

18" MIN. FOR BOX CULVERT
42" MIN. FOR IRRIGATION DITCH

VERTICAL THRUST BLOCKS,
(TYPICAL BOTH SIDES). SEE
VERTICAL THRUST BLOCK
DETAIL DRAWING NO. 5.15

JOINT RESTRAINT (IF
CONCRETE THRUST BLOCKS
ARE NOT USED) SEE ROD
DETAIL DRAWING NO. 5.03
FOR REQUIRED ROD
TYPE, SIZE AND LENGTH.
(SIMILAR ON OPPOSITE SIDE.)

BOX CULVERT
OR IRRIGATION
DITCH

2 - 45° BENDS
(TYP BOTH SIDES)

TIE RODS (TYP)

FROM END OF CASING
PIPE TO OUTSIDE OF BOX
OR TOP OF BANK OF DITCH
(TYPICAL BOTH SIDES)

INSTALL WATER LINE
IN CASING PIPE, SEE
CASING PIPE DETAIL
DRAWING NO. 4.09A
OR NO. 4.09B

THRUST BLOCK, SEE
HORIZONTAL THRUST BLOCK
DETAIL DRAWING NO. 5.14

WELD TIE RODS TO
CASING PIPE PER
HARNES LUG DETAIL
DRAWING NO. 5.08
(TYPICAL BOTH SIDES)

NOTE: PIPE RESTRAINT SHALL BE EITHER CONCRETE THRUST BLOCKS
OR JOINT RESTRAINT AS SPECIFIED.

DRAWN BY: JSH

CHECKED BY: RJH

APPROVED BY:
DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO

WATER LINE
LOWERING

CULVERT CROSSING AND
IRRIGATION DITCH CROSSING

ISSUED: JULY 2, 1998

REVISED: OCT. 17, 2000

DRAWING NO.

5.01B