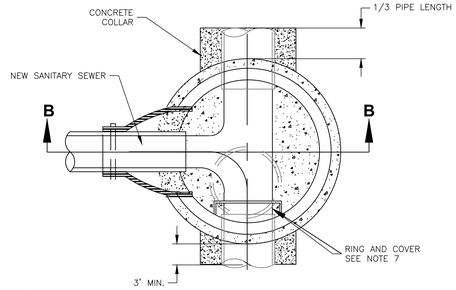
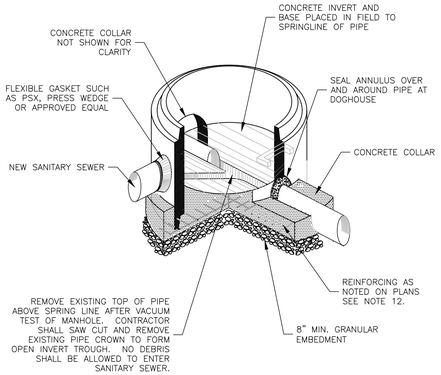
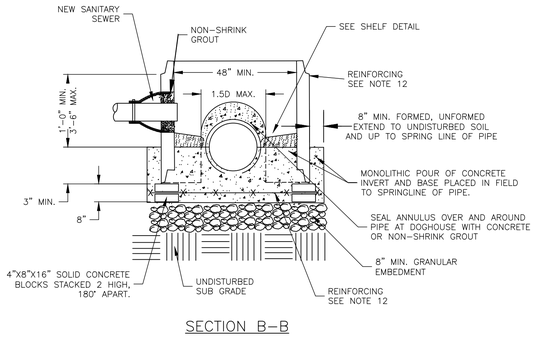


PLAN VIEW

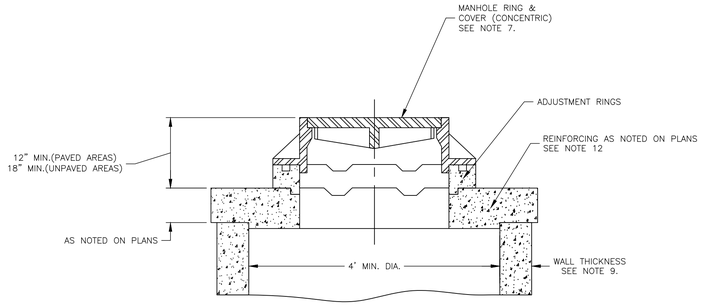




SECTION B–B

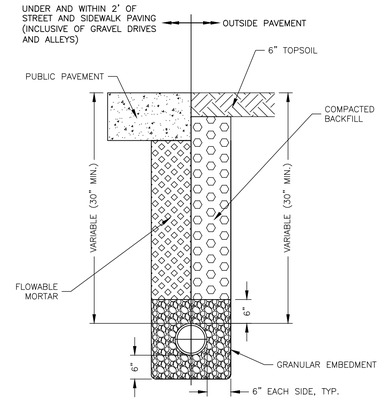
STANDARD DOGHOUSE MANHOLE

N.T.S.



STANDARD PRECAST MANHOLE (SHALLOW TYPE)

N.T.S.

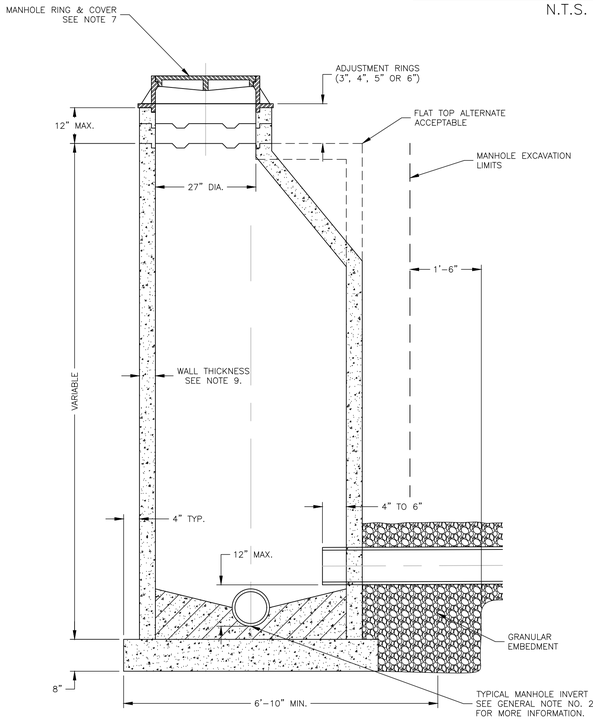


NOTES

1. FLOWABLE MORTAR MATERIALS AND PLACEMENT LIMITS SHALL CONFORM TO SECTION 1102E AND 1107B OF THE CITY OF LAWRENCE CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION 1100–GRADING RESPECTIVELY.
2. COMPACTED BACKFILL SHALL CONFORM TO SECTION 1107B AND 1108 OF THE CITY OF LAWRENCE CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION 1100–GRADING.
3. DETAIL SHOWN SHALL GOVERN IN NEW CONSTRUCTION. THE CITY OF LAWRENCE STANDARD DETAILS FOR STREET REPAIR–PAVEMENT REMOVAL AND REPLACEMENT DETAILS FOR TRENCHING WITHIN EXISTING ROADWAYS SHALL GOVERN WITHIN EXISTING PAVEMENT.

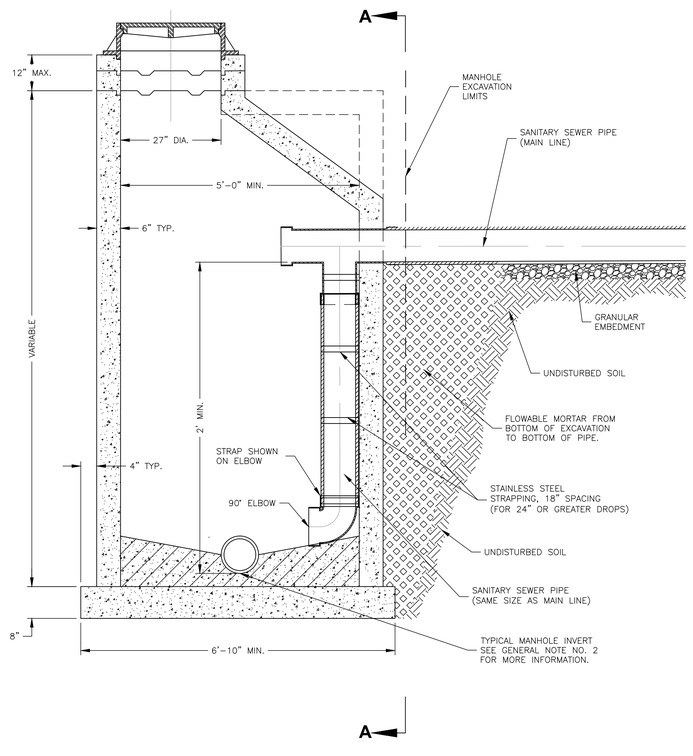
SANITARY SEWER TRENCH DETAILS

N.T.S.



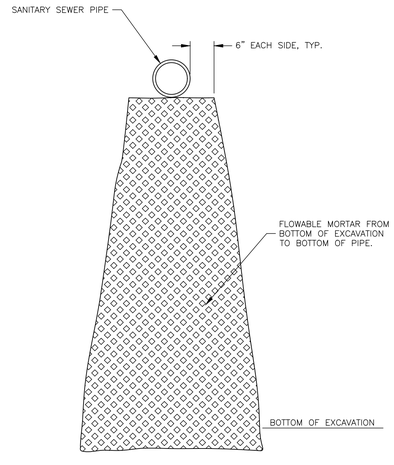
STANDARD PRECAST MANHOLE (ECCENTRIC CONE)

N.T.S.



STANDARD DROP MANHOLE SECTION (FOR 8" OR 10" MAINS ONLY)

N.T.S.



SECTION A–A

NOTES

1. PRECAST MANHOLES SHALL CONFORM TO ASTM C–478 AND THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT MINIMUM STANDARDS OF DESIGN.
2. PIPE(S) SHALL BE TEMPORARILY PLUGGED PRIOR TO FORMING INVERTS. INVERTS SHALL BE FORMED WITH KCMMB 4K CONCRETE OR GROUT PER SPECIFICATIONS.
3. STANDARD DEPTH MANHOLE IS 6'–0". LESSER DEPTH TO BE PAID FOR AS STANDARD 6'–0" MANHOLE.
4. GRANULAR EMBEDMENT SHALL BE PLACED FROM THE OUTSIDE FACE OF THE MANHOLE TO A DISTANCE OF 18" BEYOND THE LIMITS OF EXCAVATION FOR THE MANHOLE, AS SHOWN.
5. COMPRESSION TYPE PIPE TO MANHOLE CONNECTIONS SHALL BE A–LOK, MANHOLE PIPE CONNECTORS, OR APPROVED EQUAL.
6. D.I.P., V.C.P., OR TRUSS PIPE TO PIPE CONNECTIONS SHALL BE FERNCO RUBBER GASKET COUPLING OR APPROVED EQUAL.
7. MANHOLE RINGS AND LIDS SHALL BE DEETER FOUNDRY MODEL 1048, OR APPROVED EQUAL, WITH CASING INSIDE DIAMETER OF TWENTY–FOUR (24) INCHES, LID OUTSIDE DIAMETER OF TWENTY–FIVE AND ONE–QUARTER (25.25) INCHES, AND LID SEATING THICKNESS OF ONE AND ONE–HALF (1.5) INCHES PLUS/MINUS ONE–EIGHTH (0.125) OF AN INCH.
8. BEFORE FINAL ACCEPTANCE OF THE PROJECT, A 2"X4" PIECE OF LUMBER, 6'–0" TO 8'–0" TALL, OR A STEEL FENCE POST, 5'–0" TO 6'–0" TALL, SHALL BE PLACED ADJACENT TO EACH MANHOLE, IN ORDER TO LOCATE THESE STRUCTURES FOR CONTRACTORS DURING FUTURE DEVELOPMENT.
9. THE WALL THICKNESS FOR MANHOLES UNDER 16'–0" DEEP SHALL BE 1/12 OF THE INTERNAL SHELL DIAMETER, OR 4", WHICHEVER IS GREATER. THE WALL THICKNESS FOR MANHOLES 16'–0" DEEP OR GREATER SHALL BE 1/12 OF THE INTERNAL SHELL DIAMETER PLUS 1" OR 5", WHICHEVER IS GREATER.
10. IF THE SANITARY SEWER PIPE HAS A DEFLECTION IN IT, SUCH PIPE SHALL BE ROTATED SO THAT THE DEFLECTION IS ON IT'S SIDE.
11. ANY SANITARY SEWER PIPE FOUND TO HAVE MORE THAN A 5% DEFLECTION WILL BE REJECTED.
12. ALL REINFORCING SHALL BE AS NOTED ON PLANS AND/OR SHOP DRAWINGS AND SHALL CONFORM TO CITY OF LAWRENCE MUNICIPAL SERVICES AND OPERATIONS DEPARTMENT SPECIFICATIONS FOR SANITARY SEWER, SECTION 2510.3.7.
13. LIFT HOLES IN PRE–CAST STRUCTURES SHALL BE PATCHED WITH NON–SHRINK GROUT AFTER TESTING.

2024 EDITION

SHEET _____ OF _____

DATE	BY	REVISION
04–01–24	LJM	REPLACES ALL PREVIOUS VERSIONS OF SANITARY SEWER DETAILS
04–01–23	LJM	REPLACES ALL PREVIOUS VERSIONS OF SANITARY SEWER DETAILS

Lawrence KANSAS

STANDARD DETAILS FOR
SANITARY SEWER–GRAVITY

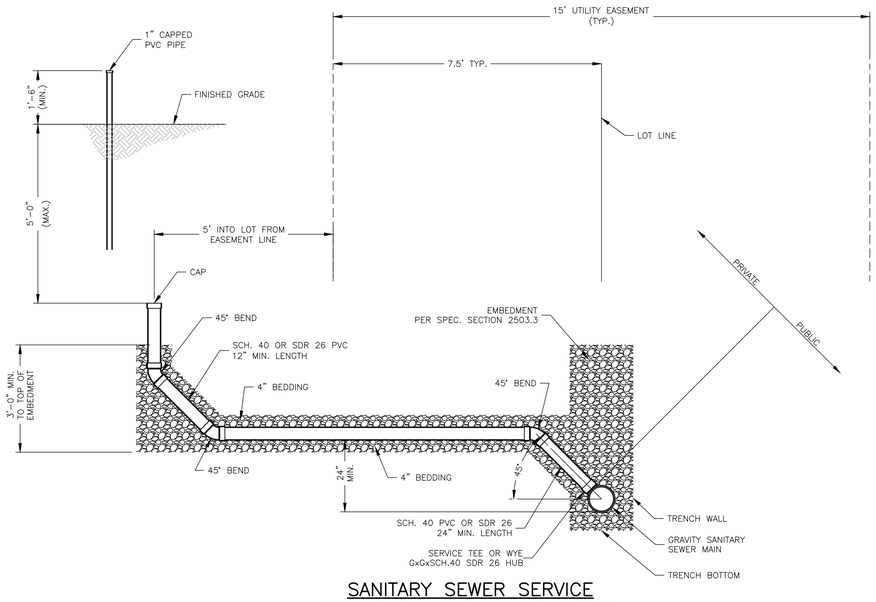
1 OF 2

ANDREW P. ENSZ
PROGRAM MANAGER

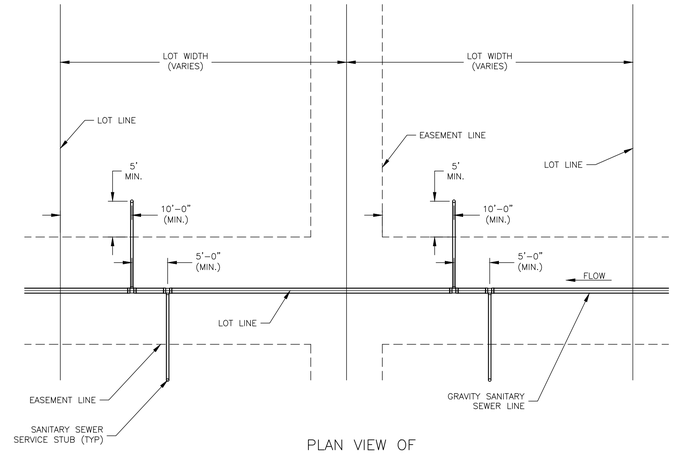
CRAIG S. OWENS
CITY MANAGER

ANDREW PAUL ENSZ LICENSED 18805 KANSAS PROFESSIONAL ENGINEER

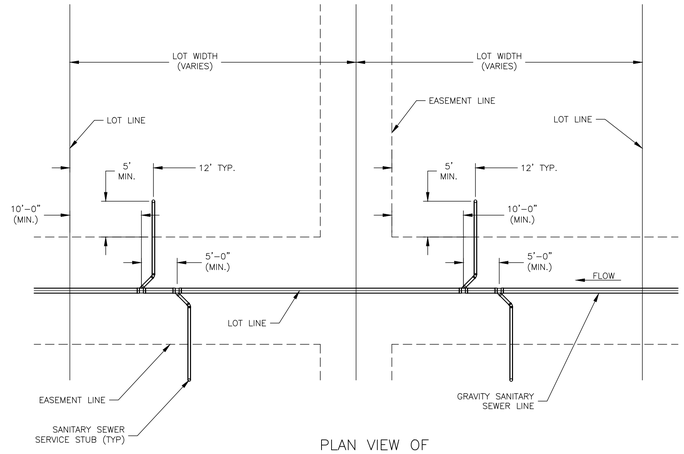
GENERAL NOTES:
1. SERVICE TEE OR WYE SHALL BE INSTALLED SO THAT SERVICE CONNECTION IS A MINIMUM OF 45° FROM HORIZONTAL.
2. SOLVENT WELDED CONNECTIONS ARE REQUIRED FOR THE ENTIRE SERVICE CONNECTION FROM THE TEE TO THE CAP, IF SCHEDULE 40.
3. MINIMUM GRADE FOR SERVICE LATERALS ARE 1.00% FOR SIX (6) INCH AND 2.00% FOR FOUR (4) INCH SERVICE LINES
4. LOCATION OF TEE OR WYE CONNECTION BY STATION AND HORIZONTAL LENGTH OF STUB OUT TO BE NOTED ON CONSTRUCTION DRAWINGS OF SANITARY SEWER MAIN CONSTRUCTION.



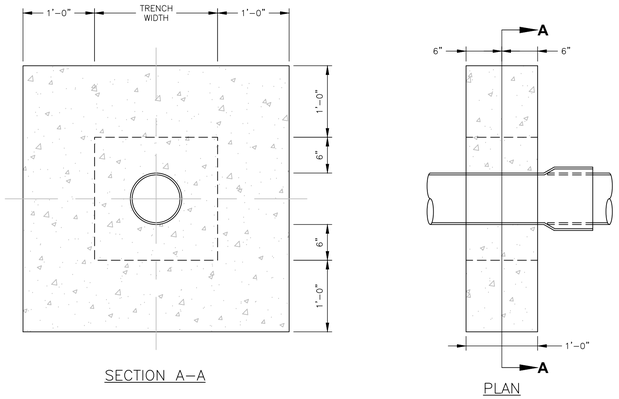
SANITARY SEWER SERVICE CONNECTION STUB OUT DETAIL
N.T.S.



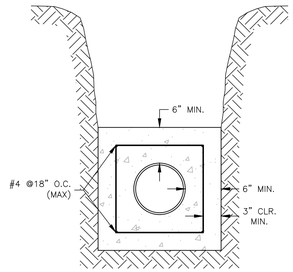
PLAN VIEW OF
SANITARY SEWER SERVICE TEE CONNECTION STUB OUT LOCATIONS
BACK LOT LINE EXAMPLE SHOWN



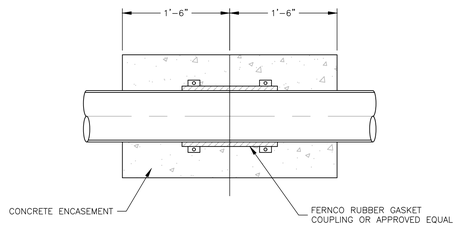
PLAN VIEW OF
SANITARY SEWER SERVICE WYE CONNECTION STUB OUT LOCATIONS
BACK LOT LINE EXAMPLE SHOWN



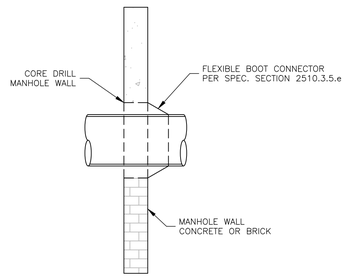
CONCRETE PIPE ANCHOR DETAIL
N.T.S.



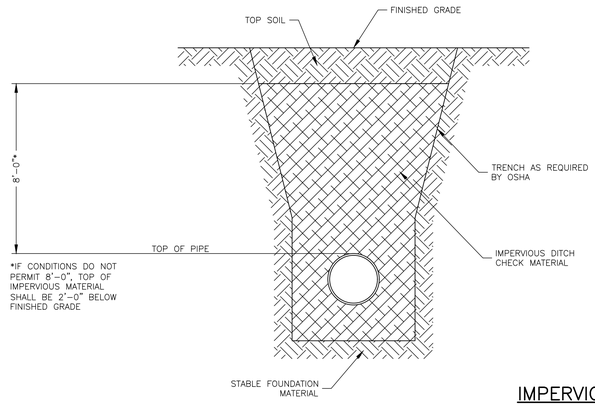
CONCRETE ENCASEMENT DETAIL
N.T.S.



DIP, VCP OR TRUSS PIPE CONNECTION (REPAIRS ONLY)
N.T.S.

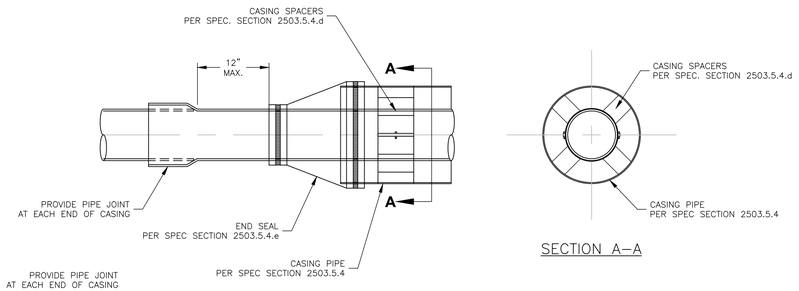


CONNECTION TO EXISTING MANHOLE
N.T.S.



IMPERVIOUS DITCH CHECK
N.T.S.

IMPERVIOUS DITCH CHECKS SHALL BE PLACED WHERE SHOWN ON THE PLANS. LENGTHS SHALL BE A MINIMUM OF 10 L.F. FLOWABLE FILL IS REQUIRED FOR PVC PIPE. FOR OTHER PIPE TYPES, CLAY MATERIAL OR FLOWABLE FILL MAY BE USED AT THE CONTRACTORS OPTION. FLOWABLE FILL MATERIAL TO COMPLY WITH CITY OF LAWRENCE CONSTRUCTION AND MATERIALS SPECIFICATION SECTION 1100, CURRENT EDITION. CLAY MATERIAL SHALL BE FREE OF CLODS, CLUMPS, DEBRIS, ORGANIC MATERIAL, AND STONES, COMPACTED SO AS TO OBTAIN 95% OF STANDARD PROCTOR MAXIMUM DENSITY AS DETERMINED BY ASTM D698.



CASING PIPE DETAIL
N.T.S.

GENERAL NOTE:
1. CATHODIC AND CORROSION PROTECTION SHALL BE PROVIDED FOR ALL CASING CONDUITS. ONE 32 LB SACRIFICIAL ANODE PACKAGE PER 100 FEET OF CASING PIPE SHALL BE PROVIDED AT EACH END OF THE CASING. SACRIFICIAL, MAGNESIUM ANODES SHALL BE ATTACHED TO THE CASING PIPE BY A #12 A.W.G. GROUNDING WIRE AT EACH END OF THE CASING.

ANDREW PAUL ENSZ LICENSED 18805 KANSAS PROFESSIONAL ENGINEER

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