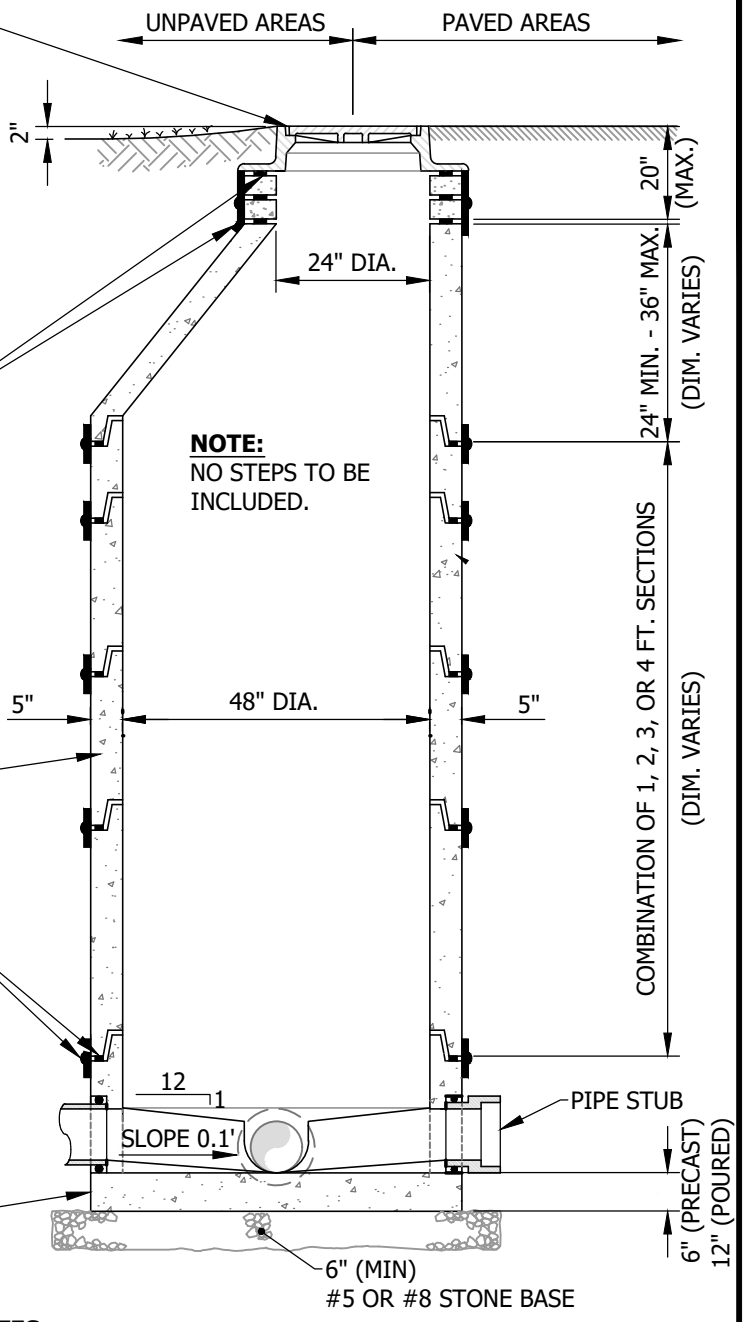
MANHOLE FRAME & COVER:
ASTM A-48, LATEST EDITION, CLASS 35 WITH 24" DIAMETER FRAME.
IN TRAFFIC AREAS:
7" MIN. HGT., EQUAL TO EAST JORDAN 1022 OR EQUAL WITH HEAVY DUTY COVER, MACHINED BEARING SURFACE & CONCEALED LIFT HOLES. (SET LID FLUSH WITH FINISHED STREET SURFACE).
IN NON-TRAFFIC AREAS:
7"HGT., EQUAL TO EAST JORDAN 1022 WITH MEDIUM DUTY COVER, MACHINED BEARING SURFACE & CONCEALED LIFT HOLES. SET TOP 2" ABOVE GRADE (AFTER EARTH SETTLEMENT).

CONCRETE GRADING RINGS:
MAXIMUM OF TWO RINGS
3", 4", 6" HEIGHTS
(SEAL BETWEEN CASTING AND EACH RING WITH 1 1/4" PREFORMED BUTYL RUBBER SEALANT MEETING ASTM C-990. MINIMUM SIZE 3/4".)
PRIME EXTERIOR OF JOINTS WITH BITUMINOUS PRIMER PRIOR TO WRAPPING. ALL JOINTS SHALL HAVE EXTERIOR JOINT WRAP MEETING THE REQUIREMENTS OF ASTM C-877.

PRECAST CONE AND RISER SECTIONS:
ASTM C-478, 4000 P.S.I. CONCRETE.

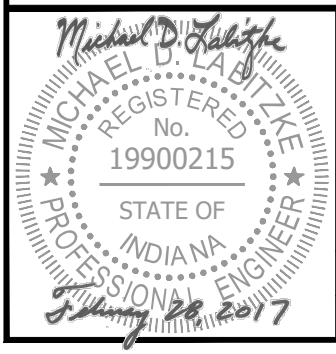
JOINTS:
JOINTS SHALL BE SEALED WITH 1 1/4" PREFORMED BUTYL MASTIC MEETING ASTM C-990.
PRIME EXTERIOR OF JOINTS WITH BITUMINOUS PRIMER PRIOR TO WRAPPING. ALL JOINTS SHALL HAVE EXTERIOR JOINT WRAP MEETING THE REQUIREMENTS OF ASTM C-877, MINIMUM 6" WRAP.
IN INSTANCES WHERE JOINT IS BELOW WATER TABLE, JOINT SHALL BE A CONTROLLED EXPANSION WATER SEAL EQUAL TO CONSEAL CS-231.

PRECAST BASE SECTION:
BASE SECTION WITH RESILIENT PIPE TO MANHOLE CONNECTOR MEETING ASTM C-923.
SMOOTH INVERT CHANNELS SHALL BE SHAPED TO A DEPTH OF A FULL INSIDE PIPE DIAMETER.
THE MANHOLE SHELF SHALL SLOPE TOWARD THE CHANNEL AT A 12:1 SLOPE.
THE MANHOLE BASE SECTION SHALL BE PLACED ON A #5 OR #8 STONE BASE WITH A MINIMUM COMPACTED DEPTH OF 6". THE STONE BASE SHALL OVERHANG THE BASE SECTION BY A MINIMUM OF 6".



NOTES:

1. ALL MANHOLE LIDS SHALL BEAR "SANITARY SEWER" MOLDED INTO THE EXTERIOR SURFACE.
2. WATERTIGHT CASTINGS EQUAL TO EJ 1022-WT CASKETED AND BOLT DOWN LIDS REQUIRED AS NOTED.
3. ALL PRECAST CONCRETE SHALL CONTAIN WATERPROOFING ADDITIVE, XYPEX OR EQUIVALENT.
4. ALL PRECAST CONCRETE FOR FORCE MAIN RECEIVING MANHOLES AND ALL NEW MANHOLES WITHIN 500 FEET UPSTREAM OR DOWNSTREAM OF THE RECEIVING MANHOLE SHALL CONTAIN ANTI-CORROSION ADDITIVE, CONSHIELD OR EQUIVALENT.



Evansville
WATER AND SEWER UTILITY

STANDARD PRECAST 48" MANHOLE

Approved: 02/28/17		Adopted: 02/28/17	Figure WW-01
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	

MANHOLE FRAME & COVER:
ASTM A-48, LATEST EDITION, CLASS 35 WITH 24" DIAMETER FRAME.
IN TRAFFIC AREAS:
7" MIN. HGT., EQUAL TO EAST JORDAN 1022 OR EQUAL WITH HEAVY DUTY COVER, MACHINED BEARING SURFACE & CONCEALED LIFT HOLES. (SET LID FLUSH WITH FINISHED STREET SURFACE).
IN NON-TRAFFIC AREAS:
7"HGT., EQUAL TO EAST JORDAN 1022 WITH MEDIUM DUTY COVER, MACHINED BEARING SURFACE & CONCEALED LIFT HOLES. SET TOP 2" ABOVE GRADE (AFTER EARTH SETTLEMENT).

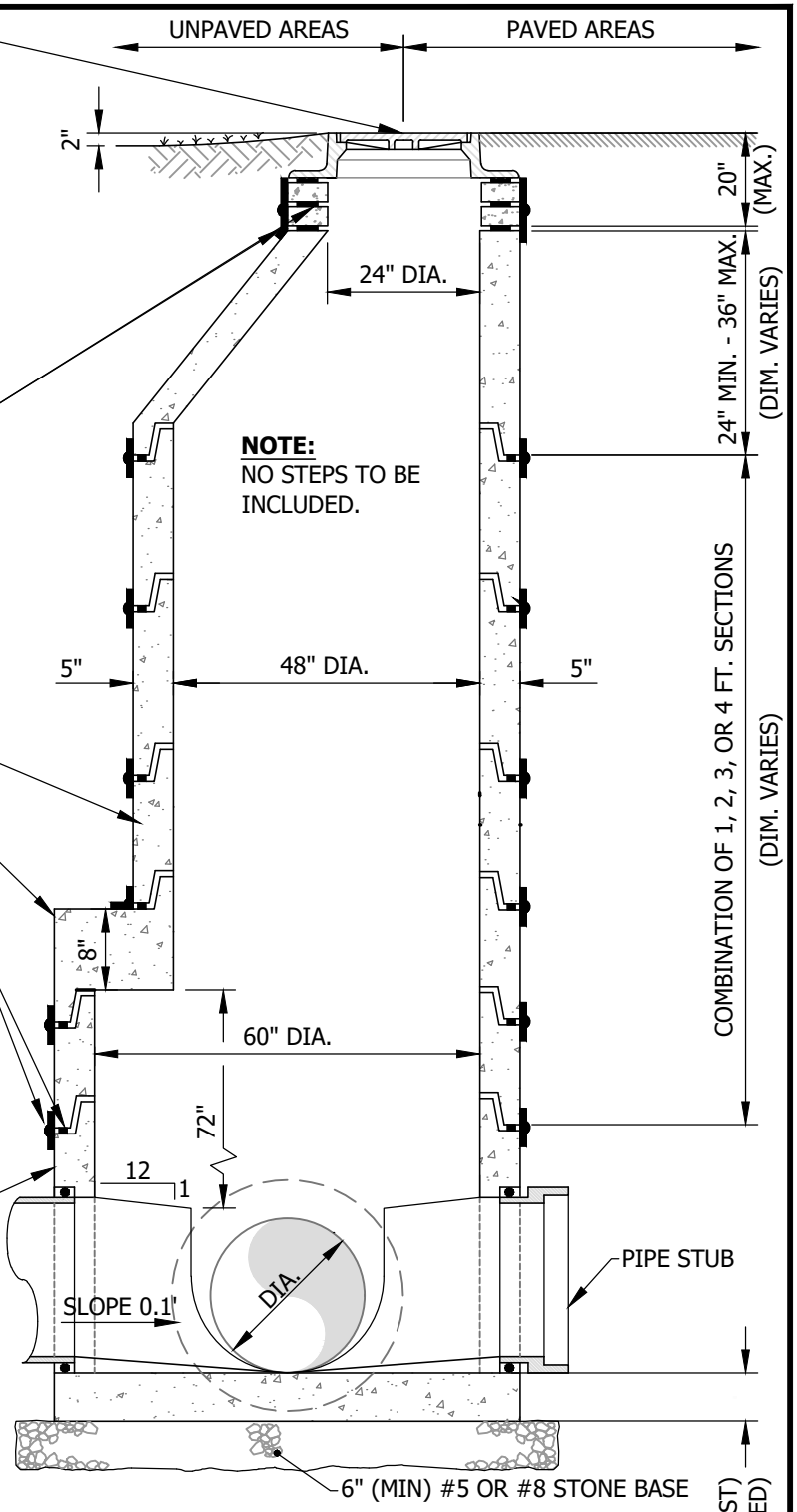
CONCRETE GRADING RINGS:
MAXIMUM OF TWO RINGS
3", 4", 6" HEIGHTS
(SEAL BETWEEN CASTING AND EACH RING WITH 1 1/4" PREFORMED BUTYL RUBBER SEALANT MEETING ASTM C-990. MINIMUM SIZE 3/4".)
PRIME EXTERIOR OF JOINTS WITH BITUMINOUS PRIMER PRIOR TO WRAPPING. ALL JOINTS SHALL HAVE EXTERIOR JOINT WRAP MEETING THE REQUIREMENTS OF ASTM C-877.

PRECAST CONE AND RISER SECTIONS:
ASTM C-478, 4000 P.S.I. CONCRETE.

PRECAST 60" TO 48" TRANSITION SECTION:
ASTM C-478, 4000 P.S.I. CONCRETE.

JOINTS:
JOINTS SHALL BE SEALED WITH 1 1/4" PREFORMED BUTYL MASTIC MEETING ASTM C-990.
PRIME EXTERIOR OF JOINTS WITH BITUMINOUS PRIMER PRIOR TO WRAPPING. ALL JOINTS SHALL HAVE EXTERIOR JOINT WRAP MEETING THE REQUIREMENTS OF ASTM C-877, MINIMUM 6" WRAP.
IN INSTANCES WHERE JOINT IS BELOW WATER TABLE, JOINT SHALL BE A CONTROLLED EXPANSION WATER SEAL EQUAL TO CONSEAL CS-231.

PRECAST BASE SECTION:
BASE SECTION WITH RESILIENT PIPE TO MANHOLE CONNECTOR MEETING ASTM C-923.
SMOOTH INVERT CHANNELS SHALL BE SHAPED TO A DEPTH OF A FULL INSIDE PIPE DIAMETER.
THE MANHOLE SHELF SHALL SLOPE TOWARD THE CHANNEL AT A 12:1 SLOPE.
THE MANHOLE BASE SECTION SHALL BE PLACED ON A #5 OR #8 STONE BASE WITH A MINIMUM COMPACTED DEPTH OF 6". THE STONE BASE SHALL OVERHANG THE BASE SECTION BY A MINIMUM OF 6".



NOTES:

1. ALL MANHOLE LIDS SHALL BEAR "SANITARY SEWER" MOLDED INTO THE EXTERIOR SURFACE.
2. WATERTIGHT CASTINGS EQUAL TO EJ 1022-WT CASKETED AND BOLT DOWN LIDS REQUIRED AS NOTED.
3. ALL PRECAST CONCRETE SHALL CONTAIN WATERPROOFING ADDITIVE, XYPEX OR EQUIVALENT.
4. ALL PRECAST CONCRETE FOR FORCE MAIN RECEIVING MANHOLES AND ALL NEW MANHOLES WITHIN 500 FEET UPSTREAM OR DOWNSTREAM OF THE RECEIVING MANHOLE SHALL CONTAIN ANTI-CORROSION ADDITIVE, CONSHIELD OR EQUIVALENT.

File: J:\ENGINEER\AUTOCAD\Standards\Detail Drawings\Sewer\WW-02R Standard 60in Manhole.dwg

MICHAEL D. LABITZKE REGISTERED No. 19900215 STATE OF INDIANA PROFESSIONAL ENGINEER
February 28, 2017

Evansville WATER AND SEWER UTILITY

STANDARD PRECAST CONCRETE 60" MANHOLE

Approved:	02/28/17	Adopted: 02/28/17	Figure WW-02
Approved By:	Michael D. Labitzke, P.E.	Scale: N.T.S.	

MANHOLE FRAME & COVER:
ASTM A-48, LATEST EDITION, CLASS 35 WITH 24" DIAMETER FRAME.
IN TRAFFIC AREAS:
7" MIN. HGT., EQUAL TO EAST JORDAN 1022 OR EQUAL WITH HEAVY DUTY COVER, MACHINED BEARING SURFACE & CONCEALED LIFT HOLES. (SET LID FLUSH WITH FINISHED STREET SURFACE).
IN NON-TRAFFIC AREAS:
7"HGT., EQUAL TO EAST JORDAN 1022 WITH MEDIUM DUTY COVER, MACHINED BEARING SURFACE & CONCEALED LIFT HOLES. SET TOP 2" ABOVE GRADE (AFTER EARTH SETTLEMENT).

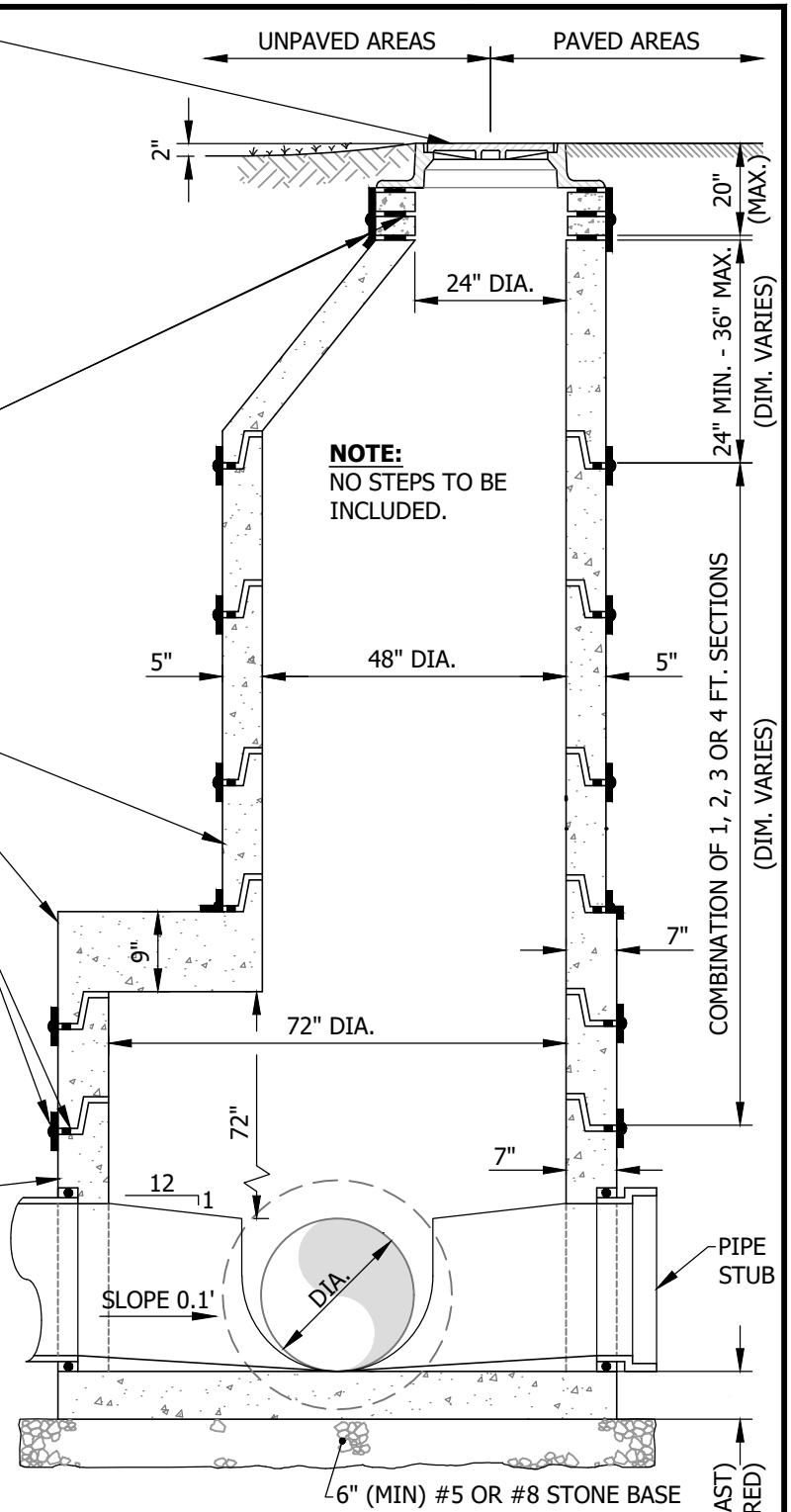
CONCRETE GRADING RINGS:
MAXIMUM OF TWO RINGS
3", 4", 6" HEIGHTS
(SEAL BETWEEN CASTING AND EACH RING WITH 1 1/4" PREFORMED BUTYL RUBBER SEALANT MEETING ASTM C-990. MINIMUM SIZE 3/4".)
PRIME EXTERIOR OF JOINTS WITH BITUMINOUS PRIMER PRIOR TO WRAPPING.
ALL JOINTS SHALL HAVE EXTERIOR JOINT WRAP MEETING THE REQUIREMENTS OF ASTM C-877

PRECAST CONE AND RISER SECTIONS:
ASTM C-478, 4000 P.S.I. CONCRETE.

PRECAST 72" TO 48" TRANSITION SECTION:
ASTM C-478, 4000 P.S.I. CONCRETE.

JOINTS:
JOINTS SHALL BE SEALED WITH 1 1/4" PREFORMED BUTYL MASTIC MEETING ASTM C-990.
PRIME EXTERIOR OF JOINTS WITH BITUMINOUS PRIMER PRIOR TO WRAPPING. ALL JOINTS SHALL HAVE EXTERIOR JOINT WRAP MEETING THE REQUIREMENTS OF ASTM C-877, MINIMUM 6" WRAP.
IN INSTANCES WHERE JOINT IS BELOW WATER TABLE, JOINT SHALL BE A CONTROLLED EXPANSION WATER SEAL EQUAL TO CONSEAL CS-231.

PRECAST BASE SECTION:
BASE SECTION WITH RESILIENT PIPE TO MANHOLE CONNECTOR MEETING ASTM C-923.
SMOOTH INVERT CHANNELS SHALL BE SHAPED TO A DEPTH OF A FULL INSIDE PIPE DIAMETER.
THE MANHOLE SHELF SHALL SLOPE TOWARD THE CHANNEL AT A 12:1 SLOPE.
THE MANHOLE BASE SECTION SHALL BE PLACED ON A #5 OR #8 STONE BASE WITH A MINIMUM COMPACTED DEPTH OF 6". THE STONE BASE SHALL OVERHANG THE BASE SECTION BY A MINIMUM OF 6".



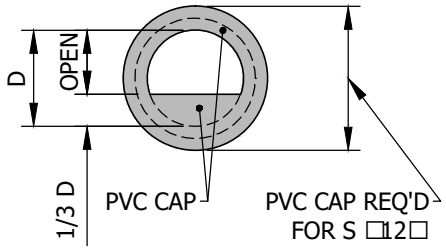
NOTES:

1. ALL MANHOLE LIDS SHALL BEAR "SANITARY SEWER" MOLDED INTO THE EXTERIOR SURFACE.
2. WATERTIGHT CASTINGS EQUAL TO EJ 1022-WT CASKETED AND BOLT DOWN LIDS REQUIRED AS NOTED.
3. ALL PRECAST CONCRETE SHALL CONTAIN WATERPROOFING ADDITIVE, XYPEX OR EQUIVALENT.
4. ALL PRECAST CONCRETE FOR FORCE MAIN RECEIVING MANHOLES AND ALL NEW MANHOLES WITHIN 500 FEET UPSTREAM OR DOWNSTREAM OF THE RECEIVING MANHOLE SHALL CONTAIN ANTI-CORROSION ADDITIVE, CONSHIELD OR EQUIVALENT.

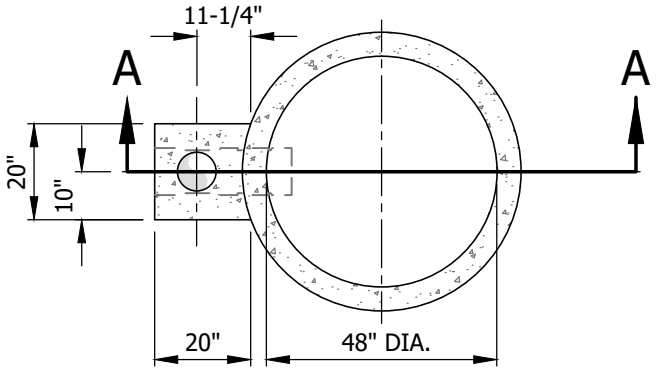
Evansville
WATER AND SEWER UTILITY

STANDARD PRECAST CONCRETE 72" MANHOLE

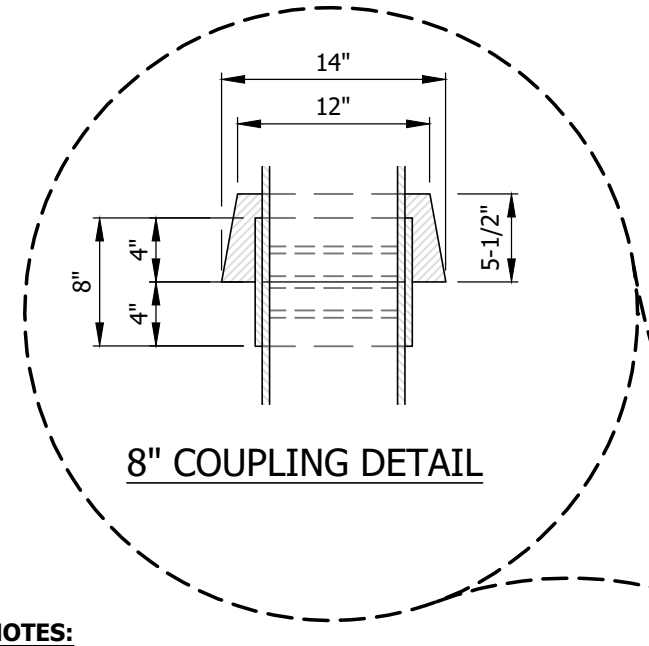
Approved:	02/28/17	Adopted: 02/28/17	Figure WW-03
Approved By:	Michael D. Labitzke, P.E.	Scale: N.T.S.	



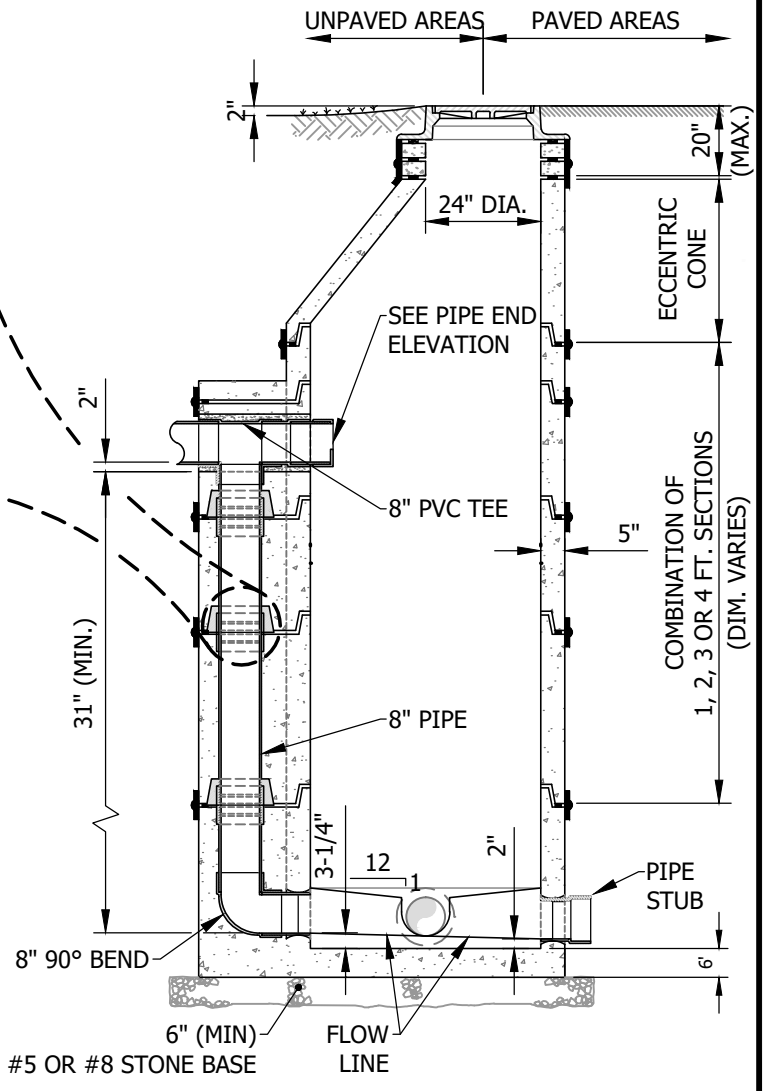
PIPE END ELEVATION



MANHOLE BASE/RISER PLAN



8" COUPLING DETAIL



SECTION "A-A"

NOTES:

1. ALL MATERIAL, DESIGN, MANUFACTURE, PHYSICAL TEST REQUIREMENTS, FINISH MARKING, INSPECTION, REJECTION AND REPAIRS TO MEET / OR EXCEED "SPECIFICATIONS FOR PRECAST-REINFORCED CONCRETE MANHOLE SECTIONS". PER ASTM C-478 (LATEST REVISION).
2. RESILIENT CONNECTORS MEET "SPECIFICATIONS FOR RESILIENT CONNECTORS BETWEEN REINFORCED CONCRETE MANHOLE STRUCTURES, PIPES AND LATERALS". PER ASTM C-923 (LATEST REVISION). RESILIENT CONNECTORS SHALL MEET AND/OR EXCEED ASTM C-478 GASKET REQUIREMENTS. 1" MASTIC BUTYL WILL BE ADDED BETWEEN THE JOINTS OF THE PRECAST DROP AND SHALL BE TIED INTO THE BARREL SECTION SEALANT. ALL ANGLES AND FALL SHALL BE ACCORDING TO PLANS.
3. 33" DROP MINIMUM REQUIRED. DROP IS 8" PIPE ONLY. IF DROP REQUIRES GREATER THAN 8" PIPE, A SPECIAL DETAIL WILL BE REQUIRED FOR APPROVAL.

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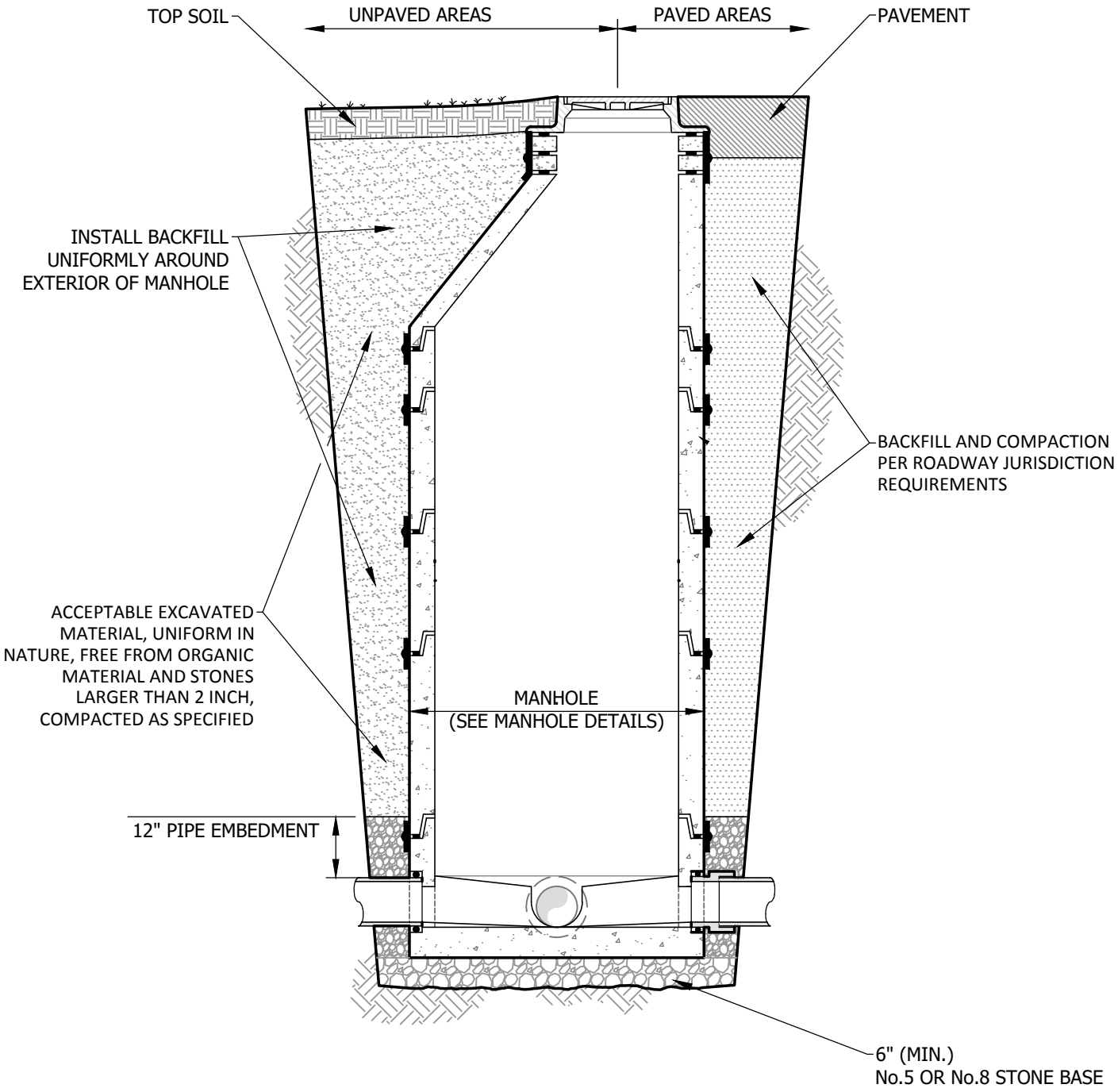
Evansville
WATER AND SEWER UTILITY

PRECAST EXTERNAL DROP MANHOLE (REQUIRED ON ALL DROPS GREATER THAN 24")

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-04
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



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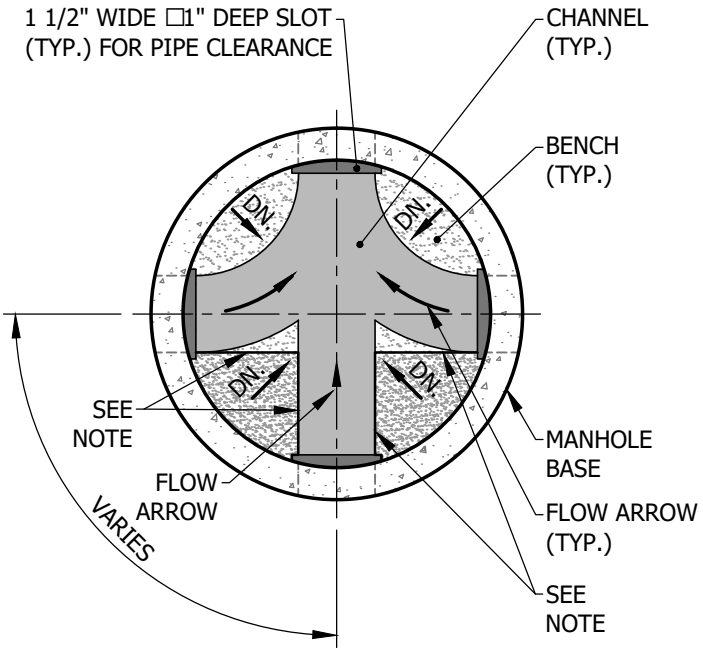
November 10, 2015

Evansville
WATER AND SEWER UTILITY

STANDARD MANHOLE BACKFILL

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-05
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



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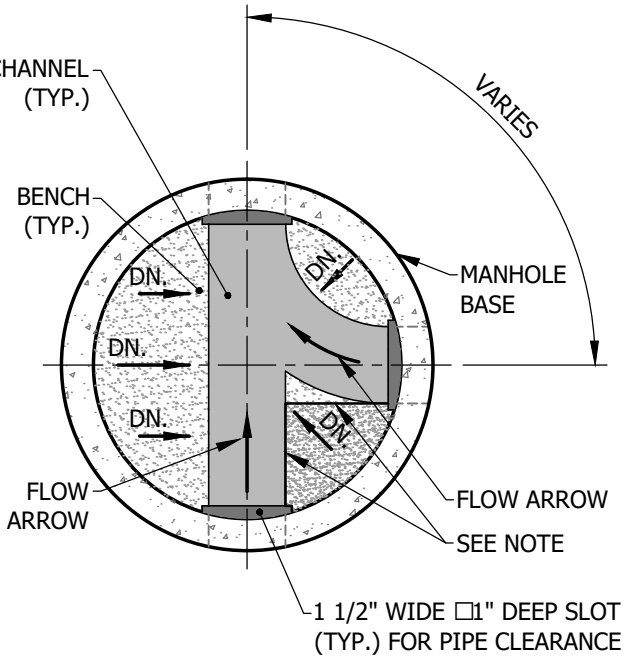

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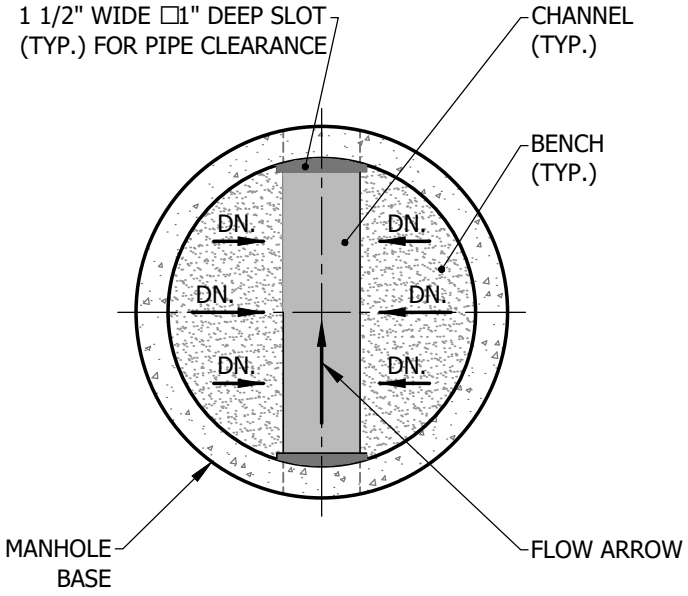
NOTE:

1. WALLS SHALL BE FLARED OUT AS REQUIRED SO THAT TESTING EQUIPMENT CAN BE SAFELY REMOVED.
2. ALL NON-TYPICAL BENCHES AND CHANNELS WILL REQUIRE A SPECIAL DETAIL ON THE PLANS.



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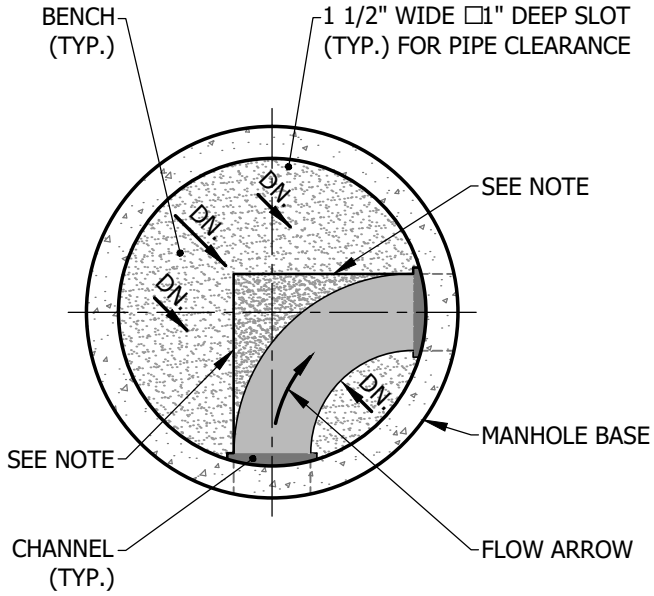

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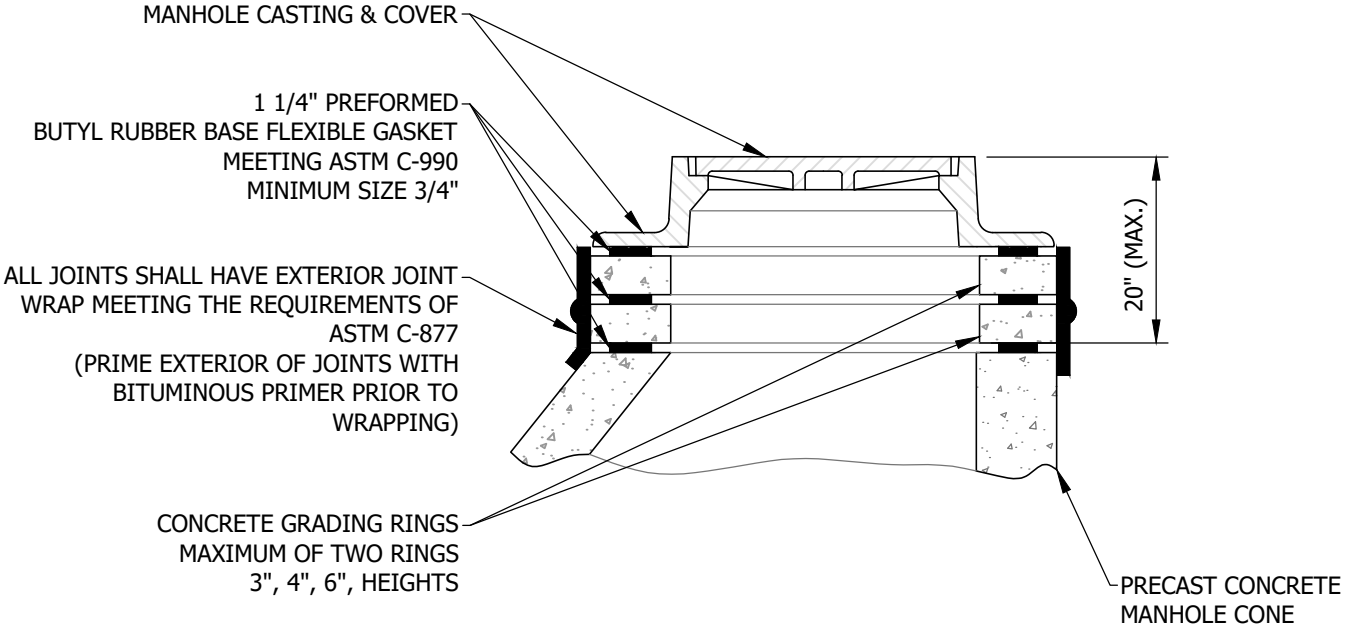
WATER AND SEWER UTILITY

STANDARD MANHOLE BENCHES AND CHANNELS

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-06
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



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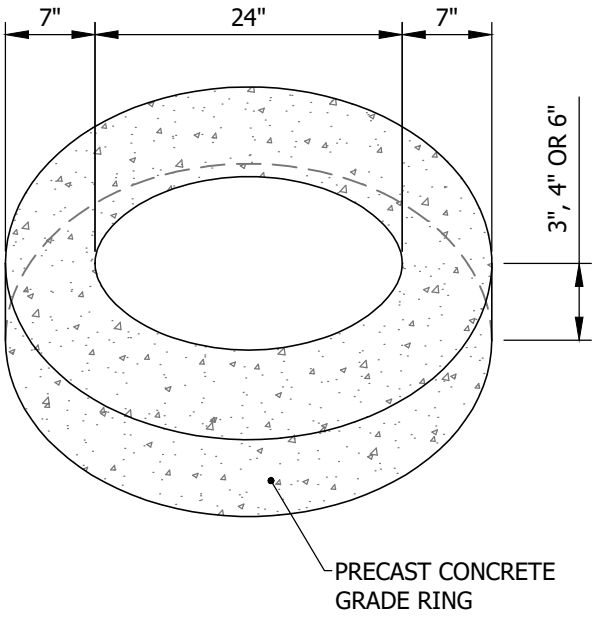

NOTE:

1. MINIMUM CONCRETE STRENGTH: 4,500 PSI AT 28 DAYS.
2. PRECAST GRADE RINGS SHALL CONTAIN WATER PROOFING ADDITIVE, XYPEX OR EQUIVALENT.

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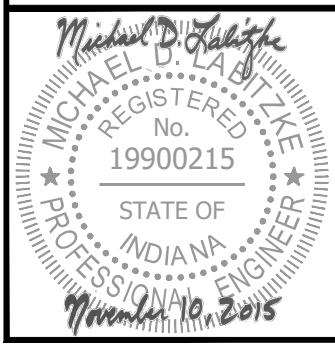
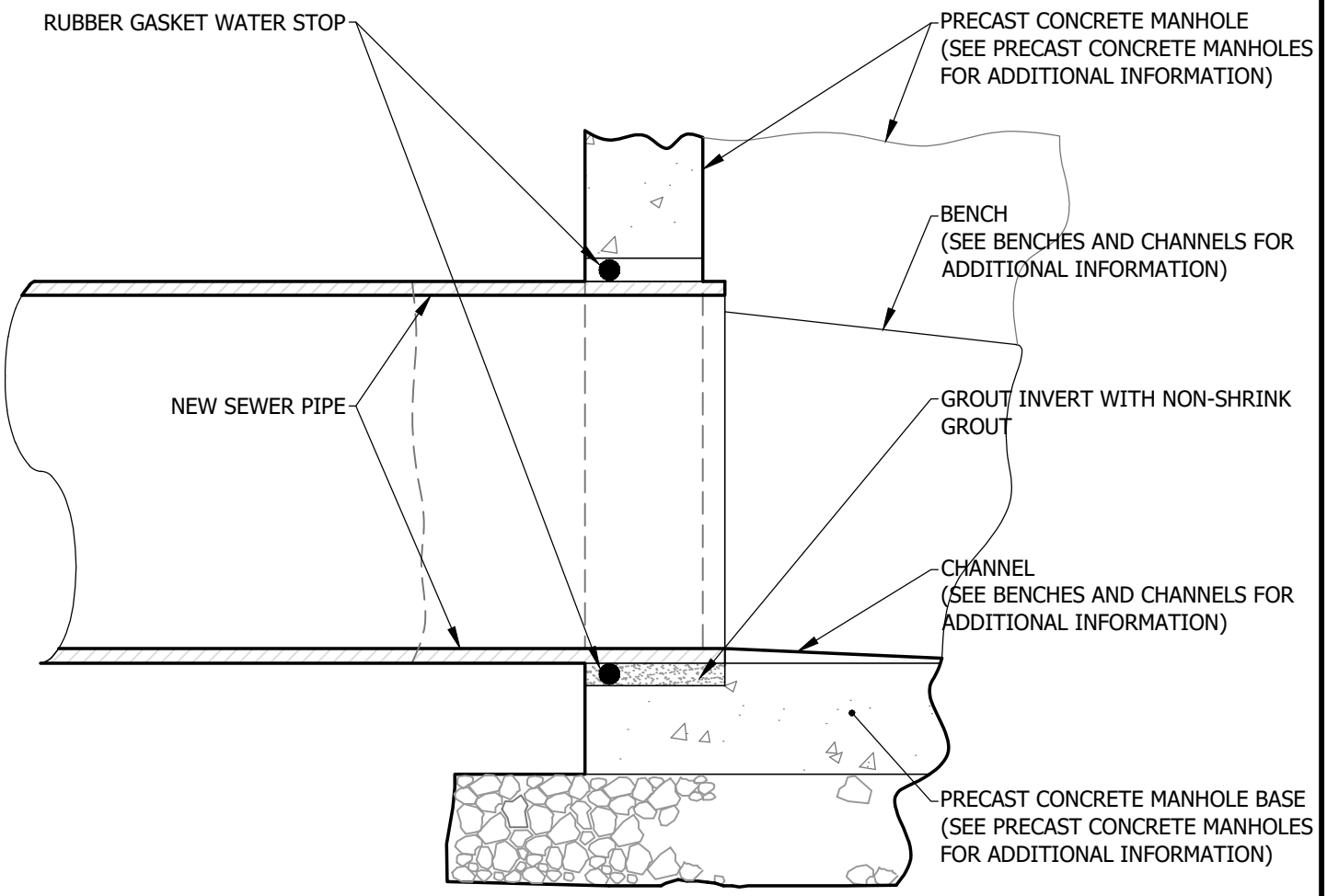


Evansville WATER AND SEWER UTILITY

STANDARD CASTING ADJUSTMENT AND GRADE RINGS

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-07
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



File: J:\ENGINEER\AUTOCAD\Standards\Detail Drawings\Sewer\WW-08 Stub-out at Manhole.dwg

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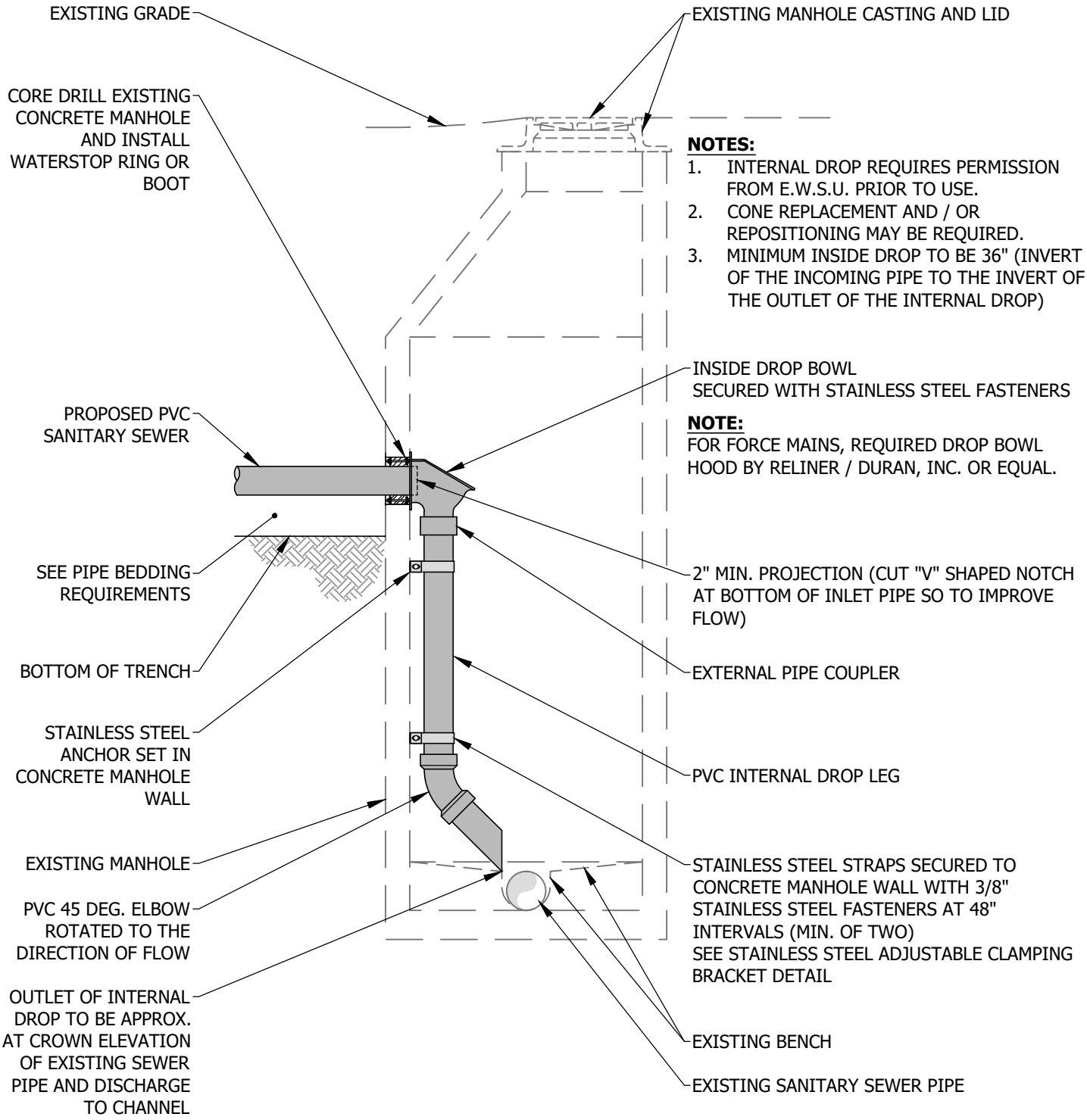
November 10, 2015

Evansville
WATER AND SEWER UTILITY

STUB-OUT AT MANHOLE

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-08
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



File: J:\ENGINEER\AUTOCAD\Standards\Detail Drawings\Sewer\WW-09 Internal Drop Connection to EXisting MH.dwg

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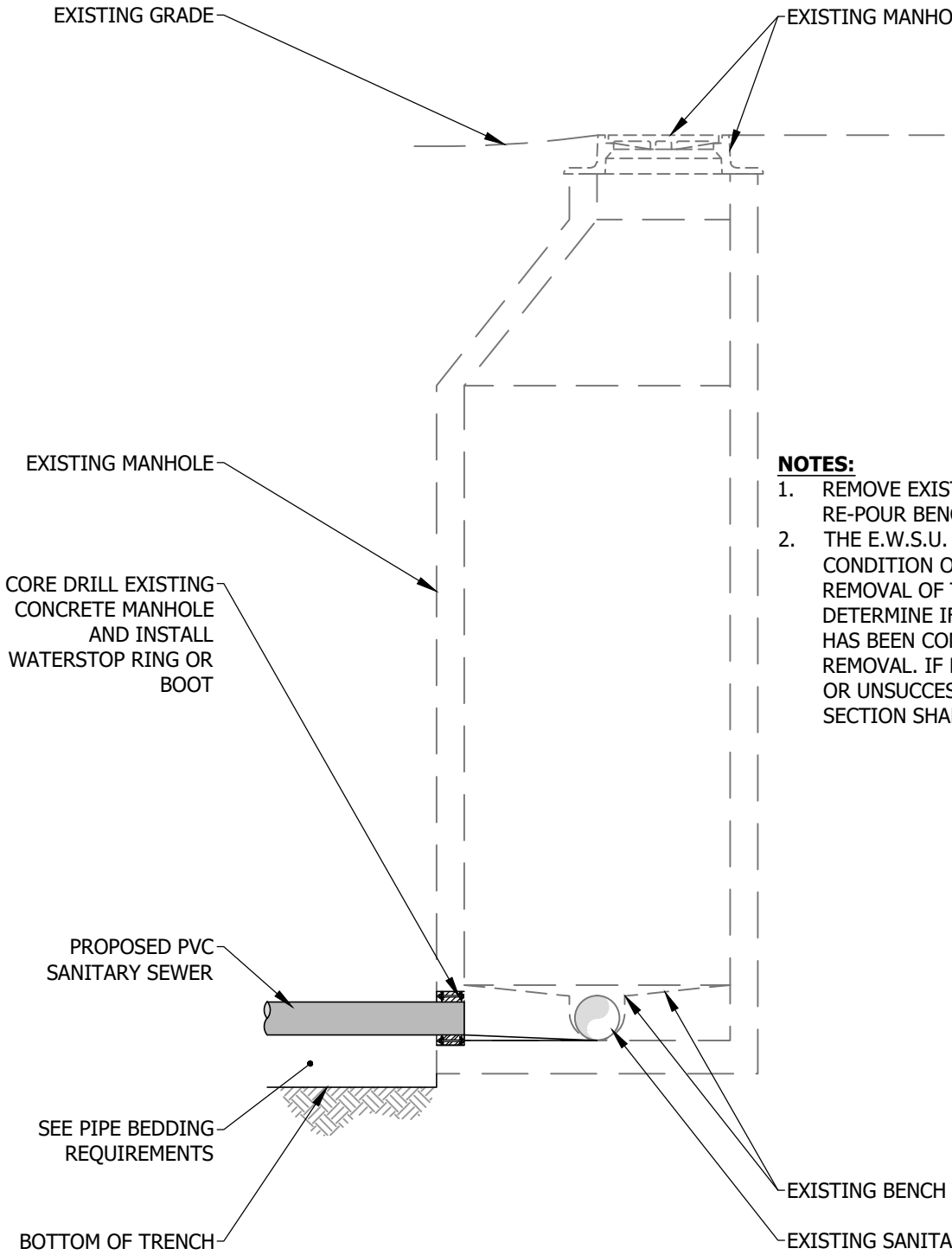
November 10, 2015

Evansville
WATER AND SEWER UTILITY

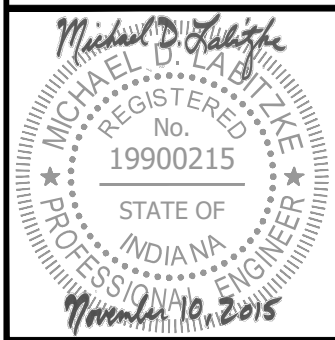
INTERNAL DROP CONNECTION TO EXISTING MANHOLE

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-09
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



NOTES:

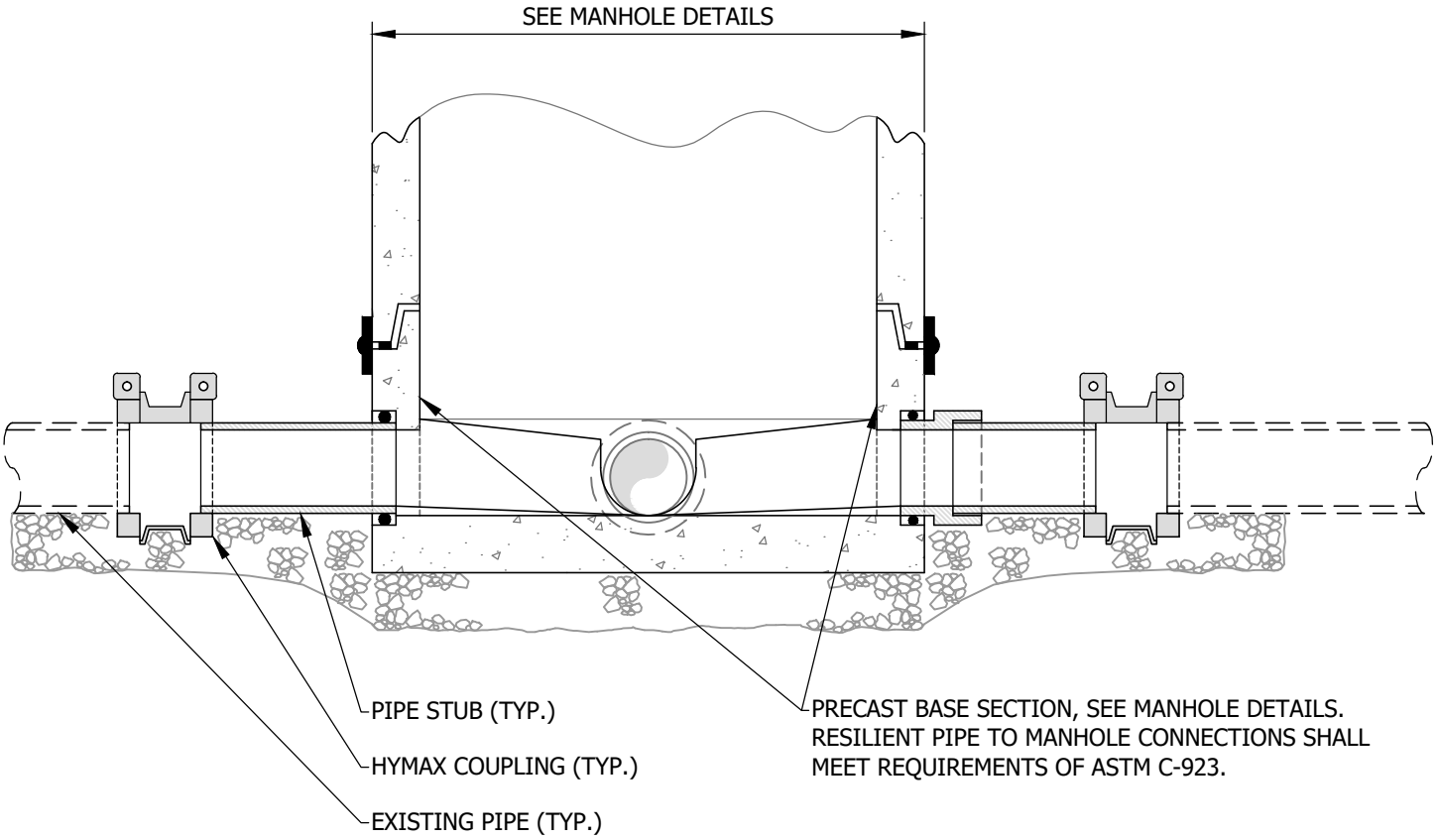
1. REMOVE EXISTING INTERIOR BENCH AND RE-POUR BENCHES AND CHANNELS.
2. THE E.W.S.U. WILL VERIFY THE CONDITION OF THE PRECAST BASE AFTER REMOVAL OF THE INTERIOR BENCH TO DETERMINE IF STRUCTURAL INTEGRITY HAS BEEN COMPROMISED DURING REMOVAL. IF REMOVAL IS IMPRACTICAL OR UNSUCCESSFUL, THE ENTIRE BASE SECTION SHALL BE REPLACED.



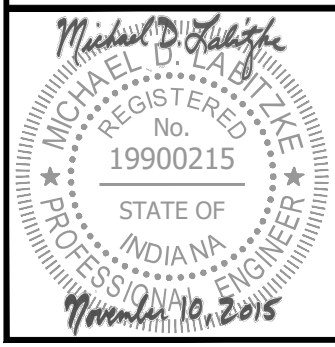
Evansville
WATER AND SEWER UTILITY

NEW PIPE CONNECTION TO EXISTING MANHOLE

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-10
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



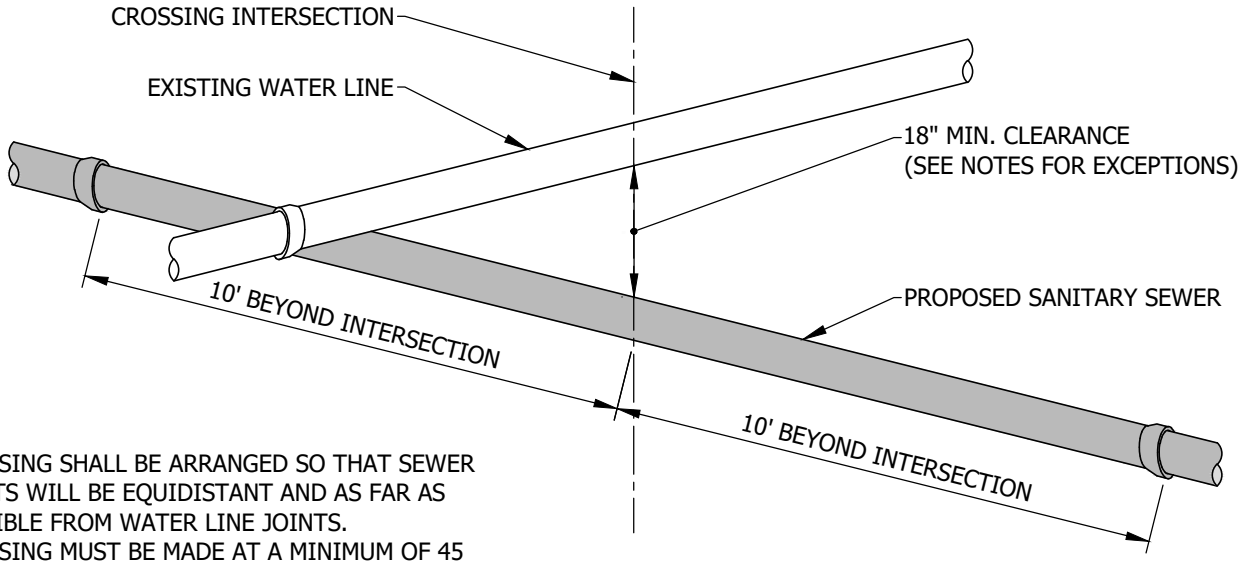
NOTE:
CUT OUT SECTION OF EXISTING PIPE, INSTALL NEW MANHOLE WITH STUBS, CONNECT WITH HYMAX COUPLERS AS SHOWN.



Evansville
WATER AND SEWER UTILITY

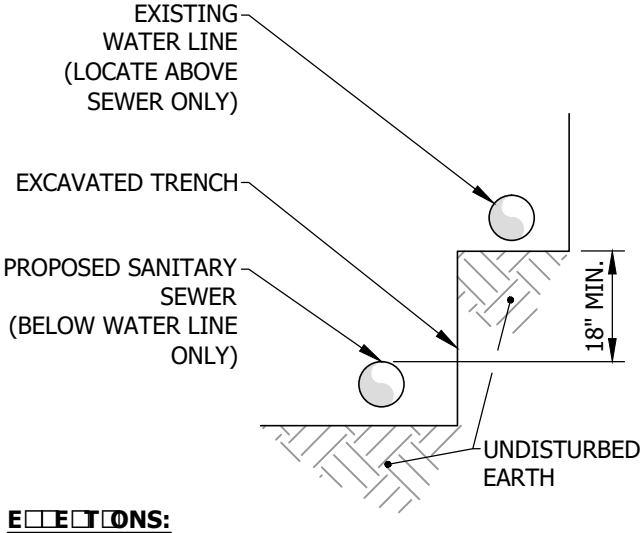
NEW MANHOLE ON EXISTING PIPE

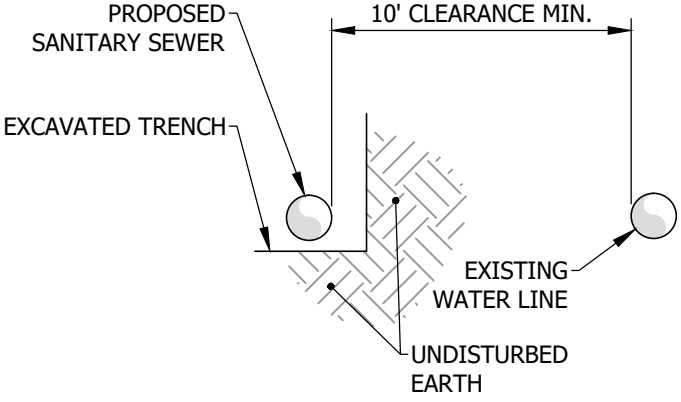
Approved: 11/10/15		Adopted: 11/10/15	Figure WW-11
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



NOTES:

1. CROSSING SHALL BE ARRANGED SO THAT SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM WATER LINE JOINTS.
2. CROSSING MUST BE MADE AT A MINIMUM OF 45 DEGREES MEASURED FROM THE CENTER LINES OF THE MAINS.

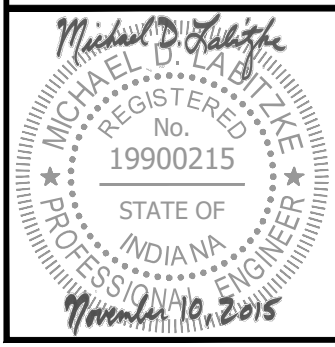




E□□E□T□ONS:

ALL OF THE FOLLOWING MUST BE MET

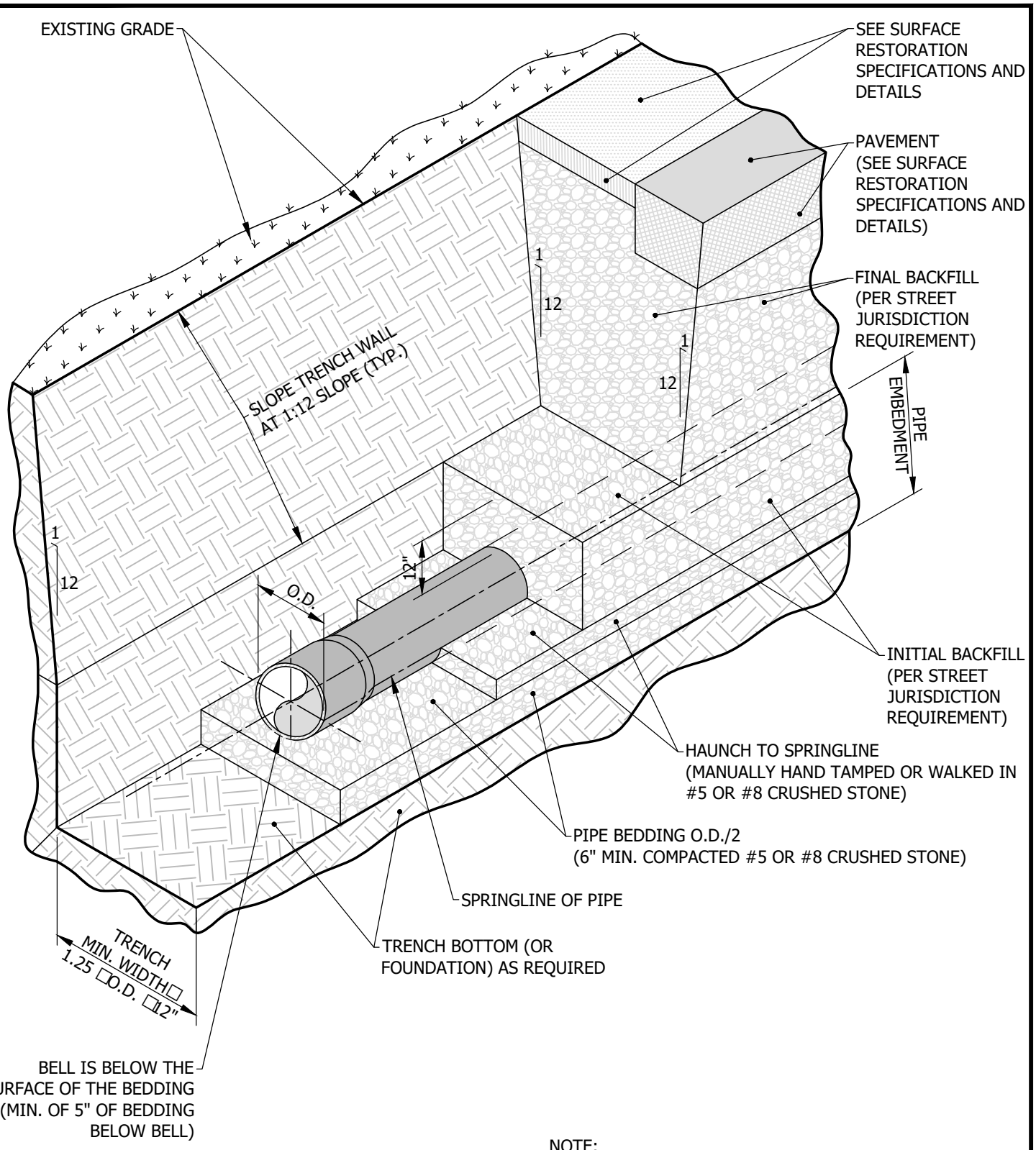
- THE SANITARY SEWER AND WATER MAIN ARE NOT IN CONTACT.
- THE SANITARY SEWER MATERIAL IS PVC SDR-21 OR PVC C900 FOR ALL INSTANCES WHERE HORIZONTAL OR VERTICAL CLEARANCE REQUIREMENTS ARE NOT MET.
- THE SANITARY SEWER MEETS ALL PRESSURE TESTING REQUIREMENTS OF WATER MAIN.
- THE SANITARY SEWER AND WATER MAIN ARE LAID ON SEPARATE TRENCH SHELVES.
- ANY SANITARY SEWER JOINTS ARE A COMPRESSION TYPE JOINT THAT ARE PLACED EQUIDISTANTLY FROM THE WATER MAIN.



Evansville
WATER AND SEWER UTILITY

PROPOSED SANITARY SEWER AND EXISTING WATER LINE CROSSING

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-12
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



NOTE:
OSHA TRENCH SAFETY REQUIREMENTS SHALL BE FOLLOWED WITH ALL TRENCH EXCAVATION.

File: J:\ENGINEER\AUTOCAD\Standards\Detail Drawings\Sewer\WW-13 Rigid San Sewer Pipe Bedding within 5' of Pave Cmt.dwg

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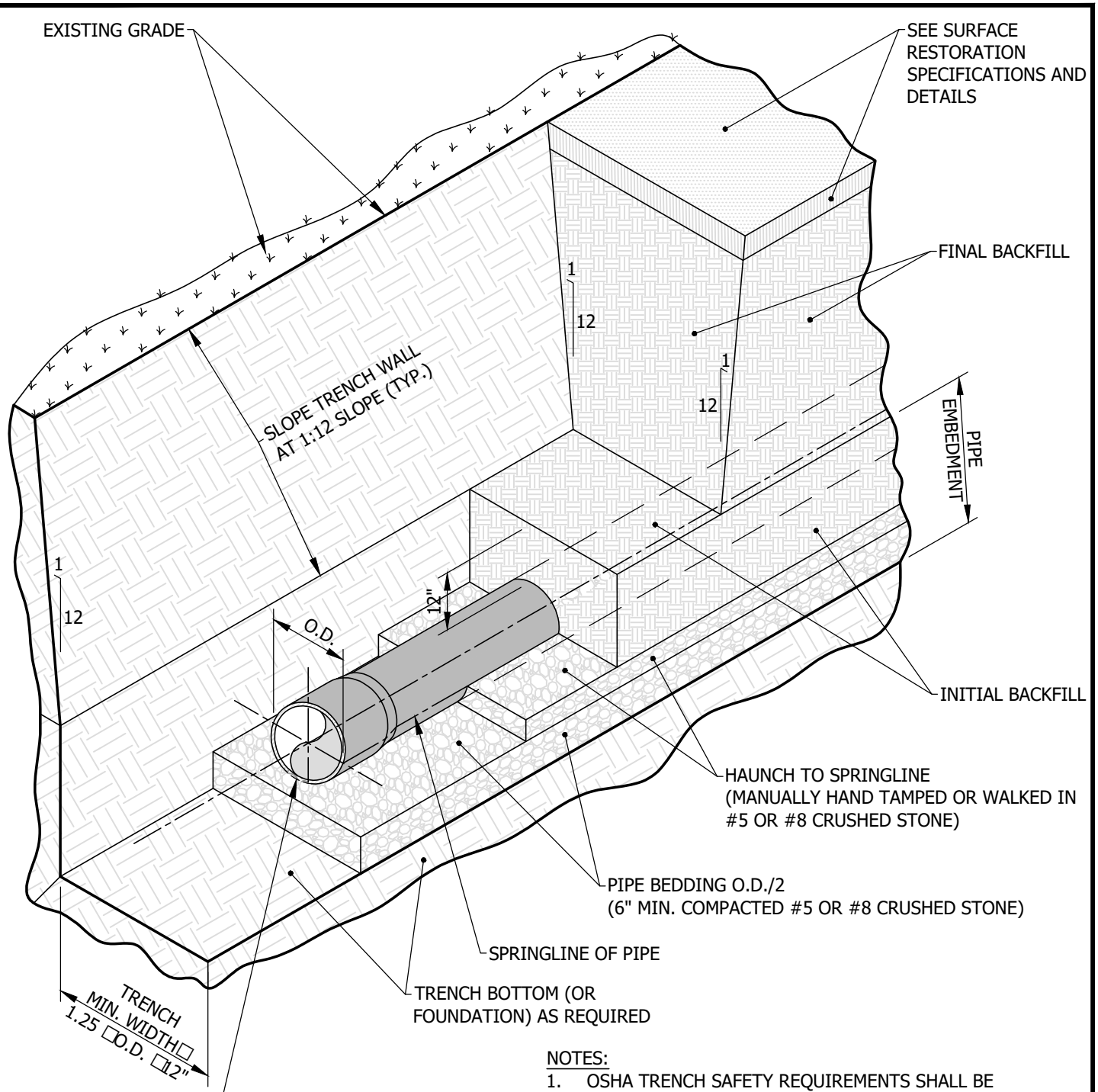
WATER AND SEWER UTILITY

RIGID SANITARY SEWER PIPE BEDDING AND BACKFILL WITHIN 5' OF, OR UNDER PAVEMENT

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-13
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



NOTES:

1. OSHA TRENCH SAFETY REQUIREMENTS SHALL BE FOLLOWED WITH ALL TRENCH EXCAVATION.
2. INITIAL BACKFILL: SUITABLE EXCAVATED MATERIAL MAY BE USED, COMPACTED AS SPECIFIED.
3. FINAL BACKFILL: SUITABLE EXCAVATED MATERIAL MAY BE USED, COMPACTED AS SPECIFIED.
4. ALL SUITABLE EXCAVATED MATERIAL SHALL BE FREE OF ROCKS OF MORE THAN TWO INCHES IN DIAMETER, CONCRETE, ROOTS, STUMPS, TRASH, FROZEN MATERIALS, OR OTHER SIMILAR MATERIAL.

File: J:\ENGINEER\AUTOCAD\Standards\Detail Drawings\Sewer\WW-14 Rigid San Sewer Pipe Bedding Beyond 5' of Pavet_Dirt.dwg

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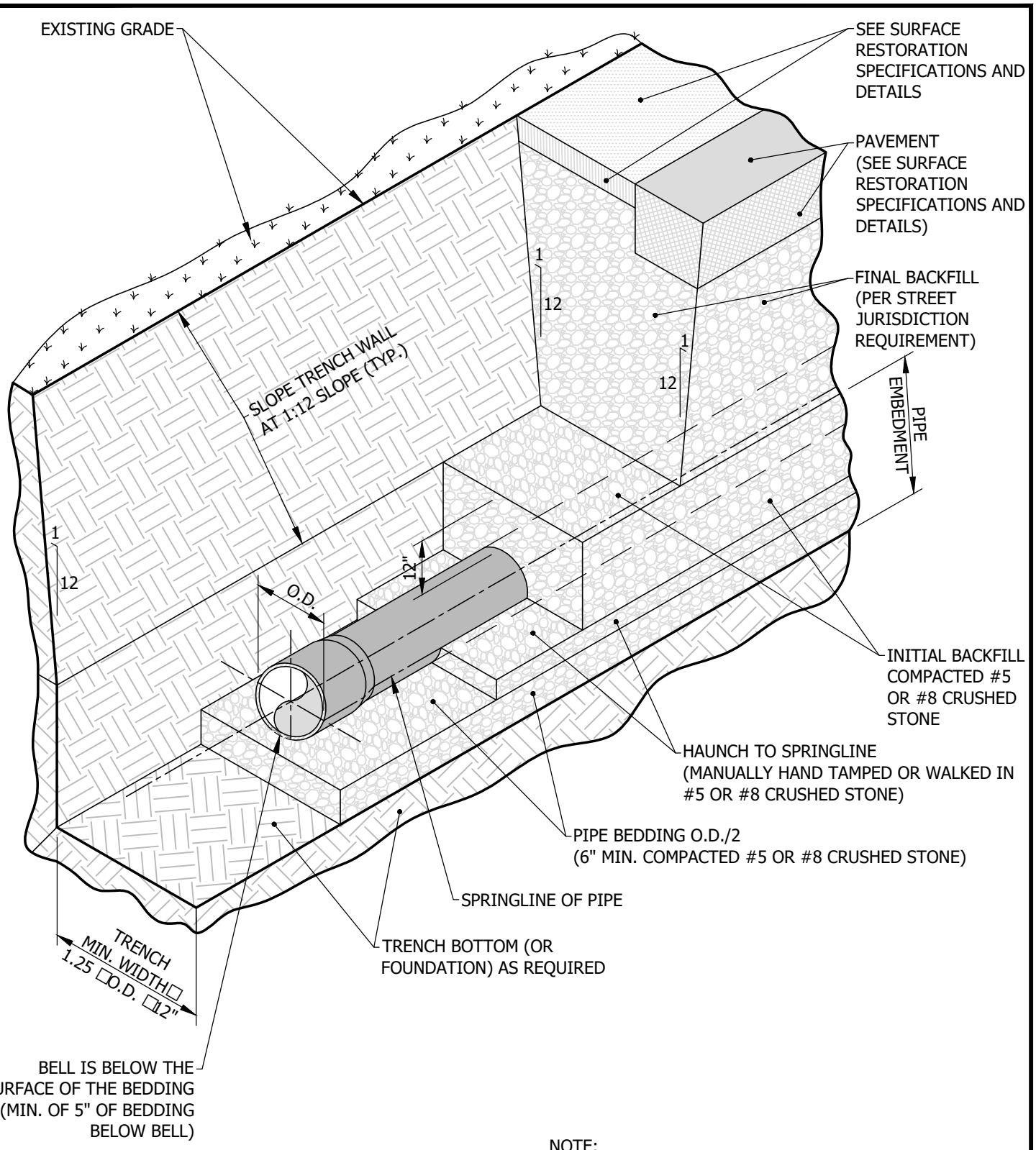
November 10, 2015

Evansville WATER AND SEWER UTILITY

RIGID SANITARY SEWER PIPE BEDDING AND BACKFILL MORE THAN 5' FROM PAVEMENT

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-14
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



NOTE:
OSHA TRENCH SAFETY REQUIREMENTS SHALL BE FOLLOWED WITH ALL TRENCH EXCAVATION.

File: J:\ENGINEER\AUTOCAD\Standards\Detail Drawings\Sewer\WW-15 Non- Rigid San Sewer Pipe Bedding within 5' of Pavement.dwg

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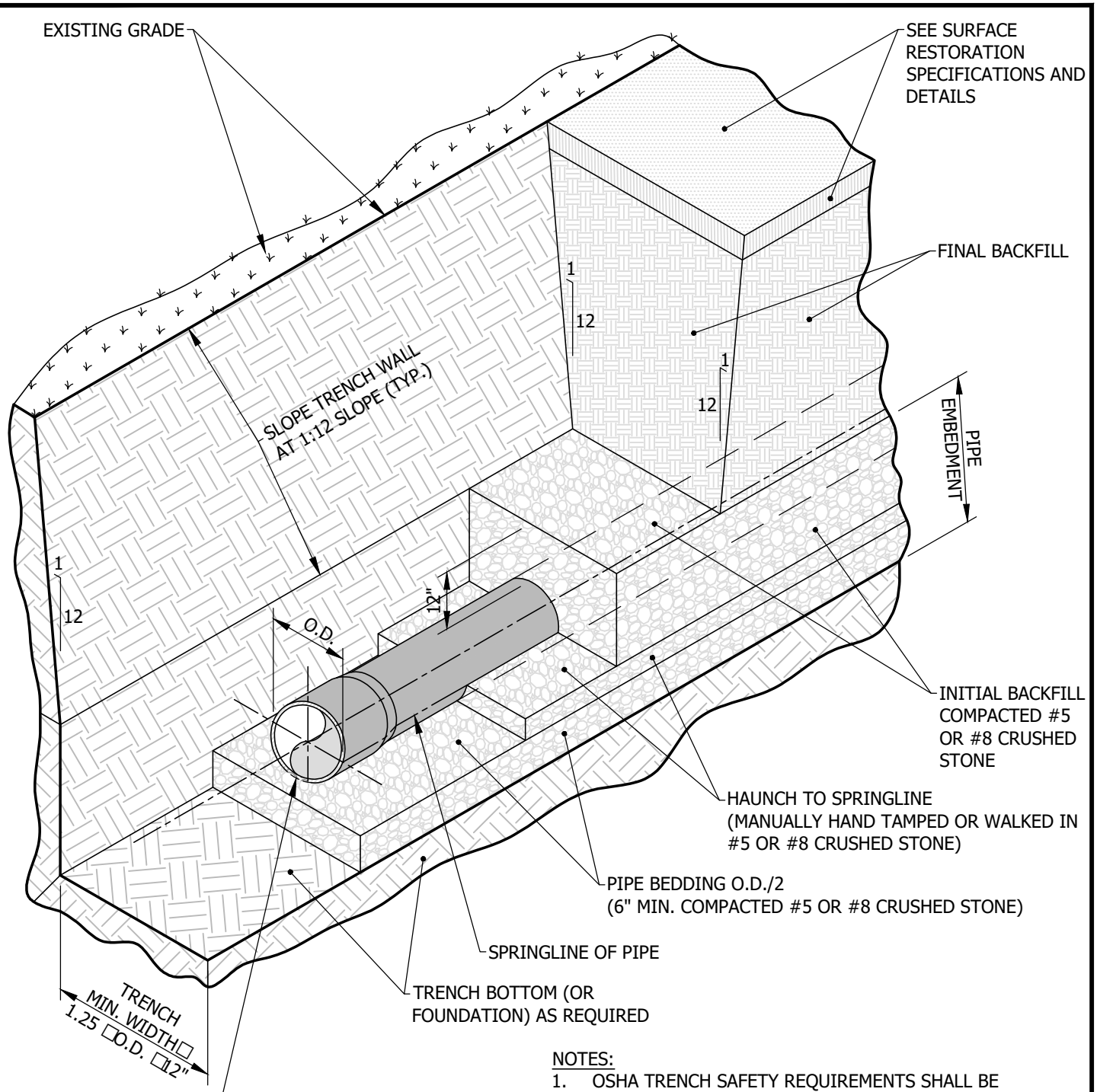
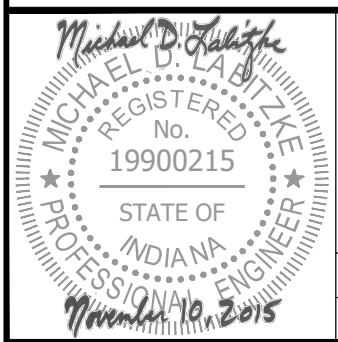
NON-RIGID SANITARY SEWER PIPE BEDDING AND BACKFILL WITHIN 5' OF, OR UNDER PAVEMENT

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-15
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



NOTES:

1. OSHA TRENCH SAFETY REQUIREMENTS SHALL BE FOLLOWED WITH ALL TRENCH EXCAVATION.
2. INITIAL BACKFILL: #5 OR #8 CRUSHED STONE MANUALLY COMPACTED
3. FINAL BACKFILL: SUITABLE EXCAVATED MATERIAL MAY BE USED, COMPACTED AS SPECIFIED.
4. ALL SUITABLE EXCAVATED MATERIAL SHALL BE FREE OF ROCKS OR MORE THAN TWO INCHES IN DIAMETER, CONCRETE, ROOTS, STUMPS, TRASH, FROZEN MATERIALS, OR OTHER SIMILAR MATERIAL.



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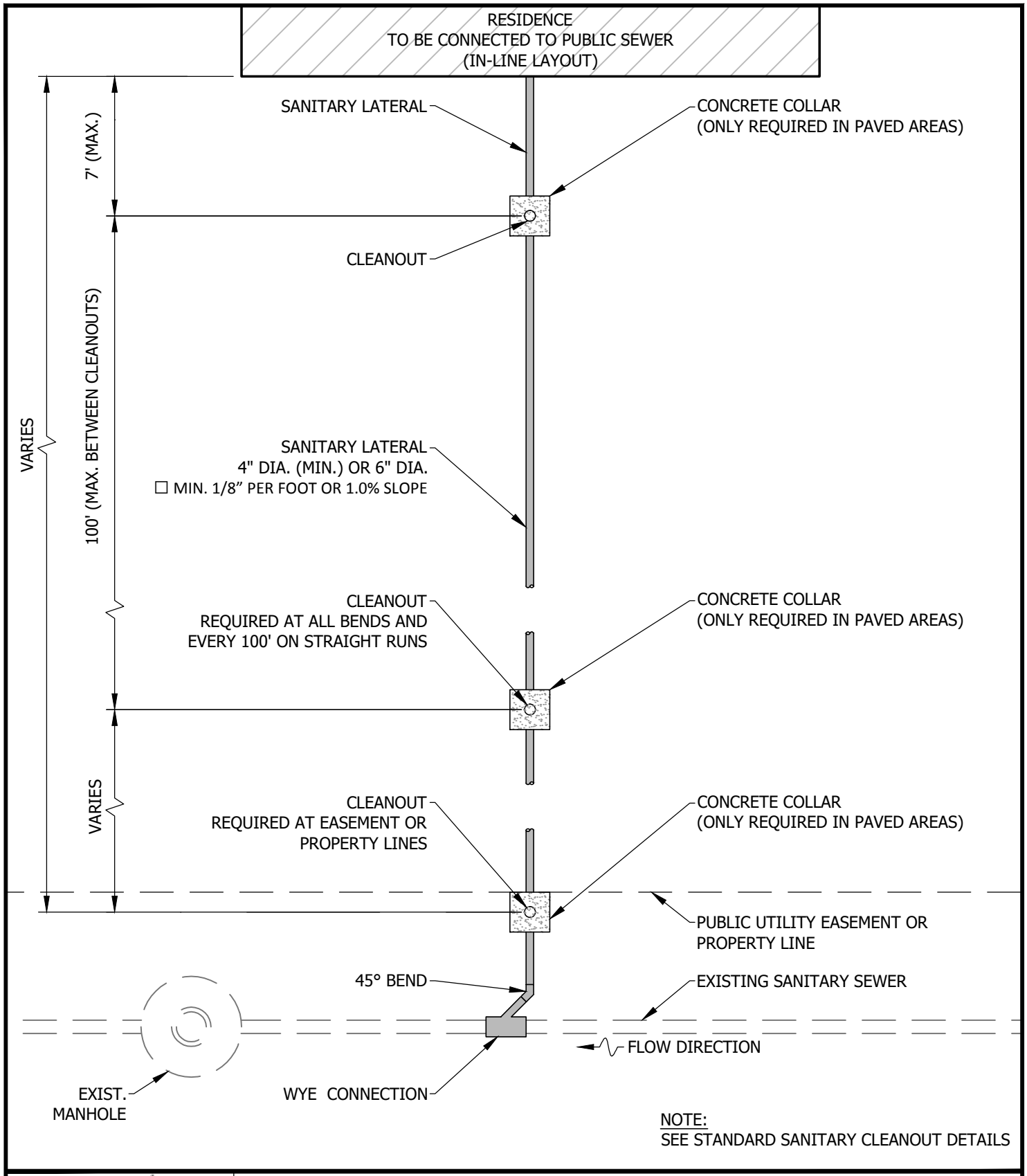
WATER AND SEWER UTILITY

NON-RIGID SANITARY SEWER PIPE BEDDING AND BACKFILL MORE THAN 5' FROM PAVEMENT

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-16
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



File: J:\ENGINEER\AUTOCAD\Standards\Detail Drawings\Sewer\WW-17 Lateral Sewer Connection Layout (Residential).dwg

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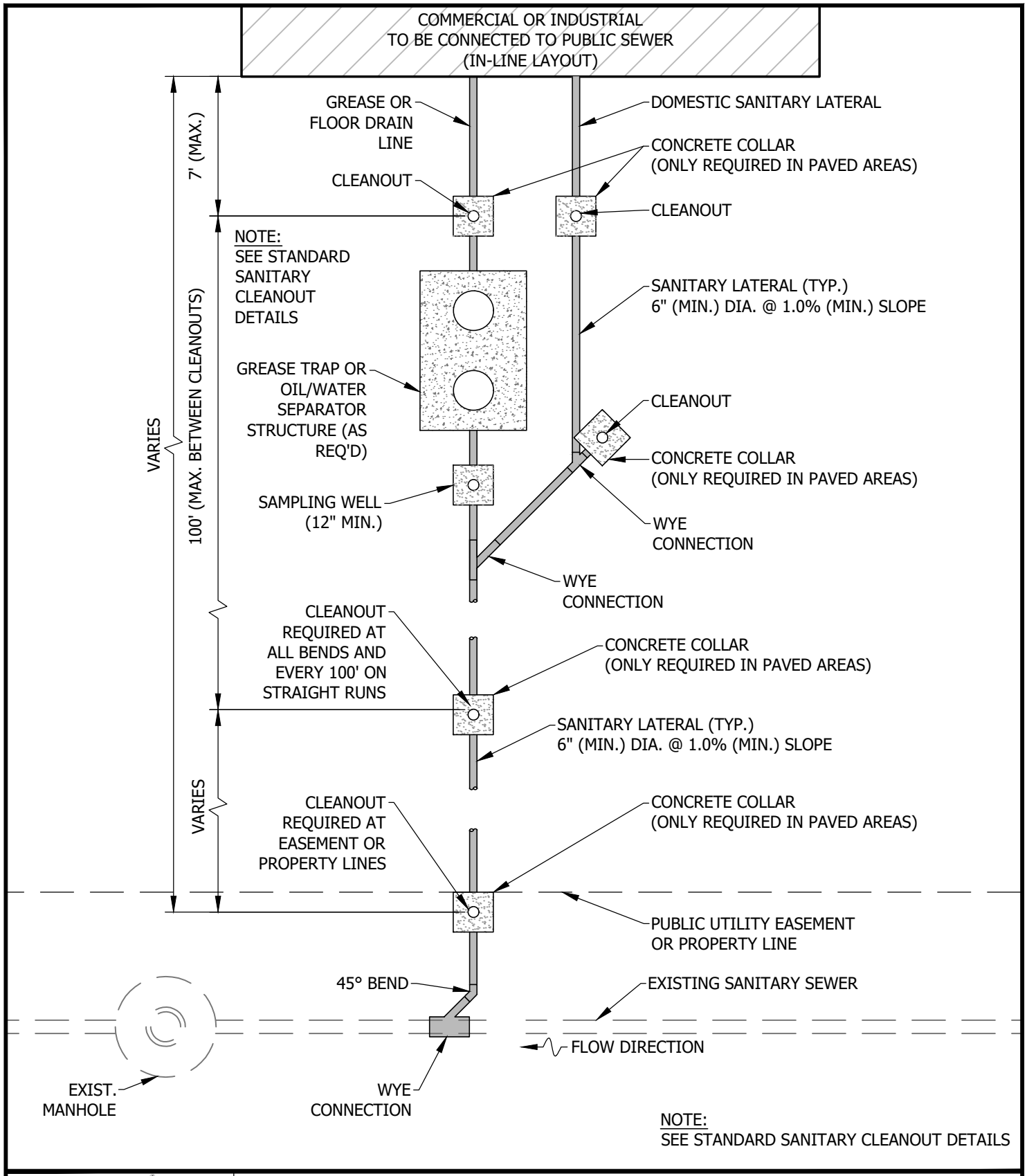
LATERAL SEWER CONNECTION LAYOUT (RESIDENTIAL)

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-17
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



File: J:\ENGINEER\AUTOCAD\Standards\Detail Drawings\Sewer\WW-18R Lateral Sewer Connection Layout (Commercial).dwg

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February 28, 2017

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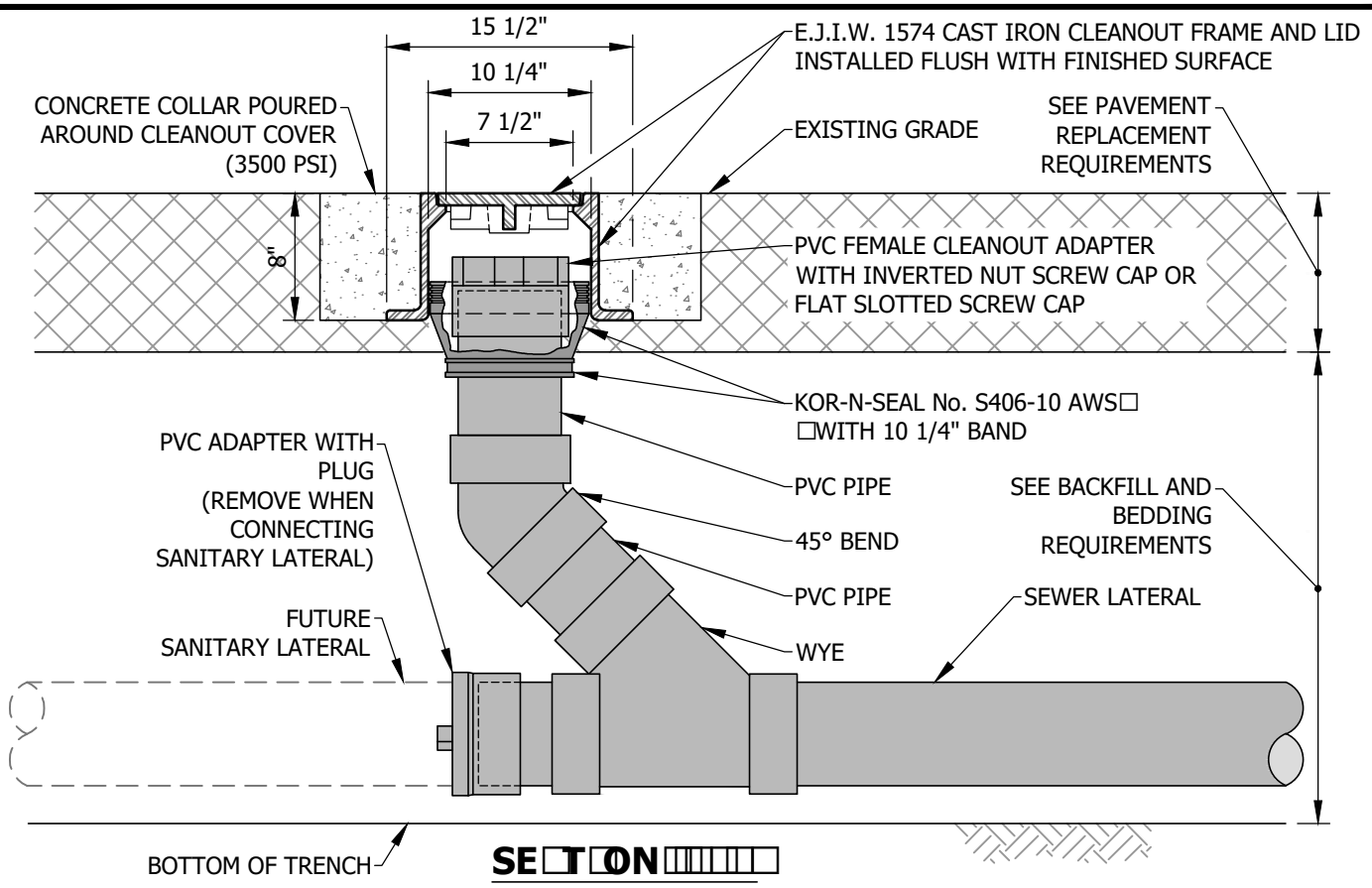
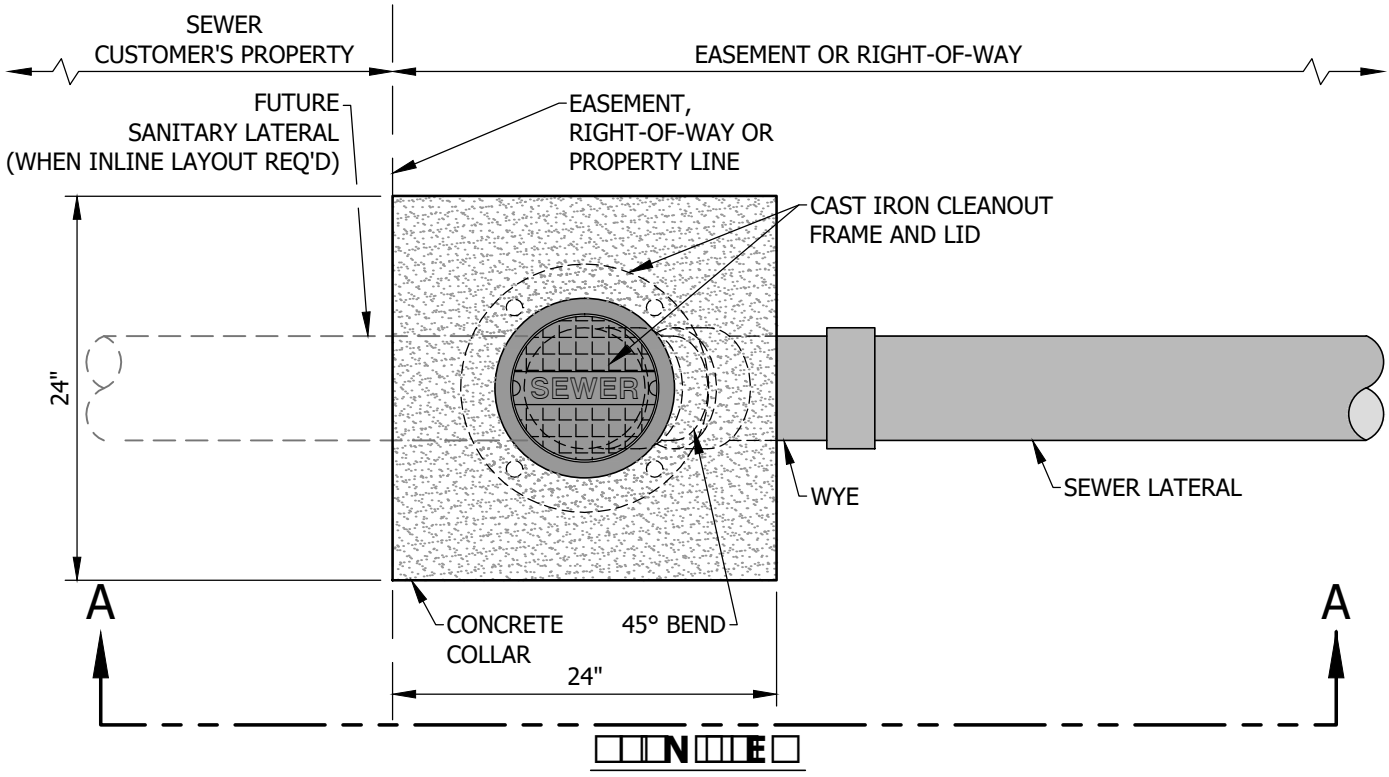
WATER AND SEWER UTILITY

LATERAL SEWER CONNECTION LAYOUT (COMMERCIAL)

Approved:	02/28/17	Adopted: 02/28/17	Figure WW-18
Approved By:	Michael D. Labitzke, P.E.	Scale: N.T.S.	





File: J:\ENGINEER\AUTOCAD\Standards\Detail Drawings\Sewer\WW-19 Standard Sanitary Cleanout in in Pave□ent.dwg

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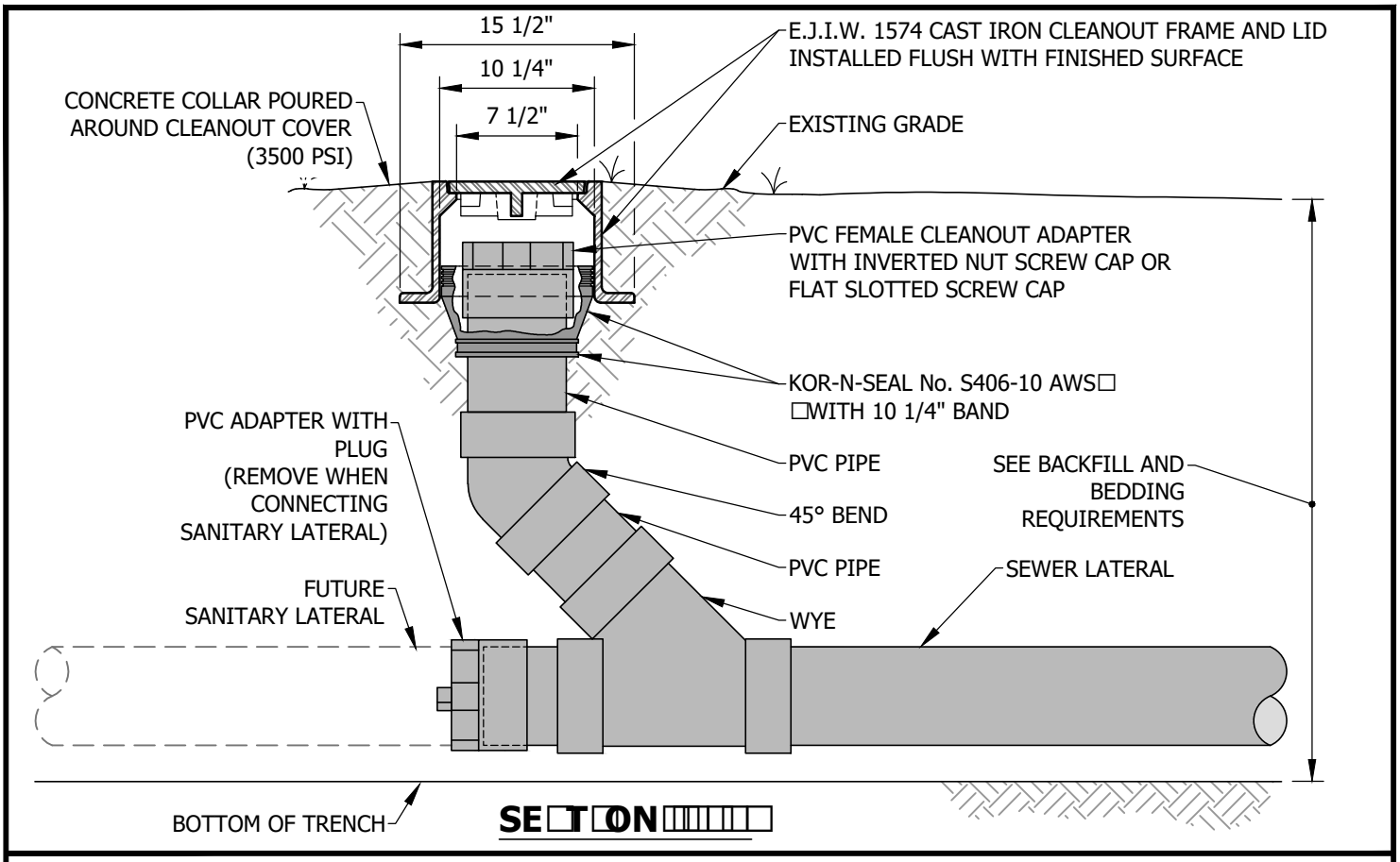
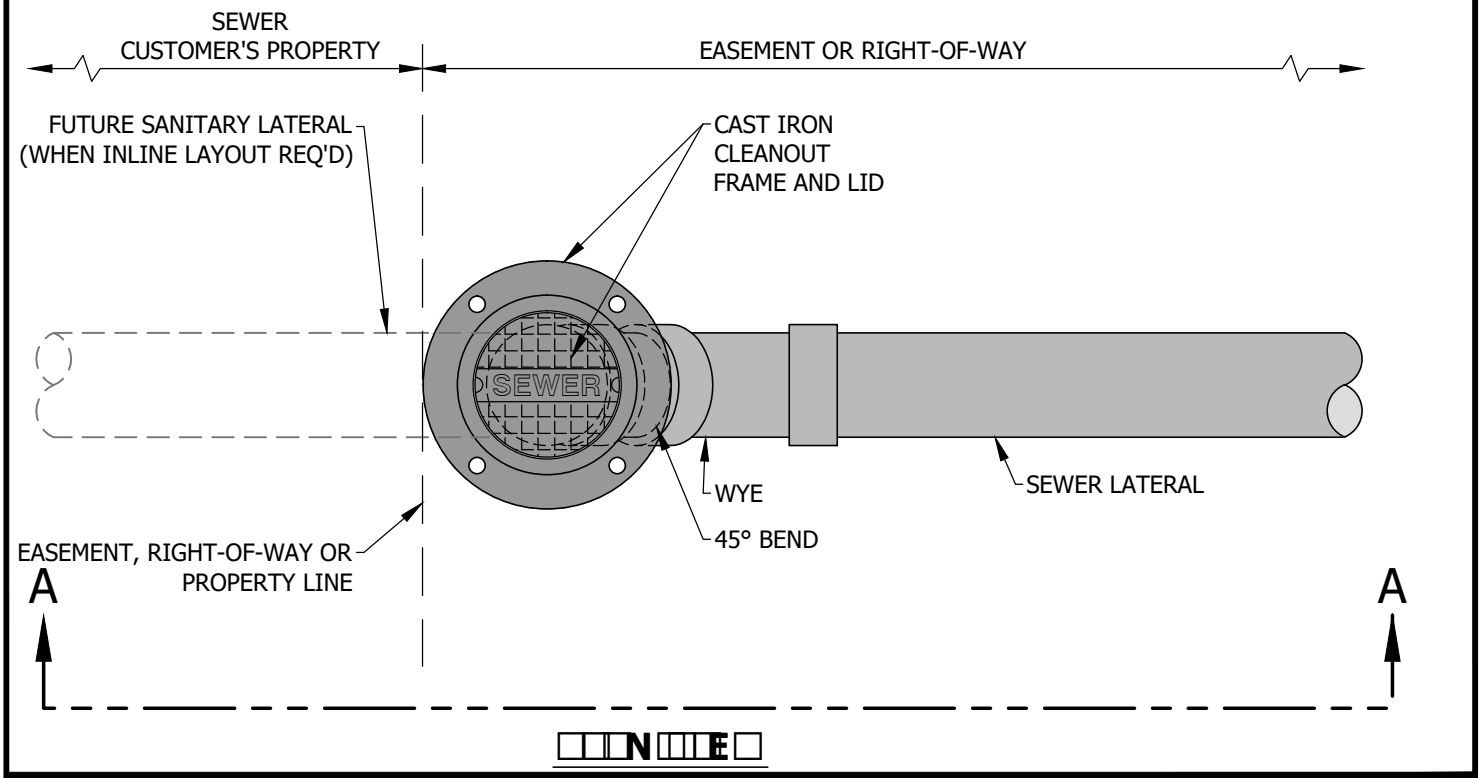
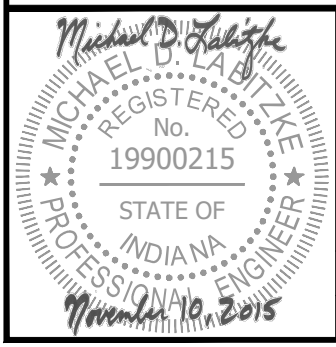
STANDARD SANITARY CLEANOUT IN PAVED AREAS

Approved:	11/10/15	Adopted: 11/10/15	Figure WW-19
Approved By:	Michael D. Labitzke, P.E.	Scale: N.T.S.	







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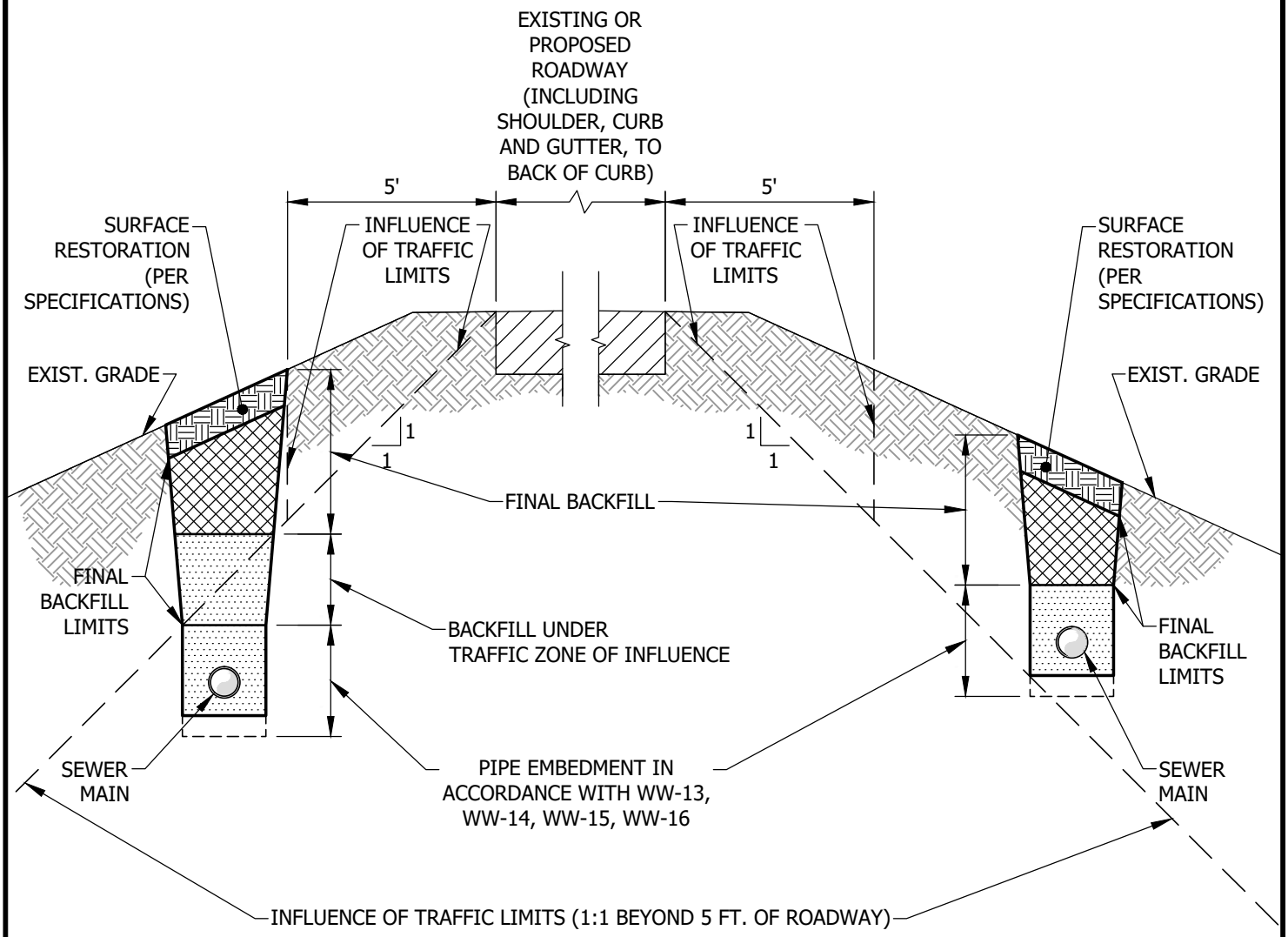
WATER AND SEWER UTILITY

STANDARD SANITARY CLEANOUT IN UN-PAVED AREAS

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-20
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



NOTES:

1. BEDDING AND BACKFILL SHALL CONFORM TO DETAILS WW-13, WW-14, WW-15, WW-16.
2. FOR SEWERS GREATER THAN FIVE FEET FROM THE EDGE OF EXISTING OR PROPOSED ROADWAY, ANY PORTION OF THE TRENCH BELOW THE ZONE OF TRAFFIC INFLUENCE SHALL BE BACKFILLED IN ACCORDANCE WITH THE STREET JURISDICTION REQUIREMENTS.

File: J:\ENGINEER\AUTOCAD\Standards\Detail Drawings\Sewer\WW-21-Final Backfill and Traffic Influence Detail.dwg

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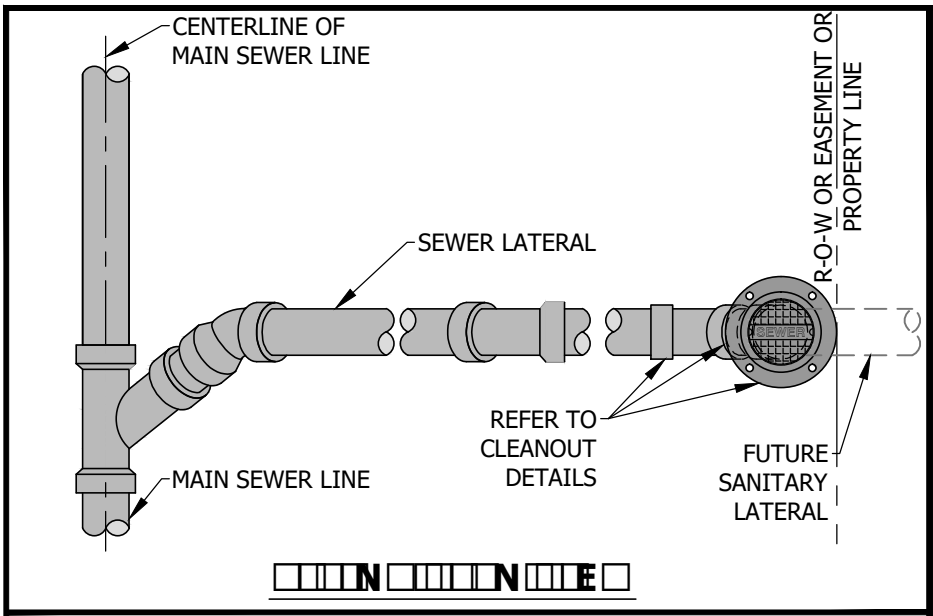
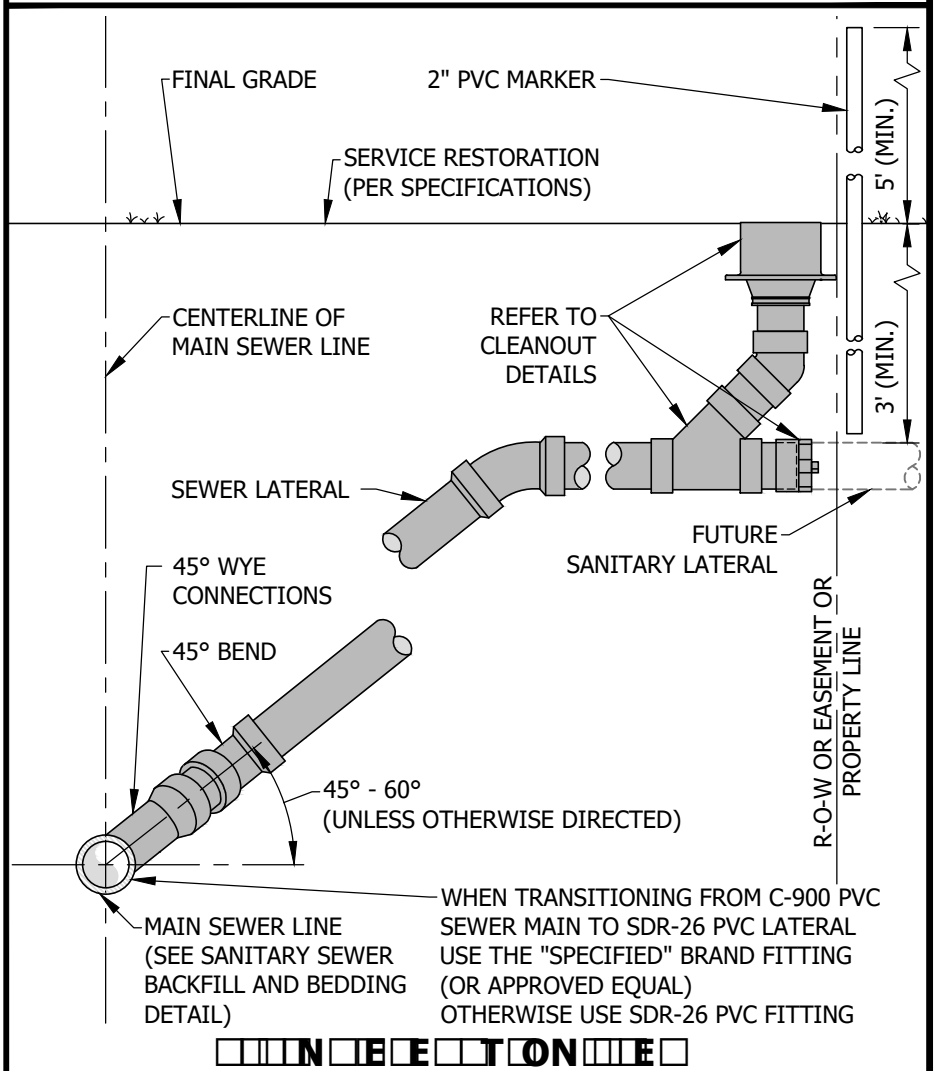
November 10, 2015

Evansville WATER AND SEWER UTILITY

FINAL BACKFILL AND TRAFFIC INFLUENCE DETAIL

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-21
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	





NOTES:

1. NORMAL LATERAL SLOPE IS 1/4" PER FOOT, MINIMUM LATERAL SLOPE IS 1/8" PER FOOT.

2. MINIMUM COVER IS 3 FEET OVER PIPE.

3. ADDITIONAL CLEANOUT REQUIRED AT RIGHT-OF-WAY WHERE LATERAL CROSSES ROADWAY.

4. MINIMUM LATERAL SIZE FROM SEWER MAIN TO PROPERTY LINE CLEANOUT IS 6".

5. WITH SEWER UTILITY APPROVAL, DEEP SEWER SLANT STACK MAY BE INSTALLED MAY REQUIRE ADDITIONAL EASEMENT.

CONTRACTOR SHALL PROVIDE "AS-BUILT" SERVICE CONNECTION TIE DOWN MEASUREMENTS TO THE OWNER, ENGINEER, AND PROPERTY OWNER.

File: J:\ENGINEER\AUTOCAD\Standards\Detail Drawings\Sewer\WW-22 Shallow Sanitary Service Connection.dwg

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November 10, 2015

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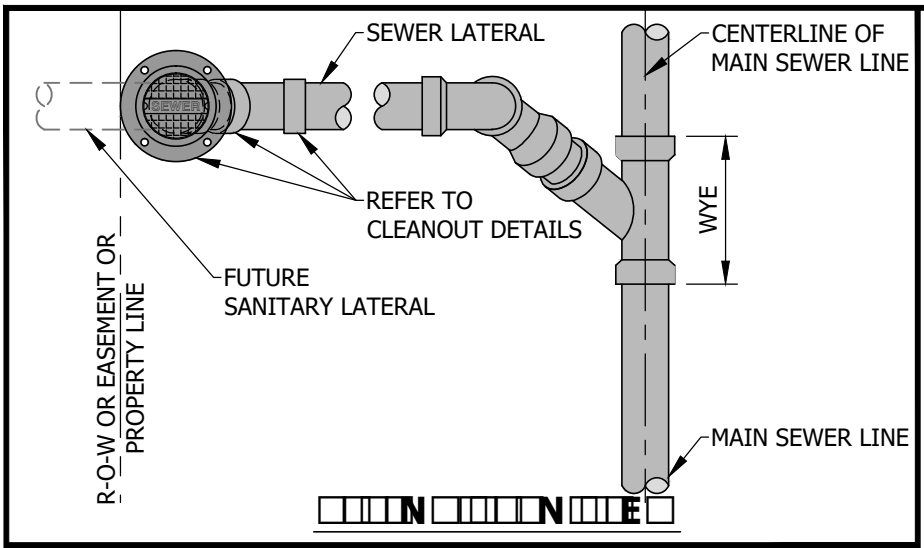
SHALLOW SANITARY SERVICE CONNECTION

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-22
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



NOTES:

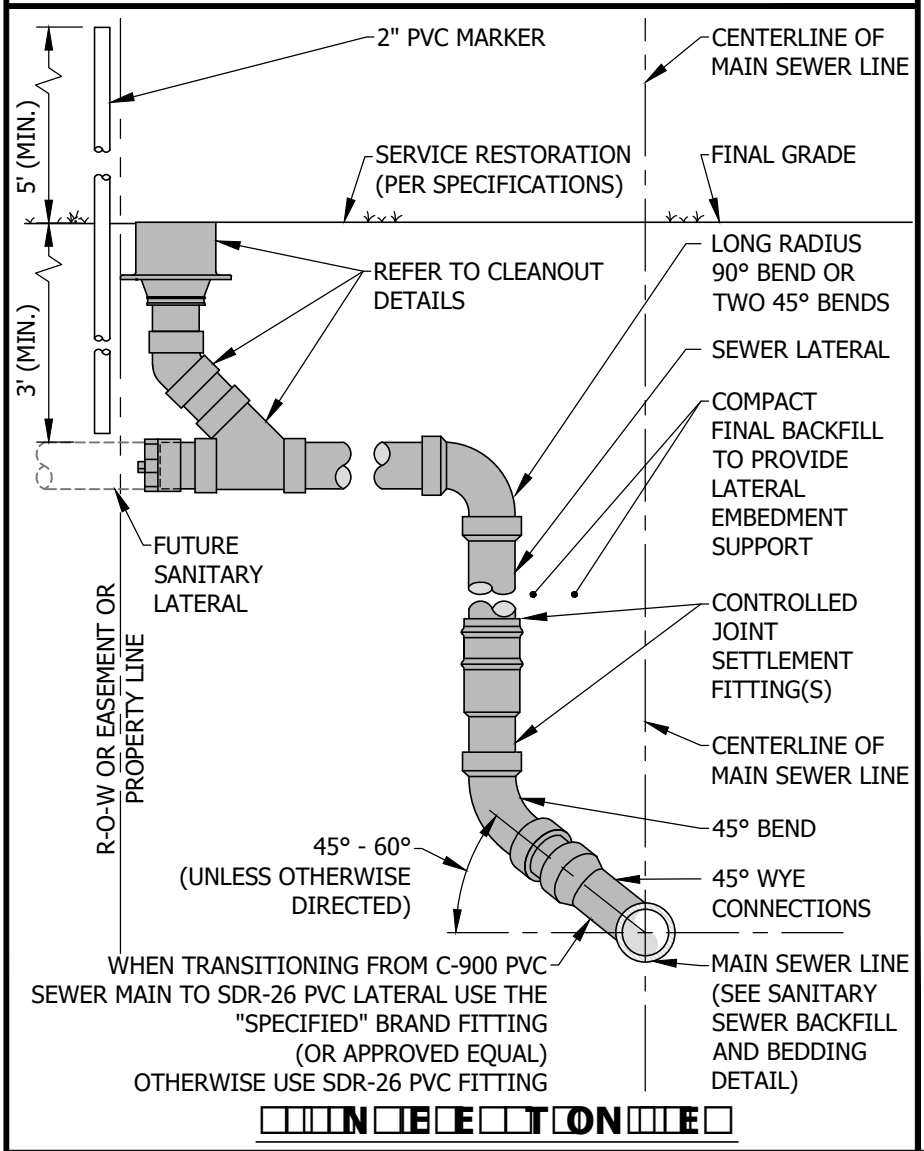
1. NORMAL LATERAL SLOPE IS 1/4" PER FOOT, MINIMUM LATERAL SLOPE IS 1/8" PER FOOT.

2. MINIMUM COVER IS 3 FEET OVER PIPE.

3. ADDITIONAL CLEANOUT REQUIRED AT RIGHT-OF-WAY WHERE LATERAL CROSSES ROADWAY.

4. . MINIMUM LATERAL SIZE FROM SEWER MAIN TO PROPERTY LINE CLEANOUT IS 6".

5. WITH SEWER UTILITY APPROVAL, DEEP SEWER SLANT STACK MAY BE INSTALLED MAY REQUIRE ADDITIONAL EASEMENT.



CONTRACTOR SHALL PROVIDE "AS-BUILT" SERVICE CONNECTION TIE DOWN MEASUREMENTS TO THE OWNER, ENGINEER, AND PROPERTY OWNER.

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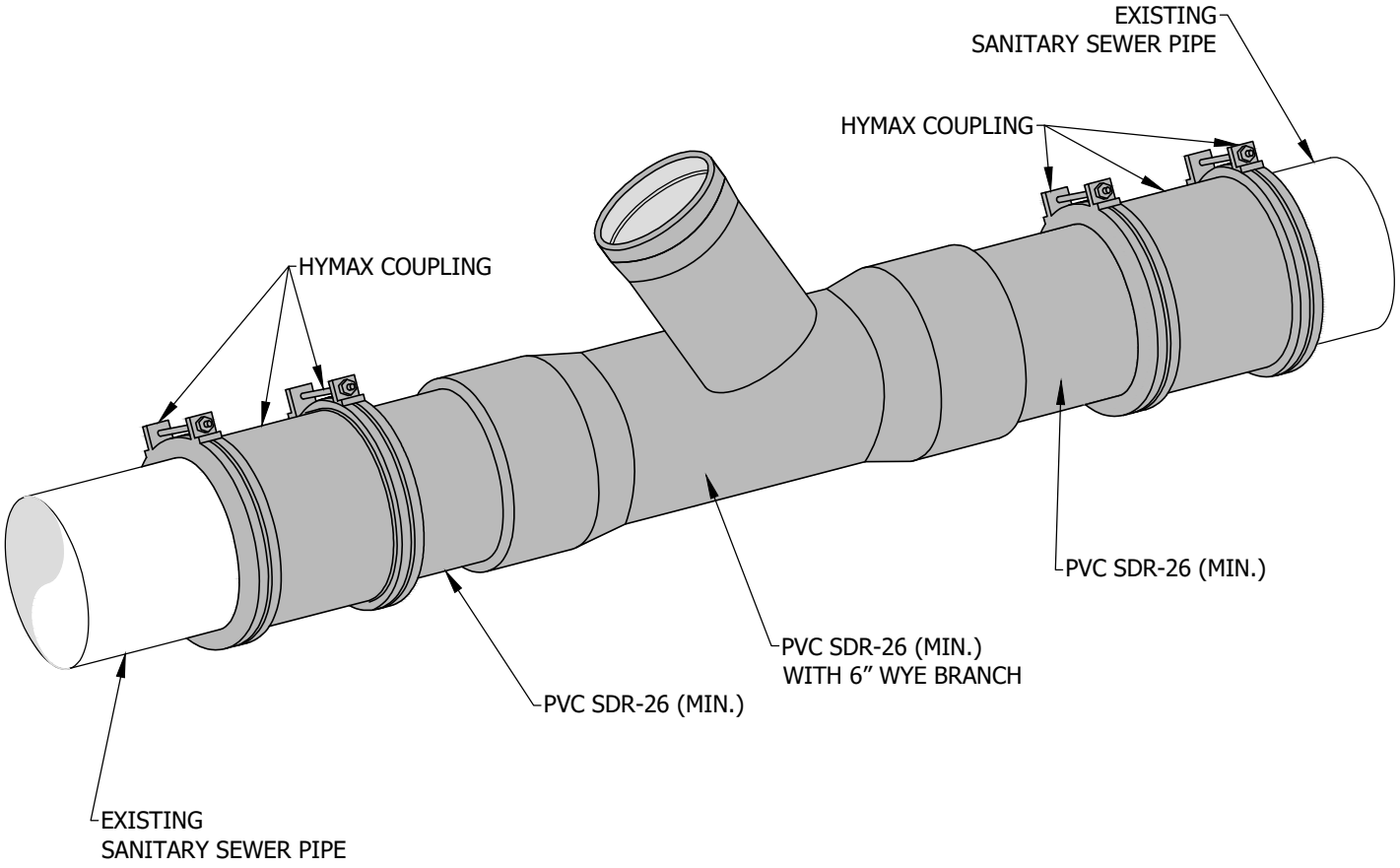
WATER AND SEWER UTILITY

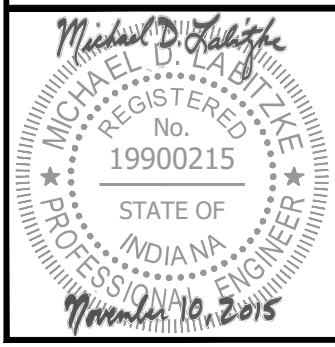
DEEP SANITARY SERVICE CONNECTION

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-23
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	



COUPLING NOTES:

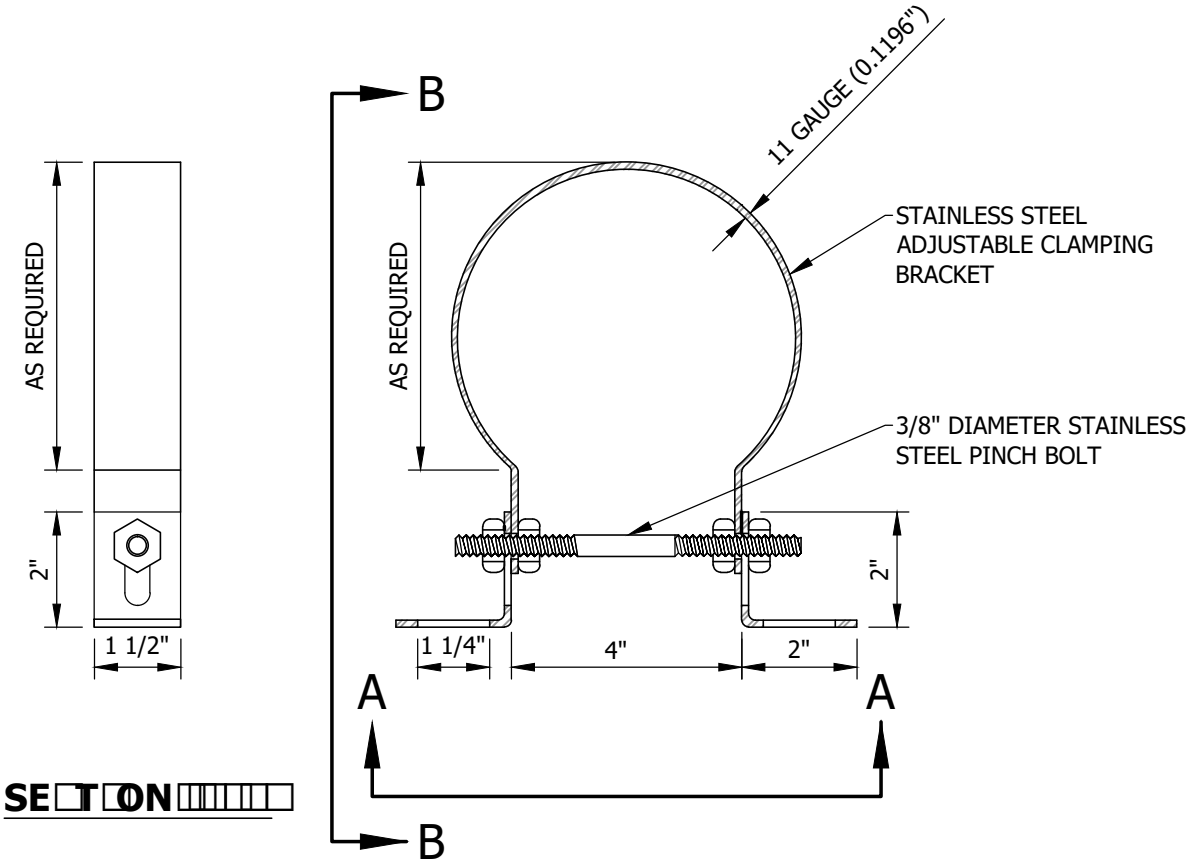
1. FOR COUPLINGS OF 12" AND LESS IN DIAMETER, THE PIPES MUST BE INSERTED A MINIMUM OF 2.25" INTO THE COUPLING. FOR COUPLINGS OF 14" TO 24", THE PIPES MUST BE INSERTED A MINIMUM OF 4" INTO THE COUPLING.
2. FOR PIPES LARGER THAN 24" DIAMETER, SEE SPECIAL DETAIL.

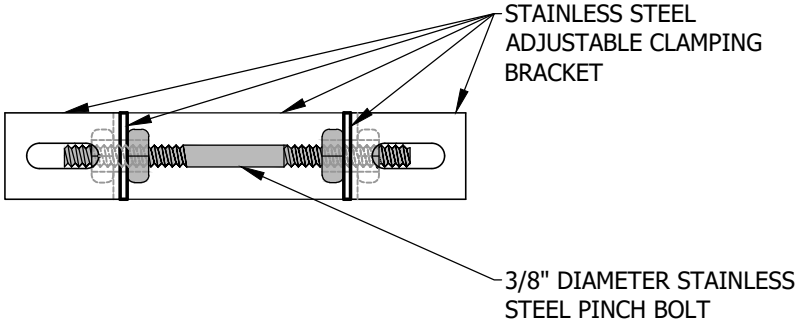


Evansville
WATER AND SEWER UTILITY

SANITARY SERVICE CONNECTION TO EXISTING PIPE

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-24
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	





SPECIFICATIONS:

1) CLAMP AND BRACKETS IS TYPE 304 STAINLESS STEEL, 11 GAUGE (.1196").
2) 3/8" ⌀ PINCH BOLT AND NUTS IS TYPE 18-8 STAINLESS STEEL.

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INSIDE DROP STAINLESS STEEL ADJUSTABLE CLAMPING BRACKET

Approved: 11/10/15		Adopted: 11/10/15	Figure WW-25
Approved By: Michael D. Labitzke, P.E.		Scale: N.T.S.	