### SECTION 2200

**STANDARD DETAILS FOR DRAINAGE**

<table>
<thead>
<tr>
<th>DWG NO.</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2201</td>
<td>DRAINAGE STORM INLET TYPE “A” PLAN AND SECTION A-A</td>
</tr>
<tr>
<td>2201A</td>
<td>DRAINAGE STORM INLET TYPE “SGL A-DBL WING” PLAN AND SECTION A-A</td>
</tr>
<tr>
<td>2201B</td>
<td>DRAINAGE STORM INLET TYPE “DBL A-SGL WING” PLAN AND SECTION A-A</td>
</tr>
<tr>
<td>2201C</td>
<td>DRAINAGE STORM INLET TYPE “DBL A-DBL WING” PLAN AND SECTION A-A</td>
</tr>
<tr>
<td>2202</td>
<td>DRAINAGE STORM INLET TYPE “A” SECTIONS B-B, C-C, D-D, AND E-E</td>
</tr>
<tr>
<td>2205</td>
<td>DRAINAGE STORM INLET TYPE “C”</td>
</tr>
<tr>
<td>2206</td>
<td>DRAINAGE STORM INLET TYPE “D”</td>
</tr>
<tr>
<td>2207</td>
<td>DRAINAGE STORM INLET GUTTER TRANSITION</td>
</tr>
<tr>
<td>2208</td>
<td>DRAINAGE STORM SEWER MANHOLE TYPE “C”</td>
</tr>
<tr>
<td>2209</td>
<td>DRAINAGE STORM SEWER MANHOLE TYPE “K”</td>
</tr>
<tr>
<td>2210</td>
<td>DRAINAGE STORM SEWER MANHOLE FRAME AND COVER</td>
</tr>
<tr>
<td>2212</td>
<td>DRAINAGE STORM SEWER CONCRETE MANHOLE TOP SLAB TYPE “C”</td>
</tr>
<tr>
<td>2215</td>
<td>DRAINAGE STORM INLET CENTER SUPPORT ASSEMBLY</td>
</tr>
<tr>
<td>2216</td>
<td>DRAINAGE STORM INLET FRAME</td>
</tr>
<tr>
<td>2220</td>
<td>DRAINAGE STORM INLET ALBUQUERQUE GRATE</td>
</tr>
<tr>
<td>2222</td>
<td>DRAINAGE INLET SHAPING</td>
</tr>
<tr>
<td>2229</td>
<td>DRAINAGE STEP DETAILS</td>
</tr>
<tr>
<td>2235</td>
<td>DRAINAGE DRAIN LINE THROUGH CURB</td>
</tr>
<tr>
<td>2236</td>
<td>DRAINAGE SIDEWALK CULVERT</td>
</tr>
<tr>
<td>2237</td>
<td>DRAINAGE DRAIN LINE CONNECTION TO EXISTING STORM INLET</td>
</tr>
<tr>
<td>2240</td>
<td>HP PP STORM TRENCH INSTALLATION</td>
</tr>
<tr>
<td>2250</td>
<td>DRAINAGE STATIONARY AND REMOVABLE POST DETAILS</td>
</tr>
<tr>
<td>2251</td>
<td>DRAINAGE PIPE GATE DETAIL</td>
</tr>
<tr>
<td>2252</td>
<td>DRAINAGE STANDARD CHAIN LINK GATE AND FENCE DETAIL</td>
</tr>
<tr>
<td>2253</td>
<td>DRAINAGE SQUARE TUBE GATE DETAIL</td>
</tr>
<tr>
<td>2260</td>
<td>DRAINAGE TYPICAL LINING FOR DRAINAGE EASEMENTS</td>
</tr>
<tr>
<td>2261</td>
<td>DRAINAGE CHANNEL DETAILS</td>
</tr>
<tr>
<td>2265</td>
<td>DRAINAGE CHANNEL EXPANSION JOINT WITH SLEEPER</td>
</tr>
<tr>
<td>2266</td>
<td>DRAINAGE EXPANSION JOINT CONNECTION TO CONCRETE WALL</td>
</tr>
<tr>
<td>2267</td>
<td>DRAINAGE CHANNEL EXPANSION JOINT REPAIR</td>
</tr>
<tr>
<td>2268</td>
<td>DRAINAGE SLEEP JOINT PROTECTION PLATE</td>
</tr>
<tr>
<td>2270</td>
<td>DRAINAGE WIRE ENCLOSED RIPRAP</td>
</tr>
<tr>
<td>2271</td>
<td>DRAINAGE CATTLE GUARD INLET</td>
</tr>
<tr>
<td>2272</td>
<td>DRAINAGE CATTLE GUARD INLET</td>
</tr>
<tr>
<td>2273</td>
<td>DRAINAGE MEDIAN STORM INLET</td>
</tr>
<tr>
<td>2274</td>
<td>DRAINAGE STATIONING AND WATER DEPTH MARKS IN CONC. LINED CHANNEL SECTION</td>
</tr>
</tbody>
</table>

(Revised May 2020, Update No. 10)
GENERAL NOTES
1. SEE DWG. 2202 FOR TYPE "A" INLET SECTIONS B-B, C-C, D-D, AND E-E.
2. FOR STORM INLET GUTTER TRANSITION, SEE DWG. 2207.
3. OUTLET PIPE SIZE, PER DESIGN REQUIREMENT.
   (MAXIMUM SIZE = 24")
4. MAXIMUM INLET DEPTH = 10". FOR DEPTHS EXCEEDING 10", A SEPARATE STRUCTURAL DESIGN
   WILL BE REQUIRED.
5. FOR FRAME & GRATING, SEE DWG. 2216, 2220 OR 2221.
6. "DRAINS TO RIVER" ALUMINUM MEDALLION SHALL BE INSTALLED ON EACH NEW STORM INLET. THE
   MEDALLION IS TO BE INSTALLED PER MANUFACTURER INSTRUCTIONS IN THE CENTER OF
   THE INLET, WITH THE BOLT HOLE 6 INCHES FROM THE FRONT OF THE INLET.

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, SHAPE PER DWG. 2222.
D. GRATE AND FRAME.
E. CONTROL POINT FOR TOP OF GRATE ELEVATION AND HORIZONTAL CONTROL.

REVISIONS
CITY OF ALBUQUERQUE
DRAINAGE
STORM INLET TYPE "A"
PLAN AND SECTION A-A

DWG. 2201  JUNE 2019
GENERAL NOTES
1. See DWG. 2002 for type "A" inlet sections B-B, C-C, D-D, and E-E.
2. For storm inlet gutter transition, see DWG. 2207.
3. Outlet pipe size, per design requirement.
   (Maximum size = 24")
4. Maximum inlet depth = 10'. For depths exceeding 10', a separate structural
   design will be required.
5. For frame & grating, see DWG. 2216, 2220 or 2221.
6. "Drains to river" aluminum medallion shall be installed on each new storm inlet. The
   medallion is to be installed per manufacturer instructions in the center of the
   inlet, with the bolt hole 6 inches from the front of the inlet.

CONSTRUCTION NOTES
A. For storm inlet depths greater than 4', install std. steps, see DWG. 2229.
B. No. 4 bars at 6" o.c. each way.
C. Concrete fill, shape per DWG 2222.
D. Grate and frame.
E. Control point for top of grate elevation and horizontal control.

SECTION A-A

<table>
<thead>
<tr>
<th>REVISIONS</th>
<th>CITY OF ALBUQUERQUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAINAGE</td>
<td>STORM INLET TYPE &quot;SCL A-30L WING&quot;</td>
</tr>
<tr>
<td>DWG. 2201A</td>
<td>PLAN AND SECTION A-A</td>
</tr>
<tr>
<td>JUNE 2019</td>
<td></td>
</tr>
</tbody>
</table>
GENERAL NOTES
1. SEE DWG. 2202 FOR TYPE "A" INLET SECTIONS B-B, C-C, D-D, AND E-E.
2. FOR STORM INLET GUTTER TRANSITION, SEE DWG. 2207.
3. OUTLET PIPE SIZE, PER DESIGN REQUIREMENT, (MAXIMUM SIZE = 24"").
4. MAXIMUM INLET DEPTH = 10". FOR DEPTHS EXCEEDING 10", A SEPARATE STRUCTURAL DESIGN WILL BE REQUIRED.
5. FOR FRAME & GRATING, SEE DWG. 2216, 2220 OR 2221.
6. "DRAINS TO RIVER" ALUMINUM MEDALLION SHALL BE INSTALLED ON EACH NEW STORM INLET. THE MEDALLION IS TO BE INSTALLED PER MANUFACTURER INSTRUCTIONS IN THE CENTER OF THE INLET, WITH THE BOLT HOLE 6 INCHES FROM THE FRONT OF THE INLET.

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. CENTER SUPPORT ASSEMBLY, SEE DWG. 2215.
D. GRATE AND FRAME.
E. CONCRETE FILL, SHAPE PER DWG. 2222.
F. CONTROL POINT FOR TOP OF GRATE ELEVATION AND HORIZONTAL CONTROL.

SECTION A-A

REVISIONS
CITY OF ALBUQUERQUE
DRAINAGE
STORM INLET TYPE "OSL A-SSL WING"
PLAN AND SECTION A-A
DWG. 2201B
JUNE 2019
GENERAL NOTES
1. SEE DWG. 2202 FOR TYPE "A" INLET SECTIONS B-B, C-C, D-D, AND E-E.
2. FOR STORM INLET GUTTER TRANSITION, SEE DWG. 2207.
3. OUTLET PIPE SIZE, PER DESIGN REQUIREMENT.
   (MAXIMUM SIZE = 24")
4. MAXIMUM INLET DEPTH = 10". FOR DEPTHS EXCEEDING 10" A SEPARATE STRUCTURAL DESIGN WILL BE REQUIRED.
5. FOR FRAME & GRATING, SEE DWG. 2216, 2220 OR 2221.
6. "DRAINS TO RIVER" ALUMINUM MEDALLION SHALL BE INSTALLED ON EACH NEW STORM INLET. THE MEDALLION IS TO BE INSTALLED PER MANUFACTURER INSTRUCTIONS IN THE CENTER OF THE INLET, WITH THE BOLT HOLE 6 INCHES FROM THE FRONT OF THE INLET.

CONSTRUCTION NOTES
A. FOR STORM INLET DEPTHS GREATER THAN 4', INSTALL STD. STEPS, SEE DWG. 2229.
B. NO. 4 BARS AT 6" O.C. EACH WAY.
C. CENTER SUPPORT ASSEMBLY. SEE DWG. 2215.
D. GRATE AND FRAME.
E. CONCRETE FILL SHAPE PER DWG 2222.
F. CONTROL POINT FOR TOP OF GRATE ELEVATION AND HORIZONTAL CONTROL.

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

CONSTRUCTION NOTES
A. STORM INLET STEPS, SEE DWG. 2229 FOR SPACING.
B. 1"-10" MIN. UNLESS OTHERWISE DIRECTED.
C. NO. 4 BARS AT 6" O.C. EACH WAY.
D. CONCRETE FILL SHAPE PER DWG 2222.
E. NORMAL CUFFER.
F. GRATE AND FRAME.
G. INVERT ELEVATION PER DESIGN.
H. TOP OF CURB.
J. FLOWLINE.
K. ANGLE ANCHOR.
L. CONTROL POINT FOR TOP OF GRATE ELEVATION AND HORIZONTAL CONTROL.

SECTION B-B
SECTION C-C
SECTION D-D
SECTION E-E

REVISIONS
CITY OF ALBUQUERQUE
DRainage
STORM INLET TYPE "A" SECTIONS B-B, C-C, D-D, & E-E
DWG. 2202 JUNE 2019
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. (MAXIMUM SIZE = 24")
4. MAXIMUM INLET DEPTH = 10". FOR DEPTHS EXCEEDING 10", A SEPARATE STRUCTURAL DESIGN WILL BE REQUIRED.
5. FOR FRAME & GRATING, SEE DWG. 2216, 2220, AND 2221.
6. FOR CENTER SUPPORT ASSEMBLY, SEE DWG. 2215.
7. FOR USE WHERE A TYPE-A INLET EXISTS LESS THAN 150' UPSTREAM.

6. "DRAINS TO RIVER" ALUMINUM MEDALLION SHALL BE INSTALLED ON EACH NEW STORM INLET. THE MEDALLION IS TO BE INSTALLED PER MANUFACTURER INSTRUCTIONS IN THE CENTER OF THE INLET, WITH THE BOLT HOLE 6 INCHES FROM THE FRONT OF THE INLET.

CONSTRUCTION NOTES
A. GUTTER TRANSITION.
B. TOP OF CURB.
C. CENTER SUPPORT ASSEMBLY (DOUBLE INLETS). SEE STD. DWG. 2215.
D. FLOWLINE.
E. CONSTRUCTION JOINT.
F. NORMAL GUTTER LINE.
G. 1'-10" MIN., UNLESS OTHERWISE DIRECTED.
H. FRAME AND GRATE.
I. INVERT OF OUTLET PIPE.
J. CONCRETE FILL SHAPE PER DWG. 2222.
K. FOR STORM INLET DEPTHS GREATER THAN 4', INSTALL STD STEPS PER DWG. 2229, DOWNSTREAM FACE.
L. EXTEND NO. 4 BARS 18" INTO CURB ON EACH SIDE OF STORM INLET.
M. NO. 4 BARS AT 6" O.C.
N. 1 3/8"X 3/4" X 4'-0" LONG FOR SINGLE GRATE TYPE "C" STORM INLET.
O. 1 3/8"X 3/4" X 7'-6" LONG FOR DOUBLE GRATE TYPE "C" STORM INLET.
R. ANGLE ANCHOR.
S. CONTROL POINT FOR TOP OF GRATE ELEVATION AND HORIZONTAL CONTROL.

REVISIONS

CITY OF ALBUQUERQUE
DRAINAGE
STORM INLET TYPE "C"

DWG. 2205 JUNE 2019
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 CUTTER TRANSITION WILL BE SHOWN ON THE CONSTRUCTION PLANS.
3. OUTLET PIPE SIZE, PER DESIGN REQUIREMENT. (MAXIMUM SIZE = 24")
4. FOR FRAME & GRATING, SEE DWG. 2216, 2220 & 2221.
5. FOR CENTER SUPPORT ASSEMBLY, SEE DWG. 2215.
6. FOR USE WHERE A TYPE-A INLET EXISTS LESS THAN 150" UPSTREAM OR AS AN AREA DRAIN.
7. "DRAINS TO RIVER" ALUMINUM MEDALLION SHALL BE INSTALLED ON EACH NEW STORM INLET. THE MEDALLION IS TO BE INSTALLED PER MANUFACTURER INSTRUCTIONS IN THE CENTER OF THE INLET, WITH THE SLOT NOLE 6 INCHES FROM THE FRONT OF THE INLET.

CONSTRUCTION NOTES
A. FRAME & GRATE.
B. CENTER SUPPORT ASSEMBLY.
C. NO. 4 BARS AT 6" O.C. EACH WAY.
D. FOR STORM INLET DEPTHS GREATER THAN 4", INSTALL STD STEPS PER DWG. 2229, DOWNSTREAM FACE.
E. CONCRETE FILL, SHAPE PER DWG. 2222.
F. INVERT PER DESIGN.
G. T-10"MIN., UNLESS OTHERWISE DIRECTED.
GENERAL NOTES
1. LOCATION DETAILS FOR PLACING INLETS AND STANDARD CURB AND GUTTER ARE TO BE SHOWN ON DESIGN PLANS.

2. CURB HEIGHT WILL BE 8" AT OUTER LIMITS OF DETAIL. ANY TRANSITION TO DIFFERENT HEIGHT CURBS WILL OCCUR OUTSIDE THE LIMITS OF THIS DETAIL AND MUST BE SPECIFIED SEPARATELY ON THE PLANS.

CONSTRUCTION NOTES
A. STANDARD CURB AND GUTTER.
B. STRAIGHT GRADE.
C. EXPANSION Joint.
D. TOP OF CURB.
E. FLOWLINE PER PLAN.
F. FOR FRAME & GRATE SEE DWG. 2216, 2217 & 2221.
G. DIRECTION OF FLOW.
H. CONTROL POINT FOR TOP OF GRATE ELEVATION AND HORIZONTAL CONTROL.
I. BACK OF CURB.
J. WHEN INSTALLING AT SAG POINT AND SLABS CONDITIONS NOT ADJACENT TO A CURB RETURN, PROVIDE THE 10:1 TAPER ON EACH SIDE.
K. THE TAPERS SHALL GOVERN THE LENGTH OF THE TRANSITION SLAB.
L. FOR INLETS PROTRUDING 2'-0" FROM FLOWLINE, TRANSITION SLAB LENGTHS ARE AS FOLLOWS:

<table>
<thead>
<tr>
<th>CUTTER WIDTH</th>
<th>TRANSITION SLAB LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>12&quot;</td>
<td>15'</td>
</tr>
<tr>
<td>18&quot;</td>
<td>10'</td>
</tr>
<tr>
<td>24&quot;</td>
<td>5'</td>
</tr>
</tbody>
</table>

REVISIONS
CITY OF ALBUQUERQUE
DRAINAGE
STORM INLET GUTTER TRANSITION
DWG. 2207 JUNE 2019
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. MANHOLES GREATER THAN 18" IN DEPTH SHALL BE CONSTRUCTED OF PRECAST CONCRETE SECTIONS ONLY.
4. DESIGN APPLIES TO 4' TO 6' I.D. MANHOLES.

5. COMPACT ALL BACKFILL AROUND MANHOLE TO 95% (ASTM).
6. USE NON-SHRINK GROUT FOR JOINTS, FILLETS AND PIPE PENETRATIONS.
7. POSITION MANHOLE OPENING OVER THE UPSTREAM SIDE OF MAIN LINE.
8. MANHOLES GREATER THAN 20' IN DEPTH WILL REQUIRE A SEPARATE STRUCTURAL DESIGN.

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 FOR 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, Poured concrete, or Precast Reinforced Concrete. If block is used, apply 1/2" thick mortar coating to exterior and interior of Manhole. If Precast Concrete is used, use mastic gaskets and apply non-shrink grout to exterior and interior of expansion joints or use watertight rubber gaskets. If rubber gaskets are used, the manhole sections do not need to be grouted, but the manufacturer must stamp the interior of each Precast section with the type of gasket used.
D. PRECAST CONCRETE TOP SLAB, SEE STANDARD DRAWING 2212.
E. USE MAX. 4 COURSES GRADE MS BACK ON UNPAVED STREET FOR FUTURE ADJUSTMENT OF MANHOLE FRAME TO PAVEMENT GRADE.
F. CONCRETE BASE TO BE POURED IN PLACE USING NO. 4 BARS AT 6" O.C. EACH WAY FOR MANHOLE DEPTHS OF 18' OR GREATER. NO. 4 BARS AT 12" O.C. EACH WAY FOR MANHOLE DEPTH OF LESS THAN 16'.
G. INVERT ELEVATION AS SHOWN ON PLANS PROVIDE 0.10" (MINIMUM) OF FALL BETWEEN INVERT(S) IN AND INVERT-OUT.
H. 6" GROUT FILLET ON UPPER HALF OF PIPE AND AROUND BASE.
I. OCTAGONAL CONCRETE PAD, SEE STANDARD Dwg. 2461 FOR REFERENCE.
J. MANHOLE FRAME AND COVER, SEE DRAWING 2270.
K. MANHOLE FRAME SECTIONS, SEE SPECIFICATION SECTION 101.
L. SLOPE 1" PER FT. FROM PIPE CROWN.
M. SLOPE 1" PER FT. FROM PIPE CROWN.
N. SLEEVES TO BE 9" WIDE MIN.
O. APPROVED WATERSTOP TO BE COMPATIBLE WITH TYPE OF PIPE.
Q. STEPS TO BE INSTALLED PER STANDARD SPECIFICATION SECTION 920 AND DRAWING 2229.
R. ELECTRONIC WARNER DEVICE (EWD), SEE STANDARD SPECIFICATION SECTION 170.
S. CONCRETE COLLAR IN UNPAVED AREAS, SEE STANDARD DRAWING 2461.
T. USE 1/2" THICK MORTAR COATING TO INTERIOR OF OPENING.
U. #4 REBAR PER STANDARD DRAWING 2461.
V. TOP OF CONCRETE COLLAR SHALL BE STAMPED WITH LINE SIZE AND FLOW DIRECTION ARROWS. MINIMUM LETTER SIZE SHALL BE 3" IN HEIGHT.

REVISIONS  CITY OF ALBUQUERQUE
DRAINAGE
STORM SEWER
MANHOLE TYPE "C"
Dwg. 2208  JUNE 2019
GENERAL NOTES

1. USE TYPE "E" MANHOLE FOR DEPTHS OF 6" OR GREATER, MEASURED FROM INERT TO
   RIM.

2. CONTRACTOR HAS OPTION TO CONSTRUCT TYPE "C" MANHOLE IN LIEU OF TYPE "E"
   MANHOLE FOR DEPHTS OF 0" OR LESS.

3. MANHOLES GREATER THAN 18" IN DEPTH SHALL BE CONSTRUCTED OF PRECAST
   CONCRETE SECTIONS ONLY.

4. DESIGN APPLIES TO 4" TO 6" I.D. MANHOLES.

5. COMPACT ALL BACKFILL AROUND MANHOLE TO 95% (ASTM).

6. USE NON-SHRINK CEMENT FOR JOINTS, PILLOWS AND PIPE PENETRATIONS.

7. POSITION MANHOLE OPENING OVER THE UPSTREAM SIDE OF MAIN LINE.

8. MANHOLES GREATER THAN 20' IN DEPTH WILL REQUIRE A SEPARATE STRUCTURAL
   DESIGN.

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 FOR 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, POURED CONCRETE, OR
   PRECAST REINFORCED CONCRETE. IF BLOCK IS USED, APPLY 1/4" THICK MORTAR
   COATING TO EXTerior AND INTeRIOIr OF MANHOLE. IF PRECAST CONCRETE IS USED,
   USE MASTIC GASKETS AND APPLY NON-SHRINK CEMENT TO EXTerior AND
   INTeRIOIr OF EXPANSION JOINTS. IF RUBBER GASKETS ARE USED, THE MANHOLE
   SECTIONS DO NOT NEED TO BE GROUTED BUT THE MANUFACTURER MUST STAMP THE
   INTErior OF EACH PRECAST SECTION WITH THE TYPE OF GASKET USED.

D. PRECAST REINFORCED CONCRETE ECCENTRIC CONE THE CONTRACTOR SHALL PROVIDE
   SHOP DRAWINGS FOR APPROVAL.

E. USE MAX. 4 COURSES GRADE MS BACK ON UNPAVED STREET FOR FUTURE ADJUSTMENT
   OF MANHOLE FRAME TO PAVEMENT GRADE.

F. CONCRETE BASE TO BE POURED IN PLACE USING NO. 4 BARS AT 6" O.C. EACH WAY
   FOR MANHOLE DEPTHS OF 16" OR GREATER. NO. 4 BARS AT 12" O.C. EACH WAY FOR
   MANHOLE DEPTHS OF LESS THAN 16".

G. INVERT ELEVATION AS SHOWN ON PLANS.

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

J. OCTAGONAL CONCRETE PAD, SEE STANDARD
   Dwg. 2461 FOR REFERENCE.

K. MANHOLE FRAME AND COVER, SEE DRAWING
   2220.

L. CONCRETE, SEE SPECIFICATION SECTION 101.

M. SLOPE 1" PER FT. FROM PIPE CROWN.

N. SHELF TO BE 9" WIDE MIN.

P. APPROVED WATERSTOP TO BE COMPATIBLE WITH TYPE OF PIPE.

Q. STEPS TO BE INSTALLED PER STANDARD
   SPECIFICATION SECTION 220 AND DRAWING
   2229.

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

S. CONCRETE COLLAR IN UNPAVED AREAS, SEE
   STANDARD DRAWING 2461.

T. APPLY 1/2" THICK MORTAR COATING TO
   INTERIOR OF OPENING.

U. #4 REBAR PER STANDARD DRAWING 2461.

<table>
<thead>
<tr>
<th>REVISIONS</th>
<th>CITY OF ALBUQUERQUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRG. 2209</td>
<td>DRAINAGE</td>
</tr>
<tr>
<td></td>
<td>STORM SEWER</td>
</tr>
<tr>
<td></td>
<td>MANHOLE TYPE &quot;E&quot;</td>
</tr>
</tbody>
</table>

JUNE 2019
CONSTRUCTION NOTES
A. PRECAST REINFORCED CONCRETE MANHOLE TOP SLAB.
B. ALL BARS TO HAVE 1 1/2" MIN. COVER.
C. 1" PIPE SLEEVE VERTICALLY THROUGH TOP SLAB.
D. TOP MAT NO. 4 BARS 6" O.C. EACH WAY FOR 4' I.D., 6' I.D., AND 8' I.D. MANHOLES.
E. NO. 4 BARS
F. BOTTOM MAT NO. 4 BARS 6" O.C. EACH WAY FOR 4' I.D., 6' I.D., AND 8' I.D. MANHOLES.
G. NO. 4 BARS FOR 4' I.D. AND 8' I.D. MANHOLES.
H. WHEN PRECAST MANHOLE SECTIONS ARE USED, TOP SLAB SHALL BE MODIFIED TO SHAPE OF APPLICABLE SIZE TONGUE AND GROOVE JOINT.
J. CONCRETE. SEE SECTION 101.

<table>
<thead>
<tr>
<th>MANHOLE I.D.</th>
<th>48&quot;</th>
<th>60&quot;</th>
<th>72&quot;</th>
<th>96&quot;</th>
<th>120&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP SLAB THK</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>10&quot;</td>
<td>10&quot;</td>
</tr>
<tr>
<td>WALL THK</td>
<td>5&quot;</td>
<td>6&quot;</td>
<td>7&quot;</td>
<td>9&quot;</td>
<td>11&quot;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>(IN²/FT)</th>
<th>(IN³/FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP LAYER STEEL</td>
<td>0.40</td>
<td>0.40</td>
</tr>
<tr>
<td>BTM LAYER STEEL</td>
<td>0.40</td>
<td>0.43</td>
</tr>
<tr>
<td>REPLACEMENT STEEL</td>
<td>(8)#5's</td>
<td>(8)#5's</td>
</tr>
<tr>
<td></td>
<td>(8)#6's</td>
<td>(6)#6's</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(8)#6's</td>
</tr>
</tbody>
</table>

|                   | APPROX. WEIGHT | 1.521 | 2.513 | 5.372 | 8.468 | 13.355 |

NOTES:
1) Fc = 4000 psi (MIN.)
2) b = 60,000 psi (MIN.)
3) 1 1/2" MINIMUM CLEAR CONCRETE COVER OVER REINFORCEMENT
4) HS-20 LIVE LOAD
5) SEE TABLE FOR APPROPRIATE WEIGHT

REVISIONS
CITY OF ALBUQUERQUE
DRAINAGE
CONCRETE MANHOLE TOP SLAB TYPE "C"
DG. 2212
JUNE 2019
GENERAL NOTES
1. ALL BOLTS USED IN CENTER SUPPORT ASSEMBLY SHALL BE 1/2".
2. FRAME MAY BE RIVETED OR WELDED.
3. BOLTS (NOT RIVETS OR WELDS) SHALL BE USED TO JOIN TWO OR MORE FRAMES TOGETHER AND TO THE WIDE FLANGE 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 68).

CONSTRUCTION NOTES
A. L4x305 X 365" LONG.
B. L3x3x3/8 X 405" LONG.
C. W5 X 19 BEAM, FOR CATCH BASIN TYPE DOUBLE "C".
D. W5 X 19 BEAM, FOR CATCH BASIN TYPE DOUBLE "D".
E. 1/2", A325 BOLTS, WITH NUTS TO SECURE ANGLE TO BEAM.
F. FOR FRAME & GRATE SEE DWGS. 2215, 2220, OR 2221.
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. 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).
4. FRAME MAY BE WELDED OR RIVETED.

CONSTRUCTION NOTES
A. 4" X 3/4" X 1/2" X 3 1/2" ∠ .
B. (2) 3/8" RIVETS AT EACH CORNER.
C. (4) 1 1/2" X 8" BOLTS WITH SQUARE HEAD AND NUT AT EACH CORNER. FOR ANCHORING FRAME INTO CONCRETE WALL.
D. 3 1/2" X 3/8" X 3/8" X 3 1/2" ∠ .
GENERAL NOTES
1. ALL BARS SHALL BE GRADE A36 STRUCTURAL STEEL.
2. THE GRATE SHALL BE WELDED WITH ¼" FILLET WELD AROUND BOTH SIDES OF CROSS BARS, ¼" 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 GATE, 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 THE FRAME ON THE ROAD SIDE SO THAT IT IS FLUSH WITH THE FRAME. THE SIDE ALONG THE CURB LINE SIDE SHALL HAVE ⅜" MAX. OPENING. SPACERS WELDED TO FRAME MAY BE USED IF REQUIRED TO KEEP ½" SPACE OR LESS.
7. WHEN INSPECTING OR DOING ROAD REHAB PROJECTS, IF THE GRATE IS NOT FLUSH WITH THE FRAME ON THE ROAD SIDE EDGE, COVER PLATES WELDED TO THE FRAME MAY BE USED TO COVER ANY GAPS.
8. INSTALLED VOID SPACE AREA: 3.72 SQUARE FEET OR 536 SQUARE INCHES. VOID SPACE CALCULATED AS TOTAL AREA EXCLUSIVE OF BEARING BARS, CROSS BARS, END BARS, FRAME, AND WELDS.

CONSTRUCTION NOTES
A. BEARING BARS, (13) PL ½ x 3½ x 39".
B. END BARS, (2) PL ½ x 3 x 25".
C. CROSS BARS, (9) ½Ø X 24" ROD.
D. FRAME, SEE DWG. 2216.

SECTION A-A

SECTION B-B
GENERAL NOTES
1. CONCRETE FILL FOR INLET SHAPING TO BE 3000 PSI (MIN), NON-REINFORCED.

CONSTRUCTION NOTES
A. CENTER SUPPORT ASSEMBLY, SEE DWG 2229.
B. GRATE AND FRAME.
C. INLET PIPE.
D. OUTLET PIPE.
E. PROVIDE 0.1' OF FALL BETWEEN INVERT IN AND INVERT OUT.

SECTION A-A
SECTION C-C
SECTION B-B
SECTION D-D
GENERAL NOTES
1. ALUMINUM STEP, ALCOA NO. 12653A OR APPROVED EQUAL.

2. ALTERNATE STEP SHALL BE POLYPROPYLENE MOLDED OVER 3/8" STEEL REINFORCEMENT, MODEL NO. PS-2PS, M.A. INDUSTRIES INC., OR APPROVED EQUAL.

3. STORM INLETS: INLETS GREATER THAN 4' DEEP SHALL HAVE STEPS INSTALLED IN DOWNSTREAM FACE OF INLET WALLS.

4. STEPS SHALL PROTRUDE 1" FROM THE WALL AND SHALL BE CENTERED 12" FROM FACE OF CURB.

5. STEPS SHALL BE 12" APART, WITH THE TOP STEP 9" ABOVE FROM TOP OF CURTAIN AND THE BOTTOM STEP NO MORE THAN 16" ABOVE THE CONCRETE FILL IN THE BOTTOM OF THE INLET.

6. DRAINAGE CHANNELS: CHANNELS SHALL HAVE STEPS FOR ACCESS AND RESCUE INSTALLED PER DETAILS ON DWG. 2261.

7. 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 AND AT 750' MAXIMUM SPACING ALONG CHANNELS OR AS NOTED ON THE PLANS.

CONSTRUCTION NOTES
A. 3/8" GRADE 60 STEEL REINFORCEMENT.
GENERAL NOTES

1. WHEN PLACING DRAIN THROUGH EXISTING CURB, REMOVE AND REPLACE ENTRANCE 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. DL OR SCH.40 P.V.C. PIPE DRAINLINE FROM PROPERTY. 4" NOMINAL DIAMETER (MAX.) FOR 8" CURB HEIGHTS. 2" NOMINAL DIAMETER (MAX.) FOR 6" CURB HEIGHTS.

B. 2- NO. 3 BARS, 2'-4" LONG, PLACED AS SHOWN.

C. COLD JOINT.

D. DISTANCE FROM CENTERLINE OF DRAIN TO NEAREST JOINT, VARIABLE WITH 15" MIN.

E. SLOPE 3/4" PER FT. WITHIN R.O.W.

F. DRAIN PIPE SHALL NOT PROTRUDE BEYOND CURB FACE.

G. JOINT NEAREST TO DRAIN TO BE AN EXPANSION JOINT.
GENERAL NOTES
1. PLACING OF DRAIN THRU EXISTING SIDEWALK AND CURB & CUTTER REQUIRES THAT THE ENTIRE SIDEWALK AND CURB AND CUTTER STONES BE REMOVED AND REPLACED AS DETAILED HEREIN.
2. THE CULVERT SHALL BE POURED MONOLITHICALLY WITH NEW CUTTER.
3. THE INVERT SHALL BE TROWELED TO PRODUCE A HARD POLISHED SURFACE OF MAXIMUM DENSITY AND SMOOTHNESS. INVERT SHALL BE V-SHAPED TO WITHIN 3" OF OUTLET, THEN WARPED PARALLEL TO FLOWLINE AT THE OUTLET, UNLESS OTHERWISE SHOWN.

CONSTRUCTION NOTES
A. INSTALL 3/8" EXPANSION JOINT.
B. 7" DEPTH WHEN USED IN CONJUNCTION WITH 8" CURB, 5" DEPTH WHEN USED WITH 6" CURB.
C. 3" RADIUS (TYPICAL).
D. 3/8" CHECKERED STEEL PLATE (PAINT PER NOTE 4, ABOVE).
E. NO. 3 REBAR \( \perp \), SPACE AT 18" O.C. MAXIMUM, 1/2" MINIMUM FROM FACE OF CONCRETE STAGING FOR MULTIPLE CULVERTS.
F. WELD 3/4" STEEL ROD TO PLATE, FULL LENGTH OF PLATE, GRIND ENDS FLUSH TO THE FACE OF CURB.

4. LENGTH OF EACH PLATE SHALL BE SUCH THAT THE WEIGHT WILL NOT EXCEED 300 LBS. CLEAN SURFACE OF PLATE AND PAINT WITH ONE SHOP COAT RED OXIDE AND TWO FINISH COATS ALUMINUM PAINT (AASHTO M 69).
5. THE CITY WILL NOT ASSUME RESPONSIBILITY FOR MAINTENANCE OF ANY SIDEWALK CULVERT INSTALLED BY OR FOR PRIVATE PROPERTY OWNERS.
6. CULVERT MUST BE PERPENDICULAR TO THE CURB.

SECTION A-A
SINGLE OR MULTIPLE CULVERT

SECTION B-B
SINGLE OR MULTIPLE CULVERT

REVISIONS
CITY OF ALBUQUERQUE
DRRAINAGE
SIDEWALK CULVERT
PLAN, AND SECTIONS A-A AND B-B
Dwg. 2236
JUNE 2019
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 EXISTING INLET WITH INVERT OF DRILLED OPENING 1/2" ABOVE EXISTING CONCRETE FILL. IF NOT CORE-DRILLED, A CONCRETE COLLAR MAY BE REQUIRED.

B. GROUT OPENING WITH NONSHRINK, NONMETALLIC GROUT.

C. NEW DRAIN LINE TO BE IRP, HIPP, HOPE, OR DUCTILE IRON PIPE. DRAIN SIZE TO BE AT LEAST ONE SIZE SMALLER THAN OUTLET PIPE WITH A MAXIMUM SIZE OF 12".

D. EXISTING CONCRETE FILL

E. SLOPE 1/4" PER FOOT MIN. WITHIN R.O.W.

F. FRAME & GRATE.
TABLE 1: MINIMUM RECOMMENDED CLEARANCES

<table>
<thead>
<tr>
<th>Type</th>
<th>Minimum Clearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>15 (32)</td>
</tr>
<tr>
<td>V2</td>
<td>20 (40)</td>
</tr>
<tr>
<td>V3</td>
<td>25 (50)</td>
</tr>
</tbody>
</table>

TABLE 2: MINIMUM CLEARANCES ABOVE GROUND

<table>
<thead>
<tr>
<th>Type</th>
<th>Minimum Clearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>15 (32)</td>
</tr>
<tr>
<td>V2</td>
<td>20 (40)</td>
</tr>
<tr>
<td>V3</td>
<td>25 (50)</td>
</tr>
</tbody>
</table>

![Diagram of Storm Trench Installation Detail]
GENERAL NOTES

1. FOR SLEEVE, USE GATES NO. 37 W WATER HOSE, DISCHARGE HOSE OR EQUIVALENT, I.D. 6.625" O.D. 7.25", 6 PLY WITH BLACK NEOPRENE COVER.

2. PIPES 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.

4. 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.

CONSTRUCTION NOTES

A. 1" 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'-6" (Removable).

G. SLEEVE, 2'-2" Paint Bright Yellow, See Note No. 1 This Sheet.

H. 2" Wide Reflective Tape, As Approved by Engineer, Locate Around Pipe As Shown.

I. 1/4" Thick Steel Safety Guard Box, Open on One Side & Bottom, Weld All Seams.

J. 3/4" x 8" Galv. Hex Bolt w/ 3/8" Dia. Hole for Padlock. (Padlock furnished by City).

K. 1/4" x 6 5/8" Dia. Galv. Steel Plate Cover, Welded to Pipe.

L. ALIGN WITH TRAFFIC FLOW IN EASEMENTS OR BIKEPATH TO AVOID TRIPPING HAZARDS WITH BOX.

M. PIPES ARE NOT TO BE FILLED W/ CONC. WHEN PIPES ARE LOCATED WITHIN 15' OF STREET FLOWLINE, USE WELDED STEEL CAP INSTEAD.

P. WHERE CONNECTING BOLLARDS ARE SPECIFIED, WELD 1 1/4" Nom., SCH. 40 Pipe Between Bollards.

REVISIONS

<table>
<thead>
<tr>
<th>CITY OF ALBUQUERQUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAINAGE</td>
</tr>
<tr>
<td>STATIONARY AND REMOVABLE POST DETAILS</td>
</tr>
</tbody>
</table>

DRAWN: 2250
JUNE 2019
GENERAL NOTES
1. ALL WELDED AND CUT AREAS TO BE CLEANED THROUGHFULLY 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 FOOT 3.65 LBS.
B. 4" DIA. BLACK STEEL PIPE. MIN. 10.79 LBS./FT., CONC. FILLED, PAINT 1/2 COATS ALUM. PAINT.
C. 5" DIA. BLACK STEEL PIPE. MIN. 14.62 LBS./FT., PAINT 1/2 COATS ALUM. PAINT.
D. 1/4" BUTT WELD ALL AROUND.
E. CONCRETE ROUNDED AT TOP OF POST.
F. 3/8" X 4 1/4" DIA. STEEL PLATE.
G. 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. 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 3/8" FILLET ALL AROUND.
Q. 1 1/2" X 5/8" SLOT FOR STEEL PLATE FLANGE.

REVISED BY:  CITY OF ALBUQUERQUE  
DRAINAGE  
PIPE GATE DETAIL  

ELEVATION  

DETAIL 1  

DETAIL 2  

DETAIL 3  

DETAIL 4  

DETAIL 5  

REV. 2251  JUNE 2019
GENERAL NOTES
1. GATE TO BE USED AS SPECIFIED ON CONSTRUCTION DRAWINGS FOR DRAINAGE EASEMENT BARRICADE, SEE DWG. 2231 OR DWG. 2233.
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 FILL 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 HANDAL 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. 1/2" DIA. HOLES, FILLED WITH 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.

REVISIONS | CITY OF ALBUQUERQUE
-----------|------------------
DRAINAGE  | STANDARD CHAIN LINK GATE AND FENCE DETAIL
DWG. 2252  | JUNE 2019
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 3'-0" D.C., MAY BE SUBSTITUTED FOR FORMED CONC. WALLS.

CONSTRUCTION NOTES

A. EXPANSION JOINT, SEE DETAIL BELOW.

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

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

D. WIDTH OF CHANNEL.

E. URETHANE PRIMER AND SEALANT.

F. POLYETHYLENE FOAM FILLER TO DEPTH OF SLAB.

G. KEYED CONSTRUCTION JOINT, SEE DETAIL BELOW.

H. WALL SURFACE.

J. CHANNEL SURFACE.

CITY OF ALBUQUERQUE

DRAINAGE
TYPICAL LINING FOR DRAINAGE EASEMENTS
DWG. 2260

REVISIONS
12-21-92
AUG. 1986
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.
B. EXPANSION, CONTRACTION AND CONSTRUCTION JOINTS SHALL COMPLY WITH SECTION 602 AND AS APPROVED BY THE ENGINEER. WHERE SAW CUTOFF JOINTS ARE PROVIDED, A JOINT SEALANT SHALL BE REQUIRED.
C. LONGITUDINAL STEEL AREA .005 TIMES CONCRETE AREA.
D. TRANSVERSE STEEL AREA .0025 TIMES CONCRETE AREA.
E. ACCESS AND ESCAPE 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.
F. BOTTOM STEP APPROXIMATELY 18" VERTICAL ABOVE INVERT.
G. NEW CONCRETE CHANNEL LIMING.
H. CHANNEL LIMING SHALL BE PLACED WITH A CENTERLINE INVERT. THE CHANNEL BOTTOM SHALL HAVE A TRANSVERSE SLOPE OF 1:2 FROM EACH SIDE TO THE INVERT AT CENTERLINE.
I. NATIVE MATERIAL (Q1 AS SPECIFIED) COMPACTED TO 95% PER ASTM D-1557.

CITY OF ALBUQUERQUE
DRAINAGE
CHANNEL DETAILS
DWG. 2261
AUG 1986
GENERAL NOTES:
1. THIS JOINT SHALL BE SPECIFIED FOR CONNECTING NEW CONCRETE STRUCTURES TO EXISTING CONCRETE STRUCTURES AS SPECIFIED BY THE ENGINEER. A SIMILAR JOINT MAY BE DETAIL FOR JOINTS AT NEW STRUCTURES. JOINT MATERIALS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. BREAKOUT 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 AASHO B 56.
D. NEW CONCRETE CHANNEL LINING, POUR LOWER STEP SECTION FIRST, STEEL FORMS PLUMED ON STEP PARALLEL TO BOTTOM PLATE. DRY BOND FINISH ON EXPOSED SURFACE.
E. 12" + BOTTOM JOINT WIDTH K. TOTAL ANCHORED BAR LENGTH = 1 + 3".
F. STEEL SIZE AND SPACING PER D.P.M. LATERAL JOINTS 20 TIMES CONCRETE AREA; TRANSVERSE JOINTS 00 TIMES CONCRETE AREA.
G. CORE DRILL 1 1/2" HOLES AT 12" O.C. DEEP INTO EXISTING STRUCTURE WITH CONTINUOUS WATER LUBRICATION AND SEALANT. HOLES DO NOT USE IMPACT DRILL. BOND REBAR INTO PLACE WITH SOLID 2 PART QUICK SETTING EPoxy.

M. INSTALL LOW DENSITY POLYETHYLENE BEARING PLATE 1/4" X 24" (MAX. ADJACENT) EAFT 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 THE FILLER SECTIONS.
K. PLACE POLYETHYLENE FOAM FILLERS AS SHOWN, PLACE FLEX SEAL OR APPROVED EQUAL, DO NOT MOUNT WITH NAILS OR BONING 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 MOLDING FOR BONER BY SANDING. BLOW ALL SAND OUT OF THE JOINT BEFORE APPLYING BONER.
H. 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 NOT BE COMPRESSED INTO JOINT. IMMEDIATELY REMOVE ALL BONER FROM TOP SURFACE OF SEALANT.
M. SAND SURFACE OF SEALANT FLUSH TO TOP OF CONCRETE. APPLY ULTRA VIOLET PROOFING, 2 COATS, FLEXCOAT 19 OR APPROVED EQUAL.
P. BONER BEND IN GROOVE BETWEEN TOOLS RADIUS AND SEALANT IS TO REMAIN.

FILLER AND SEALANT DIMENSION TABLE (INCHES)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>WIDTH</td>
<td>DEPTH</td>
<td>WIDTH</td>
<td>DEPTH</td>
<td>WIDTH</td>
</tr>
<tr>
<td>2&quot;</td>
<td>6&quot;</td>
<td>2&quot;</td>
<td>4 1/4&quot;</td>
<td>2&quot;</td>
</tr>
</tbody>
</table>
| 3" | 6" | 3" | 3 3/4" | 3" | 2 1/2" | 3 3/4" | 2 1/2"
| 4" | 6" | 4" | 2 3/4" | 4" | 3 1/2" | 5" | 3 1/2"

CITY OF ALBUQUERQUE

DRAINAGE

EXPANSION JOINT CONNECTION TO CONCRETE WALL.

DWG. 2266

REVISIONS

AUG 1986
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 & SECT. 107.4.1.2 FOR BONDING AGENT.

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

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

J. EDGES OF SPALLED AREAS SHALL BE SAWED OR CHIPED 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.
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. 22A5 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.
GENERAL NOTES:
1. DETAIL FROM N.M.S.H.D. DETAIL, SERIAL BRR-001-05.
2. WIRE FABRIC IS TO BE GALV. V-MESH, APPROX. WEIGHT 48 LBS. PER 100 SQ. FT.
3. STEEL STAKES ARE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE WORK & NO DIRECT MEASUREMENT OR PAYMENT WILL BE MADE THEREFOR.
4. IF LENGTH OF SLOPE IS 15' OR LESS ONLY ONE ROW OF STEEL STAKES 2' FROM THE TOP EDGE OF THE RIPRAP WILL BE REQUIRED UNLESS OTHERWISE NOTED ON PLANS.

CONSTRUCTION NOTES:
A, B, C & D DIMENSIONS TO BE SHOWN ON PLANS.
E. FILTER MATERIAL, 6" MIN. DEPTH AS SHOWN ON PLANS.
F. FILL B COMPACT AFTER PLACEMENT OF RIPRAP.
G. STEEL STAKES MAY BE RAILROAD RAILS NOT LESS THAN 30 LBS. PER FT., 4" O.D. STANDARD STRENGTH GALV. PIPE OR 4 X 4 X 3/4 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 & TRANSVERSALLY.
L. MAIN WIRES TO BE PLACED PERPENDICULAR TO SLOPE.
M. WIRE FABRIC.
N. TRANSVERSE SPLICE.
O. LONGITUDINAL SPLICE, NO. 9 GALV. WIRE TIES (ONE WRAP ALTERNATE SPACES).
P. CROSS WIRES: SINGLE 12 GAGE WIRES SPACED AT 2' WITH NOT LESS THAN TWO TURNS AROUND MAIN WIRES.
Q. MAIN WIRES: TWO NO. 12 GAGE STRANDED WIRES SPACED AT 4'.
S. SUBGRADE COMPACTED TO 90% MAX. DENSITY AS PER ASTM D-1557, 6" MIN. DEPTH.
GENERAL NOTES

1. ALL EXPOSED METAL PARTS SHALL BE PAINTED PRIOR TO ASSEMBLY. WELDING, MACHINING AND DRILLING SHALL BE DONE PRIOR TO PAINTING. ALL DIMENSIONS ARE FINISH DIMENSIONS.

2. ALL PARTS SHALL BE OF STRUCTURE STEEL, GRADE 36.


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 NAILS AT 6" O.C. EACH WAY.

C. ROUGH TEXTURE CONCRETE SURFACE (TYP.)

D. GRADE.

E. THICKEN ASPHALT PAVEMENT TO 6" AT EDGE OF APRON BOTH SIDES OF INLET (TYP.)

F. GRADE FRAME.

G. 1" X 1/8" STEEL STRAP-WELD TO ANGLE 6" O.C.

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

I. 2" CLEARANCE.

J. SEE PLAN.

K. SEE PLAN.

L. 3-1/2" X 3" X 3/8" X 1-4"-3/8".


N. 1/8" FILLET WELD 2" LONG AT 6" O.C. (TYP.)

O. 7/32" X 1" X 1/8" STEEL ANGLE FULL LENGTH OF GRADE ONE SIDE ONLY EACH GRADE.

P. FOUR (4) EACH 1/2" X 8" BOLTS WITH SQUARE HEADS AND NUTS. ONE BOLT AT EACH CORNER FOR ANCHORING THE FRAME INTO THE CONCRETE WALL.
GENERAL NOTES
1. ONE INCH LINE AND NUMBERS WIDTH TO BE USED IN ALL CASES.
2. STATIONING AND WATER DEPTH MARKS WITH CHANNEL NAME TO BE PLACED 10' TO 20' ABOVE AND BELOW CROSSING STRUCTURES ON BOTH SIDES OF CHANNEL.
3. STATIONING TO BE PLACED ON BOTH SIDES OF CHANNEL EVERY 200 FEET, OR 1 FOOT.
4. STATIONING TO BE PLACED 4" 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 IN 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 MARKS AT TOP OF LINE AS SHOWN.

CITY OF ALBUQUERQUE
REVISIONS
DRAINAGE STATIONING AND WATER DEPTH MARKS IN CONCRETE LINED CHANNEL
DWG. 2274 SEPT. 1992