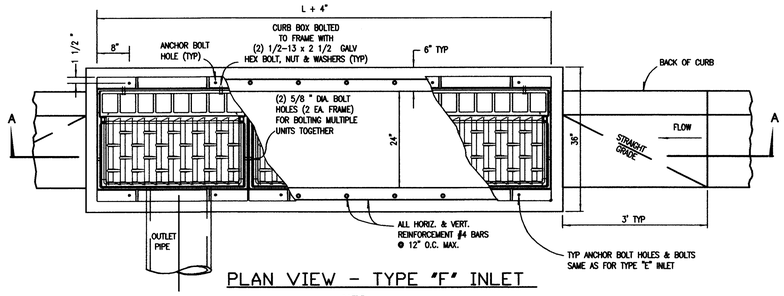
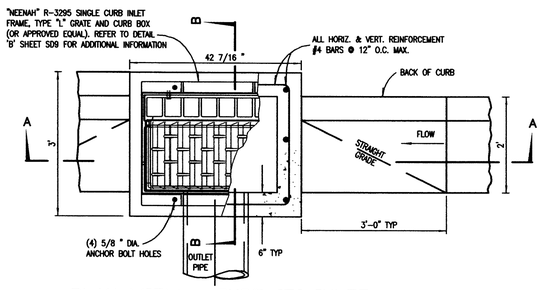
STORM DRAIN MANHOLE LOCATIONS		
SDMH #	NORTHING	EASTING
SDMH #1	N 808748.4101	E 746071.5387
SDMH #2	N 808890.5378	E 746072.1787
SDMH #3	N 809060.7376	E 746036.3545
SDMH #4	N 809414.3048	E 745860.5849
SDMH #5	N 809561.4038	E 745695.2800
SDMH #6	N 809709.6335	E 745554.0524
SDMH #7	N 809945.7350	E 745432.6728
SDMH #8	N 810186.1598	E 745392.7287
SDMH #9	N 810402.4449	E 745392.3473
SDMH #10	N 810768.1319	E 745391.8561
SDMH #11	N 810863.3128	E 745391.7283
SDMH #12	N 810922.5628	E 745391.6448
SDMH #13	N 812368.3290	E 744568.4071
SDMH #14	N 812722.2850	E 744431.1623

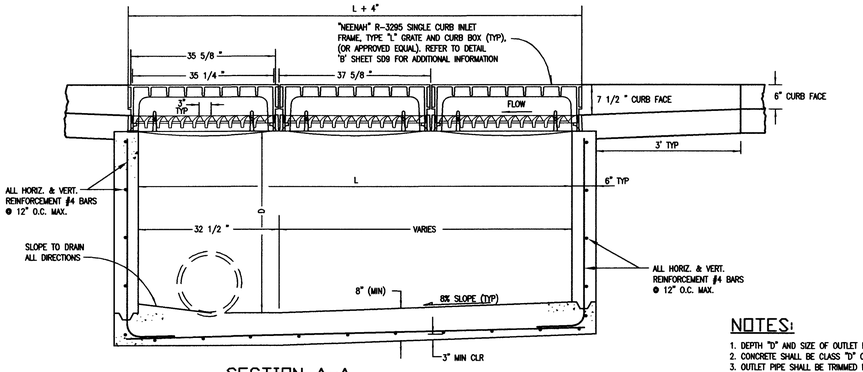
STORM DRAIN MANHOLE NORTHING/EASTING LOCATIONS



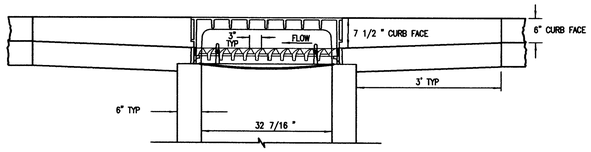
PLAN VIEW - TYPE "F" INLET
NTS



PLAN VIEW - TYPE "E" INLET
NTS



SECTION A-A
NTS

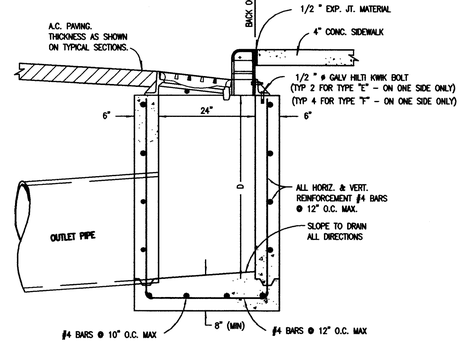


SECTION A-A
NTS

NOTES:
1. DEPTH "D" AND SIZE OF OUTLET PIPE AS SHOWN ON SHEETS SD1 THROUGH SD8
2. CONCRETE SHALL BE CLASS "D" OR "DA".
3. OUTLET PIPE SHALL BE TRIMMED FLUSH WITH INSIDE FACE OF INLET.
4. SECTION B-B APPLIES TO BOTH TYPE "E" AND TYPE "F" INLETS.
5. LENGTH "L" IS A NOMINAL DIMENSION AND IS SHOWN IN MULTIPLES OF 3 FEET ON SHEETS SD1 THROUGH SD9
6. BOTTOM SLOPE OF INLET MAY BE ACHIEVED WITH GROUT.

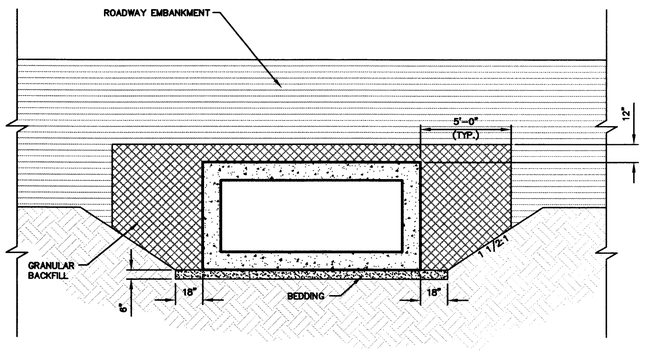
NOTE:
FINISH GRADE ELEVATIONS FOR MANHOLES AND DROP INLETS ARE AT THE CENTER OF MANHOLE LIDS AND T.O.C. AT THE CENTER OF STORM DRAIN LATERALS FOR DROP INLETS. SET FINISH GRADE ELEVATIONS FOR THE EDGES OF MANHOLE LIDS AND T.O.C. AT DROP INLETS PER STREET SLOPES.

E / SD12 **TYPE 'F' DROP INLET**
NTS



SECTION B-B
NTS

F / SD12 **TYPE 'E' DROP INLET**
NTS



1) Design Specifications: AASHTO "Standard Specifications for Highway Bridges", and AASHTO M259 or M273 (ASTM C789 or C850) as indicated by the following:

Condition	Min. Cover*	AASHTO	Equiv. ASTM
2 ft. or more cover	2 ft.	M259, Table 2	C789, Table 2
Less than 2 ft. cover	0 ft.	M273 Table 2	C850, Table 2

The Specifications noted above show concrete dimensions, reinforcing placement, earth cover, and other details needed to manufacture the box culverts.

2) Construction Specifications: Current edition of the State of Nevada Department of Transportation "Standard Specifications for Road and Bridge Construction", subsection 502.03.24, and Special Provisions thereto.

3) Live Load: Interstate loading conditions (Table 2). (Standard HS20-44 and FHWA alternate military loading.)

4) Concrete: Concrete shall be as specified in AASHTO M259 or M273 (ASTM C789 or C850), as modified in subsection 502.03.24 of the Standard Specifications and the Special Provisions.

5) Reinforcing Steel: Reinforcing steel shall be AASHTO M31 (ASTM A615) Grade 60. Welded wire fabric shall be AASHTO M55 (ASTM A185) (smooth wire), or AASHTO M22 (ASTM A497) (deformed wire). Reinforcing steel in the top slab shall have an epoxy coating conforming to AASHTO M284 (ASTM D3963), when there is 6 inches or less of cover on the RCB (Clark County excluded).

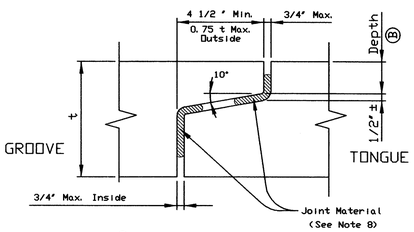
6) Bedding: Bedding material shall be either 6 inches of granular backfill or 6 inches of type 2 class B aggregate. Choice of bedding will be at the Contractors option. Excavation for bedding shall be paid for as 6 inches of structure excavation, and bedding material shall be paid for as 6 inches of granular backfill regardless of which option the Contractor uses.

7) Headwalls: Headwall details shall be as shown in the Standard Plans. Exposed reinforcements to tie cast-in-place headwall to precast box shall consist of either #4 bars at 12 inch spacings or exposure of the double case of welded wire fabric. The #4 bars shall be case a min. of 18 inches into the precast box segment. Both the #4 bar or welded wire fabric shall extend a min. of 12 inches into the cast in place headwall.

8) Joint Material: Joint material shall be a preformed joint material meeting AASHTO M198 type B. The material shall be installed in accordance with the manufacturers recommendations. A double application of joint material shall be used. One application shall be applied to the tongue and the other to the groove. The minimum size of joint material shall be 1-1/4 inches. Any joint material extruding from the interior of the joint shall be removed flush with the box wall.

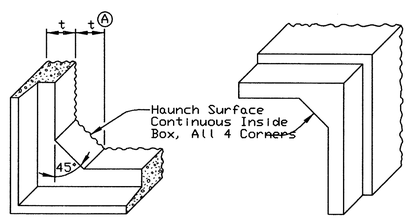
9) Special Design: A special design of the precast box shall be required for the following conditions:
   a. RCBs requiring the use of approach slabs.
   b. RCBs requiring the use of bridge rail.
   c. RCBs requiring the use of guardrail where the height of cover is less than the embedment length of the guardrail post.

10) Marking: In addition to the markings required by the AASHTO and ASTM specifications, each box section shall be marked with appropriate SID Number.



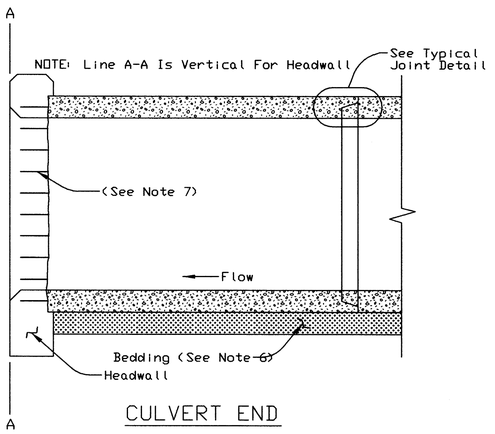
Ⓑ For Spans Thru 8', Dmin.=8"
For Spans Over 8', Dmin.=3 1/4 "

TYPICAL JOINT DETAIL



Ⓐ - t Min. Shall Equal The Wall Thickness t Max. Shall Be 8" For Spans Thru 8' & 12" For Spans Over 8'.

CORNERS



CULVERT END

G / SD12 **4'x10' RCB EXCAVATION, BACKFILL AND CONSTRUCTION DETAILS**
NTS

REVISIONS

NO.	DATE	DESCRIPTION	APPROVED

ENGINEERING DESIGN SECTION
DESIGNED BY: GREGORY
DRAWN BY: V. HARKINS
CHK'D BY: V. HARKINS
DATE: 02-27-04
JOB NO.: 511521

PBS&J
2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7272
Fax: 702/263-7200
ENGINEERING · PLANNING · SURVEYING · CONSTRUCTION SERVICES

PROFESSIONAL ENGINEER · STATE OF NEVADA · VERNON R. HARKINS · No. 9889

Department of Public Works
GRAND MONTECITO PARKWAY IMPROVEMENTS
STORM DRAIN DETAILS

CITY OF LAS VEGAS · NEVADA

DRAWING No. SD12 · 34/61
PLAN# 107V3701

Call before you Underground 1-702-455-7511 (CLARK COUNTY) 1-702-229-6611 (LAS VEGAS AREA UNDERGROUND TRAFFIC SIGNAL)
Call before you Dig. 1-800-227-2600 (UNDERGROUND SERVICE ALERT (USA))
Call before you OVERHEAD 1-702-227-2929 (NEVADA POWER ENVIRONMENT AND SAFETY SERVICES DEPARTMENT)

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