

NOTE:

1. THE FIRE HYDRANT LATERAL, GATE VALVE, AND FIRE HYDRANT BARREL SHALL BE ENCASED IN POLYETHYLENE ENCASEMENT UP TO FINISHED GRADE PER SPECIFICATION 15130 PRIOR TO BACKFILL. THE POLYETHYLENE ENCASEMENT SHALL NOT INTERFERE WITH THE DRAIN HOLE.
2. WHEN INSTALLED BEHIND CURB, PUMPER AND HOSE NOZZLES TO BE AT LEAST 18"-24", DEPENDING ON LOCAL REQUIREMENTS, FROM FACE OF CURB.

FIRE HYDRANT DETAILS

N.T.S.

**INDIANA
AMERICAN WATER**
ENGINEERING DEPARTMENT
153 N. EMERSON AVENUE
GREENWOOD, INDIANA 46143

STANDARD DETAIL

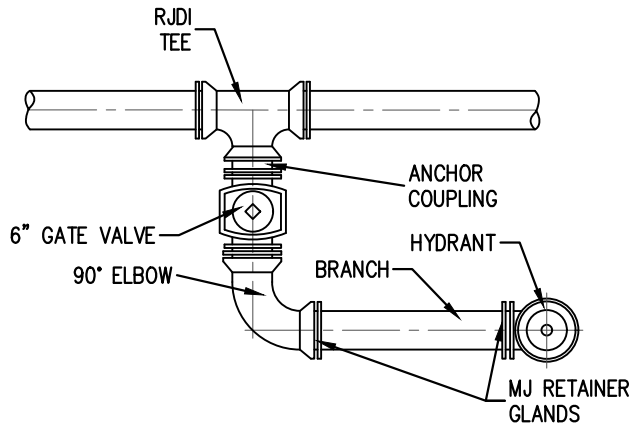
FIRE HYDRANT DETAIL

DATE: JANUARY, 2018

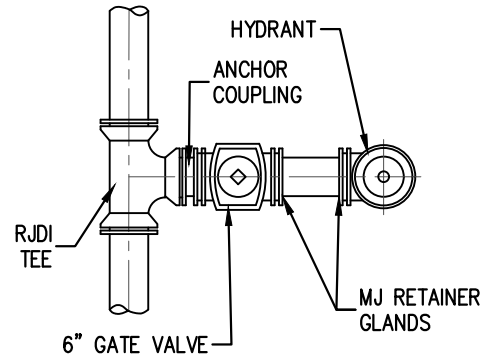
DRAWN BY: S. FORD

LATEST REV: JULY, 2018

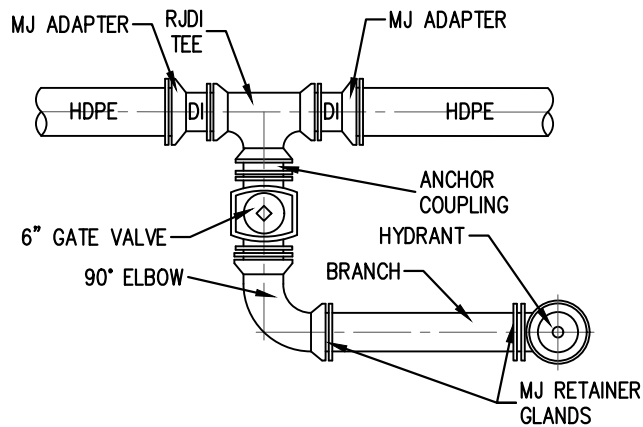
APP'D BY: E.N.



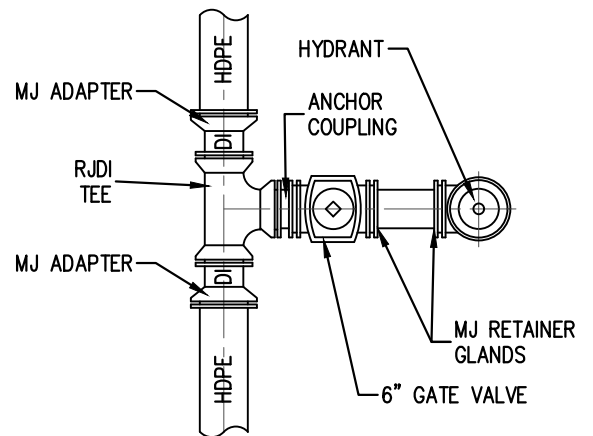
PARALLEL TO MAIN



PERPENDICULAR TO MAIN



PARALLEL TO HDPE MAIN



PERPENDICULAR TO HDPE MAIN

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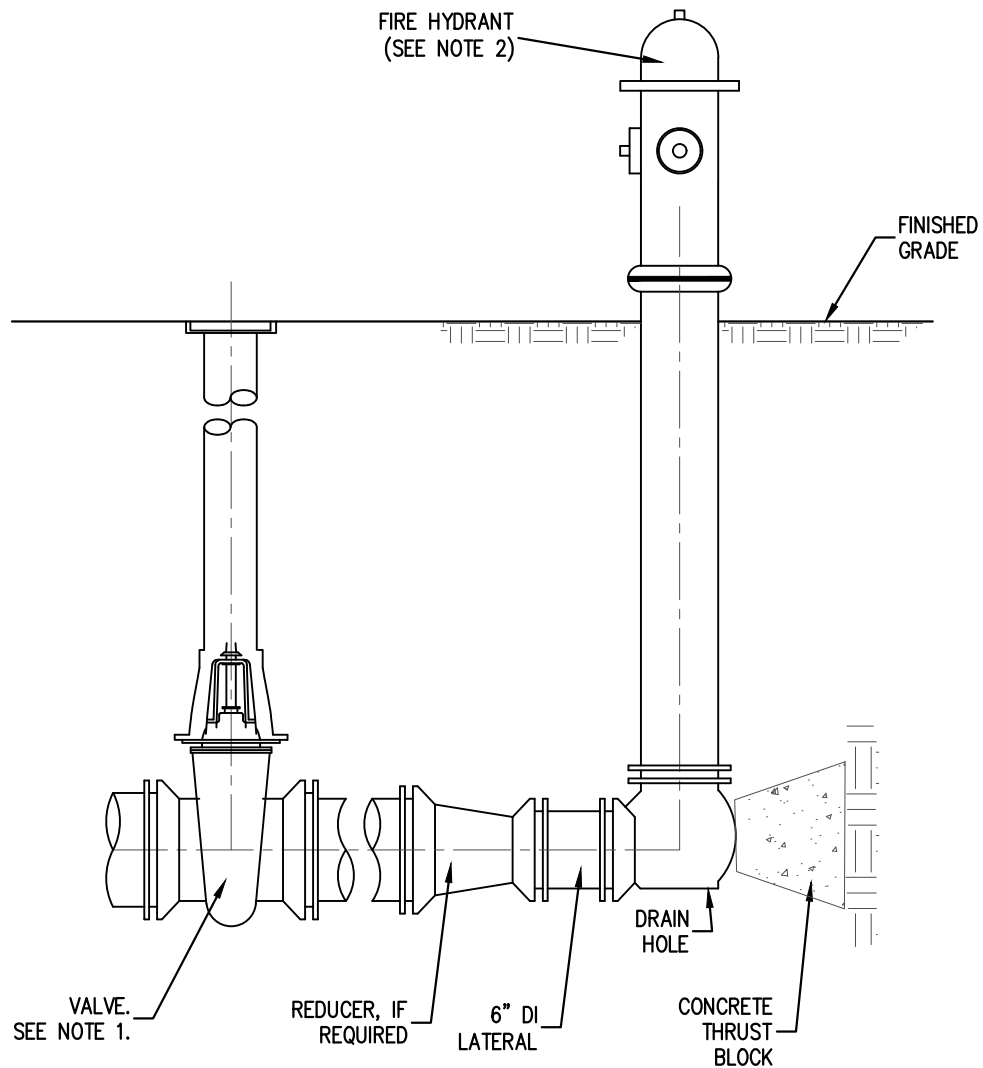
**FIRE HYDRANT
INSTALLATION DETAILS**

DATE: JANUARY, 2018

DRAWN BY: S. FORD

LATEST REV: JULY, 2018

APP'D BY: E.N.



SECTION

NOTE:

1. RESTRAIN VALVE AS A DEAD-END.
2. INSTALL FIRE HYDRANT PER INSTALLATION STANDARD DETAIL. HYDRANT AUXILIARY VALVE NOT REQUIRED.

TEMPORARY DEAD-END FIRE HYDRANT

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**TEMPORARY DEAD-END
FIRE HYDRANT DETAIL**

DATE: JANUARY, 2018

DRAWN BY: S. FORD

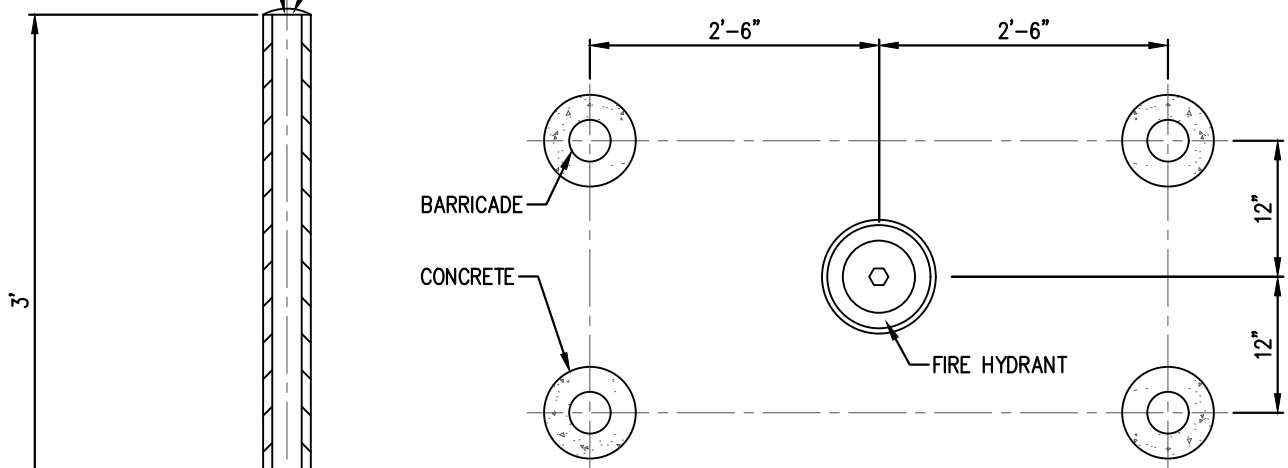
LATEST REV: JULY, 2018

APP'D BY: E.N.

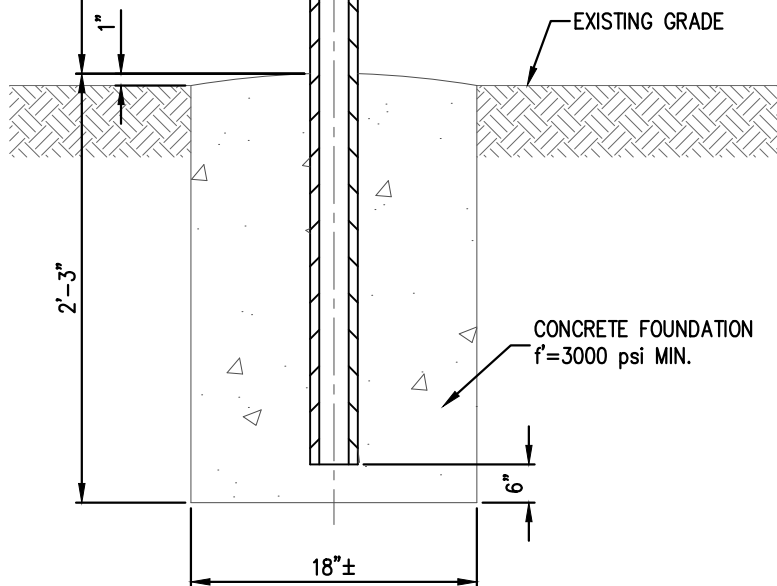
6" SCH. 80 STEEL, OR
DI PIPE.
PAINT SAFETY
YELLOW (2 COATS).
FILL WITH CONCRETE.

CONCRETE CAP.
WASH SMOOTH.

STREET
(NO CONCRETE CURB)



PLAN



SECTION

NOTES:

1. SEE PLANS FOR No. OF BOLLARDS TO BE USED.
2. THE BOLLARDS ABOVE GROUND SHALL BE PAINTED WITH PRIMER COAT.
3. TWO (2) FINISH COATS OF "SAFETY YELLOW" SHALL BE USED FOR BOLLARDS.
4. DO NOT LOCATE DIRECTLY ABOVE MAIN OR HYDRANT LATERAL.
5. SHALL BE ORIENTED SO AS TO AVOID DISRUPTING HYDRANT OPERATION.

FIRE HYDRANT PROTECTION-PIPE BOLLARD DETAIL

N.T.S.



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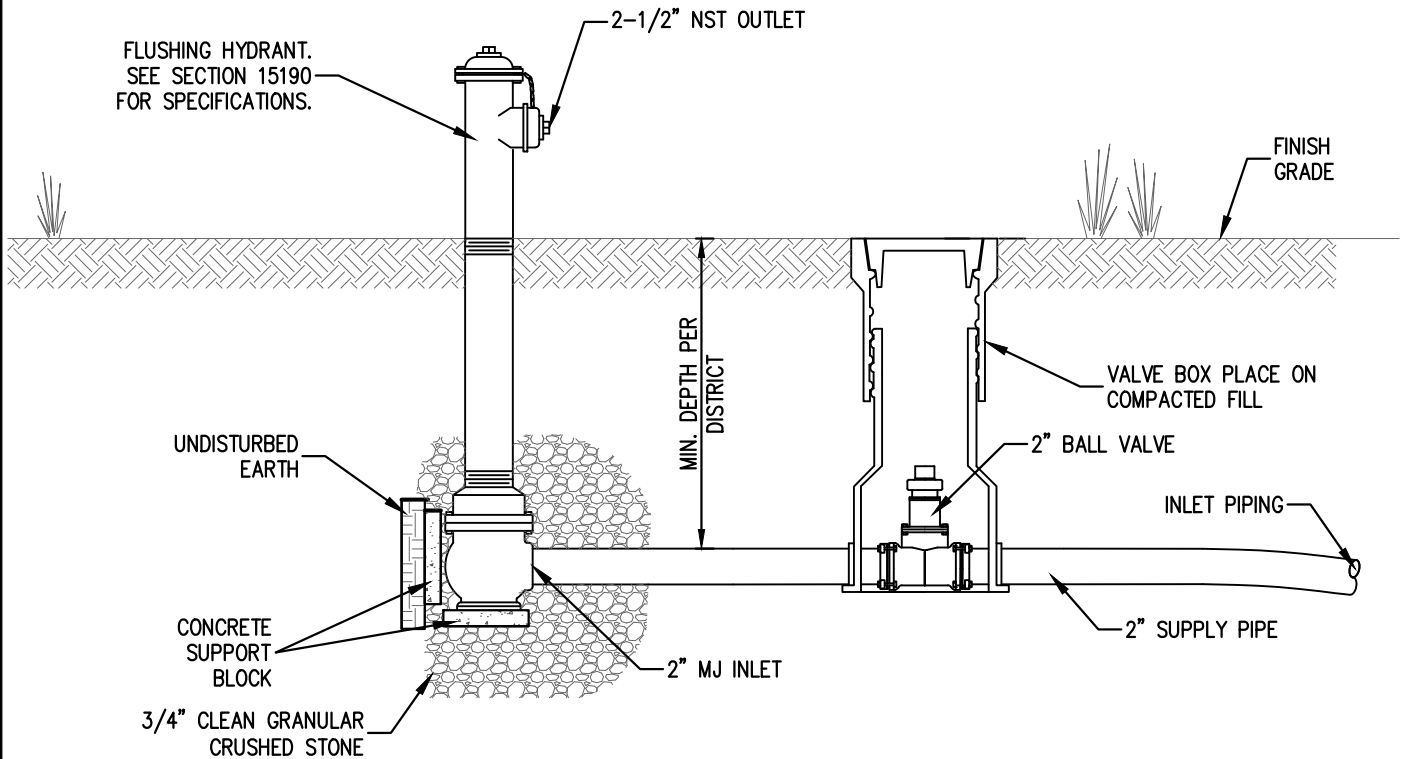
**FIRE HYDRANT PROTECTION-
PIPE BOLLARD DETAIL**

DATE: JANUARY, 2018

DRAWN BY: S. FORD

LATEST REV: JULY, 2018

APP'D BY: E.N.



NOTES:

1. HYDRANTS SHALL BE SELF-DRAINING, AND NON-FREEZING. INLET SHALL BE MJ. OUTLET SHALL BE 2-1/2" NST.
2. POLYETHYLENE ENCASING ON ALL DI PIPE WHERE REQUIRED.
3. ENCASE OR COAT BRASS AS NEEDED.

PERMANENT BLOWOFF ASSEMBLY DETAIL-ABOVE GRADE

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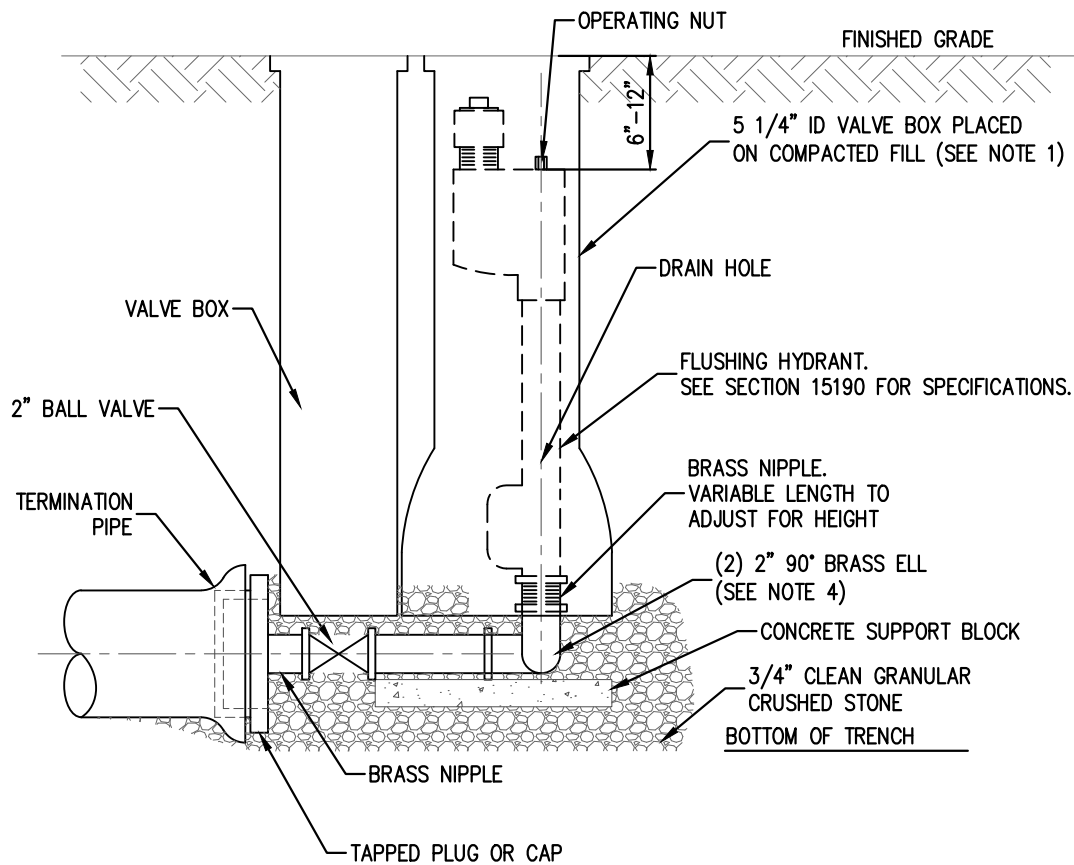
**PERMANENT BLOWOFF ASSEMBLY
DETAIL-ABOVE GRADE**

DATE: JANUARY, 2018

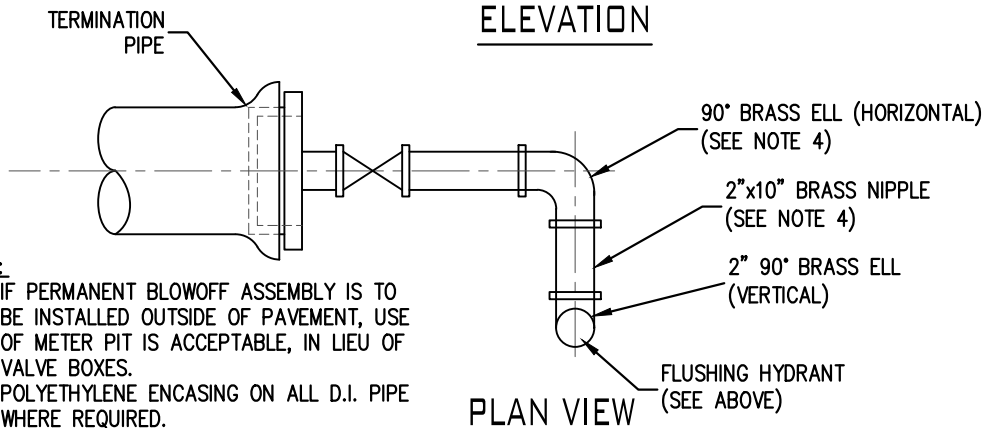
DRAWN BY: S. FORD

LATEST REV: JANUARY, 2018

APP'D BY: E.N.



ELEVATION



PLAN VIEW

NOTES:

1. IF PERMANENT BLOWOFF ASSEMBLY IS TO BE INSTALLED OUTSIDE OF PAVEMENT, USE OF METER PIT IS ACCEPTABLE, IN LIEU OF VALVE BOXES.
2. POLYETHYLENE ENCASING ON ALL D.I. PIPE WHERE REQUIRED.
3. ENCASE OR COAT BRASS AS NEEDED.
4. INSTALL BRASS PIPE AND FITTINGS AS REQUIRED TO PROPERLY POSITION FLUSHING HYDRANT.

PERMANENT BLOWOFF ASSEMBLY DETAIL-BELOW GRADE

N.T.S.



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STANDARD DETAIL

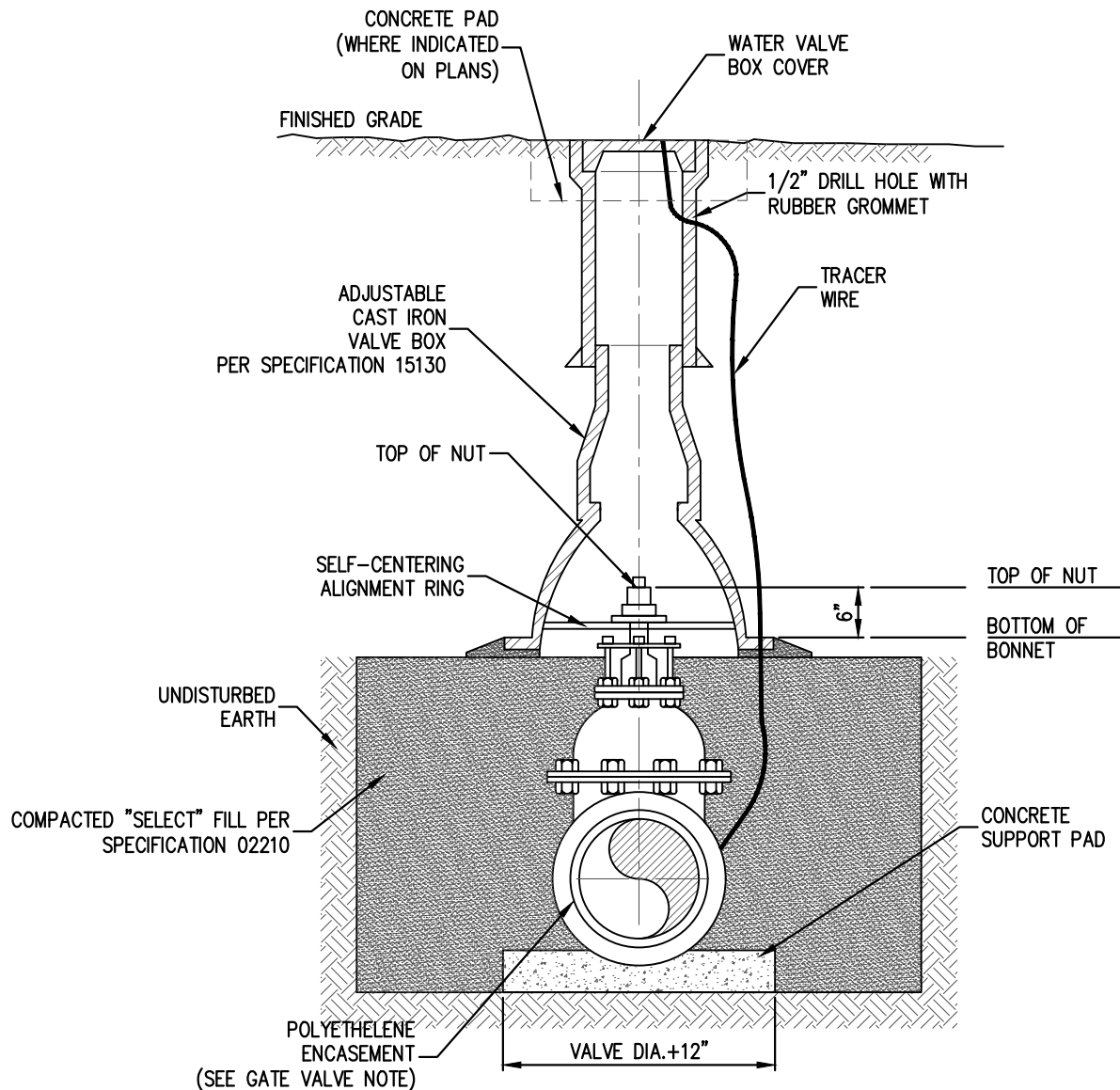
**PERMANENT BLOWOFF ASSEMBLY
DETAIL-BELOW GRADE**

DATE: JANUARY, 2018

DRAWN BY: S. FORD

LATEST REV: JULY, 2018

APP'D BY: E.N.



GATE VALVE (12" AND SMALLER)

N.T.S.

GATE VALVE NOTE

THE POLYETHELENE ENCASEMENT SHALL BE INSTALLED UP TO THE OPERATING NUT, AND OVER THE LOWER PORTION OF THE VALVE BOX, LEAVING THE OPERATING NUT EXPOSED AND FREE TO BE OPERATED WITHIN THE VALVE BOX.



STANDARD DETAIL

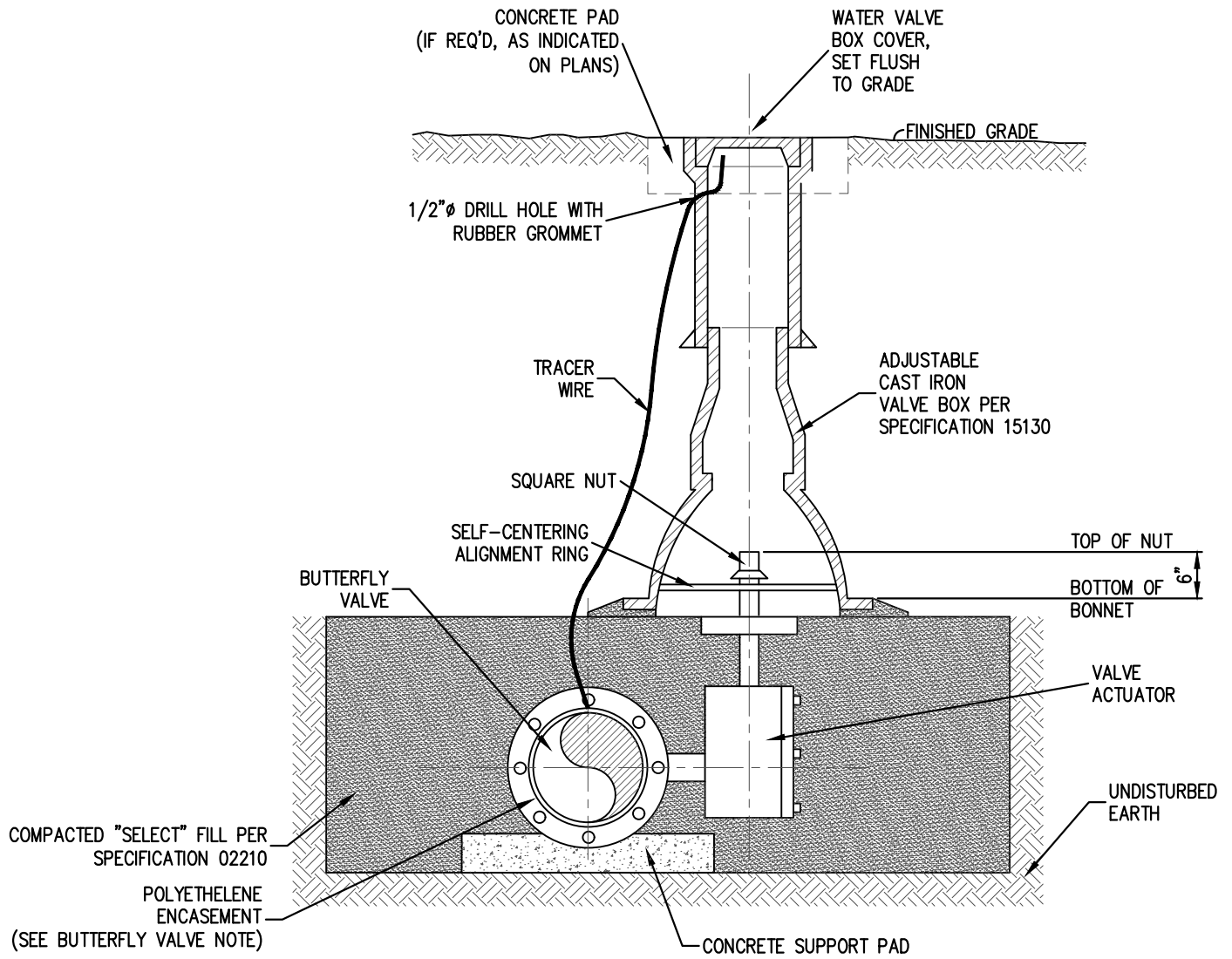
GATE VALVE (12" AND SMALLER)

DATE: JANUARY, 2018

DRAWN BY: S. FORD

LATEST REV: JANUARY, 2018

APP'D BY: E.N.



BUTTERFLY VALVE (16" AND LARGER)

BUTTERFLY VALVE NOTE
 THE POLYETHELENE ENCASEMENT SHALL BE
 INSTALLED UP TO THE OPERATING NUT, AND
 OVER THE LOWER PORTION OF THE VALVE BOX,
 LEAVING THE OPERATING NUT EXPOSED AND
 FREE TO BE OPERATED WITHIN THE VALVE BOX.

N.T.S.

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 ENGINEERING DEPARTMENT
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STANDARD DETAIL

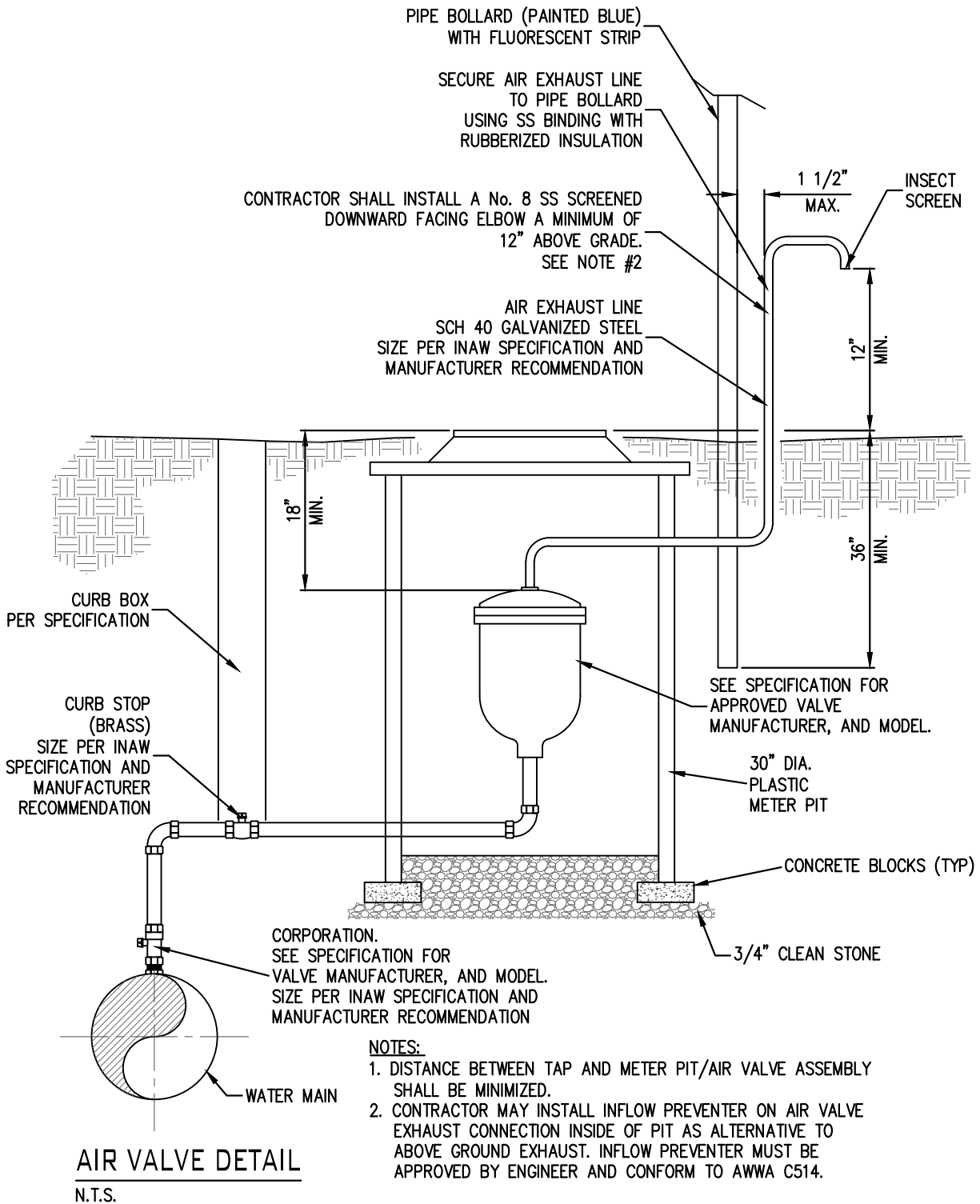
BUTTERFLY VALVE (16" AND LARGER)

DATE: JANUARY, 2018

DRAWN BY: S. FORD

LATEST REV: JANUARY, 2018

APP'D BY: E.N.



STANDARD DETAIL

AIR VALVE

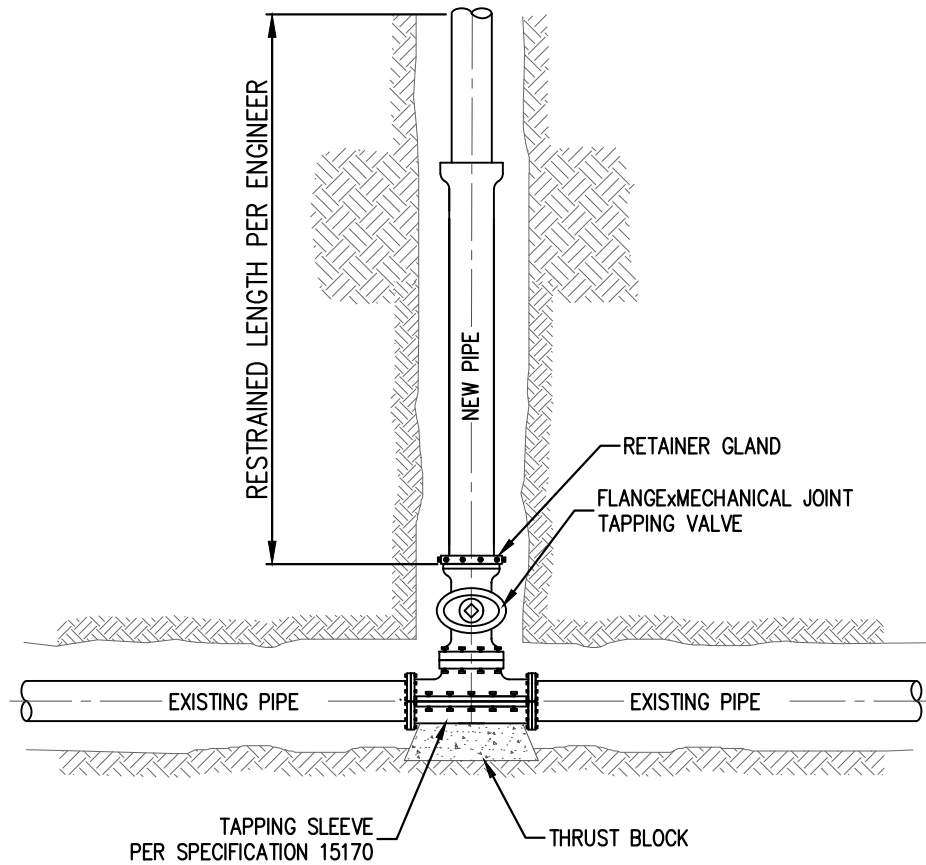


DATE: DECEMBER, 2018

DRAWN BY: S. FORD

LATEST REV: DECEMBER, 2018

APP'D BY: E.N.



NOTE:

1. RETAINER GLAND PER SPECIFICATION 15130.
2. TAPPING SLEEVE FOR HDPE PIPE MUST BE APPROVED FOR THE APPLICATION BY THE MANUFACTURER AND INAWC.

TAPPING SLEEVE AND TAPPING VALVE DETAIL

N.T.S.



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STANDARD DETAIL

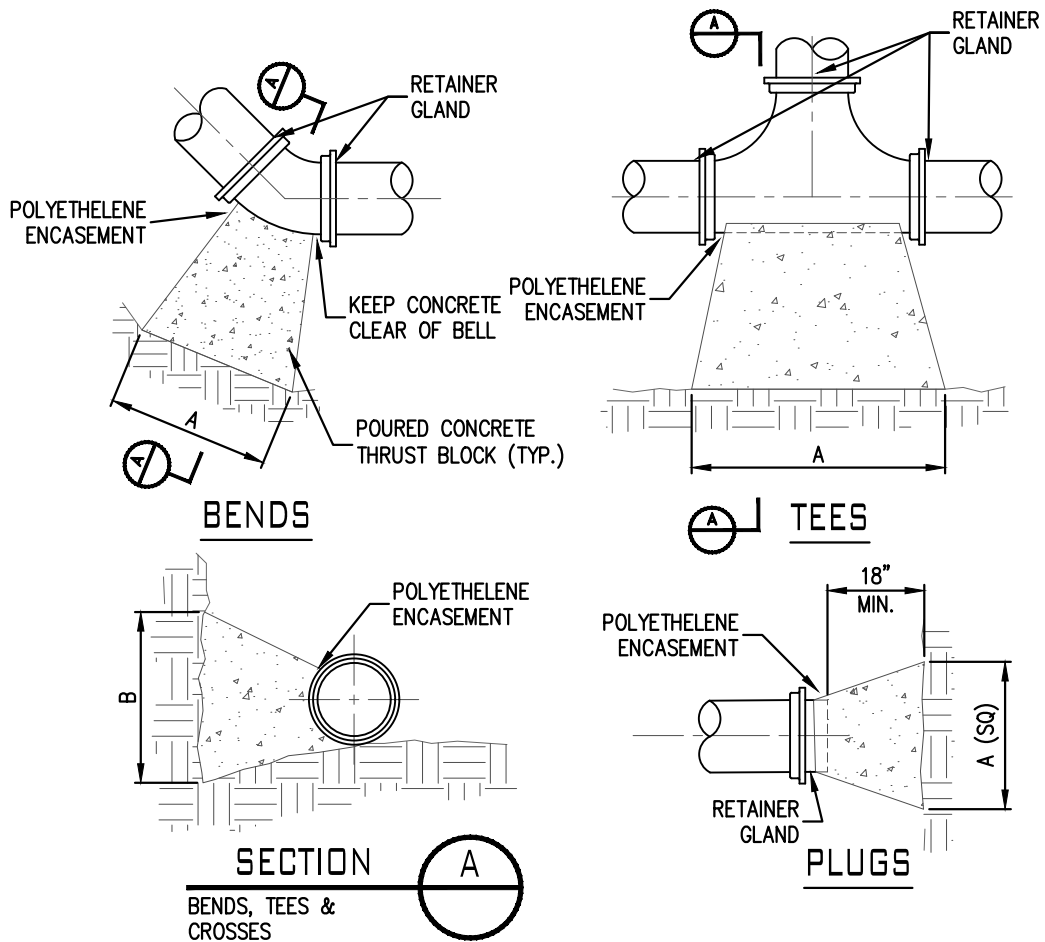
**TAPPING SLEEVE AND
TAPPING VALVE**

DATE: JANUARY, 2018

DRAWN BY: S. FORD

LATEST REV: JANUARY, 2018

APP'D BY: E.N.



THRUST BLOCK DETAIL

N.T.S.

NOTES:

1. THRUST BLOCK DIMENSIONS SHALL BE PROVIDED BY THE DESIGN ENGINEER.
2. THRUST BLOCKS SHALL BE INSTALLED AGAINST UNDISTURBED SOIL WITH ADEQUATE BEARING TO PREVENT MOVEMENT OF FITTING.
3. NO THRUST BLOCKS TO BE PLACED IN SEWER LATERAL DITCHES.
4. THRUST BLOCKING MUST FIT IN EASEMENT, IN SOME CASES ADDITIONAL RESTRAINT MAY BE REQUIRED.
5. DESIGN TO BE BASED ON 200 PSI HYDROSTATIC WATER PRESSURE (150 PSI STATIC PRESSURE PLUS 50 PSI WATER HAMMER).
6. INSTALL POLYETHYLENE ENCASEMENT ON ALL D.I. PIPE AND FITTINGS PRIOR TO POURING CONCRETE.
7. PIPE JOINTS AND BOLTS MUST BE ACCESSIBLE.
8. ALLOW SUFFICIENT CLEARANCE BETWEEN CONCRETE AND BOLTS FOR FUTURE MAINTENANCE.
9. ALL ANCHOR BOLTS SHALL BE CORROSION RESISTANT, AND SIZED PER SPECIFICATION.
10. THRUST BLOCKING DETAILS ARE SHOWN HERE FOR TYPICAL INSTALLATIONS. IN SOME CASES, ADDITIONAL RESTRAINT MAY BE REQUIRED.
11. CONCRETE USED FOR THRUST BLOCKS SHALL BE MIN 3000 PSI CONCRETE.
12. FOR UNSTABLE SOIL CONDITIONS, THE ENGINEER SHALL VERIFY THRUST BLOCK DIMENSIONS.



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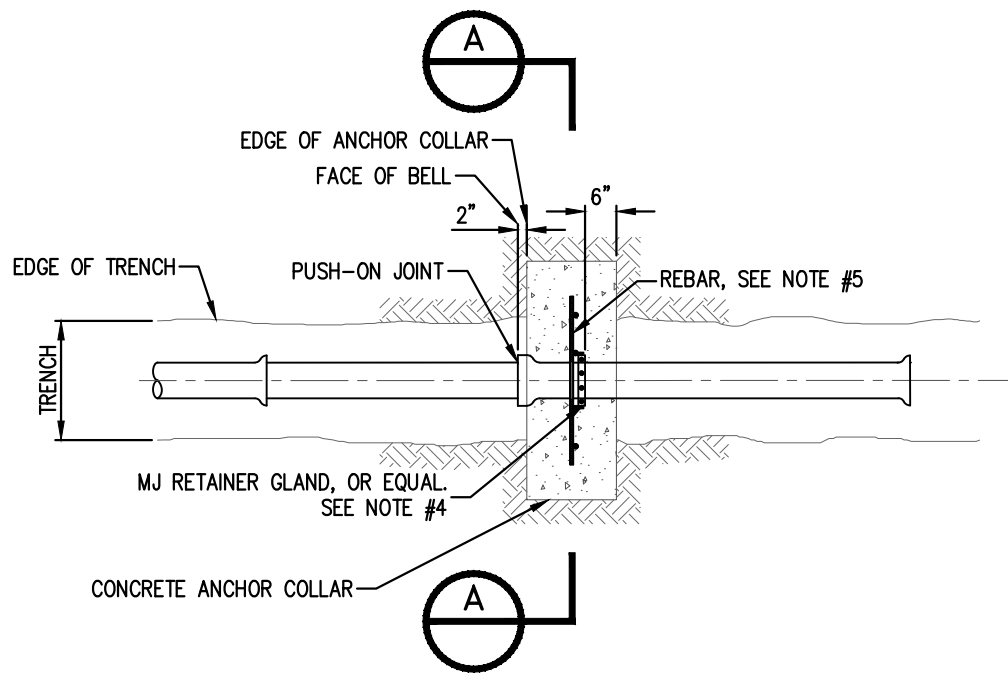
THRUST BLOCKS

DATE: JANUARY, 2018

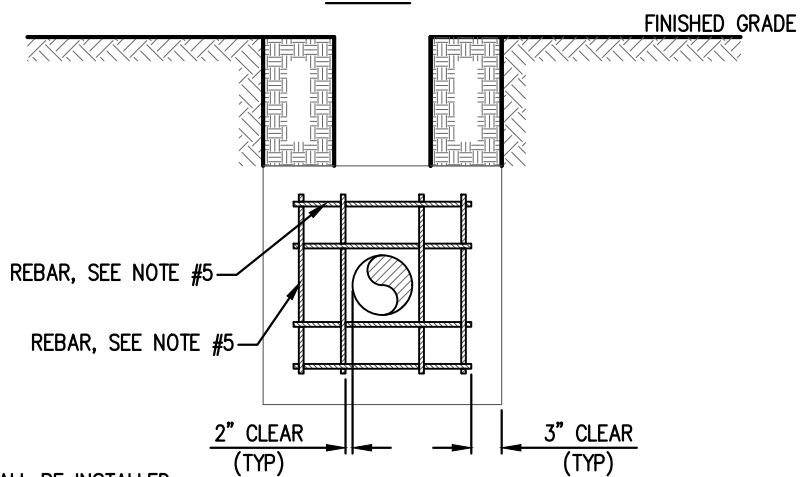
DRAWN BY: S. FORD

LATEST REV: JANUARY, 2018

APP'D BY: E.N.



PLAN



SECTION A-A

UNDISTURBED SOIL

ANCHOR COLLAR DETAIL

N.T.S.

NOTES:

1. CENTER BLOCK ON PIPE.
2. ONE RETAINER GLAND SHALL BE INSTALLED TOWARDS BELL.
3. DO NOT USE RESTRAINED JOINT GASKETS.
4. FOR HDPE PIPE, A WALL ANCHOR IS REQUIRED INSTEAD OF AN MJ RETAINER GLAND.
5. DIMENSION AND REBAR REQUIREMENTS TO BE DETERMINED BY DESIGN ENGINEER.

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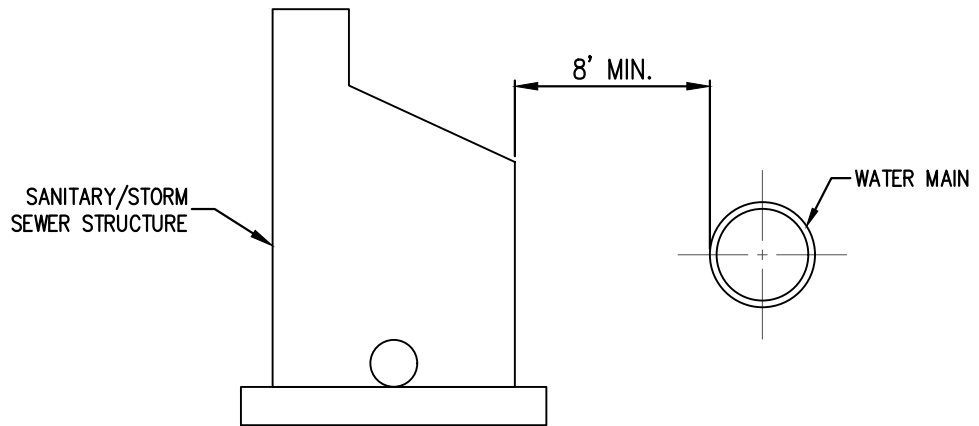
ANCHOR COLLAR DETAIL

DATE: JANUARY, 2018

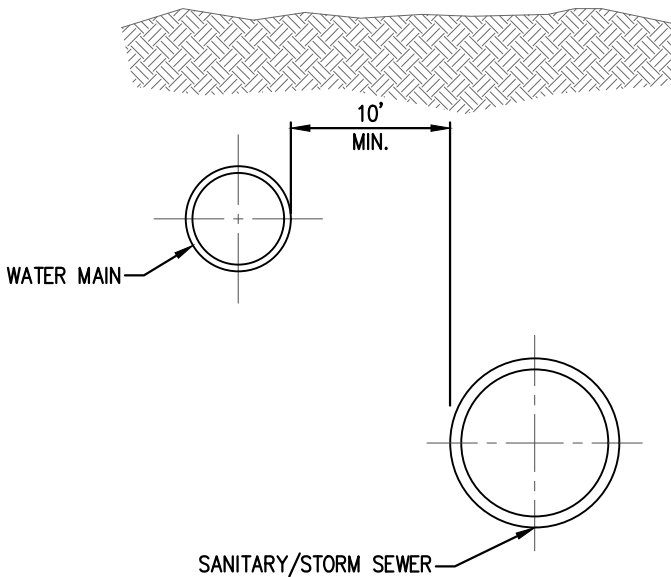
DRAWN BY: S. FORD

LATEST REV: JANUARY, 2018

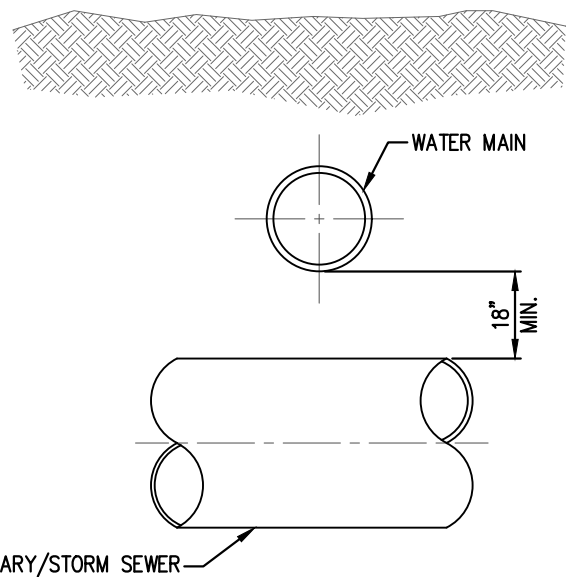
APP'D BY: E.N.



**HORIZONTAL OFFSET REQUIREMENTS
FOR SANITARY/STORM SEWER STRUCTURES**



HORIZONTAL OFFSET REQUIREMENTS



VERTICAL OFFSET REQUIREMENTS

BASIC SEPARATION REQUIREMENTS:

1. WATER MAINS AND SEWERS SHOULD BE SEPARATED AS FAR AS IS REASONABLE IN BOTH THE HORIZONTAL AND VERTICAL DIRECTIONS. THE STANDARD DEPTH OF COVER REQUIREMENTS PER COUNTY, AS SPECIFIED IN 327 IAC 8, SHALL BE MAINTAINED FOR ALL WATER MAIN CROSSINGS.
2. PARALLEL CONSTRUCTION: THE HORIZONTAL DISTANCE BETWEEN PRESSURE WATER MAINS AND SEWERS SHALL BE AT LEAST 10 FEET
3. PERPENDICULAR CONSTRUCTION (CROSSING): PRESSURE WATER MAINS SHALL BE AT LEAST 18" ABOVE SANITARY/STORM SEWERS WHERE THESE LINES MUST CROSS. THE CROSSING MUST BE AT A MINIMUM ANGLE OF 45 DEGREES.

**REQUIRED SEPARATION BETWEEN WATER MAINS
AND SANITARY/STORM SEWERS & STRUCTURES**

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GREENWOOD, INDIANA 46143

STANDARD DETAIL

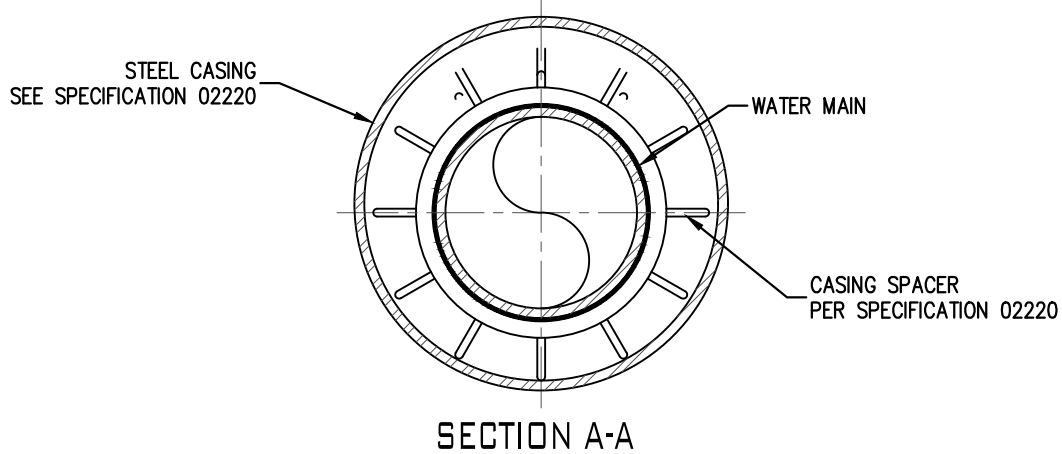
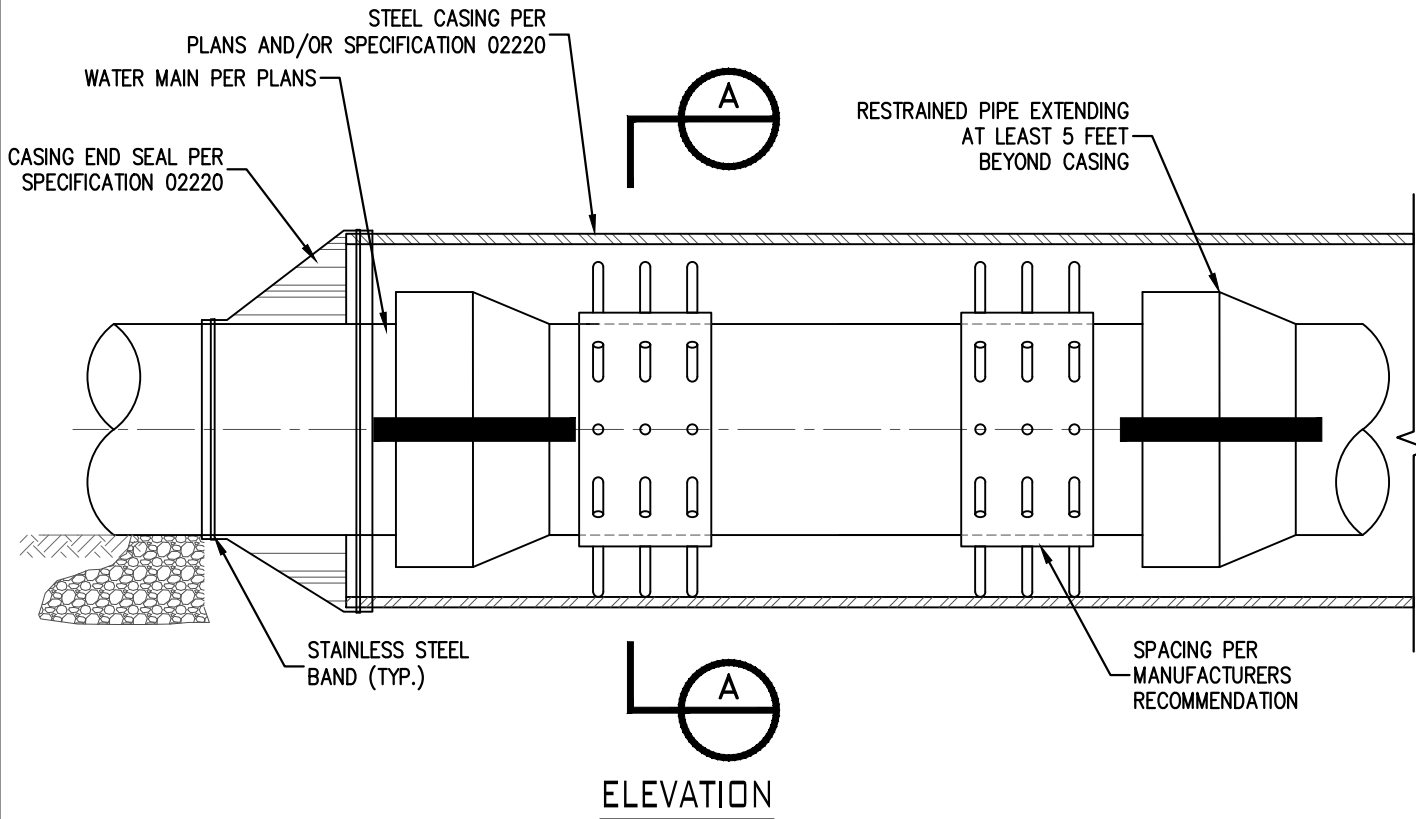
SEWER SEPARATION

DATE: JANUARY, 2018

DRAWN BY: S. FORD

LATEST REV: JULY, 2018

APP'D BY: E.N.



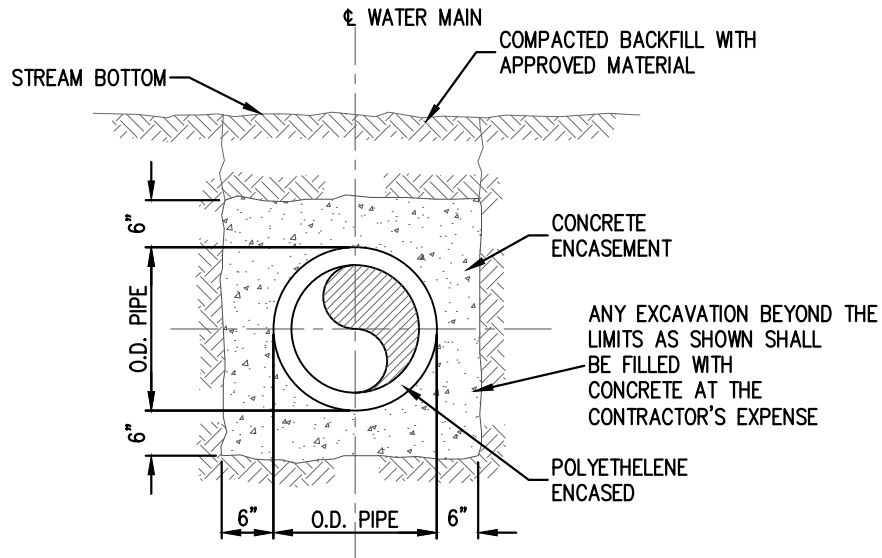
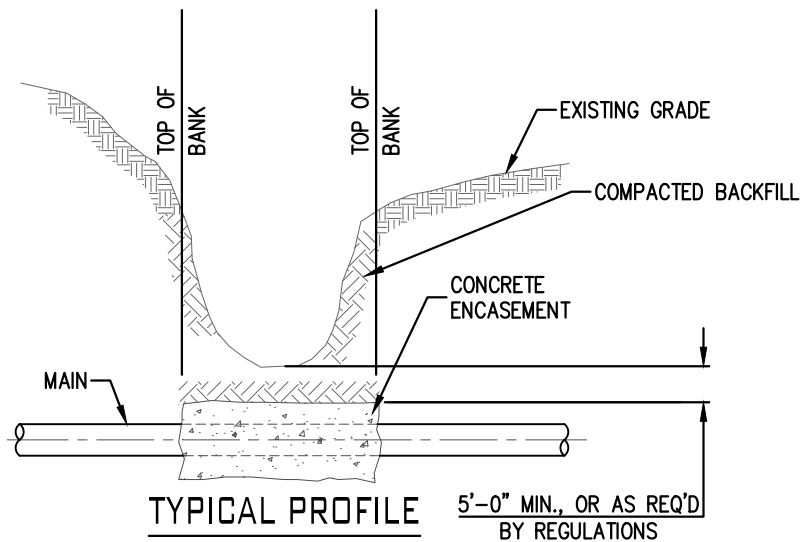
CASING INSTALLATION DETAIL

NOTE:
 WHERE STEEL CASING IS REQUIRED PER THE ALTERNATIVE TECHNICAL STANDARD, A MINIMUM OF 6 INCHES OF SEPARATION IS REQUIRED BETWEEN THE EXTERIOR OF THE CASING AND THE SEWER PIPE, OR STRUCTURE.

N.T.S.

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STANDARD DETAIL	
CASING INSTALLATION	
DATE: JANUARY, 2018	DRAWN BY: S. FORD
LATEST REV: JANUARY, 2018	APP'D BY: E.N.



NOTES:

1. MINIMUM ENCASEMENT LIMITS ARE SHOWN ON THE DRAWINGS. THE ACTUAL LIMITS SHALL BE DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION SUCH THAT THE ENCASEMENT TERMINATES AT A PIPE JOINT. THE JOINT SHALL BE FREE OF CONCRETE SO AS TO PROVIDE A FLEXIBLE JOINT.
2. REQUIRED COVER UNDER SMALL CREEKS, WASHES AND DRY STEADY BEDS SHALL BE PER LOCAL REQUIREMENTS.

MINOR STREAM CROSSING WITH CONCRETE ENCASEMENT DETAIL

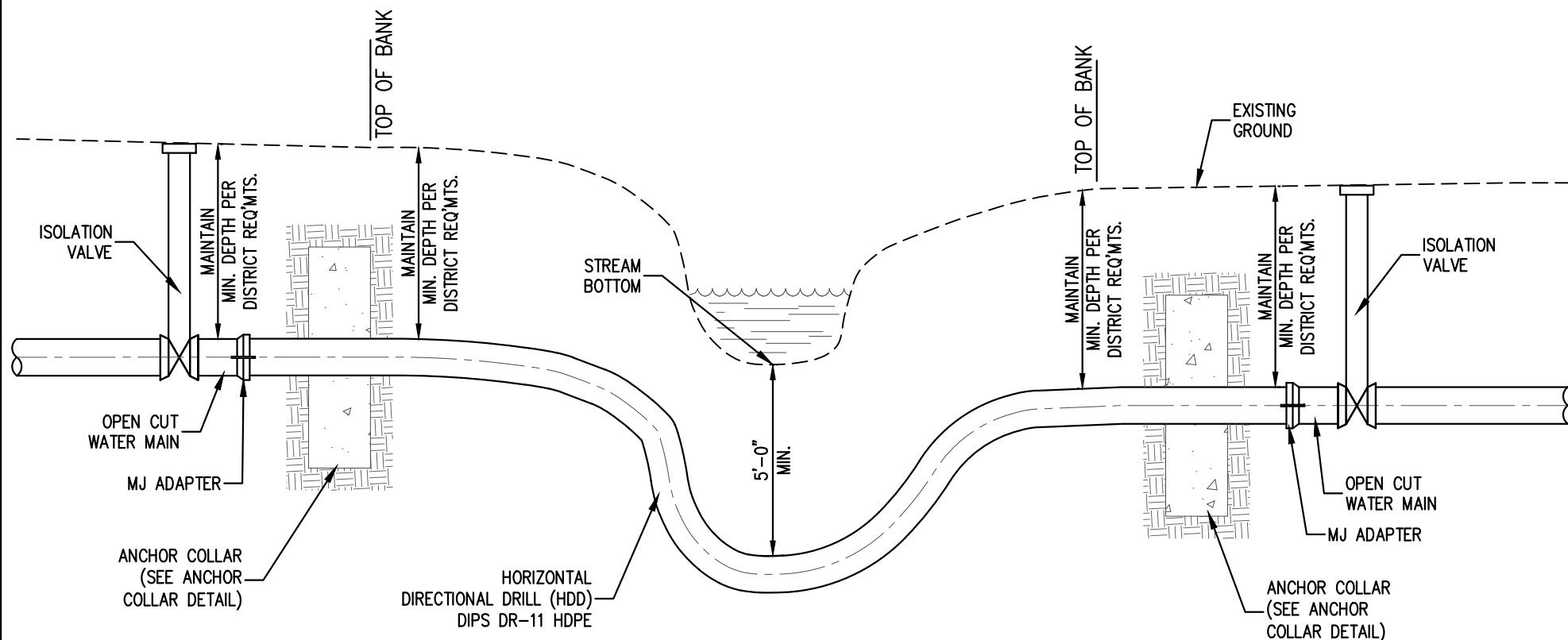
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153 N. EMERSON AVENUE
GREENWOOD, INDIANA 46143

STANDARD DETAIL

**MINOR STREAM CROSSING WITH
CONCRETE ENCASEMENT**

DATE: JANUARY, 2018	DRAWN BY: S. FORD
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STREAM CROSSING DETAIL - HORIZONTAL DIRECTIONAL DRILL

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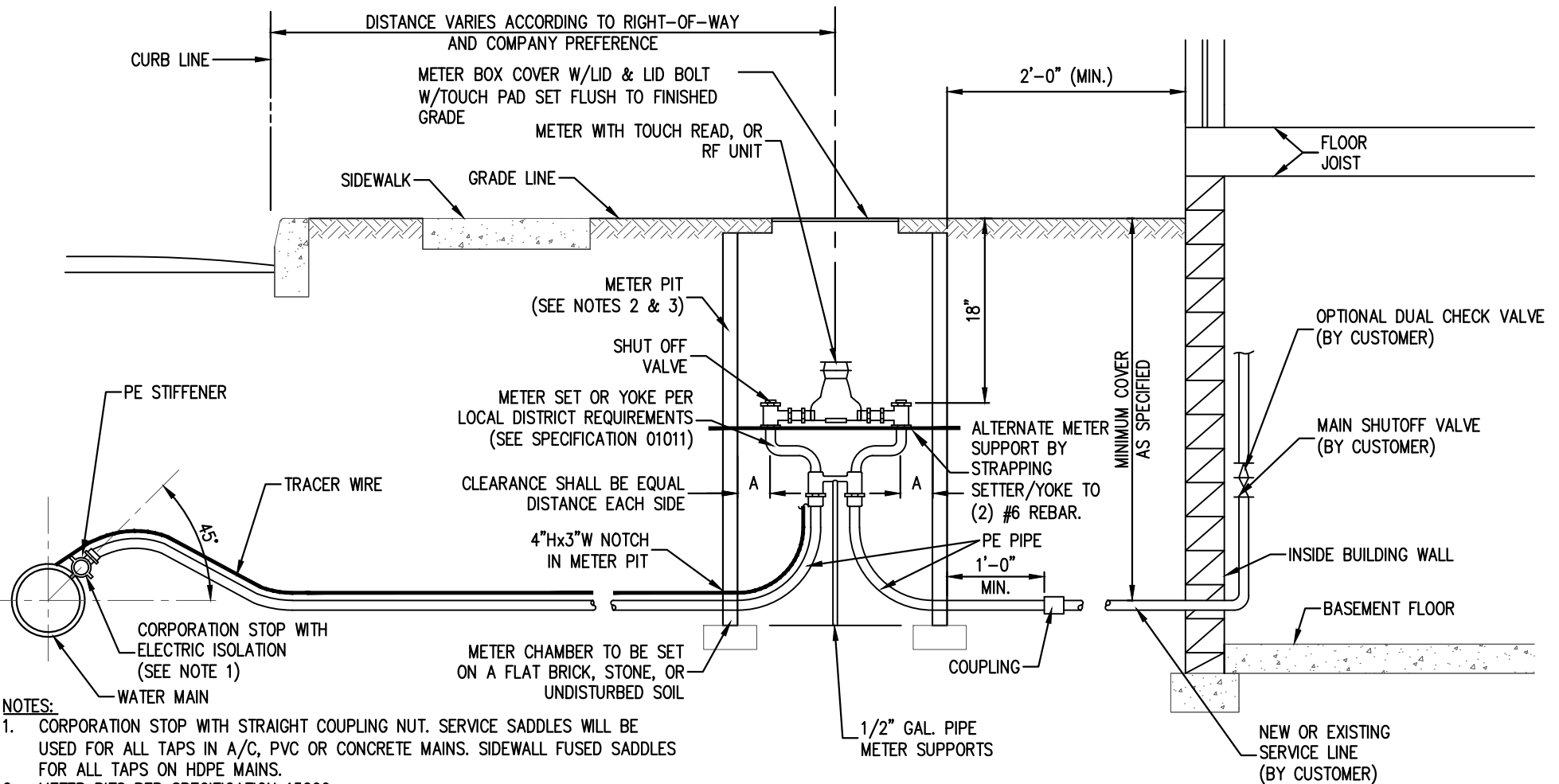
**STREAM CROSSING DETAIL -
HORIZONTAL DIRECTIONAL DRILL**

DATE: JANUARY, 2018

DRAWN BY: S. FORD

LATEST REV: JANUARY, 2018

APP'D BY: E.N.



NOTES:

1. CORPORATION STOP WITH STRAIGHT COUPLING NUT. SERVICE SADDLES WILL BE USED FOR ALL TAPS IN A/C, PVC OR CONCRETE MAINS. SIDEWALL FUSED SADDLES FOR ALL TAPS ON HDPE MAINS.
2. METER PITS PER SPECIFICATION 15200.
3. METER PIT LOCATION TO BE DETERMINED BY LOCAL AUTHORITY AND INAWC.
4. SERVICE LINE AND METER PIT OWNERSHIP VARIES BY LOCAL TARIFF.
5. CONNECTIONS BETWEEN PIPE LENGTHS SHALL BE COMPRESSION OR FLARE AND MAY DEPEND ON LOCAL PLUMBING REQUIREMENT.

SINGLE WATER SERVICE CONNECTION

N.T.S.

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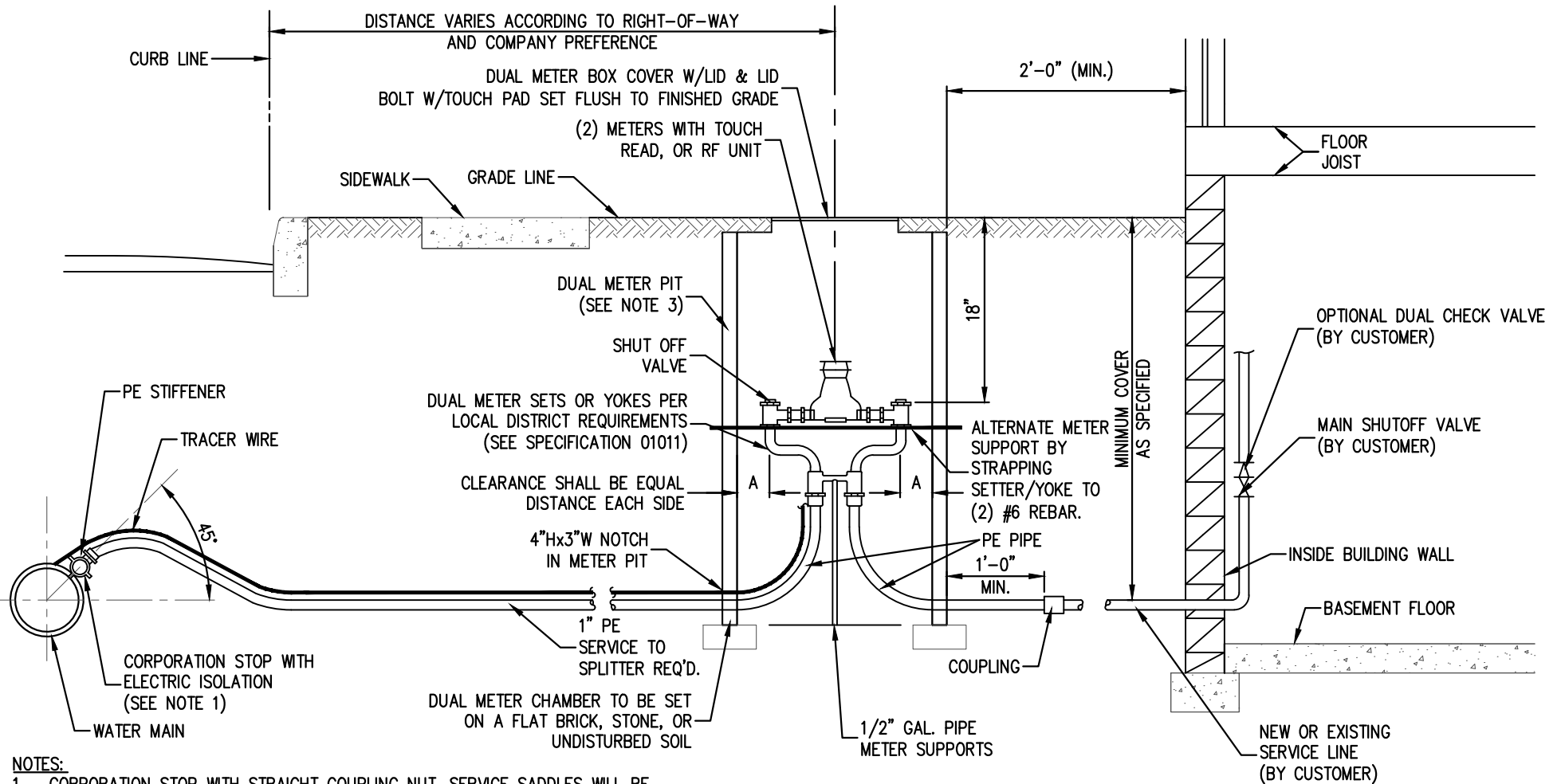
SINGLE WATER SERVICE

DATE: JANUARY, 2018

DRAWN BY: S. FORD

LATEST REV: JANUARY, 2018

APP'D BY: E.N.




NOTES:

1. CORPORATION STOP WITH STRAIGHT COUPLING NUT. SERVICE SADDLES WILL BE USED FOR ALL TAPS IN A/C, PVC OR CONCRETE MAINS. SIDEWALL FUSION SADDLES FOR HDPE.
2. METER PITS PER SPECIFICATION 01011.
3. METER PIT LOCATION TO BE DETERMINED BY LOCAL AUTHORITY AND INAWC.
4. SERVICE LINE AND METER PIT OWNERSHIP VARIES BY LOCAL TARIFF.
5. CONNECTIONS BETWEEN PIPE LENGTHS SHALL BE COMPRESSION OR FLARE AND MAY DEPEND ON LOCAL PLUMBING REQUIREMENT.

DUAL WATER SERVICE CONNECTION

N.T.S.



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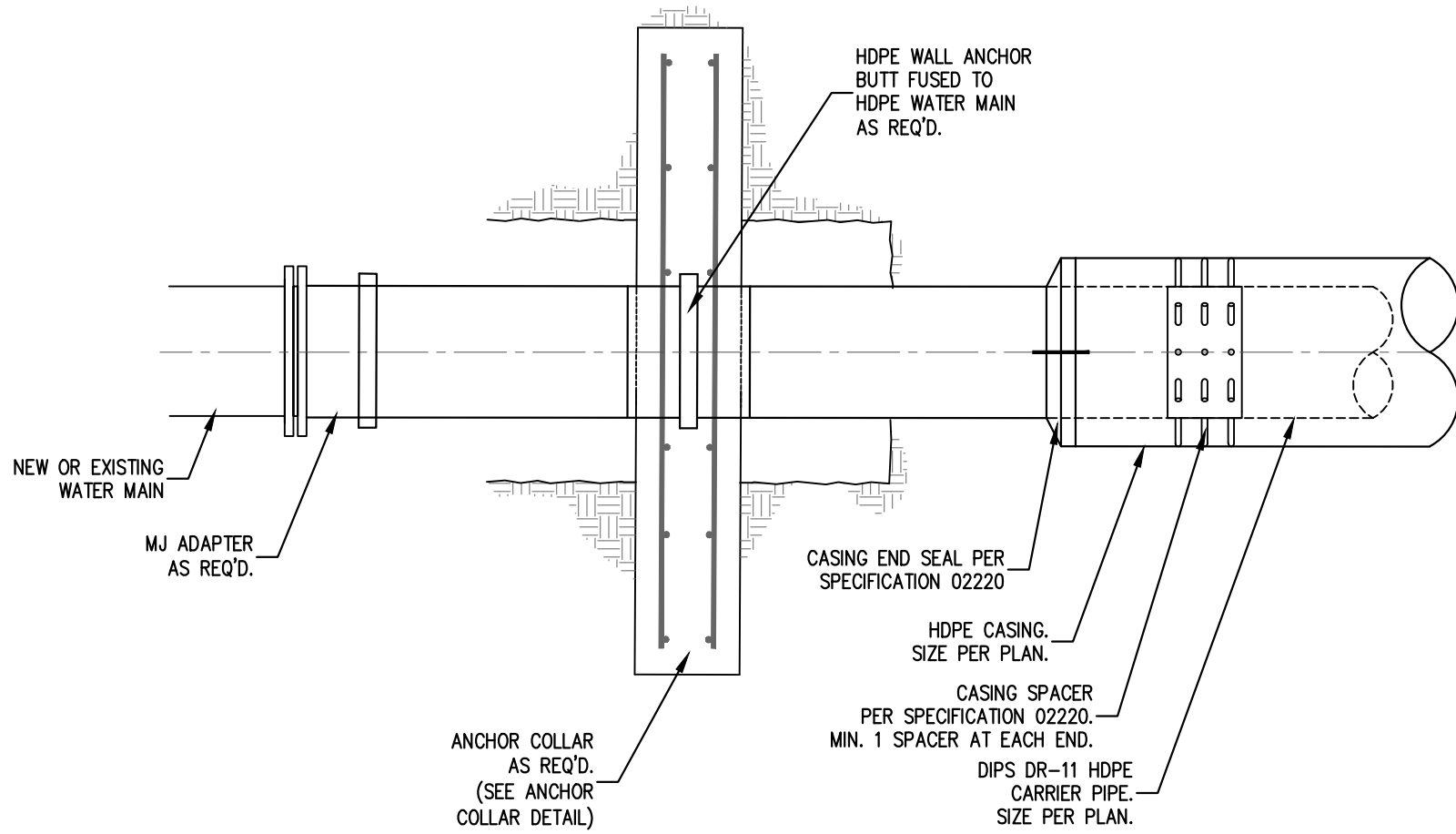
DUAL WATER SERVICE

DATE: JANUARY, 2018

DRAWN BY: S. FORD


LATEST REV: JANUARY, 2018

APP'D BY: E.N.



HDPE CASING DETAIL

N.T.S.



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GREENWOOD, INDIANA 46143

STANDARD DETAIL

HDPE CASING DETAIL

DATE: SEPTEMBER, 2019

DRAWN BY: S. FORD

LATEST REV: SEPTEMBER, 2019

APP'D BY: E.N.