HYDROLOGY

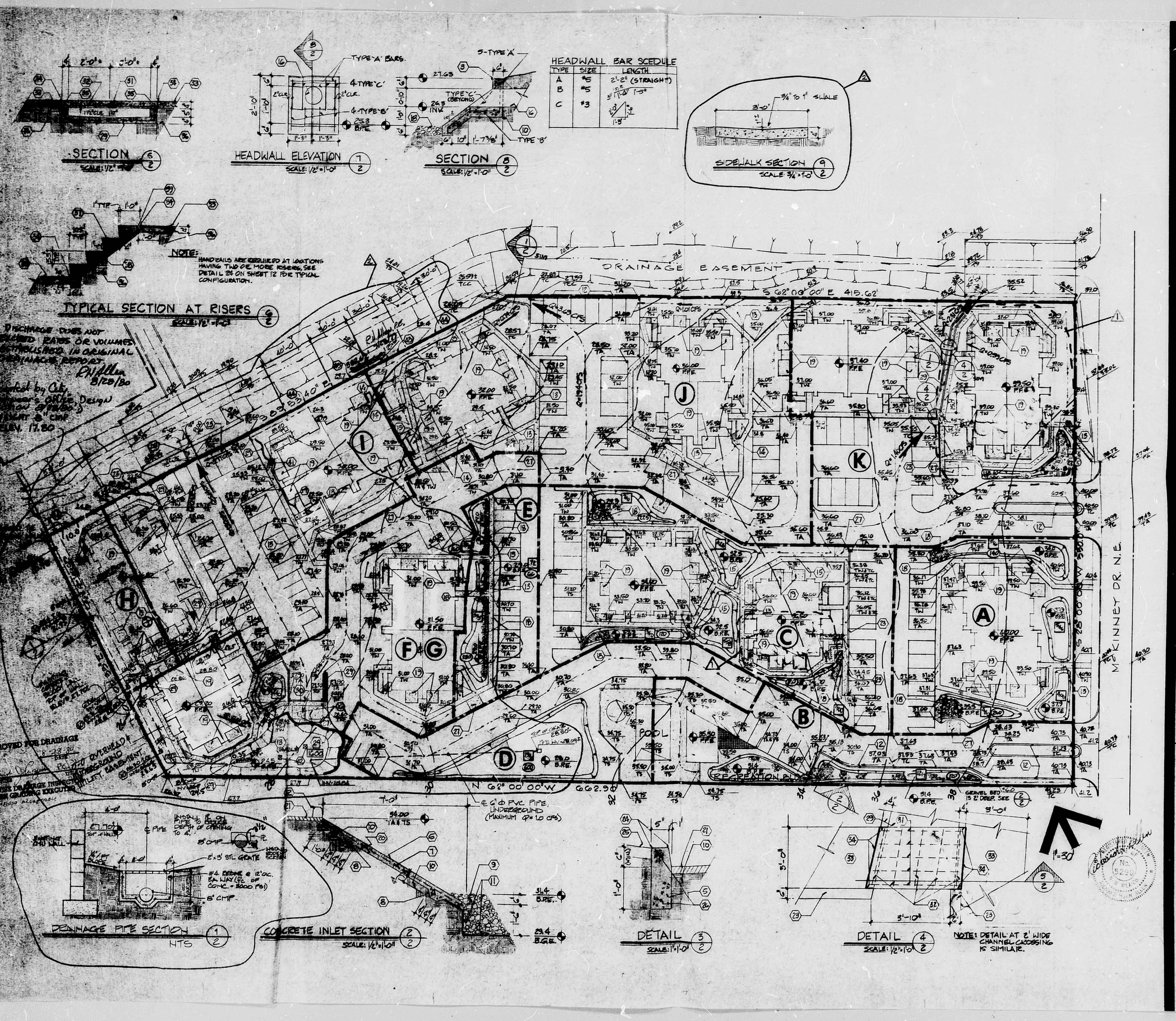
E18/D2B

THREE PLANS

3 PLANS
FOR

VILLA SANDIA
AT BEAR

E 18 · D 2B



NOTES

1. 6 - #4 rebar horizontal, continuous.
2. #4 "⊔" bar @ 16" o.c. (9" 2'-4" 9").
3. 3/4" chamfer at exposed edges.
4. Light broom finish. Slope channel per spot elevations on plan.
5. 3000 psi concrete with 6 - 7% air entrainment.
6. See plan for slope of ground or adjacent sidewalk.
7. 6 x 6: W2.9 x W2.9 mesh.
8. Shear key, full width of concrete pad.
9. 1 1/2" to 3/4" clean, well graded gravel.
10. Compacted subgrade, minimum 95% modified procter.
11. Mirafi 140 or 140S fabric drainage liner. Install along bottom and up to B.P.E. along sides of pond prior to placement of gravel.
12. 6" x 6" extruded asphalt curb.
13. 8" galvanized CMP below sidewalk.
14. 6" galvanized CMP below sidewalk.
15. 4" galvanized CMP below sidewalk.
16. 10" galvanized CMP below sidewalk. Furnish and install reducer to connect 10" CMP to 11" O.D. rear outlet of curb inlet frame. (See Note 30).
17. Concrete headwall with rubbed finish. See elevation 7/2.
18. 6" thick gravel bed.
19. 4" thick patio slab. Slope 1/8"/ft. away from entry.
20. Light broom finish.
21. Asphalt paving.
22. Radius = 5' to centerline of channel.
23. Concrete curb. See Detail 3/2.
24. 3/4" radius.
25. Sloping ground or adjacent sidewalk. Install 1/2" asphalt impregnated expansion joint between curb & sidewalk.
26. 2 - #4 rebar, continuous.
27. 10' x 10' x 4" thick conc. slab w/ raised curb for trash enclosure. Slope slab per details on architectural drawings.
28. Concrete channel similar to section 1/2 with 14-#4's x 10' longitudinally (12 in bottom slab equally spaced, 1 at top of each curb) and #4 "U" bars at 16" o.c. (9" 6'-4" 9").
29. BALANCE OF RETAINING WALL INSTALL DEAD MEN ANCHORS WHERE WALL EXCEEDS HEIGHT OF 3 FEET ALL TIES SHALL EXTEND MIN. OF 8' ABOVE FINISH GRADE.
30. Curb inlet frame and curb box with standard grate - NEENAH #R-3165 with 10" I.D. rear outlet.
31. 5-#5's longitudinal at 8" o.c.
32. 5-#4's transverse at 12" o.c.
33. 4" thick sidewalk on grade.
34. 1/2" asphalt impregnated expansion joint.
35. 15# felt bond breaker.
36. Compacted Subgrade, 90% modified proctor.
37. #4 nose bar at each riser.
38. 4-#4's, length as required for number of risers.
39. 2-#4's, same length as nose bars.
40. 8'x8' DROP INLET W/ STEEL GRATE.
41. HANDRAILS ON BOTH SIDES OF STAIRS.
42. DEEP WELLS, 22" Φ 21' DEEP FILLED W/ COBBLES.
43. REINFORCED CONCRETE RETAINING WALL (SEE ATTACHED SHTS 1&2)
44. RAILROAD TIE RETAINING WALL (SEE ATTACHED SHTS 1&2)

REVISED AUGUST 1, 1980 - PHASE III

Amended location plan dated as of the 1st day of August, 1980 amending the site and floor plans of Villa Sandia at Bear Canyon North filed September 28, 1979 in the office of the County Clerk of Bernalillo County, New Mexico, further amending the revised site and floor plans of Villa Sandia at Bear Canyon North filed March 28, 1980 in the office of the County Clerk of Bernalillo County, New Mexico.

LEGEND

- EXISTING SPOT ELEVATION.
- NEW GROUND ELEVATION.
- TA — TOP OF ASPHALT.
- TC — TOP OF CURB.
- TCC — TOP OF CONCRETE CHANNEL.
- TG — TOP OF GRATE.
- TS — TOP OF SLAB.
- TW — TOP OF SIDEWALK.
- FFE — FINISH FLOOR ELEVATION.
- B.P.E. — BOTTOM OF POND ELEVATION.
- B.G.E. — BOTTOM OF GRAVEL ELEVATION.
- SWALE
- 5' WIDE CONC. SIDEWALK W/ BROOM FINISH
- 7 1/2" CONC. RISERS, 10" TREAD. SEE
- 1 1/2" - 3/4" WELL GRADED, CLEAN GRAVEL.
- B.P.E. / B.P.E.+1.5' — PONDING AREA.
- MINIMUM POND AREA (SQ.FT) AT B.P.E.
- MINIMUM AREA (SQ.FT.) OF 6" THICK GRAVEL
- 2 REVISED DRAINAGE AND UNITS 'F' & 'G' (8/25/80)
- 1 REVISED UNITS 'F' TO 'E', AND UNITS 'G' TO 'F' (7-17-79)

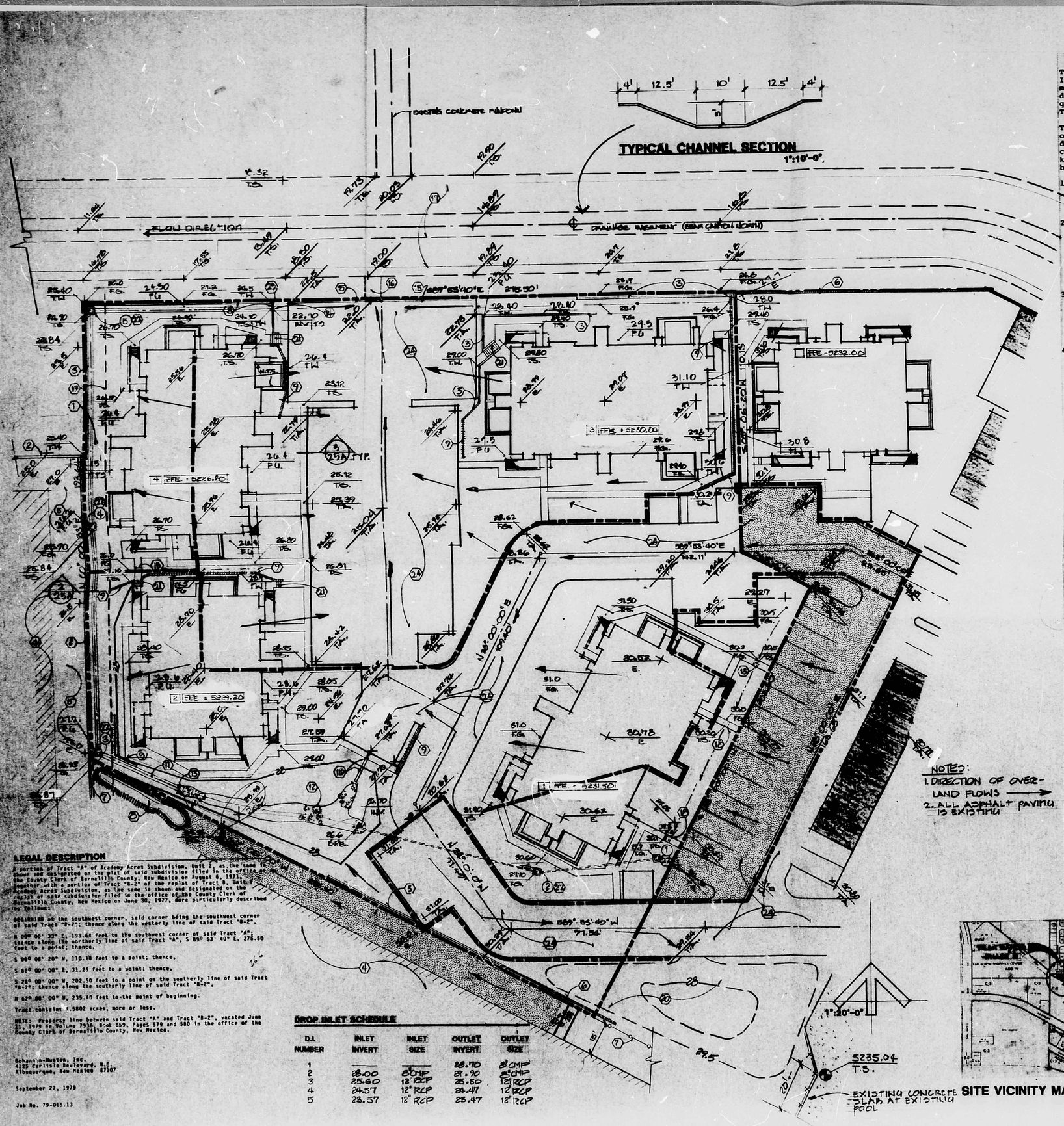
PROJECT TITLE: VILLA SANDIA AT BEAR CANYON NORTH
5901 - 5901 and 6001 - 6095 McKINNEY DR. N.E.
ALBUQUERQUE, NEW MEXICO
for L.B. NELSON CORPORATION
6400 UPTOWN BLVD. N.E.
ALBUQUERQUE, NEW MEXICO

SHEET TITLE:
SITE GRADING PLAN

E18/D28

DESIGN PROFESSIONALS, INC.
4100 CARLISLE BLVD. NE, ALBUQUERQUE, NM
dpi
Drawn by: RHA Proj. No: 7948
Checked by: Date:
ARCHITECTS/ENGINEERS

DRAWING C2 SHEET -4



DRAINAGE PLAN NARRATIVE

The illustrated conceptual drainage plan is for Phase III of the Vila Sandia at Bear Canyon North development. A drainage plan for Phases I, II and III of this development was submitted in May of 1979, and subsequently approved by the City's Hydrology Department. This report is currently on file with the City.

The Phase III area was not constructed as part of the original development. Therefore, a revised conceptual drainage plan has been developed for Phase III to coincide with current City Hydrologic requirements. The key elements of the conceptual plan are summarized below:

1. Major Intent: Convey all surface run-off directly to the hard lined channel located north of the development via either overland flow or through underground pipes.

2. Due to existing site conditions, one detention pond will be constructed at the southwest corner of the site. Free discharge will occur from the pond via a 12" RCP to the hard lined channel. An emergency spillway located at 1.33' above the outlet pipe invert will convey run-off to the hard lined channel should the 12" RCP become clogged or should run-off exceed the pipe's capacity.

3. All asphalt paving, both roads and parking areas, was installed as part of Phases I and II. These areas will not be modified under Phase III work. A small portion of paved area in Phase III will drain to a detention pond located on the Phase II development.

4. Offsite Flows: The major offsite flow enters the southerly portion of the site from the adjacent property. The flow rate is 0.3 cfs, with a total volume for the 100 year storm of about 408 cu. ft. This runoff enters the site at the pond in the southwest corner. A portion of the parking area located east of Building 1 also drains into Phase III. Runoff amounts to 360 cu. ft. at a 100 year rate of 0.23 cfs and will be directed to the pond in the southwest corner via a drop inlet and an 8" CMP.

SUMMARY

1. Detention Pond:
   A. In-Flow to Detention Pond (100 Year)
      Q = Ci A + Offsite Flows
      Q = 0.80 (5.4)(0.96) + 0.3 + 0.23 = 4.68 cfs
      Volume = 2.3(41883)(.8) + 408 + 360=7190 cu.ft.
      VOL OF POND (VP) = (2250SF)(1.1) = 2475 FT³
   B. Outflow: Use 12" RCP @ S = 1.1%, n = 0.013 (Manning)
      Q = 3.7 cfs
      (Excess will discharge to lined channel via the 2' wide concrete swale)
   C. MAX. WATER SURFACE OF POND = 5227.4
2. Discharge to Lined Channel (Overland Flow):
   A. Concrete Channel at Northwest Corner
      Q to Channel = 0.85 (5.4)(0.11) = 0.5 cfs
      Volume to Channel = 2.3/12(4950)(.85)=806 cu. ft.
   B. Balance of the Site
      Q = (0.85)(5.4)(0.598) = 2.75 cfs
      Volume = 2.3/12 (26055)(.85) = 424 cu. ft.
3. Totals for Phase III
   A. Total 100 Year Discharge Rate to Channel = Q_T
      Q_T = 4.68 + 0.5 + 2.75 = 7.93 cfs
   B. Total 100 Year Volume Discharged to Channel = V_T
      V_T = 7190 + 806 + 4245 = 12241 cu. ft.
   C. Total 10 Year Data
      Q_{10} = 3.96 cfs
      V_{10} = (.657)(12241) = 8042 cu. ft.
4. Existing Conditions:
   A. In-Flow to Existing Pond (No Outlet)
      Q_{100} = 0.5 (0.96)(5.4) + 0.53 = 3.12 cfs
      V_{100} = 4782 cu. ft.
   B. Drainage to Concrete Channel
      Q_{100} = 0.50 (5.4)(0.71) = 1.92 cfs
      V_{100} = 2964 cu. ft.

Free discharge to the adjacent concrete lined channel will be allowed per Conference Recap Sheet dated 05/30/84.

KEYED NOTES:

1. Existing power and telephone pole.
2. Existing 8" CMU wall, T.W. Elev. = 27.7.
3. New CMU RETAINING WALL, HEIGHT VARIES
4. Existing CMU structure.
5. Existing gravel.
6. Existing 6' high cedar fence.
7. Existing chain link fence on property line.
8. Existing earth berm.
9. New railroad tie retaining wall
10. 2' wide concrete rundown from asphalt paving to gravel at pond. Provide steel plate at sidewalk.
11. 12" RCP. Invert at headwall = 26.00, S = 0.011
12. 4" to 6" diameter cobbles over fabric liner.
13. 2' wide overflow spillway. Invert at headwall = 27.4
14. 2' wide concrete rundown between retaining wall and edge of asphalt.
15. 6" high existing concrete curb.
16. Existing concrete rundown.
17. Existing concrete lined arroyo.
18. 2-4" diameter PVC pipes below sidewalk.
19. Existing 10' wide utility easement.
20. Existing drainage pond for Phase II. See Drainage Report File E18-D2, VILLA SANDIA AT BEAR CANYON NORTH for details.
21. See Typical Stair Section on Sheet 25A.
22. See Section 1 on Sheet 25A for Typical D.I. Construction.
23. NORTH TW AT COMPLETE SWALE
24. ASPHALT PAVING EXISTING

GENERAL NOTES:

1. All Site Work Concrete: f'c = 2,500 psi.
2. All flat work concrete to be air entrained (5% - 7%).
3. Masonry:
   f'm = 1500 psi
   Grout Strength = 2,000 psi
   Mortar = Type N
4. Steel and Reinforcing Steel (ASTM A615)
   Rebar: fy = 60,000 psi
   WWF: ASTM A185, Grade 60
   Welded Anchors: Grade 40
   Misc. Steel Items: ASTM A36
5. Pipe:
   Concrete: ASTM C76, Class II, Class C BEDDING
   CMP: ASHTO M36, ZINC COATED Per ASTM A444

BENCH MARK: STANDARD ACS BRASS TABLET STAMPED "1-F18A 1978" SET IN TOP OF CONC. POST FLUSH W/ GROUND, LOCATED IN ACADEMY ROAD MEDIAN, APPROXIMATELY 275' WEST OF MARCHETTA AVENUE. ELEV. = 5251.227

TEMP. B.M. (TBM) = 5235.04 MSL (TOP OF SLAB AT POOL)
ALL ELEVATIONS START AT 5000.0
(i.e. ELEV 31.67 = 5231.67)

LEGEND:

FFE	FINISH FLOOR ELEVATION
TS	TOP OF CONCRETE SLAB
TW	TOP OF WALL
TA	TOP OF ASPHALT
F.G.	FINISH GRADE
BFE	BOTTOM OF POND ELEVATION
E.	DIRT ELEVATION (EXISTING)
INV	INVERT ELEVATION
T.G.	TOP OF GRATE
○	DROP INLET NUMBER. SEE SCHEDULE FOR FFE, INVERT ELEVATIONS.
====	UNDERGROUND PIPE
	EXISTING ELEVATION
	NEW CONTOUR LINE
	EXISTING CONTOUR LINE
	BUILDING NUMBER
	NEW ELEVATION
	NEW SWALE
	DRAINAGE AREA BOUNDARY
	PROPERTY LINE
	OFF SITE DRAINAGE AREA
	RAILROAD TIE RETAINING WALL

LEGAL DESCRIPTION

A portion of Tract "A" of Academy Acres Subdivision, Unit 2, as the same is shown and designated on the plat of said subdivision filed in the office of the County Clerk of Bernalillo County, New Mexico on August 4, 1971, together with a portion of Tract "B-2" of the replat of Tract B, Date of Replat, Academy Acres Subdivision, as the same is shown and designated on the replat of said subdivision filed in the office of the County Clerk of Bernalillo County, New Mexico on June 30, 1977, more particularly described by follows:

BEGINNING at the southwest corner, said corner being the southwest corner of said Tract "B-2"; thence along the westerly line of said Tract "B-2",

N 00° 00' 33" E, 193.64 feet to the southwest corner of said Tract "A"; thence along the northerly line of said Tract "A", S 89° 53' 40" E, 275.50 feet to a point; thence,

S 00° 00' 20" W, 110.18 feet to a point; thence,

S 67° 00' 00" E, 31.25 feet to a point; thence,

S 28° 00' 00" W, 202.50 feet to a point on the southerly line of said Tract "B-2"; thence along the southerly line of said Tract "B-2",

N 67° 00' 00" W, 235.40 feet to the point of beginning.

Tract contains 1.5802 acres, more or less.

NOTE: Property line between said Tract "A" and Tract "B-2", vacated June 11, 1979 in Volume 7936, Book 659, Pages 579 and 580 in the office of the County Clerk of Bernalillo County, New Mexico.

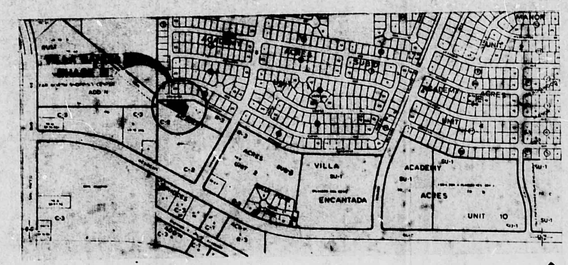
Bohannan-Huston, Inc.
4135 Carlisle Boulevard, N.E.
Albuquerque, New Mexico 87107

September 27, 1979

Job No. 79-015.13

DROP INLET SCHEDULE

D.I. NUMBER	INLET INVERT	INLET SIZE	OUTLET INVERT	OUTLET SIZE
1	—	—	28.70	8" CMP
2	28.00	8" CMP	27.70	8" CMP
3	25.60	12" RCP	25.50	12" RCP
4	24.57	12" RCP	24.47	12" RCP
5	23.57	12" RCP	23.47	12" RCP



SITE VICINITY MAP

E18-D2B

E18/D2B

DESIGN PROFESSIONALS, INC.
4301 CARLISLE BLVD. NE, ALBUQUERQUE, NM 87107
505/881-8338

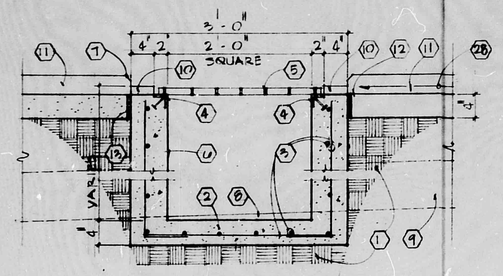
PROJECT TITLE:
VILLA SANDIA AT BEAR CANYON
PHASE III

SHEET TITLE:
SITE GRADING AND DRAINAGE PLAN

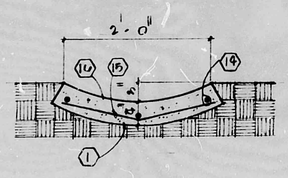
Drawn by M.B. Proj. No. 8429
Checked by R.A. Date 7-20-84

ARCHITECTS / ENGINEERS

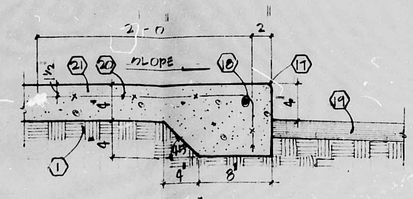
DRAWING C2A
SHEET 3 OF



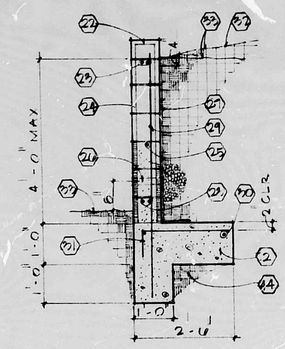
SECTION 1/25A
SC: 1" = 1'-0"



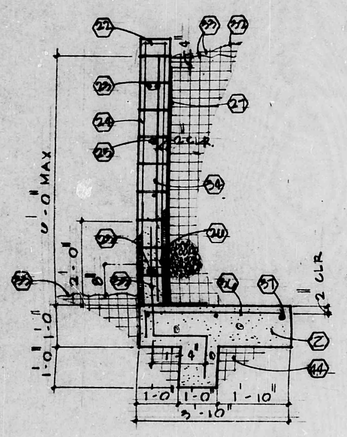
SECTION 2/25A
SC: 1" = 1'-0"



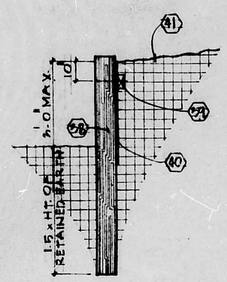
SECTION 3/25A
SC: 1 1/2" = 1'-0"



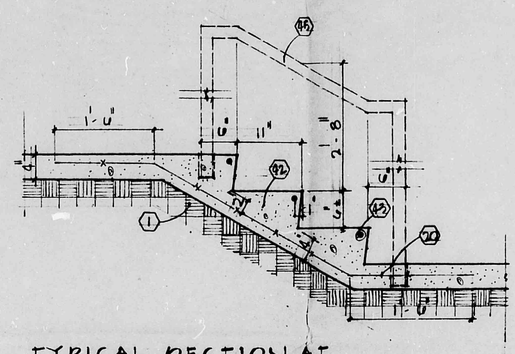
SECTION 4/25A
SC: 3/8" = 1'-0"



SECTION 5/25A
SC: 3/8" = 1'-0"



RAILROAD TIE RETAINING WALL SECTION 6/25A
SC: 3/8" = 1'-0"



TYPICAL SECTION AT EXTERIOR STEPS 7/25A
SC: 1" = 1'-0"

1. Compact soil to 90% per ASTM D1557.
2. 2500 psi concrete.
3. #4 rebar at 6" o.c. each way.
4. 2 x 2 x 3/16 angle with 4 stud anchors on each side.
5. Steel grate with 3/4" deep bearing bars.
6. Patch all voids and tie holes on interior surfaces.
7. Chamfer all exposed edges.
8. 2500 psi grout fill. Slope between pipe inverts.
9. Inlet pipe beyond.
10. Top of D.I. wall beyond.
11. Concrete swale: See Section 2 on Sheet 25A.
12. Top of slab (TS) elevation shown on plan for swale.
13. 1/2" expan. joint at face of D.I. and at 24' o.c. in concrete swale, typical.
14. 3 - #3 continuous. Do not extend #3's through exposed joints.
15. #3 transverse bent bars at 16" o.c.
16. 2500 psi concrete with steel trowel finish. Install contraction joints at 6'-0" o.c. Install expansion joints at 24' o.c. and at D.I. walls.
17. Tooled edge.
18. #7 continuous.
19. Existing asphalt.
20. 6 x 6: W2.0 x W2.0 WWF.
21. 2500 psi air entrained concrete with light broom finish
22. Cap block.
23. 2 - #4 continuous at top and bottom of wall.
24. 8 x 8 x 16 split face block, f'm = 1500psi. Grout all cells with 2000 psi grout.
25. 1 - #4 horizontal at 24" o.c. continuous.
26. 2" diameter PVC weep hole at 8' o.c. with 6" square bronze screen having 1/4" mesh and 1 cubic foot of course gravel.
27. Bituminous waterproofing: Extend minimum of 8" on to top of footing.
28. Direction of flow in swale.
29. #4 at 24' o.c. vertical.
30. 2 - #4 continuous.
31. #4 @ 24" o.c.
32. Maximum slop = 1:5.
33. Finish grade.
34. #5 vertical at 24" o.c. lap with dowel steel.
35. #5 dowels at 24" o.c.
36. #5 @ 16" o.c.
37. 3 - #4 continuous.
38. Railroad tie wall. Height of wall varies.
39. 2 x 6 bolted to ties to maintain alignment.
40. 15 lb. building paper.
41. Maximum slope = 1:4.
42. Minimum 2500 psi air entrained concrete. Slope treads 1/8" toward nosing. Apply light broom finish perpendicular to direction of travel.
43. #3 nose bars.
44. Compact subgrade to 95% per ASTM D1557.
45. Install handrails at locations where 2 or more risers occur. Install intermediate supports at locations of 4 or more risers.

DESIGN PROFESSIONALS, INC.
4301 CARLISLE BLVD. NE, ALBUQUERQUE, NM 87107
(505) 881-6388

PROJECT TITLE:
VILLA SANDIA AT BEAR CANYON
PHASE III

SHEET TITLE:
SITE AND DRAINAGE DETAILS

E18/D28

Drawn by: DM
Checked by: RA
Proj. No: 8429
Date: 10-9-84

DRAWING 25 A
SHEET OF

ARCHITECTS/ENGINEERS