

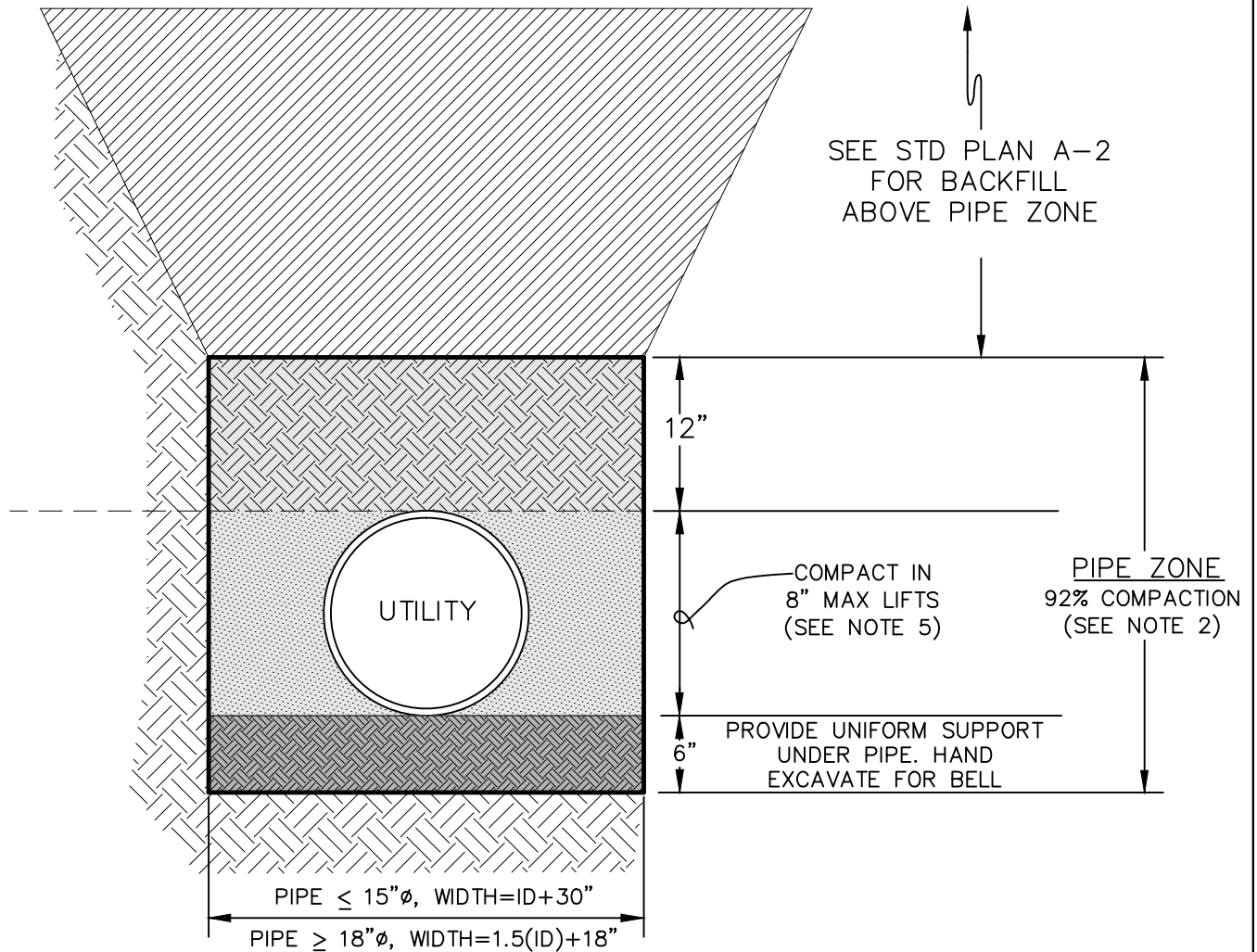
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## CITY OF SPOKANE STANDARD PLANS – SECTION A

X-### = Revised Standard Plan  
 \*\*\*X-### = New Standard Plan




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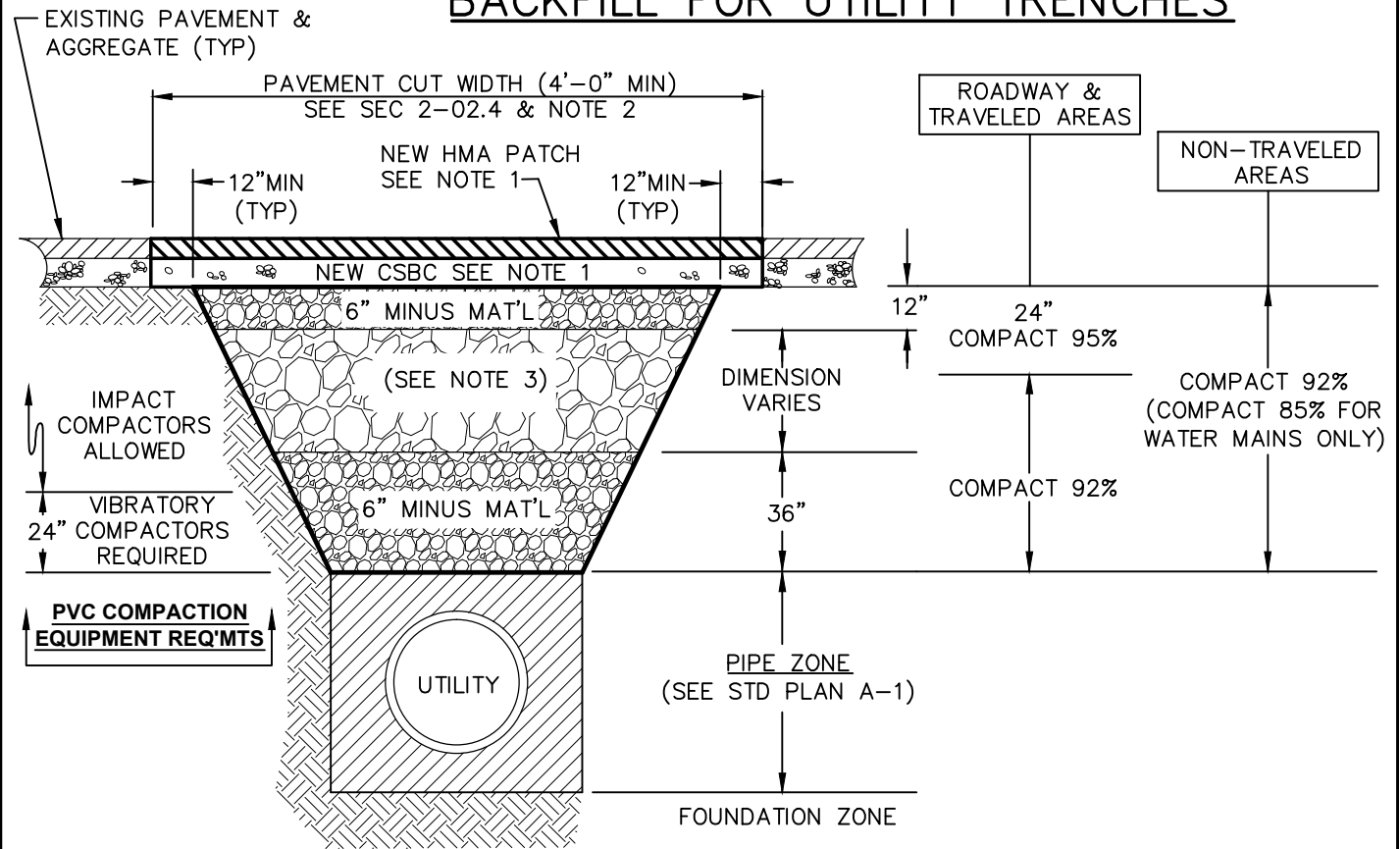


**NOTES:**

1. ALL MATERIAL IN PIPE ZONE INCLUDING 6" BENEATH THE PIPE SHALL CONFORM TO SEC 9-03.12(3) FOR SAND OR NATIVE MATERIAL EXCEPT AS FOLLOWS:
  - a) IF ROCK OR GROUND WATER IS PRESENT, PIPE ZONE MATERIAL SHALL BE CSTC PER SEC 9-03.9(3).
  - b) FOR RIGID SEWERS, PIPE ZONE MATERIAL ABOVE THE SPRING LINE MAY EITHER BE PER SEC 9-03.12(3), SAND OR NATIVE, OR 9-03.14(1), GRAVEL BORROW, EXCEPT THAT MAX MATERIAL SIZE SHALL BE 1-IN PER 1-FT OF PIPE DIAMETER UP TO A 2" MAX.
2. COMPACTION METHODS IN PIPE ZONE SHALL BE PER SECTION 7-09.3(9).
3. REFER TO 7-08.3(1)C FOR ADDITIONAL REQUIREMENTS.
4. WHERE TRENCH EXCAVATION IS PAID SEPARATELY, PAYMENT LIMITS SHALL BE PER SEC 2-09.4.
5. BEDDING TO BE INSTALLED PER SECTION 7-09.3(9). A LIFT LAYER UP TO A MAXIMUM OF 18 INCHES MAY BE APPROVED BY THE ENGINEER.

<p>APPROVED BY</p>  <p>ENGINEERING OPERATIONS MANAGER      KYLE TWOHIG</p>  <p>CITY ENGINEER      DANIEL ALBERT BULLER, P.E.</p>	<p>ADOPTED: 02/1986                  REVISED: 02/2017                  SUPERSEDES: 09/2010                  CHECKED BY: JAG                  SCALE: NTS                  DWG/REV. BY: SRM/MLD</p>	<p><b>UTILITY TRENCH BACKFILL PIPE ZONE</b></p>  <p>ENGINEERING SERVICES CITY OF SPOKANE, WASHINGTON</p>	<p>STANDARD PLAN No. <b>A-1</b></p>
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# BACKFILL FOR UTILITY TRENCHES

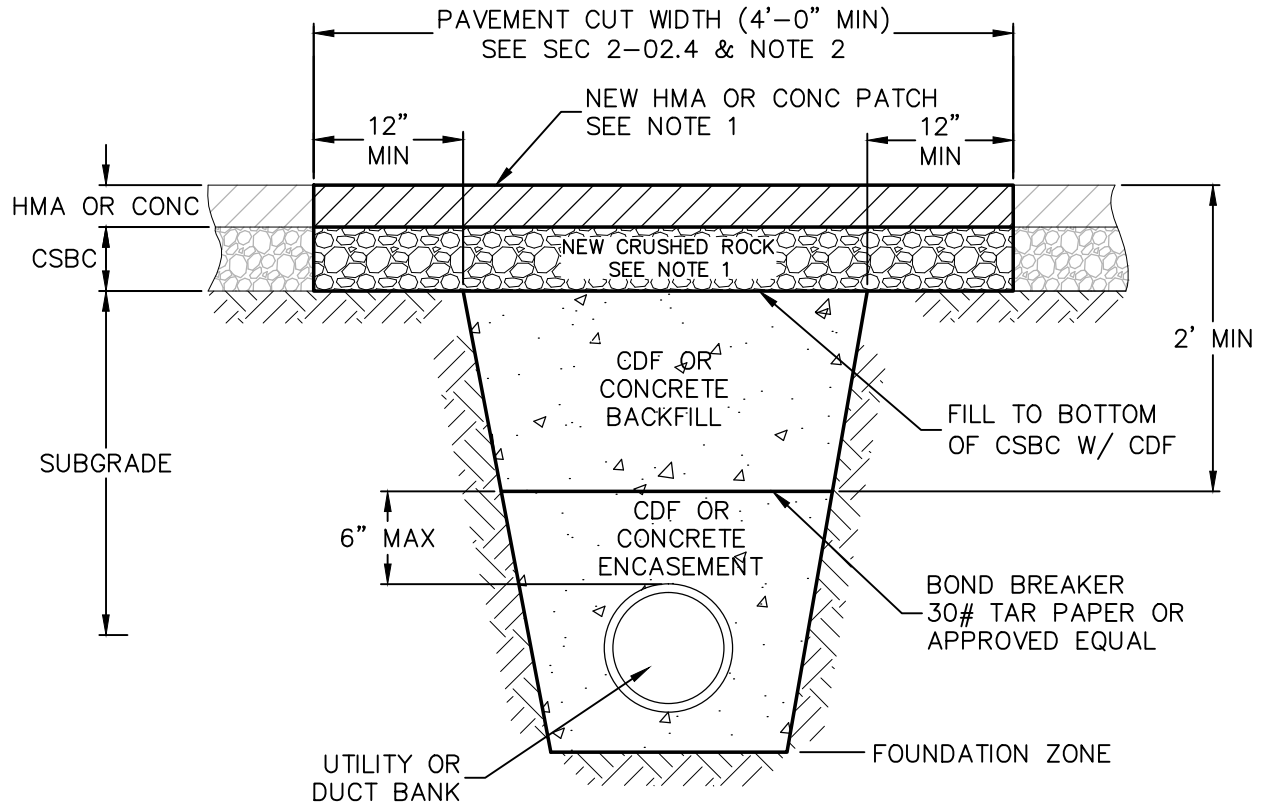


**NOTES:**

1. REPLACE HOT MIX ASPHALT (HMA) PAVEMENT & CRUSHED BASE PER STD PLANS W-108 & W-109.
2. SEE CITY OF SPOKANE (COS) PAVEMENT CUT POLICY IN THE COS DESIGN STDS, APPENDIX 'F' FOR ADD'NL REQ'MTS.
3. WATER LINES REQUIRE 6" MINUS MAT'L FOR THE ENTIRE BACKFILL. 12" MINUS MAT'L MAY BE USED FOR OTHER UTILITIES.
4. COMPACTION ABOVE THE PIPE ZONE SHALL BE MEASURED PER SEC 2-03.3(14)D. FOR ROADWAY & TRAVELED AREAS COMPACT TOP 2-FT IN 4" MAX LIFTS. COMPACT BELOW TOP 2-FT TO TOP OF PIPE ZONE IN 8" MAX LIFTS. FOR NON-TRAVELED AREAS COMPACT IN 8" MAX. LIFTS. ENGINEER MAY WAIVER THE 92% COMPACTION TO A LESSER VALUE FOR GRASS SWALES OR OTHER PLANTING AREAS.
5. FOR DEVIATION FROM LIFT THICKNESS, SEE SEC 7-08.3(3) FOR SEWER/STORM & SEC 7-09.3(11) FOR WATER UTILITIES.
6. TRENCH EXCAVATION MATERIALS SHALL BE USED FOR BACKFILL IF MATERIALS MEET GRADUATION REQ'MTS ABOVE. IMPORTED BACKFILL SHALL MEET THE REQ'MTS OF SEC 9-03.14(1), GRAVEL BORROW.
7. CONTROLLED DENSITY FILL (CDF) PER SEC 2-09.3(1)E, MAY BE USED IN LIEU OF NATIVE BACKFILL WHERE IT IS NOT PRACTICAL TO COMPACT BACKFILL TO THE REQ'D DENSITY. SUCH USE SHALL BE PRE-APPROVED BY THE ENGINEER. SEE STD PLAN A-3 FOR CDF BACKFILL REQ'MTS.

<p style="text-align: center;">APPROVED BY</p> <p style="text-align: center;">DIRECTOR, ENGINEERING SERVICES    P. MIKE TAYLOR, P.E.</p> <p style="text-align: center;">PRINCIPAL ENGINEER, DESIGN    GARY S. NELSON, P.E.</p>	<p>ADOPTED: 2/1990                  REVISED: 09/2010                  SUPERSEDES: 01/2008                  CHECKED BY: JAG                  SCALE: NTS                  DWG/REV. BY: SRM/MBM</p>	<p><b>UTILITY TRENCH BACKFILL                  ABOVE PIPE ZONE</b></p> <p>ENGINEERING SERVICES                  CITY OF SPOKANE, WASHINGTON</p>	<p>STANDARD                  PLAN No.  <b>A-2</b></p>
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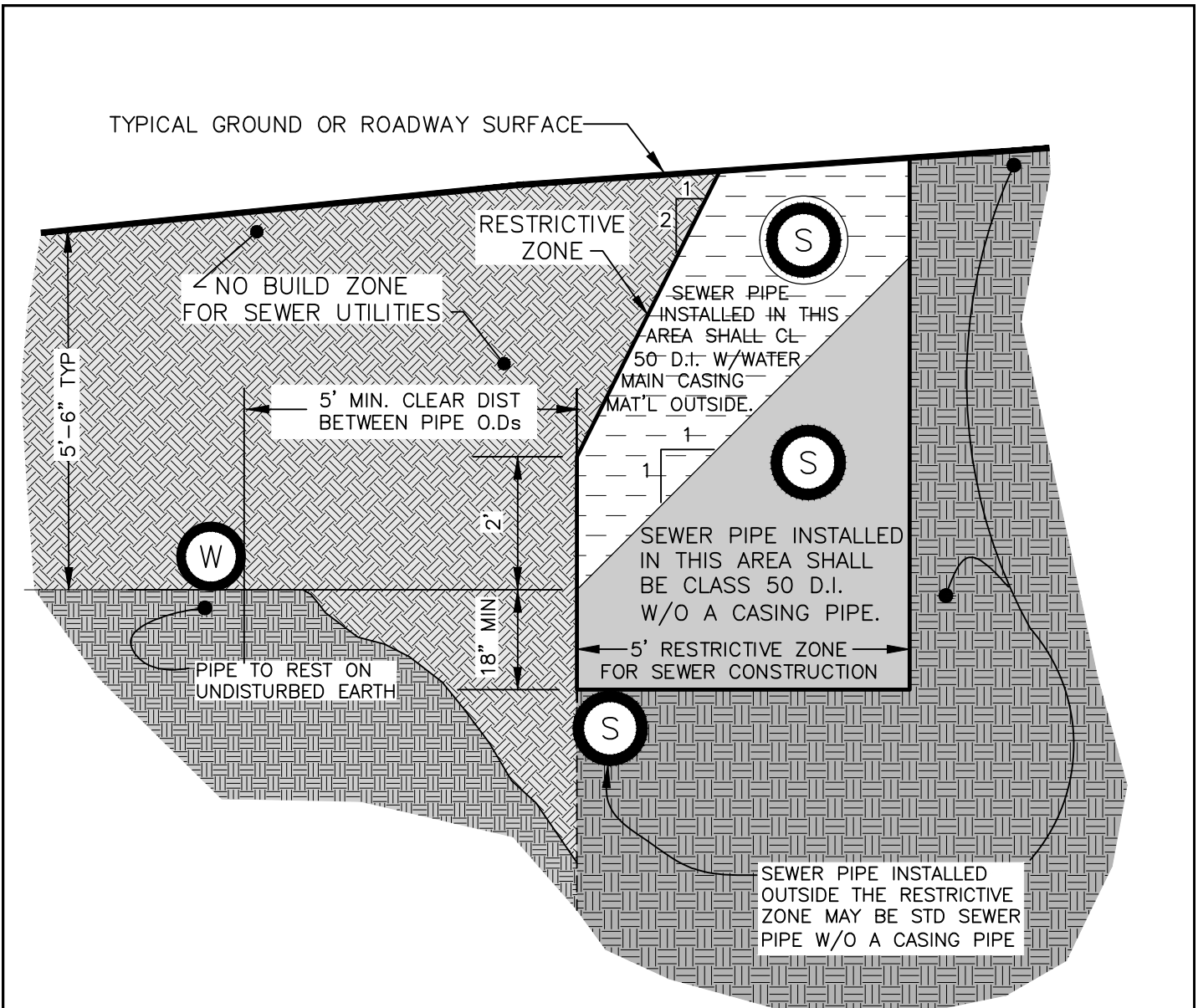
## CDF BACKFILL FOR UTILITY TRENCHES



**NOTES:**


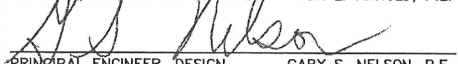
1. REPLACE HOT MIX ASPHALT (HMA) OR CONCRETE PAVEMENT PER CITY STANDARD PLANS W-102, W-108, & W-109.
2. SEE CITY OF SPOKANE (COS) PAVEMENT CUT POLICY IN THE COS DESIGN STANDARDS, APPENDIX 'F' FOR ADDITIONAL REQUIREMENTS.
3. BEDDING MATERIAL PER SEC 7-08.3(1)C MAY BE USED AS AN ALTERNATIVE TO CDF & CAPPED W/ CDF TO SERVE AS A LOCATION MARKER FOR THE UTILITY.
4. 30# TAR PAPER SHALL BE PLACED THE FULL LENGTH AND WIDTH OF A UTILITY TRENCH WHEN THE UTILITY IS ENCASED IN CDF OR CONCRETE AND THE REMAINDER OF THE TRENCH IS BACKFILLED WITH CDF OR CONCRETE.

<p>APPROVED BY</p> <p>ENGINEERING OPERATIONS MANAGER      KYLE TWOHIG</p> <p>CITY ENGINEER      DANIEL ALBERT BULLER, P.E.</p>	<p>ADOPTED: 04/2004                  REVISED: 01/2017                  SUPERSEDES: 04/2012                  CHECKED BY: JAG                  SCALE: NTS                  DWG/REV. BY: TSS/MLD</p>	<p><b>UTILITY TRENCH BACKFILL                  REQUIREMENTS USING CDF OR CONCRETE</b></p> <p>ENGINEERING SERVICES                  CITY OF SPOKANE, WASHINGTON</p>	<p>STANDARD                  PLAN No.  <b>A-3</b></p>
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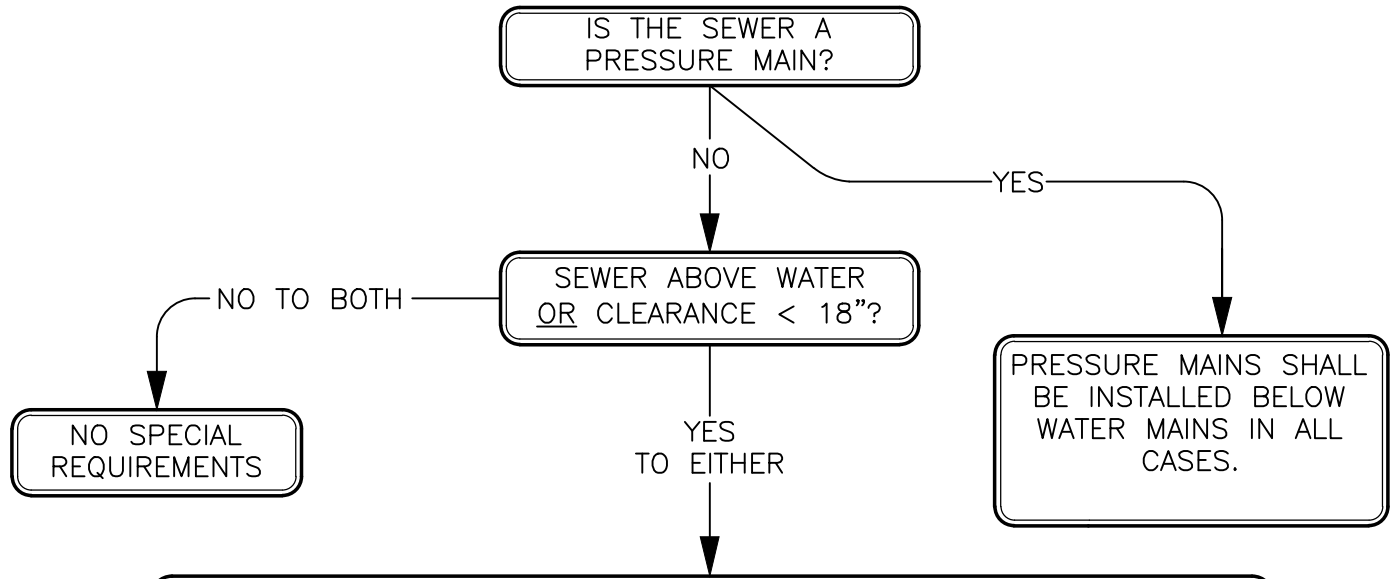


NOTES APPLY TO GRAVITY & PRESSURE SEWER MAINS INSTALLED W/IN THE RESTRICTIVE ZONE

1. SEWER MAINS 24" DIA & LARGER MAY REQUIRE MORE STRINGENT CONSTRUCTION STANDARDS.
2. SEWER MATERIALS & JOINTS SHALL MEET WATER MAIN STANDARDS.
3. SEWER MAINS SHALL BE INSTALLED & TESTED IN ACCORDANCE W/ SEC. 7-17.
4. THE RESTRICTIVE ZONE IS SYMMETRICAL ABOUT THE WATER LINE.

<p>APPROVED BY:</p>  <p>DIRECTOR, ENGINEERING SERVICES TOM L. ARNOLD, P.E.</p>  <p>PRINCIPAL ENGINEER, DESIGN GARY S. NELSON, P.E.</p>	<p>ADOPTED: 3/1992                  REVISED: 05/2007                  SUPERSEDES: 12/1998                  CHECKED BY: JAG                  SCALE: NTS                  DWG/REV. BY: REP/RLB</p>	<p style="text-align: center;"><b>SEWER UTILITY                  LOCATION &amp; CONSTRUCTION REQUIREMENTS</b></p> <p style="text-align: center;">ENGINEERING SERVICES                  CITY OF SPOKANE, WASHINGTON</p> <p style="text-align: right;">STANDARD PLAN No.  <b>A-4</b></p>
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## WATER/SEWER CROSSINGS



CASE WATER OR WASTEWATER PIPE W/PIPE MEETING THE REQUIREMENTS FOR SANITARY SEWERS FOR A MIN. 10' MEASURED PERPENDICULAR ON EITHER SIDE OF CROSSING.

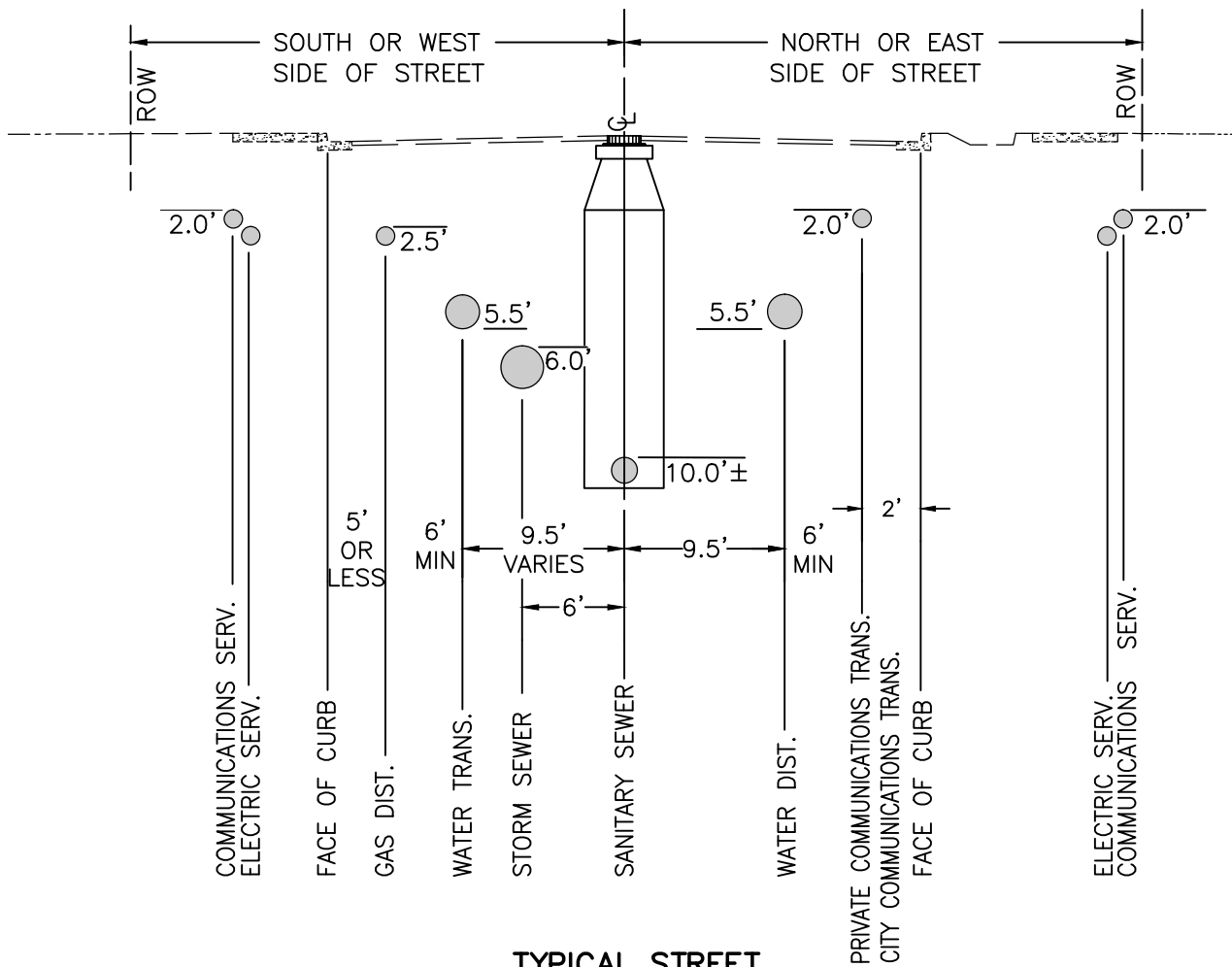
EXCEPTIONS:  
WHEN INSTALLING A WATER MAIN:

- THE CASING LENGTH FOR CROSSING SIDE SEWERS MAY BE REDUCED TO A MIN. 5' MEASURED PERPENDICULAR ON EITHER SIDE OF CROSSING PROVIDED THAT THE CASING IS PLUGGED AT BOTH ENDS WITH AN 18" LENGTH OF NON-SHRINK GROUT;
- STORM SEWER PIPE TO/FROM CATCH BASINS/INLETS NEED NOT BE CASED IF THE EXISTING PIPE IS DI FOR ENTIRE LENGTH OR, IF THE EXISTING STORM SEWER PIPE IS NOT DI, THEN AN 18' SEGMENT OF THE EXISTING STORM SEWER PIPE IS REPLACED WITH A SINGLE PIECE OF DI PIPE, CENTERED ON THE WATER MAIN.

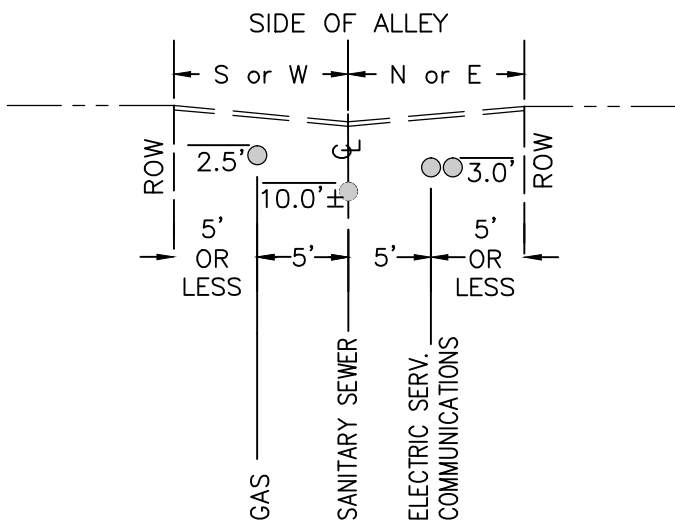
NOTES:

1. CROSSING WATER/SEWER LINES OR THEIR CASINGS SHALL HAVE A 6" MIN VERTICAL SEPARATION.
2. FLOW CHART APPLIES TO BOTH EXISTING & NEW SERVICES & MAINS.
3. DISTANCES GIVEN ABOVE ARE MEASURED FROM OUTSIDE OF PIPES OR OTHER CASINGS.
4. DESIGNER/INSTALLER SHALL MAKE ALL REASONABLE ATTEMPTS TO MEET THE FOLLOWING:
  - SEWER BENEATH WATER BY AT LEAST 18"
  - CROSSINGS AS CLOSE TO 90° AS POSSIBLE

<p>APPROVED BY</p> <p>_____ DIRECTOR, ENGINEERING SERVICES P. MIKE TAYLOR, P.E.</p> <p>_____ PRINCIPAL ENGINEER, DESIGN GARY S. NELSON, P.E.</p>	<p>ADOPTED: <u>3/92</u>          REVISED: <u>01/2009</u>          SUPERSEDES: <u>01/2008</u>          CHECKED BY: <u>JAG</u>          SCALE: <u>NTS</u>          DWG/REV. BY: MDH/TSS</p>	<p><b>WATER AND SEWER CROSSINGS</b></p> <p>ENGINEERING SERVICES CITY OF SPOKANE, WASHINGTON</p>	<p>STANDARD PLAN No. <b>A-5</b></p>
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**TYPICAL STREET**



**TYPICAL ALLEY**

**NOTES:**

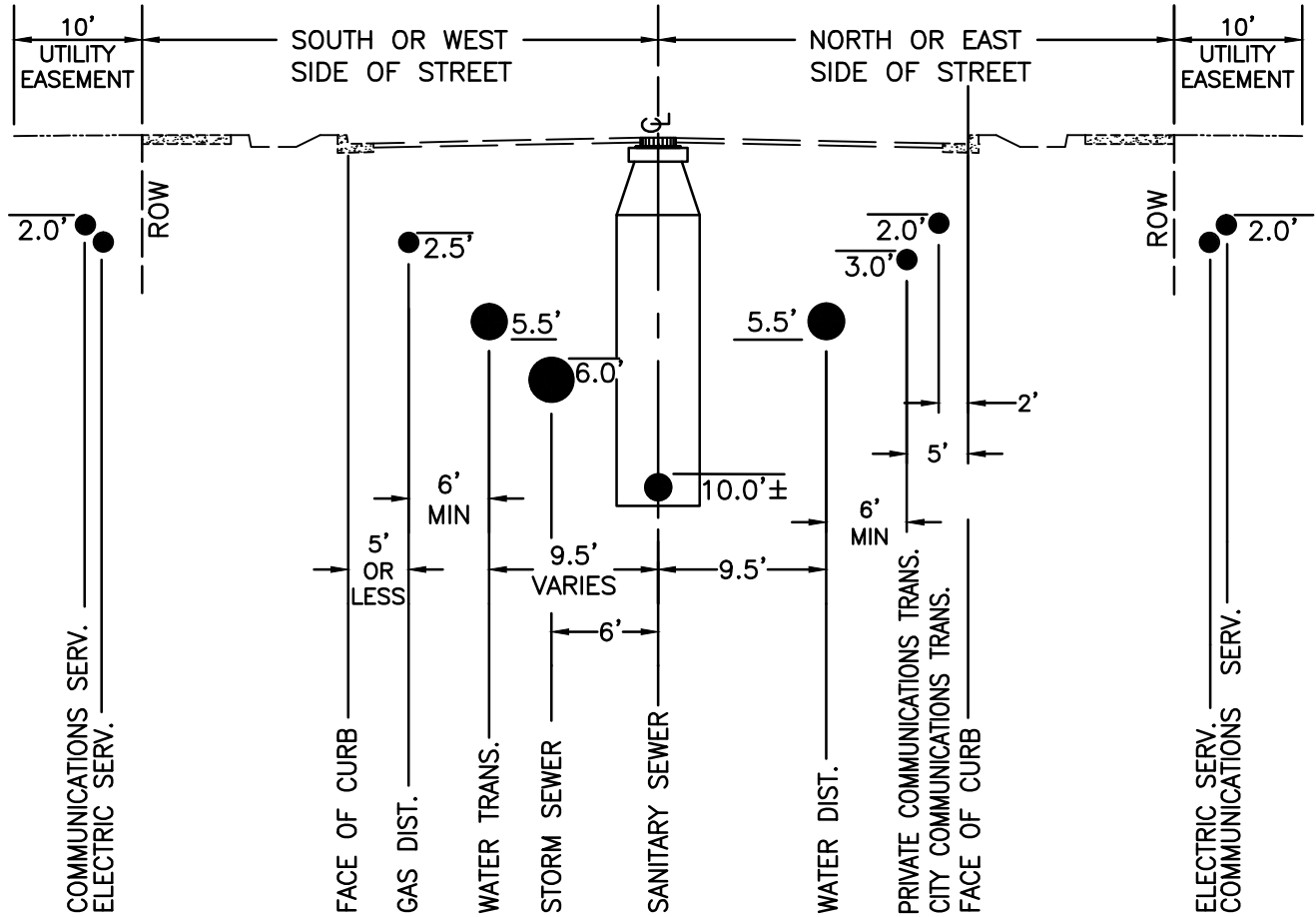
1. LOCATIONS ARE STANDARD FOR UNDERGROUND INSTALLATIONS & VARIATION SHALL REQUIRE PRE-APPROVAL BY THE CITY ENGINEER.
2. ALL LOCATIONS & DEPTHS OF EXISTING UTILITIES SHALL BE VERIFIED BY RESPECTIVE OWNERS PRIOR TO NEW INSTALLATIONS.

**CALL BEFORE YOU DIG 456-8000**

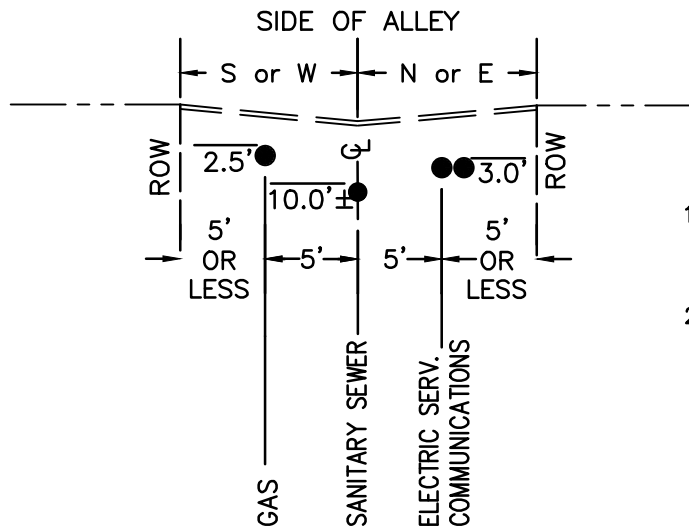
APPROVED BY  
  
 ENGINEERING OPERATIONS MANAGER KYLE TWOHIG  
  
 CITY ENGINEER DANIEL ALBERT BULLER, P.E.

ADOPTED: 02/1986  
 REVISED: 11/2018  
 SUPERSEDES: W-109A, 12/98  
 CHECKED BY: JAG  
 NTS  
 DWG/REV. BY: JHM

**UNDERGROUND UTILITY LOCATION FOR EXISTING STREETS**  
 ENGINEERING SERVICES  
 CITY OF SPOKANE, WASHINGTON  
 STANDARD PLAN No. **A-6**



**TYPICAL STREET**



**TYPICAL ALLEY**

**NOTES:**

1. LOCATIONS ARE STANDARD FOR UNDERGROUND INSTALLATIONS & VARIATION SHALL REQUIRE PRE-APPROVAL BY THE CITY ENGINEER.
2. ALL LOCATIONS & DEPTHS OF EXISTING UTILITIES SHALL BE VERIFIED BY RESPECTIVE OWNERS PRIOR TO NEW INSTALLATIONS.

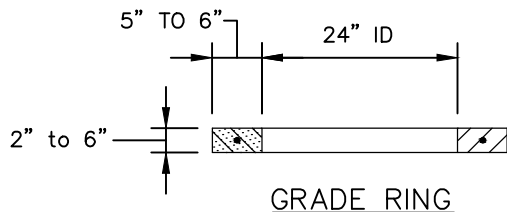
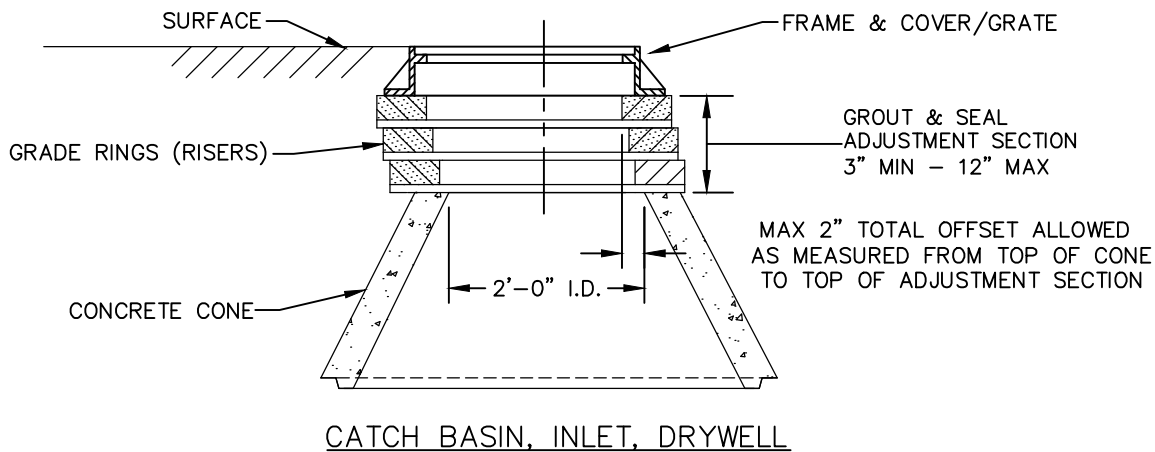
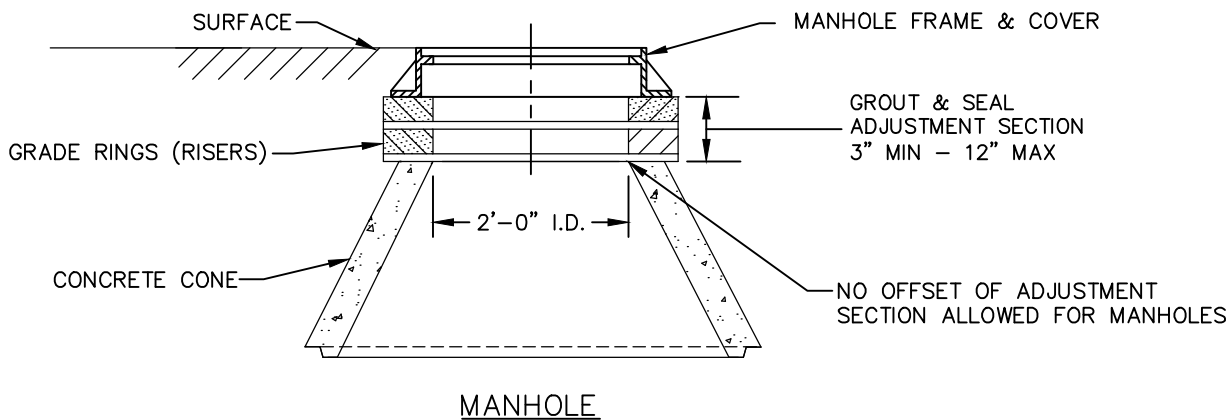
**CALL BEFORE YOU DIG 456-8000**

APPROVED BY  
  
 ENGINEERING OPERATIONS MANAGER KYLE TWOHIG  
  
 CITY ENGINEER DANIEL ALBERT BULLER, P.E.

ADOPTED: 05/2007  
 REVISED: 11/2018  
 SUPERSEDES:  
 CHECKED BY: JAG  
 SCALE: NTS  
 DWG./REV. BY: RLB/JHM

**UNDERGROUND UTILITY LOCATION FOR NEW DEVELOPMENTS**  
  
 ENGINEERING SERVICES  
 CITY OF SPOKANE, WASHINGTON  
 STANDARD PLAN No. A-7

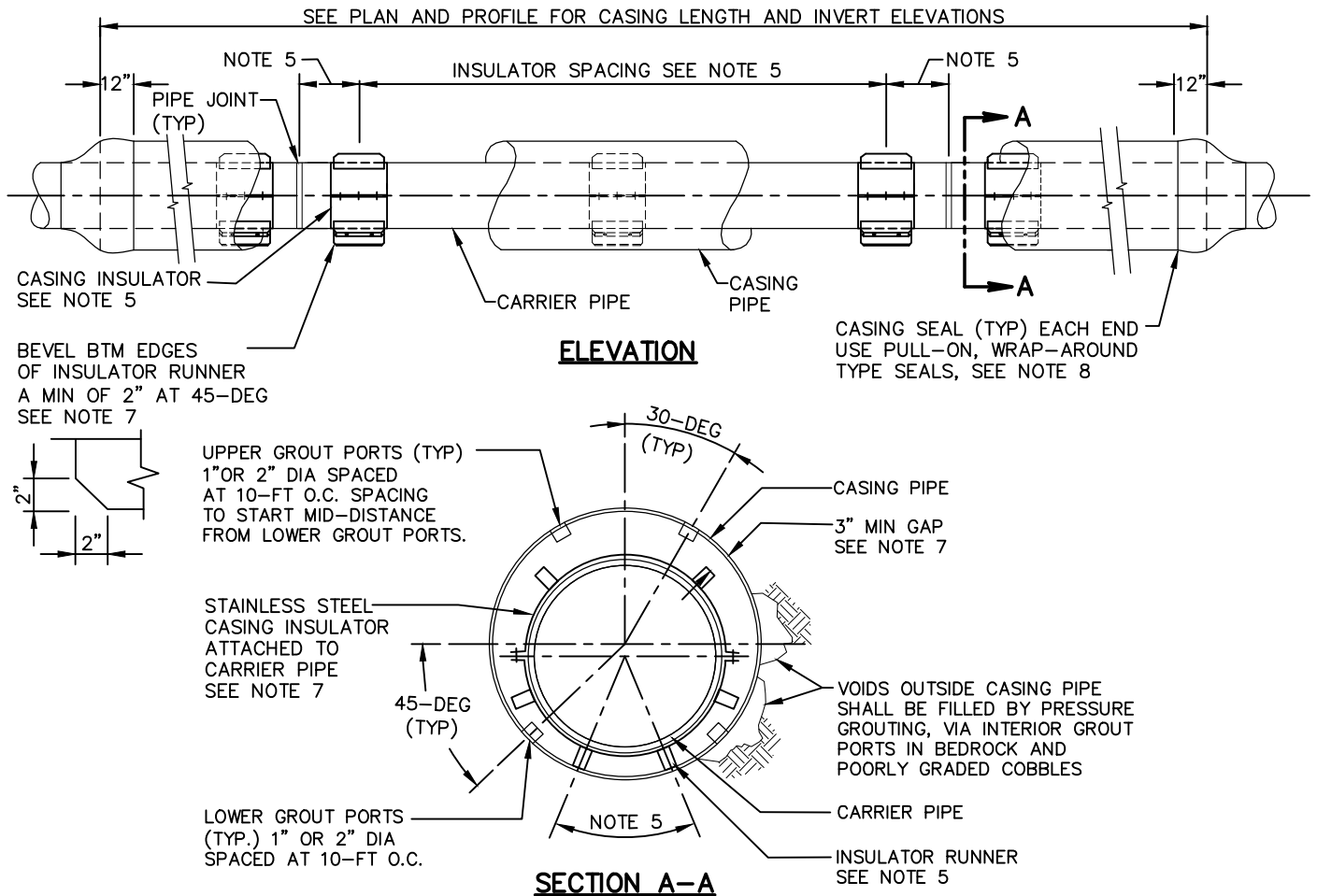




**NOTES:**

1. ADJUSTMENT SECTION SHALL BE CONSTRUCTED WITH PRE-FABRICATED REINFORCED CONCRETE GRADE RINGS (RISERS) CONFORMING TO ASTM C478 AND SHALL BE GROUTED IN PLACE.
2. GRADE RINGS SHALL BE A CONTINUOUS LOOP OF REINFORCED CONCRETE AND SHALL BE FLAT. GRADE RINGS SHALL BE A UNIFORM DIMENSION THROUGHOUT ITS CROSS SECTION.
3. GRADE RINGS REINFORCEMENT SHALL BE A MINIMUM OF ONE FULL HOOP OF STEEL REINFORCING OF MINIMUM YIELD STRESS  $F_y = 40$  KSI.
4. IN ADDITION TO THE GRADE RINGS, IF NECESSARY FOR PROPER FINAL ADJUSTMENT HEIGHT OF LESS THAN 2", WEDGES OF PRE-FABRICATED CERAMIC OR CONCRETE BRICK AS APPROVED BY THE ENGINEER MAY BE USED AND SHALL BE GROUTED IN PLACE.
5. ADJUSTMENT SECTION SHALL BE SEALED PER SECTION 7-05.

<p>APPROVED BY</p> <p>ENGINEERING OPERATIONS MANAGER      KYLE TWOHIG</p> <p>CITY ENGINEER      DANIEL ALBERT BULLER, P.E.</p>	<p>ADOPTED: <u>1/2017</u></p> <p>REVISED: _____</p> <p>SUPERSEDES: _____</p> <p>CHECKED BY: <u>WRP</u></p> <p>SCALE: <u>NTS</u></p> <p>REVISED BY: <u>EWS</u></p>	<p><b>ADJUSTMENT SECTION</b></p> <p>GRADE RINGS (RISERS)</p>
		<p>ENGINEERING SERVICES</p> <p>CITY OF SPOKANE, WASHINGTON</p>
		<p>STANDARD PLAN No.</p> <p><b>A-8</b></p>



## STEEL CASING DETAIL

**NOTES:**

1. CASING SHALL BE SMOOTH STEEL PIPE MANUFACTURED TO ASTM A-53, TYPE 'E', GRADE 'B' FOR NPS UP TO 26-INCH DIA & ASTM A-252, GRADE '2' FOR NPS GREATER THAN 26-INCH DIA, THAT CONFORMS TO AWWA C-200 QUALITY CONTROL PROCEDURES & HAVE A MIN YIELD OF 35 KSI.
2. CARRIER PIPE SHALL BE INSTALLED PER MANUFACTURER'S REQ'MTS & CITY OF SPOKANE CONTRACT PROVISIONS.
3. ALL STEEL CASING JOINT WELDS SHALL MEET AWWA C206 WELDS AND OBSTRUCTIONS ON INTERIOR OF CASING BOTTOM THIRD (RADIALLY) SHALL BE GROUND SMOOTH.
4. CARRIER PIPE SHALL BE PRESSURE TESTED PER CITY OF SPOKANE CONTRACT PROVISIONS PRIOR TO SEALING ENDS OF CASING PIPE.
5. PER-FABRICATED CASING INSULATORS SHALL BE POSITIONED & SPACED PER MANUFACTURER'S REQ'MTS & CASING/CARRIER PIPE APPLICATION. INSULATOR SPACING SHALL NOT EXCEED 8-FT O.C. NOR BE LOCATED MORE THAN 1'-6" FROM CARRIER PIPE JOINTS. CASING INSULATORS SHALL BE PRE-APPROVED BY THE ENGINEER PRIOR TO PLAN APPROVAL OR INSTALLATION. THE CONTRACTOR SHALL COORDINATE W/ THE INSULATOR MANUFACTURER SO THAT THE INSULATOR RUNNER POSITIONS AROUND THE OUTER CIRCUMFERENCE OF THE CARRIER PIPE DO NOT INTERFERE W/THE GROUT PORT POSITIONS AROUND THE INT'R CIRCUMFERENCE OF THE CASING PIPE AND NOT OCCUPY THE 5:00 THROUGH 7:00 POSITION RADIALLY CARRIER PIPE >18" DIAMETER SHALL HAVE A MINIMUM OF 6 RUNNERS
6. USE OF ROLLER TYPE CASING INSULATOR/SPACERS SHALL BE USED IF REQUESTED BY THE ENGINEER ON CASING LENGTHS >600 LF.
7. INSULATOR RUNNER HEIGHT SHALL EXTEND BEYOND THE O.D. OF THE CARRIER PIPE'S BELL OR JOINT A MIN OF 1". RUNNER LENGTH SHALL EXCEED RUNNER HEIGHT BY A 2:1 MIN RATIO. RUNNER WIDTH SHALL BE EQUAL TO OR GREATER THAN RUNNER HEIGHT. MIN CLEARANCE SHALL BE 3" BETWEEN RUNNERS NEAR TOP OF CARRIER PIPE & INSIDE DIA OF CASING PIPE. CASING INSULATORS SHALL HAVE STAINLESS STEEL (SS) ATTACHMENT BANDS CONNECTED TO THE CARRIER PIPE VIA (SS) BOLTS/NUTS. CORKSCREW OF CARRIER PIPE/SPACERS SHALL BE CORRECTED SO THAT DESIGNED NUMBER OF SPACERS SUPPORT PIPE RADIALLY.
8. CASING PIPE SHALL BE SEALED AT BOTH ENDS W/ A STD 'PULL-ON' OR 'WRAP-AROUND' SYNTHETIC RUBBER CASING SEAL. SECURE CASING SEAL W/ STAINLESS STEEL BANDS. CASING SEALS SHALL BE PRE-APPROVED BY THE ENGINEER PRIOR TO PLAN APPROVAL OR INSTALLATION.
9. ALSO SEE UNION PACIFIC, BNSF OR WSDOT FOR ADDITIONAL REQUIREMENTS FOR RAILROAD AND HIGHWAY UNDERCROSSINGS.

APPROVED BY  
  
 ENGINEERING SERVICES DIRECTOR  
 CITY ENGINEER  
 KYLE TWHOIG  
 DAN BULLER, P.E.

ADOPTED: \_\_\_\_\_  
 REVISED: 07/2020  
 SUPERSEDES: 05/2007  
 CHECKED BY: JAG  
 SCALE: NTS  
 DWG/REV. BY: TSS/MDH

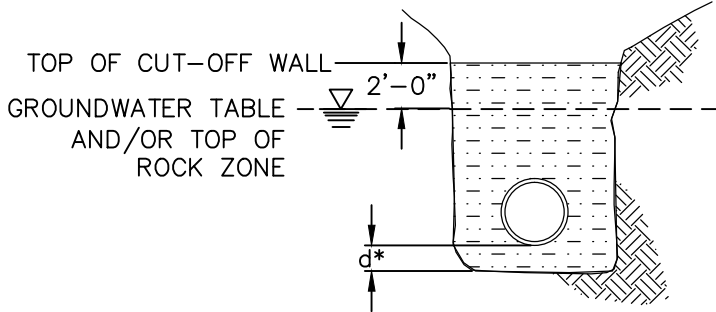
**CASING/CARRIER PIPE  
 DETAILS**

ENGINEERING SERVICES  
 CITY OF SPOKANE, WASHINGTON

STANDARD  
 PLAN No.  
**A-9**

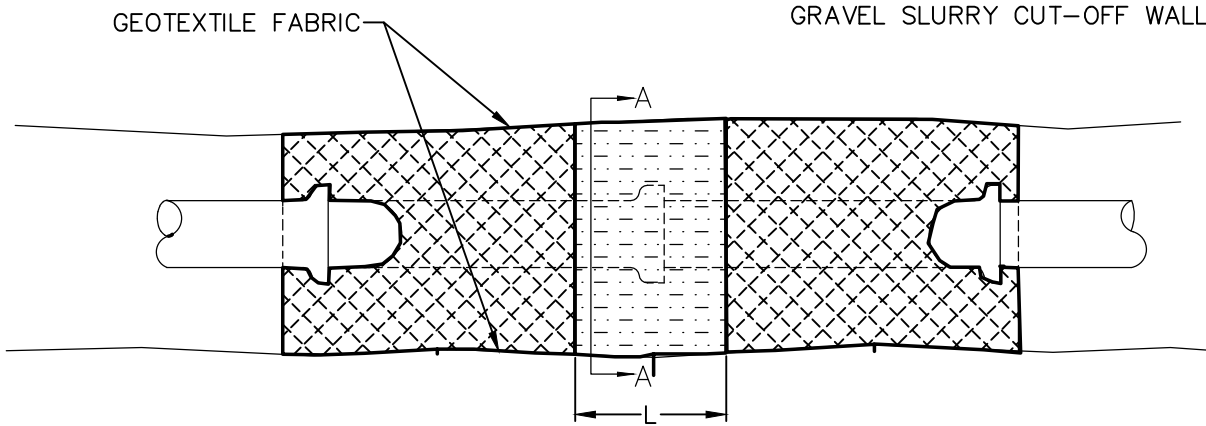
**NOTES:**

1. CUT-OFF WALLS PLACED WITHIN THE CITY R-O-W SHALL BE CONSTRUCTED USING MACHINE EXCAVATABLE CDF AS DESCRIBED IN SECTION 2-09.3(1)E. PIPE SHALL BE WRAPPED WITH 6 MIL PLASTIC.
2. CUT-OFF WALLS NOT PLACED WITHIN THE CITY R-O-W MAY BE CONSTRUCTED USING CLAY OR A BENTONITE PEA GRAVEL SLURRY.
3. CUT-OFF WALL SHALL BE WRAPPED WITH WOVEN GEOTEXTILE FABRIC FOR SEPARATION, SEE SEC 9-33. OVERLAP ALL FABRIC JOINTS 1'-6" MIN.
4. CUT-OFF WALL SHALL BE FULL WIDTH OF TRENCH.
5. L = 3' FOR CDF CUT-OFF WALL  
L = 6' FOR CLAY OR BENTONITE PEA GRAVEL SLURRY CUT-OFF WALL

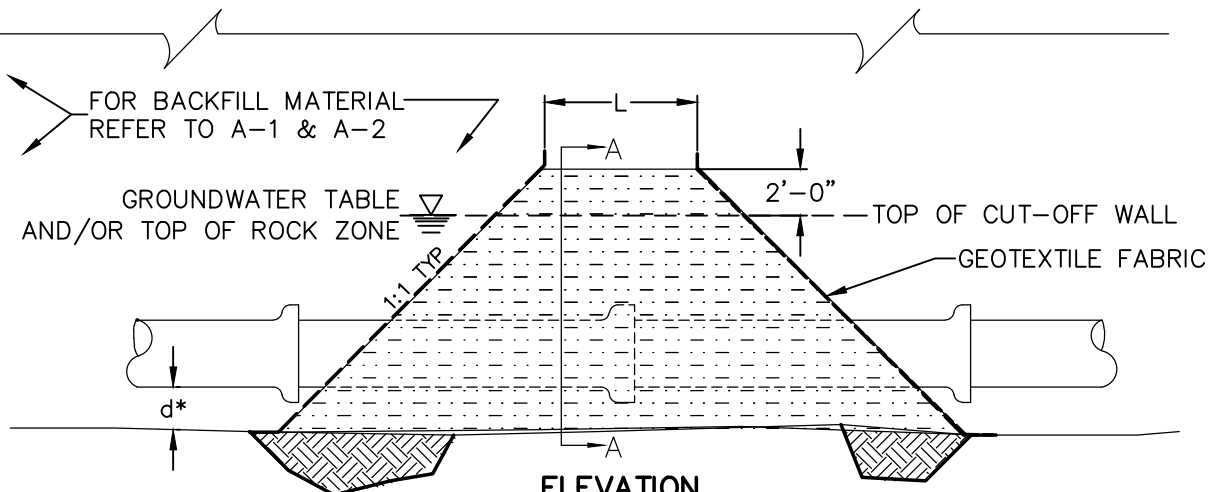


**SECTION A-A**

\*d = 6" ON ROCK FOUNDATION  
4" ON OTHER MATERIALS




**PLAN**

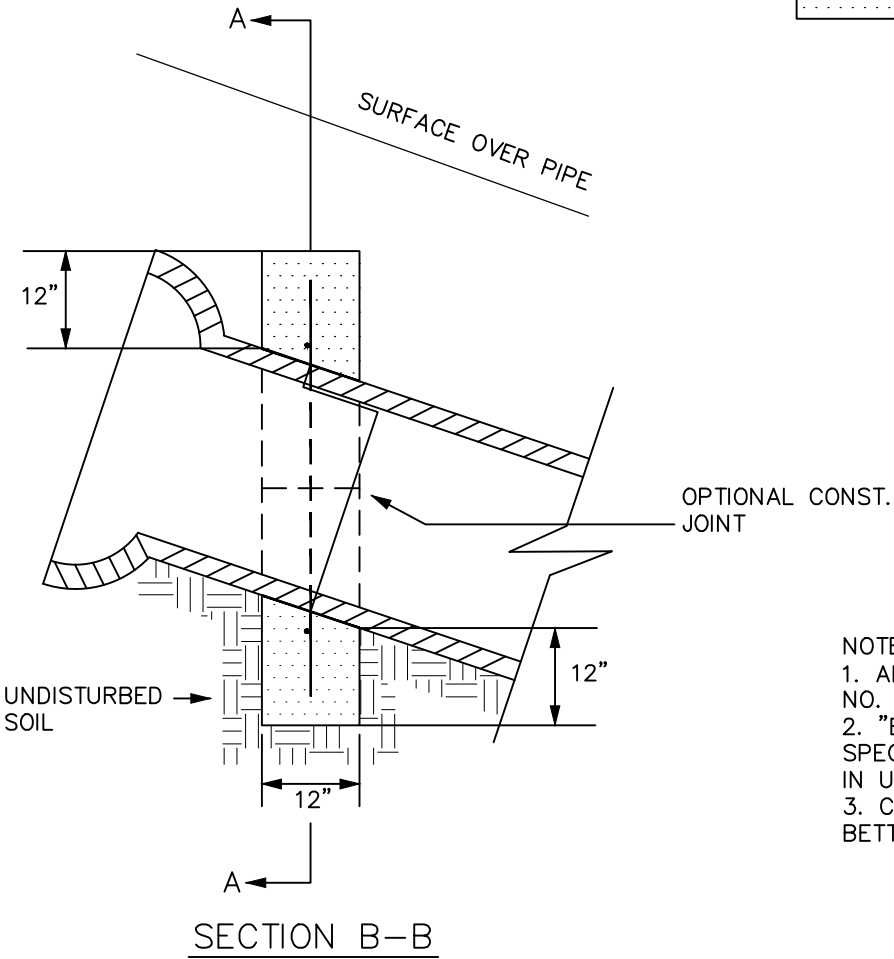
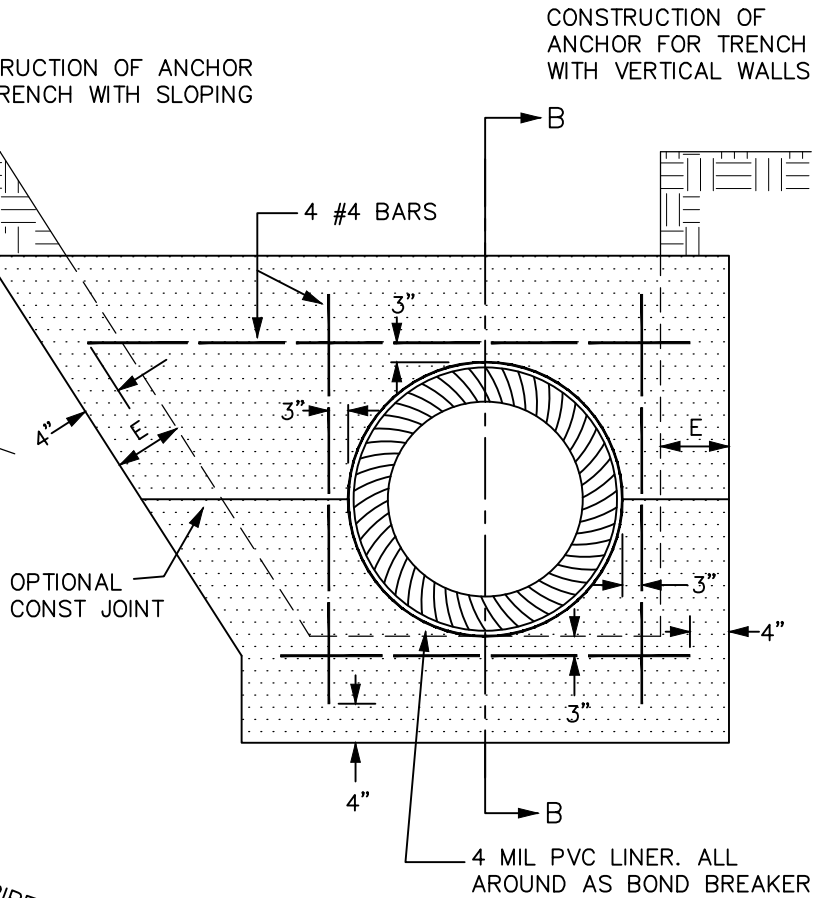
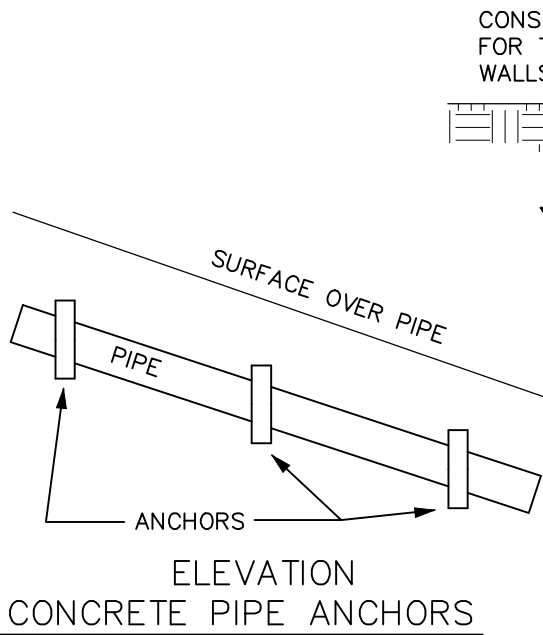


**ELEVATION**

APPROVED BY  
  
 ENGINEERING OPERATIONS MANAGER KYLE TWOHIG  
  
 CITY ENGINEER DANIEL ALBERT BULLER, P.E.

ADOPTED: 12/1993  
 REVISED: 01/2017  
 SUPERSEDES: 12/1993  
 CHECKED BY: JAG  
 SCALE: NTS  
 DWG/REV. BY: MLD

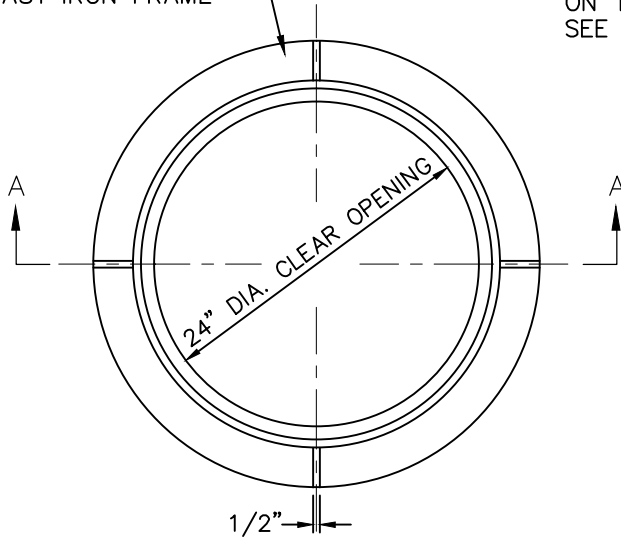
<b>CUT-OFF WALL</b>			ENGINEERING SERVICES CITY OF SPOKANE, WASHINGTON	STANDARD PLAN No. <b>A-10</b>



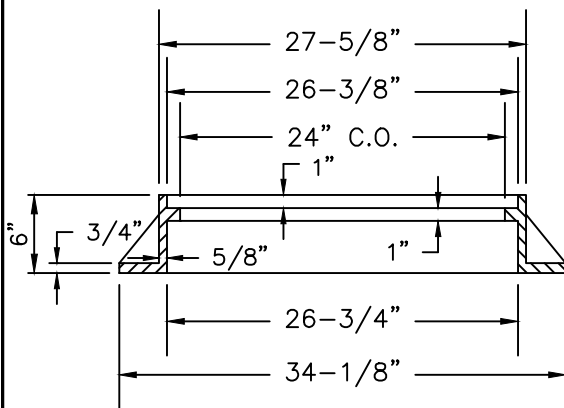
- NOTES:
1. ALL REINFORCING STEEL SHALL BE NO. 4 BARS.
  2. "E" SHALL BE 8" UNLESS OTHERWISE SPECIFIED, AND SHALL BE CONSTRUCTED IN UNDISTURBED SOIL.
  3. CONCRETE SHALL BE CLASS 3000 OR BETTER.

APPROVED BY CITY ENGR. <i>[Signature]</i> SUPV. DES. ENGR. <i>[Signature]</i>	SCALE <u>  NONE  </u> ADOPTED <u>  6/92  </u>	<b>PIPE ANCHOR</b>	
	REVISED _____ SUPERSEDES _____	DEPT. OF PUBLIC WORKS ENGR. DIVISION SPOKANE, WA	STANDARD PLAN No. <b>A-11</b>

ASTM A-48, CL. 30B  
CAST IRON FRAME

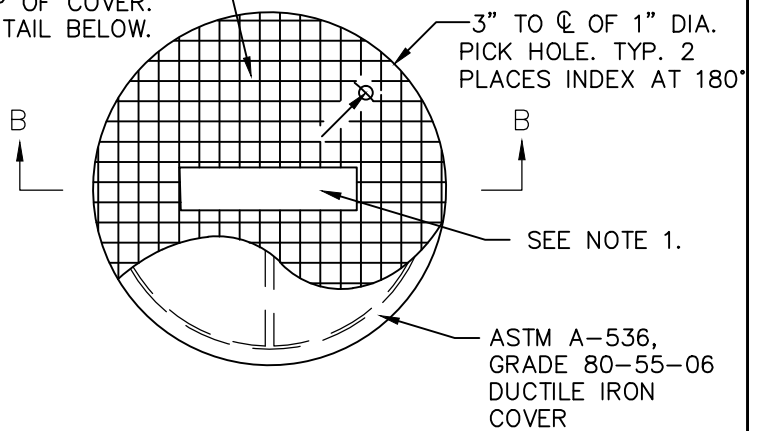


**CAST IRON FRAME**  
MIN. WEIGHT 168 LBS.

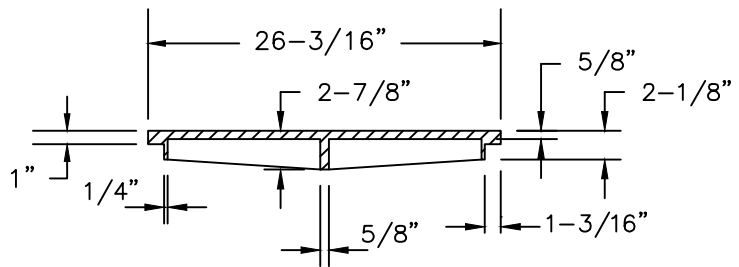


**SECTION A-A**

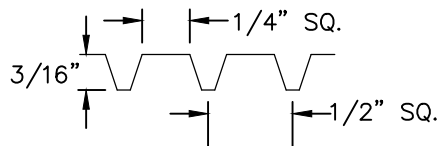
NON-SKID PATTERN  
TO BE CAST INTEGRAL  
ON TOP OF COVER.  
SEE DETAIL BELOW.



**DUCTILE IRON COVER**  
MIN. WEIGHT 118 LBS.



**SECTION B-B**



**COVER SKID DESIGN DETAIL**

**NOTES:**

1. THE APPROPRIATE WORD "SEWER", "STORM", OR "WATER" SHALL BE EMBOSSED ON EACH MANHOLE COVER WITH 3/16" RAISED LETTERS.
2. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT W/ ANY COVER POSITION.

APPROVED BY

*Tom L. Arnold*  
DIRECTOR, ENGINEERING SERVICES TOM L. ARNOLD, P.E.

*Gary S. Nelson*  
PRINCIPAL ENGINEER, DESIGN GARY S. NELSON, P.E.

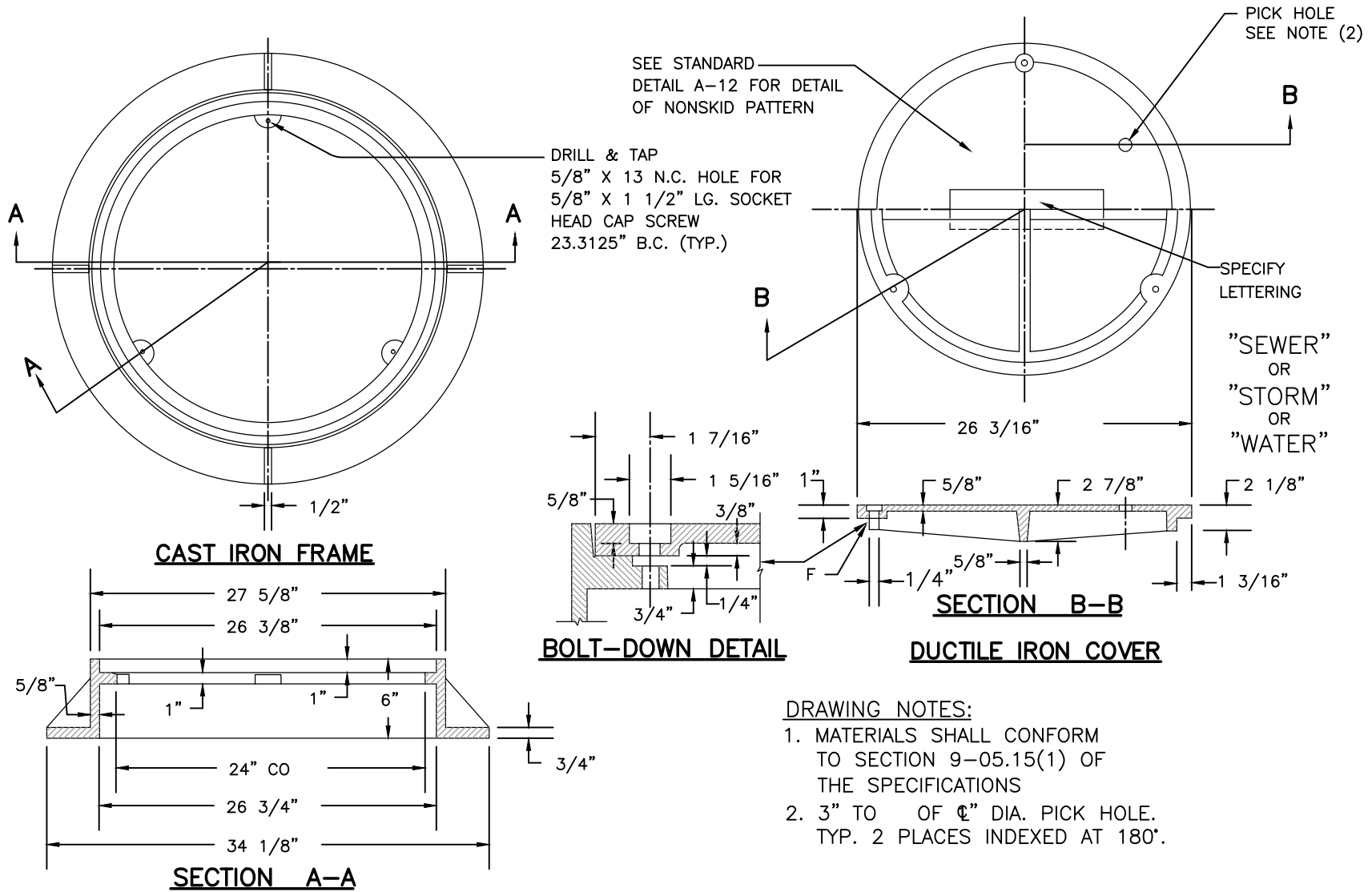
ADOPTED: 2/1990  
REVISED: 05/2007  
SUPERSEDES: 6/1995  
CHECKED BY: JAG  
SCALE: NTS  
DWG/REV. BY: RLB



**MANHOLE FRAME AND COVER**

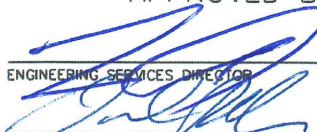
ENGINEERING SERVICES  
CITY OF SPOKANE, WASHINGTON

STANDARD  
PLAN No.  
**A-12**



**DRAWING NOTES:**

1. MATERIALS SHALL CONFORM TO SECTION 9-05.15(1) OF THE SPECIFICATIONS
2. 3" TO 4" OF  $\varnothing$ " DIA. PICK HOLE. TYP. 2 PLACES INDEXED AT 180°.

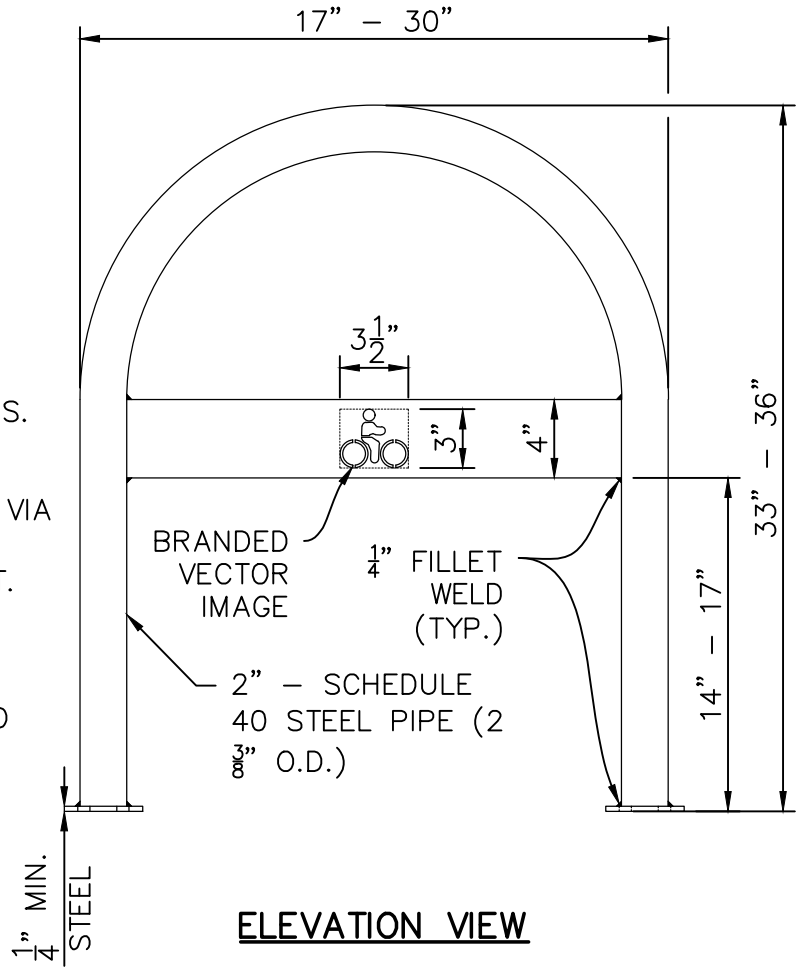
<p>APPROVED BY</p>  <p>ENGINEERING SERVICES DIRECTOR KYLE TWOHIG</p> <p>CITY ENGINEER DAN BULLER, P.E.</p>	<p>ADOPTED: _____</p> <p>REVISED: 10/2019</p> <p>SUPERSEDES: 06/1995</p> <p>CHECKED BY: DAB</p> <p>SCALE: NTS</p> <p>DWG/REV. BY: MLD</p>	<p><b>MANHOLE FRAME AND COVER</b> <b>3-POINT BOLT DOWN</b></p> <p>ENGINEERING SERVICES CITY OF SPOKANE, WASHINGTON</p>	<p>STANDARD PLAN No. <b>A-13</b></p>
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**NOTES:**

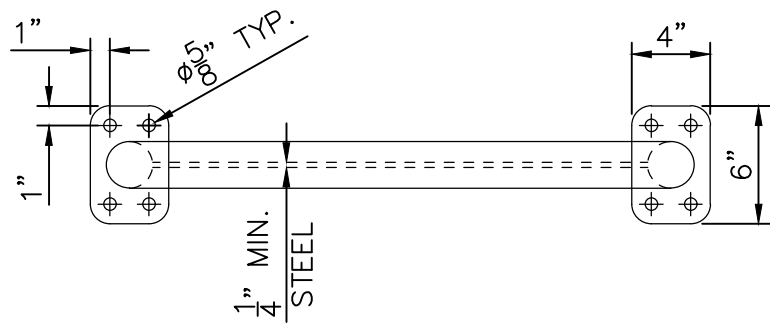
1. BIKE RACK SHALL BE POWDER COATED BLACK.
2. RACK DIMENSIONS MAY VARY BY MANUFACTURER.
3. DESIGNED FOR USE BY 2 BICYCLES.

**MOUNTING:**

1. BASE PLATE SHALL BE MOUNTED VIA 8 -  $\frac{1}{2}$ " DIA. WEDGE ANCHOR WITH TAMPER RESISTANT SECURITY NUT.
2. RACK SHALL BE SET FIRM AND ALIGNED WITH A  $\frac{1}{4}$ "  $\pm$  TOLERANCE FROM PLUMB.
3. STEEL SHIMS SHALL BE INSTALLED PRIOR TO ANCHORING IN PLACE WHEN NEEDED.



**ELEVATION VIEW**



**PLAN VIEW**

APPROVED BY  
  
 DIRECTOR OF ENGINEERING SERVICES DAN BULLER, P.E.

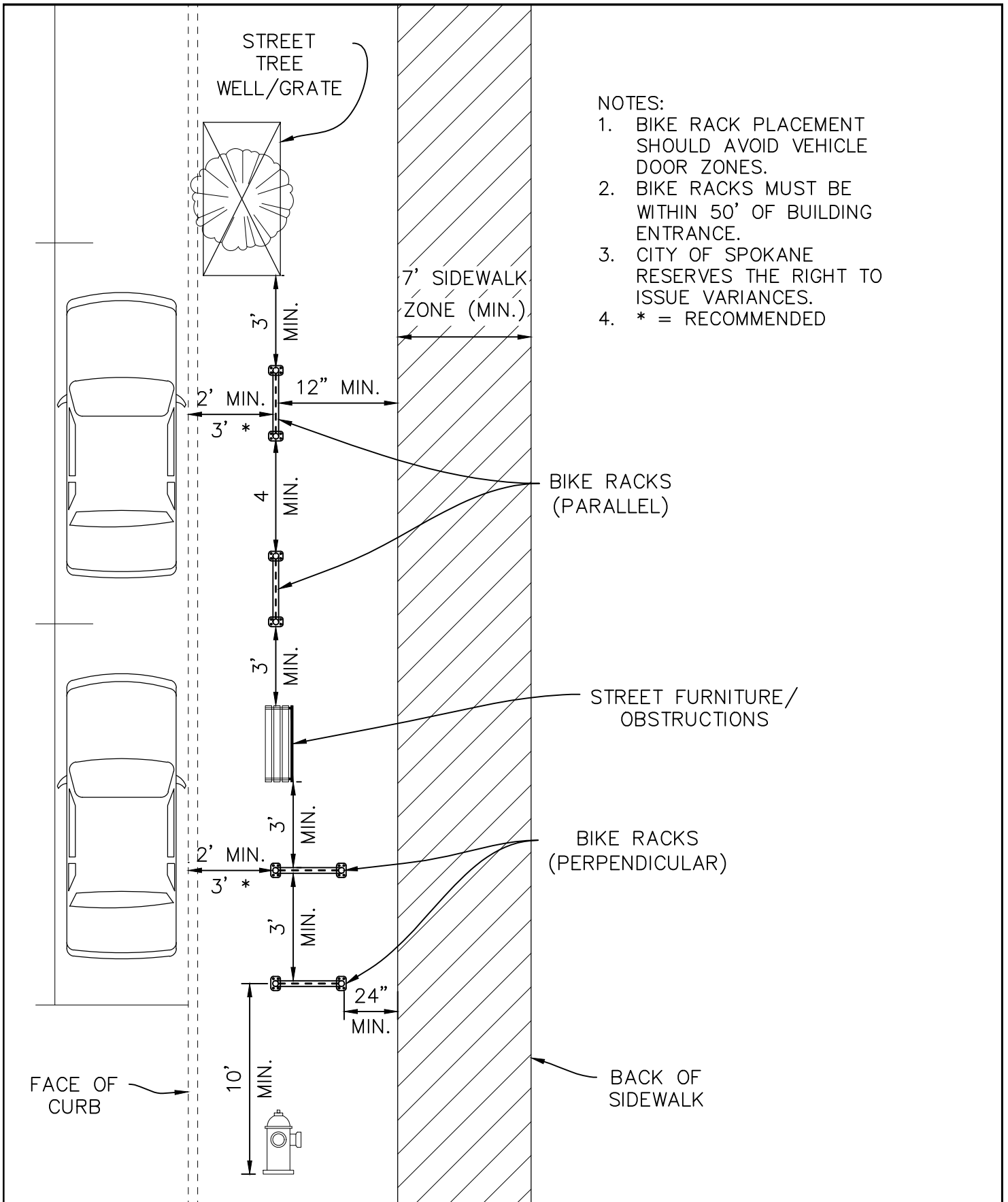
ADOPTED: 4/2023  
 REVISED: \_\_\_\_\_  
 SUPERSEDES: \_\_\_\_\_  
 CHECKED BY: DAB  
 SCALE: NTS  
 DWG/REV. BY: JAB



**BIKE RACK**

ENGINEERING SERVICES  
 CITY OF SPOKANE, WASHINGTON


STANDARD  
 PLAN No.  
**A-14**



- NOTES:
1. BIKE RACK PLACEMENT SHOULD AVOID VEHICLE DOOR ZONES.
  2. BIKE RACKS MUST BE WITHIN 50' OF BUILDING ENTRANCE.
  3. CITY OF SPOKANE RESERVES THE RIGHT TO ISSUE VARIANCES.
  4. \* = RECOMMENDED

APPROVED BY  
  
 DIRECTOR OF ENGINEERING SERVICES DAN BULLER, P.E.

ADOPTED: 04/2023  
 REVISED: \_\_\_\_\_  
 SUPERSEDES: \_\_\_\_\_  
 CHECKED BY: DAB  
 SCALE: NTS  
 DWG/REV. BY: JAB

<b>BIKE RACK SPACING</b>	
 <b>ENGINEERING SERVICES</b> CITY OF SPOKANE, WASHINGTON	STANDARD PLAN No. <b>A-15</b>

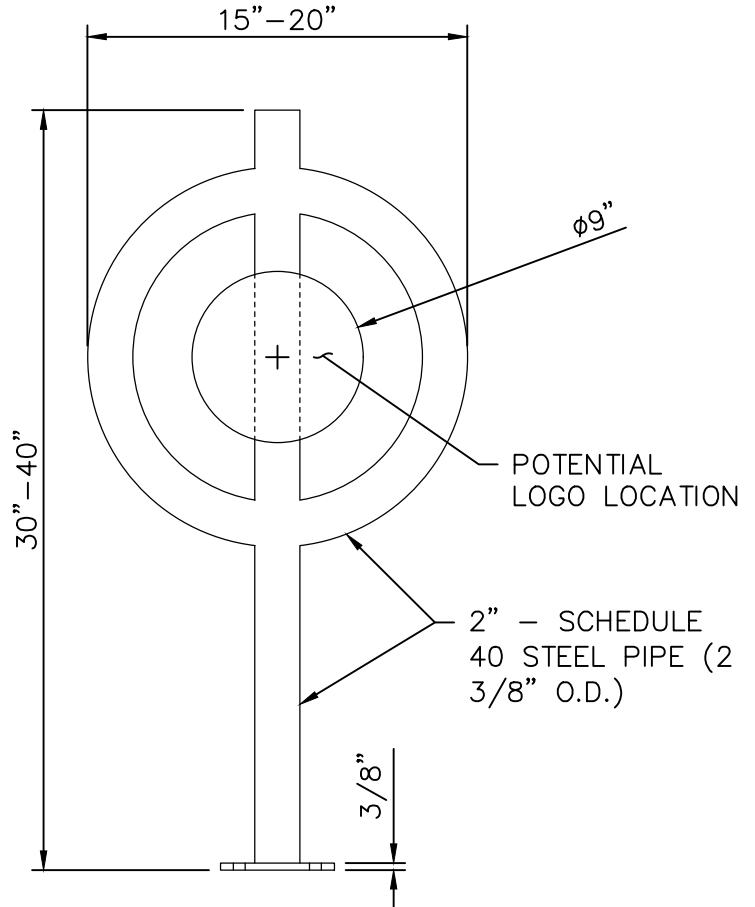


**NOTES:**

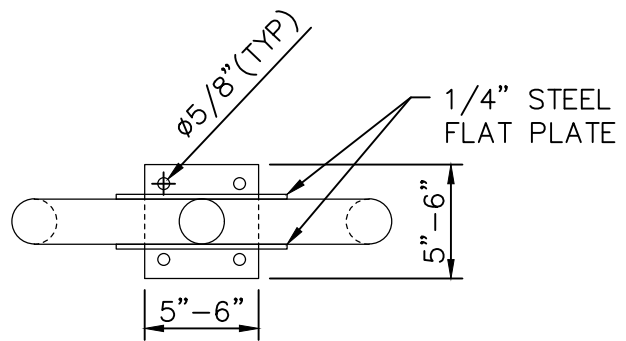
1. BIKE HITCH SHALL BE GALVANIZED OR STAINLESS STEEL.
2. RACK DIMENSIONS MAY VARY BY MANUFACTURER.

**MOUNTING:**

1. BASE PLATE SHALL BE MOUNTED VIA 8-1/2" DIA. WEDGE ANCHOR WITH TAMPER RESISTANT SECURITY NUT.
2. RACK SHALL BE SET FIRM AND ALIGNED WITH A 1/4" ± TOLERANCE FROM PLUMB.
3. STEEL SHIMS SHALL BE INSTALLED PRIOR TO ANCHORING IN PLACE WHEN NEEDED.



**ELEVATION VIEW**



**PLAN VIEW**

APPROVED BY  
  
 DIRECTOR OF ENGINEERING SERVICES DAN BULLER, P.E.

ADOPTED: 04/2023  
 REVISED: \_\_\_\_\_  
 SUPERSEDES: \_\_\_\_\_  
 CHECKED BY: DAB  
 SCALE: NTS  
 REVISED BY: JAB

**BIKE HITCH**

ENGINEERING SERVICES  
 CITY OF SPOKANE, WASHINGTON

STANDARD  
 PLAN No.  
**A-16**