# CITY OF KINGMAN


## UNIFORM STANDARD DETAILS for PUBLIC WORKS CONSTRUCTION

**(INCLUDES REVISIONS THROUGH 2020)**

**CITY OF KINGMAN**
**ENGINEERING DEPARTMENT**
**310 NORTH 4TH STREET**
**KINGMAN, AZ 86401**
**PHONE (928) 753-8122, FAX (928) 753-8118**
**www.cityofkingman.gov**

**Effective: August 18, 2020**

**Ordinance No. 1910**

## 100 SERIES: GENERAL INFORMATION

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| 123 | 2004 | STANDARD UTILITY SERVICE LOCATIONS (WITHIN THE RIGHT OF WAY) |
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| 124–2 | 2010 | JACK AND BORE |
| 125 | 2017 | TYPICAL STREET SECTION (LOCAL STREET) |
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| 130 | 2020 | ROADWAY TERMINATION BARRICADE |
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| DETAIL | REVISED | TITLE |
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| 212 | 2020 | UTILITY POTHOLE REPAIR |
| 230 | 2017 | SIDEWALKS |
| 231 | 2020 | SIDEWALK RAMPS – TYPE 'A' |
| 232 | 2020 | SIDEWALK RAMPS – TYPE 'B' |
| 233 | 2020 | SIDEWALK RAMPS – TYPE 'C' |
| 235 | 2020 | SIDEWALK RAMPS – TYPE 'E' |
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| 251 | 2017 | RURAL RESIDENTIAL TYPE DRIVEWAYS |

## 300 SERIES: WATER INFORMATION

| DETAIL | REVISED | TITLE |
|---|---|---|
| 301 | 2010 | BLOCKING FOR WATER GATE AND BUTTERFLY VALVES |
| 310 | 2017 | CAST IRON OR DIAMOND PLATE STEEL WATER METER BOX COVER NO. 1 |
| 311 | 2017 | CAST IRON OR DIAMOND PLATE STEEL WATER METER BOX COVER NO. 2 |
| 312 | 2017 | CAST IRON OR DIAMOND PLATE STEEL WATER METER BOX COVER NO. 3 |
| 313 | 2017 | CAST IRON OR DIAMOND PLATE STEEL WATER METER BOX COVER NO. 4 |
| 314 | 2010 | CAST IRON OR DIAMOND PLATE STEEL WATER METER BOX COVER NO. 5 |
| 320 | 2012 | CONCRETE METER BOXES |
| 321 | 2012 | 3", 4" WATER METER VAULT |
| 322 | 2012 | 6" WATER METER VAULT |
| 340 | 2020 | INSTALLING TAPPING SLEEVES AND VALVES 3" AND LARGER |
| 344–1 | 2020 | 1" – 2" WATER SERVICE INSTALLATION USING SCH 80 PVC |
| 344–1A | 2020 | 1" – 2" WATER SERVICE INSTALLATION USING CROSSLINKED POLYETHLENE |
| 344–2 | 2017 | WATER SERVICE REPLACEMENT |
| 344–3 | 2020 | DOUBLE WATER SERVICE |
| 345–1 | 2017 | 3", 4", 6" WATER METER |
| 345–2 | 2017 | 3", 4", 6" WATER METER WITH ON–SITE FIRE HYDRANTS |
| 346 | 2010 | FIRE LINE DETECTOR CHECK VAULT |
| 347 | 2017 | 6" & 8" PRESSURE REDUCING VALVE ASSEMBLY |
| 348 | 2017 | PRECAST PRV OR CHECKVALVE VAULT |
| 349 | 2017 | PRESSURE VACUUM BREAKER ASSEMBLY (2" OR LESS) |
| 350 | 2012 | DOUBLE CHECK BACKFLOW ASSEMBLY (3/4" TO 2") |
| 351 | 2020 | DOUBLE CHECK AND DOUBLE DETECTOR CHECK BACKFLOW ASSEMBLY (3" TO 10") |
| 352 | 2012 | REDUCED PRESSURE BACKFLOW ASSEMBLY (3/4" TO 2") |
| 353 | 2020 | REDUCED PRESSURE BACKFLOW ASSEMBLY (3" TO 10") |
| 360 | 2020 | FIRE HYDRANT INSTALLATION |
| 363 | 2017 | REMOTE FIRE DEPT. CONNECTION |
| 364 | 2020 | UNDERGROUND STUB UP DETAIL WITH REMOTE FDC. |
| 365 | 2017 | FIRE SPRINKLER RISER DETAIL WITH WALLMOUNT FDC. |
| 370 | 2020 | VERTICAL REALIGNMENT OF WATERLINE |
| 387 | 2017 | 2" BLOWOFF ASSEMBLY |
| 388 | 2017 | AIR RELEASE VALVE |
| 390 | 2017 | FLUSHING PIPE |
| 391–1 | 2020 | VALVE BOX INSTALLATION |
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| 392 | 2020 | WATER LINE TRENCH AND BACKFILL |

N.T.S.

| DETAIL NO. | STANDARD DETAIL | INDEX | CITY OF KINGMAN | DETAIL NO. |
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## 400 SERIES: SEWER INFORMATION

| DETAIL | REVISED | TITLE |
|---|---|---|
| 400 | 2020 | SEWER LINE TRENCH AND BACKFILL |
| 404–1 | 2012 | WATER AND SANITARY SEWER SEPARATION / PROTECTION |
| 420–1 | 2020 | PRECAST CONCRETE SEWER MANHOLE |
| 422 | 2020 | SEWER MANHOLE AND COVER FRAME ADJUSTMENT |
| 427 | 2017 | STUB OUT AND PLUGS |
| 430 | 2010 | SHALLOW MANHOLE |
| 431 | 2010 | CONNECTION TO EXISTING MANHOLE |
| 432 | 2010 | PRESSURE MAIN CONNECTION EXISTING MANHOLE |
| 440–1 | 2020 | 4" SEWER BUILDING CONNECTION FOR LATERALS UNDER CURB & GUTTER |
| 440–3 | 2020 | 4" SEWER BUILDING CONNECTION NON CURBED AREAS |
| 440–4 | 2010 | SERVICE CURB CROSSING MARK DETAIL |
| 441 | 2017 | SEWER CLEANOUT |
| 442 | 2020 | SEWER SERVICE TAP TO EXISTING MAIN |
| 443 | 2010 | SEWER PIPE COUPLING DETAIL |

N.T.S.

| DETAIL NO. | STANDARD DETAIL | INDEX | CITY OF KINGMAN | DETAIL NO. |
|---|---|---|---|---|

CONCRETE SECTION

SUBGRADE SEAL SECTION

SELECT MATERIAL SECTION

AGGREGATE BASE SECTION

BITUMINOUS PAVEMENT SECTION

EXISTING GROUND SECTION

EXISTING PAVEMENT

OBLITERATE PAVEMENT

PROPERTY LINE

SECTION LINE

CENTER LINE

EXISTING RIGHT OF WAY

PROPOSED RIGHT OF WAY

EXISTING WATER LINE —8"—W—

EXIST. TELEPHONE LINE —T—

EXISTING SEWER LINE —8"—S—

EXISTING GAS LINE —G—

EXISTING STORM DRAIN —24"—SD—

EXISTING IRRIGATION LINE —6"—IR—

EXISTING ELECTRIC LINE —E—

EXISTING TV CABLE —TV—

RAILROAD OR

EXIST. WASH FLOW LINE

BARBED WIRE FENCE W/GATE

CHAIN LINK FENCE W/GATE

WOODEN FENCE W/GATE

GUARD RAIL

BENCHMARK (DESCRIBE)

SURVEY MONUMENT (DESCRIBE)

EXISTING FIRE HYDRANT OR

PROPOSED FIRE HYDRANT OR

EXISTING WATER METER WM

PROPOSED WATER METER WM

EXISTING WATER VALVE

PROPOSED WATER VALVE

GAS METER GM

MANHOLE (LABEL TYPE) MH

SEWER CLEANOUT CO

STANDPIPE

TELEPHONE PEDESTAL TEL

TELEVISION PEDESTAL TV

POWER POLE PP

DOWN GUY & ANCHOR

STREET LIGHT

STREET SIGN

SIGN, SINGLE POST

SIGN, DOUBLE POST

MAILBOX

TRAFFIC SIGNAL TS OR

ELECTRIC JUNCTION BOX E

BLOCK WALL

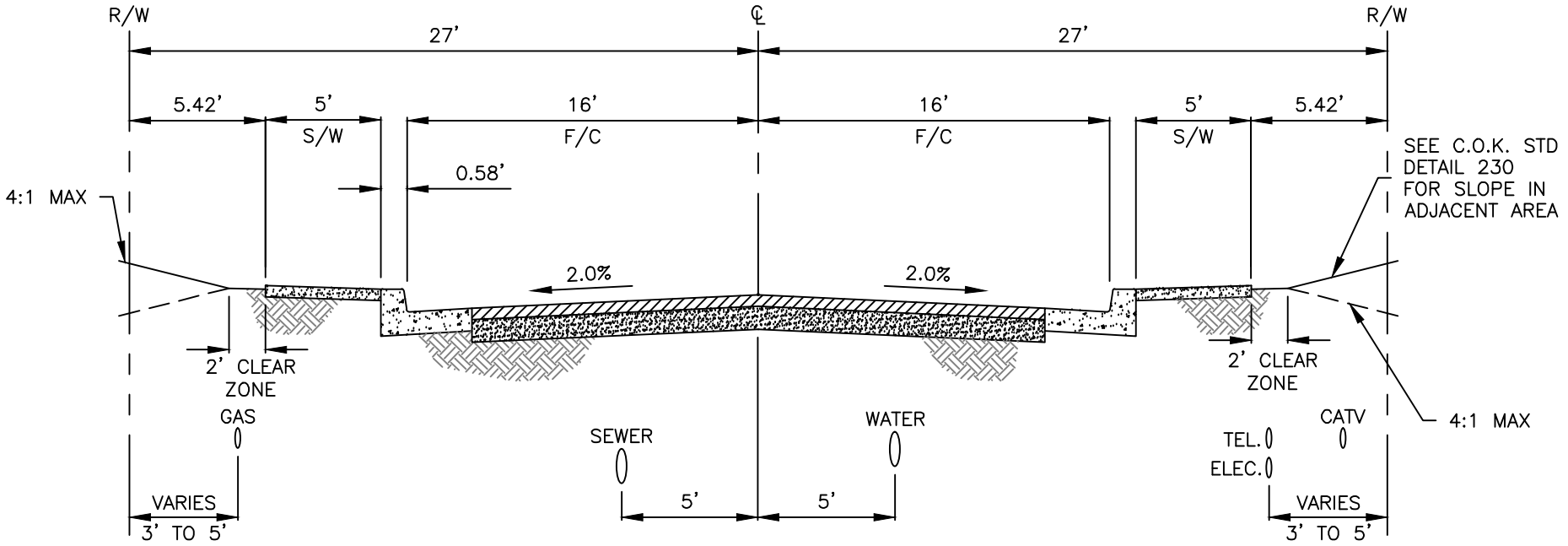
STONE WALL

NOTES:

1. EXISTING FEATURES SHOULD BE SHOWN WITH LIGHT, DASHED LINES.
2. PROPOSED FEATURES SHOULD BE SHOWN WITH HEAVIER, SOLID LINES.
3. WHEN SYMBOLS USED ON THE PLANS ARE DIFFERENT THAN THOSE SHOWN ON THIS DETAIL, A LEGEND SHALL BE INCLUDED ON THE PLANS, TO CLARIFY THE SYMBOLISM USED.

N.T.S.

| DETAIL NO. 110 | STANDARD DETAIL | STANDARD PLAN SYMBOLS | CITY OF KINGMAN | DETAIL NO. 110 |
|---|---|---|---|---|




1. MINIMUM COVER OVER WATER LINES SHALL BE PER CITY STANDARD DETAIL NO. 392, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

2. MINIMUM COVER OVER SEWER LINES SHALL BE PER CITY STANDARD DETAIL NO. 400, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

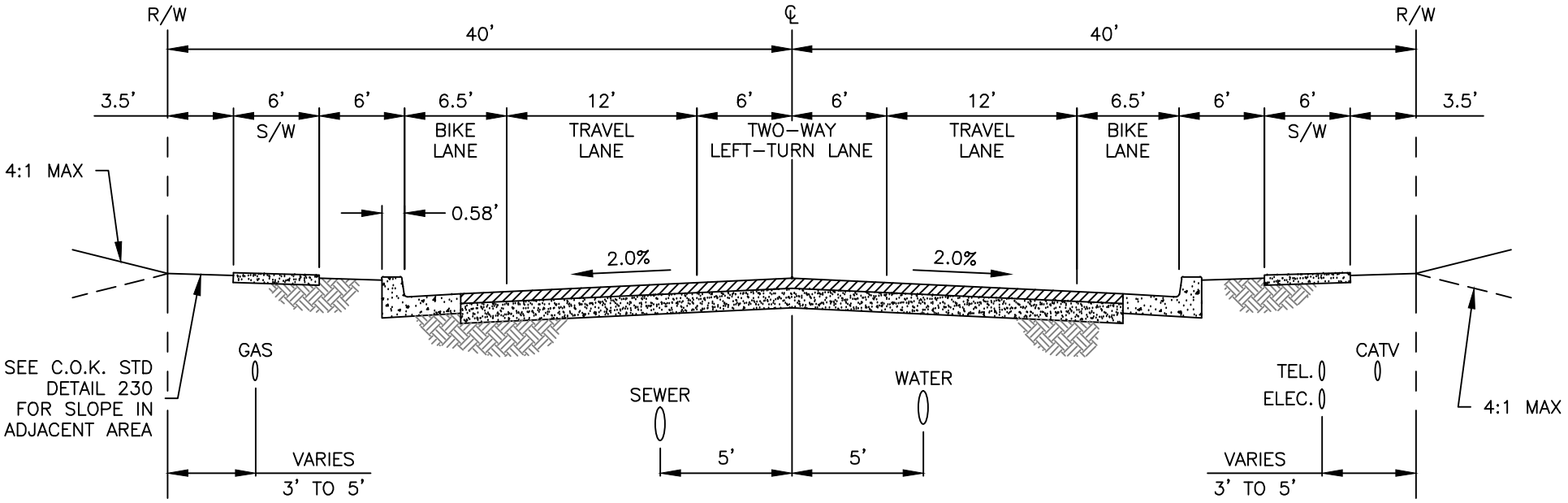
3. MINIMUM COVER OVER OTHER UTILITIES SHALL BE AS REQUIRED AND APPROVED BY THE RESPECTIVE UTILITY OWNER.

LOOKING NORTH AND WEST

(FOR NEW SUBDIVISIONS AND UNIMPROVED RIGHT OF WAY)

N.T.S.

| DETAIL NO. 120 | STANDARD DETAIL | STANDARD UTILITY LOCATIONS (LOCAL STREET) | CITY OF KINGMAN | DETAIL NO. 120 |
|---|---|---|---|---|




NOTES:

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2. MINIMUM COVER OVER SEWER LINES SHALL BE PER CITY STANDARD DETAIL NO. 400, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

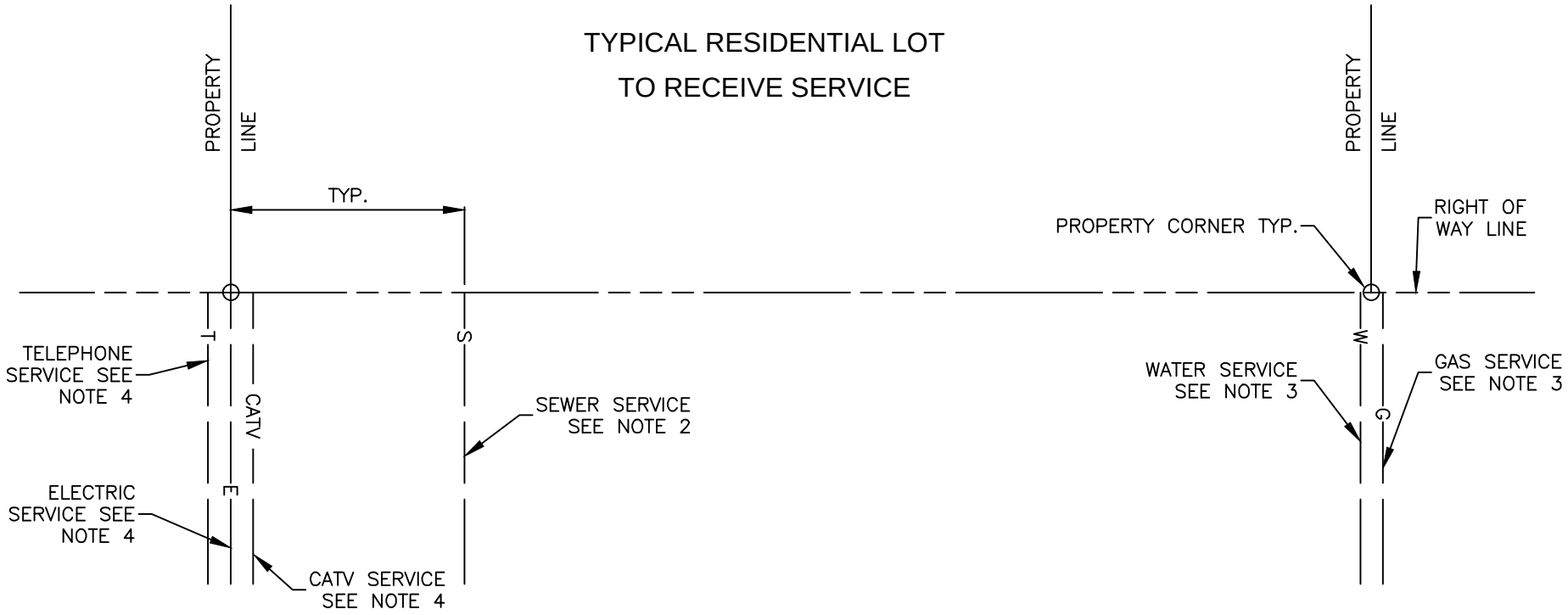
3. MINIMUM COVER OVER OTHER UTILITIES SHALL BE AS REQUIRED AND APPROVED BY THE RESPECTIVE UTILITY OWNER.

LOOKING NORTH AND WEST

(FOR NEW SUBDIVISIONS AND UNIMPROVED RIGHT OF WAY)

N.T.S.

| DETAIL NO. 121 | STANDARD DETAIL | STANDARD UTILITY LOCATIONS (COLLECTOR STREET) | CITY OF KINGMAN | DETAIL NO. 121 |
|---|---|---|---|---|

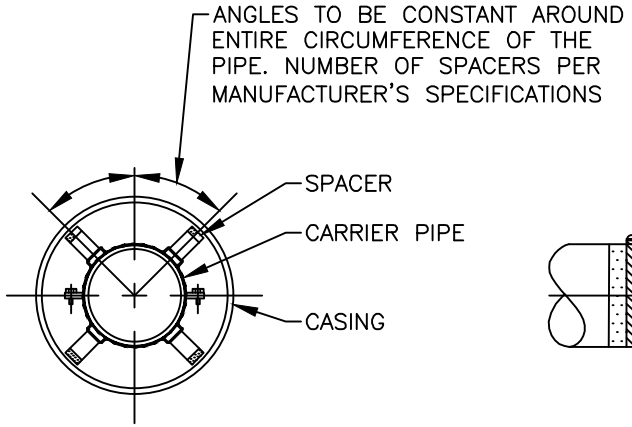



NOTES:

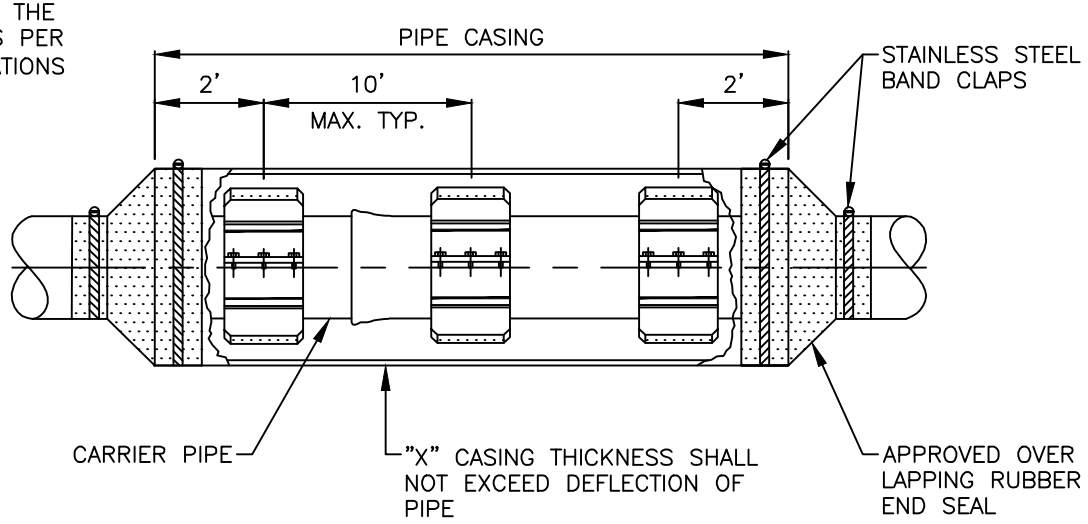
1. SEE CITY STANDARD DETAILS 120–122 FOR LOCATIONS OF UTILITY MAINS WITHIN THE RIGHT OF WAY.
2. SEWER SERVICES SHALL BE LOCATED 10' FROM THE LOWEST PROPERTY CORNER, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
3. MINIMUM SEPARATION FOR WATER & GAS SERVICE LINES SHALL BE 12 INCHES UNLESS OTHERWISE AGREED BY EACH RESPECTIVE UTILITY OWNER.
4. MINIMUM SEPARATION FOR ELECTRIC, PHONE & CABLE TV SERVICE LINES SHALL BE AS REQUIRED BY EACH RESPECTIVE UTILITY OWNER.

N.T.S.

| DETAIL NO. 123 | STANDARD DETAIL | STANDARD UTILITY SERVICE LOCATIONS WITHIN THE RIGHT OF WAY | CITY OF KINGMAN | DETAIL NO. 123 |
|---|---|---|---|---|




CROSS-SECTION




| CARRIER PIPE | | |
|---|---|---|
| PIPE SIZE | CASING ID* | THICKNESS* |
| 6" | 16" | 1/4" |
| 8" | 18" | 1/4" |
| 12" | 24" | 5/16" |
| 10" | 20" | 5/16" |
| 16" | 24" | 3/8" |
| 18" | 30" | 3/8" |
| 20" | 36" | 1/2" |
| 24" | 42" | 1/2" |

* MINIMUM.

NOTES:

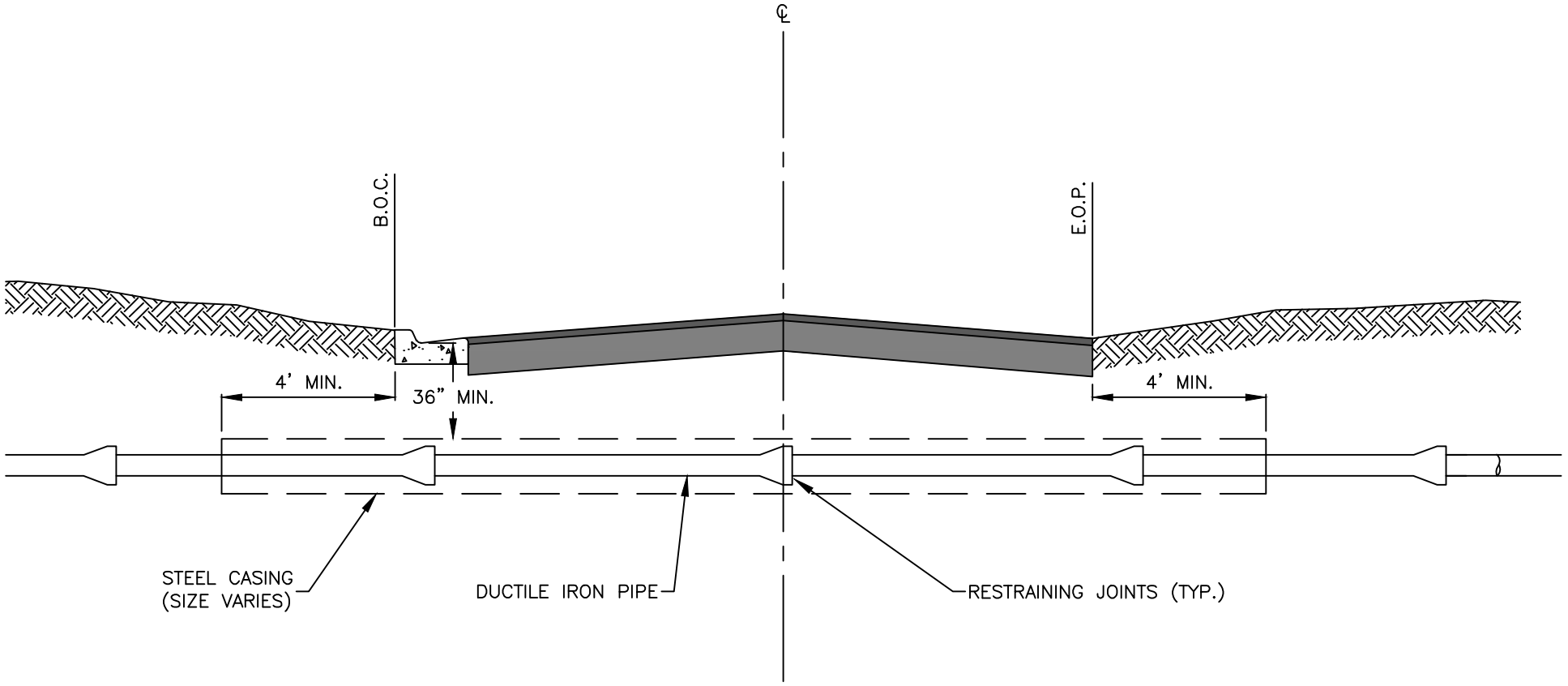
1. STEEL PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM A53. ALL JOINTS SHALL BE WELDED. INTERIOR JOINTS SHALL BE GROUND TO A SMOOTH FINISH. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWWA C206, "AWWA STANDARD FOR FIELD WELDING OF STEEL WATER PIPE." COATINGS FOR STEEL CASING NOT REQUIRED.
2. STEEL PIPE CASING SHALL BE INSTALLED SYMMETRICAL ABOUT CARRIER MAIN CENTERLINE (TYP). PIPE CASING SHALL BE LAID TRUE TO LINE AND GRADE WITH NO BENDS OR CHANGES IN GRADE FOR THE FULL LENGTH OF THE CASING.
3. AGENCY APPROVED CASING SPACERS AND END SEALS SHALL BE INSTALLED PER MANUFACTURE'S SPECIFICATIONS. USE A CENTERED CONFIGURATION AND PROVIDE THE MANUFACTURE WITH THE FOLLOWING: PIPE OD, CASING ID, AND CASING LENGTH.
4. ALL PIPE WITHIN THE CASING SHALL BE DUCTILE IRON WITH RESTRAINED JOINTS.
5. CASING TO FILLED WITH SAND OR GROUT AS REQUIRED BY THE CITY ENGINEER.
6. CASING INSTALLATIONS OVER 25 FEET BELOW FINISHED GRADE TO HAVE THICKNESS DETERMINED BY A ARIZONA LICENSED PROFESSIONAL ENGINEER.
7. ALL CASING INSTALLATIONS SHALL BE SUBJECT TO APPROVAL BY THE CITY ENGINEER.

N.T.S.

| DETAIL NO. 124-1 | STANDARD DETAIL | CASING INSTALLATION | CITY OF KINGMAN | DETAIL NO. 124-1 |
|---|---|---|---|---|

STREET WITH CURB

STREET WITHOUT CURB

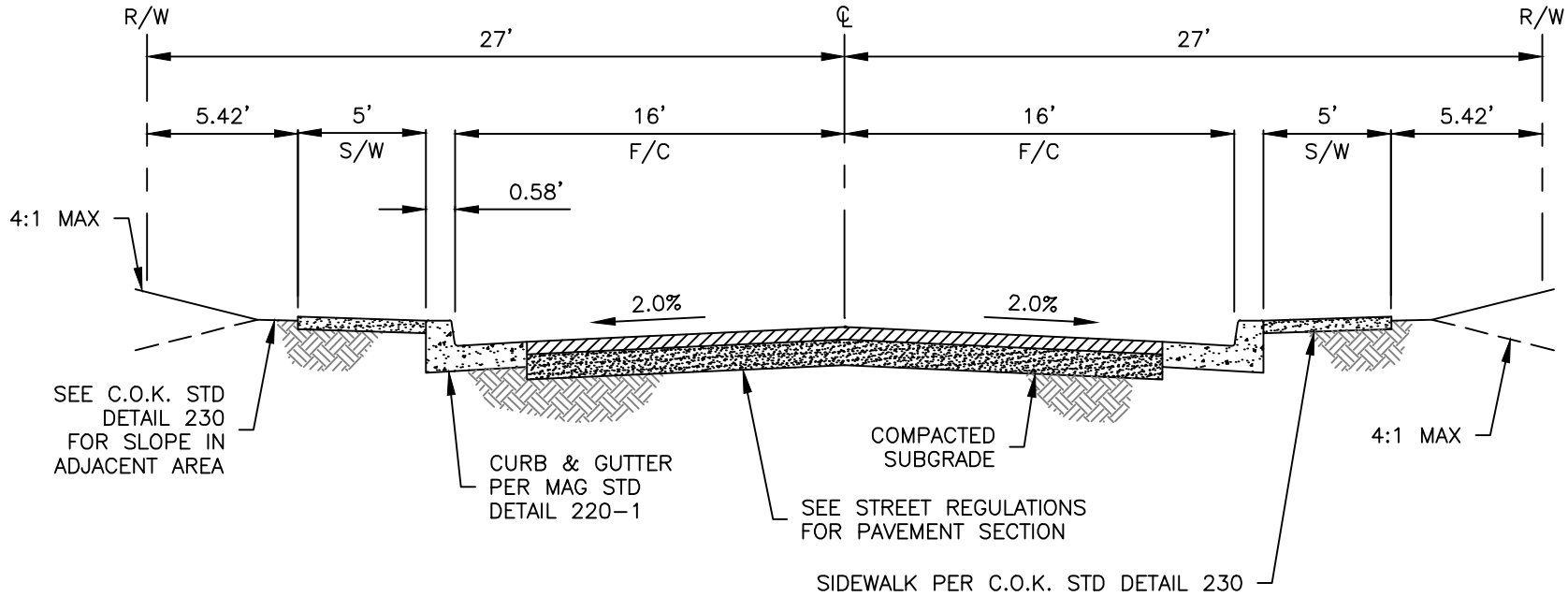



NOTES:

1. ALL PIPE THRU CASING TO BE DUCTILE IRON PIPE.
2. NUMBER 12 TRACING WIRE SHALL BE USED OVER D.I.P.
3. ALL PIPES WITHIN CASING TO BE RESTRAINED AS APPROVED BY CITY ENGINEER.
4. CASING PIPE TO MEET ASTM A53.
5. IN STREET SECTIONS WITH SIDEWALK EXTEND MIN 4' BACK OF SIDEWALK.

N.T.S.

| DETAIL NO. 124-2 | STANDARD DETAIL | JACK AND BORE | CITY OF KINGMAN | DETAIL NO. 124-2 |
|---|---|---|---|---|

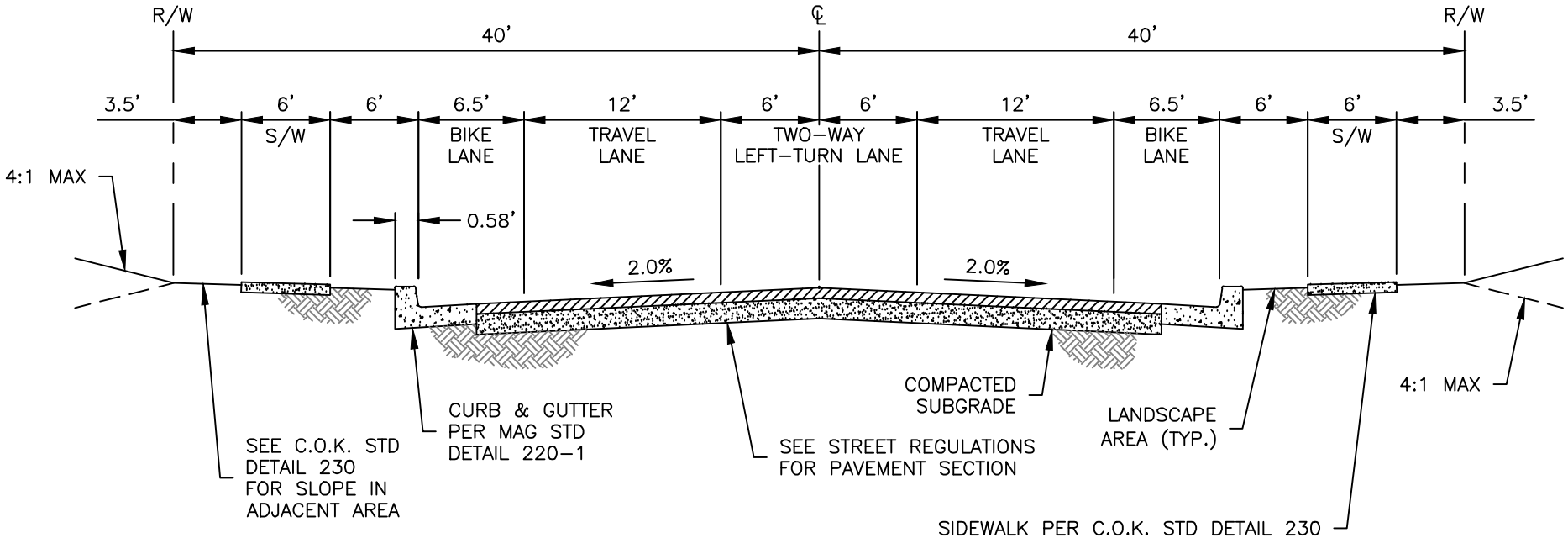



NOTES:

1. LANE DIMENSIONS ARE MEASURED TO FACE OF CURB.
2. ALL STREETS SHALL BE CONSTRUCTED WITH A STRAIGHT CROWN AT A 2% CROSS SLOPE.
3. A.B.C. FILL SHALL CONFORM TO MAG SECTION 702.
4. ASPHALT CONCRETE SHALL CONFORM TO MAG SECTION 710 AND PLACED PER MAG SECTION 321.
5. FINISH ELEVATION OF THE AREA ADJACENT TO THE SIDEWALK SHALL BE 1" BELOW THE TOP OF SIDEWALK, REFER TO CITY OF KINGMAN STANDARD DETAIL 230.
6. STREET SUBGRADE SHALL BE PREPARED AND COMPACTED PER MAG SECTION 301.

N.T.S.

| DETAIL NO. 125 | STANDARD DETAIL | TYPICAL STREET SECTION (LOCAL STREET) | CITY OF KINGMAN | DETAIL NO. 125 |
|---|---|---|---|---|




NOTES:

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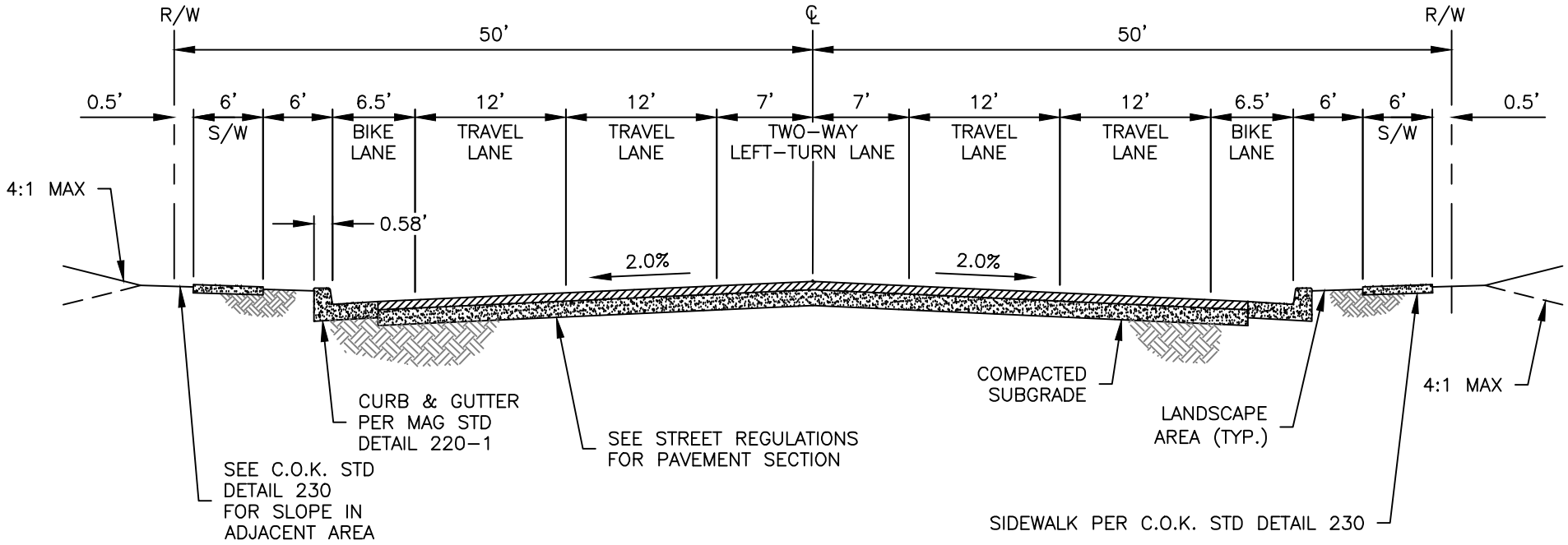
2. ALL STREETS SHALL BE CONSTRUCTED WITH A STRAIGHT CROWN AT A 2% CROSS SLOPE.
3. A.B.C. FILL SHALL CONFORM TO MAG SECTION 702.
4. ASPHALT CONCRETE SHALL CONFORM TO MAG SECTION 710 AND PLACED PER MAG SECTION 321.
5. FINISH ELEVATION OF THE AREA ADJACENT TO THE SIDEWALK SHALL BE 1" BELOW THE TOP OF SIDEWALK, REFER TO CITY OF KINGMAN STANDARD DETAIL 230.
6. STREET SUBGRADE SHALL BE PREPARED AND COMPACTED PER MAG SECTION 301.

N.T.S.

| DETAIL NO. 126 | STANDARD DETAIL | TYPICAL STREET SECTION (COLLECTOR STREET) | CITY OF KINGMAN | DETAIL NO. 126 |
|---|---|---|---|---|

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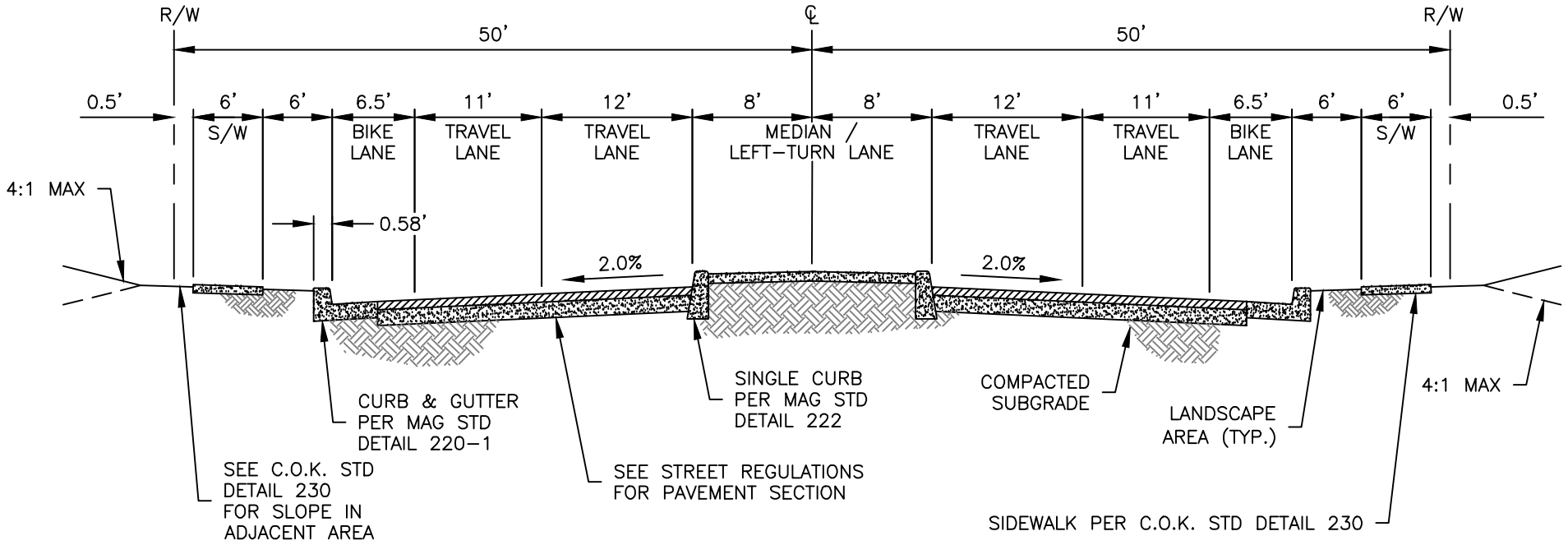
5. FINISH ELEVATION OF THE AREA ADJACENT TO THE SIDEWALK SHALL BE 1" BELOW THE TOP OF SIDEWALK, REFER TO CITY OF KINGMAN STANDARD DETAIL 230.
6. STREET SUBGRADE SHALL BE PREPARED AND COMPACTED PER MAG SECTION 301.

N.T.S.

| DETAIL NO. 127 | STANDARD DETAIL | TYPICAL STREET SECTION (MINOR ARTERIAL) | CITY OF KINGMAN | DETAIL NO. 127 |
|---|---|---|---|---|




NOTES:

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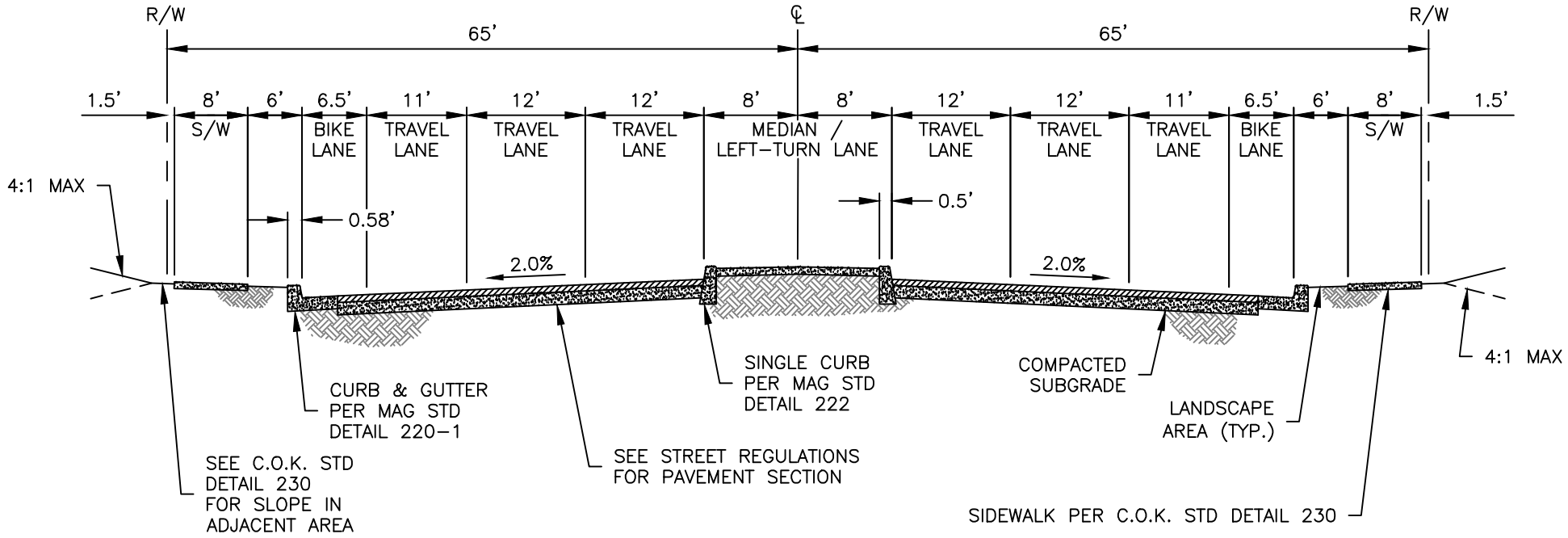
5. FINISH ELEVATION OF THE AREA ADJACENT TO THE SIDEWALK SHALL BE 1" BELOW THE TOP OF SIDEWALK, REFER TO CITY OF KINGMAN STANDARD DETAIL 230.
6. STREET SUBGRADE SHALL BE PREPARED AND COMPACTED PER MAG SECTION 301.

N.T.S.

| DETAIL NO. 128 | STANDARD DETAIL | TYPICAL STREET SECTION (MINOR ARTERIAL WITH MEDIAN) | CITY OF KINGMAN | DETAIL NO. 128 |
|---|---|---|---|---|




NOTES:

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2. ALL STREETS SHALL BE CONSTRUCTED WITH A STRAIGHT CROWN AT A 2% CROSS SLOPE.
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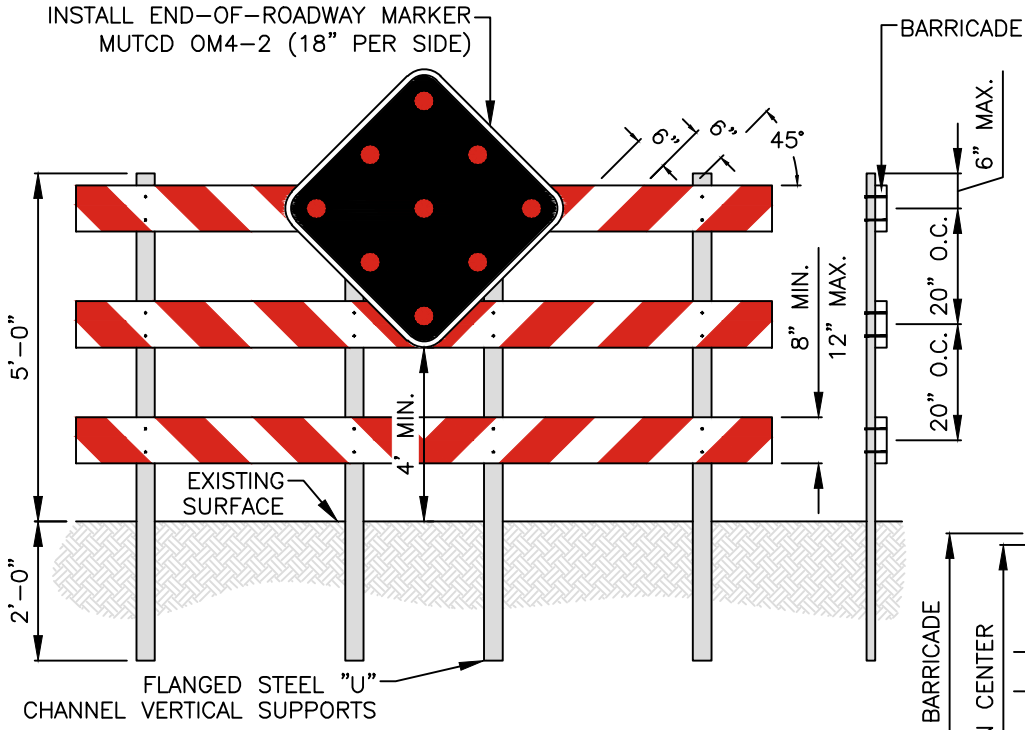
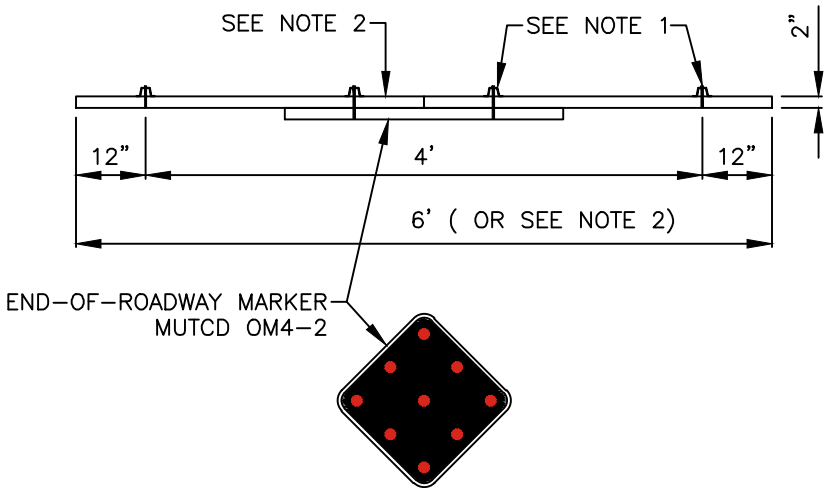
5. FINISH ELEVATION OF THE AREA ADJACENT TO THE SIDEWALK SHALL BE 1" BELOW THE TOP OF SIDEWALK, REFER TO CITY OF KINGMAN STANDARD DETAIL 230.
6. STREET SUBGRADE SHALL BE PREPARED AND COMPACTED PER MAG SECTION 301.

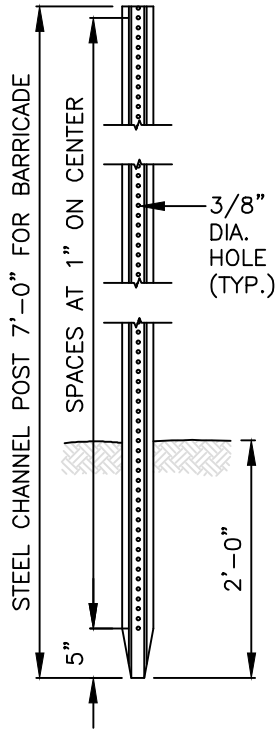
N.T.S.

| DETAIL NO. 129 | STANDARD DETAIL | TYPICAL STREET SECTION (MAJOR ARTERIAL WITH MEDIAN) | CITY OF KINGMAN | DETAIL NO. 129 |
|---|---|---|---|---|

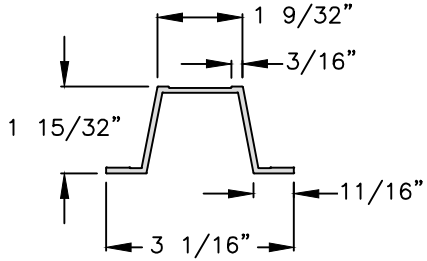



PERMANENT BARRICADE

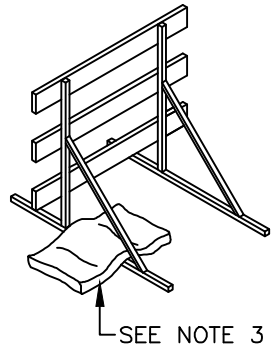



GALVANIZED STEEL U-CHANNEL POST




GALVANIZED STEEL U-CHANNEL




TEMPORARY

NOTES:

1. FASTEN WITH 5/16" WITH 2 FLAT WASHERS ON SIGN FACE.
2. 2" x 8" DOUGLAS FIR PLANK (LENGTH TO BE DETERMINED ON PLANS.) IF ONE PLANK IS USED ACROSS ENTIRE WIDTH, USE ONLY ONE VERTICAL SUPPORT IN CENTER. IF TWO OR MORE PLANS ARE USED EACH MUST BE SUPPORTED AS SHOWN.
3. WHEN BARRICADE IS CONSTRUCTED FOR "TEMPORARY" ROADWAY BARRICADE AND IS CONSTRUCTED ON BASES INSTEAD OF STEEL POSTS SET INTO THE GROUND, IT MAY BE DESIRABLE TO BALLAST THE BASES WITH SAND BAGS OR BY STAKING TO PROVIDE RESISTANCE TO OVERTURNING DURING PERIODS OF HIGH WINDS. "TEMPORARY" USE WOULD BE DEFINED AS 90 DAYS OR LESS.
4. MARKINGS SHALL BE ALTERNATE RED AND WHITE ELECTRO-CUT FILM OVER WHITE HIGH INTENSITY PRISMATIC SHEETING OR APPROVED EQUAL (SLOPING TOWARDS CENTER OF TERMINATED ROADWAY).

N.T.S.

| DETAIL NO. 130 | STANDARD DETAIL | ROADWAY TERMINATION BARRICADE | CITY OF KINGMAN | DETAIL NO. 130 |
|---|---|---|---|---|

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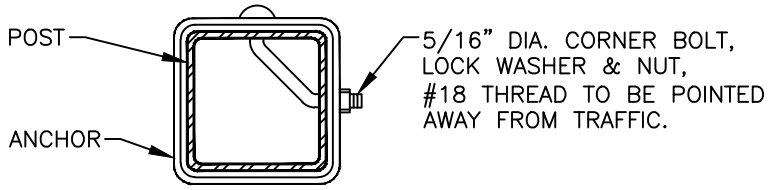
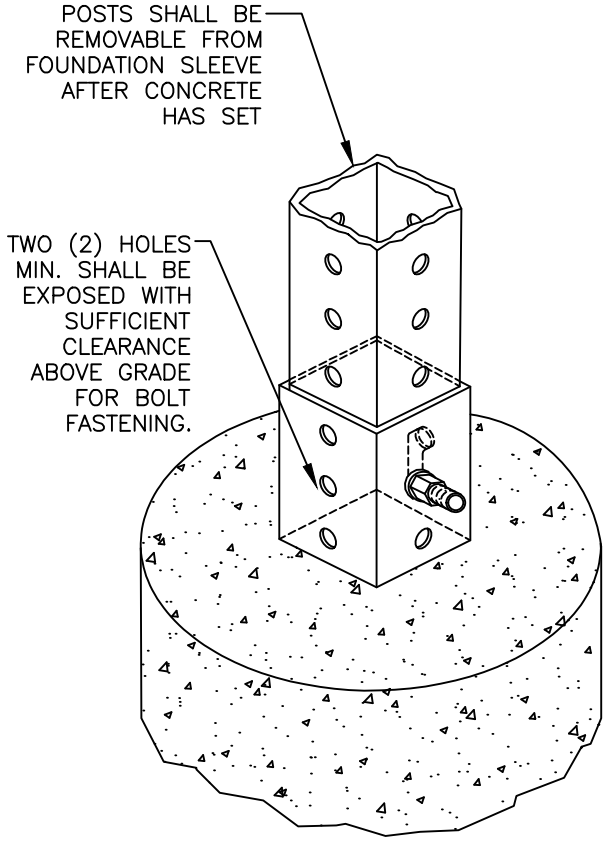


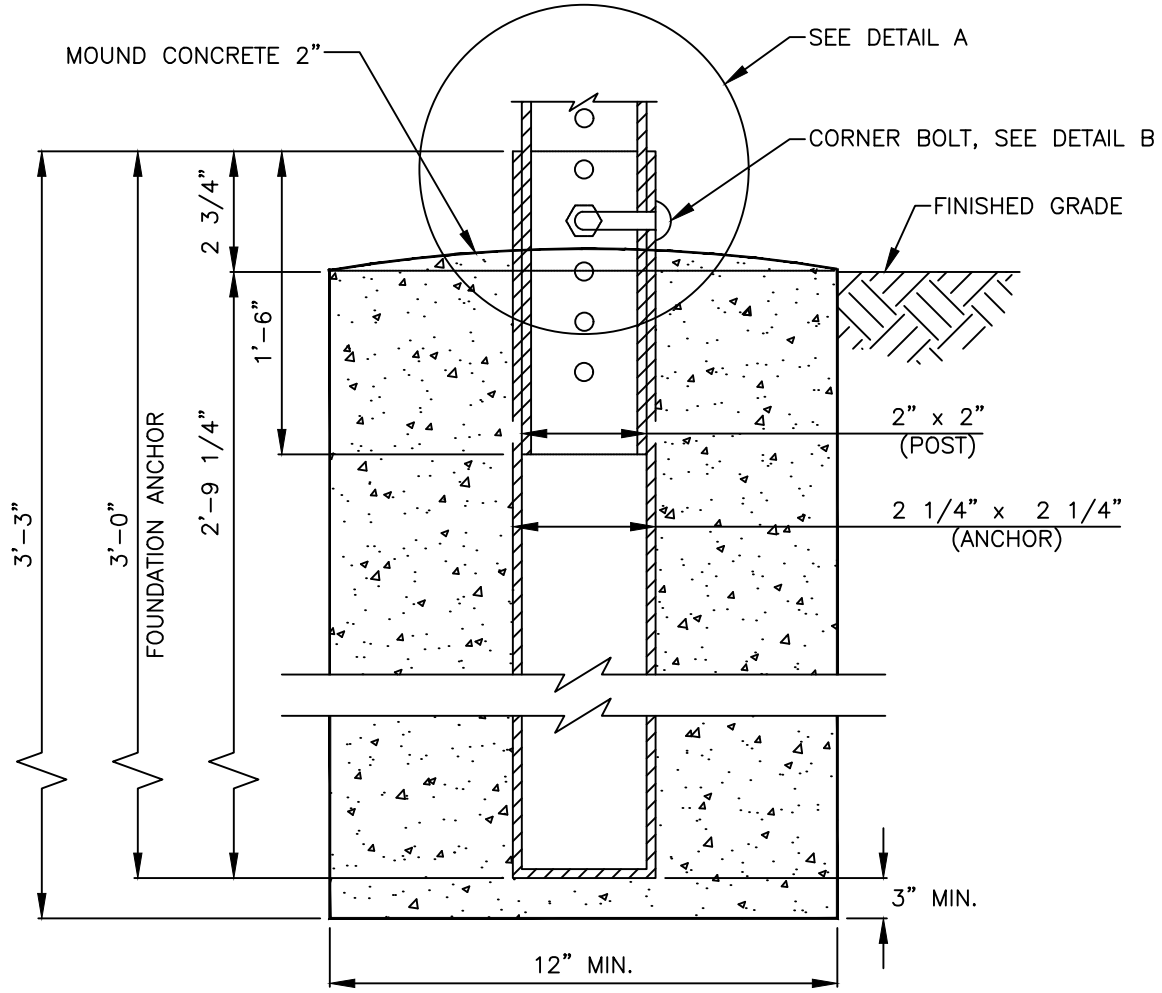

DETAIL B

NOTES:

1. ANCHOR AND POST SHALL BE 12 GAUGE GALVANIZED STEEL SQUARE TUBING.
2. WHEN TOTAL AREA OF SIGNAGE EXCEEDS 2,000 SQ. IN. AN ADDITIONAL POST IS REQUIRED.
3. CONCRETE BASE FOUNDATIONS SHALL BE CLASS 'C' CONCRETE AS PER MAG SECT. 505 & 725.

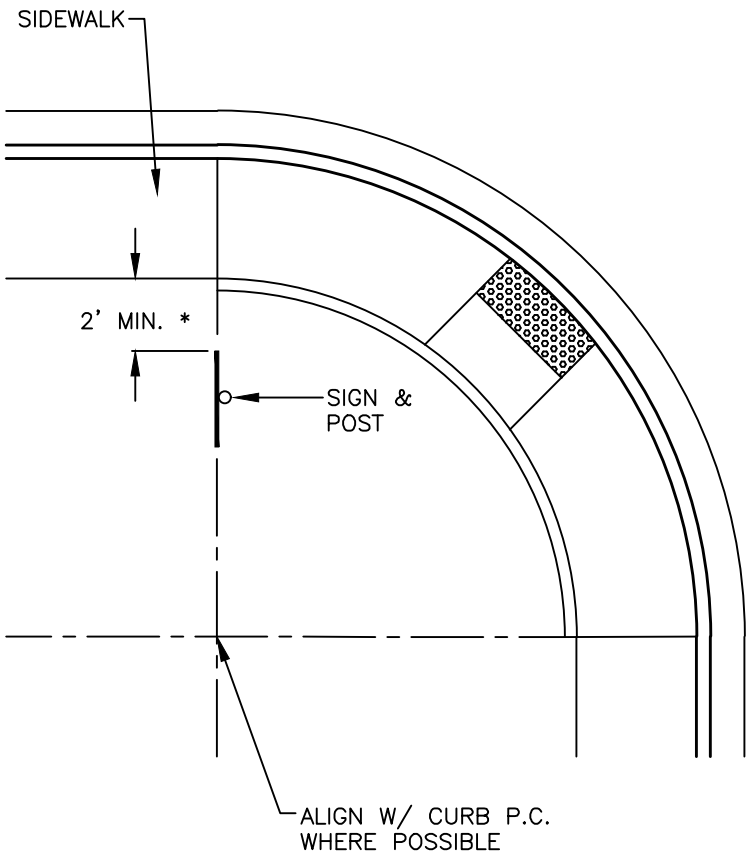


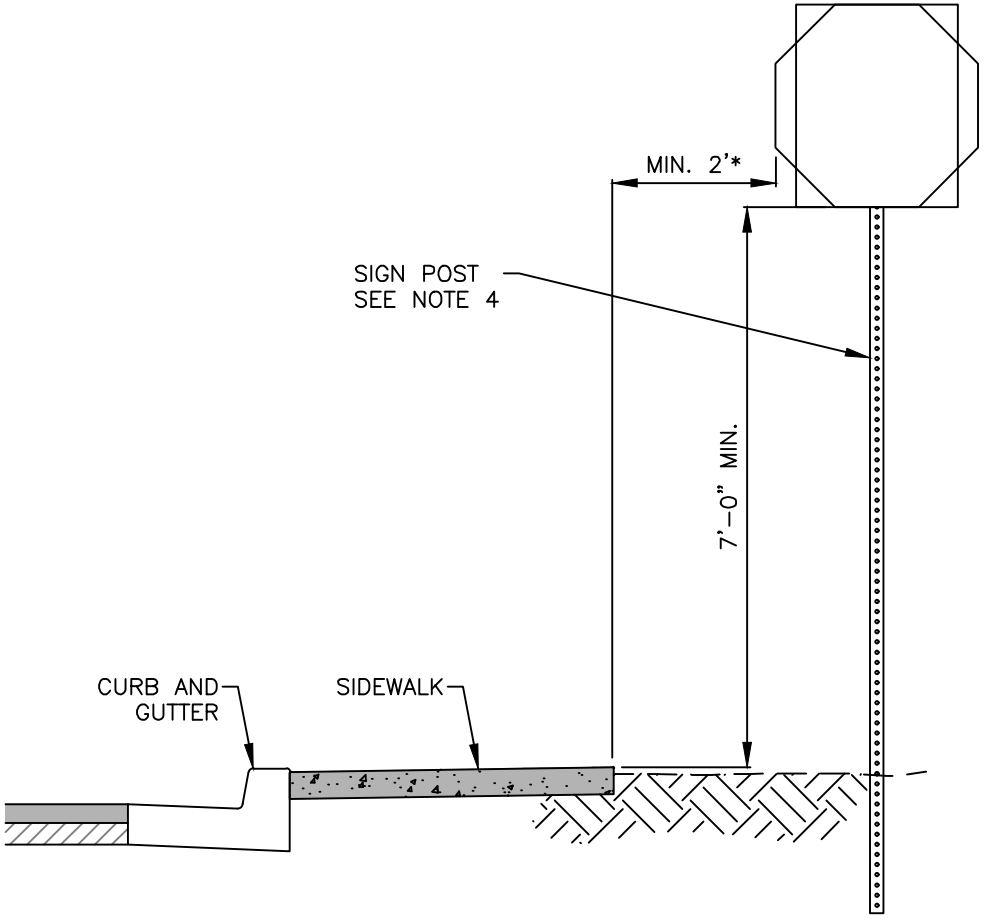

DETAIL A




N.T.S.

| DETAIL NO. 132 | STANDARD DETAIL | 2" SQUARE POST & BASE | CITY OF KINGMAN | DETAIL NO. 132 |
|---|---|---|---|---|



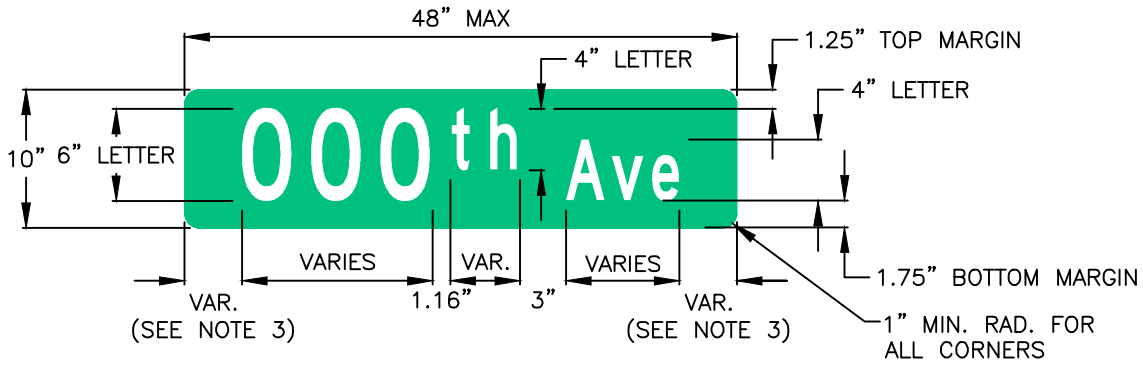

* WHEN SIDEWALK IS NOT ATTACHED, A 2' CLEARANCE FROM THE FACE OF CURB TO THE EGDE OF SIGN SHALL BE REQUIRED.

NOTES:

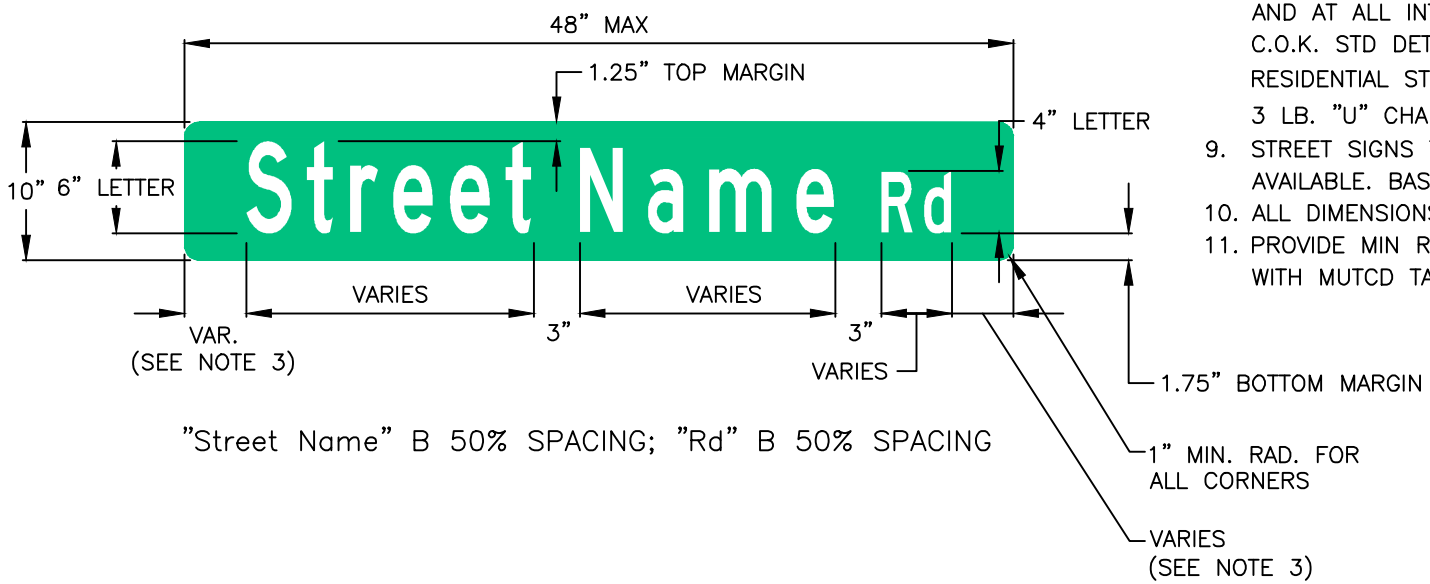
1. ALL SIGN LOCATIONS SHALL BE APPROVED BY THE INSPECTOR PRIOR TO INSTALLATION.
2. CONTACT THE ENGINEERING DEPARTMENT FOR GUIDANCE ON SIGN PLACEMENT NOT COVERED BY THIS DETAIL.
3. CLEARANCES SHOWN HEREON ARE TO BE USED FOR RECTANGULAR, SQUARE, OCTAGONAL, DIAMOND-SHAPED OR ROUND SIGNS.
4. ALL SIGN POSTS INSTALLED ON COLLECTORS, ARTERIALS AND AT ALL INTERSECTIONS SHALL BE INSTALLED PER C.O.K. STD. DETAIL 132. OTHER SIGN POSTS INSTALLED ON RESIDENTIAL STREETS MAY USE MAG 131 (TYPE A) WITH 3 LB. "U" CHANNEL.

N.T.S.

| DETAIL NO. 133 | STANDARD DETAIL | TYPICAL SIGN LOCATION | CITY OF KINGMAN | DETAIL NO. 133 |
|---|---|---|---|---|




"000th" B 100% SPACING; "Ave" B 50% SPACING




"Street Name" B 50% SPACING; "Rd" B 50% SPACING

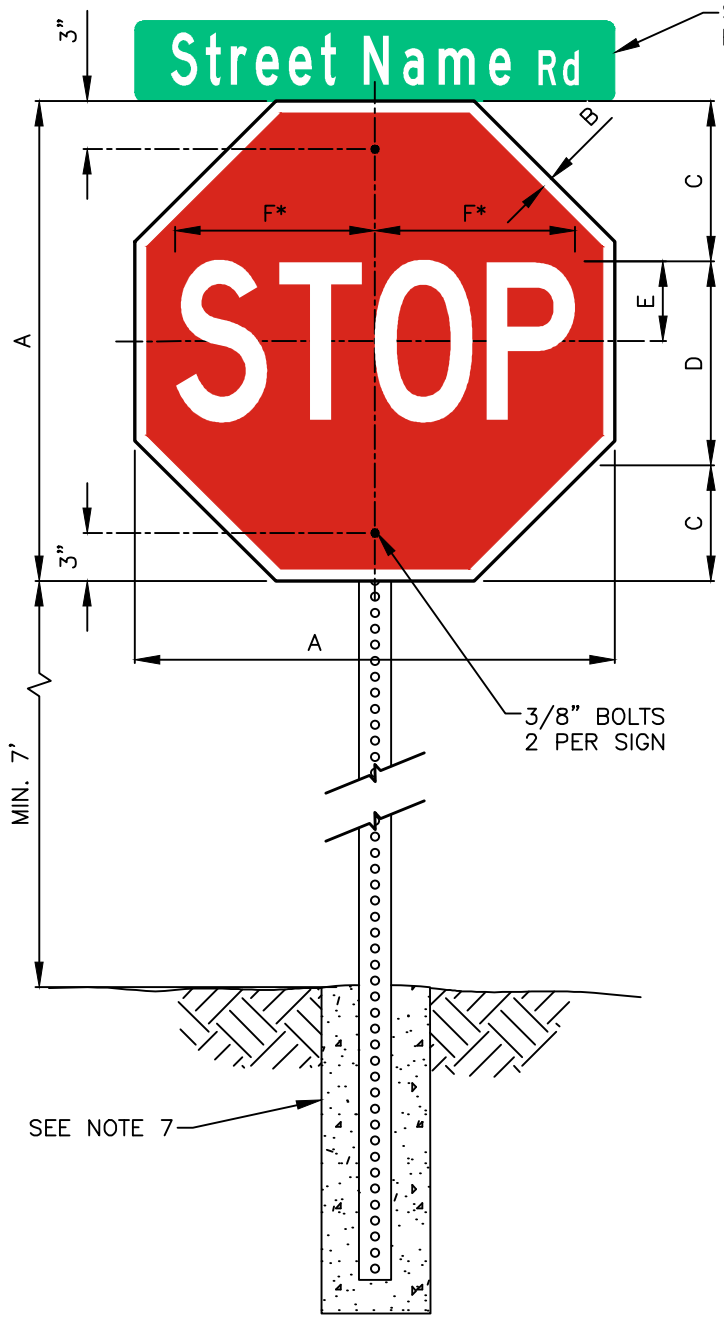
NOTES:

1. ALL LETTER STYLES SHALL BE FHWA SERIES B WITH A SPACING RATIO AS NOTED IN THE DETAIL. MAXIMUM NUMBER OF CHARACTERS INCLUDING SPACES (EXCLUDES SUFFIX) SHALL BE 13.
2. SIGN WIDTH VARIES BASED ON STREET NAME. SIGN WIDTH VARIES IN 6" INCREMENTS, MAX LENGTH 48". IF SIGN WIDTH IS AN ISSUE, REDUCE EDGE OR TEXT SPACING.
3. CENTER ENTIRE LEGEND PACKAGE HORIZONTALLY ON EACH PANEL.
4. COLORS:
   GREEN / WHITE – NORMAL
   BLACK / WHITE – PRIVATE
   BROWN / WHITE – ANDY DEVINE AVE.
5. ALL SIGN FABRICATION SHALL BE ELECTRO–CUT FILM AND 3M WHITE HIGH INTENSITY PRISMATIC SHEETING OR APPROVED EQUAL.
6. SIGN PLATE MATERIALS SHALL BE ALUMINUM WITH A THICKNESS OF 0.125 INCHES.
7. ALL SIGN LOCATIONS SHALL BE APPROVED BY THE INSPECTOR PRIOR TO INSTALLATION.
8. ALL SIGN BASES INSTALLED ON COLLECTORS, ARTERIALS AND AT ALL INTERSECTIONS SHALL BE INSTALLED PER C.O.K. STD DETAIL 132. OTHER SIGNS INSTALLED ON RESIDENTIAL STREETS MAY USE MAG 131 (TYPE A) WITH 3 LB. "U" CHANNEL.
9. STREET SIGNS TO BE MOUNTED ON STOP SIGN WHEN AVAILABLE. BASE TO COK STD DETAIL 132.
10. ALL DIMENSIONS ARE IN INCHES.
11. PROVIDE MIN RETROFLECTIVITY LEVELS IN ACCORDANCE WITH MUTCD TABLE 2A–3.

N.T.S.

| DETAIL NO. 134 | STANDARD DETAIL | 10" STREET NAME SIGN | CITY OF KINGMAN | DETAIL NO. 134 |
|---|---|---|---|---|

R1-1
STOP




NOTES:

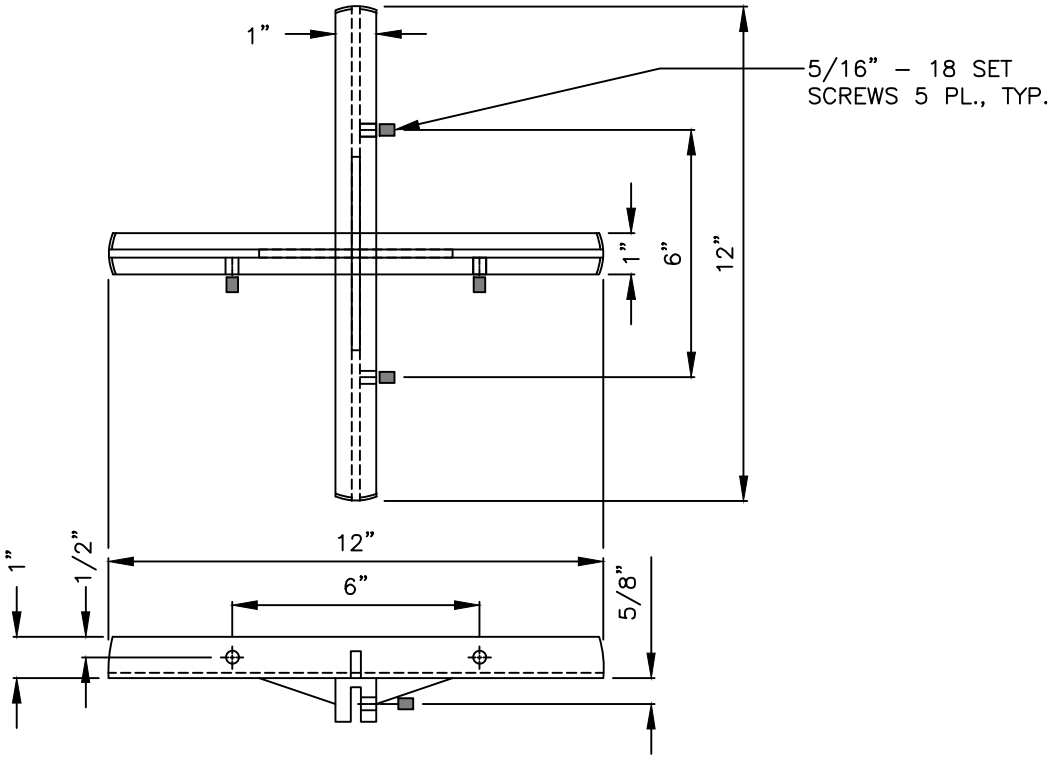
1. STOP SIGN SHALL COMPLY WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) INCLUDING ARIZONA SUPPLEMENT AS APPLICABLE.
2. COLORS:
   LEGEND – WHITE
   BACKGROUND – RED
3. MINIMUM SIGN HEIGHT MEASURED VERTICALLY FROM BOTTOM OF SIGN TO ELEVATION OF THE NEAR EDGE OF TRAVELED WAY OR SIDEWALK.
4. ALL SIGN FABRICATION SHALL ELECTRO–CUT FILM AND 3M WHITE HIGH INTENSITY PRISMATIC SHEETING OR APPROVED EQUAL.
5. SIGN PLATE MATERIALS SHALL BE ALUMINUM WITH A THICKNESS OF 0.080 INCHES.
6. ATTACH SIGN FACE TO POST WITH 3/8" DIA. BOLTS 2 PER SIGN.
7. ALL STOP SIGN BASES SHALL BE INSTALLED PER C.O.K. STD DETAIL 132.
8. ALL LETTER STYLES SHALL BE FHWA STYLES SERIES C WITH A SPACING RATIO AS NOTED IN THE DETAIL.
9. REFERENCE DETAIL 133 FOR PLACEMENT LOCATION.

*Reduce spacing 40%

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| 30 | 0.75 | 10 | 10C | 5 | 12.5 |
| 36 | 0.875 | 12 | 12C | 6 | 15 |
| 48 | 1.25 | 16 | 16C | 8 | 20 |

N.T.S.

| DETAIL NO. 135 | STANDARD DETAIL | STOP SIGN | CITY OF KINGMAN | DETAIL NO. 135 |
|---|---|---|---|---|




DOUBLE SNS CROSS-PIECE 12"

NOTES:

1. BRACKET MATERIAL: CAST ALUMINUM ALLOY A380
2. SET SCREW MATERIAL: STAINLESS STEEL
3. DIMENSIONS SHOWN AFTER FINISH.
4. APPLY 25–40 INCH–POUNDS OF PRESSURE TO SET SCREWS.

N.T.S.

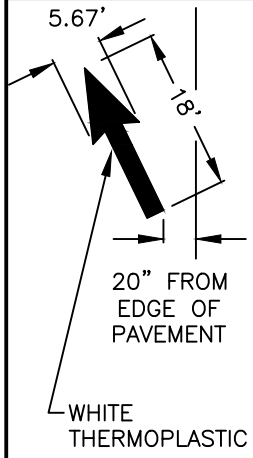
| DETAIL NO. 137 | STANDARD DETAIL | STREET NAME SIGN HARDWARE DETAILS FOR PIPE POST MOUNT | CITY OF KINGMAN | DETAIL NO. 137 |
|---|---|---|---|---|


NOTES:

1. 12” MINIMUM STOP BAR UNLESS INSTALLED IN CONJUNCTION WITH AN OVERSIZED 36” STOP SIGN. IF STOP SIGN IS 36” OR GREATER INSTALL A 16” STOP BAR.
2. SEE MUTCD 2009 EDITION SECTION 3B.16
3. SEE MCPW TRAFFIC SIGNING AND STRIPING REQUIREMENTS (PAVEMENT MARKING POLICIES AND DETAILS).

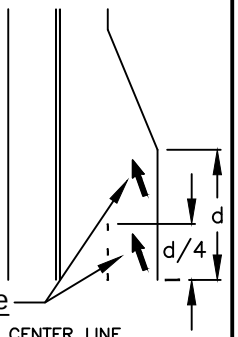
D1 | STOP BAR | N.T.S.

D2 | – | N.T.S.




NOTES:

1. ONLY INSTALL LANE REDUCTION ARROWS ON ROADS POSTED 45 MPH OR GREATER.
2. D = ADVANCE WARNING DISTANCE.
3. D/4 = TERMINATE LANE CENTER LINE STRIPING 1/4 OF ADVANCE WARNING SIGN DISTANCE.
4. SEE MUTCD 2009 EDITION SECTION 3B.20.




Lane Reduction Arrow Installation Guidance

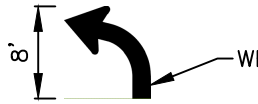
1. MUST INSTALL 1 ARROW 20’ PRIOR TO END OF LANE CENTER LINE.
2. MINIMUM DISTANCE BETWEEN ARROWS = 72’
3. MAXIMUM DISTANCE BETWEEN ARROWS = 180’
4. 0’ TO 89’ = 1 ARROW , 90’ TO 270’ = 2 ARROWS
   271’ TO 450’ = 3 ARROWS, INSTALL 1 ARROW PER 90’.

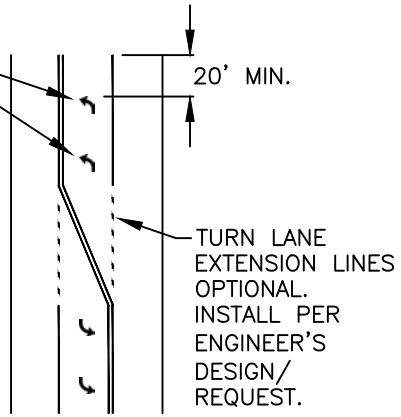
D3 | LANE REDUCTION ARROW MARKING | N.T.S.

Turn Arrow Installation Guidance

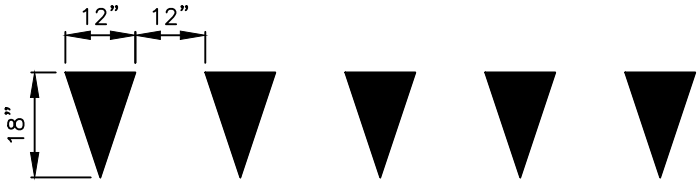
1. MINIMUM 1 ARROW PER TURN LANE.
2. MINIMUM DISTANCE BETWEEN ARROWS = 32’
3. MAXIMUM DISTANCE BETWEEN ARROWS = 80’
4. 0’ TO 88’ = 1 ARROW , 89’ TO 176’ = 2 ARROWS
   177’ TO 264’ = 3 ARROWS, INSTALL 1 ARROW PER 88’.
5. MINIMUM 20’ OFFSET FROM END OF TURN LANE TO TURN ARROW.

* SPACING MAY BE ADJUSTED BASED ON TURN LANE LENGTH.



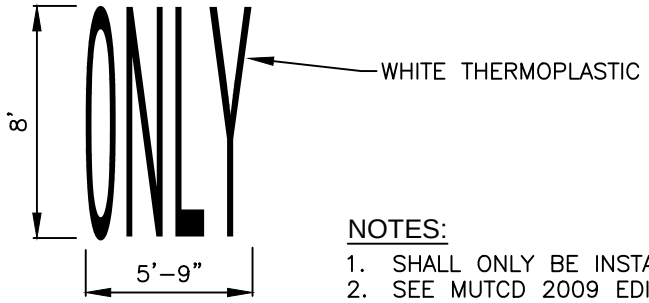




D4 | TURN ARROW MARKING | N.T.S.




NOTE:
SEE MUTCD 2009 EDITION SECTION 3B.16

D5 | YIELD BAR | N.T.S.

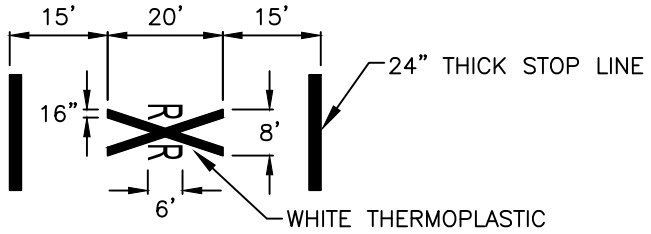



NOTES:

1. SHALL ONLY BE INSTALLED IN DROP LANES.
2. SEE MUTCD 2009 EDITION SECTION 3B.20

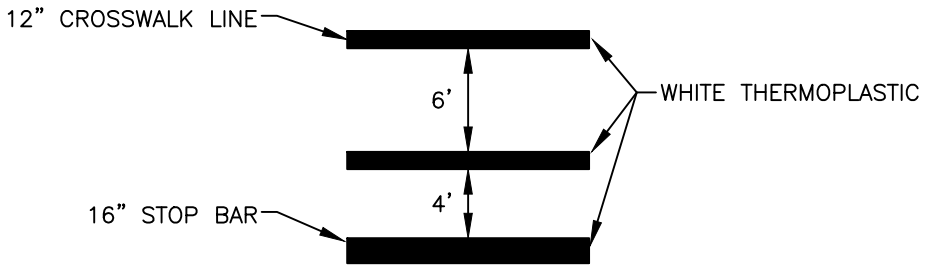
D6 | ONLY MARKING | N.T.S.

| DETAIL NO. 138-1 | STANDARD DETAIL | PAVEMENT MARKING DETAILS | CITY OF KINGMAN | DETAIL NO. 138-1 |
|---|---|---|---|---|



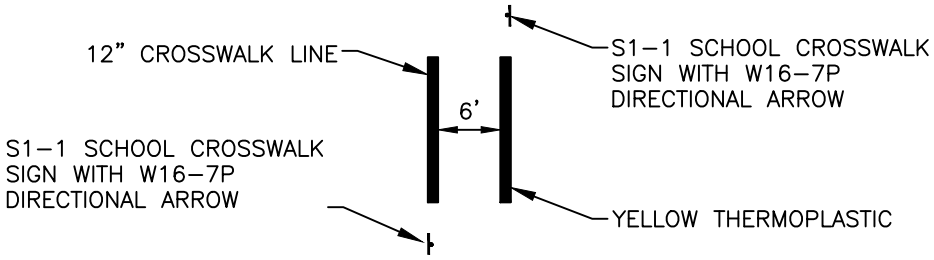

NOTE:
SEE MUTCD 2009 EDITION SECTION 8B.27 AND 8B.28

D7 | RAILROAD CROSSING MARKING | N.T.S.



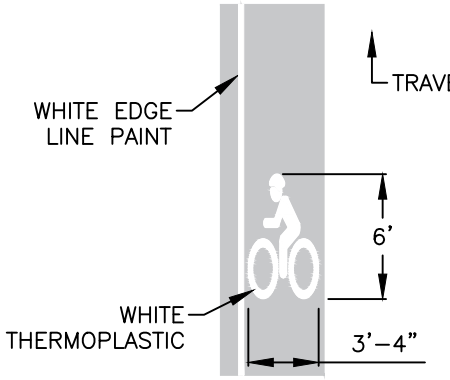

NOTE:
SEE MUTCD 2009 EDITION SECTION 3B.16 AND 3B.18
FOR CONTINENTAL AT SELECT AREAS AND SIGNALS.

D8 | PEDRESTRIAN CROSSWALK | N.T.S.




NOTES:
1. SEE CITY OF KINGMAN STANDARD DETAIL "SCHOOL ZONE SIGNING PLAN" FOR SIGN LOCATIONS AND INSTALLATION.
2. SEE MUTCD 2009 EDITION SECTION 3B.18, 7B.12, AND 7C.02

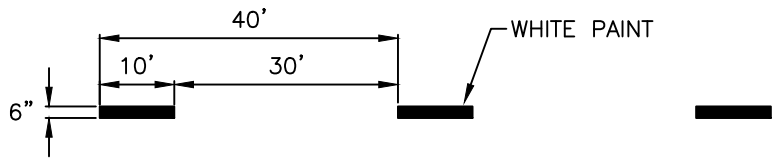
D9 | SCHOOL CROSSWALK | N.T.S.




NOTES:
1. SEE MUTCD 2009 EDITION SECTION 3B.06, 3B.20 AND 9C.04

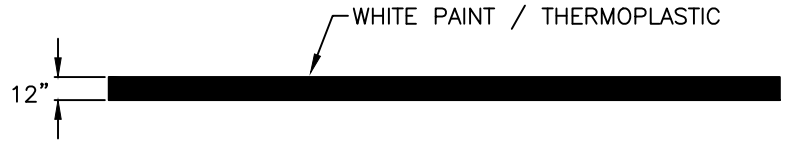
D10 | BIKE SYMBOL MARKING | N.T.S.

| DETAIL NO. 138-2 | STANDARD DETAIL | PAVEMENT MARKING DETAILS | CITY OF KINGMAN | DETAIL NO. 138-2 |
|---|---|---|---|---|



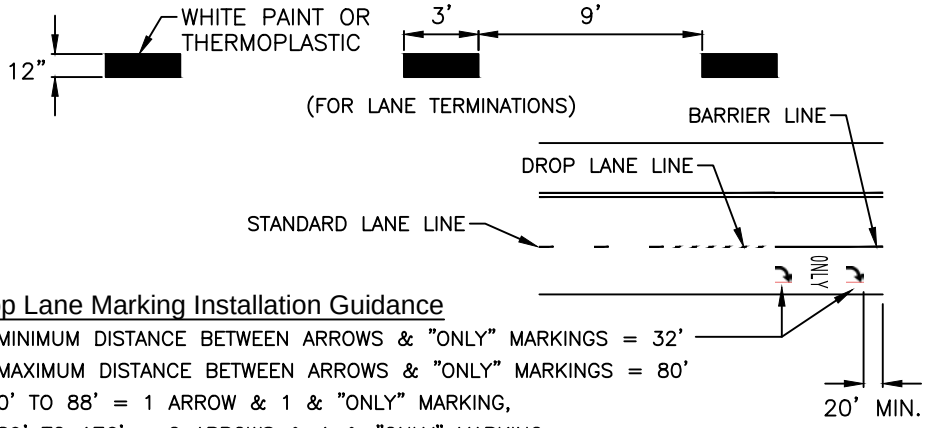

NOTE:
SEE MUTCD 2009 EDITION SECTION 3A.06 AND 3B.04

B1 CENTER LANE LINE N.T.S.




NOTE:
SEE MUTCD 2009 EDITION SECTION 3A.06 AND 3B.04

B2 BARRIER LINE N.T.S.

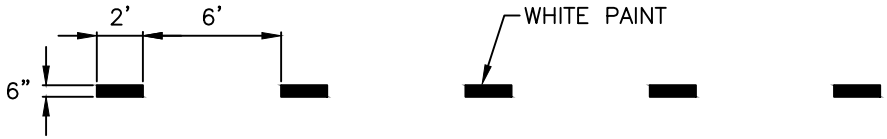



Drop Lane Marking Installation Guidance

1. MINIMUM DISTANCE BETWEEN ARROWS & "ONLY" MARKINGS = 32'
2. MAXIMUM DISTANCE BETWEEN ARROWS & "ONLY" MARKINGS = 80'
3. 0' TO 88' = 1 ARROW & 1 & "ONLY" MARKING,
   89' TO 176' = 2 ARROWS & 1 & "ONLY" MARKING,
   177' TO 264' = 3 ARROWS & 1 & "ONLY" MARKING,
   265' TO 352' = 3 ARROWS & 2 & "ONLY" MARKINGS.
4. MINIMUM 20' OFFSET FROM END OF DROP LANE TO TURN ARROW.
5. "ONLY" MARKING TO LOCATED HALF THE DISTANCE BETWEEN TURN ARROWS.

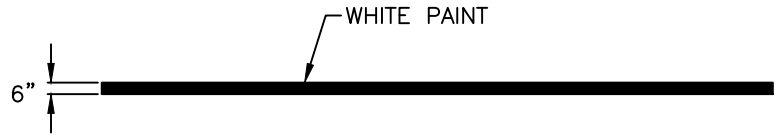
NOTE: SEE MUTCD 2009 EDITION SECTION 3A.06 AND 3B.04

B3 DROP LANE LINE & LAYOUT N.T.S.




NOTES:
1. OPTIONAL TURN LANE EXTENSIONS MAY BE INSTALLED PER ENGINEER DESIGN / REQUEST.
2. SEE MUTCD 2009 EDITION SECTION 3A.06 AND 3B.08.

B4 TURN LANE & EDGE LINE EXTENSION N.T.S.

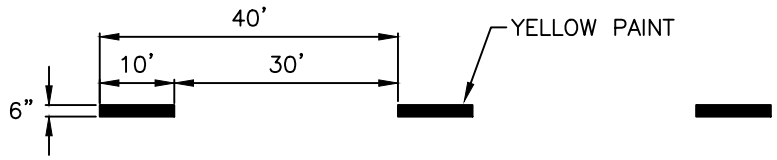



NOTE:
SEE MUTCD 2009 EDITION SECTION 3A.06 AND 3B.06

C1 PAINTED EDGE LINE N.T.S.

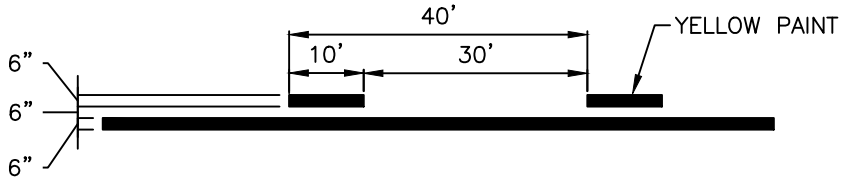
C2 – N.T.S.

| DETAIL NO. 138-3 | STANDARD DETAIL | STRIPING DETAILS - LANE LINES & EDGE LINES | CITY OF KINGMAN | DETAIL NO. 138-3 |
|---|---|---|---|---|



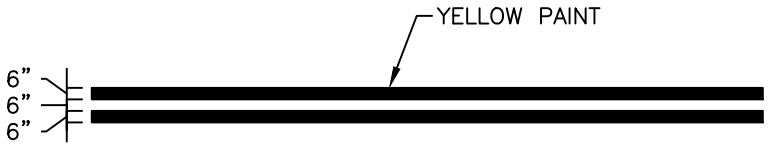

NOTE:
SEE MUTCD 2009 EDITION SECTION 3A.06 AND 3B.01

A1 | BROKEN CENTER LINE | N.T.S.



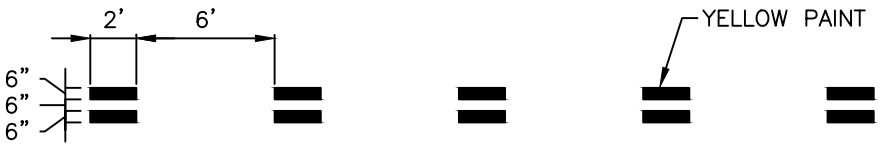

NOTES:
SEE MUTCD 2009 EDITION SECTION 3A.06 AND 3B.01 AND MCPW TRAFFIC SIGNING AND STRIPING REQUIREMENTS (PAVEMENTS MARKING POLICIES AND DETAILS).

A2 | CENTER LINE WITH NO PASSING | N.T.S.




NOTES:
SEE MUTCD 2009 EDITION SECTION 3A.06 AND 3B.01 AND MCPW TRAFFIC SIGNING AND STRIPING REQUIREMENTS (PAVEMENTS MARKING POLICIES AND DETAILS).

A3 | DOUBLE NO PASS CENTER LINE | N.T.S.

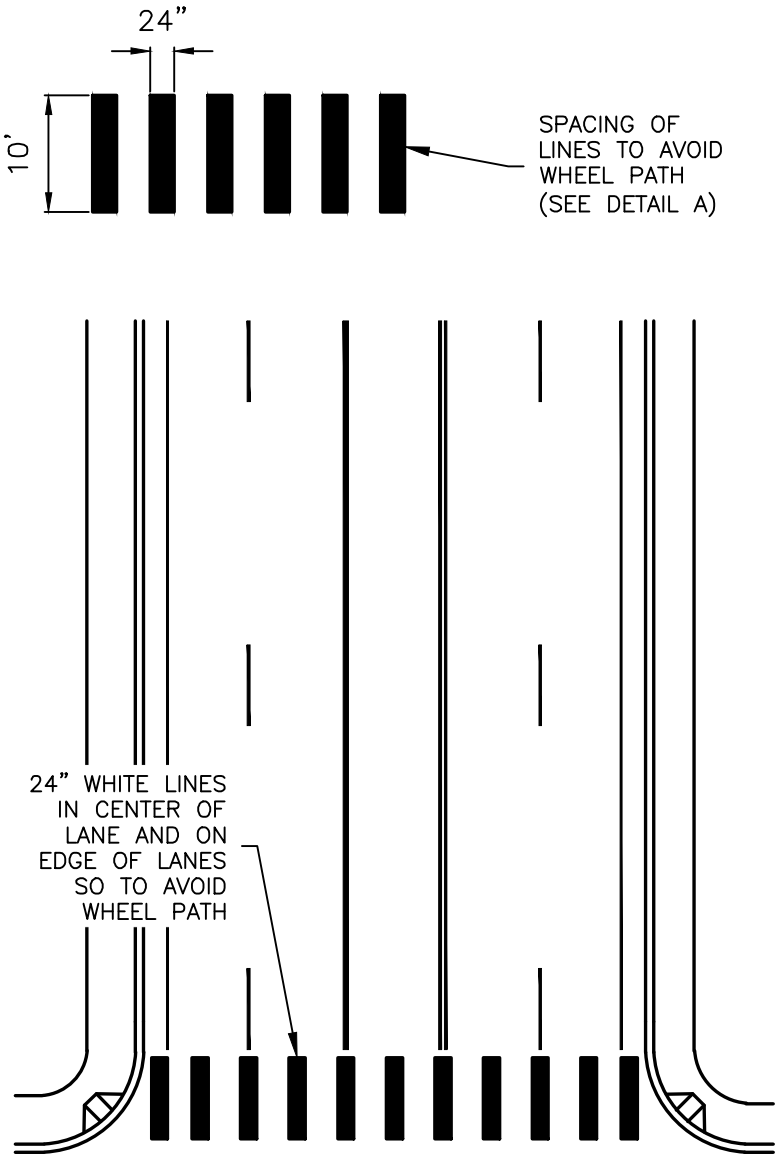



NOTES:
1. ONLY INSTALLED AT INTERSECTIONS AS GUIDANCE.
2. SEE MUTCD 2009 EDITION SECTION 3A.06, 3B.01 AND 3B.08 AND MCPW TRAFFIC SIGNING AND STRIPING REQUIREMENTS (PAVEMENTS MARKING POLICIES AND DETAILS).

A4 | CENTER LINE EXTENSION | N.T.S.

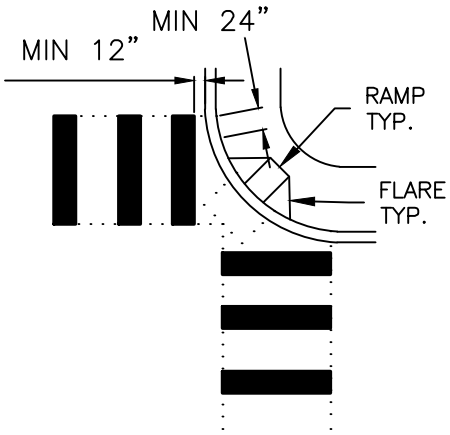
| DETAIL NO. 138-4 | STANDARD DETAIL | STRIPING DETAILS - CENTER LINES | CITY OF KINGMAN | DETAIL NO. 138-4 |
|---|---|---|---|---|

## TYPICAL CONTINENTAL CROSSWALK MARKINGS

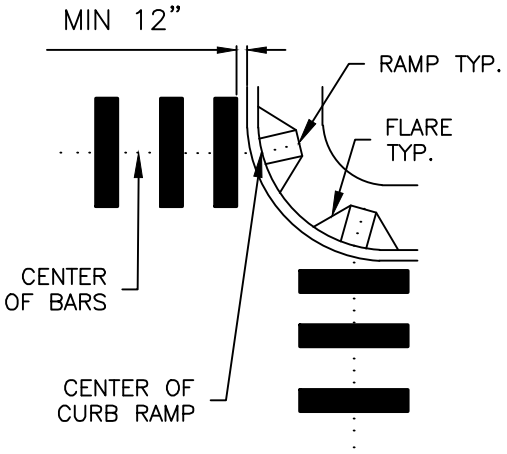



DETAIL A

## SINGLE RAMP CORNER




## DUAL RAMP CORNER




LEGEND

- CONSTRUCTION LINE
- CURB AND GUTTER
- CROSSWALK BAR (24" WIDE)

NOTES:

1. ALL SIGNALIZED CROSSWALKS ON ARTERIAL STREETS SHALL HAVE CONTINENTAL MARKINGS UNLESS APPROVED OTHERWISE.
2. MARKED CROSSWALK LOCATIONS CONSISTING OF BRICK PAVERS OR OTHER DECORATIVE PAVING SHALL BE PROVIDED WITH TRANSVERSE LINES IN ACCORDANCE WITH MUTCD STANDARDS.
3. SIGNALIZED INTERSECTIONS SHALL BE PROVIDED WITH MARKED CROSSWALK ACROSS EACH LEG WHERE PEDESTRIANS ARE PERMITTED TO CROSS.
4. CONTINENTAL CROSSWALK MARKINGS SHALL BE ALIGNED PARALLEL TO THE DIRECTION OF VEHICULAR TRAVEL.
5. MARKED CROSSWALKS SHOULD BE 10 FEET IN WIDTH (MIN. 8' W/ APPROVAL). PLACEMENT OF CONTINENTAL CROSSWALKS SHALL COMPLY WITH ACCESSIBILITY REGULATIONS PER THE MOST RECENT VERSION OF AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS.
6. THE CROSSWALK BETWEEN A DUAL RAMP CORNER AND A SINGLE RAMP CORNER SHOULD BE 10 FEET WIDE AND SATISFY THE MINIMUM OF 2 FEET BEYOND THE FLARE REQUIREMENT FOR THE SINGLE RAMP.
7. CONTINENTAL CROSSWALK BARS SHALL BE UNIFORM WITHIN THE SAME CROSSING. NO PARTIAL BARS SHALL INSTALLED.
8. A CROSSWALK BAR SHALL BE CENTERED IN THE CENTER OF THE CROSSING.
9. ALL MARKINGS SHALL BE APPROVED THERMOPLASTIC MATERIALS COMPLIANT WITH MUTCD RETROREFLECTIVITY STANDARDS AND SHALL BE SKID RESISTANT. MARKINGS SHALL HAVE A MINIMUM THICKNESS OF 90 MILS.

N.T.S.

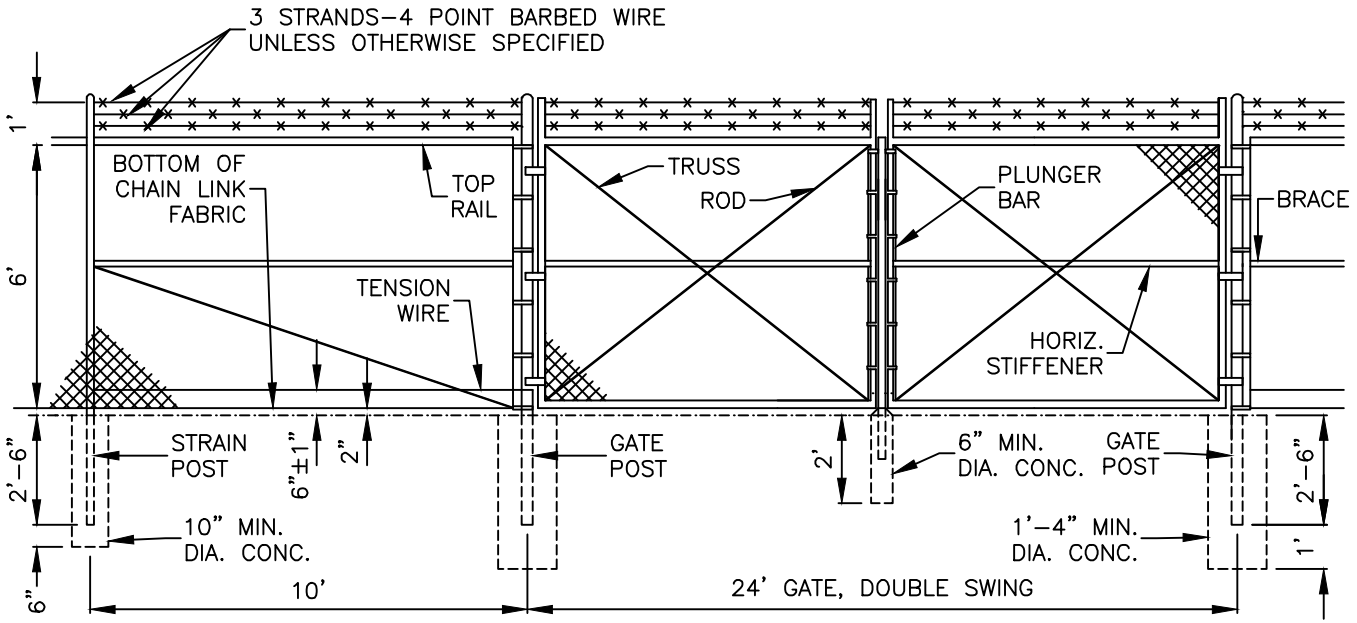
| DETAIL NO. 139 | STANDARD DETAIL | CONTINENTAL CROSSWALK MARKINGS LAYOUT AND NOTES | CITY OF KINGMAN | DETAIL NO. 139 |
|---|---|---|---|---|

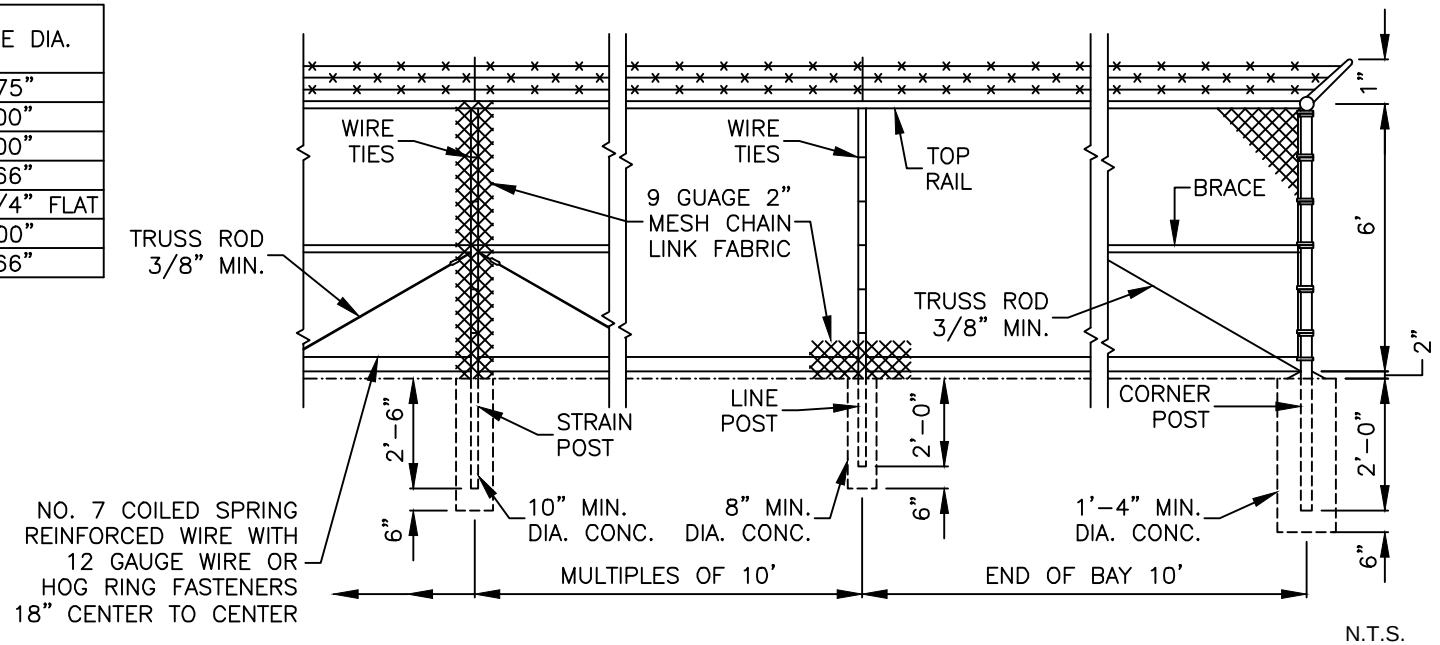
NOTES:

1. ALL CONCRETE SHALL BE CLASS 'C' PER SECT. 725.
2. FITTINGS NOT SPECIFICALLY DETAILED SHALL BE HEAVY DUTY DESIGN.
3. STRAIN POSTS SHALL BE SPACED AT 500' MAXIMUM SPACING.
4. BOTH CORNER AND STRAIN POSTS SHALL HAVE STRAIN PANELS.
5. ALL POSTS SHALL BE CAPPED.
6. MEMBER SIZES SHALL BE THE FOLLOWING:

| MEMBER | AISC SIZE | OUTSIDE DIA. |
|---|---|---|
| CORNER POST | 2-1/2" | 2.875" |
| LINE POST | 1-1/2" | 1.900" |
| STRAIN POST | 1-1/2" | 1.900" |
| BRACE | 1-1/4" | 1.666" |
| STRETCH BAR | 3/16"x3/4" FLAT | 3/16"x3/4" FLAT |
| GATE POST | 3-1/2" | 4.000" |
| TOP RAIL | 1-1/4" | 1.666" |

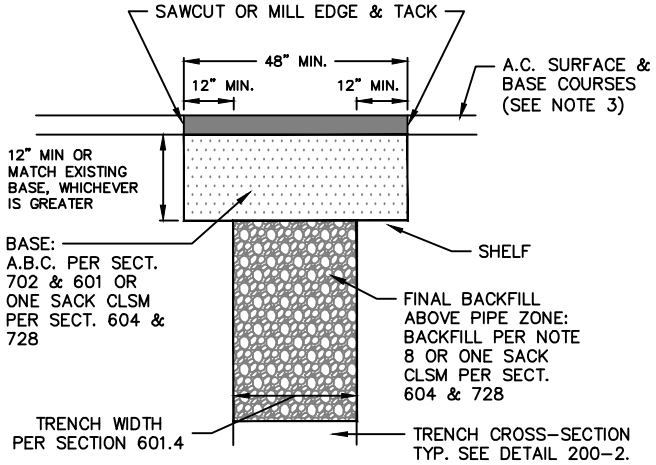
7. CONSTRUCTION AND MATERIALS SHALL CONFORM TO SECT. 420 AND 772, RESPECTIVELY. SEE TABLE 772 FOR WEIGHTS OF MEMBERS.
8. LOCKING HARDWARE FOR MAN GATES SHALL BE MALLEABLE DROP FORK LATCH TYPE OR AS APPROVED.



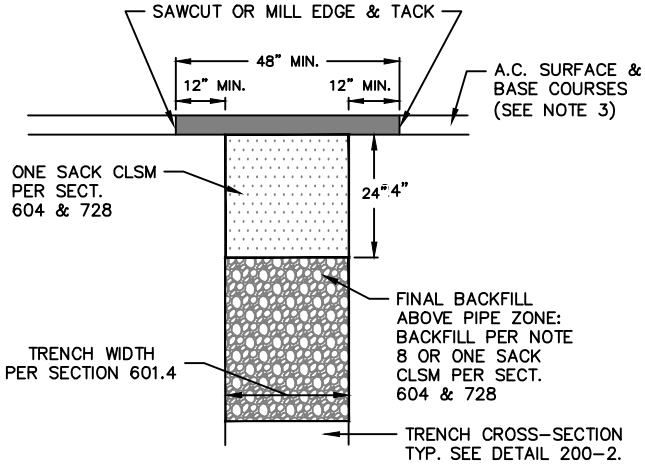




N.T.S.

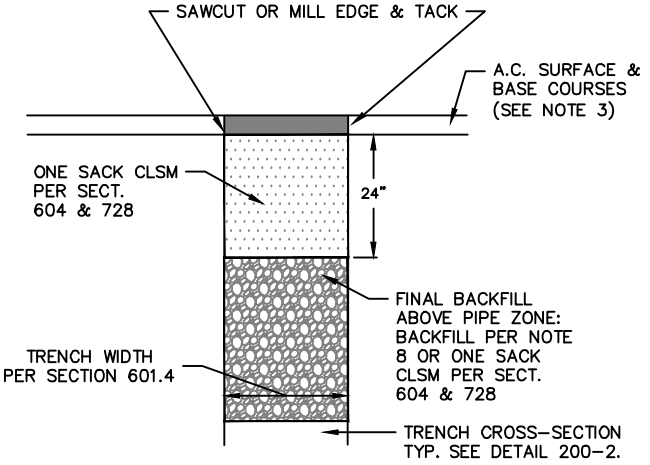
| DETAIL NO. 160 | STANDARD DETAIL | 6' CHAIN LINK FENCE AND GATE | CITY OF KINGMAN | DETAIL NO. 160 |
|---|---|---|---|---|



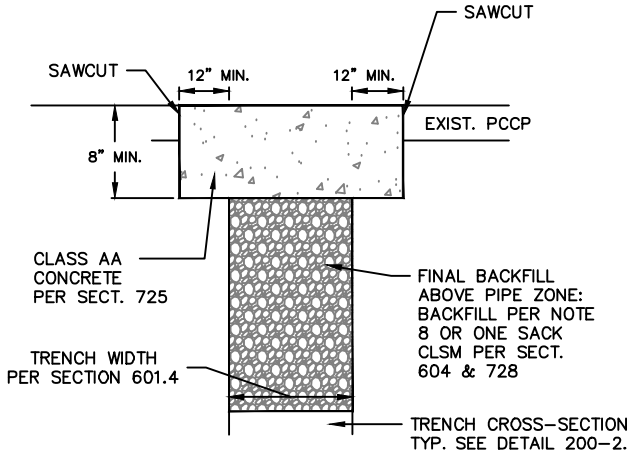

"T TOP" TRENCH REPAIR




TYPE "A" TRENCH REPAIR

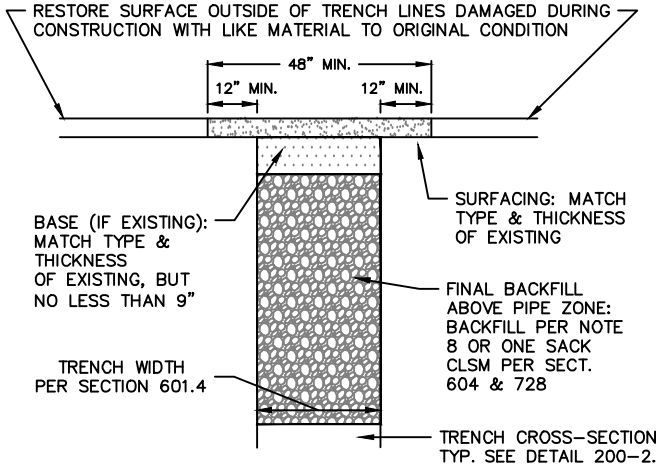



TYPE "B" TRENCH REPAIR



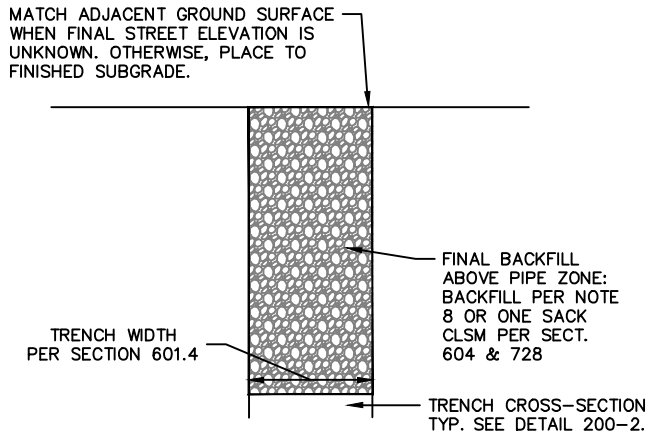

TYPE "C" TRENCH REPAIR

(TRENCH IN PORTLAND CEMENT CONCRETE PAVEMENT)




TYPE "D" TRENCH REPAIR

(TRENCH NOT UNDER CONCRETE OR ASPHALT PAVEMENT)




TYPE "E" TRENCH REPAIR

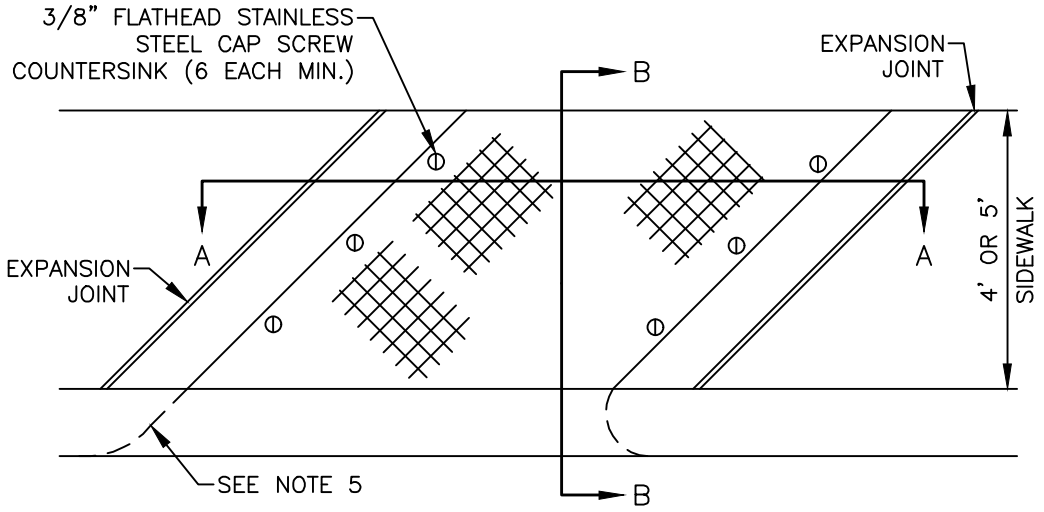
(TRENCH IN FUTURE ROADWAY PRISM OR ALLEY)

## NOTES:

1. PAVEMENT MATCHING AND SURFACE REPLACEMENT SHALL BE IN ACCORDANCE WITH SECTION 336 OR AS MODIFIED HEREIN
2. BASE, FINAL BACKFILL, AND PIPE EMBEDMENT ZONE COMPACTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH MAG SECT. 601 AND CITY OF KINGMAN ADDENDUMS.
3. ASPHALT CONCRETE SURFACE AND BASE COURSES SHALL COMPLY WITH SECTION 336.2.4.1 AND AS SPECIFIED IN THE CITY OF KINGMAN STREETS AND SIDEWALK RULES AND REGULATIONS SEC. 1-10 TABLE TWO.
4. USE TYPE "A" FOR LONGITUDINAL TRENCH REPAIR. USE "T-TOP" FOR TRANSVERSE TRENCH REPAIR OR WHEN TRENCH GOES THROUGH AN INTERSECTION. TYPE "B" TRENCH REPAIR MAY BE USED ON NON ARTERIAL STREETS.
5. WHERE TYPE "A" OR TYPE "B" TRENCH REPAIR IS REQUIRED, T-TOP TRENCH REPAIR MAY BE USED AS AN ALTERNATIVE.
6. PROVIDE MINIMUM 12" WIDE SHELF AS SHOWN IN "T-TOP" TRENCH REPAIR AT ENDS OF TYPE "A" TRENCH REPAIR EXCEPT WHERE EDGE ABUTS EXISTING CONCRETE.
7. SEE DETAIL 200-2 FOR REMNANT PAVEMENT REMOVAL REQUIREMENTS.
8. FINAL BACKFILL REQUIREMENTS-4 INCH MINUS MATERIAL WITH THE P.I. NOT EXCEEDING 20 AND THE PERCENT PASSING THE 200 SIEVE NOT EXCEEDING 60.
9. THE TEMPORARY PATCH MUST BE REPLACED WITH HOT MIX WITHIN 15 WORKING DAYS OF INITIAL PLACEMENT. COLD MIX MUST BE PLACED IMMEDIATELY IF FINAL BACKFILL IS OTHER THAN SLURRY. THE CONTRACTOR OR PERMITTEE WILL BE RESPONSIBLE TO CHECK AND MAINTAIN THE TEMPORARY PATCH OR SLURRY TRENCH SURFACE UNTIL HOT MIX ASPHALT PAVEMENT REPLACEMENT IS COMPLETE.
10. THE JOINT LOCATION OR JOINT CONFIGURATION MAY VARY FROM THAT SHOWN TO ELIMINATE REMNANTS, TO ELIMINATE FULL DEPTH SAWCUT JOINTS FORM BEING LOCATED WITHIN A WHEEL PATH AS REQUIRED BY SECTION 336, OR WHEN AN OFFSET JOINT IS CONSTRUCTED.

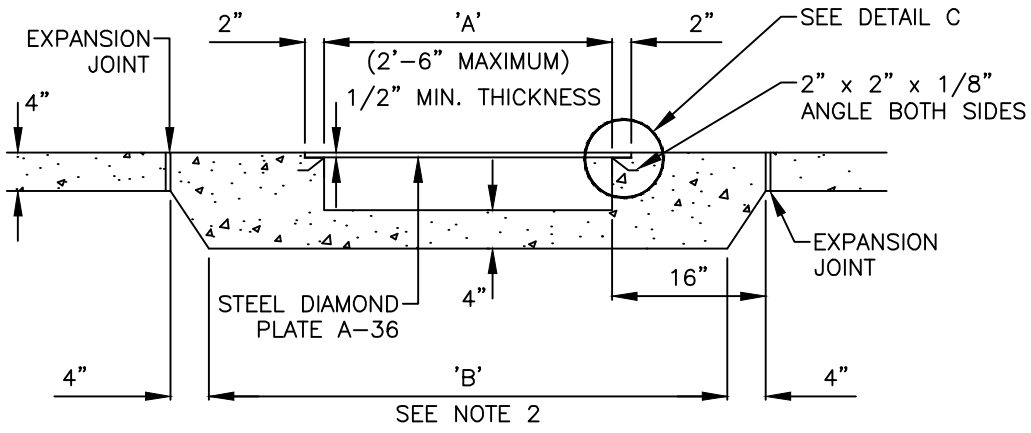
N.T.S.

| DETAIL NO. 200-1 | STANDARD DETAIL | BACKFILL, PAVEMENT AND SURFACE REPLACEMENT | CITY OF KINGMAN | DETAIL NO. 200-1 |
|---|---|---|---|---|

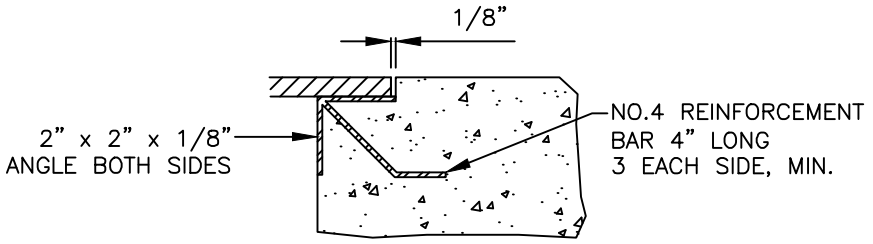



NOTES:

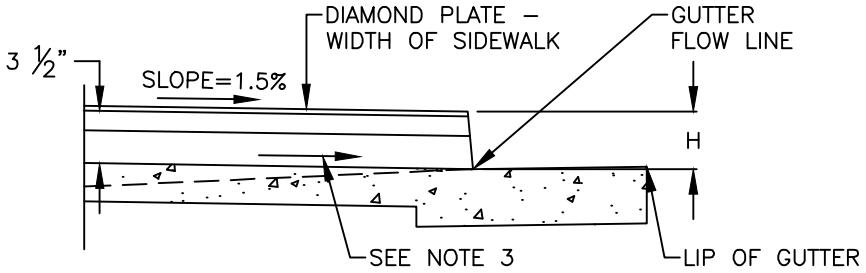
1. ANGLE EQUALS 45° UNLESS SPECIFIED ON PLAN.
2. DIMENSION 'B' EQUALS 'A' + 2'
3. ( ⟶ ) INDICATES DIRECTION OF FLOW.
4. PAINT STEEL ACCORDING TO SECTION 790. PAINT COLOR #9.
5. R EQUALS 6" UNLESS OTHERWISE DIRECTED.
6. H EQUALS CURB FACE HEIGHT.
7. DIAMOND PLATE SHALL BE ASTM A36.
8. CONCRETE SHALL BE CLASS B PER SECT. 725 AND INSTALLED PER SECT. 505.
9. PLACE EROSION CONTROL AT INLET AS APPROVED BY CITY ENGINEER.
10. DIAMOND PLATE MUST BE ONE PIECE UNLESS APPROVED OTHERWISE.




SECTION 'A-A'




DETAIL C

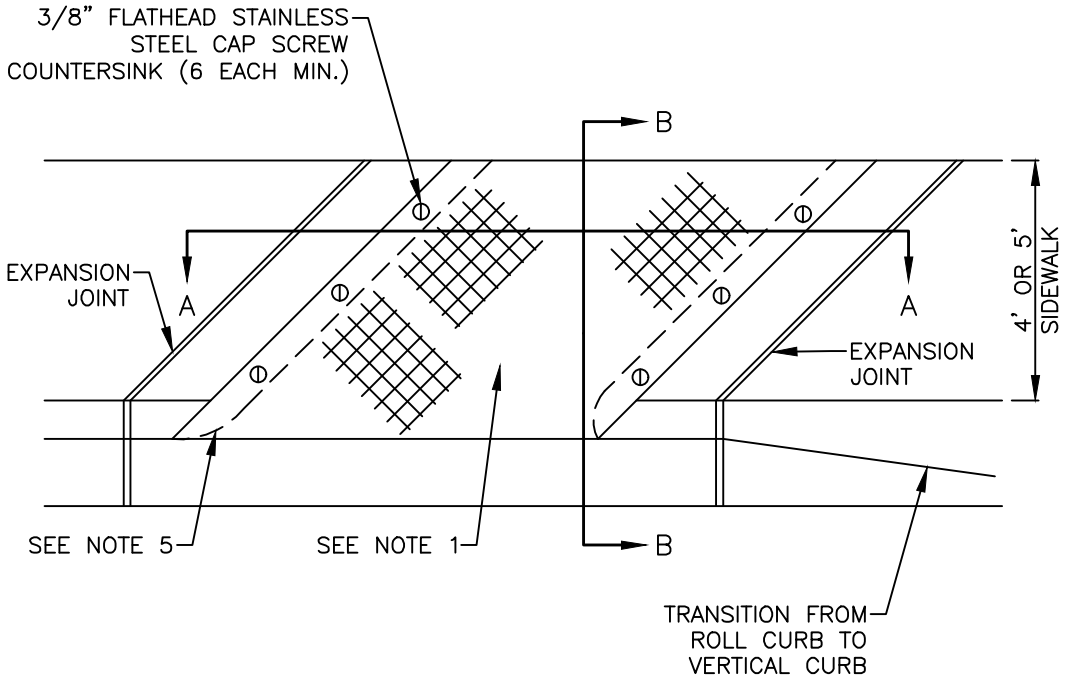



SECTION 'B-B'

N.T.S.

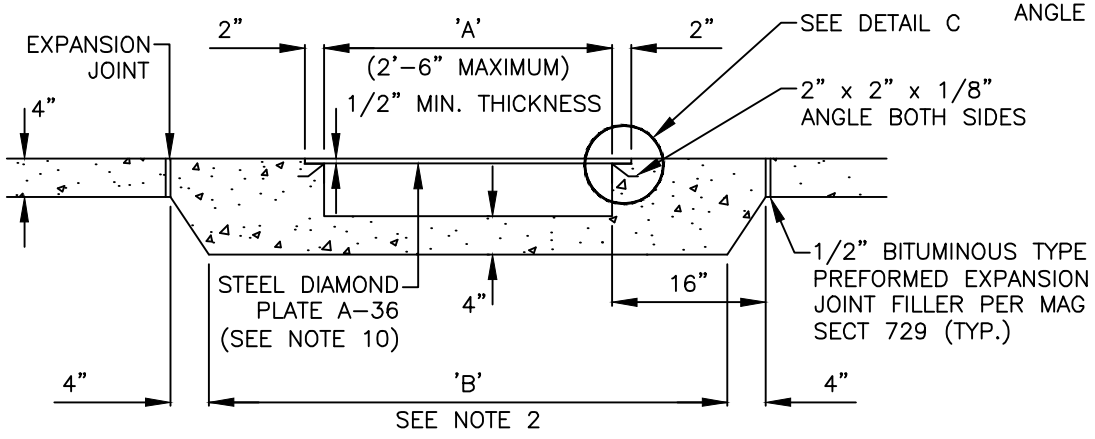
| DETAIL NO. 203-1 | STANDARD DETAIL | STEEL PLATE SCUPPER FOR ROLLED CURB | CITY OF KINGMAN | DETAIL NO. 203-1 |
|---|---|---|---|---|

Effective: August 18, 2020 REVISED 2017 Ordinance No. 1910

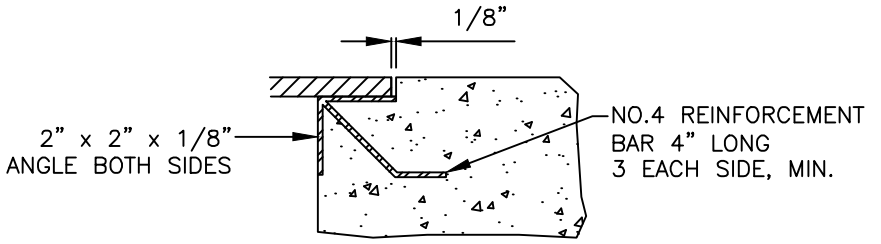



NOTES:

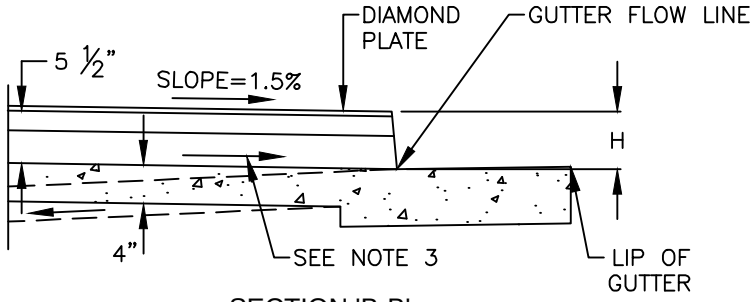
1. ANGLE EQUALS 45° UNLESS SPECIFIED ON PLAN.
2. DIMENSION 'B' EQUALS 'A' + 2'
3. (⟶) INDICATES DIRECTION OF FLOW.
4. PAINT STEEL ACCORDING TO SECTION 790. PAINT COLOR #9.
5. R EQUALS 1" UNLESS OTHERWISE DIRECTED.
6. H EQUALS CURB FACE HEIGHT.
7. FOR ROLL CURB AND GUTTER, USE 2' TRANSITIONS TO VERTICAL CURB.
8. CONCRETE SHALL BE CLASS B PER SECT. 725 AND INSTALLED PER SECT. 505.
9. PLACE EROSION CONTROL AT INLET/OUTLET AS APPROVED.
10. DIAMOND PLATE MUST BE ONE PIECE UNLESS APPROVED OTHERWISE.




SECTION 'A-A'



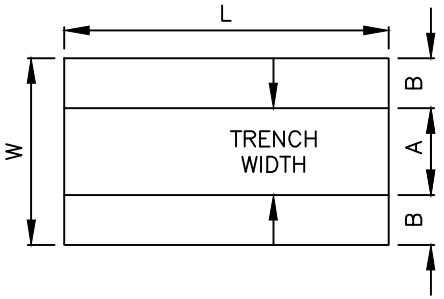

DETAIL C



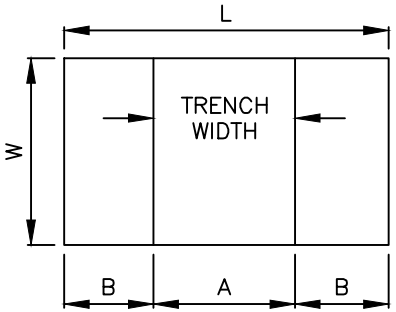

SECTION 'B-B'

N.T.S.

| DETAIL NO. 203 | STANDARD DETAIL | STEEL PLATE SCUPPER | CITY OF KINGMAN | DETAIL NO. 203 |
|---|---|---|---|---|




LONGITUDINAL
STEEL PLATE

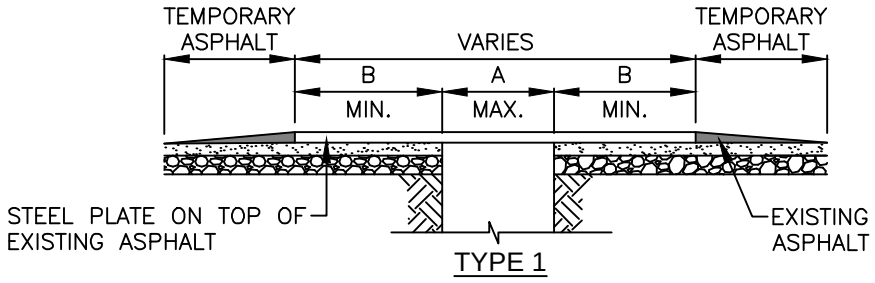



TRANSVERSE
STEEL PLATE

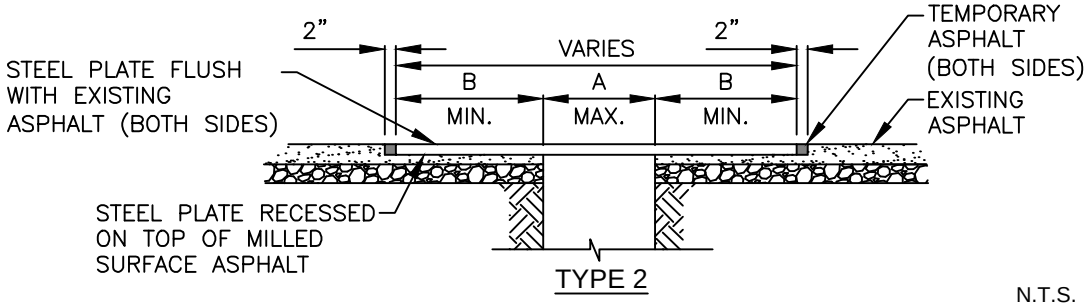
| PLATE SIZE | | | | | | |
|---|---|---|---|---|---|---|
| LONGITUDINAL | | | | | TRANSVERSE | |
| (A) | (B) | THICKNESS | (A) | (B) | (A) | (B) |
| 12" | 18" | 1" | 4' | 8' | 58" | 19" |
| 12" | 18" | 1" | 4' | 10' | 58" | 31" |
| 24" | 18" | 1" | 5' | 10' | 70" | 25" |
| 36" | 18" | 1" | 6' | 10' | 44" | 38" |
| 48" | 18" | 1" | 7' | 10' | 52" | 34" |
| 60" | 18" | 1" | 8' | 10' | 58" | 31" |
| 12" | 18" | 1-1/4" | 4' | 15' | 88" | 47" |
| 24" | 18" | 1-1/4" | 5' | 12' | 104" | 20" |
| 36" | 18" | 1-1/4" | 6' | 12' | 66" | 39" |
| 36" | 18" | 1-1/4" | 6' | 16' | 66" | 63" |
| 48" | 18" | 1-1/4" | 7' | 12' | 76" | 33" |
| 48" | 18" | 1-1/4" | 7' | 16' | 76" | 58" |
| 60" | 18" | 1-1/4" | 8' | 12' | 86" | 29" |
| 60" | 18" | 1-1/4" | 8' | 15' | 86" | 47" |
| 60" | 18" | 1-1/4" | 8' | 16' | 86" | 63" |
| 60" | 18" | 1-1/4" | 8' | 20' | 86" | 77" |
| 60" | 18" | 1-3/8" | 8' | 20' | 102" | 69" |

NOTES:

1. USE TYPE 1 PLATE INSTALLATION WHERE POSTED SPEED LIMIT IS LESS THAN 30 MPH. USE TYPE 2 PLATE INSTALLATION WHERE POSTED SPEED LIMIT IS 30 MPH OR GREATER.
2. FOR TYPE 2 PLATE INSTALLATION, THE STEEL PLATE SHALL BE RECESSED BY MILLING INTO THE EXISTING ASPHALT TO SET FLUSH WITH THE SURFACE OF THE EXISTING ASPHALT. FULL DEPTH CUTTING OF PAVEMENT SECTION OUTSIDE OF TRENCH IS NOT PERMITTED. MILLING DEPTH SHALL MATCH THICKNESS OF PLATE. THE GAP BETWEEN THE EDGE OF THE PLATE AND THE ADJACENT EXISTING ASPHALT PAVEMENT MUST BE FILLED WITH TEMPORARY ASPHALT.
3. TRENCH WIDTHS ARE BASED ON AN ANALYSIS PER THE 14TH EDITION OF STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES BY AASHTO. AN ASSUMED AXLE LOADING OF 12 TONS WITH A 30% IMPACT FACTOR WAS USED. THE AXLE LENGTH IS 6 FEET: THEREFORE THE NUMBER OF WHEELS CARRIED BY A PLATE DEPENDS ON THE ROADWAY WIDTH.
4. STEEL PLATE MUST BE ABLE TO WITHSTAND H-20 TRAFFIC LOADINGS WITHOUT ANY MOVEMENT.
5. PLATES SHALL BE FABRICATED FROM ASTM A36 STEEL (MIN).
6. PLATES SHALL BE SECURED FROM LATERAL MOVEMENT AND VERTICAL VIBRATION (ASSOCIATED NOISE) WHILE IN USE BY TEMPORARY ASPHALT (COLD MIX.)
7. BUMP SIGN(S) SHALL BE USED PER M.U.T.C.D.



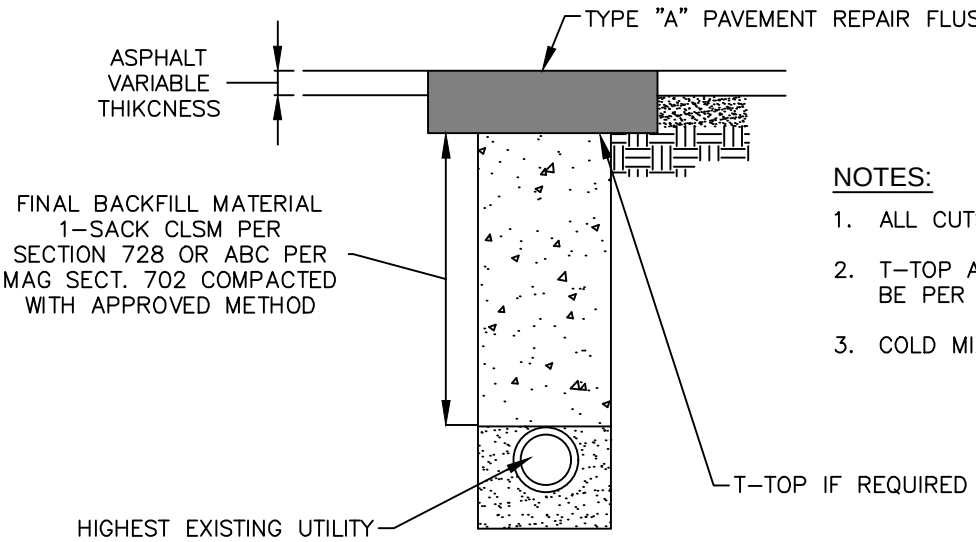

TYPE 1




TYPE 2

N.T.S.

| DETAIL NO. 211 | STANDARD DETAIL | TRENCH PLATING | CITY OF KINGMAN | DETAIL NO. 211 |
|---|---|---|---|---|

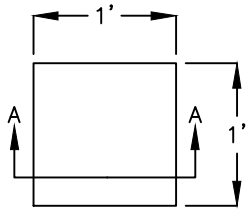



SECTION VIEW

NOTES:

1. ALL CUTS IN SHALL BE APPROVED BY THE ENGINEER.
2. T-TOP AS REQUIRED BY THE ENGINEER AND SHALL BE PER DETAIL 200-1.
3. COLD MIX UPM BY UNIQUE OR APPROVED EQUAL.

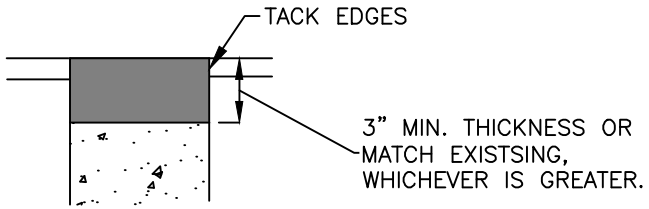
## TYPE A PAVEMENT REPAIR




PLAN VIEW

NOTES:

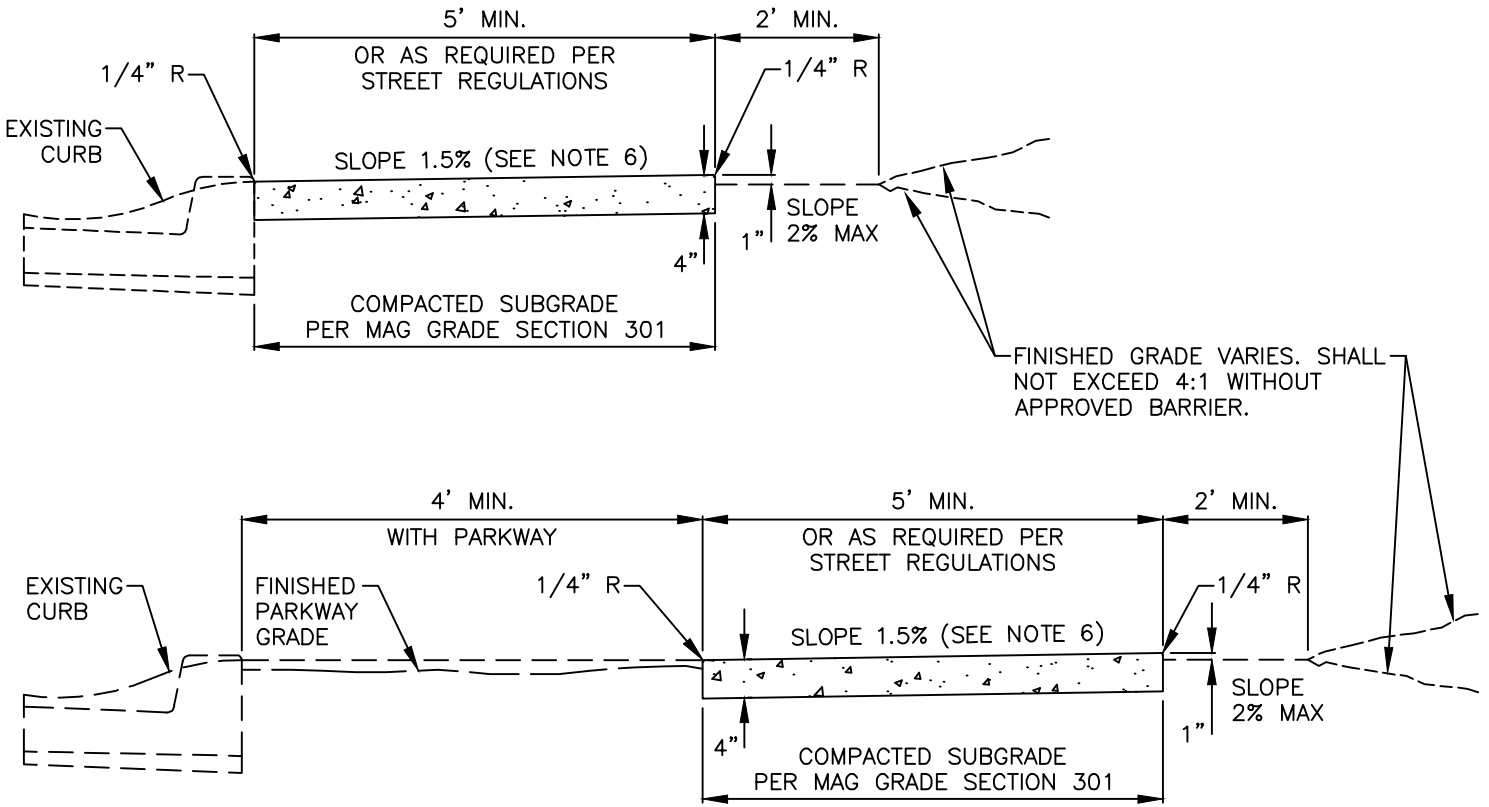
1. DIMENSIONS ARE NOMINAL.
2. EDGES SHALL BE CUT TO A NEAT VERTICAL FACE.
3. PLACE BACKFILL IN ACCORDANCE WITH SECTION 604 OR 601.
4. PLACE AGENCY-ASPHALT CONCRETE OR AGENCY APPROVED UPM IN MAXIMUM 3" LIFTS.

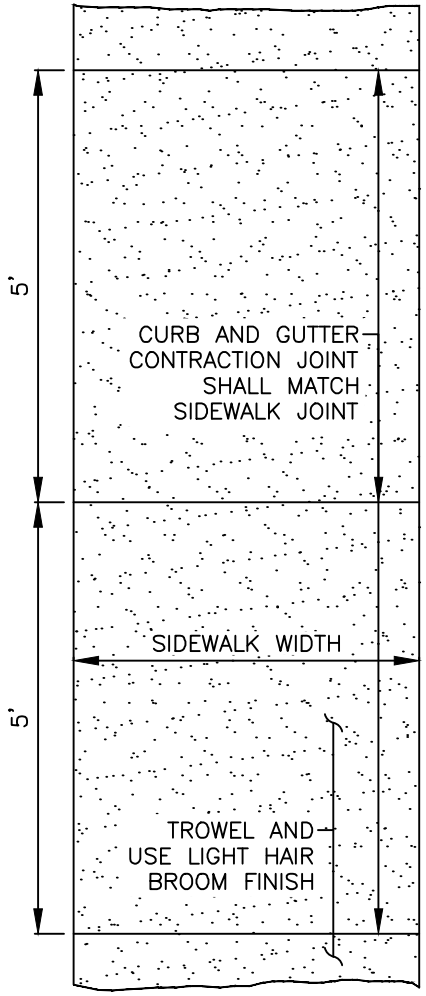



SECTION A-A

N.T.S.

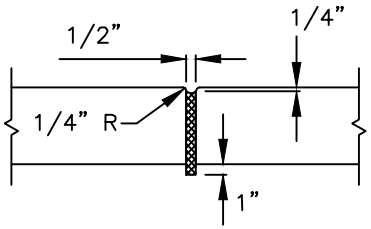
| DETAIL NO. 212 | STANDARD DETAIL | UTILITY POTHOLE REPAIR | CITY OF KINGMAN | DETAIL NO. 212 |
|---|---|---|---|---|



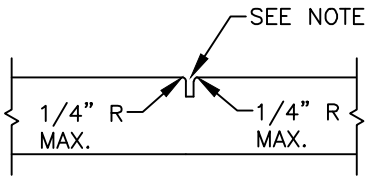




NOTES:

1. SIDEWALK CONSTRUCTION SHALL CONFORM TO SECT. 340.
2. EXPANSION JOINTS SHALL BE 1/2" BITUMINOUS TYPE PREFORMED EXPANSION JOINT FILLER PER MAG SECT 729.
3. LARGE AGGREGATE, IN CONTRACTION JOINT, SHALL BE SEPARATED TO A DEPTH OF 3/4", FINISH DEPTH SHALL BE A MINIMUM OF 3/4".
4. EXPANSION JOINT 25' MAX. SPACING FOR SIDEWALK 50' MAX. FOR CURB
5. CLASS 'B' CONCRETE CONSTRUCTION AS PER MAG SECT. 725.
6. SLOPE SHALL BE 1.5% FROM BACK OF SIDEWALK TO BACK OF CURB.




EXPANSION JOINT

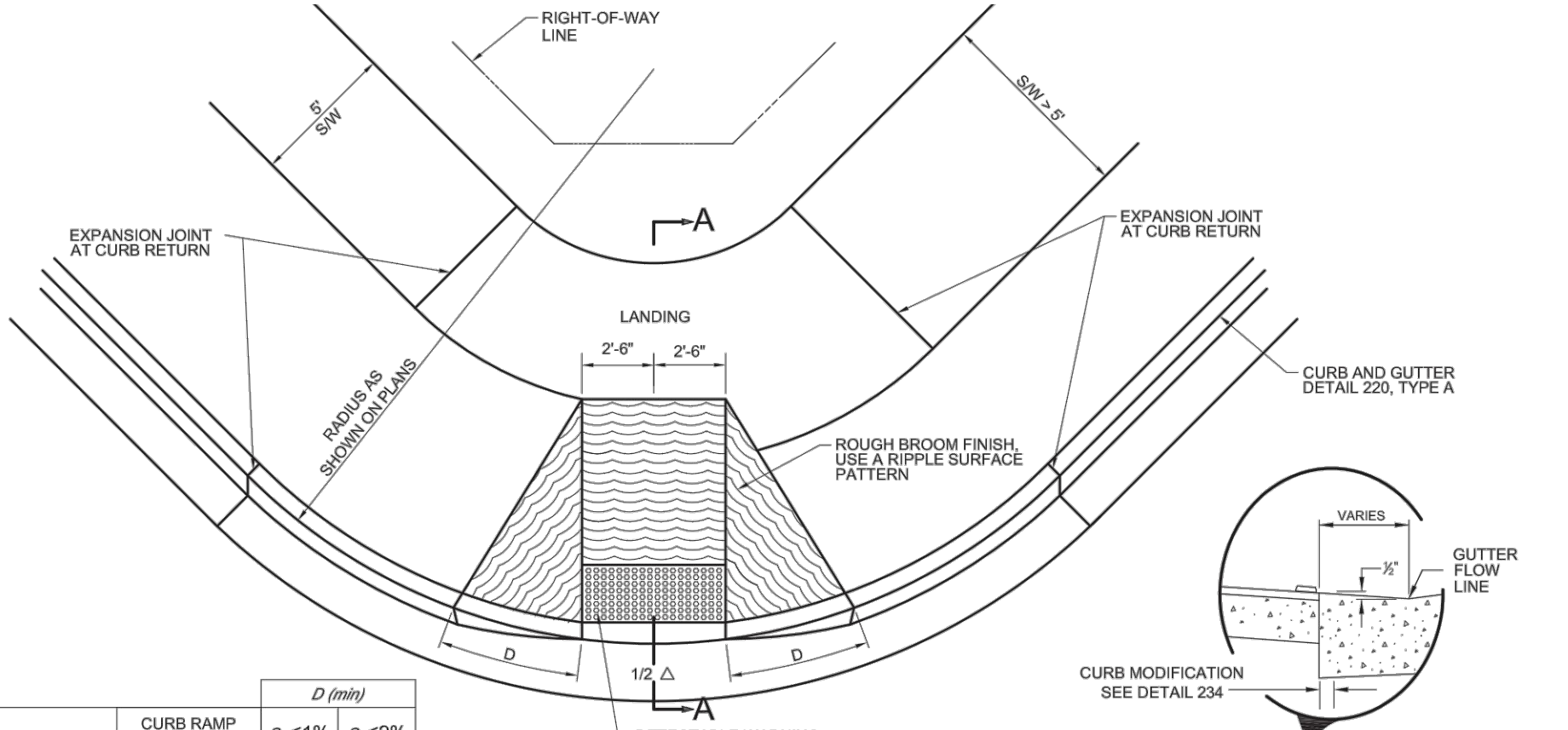



CONTRACTION JOINT

N.T.S.

| DETAIL NO. 230 | STANDARD DETAIL | SIDEWALKS | CITY OF KINGMAN | DETAIL NO. 230 |
|---|---|---|---|---|

Effective: August 18, 2020 REVISED 2017 Ordinance No. 1910



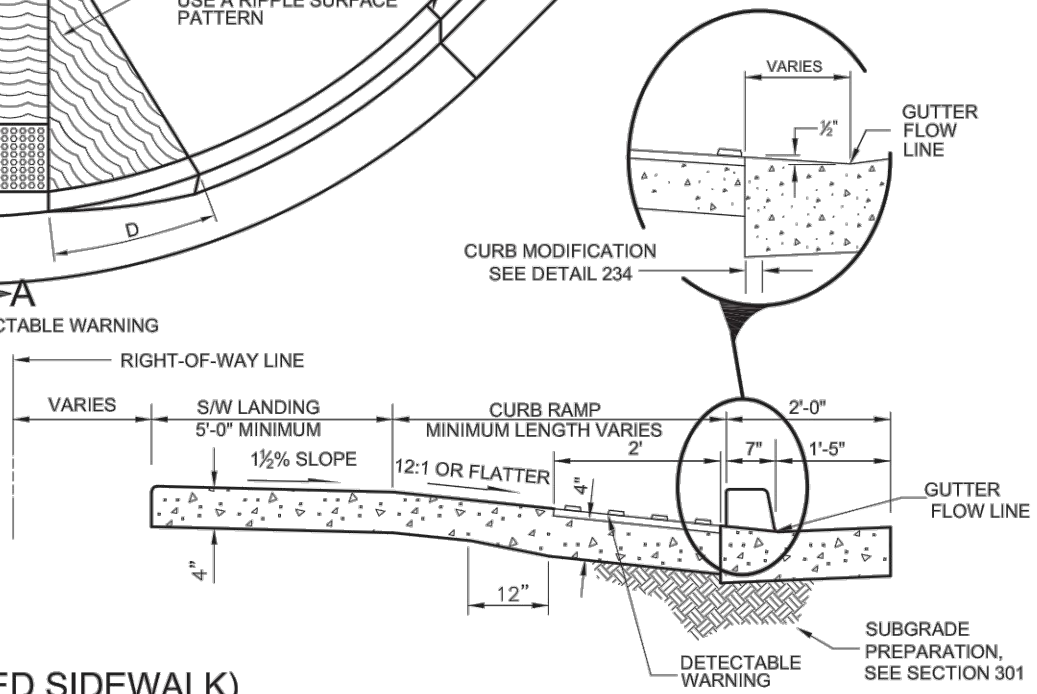

| CURB HEIGHT | CURB RAMP MINIMUM LENGTH | D (min) $S_G \leq 1\%$ | D (min) $S_G \leq 2\%$ |
|---|---|---|---|
| 4" | 5' | 4.0' | 4.5' |
| 6" | 7½' | 6.0' | 6.5' |
| 7" | 9' | 6.5' | 7.5' |

$S_G$ =MAXIMUM GUTTER SLOPE WITHIN RAMP LIMITS

NOTES:

1. CLASS 'B' CONCRETE PER SECTION 725.
2. EXPANSION JOINTS SHALL CONFORM TO SECTION 340.
3. SIDEWALK SURFACE TO MATCH 1½% SLOPE FROM TOP OF CURB
4. DETECTABLE WARNING IS TO COMPLY WITH THE JURISDICTIONAL AGENCY'S REQUIREMENTS.
5. DETAIL IS ADA COMPLIANT FOR $S_G \leq 2\%$.

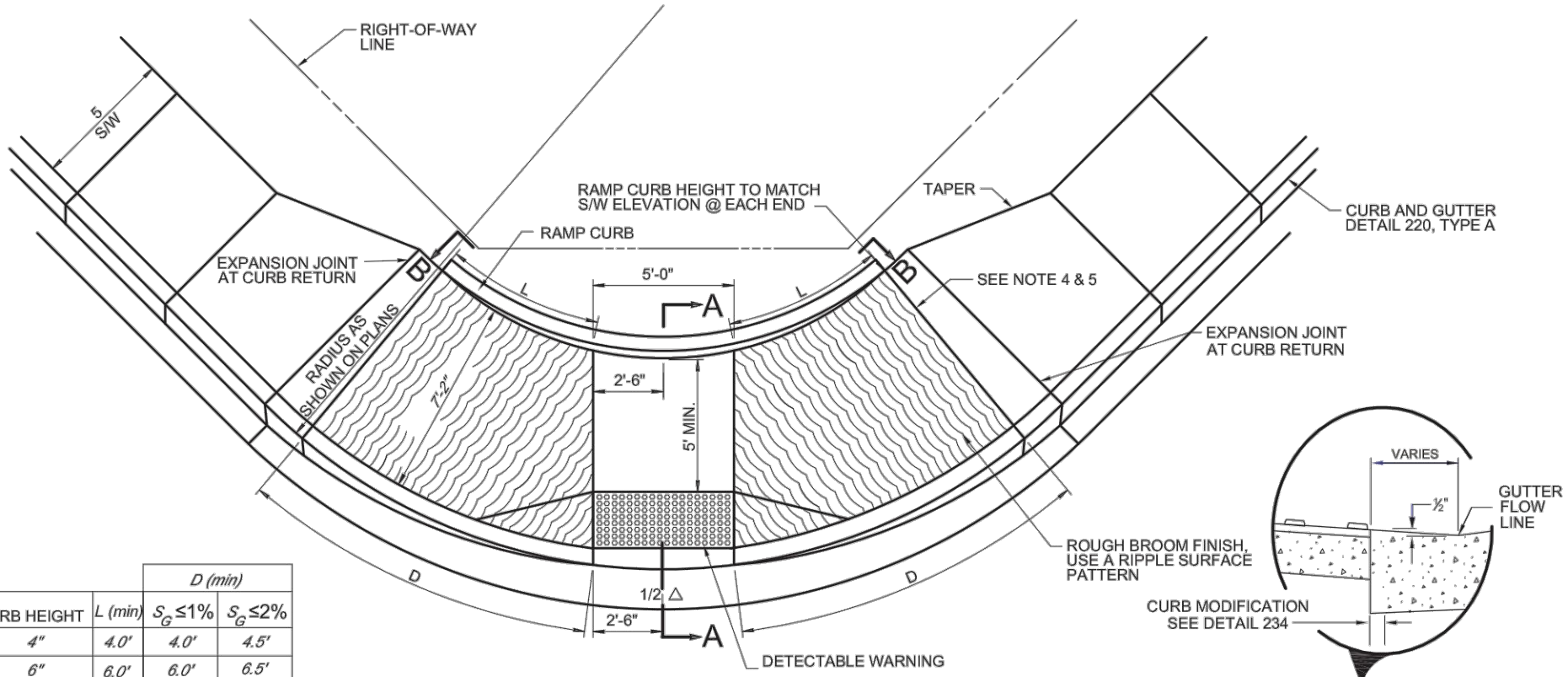
# TYPE 'A' (DETACHED SIDEWALK)




## SECTION A-A

N.T.S.

| DETAIL NO. 231 | STANDARD DETAIL | SIDEWALK RAMPS - TYPE 'A' | CITY OF KINGMAN | DETAIL NO. 231 |
|---|---|---|---|---|

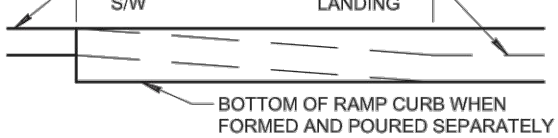



| CURB HEIGHT | L (min) | D (min) $S_G \leq 1\%$ | D (min) $S_G \leq 2\%$ |
|---|---|---|---|
| 4" | 4.0' | 4.0' | 4.5' |
| 6" | 6.0' | 6.0' | 6.5' |
| 7" | 7.0' | 6.5' | 7.5' |

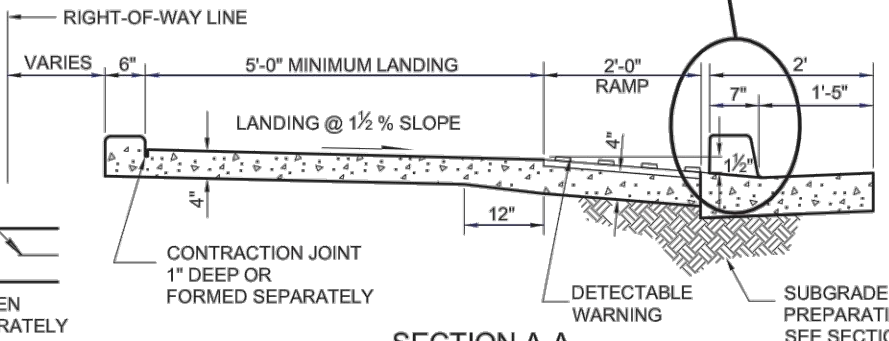
$S_G$=MAXIMUM GUTTER SLOPE WITHIN RAMP LIMITS

## NOTES:

1. CLASS 'B' CONCRETE PER SECTION 725.
2. EXPANSION JOINTS SHALL CONFORM TO SECTION 340.
3. DETECTABLE WARNING IS TO COMPLY WITH THE JURISDICTIONAL AGENCY'S REQUIREMENTS.
4. INCREASE 'L' OR 'D' AS NEEDED TO HAVE THE TOP OF RAMP FORM A RADIAL LINE.
5. WHEN TOP OF RAMP IS LESS THAN 4' FROM CURB RETURN, EXTEND RAMP TO THE CURB RETURN.
6. DETAIL IS ADA COMPLIANT FOR $S_G \leq 2\%$.




SECTION B-B




SECTION A-A

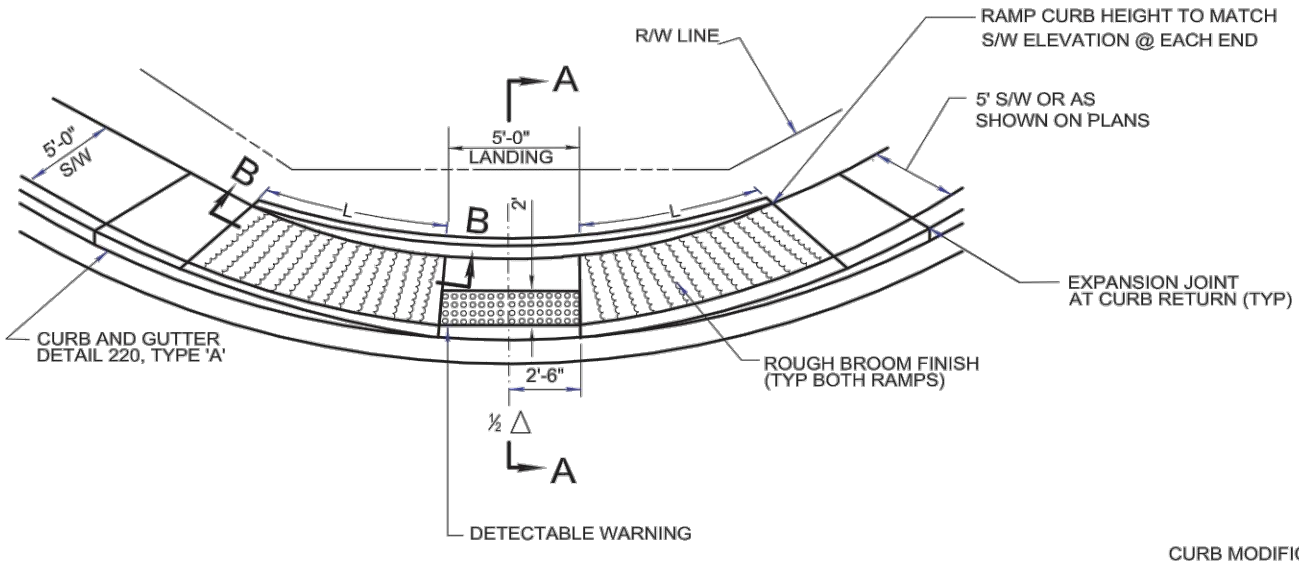
TYPE 'B'

N.T.S.

| DETAIL NO. 232 | STANDARD DETAIL | SIDEWALK RAMPS - TYPE 'B' | CITY OF KINGMAN | DETAIL NO. 232 |
|---|---|---|---|---|

NOTES:

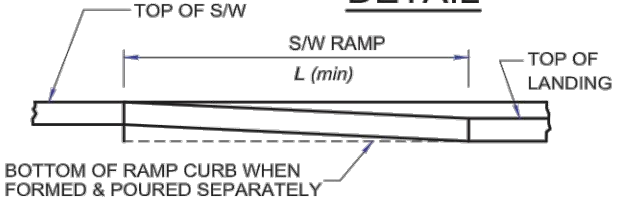
1. CLASS 'B' CONCRETE CONSTRUCTION PER SECTION 725.
2. DETECTABLE WARNING IS TO COMPLY WITH THE JURISDICTIONAL AGENCY'S REQUIREMENT.
3. RAMP LONGITUDINAL SLOPE SHALL BE 12:1 OR FLATTER.
4. RAMP CROSS SLOPE SHALL BE 1½%.
5. DETAIL IS ADA COMPLIANT FOR CURB RADII ≥ 20' AND GUTTER SLOPE ≤ 2.0%.



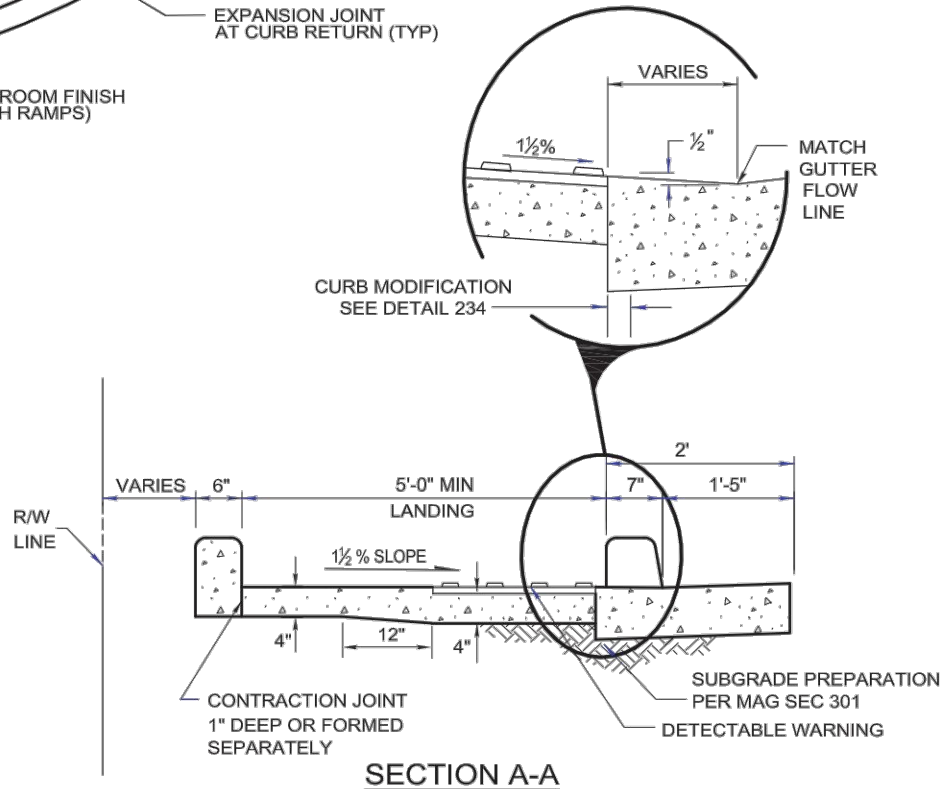

| CURB HEIGHT | L (min) $S_G \leq 1\%$ | L (min) $S_G \leq 2\%$ |
|---|---|---|
| 4" | 5.0' | 6.0' |
| 6" | 7.0' | 8.5' |

$S_G$ =MAXIMUM GUTTER SLOPE WITHIN RAMP LIMITS

## DETAIL




SECTION B-B

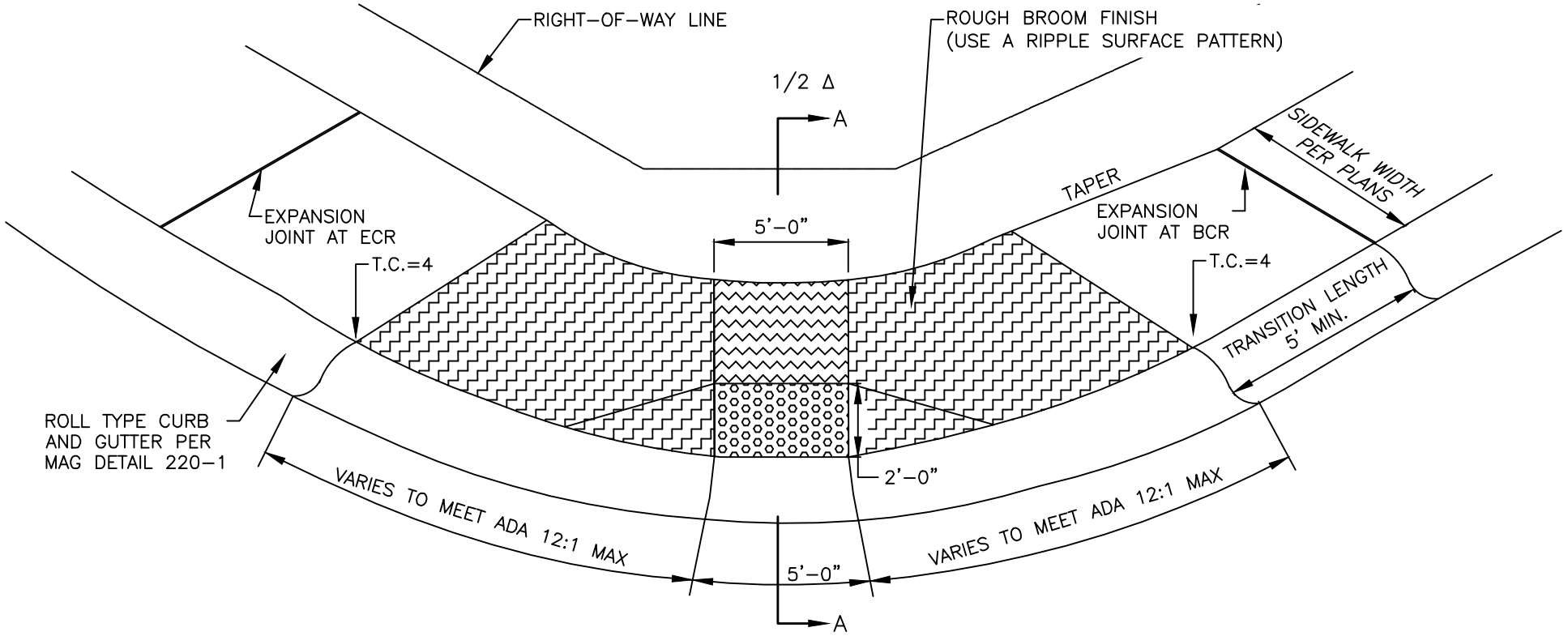



SECTION A-A

## TYPE 'C'

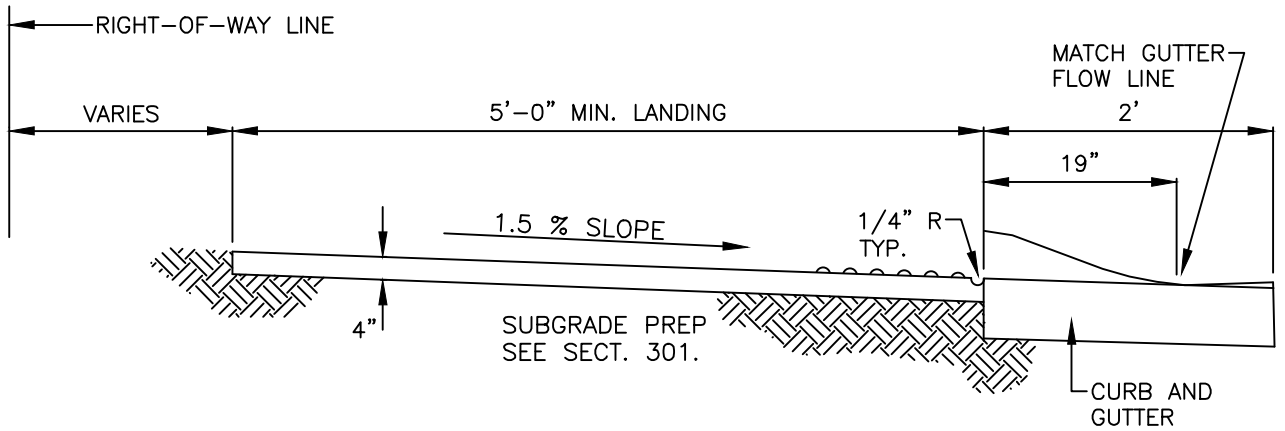
N.T.S.

| DETAIL NO. 233 | STANDARD DETAIL | SIDEWALK RAMPS - TYPE 'C' | CITY OF KINGMAN | DETAIL NO. 233 |
|---|---|---|---|---|




NOTES:

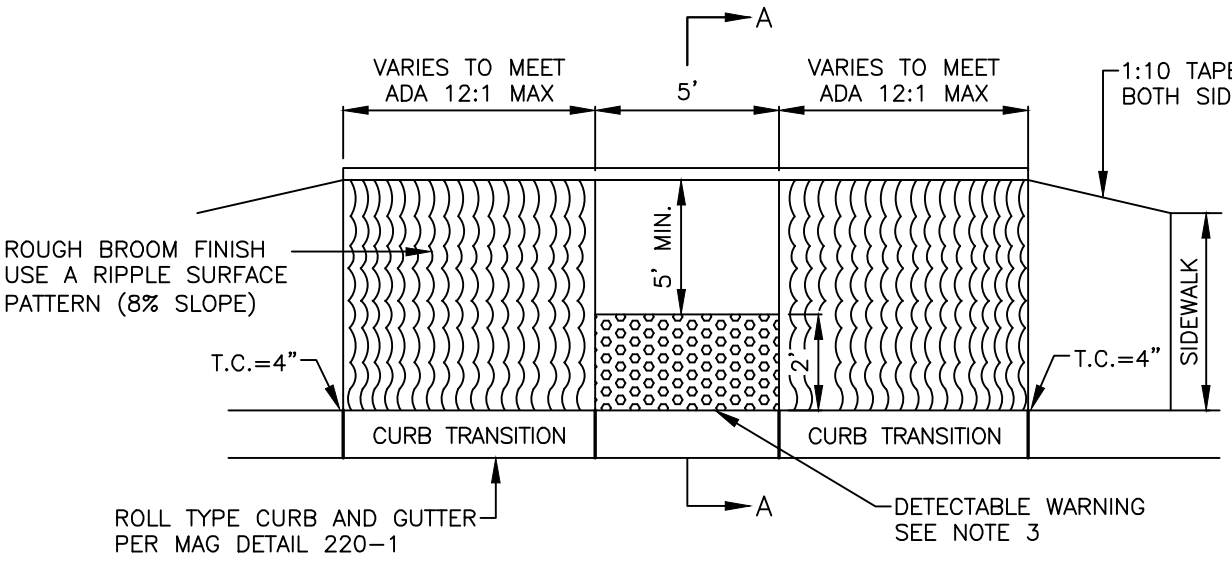
1. CLASS 'B' CONC. CONSTRUCTION AS PER SECT. 725.
2. PAYMENT FOR SIDEWALK RAMP CONSTRUCTION SHALL BE THE AREA BETWEEN THE BCR AND ECR INCLUDING CURB & GUTTER.
3. DETECTABLE WARNING TO COMPLY WITH COK STANDARD SPECIFICATION SECTION 340.

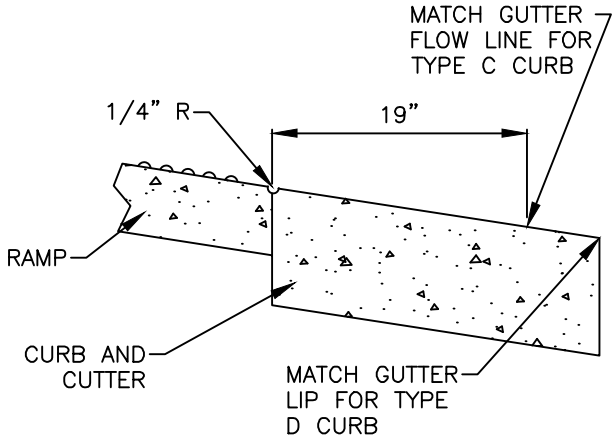



SECTION A-A

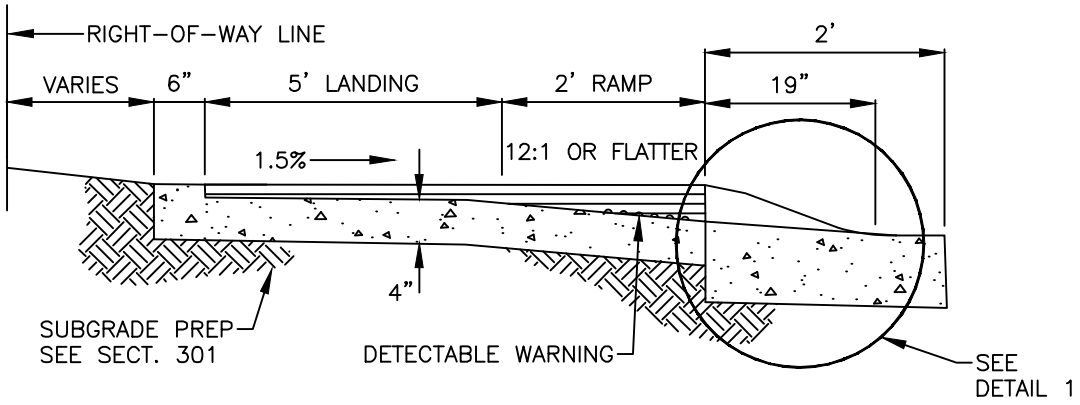
N.T.S.

| DETAIL NO. 235 | STANDARD DETAIL | SIDEWALK RAMPS - TYPE 'E' | CITY OF KINGMAN | DETAIL NO. 235 |
|---|---|---|---|---|




DETAIL 1



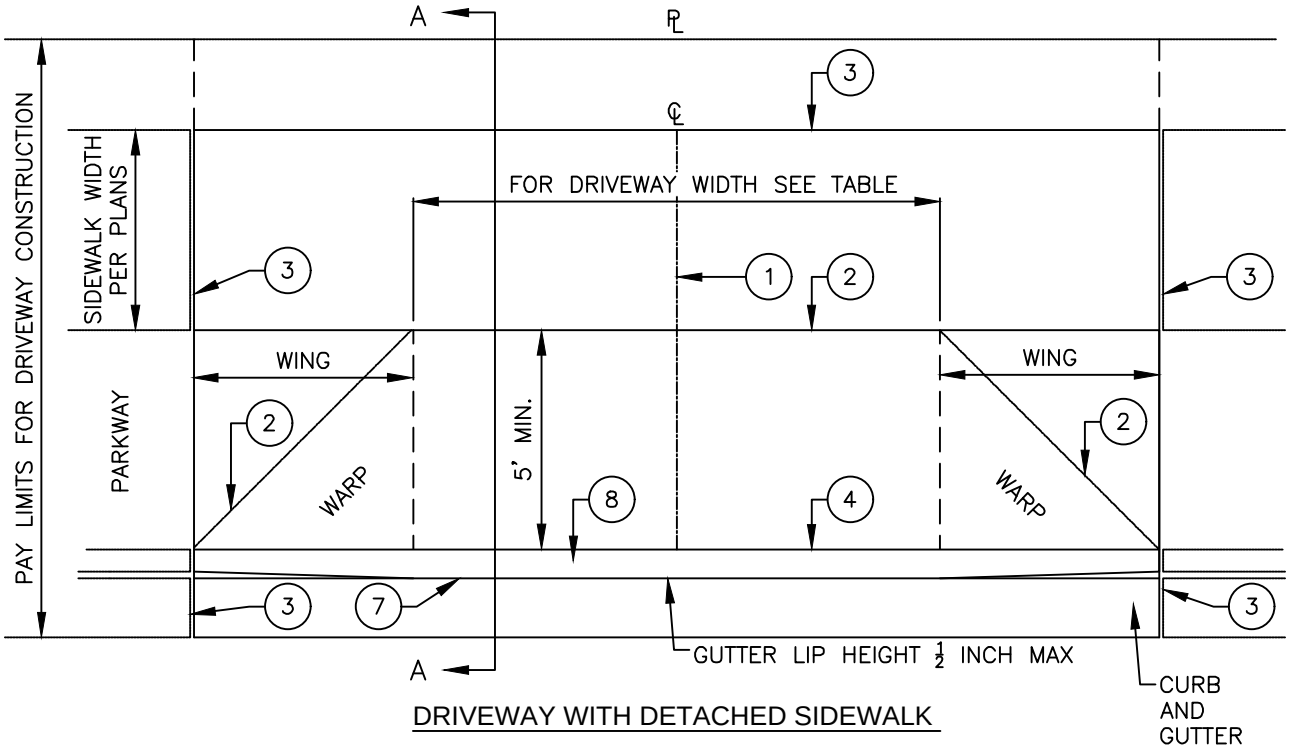

SECTION A-A

NOTES:

1. CONTROL ELEVATIONS SHOWN ARE IN RELATION TO THE GUTTER. GUTTER ELEV. = 0
2. CLASS 'B' CONC. CONSTRUCTION AS PER SECT. 725.
3. DETECTABLE WARNING TO COMPLY WITH COK STANDARD SPECIFICATION SECTION 340.

N.T.S.

| DETAIL NO. 236 | STANDARD DETAIL | SIDEWALK RAMPS- TYPE 'F' | CITY OF KINGMAN | DETAIL NO. 236 |
|---|---|---|---|---|



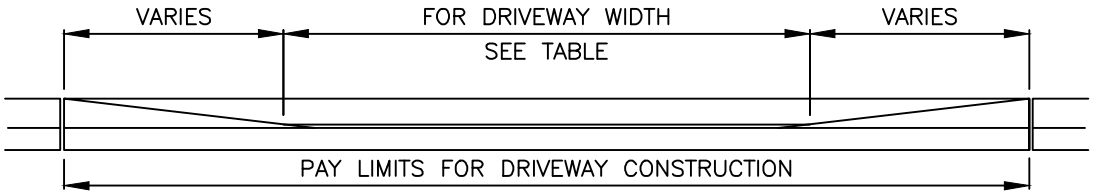

DRIVEWAY WITH DETACHED SIDEWALK

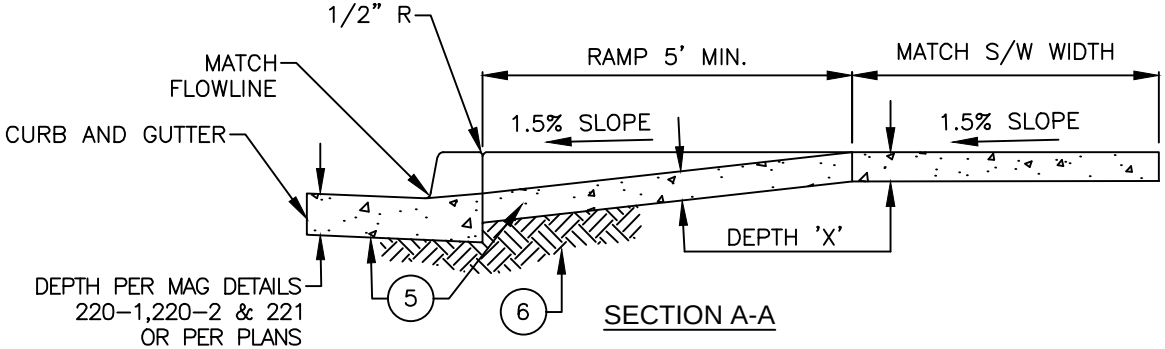
## LEGEND

1. CONTRACTION JOINT ON D/W CENTERLINE.
2. CONTRACTION JOINT.
3. 1/2–INCH EXPANSION JOINTS SHALL COMPLY WITH SECTION 340 and COK DETAIL 230.
4. BACK OF CURB – CONSTRUCTION JOINT.
5. CONCRETE CLASS AS NOTED IN TABLE. CONCRETE PER SECTION 725.
6. SUBGRADE PREPARATION, MAG SECT. 301.
7. FLOW LINE OF GUTTER.
8. DEPRESSED CURB.

## NOTES:

1. SECT. A–A AND ELEVATION: D/W SHOWN WITH VERTICAL CURB AND GUTTER, ROLL TYPE CURB AND GUTTER TREATED SIMILARLY.
2. ROUGH BROOM FINISH FULL WIDTH OF RAMP AND WINGS. TROWEL AND USE LIGHT HAIR BROOM FINISH FOR WALKWAY AREA.
3. SINGLE FAMILY IS RESIDENTIAL. ANY LOCATION OTHER THAN SINGLE FAMILY RESIDENTIAL IS CONSIDERED COMMERCIAL AND INDUSTRIAL.



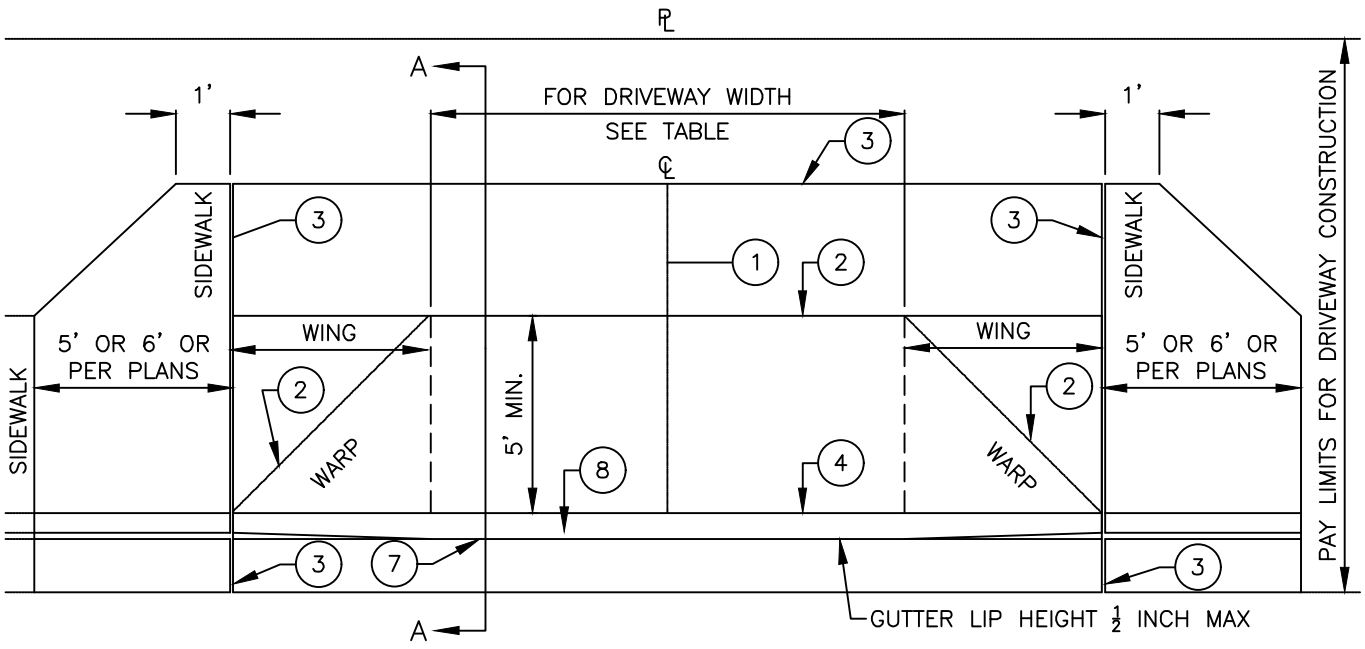




SECTION A-A

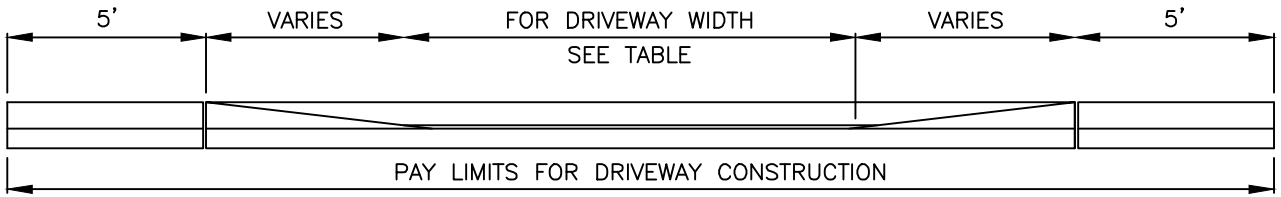
| COMMERCIAL AND INDUSTRIAL | | | | |
|---|---|---|---|---|
| DRIVEWAY WIDTH | MIN. | MAX. | CLASS | DEPTH 'X' |
| COMMERCIAL | *16' | 40' | A | 9" |
| INDUSTRIAL | *16' | 40' | A | 9" |
| *24' MIN. FOR TO WAY TRAFFIC | | | | |
| RESIDENTIAL | | | | |
| DRIVEWAY WIDTH | MIN. | MAX. | CLASS | DEPTH 'X' |
| MAJOR STREET | *16' | 30' | B | 5" |
| COLLECTOR STREET | *16' | 30' | B | 5" |
| LOCAL STREET | 12' | 30' | B | 5" |
| *16' DESIRABLE | | | | |

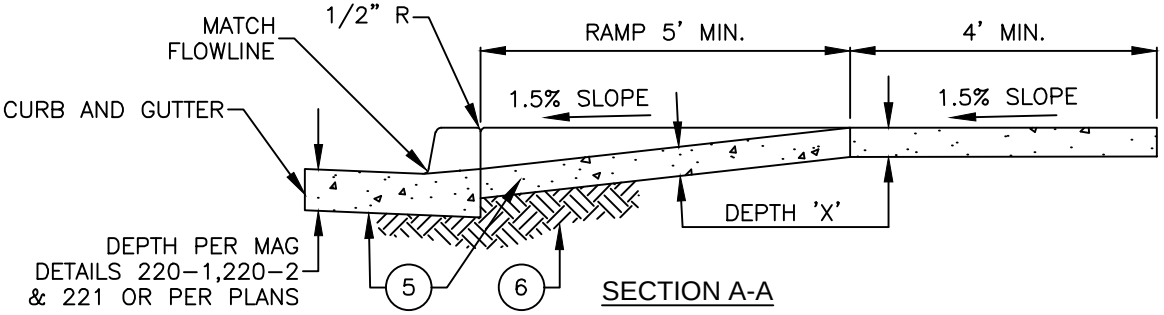
N.T.S.

| DETAIL NO. 250-1 | STANDARD DETAIL | DRIVEWAY ENTRANCES WITH DETACHED SIDEWALK | CITY OF KINGMAN | DETAIL NO. 250-1 |
|---|---|---|---|---|




DRIVEWAY WITH DETACHED SIDEWALK ATTACHED TO CURB




SECTION A-A

## LEGEND

1. CONTRACTION JOINT ON D/W CENTERLINE.
2. CONTRACTION JOINT.
3. 1/2–INCH EXPANSION JOINTS SHALL COMPLY WITH SECTION 340.
4. BACK OF CURB – CONSTRUCTION JOINT.
5. CONCRETE CLASS AS NOTED IN TABLE. CONCRETE PER SECTION 725.
6. SUBGRADE PREPARATION, MAG SECT. 301.
7. FLOW LINE OF GUTTER.
8. DEPRESSED CURB.

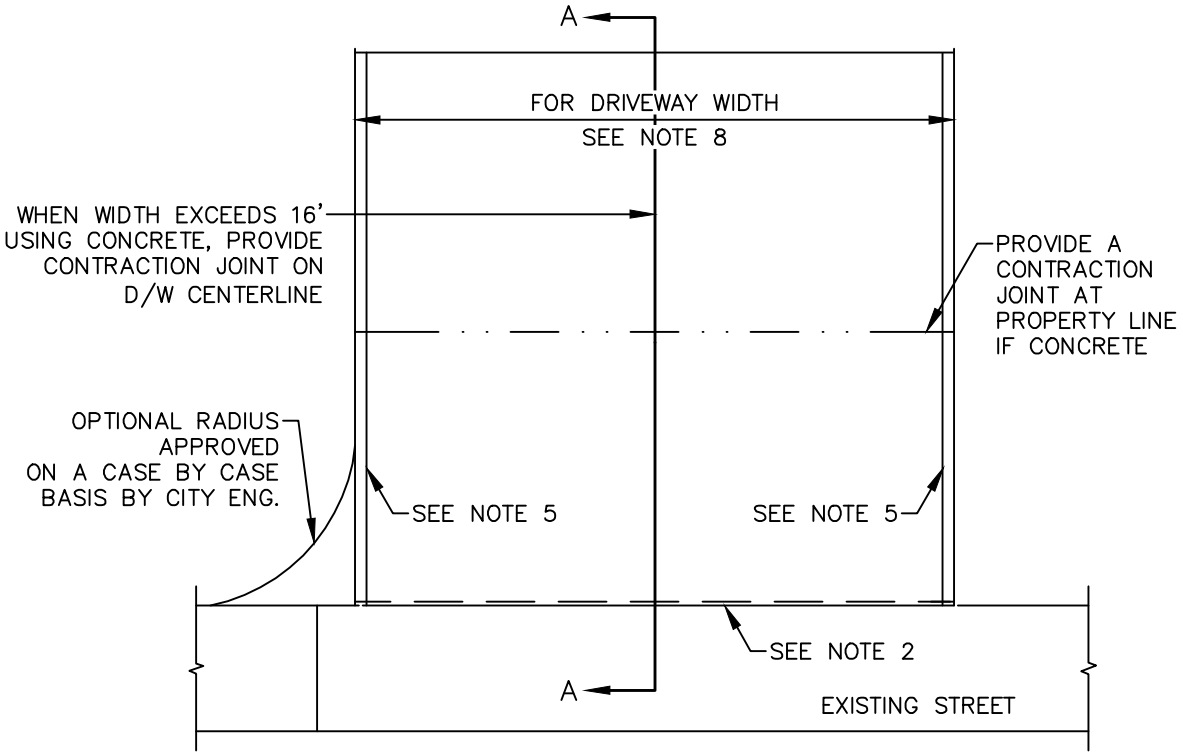
## NOTES:

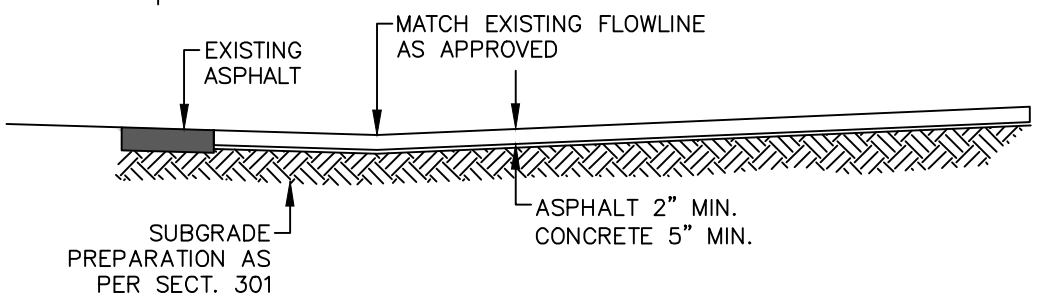
1. SECT. A–A AND ELEVATION: D/W SHOWN WITH VERTICAL CURB AND GUTTER, ROLL TYPE CURB AND GUTTER TREATED SIMILARLY.
2. ROUGH BROOM FINISH FULL WIDTH OF RAMP AND WINGS. TROWEL AND USE LIGHT HAIR BROOM FINISH FOR WALKWAY AREA.
3. SINGLE FAMILY IS RESIDENTIAL. ANY LOCATION OTHER THAN SINGLE FAMILY RESIDENTIAL IS CONSIDERED COMMERCIAL AND INDUSTRIAL.

| COMMERCIAL AND INDUSTRIAL | | | | |
|---|---|---|---|---|
| DRIVEWAY WIDTH | MIN. | MAX. | CLASS | DEPTH 'X' |
| COMMERCIAL | *16' | 40' | A | 9" |
| INDUSTRIAL | *16' | 40' | A | 9" |
| *24' MIN. FOR TO WAY TRAFFIC | | | | |
| RESIDENTIAL | | | | |
| DRIVEWAY WIDTH | MIN. | MAX. | CLASS | DEPTH 'X' |
| MAJOR STREET | *16' | 30' | B | 5" |
| COLLECTOR STREET | *16' | 30' | B | 5" |
| LOCAL STREET | 12' | 30' | B | 5" |
| *16' DESIRABLE | | | | |

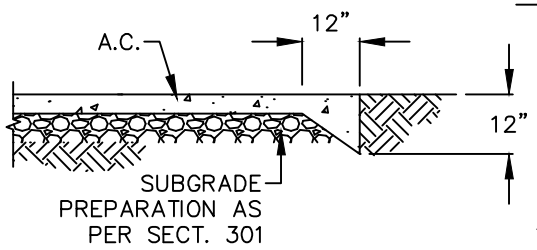
N.T.S.

| DETAIL NO. 250-2 | STANDARD DETAIL | DRIVEWAY ENTRANCES WITH SIDEWALK ATTACHED TO CURB | CITY OF KINGMAN | DETAIL NO. 250-2 |
|---|---|---|---|---|

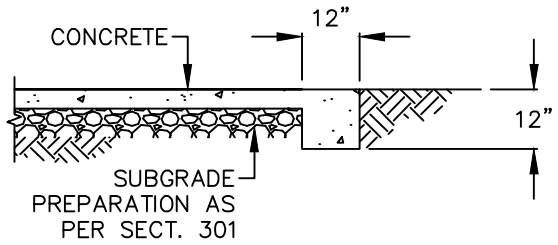



SECTION A-A




DETAIL 'A'

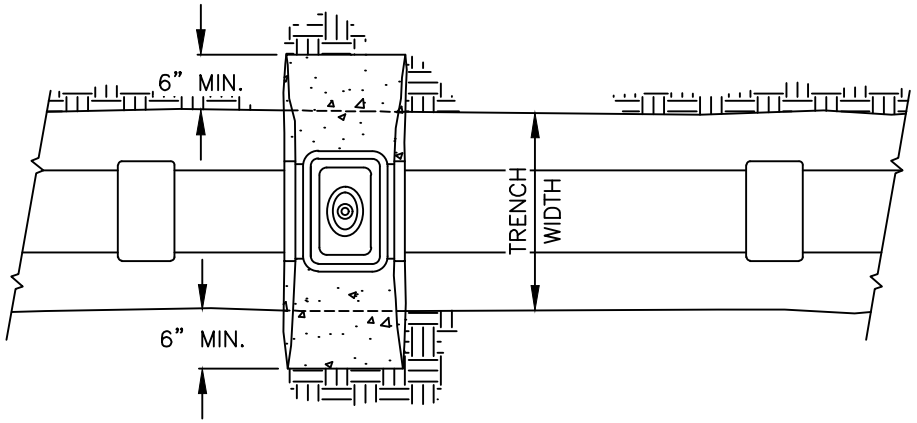


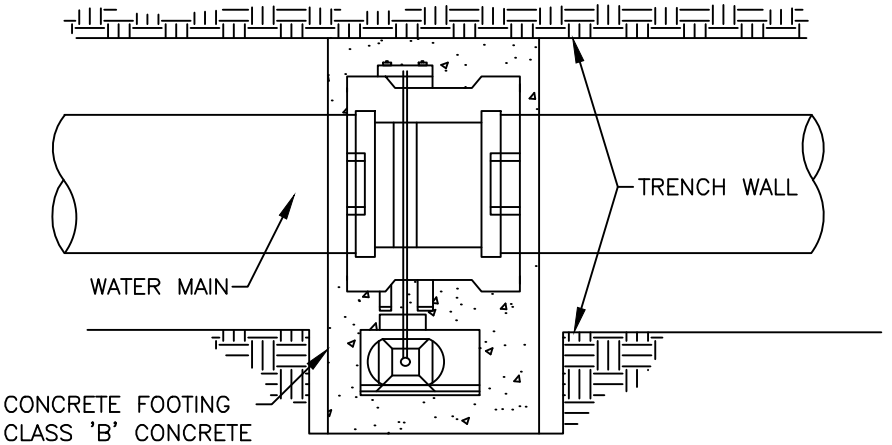

NOTES:

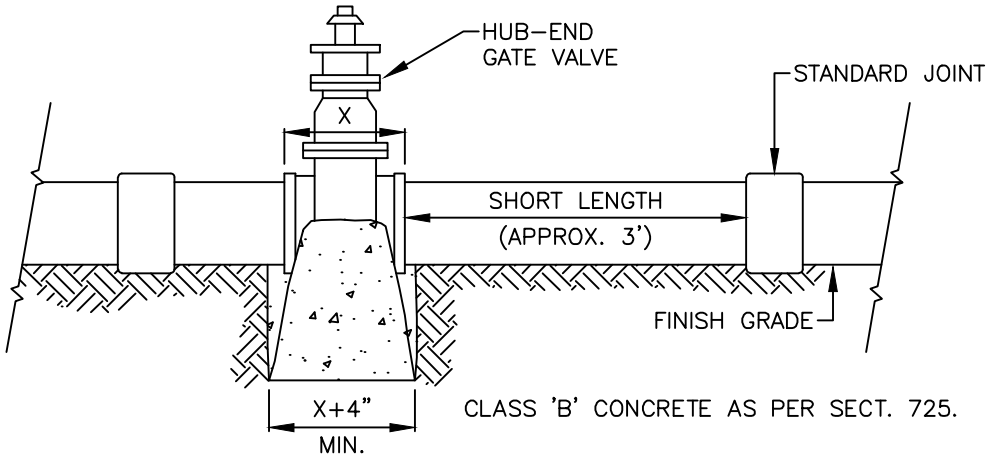
1. THIS TYPE OF D/W TO BE USED ONLY UPON APPROVAL BY THE CITY ENGINEER.
2. EXISTING ASPHALT SHALL BE SAW CUT TO A STRAIGHT VERTICAL EDGE FREE FROM ANY IRREGULARITIES. SAW CUT SHALL NOT PROTRUDE MORE THAN 3" INTO EXISTING ASPHALT. IF MORE THAN 3" IS REQUIRED TO OBTAIN A VERTICAL EDGE THEN THE EXISTING ASPHALT SHALL BE CUT BACK A MIN. OF 12" FOR ENTIRE WIDTH OF DRIVEWAY AND REPLACED WITH NEW HOT MIX ASPHALT.
3. CLASS 'B' CONCRETE FOR RESIDENTIAL CONSTRUCTION AS PER SECT. 725
4. ASPHALT PER SEC 710.
5. THICKENED EDGE 12" DEEP ON BOTH SIDES OF DRIVEWAY (SEE DETAIL A).
6. D/W TO MATCH EXISTING DRAINAGE AS APPROVED.
7. SINGLE FAMILY IS RESIDENTIAL. ANY LOCATION OTHER THAN SINGLE FAMILY RESIDENTIAL IS CONSIDERED COMMERCIAL AND INDUSTRIAL.
8. DRIVEWAY WIDTH MIN. 12' MAX. 30'

N.T.S.

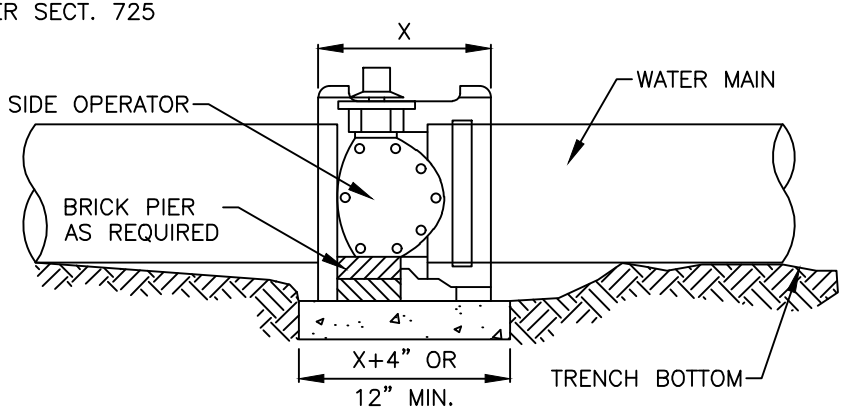
| DETAIL NO. 251 | STANDARD DETAIL | RURAL RESIDENTIAL TYPE DRIVEWAYS | CITY OF KINGMAN | DETAIL NO. 251 |
|---|---|---|---|---|

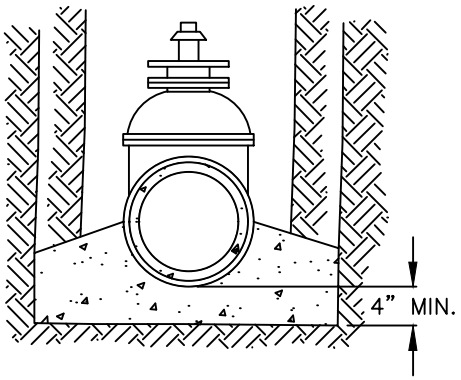



CLASS 'B' CONCRETE AS PER SECT. 725.

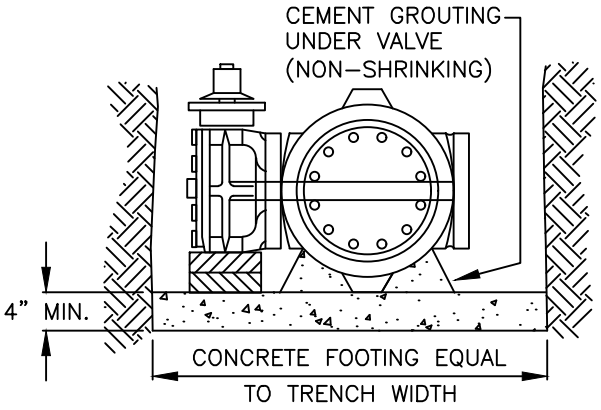



NOTE:

THIS DETAIL COVERS WATER GATE VALVES, 4" TO 12" INCLUSIVE REGARDLESS OF TYPE OF PIPE USED. LARGER LINES TO BE DETAILED ON PLANS.

WATER GATE VALVE




NOTES:

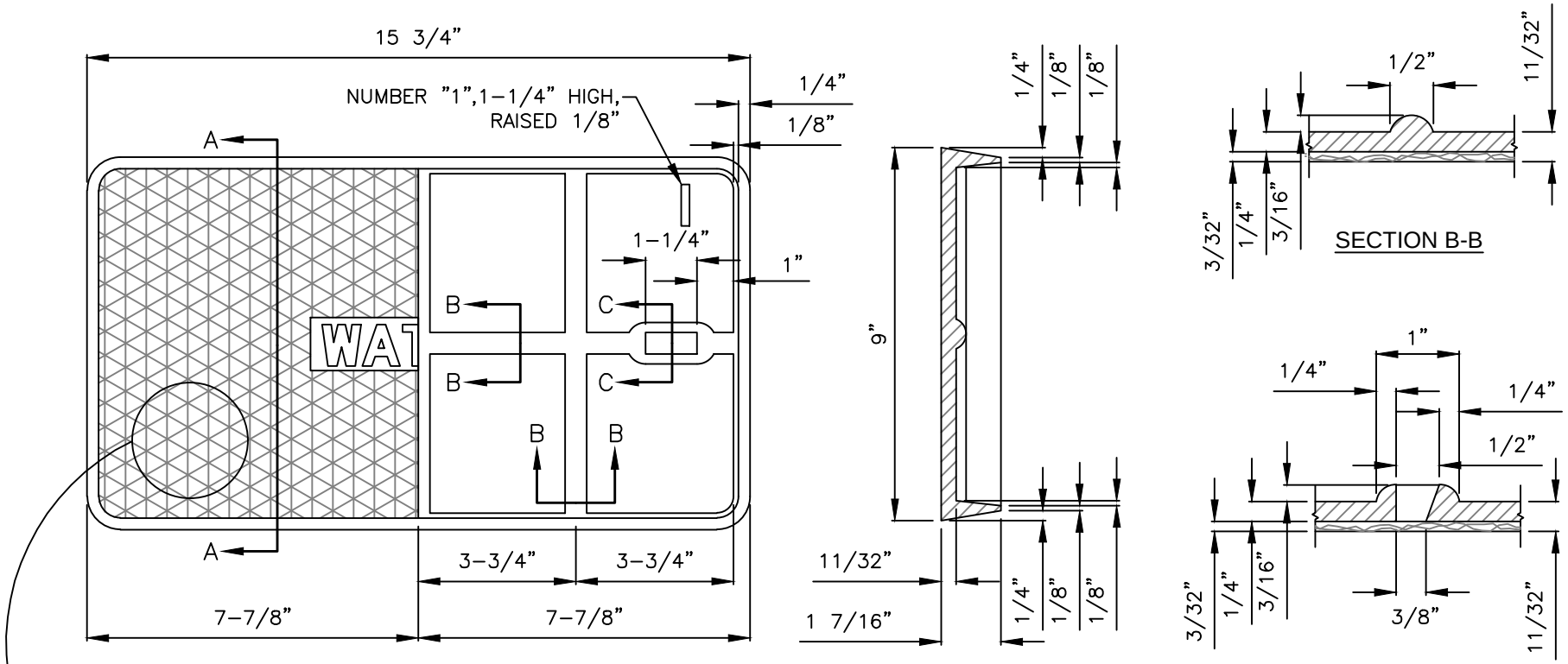
1. THIS DETAIL COVERS BUTTERFLY VALVE INSTALLATION, 3" TO 12" INCLUSIVE, REGARDLESS OF TYPE OF PIPE OR JOINT USED. LARGER LINES TO BE DETAILED ON PLANS.
2. VALVE BOX AND COVER REQUIRED PER DETAILS 270 AND 391.

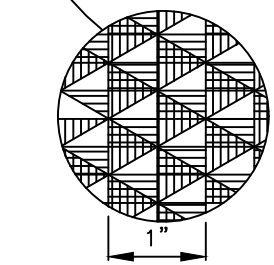
BUTTERFLY VALVE

N.T.S.

| DETAIL NO. 301 | STANDARD DETAIL | BLOCKING FOR WATER GATE AND BUTTERFLY VALVES | CITY OF KINGMAN | DETAIL NO. 301 |
|---|---|---|---|---|

Effective: August 18, 2020 REVISED 2010 Ordinance No. 1910



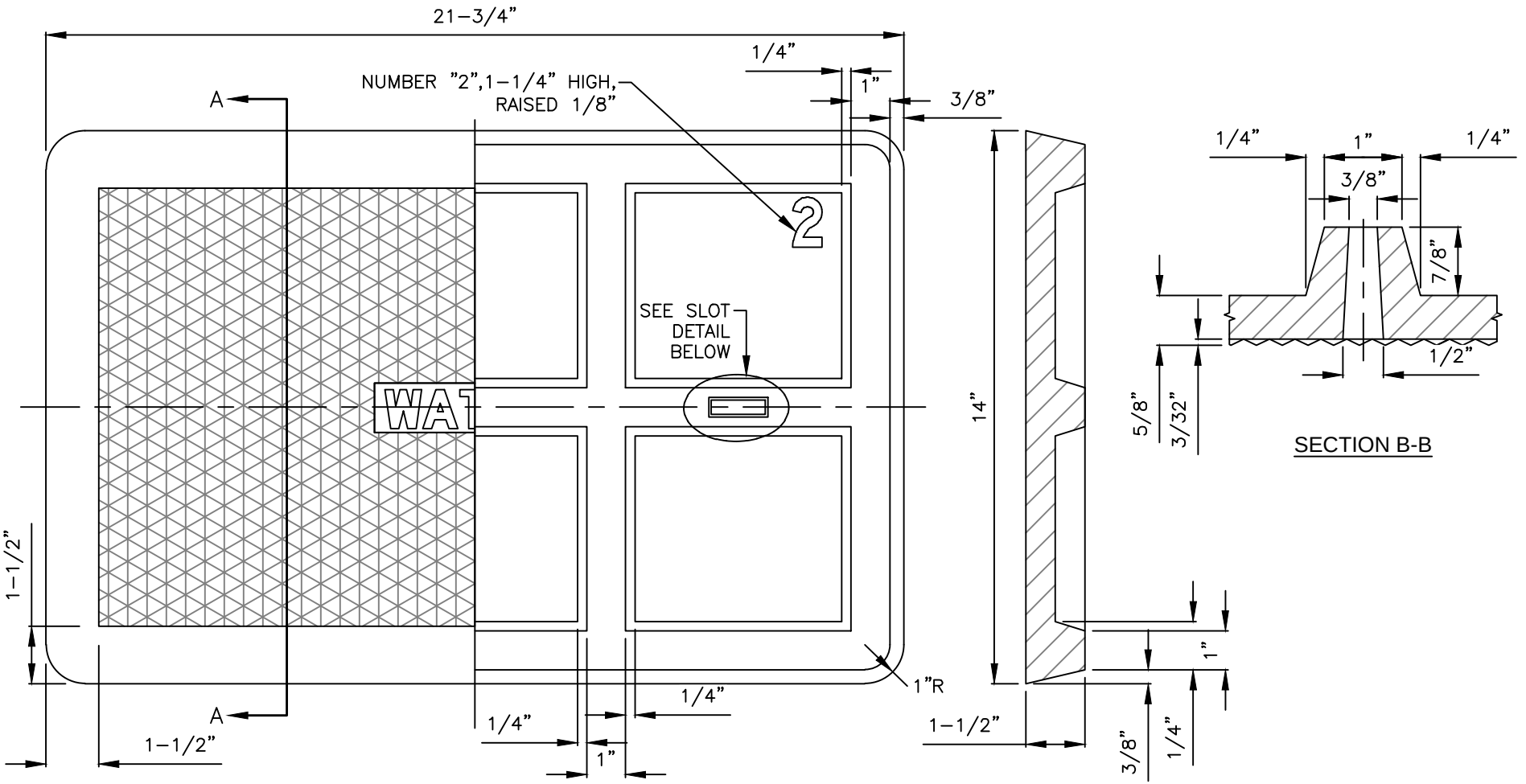

TOP OF COVER

NOTE:

DIAMOND PLATE STEEL TO BE 1/4" MINIMUM THICKNESS, AND DOES NOT REQUIRE "WATER" DESIGNATION. DIAMOND PLATE TO BE USED IN NON-TRAFFIC AREAS ONLY.

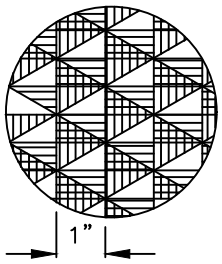
N.T.S.

| DETAIL NO. 310 | STANDARD DETAIL | CAST IRON OR DIAMOND PLATE STEEL WATER METER BOX COVER NO. 1 | CITY OF KINGMAN | DETAIL NO. 310 |
|---|---|---|---|---|

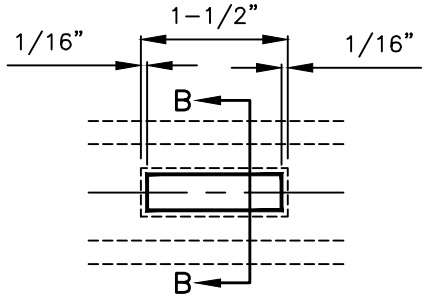



SECTION B-B

SECTION A-A




TOP OF COVER




SLOT DETAIL

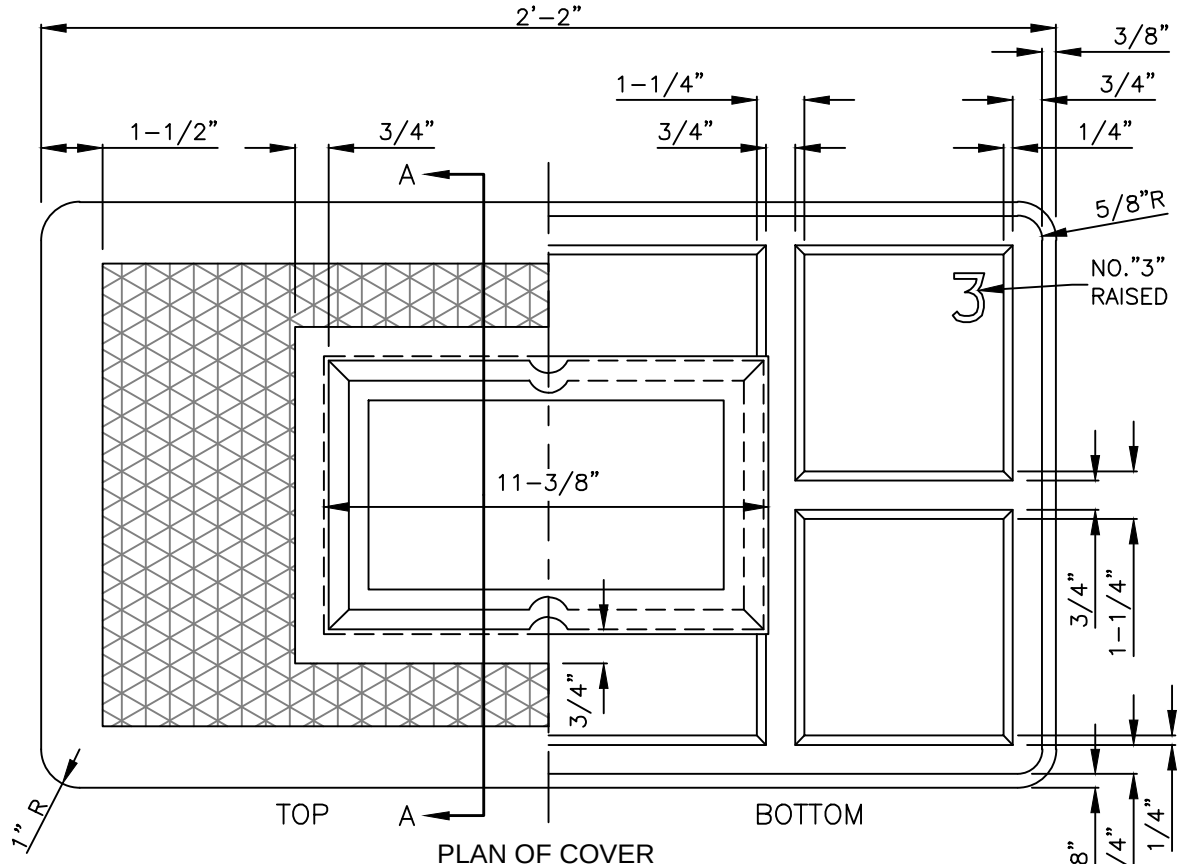
NOTE:

DIAMOND PLATE STEEL TO BE 5/8" MINIMUM THICKNESS, AND DOES NOT REQUIRE "WATER DESIGNATION. DIAMOND PLATE TO BE USED IN NON–TRAFFIC AREAS ONLY.

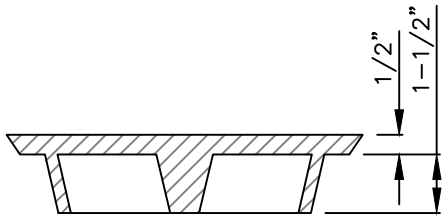
N.T.S.

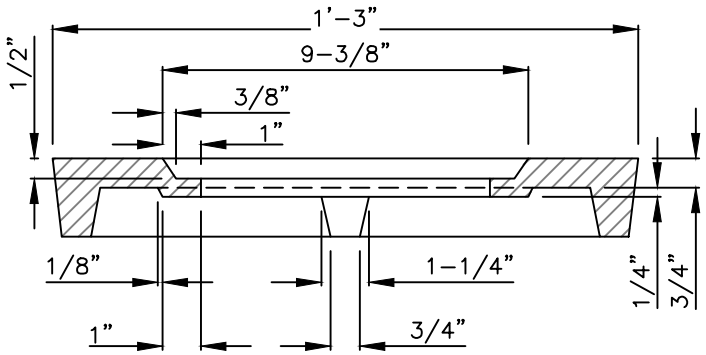
| DETAIL NO. 311 | STANDARD DETAIL | CAST IRON OR DIAMOND PLATE STEEL WATER METER BOX COVER NO. 2 | CITY OF KINGMAN | DETAIL NO. 311 |
|---|---|---|---|---|

Effective: August 18, 2020 REVISED 2017 Ordinance No. 1910

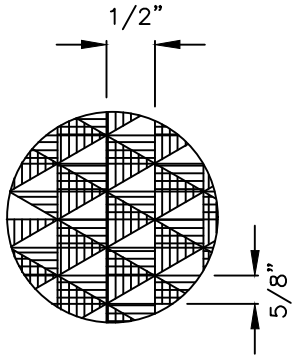



PLAN OF COVER



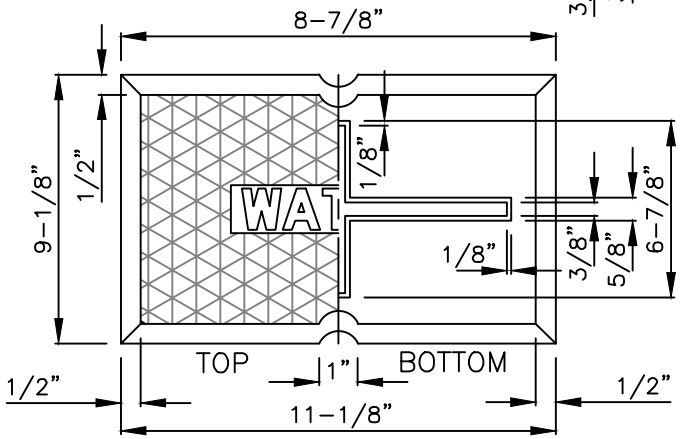




SECTION A-A




DETAIL

TOP OF COVER & PLATE




INSPECTION PLATE

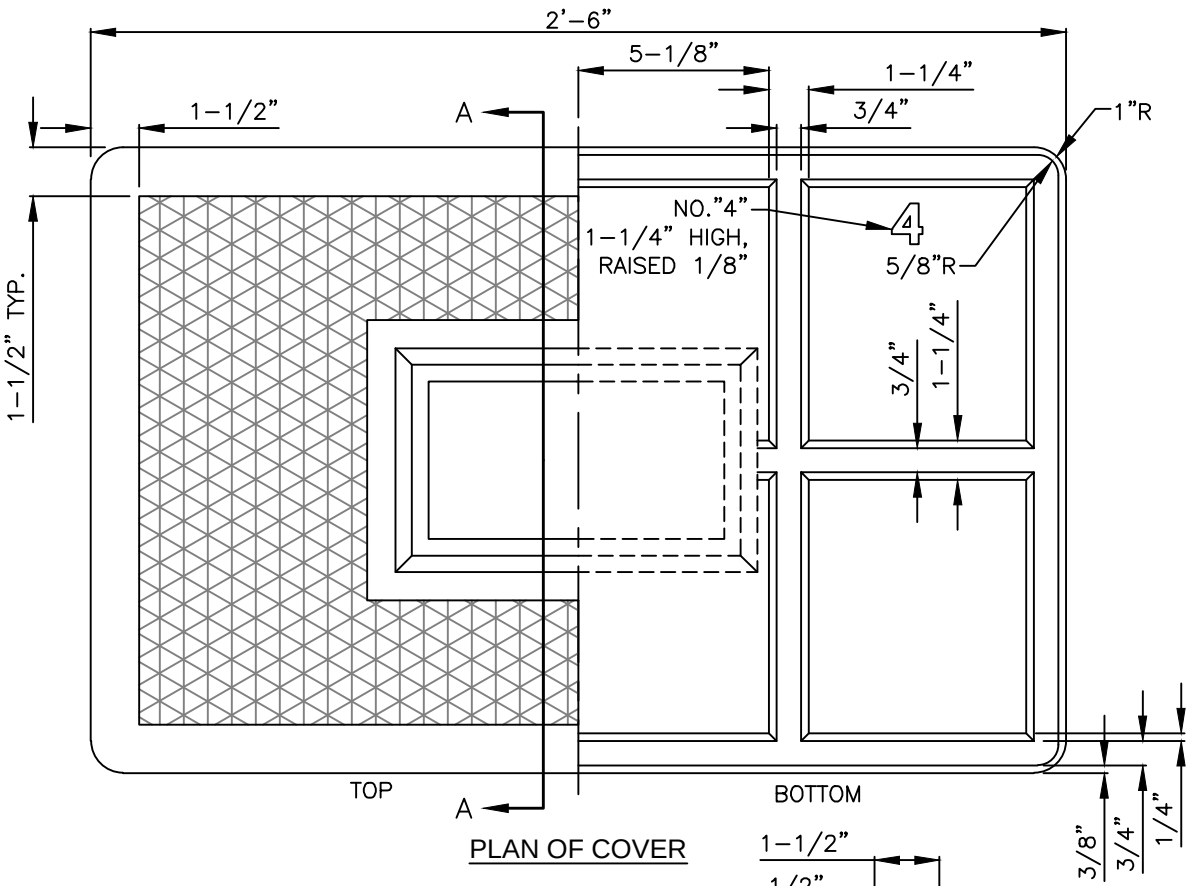
NOTES:

1. INSPECTION PLATE IS SAME AS USED WITH METER BOX COVER NO. 4.
2. FOR CASTING SPECIFICATIONS, SEE SECTION 787.
3. THE BEARING EDGES OF THESE CASTINGS SHALL BE MACHINED TO INSURE A FULL BEARING ON A FLAT SURFACE.
4. DIAMOND PLATE STEEL TO BE 1/2" MIN. THICKNESS, AND DOES NOT REQUIRE "WATER" DESIGNATION. DIAMOND PLATE TO BE USED IN NON–TRAFFIC AREAS ONLY.

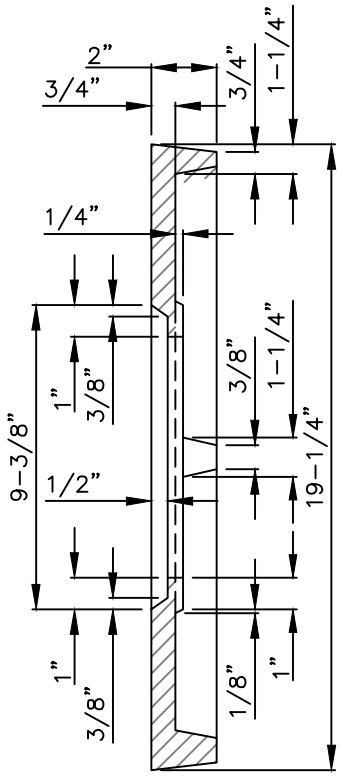
N.T.S.

| DETAIL NO. | STANDARD DETAIL | CAST IRON OR DIAMOND PLATE STEEL WATER METER BOX COVER NO. 3 | CITY OF KINGMAN | DETAIL NO. 312 |
|---|---|---|---|---|

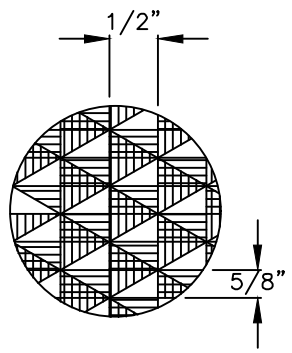
Effective: August 18, 2020 REVISED 2017 Ordinance No. 1910



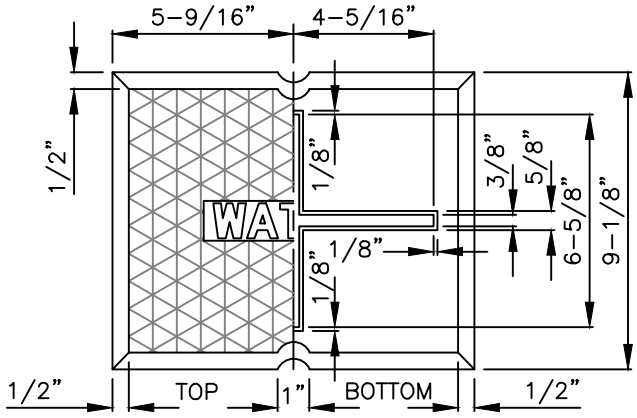

PLAN OF COVER



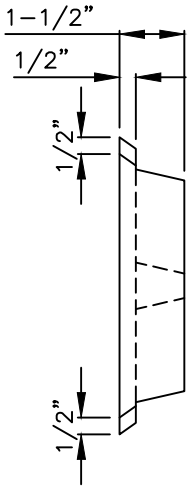

SECTION A-A




TOP OF COVER




INSPECTION PLATE



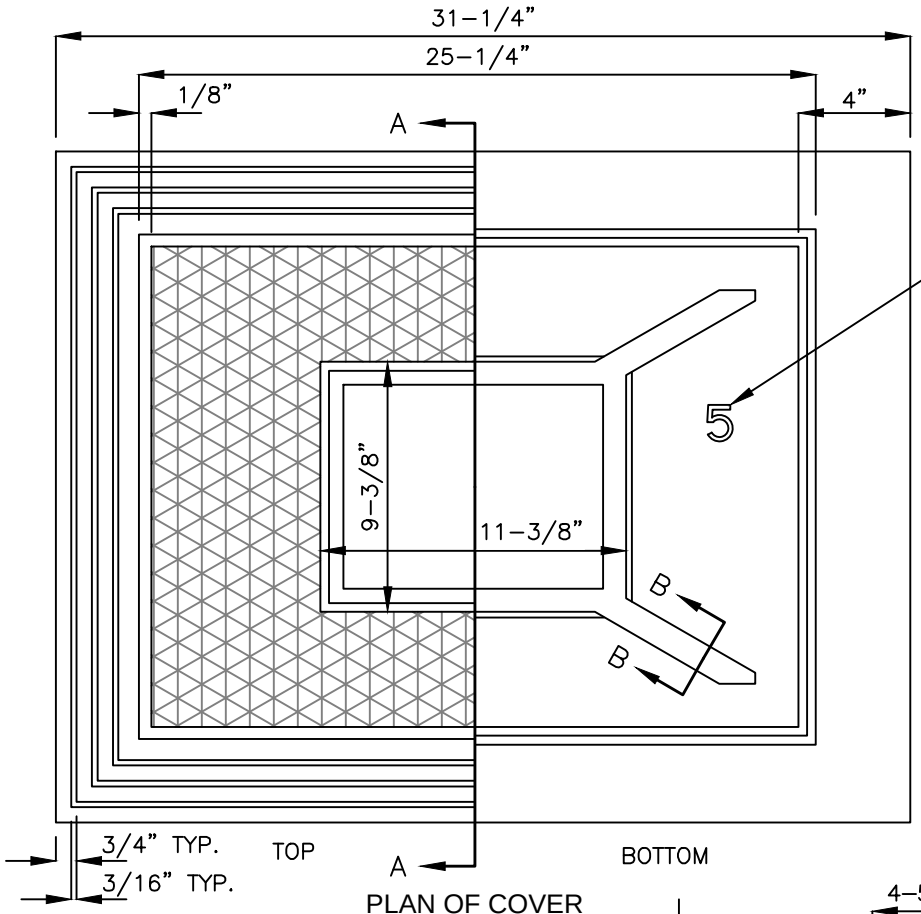

NOTES:

1. FOR CASTING SPECIFICATIONS, SEE SECT. 787.
2. THE BEARING EDGES OF THESE CASTINGS SHALL BE MACHINED TO INSURE A FULL BEARING ON A FLAT SURFACE.
3. DIAMOND PLATE STEEL TO BE 1/2" MINIMUM THICKNESS, AND DOES NOT REQUIRE "WATER" DESIGNATION. DIAMOND PLATE TO BE USED IN NON-TRAFFIC AREAS ONLY.

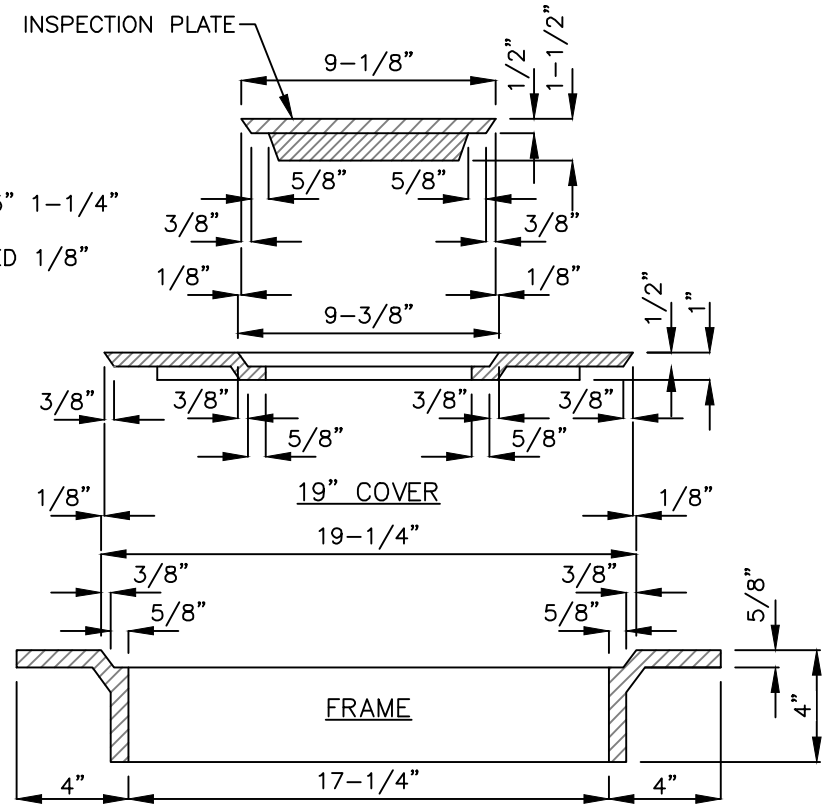
N.T.S.

| DETAIL NO. 313 | STANDARD DETAIL | CAST IRON OR DIAMOND PLATE STEEL WATER METER BOX COVER NO. 4 | CITY OF KINGMAN | DETAIL NO. 313 |
|---|---|---|---|---|

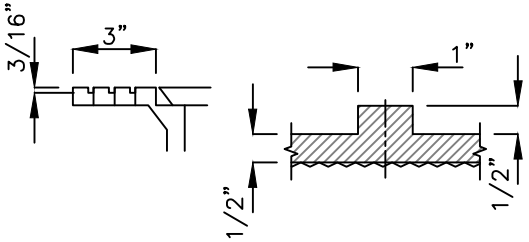
Effective: August 18, 2020 REVISED 2017 Ordinance No. 1910



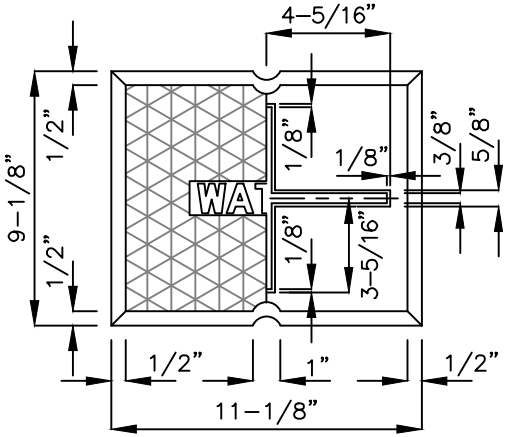

PLAN OF COVER



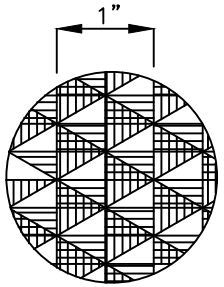

SECTION A-A




SECTION B-B




INSPECTION PLATE




DETAIL

TOP OF COVER

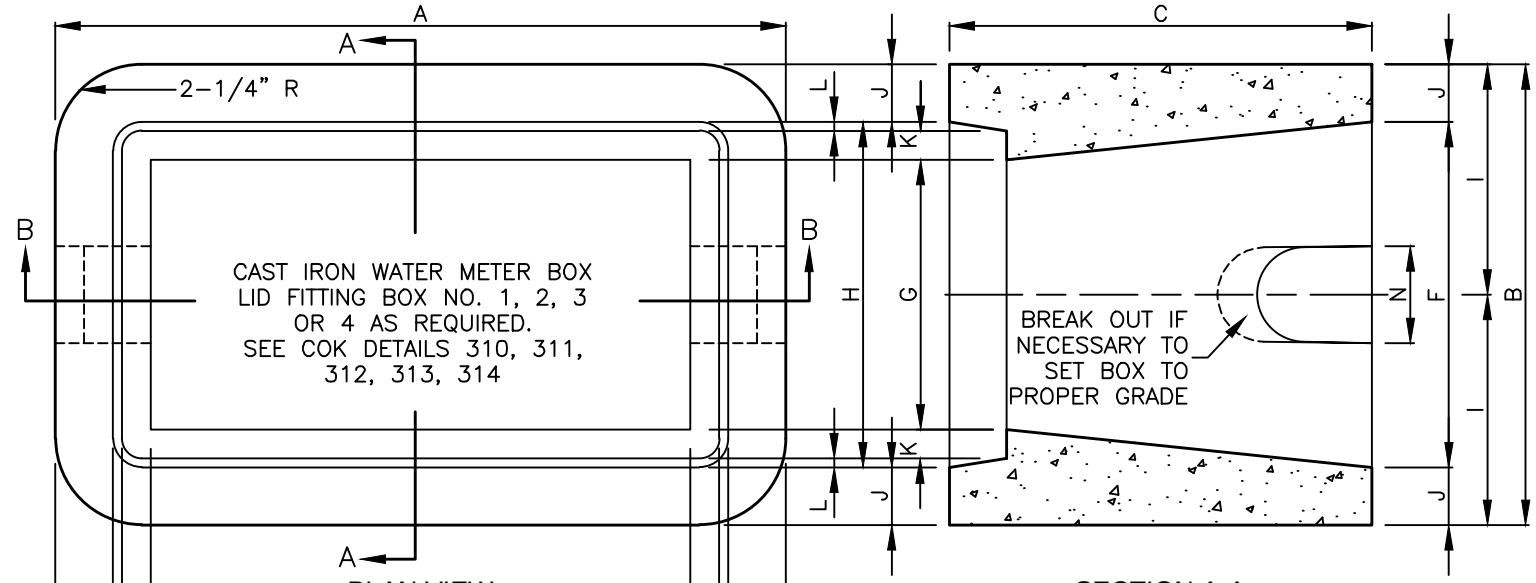
NOTES:

1. FOR CASTING SPECIFICATIONS, SEE SECT. 787.
2. THE BEARING EDGES OF THESE CASTINGS SHALL BE MACHINED TO INSURE A FULL BEARING ON A FLAT SURFACE.
3. DIAMOND PLATE STEEL TO BE 3/8" MINIMUM THICKNESS, AND DOES NOT REQUIRE "WATER" DESIGNATION. DIAMOND PLATE TO BE USED IN NON–TRAFFIC AREAS ONLY.

N.T.S.

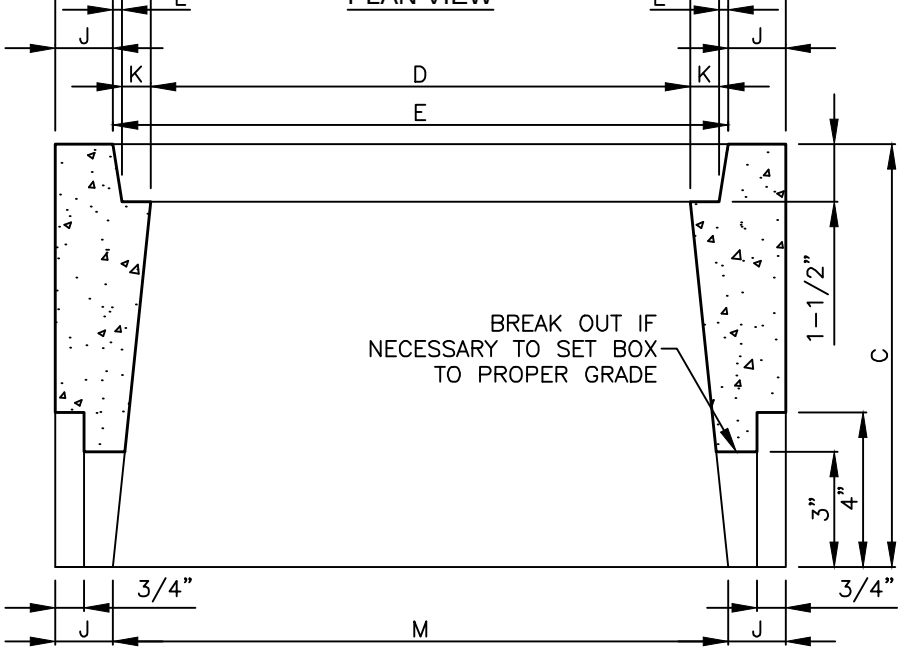
| DETAIL NO. 314 | STANDARD DETAIL | CAST IRON OR DIAMOND PLATE STEEL WATER METER BOX COVER NO. 5 | CITY OF KINGMAN | DETAIL NO. 314 |
|---|---|---|---|---|

Effective: August 18, 2020 REVISED 2010 Ordinance No. 1910




PLAN VIEW

SECTION A-A




SECTION B-B

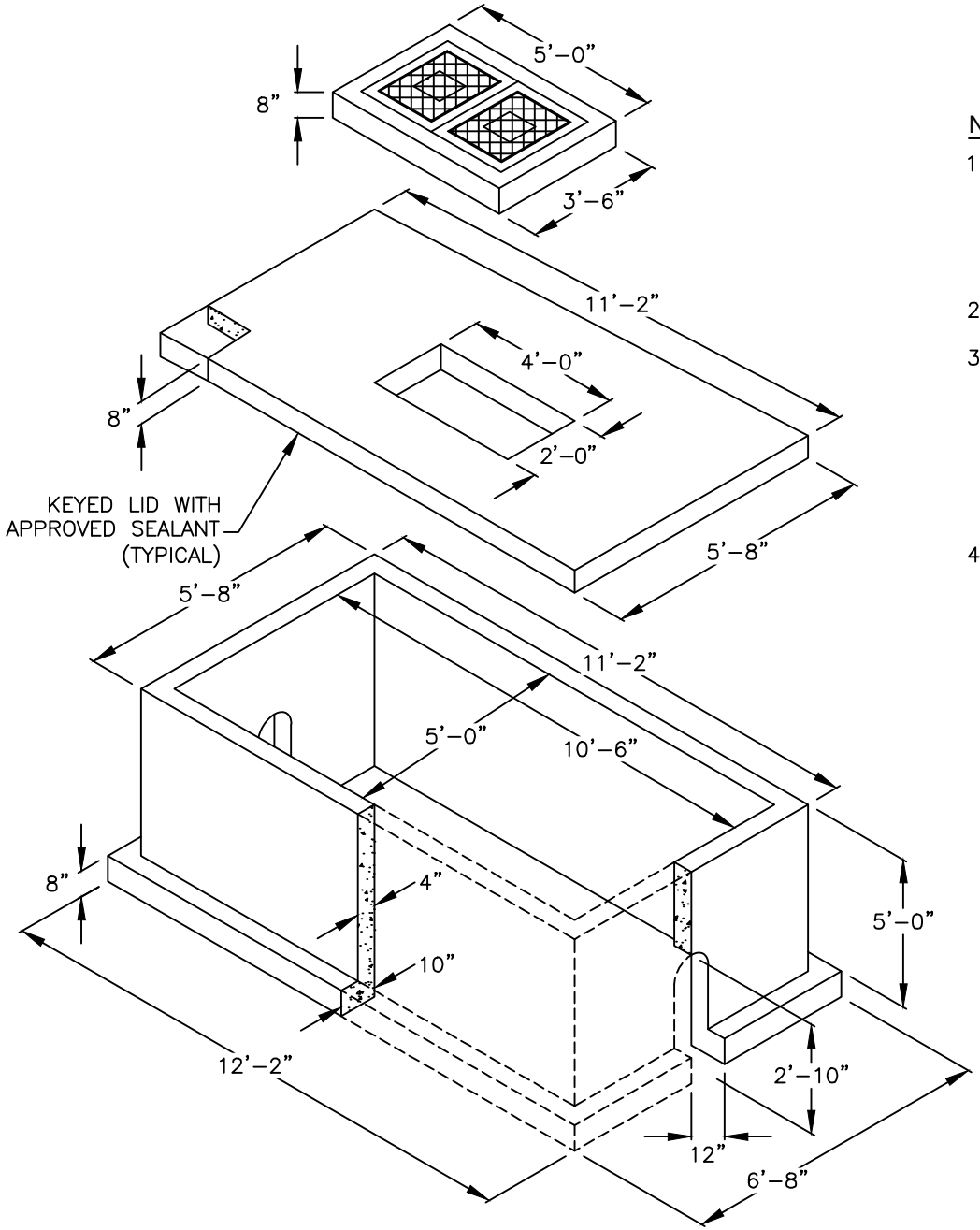
NOTES:

1. METER BOXES SHALL BE PRECAST PORTLAND CONCRETE USING CLASS AA CONCRETE PER SECT. 725.
2. METER BOXES SHALL CONFORM TO THE DIMENSIONS AS SHOWN.
3. ALL METER BOXES SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO USE.
4. METER BOXES SHALL BE SET TO FINISH GRADE AS DIRECTED BY THE CITY ENGINEER.

| METER BOX DIMENSIONS | | | | |
|---|---|---|---|---|
| DIMS | BOX NUMBER | | | |
| | 1 | 2 | 3 | 4 |
| A | 19" | 24–1/2" | 29–1/2" | 33–1/2" |
| B | 12" | 16–3/4" | 18–1/2" | 22–3/4" |
| C | 11" | 12" | 13" | 12" |
| D | 14" | 19" | 23–3/4" | 27–3/4" |
| E | 16" | 22" | 26–1/2" | 30–1/2" |
| F | 9" | 13–1/4" | 15" | 19–3/4" |
| G | 7" | 11–1/4" | 12–3/4" | 17" |
| H | 9" | 14–1/4" | 15–1/2" | 19–3/4" |
| I | 6" | 8–3/8" | 9–1/4" | 11–3/8" |
| J | 1–1/2" | 1–3/4" | 1–3/4" | 1–1/2" |
| K | 3/4" | 1–1/8" | 1" | 1" |
| L | 1/4" | 3/8" | 3/8" | 3/8" |
| M | 16" | 21" | 25–1/2" | 30–1/2" |
| N | 2–1/2" | 3–1/2" | 4" | 4" |
| | 5/8" OR 3/4" METER | 1" METER | 1–1/2" METER | 2" METER |

N.T.S.

| DETAIL NO. 320 | STANDARD DETAIL | CONCRETE METER BOXES | CITY OF KINGMAN | DETAIL NO. 320 |
|---|---|---|---|---|



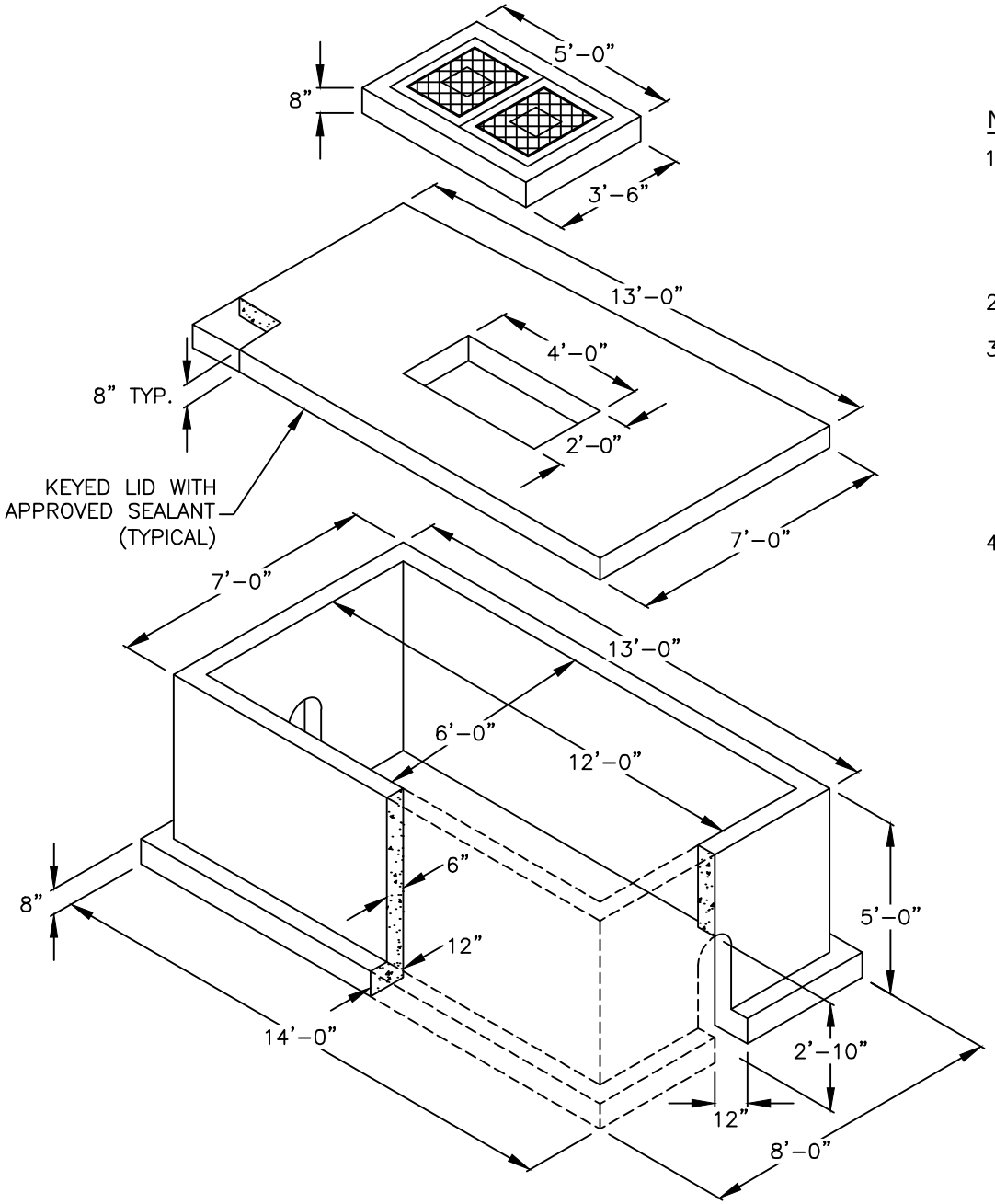

NOTES:

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, CONSTRUCTION SPECIFICATIONS AND DETAILS FROM THE MANUFACTURER FOR REVIEW AND APPROVAL BY THE CITY ENGINEER PRIOR TO INSTALLING THE VAULT AND ENTRY HARDWARE. VAULTS SHALL BE PRE–CAST CONCRETE ONLY.
2. VAULTS SHALL BE DESIGNED AND MEET AASHTO (HS20–44).
3. A NO. 1 METER BOX AND COVER PER CITY OF KINGMAN DETAIL 320 AND CITY OF KINGMAN DETAIL 310 SHALL BE PROVIDED AND MODIFIED BY THE CONTRACTOR TO HOUSE REMOTE READ DEVICES AND ASSOCIATED WIRING. 1/2 INCH DIA SCHEDULE 40 PVC CONDUIT SHALL BE RUN FROM THE VAULT TO THE INTERIOR OF THE METER BOX TO HOUSE REMOTE READ WIRING AS DIRECTED BY THE CITY ENGINEER.
4. THE VAULT FLOOR SHALL CONSIST OF 2" MAX DIA CRUSHED ROCK PER MAG SPECIFICATIONS SECTION 701, PLACED TO 4" MIN DEPTH.

* VAULT SPECIFICATIONS MAY DIFFER SLIGHTLY FROM MANUFACTURER TO MANUFACTURER (SEE NOTE 1)

N.T.S.

| DETAIL NO. 321 | STANDARD DETAIL | 3", 4" WATER METER VAULT | CITY OF KINGMAN | DETAIL NO. 321 |
|---|---|---|---|---|




NOTES:

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, CONSTRUCTION SPECIFICATIONS AND DETAILS FROM THE MANUFACTURER FOR REVIEW AND APPROVAL BY THE CITY ENGINEER PRIOR TO INSTALLING THE VAULT AND ENTRY HARDWARE. VAULTS SHALL BE PRE–CAST CONCRETE ONLY.

2. VAULTS SHALL BE DESIGNED AND MEET AASHTO (HS20–44).

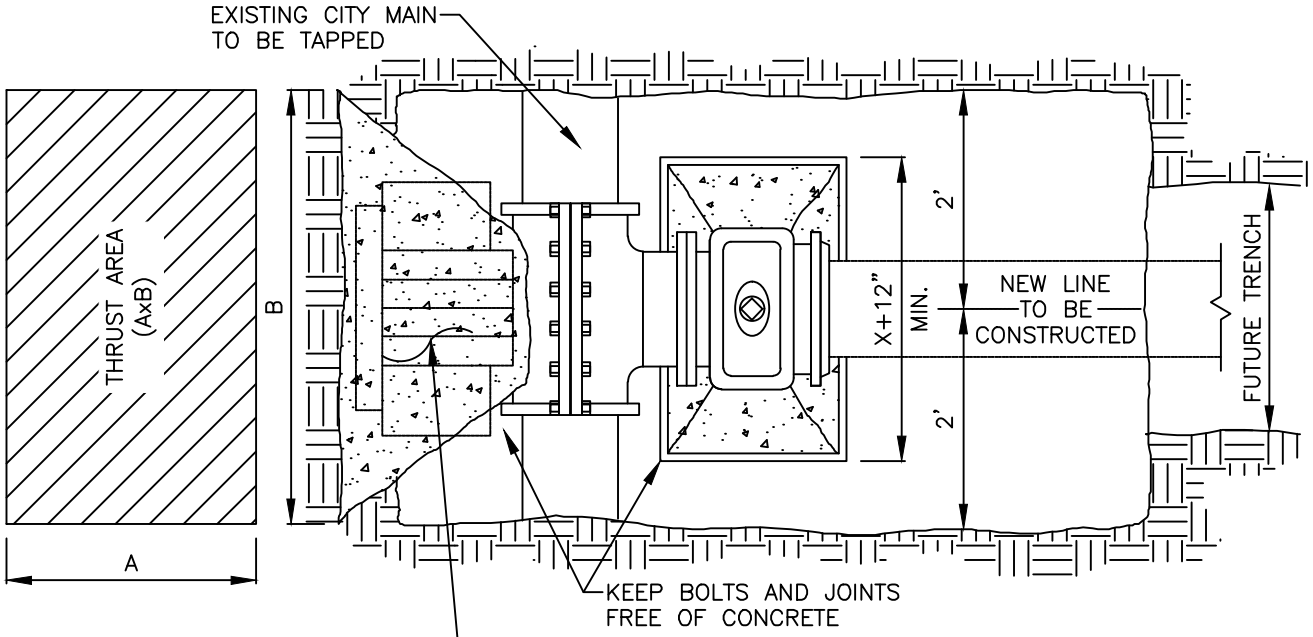
3. A NO. 1 METER BOX AND COVER PER CITY OF KINGMAN DETAIL 320 AND CITY OF KINGMAN DETAIL 310 SHALL BE PROVIDED AND MODIFIED BY THE CONTRACTOR TO HOUSE REMOTE READ DEVICES AND ASSOCIATED WIRING. 1/2 INCH DIA SCHEDULE 40 PVC CONDUIT SHALL BE RUN FROM THE VAULT TO THE INTERIOR OF THE METER BOX TO HOUSE REMOTE READ WIRING AS DIRECTED BY THE CITY ENGINEER.

4. THE VAULT FLOOR SHALL CONSIST OF 2" MAX DIA CRUSHED ROCK PER MAG SPECIFICATIONS SECTION 701, PLACED TO 4" MIN DEPTH.

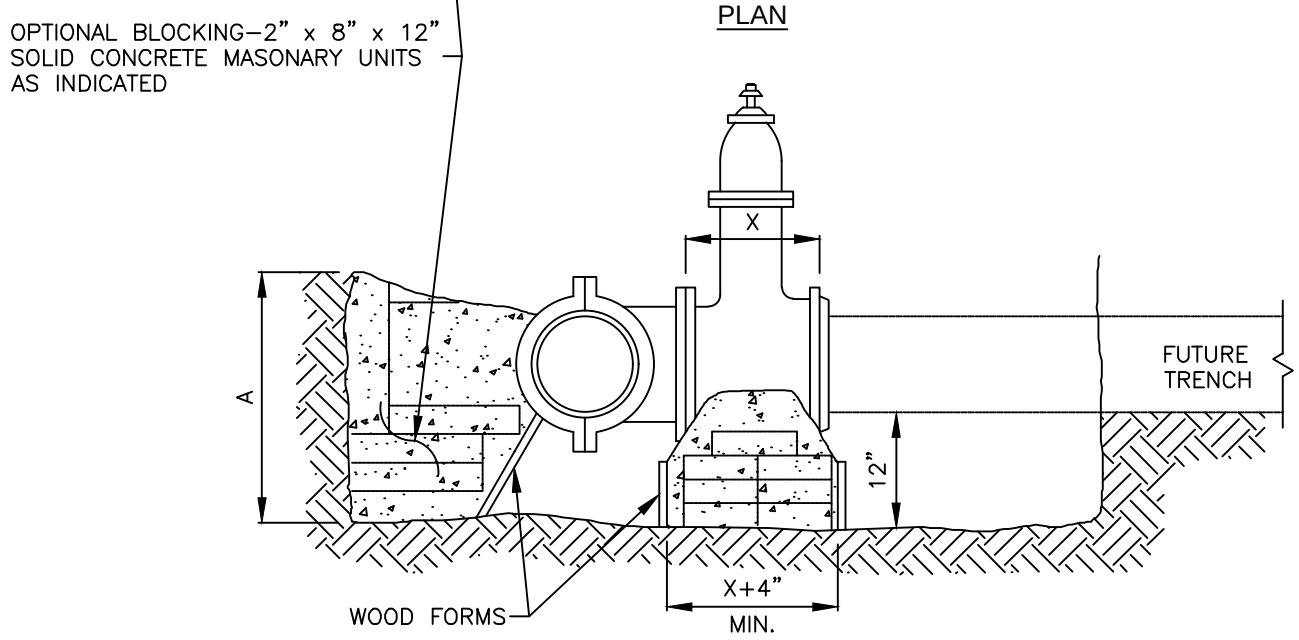
*VAULT SPECIFICATIONS MAY DIFFER SLIGHTLY FROM MANUFACTURER TO MANUFACTURER (SEE NOTE 1)

N.T.S.

| DETAIL NO. 322 | STANDARD DETAIL | 6" WATER METER VAULT | CITY OF KINGMAN | DETAIL NO. 322 |
|---|---|---|---|---|




PLAN




ELEVATION

NOTES:

1. EDGE OF TAPPING SLEEVE TO BE PLACED A MINIMUM OF 18" FROM ANY BELL, COUPLING VALVE, FITTING OR OTHER OBSTRUCTION.
2. CONTRACTOR SHALL EXCAVATE AS SHOWN AND SHALL SET TAPPING SLEEVE AND VALVE AND TIGHTEN ALL BOLTS PRIOR TO THE PRESSURE TEST.
3. ALL TAPPING SLEEVES AND VALVES MUST BE PRESSURE TESTED AND WITNESSED BY THE INSPECTOR PRIOR TO BLOCKING OR TAPPING. THE PRESSURE TEST SHALL BE PER MAG 630.4.2 WITH NO LEAKS OR PRESSURE LOST FOR THE DURATION OF THE TEST.
4. CONCRETE THRUST BLOCKS SHALL BE CLASS 'B' PER SECT. 725.
5. TAPS SHALL BE MADE BY THE CONTRACTOR FOR 3" TAPS AND LARGER. THE CONTRACTOR MAKING THE TAP MUST BE APPROVED BY THE CITY ENGINEER PRIOR TO BEGINNING ANY WORK.
6. THIS DETAIL COVERS TAPPING SLEEVES 3" THROUGH 12" IN SIZE ON DUCTILE IRON, CAST IRON, PVC AND ASBESTOS CEMENT PIPE. TAPPING SLEEVES SHALL BE PER MAG SEC. 630.4.2 (B), ALL MATERIALS REQUIRE A SUBMITTAL AND APPROVAL BY THE ENGINEER.

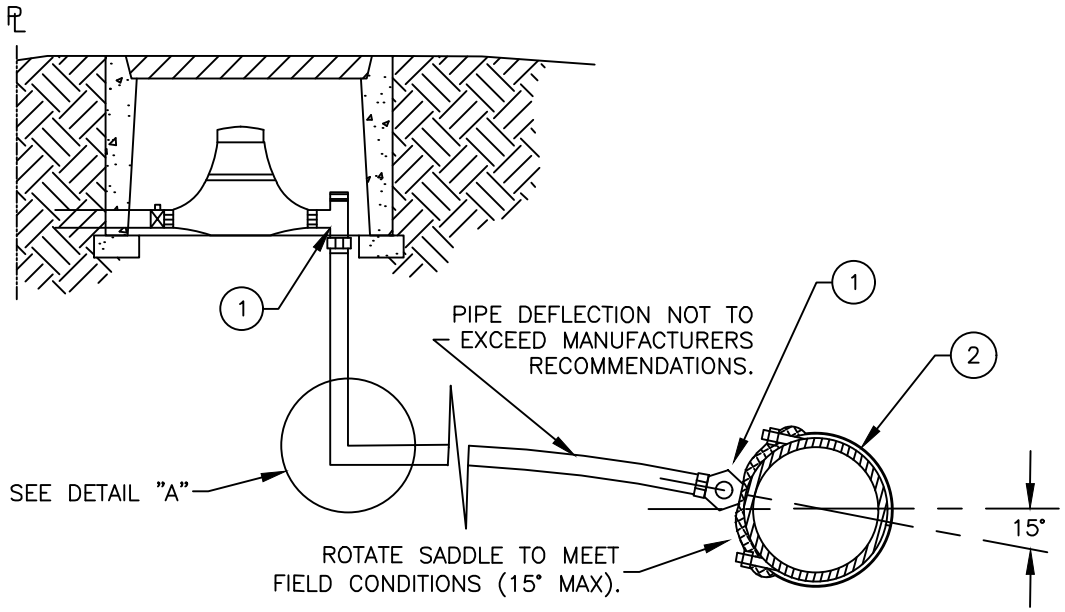
| NOMINAL PIPE SIZE | MAX TAP SIZE |
|---|---|
| 3" | 3" |
| 4" | 4" |
| 6" | 6" |
| 8" | 8" |
| 10" | 10" |
| 12" | 12" |

| SIZE OF NEW LINE TO BE CONSTRUCTED | MINIMUM THRUST AREA REQUIRED EQUALS (AxB) (SQUARE FEET) |
|---|---|
| 4" AND LESS | 3 |
| 6" | 4 |
| 8" | 6 |
| 10" | 9 |
| 12" | 13 |

N.T.S.

| DETAIL NO. 340 | STANDARD DETAIL | INSTALLING TAPPING SLEEVES AND VALVES 3" AND LARGER | CITY OF KINGMAN | DETAIL NO. 340 |
|---|---|---|---|---|

Effective: August 18, 2020 REVISED 2020 Ordinance No. 1910




## ALLOWABLE MATERIALS FOR 1" - 2" SERVICES

SCHEDULE 80 IPS PVC PER ASTM D1784, D1785 AS APPROVED BY THE WATER SUPERINTENDENT.

1"–FORD ANGLE VALVE BA63–342W–NL OR APPROVED EQUAL.

1"–FORD BALL CORP FB1101–4–NL OR APPROVED EQUAL.

1 1/2"–FORD BALL CORP FB1102–6–NL OR APPROVED EQUAL.

2"–FORD BALL CORP FB1102–7–NL OR APPROVED EQUAL.

1 1/2"–FORD ANGLE VALVE OR APPROVED EQUAL.

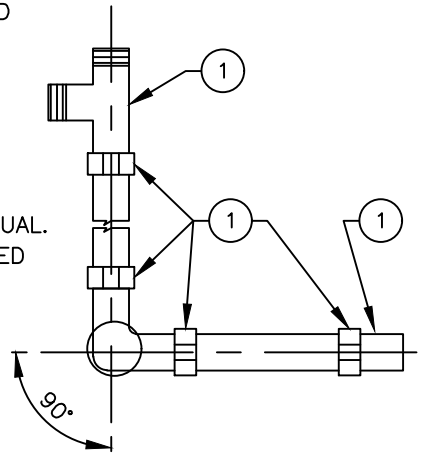
2"–FORD ANGLE VALVE BFA–777W–AWT–NL OR APPROVED EQUAL.

1"–2" FORD PACK JOINT ELL L66–XX–NL (STYLE) OR APPROVED EQUAL.

(1) ALL SERIVICE LINES SHALL USE PACK JOINT FITTINGS AS APPROVED

(2) SERVICE SADDLES ON PVC WATER MAINS SHALL BE BRASS FULL CIRCLE SINGLE CLAMPS MADE SPECIFICALLY FOR AWWA C–900 PVC PIPE. AC, STEEL AND DIP PIPE SHALL BE BRASS DOUBLE STRAP SERVICE SADDLES.

ALL SERIVICE SADDLES AND FITTINGS SHALL BE MANUFACTURED BY FORD METER BOX OR APPROVED EQUAL.



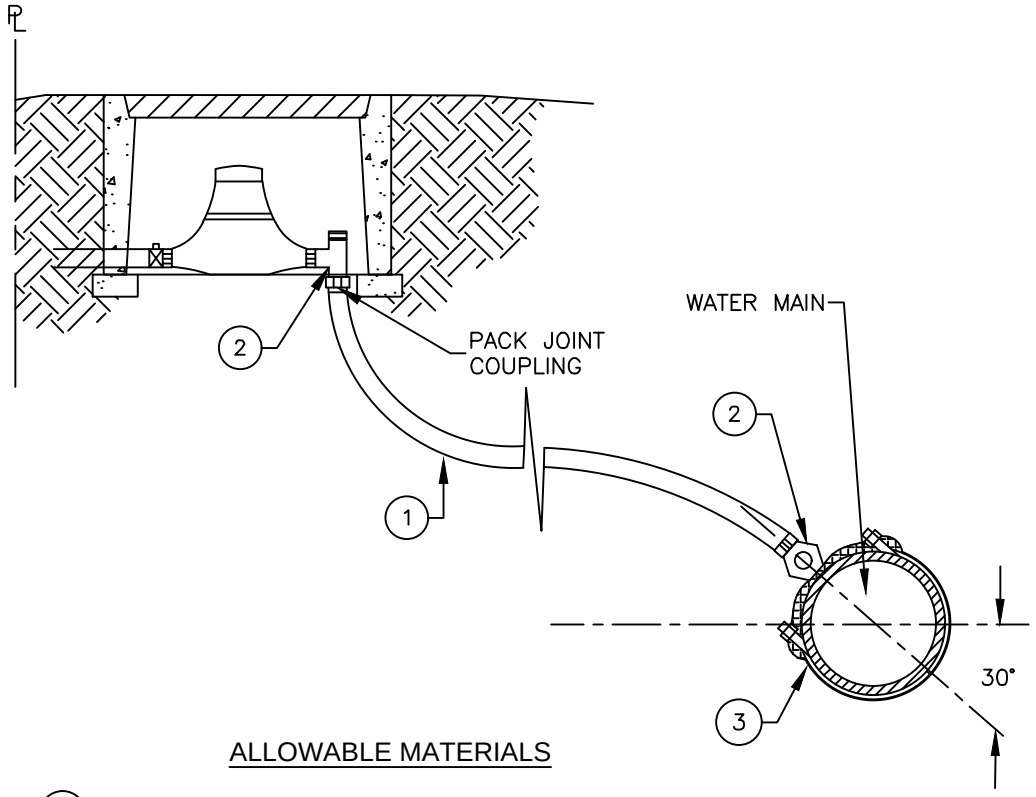

DETAIL "A"

## NOTES:

1. METER STOPS SHALL BE BURIED ONE FOOT DEEP. THE METER STOP SHALL BE LOCATED PER COK DETAILS 344–2 & 344–3 OR AS DIRECTED BY THE CITY OF KINGMAN WATER SUPERINTENDENT.
2. ALL FITTINGS SHALL BE THE PACK JOINT TYPE. FLARED FITTINGS AND COUPLINGS WILL NOT BE ACCEPTED.
3. METER BOXES SHALL BE IN ACCORDANCE WITH CITY OF KINGMAN STANDARD DETAIL 320, METER BOX COVERS SHALL BE IN ACCORDANCE WITH COK STANDARD DETAILS 310, 311, 312, 313, OR 314.
4. METER BOXES AND COVERS SHALL BE SUPPLIED BY THE DEVELOPER OR CONTRACTOR.
5. SERVICE SADDLES AT THE WATER MAIN SHALL BE LOCATED A MINIMUM OF 18 INCHES FROM COUPLINGS, COLLARS, OR ANY FITTING OR VALVE.
6. THE MAXIMUM SIZE OUTLET FOR USING STRAP SERVICE CLAMPS IS 2". THE MAXIMUM PIPE DIA THAT CAN BE TAPPED IS 12".
7. WATER SERVICE LINES SHALL MEET THE REQUIREMENTS OF THE APPLICABLE CODES AND STANDARDS FOR POTABLE WATER CONVEYANCE INCLUDING: ANSI, ASTM, NSF61, IPC, AND MAG. ALL WATER SERVICE LINES SHALL BE IRON PIPE SIZE (IPS) DIAMETER, RATED TO 200 PSI MIN.
8. WATER SERVICE LINES SHALL BE BURIED A MINIMUM OF 24" TO FINISH GRADE. BACKFILL SHALL BE PER CITY OF KINGMAN DETAILS 200–1 & 392. MINIMUM TRENCH WIDTH SHALL BE PER MAG SECT. 601 TABLE 601–1.
9. LOCATOR WIRE AND WARNING TAPE SHALL BE INSTALLED IN THE SERVICE LINE TRENCH FROM THE MAIN TO THE METER BOX, IN ACCORDANCE WITH CITY OF KINGMAN DETAIL 392.
10. THE METER BOX SHALL BE ADJUSTED TO FINISH GRADE OR TO THE GRADE DIRECTED BY THE CITY ENGINEER. ALL ASSOCIATED WORK SHALL BE CONSIDERED INCIDENTAL.
11. WATER SERVICE LINE DIAMETER SHALL BE A MIN OF 1" AND MAXIMUM OF 2".

N.T.S.

| DETAIL NO. 344-1 | STANDARD DETAIL | 1" - 2" WATER SERVICE INSTALLATION USING SCH 80 PVC | CITY OF KINGMAN | DETAIL NO. 344-1 |
|---|---|---|---|---|




## ALLOWABLE MATERIALS

(1) SERVICE LINE MATERIAL: CROSSLINKED POLYETHLENE (PEXa) PIPING PRODUCED IN ACCORDANCE WITH AWWA C904. REHAU MUNICIPEX OR APPROVED EQUIVALENT.
1" FORD ANGLE VALVE – BA43–342W–NL OR APPROVED EQUAL.
1" FORD BALL CORP – FB1100–4–NL OR APPROVED EQUAL.
1 1/2" – 2" FORD BALL CORP – FB1100–X–NL OR APPROVED EQUAL.
1 1/2" – 2" FORD ANGLE VALVE – BFA43–777W–NL OR APPROVED EQUAL.

(2) ALL SERVICE LINES SHALL USE PACK JOINT FITTINGS AS APPROVED.

(3) SERVICE SADDLES ON PVC WATER MAINS SHALL BE BRASS FULL CIRCLE SINGLE CLAMPS MADE SPECIFICALLY FOR AWWA C–900 PVC PIPE. AC, STEEL AND DIP PIPE SHALL BE BRASS DOUBLE STRAP SERVICE SADDLES.

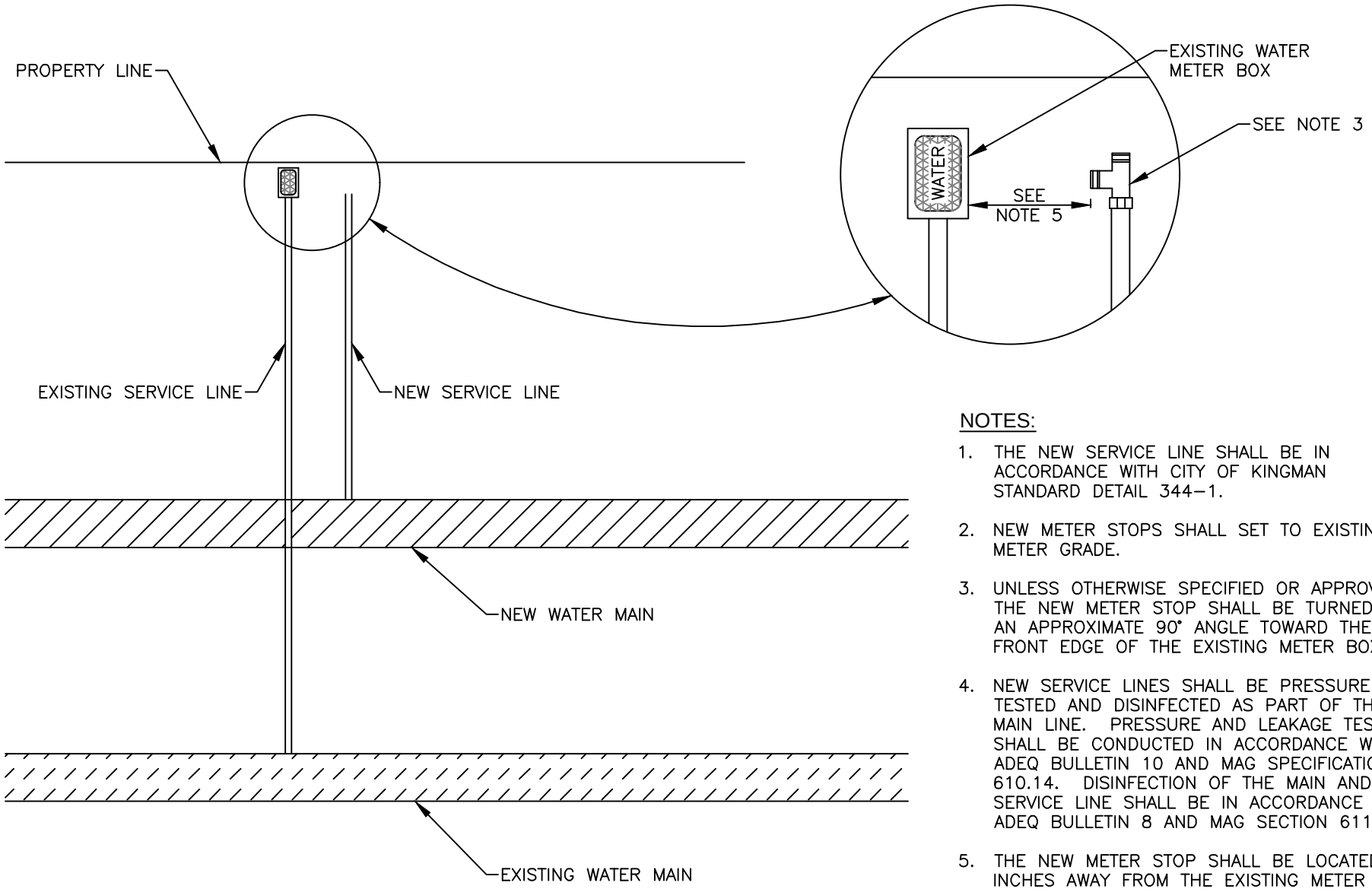
(4) ALL SERVICE SADDLES AND FITTINGS SHALL BE MANUFACTURED BY FORD METER BOX OR APPROVED EQUAL.

## NOTES:

1. METER STOPS SHALL BE BURIED ONE FOOT DEEP. THE METER STOP SHALL BE LOCATED PER COK DETAILS 344–2 & 344–3 OR AS DIRECTED BY THE CITY OF KINGMAN WATER SUPERINTENDENT.
2. ALL FITTINGS SHALL BE THE PACK JOINT TYPE.
3. METER BOXES SHALL BE IN ACCORDANCE WITH CITY OF KINGMAN STANDARD DETAIL 320, METER BOX COVERS SHALL BE IN ACCORDANCE WITH COK STANDARD DETAILS 310, 311, 312, 313, OR 314.
4. METER BOXES AND COVERS SHALL BE SUPPLIED THE DEVELOPER OR CONTRACTOR.
5. SERVICE SADDLES AT THE WATER MAIN SHALL BE LOCATED A MINIMUM OF 18 INCHES FROM COUPLINGS, COLLARS, OR ANY FITTING OR VALVE.
6. THE MAXIMUM SIZE OUTLET FOR USING STRAP SERVICE CLAMPS IS 2". THE MAXIMUM PIPE DIA THAT CAN BE TAPPED IS 12".
7. WATER SERVICE LINES SHALL MEET THE REQUIREMENTS OF THE APPLICABLE CODES AND STANDARDS FOR POTABLE WATER CONVEYANCE INCLUDING: ANSI, ASTM B88, NSF61, IPC AND MAG.
8. SERVICE LINES SHALL BE ONE CONTINUOUS PIECE FROM THE SERVICE SADDLE TO THE METER.
9. PIPE SHALL BE INSTALLED PER MANUFACTURES RECOMMENDATIONS.
10. KINKED OR DAMAGED PIPE WILL BE REJECTED.
11. WATER SERVICE LINES SHALL BE BURIED A MINIMUM OF 24 INCHES DEEP TO FINISH GRADE. BACKFILL SHALL BE PER CITY OF KINGMAN DETAILS 200–1 & 392. MINIMUM TRENCH WIDTHS SHALL BE PER MAG SECT. 601 TABLE 601–1.
12. LOCATOR WIRE AND WARNING TAPE SHALL BE INSTALLED IN THE SERVICE LINE TRENCH FROM THE MAIN TO THE METER BOX, IN ACCORDANCE WITH CITY OF KINGMAN DETAIL 392.
13. THE METER BOX SHALL BE ADJUSTED TO FINISH GRADE OR TO THE GRADE DIRECTED BY THE CITY ENGINEER. ALL ASSOCIATED WORK SHALL BE CONSIDERED INCIDENTAL.
11. WATER SERVICE LINE DIAMETER SHALL BE A MIN OF 1" AND MAXIMUM OF 2".

N.T.S.

| DETAIL NO. 344-1-A | STANDARD DETAIL | 1" - 2" WATER SERVICE INSTALLATION USING CROSSLINKED POLYETHYLENE | CITY OF KINGMAN | DETAIL NO. 344-1-A |
|---|---|---|---|---|

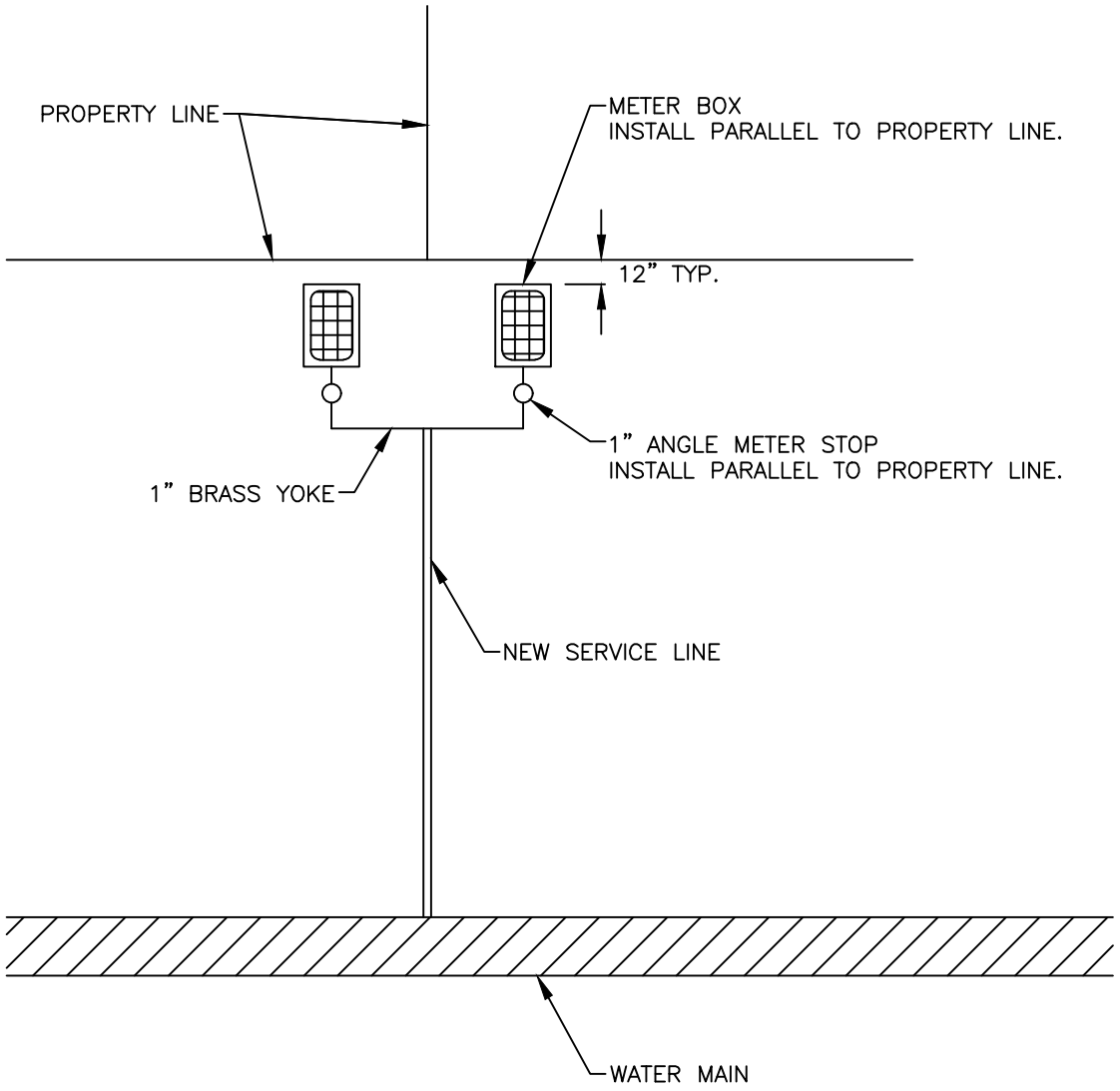



NOTES:

1. THE NEW SERVICE LINE SHALL BE IN ACCORDANCE WITH CITY OF KINGMAN STANDARD DETAIL 344–1.
2. NEW METER STOPS SHALL SET TO EXISTING METER GRADE.
3. UNLESS OTHERWISE SPECIFIED OR APPROVED, THE NEW METER STOP SHALL BE TURNED AT AN APPROXIMATE 90° ANGLE TOWARD THE FRONT EDGE OF THE EXISTING METER BOX.
4. NEW SERVICE LINES SHALL BE PRESSURE TESTED AND DISINFECTED AS PART OF THE MAIN LINE. PRESSURE AND LEAKAGE TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH ADEQ BULLETIN 10 AND MAG SPECIFICATION 610.14. DISINFECTION OF THE MAIN AND SERVICE LINE SHALL BE IN ACCORDANCE WITH ADEQ BULLETIN 8 AND MAG SECTION 611.
5. THE NEW METER STOP SHALL BE LOCATED 6 INCHES AWAY FROM THE EXISTING METER BOX FOR 3/4 AND 1 INCH SERVICES. THE NEW METER STOP SHALL BE LOCATED 18 INCHES AWAY FROM THE EXISTING METER BOX FOR 2 INCH AND LARGER SERVICES.

N.T.S.

| DETAIL NO. 344-2 | STANDARD DETAIL | WATER SERVICE REPLACEMENT | CITY OF KINGMAN | DETAIL NO. 344-2 |
|---|---|---|---|---|




NOTES:

1. NEW WATER SERVICE LINES SHALL BE IN ACCORDANCE WITH CITY OF KINGMAN STANDARD DETAIL 344–1.
2. THE 1 INCH BRASS YOKE SHALL BE FORD UV U88–43–14–NL OR APPROVED EQUAL.
3. A 1 INCH BALL VALVE OR CURB STOP SHALL BE USED FOR CONNECTION TO THE YOKE WHEN REPLACING EXISTING SERVICE LINES.
4. METER BOXES SHALL BE IN ACCORDANCE WITH MAG STANDARD DETAIL 320, NO. 1.
5. METER BOX COVERS SHALL BE IN ACCORDANCE WITH MAG STANDARD DETAIL 310.
6. SERVICE SADDLES AT THE WATER MAIN SHALL BE LOCATED A MINIMUM OF 18 INCHES FROM A COUPLING, COLLAR, OR ANY TYPE OF FITTING OR VALVE.

ALLOWABLE MATERIALS:

FORD ANGLE VALVE – BA13–232W–NL OR APPROVED EQUAL.

FORD MUNICIPLEX COUPLING – C14–44–NL

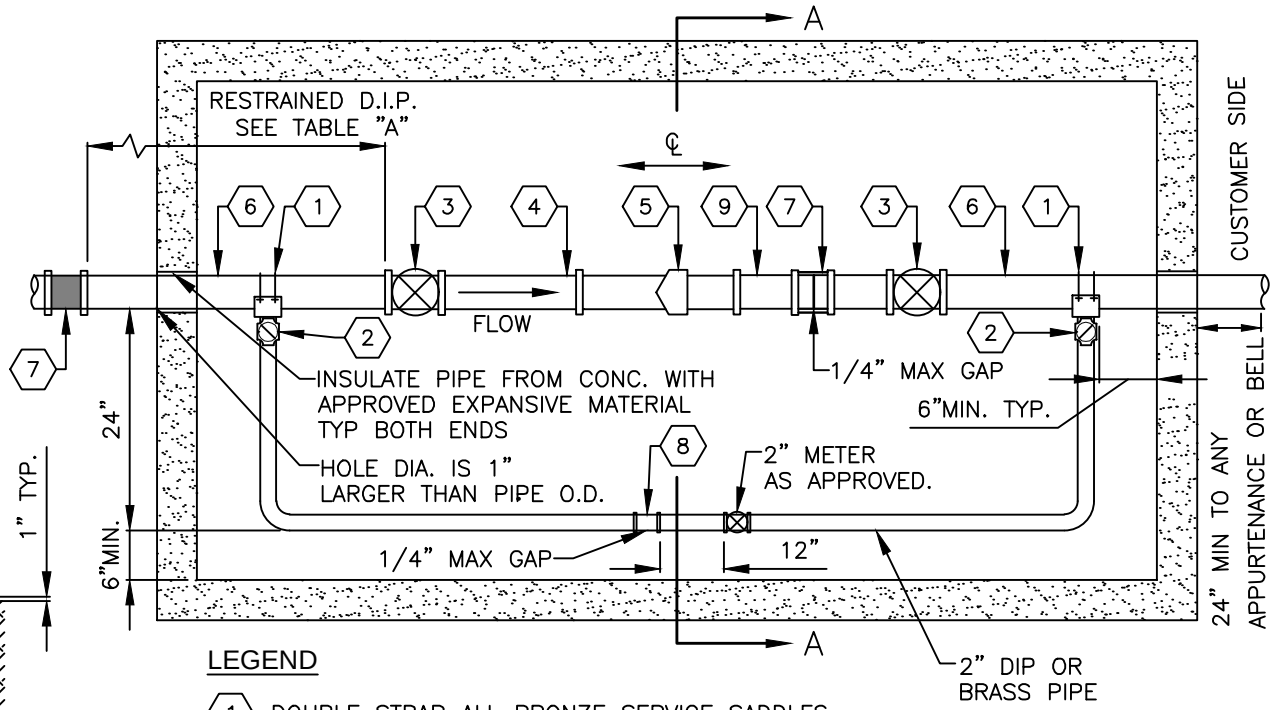
WITH FORD STAINLESS STEEL INSERTS #52
FORD SCH 80 COUPLING–C–16–44–NL.

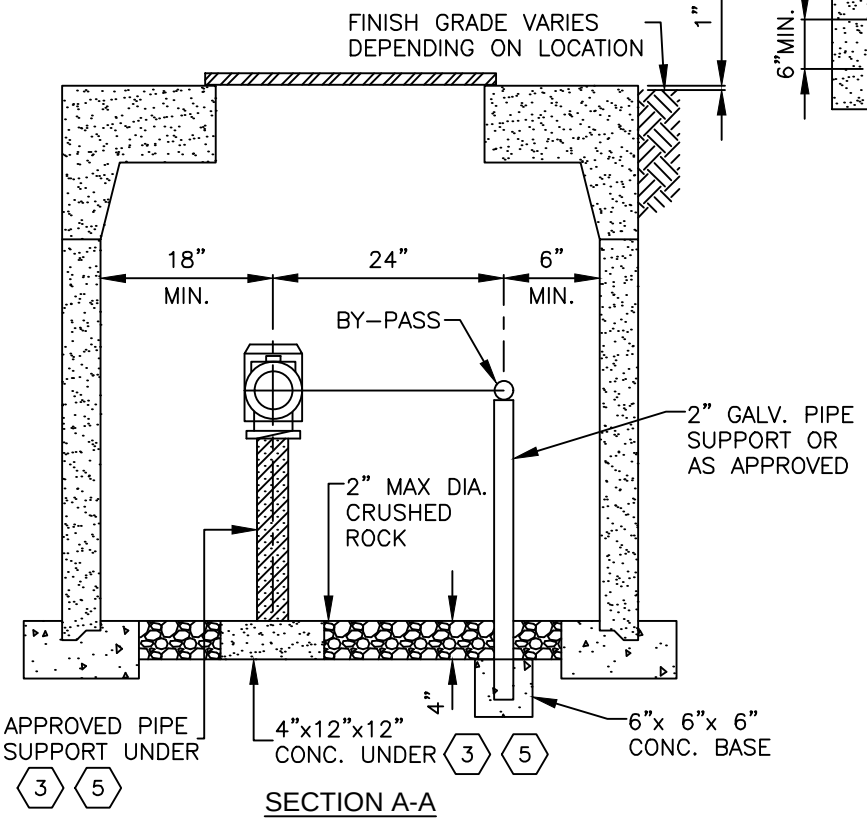
N.T.S.

| DETAIL NO. 344-3 | STANDARD DETAIL | DOUBLE WATER SERVICE | CITY OF KINGMAN | DETAIL NO. 344-3 |
|---|---|---|---|---|

NOTES:

1. AN APPROVED VALVE SHALL BE INSTALLED AT THE MAIN FOR THE SUPPLY LINE LEADING TO THE METER.
2. INSTALLATION FOR WATER METER SHALL INCLUDE ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO CONNECT TO THE SUPPLY LINE. (TAPPING SLEEVE, TEE, VALVES, SERVICE SADDLES, THRUST BLOCKS ETC) ALL PIPE, FITTINGS, TRENCHING, AND MATERIALS NEEDED FOR THE CONSTRUCTION FROM THE CONNECTION POINT TO THE METER. (ALL COMPONENTS OF THE METER ASSEMBLY AND VAULT).
3. FOR VAULT CONSTRUCTION SEE CITY OF KINGMAN DETAIL 321 OR 322.




SECTION A-A

LEGEND

1. DOUBLE STRAP ALL BRONZE SERVICE SADDLES.
2. CORP. STOP, 2" (BALL TYPE).
3. FLANGED RESILIENT WEDGE GATE VALVE WITH HAND WHEEL, OPEN LEFT.
4. FLANGED SPOOL (24" LENGTH).
5. TURBOMETER U.L. APPROVED: SENSUS OR W–2000 DR, OR HERSEY F.M,–C.T. OR NEPTUNE TURBINE–F.S.–U.L. OR APPROVED BY WATER SUPERINTENDENT.
6. FLANGED SPOOL, OR DUCTILE IRON PIPE WITH MEGA–LUGS.
7. DUCTILE IRON SLEEVE RESTRAINED WITH MEGA–LUGS. (TYPICAL).
8. STEEL REPAIR COUPLING, FORD FC3 OR APPROVED EQUAL.
9. 24" DIP SPOOL.

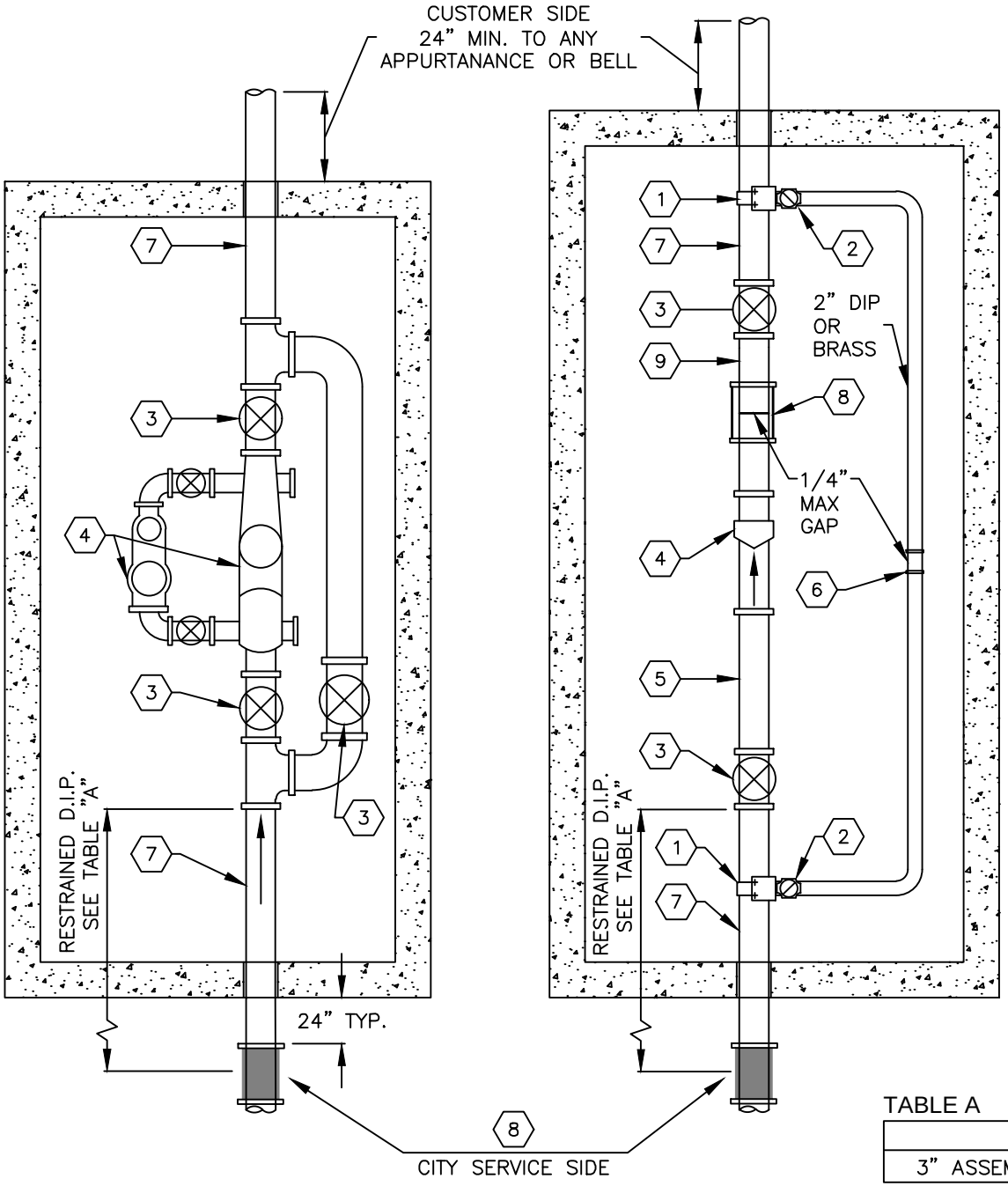
TABLE A

| MINIMUM RESTRAINED PIPE LENGTH CITY SERVICE SIDE (FEET) | |
|---|---|
| 3" ASSEMBLY | 54 |
| 4" ASSEMBLY | 72 |
| 6" ASSEMBLY | 102 |

N.T.S.

| DETAIL NO. 345-1 | STANDARD DETAIL | 3", 4", 6" WATER METER | CITY OF KINGMAN | DETAIL NO. 345-1 |
|---|---|---|---|---|

Effective: August 18, 2020 REVISED 2017 Ordinance No. 1910




## LEGEND

1. ALL BRONZE DOUBLE STRAP SERVICE SADDLES.
2. 2" FORD BALL VALVE.
3. RESILENT WEDGE GATE VALVE, FLANGED, WITH HAND WHEEL TO OPEN LEFT PER MAG 630.3.
4. TURBOMETER U.L. APPROVED: SENSUS W–5000 DR OR W–2000 DR OR HERSEY F.M.–C.T. OR NEPTUNE TURBINE–F.S.–U.L. OR AS APPROVED BY WATER SUPERINTENDENT.
6. STEEL REPAIR COUPLING, FORD FC3 OR APPROVED EQUAL.
7. BOLTED FLEXIBLE COUPLING (GASKETED SLEEVE TYPE), FORD OR APPROVED EQUAL.
8. FLANGED SPOOL, OR DUCTILE IRON PIPE WITH MEGA LUGS.
9. DUCTILE IRON SLEEVE RESTRAINED WITH MEGA–LUGS.

## NOTES

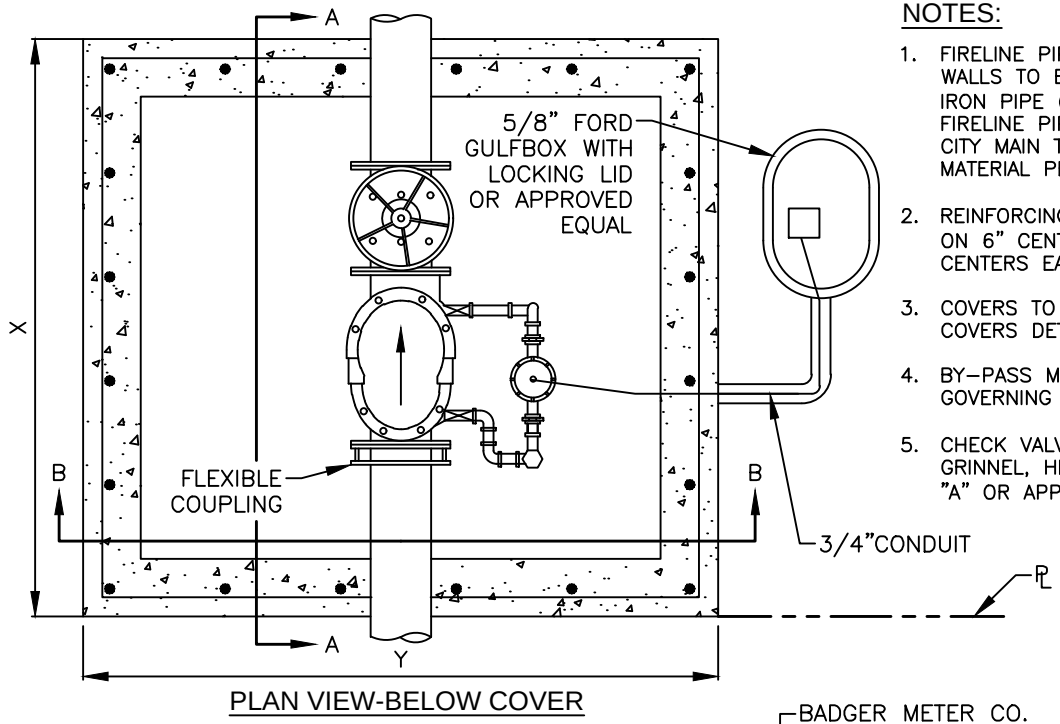
1. FOR VAULT CONSTRUCTION SEE COK DETAIL 321 AND 322.
2. FOR LARGER METERS, SPECIAL VAULT DESIGN IS REQUIRED.
3. REQUIREMENT OF REMOTE READING DEVICE IS AT THE OPTION OF THE UTILITY.
4. AT LEAST THREE APPROVED PIPE SUPPORTS ON 4X12X12 CONCRETE FOOTINGS SHALL BE PLACED UNDER THE ASSEMBLEY AS DIRECTED BY THE CITY ENGINEER.
5. AN APPROVED VALVE SHALL BE PLACED ON THE SUPPLY LINE AT THE MAIN.
6. INSTALLATION FOR WATER METER SHALL INCLUDE ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO CONNECT TO THE SUPPLY LINE. (TAPPING SLEEVE, TEE, VALVES, SERVICE SADDLES, THRUST BLOCKS ETC) ALL PIPE, FITTINGS, TRENCHING, AND MATERIALS NEEDED FOR THE CONSTRUCTION FROM THE CONNECTION POINT TO THE METER.
7. STRAINER (3", 4", 6") AVAILABLE FROM METER MANUFACTURER. INSTALL ONLY WHEN "TURBO" IS USED AS DIRECTED BY THE CITY WATER SUPERINTENDENT.

TABLE A

| MINIMUM RESTRAINED PIPE LENGTHS (FEET) | | |
|---|---|---|
| 3" ASSEMBLY –54 | 4" ASSEMBLY –72 | 6" ASSEMBLY –102 |

N.T.S.

| DETAIL NO. 345-2 | STANDARD DETAIL | 3", 4", 6" WATER METER WITH ON-SITE FIRE HYDRANTS | CITY OF KINGMAN | DETAIL NO. 345-2 |
|---|---|---|---|---|

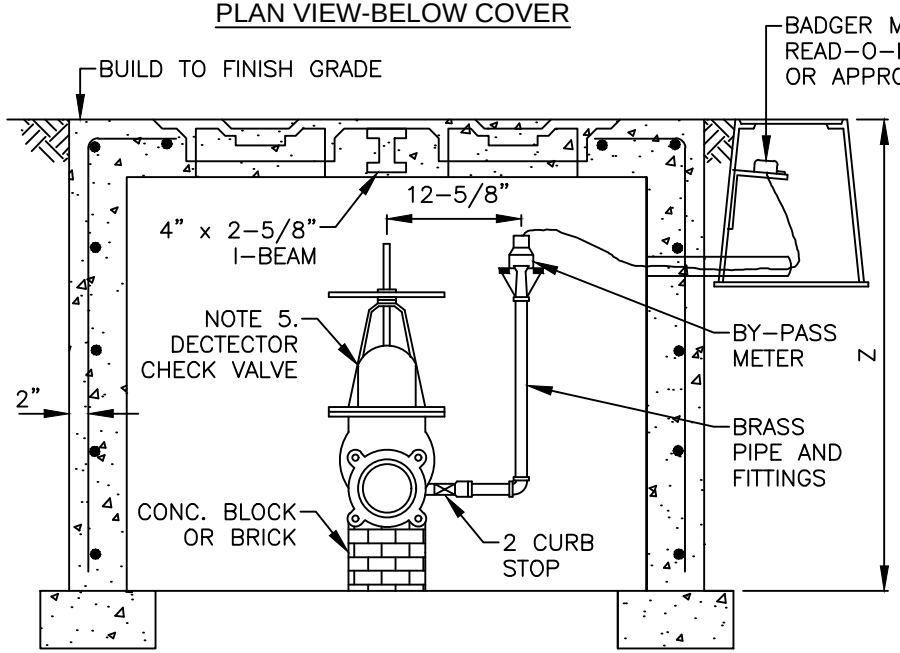


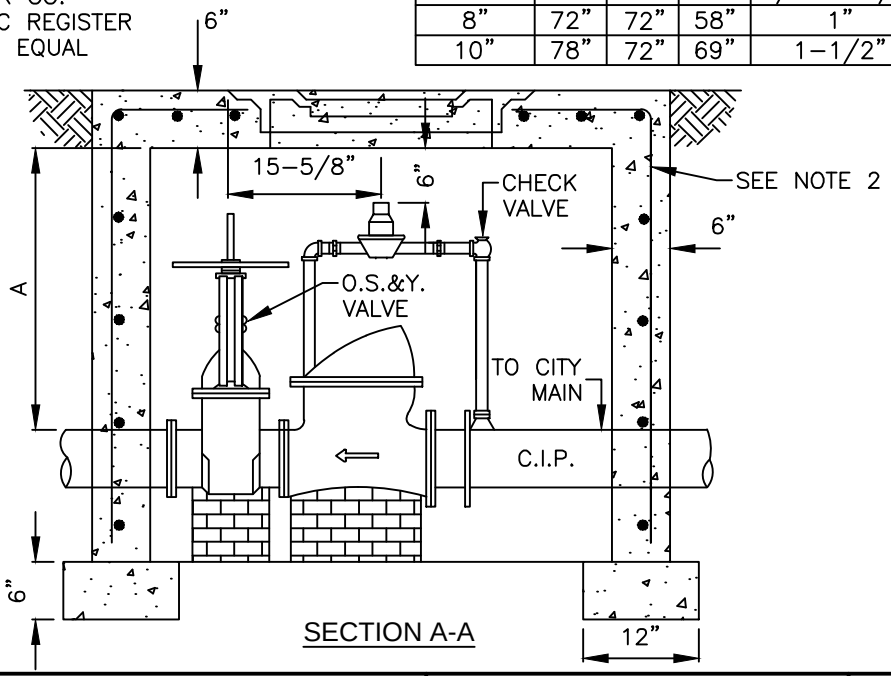

PLAN VIEW-BELOW COVER

NOTES:

1. FIRELINE PIPE WITHIN VAULT AND VAULT WALLS TO BE CONSTRUCTED OF DUCTILE IRON PIPE (REPLACES CAST IRON PIPE). FIRELINE PIPE FROM EXTERIOR OF VAULT TO CITY MAIN TO BE AN APPROVED PIPE MATERIAL PER CITY OF KINGMAN.
2. REINFORCING TO BE 1/2" DIAMETER REBAR ON 6" CENTERS EACH WAY ON TOP AND 12" CENTERS EACH WAY ON THE SIDES.
3. COVERS TO CONSIST OF TWO METER BOX COVERS DET. 314.
4. BY-PASS METER TO BE ACCORDING TO GOVERNING AGENCY.
5. CHECK VALVE TO BE GLOBE MODEL "A" GRINNEL, HERSEY MODEL D.C., VIKING MODEL "A" OR APPROVED EQUAL.
6. VAULT SHALL BE CONSTRUCTED IN OWNER'S PROPERTY AGAINST THE FRONT PROPERTY LINE OR ANOTHER APPROVED LOCATION. WALLS AND FENCES SHALL NOT OBSTRUCT ACCESS.
7. CITY CONTROL VALVE TO BE REQUIRED AT MAIN.
8. PARTS OF PIPE TO BE EMBEDDED IN CONC. SHALL BE WRAPPED WITH 30 LB ASPHALT ROOFING FELT.
9. REMOTE READING DEVICE SHALL BE OF SELF GENERATING ELECTRICAL TYPE. HYDRAULIC OR MECHANICAL DRIVE REGISTERS WILL NOT BE ACCEPTABLE.
10. CONCRETE TO BE CLASS 'B' PER SECT. 725.
11. INLET PIPE MATERIAL TO BE DUCTILE IRON WITH RESTRAINTS OR FLANGED SPOOLS FROM SUPPLY VALVE TO PRV ASSEMBLY.

| DIA. OF PIPE | X | Y | Z | BY-PASS METER SIZE | A |
|---|---|---|---|---|---|
| 4" | 60" | 66" | 49" | 5/8" x 3/4" | 30" |
| 6" | 66" | 72" | 49" | 5/8" x 3/4" | 30" |
| 8" | 72" | 72" | 58" | 1" | 36" |
| 10" | 78" | 72" | 69" | 1-1/2" | 36" |

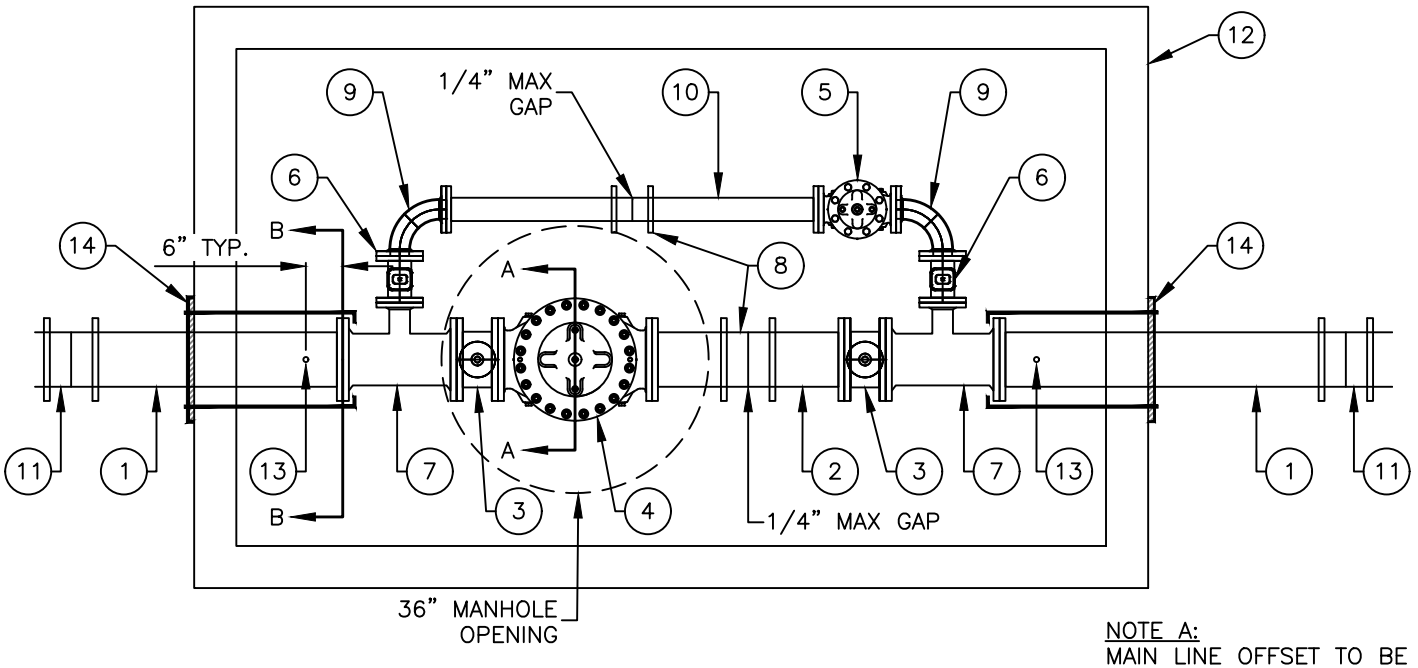



SECTION A-A

N.T.S.

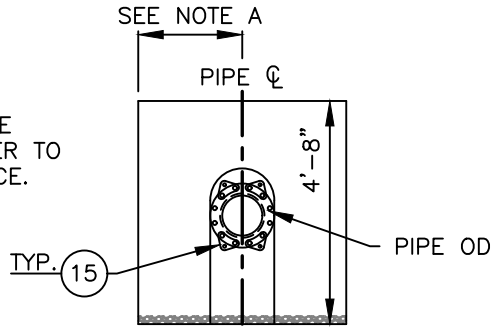
| DETAIL NO. 346 | STANDARD DETAIL | FIRE LINE DETECTOR CHECK VAULT | CITY OF KINGMAN | DETAIL NO. 346 |
|---|---|---|---|---|



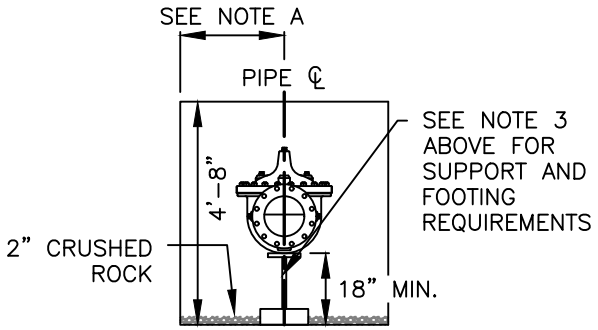

NOTES

1. SEE CITY OF KINGMAN STANDARD DETAIL 348 FOR VAULT SPECIFICATIONS.
2. EXPANSIVE MATERIAL SHALL BE INSTALLED AROUND THE PIPE PRIOR TO GROUTING THE VAULT WALLS.
3. PRESSURE REDUCING VALVE SHALL BE SUPPORTED WITH APPROVED SUPPORT ON 4X12X12 CONCRETE FOOTING ALONG WITH AT LEAST TWO ADDITIONAL SUPPORTS PLACED UNDER THE ASSEMBLY AS DIRECTED BY THE CITY ENGINEER.
4. AN APPROVED VALVE SHALL BE PLACED ON THE SUPPLY LINE AT THE MAIN.

NOTE A:
MAIN LINE OFFSET TO BE DETERMINED BY ENGINEER TO MAXIMIZE SIDE CLEARANCE.




SEC B-B
( TYP. BOTH SIDES)




SEC A-A

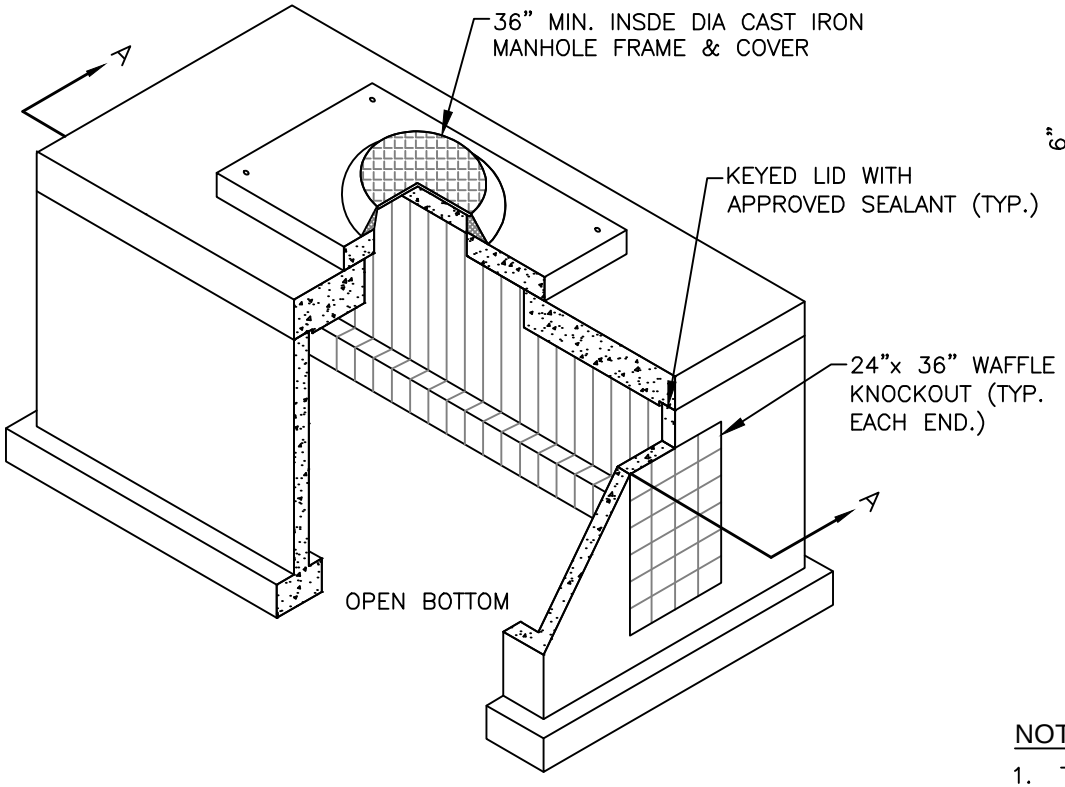
N.T.S.

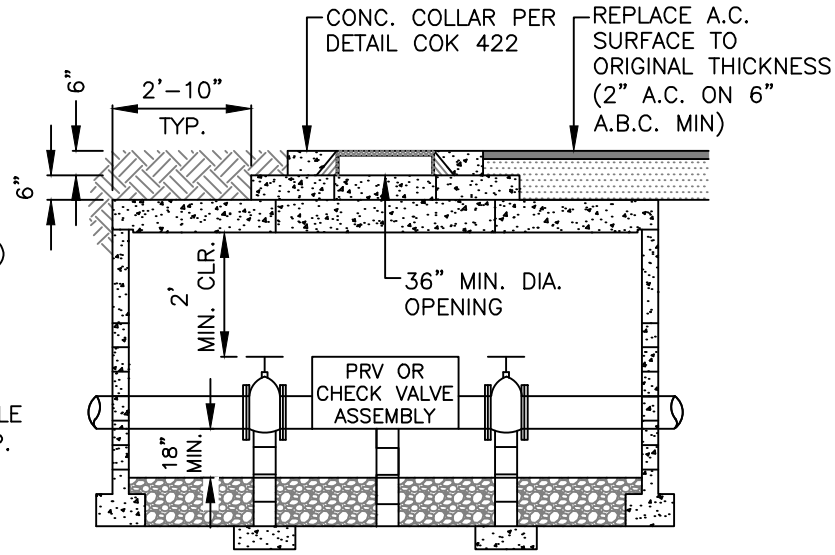
MATERIALS

1. FLANGED DUCTILE IRON SPOOL OR DUCTILE IRON PIPE WITH MEGA-LUGS. (L=5' MIN.)
2. FLANGED DUCTILE IRON SPOOL. (L=3', VALVE TO PRV)
3. FLANGED R.W.V. W/ HANDWHEEL PER MAG SPEC. 630.5
4. FLANGED PRESSURE REDUCING VALVE, CLA VAL 690-01 OR APPROVED EQUAL. (SIZED PER WATER DEPT.)
5. FLANGED PRESSURE REDUCING VALVE, CLA VAL 90-01 OR APPROVED EQUAL. (SIZED PER WATER DEPT.)
6. FLANGED RESILIENT WEDGE GATE VALVE W/ HANDWHEEL PER MAG SPEC. 630.3
7. DIP FLANGED TEE
8. DUCTILE IRON REPAIR COUPLING
9. DIP 90° FLANGED BEND
10. DIP FLANGED SPOOL
11. DUCTILE IRON COUPLING AS NEEDED
12. 8' x 14' x 4'-8" ID VAULT
13. 3/4" BRASS BALL VALVE (THREADED TAP) OR 1/4" TAP & VALVE.
14. STEEL PLATE FOR THRUST RESTRAINT. (SIZED PER ENGINEERING CALCULATIONS)
15. FLANGE LUG W/ TIE ROD, ROMAC OR APPROVED EQUAL.

| DETAIL NO. 347 | STANDARD DETAIL | 6 AND 8 INCH PRESSURE REDUCING VALVE ASSEMBLY | CITY OF KINGMAN | DETAIL NO. 347 |
|---|---|---|---|---|

Effective: August 18, 2020 | REVISED 2017 | Ordinance No. 1910




SECTION A-A

## SPECIFICATIONS

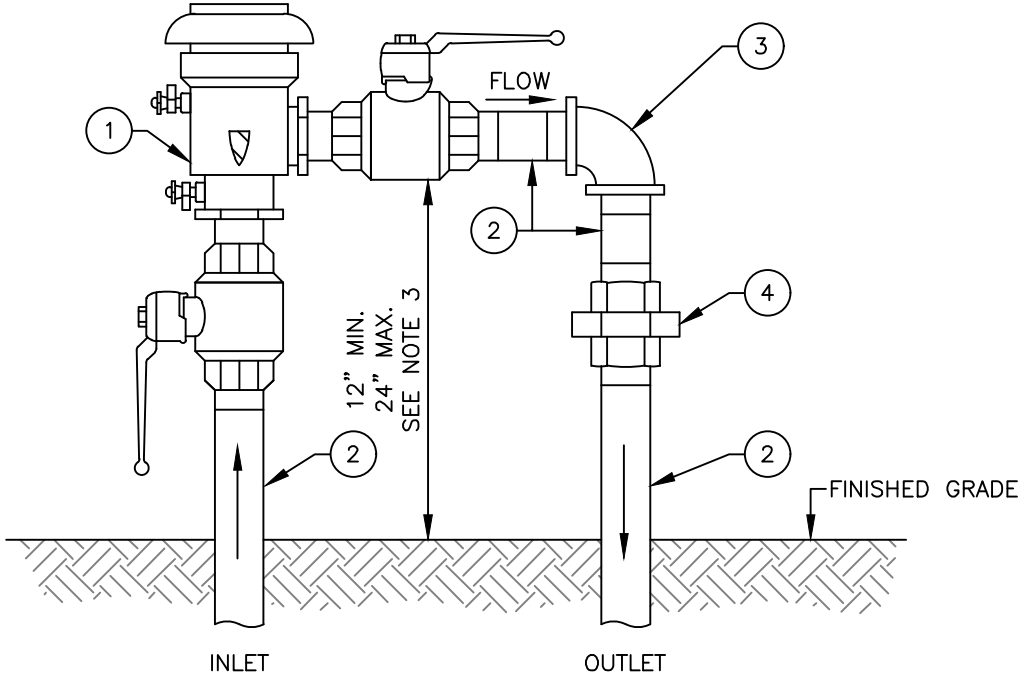
1. CONCRETE SHALL BE CLASS AA IN ACCORDANCE WITH MAG SPECIFICATION SECTION 725.
2. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A-615, GRADE 60.
3. VAULTS SHALL BE DESIGNED FOR HEAVY TRAFFIC CONDITIONS (HS20-44).
4. 8' x 14' x 4'-8" I.D. VAULT

## NOTES:

1. THIS DETAIL APPLIES TO PRESSURE REDUCING VALVE AND DOUBLE CHECK BACKFLOW ASSEMBLIES UP TO 8 INCHES IN DIAMETER. LARGER ASSEMBLIES MAY REQUIRE A LARGER VAULT. ALL DIMENSIONS SHOWN ARE MINIMUM.
2. THE VAULT FLOOR SHALL CONSIST OF 2 INCH MAX. DIAMETER CRUSHED ROCK, PER MAG SPECIFICATIONS SECTION 701, PLACED TO A 1 FOOT MINIMUM DEPTH.
3. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, CONSTRUCTION SPECIFICATIONS, AND DETAILS FROM THE MANUFACTURER FOR REVIEW AND APPROVAL BY THE CITY PRIOR TO INSTALLING THE PRECAST VAULT AND ENTRY HARDWARE.

N.T.S.

| DETAIL NO. 348 | STANDARD DETAIL | PRECAST PRV OR CHECKVALVE VAULT | CITY OF KINGMAN | DETAIL NO. 348 |
|---|---|---|---|---|




## LIST OF MATERIALS

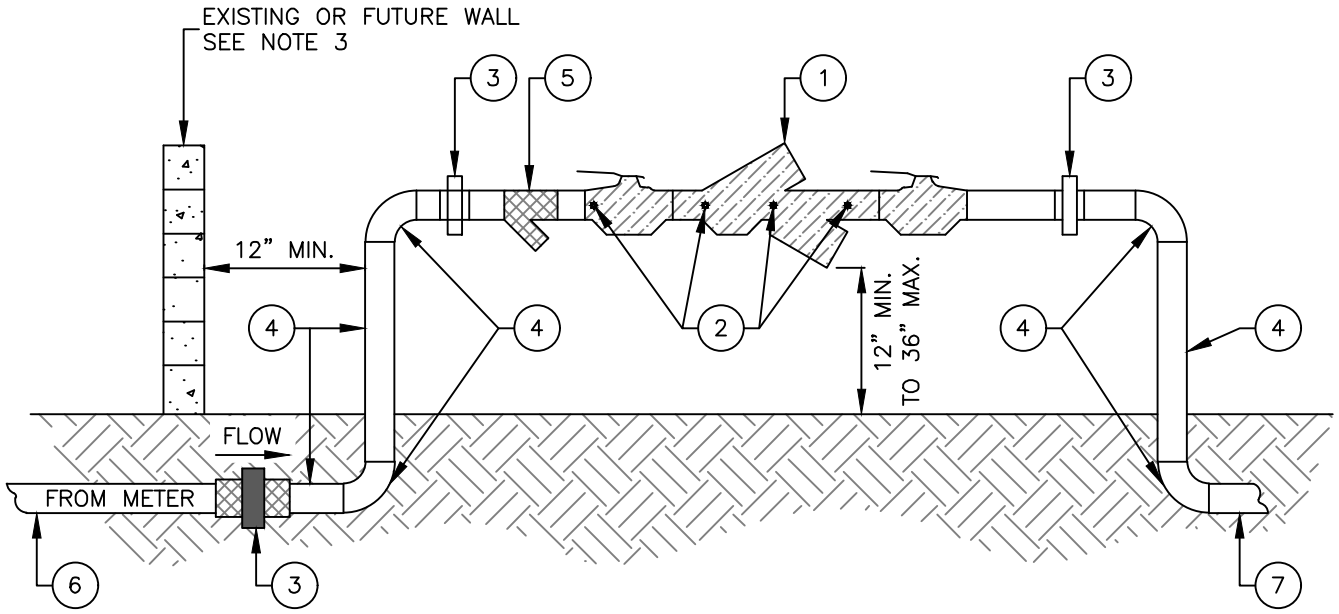
1. APPROVED PRESSURE VACUUM BREAKER ASSEMBLY, INCLUDING BALL VALVES.
2. PIPE SPOOL, TYPE "K" COPPER.
3. 90° COPPER ELBOW.
4. PIPE UNION, BRASS OR COPPER.

## NOTES:

1. CONTACT CITY OF KINGMAN UTILITIES DIVISION FOR LATEST LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES OR CERTIFIED TESTERS.
2. PRESSURE VACUUM BREAKERS MUST BE INSTALLED AT LEAST 12" ABOVE ALL DOWNSTREAM PIPING AND THE HIGHEST OUTLET ON THE SYSTEM.
3. IF THIS DISTANCE EXCEEDS 24 INCHES, A REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY MUST BE UTILIZED. SEE DETAILS 352 & 353.
4. TWO TEST COCKS SHALL BE INSTALLED AS PER UNIVERSITY OF SOUTHERN CALIFORNIA (USC) REQUIREMENTS.
5. SHUT OFF BALL VALVES FORD BALL VALVE AS APPROVED.
6. A COPPER/BRASS UNION MUST BE INSTALLED IN THE MIDDLE OF THE DOWNSTREAM RISER.
7. BACKFLOW PREVENTERS MUST BE TESTED BY AN INDEPENDENT CERTIFIED TESTER BEFORE FINAL APPROVAL IS ISSUED.
8. ADEQUATE FREEZE PROTECTION THAT WILL NOT INTERFERE WITH TESTING PROCEDURES TO BE PROVIDED BY OWNER/DEVELOPER.
6. ALL COPPER JOINTS SHALL BE SOLDERED. THE SOLDER ALLOY SHALL COMPLY WITH NSF61 AND ASTM B 32 HAVING A SILVER CONTENT OF NOT LESS THAN 3.4% INTENDED FOR JOINING COPPER PIPES FOR POTABLE WATER SYSTEMS (GRADES SN 94 OR SN 95). THE FLUX SHALL BE TYPE OA FOR GENERAL SOLDERING ON COPPER.

N.T.S.

| DETAIL NO. 349 | STANDARD DETAIL | PRESSURE VACUUM BREAKER ASSEMBLY (2" OR LESS) | CITY OF KINGMAN | DETAIL NO. 349 |
|---|---|---|---|---|




## LIST OF MATERIALS

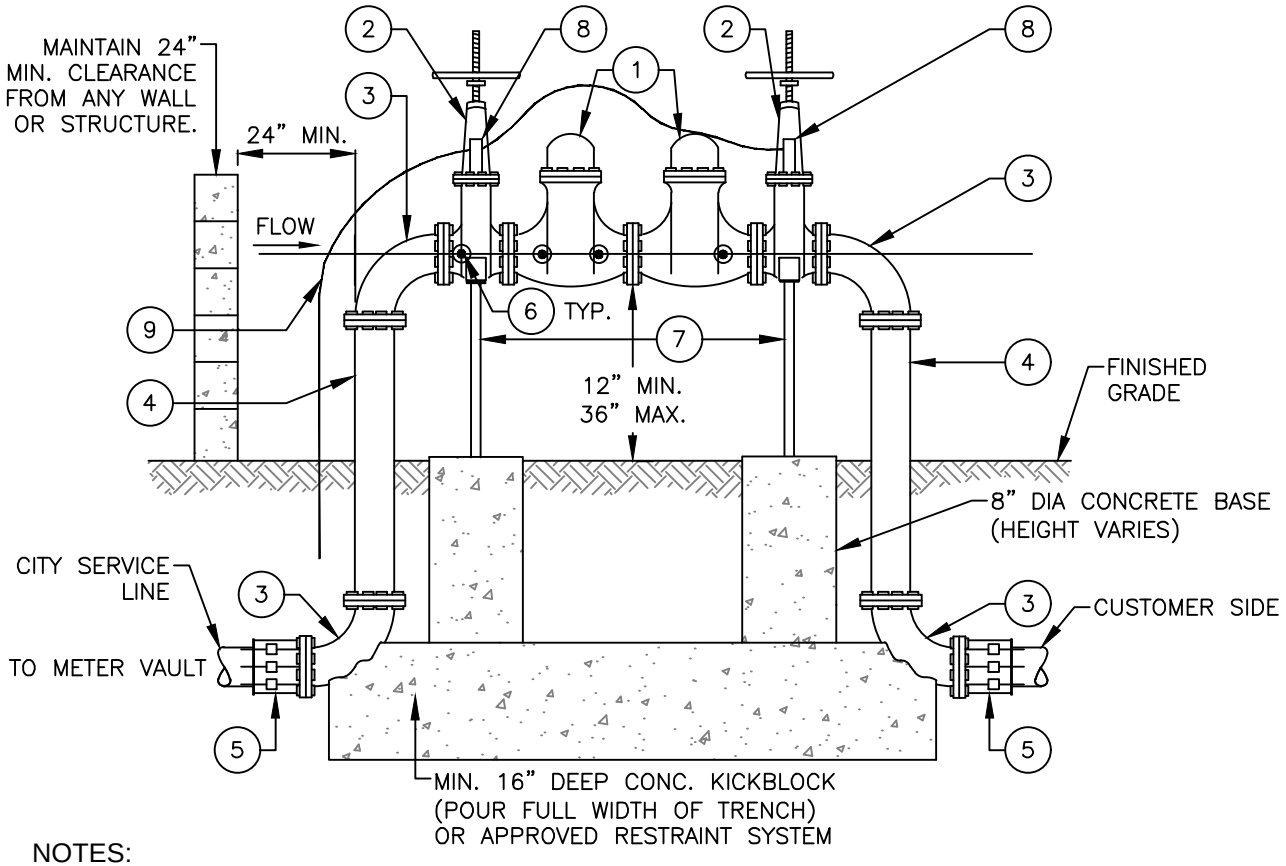
1. APPROVED DOUBLE CHECK BACKFLOW ASSEMBLY.
2. TEST COCKS (FOUR REQUIRED)
3. 3 PIECE BRASS UNION
4. TYPE "K" COPPER INCLUDING ELBOW
5. INSTALL WYE STRAINER BEFORE ASSEMBLY (OPTIONAL).
6. TYPE "K" COPPER MATERIAL VARIES
7. MATERIAL VARIES

## NOTES:

1. CONTACT CITY OF KINGMAN WATER DIVISION FOR LATEST LIST OF APPROVED ASSEMBLIES. ALL MATERIALS FROM THE METER, THE ASSEMBLY AND RELATED COMPONENTS SHALL BE APPROVED BY THE CITY PRIOR TO CONSTRUCTION.
2. CLEARANCES: MINIMUM 12 INCHES AWAY FROM ANY WALL OR STRUCTURE. MINIMUM 12" ABOVE FINISH GRADE, MAXIMUM 36 INCHES.
3. BACKFLOW PREVENTERS MUST BE TESTED BY AN INDEPENDENT CERTIFIED TESTER BEFORE FINAL APPROVAL IS ISSUED.
4. APPROVED FREEZE PROTECTION THAT WILL NOT INTERFERE WITH TESTING PROCEDURES TO BE PROVIDED BY OWNER/DEVELOPER.
5. ONE UNION IS REQUIRED, EXCEPT IN VAULT INSTALLATIONS, TWO UNIONS SHALL BE REQUIRED. VAULTS FOR BACKFLOW ASSEMBLIES MUST BE APPROVED BY THE CITY ENGINEER.
6. ALL COPPER JOINTS SHALL BE SOLDERED. THE SOLDER ALLOY SHALL COMPLY WITH NSF61 AND ASTM B 32 HAVING A SILVER CONTENT OF NOT LESS THAN 3.4% INTENDED FOR JOINING COPPER PIPES FOR POTABLE WATER SYSTEMS (GRADES SN 94 OR SN 95). THE FLUX SHALL BE TYPE OA FOR GENERAL SOLDERING ON COPPER.

N.T.S.

| DETAIL NO. 350 | STANDARD DETAIL | DOUBLE CHECK BACKFLOW ASSEMBLY (3/4 TO 2") | CITY OF KINGMAN | DETAIL NO. 350 |
|---|---|---|---|---|




## LIST OF MATERIALS

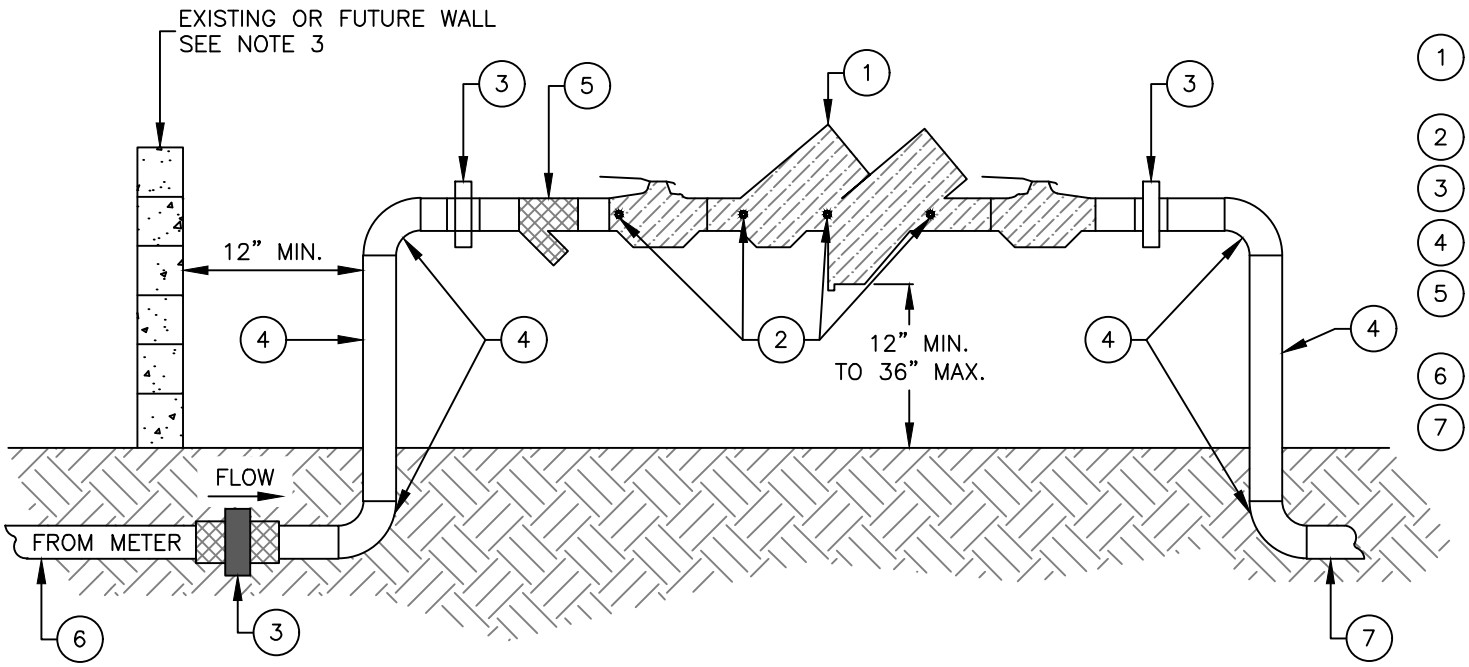
1. APPROVED DOUBLE CHECK BACKFLOW ASSEMBLY.
2. RESILIENT SEATED VALVE N.R.S. (NON–FIRE) OR O.S.&Y. (FIRELINE).
3. 90° BEND (FLANGED D.I.P. 3" THRU 10").
4. PIPE SPOOL (FLANGED D.I.P. 3" THRU 10").
5. FLANGED ADAPTER (WHEN REQUIRED).
6. TEST COCKS (FOUR REQUIRED).
7. ADJUSTABLE HOT DIPPED GALVANIZED PIPE SUPPORTS.
8. TAMPER SWITCH (FIRELINE ONLY).
9. ELECTRICAL CONDUIT FOR TAMPER SWITCH (FIRELINE ONLY).

## NOTES:

1. CONTACT THE CITY OF KINGMAN PUBLIC WORKS DEPARTMENT FOR THE LATEST LIST OF APPROVED ASSEMBLIES, INSPECTION, AND TESTING.
2. FIRE PROTECTION SYSTEMS MAY REQUIRE A DOUBLE CHECK DETECTOR VALVE ASSEMBLY (DCDVA) AS A BACKFLOW ASSEMBLY.
3. BACKFLOW PREVENTERS MUST BE TESTED BY AN INDEPENDENT CERTIFIED TESTER BEFORE FINAL APPROVAL IS ISSUED.
4. ASSEMBLY SHALL BE APPROVED BY LATEST EDITION OF UNIVERSITY OF SOUTHERN CALIFORNIA (USC) FOUNDATION MANUAL ON CROSS–CONNECTION CONTROL AND HYDRAULIC RESEARCH.
5. ADEQUATE FREEZE PROTECTION THAT WILL NOT INTERFERE WITH TESTING PROCEDURES TO BE PROVIDED BY OWNER/DEVELOPER.
6. INSTALLATION SHALL INCLUDE ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO CONNECT TO THE SUPPLY LINE. (TAPPING SLEEVE, TEES, VALVES, THRUSTING, ETC) ALL PIPE, FITTINGS, TRENCHING, AND MATERIALS NEEDED FOR THE CONSTRUCTION FROM THE SUPPLY LINE TO THE ASSEMBLY.
7. FIRE DEPARTMENT MAY REQUIRE THIS ASSEMBLY TO BE A PART OF THE FIRE RISER PLACED WITHIN THE BUILDING IN A FIRE RISER ROOM.

N.T.S.

| DETAIL NO. 351 | STANDARD DETAIL | DOUBLE CHECK AND DOUBLE DETECTOR CHECK BACKFLOW ASSEMBLY (3" TO 10") | CITY OF KINGMAN | DETAIL NO. 351 |
|---|---|---|---|---|




## LIST OF MATERIALS

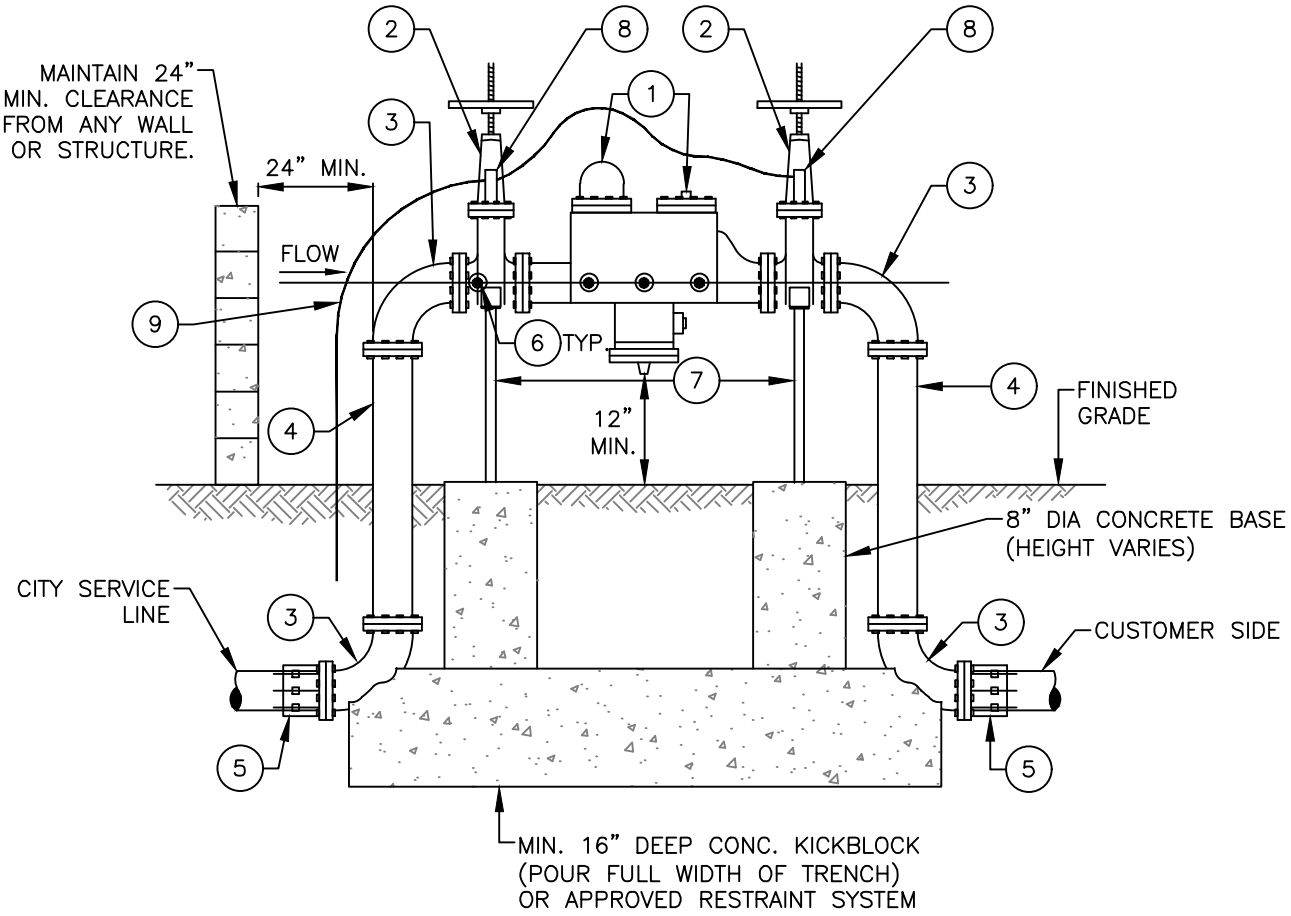
1. APPROVED DOUBLE CHECK BACKFLOW ASSEMBLY.
2. TEST COCKS (FOUR REQUIRED)
3. 3 PIECE BRASS UNION
4. TYPE "K" COPPER INCLUDING ELBOW
5. INSTALL WYE STRAINER BEFORE ASSEMBLY (OPTIONAL).
6. TYPE "K" COPPER
7. MATERIAL VARIES

## NOTES:

1. CONTACT CITY OF KINGMAN WATER DIVISION FOR LATEST LIST OF APPROVED ASSEMBLIES. ALL MATERIALS FROM THE METER, THE ASSEMBLY AND RELATED COMPONENTS SHALL BE APPROVED BY THE CITY PRIOR TO CONSTRUCTION.
2. CLEARANCES: MINIMUM 12 INCHES AWAY FROM ANY WALL OR STRUCTURE. MINIMUM 12" ABOVE FINISH GRADE, MAXIMUM 36 INCHES.
3. BACKFLOW PREVENTERS MUST BE TESTED BY AN INDEPENDENT CERTIFIED TESTER BEFORE FINAL APPROVAL IS ISSUED.
4. APPROVED FREEZE PROTECTION THAT WILL NOT INTERFERE WITH TESTING PROCEDURES TO BE PROVIDED BY OWNER/DEVELOPER.
5. ONE UNION IS REQUIRED, EXCEPT IN VAULT INSTALLATIONS, TWO UNIONS SHALL BE REQUIRED. VAULTS FOR BACKFLOW ASSEMBLIES MUST BE APPROVED BY THE CITY ENGINEER.
6. ALL COPPER JOINTS SHALL BE SOLDERED. THE SOLDER ALLOY SHALL COMPLY WITH NSF61 AND ASTM B 32 HAVING A SILVER CONTENT OF NOT LESS THAN 3.4% INTENDED FOR JOINING COPPER PIPES FOR POTABLE WATER SYSTEMS (GRADES SN 94 OR SN 95). THE FLUX SHALL BE TYPE OA FOR GENERAL SOLDERING ON COPPER.

N.T.S.

| DETAIL NO. 352 | STANDARD DETAIL | REDUCED PRESSURE BACKFLOW ASSEMBLY (3/4" TO 2") | CITY OF KINGMAN | DETAIL NO. 352 |
|---|---|---|---|---|




## LIST OF MATERIALS

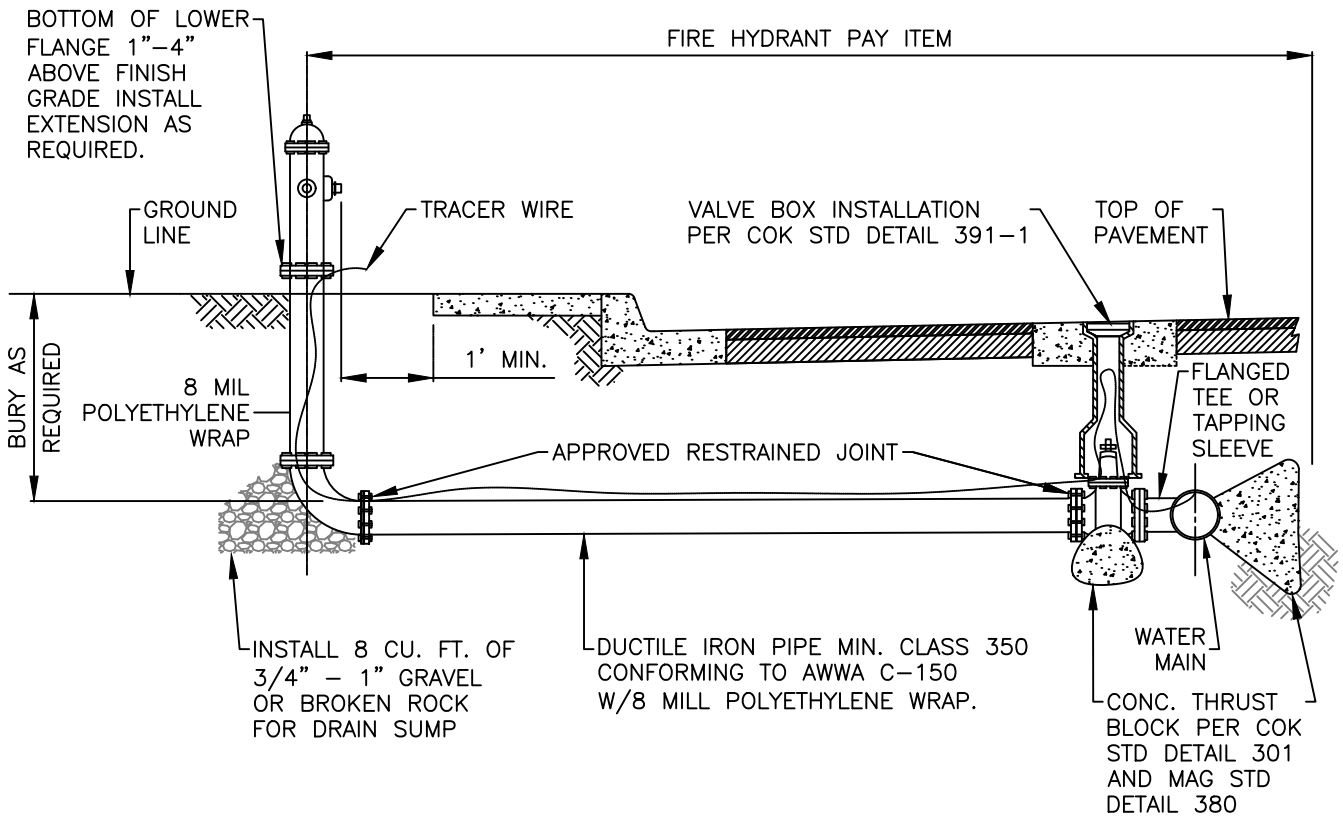
1. APPROVED DOUBLE CHECK BACKFLOW ASSEMBLY.
2. RESILIENT SEATED VALVE N.R.S. (NON–FIRE) OR O.S.&Y. (FIRELINE).
3. 90° BEND (FLANGED D.I.P. 3" THRU 10").
4. PIPE SPOOL (FLANGED D.I.P. 3" THRU 10").
5. FLANGED ADAPTER (WHEN REQUIRED).
6. TEST COCKS (FOUR REQUIRED).
7. ADJUSTABLE HOT DIPPED GALVANIZED PIPE SUPPORTS.
8. TAMPER SWITCH (FIRELINE ONLY).
9. ELECTRICAL CONDUIT FOR TAMPER SWITCH (FIRELINE ONLY).

## NOTES:

1. CONTACT THE CITY OF KINGMAN PUBLIC WORKS DEPARTMENT FOR THE LATEST LIST OF APPROVED ASSEMBLIES, INSPECTION, AND TESTING.
2. FIRE PROTECTION SYSTEMS MAY REQUIRE A DOUBLE CHECK DETECTOR VALVE ASSEMBLY (DCDVA) AS A BACKFLOW ASSEMBLY.
3. COPPER FITTINGS SHALL BE CONNECTED WITH LEAD FREE SOLDER.
4. BACKFLOW PREVENTERS MUST BE TESTED BY AN INDEPENDENT CERTIFIED TESTER BEFORE FINAL APPROVAL IS ISSUED.
5. ASSEMBLY SHALL BE APPROVED BY LATEST EDITION OF UNIVERSITY OF SOUTHERN CALIFORNIA (USC) FOUNDATION MANUAL ON CROSS–CONNECTION CONTROL AND HYDRAULIC RESEARCH.
6. ADEQUATE FREEZE PROTECTION THAT WILL NOT INTERFERE WITH TESTING PROCEDURES TO BE PROVIDED BY OWNER/DEVELOPER.

N.T.S.

| DETAIL NO. 353 | STANDARD DETAIL | REDUCED PRESSURE BACKFLOW ASSEMBLY (3" TO 10") | CITY OF KINGMAN | DETAIL NO. 353 |
|---|---|---|---|---|




NOTES:

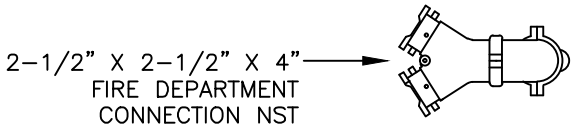
1. FIRE HYDRANTS ON GROUND LEVEL SHALL HAVE A MINIMUM OF 3 FEET SIDE CLEARANCE FROM ALL OBSTRUCTIONS, SUCH AS UTILITY POLES, SIGNS, TREES, FENCES, ETC.
2. PIPE, FITTINGS, VALVE, AND FIRE HYDRANTS SHALL CONFORM TO AWWA, ASTM, ANSI AND OTHER APPLICABLE STANDARDS.
3. THE MINIMUM SIZE OF MAIN OR LATERAL SERVING A FIRE HYDRANT SHALL BE 6 INCHES.
4. FIRE HYDRANT SPACING SHALL BE PER CITY OF KINGMAN (UTILITY REGULATIONS) AND/OR AS SHOWN ON THE PLANS.
5. HYDRANT LOCATION SHALL BE AUTHORIZED BY THE KINGMAN FIRE DEPARTMENT.
6. BENDS USED BETWEEN VALVE AND HYDRANT MUST BE APPROVED IN ADVANCE.
7. WATER LINE LOCATOR WIRE IS REQUIRED ALONG THE FIRE HYDRANT LINE AS SPECIFIED IN CITY OF KINGMAN STANDARD DETAIL NO. 392.
8. NOZZLE SIZE REQUIREMENTS ARE AS FOLLOWS (NST THREADS):
   1 – EACH 4 ½ INCH DIAMETER NOZZLE
   2 – EACH 2 ½ INCH DIAMETER NOZZLE
9. ACCEPTABLE MANUFACTURER'S AND MODELS OF FIRE HYDRANTS INCLUDE: KENNEDY "K81D", WATEROUS "PACER", CLOW "MEDALLION" AND AMERICAN (AVK) CO. "MODEL 2700". USE OF OTHERS REQUIRES APPROVAL BY THE FIRE DEPARTMENT.

N.T.S.

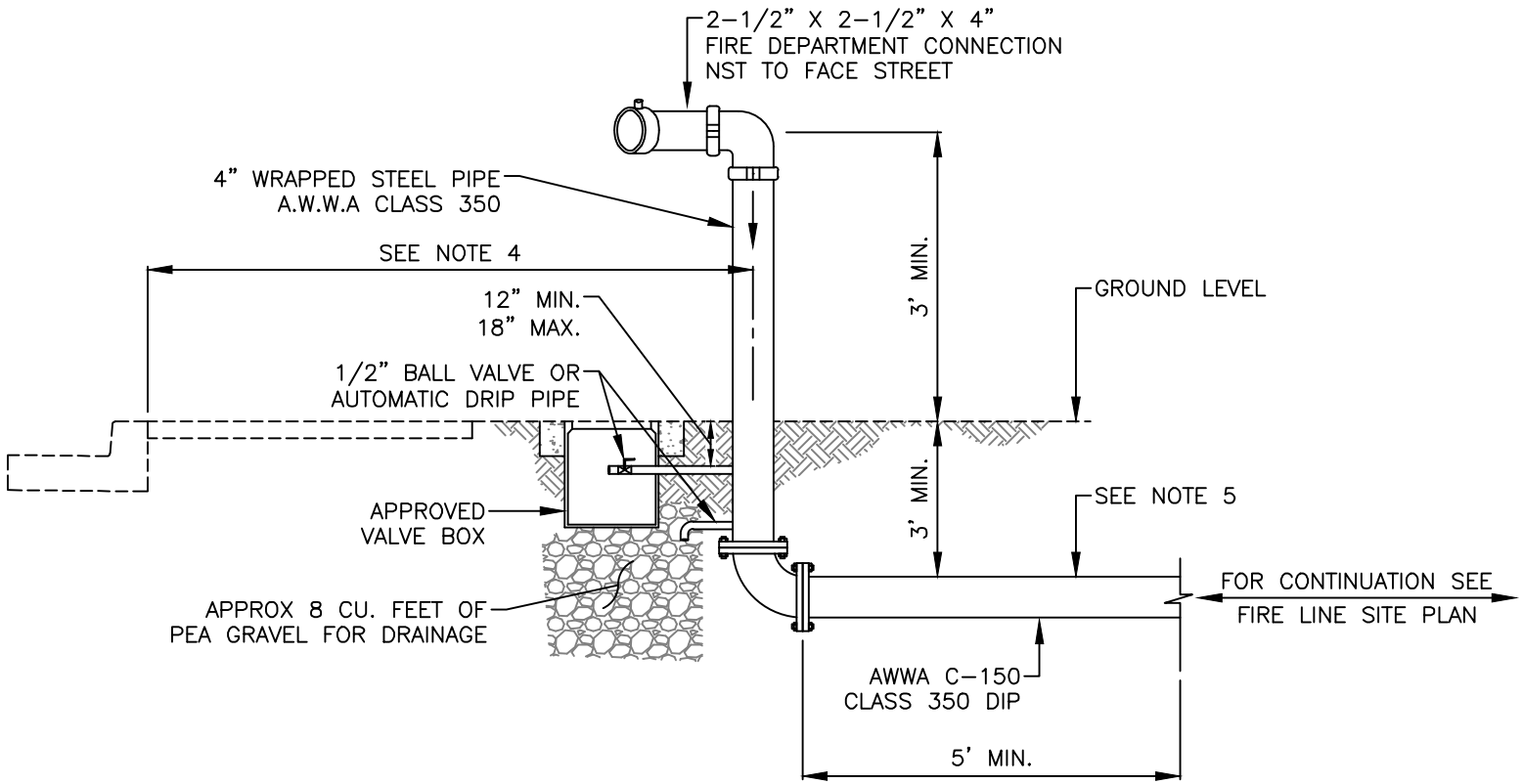
| DETAIL NO. 360 | STANDARD DETAIL | FIRE HYDRANT INSTALLATION | CITY OF KINGMAN | DETAIL NO. 360 |
|---|---|---|---|---|

NOTES

1. PROVIDE BUILDING I.D. ON REMOTE FIRE DEPT. CONNECTION.
2. NO TREES, BUSHES OR WALLS WITHIN 5' RADIUS OF FIRE DEPT. CONNECTION.
3. IF FIRE SPRINKLER DESIGN INDICATES DEMAND OF 1000 GPM OR GREATER, THE UNDERGROUND FIRE DEPT. CONNECTION LINE SHALL BE INCREASED TO 6" DIAMETER WITH A THREE WAY 2-1/2" FIRE DEPT. HOSE CONNECTION.
4. 4' MIN. TO BACK OF CURB, OR 2' MIN TO BACK OF SIDEWALK, OR WHEN NO CURB, 4' MAX. OUTSIDE THE CLEAR ZONE.
5. PIPE BELOW GROUND LEVEL SHALL BE POLYWRAPPED PER SEC 610.




TOP VIEW

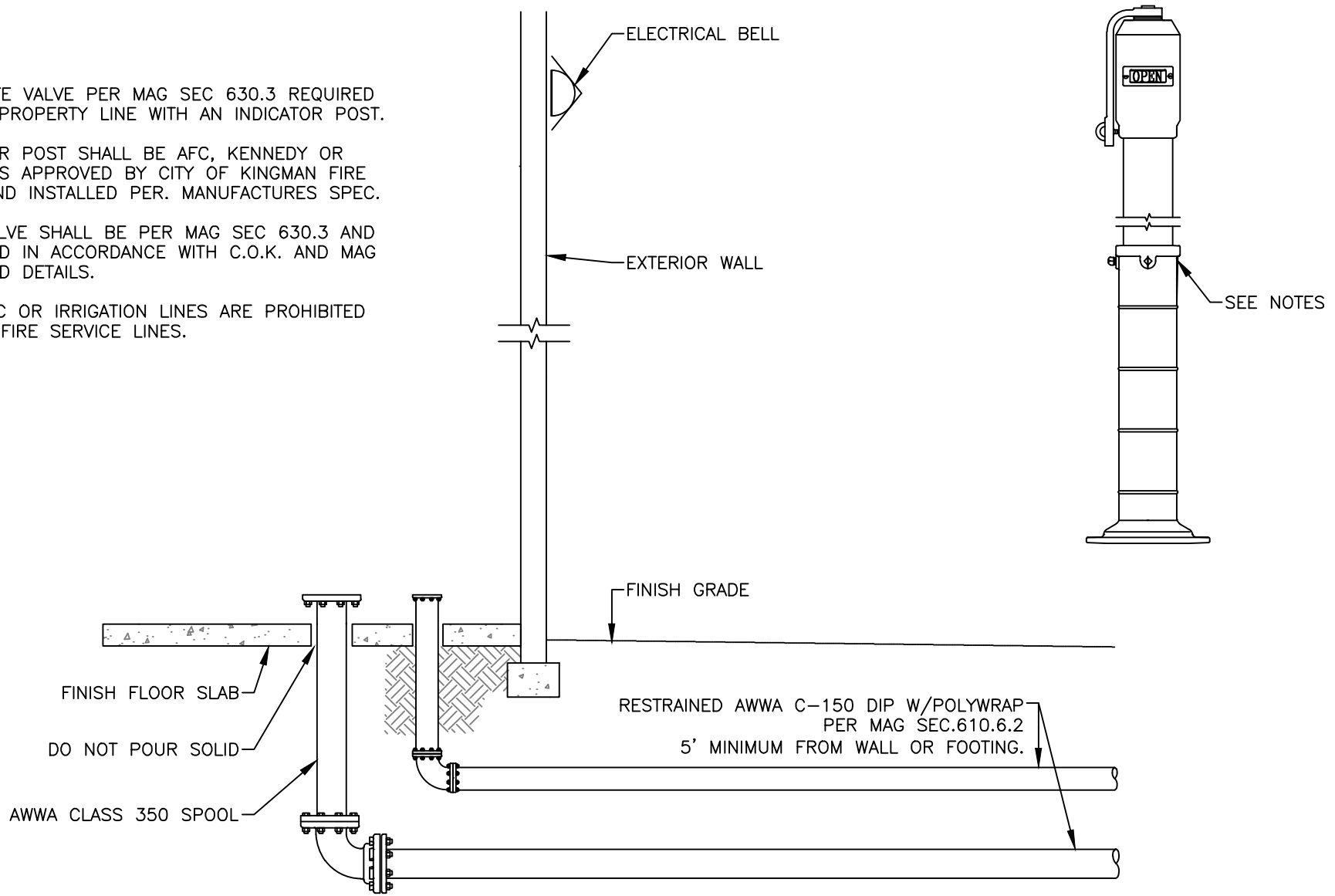



N.T.S.

| DETAIL NO. 363 | STANDARD DETAIL | REMOTE FIRE DEPT. CONNECTION | CITY OF KINGMAN | DETAIL NO. 363 |
|---|---|---|---|---|

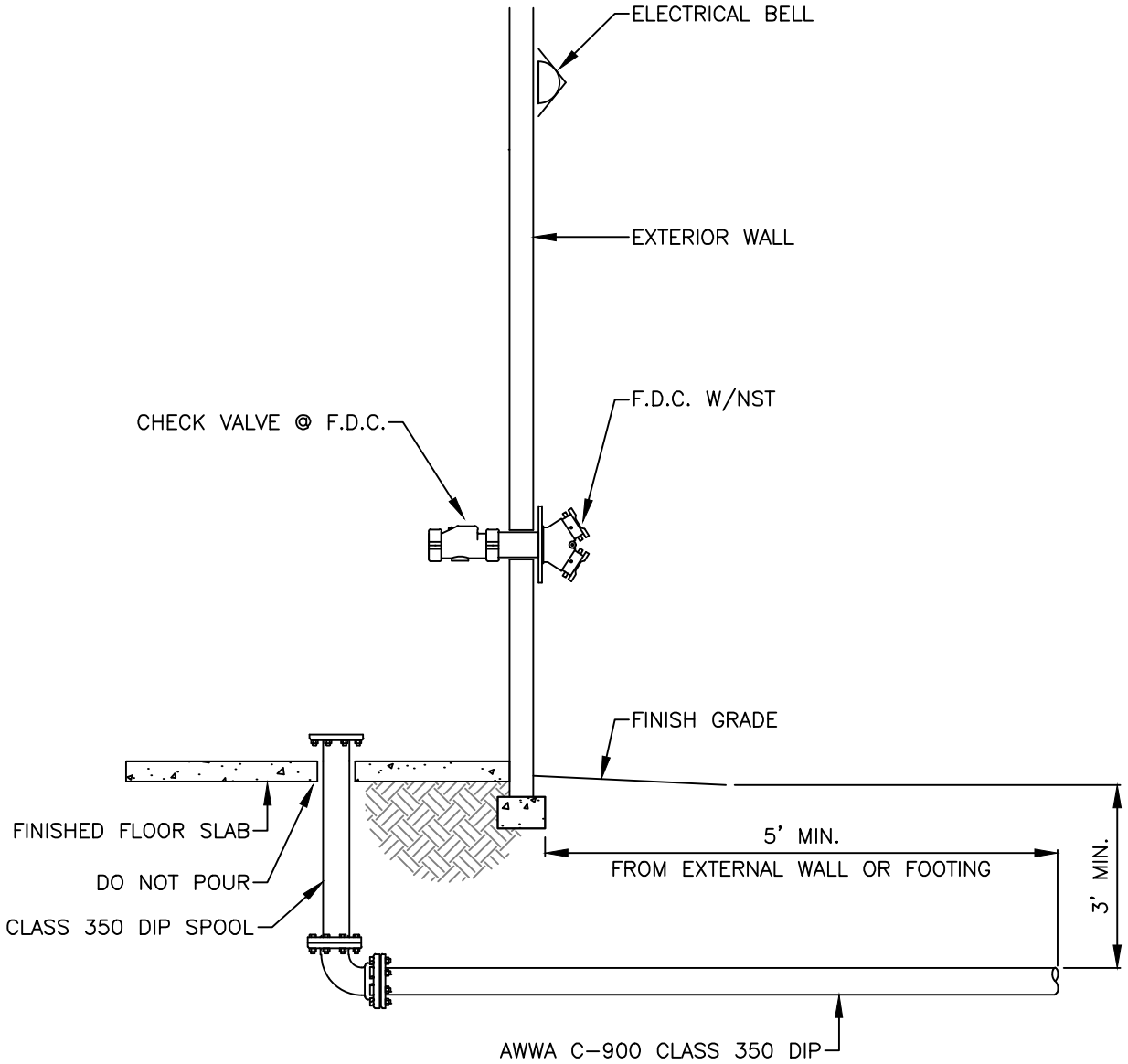
NOTES:

1. NEW GATE VALVE PER MAG SEC 630.3 REQUIRED AT THE PROPERTY LINE WITH AN INDICATOR POST.
2. INDICATOR POST SHALL BE AFC, KENNEDY OR EQUAL AS APPROVED BY CITY OF KINGMAN FIRE DEPT. AND INSTALLED PER. MANUFACTURES SPEC.
3. FEED VALVE SHALL BE PER MAG SEC 630.3 AND INSTALLED IN ACCORDANCE WITH C.O.K. AND MAG STANDARD DETAILS.
4. DOMESTIC OR IRRIGATION LINES ARE PROHIBITED OFF OF FIRE SERVICE LINES.




N.T.S.

| DETAIL NO. 364 | STANDARD DETAIL | UNDERGROUND STUB UP DETAIL WITH REMOTE FDC. | CITY OF KINGMAN | DETAIL NO. 364 |
|---|---|---|---|---|

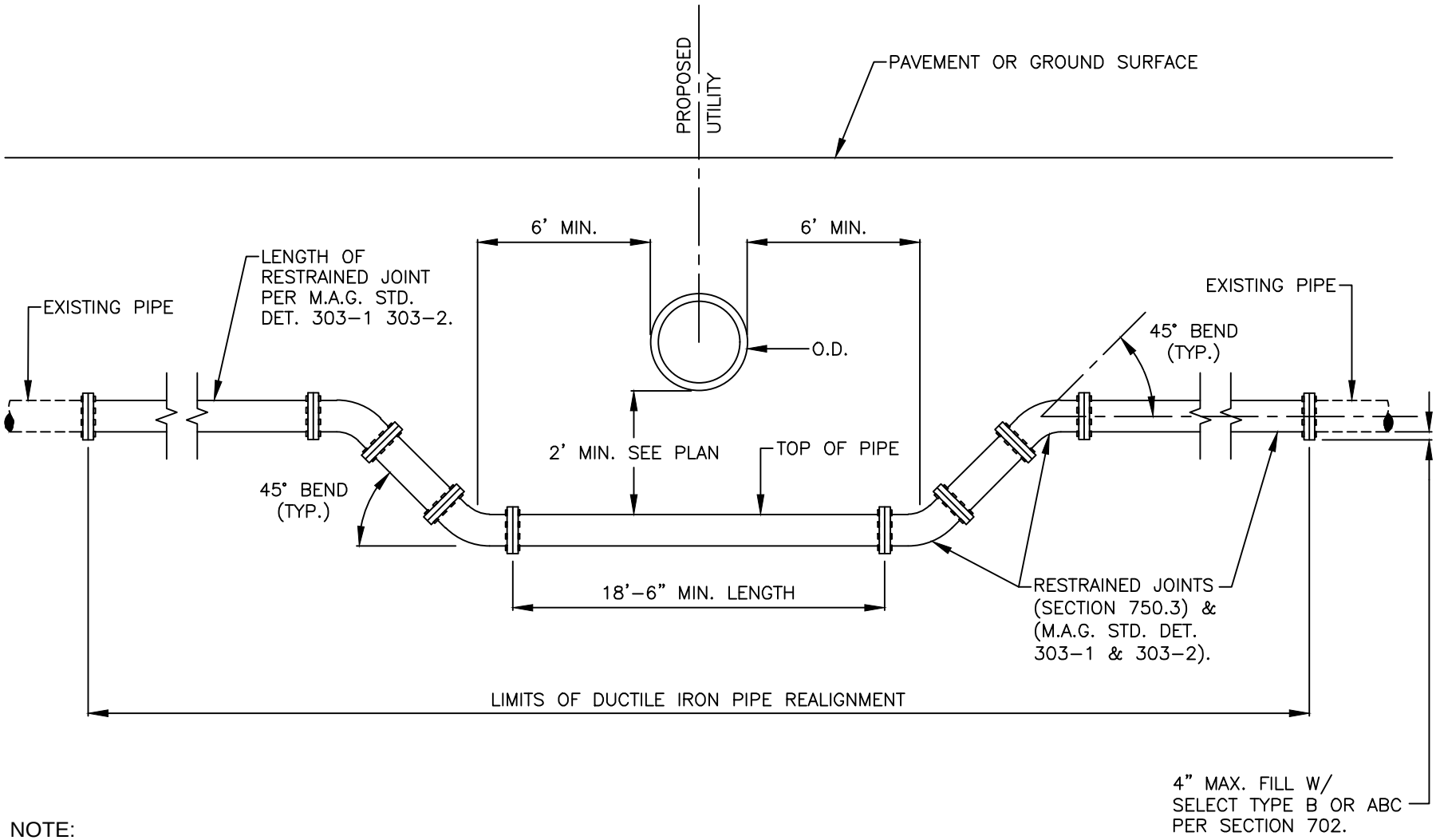



NOTES:

1. ALL PIPE SHALL BE AWWA C-900 CLASS 350 DIP FROM FEED VALVE AT MAIN TO BACKFLOW PREVENTION ASSEMBLY.
2. ALL JOINTS SHALL BE MEGA-LUG RESTRAINED OR APPROVED EQUAL.
3. ALL PIPE SHALL BE POLYWRAPPED PER MAG. SEC 610

N.T.S.

| DETAIL NO. 365 | STANDARD DETAIL | FIRE SPRINKLER RISER DETAIL WITH WALLMOUNT FD CONNECTION | CITY OF KINGMAN | DETAIL NO. 365 |
|---|---|---|---|---|

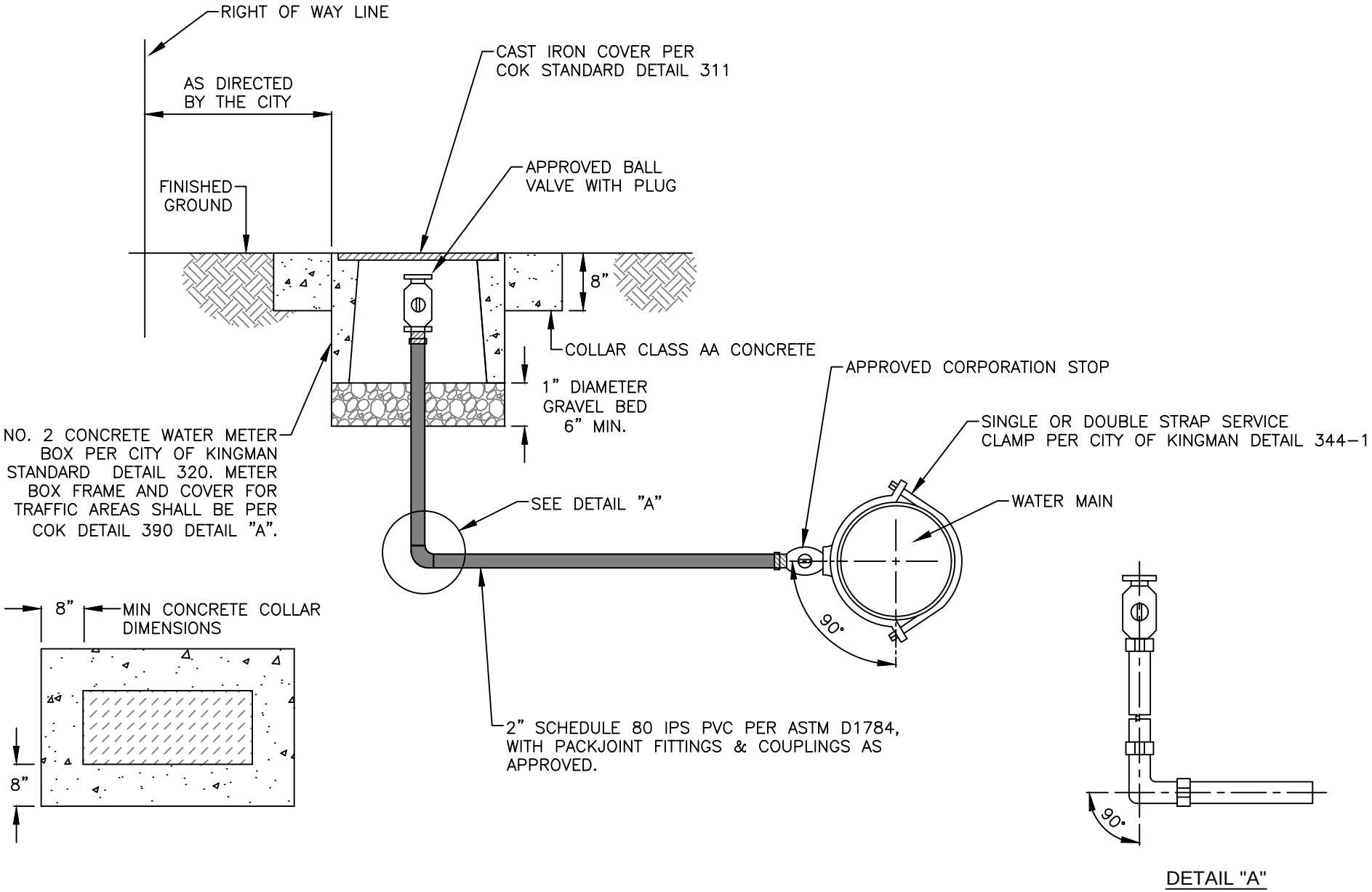



NOTE:

1. REFER TO MAG SECT. 610 FOR WATER/SEWER SEPARATION REQUIREMENTS.

N.T.S.

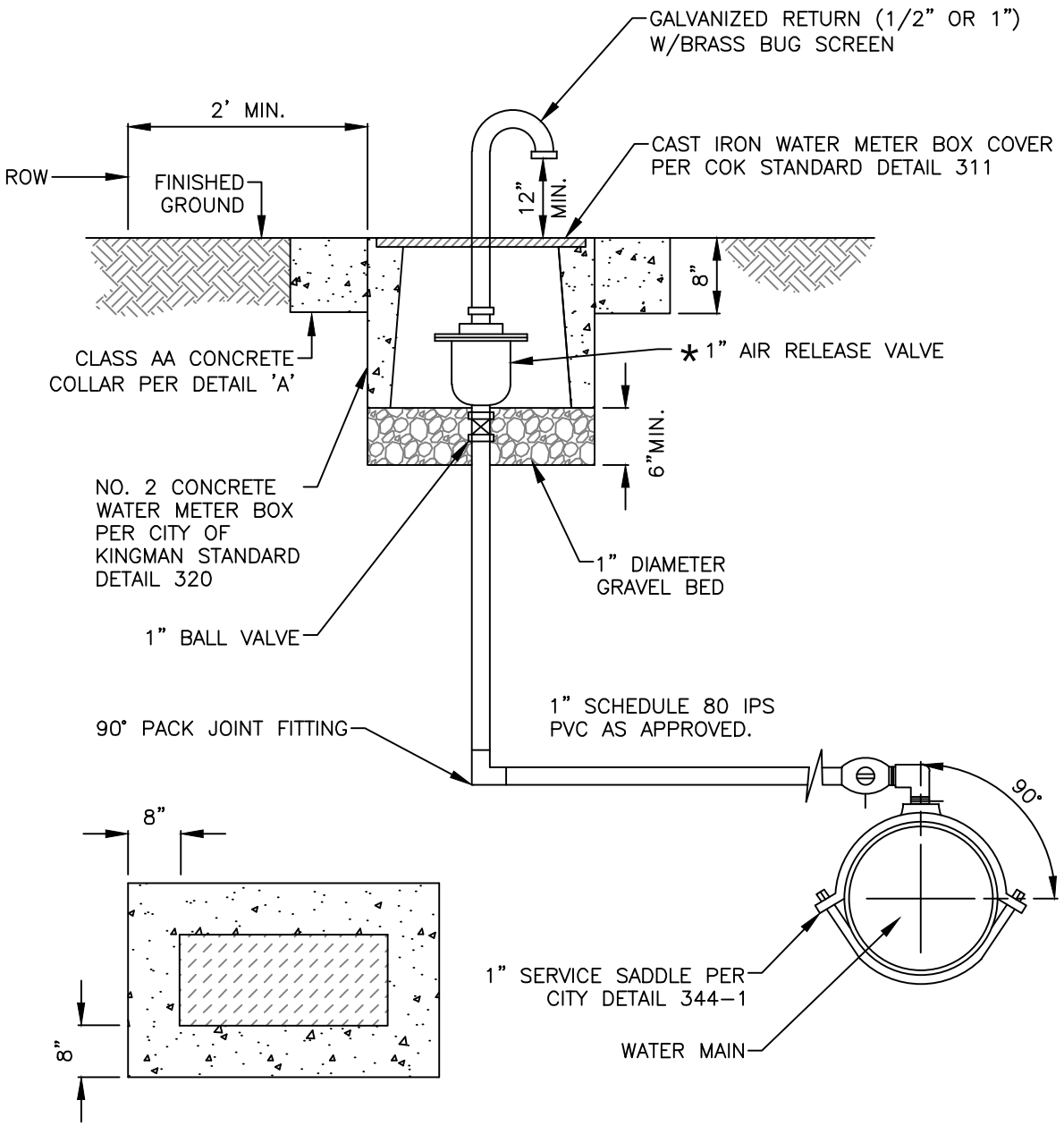
| DETAIL NO. 370 | STANDARD DETAIL | VERTICAL REALIGNMENT OF WATERLINE | CITY OF KINGMAN | DETAIL NO. 370 |
|---|---|---|---|---|




N.T.S.

| DETAIL NO. 387 | STANDARD DETAIL | 2" BLOWOFF ASSEMBLY | CITY OF KINGMAN | DETAIL NO. 387 |
|---|---|---|---|---|

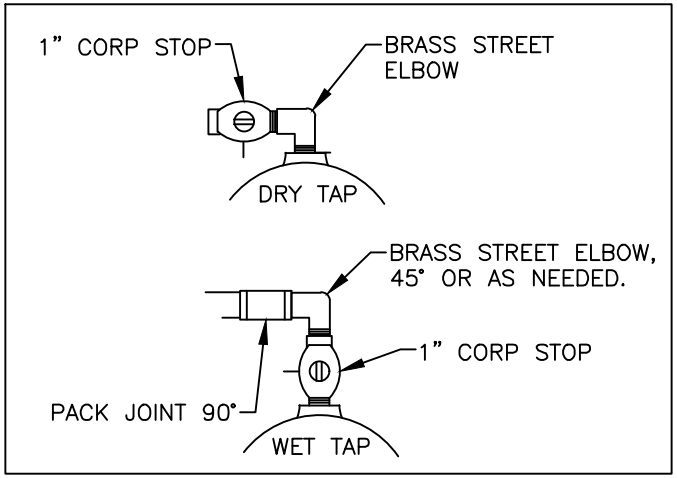
Effective: August 18, 2020 REVISED 2017 Ordinance No. 1910




NOTES:

1. AIR RELEASE VALVES SHALL BE INSTALLED AT HIGH POINTS IN THE MAIN LINE, OR WHERE A LONG LENGTH OF MAIN LINE CHANGES SLOPE.
2. THE AIR RELEASE VALVE ASSEMBLY SHALL BE EXTENDED TO A LOCATION AT LEAST 2 FEET ABOVE THE ELEVATION OF THE TOP OF THE WATER MAIN.
3. AUTOMATIC AIR RELEASE VALVES SHALL NOT BE USED IN SITUATIONS WHERE FLOODING OF THE METER BOX MAY OCCUR.
4. A COMBINATION AIR/VACUUM RELEASE VALVE ASSEMBLY SHALL BE USED IN SITUATIONS WHERE THE WATER MAIN MAY BE SUBJECTED TO VACUUM CONDITIONS, AS DETERMINED BY THE ENGINEER.
5. AS AUTHORIZED BY THE CITY ENGINEER THE ASSEMBLY SHALL BE LOCATED WHERE IT WILL NOT BE SUBJECT TO TRAFFIC, DAMAGE OR TRIP HAZARD.

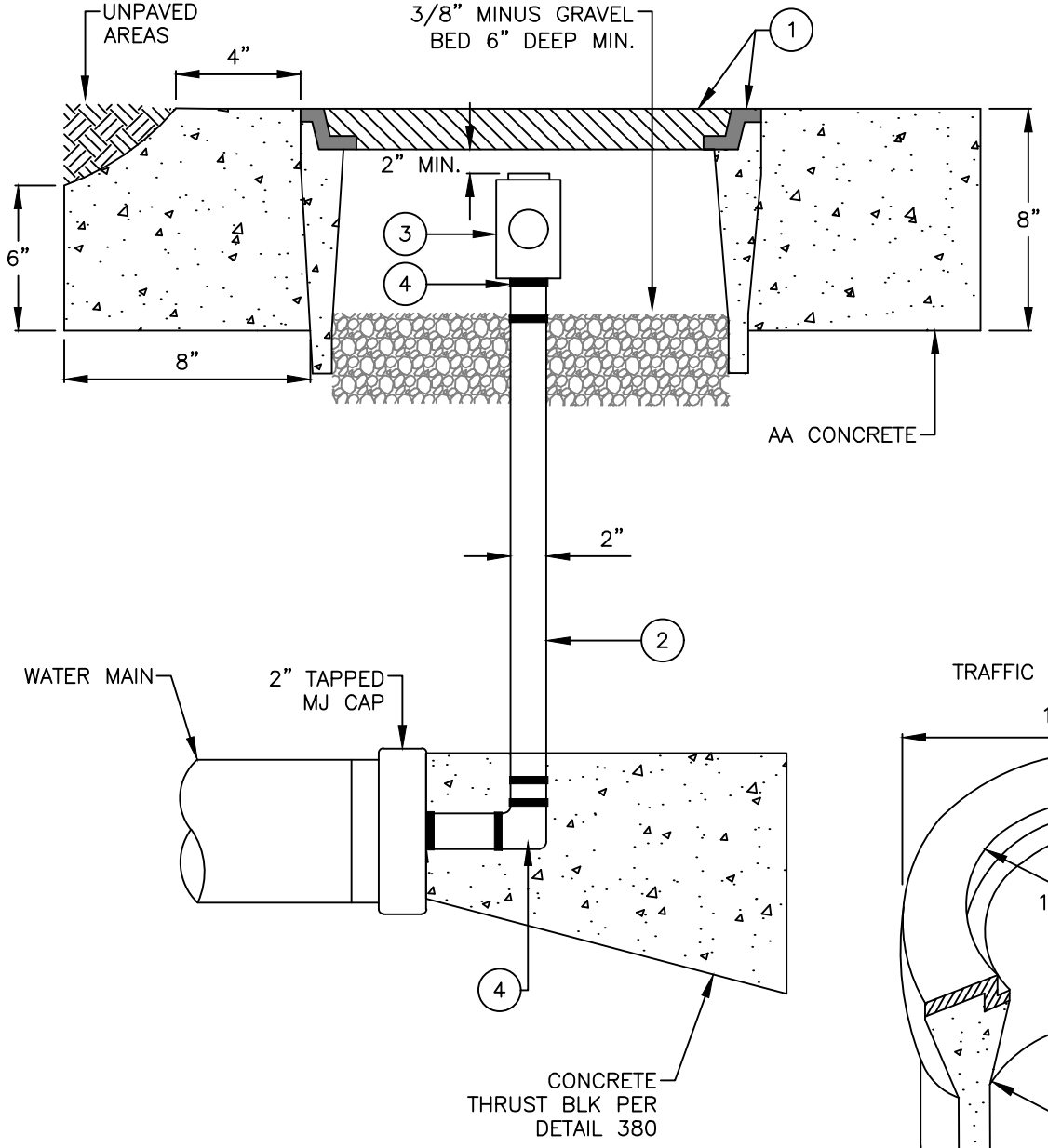
*APCO, CRIPSIN, SIMPLEX, OR APPROVED EQUAL




N.T.S.

| DETAIL NO. 388 | STANDARD DETAIL | AIR RELEASE VALVE | CITY OF KINGMAN | DETAIL NO. 388 |
|---|---|---|---|---|

Effective: August 18, 2020 REVISED 2017 Ordinance No. 1910




NOTES:

1. ALL FLUSH VALVE LOCATIONS SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO INSTALLATION.
2. COMPACTION OF THE BACKFILL AROUND THE VALVE BOXAND BELOW THE CONCRETE COLLAR PER SECT 301 & 601.
3. ALL PIPING, FITTINGS, VALVES ETC SHALL MEET NSF61.

ALLOWABLE MATERIALS

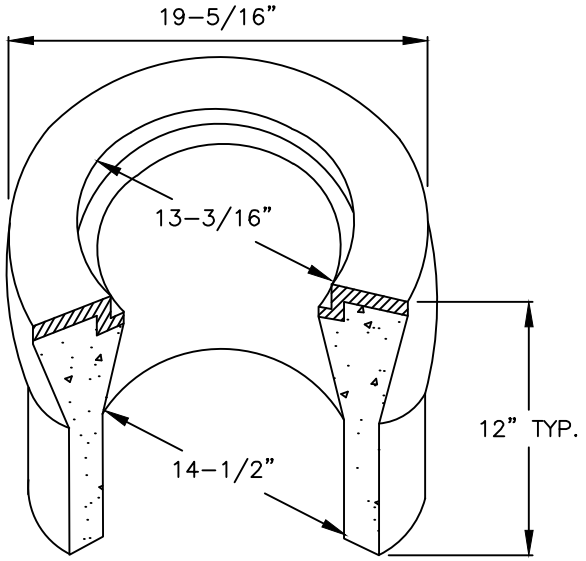
(1) FRAME AND COVER SHALL BE TRAFFIC RATED H–20 MIN AS MANUFACTURED BY OLDCASTLE PRECAST/CHRISTY PART NO. G12 OR APPROVED EQUAL.

(2) SCHEDULE 80 PVC PER ASTM D1784, D1785 OR NSF61 COMPLIANT ASTM B 43 SEAMLESS THREADED (NPT) BRASS PIPE WITH BRASS STREET ELBOW. ALL MATERIALS SHALL BE APPROVED BY THE AGENCY.

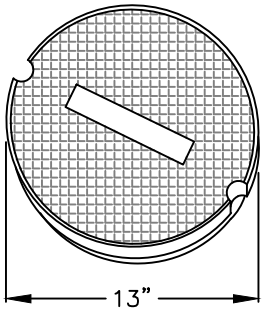
(3) APPROVED BALL VALVE WITH BRASS PLUG.

(4) FORD PACK JOINT FITTINGS OR APPROVED EQUAL FOR SCHEDULE 80 PVC.

TRAFFIC VALVE BOX NO. G12



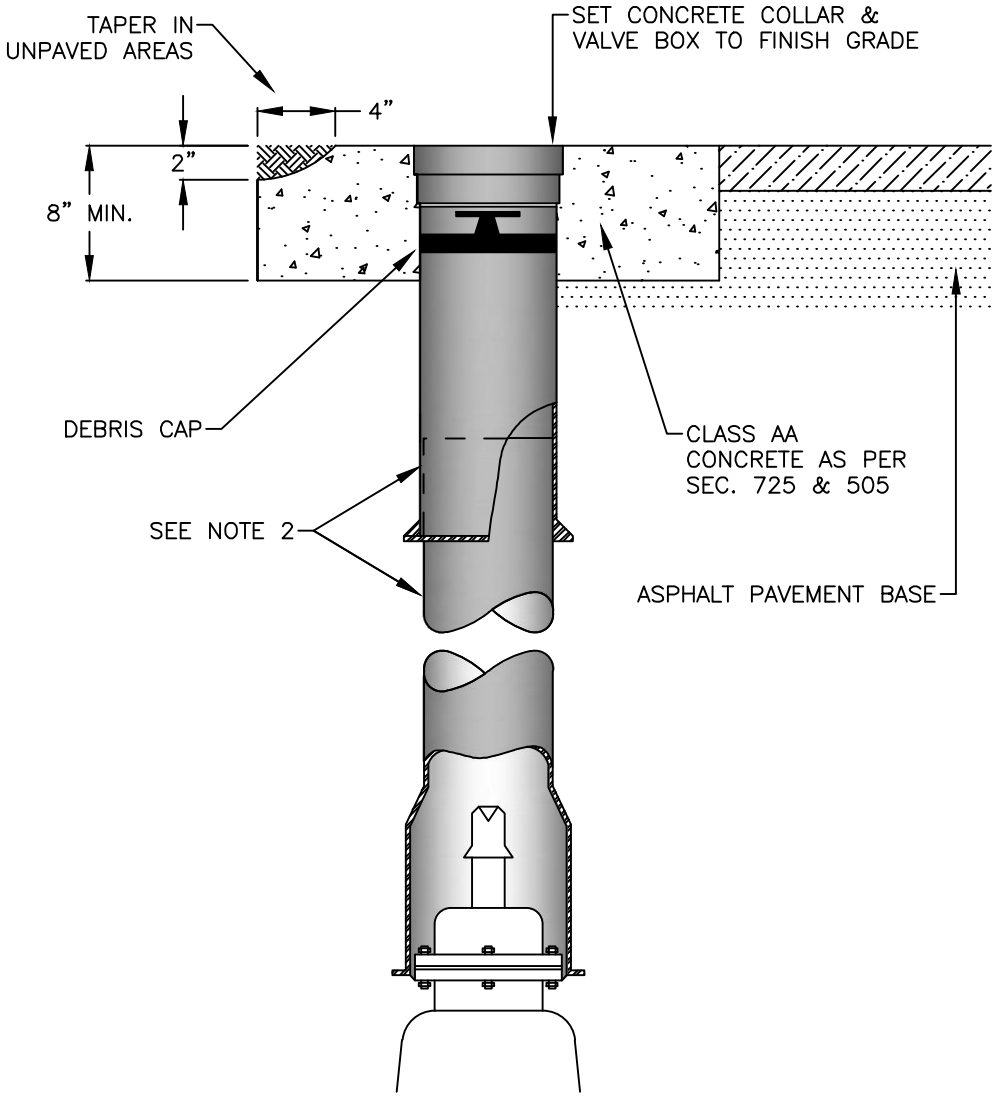

CAST IRON LID NO. G12C




N.T.S.

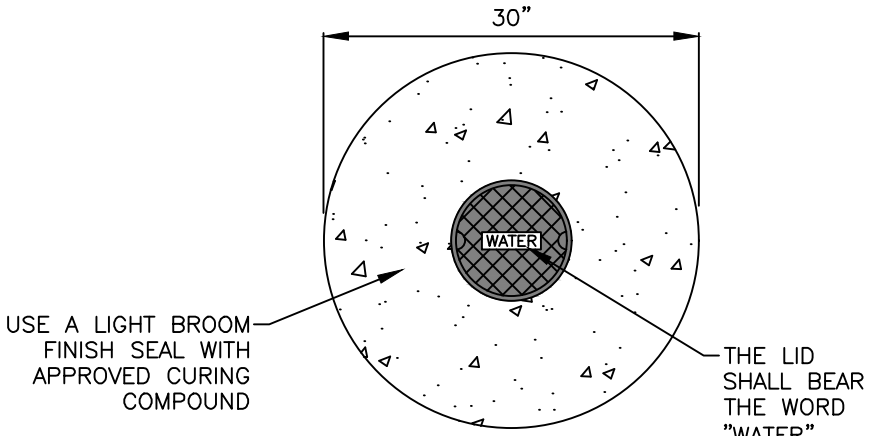
| DETAIL NO. 390 | STANDARD DETAIL | FLUSHING PIPE | CITY OF KINGMAN | DETAIL NO. 390 |
|---|---|---|---|---|

Effective: August 18, 2020 REVISED 2017 Ordinance No. 1910




NOTES:

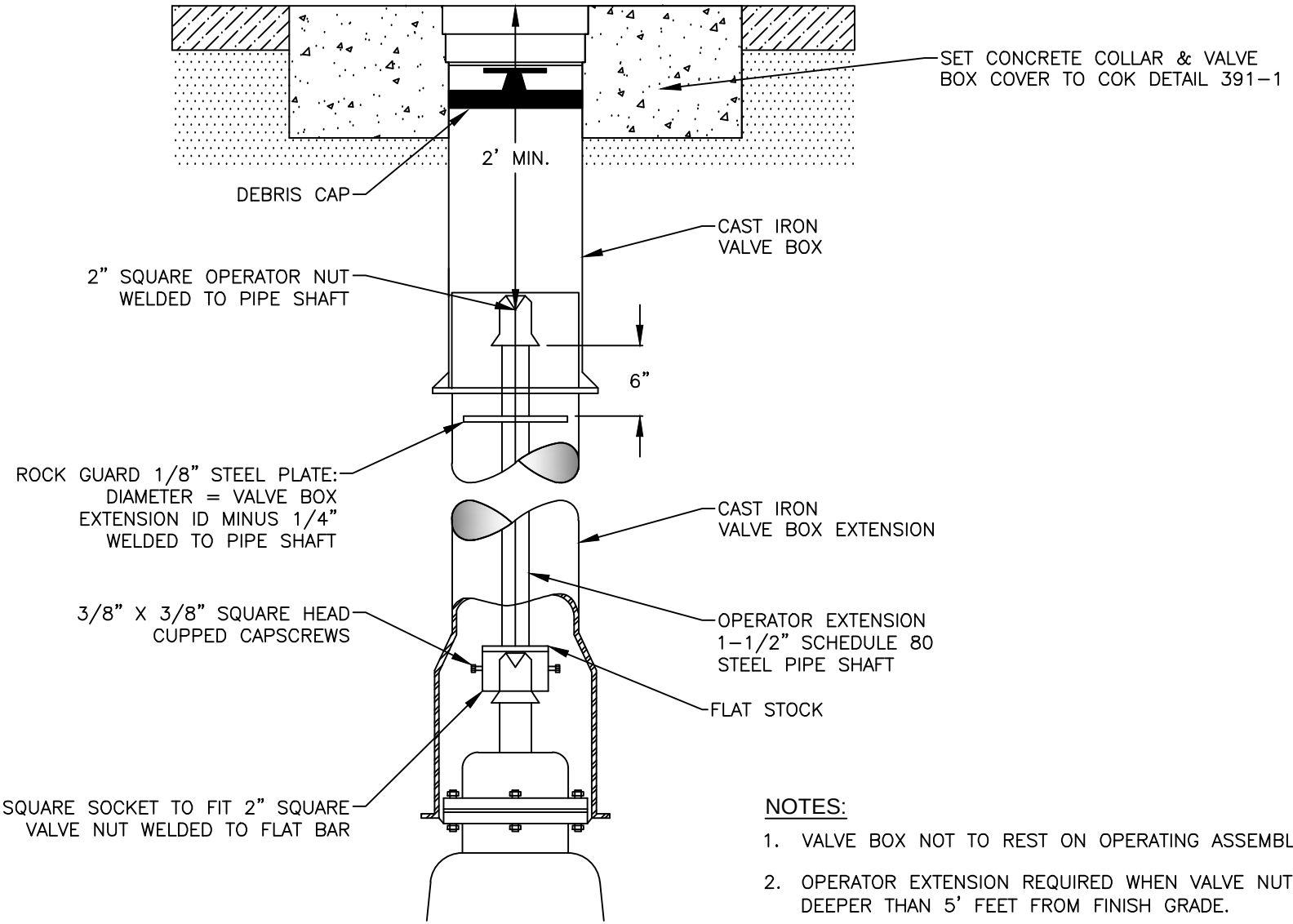
1. THE CONTRACTOR SHALL ADJUST ALL VALVE BOXES AND COLLARS TO FINISH GRADE. THE ADJUSTMENT SHALL BE MADE AFTER PLACEMENT OF ANY REQUIRED ASPHALT CONCRETE PAVEMENT.
2. VALVE BOXES SHALL BE THE SLIDING ADJUSTABLE TYPE MADE OF CAST IRON WITH A 4 INCH OR GREATER DEEP SKIRTED LID AS MANUFACTURED BY TYLER, APCO, OR OTHER APPROVED EQUAL. CAST IRON SHALL HAVE A MINIMUM TENSILE STRENGTH OF 30,000 PSI.
3. BACKFILL SHALL BE IN ACCORDANCE WITH CITY OF KINGMAN STANDARD DETAIL 392. COMPACTION OF BACKFILL AROUND THE VALVE BOX AND BELOW THE CONCRETE COLLAR SHALL BE TO 95% OF MAX. DENSITY.
4. 12 GAUGE BLUE INSULATED COPPER LOCATOR WIRE SHALL EXTEND ALONG THE OUTSIDE OF THE BOTTOM BOX SECTION AND ALONG THE INSIDE OF THE UPPER BOX SECTION.
5. EXTENSIONS TO VALVE STEMS SHALL BE REQUIRED FOR ALL VALVES WHERE THE OPERATING NUT IS 5 FEET OR GREATER BELOW THE FINISHED GRADE SURFACE. SEE COK STANDARD DETAIL 391–2.
6. ALL CONCRETE SHALL BE FREE OF DEFECTS INCLUDING CRACKS OR CHIPS.
7. DEBRIS CAPS SHALL BE USED IN ALL VALVE BOX INSTALLATIONS AND SHALL BE S.W. SERVICES OR APPROVED EQUAL.




PLAN VIEW

N.T.S.

| DETAIL NO. 391-1 | STANDARD DETAIL | VALVE BOX INSTALLATION | CITY OF KINGMAN | DETAIL NO. 391-1 |
|---|---|---|---|---|



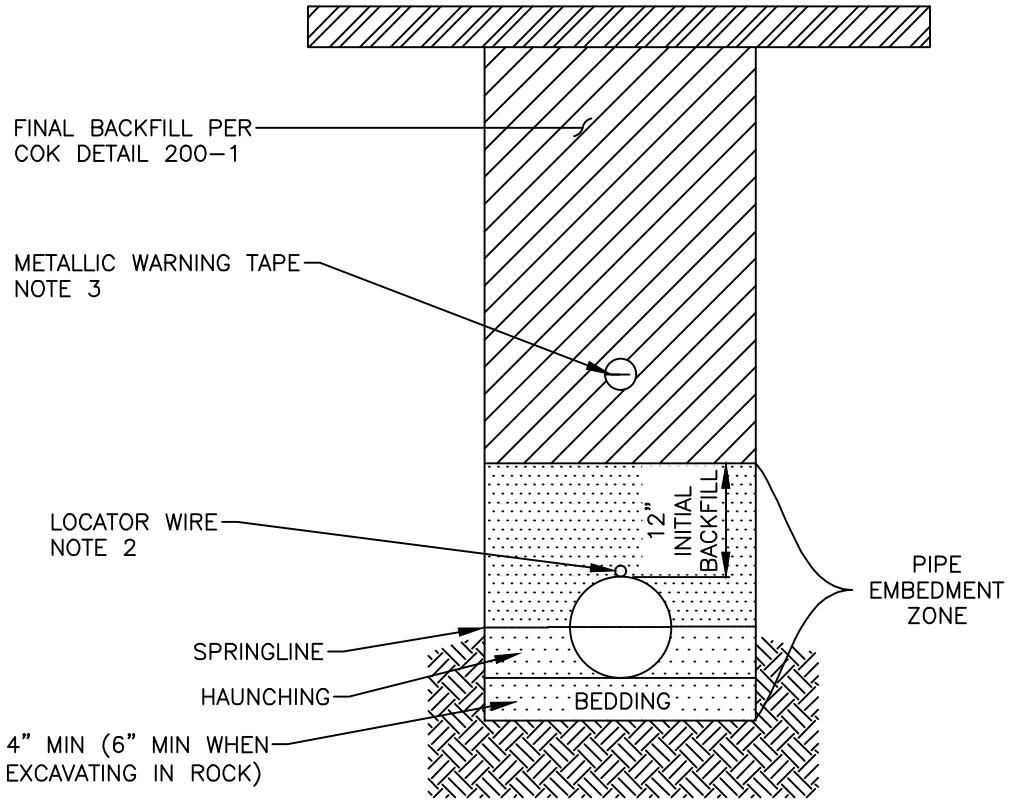

ELEVATION VIEW

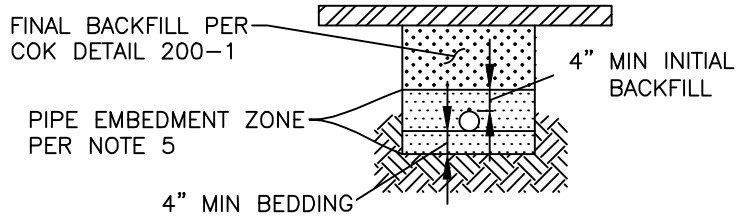
NOTES:

1. VALVE BOX NOT TO REST ON OPERATING ASSEMBLY.
2. OPERATOR EXTENSION REQUIRED WHEN VALVE NUT IS DEEPER THAN 5' FEET FROM FINISH GRADE.

N.T.S.

| DETAIL NO. 391-2 | STANDARD DETAIL | VALVE BOX OPERATOR EXT. ASSEMBLY | CITY OF KINGMAN | DETAIL NO. 391-2 |
|---|---|---|---|---|




DETAIL "A"

USE THIS DETAIL FOR SERVICE, ARV AND OTHER SHALLOW BURY DEPTHS

ALL DIMENSIONS SPECIFIED ARE MINIMUM

## GENERAL NOTES

1. THE MINIMUM COVER FOR WATER LINES UNDER ASPHALT PAVEMENT SHALL BE 36 INCHES. THE MINIMUM COVER FOR WATER LINES IN UNPAVED AREAS SHALL BE 42 INCHES. THE MINIMUM COVER FOR WATER LINES 12" AND LARGER, IN ALL AREAS, SHALL BE 48 INCHES. MINIMUM COVER SHALL BE MEASURED FROM EXISTING OR PROPOSED FINISH GRADE OF PAVEMENT, OR FROM NATURAL GROUND, WHICHEVER IS DEEPER.

2. PLACE LOCATOR WIRE DIRECTLY ON TOP OF THE WATER MAIN AND FASTENED WITH DUCT TAPE AT EVERY 10 FEET. LOCATOR WIRE IS ALSO REQUIRED ON SERVICE LINES, FIRE SERVICE/SPRINKLER LINES, FIRE HYDRANT LINES, FLUSH VALVES AND AIR RELEASE VALVES (ARV'S). WIRE FOR FIRE HYDRANTS SHALL LOOP COMPLETELY AROUND OR CLAMP ABOVE THE FLANGED FITTING AT THE BASE OF THE HYDRANT. WIRE FOR SERVICE LINES AND ARV'S SHALL EXTEND TO THE METER BOX AND WRAP AROUND THE CORP STOP OR THE ARV, WITH 1 FOOT MINIMUM SLACK. REFER TO NOTE 4, COK DETAIL 391–1, FOR INSTALLING LOCATOR WIRE ON VALVE BOXES. LOCATOR WIRE SHALL BE SPLICED BY USING 3M–DBR/Y–6 600V DIRECT BURY/SPLICE KIT OR APPROVED EQUAL. THE CONTRACTOR SHALL CONDUCT CONTINUITY TEST ON ALL LOCATOR WIRE. LOCATOR WIRE SHALL BE 12 AWG TYPE UF SINGLE CONDUCTOR.

3. WARNING TAPE SHALL BE METALLIC TAPE, BURIED WITHIN 12 TO 18 INCHES BELOW FINISH GRADE. WARNING TAPE SHALL BE USED ON ALL MAIN LINE, FIRE SERVICE/SPRINKLER LINES, ARV, FLUSH VALVE, FIRE HYDRANT LINES, BLOW–OFF LINES AND SERVICE LINE TRENCHES. ALL TAPE ENDS SHALL BE TIED OR OVERLAPPED TO FORM ONE CONTINUOUS LENGTH. TAPE SHALL BE 3 INCHES WIDE, WITH BLACK LETTERING "CAUTION: WATER LINE BURIED BELOW" ON A BLUE BACKGROUND, TERRA TAPE AS MANUFACTURED BY REEF INDUSTRIES OR APPROVED EQUAL.

4. WATER SERVICE, AIR RELEASE, BLOW–OFF ASSEMBLY OR ANY SHALLOW BURY LINES SHALL BE BACKFILLED PER CITY STANDARD DETAIL 200–1.

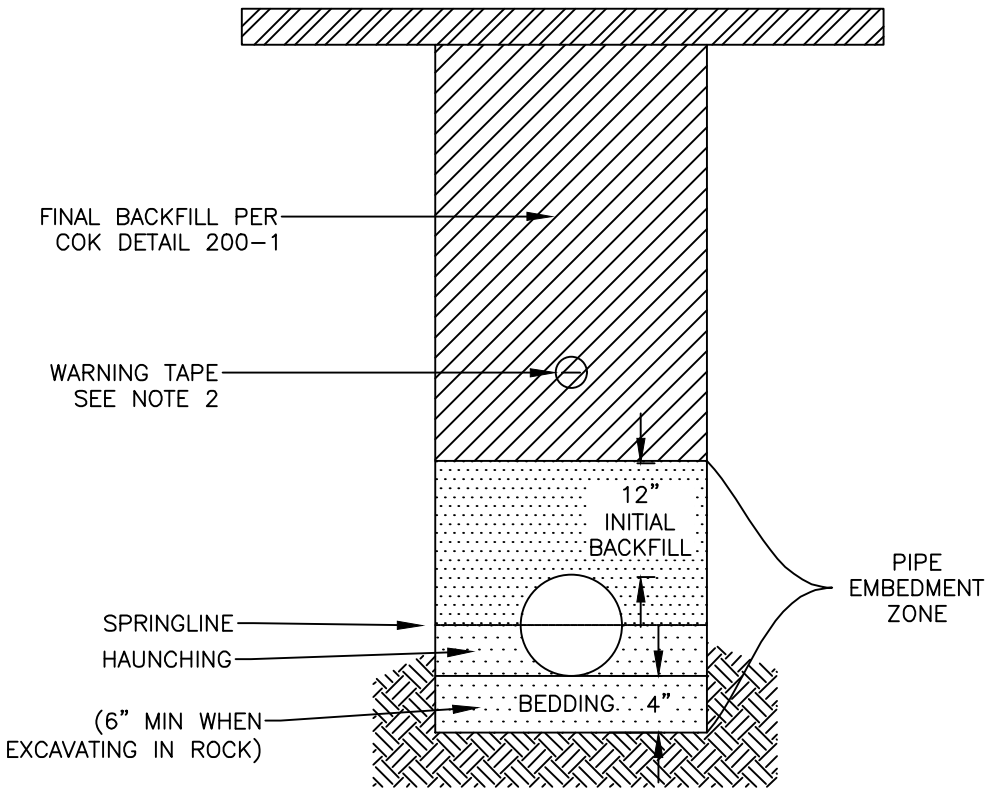
5. BEDDING AND HAUNCHING SHALL BE A.B.C. OR SELECT MATERIAL TYPE "B" PER MAG SECTION 702, TABLE 702–1. CLSM BY APPROVAL OF THE ENGINEER.

6. INITIAL BACKFILL MATERIAL SHALL BE A.B.C. OR SELECT MATERIAL TYPE "B" PER MAG SECTION 702, TABLE 702–1 OR $1\frac{1}{2}$ MINUS GRANULAR MATERIAL PER SECTION 601.

7. SEE SECTION 601 FOR TRENCH COMPACTION REQUIREMENTS.

N.T.S.

| DETAIL NO. 392 | STANDARD DETAIL | WATERLINE TRENCH AND BACKFILL | CITY OF KINGMAN | DETAIL NO. 392 |
|---|---|---|---|---|




ALL DIMENSIONS SPECIFIED ARE MINIMUM.

NOTES

1. THE MINIMUM COVER FOR SEWER LINE EXTENSIONS SHALL BE 36 INCHES. THE MINIMUM COVER FOR SEWER LINES IN ALL OTHER AREAS SHALL BE 48 INCHES. MINIMUM COVER SHALL BE MEASURED FROM EXISTING OR PROPOSED FINISH GRADE OF PAVEMENT, OR FROM NATURAL GROUND, WHICHEVER IS DEEPER.

2. WARNING TAPE SHALL BE METALLIC TAPE, BURIED WITHIN 12 TO 18 INCHES BELOW FINISH GRADE. WARNING TAPE SHALL BE USED ON ALL MAIN LINE AND SERVICE LINE TRENCHES. ALL TAPE ENDS SHALL BE TIED OR OVERLAPPED TO FORM ONE CONTINUOUS LENGTH. TAPE SHALL BE 3 INCHES WIDE, WITH BLACK LETTERING "CAUTION SEWER LINE BURIED BELOW", ON A GREEN BACKGROUND, TERRA TAPE AS MANUFACTURED BY REEF INDUSTRIES OR APPROVED EQUAL.

3. TRENCH WIDTHS PER MAG SECTION 601 TABLE 601–1.

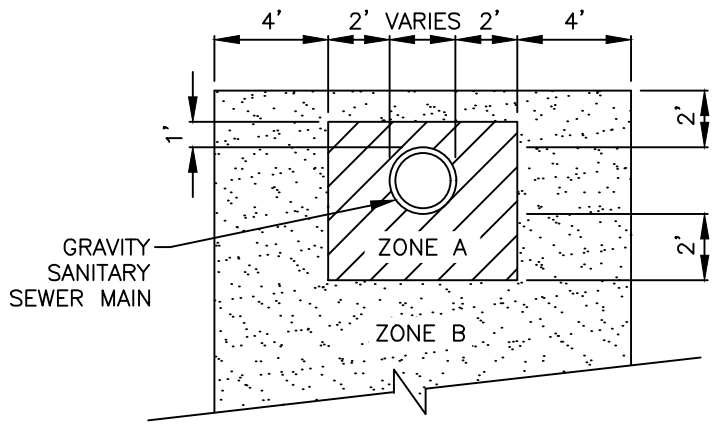
4. BEDDING AND HAUNCHING SHALL BE A.B.C. OR SELECT MATERIAL TYPE "B" PER MAG SECTION 702, TABLE 702–1. CLSM BY APPROVAL OF THE ENGINEER.

5. INITIAL BACKFILL MATERIAL SHALL BE A.B.C. OR SELECT MATERIAL TYPE "B" PER MAG SECTION 702, TABLE 702–1 OR $1\frac{1}{2}$ MINUS GRANULAR MATERIAL PER SECTION 601.

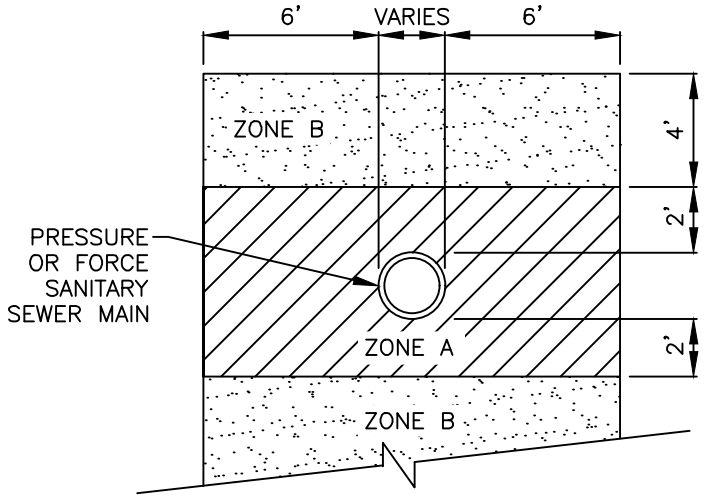
6. SEE SECTION 601 FOR TRENCH COMPACTION REQUIREMENTS.

N.T.S.

| DETAIL NO. 400 | STANDARD DETAIL | SEWERLINE TRENCH AND BACKFILL | CITY OF KINGMAN | DETAIL NO. 400 |
|---|---|---|---|---|




GRAVITY SANITARY SEWER



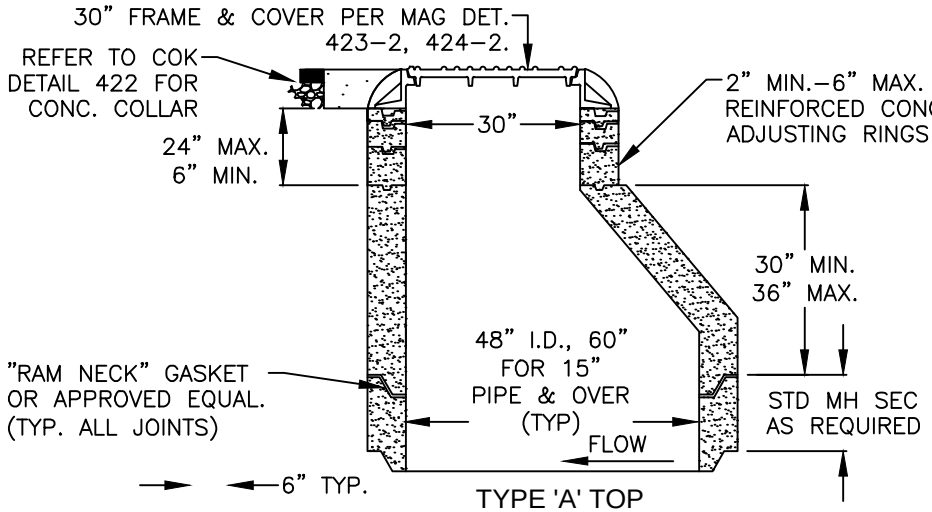

PRESSURIZED SANITARY SEWER

NOTES:

1. ZONE A: NO WATER LINES ALLOWED / MINIMUM SEPARATION.
   ZONE B: EXTRA PROTECTION REQUIRED FOR WATER LINES.
2. CONCRETE ENCASEMENT SHALL NOT BE UTILIZED AS A MEANS TO PROVIDE EXTRA PROTECTION UNLESS APPROVED OTHERWISE BY THE CITY ENGINEER.
3. REFER TO MAG STANDARD SPECIFICATION 610 FOR EXTRA PROTECTION REQUIREMENTS.

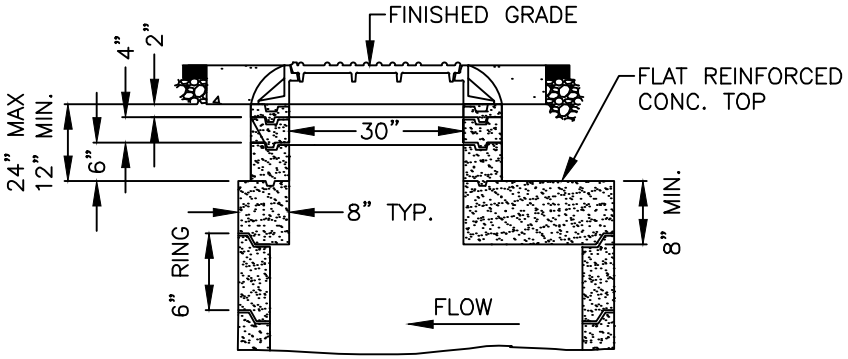
N.T.S.

| DETAIL NO. 404-1 | STANDARD DETAIL | WATER AND SANITARY SEWER SEPARATION / PROTECTION | CITY OF KINGMAN | DETAIL NO. 404-1 |
|---|---|---|---|---|




TYPE 'A' TOP

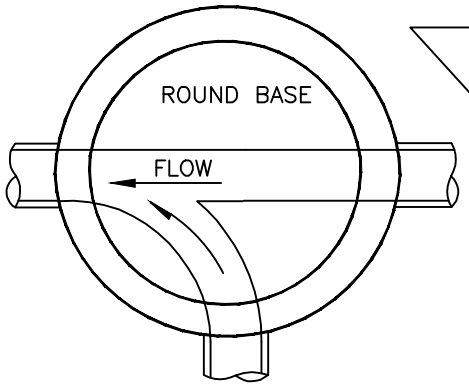
(PRE-CAST ECCENTRIC CONICAL TOP M.H.)

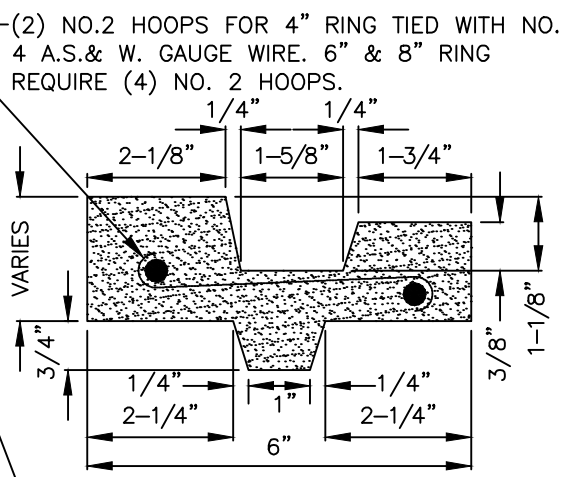



TYPE 'B' TOP

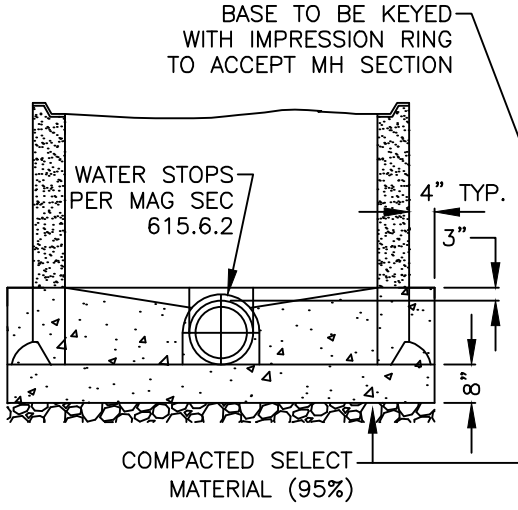
## NOTES:

1. PRE-CAST M.H. SECTIONS AND GRADE RINGS, SHALL BE MANUFACTURED IN ACCORDANCE WITH A.S.T.M. C-478 EXCEPT AS MODIFIED HEREIN. CLASS A CONCRETE MIN.
2. ALL MANHOLE MATERIAL SHALL BE SUBMITTED FOR APPROVAL PRIOR TO USE.
3. MORTAR MEETING TYPE C REQUIREMENTS PER MAG SPEC, 776 TO BE PLACED AT ALL PRECAST MANHOLE SECTIONS INCLUDING STEEL MANHOLE RINGS AND ADJUSTMENT RINGS ON THE INTERIOR OF MANHOLES. GROUT SHALL ALSO BE APPLIED IN AREAS AROUND THE PIPE AND THE PRECAST BASE INCLUDING: BETWEEN THE PIPE AND THE WALL, BETWEEN THE PIPE AND THE FLOOR, AND BETWEEN THE PIPE AND THE CHANNEL.
4. NEW MANHOLES AND TIES TO EXISTING MANHOLES SHALL BE CONSTRUCTED TO ALLOW NO SUBSIDENCE IN THE SURROUNDING ASPHALT BY ONE OF THE FOLLOWING:
   A. 100% ABC PLACEMENT USING MECHANICAL COMPACTION METHODS AROUND THE ENTIRE MANHOLE.
   B. PLACEMENT OF A ONE SACK ABC SLURRY BACKFILL PER CITY DETAIL 200-1 IN THE AREA BETWEEN THE MANHOLE AND THE SURROUNDING UNDISTURBED EARTH MATERIAL.
5. CONCRETE SHALL BE CLASS 'A' PER MAG SEC 725 & 505 FOR CAST IN PLACE BASE.
6. ALLOW 24 HOURS FOR BASE TO CURE BEFORE VERTICAL MANHOLE CONSTRUCTION.
7. DEPTH OF CONCRETE BASE SHALL BE 12" ON MANHOLES OVER 13'.
8. NO FITTINGS ALLOWED TO CONNECT PIPES INSIDE OF MANHOLE.

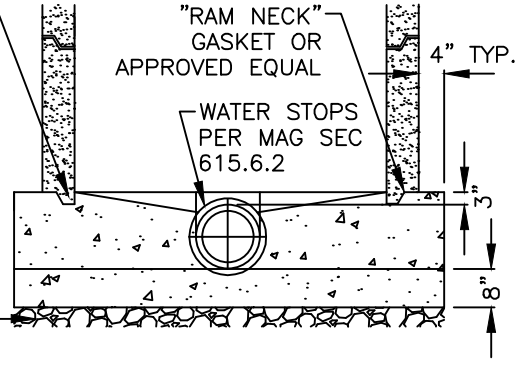



ADJUSTING RING DETAIL



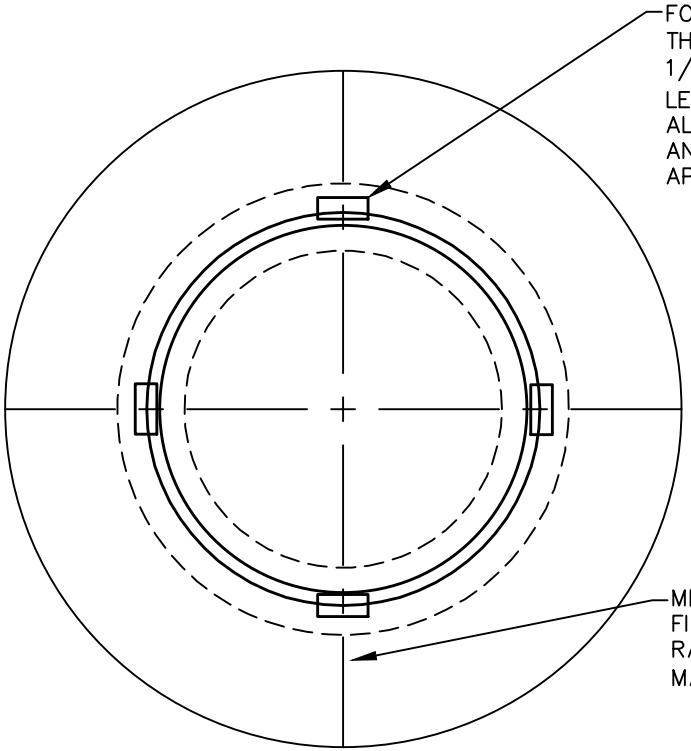

PRECAST BASE




CAST IN PLACE BASE

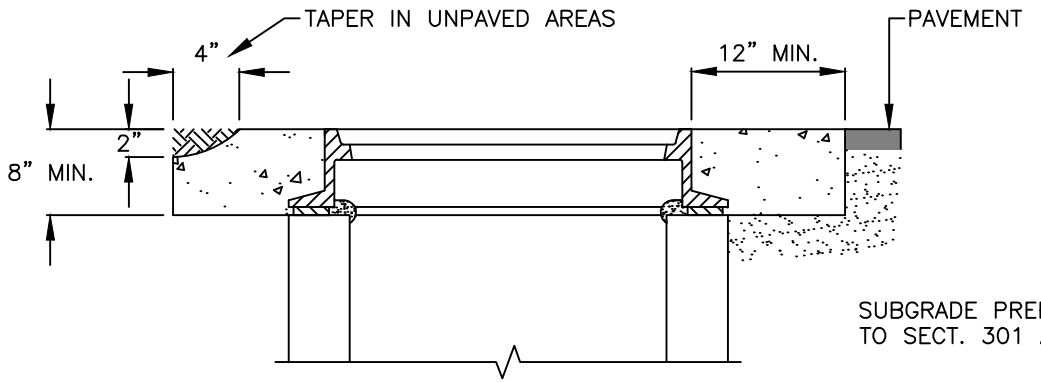
N.T.S.

| DETAIL NO. 420-1 | STANDARD DETAIL | PRECAST CONCRETE SEWER MANHOLE | CITY OF KINGMAN | DETAIL NO. 420-1 |
|---|---|---|---|---|



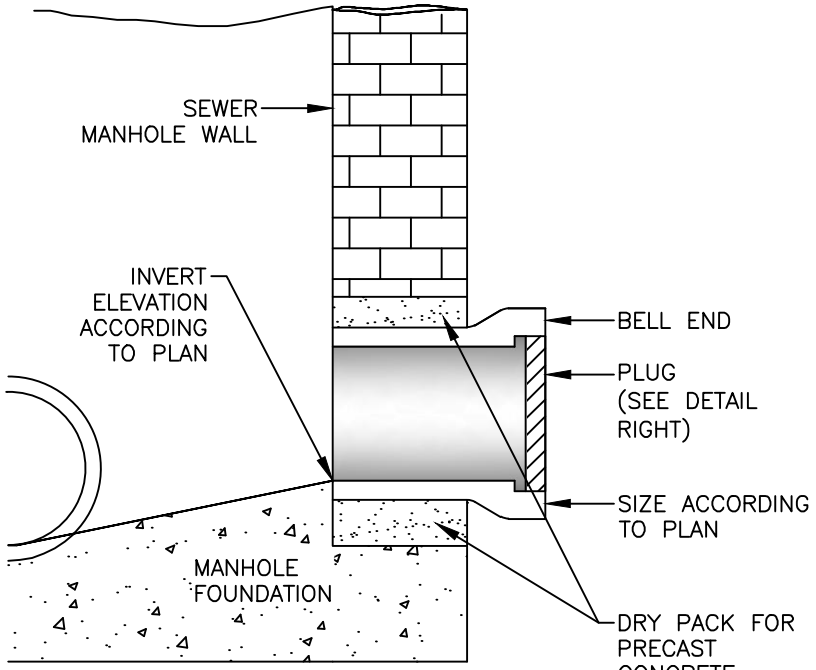

NOTES:

1. IF AN EXISTING MANHOLE IS DISTURBED DURING CONSTRUCTION OR AN EXCAVATION MADE AROUND THE MANHOLE, THE CONCRETE COLLAR IS TO BE REMOVED (IF EXISTING) AND A NEW CONCRETE COLLAR PLACED PER THIS DETAIL TO INCLUDE NECESSARY GROUTING OF EXISTING MANHOLE LID AND ADJUSTMENT RINGS.
2. CLASS AA CONCRETE PER MAG SECT. 725 & 505.
3. MANHOLE FRAME AND COVER PER MAG SECT. 625.
4. FRAME & COVER ADJUSTMENT AND CONCRETE COLLAR SHALL BE COMPLETED BEFORE PAVING.

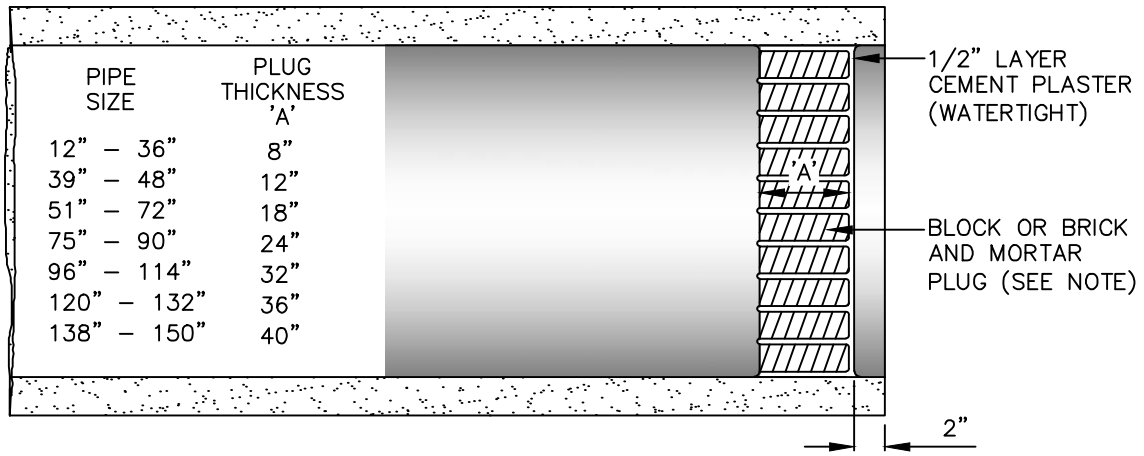



N.T.S.

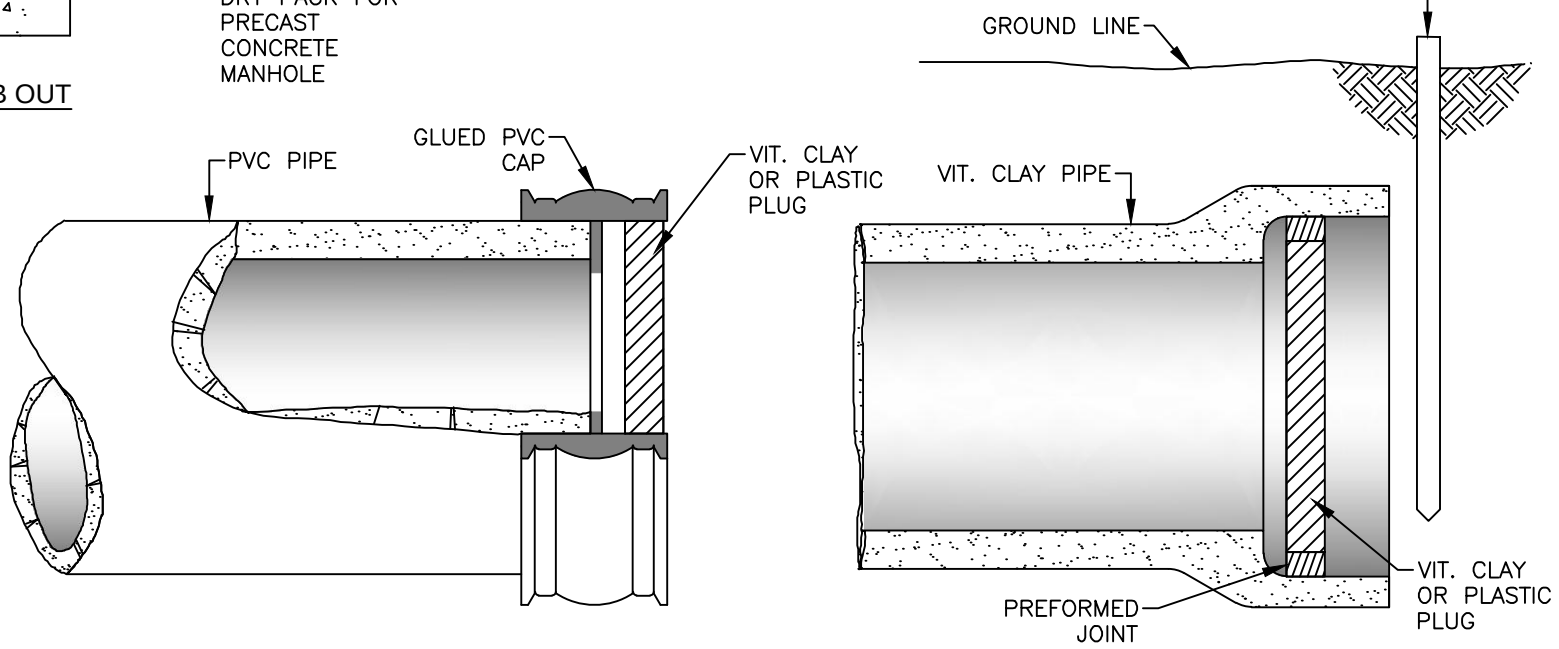
| DETAIL NO. 422 | STANDARD DETAIL | SEWER MANHOLE COVER FRAME ADJUSTMENT | CITY OF KINGMAN | DETAIL NO. 422 |
|---|---|---|---|---|




TYPICAL STUB OUT




STUBOUTS SHALL BE MARKED WITH A 1/2 INCH SCHEDULE 40 PVC PIPE AND #12 COPPER WIRE. THE INSULATION ON THE MARKING WIRE SHALL BE GREEN. THE PVC PIPE SHALL BE PAINTED GREEN.



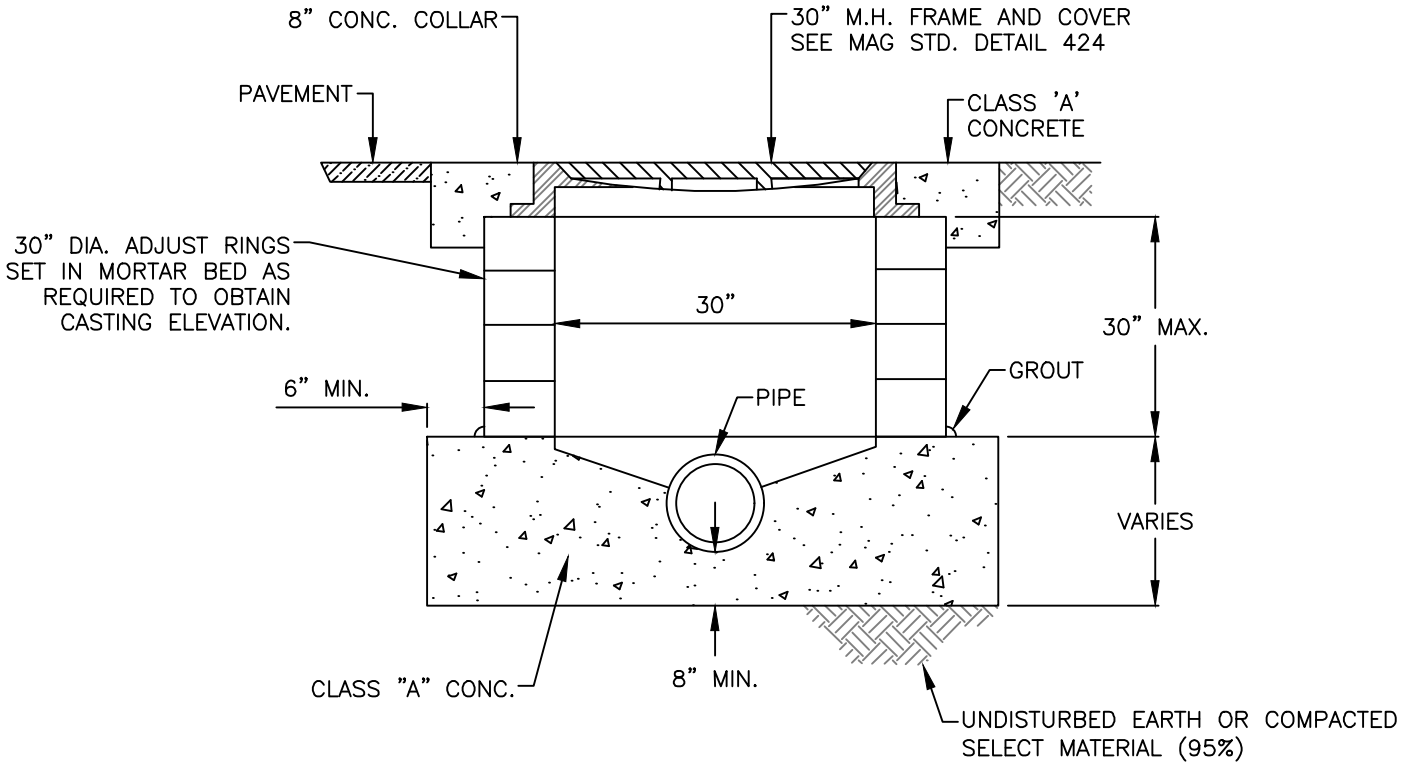

SEWER LINE

NOTES:

1. NOTE: COMPACT SOIL AT END OF PIPE TO 95% OF MAXIMUM DENSITY.
2. IF DEPTH OF COVER IS LESS THAN 5' OR GREATER THAN 10' INCREASE PLUG THICKNESS A MIN. OF 4".
3. USE GLUE ON CAP IF PVC.

N.T.S.

| DETAIL NO. 427 | STANDARD DETAIL | STUB OUT AND PLUGS | CITY OF KINGMAN | DETAIL NO. 427 |
|---|---|---|---|---|

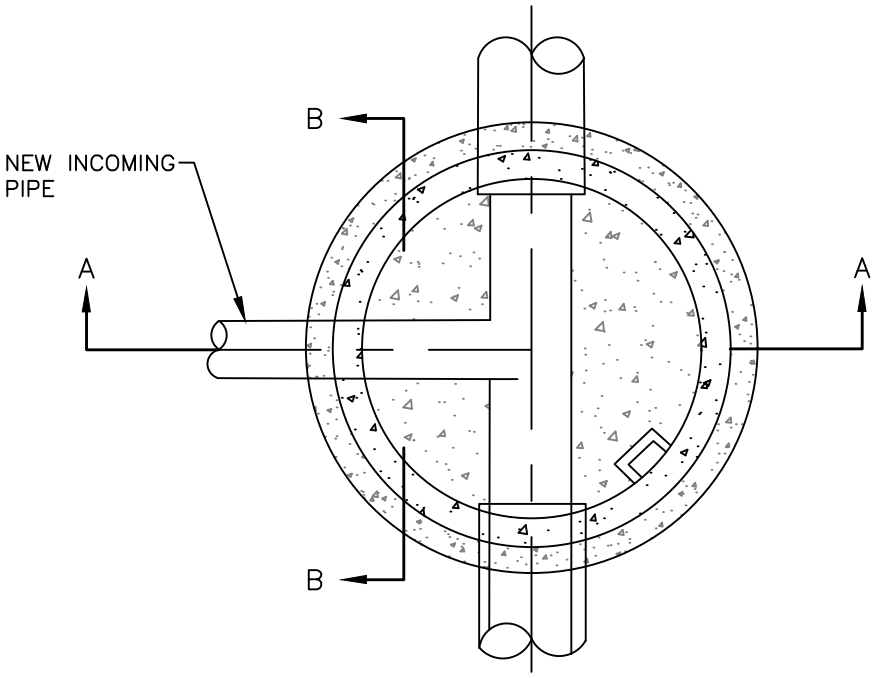



NOTE:

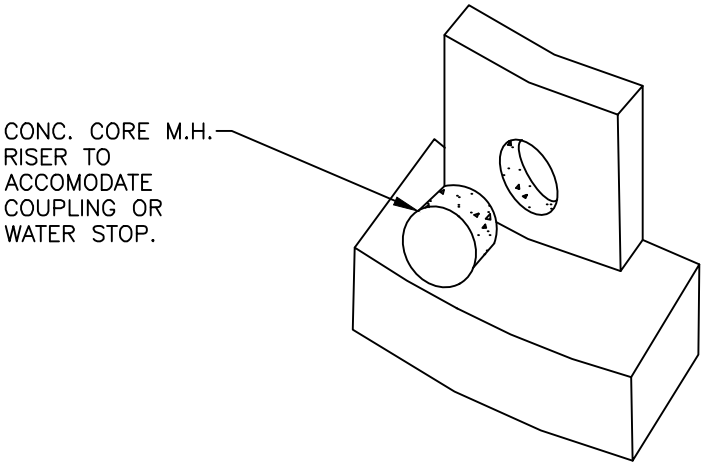
USE OF THIS TYPE OF MANHOLE IS SUBJECT TO SPECIAL APPROVAL BY THE CITY ENGINEER.

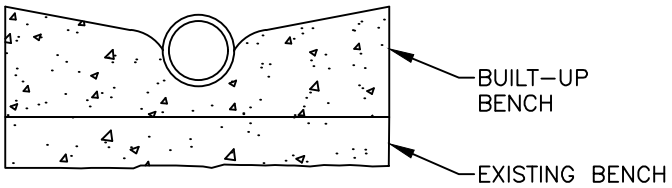
N.T.S.

| DETAIL NO. 430 | STANDARD DETAIL | SHALLOW MANHOLE | CITY OF KINGMAN | DETAIL NO. 430 |
|---|---|---|---|---|

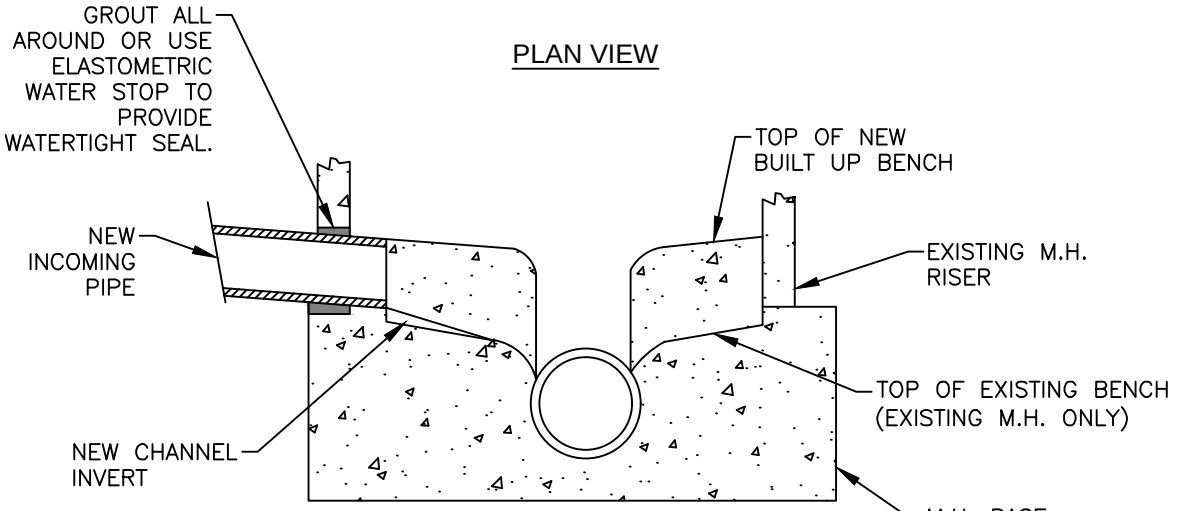



PLAN VIEW




SECTION B-B




SECTION A-A

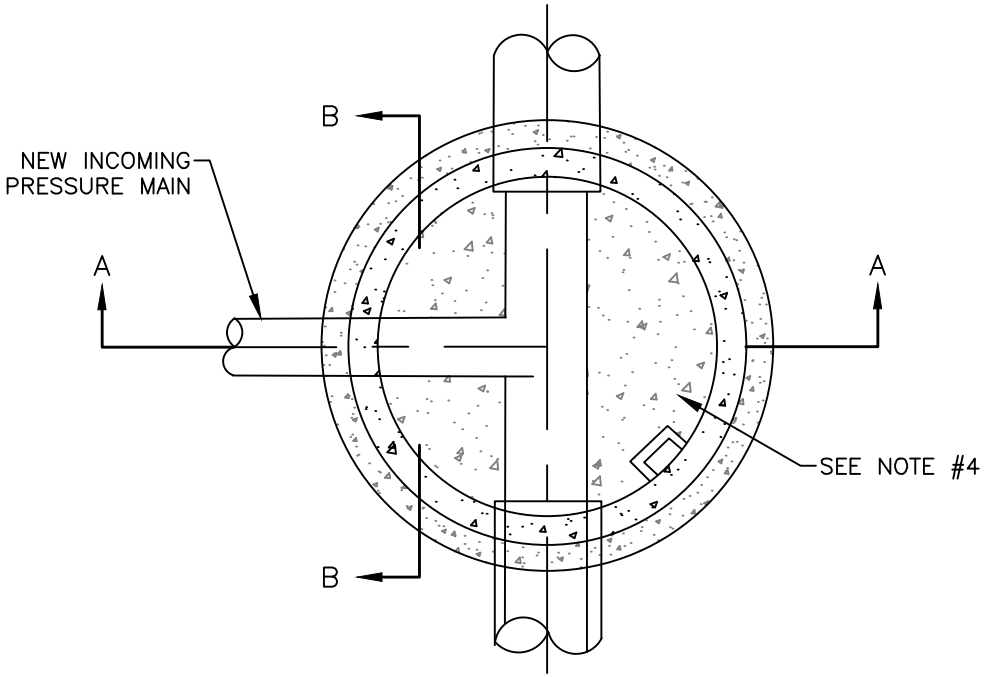
NOTES:

1. EXISTING M.H. BENCH TO BE THOROUGHLY CLEANED PRIOR TO CONSTRUCTING NEW BUILT UP BENCH. NEW BENCH SHALL BE CLASS 'A' CONCRETE W/ TYPE II PORTLAND CEMENT. USE OF AN APPROVED CONCRETE BONDING ADHESIVE IS REQUIRED.
2. ALL CONNECTIONS TO EXISTING MANHOLES SHALL BE INSPECTED AND APPROVED BY THE CITY OF KINGMAN.
3. SHAPE NEW CHANNEL TO PROVIDE FOR A SMOOTH TRANSITION OF FLOW FROM NEW INCOMING PIPE TO OUTGOING MAIN.

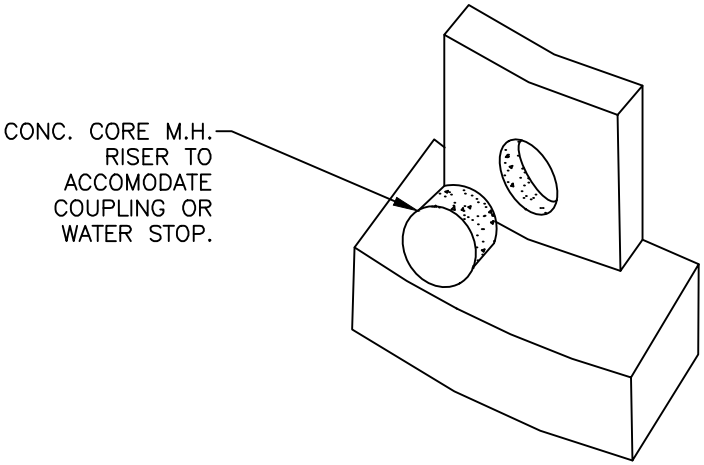
N.T.S.

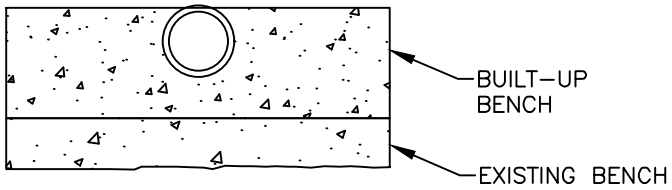
| DETAIL NO. 431 | STANDARD DETAIL | CONNECTION TO EXISTING MANHOLE (NON-REINFORCED BASE) | CITY OF KINGMAN | DETAIL NO. 431 |
|---|---|---|---|---|

Effective: August 18, 2020 REVISED 2010 Ordinance No. 1910

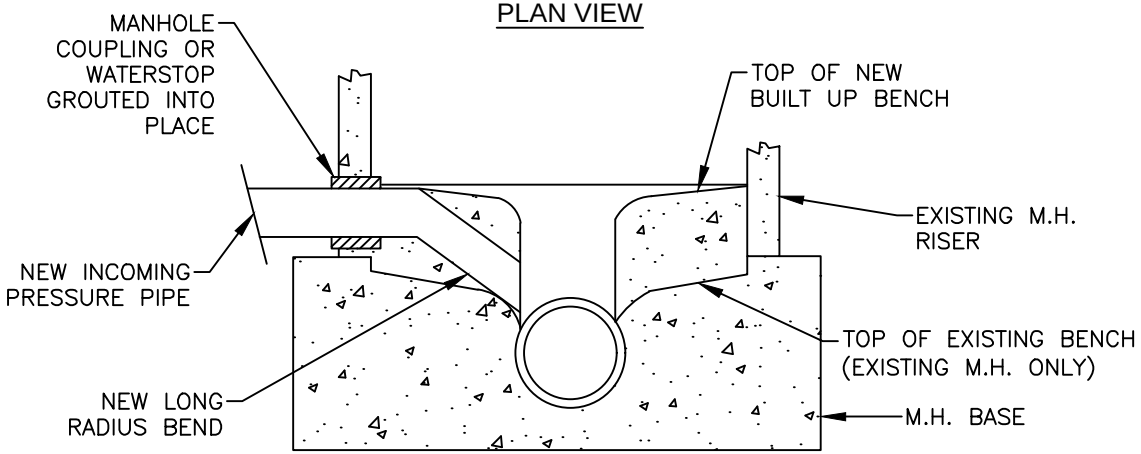



PLAN VIEW




SECTION B-B



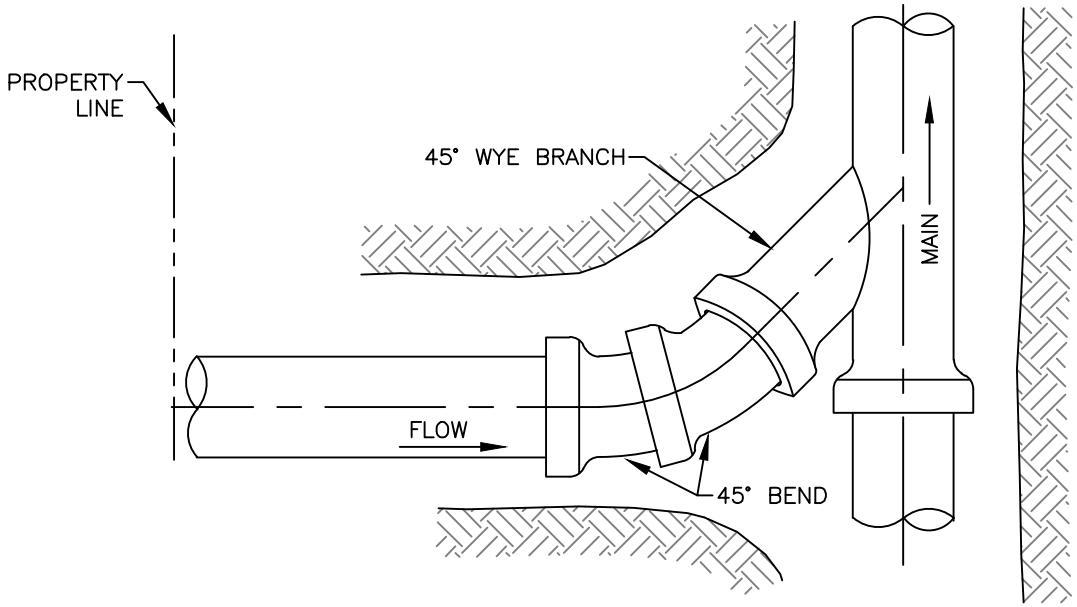

SECTION A-A

NOTES:

1. THIS DETAIL MAY BE USED FOR PRESSURE SEWER CONNECTIONS TO EXISTING OR NEW MANHOLES.
2. EXISTING M.H. BENCH TO BE THOROUGHLY CLEANED PRIOR TO CONSTRUCTING NEW BUILT UP BENCH. NEW BENCH SHALL BE CLASS 'A' CONCRETE W/ TYPE II PORTLAND CEMENT. USE OF AN APPROVED CONCRETE BONDING ADHESIVE IS REQUIRED.
3. IF CONNECTING TO TERMINAL MANHOLE, BRING PRESSURE MAIN INTO MANHOLE STRAIGHT ALIGNMENT WITH OUTLET MAIN.
4. INTERIOR OF MANHOLE TO BE PROTECTED WITH TNEMEC SERIES 104 H.S. EPOXY 15–20 MIL. DFT.

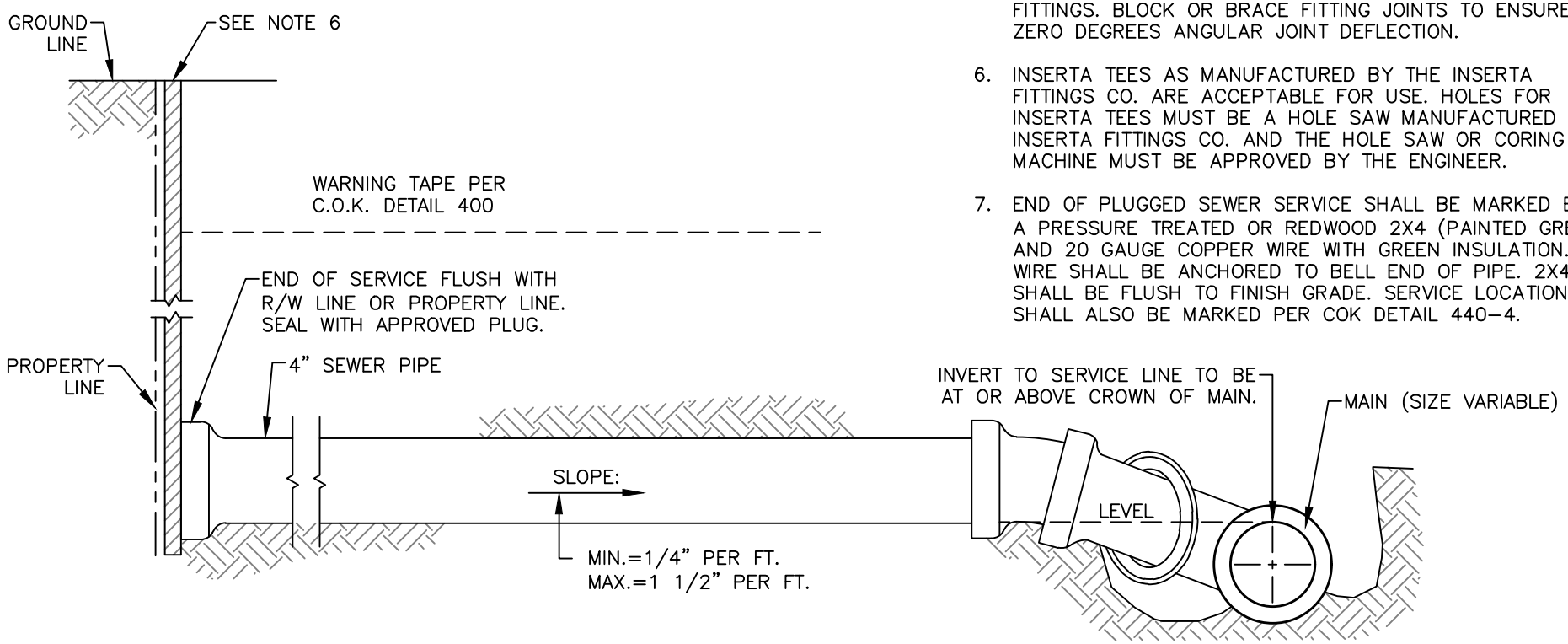
N.T.S.

| DETAIL NO. 432 | STANDARD DETAIL | PRESSURE MAIN CONNECTION EXISTING MANHOLE | CITY OF KINGMAN | DETAIL NO. 432 |
|---|---|---|---|---|



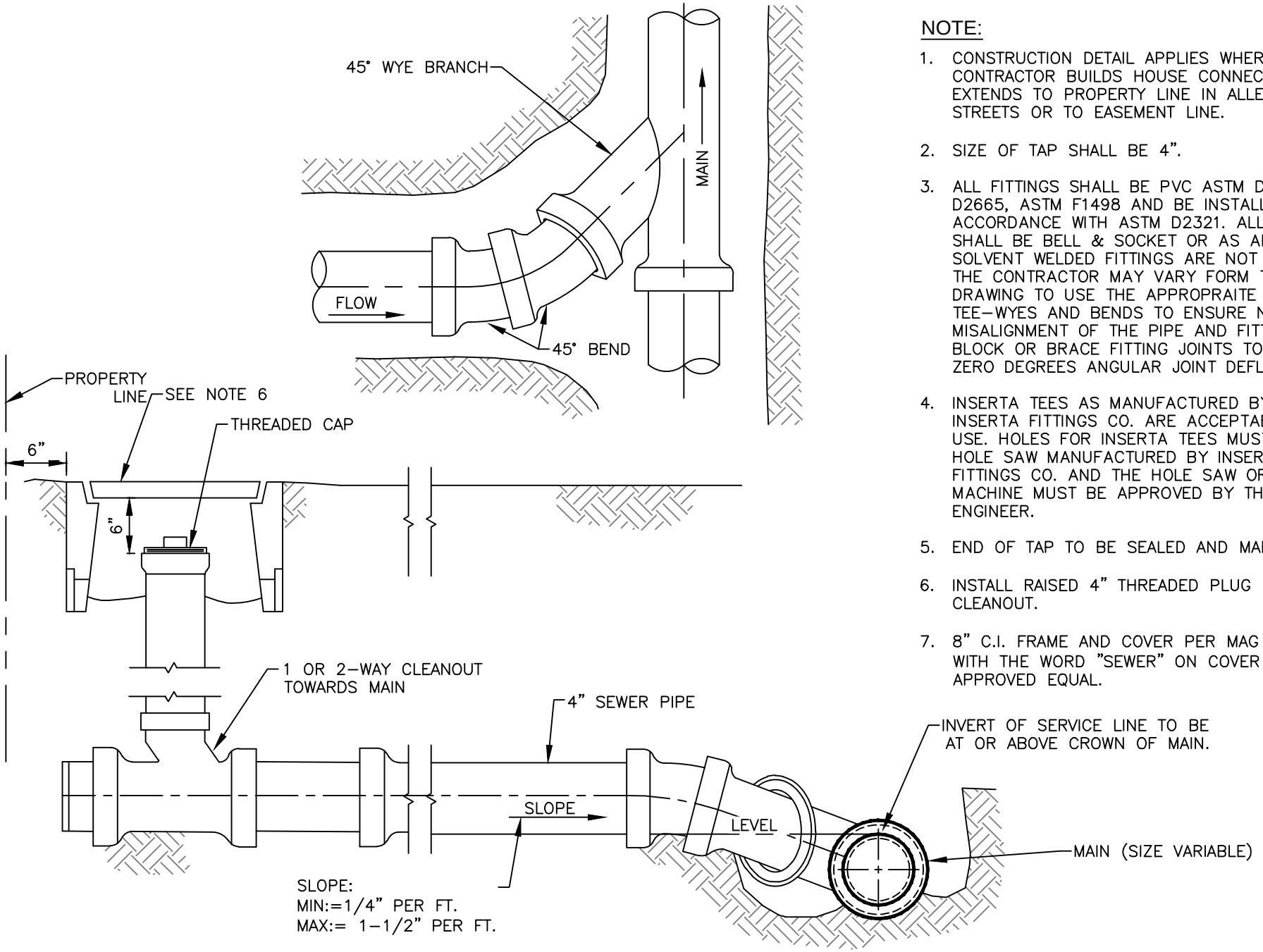

NOTE:

1. CONSTRUCTION DETAIL APPLIES WHERE CONTRACTOR BUILDS HOUSE CONNECTION. TAP EXTENDS TO PROPERTY LINE IN ALLEYS OR STREETS OR TO EASEMENT LINE.
2. SIZE OF TAP SHALL BE 4" UNLESS DESIGNATED OTHERWISE ON PLANS.
3. CONSTRUCT TAP AT MINIMUM SLOPE IF COVER WILL BE LESS THAN 5' AT PROPERTY LINE.
4. IF SHALLOW MAIN REQUIRES, MINMUM SLOPE CAN BE REDUCED TO 1/8" PER FOOT PROVIDED STUB IS STAKED TO GRADE AS APPROVED BY AGENCY.
5. ALL FITTINGS SHALL BE PVC ASTM D1784, ASTM D2665, ASTM F1498 AND BE INSTALLED IN ACCORDANCE WITH ASTM D2321. ALL FITTINGS SHALL BE BELL & SOCKET OR AS APPROVED. SOLVENT WELDED FITTINGS ARE NOT ALLOWED. THE CONTRACTOR MAY VARY FORM THE DRAWING TO USE THE APPROPRAITE WYES, TEE–WYES AND BENDS TO ENSURE NO MISALIGNMENT OF THE PIPE AND FITTINGS. BLOCK OR BRACE FITTING JOINTS TO ENSURE ZERO DEGREES ANGULAR JOINT DEFLECTION.
6. INSERTA TEES AS MANUFACTURED BY THE INSERTA FITTINGS CO. ARE ACCEPTABLE FOR USE. HOLES FOR INSERTA TEES MUST BE A HOLE SAW MANUFACTURED BY INSERTA FITTINGS CO. AND THE HOLE SAW OR CORING MACHINE MUST BE APPROVED BY THE ENGINEER.
7. END OF PLUGGED SEWER SERVICE SHALL BE MARKED BY A PRESSURE TREATED OR REDWOOD 2X4 (PAINTED GREEN) AND 20 GAUGE COPPER WIRE WITH GREEN INSULATION. WIRE SHALL BE ANCHORED TO BELL END OF PIPE. 2X4 SHALL BE FLUSH TO FINISH GRADE. SERVICE LOCATION SHALL ALSO BE MARKED PER COK DETAIL 440–4.




N.T.S.

| DETAIL NO. 440-1 | STANDARD DETAIL | 4" SEWER BUILDING CONNECTION FOR LATERALS UNDER CURB AND GUTTER | CITY OF KINGMAN | DETAIL NO. 440-1 |
|---|---|---|---|---|

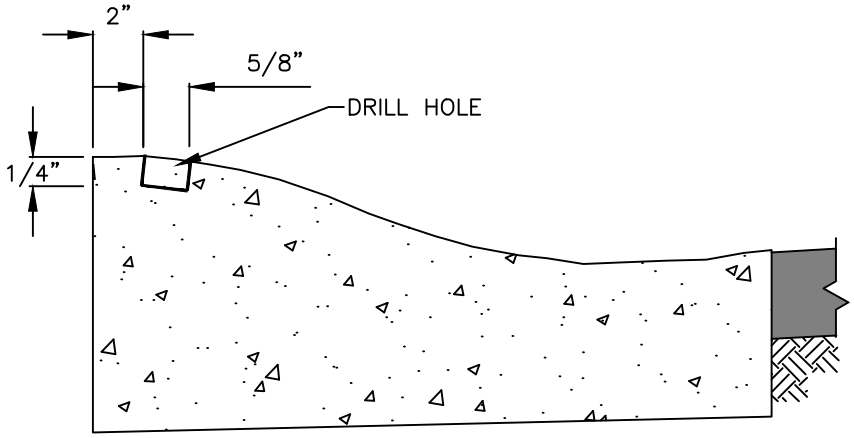



NOTE:

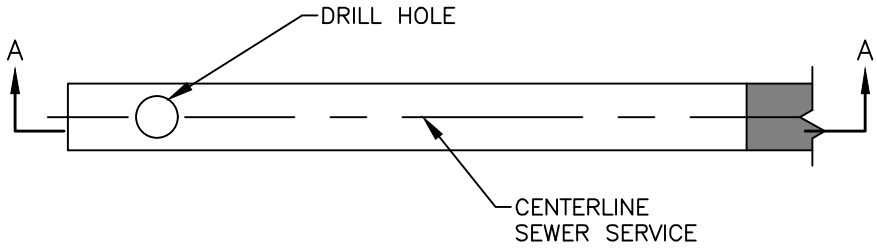
1. CONSTRUCTION DETAIL APPLIES WHERE CONTRACTOR BUILDS HOUSE CONNECTION. TAP EXTENDS TO PROPERTY LINE IN ALLEYS OR STREETS OR TO EASEMENT LINE.
2. SIZE OF TAP SHALL BE 4".
3. ALL FITTINGS SHALL BE PVC ASTM D1784, ASTM D2665, ASTM F1498 AND BE INSTALLED IN ACCORDANCE WITH ASTM D2321. ALL FITTINGS SHALL BE BELL & SOCKET OR AS APPROVED. SOLVENT WELDED FITTINGS ARE NOT ALLOWED. THE CONTRACTOR MAY VARY FORM THE DRAWING TO USE THE APPROPRAITE WYES, TEE–WYES AND BENDS TO ENSURE NO MISALIGNMENT OF THE PIPE AND FITTINGS. BLOCK OR BRACE FITTING JOINTS TO ENSURE ZERO DEGREES ANGULAR JOINT DEFLECTION.
4. INSERTA TEES AS MANUFACTURED BY THE INSERTA FITTINGS CO. ARE ACCEPTABLE FOR USE. HOLES FOR INSERTA TEES MUST BE A HOLE SAW MANUFACTURED BY INSERTA FITTINGS CO. AND THE HOLE SAW OR CORING MACHINE MUST BE APPROVED BY THE ENGINEER.
5. END OF TAP TO BE SEALED AND MARKED.
6. INSTALL RAISED 4" THREADED PLUG IN CLEANOUT.
7. 8" C.I. FRAME AND COVER PER MAG DETAIL 270 WITH THE WORD "SEWER" ON COVER OR APPROVED EQUAL.

N.T.S.

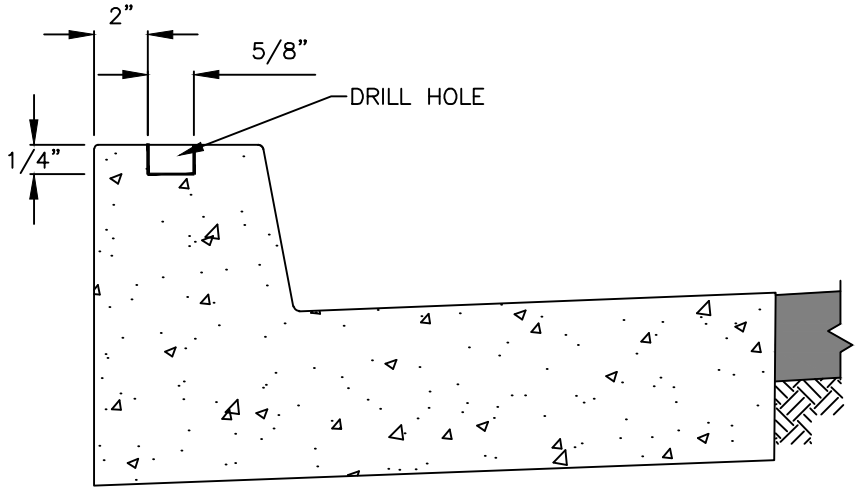
| DETAIL NO. 440-3 | STANDARD DETAIL | 4" SEWER BUILDING CONNECTION NON CURBED AREAS | CITY OF KINGMAN | DETAIL NO. 440-3 |
|---|---|---|---|---|



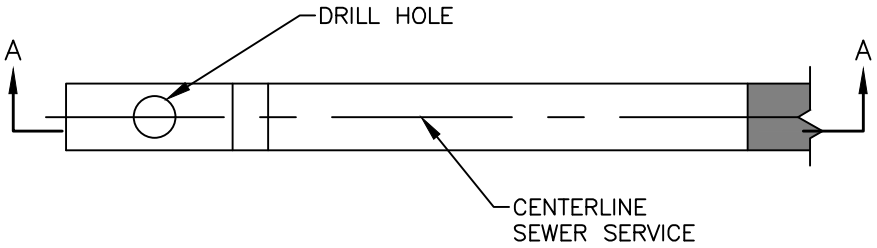

SECTION A-A




CURB MARK ROLLED CURB




SECTION A-A




CURB MARK VERTICAL CURB

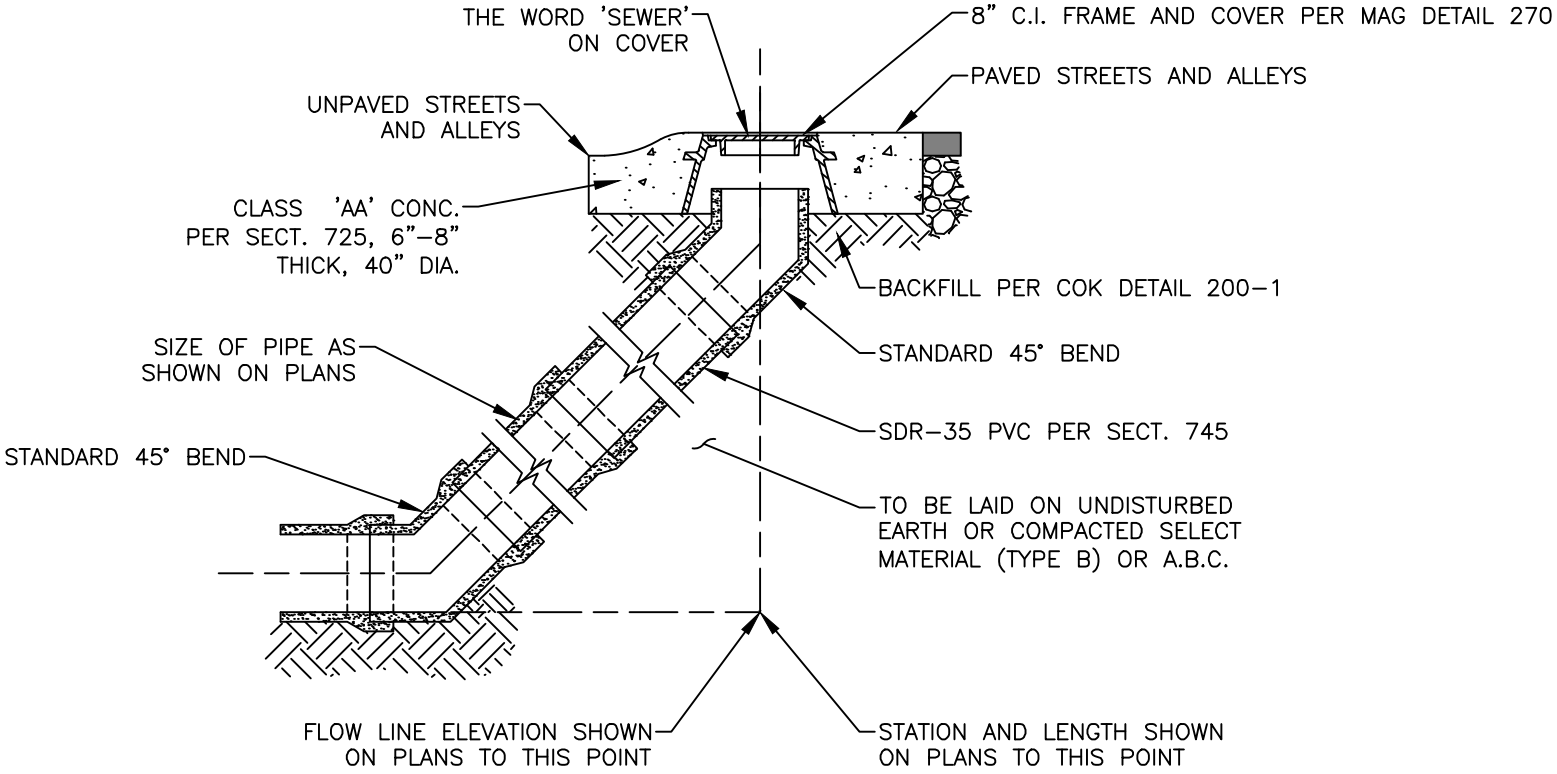
NOTE:

DRILL TOP OF CURB WITH 5/8" BY 1/4" DEEP HOLE TO DESIGNATE SEWER SERVICE LINE CROSSING.

N.T.S.

| DETAIL NO. 440-4 | STANDARD DETAIL | SEWER SERVICE CURB CROSSING MARK DETAIL | CITY OF KINGMAN | DETAIL NO. 440-4 |
|---|---|---|---|---|

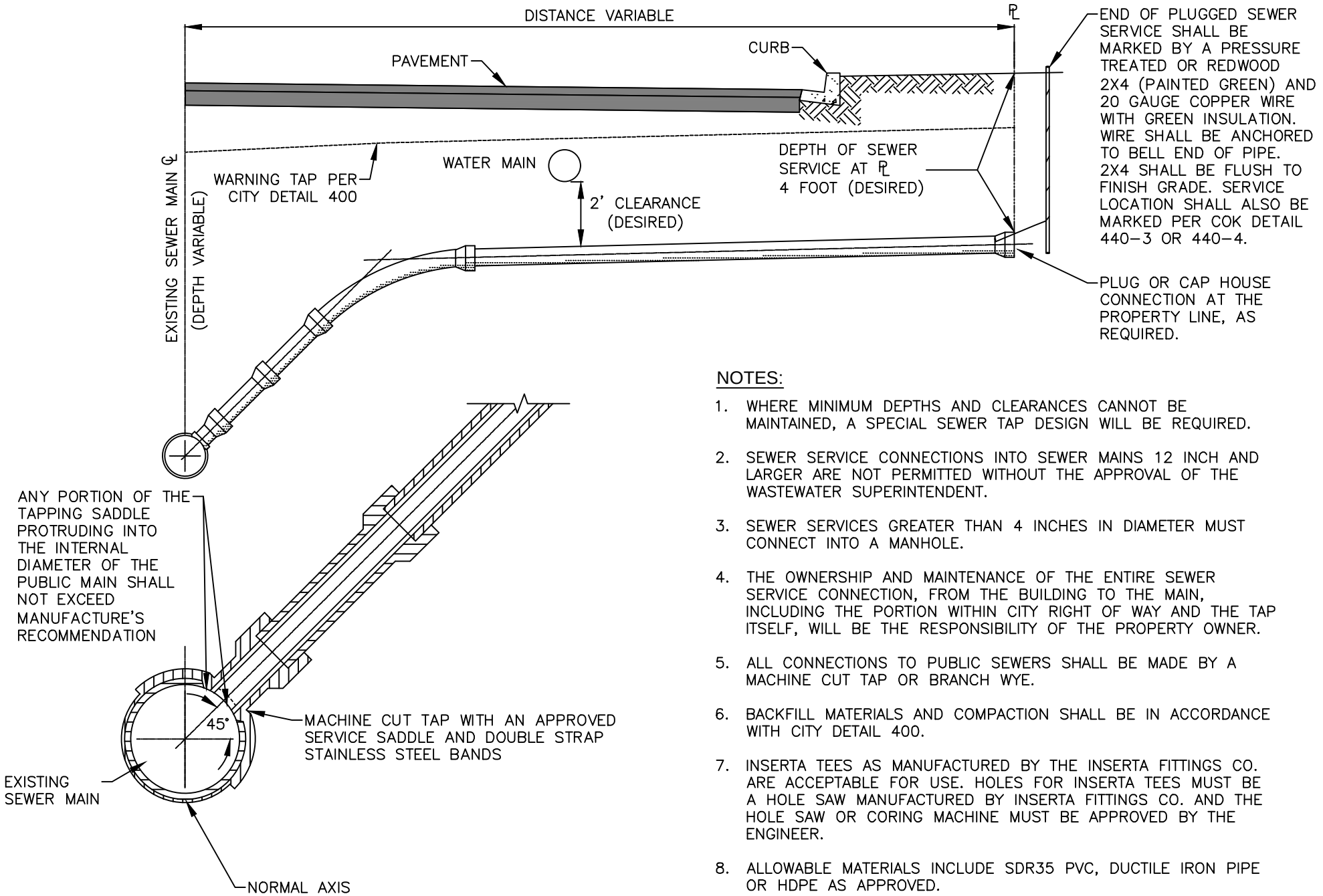
Effective: August 18, 2020 REVISED 2010 Ordinance No. 1910




CLEANOUT INSTALLATION

N.T.S.

| DETAIL NO. 441 | STANDARD DETAIL | SEWER CLEANOUT | CITY OF KINGMAN | DETAIL NO. 441 |
|---|---|---|---|---|

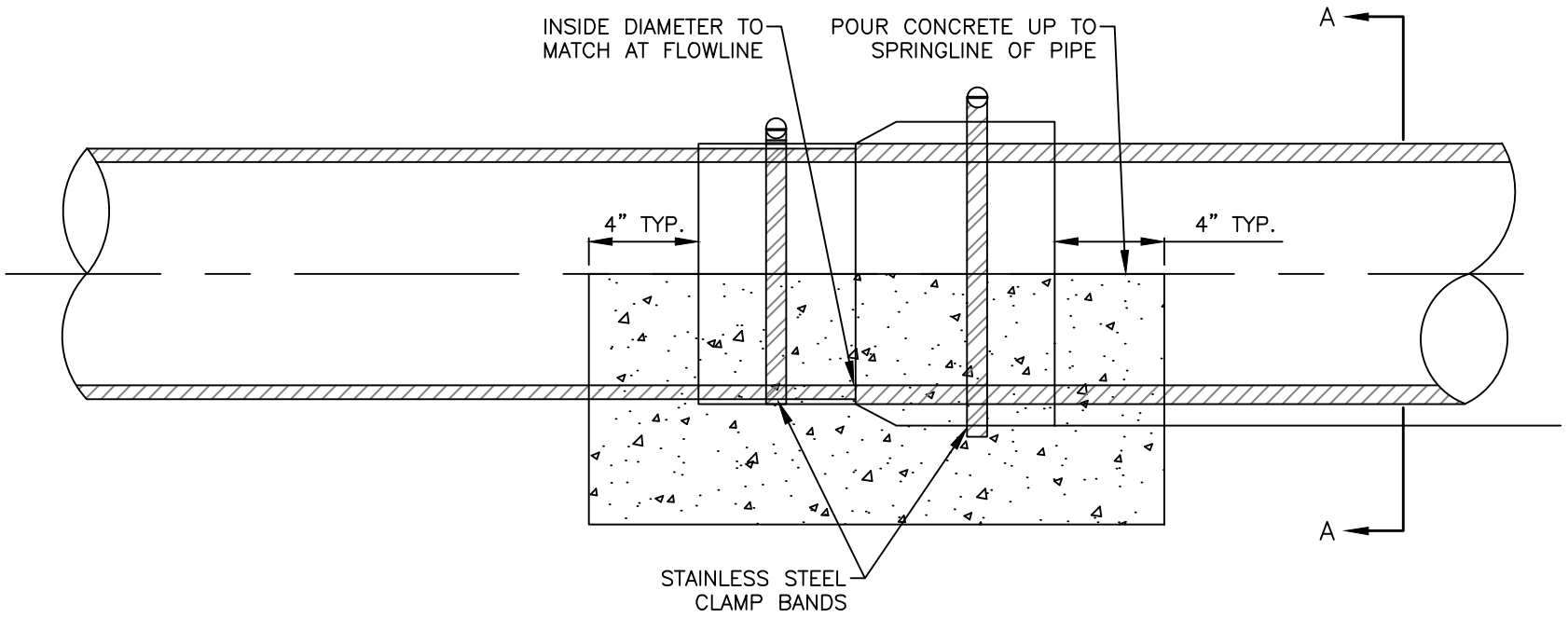


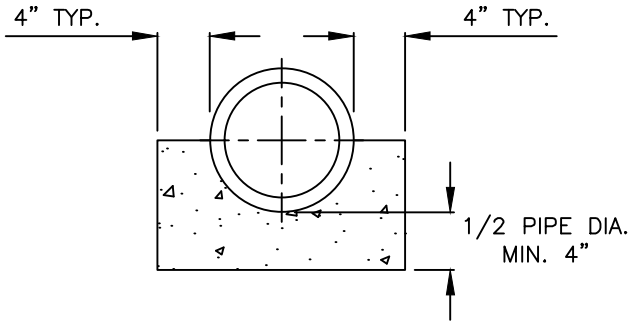

NOTES:

1. WHERE MINIMUM DEPTHS AND CLEARANCES CANNOT BE MAINTAINED, A SPECIAL SEWER TAP DESIGN WILL BE REQUIRED.
2. SEWER SERVICE CONNECTIONS INTO SEWER MAINS 12 INCH AND LARGER ARE NOT PERMITTED WITHOUT THE APPROVAL OF THE WASTEWATER SUPERINTENDENT.
3. SEWER SERVICES GREATER THAN 4 INCHES IN DIAMETER MUST CONNECT INTO A MANHOLE.
4. THE OWNERSHIP AND MAINTENANCE OF THE ENTIRE SEWER SERVICE CONNECTION, FROM THE BUILDING TO THE MAIN, INCLUDING THE PORTION WITHIN CITY RIGHT OF WAY AND THE TAP ITSELF, WILL BE THE RESPONSIBILITY OF THE PROPERTY OWNER.
5. ALL CONNECTIONS TO PUBLIC SEWERS SHALL BE MADE BY A MACHINE CUT TAP OR BRANCH WYE.
6. BACKFILL MATERIALS AND COMPACTION SHALL BE IN ACCORDANCE WITH CITY DETAIL 400.
7. INSERTA TEES AS MANUFACTURED BY THE INSERTA FITTINGS CO. ARE ACCEPTABLE FOR USE. HOLES FOR INSERTA TEES MUST BE A HOLE SAW MANUFACTURED BY INSERTA FITTINGS CO. AND THE HOLE SAW OR CORING MACHINE MUST BE APPROVED BY THE ENGINEER.
8. ALLOWABLE MATERIALS INCLUDE SDR35 PVC, DUCTILE IRON PIPE OR HDPE AS APPROVED.

N.T.S.

| DETAIL NO. 442 | STANDARD DETAIL | SEWER SERVICE TAP TO EXISTING MAIN | CITY OF KINGMAN | DETAIL NO. 442 |
|---|---|---|---|---|




SECTION A-A

NOTES:

1. ALL COUPLINGS SHALL APPLY TO THIS DETAIL.
2. USE LOW ALKALI CLASS "B" CONCRETE PER SEC.725
3. ALL COUPLINGS USED SHALL BE APPROVED BY THE CITY OF KINGMAN ENGINEER.

N.T.S.

| DETAIL NO. 443 | STANDARD DETAIL | SEWER PIPE COUPLING DETAIL | CITY OF KINGMAN | DETAIL NO. 443 |
|---|---|---|---|---|