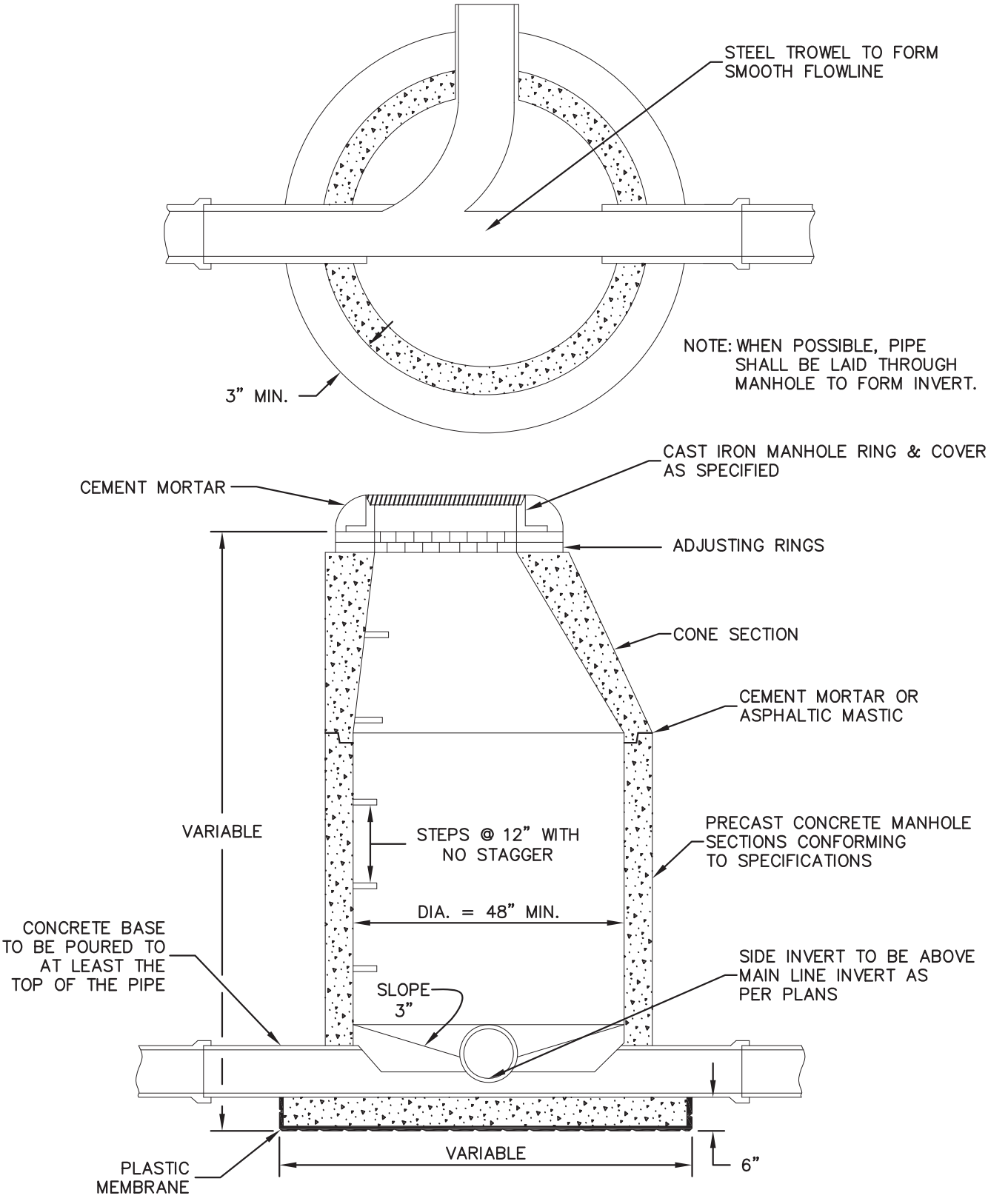


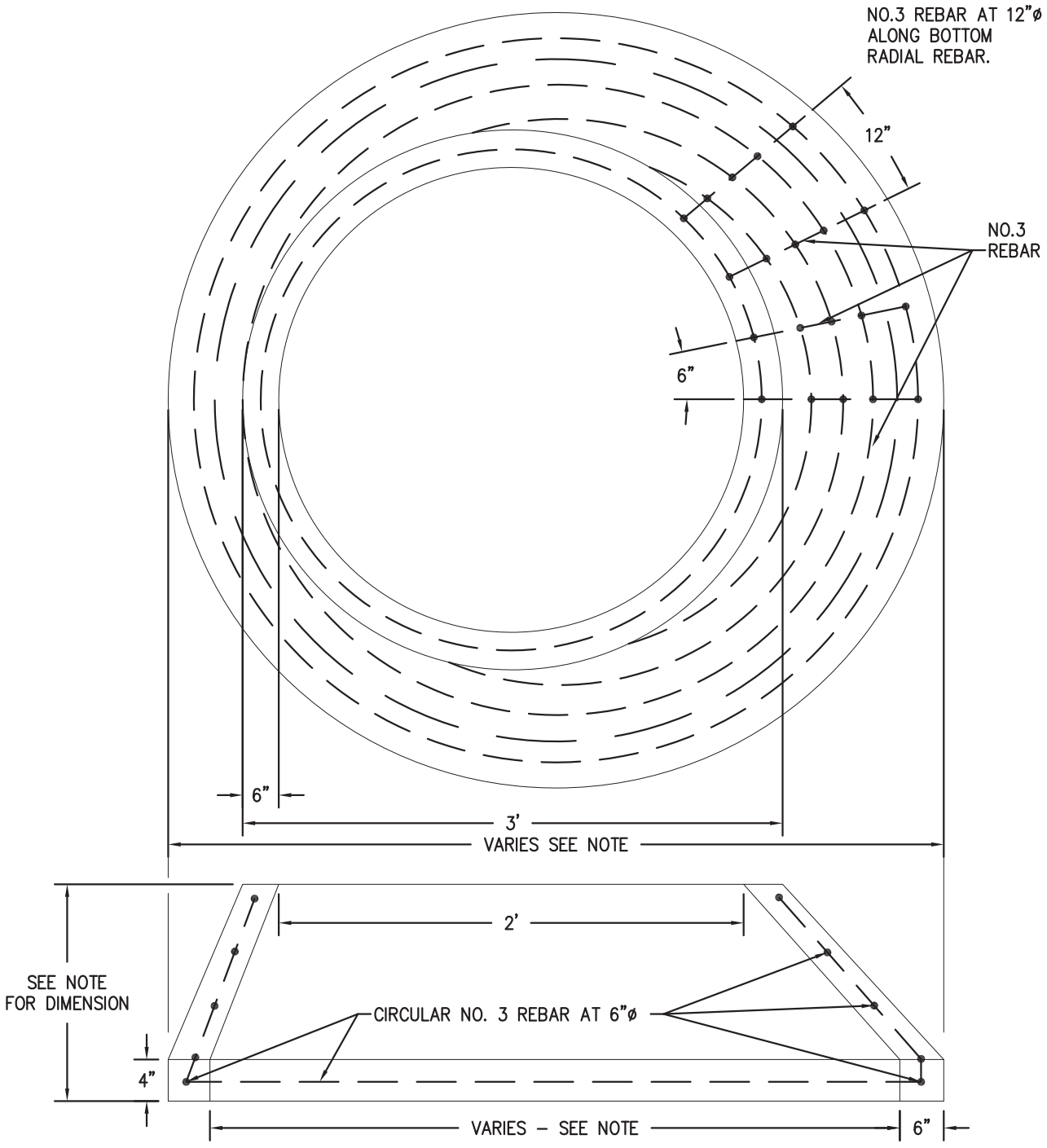
ELEVATE! COLORADO
WOODLAND PARK
CITY ABOVE THE CLOUDS

STANDARD MANHOLE CONSTRUCTION

DATE: FEB, 2011	REV. –/–/–	FIG. 3.4.1

NOTE:

4' I.D. MH–18" CONE CAP 5' O.D.
OR 4' I.D. MH–24" CONE CAP 5' O.D.
5' I.D. MH–30" CONE CAP 6' O.D.
6' I.D. MH–30" CONE CAP 7' O.D.



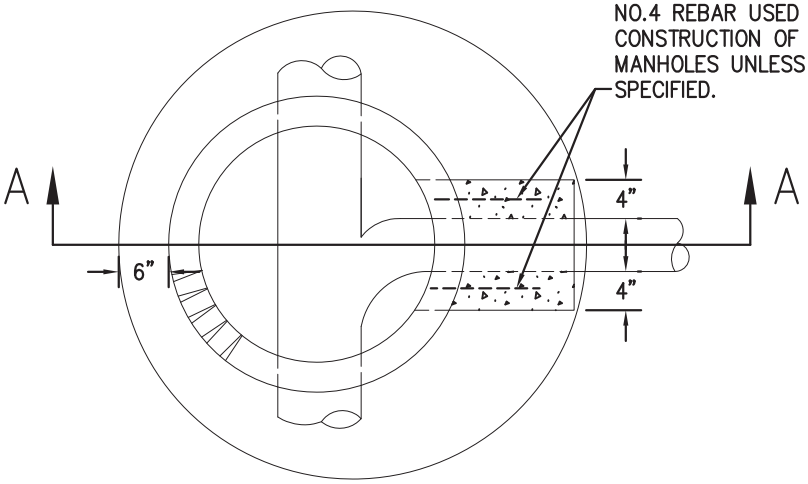
ELEVATE! COLORADO
WOODLAND PARK
CITY ABOVE THE CLOUDS

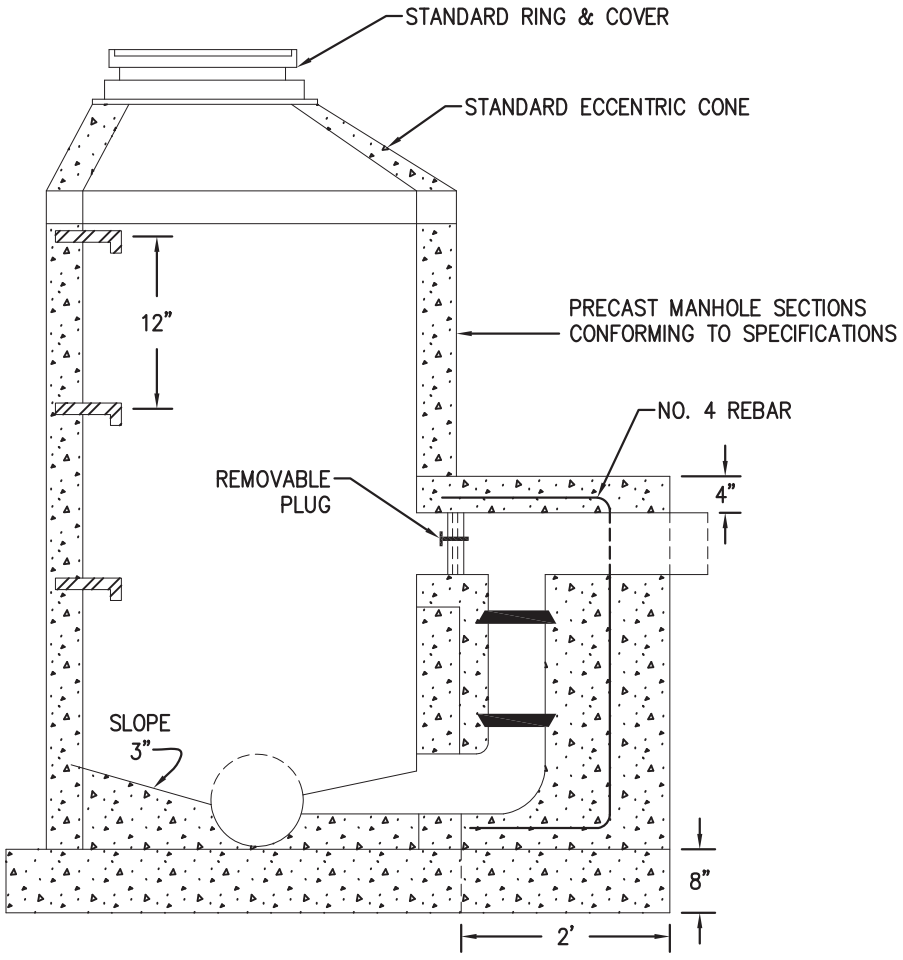
STANDARD CONCRETE MANHOLE CONE CAP

DATE: FEB, 2011	REV. –/–/–	FIG. 3.4.2

NOTE:

NO.4 REBAR USED IN ALL CONSTRUCTION OF DROP MANHOLES UNLESS OTHERWISE SPECIFIED.



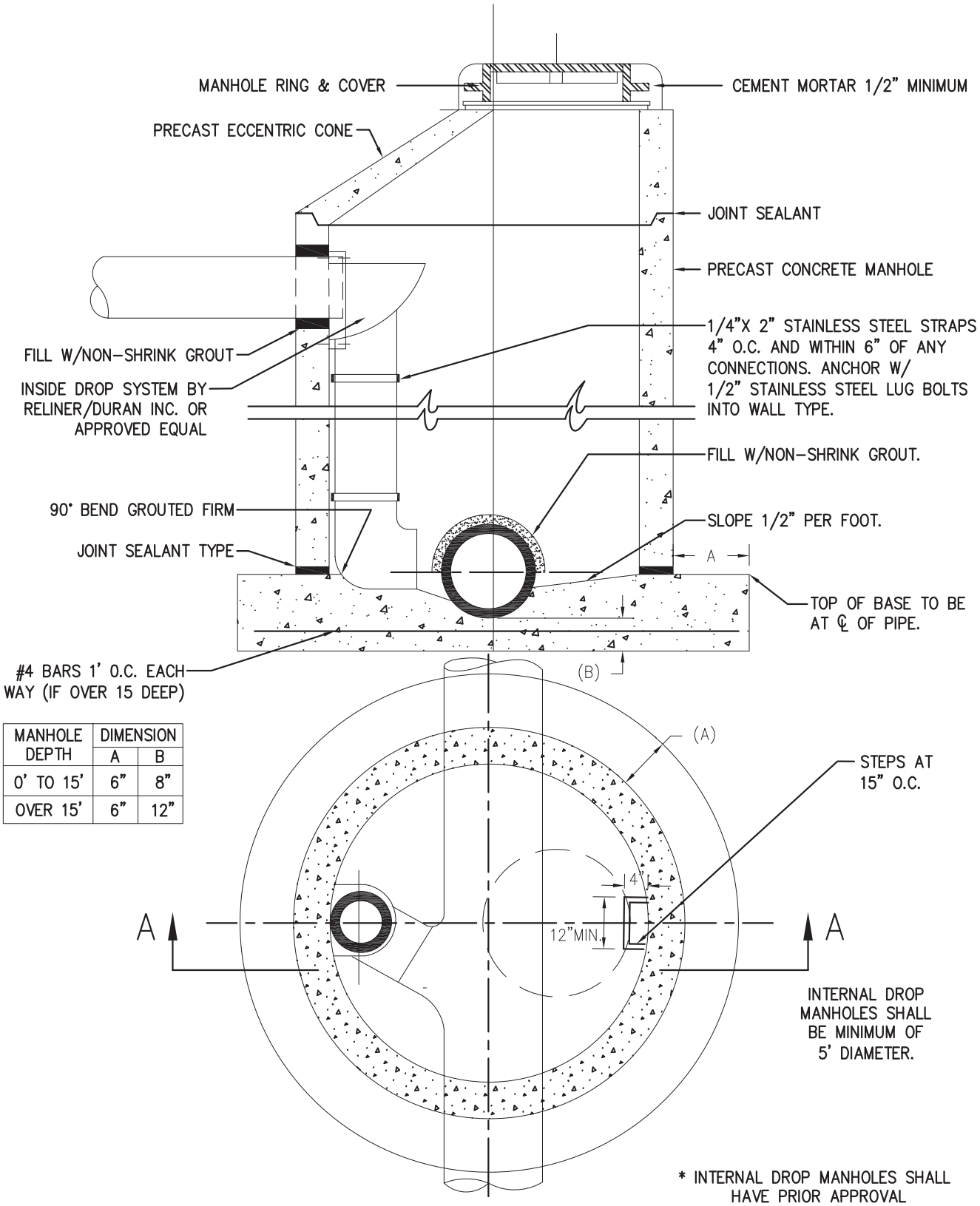


SECTION A–A

ELEVATE! COLORADO
WOODLAND PARK
CITY ABOVE THE CLOUDS

STANDARD OUTSIDE DROP MANHOLE

DATE: FEB, 2011	REV. –/–/–	FIG. 3.4.3



MANHOLE DEPTH	DIMENSION	
	A	B
0' TO 15'	6"	8"
OVER 15'	6"	12"

* INTERNAL DROP MANHOLES SHALL HAVE PRIOR APPROVAL

ELEVATE! COLORADO
WOODLAND PARK
CITY ABOVE THE CLOUDS

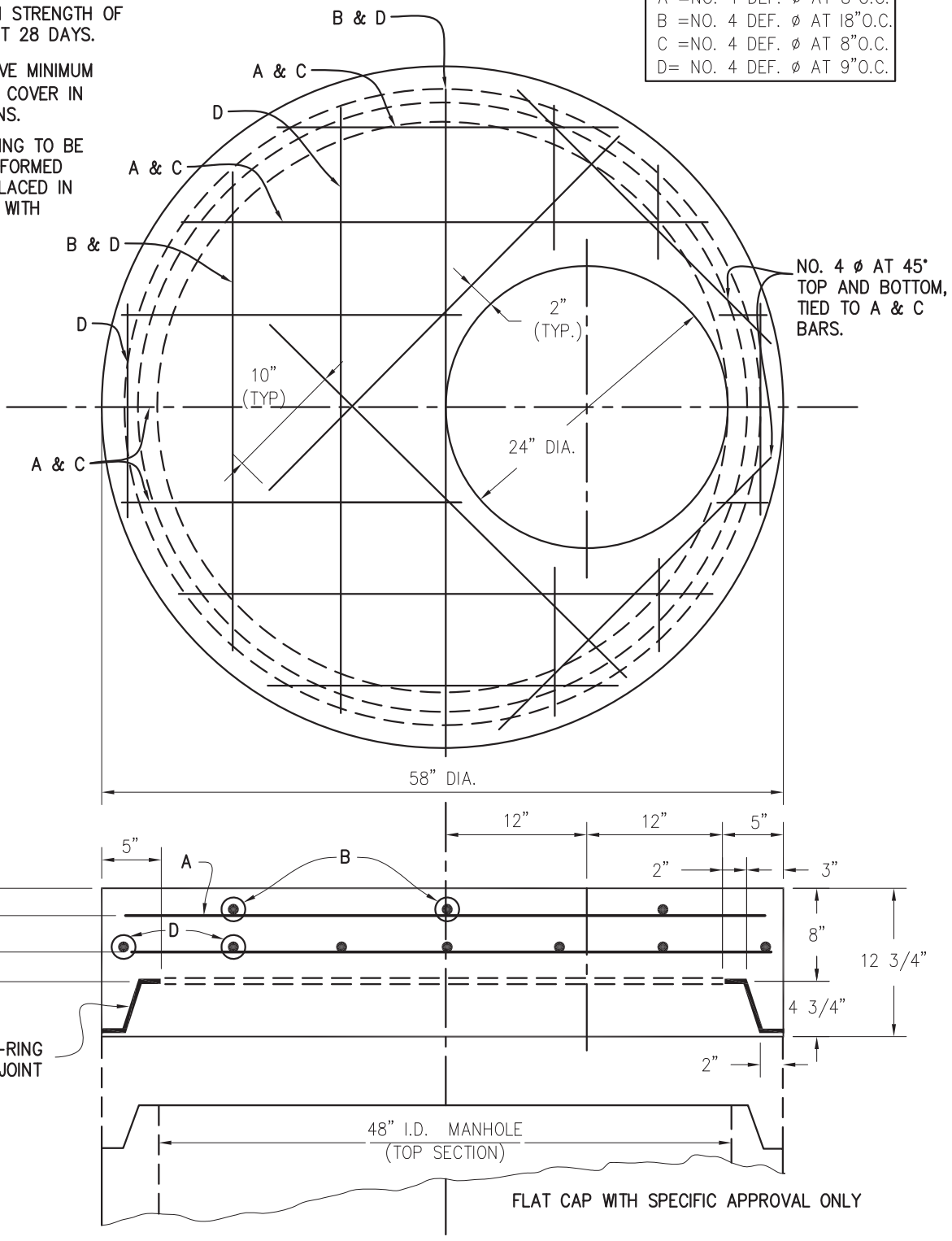
STANDARD INTERNAL DROP MANHOLE *

DATE: FEB, 2011	REV. -/-/-	FIG. 3.4.4

H–20 LOADING

NOTE:
1. CONCRETE SHALL BE TYPE II WITH MINIMUM STRENGTH OF 3000 P.S.I. AT 28 DAYS.
2. REBAR TO HAVE MINIMUM 2" CONCRETE COVER IN ALL DIRECTIONS.
3. ALL REINFORCING TO BE GRADE 40 DEFORMED BARS, AND PLACED IN ACCORDANCE WITH THE LATEST A.C.I. CODE.

A =NO. 4 DEF. ø AT 8"O.C.
B =NO. 4 DEF. ø AT 18"O.C.
C =NO. 4 DEF. ø AT 8"O.C.
D= NO. 4 DEF. ø AT 9"O.C.



WOODLAND PARK COLORADO

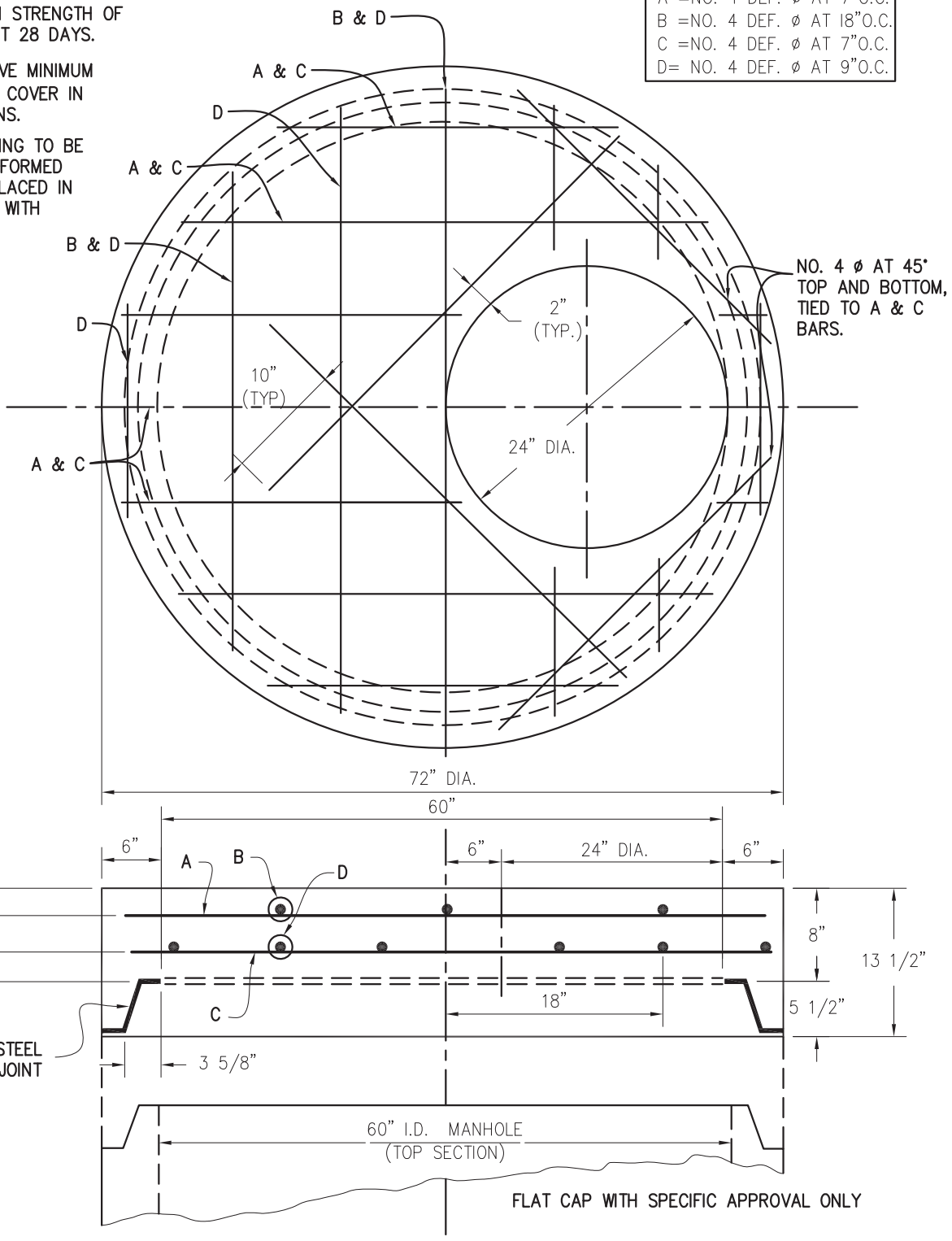
48" PRE-CAST CONCRETE MANHOLE DECK

DATE: FEB, 2011	REV. –/–/–	FIG. 3.4.5

H-20 LOADING

NOTE:
1. CONCRETE SHALL BE TYPE II WITH MINIMUM STRENGTH OF 3000 P.S.I. AT 28 DAYS.
2. REBAR TO HAVE MINIMUM 2" CONCRETE COVER IN ALL DIRECTIONS.
3. ALL REINFORCING TO BE GRADE 40 DEFORMED BARS, AND PLACED IN ACCORDANCE WITH THE LATEST A.C.I. CODE.

A =NO. 4 DEF. ø AT 7"O.C.
B =NO. 4 DEF. ø AT 18"O.C.
C =NO. 4 DEF. ø AT 7"O.C.
D= NO. 4 DEF. ø AT 9"O.C.



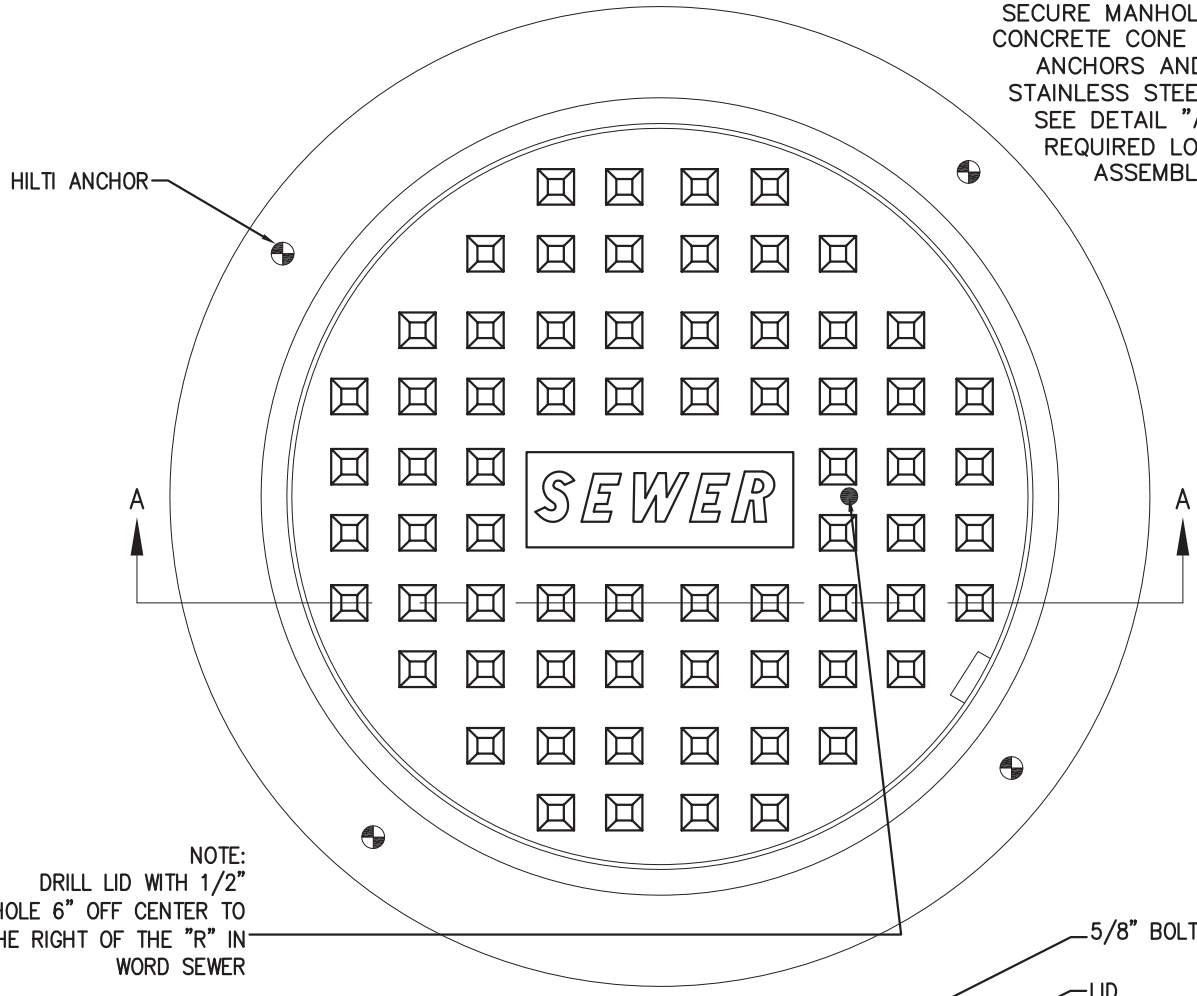
ELEVATE! COLORADO
WOODLAND PARK
CITY ABOVE THE CLOUDS

60" PRE-CAST CONCRETE MANHOLE DECK

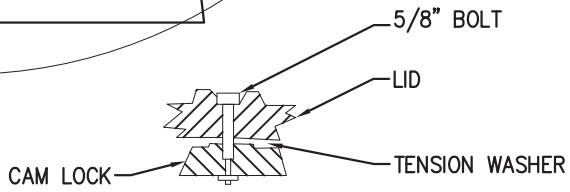
DATE: FEB, 2011	REV. -/-/-	FIG. 3.4.6

MANHOLE OUTSIDE
PUBLIC STREETS

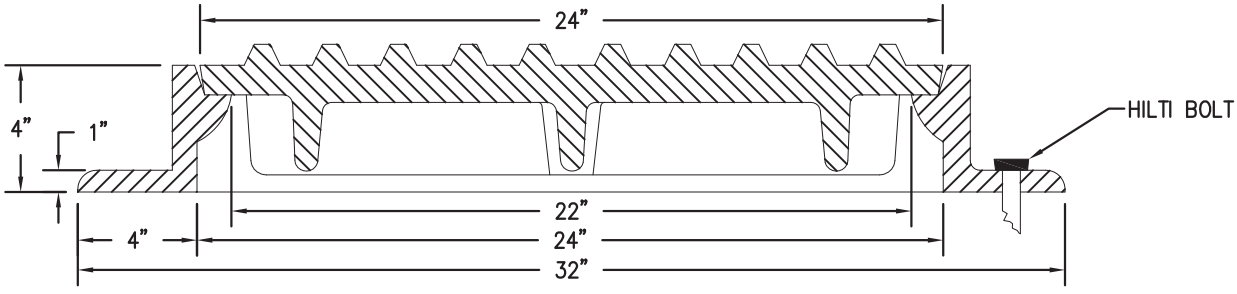
SECURE MANHOLE RING TO CONCRETE CONE WITH HILTI ANCHORS AND 5/8" STAINLESS STEEL BOLTS. SEE DETAIL "A" FOR REQUIRED LOCKING ASSEMBLY.



WEIGHT	C.I.
COVER A	166
COVER B	126
RING	150



DETAIL A (LID LOCK ASSEMBLY)

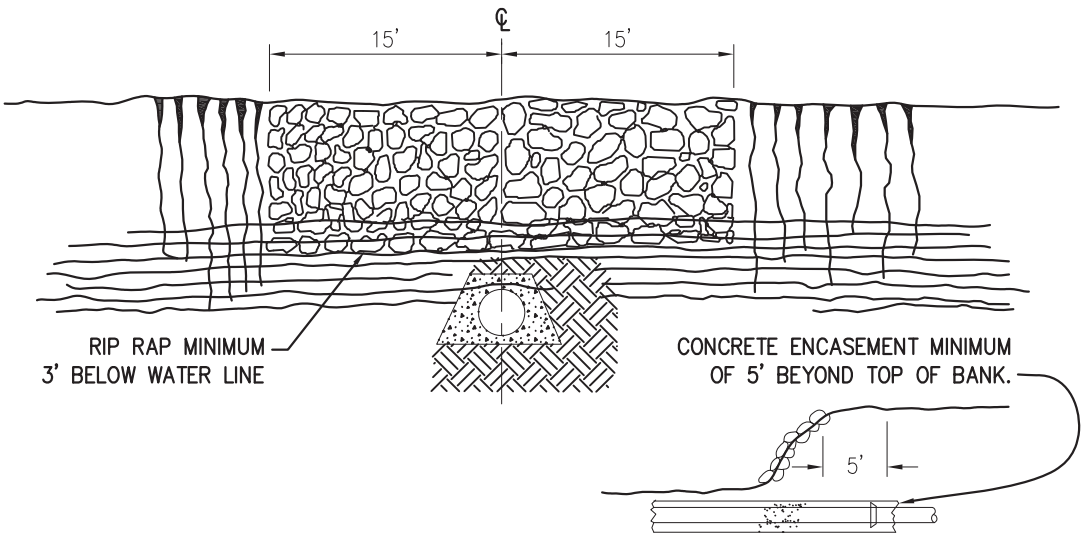


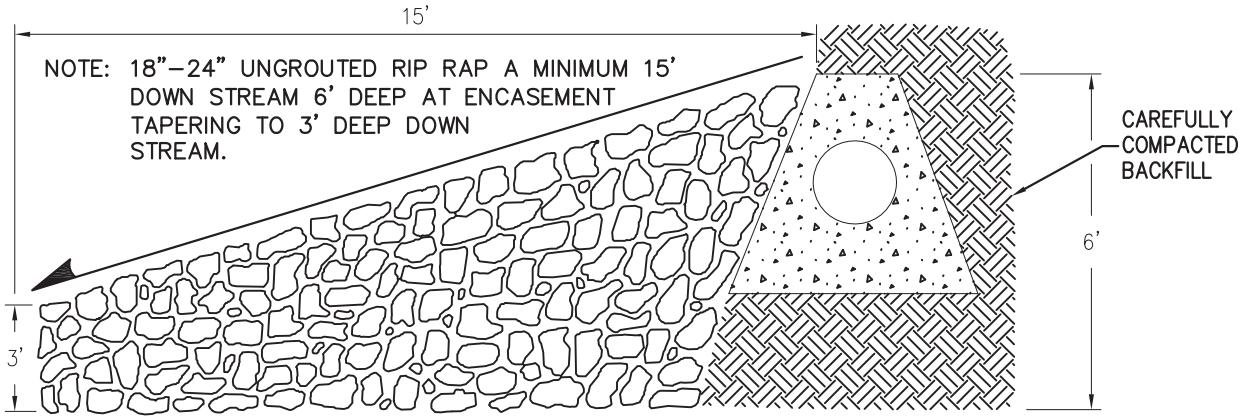
SECTION A–A

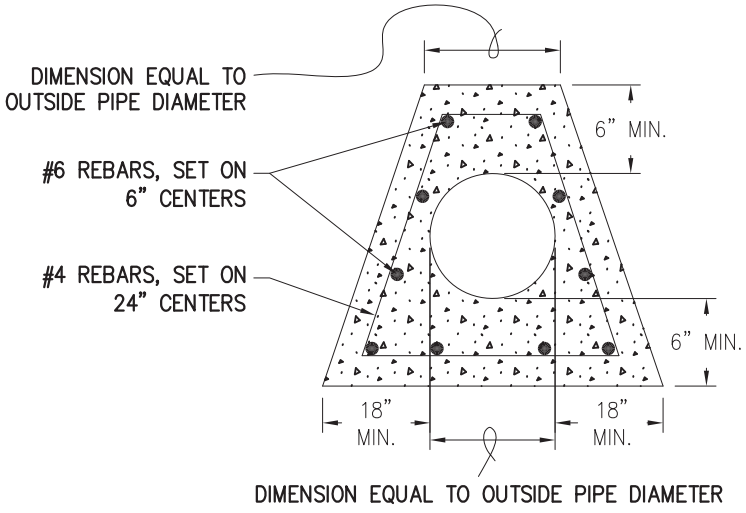
ELEVATE! COLORADO
WOODLAND PARK
CITY ABOVE THE CLOUDS

MANHOLE RING AND COVER

DATE: FEB, 2011	REV. –/–/–	FIG. 3.4.7







NOTE: PIPE ENCASEMENT DETAILS ARE FOR DEPTHS BELOW 4' WHERE CAISSON'S ARE NOT REQUIRED.

DUCTILE IRON PIPE OR STEEL PIPE WITH CONCRETE ENCASEMENT.

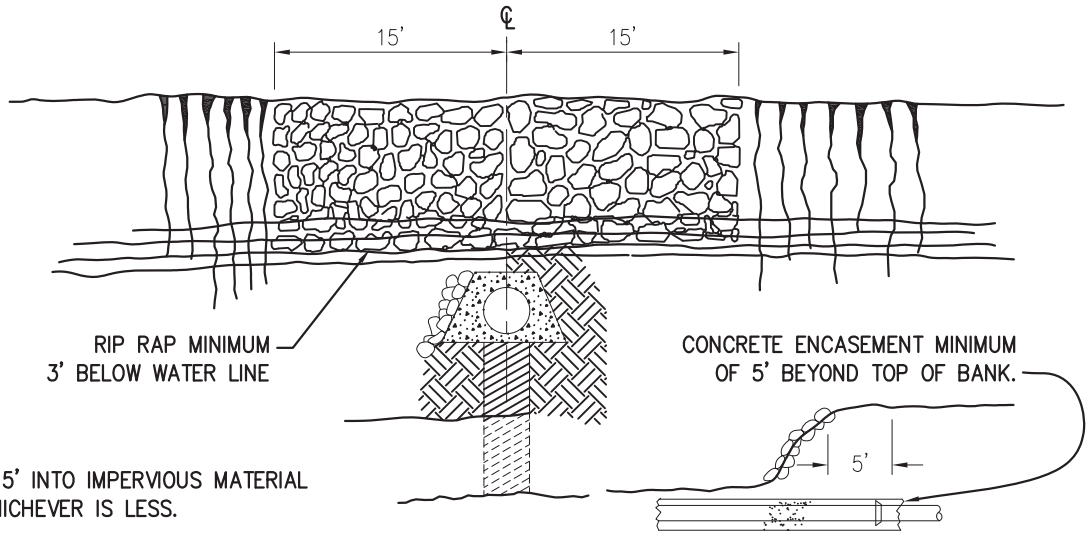
SECTION A–A

ELEVATE! COLORADO
WOODLAND PARK
CITY ABOVE THE CLOUDS

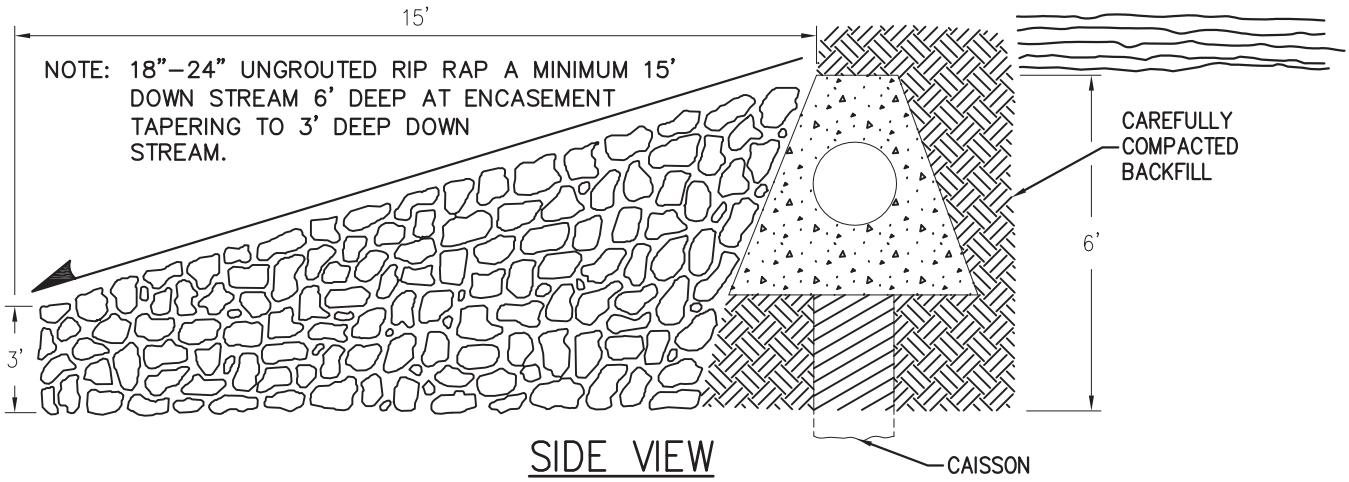
STREAM CROSSING ENCASEMENT WITHOUT CAISSONS

DATE: FEB, 2011	REV. –/–/–	FIG. 3.4.8

FRONT VIEW

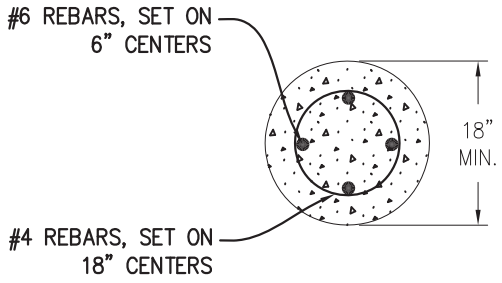


CAISSONS 5' INTO IMPERVIOUS MATERIAL
OR 20' WHICHEVER IS LESS.

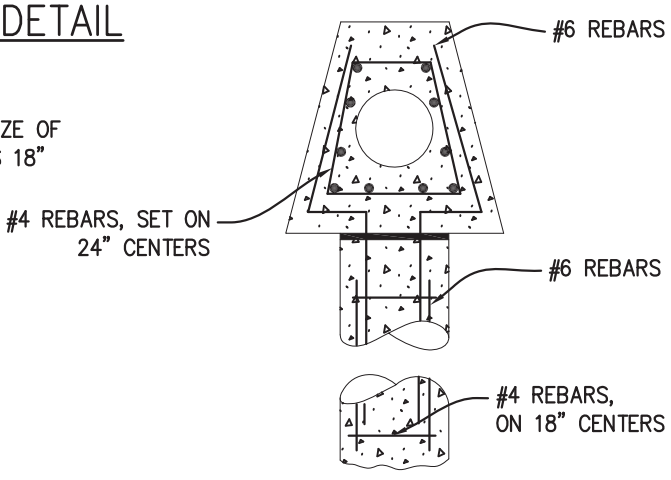


SIDE VIEW

CAISSON DETAIL



MINIMUM SIZE OF
CAISSONS 18"



CAISSON SPACING SHALL NOT EXCEED 20' ON CENTER.

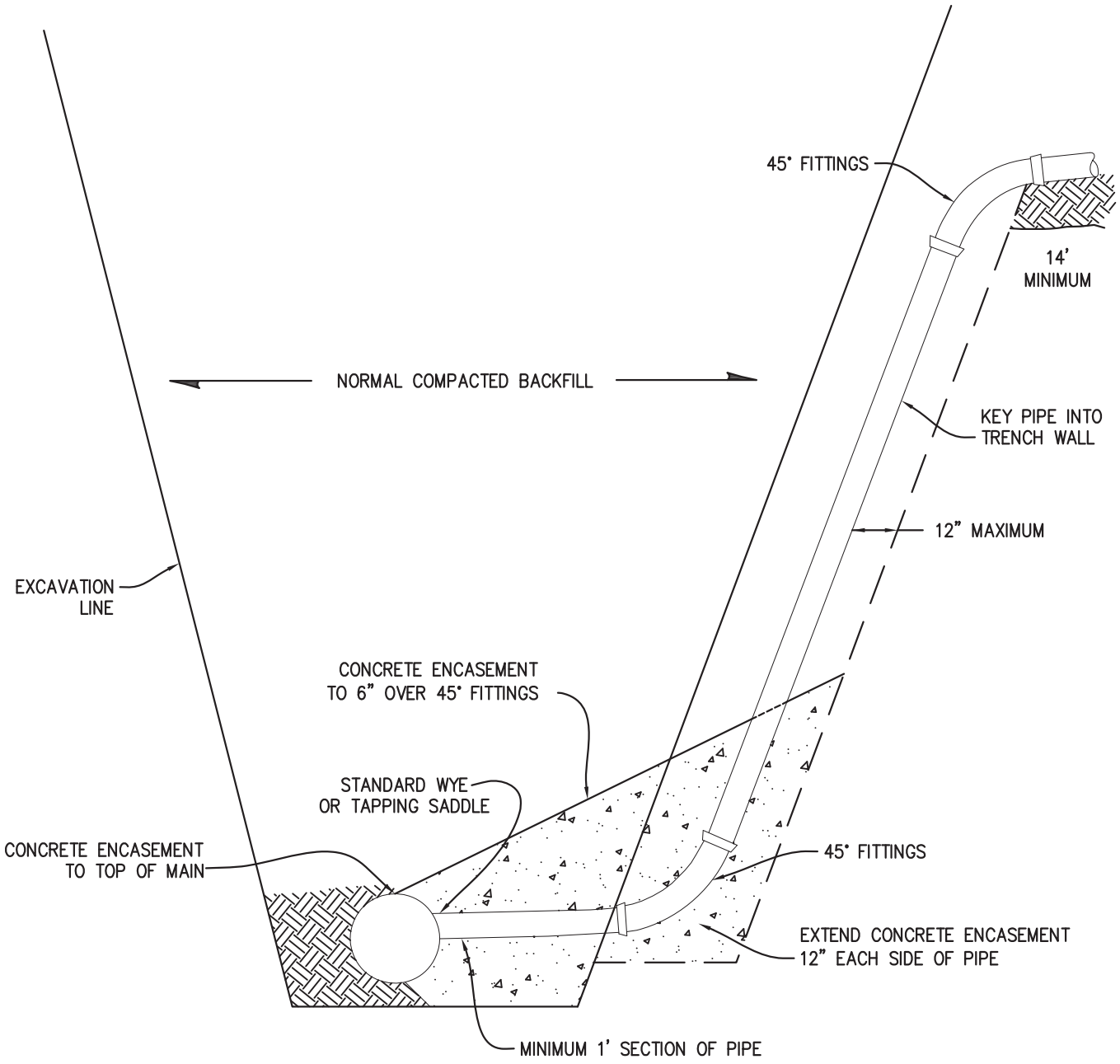
ELEVATE! COLORADO
WOODLAND PARK
CITY ABOVE THE CLOUDS

STREAM CROSSING ENCASEMENT TYPICAL CAISSON

DATE: FEB, 2011	REV. –/–/–	FIG. 3.4.9

DEEP SERVICE CONNECTIONS

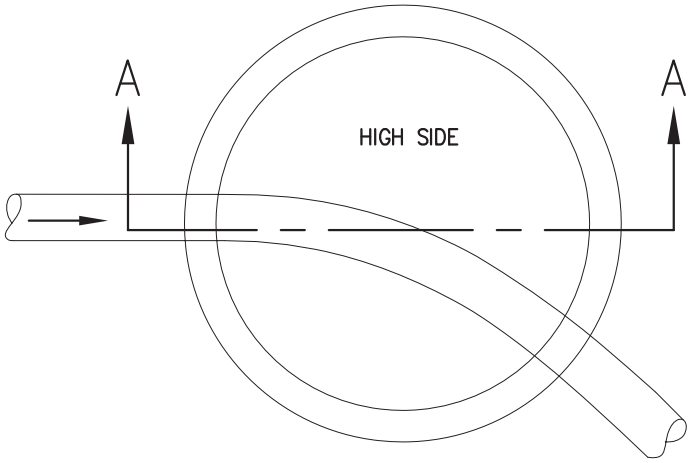
SERVICE CONNECTION IN EXCESS OF 14 FT (ON HIGH SIDE OF STREET)



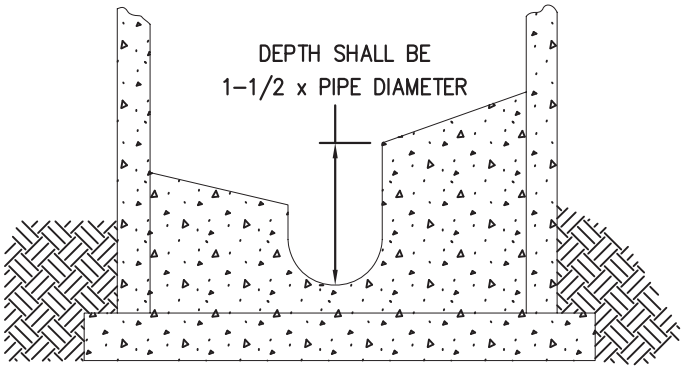
ELEVATE! COLORADO
WOODLAND PARK
CITY ABOVE THE CLOUDS

DEEP SERVICE CONNECTION

DATE: FEB, 2011	REV. –/–/–	FIG. 3.4.10



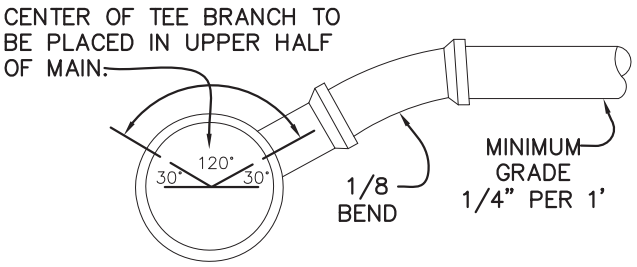
SECTION A–A



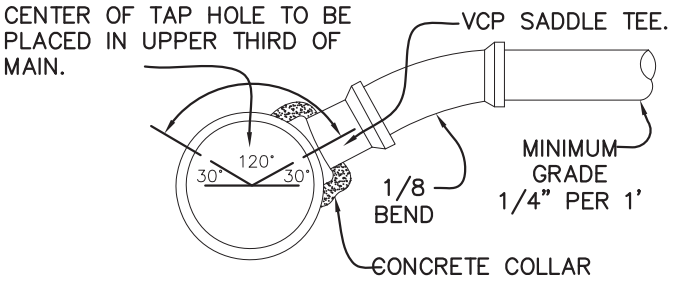
ELEVATE! COLORADO
WOODLAND PARK
CITY ABOVE THE CLOUDS

HIGH VELOCITY PROTECTION

DATE: FEB, 2011	REV. –/–/–	FIG. 3.4.11

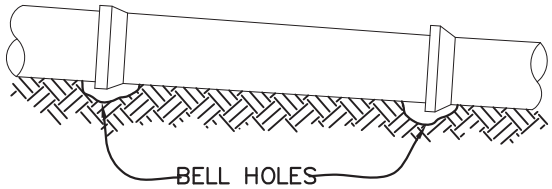


1/8 BEND CONNECTION TO TEE

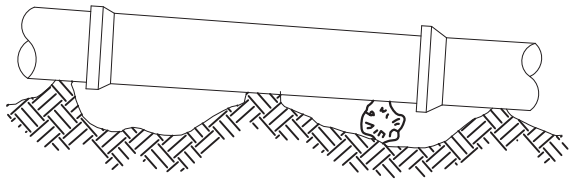


TAP TO BE MACHINE DRILLED ONLY

1/8 BEND & SADDLE CONNECTION



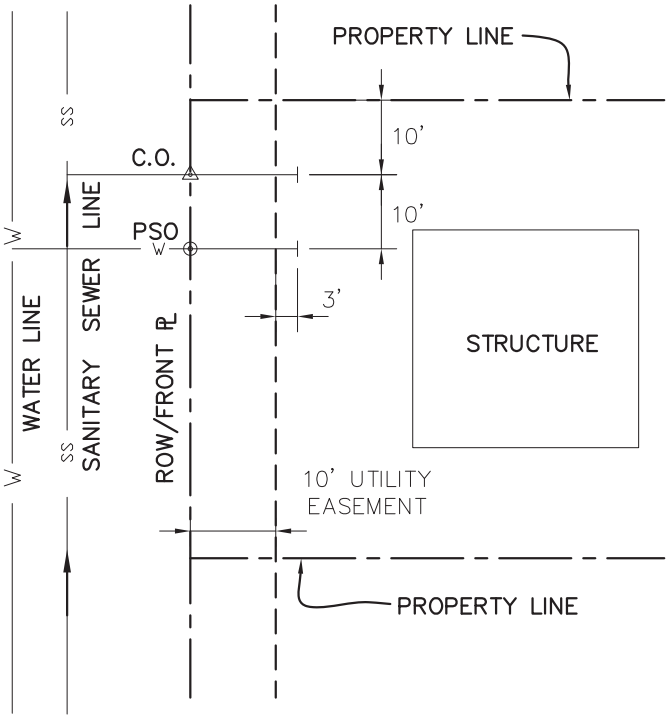
ACCEPTABLE BEDDING



UNACCEPTABLE BEDDING

NOTES:

1. BELLS SHALL NOT TOUCH THE SIDES OR BOTTOM OF THE BELL HOLE.
2. THE BARREL SECTION SHALL BE SUPPORTED THROUGHOUT ITS LENGTH.
3. SERVICE TAPS SHALL BE IN LINE TEE OR MACHINE TAPPED, HAND TAPS SHALL NOT BE ALLOWED.
4. SERVICE LINES SHALL BE LOCATED TEN FEET UP HILL FROM THE LOWEST FRONT PROPERTY CORNER.
5. THE CURB SHALL BE MARKED WITH "S" WHERE THE SEWER SERVICE LINE CROSSES THE CURB.
6. THE MINIMUM SERVICE LINE GRADE SHALL BE 1/4" PER FOOT.
7. JOINTS SHALL BE WATER TIGHT.
8. SERVICE LINES SHALL RUN PERPENDICULAR TO THE FRONT LOT LINE AND SHALL EXTEND AT LEAST THIRTEEN FEET INSIDE THE PROPERTY LINE. AN AIR & WATER TIGHT PLUG OR CAP SHALL BE PLACED ON THE END OF THE SERVICE LINE AND 4x4 POST PLACED IN GROUND FOR FUTURE LOCATION.
9. A CLEAN OUT SHALL BE PROVIDED AT THE PROPERTY LINE.

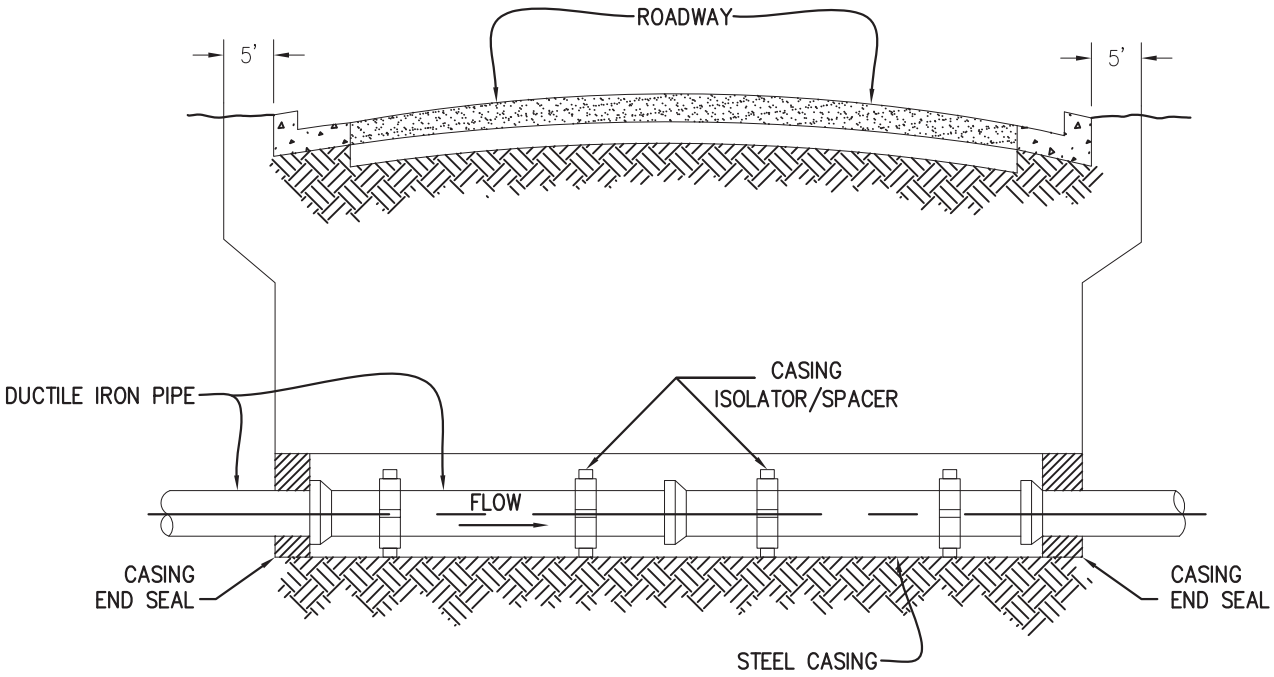


RESIDENTIAL SEWER SERVICE

ELEVATE! COLORADO
WOODLAND PARK
CITY ABOVE THE CLOUDS

SANITARY SEWER SERVICE DETAIL

DATE: FEB, 2011	REV. -/-/-	FIG. 3.4.12



NOTES:

1. DUCTILE IRON PIPE ONLY SHALL BE USED THROUGH ALL BORES.
2. IF THE BORE IS NOT CONSTRUCTED TO THE PROPER GRADE AN ADDITIONAL MANHOLE SHALL BE INSTALLED AT THE GRADE CHANGE.
3. THE CASING SHALL BE SEALED WITH A FLEXIBLE CASING END SEAL SUCH AS PSI MODEL "S".
4. THE PIPE AND CASING SHALL BE INSULATED USING A PSI MODEL "PE" CASING ISOLATOR/SPACER ATTACHED TO THE PIPE.

ELEVATE! COLORADO
WOODLAND PARK
CITY ABOVE THE CLOUDS

TYPICAL BORE CONSTRUCTION

DATE: FEB, 2011	REV. -/-/-	FIG. 3.4.13