1.5" Riser
2.5" Riser

4" Ring with two risers and cover.

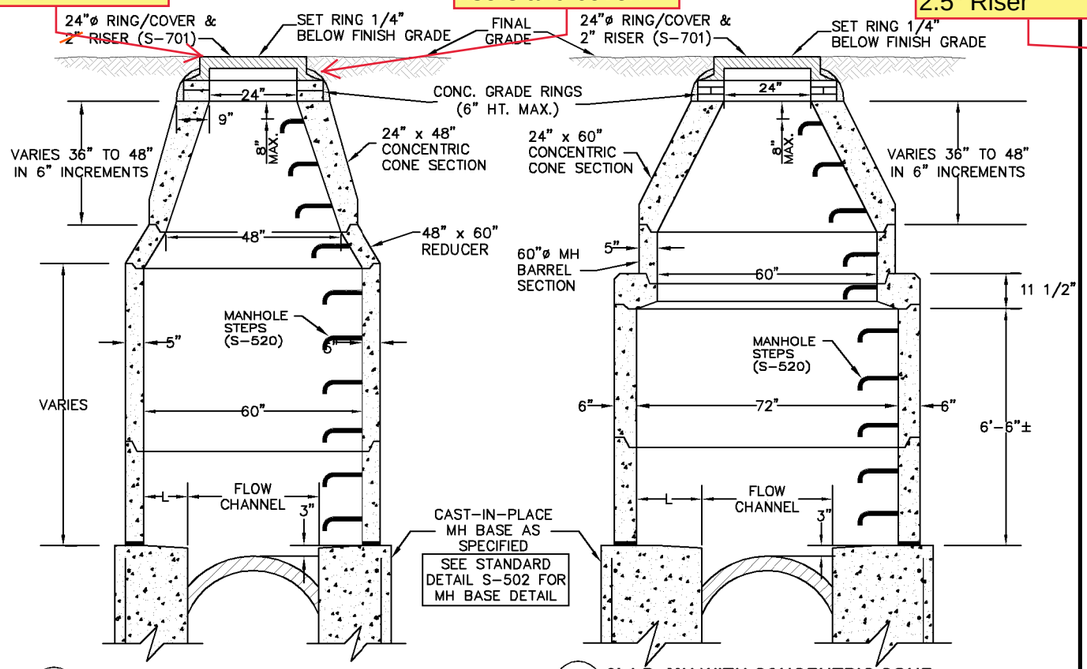


FIG. 1A **5' I.D. MH WITH CONCENTRIC CONE**
(30", 33" & 36" DIA. PIPE)
NO SCALE

FIG. 1B **6' I.D. MH WITH CONCENTRIC CONE**
(42" DIA. PIPE)
NO SCALE

TO BE USED ONLY AT SPECIFIC DIRECTION OF THE ENGINEER 48" DIA. & LARGER PIPES SHALL BE TYPE B(S-503) OR TYPE P(S-504).

1.5" Riser
2.5" Riser

4" Ring with two risers and cover.

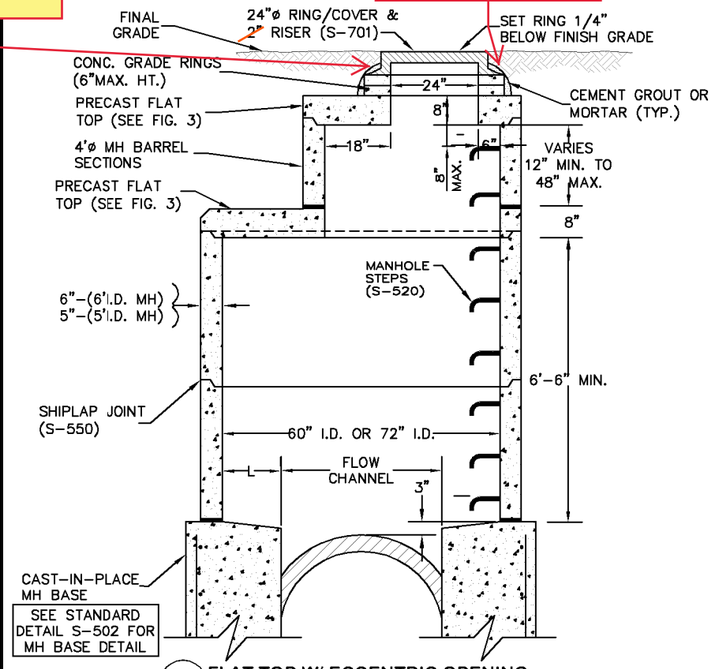


FIG. 2 **FLAT TOP W/ ECCENTRIC OPENING**
NO SCALE

5' I.D. MANHOLE (33"Ø & 36"Ø PIPE) OR 6' I.D. MANHOLE (42"Ø PIPE)

NOTES:

Both

1. RING/COVER & 2" RISERS SHALL BE SET ON A FULL BED OF NON-SHRINK GROUT.
2. FLAT TOP SECTIONS (FIG. 2, 3, 4A & 4B), MAY BE USED IN LIEU OF CONCENTRIC MANHOLES WHEN SPECIFICALLY APPROVED BY THE PROJECT ENGINEER.
3. FOR MANHOLE DEPTHS LESS THAN 4' FROM RIM TO TOP OF BENCH, VERTICAL MANHOLE BARRELS WITH PRECAST FLAT TOP SECTIONS ARE REQUIRED.
4. ALL PRECAST MANHOLE SECTIONS, FLAT TOPS, BARRELS, REDUCERS ETC. SHALL CONFORM TO ASTM C-478, STANDARD SPECIFICATIONS FOR PRECAST REINFORCED MANHOLE SECTIONS.
5. FLAT TOPS (FIG. 2, 3, 4A & 4B) SHALL BE CAPABLE OF WITHSTANDING H-20 LIVE LOADS.
6. ALL MANHOLE BARRELS, CONES, FLAT TOP SECTIONS AND RINGS SHALL INDICATE DATE, MANUFACTURER, SIZE AND ASTM C-478.
7. FOR DEPTHS GREATER THAN 20' (RIM TO INVERT) SHOP DRAWINGS, CALCULATIONS OF WALLS, TOP AND BOTTOM SLABS SHALL BE SUBMITTED.
8. AN APPROVED FLEXIBLE PLASTIC SEALANT IS REQUIRED IN SHIPLAP JOINTS AND IN JOINTS BETWEEN FLAT TOP BARREL SECTIONS, CONE SECTIONS, ETC.
9. DIMENSION L = 9" MINIMUM FOR ALL SANITARY SEWER MANHOLES (FIG. 1 & 2).
10. DESIGN ENGINEER OR PROJECT ENGINEER MAY INCREASE MH SIZE FOR SPECIAL DESIGN CONSIDERATIONS.
11. SET 24" MANHOLE RING 1/4" BELOW FINISH GRADE ON ALL MANHOLES. (TYPICAL FOR ALL APPLICATIONS UNLESS DETAILED OTHERWISE.)
12. ALL MORTAR AND GROUT SHALL USE NON-SHRINK GROUT.
13. FACE OF GRADE RINGS & SHIPLAP JOINTS SHALL BE GROUTED WITH AN APPROVED NON-SHRINK GROUT.
14. MANHOLE STEPS SHALL NOT BE INSTALLED OVER THE FLOW CHANNEL. THEY SHALL BE PLACED 12" MINIMUM OR 16" MAXIMUM IN STRAIGHT VERTICAL ALIGNMENT WITH THE BOTTOM STEP 8" ABOVE THE BENCH MINIMUM. SEE STANDARD DETAIL S-750 AND S-502.
15. 6' DIA MH'S ALLOWED ONLY WITH 42" PIPE AND SPECIFIC APPROVAL OF THE ENGINEER.

1.5" Riser
2.5" Riser

4" Ring with two risers and cover

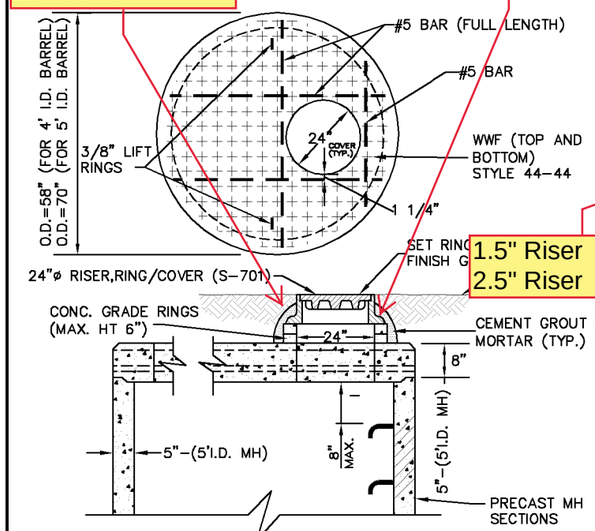


FIG. 3 **FLAT TOP WITH ECCENTRIC OPENING**
(5' I.D. MANHOLES)
NO SCALE

1.5" Riser
2.5" Riser

4" Ring with two risers and cover

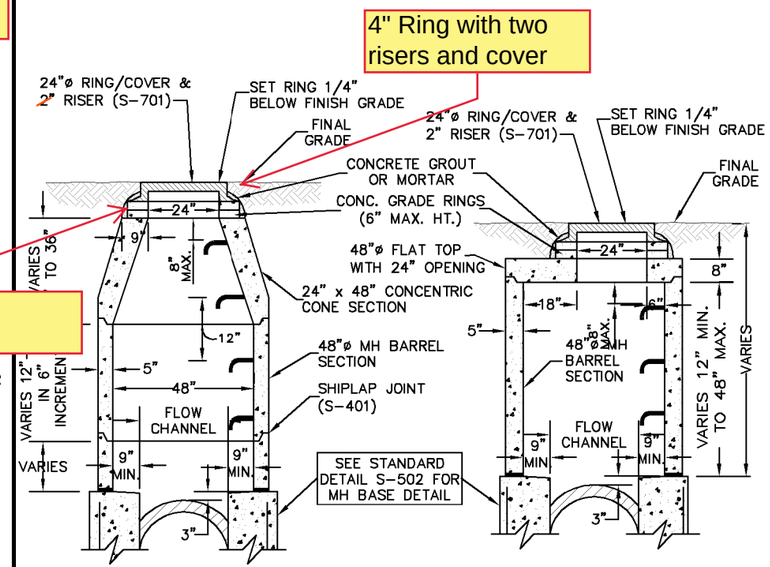
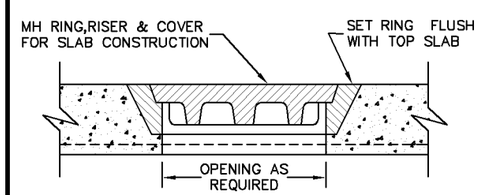


FIG. 4A **4' I.D. MH WITH CONCENTRIC CONE**
(30"Ø PIPE OR LESS)
NO SCALE

FIG. 4B **4' I.D. MH WITH FLAT TOP**
(FOR SHALLOW COVER LESS THAN 4' TO BENCH)
NO SCALE



ALTERNATE RING AND COVER
(TO BE USED ONLY WHEN SPECIFICALLY AUTHORIZED.) (NON-ADJUSTABLE RING & COVER TO BE CAST IN FLAT TOP)
NO SCALE

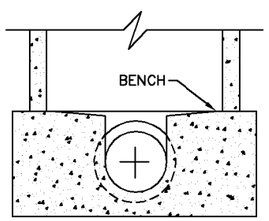


FIG. 5 **IDEAL MH CHANNEL SECTION**
(SEE STD. DETAIL S-502)
NO SCALE

NO	DATE	BY	DESCRIPTION OF REVISIONS
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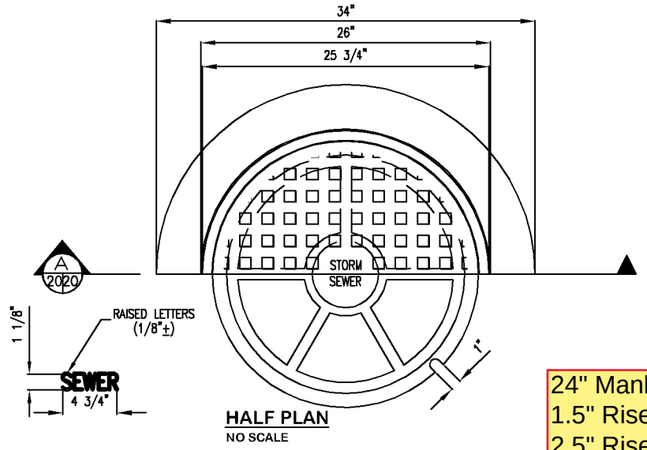
CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
CAPITAL PROJECTS MANAGEMENT
2000 W. 3RD AVE. DENVER, CO 80223
TEL.: (303) 446-3617 FAX: (303) 446-3647

STANDARD DETAILS
PRECAST MANHOLE BARRELS AND TOP SECTIONS

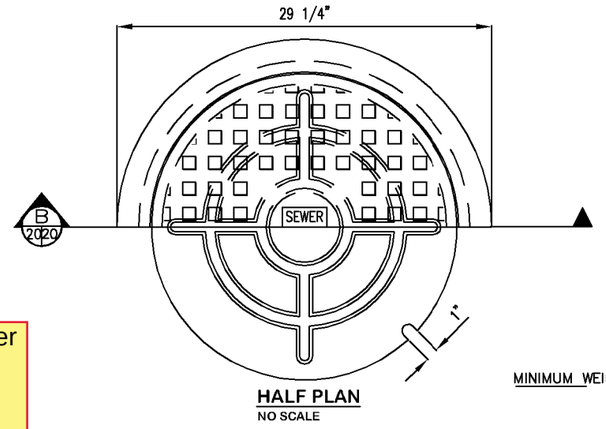
S-501.1

DESIGNED	####
DRAWN	####
CHECKED	####
S501-1 2010.dwg	
APPROVED	####
SHEET NO.	6

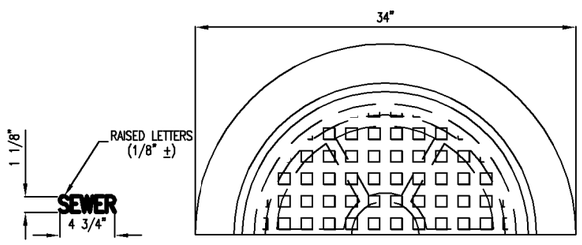
P:\P\15015CCD\Dwg\FINAL SHEET SET\S501-1 2010.dwg, 7/7/2015 6:18:29 AM, dbernier, PDF-AcroPlot Pro.pc3, 1:1



HALF PLAN
NO SCALE

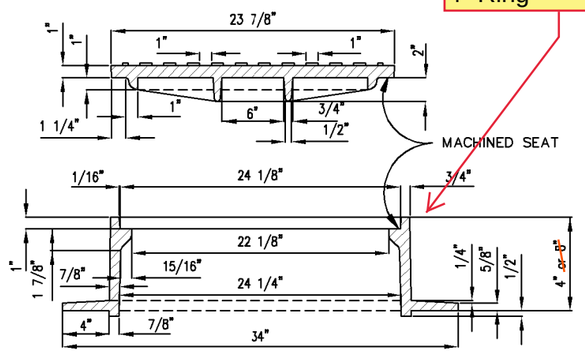


HALF PLAN
NO SCALE



HALF PLAN
NO SCALE

24" Manhole Cover
1.5" Riser
2.5" Riser
4" Ring



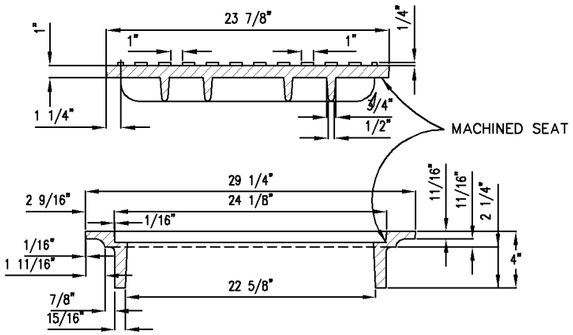
MINIMUM WEIGHT

4" RING	8" RING
RING=165	RING=235
COVER=165	COVER=165
TOTAL=330#	400#

A 2020 SECTION
NO SCALE

FIG. 1
CAST IRON 24" MANHOLE RING AND COVER
NO SCALE

MINIMUM WEIGHT

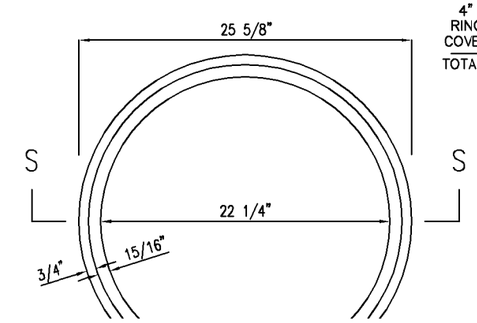


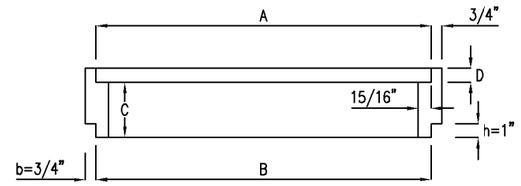
B 2020 SECTION
NO SCALE

FIG. 1
CAST IRON 24" MANHOLE RING AND COVER
NO SCALE

MINIMUM WEIGHT

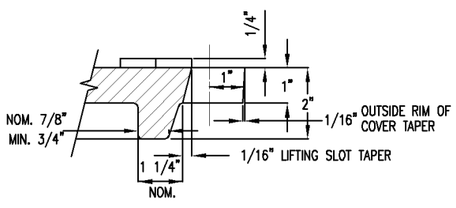
4" RING	~~8" RING~~
RING=60#	~~RING=80#~~
COVER=60#	~~COVER=60#~~
TOTAL=120#	~~TOTAL=140#~~



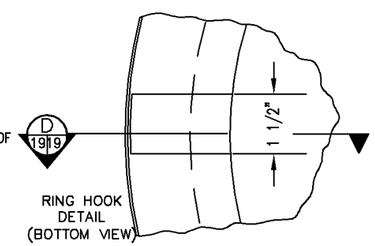


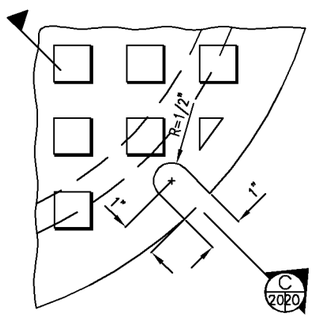
A = LID OPENING DIAMETER
B = LID DIAMETER
C = EXTENSION RISE (varies)
D = LID THICKNESS

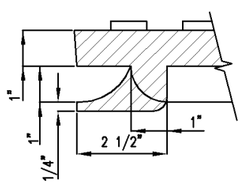
SECTION S-S
NO SCALE



C 2020 SECTION
NO SCALE







D 2020 SECTION
NO SCALE

STANDARD LIFTING SLOT DETAIL
(TYPICAL FOR ALL COVERS)
NO SCALE

NOTES: CAST IRON

1. COVER SHALL BE THE DENVER STANDARD PATTERN OR ALTERNATE.
2. THE CASTING SHALL BE OF GRAY CAST IRON, ASTM DESIGNATION A48 CLASS 358. THE MINIMUM TENSILE STRENGTH SHALL BE 35 KSI. THE TEST BAR DESIGNATION IS NOT DEFINED AT THIS TIME.
3. CASTINGS SHALL NOT BE DIPPED OR PAINTED.
4. CASTINGS SHALL BE CLEAN, TREE OF FUSED SAND AND REASONABLY SMOOTH. THERE SHALL BE NO PROMINENT BLOW HOLES, NO CRACKS OR FISSURES, AND NO OBSERVED INCOMPLETE FILLING OF THE MOLD.
5. THE MUD RING IS OPTIONAL.
6. THE 4 OR 5 INCH DEEP RING IS TO BE CONSIDERED AS STANDARD. ~~THE 7 OR 8 INCH DEEP RING IS FOR USE IN DIRT OR LIGHT ASPHALT AND SHALL BE AT THE ENGINEER'S OPTION~~.
7. COVERS TO DISPLAY ON VISIBLE SURFACE, A48-35 (FOR 35KSI CI), MFG'S LOGO OR NAME, YEAR (2 DIGITS), AND COUNTRY OF ORIGIN IF IMPORTED.

NO.	DESCRIPTION OF REVISIONS	DATE	BY
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STANDARD DETAILS
24 INCH DIAMETER RING AND COVER

S-701

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S701 2014 bju.dwg	
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