

BASE SECTION

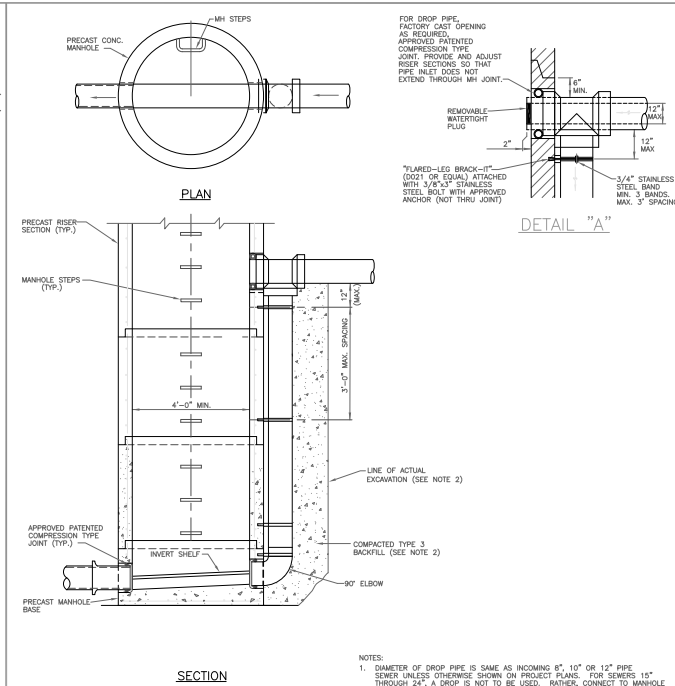
MINIMUM INSIDE DIAMETER OF BASE SECTION

PIPE ID NOMINAL INCHES	MINIMUM INSIDE DIAMETER INCHES
8"	48"
12"	48"
16"	48"
18"	48"
21"	48"
24"	48"
27"	60"
30"	60"
33"	60"
36"	AS APPROVED

MANHOLE BASE PLAN

- NOTES:
1. FLOWLINE ELEVATION OF INCOMING PIPES SHALL BE ONE (1) INCH HIGHER THAN THAT OF OUTGOING PIPE.
 2. SEE A.S.T.M. C-478 FOR MIN. STEEL REQUIREMENTS.

PRECAST MANHOLE FOR SANITARY SEWER
N.T.S.

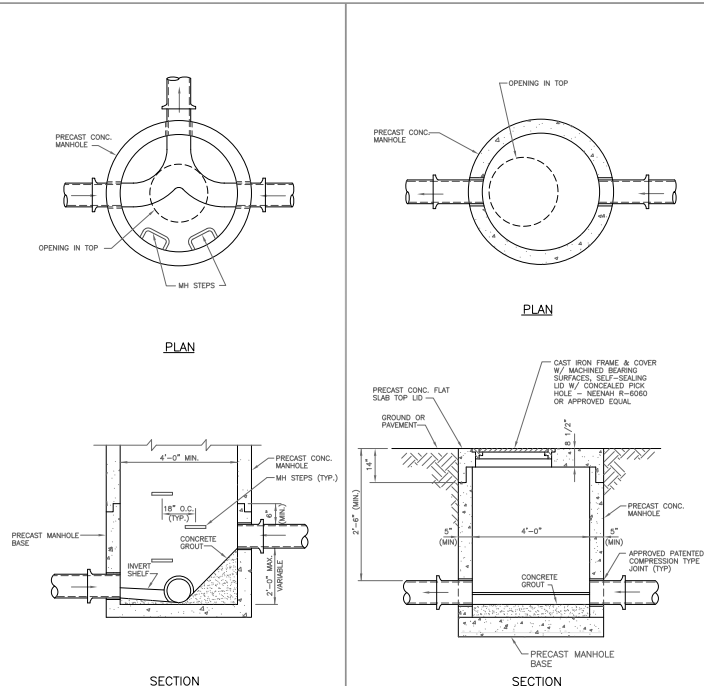


SECTION

OUTSIDE DROP MANHOLE

N.T.S.

- NOTES:
1. DIAMETER OF DROP PIPE IS SAME AS INCOMING 8", 10" OR 12" PIPE SEWER UNLESS OTHERWISE SHOWN ON PROJECT PLANS. FOR SEWERS 15" THROUGH 24" A DROP IS NOT TO BE USED. RATHER, CONNECT TO MANHOLE AT OR WITHIN 24" ABOVE ITS FLOWLINE.
 2. IF EXCAVATED SPACE OUTSIDE OF DROP PIPE EXCEEDS ONE(1) FT. PROVIDE 6" CLASS "A" CONCRETE ENGAGEMENT ON INCOMING LINE FROM WALL OF MANHOLE TO A MIN. OF TWO FT. INTO UNDISTURBED EARTH WITH A MIN. OF 4-#4 REBARS FOR LENGTH OF EXCAVATION OR INSTALL ONE (1) LENGTH OF D.I.P. FROM TEE FITTING INTO UNDISTURBED EARTH.



SECTION

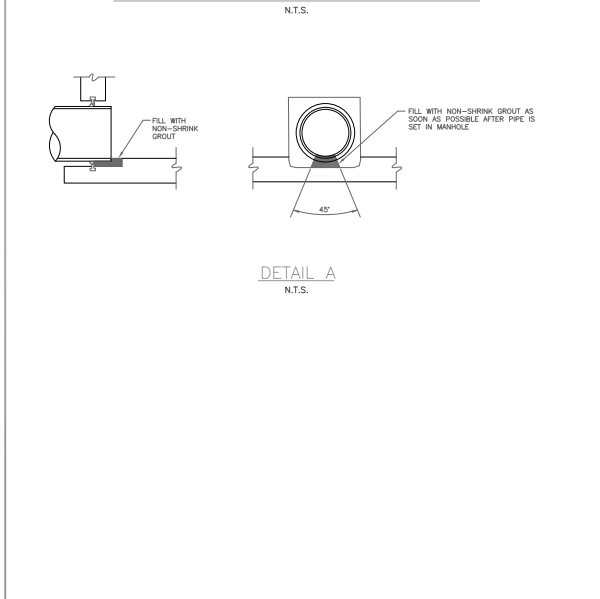
INSIDE DROP MANHOLE

N.T.S.

SECTION

SHALLOW MANHOLE

N.T.S.

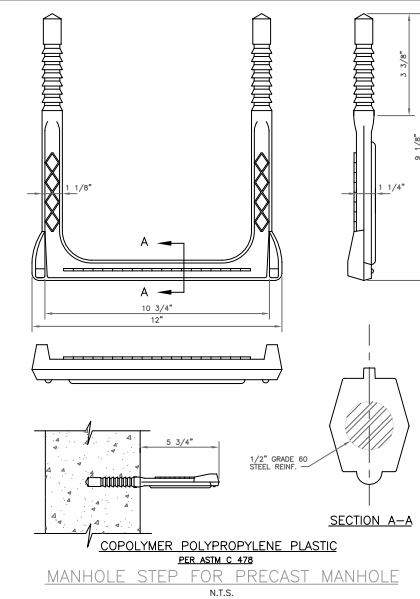


SECTION

STANDARD CAST IRON MANHOLE FRAME & COVER

N.T.S.

- NOTES:
1. MACHINE-FINISH CONTACTING SURFACES FOR SEAT OF STANDARD MANHOLE FRAME AND COVER.
 2. NEDAH R-1642 M.H. FRAME AND SOLID LID OR APPROVED EQUAL. TOTAL WEIGHT 360 LBS.
 3. PROVIDE NON-SHRINK GROUT OR 2 COMPLETE ROWS OF 1-INCH THICK FLEXIBLE RUBBER MASTIC SEALANT BETWEEN CAST IRON FRAME AND CONCRETE CURB OR GRADE RING.



SECTION A-A


COPOLYMER POLYPROPYLENE PLASTIC
PER ASTM C 428

MANHOLE STEP FOR PRECAST MANHOLE

N.T.S.


NOTES:

1. ALL SEWER PIPES SHALL BE JOINED NOT LESS THAN 6" NOR MORE THAN 12" FROM THE OTHER SURFACE OF THE MANHOLE OR ANY CONCRETE SURFACE WHICH MAY BE A PART OF THE MANHOLE FOUNDATION OR SUPPORT FOR A DROP.
2. A-LOK RUBBER GASKET MEETING A.S.T.M. C-923 OR AN APPROVED EQUAL SHALL BE USED FOR P.V.C. CONNECTIONS TO CONCRETE MANHOLES.
3. USE NON-SHRINK GROUT SIKKA CHEMICAL "KEMCO" OR APPROVED EQUAL.
4. ALL PRECAST REINFORCED CONCRETE MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478.



REV.	DATE	DESCRIPTION	BY

CITY OF JACKSON, MISSOURI
STANDARD DETAILS OF
SANITARY SEWER CONSTRUCTION

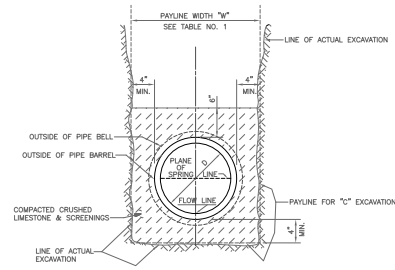


REVISED: MARCH, 2013
DIRECTOR OF WASTEWATER UTILITIES:
KENT A. PEETZ, P.E.

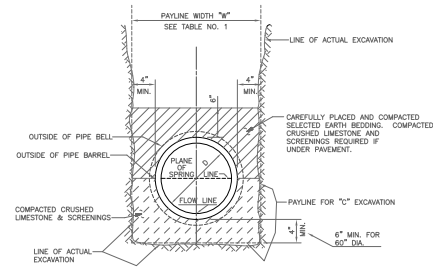
DRAWN BY: HS
SCALE: NONE
SHEET NO. 1 OF 3

ROUND PIPE			
"D" PIPE DIAMETER OF PIPE (INCHES)	"W" PAYLINE WIDTH OF TRENCH (INCHES)	"W" PAYLINE WIDTH OF TRENCH (FEET)	PAY VOLUME CU. FT. PER FT.
4	30	2.50	3.28
6	30	2.50	3.59
8	30	2.50	3.87
10	30	2.50	4.09
12	30	2.50	4.25
15	36	3.00	5.55
18	36	3.00	5.77
21	39	3.25	6.61
24	42	3.50	7.39
27	45	3.75	8.18
30	49	4.08	9.30
33	53	4.42	10.53
36	56	4.67	11.43
D I S C O N T I N U E D			
42	63	5.25	13.38
48	70	5.83	15.67
54	77	6.42	18.15
60	84	7.00	20.73

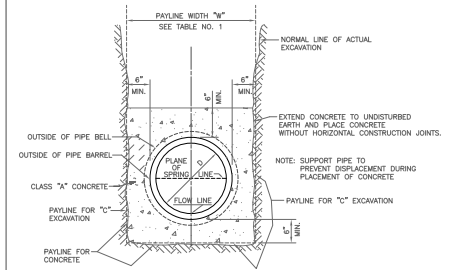
TABLE 1
PAYLINE WIDTHS OF TRENCH
AND PAY-VOLUMES OF CONCRETE



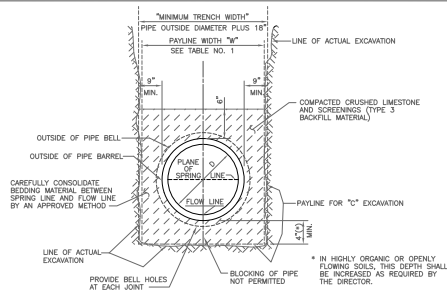
PIPE BEDDING CLASS "C"
N.T.S.
(FOR ALL PIPE EXCEPT
REINFORCED CONCRETE PIPE)



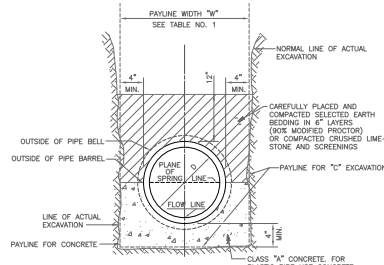
PIPE BEDDING CLASS "C"
N.T.S.
(MODIFIED FOR REINFORCED
CONCRETE PIPE)



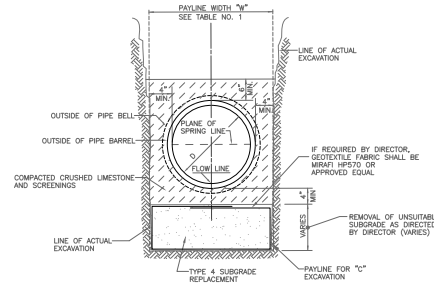
CONCRETE ENCASUREMENT
N.T.S.



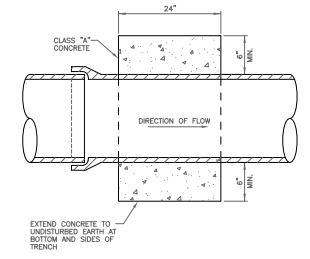
PIPE BEDDING FOR FLEXIBLE PIPE
N.T.S.
(18" TO 48" DIAMETER)



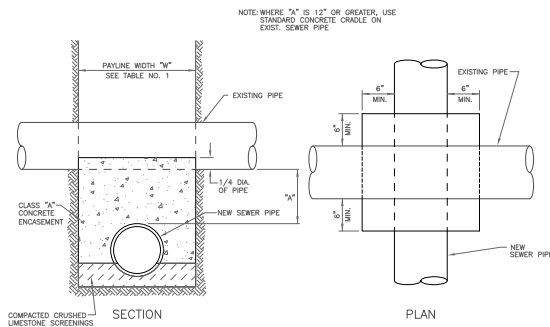
CONCRETE CRADLE
(CLASS "A" BEDDING)
N.T.S.



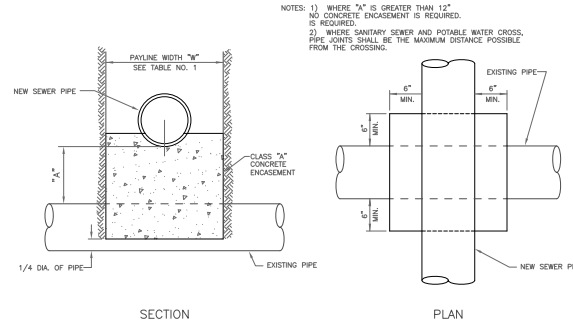
BEDDING OF PIPE LAID ON
UNSUITABLE SUBGRADE
N.T.S.



DETAIL OF CONCRETE COLLAR
N.T.S.



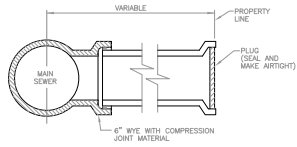
PIPE ENCASUREMENT FOR NEW SANITARY
PIPE UNDER EXISTING PIPE
N.T.S.



PIPE ENCASUREMENT FOR NEW SANITARY
PIPE OVER EXISTING PIPE
N.T.S.

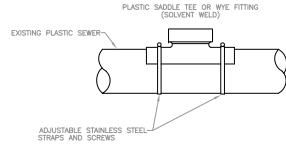


REV.	DATE	DESCRIPTION	BY
CITY OF JACKSON, MISSOURI STANDARD DETAILS OF SANITARY SEWER CONSTRUCTION			
REVISED: MARCH, 2013		DIRECTOR OF WASTEWATER UTILITIES:	
DRAWN BY: HS		SCALE: NONE	
SHEET NO. 2		OF 3	



1. 6" V.C.P. WITH COMPRESSION JOINT
2. 6" V.C.P. WITHOUT COMPRESSION JOINT. USE SEWER TIE AND GUMUM
3. 6" 4" HOUSE CONNECTION IS APPROVED, A 4" TO 6" INCREASER IS REQUIRED.
4. IF 6" P.V.C. IS USED A FERROD ADAPTER OR SEWER TIE AND GUMUM MAY BE USED TO MAKE THE JOINT.
5. A CLEAN, DRY BEDDING MATERIAL IS REQUIRED AROUND THE COMPLETED CONNECTION BEFORE BACK FILLING. THE BEDDING MATERIAL SHALL BE ONE OF THE FOLLOWING:
 - A. TYPE I BEDDING
 - B. 1 TO 3 CEMENT TO SAND
 - C. PRE-MIX CONCRETE

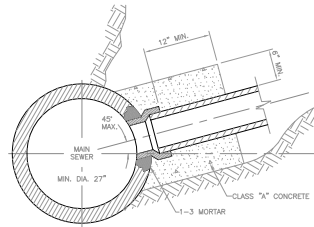
(SIZES AND MATERIAL AS SPECIFIED)
SERVICE CONNECTION TO WYE
 N.T.S.



WHEN A CONNECTION TO A PLASTIC PIPE IS ALLOWED AND A CONNECTION IS LARGER THAN 6" IN DIAMETER, A SOLVENT WELD WYE OR TEE FITTING OF A SIMILAR MATERIAL MUST BE USED (EXAMPLE: 10" X 8").

- THIS IS ACCOMPLISHED BY CAREFULLY CUTTING A HOLE WITH A SAW IN THE MAIN AT THE REQUIRED LOCATION. AFTER CUTTING AND SHARPENING THE HOLE TO THE SIZE OF THE FITTING, THE FOLLOWING STEPS SHOULD BE TAKEN:
1. CLEAN AND DRY BOTH INSIDE SADDLE WYE SURFACE AND PIPE SURFACE TO BE SOLVENT CEMENTED.
 2. IMPORTANT: APPLY A LIBERAL HEAVY COAT OF A ONE-STEP SOLVENT CEMENT TO THE INSIDE SURFACE OF THE SADDLE WYE AND TO THE EXTERIOR WELDING SURFACE TO THE PIPE.
 3. WITHOUT DELAY, Wipe the surfaces and strap down tightly. A BEAD OF SOLVENT SHOULD APPEAR AFTER SADDLE HAS BEEN STRAPPED DOWN TIGHTLY.
 4. USING A RAG OR PAPER TOWEL, WIPE BEAD AND ANY EXCESS SOLVENT CEMENT OFF PIPE AND SADDLE.
 5. ALLOW 30-40 MINUTES FOR SET-UP TIME BEFORE BACKFILLING. CURE TIME DEPENDS ON SIZE AND FIT OF MATERIALS BEING INSTALLED AND VARIOUS COLD DAMP CONDITIONS.
 6. DISCARD OLD SOLVENT IF IT BECOMES JELLED OR LUMPY.
 7. A CLEAN, DRY BEDDING MATERIAL IS REQUIRED AROUND THE COMPLETED CONNECTION BEFORE BACKFILLING. THE BEDDING MATERIAL SHOULD BE ONE OF THE FOLLOWING:
 - A. TYPE I BEDDING
 - B. 1 TO 3 CEMENT TO SAND MIX
 - C. "PRE-MIX" CONCRETE

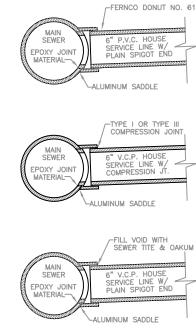
8" (& LARGER) CONNECTION TO PLASTIC MAIN
 N.T.S.



NOTE: THE OPENING SHALL BE CUT BY THE CONTRACTOR TO A SUFFICIENT SIZE TO PERMIT INSERTING A TEE SADDLE OR SHORT LENGTH OF PIPE AT THE REQUIRED ELEVATION AND ANGLE TO ALLOW AT LEAST TWO (2) INCHES SPACE AROUND THE PIPE. THIS SPACE WILL BE SOLIDLY FILLED WITH 1-3 CEMENT-SAND MORTAR AND THE NEW PIPE NEATLY TRIMMED AND POINTED UP FLUSH WITH THE INSIDE OF THE MAIN SEWER.

IF THERE ARE REINFORCING BARS IN THE SEWER WALL, ONLY THOSE PREVENTING INSERTION OF THE PIPE MAY BE CUT. ALL OTHERS SHALL BE LEFT IN PLACE AND A CLASS "A" CONCRETE COLLAR AT THE JUNCTION OF THE CONNECTION PIPE AND THE MAIN SEWER.

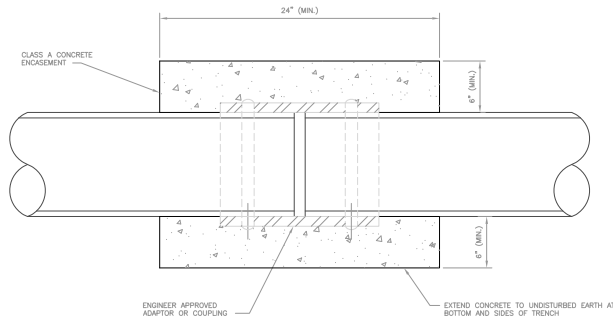
HOUSE CONNECTIONS ALLOWED BY TEE SADDLE
 N.T.S.



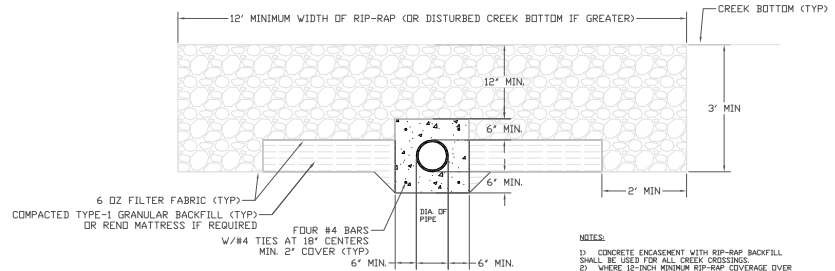
NOTES:

1. 6" V.C.P. OR 6" P.V.C. HOUSE CONNECTION INTO PUBLIC V.C.P. OR PUBLIC P.V.C. MAIN 8" TO 24" DIAMETER AND NO WYE OR TEE AVAILABLE, A MACHINE TAP IS REQUIRED.
2. THE CONTRACTOR SHALL CUT THE HOLE IN THE MAIN, PROVIDE AND EPOXY THE SADDLE TO THE MAIN, AND PROVIDE ALL OTHER MATERIAL AND LABOR REQUIRED.
3. A CLEAN DRY BEDDING MATERIAL IS REQUIRED AROUND THE COMPLETED CONNECTION BEFORE BACK FILLING. THE BEDDING MATERIAL SHALL BE ONE OF THE FOLLOWING:
 - A. TYPE I BEDDING
 - B. 1 TO 3 CEMENT TO SAND
 - C. PRE-MIX CONCRETE
4. IF 4" HOUSE CONNECTION IS APPROVED, A 4" TO 6" INCREASER IS REQUIRED AT MACHINE TAP.
5. ALL EXCAVATION MUST BE ADEQUATELY BRACED BEFORE CITY INSPECTOR WILL MAKE AN INSPECTION.
6. ALL MATERIAL REQUIRED TO MAKE AN APPROVED CONNECTION MUST BE ON THE CONNECTION SITE AT THE TIME OF ARRIVAL OF THE CITY INSPECTOR. IF THE MATERIAL IS NOT AVAILABLE, THE TAP MUST BE RESCHEDULED.

MACHINE TAP
 N.T.S.



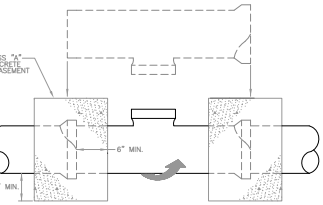
PIPE CONNECTION OF DISSIMILAR MATERIAL OR DIFFERENT SIZES OF SIMILAR MATERIAL
 N.T.S.



NOTES:

- 1) CONCRETE ENCASEMENT WITH RIP-RAP BACKFILL SHALL BE USED FOR ALL CREEK CROSSINGS.
- 2) WHERE 18-INCH MINIMUM RIP-RAP COVERAGE OVER ENCASEMENT IS NOT POSSIBLE, 6-INCH THICK P.V.C. COATED REND MATRESS SHALL BE INSTALLED OVER, AND 9-INCH THICK REND MATRESSES ON SIDES OF ENCASEMENT.
- 3) PIPE AND REBAR MUST BE SUPPORTED TO PREVENT DISPLACEMENT DURING PLACEMENT OF CONCRETE.
- 4) ALL REBAR SHALL BE 40 KSI AND CONCRETE SHALL BE 4000 PSI.
- 5) IF ENCASEMENT IS CUT INTO BEDROCK, TOP OF ENCASEMENT MUST BE FLUSH WITH TOP OF BEDROCK.

CREEK CROSSING
 NOT TO SCALE



WHEN A CONNECTION IS ALLOWED LARGER THAN 6" DIAMETER A SADDLE MAY BE USED IF THE I.D. OF THE CONNECTION PIPE IS NOT GREATER THAN ONE-HALF (1/2) THE I.D. OF THE MAIN SEWER (EXAMPLE: 24" X 10"). IF THE I.D. OF THE CONNECTION PIPE IS GREATER THAN ONE-HALF (1/2) THE I.D. OF THE MAIN SEWER THE WYE OR TEE MUST BE "ROLLED-IN" (EXAMPLE: 18" X 8").

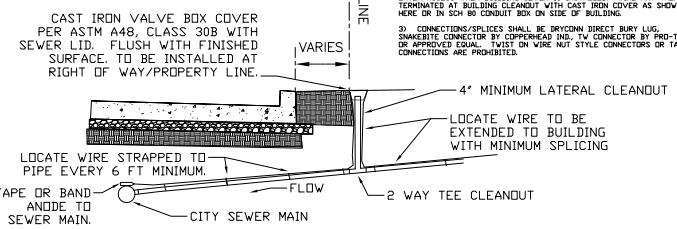
THIS IS ACCOMPLISHED BY BREAKING AWAY AND REMOVING ONE SECTION OF PIPE, THE TOP HALF OF THE BELL ON THE PIPE LINGS ADJACENT TO THE GAP IS CAREFULLY BROKEN OFF, THE TOP HALF OF THE BELL ON THE MAIN REPLACEMENT SECTION (WITH A "TEE" OR "WYE" FITTING) IS ALSO BROKEN OFF, THE REPLACEMENT PIPE IS THEN PLACED ON THE LINE GAP WITH THE STUD POINTED IN THE WINDING DIRECTION, THE BROKEN BELLS ON THE REPLACEMENT AND THE ADJOINING PIPE MAKE IT POSSIBLE FOR THE REPLACEMENT SECTION TO FIT INTO THE SEWER LINE WITHOUT DISTURBING THE ADJOINING PIPE SECTIONS, THE REPLACEMENT SECTION IS THEN ROTATED TO THE DESIRED POSITION AND THE BROKEN BELLS ARE ENCASED WITH A 6" CLASS "A" CONCRETE ENCASEMENT.

(FOR EXISTING CLAY OR CONCRETE PIPE)
"ROLL-IN"
 N.T.S.

LOCATE WIRE DETAIL TO BE USED ON ALL LATERALS
 N.T.S.

NOTES:

- 1) ALL LOCATE WIRE SHALL BE GREEN #10 AWG COPPER CLAD STEEL CONDUCTOR (HS-CCS) WITH 30-MIL HDPE DIRECT BURY INSULATION AS PER THE CITY OF JACKSON LIFT STATION AND FORCE MAIN SPECIFICATIONS, SECTION 4.32. NOTCH TOP OF RISER PIPE IF NECESSARY TO ALLOW WIRE TO BE PLACED IN VALVE BOX FOR ACCESS. WIRE MUST EXTEND 3 FEET OUTSIDE VALVE BOX AFTER CONSTRUCTION AND CONNECTION TO BUILDING.
- 2) CLEANDUTS INSTALLED AT RIGHT OF WAY ONLY DURING SEWER MAIN CONSTRUCTION. WHERE SANITARY SEWER MAIN IS IN EXCAVATION ON SIDE OR REAR LOT LINE, WIRE IS TO BE TAPED OR BANNED TO WIRE MARKER FOR LATER ACCESS WHEN BUILDING SEWER IS INSTALLED. WIRE MAY THEN BE TERMINATED AT BUILDING CLEANDUT WITH CAST IRON COVER AS SHOWN HERE OR IN SCH 80 CONDUIT BOX ON SIDE OF BUILDING.
- 3) CONNECTIONS/SPLICES SHALL BE DRYCON DIRECT BURY LUG, SHAKETITE CONNECTOR BY COPPERHEAD INC. TW CONNECTOR BY PRO-TRACE, OR APPROVED EQUAL. TWIST ON WIRE NUT STYLE CONNECTOR OR TAPED CONNECTIONS ARE PROHIBITED.



CAST IRON VALVE BOX COVER PER ASTM A48, CLASS 30B WITH SEWER LID. FLUSH WITH FINISHED SURFACE. TO BE INSTALLED AT RIGHT OF WAY/PROPERTY LINE.

LOCATE WIRE STRAPPED TO PIPE EVERY 6 FT MINIMUM.

TAPE OR BAND AND DUCT TO SEWER MAIN.

4" MINIMUM LATERAL CLEANDUT

LOCATE WIRE TO BE EXTENDED TO BUILDING WITH MINIMUM SPLICING

2 WAY TEE CLEANDUT

CITY SEWER MAIN



REV.	DATE	DESCRIPTION	BY
1	2/2/16	ADD LATERAL WIRE DETAIL	KAP

CITY OF JACKSON, MISSOURI
 STANDARD DETAILS OF
 SANITARY SEWER CONSTRUCTION

REVISED: FEBRUARY, 2016
 DIRECTOR OF WASTEWATER UTILITIES:
 KENT A. PEETZ, P.E.

DRAWN BY: HS
 SCALE: NONE
 SHEET NO. 3 OF 3