

DRAINAGE STUDY

PINON POINT SUBDIVISION

APPROVED FOR
SUBMITTAL TO THE
SANTA FE COUNTY
PLANNING AND
ZONING DEPARTMENT
ON BEHALF OF THE
PROPERTY OWNER
DATE: 11/15/2011
BY: [Signature]

DONELL JEFFRIES
PROFESSIONAL ENGINEER
REGISTERED LAND SURVEYOR
SUBDIVISION LAYOUT AND DESIGN



3730 Sinton Road, Suite 203²⁵⁰
Colorado Springs, Colorado 80907
(303) 634-4447

DRAINAGE STUDY

PINON POINT SUBDIVISION

Prepared for:

Metro Builders, Inc.

P. O. Box 685

Arvada, Colorado 80001

October 7, 1986

The attached Drainage Plan and Report were prepared under my supervision and direction and are correct to the best of my knowledge and belief. Said report has been prepared according to the criteria established by the City of Colorado Springs for drainage reports. It is in general conformity with the Popes Bluff Master Drainage Plan. I accept responsibility for any liability caused by the negligent acts, errors, or omissions contained in this report.



Donnell R. Jeffries
Registered Engineer # 3470

Owner and Developer of the Site

The owner has read and will comply will all of the requirements specified in this report.

[Signature]
Metro Builders, Inc.

Filed in accordance with Section 15-3-906 of the Code of the City of Colorado Springs, 1980, as amended.

[Signature] 10/13/80
City Engineer Date

City Engineer

SCOPE OF THIS REPORT

The intent of this report is to provide an overall study of the potential drainage problems which are foreseen by the development of this tract, and also to show in a general way how these future problems will be solved.

PROJECT DESCRIPTION

PINON POINT is a 7.55 acre subdivision consisting of 50 small (42' wide) lots. This tract was previously platted in 1968 as Lot 1 in Block 1 in Pine-cliff No. 1 in the City of Colorado Springs, El Paso County, Colorado. The subdivision is bounded on the north by Point of the Pines Drive, on the south by the steep bluff north of Garden of the Gods Road, and on the east by Sunbird Cliffs Subdivision. It is situated in Section 24, Township 13 South, Range 67 West of the 6th P. M.. It lies within the Popes Bluff Drainage Basin of the City of Colorado Springs. Most of the nearby land has been developed into single family lots, and houses have been constructed on 80% of the lots.

SOILS CLASSIFICATION

The soil on the site is either Bresser Sandy Loam or Travessilla Rocky Outcroppings. Storm water runoff from the natural soils is generally high.

HYDROLOGY

This study is based on the City of Colorado Springs requirements as detailed in "Determination of Storm Runoff Criteria", March, 1977. Since the site is quite small, the Rational Method of computing runoff was used.

Point A was found to have a five year storm event runoff of 16 cubic feet per second, with Point B having 35 cubic feet per second.

A runoff coefficient of 0.70 (multi-family area) was used, along with a time of concentration of 3 minutes for Point A and a time of concentration of 4 minutes for Point B. 6.1 inches per hour of precipitation was used.

$$Q = C I A$$

$$\text{Point A} \quad Q = (.70) (6.1) (3.8) = 16 \text{ cfs}$$

$$\text{Point B} \quad Q = (.70) (6.1) (8.1) = 35 \text{ cfs}$$

STORM WATER ROUTING

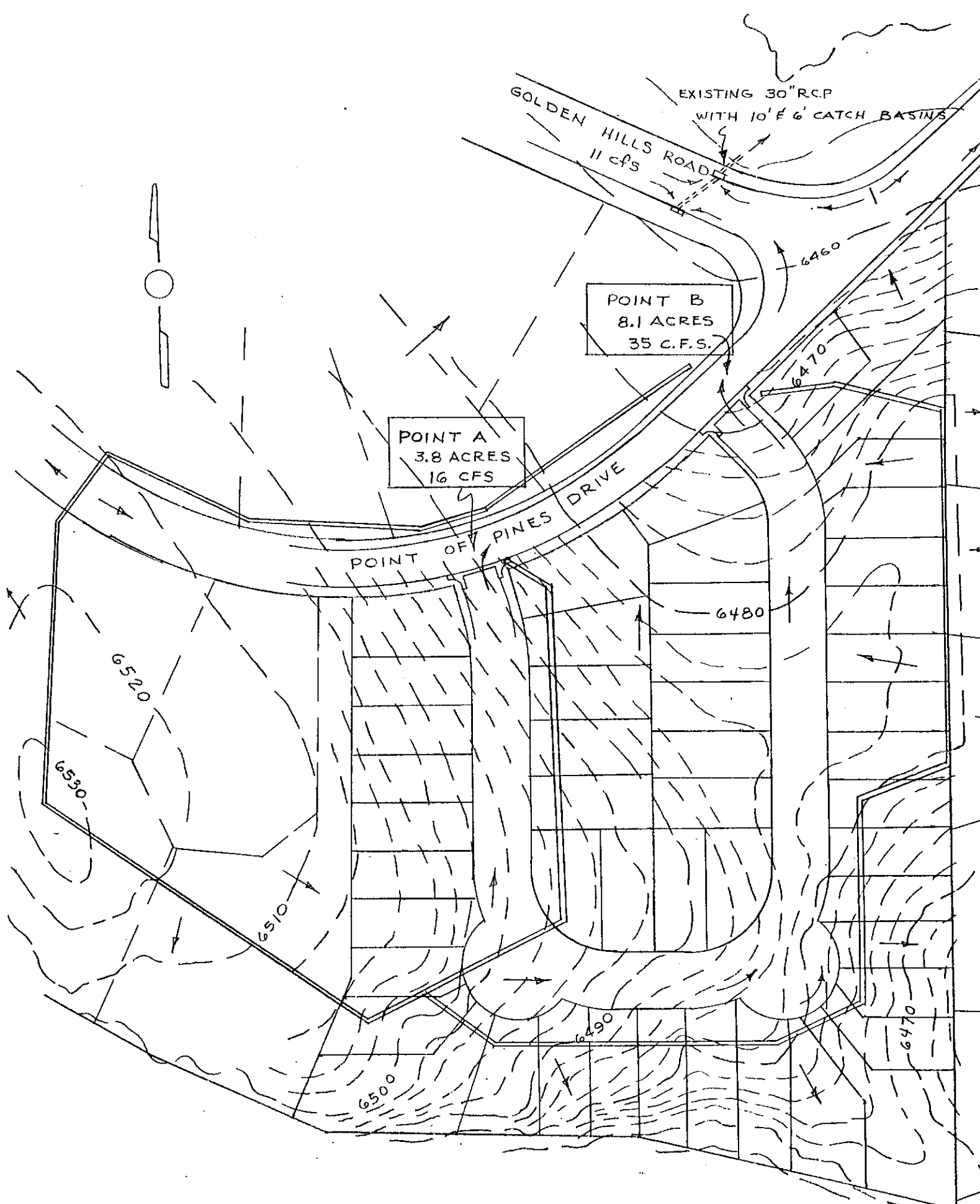
Since the adjacent subdivisions have been completely developed and the site was previously studied for drainage in 1968, provision for removing storm water from the area has already been implemented. A 10' wide catch basin and a 6' wide catch basin are in place on Golden Hills Drive just west of its intersection with Point of the Pines Road. The proposed loop street within Pinon Point Subdivision will drain into Point of the Pines Road. Street cross pans will be built at these new intersections, and the storm water will continue to flow northeasterly to Golden Hills Drive.

The original drainage plan for the area showed a swale across Point of the Pines Drive at the extreme northeast corner of this filing. Apparently the swale across the busy street has been removed, and a small amount of storm water continues to flow northeasterly along the southerly edge of the street. However, the bulk of the runoff, (estimated to be 75% or more of the total) will turn into Golden Hills Road and thence into the existing storm sewer system at the low point in Golden Hills Road.

Street cross sections were taken along the critical portion of Point of the Pines Drive in order to determine how much of the runoff fails to turn into Golden Hills Drive. These cross sections and related topography are included in the following pages. It appears that only a small amount of water will remain in the uphill (southeast) gutter of Point of the Pines Drive. Almost all of the runoff will break or be pushed across the crown of the street and make the turn into Golden Hills Road.

Since the area was previously platted and drainage fees have been satisfied, no drainage fees are due. No additional drainage structures need to be built in connection with the construction of this subdivision.

It should be noted that no portion of this subdivision falls within a designated flood plain.



EXISTING 30" R.C.P.
WITH 10' E & 6' CATCH BASINS

GOLDEN HILLS ROAD
11 cfs

POINT B
8.1 ACRES
35 C.F.S.

POINT A
3.8 ACRES
16 CFS

POINT OF PINES DRIVE

6480

6520

6530

6510

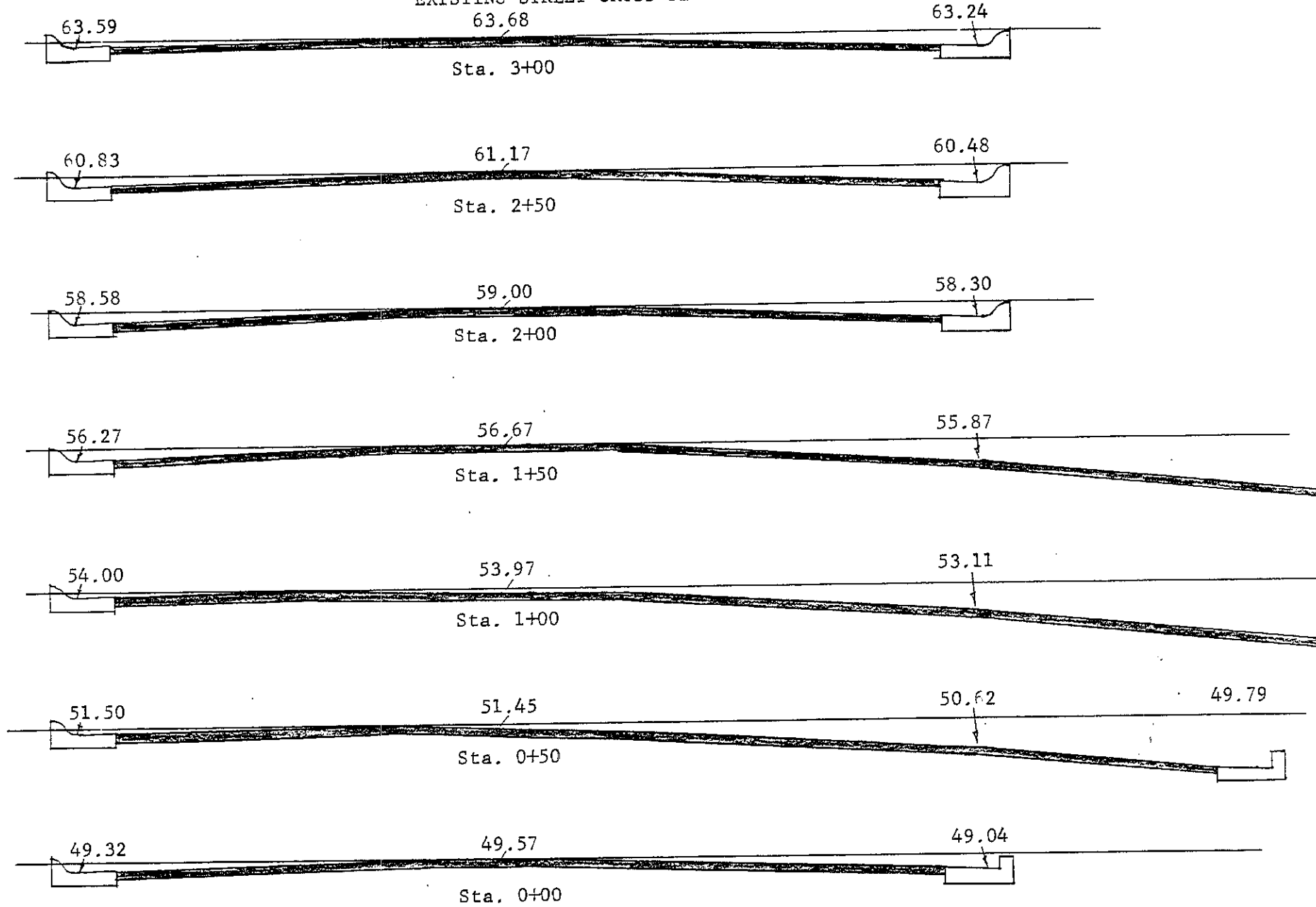
6500

6490

6470

POINT OF THE PINES DRIVE

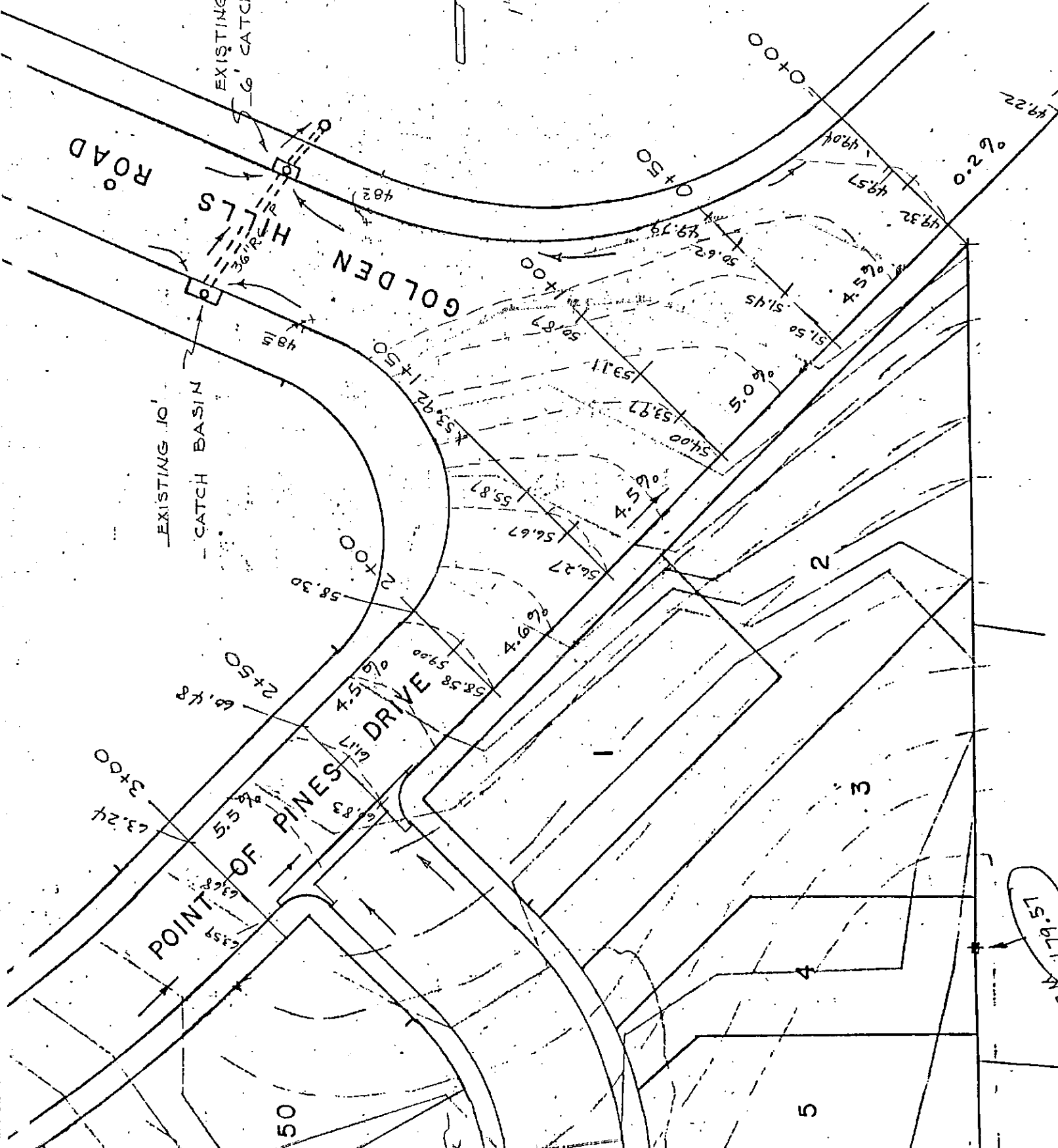
EXISTING STREET CROSS SECTIONS

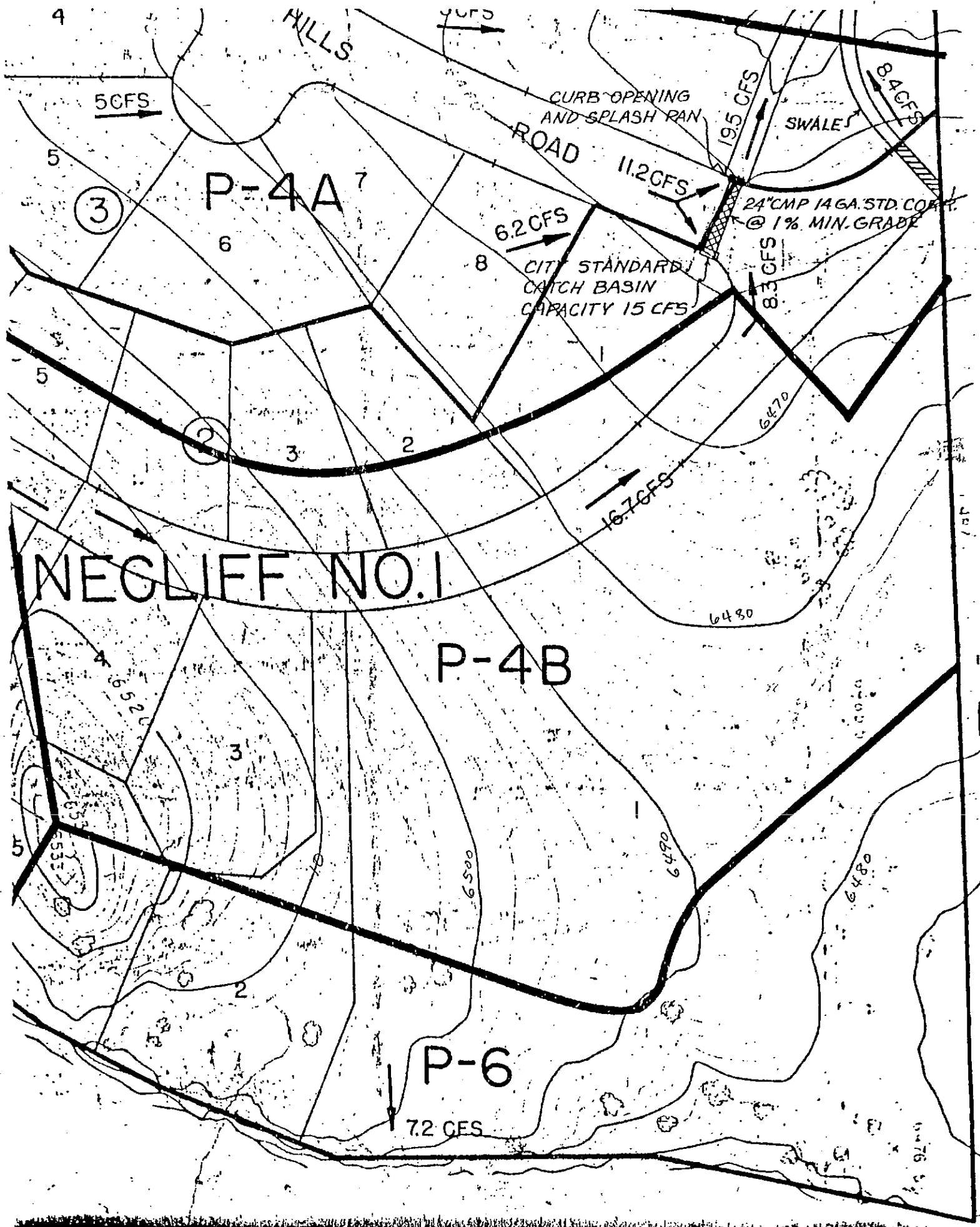


Scale: 1" = 50' Hor., 1" = 5' Vertical



1" = 40'





From the original drainage study and report for Pinecliff Sub. No. 1
 by R. K. Hook & Associates. Approved Jan. 16, 1970.