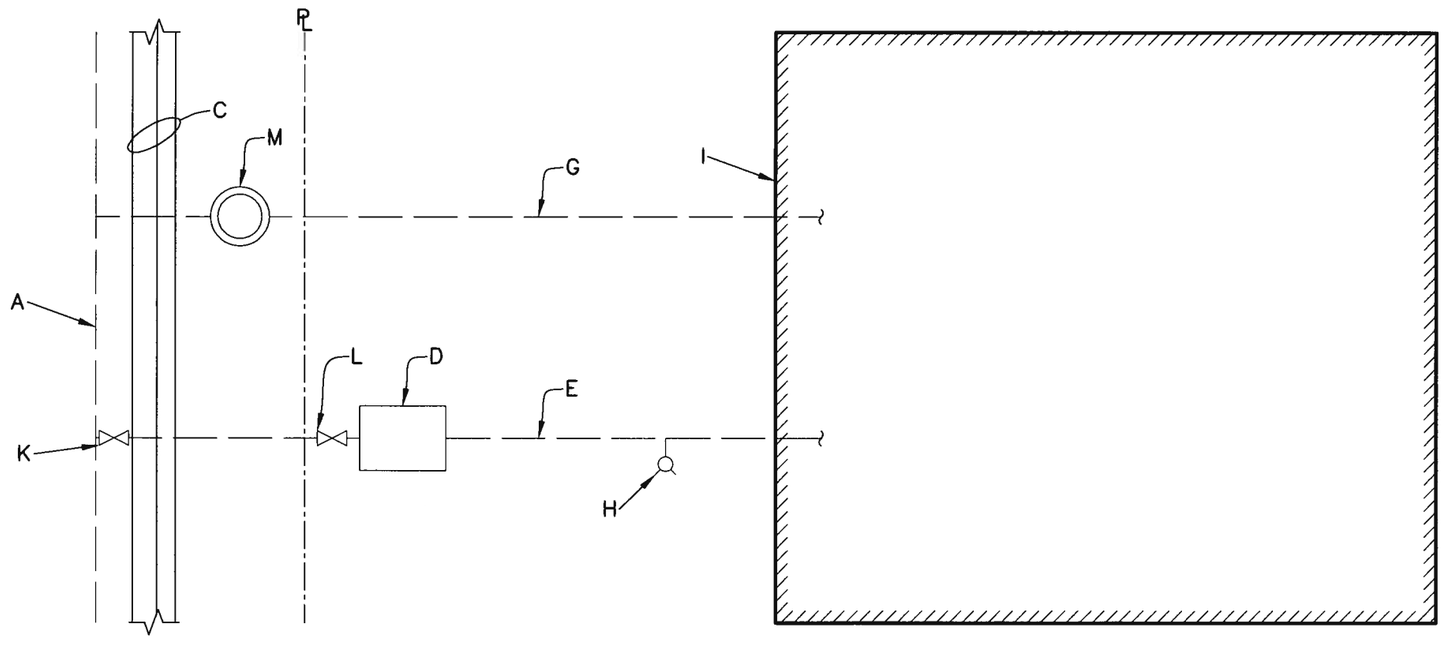
G. PIPING AND FITTINGS MAY BE ABOVE OR BELOW GRADE.

H. GATE VALVE WITH HAND WHEEL.

REVISIONS	WATER AUTHORITY
	WATER INSTALLATION FOR CONTINUOUS SERVICE
	DWG. 2390 JANUARY 2011



CROSS–CONNECTION CONTROL CONTAINMENT
WITH MULTI–USE DOMESTIC & FIRE SERVICE LINE



CROSS–CONNECTION CONTROL CONTAINMENT
WITH UNMETERED FIRE SERVICE LINE

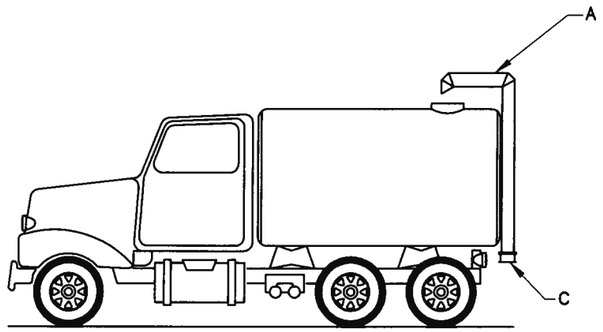
GENERAL NOTES:

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 ACCOMODATE 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.

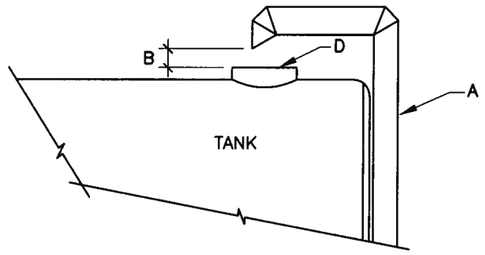
CONSTRUCTION NOTES:

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.

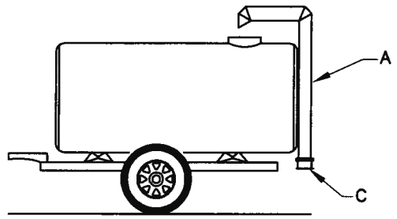
REVISIONS	WATER AUTHORITY
	WATER **RESIDENTIAL WATER PRIVATE FIRE PROTECTION SYSTEMS**
	DWG. 2394 JANUARY 2011



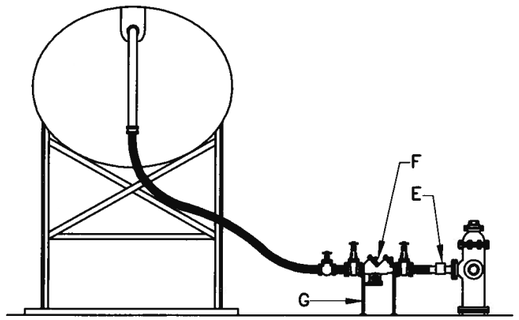
WATER TRUCK WITH AIR GAP

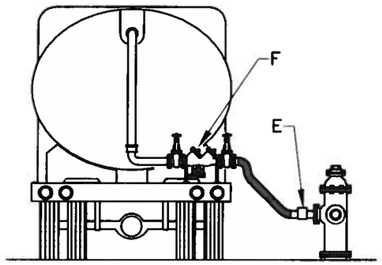


FILL PIPE DETAIL WITH AIR GAP

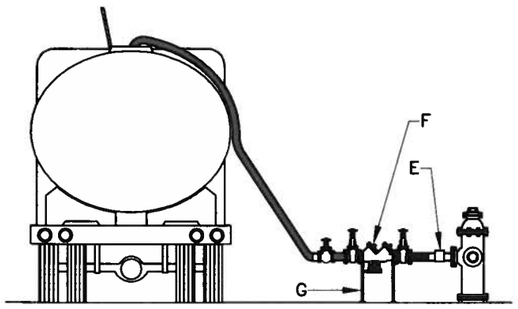


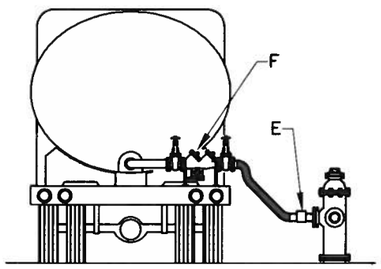
WATER WAGON WITH AIR GAP





ELEVATED TANK WITH RPBA"S





TANK TRUCKS WITH RPBA'S

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.

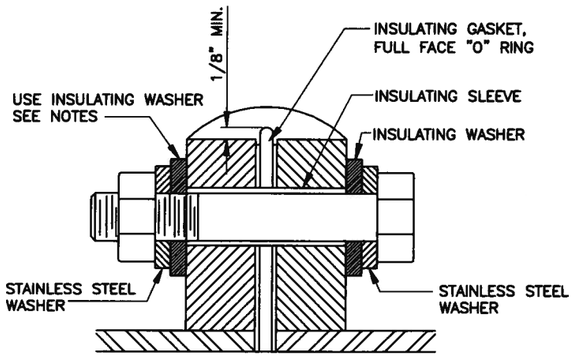
E. FIRE HYDRANT METER.

F. USC APPROVED RPBA.

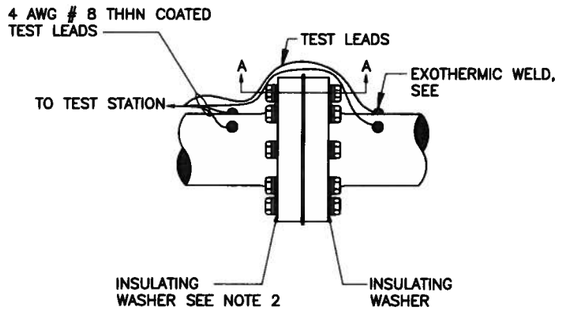
G. SUPPORTS REQUIRED.

RPBA = REDUCED PRESSURE BACKFLOW ASSEMBLY

REVISIONS	WATER AUTHORITY
	WATER APPROVED METHODS OF FILLING TANKS
	DWG. 2395 JANUARY 2011



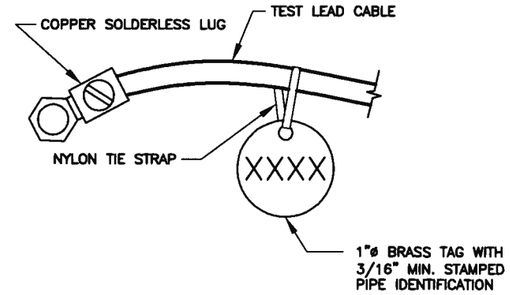
SECTION A–A



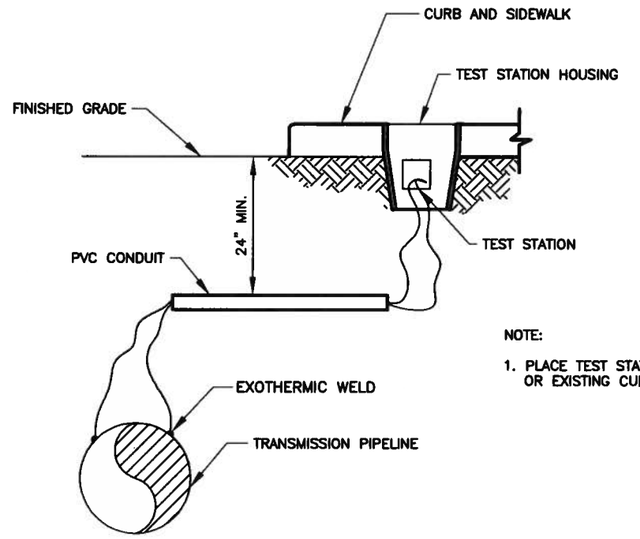
ISOLATION FLANGE DETAIL

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.



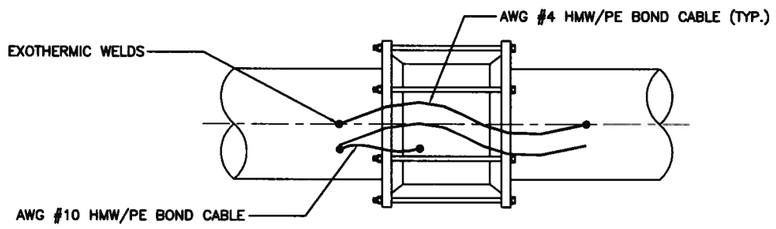
CABLE IDENTIFIER



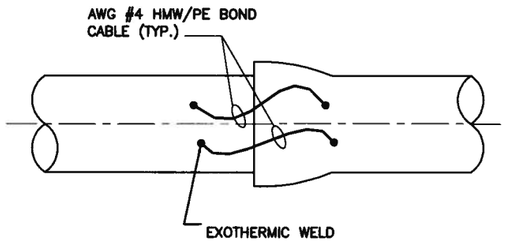
NOTE:

1. PLACE TEST STATION HOUSING BEHIND NEW OR EXISTING CURB IN THE SIDEWALK.

TEST STATION INSTALLATION (TYP.)



FLEXIBLE COUPLING BONDING

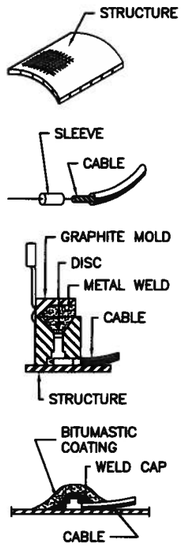


DIP PIPE BONDING

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

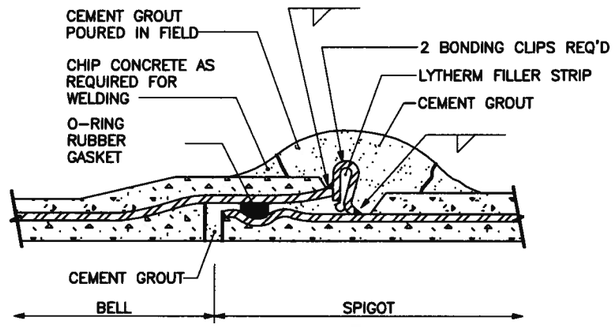
2) STRIP INSULATION FROM WIRE AND ATTACH SLEEVE

3) HOLD MOLD FIRMLY WITH OPENING AWAY FROM OPERATOR. IGNITE WITH FLINT GUN

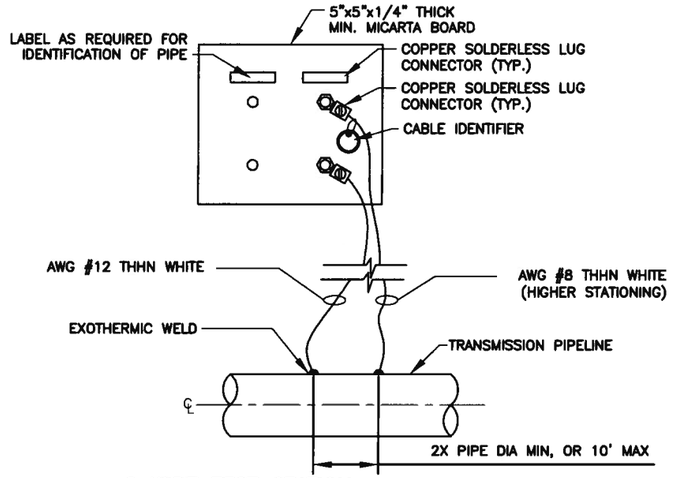
4) REMOVE SLAG FROM CONNECTION WITH CHIPPING HAMMER

5) COVER CONNECTION WITH BITUMASTIC COATING OVER ALL EXPOSED METAL

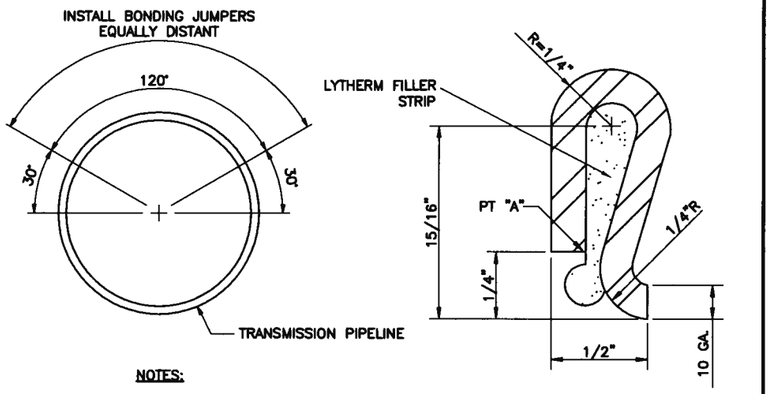
EXOTHERMIC WELD DETAIL



CCP OR CML&C STEEL PIPE BONDING INSTALLATION



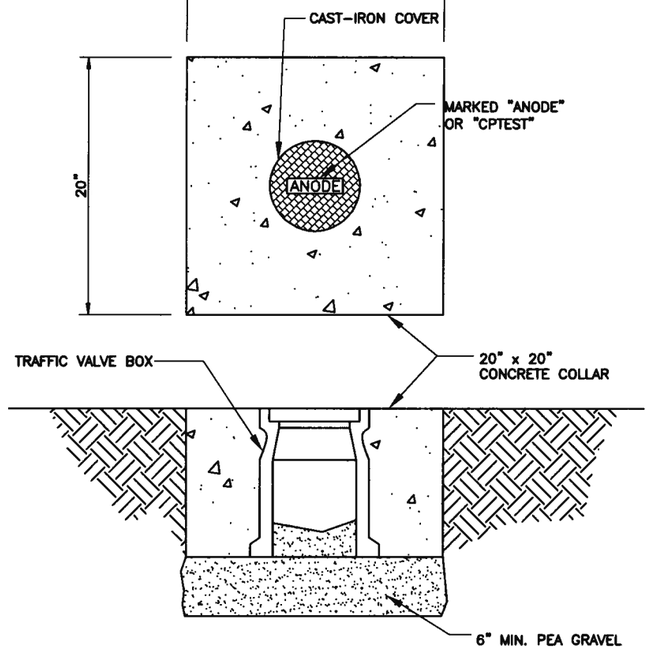
2 WIRE TEST STATION



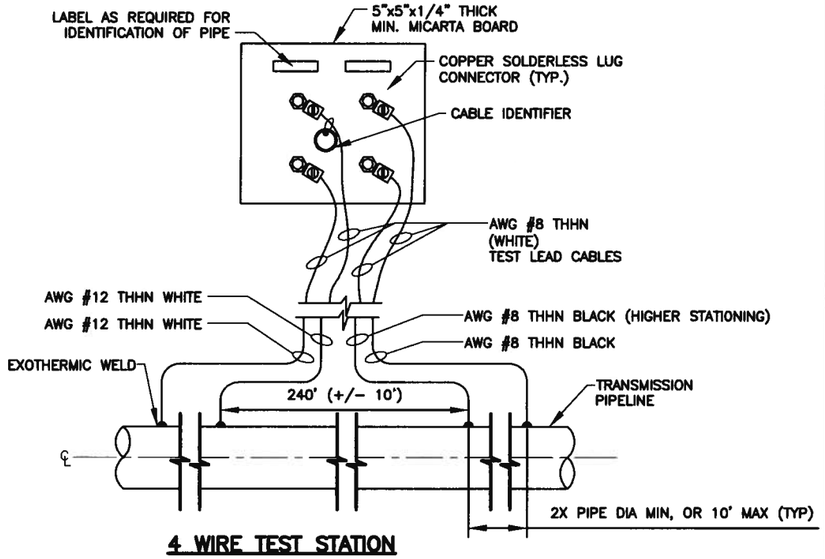
NOTES:

1. MATERIAL SPECIFICATION – ASTM A336 (COMMERCIAL QUALITY)
   CUT LENGTH – 2 1/2"± 1/16"
   WIDTH – 1 1/4" ± 1/16"
2. LYTHERM FILLER STRIP TO BE 1" x 1 1/2" WIDE TO OVERLAP SIDES OF JUMPER.
3. CRIMP BONDING JUMPER OVER FILLER AT PT "A" TO COMPRESS FILLER.

BONDING CLIPS



TEST STATION HOUSING



4 WIRE TEST STATION

ABBREVIATIONS:

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

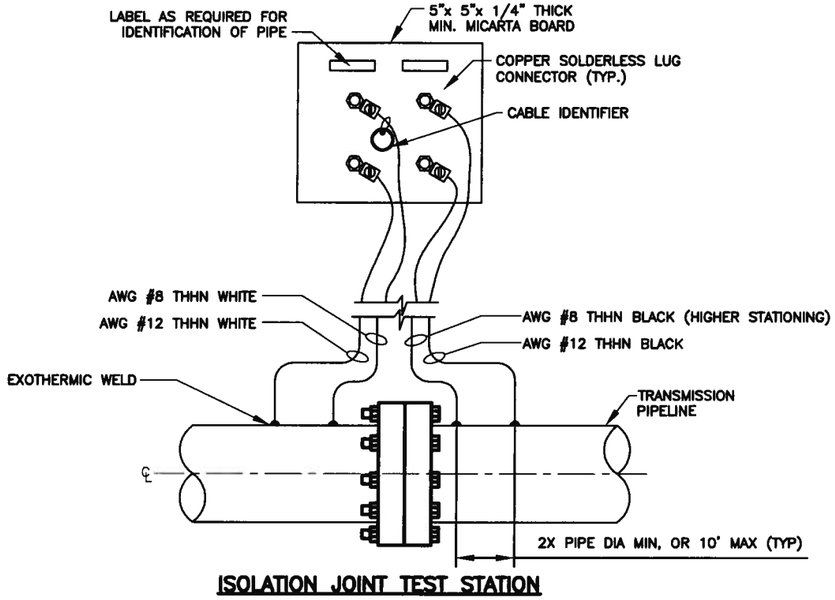
REVISIONS

WATER AUTHORITY

WATER CORROSION MONITORING DETAILS – 2

DWG. 2397

JANUARY 2011



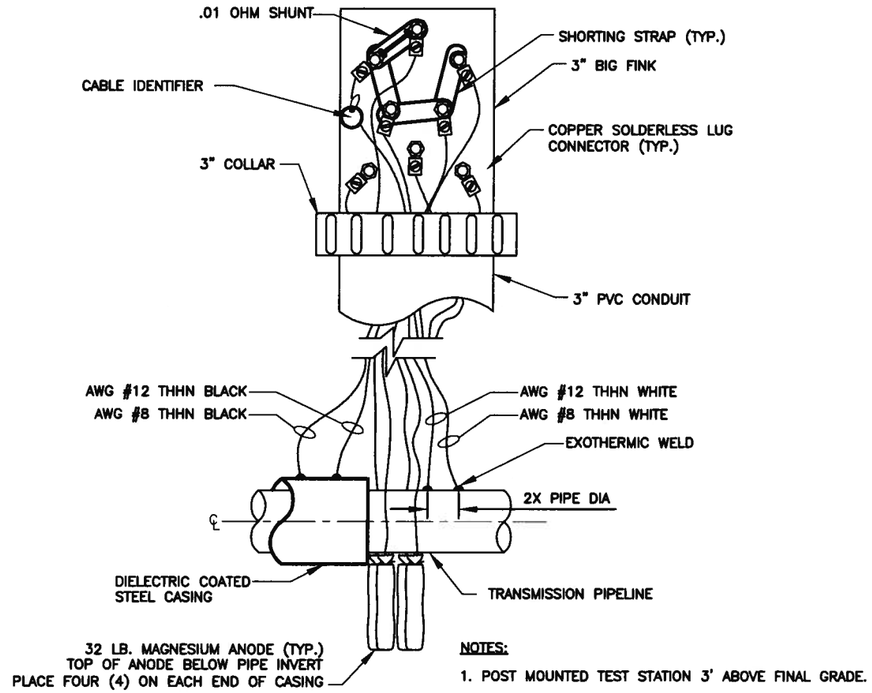
ISOLATION JOINT TEST STATION

NOTES:

1. ENGRAVE LABEL ON MICARTA 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

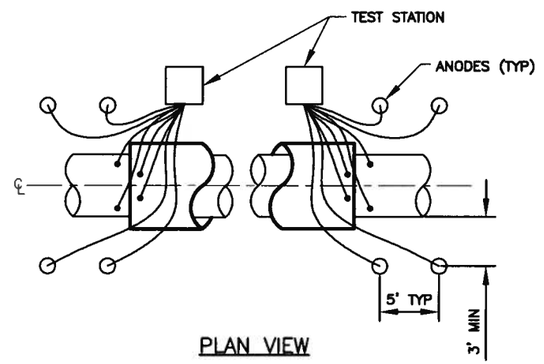
TEST BOARD LABEL



NOTES:

1. POST MOUNTED TEST STATION 3' ABOVE FINAL GRADE.

ELEVATION VIEW



PLAN VIEW

CASING TEST STATION

ABBREVIATIONS:

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

REVISIONS	WATER AUTHORITY
	WATER CORROSION MONITORING DETAILS – 3
	DWG. 2398 JANUARY 2011

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SECTION 2400
STANDARD DETAILS FOR PAVING

DWG. NO.	TITLE
2400	PAVEMENT DESIGN STANDARDS
2401	TYPICAL RESIDENTIAL STREET INTERSECTION
2405A	LOCAL RESIDENTIAL STREET SECTION
2405B	MAJOR LOCAL STREET SECTION
2406	ESTATE TYPE STREETS
2407	ART./COLL. ST. SECTIONS WITHOUT MEDIAN
2408	ART./COLL. ST. SECTIONS WITH MEDIAN
2411	COMMERCIAL & RESIDENTIAL ALLEY SECTION
2412	STREET SECTION USING CONCRETE PAVERS
2415A	CURB AND GUTTER AND CURB CUT DETAILS
2415B	CURB AND GUTTER AND TEMPORARY PAVING SECTION
2418	MOUNTABLE TO STANDARD CURB TRANSITION
2420	CONCRETE VALLEY GUTTER
2421	CONCRETE VALLEY GUTTER (KNUCKLE)
2422	SPECIAL CONCRETE VALLEY GUTTERS
2425	DRIVEPADS
2426	PRIVATE ENTRANCE DETAILS - TWO SEPARATE ROW CONDITIONS
2428	ALLEY INTERSECTIONS
2430	SIDEWALK DETAILS
2431	SIDEWALK OBSTRUCTIONS
2432	SIDEWALK TRANSITIONS
2440	CURB ACCESS RAMP
2441	WHEEL CHAIR ACCESS RAMP
2450	CONCRETE JOINTS STANDARD
2451	CONCRETE JOINTS STANDARD TYPES 5 & 6
2452	TYPICAL CONCRETE PAVEMENT JOINT PATTERN
2453	STANDARD PENETRATIONS PCC PAVEMENT
2460	MANHOLE & VALVE BOX REGRADING
2461	MANHOLE/VALVE CONCRETE COLLAR DETAIL
2465	PAVEMENT CUTS FOR UTILITIES
2466	BUS BAY DETAIL

PAVEMENT DESIGN STANDARDS

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 ≥ 50 AND MAXIMUM TRAFFIC VOLUMES DEFINED BELOW:

   a. LOCAL RESIDENTIAL STREETS (SEE STD. DWG 2405 A)
   ROADWAY PROVIDES ACCESS TO A MAXIMUM OF 50 RESIDENTIAL LOTS OR HAS A MAXIMUM AWDT 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 AWDT OF 3000.

LIFT	THICKNESS
AC SURFACE COURSE	2"
AC BASE COURSE	2"

   c. ROADS CLASSIFIED ON THE LONG RANG MAJOR STREET PLAN REQUIRE A PAVEMENT DESIGN IN ACCORDANCE WITH SECTION 23 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

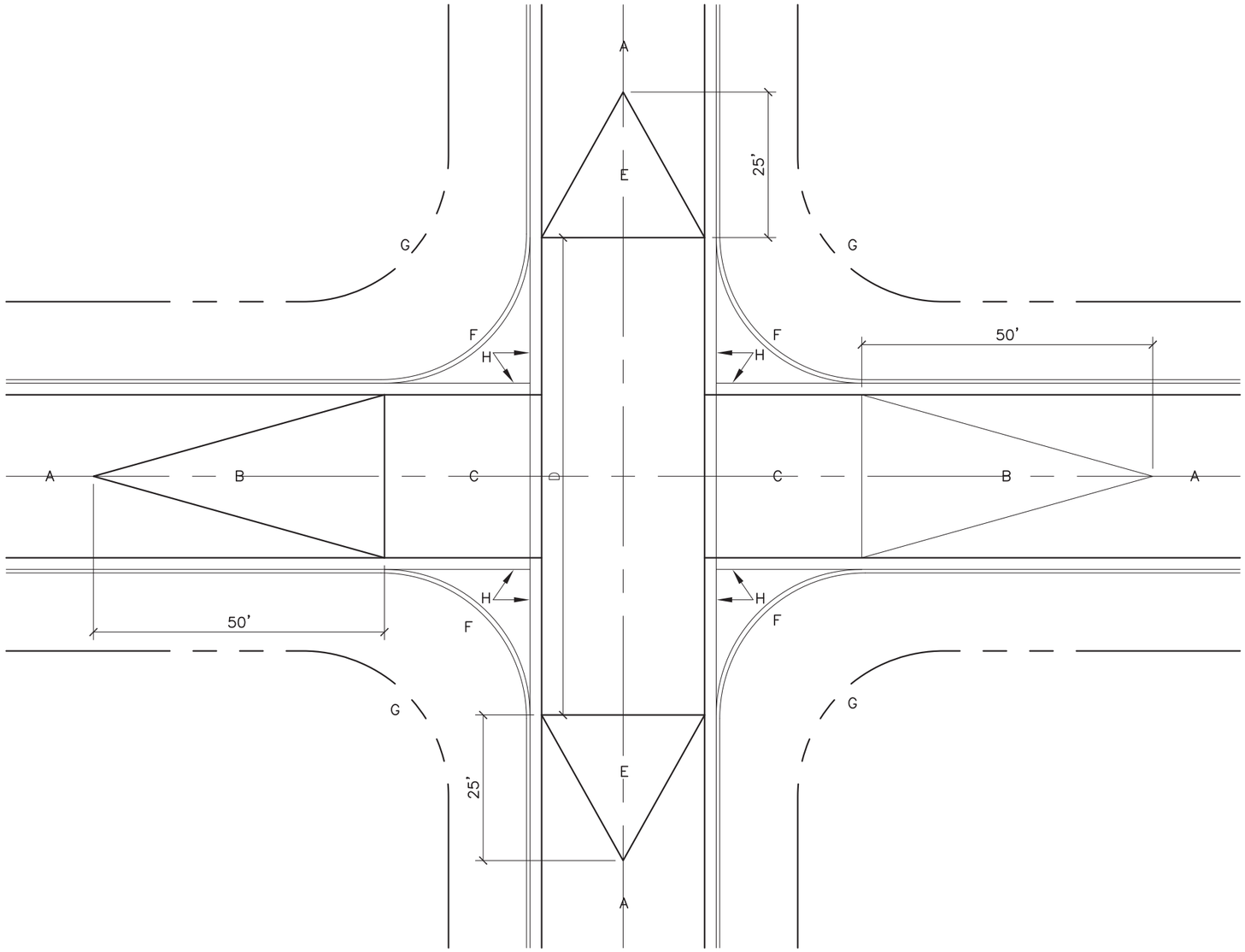
PAVEMENT CONSTRUCTION MATERIALS				
MATERIAL	COMPACTED LIFTS [1] MINIMUM	COMPACTED LIFTS [1] MAXIMUM	NOTES	CONSTRUCTION TOLERANCES [3]
FILL	4"	8"	SEE SECTION 204	± 1 1/4" (0.10 FT)
SUBGRADE	4"	8"	SEE SECTION 301 FOR SUBGRADE DEPTH REQUIREMENTS	± 1 1/4" (0.10 FT)
AGGREGATE BASE COURSE (ABC)	4"	6"	SEE SECTION 302 FOR ABC CONSTRUCTION REQUIREMENTS	± 1/2" (0.04 FT)
BITUMINOUS TREATED BASE (BTB)	4"	6"	SEE SECTION 305 FOR BTB CONSTRUCTION REQUIREMENTS	± 1/2" (0.04 FT)
CONCRETE TREATED BASE (CTB)	4"	6"	SEE SECTION 307 FOR CTB CONSTRUCTION REQUIREMENTS	± 1/2" (0.04 FT)
ASPHALT CONCRETE (AC)			SEE SECTION 116 FOR AC CONSTRUCTION REQUIREMENTS	
TYPE A, SP-II	3"	4"		± 1/4" (0.02 FT)
TYPE B, SP-III	2"	3"		± 1/4" (0.02 FT)
TYPE C, SP-IV	1 1/2"	2 1/2"		± 1/4" (0.02 FT)
TYPE D, SP-V	1"	2"		± 1/4" (0.02 FT)
TREATED SOILS	4"	8"	SEE SECTION 304, 342 FOR CONSTRUCTION REQUIREMENTS	

[1] THE LIFT THICKNESS/DEPTH(S) FOR A PAVEMENT SECTION SHALL BE IDENTIFIED IN TYPICAL PAVEMENT SECTIONS ON A PROJECTS PLANS AND IN A PROJECT'S SPECIFICATIONS.

[2] AGGREGATE BASE COURSE MAY BE USED IF PROPER DRAINAGE CAN BE PROVIDED.

[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



TYPICAL RESIDENTIAL STREET INTERSECTION
GRADING CONCEPT

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.

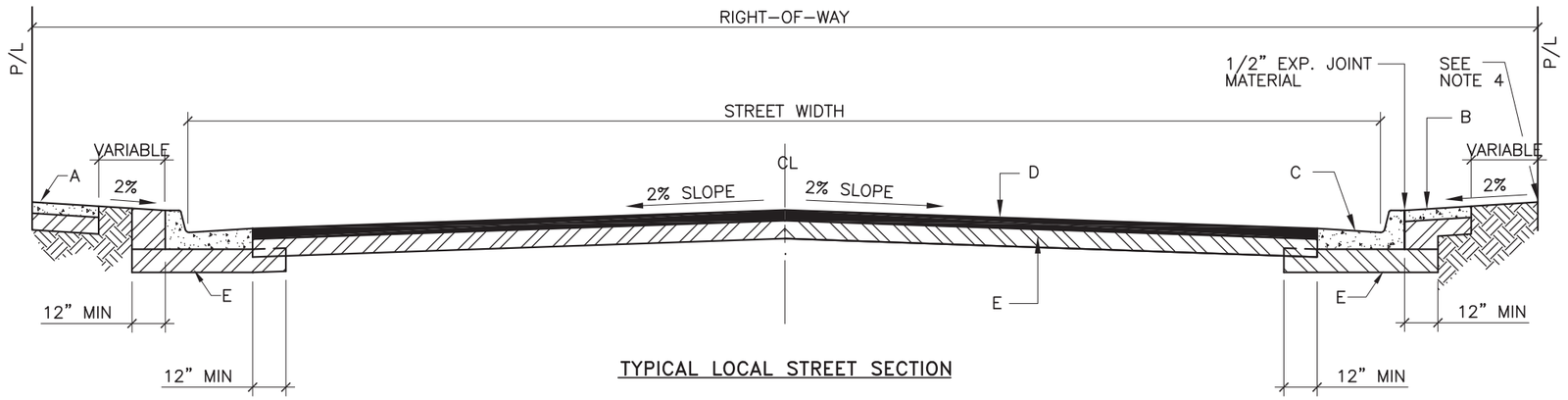
E. TRANSITION SECTION FROM FULL CROWN TO HALF CROWN SECTION.

F. CURB RETURN.

G. PROPERTY RETURN.

H. FLOW LINE OF VALLEY GUTTER.

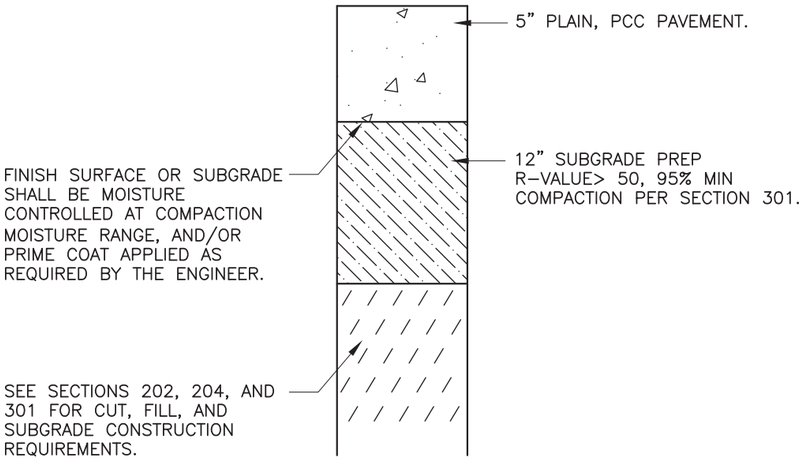
REVISIONS	CITY OF ALBUQUERQUE
1/91	PAVING TYPICAL RESIDENTIAL STREET INTERSECTION DWG. 2401 JANUARY 2003



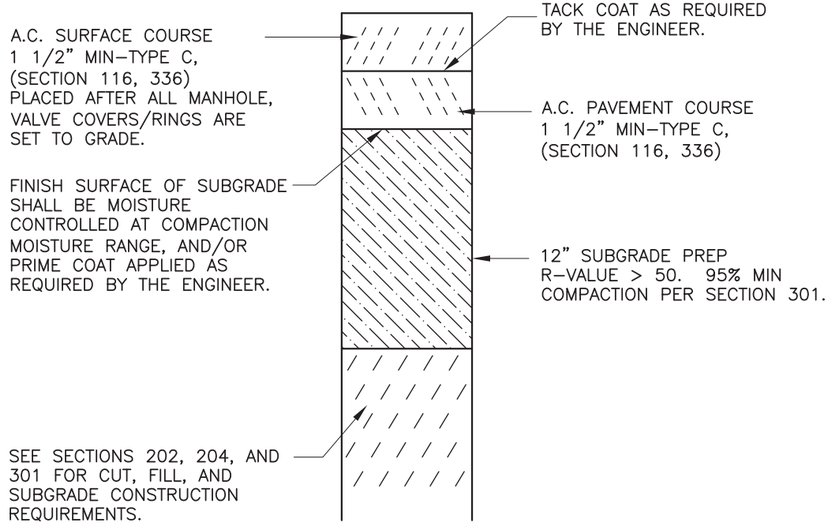
TYPICAL LOCAL STREET SECTION

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 COMPACTION 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:
   * RESIDENTIAL STREETS SERVING 50 LOTS OR LESS SHALL BE DESIGNED AS LOCAL RESIDENTIAL STREETS.
   * RESIDENTIAL STREETS SERVING MORE THAN 50 LOTS WITH AN ANTICIPATED AWDT < 3000 SHALL BE DESIGNED AS MAJOR LOCAL STREETS.
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.



RIGID PAVEMENT SECTION



FLEXIBLE PAVEMENT SECTION

CONSTRUCTION NOTES:

A. SIDEWALK AT STANDARD SETBACK.

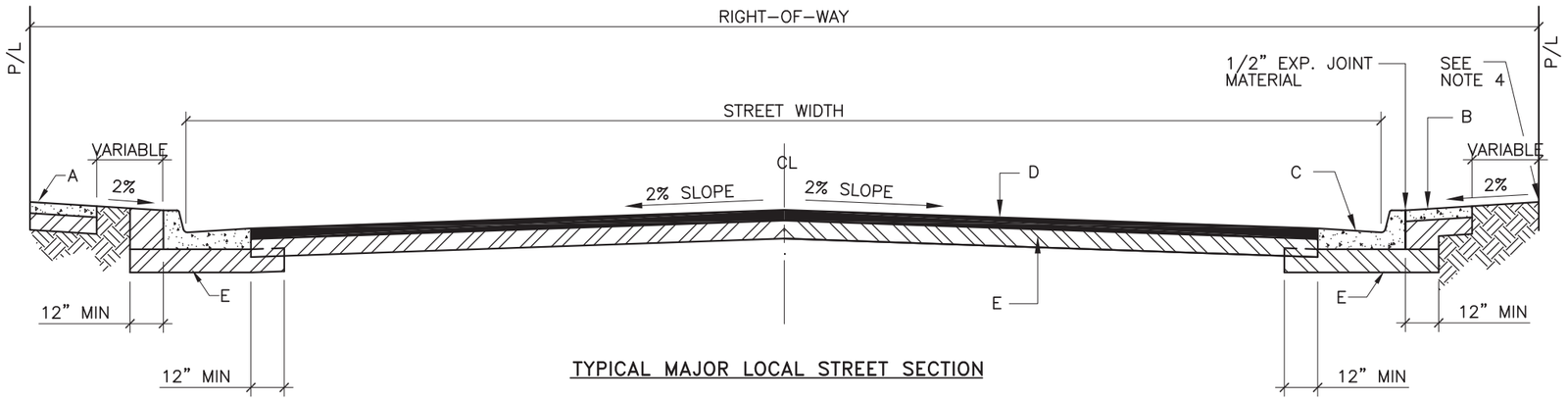
B. SIDEWALK ADJACENT TO CURB. (NON–STANDARD, VARIANCE REQUIRED).

C. STANDARD CURB AND GUTTER.

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

E. 12" COMPACTED SUBGRADE PREP, 95% COMPACTION.

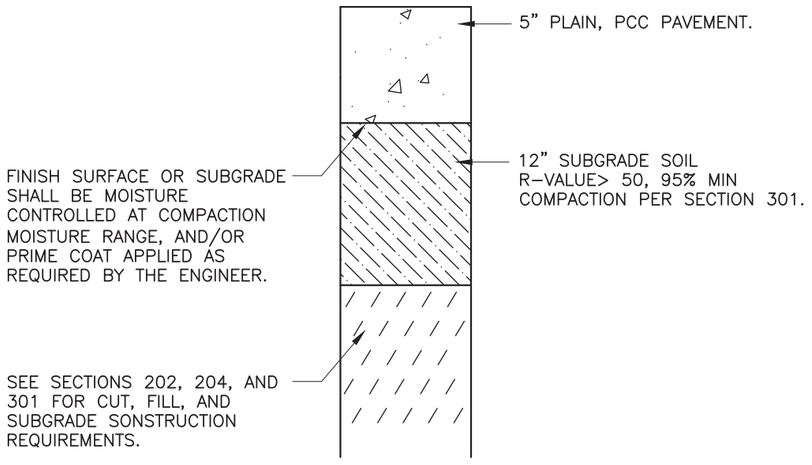
REVISIONS	CITY OF ALBUQUERQUE
1/91 12/15/92 8/29/94	PAVING LOCAL – RESIDENTIAL STREET SECTION DWG. 2405A JANUARY 2003



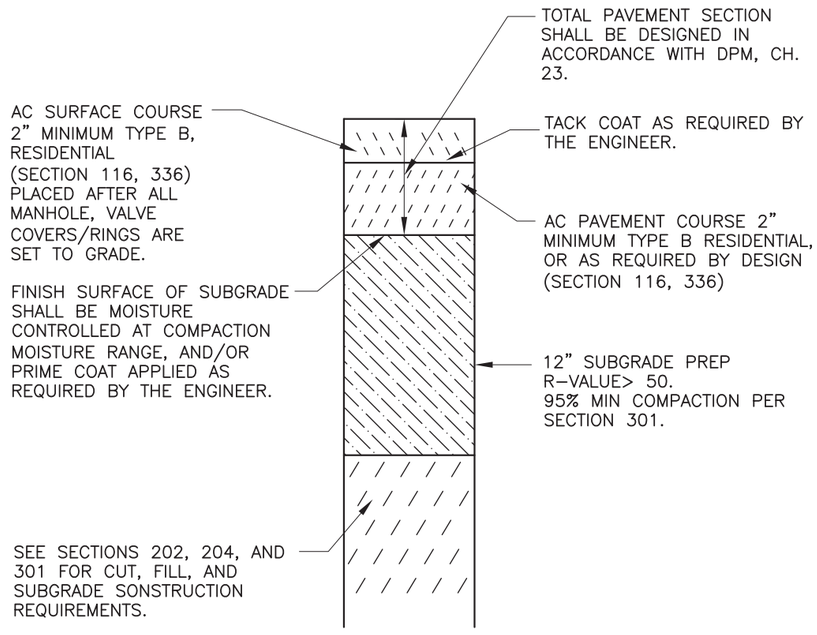
TYPICAL MAJOR LOCAL STREET SECTION

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 COMPACTION 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 COA 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 SERVINGMORE THAN 50 LOTS WITH AN ANTICIPATED AWDT < 3000 SHALL BE DESIGNED AS MAJOR LOCAL STREETS.
8. FOR SUBGRADE R–VALUE < 50, PAVEMENT SECTION SECTION SHALL BE DESIGNED IN ACCORDANCE WITH DPM CH. 23.
9. SUBGRADE PREPERATION SHALL BE PERFORMED AFTER ALL SUBSURFACE UTILITIES ARE CONSTRUCTED.



RIGID PAVEMENT SECTION



FLEXIBLE PAVEMENT SECTION

CONSTRUCTION NOTES:

A. SIDEWALK AT STANDARD SETBACK.

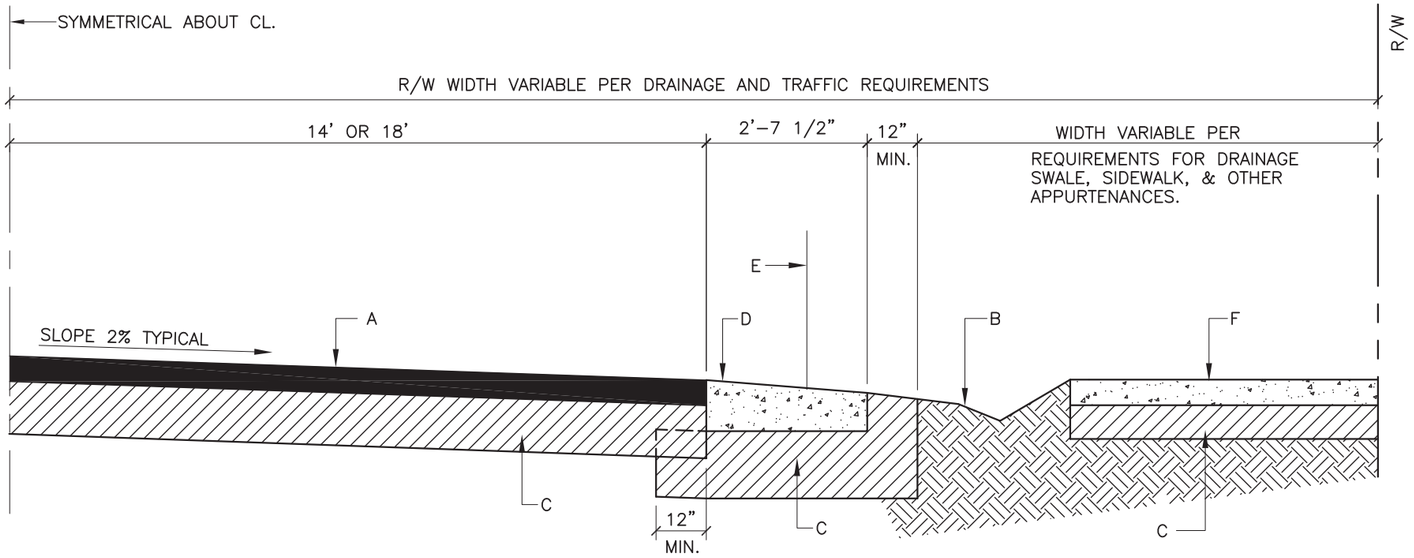
B. SIDEWALK ADJACENT TO CURB. (NON–STANDARD, VARIANCE REQUIRED).

C. STANDARD CURB AND GUTTER.

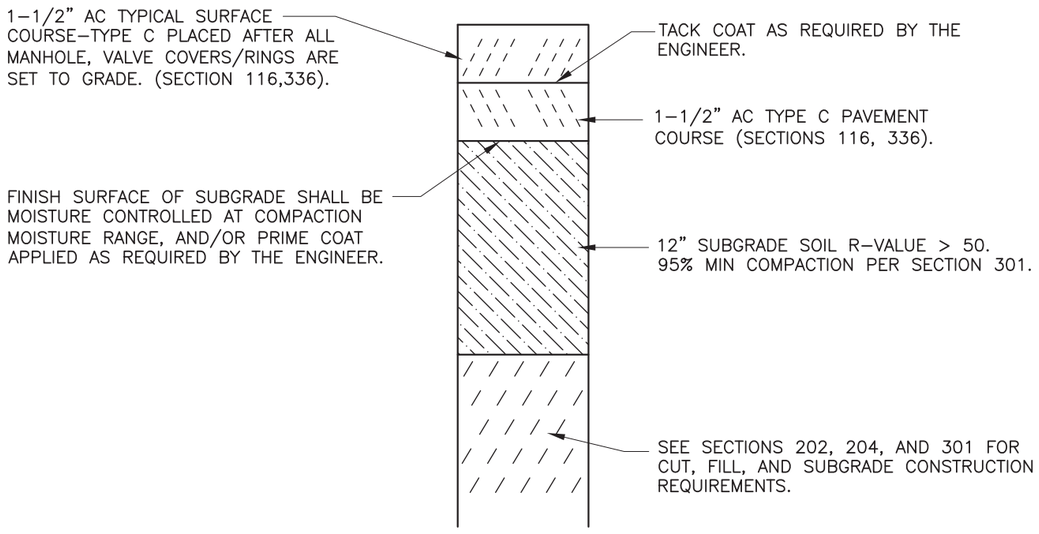
D. ASPHALT CONCRETE (AC) OR PORTLAND CEMENT (PCC) PAVEMENT.

E. 12" COMPACTED SUBGRADE PREP, 95% COMPACTION.

REVISIONS	CITY OF ALBUQUERQUE
1/91 12/15/92 8/29/94	PAVING MAJOR LOCAL STREET SECTION DWG. 2405B JANUARY 2003



TYPICAL SECTION FOR
32 FT. OR 40 FT. ESTATE TYPE STREET



FLEXIBLE PAVEMENT SECTION

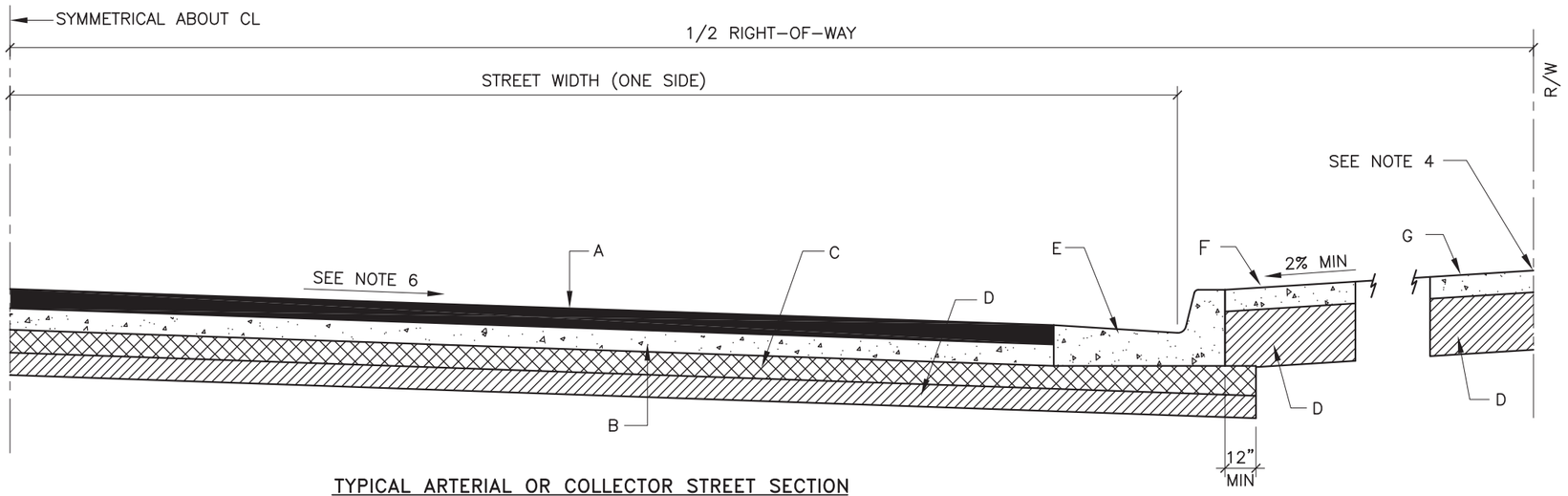
GENERAL NOTES:

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 DRB. DESIGN OF SIDEWALK CONFIGURATION, DRAINAGE REQUIREMENTS & OTHER APPURTENANCE 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 116.
4. IN ACCORDANCE WITH COA 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 AWDT GREATER THAN 1000 SHALL BE DESIGNED AS MAJOR LOCAL STREETS.
5. FOR SUBGRADE R-VALUE <50, PAVEMENT SECTION SHALL BE DESIGNED IN ACCORDANCE WITH DPM, CH 23.
6. SUBGRADE PREPARATION SHALL BE PERFORMED AFTER ALL SUBSURFACE UTILITIES ARE CONSTRUCTED.

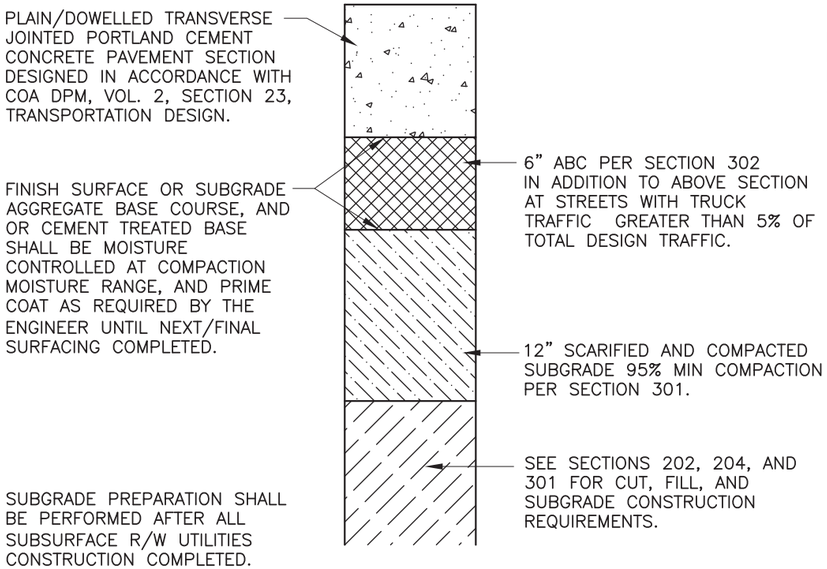
CONSTRUCTION NOTES:

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

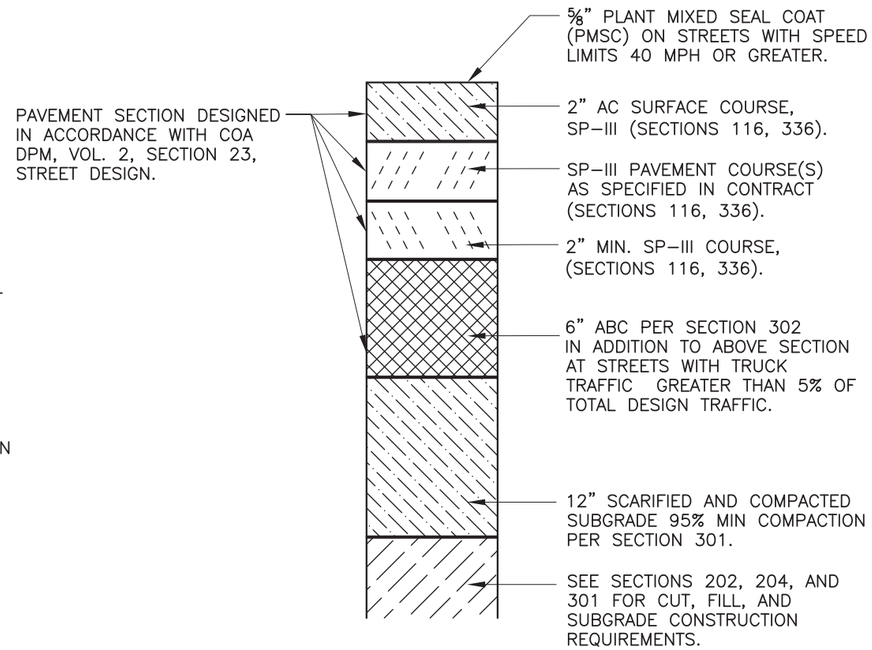
REVISIONS	CITY OF ALBUQUERQUE
1/91 12/15/92 8/29/94	LOCAL RESIDENTIAL PAVING ESTATE TYPE STREETS DWG. 2406 JANUARY 2003



TYPICAL ARTERIAL OR COLLECTOR STREET SECTION
WITHOUT MEDIAN



RIGID PAVEMENT SECTION



FLEXIBLE PAVEMENT SECTION

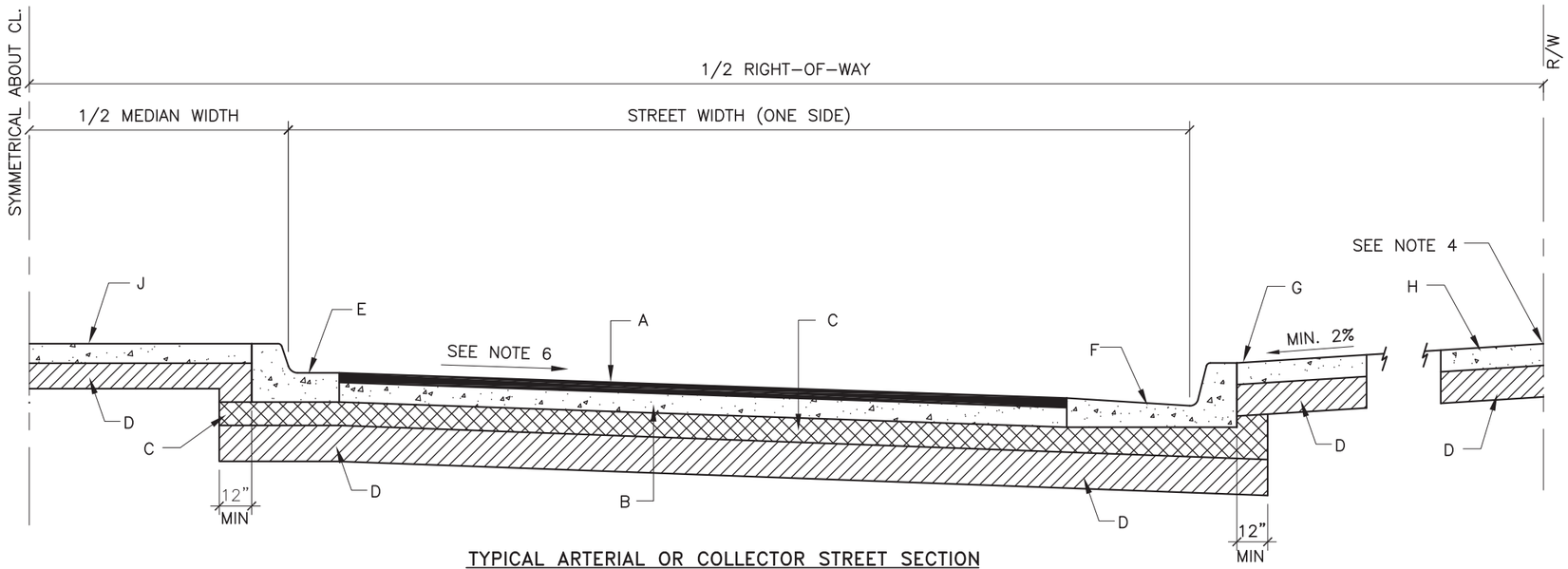
GENERAL NOTES:

1. STRUCTURAL THICKNESS OR PAVEMENT COMPONENTS WILL BE PER PAVEMENT DESIGN.
2. ALL SUBGRADE COMPACTION FOR C & G SHALL EXTEND 12" MIN. ON EITHER SIDE OF C & G OR CURB SECTION, A MINIMUM OF 12" BELOW BOTTOM OF CURB.
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. GRADES AND ELEVATIONS SHALL BE MET BY SURFACE COURSE WITH PLANT MIX SEAL PLACED AS AN OVERLAY.
8. PLANT MIX SEAL SHALL BE PLACES ABOVE THE TOE OF THE GUTTER.
9. ALL ASPHALT CONCRETE (AC) PAVEMENT SHALL COMPLY WITH SECTION 116.
10. ALL PORTLAND CEMENT CONCRETE (PCC) PAVEMENT SHALL COMPLY WITH SECTION 101.

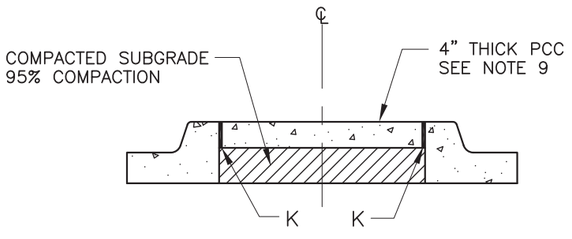
CONSTRUCTION NOTES:

A. ASPHALT CONCRETE SURFACE COURSE.
B. ASPHALT CONCRETE (AC) PAVEMENT.
C. 6" AGGREGATE BASE COURSE (ABC), IF REQUIRED.
D. 12" SUBGRADE PREP, 95% COMPACTION.
E. CURB & GUTTER STANDARD.
F. SIDEWALK ADJACENT TO CURB (NON–STANDARD, VARIANCE REQUIRED).
G. SIDEWALK AT STANDARD SETBACK.

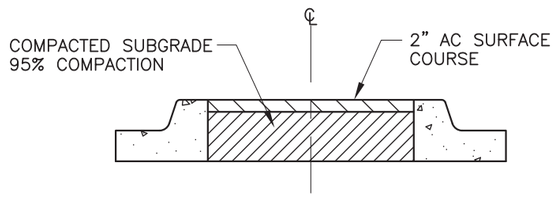
REVISIONS	CITY OF ALBUQUERQUE
1/91 12/15/92 8/29/94	PAVING ART./COLL. ST. SECTIONS WITHOUT MEDIAN DWG. 2407 JANUARY 2003



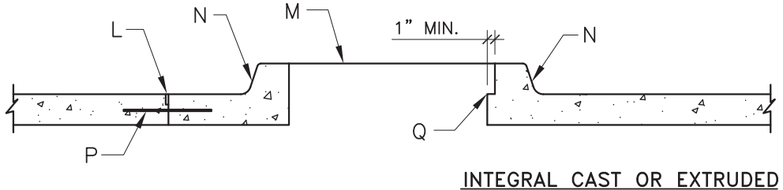
TYPICAL ARTERIAL OR COLLECTOR STREET SECTION
WITHOUT MEDIAN



CONCRETE MEDIAN PAVING SECTION
(WIDTH VARIES)

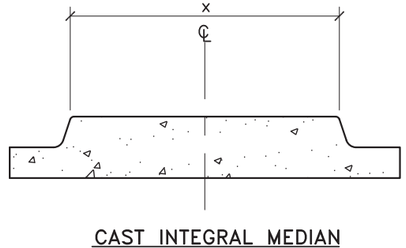


BITUMINOUS MEDIAN PAVING SECTION
(WIDTH VARIES)



CAST CURB & GUTTER

INTEGRAL CAST OR EXTRUDED
PINNED CURB



CAST INTEGRAL MEDIAN
WHERE x > 4 FT

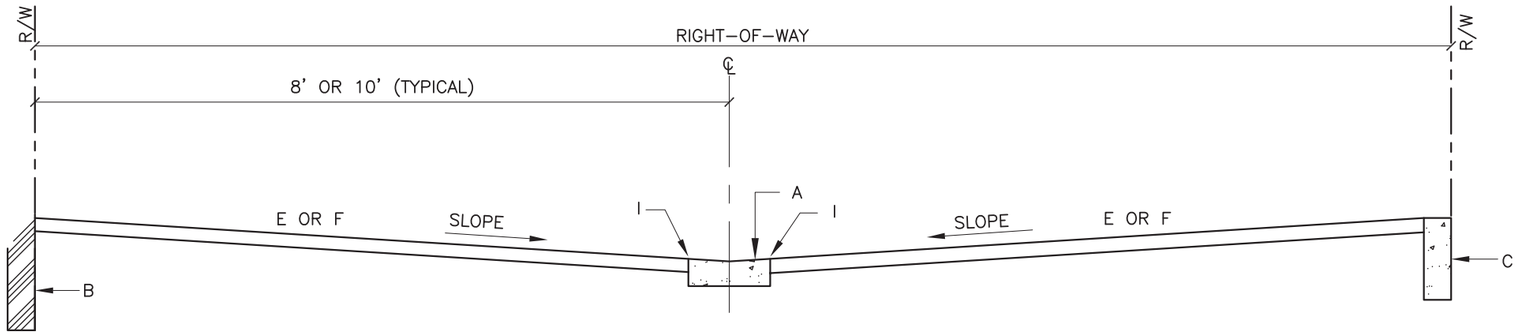
GENERAL NOTES:

1. STRUCTURAL THICKNESS OR PAVEMENT COMPONENTS WILL BE PER PAVEMENT DESIGN.
2. ALL SUBGRADE COMPACTION 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. SLOPE EASEMENT REQUIREMENTS WILL BE SHOWN ON PROJECT CONSTRUCTION PLANS.
6. TRANSVERSE SLOPE FOR PAVEMENT SHALL BE 2% TYPICAL.
7. PAVEMENT FINISH GRADES AND ELEVATIONS SHALL BE MET BY 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 ARTERIAL/COLLECTOR, FLEXIBLE OR RIGID PAVEMENT SECTION.

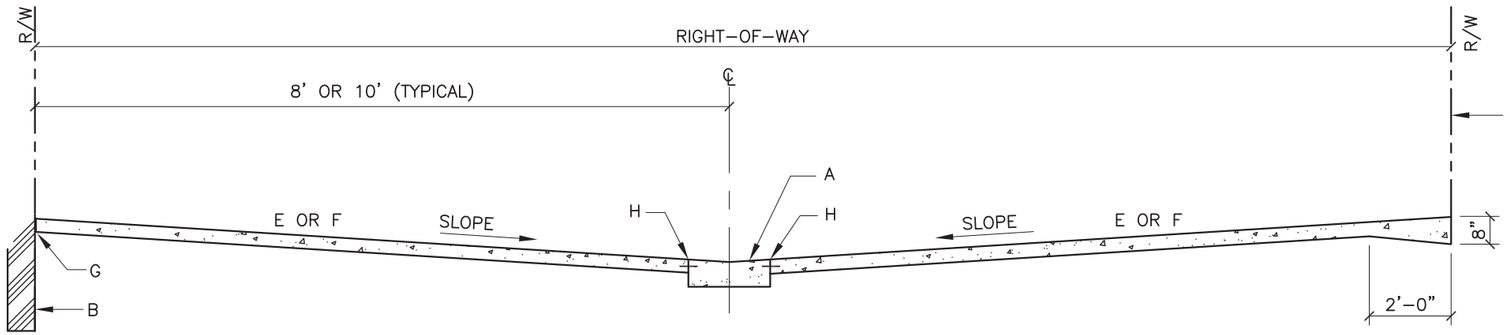
CONSTRUCTION NOTES:

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" TIE BAR @ 2'-0" O.C. EXTENSION NOT REQUIRED AT INTEGRAL.
Q. EXTENSION NOT REQUIRED AT INTEGRAL CAST CURB.

REVISIONS	CITY OF ALBUQUERQUE
9/91 12/15/92 8/29/94	PAVING ART./COLL. ST. SECTIONS WITH MEDIAN DWG. 2408 JANUARY 2003



ASPHALT CONCRETE
ALLEY SECTION



PORTLAND CEMENT CONCRETE
ALLEY SECTION

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% MIN.
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.

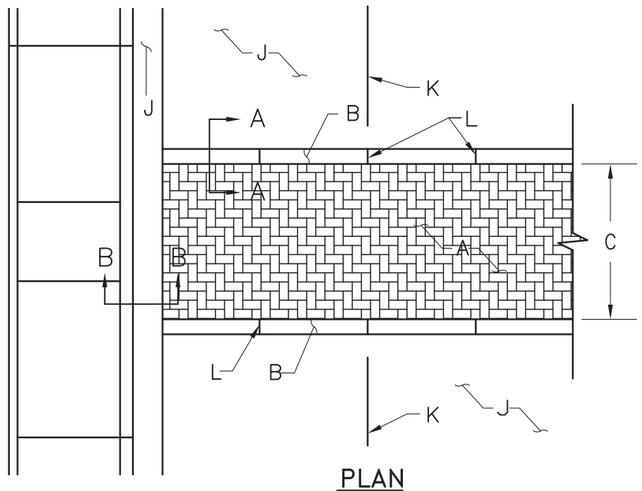
F. USE ARTERIAL SECTION FOR COMMERCIAL ALLEY USE, SEE DWG. 2407.

G. USE 1/2" EXPANSION JOINT WHERE PCC PAVEMENT ABUTS WALLS, RIGID PAVEMENT, POLES, TRANSFORMERS, ETC.

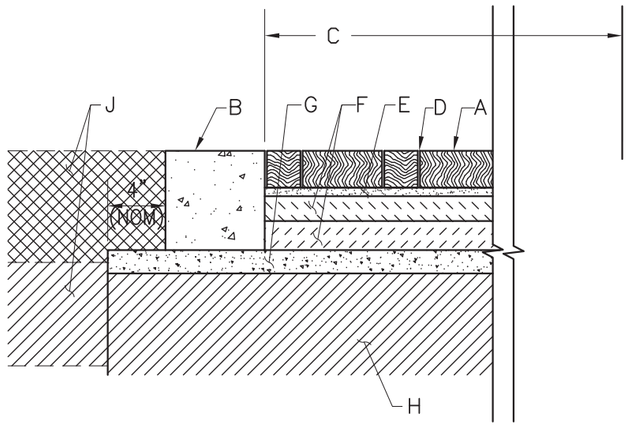
H. TYPE 4 TIED JOINT, SEE DWG. 2450.

I. SAWCUT AND SEAL JOINT, SEE DWG. 2450.

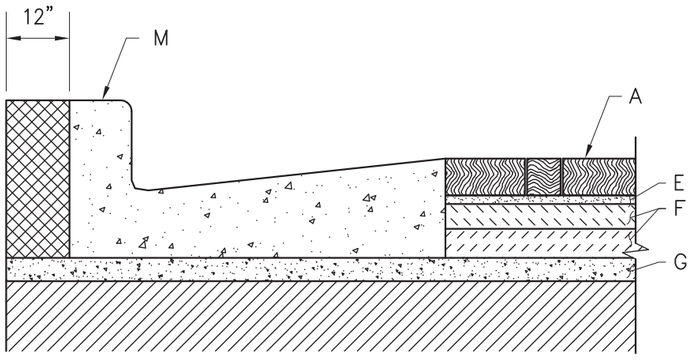
REVISIONS	CITY OF ALBUQUERQUE
1/91 12/15/92	PAVING COMMERCIAL & RESIDENTIAL ALLEY SECTION DWG. 2411 JANUARY 2003



PLAN



SECTION A–A



SECTION B–B

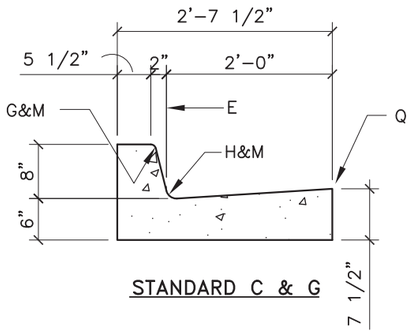
CONSTRUCTION NOTES:

A. 4x8" (NOM) x 3 1/8" CONCRETE BRICK PAVERS, f"m=8000 psi, COMPLYING WITH REQUIREMENTS OF ASTM C936, STANDARD SPECIFICATIONS FOR SOLID CONCRETE INTERLOCKING PAVER UNITS, COLOR AS SPECIFIED BY THE ENGINEER.
B. PORTLAND CEMENT CONCRETE EDGE RESTRAINT CURB, h=8" x b=14" x l=6' (NOM) 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 1/8" TO ALLOW FOR SAND FILLER.
E. BEDDING SAND 1" (NOM) MIN.
F. 2–2" (NOM) LIFTS, TYPE C OR S–IV ASPHALT CONCRETE (SECTIONS 116, 336)
G. 1–2" (NOM) 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 (TYP).
K. CONTROL JOINT.
L. CURB & GUTTER.
M. GAPS OCCURRING AT THE INTERFACE BETWEEN THE CONCRETE BRICK PAVERS AND ADJACENT CURB & GUTTER AND OTHER MATERIALS SHALL BE FILLED WITH SAW CUT PAVERS WITH A MIN. DIMENSION OF THE PAVER NOT LESS THAN 2". GAPS LESS THAN 3/8" SHALL BE FILLED WITH SAND.

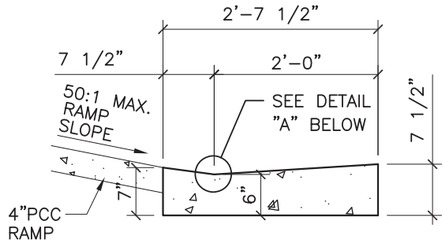
GENERAL NOTES

1. CONCRETE PAVERS SHALL BE INSTALLED IN A MODULAR 90° HERRINGBONE PATTERN.
2. EDGE RESTRAINT CURB SHALL HAVE CONTROL JOINTS INSTALLED AT LANE LINES AND THE VENTER OF EACH TRAFFIC LANE CROSSED. IF TRAFFIC LANES ARE NOT DEFINED OF A NON–STANDARD WIDTH CONTROL JOINTS SHALL BE EVENLY SPACED THE LENGTH OF THE RESTRAINING CURB AT 6' (NOM) 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 PAVERS 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.
6. INSTALLATION PROCESS:
   1. PLACE DRY CONCRETE SAND ON COMPACTED ASPHALT CONCRETE AND SCREED TO A UNIFORM DEPTH NOT LESS THAN 1".
   2. PLACE BRICK PAVERS ON THE CONCRETE SAND IN PATTERN AND JOINT WIDTH(S) SPECIFIED.
   3. VIBRATE PAVERS 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 COMPACTION FORCE, OPERATED AT A FREQUENCY OF 80 TO 90 HERTZ.
   4. SWEEP FILL DRY CONCRETE SAND INTO THE JOINTS AND VIBRATE ACROSS THE BRICK PAVER SURFACE. REPEAT SAND SWEEP 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 SURFACES. ALL BRICK PAVERS PLACED 3 FEET OR GREATER FROM THE LAYING FACE SHALL BE COMPACTED WITH SAND–FILLED JOINTS AT THE COMPLETION OF THE DAY'S WORK. COVER THE REMAINING UNCOMPACTED AREA EXPOSED SAND BEDDING WITH WATERPROOF COVERING.
6. SWEEP OFF EXCESS SAND WHEN COMPACTION IS COMPLETED.
7. FINISH SURFACE CONSTRUCTION SHALL NOT DEVIATE FROM THE SPECIFIED ELEVATION BY MORE THAN 3/8" UNDER A 10–FT STRAIGHTEDGE. THE FINISHED ELEVATION OF PAVERS SHALL BE 1/8" TO 1/4" ABOVE ADJACENT DRAINAGE INLETS, EDGE RESTRAINTS, PAVEMENT, AND TOE OF GUTTER PANS, EXCEPT WHERE ADJACENT TO AN ACCESS RAMP WHERE THE PAVER SHALL BE FLUSH TO 1/8" ABOVE THE TOE OF CURB.

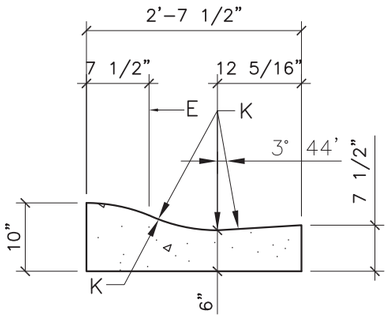
REVISIONS	CITY OF ALBUQUERQUE
	PAVING STREET SECTION USING CONCRETE PAVERS DWG. 2412 JANUARY 2003



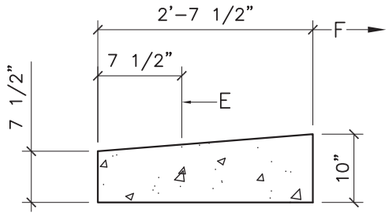
STANDARD C & G



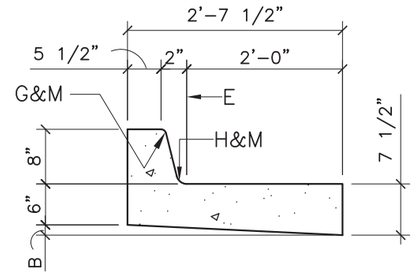
GUTTER AT (WHEEL CHAIR) CURB ACCESS RAMP



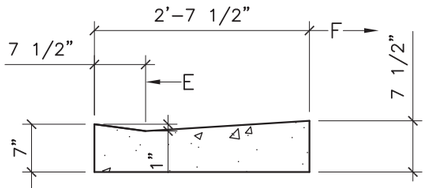
MOUNTABLE CURB ROLL TYPE



MOUNTABLE CURB ESTATE TYPE

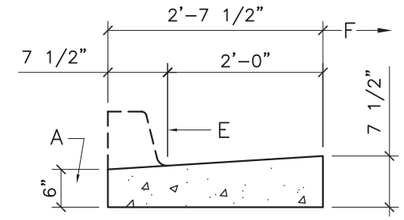


DEPRESSED GUTTER

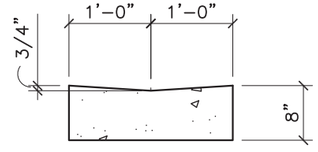


8" OPTION FOR ADA COMPLIANCE SIDEWALK AT BACK OF CURB ADJACENT TO DRIVE PAD OR ALLEY.

GUTTER AT DRIVE PAD

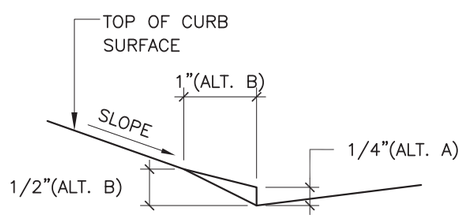


RUNDOWN CURB

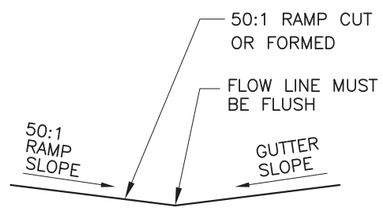


ALLEY GUTTER

NOTE:
ALT. A–1/4" VERT. RISE THEN SLOPE UP TO BACK OF CURB. (SEE STD. DWG. 2440)
ALT. B–1/2" RISE 1" HORIZ THEN SLOPE UP TO BACK OF CURB. (SEE STD. DWG. 2440).



CURB CUT DETAIL – NOT ADA COMPLIANT



CURB CUT DETAIL – ADA COMPLIANT DETAIL "A"

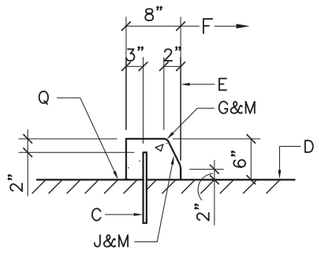
GENERAL NOTES:

1. CURB, GUTTER AND CUT–OFF WALL WILL BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE (PCC).
2. FOR STANDARD AND MEDIAN C&G ADJACENT TO ASPHALT CONCRETE (AC) PAVEMENT, PROVIDE CONTRACTION JOINTS AT 12' MAX. SPACING, CONTRACTION JOINTS SHALL BE EITHER SAWED OR TOOLED A MININUM OF 1" DEEP AT FINISHED FACES. 1/2" EXPANSION JOINTS TO BE INSTALLED AT CURB RETURNS AND AT A MAXIMUM SPACING OF 200' BETWEEN CURB RETURNS AND SEPARATELY CONSTRUCTED DRIVEWAYS.
3. FOR ALL OTHER C & G CUT–OFF WALL PROVIDE CONTRACTION JOINTS AT 10' 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 EDGED 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 LIP OF GUTTER WHEN CONSTRUCTING C & G ADJACENT TO 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.

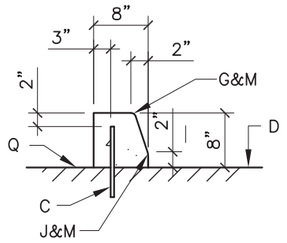
CONSTRUCTION NOTES:

SEE COA DRAWING 2415B

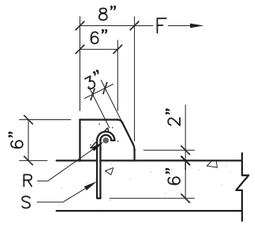
REVISIONS	CITY OF ALBUQUERQUE
9/91 11/14/91 12/15/92 3/30/94	PAVING CURB AND GUTTER & CURB CUT DETAILS DWG. 2415A JANUARY 2003



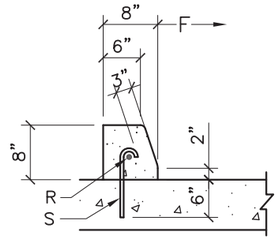
TYPE I
PINNED CURB



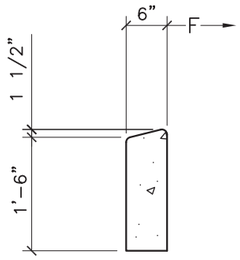
TYPE II
PINNED CURB



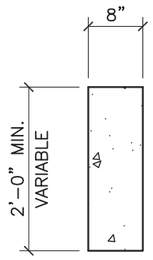
PINNED CURB TYPE III
MEDIAN PAVEMENT



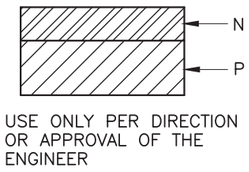
PINNED CURB TYPE IV
OUTSIDE PAVEMENT



HEADER CURB

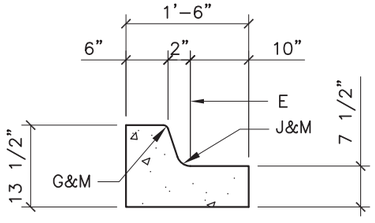


CUT-OFF WALL

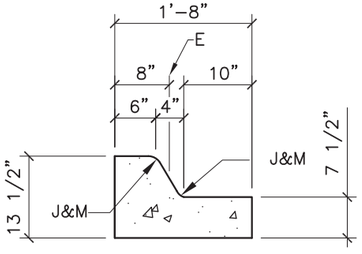


USE ONLY PER DIRECTION
OR APPROVAL OF THE
ENGINEER

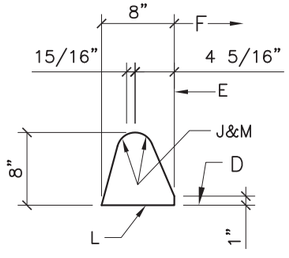
TEMPORARY OR BICYCLE
PATH SECTION



MEDIAN C & G



MOUNTABLE
MEDIAN CURB



TEMPORARY ASPHALT CURB,
TYPE C RESIDENTIAL

CONSTRUCTION NOTES

A. REQ. 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 PINS 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.

J. 2" RADIUS.

K. 24" RADIUS.

L. TACK COAT.

M. DIMENSIONS AT ROUNDED CORNERS MEASURED TO INTERSECTION OF STRAIGHT LINES.

N. 4" AC: MAJOR LOCAL OR BETTER (SP-III)
3" AC: LOCAL RESIDENTIAL STREET (TYPE C)
2" AC: BICYCLE PATH (TYPE B, RESIDENTIAL)

P. 8" SCARIFIED AND COMPACTED SUBGRADE. 95% MINIMUM COMPACTION PER SECTION 301.

Q. AC PAVEMENT.

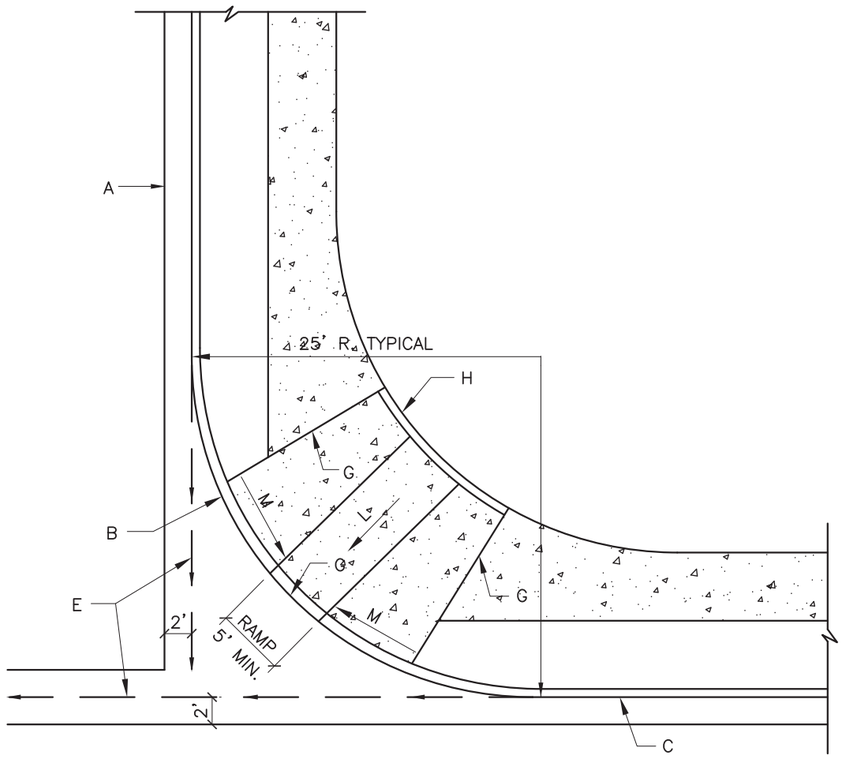
R. #4 CONT. BETWEEN JOINTS 3" COVER AT JOINTS.

S. #3 PINS @ 3'-0" O.C. W/STD. HOOK.

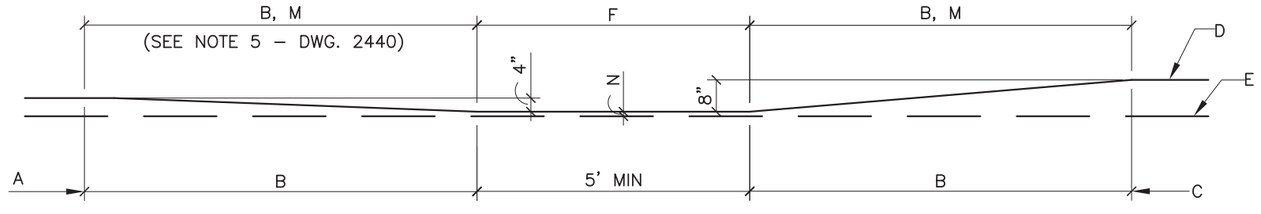
GENERAL NOTES

SEE COA DRAWING 2415A

REVISIONS	CITY OF ALBUQUERQUE
9/91 11/14/91 12/15/92 3/30/94	PAVING CURB AND GUTTER & TEMPORARY PAVING SECTION DWG. 2415B JANUARY 2003



CURB TRANSITION WITH CURB ACCESS
(WHEELCHAIR) RAMP



PROFILE AT BACK OF CURB
CURB TRANSITION WITH CURB ACCESS RAMP PER DETAIL

CONSTRUCTION NOTES:

A. MOUNTABLE CURB, ROLL TYPE.

B. CURB TRANSITION. TRANSITION LENGTHS BETWEEN DIFFERENT CURB TYPES SHALL BE 10' MIN.

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.

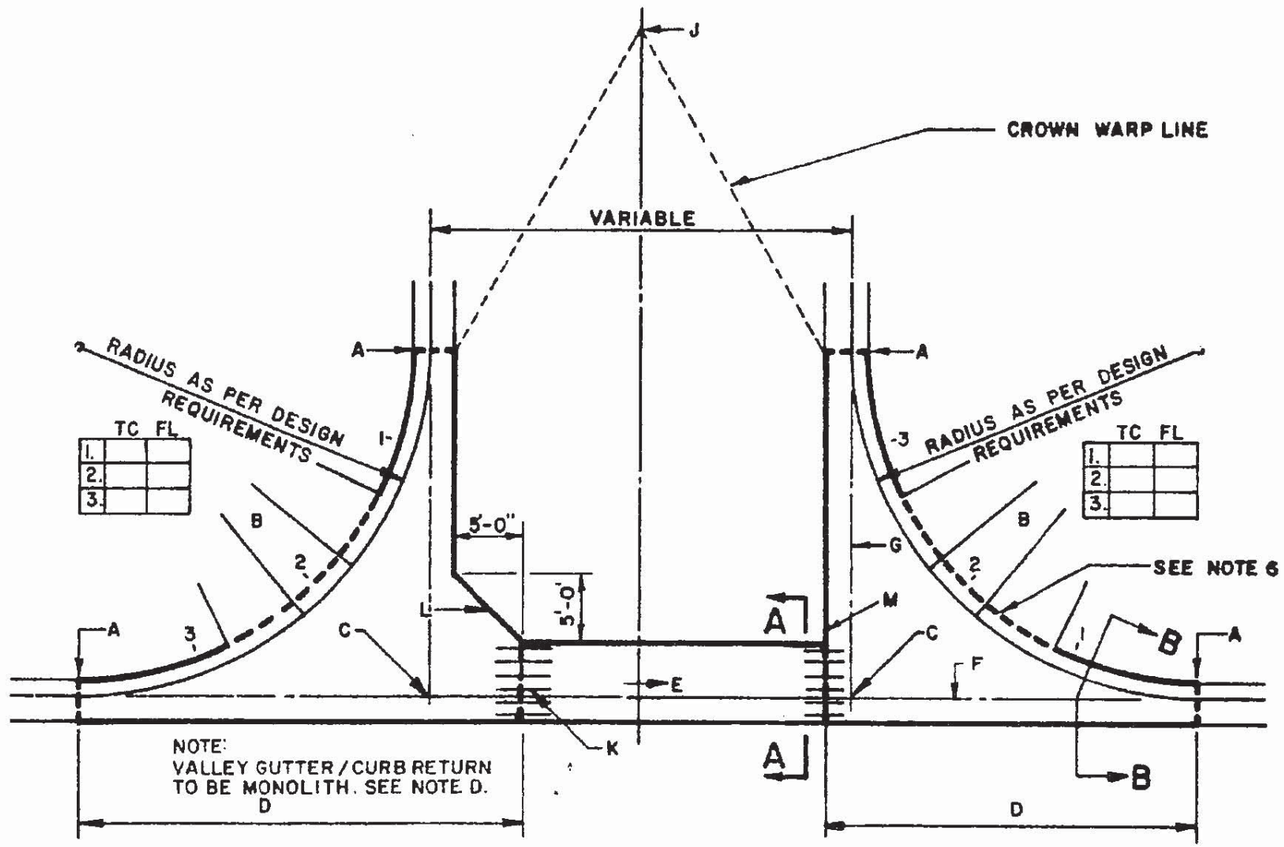
K. FOR CURB ACCESS (WHEELCHAIR) RAMPS AT LOCATIONS NOT INVOLVING CURB TRANSITIONS, SEE STD. DWGS. 2440 & 2441.

L. 50:1 MAX SLOPE ALL DIRECTIONS.

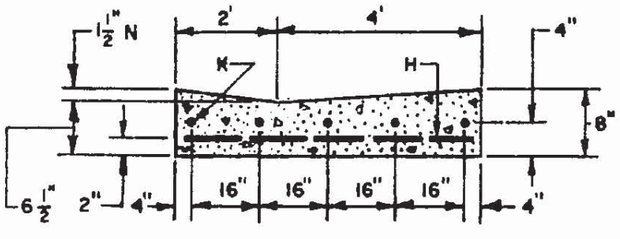
M. 12:1 MAX SLOPE.

N. ACCESS RAMP FLUSH WITH FILLET.

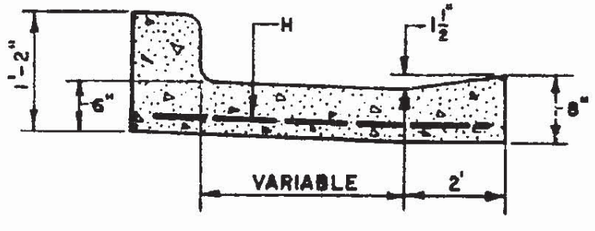
REVISIONS	CITY OF ALBUQUERQUE
1/91 11/14/91 3/30/94	PAVING MOUNTABLE TO STANDARD CURB TRANSITION DWG. 2418 JANUARY 2003



PLAN



SECTION A-A



SECTION B-B

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 RETURNS.
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 QUARTERPOINTS 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

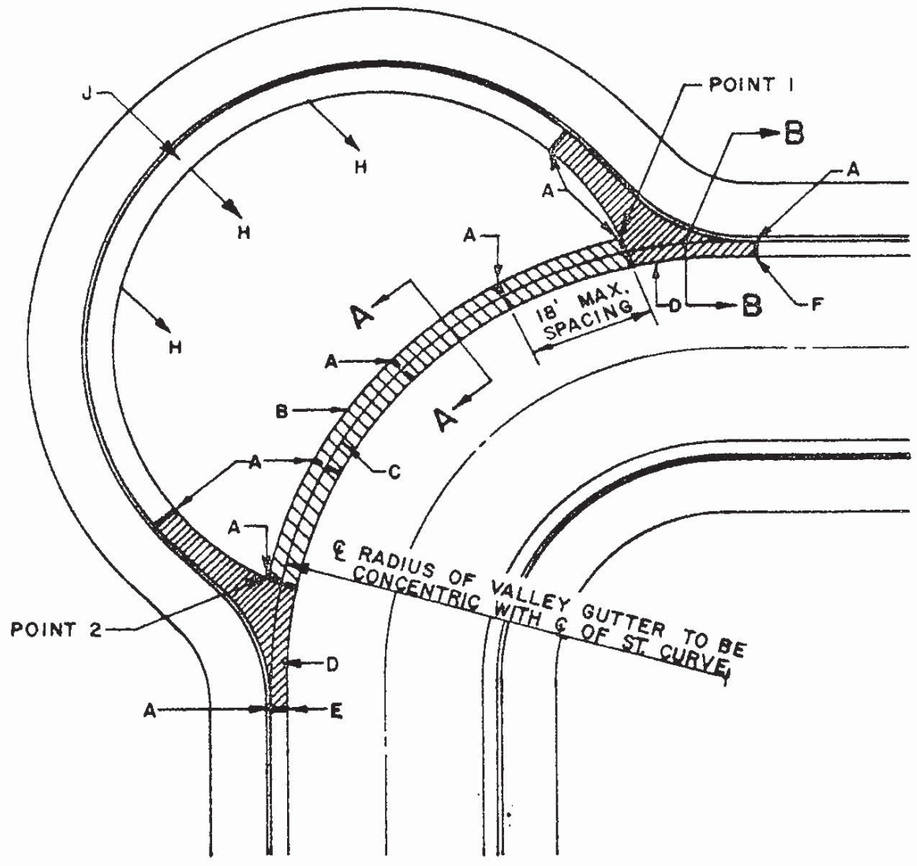
A. END OF CURB RETURN, SEE NOTE 1.
B. FOR RAMP DETAILS, SEE DWGS. 2418, 2440, 2441.
C. INTERSECTION OF FLOWLINES, SEE NOTE 1.
D. VALLEY GUTTER (CURB RETURN FILLET)
E. DIRECTION OF FLOW.
F. FLOWLINE.
G. PROJECTED FLOWLINE OF 1-1/2" INVERT, SEE NOTE 2.
H. 6" X 6" X NO. 6 GA. WIRE MESH.
J. BEGIN CROWN WARP TO NO CROWN SECTION AS PER DWGS. 2401 OR AS SPECIFIED ON PLANS, OR INDICATED BY THE ENGINEER.
K. NO. 4 BARS 3'-0" LONG AT 16" O.C.
L. ALTERNATE A, WITH FILLET AS PER PLANS.
M. ALTERNATE B, NO FILLET AS PER PLANS.
N. THE 1-1/2" INVERT DEPTH MAY BE REDUCED TO IMPROVE RIDEABILITY WITH APPROVAL OF ENGINEER.

REVISIONS
1/91
11/4/91
3/30/94

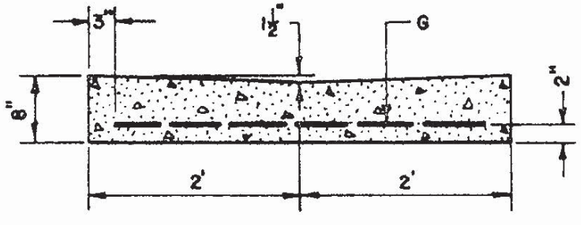
CITY OF ALBUQUERQUE

PAVING
CONCRETE VALLEY GUTTER
DWG. 2420

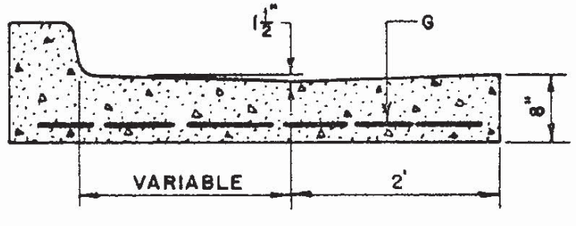
AUG. 1986



PLAN
CUL-DE-SAC



SECTION A-A



SECTION B-B

GENERAL NOTES

1. FLOWLINE AND T.C. ELEV. TO BE GIVEN AT QUARTERPOINTS FROM CURB RETURN "A" TO CURB RETURN "B" IN THE CLOCKWISE DIRECTION.
2. INV. OF VALLEY GUTTER TO EXTEND FROM FLOWLINE OF UPSTREAM CURB RETURN TO FLOWLINE 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" PREMOLDED BIT. EXPANSION JOINT.

CONSTRUCTION NOTES

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

REVISIONS
1/91
11/14/91

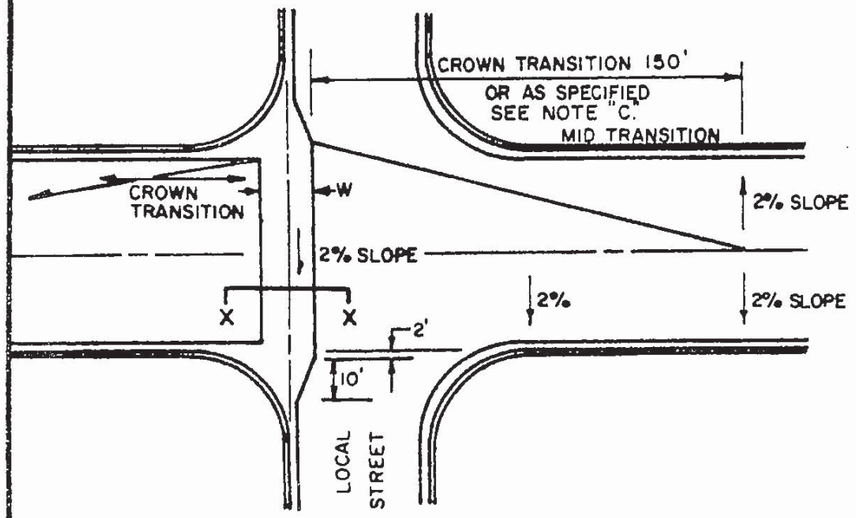
CITY OF ALBUQUERQUE

PAVING

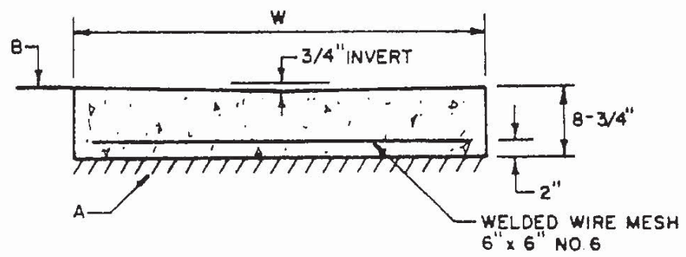
CONCRETE VALLEY GUTTER

DWG. 2421

AUG. 1986



HIGHER SPEED ROADWAY



SECTION X-X

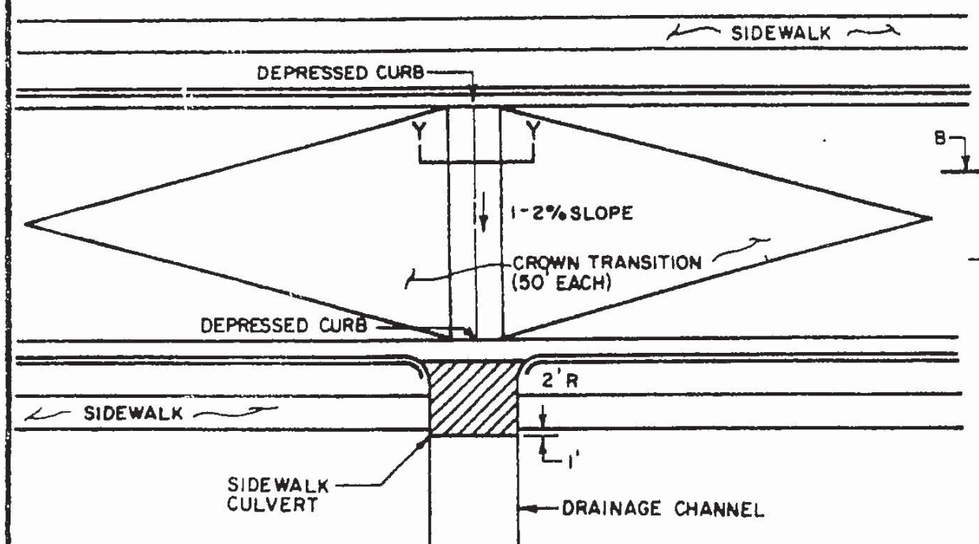
DESIGN SPEED	'W' GUTTER WIDTH	C CROWN TRANSITION RATE
35 MPH	12'	1:150
50 MPH	16'	1:200

GENERAL NOTES

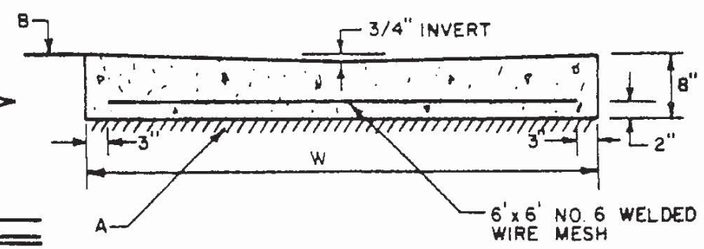
1. VALLEY GUTTER SHOWN IN THIS DRAWING ARE TO BE USED WHERE THERE IS A NON STOPPING CONDITION FOR VEHICLES CROSSING THE VALLEY GUTTER.
2. VALLEY GUTTERS ARE NO TO BE USED AS STANDARD DESIGN FOR CROSSING WATER ACROSS COLLECTOR OR ARTERIAL ROADWAYS EXCEPT WITH WRITTEN AUTHORIZATION FROM THE CITY TRAFFIC ENGINEER.
3. REFER TO OTHER CITY OF ALBUQUERQUE STANDARD DRAWINGS FOR CURB & GUTTER AND PAVING CONSTRUCTION DETAILS.
4. SPECIAL VALLEY GUTTERS SHALL BE P.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 301).
B. SPECIAL VALLEY GUTTERS SHALL BE COMPLETED PRIOR TO PLACEMENT OF ADJACENT ASPHALT SURFACE COURSE.
C. TRANSITION LENGHTS TO BE CALCULATED PER TABLE.



LOCAL STREET (25 MPH DESIGN SPEED)



SECTION Y-Y

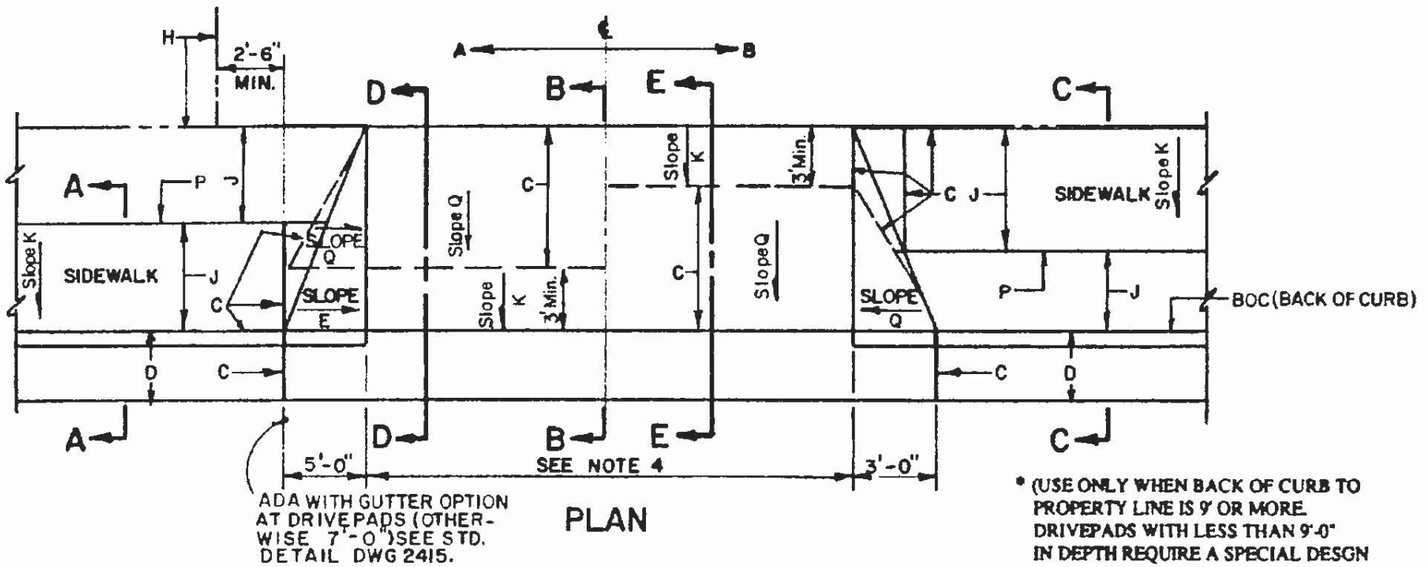
CITY OF ALBUQUERQUE

REVISIONS
1/91
11/14/91

PAVING
SPECIAL VALLEY GUTTERS

DWG. 2422

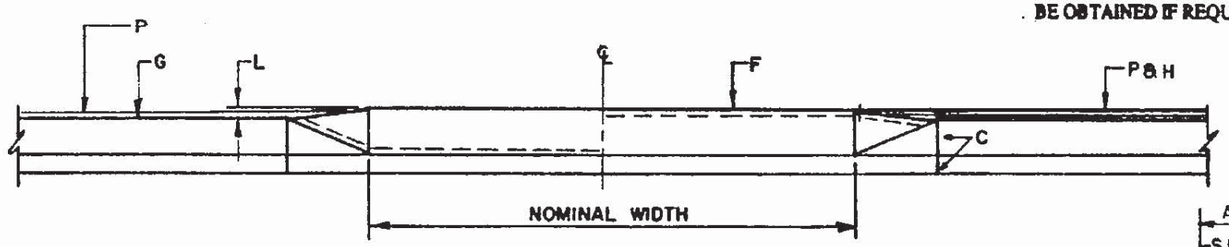
AUG. 1986



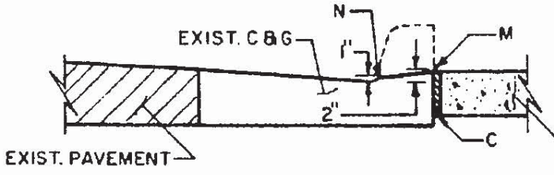
ADA WITH GUTTER OPTION AT DRIVEPADS (OTHERWISE 7'-0") SEE STD. DETAIL DWG 2415.

PLAN

* (USE ONLY WHEN BACK OF CURB TO PROPERTY LINE IS 9' OR MORE. DRIVEPADS WITH LESS THAN 9'-0" IN DEPTH REQUIRE A SPECIAL DESGN TO BE SUBMITTED TO AND APPROVED BY THE CITY ENGINNER. ADDITIONAL RIGHT-OF-WAY OR EASEMENTS SHALL BE OBTAINED IF REQUIRED.)

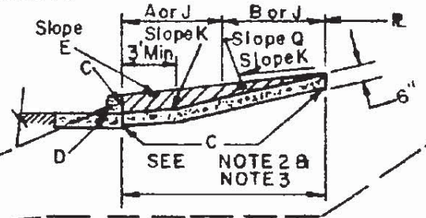


ELEVATION



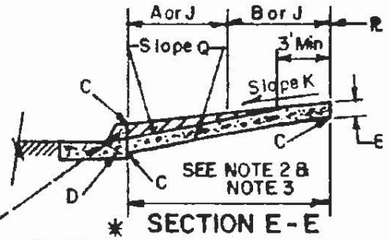
ALTERNATE DETAIL

MACHINE CUT EXISTING CURBS



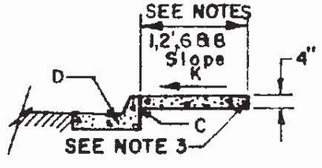
* SECTION D-D

(ALTERNATE FOR ADA COMLIANCE) (SIDEWALK AT BACK OF CURB)

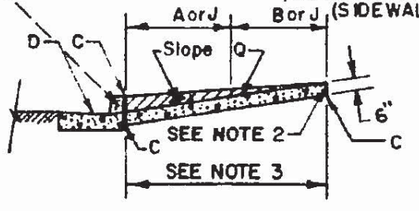


* SECTION E-E

(ALTERNATE FOR ADA COMPLIANCE) (SIDEWALK AT PROPERTY LINE)

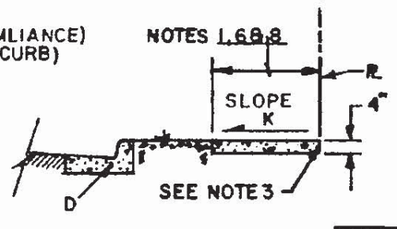


SECTION A-A



SECTION B-B

(ADA COMPLIANCE NOT REQUIRED OR POSSIBLE W/O ADDITIONAL ROW ACQUIS)



SECTION C-C

GENERAL NOTES

1. DEVIATIONS FROM THESE STANDARDS SHALL BE SUBMITTED TO THE CITY ENGINEER AND/OR TRAFFIC ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
2. REQUEST FOR SIDEWALK VARIANCES SHALL BE SUBMITTED TO THE DEVELOPMENT REVIEW BOARD.
3. USE 1/2" EXP. JT. WHERE SIDEWALK OR DRIVEPAD ABUTS BLDGS., FENCES, WALLS OR OTHER IMMOVABLE OBJECTS.
4. ALL DRIVEPADS SHALL BE A MIN. THICKNESS OF 6" AND SHALL BE CONSTRUCTED FROM BACK OF CURB TO P/L.
5. DRIVEPADS WIDER THAN 18' (NOMINAL) SHALL HAVE A 1/2" EXP. JT AT MIDPOINT. DRIVEPADS WIDER THAT 36' SHALL HAVE 2 OR MORE 1/2" EXP. JTS. EQUALLY SPACED, MAX., SPACING IS 18' APART.
6. SIDEWALK AT THE BACK OF CURB SHALL BE USED ONLY WHEN VARIANCE IS APPROVED.
7. FOR SIDEWALK WIDTH, SEE CHAPTER 23 THE DEVELOPMENT PROCESS MANUAL.
8. SUBGRADE UNDER SIDEWALK & DRIVEPAD SHALL BE COMPACTED AS PER SECTION 301.
9. ADA - AMERICANS WITH DISABILITIES ACT.

CONSTRUCTION NOTES

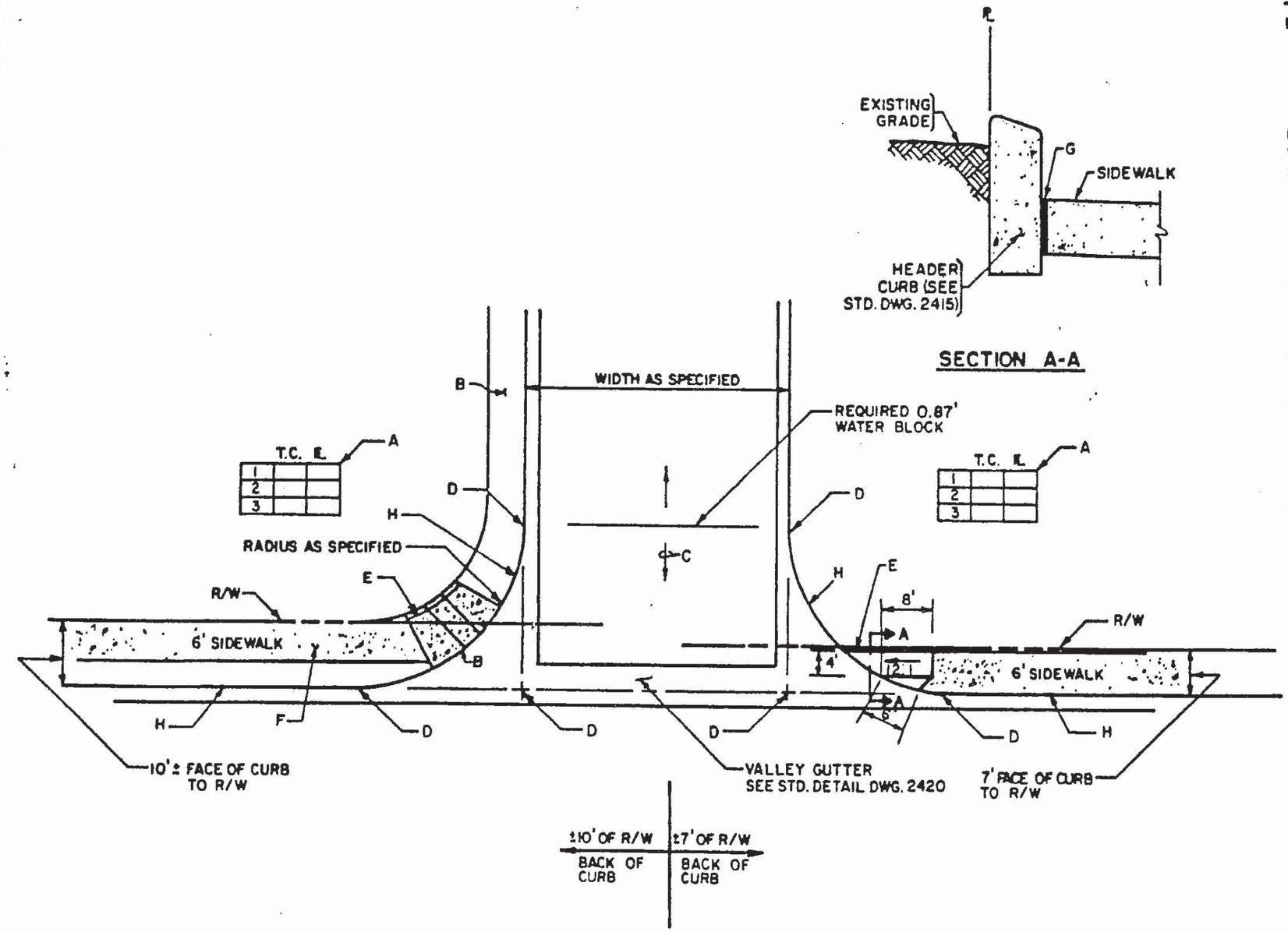
A. CURB TYPE SIDEWALK.
B. OFFSET SIDEWALK.
C. 1/2" EXPANSION JOINT ADJACENT TO FIELD CONDITIONS ON REPLACEMENT WORK.
D. CURB AND GUTTER.
E. SLOPE TO BE ADJUSTED TO PROVIDE A UNIFORM TRANSITION BETWEEN SIDEWALK AND DRIVEPAD. (NOT TO EXCEED 1(VERTICAL) TO 10(HORIZONTAL)).
F. TOP OF DRIVEPAD.
G. TOP OF CURB.
H. PROPERTY LINE.
J. VARIABLE WIDTH.
K. SLOPE 1(VERTICAL) TO 50(HORIZONTAL).
L. THE FINISH GRADE ELEVATION DIFFERENCE BETWEEN TOP OF DRIVEPAD AT PROPERTY LINE AND TOP OF CURB AS DETERMINED BY A SLOPE OF 1(VERTICAL) TO 50(HORIZONTAL) FROM TOP OF CURB TO TOP OF DRIVEPAD, AND ANY DEVIATION FROM THIS SLOPE MUST BE APPROVED BY THE CITY ENGINEER.
M. SAW CUT EXISTING CONCRETE FROM BACKSIDE OF CURB WITH SLOPE TOWARD FLOWLINE.
N. EXPOSED CUT EDGES SHALL BE GROUND SMOOTH/ ROUNDED TO REMOVE SHARP EDGE.
P. OUTSIDE EDGE OF SIDEWALK.
Q. SLOPE REQUIRED TO MEET GIVEN OR SET BOUNDARY ELEVATIONS (PROPERTY LINE OR BOC, ETC.).

CITY OF ALBUQUERQUE

REVISIONS
1/91
11/14/91
3/30/94

PAVING
DRIVEPADS
DWG. 2425

AUG. 1986



PRIVATE ENTRANCE

GENERAL NOTES:

1. THESE DETAILS ARE PROVIDED FOR HIGH TRAFFIC VOLUME PRIVATE ENTRANCES TO COMMERCIAL SITES AND THE LIKE, IN LIEU OF STANDARD DRIVEPADS.

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 DWGS 2418 & 2441.

C. INITIAL GRADE TO BE 4% OR LESS WHEN CONNECTING TO COLLECTOR OR ARTERIAL 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 2415

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.

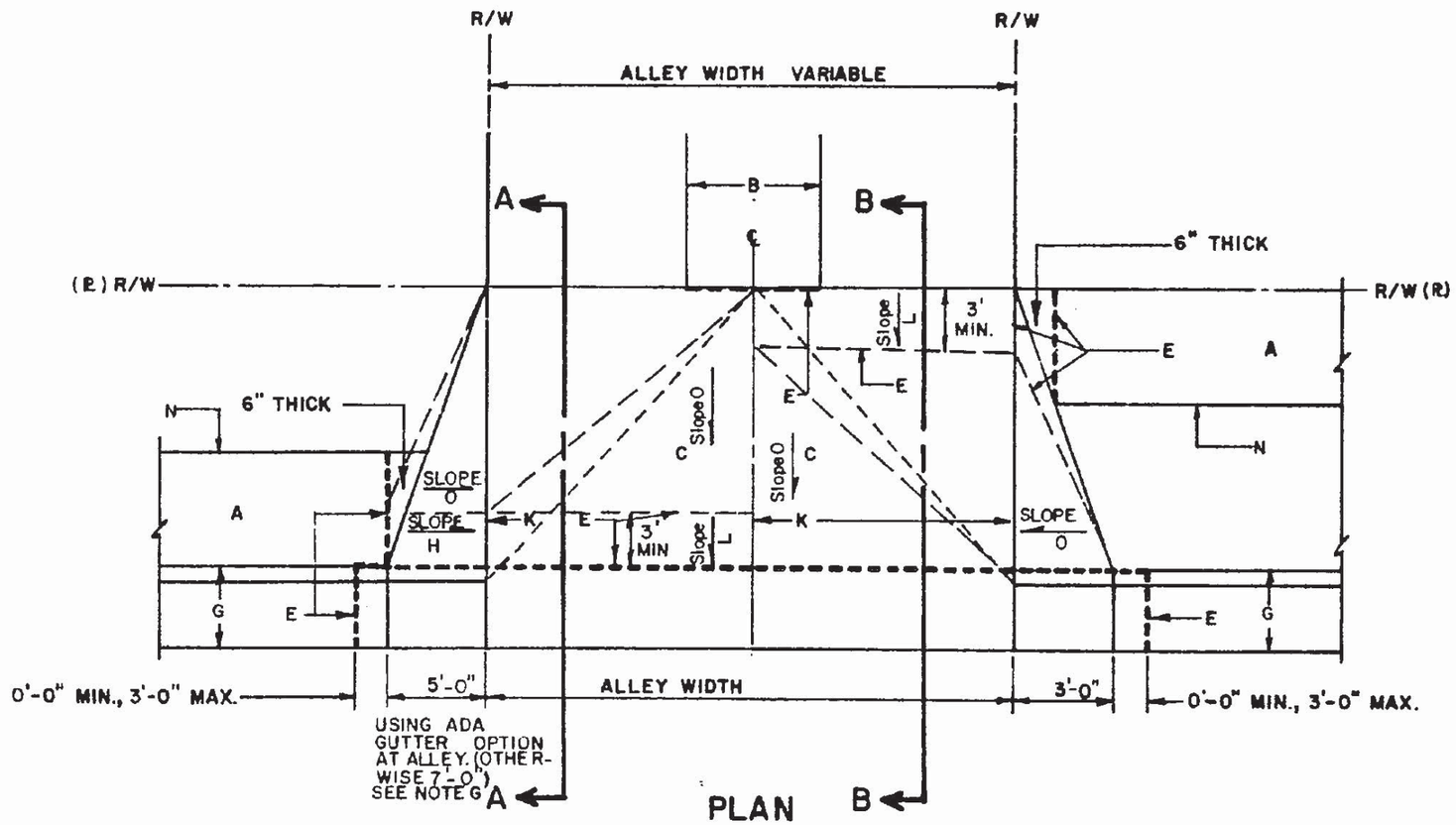
H. THEORETICAL FACE OF CURB OR FLOWLINE

REVISIONS
1/91
11/14/91
4/4/94

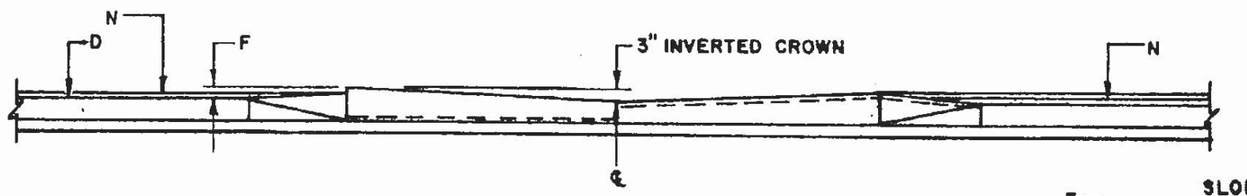
CITY OF ALBUQUERQUE

PAVING
PRIVATE ENTRANCE DETAILS - ILLUSTRATING TWO SEPRATE R/W CONDITIONS.
DWG. 2426

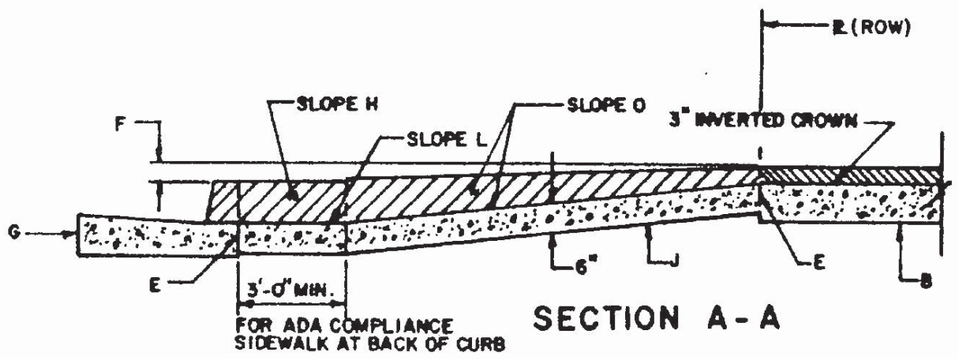
AUG. 1986



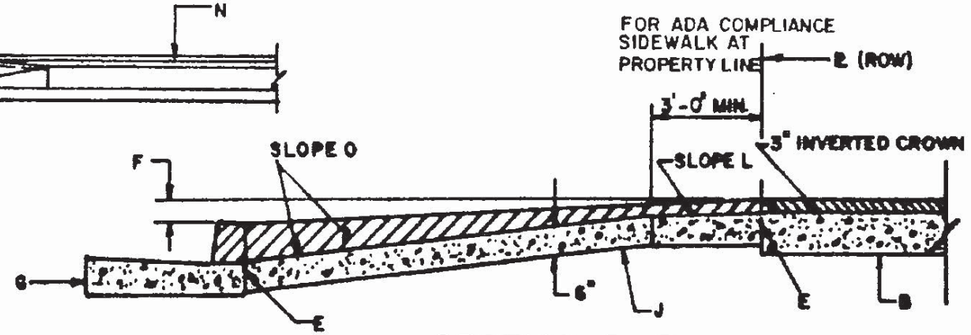
PLAN



FRONT VIEW



SECTION A - A



SECTION B - B

CONSTRUCTION NOTES

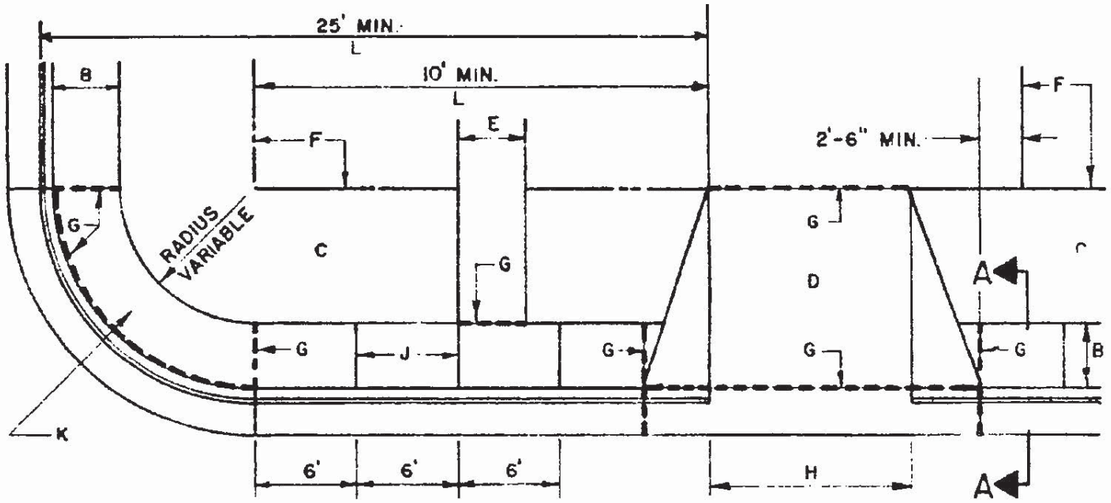
A. SIDEWALK
B. ALLEY GUTTER, SEE DWGS 2411 & 2415
C. TRANSITION FROM 3" INVERTED ALLEY CROWN TO NO CROWN AT BACK OF CURB.
D. TOP OF CURB.
E. 1/2" EXPANSION JOINT.
F. THE FINISH GRADE ELEVATION DIFFERENCE BETWEEN TOP OF ALLEY AT PROPERTY LINE AND TOP OF CURB AS DETERMINED BY A SLOPE OF 1(VERTICAL) TO 50(HORIZONTAL) FROM TOP OF CURB UP TO TOP OF ALLEY.
G. CURB AND GUTTER (SEE STD DWG 2415 ADA OPTION)
H. SLOPE TO BE ADJUSTED TO PROVIDE A UNIFORM TRANSITION BETWEEN DRIVEPAD AND SIDEWALK (NOT TO EXCEED 1(VERTICAL) TO 10(HORIZONTAL) UNITS OF MEASURE FOR ADA COMPLIANCE).
J. DRIVEPAD, CONSTRUCT WITH PORTLAND CEMENT CONCRETE (SEE SECTION 101).
K. WEAKENED PLANE, (SAWCUT OR SCORE TO 1/4" DEPTH OF CONCRETE SLAB).
L. SLOPE NOT TO EXCEED 1(VERTICAL) TO 50(HORIZONTAL) UNITS OF IDENTICAL MEASURE.
M. ADA = AMERICAN WITH DISABILITIES ACT.
N. EDGE OF SIDEWALK (FRONT OR BACK).
O. STRAIGHT LINE SLOPE REQUIRED TO MEET GIVEN OR SET BOUNDARY ELEVATIONS (I.E., PROPERTY LINE, BACK OF CURB, ECT).

CITY OF ALBUQUERQUE

REVISIONS
1/91
11/14/91
1/94

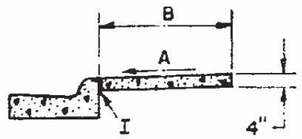
PAVING
ALLEY INTERSECTION
DWG. 2428

AUG. 1986

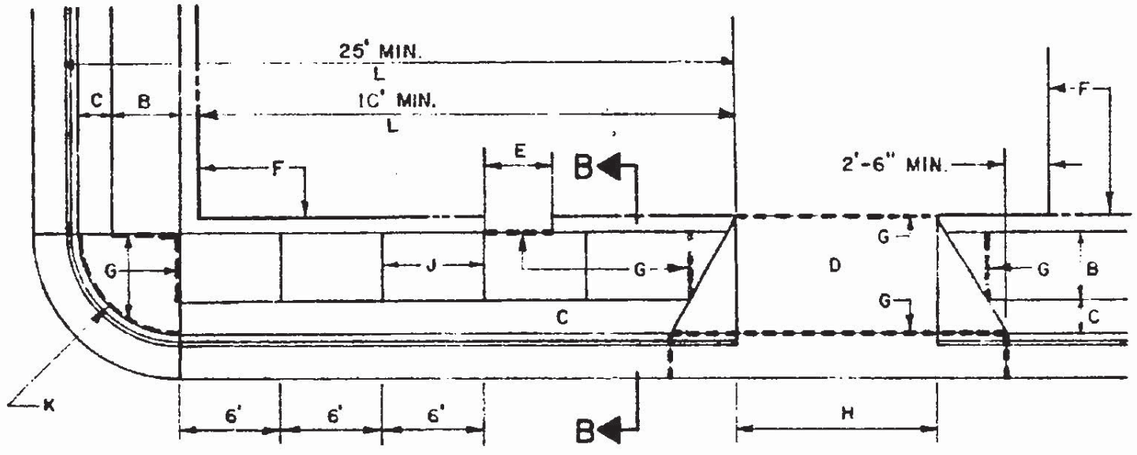


PLAN

CURB TYPE SIDEWALK

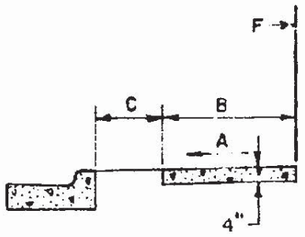


SECTION A-A



PLAN

OFFSET TYPE SIDEWALK



SECTION B-B

GENERAL NOTES

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 DRIVEPADS SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 301.

CONSTRUCTION NOTES

A. SLOPE 1(VERTICAL)TO 50(HORIZONTAL).
B. SIDEWALK WIDTHS SHALL BE IN ACCORDANCE WITH CHAPTER 23 OF THE DEVELOPMENT PROCESS MANUAL.
C. SETBACK TO BE DETERMINED BY AVAILABLE RIGHT-OF-WAY. SEE CHAPTER 23 OF DEVELOPMENT PROCESS MANUAL.
D. SEE DRIVEPAD DETAIL, DWG 2425.
E. WALKWAY VARIABLE.
F. PROPERTY LINE.
G. ½" EXPANSION JOINTS WHERE SIDEWALK OR DRIVEPAD 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.
J. CONTRACTION JOINTS.
K. FOR CURB ACCESS RAMPS, SEE DWGS 2440 & 2441.
L. CHECK DIMENSION FROM BOTH PROPERTY LINE AND FLOW LINE. USE IN AREAS WHERE DRIVEPAD IS FARTHEST FROM INTERSECTION.

REVISIONS
'91
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4/12/94

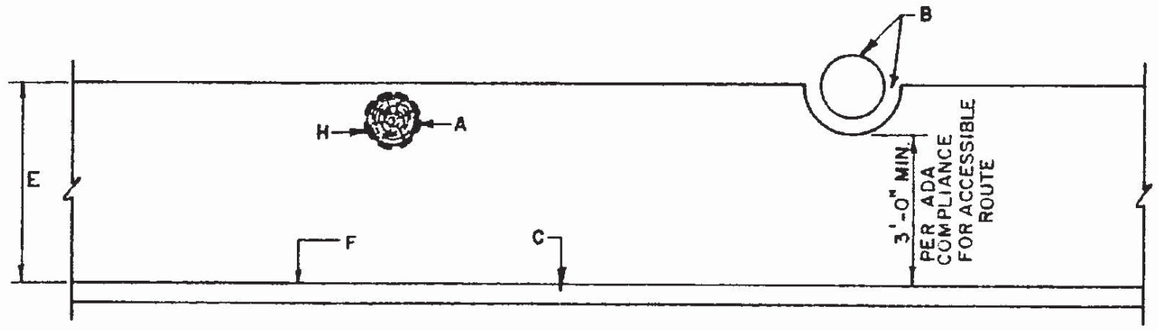
CITY OF ALBUQUERQUE

PAVING

SIDEWALK DETAILS

DWG. 2430

AUG. 1986

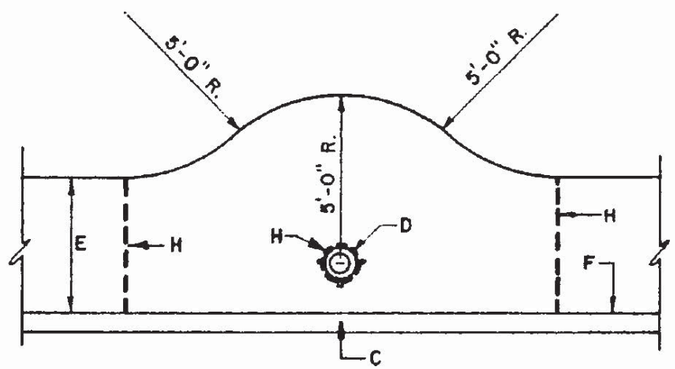


GENERAL NOTES:

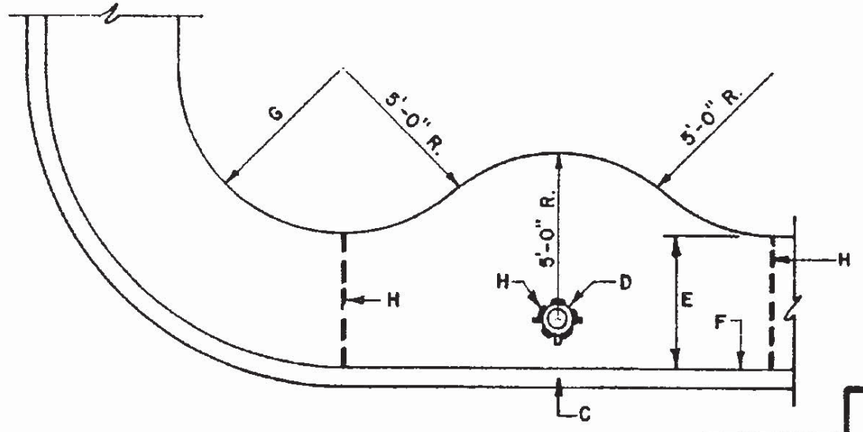
1. FOR SIDEWALK CONSTRUCTION DETAILS, SEE DWG. 2430.
2. USE WHERE AVAILABLE R/W EXIST., TO BE DETERMINED BY THE ENGINEER.
3. PROVIDE $\frac{1}{2}$" PREFORMED EXPANSION JOINT MATERIAL AROUND ALL POWER POLES AND FIRE HYDRANTS WITHIN THE SIDEWALK AREA.

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. $\frac{1}{2}$" EXPANSION JOINT MATERIAL.



ON STRAIGHT STRETCH



AT CURB RETURN

4'-0" SIDEWALK ENCLOSING A FIRE HYDRANT

REVISIONS
11/14/91
4/12/94

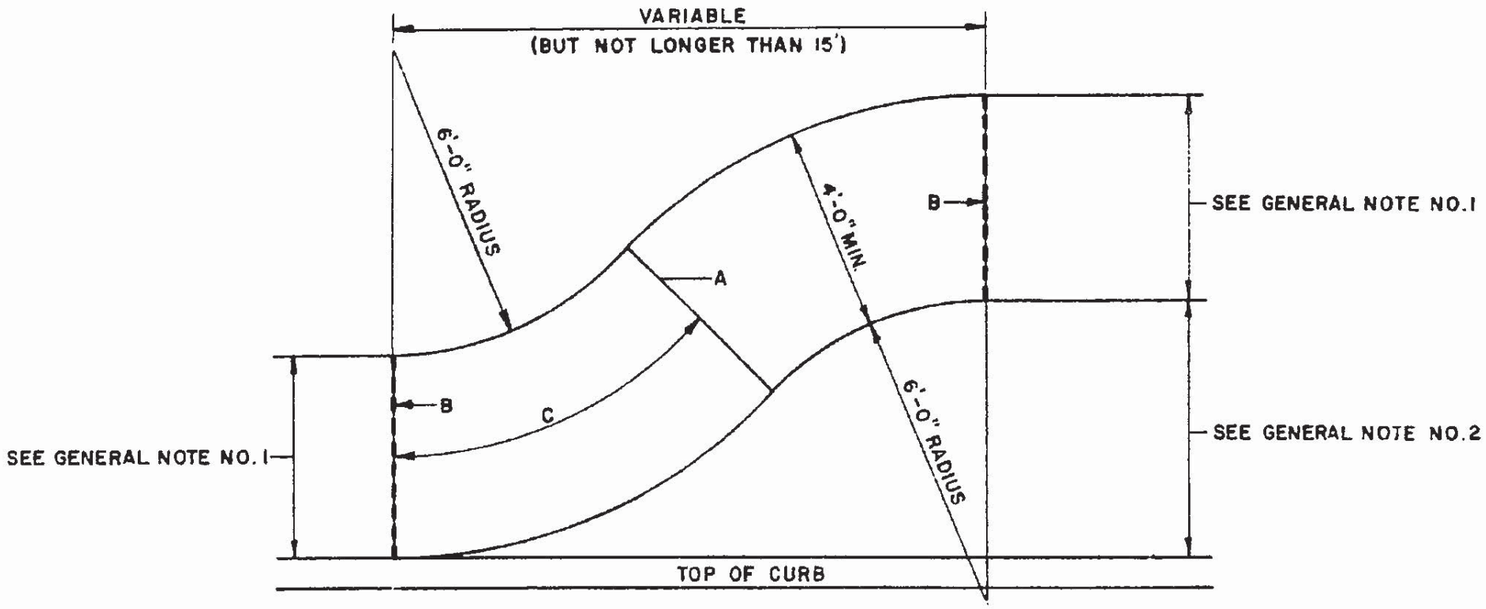
CITY OF ALBUQUERQUE

PAVING

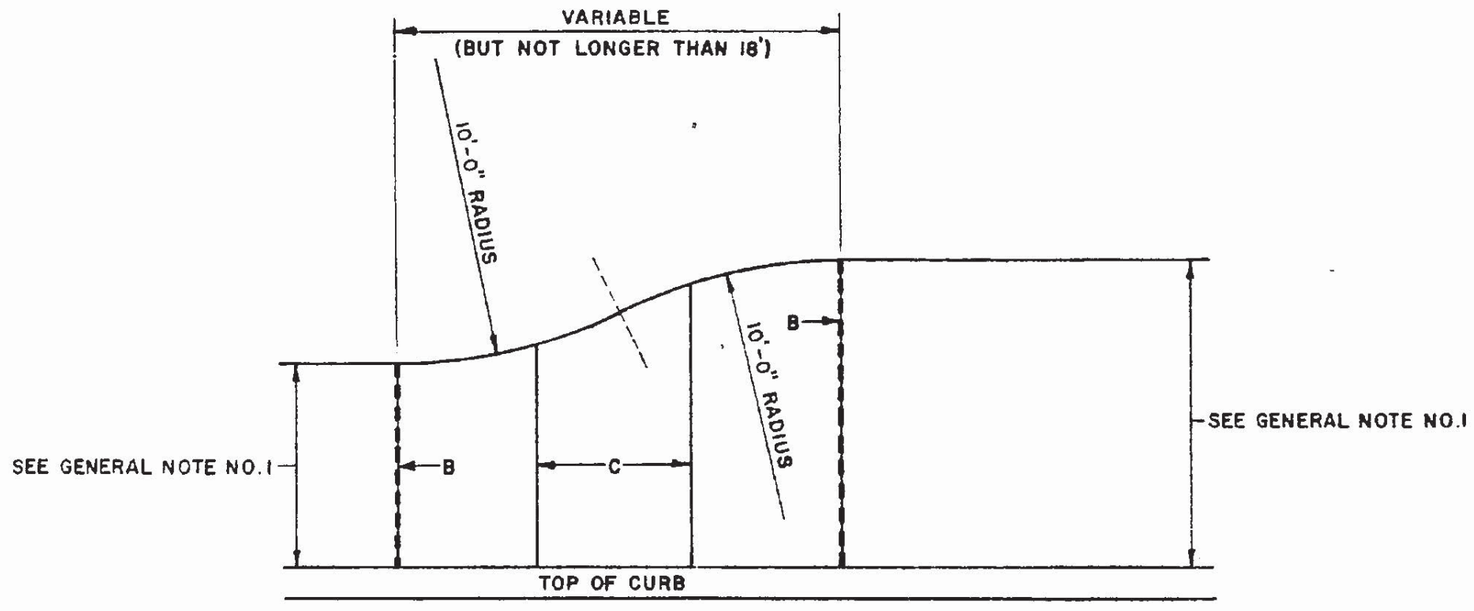
SIDEWALK OBSTRUCTIONS

DWG. 2431

AUG. 1986



CURB TYPE TO OFFSET TYPE



CURB TYPE WITH VARYING WIDTHS

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. $\frac{1}{2}$" EXPANSION JOINT.
C. WEAKENED PLANE JOINTS SHALL NOT BE GREATER THAN 6 FT. O.C. BETWEEN EXPANSION JOINTS, MEASURED ALONG ℄ OF SIDEWALK.

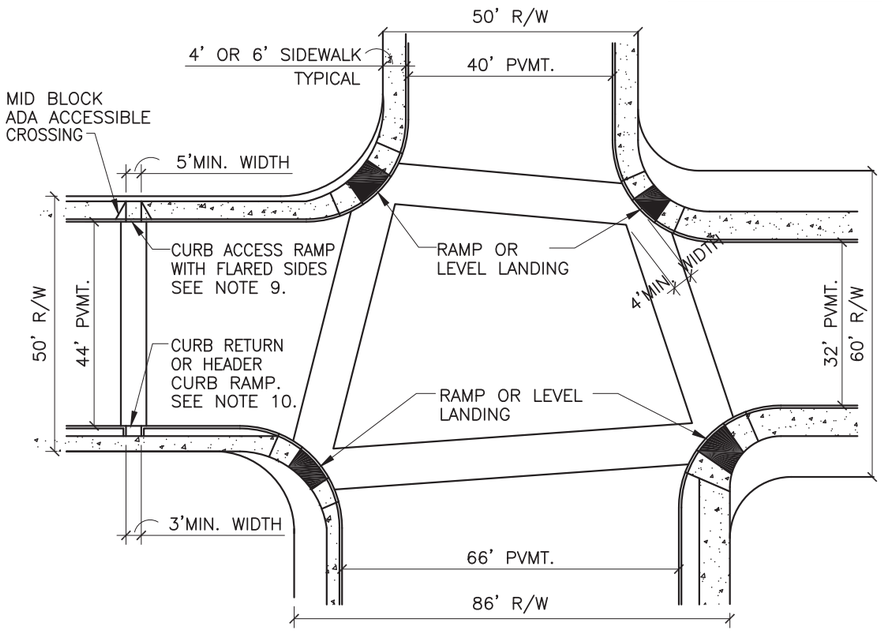
REVISIONS
11/14/91

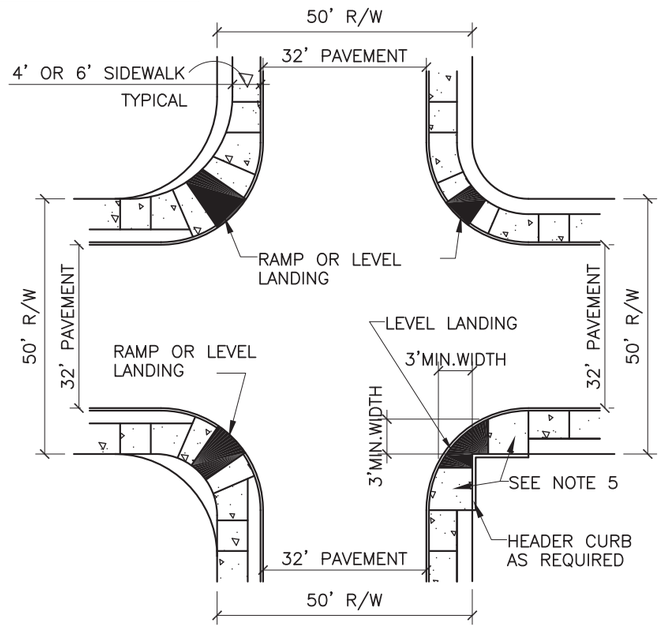
CITY OF ALBUQUERQUE

PAVING
SIDEWALK TRANSITIONS
DWG. 2432

AUG. 1986

TYPICAL LOCATIONS OF SIDEWALKS & RAMPS



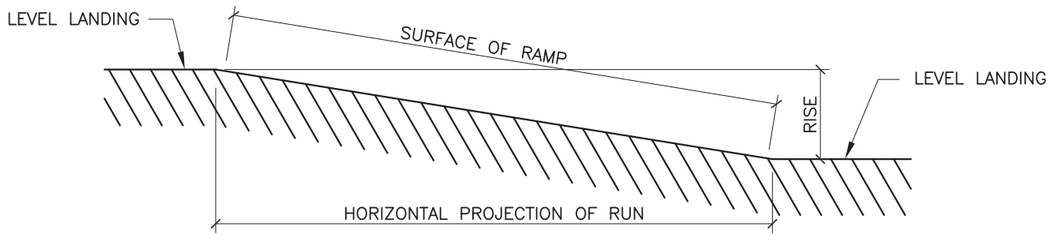


ADA ACCESSIBLE ROUTE RAMP SLOPES (SEE FIGURE BELOW)

SLOPE *	% SLOPE	MAX. RISE ** INCHES MM	MAX. HORIZ. PROJ. FEET METERS	COMMENTS
1:50 or FLATTER	2% OR LESS	UNLIMITED	UNLIMITED	TO BE USED FOR CROSS SLOPES ON ANY INTENDED ADA ACCESSIBLE ROUTE.
1:16 TO 1:20	6.25% TO 5%	30 760	40 12.2	TO BE USED FOR DIRECTION OF TRAVEL ON ANY RAMP SURFACE.
1:12 TO < 1:16	8.33% TO <6.25%	30 760	30 9.1	TO BE USED FOR DIRECTION OF TRAVEL ON ANY RAMP SURFACE.
1:10 TO FLATTER * * *	10% OR LESS	6 150	5 1.5	MAY BE USED AT EXISTING SITES WITH APPROVAL OF THE CITY ENGINEER IF SPACE LIMITATIONS PROHIBIT USE OF A 1:12 SLOPE OR FLATTER.
1:8 OR FLATTER	12.5% OR LESS	3 75	2 0.6	MAY BE USED AT EXISTING SITES WITH APPROVAL OF THE CITY ENGINEER IF SPACE LIMITATIONS PROHIBIT USE OF A 1:12 SLOPE OR FLATTER.

* SLOPE IS INDICATED IN A RATIO OF VERTICAL UNITS TO HORIZONTAL UNITS OF IDENTICAL MEASURE.
** AFTER THE MAXIMUM RISE HAS BEEN ATTAINED, A LEVEL LANDING AREA MUST BE PROVIDED.
*** SEE GENERAL NOTE NO. 9.

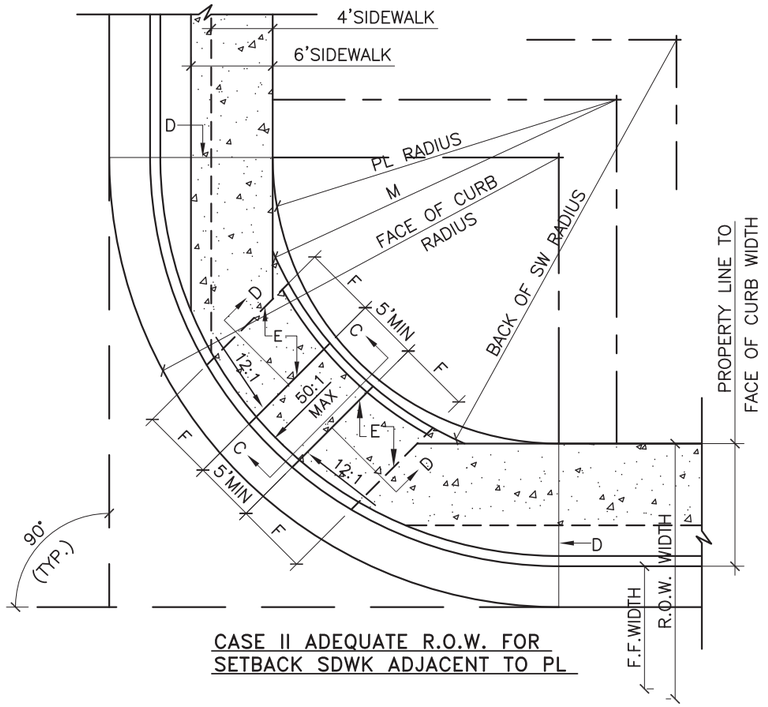
NOTE: ADA DEFINES "RAMP" AS ANY SURFACE THAT EQUALS OR EXCEEDS A 5% SLOPE ALONG ITS PATH OF TRAVEL. A LEVEL LANDING AREA IS A SURFACE OF SUFFICIENT SIZE THAT DOES NOT EXCEED A 2% SLOPE IN ANY DIRECTION.



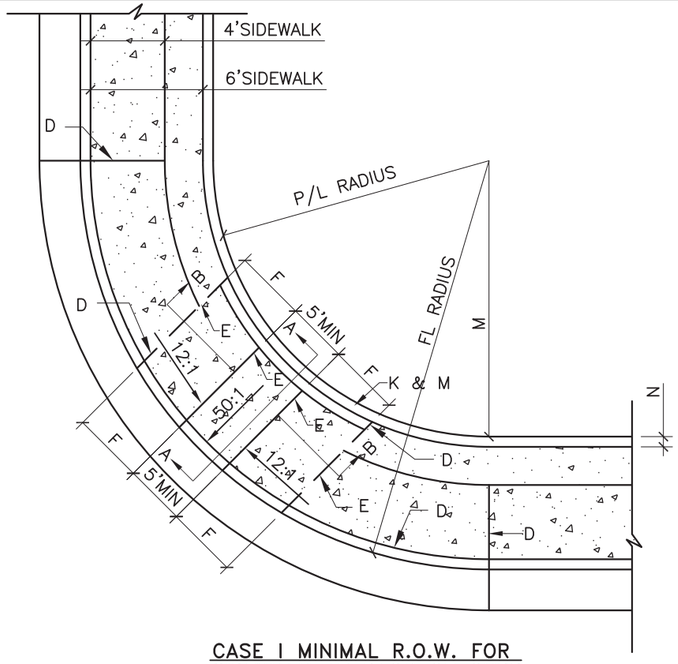
GENERAL NOTES:

1. WHERE AN ADEQUATE AREA CURB ACCESS (WHEELCHAIR) RAMPS EXIST, THE CITY TRAFFIC ENGINEER WILL SPECIFY LOCATION OF RAMPS.
2. MIN. CURB RADIUS IS 25FT. UNLESS OTHERWISE SPECIFIED.
3. CURB ACCESS (WHEELCHAIR RAMPS SHALL BE PROVIDED AT ALL CORNERS OF STREET INTERSECTIONS.
4. SLOPE SIDEWALK FROM TOP OF CURB TO LEVEL LANDING AREA AT BOTTOM OF RAMP ON SLOPE OF 1 (VERTICAL) UNIT TO 12 (HORIZONTAL) UNITS OF IDENTICAL MEASURE (MAXIMUM SLOPE).
5. UNIDIRECTIONAL CURB ACCESS RAMPS: SLOPE SIDEWALK FROM P.C. OR P.T. OF CURB RETURN DOWN TO QUARTER POINT OF CURB RETURN USING A SLOPE NO STEEPER THAN THAT DEFINED IN NOTE 4 ABOVE. FOR POSSIBLE EXCEPTIONS, SEE TABLE OF ADA ACCESSIBLE ROUTE SLOPES ON THIS DRAWING.
6. CURB ACCESS RAMPS COMPLYING WITH ADA REGULATIONS AND THESE DRAWING (2415, 2418, 2425, 2428, & 2441) SHALL BE PROVIDED WHEREVER AN ACCESSIBLE ROUTE CROSSES A CURB.
7. SLOPES OF CURB ACCESS RAMPS SHALL COMPLY WITH ALL ADA REGULATIONS AND THE TABLE OF ACCESSIBLE ROUTE SLOPES OF THIS DRAWING. MAXIMUM SLOPES OF ADJOINING GUTTERS, ROAD SURFACES OR SIDEWALKS ADJACENT TO CURB ACCESS RAMPS SHALL NOT EXCEED 1:20.
8. THE MINIMUM WIDTH OF ANY ADA ACCESSIBLE RAMP SHALL BE 60 IN. (5 FT.).
9. A CURB ACCESS RAMP LOCATED WHERE PEDESTRIANS MUST WALK ACROSS THE RAMP OR WHERE IT IS NOT PROTECTED BY HAND OR GUARDRAIL, SHALL HAVE FLARED SIDES WITH SLOPES NOT EXCEEDING 1:12. IF A LEVEL LANDING AREA OF AT LEAST 48 INCHES LONG IS PROVIDED AT THE TOP END OF THE RAMP. (SEE DWG. 2441, SEC. C–C). OTHERWISE THE FLARED SIDE SLOPES SHALL NOT EXCEED 1:12.
10. CURB ACCESS RAMPS WITH RETURNS OR HEADER TYPE CURBING MAY BE CONSTRUCTED WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. BUILT–UP CURB ACCESS RAMPS SHALL BE LOCATED SO THAT THEY DO NOT PROJECT INTO VEHICLE TRAFFIC LANES AND MAY ONLY BE USED WITH APPROVAL FROM THE CITY ENGINEER EXCEPT FOR PARKING LOT APPLICATIONS.
11. CURB ACCESS RAMPS SHALL BE LOCATED OR PROTECTED TO PREVENT THEIR OBSTRUCTION BY PARKED VEHICLES.
12. CURB ACCESS RAMPS AT MARKED CROSSING SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS EXCLUDING ANY FLARES SIDES.
13. ADA – AMERICAN WITH DISABILITIES ACT.
14. CURB ACCESS RAMPS AND THEIR APPROACHES SHALL BE CONSTRUCTED SO THAT WATER WILL NOT ACCUMULATE ON WALKING SURFACES.
15. ANY CONFLICT BETWEEN COA STANDARD DRAWING AND ADA REGULATIONS SHALL BE BROUGHT TO THE ATTENTION OF CITY ENGINEER FOR RESOLUTION.
16. ALL ADA ACCESSIBLE RAMPS SHALL HAVE LANDINGS AT BOTTOM AND TOP OF EACH RAMP AND EACH RAMP RUN. LANDING SHALL BE AT LEAST AS WIDE AS THE RAMP RUN LEADING TO IT AND SHALL HAVE A LENGTH OF 60 INCHES (5 FT.) MINIMUM. IF THE RAMP CHANGES DIRECTION AT THE LANDING, THE MINIMUM LANDING SIZE SHALL BE 5 FEET BY 5 FEET. RAMPS AND LANDINGS WITH DROP –OFFS SHALL HAVE CURBS, WALLS, RAILINGS, OR PROJECTIONS THAT PREVENTS SLOPPING OR FALLING OFF OF THE RAMP.

REVISIONS	CITY OF ALBUQUERQUE
11/14/91 4/12/94	PAVING CURB ACCESS RAMP DWG. 2440 JANUARY 2003



CASE II ADEQUATE R.O.W. FOR SETBACK SDWK ADJACENT TO PL



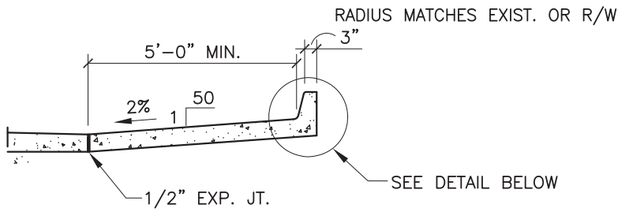
CASE I MINIMAL R.O.W. FOR SIDEWALK AT BACK OF CURB

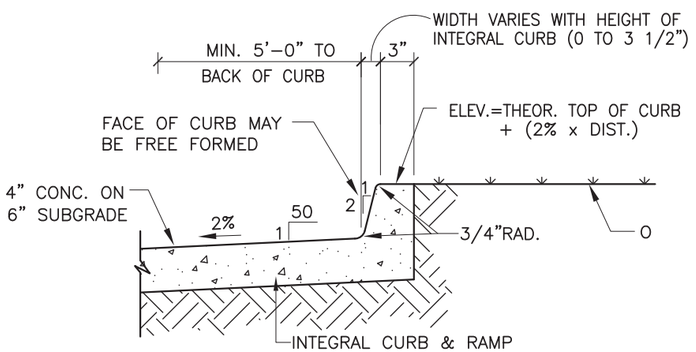
GENERAL NOTES:

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. GUTTER FLOW–LINE PROFILE SHALL BE MAINTAINED THROUGH 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.

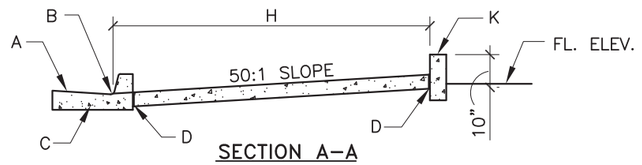
CONSTRUCTION NOTES:

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 RAMP).
D. 1/2" EXPANSION JOINT.
E. PARALLEL LINES–TOP AND BOTTOM OF RAMP.
F. 12:1 MAX SLOPE OF RAMP.
G. CONTRACTION JOINT.
H. VARIES WITH AVAILABLE R.O.W.
J. VARIABLE.
K. HEADER CURB, SEE DWG. 2415.
L. BACK OF SIDEWALK.
M. BACK OF SIDEWALK RADIUS TO BE ESTABLISHED 90 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 UNTIMELY UNRESOLVABLE CONSTRAINTS.
N. 4–1/2" MAX.
O. ANY PRIVATE LANDSCAPING AND OR IRRIGATION SHALL BE RESTORED TO ORIGINAL CONDITION. SHOULD ANY PRIVATE IMPROVEMENT NEED TO BE REMOVED, OWNER MUST BE NOTIFIED.

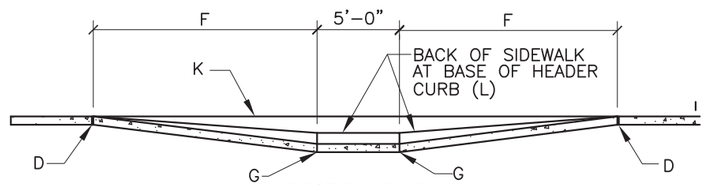




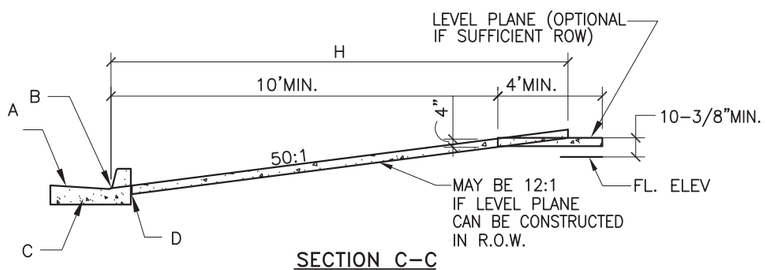
ALTERNATE SECTION A–A



SECTION A–A

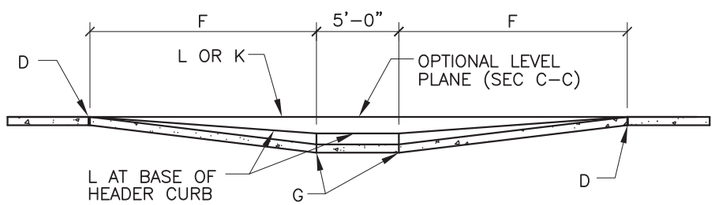


SECTION B–B



SECTION C–C

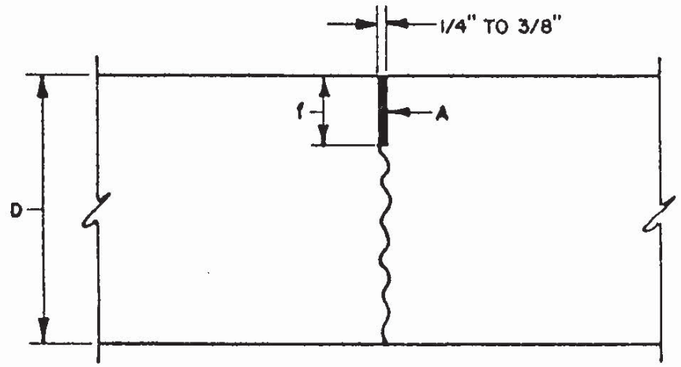
△	PL RAD.	CURB RAD.	PL CURB WIDTH	BACK S.W. RADIUS
90°	25'	25'	4'	25'
90°	30'	25'	4'	30'
90°	25'	30'	4'	25'
90°	30'	30'	4'	30'



SECTION D–D

REVISIONS	CITY OF ALBUQUERQUE
11/14/91 4/27/94	PAVING (WHEELCHAIR) CURB ACCESS RAMP DWG. 2441 JANUARY 2003

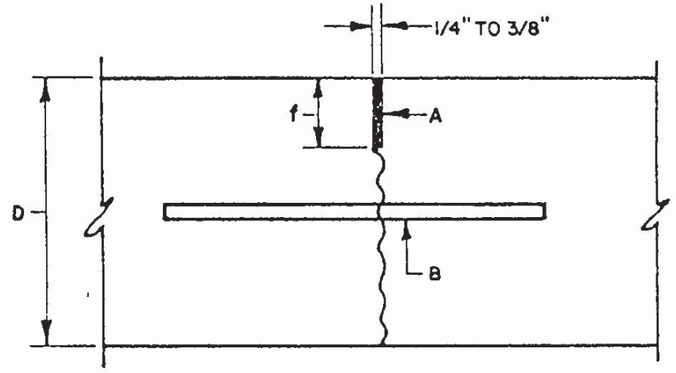
JOINT DIMENSIONS								
						TRANS. JOINTS	LONG. JOINTS	
D	a	b	c	d	e	f - min.	f - min.	g
5"	1"	1-3/4"	1-1/2"	1"	2"	1/4 D	1/3 D	1/2 D
6"	1"	2-1/4"	1-1/2"	1"	2-1/2"	1/4 D	1/3 D	1/2 D
8"	1"	3"	2"	1-1/2"	3-1/4"	1/4 D	1/3 D	1/2 D



TYPE 1

SAWED JOINT

(LONGITUDINAL OR TRANSVERSE)

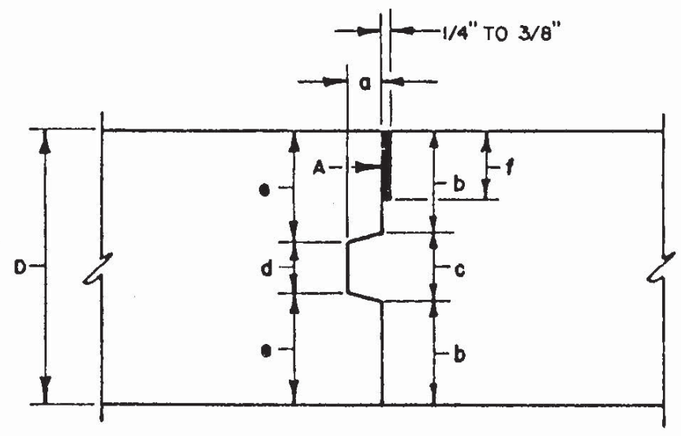


TYPE 2

DOWELED JOINT

(TRANSVERSE)

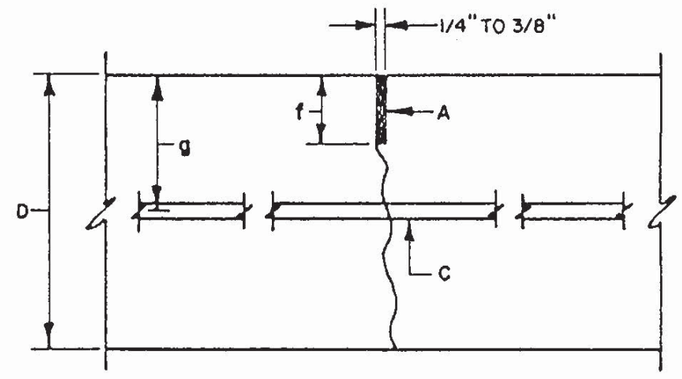
ARTERIAL/COLLECTOR STREETS ONLY



TYPE 3

KEYED JOINT

(LONGITUDINAL OR TRANSVERSE)



TYPE 4 ALTERNATE

TIED JOINT

(LONGITUDINAL OR TRANSVERSE)

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" ø 16" SMOOTH DOWELL 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.

REVISIONS
12/15/92

CITY OF ALBUQUERQUE

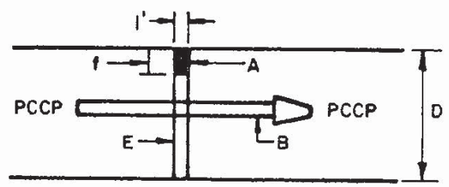
PAVING

CONCRETE JOINTS

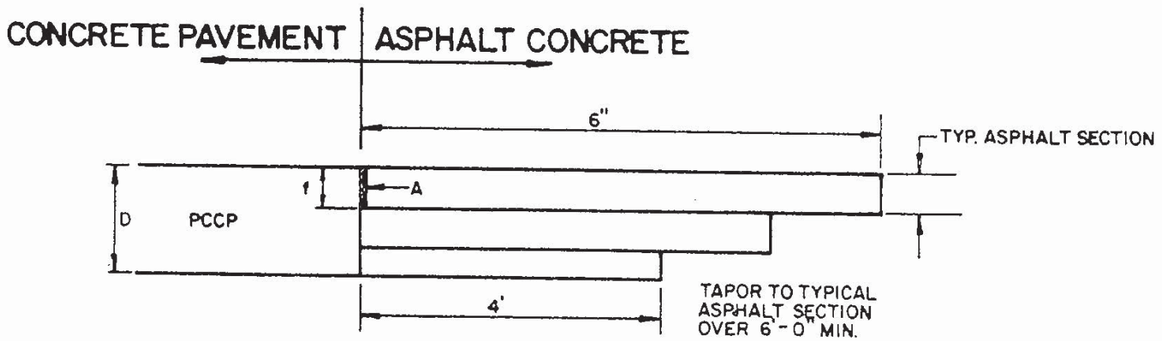
DWG. 2450

AUG.1986

JOINT DIMENSIONS								
						TRANS. JOINTS	LONG. JOINTS	
D	a	b	c	d	e	f - min.	f - min.	g
5"	1"	1-3/4"	1-1/2"	1"	2"	1/4 D	1/3 D	1/2 D
6"	1"	2-1/4"	1-1/2"	1"	2-1/2"	1/4 D	1/3 D	1/2 D
8"	1"	3"	2"	1-1/2"	3-1/4"	1/4 D	1/3 D	1/2 D



TYPE 5 EXPANSION JOINT



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:

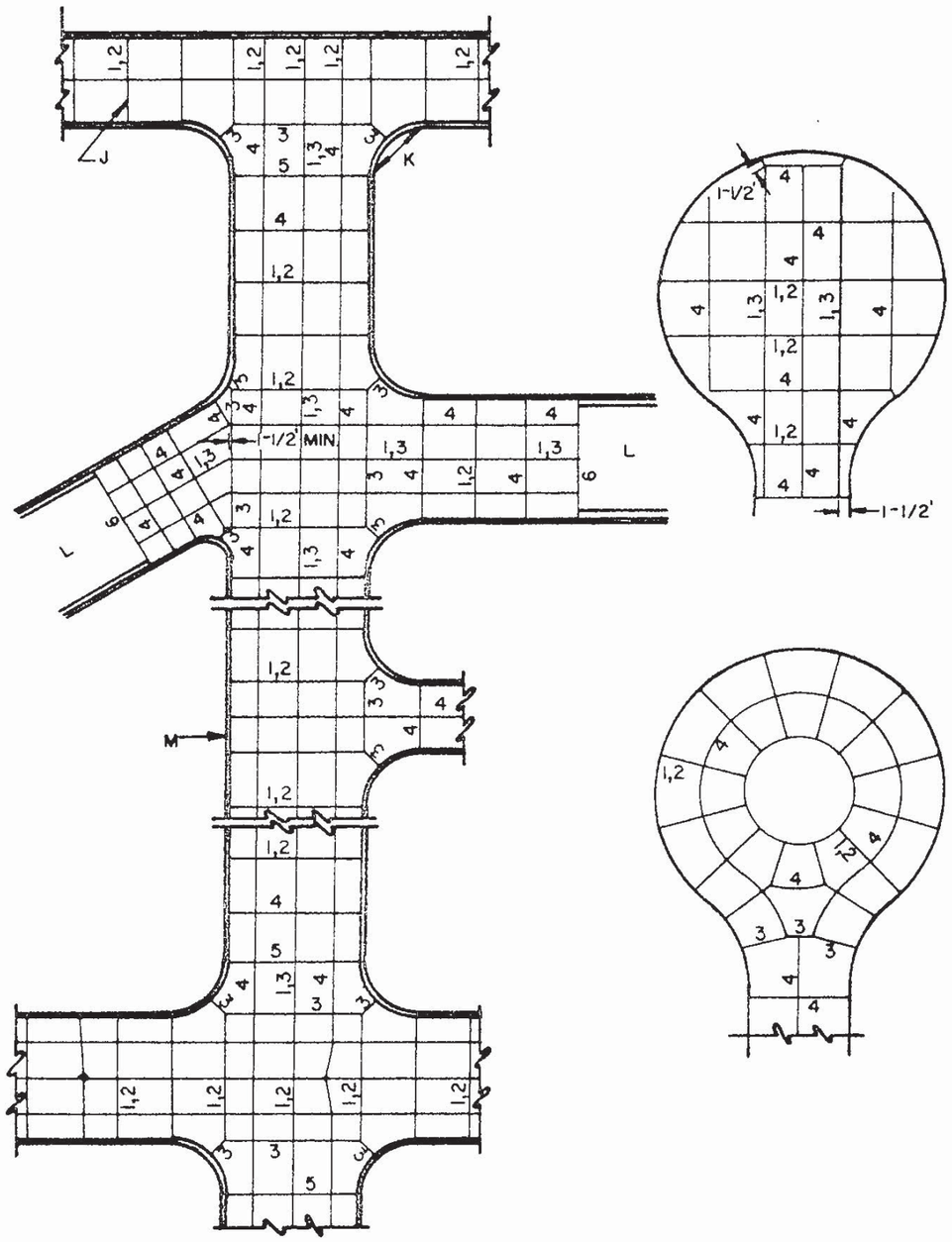
A. JOINT FILLER, INSTALL PER MANF. INSTR. OVER BACKER ROD OR JOINT TAPE.
B. 3/4" Ø 16" SMOOTH DOWELL BAR @ 12" O.C., 1/2 GREASED 1/2 PAINTED.
C. NO. 4 DEFORMED BARS, 3'-0" LONG AT 2'-0" O.C.
D. THICKNESS OF SLAB.
E. COMPRESSIBLE FILLER FULL HEIGHT.

CITY OF ALBUQUERQUE

REVISIONS

PAVING
CONCRETE JOINTS TYPES 5 & 6
DWG. 2451

DEC 1992



TYPICAL CONCRETE PAVEMENT JOINT PATTERN

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 2 JOINTS ARE REQUIRED ON COLLECTOR/ARTERIAL STREETS ONLY.

CONSTRUCTION NOTES:

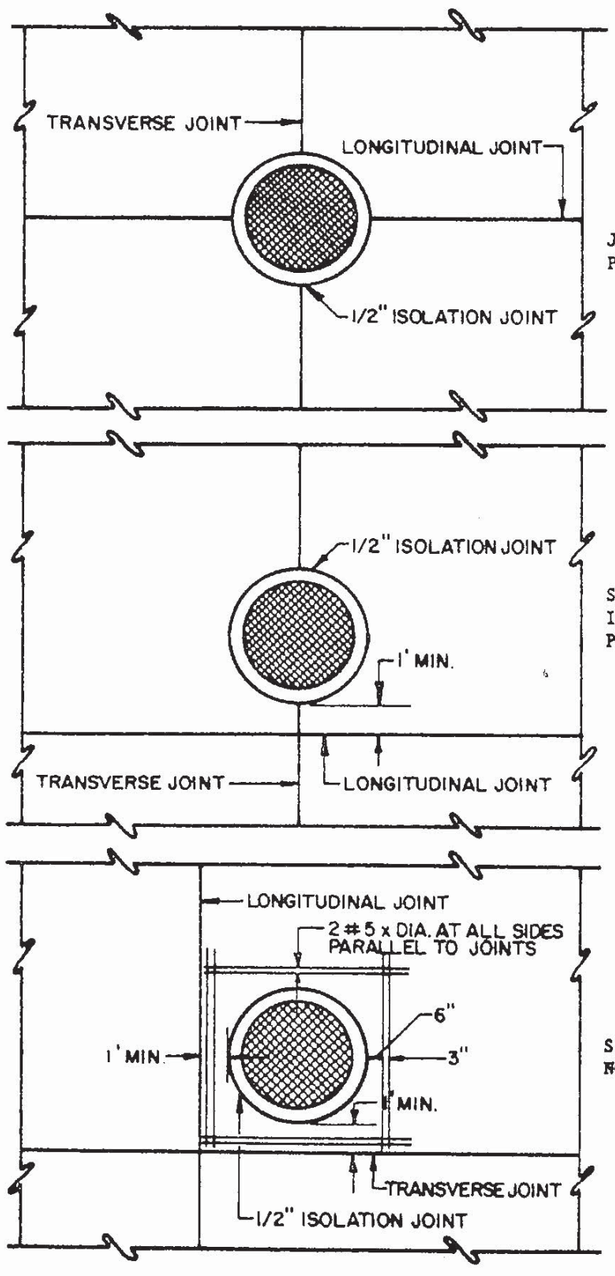
A. THE CONTRACTOR SHALL SUBMIT A PAVEMENT JOINT PLAN TO THE ENGINEER FOR HIS REVIEW AND APPROVAL PRIOR TO THE PLACEMENT OF ANY CONCRETE PAVEMENT. IF THE PLAN DIFFERS FROM THE JOINT PATTERN SHOWN ON THE CONSTRUCTION PLANS, THE CHANGES SHALL BE CALLED OUT. THE JOINT PLAN SHALL INCLUDE THE LOCATIONS OF MANHOLES, VALVE BOXES AND DROP INLETS, AND THE TYPE OF JOINT TO BE CONSTRUCTED. (SEE DWG. 2453).
B. JOINT 1 MAY BE ALTERNATED WITH JOINT 3 IF THE CONTRACTOR CAN PLACE THREE (3) OR MORE LANES IN A SINGLE PASS.
C. CONCRETE PLACEMENT SHALL TERMINATE AT A PAVEMENT JOINT.
D. ALL LONGITUDINAL JOINTS SHALL BE SAWED TO A MINIMUM DEPTH OF D/3.
E. ALL TRANSVERSE JOINTS SHALL BE SAWED TO A MINIMUM DEPTH OF D/4.
F. JOINTS SHALL BE SAWED AS SOON AS THE CONCRETE WILL CUT WITHOUT LEAVING A RAVELED EDGE. SAW CUTS SHALL BE CURED SAME AS THE ADJACENT CONCRETE.
G. ARTERIAL/COLLECTOR PCC PAVEMENT IN INTERSECTIONS SHALL BE FINISHED WITH A TRANSVERSE "RAKE TINED" TEXTURE. THE TINING 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. PCC PAVEMENT BETWEEN INTERSECTIONS AND RESIDENTIAL STREETS/INTERSECTIONS SHALL BE FINISHED WITH A FULL WIDTH LONGITUDINAL COARSE TEXTURE BURLAP DRAG.
J. END OF DAYS WORK.
K. PLACE 1/2" EXPANSION JOINT FILLER IN CURB AT ALL RADIUS POINTS.
L. ASPHALT PAVEMENT.
M. FIRST STREET PAVED.

CITY OF ALBUQUERQUE

REVISIONS

PAVING
TYPICAL CONCRETE PAVEMENT JOINT PATTERN
DWG. 2452

DEC 1992



TYPE 1

JOINTS INTERSECT PENETRATION

TYPE 2

SINGLE JOINT INTERSECT PENETRATION

TYPE 3

SINGLE PENETRATION NOT AT A JOINT

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 EACHWAY AT 6" O.C. CONTINUOUS BETWEEN JOINTS

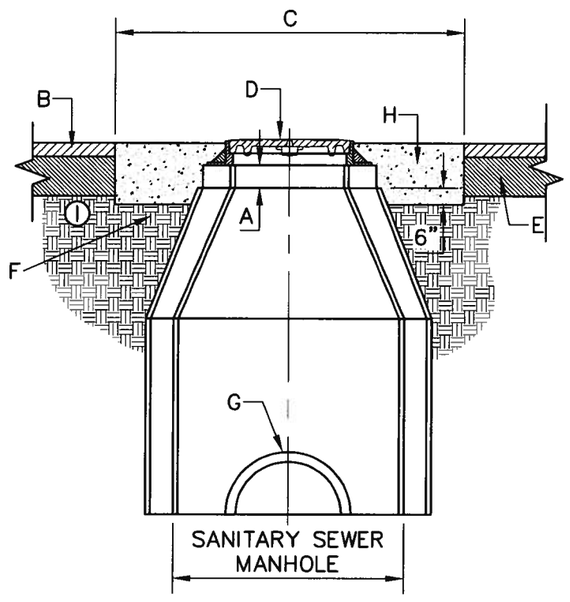
REVISIONS

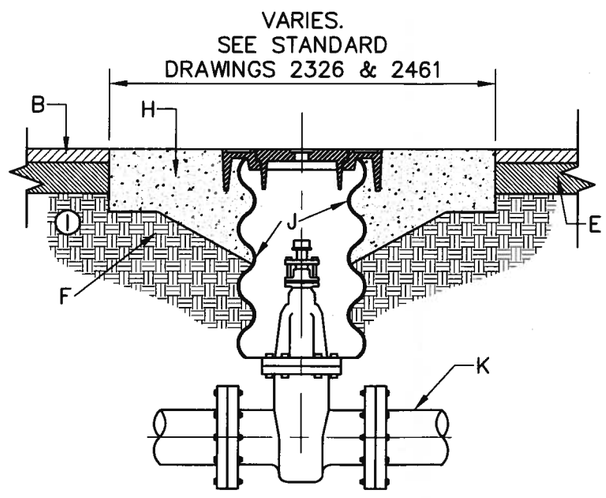
CITY OF ALBUQUERQUE

PAVING
STANDARD PENETRATIONS
PCC PAVEMENT

DWG. 2453

DEC. 1992





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.

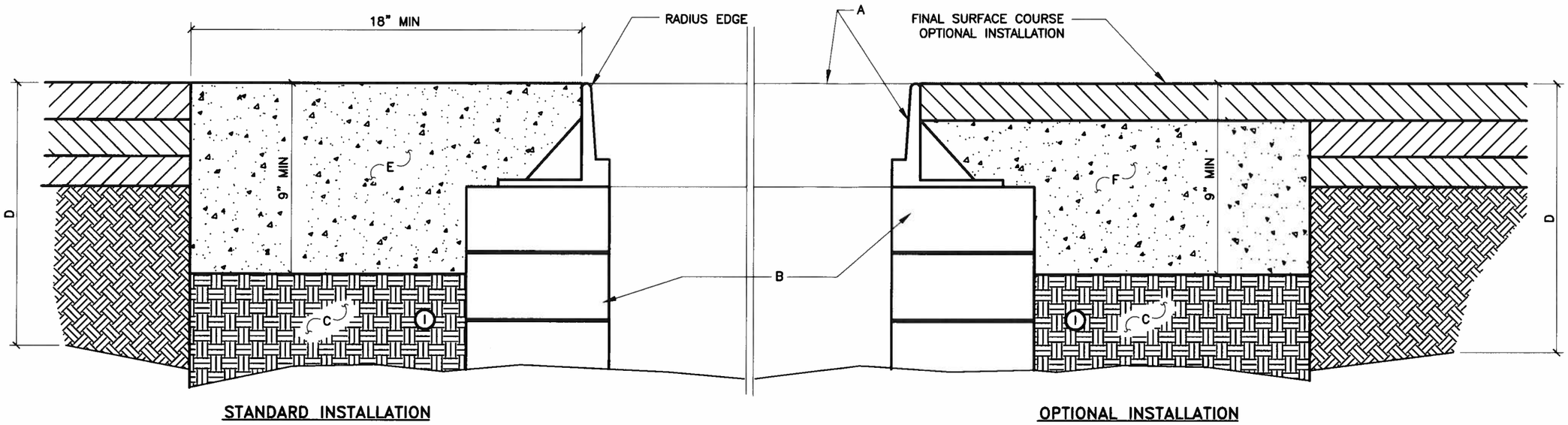
H. NEW PORTLAND CEMENT CONCRETE COLLAR (4000 PSI). ALL ADJUSTMENTS SHALL BE INSTALLED WITH A NEW CONCRETE COLLAR. THE OLD COLLAR(S) SHALL BE REMOVED AND DISPOSED OF PROPERLY. REFER TO STANDARD DRAWINGS 2326 & 2461 FOR PROPER LINE IDENTIFICATION ON THE COLLAR.

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.

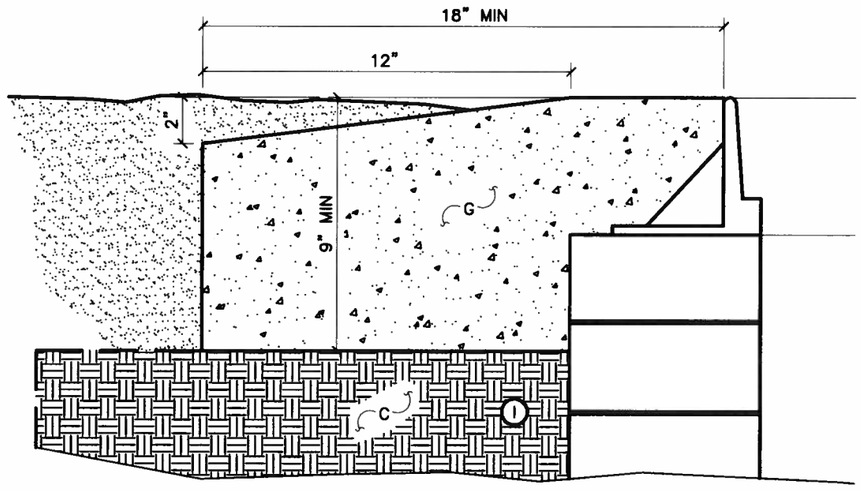
REVISIONS	WATER AUTHORITY
	PAVING MANHOLE AND VALVE BOX REGRADING
	DWG. 2460 JANUARY 2011



STANDARD INSTALLATION

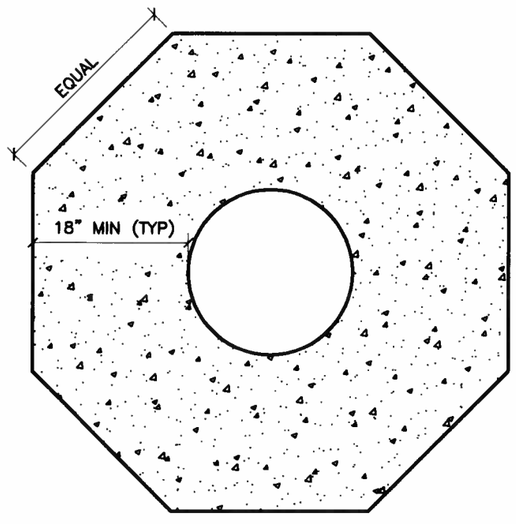
OPTIONAL INSTALLATION

PAVED AREAS



STANDARD INSTALLATION

DIRT AREAS



TOP PLAN

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 PAVING SECTION PER APPROVED DRAWINGS.

E CONCRETE COLLAR IN PAVED AREAS – TYPICAL INSTALLATION.

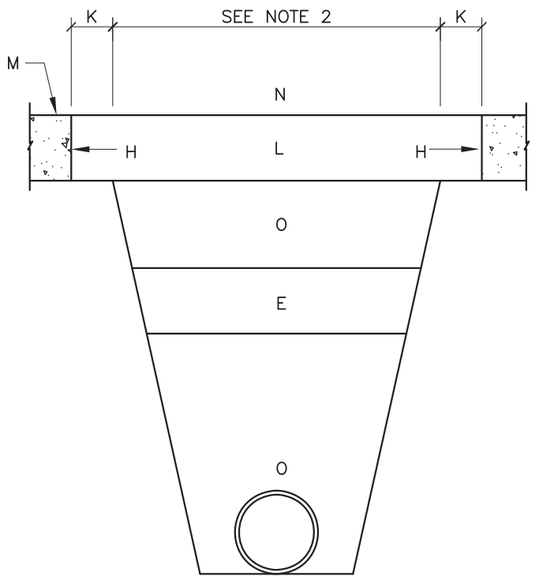
F CONCRETE COLLAR IN PAVED AREAS WITH ASPHALT CAP. TO BE USED WHEN CALLED FOR ON PLANS OR AS DIRECTED BY THE ENGINEER. WATER AUTHORITY APPROVAL MUST BE OBTAINED PRIOR TO INSTALLATION ON SANITARY SEWER AND/OR WATER APPLICATIONS.

G CONCRETE COLLAR IN DIRT AREAS – SET RING 1" ABOVE GRADE AND SLOPE CONCRETE DOWN AS SHOWN TO 1" BELOW GRADE.

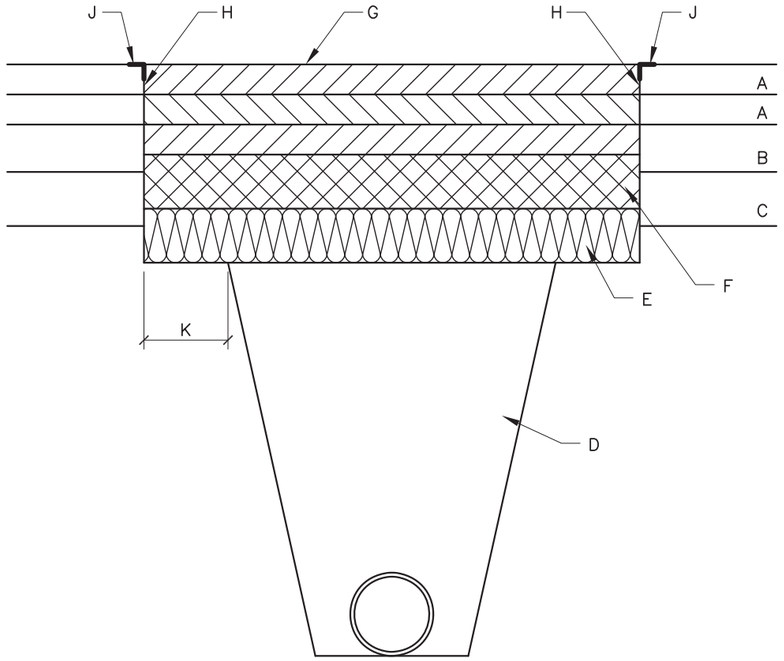
H WATER VALVE INSTALLATIONS SHALL HAVE SURFACE STAMPED WITH LINE INFORMATION PER CITY STANDARD DWG 2326.

I ELECTRONIC MARKER DEVICE (EMD) REQUIRED FOR ALL SANITARY SEWER MANHOLES AND WATER VALVES, SEE COA STANDARD SPECIFICATION SECTION 170.

REVISIONS	WATER AUTHORITY
	MANHOLE/VALVE CONCRETE COLLAR DETAIL
	DWG. 2461 JANUARY 2011



CONCRETE PAVEMENT



ASPHALT CONCRETE PAVEMENT

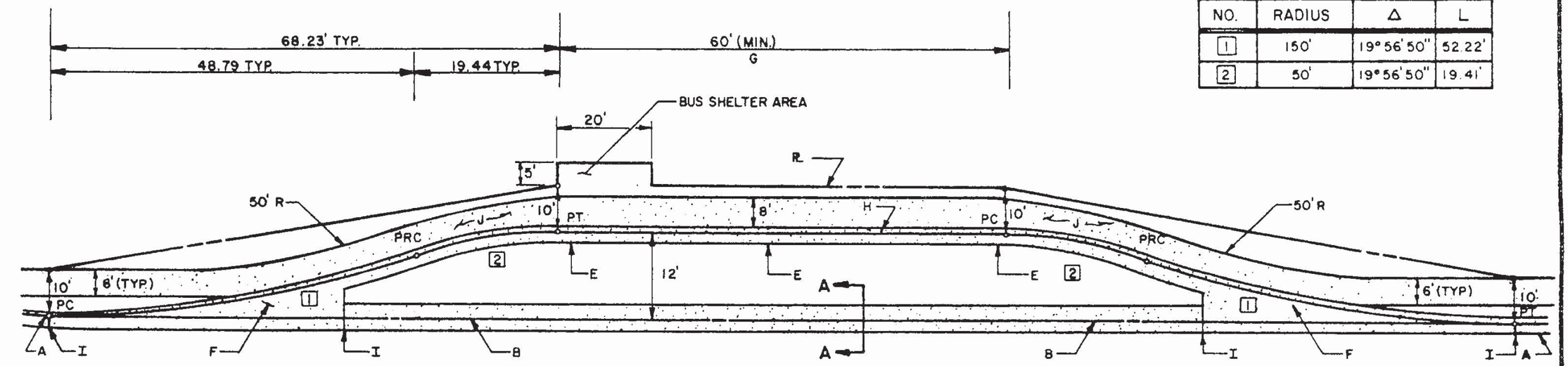
GENERAL NOTES:

1. COMPACTION AS DETERMINED BY ASTM D1557 MAX DENSITY.
2. TRENCH CUT WIDTHS SHALL BE MIN. WIDTH REQ'D FOR UTILITY INSTALLATION, ECONOMICAL BACKFILL COMPACTION AND COMPLIANCE WITH CURRENT AND APPLICABLE SAFETY REGULATIONS.
3. ALL PAVEMENTS 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.

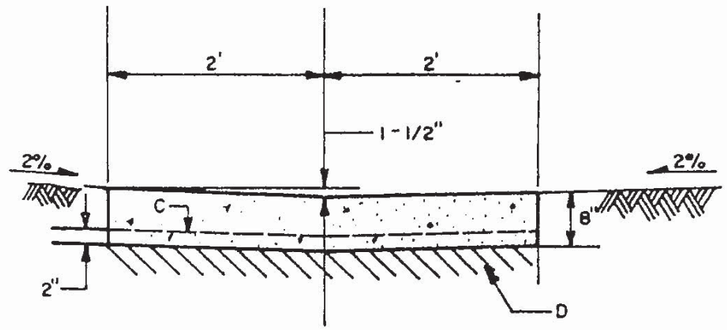
CONSTRUCTION NOTES:

A. EXISTING ASPHALT PAVEMENT.
B. EXISTING BASE MATERIAL (ABC, BTB, CTB)
C. EXISTING SUBGRADE
D. COMPACTED FILL, 95% COMPACTION
E. COMPACTED SUBGRADE, 95% COMPACTION. SUBGRADE TO MEET OR EXCEED APPARENT R-VALUE OF ADJACENT SOIL, BY SOIL CLASSIFICATION (2 FEET MIN.).
F. MATCH EXISTING BASE MATERIAL PLUS AN ADDITIONS 2" OF THICKNESS – 95% COMPACTION
G. MATCH EXISTING ASPHALT CONCRETE SECTION PLUS AN ADDITIONAL 2" OF THICKNESS
   a) FOR RESIDENTIAL STREETS, SURFACE COURSE SHALL BE 1 1/2" THICK, TYPE C
   b) FOR MAJOR LOCAL STREETS, SURFACE COURSE SHALL BE 2" THICK, TYPE B
   c) FOR ALL OTHER STREETS, SURFACE COURSE SHALL BE 2" THICK, S-III
H. SAW CUT OR BLADE-CUT ASPHALT PAVEMENT. SAW CUT ONLY ONE THIRD CONC. DEPTH
J. TACK COAT
K. 12" CUT-BACK
L. MATCH EXISTING CONCRETE PAVEMENT THICKNESS, 6" MINIMUM, 4000 PSI
M. EXISTING CONCRETE PAVEMENT
N. JOINTS TO BE TOOLED & SEALED IN ACCORDANCE WITH ENGINEERS REQUIREMENTS
O. 6" CONC. TREATED BASE (C.T.B).

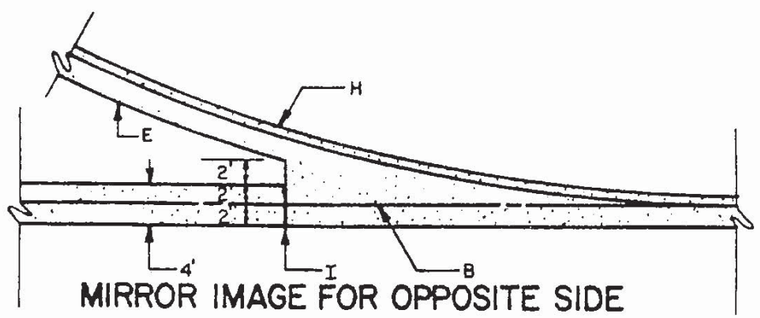
REVISIONS	CITY OF ALBUQUERQUE
1/91 12/15/92	PAVING CITYWIDE PAVEMENT CUTS FOR ALL UTILITIES DWG. 2465 JANUARY 2003



NO.	RADIUS	Δ	L
1	150'	19°56'50"	52.22'
2	50'	19°56'50"	19.41'



SECTION A-A



MIRROR IMAGE FOR OPPOSITE SIDE

DETAIL

GENERAL NOTES

1. DESIGN ELEVATIONS TO BE GIVEN AT PC'S, PRC'S, AND PT'S OF CURB CURVES AND AT 50' MINIMUM INTERVALS AT VALLEY GUTTER INVERT.
2. THE INVERT OF THE VALLEY GUTTER TO EXTEND FROM THE FLOWLINE OF THE UPSTREAM PC TO THE FLOWLINE OF THE DOWNSTREAM PT CONCENTRIC TO THE CENTERLINE.
3. THE VALLEY GUTTER TO BE REINFORCED WITH 6" X 6" X NO. 6 GA. WIRE MESH.
4. FOR NEW CONSTRUCTION, VALLEY GUTTER SHALL BE CONSTRUCTED PRIOR TO ADJACENT PAVEMENT. ASPHALT CONCRETE SHALL BE INSTALLED MONOLITHICALLY TO MEET NEW VALLEY GUTTER.
5. PRIOR TO CONSTRUCTION OF NEW VALLEY GUTTER ON EXISTING ACCEPTED STREETS, PAVEMENT SHALL BE REMOVED AS SHOWN ON PLANS.
6. LOCATE EXPANSION AND CONTRACTION JOINTS AS PER CITY STANDARD DRAWING NO. 2415.
7. BUS SHELTER AREA IS OPTIONAL. BUS SHELTER TYPE "A" SEE 2533.1 - 2533.14. BUS SHELTER TYPE "B" SEE 2534.1 - 2534.12.

CONSTRUCTION NOTES

A. TANGENT - SEE CITY STANDARD DRAWING NO. 2415.
B. FLOWLINE.
C. 6" X 6" X NO. 6 GA. WIRE MESH.
D. FOUNDATION FOR VALLEY GUTTER SHALL BE EQUAL TO BASE, SUBBASE AND SUBGRADE REQUIREMENTS FOR ADJACENT PAVEMENT SECTION BELOW BOTTOM OF GUTTER.
E. SLOPE PAVING TO VALLEY GUTTER. PAVEMENT MAYBE ASPHALT OR CONCRETE.
F. SURFACE AND CURB TO BE MONOLITHIC.
G. LENGTH TO BE DETERMINED BY CITY OF ALBUQUERQUE TRAFFIC ENGINEER.
H. DEPRESSED GUTTER - SEE CITY STANDARD DRAWING NO. 2415.
I. 1/2" EXPANSION MATERIAL.
J. 6' MINIMUM SIDEWALK.

CITY OF ALBUQUERQUE

REVISIONS

PAVING
BUS BAY

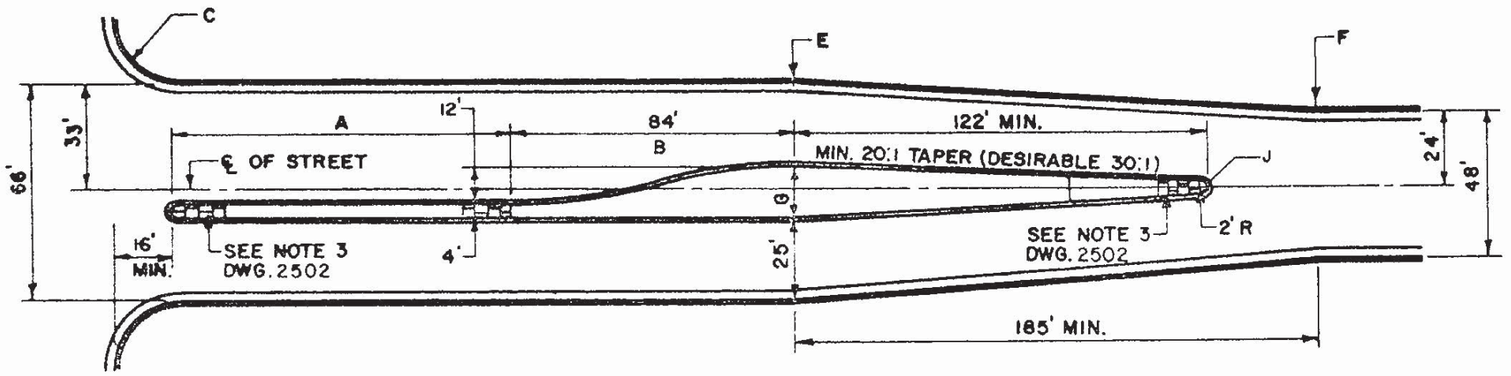
DWG. 2466

JUNE 1991

SECTION 2500

STANDARD DETAILS FOR Traffic

DWG.NO.	TITLE
2501	STANDARD TRANSITION
2502	TYPICAL STREET INERSECTION PLAN
2503	TYPICAL STREET INTESECTION PLAN
2504	CURB RETURN RADIUS TABLE
2505	CHANNELIZED RIGHT TURN FOR INTER. WITH PRINCIPAL ARTERIAL
2510	PLAN CUL-DE-SACS
2511	ISLAND CUL-DE-SACS
2512	HAMMER HEAD CUL-DE-SACS
2528	POLE INSTALLATION FOR PARKING METERS
2529	BICYCLE GATEWAY
2535.1	BUS SHELTER “C” – CUT SECTION, FILL SECTION
2535.2	BUS SHELTER “C” – PLAN &ROOF PLAN (W/SIDEWALK)
2535.3	BUS SHELTER “C” – (W/O SIDEWALK)
2535.4	BUS SHELTER “D” – PLAN &ROOF PLAN (W/SIDEWALK)
2535.5	BUS SHELTER “D” – (W/O SIDEWALK)
2535.6	BUS SHELTER “C” – ELEVATION / SECTION
2535.7	BUS SHELTER “D” – ELEVATION / SECTION
2535.8	BUS SHELTER “C” & “D” DETAILS
2535.9	BUS SHELTER “C” & “D” BENCH
2535.10	BUS SHELTER “C” & “D” TRASH RECEPTACLE
2550	TRAFFIC SIGNAL PULL BOX DETAILS
2551	TRAFFIC SIGNAL MANHOLE DETAILS
2552	TRAFFIC SIGNAL LOOP DETECTOR DETAILS
2555	TRAFFIC SIGNAL CONTROLLER CABINET & PEDESTRIAN FOUNDATION DETAILS
2556	TRAFFIC SIGNAL CABINET FOUNDATION CONVERSION
2557	TRAFFIC SIGNAL SPLICE CABINET GROUND MOUNT (LARGE)
2558	TRAFFIC SIGNAL FOUNDATION DETAILS TYPE II AND TYPE III STANDARDS
2560	TRAFFIC SIGNAL MISCELLANEOUS DETAILS
2561	TRAFFIC SIGNAL MASTARM DETAILS, ALUMINUM
2562A	TRAFFIC SIGNAL MASTARM DETAILS, TYPE II STANDARD
2562B	TRAFFIC SIGNAL MASTARM DETAILS, TYPE II STANDARD
2562C	TRAFFIC SIGNAL MASTARM DETAILS, TYPE III STANDARD
2562D	TRAFFIC SIGNAL TYPE III STANDARD MISC. DETAILS
2565	TRAFFIC SIGNAL SCHOOL BEACON DETAILS (MASTARM)
2566A	TRAFFIC SIGNAL SCHOOL BEACON DETAILS (PEDESTAL)
2566B	TRAFFIC SIGNAL WARNING TRAFFIC BEACON DETAILS
2568	TRAFFIC SIGNAL MACHINE VISION VEHICLE DETECTOR SYSTEM
2569	TRAFFIC SIGNAL OPTICAL DETECTOR INSTALLATION DETAILS
2570	TRAFFIC SIGNAL ELECTRICAL SERVICE DETAILS
2571	TRAFFIC SIGNAL METER PEDESTAL DETAILS FOR SIGNAL
2572	TRAFFIC SIGNAL METER PEDESTAL DETAILS COMBINATION SIGNALS & LIGHTING
2573	STREET LIGHTING CONTROL CABINET SIX CIRCUIT, METERED
2574	STREET LIGHTING CONTROL CABINET SIX CIRCUIT UNMETERED
2580	STREET LIGHTING FOUNDATION & MISCELLANEOUS DETAILS
2581	STREET LIGHTING INSTALLATION & POLE DETAILS



STANDARD TRANSITION FROM 48' TO 66'

(WITH CHANNELIZATION)

GENERAL NOTES:

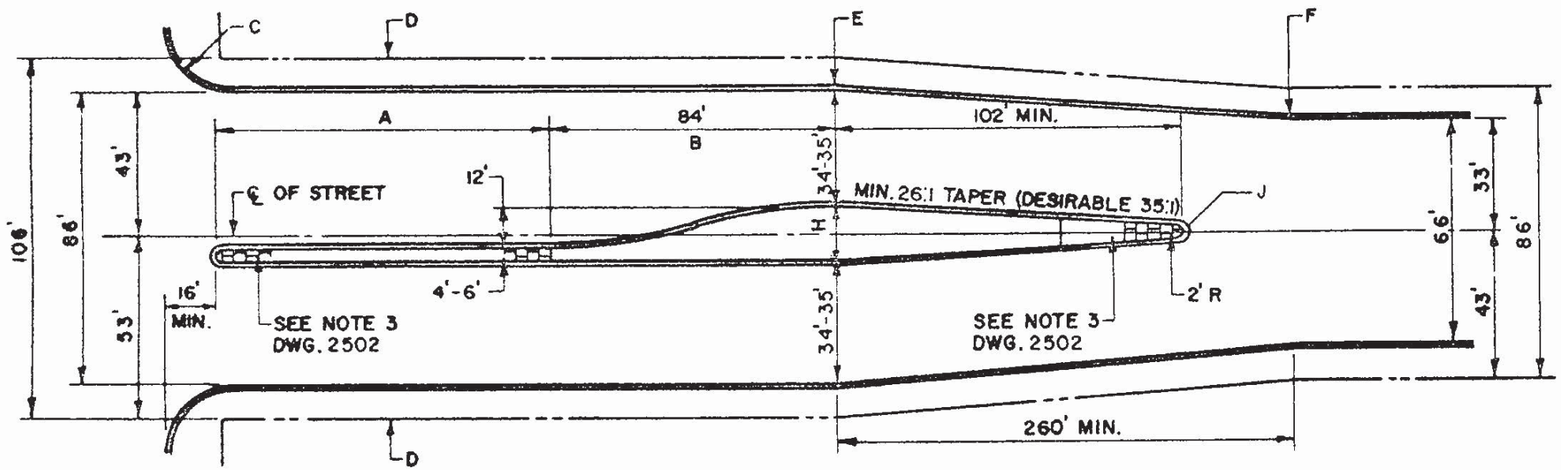
1. ALL DIMENSIONS ARE FROM FLOW LINE TO FLOW LINE.

CONSTRUCTION NOTES:

A. VARIES, SEE PLANS.
B. 150' R REVERSE CURVE.
C. FOR CURB RETURN RADII SEE DWG. 2504 & 2505.
D. RIGHT-OF-WAY LINE.
E. BEGIN TRANSITION.
F. END TRANSITION.
G. 16' OR AS SPECIFIED ON THE PLANS.
H. 16'-18' OR AS SPECIFIED ON THE PLANS.
J. INSTALL 4" DIAMETER PVC SLEEVE THRU MEDIAN PAVING ± 10' BACK OF NOSE. CENTERED IN MEDIAN FOR SIGN POSTS BY OTHERS.

CURVE DATA

	R	Δ	T	L
B	150'	16° 15' 37"	21.43'	42.57'



STANDARD TRANSITION FROM 66' TO 86'

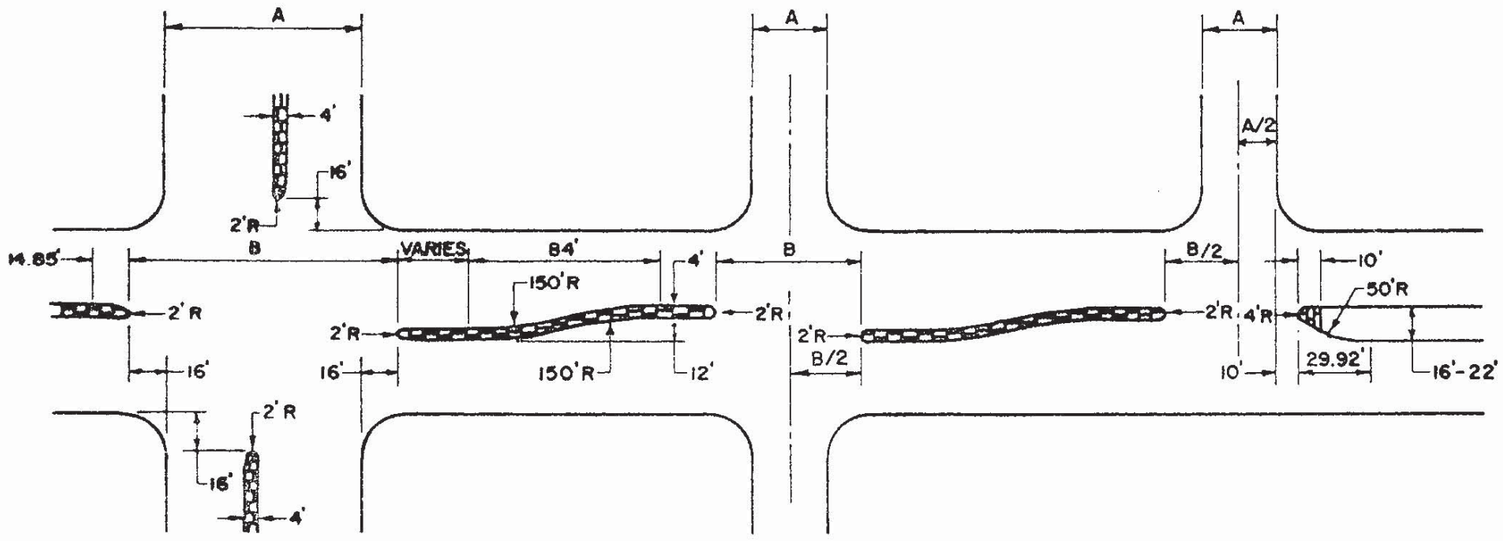
(WITH CHANNELIZATION)

CITY OF ALBUQUERQUE

REVISIONS
12-31-92

TRAFFIC
STANDARD TRANSITION
DWG. 2501

AUG. 1986



THRU INTERSECTION THRU INTERSECTION "T" INTERSECTION

TYPICAL STREET INTERSECTION PLAN

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	
STREET WIDTH "A"	MEDIAN OPENING "B"
LESS THAN 48'	76'
48' TO 64'	96'
66'	98'
86'	118'

CURVE DATA

R	Δ	T	L
150'	16° 15' 37"	21.43'	42.57'
50'	34° 18' 04" *	15.43' *	29.93' *
4'	145° 41' 56" *	12.96' *	10.17" *

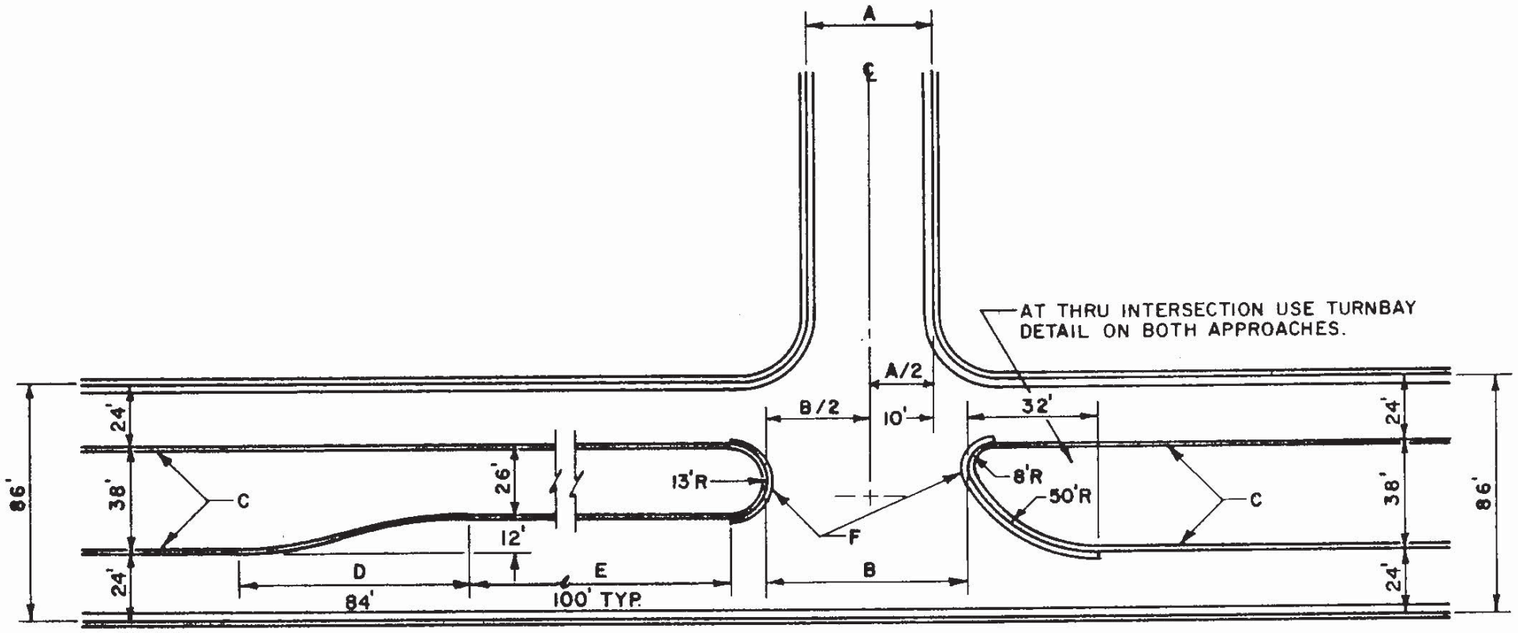
* FOR 16' MEDIAN WIDTH.

REVISIONS

CITY OF ALBUQUERQUE

TRAFFIC
TYPICAL STREET INTERSECTION PLAN
DWG. 2502

AUG. 1986



TYPICAL INTERSECTION PLAN
MAJOR ARTERIAL STREET W/STAGE CONSTRUCTION

GENERAL NOTES:

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

MEDIAN OPENING DIMENSIONS	
STREET WIDTH "A"	MEDIAN OPENING "B"
LESS THAN 40'	58'
40' TO 46'	66'
48' TO 64'	86'
66'	98'
86'	118'

CONSTRUCTION NOTES:

A. STREET WIDTH.
B. MEDIAN OPENING.
C. EXTRUDED ASPHALT CURB.
D. 150'-R REVERSE CURVES.
E. VARIES, SEE PLANS.
F. CONC. MEDIAN C. & G.

CURVE DATA

	R	Δ	T	L
D	150'	16° 15' 37"	21.43'	42.57'
	50'	58° 24' 43"	27.95'	50.97'
	13'	180°	∞	40.84'
	8'	121° 35' 17"	14.31'	16.98'

REVISIONS

CITY OF ALBUQUERQUE

TRAFFIC
TYPICAL STREET INTERSECTION PLAN
DWG. 2503

AUG. 1986

STANDARD CURB RETURN RADII (AT FLOWLINE) AND RIGHT-OF-WAY AT INTERSECTIONS

INTERSECTING STREETS	PRINCIPAL ARTERIAL	MINOR ARTERIAL	COLLECTOR	MAJOR LOCAL	LOCAL RESIDENTIAL	LOCAL-INDUSTRIAL COMMERCIAL
PRINCIPAL ARTERIAL	(3) min.*	(3)*	(3)*	30'	30'	30'*
MINOR ARTERIAL	(3)*	35'*	30'*	30'	30'	30'*
COLLECTOR	(3)*	30'*	25'	25'	25'	30'*
MAJOR LOCAL	30'	30'	25'	20'	20'	30'*
LOCAL RESIDENTIAL	30'	30'	25'	20'	20'	N/A
LOCAL INDUSTRIAL COMMERCIAL	30'*	30'*	30'	30	N/A	30*
ALLEY RETURNS	Shall match the radii requirements for design vehicles expected - 25' minimum.					

* MAY BE INCREASED AT DISCRETION OF THE TRAFFIC ENGINEER.

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

2. Flared 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 ends of the curb returns on the narrow street leg of the intersection. Curb return radii will normally be 25 feet measured to the flowline.

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

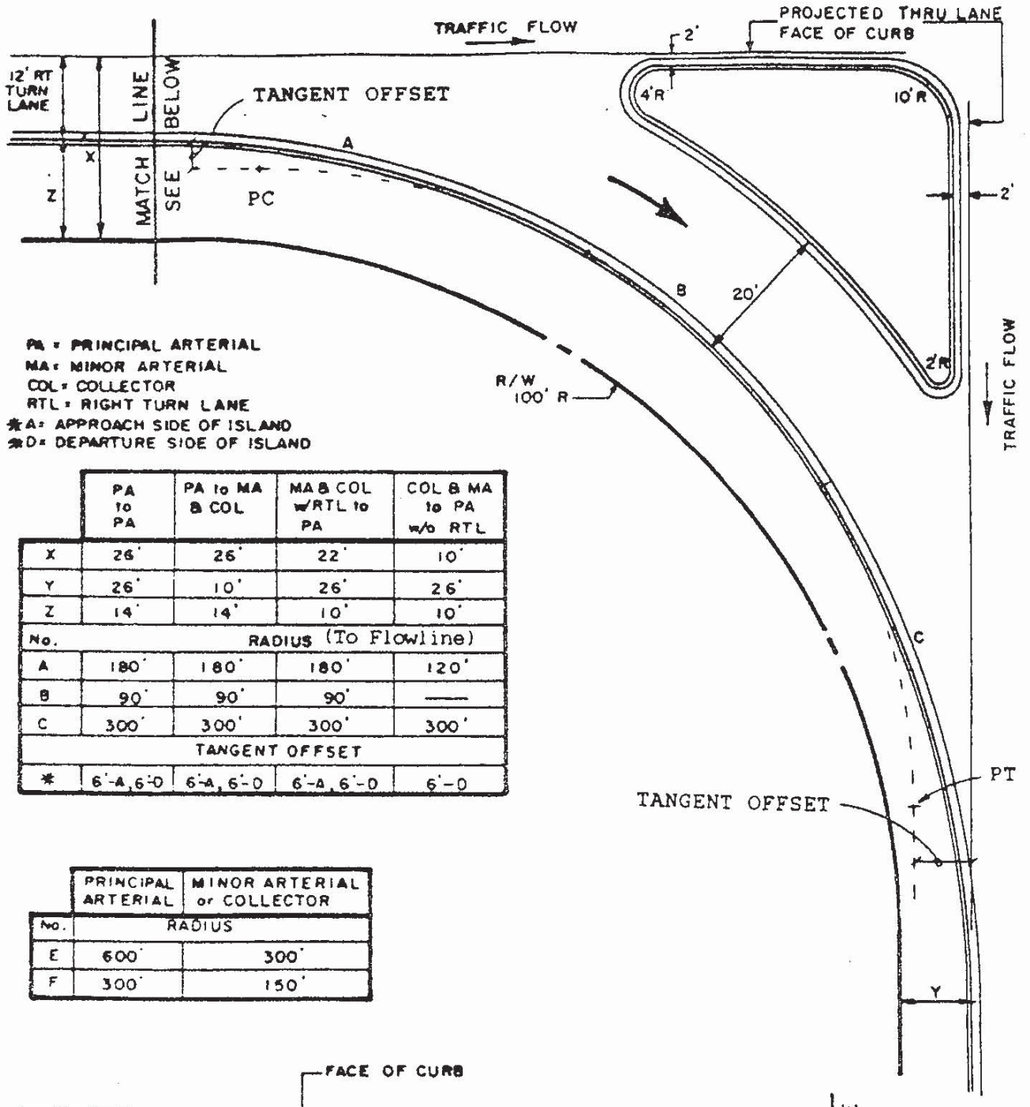
REVISIONS

CITY OF ALBUQUERQUE

TRAFFIC
CURB RETURN RADIUS TABLE

DWG. 2504

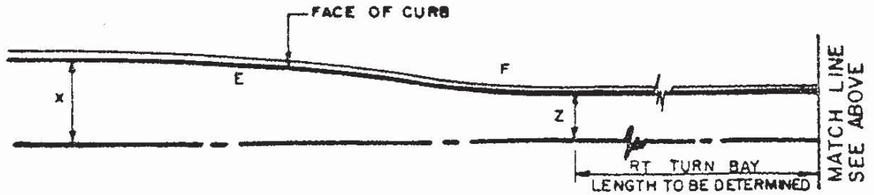
DEC. 1992



PA = PRINCIPAL ARTERIAL
MA = MINOR ARTERIAL
COL = COLLECTOR
RTL = RIGHT TURN LANE
*A = APPROACH SIDE OF ISLAND
*D = DEPARTURE SIDE OF ISLAND

	PA to PA	PA to MA & COL	MA & COL w/RTL to PA	COL & MA to PA w/o RTL
X	26'	26'	22'	10'
Y	26'	10'	26'	26'
Z	14'	14'	10'	10'
No.	RADIUS (To Flowline)			
A	180'	180'	180'	120'
B	90'	90'	90'	—
C	300'	300'	300'	300'
TANGENT OFFSET				
*	6'-A, 6'-D	6'-A, 6'-D	6'-A, 6'-D	6'-D

No.	PRINCIPAL ARTERIAL	MINOR ARTERIAL or COLLECTOR
	RADIUS	
E	600'	300'
F	300'	150'



CITY OF ALBUQUERQUE

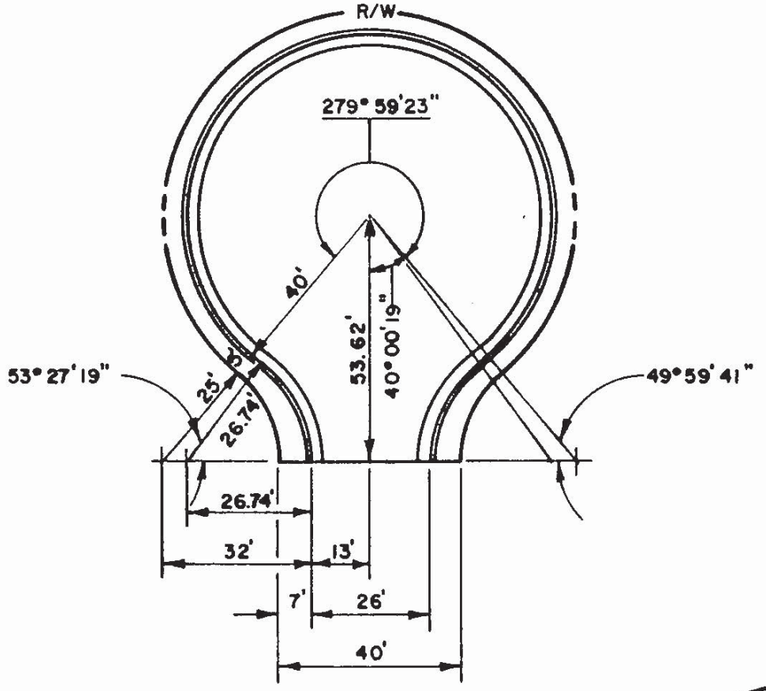
REVISIONS

TRAFFIC
CHANNELIZED RIGHT TURN FOR INTER. WITH PRINCIPAL ARTERIAL
DWG. 2505
DEC. 1992

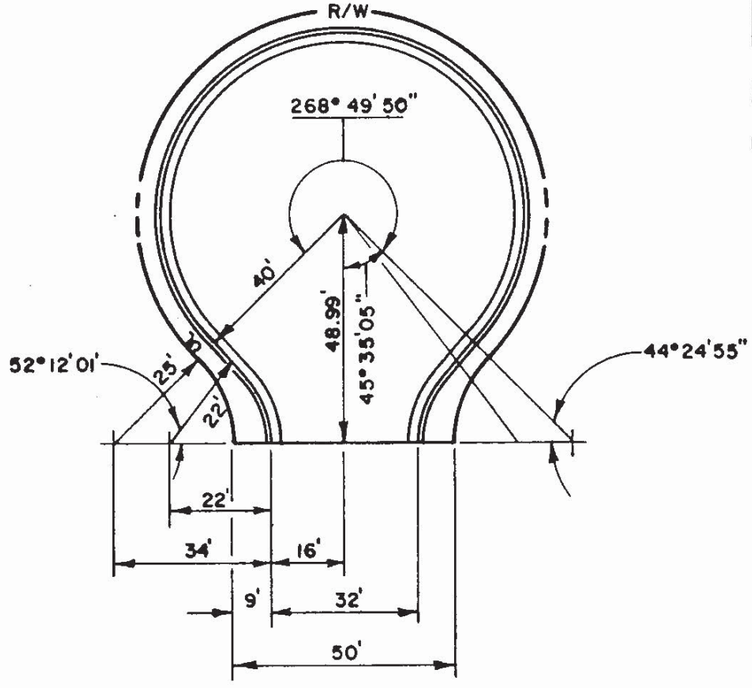
CASE	PAVED AREA SQ. YARDS	C. & G. LINEAL FEET
I	564	250
II	556	239
III	573	245

GENERAL NOTES:

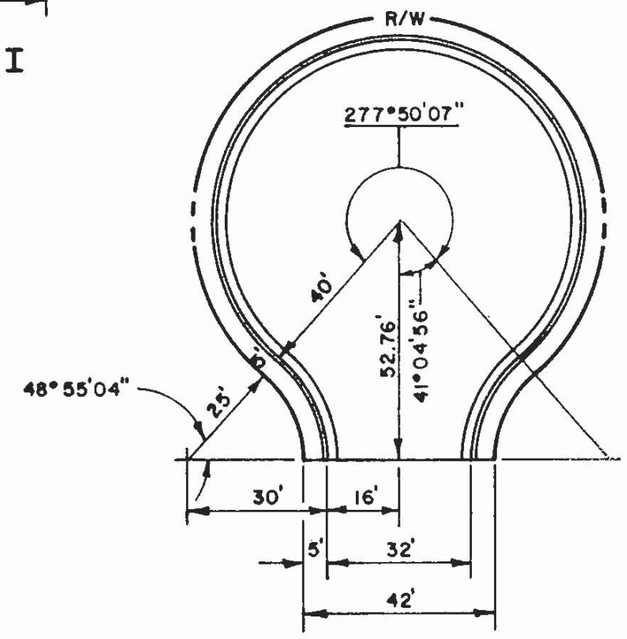
1. ANY DESIGN CALLING FOR A CUL-DE-SAC WITH LESS THAN A 40 FT. PAVING RADIUS MUST BE INDIVIDUALLY APPROVED BY TRAFFIC ENG. DIVISION.



CASE I



CASE II



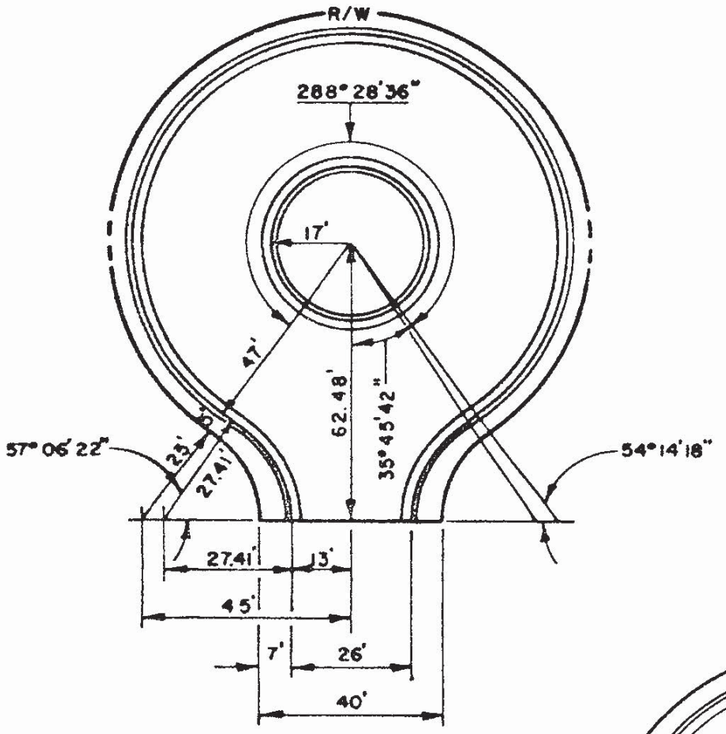
CASE III

REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC PLAIN CUL-DE-SACS DWG. 2510 AUG. 1986

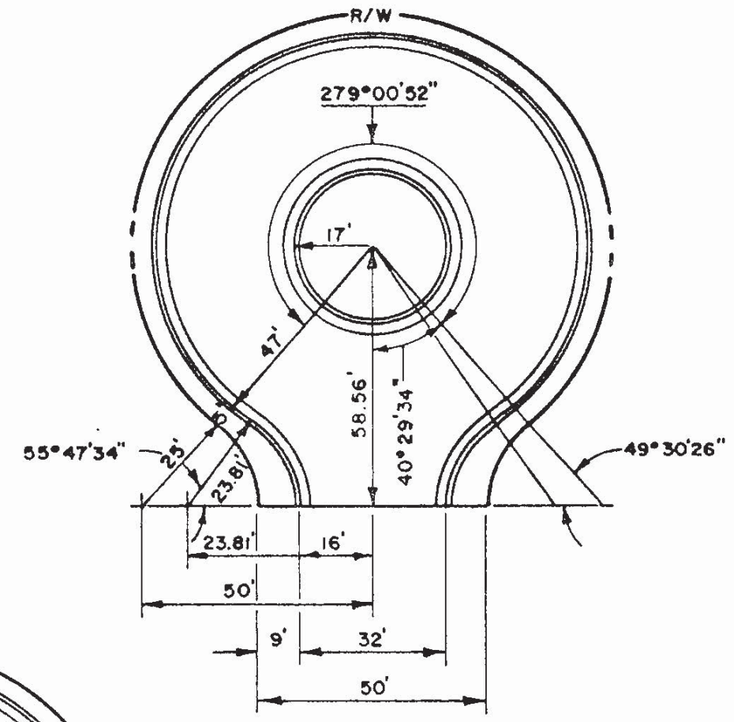
CASE	PAVED AREA SQ. YARDS	C. & G. LINEAL FEET
I	649	400
II	644	392
III	659	398

GENERAL NOTES:

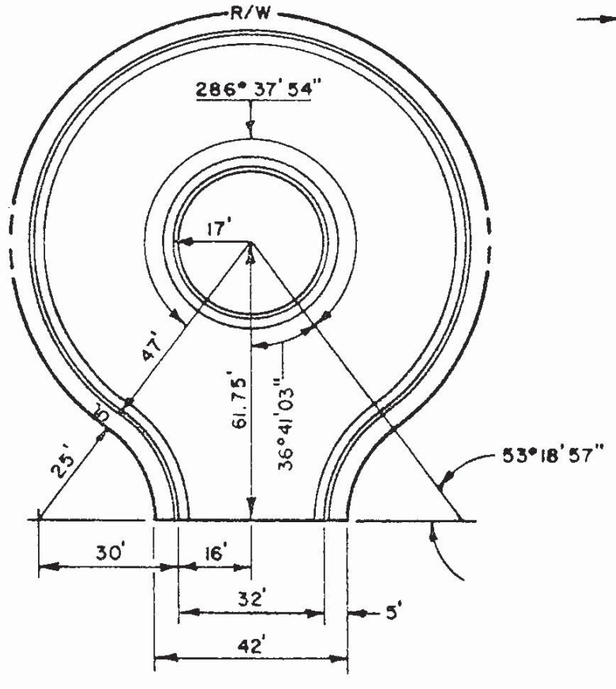
1. SEE GENERAL NOTES DWG, 2510.



CASE I



CASE II



CASE III

REVISIONS
12-31-92

CITY OF ALBUQUERQUE

TRAFFIC

ISLAND CUL-DE-SACS

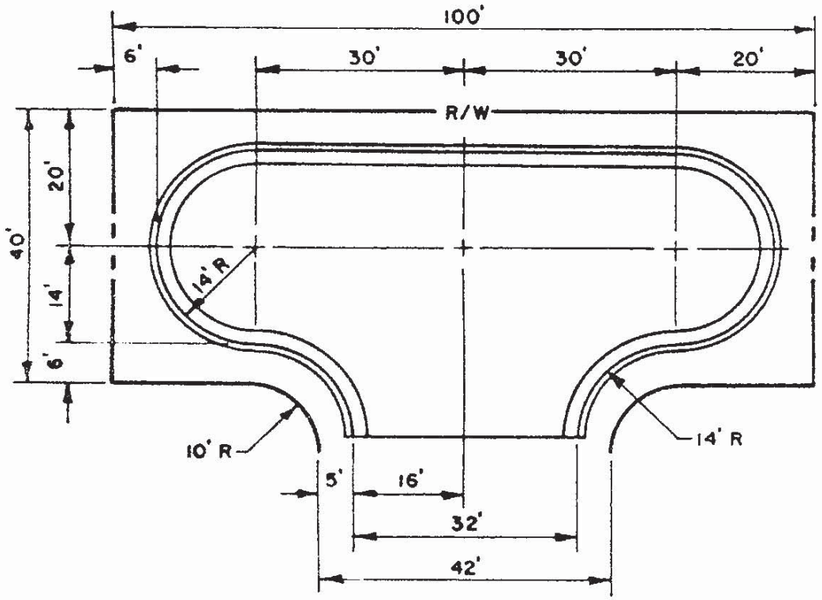
DWG. 2511

AUG. 1986

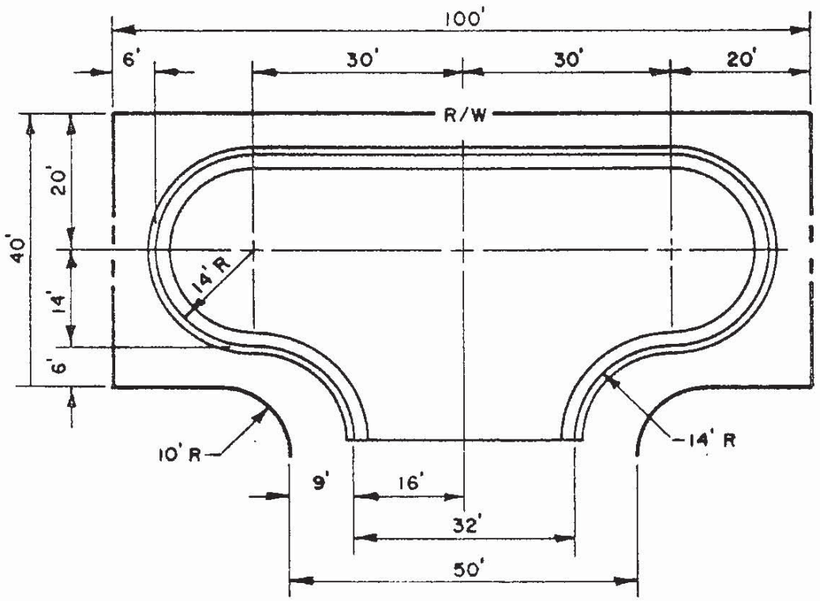
CASE	PAVED AREA SQ. YARDS	C. & G. LINEAL FEET
I	272	192
II	272	192
III	274	201

GENERAL NOTES:

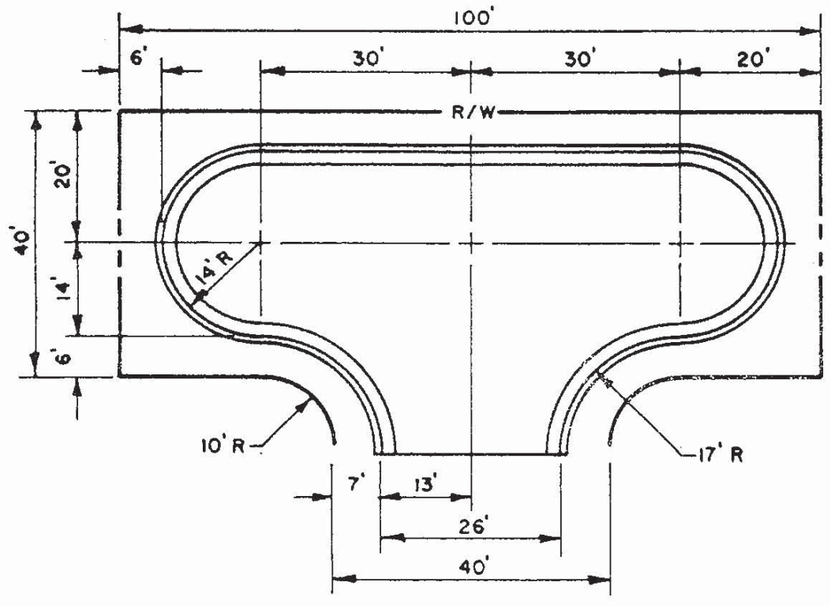
1. SEE GENERAL NOTES DWG. 2510.



CASE I



CASE II



CASE III

CITY OF ALBUQUERQUE

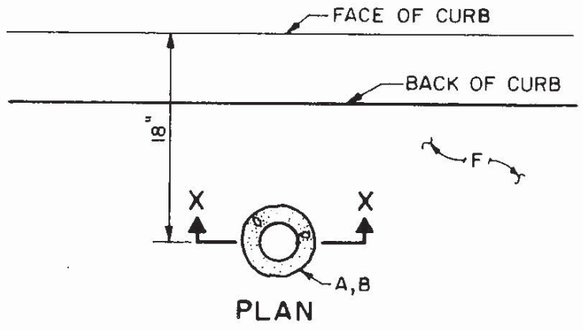
REVISIONS
12-31-92

TRAFFIC

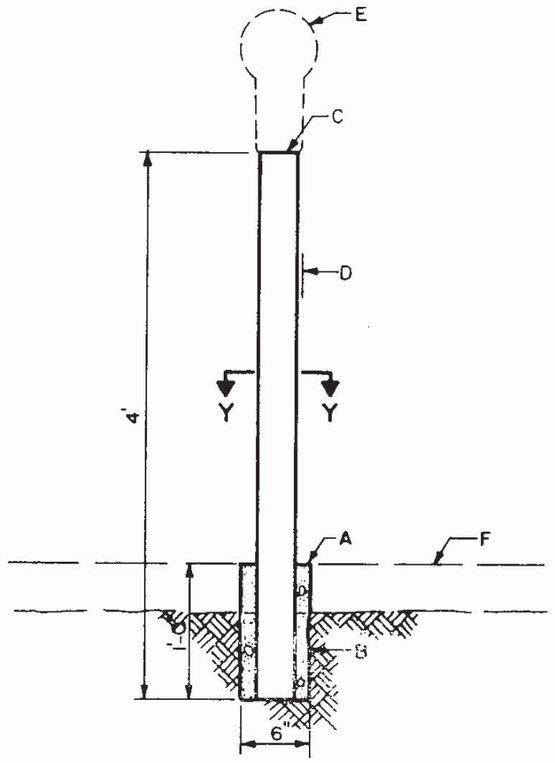
HAMMER HEAD CUL-DE-SACS

DWG. 2512

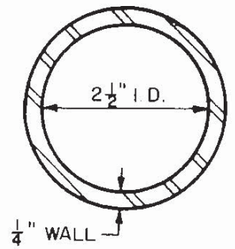
AUG. 1986



PLAN



SECTION X-X



SECTION Y-Y

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.

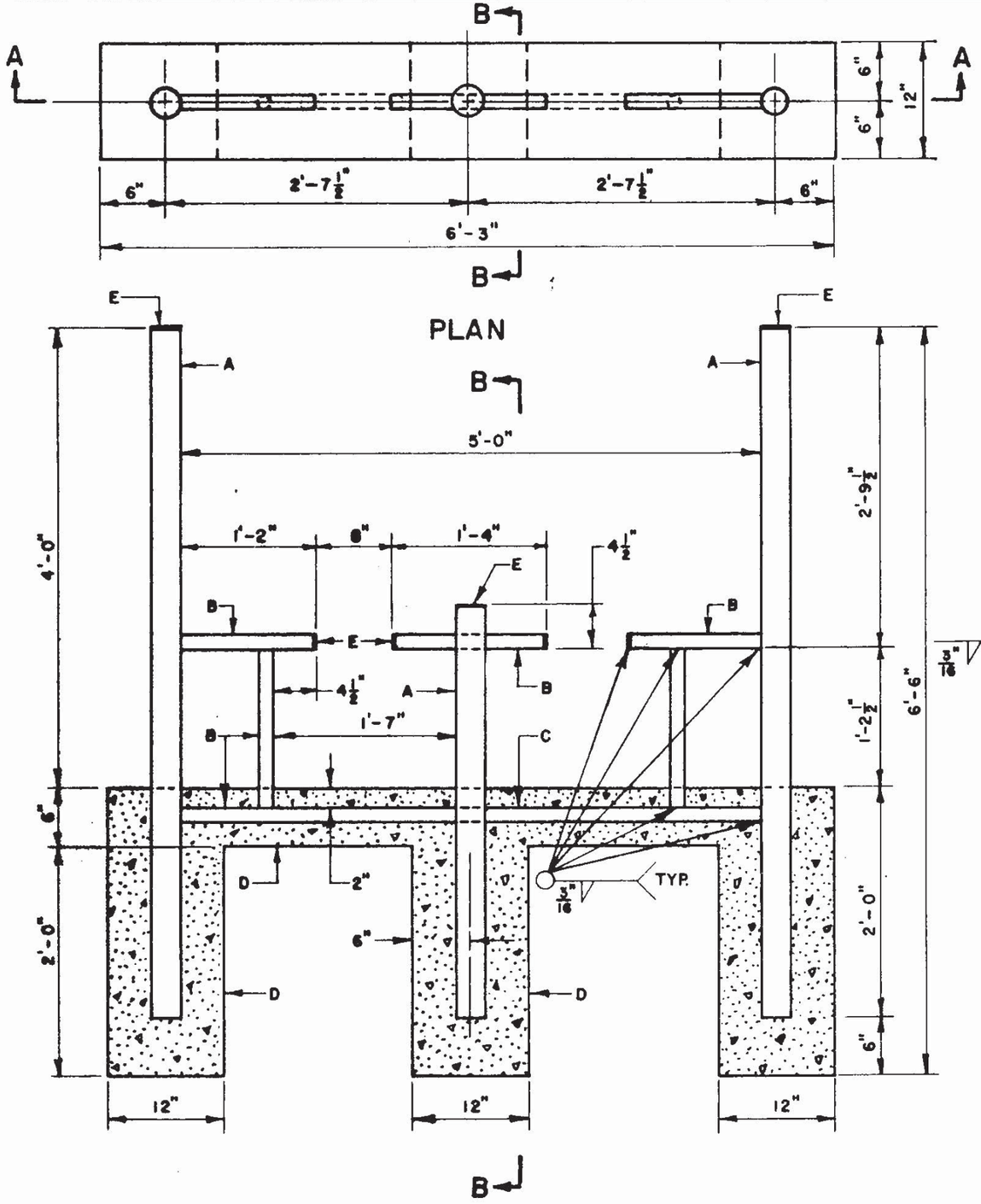
E. METER HEAD FURNISHED AND INSTALLED BY CITY.

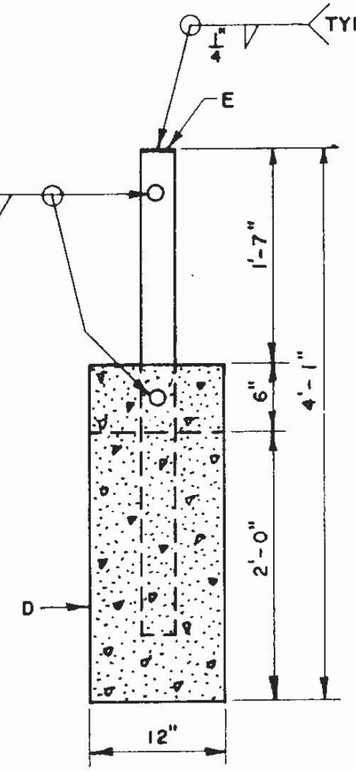
F. 4" P.C.C. SIDEWALK.

CITY OF ALBUQUERQUE

REVISIONS

TRAFFIC
POLE INSTALLATION
FOR PARKING METER
DWG.2528





GENERAL NOTES:

1. SQUARE TUBING MAY BE USED IN LIEU OF SCH. 40 PIPE.
2. GALVANIZE BICYCLE GATEWAY AFTER FABRICATION.
3. GRIND ALL WELDS SMOOTH.

CONSTRUCTION NOTES:

A. 3" DIA. SCH. 40 PIPE, TYPICAL.
B. 1½" DIA. SCH. 40 PIPE, TYPICAL.
C. ENCLOSE BOTTOM MEMBER IN CONCRETE.
D. PORTLAND CEMENT CONCRETE.
E. ¼" FLAT CAP, TYPICAL.

CITY OF ALBUQUERQUE

REVISIONS

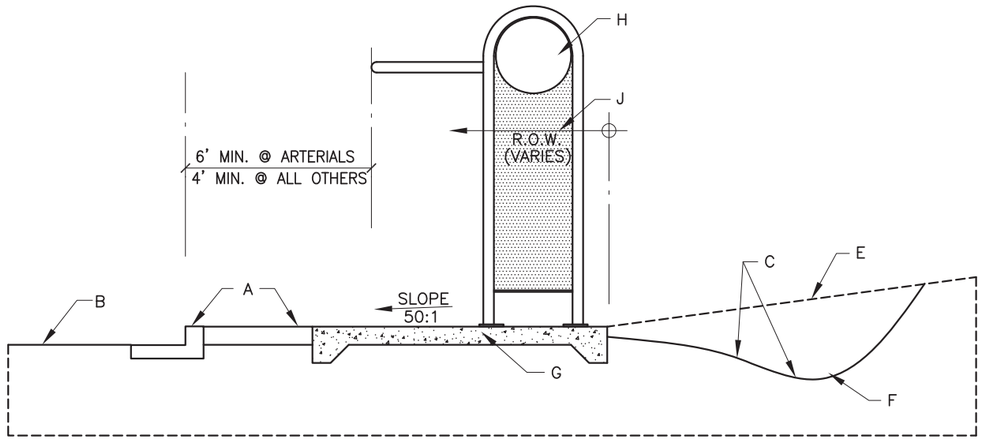
TRAFFIC

BICYCLE GATEWAY

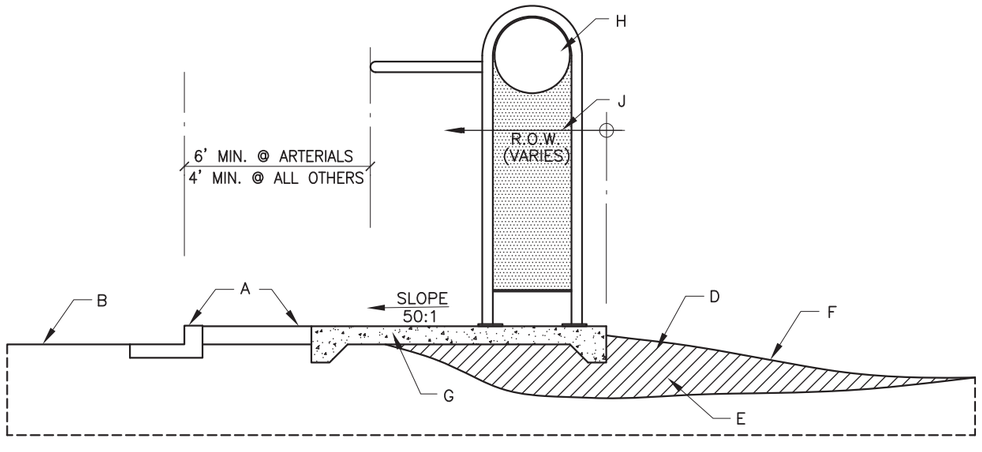
DWG. 2529

AUG. 1986

CUT SECTION



FILL SECTION



CONSTRUCTION NOTES:

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

B. EXISTING STREET.

C. SWALE, 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.

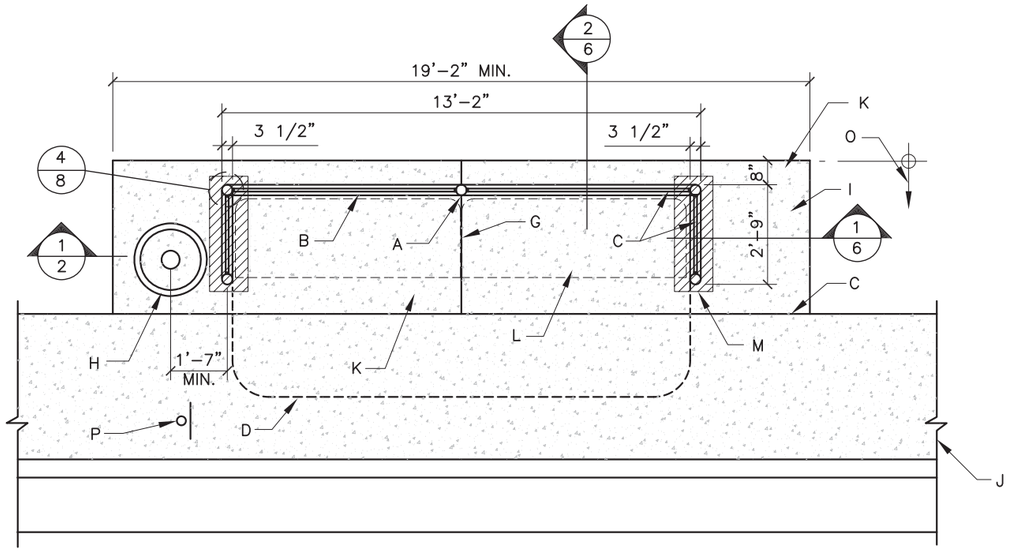
H. 16ga. METAL END PANEL.

J. SHELTER TO BE CONSTRUCTED WITHIN R.O.W. (NOTE: EASEMENT MAY BE REQUIRED IF R.O.W. DOES NOT PERMIT MINIMUM CLEARANCE TO STREET).

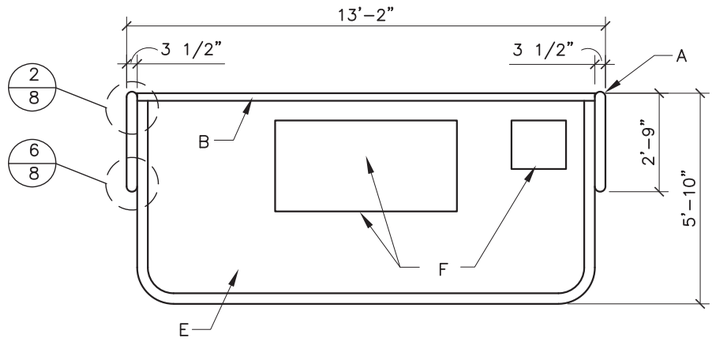
GENERAL NOTES:

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 GEOTECHNICAL ENGINEER TO DETERMINE THAT THE ON SITE SOIL ARE NON–EXPANSIVE AND CAPABLE OF 1500 PSF BEARING, AND SUITABLE FOR USE AS BACKFILL MATERIAL. THE OWNER SHALL PAY THE COAT 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 FOLLOW:
   8" 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"
   1 1/4" SCHEDULE 40 STANDARD PIPE, O.D.=1.660"
9. ALL METAL ITEMS EXCEPT ANY FACTORY FINISHED ITEMS SHALL BE FIELD OR SHOP PAINTED WITH ONE COAT OF "CORROBAR" STEEL PRIMER AND TWO COATS OF "SYN–LUSTRO" COLOR #Q12–64U, "BLUE GROTTO" MARRED AREAS SHALL BE RE–PRIMED & RE–PAINTED AFTER CONSTRUCTION IS COMPLETE. PAINT AND PRIMER TO BE APPLIED PER MANUFACTURE'S SPECIFICATIONS.
10. SHOP APPLY POWER COAT TO PAINT FINISH TO ALL SURFACES OF SHELTER, BENCH & TRASH RECEPTACLE, TOUCH UP ONLY IN FIELD.
11. SHELTER SHALL BE DESIGNED TO MEET ALL AASHTO WIND LOAD REQUIREMENTS.
12. CONCRETE PER SECTION 101, EXTERIOR CONCRETE. f'c = 3500 psi AT 28 DAYS.

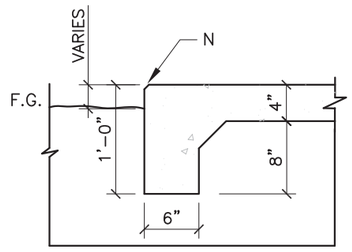
REVISIONS	CITY OF ALBUQUERQUE
	BUS SHELTER 'C' CUT SECTION, FILL SECTION
	DWG. 2535.01 JANUARY 2003



PLAN WITH SIDEWALK



ROOF PLAN



1/2 TURN DOWN DETAIL

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. 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. FASTEN TO 1/2" x 2" CHANNEL WITH RIVETS OR TEMPER PROOF SCREWS @ 8"o.c. PAINT TO MATCH SHELTER.

F. OPTIONAL FLUORESCENT DC LIGHT WITH PHOTO VOLTAIC SOLAR COLLECTOR AND BATTERY IN VENTED SECURITY HOUSING. LACOR MODEL SR100 OR EQUAL. LACOR STREET SCAPES, PHOENIX, ARIZONA, (602) 371–3110.

G. 1/2" EXPANSION JOINT.

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

I. 4" SLAB WITH 4x4 – W4.0 WWF, USE 10' DEEP TURNDOWN AT PERIMETER, BROWN FINISH.

J. EXISTING SIDEWALK & CURB (WIDTH VARIES). (SHADED)

K. SLOPE SLAB AT 1:50 MATCH ELEVATION OF SIDEWALK.

L. BENCH (SEE DETAILS, STD. DWG. 2535.09).

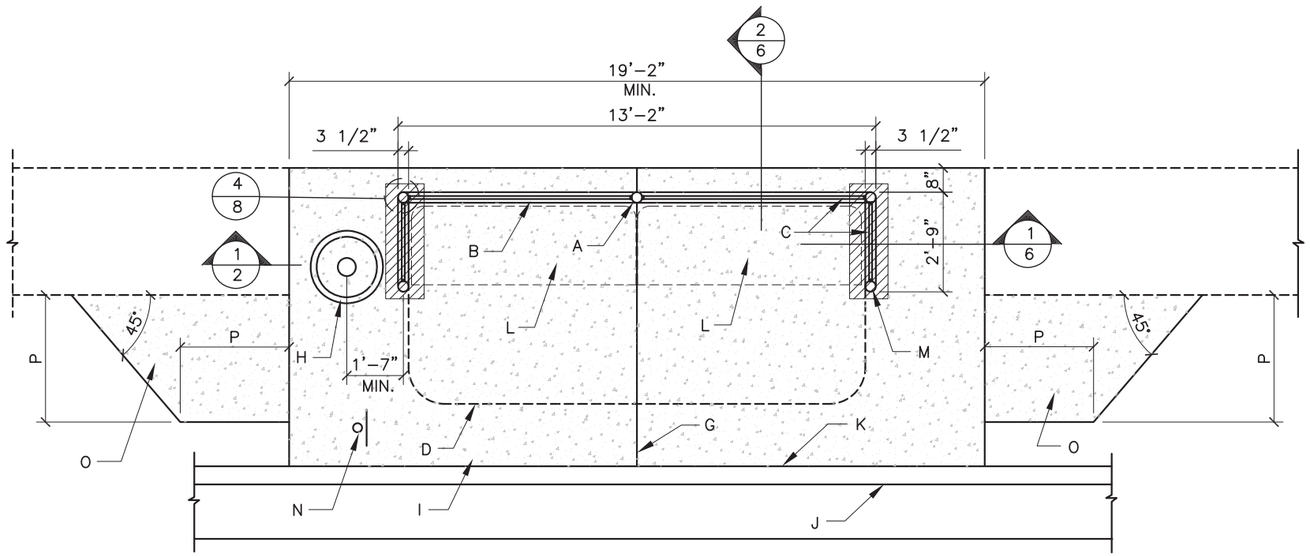
M. THICKENED SLAB (TYP.)

N. 3/4" CHAMFER EDGE.

O. R.O.W. VARIES. SHELTER MUST BE CONSTRUCTED WITHIN R.O.W.

P. BUS STOP SIGN. (TYP.)

REVISIONS	CITY OF ALBUQUERQUE
	BUS SHELTER 'C' PLAN & ROOF PLAN (W/ SIDEWALK) DWG. 2535.02 JANUARY 2003



PLAN WITHOUT SIDEWALK (OR SIDEWALK SET BACK FROM CURB

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. 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. (NOT USED)

F. (NOT USED)

G. 1/2" EXPANSION JOINT.

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

I. 4" SLAB WITH 4x4 – W4.0 WWF, USE 10' DEEP TURNDOWN AT PERIMETER, BROWN FINISH.

J. EXISTING CURB (SHADED)

K. MATCH SLOPE OF CURB.

L. BENCH (SEE STD. DWG. 2535.09).

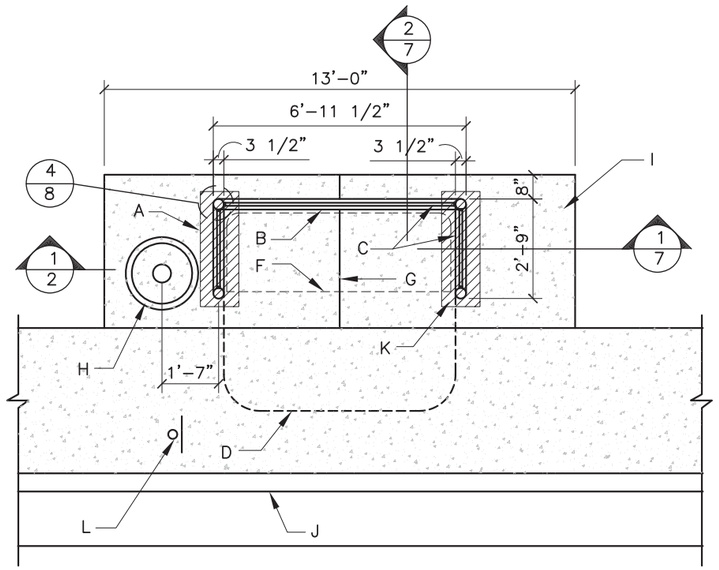
M. THICKENED SLAB (TYP.)

N. BUS STOP SIGN (TYP.)

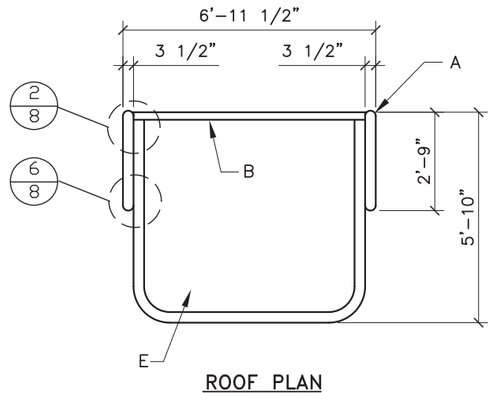
O. NEW CONCRETE INFILL IF SIDEWALK IS SET BACK FROM CURB. SIZE AND SHAPE OF INFILL MAY VARY.

P. MATCH SIDEWALK WIDTH.

REVISIONS	CITY OF ALBUQUERQUE
	BUS SHELTER 'C' PLAN (W/O SIDEWALK)
	DWG. 2535.03 JANUARY 2003



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 CHASSIS, 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. FASTEN TO 1/2" x 2" CHANNEL WITH RIVETS OR TAMPER 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).

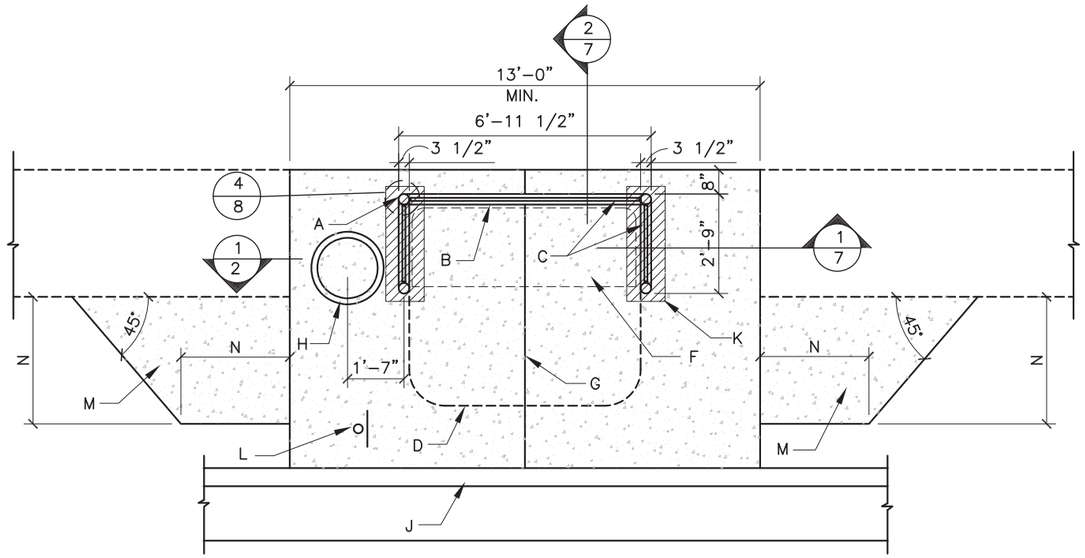
I. 4" SLAB WITH 4x4 – W4.0 WWF, USE 10' DEEP TURNDOWN AT PERIMETER, BROWN FINISH.

J. EXISTING CURB & SIDEWALK (SHADED). MATCH SLOPE OF CURB.

K. THICKENED SLAB. (TYP.)

L. BUS STOP SIGN. (TYP.)

REVISIONS	CITY OF ALBUQUERQUE
	BUS SHELTER 'D' PLAN & ROOF PLAN (W/ SIDEWALK)
	DWG. 2535.04 JANUARY 2003



PLAN WITHOUT SIDEWALK (OR SIDEWALK SET BACK FROM CURB)

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. 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. FASTEN TO 1/2" x 2" CHANNEL WITH RIVETS OR TAMPER 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 – W4.0 WWF, USE 10' DEEP TURNDOWN AT PERIMETER, BROWN FINISH.

J. EXISTING CURB. (SHADED).

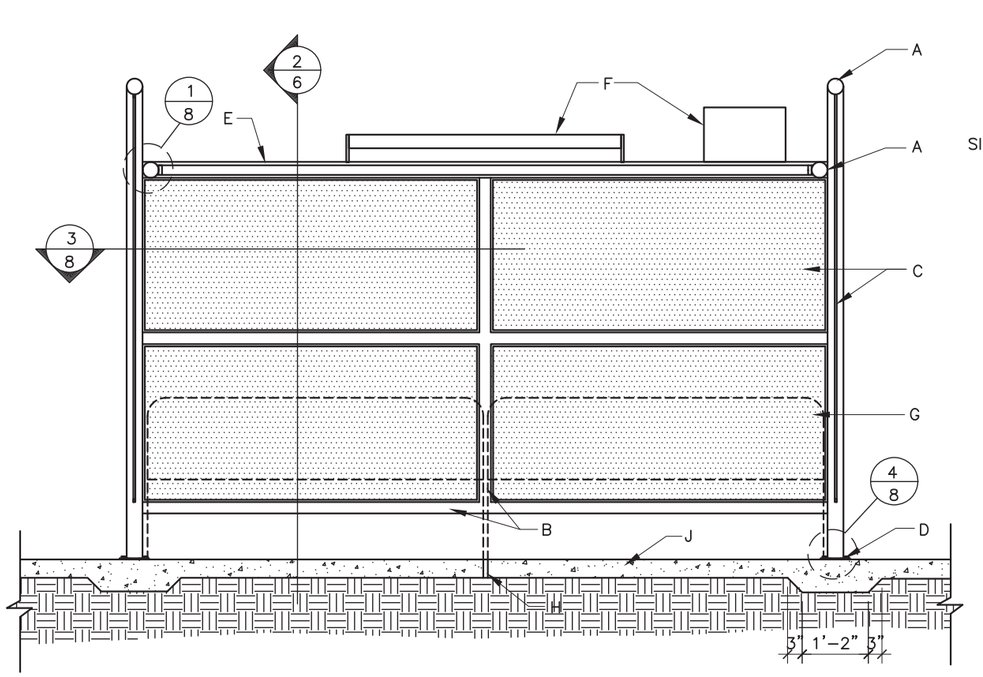
K. THICKENED SLAB. (TYP.)

L. BUS STOP SIGN. (TYP.)

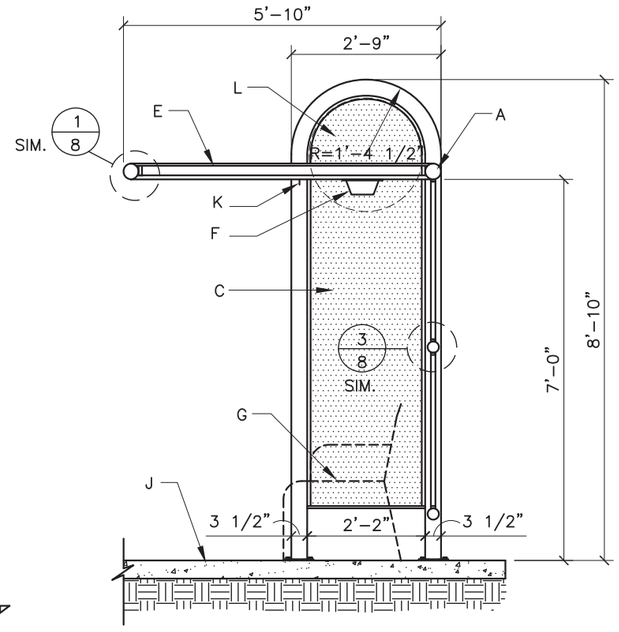
M. NEW CONCRETE INFILL IF SIDEWALK IS SET BACK FROM CURB. SIZE AND SHAPE OF INFILL MAY VARY.

N. MATCH SIDEWALK WIDTH.

REVISIONS	CITY OF ALBUQUERQUE
	BUS SHELTER 'D' (W/O/ SIDEWALK)
	DWG. 2535.05 JANUARY 2003



1/6 SECTION



2/6 SECTION

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 4/8.

E. ROOF: HIGH STRENGTH F.R.P. SMOOTH SURFACE TOP AND BOTTOM, FASTEN TO 1/2"x2" CHANNEL WITH RIVETS OR TEMPER 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. SR100 OR EQUAL. LACOR STREET SCAPES, PHOENIX, ARIZONA, (602) 371-3110.

G. BENCH (SEE DETAILS ON ST. DWG. 2535.09).

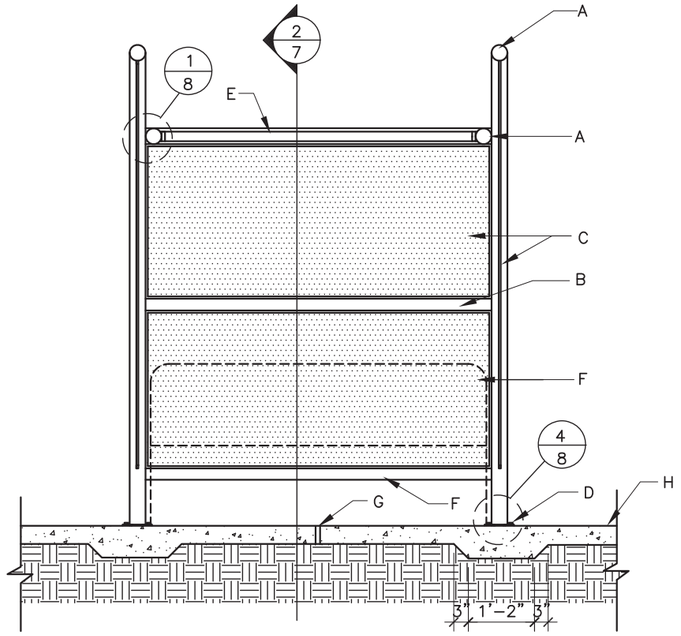
H. 1/2" EXPANSION JOINT.

J. 4" SLAB WITH 4X4 - W4.0xW4.0 WWF, USE 10" DEEP TURNDOWN AT PERIMETER, BROOM FINISH.

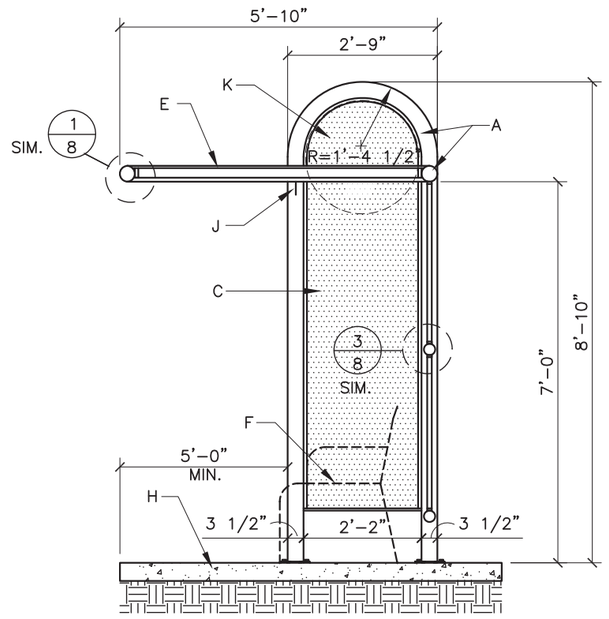
K. 1/2" STEEL BRACKET, WELD TO PIPE FRAME, GRIND SMOOTH.

L. 16 GA. SHEET METAL PANEL (BEYOND). ATTACH WITH RIVETS OR TAMPER PROOF SCREWS (8 PER PANEL).

REVISIONS	CITY OF ALBUQUERQUE
	BUS SHELTER 'C' ELEVATION / SHELTER
	DWG. 2535.06 JANUARY 2003



1/7 SECTION



2/7 SECTION

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 4/8.

E. ROOF: HIGH STRENGTH F.R.P. SMOOTH SURFACE TOP AND BOTTOM, FASTEN TO 1/2"x2" CHANNEL WITH RIVETS OR TEMPER PROOF SCREWS AT 8" o.c.

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

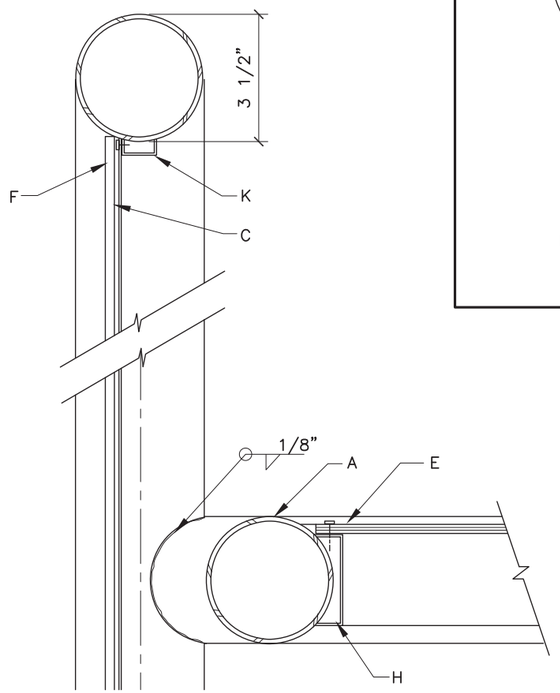
G. 1/2" EXPANSION JOINT.

H. 4" SLAB WITH 4X4 – W4.0xW4.0 WWF, USE 10" DEEP TURNDOWN AT PERIMETER, BROOM FINISH.

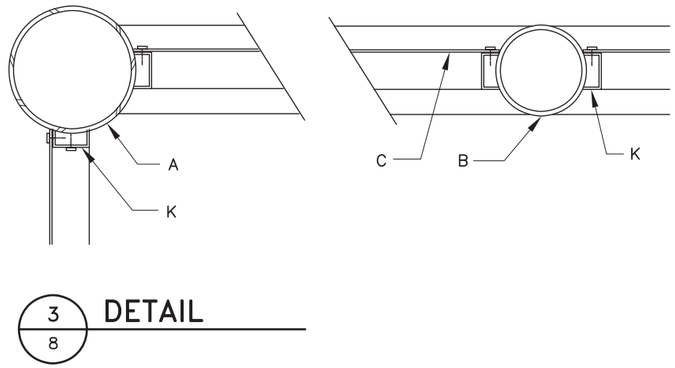
J. 1/2" STEEL BRACKET, WELD TO PIPE FRAME, GRIND SMOOTH.

K. 16 GA. SHEET METAL PANEL (BEYOND). ATTACH WITH RIVETS OR TAMPER PROOF SCREWS (8 PER PANEL).

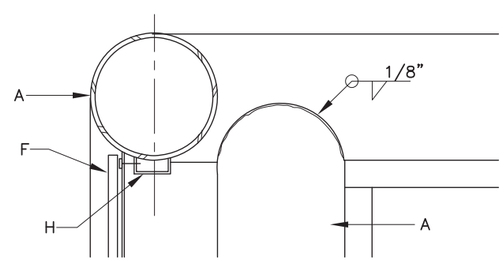
REVISIONS	CITY OF ALBUQUERQUE
	BUS SHELTER 'D' ELEVATION / SECTION
	DWG. 2535.07 JANUARY 2003



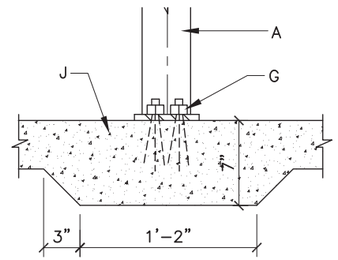
1 DETAIL 8



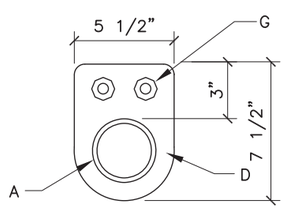
3 DETAIL 8



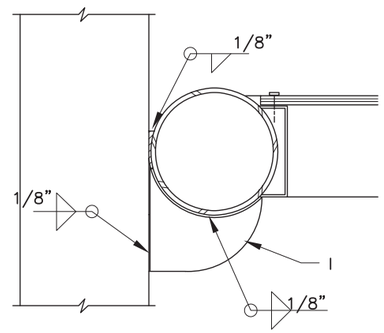
2 DETAIL 8



4 DETAIL 8



5 DETAIL 8



6 DETAIL 8

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 HIGH STRENGTH F.R.P. SMOOTH SURFACE TOP AND BOTTOM, FASTEN TO 1/2" x 2" CHANNEL WITH RIVETS FOR TAMPER 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"øx 3 1/2" REDHEAD BOLTS (TYP.)

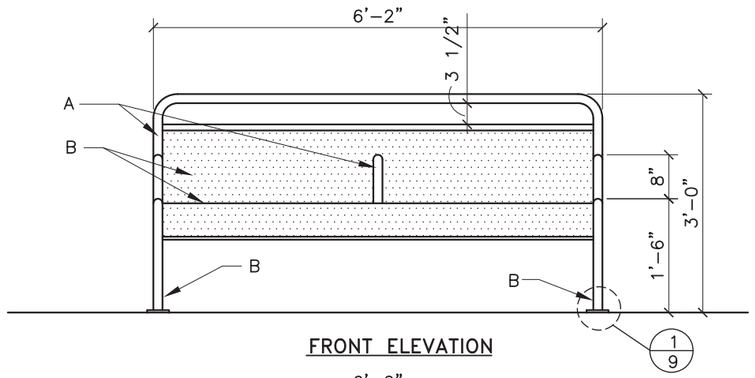
H. 2" x 1/2" x 1/4" CHANNEL WELD TO PIPE FRAME GRIND SMOOTH.

I. 1/4" STEEL BRACKET WELD TO PIPE FRAME GRIND SMOOTH.

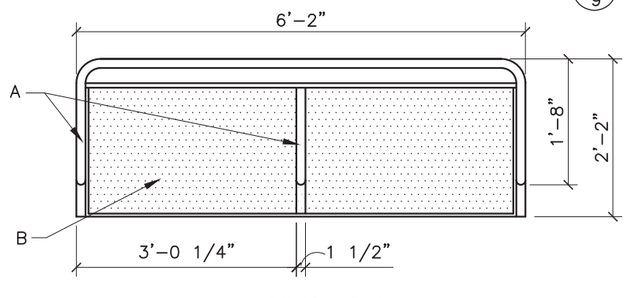
J. CONCRETE SLAB.

K. 1" x 1/2" x 1/4" CHANNEL WELD TO PIPE GRIND SMOOTH.

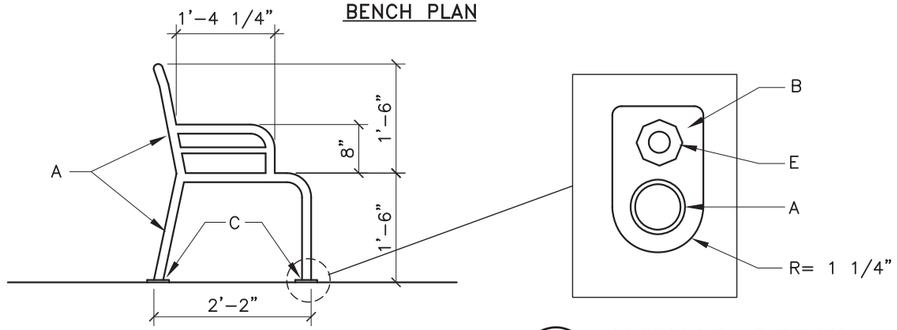
REVISIONS	CITY OF ALBUQUERQUE
	BUS SHELTER 'C' & 'D' DETAILS
	DWG. 2535.08 JANUARY 2003



FRONT ELEVATION



BENCH PLAN



SIDE ELEVATION

1/9 ANCHOR DETAIL

CONSTRUCTION NOTES:

A. BENCH FRAME: 1–1/2" O.D. COPED, WELDED PIPE CHASSIS 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.

REVISIONS	CITY OF ALBUQUERQUE
	BUS SHELTER 'C' & 'D' BENCH
	DWG. 2535.09 JANUARY 2003

CONSTRUCTION NOTES:

A. TRASH RECEPTACLE 16 GA. PERFORATED STEEL WITH 8" O.D. PIPE PEDESTAL PAINT FINISH.

B. ANCHORING: 1 HOLE FOR 1/2" x 24" ø ROD THROUGH BOTTOM OF PEDESTAL.

C. NEW CONCRETE SLAB.

D. 1/4"ø ANCHORS (2) WELD TO x 6' PEDESTAL.

E. LIQUID APPLIED WATER PROOFING ON ALL BELOW GRADE STEEL.

F. PADLOCK HASP.

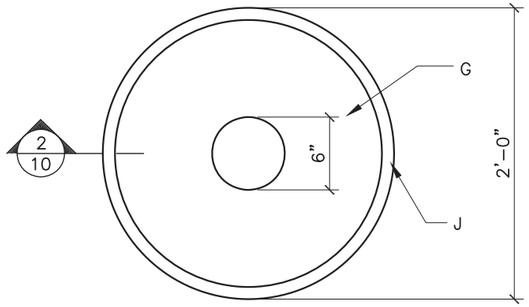
G. REMOVABLE TOP 16 GA. STEEL POWDER COATING FINISH.

H. 8" PEDESTAL W/ 1/2"x6"x24" ANCHOR BAR WELD TO PEDESTAL.

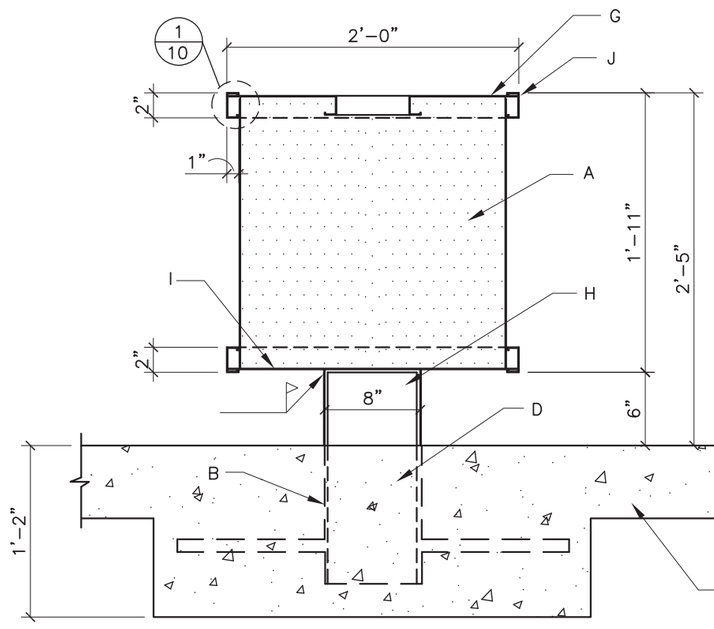
I. 10 GA. SOLID BOTTOM WELD TO PEDESTAL.

J. 2" x 1" STEEL CHANNEL FRAME AT TOP AND BOTTOM.

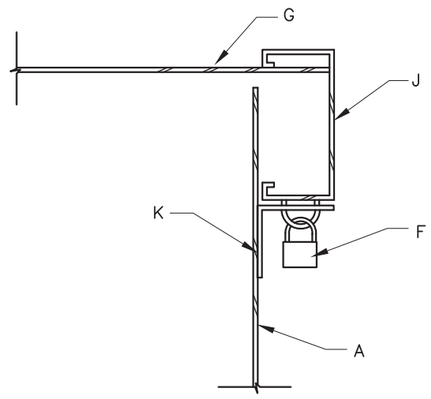
K. 2"x2"x1/4" STEEL ANGLE. WELD TO PERFORATED STEEL LINER.



PLAN

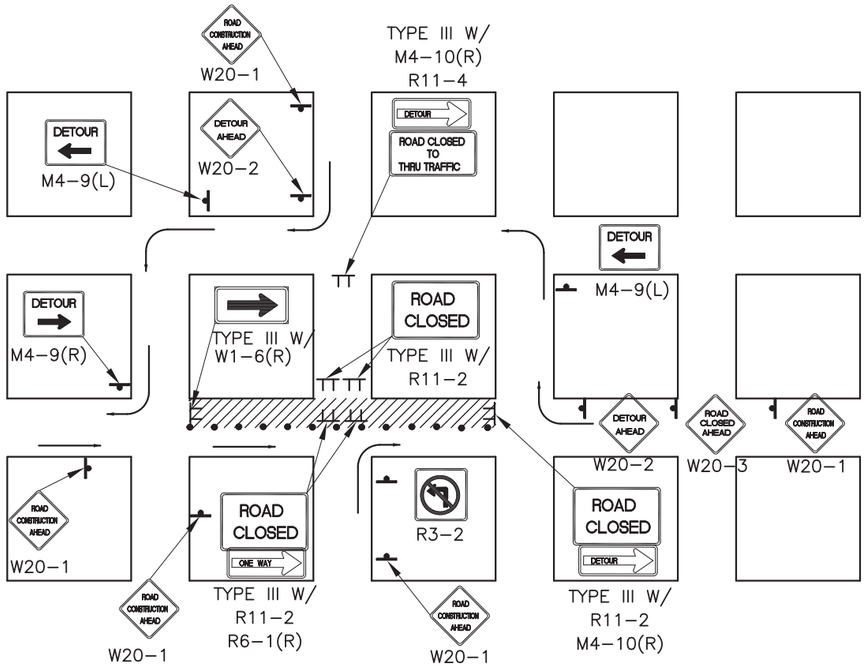


2 / 10 SECTION

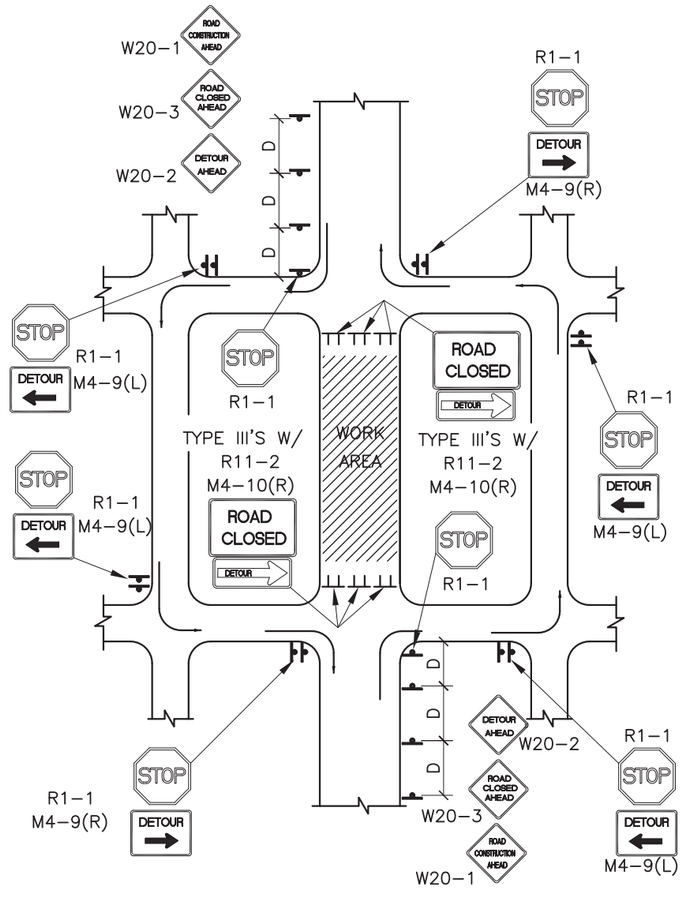


1 / 10 HASP DETAIL

REVISIONS	CITY OF ALBUQUERQUE
	BUS SHELTER 'C' & 'D' TRASH RECEPTACLE
	DWG. 2535.10 JANUARY 2003

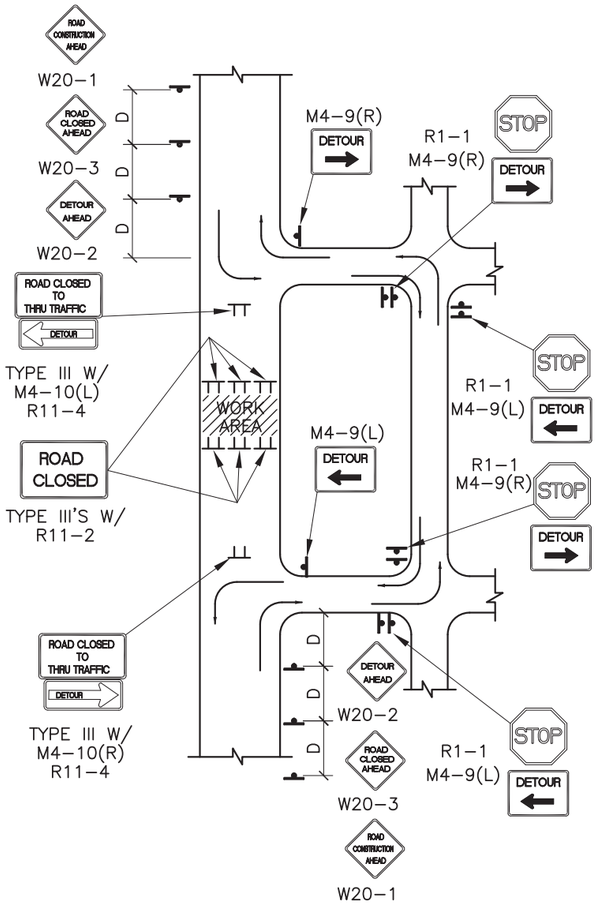


TYPICAL ONE DIRECTION DETOUR



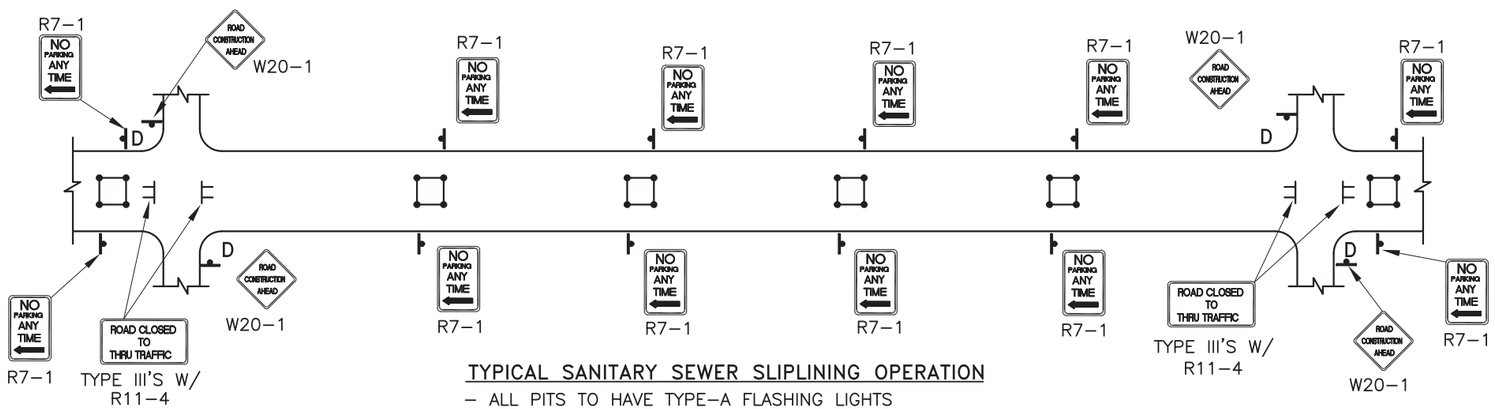
TYPICAL STREET CLOSURE

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



TYPICAL STREET CLOSURE

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



TYPICAL SANITARY SEWER SLIPLINING OPERATION

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

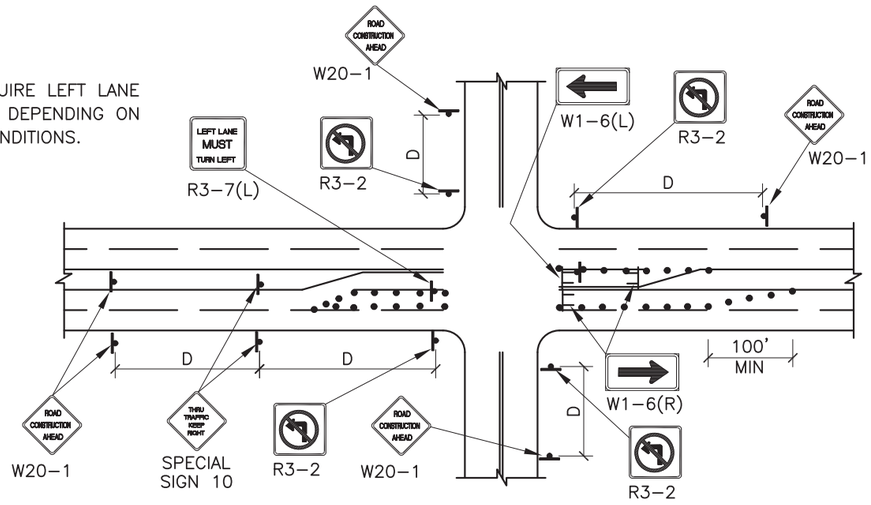
GENERAL NOTE:

1. ALL CONSTRUCTION WARNING SIGNS SHALL HAVE A BLACK LEGEND ON A ORANGE BACKGROUND.
2. ALL ADVANCE WARNING SIGNS SHALL BE A MINIMUM OF 36" THIRTY SIX INCHES BY 36" THIRTY SIX INCHES IN SIZE AND SHALL HAVE ONE WARNING LIGHT.

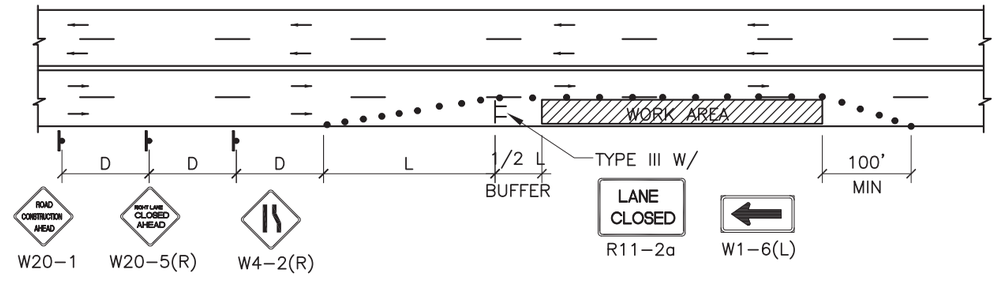
REVISIONS	CITY OF ALBUQUERQUE
4/01	TRAFFIC CONTROL
	TYPICAL TRAFFIC CONTROL & SIGNING EXAMPLES (REF. MUTCD)
	DWG. 2541A JANUARY 2003

NOTE:

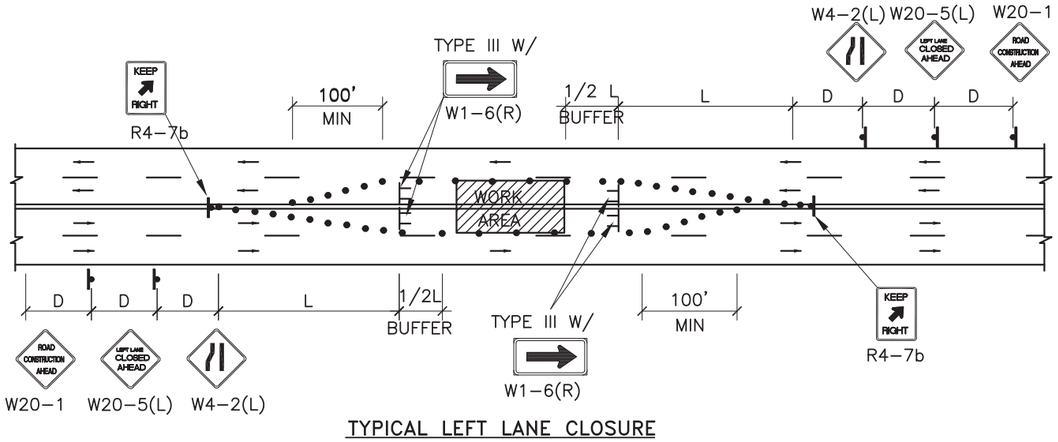
MAY REQUIRE LEFT LANE CLOSURE DEPENDING ON FIELD CONDITIONS.



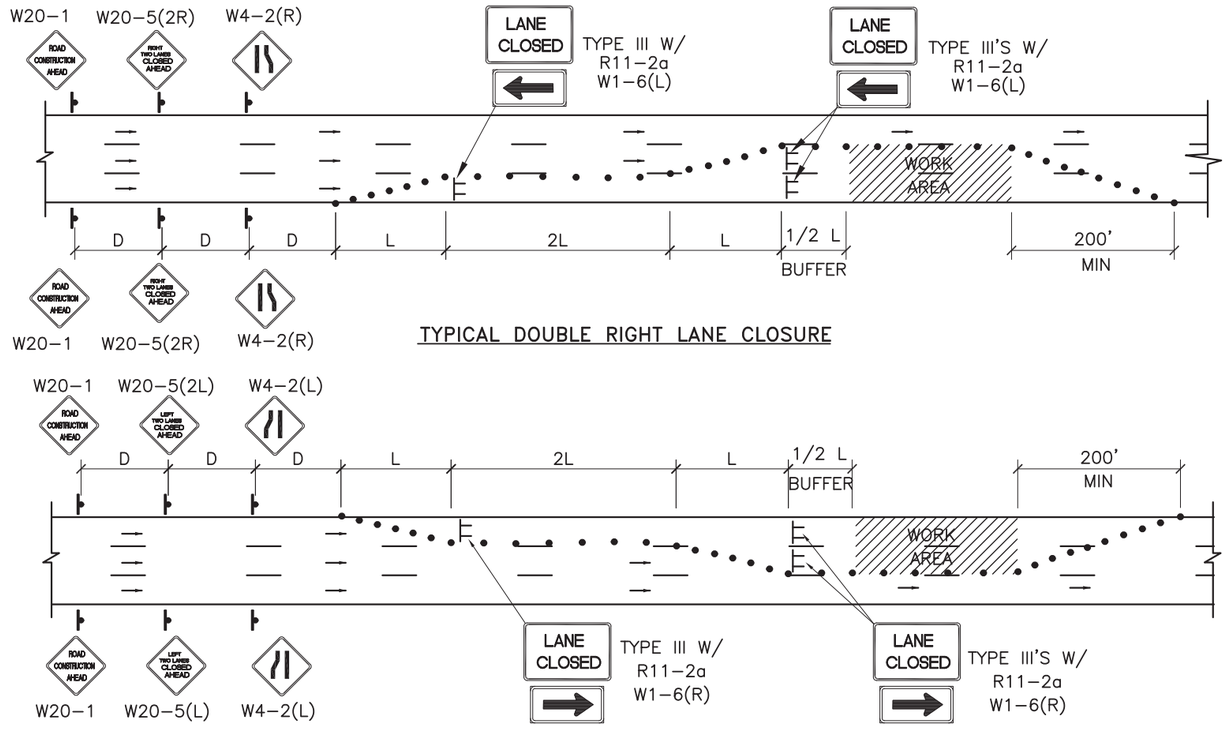
TYPICAL LANE CLOSURE AT INTERSECTION
NOTE: DEPENDING ON WORK ZONE LOCATION.



TYPICAL RIGHT LANE CLOSURE

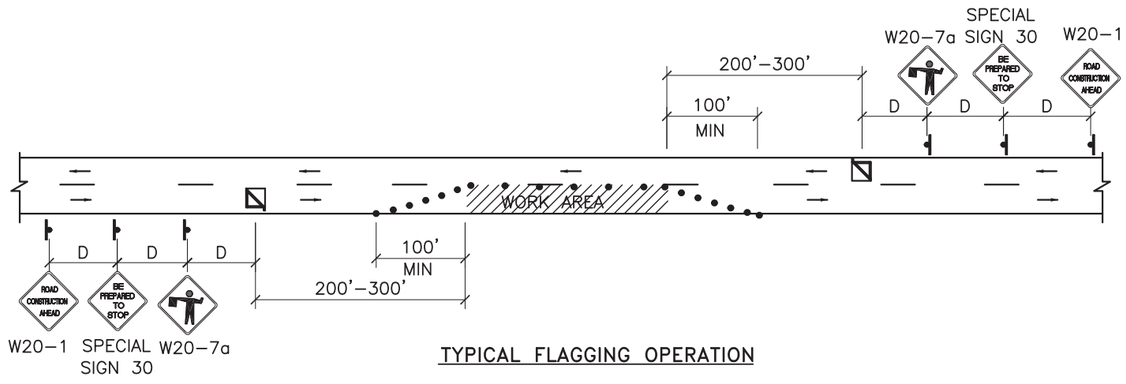


TYPICAL LEFT LANE CLOSURE



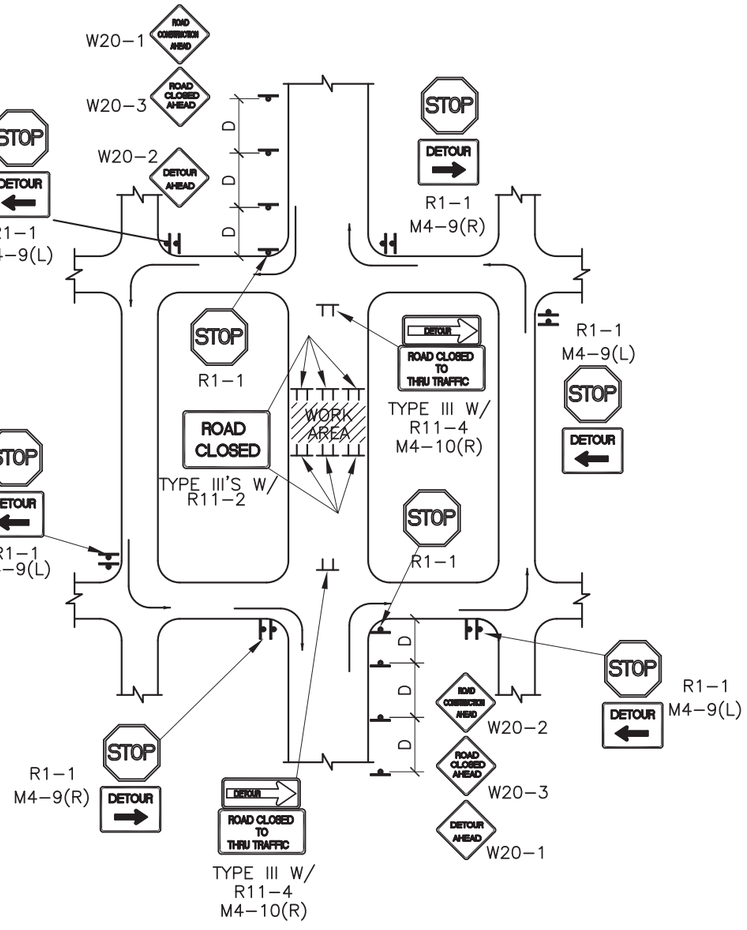
TYPICAL DOUBLE RIGHT LANE CLOSURE

TYPICAL DOUBLE LEFT LANE CLOSURE



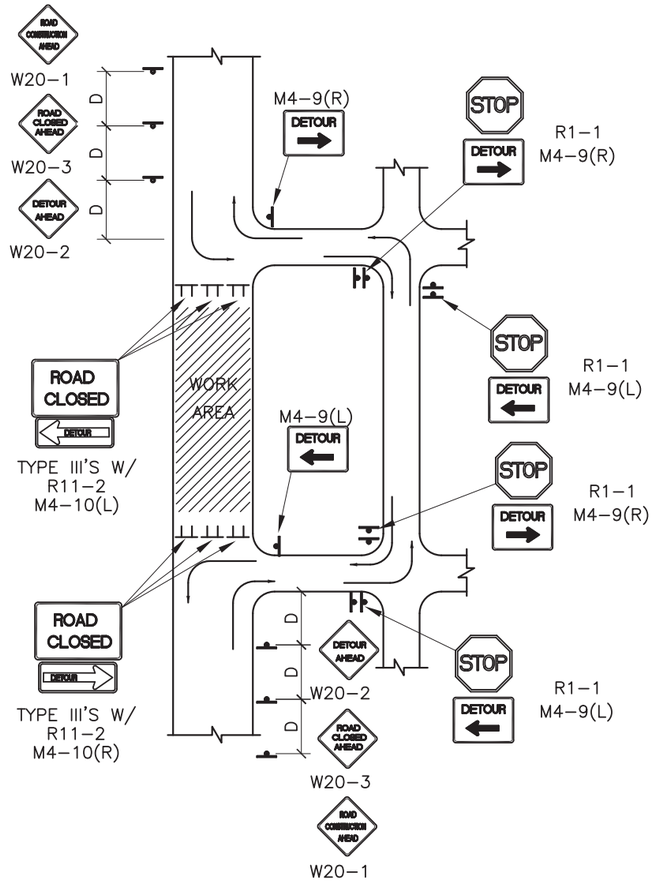
TYPICAL FLAGGING OPERATION

REVISIONS	CITY OF ALBUQUERQUE
4/01	TRAFFIC CONTROL TYPICAL TRAFFIC CONTROL & SIGNING EXAMPLES (REF. MUTCD) DWG. 2541B JANUARY 2003



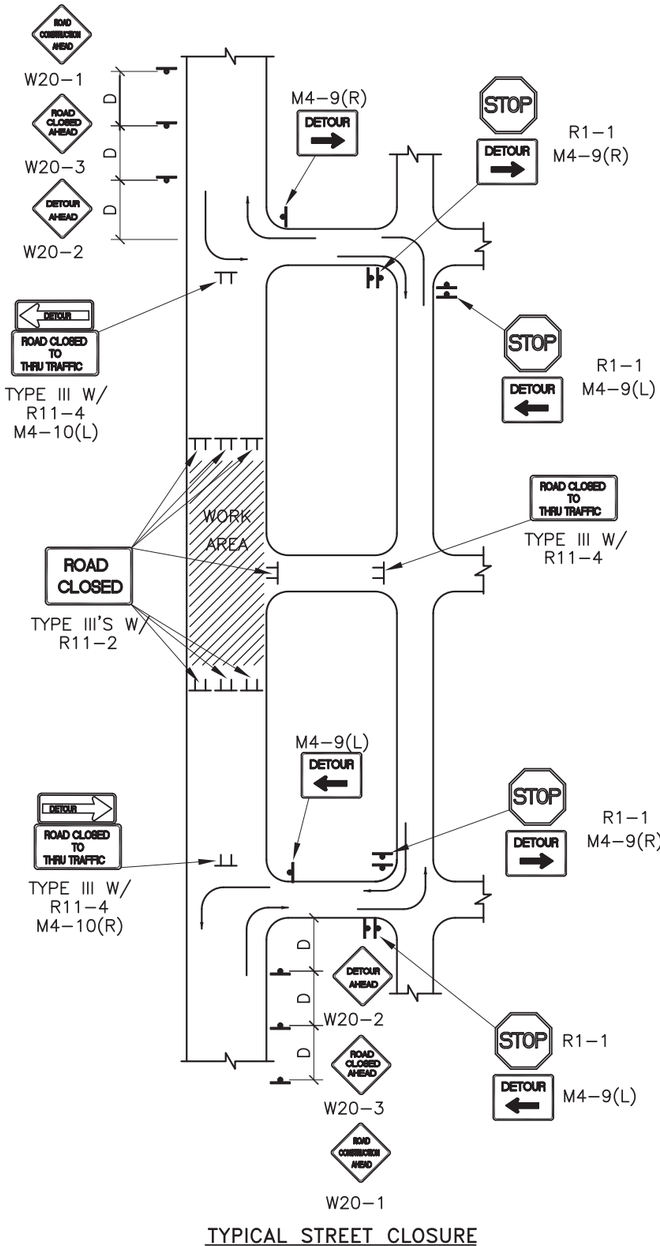
TYPICAL MID-BLOCK CLOSURE

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



TYPICAL STREET CLOSURE

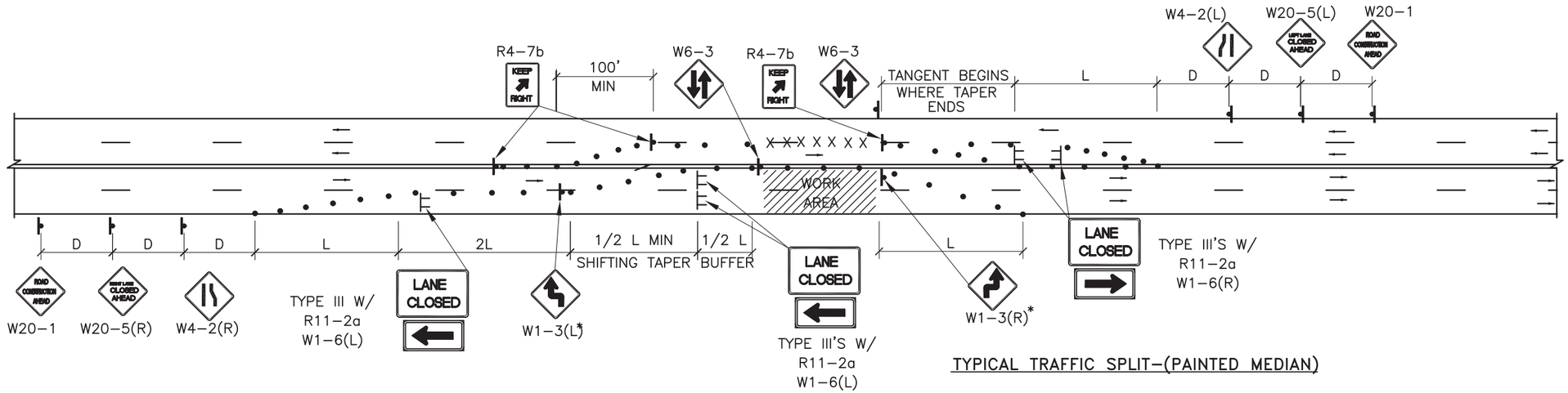
NOTE: (R1-1) BASED ON FIELD CONDITIONS.



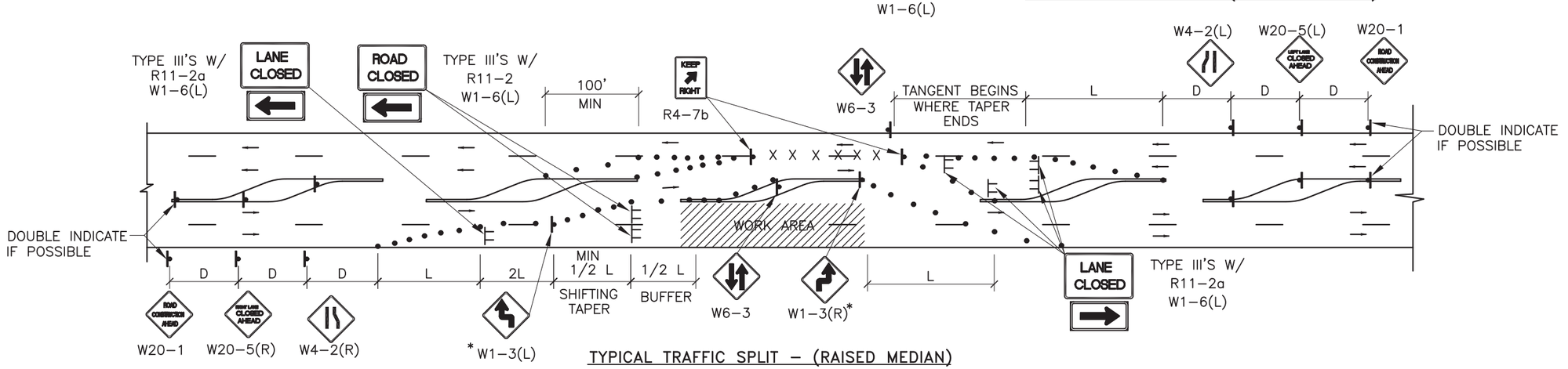
TYPICAL STREET CLOSURE

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

REVISIONS	CITY OF ALBUQUERQUE
1/91	TRAFFIC CONTROL TYPICAL TRAFFIC CONTROL & SIGNING EXAMPLES (REF. MUTCD) DWG. 2541C JANUARY 2003



TYPICAL TRAFFIC SPLIT–(PAINTED MEDIAN)

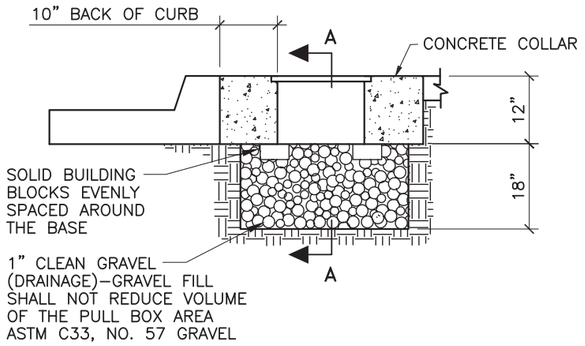


TYPICAL TRAFFIC SPLIT – (RAISED MEDIAN)

TRAFFIC SPLIT NOTES:

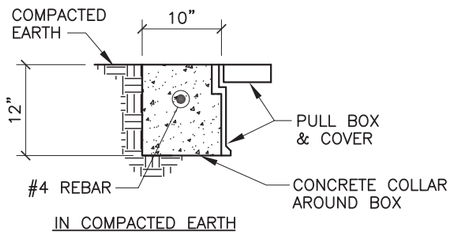
1. THE OFFSET DISTANCE MUST BE CALCULATED IN ALL SHIFTING TAPERS. THE OFFSET DISTANCES SHALL INCLUDE LANE WIDTHS PLUS MEDIAN WIDTHS.
2. 1/2 L IS THE MINIMUM DISTANCE FOR SHIFTING TAPERS.
3. REVERSE CURVES MAY BE IMPLEMENTED. ALL CURVE DATA SHALL BE CALCULATED.
4. MEDIAN REMOVAL SHALL BE REQUIRED IF 1/2 L OR REVERSE CURVE IS NOT SUFFICIENT.
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.

REVISIONS	CITY OF ALBUQUERQUE
4/01	TRAFFIC CONTROL TYPICAL TRAFFIC CONTROL & SIGNING EXAMPLES (REF. MUTCD) DWG. 2541D JANUARY 2003

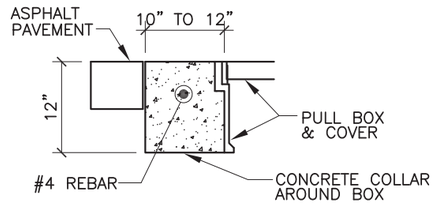


TYPICAL PULL BOX INSTALLATION

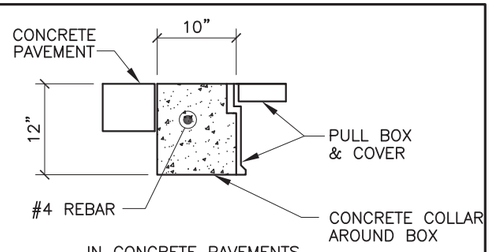
NOTE: SEE CONCRETE COLLAR DETAILS, THIS SHEET



IN COMPACTED EARTH



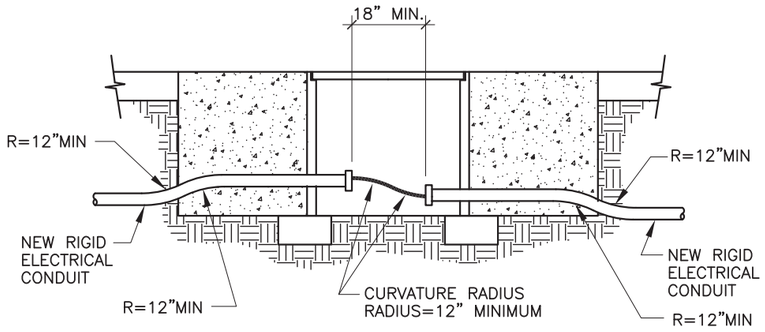
IN ASPHALT PAVEMENTS



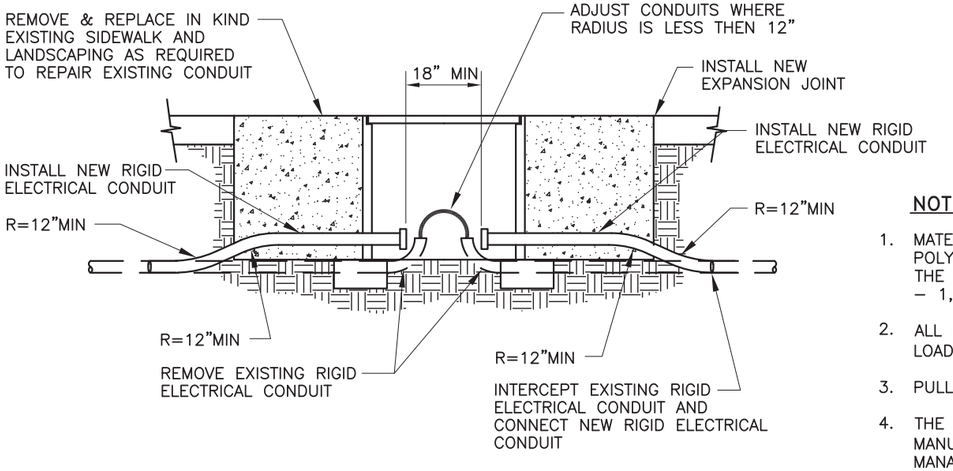
IN CONCRETE PAVEMENTS

CONCRETE COLLAR DETAILS

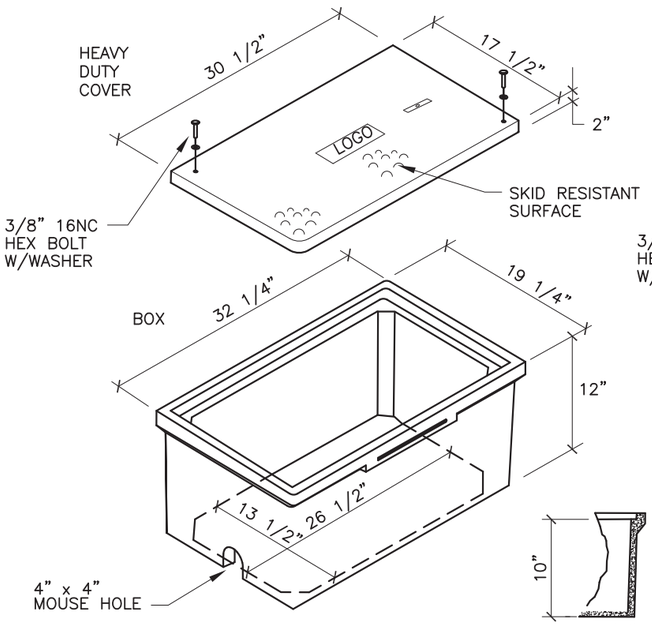
NOTES: 1. THE CONCRETE IN THE COLLAR SHALL BE PER SEC. 101, EXTERIOR CONCRETE, f'c=3500 PSI AT 28 DAYS.
2. THE CONCRETE COLLAR SHALL BE CONSIDERED INCIDENTAL TO THE PULL BOX BID ITEMS.



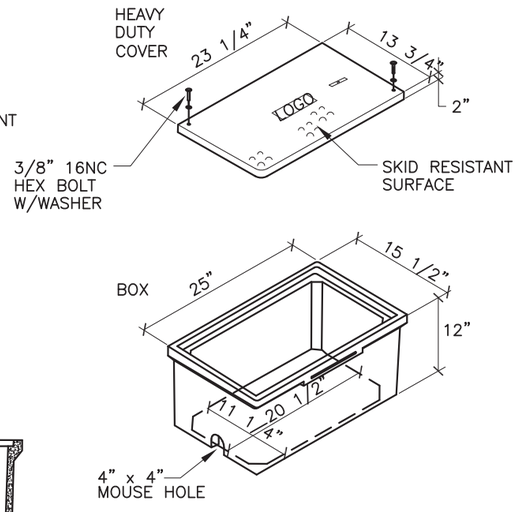
TRAFFIC SIGNAL PULL BOX (TYPICAL) NEW CONDUIT INSTALLATION



TRAFFIC SIGNAL PULL BOX (TYPICAL)



LARGE PULL BOX



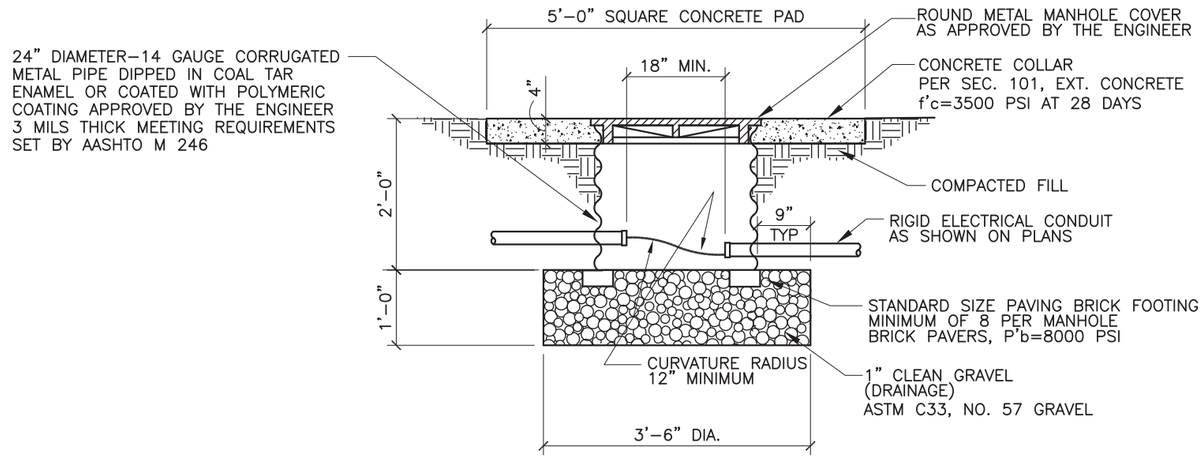
STANDARD PULL BOX

PULL BOX DETAILS

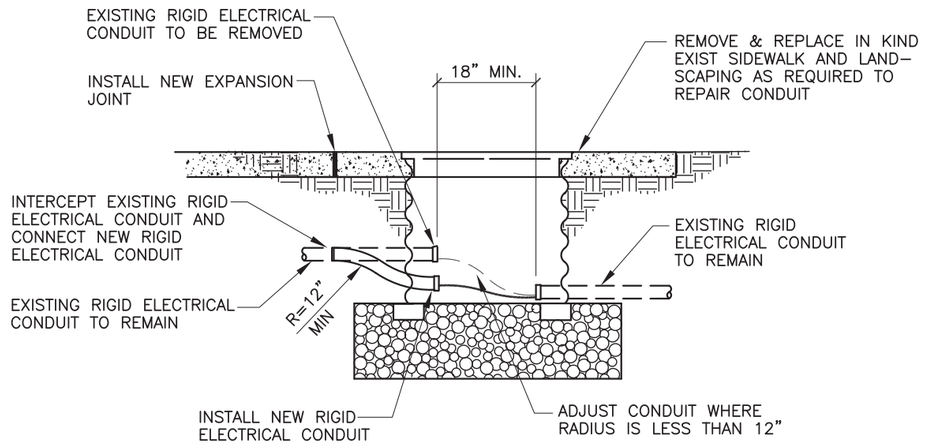
NOTES FOR HEAVY DUTY REINFORCED POLYMER MORTAR PULL BOX AND COVERS

1. MATERIAL TO BE AN AGGREGATE CONSISTING OF SAND AND GRAVEL BOUND TOGETHER WITH A POLYMER AND REINFORCED WITH CONTINUOUS WOVEN GLASS STRANDS. THE MATERIAL MUST HAVE THE FOLLOWING MECHANICAL PROPERTIES: COMPRESSIVE STRENGTH – 11,000 PSI, TENSILE STRENGTH – 1,700 PSI, FLEXURAL STRENGTH – 7,500 PSI.
2. ALL PULL BOX COVERS SHALL BE HEAVY DUTY REINFORCED POLYMER MORTAR, HAVING A SERVICE LOAD OF 22,568 LBS OVER 10" SQUARE (225 PSI).
3. PULL BOX TYPE AND LOGO SHALL BE APPROVED BY THE PROJECT MANAGER.
4. THE DIMENSIONS OF THE PULL BOXES SHOWN ARE NOMINAL DIMENSIONS AND MAY VARY AS TO THE MANUFACTURER'S RECOMMENDATIONS. ALL DIMENSIONS SHALL BE VERIFIED BY THE PROJECT MANAGER.
5. ELECTRICAL PULL BOX (STANDARD) SHALL BE A HEAVY DUTY REINFORCED POLYMER MORTAR PULL BOX AND COVER MEASURING 13 3/4" x 23 1/4" x 2".

REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC
	TRAFFIC SIGNAL PULL BOX DETAILS
	DWG. 2550 JANUARY 2003



TRAFFIC SIGNAL MANHOLE (TYPICAL)
NEW CONDUIT INSTALLATION

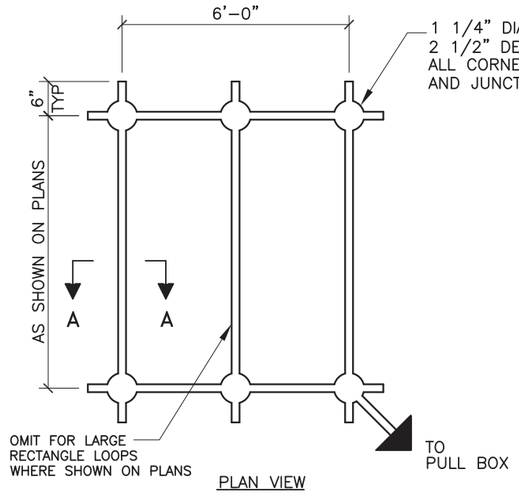


TRAFFIC SIGNAL MANHOLE (TYPICAL)
RETROFIT INSTALLATION

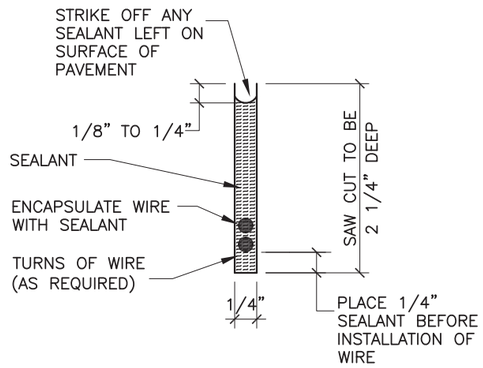
NOTES:

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

REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL MANHOLE DETAILS DWG. 2551 JANUARY 2003

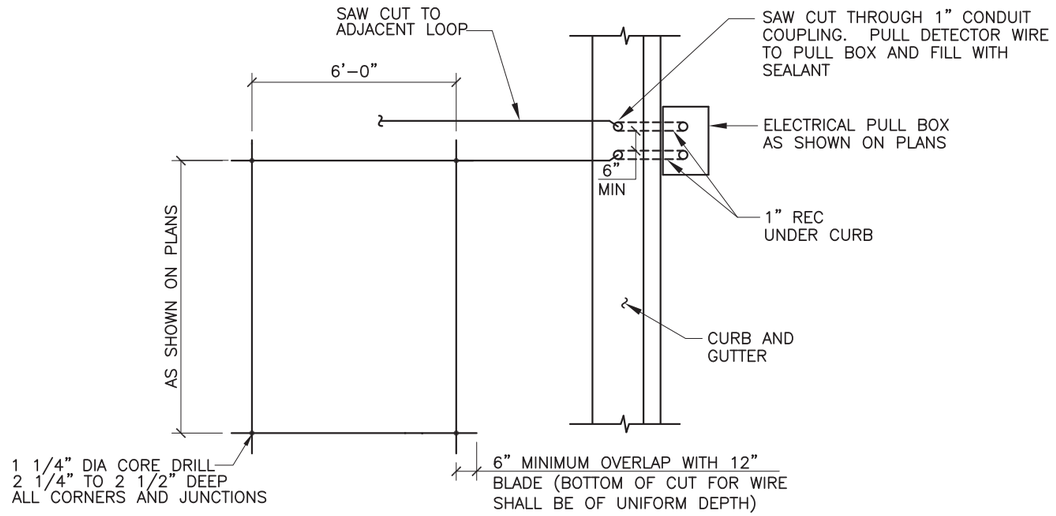


PLAN VIEW

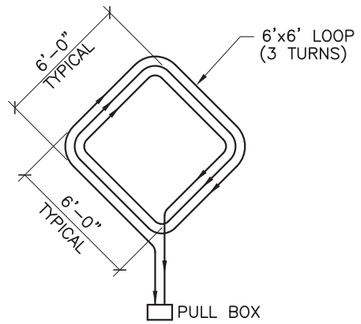


SECTION A–A

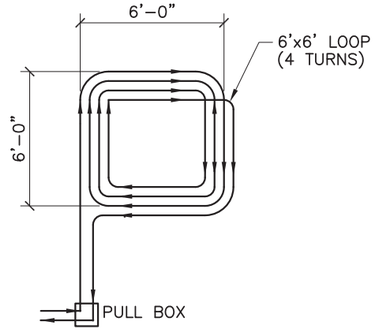
TYPICAL ROADWAY LOOP SAW CUT DETAIL



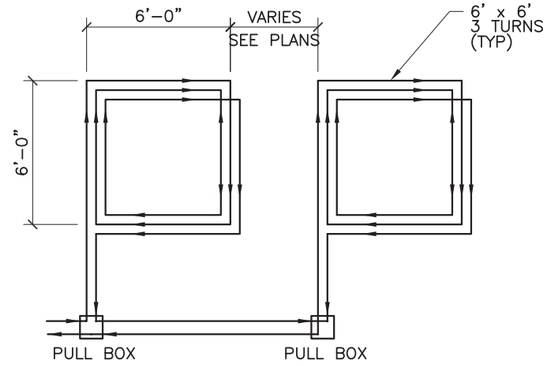
PLAN VIEW



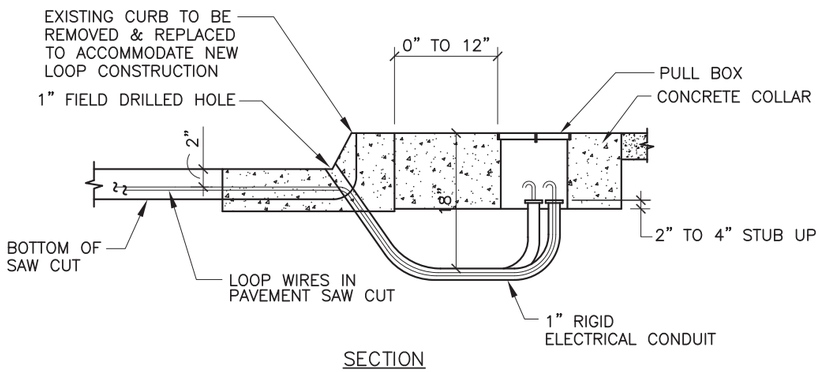
EXTEND CALL LOOP WIRING DETAIL



SYSTEM LOOP WIRING DETAIL

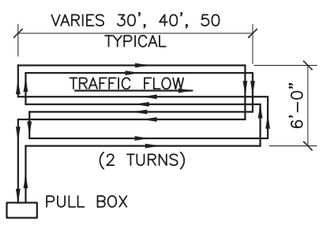


SERIES LOOP WIRING DETAIL

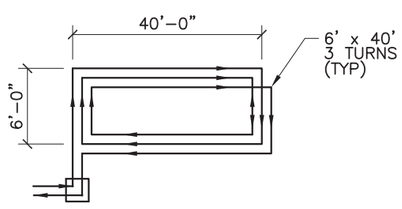


SECTION

LOOP WIRE TERMINATION DETAILS



QUADRUPOLE LOOP WIRING DETAIL



LARGE RECTANGULAR LOOP WIRING DETAIL

TYPICAL LOOP WIRE PLACEMENT DETAILS

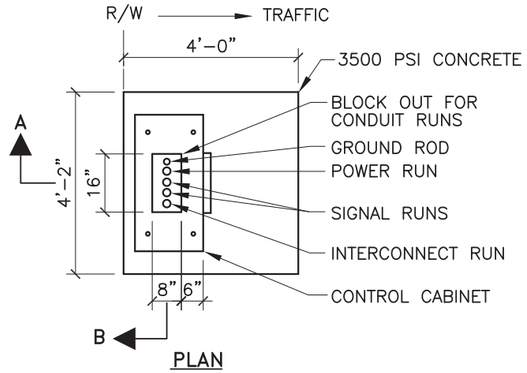
LOOP DETECTOR NOTES

1. ALL LOOP DETECTOR WIRE SHALL BE #14 AWG STRANDED COPPER WIRE WITH CROSS–LINKED POLYETHYLENE INSULATION (INDUSTRY TYPE XHHW) CONFORMING TO THE REQUIREMENTS OF IMSA SPECIFICATIONS #51–3 1984. BACKER ROD SHALL NOT BE USED IN THE INSTALLATION OF LOOP (EXCEPT PIECES LESS THAN 12" WHICH MAY BE PLACED OVER THE WIRE AT THE SAW CUT CORNERS TO HOLD THE WIRE. A 1/4" LAYER OF SEALANT SHALL BE PLACED IN THE SAW CUT BEFORE PLACEMENT OF THE WIRE AND THEN THE WIRE SHALL BE ENCAPSULATED WITH SEALANT. HOT–MELT RUBBERIZED ASPHALT LOOP DETECTOR SEALANT MANUFACTURED BY CRAFCO SHALL BE AN ACCEPTABLE SEALANT ALTERNATE.
2. ALL LOOP LEAD IN CABLES SHALL BE TAGGED AT CABINET TO IDENTIFY. EACH CABLE BY LOOP AND PHASE NUMBER.
3. GROUND LOOP LEAD IN CABLE SHIELDING IN CONTROL CABINET.
4. SEPARATE 1" RIGID ELECTRICAL CONDUITS ARE REQUIRED FOR EACH PAIR OF DETECTOR WIRES.

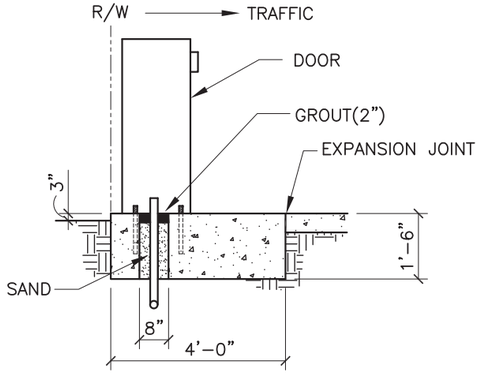
NOTES

1. WIRES MUST BE WOUND IN THE DIRECTION SHOWN.
2. QUADRUPOLE LOOPS SHALL HAVE 2 TURNS.
3. EXTEND CALL LOOPS SHALL HAVE 3 TURNS.
4. SYSTEM DETECTOR LOOPS SHALL HAVE 4 TURNS.
5. LARGE RECTANGLE LOOPS SHALL HAVE 3 TURNS.

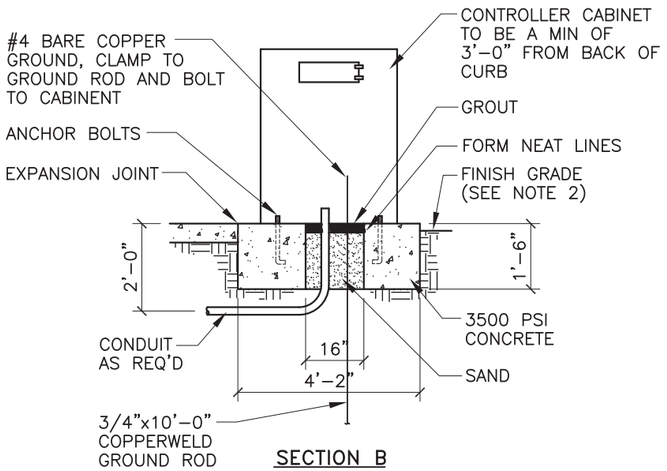
REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL LOOP DETECTOR DETAILS
	DWG. 2552 JANUARY 2003



PLAN



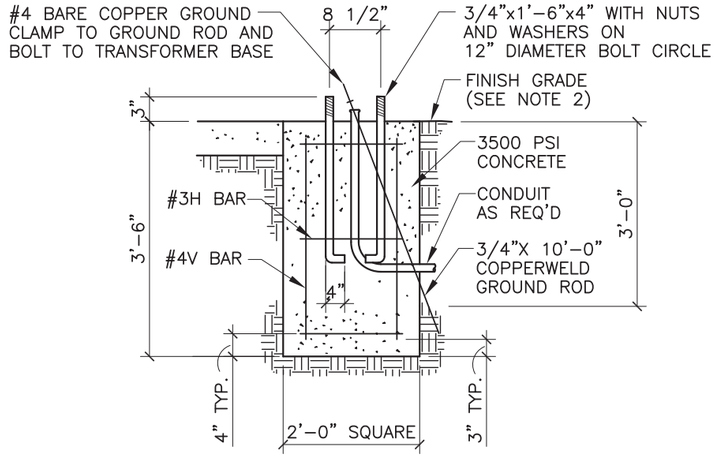
SECTION A



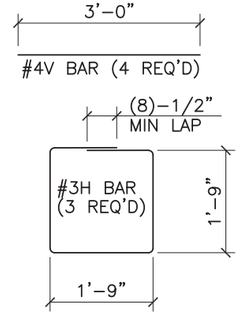
SECTION B

CONTROLLER FOUNDATION DETAIL

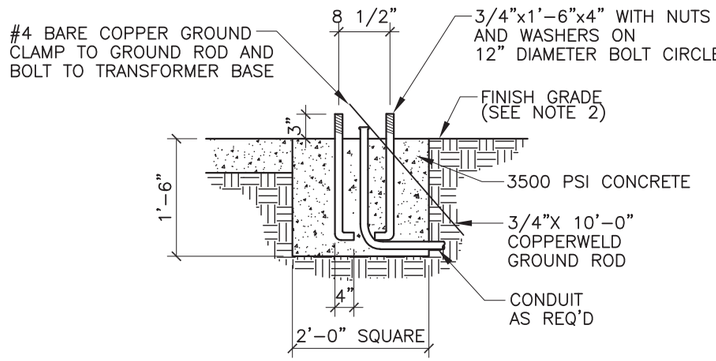
IN THE EVENT THE SUPPLIED CABINET WOULD OVERLAP THE SIDES OF ABOVE FOUNDATION, THE FOUNDATION SHALL BE INCREASED IN SIZE AS DIRECTED BY THE ENGINEER.



PEDESTAL FOUNDATION DETAIL



REINFORCING STEEL



SPLICE CABINET FOUNDATION DETAIL

TRAFFIC SIGNAL FOUNDATION NOTES

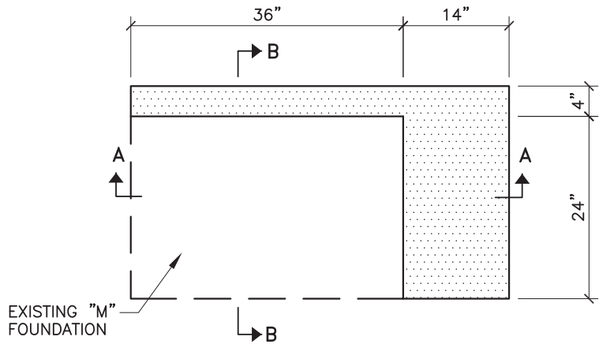
1. ALL FOUNDATIONS SHALL INCLUDE COPPERWELD GROUND RODS. ALL GROUND RODS SHALL BE 3/4"Ox10'–0" AND WILL BE CONSIDERED INCIDENTAL TO THE FOUNDATION BID ITEMS.
2. FINISHED GRADE FOR ALL FOUNDATIONS TO BE DETERMINED IN THE FIELD BY THE PROJECT ENGINEER. FOUNDATIONS MAY BE SLOPED TO MATCH SIDEWALKS. SLOPES SHALL CONFORM TO THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS.
3. TOP 6" OF FOUNDATIONS MUST BE FORMED.
4. CONCRETE PER SEC. 101, EXTERIOR CONCRETE f'c=3500 PSI AT 28 DAYS.

ESTIMATED QUANTITIES

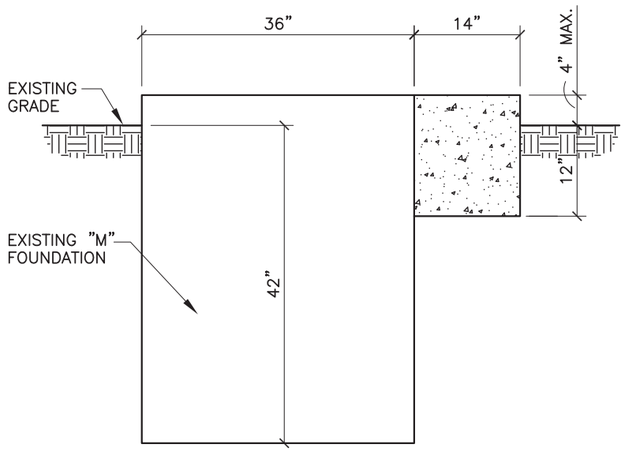
FOUNDATION TYPE	3500 PSI CONCRETE CU YD	REINFORCING BARS POUNDS
PEDESTAL FOUNDATION	0.52	17
CONTROLLER FOUNDATION (TYPE M & P)	0.88	--
SPLICE CABINET FOUNDATION	0.13	--

(FOR CONTRACTORS INFORMATION ONLY)

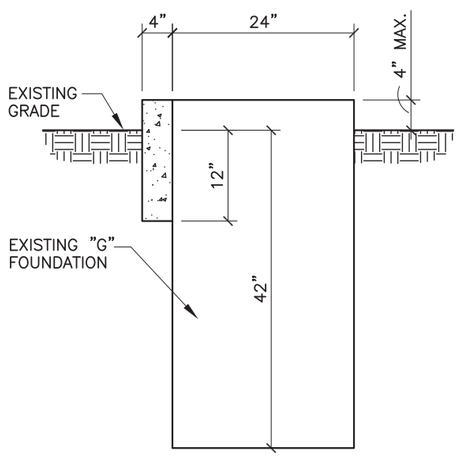
REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL CONTROLLER CABINET & PEDESTAL FOUNDATION DETAILS DWG. 2555 JANUARY 2003



PLAN

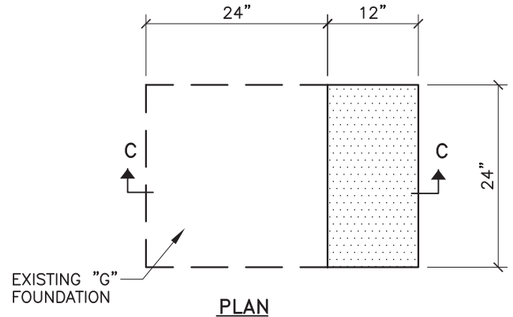


SECTION A–A

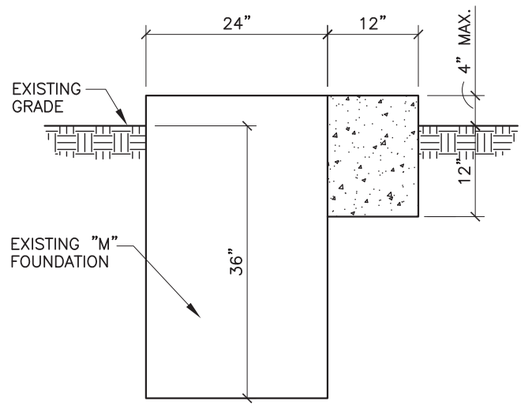


SECTION B–B

EXISTING "G" OR "M" CABINET
CONVERSION TO NEW "P" CABINET

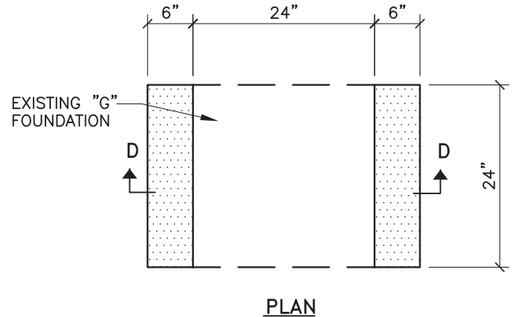


PLAN

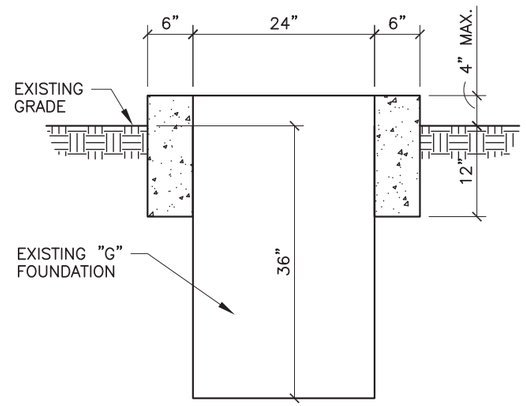


SECTION C–C

EXISTING "G" CABINET
CONVERSION TO NEW "M" CABINET



PLAN



SECTION D–D

EXISTING "G" CABINET
CONVERSION TO NEW "M" CABINET

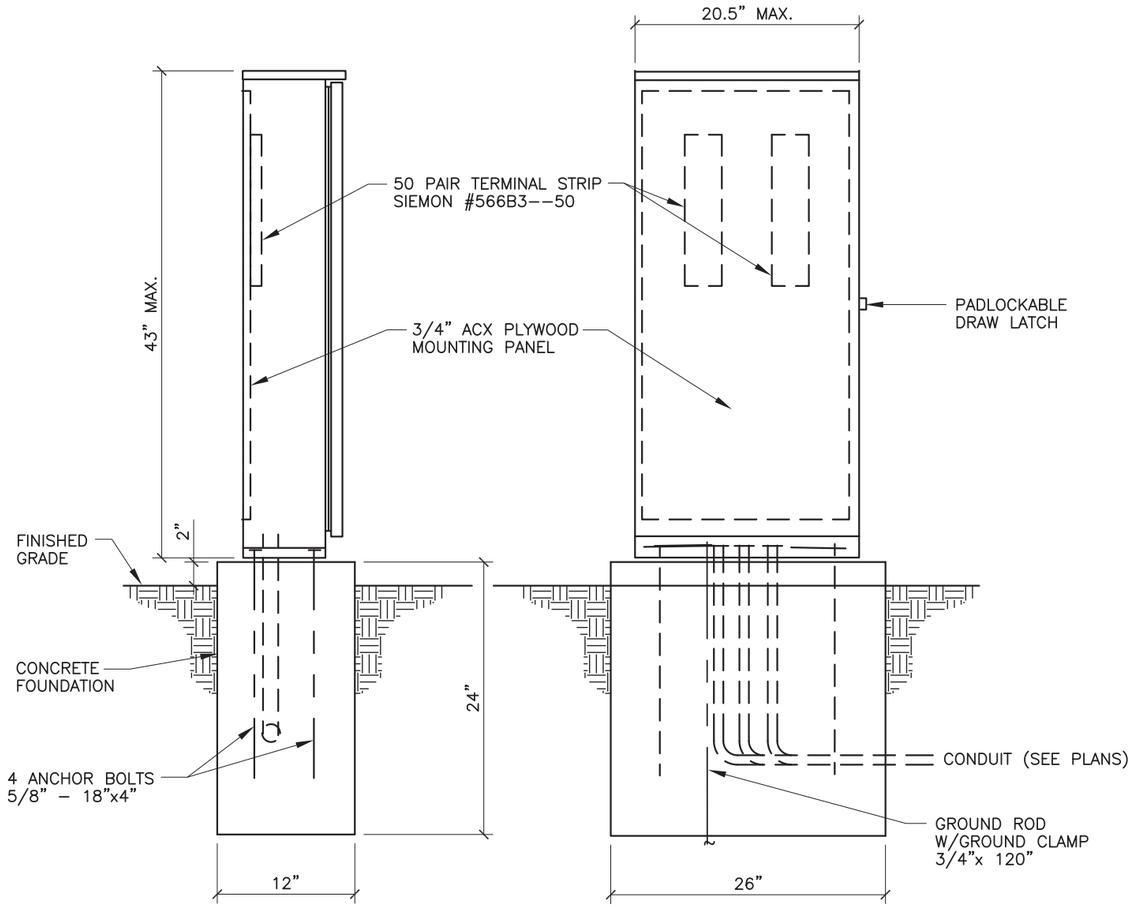
ESTIMATED QUANTITIES FOR NEW FOUNDATION MODIFCATIONS

CABINET	SIZE	511000 STRUCTURAL CONCRETE CLASS A
CONVERTING G CABINET TO "M" CABINET	24"x24"x36"(EXISTING) 12"x24"x12" (NEW)	0.075 CY
CONVERTING "G"OR"M" CABINET TO "P" CABINET	24"x24"x36"(EXISTING) 14"x28"x12" (NEW) 4"x36"x12" (NEW)	0.138 CY
NEW "M" CABINET	12"x36"x42" (NEW)	0.78 CY
NEW "P" CABINET	28"x50"x42" (NEW)	1.26 CY

NOTES:

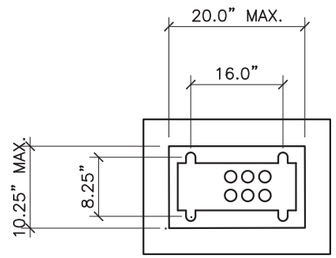
1. CONCRETE PER SEC. 101, EXTERIOR CONCRETE f'c=3500 PSI AT 28 DAYS.

REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL CABINET FOUNDATION CONVERSION DWG. 2556 JANUARY 2003



LEFT SIDE

FRONT VIEW



BASE PLAN

CONSTRUCTION MATERIALS AND FINISH

- ☐ 12 GA HD GALVANIZED SHEET STEEL
  - ☐ POWDER COATED
- ☐ 14 GA #304D STAINLESS STEEL SHEET
  - ☐ POWDER COATED COLOR:
  - ☐ NATURAL
- ☐ 0.125" ALUMINUM SHEET
  - ☐ POWDER COATED COLOR:
  - ☐ ANODIZED

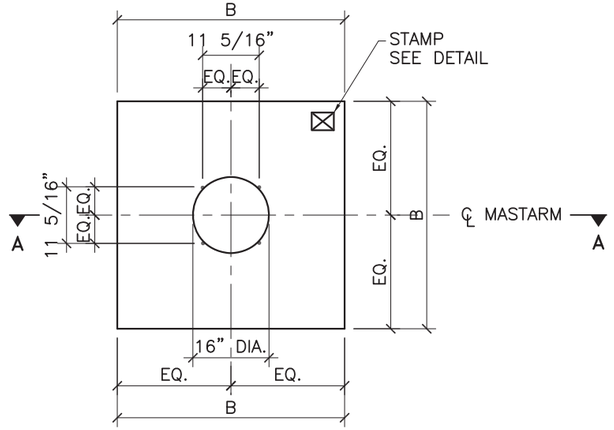
POWDER COAT COLORS

☐ WHITE ☐ RANCH GREEN
☐ MINT GREEN ☐ OTHER
☐ CAMEL

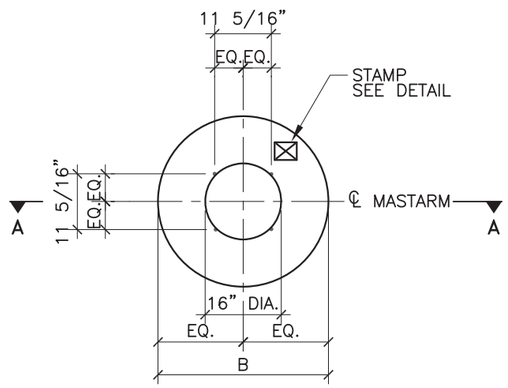
SPLICE CABINET CONSTRUCTION NOTES

1. SPLICE CABINET SHALL BE UL LISTED "INDUSTRIAL CONTROL PANEL" PER UL 508.
2. CONSTRUCTION SHALL BE NEMA 3R AND 12, RAIN TIGHT AND DUST TIGHT. ELECTRICALLY WELDED AND REINFORCED WHERE REQUIRED.
3. ALL NUTS, BOLTS, SCREWS AND HINGES 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. PHENOLIC NAME PLATES SHALL BE PROVIDED AS REQUIRED.
6. ALL POWDER COATED CABINETS SHALL HAVE A CORROSION RESISTANT COATING WHICH INCLUDES A FIVE STEP DIP TANK METAL PREPARATION PROCESS:
   A. ALKALINE CLEANER 160° F.
   B. CLEAR WATER RINSE.
   C. IRON PHOSPHATE APPLICATION 150°.
   D. CLEAR WATER RINSE.
   E. INHIBITIVE RINSE TO SEAL PHOSPHATED SURFACES 120°.
   FINISHED WITH AN ELECTROSTATICALLY APPLIED DRY POLYESTER POWDER COATING THEN BAKED @ 380° 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)
	DWG. 2557 JANUARY 2003

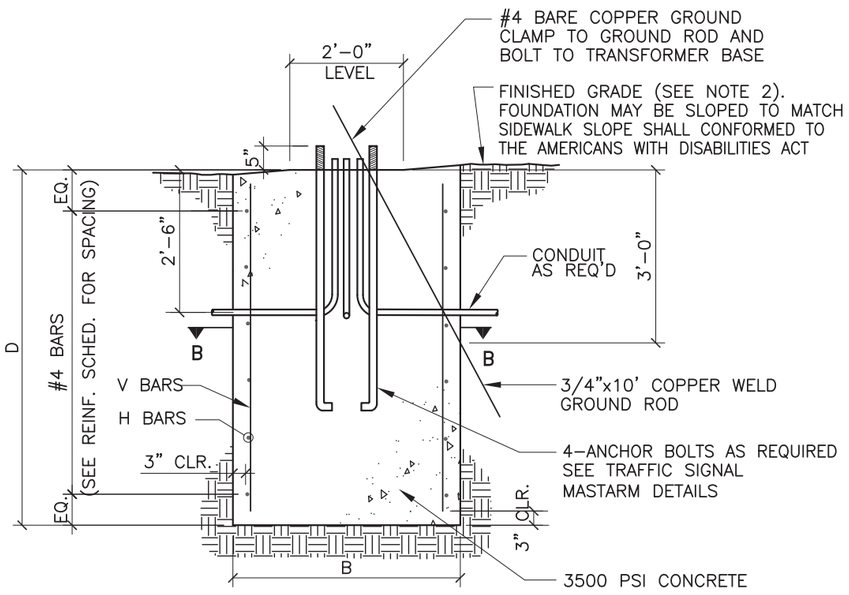


PLAN VIEW (SQUARE)

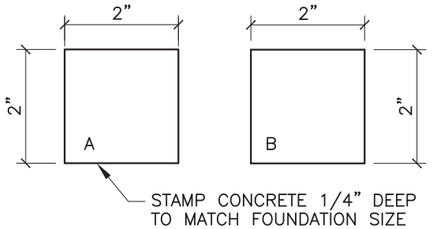


PLAN VIEW (ROUND)

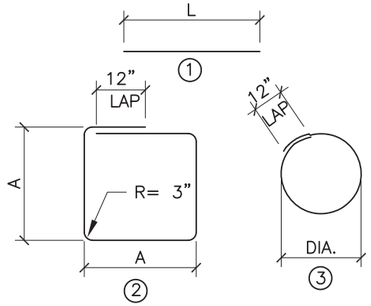
FOUNDATION DIMENSIONS AND QUANTITIES								
FOUNDATION TYPE	SIGNAL ARM SPAN(FT)	DIMENSION B (WIDTH)	DIMENSION D (DEPTH)	REINFORCING V BARS MARK	REINFORCING H BARS MARK	REBAR POUNDS	3500 PSI. CONCRETE CUBIC YARDS	NOTES
TYPE A (SQUARE)	15 20 25	3'–6" " "	5'–0" " "	#4V2 " "	#3H2 " "	49.1	2.27 " "	
TYPE B (SQUARE)	30 35 40	4'–0" " "	6'–3" " "	#5V1 " "	#3H1 " "	82.6	3.70 " "	
TYPE A (ROUND)	15 20 25	2'–6" " "	8'–6" " "	#6V4 " "	#3H4 " "	98.1	1.55 " "	ROUND SHAPE TO BE USED ONLY WHERE SPECIFICALLY NOTED ON PLANS OR WHEN APPROVED BY THE PROJECT MANAGER.
TYPE B (ROUND)	30 35 40	3'–0" " "	11'–9" " "	#7V3 " "	#3H3 " "	179.7	3.08 " "	



SECTION A–A (ROUND OR SQUARE)



STAMP DETAIL

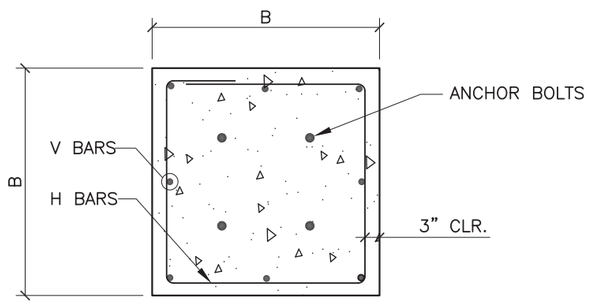


BAR BENDING DIAGRAM

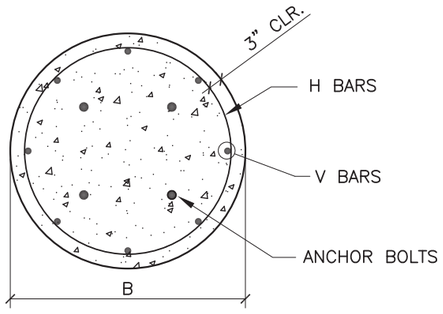
REINFORCING SCHEDULE (GRADE 60 BARS)					
MARK	QUANT	TYPE	SIZE	LENGTH	COMMENTS
#5V1	8	1	5	5'–9"	
#4V2	8	1	4	4'–6"	
#7V3	6	1	7	11'–3"	
#6V4	6	1	6	8'–0"	
#3H1	6	2	3	15'–4"	A = 42",TIES AT 14" OC.
#3H2	5	2	3	13'–4"	A = 36",TIES AT 12" OC.
#3H3	12	3	3	9'–3"	DIA = 30",TIES AT 12" OC.
#3H4	9	3	3	7'–8"	DIA = 24",TIES AT 12" OC.

TRAFFIC SIGNAL MASTARM FOUNDATION NOTES

1. REFER TO THE PLANS FOR LOCATIONS OF TRAFFIC SIGNAL MASTARM FOUNDATIONS.
2. FINISHED GRADE FOR THE FOUNDATIONS SHALL BE ESTABLISHED IN THE FIELD BY THE PROJECT MANAGER.
3. THE FOUNDATIONS SHOWN HERE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CURRENT REVISION.
4. CONCRETE SHALL BE 3500 PSI FOR EXTERIOR STRUCTURES. REFER TO TABLE 101.C OF THE SPECIFICATIONS.
5. REINFORCING STEEL SHALL CONFORM TO ASTM A–615 GRADE 60.
6. THE TOP 6 INCHES OF THE FOUNDATION PEDESTAL SHALL BE FORMED TO THE DIMENSIONS SHOWN ON THIS SHEET TO FORM NEAT LINES. CONCRETE BELOW 6 INCHES MAY BE CAST AGAINST THE EARTH.
7. THE CONCRETE SHALL GAIN 80% OF THE DESIGN STRENGTH PRIOR TO INSTALLING THE TRAFFIC SIGNAL MASTARM.
8. ALL FOUNDATIONS SHALL INCLUDE COPPER WELD GROUND RODS. ALL GROUND RODS SHALL BE 3/4" DIA X 10'–0" AND WILL BE CONSIDERED INCIDENTAL TO THE FOUNDATIONS BID ITEMS.
9. ALL FOUNDATIONS SHALL BE STAMPED EITHER "A" OR "B" TO SHOW TYPE CONSTRUCTED (SEE STAMP DETAIL).
10. CONCRETE PER SEC. 101, EXTERIOR CONCRETE, f'c=3500 PSI AT 28 DAYS.

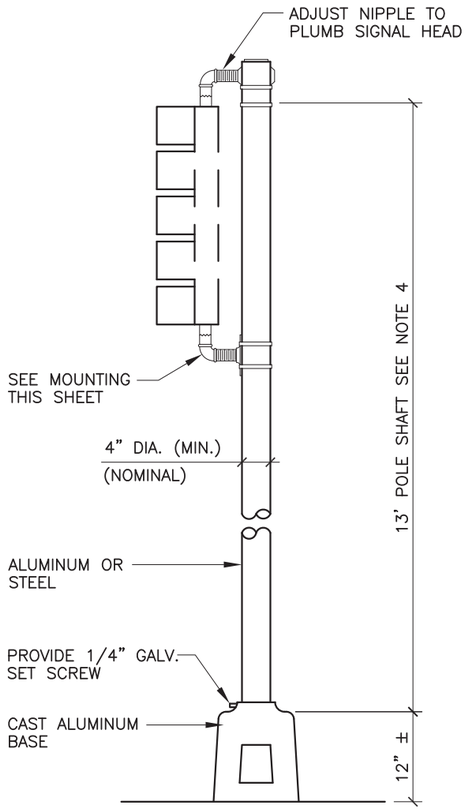


SECTION B–B (SQUARE)

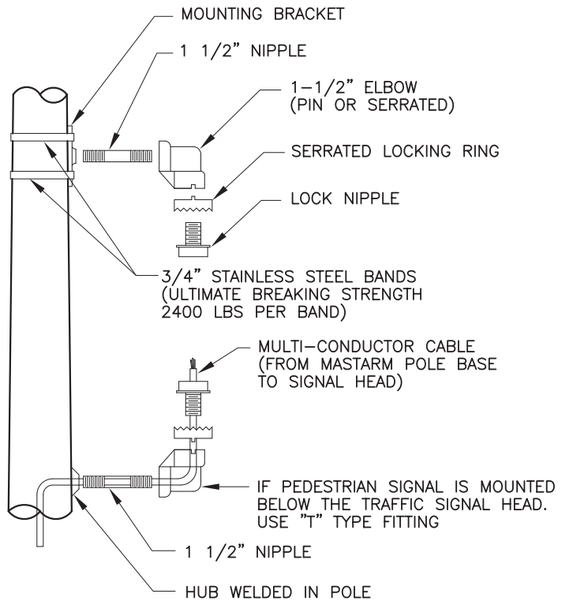


SECTION B–B (ROUND)

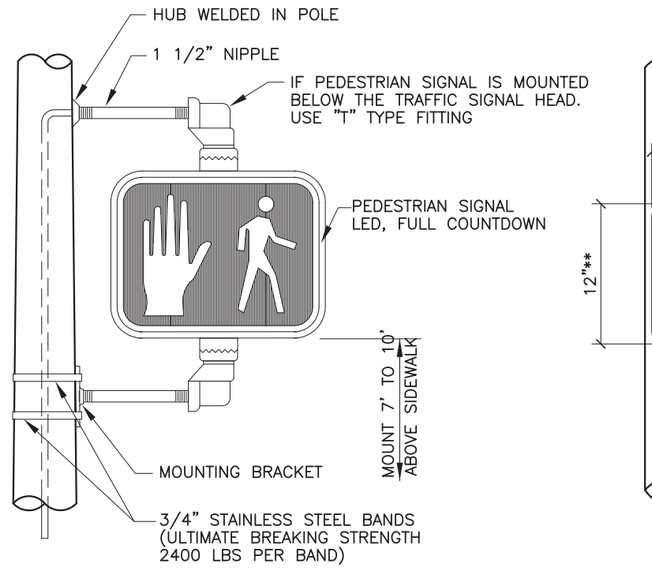
REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL FOUNDATION DETAILS TYPE II AND TYPE III STANDARDS DWG. 2558 JANUARY 2003



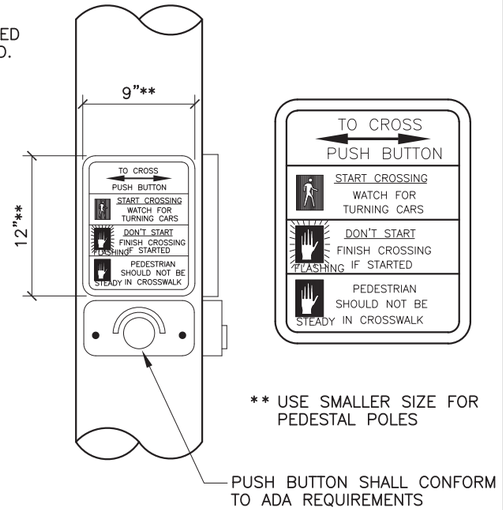
PEDESTAL POLE DETAILS



MOUNTING DETAIL



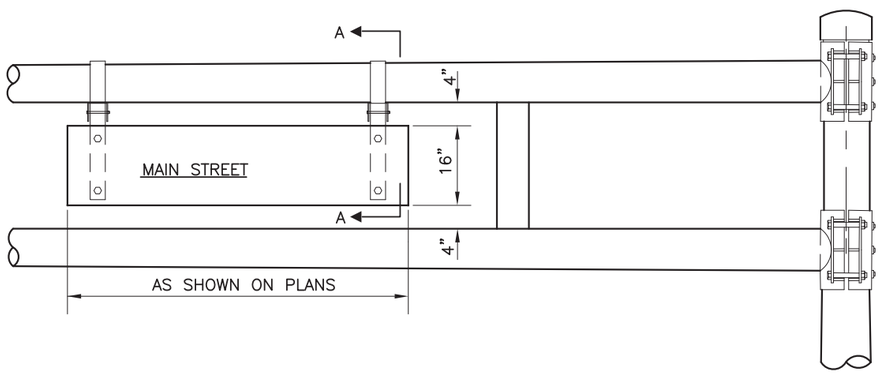
PEDESTRIAN SIGNAL DETAILS



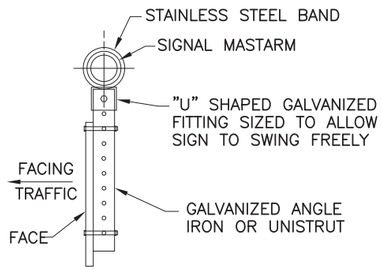
PUSH BUTTON DETAIL

NOTES:

1. STREET NAME SIGNS REQUIRED AS SHOWN ON PLANS.
2. STREET NAME SIGN SHALL BE 16" WIDE WITH 8" SERIES "C" LETTERS. SIGN SHALL BE NO MORE THAN TO 12 SQUARE FEET TOTAL AREA AND SHALL HAVE HIGH INTENSITY REFLECTIVE LEGEND, 1" BORDER AND BACKGROUND COLORS: WHITE ON GREEN, 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"x48" SHALL BE PROVIDED TO ALLOW FOR A FORWARD OR A PARALLEL APPROACH TO THE CONTROLS. WHERE A PARALLEL IS PROVIDED, CONTROLS SHALL BE WITHIN 10" HORIZONTALLY OF AND CENTERED ON THE CLEAR GROUND SPACE.
4. FOR INSTALLATIONS WITH ONLY PEDESTRIAN SIGNALS, CUT SHAFT TO 9'. USE 15' SHAFT FOR PEDESTAL POLES REQUIRING BOTH 5-SECTION SIGNAL ASSEMBLIES AND PEDESTRIAN SIGNALS.



STREET NAME SIGN DETAILS



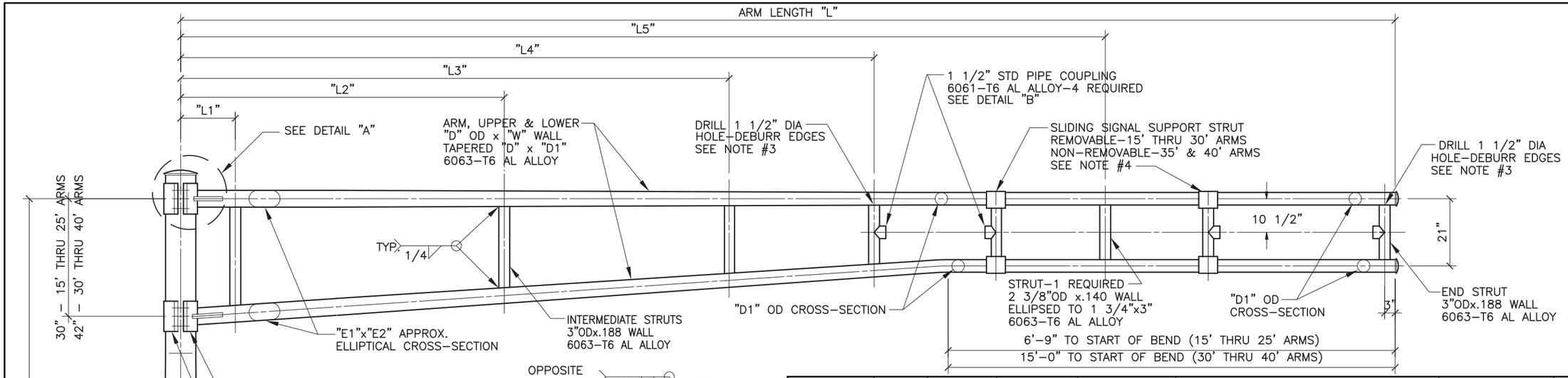
SECTION "A-A"

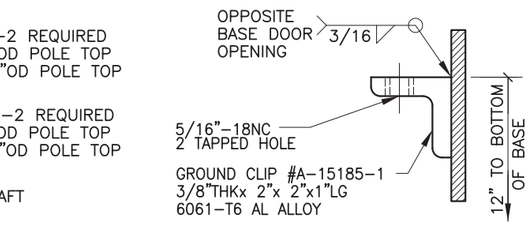
FINISH:

- ☐ GALVANIZED
- ☐ POWDER COATED

COLOR _____

REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL MISCELLANEOUS DETAILS DWG. 2560 JANUARY 2003





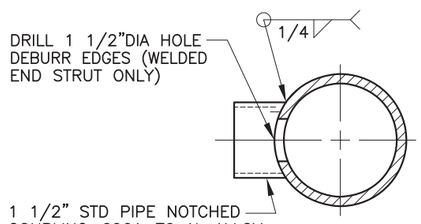
GROUNDING - DETAIL "C"

ARM DRAWING NUMBER	ARM LENGTH "L"	TROMBONE ARM SIZE "D"x"W"	TROMBONE ARM TAPER "D"x"D1"	TROMBONE ARM ELLIPSE "E1"x"D2"	STRUT SPACING "L1"	"L2"	"L3"	"L4"	"L5"	SHAFT SIZE "S"ODx"T"WALL	SHAFT TAPER "S"x"S1"
G-103004-1	15'-0"	4"x.156"	4"x3"	4 3/4"x3"	----	3'-3"	3'-3"	----	----	10"ODx.219"WALL	10"x8"
G-103004-2	20'-0"	5"x.156"	5"x3"	6 3/8"x3"	1'-6"	10'-6"	----	----	----	10"ODx.219"WALL	10"x8"
G-103004-3	25'-0"	5"x.156"	5"x3"	6 3/8"x3"	1'-6"	10'-6"	15'-0"	----	----	10"ODx.219"WALL	10"x8"
G-103004-4	30'-0"	6"x.188"	6"x3"	7 5/8"x3 1/2"	1'-6"	10'-6"	----	13'-0"	20'-6"	12"ODx.312"WALL	12"x10"
G-103004-5	35'-0"	7"x.188"	7"x3 1/2"	9 1/4"x3 3/4"	1'-6"	10'-6"	----	17'-8"	25'-3"	12"ODx.312"WALL	12"x10"
G-103004-6	40'-0"	7"x.219"	7"x4"	9 1/8"x4"	1'-6"	10'-6"	17'-11"	22'-8"	30'-3"	12"ODx.312"WALL	12"x10"

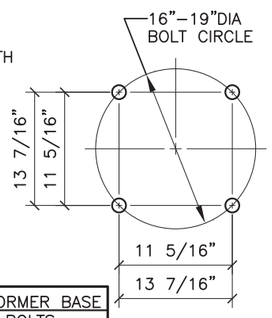
NOTES

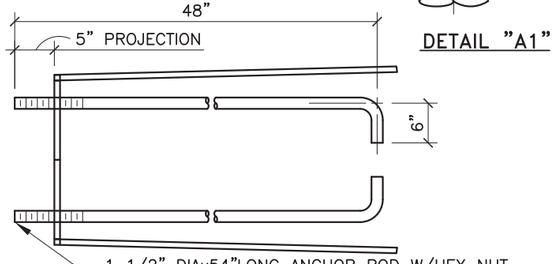
1. USE 4043 WELD WIRE.
2. 6063 ASSEMBLY .375 WALL OR LESS TO BE HEAT-TREATED TO T6 TEMPER AFTER WELDING.
3. INSTALL PULL WIRE THRU TOP ARM BEFORE WELDING STRUT.
4. INSTALL SLIDING SIGNAL STRUTS BEFORE WELDING FIXED STRUTS.
5. FOLLOWING MOUNTING HARDWARE SUPPLIED FOR EACH TRAFFIC SIGNAL:
   (2) ALUM SERRATED LOCK RINGS FOR 1 1/2" PIPE COUPLING
   (2) 1 1/2" STD PIPE CAST ALUM CHASE NIPPLES

SHAFT SIZE	SHOE BASE WELDS "TW"	SHOE BASE WELDS "BW"	SHOE BASE TO TRANSFORMER BASE HEX HEAD CONNECTING BOLTS
15'-0"	5/16"	7/32"	1 1/4"-7NC-2 x 4 1/2" LONG
20'-0"	5/16"	5/16"	1 1/4"-7NC-2 x 5 1/2" LONG

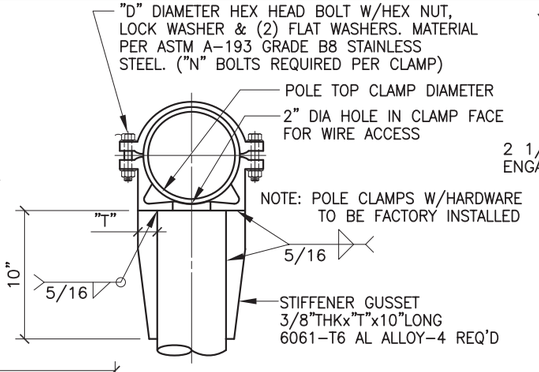


DETAIL "B"

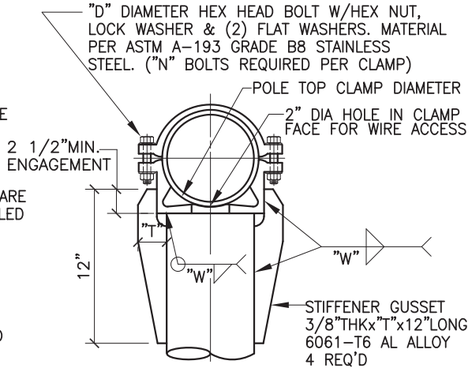




ANCHORAGE LAYOUT DETAIL



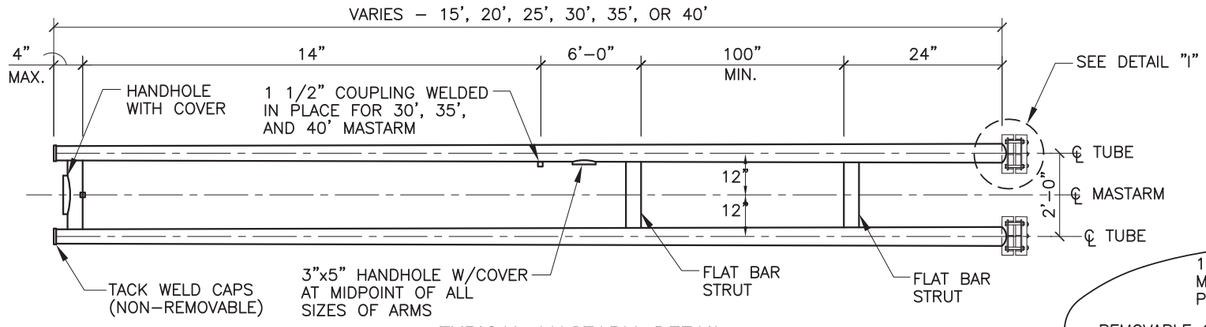
DETAIL "A1"



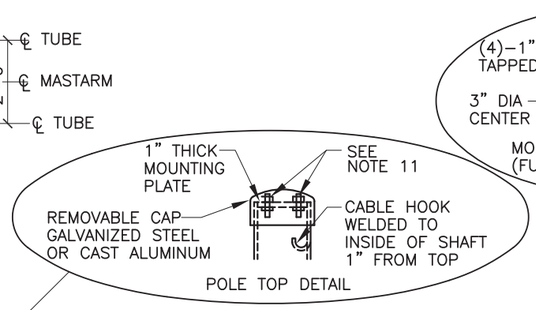
DETAIL "A2"

ARM LENGTH	ELLIPSE CROSS-SECTION	CLAMP DETAIL	DIA	"T"	"W"	"D"	"N"
15'-0"	4 3/4"x3"	"A1"	8"	1 1/2"	5/16"	5/8"	4"
20'-0"	6 3/8"x3"	"A2"	8"	3"	5/16"	5/8"	4"
25'-0"	6 3/8"x3"	"A2"	8"	3"	5/16"	5/8"	4"
30'-0"	7 5/8"x3 1/2"	"A2"	10"	3"	5/16"	5/8"	6"
35'-0"	9 1/4"x3 3/4"	"A2"	10"	2 1/2"	5/16"	5/8"	6"
40'-0"	9 1/8"x4"	"A2"	10"	2 1/2"	3/8"	5/8"	6"

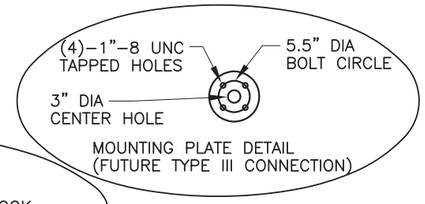
REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC
	TRAFFIC SIGNAL MASTARM DETAILS, ALUMINUM
	DWG. 2561 JANUARY 2003



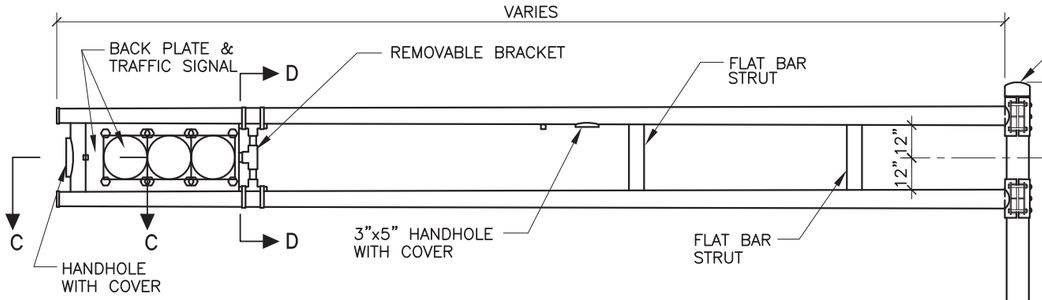
TYPICAL MASTARM DETAIL



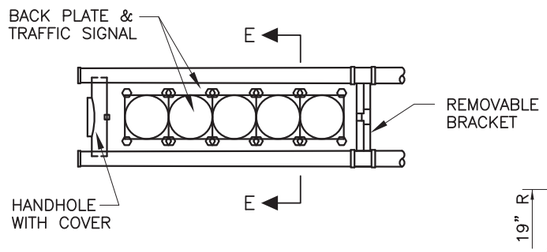
POLE TOP DETAIL



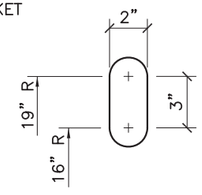
MOUNTING PLATE DETAIL (FUTURE TYPE III CONNECTION)



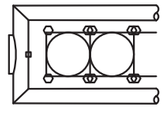
3–SECTION TRAFFIC SIGNAL



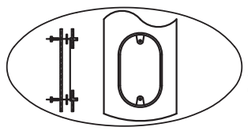
5–SECTION TRAFFIC SIGNAL

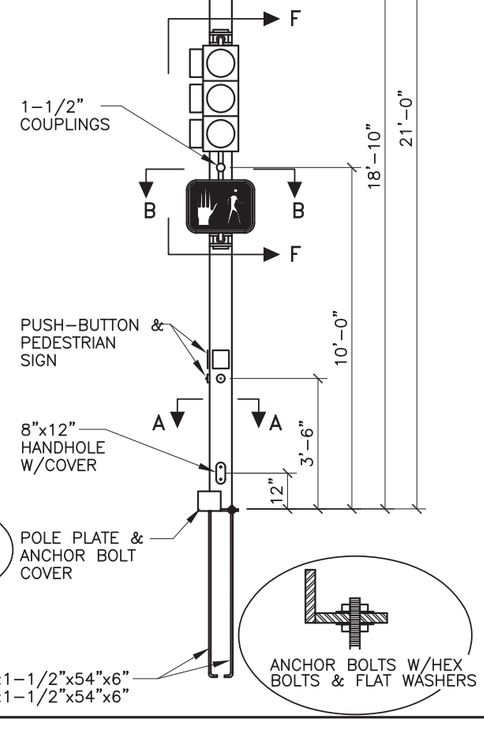


POLE PLATE SLOT DETAIL



MITERED ARM END (OPTIONAL)





ANCHOR BOLTS
15', 20', 25' ARM:1–1/2"x54"x6"
30', 35', 40' ARM:1–1/2"x54"x6"

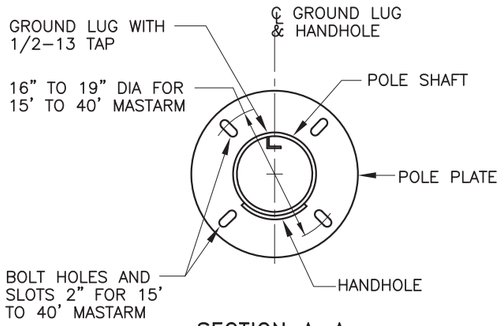
TRAFFIC SIGNAL MASTARM NOTES:

1. DESIGN IN ACCORDANCE WITH 1985 AASHTO SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES, AND TRAFFIC SIGNALS FOR AN 80 MPH WIND ZONE.
2. POLES AND MASTARMS SHAFTS SHALL CONFORM TO ASTM A–595 GRADE A (MIN YIELD 55 KSI).
3. BASE PLATE AND SIGNAL ARM CLAMP SHALL BE ASTM A–36 (MIN. YIELD 36 KSI).
4. ANCHOR BOLTS SAHLL BE ASTM A–36 MOD 55 (MIN. YIELD 55 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. 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 SHALL BE MARKED TO DESCRIBE WHICH IS TOP AND WHICH IS BOTTOM. POLE PLATE COVER SHALL BE MARKED IN MATED PAIRS. POLE SHAFTS SHALL BE MARKED "ALB" "15–25" OR "30–40", AND DATE OF FABRICATION (MOUNTH/YEAR).
10. DETAILS SHOWN ARE FOR STEEL POLES. ALUMINIUM POLES MAY BE USED ONLY WHEN PRE–APPROVED BY THE CITY OF ALBUQUERQUE TRAFFIC ENGINEERING OPERATIONS DIVISION.
11. BOLTS FOR TYPE III EXTENSIONS SHALL BE FURNISHED BY THE MANUFACTURER FOR ALL POLES INCLUDING TYPE II STANDARDS WITH NO EXTENSIONS.

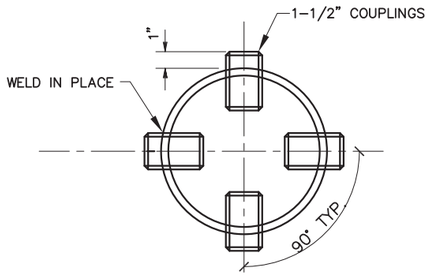
NOTE: FOR SECTIONS A–A THROUGH G–G & DETAILS, SEE STD. DWG. 2562b

FINISH: GALVANIZED

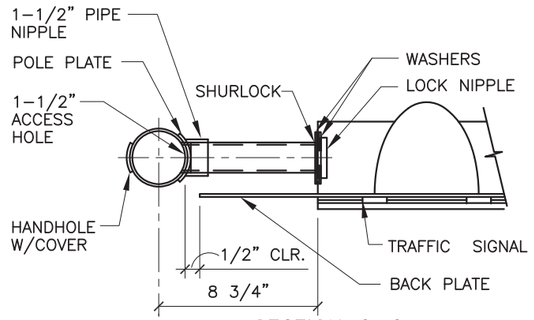
REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL MASTARM DETAILS, TYPE II STANDARD DWG. 2562a JANUARY 2003



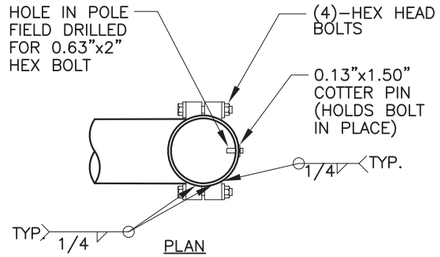
SECTION A–A



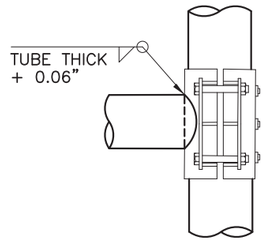
SECTION B–B



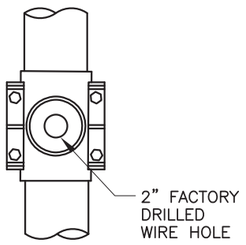
SECTION C–C



PLAN



ELEVATION

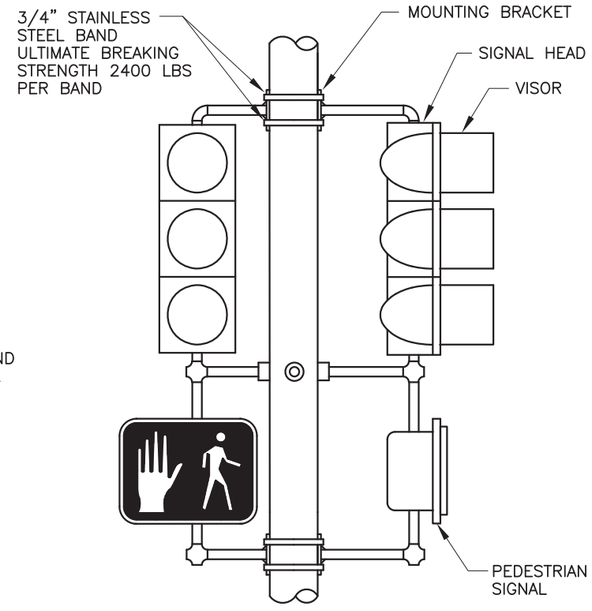


SECTION

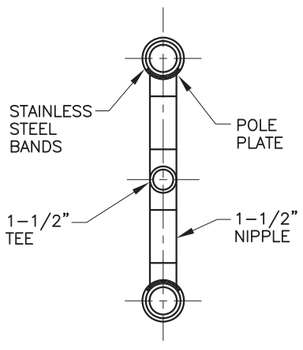
DETAIL I

NOTE:

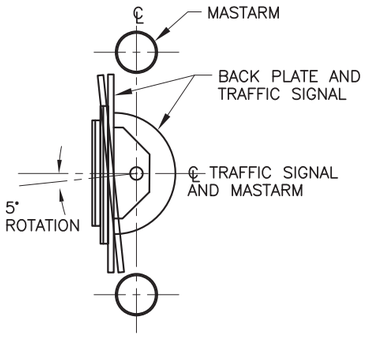
ONE SIZE ARM CLAMP FOR 15' TO 25' MASTARMS AND ONE SIZE FOR 30' TO 40' MASTARMS WILL BE ALLOWED



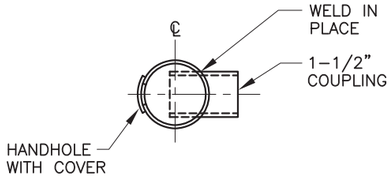
SECTION F–F



SECTION D–D

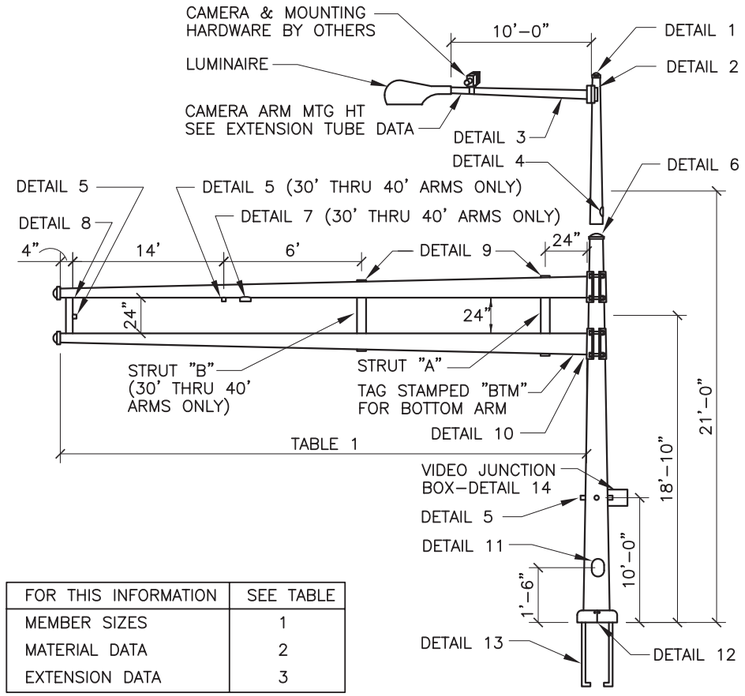


SECTION E–E



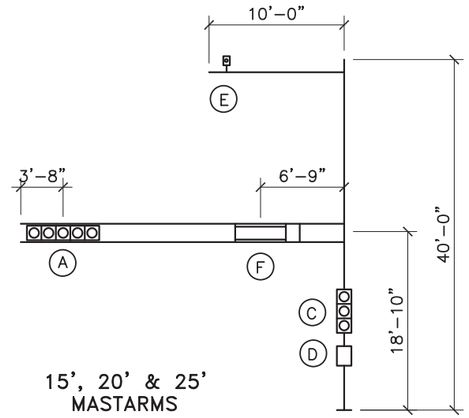
SECTION G–G

REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL MASTARM DETAILS, TYPE II STANDARD DWG. 2562b JANUARY 2003

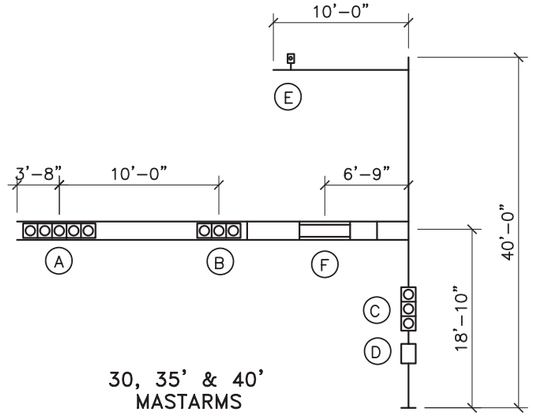


FOR THIS INFORMATION	SEE TABLE
MEMBER SIZES	1
MATERIAL DATA	2
EXTENSION DATA	3

ALBUQUERQUE, NM POLE SERIES



15', 20' & 25' MASTARMS



30, 35' & 40' MASTARMS

DEVICE	DESCRIPTION	PROJ. AREA (SQ FT)	WEIGHT (LBS)
Ⓐ	12"–5 SEC. SIGNAL WITH BACK PLATE	13.33	75
Ⓑ	12"–3 SEC. SIGNAL WITH BACK PLATE	8.67	50
Ⓒ	DUAL 12"–3 SEC. SIGNAL WITHOUT BACK PLATES	8.20	100
Ⓓ	DUAL PEDESTRIAN SIGNAL & VIDEO JUNCTION BOX	3.00	60
Ⓔ	VIDEO CAMERA	1.00 EPA	35
Ⓕ	FREE SWINGING STREET NAME –96" X 16"	3.00 EPA	35

DESIGN CRITERIA:

1985 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.

WIND VELOCITY:

80 MPH ISOTACH

LOADING INFORMATION

TABLE 1: POLE AND MASTARM SCHEDULE

DESIGNATION (SEE EXAMPLE ABOVE)				POLE DATA				BASE PLATE DATA				ANCHOR BOLT DATA				MASTARM DATA				ARM ATTACHMENT DATA					
POLE SERIES	POLE TYPE	SIGNAL ARM SPAN (FT)	CAMERA MOUNTING HEIGHT 0=NO CAMERA	BASE DIA	TOP DIA	LENGTH	GA	CIRCLE "C"	THK "G"	BC RANGE BC1	BC RANGE BC2	BOLT CIRCLE	DIAMETER "K"	LENGTH "J"	HOOK "H"	FIXED END DIA	FREE END DIA	GA	LENGTH (FT)	"A"	"B"	"C"	"D"	"E"
ALB	2	15	0, 30, 35, 40	10.00"	7.06"	21'–0"	7	23.00"	1.50"	16.00"	19.00"	16.00"	1.50"	54"	6"	5.80"	3.70"	11	15	7.25"	9.44"	10.81"	10.38"	1.00"–8UNC X 8.00"
ALB	2	20	0, 30, 35, 40	10.00"	7.06"	21'–0"	7	23.00"	1.50"	16.00"	19.00"	16.00"	1.50"	54"	6"	6.50"	3.70"	11	20	7.25"	9.44"	10.81"	10.38"	1.00"–8UNC X 8.00"
ALB	2	25	0, 30, 35, 40	10.00"	7.06"	21'–0"	7	23.00"	1.50"	16.00"	19.00"	16.00"	1.50"	54"	6"	7.00"	3.50"	11	25	7.25"	9.44"	10.81"	10.38"	1.00"–8UNC X 8.00"
ALB	2	30	0, 30, 35, 40	12.00"	9.06"	21'–0"	5	23.00"	1.50"	16.00"	19.00"	16.00"	1.50"	54"	6"	7.72"	3.52"	7	30	9.25"	11.44"	13.81"	12.38"	1.00"–8UNC X 9.00"
ALB	2	35	0, 30, 35, 40	12.00"	9.06"	21'–0"	5	23.00"	1.50"	16.00"	19.00"	16.00"	1.50"	54"	6"	8.30"	3.40"	7	35	9.25"	11.44"	13.81"	12.38"	1.00"–8UNC X 9.00"
ALB	2	40	0, 30, 35, 40	12.00"	9.06"	21'–0"	5	23.00"	1.50"	16.00"	19.00"	16.00"	1.50"	54"	6"	9.00"	3.40"	7	40	9.25"	11.44"	13.81"	12.38"	1.00"–8UNC X 9.00"

FINISH:

☐ GALVANIZED

☐ POWDER COATED

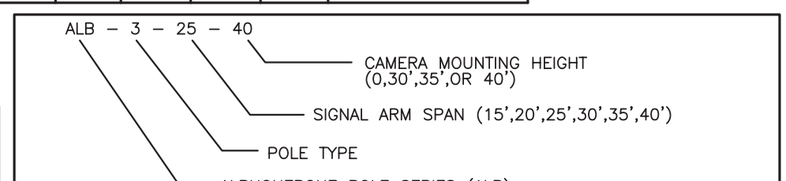
COLOR _____

TABLE 2: MATERIAL DATA

COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)	COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
POLE TUBE	A595 GR A	55	SIGNAL ARM CLAMP	A36	36
BASE PLATE	A36	36	SIGNAL ARM CONN. BOLTS	A325 *	
MAST ARM TUBE	A595 GR A	55	CAMERA ARM PLATES	A36	36
CAMERA ARM TUBE	A595 GR A	55	GALVANIZING	A123 & A153	
POLE EXTENSION	A595 GR A	55			
ANCHOR BOLTS AASHTO M314 GR. 55					
* LUBRICATE IN FIELD IF NECESSARY IN LIEU OF THE REQUIREMENT IN A325					

TABLE 3: EXTENSION TUBE DATA

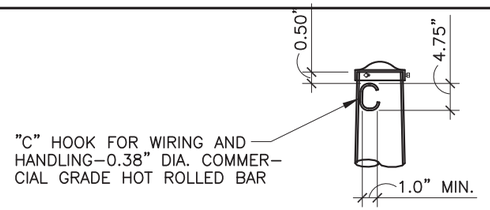
MASTARM LENGTH (FT)	CAMERA MTG HT (FT)	EXTENSION TUBE BASE DIA	EXTENSION TUBE TOP DIA	EXTENSION TUBE LENGTH (FT)	EXTENSION TUBE GAUGE
15–20	30	7.00	5.74	9.0	11
	35	7.00	5.04	14.0	11
	40	7.00	4.34	19.0	11
30–40	30	9.00	7.74	9.0	11
	35	9.00	7.04	14.0	11
	40	9.00	6.34	19.0	11



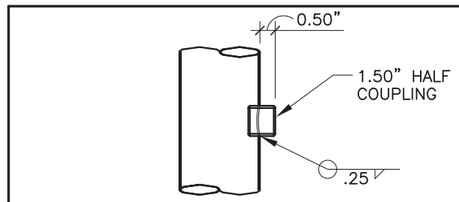
DESIGNATION EXAMPLE * *

** POLE SHAFTS SHALL BE MARKED "ALB" "15–25" OR "30–40", AND DATE OF FABRICATION (MONTH/YEAR).

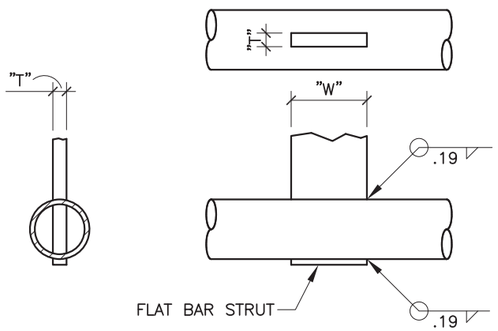
REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL MASTARM DETAILS TYPE III STANDARD DWG. 2562c JANUARY 2003



DETAIL 1 | POLE TOP

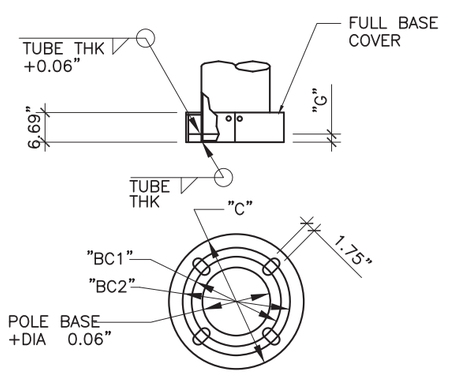


DETAIL 5 | POLE COUPLING

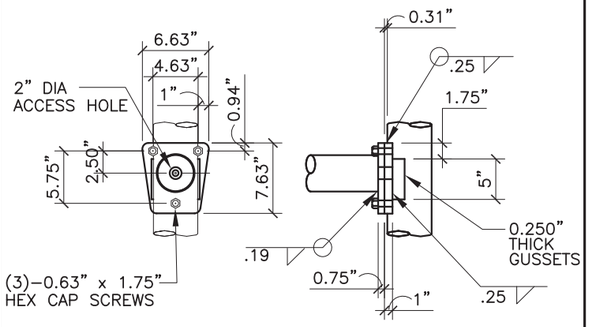


STRUT	ARM SPAN 15' THRU 25' "W" X "T"	ARM SPAN 30' THRU 40' "W" X "T"
A	5" X 0.50"	7" X 0.50"
B	———	5" X 0.50"

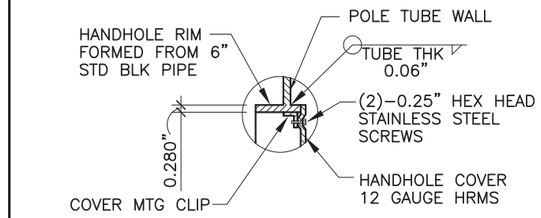
DETAIL 9 | MID BAR STRUT

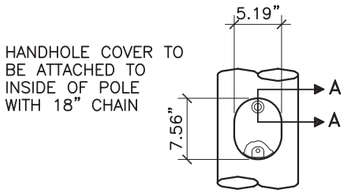


DETAIL 12 | POLE BASE

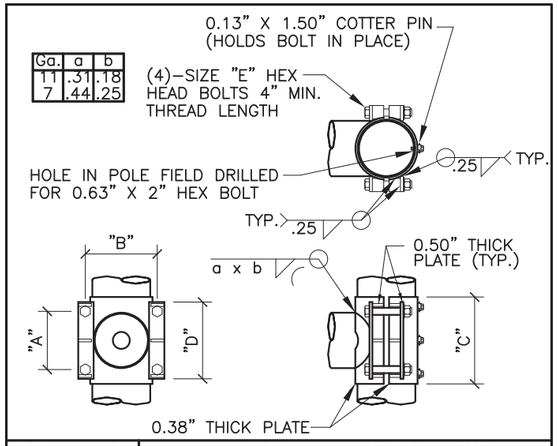


DETAIL 2 | CAMERA ARM ATTACHMENT

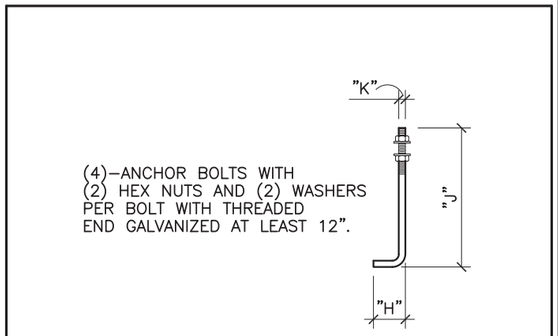




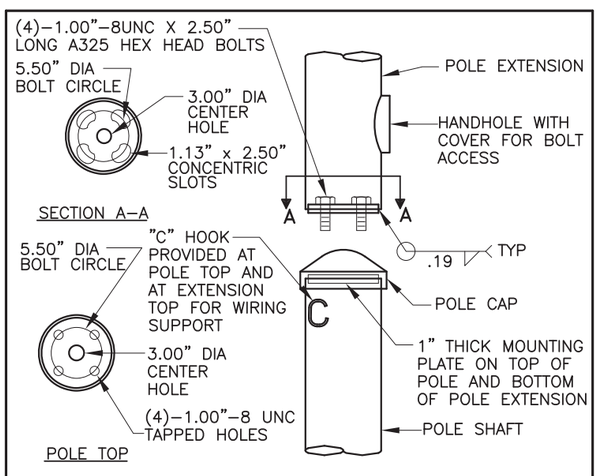
DETAIL 6 | EXTENSION HANDHOLE



DETAIL 10 | SIGNAL ARM ATTACHMENT



DETAIL 13 | ANCHOR BOLT

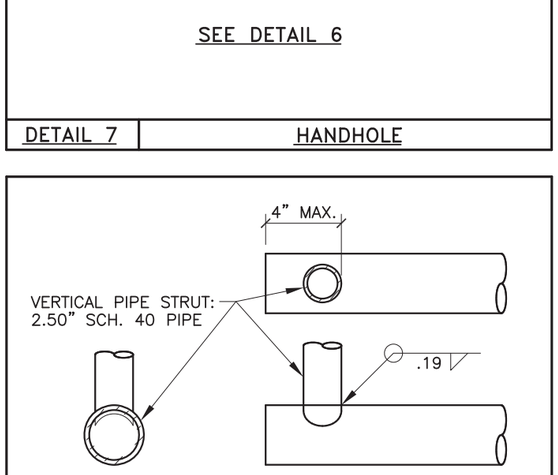


DETAIL 3 | CAMERA ARM

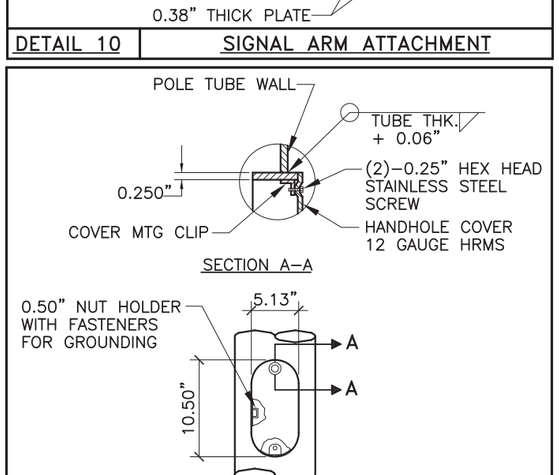
SEE DETAIL 6

DETAIL 7 | HANDHOLE

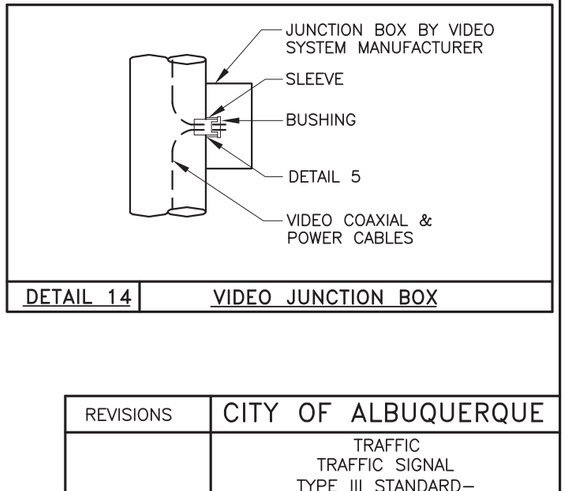
DETAIL 4 | POLE EXTENSION CONNECTION



DETAIL 8 | END PIPE STRUT

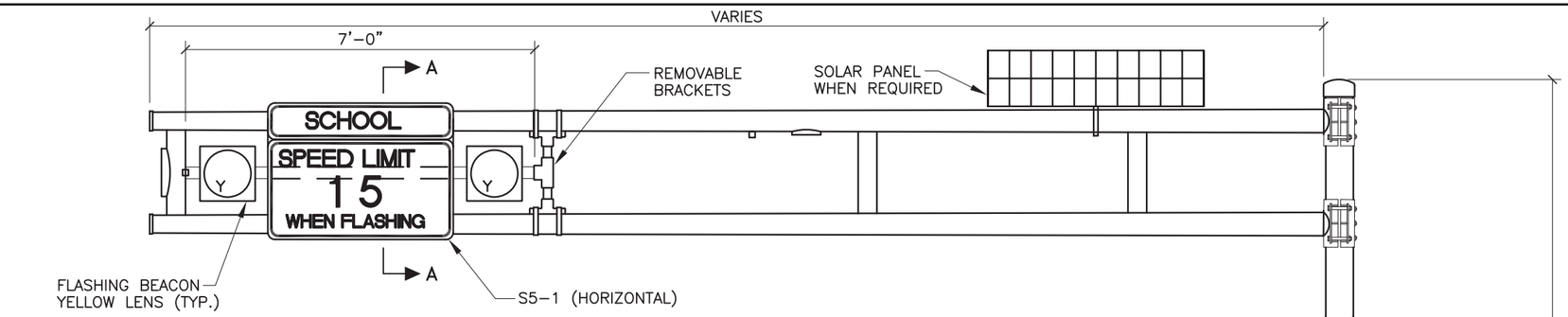


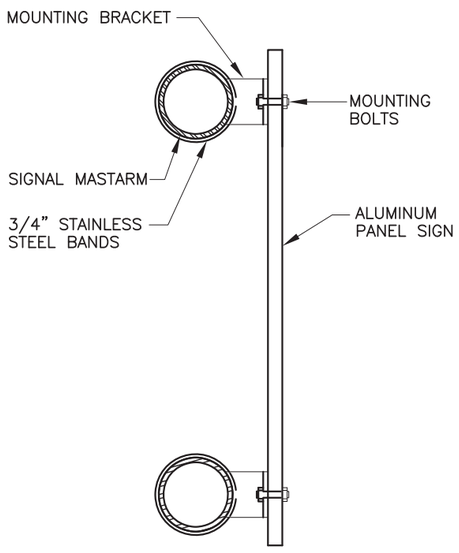
DETAIL 11 | HANDHOLE



DETAIL 14 | VIDEO JUNCTION BOX

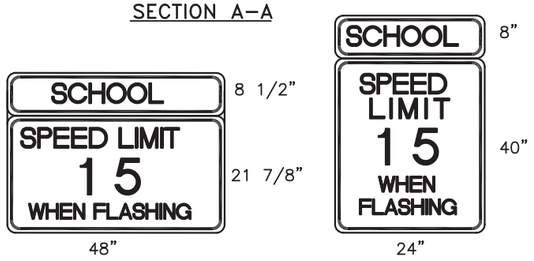
REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL TYPE III STANDARD– MISCELLANEOUS DETAILS DWG. 2562d JANUARY 2003





HORIZONTAL SIGN MOUNT DETAIL

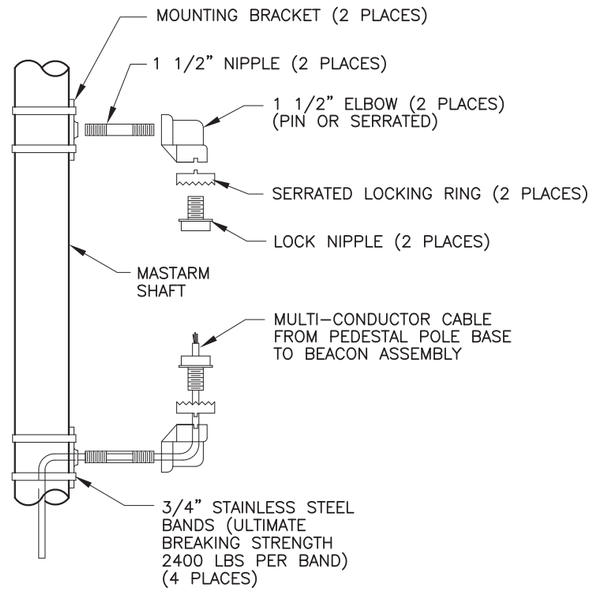
SECTION A–A



TYPICAL SIGN FACE
DETAIL FOR SCHOOL BEACON

COLORS

LEGEND:BLACK(NON–REFLECTIVE)
TOP PANEL:YELLOW
BOTTOM PANEL:WHITE
OUTSIDE BORDER:WHITE
INSIDE BORDER:BLACK



SIGNAL MOUNT DETAIL

SECTION B–B

NOTES:

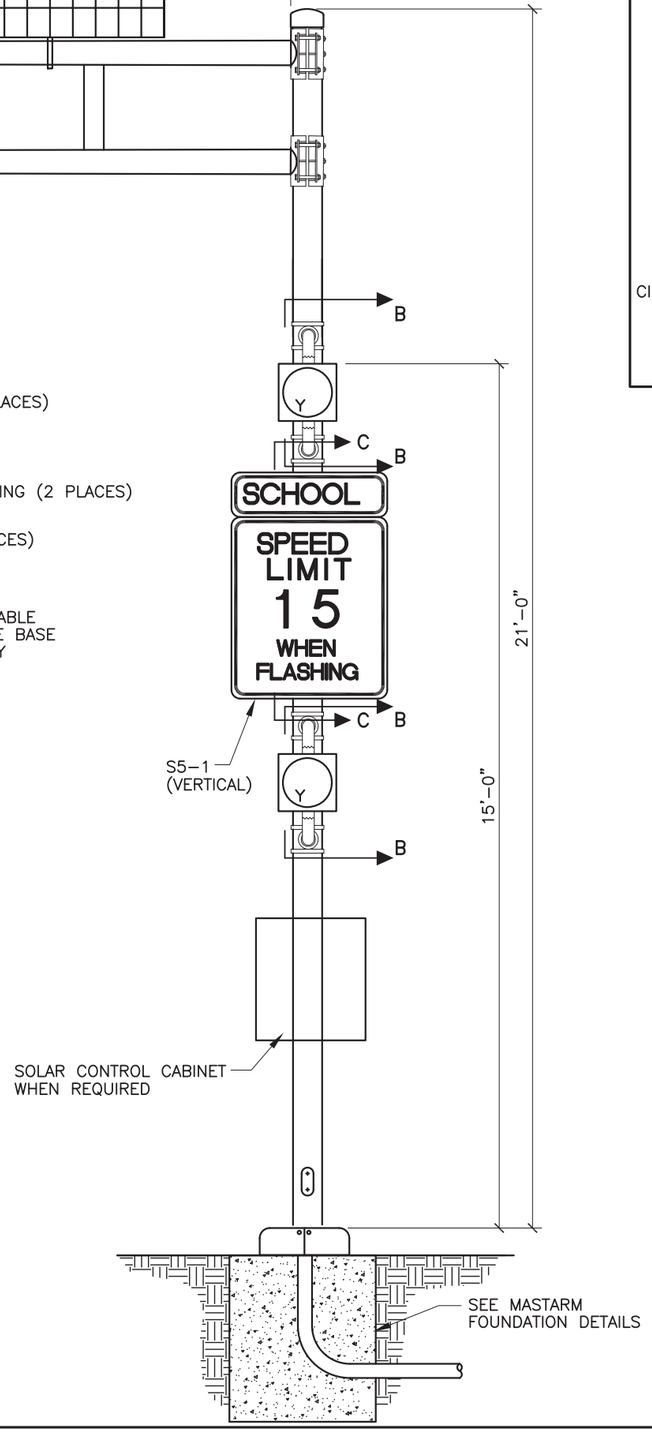
1. EACH SCHOOL BEACON (MASTARM) WILL BE MEASURED AND PAID FOR UNDER THE FOLLOWING ITEMS:

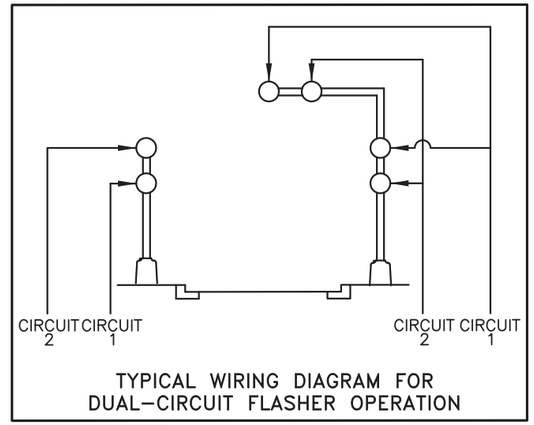
   ITEM 0422.0XX – TRAFFIC SIGNAL MASTARM X' ARM (1 EACH BEACON)

   ITEM 0423.002 – TRAFFIC SIGNAL MASTARM FOUNDATION (1 EACH BEACON)

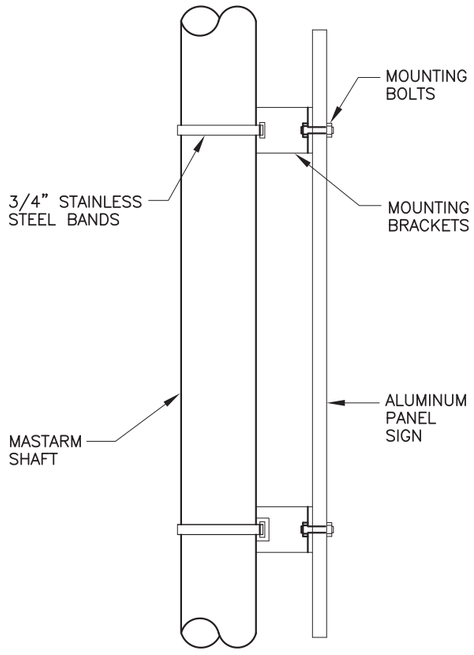
   ITEM 0427.001 – 1 SECTION TRAFFIC SIGNAL ASSEMBLY (4 EACH BEACON)

   ITEM 0450.001 – ALUMINUM PANEL SIGNS (2 EACH BEACON)





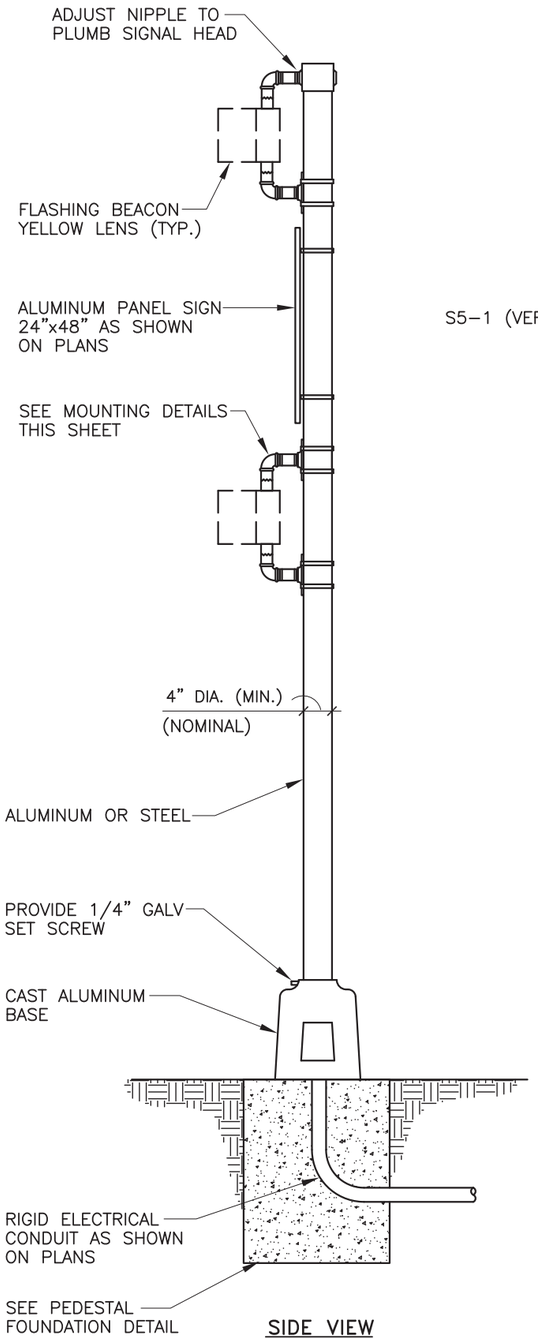
TYPICAL WIRING DIAGRAM FOR
DUAL–CIRCUIT FLASHER OPERATION



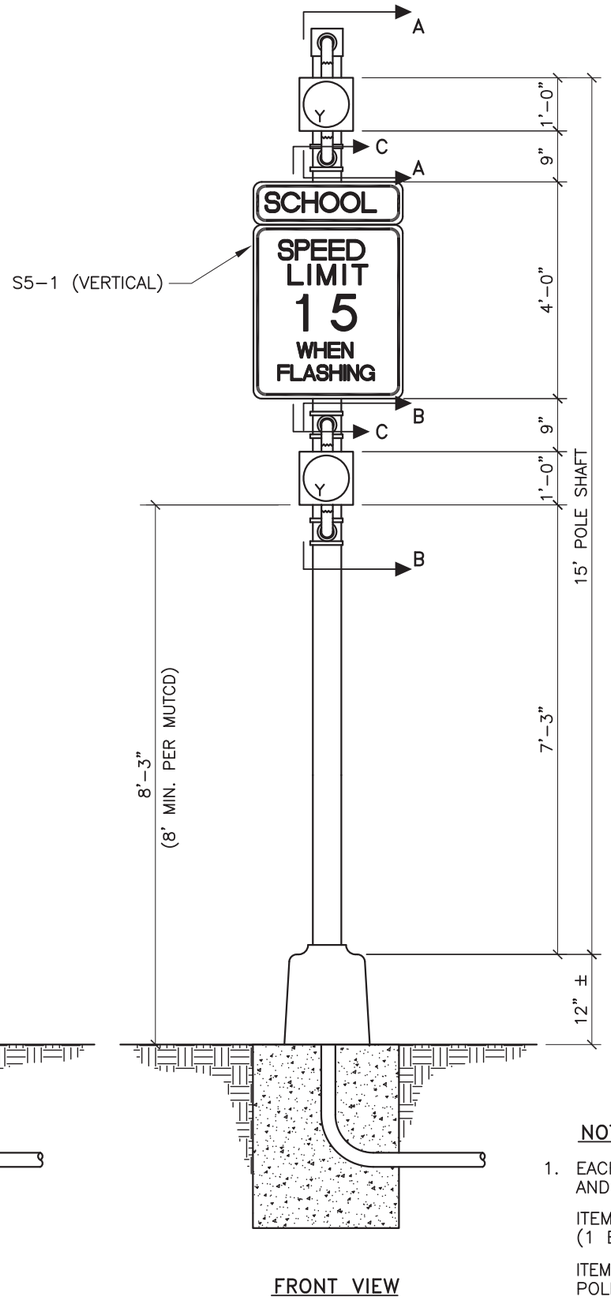
VERTICAL SIGN MOUNT DETAIL

SECTION C–C

REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL SCHOOL BEACON DETAILS (MASTARM)
	DWG. 2565 JANUARY 2003

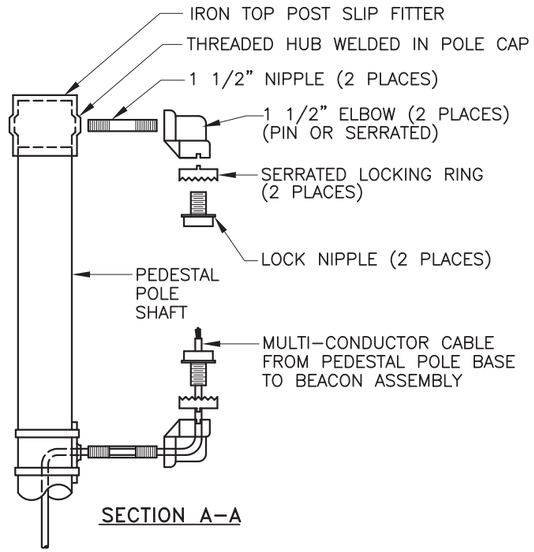


SIDE VIEW

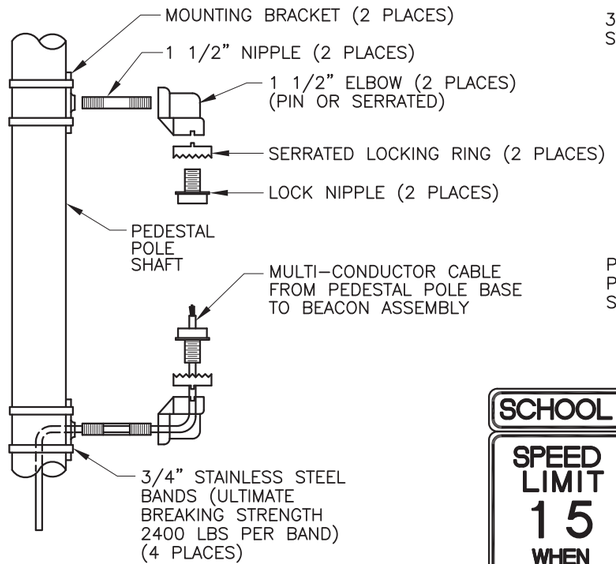


FRONT VIEW

SCHOOL BEACON DETAIL – PEDESTAL



SECTION A–A



SECTION B–B

NOTES:

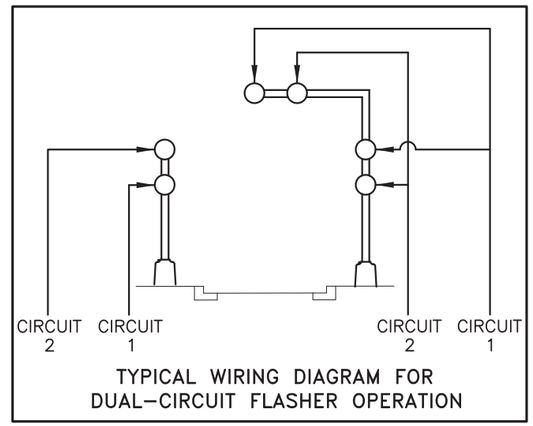
1. EACH SCHOOL BEACON (PEDESTAL) WILL BE MEASURED AND PAID FOR UNDER THE FOLLOWING ITEMS:

   ITEM 0422.004 – TRAFFIC SIGNAL PEDESTAL POLE 15' (1 EACH BEACON)

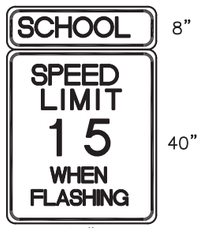
   ITEM 0423.001 – TRAFFIC SIGNAL FOUNDATION FOR PEDESTAL POLE (1 EACH BEACON)

   ITEM 0427.001 – 1 SECTION TRAFFIC SIGNAL ASSEMBLY (2 EACH BEACON)

   ITEM 0450.001 – ALUMINUM PANEL SIGNS (1 EACH BEACON)

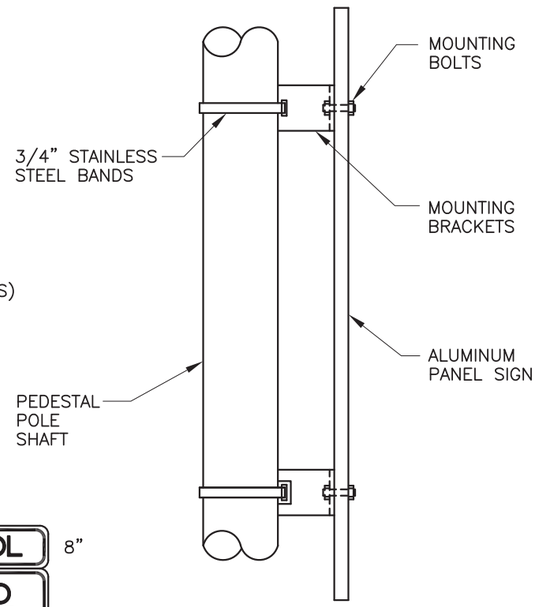


TYPICAL WIRING DIAGRAM FOR DUAL–CIRCUIT FLASHER OPERATION



S5–1 (VERTICAL)

TYPICAL SIGN FACE DETAIL FOR SCHOOL BEACON

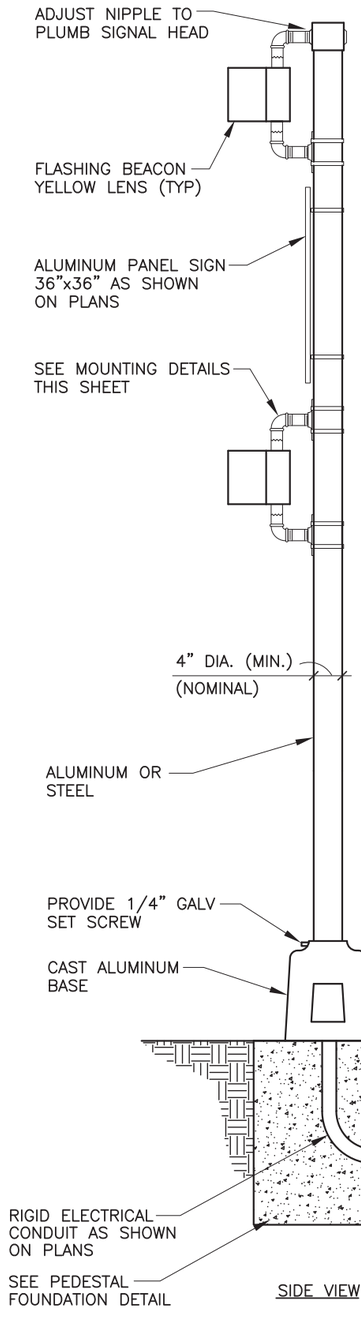


VERTICAL SIGN MOUNT DETAIL
SECTION C–C

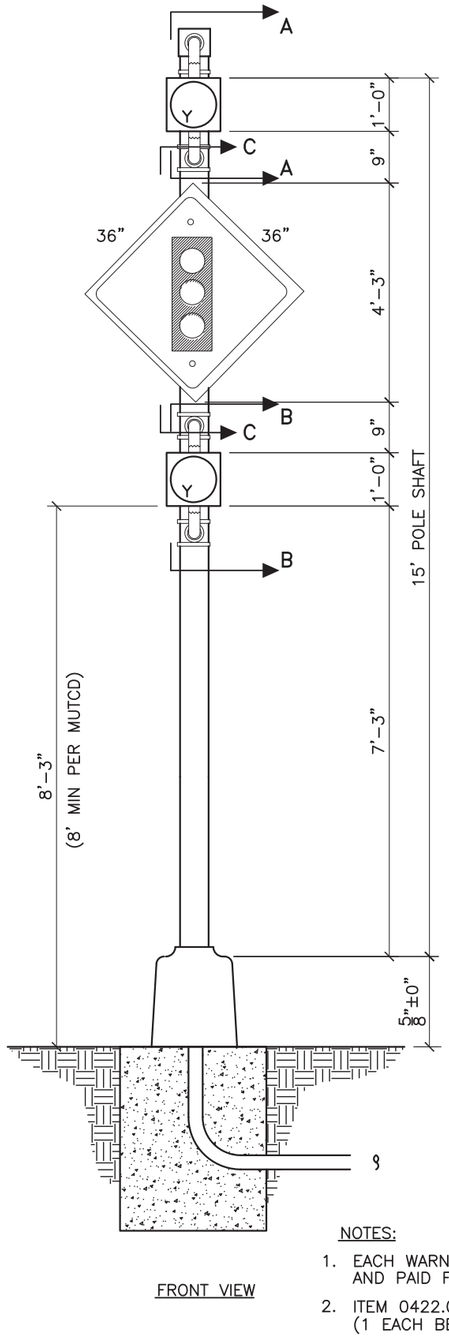
COLORS

LEGEND: BLACK(NON–REFLECTIVE)
TOP PANEL: YELLOW
BOTTOM PANEL: WHITE
OUTSIDE BORDER: WHITE
INSIDE BORDER: BLACK

REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL SCHOOL BEACON DETAILS (PEDESTAL) DWG. 2566 JANUARY 2003

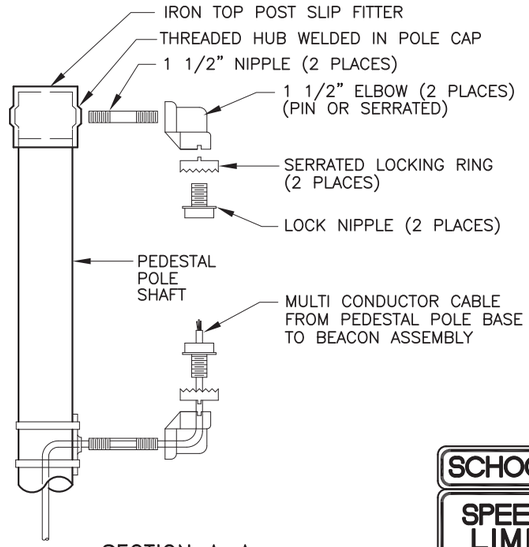


SIDE VIEW

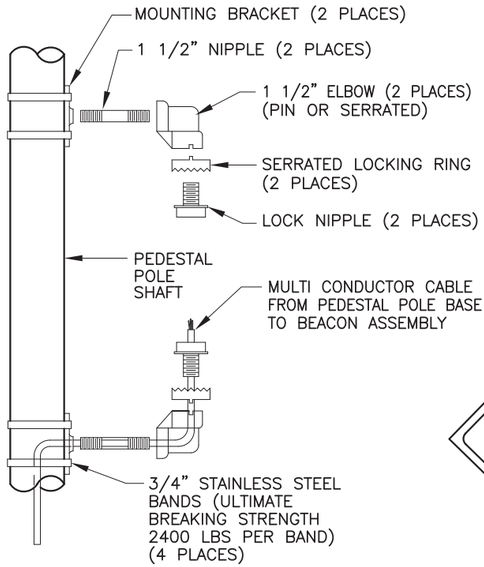


FRONT VIEW

HAZARD IDENTIFICATION BEACON DETAIL



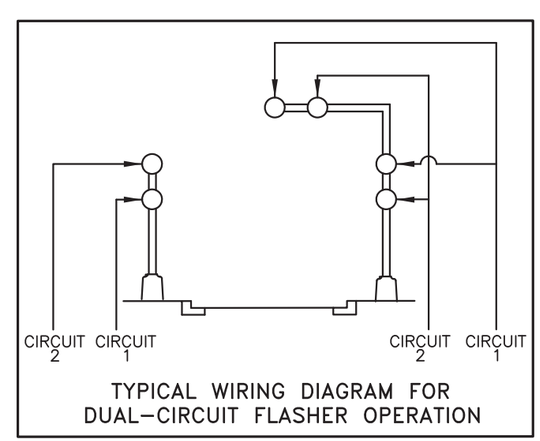
SECTION A–A



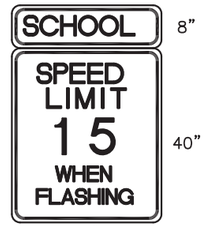
SECTION B–B

NOTES:

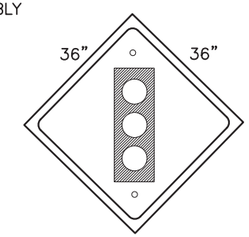
1. EACH WARNING TRAFFIC BEACON WILL BE MEASURED AND PAID FOR UNDER THE FOLLOWING ITEMS:
2. ITEM 0422.004 – TRAFFIC SIGNAL PEDESTAL POLE 15' (1 EACH BEACON)
3. ITEM 0423.001 – TRAFFIC SIGNAL FOUNDATION FOR PEDESTAL POLE (1 EACH BEACON)
4. ITEM 0427.001 – 1 SECTION TRAFFIC SIGNAL ASSEMBLY (2 EACH BEACON)
5. ITEM 0450.001 – ALUMINUM PANEL SIGNS (1 EACH BEACON)



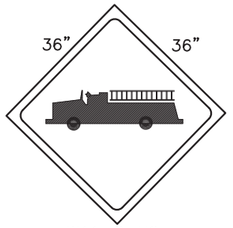
TYPICAL WIRING DIAGRAM FOR DUAL–CIRCUIT FLASHER OPERATION



S5–1 (VERTICAL)

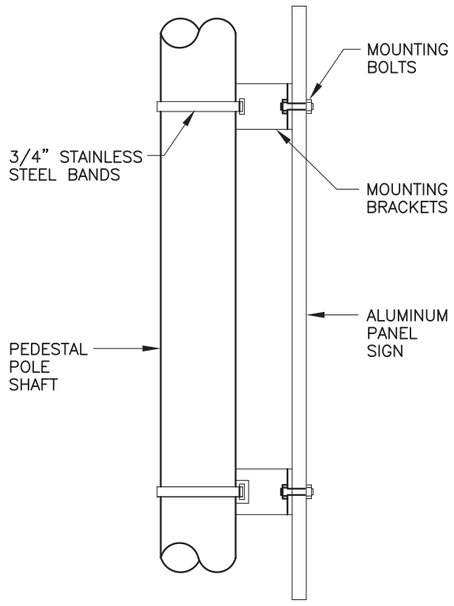


W3–3–36



W11–8–36

TYPICAL SIGN FACE DETAIL FOR HAZARD IDENTIFICATION BEACON



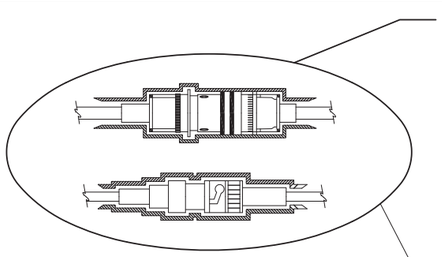
SIGN MOUNT DETAIL

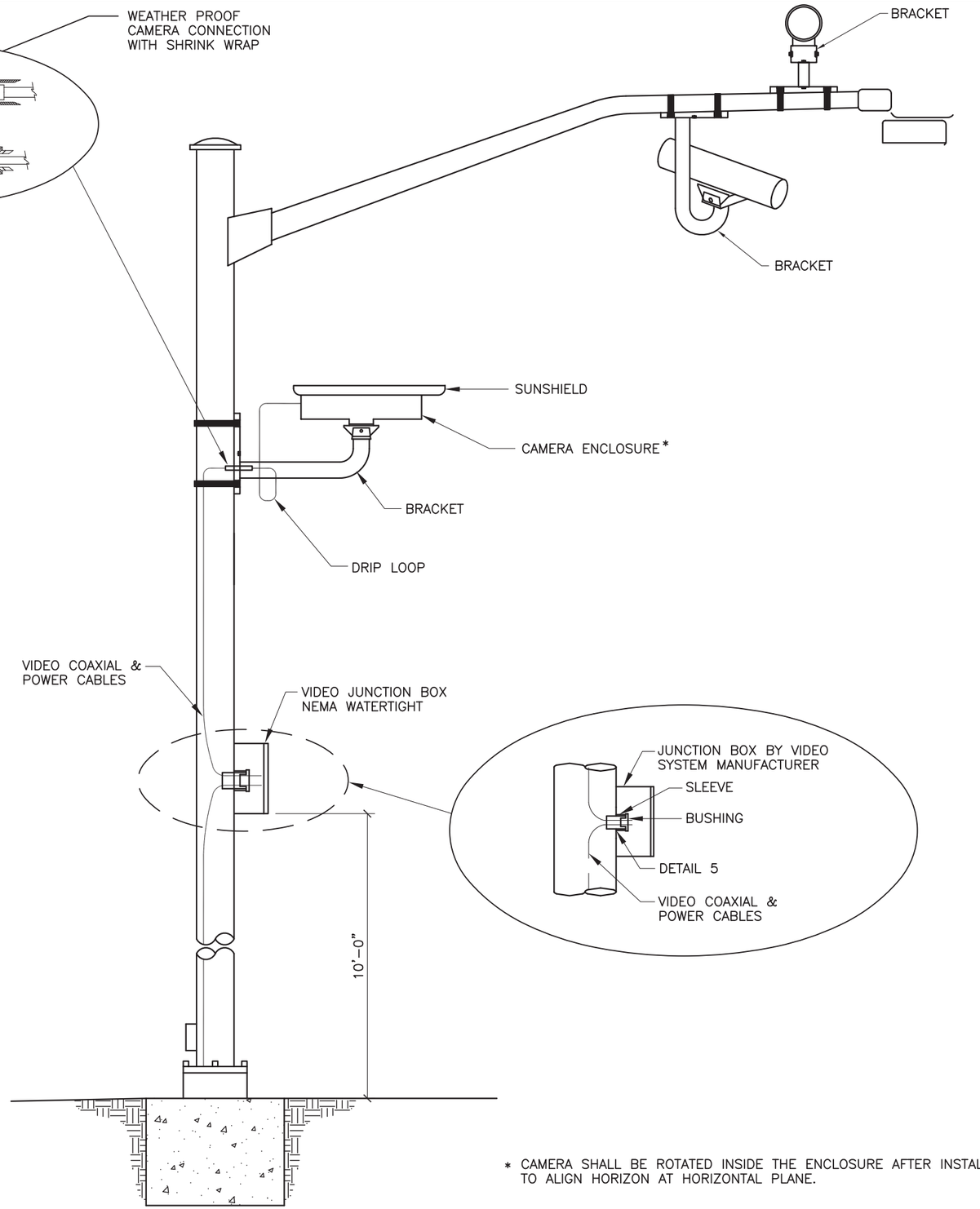
SECTION C–C

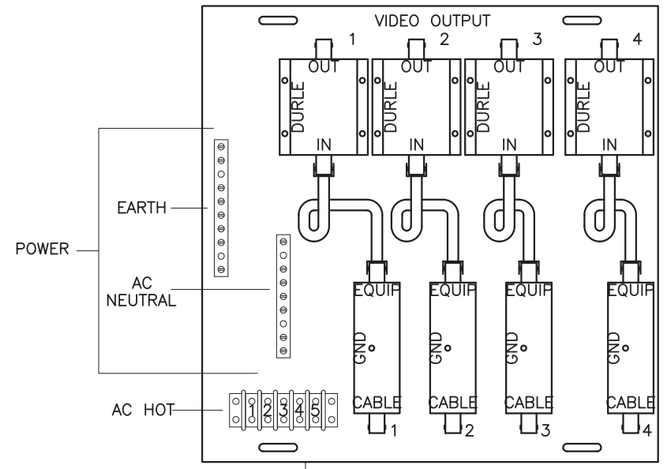
COLORS

LEGEND: BLACK(NON–REFLECTIVE)
TOP PANEL: YELLOW
BOTTOM PANEL: WHITE
OUTSIDE BORDER: WHITE
INSIDE BORDER: BLACK

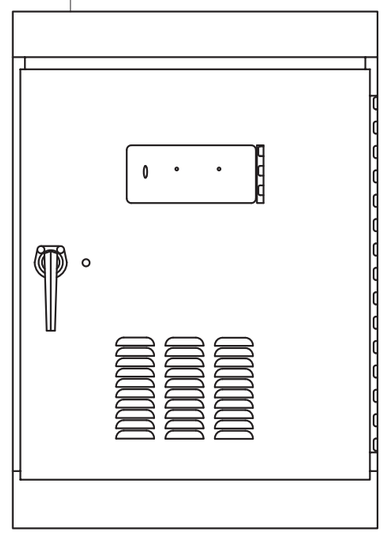
REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL WARNING TRAFFIC BEACON DETAILS DWG. 2566b JANUARY 2003





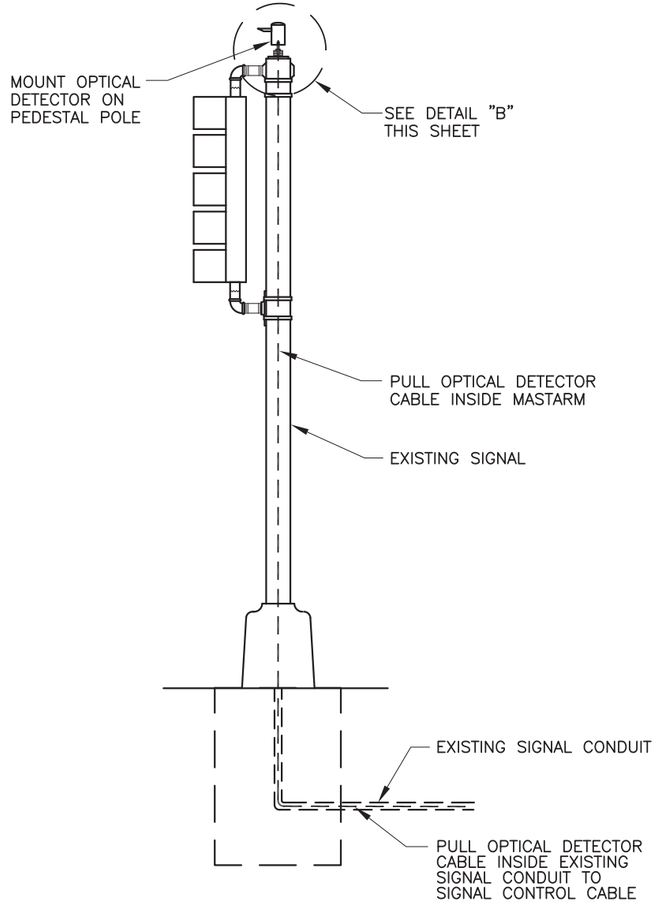


CAMERA INTERFACE PANEL



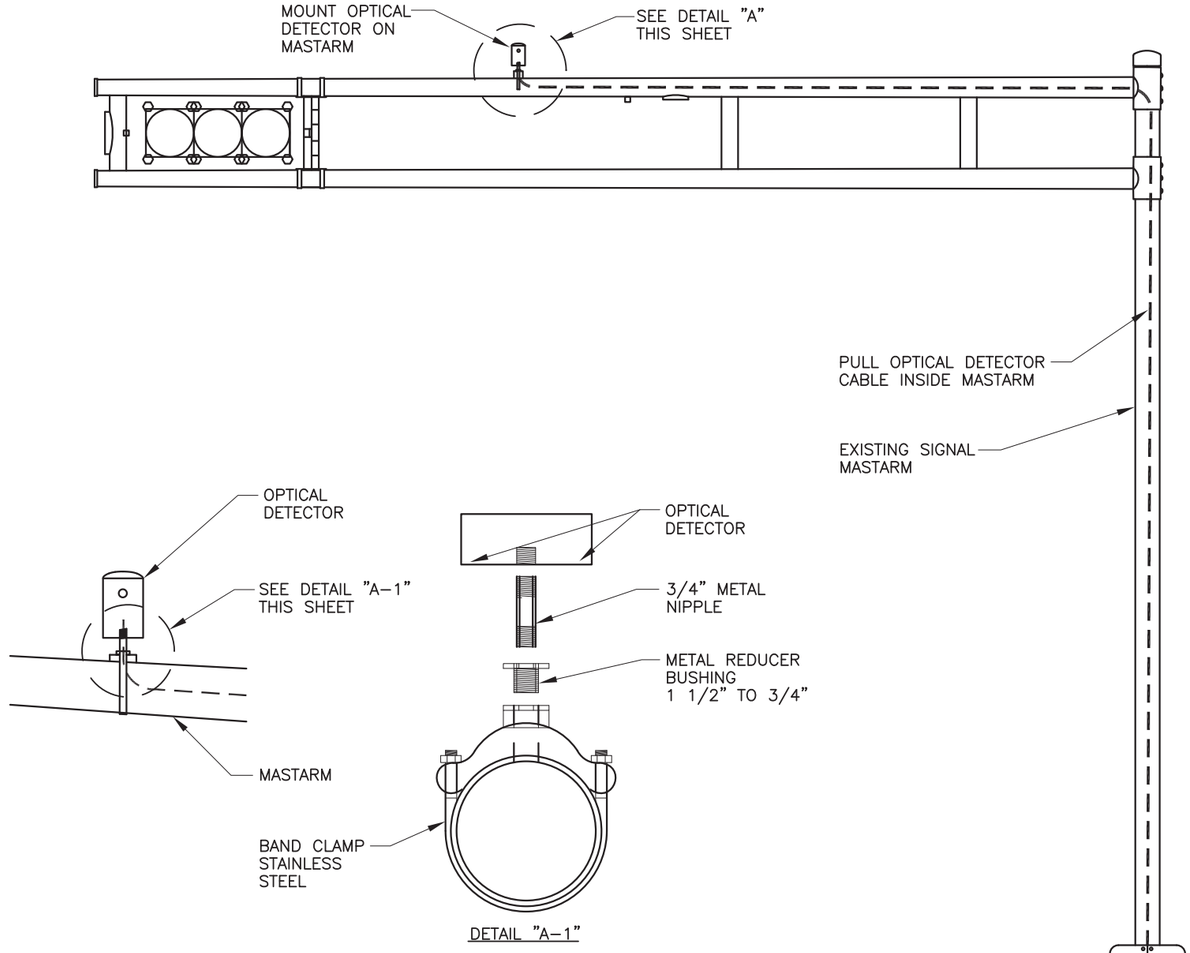
* CAMERA SHALL BE ROTATED INSIDE THE ENCLOSURE AFTER INSTALLATION, TO ALIGN HORIZON AT HORIZONTAL PLANE.

REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL MACHINE VISION VEHICLE DETECTOR SYSTEMS DWG. 2568 JANUARY 2003

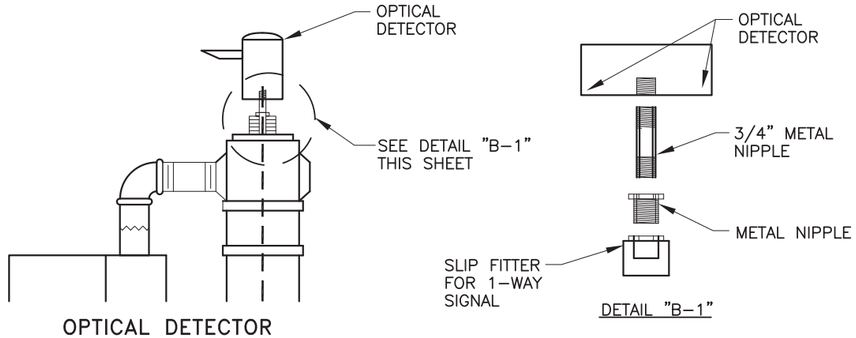


TYPICAL OPTICAL DETECTOR INSTALLATION – PEDESTAL POLE

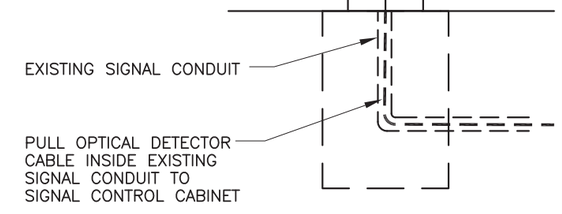
NOTE: OPTICAL DETECTOR SHALL ONLY BE MOUNTED ON PEDESTAL POLES WHEN THERE IS NO MASTARM.



OPTICAL DETECTOR MOUNTING – DETAIL "A"



OPTICAL DETECTOR MOUNTING – DETAIL "B"

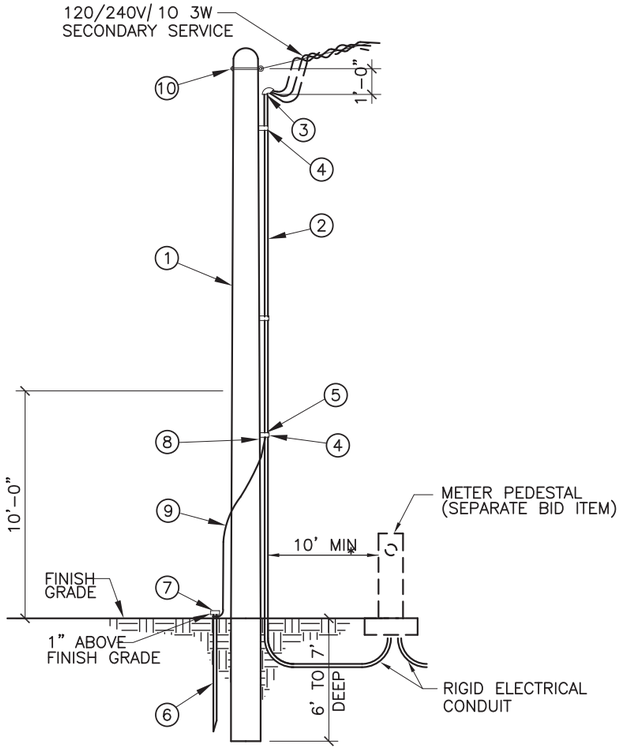


TYPICAL OPTICAL DETECTOR INSTALLATION – MASTARM

NOTES:

1. ALL OPTICAL DETECTOR MOUNTING HARDWARE SHALL CONFORM TO OPTICAL DETECTOR MANUFACTURER'S REQUIREMENTS.

REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL OPTICAL DETECTOR INSTALLATION DETAILS DWG. 2569 JANUARY 2003

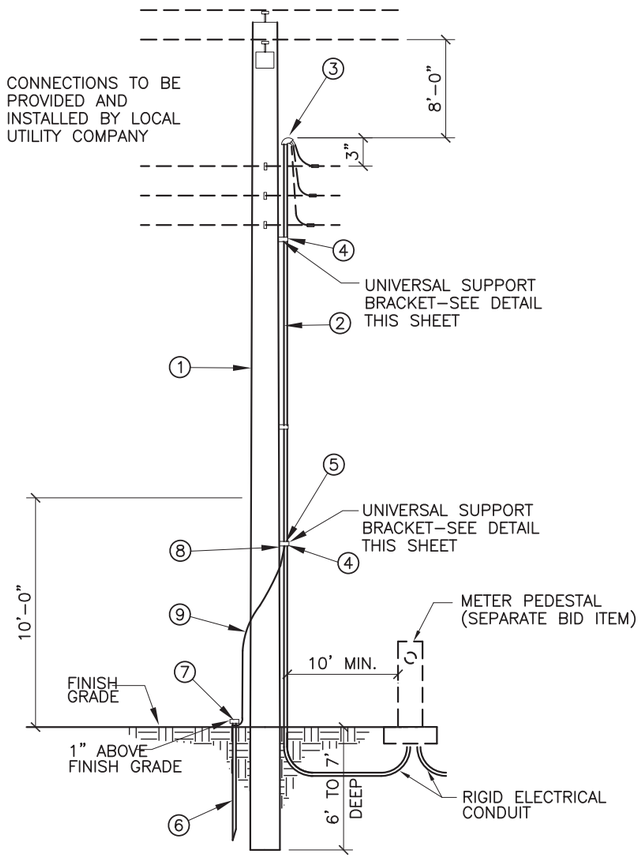


MATERIAL LIST

①	1	25' TREATED POLE
②	30'	2" GALVANIZED CONDUIT
③	1	2" WEATHER HEAD
④	2	UNIVERSAL SUPPORT BRACKET
⑤	2	2" PIPE STRAP KIT
⑥	1	COPPER WELD 3/4"x10'-0" GROUND ROD
⑦	1	GROUND ROD CLAMP
⑧	1	GROUND LUG
⑨	10'	#6 BARE COPPER GROUND WIRE
⑩	1	5/8" EYE BOLT 40' I/C #2 THW BLACK 40' I/C #2 THW WHITE 40' I/C #2 THW RED

SERVICE POLE (SIGNAL)

* CONDUIT AND WIRE EXTENDING MORE THAN 10' FROM POLE WILL BE MEASURED AND PAID PER ACTUAL FOOTAGE USED.

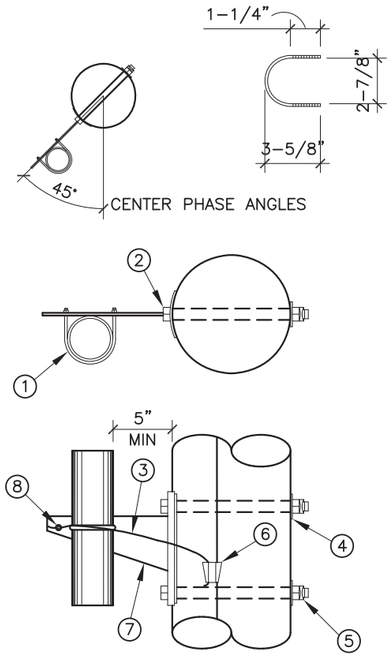


MATERIAL LIST

①	1	EXISTING POLE
②	40'	2" GALVANIZED CONDUIT
③	1	2" WEATHER HEAD
④	2	UNIVERSAL SUPPORT BRACKET
⑤	2	2" PIPE STRAP KIT
⑥	1	COPPER WELD 3/4"x10'-0" GROUND ROD
⑦	1	GROUND ROD CLAMP
⑧	1	GROUND LUG
⑨	10'	#6 BARE COPPER GROUND WIRE 50' I/C #2 THW BLACK 50' I/C #2 THW WHITE 50' I/C #2 THW RED

SERVICE RISER (SIGNAL)

* CONDUIT AND WIRE EXTENDING MORE THAN 10' FROM POLE WILL BE MEASURED AND PAID PER ACTUAL FOOTAGE USED



UNIVERSAL SUPPORT BRACKETS

MATERIAL LIST

①	1	U BOLT
②	2	5/8" MACHINE BOLTS
③	3'	#4 SOLID COPPER WIRE
④	2	2-1/4" SQUARE WASHER
⑤	2	5/8" MF LOCK NUT
⑥	1	LINE TAP
⑦	1	SUPPORT BRACKET
⑧	1	GROUNDING LUG

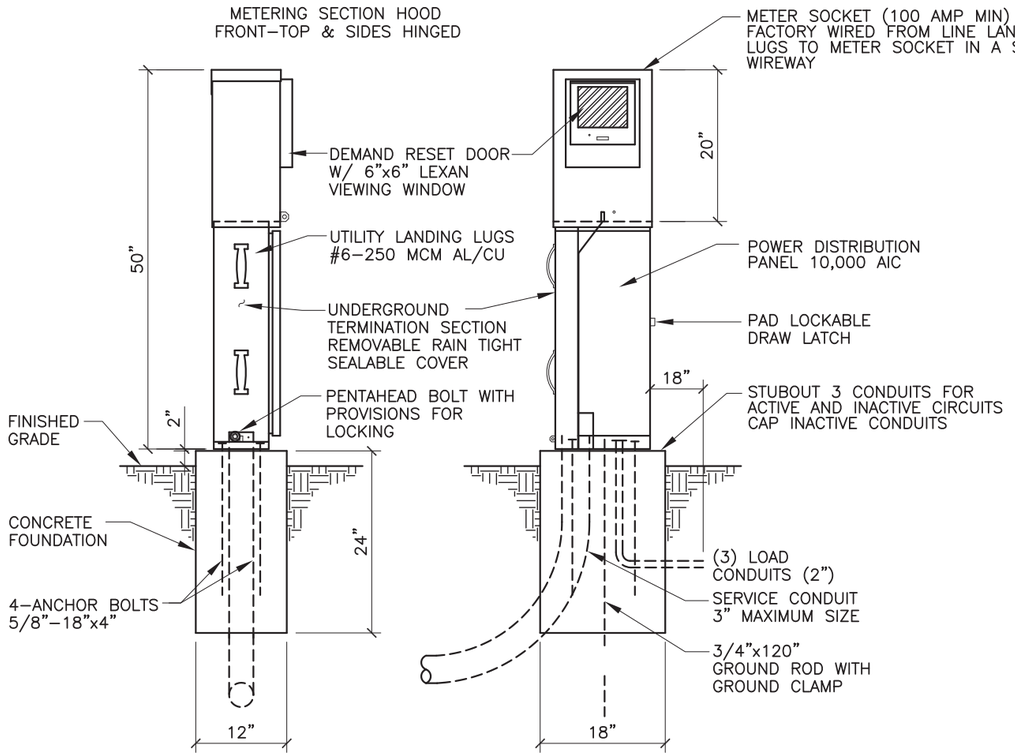
UNIVERSAL SUPPORT BRACKETS NOTES:

1. BRACKET TO BE FASTENED TO POLE WITH 5/8" GALVANIZED MACHINE BOLTS.
2. BRACKET SUITABLE FOR TWO 2" CONDUITS.
3. TWO HOLE STRAPS ATTACHED AT 30" INTERVALS WITH 2" LAG SCREWS MAY BE USED INSTEAD OF THE SUPPORT BRACKET WHEN THE CONDUIT IS 1" OR LESS. A MAXIMUM OF TWO CONDUITS MAY BE STRAPPED DIRECTLY TO THE POLE.

SIGNAL SERVICE NOTES

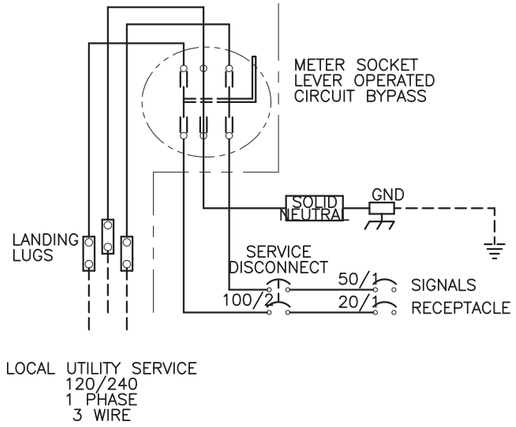
1. ALL SIGNAL SERVICE DETAILS, MATERIALS, & INSTALLATION SHALL CONFORM TO THE LOCAL POWER COMPANY REQUIREMENTS.
2. CONTACT LOCAL POWER COMPANY CUSTOMER SERVICES FOR POLE QUADRANT FOR RISERS.
3. ALL ABOVE GRADE CONDUIT SHALL BE GALVANIZED.
4. RISER BRACKET ASSEMBLY MUST BE GROUNDED PER LOCAL POWER COMPANY REQUIREMENTS.
5. CONDUIT AND WIRE EXTENDING MORE THEN 10' FROM POLE WILL BE MEASURED AND PAID PER ACTUAL FOOTAGE USED.
6. UNIVERSAL SUPPORT BRACKETS WILL BE CONSIDERED INCIDENTAL.
7. DRILLING HOLES IN EXISTING STEEL POLES FOR UNIVERSAL SUPPORT BRACKETS WILL NOT BE PERMITTED. BRACKETS SHALL BE MOUNTED ON STEEL POLES WITH STAINLESS STEEL BANDS.
8. PROVIDE ONE 50A, SINGLE POLE, 120V CIRCUIT FOR CONTROLLER SIGNALS.

REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL ELECTRICAL SERVICE DETAILS DWG. 2570 JANUARY 2003

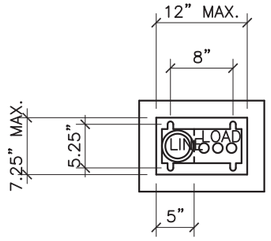


LEFT SIDE

FRONT VIEW



SERVICE EQUIPMENT
WIRING DIAGRAM "A"



BASE PLAN

METER PEDESTAL CONSTRUCTION NOTES

1. METER PEDESTAL SHALL BE UL LISTED "INDUSTRIAL CONTROL PANEL" PER UL 508.
2. METER PEDESTAL SHALL MEET THE ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE (EUSERC) 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 HINGES SHALL BE STAINLESS STEEL.
5. NUTS, BOLTS, AND SCREWS SHALL NOT BE VISIBLE FROM OUTSIDE OF METER PEDESTAL.
6. PHENOLIC NAME PLATES SHALL BE PROVIDED AS REQUIRED.
7. CIRCUIT BREAKERS SHALL BE CABLE IN–CABLE OUT WITH LINE ON TOP & LOAD ON THE BOTTOM. HANDLE POSITION UP="ON", MIDDLE="TRIPPED", DOWN="OFF".
8. A PLASTIC COVERED WIRING DIAGRAM SHALL BE ATTACHED TO THE INSIDE OF THE FRONT DOOR.
9. METER PEDESTAL SHALL BE FACTORY WIRED AND CONFORM TO REQUIRED NEMA STANDARDS.
10. ALL POWDER COATED METER PEDESTAL SHALL HAVE A CORROSION RESISTANT COATING WHICH INCLUDES A FIVE STEP DIP TANK METAL PREPARATION PROCESS:
    A. ALKALINE CLEANER 160° F.
    B. CLEAR WATER RINSE.
    C. IRON PHOSPHATE APPLICATION 150°.
    D. CLEAR WATER RINSE.
    E. INHIBITIVE RINSE TO SEAL PHOSPHATED SURFACES 120°.
    FINISHED WITH AN ELECTROSTATICALLY APPLIED DRY POLYESTER POWDER COATING THEN BAKED @ 380° TO CURE.
11. CONCRETE FOUNDATIONS INCLUDING EXCAVATION AND BACKFILL, CONCRETE, AND ANCHOR BOLTS, COMPLETE–IN PLACE, WILL BE CONSIDERED INCIDENTAL TO THE METER PEDESTAL.

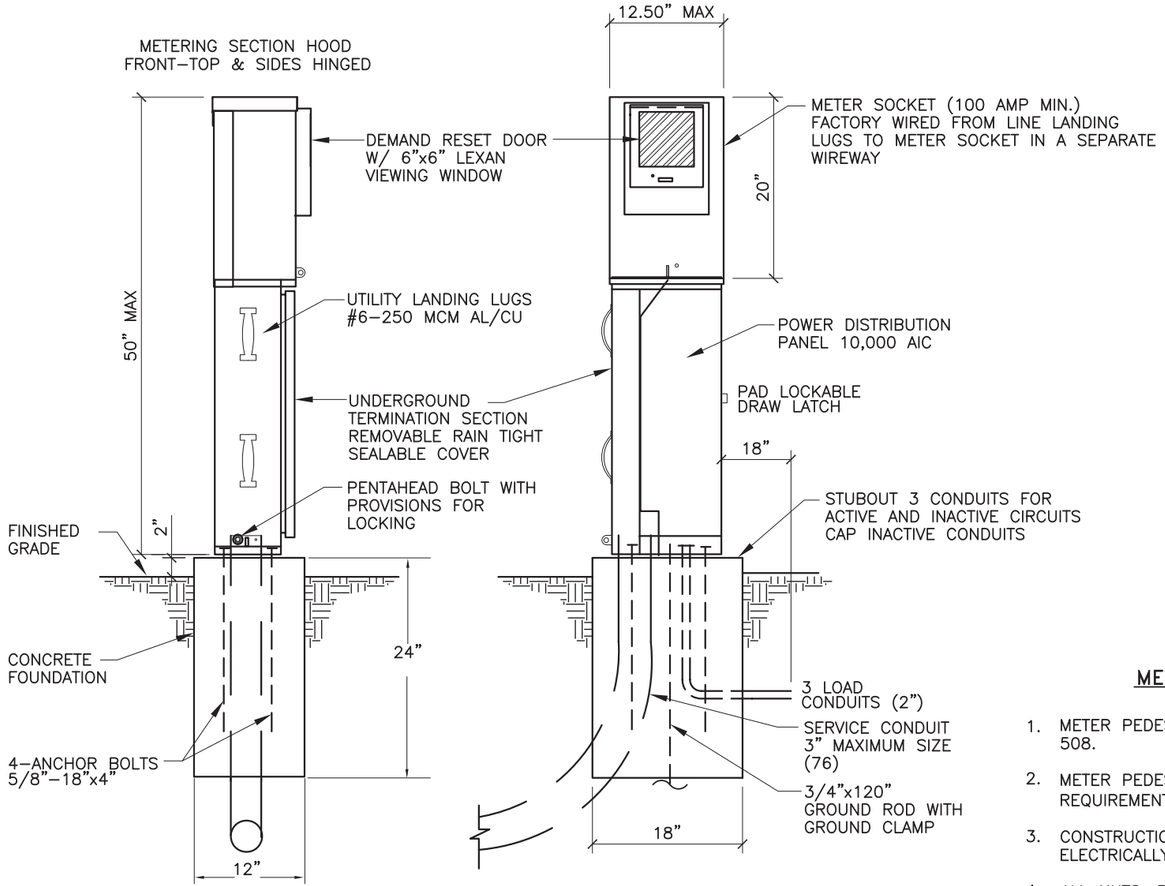
CONSTRUCTION MATERIALS AND FINISH

- ☐ 12 GA HD GALVANIZED SHEET STEEL
  - ☐ POWDER COATED
- ☐ 14 GA #304D STAINLESS STEEL SHEET
  - ☐ POWDER COATED COLOR:
  - ☐ NATURAL
- ☐ 0.125" ALUMINUM SHEET
  - ☐ POWDER COATED COLOR:
  - ☐ ANODIZED

POWDER COAT COLORS

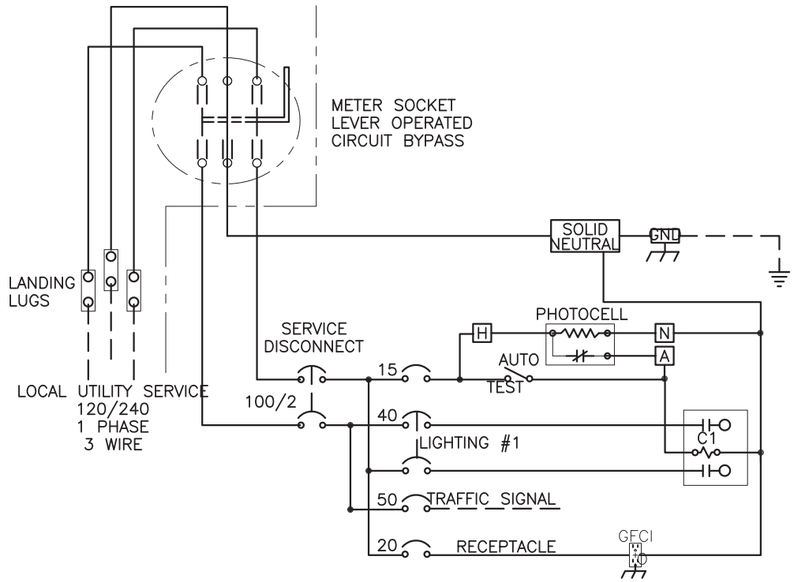
☐ WHITE ☐ RANCH GREEN
☐ MINT GREEN ☐ OTHER_____
☐ CAMEL

REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL METER PEDESTAL DETAILS FOR SIGNAL DWG. 2571 JANUARY 2003

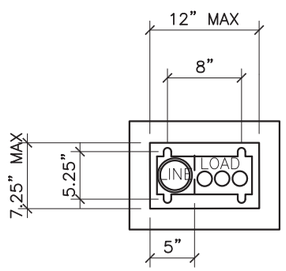


LEFT SIDE

FRONT VIEW



SERVICE EQUIPMENT
WIRING DIAGRAM "B"



BASE PLAN

METER PEDESTAL CONSTRUCTION NOTES

1. METER PEDESTAL SHALL BE UL LISTED "INDUSTRIAL CONTROL PANEL" PER UL 508.
2. METER PEDESTAL SHALL MEET THE ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE (EUSERC) 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 HINGES SHALL BE STAINLESS STEEL.
5. NUTS, BOLTS, AND SCREWS SHALL NOT BE VISIBLE FROM OUTSIDE OF METER PEDESTAL.
6. PHENOLIC NAME PLATES SHALL BE PROVIDED AS REQUIRED.
7. CIRCUIT BREAKERS SHALL BE CABLE IN–CABLE OUT WITH LINE ON TOP & LOAD ON THE BOTTOM. HANDLE POSITION UP="ON", MIDDLE="TRIPPED", DOWN="OFF".
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    B. CLEAR WATER RINSE.
    C. IRON PHOSPHATE APPLICATION 150°.
    D. CLEAR WATER RINSE.
    E. INHIBITIVE RINSE TO SEAL PHOSPHATED SURFACES 120°.
    FINISHED WITH AN ELECTROSTATICALLY APPLIED DRY POLYESTER POWDER COATING THEN BAKED @ 380° TO CURE.
11. CONCRETE FOUNDATIONS INCLUDING EXCAVATION AND BACKFILL, CONCRETE, AND ANCHOR BOLTS, COMPLETE–IN PLACE, WILL BE CONSIDERED INCIDENTAL TO THE METER PEDESTAL.

CONSTRUCTION MATERIALS AND FINISH

- ☐ 12 GA HD GALVANIZED SHEET STEEL
  - ☐ POWDER COATED
- ☐ 14 GA #304D STAINLESS STEEL SHEET
  - ☐ POWDER COATED COLOR:
  - ☐ NATURAL
- ☐ 0.125" ALUMINUM SHEET
  - ☐ POWDER COATED COLOR:
  - ☐ ANODIZED

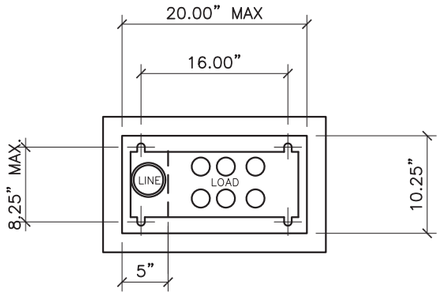
POWDER COAT COLORS

☐ WHITE ☐ RANCH GREEN
☐ MINT GREEN ☐ OTHER_____
☐ CAMEL

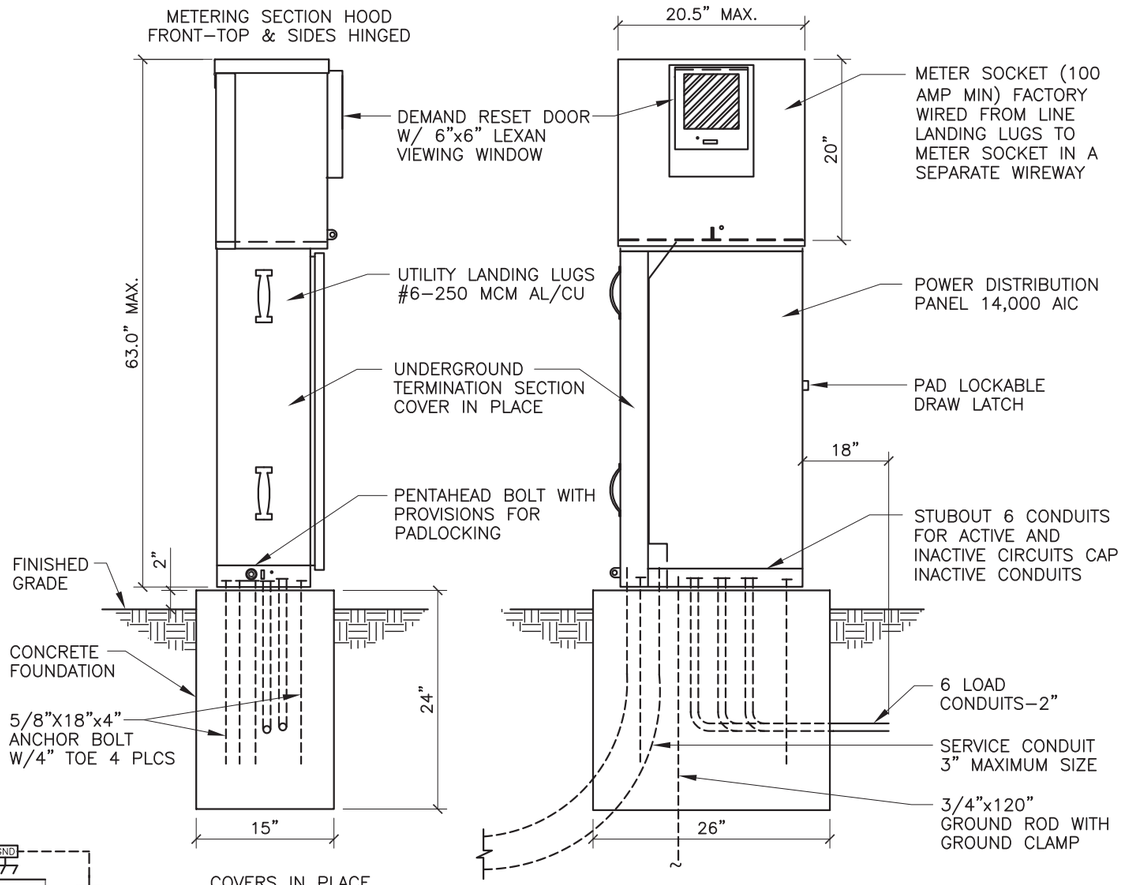
PHOTO ELECTRIC CELL

☐ ON LIGHT POLE
☐ IN SERVICE CABINET

REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC TRAFFIC SIGNAL METER PEDESTAL DETAILS COMBINATION SIGNALS & LIGHTING
	DWG. 2572 JANUARY 2003

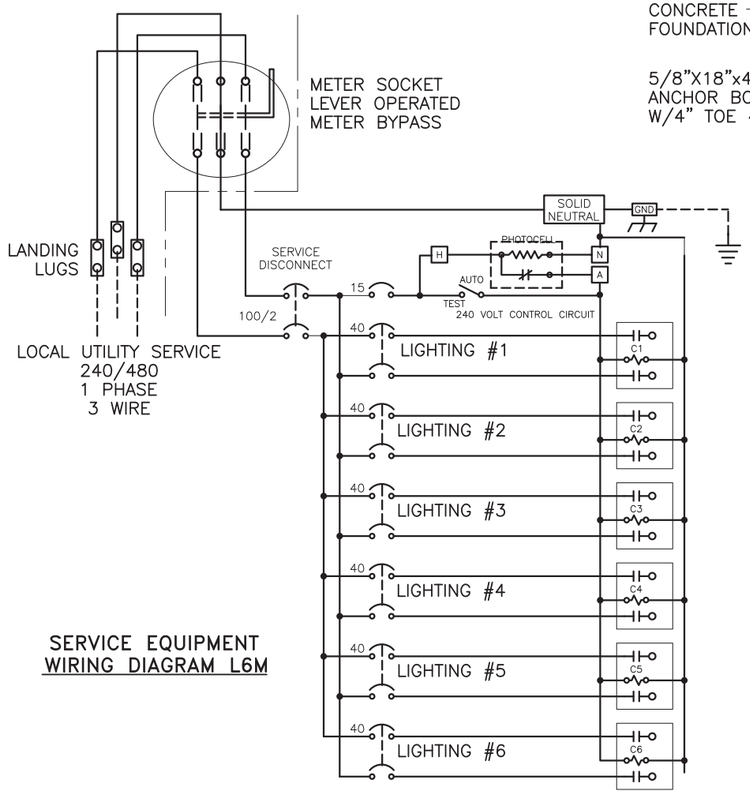


BASE PLAN



LEFT SIDE

FRONT VIEW



SERVICE EQUIPMENT
WIRING DIAGRAM L6M

CONTROL CABINET CONSTRUCTION NOTES

1. CONTROL CABINET SHALL BE UL LISTED "INDUSTRIAL CONTROL PANEL" PER UL 508.
2. CONTROL CABINET SHALL MEET THE ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE (EUSERC) 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 HINGES SHALL BE STAINLESS STEEL.
5. NUTS, BOLTS & SCREWS SHALL NOT BE VISIBLE FROM OUTSIDE OF CABINET.
6. PHENOLIC NAMEPLATES SHALL BE PROVIDED AS REQUIRED.
7. CIRCUIT BREAKERS SHALL BE CABLE IN–CABLE OUT WITH LINE ON TOP & LOAD ON THE BOTTOM. HANDLE POSITION UP="ON", MIDDLE="TRIPPED", DOWN="OFF".
8. A PLASTIC COVERED WIRING DIAGRAM SHALL BE ATTACHED TO THE INSIDE OF THE FRONT DOOR.
9. CABINET SHALL BE FACTORY WIRED AND CONFORM TO REQUIRED NEMA STANDARDS.
10. ALL POWDER CONTROL COATED CONTROL CABINETS SHALL HAVE A CORROSION RESISTANT COATING WHICH INCLUDES A FIVE STEP DIP TANK METAL PREPARATION PROCESS:
    A. ALKALINE CLEANER 160° F.
    B. CLEAR WATER RINSE.
    C. IRON PHOSPHATE APPLICATION 150° F.
    D. CLEAR WATER RINSE.
    E. INHIBITIVE RINSE TO SEAL PHOSPHATED SURFACES 120° F.

    FINISHED WITH AN ELECTROSTATICALLY APPLIED DRY POLYESTER POWDER COATING THEN BAKED @ 380° F TO CURE.
11. CONCRETE FOUNDATIONS FOR CONTROL CABINET INCLUDING EXCAVATION AND BACKFILL, CONCRETE, GROUND RODS AND ANCHOR BOLTS, COMPLETE IN PLACE, WILL BE CONSIDERED INCIDENTAL TO THE METER CONTROL CABINET.

CONSTRUCTION MATERIALS AND FINISH

- ☐ 12 GA HD GALVANIZED SHEET STEEL
  - ☐ POWDER COATED
- ☐ 14 GA #304D STAINLESS STEEL SHEET
  - ☐ POWDER COATED COLOR:
  - ☐ NATURAL
- ☐ 0.125" ALUMINUM SHEET
  - ☐ POWDER COATED COLOR:
  - ☐ ANODIZED

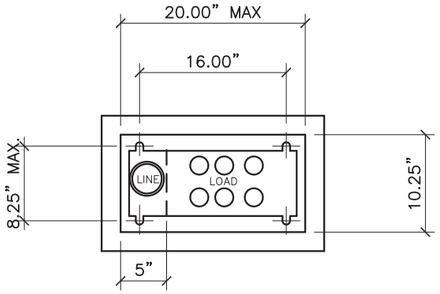
POWDER COAT COLORS

☐ WHITE ☐ RANCH GREEN
☐ MINT GREEN ☐ OTHER _____
☐ CAMEL

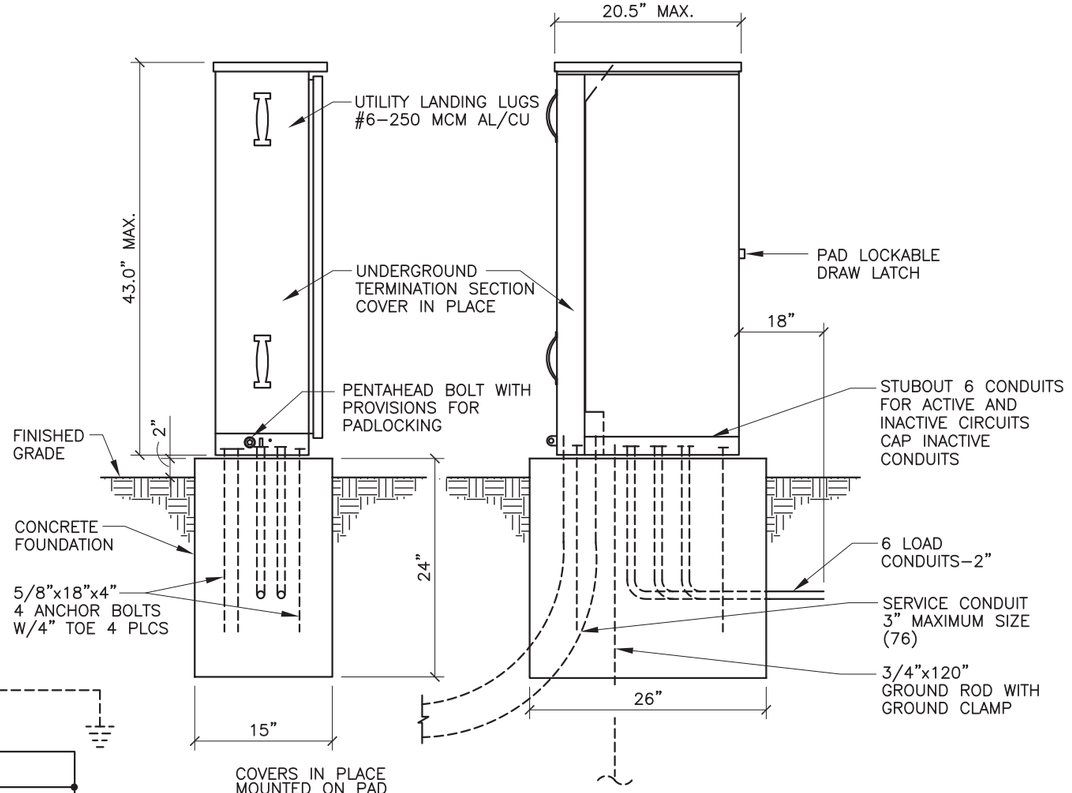
PHOTO ELECTRIC CELL

☐ ON LIGHT POLE
☐ IN SERVICE CABINET

REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC STREET LIGHTING CONTROL CABINET SIX CIRCUIT, METERED
	DWG. 2573 JANUARY 2003

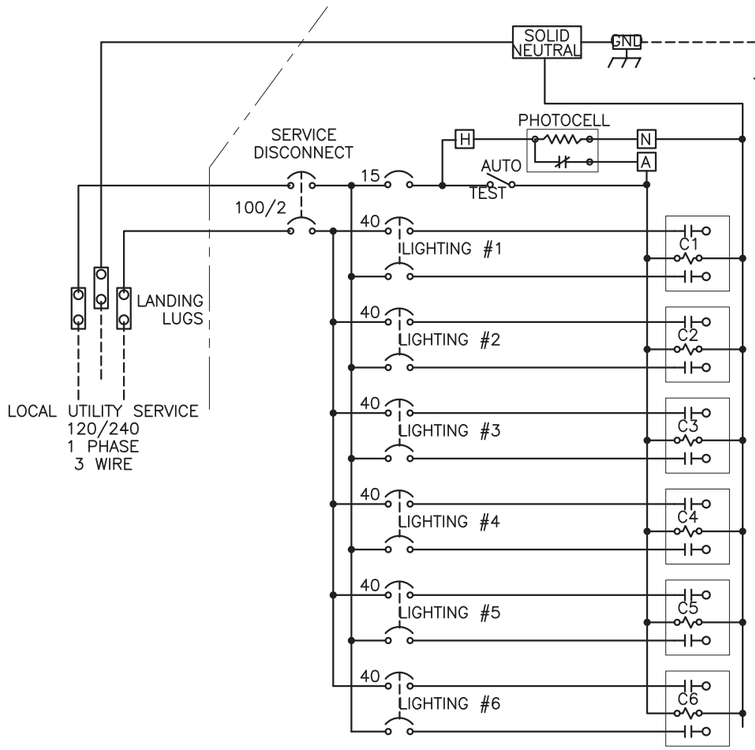


BASE PLAN



LEFT SIDE

FRONT VIEW



SERVICE EQUIPMENT
WIRING DIAGRAM L6UM

CONTROL CABINET CONSTRUCTION NOTES

1. CONTROL CABINET SHALL BE UL LISTED "INDUSTRIAL CONTROL PANEL" PER UL 508.
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CONSTRUCTION MATERIALS AND FINISH

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  - ☐ POWDER COATED
- ☐ 14 GA #304D STAINLESS STEEL SHEET
  - ☐ POWDER COATED COLOR:
  - ☐ NATURAL
- ☐ 0.125" ALUMINUM SHEET
  - ☐ POWDER COATED COLOR:
  - ☐ ANODIZED

POWDER COAT COLORS

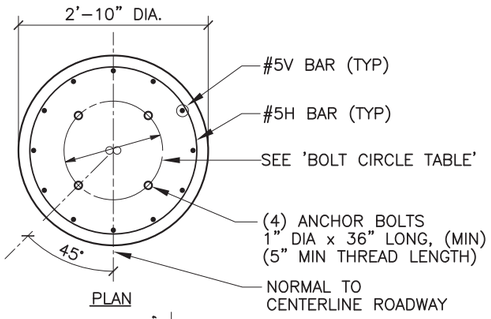
- ☐ WHITE
- ☐ RANCH GREEN
- ☐ MINT GREEN
- ☐ OTHER _____
- ☐ CAMEL

PHOTO ELECTRIC CELL

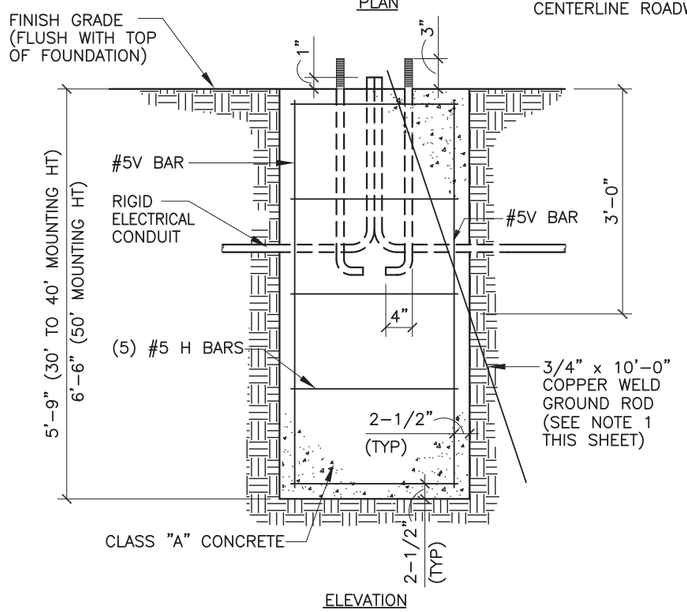
- ☐ ON LIGHT POLE
- ☐ IN SERVICE CABINET

REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC STREET LIGHTING CONTROL CABINET– SIX CIRCUIT UNMETERED
	DWG. 2574 JANUARY 2003

BOLT CIRCLE TABLE		
MOUNTING HEIGHT	NUMBER OF ARMS	BOLT CIRCLE
30'–35'	1 OR 2	11" OR 12"
40'	1	11" OR 12"
40'	2	14" OR 15"
50'	1	14" OR 15"
50'	2	14" OR 16"



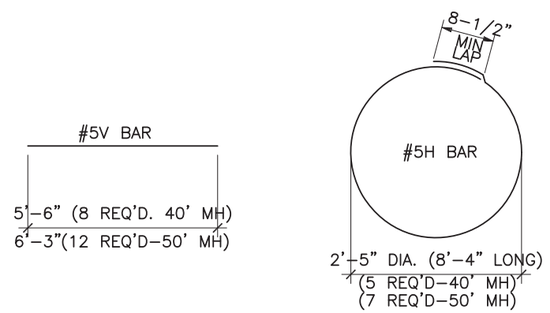
PLAN



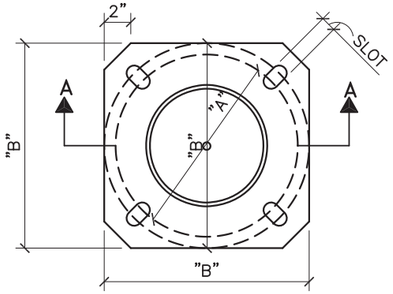
ELEVATION

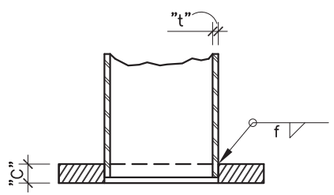
FOUNDATION DETAILS

ESTIMATED FOUNDATION QUANTITIES		
ITEM	30' TO 40' MOUNTING HT	50' MOUNTING HT
REINFORCING BARS, GRADE 60	92 LBS	139 LBS
PORTLAND CEMENT CONCRETE CLASS "A"	1.33 CU YDS	1.5 CU YDS



REINFORCING BARS





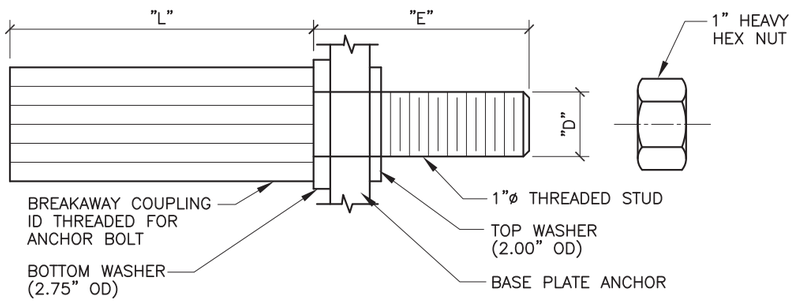
SECTION "A–A"

t. = 0.120 f. = 3/16"
t. = 0.134 f. = 3/16"
t. = 0.179 f. = 1/4"

DIMENSION TABLE					
MOUNTING HEIGHT	NUMBER OF ARMS	DIMENSIONS (INCHES) A (MIN)	B (MAX)	C	SLOT
30'–35'	1 OR 2	11	16	1"	1.13" x 3.69"
40'	1 OR 2	11	16	1"	1.13" x 3.69"
50'	1 OR 2	14	16	1"	1.13" x 2.19"

ANCHOR BASE SHALL BE FABRICATED FROM PLATE STEEL CONFORMING TO ASTM A–36 AND SHALL BE WELDED TO POLE SHAFT PRIOR TO GALVANIZING SHAFT.

ANCHOR BASE DETAIL



DIMENSION TABLE							
D	THREAD	MINIMUM TENSILE STRENGTH	RESTRAINED SHEAR MIN	RESTRAINED SHEAR MAX	NUT TORQUE ±25 FT–LBS	L	E
1"	8 UNC	25 KIPS	30 KIPS	7.5 KIPS	175	4–3/4"	3–5/16"

BREAKAWAY SUPPORT COUPLING SHALL CONFORM TO THE REQUIREMENTS OF AASHTO STANDARDS FOR BREAKAWAY SUPPORTS.

BREAKAWAY COUPLINGS SHOULD NOT BE USED ON 50' DOUBLE ARM POLES.

COUPLING SHALL BE FABRICATED FROM EITHER DIE CAST ALUMINUM ALLOY 380 ACCORDING TO ASTM B–85, OR EXTRUDED FROM ALLOY 2024–T8511 ACCORDING TO ASTM A–153.

WASHERS SHALL BE FABRICATED FROM ASTM A–36 STEEL PLATE AND SHALL BE GALVANIZED ACCORDING TO ASTM A–153.

HEX NUTS SHALL MEET THE REQUIREMENTS OF ASTM A–563 GRADE A, AND ANSI 18.2.2 HEX TYPE AND SHALL BE GALVANIZED ACCORDING TO ASTM A–153.

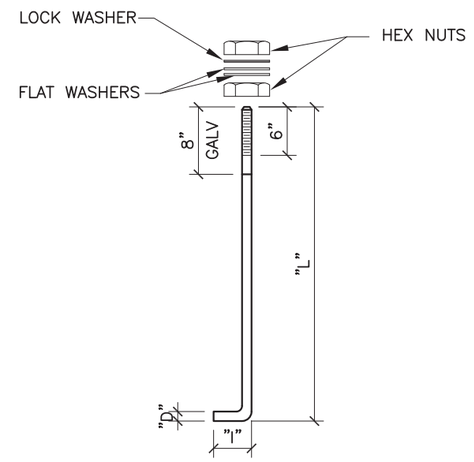
THREADED STUD SHALL MEET THE REQUIREMENT OF ASTM A–675 GRADE 90 AND IS GALVANIZED WITH ASTM A–153, OR IS FABRICATED FROM ANSI STAINLESS STEEL.

WHEN COUPLINGS ARE FURNISHED, EACH LIGHT POLE SHALL BE FURNISHED WITH FOUR (4) COUPLINGS AND THREADED STUDS, EIGHT (8) FLAT WASHERS, AND FOUR (4) HEX NUTS.

BREAKAWAY SUPPORT COUPLING

GENERAL NOTES:

1. ALL FOUNDATIONS SHALL INCLUDE COPPER WELD GROUND RODS AS SHOWN WHICH SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE FOUNDATION. NO PRICE OR PAYMENTS SHALL BE MADE THEREFOR.
2. WELDING SHALL BE IN ACCORDANCE WITH SECTION 1.4.2 OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.
3. ALUMINUM STANDARDS MAY UTILIZE EITHER AN APPROVED ALUMINUM BASE OR BREAKAWAY COUPLINGS.



DIMENSION TABLE					
MOUNTING HEIGHT	NUMBER OF ARMS	D	L	I	UNC
30'–50'	1 OR 2	1"	36	4	8

ANCHOR BOLTS SHALL BE HOT BENT AND SHALL MEET THE REQUIREMENTS OF ASTM A–675 GRADE 90, NUTS MEET THE REQUIREMENTS OF ASTM A–563 GRADE A, AND ANSI B18.2.

FLAT WASHERS SHALL MEET THE REQUIREMENTS OF ANSI B27.2 HEAVY WASHERS.

LOCK WASHERS SHALL MEET THE REQUIREMENTS OF ANSI B18.21.1 HEAVY WASHERS.

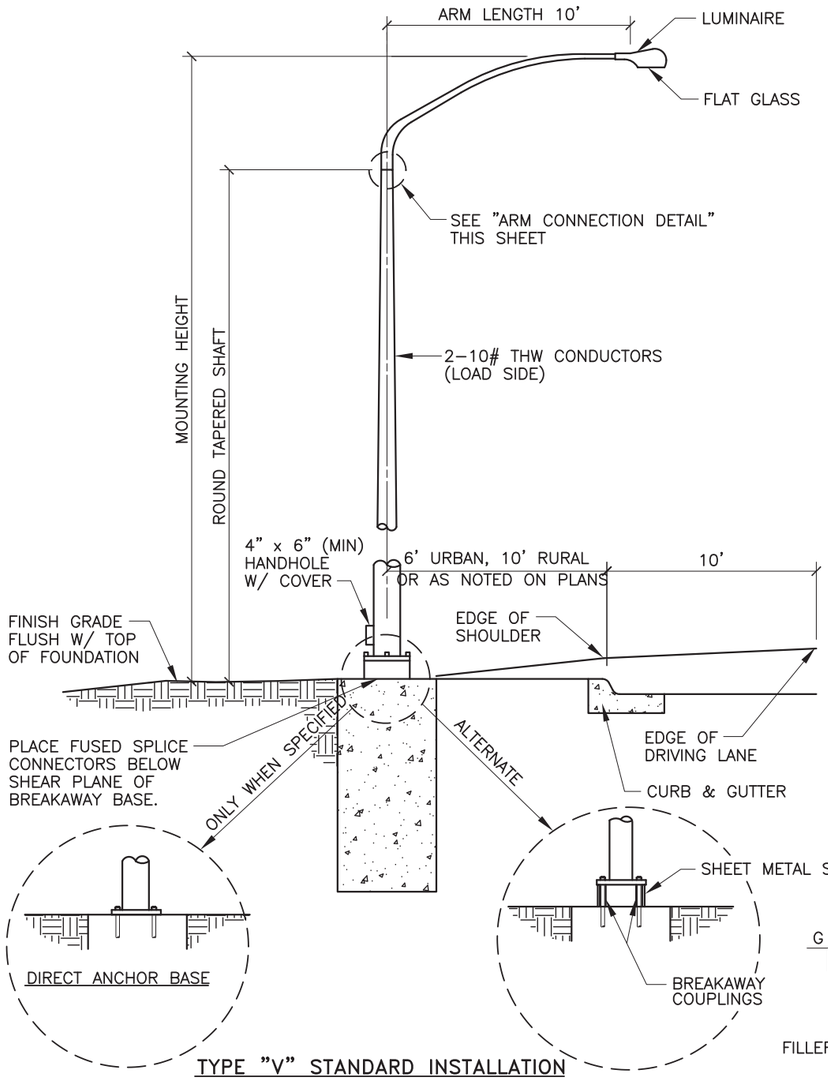
BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A–153.

FOUR (4) ANCHOR BOLTS, EIGHT(8) HEX NUTS, EIGHT (8) FLAT WASHERS, AND FOUR (4) LOCK WASHERS SHALL BE FURNISHED WITH EACH POLE.

NUTS, FLAT WASHERS, AND LOCK WASHERS FURNISHED FOR BREAKAWAY SUPPORTS SHALL BE SPECIFIED ON DETAILS.

ANCHOR BOLTS

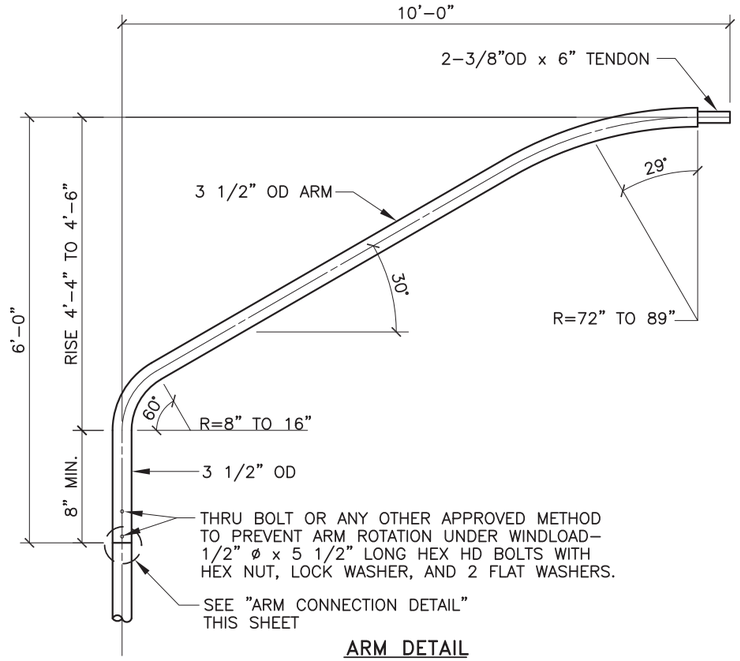
REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC STREET LIGHTING FOUNDATION & MISCELLANEOUS DETAILS DWG. 2580 JANUARY 2003



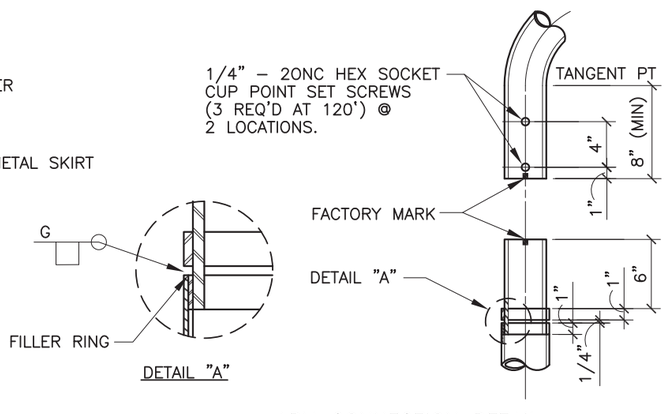
TYPE "V" STANDARD INSTALLATION

NOTES

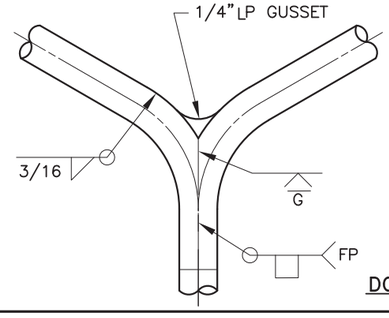
1. MASTARM SHALL BE DAVIT STYLE. DIMENSIONS SHALL BE AS NOTED. ARM SHALL BE ATTACHED ON A SHAFT TENDON AS DETAILED. SHAFT SHALL BE A ROUND TAPERED TUBE.
2. NUTS, BOLTS OR FASTENERS SHALL COMPLY WITH ASTM A–307 AND/OR AASHTO M–314 GRADE 55 BE EITHER ZINC PLATED, ASTM A–153 OR CADMIUM PLATED, ASTMA–165.
3. BOLT GASKET SHALL BE 22 GAUGE STAINLESS STEEL SHEET OF 18–8 SERIES (301, 302, 303, 304).
4. GROUTING SHALL BE IN ACCORDANCE TO SECTION 617 OF THE STANDARD SPECIFICATIONS.
5. ACCEPTABLE TYPE V LIGHTING STANDARDS ARE VALMONT HAPCO ALUMINUM, AND UNION METAL.
6. DETAILS SHOWN ARE FOR STEEL POLES. PRE–APPROVED ALUMINUM POLES MAY BE USED.



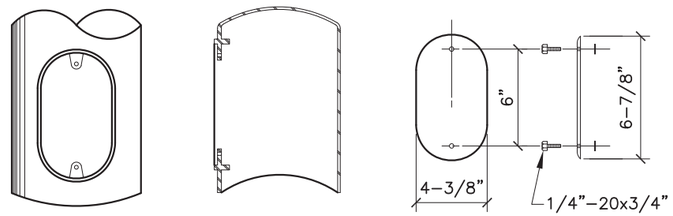
ARM DETAIL



ARM CONNECTION DETAIL



DOUBLE ARM CONNECTION DETAIL



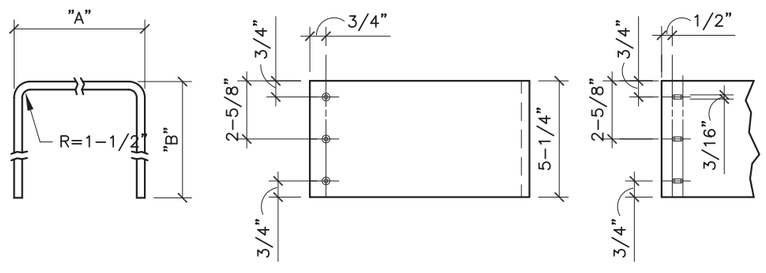
HANDHOLE REINFORCEMENT1. SHALL BE FORGED FROM STEEL CONFORMING TO ASTM A–576, GRADE 1021, OR SHALL BE FABRICATED FROM 3/16" WALL TUBING CONFORMING TO ASTM A–36; OR CAST FROM STEEL CONFORMING TO ASTM A–27, GRADE 65–35. OR 6" STANDARD BLACK PIPE (0–280" WALL) ASTM A–53 GRADE B.

REINFORCEMENT SHALL BE WELDED TO THE POLE SHAFT IN THE 90 DEGREE LOCATION, PRIOR TO GALVANIZING POLE SHAFT. COVER SHALL BE FABRICATED FROM 3/16" SHEET STEEL OR ALUMINUM. STEEL COVER IS GALVANIZED ACCORDING TO ASTM A–153. COVER SHALL BE EQUIPPED WITH TWO (2) AISI 304 STAINLESS STEEL 1/4" – 20 x 3/4" HEX CAP SCREW AND TWO (2) CAPTIVE WASHERS.

PROVISION FOR INTERNAL GROUNDING SHALL BE PROVIDED BY A TAPPED HOLE.

HANDHOLE REINFORCEMENT SHALL STRENGTHEN POLE SHAFT SECTION TO THAT OF A SHAFT FABRICATED WITHOUT A HANDHOLE.

HANDHOLE DETAILS



SPECIFICATION:

SKIRT COVER SHALL BE FABRICATED FROM 1/16" SHEET ALUMINUM ALLOY 3003H14. SCREWS ARE SELF TAPPING #10 x 5/8" STAINLESS STEEL.
WHEN COUPLINGS ARE SPECIFIED, EACH LIGHT POLE WILL BE FURNISHED WITH TWO (2) SKIRT COVER SECTIONS AND SIX (6) SCREWS.

INTENDED USE:

THE SKIRT COVER IS USED TO ENCLOSE VOID UNDER POLES WITH BREAKAWAY SUPPORT COUPLINGS.

SKIRT COVER DETAILS

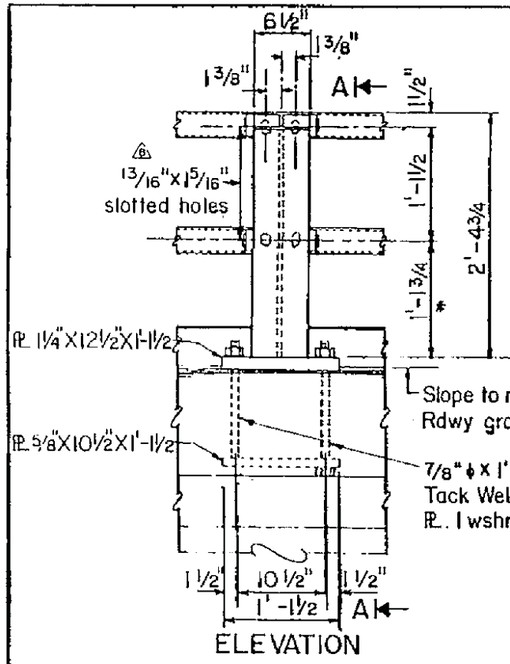
REVISIONS	CITY OF ALBUQUERQUE
	TRAFFIC
	STREET LIGHTING INSTALLATION & POLE DETAILS
	DWG. 2581 JANUARY 2003

SECTION 2600

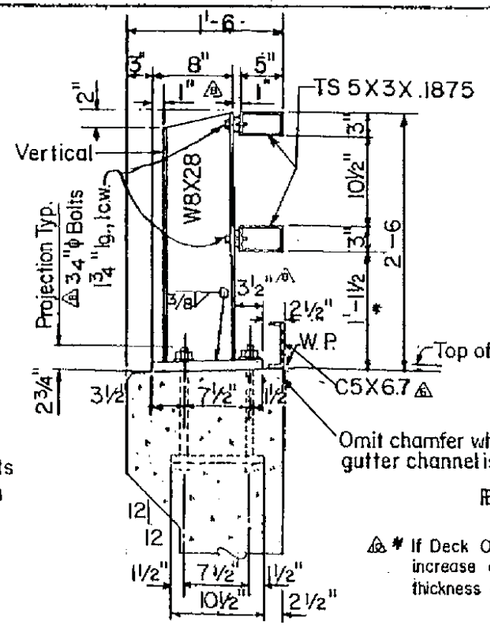
NMSHD STANDARD DRAWINGS

DWG. NO.	TITLE
2601	METAL RAILING TYPE A
2602	METAL RAILING TYPE B
2603	METAL RAILING TYPE C
2604	METAL RAILING TYPE D
2610	METAL BARRIER MATERIALS & PLACEMENT PROCEDURES
2615	METAL BARRIER DETAIL TYPE A END ANCHORAGE
2620	THRIE BEAM METAL BARRIER OVER CBC & UNDERPASSES
2625	METAL BARRIER THRIE BEAM ROADSIDE & BOX CULVERT
2626	SPECIAL METAL BARRIER TRANSITION DETAILS
2630	METAL BARRIER AT BRIDGE APPROACHES
2631	APPROACH SLOPE PREPARATION FOR METAL BARRIER
2635	METAL BARRIER(BREAKAWAY) TYPE "C" END ANCHORAGE (WOOD POSTS)
2636	METAL BARRIER(BREAKAWAY TYPE "C" END ANCHORAGE (STEEL POSTS)
2637	METAL BARRIER(BREAKAWAY TYPE "C" END ANCHORAGE STEEL POSTS(SOIL PLATE)

FHWA Project No.	STATE		SHEET NO	TOTAL SHEETS
6	NEW MEXICO		28	

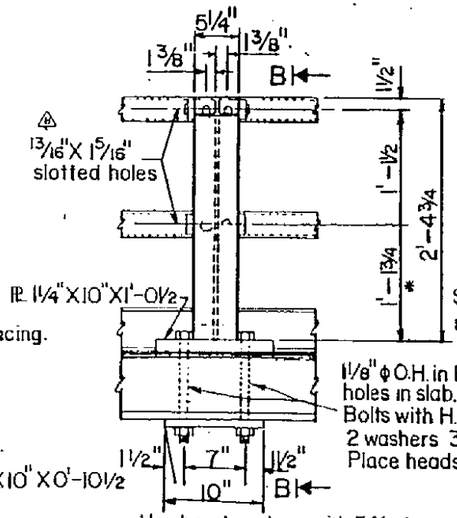


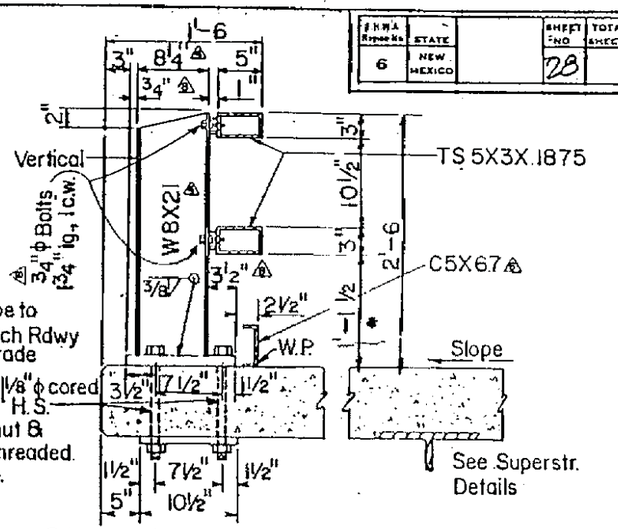
ELEVATION



SECTION A-A

△* If Deck Overlay is used, increase dimension by thickness of Overlay.





1 1/8"ϕ O.H. in PL 8 1/8"ϕ cored holes in slab. 7/8" H.S. Bolts with H.S. nut & 2 washers 3" threaded. Place heads up.

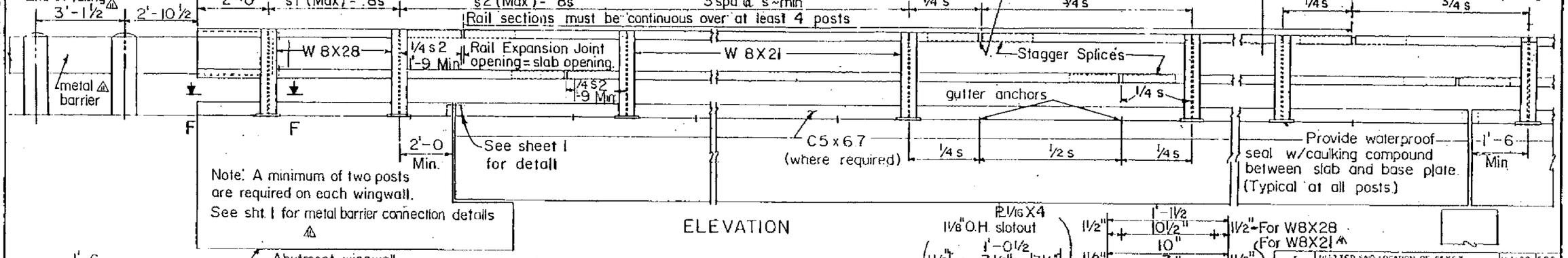
Use bevel washers with 5% slope when top & bottom of concrete diverge by more than 3%. If the divergence exceeds 7% special details will be shown on bridge plans.

ELEVATION DETAIL OF POSTS ON BRIDGE

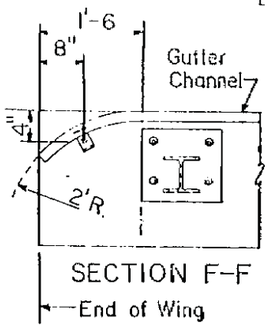
SECTION B-B

Rail Splice Joint See Detail Sheet 1

Rail Expansion Joint. Place near all piers for simple span bridges. Place at ends of continuous span units. Rail opening to equal slab openings.

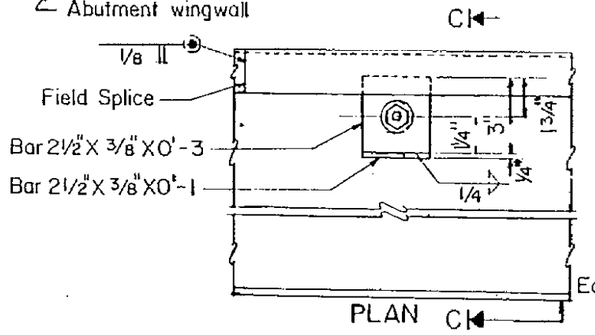


ELEVATION



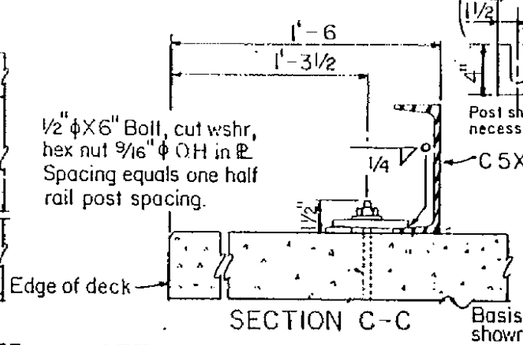
SECTION F-F

End of Wing

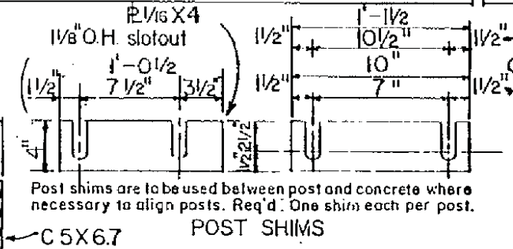


PLAN

GUTTER DETAIL



SECTION C-C



Post shims are to be used between post and concrete where necessary to align posts. Req'd: One shim each per post.

POST SHIMS

Provide waterproof seal with caulking compound. Gutter anchor bolts shall be placed before concrete has attained initial set. △

Max. s	Type of Steel
7'-8"	TS 5X3X.1875
8'-4	A 501
9'-10	A 500 Grade A
	A 500 Grade B

Basis for spa. shown on plans see note 6

IDENT. NO	DESCRIPTION REVISIONS (OR CHANGE NOTICES)	DATE	BY
5.	WAITED SAID LOCATION OF C5X6.7	1-4-80	ERD
△	CHANGE GUARDRAIL TO METAL BARRIER DEL BRIDGE	3-6-85	RAZ
△	ADDED NOTE ON DECK OVERLAY	10-6-83	DJR
9. △	REVISED NOTE SECTION C-C	2-1-84	ERD
△	CHANGED DIMENSIONS ON RAIL POSTS	2-6-80	ERD
△	ADDED CROSS REFERENCE	4-[illegible]	ERD

NEW MEXICO STATE HIGHWAY DEPARTMENT

△ METAL RAILING TYPE A

DESIGNED BY
DRAWN BY GWEITH
CHECKED BY AL

APPROVAL RECOMMENDED BRIDGE ENGINEER DATE
APPROVED ENGINEER OF DESIGN DATE

△SERIAL BMR-002-11

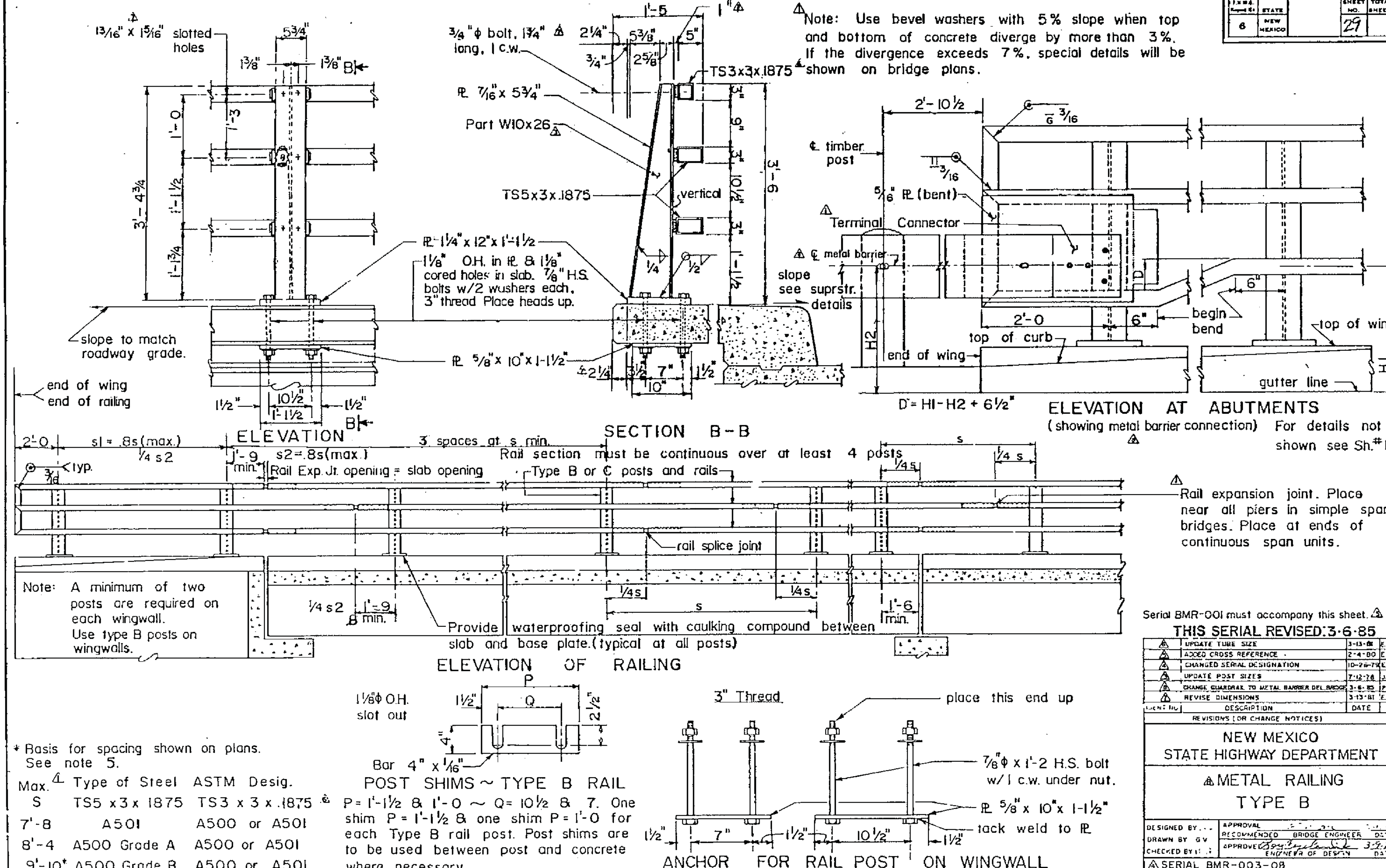
Serial BMR-001 must accompay this sheet

THIS SERIAL REVISED: 3-6-85

CITY OF ALBUQUERQUE DWG. 2601

F.H.W.A. Region No.	STATE		SHEET NO.	TOTAL SHEETS
6	NEW MEXICO		29	-

Note: Use bevel washers with 5% slope when top and bottom of concrete diverge by more than 3%. If the divergence exceeds 7%, special details will be shown on bridge plans.



P = 1'-1 1/2 & 1'-0 ~ Q = 10 1/2 & 7. One shim P = 1'-1 1/2 & one shim P = 1'-0 for each Type B rail post. Post shims are to be used between post and concrete where necessary.

* Basis for spacing shown on plans. See note 5.

Max. S	Type of Steel	ASTM Desig.
7'-8	A501	A500 or A501
8'-4	A500 Grade A	A500 or A501
9'-10*	A500 Grade B	A500 or A501

Serial BMR-001 must accompany this sheet.

THIS SERIAL REVISED: 3-6-85

IDENT. NO.	DESCRIPTION	DATE	BY
6	UPDATE TUBE SIZE	3-13-86	E.R.D.
5	ADDED CROSS REFERENCE	2-4-80	E.R.D.
4	CHANGED SERIAL DESIGNATION	10-26-79	E.R.D.
3	UPDATE POST SIZES	7-12-78	J.E.R.
2	CHANGE GUARDRAIL TO METAL BARRIER DEL. BRIDGE	3-6-85	F.A.Z.
1	REVISE DIMENSIONS	3-13-81	E.R.D.

REVISIONS (OR CHANGE NOTICES)

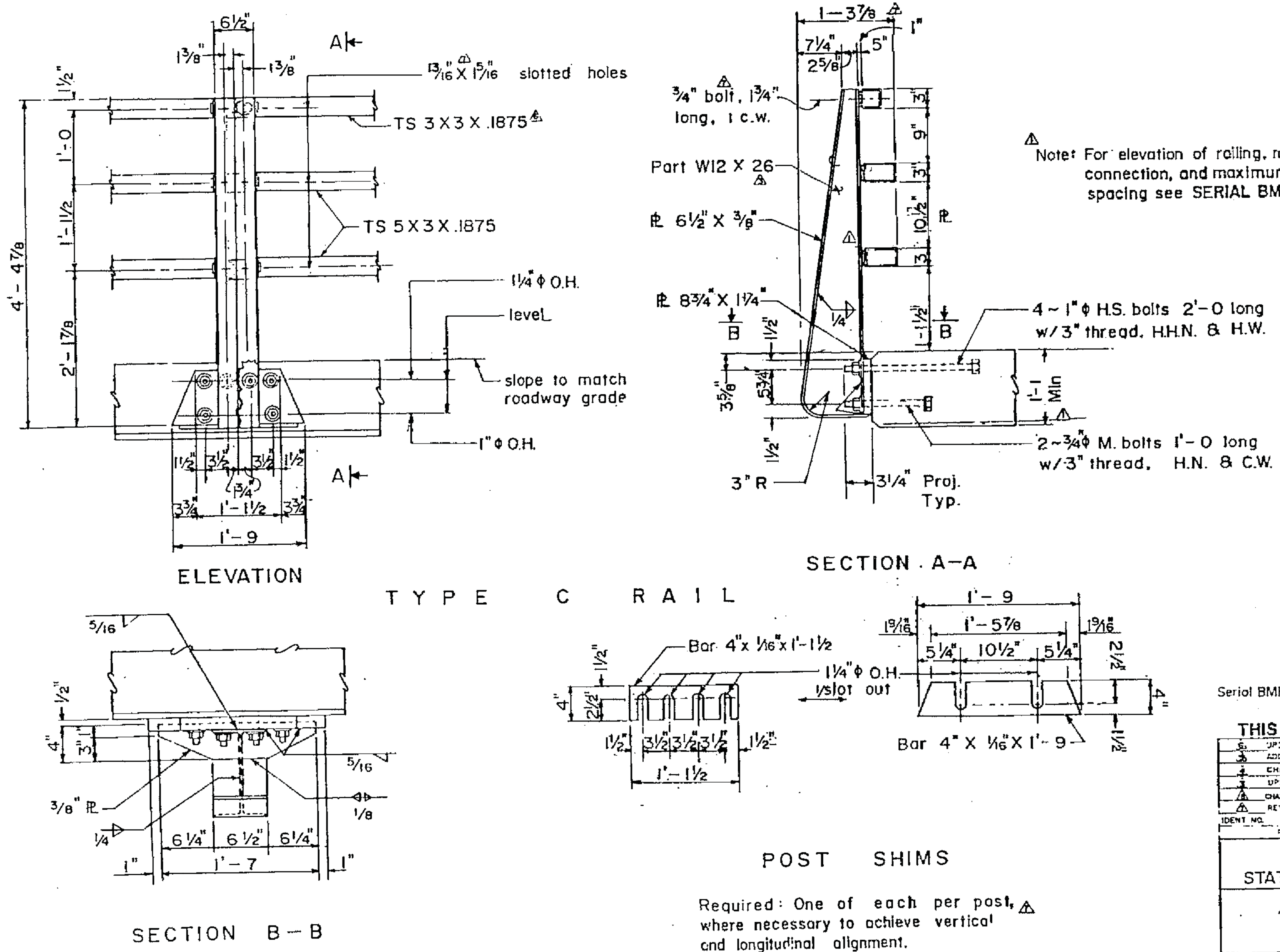
NEW MEXICO STATE HIGHWAY DEPARTMENT

METAL RAILING TYPE B

DESIGNED BY ... DRAWN BY G.V. CHECKED BY ...

APPROVAL: RECOMMENDED BRIDGE ENGINEER DATE; APPROVED ENGINEER OF DESIGN 3-9-76 DATE

SERIAL BMR-003-08



Serial BMR-001 must accompany this sheet.

THIS SERIAL REVISED: 3·6·85

IDENT NO.	DESCRIPTION	DATE	BY
6	UPDATE TUBE SIZE	3-16-81	E.R.D.
5	ADDED CROSS REFERENCE	2-4-80	E.R.D.
4	CHANGED SERIAL DESIGNATION	10-26-79	E.R.D.
3	UPDATE POST SIZES	7-12-78	J.A.H.
2	CHANGE GUARDRAIL TO METAL BARRIER, DEL. BRIDGE	3-6-85	P.A.Z.
1	REVISE NOTE & DIMENSIONS	3-16-81	E.R.D.

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO
STATE HIGHWAY DEPARTMENT

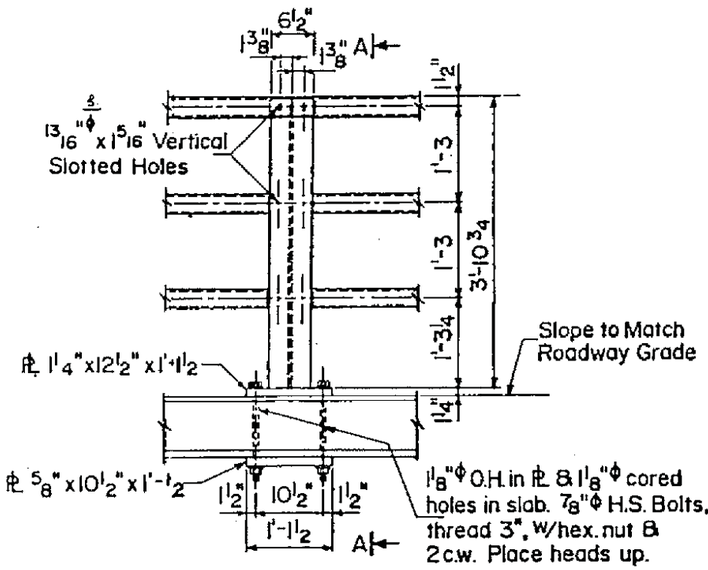
METAL RAILING
TYPE C

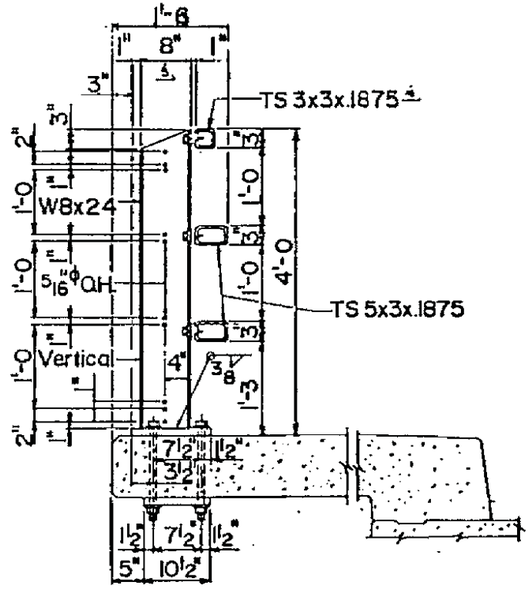
DESIGNED BY
DRAWN BY G.V.
CHECKED BY
APPROVAL RECOMMENDED — BRIDGE ENGINEER — DATE
APPROVED — ENGINEER OF DESIGN — DATE 3-5-72

SERIAL BMR-004-08

F.H.W.A. Region No. 6 | STATE NEW MEXICO | SHEET NO. 30 | TOTAL SHEETS

CITY OF ALBUQUERQUE DWG. 2603





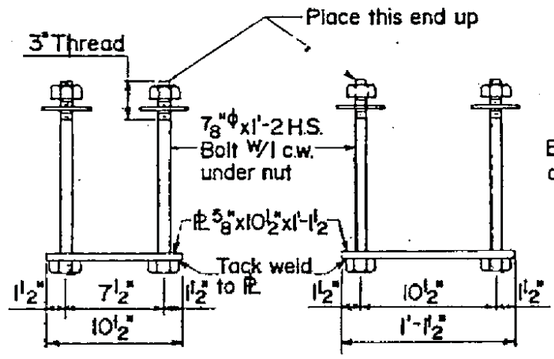
Use beveled washers with 5% slope when top & bottom of concrete diverge by more than 3%. If the divergence exceeds 9% special details will be shown on the bridge plans.

ELEVATION

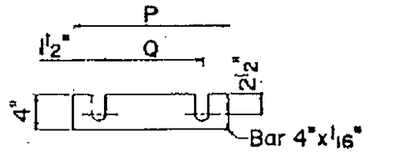
SECTION A-A

DETAILS OF POSTS ON SUPERSTRUCTURE

Details for posts on wingwalls are identical except W8x28 shall be used in place of W8x24 and anchors are to be embeded in wingwall concrete.



ANCHOR FOR RAIL POST ON WINGWALL



P = 1'-1½ & 1'-0½ ~ Q = 10½" & 7½". One shim P = 1'-1½ & one shim P = 1'-0½ for each Type D rail post required. Post shims are to be used between post and concrete where neccessary.

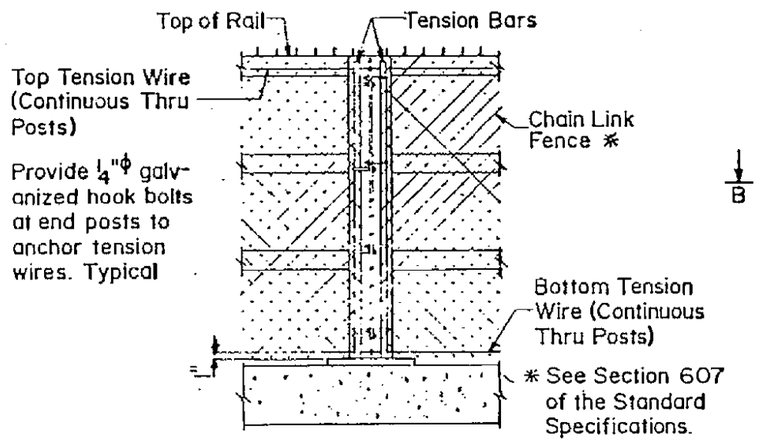
POST SHIMS ~ TYPE D RAIL

Notes: See sheet 3 of 5 for details of 'Elevation At Abutments', 'Elevation of Railing' and 'Spacing of Rail Posts'.

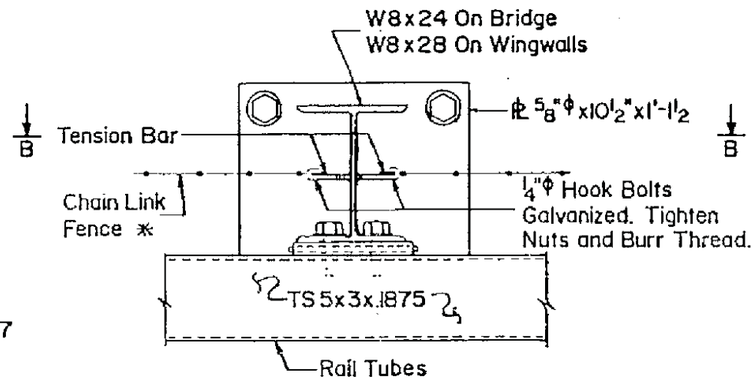
For General Notes and details not shown on this sheet, see sheet 1 of 5.

⚠ Tension wires to be #7 ga. galvanized coil spring wire.

⚠ Fabric is to be attached to tension wires with #11 ga. galvanized hog rings spaced 24" o.c.



SECTION B-B



TRANSVERSE SECTION THRU POST

DETAILS FOR ATTACHING CHAIN LINK FENCE

Serial BMR-001 must accompany this sheet. ⚠

THIS SERIAL REVISED: 3-6-85

NO	DESCRIPTION	DATE	BY
6	DELETE WORD BRIDGE FROM TITLE	3-6-85	PAZ
5	REVISE DIMENSIONS	3-13-81	E.R.D
4	UPDATE TUBE SIZE	3-13-81	E.R.D
3	ADDED CROSS REFERENCE	2-4-80	E.R.D
2	ADDED NOTES	10/26/79	E.R.D
1	CHANGED SERIAL DESIGNATION	10/26/79	E.R.D

REVISIONS OR CHANGE NOTICES

NEW MEXICO STATE HIGHWAY DEPARTMENT

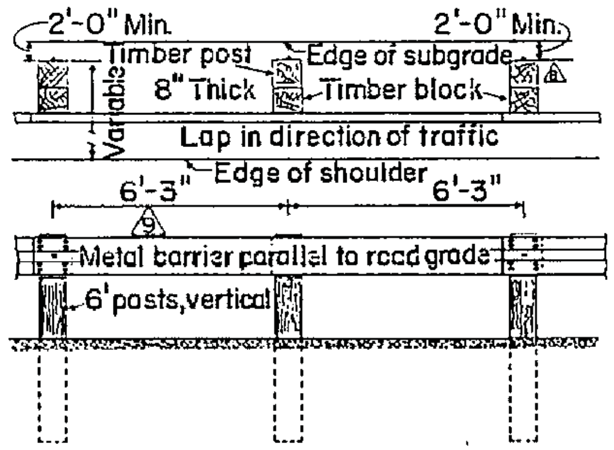
⚠ METAL RAILING TYPE D

DESIGNED BY JAH
DRAWN BY AJS
CHECKED BY ERD

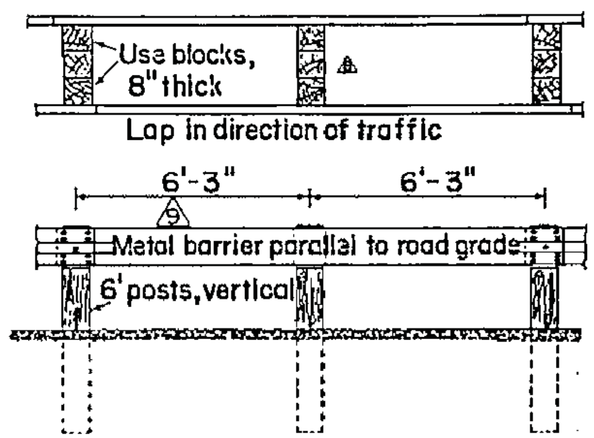
APPROVAL RECOMMENDED: BRIDGE ENGINEER DATE
APPROVED: DIRECTOR PROJ DEVELOPMENT DIVISION DATE

⚠ SERIAL BMR-005-06

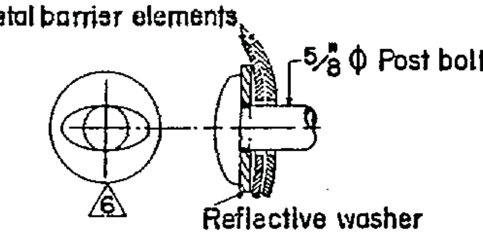
CITY OF ALBUQUERQUE DWG. 2604

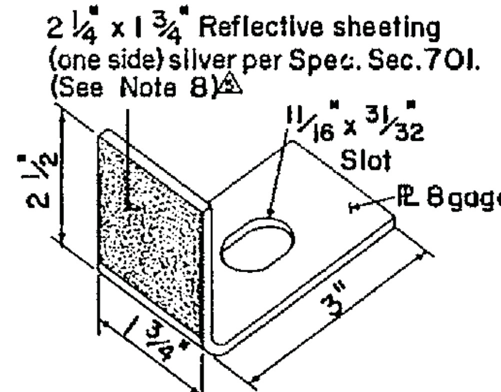


ROADSIDE INSTALLATION

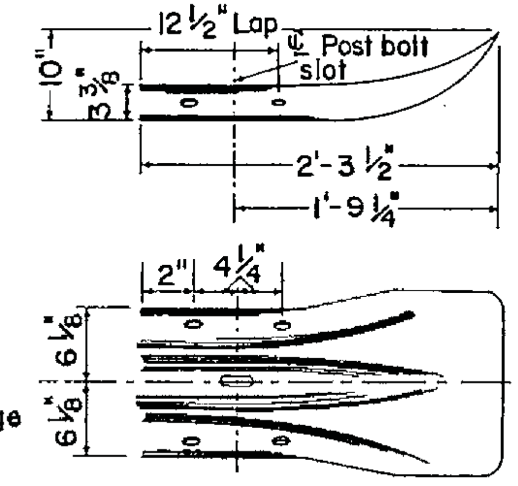


METAL BEAM RIGID BARRIER INSTALLATION

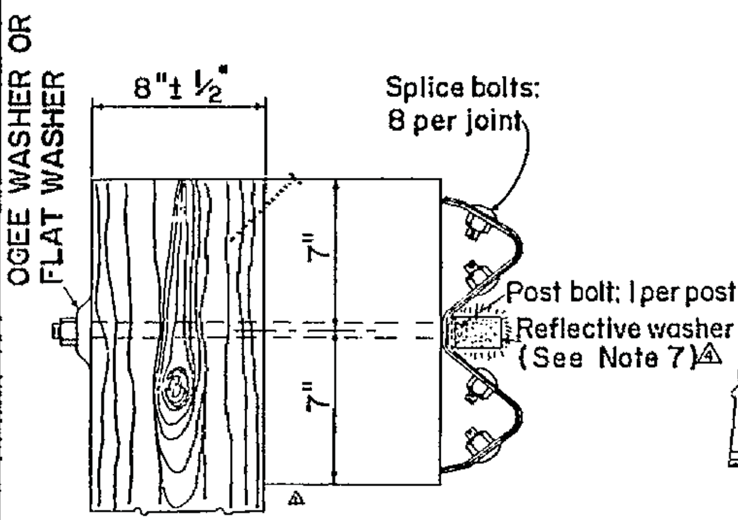




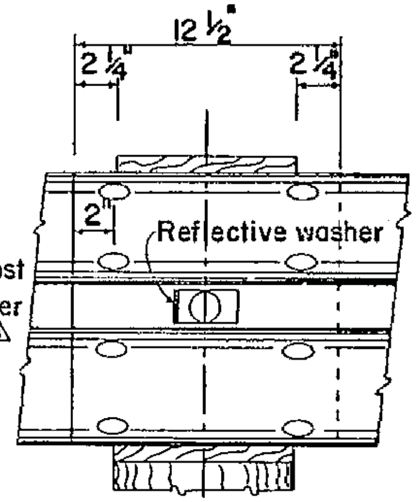
REFLECTIVE WASHER DETAIL



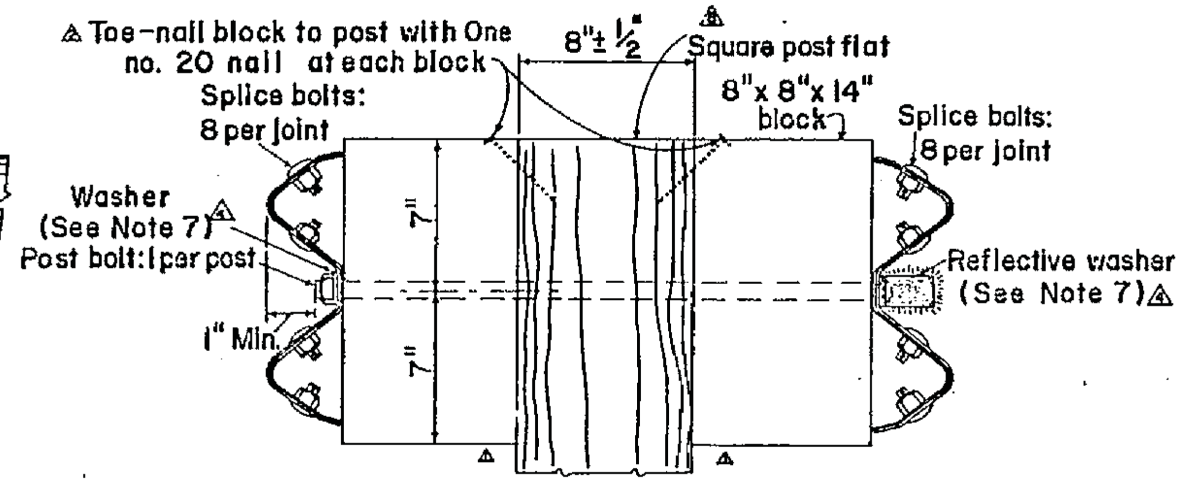
STANDARD TERMINAL SECTION



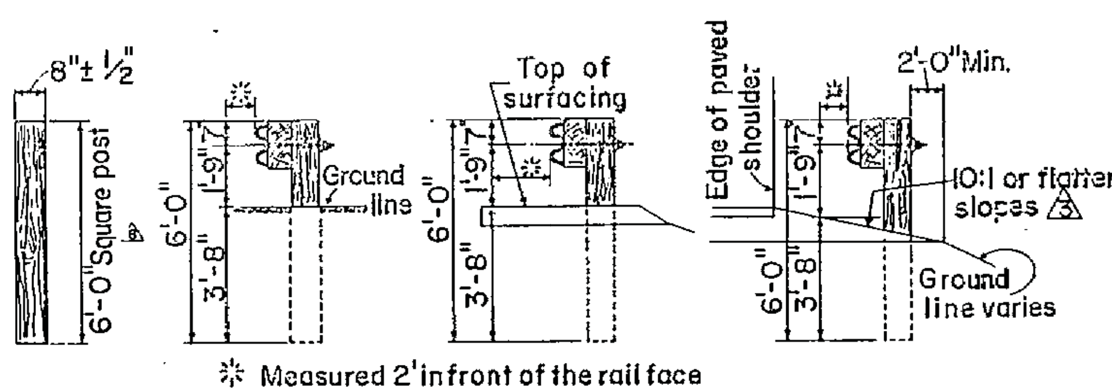
SECTION AT JOINT, SINGLE RAIL



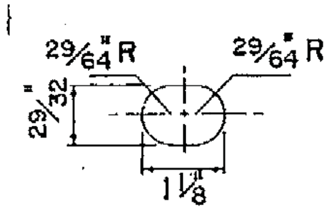
JOINT ASSEMBLY



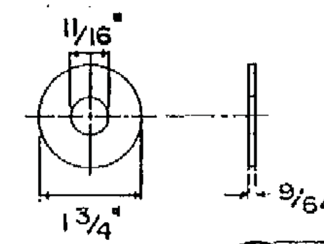
SECTION AT JOINT, METAL RIGID BARRIER



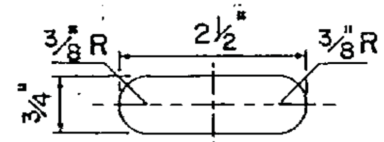
PLACEMENT PROCEDURES



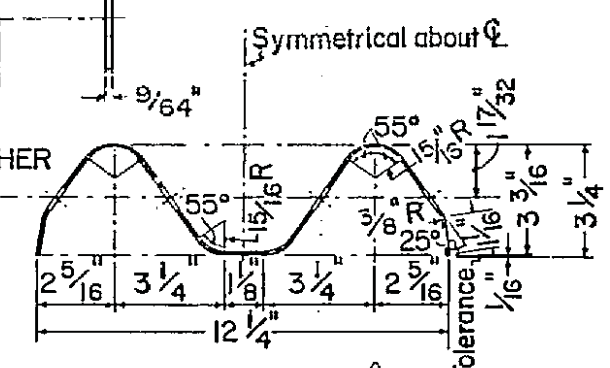
SPLICE BOLT SLOT



FLAT WASHER



POST BOLT SLOT



SECTION THRU METAL BARRIER ELEMENT

NOTES

1. Top of posts shall be flat.
2. Unless otherwise provided, rail elements and terminal sections shall be .105 inch thick. Rail elements may be furnished in 12 1/2 ft. or 25 ft. lengths.
3. Where the radius of curved alignment is 150 ft. or less, the individual railing sections shall be shop-formed by the manufacturer to fit the curvature.
4. Timber blocks to be 8" x 8" x 14" high, except where otherwise noted. Blocks and posts may be rough or S4S.
5. Contractor to use 8" square post.
6. Rail element shall conform to AASHTO Spec M180, Class A, Type I., unless otherwise specified.
7. Reflective washers shall be placed facing approaching traffic at 25 ft intervals on one-way and divided roadways. On two-way roadways, reflective washers shall be placed at 12 1/2 ft. intervals with every 2nd washer facing opposing traffic. Rectangular flat washers to be placed at all other post bolts.
8. Amber reflective washers in lieu of silver shall be used when the metal barrier is on the left side to approaching traffic on multi-lane facilities.

IDENT NO.	DESCRIPTION	DATE	BY
9	CHANGED GUARDRAIL TO METAL BARRIER	2-1-85	DRR
7 - 8	Added flat washer ...	[illegible]	[illegible]
5 - 6	ADDED NOTE 8 - ADDED NEW BOLT FIGURE	[illegible]	[illegible]
3 - 4	REVISED SLOPES - ADDED NOTE 7	8-29-77	JR
1 - 2	REMOVED LOWER RAILS - REVISED NAILING NOTE	8/2/77	TGM

REVISIONS (OR CHANGE NOTICES)

F.H.W.A. Region No.	STATE		SHEET NO.	TOTAL SHEETS
6	NEW MEXICO			

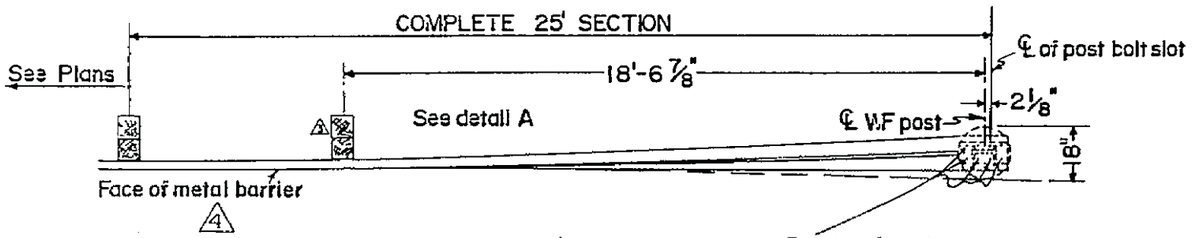
NEW MEXICO STATE HIGHWAY DEPARTMENT

METAL BARRIER MATERIALS AND PLACEMENT PROCEDURES

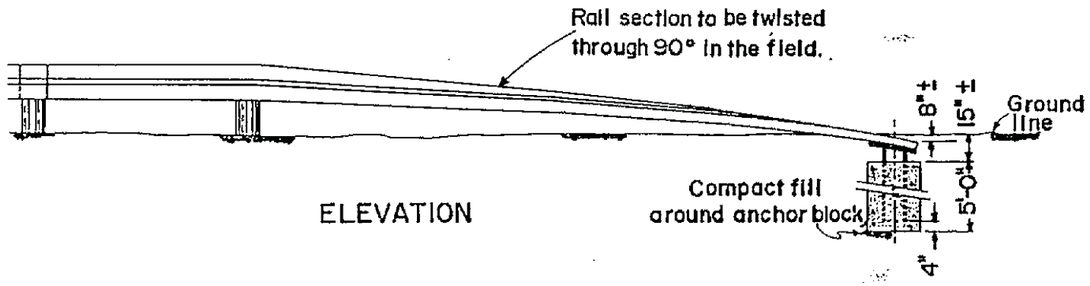
DESIGNED BY L.A.L.
DRAWN BY J.L.M.
CHECKED BY L.A.L.
APPROVAL [signature] — RECOMMENDED - TRAFFIC ENGINEER — DATE
APPROVED [signature] — ENGINEER OF DESIGN — DATE

SERIAL M-21-62 — SHEET 1 OF 1

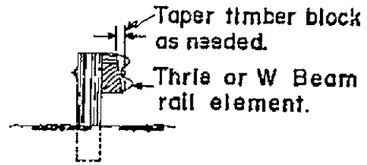
F.H.W.A. Region No.	STATE		SHEET NO.	TOTAL SHEETS
6	NEW MEXICO			



PLAN- SINGLE METAL BARRIER



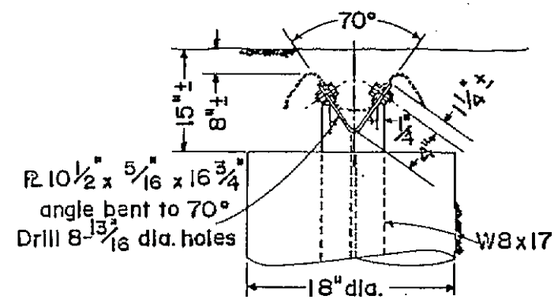
ELEVATION



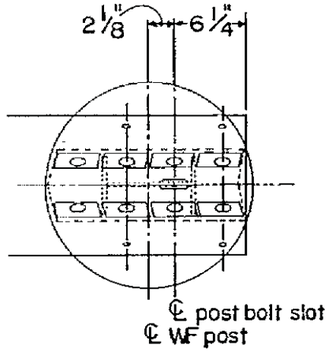
DETAIL A

NOTES:

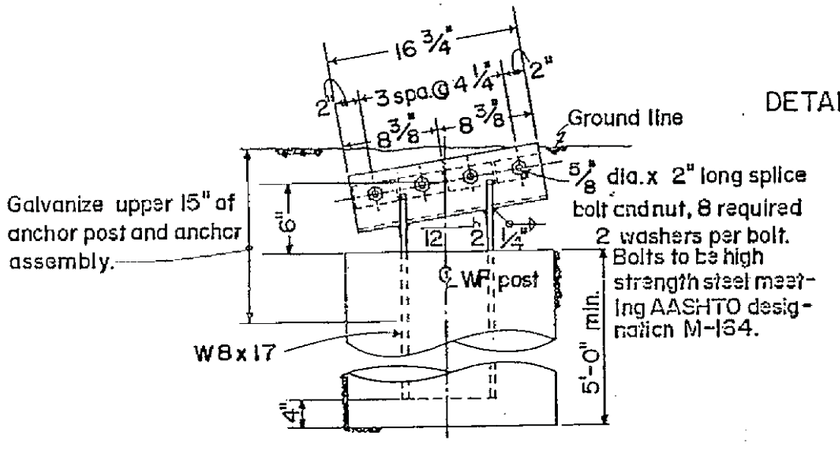
1. Materials and workmanship shall conform to New Mexico State Highway Department Specifications.
2. Structural steel items in anchor system shall be equal to AASHTO designation M-183.
3. Bolts, nuts, washers, anchor posts and other fittings shall be galvanized steel, in accordance with AASHTO designation M-232, except where otherwise specified.
4. For additional metal barrier details, see New Mexico Standard M-21-62 and M-21-75.
5. Class "A" Concrete required for anchors.



DETAIL-TYPE A ANCHORAGE



PLAN-TYPE A ANCHORAGE



DETAIL-TYPE A ANCHORAGE

THIS SERIAL REVISED: 2-4-85

IDENT. NO.	DESCRIPTION	DATE	BY
	REVISIONS (OR CHANGE NOTICES)		
4	CHANGED GUARDRAIL TO METAL BARRIER	2/4/85	DRR
3	REPLACED ROUND POSTS WITH SQUARE POSTS	11/17/83	P.L.
2	MINOR CLARIFICATIONS	5/26/81	J.R.
1	REDRAFTED SERIAL - DELETED METAL-BEAM RIGID BARRIER DETAILS	5/26/81	J.R.

NEW MEXICO
STATE HIGHWAY DEPARTMENT

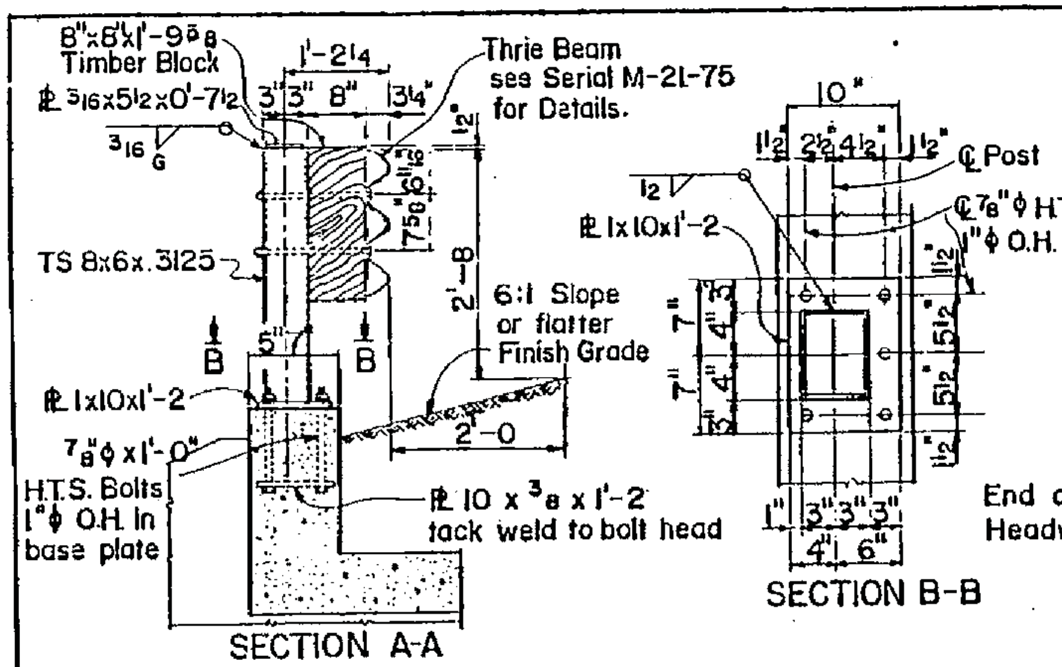
4 METAL BARRIER DETAIL
TYPE A END ANCHORAGE

DESIGNED BY J.R.	APPROVAL RECOMMENDED - TRAFFIC ENGINEER	7/3/51 DATE
DRAWN BY G.D.		
CHECKED BY J.R.	APPROVED DIR., PROJ. DEV. DIVISION	7/3/51 DATE

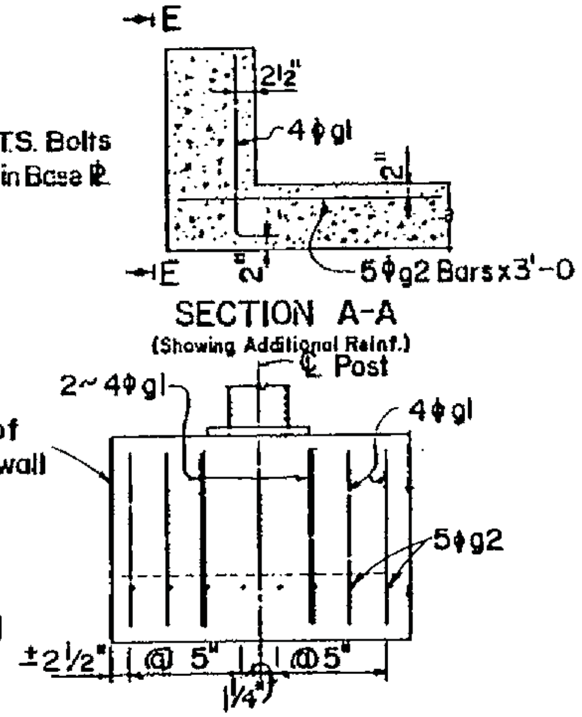
SERIAL M-21-65A SHEET 1 OF 1

CITY OF ALBUQUERQUE DWG. 2615

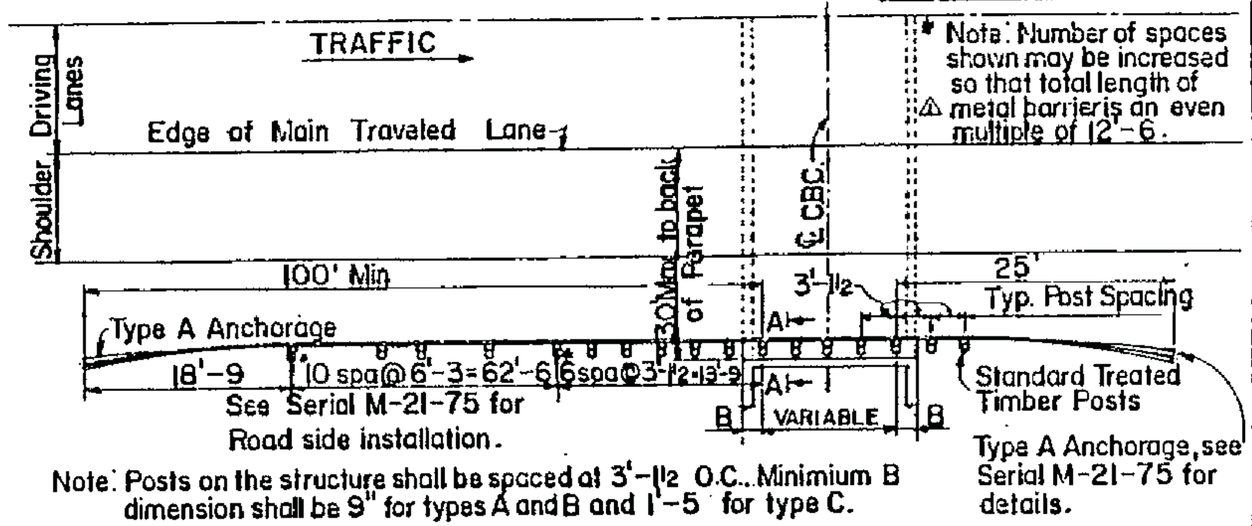
Note: Use metal barrier when parapets are closer than 30' from edge of main traveled lane.



TYPE C- METAL BARRIER POST DETAILS FOR NEW CONSTRUCTION

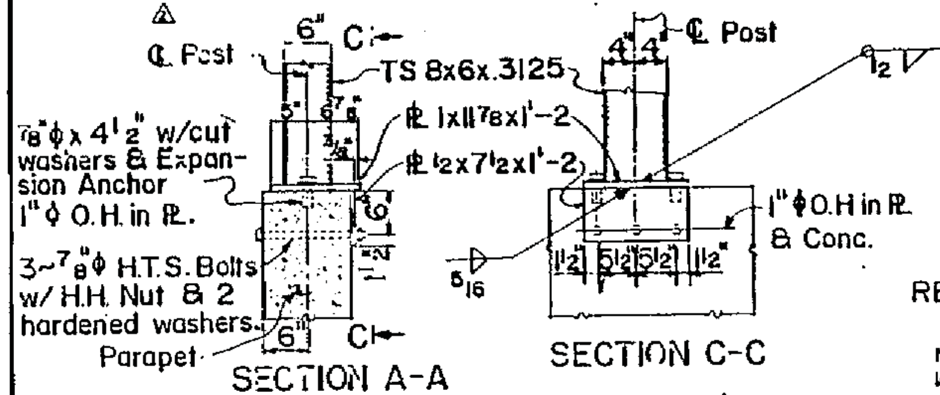


PART VIEW E-E
Reinforcing Details For Type C Posts



Note: Posts on the structure shall be spaced at 3'-1½ O.C. Minimum B dimension shall be 9" for types A and B and 1'-5 for type C.

PLAN~METAL BARRIER FOR FOUR LANES



TYPE B~DETAIL FOR PLACING METAL BARRIER POST ON EXISTING PARAPET

6φg3	1'-4	Req'd 6 per post

Weight: 12 lbs. per post

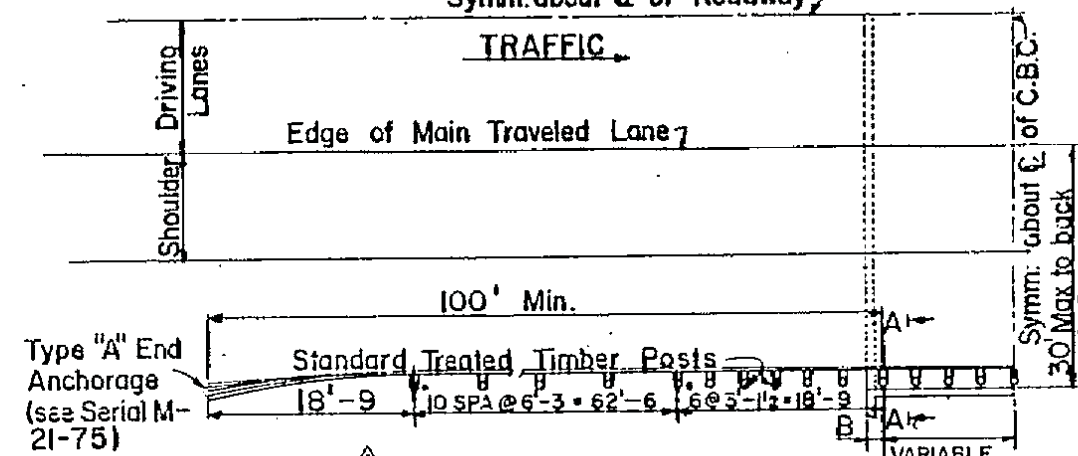
REBAR SCHEDULE FOR TYPE A POST

Note: Cost of Rebar to be included in the unit price bid for Reinforcing Bars. Provide with rebar for appropriate C.B.C.

5φg2	3'-0	Req'd 8 per post
4φg1	2'-0 (R=2")	2'-6 lg. Req'd. 8 per post.

Weight: 38 lbs. per post.

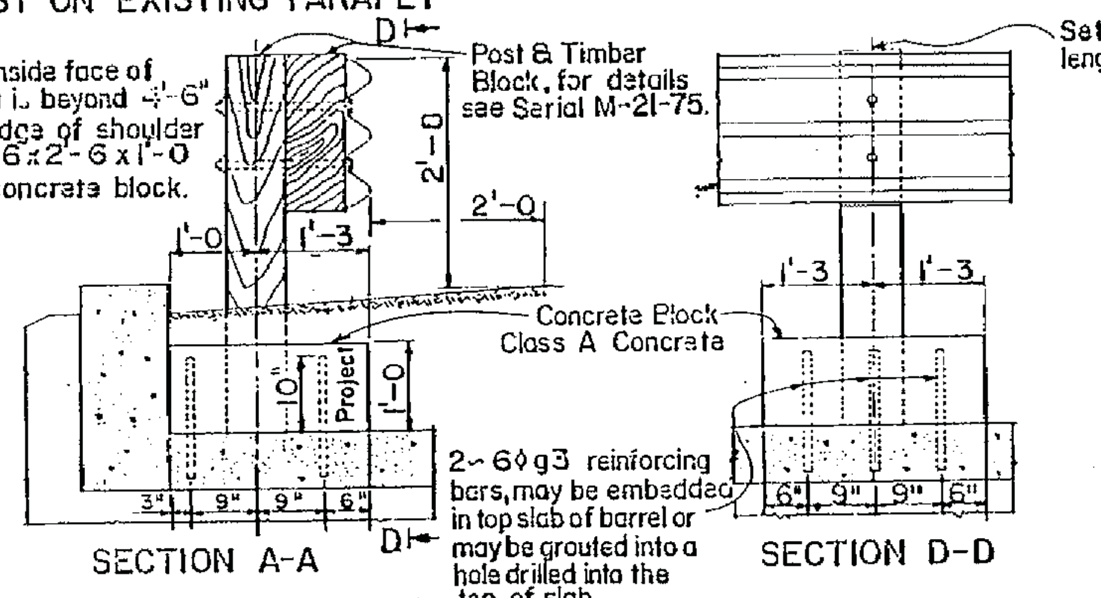
REBAR SCHEDULE FOR TYPE C POST



PLAN-METAL BARRIER LAYOUT TWO LANES

Note: Layouts above show Type A posts. Where Type B or C posts are used, length of metal barrier and post spacing to be the same. Type A Posts shall be used unless otherwise noted on the plans.

Note: Where inside face of parapet is beyond 4'-6" from edge of shoulder use 2'-6x2'-6x1'-0 thick concrete block.



TYPE A~DETAIL FOR PLACING METAL BARRIER POST IN CONCRETE BLOCK

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-183. Steel tubing shall conform to ASTM Spec. A501 or A500.
3. Post, post plate and exposed surfaces of anchor bolts to be painted in accordance with the Specifications.
4. Cost of Steel posts & connections in place of timber posts, concrete blocks in place to be included in the unit price bid per linear foot of metal barrier.
5. Reinforcing bars shall conform to ASTM Specification A-615. Grade 40 dimensions refer to ℄ of bars. High tensile strength bolts shall conform to ASTM Specification A-325.
6. Rail posts (TS 8x6x.3125) designed for bridge railing loads in accordance with 1975 AASHTO Specifications.

THIS SERIAL REVISED: 3-7-85

IDENT NO	DESCRIPTION	DATE	BY
	CHANGE "GUARDRAIL" TO "METAL BARRIER"	3-7-85	ERO
	[illegible]	12/9/76	

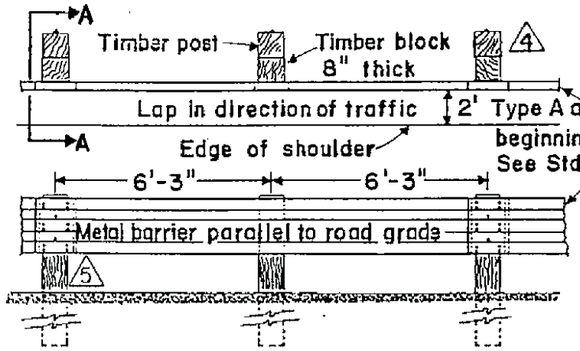
REVISIONS (OR CHANGE NOTICES)

NEW MEXICO STATE HIGHWAY DEPARTMENT

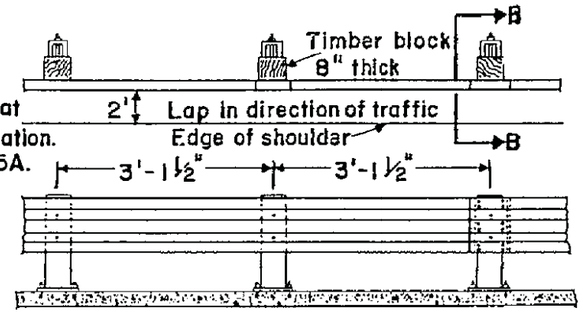
THRIE BEAM METAL BARRIER OVER CBC & UNDERPASSES

DESIGNED BY M.G. DRAWN BY A.L.B.F.D. CHECKED BY [illegible]
APPROVAL RECOMMENDED H. Tachau BRIDGE ENGINEER 3-26-76
APPROVED [illegible] ENGINEER OF DESIGN 3-27-76

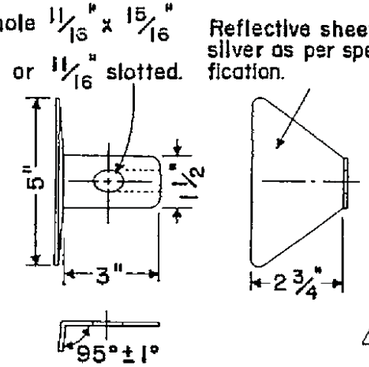
SERIAL M-21-67A



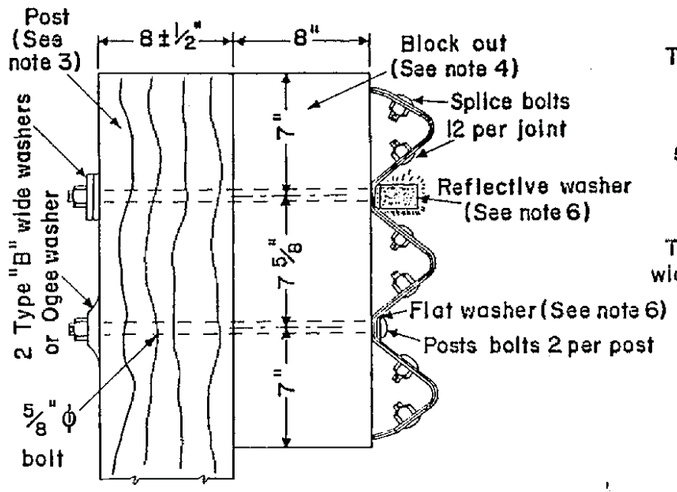
ROADSIDE INSTALLATION



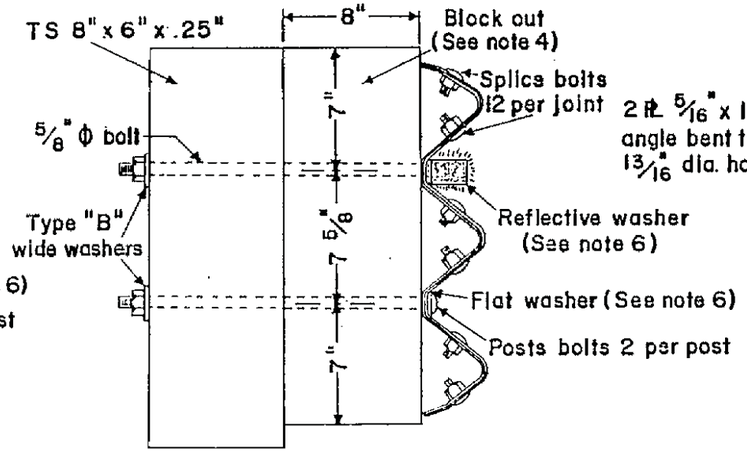
BOX CULVERT INSTALLATION
(See note 9)



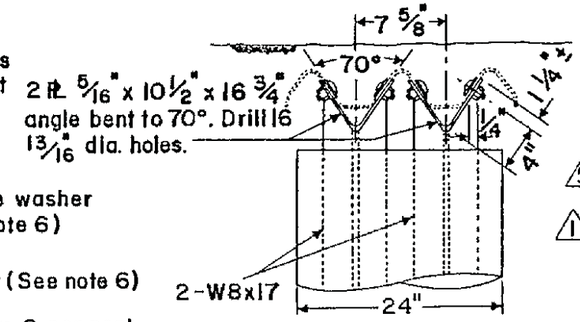
ALTERNATE REFLECTIVE WASHER DETAIL



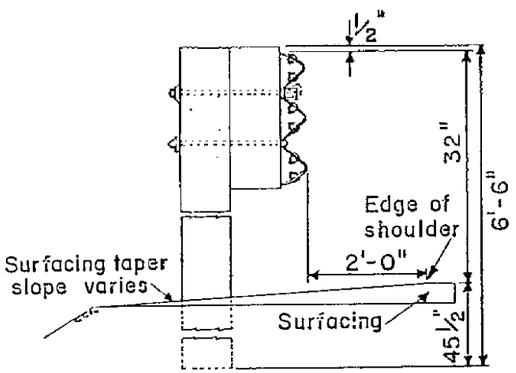
ROADSIDE SECTION AT JOINT



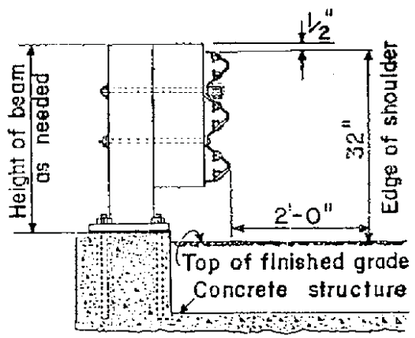
BOX CULVERT SECTION AT JOINT



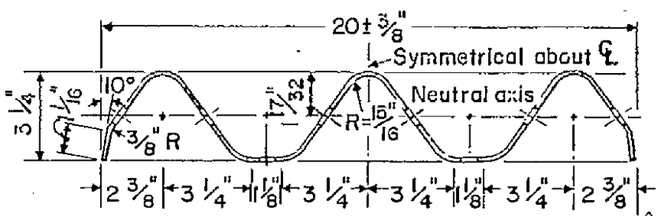
THRIE BEAM
DETAILS OF TYPE A ANCHOR
(See note 7)



SECTION A-A



SECTION B-B



SECTION THRU RAIL ELEMENT

NOTES

1. All material and workmanship shall be done in accordance to the N.M. State Highway Department Specifications.
2. Unless otherwise provided, rail elements shall be .105 inches thick. Rail elements may be furnished in 12-½ ft. or 25 ft. lengths.
4 3. Contractor to use 8"x8"x6' 6" rough post or surfaced on four sides (S4S), W6x8.5x6' 6" steel post or W6x9.0x6' 6" steel post.
6 4. Timber blocks shall be 8"x8"x1' 9⅝" high. Blocks may rough or (S4S). Steel block shall W6x8.5x1' 9.5" or W6x9x1' 9.5".
5. Timber posts and blocks are to be treated as specified.
6. Reflective washers as per this sheet or standard M-21-62 shall be placed every 25 ft. on upper bolt slot of metal
5 barrier elements. Flat washers to be placed at all other bolt slots.
1 7. For additional details see standards M-21-62, M-21-77, M-21-65A.
8. Rail elements shall be steel conforming to the requirements of AASHTO M180, Class A, Type I, except as shown otherwise on this sheet.
9. For Box Culvert installation see standard M-21-67A.
2 10. When steel posts and steel blocks are used, a 1 foot rail section must be placed behind rail elements at intermediate posts (non-splice-posts).

THIS SERIAL REVISED: 3-21-85

IDENT NO.	DESCRIPTION	DATE	BY
	REVISIONS (OR CHANGE NOTICES)		
4	ADDED TO NOTES 3 & 4	3-21-85	DRR
3	CHANGED GUARDRAIL TO METAL BARRIER	2-4-85	DRR
2	Changed round posts to square posts Revised note 3	11-10-83	PWL
1	CHANGED SHEET 1 OF 1 TO 1 OF 2	9-20-83	CVT
5	ADDED NOTE 10.	11/15/78	JR
4	REVISED NOTE 7.	12/29/77	JR

NEW MEXICO
STATE HIGHWAY DEPARTMENT

METAL BARRIER THRIE BEAM
ROADSIDE AND BOX CULVERT

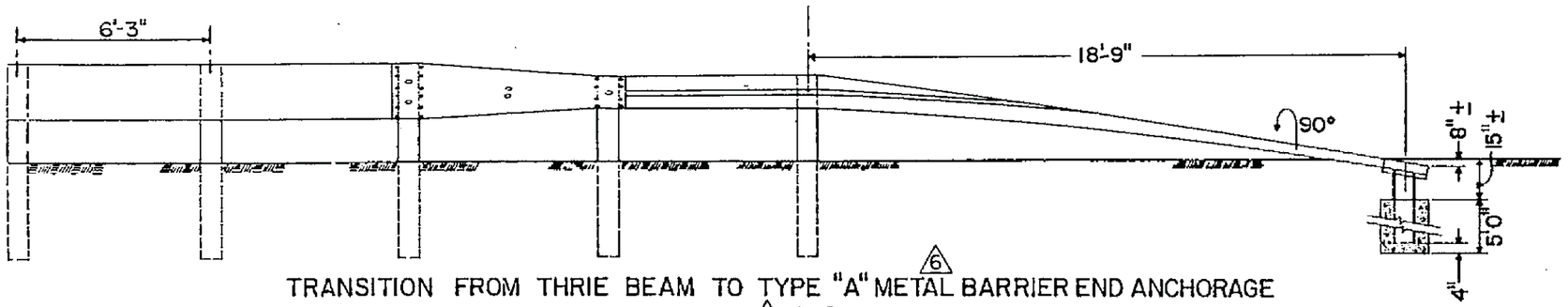
DESIGNED BY L.A.L.	APPROVAL RECOMMENDED — TRAFFIC ENGINEER	7-13-78 DATE
DRAWN BY J.L.M.	APPROVED ENGINEER OF DESIGN	7-13-78 DATE
CHECKED BY L.A.L.		

SERIAL M-21-75 — 3 SHEET 1 OF 2

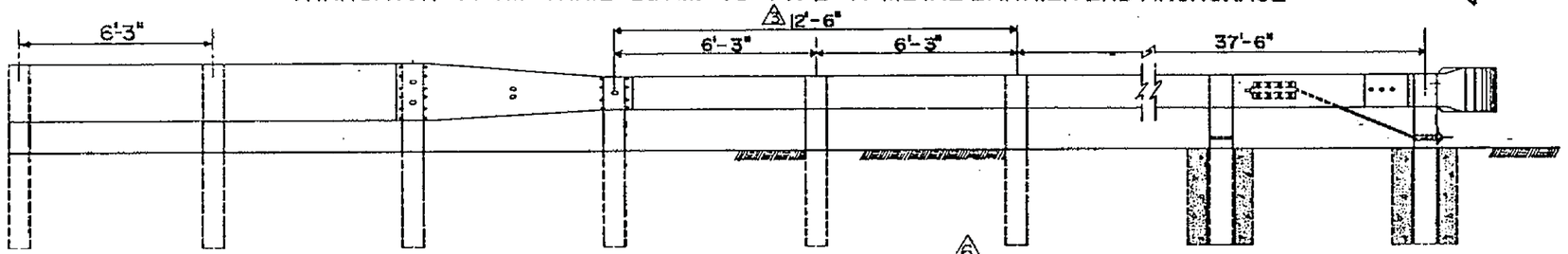
F.H.W.A. Action No.	STATE		SHEET NO.	TOTAL SHEETS
6	NEW MEXICO			

CITY OF ALBUQUERQUE DWG. 2625

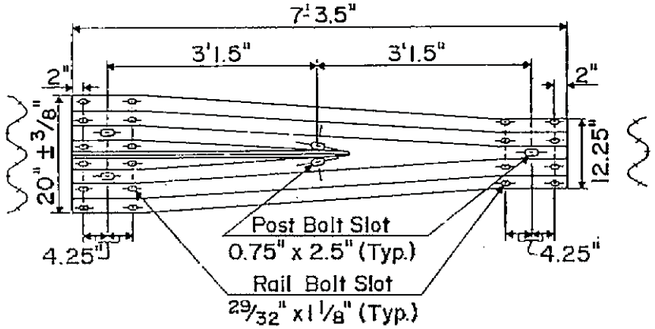
F.H.W.A. Project No.	STATE		SHEET NO.	TOTAL SHEETS
6	NEW MEXICO			



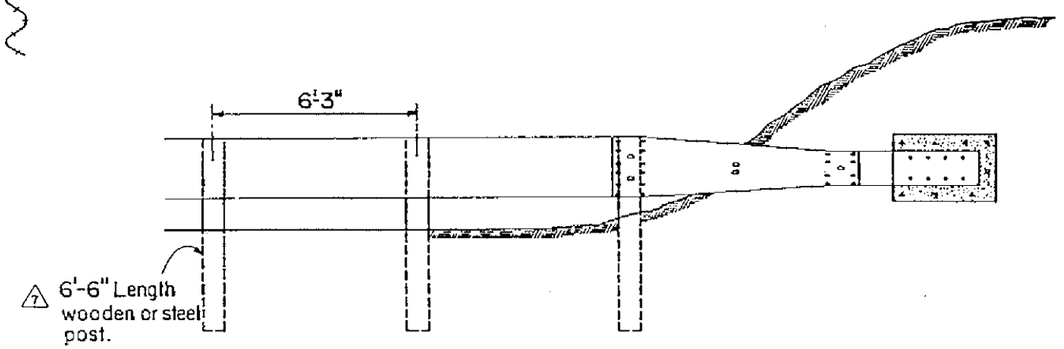
TRANSITION FROM THRIE BEAM TO TYPE "A" METAL BARRIER END ANCHORAGE



TRANSITION FROM THRIE BEAM TO TYPE "C" METAL BARRIER END ANCHORAGE



TRANSITION FROM THRIE BEAM TO W-BEAM



TRANSITION FROM THRIE BEAM TO TYPE "D" METAL BARRIER END ANCHORAGE

GENERAL NOTES:

1. For additional Metal Barrier End Anchorage details refer to appropriate Standard Serial M-21-65A, M-21-77C or M-21-77D.
2. Metal Barrier Transition Section shall be included in the Linear Feet of Thrie Beam metal barrier.

THIS SERIAL REVISED 3-20-85

IDENT. NO.	DESCRIPTION	DATE	BY
	REVISIONS (OR CHANGE NOTICES)		
5	CHANGED GUARDRAIL TO METAL BARRIER	2-4-85	DRR
4	CHANGED DRAWING TO SERIAL	9-20-83	C.V.T.
3	REVISED GENERAL NOTE No. 2	5/8/83	C.V.T.
2	ADDED 12'-6" SECTION OF GUARDRAIL	12/18/81	J.R.
1	GENERAL NOTE No. 2 ADDED	8/23/79	ADSO
A	NOTE ADDED	3/20/78	DRR

NEW MEXICO
STATE HIGHWAY DEPARTMENT

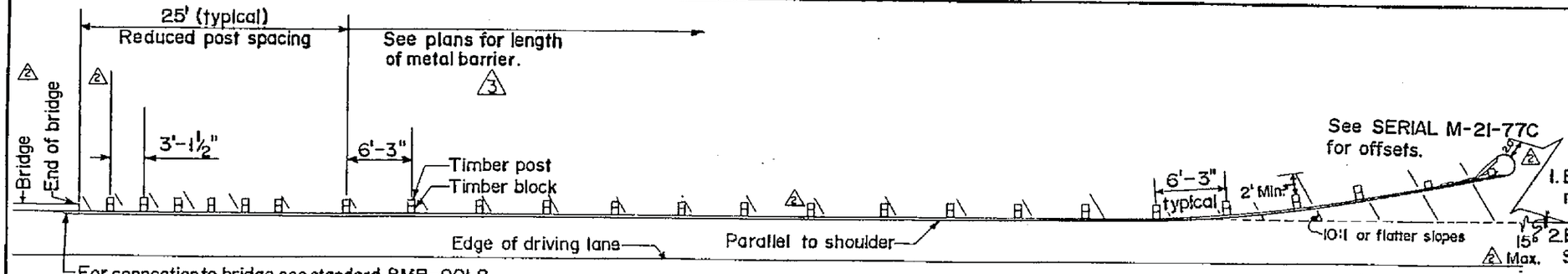
SPECIAL METAL BARRIER TRANSITION DETAILS

DESIGNED BY	APPROVAL RECOMMENDED	ENGINEER — DATE
DRAWN BY J.L.S.	APPROVED	DIR. PROJ. DEV. DIV. — DATE
CHECKED BY J.R.		

SERIAL M-21-75 SHEET 2 OF 2

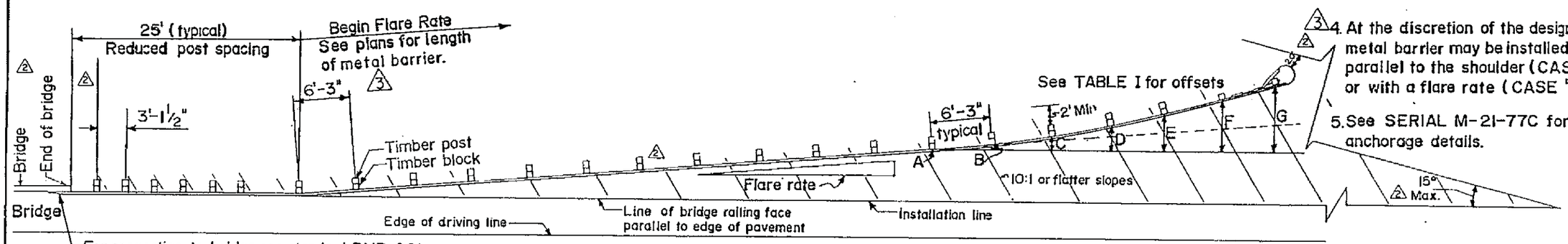
1/31/78

CITY OF ALBUQUERQUE DWG. 2626



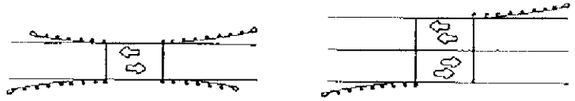
For connection to bridge see standard BMR-001 & BMR-002 or special design GR-1, GR-2 or GR-3.

SHOULDER INSTALLATION (typical)
CASE "A"

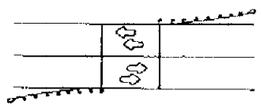


For connection to bridge see standard BMR-001 BMR-002 or special design GR-1, GR-2 or GR-3.

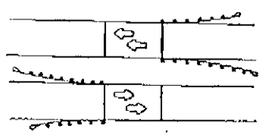
SHOULDER INSTALLATION (typical)
CASE "B"



Two-Lane Highway



Multi-Lane Single-Structure



Multi-Lane Double Structure

APPLICATION

TABLE I

	CASE "B" FLARE RATE	
	50:1	25:1
A	0.0'	0.0'
B	0.24'	0.36'
C	0.69'	0.94'
D	1.38'	1.75'
E	2.30'	2.80'
F	3.43'	4.05'
G	4.75'	5.50'

GENERAL NOTES

1. Build metal barrier at structures when noted on plans.
2. For metal barrier details, see New Mexico Standard M-21-62.
3. For special installations, Project Engineer will determine the exact radius of rail and location of posts and notify contractor before material is fabricated.
4. At the discretion of the designer, the metal barrier may be installed parallel to the shoulder (CASE "A") or with a flare rate (CASE "B").
5. See SERIAL M-21-77C for anchorage details.

F.H.W.A. Region No.	STATE		SHEET NO.	TOTAL SHEETS
6	NEW MEXICO			

THIS SERIAL REVISED: 2-5-85

IDENT. NO.	DESCRIPTION	DATE	BY
3	CHANGED GUARDRAIL TO METAL BARRIER	2-5-85	D R R
2	(Revise Table), Posts And Notes	11-22-82	P.L.
1	REDREW STANDARD	11-25-82	J.R

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO
STATE HIGHWAY DEPARTMENT

METAL BARRIER AT BRIDGE APPROACHES

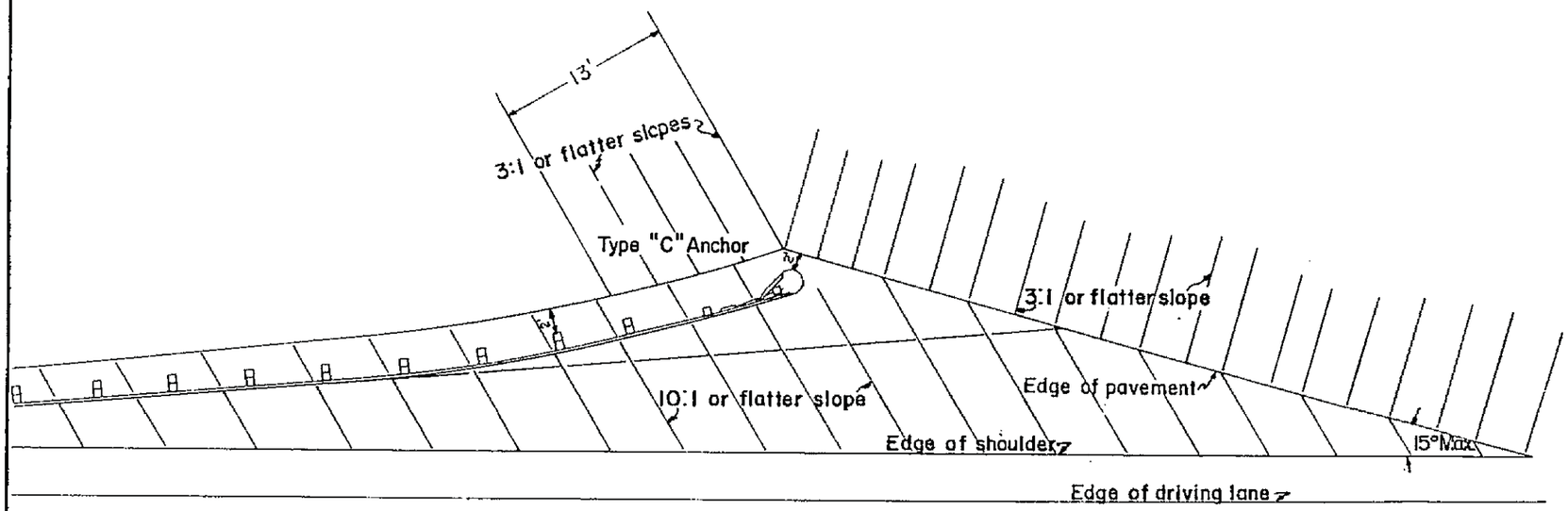
DESIGNED BY J.R
DRAWN BY G.O.
CHECKED BY

APPROVAL
RECOMMENDED — ENGINEER / DATE
APPROVED — ENGINEER OF DESIGN / DATE

SERIAL M-21-77 SHEET 1 OF 2

CITY OF ALBUQUERQUE DWG. 2630

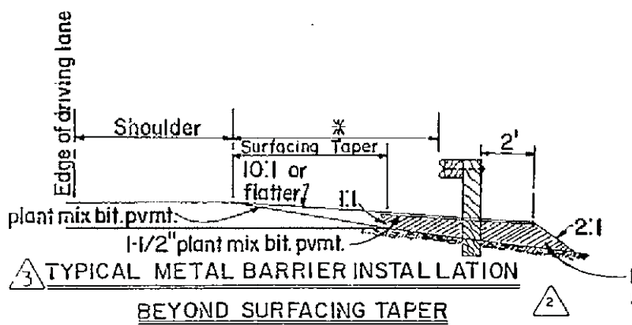
F.H.W.A. Proj. No.	STATE		SHEET NO.	TOTAL SHEETS
6	NEW MEXICO			



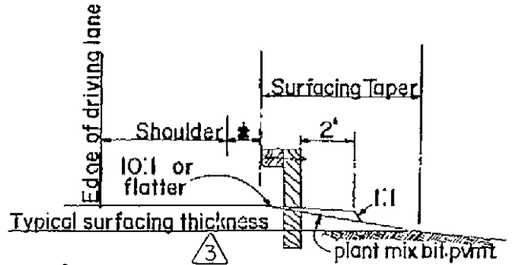
GENERAL NOTES

1. For additional details see Serials M-21-62, M-21-77 sheet 1 of 2 and M-21-77C.
2. The embankment material shall be compacted to 95 percent of maximum density.
3. Unless otherwise specified on the plans, the cost of the embankment material and the placing thereof shall be included in the unit bid price for metal barrier.

SLOPE DETAIL (2)



(3) TYPICAL METAL BARRIER INSTALLATION BEYOND SURFACING TAPER



(2) FOR METAL BARRIER INSTALLATION ON TOP OF SURFACING TAPER

* See plans for offset distance.

THIS SERIAL REVISED: 2-7-85

IDENT. NO.	DESCRIPTION	DATE	BY
4			
3			
2	CHANGED GUARDRAIL TO METAL-BARRIER	2/7/85	DRR
1	DETAIL LABELS WERE CHANGED	3/20/84	C.V.T
1	REVISED GENERAL NOTES	3/20/84	C.V.T

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO
STATE HIGHWAY DEPARTMENT

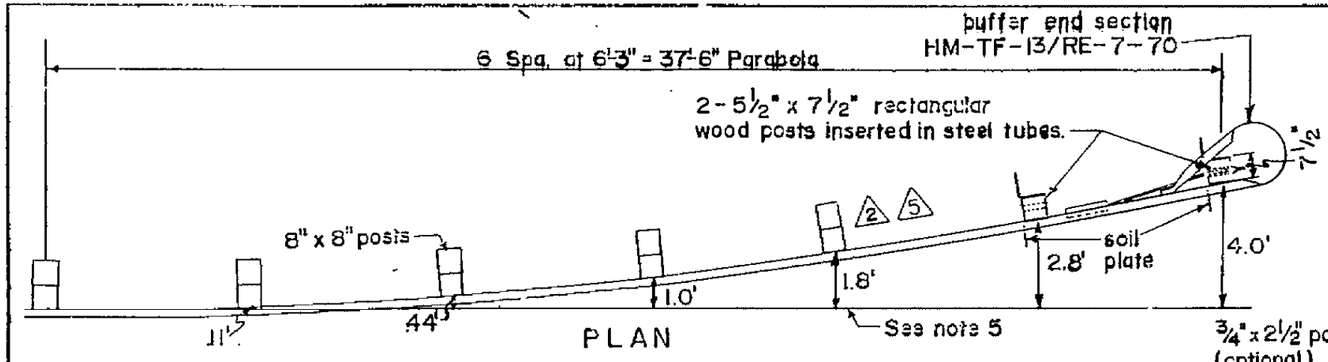
(3) APPROACH SLOPE PREPARATION
METAL BARRIER INSTALLATION

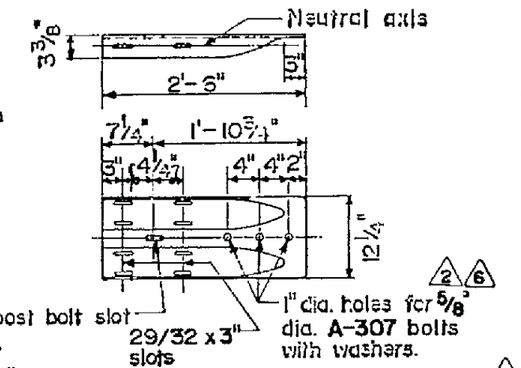
DESIGNED BY P.L.
DRAWN BY F.L.P.
CHECKED BY P.L.

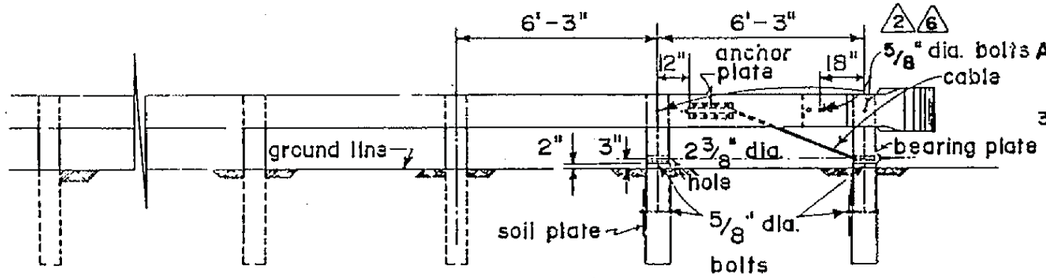
APPROVAL RECOMMENDED — TRAFFIC ENGINEER — DATE 2/27/85
APPROVED — ENGINEER OF DESIGN — DATE 2/25/85

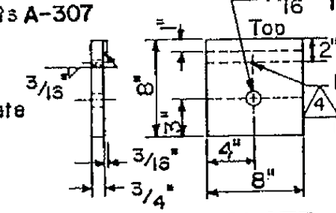
SERIAL M-21-77 SHEET 2 OF 2

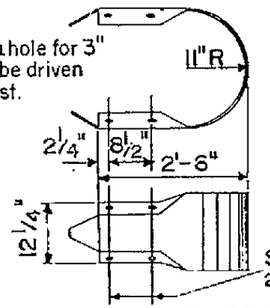
CITY OF ALBUQUERQUE DWG. 2631



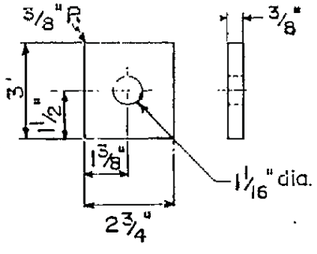




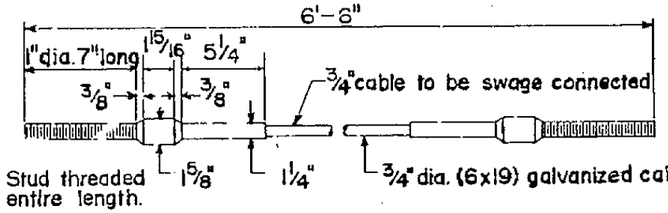




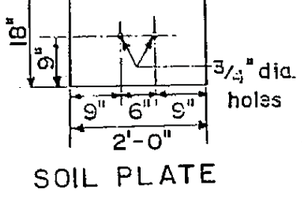
BUFFER END SECTION DETAILS



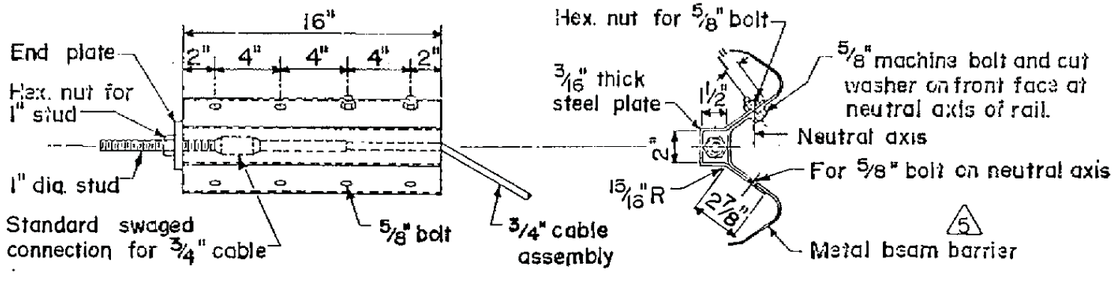
END PLATE



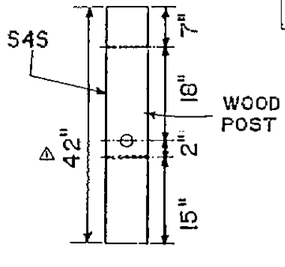
CABLE ASSEMBLY

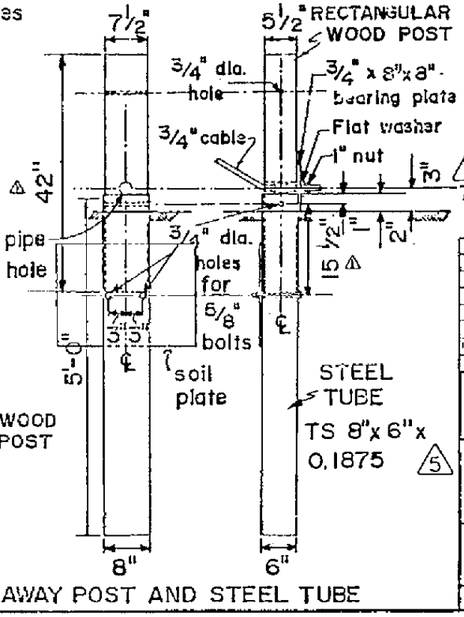


SOIL PLATE



ANCHOR PLATE DETAILS





DETAILS BREAKAWAY POST AND STEEL TUBE

F.H.W.A. Region No.	STATE		SHEET NO.	TOTAL SHEETS
6	NEW MEXICO			

NOTES

1. Unless otherwise provided, rail elements shall be .105 inch thick.
2. Structural steel items in anchor system shall be AASHTO M-183 or equal.
3. Bolts, washers, nuts and other fittings shall be galvanized steel in accordance with ASTM A-153.
4. Washers between the mounting bolts head and W-Beam shall be **included only on the post at the buffer end section.**
5. See standard M-21-77 for offsets when metal barrier in advance of the anchorage is installed with a flare rate. (e.g. 25:1 or 50:1).
6. To provide a parabolic flare, the posts in the last 37.5' feet 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 layering 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.
7. Cable tension at B.C.T. shall be snug with no visible slack.

IDENT. NO	DESCRIPTION	DATE	BY
8	Changed bolt size and note 4	10-2-85	DRR
7	CHANGE GUARDRAIL TO METAL BARRIER	2-7-85	D RR
6	Changed 1/8" To 3/4"	6-11-84	P.L.
5	Added note 7, Bearing plate nail note	2-9-84	P.L.
2	Revised notes 4 & 5, Posts and bolt A-325	11-18-83	P.L.
1	CHANGED NOTE NOTE 4, ADDED-ONLY-	1-28-86	DRR

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO
STATE HIGHWAY DEPARTMENT

METAL BARRIER (BREAKAWAY) TYPE "C" END ANCHORAGE (WOOD POSTS)

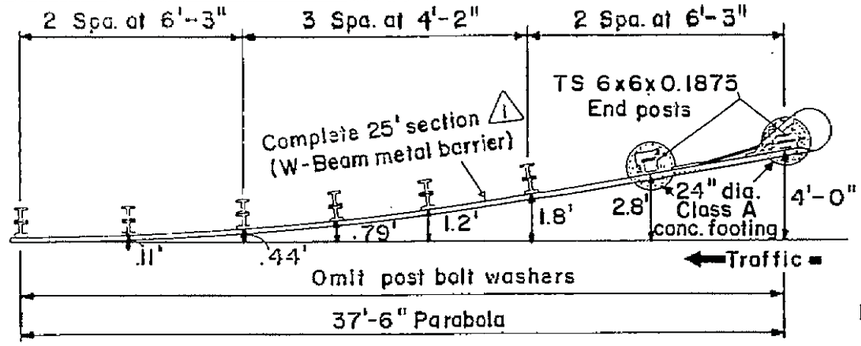
DESIGNED BY J.R.
DRAWN BY G.O.
CHECKED BY J.R.

APPROVAL RECOMMENDED — ENGINEER — DATE 7-15-86
APPROVED — ENGINEER OF DESIGN — DATE 7/15/86

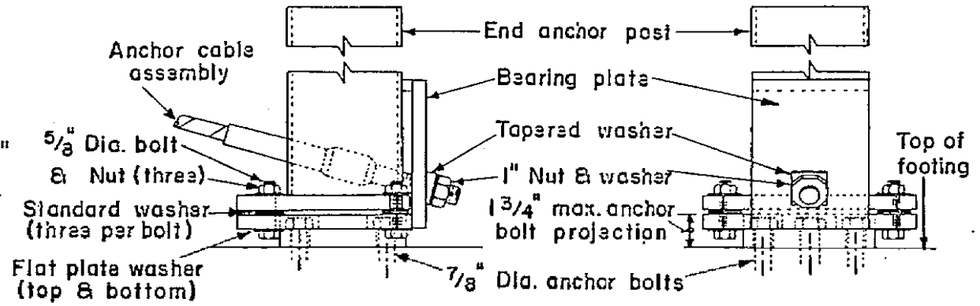
SERIAL M-21-77C — SHEET 1 OF 3

THIS SERIAL REVISED 1-28-86

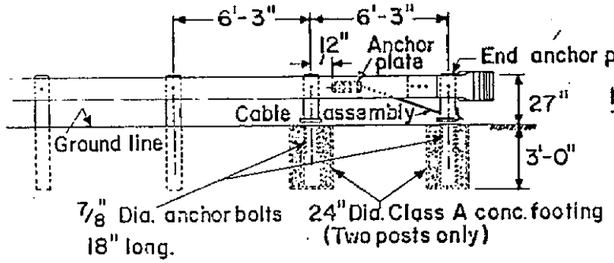
CITY OF ALBUQUERQUE DWG. 2635



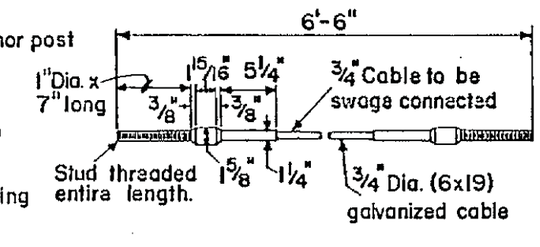
PLAN



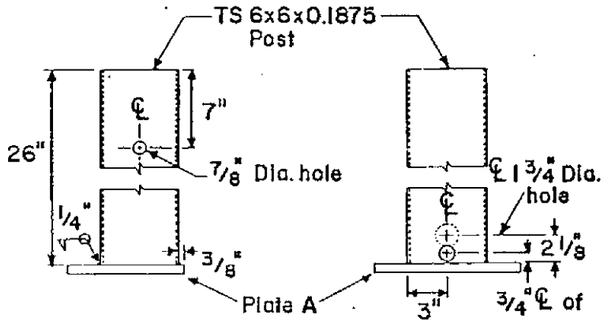
BREAKAWAY CABLE TERMINAL ASSEMBLY



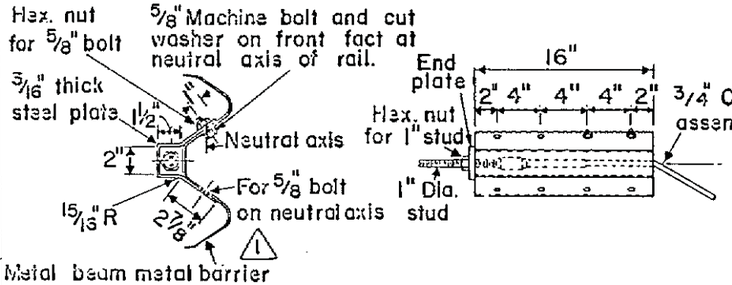
ELEVATION



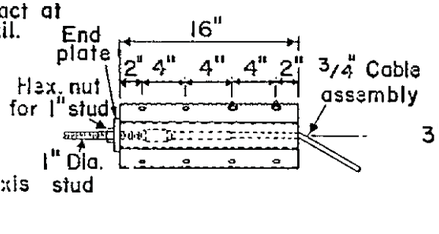
CABLE ASSEMBLY

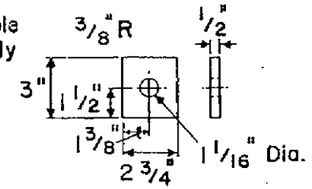


TERMINAL POST DETAIL

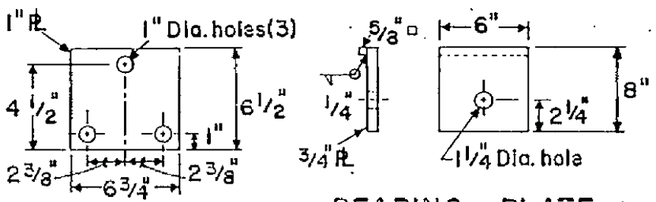


ANCHOR PLATE DETAILS



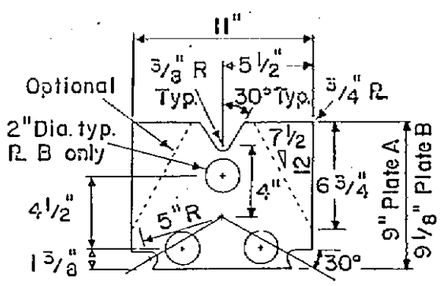


END PLATE

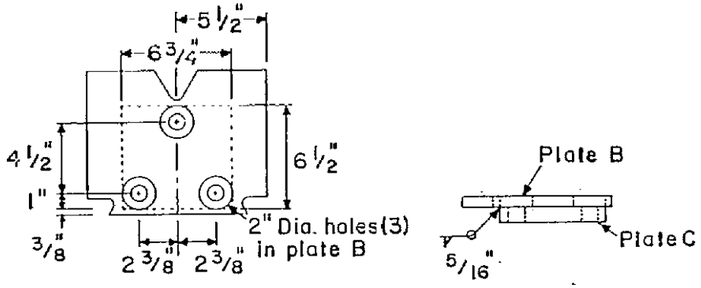


BASE PLATE C

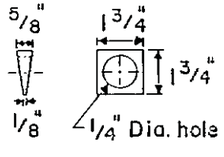
BEARING PLATE



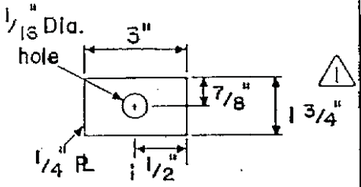
SLIP BASE PLATES A&B



POST & PLATE FABRICATION



TAPERED WASHER



FLAT PLATE WASHER

NOTES

1. A 25' section may be 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 rope.
5. Torque slip plate bolts to be 155-170 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-153.
7. B.C.T. must be installed on level surface (10:1 or flatter) with metal barrier system for optimum performance.
8. Use 25 foot (Nom.) rail length in first section, use 12 inch long backup plate at posts where W-Beam splice does not occur.

FHWA Region No.	STATE		SHEET NO.	TOTAL SHEETS
6	NEW MEXICO			

THIS SERIAL REVISED: 2-6-85

IDENT. NO.	DESCRIPTION	DATE	BY
1	CHANGED GAURDRAIL TO METAL BARRIER	2-6-85	DRP

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO
STATE HIGHWAY DEPARTMENT

METAL BARRIER (BREAKAWAY) TYPE "C" END ANCHORAGE (STEEL POSTS)

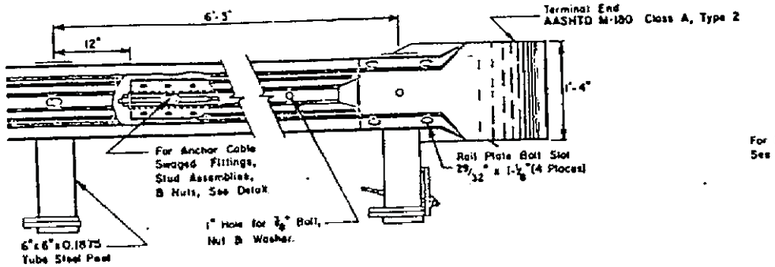
DESIGNED BY J.R.
DRAWN BY J.L.M.
CHECKED BY J.R.

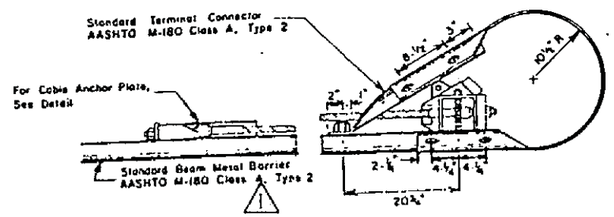
APPROVAL RECOMMENDED: TRAFFIC ENGINEER — DATE 8-14-85
APPROVED: DIR. PROJ. DEV. DIV. — DATE 2-15-85

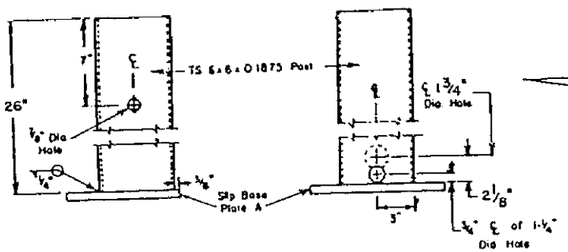
SERIAL M-21-77C — SHEET 2 OF 3

CITY OF ALBUQUERQUE DWG. 2636

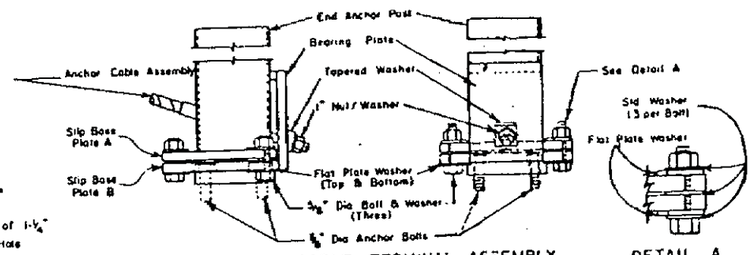
FHWA Region No	STATE		SHEET NO.	TOTAL SHEETS
6	NEW MEXICO			





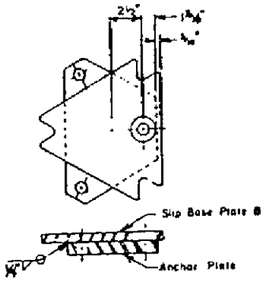


TERMINAL POST DETAIL

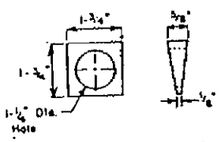


BREAKAWAY CABLE TERMINAL ASSEMBLY

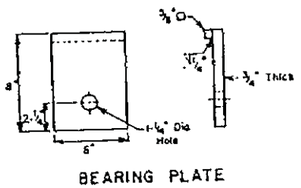
DETAIL A



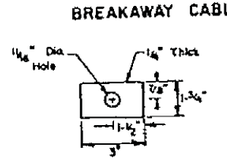
TERMINAL POST FOUNDATION



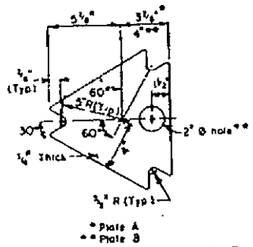
TAPERED WASHER



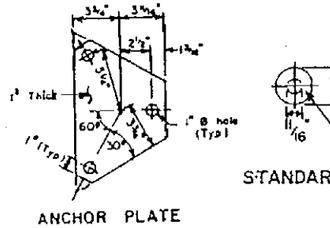
BEARING PLATE



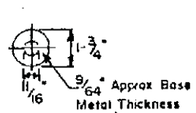
FLAT PLATE WASHER



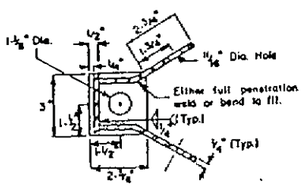
SLIP BASE PLATES A & B



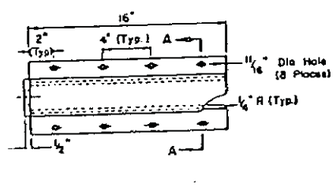
ANCHOR PLATE



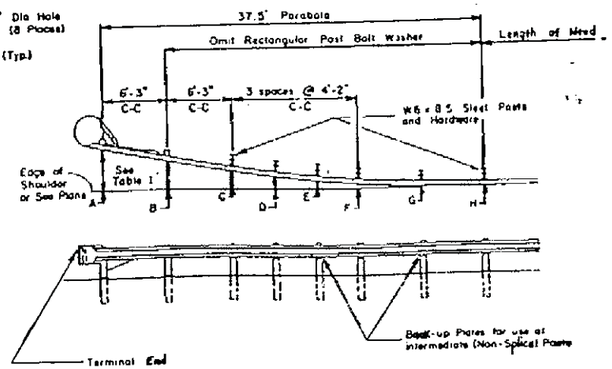
STANDARD WASHER



SECTION A-A

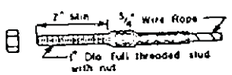


CABLE ANCHOR PLATE

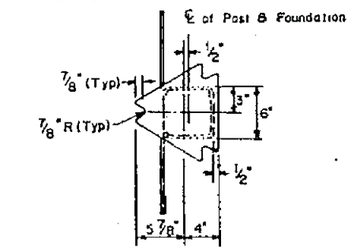


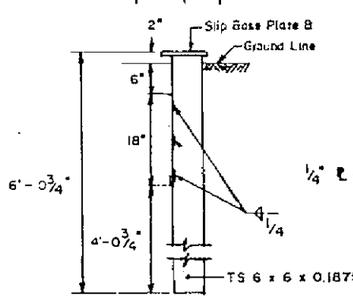
TYPICAL PARABOLA OFFSETS	
Post	Offset Distance
A	4.0'
B	2.0'
C	1.3'
D	1.2'
E	0.79'
F	0.44'
G	0.11'
H	0

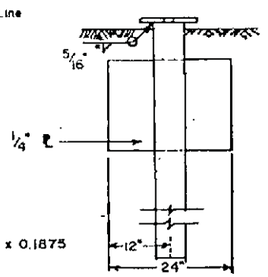
TABLE 1



SWAGED FITTING







STEEL POST EMBEDMENT - SOIL

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 rope.
5. Torque slip plate bolts to be 155-170 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-153.
7. B.C.T. must be installed on level surface (10:1 or flatter) with metal barrier system for optimum performance. ⚠1
8. Use 12 inch long backup plate at posts where W-Beam splice does not occur.
9. ⚠1 To provide a parabolic flare, the posts in the last 37.5 feet of metal barrier shall be completly backfilled and tamped before the W-Beam rail is attached. In addition, the last two posts (steel tubes) shall be embedded by layering 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 no visible slack.

THIS SERIAL REVISED 2-5-85

IDENT. NO	DESCRIPTION	DATE	BY
⚠5			
⚠4			
⚠3			
⚠2			
⚠1	CHANGED GUARDRAIL TO METAL BARRIER	2-5-85	DRR

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO
STATE HIGHWAY DEPARTMENT

⚠1 METAL BARRIER (BREAKAWAY)
TYPE "C" END ANCHORAGE
STEEL POSTS (SOIL PLATE)

DESIGNED BY G.P.B.	APPROVAL	11/21/84
DRAWN BY - G.O.	RECOMMENDED - TRAFFIC ENGINEER	DATE
CHECKED BY G.P.B.	APPROVED - ENGINEER OF DESIGN	12-6-84 DATE

SERIAL M-21-77C SHEET 3 OF 3

CITY OF ALBUQUERQUE DWG. 2637

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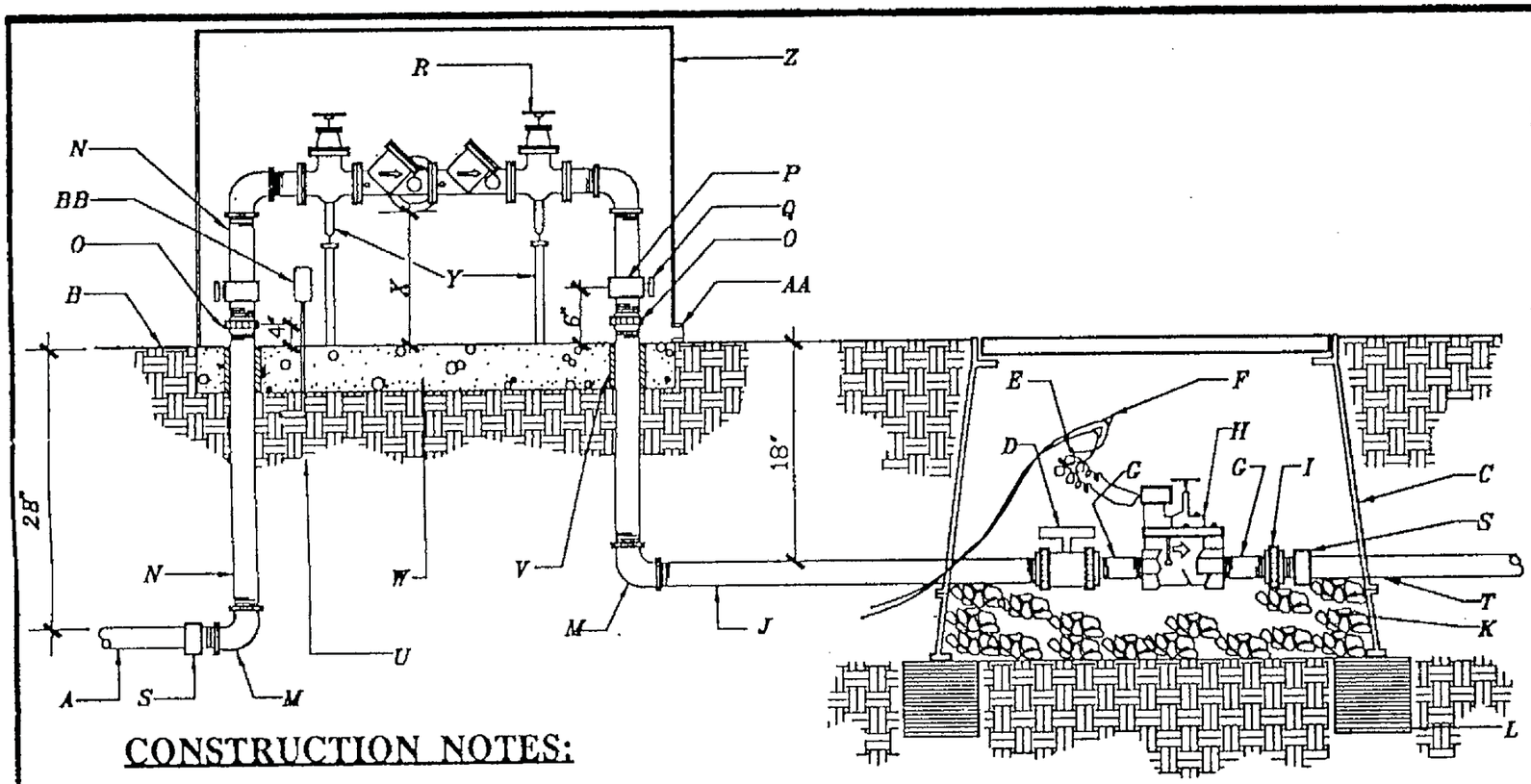
SECTION 2700
STANDARD DETAILS FOR LANDSCAPING

DWG. NO.	TITLE
2701	MASTERVALVE W/RPBA
2701-A	BERMAD FLOWMETER MASTERVALVE W/RPBA
2702	MASTERVALVE W/PVB
2702-A	BERMAD FLOWMETER MASTERVALVE W/PVB
2702-B	IRRIGATION SYSTEMS
2702-C	IRRIGATION SYSTEMS WITH CHEMICAL INJECTION
2703	IRRIGATION ELECTRIC VALVE
2704	IRRIGATION THRUST BLOCKS
2705	AIR RELIEF VALVE
2706	IRRIGATION GATE VALVE
2707	IRRIGATION MAINLINE ISOLATION VALVE
2708	QUICKS COUPLER VALVE
2709	SPRINKLER HEAD W/FLEX PIPE ASSEMBLY
2709-A	IRRIGATION DRIPS VALVE
2709-B	DRINKING FOUNDATION W/BALL DRAIN
2710	IRRIGATION BUBBLER HEAD AT TREE
2711	IRRIGATION BUBBLER HEAD AT SHRUB
2711-A	BUBBLER DETAIL IN FLOWER BED
2712	IRRIGATION BUBBLER HEAD IN TREE GRATE
2713	TREE PLANTED IN TURF
2714	ISOLATED TREE PLANTING
2715	TREE IN PLANTER
2716	TREE PLANTED ON A SLOPE
2717	ISOLATED SHRUB PLANTING
2718	SHRUB BED
2719	FLOWER BED
2720	CONCRETE WALK
2721	CRUSHED SAND PATH W/CONCRETE MOWSTRIP
2722	ASPHALT PATH W/CONCRETE MOWSTRIP
2723	BOLLARD DETAIL
2724	BOLLARD IN CONCRETE WALKS
2725	CONCRETE EDGER AT FENCE
2726	CONCRETE MOWSTRIPS
2727	CONCRETE EDGER AT TREE WELL OR PLANTER
2728	TURN DOWN SLAB AT PLAN AREA
2729	EDGER WALL AT SAND PLAY AREA
2730	MEDIAN PLANTER W/ROADBED WATERPROOFING



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. 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 REINF. 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. MOWSTRIP SHALL BE A MIN OF 12" FROM PIPING AND VALVE BOX. (OPTIONAL, DEPENDING ON APPLICATION).

CITY OF ALBUQUERQUE

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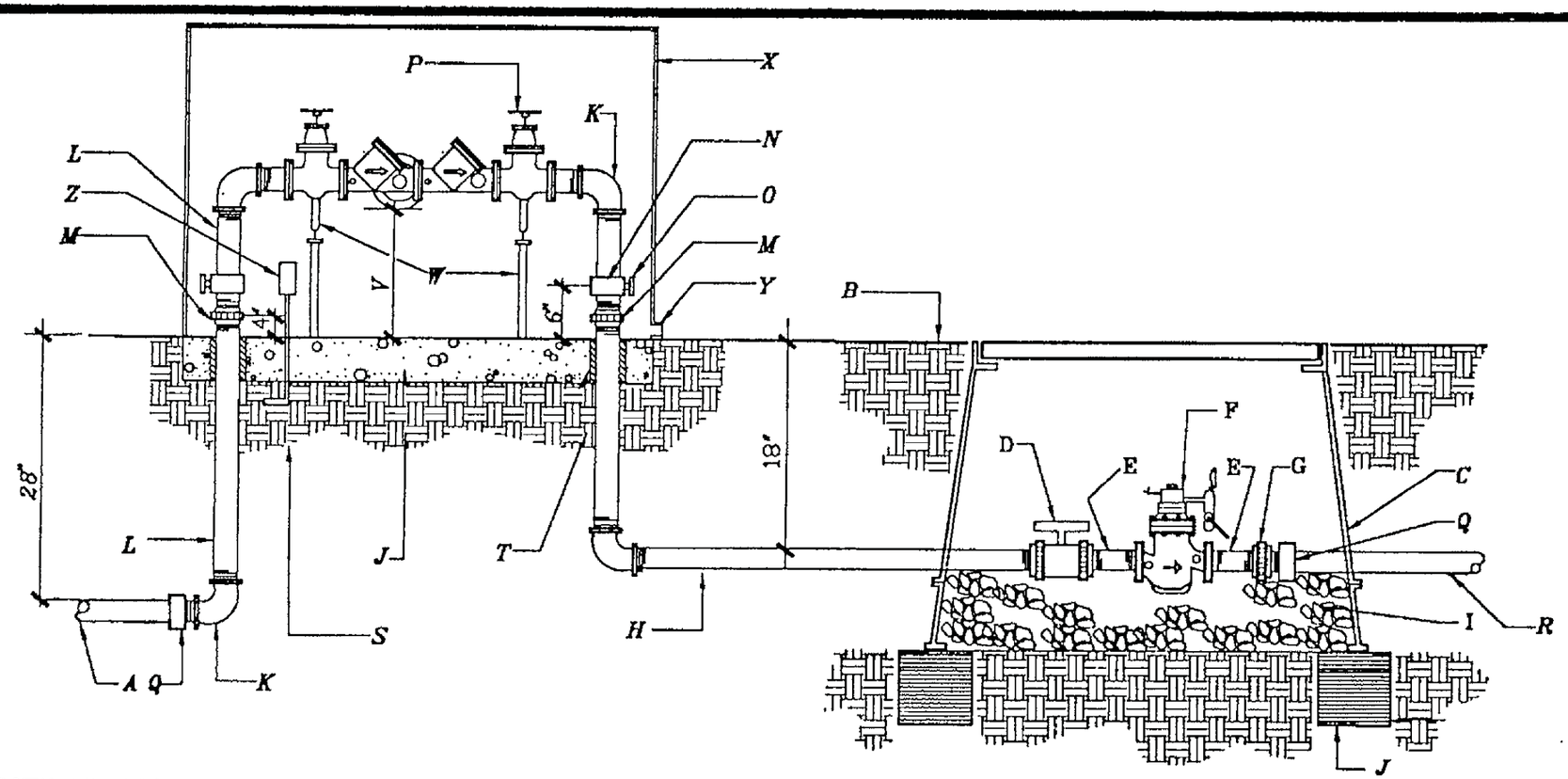
LANDSCAPE
MASTERVALVE W/ RPBA
DWG. 2701 NOV. 1990



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. 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., 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. 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 DV050 1/2".
P. RPBA BACKFLOW PREVENTER (REFERENCE DRAWINGS).
Q. PVC MIP ADAPTER.
R. NON-CONSTANT PRESSURE IRRIGATION MAINLINE.
S. COMPACTED SUBGRADE.

CITY OF ALBUQUERQUE

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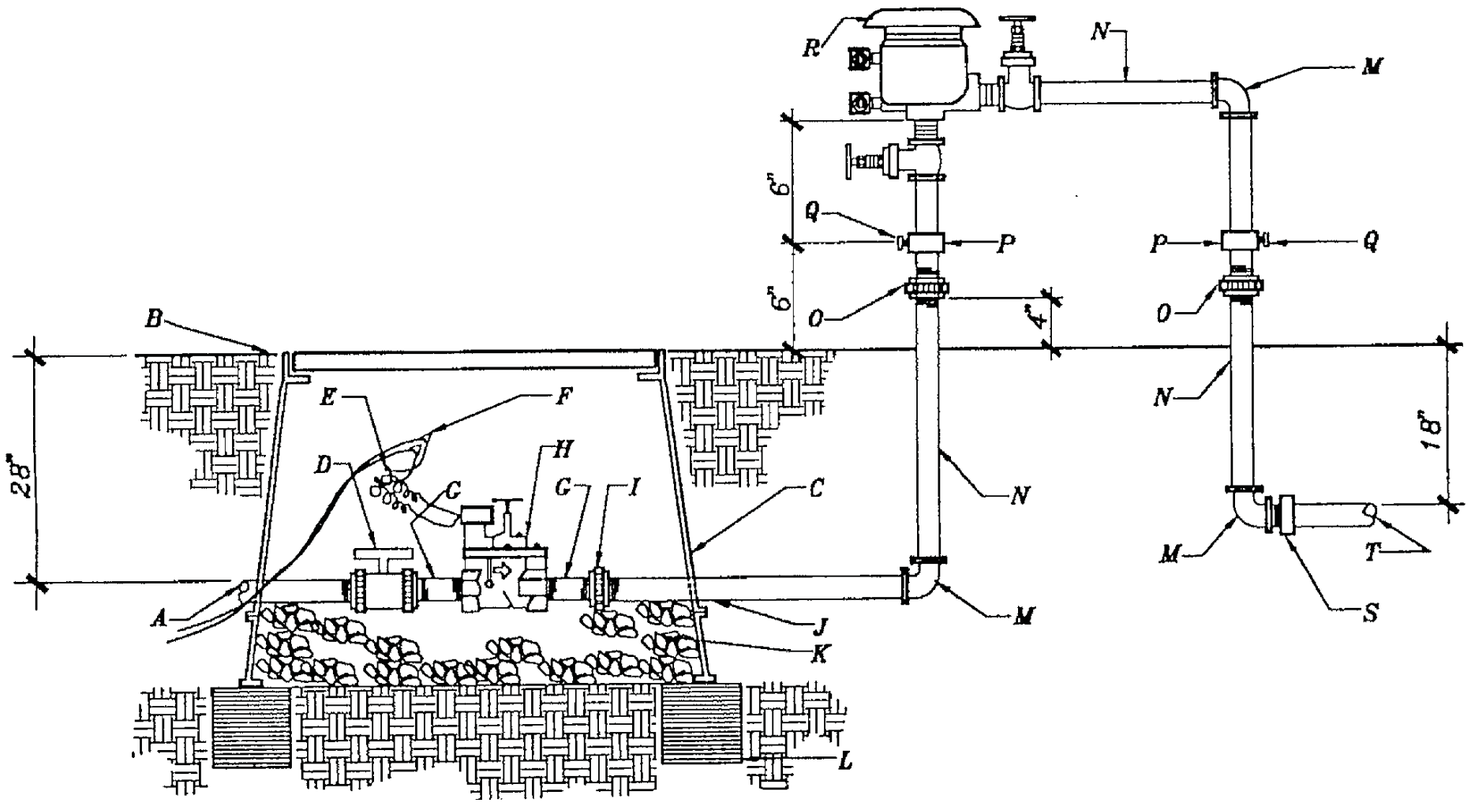
LANDSCAPE
BERMAD FLOWMETER
MASTERVALVE W/ RPBA
DWG. 2701-A NOV. 1990



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. 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 MASTERVALVE AND PVB 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., 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.

CITY OF ALBUQUERQUE

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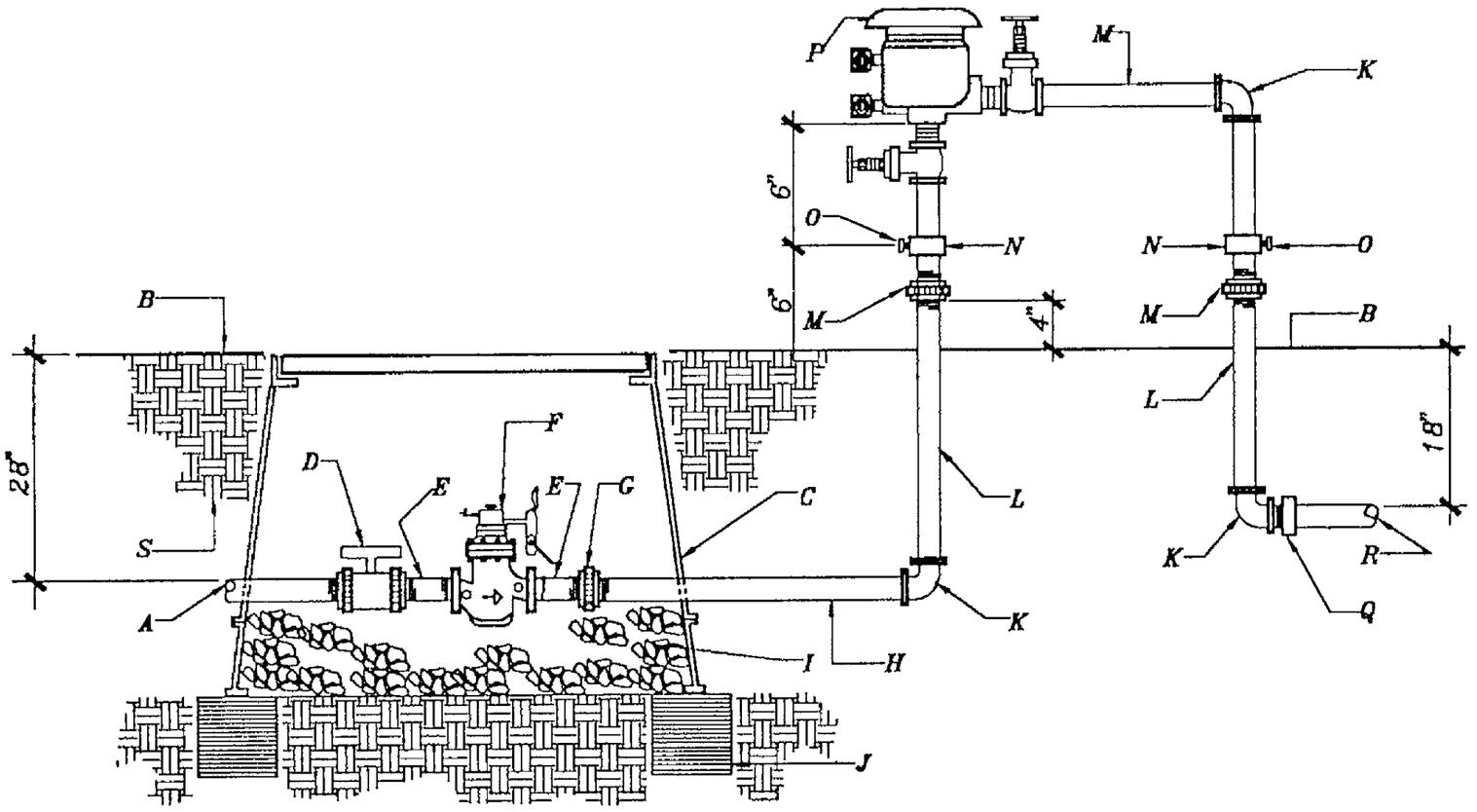
LANDSCAPE
MASTERVALVE W/ PVB
DWG. 2702 JAN. 1991



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 A 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. 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 MASTERVALVE AND PVB 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., 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. 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 DV050 1/2".
P. PVB BACKFLOW PREVENTER (REFERENCE DRAWINGS).
Q. PVC MIP ADAPTER.
R. NON-CONSTANT PRESSURE IRRIGATION MAINLINE.
S. COMPACTED SUBGRADE.

CITY OF ALBUQUERQUE

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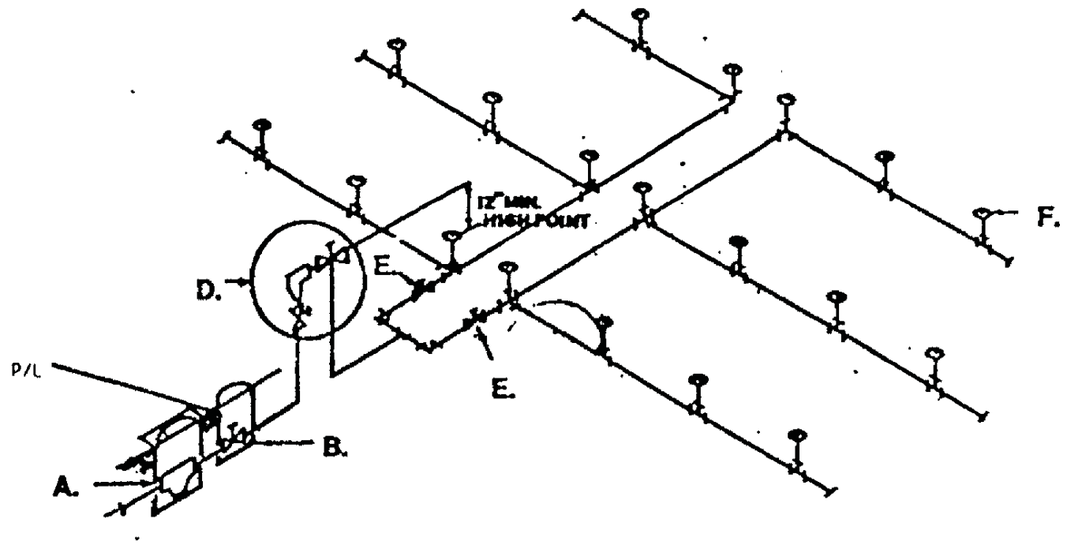
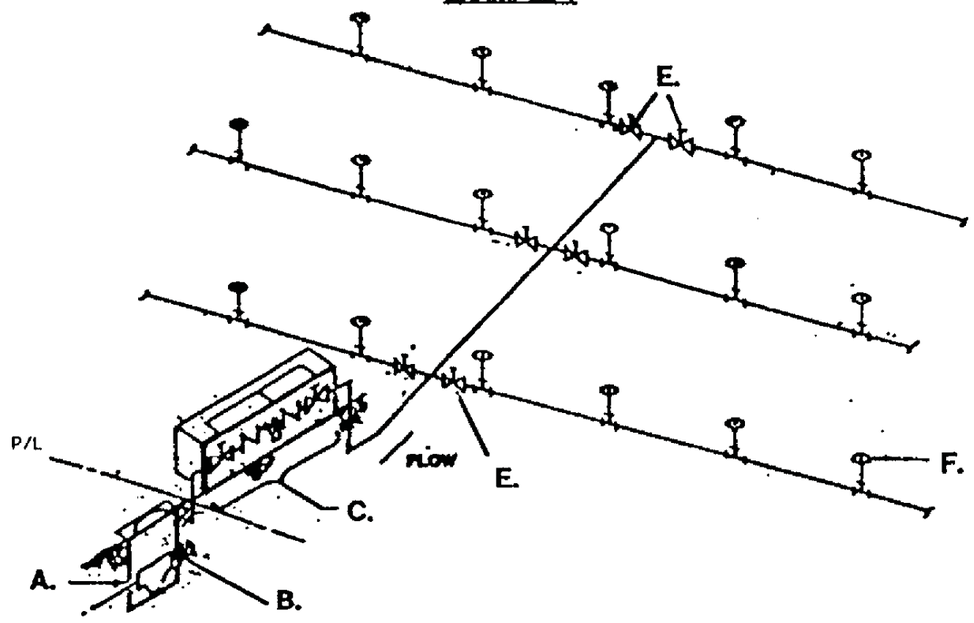
LANDSCAPE
BERMAD FLOWMETER
MASTERVALVE W/ PVB
DWG. 2702-A JAN.1991



W/ PRESSURE VACUUM BREAKER
EXAMPLE 1

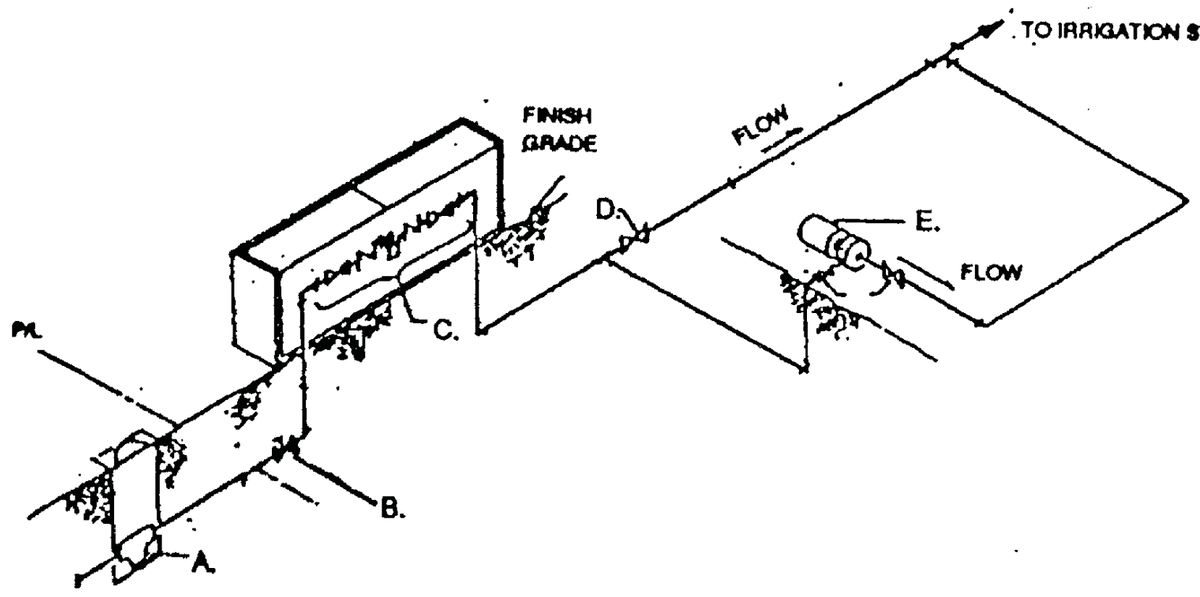


REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY
EXAMPLE 2

GENERAL NOTES
1. See Landscape DWGS 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

	CITY OF ALBUQUERQUE
REVISIONS 12-91	LANDSCAPE EXAMPLES OF IRRIGATION SYSTEMS DWG. 2702-B JAN. 1991



WITH CHEMICAL INJECTION

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.

REVISIONS	CITY OF ALBUQUERQUE
	LANDSCAPE EXAMPLES OF IRRIGATION SYSTEMS WITH CHEMICAL INJECTION DWG. 2702-C JAN. 1991

CITY OF ALBUQUERQUE

LANDSCAPE
IRRIGATION ELECTRIC VALVE
DWG. 2703 NOV. 1990

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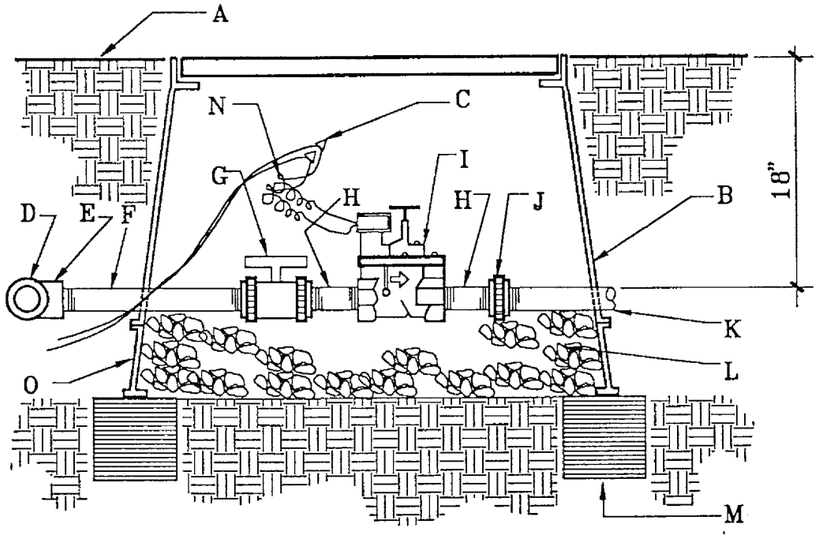


GENERAL NOTES:

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 PB-18 BODY (ABS) VALVE BOX WITH 1730 BOLT DOWN COVER (ABS) AND ONE 8" EXTENSION.

C. 3M SCOTCHLOK CONNECTORS.

D. IRRIGATION MAINLINE.

E. IRRIGATION MAINLINE SERVICE TEE OR ELL.

F. SCHEDULE 80 PVC 12" 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 WASHED ROCK.

M. 8"X8"X16" SOLID CMU BLOCK.

N. 24" WIRE EXPANSION COIL.

CITY OF ALBUQUERQUE

LANDSCAPE
IRRIGATION THRUST BLOCKS
DWG. 2704 NOV. 1990

REVISIONS 3/92

GENERAL NOTES

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

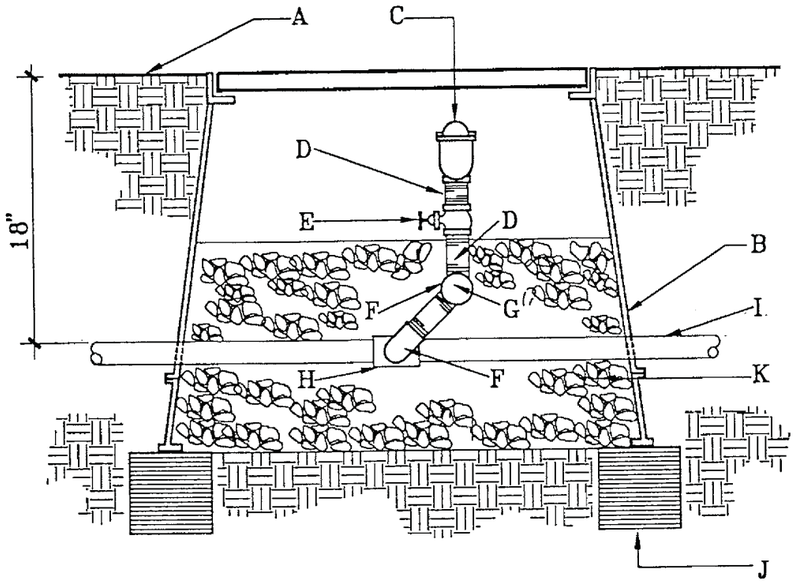
CONSTRUCTION NOTES

A. CONCRETE THRUST BLOCK PLACED AGAINST SOLID UNDISTURBED SOIL. (SEE SECTION 101).
B. PVC FITTING.
C. PIPE TRENCH.
D. 10 MIL. PLASTIC SHEETING.

CITY OF ALBUQUERQUE

LANDSCAPE
AIR RELIEF VALVE
DWG. 2705 NOV. 1990

REVISIONS



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 MASTERVALVE.

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 AIR RELIEF VALVE IS INSTALLED IN PLAYING FIELD USE 4" PIPE WITH PLASTIC LID.

C. AIR RELIEF VALVE (REFERENCE THE DRAWINGS).

D. SCHEDULE 80 PVC NIPPLE.

E. GATE VALVE.

F SCHEDULE 40 PVC ST. ELL.

G. SCHEDULE 40 PVC ELL.

H. IRRIGATION MAINLINE TEE.

I. IRRIGATION MAINLINE.

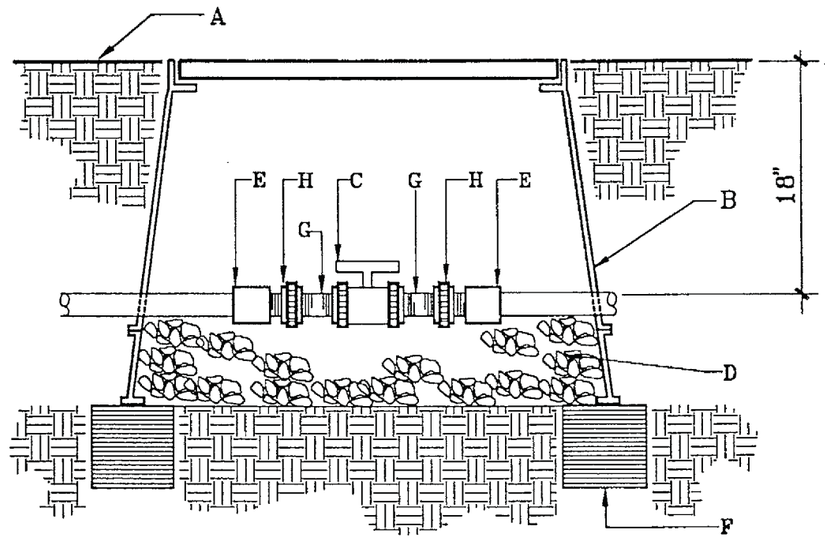
J. 8"X8"X16" SOLID CMU BLOCK.

K. 1" DIAMETER WASHED ROCK.

CITY OF ALBUQUERQUE

LANDSCAPE
IRRIGATION GATE VALVE
DWG. 2706 NOV. 1990

REVISIONS



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 PB-18 BODY (ABS) VALVE BOX WITH 1730 BOLT DOWN COVER (ABS) AND ONE 8" EXTENSION.

C. SPEARS TRUE UNION SCHEDULED 80 PVC BALL VALVE.

D. 1" DIAMETER WASHED ROCK.

E. PVC MIP ADAPTER.

F. 8"X8"X16" SOLID CMU BLOCK.

G. SCHEDULE 80 PVC 4" NIPPLE.

H. SPEARS SCHEDULE 80 PVC UNION.

CITY OF ALBUQUERQUE

LANDSCAPE
IRRIGATION MAINLINE
ISOLATION VALVE
DWG. 2707

NOV. 1990

REVISIONS
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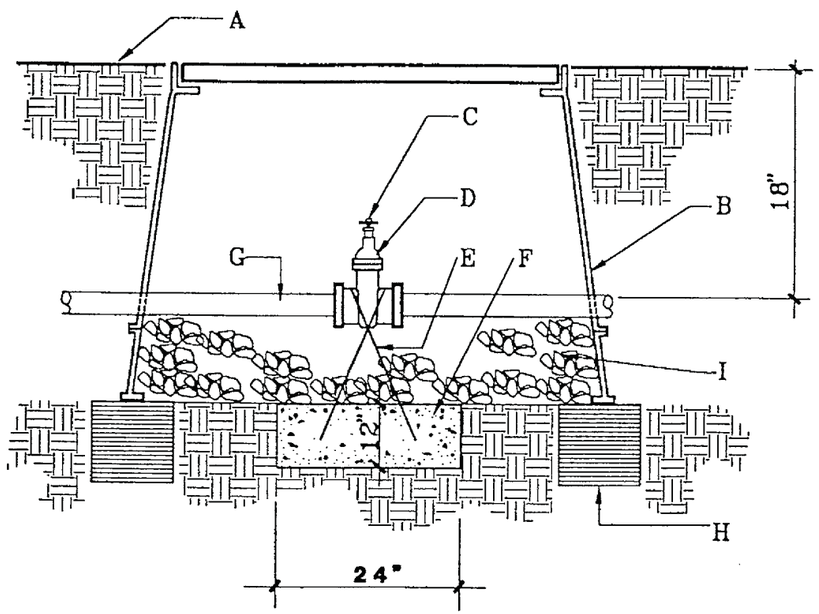


GENERAL NOTES:

1. INSTALL AN 8"X8"X16" CMU BLOCK AT EACH CORNER OF THE VALVE BOX.

CONSTRUCTION NOTES:

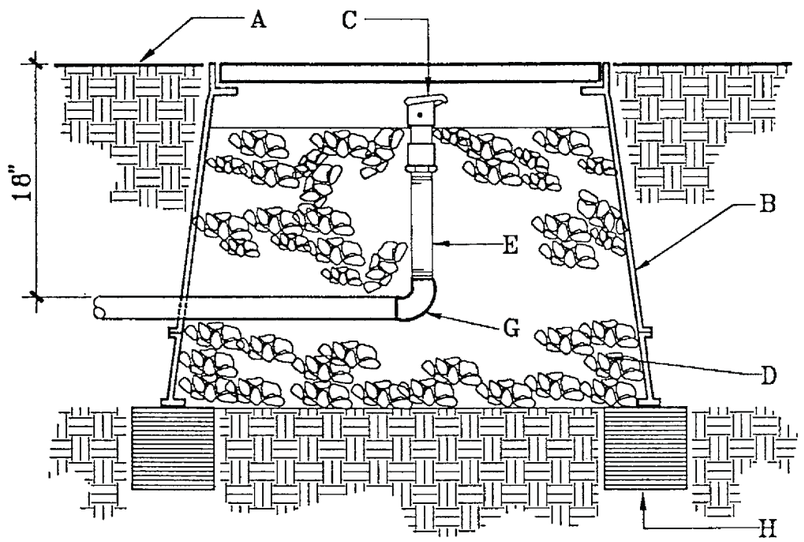
A. FINISH GRADE.
B. BROOKS PRODUCTS INC., 1730 PB-18 BODY (ABS) VALVE BOX WITH 1730 BOLT DOWN COVER (ABS) AND ONE 8" EXTENSION.
C. 2" OPERATING NUT.
D. PEGLER "O" RING GASKET VALVE 708 A (LINE SIZE).
E. NO. 4 REBAR.
F. THRUST BLOCK-4000 PSI CONCRETE PLACED AGAINST UNDISTURBED SOIL.
G. IRRIGATION MAINLINE.
H. 8"X8"X16" CMU BLOCK.
I. 1" DIAMETER WASHED ROCK.

CITY OF ALBUQUERQUE

LANDSCAPE
QUICK COUPLER VALVE
DWG. 2708

NOV. 1990

REVISIONS



GENERAL NOTES:

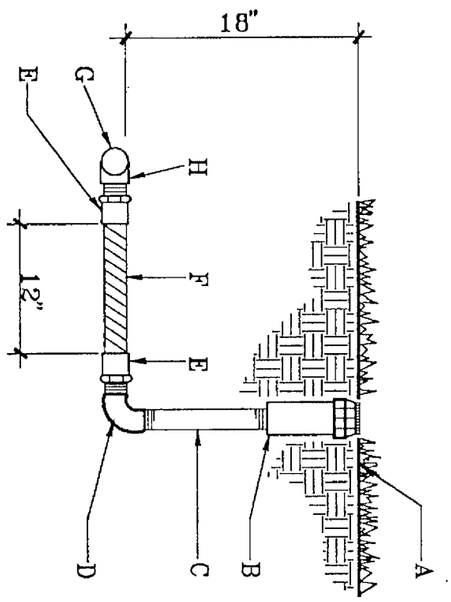
1. INSTALL AN 8"X8"X16" SOLID CMU BLOCK AT EACH CORNER OF THE VALVE BOX.
2. INSTALL 1" DIAMETER WASHED ROCK BELOW THE VALVE BOX. EXTEND WASHED ROCK UP TO COLLAR OF QUICK COUPLER VALVE.
3. INSTALL A GATE VALVE IMMEDIATELY UPSTREAM OF QUICK COUPLER VALVE.

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" PIPE WITH PLASTIC LID.
C. RAINBIRD 33 DRC QUICK COUPLER VALVE.
D. 1" DIAMETER WASHED ROCK.
E. 12" SCH. 80 PVC RISER.
F. IRRIGATION MAINLINE.
G. SCHEDULE 40 PVC ELL SXT.
H. 8"X8"X16" SOLID CMU BLOCK.

GENERAL NOTES:

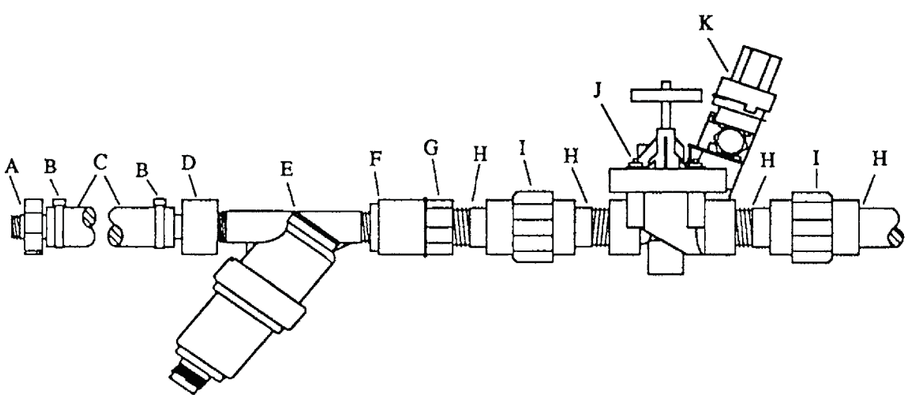
1. THIS DETAIL SHALL BE USED FOR POP-UP SHRUB SPRAY, POP-UP LAWN SPRAY, GEAR DRIVEN AND ROTARY SPRINKLER HEADS.
2. LATERAL LINE PRESSURE TESTING SHALL BE COMPLETED PRIOR TO INSTALLATION OF FLEX PIPE ASSEMBLY. LATERAL LINE TESTING SHALL BE ACCOMPLISHED BY INSTALLING A PLUG IN THE OUTLET OF LATERAL LINE TEES AND ELLS.
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 SPRINKLER HEAD.
D. SCH. 40 PVC THREADED ELL.
E. SCH. 40 PVC MIP ADAPTER.
F. PVC FLEXIBLE VINYL PIPE STD. IPS FROM AGRICULTURAL PRODUCTS INC. (818-768-3303).
G. LATERAL PIPE.
H. SCH. 40 PVC SXSXT TEE OR SXT ELL.

REVISIONS	CITY OF ALBUQUERQUE
	LANDSCAPE SPRINKLER HEAD W/ FLEX PIPE ASSEMBLY DWG. 2709 NOV. 1990



CONSTRUCTION NOTES:

A. SCH. 40 PVC MIP ADAPTER.
B. 3/4" CLAMP.
C. POLY DRIP LINE.
D. SCH. 40 PVC FEMALE ADAPTER.
E. DRIP 'Y' FILTER.
F. SCH. 40 PVC MIP ADAPTER REDUCER 1"X3/4" SXT.
G. SCH. 40 SXT COUPLING 1".
H. SCH. 80 PVC SXT NIPPLE 1".
I. SCH. 80 PVC UNION.
J. ELECTRIC CONTROL VALVE.
K. PRS 2.

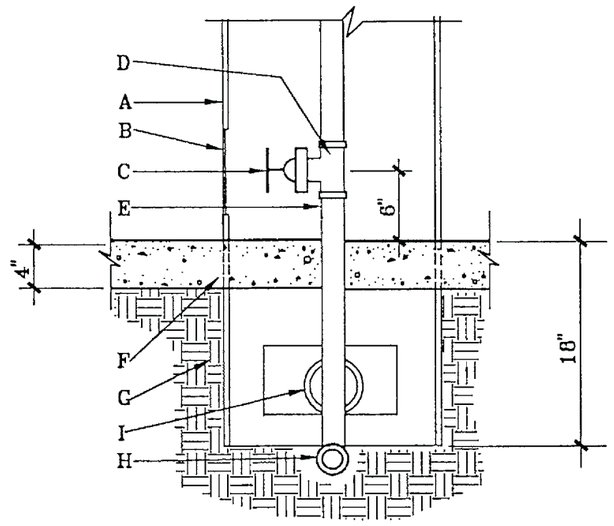
REVISIONS	CITY OF ALBUQUERQUE
	LANDSCAPE IRRIGATION DRIP VALVE DWG. 2709-A JUNE 1991

CITY OF ALBUQUERQUE

LANDSCAPE
DRINKING FOUNTAIN W/
BALL DRAIN
DWG. 2709-B

DEC. 1992

REVISIONS
12/92



CONSTRUCTION NOTES:

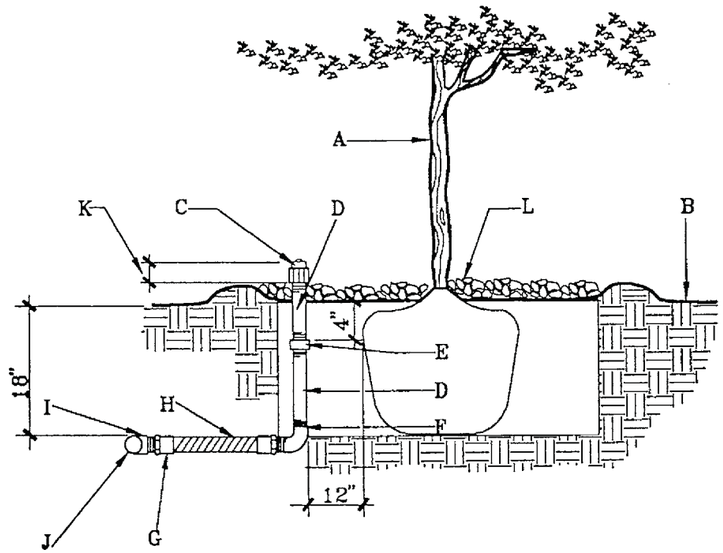
A. DRINKING FOUNTAIN (SEE PRODUCT SCHEDULE) ASSEMBLE ACCORDING TO MANUFACTURER'S SPECS. INSTALL VERTICAL.
B. DOOR FOR OPENING TO BALL DRAIN AREA.
C. BALL DRAIN, CHAMPION DV050 1/2".
D. GALVANIZED TEE.
E. 1/2" NYLON REINFORCED TUBING.
F. CONCRETE PAVING.
G. COMPACTED BACKFILL.
H. WATER SUPPLY LINE TO VALVE BOX W/ GATE VALVE. SEE IRRIGATION PLAN FOR VALVE LOCATION.
I. 1 1/2" PVC DRAIN TO DRINKING FOUNTAIN SUMP.

CITY OF ALBUQUERQUE

LANDSCAPE
IRRIGATION BUBBLER HEAD
AT TREE
DWG. 2710

NOV. 1990

REVISIONS
12/91



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 TREE.

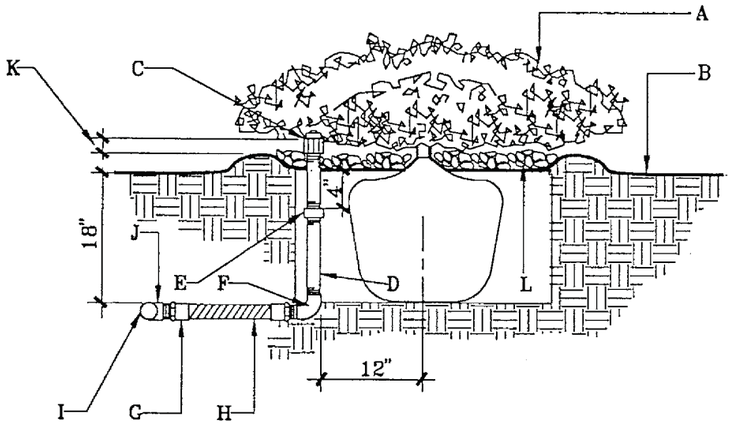
CONSTRUCTION NOTES:

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. (818-768-3303).
I. SCH. 40 PVC SXSXT TEE 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.

CITY OF ALBUQUERQUE

LANDSCAPE
IRRIGATION BUBBLER HEAD
AT SHRUB
DWG. 2711 NOV. 1990

REVISIONS
12/91



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.

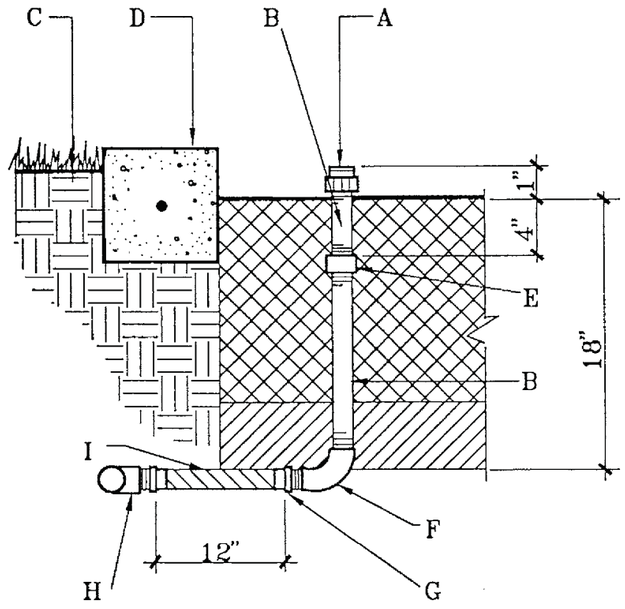
CONSTRUCTION NOTES:

A. SHRUB.
B. FINISH GRADE.
C. BUBBLER HEAD (REFERENCE IRRIGATION LEGEND).
D. SCH. 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. (818-768-3303).
I. LATERAL PIPE.
J. SCH. 40 PVC SXSXT TEE OR SXT ELL.
K. TOP OF BUBBLER LEVEL WITH TOP OF BARK MULCH OR MAX. 1" ABOVE TOP OF BARK MULCH.
L. 4" BARK MULCH.

CITY OF ALBUQUERQUE

LANDSCAPE
BUBBLER DETAIL
IN FLOWER BED
DWG. 2711-A NOV. 1990

REVISIONS
12/91
3/92



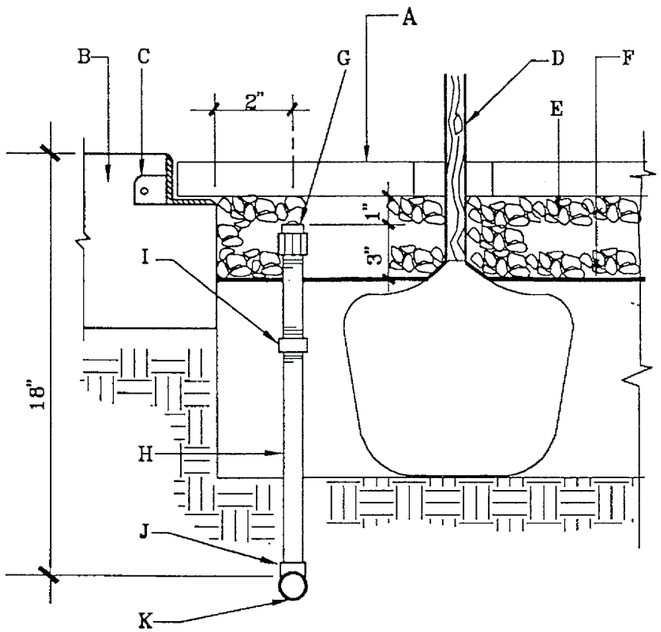
CONSTRUCTION NOTES:

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. 80 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 SXSXT TEE OR SXT ELL.
I. PVC FLEXIBLE VINYL PIPE STD. IPS FROM AGRICULTURAL PRODUCTS INC. (818-768-3303)

CITY OF ALBUQUERQUE

LANDSCAPE
IRRIGATION BUBBLER HEAD
IN TREE GRATE
DWG. 2712 NOV. 1990

REVISIONS
12/91
3/92



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 TREE.
3. PVC PIPE SHALL NOT BE INSTALLED UNDER THE LOCATION OF THE TREE BALL.

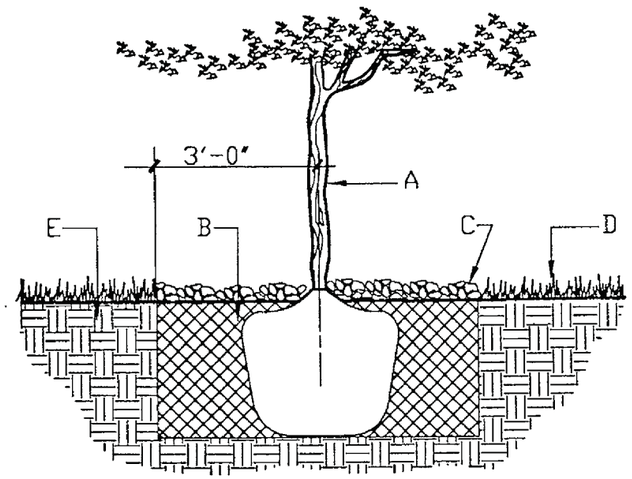
CONSTRUCTION NOTES:

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 SXSXT TEE OR SXT ELL.
K. LATERAL PIPE.

CITY OF ALBUQUERQUE

LANDSCAPE
TREE PLANTED IN TURF
DWG. 2713 NOV. 1990

REVISIONS
12/91
12/92



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.

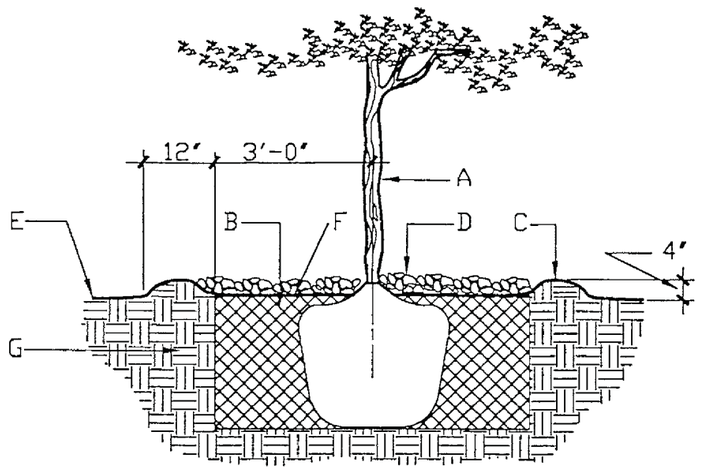
CONSTRUCTION NOTES:

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

CITY OF ALBUQUERQUE

LANDSCAPE
ISOLATED TREE PLANTING
DWG. 2714
NOV. 1990

REVISIONS
12/91
12/92



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.

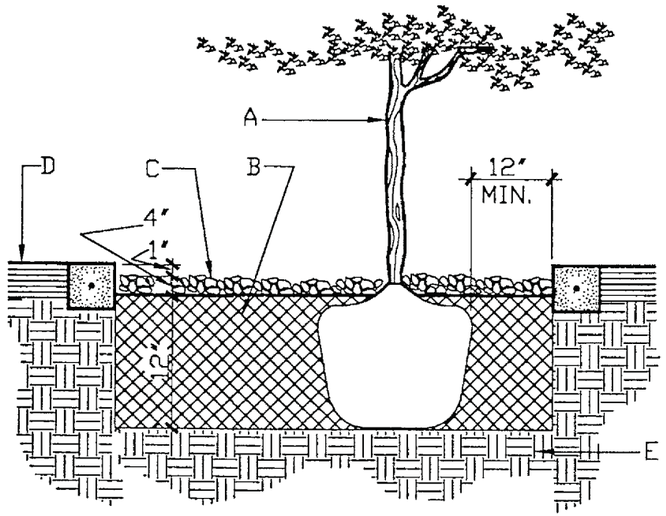
CONSTRUCTION NOTES:

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

CITY OF ALBUQUERQUE

LANDSCAPE
TREE IN PLANTER
DWG. 2715
NOV. 1990

REVISIONS
12/91



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.

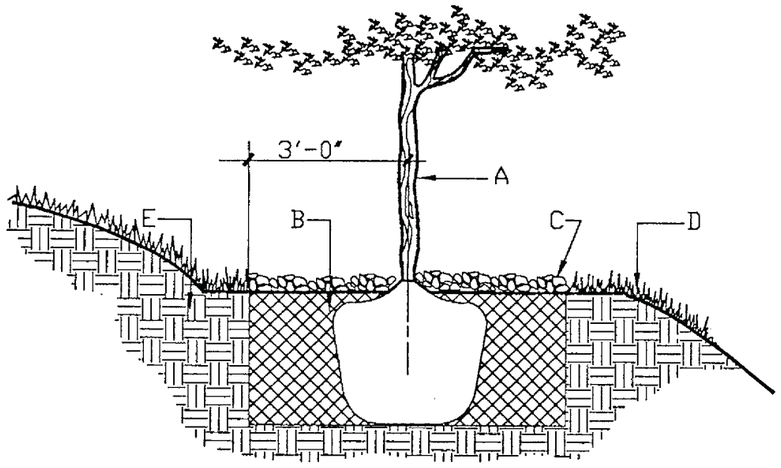
CONSTRUCTION NOTES:

A. TREE.
B. PLANTING SOIL MIXTURE. (REFERENCE THE SPECIFICATION).
C. 4" DEPTH OF BARK MULCH.
D. MATERIAL VARIES (REFERENCE THE DRAWING).
E. UNDISTURBED SOIL.

CITY OF ALBUQUERQUE

LANDSCAPE
TREE PLANTED ON A SLOPE
DWG. 2716
NOV. 1990

REVISIONS
12/91
12/92



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.
6. WHEN THE TREE IS PLANTED, A LEVEL SPACE SHALL BE GRADED IN ORDER TO PLANT THE TREE LEVEL. THE MINIMUM AREA OF THE LEVEL SPACE SHALL BE THE SAME AS THE DIAMETER OF THE DRIP LINE OF THE TREE.
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.

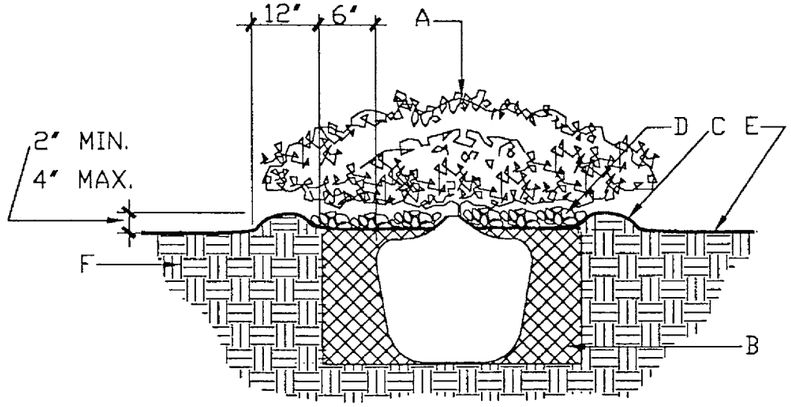
CONSTRUCTION NOTES:

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

CITY OF ALBUQUERQUE

LANDSCAPE
ISOLATED SHRUB PLANTING
DWG. 2717
NOV. 1990

REVISIONS
12/91
12/92



GENERAL NOTES:

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

CONSTRUCTION NOTES:

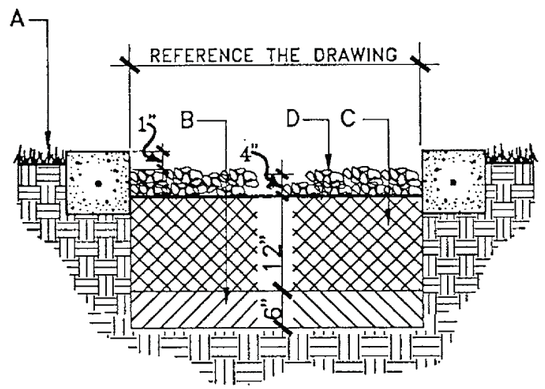
A. SHRUB.
B. BACKFILL WITH EXISTING SOIL.
C. EARTH BERM AROUND WATER RETENTION BASIN.
D. 4" DEPTH OF BARK MULCH.
E. FINISH GRADE.
F. UNDISTURBED SOIL.

CITY OF ALBUQUERQUE

LANDSCAPE
SHRUB BED
DWG. 2718

NOV. 1990

REVISIONS



GENERAL NOTES:

1. EXISTING SOIL WITHIN THE FLOWER BED SHALL BE REMOVED AND REPLACED WITH THE SPECIFIED PLANTING SOIL MIXTURE.

CONSTRUCTION NOTES:

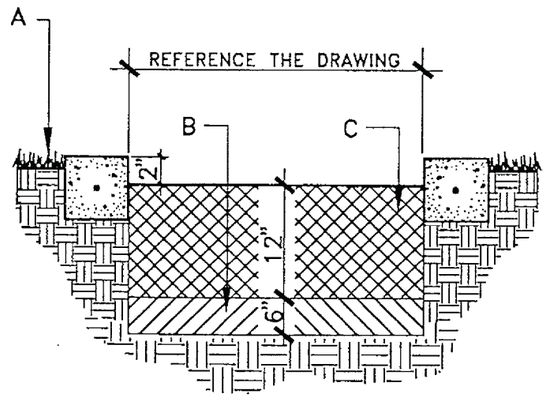
A. MATERIAL VARIES (REFERENCE THE DRAWINGS).
B. LOOSEN SOIL TO DEPTH OF 6".
C. PLANTING SOIL MIXTURE (REFERENCE THE SPECIFICATIONS).
D. BARK MULCH.

CITY OF ALBUQUERQUE

LANDSCAPE
FLOWER BED
DWG. 2719

NOV. 1990

REVISIONS



GENERAL NOTES:

1. EXISTING SOIL WITHIN THE FLOWER BED SHALL BE REMOVED AND REPLACED WITH THE SPECIFIED PLANTING SOIL MIXTURE.

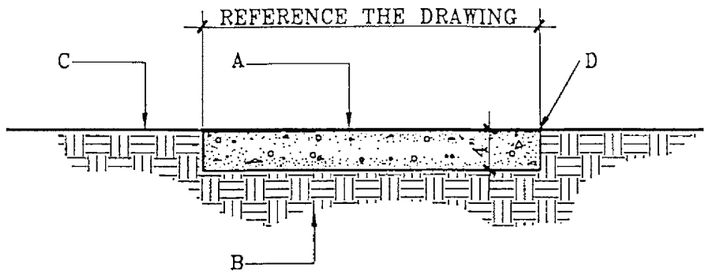
CONSTRUCTION NOTES:

A. MATERIAL VARIES (REFERENCE THE DRAWINGS).
B. LOOSEN SOIL TO DEPTH OF 6".
C. PLANTING SOIL MIXTURE (REFERENCE THE SPECIFICATIONS).

CITY OF ALBUQUERQUE

LANDSCAPE
CONCRETE WALK
DWG. 2720
NOV. 1990

REVISIONS
12/91
3/92



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.

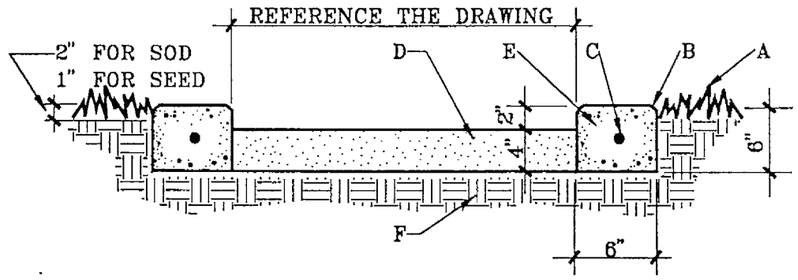
CONSTRUCTION NOTES:

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

CITY OF ALBUQUERQUE

LANDSCAPE
CRUSHED SAND PATH W/
CONCRETE MOWSTRIP
DWG. 2721
NOV. 1990

REVISIONS
12/91
3/92



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 EXTRUDED, 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:

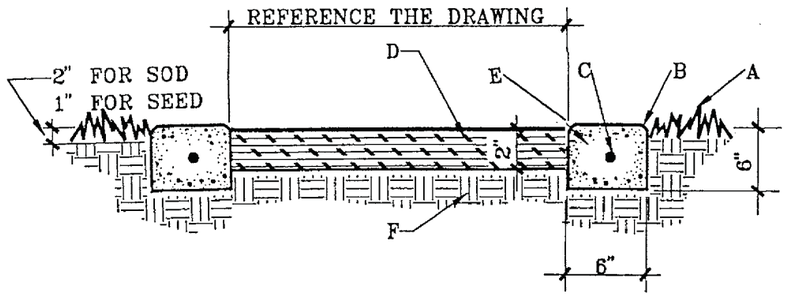
A. SOD OR SEEDED TURF (REFERENCE THE DRAWING).
B. TOOLED EDGE. (TYP.)
C. #3 REBAR, HORIZONTAL AND CONTINUOUS.
D. CRUSHED SAND ROLLED FOR COMPACTION.
E. 4000 PSI CONCRETE MOWSTRIP WITH BRUSH FINISH. (SEE SECTION 101).
F. SUBGRADE COMPACTED TO 95%. (SEE SECTION 301).

CITY OF ALBUQUERQUE

LANDSCAPE
ASPHALT PATH W/
CONCRETE MOWSTRIP
DWG. 2722

NOV. 1990

REVISIONS
12/91
3/92



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 EXTRUDED, 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:

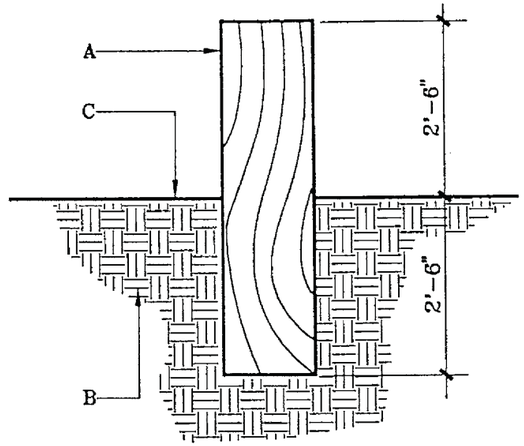
A. SOD OR SEEDED TURF (REFERENCE THE DRAWING).
B. TOOLED EDGE.
C. #3 REBAR, HORIZONTAL AND CONTINUOUS.
D. 2" ASPHALT SURFACE COURSE WITH 1500 LBS. STABILITY.
E. 4000 PSI CONCRETE MOWSTRIP WITH BRUSH FINISH. (SEE SECTION 101).
F. SUBGRADE COMPACTED TO 95%. (SEE SECTION 301).

CITY OF ALBUQUERQUE

LANDSCAPE
BOLLARD DETAIL
DWG. 2723

NOV. 1990

REVISIONS



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 AASHTO M-133.
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%.

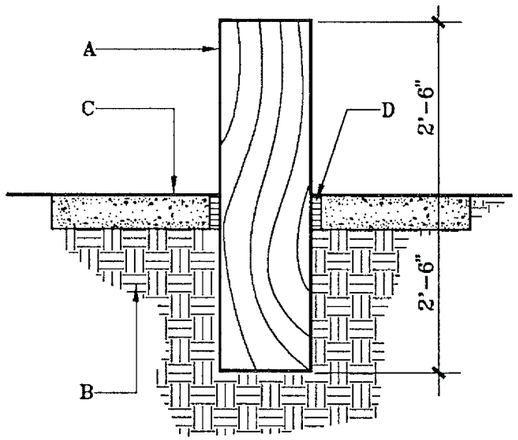
CONSTRUCTION NOTES:

A. WOOD BOLLARD; 8"X8"X5'-0".
B. SUBGRADE COMPACTED TO 95%. (SEE SECTION 301).
C. MATERIAL VARIES (REFERENCE THE DRAWING).

CITY OF ALBUQUERQUE

LANDSCAPE
BOLLARD IN CONCRETE WALK
DWG. 2724
NOV. 1990

REVISIONS
3/92



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 AASHTO M-133.
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%.

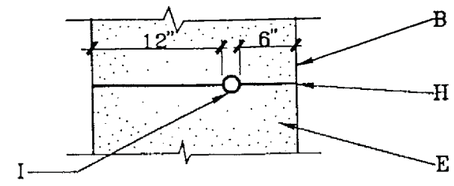
CONSTRUCTION NOTES:

A. WOOD BOLLARD; 8"X8"X5'-0".
B. SUBGRADE COMPACTED TO 95%. (SEE SECTION 301).
C. 4000 PSI STANDARD CONCRETE WALK
D. 1/2" ASPHALT IMPREGNATED EXPANSION JOINT.

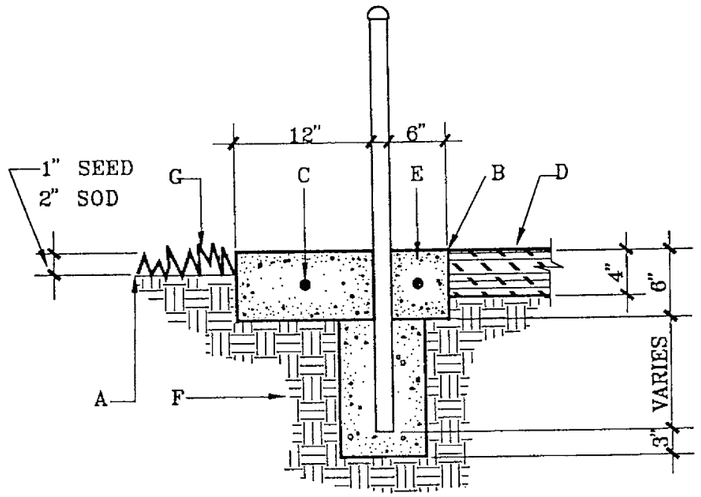
CITY OF ALBUQUERQUE

LANDSCAPE
CONCRETE EDGER AT FENCE
DWG. 2725
NOV. 1990

REVISIONS
12/91
3/92



PLAN VIEW



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' O.C..
3. EXPANSION JOINTS SHALL BE PLACED AT 20' O.C., AND WHERE THE MOWSTRIP ABUTS ANOTHER HARD SURFACE.
4. TOP OF EDGER SHALL BE LEVEL WITH THE TURF AT FINISH GRADE.
5. REFERENCE THE CITY STANDARD FENCING DETAILS FOR FENCE INSTALLATION INFORMATION.

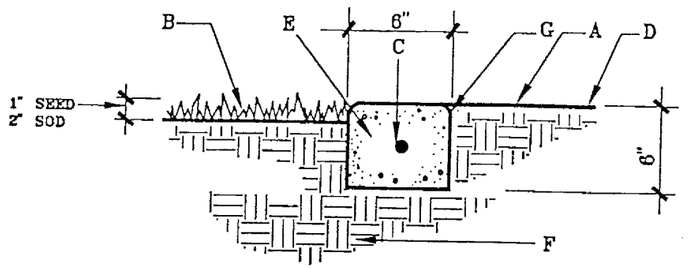
CONSTRUCTION NOTES:

A. FINISH GRADE.
B. TOOLED EDGE.
C. #3 REBAR, HORIZONTAL AND CONTINUOUS.
D. MATERIAL VARIES. (REFERENCE THE DRAWINGS).
E. 4000 PSI CONCRETE EDGER WITH BRUSH FINISH. (SEE SECTION 101).
F. 6" SUBGRADE COMPACTION. (SEE SECTION 301).
G. SOD OR SEEDED TURF. (REFERENCE THE DRAWINGS).
H. CONTROL JOINT.
I. POST.

CITY OF ALBUQUERQUE

LANDSCAPE
CONCRETE MOWSTRIP
DWG. 2726 NOV. 1990

REVISIONS
12/91
3/92



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.

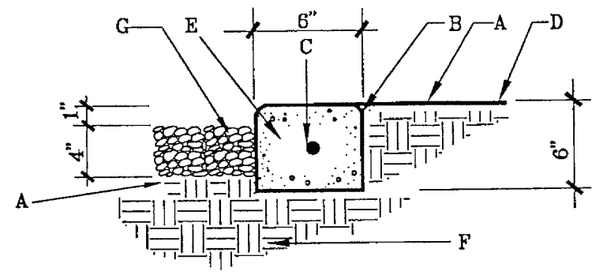
CONSTRUCTION NOTES:

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.)

CITY OF ALBUQUERQUE

LANDSCAPE
CONCRETE EDGER AT TREE
WELL OR PLANTER
DWG. 2727 NOV.1990

REVISIONS
12/91
3/92



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/PLANTER.

CONSTRUCTION NOTES:

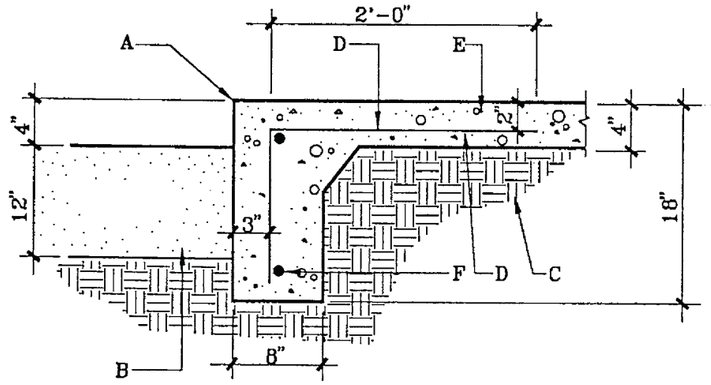
A. FINISH GRADE AT TREE WELL OR PLANTER.
B. TOOLED EDGE. (TYP.)
C. #3 REBAR, HORIZONTAL AND CONTINUOUS.
D. MATERIAL VARIES (REFERENCE THE DRAWING).
E. 4000 PSI CONCRETE EDGER WITH BRUSH FINISH. (SEE SECTION 101).
F. SUBGRADE COMPACTED TO 95%. (SEE SECTION 301).
G. BARK MULCH.

CITY OF ALBUQUERQUE

LANDSCAPE
TURN DOWN SLAB
AT PLAY AREA
DWG. 2728

NOV. 1990

REVISIONS
12/91
3/92



GENERAL NOTES:

1. CONTROL JOINTS SHALL BE PLACED AT 5' O.C..
2. EXPANSION JOINTS SHALL BE PLACED AT 20' O.C..

CONSTRUCTION NOTES:

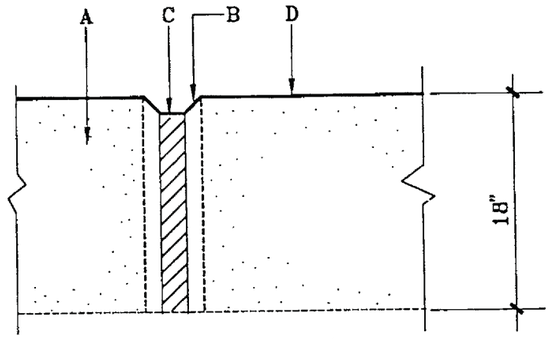
A. TOOLED EDGE.
B. BRICK SAND.
C. SUBGRADE COMPACTED TO 95%. (SEE SECTION 301).
D. #4 REBAR AT 12" O.C..
E. 4000 PSI CONCRETE WITH BRUSH FINISH. (SEE SECTION 101).
F. #4 REBAR, HORIZONTAL AND CONTINUOUS.

CITY OF ALBUQUERQUE

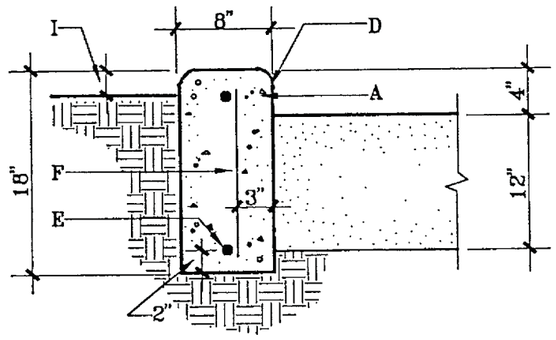
LANDSCAPE
EDGER WALL AT
SAND PLAY AREA
DWG. 2729

NOV. 1990

REVISIONS
12/91
3/92



EXPANSION JOINT DETAIL



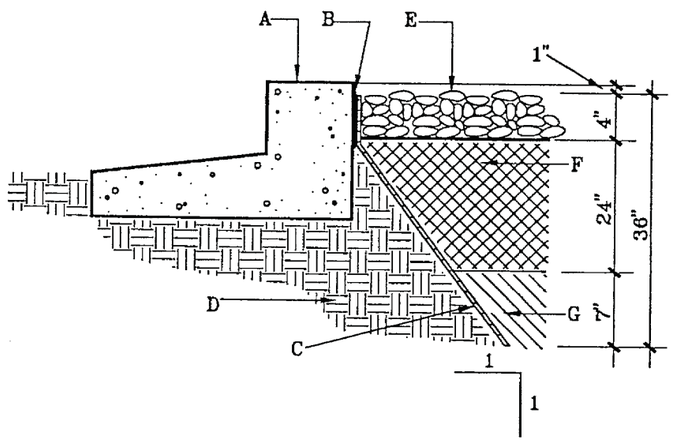
WALL DETAIL

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. 4000 PSI CONCRETE WITH BRUSH FINISH. (SEE SECTION 101).
B. 1" CHAMFER.
C. 1/2" EXPANSION JOINT MATERIAL.
D. TOOLED EDGE.
E. #4 REBAR, HORIZONTAL AND CONTINUOUS.
F. #4 REBAR AT 4' O.C..
G. BRICK SAND.
H. SUBGRADE COMPACTED TO 95%. (SEE SECTION 301).
I. MATERIAL VARIES. (REFERENCE THE DRAWINGS).



CITY OF ALBUQUERQUE

LANDSCAPE
MEDIAN PLANTER W/
ROADBED WATERPROOFING
DWG. 2930
NOV. 1990

REVISIONS
12/91

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 301).
E. BARK MULCH.
F. PLANTING SOIL MIXTURE. (REFERENCE THE SPECIFICATIONS).
G. LOOSEN THE SOIL TO A DEPTH OF 6".

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SECTION 2800
TEMPORARY TRAFFIC CONTROL

DWG.	TITLE
2801	GENERAL NOTES
2802	TRAFFIC CONTROL SIGNING
2803	CONSTRUCTION TRAFFIC CONTROL
2804	SIGNING EXAMPLES (MUTCD)
2805	SIGNING EXAMPLES (MUTCD)
2806	SIGNING EXAMPLES (MUTCD)
2807	SIGNING EXAMPLES (MUTCD)
2808	SIGNING EXAMPLES (MUTCD)

TEMPORARY TRAFFIC CONTROL GENERAL NOTES

1. CONTRACTOR MUST OBTAIN FROM CONSTRUCTION COORDINATION AN EXCAVATION/BARRICADING 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 PRESERVE 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 ACCESSES. THE TRAFFIC CONTROL PLAN SHALL INCLUDE ALL PHASES OF WORK AND SCHEDULES INVOLVED IN THE CONSTRUCTION PROJECT. ANY SEPARATE PHASES OF A CONSTRUCTION PROJECT SHALL BE GIVEN AN INDIVIDUAL PERMIT EACH. BLANKET PERMITS WILL NOT BE ISSUED.

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

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

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

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

7. THE CONSTRUCTION TRAFFIC CONTROL INITIAL 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 THROUGHOUT LENGTH OF PROJECT. CONTRACTOR IS RESPONSIBLE THAT ALL TRAFFIC CONTROL DEVICES COMPLY WITH THE MUTCD, LATEST EDITION.

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

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

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

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

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

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

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

16. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL FACILITIES, BUSINESSES AND/OR 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 ON BLUE REFLECTORIZED BACKGROUND. ACCESS SIGNS SHALL BE CONSIDERED INCIDENTAL TO THE BID AND NOT PART OF THE CONTRACT UNLESS OTHERWISE STATED. NO MORE THAN 3 BUSINESSES SHALL BE LISTED ON A ACCESS SIGN. SHOPPING CENTERS AND MALLS SHALL BE LISTED AS SUCH.

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

19. 48 HOURS PRIOR TO OCCUPYING OR CLOSING A RIGHT–OF–WAY, CONTRACTOR SHALL NOTIFY: POLICE, FIRE DEPARTMENT, SCHOOLS, HOSPITALS, TRANSIT AUTHORITY, BUSINESSES AND/OR RESIDENTS THAT WILL BE AFFECTED BY THE CONSTRUCTION.

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

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

22. CONTRACTOR SHALL AT ALL TIMES COMPLY WITH THE FOLLOWING:

    1) STANDARDS AND REQUIREMENTS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

    2) THE CITY OF ALBUQUERQUE TRAFFIC CODE, LATEST EDITION.

    3) 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 ALL REQUIREMENTS ARE ADDRESSED AND APPROVED BY CONSTRUCTION COORDINATION.

24. ALL TRAFFIC CONTROL DEVICES SHALL BE KEPT IN NEW/CLEAN CONDITION, WASHING OF EQUIPMENT IS INCIDENTAL TO ITS PLACEMENT AND MAINTENANCE.

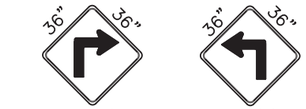
25. TRAFFIC CONTROL STANDARDS APPLY ONLY WHERE THE TEMPORARY TRAFFIC CONTROL PLANS ARE NOT SPECIFIC.

26. ADVANCE WARNING SIGNS SHALL BE 36"x36" MIN. WITH SUPER ENGINEERING GRADE SHEETING OR BETTER. MOUNTING HEIGHT AT TOP OF SIGN SHALL BE THE SAME AS FOR A 48" SIGN AS INDICATED IN THE M.U.T.C.D.

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

REVISIONS	CITY OF ALBUQUERQUE
	TEMPORARY TRAFFIC CONTROL GENERAL NOTES DWG. 2801 JANUARY 2003

SIGN FACE DETAILS



W1–1(R)

W1–1(L)

30 MPH or LESS

W1–2(R)

W1–2(L)

30 MPH or GREATER

W1–3(R)

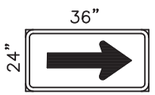
W1–3(L)

30 MPH or LESS

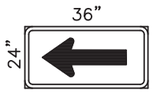
W1–4(R)

W1–4(L)

30 MPH or GREATER



W1–6(R)



W1–6(L)

W3–1

W4–2(R)

W4–2(L)

W6–3

W8–1

W8–3

W8–3A

W8–7

W13–1

W12–1

W8–9a

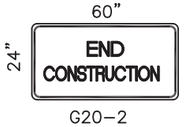
W14–2

W3–1A

W20–1

W20–2

W20–3



G20–2

W20–5(R)

W20–5(L)

W20–5(2R)

W20–5(2L)

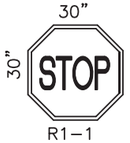
W20–5(C)

W20–7

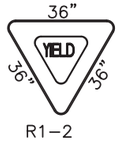
W20–7a

W1–4bR

W1–4bL

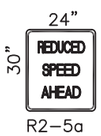


R1–1



R1–2

R2–1



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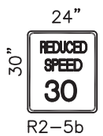
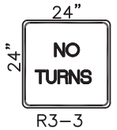


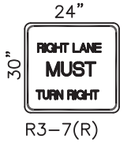
R2–5b

R3–1

R3–2



R3–3



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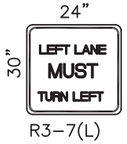
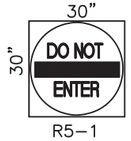


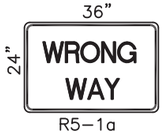
R3–7(L)

R4–7b

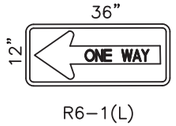
R4–7b(L)



R5–1



R5–1a



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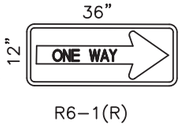
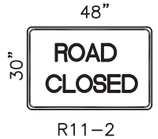
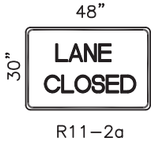


R6–1(R)

R7–1



R11–2



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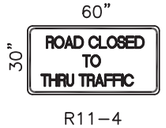
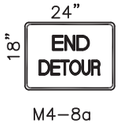
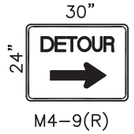


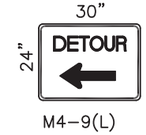
R11–4



M4–8a



M4–9(R)



M4–9(L)

SPECIAL
SIGN
10

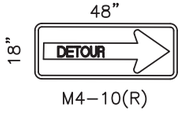
SPECIAL
SIGN
20

W20–7b

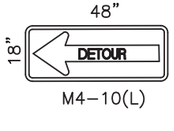
SPECIAL
SIGN
50

W11–1S

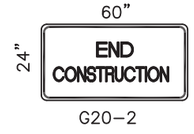
SP–STR



M4–10(R)



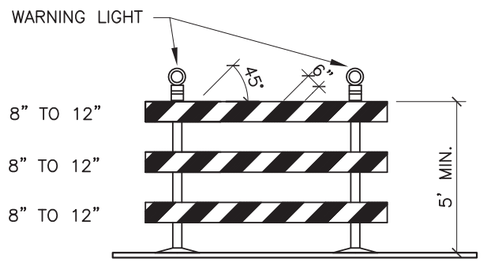
M4–10(L)



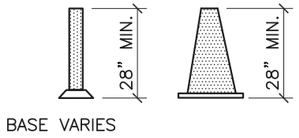
G20–2

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

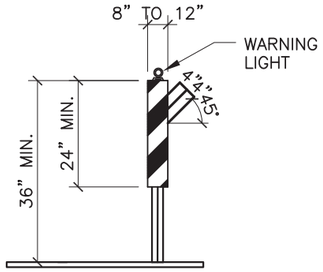
REVISIONS	CITY OF ALBUQUERQUE
	TEMPORARY TRAFFIC CONTROL
	TRAFFIC CONTROL SIGNING
	DWG. 2802 JANUARY 2003



TYPE III BARRICADE

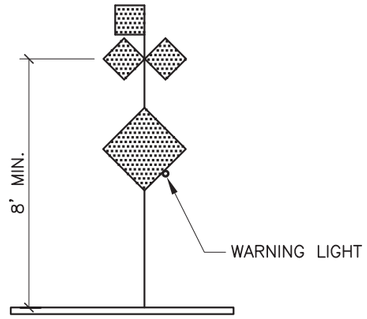


CONES

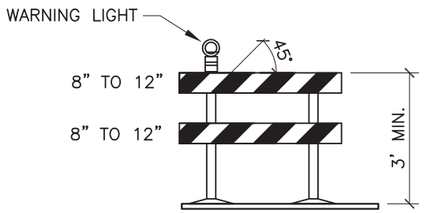


VERTICAL PANEL

NOTE: STRIPES SHALL SLOPE DOWNWARD TOWARD DIRECTION OF TRAVEL

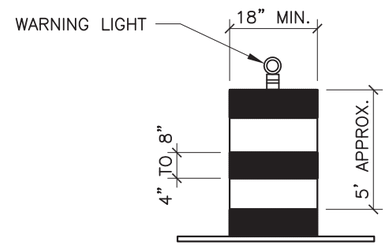


HIGH LEVEL WARNING DEVICE

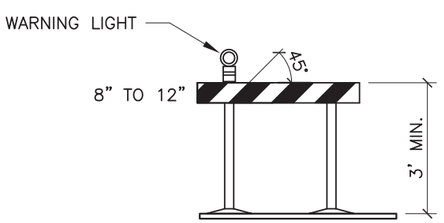


TYPE II BARRICADE COLLAPSIBLE

NOTE: STRIPES SHALL SLOPE DOWNWARD TOWARD DIRECTION OF TRAVEL

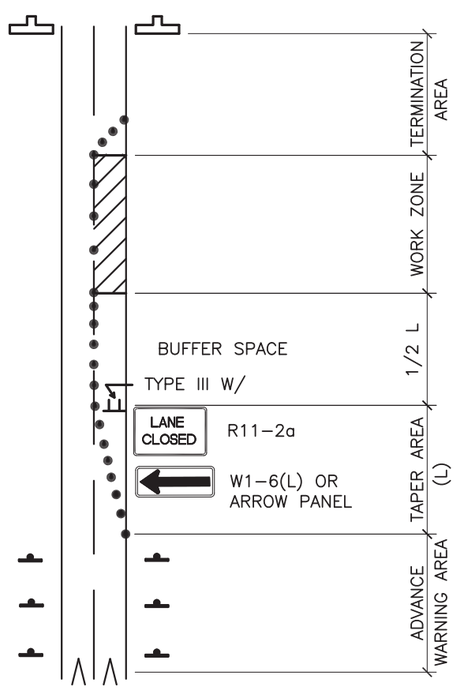


BARREL



TYPE I BARRICADE COLLAPSIBLE

NOTE: STRIPES SHALL SLOPE DOWNWARD TOWARD DIRECTION OF TRAVEL



TRAFFIC CONTROL ELEMENTS

LEGEND

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

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

TAPER REQUIREMENT

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

TAPER CRITERIA

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

TAPER LENGTH COMPUTATION

SPEED LIMIT

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

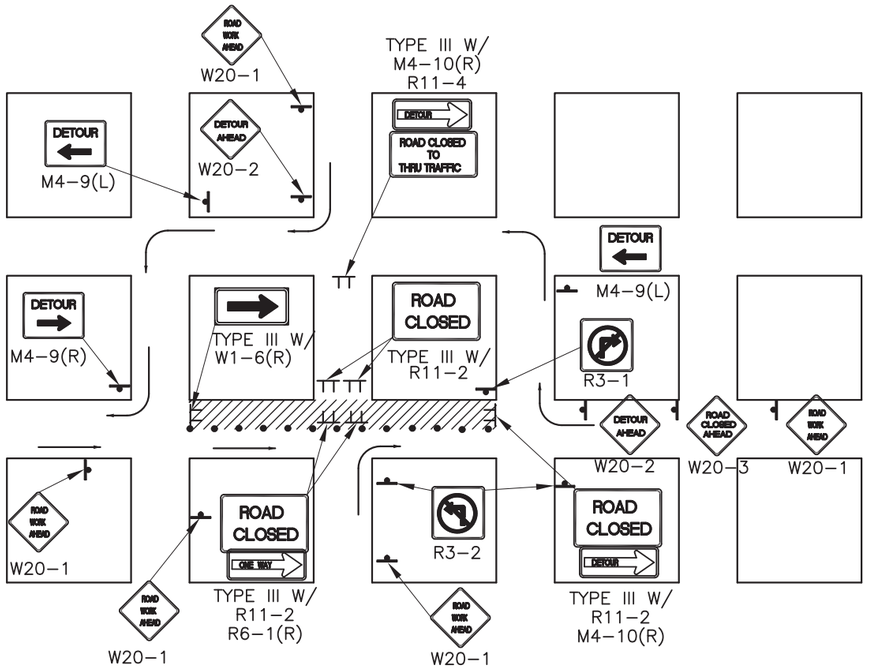
40 MPH OR GREATER $L = W \times S$

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

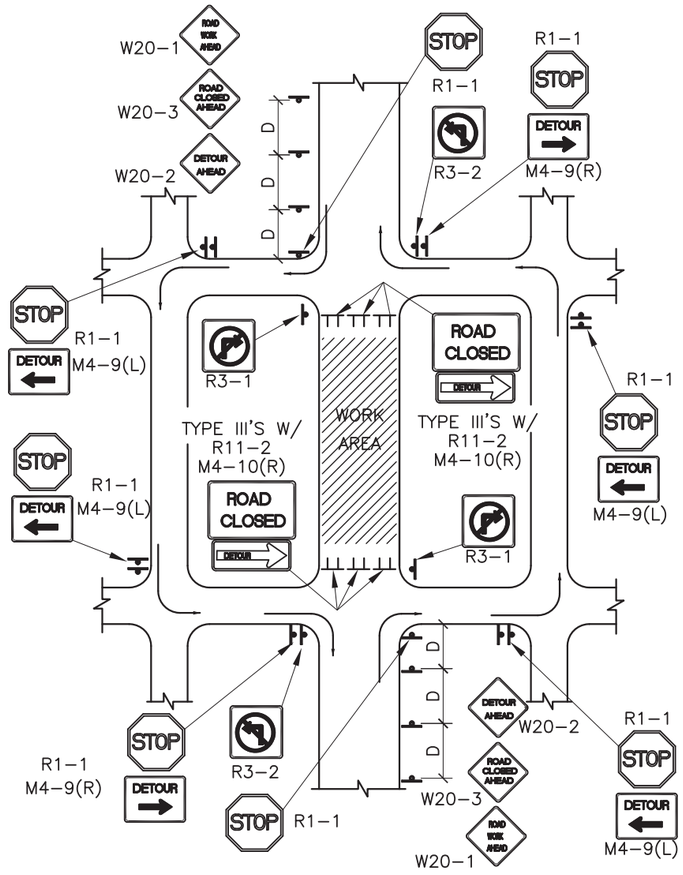
RECOMMENDED SIGN SPACING(D) FOR ADVANCE WARNING SIGN SERIES

SPEED MILES PER HOUR	MINIMUM DISTANCE IN FEET BETWEEN SIGNS	FROM LAST SIGN TO TAPER
0–20	10 X SPEED LIMIT	10 X SPEED LIMIT
25–30	10 X SPEED LIMIT	10 X SPEED LIMIT
30–35	10 X SPEED LIMIT	10 X SPEED LIMIT
40–45	10 X SPEED LIMIT	10 X SPEED LIMIT
50–60	10 X SPEED LIMIT	10 X SPEED LIMIT

REVISIONS	CITY OF ALBUQUERQUE
	TEMPORARY TRAFFIC CONTROL CONSTRUCTION TRAFFIC CONTROL STANDARDS DWG. 2803 JANUARY 2003



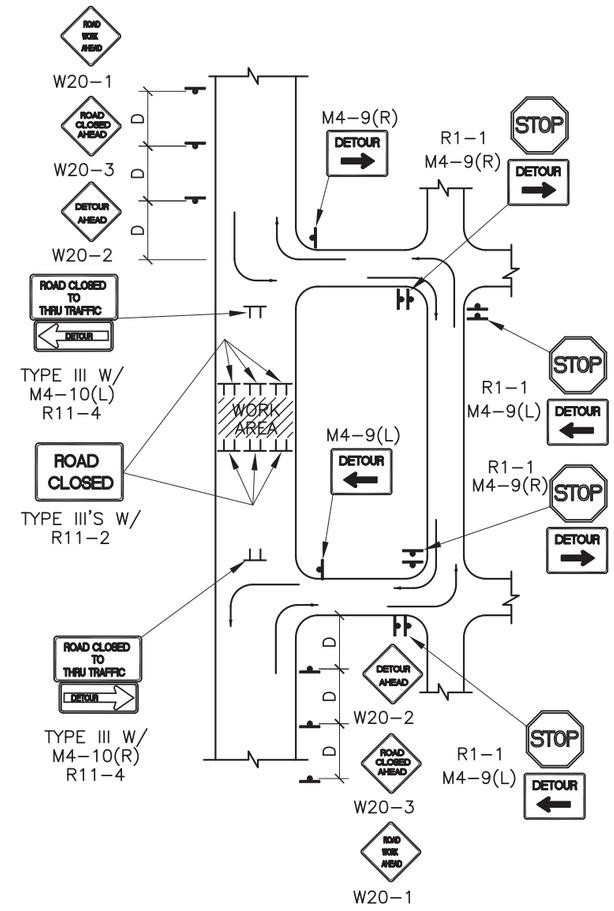
TYPICAL ONE DIRECTION DETOUR



TYPICAL STREET CLOSURE

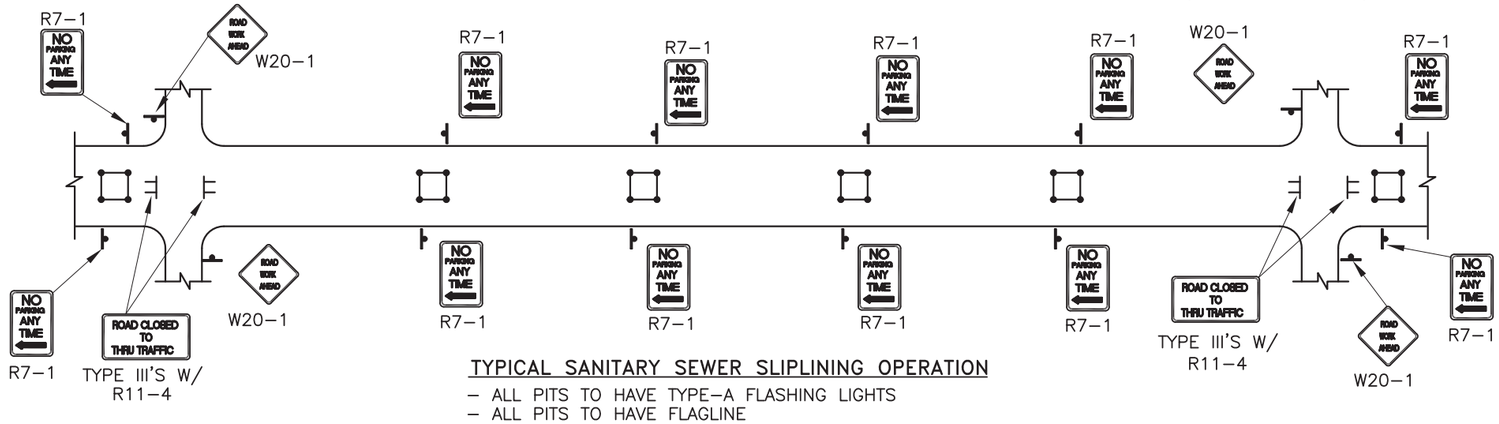
NOTES:

1. (R1-1) BASED ON FIELD CONDITIONS.
2. CLOSE LEFT TURN AND RIGHT TURN ONLY LANES ON CROSS STREETS AT EACH END OF ROAD CLOSURE (WHERE APPLICABLE).



TYPICAL STREET CLOSURE

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



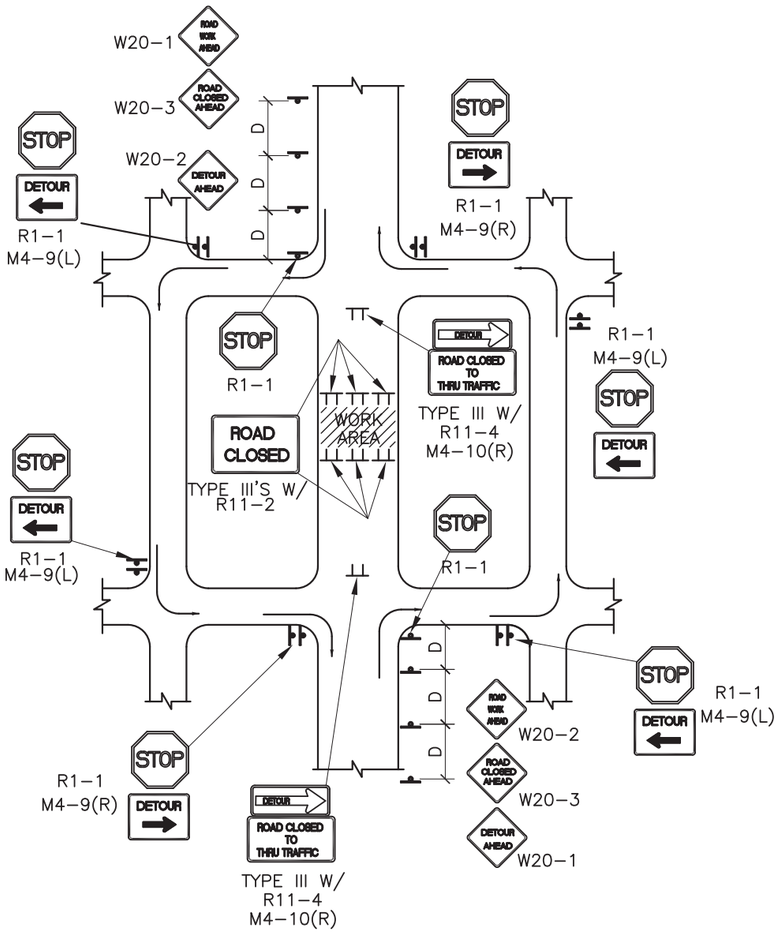
TYPICAL SANITARY SEWER SLIPLINING OPERATION

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

GENERAL NOTE:

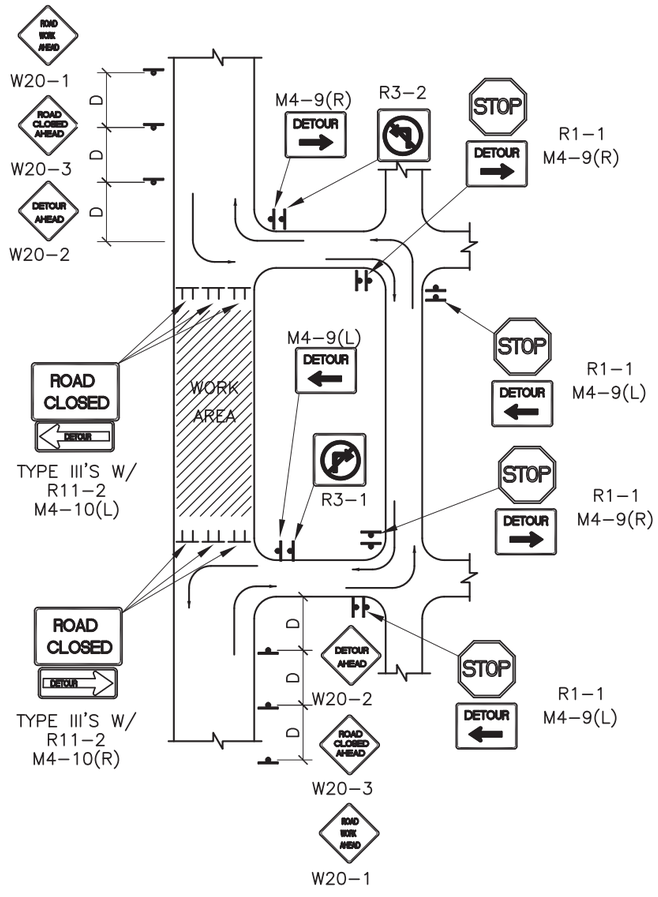
1. ALL CONSTRUCTION WARNING SIGNS SHALL HAVE A BLACK LEGEND ON A ORANGE BACKGROUND.
2. ALL ADVANCE WARNING SIGNS SHALL BE A MINIMUM OF 36" X 36" IN SIZE AND SHALL HAVE ONE WARNING LIGHT.
3. SEE DWG. 2803 FOR DEFINITION OF "D" AND "L".

REVISIONS	CITY OF ALBUQUERQUE
	TEMPORARY TRAFFIC CONTROL
	TYPICAL TRAFFIC CONTROL & SIGNING EXAMPLES (REF. MUTCD)
	DWG. 2804 JANUARY 2003



TYPICAL MID-BLOCK CLOSURE

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



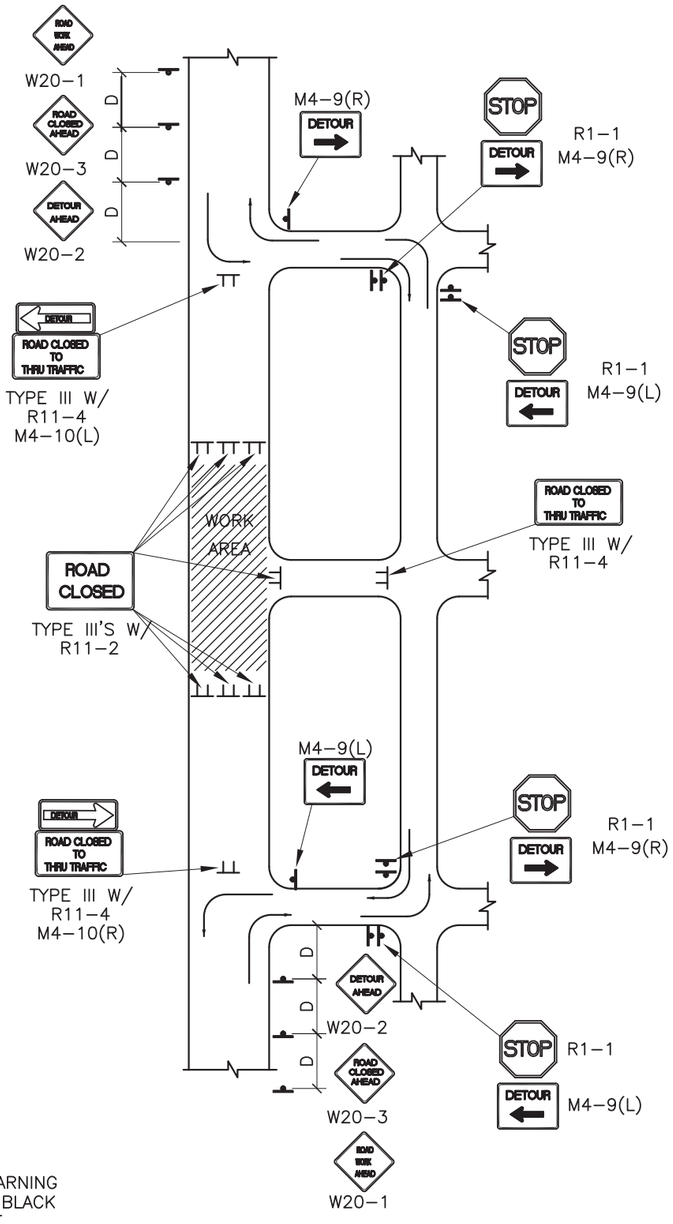
TYPICAL STREET CLOSURE

NOTE:

1. (R1-1) BASED ON FIELD CONDITIONS.
2. CLOSE LEFT TURN AND RIGHT TURN ONLY LANES ON CROSS STREETS AT EACH END OF ROAD CLOSURES (WHERE APPLICABLE).

GENERAL NOTE:

1. ALL CONSTRUCTION WARNING SIGNS SHALL HAVE A BLACK LEGEND ON A ORANGE BACKGROUND.
2. ALL ADVANCE WARNING SIGNS SHALL BE A MINIMUM OF 36" X 36" IN SIZE AND SHALL HAVE ONE WARNING LIGHT.
3. SEE DWG. 2803 FOR DEFINITION OF "D" AND "L".



TYPICAL STREET CLOSURE

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

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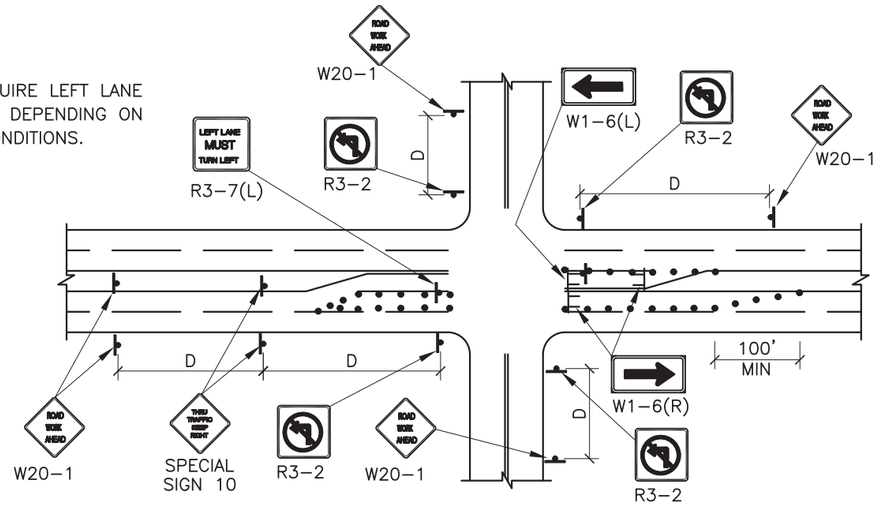
NOTE:

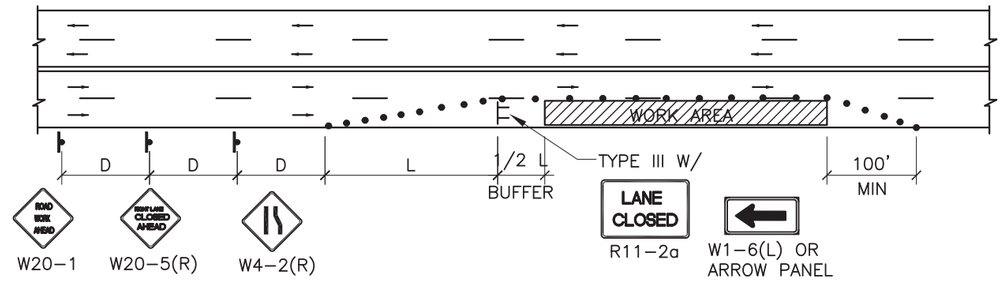
MAY REQUIRE LEFT LANE CLOSURE DEPENDING ON FIELD CONDITIONS.



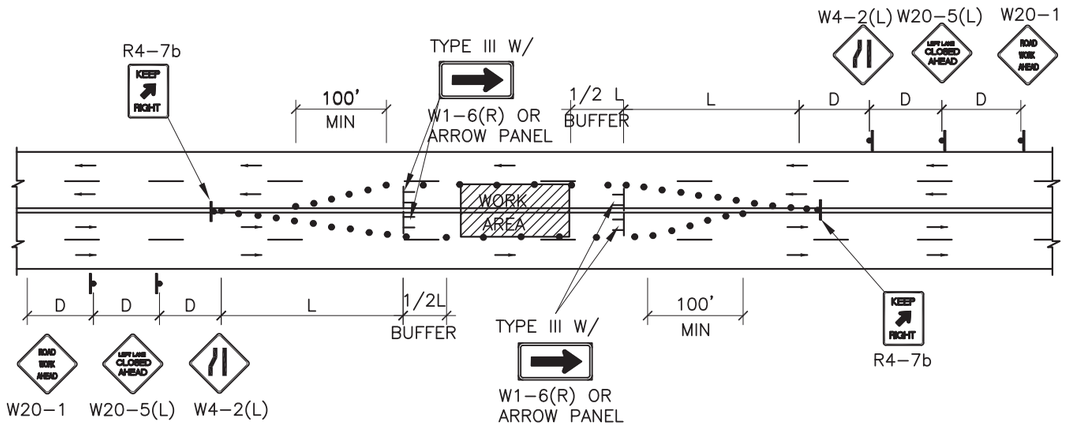
TYPICAL LANE CLOSURE AT INTERSECTION

NOTES:

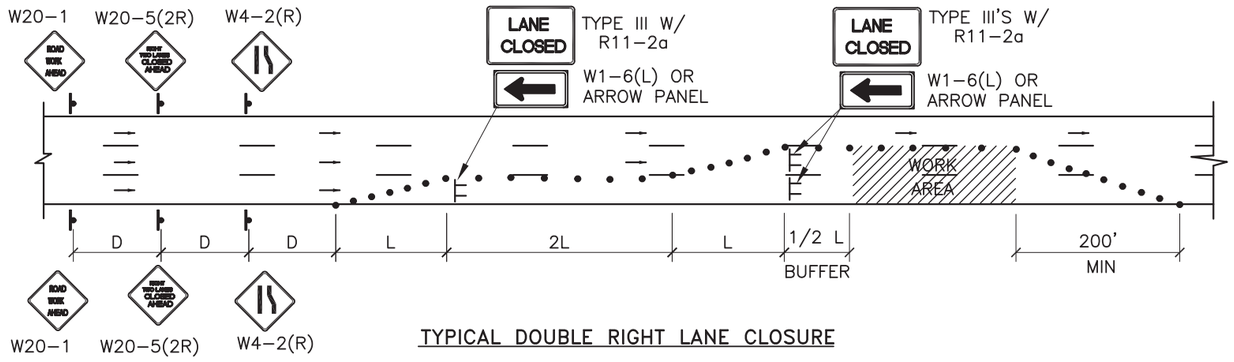
1. DEPENDING ON WORK ZONE LOCATION.
2. MAY REQUIRE CLOSURE OF EITHER ONE OF TWO LEFT TURN LANES (WHERE APPLICABLE).



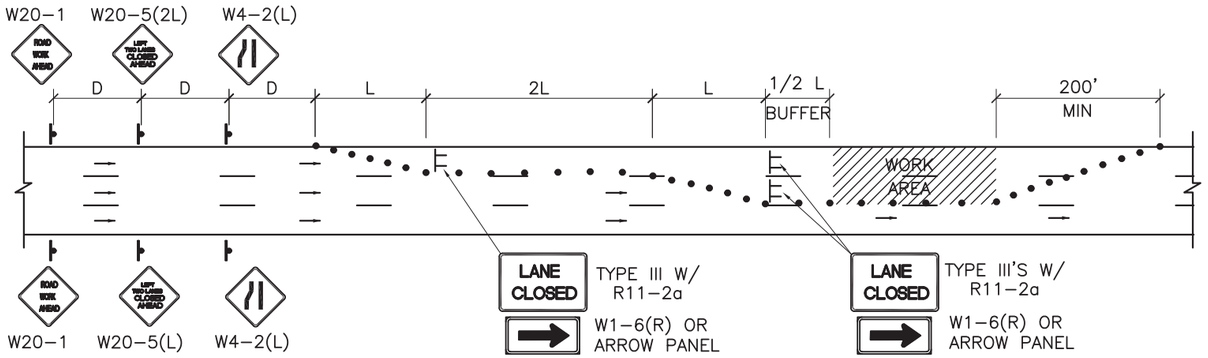
TYPICAL RIGHT LANE CLOSURE



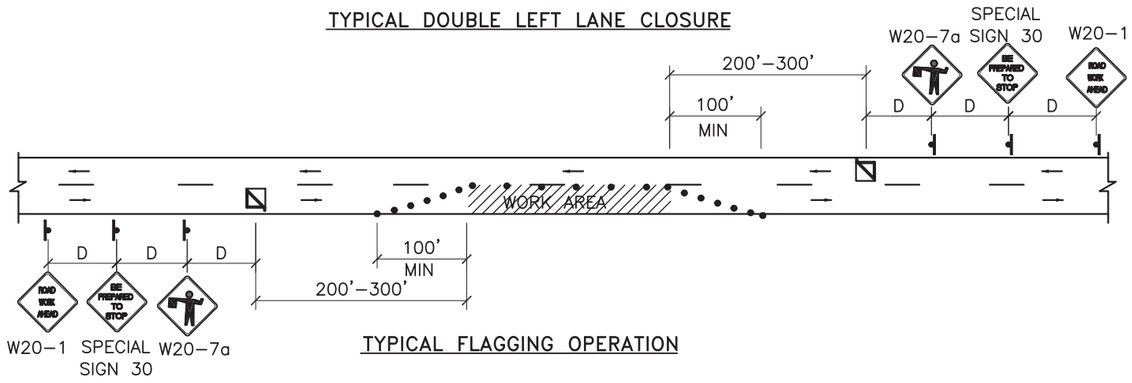
TYPICAL LEFT LANE CLOSURE



TYPICAL DOUBLE RIGHT LANE CLOSURE



TYPICAL DOUBLE LEFT LANE CLOSURE

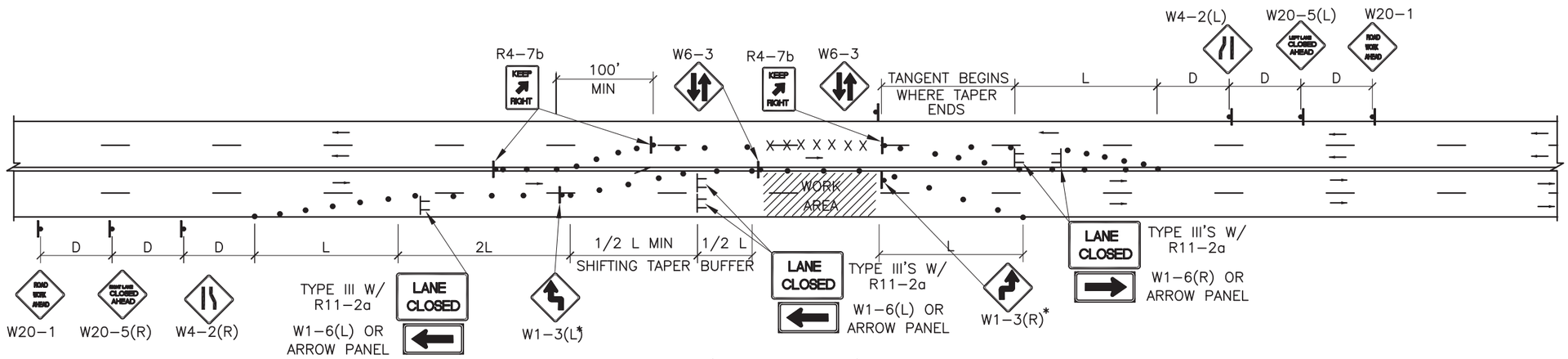


TYPICAL FLAGGING OPERATION

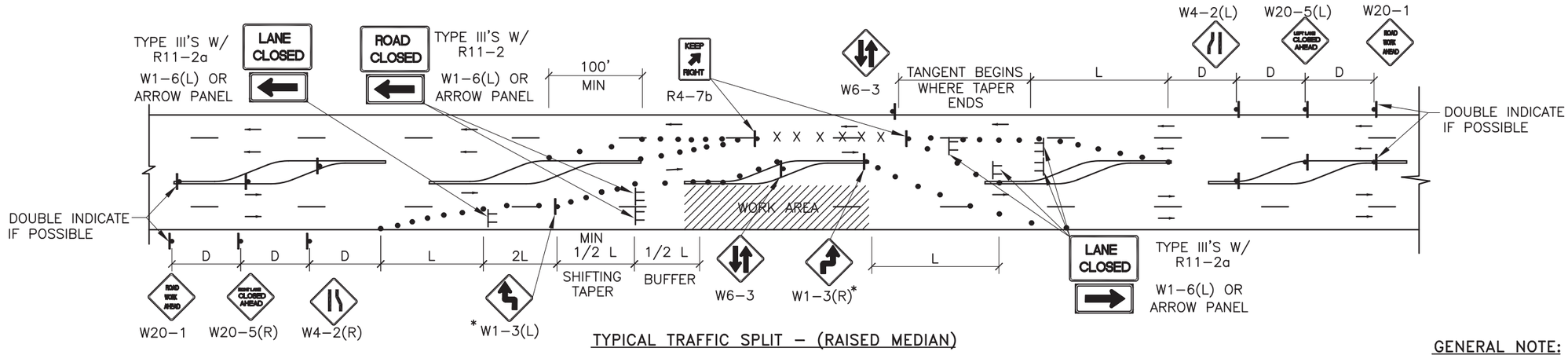
GENERAL NOTES:

1. ALL CONSTRUCTION WARNING SIGNS SHALL HAVE A BLACK LEGEND ON A ORANGE BACKGROUND.
2. ALL ADVANCE WARNING SIGNS SHALL BE A MINIMUM OF 36" BY 36" IN SIZE AND SHALL HAVE ONE WARNING LIGHT.
3. SEE DWG. 2803 FOR DEFINITION OF "D" AND "L".
4. ARROW PANEL REQUIRED FOR EACH LANE CLOSURE WITH MULTIPLE LANE CLOSURES ON ARTERIAL AND COLLECTOR STREETS.

REVISIONS	CITY OF ALBUQUERQUE
	TEMPORARY TRAFFIC CONTROL
	TYPICAL TRAFFIC CONTROL & SIGNING EXAMPLES (REF. MUTCD)
	DWG. 2806 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 WIDTHS.
2. 1/2 L IS THE MINIMUM DISTANCE FOR SHIFTING TAPERS.
3. REVERSE CURVES MAY BE IMPLEMENTED. ALL CURVE DATA SHALL BE CALCULATED.
4. MEDIAN REMOVAL SHALL BE REQUIRED IF 1/2 L OR REVERSE CURVE IS NOT SUFFICIENT.
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.
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 BLACK LEGEND ON A ORANGE BACKGROUND.
2. ALL ADVANCE WARNING SIGNS SHALL BE A MINIMUM OF 36" BY 36" IN SIZE AND SHALL HAVE ONE WARNING LIGHT.
3. SEE DWG 2803 FOR DEFINITION OF "D" AND "L".
4. ARROW PANEL REQUIRED FOR EACH LANE CLOSURE WITH MULTIPLE LANE CLOSURES ON ARTERIAL AND COLLECTOR STREETS.

REVISIONS	CITY OF ALBUQUERQUE
	TEMPORARY TRAFFIC CONTROL
	TYPICAL TRAFFIC CONTROL & SIGNING EXAMPLES (REF. MUTCD)
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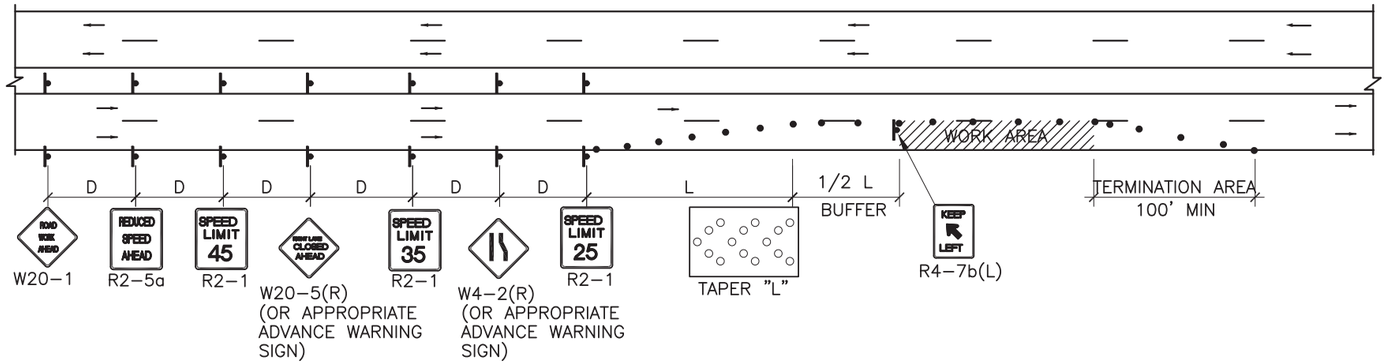
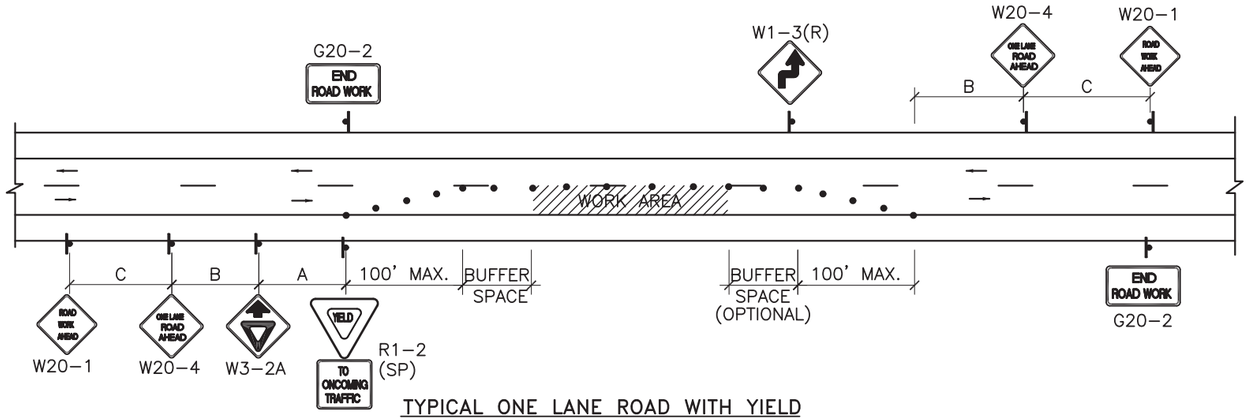
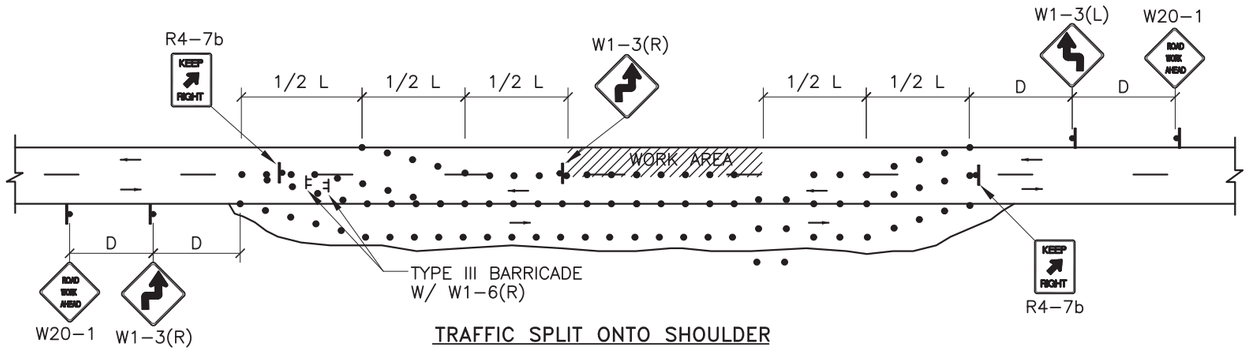


TYPICAL "REDUCED SPEED AHEAD" SET UP



TYPICAL ONE LANE ROAD WITH YIELD



TRAFFIC SPLIT ONTO SHOULDER

NOTES:

1. SHOULDER AREA MUST BE GRADED, LEVEL AND SURFACED PER SECTION 1200.5.6
2. LANE WIDTHS SHALL BE MAINTAINED AT 11 FEET MINIMUM.
3. SHOULDER MUST HAVE ADEQUATE "CLEAR ZONE".
4. TRAFFIC SPLITS ONTO SHOULDERS SHALL NOT EXCEED THREE DAYS.

SUGGESTED ADVANCE WARNING SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (LOW SPEED)	200	200	200
URBAN (HIGH SPEED)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1,000	1,600	2,600

GENERAL NOTE:

1. ALL CONSTRUCTION WARNING SIGNS SHALL HAVE A BLACK LEGEND ON A ORANGE BACKGROUND.
2. ALL ADVANCE WARNING SIGNS SHALL BE A MINIMUM OF 36" BY 36" IN SIZE AND SHALL HAVE ONE WARNING LIGHT.
3. SEE DWG 2803 FOR DEFINITION OF "D" AND "L".

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