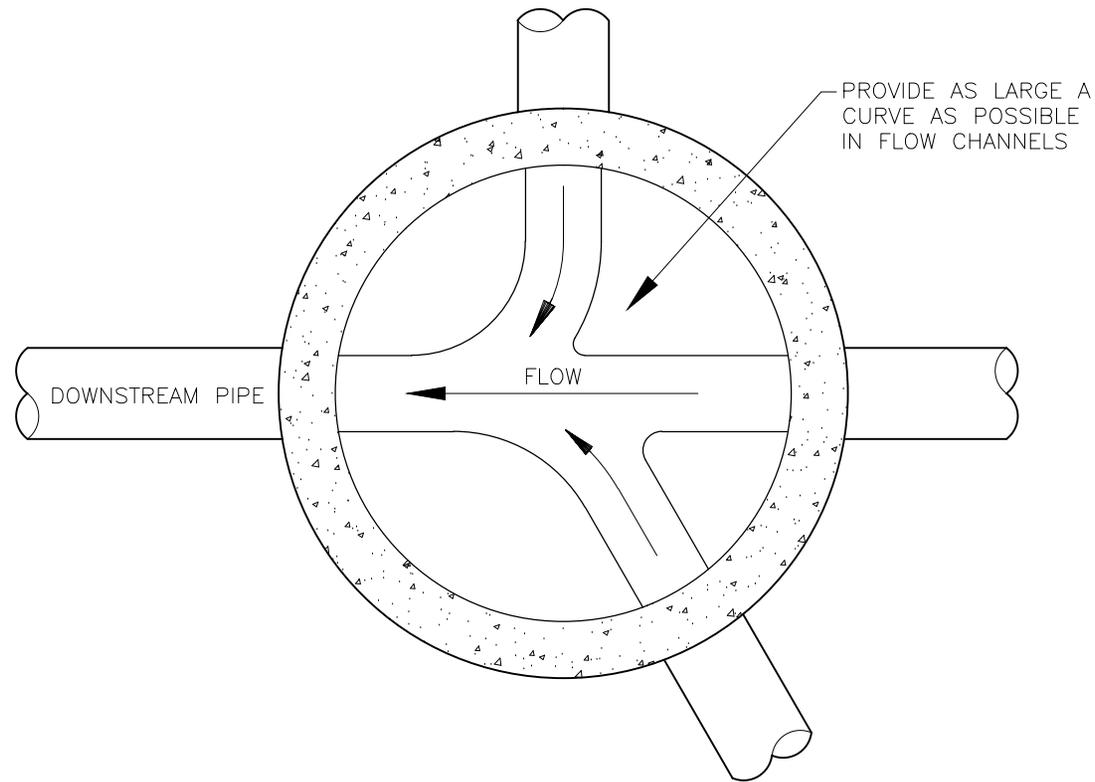


NOTE: DROP MANHOLE SHALL BE USED WHEN THE DISTANCE
BETWEEN THE INVERT OF THE UPPER PIPE IS 2' OR GREATER
THAN THE INVERT OF THE LOWER PIPE.

CAST IN PLACE SANITARY SEWER DROP MANHOLE

N.T.S.

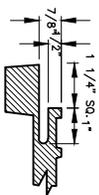


NOTE

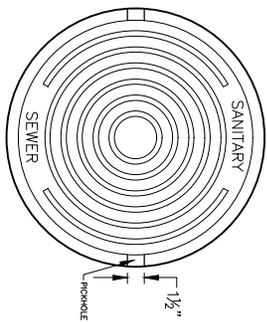
1. CENTERLINE OF ALL PIPES ENTERING AND LEAVING MANHOLE SHALL PASS THROUGH THE CENTERS OF THE MANHOLES.
2. BRUSH FINISHED SURFACE OF CONCRETE AND REMOVE ALL SHARP EDGES.
3. CONSTRUCT FLOW CHANNEL FOR ALL PIPES ENTERING MANHOLE, INCLUDING SERVICES.
4. MAINTAIN A CONSTANT GRADE THROUGHOUT EACH INVERT.

MANHOLE FLOORING FOR SEWER MANHOLES WITH 8" - 24" PIPE

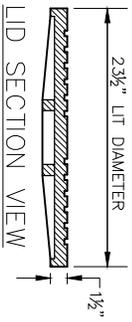
N.T.S.



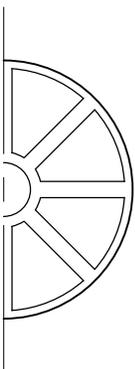
PICKHOLE BLOW UP



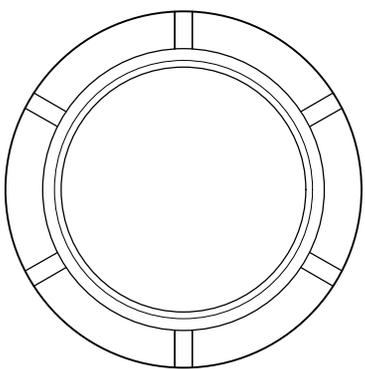
LID TOP VIEW



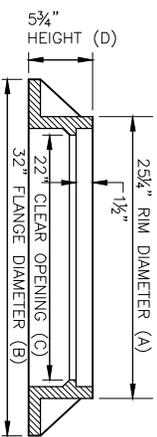
LID SECTION VIEW



LID BOTTOM VIEW



FRAME TOP VIEW

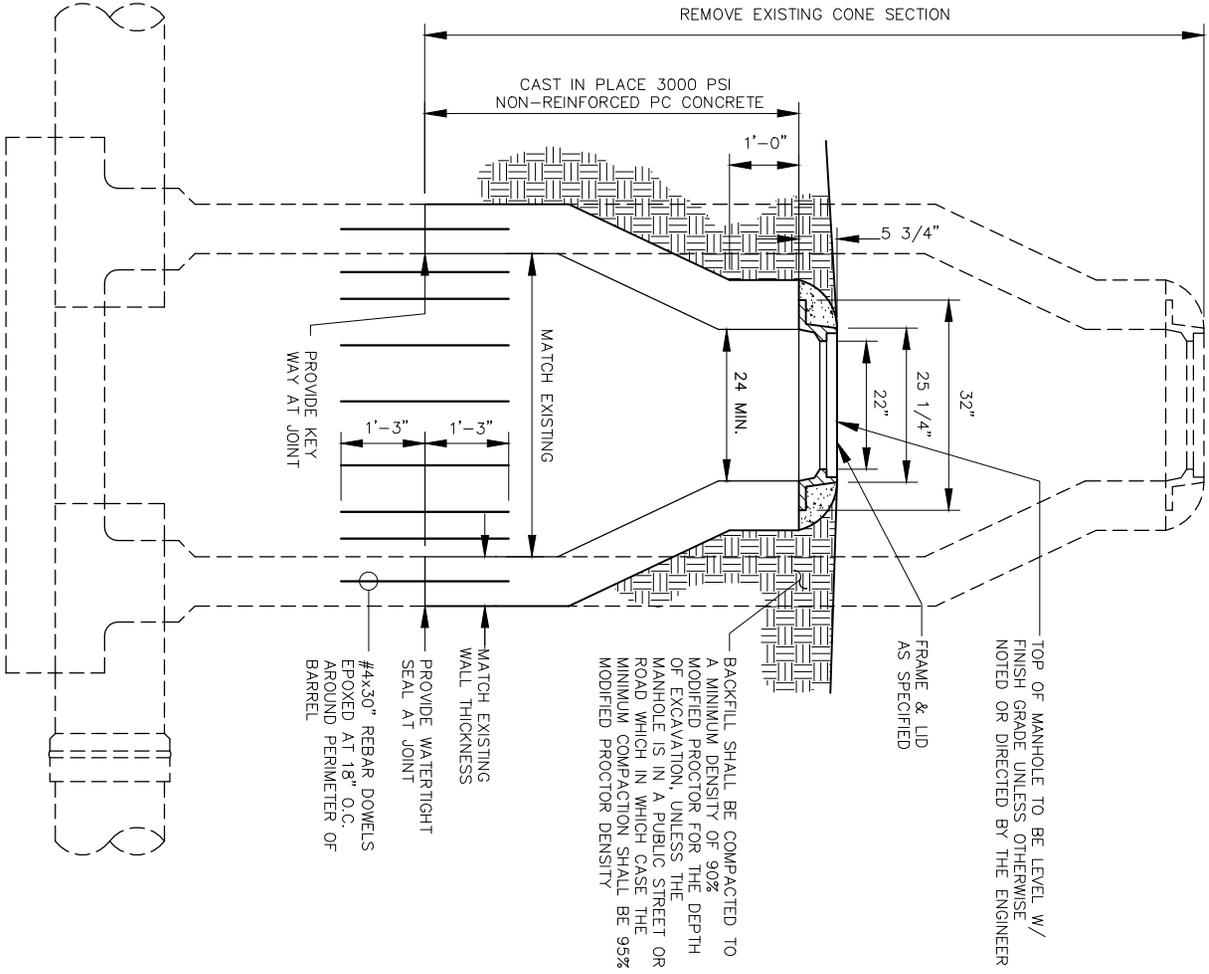


NOTE MINIMUM WEIGHTS
 COVER - 110 LBS
 FRAME - 146 LBS
 MINIMUM COMBINED WEIGHT - 250 LBS
 STD. MANHOLE COVER - VULCAN
 FOUNDRY, PATTERN VW-48A MODEL
 V-1348-1
 WATERTIGHT MANHOLE COVER - VULCAN
 FOUNDRY, PATTERN VM-50 SPECIAL

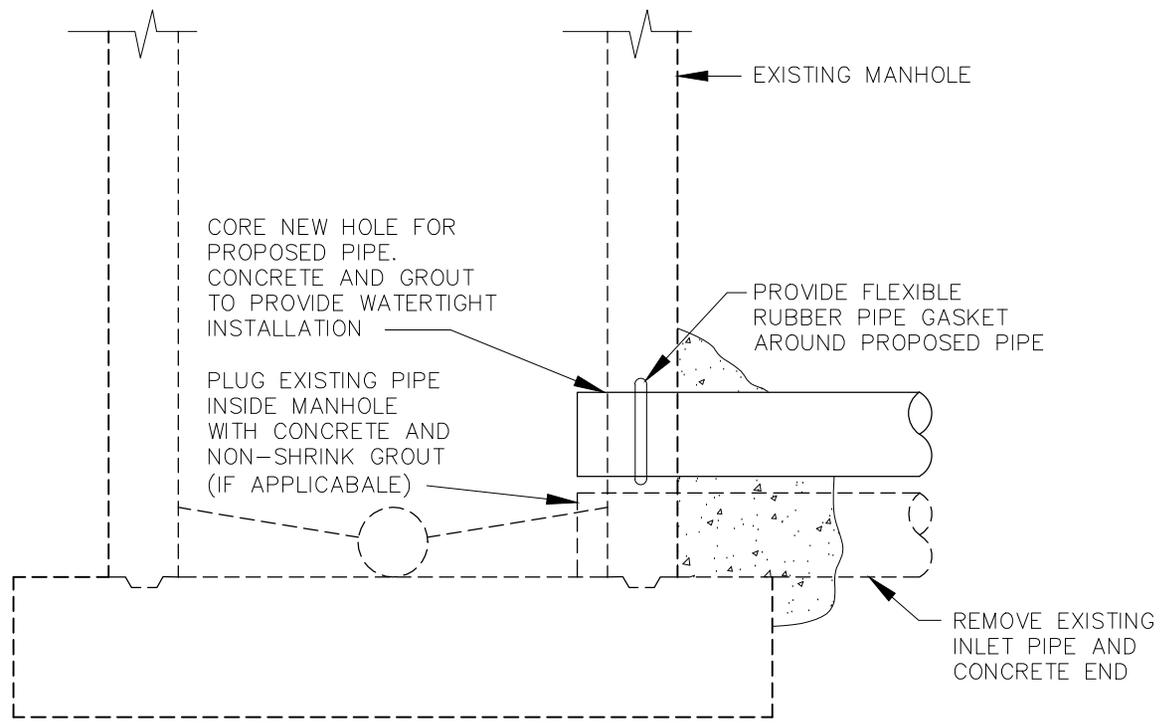
FRAME SECTION VIEW

MANHOLE FRAME AND COVER

N.T.S.

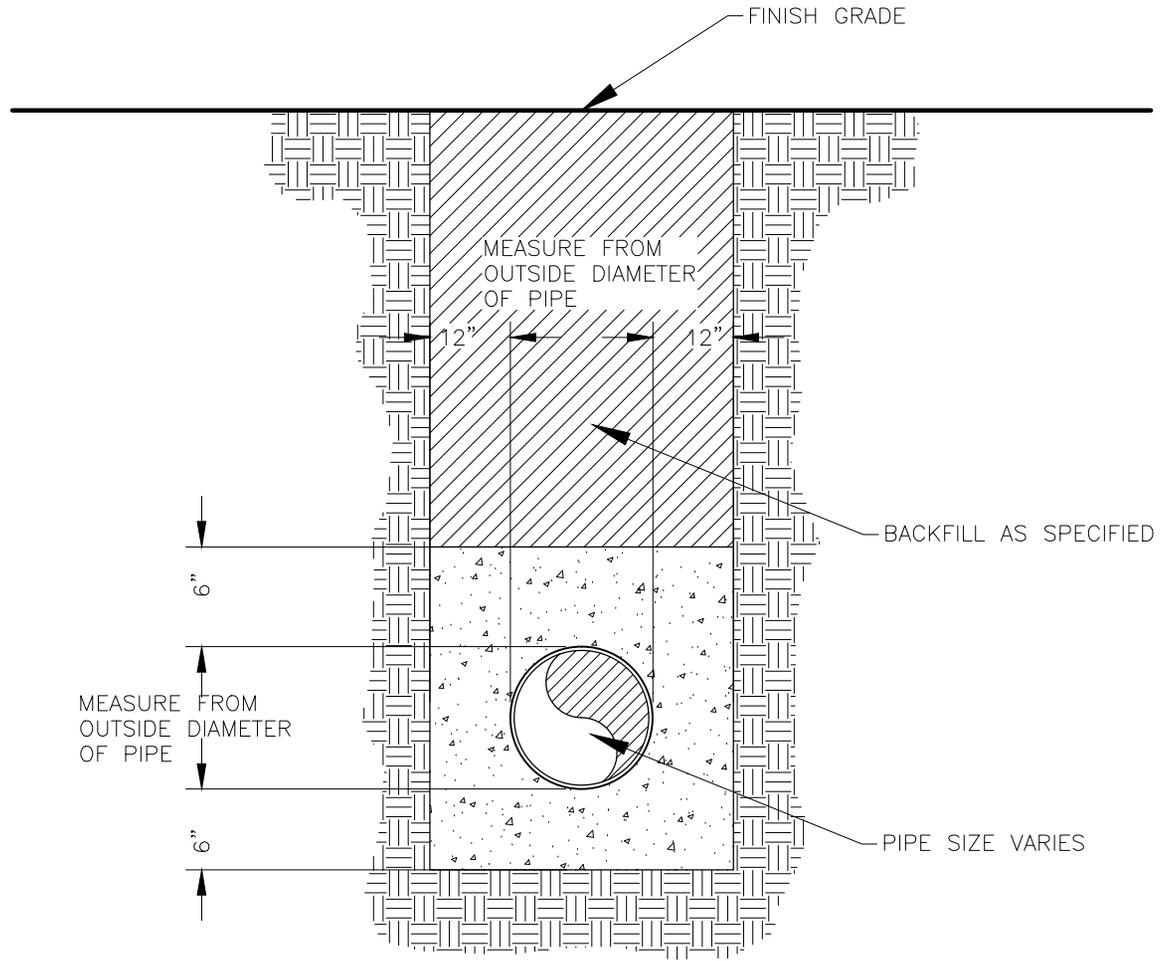


MODIFIED SANITARY SEWER MANHOLE
N.T.S.

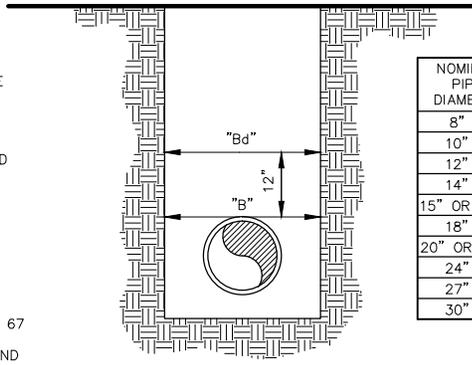
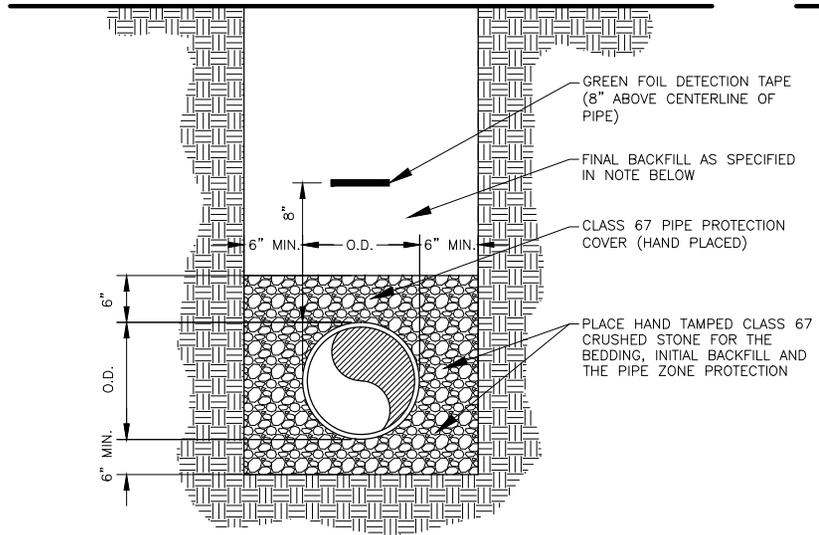


SEWER CONNECTION
IN EXISTING MANHOLE

N.T.S.



SEWER PIPE
 CONCRETE ENCASEMENT
 N.T.S.



NOMINAL PIPE DIAMETER	"Bd" (MAX)	"B" (MAX)
8"	2'-10"	2'-6"
10"	3'-0"	2'-6"
12"	3'-4"	3'-0"
14"	3'-4"	3'-0"
15" OR 16"	3'-6"	3'-0"
18"	4'-0"	3'-6"
20" OR 21"	4'-0"	3'-6"
24"	4'-8"	4'-0"
27"	5'-0"	4'-0"
30"	5'-6"	4'-6"

TRENCH SCHEDULE
N.T.S.

NOTE: ALL TRENCHING SHALL COMPLY WITH APPLICABLE OSHA SAFETY STANDARDS

NOTES

1. THE MINIMUM TRENCH WIDTH FOR ALL PIPES SIZES SHALL BE THAT WHICH FOLLOWS A 6" WORKING DISTANCE ON EACH SIDE OF THE BELL.
2. CAST OR DUCTILE IRON PIPE REQUIRED WHEN EXISTING OR FINISHED GRADE, WHICHEVER IS LESS, PROVIDES LESS THAN 30" OF COVER.

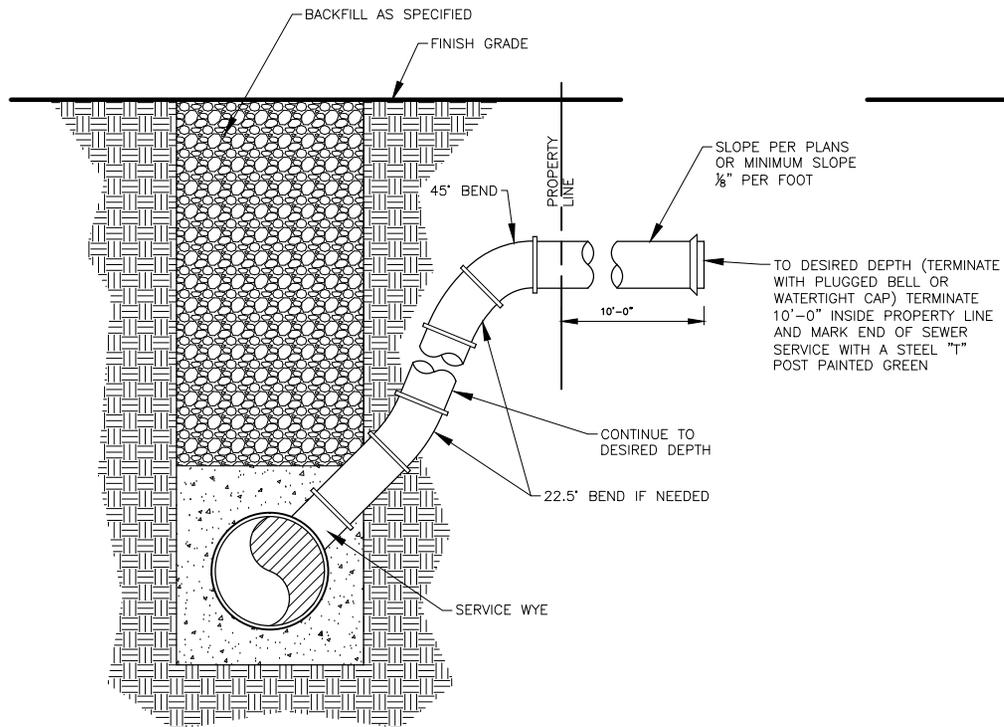
INITIAL BEDDING

1. PIPE BEDDING SHALL BE CRUSHED STONE (ASTM C33 CLASS 67 w/ 1" MAX PARTICLE SIZE WITH A MIN OF 90% PASSING A 3/4" SIEVE)

FINAL BACKFILL

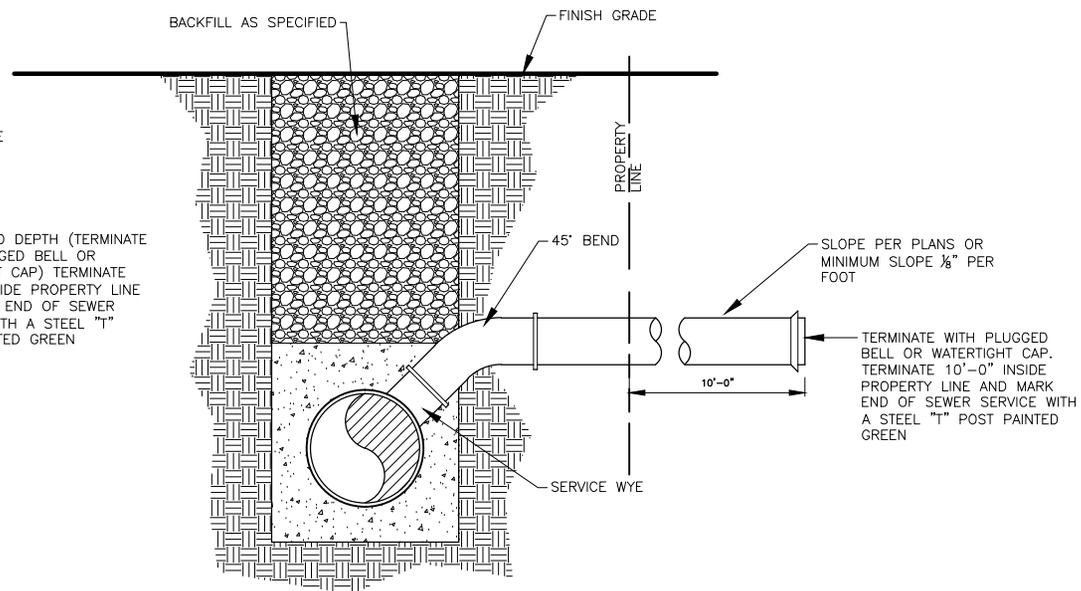
1. ALL TRENCH BACKFILL SHALL BE COMPACTED TO A MINIMUM DENSITY OF 85% OF THAT OF THE ADJACENT UNDISTURBED SOIL AND SHALL CONSIST OF NO MATERIAL LARGER THAN 8" IN DIAMETER.
2. WHERE TRENCHES ARE UNDER EXISTING OR PROPOSED PAVED AREAS, THE ENTIRE TRENCH ABOVE THE PIPE EMBEDMENT, UP TO A POINT 2' BELOW EXISTING OR PROPOSED SUBGRADE, SHALL BE BACKFILLED WITH AHTD CLASS 7 BASE AND BE COMPACTED TO 90% MODIFIED PROCTOR DENSITY. THE REMAINING 2' SHALL BE BACKFILLED WITH AHTD CLASS 7 BASE IN 6" LIFTS AND COMPACTED TO 95% MODIFIED PROCTOR DENSITY.
3. WHERE TRENCHES ARE UNDER EXISTING OR PROPOSED PUBLIC STREETS OF THE CITY, THE ENTIRE TRENCH ABOVE THE EMBEDMENT SHALL BE BACKFILLED UP TO SUBGRADE WITH AHTD CLASS 7 BASE PLACED IN 4-6" LIFTS AND COMPACTED TO 95% MODIFIED PROCTOR DENSITY.

SEWER PIPE TRENCH AND BEDDING
N.T.S.



RISER FROM DEEP MAIN

N.T.S.



NORMAL DEPTH

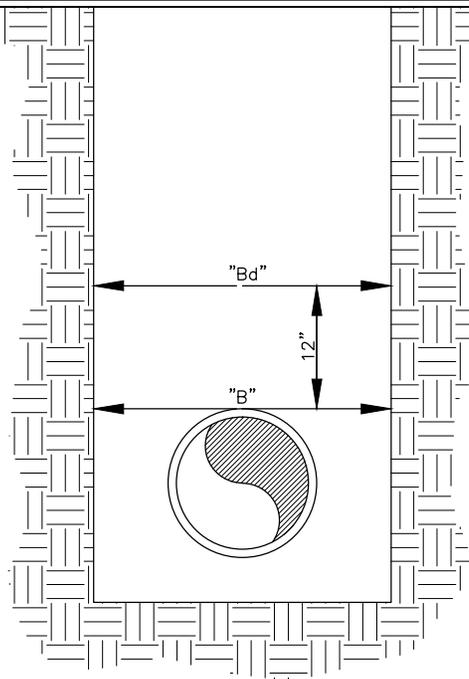
N.T.S.

SEWER SERVICE CONNECTION

N.T.S.

NOTES

1. THE MINIMUM TRENCH WIDTH FOR ALL PIPES SIZES SHALL BE THAT WHICH FOLLOWS A 6" WORKING DISTANCE ON EACH SIDE OF THE BELL.
2. CAST OR DUCTILE IRON PIPE REQUIRED WHEN EXISTING OR FINISHED GRADE, WHICHEVER IS LESS, PROVIDES LESS THAN 30" OF COVER.



NOMINAL PIPE DIAMETER	"Bd" (MAX)	"B" (MAX)
8"	2'-10"	2'-6"
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18"	4'-0"	3'-6"
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27"	5'-0"	4'-0"
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INITIAL BEDDING

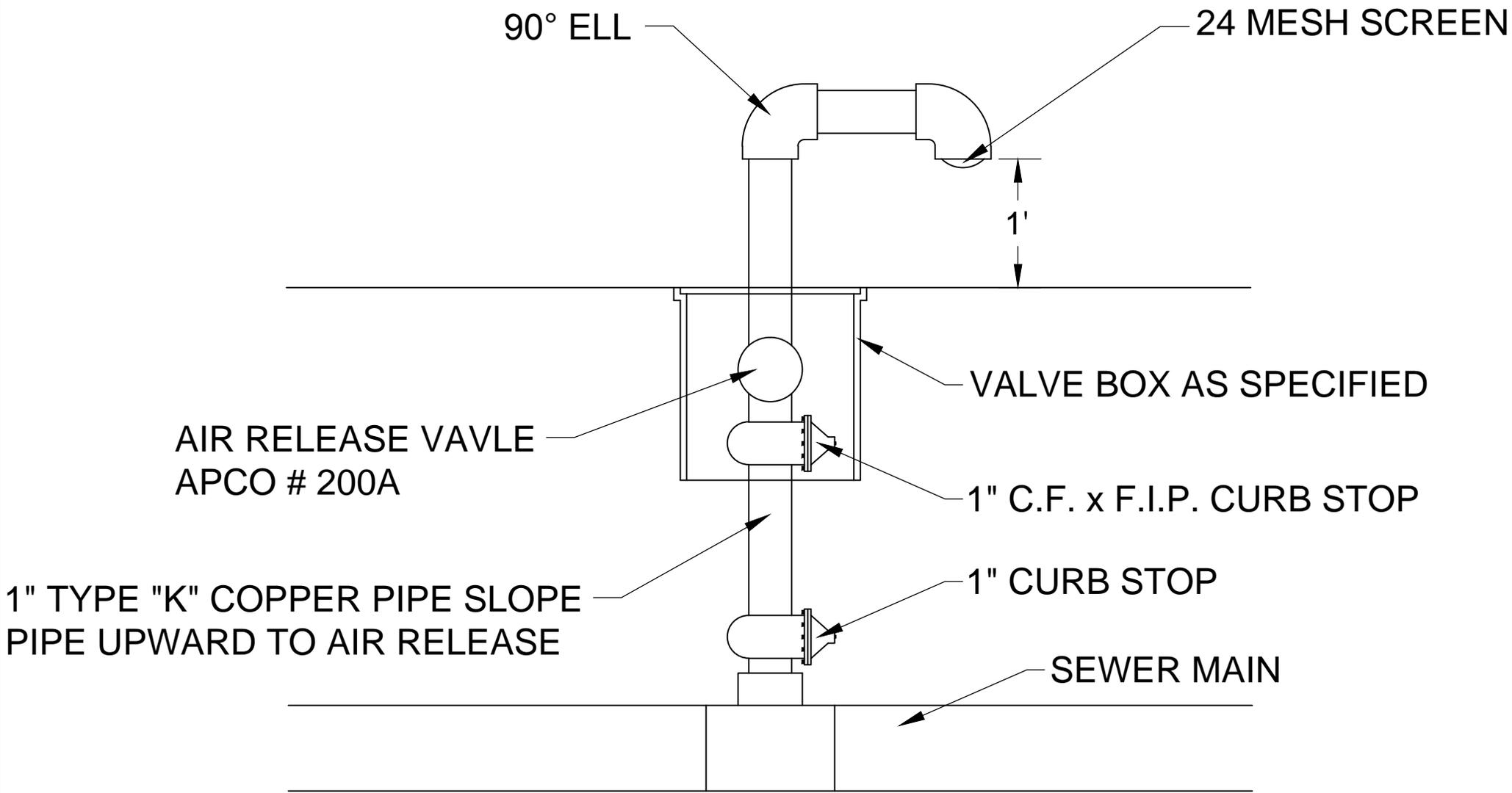
1. PIPE BEDDING SHALL BE CRUSHED STONE (ASTM C33 CLASS 67 w/ 1" MAX PARTICLE SIZE w/ A MIN OF 90% PASSING A 3/4" SIEVE)

FINAL BACKFILL

1. ALL TRENCH BACKFILL SHALL BE COMPACTED TO A MINIMUM DENSITY OF 85% OF THAT OF THE ADJACENT UNDISTURBED SOIL AND SHALL CONSIST OF NO MATERIAL LARGER THAN 8" IN DIAMETER.
2. WHERE TRENCHES ARE UNDER EXISTING OR PROPOSED PAVED AREAS, THE ENTIRE TRENCH ABOVE THE PIPE EMBEDMENT, UP TO A POINT 2' BELOW EXISTING OR PROPOSED SUBGRADE, SHALL BE BACKFILLED WITH AHTD CLASS 7 BASE AND BE COMPACTED TO 90% MODIFIED PROCTOR DENSITY. THE REMAINING 2' SHALL BE BACKFILLED WITH AHTD CLASS 7 BASE IN 6" LIFTS AND COMPACTED TO 95% MODIFIED PROCTOR DENSITY.
3. WHERE TRENCHES ARE UNDER EXISTING OR PROPOSED PUBLIC STREETS OF THE CITY, THE ENTIRE TRENCH ABOVE THE EMBEDMENT SHALL BE BACKFILLED UP TO SUBGRADE WITH AHTD CLASS 7 BASE PLACED IN 4-6" LIFTS AND COMPACTED TO 95% MODIFIED PROCTOR DENSITY.

TYPICAL PIPE TRENCH

N.T.S.



TYPICAL SEWER AIR RELEASE DETAIL

N.T.S.