

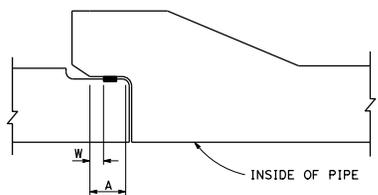
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

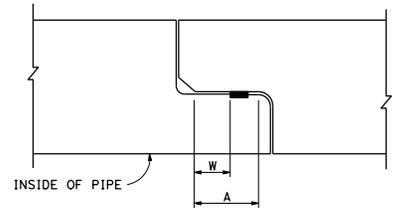
October 30, 2015
PLANS APPROVAL DATE

BRUCE D. SWANGER
No. C61257
Exp. 6-30-17
CIVIL
STATE OF CALIFORNIA

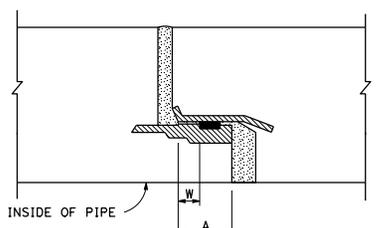
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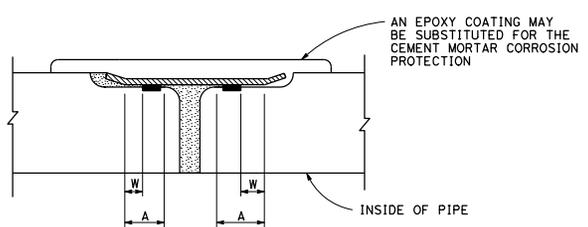
CONCRETE JOINT-FLARED BELL DESIGN



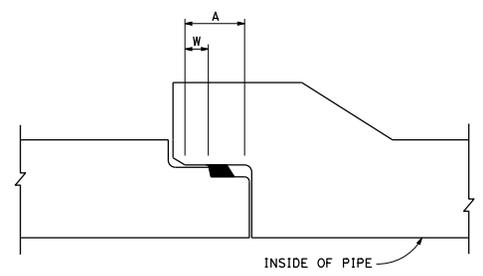
CONCRETE JOINT-FLUSH BELL DESIGN



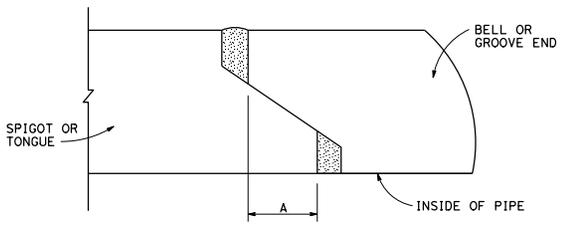
STEEL JOINT-FLUSH BELL DESIGN



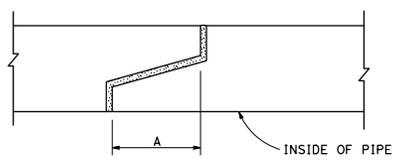
CONCRETE JOINT-DOUBLE GASKET DESIGN



CONCRETE JOINT-SINGLE OR DOUBLE OFFSET DESIGN
(Flared or Flush Bell)



SELF-CENTERING TONGUE & GROOVE
(See Note 4)



TONGUE & GROOVE DESIGN

LEGEND

- CEMENT MORTAR
- RUBBER GASKET
- STEEL

NOTES:

1. For pipe sections installed on straight alignment, the pipe sections shall be joined to provide maximum joint overlap at all points on the joint periphery, but in no case less than the values shown in Table A for "W" if the installation is required to be watertight or "A" for all other installations.
2. For pipe sections installed on curved alignment, the pipe sections shall be joined to provide maximum joint overlap on one side of the joint and not less than 1/4" overlap on the other. The 1/4" overlap shall be the "W" dimension for installations required to be watertight, or the "A" dimension for all other installations.
3. Watertight joint requirement shall typically be met with the use of rubber gaskets as shown. Pipe installed with rubber gaskets shall have a minimum overlap meeting or exceeding the indicated "W" dimension shown in Table A or indicated in Note 2. Joints shown with rubber gaskets may be installed without gaskets in non-watertight applications, in which case the joint shall be sealed with sealing materials and the minimum joint overlap shall meet or exceed the "A" dimension shown in Table A or indicated in Note 2.
4. For Self-Centering Tongue and Groove Joints, the mortar shall be applied after the pipe ends are pushed together. The mortar shall be applied to the joint gap on the inside of the pipe for pipe diameters of 24" or more, or to the gap on the outside of the pipe for pipe smaller than 24" in diameter.
5. When watertight joints are required (See Note 3) and cement mortar joints are not allowed, the taper on surfaces within the "W" dimension at full joint closure and the opposing sealing surfaces of the bells and spigots on which the rubber gaskets may bear during closure of the joint and at any degree of partial closure shall form an angle of not more than 2 degrees with the longitudinal axis of the pipe.

TABLE A

PIPE DIAMETER LIMITS	MINIMUM JOINT OVERLAP			
	STANDARD "A"	POSITIVE "A"	STANDARD "W"	POSITIVE "W"
6" THROUGH 12"	1/4"	1/2"	1/4"	3/8"
15" THROUGH 33"	1/2"	3/4"	1/4"	1/2"
GREATER THAN 33"	3/4"	1"	3/8"	5/8"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**REINFORCED CONCRETE PIPE OR
NON-REINFORCED CONCRETE PIPE
STANDARD AND POSITIVE JOINTS**

NO SCALE

D97H