

# CITY OF ALBUQUERQUE



Richard J. Berry, Mayor

June 7, 2017

Fred Arfman, P.E.  
Isaacson & Arfman, P.A.  
128 Monroe St. N.E  
Albuquerque, NM, 87108

RE: **ABQ Biopark Elephant Exhibit**  
**903 10<sup>th</sup> St SW**  
**Engineer's Stamp Date 6/2/17**  
**Hydrology File: K13D034B**

Dear Mr. Arfman:

Based on the information provided in the submittal received on 6/5/17 the above-referenced Grading and Drainage Plan cannot be approved for building permit until the following are addressed:

1. Developed flows must account for all offsite flows entering the enclosure and volume must be provided for the 100-yr, 10-day volume.
2. Provide the maximum water surface elevation for the 100-yr, 10-day volume.
3. The finished floor of the new elephant barn must be elevated at least 1' above the MWSE.
4. Expand the viewport to show surrounding contours and outbuildings potentially affected by the MWSE.

If you have any questions, please contact me at 924-3695 or [dpeterson@cabq.gov](mailto:dpeterson@cabq.gov).

Sincerely,

Dana Peterson, P.E.  
Senior Engineer, Planning Dept.  
Development Review Services



# City of Albuquerque

Planning Department

Development & Building Services Division

## DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

**Project Title:** \_\_\_\_\_ **Building Permit #:** \_\_\_\_\_ **City Drainage #:** \_\_\_\_\_

**DRB#:** \_\_\_\_\_ **EPC#:** \_\_\_\_\_ **Work Order#:** \_\_\_\_\_

**Legal Description:** \_\_\_\_\_

**City Address:** \_\_\_\_\_

**Engineering Firm:** \_\_\_\_\_ **Contact:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone#:** \_\_\_\_\_ **Fax#:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

bryanb@iacivil.com

**Owner:** \_\_\_\_\_ **Contact:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone#:** \_\_\_\_\_ **Fax#:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

**Architect:** \_\_\_\_\_ **Contact:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone#:** \_\_\_\_\_ **Fax#:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

**Other Contact:** \_\_\_\_\_ **Contact:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone#:** \_\_\_\_\_ **Fax#:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

Check all that Apply:

### DEPARTMENT:

- ☒ HYDROLOGY/ DRAINAGE  
☐ TRAFFIC/ TRANSPORTATION  
☐ MS4/ EROSION & SEDIMENT CONTROL

### TYPE OF SUBMITTAL:

- ☒ ENGINEER ARCHITECT CERTIFICATION  
☐ CONCEPTUAL G & D PLAN  
☒ GRADING PLAN  
☐ DRAINAGE MASTER PLAN  
☐ DRAINAGE REPORT  
☐ CLOMR/LOMR  
☐ TRAFFIC CIRCULATION LAYOUT (TCL)  
☐ TRAFFIC IMPACT STUDY (TIS)  
☐ EROSION & SEDIMENT CONTROL PLAN (ESC)  
☐ OTHER (SPECIFY) \_\_\_\_\_

### CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

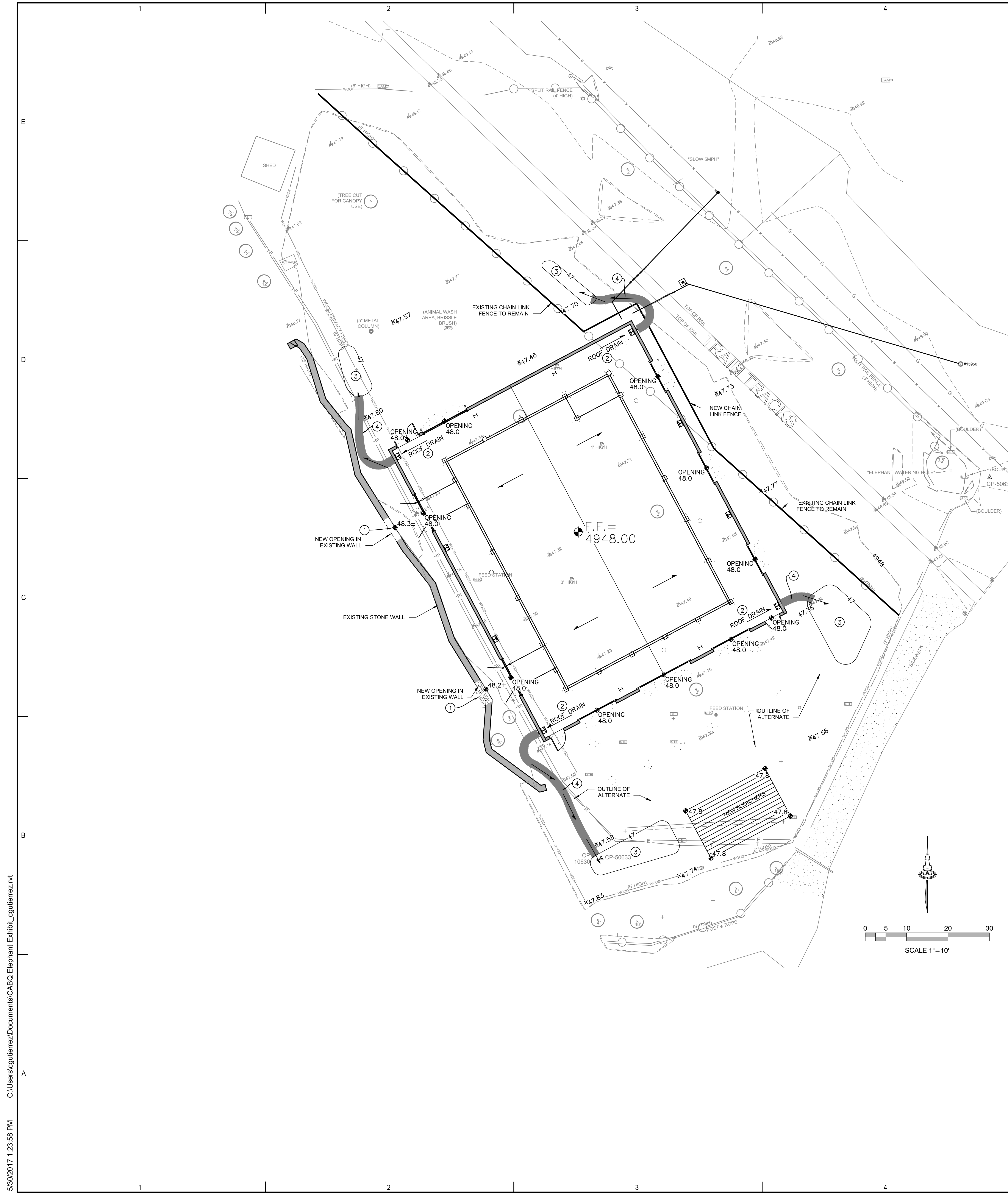
- ☒ BUILDING PERMIT APPROVAL  
☐ CERTIFICATE OF OCCUPANCY  
☐ PRELIMINARY PLAT APPROVAL  
☐ SITE PLAN FOR SUB'D APPROVAL  
☐ SITE PLAN FOR BLDG. PERMIT APPROVAL  
☐ FINAL PLAT APPROVAL  
☐ SIA/ RELEASE OF FINANCIAL GUARANTEE  
☐ FOUNDATION PERMIT APPROVAL  
☐ GRADING PERMIT APPROVAL  
☐ SO-19 APPROVAL  
☐ PAVING PERMIT APPROVAL  
☐ GRADING/ PAD CERTIFICATION  
☐ WORK ORDER APPROVAL  
☐ CLOMR/LOMR  
☐ PRE-DESIGN MEETING  
☐ OTHER (SPECIFY) \_\_\_\_\_

IS THIS A RESUBMITTAL?: ☐ Yes ☒ No

DATE SUBMITTED: June 5, 2017 By: Fred C. Arfman

COA STAFF: \_\_\_\_\_ ELECTRONIC SUBMITTAL RECEIVED: \_\_\_\_\_





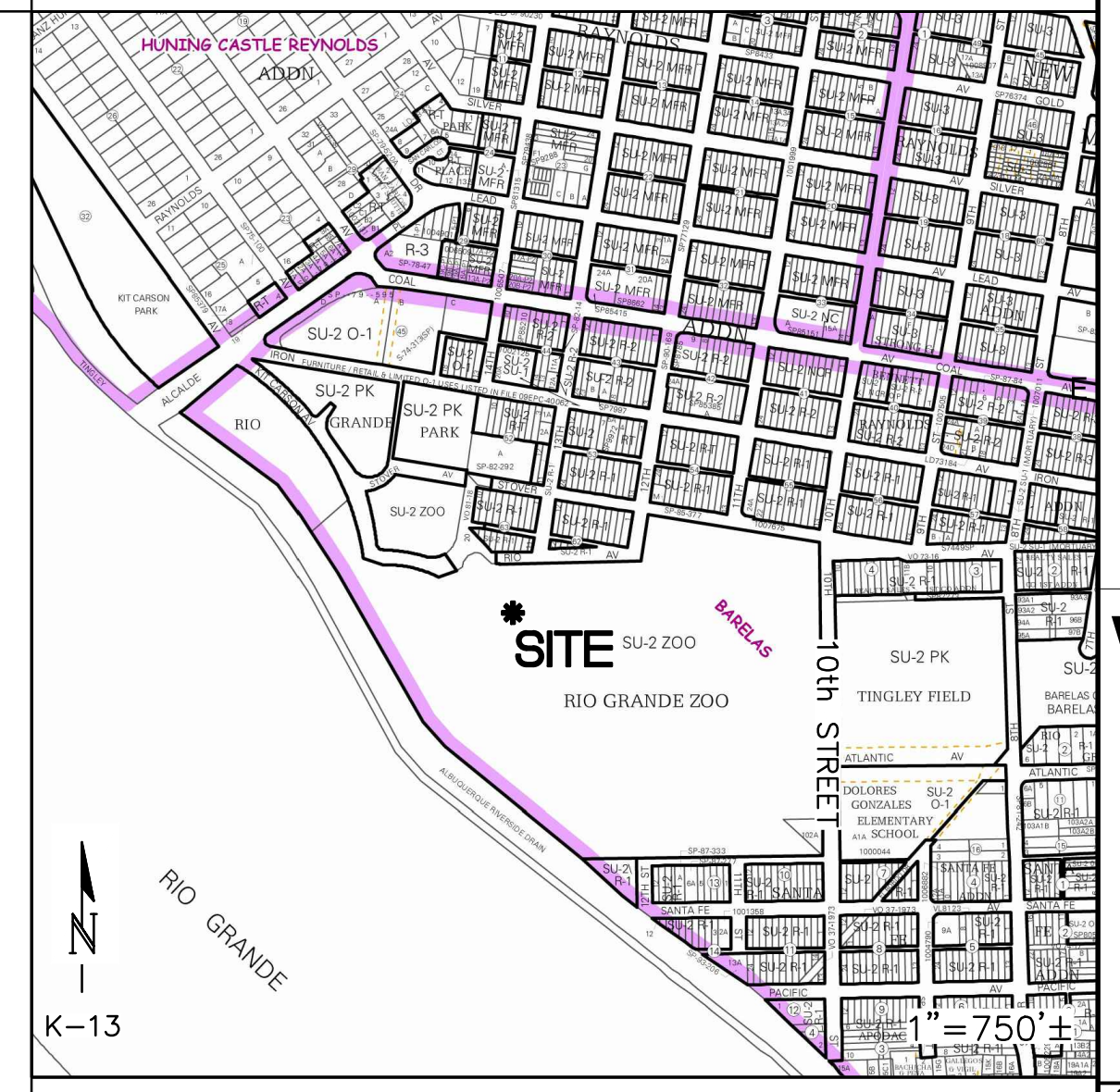
GENERAL NOTES

- A. THE CONTRACTOR SHALL ABIDE BY ALL STATE, LOCAL, AND FEDERAL LAWS, CODES, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS, INCLUDING EPA AND ADA REQUIREMENTS.
- B. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED ON OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS (COA SPEC.).
- C. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS FOR THE PROJECT PRIOR TO COMMENCING CONSTRUCTION, OR PRIOR TO OCCUPANCY, AS APPROPRIATE.
- D. COORDINATE WORK WITH SITE PLAN, UTILITY PLAN AND DEMOLITION PLAN.
- E. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING OBSTRUCTIONS, AND CONDITION OF ALL EXISTING INFRASTRUCTURE PRIOR TO CONSTRUCTION. REPORT ALL DISCREPANCIES TO THE ARCHITECT AND VERIFY THE ARCHITECT INTENT BEFORE PROCEEDING.
- F. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED INSPECTIONS OF THE WORK.
- G. CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE PROJECT LIMITS. ANY DAMAGE TO ADJACENT STRUCTURES RESULTING FROM THE CONSTRUCTION PROCESS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL BE RESPONSIBLE FOR DOCUMENTING EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
- H. THE CONTRACTOR SHALL MAINTAIN ALL BARRICADING AND CONSTRUCTION SIGNING AT ALL TIMES. THE CONTRACTOR SHALL VERIFY THE PROPER LOCATION OF ALL BARRICADING AT THE END AND BEGINNING OF EACH DAY.
- I. 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. CONTRACTOR SHALL CONTACT NM-811 FOR UTILITY SPOTS FIVE WORKING DAYS PRIOR TO CONDUCTING SITE FIELD WORK. CONTRACTOR SHALL FIELD VERIFY AND LOCATE ALL UTILITIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. 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. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF NECESSARY DRY UTILITY ADJUSTMENTS.
- J. FIVE WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NM811 (811) FOR LOCATION OF EXISTING UTILITIES.
- K. ALL SITE PREPARATION, GRADING OPERATIONS, FOUNDATION CONSTRUCTION, AND PAVEMENT INSTALLATION WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT, WHICH WILL BE PROVIDED BY THE OWNER OR ARCHITECT.
- L. ALL TRASH, DEBRIS, & SURFACE VEGETATION SHALL BE CLEARED AND LEGALLY DISPOSED OF OFFSITE.
- M. VIBRATORY COMPACTION SHALL NOT BE USED OVER IN-PLACE UTILITIES.
- N. SOIL TESTING AND INSPECTION SERVICES DURING SITE OPERATIONS ARE REQUIRED. CONTRACTOR SHALL ALLOW TESTING LABS TO INSPECT AND APPROVE COMPACTED SUBGRADES, BACKFILL, AND FILL LAYERS BEFORE FURTHER CONSTRUCTION WORK IS DONE. SHOULD COMPACTION TESTS INDICATE INADEQUATE DENSITY, CONTRACTOR SHALL PROVIDE ADDITIONAL COMPACTION AND TESTING AT THE CONTRACTOR'S SOLE EXPENSE.
- O. ADJUST ANY RIMS OF EXISTING UTILITY FEATURES AS NECESSARY TO MATCH NEW GRADES. UTILITIES IN PAVED AREAS SHALL BE HS-25 TRAFFIC RATED.

GRADING NOTES

- a. GRADING SHALL BE PERFORMED AT THE ELEVATIONS AND IN ACCORDANCE WITH THE DETAILS SHOWN ON THIS PLAN.
- b. PROPOSED SPOT AND CONTOUR ELEVATIONS SHOWN REPRESENT TOP OF FINISH MATERIAL (I.E. TOP OF COMPACTED DIRT, 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.
- c. IF FIELD GRADE ADJUSTMENTS ARE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT.
- d. POST-CONSTRUCTION MAINTENANCE FOR STORMWATER FACILITIES WILL BE THE RESPONSIBILITY OF THE FACILITIES OWNER. 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.

VICINITY MAP



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 OF THE MAIN PARK AREA.

PROPOSED IMPROVEMENTS: THE PROPOSED IMPROVEMENTS INCLUDE A NEW ELEPHANT BARN WITH ASSOCIATED SITE WORK.

LEGAL: A PORTION OF RIO GRANDE ZOO, ALBUQUERQUE, NM

BENCHMARK: VERTICAL DATUM IS BASED UPON THE ALBUQUERQUE CONTROL STATION, "6-K14R", A STANDARD CITY OF ALBUQUERQUE BRASS CAP MONUMENT. ELEVATION: 4971.456' (NAVD 1988)

OFF-SITE: NO OFFSITE FLOW IMPACTS THIS PROPERTY.

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: PER THE BERNALILLO COUNTY CONTOUR DATA, THE PROPOSED AREA IS SITUATED WITHIN A SELF-PONDING AREA (MINIMUM OF 3 ACRES X 1' DEEP). THIS SUMP HAS THE CAPACITY TO CONTAIN ALL FLOW THAT FALLS WITHIN IT REGARDLESS OF LAND TREATMENT. THE PROPOSED INCREASE IN IMPERMEABLE AREA WILL GENERATE MINOR ADDITIONAL VOLUME. THE PROPOSED DEVELOPMENT WILL BE ELEVATED 6" ABOVE EXISTING GRADE. THE REMAINDER OF THE SITE WILL CONTINUE TO PROVIDE STORMWATER STORAGE UNTIL INFILTRATION OCCURS. LANDSCAPING FOR THIS EXHIBIT WILL BE CONTRACTED SEPARATELY BY OWNER.

KEYED NOTES

- 1. GRADE DIFFERENCE AT PROPOSED WALL OPENINGS ARE UNKNOWN (NO SURVEY DATA). FIELD COORDINATE TRANSITIONS WITH ARCHITECT AS NECESSARY.
- 2. ROOF DISCHARGE TO GRADE. INSTALL SPLASH BLOCKS AT EACH DOWNSPOUT PER AS-101. PROVIDE EROSION PROTECTION WITHIN LANDSCAPING TO BOTTOM OF POND.
- 3. GRADE SHALLOW (12" MAX) WATER HARVESTING BASIN TO ACCEPT ROOF DISCHARGE FOR INFILTRATION.
- 4. OWNER'S OPTION: ENGINEER RECOMMENDS THAT EROSION PROTECTION BE INSTALLED FROM END OF SPLASH BLOCKS TO BOTTOM OF SHALLOW WATER HARVESTING BASINS. DUE TO THE NATURE OF THIS INSTALLATION, THE TYPE OF EROSION CONTROL (CONCRETE, GROUTED ROCK, NATIVE GRASSES, EROSION CONTROL MATERIAL, NONE) IS OWNER'S OPTION. ENGINEER RECOMMENDS REGULAR INSPECTION AFTER RAINFALLS TO REPAIR EROSION.

LEGEND

---	EXISTING CONTOUR
+4947.73	EXISTING SPOT ELEVATION
◆47.5	PROPOSED SPOT ELEVATION
→	FLOW ARROW
FF=4948.00	FINISH FLOOR ELEVATION
█	EROSION PROTECTION

Van H. Gilbert Architect PC  
ARCHITECTURE • INTERIORS • PLANNING



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CONSULTANTS

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128 Monroe NE, Alb., NM 87108 (505) 268-8628  
STRUCTURAL ENGINEERS: MacCormack Engineering  
1776 Montano Rd NW, Alb., NM 87107, (505) 861-0570  
PLUMBING, MECHANICAL, ELECTRICAL ENGINEERS: Broders and Paxton Consulting Engineers, Inc.  
4600-C Montgomery Blvd NE, Alb., NM 87109, (505) 883-4111



NO.	DATE	REVISION/REMARKS	BY

DESIGNED BY: Designer DATE:  

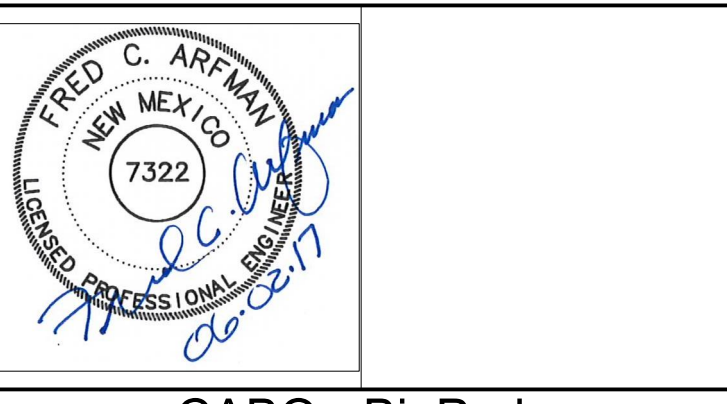
DRAWN BY: Author DATE:  

CHECKED BY: Checker DATE:  

SUBMITTAL / DATE: CONSTRUCTION DOCS 6/2/2017

PROJECT NUMBER 2231

PROJECT FILE CG-101.dwg May 31, 2017



CABQ - BioPark

Elephant Exhibit  
903 10th SW

SHEET TITLE

GRADING &  
DRAINAGE  
PLAN

DESIGN REVIEW COMMITTEE CITY ENGINEER APPROVAL

CITY PROJECT NO. 593393 ZONE MAP NO. K13-Z

CG-101

SHEET