

STORMWATER GENERAL NOTES

1. BEDDING FOR ALL STORM DRAIN SHALL BE PER THE STANDARD STORM DRAIN BEDDING DETAILS - DETAILS 6-6 AND 6-7 FOR REINFORCED CONCRETE PIPE AND POLYWRAPPED DUCTILE IRON PIPE.

2. ALL STORM DRAINAGE CONSTRUCTION SHALL CONFORM TO THE CITY OF GREELEY'S MOST RECENT STORM DRAINAGE SPECIFICATIONS. A COPY OF THE SPECIFICATIONS MAY BE OBTAINED FROM THE CITY OR FOUND ON THE CITY'S WEB PAGE - GREELEYGOV.COM.

3. RCP SHALL HAVE FLEXIBLE GASKET MATERIAL (WATER TIGHT RUBBER GASKETS) MEETING ASTM C443 AND TYPE 4-G BELL AND SPIGOT JOINTS. DUCTILE IRON PIPE SHALL BE POLYWRAPPED IN ACCORDANCE WITH AWWA STANDARD C-105.

4. BACKFILL MATERIAL MAY BE LOCAL SITE MATERIAL THAT IS WELL-GRADED, NON-COHESIVE GRANULAR MATERIAL FREE OF ROCKS, FROZEN LUMPS, FOREIGN MATERIAL OR STONES GREATER THAN 3" IN ANY DIMENSION, AGGREGATE BASE COURSE, OR FLOWFILL. REMOVE ALL DEBRIS INCLUDING SODA CANS, RAGS, PIPE BANDING MATERIAL, ETC. FROM THE PIPE TRENCH BEFORE BACKFILLING.

5. ALL AREAS IMPACTED BY THE CONSTRUCTION SHALL BE CLEARED OF PROJECT GENERATED DEBRIS BY THE CONTRACTOR AT THE EARLIEST OPPORTUNITY, BUT IN NO CASE SHALL ANY ROADS OR WALKWAYS BE LEFT UNCLEARED AFTER THE COMPLETION OF THE DAY'S WORK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE NECESSARY EQUIPMENT AND MATERIAL TO SATISFACTORILY CLEAN THE ROADWAYS.

CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987
CALL 2-BUSINESS DAYS IN ADVANCE
BEFORE YOU DIG, GRADE, OR EXCAVATE
FOR THE MARKING OF UNDERGROUND
MEMBER UTILITIES.

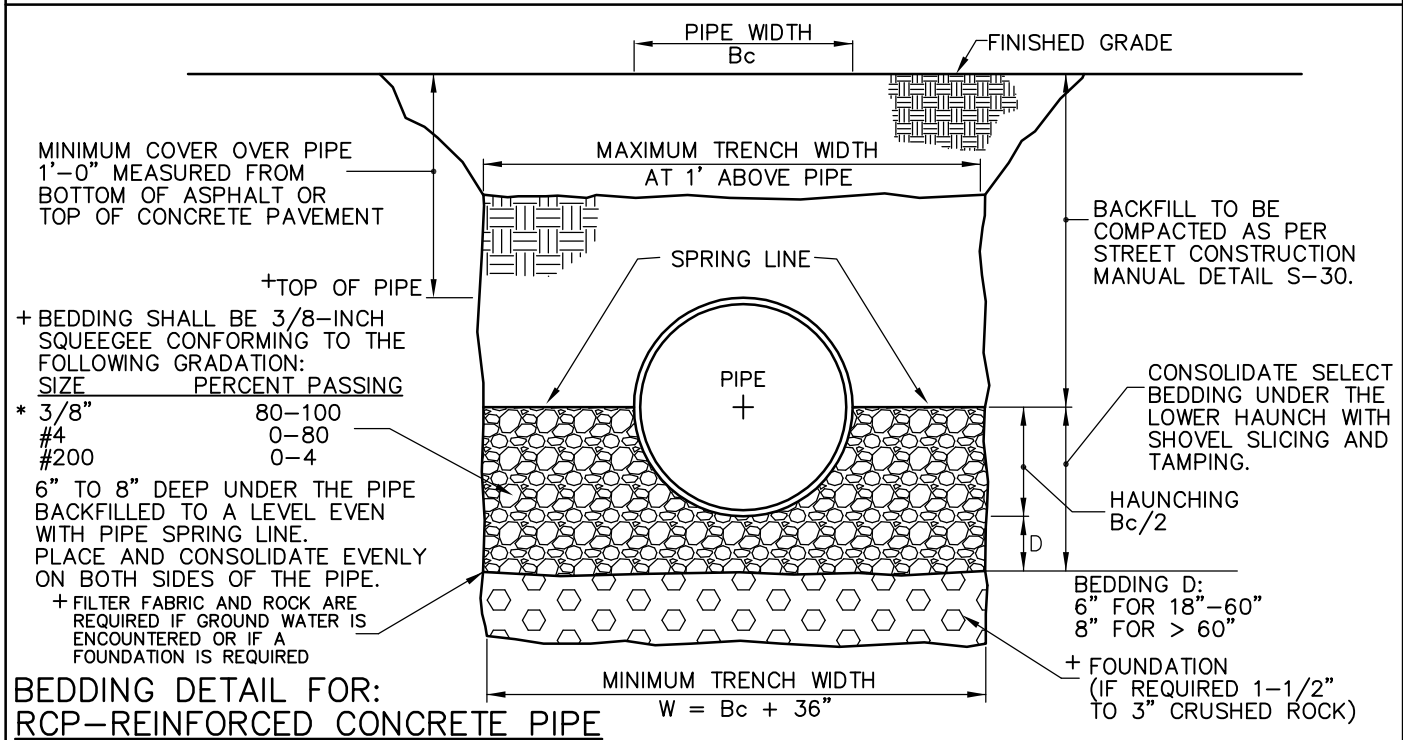
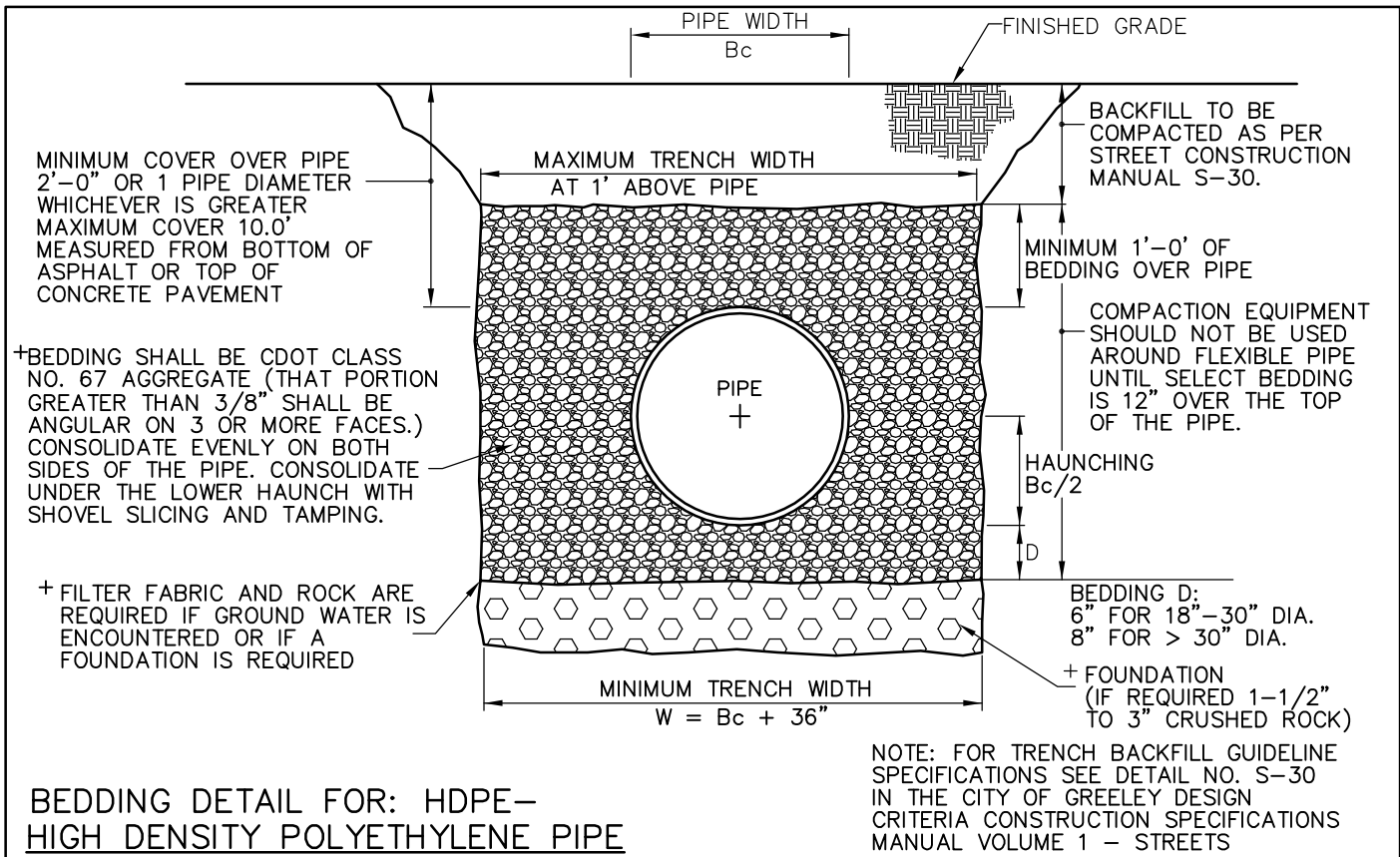
REVISIONS	
3/31/07	+ NEW DETAIL



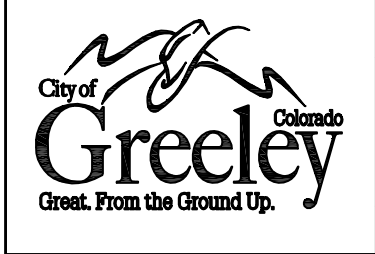
STORMWATER GENERAL NOTES DETAIL 1-1

DATE: MARCH 2007

SCALE: N.T.S.



REVISIONS	
3/31/07	+ UPDATE DETAIL
6/03/08	* UPDATE DETAIL

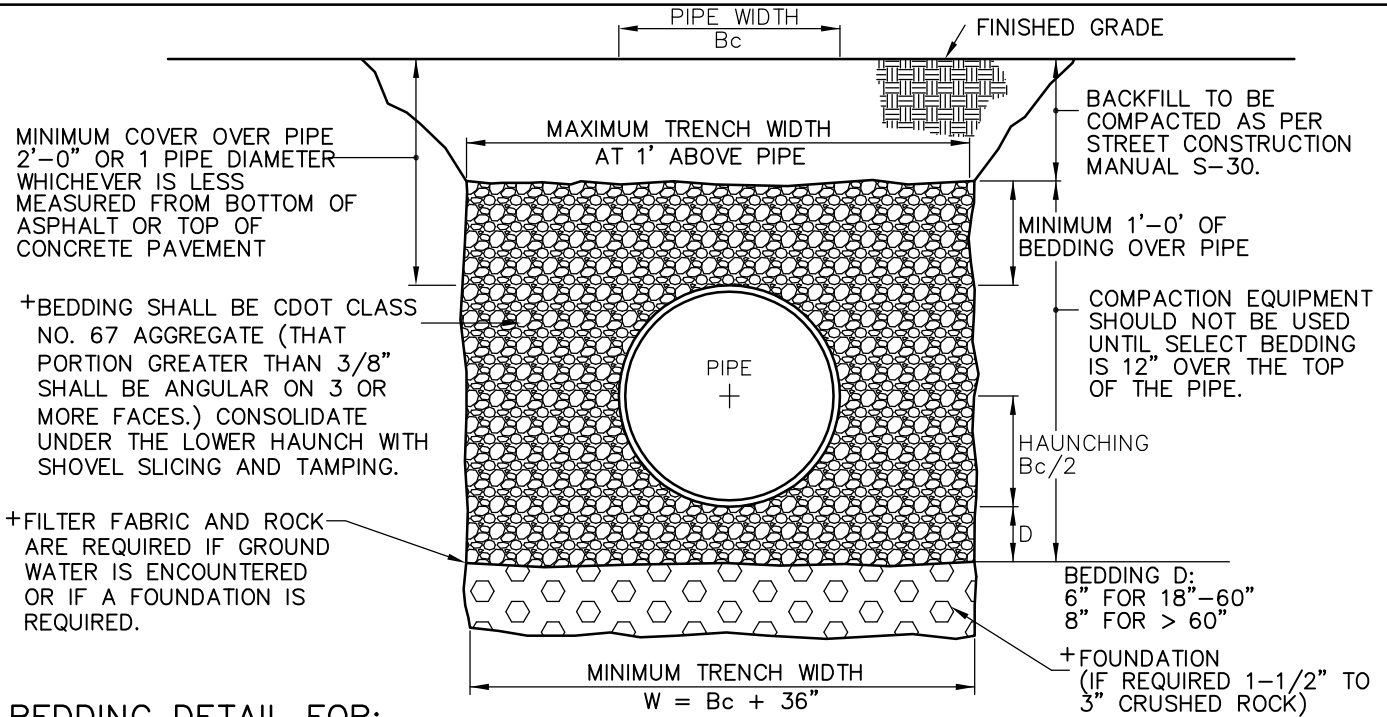


STANDARD STORM WATER
BEDDING DETAIL
DETAIL 6-6

DATE: JUNE 2008

SCALE: N.T.S.

REDACTED SECTION-THE SECTION PREVIOUSLY HAD BEDDING DETAILS FOR CORRUGATED METAL PIPE (CMP). AS OF AUGUST, 2019, CMP IS NO LONGER AN AUTHORIZED MATERIAL.



BEDDING DETAIL FOR:
PVC-POLYVINYL CHLORIDE PIPE

NOTE: FOR TRENCH BACKFILL GUIDELINE SPECIFICATIONS SEE DETAIL NO. S-30 IN THE CITY OF GREELEY DESIGN CRITERIA CONSTRUCTION SPECIFICATIONS MANUAL VOLUME 1 - STREETS

REVISIONS	
3/31/07	+ UPDATE DETAIL



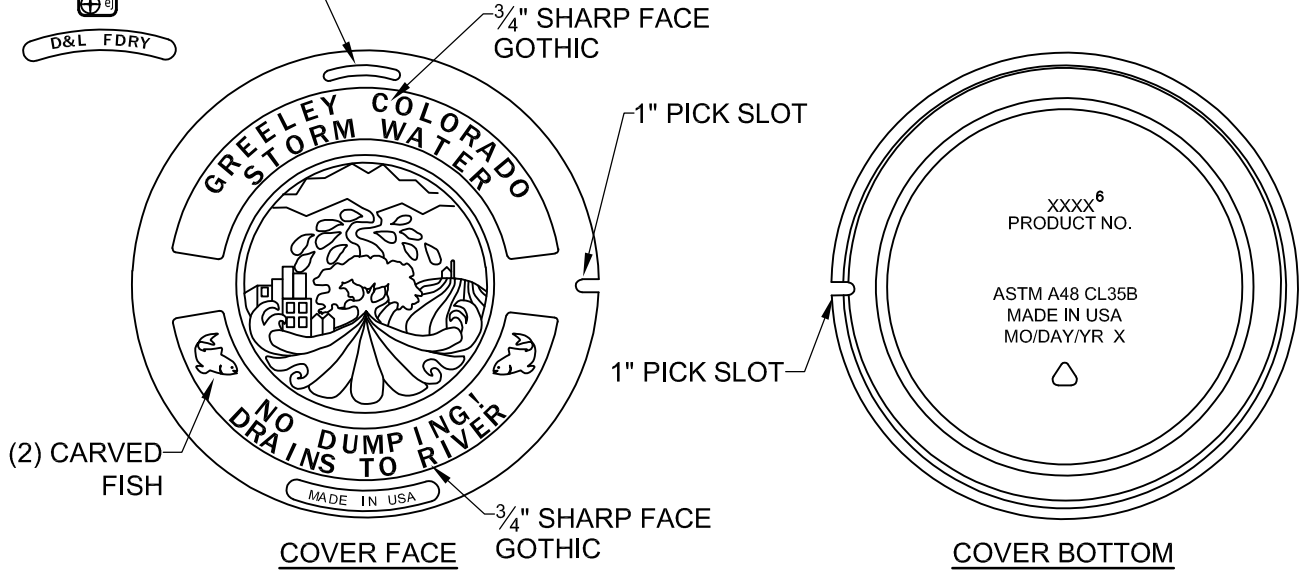
STANDARD STORM WATER
BEDDING DETAIL
DETAIL 6-7

DATE: MARCH 2007

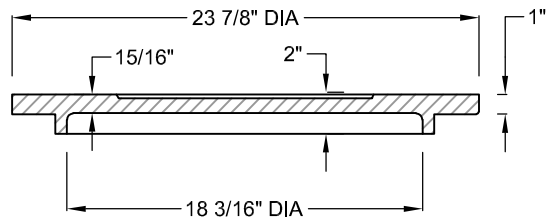
Revised Aug 2019

SCALE: N.T.S.

FOUNDRY LOGO⁶
EJ, D&L OR
APPROVED EQUIVALENT



PLAN



SECTION

GENERAL NOTES

1. COVER SHALL BE GRAY IRON, MANUFACTURED PER AASHTO M105-06/ASTM A48 CLASS 35B AND CONFORM TO AASHTO M306-07.
2. COVER SHALL BE NONPERFORATED, WITH LETTERING AS SHOWN, CAST ON THE TOP OF THE LID FOR STORMWATER MANHOLES.
3. COVER SHALL BE BOLTED IF SPECIFIED BY THE PUBLIC WORKS DEPARTMENT. BOLTS SHALL BE STAINLESS STEEL 3/8" DIAMETER HEX BOLTS.
4. ACCEPTED FOUNDRY PRODUCTS MEETING THESE SPECIFICATIONS INCLUDE:
 - EAST JORDAN, 2408A SERIES COVER, PRODUCT NUMBER 00240890
 - D&L SUPPLY, PRODUCT NUMBER A-1043-59
5. THIS COVER SHALL BE USED ON ALL STORMWATER MANHOLES AND TYPE R INLETS. COVERS READING "STORM SEWER" OR "SEWER" ARE NOT ACCEPTABLE.
6. OTHER FOUNDRIES MAY PRODUCE THIS COVER. THE CITY MUST APPROVE THE PRODUCT DRAWING AND MANUFACTURED PRODUCT AS AN APPROVED EQUIVALENT PRIOR TO APPROVAL FOR INSTALLATION.
7. ALL MANHOLE COVERS MUST HAVE 1" PICK SLOTS. HIDDEN PICK HOLES WILL NOT BE ACCEPTABLE.

REVISIONS	
3/31/07	UPDATE DETAIL
8/18/20	UPDATE DETAIL



CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR MARKING OF UNDERGROUND MEMBER UTILITIES.

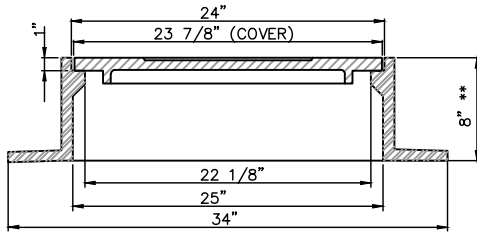


STANDARD STORMWATER
MANHOLE COVER
DETAIL 6-8A

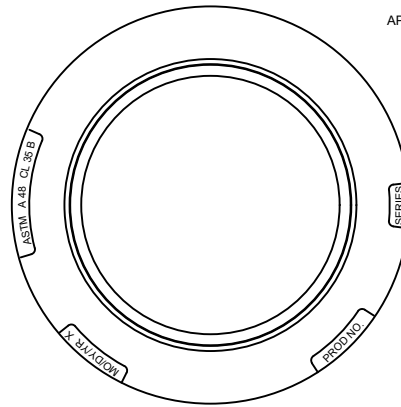
DATE: AUGUST 2020

SCALE: N.T.S.

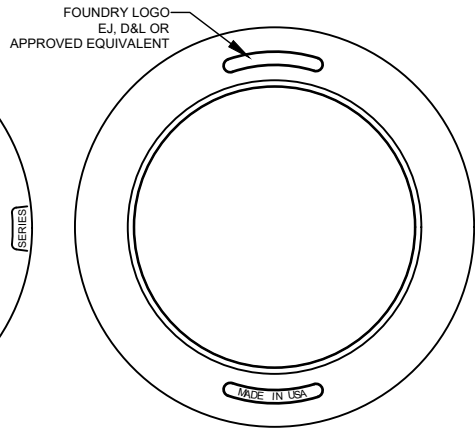
STANDARD RING



SECTION OF FRAME



BOTTOM VIEW OF FRAME



TOP VIEW OF FRAME

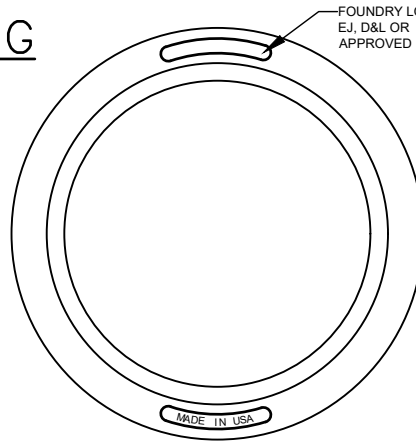
NOTES

1. THIS RING AND COVER SHALL BE USED FOR ALL FLAT TOP AND ECCENTRIC CONE TOP MANHOLES.
2. RING AND COVER SHALL BE HEAVY DUTY MEETING THE AASHTO M306 PROOF LOAD CRITERIA .
3. ACCEPTED FOUNDRY PRODUCTS MEETING THESE SPECIFICATIONS INCLUDE:
 -EAST JORDAN - 2416Z SERIES, PRODUCT NUMBER 00241611
 -D&L SUPPLY: PRODUCT NUMBER A-1161-R2L.
4. MANHOLE RINGS PRODUCED BY OTHER FOUNDRIES MAY BE ACCEPTED BY THE CITY AS AN APPROVED EQUIVALENT.
5. DIMENSIONS SHALL INCLUDE A $\frac{1}{16}$ " TOLERANCE
6. **STANDARD RING HEIGHT IS 8". OTHER HEIGHTS MAY BE APPROVED SHOULD THE RING MEET SPECIFICATIONS AND ALL OTHER DIMENSIONS.
7. ACCEPTED FOUNDRY PRODUCTS MEETING THESE SPECIFICATIONS WITH A HEIGHT OF 4" INCLUDE:
 -EAST JORDAN - 1244Z SERIES, PRODUCT NUMBER 00124411
 -D&L SUPPLY - A-1071-R1
8. "REVERSIBLE" 4" FRAMES ARE NOT REQUIRED BUT MAY BE ACCEPTED. ACCEPTED REVERSIBLE FOUNDRY PRODUCTS MEETING THESE SPECIFICATIONS INCLUDE:
 -EAST JORDAN: 2425Z SERIES, PRODUCT NUMBER 00242511
 -D&L SUPPLY: PRODUCT NUMBER A-1071-R3
9. SEE COVER DETAIL 6-8A FOR COVER SPECIFICATIONS.

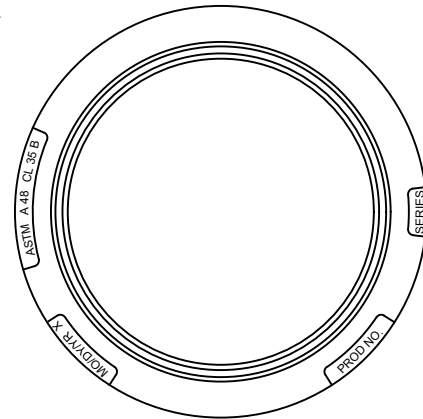
TOP FLANGE RING

NOTES

1. THIS RING SHALL BE USED FOR ALL TYPE R INLETS.
2. RING AND COVER SHALL BE HEAVY DUTY MEETING THE AASHTO M306 PROOF LOAD CRITERIA .
3. ACCEPTED FOUNDRY PRODUCTS MEETING THESE SPECIFICATIONS INCLUDE:
 -EAST JORDAN - 2416Z SERIES, PRODUCT NUMBER 00241611
 -D&L SUPPLY - PRODUCT NUMBER B-5086-R1
4. TOP FLANGE MANHOLE RINGS PRODUCED BY OTHER FOUNDRIES MAY BE ACCEPTED BY THE CITY AS AN APPROVED EQUIVALENT.
5. DIMENSIONS SHALL INCLUDE A $\frac{1}{16}$ " TOLERANCE
6. SEE COVER DETAIL 6-8A FOR COVER SPECIFICATIONS.



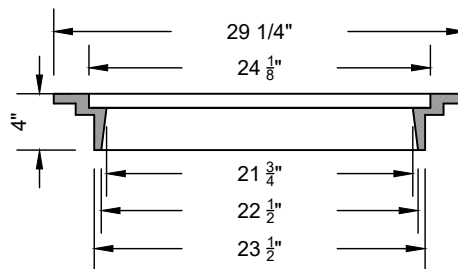
TOP VIEW OF FRAME



BOTTOM VIEW OF FRAME



CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR MARKING OF UNDERGROUND MEMBER UTILITIES.



SECTION OF FRAME

REVISIONS

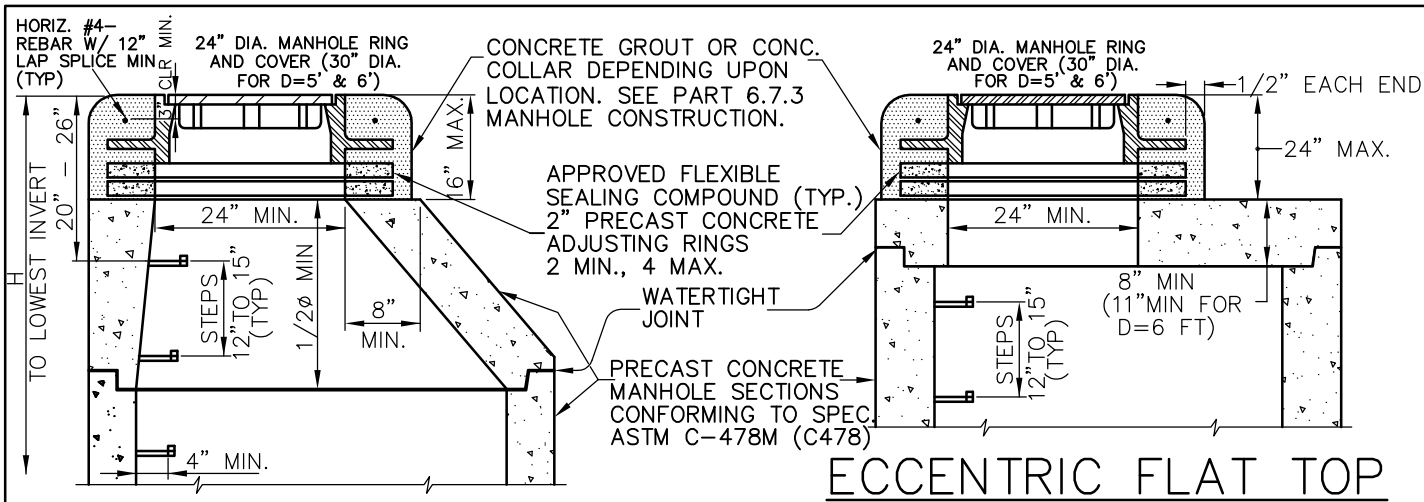
3/31/07	UPDATE DETAIL
8/18/20	UPDATE DETAIL



CITY OF GREELEY STANDARD STORMWATER MANHOLE FRAME RINGS DETAIL 6-8B

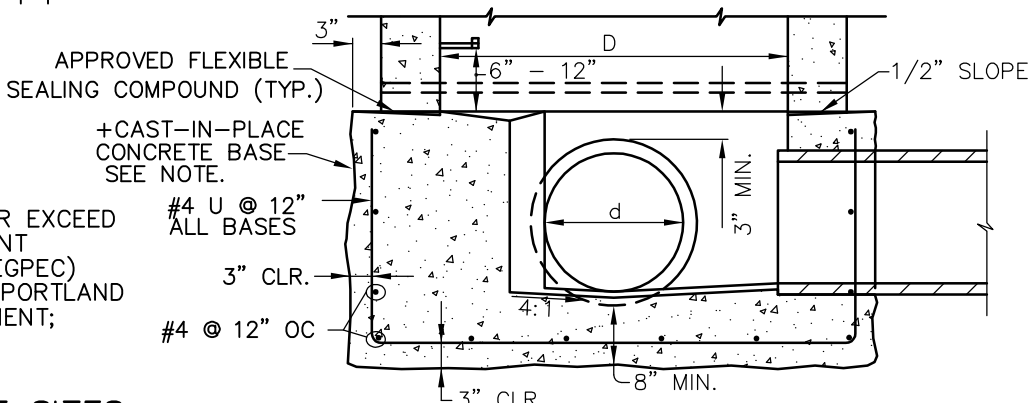
DATE: AUGUST 2020

SCALE: N.T.S.



ECCENTRIC CONE TOP
FOR H > 8 FT ±

ECCENTRIC FLAT TOP
MAY BE USED ON SHALLOW MANHOLE



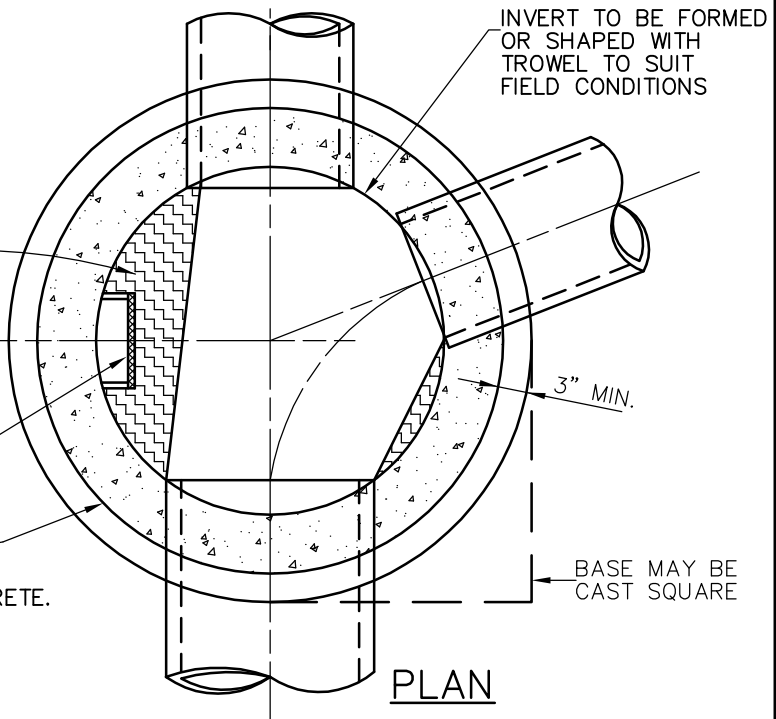
SECTION - BASE

CONCRETE NOTE:

+ CONCRETE SHALL MEET OR EXCEED METROPOLITAN GOVERNMENT ENGINEERING COUNCIL (MEGPC) SPECIFICATIONS, ITEM 11, PORTLAND CEMENT CONCRETE PAVEMENT; SECTION 11.2, MATERIALS.

MANHOLE SIZES

BOTTOM REINF.	PIPE DIA. (d)	MANHOLE DIAMETER
#4 @ 12	15" TO 18"	4 FT.
#4 @ 12	21" TO 30"	5 FT.
#4 @ 12	36" TO 54"	6 FT.
60" & Larger	CDOT Std. M-604-20	



PLAN

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

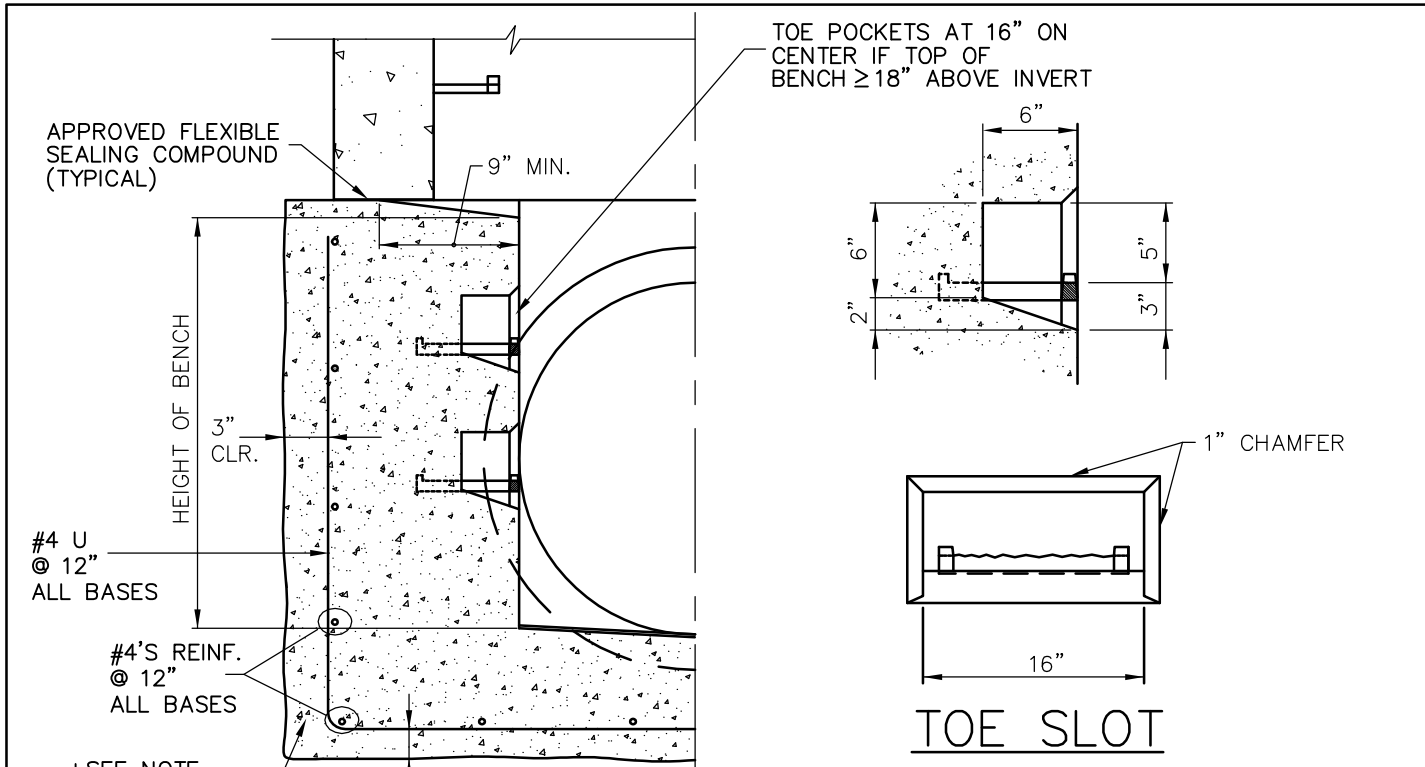
REVISIONS	
3/31/07	+ UPDATE DETAIL



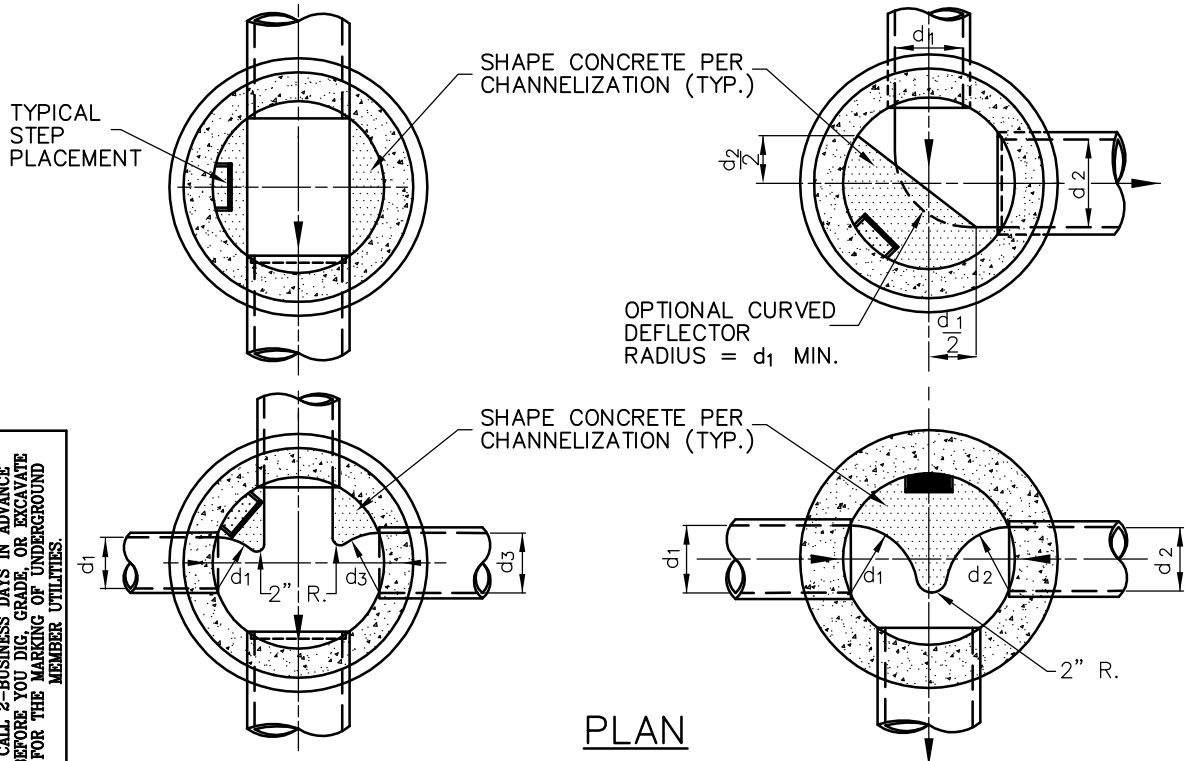
STANDARD STORM WATER MANHOLE
DETAIL 6-9

DATE: MARCH 2007

SCALE: N.T.S.



TOE POCKET DETAILS
FOR HEIGHT OF BENCH GREATER THAN 30"



PLAN

NOTE:
+ CONCRETE SHALL MEET OR EXCEED METROPOLITAN GOVERNMENT ENGINEERING COUNCIL (MEGPEC) SPECIFICATIONS, ITEM 11, PORTLAND CEMENT CONCRETE PAVEMENT; SECTION 11.2, MATERIALS.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

REVISIONS	
3/31/07	+ UPDATE DETAIL



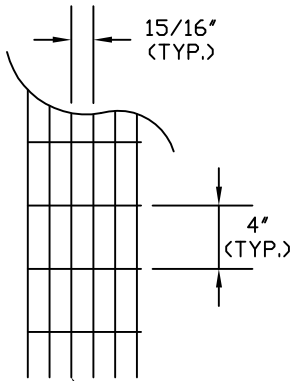
**STORM MANHOLE
TYPICAL BASE CHANNEL DETAILS
DETAIL 6-10**

DATE: MARCH 2007

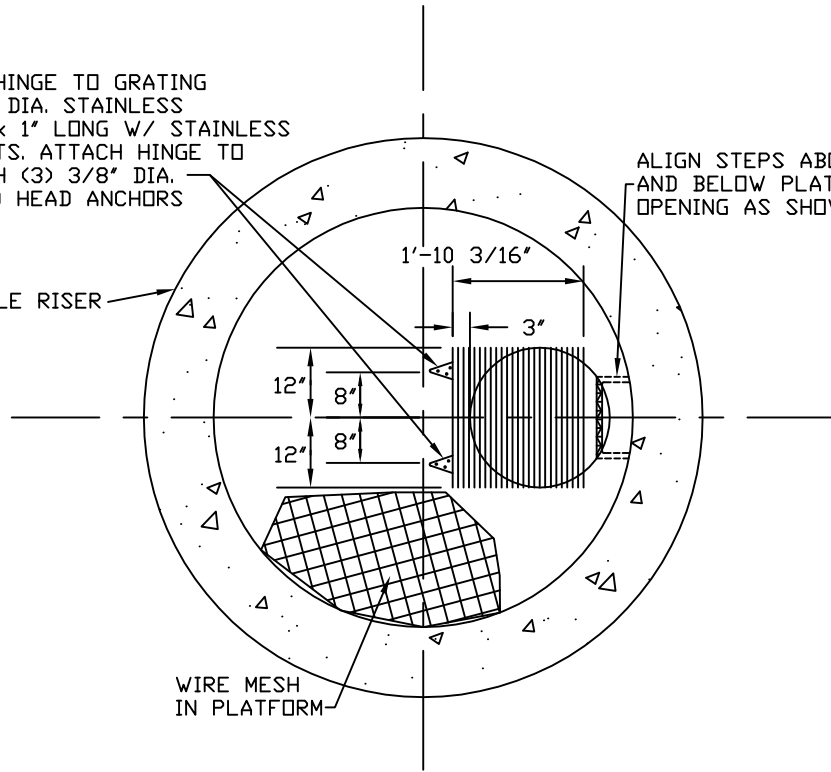
SCALE: N.T.S.

ATTACH EACH HINGE TO GRATING WITH (2) 3/8" DIA. STAINLESS STEEL BOLTS x 1" LONG W/ STAINLESS STEEL HEX NUTS. ATTACH HINGE TO PLATFORM WITH (3) 3/8" DIA. x 3" LONG RED HEAD ANCHORS OR EQUAL.

ALIGN STEPS ABOVE AND BELOW PLATFORM OPENING AS SHOWN.

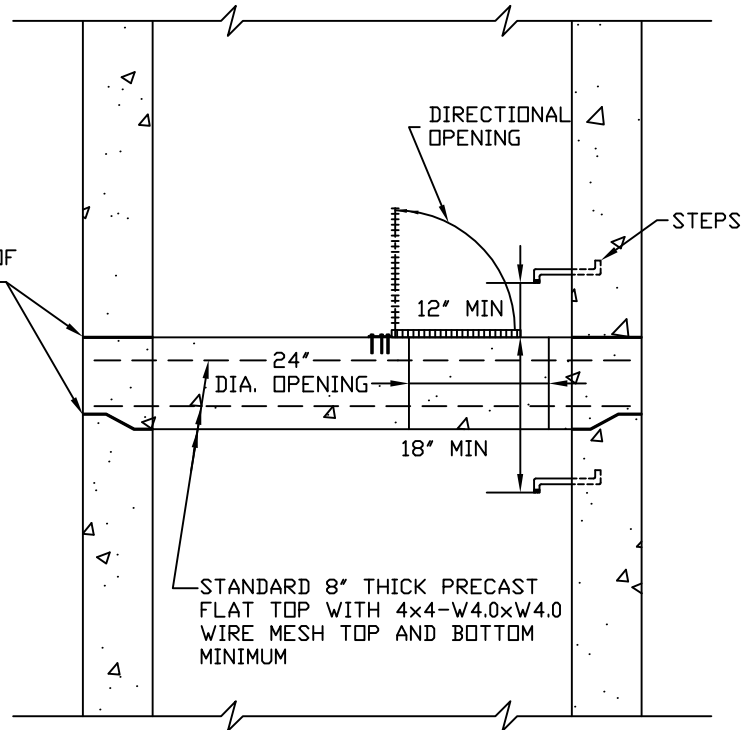


FIBERGLASS OR ALUMINUM GRATING
3/16" x 1 1/4" BEARING BARS.
SERRATED GRATING OPTIONAL.



+ SECTION

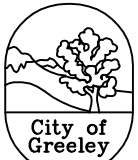
SET IN FULL BED OF SEALING COMPOUND ALL AROUND



+ ELEVATION

REVISIONS

03/31/07 + UPDATED DETAIL



City of Greeley
Public Works Department

CALL UTILITY NOTIFICATION
CENTER OF COLORADO

1-800-922-1987

CALL 2-BUSINESS DAYS IN ADVANCE
BEFORE YOU DIG, GRADE, OR EXCAVATE
FOR THE MARKING OF UNDERGROUND
MEMBER UTILITIES.

INTERMEDIATE PLATFORM FOR
MANHOLES OVER 20' IN DEPTH
DETAIL 6-11

DATE: MARCH 2007

SCALE: N.T.S.

See detail 6-8, specifications for artistic design manhole cover

29 1/2" (RING)

24 1/4" (COVER)

23 7/8" (COVER)

22 1/8"

24"

5/8"

SECTION

WEIGHTS COVER = 145 LBS. FRAME = 140 LBS. TOTAL = 285 LBS.

1" X 1" PICK SLOT

MINIMUM 1 1/2" LETTERS

MINIMUM 1 1/2" LETTERS

MANHOLE RING AND COVER

GENERAL NOTES

REVISIONS

DATE DESCRIPTION

7/12/00 MANHOLE RING AND FRAME #2018-A NEENAH DEETTER FOUNDRY, INC. OR EQUAL

9/16/04 CHANGED TEXT ON M/H LID, NOTES 3/31/07 + UPDATE DETAIL

REFERENCE: COLORADO DEPARTMENT OF TRANSPORTATION STANDARD M-604-104 (SHEET 2 OF 2) REFER TO LATEST M & S STANDARDS.

10. STRUCTURAL STEEL SHALL BE GALVANIZED AND SHALL CONFORM TO THE REQUIREMENTS OF COOT - 712.06.

*11. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

1. CONCRETE SHALL MEET OR EXCEED METROPOLITAN GOVERNMENT ENGINEERING COUNCIL(MPEEC) SPECIFICATIONS, ITEM 11, PORTLAND CEMENT CONCRETE PAVEMENT; SECTION 11.2 MATERIALS.

2. CONCRETE WALLS SHALL BE FORMED ON BOTH SIDES AND SHALL BE 8" THICK.

3. INLET STEPS SHALL BE IN ACCORDANCE WITH AASHTO M 199.

4. CURB FACE ASSEMBLY SHALL BE GALVANIZED AFTER WELDING.

5. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4". CURB AND GUTTER CORNERS SHALL BE FINISHED TO MATCH THE EXISTING CURB AND GUTTER BEYOND THE TRANSITION GUTTER.

6. REINFORCING BARS SHALL BE DEFORMED, GRADE 60, PER ASTM A615, EPOXY COATED, AND SHALL HAVE A 2" MINIMUM CLEARANCE.

7. DIMENSIONS AND WEIGHTS OF TYPICAL MANHOLE RING AND COVER ARE NOMINAL.

8. MATERIAL FOR MANHOLE RINGS AND COVERS SHALL BE GRAY OR DUCTILE CAST IRON CONFORMING TO COOT-712.06.

9. SINCE PIPE ENTRIES INTO THE INLET ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE REQUIRED IN THE WORK. QUANTITIES INCLUDE VOLUMES OCCUPIED BY PIPES.

10. STRUCTURAL STEEL SHALL BE GALVANIZED AND SHALL CONFORM TO THE REQUIREMENTS OF COOT - 712.06.

*11. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

12. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

13. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

14. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

15. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

16. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

17. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

18. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

19. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

20. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

21. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

22. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

23. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

24. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

25. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

26. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

27. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

28. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

29. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

30. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

31. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

32. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

33. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

34. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

35. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

36. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

37. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

38. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

39. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

40. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

41. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

42. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

43. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

44. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

45. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

46. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

47. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

48. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

49. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

50. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

51. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

52. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

53. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

54. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

55. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

56. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

57. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

58. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

59. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

60. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

61. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

62. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

63. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

64. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

65. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

66. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

67. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

68. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

69. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

70. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

71. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

72. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

73. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

74. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

75. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

76. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

77. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

78. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

79. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

80. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

81. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

82. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

83. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

84. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

85. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

86. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

87. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

88. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

89. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

90. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

91. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

92. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

93. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

94. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

95. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

96. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

97. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

98. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

99. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

100. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

101. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

102. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

103. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

104. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

105. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

106. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

107. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

108. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

109. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

110. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

111. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

112. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

113. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

114. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

115. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

116. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

117. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

118. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

119. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

120. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

121. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

122. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

123. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

124. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

125. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

126. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

127. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

128. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

129. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

130. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

131. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

132. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

133. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

134. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

135. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

136. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

137. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

138. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

139. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

140. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

141. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

142. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

143. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

144. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

145. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

146. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

147. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

148. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

149. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

150. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

151. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

152. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

153. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

154. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

155. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

156. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

157. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

158. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

159. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

160. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

161. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

162. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

163. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

164. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

165. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

166. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

167. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

168. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

169. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

170. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

171. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

172. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

173. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

174. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

175. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

176. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

177. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

178. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

179. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

180. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

181. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

182. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

183. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

184. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

185. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

186. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

187. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

188. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

189. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

190. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

191. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

192. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

193. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

194. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

195. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

196. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

197. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

198. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

199. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

200. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

201. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

202. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

203. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

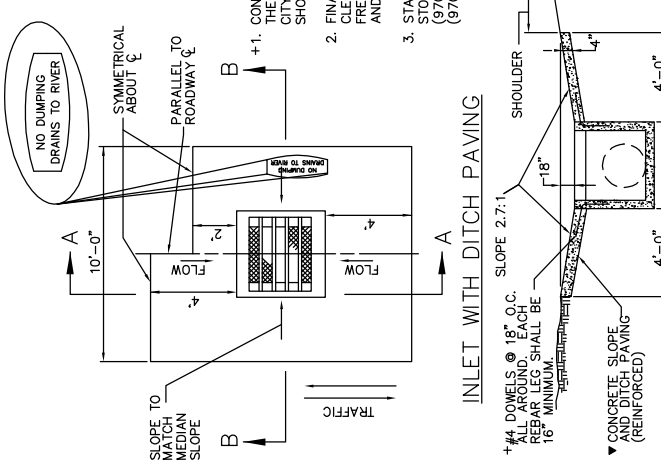
204. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

205. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

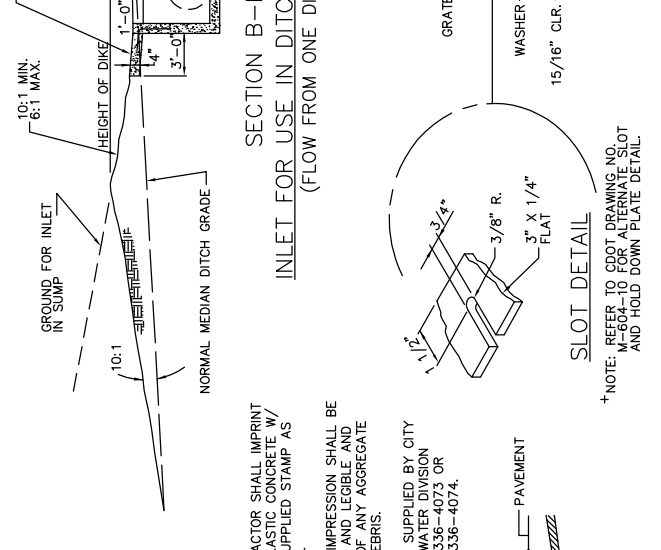
206. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

207. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

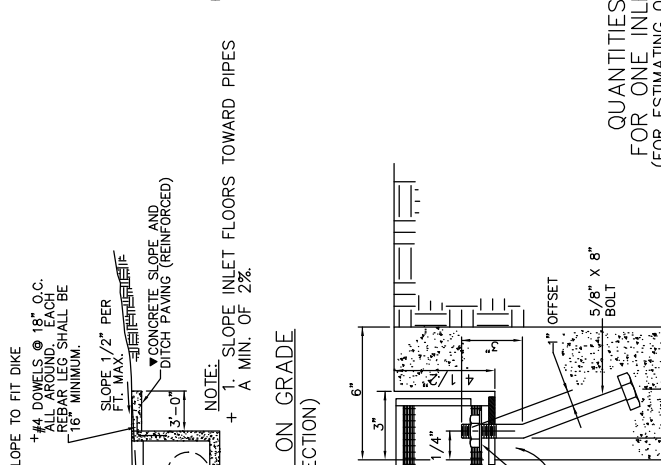
208. MINIMUM REBAR SPLICE



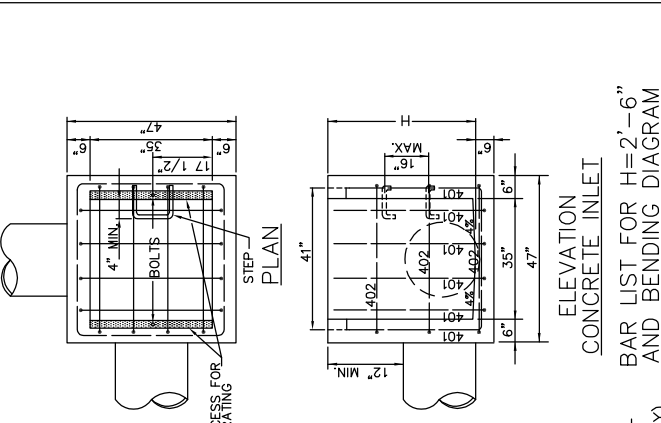
SECTION A-A
1. SLOPE INLET FLOORS TOWARD PIPES
A MIN. OF 2% SO THEY WILL DRAIN COMPLETELY.



SECTION B-B
INLET FOR USE IN DITCH ON GRADE
(FLOW FROM ONE DIRECTION)



ELEVATION
CONCRETE INLET
BAR LIST FOR H=2'-6"
AND BENDING DIAGRAM



STEP PLAN

GENERAL NOTES

1. CONCRETE SHALL MEET OR EXCEED METROPOLITAN GOVERNMENT ENGINEERING COUNCIL (M.E.C.) SPECIFICATIONS ITEM 11.1 FOR PORTLAND CEMENT CONCRETE PAVEMENT; SECTION 11.2, MATERIALS.
2. INLET MAY BE CAST-IN-PLACE OR PRECAST.
3. REINFORCING BARS SHALL BE DEFORMED, GRADE 60, PER ASTM A615, EPOXY COATED, AND SHALL HAVE A 2" MINIMUM CLEARANCE.
4. CONCRETE SLOPE AND DITCH PAVING SHALL CONFORM TO CDOT SECTION 507. REINFORCEMENT FOR CONCRETE SLOPE PAVING SHALL BE 6 X 6 - W1.4 X W1.4 OR 6 X 6 - W2.1 X W2.1.
5. STRUCTURAL STEEL FOR GRATES AND GRATE INSTALLATION HARDWARE SHALL BE GALVANIZED AND SHALL BE IN ACCORDANCE WITH CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 712.06.
6. THE STANDARD INLET GRATES SHALL BE USED ON ALL TYPE C INLETS UNLESS CLOSE MESH GRATES ARE SPECIFIED ON THE PLANS.
7. STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" EXCEEDS 3'-6" AND SHALL BE IN ACCORDANCE WITH AASHTO M 199.
8. CLOSE MESH GRATE SHALL BE USED FOR PEDESTRIAN AND BICYCLE AREAS. FOLLOW CDOT DRAWING M-604-10 TO MANUFACTURE GRATE.
9. MINIMUM REBAR SPICE LENGTH SHALL BE 10".

GRATE INSTALLATION



QUANTITIES FOR ONE INLET (FOR ESTIMATING ONLY)

H	CONCRETE (CU. YDS)	REIN. NO. (LESS REGRD.)	LENGTH (FT.)
2'-6"	0.9	75	0
3'-0"	1.0	80	0
3'-6"	1.2	96	0
4'-0"	1.3	101	1
4'-6"	1.4	116	2
5'-0"	1.5	122	2
5'-6"	1.7	137	2
6'-0"	1.8	142	3
6'-6"	1.9	158	3
7'-0"	2.0	163	3
7'-6"	2.2	179	4
8'-0"	2.3	184	4
8'-6"	2.4	199	4
9'-0"	2.5	205	5
9'-6"	2.7	220	5
10'-0"	3.0	235	6
11'-6"	3.4	251	6

*INCLUDES VOLUME OCCUPIED BY PIPES

BAR LIST FOR H=2'-6" AND BENDING DIAGRAM

MARK	NO.	REGD.	HGT.	LENGTH
401	2	2	5'-7"	7'-1"
402	3	3	7'-11"	8'-11"
			10'-0"	15'-0"

NO. 401
3'-5"

INCREASE DIMENSION "U" FOR EACH 6" INCREASE OF "H" ABOVE 2'-6"

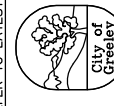
NO. 402

ADD ONE BAR FOR EACH FOOT INCREASE OF "H" ABOVE 2'-6"
ALL BARS TO BE 1/2" DIA. CUT OR BEND AROUND PIPES AS REQUIRED

REFERENCE:
COLORADO DEPARTMENT OF TRANSPORTATION STANDARD M-604-10
REFER TO LATEST M & S STANDARDS.

REVISIONS

DATE	DESCRIPTION
9/16/04	UPDATED GENERAL NOTES SLOPE INLET FLOORS
3/31/07	UPDATED DETAIL



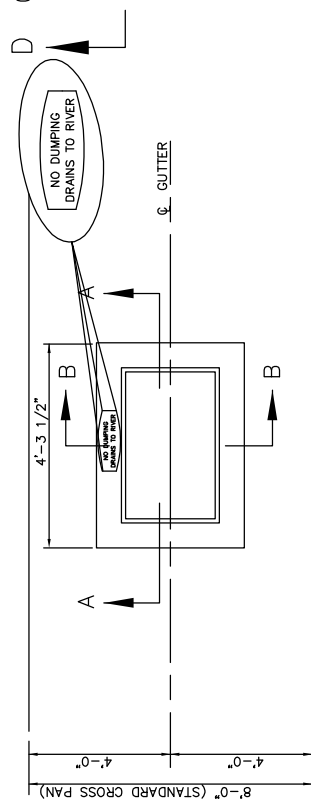
Public Works
Department

GRADED INLET TYPE C
DETAIL 7-2

DATE: MARCH 2007

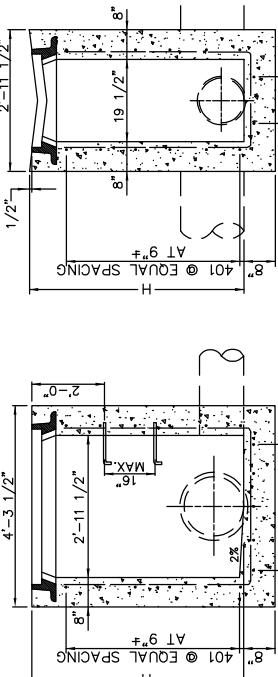
SCALE: N.T.S.

- +1. CONTRACTOR SHALL IMPRINT BE CLEAR AND LEGIBLE AND CITY SUPPLIED STAMP AS SHOWN.
- +2. FINAL IMPRESSION SHALL BE CLEAR AND LEGIBLE AND CITY SUPPLIED STAMP AS SHOWN.
- +3. STAMP SUPPLIED BY CITY STORMWATER DIVISION (970) 336-4073 OR (970) 336-4074.



PLAN OF TYPE 13 INLET

NOTE: INLET MAY BE USED IN GENERAL TYPE CONSTRUCTION.



NOTE:
1. SLOPE INLET FLOORS TOWARD PIPES A MIN. OF 2% SO THEY WILL DRAIN COMPLETELY.

NOTE:
1. SLOPE INLET FLOORS TOWARD PIPES A MIN. OF 2% SO THEY WILL DRAIN COMPLETELY.

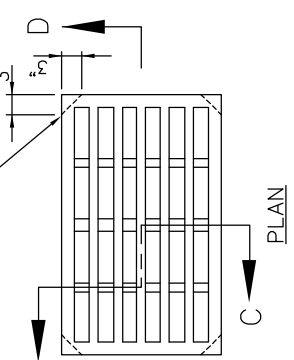
SECTION A-A

SECTION B-B

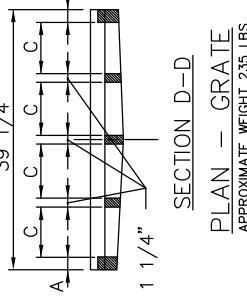
GENERAL NOTES

- +1. CONCRETE SHALL MEET OR EXCEED METROPOLITAN GOVERNMENT ENGINEERING COUNCIL (MGPEC) SPECIFICATIONS, ITEM 11, PORTLAND CEMENT CONCRETE PAVEMENT; SECTION 11.2, MATERIALS.
- +2. CAST-IN-PLACE CONCRETE WALLS SHALL BE FORMED ON BOTH SIDES.
- +3. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4".
- +4. REINFORCING BARS SHALL BE DEFORMED, GRADE 60, PER ASTM A615, AND SHALL HAVE A 2" MINIMUM CLEARANCE.
- +5. STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" EXCEEDS 3'-6" AND SHALL BE IN ACCORDANCE W/ AASHTO M199.
- +6. ALL GRATES AND FRAMES SHALL BE GRAY OR DUCTILE CAST IRON CONFORMING TO CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION-712.06. GRATES AND FRAMES SHALL BE DESIGNED TO WITHSTAND HS-20 LOADING.
- +7. SEE PLAN DETAILS FOR LOCATION AND SIZE OF PIPE.
- +8. INLET STRUCTURES SHALL NOT BE CONSTRUCTED UNTIL THE CURB AND GUTTER HAS BEEN INSTALLED; OR CONTRACTOR STAKES THE CURB & GUTTER FOR LOC ON EACH SIDE OF INLET; CONTRACTOR MUST ALSO STAKE INLET BOX CORNERS.
- +9. A MULTIPLE TYPE 13 INLET SHALL BE CONSTRUCTED THE SAME AS A MULTIPLE TYPE 3 INLET MINUS THE CURB OPENING DETAILS.
- +10. MINIMUM REBAR SPICE LENGTH SHALL BE 10".

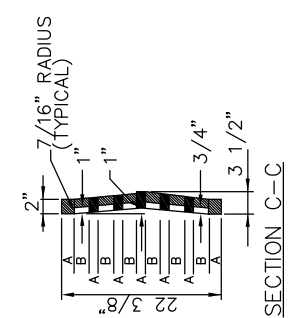
CORNERS RELIEVED 3/16" TO PREVENT ROCKING



PLAN



SECTION D-D
PLAN - GRATE
APPROXIMATE WEIGHT 235 LBS.



SECTION C-C

A = 1 3/4" MIN.
B = 1 3/4" MAX
C = 8" MAX

QUANTITIES
(FOR ESTIMATING ONLY)

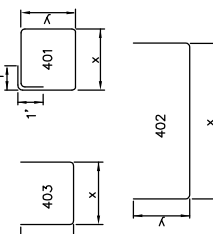
H	CONCRETE (CU. YDS)	REINFORCING STEEL (LBS)	NO. OF BARS	REC'D.
3'-0"	1.3	72	4	4
3'-6"	1.5	76	4	4
4'-0"	1.6	80	5	5
4'-6"	1.8	104	6	6
5'-0"	1.9	109	6	6
5'-6"	2.1	122	7	7
6'-0"	2.2	136	8	8
6'-6"	2.4	141	8	8
7'-0"	2.5	154	9	9
7'-6"	2.7	168	10	10
8'-0"	3.0	173	10	10
8'-6"	3.1	187	11	11
9'-0"	3.1	200	12	12
9'-6"	3.3	205	12	12
10'-0"	3.4	219	13	13

NOTE: INCLUDES 1% FOR OVERRUN CONCRETE QUANTITIES INCLUDE VOLUME OCCUPIED BY PIPE

BAR LIST FOR H=3'-0"

MARK	NO. REQ'D.	DIMENSIONS	LENGTH	
401	4	3'-6" X	2'-2"	13'-4"
402	2	3'-4 1/2" X	2'-6 1/2"	8'-5 1/2"
402	5	2'-0 1/2" X	2'-7"	7'-2 1/2"

*ADD 6" TO THIS DIMENSION FOR EACH 6" INCREASE OF "H" OVER 3'-0"



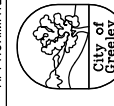
ALL DIMENSIONS ARE OUT-TO-OUT BAR BENDING DIAGRAM

DEETER #2501-A CATCH BASIN

INLET FRAME

APPROXIMATE WEIGHT 295 LBS.

TYPE 13 GRATE
FRAME - #2501-A DEETER
FOUNDRY, INC., OR EQUAL



Public Works
Department

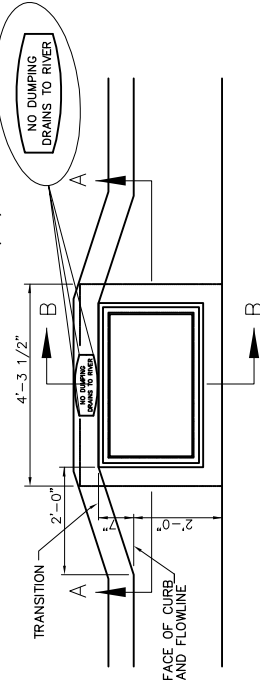
GRADED INLET TYPE 13
(GENERAL)
DETAIL 7-3

DATE: MARCH 2007

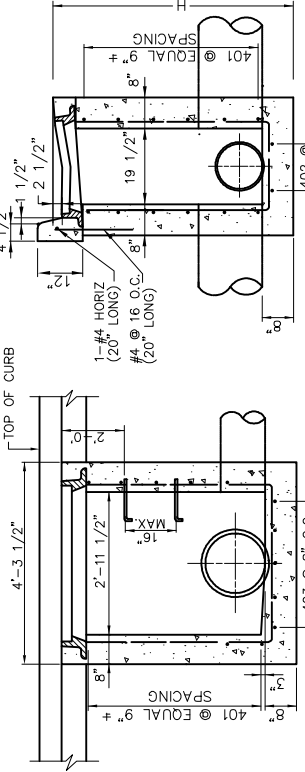
SCALE: N.T.S.

DATE	REVISIONS
4-3-00	SEE GENERAL NOTES
4-26-00	GRATE CHANGE TO TYPE 13
7-12-00	GRATE AND FRAME CHANGE
9/16/04	CLARIFY DRAWING ADD STAMP SLOPE INLET FLOORS
3/31/07	+ UPDATE DETAIL

- + 1. CONTRACTOR SHALL IMPRINT THE PLASTIC CONCRETE W/ CITY SUPPLIED STAMP AS SHOWN.
- 2. FINAL IMPRESSION SHALL BE CLEAR AND LEGIBLE AND FREE OF ANY AGGREGATE AND DEBRIS.
- 3. STAMP SUPPLIED BY CITY STORMWATER DIVISION (970) 338-4073 OR (970) 338-4074.



PLAN OF TYPE 13 INLET = VERTICAL FACE CURB, GUTTER & SIDEWALK



NOTE:
1. SLOPE INLET FLOORS TOWARD PIPES A MIN. OF 2% SO THEY WILL DRAIN COMPLETELY.

SECTION B-B =

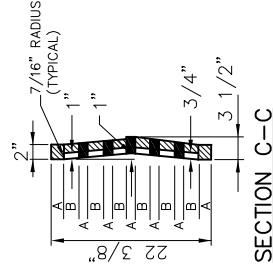
SECTION A-A =

GENERAL NOTES

- +1. CONCRETE SHALL MEET OR EXCEED METROPOLITAN GOVERNMENT ENGINEERING COUNCIL (MGPEC) SPECIFICATIONS, ITEM 11, PORTLAND CEMENT CONCRETE PAVEMENT; SECTION 11.2, MATERIALS.
- 2. INLET MAY BE CAST-IN-PLACE OR PRECAST. CAST-IN-PLACE CONCRETE WALLS SHALL BE FORMED ON BOTH SIDES.
- 3. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4".
- 4. REINFORCING BARS SHALL BE DEFORMED, GRADE 60, PER ASTM A615, AND SHALL HAVE A 2" MINIMUM CLEARANCE.
- 5. STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" EXCEEDS 3'-6" AND SHALL BE IN ACCORDANCE WITH AASHTO M 199.
- 6. ALL GRATES AND FRAMES SHALL BE GRAY OR DUCTILE CAST IRON CONFORMING TO CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION-712.06. GRATES AND FRAMES SHALL BE DESIGNED TO WITH-STAND HS-20 LOADING.
- 7. SEE PLAN DETAILS FOR LOCATION AND SIZE OF PIPE.
- + 8. INLET STRUCTURES SHALL NOT BE CONSTRUCTED UNTIL THE CURB AND GUTTER HAS BEEN INSTALLED, OR CONTRACTOR STAKES THE CURB & GUTTER FOR 100' ON EACH SIDE OF INLET.
- 9. CONTRACTOR MUST ALSO STAKE INLET BOX CORNERS.
- 9. A MULTIPLE TYPE 13 INLET SHALL BE CONSTRUCTED THE SAME AS A MULTIPLE TYPE 3 INLET MINUS THE CURB OPENING DETAILS.
- + 10. MINIMUM REBAR SPICE LENGTH SHALL BE 10".

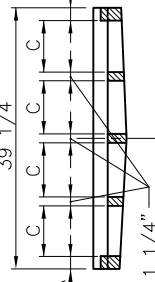
DATE	REVISIONS
4-3-00	SEE GENERAL NOTES
4-26-00	GRATE CHANGED FROM TYPE 1-A
7-12-00	GRATE AND FRAME CHANGE
09-16-04	CLEARLY DRAWING ADD STAMP SLOPE INLET FLOORS
3-31-07	+ UPDATE DETAIL
06-03-08	= UPDATE DETAIL

CORNERS RELIEVED 3/16" TO PREVENT ROCKING



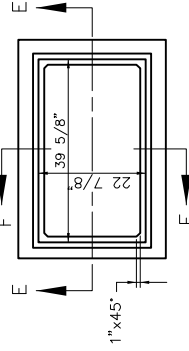
SECTION C-C =

A = 1 3/4" MIN.
B = 1 3/4" MAX
C = 8" MAX



SECTION D-D =

PLAN - GRATE
APPROXIMATE WEIGHT 235 LBS.



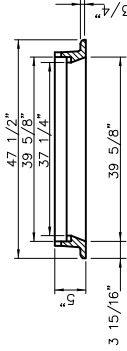
SECTION E-E =

DEETER #2501 CATCH BASIN

FRAME AND GRATE

APPROXIMATE WEIGHT 295 LBS.

SECTION F-F =



QUANTITIES
(FOR ESTIMATING ONLY)

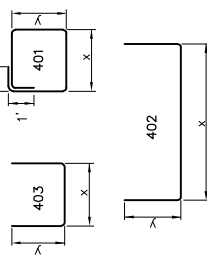
H	CONCRETE (CU. YDS)	θ (LBS)	REINFORCING STEEL (LBS)	NO. OF 401 BARS (REQ'D)
3'-0"	1.3	72	76	4
3'-6"	1.6	76	80	4
4'-0"	1.8	80	84	5
4'-6"	1.9	84	88	5
5'-0"	2.1	88	92	6
5'-6"	2.2	92	96	6
6'-0"	2.4	96	100	7
6'-6"	2.5	100	104	7
7'-0"	2.7	104	108	8
7'-6"	2.8	108	112	8
8'-0"	3.0	112	116	9
8'-6"	3.1	116	120	9
9'-0"	3.3	120	124	10
10'-0"	3.4	124	128	10

θ INCLUDES 1% FOR OVERRUN
NOTE: CONCRETE QUANTITIES INCLUDE VOLUME OCCUPIED BY PIPE

BAR LIST FOR H=3'-0"

MARK	NO.	REQ'D	DIMENSIONS	LENGTH
401	4	3'-6"	2'-0"	13'-4"
402	2	3'-0"	2'-6 1/2"	8'-5 1/2"
402	5	2'-0 1/2"	2'-7"	7'-2 1/2"

*ADD 6" TO THIS DIMENSION FOR EACH 6" INCREASE OF H OVER 3'-0"



ALL DIMENSIONS ARE OUT-TO-OUT BAR BENDING DIAGRAM

TYPE #13" GRATE
FRAME - #2501-A NEENAH / DEETER
FOUNDRY, INC., OR EQUAL



CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL A BUSINESS PARTNER IN ADVANCE BEFORE YOU DIG. GRAB OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

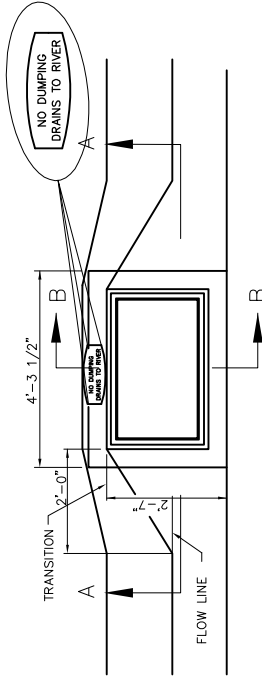
GRADED INLET TYPE 13
(FOR VERTICAL FACE CURB)

DETAIL 7-3A

DATE: JUNE 2008

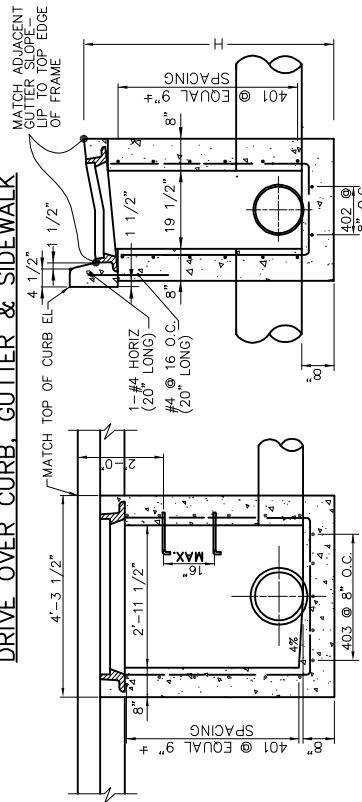
SCALE: N.T.S.

- +1. CONTRACTOR SHALL IMPRINT THE PLASTIC CONCRETE W/ CITY SUPPLIED STAMP AS SHOWN.
- 2. FINAL IMPRESSION SHALL BE CLEAR AND LEGIBLE AND FREE OF ANY AGGREGATE AND DEBRIS.
- 3. STAMP SUPPLIED BY CITY STORMWATER DIVISION (970) 336-4073 OR (970) 336-4074.



PLAN OF TYPE 13 INLET

DRIVE OVER CURB, GUTTER & SIDEWALK



NOTE:
1. SLOPE INLET FLOORS TOWARD PIPES A MIN. OF 2% SO THEY WILL DRAIN COMPLETELY.

SECTION A-A

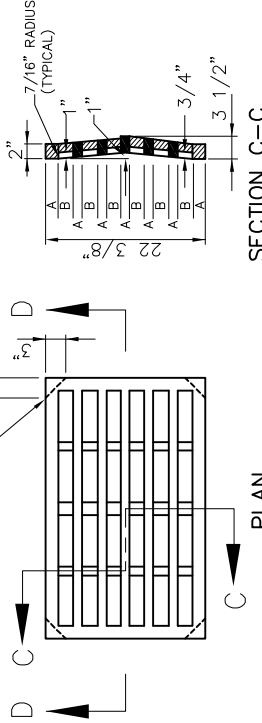
NOTE:
1. SLOPE INLET FLOORS TOWARD PIPES A MIN. OF 2% SO THEY WILL DRAIN COMPLETELY.

SECTION B-B

GENERAL NOTES

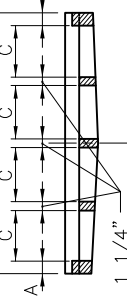
- +1. CONCRETE SHALL MEET OR EXCEED METROPOLITAN GOVERNMENT ENGINEERING COUNCIL (MOPEC) SPECIFICATIONS, ITEM 11, PORTLAND CEMENT CONCRETE PAVEMENT; SECTION 11.2, MATERIALS.
- 2. INLET MAY BE CAST-IN-PLACE OR PRECAST. CAST-IN-PLACE CONCRETE WALLS SHALL BE FORMED ON BOTH SIDES.
- 3. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4".
- 4. REINFORCING BARS SHALL BE DEFORMED, GRADE 60, PER ASTM A615, AND SHALL HAVE A MINIMUM CLEARANCE.
- 5. STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" EXCEEDS 3'-6" AND SHALL BE IN ACCORDANCE WITH AASHTO M 199.
- 6. ALL GRATES AND FRAMES SHALL BE GRAY OR DUCTILE CAST IRON CONFORMING TO CDDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION-712.06. GRATES AND FRAMES SHALL BE DESIGNED TO WITHSTAND HS-20 LOADING.
- 7. SEE PLAN DETAILS FOR LOCATION AND SIZE OF PIPE.
- + 8. INLET STRUCTURES SHALL NOT BE CONSTRUCTED UNTIL THE CURB AND GUTTER HAS BEEN INSTALLED, OR CONTRACTOR STAKES THE CURB & GUTTER FOR 100' ON EACH SIDE OF INLET. CONTRACTOR MUST ALSO STAKE INLET BOX CORNERS.
- 9. A MULTIPLE TYPE 13 INLET SHALL BE CONSTRUCTED THE SAME AS A MULTIPLE TYPE 3 INLET MINUS THE CURB OPENING DETAILS.
- + 10. MINIMUM REBAR SPLICE LENGTH SHALL BE 10".

CORNERS RELIEVED 3/16" TO PREVENT ROCKING



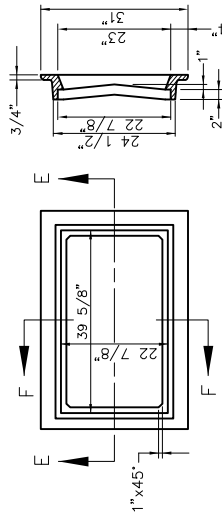
SECTION C-C

PLAN



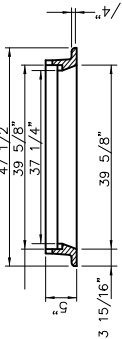
SECTION D-D
PLAN - GRATE
APPROXIMATE WEIGHT 235 LBS.

A = 1 3/4" MIN.
B = 1 3/4" MAX
C = 8" MAX



SECTION F-F

SECTION E-E



SECTION E-E

DEETER #2501-A CATCH BASIN
FRAME AND GRATE
APPROXIMATE WEIGHT 295 LBS.

QUANTITIES
(FOR ESTIMATING ONLY)

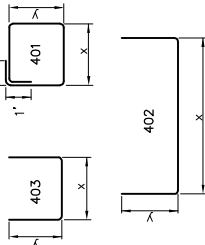
H	CONCRETE (CU. YDS)	REINFORCING STEEL (LBS)	NO. OF BARS	NO. OF RECD.
3'-0"	1.3	72	4	4
3'-6"	1.5	76	4	4
4'-0"	1.6	90	5	5
4'-6"	1.8	104	6	6
5'-0"	1.9	109	6	6
5'-6"	2.1	122	7	7
6'-0"	2.2	136	8	8
6'-6"	2.4	141	8	8
7'-0"	2.5	154	9	9
7'-6"	2.7	168	10	10
8'-0"	2.8	187	11	11
9'-0"	3.1	200	12	12
9'-6"	3.3	205	12	12
10'-0"	3.4	219	13	13

θ INCLUDES 1% FOR OVERRUN
NOTE: CONCRETE QUANTITIES INCLUDE VOLUME OCCUPIED BY PIPE

BAR LIST FOR H=3'-0"

MARK	NO.	DIMENSIONS	LENGTH
401	4	3'-6" x 2'-2"	13'-4"
402	2	3'-4 1/2" x 2'-6 1/2"	8'-5 1/2"
402	5	2'-0 1/2" x 2'-7"	7'-2 1/2"

*ADD 6" TO THIS DIMENSION FOR EACH 6" INCREASE OF "H" OVER 3'-0"



ALL DIMENSIONS ARE OUT-TO-OUT BAR BENDING DIAGRAM

TYPE "13" GRATE
FRAME #2501-A MEENAH / DEETER
FOUNDRY, INC., OR EQUAL

GRATED INLET TYPE 13
(FOR DRIVE OVER CURB)
DETAIL 7-3B

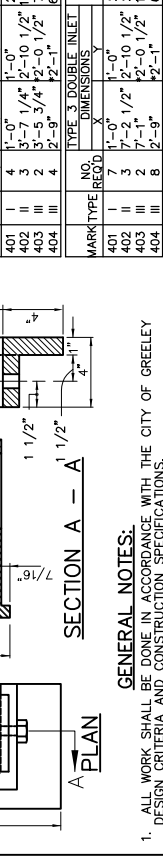
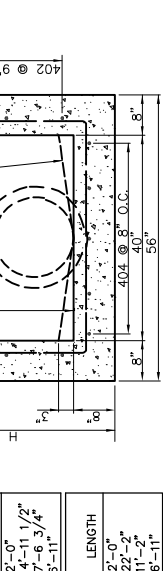
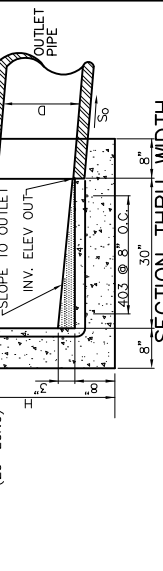
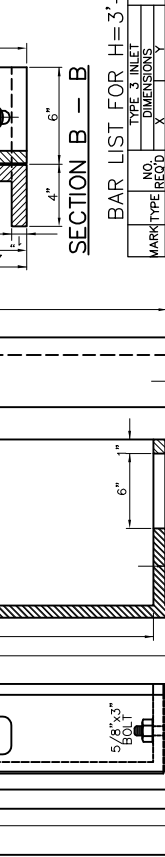
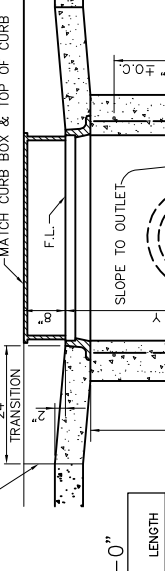
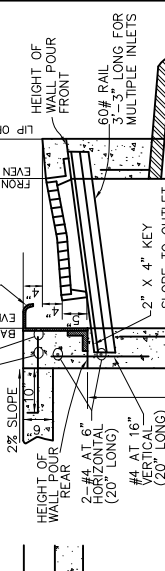
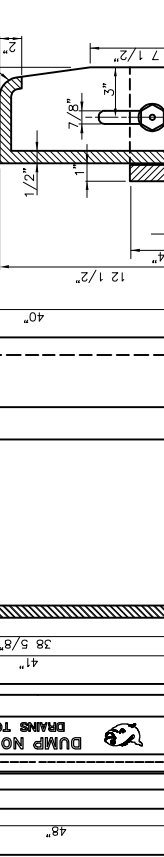
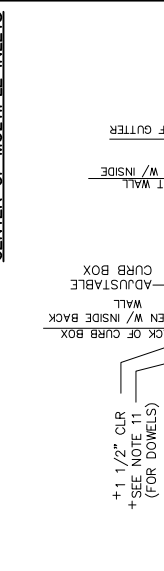
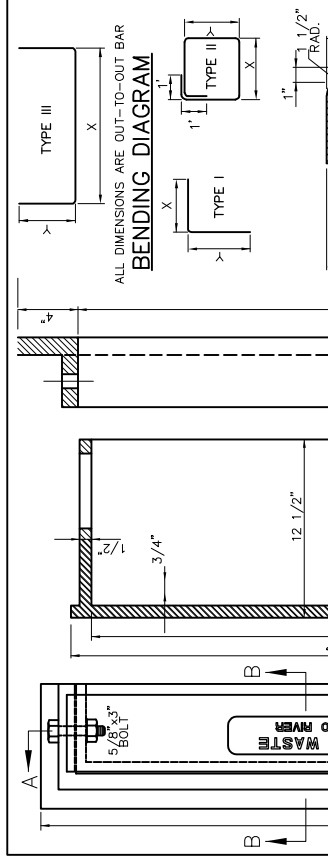
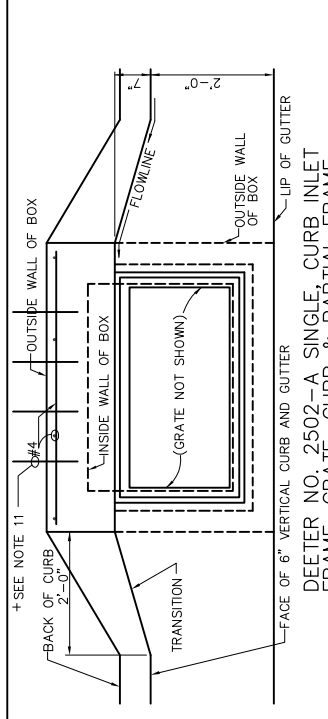
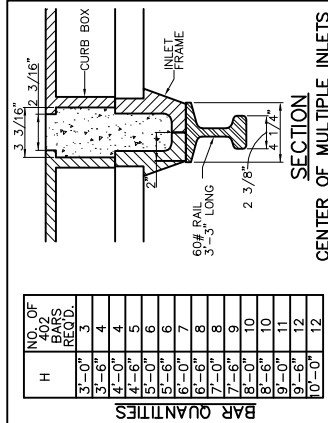


CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

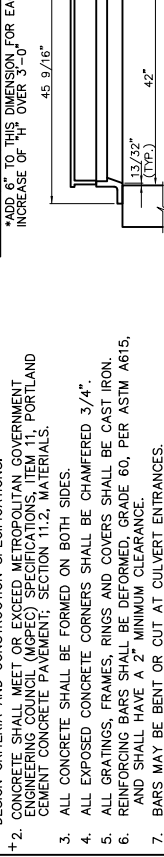
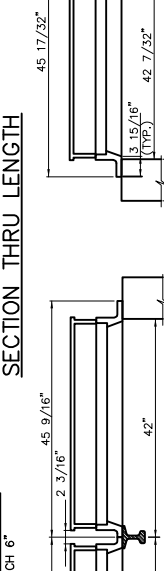
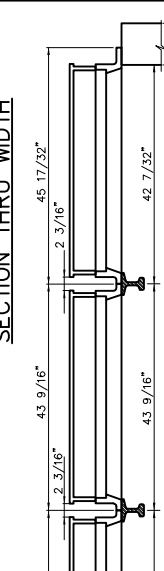
DATE: JUNE 2008

SCALE: N.T.S.

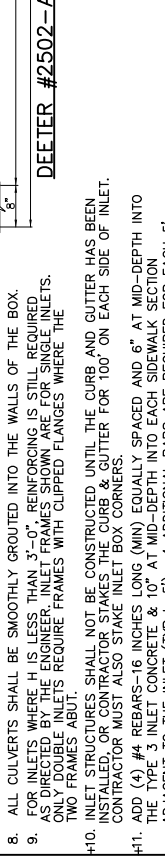
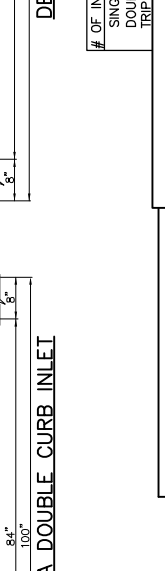
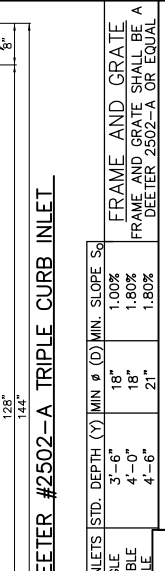
DATE	REVISIONS	DESCRIPTION
4-3-00	SEE GENERAL NOTES	
4-26-00	GRADE CHANGE, TYPE "L" VAN TO DEETER #2501-A	
7-12-00	GRADE AND FRAME CHANGE	
09-16-04	SLOPE INLET FLOORS	
3-31-07	+ UPDATE DETAIL	
06-03-08	= UPDATE DETAIL	



MARKTYPE	NO.	RECD	DIMENSIONS	LENGTH
401	I	4	1'-0"	2'-0"
402	II	2	1'-0"	1'-0"
403	III	2	3'-5 3/4"	12'-0 1/2"
404	III	4	2'-9"	17'-6 3/4"

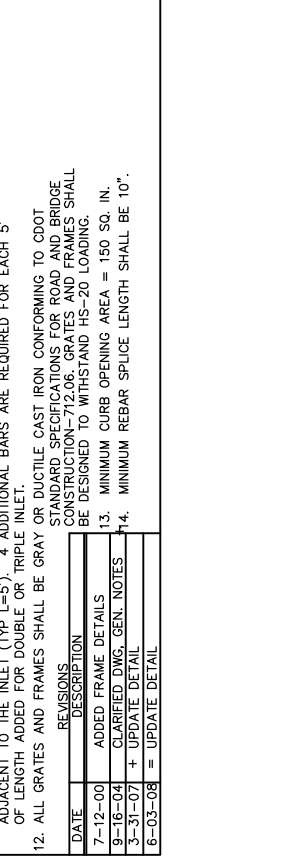
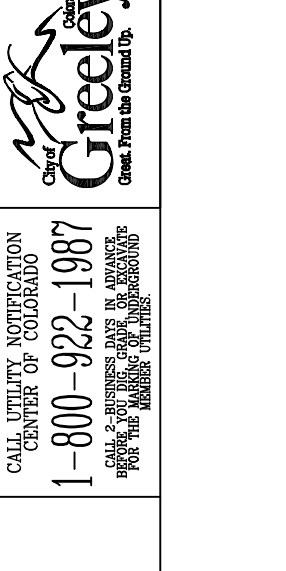
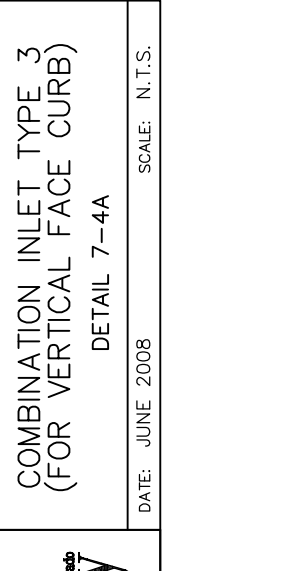


MARKTYPE	NO.	RECD	DIMENSIONS	LENGTH
401	I	7	1'-0"	2'-0"
402	II	3	7'-2 1/2"	22'-2"
403	III	2	7'-1"	11'-2"
404	III	8	2'-9"	12'-1"



MARKTYPE	NO.	RECD	DIMENSIONS	LENGTH
401	I	7	1'-0"	2'-0"
402	II	3	7'-2 1/2"	22'-2"
403	III	2	7'-1"	11'-2"
404	III	8	2'-9"	12'-1"

*ADD .6" TO THIS DIMENSION FOR EACH 6" INCREASE OF H OVER 3'-0"



MARKTYPE	NO.	RECD	DIMENSIONS	LENGTH
401	I	7	1'-0"	2'-0"
402	II	3	7'-2 1/2"	22'-2"
403	III	2	7'-1"	11'-2"
404	III	8	2'-9"	12'-1"

GENERAL NOTES:

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CITY OF GREELY DESIGN CRITERIA AND CONSTRUCTION SPECIFICATIONS.
- CONCRETE SHALL MEET OR EXCEED METROPOLITAN GOVERNMENT ENGINEERING COUNCIL (MGPEC) SPECIFICATIONS, ITEM 11, PORTLAND CEMENT CONCRETE PAVEMENT; SECTION 11.2, MATERIALS.
- ALL CONCRETE SHALL BE FORMED ON BOTH SIDES.
- ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4".
- ALL GRATINGS, FRAMES, RINGS AND COVERS SHALL BE CAST IRON.
- REINFORCING BARS SHALL BE DEFORMED, GRADE 60, PER ASTM A615, AND SHALL HAVE A 2" MINIMUM CLEARANCE.
- BARS MAY BE BENT OR CUT AT CULVERT ENTRANCES.
- ALL CULVERTS SHALL BE SMOOTHLY GROUTED INTO THE WALLS OF THE BOX.
- FOR INLETS WHERE H IS LESS THAN 3'-0", REINFORCING IS STILL REQUIRED AS DIRECTED BY THE ENGINEER. INLET FRAMES SHOWN ARE FOR SINGLE INLETS. ONLY DOUBLE INLETS REQUIRE FRAMES WITH CLIPPED FLANGES WHERE THE TWO FRAMES ABUT.
- INLET STRUCTURES SHALL NOT BE CONSTRUCTED UNTIL THE CURB AND GUTTER HAS BEEN INSTALLED, OR CONTRACTOR STAKES THE CURB & GUTTER FOR 100' ON EACH SIDE OF INLET. CONTRACTOR MUST ALSO STAKE INLET BOX CORNERS.
- ADD (4) #4 REBARS-16 INCHES LONG (MIN) EQUALLY SPACED AND 6" AT MID-DEPTH INTO THE TYPE 3 INLET CONCRETE & 10" AT MID-DEPTH INTO EACH SIDEWALK SECTION ADJACENT TO THE INLET (TYPE L-5). 4 ADDITIONAL BARS ARE REQUIRED FOR EACH 5' OF LENGTH ADDED FOR DOUBLE OR TRIPLE INLET.
- ALL GRATES AND FRAMES SHALL BE GRAY OR DUCTILE CAST IRON CONFORMING TO CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION-712.06. GRATES AND FRAMES SHALL BE DESIGNED TO WITHSTAND HS-20 LOADING.
- MINIMUM CURB OPENING AREA = 150 SQ. IN.
- MINIMUM REBAR SPICE LENGTH SHALL BE 10".

DATE	REVISIONS	DESCRIPTION
7-12-00	ADDED FRAME DETAILS	
9-16-04	CLARIFIED DWG. GEN. NOTES	
3-31-07	+ UPDATE DETAIL	
6-03-08	= UPDATE DETAIL	

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
 CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.



COMBINATION INLET TYPE 3
 (FOR VERTICAL FACE CURB)
 DETAIL 7-4A

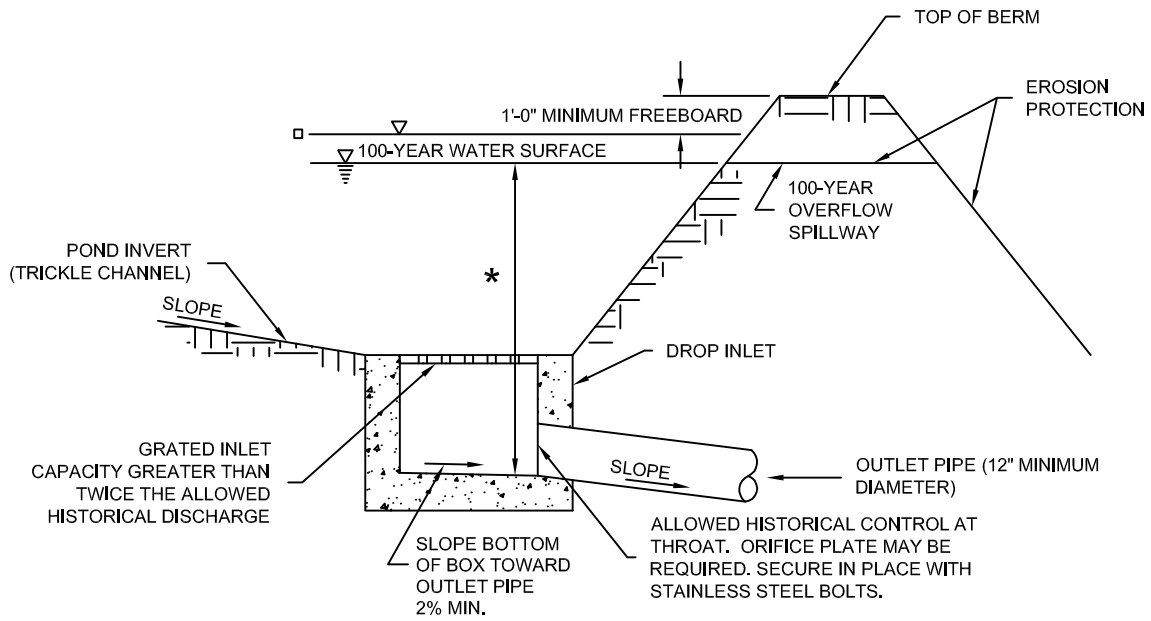
DATE: JUNE 2008
 SCALE: N.T.S.

DEETER #2502-A TRIPLE CURB INLET

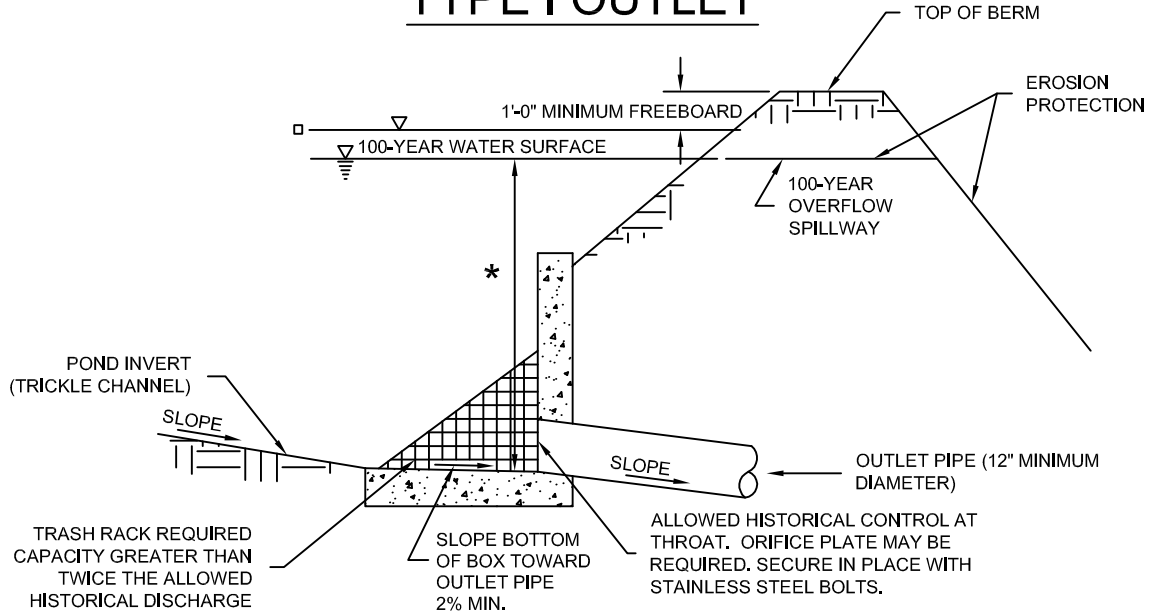
DEETER #2502-A DOUBLE CURB INLET

OF INLETS STD. DEPTH (Y) MIN. @ (D) MIN. SLOPE S₀

SINGLE	3'-6"	18"	1.00%	FRAME AND GRATE
DOUBLE	4'-0"	18"	1.80%	FRAME AND GRATE SHALL BE A
TRIPLE	4'-6"	21"	1.80%	DEETER 2502-A OR EQUAL



TYPE I OUTLET



TYPE II OUTLET

NOTES:

1. PROVIDE AT LEAST A $\frac{3}{8}$ " THICK ORIFICE PLATE. ORIFICE PLATE SHALL BE HOT DIPPED GALVANIZED COATED.
2. ALL STEEL TRASH RACKS SHALL BE HOT DIPPED GALVANIZED COATED.
3. A TRASH RACK SHALL BE ABLE TO CARRY A MINIMUM LOAD (LIVE LOAD) EQUAL TO 250 LB/FT² OR TWICE THE HYDRAULIC LOADING PLACED ON THE TRASH RACK DURING A CLOGGED CONDITION AT THE 100-YR WATER SURFACE ELEVATION, WHICHEVER IS GREATER.

* HEADWATER FOR ALLOWABLE HISTORIC DISCHARGE

□ WATER SURFACE ELEVATION WHEN WATER IS FLOWING OVER THE SPILLWAY DURING A 100-YEAR STORM EVENT DURING A PLUGGED ORIFICE CONDITION.

REVISIONS

3/28/07 + UPDATE DETAIL



City of
Greeley
Public Works
Department

CALL UTILITY NOTIFICATION
CENTER OF COLORADO

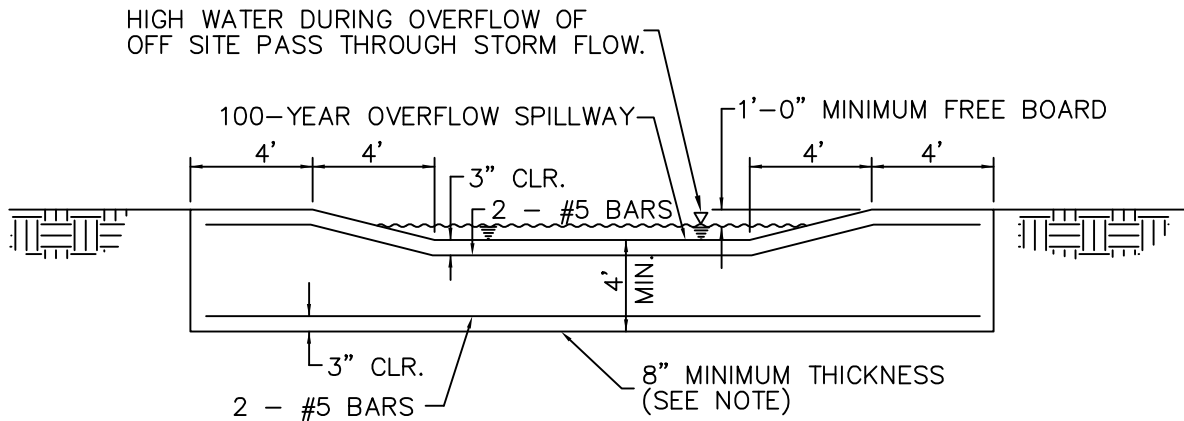
1-800-922-1987

CALL 2-BUSINESS DAYS IN ADVANCE
BEFORE YOU DIG, GRADE, OR EXCAVATE
FOR THE MARKING OF UNDERGROUND
MEMBER UTILITIES.

TYPE I AND TYPE II
OUTLET DETAILS
DETAIL 11-3

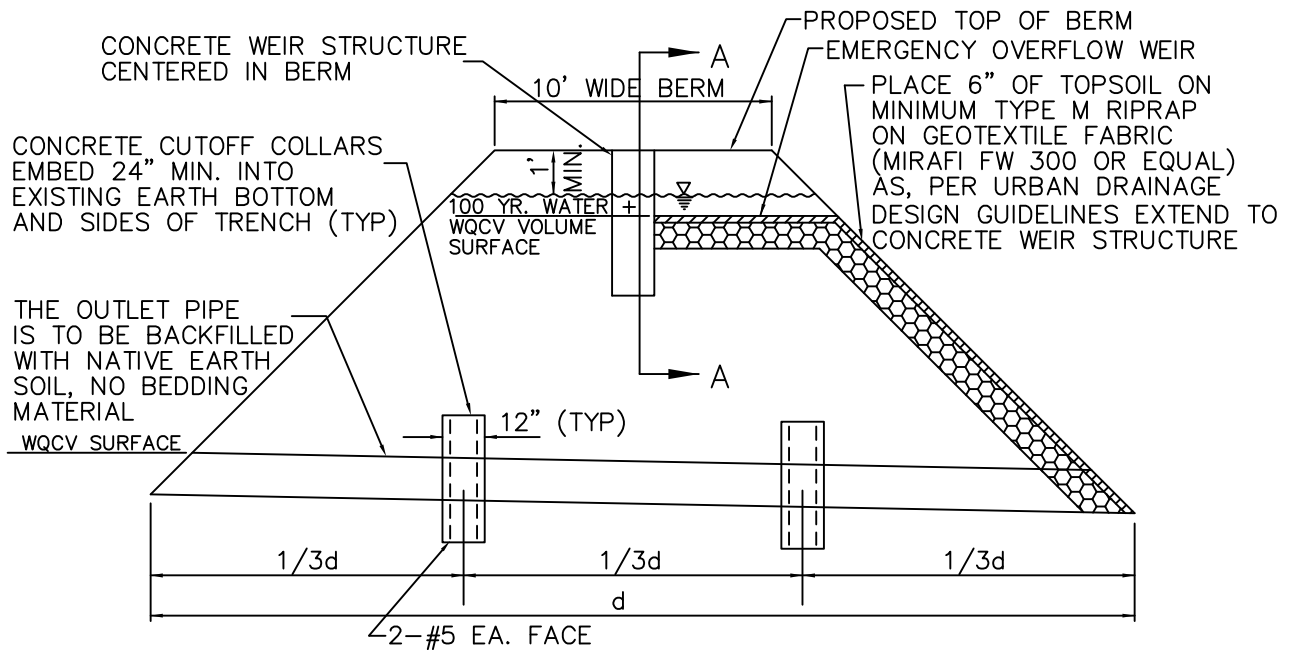
DATE: MARCH 2007

SCALE: N.T.S.



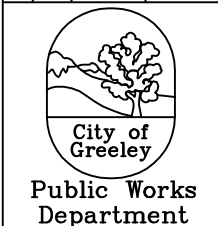
NOTE:
 TRENCH FOR WEIR OUTLET STRUCTURE USING NATIVE GROUND AS FORM WORK. CONSTRUCT WEIR 8" MINIMUM THICKNESS. UPON COMPLETION OF TRENCHING, PLACE TEMPERATURE STEEL AND CONCRETE IMMEDIATELY, FORM TOP 4".

SECTION A - A
CONCRETE WEIR OVERFLOW STRUCTURE



DETAIL A
OUTLET AND SPILLWAY DETAILS

REVISIONS	
3/31/07	+ UPDATE DETAIL



CALL UTILITY NOTIFICATION
 CENTER OF COLORADO
1-800-922-1987
 CALL 2-BUSINESS DAYS IN ADVANCE
 BEFORE YOU DIG, GRADE, OR EXCAVATE
 FOR THE MARKING OF UNDERGROUND
 MEMBER UTILITIES.

**OUTLET AND SPILLWAY
 DETAILS
 DETAIL 11-7**

DATE: MARCH 2007

SCALE: N.T.S.

GENERAL EROSION CONTROL NOTES

CONTRACTOR SHALL INSTALL ALL PERIMETER SEDIMENT AND EROSION CONTROL DEVICES IN ACCORDANCE WITH THE URBAN DRAINAGE FLOOD CONTROL DISTRICT (UDFCD), VOLUME 3 CONSTRUCTION BEST MANAGEMENT PRACTICES. THESE BEST MANAGEMENT PRACTICES INCLUDE, BUT ARE NOT LIMITED TO, SILT FENCE, INLET PROTECTION, VTC PAD, WHEEL WASHOUT, AND SEDIMENT BASINS. BEST MANAGEMENT PRACTICES SHALL BE INSTALLED BEFORE COMMENCING ANY LAND CLEARING OR GRADING ACTIVITIES. THE CONTRACTOR SHALL LIMIT TOPSOIL STRIPPING OPERATIONS TO WITHIN THE AREAS IN WHICH THEY WILL BE IMMEDIATELY WORKING. THE CONSTRUCTION OF UNDERGROUND UTILITIES SHALL BE INCLUDED AS A LAND-DISTURBING ACTIVITY. ALL EXCAVATED MATERIAL SHALL BE PLACED WHERE SEDIMENT WILL ERODE BACK INTO THE TRENCH. ALL TRENCHES SHALL BE BACKFILLED BY THE END OF THE DAYS WORK; BACKFILL SHALL BE PERMANENTLY STABILIZED BEFORE CONSTRUCTION IS CONSIDERED COMPLETE.

Previous City of Greeley standard details for Erosion Control Structures have been redacted as of July 2019. The City of Greeley has fully adopted standard details established by UDFCD, Volume 3 – Construction BMPs.

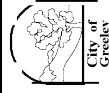
ALL DISTURBED AREAS AND SOIL STOCKPILES SHALL BE ADEQUATELY STABILIZED AS DEFINED IN UDFCD, VOLUME 3, CONSTRUCTION BEST MANAGEMENT PRACTICES. ALL DISTURBED SOILS AND SOIL STOCKPILES SHALL BE WATERED AND MAINTAINED IN A ROUGHENED CONDITION AT ALL TIMES DURING CONSTRUCTION ACTIVITIES TO PREVENT WIND-CAUSED EROSION. ALL LAND DISTURBING ACTIVITIES WILL BE IMMEDIATELY DISCONTINUED WHEN FUGITIVE DUST IMPACTS ADJACENT PROPERTIES, AS DETERMINED BY CITY INSPECTOR, PERMANENT OR TEMPORARY NATIVE SEED (SEE EROSION CONTROL STRUCTURES - DETAIL 12-2 FOR SEEDING SPECIFICATIONS) SOIL STABILIZATION SHALL BE REQUIRED WITHIN 14 DAYS AFTER FINAL GRADE IS REACHED. IF DISTURBED AREAS OR STOCKPILES ARE NOT BROUGHT TO FINAL GRADE WITHIN 30 DAYS FOLLOWING THE INITIAL DISTURBANCE, OR RE-DISTURBANCE, TEMPORARY STABILIZATION MEASURES SHALL BE REQUIRED. NO SOIL STOCKPILE SHALL EXCEED TEN (10) FEET IN HEIGHT. ALL SOIL STOCKPILE SIDE SLOPES SHALL NOT EXCEED A SLOPE OF 4V: 1 H.

ALL STORM SEWER INLETS SHALL BE PROTECTED FROM THE ENTRY OF SEDIMENT-LADEN WATER. HAY BALES ARE NOT RECOGNIZED BY THE CITY OF GREELEY AS AN ACCEPTABLE FORM OF EROSION CONTROL. INSPECTION OF ALL EROSION AND SEDIMENT CONTROL BMP'S SHALL BE REQUIRED AT THE END OF EACH DAY'S WORK. WITH NECESSARY MAINTENANCE AND REPAIRS PROVIDED IMMEDIATELY, THE CITY OF GREELEY INSPECTOR SHALL, AT THEIR DISCRETION, REQUIRE ANY EROSION CONTROL DEVICES BE REPAIRED, REPLACED, RELOCATED, MODIFIED, OR REMOVED. SUCH REQUESTS SHALL BE COMPLETED WITHIN 5 WORKING DAYS FOLLOWING RECEIPT OF THE WRITTEN REQUEST FROM THE INSPECTOR. ALL PUBLIC RIGHT OF WAY POLLUTED WITH DIRT, MUD, OR DEBRIS SHALL BE SWEEPED CLEAN AT THE END OF EACH DAY'S WORK OR AFTER STORM EVENTS, AS NECESSARY. ALL TEMPORARY AND PERIMETER EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AS SOON AS THEIR FUNCTION HAS BEEN FILLED. SEDIMENT TRAPS/BASINS SHALL BE CLEANED AND REMOVED, OR STABILIZED, WHEN ALL UPSTREAM AREAS ARE PERMANENTLY STABILIZED. THE SITE CONTRACTOR IS RESPONSIBLE FOR PROPERLY DISPOSING OFF ALL SILT FROM THE SITE. IF IT IS NOT REUSABLE ON SITE:

THE LANDOWNER SHALL BE HELD RESPONSIBLE FOR THE LONG-TERM STABILITY OF CUT AND FILL SLOPES AND THE SUCCESSFUL ESTABLISHMENT OF PERMANENT VEGETATIVE COVER ON EXPOSED SOIL AS DEFINED IN THE UDFCD, VOLUME 3, CONSTRUCTION BEST MANAGEMENT PRACTICES

ALL CONSTRUCTION SUPPLIES OR MATERIALS USED OR STORED ON SITE MUST BE DISPOSED OF PROPERLY AND MUST MEET ALL APPLICABLE MATERIAL SAFETY DATA SHEET CRITERIA.

THE STATE STORMWATER DISCHARGE PERMIT HOLDER MAY BE LIABLE FOR ANY VIOLATIONS RESULTING FROM THE ACTIONS TAKEN BY SITE CONTRACTORS, SUBCONTRACTORS, MAINTENANCE CREWS, ETC.



Public Works
Stormwater Management

EROSION CONTROL STRUCTURES

DETAIL 12-1

DATE: MARCH 2007 Revised Aug 2019

SCALE: N.T.S.