HYDROLOGY K22/D30 5 PLANS

1 of 2

C

B

A

C

B

A

K22/D30

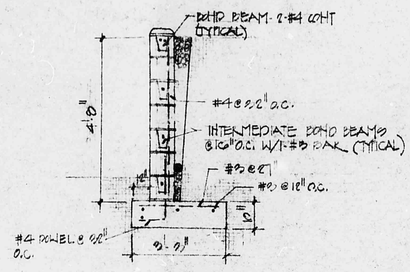
5 Plans

C 20 B 15 A 12

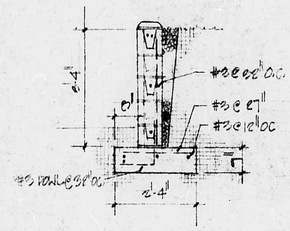
CITY OF ALBUQUERQUE

C

224



RETAINING WALL (A)



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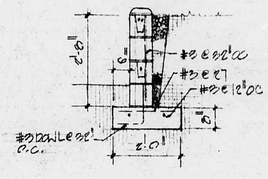

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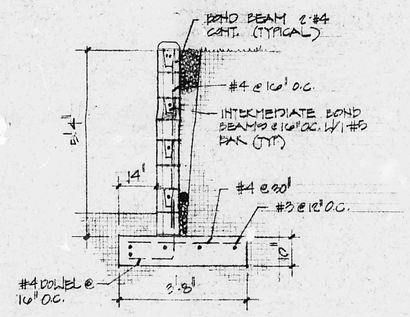
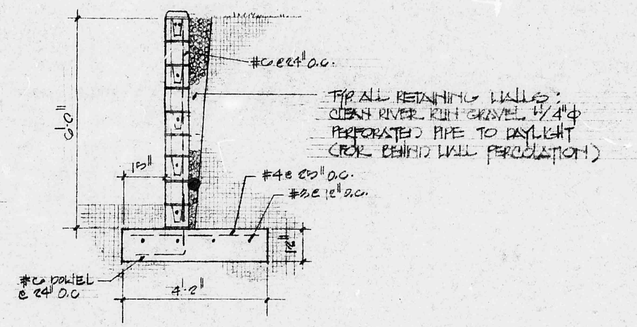


RETAINING WALL (D)



RETAINING WALL (E)

RETAINING WALL DETAILS

1/2" = 1'-0"

RECEIVED
JUL 13 1984
HYDROLOGY SECTION

THOMAS E. ROBSON · ARCHITECT
1202 PENNSYLVANIA NE
ALBUQUERQUE, NEW MEXICO 87110
(505) 266-9013

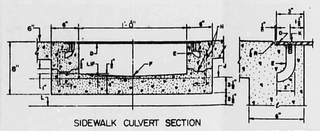
STATE OF NEW MEXICO
THOMAS E. ROBSON
1357
REGISTERED ARCHITECT

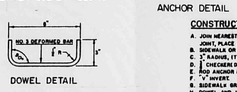
CITY OF ALBUQUERQUE
THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT

PROJECT BENCHMARK:
ACS BM 14-KZ2 ELEVATION: 5637.90 FEET (MSLD)
TBM:
AS SHOWN. ELEVATION: 5679.52 FEET (MSLD)
STREET ADDRESS:
12800 COPPER AVE. NE.

CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.

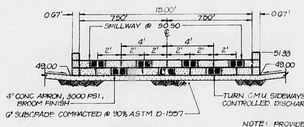




SIDEWALK CULVERT DETAILS

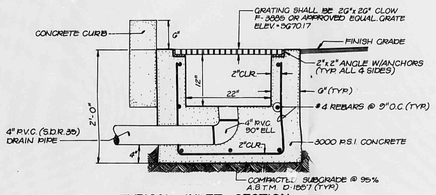
CONSTRUCTION NOTES:

A. JOHN HEMMERT SCORE LINE OR WEAKENED PLANE JOINT, PLACE ½" EXPANSION JOINT MATERIAL.
B. SIDEWALK OR SILTRAK K, (NAVAJO K).
C. ½" RADIUS, (TYPICAL).
D. ½" CHECKERED STEEL PLATE CULVERT TOP
E. ROD ANCHOR ¾" x 5'
F. "V" INVERT.
G. SIDEWALK GRADE.
H. DOWEL AND JOINT, (OPTIONAL).
J. GUTTER FLOWLINE ELEV.
K. ¼" x 1¼ CROWN STAINLESS STL. MACHINE SCREW
L. BOTTOM OF GUTTER.
M. DRAIN WIDTH, 2.4' MAX. 1.8' MIN.
N. SLOPE ⅛" PER FT. MIN.

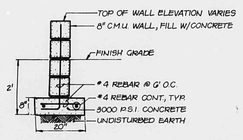


SECTION A-A
SCALE 1" = 5'

NOTE: PROVIDE 48" SCORED JOINTS IN CONC. APRON @ 6' O.C.E.W.

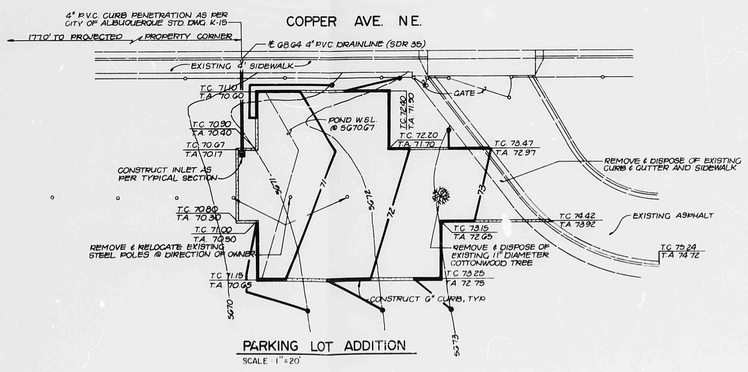


TYPICAL INLET SECTION
SCALE 1" = 1'



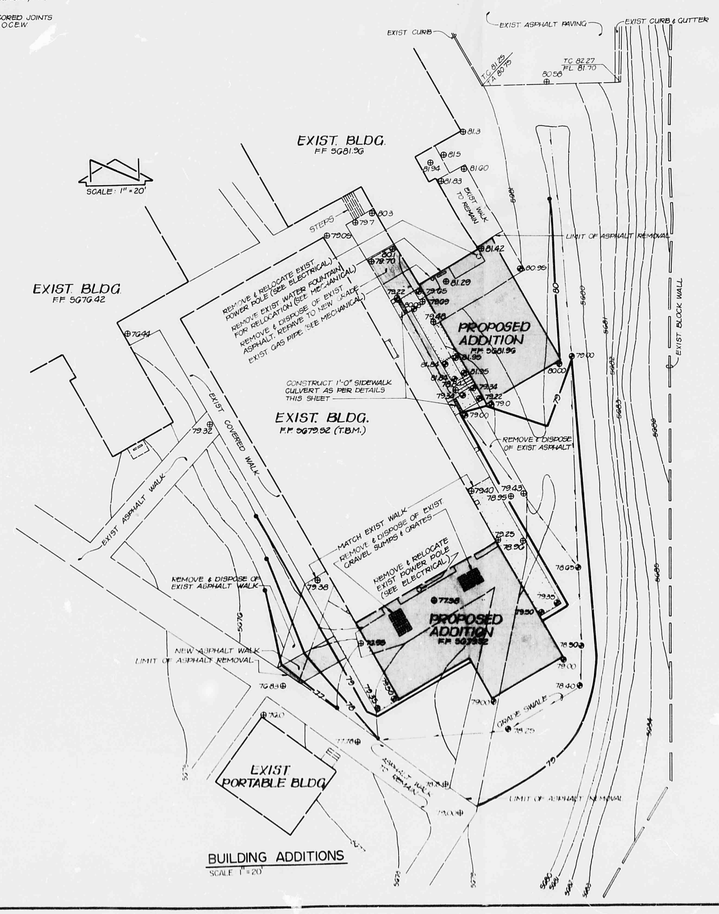
TYPICAL WALL SECTION FOR SEDIMENTATION BASIN
SCALE 1" = 2'

SCALE: 1" = 20'



PARKING LOT ADDITION
SCALE 1" = 20'

SCALE: 1" = 20'



BUILDING ADDITIONS
SCALE 1" = 20'

REGISTERED PROFESSIONAL ENGINEER
STATE OF NEW MEXICO
THOMAS J. MANN
7979
NEW MEXICO
PROFESSIONAL
LAND SURVEYOR

REVISIONS:

JOB: 1-0133
DRW: GCC
CHK: JGM
DATE: 1-84

BLAND & ASSOCIATES
ARCHITECTS / PLANNERS
1000 MENAUL NE
SUITE 203
ALBUQUERQUE
NEW MEXICO 87107
(505) 294-1448

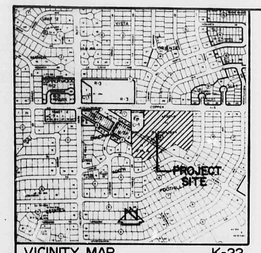
GRADING AND DRAINAGE PLAN · APACHE ELEMENTARY SCHOOL

SHEET NO
OF SHEETS

D 24 | C 20 | B 16 | A 12

CITY OF ALBUQUERQUE

C D



VICINITY MAP K-22

SCALE: 1" = 800'

DRAINAGE PLAN

The following items concerning the Apache Elementary School Drainage Plan are contained hereon:

1. Vicinity Map
2. Site Grading Plan
3. Calculations

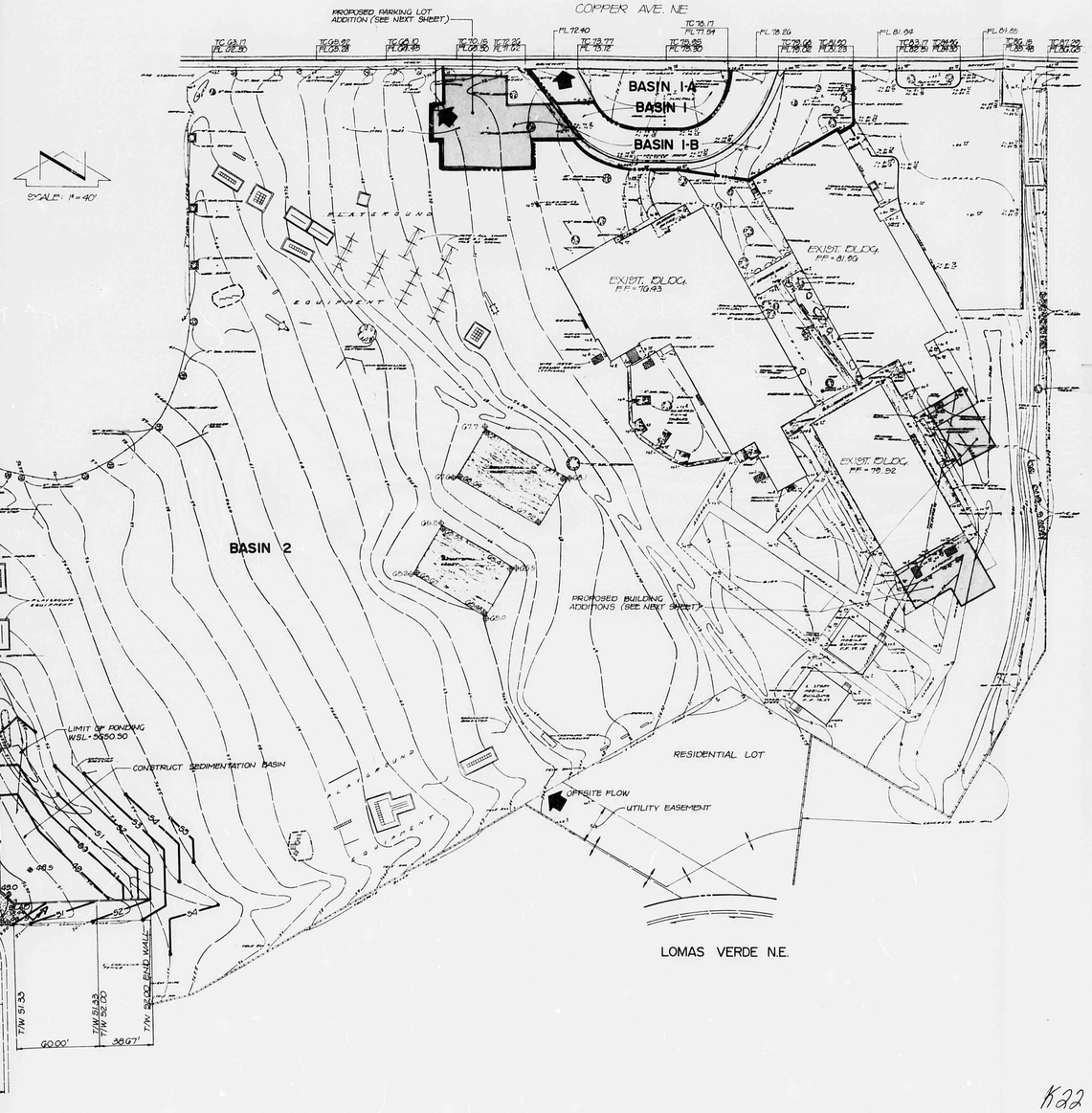
The proposed improvements, as shown by the Vicinity Map, are located on the south side of Copper Avenue N.E. just east of Chelwood Park Boulevard N.E. At present, the site is developed as an elementary school campus. The surrounding area is developed residentially.

As shown by Plate K22 of the Albuquerque Master Drainage Study, the site does not lie within a designated flood hazard zone. This plate does, however, indicate that downstream flooding exists beginning at the northwest corner of the site. It is based upon this that it is stated that offsite flows do not enter the site from Copper Avenue. Much of the east and south property lines are defined by an existing concrete block wall which prohibits offsite flows from those areas from entering the site. There is, however, a relatively short distance along the south property line that does not have a concrete block wall but rather a chain link fence. An offsite flow is contributed from this area as shown on the adjacent plan. As shown by the calculations, the contribution from this small offsite area is negligible. Offsite flows do not enter the site from the west being the downhill side of the site.

Another area of concern with respect to the development of this site is the extreme southwest corner where there is an existing soil erosion problem. In response to complaints from the neighborhood and efforts from the City to understand the existing problem, a sedimentation basin is proposed to control the discharge of sediment from the vast unpaved playground area. The sedimentation basin has been designed to contain the 10-year, 6-hour runoff volume after a rating curve was applied to that hydrograph. The sedimentation basin will still permit pedestrian access to the site from the southwest corner and at the same time control the discharge of runoff from the site in a manner which will be more acceptable to the neighborhood and the City.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at " intervals, 2) continuity between existing and proposed elevations, 3) the limit and character of the existing improvements, and 4) the limit and character of the proposed improvements. As shown by this plan, the proposed improvements include the construction of two building additions, a parking lot addition, and a sedimentation basin. At present, the majority of the runoff from the site flows from east to west to discharge at the southwest corner of the site as previously mentioned. A small portion of the runoff from the site does discharge to Copper Avenue N.E. This portion of the site has been designated Basin 1 in the existing condition and Basin 1-A and 1-B for the developed condition. The remaining larger portion of the site has been designated Basin 2. The existing pattern of drainage will not be significantly altered by development. A slightly larger contribution of runoff will be discharged to Copper Avenue due to the enlargement of Basin 1 by the construction of the proposed parking lot addition. The total runoff from Basin 2 will remain approximately the same as pre-construction. Construction details and enlarged grading plans for the building and parking lot additions appear on the following sheet.

The Calculations which appear on this sheet analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume II. The evaluation of pond release rates is based upon the Orifice Equation. The evaluation of pond volumes is based upon the Average End Area Method. Hydrograph construction and analysis is based upon a triangular hydrograph in which the area under the curve is the runoff volume. Supplemental calculations accompany this submittal.



CALCULATIONS

Ground Cover Information

1. From SCS Bernalillo County Soil Survey, Plate 32: ETC Embudo-Tijeras Complex
   Hydrologic Soil Group B

2. Existing Condition
   a. Basin 1
      A_{total} = 12,630 sf = 0.29 Ac
      A_{imp} = 3120 sf, % impervious = 25%
      C = 0.45 (DPM Plate 22.2C-1)
   b. Basin 2
      A_{total} = 359,800 sf = 8.26 Ac
      A_{imp} = 67,880 sf, % impervious = 19%
      C = 0.42 (DPM Plate 22.2C-1)

3. Developed Condition
   a. Basin 1-A
      A_{total} = 4200 sf = 0.10 Ac
      A_{imp} = 970 sf, % impervious = 23%
      C = 0.44 (DPM Plate 22.2C-1)
   b. Basin 1-B
      A_{total} = 15,300 sf = 0.35 Ac
      A_{imp} = 7000 sf, % impervious = 46%
      C = 0.56 (DPM Plate 22.2C-1)
   c. Basin 2
      A_{total} = 352,930 sf = 8.1 Ac
      A_{imp} = 71,400 sf, % impervious = 20%
      C = 0.43 (DPM Plate 22.2C-1)

Rational Method

1. Discharge: Q = CiA
   where C varies
   $i = P_6 (6.84)\, T_c^{-0.51}$ = 5.28 in/hr (Basin 1)
   i = 3.62 in/hr (Basin 2)
   P_6 = 2.5 in (DPM Plate 22.2D-1)
   T_c = 10 min (minimum) - Basin 1
   T_c = 21 min (overland method) - Basin 2
   A = area, acres

2. Volume: $V = CP_6A(1/12)$
   where C varies, A = area, sf and
   P_6 = 2.5 in (DPM Plate 22.2D-1)

Existing Condition

a. Basin 1 (to Copper)
   Q_{100} = CiA = 0.45 (5.28) (0.29) = 0.7 cfs
   $V_{100} = CP_6A$ = 0.45 (2.5/12) (12,630) = 1180 cf
b. Basin 2 (to Conejo)
   Q_{100} = 0.42 (3.62) (8.26) = 12.6 cfs
   V_{100} = 0.42 (2.5/12) (359,800) = 31,480 cf

Developed Condition

a. Basin 1-A

   Q_{100} = CiA = 0.44 (5.28) (0.10) = 0.2 cfs

   $V_{100} = CP_6A$ = 0.44 (2.5/12) (4200) = 380 cf

b. Basin 1-B

   Q_{100} = CiA = 0.56 (5.28) (0.35) = 1.0 cfs

   $V_{100} = CP_6A$ = 0.56 (2.5/12) (15,300) = 1780 cf

   $Q_{release} = CA\sqrt{2gh}$ = 0.7 cfs

   where C = 0.8, A = 0.0873 sf, g = 32.2 ft/sec^2

   and h = 70.67 - 70.17 -1' = 1.5'

   By hydrograph analysis, $V_{required}$ = 160 cf

   $V_{pond} = 1/2\ (h_{70.17} + h_{70.67})\ (70.67 - 70.67)$

   $= 1/2\ (0 + 620)\ (0.5) = 155\ cf \approx V_{required}$

c. Basin 2

   Q_{100} = CiA = 0.43 (3.62) (8.1) = 12.6 cfs

   $V_{100} = CP_6A$ = 0.43 (2.5/12) (352,930) = 31,620 cf

   $Q_{10} = F_r\ Q_{100}$ = 0.657 (12.6) = 8.3 cfs

   $V_{10} = F_r$ = 0.657 (31,620) = 20,770 cf

   By hydrograph analysis, $V_{required}$ = 2100 cf

   $V_{provided}$ = 7660 cf

   $V_{pond} = 1/2\ [(A_{48.5} + A_{49})(49 - 48.5) +$

   $(A_{49} + A_{50})(50 - 49) +$

   $(A_{50} + A_{50.3})(50.5 - 50)]$

   $= 1/2\ [(0 + 3200)(0.5) +$

   $(3200 + 5000)(1) + (5000 + 6050)(0.5)]$

   $V_{pond} = V_{provided} = 7660\ cf > V_{required}$

Spillway capacity = 25 cfs

$Q = CLH^{3/2} = 25\ cfs > Q_{100}$

where C = 3, L = 15', H = 0.67'

Comparison

a. Basin 1
   ΔQ_{100} = 0.7 - (0.2 + 0.7) = 0.2 cfs (increase)
   ΔV_{100} = 1180 - (380 + 1780) = 980 cf (increase)
b. Basin 2
   ΔQ_{100} = 12.6 - 12.6 = 0 cfs (no change)
   ΔV_{100} = 31,480 - 31,620 = 140 cf (increase)

Offsite Flows

A = 17,000 sf = 0.4 Ac
C = 0.45 (assumed)
i = 5.28 in/hr
Q_{100} = CiA = 0.45 (5.28) (0.4) = 1 cfs
$V_{100} = CP_6A$ = 0.45 (2.5/12) (17,000) = 1600 cf

K22
D3

RECEIVED
JUL 10 1984
HYDROLOGY SECTION

REGISTERED PROFESSIONAL ENGINEER
STATE OF NEW MEXICO
THOMAS T. MANN, JR.
3792

REVISIONS:

JOB: 1.0033
DRW: TMA
CHK: JGM
DATE: 1-84

BLAND & ASSOCIATES
ARCHITECTS / PLANNERS
ALBUQUERQUE, NEW MEXICO

GRADING AND DRAINAGE PLAN · APACHE ELEMENTARY SCHOOL

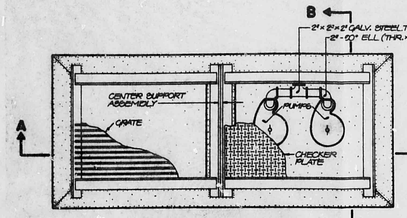
SHEET NO
OF SHEETS

D 24 C 20 B 16 A 12

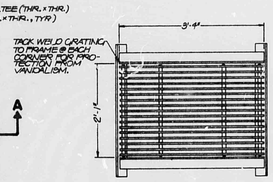
CITY OF ALBUQUERQUE

C D

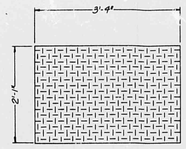
HYDROLOGY K22/D30 5 PLANS
2 of 2



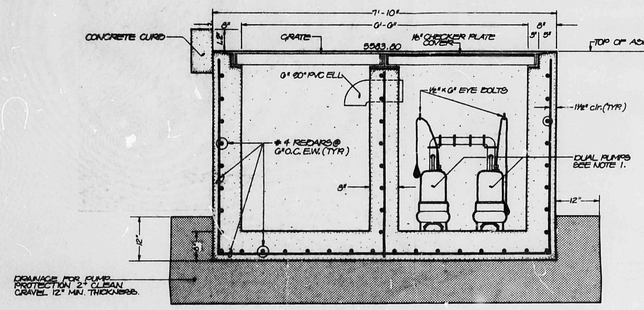
CATCH BASIN PLAN
3/4" = 1'-0"



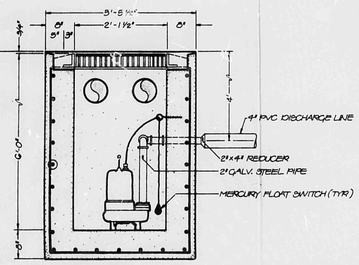
INLET GRATE PLAN
3/4" = 1'-0"



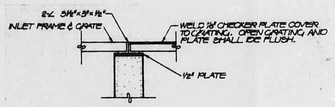
CHECKER PLATE COVER PLAN
3/4" = 1'-0"



SECTION A·A
3/4" = 1'-0"



SECTION B·B
3/4" = 1'-0"



CENTER SUPPORT ASSEMBLY
3/4" = 1'-0"

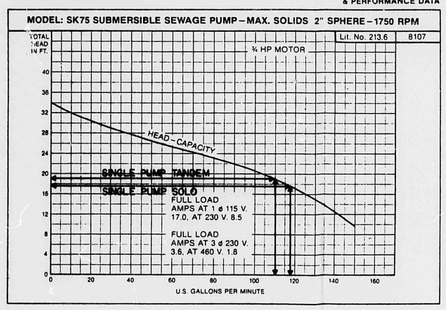
NOTES:

1. Install two HYDR-O-MATIC submersible pumps, Model SK75, 3/4 Hp motor, single ϕ, or approved equal. Pump installation shall include three mercury float switches with controls set for "LEAD", "LAG" and "ALTERNATE" modes of operation.
2. Refer to Electrical Plans for location of pump control box, installation of electrical cable/conduit and pump/control one-line diagrams.
3. Grating and frame shall be cleaned of all scale, rust and foreign material and shall be painted with one shop coat of red oxide primer, then 2 finish coats of aluminum paint (AASHO M69).

HYDR-O-MATIC PUMPS

SECTION 210
DIMENSIONAL DRAWINGS & PERFORMANCE DATA

MODEL: SK75 SUBMERSIBLE SEWAGE PUMP – MAX. SOLIDS 2" SPHERE – 1750 RPM



PUMP CALCULATIONS

1. Estimated Discharge Rate 130 GPM
2. Head Loss

   A. Elevation: 57.59 - 50.00 = 7.6'
   B. Friction (4" pipe)
      Type of pipe: PVC
      Design C Value: 130
      Chart C Value: 100
      Correction Factor: 0.62
      H_F = 2 ft/100 ft
      Length of Pipe = 240' ±

      Equivalent Length of Pipe:
      Sudden Enlargement = 6'
      Exit Loss = 10'
      16'

      Total Equivalent Length of 4" pipe = 260' ±
      H_F = 260 (2/100) = 5.2'
      H'_F = 0.62 (5.2) = 3.2'

   C. Friction (2" pipe)
      Type of Pipe: Steel
      Design C Value: 100
      Chart C Value: 100
      No Correction Required
      H_F = 67.7 ft/100 ft
      Length of Pipe = 3' ±
      Equivalent Length of Pipe:
      90° Ell = 5'

      Total Equivalent Length of 2" Pipe = 10' ±
      H_F = 10 (67.7/100) = 6.8'

   D. Total
      @ $H_T = H_Z + H'_{F,4"} + H_{F,2"}$ = 7.6' + 3.2' + 6.8" = 17.6'

3. Pump Curve Interpretation
   @ H_T = 17.6', Q = 118 GPM
   Q = 118 GPM (1 cf/6.94 gallon)(1 min/60 sec) = 0.3 cfs
   Combined capacity of the pumps is approximately 0.5 cfs

Reference: Cameron Hydraulic Data, 14th Edition Ingersoll-Rand Company, Woodcliff Lake, NJ 1970, PP-27, 32, 36 and 48

REGISTERED PROFESSIONAL ENGINEER STATE OF NEW MEXICO THOMAS M. HOLT 6844 LAND SURVEYOR

Lewis Harry Associates Inc.
811 DALLAS N.E. · ALBUQUERQUE · NEW MEXICO · 87110
ENGINEERS

NO.	DATE	BY	REVISIONS

DESIGNED BY J.G.M., J.T.O.
DRAWN BY L.B.D.
APPROVED T.T.M., J.G.M.

JOB NO. 40211
DATE 4·84

PUMP DETAILS
COPPER PARK COMPOUND

FILE NO.
SHEET 2 OF 2

D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE

C D

VICINITY MAP K-22

SCALE 1" = 800'

SCALE: 1" = 20'

· LEGEND ·

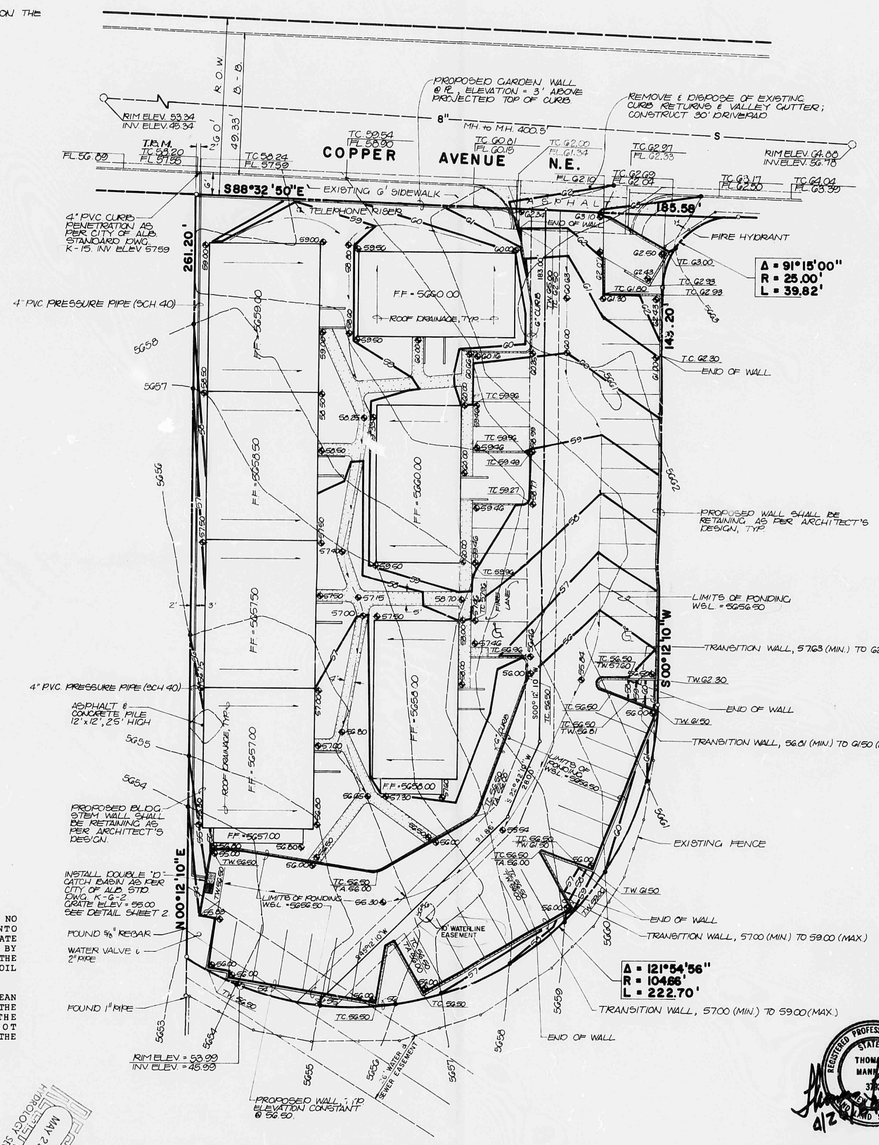
+	EXISTING SPOT ELEVATION
⊕	PROPOSED SPOT ELEVATION
5863	EXISTING CONTOUR
66	PROPOSED CONTOUR
T.C. 62.95	EXISTING TOP OF CURB
F.L. 62.55	EXISTING FLOW LINE
	PROPERTY LINE
	CONCRETE
	FLOW LINE

PROJECT BENCHMARK:

A STANDARD ACS BRASS TABLET STAMPED '14-K22-1978', SET FLUSH WITH THE CURB LOCATED IN THE INTERSECTION OF COPPER AVE. N.E. AND CHELWOOD PARK BLVD. N.E. THE STATION IS LOCATED IN THE SE QUADRANT OF THE INTERSECTION.
ELEVATION = 5637.90 FEET

TEMPORARY BENCHMARK:

A PROJECTION OF THE NORTHWEST CORNER ON THE TOP OF CURB.
ELEVATION = 5668.20 FEET



DRAINAGE PLAN

The following items concerning the Copper Park Compound Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Pump Details
4. Calculations

The proposed improvements, as shown by the Vicinity Map, are located on the south side of Copper Avenue N.E. adjacent to the northwest boundary of the Apache Elementary School. The site is more particularly described as Block 19-A of the Foothill Estates Subdivision. Directly east and south of the site is the Apache Elementary School. Directly west of the site is an undeveloped parcel.

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The site does not lie within a designated Flood Hazard Zone, however, adjacent flooding conditions exist in Copper Avenue N.E. as indicated by Plate K-22 of the Albuquerque Master Drainage Study. Because of this, runoff will be positively discharged through a 4-inch pipe into Copper Avenue N.E. In the past, runoff from Copper Avenue N.E. overflowed through the existing curb returns at the northeast corner of the site and crossed the site in a southwesterly direction. It is believed that the construction of a standard city drivepad at this location will prevent this problem from reoccurring. In addition, it is recognized that flooding may still occur in Copper Avenue adjacent to the site. In lieu of raising the finish floor elevations of those units adjacent to the street, a garden wall approximately 3-feet above the top of curb will be constructed to protect the proposed buildings from floodings. Based upon the discussion above and previous work performed by this office pertaining to the Apache Elementary School site, no offsite flows are expected to impact the site from any adjacent areas. The existing drainage pattern is one in which runoff flows from northeast to southwest. The proposed improvements will not alter this drainage pattern.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1' 0" intervals, 2) continuity between existing and proposed grades, 3) the limit and character of the proposed improvements, and 4) the limits of ponding. A volume of ponding equivalent to 100% of the developed runoff has been provided in the southwest corner of the site. Because of this, and the lack of a downstream public right-of-way, an emergency spillway has not been provided and is not necessary. The pond is to be drained by dual submersible pumps located within one chamber of a Double "D" catch basin. Details concerning the pump installation, supporting calculations, and the pump curve are presented on Sheet 2.

The Calculations which appear below analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume II. Pond volume calculations are based on the Average End-Area Method. The pond discharge rate is based upon the analysis of the pump curve and Standard Hydraulic Data as set forth in the Cameron Hydraulic Handbook. These calculations demonstrate that a decrease in the peak discharge of runoff from the site will be realized due to the proposed construction.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 32:
Etc Embudo-Tijeras Complex
Hydrologic Soil Group B

Rational Method

Discharge: $Q = CiA$
where C varies
$i = P_6 (6.84) T_c^{-0.51} = 5.28$ in/hr
$P_6 = 2.50$ in (DPM Plate 22.2D-1)
$T_c = 10$ min (minimum)
A = area, acres

Volume: $V = CP_6A(1/12)$
where C varies
$P_6 = 2.50$ in (DPM Plate 22.2D-1)
A = area, sf

Existing Condition

$A_{total} = 41,600$ sf $= 0.96$ Ac
$A_{imp} = 0$ sf; % impervious = 0%
$C^{DPP} = 0.34$ (DPM Plate 22.2C-1)
$Q_{100} = CiA = .34 (5.28)(0.96) = 1.7$ cfs
$V_{100} = CP_6A = .34 (2.5/12)(41,600) = 2950$ cf

Developed Condition

$A_{total} = 41,600$ sf $= 0.96$ Ac
$A_{imp} = 30,600$ sf; % impervious = 74%
$C^{DPP} = 0.72$ (DPM Plate 22.2C-1)
$Q_{100} = CiA = .72 (5.28)(0.96) = 3.6$ cfs
$V_{100} = CP_6A = .72 (2.5/12)(41,600) = 6250$ cf

Pond Calculations

$$V_{pond} = \tfrac{1}{3}[A_{55.00} + A_{55.50})(55.50 - 55.00) + (A_{56.00} + A_{55.50})(56.00 - 55.50) + (A_{56.50} - A_{56.00})(56.50 - 56.00)] = 6480 \text{ cf}$$

$V_{pond} > V_{required} = V_{100}$

6480 cf > 6250 cf

Comparison

(a) Southwest Corner
$Q_{100} = 1.7 - 0 = 1.7$ cfs (decrease)
V_{100} 2950 - 0 = 2950 (decrease)

(b) Copper Avenue N.E.
$Q_{100} = 0.5 - 0 = 0.5$ (increase)
$V_{100} = 6250 - 0 = 6250$ (increase)

(c) Total Site

$Q_{100} = 1.7 - 0.5$ (pump discharge) $= 1.2$ cfs (decrease)
$V_{100} = 6250 - 2950 = 3300$ cf (increase)

CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE 765-1234, FOR LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.

EROSION CONTROL MEASURES

1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AT THE PROPERTY LINES AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.

REGISTERED PROFESSIONAL ENGINEER — STATE OF NEW MEXICO — THOMAS T. MANN — 3703 — 4/2 — REGISTERED PROFESSIONAL LAND SURVEYOR

MAY 2 1984 HYDROLOGY SECTION

BOHNINGER/ASSOCIATES, INC.
811 DALLAS, N.E. · ALBUQUERQUE · NEW MEXICO · 87110
ENGINEERS

NO.	DATE	BY	REVISIONS

DESIGNED BY: J.G.M., J.T.O.
DRAWN BY: jmc., L.B.D.
APPROVED: T.T.M., J.G.M.

JOB NO. 40211
DATE 4·84

GRADING & DRAINAGE PLAN
COPPER PARK COMPOUND

FILE NO.
SHEET 1 OF 2

D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE

C D