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**Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority**

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January 13, 2012

Mr. Jeff Mulberry, P.E., LEED AP BD+C
Bohannon Huston, Inc.
7500 Jefferson St. NE, Courtyard I
Albuquerque, NM 87109

Via electronic & regular mail

Re: Drainage Management and Construction Plans for APS Community Stadium
Engineer's Seal Dated 12-21-11

Dear Mr. Mulberry:

I have reviewed the referenced plans with the Ladera Dam 5 and Dam 9 Arroyos: APS Projects Design Analysis Report (DAR), BHI, received December 21, 2011. It will be helpful to show the limits of the drainage basins from the DAR on sheet DMP-002 of the plans. With respect to the drainage management plan, I note the following discrepancies:

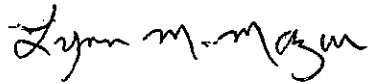
1. Basins 15, 16 and 17 are going to Ladera Dam (LD) 5. In the DAR, these basins are the eastern third of Basin UD.4B, which was going to LD 4. I don't think this change will have significant impact, but it should be shown with flow arrows on DMP-002 (see attached) and noted in the narrative on Sheet DMP-001.
2. Basins 2-14 are going to LD 3. In the DAR, these basins are the western two-thirds of Basin UD.4B, which was going to LD 4. This change may have some impact on the storage volume of LD 3. I would like this evaluated by Craig Hoover, who prepared the DAR, and a recommendation from him whether or not this change warrants a re-evaluation of the LD system hydraulic analysis. This change should also be shown with flow arrows on DMP-002 and noted in the narrative on Sheet DMP-001

With respect to construction plans, I offer the following comments:

1. On Sheet C-107, there needs to be a base course access road to MH 12 and the water quality manhole.
2. On Sheet C-190, the 10-foot riprap extension should be buried. The intent is to prevent headcutting at the horizontal section (see attached). Also, the riprap around the pipe outlet should extend at least to the top of pipe. We often see erosion around pipe outlets.

If you have any questions, please call me at 884-2215.

Sincerely,
AMAFCA

A handwritten signature in black ink, reading "Lynn M. Mazur". The signature is written in a cursive, flowing style.

Lynn M. Mazur, P.E., C.F.M.
Development Review Engineer

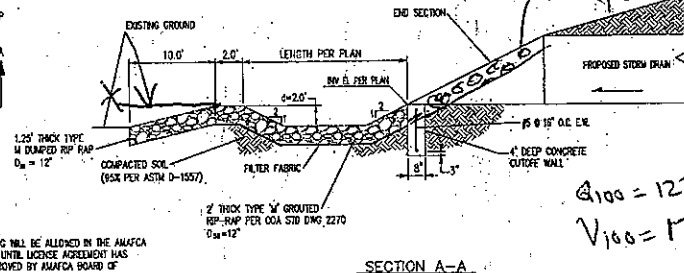
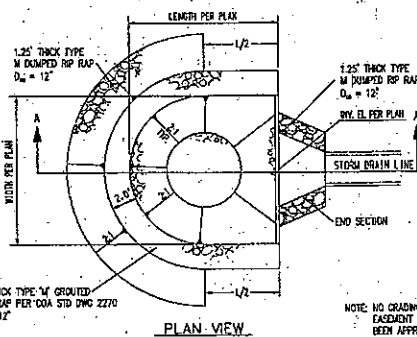
C: Craig Hoover, BHI
 Curtis Cherne, COA Development & Bldg Services
 Brad Bingham, AMAFCA

○ GRADING KEYED NOTES

1. INSTALL SD PIPE; HOPE N-12WT OR APPROVED EQUAL. SEE PLAN.
2. INSTALL SINGLE COA TYPE 'A' STORM DRAIN INLET PER COA STD DWG 2201.
3. INSTALL DOUBLE COA TYPE 'A' STORM DRAIN INLET WITH DOUBLE WINGS PER COA STD DWG 2205.
4. INSTALL SINGLE COA TYPE 'C' STORM DRAIN INLET PER COA STD DWG 2205.
5. INSTALL COA TYPE 'D' STORM DRAIN INLET (OR APPROVED EQUAL) PER COA STD DWG 2206.
6. INSTALL DOUBLE COA TYPE 'D' STORM DRAIN INLET (OR APPROVED EQUAL) PER COA STD DWG 2206.
7. INSTALL 12" NYLOPLAST (OR APPROVED EQUAL) STORM INLET STRUCTURE W/ PEDESTRIAN RATED GRATE.
8. INSTALL 24" NYLOPLAST (OR APPROVED EQUAL) STORM INLET STRUCTURE W/ PEDESTRIAN RATED GRATE.
9. INSTALL 30" NYLOPLAST (OR APPROVED EQUAL) STORM INLET STRUCTURE W/ PEDESTRIAN RATED GRATE.
10. INSTALL 4" STORM DRAIN MANHOLE PER COA STD DWG 21.
11. INSTALL 6" STORM DRAIN MANHOLE PER COA STD DWG 21.
12. INSTALL PREFABRICATED DRAINAGE FITTING.
13. INSTALL CMP END SECTION (CONTECH OR APPROVED EC SEE PLANS FOR SIZES). INSTALL WITH 2" CUT-OFF WALL PER DETAIL C-193.
14. INSTALL SD PIPE; RCP III OR APPROVED EQUAL. SEE PLAN.
15. INSTALL 2" CUT-OFF WALL PER DETAIL B1, SHEET C-193.
16. DESIGNATED WATER QUALITY FEATURE AREA. SEE LAND PLANS FOR EROSION PROTECTION AND DETAILS.
17. INSTALL 2" CURB OPENING PER DETAIL A1, SHEET C-193.
18. INSTALL 24"x24" PEDESTRIAN RATED GRATE AT UPSTREAM OF SIDEWALK CULVERT. CONTRACTOR SHALL VERIFY R/D DRAINS FALL WITHIN GRATE OPENING.
19. INSTALL SINGLE 24" SIDEWALK CULVERT PER COA STD D 2238.
20. INSTALL 24" WIDE CONCRETE RIBBON CHANNEL WITHOUT CHECKERED STEEL PLATE PER COA STD DWG 2238.
21. INSTALL RIP RAP/BASALT BLANKET (DIMENSIONS PER PLAN PER DETAIL A2, SHEET C-193).
22. CONNECT TO FIELD DRAINAGE PIPE. SEE LANDSCAPE PL FOR CONTINUATION AND DETAILS.
23. CONSTRUCT RETAINING WALL PER STRUCTURAL PLANS S-601.
24. INSTALL 6" WEEP HOLE, INVERT TO MATCH FINISHED GR.
25. SLOPE PROTECTION; SEE LANDSCAPE PLANS FOR DETAILS.
26. SEE LANDSCAPE PLAN & DETAIL B1/CA504 FOR FINISHED GRADE DETAILS WITHIN PLANTERS.
27. SEE LANDSCAPE PLAN FOR PLAYING FIELD DRAINAGE DETAILS, SHEET LS101.
28. SEE ARCHITECTURAL PLAN FOR FOOTBALL FIELD TRENCH DRAIN DETAILS, SHEET CA504.
29. CONNECT TO FOOTBALL STADIUM GRANDSTAND TRENCH DRAIN. SEE ARCHITECTURE SHEETS AB112 & AB115 FOR CONTINUATION AND DETAILS.
30. CONNECT TO TRACK & FIELD STADIUM GRANDSTAND TRENCH DRAIN. SEE ARCHITECTURE SHEETS AB112, AB117, AB118 & AB119 FOR CONTINUATION AND DETAILS.
31. CONNECT TO FIELD DRAINAGE PIPE. SEE LANDSCAPE S-LS101 FOR CONTINUATION AND DETAILS.
32. CONNECT TO FOOTBALL FIELD TRENCH DRAIN. SEE ARCHITECTURAL SHEET CA504 FOR CONTINUATION AND DETAILS.
33. CONNECT TO TRACK & FIELD TRENCH DRAIN. SEE LANDSCAPE S-LS152 & LS501 FOR CONTINUATION AND DETAILS.
34. INSTALL EARTHEN DIVERSION BERM PER DETAIL, SHEET C-193.
35. INSTALL RCP END SECTION.
36. INSTALL RIP-RAP EROSION CONTROL PER DETAIL, SHEET C-193.

LEGEND

---	PROPERTY LINE
---	PROJECT LIMITS OF GRADING
---	EXISTING INDEX CONTOUR
---	EXISTING INTERMEDIATE CONTOUR
---	EXISTING GROUND ELEVATION
---	PROPOSED GROUND ELEVATION: FL=FLOW LINE, TC=TOP OF CURB IS=TOP OF SIDEWALK, TO=TOP OF FOH=FINISH GROUND HIGH SIDE, FOL=FINISH GROUND LOW SIDE
---	DIRECTION OF FLOW
---	GRADE BREAK/WATER BLOCK
---	PROPOSED INDEX CONTOUR
---	PROPOSED INTERMEDIATE CONTOUR
---	PROPOSED CURB & GUTTER
---	PROPOSED STORM DRAIN LINE
○	PROPOSED STORM DRAIN MANHOLE
• ■ ■	PROPOSED STORM DRAIN INLETS



STORM DRAIN OUTFALL RIP-RAP EROSION CONTROL

A3

NOT TO SCALE

$G_{100} = 127 \text{ cfs}$
 $V_{100} = 17 \text{ fps}$