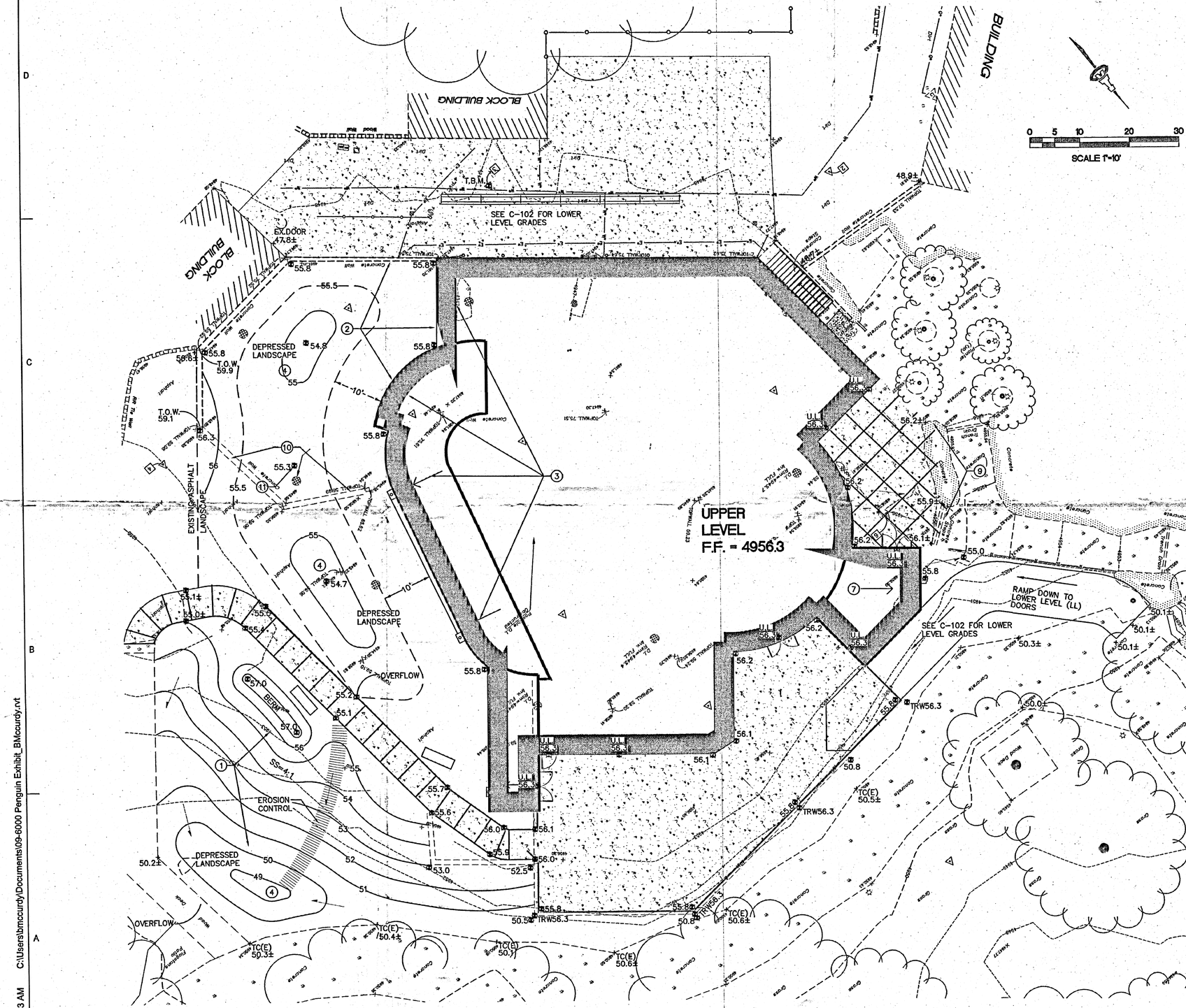
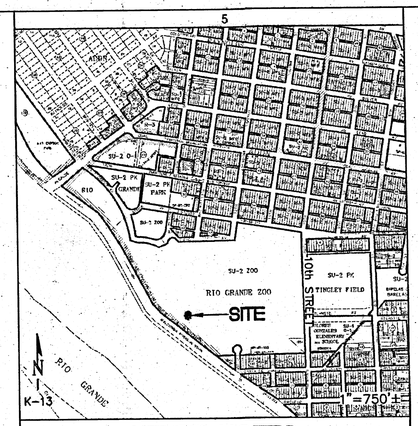


GRADING AND DRAINAGE PLAN - UPPER LEVEL



KEYED NOTES

1. PROVIDE 4:1 SLOPED TRANSITION FROM NEW PEDESTRIAN WALK TO EXISTING MAIN ZOO PERIMETER WALK AS SHOWN.
2. EXISTING POLAR BEAR PIT WALL OPENINGS TO BE FILLED AND MADE WATERTIGHT. SEE ARCHITECTURAL / STRUCTURAL FOR ADDITIONAL INFORMATION.
3. ROOF DRAINS DISCHARGE TO LANDSCAPING THIS AREA. PROVIDE EROSION PROTECTION AT OUTLET.
4. CONSTRUCT A SERIES OF OVERFLOWING SHALLOW (6" DEEP) WATER HARVESTING BASINS TO UTILIZE STORMWATER FOR LANDSCAPING. EXCESS WILL PASS TO ADJACENT BASIN. PROVIDE EROSION PROTECTION AT OVERFLOWS (6" AVG. DIA. FRACTURED FACE ROCK OR COORDINATE EROSION PROTECTION MATERIAL WITH CLIENT).
5. INSTALL SIX 8'-0" LONG SECTIONS OF ZURN Z882 TRENCH DRAIN SYSTEM (PART 8203N WITH 9.25" INVERT) WITH 'PPC' GRATE (LOADING CLASSIFICATION = 'C' 'EXTRA HEAVY DUTY) TO CAPTURE WOLF ENCLOSURE AND MAINTENANCE AREA DISCHARGE. SEE UTILITY PLAN FOR TIE TO SANITARY SEWER SYSTEM.
6. CONSTRUCT CONCRETE PAVING FOR MAINTENANCE AREA AND MECHANICAL EQUIPMENT. SLOPE TO DRAIN AS SHOWN.
7. CONCENTRATED ROOF DISCHARGE THIS AREA. PROVIDE EROSION PROTECTION AT OUTLET.
8. SEE MECHANICAL PLANS FOR TRENCH DRAIN WITHIN WALK LOW POINT THIS AREA.
9. COORDINATE TRANSITION BETWEEN NEW CONSTRUCTION AND EXISTING CONSTRUCTION THIS AREA WITH ARCHITECT.
10. EXISTING WALLS THIS AREA TO BE REMOVED TO 24" BELOW NEW GRADE. SEE ARCHITECTURAL.
11. OVERFLOW BETWEEN LANDSCAPED WATER HARVESTING BASINS.

GENERAL NOTES

A. COORDINATE WORK WITH SITE PLAN, UTILITY PLAN, DEMOLITION PLAN, AND LANDSCAPE PLAN.

B. ALL TRASH, DEBRIS, & SURFACE VEGETATION SHALL BE CLEARED AND LEGALLY DISPOSED OF OFFSITE.

C. FINAL GRADES SHOWN REPRESENT TOP OF FINISH MATERIAL (I.E. TOP OF CONCRETE, TOP OF CONCRETE BUILDING PAD, TOP OF PAVEMENT MATERIAL, TOP OF LANDSCAPING MATERIAL, ETC.). CONTRACTOR SHALL GRADE, COMPACT SUBGRADE AND DETERMINE EARTHWORK ESTIMATES BASED ON ELEVATIONS SHOWN MINUS FINISH MATERIAL THICKNESSES.

D. MAXIMUM SLOPES SHALL BE 3:1. MINIMUM SLOPES SHALL BE 1% UNLESS OTHERWISE NOTED.

E. EXISTING UTILITY LINES ARE SHOWN IN AN APPROXIMATE MANNER ONLY AND MAY BE INCOMPLETE OR OBSOLETE. SUCH LINES MAY OR MAY NOT EXIST WHERE SHOWN OR NOT SHOWN. ALL UTILITIES SHOULD BE FIELD VERIFIED AND LOCATED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES.

F. ADJUST RIMS OF EXISTING UTILITY FEATURES AS NECESSARY TO MATCH NEW GRADES, TYPICAL.

G. WHERE NEW GRADES ARE SHOWN AS 'MATCH' OR '±', TRANSITIONS TO EXISTING SHALL BE SMOOTH AND LEVEL.

H. ALL FRACTURED FACE ROCK (F.F. ROCK) TO BE 6" AVG. DIA. ANGULAR FACED ROCK PLACED OVER GEOTEX 50 NON-WOVEN GEOTEXTILE (O.E.).

I. OWNER SHALL MAINTAIN EROSION PROTECTION ELEMENTS. ENGINEER RECOMMENDS THAT OWNER INSPECT SITE YEARLY AND AFTER EACH RAINFALL TO IDENTIFY NEW AREAS OF EROSION AND INSTALL ADDITIONAL EROSION PROTECTION AS NEEDED BASED ON ACTUAL OCCURRENCES.

MAR 11 2011
HYDROLOGY SECTION

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108
Ph. 505-268-8828 Fax. 505-268-2632
1835 CG-101.dwg Mar 10,2011

Van H. Gilbert Architect PC
ARCHITECTURE • INTERIORS • PLANNING
VHGA
2428 Baylor Dr SE Albuquerque, NM 87106
Tel 505-247-9955 Fax 505-247-1826
E-mail info@vhgarchitect.com
Web Site www.vhgarchitect.com

CONSULTANTS

STRUCTURAL ENGINEERS:	Chavez - Grieves Consulting Engineers, Inc
MECHANICAL, ELECTRICAL ENGINEERS:	Bridgers and Paxton Consulting Engineers, Inc
LIFE SUPPORT ENGINEERS:	Alvine and Associates, Inc.

ABQ BIOPARK
ZOO BOTANIC GARDEN TINGLEY BEACH AQUARIUM

NO.	DATE	REVISION/REMARKS	BY

DESIGNED BY:	BJB	DATE: 03/10/11
DRAWN BY:	BJB	DATE: 03/10/11
CHECKED BY:	FCA	DATE: 03/10/11
SUBMITTAL / DATE:	CONSTRUCTION DOCUMENTS	03/10/11
PROJECT NUMBER		09-6000
PROJECT FILE	1835 CG-101.dwg	Mar 10,2011

FRED C. ARFMAN NEW MEXICO 7322 LICENSED PROFESSIONAL ENGINEER 03-10-11

THE PENGUIN CHILL HABITAT

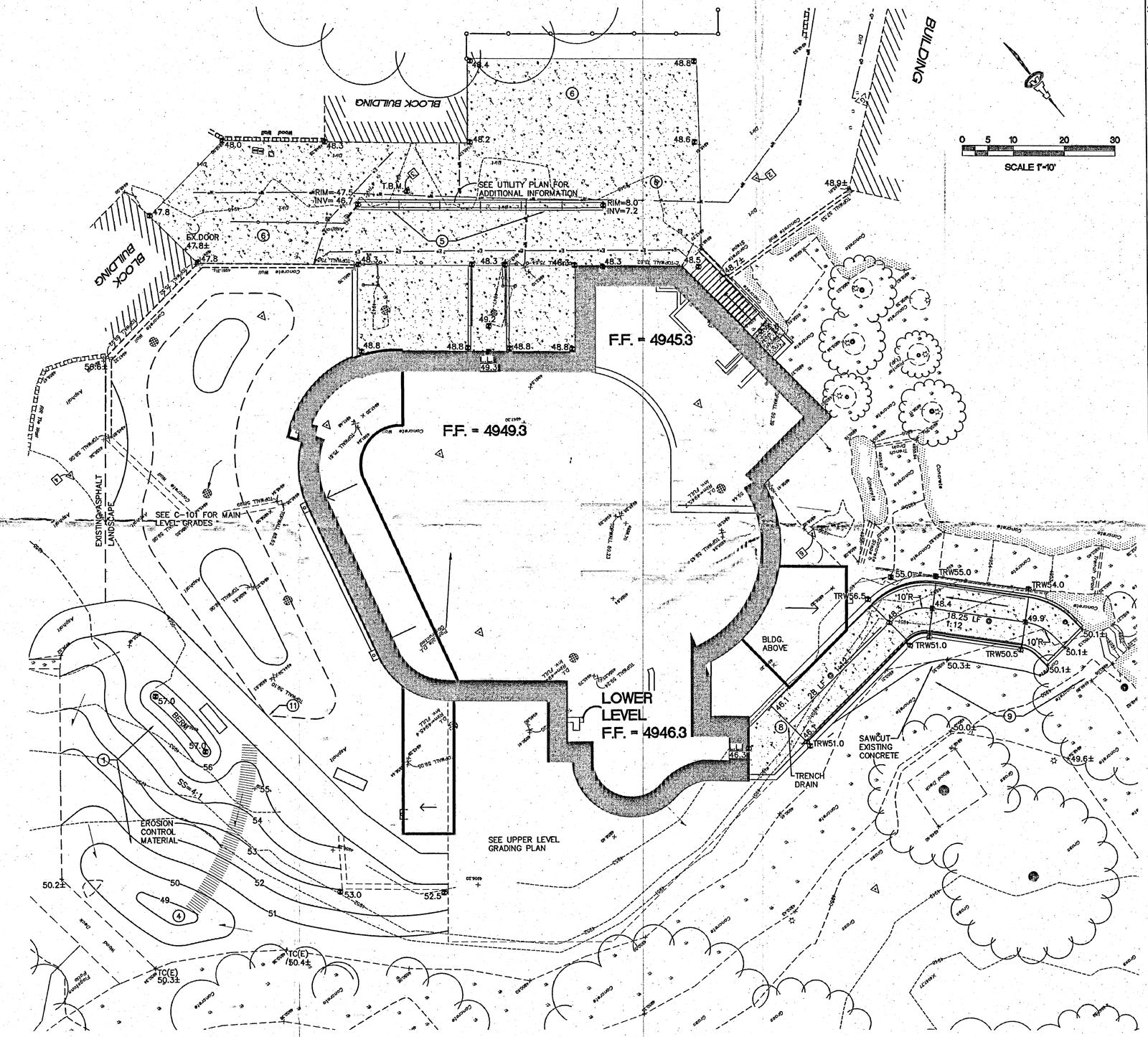
Albuquerque, New Mexico

SHEET TITLE

GRADING AND DRAINAGE PLAN UPPER LEVEL

C-101

SHEET



GRADING AND DRAINAGE PLAN - LOWER LEVEL

KEYED NOTES

1. PROVIDE 4:1 SLOPED TRANSITION FROM NEW PEDESTRIAN WALK TO EXISTING MAIN ZOO PERIMETER WALK AS SHOWN.
2. EXISTING POLAR BEAR PIT WALL OPENINGS TO BE FILLED AND MADE WATERTIGHT. SEE ARCHITECTURAL / STRUCTURAL FOR ADDITIONAL INFORMATION.
3. ROOF DRAINS DISCHARGE TO LANDSCAPING THIS AREA. PROVIDE EROSION PROTECTION AT OUTLET.
4. CONSTRUCT A SERIES OF OVERFLOWING SHALLOW (6" DEEP) WATER HARVESTING BASINS TO UTILIZE STORMWATER FOR LANDSCAPING. EXCESS WILL PASS TO ADJACENT BASIN. PROVIDE EROSION PROTECTION AT OVERFLOWS (6" AVG. DIA. FRACTURED FACE ROCK OR COORDINATE EROSION PROTECTION MATERIAL WITH CLIENT).
5. INSTALL SIX 8'-0" LONG SECTIONS OF ZURN Z882 TRENCH DRAIN SYSTEM (PART 8203N WITH 9.25" INVERT) WITH 'PPC' GRATE (LOADING CLASSIFICATION = 'C' 'EXTRA HEAVY DUTY) TO CAPTURE WOLF ENCLOSURE AND MAINTENANCE AREA DISCHARGE. SEE UTILITY PLAN FOR TIE TO SANITARY SEWER SYSTEM.
6. CONSTRUCT CONCRETE PAVING FOR MAINTENANCE AREA AND MECHANICAL EQUIPMENT. SLOPE TO DRAIN AS SHOWN.
7. CONCENTRATED ROOF DISCHARGE THIS AREA. PROVIDE EROSION PROTECTION AT OUTLET.
8. SEE MECHANICAL PLANS FOR TRENCH DRAIN WITHIN WALK LOW POINT THIS AREA.
9. COORDINATE TRANSITION BETWEEN NEW CONSTRUCTION AND EXISTING CONSTRUCTION THIS AREA WITH ARCHITECT.
10. EXISTING WALLS THIS AREA TO BE REMOVED TO 24" BELOW NEW GRADE. SEE ARCHITECTURAL.
11. OVERFLOW BETWEEN LANDSCAPED WATER HARVESTING BASINS.

PROJECT DATA

PROPERTY: THE SITE IS A PORTION OF THE ALBUQUERQUE RIO GRANDE ZOO PROPERTY LOCATED WITHIN C.O.A. VICINITY MAP K-13. THE SITE IS BOUND TO THE NORTH AND EAST BY THE MAIN PARK ARE OF THE ZOO, TO THE SOUTH BY MAINTENANCE AREA AND WOLF ENCLOSURE, AND TO THE WEST BY THE POLAR BEAR EXHIBIT.

PROPOSED IMPROVEMENTS: THE PROPOSED IMPROVEMENTS INCLUDE A NEW FACILITY HOUSING THE PROPOSED PENGUIN EXHIBIT WITH ASSOCIATED CONCRETE WALKS AND LANDSCAPING. DRAINAGE IMPROVEMENTS WILL BE CONSTRUCTED TO ADDRESS BUILDING DISCHARGE.

LEGAL: POLAR BEAR EXHIBIT AND ADJACENT AREAS, RIO GRANDE ZOO, ALBUQUERQUE, NM

BENCHMARK: VERTICAL DATUM IS BASED UPON THE ALBUQUERQUE CONTROL STATION MONUMENT "12-L14", ELEVATION = 4947.708 FEET (NAVD 1988), AS PUBLISHED.

TEMPORARY BENCHMARK (T.B.M. - SEE PLAN): SURV-TEK CONTROL POINT 578" REBAR WITH CAP STAMPED "CONTROL PT. SURV-TEK. ELEVATION = 4948.07'. SEE TOPOGRAPHIC SURVEY FOR ADDITIONAL CONTROL POINTS.

OFF-SITE: MINOR OFFSITE FLOW FROM THE WOLF COMPOUND TO THE NORTH DRAINS TOWARDS THIS PROPERTY. THIS FLOW WILL CONTINUE TO BE ACCEPTED INTO THE SANITARY SEWER SYSTEM VIA A NEW TRENCH DRAIN SYSTEM.

FLOOD HAZARD: PER BERNALILLO COUNTY FIRM MAP #333, THE SITE IS LOCATED WITHIN FLOOD ZONE 'X' (SHADED) DESIGNATED AS AREA OF MODERATE FLOOD HAZARD, USUALLY THE AREA BETWEEN THE LIMITS OF THE 100-YEAR AND 500-YEAR FLOODS.

DRAINAGE PLAN CONCEPT: THE PROPOSED AREA TO BE DEVELOPED CONSISTS OF THE ABANDONED POLAR BEAR EXHIBIT. HISTORICALLY, THE MAJORITY OF THIS AREA DRAINED TO THE EXISTING SANITARY SEWER SYSTEM. THE PROPOSED DEVELOPMENT WILL ROUTE ROOF DISCHARGE TO A SERIES OF OVERFLOWING WATER HARVESTING BASINS WITH EXCESS DISCHARGING TO THE MAIN PARK AREA WHICH, HISTORICALLY, IS USED TO INFILTRATE STORMWATER (TOTAL PROPOSED VOLUME < 0.05±' OVER PARK AREA). DISCHARGE IN THE MAINTENANCE AREA, WHICH INCLUDES A PORTION OF THE EXISTING WOLF COMPOUND WILL CONTINUE TO DRAIN INTO THE SANITARY SEWER SYSTEM. HISTORIC=2.4 CFS; PROPOSED = 2.4 CFS.

LEGEND

-------	EXISTING CONTOUR
———	PROPOSED CONTOUR
78.3	PROPOSED SPOT ELEVATION
→	FLOW ARROW (PROPOSED)
FF = 4949.3	FINISH FLOOR ELEVATION
FL=72.5	FLOWLINE ELEVATION
INV=72.5	INVERT ELEVATION
	PROPOSED PERCOLATION PIT AND DRAIN LINE
	PROPOSED TRENCH DRAIN
F.F.ROCK	FRACTURED FACE ROCK - 6"AVG. DIA.

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108
Ph. 505-268-8828 Fax. 505-268-2532
1835 CG-101.dwg Mar 10,2011

Van H. Gilbert Architect PC
ARCHITECTURE • INTERIORS • PLANNING
VHGA
2428 Baylor Dr SE Albuquerque, NM 87106
Tel 505-247-9955 Fax 505-247-1826
E-mail Info@vhgarchitect.com
Web Site www.vhgarchitect.com

CONSULTANTS

STRUCTURAL ENGINEERS:	Chavez - Grieves Consulting Engineers, Inc
MECHANICAL, ELECTRICAL ENGINEERS:	Bridgers and Paxton Consulting Engineers, Inc
LIFE SUPPORT ENGINEERS:	Alvine and Assocdates, Inc.

ABQ BIOPARK
ZOO BOTANIC GARDEN TINGLEY BEACH AQUARIUM

NO.	DATE	REVISION/REMARKS	BY

DESIGNED BY: BJB	DATE: 03/10/11
DRAWN BY: BJB	DATE: 03/10/11
CHECKED BY: FCA	DATE: 03/10/11
SUBMITTAL / DATE: CONSTRUCTION DOCUMENTS	03/10/11
PROJECT NUMBER	09-6000
PROJECT FILE 1835 CG-101.dwg	Mar 10,2011

FRED C. ARFMAN NEW MEXICO 7322 LICENSED PROFESSIONAL ENGINEER 03-10-11

THE PENGUIN CHILL HABITAT

Albuquerque, New Mexico

SHEET TITLE

GRADING AND DRAINAGE PLAN LOWER LEVEL

C-102

SHEET OF

12/23/2010 11:00:03 AM C:\Users\bmcurdy\Documents\09-6000 Penguin Exhibit_BMcurdy.rvt