

RETURN TO:
Land Development
105 West Costilla
Colorado Springs, CO 80903

POWERS BUSINESS PARK
DRAINAGE PLAN

MASTER PLAN AND FILING NO. ONE

FEBRUARY 1, 1982

Prepared By:

OLIVER E. WATTS
CONSULTING ENGINEER
300 Garden of the Gods Road, Suite 103
Colorado Springs, CO 80907

Not Approved

OLIVER E. WATTS PE-LS
CONSULTING ENGINEER
300 GARDEN OF THE GODS ROAD
SUITE NO. 103
COLORADO SPRINGS, COLORADO 80907
February 1, 1982

City of Colorado Springs
Department of Public Works
Engineering Division
P.O. Box 1575
Colorado Springs, CO 80901

SUBJECT: Powers Business Park
Drainage Plan
Master Plan and Filing No. One

Gentlemen

Enclosed for your review and approval is the drainage plan for the Powers Business Park, covering the entire development and filing Number One.

Please contact me if I may provide further information or answer any questions.

Respectfully Submitted



Oliver E. Watts
Consulting Engineer

Encl:

Drainage Report
Computations, 2 ppgs
Area Drainage Plan 81-1178-06
Master Drainage Plan 81-1178-07
Agreement of June 27, 1974, 4 ppgs

Drainage Plan
Powers Business Park
Certifications and Approvals

ENGINEERS STATEMENT:

The enclosed drainage plan and report for the Powers Business Park were prepared by me and under my direct supervision and comply with all criteria and specifications of the City of Colorado Springs, and are in full compliance with the Master Drainage plan for the Sand Creek Basin, 1977.




Colorado PE-LS No. 9853 Feb. 1, 1982



DEVELOPER:

The developer has read and understands the enclosed report and will comply with the requirements thereof as approved by the City Engineer.

By; 

2-5-82
date

CITY ENGINEER:

Approved.

City of Colorado Springs
Department of Public Works
City Engineer

date

1. LOCATION AND DESCRIPTION

The Powers Business Park is located on the west side of Powers Blvd. between Palmer Park and Constitution, and on the north bank of the West Fork of Sand Creek.

The total area within the development is 23.166 acres. Filing No. One occupies 8.731 acres. All of the area within the development lies within the Sand Creek Drainage Basin.

2. METHOD AND CRITERIA

The method used in all computations is as prescribed by the criteria of the City of Colorado Springs, and uses the USDA/SCS synthetic hydrograph method to compute the City "5-year" storm of 2.1 inches of rainfall in a 6-hour period. All computations are enclosed for review.

This report is in full compliance with the Master Drainage Report for the Sand Creek Drainage Basin, which was approved by the City of Colorado Springs in 1977.

The soils types within the development were mapped by the local office of the USDA/SCS, and are shown on the enclosed plans. All soils within the development are of hydrologic group "A".

3. EXISTING DRAINAGE CONDITIONS.

As shown on the enclosed area drainage map, the area of the development is located within a minor drainage basin draining through the development into the West fork of Sand Creek immediately West of Powers Blvd. The area to the west of the development has been regraded slightly from the topography shown on the plan so that runoff is contained within the public streets west of the development. Under existing conditions a total of 8.1 cfs will drain through the area into City owned park land to the south.

The existing channel of the West Fork of Sand Creek was excavated by the Cimmaron corporation about 1973 in order to improve a minor side channel and divert the total flow of the West Fork of Sand Creek into this channel. The channel has remained in an unimproved condition since that time, and appears to be relatively stable, with no active severe erosion.

4. PROPOSED FLOW ROUTING

The natural topography will be maintained with normal grading on adjacent lots. As shown on the enclosed area drainage plan, 12.4 cfs will enter the development from existing subdivided ground to the north and will be routed by ordinary normal side lot private swales to the street. A total of 21.9 cfs will be contained at the end of the cul-de-sac by a 10-foot D-10R catch basin in a sump condition where a 24-inch storm sewer will route the runoff to the West fork of Sand Creek.

The far westerly portion of the development will drain as dictated by the natural topography into the Heathercrest subdivisions adjacent to the development. A total of 4.3 cfs will run off along the entire boundary, and can be easily contained by normal private swales associated with this development.

The remaining southerly portion of the development will drain by the dictates of the natural topography into the City Park ground south of the boundary. Most of the natural basin will have been diverted into Sand Creek, which will lower the natural runoff of 8.1 cfs to a total development runoff of 4.8 cfs.

The West Fork of Sand Creek will be improved in accordance with the Master Drainage Basin Report which indicates that a 100-foot bottom width, 4.5-foot depth on a 1.5:1 slope, channel will be necessary. All of the construction of this channel will occur outside the ownership of the developers, so that only the side adjacent to the development will be improved with concrete lining, at the time required to obtain building permits on the lots adjacent to the channel. Included in this report is an agreement between the developers, the Cimmaron corporation, and the City of Colorado Springs, dated June 27, 1974, indicating that the Cimmaron corporation will improve the channel as required, and that the City will place the burden for such improvements, along with the necessary guarantees upon the Cimmaron corporation. Please note that Para. 3 on page 3 removes any contingency resulting from the status of the channel from consideration in this platting process.

5. DRAINAGE FEES

1982 Sand Creek Fees.

Master Plan Total:	Drainage:	23.166 ac.	@ \$1928	= \$44,664.05
	Bridge:	23.166 ac.	@ \$ 367	= \$ 8,501.92
Filing No. One:	Drainage:	8.731 ac.	@ \$1928	= \$16,833.37
	Bridge:	8.731 ac.	@ \$ 367	= \$ 3,204.28

6. COST ESTIMATE

Master Plan:

Obligation of Cimmaron corporation:

10,540 SF Channel Lining	@ \$ 2.50	= \$ 26,350.00
5 EA Cutoffs	@ \$ 500.00	= 2,500.00

	Subtotal	\$ 28,850.00
10% Engineering and Contingency		2,885.00
	Total	\$ 31,735.00

Obligation of the Developers

1 EA 4' D-10R C.B.	@ \$1200.00	= \$ 1,200.00
1 EA 10'D-10R C.B.	@ 1800.00	1,800.00
350 LF 24" RCP	@ 28.00	9,800.00

	Subtotal	\$ 12,800.00
10% Engineering and Contingency		1,280.00
	Total	\$ 14,080.00
Total Drainage Cost, Master Plan		\$ 45,815.00

Filing No. One (Developer Responsibility)

1 EA 10'D-10R C.B.	@ \$1800.00	= \$ 1,800.00
10% Engn'g and Cont		180.00

	Total	\$ 1,980.00
--	-------	-------------

It is requested that the payment of drainage fees be delayed until the platting process and installation of improvements is complete.

MAJOR BASIN	SUB BASIN	AREA		BASIN		Tc	K	SOIL GROUP	DEV. TYPE	CURVE NO.	FLOW	
		Planim. Read.	MILE	LENGTH	HEIGHT						Q	qp
	1" = 200'											
				$T_c = \frac{(11.9L^0.5)}{H}$	0.385							
Natural	A-D	34.05	0.0489	4480	41	0.513	720	A	R/L Poor	68	0.23	8.1
Dev'p'd	A	13.26	0.0190	1880	19	0.253	980	↑	Ind	81	0.67	12.4
	B	12.65	0.0182	1070	18	0.135	1190	↑	↑	↑	↑	14.5
	A+B	25.91	0.0372	2950	37	0.330	880	↑	↑	↑	↑	21.9
	C	4.17	5.98 ⁻³	690	14	0.090	1270	↑	↑	↑	↑	5.1
	A+B+C	30.08	0.0432	+400'	V=7.0	0.346	870	↑	↑	↑	↑	25.2
	D	3.97	5.70 ⁻³	420	10	0.057	1270	↓	↓	↓	↓	4.8
	E	3.78	5.42 ⁻³	1200	24	0.138	1190	A	Ind	81	0.67	4.3

HYDROLOGIC COMPUTATION - BASIC DATA

PROJ: Powers Business Park

By: *OEW*
Date: 1-8-82

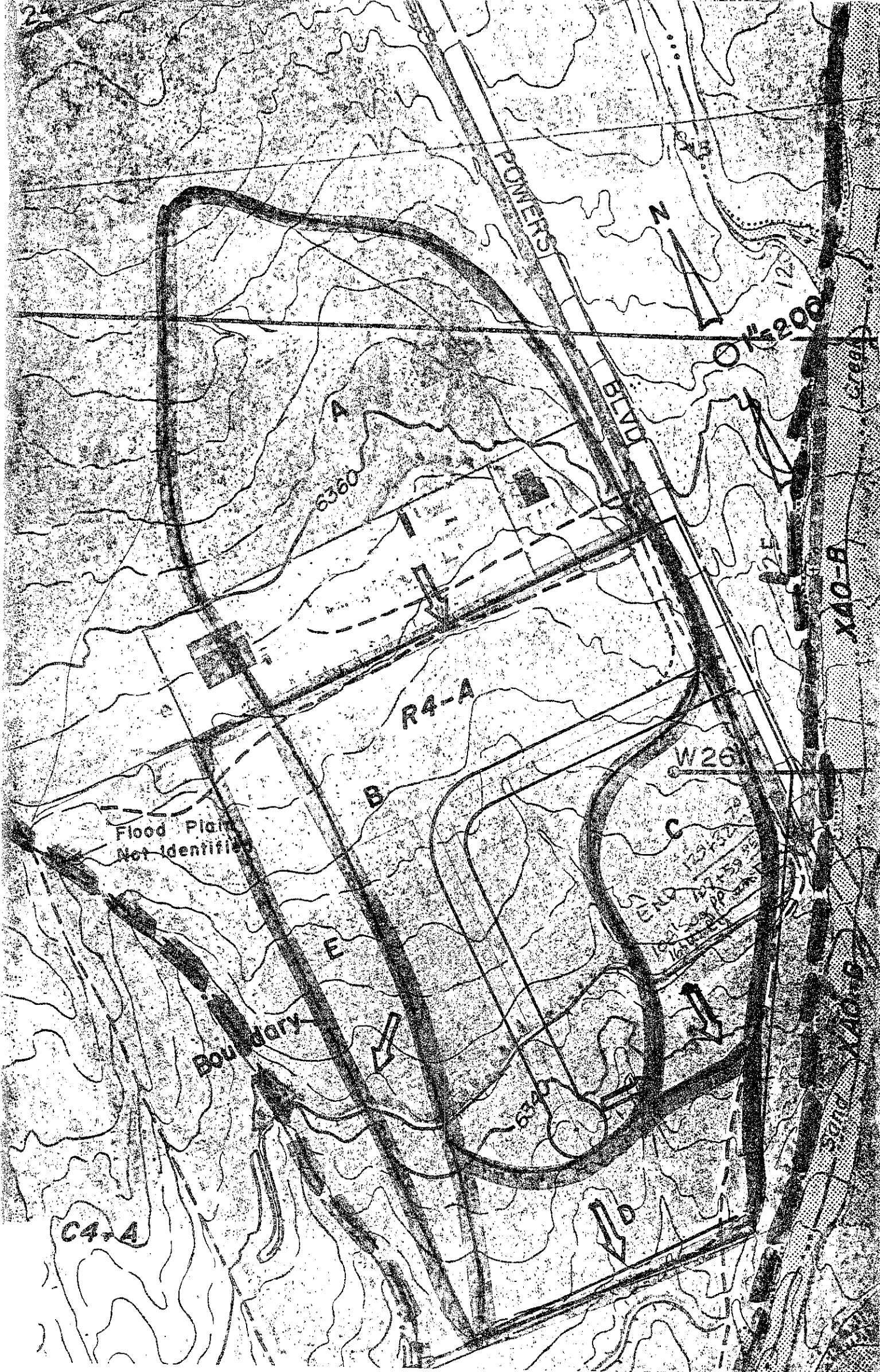
Oliver E. Watts
CONSULTING ENGINEER




Street and Storm Sewer Calculations

STREET	LOCATION	DIST.	ELEVATION & SLOPE	TOTAL RUNOFF	STREET FLOW CAPACITY	PIPE FLOW	TYPE PIPE, CATCH BASIN & SLOPE %
Cul de Sac	Sump		2.2%	21.9	21.9/23.4		Ramp Curb 10' D-10R in Sump C _s = 23.0
Storm Sewer	Private Inlets	400 Total			5.1	21.9	24" RCP min S = 0.938%
				25.2		25.2	4' D-10R in Sump C _s = 7.9 24" RCP, min S = 1.24%

Oliver E. Watts
 CONSULTING ENGINEER

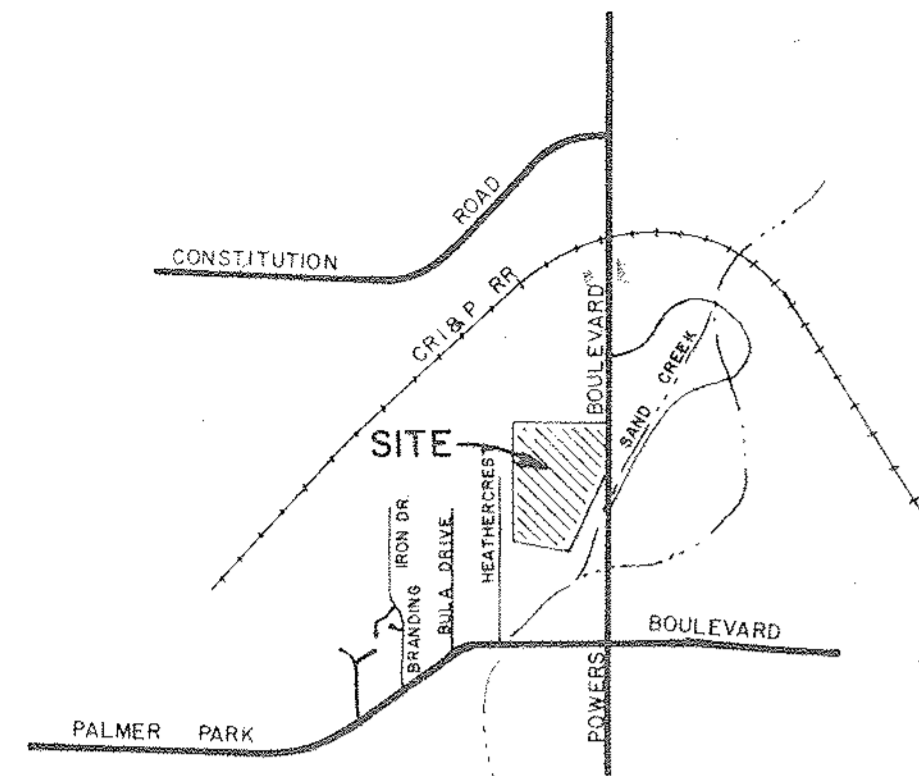
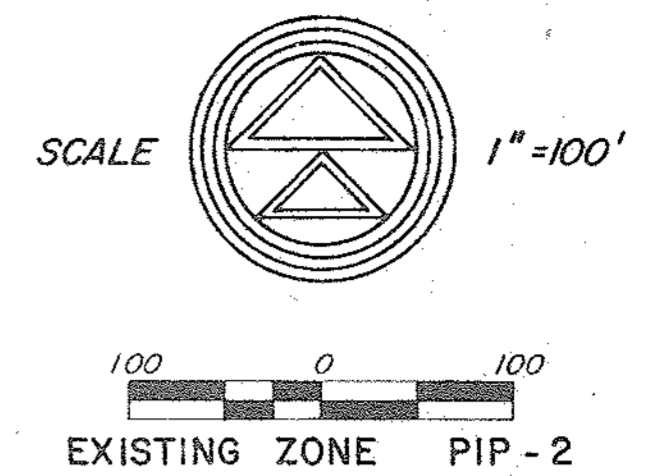
Project Power Business Park Page 2 of 2
 Calc. by OSUD date 1-8-82
 Checked by _____ date _____



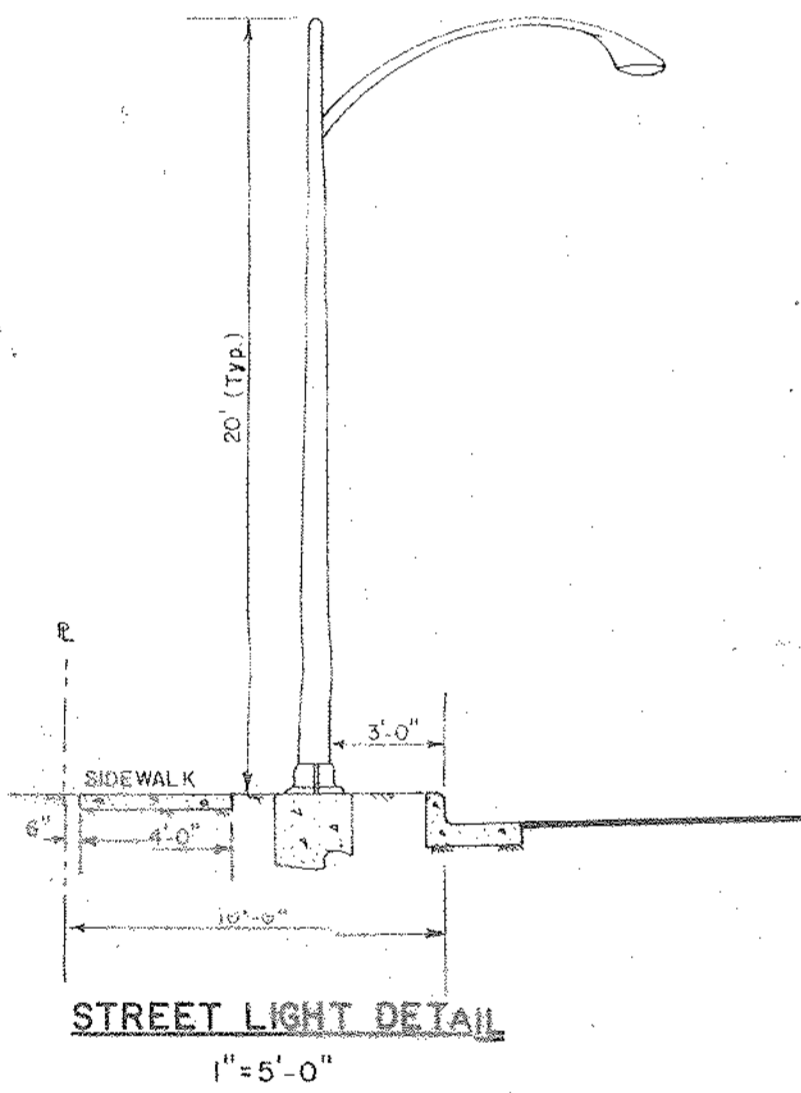
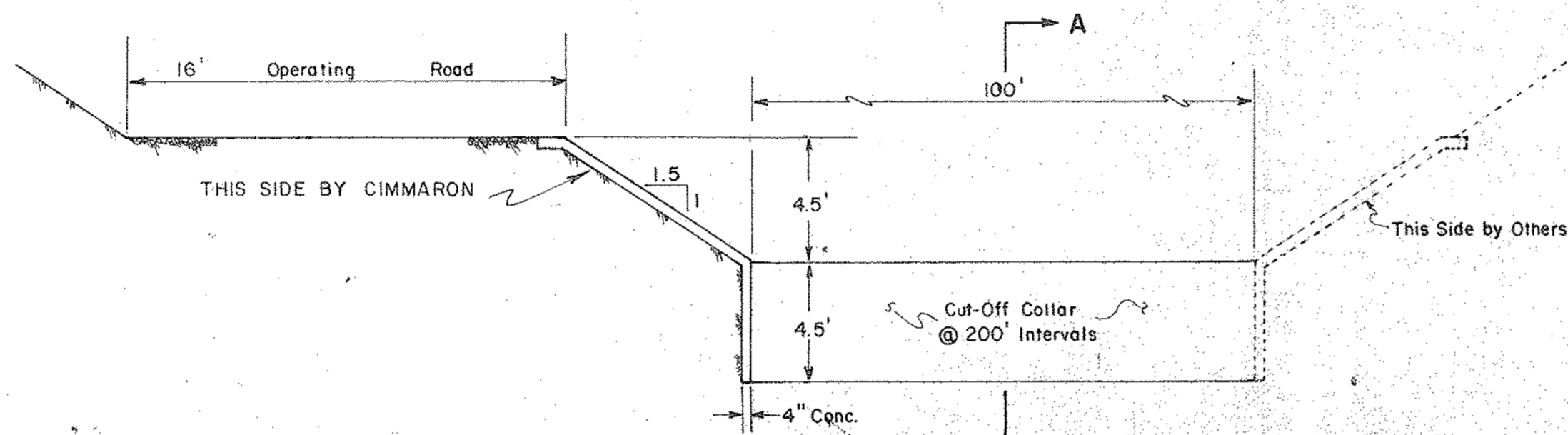
-  **A** LIMIT OF BASIN & DESIGNATION
-  **R4-A** SOILS BOUNDARY AND HYD. GROUP
-  DIRECTION OF FLOW ROUTING

POWERS BUSINESS PARK
 AREA DRAINAGE MAP
 Oliver E. Watts
 Consulting Engineer
 Colorado Springs
 Dwg. 81-1178-06

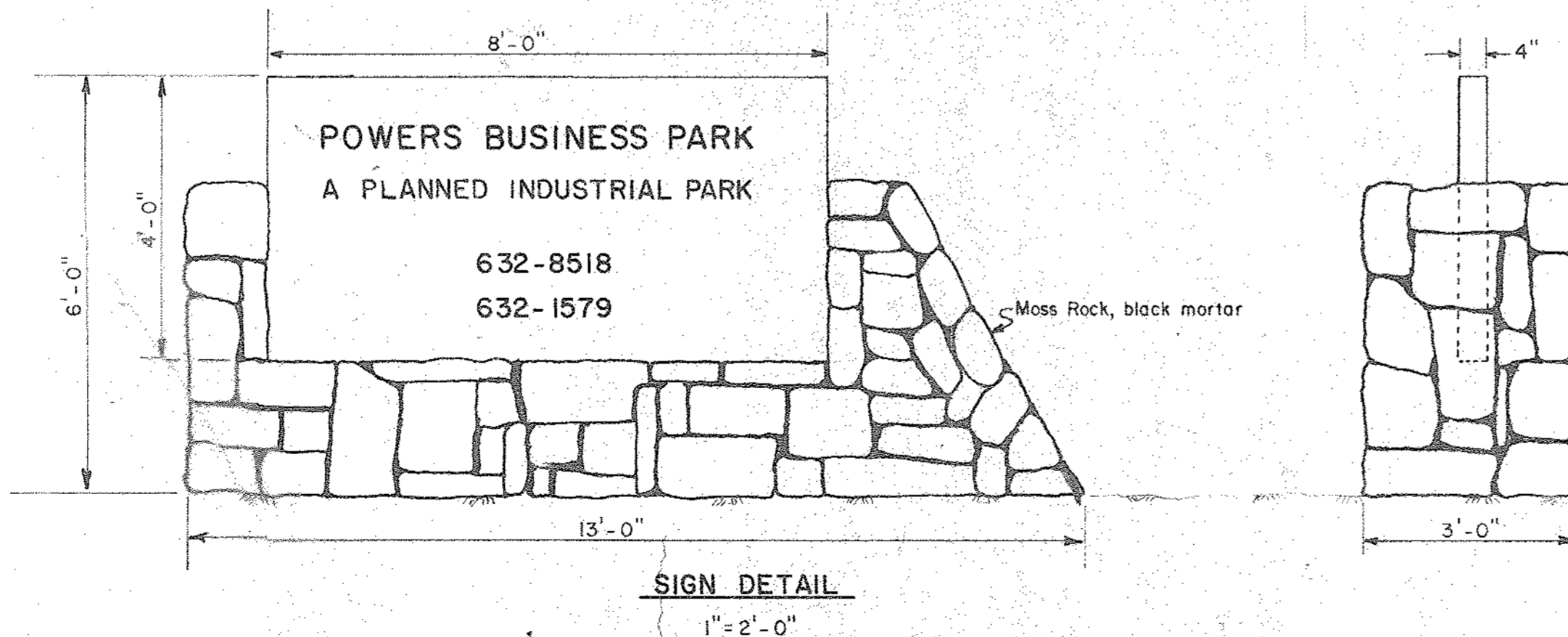
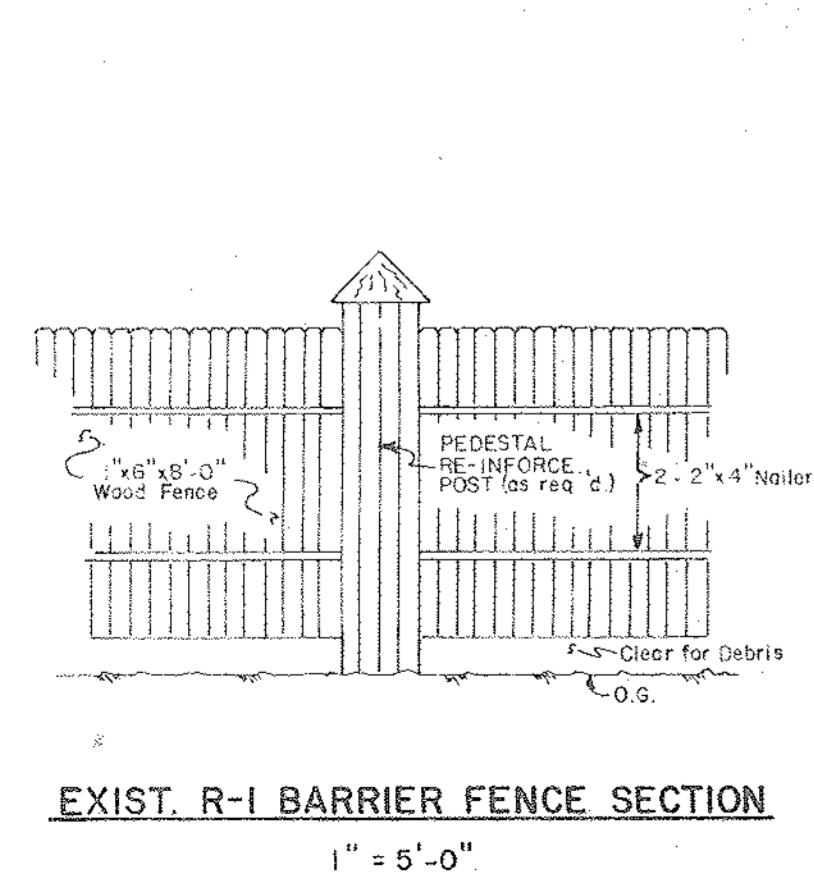
POWERS BUSINESS PARK OFFICE AND INDUSTRIAL CENTER MASTER DRAINAGE PLAN S & W Investment Company Colorado Springs, Colorado



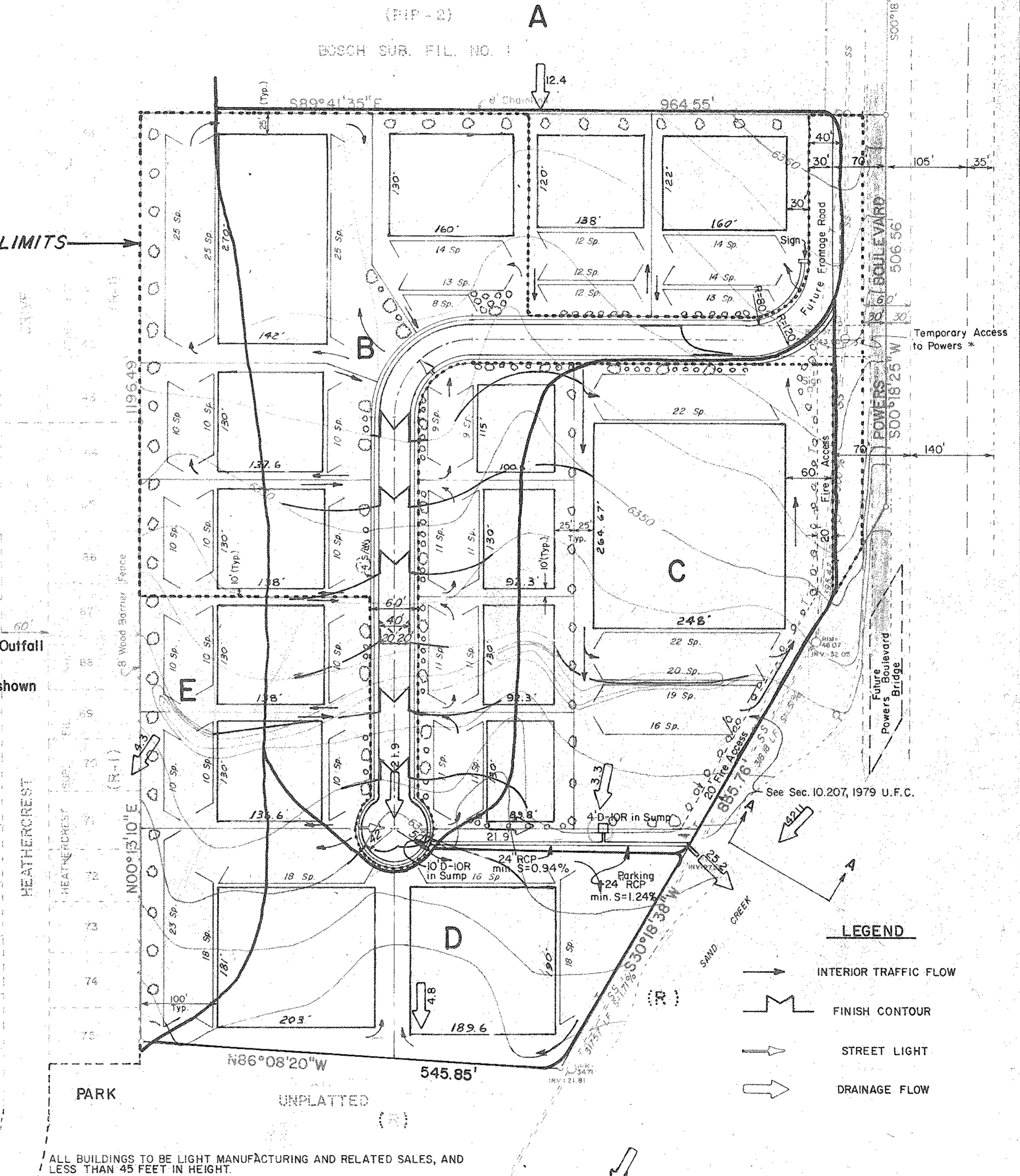
LEGAL DESCRIPTION
Part of the NW 1/4, Section 1, T14S, R66W, of the 6th P.M.; Commencing at the E 1/4 Corner of Section 1, T14S, R66W of the 6th P.M.; Thence N86°08'20" W, 418.73' along the South Line of the SE 1/4, NE 1/4, Section 1, to the Point of Beginning; Thence N86°08'20" W along said South Line, SE 1/4, NE 1/4, 545.85' to a point on the East Boundary Line of Heathercrest Sub. Fil. No. 1; Thence N00°13'10" E along said East Boundary of Heathercrest Sub. Fil. No. 1 and No. 2, 1196.49' to the SW Corner of Bosch Sub. Fil. No. 1; Thence S89°41'35" E along the South Boundary of Bosch Sub. Fil. No. 1, 964.55' to a point on the East Line of Section 1; Thence S00°18'25" W along the East Line of Section 1, 506.56'; Thence S30°18'38" W, 835.76' to the Point of Beginning; and excluding the Easterly 30.00 feet of Section 1, being the Right of Way of Powers Boulevard; Containing 23.166 Acres.



- LEGEND**
- Drainage Basin Limit & Designation
 - Soil Type & Group
 - Runoff in C.F.S. at Designated Basin Outfall
 - Proposed Storm Sewer & Inlet - as shown



FILING NO. 1 LIMITS



ALL BUILDINGS TO BE LIGHT MANUFACTURING AND RELATED SALES, AND LESS THAN 45 FEET IN HEIGHT.

LANDSCAPING:

- Large Trees: Japanese Locust, Russian Olive, Red Maple
- Shrubs: Pfizers

Sidewalk, Parking Island and similar areas to be sodded.

Each building to be individually landscaped at the owners discretion for plant type & location.

* ACCESS TO POWERS BOULEVARD TO BE TEMPORARY UNTIL FRONTAGE ROAD IS BUILT DURING CONSTRUCTION OF POWERS BOULEVARD.

Oliver E. Watts
OLIVER E. WATTS
CONSULTING ENGINEER
Colorado Springs
81-1178-07

AGREEMENT

THIS AGREEMENT, made and entered into this ^{27th Oct} ~~18th~~ day of June, 1974, by and between J. DARREL STONE and K. C. WOFFORD, hereinafter referred to as "Stone-Wofford", First Parties; CIMARRON CORPORATION, a Colorado corporation, hereinafter referred to as "Cimarron", Second Party; and THE CITY OF COLORADO SPRINGS, COLORADO, a municipal corporation, hereinafter referred to as "City", Third Party,

WITNESSETH:

THAT WHEREAS, Stone-Wofford and Cimarron are presently involved in litigation in the District Court of El Paso County, Colorado, Civil Action No. 75564, wherein they are Plaintiffs and Defendant, respectively, which litigation involves a drainage channel draining the waters of West Sand Creek, a portion of which channel crosses the land presently owned by Stone-Wofford at the extreme southeasterly corner thereof, which entire Stone-Wofford tract is more particularly described in Exhibit A annexed hereto and made a part hereof, and

WHEREAS, Cimarron owns lands southerly from said Stone-Wofford tract and more particularly described in Exhibit B annexed hereto and made a part hereof, and

WHEREAS, neither the Stone-Wofford tract described in Exhibit A nor the Cimarron tract described in Exhibit B has yet been platted, although Cimarron has submitted a preliminary plat for its property as described in Exhibit B, and

WHEREAS, the City, at such time as either of said

tracts is platted, necessarily will cause certain improvements to be made under and by virtue of its contiguity to said drainage channel and by virtue of a City Ordinance, namely, Sections 13:30 through 13:43 of Chapter 12 of the City Code of the City of Colorado Springs, and

WHEREAS, the litigation above referred to between Stone-Wofford and Cimarron involved a trespass on the part of Cimarron over and across said southeasterly portion of said Stone-Wofford tract, and said parties have now settled their differences by virtue of an agreement separate and apart from this Agreement, but nevertheless contingent upon the City entering into this Agreement, and

WHEREAS, Stone-Wofford have agreed to convey to Cimarron the drainage channel, together with all their land southeasterly of said channel as it crosses said Stone-Wofford tract and together with a 16 foot area along Stone-Wofford's southeasterly boundary, as said boundary line will be located after said conveyance, said drainage channel and the area proposed to be conveyed by Stone-Wofford to Cimarron as shown by Exhibit C annexed hereto and made a part hereof, so that Cimarron will then own the entire drainage channel, including said 16 foot area northwest of said drainage channel, and

WHEREAS, the City is interested in having said dispute between Stone-Wofford and Cimarron resolved, so that its master plan for the area may be modified as necessary to conform to the said drainage channel as now constructed, and

WHEREAS, The purpose of this Agreement is to fix the burden of improving said drainage channel upon Cimarron, said improvements to be constructed in accordance with the above referred to City Ordinances at such time as Cimarron plats its land as hereinabove described in Exhibit B.

NOW, THEREFORE, in consideration of the premises, IT IS AGREED:

1. Stone-Wofford agree to convey to Cimarron forthwith the drainage channel and all of their land southeasterly thereof, together with a strip of land 16 feet in width to the northwest of said channel, all of which land is more particularly described in Exhibit C annexed hereto.

2. Cimarron agrees to improve or provide letters of credit for the improvement of said channel in accordance with the City Ordinances as above set forth at such time as it finally plats its property as described in Exhibit B.

3. The City agrees that the burden of accomplishing said improvements in accordance with the above set forth City Ordinances shall be upon Cimarron and shall not be upon Stone-Wofford, at such time as Stone-Wofford may plat their property described in Exhibit A, or at any other time, and that requests by Stone-Wofford for approvals necessary from the City for the improvement of their remaining property (after the conveyance described in Paragraph 1 above) will in no way be contingent upon the status of said channel.

4. This Agreement shall be binding upon the heirs, administrators, executors, successors and assigns of First Parties, and the successors and assigns of Second and Third Parties.

IN WITNESS WHEREOF, the parties hereto have subscribed

their names this the day and year first above written.

[Handwritten signature]

J. DARREL STONE and

[Handwritten signature]

K. C. WOFFORD "First Parties"

CIMARRON CORPORATION

By *[Handwritten signature]* President

ATTEST:

[Handwritten signature]
ASST Secretary

"Second Party"

THE CITY OF COLORADO SPRINGS,
COLORADO

By *[Handwritten signature]*

"Third Party"

Attest:

[Handwritten signature]
city clerk

APPROVED AS TO FORM:

[Handwritten signature]
CITY ATTORNEY