Hydrology G17/D1a Carlmont Office Park

G17 - DIA

CARLMONT OFFICE PARK

1 PLAN

263-8828 883-2800

Address 4370 CARLISLE N.C Engr/Arch FRED ORTMAN

Plans Approved 8-3-82 Cond.

Comments: 6-17-DIA

FRED WILL PROVIDE S.U. 19 on the ~~Roofing~~ SPECIAL plans to be SUBMITTED LATER

Inspection Requested 1-11-83 Contractor

Appr. 5/4/83 Disappr. 30 Day Temp.

Comments: Reinspection on 617-DIA called in 2-7-83
Reinspection on 2/11/83 disapproved must address the problem of ponding within the patio area Received letter from Engineer Fred Ortman and copy of letter from soils repair engineer pertaining to ponding within the patio area

Reinspection and/or comments:

File G17-D1A

Westwind, Inc.
BUILDERS ■ DEVELOPERS

6/27/84

CITY OF ALBUQUERQUE
HYDROLOGY DEPT.
ATTN: STEVE CHAVEZ

RE: OFFICE BLDG.
4316 CARLISLE N.E.

DEAR MR. CHAVEZ.

BY WAY OF THIS LETTER WESTWIND INC. HEREBY AGREES TO COMPLETE, WITHIN THIRTY DAYS OF THE DATE HEREON, THE REQUIRED "SPECIAL ORDER 19" AT THE NORTH WEST CORNER OF THE PROPERTY AT 4316 CARLISLE N.E.

UNIVERSAL CONSTRUCTION CO. WILL BE MARKING THE INSTALLATION SOMETIME NEXT WEEK. I WILL NOTIFY YOU UPON COMPLETION SO THAT YOU CAN INSPECT THE WORK.

THANK YOU,
SINCERELY,

G.P.
WESTWIND INC.

6413 CRANBROOK N.E. • ALBUQUERQUE, NEW MEXICO 87111 • 505-822-0997

1943

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

February 6, 1984

Mr. Fred Arfman
Isaacson & Arfman, PA
128 Monroe NE
Albuquerque, NM 87108

REF: SUPPLEMENTAL DRAINAGE PLAN FOR CARLMONT OFFICE PARK, PHASE II (G17-D1A) RECEIVED JANUARY 19, 1984

Dear Mr. Arfman:

The above referenced submittal dated January 19, 1984, is approved.

Please attach a copy of the plan along with the approved "Construction Within Public R/W" document and an erosion control plan, for the period of construction, to the construction set prior to sign-off.

If I can be of further assistance, please contact me at 766-7644.

Sincerely yours,

Billy J. Goolsby

Billy J. Goolsby, PE
City/County Flood Plain Admin.

BJG:mrk

Isaacson &
Arfman, P.A.

Consulting Engineering
Associates

February 18, 1983

Mr. Fred Aguirre
Municipal Development Dept.-Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, N.M. 87103

RE: Carlmont Office Park
4300 Carlisle Blvd. N.E.

Dear Fred:

Our firm has been asked to assist in the related matters of obtaining a permanent Certificate of Occupancy for the above referenced address. Primarily, a revised private patio plan and improvements or an Engineer's certification was requested by your office with respect to that singular area to the Southeast of the new building. The following action was taken:

1. Information gathering from your department, Project Architect(Fanning/Bard) and the Project Contractor(Baker Const.)
2. A site inspection by our firm on 2-16-83.
3. Consultation with the firm which prepared the site's soil report.
4. F.M. Fox site inspection and subsequent letter of recommendations.
5. Summation letter to City Hydrology.

The firm of F.M. Fox has stated that do to existing site drainage(fully-developed) and soil conditions, that temporary ponding, within the limits of the patio, would be allowed until such time that the alley grades are lowered (future alley paving) and a 4" dia. outfall pipe be placed at the low point of the interior landscaped area. Storm waters would then exit via this outfall and flow onto the alley and then toward Carlisle Blvd.'s storm drain system. This handling of flows is consistent with the Master Drainage Study for the overall project.

Attached is the February 17, 1983 letter from F.M. Fox & Associates, Inc. containing their recommendations and certification. Hopefully, this latest endeavor will free

128 Monroe, NE • Albuquerque, NM 87108 • (505) 268-8828

your office to issue an approval for the permanent Certificate of Occupancy.

In a semi-related matter, it should be fully understood that any improvements to the Hardee's Restaurant drainage situation along Montgomery Blvd. was not intended as a part of Phase I development. The situation is this: the limits of Phase I did not include the building site along Montgomery. Therefore, final parking lot & landscaped grades have not been established for that area. The necessary improvements are to be incorporated in the site planning and be designed by a Special Order No. 19 at such time of lot development. Futhermore, it appears that this was understood by all concerned parties since the approved Phase I site development plans only showed those improvements along Carlisle Blvd. Hopefully, this correspondence might aid in clearing up any questions that might arise concerning phase development.

Please call if futher clarification or assistance is required.

Very truly yours,
ISAACSON & ARFMAN, P.A.

Fred C. Arfman

Fred C. Arfman, P.E.

Attachment

FCA/naf

Consulting Engineers and Geologists

F. M. FOX & ASSOCIATES, INC.
3412 BRYN MAWR DRIVE, N.E.
ALBUQUERQUE, NEW MEXICO 87107
(505) 884-0900

February 17, 1983

Isaacson & Arfman, P.A.
128 Monroe Street, NE
Albuquerque, New Mexico 87108

Attention: Mr. Fred Arfman

Subject: Temporary Site Drainage, Phase I, Carlmont Office Park

Reference: Subsoil Investigation, Office Complex, Carlisle & Montgomery Boulevard, NE, Albuquerque, New Mexico
Job No. 0109570

Gentlemen:

As per your request we have evaluated the site drainage along the southeast side of the existing Phase I structure. The site drainage presently does not conform to the recommendations of our referenced report. Based upon a visual inspection of the site, water will pond in the landscaped area parallel to the southeast side of the structure. The ponding area is on the order of ten feet away from the structure.

It is our understanding that when the remainder of the site is developed the alley to the southeast of the structure will be brought to grade and paved. At that time an outlet pipe will be installed to drain the ponding area behind the structure.

Based upon an evaluation of the existing site drainage and site soil conditions, it is our opinion that the existing site drainage is adequate on a temporary basis (one-two years). As soon as feasible, the outlet pipe from the ponding area to the alley should be installed.

Consulting Engineers and Geologists

Should any questions arise concerning this letter, or if we may be of further service, please call.

Sincerely,
F. M. Fox & Associates, Inc.

MARTIN D. VINYARD
NEW MEXICO
8001
REGISTERED PROFESSIONAL ENGINEER

Martin D. Vinyard

Martin D. Vinyard, P.E.
Project Geotechnical Engineer

1950

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 8, 1982

Mr. Fred Arfman
Isaacson-Arfman, PA
2727 San Pedro Dr. NE
Albuquerque, N.M. 87110

RE: CARLMONT ADDITION DRAINAGE REPORT

Dear Fred:

The referenced report is approved in concept. Per our conversation of June 7, 1982, items a, b, d, g and h should be addressed before final approval is granted:

a. Please indicate the roof drains and existing curbing adjacent to Hardy's Restaurant on the Grading-Drainage Plan. If possible, roof runoff should not discharge across the sidewalk. Also, the finished floor elevations should be indicated to a five digit mean sea level designation.

b. Please indicate the location of the emergency spillways along Montgomery Blvd. Supporting calculations should also be provided.

c. Alley grades will need to be established when the Phase 1 building is expanded to allow parking in the rear. The grades should be established from Hilton Ave. to the existing 6' fence. If this additional parking is contemplated for the near future, we suggest that the alley grades be submitted at the earliest possible date in order to insure that City review and approval coincides with the construction schedule.

d. A statement should be made regarding what is to be done with the existing facilities for the Hardy's Restaurant once the "clean-up" work is completed.

e. If possible, the landscaped area should be designed to prevent nuisance flows from entering the street.

f. Some means of erosion control is required when grading takes place and is not followed by development of the parcel.

g. The grading plan for the Phase 1 development should be detailed per the checklist items listed in the Drainage Report and Drainage Plan Checklist which is contained in Chapter 22 of the "Development Process Manual - City of Albuquerque, N.M.".

h. Approved copies of Special Order No. 19 are required for 1) the inlets along Carlisle Blvd., 2) the outfall for basin "A" and 3) the outfall for Hardee's Restaurant.

i. Drainage Plans, detailed per the Drainage Report and Drainage Plan Checklist, will be required for the future structures in order to check compliance with the master plan.

If you have any questions concerning these matters, please call.

Very truly yours,

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

229

ISAACSON & ARFMAN, P.A.
CONSULTING ENGINEERING ASSOCIATES

RECEIVED
MAY 21 1982
CITY ENGINEER

LETTER OF TRANSMITTAL

To CITY HYDROLOGY
P.O. BOX 1293
ALBUQ., N. MEX 87103

Date MAY 21, 1982
Job No. _____

Attn: BRIAN BURNETT

Reference CARLMONT OFFICE PARK

Gentlemen:

We transmit to you 2 copy(ies) of the following

- ☐ _____ Plats
- ☐ _____ Plans
- ☐ Specifications
- ☒ DRAINAGE Report
- ☐ _____
- ☐ _____
- ☐ Shop Drawings
- ☐ Submittals
- ☐ Material Specifications
- ☐ Copy of Letter

This information is transmitted:

- ☐ As per your request
- ☒ For your review & approval
- ☐ For your information
- ☐ For your attention
- ☐ For your signature
- ☐ _____
- ☐ _____
- ☐ For your files
- ☐ For your use
- ☐ Please review & return
- ☐ For return to your files
- ☐ Please advise

RECEIVED
MAY 24 1982
ENGINEERING

G12-D12a

Remarks: _____

By: Frank C. Arfman IV A Copies To FILE

268.8828

2727 San Pedro N.E. • Suite 104A • Albuquerque, New Mexico 87110 • Telephone 883-2800

1954

RECEIVED
MAY 21 1982
CITY ENGINEER

DRAINAGE REPORT

for the

CARLMONT OFFICE PARK

MAY 1982

RECEIVED
MAY 24 1982
ENGINEERING

Isaacson & Arfman, P.A.
Consulting Engineering Associates
• Albuquerque, New Mexico •

INTRODUCTION

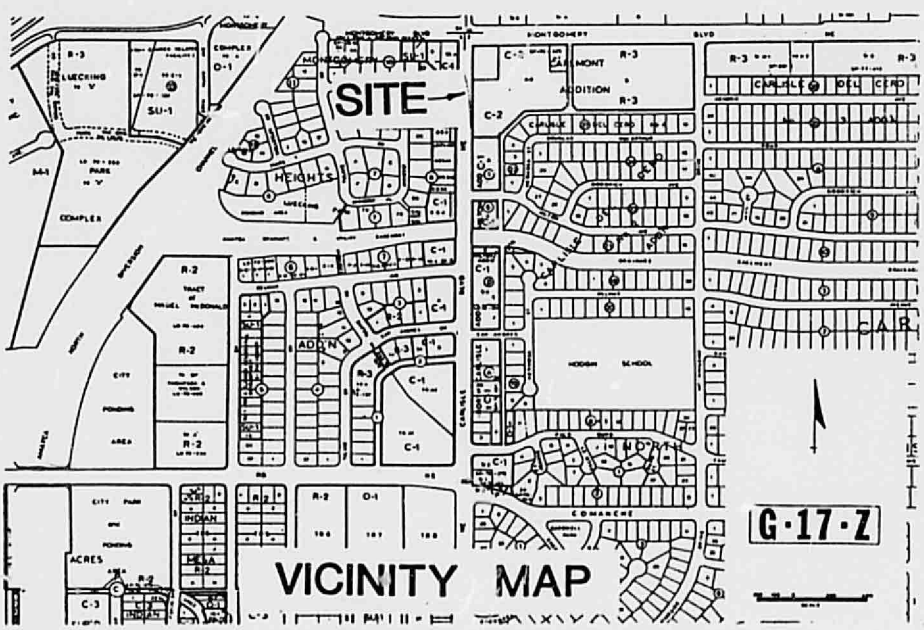
Our firm of Isaacson & Arfman, P.A. has been contracted by the Carlisle and Montgomery Limited Partnership of Albuquerque, New Mexico to assist them in the development of an acceptable drainage plan for their proposed office complex. This investigation and report shall be presented along the guidelines laid out in the City of Albuquerque's "Hydrology Checklist and Procedures", August 1981.

On April 14, 1982, a pre-design conference was held with Mr. Brian Burnett of the City of Albuquerque's Hydrology Section. At that time, the unique characteristice of the site and development were discussed and the findings were documented In the form of a converence recap (found in the appendix of this report). The three findings were:

1. Attempt to correct problem at Hardee's Resuaurant.

2. Direct discharge allowed to both 48" and 60" storm lines.

3. Erosion control measures required for graded, undeveloped areas.



SECTION I - GENERAL

1. No certification of the contractor work will be given by the design engineer. The City of Albuquerque shall be responsible for all inspection of drainage concepts, criteria and plan compliance.

2. The parcel of land has been zoned C-2 by means of platting: Carlmont Addition, Tract A-2 (SP-78-125). The proposed development is consistant with the existing zoning and no public hearing was required for site plan approval.

3. I, Fred C. Arfman, Registered Professional Engineer in the State of New Mexico, hereby certify that this report and accompanying grading plan was prepared by me or under my supervision.

Fred C. Arfman — MAY 21, 1982
Date

FRED C. ARFMAN NEW MEXICO 7322 REGISTERED PROFESSIONAL ENGINEER

4. Flood Hazard - No protion of this site is subject of flooding from the standard 100 year storm. A portion of the Flood Hazard Boundary Map may be found in the Appendix of this report.

5. Watershed Soils - The delineation of site and contributing off-site watersheds on a SCS Bernalillo County Soil Survey Map does not apply in this development since the site is completely surrounded by developed areas.

6. Soils - A soils investigation report was performed on May 19,1982 by F. A. Fox & Associates. The recommendation of which may be found in the appendix of this report.

SECTION II - OFFSITE CONDITIONS

7. Watershed Area - There is an offsite contributing area bordering the site on the east. But, from site surveys and analysis, it appears that the flows from these apartments were intended to flow northward and empty onto Montgomery Blvd. This statement is substantiated from our site survey which shows a slight inverted crown in the adjacent pavement section. Also, in this access drive are speed bumps with mid-point openings for the routing of storm waters and nuisance flows.

8. Does not apply to this project.

9. Does not apply to this project.

10. Other Conditions - The proposed office complex is a pure in-fill development, in that it is completely surrounded by fully developed sites or arterial streets. The existing Hardee's Restaurant is included within the 4.4± acres of the site, due to its inadequate site drainage features. The site development for Hardee's was done in accordance with the approved overall drainage study for Tract A of the Carlmont Addition, June 1978. This drainage plan called for area ponds interconnected by piping. The plan is workable only if the entire site is build-out, but since only Hardee's was constructed, it has a non-workable drainage plan. Some of the existing features will be incorporated into the revised plan and will be functionable under Phase I construction.

Adjacent to the northern and inclusive in the western boundaries is a 48" and 60" storm sewer, respectively. There are two double-combination inlets bordering the site on Montgomery Blvd. The westerly most storm inlets, as shown on Drainage Exhibit I, shall be utilized as storm water discharge points. The 60" storm sewer along the west boundary is located on site and within a 15' storm sewer easement; the westerly edge of which is common with the site's west boundary. There are no storm sewer inlets along that portion of sewer bordering on the west.

Finally, A.M.A.F.C.A.'S North Diversion Channel is situated approximately 1000 feet west of the site. The previously mentioned storm sewer releases its' flows into one of the channel's tributaries located approximately 600 feet to the south of the site.

11. Proposed Treatment (Of Offsite Flows)

The apartment complex to the east has a drainage basin of approximately 20,000 sq. ft. from which the storm waters flow pass the eastern edge of the proposed office park. From a site analysis, it appears that a portion of these flows would not be contained within the limits of the access drive. This statement is based on the fact that the flows in question must be turned 90° to the north. Since the depth of flow would be increased due to the decrease in velocity and the incoming flow velocity itself; it would be safe to assume that some storm water would jump the access drive.

Phase one construction does not call for any perimeter improvement along that easterly portion. Those flows not

contained by the access drive will be allowed to enter onto the site and sheet flow across the undeveloped portion to the phase one paving.

Future phase site improvements will call for the placement of a perimeter curb and water blocks to help channelize those flows. It if felt that these improvements would only aid in making the offsite storm water function as originally intended. Until such time that the entire office park is built out, a low profile hard packed combination deflection vehicular control berm should be placed along the east boundary.

12. No drainage right-of-ways or easements are required for the acceptance of the minor offsite sheet flows from the east.

ON-SITE CONDITIONS

13. In its undeveloped condition, the site has a gentle 2% slope. The terrain is a crusted dirt with sparce prairie grasses. A "c" value of 0.40 shall be assigned to the undeveloped site conditions. Working with the site as a holes, the flow volume and rates are based on the following data:

STORM WATER RUNOFF DATA

Area = 4.4225 Ac.
Slope (Ave.) = 2%
Distance (Max.) - 600 Ft.
Storm Duration = 6 hrs.

	10 Year Storm	100 Year Storm
UND.	Duration (tc) = 26 min. Intensity (^{in}/hr.) = 2.52 C = 0.40 D = 1.60"	Duration (tc) = 26 min. Intensity(^{in}/hr) = 3.82 C = 0.40 D = 2.4
DEV.	Duration (tc) = 10 min. Intensity(^{in}/hr) = 3.77 C = 0.90 D = 1.6"	Duration (tc) = 10 min. Intensity(^{in}/hr) = 5.85 C = 0.90 D = 2.4"

A. 10 year storm - Undeveloped
Q = CIA
= (0.40)(2.52)(4.4225) = 4.5 cfs

V = CDA
= (0.40)(1.6)(4.4225)($\frac{1}{12}$)(43560) = 10,280 c.f.

B. 10 year storm - Developed
$Q = (0.90)(3.77)(4.4225) = 15$ cfs

$V = (0.90)(1.6)(\frac{1}{12})(4.4225)(43560) = 21{,}120$ c.f.

C. 100 year storm - Undeveloped
$Q = (0.40)(3.82)(4.4225) = 6.8$ cfs

$V = (0.40)(2.4)(\frac{1}{12})(4.4225)(43560) = 15{,}410$ c.f.

D. 100 year storm - Developed
$Q = 90.90)(2.4)(\frac{1}{12})(4.4225)(43560) = 34{,}680$ c.f.

The site is divided into three drainage basins as shown on site drainage plan presented in this report. The flow volumes and rates of these sub-areas are determined by use of the rational method based on the drainage data presented earlier in this report and are as shown in the following table.

	BASIN "A"	BASIN "B"	BASIN "C"
AREA	46370 sq. ft.	129600 sq. ft.	25850 sq. ft.
10-year und.	(1.1 cfs, 2400 c.f.)	(3.0 cfs, 6910 c.f.)	(0.6 cfs, 1380 c.f.)
Fully dev.	(3.6 cfs, 5560 c.f.)	(10.1 cfs, 15,550 c.f.)	(2.0 cfs, 3100 c.f.)
100-year und.	(1.6 cfs, 3,710 c.f.)	(4.5 cfs, 10368 c.f.)	(0.9 cfs, 2070 c.f.)
Fully dev.	(5.6 cfs, 8350 c.f.)	(15.7 cfs, 23,330 c.f.)	(3.1 cfs, 4,650 c.f.)
Outfall Pt.	Storm sewer inlets along Montgomery	Site entrance inlets on Carlisle	Future access Dr. at S.W. corner on Car.
Flow Depth	Sheet Flow	4"±	2"±
Velocity	~1 fps	3.6 fps	3 fps

14. Flow Depth and Velocity

All onsite storm waters are transferred across the site to the west within the parking areas and access roads. An assumed average slope of these areas is 1.5% and using cross-sectional slopes of 2%, the velocities and rates are determined as shown in the previous table.

15. PROPOSED TREATMENT

A. Drainage improvements for this development consist of two combination inlets, two private catch basins with 6 inch diameter outfall pipes to the public storm drain inlets and three asphalt water blocks.

B. The combination inlets shall be located within the curb returns of the site's entrance (see Drainage Exhibit I). The catch basins are located directly above the 60" R.C.P. storm sewer which is parallel and offset 7.5' east of the west property line.

Two private catch basins shall have future ties into the two double combination inlets located adjacent to the North property line along Montgomery Blvd (see Drainage Exhibit I).

The three water blocks are placed at access points along the northeast and east property lines (see Drainage Exhibit I). The two blocks around the Hardee's Restaurant are to be placed under Phase I improvements. The intent is to re-route surface flows away from the existing ponds around Hardee's since those ponds do not have an outfall. A 3" dia. pipe system does exist but was intended to be part of an area wide drainage plan that has been abandoned. The third block is designated for future construction when that portion of the parking lot/access road is developed. The water block may be placed on top of the existing asphalt. Typical cross-section are found in the appendix of this report.

APPENDIX

Index:

Conference Recap
Flood Hazard Boundary Map
Soils Report Recommendations
Offsite Watershed
Intensity/Duration Frequency Curves
PHASE CONSTRUCTION SCHEDULE

Preliminary Design:

Combination Inlets

- Preliminary Design
- Design Calculation
- Standard Detail
- Support Graphs

Grated Inlets in a Sump

- Preliminary Design
- Design Calculations
- Manufacturer's Spec. Sheet
- Support Graphs

Curb and Gutter

Water Blocks

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

HYDROLOGY SECTION PROJ. NO. G17 DATE: 4.14.82

PLANNING DIVISION NO. _____

CONFERENCE RECAP

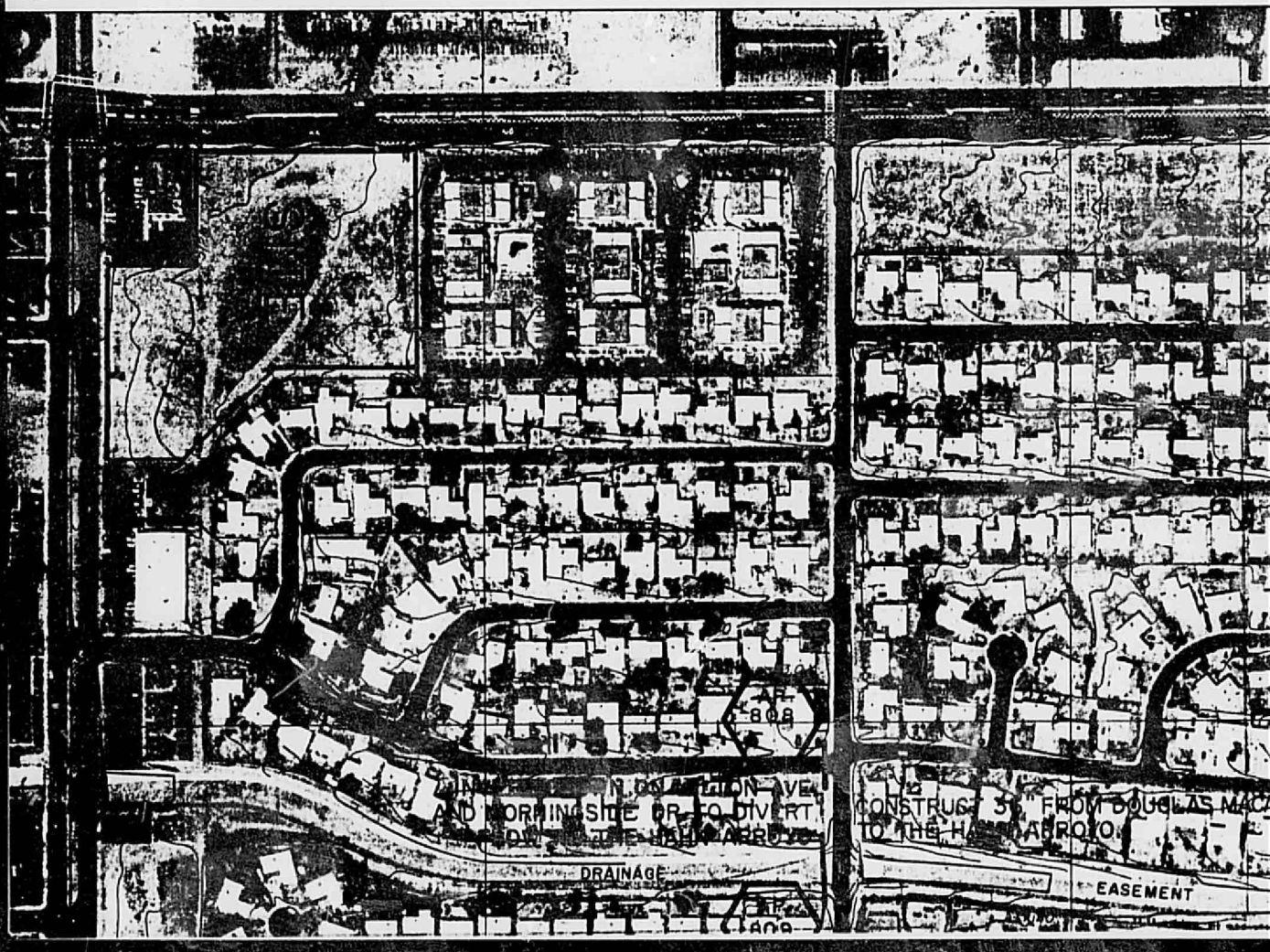
SUBJECT: Carlmont Office Park
(Corner of Montgomery & Carlisle)

ATTENDANCE:	WHO	REPRESENTING
	Brian Burnett	City
	Fred Arfman	Isaacson & Arfman

FINDINGS:
1. Attempt to Correct Problem @ Hardy's Rest.
2. Direct discharge allowed to both 48" and 60" Storm lines
3. Erosion Control measures required for graded, undeveloped areas.

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: Allan D. Burnett	SIGNED: Fred C. Arfman
TITLE: CE/Hydrology	TITLE: V.P.
DATE: 4.14.82	DATE: 4-14-82



THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT.

BACKFILL AND SURFACE DRAINAGE

The foundation soils should be prevented from being wetted after construction. Backfill around the foundations should be free of trash and construction debris, and should be moistened and compacted to a minimum of 90% of maximum density as determined by ASTM D-1557. Only enough water should be added to the backfill material to allow proper compaction. Do not puddle or jet backfill.

The final grade should have a good slope away from the foundation walls on all sides. A minimum slope of 1 foot of fall in the first 10 feet from all foundation walls is recommended. Drainage from roofs, and all other surface water, should not be allowed to pond in the backfill areas. Backfill adjacent to the foundation walls should be protected from erosion and subsequent ponding of water by suitable means.

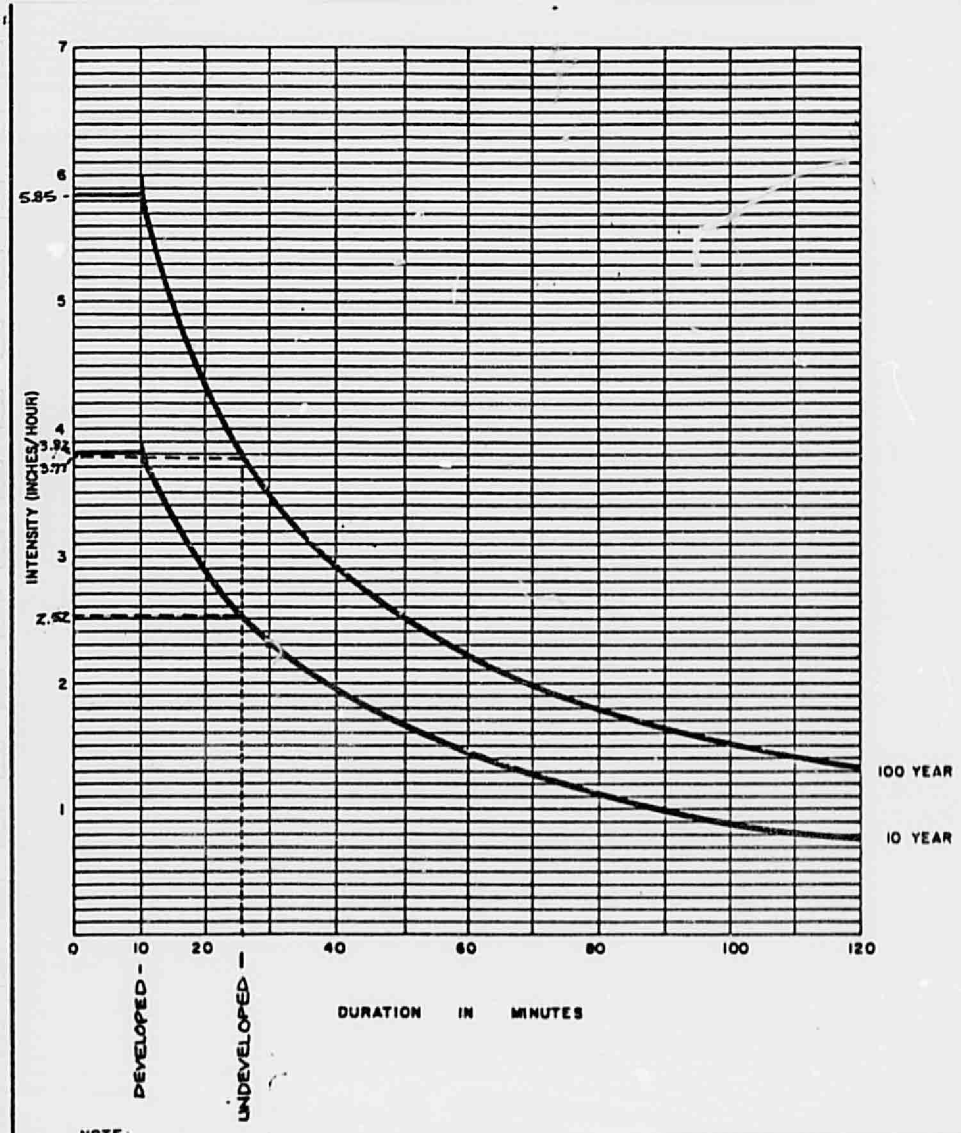
Ponding areas should be eliminated if possible. However, if they are required for the control of surface runoff, they should be located as far from foundation walls as possible, a minimum of 15 feet.

IRRIGATION OF LANDSCAPED AREAS

Do not install sprinkler system lines next to foundation walls. If a sprinkler system is installed, the sprinklers should be placed so that the spray from the heads under full pressure does not fall within 5 feet of foundation walls. Irrigation should be minimized and con-

SOILS REPORT RECOMMENDATIONS

TO BE INSERTED HERE



NOTE:
CURVE IS BASED ON DATA CONTAINED IN NOAA ATLAS 2, DATED 1973.

INTENSITY/ DURATION FREQUENCY CURVE ALBUQUERQUE, N.M.

APPENDIX "A"

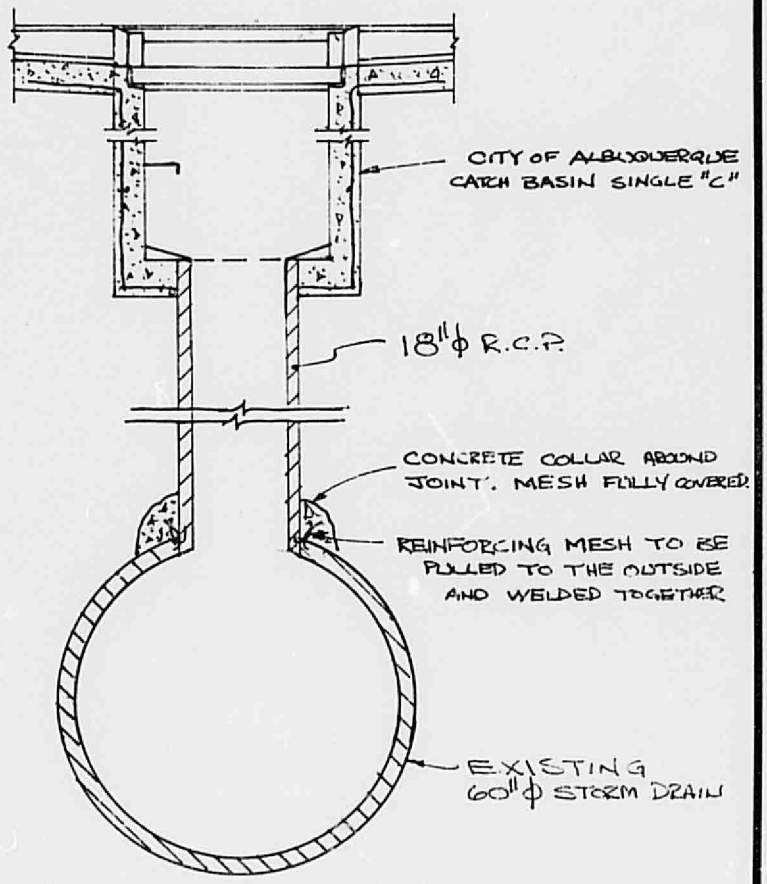
PHASE CONSTRUCTION SCHEDULE

The Carlmont Office Park shall be built-out in various phases. Phase One is defined on this exhibit. All runoff generated by the Phase One Development is handled by the associated improvements. Phase One Drainage Improvements are shown on this exhibit and consist of two combination inlets at the entrance along Carlisle Blvd., one pond outfall piping to a double "C" inlet and access road paving.

The Hardees Restuarant Drainage Scheme is being revised by this plan under Phase One Improvements. A majority of the offsite flows that entered onto the Hardees site are being re-routed. Also an outfall for the north pond is being constructed.

All remaining Tracts shall be left undisturbed and in their natural state up to the time of their individual development. All future phases may be developed in random order without adversely affecting the neighborly phases.

CATCH BASIN CONNECTION TO EXISTING STORM SEWER



INLET CAPACITY: COMBINATION CATCH BASIN

CRITERIA: CITY STD. W/ DROP OUT. TALL
CONTINUOUS GRADE
Q_o (GUTTER FLOW) = 7.8 CFS
STREET CROWN SLOPE = 2%
STREET GRADE = 1.5%
GRATE LENGTH = 3'-3"
" WIDTH = 2'-0"
DEPRESSION = 2"

FLOW CAPTURED BY GRATING:
FROM FIG. 4-3, THE THEORETICAL GRATING CAPACITY = 5.6 CFS. THE REDUCTION FACTOR FOR THESE CONDITIONS = 0.66

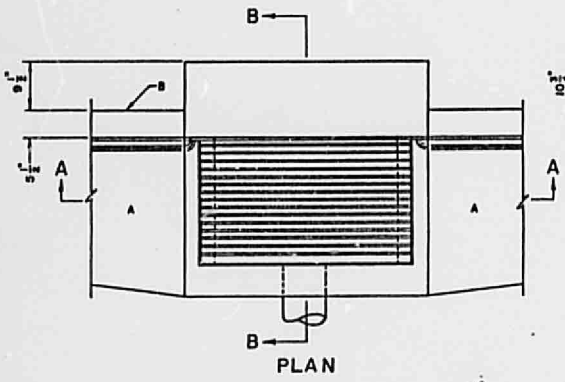
∴ 5.6 CFS x 0.66 = 3.9 CFS

FROM FIG. 3-7, INLET INTERCEPTION RATIO Q/Q_o

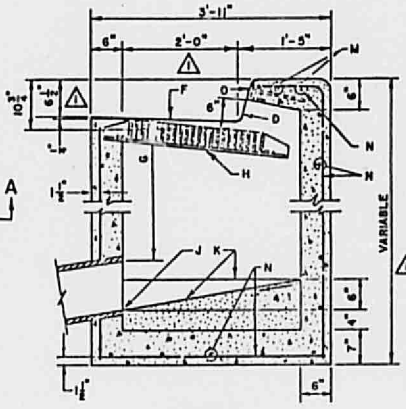
7.8 CFS x 0.40 = 3.1 CFS

CAPACITY PER BASIN = 7.0 CFS

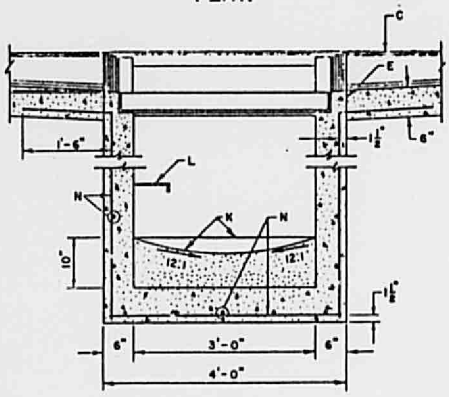
CONCLUSION: PARTIAL FLOW (~ 10%) MAY BYPASS THE BASINS, BUT THEY WOULD ONLY ENTER ONTO CARLISLE BLVD. AT A HIGH POINT AND EVENTUALLY BE CONTAINED BY OTHER STORM WATER COLLECTION FACILITIES THAT ARE DESIGNED TO HANDLE SUCH FLOWS.



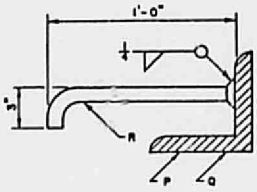
PLAN



SECTION B-B



SECTION A-A



ANCHOR DETAIL

GENERAL NOTES:

I. OUTLET PIPE SIZE PER DESIGN REQUIREMENT.

CONSTRUCTION NOTES:

A. FOR GUTTER TRANSITION, SEE DWG. K-7 CATCH BASIN LOCATION.
B. BACK OF CURB.
C. TOP OF CURB.
D. FLOWLINE.
E. CONSTRUCTION JOINT.
F. NORMAL GUTTER LINE.
G. 1'-10" MIN. UNESS OTHERWISE DIRECTED.
H. SEE DWG. K-8 FOR FRAME AND GRATING DETAILS.
J. INVERT PER DESIGN.
K. CONC. FILL, SEE NOTE E, DWG. K-1.
L. USE STANDARD MH STEPS, SEE DWG. S-11. FIRST STEP SHALL BE 18" FROM TOP OF GRATE AND SHALL PROTRUDE 7" SPACING AT 12" O.C. LAST STEP 18" MAX. FROM BOTTOM.
M EXTEND NO. 4 REBARS 18" INTO CURB ON EACH SIDE OF CATCH BASIN.
N. NO. 4 BARS AT 6" O.C EACH WAY.
O. SEE ANCHOR DETAIL, THIS DWG.
P. ∠ 3½" x 3½" x ⅜" x 4'-0" FOR SINGLE GRATE C CATCH BASIN.
Q ∠ 3½" x 3½" x ⅜" x 7'-6" FOR DOUBLE GRATE C CATCH BASIN.
R. NO. 4 - 1'-3" ANCHOR AT 1'-9" O.C.

NOTE:
INLET SHALL BE CONSTRUCTED USING A 18" R.C.P. IN A VERTICAL ALIGNMENT. (NO FRONT DISCHARGE)

REVISIONS	CITY OF ALBUQUERQUE
1-26-84	DRAINAGE
	CATCH BASIN SINGLE "C"
	DWG. K-4-1 NOV. 1979

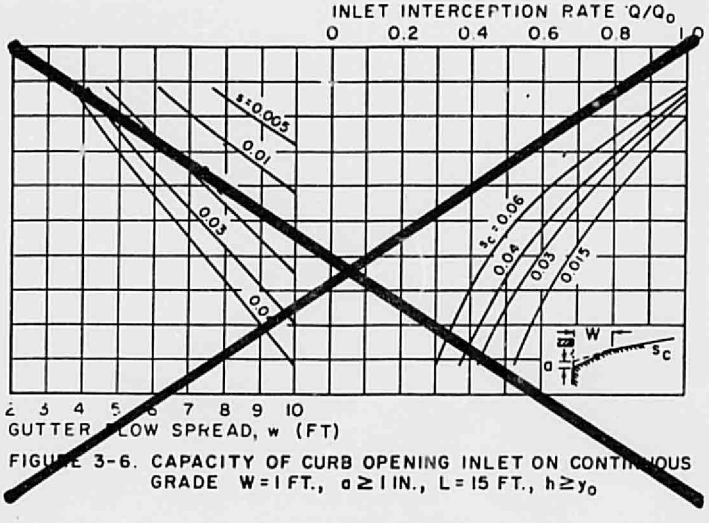


FIGURE 3-6. CAPACITY OF CURB OPENING INLET ON CONTINUOUS GRADE W=1 FT., a≥1 IN., L=15 FT., h≥y_o

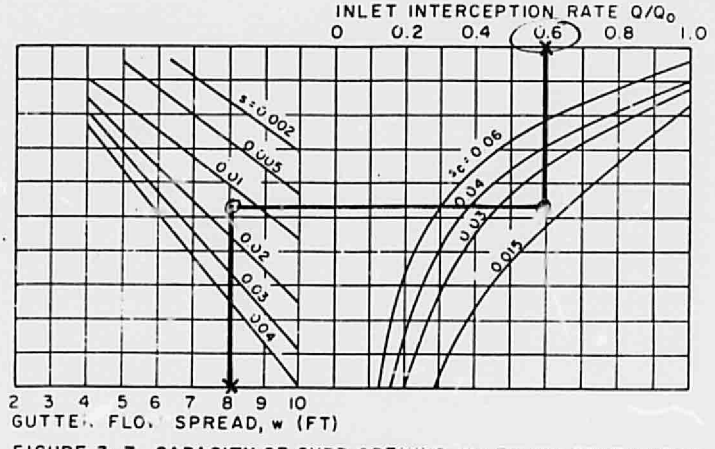


FIGURE 3-7. CAPACITY OF CURB OPENING INLET ON CONTINUOUS GRADE W=2 FT., a≥2 IN., L=5 FT., h≥y_o

$Q/Q_o = 0.6$ FOR L=5 FT.

REDUCE BY 33% FOR L=3+ FT.

FINAL Q/Q_o = 67% × 0.6 = 0.4 – USE

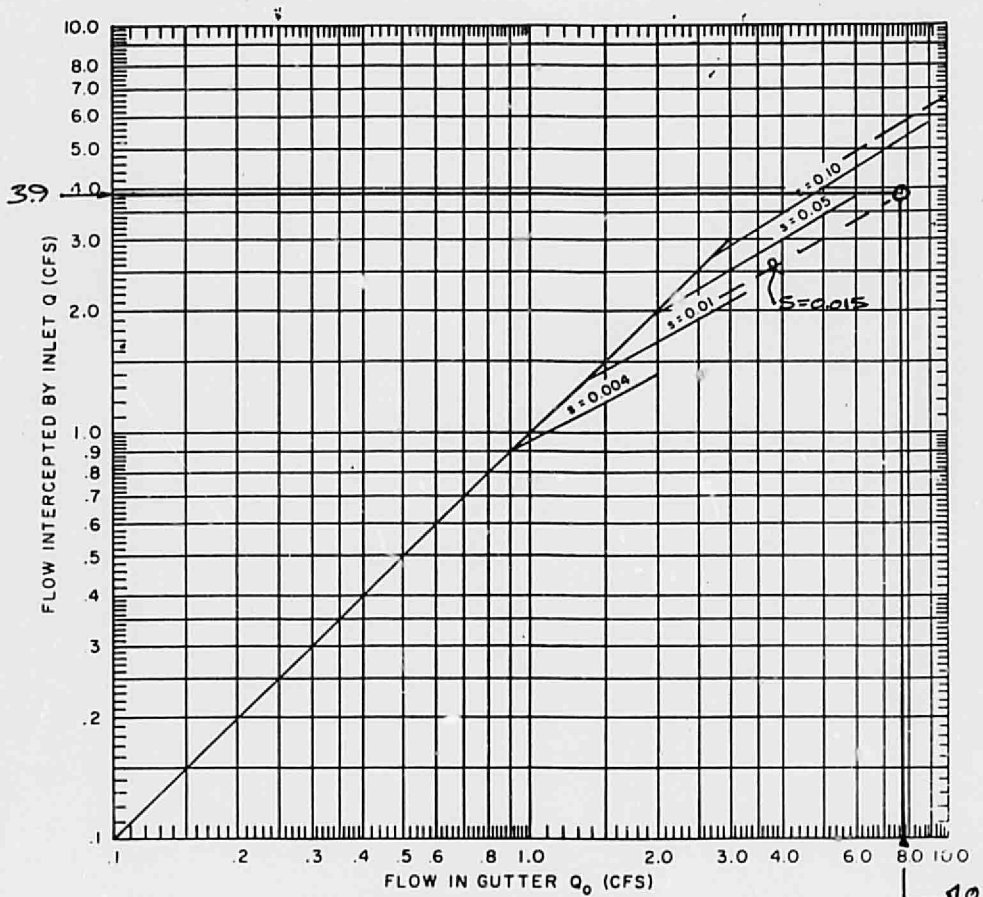
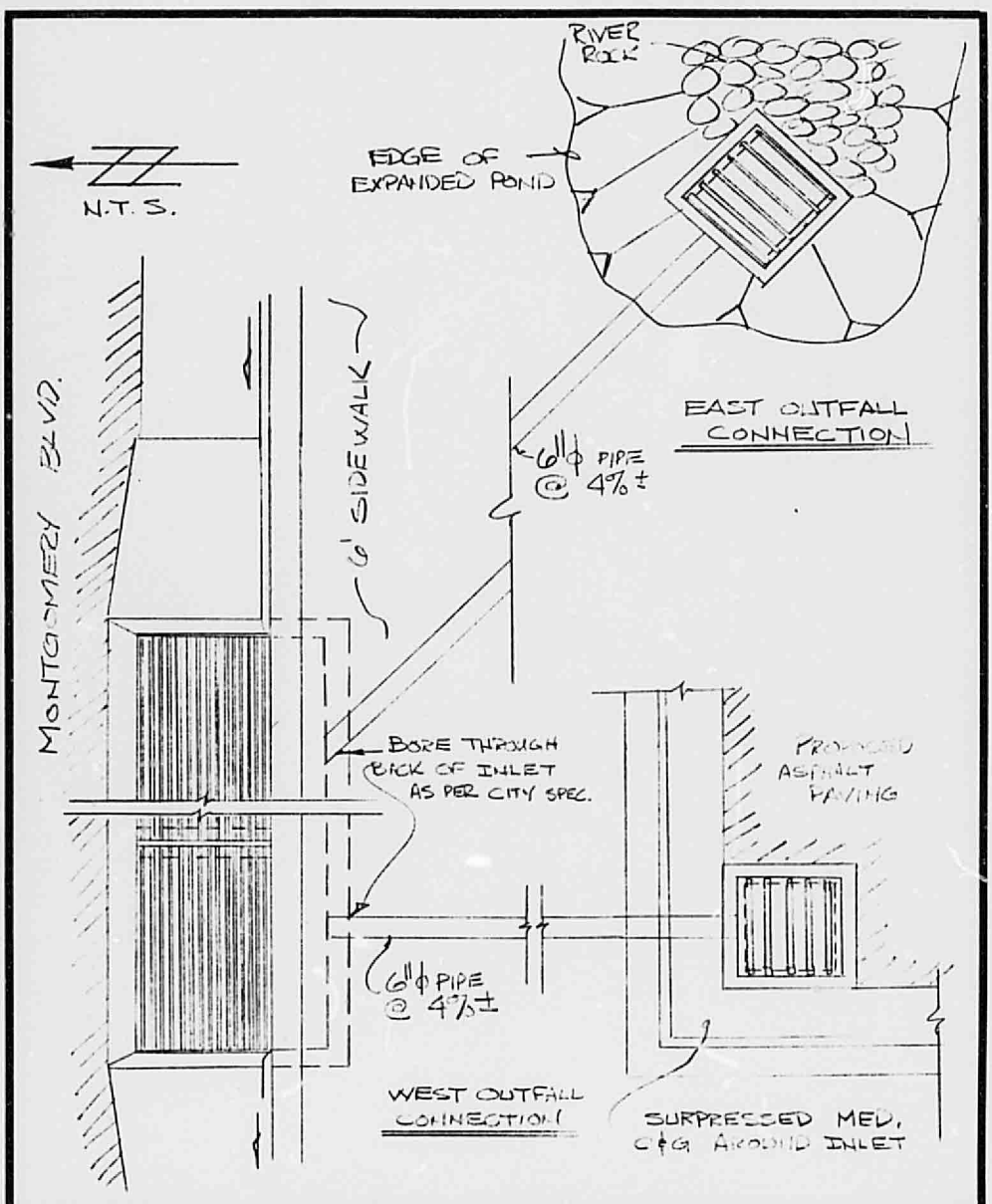


FIGURE 4-2. CAPACITY CHART, LONGITUDINAL BAR COMBINATION INLET
L = 3 FT., w = 2 FT., a = 2 IN., s_c = 0.01

Above dashed line, carryover occurs across surface of grate.



Isaacson & Arfman, P.A.
Consulting Engineering Associates

SUBJECT CARLMONT VILLAGE I & JOB NO. 164
BY ECA DATE 5/[illegible] SHEET NO. ___ OF ___

INLET CAPACITY: GUTTER INLET

CRITERIA: NEENAH R-3470-A OR ENRG. APPROVED EQUIVALENT
SUMP CONDITION
$Q_o = 0.6$ CFS
GRATE SIZE = 22 x 15 w/ 60% OPENINGS
PONDING DEPTH OVER GRATE = 8"

CAPACITY: FROM FIG. 4-1 "CAPACITY OF GRATED INLET IN SUMP" A VALUE OF

3.8 CFS/FT^2 IS DERIVED.

COMPUTING THE OPEN AREA AS FOLLOWS—

$[(22 \times 15) \div 144] \times 0.60 = 1.375$ FT^2

IT CAN BE CALCULATED THAT THE INLETS HAVE A CAPACITY OF:

1.375 FT$^2 \times 5.8$ CFS/FT$^2 = \sim 5$ CFS

DISCHARGE PIPE SIZING:

USING THE FORMULA FOR DETERMINING THE REQUIRED CROSS-SECTIONAL AREA -VS- HEAD AVAILABLE:

AREA REQ'D $= 0.2 \times Q \times \frac{1}{\sqrt{h}}$; WHERE $h = 8"$

$= 0.2 \times 0.5 \times \frac{1}{1.69}$

$= 0.122$ S.F $= 17.59$ □"

$17.6 = \pi r^2$

$r = 2.4$

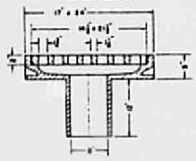
$d = \sim 4.8$ USE 5" ϕ

R-3465 Inlet with 8" Bottom Pipe Opening

R-3466-A Inlet with Long Spigot for 8" Pipe

Heavy Duty

R-3466-A



Total Weight 325 Pounds

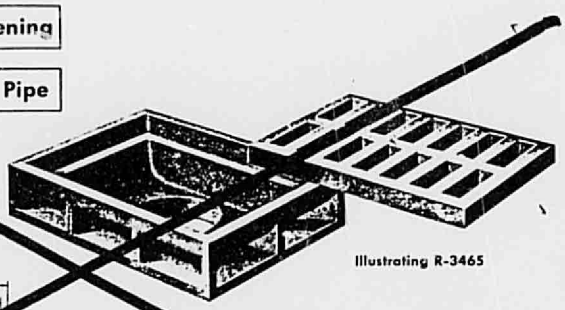
Can be used as a scupper when bottom spigot is extended as shown.

Size of bottom opening can be altered as specified.

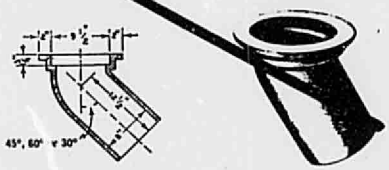
R-3465



Total Weight 280 Pounds



Illustrating R-3465



45°, 60° & 30°

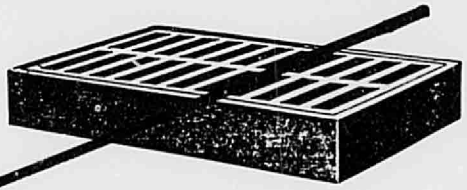
R-3467 45° Bend
R-3468 60° Bend
R-3468-A 30° Bend

Total Weight 85 Pounds

Hub of elbow is designed to fit spigot on casting R-3465 or R-3466-A

R-3469 Gutter Inlet Frame and Grate

Heavy Duty Total Weight 465 Pounds

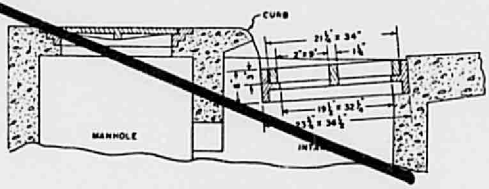


R-3469-E2 Inlet Frame and Depressed Bar Grate

Heavy Duty Total Weight 490 Pounds

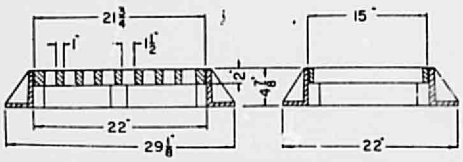
Depressed bar grate furnished on R-3469-E2 similar to R-3279-BD grate style shown on catalog page 121. Not recommended for bicycle traffic. For safety standards see pages 86 to 91. The drawing to the right shows method of installing as a combination intake and manhole. The cleanout manhole listed under Neenah R-6040 on catalog page 260 is not furnished as a part of the combination and should be ordered separately.

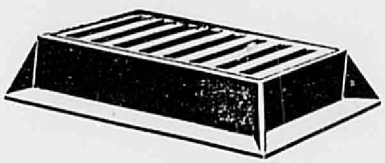
When increased drainage is required, two or more inlets are placed end to end in combinations over large basins or trench drains.



R-3470-A Gutter Inlet Frame and Grate

Heavy Duty Total Weight 180 Pounds





NEENAH FOUNDRY COMPANY

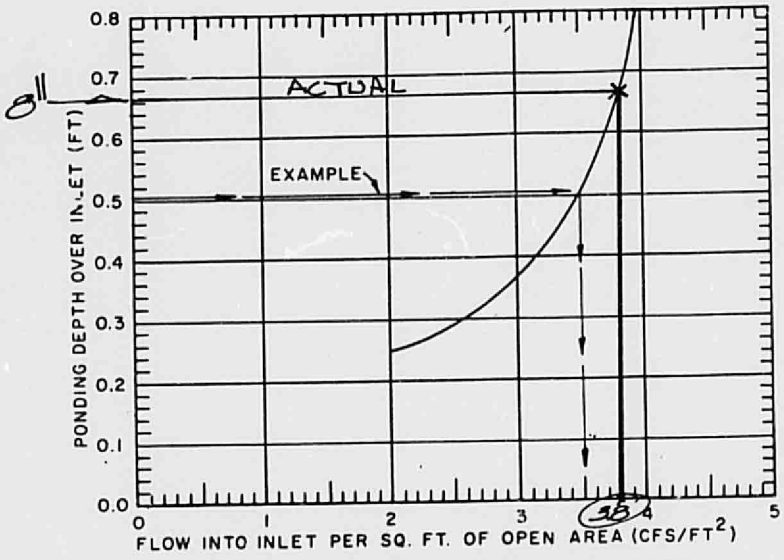
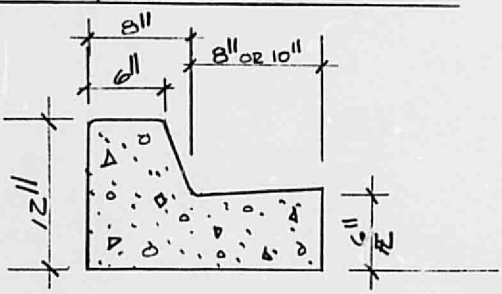
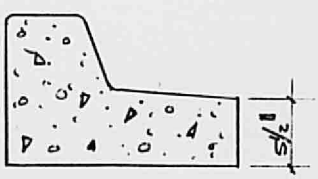


FIGURE 4-1. CAPACITY OF GRATED INLET IN SUMP

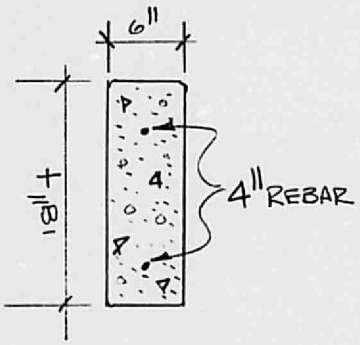
CURB & GUTTER SECTIONS



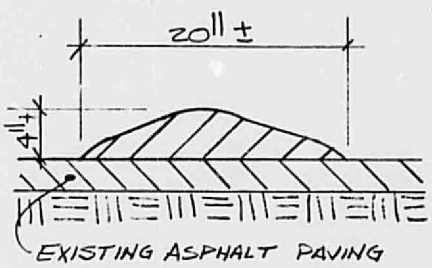
"STANDARD"



"SURPRESSED"



"CUT-OFF WALL"

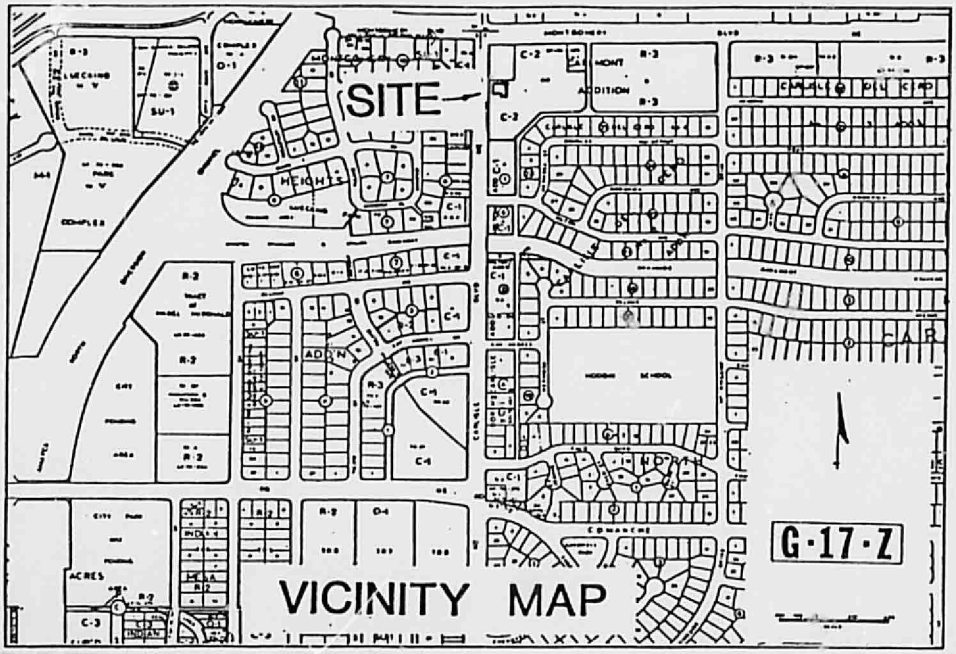


"WATER BLOCK"

CITY OF ALBUQUERQUE

Jerry Re-assign

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



Legal Description: Lot 3 of the Carlmont Office Park Addition as found on the amended plat in the office of the County Clerk of Bernalillo County, New Mexico in Book C20, Page 49 as filed on September 22, 1982.

G17-D19

FRED C. ARFMAN NEW MEXICO 7822 REGISTERED PROFESSIONAL ENGINEER

8-8-84

NOTICE TO CONTRACTOR

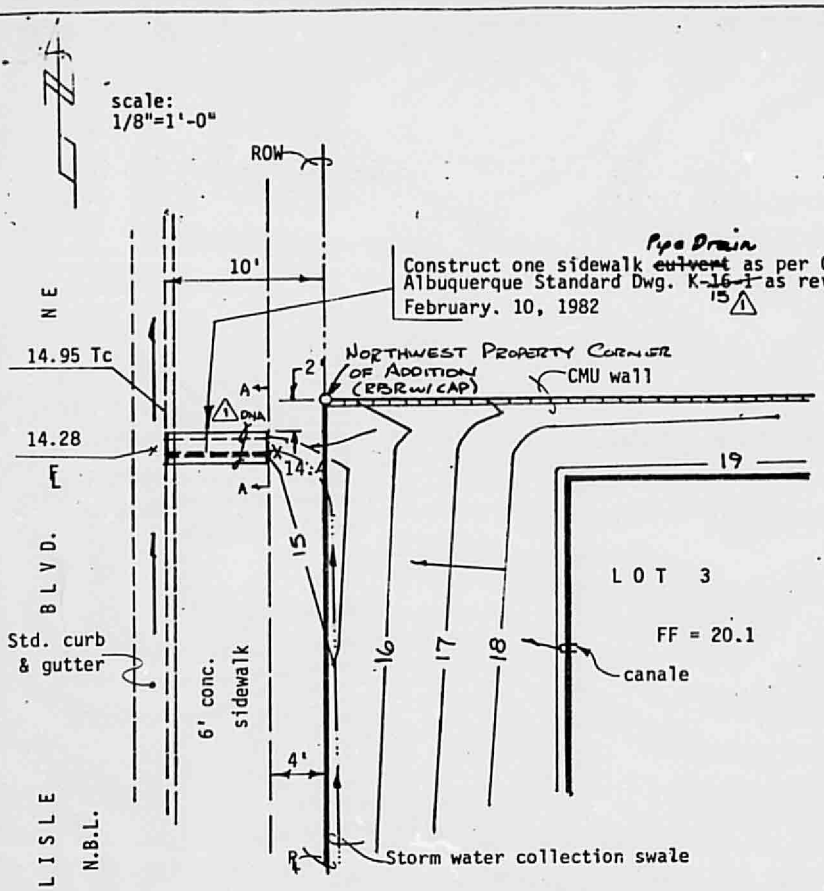
1. An excavation/construction permit will be required before beginning any work within City right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.
2. All work detailed on these plans to be performed, except as otherwise stated or provided hereon, shall be constructed in accordance with Public Works Contract 84-1.
3. Two working days prior to any excavation, contractor must contact Line Locating Service, 765-1234, for location of existing utilities.
4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum amount of delay.
5. Backfill compaction shall be according to collector street use.

Interchan P-14543 OKay TCH D-11

APPROVALS	NAME	DATE
A.C.E./DESIGN	[illegible]	8/30/Mar 84
INSPECTOR	[illegible]	8/31/84

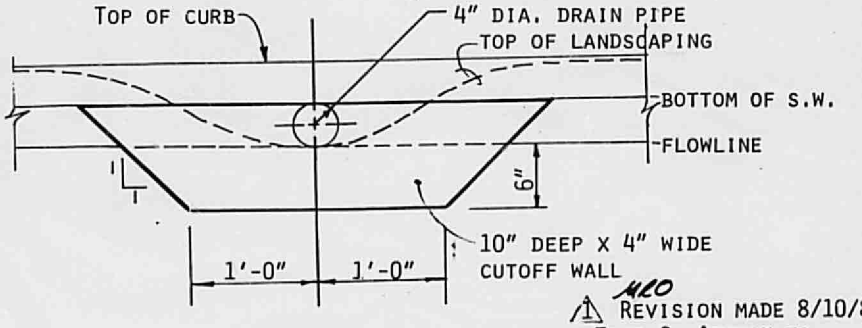
TITLE: ⚠ PIPE DRAIN
~~Sidewalk Culvert~~
Lot 3, Carmont Office Park
4316 Carlisle Blvd, NE

PERMIT NO. | MAP



NOTES: 1. Contractor shall remove and replace curb and gutter if necessary

2. Whole length curb stones shall be removed if any section of it is called for removal.



1 SECTION A-A
SCALE: 1"=1'-0"

1 REVISION MADE 8/10/84 HLO BY FRED C. ARFMAN TO REPLACE S.W. CULVERT WITH D-11 CITY STD. PIPE DRAIN

P-14543 Inter Can

CITY OF ALBUQUERQUE

APPROVALS	ENGINEER	DATE
A.C.E. DESIGN	HLO 8/13/84	19 Jan 84
WATER RESOURCES	Jerry L	8/31/84
CITY ENGINEER	W.T. McNamara	8/31/84

TITLE: Pipe Drain ~~Sidewalk Culvert~~
Lot 3, Carlmont Office Park
4316 Carlisle Blvd. NE

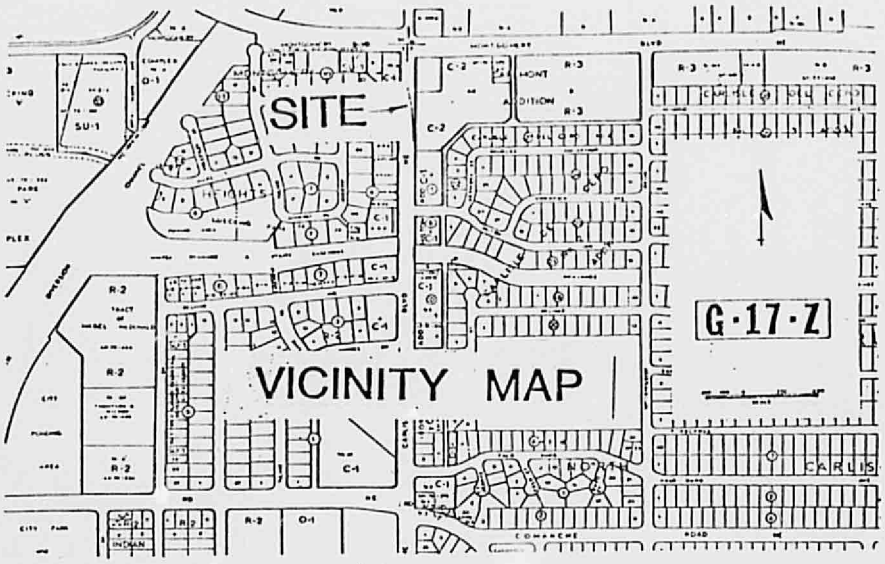
PROJECT NO. 2 of 2

MAP NO. G-17

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

G17-1A



Submittal of this agreement to construct in public right-of-way is for the related drainage improvements for the Carlmont Office Park.

The improvements consist of two storm drains and taps (18") into the cities' 60" storm sewer located within a 15 foot storm sewer easement along the east R.O.W. line of Carlisle Blvd. and across from the Hendrix Ave., N.E.

4304 CARLISLE

FRED C. ARFMAN NEW MEXICO 7322 REGISTERED PROFESSIONAL ENGINEER

8-2-82

NOTICE TO CONTRACTOR

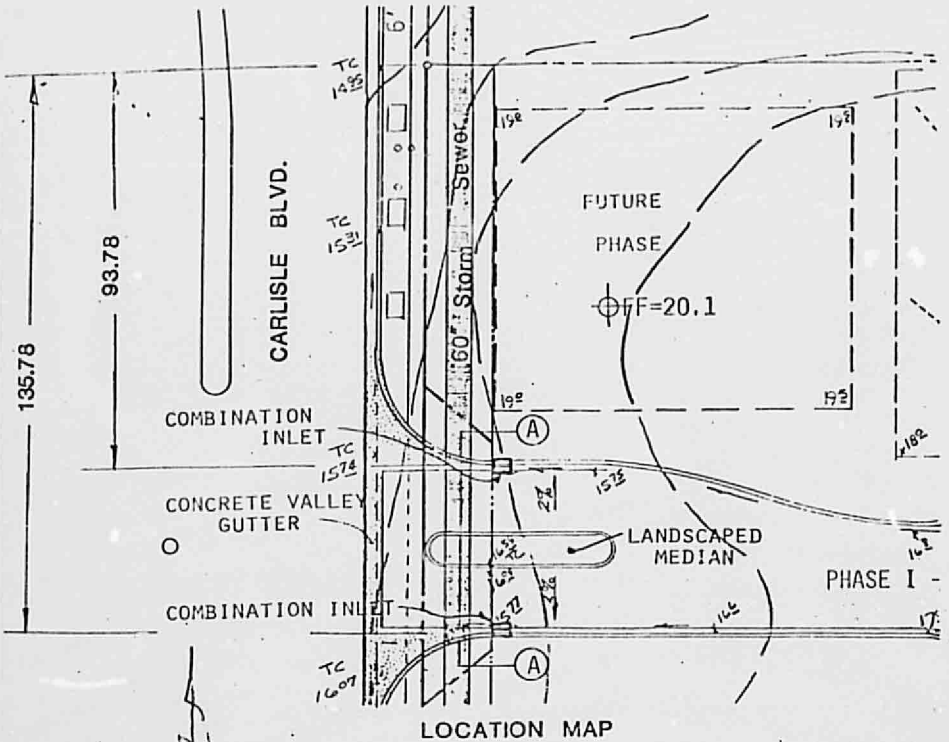
1. An excavation/construction permit will be required before beginning any work within City right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.
2. All work detailed on these plans to be performed, except as otherwise stated or provided hereon, shall be constructed in accordance with "Contract Documents for City-Wide Utilities and Cash Paving No. 30 "
3. Two working days prior to any excavation, contractor must contact Line Locating Service, 765-1234, for location of existing utilities.
4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum amount of delay.
5. Backfill compaction shall be according to DNA street use.

APPROVALS	NAME	DATE	TITLE:
A.C.E./DESIGN	[illegible]	Aug 82	Carlmont Office Park Combination Inlets and Connections.
INSPECTOR	[illegible]	4-10-83	PERMIT NO. MAP

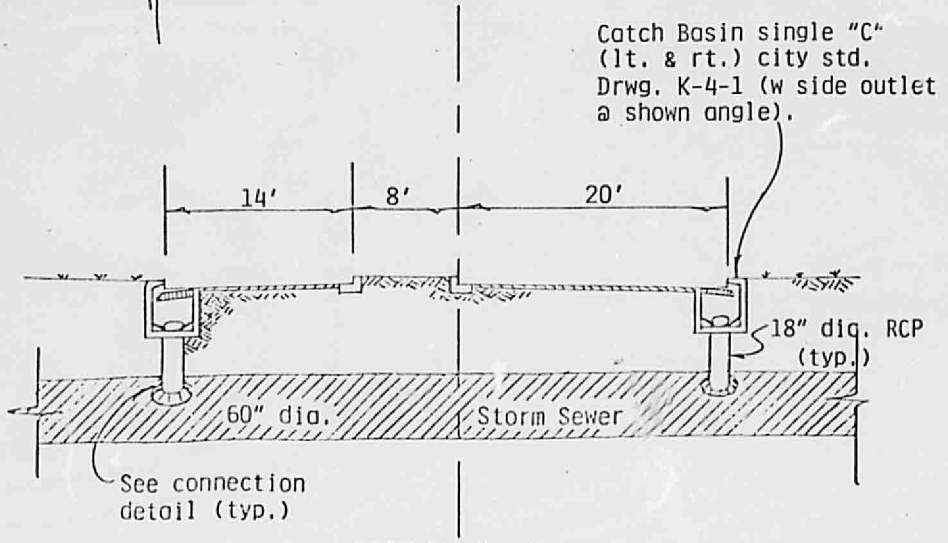
THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT.

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



LOCATION MAP



SECTION A - A

APPROVALS	NAME	DATE	TITLE: CARLMONT OFFICE PARK Combination Inlets and Conn.
A.C.E./DESIGN	G. Kolbach	May 83	
INSPECTOR			
A.C.E./FIELD	W. Kearney	4-10-83	PERMIT NO. SHEET 2 OF 3 — MAP NO G-17

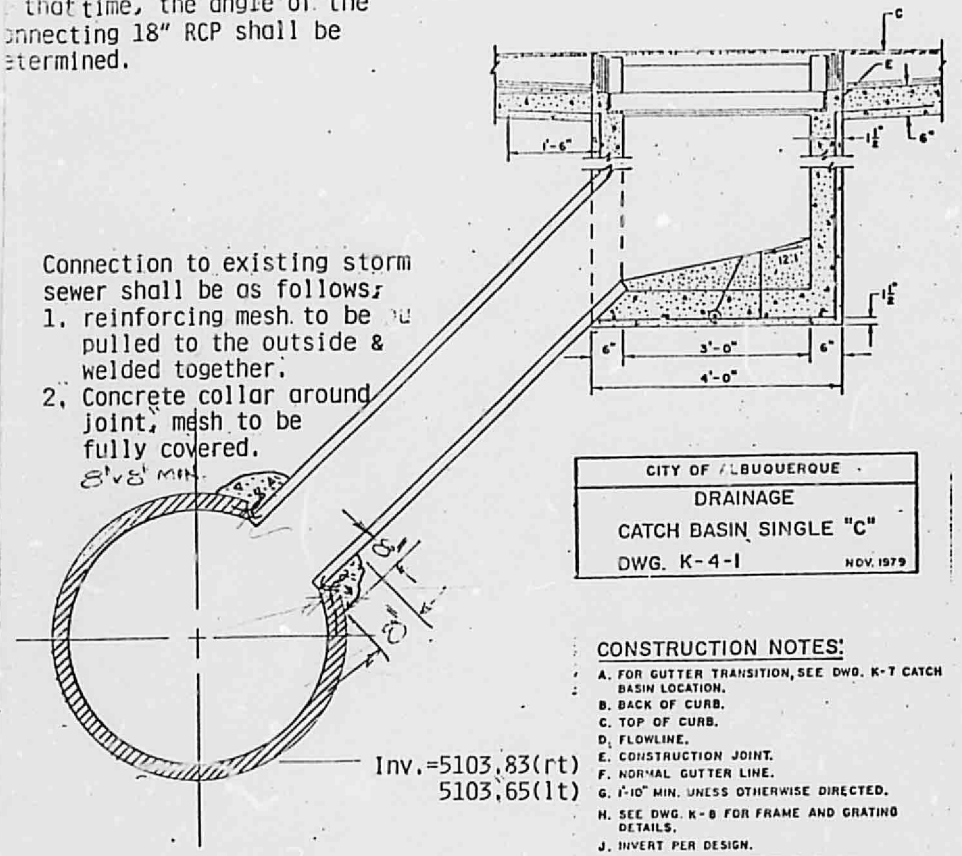
AGE FACILITIES WITHIN CITY RIGHT-OF-WAY

RAL NOTE TO CONTRACTOR

e Contractor shall verify the cation of the storm drain at e two (2) connection points by posing that portion of the pipe. that time, the angle of the nnecting 18" RCP shall be etermined.

Connection to existing storm sewer shall be as follows:
1. reinforcing mesh to be pulled to the outside & welded together.
2. Concrete collar around joint, mesh to be fully covered.

8'x8' MIN.



CITY OF ALBUQUERQUE
DRAINAGE
CATCH BASIN SINGLE "C"
DWG. K-4-1 NOV. 1979

CONSTRUCTION NOTES:

A. FOR GUTTER TRANSITION, SEE DWG. K-7 CATCH BASIN LOCATION.
B. BACK OF CURB.
C. TOP OF CURB.
D. FLOWLINE.
E. CONSTRUCTION JOINT.
F. NORMAL GUTTER LINE.
G. 1'-10" MIN. UNESS OTHERWISE DIRECTED.
H. SEE DWG. K-8 FOR FRAME AND GRATING DETAILS.
J. INVERT PER DESIGN.
K. CONC. FILL, SEE NOTE E, DWG. K-1.
⚠ L. USE STANDARD MH STEPS, SEE DWG. S-11. FIRST STEP SHALL BE 18" FROM TOP OF GRATE AND SHALL PROTRUDE 7" SPACING AT 12" O.C. LAST STEP 18" MAX. FROM BOTTOM.
M. EXTEND NO. 4 REBARS 18" INTO CURB ON EACH SIDE OF CATCH BASIN.
N. NO. 4 BARS AT 6" O.C. EACH WAY.
O. SEE ANCHOR DETAIL, THIS DWG.
P. ∠ 3½" x 3½" x ¼" x 4'-0" FOR SINGLE GRATE C CATCH BASIN.
Q. ∠ 3½" x 3½" x ¼" x 7'-6" FOR DOUBLE GRATE C CATCH BASIN.
R. NO. 4 - 1'-3" ANCHOR AT 1'-9" O.C.
⚠

APPROVALS	NAME	DATE
C.E./DESIGN	[illegible]	8/29/82
INSPECTOR		
C.E./FIELD	[illegible]	

TITLE: CARLMONT OFFICE PARK
PRV'T STORM DRAIN CONNECTION
TO A PUBLIC FACILITY

PERMIT NO.
SHEET 3 OF 3

MAP NO. G-17



G17 - DIA

CARLMONT OFFICE PARK

1 PLAN

263-8828 883-2800

Address 4300 CARLISLE N.E Engr/~~Arch~~ FRED ORTMAN

Plans Approved 8-3-82 Cond. _____

Comments: 6-17-DIA

FRED WILL PROVIDE S.O.19 on the ~~Roofing~~ SPECIAL plans to be submitted LATER

Inspection Requested 1-11-83 Contractor _____

Appr. 5/4/83 Disappr. _____ 30 Day Temp. _____

Comments: Reinspection on 617-DIA called in 2-7-83
Reinspection on 2/11/83 disappieved must address the problem of ponding within the patio area Received letter from Engineer Fred Ortman and copy of letter from soils report engineer pertaining to ponding within the patio area

Reinspection and/or comments:

File G17-D1A

Westwind, Inc.
BUILDERS ■ DEVELOPERS

6/27/84

City of Albuquerque
Hydrology Dept.
Attn: Steve Chavez

RE: Office Bldg.
4316 Carlisle N.E.

Dear Mr. Chavez.

By way of this letter Westwind Inc. hereby agrees to complete, within thirty days of the date hereon, the required "Special Order 19" at the north west corner of the property at 4316 Carlisle N.E.:.

Universal Construction Co will be making the installation sometime next week. I will notify you upon completion so that you can inspect the work.

Thank You,
Sincerely,

V.P.
Westwind Inc.

6413 CRANBROOK N.E. • ALBUQUERQUE, NEW MEXICO 87111 • 505-822-0997

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

February 6, 1984

Mr. Fred Arfman
Isaacson & Arfman, PA
128 Monroe NE
Albuquerque, NM 87108

REF: SUPPLEMENTAL DRAINAGE PLAN FOR CARLMONT OFFICE PARK, PHASE II
(G17-D1A) RECEIVED JANUARY 19, 1984

Dear Mr. Arfman:

The above referenced submittal dated January 19, 1984, is approved.

Please attach a copy of the plan along with the approved "Construction Within Public R/W" document and an erosion control plan, for the period of construction, to the construction set prior to sign-off.

If I can be of further assistance, please contact me at 766-7644.

Sincerely yours,

Billy G. Goolsby

Billy G. Goolsby, PE
City/County Flood Plain Admin.

BJG:mrk

Isaacson &
Arfman, P.A.

Consulting Engineering
Associates

February 18, 1983

Mr. Fred Aguirre
Municipal Development Dept.-Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, N.M. 87103

RE: Carlmont Office Park
4300 Carlisle Blvd. N.E.

Dear Fred:

Our firm has been asked to assist in the related matters of obtaining a permanent Certificate of Occupancy for the above referenced address. Primarily, a revised private patio plan and improvements or an Engineer's certification was requested by your office with respect to that singular area to the Southeast of the new building. The following action was taken:

1. Information gathering from your department, Project Architect(Fanning/Bard) and the Project Contractor(Baker Const.)
2. A site inspection by our firm on 2-16-83.
3. Consultation with the firm which prepared the site's soil report.
4. F.M. Fox site inspection and subsequent letter of recommendations.
5. Summation letter to City Hydrology.

The firm of F.M. Fox has stated that do to existing site drainage(fully-developed) and soil conditions, that temporary ponding, within the limits of the patio, would be allowed until such time that the alley grades are lowered (future alley paving) and a 4" dia. outfall pipe be placed at the low point of the interior landscaped area. Storm waters would then exit via this outfall and flow onto the alley and then toward Carlisle Blvd.'s storm drain system. This handling of flows is consistent with the Master Drainage Study for the overall project.

Attached is the February 17, 1983 letter from F.M. Fox & Associates, Inc. containing their recommendations and certification. Hopefully, this latest endeavor will free

128 Monroe, NE • Albuquerque, NM 87108 • (505) 268-8828

your office to issue an approval for the permanent Certificate of Occupancy.

In a semi-related matter, it should be fully understood that any improvements to the Hardee's Restaurant drainage situation along Montgomery Blvd. was not intended as a part of Phase I development. The situation is this: the limits of Phase I did not include the building site along Montgomery. Therefore, final parking lot & landscaped grades have not been established for that area. The necessary improvements are to be incorporated in the site planning and be designed by a Special Order No. 19 at such time of lot development. Futhermore, it appears that this was understood by all concerned parties since the approved Phase I site development plans only showed those improvements along Carlisle Blvd. Hopefully, this correspondence might aid in clearing up any questions that might arise concerning phase development.

Please call if futher clarification or assistance is required.

Very truly yours,
ISAACSON & ARFMAN, P.A.

Fred C. Arfman, P.E.

Attachment

FCA/naf

Consulting Engineers and Geologists

F. M. FOX & ASSOCIATES, INC.
3412 BRYN MAWR DRIVE, N.E.
ALBUQUERQUE, NEW MEXICO 87107
(505) 884-0900

February 17, 1983

Isaacson & Arfman, P.A.
128 Monroe Street, NE
Albuquerque, New Mexico 87108

Attention: Mr. Fred Arfman

Subject: Temporary Site Drainage, Phase I, Carlmont Office Park

Reference: Subsoil Investigation, Office Complex, Carlisle & Montgomery Boulevard, NE, Albuquerque, New Mexico
Job No. 0109570

Gentlemen:

As per your request we have evaluated the site drainage along the southeast side of the existing Phase I structure. The site drainage presently does not conform to the recommendations of our referenced report. Based upon a visual inspection of the site, water will pond in the landscaped area parallel to the southeast side of the structure. The ponding area is on the order of ten feet away from the structure.

It is our understanding that when the remainder of the site is developed the alley to the southeast of the structure will be brought to grade and paved. At that time an outlet pipe will be installed to drain the ponding area behind the structure.

Based upon an evaluation of the existing site drainage and site soil conditions, it is our opinion that the existing site drainage is adequate on a temporary basis (one-two years). As soon as feasible, the outlet pipe from the ponding area to the alley should be installed.

Should any questions arise concerning this letter, or if we may be of further service, please call.

Sincerely,
F. M. Fox & Associates, Inc.



Martin D. Vinyard, P.E.
Project Geotechnical Engineer

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 8, 1982

Mr. Fred Arfman
Isaacson-Arfman, PA
2727 San Pedro Dr. NE
Albuquerque, N.M. 87110

RE: CARLMONT ADDITION DRAINAGE REPORT

Dear Fred:

The referenced report is approved in concept. Per our conversation of June 7, 1982, items a, b, d, g and h should be addressed before final approval is granted:

a. Please indicate the roof drains and existing curbing adjacent to Hardy's Restaurant on the Grading-Drainage Plan. If possible, roof runoff should not discharge across the sidewalk. Also, the finished floor elevations should be indicated to a five digit mean sea level designation.

b. Please indicate the location of the emergency spillways along Montgomery Blvd. Supporting calculations should also be provided.

c. Alley grades will need to be established when the Phase 1 building is expanded to allow parking in the rear. The grades should be established from Hilton Ave. to the existing 6' fence. If this additional parking is contemplated for the near future, we suggest that the alley grades be submitted at the earliest possible date in order to insure that City review and approval coincides with the construction schedule.

d. A statement should be made regarding what is to be done with the existing facilities for the Hardy's Restaurant once the "clean-up" work is completed.

e. If possible, the landscaped area should be designed to prevent nuisance flows from entering the street.

f. Some means of erosion control is required when grading takes place and is not followed by development of the parcel.

g. The grading plan for the Phase 1 development should be detailed per the checklist items listed in the Drainage Report and Drainage Plan Checklist which is contained in Chapter 22 of the "Development Process Manual - City of Albuquerque, N.M.".

h. Approved copies of Special Order No. 19 are required for 1) the inlets along Carlisle Blvd., 2) the outfall for basin "A" and 3) the outfall for Hardee's Restaurant.

i. Drainage Plans, detailed per the Drainage Report and Drainage Plan Checklist, will be required for the future structures in order to check compliance with the master plan.

If you have any questions concerning these matters, please call.

Very truly yours,

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

229

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates

RECEIVED
MAY 21 1982
CITY ENGINEER

LETTER OF TRANSMITTAL

To CITY HYDROLOGY
P.O. BOX 1293
ALBUQ., N. MEX 87103

Date MAY 21, 1982
Job No. _____

Attn: BRIAN BURNETT

Reference CARLMONT OFFICE PARK

Gentlemen:

We transmit to you 2 copy(ies) of the following

- ☐ _____ Plats
- ☐ _____ Plans
- ☐ Specifications
- ☒ DRAINAGE Report
- ☐ Shop Drawings
- ☐ Submittals
- ☐ Material Specifications
- ☐ Copy of Letter
- ☐ _____
- ☐ _____

This information is transmitted:

- ☐ As per your request
- ☒ For your review & approval
- ☐ For your information
- ☐ For your attention
- ☐ For your signature
- ☐ For your files
- ☐ For your use
- ☐ Please review & return
- ☐ For return to your files
- ☐ Please advise
- ☐ _____
- ☐ _____

RECEIVED
MAY 24 1982
ENGINEERING

C-17-D1a

Remarks: _____

By: Frank C. Arfman Copies To FILE

268.8828

2727 San Pedro N.E. • Suite 104A • Albuquerque, New Mexico 87110 • Telephone 883-2800

RECEIVED
MAY 21 1982
CITY ENGINEER

DRAINAGE REPORT

for the

CARLMONT OFFICE PARK

MAY 1982

RECEIVED
MAY 24 1982
ENGINEERING

Isaacson & Arfman, P.A.
Consulting Engineering Associates
• Albuquerque, New Mexico •

INTRODUCTION

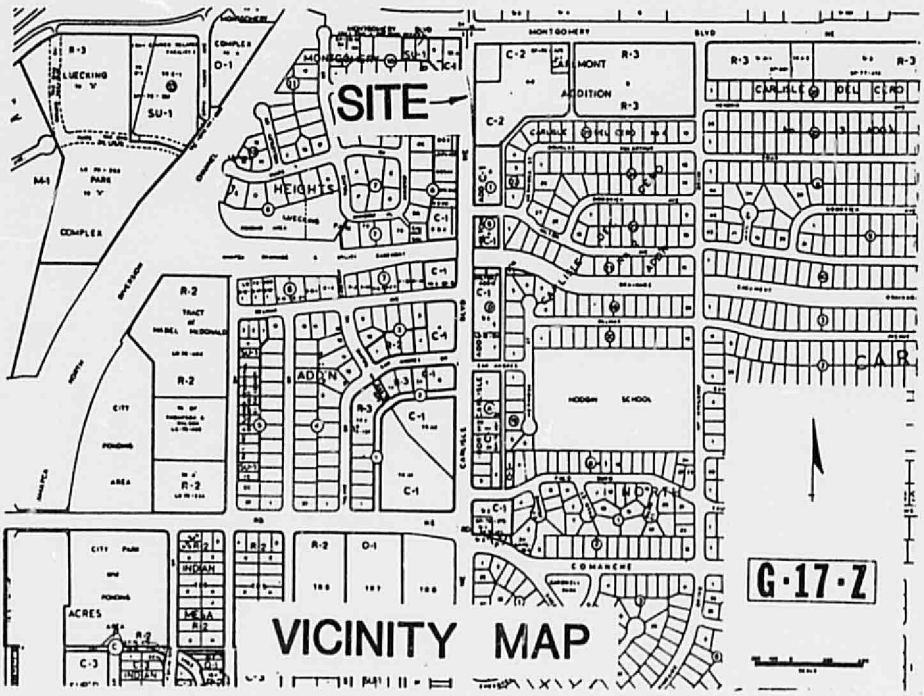
Our firm of Isaacson & Arfman, P.A. has been contracted by the Carlisle and Montgomery Limited Partnership of Albuquerque, New Mexico to assist them in the development of an acceptable drainage plan for their proposed office complex. This investigation and report shall be presented along the guidelines laid out in the City of Albuquerque's "Hydrology Checklist and Procedures", August 1981.

On April 14, 1982, a pre-design conference was held with Mr. Brian Burnett of the City of Albuquerque's Hydrology Section. At that time, the unique characteristice of the site and development were discussed and the findings were documented In the form of a converence recap (found in the appendix of this report). The three findings were:

1. Attempt to correct problem at Hardee's Resuaurant.

2. Direct discharge allowed to both 48" and 60" storm lines.

3. Erosion control measures required for graded, undeveloped areas.



SECTION I - GENERAL

1. No certification of the contractor work will be given by the design engineer. The City of Albuquerque shall be responsible for all inspection of drainage concepts, criteria and plan compliance.

2. The parcel of land has been zoned C-2 by means of platting: Carlmont Addition, Tract A-2 (SP-78-425). The proposed development is consistant with the existing zoning and no public hearing was required for site plan approval.

3. I, Fred C. Arfman, Registered Professional Engineer in the State of New Mexico, hereby certify that this report and accompanying grading plan was prepared by me or under my supervision.

Fred C. Arfman — MAY 21, 1982 Date

FRED C. ARFMAN NEW MEXICO 7322 REGISTERED PROFESSIONAL ENGINEER

4. Flood Hazard - No protion of this site is subject of flooding from the standard 100 year storm. A portion of the Flood Hazard Boundary Map may be found in the Appendix of this report.

5. Watershed Soils - The delineation of site and contributing off-site watersheds on a SCS Bernalillo County Soil Survey Map does not apply in this development since the site is completely surrounded by developed areas.

6. Soils - A soils investigation report was performed on May 19,1982 by F. A. Fox & Associates. The recommendation of which may be found in the appendix of this report.

SECTION II - OFFSITE CONDITIONS

7. Watershed Area - There is an offsite contributing area bordering the site on the east. But, from site surveys and analysis, it appears that the flows from these apartments were intended to flow northward and empty onto Montgomery Blvd. This statement is substantiated from our site survey which shows a slight inverted crown in the adjacent pavement section. Also, in this access drive are speed bumps with mid-point openings for the routing of storm waters and nuisance flows.

8. Does not apply to this project.

9. Does not apply to this project.

10. Other Conditions - The proposed office complex is a pure in-fill development, in that it is completely surrounded by fully developed sites or arterial streets. The existing Hardee's Restaurant is included within the 4.4± acres of the site, due to its inadequate site drainage features. The site development for Hardee's was done in accordance with the approved overall drainage study for Tract A of the Carlmont Addition, June 1978. This drainage plan called for area ponds interconnected by piping. The plan is workable only if the entire site is build-out, but since only Hardee's was constructed, it has a non-workable drainage plan. Some of the existing features will be incorporated into the revised plan and will be functionable under Phase I construction.

Adjacent to the northern and inclusive in the western boundaries is a 48" and 60" storm sewer, respectively. There are two double-combination inlets bordering the site on Montgomery Blvd. The westerly most storm inlets, as shown on Drainage Exhibit I, shall be utilized as storm water discharge points. The 60" storm sewer along the west boundary is located on site and within a 15' storm sewer easement; the westerly edge of which is common with the site's west boundary. There are no storm sewer inlets along that portion of sewer bordering on the west.

Finally, A.M.A.F.C.A.'S North Diversion Channel is situated approximately 1000 feet west of the site. The previously mentioned storm sewer releases its' flows into one of the channel's tributaries located approximately 600 feet to the south of the site.

11. Proposed Treatment (Of Offsite Flows)

The apartment complex to the east has a drainage basin of approximately 20,000 sq. ft. from which the storm waters flow pass the eastern edge of the proposed office park. From a site analysis, it appears that a portion of these flows would not be contained within the limits of the access drive. This statement is based on the fact that the flows in question must be turned 90° to the north. Since the depth of flow would be increased due to the decrease in velocity and the incoming flow velocity itself; it would be safe to assume that some storm water would jump the access drive.

Phase one construction does not call for any perimeter improvement along that easterly portion. Those flows not

contained by the access drive will be allowed to enter onto the site and sheet flow across the undeveloped portion to the phase one paving.

Future phase site improvements will call for the placement of a perimeter curb and water blocks to help channelize those flows. It if felt that these improvements would only aid in making the offsite storm water function as originally intended. Until such time that the entire office park is built out, a low profile hard packed combination deflection vehicular control berm should be placed along the east boundary.

12. No drainage right-of-ways or easements are required for the acceptance of the minor offsite sheet flows from the east.

ON-SITE CONDITIONS

13. In its undeveloped condition, the site has a gentle 2% slope. The terrain is a crusted dirt with sparce prairie grasses. A "c" value of 0.40 shall be assigned to the undeveloped site conditions. Working with the site as a holes, the flow volume and rates are based on the following data:

STORM WATER RUNOFF DATA

Area = 4.4225 Ac.
Slope (Ave.) = 2%
Distance (Max.) - 600 Ft.
Storm Duration = 6 hrs.

	10 Year Storm	100 Year Storm
UND.	Duration (tc) = 26 min. Intensity (^{in}/hr.) = 2.52 C = 0.40 D = 1.60"	Duration (tc) = 26 min. Intensity(^{in}/hr) = 3.82 C = 0.40 D = 2.4
DEV.	Duration (tc) = 10 min. Intensity(^{in}/hr) = 3.77 C = 0.90 D = 1.6"	Duration (tc) = 10 min. Intensity(^{in}/hr) = 5.85 C = 0.90 D = 2.4"

A. 10 year storm - Undeveloped

$Q = CIA$

$= (0.40)(2.52)(4.4225) = 4.5$ cfs

$V = CDA$

$= (0.40)(1.6)(4.4225)(\frac{1}{12})(43560) = 10{,}280$ c.f.

B. 10 year storm - Developed
$Q = (0.90)(3.77)(4.4225) = 15$ cfs

$V = (0.90)(1.6)(\frac{1}{12})(4.4225)(43560) = 21{,}120$ c.f.

C. 100 year storm - Undeveloped
$Q = (0.40)(3.82)(4.4225) = 6.8$ cfs

$V = (0.40)(2.4)(\frac{1}{12})(4.4225)(43560) = 15{,}410$ c.f.

D. 100 year storm - Developed
$Q = 90.90)(2.4)(\frac{1}{12})(4.4225)(43560) = 34{,}680$ c.f.

The site is divided into three drainage basins as shown on site drainage plan presented in this report. The flow volumes and rates of these sub-areas are determined by use of the rational method based on the drainage data presented earlier in this report and are as shown in the following table.

	BASIN "A"	BASIN "B"	BASIN "C"
AREA	46370 sq. ft.	129600 sq. ft.	25850 sq. ft.
10-year und.	(1.1 cfs, 2400 c.f.)	(3.0 cfs, 6910 c.f.)	(0.6 cfs, 1380 c.f.)
Fully dev.	(3.6 cfs, 5560 c.f.)	(10.1 cfs, 15,550 c.f.)	(2.0 cfs, 3100 c.f.)
100-year und.	(1.6 cfs, 3,710 c.f.)	(4.5 cfs, 10368 c.f.)	(0.9 cfs, 2070 c.f.)
Fully dev.	(5.6 cfs, 8350 c.f.)	(15.7 cfs, 23,330 c.f.)	(3.1 cfs, 4,650 c.f.)
Outfall Pt.	Storm sewer inlets along Montgomery	Site entrance inlets on Carlisle	Future access Dr. at S.W. corner on Car.
Flow Depth	Sheet Flow	4"±	2"±
Velocity	~1 fps	3.6 fps	3 fps

14. Flow Depth and Velocity

All onsite storm waters are transferred across the site to the west within the parking areas and access roads. An assumed average slope of these areas is 1.5% and using cross-sectional slopes of 2%, the velocities and rates are determined as shown in the previous table.

15. PROPOSED TREATMENT

A. Drainage improvements for this development consist of two combination inlets, two private catch basins with 6 inch diameter outfall pipes to the public storm drain inlets and three asphalt water blocks.

B. The combination inlets shall be located within the curb returns of the site's entrance (see Drainage Exhibit I). The catch basins are located directly above the 60" R.C.P. storm sewer which is parallel and offset 7.5' east of the west property line.

Two private catch basins shall have future ties into the two double combination inlets located adjacent to the North property line along Montgomery Blvd (see Drainage Exhibit I).

The three water blocks are placed at access points along the northeast and east property lines (see Drainage Exhibit I). The two blocks around the Hardee's Restaurant are to be placed under Phase I improvements. The intent is to re-route surface flows away from the existing ponds around Hardee's since those ponds do not have an outfall. A 3" dia. pipe system does exist but was intended to be part of an area wide drainage plan that has been abandoned. The third block is designated for future construction when that portion of the parking lot/access road is developed. The water block may be placed on top of the existing asphalt. Typical cross-section are found in the appendix of this report.

APPENDIX

Index:

Conference Recap
Flood Hazard Boundary Map
Soils Report Recommendations
Offsite Watershed
Intensity/Duration Frequency Curves
PHASE CONSTRUCTION SCHEDULE

Preliminary Design:

Combination Inlets

- Preliminary Design
- Design Calculation
- Standard Detail
- Support Graphs

Grated Inlets in a Sump

- Preliminary Design
- Design Calculations
- Manufacturer's Spec. Sheet
- Support Graphs

Curb and Gutter

Water Blocks

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

HYDROLOGY SECTION PROJ. NO. G17 DATE: 4.14.82

PLANNING DIVISION NO. _____

CONFERENCE RECAP

SUBJECT: Carlmont Office Park
(corner of Montgomery & Carlisle)

ATTENDANCE:	WHO	REPRESENTING
	Brian Burnett	City
	Fred Arfman	Isaacson & Arfman

FINDINGS: 1. Attempt to Correct Problem @ Hardy's Rest.

2. Direct discharge allowed to both 48" and 60" storm lines

3. Erosion control measures required for graded, undeveloped areas.

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: Brian D. Burnett	SIGNED: Fred C. Arfman
TITLE: CE/Hydrology	TITLE: V.P.
DATE: 4.14.82	DATE: 4-14-82



THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT.

BACKFILL AND SURFACE DRAINAGE

The foundation soils should be prevented from being wetted after construction. Backfill around the foundations should be free of trash and construction debris, and should be moistened and compacted to a minimum of 90% of maximum density as determined by ASTM D-1557. Only enough water should be added to the backfill material to allow proper compaction. Do not puddle or jet backfill.

The final grade should have a good slope away from the foundation walls on all sides. A minimum slope of 1 foot of fall in the first 10 feet from all foundation walls is recommended. Drainage from roofs, and all other surface water, should not be allowed to pond in the backfill areas. Backfill adjacent to the foundation walls should be protected from erosion and subsequent ponding of water by suitable means.

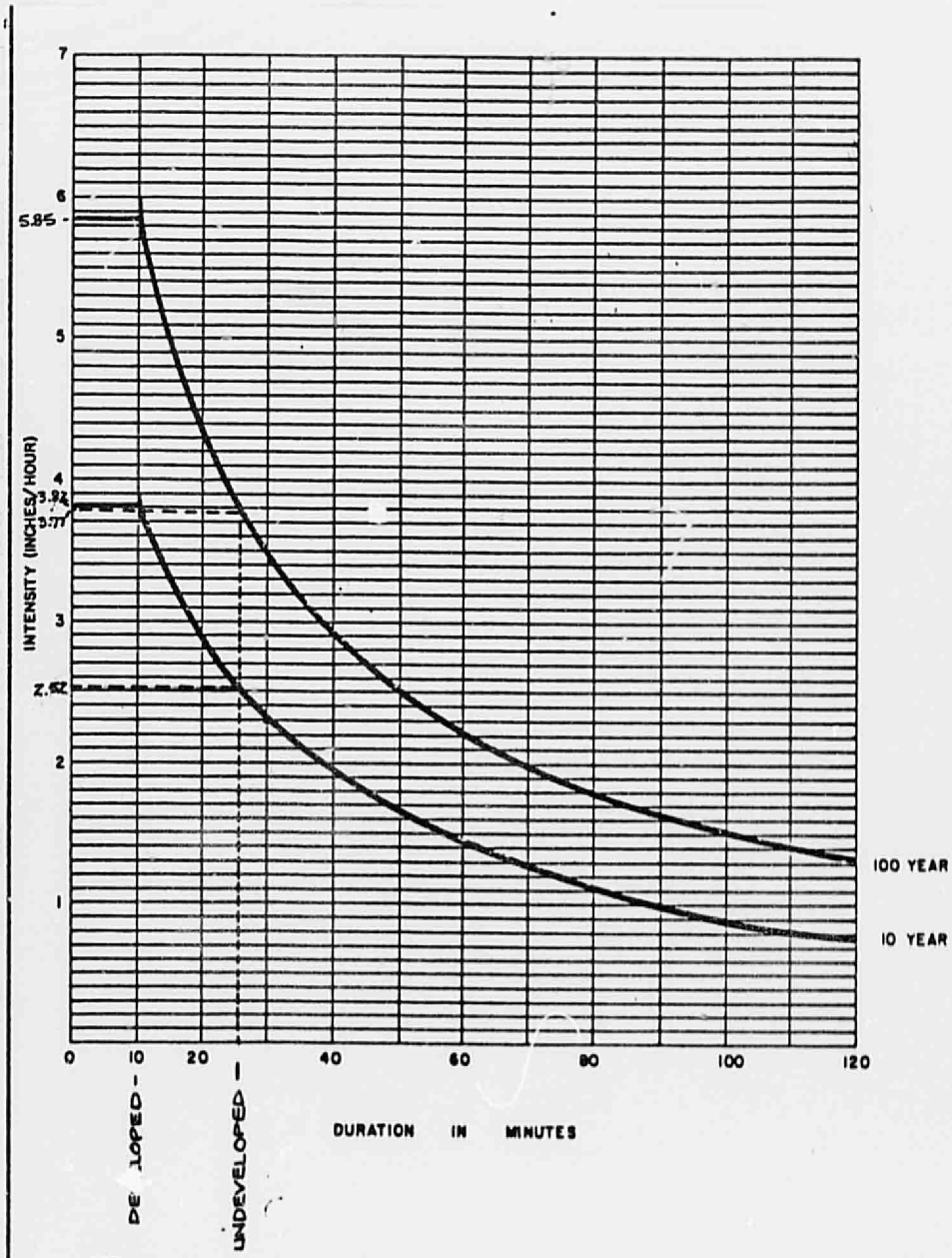
Ponding areas should be eliminated if possible. However, if they are required for the control of surface runoff, they should be located as far from foundation walls as possible, a minimum of 15 feet.

IRRIGATION OF LANDSCAPED AREAS

Do not install sprinkler system lines next to foundation walls. If a sprinkler system is installed, the sprinklers should be placed so that the spray from the heads under full pressure does not fall within 5 feet of foundation walls. Irrigation should be minimized and con-

SOILS REPORT RECOMMENDATIONS

TO BE INSERTED HERE



NOTE:
CURVE IS BASED ON DATA CONTAINED IN NOAA ATLAS 2, DATED 1973.

APPENDIX "A"

INTENSITY/DURATION FREQUENCY CURVE
ALBUQUERQUE, N.M.

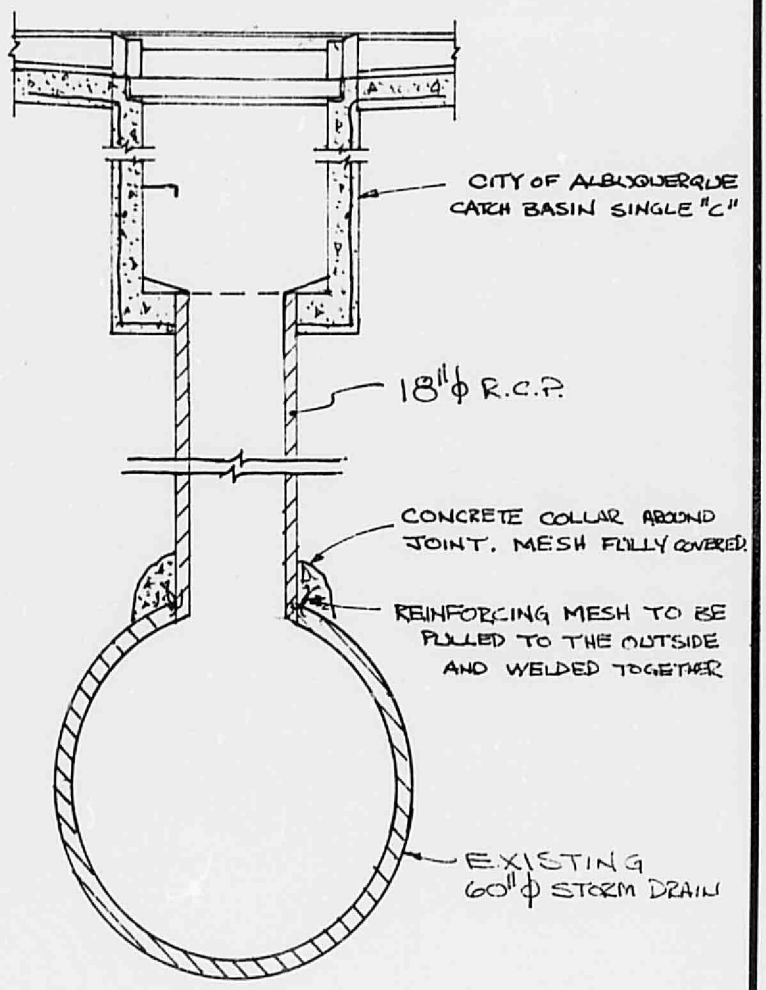
PHASE CONSTRUCTION SCHEDULE

The Carlmont Office Park shall be built-out in various phases. Phase One is defined on this exhibit. All runoff generated by the Phase One Development is handled by the associated improvements. Phase One Drainage Improvements are shown on this exhibit and consist of two combination inlets at the entrance along Carlisle Blvd., one pond outfall piping to a double "C" inlet and access road paving.

The Hardees Restuarant Drainage Scheme is being revised by this plan under Phase One Improvements. A majority of the offsite flows that entered onto the Hardees site are being re-routed. Also an outfall for the north pond is being constructed.

All remaining Tracts shall be left undisturbed and in their natural state up to the time of their individual development. All future phases may be developed in random order without adversely affecting the neighborly phases.

CATCH BASIN CONNECTION TO EXISTING STORM SEWER



INLET CAPACITY: COMBINATION CATCH BASIN

CRITERIA: CITY STD. W/ DROP OUTFALL
CONTINUOUS GRADE
Q_o (GUTTER FLOW) = 7.8 CFS
STREET CROWN SLOPE = 2%
STREET GRADE = 1.5%
GRATE LENGTH = 3'-0"
" WIDTH = 2'-0"
DEPRESSION = 2"

FLOW CAPTURED BY GRATING:
FROM FIG. 4-3, THE THEORETICAL GRATING CAPACITY = 5.6 CFS. THE REDUCTION FACTOR FOR THESE CONDITIONS = 0.66

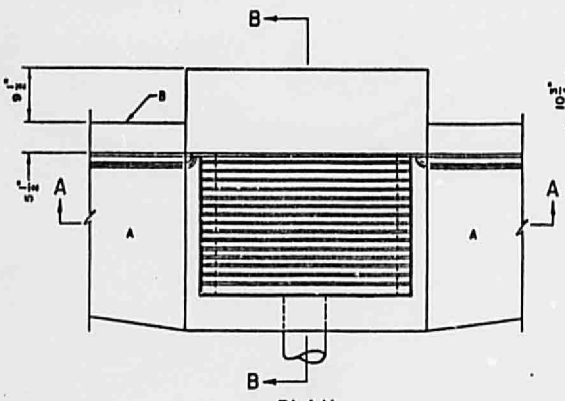
$\therefore$ 5.6 CFS x 0.66 = 3.9 CFS

FROM FIG. 3-7, INLET INTERCEPTION RATIO Q/Q_o

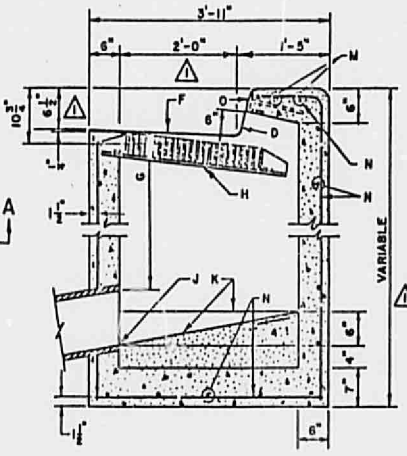
7.8 CFS x 0.40 = 3.1 CFS

CAPACITY PER BASIN = 7.0 CFS

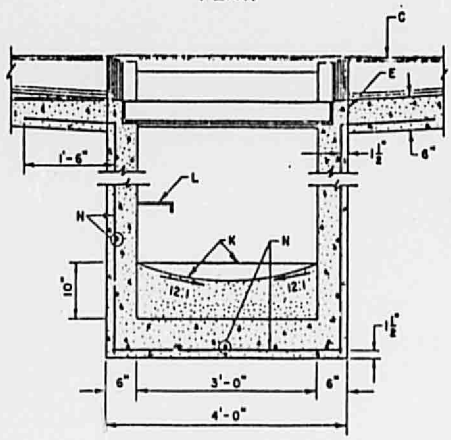
CONCLUSION: PARTIAL FLOW (~ 10%) MAY BYPASS THE BASINS, BUT THEY WOULD ONLY ENTER ONTO CARLISLE BLVD. AT A HIGH POINT AND EVENTUALLY BE CONTAINED BY OTHER STORM WATER COLLECTION FACILITIES THAT ARE DESIGNED TO HANDLE SUCH FLOWS.



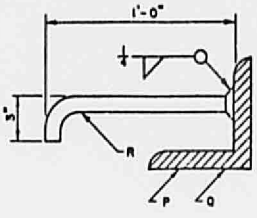
PLAN



SECTION B-B



SECTION A-A



ANCHOR DETAIL

GENERAL NOTES:

1. OUTLET PIPE SIZE PER DESIGN REQUIREMENT.

CONSTRUCTION NOTES:

A. FOR GUTTER TRANSITION, SEE DWG. K-7 CATCH BASIN LOCATION.
B. BACK OF CURB.
C. TOP OF CURB.
D. FLOWLINE.
E. CONSTRUCTION JOINT.
F. NORMAL GUTTER LINE.
G. 1'-10" MIN. UNESS OTHERWISE DIRECTED.
H. SEE DWG. K-8 FOR FRAME AND GRATING DETAILS.
J. INVERT PER DESIGN.
K. CONC. FILL, SEE NOTE E, DWG. K-1.
⚠1 L. USE STANDARD MH STEPS, SEE DWG. S-11. FIRST STEP SHALL BE 18" FROM TOP OF GRATE AND SHALL PROTRUDE 7", SPACING AT 12" O.C. LAST STEP 18" MAX. FROM BOTTOM.
M. EXTEND NO. 4 REBARS 18" INTO CURB ON EACH SIDE OF CATCH BASIN.
N. NO. 4 BARS AT 6" O.C EACH WAY.
O. SEE ANCHOR DETAIL, THIS DWG.
P. ∠ 3½" X 3½" X ¼" X 4'-0" FOR SINGLE GRATE C CATCH BASIN.
Q. ∠ 3½" X 3½" X ¼" X 7'-6" FOR DOUBLE GRATE C CATCH BASIN.
R. NO. 4 - 1'-3" ANCHOR AT 1'-9" O.C.

⚠

NOTE:
INLET SHALL BE CONSTRUCTED USING A 18" R.C.P. IN A VERTICAL ALIGNMENT. (NO FRONT DISCHARGE)

CITY OF ALBUQUERQUE

REVISIONS	DRAINAGE
⚠ 1-28-81	CATCH BASIN SINGLE "C"
	DWG. K-4-1 NOV. 1979

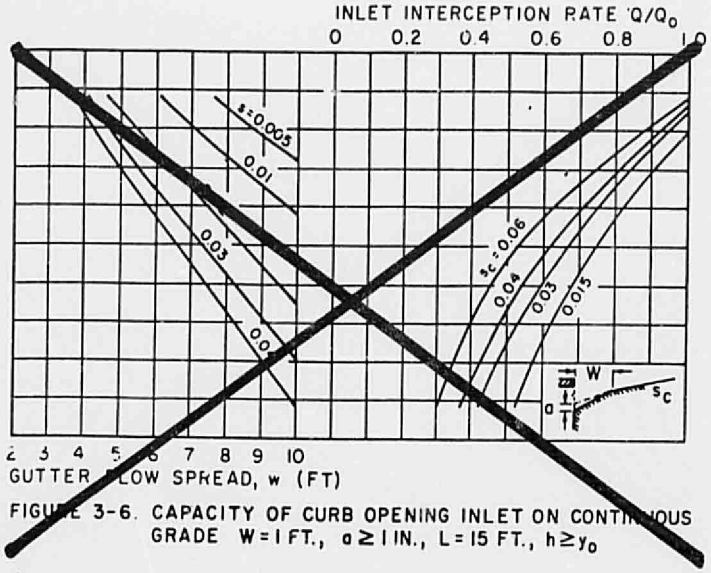


FIGURE 3-6. CAPACITY OF CURB OPENING INLET ON CONTINUOUS GRADE W=1 FT., a≥1 IN., L=15 FT., h≥y_o

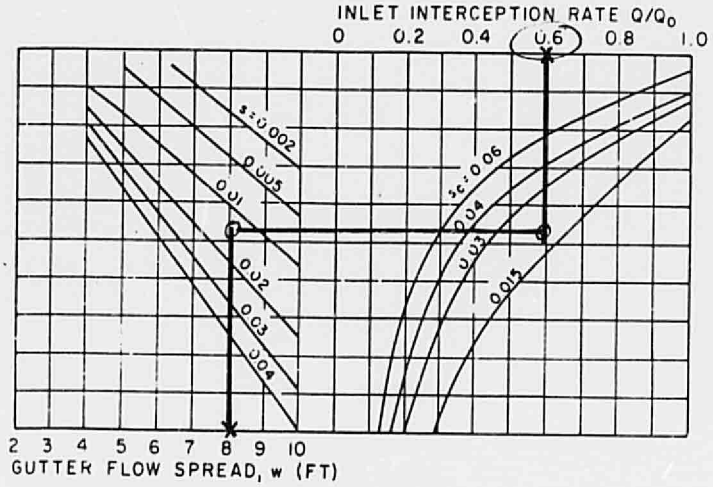


FIGURE 3-7. CAPACITY OF CURB OPENING INLET ON CONTINUOUS GRADE W=2 FT., a≥2 IN., L=5 FT., h≥y_o

$Q/Q_o = 0.6$ FOR L=5 FT.

REDUCE BY 33% FOR L=3+ FT.

FINAL Q/Q_o = 67% × 0.6 = 0.4 - USE

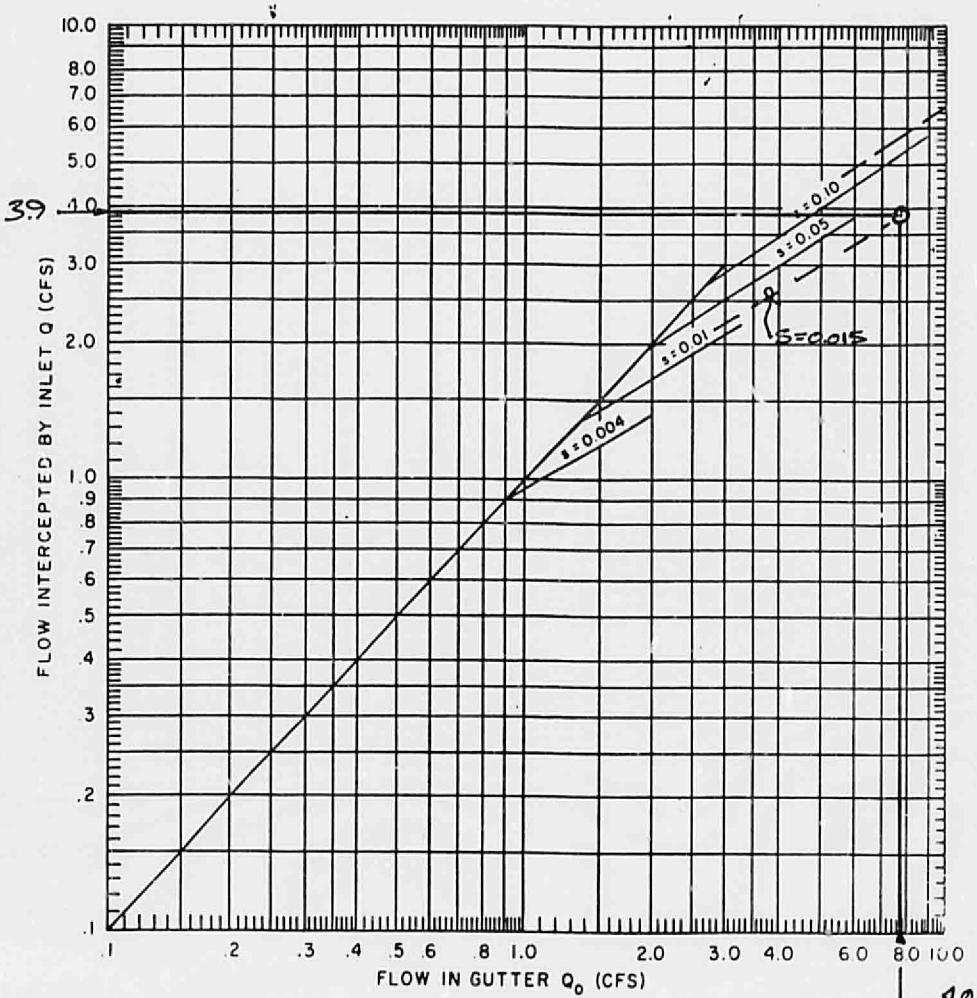
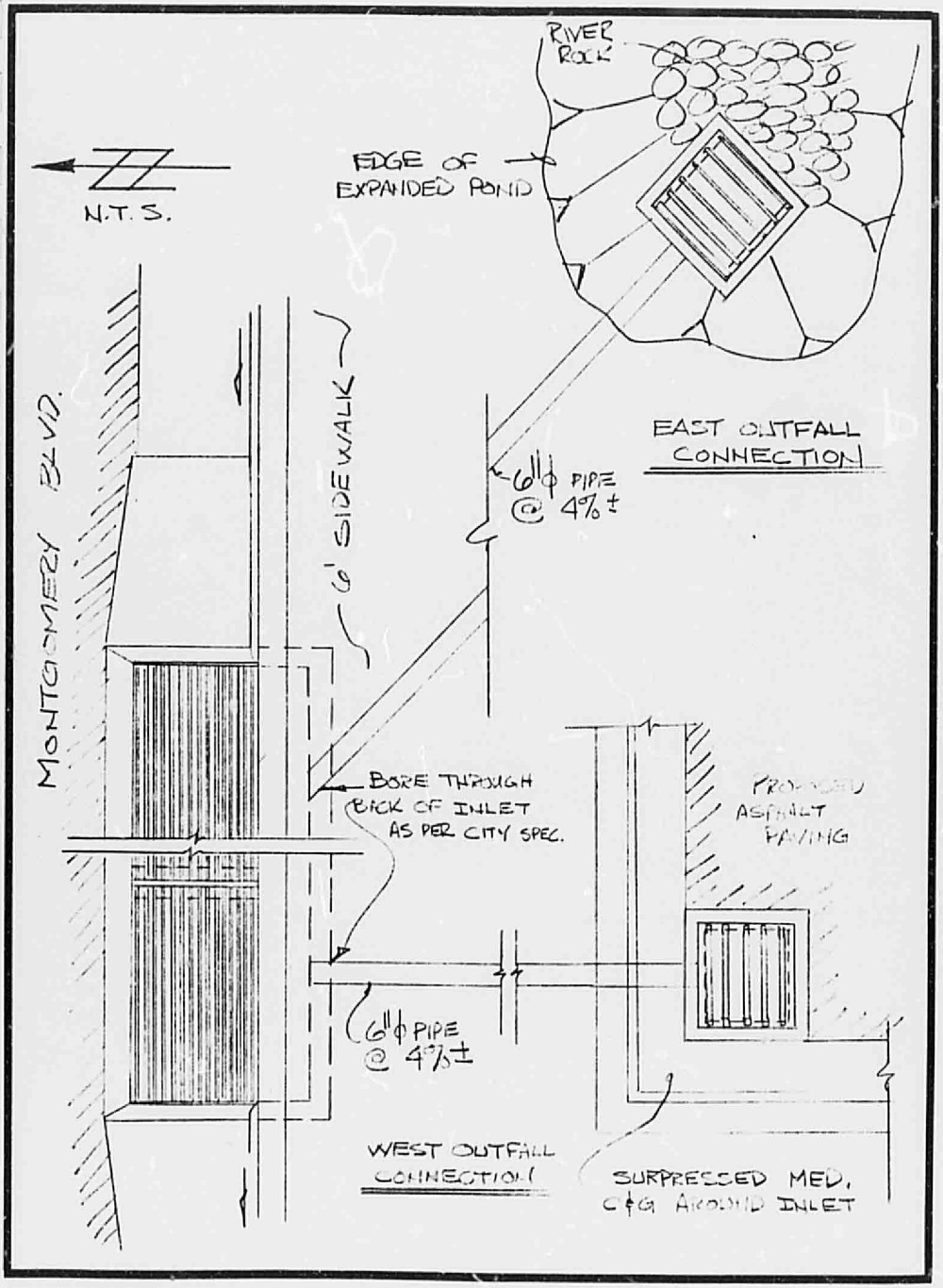


FIGURE 4-2. CAPACITY CHART, LONGITUDINAL BAR COMBINATION INLET
L = 3 FT., w = 2 FT., a = 2 IN., s_c = 0.01

Above dashed line, carryover occurs across surface of grate.



Isaacson & Arfman, P.A.
Consulting Engineering Associates

SUBJECT CARLMONT VILLAGE IX JOB NO. 164
BY ECA DATE 5/12 SHEET NO. ___ OF ___

INLET CAPACITY: GUTTER INLET

CRITERIA: NEENAH R-3470-A OR ENRG. APPROVED EQUIVALENT
SUMP CONDITION
Q_o = 0.6 CFS
GRATE SIZE = 22 x 15 w/ 60% OPENNINGS
PONDING DEPTH OVER GRATE = 8"

CAPACITY: FROM FIG. 4-1 "CAPACITY OF GRATED INLET IN SUMP" A VALUE OF

3.8 CFS/FT^2 IS DERIVED.

COMPUTING THE OPEN AREA AS FOLLOWS—

$[(22 \times 15) \div 144] \times 0.60 = 1.375$ FT^2

IT CAN BE CALCULATED THAT THE INLETS HAVE A CAPACITY OF:

1.375 FT^2 $\times$ 5.8 CFS/FT^2 = ~5 CFS

DISCHARGE PIPE SIZING:

USING THE FORMULA FOR DETERMINING THE REQUIRED CROSS-SECTIONAL AREA -VS- HEAD AVAILABLE:

AREA REQ'D = $0.2 \times Q \times \frac{1}{\sqrt{h}}$; WHERE $h = 8"$

$= 0.2 \times 0.5 \times \frac{1}{1.67}$

$= 0.122$ S.F $= 17.59$ ⌀

$17.6 = \pi r^2$

$r = 2.4$

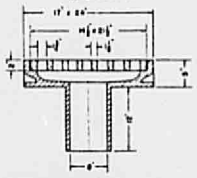
$d = \sim 4.8$ USE 6" ⌀

R-3465 Inlet with 8" Bottom Pipe Opening

R-3466-A Inlet with Long Spigot for 8" Pipe

Heavy Duty

R-3466-A



Total Weight 325 Pounds

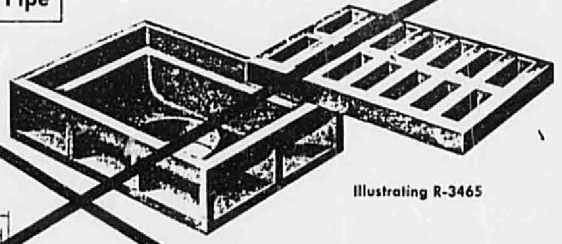
Can be used as a scupper when bottom spigot is extended as shown.

Size of bottom opening can be altered as specified.

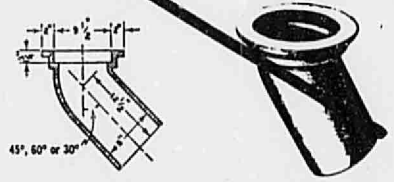
R-3465



Total Weight 280 Pounds



Illustrating R-3465



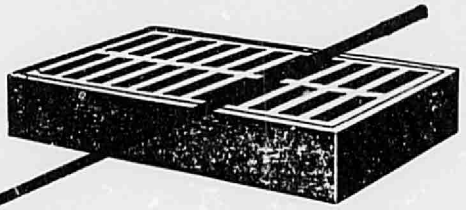
Hub of elbow is designed to fit spigot on casting R-3465 or R-3466-A

R-3467 45° Bend
R-3468 60° Bend
R-3468-A 30° Bend

Total Weight 85 Pounds

R-3469 Gutter Inlet Frame and Grate

Heavy Duty Total Weight 465 Pounds

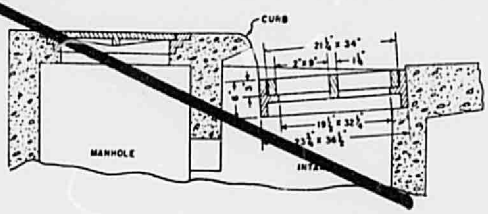


R-3469-E2 Inlet Frame and Depressed Bar Grate

Heavy Duty Total Weight 490 Pounds

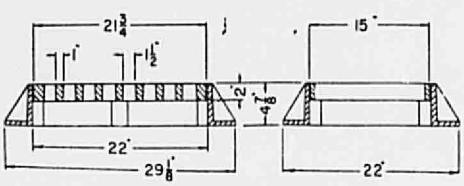
Depressed bar grate furnished on R-3469-E2 similar to R-3246-BD grate style shown on catalog page 121. Not recommended for bicycle traffic. For safety standards see pages 86 to 91. The drawing to the right shows method of installing as a combination intake and manhole. The cleanout manhole listed under Neenah R-6040 on catalog page 260 is not furnished as a part of the combination and should be ordered separately.

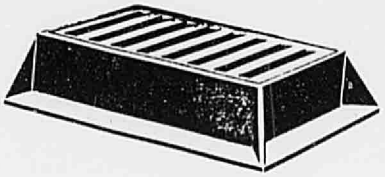
When increased drainage is required, two or more inlets are placed end to end in combinations over large basins or trench drains.



R-3470-A Gutter Inlet Frame and Grate

Heavy Duty Total Weight 180 Pounds





NEENAH FOUNDRY COMPANY

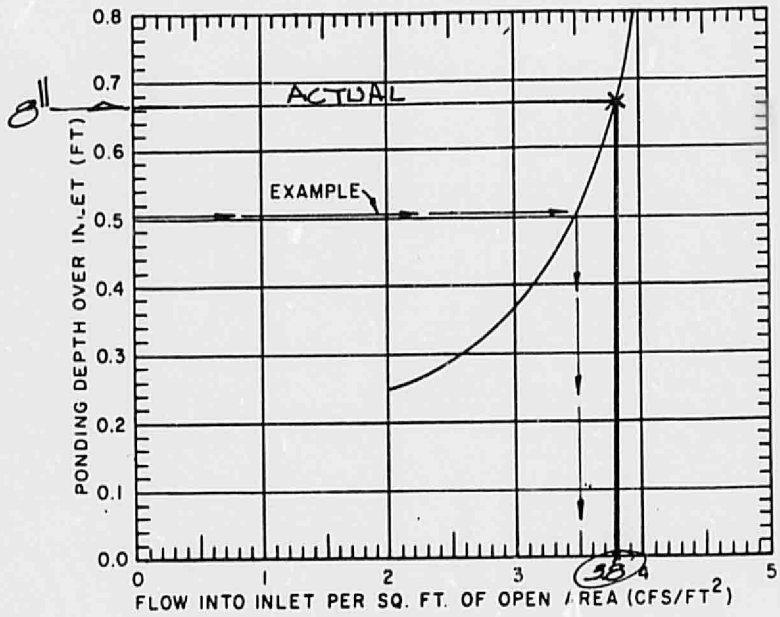
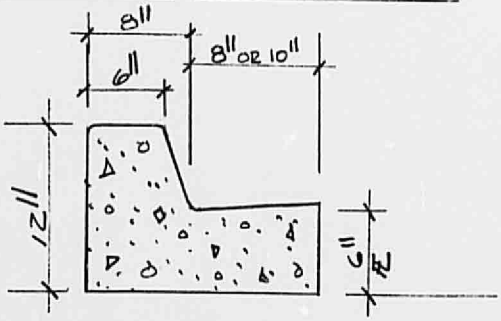
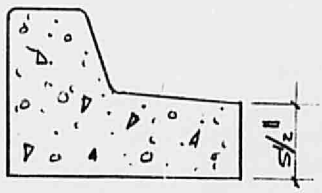


FIGURE 4-I. CAPACITY OF GRATED INLET IN SUMP

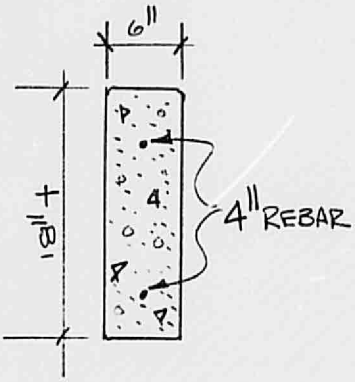
CURB & GUTTER SECTIONS



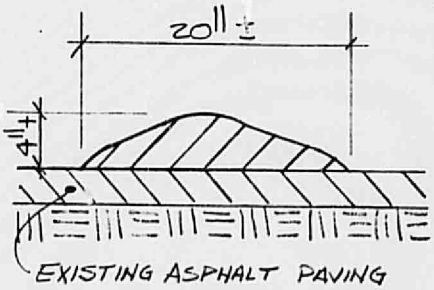
"STANDARD"



"SURPRESSED"



"CUT-OFF WALL"

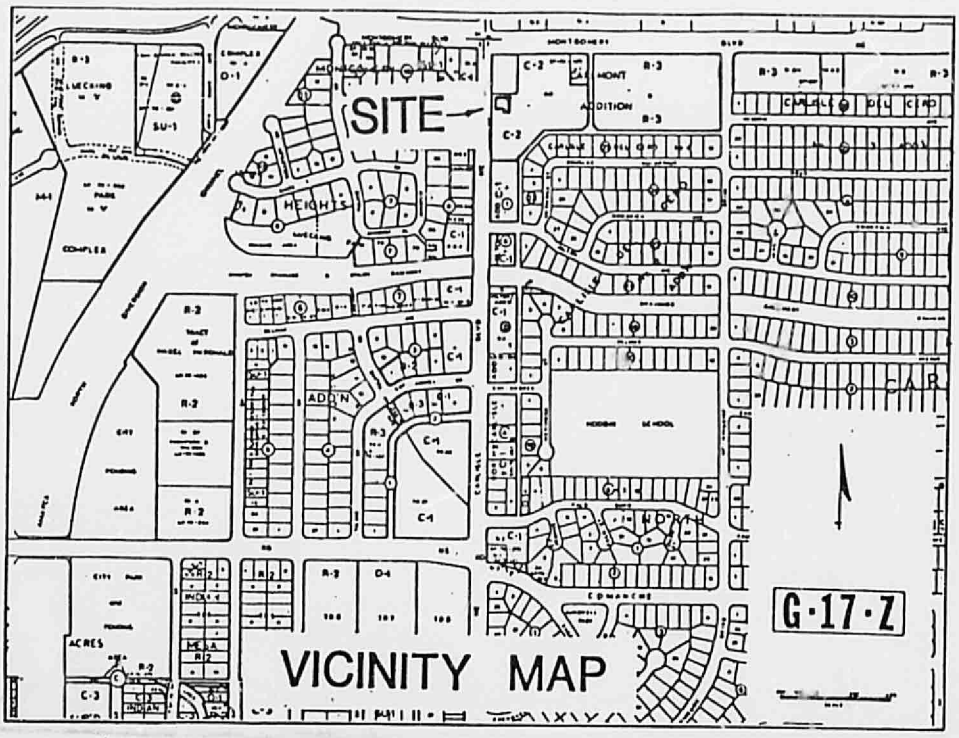


"WATER BLOCK"

CITY OF ALBUQUERQUE

Jerry Tom RE-nssign

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



Legal Description: Lot 3 of the Carlmont Office Park Addition as found on the amended plat in the office of the County Clerk of Bernalillo County, New Mexico in Book C20, Page 49 as filed on September 22, 1982.

G17-D9

FRED C. ARFMAN NEW MEXICO 7821 REGISTERED PROFESSIONAL ENGINEER 9-8-84

NOTICE TO CONTRACTOR

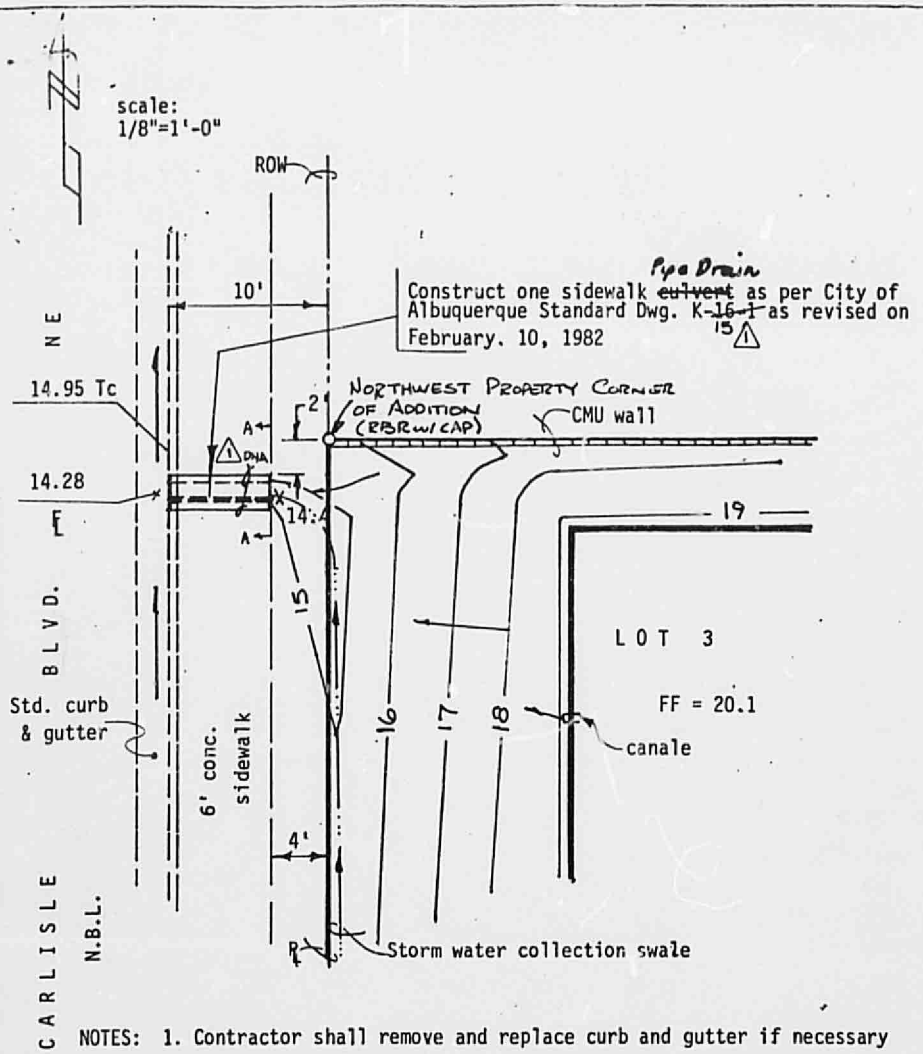
1. An excavation/construction permit will be required before beginning any work within City right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.
2. All work detailed on these plans to be performed, except as otherwise stated or provided hereon, shall be constructed in accordance with Public Works Contract 84-1.
3. Two working days prior to any excavation, contractor must contact Line Locating Service, 765-1234, for location of existing utilities.
4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum amount of delay.
5. Backfill compaction shall be according to collector street use.

Interlan P-14543 Okay TOM D-11

APPROVALS	NAME	DATE
A.C.E./DESIGN	Rkelich for FCA	9/20/84
INSPECTOR	Jerry L.	9/21/84
		9/21/84

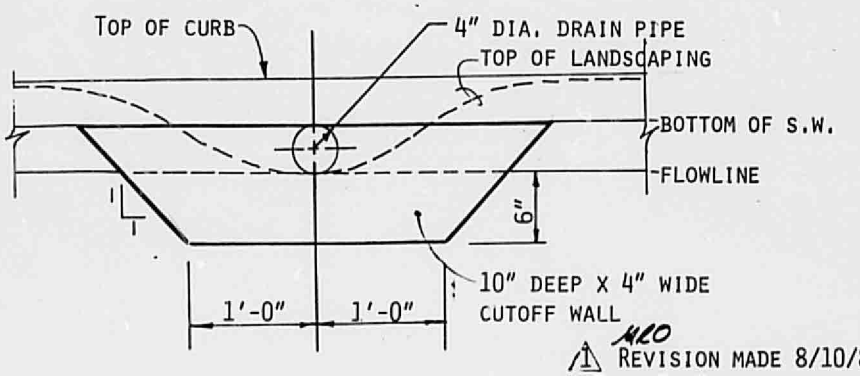
TITLE: ⚠ PIPE DRAIN
~~Sidewalk Culvert~~
Lot 3, Carmont Office Park
4316 Carlisle Blvd, NE

PERMIT NO. MAP



NOTES: 1. Contractor shall remove and replace curb and gutter if necessary

2. Whole length curb stones shall be removed if any section of it is called for removal.



1 SECTION A-A
SCALE: 1"=1'-0"

HLO
1 REVISION MADE 8/10/84 BY FRED C. ARFMAN TO REPLACE S.W. CULVERT WITH CITY STD. PIPE DRAIN

P-14543 Inter Con

D-11

CITY OF ALBUQUERQUE

APPROVALS	ENGINEER	DATE
A.C.E. DESIGN	Approved 8/13/84	19 Jan 84
WATER RESOURCES	Jerry L	8/31/84
CITY ENGINEER	W.T. McNamara	8/31/84

TITLE: Pipe Drain ~~Sidewalk Culvert~~
Lot 3, Carlmont Office Park
4316 Carlisle Blvd. NE

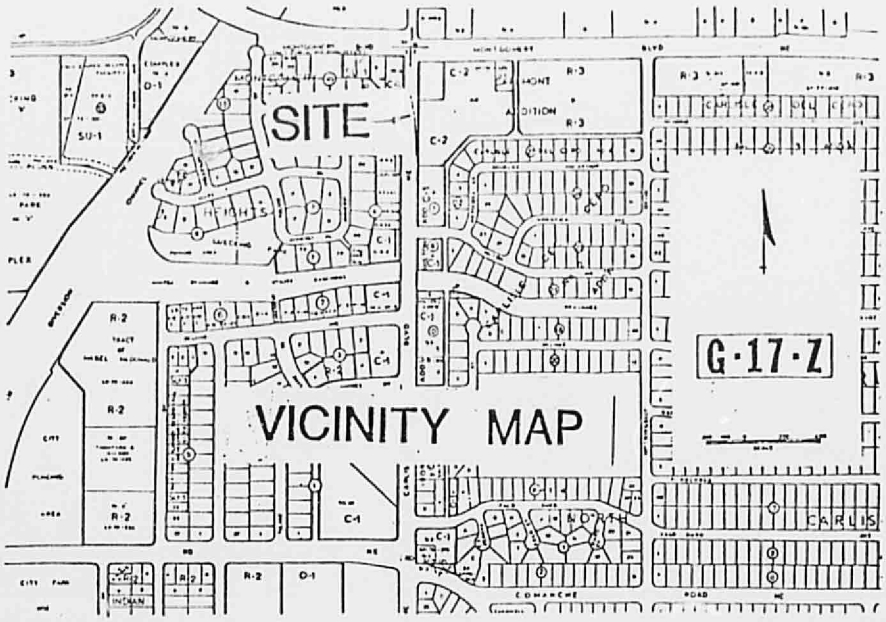
PROJECT NO. 2 of 2

MAP NO. G-17

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

G17-1A



Submittal of this agreement to construct in public right-of-way is for the related drainage improvements for the Carlmont Office Park.

The improvements consist of two storm drains and taps (18") into the cities' 60" storm sewer located within a 15 foot storm sewer easement along the east R.O.W. line of Carlisle Blvd. and across from the Hendrix Ave., N.E.

4304 CARLISLE

FRED C. ARFMAN NEW MEXICO 7322 REGISTERED PROFESSIONAL ENGINEER

8-2-82

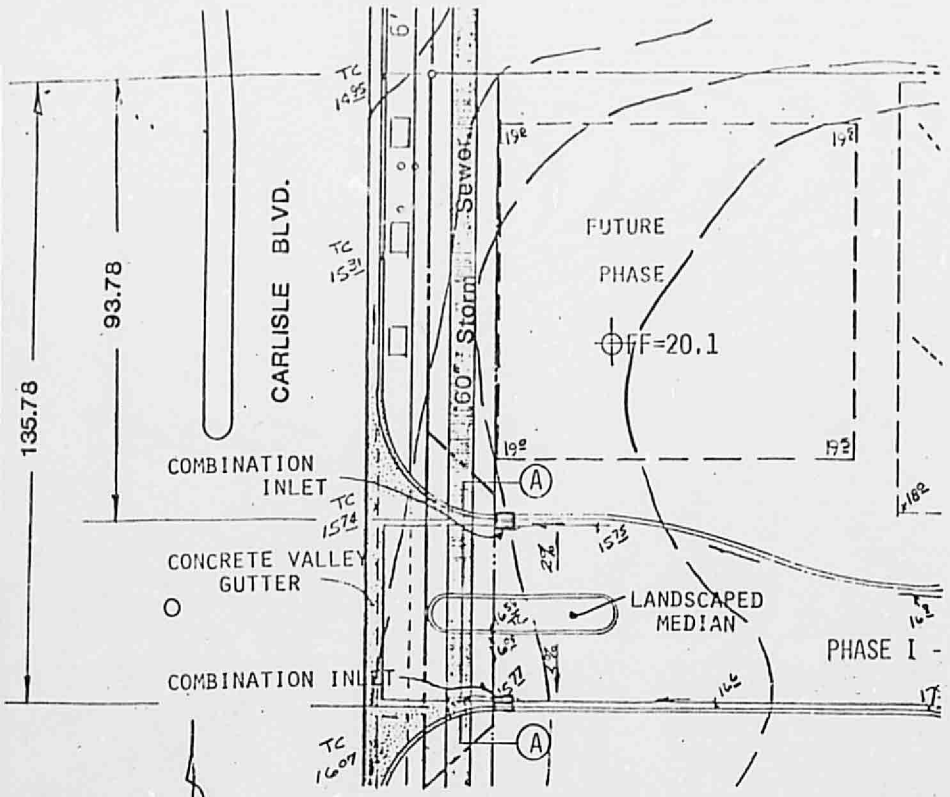
NOTICE TO CONTRACTOR

1. An excavation/construction permit will be required before beginning any work within City right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.
2. All work detailed on these plans to be performed, except as otherwise stated or provided hereon, shall be constructed in accordance with "Contract Documents for City-Wide Utilities and Cash Paving No. 30 "
3. Two working days prior to any excavation, contractor must contact Line Locating Service, 765-1234, for location of existing utilities.
4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum amount of delay.
5. Backfill compaction shall be according to DNA street use.

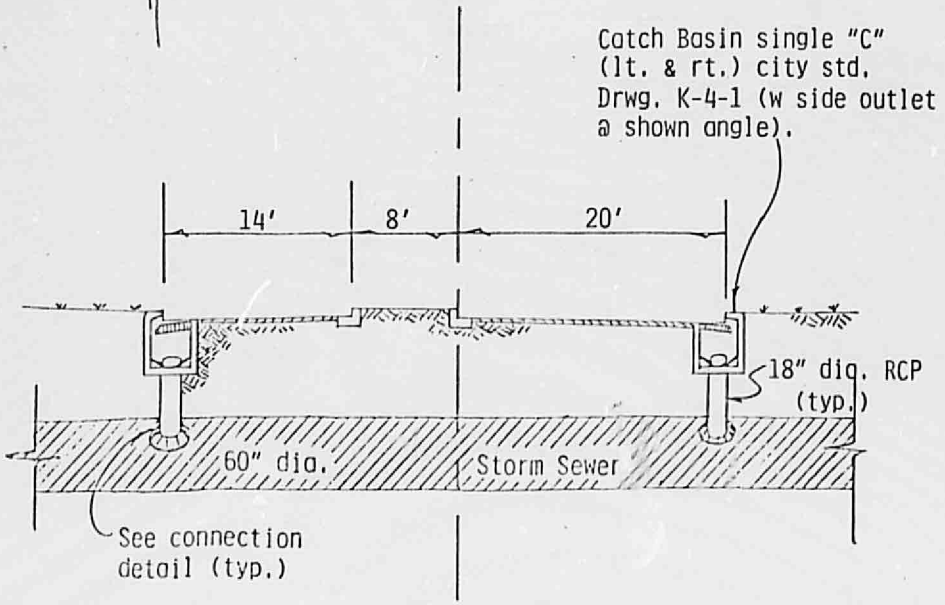
APPROVALS	NAME	DATE	TITLE:
A.C.E./DESIGN	[illegible]	Aug 82	Carlmont Office Park Combination Inlets and Connections.
INSPECTOR	[illegible]	4-10-83	
			MAP

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



LOCATION MAP



SECTION A - A

APPROVALS	NAME	DATE	TITLE: CARLMONT OFFICE PARK Combination Inlets and Conn.
A.C.E./DESIGN	G. Kulick	Aug 82	
INSPECTOR			
A.C.E./FIELD	W.D. Kearney	4-10-83	PERMIT NO. SHEET 2 OF 3 — MAP NO G-17

CITY OF ALBUQUERQUE

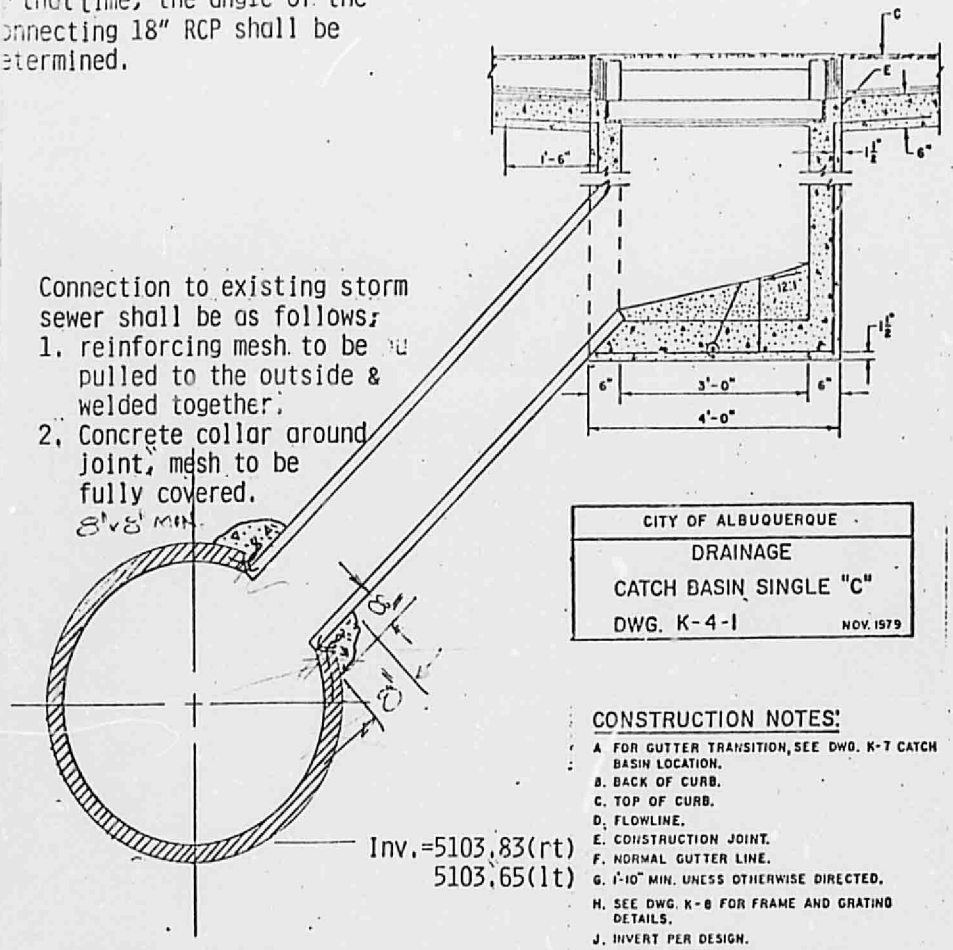
AGE FACILITIES WITHIN CITY RIGHT-OF-WAY

RAL NOTE TO CONTRACTOR

e Contractor shall verify the cation of the storm drain at e two (2) connection points by posing that portion of the pipe. that time, the angle of the onnecting 18" RCP shall be etermined.

Connection to existing storm sewer shall be as follows:

1. reinforcing mesh to be pulled to the outside & welded together.
2. Concrete collar around joint, mesh to be fully covered.



CITY OF ALBUQUERQUE
DRAINAGE
CATCH BASIN SINGLE "C"
DWG. K-4-1 NOV. 1979

CONSTRUCTION NOTES:

A. FOR GUTTER TRANSITION, SEE DWG. K-7 CATCH BASIN LOCATION.
B. BACK OF CURB.
C. TOP OF CURB.
D. FLOWLINE.
E. CONSTRUCTION JOINT.
F. NORMAL GUTTER LINE.
G. 1'-10" MIN. UNESS OTHERWISE DIRECTED.
H. SEE DWG. K-8 FOR FRAME AND GRATING DETAILS.
J. INVERT PER DESIGN.
K. CONC. FILL, SEE NOTE E, DWG. K-1.
⚠ L. USE STANDARD MH STEPS, SEE DWG. S-11. FIRST STEP SHALL BE 18" FROM TOP OF GRATE AND SHALL PROTRUDE 7" SPACING AT 12" O.C. LAST STEP 18" MAX. FROM BOTTOM.
M. EXTEND NO. 4 REBARS 18" INTO CURB ON EACH SIDE OF CATCH BASIN.
N. NO. 4 BARS AT 6" O.C. EACH WAY.
O. SEE ANCHOR DETAIL, THIS DWG.
P. ∠ 3½" x 3½" x ¼" x 4'-0" FOR SINGLE GRATE C CATCH BASIN.
Q. ∠ 3½" x 3½" x ¼" x 7'-6" FOR DOUBLE GRATE C CATCH BASIN.
R. NO. 4 - 1'-3" ANCHOR AT 1'-9" O.C.
⚠

APPROVALS	NAME	DATE	TITLE: CARLMONT OFFICE PARK PRV'T STORM DRAIN CONNECTION TO A PUBLIC FACILITY	
C.E./DESIGN	J. Kilcoyne	9 Aug 82		
INSPECTOR			PERMIT NO.	MAP NO. G-17
C.E./FIELD	W. Kearney		SHEET 3 OF 3	

