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### CITY OF SPOKANE STANDARD PLANS – SECTION A

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B-101B = Revised Standard Plan  
***W-108A = New Standard Plan  
#A-1 = Renumbered Standard Plan  

Back to Main TOC
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.
NOTES:
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.
CDF BACKFILL FOR UTILITY TRENCHES

NOTES:


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.
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.
WATER/SEWER CROSSINGS

IS THE SEWER A PRESSURE MAIN?

NO

NO TO BOTH

SEWER ABOVE WATER OR CLEARANCE < 18”?

NO SPECIAL REQUIREMENTS

YES TO EITHER

PRESSURE MAINS SHALL BE INSTALLED BELOW WATER MAINS IN ALL CASES.

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
TYPICAL STREET

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.

TYPICAL ALLEY

CALL BEFORE YOU DIG 456-8000
TYPICAL STREET

SIDE OF ALLEY

S or W  N or E

2.5'

2.5'

5'

5'

5'

5'

5'

5'

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.

TYPICAL ALLEY

CALL BEFORE YOU DIG 456-8000

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.
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. CARRIER PIPE SHALL BE PRESSURE TESTED PER CITY OF SPOKANE CONTRACT PROVISIONS PRIOR TO SEALING ENDS OF CASING PIPE.


5. INSULATOR RUNNER HEIGHT 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.

6. 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.
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
**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.
ASTM A-48, CL. 30B
CAST IRON FRAME

CAST IRON FRAME
MIN. WEIGHT 168 LBS.

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

3" TO C OF 1" DIA.
PICK HOLE, TYP. 2
PLACES INDEX AT 180°

SEE NOTE 1.

ASTM A-536,
GRADE 80-55-06
DUCTILE IRON
COVER

DUCTILE IRON COVER
MIN. WEIGHT 118 LBS.

26-3/16"
2-7/8"
5/8"
2-1/8"
1"
1/4"
5/8"
1-3/16"

SECTION B-B

SECTION A-A

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.

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

ENGINEERING SERVICES
CITY OF SPOKANE, WASHINGTON

MANHOLE FRAME AND COVER

STANDARD PLAN No. A-12
SEE STANDARD DETAIL A–12 FOR DETAIL OF NONSKID PATTERN

DRILL & TAP
5/8" X 13 N.C. HOLE FOR 5/8" X 1 1/2" LG. SOCKET HEAD CAP SCREW
23.3125" B.C. (TYP.)

CAST IRON FRAME

27 5/8"
26 3/8"
5/8"
1"
1"
6"
24" CO
26 3/4"
34 1/8"

1/2"

1 7/16"
1 5/16"
3/8"
1"
5/8"
3/4"
1 1/4"
2 7/8"
2 1/8"
1 3/16"

PICK HOLE SEE NOTE (2)

"SEWER" OR "STORM" OR "WATER"

SECTION B–B

BOLT-DOWN DETAIL

DUCTILE IRON COVER

SECTION A–A

DRAWING NOTES:
1. MATERIALS SHALL CONFORM TO SECTION 9–05.15(1) OF THE SPECIFICATIONS
2. 3" TO 4" DIA. PICK HOLE. TYP. 2 PLACES INDEXED AT 180°.