


# BPLW

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Architects & Engineers, Inc.

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## GENERAL NOTES

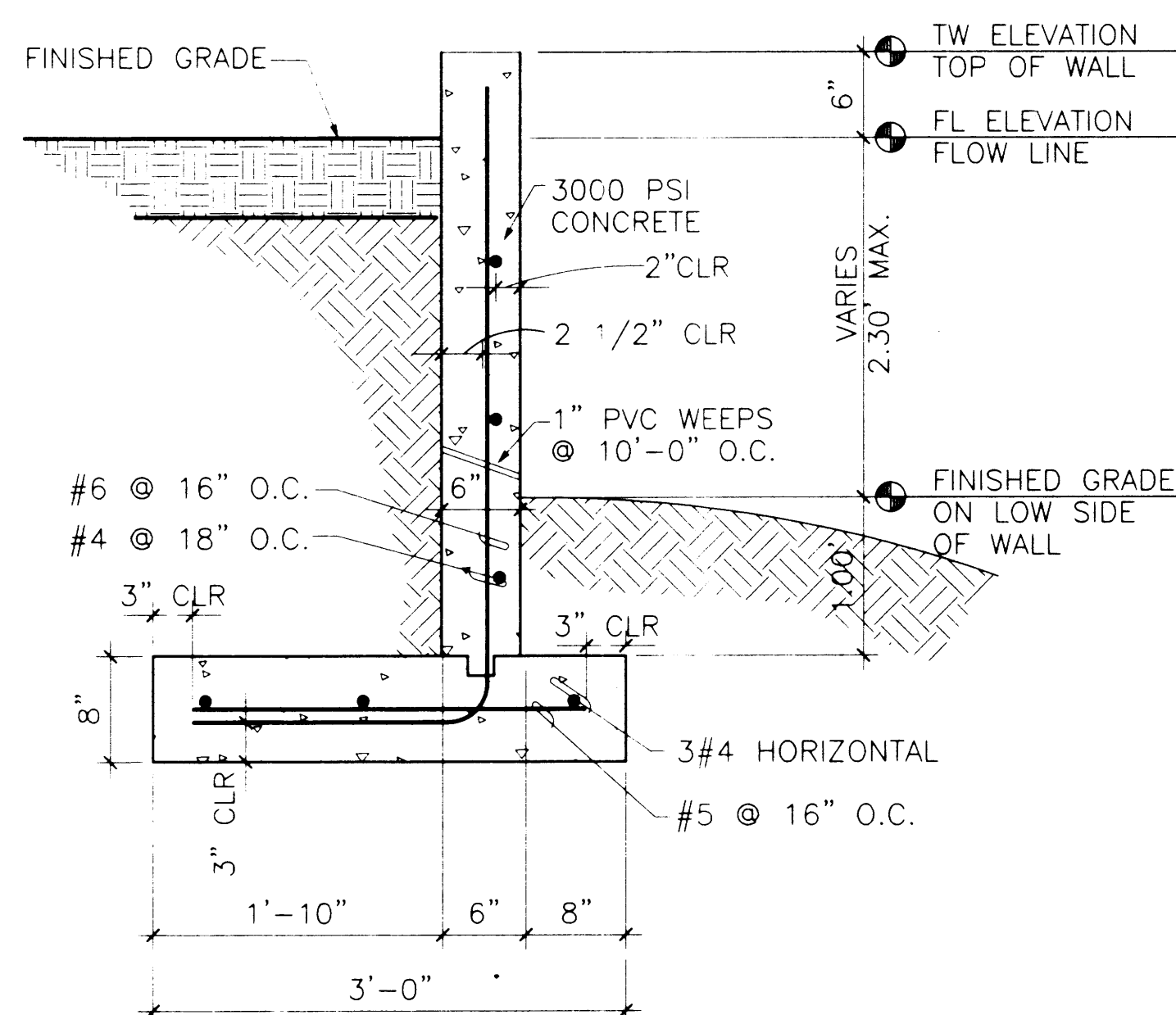
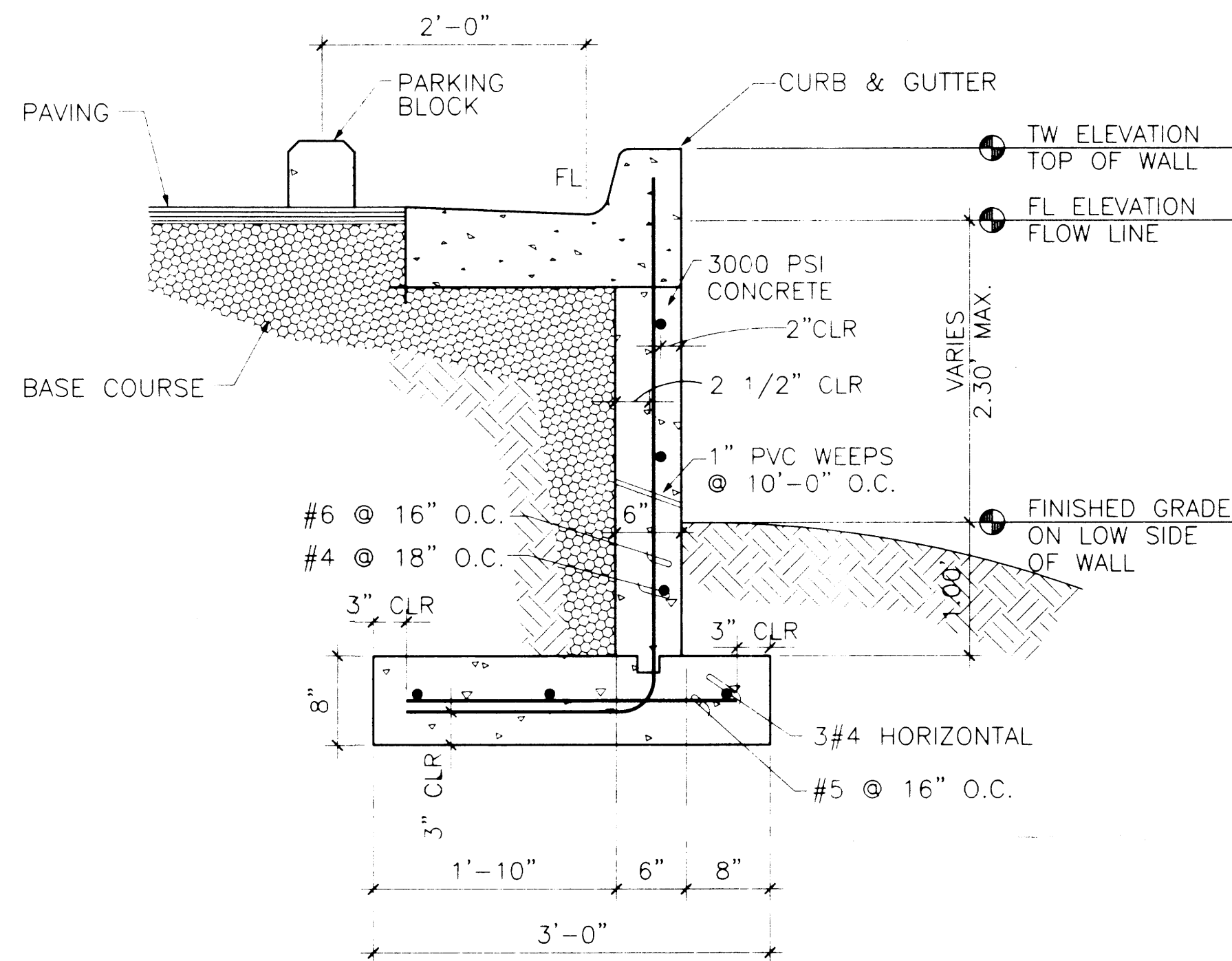
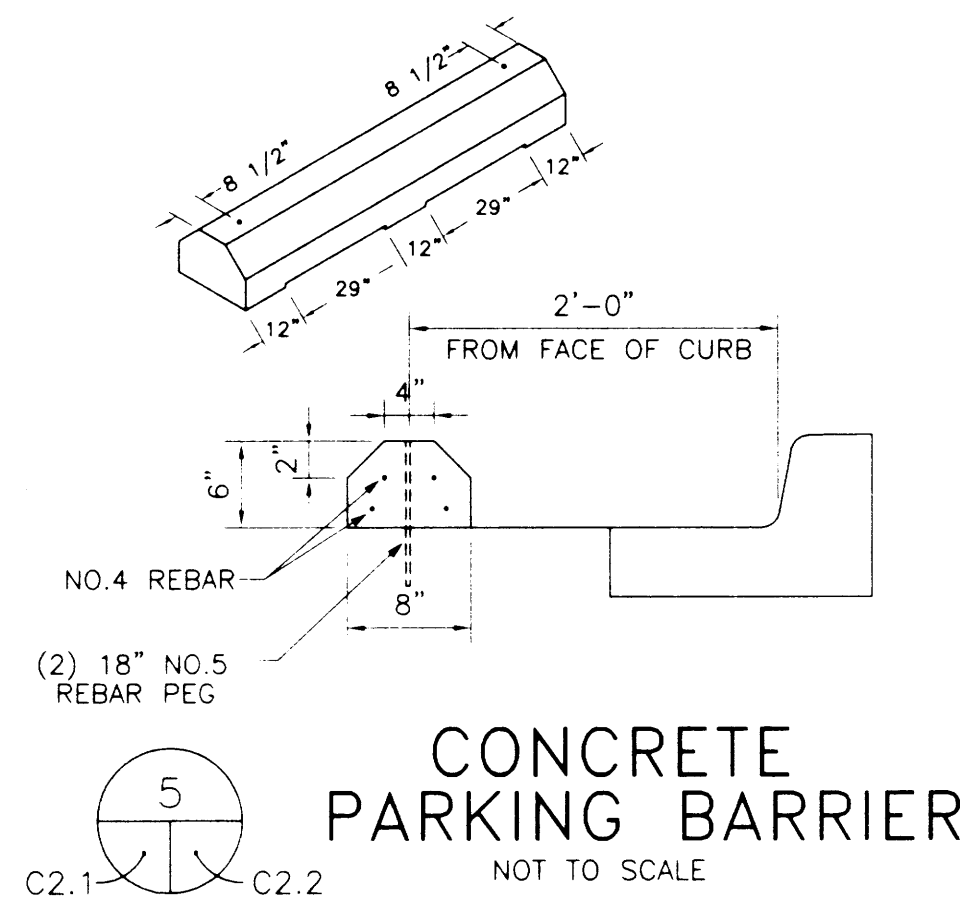
**TBM**  
SAS MANHOLE LOCATED APPROX. 95' NORTH OF CURB  
SHOWN ON PLAN THIS SHEET. RIM EL. 5105.19

REV.	DESCRIPTION	DATE

FIRST STATE BANK  
PETROGLYPH PLAZA

### GRADING PLAN

# C2.1



## Calculations

### Site Characteristics

- Precipitation Zone = 1
- P360 = 2.20 in.
- Total Area = 0.54 ac.; 23,640 sf
- Existing Conditions

Onsite Basin		
Land Treatment	Area (sf/ac)	%
B	23,640/0.54	100

### 5. Developed Conditions

Onsite Basin		
Basin A	8,245/0.19	100.00
Land Treatment	Area (sf/ac)	%
B	6,470/0.15	78.47
C	930/0.02	11.28
D	845/0.02	10.25
Basin B	15,395/0.35	100.00
Land Treatment	Area (sf/ac)	%
B	1,880/0.04	12.21
C	450/0.01	2.92
D	13,065/0.30	84.87

### 6. Existing Conditions Calculations

- Onsite Basin
- a. Volume
- $$EW = [(EA*AA+EB*AB+EC*AC+ED*AD)]/(AT)$$
- $$EW = [(0.67*0.54)]/(0.54) = 0.67 \text{ in.}$$
- $$V100 = (EW/12)*AT$$
- $$V100 = 0.67/12*0.54 = 0.03015 \text{ ac.ft; } 1,313 \text{ cf}$$
- b. Runoff
- $$Q100 = QPA*AA+QPB*AB+QPC*AC+QPD*AD$$
- $$Q100 = 2.03*0.54 = 1.1 \text{ cfs}$$

### 7. Developed Conditions Calculations

- Basin A
- Onsite Basin
- a. Volume
- $$EW = [(EA*AA+EB*AB+EC*AC+ED*AD)]/(AT)$$
- $$EW = [(0.67*0.15)+(0.99*0.02)+(1.97*0.02)]/(0.19) = 0.84 \text{ in.}$$
- $$V100 = (EW/12)*AT$$
- $$V100 = 0.84/12*0.19 = 0.0133 \text{ ac.ft; } 580 \text{ cf}$$
- b. Runoff
- $$Q100 = QPA*AA+QPB*AB+QPC*AC+QPD*AD$$
- $$Q100 = 2.03*0.15+2.87*0.02+4.37*0.02 = 0.45 \text{ cfs}$$

- Basin B
- a. Volume
- $$EW = [(EA*AA+EB*AB+EC*AC+ED*AD)]/(AT)$$
- $$EW = [(0.67*0.04)+(0.99*0.01)+(1.97*0.30)]/(0.35) = 1.79 \text{ in.}$$
- $$V100 = (EW/12)*AT$$
- $$V100 = 1.79/12*0.35 = 0.0522 \text{ ac.ft; } 2,275 \text{ cf}$$
- b. Runoff
- $$Q100 = QPA*AA+QPB*AB+QPC*AC+QPD*AD$$
- $$Q100 = 2.03*0.04+2.87*0.01+4.37*0.30 = 1.42 \text{ cfs}$$

(Flow From Basin B exits site through trickle channel Weir eqn. applies for opening which will be the controlling factor.)

2' Curb Opening at south end of site

Weir

$$Q = CLH3/2$$

$$C = 2.6$$

$$L = 2 \text{ ft.}$$

$$H = 0.5 \text{ ft.}$$

$$Q = 1.84 \text{ cfs}$$

$$Q > Q100(\text{Basin B})$$

### 8. Comparison

- a. Change in Flow for 100 year storm
- Versus Master Drainage Plan
- $$DV = 1.42 + 0.45 - (4.0*0.54) = 0.29 \text{ cfs (decrease)}$$
- b. Change in Volume for 100 year 6 day storm
- $$DV = 2,275 + 580 - 1,313 = 1,542 \text{ cf (increase)}$$
- c. Change in Runoff Rate
- $$DQ = 1.42 + 0.45 - 1.1 = 0.77 \text{ cfs (increase)}$$

## DRAINAGE PLAN

The following items concerning the First State Bank Drainage Plan

are contained herein: 1) Vicinity Map; 2) Grading Plan;

3) Calculations and 4)Offsite/Floodplain Map. As shown by the Vicinity

Map, the site lies west of Golf Course Road N.W. south of the intersection

of Golf Course Road N.W. and Paseo Del Norte N.W. Per flood insurance

rate maps 112 and 116 of 825 for Bernalillo county, the site does not

lie nor is it adjacent to a flood hazard zone area The nearest flood

hazard zone is located and contained in the Piedras Marcadas Arroyo

which is designated as Zone A. The Grading Plan shows existing and

proposed spot elevations and contours at 1'-0" intervals, limit and

character of the proposed improvements and also the existing conditions.

As shown by this plan, the proposed construction consists of the construction

a bank building with associated parking, landscaping, and drive through lanes (3).

In the existing and developed condition, all of the storm water runoff

will freely discharge to the south, which is in compliance with the

master drainage plan prepared by Bohannon-Huston Inc. (BHI) signed

and stamped by Kerry Davis, dated 11-07-94 and approved by COA hydrology.

In the original master plan, this area was to be simply parking spaces

But, due to the fact that there is a large excess in parking, this area

can be developed as a building with associated parking. This area has been

re-submitted for Admin. Amendment to COA for this site.

This scheme will decrease the amount of pavement in this area

in the developed condition. As can be seen, the site will mainly discharge

to a trickle channel located at the southwest corner of the site. These

flows eventually outfall into Golf Course Road. The remainder of the

flows head toward Golf Course Road by sheet flow. Offsite flows do not

enter the site from the south, north, and east due to existing curb and

gutter. Flows do not enter from the west, but to insure that flows do

not enter the site, a speed bump has been placed in the new pavement

located at the northwest corner of the site. The calculations which

appear herein analyzes the developed conditions for the 100-year,

6-hour rainfall event. The procedure for 40 acre and smaller basins

set by Section 22.2, Hydrology of the Development Process Manual,

Volume 2, Design Criteria, dated January 1993, has been used to

quantify the peak rate of discharge and volume of runoff generated.

As shown by these calculations, there will be a decrease in the

discharge rate from the site, from what was originally projected

in the BHI master drainage plan due to the additional placement

of additional landscaping for this site. This is shown in the calculations section.

RECEIVED  
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HYDROLOGY SECTION

**BPLW**

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*Designing to Shape the Future*

## GENERAL NOTES

- THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND NOTIFY THE CONTRACTING OFFICER IMMEDIATELY OF ANY DISCREPANCIES.
- ANY DAMAGE TO THE EXISTING FACILITIES (ASPHALT, CONDUITS, CULVERTS, UTILITY LINES ETC..) DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.
- THE CONTRACTOR SHALL INSURE THAT NO SEDIMENT LADEN WATER LEAVES THE CONSTRUCTION SITE, AND WETTING DOWN THE DIRT TO MINIMIZE DUST.
- CONTRACTOR SHALL PARK EQUIPMENT AND VEHICLES AS NOT TO INTERFERE WITH NORMAL BUSINESS ACTIVITIES OR WITH OTHER CONTRACTORS ON THE SITE.
- ANY ADDITIONAL GRADING REQUIRED TO MATCH PROPOSED STREET GRADES SHALL BE INCIDENTAL TO PAVING ITEMS.
- EXISTING HORIZONTAL & VERTICAL INFORMATION INDICATED ON THIS DRAWING WAS TAKEN FROM ONSITE SURVEY BY SURV-TEK BPLW ARCH. & ENG. IS NOT RESPONSIBLE FOR THE ACCURACY OF THE SURVEY.
- THE CONTRACTOR SHALL SCHEDULE ANY UTILITY SHUTOFF WITH THE FACILITIES ENGINEER OF THE APPROPRIATE UTILITY, INCLUDING WATER, SEWER, GAS, TELEPHONE, POWER ETC...
- ALL EXISTING LANDSCAPING DISTURBED ON ADJACENT PROPERTIES WILL BE REPLACED TO ITS ORIGINAL CONDITION OR BETTER, AT CONTRACTOR'S EXPENSE.

REV.	DESCRIPTION	DATE

 ENGINEER	 ARCHITECT
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FIRST STATE BANK  
PETROGLYPH PLAZA

PROJECT NO. 98057	DATE 8/98
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DRAINAGE PLAN

DRAWING NO.

C2.2