CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

April 11, 2016

J. Graeme Means, P.E.
High Mesa Consulting Group
4715 Moon St NE
Albuquerque, NM, 87111

RE: Osuna Elementary School
Grading and Drainage Plan for Phase I
Drainage Master Plan Update
Engineer's Stamp Date 4-4-2016 (File:F20D010A)

Dear Mr. Means:

Based upon the information provided in your submittal received 4-8-2016, the above referenced Grading and Drainage Plan is approved for Grading Permit.

Please attach a copy of this approved plan in the construction sets when submitting for the building permit. Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Abiel Carrillo, P.E.
Principal Engineer, Planning Department
Development Review Services

Orig: Drainage file

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

2014.184.6

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Osuna ES Master Drainage Plan **Building Permit #:** _____ **City Drainage #:** F20/D010A

DRB#: _____ **EPC#:** _____ **Work Order#:** _____

Legal Description: Tract A, Osuna Elementary School, Albuquerque, New Mexico

City Address: 4715 Moon St NE, Albuquerque, NM 87111

Engineering Firm: High Mesa Consulting Group **Contact:** J. Graeme Means

Address: 6010-B Midway Park Blvd NE, Albuquerque, NM 87109

Phone#: 505-345-4250 **Fax#:** 505-345-4254 **E-mail:** Gmeans@highmesacg com

Owner: Albuquerque Public Schools **Contact:** David Ritchey

Address: 915 Oak Street SE, Albuquerque, NM 87106

Phone#: 505-848-8876 **Fax#:** 505-246-9020 **E-mail:** ritchey_d@aps edu

Architect: N/A **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

Other Contact: N/A **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

Check all that Apply:

DEPARTMENT:

X HYDROLOGY/ DRAINAGE
____ TRAFFIC/ TRANSPORTATION
____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

____ ENGINEER/ ARCHITECT CERTIFICATION

____ CONCEPTUAL G & D PLAN
X GRADING PLAN
X DRAINAGE MASTER PLAN
____ DRAINAGE REPORT
____ CLOMR/LOMR

____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ TRAFFIC IMPACT STUDY (TIS)
____ EROSION & SEDIMENT CONTROL PLAN (ESC)

____ OTHER (SPECIFY) _____

RECEIVED
APR 08 2016
AC
LAND DEVELOPMENT SECTION

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY

____ PRELIMINARY PLAT APPROVAL
____ SITE PLAN FOR SUB'D APPROVAL
____ SITE PLAN FOR BLDG. PERMIT APPROVAL
____ FINAL PLAT APPROVAL
____ SIA/ RELEASE OF FINANCIAL GUARANTEE
____ FOUNDATION PERMIT APPROVAL
X GRADING PERMIT APPROVAL
____ SO-19 APPROVAL
____ PAVING PERMIT APPROVAL
____ GRADING/ PAD CERTIFICATION
____ WORK ORDER APPROVAL
____ CLOMR/LOMR

____ PRE-DESIGN MEETING
____ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: X Yes ____ No

DATE SUBMITTED: 4-07-16 By: Graeme Means

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ____

Graeme Means

From: Graeme Means
Sent: Thursday, April 07, 2016 7:20 AM
To: 'Abiel X. Carrillo'; 'plndrs@cabq.gov'
Cc: Cedric Smith
Subject: RE: F20D010A - Osuna Elementary School DMP - Stamp Date 2-15-2016
Attachments: 141846_C-101-R3.pdf; 141846_C-104-R3.pdf; Transportation-DrainageInfoSheet-3-7-16.pdf; OUTFLOW.txt; 2014.184.6Proposed.txt

Abiel,

We are resubmitting this plan today. Sheets 1 and 4 are revised to 1) include the table on sheet 1 requested in item #2 below, 2) Move the flowline of the Basin 2 outfall on sheet 4 away from the wall, 3) expand narrative on sheet 1 to explain that sheet 6 improvements are to be built under this plan, and 4) add asphalt shading to legend on sheet 4.

The revised sheets and the AHYMO files are attached to this email that also is sent to the plndrs@cabq.gov address.

Please let us know if you have any questions.

Thank you,

Graeme

HIGH MESA Consulting Group

J. Graeme Means, P.E., LEED AP BD+C
Principal

6010-B Midway Park Blvd. NE
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www.highmesacg.com

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Fax: 505.345.4254
gmeans@highmesacg.com

We invite you to learn about our subsurface utility department

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From: Abiel X. Carrillo [mailto:acarrillo@cabq.gov]
Sent: Tuesday, March 29, 2016 1:38 PM
To: Graeme Means <GMeans@highmesacg.com>
Subject: F20D010A - Osuna Elementary School DMP - Stamp Date 2-15-2016

Mr. Means,

This email is being sent in lieu of an attached comment letter in order to expedite the response for initial reviews. Responses to comments should continue to be included in the re-submittal. A reply to this email with responses to comments will not be considered a re-submittal.

Based on the information provided in your submittal received 2-18-2016, and per our meeting today, the above referenced Drainage Master Plan and Grading Plan cannot be approved for Grading Permit until the following items are addressed:

1. Please provide the AHYMO output that is referenced as an update to the hydrology calculations from the original DMP.

2. Provide a table that summarizes the differences in Basin and Analysis point Peak Flows and pond volumes from the original plan on Sheet C-101.

3. Move the flowline of the Basin 2 outfall away from the wall along the western property line (provide a conceptual cross section of the swale/alley)

4. Clarify in the drainage narrative and/or on the applicable sheets what is proposed to be built with this phase.

5. Add a legend for the hatched areas that we understand will be paving in the future.

Any question please let me know.

Abiel Carrillo, P.E.

Principal Engineer - Hydrology
Planning Department
Development Review Services Division
City of Albuquerque
505-924-3986
acarrillo@cabq.gov
600 2nd Street NW
Albuquerque, NM 87102

```
*2345678901234567890
*
*   100 year, 6 hour storm
*
*   HMCG JOB NUMBER 2014.184.6
*   OSUNA ES
*
*
START                TIME = 0.0 HR  PUNCH CODE = 0  PRINT LINES = -1
*
*   RAINFALL DATA FROM NOAA Atlas 14, Volume 1, Version 5
*

*100-Year, 6 Hour Storm
RAINFALL             TYPE = 1  RAIN QUARTER = 0.0
                     RAIN ONE = 1.84 IN  RAIN SIX = 2.45 IN
                     RAIN DAY = 2.88 IN  DT = 0.033333
*
*   COMPUTE EXISTING 100-YEAR PEAK RATE AND VOLUME OF RUNOFF
*
*   BASIN 1
*
COMPUTE NM HYD       ID = 1  HYD NO = BASIN_1  AREA = 0.0061768 SQ MI
                     PER A = 0 PER B = 1 PER C = 17  PER D = 82
                     TP = -0.13333 HRS  MASS RAIN = -1
PRINT HYD            ID = 1  CODE = 1
*
*
*
*   BASIN 2
*
COMPUTE NM HYD       ID = 2  HYD NO = BASIN_2  AREA = 0.0046645 SQ MI
                     PER A = 0 PER B = 62 PER C = 24  PER D = 14
                     TP = -0.13333 HRS  MASS RAIN = -1
PRINT HYD            ID = 2  CODE = 1
*
*
*   BASIN 3
*
COMPUTE NM HYD       ID = 3  HYD NO = BASIN_3  AREA = 0.00051294 SQ MI
                     PER A = 0 PER B = 0 PER C = 96  PER D = 4
                     TP = -0.13333 HRS  MASS RAIN = -1
PRINT HYD            ID = 3  CODE = 1
*

*     ADD THE FLOWS FROM BASIN 1 TO THE FLOWS FROM BASIN 2
*
ADD HYD                  ID = 4  HYD = 4  I = 1  II = 3
PRINT HYD                ID = 4  CODE = 1
*
*
*ROUTE THROUGH POND with 18" Outlet
*
ROUTE RESERVOIR          ID = 5  HYD NO = OUTFLOW  INFLOW ID = 4 CODE = 4
                         OUTFLOW (CFS)   STORAGE (AC FT)   ELEV(FT)
                         0               0                 5496.5
                         0.01            0.02              5497.0
                         0.01            0.07              5498.0
                         0.01            0.11              5498.5
                         1.95            0.15              5499.0
                         3.30            0.20              5499.5
                         6.00            0.26              5500
```

```
                                        2014.184.6Proposed
                                8.90            0.32                5500.5

*       *       *       *       *       *       *       *       *       *


*ADD THE ROUTED POND FLOW AND BASIN 2
*
ADD HYD                         ID = 6  HYD = 6  I = 5 II = 2
PRINT HYD                       ID = 6  CODE = 1
*
FINISH
```

OUTFLOW

←(s16.66H

AHYMO PROGRAM (AHYMO_97) - - Version: 1997.02c
RUN DATE (MON/DAY/YR) = 12/02/2015
START TIME (HR:MIN:SEC) = 14:52:36 USER NO.=
AHYMO-I-9702c0100021U-SH
INPUT FILE = C:\DOCUME~1\XPMUser\Desktop\201418~1.TXT

```
*2345678901234567890
*
*   100 year, 6 hour storm
*
*   HMCG JOB NUMBER 2014.184.6
*   OSUNA ES
*
*
START                TIME = 0.0 HR  PUNCH CODE = 0  PRINT LINES = -1
*
*   RAINFALL DATA FROM NOAA Atlas 14, Volume 1, Version 5
*

*100-Year, 6 Hour Storm
RAINFALL             TYPE = 1  RAIN QUARTER = 0.0
                     RAIN ONE = 1.84 IN  RAIN SIX = 2.45 IN
                     RAIN DAY = 2.88 IN  DT = 0.033333

                     COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 -
PEAK AT 1.40 HR.
                     DT =    .033333 HOURS       END TIME =     5.999940 HOURS
                        .0000   .0054   .0110   .0167   .0224   .0283   .0343
                        .0405   .0468   .0532   .0598   .0665   .0735   .0805
                        .0878   .0953   .1030   .1109   .1191   .1275   .1362
                        .1452   .1545   .1641   .1742   .1846   .1955   .2069
                        .2188   .2314   .2446   .2497   .2551   .2609   .2734
                        .3014   .3444   .4062   .4905   .6013   .7426   .9186
                       1.1333  1.3318  1.4149  1.4851  1.5475  1.6043  1.6566
                       1.7052  1.7505  1.7930  1.8331  1.8708  1.9065  1.9402
                       1.9722  2.0025  2.0313  2.0586  2.0846  2.0912  2.0976
                       2.1037  2.1096  2.1154  2.1209  2.1263  2.1316  2.1367
                       2.1417  2.1466  2.1514  2.1560  2.1606  2.1651  2.1695
                       2.1738  2.1780  2.1822  2.1863  2.1903  2.1943  2.1982
                       2.2020  2.2058  2.2096  2.2133  2.2169  2.2205  2.2240
                       2.2276  2.2310  2.2344  2.2378  2.2412  2.2445  2.2477
```

OUTFLOW

2.2510	2.2542	2.2573	2.2605	2.2636	2.2667	2.2697
2.2727	2.2757	2.2787	2.2816	2.2846	2.2875	2.2903
2.2932	2.2960	2.2988	2.3016	2.3043	2.3070	2.3098
2.3125	2.3151	2.3178	2.3204	2.3230	2.3256	2.3282
2.3308	2.3333	2.3358	2.3384	2.3409	2.3433	2.3458
2.3483	2.3507	2.3531	2.3555	2.3579	2.3603	2.3626
2.3650	2.3673	2.3697	2.3720	2.3743	2.3766	2.3788
2.3811	2.3833	2.3856	2.3878	2.3900	2.3922	2.3944
2.3966	2.3988	2.4009	2.4031	2.4052	2.4074	2.4095
2.4116	2.4137	2.4158	2.4179	2.4199	2.4220	2.4241
2.4261	2.4281	2.4302	2.4322	2.4342	2.4362	2.4382
2.4402	2.4422	2.4441	2.4461	2.4481	2.4500	

```
*

*   COMPUTE EXISTING 100-YEAR PEAK RATE AND VOLUME OF RUNOFF

*

*   BASIN 1

*

COMPUTE NM HYD       ID = 1  HYD NO = BASIN_1  AREA = 0.0061768 SQ MI

                     PER A = 0 PER B = 1 PER C = 17  PER D = 82

                     TP = -0.13333 HRS  MASS RAIN = -1

          K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE
CONSTANT, N =  7.106420
          UNIT PEAK =   19.992    CFS   UNIT VOLUME =    .9988       B =   526.28
  P60 = 1.8400
          AREA =      .005065 SQ MI    IA =    .10000 INCHES    INF =    .04000
INCHES PER HOUR
          RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =
.033333

          K =   .106996HR    TP =   .133330HR    K/TP RATIO =   .802493     SHAPE
CONSTANT, N =  4.462654
          UNIT PEAK =   3.2097    CFS   UNIT VOLUME =    .9965       B =   384.91
  P60 = 1.8400
          AREA =      .001112 SQ MI    IA =    .35833 INCHES    INF =    .85333
INCHES PER HOUR
          RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =
.033333

PRINT HYD            ID = 1  CODE = 1


                                                HYDROGRAPH FROM AREA BASIN_1


         RUNOFF VOLUME =     1.98666 INCHES     =        .6545 ACRE-FEET
         PEAK DISCHARGE RATE =      16.12 CFS  AT   1.500 HOURS   BASIN AREA =
.0062 SQ. MI.


*
```

```
*
*
*   BASIN 2
*
COMPUTE NM HYD       ID = 2  HYD NO = BASIN_2  AREA = 0.0046645 SQ MI
                     PER A = 0 PER B = 62 PER C = 24  PER D = 14
                     TP = -0.13333 HRS  MASS RAIN = -1

          K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE
CONSTANT, N =  7.106420
          UNIT PEAK =   2.5776    CFS   UNIT VOLUME =    .9949       B =   526.28
  P60 = 1.8400
          AREA =      .000653 SQ MI    IA =    .10000 INCHES    INF =    .04000
INCHES PER HOUR
          RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =
.033333


          K =   .124294HR    TP =   .133330HR    K/TP RATIO =   .932231     SHAPE
CONSTANT, N =  3.794449
          UNIT PEAK =   10.266    CFS   UNIT VOLUME =    .9990       B =   341.22
  P60 = 1.8400
          AREA =      .004011 SQ MI    IA =    .45814 INCHES    INF =   1.13279
INCHES PER HOUR
          RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =
.033333

     PRINT HYD           ID = 2  CODE = 1


                                          HYDROGRAPH FROM AREA BASIN_2


        RUNOFF VOLUME =     1.02219 INCHES     =        .2543 ACRE-FEET
        PEAK DISCHARGE RATE =       8.11 CFS  AT   1.500 HOURS   BASIN AREA =
.0047 SQ. MI.


     *
     *
     *   BASIN 3
     *
     COMPUTE NM HYD       ID = 3  HYD NO = BASIN_3  AREA = 0.00051294 SQ MI
                          PER A = 0 PER B = 0 PER C = 96  PER D = 4
                          TP = -0.13333 HRS  MASS RAIN = -1
```

```
                                        OUTFLOW
          K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE
CONSTANT, N =  7.106420
          UNIT PEAK =   .80986E-01CFS   UNIT VOLUME =    .8874       B =   526.28
  P60 = 1.8400
          AREA =      .000021 SQ MI    IA =    .10000 INCHES    INF =    .04000
INCHES PER HOUR
          RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =
.033333


          K =   .105552HR    TP =   .133330HR    K/TP RATIO =   .791661     SHAPE
CONSTANT, N =  4.531123
          UNIT PEAK =   1.4372    CFS   UNIT VOLUME =    .9918       B =   389.14
  P60 = 1.8400
          AREA =      .000492 SQ MI    IA =    .35000 INCHES    INF =    .83000
INCHES PER HOUR
          RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =
.033333

     PRINT HYD           ID = 3  CODE = 1

                                                HYDROGRAPH FROM AREA BASIN_3


         RUNOFF VOLUME =     1.11980 INCHES     =        .0306 ACRE-FEET
         PEAK DISCHARGE RATE =       1.02 CFS  AT   1.500 HOURS   BASIN AREA =
.0005 SQ. MI.


     *


     *     ADD THE FLOWS FROM BASIN 1 TO THE FLOWS FROM BASIN 2

     *

     ADD HYD                             ID = 4  HYD = 4  I = 1  II = 3

     PRINT HYD                   ID = 4  CODE = 1

                                              OUTFLOW HYDROGRAPH REACH     4.00


         RUNOFF VOLUME =     1.91963 INCHES     =        .6849 ACRE-FEET
         PEAK DISCHARGE RATE =      17.14 CFS  AT   1.500 HOURS   BASIN AREA =
.0067 SQ. MI.


     *

     *

     *ROUTE THROUGH POND with 18" Outlet

     *

     ROUTE RESERVOIR             ID = 5  HYD NO = OUTFLOW  INFLOW ID = 4 CODE = 4
```

OUTFLOW

OUTFLOW (CFS)	STORAGE (AC FT)	ELEV(FT)
0	0	5496.5
0.01	0.02	5497.0
0.01	0.07	5498.0
0.01	0.11	5498.5
1.95	0.15	5499.0
3.30	0.20	5499.5
6.00	0.26	5500
8.90	0.32	5500.5

* * * * * * * * * * * * * * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	5496.50	.000	.00
.13	.00	5496.50	.000	.00
.27	.00	5496.50	.000	.00
.40	.00	5496.50	.000	.00
.53	.00	5496.50	.000	.00
.67	.33	5496.53	.001	.00
.80	.63	5496.67	.007	.00
.93	.79	5496.86	.015	.01
1.07	.94	5498.50	.110	.01
1.20	.82	5498.50	.110	.01
1.33	5.12	5498.50	.110	.01
1.47	15.76	5499.15	.165	2.36
1.60	11.84	5500.18	.281	7.02
1.73	6.90	5500.30	.296	7.72
1.87	5.06	5500.16	.279	6.94
2.00	3.84	5499.98	.257	5.88
2.13	2.22	5499.78	.233	4.79
2.27	1.10	5499.54	.204	3.50
2.40	.75	5499.30	.180	2.77
2.53	.55	5499.10	.160	2.22
2.67	.43	5498.92	.144	1.65
2.80	.34	5498.79	.133	1.12
2.93	.28	5498.70	.126	.79
3.07	.25	5498.64	.122	.57
3.20	.22	5498.61	.119	.43
3.33	.21	5498.59	.117	.34
3.47	.20	5498.57	.116	.28
3.60	.19	5498.56	.115	.25
3.73	.19	5498.55	.114	.22
3.87	.18	5498.55	.114	.21
4.00	.18	5498.55	.114	.20
4.13	.18	5498.55	.114	.19
4.27	.17	5498.54	.114	.18
4.40	.17	5498.54	.113	.18
4.53	.17	5498.54	.113	.18
4.67	.17	5498.54	.113	.17

				OUTFLOW
4.80	.17	5498.54	.113	.17
4.93	.17	5498.54	.113	.17
5.07	.17	5498.54	.113	.17
5.20	.18	5498.54	.113	.17
5.33	.18	5498.54	.113	.17
5.47	.18	5498.54	.113	.18
5.60	.18	5498.54	.113	.18
5.73	.18	5498.54	.113	.18
5.87	.18	5498.54	.114	.18
6.00	.19	5498.54	.114	.18
6.13	.11	5498.54	.113	.17
6.27	.03	5498.53	.112	.12
6.40	.02	5498.52	.111	.08
6.53	.01	5498.51	.111	.05
6.67	.00	5498.51	.110	.03
6.80	.00	5498.50	.110	.02
6.93	.00	5498.50	.110	.01
7.07	.00	5498.50	.110	.01
7.20	.00	5498.50	.110	.01
7.33	.00	5498.50	.110	.01

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
7.47	.00	5498.50	.110	.01
7.60	.00	5498.50	.110	.01
7.73	.00	5498.50	.110	.01
7.87	.00	5498.50	.110	.01
8.00	.00	5498.50	.110	.01
8.13	.00	5498.50	.110	.01
8.27	.00	5498.50	.110	.01
8.40	.00	5498.50	.110	.01
8.53	.00	5498.50	.110	.01
8.67	.00	5498.50	.110	.01
8.80	.00	5498.50	.110	.01
8.93	.00	5498.50	.110	.01
9.07	.00	5498.50	.110	.01
9.20	.00	5498.50	.110	.01
9.33	.00	5498.50	.110	.01
9.47	.00	5498.50	.110	.01
9.60	.00	5498.50	.110	.01
9.73	.00	5498.50	.110	.01
9.87	.00	5498.50	.110	.01
10.00	.00	5498.50	.110	.01
10.13	.00	5498.50	.110	.01
10.27	.00	5498.50	.110	.01
10.40	.00	5498.50	.110	.01
10.53	.00	5498.50	.110	.01
10.67	.00	5498.50	.110	.01
10.80	.00	5498.50	.110	.01
10.93	.00	5498.50	.110	.01
11.07	.00	5498.50	.110	.01
11.20	.00	5498.50	.110	.01
11.33	.00	5498.50	.110	.01
11.47	.00	5498.50	.110	.01
11.60	.00	5498.50	.110	.01
11.73	.00	5498.50	.110	.01
11.87	.00	5498.50	.110	.01
12.00	.00	5498.50	.110	.01
12.13	.00	5498.50	.110	.01
12.27	.00	5498.50	.110	.01
12.40	.00	5498.50	.110	.01
12.53	.00	5498.50	.110	.01

			OUTFLOW	
12.67	.00	5498.50	.110	.01
12.80	.00	5498.50	.110	.01
12.93	.00	5498.50	.110	.01
13.07	.00	5498.50	.110	.01
13.20	.00	5498.50	.110	.01
13.33	.00	5498.50	.110	.01
13.47	.00	5498.50	.110	.01
13.60	.00	5498.50	.110	.01
13.73	.00	5498.50	.110	.01
13.87	.00	5498.50	.110	.01
14.00	.00	5498.50	.110	.01
14.13	.00	5498.50	.110	.01
14.27	.00	5498.50	.110	.01
14.40	.00	5498.50	.110	.01
14.53	.00	5498.50	.110	.01
14.67	.00	5498.50	.110	.01
14.80	.00	5498.50	.110	.01

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
14.93	.00	5498.50	.110	.01
15.07	.00	5498.50	.110	.01
15.20	.00	5498.50	.110	.01
15.33	.00	5498.50	.110	.01
15.47	.00	5498.50	.110	.01
15.60	.00	5498.50	.110	.01
15.73	.00	5498.50	.110	.01
15.87	.00	5498.50	.110	.01
16.00	.00	5498.50	.110	.01
16.13	.00	5498.50	.110	.01
16.27	.00	5498.50	.110	.01
16.40	.00	5498.50	.110	.01
16.53	.00	5498.50	.110	.01
16.67	.00	5498.50	.110	.01
16.80	.00	5498.50	.110	.01
16.93	.00	5498.50	.110	.01
17.07	.00	5498.50	.110	.01
17.20	.00	5498.50	.110	.01
17.33	.00	5498.50	.110	.01
17.47	.00	5498.50	.110	.01
17.60	.00	5498.50	.110	.01
17.73	.00	5498.50	.110	.01
17.87	.00	5498.50	.110	.01
18.00	.00	5498.50	.110	.01
18.13	.00	5498.50	.110	.01
18.27	.00	5498.50	.110	.01
18.40	.00	5498.50	.110	.01
18.53	.00	5498.50	.110	.01
18.67	.00	5498.50	.110	.01
18.80	.00	5498.50	.110	.01
18.93	.00	5498.50	.110	.01
19.07	.00	5498.50	.110	.01
19.20	.00	5498.50	.110	.01
19.33	.00	5498.50	.110	.01
19.47	.00	5498.50	.110	.01
19.60	.00	5498.50	.110	.01
19.73	.00	5498.50	.110	.01
19.87	.00	5498.50	.110	.01

PEAK DISCHARGE = 7.788 CFS - PEAK OCCURS AT HOUR 1.70
MAXIMUM WATER SURFACE ELEVATION = 5500.309
MAXIMUM STORAGE = .2970 AC-FT INCREMENTAL TIME= .033333HRS

```
                                        OUTFLOW
        *                    *       *       *       *       *       *       *       *
    *


        *ADD THE ROUTED POND FLOW AND BASIN 2
        *
        ADD HYD                                ID = 6  HYD = 6  I = 5 II = 2
        PRINT HYD                     ID = 6  CODE = 1

                                                OUTFLOW HYDROGRAPH REACH     6.00

            RUNOFF VOLUME =     1.38701 INCHES     =        .8399 ACRE-FEET
            PEAK DISCHARGE RATE =      13.16 CFS  AT   1.567 HOURS   BASIN AREA =
    .0114 SQ. MI.


        *
        FINISH

            NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 14:52:36
    ←(s10H
```

2014.184.6

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Osuna ES Master Drainage Plan Building Permit #: _____ City Drainage #: F20/D010A

DRB#: _____ EPC#: _____ Work Order#: _____

Legal Description: Tract A, Osuna Elementary School, Albuquerque, New Mexico

City Address: 4715 Moon St NE, Albuquerque, NM 87111

Engineering Firm: High Mesa Consulting Group Contact: J Graeme Means

Address: 6010-B Midway Park Blvd NE, Albuquerque, NM 87109

Phone#: 505-345-4250 Fax#: 505-345-4254 E-mail: Gmeans@highmesacg com

Owner: Albuquerque Public Schools Contact: David Ritchey

Address: 915 Oak Street SE, Albuquerque, NM 87106

Phone#: 505-848-8876 Fax#: 505-246-9020 E-mail: ritchey_d@aps edu

Architect: N/A Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Other Contact: N/A Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Check all that Apply:

DEPARTMENT:

X HYDROLOGY/ DRAINAGE
____ TRAFFIC/ TRANSPORTATION
____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

____ ENGINEER/ ARCHITECT CERTIFICATION

____ CONCEPTUAL G & D PLAN
____ GRADING PLAN
X DRAINAGE MASTER PLAN
____ DRAINAGE REPORT
____ CLOMR/LOMR

____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ TRAFFIC IMPACT STUDY (TIS)
____ EROSION & SEDIMENT CONTROL PLAN (ESC)

____ OTHER (SPECIFY) _____

RECEIVED
FEB 18 2016
LAND DEVELOPMENT SECTION

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY

____ PRELIMINARY PLAT APPROVAL
____ SITE PLAN FOR SUB'D APPROVAL
____ SITE PLAN FOR BLDG. PERMIT APPROVAL
____ FINAL PLAT APPROVAL
____ SIA/ RELEASE OF FINANCIAL GUARANTEE
____ FOUNDATION PERMIT APPROVAL
X GRADING PERMIT APPROVAL
____ SO-19 APPROVAL
____ PAVING PERMIT APPROVAL
____ GRADING/ PAD CERTIFICATION
____ WORK ORDER APPROVAL
____ CLOMR/LOMR

____ PRE-DESIGN MEETING
____ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: X Yes ____ No

DATE SUBMITTED: 2-18-16 By: Graeme Means

COA STAFF ELECTRONIC SUBMITTAL RECEIVED ___

Ryan Curley

From: Ryan Curley
Sent: Thursday, February 18, 2016 10:22 AM
To: 'plndrs@cabq.gov'
Cc: Graeme Means
Subject: Osuna ES Master Drainage Plan Submittal
Attachments: OSUNA ES Drainage Plan.pdf; Transportation-DrainageInfoSheet-2-18-16.pdf

Hello,
Attached is a pdf copy of the submittal that will be turned in later today. Please let me know if you have any questions or comments.
Thanks,
Ryan

HIGH MESA Consulting Group

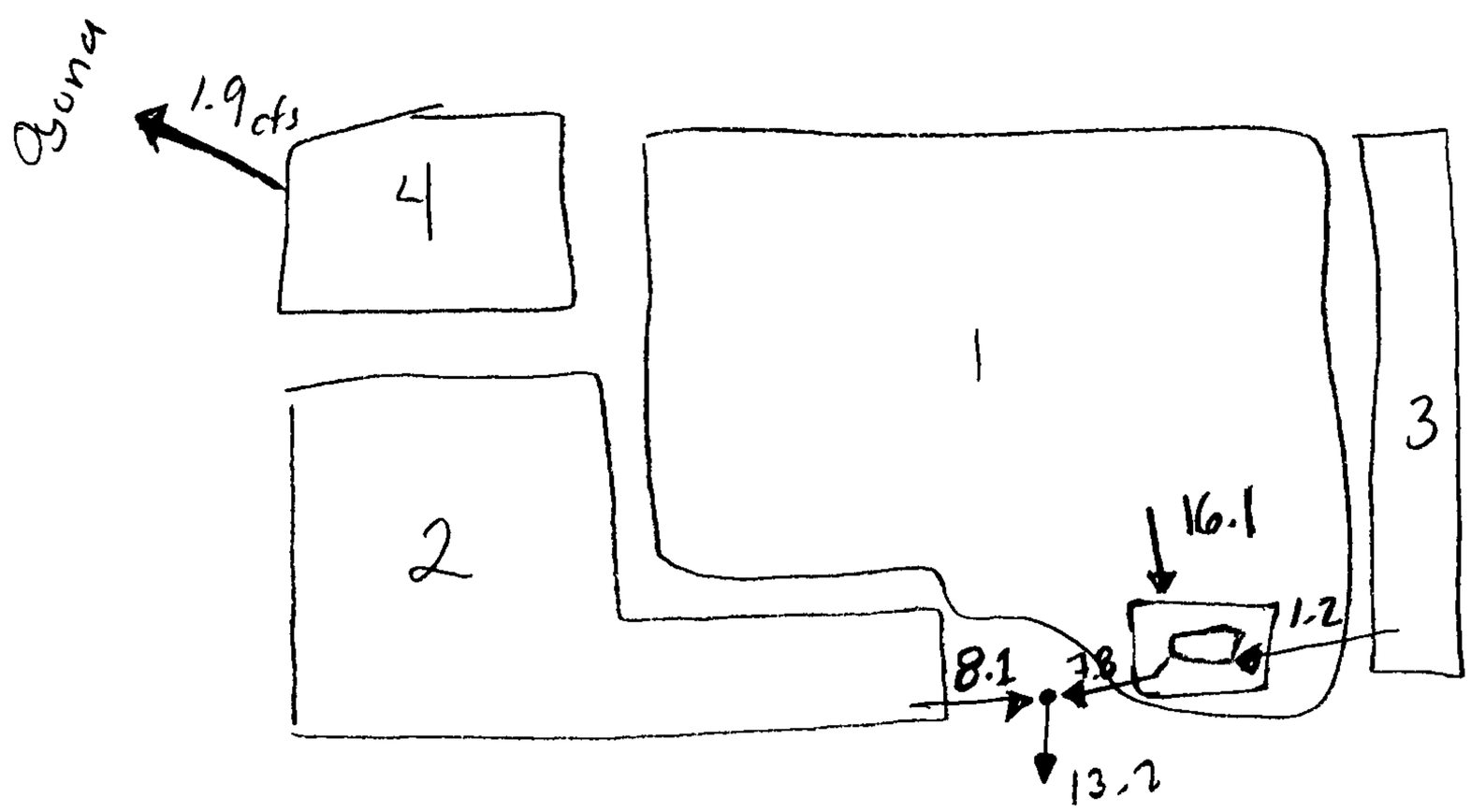
Ryan J. Curley, E.I.

6010-B Midway Park Blvd. NE
Albuquerque, NM 87109
www.highmesacg.com

Phone: 505.345.4250
Fax: 505.345.4254
rcurley@highmesacg.com

We invite you to visit our updated website at www.highmesacg.com

RECEIVED
FEB 18 2016
LAND DEVELOPMENT SECTION



Allowable = 17.84

Abiel X. Carrillo

From: Abiel X. Carrillo
Sent: Tuesday, March 29, 2016 1:38 PM
To: 'GMeans@highmesacg.com'
Subject: F20D010A - Osuna Elementary School DMP - Stamp Date 2-15-2016

Mr. Means,

This email is being sent in lieu of an attached comment letter in order to expedite the response for initial reviews. Responses to comments should continue to be included in the re-submittal. A reply to this email with responses to comments will not be considered a re-submittal.

Based on the information provided in your submittal received 2-18-2016, and per our meeting today, the above referenced Drainage Master Plan and Grading Plan cannot be approved for Grading Permit until the following items are addressed:

1. Please provide the AHYMO output that is referenced as an update to the hydrology calculations from the original DMP.

2. Provide a table that summarizes the differences in Basin and Analysis point Peak Flows and pond volumes from the original plan on Sheet C-101.

3. Move the flowline of the Basin 2 outfall away from the wall along the western property line (provide a conceptual cross section of the swale/alley)

4. Clarify in the drainage narrative and/or on the applicable sheets what is proposed to be built with this phase.

5. Add a legend for the hatched areas that we understand will be paving in the future.

Any question please let me know.

Abiel Carrillo, P.E.
Principal Engineer - Hydrology
Planning Department
Development Review Services Division
City of Albuquerque
505-924-3986
acarrillo@cabq.gov
600 2nd Street NW
Albuquerque, NM 87102

CITY OF ALBUQUERQUE

April 7, 2011

Jeffrey G. Mortensen, P.E.
High Mesa Consulting Group
6010-B Midway Park Blvd NE
Albuquerque, NM 87109

Re: Osuna Elementary School Grading Plan, Paving Plan, and SO-19 Permit Engineer's Stamp date 3-13-11 (F20/D010A)

Dear Mr. Mortensen,

Based upon the information provided in your submittal received 3-21-11, the above referenced plan cannot be approved for Grading Plan, Paving Plan, and SO-19 Permit until the following comments are addressed:

- It appears that the runoff from Basin 2 runs down the western property line along the CMU wall. It would be preferred to have the runoff drain away from the wall near the centerline of the asphalt pavement.
- It appears that the 4" storm drain (INV 06.00) tying into the new SDMH #3 (RIM 06.50) does not have enough cover. Please provide a detail specifying how this is to be done.
- There has been a recent modification to the approved standard sidewalk culvert detail (COA STD DWG #2236), please see attached detail. If another design is desired, please contact Curtis Cherne in Hydrology at 924-3695 for further approval.

If you have any questions, you may contact me at 924-3421.

Sincerely,

Paul Olson, P.E.
Senior Engineer, Planning Department.
Development and Building Services

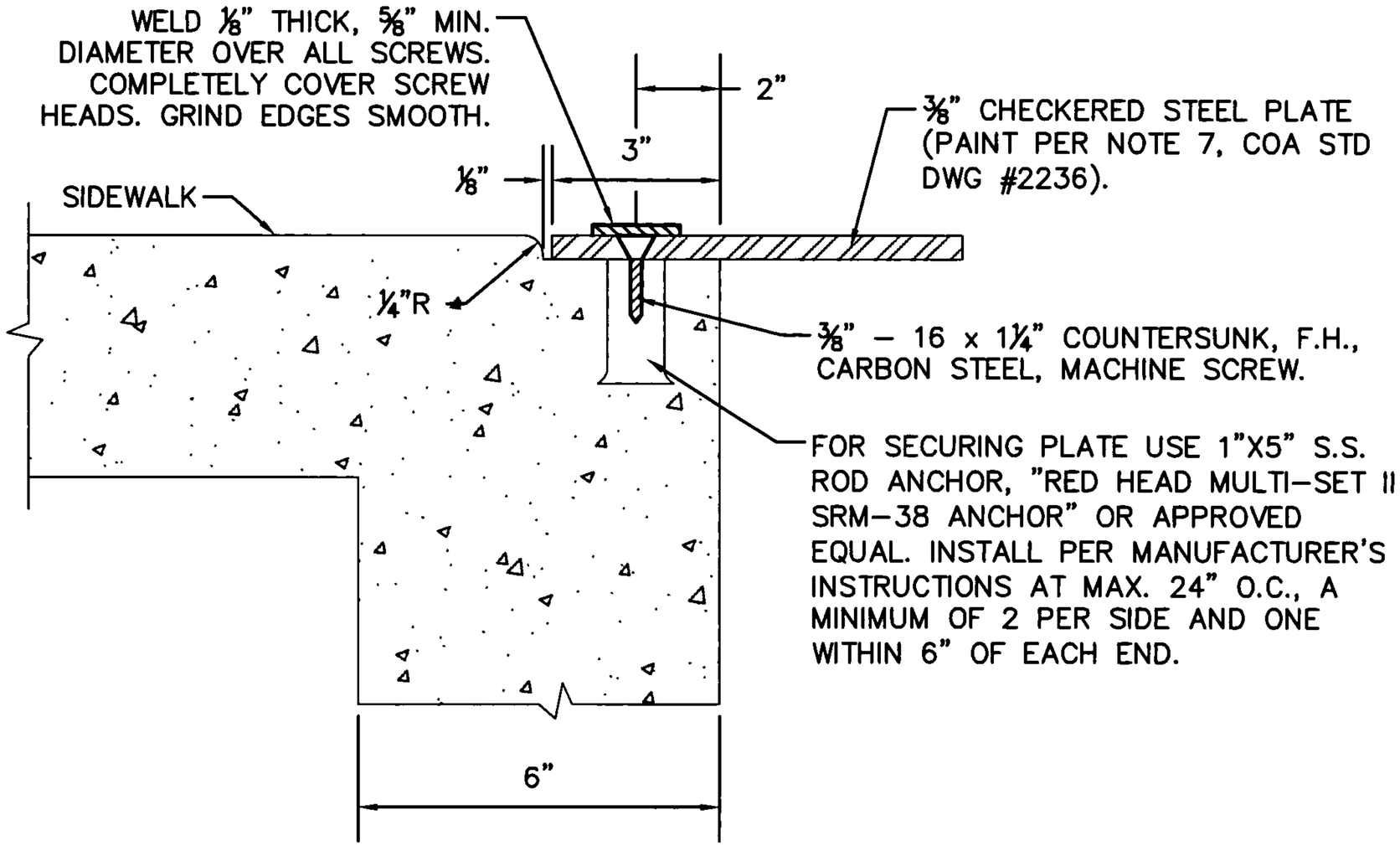
PO/MP
C: file

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov



X

MODIFIED SECTION B–B FROM COA STD DWG #2236

N.T.S.

M:\CAD FILES\1800-1899\1801\dwg\1801 CG-501.dwg, 3/29/2011 4:32:48 PM, thor

JMA _2008.193.8__

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: Osuna Elementary School Playground and Drainage Improvements

ZONE ATLAS/DRNG. FILE #: F-20 / ~~D020~~ D01DA

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: Tract A, Osuna Elementary School

CITY ADDRESS: 4715 Moon Street NE, Albuquerque NM

ENGINEERING FIRM: High Mesa Consulting Group
ADDRESS: 6010-B Midway Park Blvd. NE
CITY, STATE: Albuquerque, NM
CONTACT: Jeff Mortensen, PE 8547
PHONE: (505) 345-4250
ZIP CODE: 87109

OWNER: Albuquerque Public Schools
ADDRESS: P.O. Box 25704
CITY, STATE: Albuquerque, NM
CONTACT: David Ritchey
PHONE: 848-8876
ZIP CODE: 87125

ARCHITECT: (see Engineer)
ADDRESS:
CITY, STATE:
CONTACT:
PHONE:
ZIP CODE:

SURVEYOR: High Mesa Consulting Group
ADDRESS: 6010-B Midway Park Blvd. NE
CITY, STATE: Albuquerque, NM
CONTACT: Charles Cala, NMPS 11184
PHONE: (505) 345-4250
ZIP CODE: 87109

CONTRACTOR:
ADDRESS:
CITY, STATE:
CONTACT:
PHONE:
ZIP CODE:

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT
X DRAINAGE PLAN 1st SUBMITTAL, *REQUIRES TCL or equal*
___ DRAINAGE PLAN RESUBMITTAL
___ CONCEPTUAL GRADING & DRAINAGE PLAN
X GRADING PLAN
___ EROSION CONTROL PLAN
___ ENGINEER'S CERTIFICATION (HYDROLOGY)
___ CLOMR/LOMR
___ TRAFFIC CIRCULATION LAYOUT (TCL)
___ ENGINEER'S CERTIFICATION (TCL)
___ ENGINEER'S CERTIFICATION (DRB APPR. SITE PLAN)
___ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

___ SIA/FINANCIAL GUARANTEE RELEASE
___ PRELIMINARY PLAT APPROVAL
___ S. DEV. PLAN FOR SUB'D APPROVAL
___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
___ SECTOR PLAN APPROVAL
___ FINAL PLAT APPROVAL
___ FOUNDATION PERMIT APPROVAL
___ BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY (PERM.)
___ CERTIFICATE OF OCCUPANCY (TEMP.)
X GRADING PERMIT APPROVAL
X PAVING PERMIT APPROVAL
___ WORK ORDER APPROVAL
X OTHER (SPECIFY) SO #19 PERMIT APPROVAL

WAS A PRE-DESIGN CONFERENCE ATTENDED:

___ YES
X NO
___ COPY PROVIDED

DATE SUBMITTED: 03-18-11 BY: Justin Schara

RECEIVED
MAR 21 2011
HYDROLOGY SECTION

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based upon the following:

1. **Conceptual Grading and Drainage Plan**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans**: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report**: Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

CITY OF ALBUQUERQUE

February 14, 2011

Jeffrey Mortensen, P.E.
High Mesa Consulting Group
6010-B Midway Park Blvd. NE
Albuquerque, NM 87109

Re: Osuna Elementary School Master Drainage Plan
Engineer's Stamp dated 2-9-11 (F20/D010A)

Dear Mr. Mortensen,

Based upon the information provided in your submittal dated 2-9-11, the above referenced plan is approved for Master Drainage Plan.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Curtis A. Cherne, P.E.
Senior Engineer, Planning Dept.
Development and Building Services

C: file

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

HMCG _2008.193.8__

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: Osuna Elementary School MDP ZONE ATLAS/DRNG. FILE #: F-20 DUIDA
DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: Tract A, Osuna Elementary School
CITY ADDRESS: 4715 Moon Street NE

ENGINEERING FIRM: High Mesa Consulting Group CONTACT: Jeff Mortensen, PE 8547
ADDRESS: 6010-B Midway Park Blvd. NE PHONE: (505) 345-4250
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

OWNER: Albuquerque Public Schools CONTACT: David Ritchey
ADDRESS: 915 Oak Street SE PHONE: 848-8876
CITY, STATE: Albuquerque, NM ZIP CODE: 87106

ARCHITECT: n/a CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

SURVEYOR: High Mesa Consulting Group CONTACT: Charles Cala, NMPS 11184
ADDRESS: 6010-B Midway Park Blvd. NE PHONE: (505) 345-4250
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

CONTRACTOR: n/a CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:
- X DRAINAGE REPORT - RESUBMITTAL
- ___ DRAINAGE PLAN 1st SUBMITTAL, *REQUIRES TCL or equal*
- ___ DRAINAGE PLAN RESUBMITTAL
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- ___ GRADING PLAN
- ___ EROSION CONTROL PLAN
- ___ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ___ CLOMR/LOMR
- ___ TRAFFIC CIRCULATION LAYOUT (TCL)
- ___ ENGINEER'S CERTIFICATION (TCL)
- ___ ENGINEER'S CERTIFICATION (DRB APPR. SITE PLAN)
- ___ OTHER

CHECK TYPE OF APPROVAL SOUGHT:
- ___ SIA/FINANCIAL GUARANTEE RELEASE
- ___ PRELIMINARY PLAT APPROVAL
- ___ S. DEV. PLAN FOR SUB'D APPROVAL
- ___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ___ SECTOR PLAN APPROVAL
- ___ FINAL PLAT APPROVAL
- ___ FOUNDATION PERMIT APPROVAL
- ___ BUILDING PERMIT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY (PERM.)
- ___ CERTIFICATE OF OCCUPANCY (TEMP.)
- ___ GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- ___ WORK ORDER APPROVAL
- X OTHER (SPECIFY): MASTER DRAINAGE PLAN UPDATE

RECEIVED
FEB 09 2011
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:
- ___ YES
- X NO
- ___ COPY PROVIDED

DATE SUBMITTED: 2/9/11 BY: Justin Schara

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based upon the following:

1. **Conceptual Grading and Drainage Plan**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans**: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report**: Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

CITY OF ALBUQUERQUE

November 16, 2010

Jeffrey G. Mortensen, P.E.
High Mesa Consulting Group
6010-B Midway Park Blvd NE
Albuquerque, NM 87109

Re: Osuna Elementary School Master Drainage Plan
Engineer's Stamp date 10-6-10 (F20/D010A)

Dear Mr. Mortensen,

Based upon the information provided in your submittal received 10-7-10, the above referenced plan cannot be approved for Master Drainage Plan until the following comments are addressed:

- It appears that the proposed flow out of the drainage easement on the west side of the site may exceed the allowable flow and cause storm water to leave the ROW at the intersection of General Bradley and Northridge. As far as I could figure out, a flow of 3 cfs from the pond was the max allowable. However, there are mostly likely other flows leaving the site in this location.
- Please provide the existing allowable flow and the proposed flow out of the drainage easement from this site.

If you have any questions, you may contact me at 924-3986.

Sincerely,

Curtis a. Cherne

Curtis Cherne, P.E.
Senior Engineer, Planning Department.
Development and Building Services

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

$Q_{exist\ current} = ?$

$Q_{new\ current} = ?$

Could be problem at
Northridge and Canal Bradley

HMCG J08.193.8__

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: Osuna Elementary School MDP
ZONE ATLAS/DRNG. FILE #: F-20/D010A
DRB #: _____ EPC #: _____
WORK ORDER #: _____

LEGAL DESCRIPTION: Tract A, Osuna Elementary School
CITY ADDRESS: 4715 Moon Street NE

ENGINEERING FIRM: High Mesa Consulting Group
ADDRESS: 6010-B Midway Park Blvd. NE
CITY, STATE: Albuquerque, NM
CONTACT: Jeff Mortensen, PE 8547
PHONE: (505) 345-4250
ZIP CODE: 87109

OWNER: Albuquerque Public Schools
ADDRESS: 915 Oak Street SE
CITY, STATE: Albuquerque, NM
CONTACT: David Ritchey
PHONE: 848-8876
ZIP CODE: 87106

ARCHITECT: n/a
ADDRESS: _____
CITY, STATE: _____
CONTACT: _____
PHONE: _____
ZIP CODE: _____

SURVEYOR: High Mesa Consulting Group
ADDRESS: 6010-B Midway Park Blvd. NE
CITY, STATE: Albuquerque, NM
CONTACT: Charles Cala, NMPS 11184
PHONE: (505) 345-4250
ZIP CODE: 87109

CONTRACTOR: n/a
ADDRESS: _____
CITY, STATE: _____
CONTACT: _____
PHONE: _____
ZIP CODE: _____

TYPE OF SUBMITTAL:

- X DRAINAGE REPORT
- ___ DRAINAGE PLAN 1st SUBMITTAL, *REQUIRES TCL or equal*
- ___ DRAINAGE PLAN RESUBMITTAL
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- ___ GRADING PLAN
- ___ EROSION CONTROL PLAN
- ___ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ___ CLOMR/LOMR
- ___ TRAFFIC CIRCULATION LAYOUT (TCL)
- ___ ENGINEER'S CERTIFICATION (TCL)
- ___ ENGINEER'S CERTIFICATION (DRB APPR. SITE PLAN)
- ___ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- ___ SIA/FINANCIAL GUARANTEE RELEASE
- ___ PRELIMINARY PLAT APPROVAL
- ___ S. DEV. PLAN FOR SUB'D APPROVAL
- ___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ___ SECTOR PLAN APPROVAL
- ___ FINAL PLAT APPROVAL
- ___ FOUNDATION PERMIT APPROVAL
- ___ BUILDING PERMIT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY (PERM.)
- ___ CERTIFICATE OF OCCUPANCY (TEMP.)
- ___ GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- ___ WORK ORDER APPROVAL
- X OTHER (SPECIFY) MASTER DRAINAGE PLAN UPDATE

RECEIVED
OCT 07 2010
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ___ YES
- X NO
- ___ COPY PROVIDED

DATE SUBMITTED: 10/6/10 BY: Justin Sikara

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based upon the following:

1. **Conceptual Grading and Drainage Plan**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans**: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report**: Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

$A_{\text{North bin hole}} = 695{,}000\ ft^2 = 16\ ac$

$\times 3.5$

40 cfs

Site 1973 with Chavez Grove

12.33 cfs from North area

+ Pump output 3 cfs

15.33 cfs

+ 2.1 E

1243

API upstream of

encement

at Analysis pt 7 55.63 cfs

$\simeq 40 + 15.3 = 55.3$

hold to 56.63 at AP 7

Good at 17.04 ~ 18 cfs leaving OSCM

planning there easement

Car Information

Hertz Kahului

Pick-up 05/28/11
Drop-off 06/04/11

Economy Car

Choose a different car

Flight + Hotel + Car Trip

Honua Kai Resort

This beachfront condominium resort is located in Lahaina, near Kaanapali Beach. Additional points of interest in the area include Kapalua Beach. More lodging info

Hotel promotion - Early Booking Bonus—Save 35%. on Your Hotel Stay

Book online or call 1-800-222-0892

☆☆☆☆☆ Lahaina, HI
Ohana Partial Oceanview Studio
Includes: Full Kitchen

Check in. 05/28/11
Check out 06/04/11

You received $438 of Trip Savings by booking flight & hotel together*

Total Price $5825

$1457 per person
includes: Flight + Hotel + Car, Taxes & Fees**

Select and Continue

Traveler Opinion
4.3 out of 5
15+ reviews

Flight Information

Albuquerque (ABQ) to Kahului (OGG)	Depart 05/28/11 6:00 AM - 11:15 AM	UNITED UNITED
Kahului (OGG) to Albuquerque (ABQ)	Return.06/04/11 9 40 PM - 12 52 PM (+1 day)	UNITED UNITED

Choose a different flight

Car Information

Hertz Kahului

Pick-up 05/28/11
Drop-off 06/04/11

Economy Car

Choose a different car

Flight + Hotel + Car Trip

The Fairmont Kea Lani Maui

Set amid waterfall gardens and pools, this 22-acre resort borders Wailea's three championship golf courses and is one mile from the upscale Shops at Wailea and ...

More lodging info

Insiders' Select™ 2010 WINNER

Hotel promotion - Stay 1 Night and Save 15% on Your Stay!

Book online or call 1-800-222-0892

☆☆☆☆½ Wailea (Maui), HI
Moderate Suite-Fairmont Saver

Check in. 05/28/11
Check out 06/04/11

You received $422 of Trip Savings by booking flight & hotel together*

Total Price. $5928

$1482 per person
includes: Flight + Hotel + Car, Taxes & Fees**

Select and Continue

Traveler Opinion
4.9 out of 5
130+ reviews

Flight Information

CITY OF ALBUQUERQUE

February 18, 2010

Fred C. Arfman, P.E.
Isaacson & Arfman, P.A.
128 Monroe Street N.E.
Albuquerque, NM 87108

Re: Osuna Elementary School Administration, 4715 Moon St. NE,
Permanent Certificate of Occupancy - Approved
Engineer's Stamp dated 4-23-09 (F-20/D010A)
Certification dated 02-17-10

Dear Mr. Arfman,

Based upon the information provided in your submittal received 02-17-10, the above referenced Certification is approved for a release of a Permanent Certificate of Occupancy by Hydrology.

If you have any questions, you can contact me at 924-3982.

Sincerely,

Timothy E. Sims
Plan Checker—Hydrology
Development and Building Services

C: CO Clerk—Katrina Sigala
File

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV. 1/28/2003rd)

PROJECT TITLE: OSUNA Elementary School ADMINISTRATION ADDITION_____ ZONE MAP / DRG. FILE #: F-20 / D 10A
DRB #:_____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: Osuna Elementary School
CITY ADDRESS: 4715 Moon Street NE

ENGINEERING FIRM: Isaacson & Arfman, P.A. CONTACT: Scott McGee
ADDRESS: 128 Monroe St. NE PHONE: 268-8828
CITY, STATE: Albuquerque, NM ZIP CODE: 87108

OWNER: A P S CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

ARCHITECT Westwork Architects. CONTACT: Cindy Terry
ADDRESS: 2403 San Mateo NE Ste. S-2 PHONE 884-5252
CITY, STATE: ABQ, NM ZIP CODE: 87110

SURVEYOR: Jeff Mortensen CONTACT: Chuck Cala LS # 11184
ADDRESS 6010-B Midway Park Blvd PHONE: 345-4250
CITY, STATE: Albuquerque, New Mexico ZIP CODE: 87109

CONTRACTOR: ESA CONSTRUCTION CONTACT: MARTIN OLIVES
ADDRESS: 3435 GIRARD BLVD. NE PHONE: 884-2171
CITY, STATE: ABQ. NM ZIP CODE: 87107

CHECK TYPE OF SUBMITTAL
_____DRAINAGE REPORT
_____DRAINAGE PLAN 1ST *REQUIRES TCL or equal*
_____DRAINAGE PLAN RESUBMITTAL
_____CONCEPTUAL GRADING & DRAINAGE PLAN
_____GRADING PLAN
_____EROSION CONTROL PLAN
__X__ENGINEER'S CERTIFICATION (HYDROLOGY)
_____CLOMR / LOMR
_____TRAFFIC CIRCULATION LAYOUT (TCL)
_____ENGINEER'S CERTIFICATION (TCL)
_____ENGINEER'S CERTIFICATION (DRB APPR, SITE PLAN)
_____OTHER

CHECK TYPE OF APPROVAL SOUGHT
_____SIA / FINANCIAL GUARANTEE RELEASE
_____PRELIMINARY PLAT APPROVAL
_____S. DEV PLAN FOR SUB'D APPROVAL
_____S. DEV. PLAN FOR BLDG. PERMIT APPR
_____SECTOR PLAN APPROVAL
_____FINAL PLAT APPROVAL
_____FOUNDATION PERMIT APPROVAL
_____BUILDING PERMIT APPROVAL
__X__CERTIFICATE OF OCCUPANCY (PERM)
_____CERTIFICATE OF OCCUPANCY (TEMP)
_____GRADING PERMIT APPROVAL
_____PAVING PERMIT APPROVAL
_____WORK ORDER APPROVAL
_____OTHER

WAS A PRE-DESIGN CONFERENCE ATTENDED:
_____YES
_____NO
_____COPY PROVIDED

RECEIVED
FEB 17 2010
HYDROLOGY SECTION

DATE SUBMITTED: 02-17-2010 BY: FRED C. ARFMAN Isaacson & Arfman, P.A.

Requests for approvals of Site Development Plans and / or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. Conceptual Grading and Drainage Plan: Required for approval of Site Development Plans greater than five acres and Sector Plans
2. Drainage Plans: Required for building permits, grading permits, paving permits and site plans less than five acres
3. Drainage Report: Required for subdivisions containing more than ten (10) lots or constituting five acres or more

CITY OF ALBUQUERQUE

September 22, 2009

Scott M. McGee, P.E.
Isaacson & Arfman, P.A.
128 Monroe Street N.E.
Albuquerque, NM 87108

Re: Osuna Elementary School—Classroom Addition, 4715 Moon St. NE

Permanent Certificate of Occupancy - Approved

Approved Engineer's Stamp Date: 12-04-07 & 04-23-09

Certification dated: 09-15-09 & 09-22-09, (F18/D056)

Dear Mr. McGee,

Based upon the information provided in the Certification received 9-22-09, the above referenced Certification is approved for Permanent Certificate of Occupancy by Hydrology.

If you have any questions, you can contact me at 924-3982.

Sincerely,

Timothy E. Sims
Plan Checker—Hydrology Section
Development and Building Services

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

C: CO Clerk—Katrina Sigala
File

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV. 1/28/2003rd)

PROJECT TITLE: OSUNA Elementary School ZONE MAP / DRG. FILE #: F-20 / D10A
DRB #: EPC #: WORK ORDER #:

LEGAL DESCRIPTION: Osuna Elementary School
CITY ADDRESS: 4715 Moon Street NE

ENGINEERING FIRM: Isaacson & Arfman, P.A. CONTACT: Scott McGee
ADDRESS: 128 Monroe St. NE PHONE: 268-8828
CITY, STATE: Albuquerque, NM ZIP CODE: 87108

OWNER: A P S CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

ARCHITECT Westwork Architects. CONTACT: Cindy Terry
ADDRESS: 2403 San Mateo NE Ste. S-2 PHONE 884-5252
CITY, STATE: ABQ, NM ZIP CODE: 87110

SURVEYOR: Jeff Mortensen CONTACT: Chuck Cala LS # 11184
ADDRESS 6010-B Midway Park Blvd PHONE: 345-4250
CITY, STATE: Albuquerque, New Mexico ZIP CODE: 87109

CONTRACTOR: CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

CHECK TYPE OF SUBMITTAL
_____DRAINAGE REPORT
_____DRAINAGE PLAN 1ST *REQUIRES TCL or equal*
_____DRAINAGE PLAN RESUBMITTAL
_____CONCEPTUAL GRADING & DRAINAGE PLAN
_____GRADING PLAN
_____EROSION CONTROL PLAN
__XX__ENGINEER'S CERTIFICATION (HYDROLOGY)
_____CLOMR / LOMR
_____TRAFFIC CIRCULATION LAYOUT (TCL)
_____ENGINEER'S CERTIFICATION (TCL)
_____ENGINEER'S CERTIFICATION (DRB APPR, SITE PLAN)
_____OTHER

CHECK TYPE OF APPROVAL SOUGHT:
_____SIA / FINANCIAL GUARANTEE RELEASE
_____PRELIMINARY PLAT APPROVAL
_____S. DEV PLAN FOR SUB'D APPROVAL
_____S. DEV. PLAN FOR BLDG. PERMIT APPR.
_____SECTOR PLAN APPROVAL
_____FINAL PLAT APPROVAL
_____FOUNDATION PERMIT APPROVAL
_____BUILDING PERMIT APPROVAL
__XX__CERTIFICATE OF OCCUPANCY (PERM)
_____CERTIFICATE OF OCCUPANCY (TEMP)
_____GRADING PERMIT APPROVAL
_____PAVING PERMIT APPROVAL
_____WORK ORDER APPROVAL
_____OTHER

d-07

Need plan 12 certified w/

RECEIVED
SEP 15 2009
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:
_____YES
_____NO
_____COPY PROVIDED

DATE SUBMITTED: Tuesday, September 15, 2009 BY: Isaacson & Arfman, P.A.

Requests for approvals of Site Development Plans and / or Subdivision Plats shall be accompanied by a drainage submittal The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. Conceptual Grading and Drainage Plan: Required for approval of Site Development Plans greater than five acres and Sector Plans
2. Drainage Plans: Required for building permits, grading permits, paving permits and site plans less than five acres
3. Drainage Report: Required for subdivisions containing more than ten (10) lots or constituting five acres or more.

Letter of Transmittal

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108

To: COA HYDROLOGY
ONE - STOP

Date: 9/15/09
Job No.

Attn: CURTIS
Reference: OSUNA E.S.

We transmit to you 1 copy(ies) of the following:

- [ ] Plats
- [x] As-BUILT POND Plans
- [ ] Disks
- [ ] Report
- [ ] Specifications
- [ ] Submittals
- [ ] Shop Drawings
- [ ] Copy of Letter

RECEIVED
SEP 15 2009
HYDROLOGY SECTION

This information is transmitted:

- [x] As per your request
- [ ] For your review & approval
- [ ] For your information
- [ ] For your attention
- [ ] For your signature
- [x] For your files
- [ ] For your use
- [ ] Please review & return
- [ ] For return to your files
- [x] Please advise

Remarks: The enlarged pond is shown on the attached as-built plan (although the plan is for the Administration Addition). This request is for Permanent C.O. for the adjacent classroom building

By: Scott McGee
Copies to:

(505) 268 - 8828; FAX: (505) 268 - 2632; EMAIL: iamengrs@swcp.com

CITY OF ALBUQUERQUE

May 29, 2009

Scott M. McGee, P.E.
Isaacson & Arfman, P.A.
128 Monroe St. NE
Albuquerque, NM 87108

Re: Osuna Elementary School Admin Bldg Addition Grading and Drainage Plan Engineer's Stamp dated 4-23-09 (F20/D010A)

Dear Mr. McGee,

Based upon the information provided in your submittal received 5-8-09, the above referenced plan is approved for Building Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required. Please provide a cleaner copy for the Certification.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Curtis A. Cherne, P.E.
Senior Engineer, Planning Dept.
Development and Building Services

C: file

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

CITY OF ALBUQUERQUE

September 3, 2009

Jeffrey G. Mortensen, P.E.
High Mesa Consulting Group
6010-B Midway Park Blvd. NE
Albuquerque, NM 87109

Re: Osuna Elementary School Portables Grading Plan
Engineer's Stamp date 4-9-09 (F20/D010A)
Engineer's Certification date 8-25-09

Dear Mr. Mortensen,

Thank you for submitting a Certification of the above referenced Grading Plan.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Curtis A. Cherne

Curtis A. Cherne, P.E.
Senior Engineer, Planning Dept.
Development and Building Services

C: file

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

HMCG 2008.184.1

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: OSUNA ELEMENTARY SCHOOL PORTABLES ZONE ATLAS/DRNG. FILE #:F20 / D 010A
DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: TRACT A, OSUNA ELEMENTARY SCHOOL
CITY ADDRESS: 4715 MOON STREET NE, 87111

ENGINEERING FIRM: HIGH MESA CONSULTING GROUP. CONTACT: JEFF MORTENSEN
ADDRESS: 6010-B MIDWAY PARK BLVD. NE PHONE: (505) 345-4250
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87109

OWNER: ALBUQUERQUE PUBLIC SCHOOLS, DEPT OF FDC CONTACT: SAL WAR
ADDRESS: 915 OAK STREET SE PHONE: 975-5965
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87106

ARCHITECT: N/A CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

SURVEYOR: HIGH MESA CONSULTING GROUP (NMPS 15075) CONTACT: JOSEPH M. SOLOMON, JR
ADDRESS: 6010-B MIDWAY PARK BLVD. NE PHONE: (505) 345-4250
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87109

CONTRACTOR: ALTOR CONSTRUCTION CONTACT: OWNER
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:
- ___ DRAINAGE REPORT
- ___ DRAINAGE PLAN 1st SUBMITTAL, ***REQUIRES TCL or equal***
- ___ DRAINAGE PLAN RESUBMITTAL
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- ___ GRADING PLAN
- ___ EROSION CONTROL PLAN
- X ENGINEER'S CERTIFICATION (HYDROLOGY)
- ___ CLOMR/LOMR
- ___ TRAFFIC CIRCULATION LAYOUT (TCL)
- ___ ENGINEER'S CERTIFICATION (TCL)
- ___ ENGINEER'S CERTIFICATION (DRB APPR. SITE PLAN)
- X OTHER - SUPPLEMENTAL TO BUILDING PERMIT

CHECK TYPE OF APPROVAL SOUGHT:
- ___ SIA/FINANCIAL GUARANTEE RELEASE
- ___ PRELIMINARY PLAT APPROVAL
- ___ S. DEV. PLAN FOR SUB'D APPROVAL
- ___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ___ SECTOR PLAN APPROVAL
- ___ FINAL PLAT APPROVAL
- ___ FOUNDATION PERMIT APPROVAL
- ___ BUILDING PERMIT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY (PERM.)
- ___ CERTIFICATE OF OCCUPANCY (TEMP.)
- X GRADING PERMIT APPROVAL
- X PAVING PERMIT APPROVAL
- ___ WORK ORDER APPROVAL
- X OTHER (SPECIFY) – N/A FOR INFORMATION

WAS A PRE-DESIGN CONFERENCE ATTENDED:
- X YES (DISCUSSION WITH BRAD BINGHAM)
- ___ NO
- ___ COPY PROVIDED

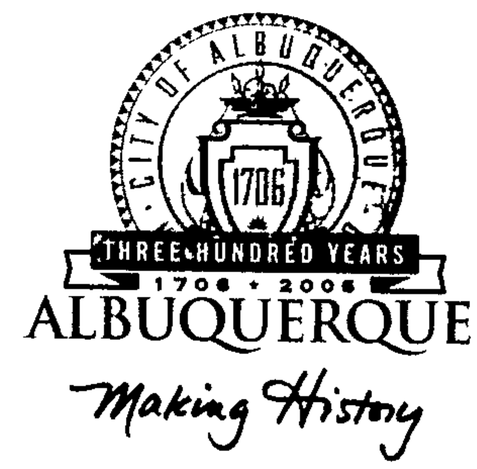
RECEIVED
AUG 27 2009
HYDROLOGY SECTION

DATE SUBMITTED: 08/26/2009 BY: JEFFREY G. MORTENSEN

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based upon the following:

1. **Conceptual Grading and Drainage Plan**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans**: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report**: Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

CITY OF ALBUQUERQUE



February 22, 2006

Mr. Scott McGee, P.E.
ISAACSON & ARFMAN, P.A.
128 Monroe Street NE
Albuquerque, NM 87108

Re: OSUNA ELEMENTARY SCHOOL
4715 Moon Street NE
Approval of Permanent Certificate of Occupancy (C.O.)
Approved Engineer's Stamp dated 02/01/2005 (F-20/D10A)
Certification dated 02/21/2006

Dear Scott:

Based upon the information provided in your submittal received 02/21/2006, the above referenced certification is approved for release of Permanent Certificate of Occupancy by Hydrology.

If you have any questions, you can contact me at 924-3982.

Sincerely,

Arlene V. Portillo

Arlene V. Portillo
Plan Checker, Planning Dept. - Hydrology
Development and Building Services

C: CO Clerk
File

P.O. Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV. 1/28/2003rd)

PROJECT TITLE: OSUNA ELEMENTARY SCHOOL ZONE MAP/DRG. FILE #: F-20/D10A
DRB #: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: OSUNA ELEMENTARY SCHOOL
CITY ADDRESS: 4715 MOON ST. NE

ENGINEERING FIRM: Isaacson & Arfman, P.A. CONTACT: SCOTT McGEE
ADDRESS: 128 Monroe Street NE PHONE: (505) 268-8828
CITY, STATE: Albuquerque, NM ZIP CODE: 87108

OWNER: APS
ADDRESS: _____ CONTACT: _____
CITY, STATE: _____ PHONE: _____
ZIP CODE: _____

ARCHITECT: CHERRY SEE ARCHITECTS
ADDRESS: 220 GOLD AVE SW CONTACT: JIM SEE
CITY, STATE: ABQ, NM PHONE: 842-1278
ZIP CODE: 87102

SURVEYOR: JEFF MORTENSEN & ASSOCS.
ADDRESS: 6010-B MIDWAY PARK NE CONTACT: CHUCK CALA
CITY, STATE: ABQ NM PHONE: 345 4250
ZIP CODE: 87109

CONTRACTOR: _____
ADDRESS: _____ CONTACT: _____
CITY, STATE: _____ PHONE: _____
ZIP CODE: _____

CHECK TYPE OF SUBMITTAL:

- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN 1st SUBMITTAL, *REQUIRES TCL or equal*
- ____ DRAINAGE PLAN RESUBMITTAL
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- X ENGINEER'S CERTIFICATION (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEERS CERTIFICATION (TCL)
- ____ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ____ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- ____ SIA / FINANCIAL GUARANTEE RELEASE
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D. APPROVAL
- ____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ FOUNDATION PERMIT APPROVAL
- ____ BUILDING PERMIT APPROVAL
- X CERTIFICATE OF OCCUPANCY (PERM.)
- ____ CERTIFICATE OF OCCUPANCY (TEMP.)
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ OTHER (SPECIFY)

RECEIVED
FEB 21 2006
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ____ YES
- ____ NO
- ____ COPY PROVIDED

DATE SUBMITTED: 2/21/06 BY: Scott McGee

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submitta The particular nature , location and scope of the proposed development defines the degree of drainage detail. One (more of the following levels of submittal may be required based on the following:

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3. **Drainage Report**: Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

CITY OF ALBUQUERQUE

THREE HUNDRED YEARS
1706 • 2006
ALBUQUERQUE
Making History

March 11, 2005

Scott McGee, P.E.
Isaacson & Arfman, P.A.
128 Monroe St. NE
Albuquerque, NM 87108

Re: Osuna Elementary School, 4715 Moon St NE, Grading and Drainage Plan Engineer's Stamp dated 2-01-05 (F20-D10A)

Dear Mr. McGee,

Based upon the information provided in your submittal received 2-01-05, the above referenced plan is approved for Building Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology. Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

This project requires a National Pollutant Discharge Elimination System (NPDES) permit. If you have any questions regarding this permit please feel free to call the DMD Storm Drainage Design section at 768-3654 (Charles Caruso).

If you have any questions, you can contact me at 924-3981.

Sincerely,

Kristal D. Metro
Engineering Associate, Planning Dept.
Development and Building Services

C: Charles Caruso, DMD Storm Drainage Design
File

P.O. Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

CITY OF ALBUQUERQUE

THREE HUNDRED YEARS
1706 • 2006
ALBUQUERQUE
Making History

January 25, 2005

Scott McGee, P.E.
Isaacson & Arfman, P.A.
128 Monroe St. NE
Albuquerque, NM 87108

Re: Osuna Elementary School, 4715 Moon St NE, Grading and Drainage Plan Engineer's Stamp dated 10-04-04 (F20-D10A)

Dear Mr. McGee,

Based upon the information provided in your submittal received 11-24-04, the above referenced plan is approved for Building Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology. Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

This project requires a National Pollutant Discharge Elimination System (NPDES) permit. If you have any questions regarding this permit please feel free to call the DMD Storm Drainage Design section at 768-3654 (Charles Caruso).

If you have any questions, you can contact me at 924-3981.

Sincerely,

Kristal D. Metro
Engineering Associate, Planning Dept.
Development and Building Services

C: Charles Caruso, DMD Storm Drainage Design
File

P.O. Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV. 1/28/2003rd)

PROJECT TITLE: OSUNA ELEMENTARY SCHOOL
DRB #: _____ EPC#: _____
ZONE MAP/DRG. FILE #: F-20/D10A
WORK ORDER#: _____

LEGAL DESCRIPTION: OSUNA ELEMENTARY SCHOOL
CITY ADDRESS: 4715 MON ST. NE

ENGINEERING FIRM: Isaacson & Arfman, P.A.
ADDRESS: 128 Monroe Street NE
CITY, STATE: Albuquerque, NM
CONTACT: SCOTT McGEE
PHONE: (505) 268-8828
ZIP CODE: 87108

OWNER: APS
ADDRESS: _____
CITY, STATE: _____
CONTACT: _____
PHONE: _____
ZIP CODE: _____

ARCHITECT: CHERRY SEE ARCHITECTS
ADDRESS: 220 GOLD AVE SW
CITY, STATE: ABQ, NM
CONTACT: JIM SEE
PHONE: 842-1218
ZIP CODE: 87102

SURVEYOR: _____
ADDRESS: _____
CITY, STATE: _____
CONTACT: _____
PHONE: _____
ZIP CODE: _____

CONTRACTOR: _____
ADDRESS: _____
CITY, STATE: _____
CONTACT: _____
PHONE: _____
ZIP CODE: _____

CHECK TYPE OF SUBMITTAL:

- ___ DRAINAGE REPORT
- ___ DRAINAGE PLAN 1st SUBMITTAL, *REQUIRES TCL or equal*
- ___ DRAINAGE PLAN RESUBMITTAL
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- X GRADING PLAN
- ___ EROSION CONTROL PLAN
- ___ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ___ CLOMR/LOMR
- ___ TRAFFIC CIRCULATION LAYOUT (TCL)
- ___ ENGINEERS CERTIFICATION (TCL)
- ___ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ___ OTHER

BP fee paid ✓

CHECK TYPE OF APPROVAL SOUGHT:

- ___ SIA / FINANCIAL GUARANTEE RELEASE
- ___ PRELIMINARY PLAT APPROVAL
- ___ S. DEV. PLAN FOR SUB'D. APPROVAL
- ___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ___ SECTOR PLAN APPROVAL
- ___ FINAL PLAT APPROVAL
- ___ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY (PERM.)
- ___ CERTIFICATE OF OCCUPANCY (TEMP.)
- ___ GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- ___ WORK ORDER APPROVAL
- ___ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ___ YES
- ___ NO
- ___ COPY PROVIDED

RECEIVED
NOV 24 2004
HYDROLOGY SECTION

DATE SUBMITTED: 11/24/04 BY: Scott McGee

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submitta The particular nature , location and scope of the proposed development defines the degree of drainage detail. One c more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans**: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report**: Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more

CITY OF ALBUQUERQUE

April 1, 2008

Scott M. McGee, P.E.
Isaacson & Arfman, P.A.
128 Monroe St. NE
Albuquerque, NM 87108

Re: Osuna Elementary Classroom Addition Grading and Drainage Plan Engineer's Stamp dated 12-4-07 (F20/D010A)

Dear Mr. McGee,

Based upon the information provided in your submittal received 12-5-07 and the additional information provided 2-23-08, the above referenced plan is approved for Building Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

This project requires a National Pollutant Discharge Elimination System (NPDES) permit. Send a copy of your SWPPP on a CD to the following address:

Department of Municipal Development, Storm Drainage Division, P.O. Box 1293, One Civic Plaza, Rm. 301, Albuquerque, NM 87103

Prior to Certificate of Occupancy release:

- Engineer Certification per the DPM checklist will be required.
- Certify the volume of the pond.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Curtis A. Cherne

Curtis A. Cherne, P.E.
Senior Engineer, Planning Dept.
Development and Building Services

C: file
Kathy Verhage, DMD

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

CITY OF ALBUQUERQUE

December 24, 2007

Scott M. McGee, P.E.
Isaacson & Arfman, P.A.
128 Monroe Street NE
Albuquerque, NM 87108

Re: Osuna Elementary School, 4715 Moon St., Grading and Drainage Plan
Engineer's Stamp dated 12-04-07 (F-20/D010A)

Mr. McGee,

Based upon the information provided in your submittal received 12-05-07, the above referenced plan cannot be approved for Building Permit until the following comments are addressed:

1. Will there be a curb at the access road to the pond from the parking lot?
2. There appears to be 74' of trench drain with this phase; where does this discharge and what does it connect into?
3. Is the Notice to Contractors language applicable with this project? Where is the sidewalk culvert?
4. Please provide a wall detail.

If you have any questions, you can contact me at 924-3982.

Sincerely,

Timothy Sims
Plan Checker-Hydrology, Planning Dept.
Development and Building Services

C: Bradley L. Bingham
File

P.O. Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV. 1/28/2003rd)

PROJECT TITLE: OSUNA Elementary School ZONE MAP / DRG. FILE #: F-20 / D01DA
DRB #: EPC #: WORK ORDER #:

LEGAL DESCRIPTION: Osuna Elementary School
CITY ADDRESS: 4715 Moon Street NE

ENGINEERING FIRM: Isaacson & Arfman, P.A. CONTACT: Scott McGee
ADDRESS: 128 Monroe St. NE PHONE: 268-8828
CITY, STATE: Albuquerque, NM ZIP CODE: 87108

OWNER: A P S CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

ARCHITECT Westwork Architects. CONTACT: Cindy Terry
ADDRESS: 2403 San Mateo NE Ste. S-2 PHONE 884-5252
CITY, STATE: ABQ, NM ZIP CODE: 87110

SURVEYOR: Jeff Mortensen CONTACT: Chuck Cala LS # 11184
ADDRESS 6010-B Midway Park Blvd PHONE: 345-4250
CITY, STATE: Albuquerque, New Mexico ZIP CODE: 87109

CONTRACTOR: CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

CHECK TYPE OF SUBMITTAL:
_____DRAINAGE REPORT
_____DRAINAGE PLAN 1ST *REQUIRES TCL or equal*
_____DRAINAGE PLAN RESUBMITTAL
_____CONCEPTUAL GRADING & DRAINAGE PLAN
__X__GRADING PLAN
_____EROSION CONTROL PLAN
_____ENGINEER'S CERTIFICATION (HYDROLOGY)
_____CLOMR / LOMR
_____TRAFFIC CIRCULATION LAYOUT (TCL)
_____ENGINEER'S CERTIFICATION (TCL)
_____ENGINEER'S CERTIFICATION (DRB APPR, SITE PLAN)
_____OTHER

CHECK TYPE OF APPROVAL SOUGHT:
_____SIA / FINANCIAL GUARANTEE RELEASE
_____PRELIMINARY PLAT APPROVAL
_____S. DEV. PLAN FOR SUB'D APPROVAL
_____S. DEV. PLAN FOR BLDG. PERMIT APPR.
_____SECTOR PLAN APPROVAL
_____FINAL PLAT APPROVAL
_____FOUNDATION PERMIT APPROVAL
__XX__BUILDING PERMIT APPROVAL
_____CERTIFICATE OF OCCUPANCY (PERM)
_____CERTIFICATE OF OCCUPANCY (TEMP)
_____GRADING PERMIT APPROVAL
_____PAVING PERMIT APPROVAL
_____WORK ORDER APPROVAL
_____OTHER

WAS A PRE-DESIGN CONFERENCE ATTENDED:
_____YES
_____NO
_____COPY PROVIDED

PAID $50.00

DATE SUBMITTED: Tuesday, December 04, 2007 BY: Isaacson & Arfman, P.A.

Requests for approvals of Site Development Plans and / or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

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2. Drainage Plans: Required for building permits, grading permits, paving permits and site plans less than five acres
3. Drainage Report: Required for subdivisions containing more than ten (10) lots or constituting five acres or more.

RECEIVED
DEC 05 2007
HYDROLOGY SECTION

ISAACSON & ARFMAN, P.A.

Consulting Engineering Associates

Thomas O. Isaacson, PE & LS • Fred C. Arfman, PE
Scott M. McGee, PE

February 26, 2008

Mr. Tim Sims
Hydrology Development Section
Development Services Division
Planning Department
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

RE: Osuna Elementary School (F-20/D010A)
4715 Moon Street

Dear Mr. Sims:

Thank you for your review comments of 12/24/07, which have been addressed as follows:

1. The curb will be omitted at the west side of the most westerly parking space and to the west for a total of 25 feet.
2. The trench drain allows minor runoff to be carried south to an existing landscaped area south of the existing Administration building. This area will accept the minor runoff at present. A future building is proposed for this area, at which time the drain will be extended south.
3. The Notice to Contractors was included to cover the rework of the private entry drives from Moon Street NE.
4. A wall detail (from the Structural Plan prepared by Chavez Grieves) has been attached.

Please contact me with any comments at 268-8828.

Sincerely,
ISAACSON & ARFMAN, P.A.

Scott M McGee

Scott M. McGee, PE
SMM/rtl
Attachment

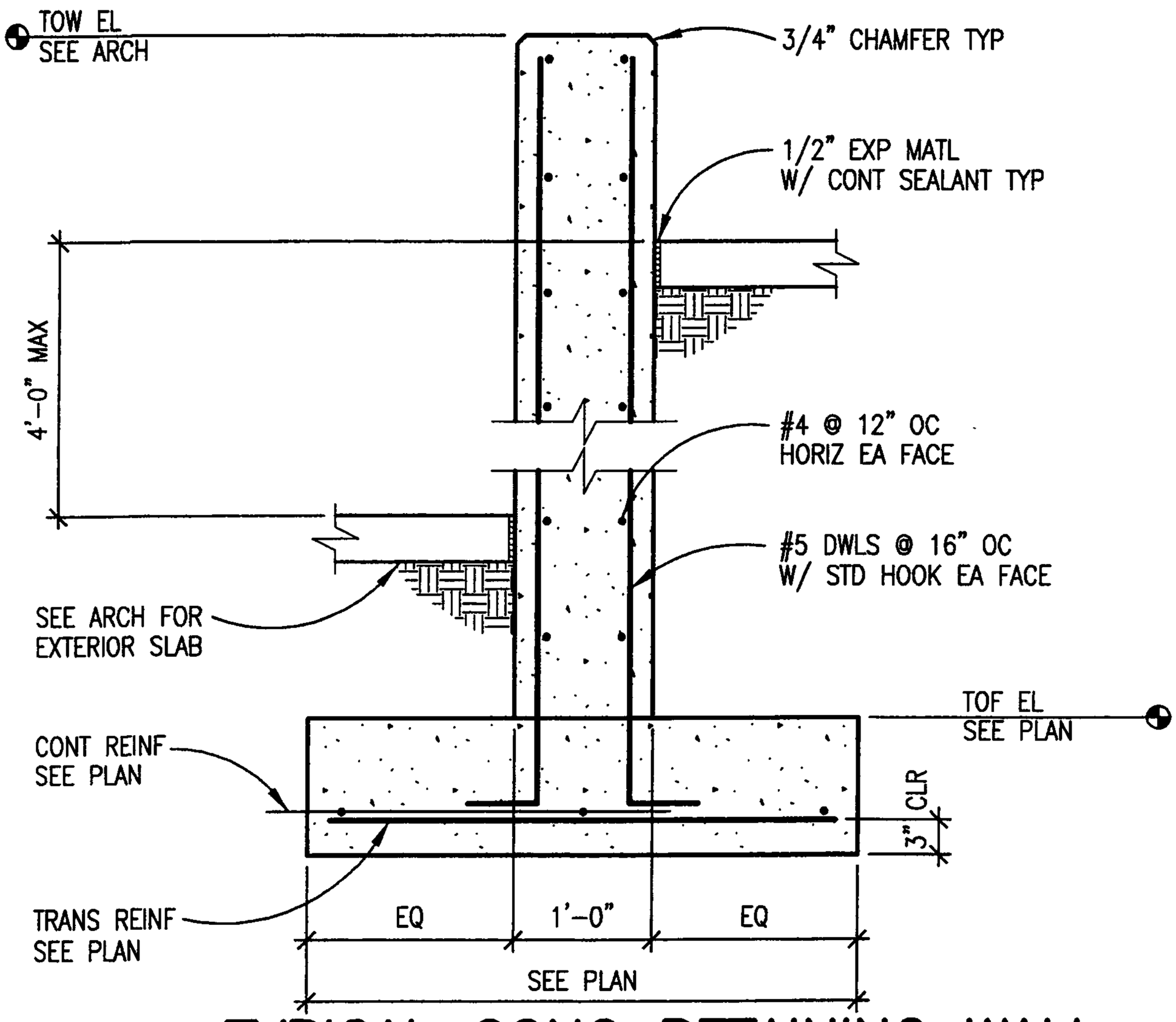
RECEIVED
FEB 26 2008
HYDROLOGY SECTION

128 Monroe St. NE • Albuquerque, NM 87108 • (505) 268-8828 • FAX (505) 268-2632

(C2) INTERIOR FOUNDATION SECTION

SCALE: 3/4"=1'-0"

1' 1' 0 3'



(B2) TYPICAL CONC RETAINING WALL

SCALE: 3/4"=1'-0"

1' 1' 0 3'

RECEIVED
FEB 26 2008
HYDROLOGY
SECTION

SEE ARCH FOR
EXT SLAB

1'-0"

CITY OF ALBUQUERQUE

March 5, 2008

Cindy A. Terry, R.A.
Westwork Architects
2403 San Mateo NE Ste. 2
Albuquerque, NM 87110

Re: Osuna Elementary Classroom Addtn, 4715 Moon St. NE, Traffic Circulation Layout

Architect's Stamp dated 2-26-08 (F-20/D010A)

Ms. Terry,

Based upon the information provided in your submittal received 2-26-08, the above referenced plan cannot be approved for Building Permit until the following comments are addressed:

1. ✓Provide a north arrow on the vicinity map.
2. ✓Include the street names on the TCL.
3. Provide a detail for the pedestrian gate. Clarify the keyed note that accompanies this area.
4. Will there be a vehicle drop off area? Is this one-way directional traffic? If a drop off area is desired, then appropriate signing and striping is required.
5. Define all "?" keyed notes.

If you have any questions, you can contact me at 924-3991.

Sincerely,

Kristal D. Metro, P.E.
Traffic Engineer, Planning Dept.
Development and Building Services

C: File

P.O. Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

CITY OF ALBUQUERQUE

March 19, 2008

Cindy Terry, R.A.
Westwork Architects
2403 San Mateo Blvd NE Suite S-2
Albuquerque, NM 87110

Re: Osuna Elementary Classroom Addition, 4715 Moon St NE, Traffic Circulation Layout
Architect's Stamp dated 3-19-08 (F20-D010A)

Dear Ms. Terry,

The TCL submittal received 3-19-08 is approved for Building Permit. The plan is stamped and signed as approved. A copy of this plan will be needed for each of the building permit plans. Please keep the original to be used for certification of the site for final C.O. for Transportation. **Public infrastructure or work done within City Right-of-Way shown on these plans is for information only and is not part of approval. A separate DRC and/or other appropriate permits are required to construct these items.**

If a temporary CO is needed, a copy of the original TCL that was stamped as approved by the City will be needed. This plan must include a statement that identifies the outstanding items that need to be constructed or the items that have not been built in "substantial compliance," as well as the signed and dated stamp of a NM registered architect or engineer. Submit this TCL with a completed Drainage and Transportation Information Sheet to Hydrology at the Development Services Center of Plaza Del Sol Building.

When the site is completed and a final C.O. is requested, use the original City stamped approved TCL for certification. A NM registered architect or engineer must stamp, sign, and date the certification TCL along with indicating that the development was built in "substantial compliance" with the TCL. Submit this certification TCL with a completed Drainage and Transportation Information Sheet to Hydrology at the Development Services Center of Plaza Del Sol Building.

Once verification of certification is completed and approved, notification will be made to Building Safety to issue Final C.O. To confirm that a final C.O. has been issued, call Building Safety at 924-3306.

Sincerely,

Kristal D. Metro, P.E.
Traffic Engineer, Planning Dept.
Development and Building Services

C: File

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV 12/2005)

PROJECT TITLE: OSUNA ELEM. CLASSRM ADD. ZONE MAP: F-20/D010A
DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: OSUNA ELEM. SCHOOL
CITY ADDRESS: 4715 MOON ST. NE

ENGINEERING FIRM: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

OWNER: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

ARCHITECT: WESTWORK ARCHITECTS CONTACT: CINDY TERK
ADDRESS: 2403 SAN MATEO BLVD NE PHONE: 239-8368
CITY, STATE: ALB NM ZIP CODE: 87110

SURVEYOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:
- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN 1st SUBMITTAL
- ____ DRAINAGE PLAN RESUBMITTAL
- ____ CONCEPTUAL G & D PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ ENGINEER'S CERT (HYDROLOGY)
- ____ CLOMR/LOMR
- RESUBMIT X TRAFFIC CIRCULATION LAYOUT
- ____ ENGINEER'S CERT (TCL)
- ____ ENGINEER'S CERT (DRB SITE PLAN)
- ____ OTHER (SPECIFY)

Resubmittal

CHECK TYPE OF APPROVAL SOUGHT:
- ____ SIA/FINANCIAL GUARANTEE RELEASE
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D APPROVAL
- ____ S. DEV. FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY (PERM)
- ____ CERTIFICATE OF OCCUPANCY (TEMP)
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ OTHER (SPECIFY)

RECEIVED
MAR 11 2008
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:
- ✓ YES
- ____ NO
- ____ COPY PROVIDED Resubmit

DATE SUBMITTED: 3 11 08 BY: Andy Terry

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

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2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.

* Call Cindy at 239-8368 if have comments

CITY OF ALBUQUERQUE

THREE HUNDRED YEARS 1706 • 2006
ALBUQUERQUE
Making History

Planning Department
Transportation Development Services Section

April 7, 2006

Mr. Charles Rowland, Registered Architect
CHERRY/SEE ARCHITECTS
220 Gold Avenue SW
Albuquerque, NM 87102

Re: Certification Submittal for Final Building Certificate of Occupancy for
OSUNA ELEMENTARY SCHOOL ADDITION, [F-20 / 10A]
4715 Moon Street NE
Architect's Stamp Dated 04/07/2006

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

Dear Mr. Rowland:

The TCL / Letter of Certification submitted on April 7, 2006 is sufficient for acceptance by this office for final Certificate of Occupancy (C.O.). Notification has been made to the Building and Safety Section.

Sincerely,

Nilo E. Salgado-Fernandez, P.E.
Senior Traffic Engineer
Development and Building Services
Planning Department

c: Engineer
Hydrology file
CO Clerk

edith cherry d. james see architects
220a gold ave sw. albuquerque, n.m. 87102

TRAFFIC CERTIFICATION

Classroom, Cafeteria & Kitchen Building
Osuna Elementary School, 4715 Moon Street, NE
Albuquerque, New Mexico

I, Jim See, NMRA #959, of the firm Cherry/See Architects, hereby certify that this project is in substantial compliance with and in accordance with the design intent of the TCL approved plan dated 1-25-05. The record information edited onto the original design document has been obtained by Charles Rowland of the firm Cherry/See Architects. I further certify that I have personally visited the project site on February 15, 2006 and have determined by visual inspection that the survey data provided is representative of the actual site conditions and is true and correct to the best of my knowledge and belief. This certification is submitted in support of a request for Certificate of Occupancy.

The south dumpster pad was widened from 18'-0" to 24'-0" as per request by Solid Waste Division.

The record information presented hereon is not necessarily complete and is intended only to verify substantial compliance of the traffic aspects of this project. Those relying on the record document are advised to obtain independent verification of its accuracy before using it for any further purpose.

STATE OF NEW MEXICO
D. JAMES SEE
NO. 959
REGISTERED ARCHITECT

4/7/06

Jim See, A.I.A.

telephone (505) 842-1278
facsimile (505)766-9269

F-20/D10A

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(Rev. 12/2005)

PROJECT TITLE: Classroom, Cafeteria & kitchen Bldg. OSUNA Elem. Sch. ZONE MAP/DRG. FILE # F-20-Z
DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: Osuna Elementary School
CITY ADDRESS: 4715 Moon Street, N.E.

ENGINEERING FIRM: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

OWNER: Albuquerque Public Schools CONTACT: Karen Alarid
ADDRESS: 915 Oak St., SE PHONE: 848-8810
CITY, STATE: ABQ. NM ZIP CODE: 87125-0704

ARCHITECT: Cherry / See Architects CONTACT: Charles Rowland
ADDRESS: 220 Gold Avenue, SW PHONE: 842-1278
CITY, STATE: ABQ. NM ZIP CODE: 87102

SURVEYOR: Jeff Mortensen & Associates CONTACT: Charles G. Cala, Jr.
ADDRESS: 6010-B Midway Park Blvd., NE PHONE: 345-4250
CITY, STATE: ABQ. NM ZIP CODE: 87109

CONTRACTOR: T.A. Cole & Sons CONTACT: Skip Cole
ADDRESS: P.O. Box 10143 PHONE: 898-8698
CITY, STATE: ABQ., NM 87114 ZIP CODE: _____

TYPE OF SUBMITTAL:
_____ DRAINAGE REPORT
_____ DRAINAGE PLAN 1st SUBMITTAL
_____ DRAINAGE PLAN RESUBMITTAL
_____ CONCEPTUAL G & D PLAN
_____ GRADING PLAN
_____ EROSION CONTROL PLAN
_____ ENGINEER'S CERT (HYDROLOGY)
_____ CLOMR/LOMR
_____ TRAFFIC CIRCULATION LAYOUT
✓ ENGINEER'S/ARCHITECT'S CERT (TCL)
_____ ENGINEER'S CERT (DRB SITE PLAN)
_____ OTHER

CHECK TYPE OF APPROVAL SOUGHT:
_____ SIA/FINANCIAL GUARANTEE RELEASE
_____ PRELIMINARY PLAT APPROVAL
_____ S. DEV. PLAN FOR SUB'D APPROVAL
_____ S. DEV. FOR BLDG. PERMIT APPROVAL
_____ SECTOR PLAN APPROVAL
_____ FINAL PLAT APPROVAL
_____ FOUNDATION PERMIT APPROVAL
_____ BUILDING PERMIT APPROVAL
✓ CERTIFICATE OF OCCUPANCY (PERM)
_____ CERTIFICATE OF OCCUPANCY (TEMP)
_____ GRADING PERMIT APPROVAL
_____ PAVING PERMIT APPROVAL
_____ WORK ORDER APPROVAL
_____ OTHER (SPECIFY)

RECEIVED
APR 07 2006
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:
_____ YES
_____ NO
_____ COPY PROVIDED

SUBMITTED BY: [signature] DATE: 4-7-06

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

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3. **Drainage Report**: Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/28/2003rd)

No Plan

PROJECT TITLE: OSUNA Elementary School ADMINISTRATION ADDITION ZONE MAP / DRG. FILE #: F-20 / D10A

DRB #: EPC #: WORK ORDER #:

Scott to provide

LEGAL DESCRIPTION: Osuna Elementary School

CITY ADDRESS: 4715 Moon Street NE

ENGINEERING FIRM: Isaacson & Arfman, P.A. CONTACT: Scott McGee

ADDRESS: 128 Monroe St. NE PHONE: 268-8828

CITY, STATE: Albuquerque, NM ZIP CODE: 87108

OWNER: A P S CONTACT:

ADDRESS: PHONE:

CITY, STATE: ZIP CODE:

ARCHITECT Westwork Architects. CONTACT: Cindy Terry

ADDRESS: 2403 San Mateo NE Ste. S-2 PHONE 884-5252

CITY, STATE: ABQ, NM ZIP CODE: 87110

SURVEYOR: Jeff Mortensen CONTACT: Chuck Cala LS # 11184

ADDRESS 6010-B Midway Park Blvd PHONE: 345-4250

CITY, STATE: Albuquerque, New Mexico ZIP CODE: 87109

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

CITY, STATE: ZIP CODE:

CHECK TYPE OF SUBMITTAL:

_____DRAINAGE REPORT
_____DRAINAGE PLAN 1ST *REQUIRES TCL or equal*
_____DRAINAGE PLAN RESUBMITTAL
_____CONCEPTUAL GRADING & DRAINAGE PLAN
_X___GRADING PLAN
_____EROSION CONTROL PLAN
_____ENGINEER'S CERTIFICATION (HYDROLOGY)
_____CLOMR / LOMR
_____TRAFFIC CIRCULATION LAYOUT (TCL)
_____ENGINEER'S CERTIFICATION (TCL)
_____ENGINEER'S CERTIFICATION (DRB APPR, SITE PLAN)
_____OTHER

CHECK TYPE OF APPROVAL SOUGHT:

_____SIA / FINANCIAL GUARANTEE RELEASE
_____PRELIMINARY PLAT APPROVAL
_____S. DEV. PLAN FOR SUB'D APPROVAL
_____S. DEV. PLAN FOR BLDG. PERMIT APPR.
_____SECTOR PLAN APPROVAL
_____FINAL PLAT APPROVAL
_____FOUNDATION PERMIT APPROVAL
_XX___BUILDING PERMIT APPROVAL
_____CERTIFICATE OF OCCUPANCY (PERM)
_____CERTIFICATE OF OCCUPANCY (TEMP)
_____GRADING PERMIT APPROVAL
_____PAVING PERMIT APPROVAL
_____WORK ORDER APPROVAL
_____OTHER

RECEIVED
MAY 08 2009
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:

_____YES
_____NO
_____COPY PROVIDED

$50.00

DATE SUBMITTED: Thursday, May 07, 2009 BY: Isaacson & Arfman, P.A.

Requests for approvals of Site Development Plans and / or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

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Letter of Transmittal

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108

To: HYDROLOGY

Date: 5/7/09

Job No. 1627.2

Attn:

Reference:

We transmit to you 1 copy(ies) of the following:

- [ ] Plats
- [x] GRADING Plans
- [ ] Disks
- [ ] Report
- [x] DRAINAGE CALCULATIONS
- [ ]
- [ ] Specifications
- [ ] Submittals
- [ ] Shop Drawings
- [ ] Copy of Letter

This information is transmitted:

- [ ] As per your request
- [x] 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
- [x] Please advise

Remarks: CALCULATIONS REFLECT AREA OF RECENT CLASSROOM ADDITION AND ADMINISTRATION BUILDING. POND OUTLET HAS CONTROLLED DISCHARGE & WILL REMAIN UNCHANGED.

By: Scott McKee

Copies to:

(505) 268 – 8828; FAX: (505) 268 – 2632; EMAIL: iamengrs@swcp.com

CALCULATIONS: Osuna Elementary School - Additions : 5-7-2009

Based on Drainage Design Criteria for City of Albuquerque Section 22.2, DPM, Vol 2, dated Jan., 1993

ON-SITE

AREA OF SITE CALCULATED: 69370 SF = 1.6

100-year, 6-hour

HISTORIC FLOWS:

		Treatment SF	%
Area A	=	0	0%
Area B	=	9018.1	13%
Area C	=	17342.5	25%
Area D	=	43009.4	62%
Total Area	=	69370	100%

DEVELOPED FLOWS:

		Treatment SF	%
Area A	=	0	0%
Area B	=	7630.7	11%
Area C	=	3468.5	5%
Area D	=	58270.8	84%
Total Area	=	69370	100%

EXCESS PRECIP:

Precip. Zone 3

$E_A = 0.66$

$E_B = 0.92$

$E_C = 1.29$

$E_D = 2.36$

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted } E = \frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$$

Historic E	=	1.91 in.	Developed E	=	2.15 in.

On-Site Volume of Runoff: V360 = E*A / 12

Historic V_{360}	=	11014 CF	Developed V_{360}	=	12418 CF

On-Site Peak Discharge Rate: $Qp = Q_{pA}A_A+Q_{pB}A_B+Q_{pC}A_C+Q_{pD}A_D / 43{,}560$

For Precipitation Zone 3

Q_{pA}	=	1.87	Q_{pC}	=	3.45
Q_{pB}	=	2.60	Q_{pD}	=	5.02

Historic Q_p	=	6.9 CFS	Developed Q_p	=	7.4 CFS

SCOTT M. McGEE NEW MEXICO 10519 REGISTERED PROFESSIONAL ENGINEER

5/07/09

RECEIVED

MAY 08 2009

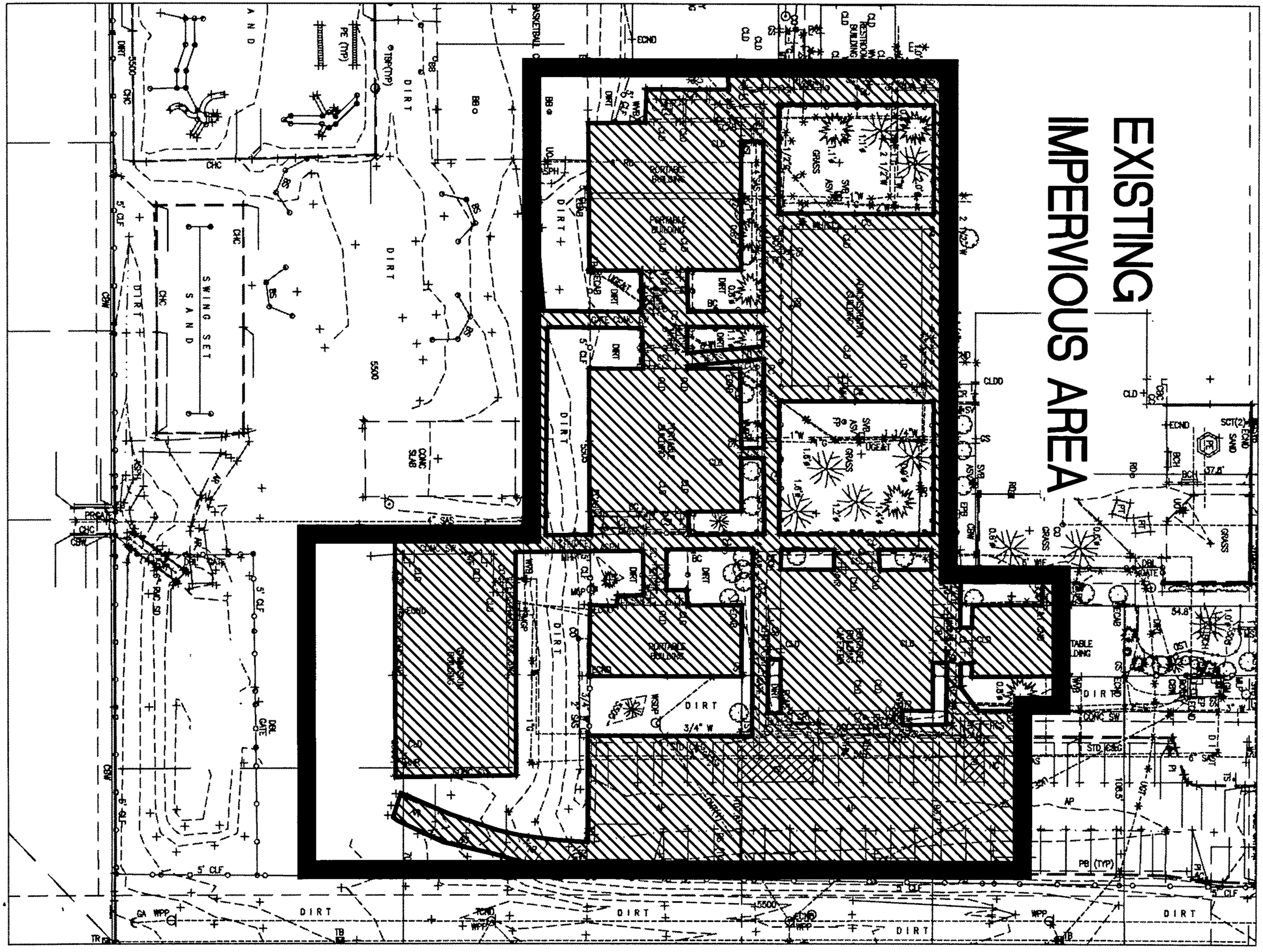
HYDROLOGY SECTION

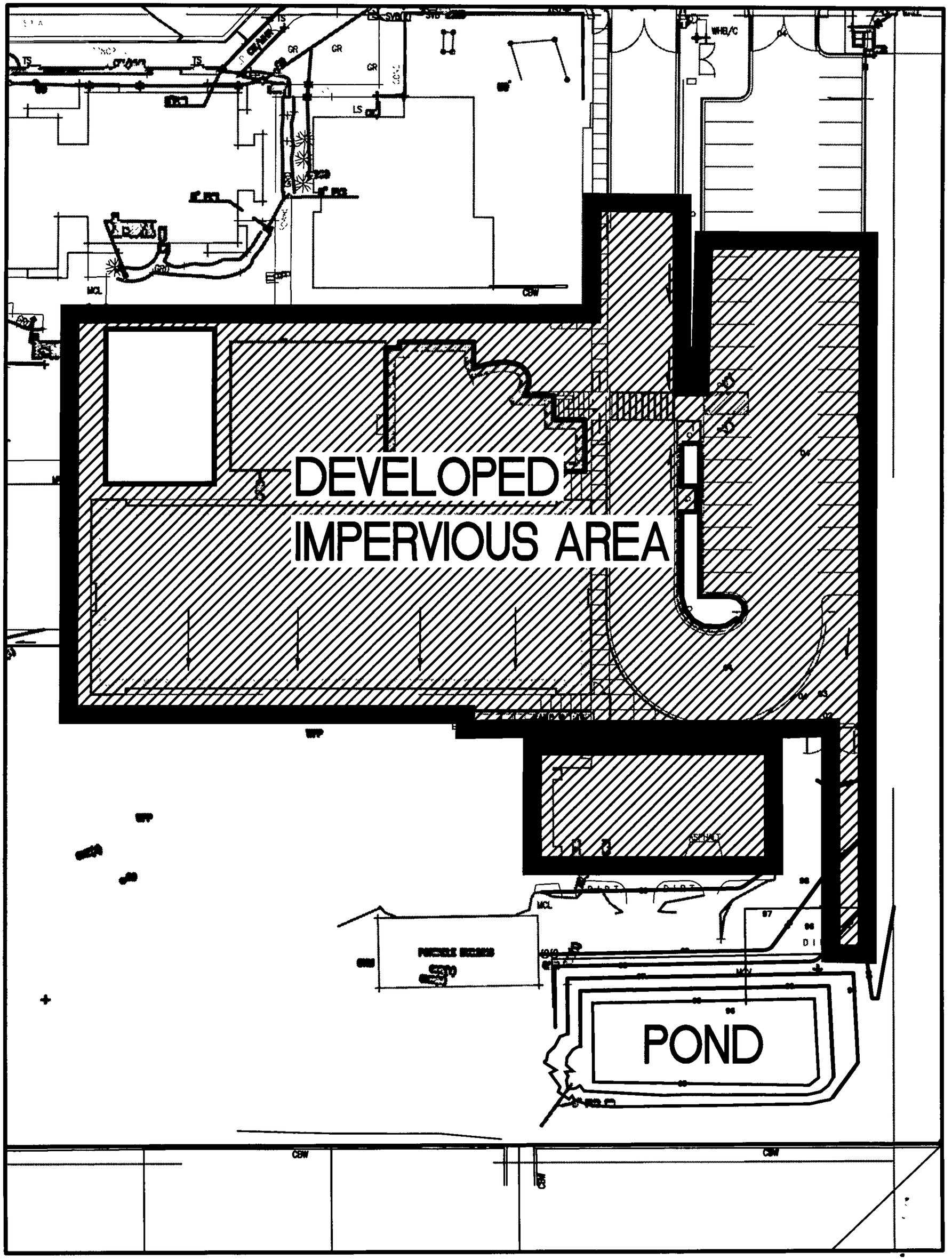
POND - EXISTING		
Contour	Area	Volume
5495.00	472	
5496.00	2485	1479 CF
5497.00	4539	3512 CF
TOTAL VOL.		**4991** CF

POND - PROPOSED		
Contour	Area	Volume
5495.00	2980	
5496.00	4335	3658 CF
5497.00	6022	5179 CF
TOTAL VOL.		**8836** CF

The existing dirt pond will be enlarged to detain 8836 cf (an increase of 3846 cf). Based on the attached calculations, the proposed development will generate an additional 1404 cf < 3846. OK

M:\CAD FILES\1600-1699\1627.1\dwg\1627.1 CX-CG-EXHIBIT-EXIST.dwg, Layout1, 5/7/2009 3:03:37 PM, BJB





M:\CAD FILES\1600-1699\1627.1\dwg\1627.1 CX-CG-EXHIBIT.dwg, Layout1, 5/7/2009 3:00:40 PM, BJB

CITY OF ALBUQUERQUE

January 26, 2009

Scott M. McGee, P.E.
Isaacson & Arfman, P.A.
128 Monroe St. NE
Albuquerque, NM 87108

Re: Osuna Elementary School Admin Bldg Addition Grading and Drainage Plan Engineer's Stamp dated 1-15-09 (F20/D010A)

Dear Mr. McGee,

Based upon the information provided in your submittal received 1-22-09, the above referenced plan is approved for Foundation Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Foundation permits allow the property owner to pour the foundation, but not to do other ground work (e.g. storm drain, paving, etc.).

If you have any questions, you can contact me at 924-3695.

Sincerely,

Curtis A. Cherne

Curtis A. Cherne, P.E.
Senior Engineer, Planning Dept.
Development and Building Services

C: file

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

CITY OF ALBUQUERQUE

Planning Department
Transportation Development Services Section

October 6, 2009

Cindy A. Terry, Registered Architect
Westwork Architects
2403 San Mateo Blvd. NE, Ste. S-2
Albuquerque, NM 87110

Re: Certification Submittal for Final Building Certificate of Occupancy for Osuna Elementary Classroom Addition, [F-20 / D010A]
4715 Moon NE
Architect Stamp Dated 09/13/09

Dear Ms. Terry:

The TCL Letter of Certification and approved Site Plan submitted on October 5, 2009 are **not sufficient** for acceptance by this office for final (Permanent) Certificate of Occupancy (C.O.) until the following items are addressed:

- ***Your Site Plan calls out for wheelchair ramps (with truncated domes), curb and gutter, and sidewalk to be constructed between the new driveway entrances. But, only a flat sidewalk (flush to roadway pavement) was constructed. I feel this issue needs to be resolve prior to issuance of a Permanent C.O.***

A 120-day Temporary C.O. has been issued until the above comments are addressed, which may have redlined comments, initialed and dated by the designer-of-record.

When all items are addressed you can resubmit acceptable package along with fully completed Drainage Information Sheet to front counter personnel for log in and evaluation by Transportation.

If you have any questions, please call me at 505-924-3630.

Sincerely,

Nilo E. Salgado-Fernandez, P.E.
Senior Traffic Engineer
Development and Building Services
Planning Department

c: Engineer
Hydrology file
CO Clerk

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

Westwork
ARCHITECTS

Dennis Elementary School Classroom Addition

Date: September 14, 2009

To whom it may concern:

TRAFFIC CERTIFICATION

I, Cindy A. Terry AIA, NMRA 2294, of the firm Westwork Architects, hereby certify that this project is in substantial compliance with and in accordance with the design intent of the DRB, AA or TCL approved plan dated 3/19/08 The record information edited onto the original design document has been obtained by Chuck Calla of the firm High Mesa. I further certify that I have personally visited the project site on September 7, 2009 and have determined by visual inspection that the survey data provided is representative of actual site conditions and is true and correct to the best of my knowledge and belief. This certification is submitted in support of a request for final certificate of occupancy.

The record information presented hereon is not necessarily complete and intended only to verify substantial compliance of the traffic aspects of this project. Those relying on the record document are advised to obtain independent verification of its accuracy before using it for any other purpose.

Cindy A. Terry AIA

Sept 13, 2009
Date

STATE OF NEW MEXICO
CINDY A. TERRY
NO. 2294
9 13 09
REGISTERED ARCHITECT

RECEIVED
OCT 5 2009
HYDROLOGY SECTION

2403 San Mateo Blvd. NE Suite S-2, Albuquerque, New Mexico. p (505)884-5252 f. (505)213-0002 westwork@swcp.com

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV 12/2005)

PROJECT TITLE: Osuna Elementary ZONE MAP: F-20/D010A
DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: _____
CITY ADDRESS: 4715 MOON ST NE, ALBUQUERQUE

ENGINEERING FIRM: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

OWNER: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

ARCHITECT: Westwork Architects, CINDY TERRY CONTACT: CINDY TERRY
ADDRESS: 2403 SAN MATEO BLVD NE PHONE: 239-8368
CITY, STATE: Ste S-2 ALB. N.M. ZIP CODE: 87110

SURVEYOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:
- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN 1st SUBMITTAL
- ____ DRAINAGE PLAN RESUBMITTAL
- ____ CONCEPTUAL G & D PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ ENGINEER'S CERT (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT
- ____ ENGINEER'S CERT (TCL)
- ____ ENGINEER'S CERT (DRB SITE PLAN)
- X OTHER (SPECIFY) TRAFFIC CIRCULATION

CHECK TYPE OF APPROVAL SOUGHT:
- ____ SIA/FINANCIAL GUARANTEE RELEASE
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D APPROVAL
- ____ S. DEV. FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ FOUNDATION PERMIT APPROVAL
- ____ BUILDING PERMIT APPROVAL
- X CERTIFICATE OF OCCUPANCY (PERM)
- ____ CERTIFICATE OF OCCUPANCY (TEMP)
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ OTHER (SPECIFY)

RECEIVED
OCT 5 2009
05
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:
- X YES
- ____ NO
- ____ COPY PROVIDED

DATE SUBMITTED: Oct 2, 2009 BY: CINDY TERRY

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans**: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report**: Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.

- Field Inspection -

(1) Check ramp design betw. driveways

(2) Verify truncated domes

RECEIVED
DEC 17 2009
HYDROLOGY
SECTION

CITY OF ALBUQUERQUE

Planning Department
Transportation Development Services Section

October 6, 2009

Cindy A. Terry, Registered Architect
Westwork Architects
2403 San Mateo Blvd. NE, Ste. S-2
Albuquerque, NM 87110

Re: Certification Submittal for Final Building Certificate of Occupancy for Osuna Elementary Classroom Addition, [F-20 / D010A]
4715 Moon NE
Architect Stamp Dated 09/13/09

Dear Ms. Terry:

The TCL Letter of Certification and approved Site Plan submitted on October 5, 2009 are **not sufficient** for acceptance by this office for final (Permanent) Certificate of Occupancy (C.O.) until the following items are addressed:

- ***Your Site Plan calls out for wheelchair ramps (with truncated domes), curb and gutter, and sidewalk to be constructed between the new driveway entrances. But, only a flat sidewalk (flush to roadway pavement) was constructed. I feel this issue needs to be resolve prior to issuance of a Permanent C.O.***

A 120-day Temporary C.O. has been issued until the above comments are addressed, which may have redlined comments, initialed and dated by the designer-of-record.

When all items are addressed you can resubmit acceptable package along with fully completed Drainage Information Sheet to front counter personnel for log in and evaluation by Transportation.

If you have any questions, please call me at 505-924-3630.

Sincerely,

Nilo E. Salgado Fernandez, P.E.
Senior Traffic Engineer
Development and Building Services
Planning Department

c: Engineer
Hydrology file
CO Clerk

RECEIVED
DEC 1 8 2009
7
HYDROLOGY SECTION

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

CITY OF ALBUQUERQUE

Planning Department
Transportation Development Services Section

December 18, 2009

Cindy A. Terry, Registered Architect
Westwork Architects
2403 San Mateo Blvd. NE, Ste. S-2
Albuquerque, NM 87110

Re: Certification Submittal for Final Building Certificate of Occupancy for Osuna Elementary Classroom Addition, [F-20 / D010A]
4715 Moon NE
Architect Stamp Dated 09/13/09

Dear Ms. Terry:

Based upon the information provided in your resubmittal received 12-17-09, Transportation Development has no objection to the issuance of a Permanent Certificate of Occupancy (C.O.).

This letter serves as a "green tag" from Transportation Development for a Permanent Certificate of Occupancy to be issued by the Building and Safety Division.

Sincerely,

Nilo E. Salgado-Fernandez, P.E.
Senior Traffic Engineer
Development and Building Services
Planning Department

c: Engineer
Hydrology file
CO Clerk

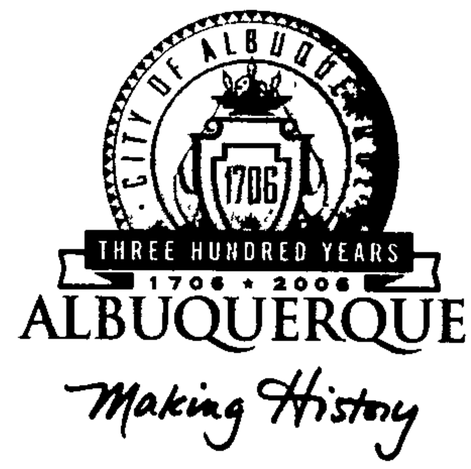
PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

CITY OF ALBUQUERQUE



December 13, 2004

D. James See, R.A.
Edith Cherry / D. James See Architects
220-A Gold Ave. SW
Albuquerque, NM 87102

Re: Osuna Elementary Classroom / Cafeteria / Kitchen Addition, 4715 Moon St NE, Traffic Circulation Layout
Architect's Stamp dated 10-14-04 (F20-D10A)

Dear Mr. See,

Based upon the information provided in your submittal received 12-06-04, the above referenced plan cannot be approved for Building Permit until the following comments are addressed:

1. Please refer to all applicable city standards.
2. What is the purpose of the 3" pea gravel at the entrance?
3. Please show a vicinity map.
4. List the number of parking spaces required by the zoning code as well as the proposed number of parking spaces.
5. Please list the length for all parking spaces.
6. Define width of all sidewalk.
7. For passenger vehicles, the minimum end island radius is 15 feet.
8. List the aisle width.
9. Why is an access ramp being provided at an area that is not an entrance?

If you have any questions, you can contact me at 924-3991.

Sincerely,

Wilfred A. Gallegos, P.E.
Traffic Engineer, Planning Dept.
Development and Building Services

C: file

P.O. Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/28/2003rd)

@ Osuna Elem. Sch.

PROJECT TITLE: Classroom, Cafeteria & kitchen Bldg. ZONE MAP/DRG. FILE #: F-20/D010A
DRB #: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: _____
CITY ADDRESS: 4715 Moon Street, NE

ENGINEERING FIRM: Isaacson & Arfman — CONTACT: Scott McGee
ADDRESS: _____ — PHONE: 268-8828
CITY, STATE: ABQ, NM — ZIP CODE: _____

OWNER: Albuquerque Public Schools — CONTACT: Pat McMurray
ADDRESS: _____ — PHONE: call architect
CITY, STATE: ABQ NM — ZIP CODE: 87106

ARCHITECT: Cherry/Lee Architects — CONTACT: Charles Rowland
ADDRESS: 220 Gold Ave., SW — PHONE: 842-1278
CITY, STATE: ABQ, NM — ZIP CODE: 87102

SURVEYOR: Jeff Mortensen — CONTACT: _____
ADDRESS _____ — PHONE: 345-4250
CITY, STATE: ABQ NM — ZIP CODE: _____

CONTRACTOR: T. A. Cole & Sons — CONTACT: Skip Cole
ADDRESS: _____ — PHONE: call Architect
CITY, STATE: ABQ, NM — ZIP CODE: _____

CHECK TYPE OF SUBMITTAL:

____ DRAINAGE REPORT
____ DRAINAGE PLAN 1st SUBMITTAL, ***REQUIRES TCL or equal***
____ DRAINAGE PLAN RESUBMITTAL
____ CONCEPTUAL GRADING & DRAINAGE PLAN
____ GRADING PLAN
____ EROSION CONTROL PLAN
____ ENGINEER'S CERTIFICATION (HYDROLOGY)
____ CLOMR/LOMR
✓ TRAFFIC CIRCULATION LAYOUT (TCL)
____ ENGINEERS CERTIFICATION (TCL)
____ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
____ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

____ SIA / FINANCIAL GUARANTEE RELEASE
____ PRELIMINARY PLAT APPROVAL
____ S. DEV. PLAN FOR SUB'D. APPROVAL
____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
____ SECTOR PLAN APPROVAL
____ FINAL PLAT APPROVAL
____ FOUNDATION PERMIT APPROVAL
✓ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY (PERM.)
____ CERTIFICATE OF OCCUPANCY (TEMP.)
____ GRADING PERMIT APPROVAL
____ PAVING PERMIT APPROVAL
____ WORK ORDER APPROVAL
____ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

____ YES
____ NO
____ COPY PROVIDED

DATE SUBMITTED: 12-6-04 BY: Charles Rowland

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature , location and scope ot the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans**: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report**: Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

RECEIVED
DEC 0 6 2004
HYDROLOGY SECTION

Vicinity Map

Parking Calcs

15' min radius

Hoing length of parking spaces

Aisle width

Pea gravel? Why using?

Why providing an access ramp
that's not at an entrance?

Refer to City Stds

Width of all side walks

TRANSMISSION VERIFICATION REPORT

TIME : 04/01/2008 12:16
NAME :
FAX : 9243864
TEL : 5059243979
SEP.# : BPOL6J570919

DATE,TIME	04/01 12:16
FAX NO./NAME	92682632
DURATION	00:00:14
PAGE(S)	01
RESULT	OK
MODE	STANDARD ECM

CITY OF ALBUQUERQUE

April 1, 2008

Scott M. McGee, P.E.
Isaacson & Arfman, P.A.
128 Monroe St. NE
Albuquerque, NM 87108

Re: Osuna Elementary Classroom Addition Grading and Drainage Plan

Engineer's Stamp dated 12-4-07 (F20/D010A)

Dear Mr. McGee,

Based upon the information provided in your submittal received 12-5-07 and the additional information provided 2-23-08, the above referenced plan is approved for Building Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

PO Box 1293

This project requires a National Pollutant Discharge Elimination System (NPDES) permit. Send a copy of your SWPPP on a CD to the following address:

Albuquerque

Department of Municipal Development, Storm Drainage Division, P.O. Box 1293, One Civic Plaza, Rm. 301, Albuquerque, NM 87103

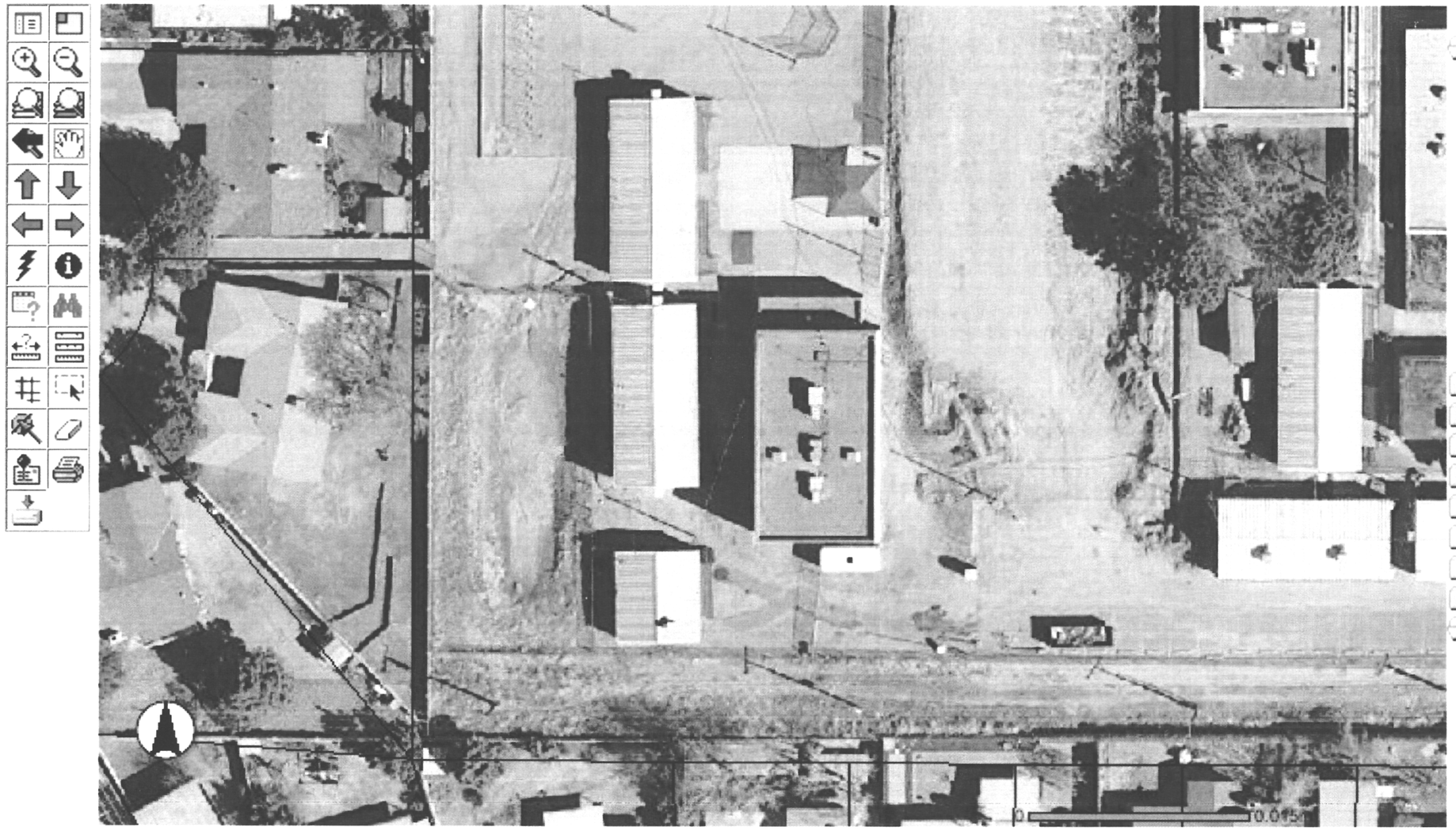
Prior to Certificate of Occupancy release:

NM 87103

- Engineer Certification per the DPM checklist will be required.
- Certify the volume of the pond.

CITY OF ALBUQUERQUE
www.cabq.gov

TEGIS WEB



LAYERS

- BASEMAP
  - PARCELS
  - METRO ADDRESS
  - ZONING
  - OWNERSHIP
  - 10FT CONTOURS
  - CONTOURS
  - MAJOR STREETS
  - FREEWAYS
  - STREET NETWORK
  - STREET NAMES
- INFRASTRUCTURE
- BOUNDARIES
- SITES
- DRC
- APS
- STREETS
- TRAFFIC ENG.
- TRANSIT
- AIR PHOTO
  - 2008 AIR PHOTO
  - 2006 AIR PHOTO
  - 2004 AIR PHOTO
  - 2002 AIR PHOTO
  - 1999 AIR PHOTO
  - STREETVIEW IMAGES

Refresh Map

Auto Refresh

OWNERSHIP

Rec	UPC CODE	OWNER	OWNER ADDRESS	OWNER CITY	OWNER STATE	OWNER ZIPCODE	PROPERTY CLASS	TAX DISTRICT
1	101806104622830226L1	GOODWILL INDUSTRIES OF NM	5000 SAN MATEO BLVD NE	ALBUQUERQUE	NM	87109	C	A1A

Help:

- Closed group, click to open.
- Open group, click to close.
- Map layer.
- Hidden group/layer, click for visible.
- Visible group/layer, click to hide.

Pan SEARCH REFRESH HELP INDEX PAGE CONTACT

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: OSUNA Elementary School ZONE MAP / DRG. FILE #: F-20 / D10A

DRB #: EPC #: WORK ORDER #:

LEGAL DESCRIPTION: Osuna Elementary School

CITY ADDRESS: 4715 Moon Street NE

ENGINEERING FIRM: Isaacson & Arfman, P.A. CONTACT: Scott McGee

ADDRESS: 128 Monroe St. NE PHONE: 268-8828

CITY, STATE: Albuquerque, NM ZIP CODE: 87108

OWNER: A P S CONTACT:

ADDRESS: PHONE:

CITY, STATE: ZIP CODE:

ARCHITECT Westwork Architects. CONTACT: Cindy Terry

ADDRESS: 2403 San Mateo NE Ste. S-2 PHONE 884-5252

CITY, STATE: ABQ, NM ZIP CODE: 87110

SURVEYOR: Jeff Mortensen CONTACT: Chuck Cala LS # 11184

ADDRESS 6010-B Midway Park Blvd PHONE: 345-4250

CITY, STATE: Albuquerque, New Mexico ZIP CODE: 87109

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

CITY, STATE: ZIP CODE:

8-18-09

90DAY TEMP VERBAL

CHECK TYPE OF SUBMITTAL:

- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN 1ST *REQUIRES TCL or equal*
- ____ DRAINAGE PLAN RESUBMITTAL
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- XX ENGINEER'S CERTIFICATION (HYDROLOGY)
- ____ CLOMR / LOMR
- ____ TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEER'S CERTIFICATION (TCL)
- ____ ENGINEER'S CERTIFICATION (DRB APPR, SITE PLAN)
- ____ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- ____ SIA / FINANCIAL GUARANTEE RELEASE
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D APPROVAL
- ____ S. DEV. PLAN FOR BLDG. PERMIT APPR.
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ FOUNDATION PERMIT APPROVAL
- ____ BUILDING PERMIT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY (PERM)
- XX CERTIFICATE OF OCCUPANCY (TEMP)
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ OTHER

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ____ YES
- ____ NO
- ____ COPY PROVIDED

RECEIVED

AUG 18 2009

HYDROLOGY SECTION

DATE SUBMITTED: Tuesday, August 18, 2009 BY: Isaacson & Arfman, P.A.

Requests for approvals of Site Development Plans and / or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. Conceptual Grading and Drainage Plan: Required for approval of Site Development Plans greater than five acres and Sector Plans
2. Drainage Plans: Required for building permits, grading permits, paving permits and site plans less than five acres
3. Drainage Report: Required for subdivisions containing more than ten (10) lots or constituting five acres or more.

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

June 8, 1994

Mike Walla, P.E.
Chavez-Grieves
5639 Jefferson NE
Albuquerque, N.M. 87109

RE: REVISED CALCULATIONS FOR OSUNA ELEMENTARY (F-20/D10A)
RECEIVED MAY 26, 1994 FOR CERTIFICATE OF OCCUPANCY APPROVAL

Dear Mr. Walla:

Based on the information included in the submittal referenced above, City Hydrology releases a Permanent Certificate of Occupancy for this project.

If I can be of further assistance, You may contact me at 768-2727.

Sincerely,

John P. Curtin

John P. Curtin, P.E.
Civil Engineer/Hydrology

c: Andrew Garcia

WPHYD/7832/jpc

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

DRAINAGE INFORMATION SHEET

PROJECT TITLE: OSUNA ELEMENTARY ZONE ATLAS/DRNG. FILE #: F-20/D10A

LEGAL DESCRIPTION: BOARD OF EDUC. OSUNA ADD'N, BERN. COUNTY, ALBUQ, NM

CITY ADDRESS: 4715 MOON NE

ENGINEERING FIRM: CHAVEZ-GRIEVES CONTACT: MIKE NALLA

ADDRESS: 5639 JEFFERSON PHONE: 344-4080

OWNER: APS CONTACT: GERRY BROWN

ADDRESS: PHONE: 242-5865

ARCHITECT: VGA CONTACT: MIKE HILL

ADDRESS: 319 CENTRAL NW PHONE: 247.9955

SURVEYOR: JMA CONTACT: JEFF MORTENSEN

ADDRESS: PHONE: 345-4250

CONTRACTOR: GEMCON CONTACT: PAULA

ADDRESS: PHONE:

PRE-DESIGN MEETING:

X YES

____ NO

____ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. ____

EPC NO. ____

PROJ. NO. ____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

X DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

X GRADING PLAN

____ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ SITE DEVELOPMENT PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ BUILDING PERMIT APPROVAL

____ FOUNDATION PERMIT APPROVAL

X CERTIFICATE OF OCCUPANCY APPROVAL

____ ROUGH GRADING PERMIT APPROVAL

____ GRADING/PAVING PERMIT APPROVAL

____ OTHER ____ (SPECIFY)

DATE SUBMITTED: 5/26/94

BY: [signature]

RECEIVED

MAY 2 6 1994

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.
THE ENGINEERING FIRM OF CHOICE
5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344-4080 · FAX (505) 343-8759

LETTER OF TRANSMITTAL

TO: CITY OF ALBUQ
HYDROLOGY DEPT

ATTN: JOHN CURTIN

DATE: 5/26/94

JOB #

RE: OSUNA ELEM

WE ARE SENDING YOU X ATTACHED ___ UNDER SEPARATE COVER, THE FOLLOWING ITEMS:

___ SHOP DRAWINGS ___ PLANS ___ SPECIFICATIONS ___ DISKETTE
___ CHANGE ORDER ___ PRINTS ___ CALCULATIONS ___ ___
___ COPY OF LETTER ___ SAMPLES ___ REPORT ___ ___

COPIES	DATE	NO.	DESCRIPTION
2 EA	5/26/94		REVISED ANALYSIS
1 EA			COMMENT LETTER
1			DRAINAGE INFO SHEET

THESE ARE TRANSMITTED AS CHECKED BELOW:

X FOR YOUR USE
X AS REQUESTED
___ PLEASE CORRECT AND RESUBMIT
___ RESUBMITTAL IS NOT REQUIRED
CORRECTIONS, IF ANY, ARE NOTED

X FOR REVIEW & COMMENT
___ RETURNED AFTER LOAN TO US
___ SUBMIT ___ COPIES FOR DISTRIBUTION
___ RETURN ___ CORRECTED PRINTS
___ ___

REMARKS: YOU MADE NO COMMENTS ON THE PREVIOUS PLAN SUBMITTAL SO I DID NOT SUBMIT ANY NEW ONES. PLEASE LET ME KNOW IF YOU NEED ADD'L COPIES OF THIS PLAN.

THANKS,

MAY 2 6 1994

COPIES TO: FILE

SIGNED: [signature]

IF ENCLOSURES ARE NOT AS NOTED, KINDLY NOTIFY US AT ONCE.

REV.1/92

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.
THE ENGINEERING FIRM OF CHOICE
5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344-4080 · FAX (505) 343-8759

May 26, 1994

Mr. John P. Curtin, P.E.
City of Albuquerque Public Works Dept., Hydrology Division
City-County Building Room 301
P.O. Box 1293
Albuquerque, New Mexico 87103

RE: Engineer's Certification for Osuna Elementary (F-20/D10A)
Drainage Analysis of Downstream Conditions

Dear Mr. Curtin:

These calculations are submitted herewith for permanent Certificate of Occupancy issuance. The concerns listed in your letter of May 13th have been addressed as follows:

1. The AHYMO land treatment percentages were revised per your recommendation.

2. An additional analysis point was added as requested. Our enclosed calculations show that the runoff at this analysis point is contained within the right-of-way.

As shown on the analysis point summary table, the total discharge from this site has been reduced considerably by the installation of the on-site pond. The reduction at analysis point 1 is almost 10 cfs. Therefore, this site has fulfilled its drainage obligations and should be granted its permanent Certificate of Occupancy.

If you have any questions or comments, please call Mr. Joe Kelley or myself.

Sincerely,

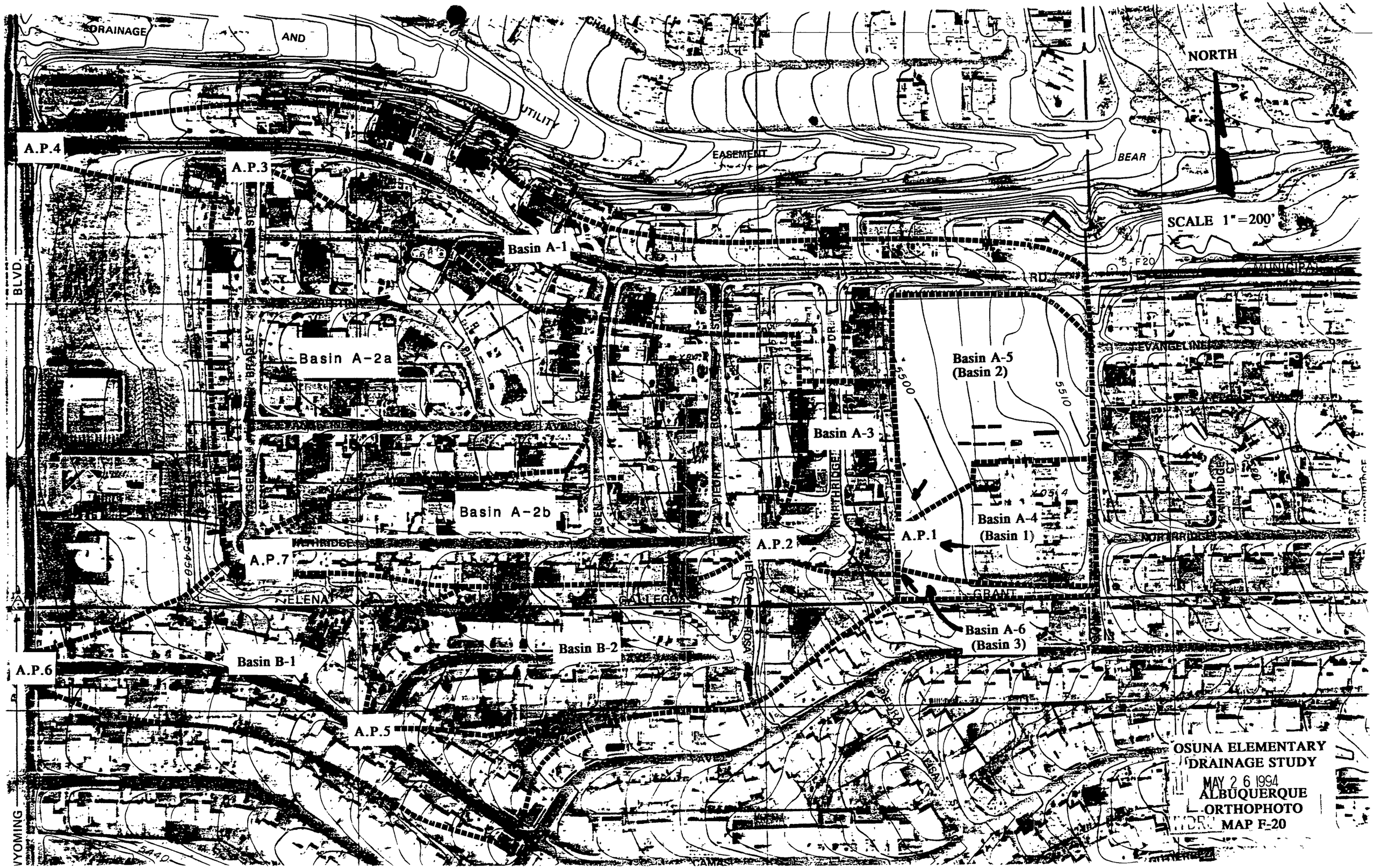
CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Mike J. Walla, P.E.

MJW:cjr

Enclosure

MAY 2 6 1994



OSUNA ELEMENTARY
DRAINAGE STUDY

MAY 2 6 1994
ALBUQUERQUE
ORTHOPHOTO
MAP F-20

ANALYSIS POINT SUMMARY

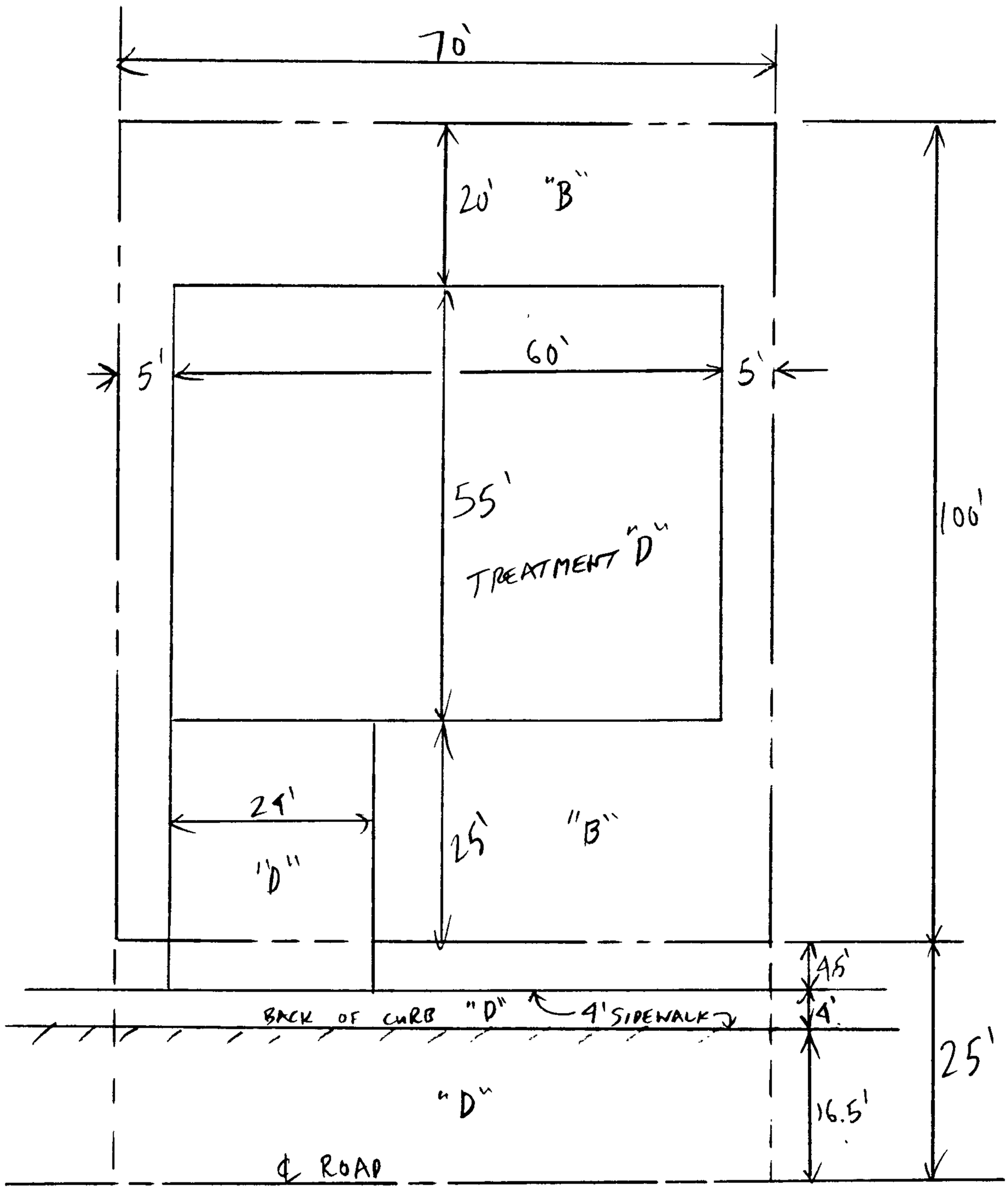
ANALYSIS POINT	STREET CAPACITY	EXISTING FLOW (NO POND)	DEVELOPED FLOW (POND)
A.P.1	50.73 CFS	27.32 CFS	17.84 CFS
A.P.2	211.39 CFS	37.62 CFS	28.24 CFS
A.P.3	125.06 CFS	107.19 CFS	103.17 CFS
A.P.4	231.56 CFS	160.76 CFS	157.17 CFS
A.P.5	231.56 CFS	43.83 CFS	41.12 CFS
A.P.6	211.39 CFS	74.51 CFS	72.12 CFS
A.P.7	211.39 CFS	62.12 CFS	56.63 CFS

BASIN RUNOFF SUMMARY		
BASIN	EXISTING CONDITIONS (NO POND)	DEVELOPED CONDITIONS (POND)
A-1	57.00 CFS	57.00 CFS
A-2a	56.22 CFS	56.22 CFS
A-2b	45.81 CFS	45.81 CFS
A-3	10.66 CFS	10.66 CFS
A-4	10.60 CFS	10.64 CFS
A-5	14.82 CFS	15.05 CFS
A-6	1.90 CFS	1.90 CFS
B-1	34.62 CFS	34.62 CFS
B-2	35.92 CFS	35.92 CFS

Job OSUNA ELEMENTARY
Subject CALCULATION OF LAND TREATMENT FACTORS
Client

Sheet No. 1 of 4
Job. No.
By JPK Date 4/26/94

CHAVEZ - GRIEVES / CONSULTING ENGINEERS, Inc. Albuquerque, NM



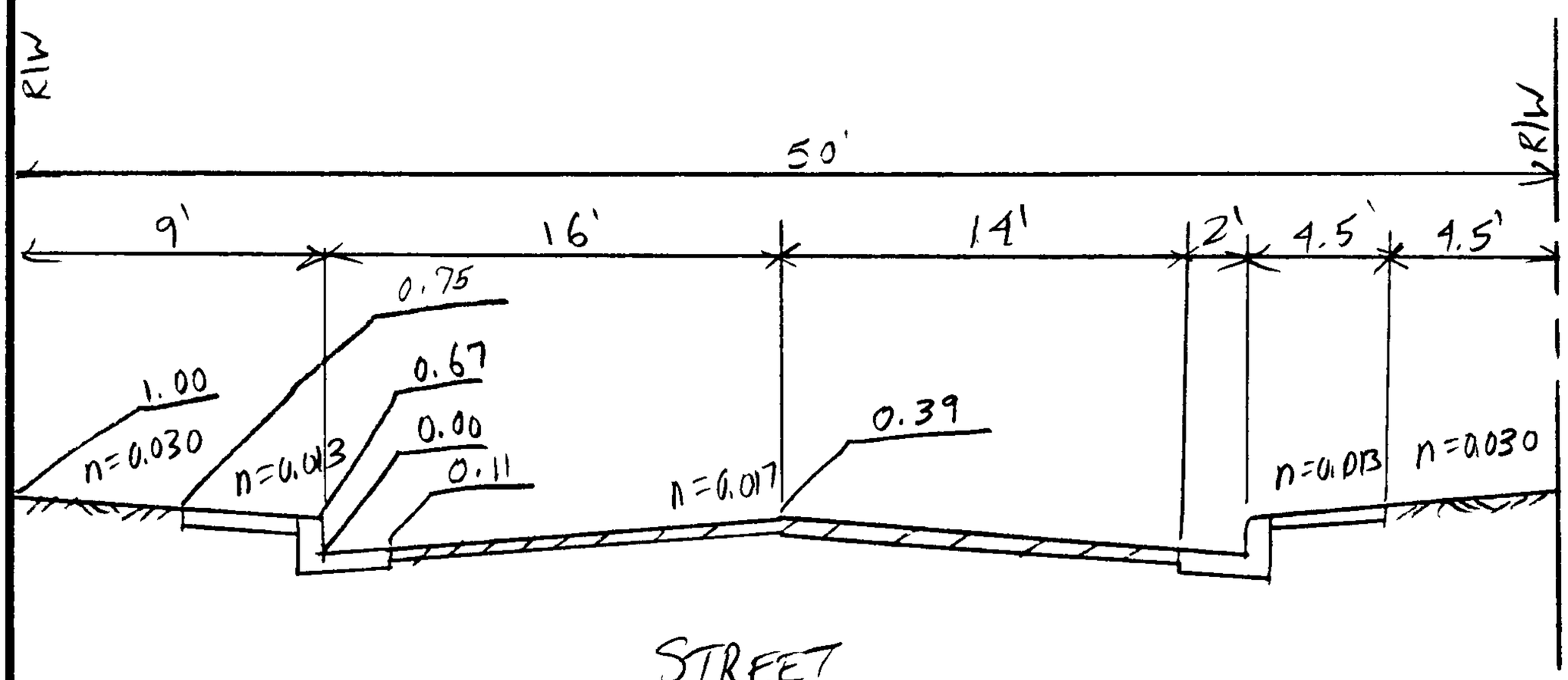
AREAS:	B	D	TOTAL
	3307 SF	5443 SF	8750 SF
	38%	62%	

Job _____ Sheet No. 2 of 4

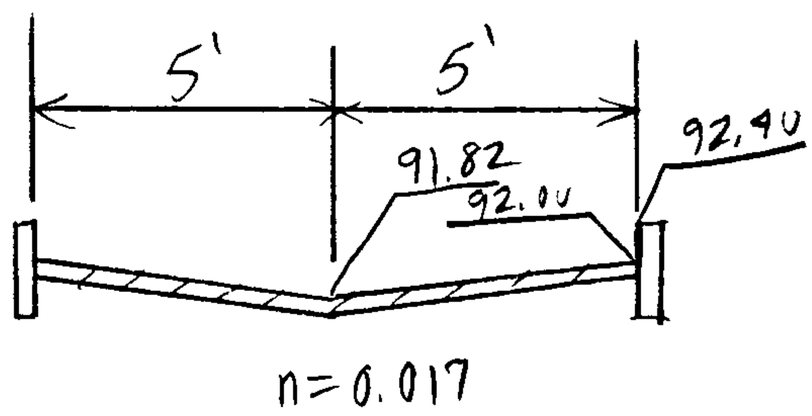
Subject TYPICAL STREET SECTION AND EXIST. CHANNEL Job. No. _____

Client _____ By _____ Date _____

CHAVEZ - GRIEVES / CONSULTING ENGINEERS, Inc. Albuquerque, NM



STREET



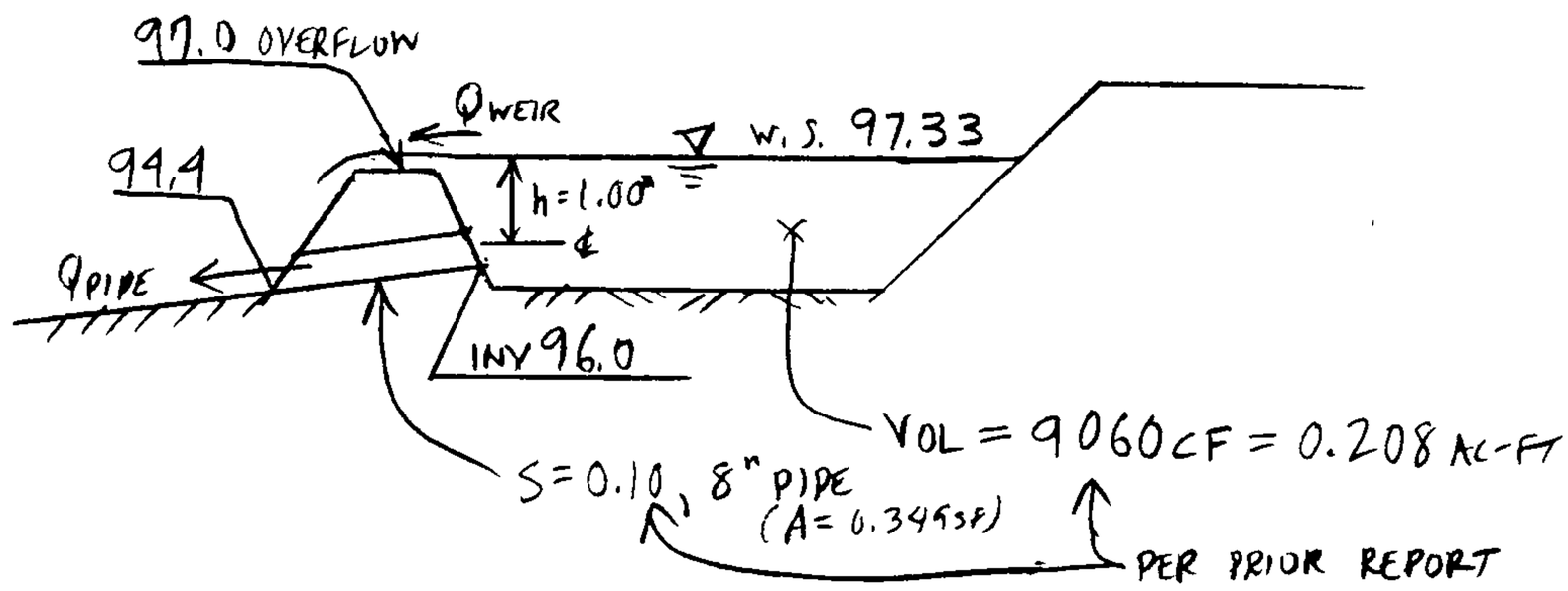
EXIST. CHANNEL

COMPOSITE "n" CALCULATION FOR THE STREET FLOWING FULL:

$$[9(0.030)+28(0.017)+13(0.013)]\div 50 = 0.0183$$

Job _____ Sheet No. 4 of 6
Subject NEW POND DATA Job. No. _____
Client _____ By _____ Date _____

CHAVEZ - GRIEVES / CONSULTING ENGINEERS, Inc. Albuquerque.



1. CAPACITY OF 8" PIPE DISCHARGE:

1) BY ORIFICE EQUATION:

$$Q = 0.6A\sqrt{2gh} = 0.6(0.349)\sqrt{64.4(1.00')} = 1.68 \text{ CFS} \leftarrow \text{CONTROLS}$$

2) BY MANNING'S:

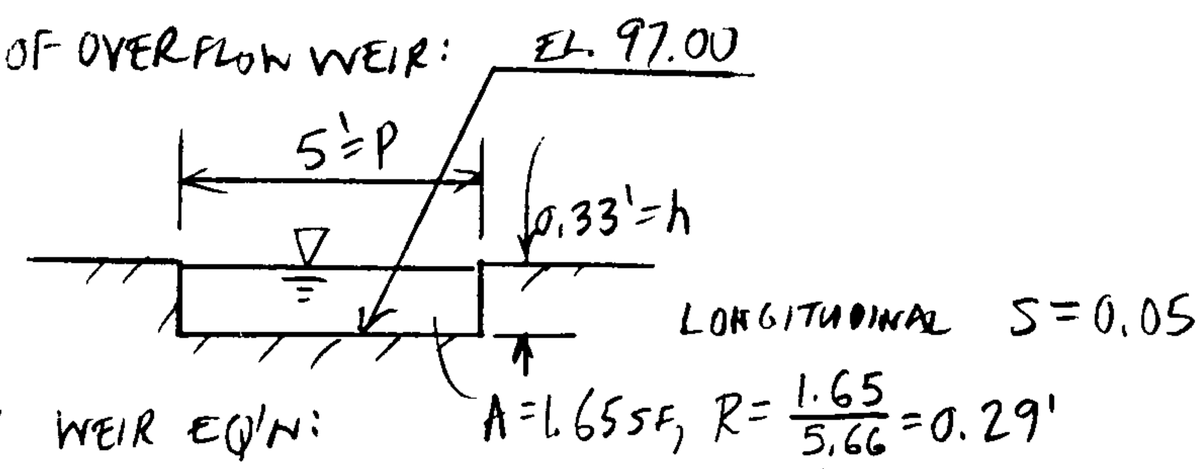
$$Q = \frac{1.486}{n} A R^{2/3} S^{1/2} \qquad R^{2/3} = (r/2)^{2/3}$$

$$= \frac{1.486}{.013} 0.349 \left(\frac{0.33}{2}\right)^{2/3} (0.10)^{1/2}$$

$$= 3.8 \text{ CFS}$$

$$\therefore Q_{PIPE} = 1.68 \text{ CFS}$$

2. CAPACITY OF OVERFLOW WEIR:



1) BY WEIR EQ'N:

$$Q = 3.3\, P\, h^{1.5} = 3.3(5)(0.33)^{1.5} = 3.13 \text{ CFS} \leftarrow \text{CONTROLS}$$

2) BY MANNINGS:

$$Q = \frac{1.486}{.013} 1.65 (0.29)^{2/3} (.05)^{1/2} = 18.54 \text{ CFS}$$

3. TOTAL DISCHARGE AT W.S. 97.33 ⇒ 1.68 + 3.13 = 4.81 CFS

Job _____ Sheet No. 3 of 4

Subject BASIN INFORMATION Job. No. _____

Client _____ By _____ Date _____

CHAVEZ - GRIEVES / CONSULTING ENGINEERS, Inc. Albuquerque, NM

BASIN	AREA (SF)	LENGTH	SLOPE	%A	%B	%C	%D
A-1	611,325	500' TO AP3	.024	0	38	0	62
A-2	1,092,900	930'	.007	0	38	0	62
		1200'	.020				
A-3	114,000	250'	.020	0	38	0	62
		100'	.041 (EXIST. CHANNEL)				
A-4	109,209	—	—	0	0	~~59~~ 48	~~41~~ 52
A-5	209,537	—	—	~~82~~ 0	~~85~~ 58	~~02~~ 28	~~10~~ 14
A-6	24,084	—	—	0	0	100	0
B-1	370,500	850'	.020	0	38	0	62
B-2	383,500	1150'	.024	0	38	0	62

DATA PER PRIOR REPORT

```
    AHYMO PROGRAM (AHYMO392) - AMAFCA VERSION OF HYMO - MARCH, 1992
         RUN DATE (MON/DAY/YR) = 05/25/1994
         START TIME (HR:MIN:SEC) = 11:27:13     USER NO.= J_KELLY_.S92
         INPUT FILE = ahymo.in

***** CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC. *****
** AHYMO RUN FOR OSUNA ELEMENTARY OFFSITE DRAINAGE STUDY--
** ALBUQUERQUE, NEW MEXICO
** FILE NAME: AHYMO.IN/OUT
** 100-YEAR, 6-HOUR STORM
******** EXISTING CONDITIONS (PRIOR TO POND INSTALLATION) *********
START              0.0
RAINFALL           TYPE=1   RAIN QUARTER=0.0
                   RAIN ONE=2.13 RAIN SIX=2.56 RAIN DAY=3.00
                   DT=.033333

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
DT =    .033333 HOURS       END TIME =     5.999940 HOURS
   .0000   .0024   .0049   .0074   .0099   .0126   .0153
   .0180   .0208   .0237   .0266   .0297   .0328   .0360
   .0393   .0426   .0461   .0497   .0534   .0573   .0612
   .0654   .0696   .0741   .0787   .0835   .0886   .0939
   .0995   .1053   .1116   .1174   .1237   .1305   .1450
   .1773   .2271   .2986   .3963   .5245   .6881   .8918
  1.1403  1.3702  1.4664  1.5476  1.6199  1.6856  1.7461
  1.8023  1.8548  1.9041  1.9504  1.9941  2.0354  2.0745
  2.1115  2.1466  2.1799  2.2115  2.2415  2.2488  2.2557
  2.2623  2.2686  2.2746  2.2803  2.2859  2.2912  2.2964
  2.3014  2.3062  2.3109  2.3155  2.3199  2.3242  2.3284
  2.3326  2.3366  2.3405  2.3443  2.3481  2.3518  2.3554
  2.3589  2.3624  2.3658  2.3691  2.3724  2.3756  2.3788
  2.3819  2.3849  2.3880  2.3909  2.3939  2.3968  2.3996
  2.4024  2.4052  2.4079  2.4106  2.4133  2.4159  2.4185
  2.4210  2.4236  2.4261  2.4285  2.4310  2.4334  2.4358
  2.4381  2.4405  2.4428  2.4451  2.4473  2.4496  2.4518
  2.4540  2.4562  2.4583  2.4604  2.4626  2.4647  2.4667
  2.4688  2.4708  2.4728  2.4748  2.4768  2.4788  2.4808
  2.4827  2.4846  2.4865  2.4884  2.4903  2.4922  2.4940
  2.4958  2.4977  2.4995  2.5013  2.5030  2.5048  2.5066
  2.5083  2.5100  2.5117  2.5134  2.5151  2.5168  2.5185
  2.5202  2.5218  2.5235  2.5251  2.5267  2.5283  2.5299
  2.5315  2.5331  2.5346  2.5362  2.5378  2.5393  2.5408
  2.5424  2.5439  2.5454  2.5469  2.5484  2.5498  2.5513
  2.5528  2.5542  2.5557  2.5571  2.5586  2.5600

** COMPUTE BASIN A-4 RUNOFF
COMPUTE NM HYD     ID=2  HYD=104  DA=0.00392 SQ MI
                   PER A=0 PER B=0 PER C=49 PER D=51
                   TP=0.133333 MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000    SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   7.8910    CFS   UNIT VOLUME =    .9978      B =   526.28      P60 = 2.1300
    AREA =      .001999 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
```

```
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

K =   .108826HR    TP =   .133333HR    K/TP RATIO =   .816201     SHAPE CONSTANT, N =  4.378976
UNIT PEAK =   5.4699    CFS   UNIT VOLUME =    .9981       B =   379.69      P60 = 2.1300
AREA =      .001921 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD          ID=2      CODE=1

                          PARTIAL HYDROGRAPH   104.00

RUNOFF VOLUME =     1.80441 INCHES     =        .3772 ACRE-FEET
PEAK DISCHARGE RATE =     10.60 CFS  AT   1.500 HOURS   BASIN AREA =   .0039 SQ. MI.

**- COMPUTE BASIN A-5 RUNOFF
COMPUTE NM HYD      ID=1  HYD=105  DA=0.00752 SQ MI
                    PER A=0  PER B=58  PER C=31  PER D=11
                    TP=0.133333 MASSRAIN=-1

K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   3.2650    CFS   UNIT VOLUME =    .9960       B =   526.28      P60 = 2.1300
AREA =      .000827 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

K =   .124950HR    TP =   .133333HR    K/TP RATIO =   .937130     SHAPE CONSTANT, N =  3.773726
UNIT PEAK =   17.056    CFS   UNIT VOLUME =    .9995       B =   339.79      P60 = 2.1300
AREA =      .006693 SQ MI    IA =    .44775 INCHES    INF =   1.10371 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD          ID=1      CODE=1

                          PARTIAL HYDROGRAPH   105.00

RUNOFF VOLUME =     1.15950 INCHES     =        .4650 ACRE-FEET
PEAK DISCHARGE RATE =     14.82 CFS  AT   1.500 HOURS   BASIN AREA =   .0075 SQ. MI.

**- ADD BASIN A-5 AND BASIN A-4 RUNOFF AT A.P.1
ADD HYD            ID=2  HYD=104.2  ID I=1  ID II=2
PRINT HYD          ID=2  CODE=1

                          PARTIAL HYDROGRAPH   104.20

RUNOFF VOLUME =     1.38043 INCHES     =        .8422 ACRE-FEET
PEAK DISCHARGE RATE =     25.42 CFS  AT   1.500 HOURS   BASIN AREA =   .0114 SQ. MI.
```

```
** COMPUTE BASIN A-6 RUNOFF
COMPUTE NM HYD      ID=1  HYD=106  DA=0.000863 SQ MI
                    PER A=0 PER B=0 PER C=100 PER D=0
                    TP=0.133333 MASSRAIN=-1

    K =   .108826HR    TP =   .133333HR    K/TP RATIO =   .816201     SHAPE CONSTANT, N =  4.378976
    UNIT PEAK =   2.4576    CFS   UNIT VOLUME =    .9952       B =   379.69      P60 = 2.1300
    AREA =      .000863 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=1      CODE=1

                                PARTIAL HYDROGRAPH   106.00

    RUNOFF VOLUME =     1.26973 INCHES     =        .0584 ACRE-FEET
    PEAK DISCHARGE RATE =      1.90 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.


** ADD BASIN A-6 AND BASIN A-4 RUNOFF AT A.P.1 FOR THE TOTAL
** EXISTING RUNOFF FROM THE SCHOOL, WITHOUT THE DETENTION POND.
ADD HYD             ID=2  HYD=104.3  ID I=1  ID II=2
PRINT HYD           ID=2  CODE=1

                                PARTIAL HYDROGRAPH   104.30


    RUNOFF VOLUME =     1.37266 INCHES     =        .9007 ACRE-FEET
    PEAK DISCHARGE RATE =     27.32 CFS  AT   1.500 HOURS   BASIN AREA =   .0123 SQ. MI.


** ROUTE THE RUNOFF FROM THE SCHOOL TO A.P.2 AT THE
** INTERSECTION OF NORTHRIDGE DR. AND PIEDRA ROSA ST.
** FIRST ROUTE THE RUNOFF THROUGH THE ASPHALT CHANNEL
COMPUTE RATING CURVE CID=1  VS=1  SEG=1  MIN EL=91.82  MAX EL=92.40
CH SLP=.041  FP SLP=.041  N=.017  DIST=10
DIST   ELEV
 0     92.40
 0.1   92.00
 5     91.82
 9.9   92.00
 10    92.40

                    RATING CURVE VALLEY SECTION  1.0
                       WATER      FLOW      FLOW
                      SURFACE     AREA      RATE
                       ELEV       SQ FT     CFS
                       91.82        .0        .0
                       91.85        .0        .0
                       91.88        .1        .2
                       91.91        .2        .5
```

91.94	.4	1.1
91.97	.6	2.0
92.00	.9	3.3
92.03	1.2	5.3
92.06	1.5	7.6
92.09	1.8	10.3
92.13	2.1	13.2
92.16	2.4	16.4
92.19	2.7	19.9
92.22	3.0	23.6
92.25	3.3	27.6
92.28	3.6	31.8
92.31	3.9	36.2
92.34	4.2	40.9
92.37	4.5	45.7
92.40	4.8	50.7

COMPUTE TRAVEL TIME ID=1 REACH=1 NO VS=1 L=100 SLP=0.041

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.031	.025	.03	.0255
.061	.101	.18	.0161
.092	.228	.52	.0123
.122	.406	1.11	.0101
.153	.634	2.02	.0087
.183	.913	3.32	.0076
.214	1.212	5.30	.0064
.244	1.512	7.63	.0055
.275	1.813	10.27	.0049
.305	2.113	13.21	.0044
.336	2.415	16.43	.0041
.366	2.716	19.91	.0038
.397	3.019	23.64	.0035
.427	3.321	27.61	.0033
.458	3.625	31.81	.0032
.488	3.928	36.23	.0030
.519	4.232	40.86	.0029
.549	4.537	45.70	.0028
.580	4.842	50.73	.0027

ROUTE ID=1 HYD=104.4 INFLOW ID=2 DT=0.033333

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 104.40

RUNOFF VOLUME = 1.37269 INCHES = .9007 ACRE-FEET

PEAK DISCHARGE RATE = 27.34 CFS AT 1.500 HOURS BASIN AREA = .0123 SQ. MI.

** THEN ROUTE THE RUNOFF THROUGH THE STREET TO A.P.2

COMPUTE RATING CURVE CID=1 VS=1 SEG=1 MIN EL=0 MAX EL=1.00

CH SLP=.020 FP SLP=.020 N=.0183 DIST=50

DIST	ELEV
0	1.00
9.0	0.67
9.0	0.00
11.0	0.11
25.0	0.39
39.0	0.11
41.0	0.00
41.0	0.67
50.0	1.00

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
.00	.0	.0
.05	.1	.0
.11	.2	.3
.16	.5	.9
.21	1.1	2.4
.26	2.0	5.0
.32	3.2	9.1
.37	4.6	14.9
.42	6.3	23.8
.47	7.9	35.3
.53	9.6	48.5
.58	11.3	63.4
.63	13.0	79.7
.68	14.7	96.1
.74	16.5	110.4
.79	18.4	126.6
.84	20.5	144.7
.89	22.8	164.8
.95	25.2	187.0
1.00	27.7	211.4

COMPUTE TRAVEL TIME ID=2 REACH=1 NO VS=1 L=250 SLP=0.020

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.050	.05	.0709
.105	.201	.31	.0447
.158	.526	.90	.0405
.211	1.127	2.36	.0332
.263	2.005	5.00	.0279
.316	3.161	9.09	.0241
.368	4.593	14.90	.0214
.421	6.254	23.76	.0183

```
                    .474      7.938      35.29      .0156
                    .526      9.622      48.52      .0138
                    .579     11.306      63.36      .0124
                    .632     12.991      79.69      .0113
                    .684     14.680      96.07      .0106
                    .737     16.481     110.39      .0104
                    .789     18.432     126.55      .0101
                    .842     20.535     144.65      .0099
                    .895     22.789     164.77      .0096
                    .947     25.194     186.98      .0094
                   1.000     27.750     211.39      .0091
ROUTE          ID=2  HYD=104.5  INFLOW ID=1  DT=0.033333
PRINT HYD      ID=2      CODE=1

                         PARTIAL HYDROGRAPH   104.50

    RUNOFF VOLUME =     1.37270 INCHES     =        .9007 ACRE-FEET
    PEAK DISCHARGE RATE =     27.38 CFS  AT   1.533 HOURS   BASIN AREA =   .0123 SQ. MI.


** COMPUTE BASIN A-3 RUNOFF
COMPUTE NM HYD     ID=1  HYD=103  DA=0.00409 SQ MI
                   PER A=0 PER B=38 PER C=0 PER D=62
                   TP=0.133333 MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   10.009    CFS   UNIT VOLUME =    .9982       B =   526.28      P60 = 2.1300
    AREA =      .002536 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .133568HR    TP =   .133333HR    K/TP RATIO =  1.001765     SHAPE CONSTANT, N =  3.524016
    UNIT PEAK =   3.7543    CFS   UNIT VOLUME =    .9967       B =   322.08      P60 = 2.1300
    AREA =      .001554 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD      ID=1      CODE=1

                         PARTIAL HYDROGRAPH   103.00


    RUNOFF VOLUME =     1.78030 INCHES     =        .3883 ACRE-FEET
    PEAK DISCHARGE RATE =     10.66 CFS  AT   1.500 HOURS   BASIN AREA =   .0041 SQ. MI.


** ADD BASIN A-3 TO THE REMAINDER OF THE RUNOFF AT A.P.2
ADD HYD        ID=2  HYD=103.1  ID I=1  ID II=2
PRINT HYD      ID=2  CODE=1

                         PARTIAL HYDROGRAPH   103.10
```

```
RUNOFF VOLUME =     1.47435 INCHES     =       1.2890 ACRE-FEET
PEAK DISCHARGE RATE =     37.62 CFS AT   1.533 HOURS   BASIN AREA =   .0164 SQ. MI.


** DIVIDE THE RUNOFF AT A.P.2, WHICH IS THE INTERSECTION OF
** NORTHRIDGE DRIVE AND PIEDRA ROSA STREET. DIVIDE 65% DOWN
** NORTHRIDGE, AND 35% DOWN PIEDRA ROSA.
DIVIDE HYD          ID=2  PER=-65  ID I=3  HYD=102.1
                                   ID II=4 HYD=202.1
PRINT HYD           ID=3  CODE=1

                                PARTIAL HYDROGRAPH   102.10


RUNOFF VOLUME =     1.47435 INCHES     =        .8379 ACRE-FEET
PEAK DISCHARGE RATE =     24.45 CFS AT   1.533 HOURS   BASIN AREA =   .0107 SQ. MI.


PRINT HYD           ID=4  CODE=1

                                PARTIAL HYDROGRAPH   202.10


RUNOFF VOLUME =     1.47435 INCHES     =        .4512 ACRE-FEET
PEAK DISCHARGE RATE =     13.17 CFS AT   1.533 HOURS   BASIN AREA =   .0057 SQ. MI.


** ROUTE THE RUNOFF THROUGH THE STREET FROM A.P.2 TO A.P.7,
** TO THE INTERSECTION OF NORTHRIDGE AND GENERAL BRADLEY STREET.
COMPUTE RATING CURVE CID=1  VS=1  SEG=1  MIN EL=0  MAX EL=1.00
                    CH SLP=.020  FP SLP=.020  N=.0183  DIST=50
                    DIST   ELEV
                     0     1.00
                    9.0    0.67
                    9.0    0.00
                   11.0    0.11
                   25.0    0.39
                   39.0    0.11
                   41.0    0.00
                   41.0    0.67
                   50.0    1.00
```

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
.00	.0	.0
.05	.1	.0
.11	.2	.3
.16	.5	.9
.21	1.1	2.4

.26	2.0	5.0
.32	3.2	9.1
.37	4.6	14.9
.42	6.3	23.8
.47	7.9	35.3
.53	9.6	48.5
.58	11.3	63.4
.63	13.0	79.7
.68	14.7	96.1
.74	16.5	110.4
.79	18.4	126.6
.84	20.5	144.7
.89	22.8	164.8
.95	25.2	187.0
1.00	27.7	211.4

COMPUTE TRAVEL TIME ID=2 REACH=1 NO VS=1 L=1200 SLP=0.020

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.050	.05	.3403
.105	.201	.31	.2144
.158	.526	.90	.1943
.211	1.127	2.36	.1592
.263	2.005	5.00	.1338
.316	3.161	9.09	.1159
.368	4.593	14.90	.1028
.421	6.254	23.76	.0877
.474	7.938	35.29	.0750
.526	9.622	48.52	.0661
.579	11.306	63.36	.0595
.632	12.991	79.69	.0543
.684	14.680	96.07	.0509
.737	16.481	110.39	.0498
.789	18.432	126.55	.0486
.842	20.535	144.65	.0473
.895	22.789	164.77	.0461
.947	25.194	186.98	.0449
1.000	27.750	211.39	.0438

$V = 5.6$ fps

$F = \frac{5.6}{\sqrt{32.2(.58)}} = 1.3$

$D_2 = \frac{.58}{2}\left(\sqrt{1+8(1.3)^2}-1\right)$

$D_2 = .58(1.4) = .81'$

ROUTE ID=2 HYD=102.2 INFLOW ID=3 DT=0.033333

PRINT HYD ID=2 CODE=1

PARTIAL HYDROGRAPH 102.20

RUNOFF VOLUME = 1.47441 INCHES = .8379 ACRE-FEET

PEAK DISCHARGE RATE = 19.98 CFS AT 1.567 HOURS BASIN AREA = .0107 SQ. MI.

** COMPUTE BASIN A-2b RUNOFF

```
COMPUTE NM HYD       ID=1  HYD=1021  DA=0.0176 SQ MI
                     PER A=0 PER B=38 PER C=0 PER D=62
                     TP=0.133333 MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   43.070    CFS   UNIT VOLUME =    .9991       B =   526.28      P60 = 2.1300
    AREA =      .010912 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .133568HR    TP =   .133333HR    K/TP RATIO =  1.001765     SHAPE CONSTANT, N =  3.524016
    UNIT PEAK =   16.155    CFS   UNIT VOLUME =    .9995       B =   322.08      P60 = 2.1300
    AREA =      .006688 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD            ID=1      CODE=1

                                        HYDROGRAPH FROM AREA  1021.00


     RUNOFF VOLUME =     1.78030 INCHES     =       1.6711 ACRE-FEET
     PEAK DISCHARGE RATE =      45.81 CFS  AT   1.500 HOURS   BASIN AREA =   .0176 SQ. MI.


** ADD BASIN A-2b TO THE REMAINDER OF THE RUNOFF AT A.P.7
 ADD HYD             ID=2  HYD=1021.4  ID I=1  ID II=2
 PRINT HYD           ID=2  CODE=1

                                        HYDROGRAPH FROM AREA  1021.40


     RUNOFF VOLUME =     1.66492 INCHES     =       2.5089 ACRE-FEET
     PEAK DISCHARGE RATE =      62.12 CFS  AT   1.533 HOURS   BASIN AREA =   .0283 SQ. MI.


** ROUTE THE RUNOFF THROUGH THE STREET FROM A.P.7 TO A.P.3,
** TO THE INTERSECTION OF GENERAL BRADLEY STREET AND OSUNA RD.
COMPUTE RATING CURVE CID=1  VS=1  SEG=1  MIN EL=0  MAX EL=1.00
                     CH SLP=.007  FP SLP=.007  N=.0183  DIST=50
                     DIST   ELEV
                      0     1.00
                     9.0    0.67
                     9.0    0.00
                     11.0   0.11
                     25.0   0.39
                     39.0   0.11
                     41.0   0.00
                     41.0   0.67
                     50.0   1.00

                                   RATING CURVE VALLEY SECTION  1.0
                                       WATER     FLOW      FLOW
```

SURFACE ELEV	AREA SQ FT	RATE CFS
.00	.0	.0
.05	.1	.0
.11	.2	.2
.16	.5	.5
.21	1.1	1.4
.26	2.0	3.0
.32	3.2	5.4
.37	4.6	8.8
.42	6.3	14.1
.47	7.9	20.9
.53	9.6	28.7
.58	11.3	37.5
.63	13.0	47.1
.68	14.7	56.8
.74	16.5	65.3
.79	18.4	74.9
.84	20.5	85.6
.89	22.8	97.5
.95	25.2	110.6
1.00	27.7	125.1

COMPUTE TRAVEL TIME ID=3 REACH=1 NO VS=1 L=930 SLP=0.007

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.050	.03	.4458
.105	.201	.19	.2809
.158	.526	.53	.2545
.211	1.127	1.40	.2086
.263	2.005	2.96	.1753
.316	3.161	5.38	.1518
.368	4.593	8.81	.1346
.421	6.254	14.06	.1149
.474	7.938	20.88	.0982
.526	9.622	28.71	.0866
.579	11.306	37.48	.0779
.632	12.991	47.14	.0712
.684	14.680	56.83	.0667
.737	16.481	65.30	.0652
.789	18.432	74.87	.0636
.842	20.535	85.58	.0620
.895	22.789	97.48	.0604
.947	25.194	110.62	.0588
1.000	27.750	125.06	.0573

$V = 4.39 fps$

$F = \frac{4.4}{\sqrt{32.2(.95)}} = .80$

ROUTE ID=3 HYD=102.3 INFLOW ID=2 DT=0.033333

PRINT HYD ID=3 CODE=1

PARTIAL HYDROGRAPH 102.30

```
RUNOFF VOLUME =     1.66493 INCHES     =       2.5090 ACRE-FEET
PEAK DISCHARGE RATE =     56.90 CFS AT   1.567 HOURS   BASIN AREA =   .0283 SQ. MI.


** COMPUTE BASIN A-2a RUNOFF
COMPUTE NM HYD      ID=1  HYD=102  DA=0.0216 SQ MI
                    PER A=0 PER B=38 PER C=0 PER D=62
                    TP=0.133333 MASSRAIN=-1

K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   52.859    CFS   UNIT VOLUME =    .9992       B =   526.28      P60 = 2.1300
AREA =      .013392 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

K =   .133568HR    TP =   .133333HR    K/TP RATIO =  1.001765     SHAPE CONSTANT, N =  3.524016
UNIT PEAK =   19.827    CFS   UNIT VOLUME =    .9996       B =   322.08      P60 = 2.1300
AREA =      .008208 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=1      CODE=1

                                PARTIAL HYDROGRAPH   102.00


RUNOFF VOLUME =     1.78030 INCHES     =       2.0509 ACRE-FEET
PEAK DISCHARGE RATE =     56.22 CFS AT   1.500 HOURS   BASIN AREA =   .0216 SQ. MI.


** ADD BASIN A-2a TO THE REMAINDER OF THE RUNOFF AT A.P.3
ADD HYD             ID=3  HYD=102.4  ID I=1  ID II=3
PRINT HYD           ID=3  CODE=1

                                PARTIAL HYDROGRAPH   102.40

RUNOFF VOLUME =     1.71490 INCHES     =       4.5598 ACRE-FEET
PEAK DISCHARGE RATE =    107.19 CFS AT   1.533 HOURS   BASIN AREA =   .0499 SQ. MI.


** ROUTE THE RUNOFF TO THE INTERSECTION OF WYOMING AND OSUNA
** (A.P.4)
COMPUTE RATING CURVE CID=1  VS=1  SEG=1  MIN EL=0  MAX EL=1.00
                    CH SLP=.024  FP SLP=.024  N=.0183  DIST=50
                    DIST   ELEV
                     0     1.00
                    9.0    0.67
                    9.0    0.00
                    11.0   0.11
                    25.0   0.39
                    39.0   0.11
```

41.0	0.00
41.0	0.67
50.0	1.00

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
.00	.0	.0
.05	.1	.1
.11	.2	.3
.16	.5	1.0
.21	1.1	2.6
.26	2.0	5.5
.32	3.2	10.0
.37	4.6	16.3
.42	6.3	26.0
.47	7.9	38.7
.53	9.6	53.2
.58	11.3	69.4
.63	13.0	87.3
.68	14.7	105.2
.74	16.5	120.9
.79	18.4	138.6
.84	20.5	158.5
.89	22.8	180.5
.95	25.2	204.8
1.00	27.7	231.6

COMPUTE TRAVEL TIME ID=1 REACH=1 NO VS=1 L=500 SLP=0.024

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.050	.05	.1295
.105	.201	.34	.0815
.158	.526	.99	.0739
.211	1.127	2.59	.0606
.263	2.005	5.47	.0509
.316	3.161	9.96	.0441
.368	4.593	16.32	.0391
.421	6.254	26.03	.0334
.474	7.938	38.65	.0285
.526	9.622	53.16	.0251
.579	11.306	69.40	.0226
.632	12.991	87.29	.0207
.684	14.680	105.23	.0194
.737	16.481	120.92	.0189
.789	18.432	138.63	.0185
.842	20.535	158.46	.0180
.895	22.789	180.49	.0175
.947	25.194	204.83	.0171

$V = 7.7$ fps

$$F = \frac{7.7}{\sqrt{32.2(.842)}}$$

$$= 1.48$$

```
                                  1.000      27.750      231.56       .0166
ROUTE                ID=1  HYD=101.1  INFLOW ID=3  DT=0.033333
PRINT HYD            ID=1       CODE=1

                                PARTIAL HYDROGRAPH   101.10


    RUNOFF VOLUME =      1.71491 INCHES      =       4.5598 ACRE-FEET
    PEAK DISCHARGE RATE =    106.48 CFS  AT   1.567 HOURS   BASIN AREA =   .0499 SQ. MI.


** COMPUTE BASIN A-1 RUNOFF
COMPUTE NM HYD       ID=3  HYD=101  DA=0.0219 SQ MI
                     PER A=0 PER B=38 PER C=0 PER D=62
                     TP=0.133333 MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   53.593    CFS   UNIT VOLUME =    .9992       B =   526.28      P60 = 2.1300
    AREA =      .013578 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .133568HR    TP =   .133333HR    K/TP RATIO =  1.001765     SHAPE CONSTANT, N =  3.524016
    UNIT PEAK =   20.103    CFS   UNIT VOLUME =    .9996       B =   322.08      P60 = 2.1300
    AREA =      .008322 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD            ID=3      CODE=1

                                PARTIAL HYDROGRAPH   101.00


    RUNOFF VOLUME =      1.78030 INCHES      =       2.0794 ACRE-FEET
    PEAK DISCHARGE RATE =     57.00 CFS  AT   1.500 HOURS   BASIN AREA =   .0219 SQ. MI.


** ADD BASIN A-1 TO THE REMAINDER OF THE RUNOFF AT A.P.4
** FOR THE TOTAL RUNOFF INTO WYOMING AT OSUNA.
ADD HYD              ID=3  HYD=101.2  ID I=1  ID II=3
PRINT HYD            ID=3  CODE=1

                                PARTIAL HYDROGRAPH   101.20


    RUNOFF VOLUME =      1.73485 INCHES      =       6.6392 ACRE-FEET
    PEAK DISCHARGE RATE =    160.76 CFS  AT   1.533 HOURS   BASIN AREA =   .0718 SQ. MI.


** ROUTE THE RUNOFF DOWN AVENALES AVE. FROM THE DIVIDE AT
** A.P.2 TO A.P.5.
COMPUTE RATING CURVE CID=1  VS=1  SEG=1  MIN EL=0  MAX EL=1.00
```

CH SLP=.024 FP SLP=.024 N=.0183 DIST=50

DIST	ELEV
0	1.00
9.0	0.67
9.0	0.00
11.0	0.11
25.0	0.39
39.0	0.11
41.0	0.00
41.0	0.67
50.0	1.00

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
.00	.0	.0
.05	.1	.1
.11	.2	.3
.16	.5	1.0
.21	1.1	2.6
.26	2.0	5.5
.32	3.2	10.0
.37	4.6	16.3
.42	6.3	26.0
.47	7.9	38.7
.53	9.6	53.2
.58	11.3	69.4
.63	13.0	87.3
.68	14.7	105.2
.74	16.5	120.9
.79	18.4	138.6
.84	20.5	158.5
.89	22.8	180.5
.95	25.2	204.8
1.00	27.7	231.6

COMPUTE TRAVEL TIME ID=1 REACH=1 NO VS=1 L=1150 SLP=0.024

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.050	.05	.2977
.105	.201	.34	.1876
.158	.526	.99	.1700
.211	1.127	2.59	.1393
.263	2.005	5.47	.1171
.316	3.161	9.96	.1014
.368	4.593	16.32	.0899
.421	6.254	26.03	.0767
.474	7.938	38.65	.0656
.526	9.622	53.16	.0578

```
                                .579      11.306      69.40      .0520
                                .632      12.991      87.29      .0475
                                .684      14.680     105.23      .0446
                                .737      16.481     120.92      .0435
                                .789      18.432     138.63      .0425
                                .842      20.535     158.46      .0414
                                .895      22.789     180.49      .0403
                                .947      25.194     204.83      .0393
                               1.000      27.750     231.56      .0383
ROUTE              ID=1  HYD=202.2  INFLOW ID=4  DT=0.033333
PRINT HYD          ID=1      CODE=1

                                PARTIAL HYDROGRAPH   202.20


    RUNOFF VOLUME =     1.47442 INCHES     =        .4512 ACRE-FEET
    PEAK DISCHARGE RATE =     10.57 CFS  AT   1.600 HOURS   BASIN AREA =   .0057 SQ. MI.



** COMPUTE BASIN B-2 RUNOFF
COMPUTE NM HYD     ID=4  HYD=202  DA=0.0138 SQ MI
                   PER A=0 PER B=38 PER C=0 PER D=62
                   TP=0.133333 MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   33.771    CFS   UNIT VOLUME =    .9990       B =   526.28      P60 = 2.1300
    AREA =      .008556 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .133568HR    TP =   .133333HR    K/TP RATIO =  1.001765     SHAPE CONSTANT, N =  3.524016
    UNIT PEAK =   12.667    CFS   UNIT VOLUME =    .9993       B =   322.08      P60 = 2.1300
    AREA =      .005244 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD          ID=4      CODE=1

                                PARTIAL HYDROGRAPH   202.00


    RUNOFF VOLUME =     1.78030 INCHES     =       1.3103 ACRE-FEET
    PEAK DISCHARGE RATE =     35.92 CFS  AT   1.500 HOURS   BASIN AREA =   .0138 SQ. MI.



** ADD BASIN B-2 TO THE REMAINDER OF THE RUNOFF AT A.P.5
ADD HYD            ID=4  HYD=202.2  ID I=1  ID II=4
PRINT HYD          ID=4  CODE=1

                                PARTIAL HYDROGRAPH   202.20


    RUNOFF VOLUME =     1.69043 INCHES     =       1.7614 ACRE-FEET
```

PEAK DISCHARGE RATE = 43.83 CFS AT 1.533 HOURS BASIN AREA = .0195 SQ. MI.

** ROUTE THE RUNOFF TO THE INTERSECTION OF WYOMING AND LOS
** CAMAS RD. (A.P.6).
COMPUTE RATING CURVE CID=1 VS=1 SEG=1 MIN EL=0 MAX EL=1.00
CH SLP=.020 FP SLP=.020 N=.0183 DIST=50

DIST	ELEV
0	1.00
9.0	0.67
9.0	0.00
11.0	0.11
25.0	0.39
39.0	0.11
41.0	0.00
41.0	0.67
50.0	1.00

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
.00	.0	.0
.05	.1	.0
.11	.2	.3
.16	.5	.9
.21	1.1	2.4
.26	2.0	5.0
.32	3.2	9.1
.37	4.6	14.9
.42	6.3	23.8
.47	7.9	35.3
.53	9.6	48.5
.58	11.3	63.4
.63	13.0	79.7
.68	14.7	96.1
.74	16.5	110.4
.79	18.4	126.6
.84	20.5	144.7
.89	22.8	164.8
.95	25.2	187.0
1.00	27.7	211.4

COMPUTE TRAVEL TIME ID=1 REACH=1 NO VS=1 L=850 SLP=0.020

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.050	.05	.2411
.105	.201	.31	.1519
.158	.526	.90	.1376

.211	1.127	2.36	.1128
.263	2.005	5.00	.0948
.316	3.161	9.09	.0821
.368	4.593	14.90	.0728
.421	6.254	23.76	.0621
.474	7.938	35.29	.0531
.526	9.622	48.52	.0468
.579	11.306	63.36	.0421
.632	12.991	79.69	.0385
.684	14.680	96.07	.0361
.737	16.481	110.39	.0353
.789	18.432	126.55	.0344
.842	20.535	144.65	.0335
.895	22.789	164.77	.0327
.947	25.194	186.98	.0318
1.000	27.750	211.39	.0310

```
ROUTE              ID=1  HYD=201.1  INFLOW ID=4  DT=0.033333
PRINT HYD          ID=1       CODE=1

                              PARTIAL HYDROGRAPH   201.10


   RUNOFF VOLUME =     1.69046 INCHES     =       1.7614 ACRE-FEET
   PEAK DISCHARGE RATE =      42.00 CFS  AT   1.567 HOURS   BASIN AREA =   .0195 SQ. MI.



** COMPUTE BASIN B-1 RUNOFF
COMPUTE NM HYD      ID=4  HYD=201  DA=0.0133 SQ MI
                    PER A=0 PER B=38 PER C=0 PER D=62
                    TP=0.133333 MASSRAIN=-1

   K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   32.548    CFS   UNIT VOLUME =    .9990       B =   526.28      P60 = 2.1300
   AREA =      .008246 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


   K =   .133568HR    TP =   .133333HR    K/TP RATIO =  1.001765     SHAPE CONSTANT, N =  3.524016
   UNIT PEAK =   12.208    CFS   UNIT VOLUME =    .9992       B =   322.08      P60 = 2.1300
   AREA =      .005054 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=4      CODE=1

                              PARTIAL HYDROGRAPH   201.00


   RUNOFF VOLUME =     1.78030 INCHES     =       1.2628 ACRE-FEET
   PEAK DISCHARGE RATE =      34.62 CFS  AT   1.500 HOURS   BASIN AREA =   .0133 SQ. MI.



** ADD BASIN B-1 TO THE REMAINDER OF THE RUNOFF AT A.P.6
```

```
** FOR THE TOTAL RUNOFF INTO WYOMING AT LOS CAMAS.
ADD HYD            ID=4  HYD=201.2  ID I=1  ID II=4
PRINT HYD          ID=4  CODE=1

                              PARTIAL HYDROGRAPH   201.20


   RUNOFF VOLUME =     1.72682 INCHES     =       3.0242 ACRE-FEET
   PEAK DISCHARGE RATE =      74.51 CFS  AT   1.533 HOURS   BASIN AREA =   .0328 SQ. MI.


****************** DEVELOPED CONDITIONS ********************
** COMPUTE BASIN A-4 RUNOFF
COMPUTE NM HYD     ID=1  HYD=104  DA=0.00392 SQ MI
                   PER A=0 PER B=0 PER C=48 PER D=52
                   TP=0.133333 MASSRAIN=-1

   K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   8.0457    CFS   UNIT VOLUME =    .9980       B =   526.28      P60 = 2.1300
   AREA =      .002038 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


   K =   .108826HR    TP =   .133333HR    K/TP RATIO =   .816201     SHAPE CONSTANT, N =  4.378976
   UNIT PEAK =   5.3582    CFS   UNIT VOLUME =    .9981       B =   379.69      P60 = 2.1300
   AREA =      .001882 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD          ID=1      CODE=1

                              PARTIAL HYDROGRAPH   104.00


   RUNOFF VOLUME =     1.81489 INCHES     =        .3794 ACRE-FEET
   PEAK DISCHARGE RATE =      10.64 CFS  AT   1.500 HOURS   BASIN AREA =   .0039 SQ. MI.


** ROUTE BASIN A-4 THROUGH THE NEW DETENTION POND TO ANALYSIS
** POINT 1 (A.P.1)
ROUTE RESERVOIR    ID=2  HYD=104.1 INFLOW ID=1 CODE=10
                   OUTFLOW (CFS)   STORAGE (AC FT)  ELEV (FT)
                      0              .0000           5496.00
                     1.38            .1564           5497.00
                     4.81            .2080           5497.33

  * * * * * * * * * * * * * * * * *

   TIME      INFLOW    ELEV      VOLUME    OUTFLOW
   (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

     .00       .00   5496.00      .000       .00
     .33       .00   5496.00      .000       .00
```

.67	.00	5496.00	.000	.00
1.00	.01	5496.00	.000	.00
1.33	2.58	5496.09	.013	.12
1.67	5.54	5497.20	.188	3.48
2.00	2.27	5497.17	.183	3.15
2.33	.52	5496.99	.155	1.37
2.67	.21	5496.83	.130	1.14
3.00	.11	5496.67	.105	.93
3.33	.07	5496.54	.085	.75
3.67	.06	5496.43	.068	.60
4.00	.05	5496.35	.055	.48
4.33	.05	5496.28	.044	.39
4.67	.05	5496.23	.036	.32
5.00	.05	5496.19	.029	.26
5.33	.05	5496.15	.024	.21
5.67	.05	5496.13	.020	.18
6.00	.05	5496.11	.017	.15
6.33	.01	5496.09	.014	.12
6.67	.00	5496.07	.011	.10
7.00	.00	5496.06	.009	.08
7.33	.00	5496.04	.007	.06
7.67	.00	5496.03	.005	.05
8.00	.00	5496.03	.004	.04
8.33	.00	5496.02	.003	.03
8.67	.00	5496.02	.003	.02
9.00	.00	5496.01	.002	.02
9.33	.00	5496.01	.002	.01
9.67	.00	5496.01	.001	.01
10.00	.00	5496.01	.001	.01
10.33	.00	5496.00	.001	.01
10.67	.00	5496.00	.001	.01
11.00	.00	5496.00	.000	.00

PEAK DISCHARGE = 3.944 CFS = PEAK OCCURS AT HOUR 1.77
MAXIMUM WATER SURFACE ELEVATION = 5497.247
MAXIMUM STORAGE = .1950 AC-FT INCREMENTAL TIME= .033333HRS

PRINT HYD ID=2 CODE=1

PARTIAL HYDROGRAPH 104.10

RUNOFF VOLUME = 1.81482 INCHES = .3794 ACRE-FEET
PEAK DISCHARGE RATE = 3.94 CFS AT 1.767 HOURS BASIN AREA = .0039 SQ. MI.

** COMPUTE BASIN A-5 RUNOFF
COMPUTE NM HYD ID=1 HYD=105 DA=0.00752 SQ MI
PER A=0 PER B=58 PER C=28 PER D=14
TP=0.133333 MASSRAIN=-1

K = .072666HR TP = .133333HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 4.1555 CFS UNIT VOLUME = .9965 B = 526.28 P60 = 2.1300
AREA = .001053 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR

```
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


K =   .125513HR    TP =   .133333HR    K/TP RATIO =   .941349     SHAPE CONSTANT, N =  3.756109
UNIT PEAK =   16.422    CFS   UNIT VOLUME =    .9994       B =   338.57      P60 = 2.1300
AREA =      .006467 SQ MI    IA =    .45116 INCHES    INF =   1.11326 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD          ID=1      CODE=1

                              PARTIAL HYDROGRAPH   105.00


RUNOFF VOLUME =     1.19174 INCHES     =        .4780 ACRE-FEET
PEAK DISCHARGE RATE =     15.05 CFS  AT   1.500 HOURS   BASIN AREA =   .0075 SQ. MI.


** ADD BASIN A-5 AND BASIN A-4 RUNOFF AT A.P.1
ADD HYD            ID=2  HYD=104.2  ID I=1  ID II=2
PRINT HYD          ID=2  CODE=1

                              PARTIAL HYDROGRAPH   104.20


RUNOFF VOLUME =     1.40504 INCHES     =        .8573 ACRE-FEET
PEAK DISCHARGE RATE =     15.94 CFS  AT   1.500 HOURS   BASIN AREA =   .0114 SQ. MI.


** COMPUTE BASIN A-6 RUNOFF
COMPUTE NM HYD     ID=1  HYD=106  DA=0.000863 SQ MI
                   PER A=0 PER B=0 PER C=100 PER D=0
                   TP=0.133333 MASSRAIN=-1

K =   .108826HR    TP =   .133333HR    K/TP RATIO =   .816201     SHAPE CONSTANT, N =  4.378976
UNIT PEAK =   2.4576    CFS   UNIT VOLUME =    .9952       B =   379.69      P60 = 2.1300
AREA =      .000863 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD          ID=1      CODE=1

                              PARTIAL HYDROGRAPH   106.00


RUNOFF VOLUME =     1.26973 INCHES     =        .0584 ACRE-FEET
PEAK DISCHARGE RATE =     1.90 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.


** ADD BASIN A-6 AND BASIN A-4 RUNOFF AT A.P.1 FOR THE TOTAL
** RUNOFF FROM THE SCHOOL.
ADD HYD            ID=2  HYD=104.3  ID I=1  ID II=2
PRINT HYD          ID=2  CODE=1
```

PARTIAL HYDROGRAPH 104.30

RUNOFF VOLUME = 1.39553 INCHES = .9157 ACRE-FEET
PEAK DISCHARGE RATE = 17.84 CFS AT 1.500 HOURS BASIN AREA = .0123 SQ. MI.

** ROUTE THE RUNOFF FROM THE POND TO A.P.2 AT THE
** INTERSECTION OF NORTHRIDGE DR. AND PIEDRA ROSA ST.
** FIRST ROUTE THE RUNOFF THROUGH THE ASPHALT CHANNEL
COMPUTE RATING CURVE CID=1 VS=1 SEG=1 MIN EL=91.82 MAX EL=92.40
CH SLP=.041 FP SLP=.041 N=.017 DIST=10

DIST	ELEV
0	92.40
0.1	92.00
5	91.82
9.9	92.00
10	92.40

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
91.82	.0	.0
91.85	.0	.0
91.88	.1	.2
91.91	.2	.5
91.94	.4	1.1
91.97	.6	2.0
92.00	.9	3.3
92.03	1.2	5.3
92.06	1.5	7.6
92.09	1.8	10.3
92.13	2.1	13.2
92.16	2.4	16.4
92.19	2.7	19.9
92.22	3.0	23.6
92.25	3.3	27.6
92.28	3.6	31.8
92.31	3.9	36.2
92.34	4.2	40.9
92.37	4.5	45.7
92.40	4.8	50.7

COMPUTE TRAVEL TIME ID=1 REACH=1 NO VS=1 L=100 SLP=0.041

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.031	.025	.03	.0255
.061	.101	.18	.0161

.092	.228	.52	.0123
.122	.406	1.11	.0101
.153	.634	2.02	.0087
.183	.913	3.32	.0076
.214	1.212	5.30	.0064
.244	1.512	7.63	.0055
.275	1.813	10.27	.0049
.305	2.113	13.21	.0044
.336	2.415	16.43	.0041
.366	2.716	19.91	.0038
.397	3.019	23.64	.0035
.427	3.321	27.61	.0033
.458	3.625	31.81	.0032
.488	3.928	36.23	.0030
.519	4.232	40.86	.0029
.549	4.537	45.70	.0028
.580	4.842	50.73	.0027

```
ROUTE              ID=1  HYD=104.4  INFLOW ID=2  DT=0.033333
PRINT HYD          ID=1       CODE=1

                              PARTIAL HYDROGRAPH   104.40


    RUNOFF VOLUME =     1.39557 INCHES     =        .9157 ACRE-FEET
    PEAK DISCHARGE RATE =     17.85 CFS  AT   1.500 HOURS   BASIN AREA =   .0123 SQ. MI.


**THEN ROUTE THE RUNOFF THROUGH THE STREET TO A.P.2
COMPUTE RATING CURVE CID=1  VS=1  SEG=1  MIN EL=0  MAX EL=1.00
                   CH SLP=.020  FP SLP=.020  N=.0183  DIST=50
                   DIST   ELEV
                    0     1.00
                   9.0    0.67
                   9.0    0.00
                   11.0   0.11
                   25.0   0.39
                   39.0   0.11
                   41.0   0.00
                   41.0   0.67
                   50.0   1.00
```

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
.00	.0	.0
.05	.1	.0
.11	.2	.3
.16	.5	.9
.21	1.1	2.4
.26	2.0	5.0
.32	3.2	9.1
.37	4.6	14.9

.42	6.3	23.8
.47	7.9	35.3
.53	9.6	48.5
.58	11.3	63.4
.63	13.0	79.7
.68	14.7	96.1
.74	16.5	110.4
.79	18.4	126.6
.84	20.5	144.7
.89	22.8	164.8
.95	25.2	187.0
1.00	27.7	211.4

```
COMPUTE TRAVEL TIME ID=2  REACH=1  NO VS=1  L=250  SLP=0.020
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.050	.05	.0709
.105	.201	.31	.0447
.158	.526	.90	.0405
.211	1.127	2.36	.0332
.263	2.005	5.00	.0279
.316	3.161	9.09	.0241
.368	4.593	14.90	.0214
.421	6.254	23.76	.0183
.474	7.938	35.29	.0156
.526	9.622	48.52	.0138
.579	11.306	63.36	.0124
.632	12.991	79.69	.0113
.684	14.680	96.07	.0106
.737	16.481	110.39	.0104
.789	18.432	126.55	.0101
.842	20.535	144.65	.0099
.895	22.789	164.77	.0096
.947	25.194	186.98	.0094
1.000	27.750	211.39	.0091

```
ROUTE            ID=2  HYD=104.5  INFLOW ID=1  DT=0.033333
PRINT HYD        ID=2       CODE=1
```

PARTIAL HYDROGRAPH 104.50

RUNOFF VOLUME = 1.39557 INCHES = .9157 ACRE-FEET
PEAK DISCHARGE RATE = 18.00 CFS AT 1.533 HOURS BASIN AREA = .0123 SQ. MI.

```
**COMPUTE BASIN A-3 RUNOFF
COMPUTE NM HYD      ID=1  HYD=103  DA=0.00409 SQ MI
                    PER A=0 PER B=38 PER C=0 PER D=62
                    TP=0.133333 MASSRAIN=-1
```

```
K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   10.009    CFS   UNIT VOLUME =    .9982       B =   526.28      P60 = 2.1300
AREA =       .002536 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


K =   .133568HR    TP =   .133333HR    K/TP RATIO =  1.001765     SHAPE CONSTANT, N =  3.524016
UNIT PEAK =   3.7543    CFS   UNIT VOLUME =    .9967       B =   322.08      P60 = 2.1300
AREA =      .001554 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD          ID=1      CODE=1

                                   PARTIAL HYDROGRAPH   103.00

     RUNOFF VOLUME =     1.78030 INCHES     =        .3883 ACRE-FEET
     PEAK DISCHARGE RATE =    10.66 CFS  AT   1.500 HOURS   BASIN AREA =   .0041 SQ. MI.


** ADD BASIN A-3 TO THE REMAINDER OF THE RUNOFF AT A.P.2
ADD HYD            ID=2  HYD=103.1  ID I=1  ID II=2
PRINT HYD          ID=2  CODE=1

                                   PARTIAL HYDROGRAPH   103.10


     RUNOFF VOLUME =     1.49151 INCHES     =       1.3040 ACRE-FEET
     PEAK DISCHARGE RATE =    28.24 CFS  AT   1.533 HOURS   BASIN AREA =   .0164 SQ. MI.


** DIVIDE THE RUNOFF AT A.P.2, WHICH IS THE INTERSECTION OF
** NORTHRIDGE DRIVE AND PIEDRA ROSA STREET.  DIVIDE 65% DOWN
** NORTHRIDGE, AND 35% DOWN PIEDRA ROSA.
DIVIDE HYD         ID=2  PER=-65  ID I=3  HYD=102.1
                                  ID II=4 HYD=202.1
PRINT HYD          ID=3  CODE=1

                                   PARTIAL HYDROGRAPH   102.10


     RUNOFF VOLUME =     1.49151 INCHES     =        .8476 ACRE-FEET
     PEAK DISCHARGE RATE =    18.35 CFS  AT   1.533 HOURS   BASIN AREA =   .0107 SQ. MI.


PRINT HYD          ID=4  CODE=1

                                   PARTIAL HYDROGRAPH   202.10


     RUNOFF VOLUME =     1.49151 INCHES     =        .4564 ACRE-FEET
```

PEAK DISCHARGE RATE = 9.88 CFS AT 1.533 HOURS BASIN AREA = .0057 SQ. MI.

** ROUTE THE RUNOFF THROUGH THE STREET FROM A.P.2 TO A.P.7,
** TO THE INTERSECTION OF NORTHRIDGE AND GENERAL BRADLEY STREET.
COMPUTE RATING CURVE CID=1 VS=1 SEG=1 MIN EL=0 MAX EL=1.00
CH SLP=.020 FP SLP=.020 N=.0183 DIST=50

DIST	ELEV
0	1.00
9.0	0.67
9.0	0.00
11.0	0.11
25.0	0.39
39.0	0.11
41.0	0.00
41.0	0.67
50.0	1.00

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
.00	.0	.0
.05	.1	.0
.11	.2	.3
.16	.5	.9
.21	1.1	2.4
.26	2.0	5.0
.32	3.2	9.1
.37	4.6	14.9
.42	6.3	23.8
.47	7.9	35.3
.53	9.6	48.5
.58	11.3	63.4
.63	13.0	79.7
.68	14.7	96.1
.74	16.5	110.4
.79	18.4	126.6
.84	20.5	144.7
.89	22.8	164.8
.95	25.2	187.0
1.00	27.7	211.4

COMPUTE TRAVEL TIME ID=2 REACH=1 NO VS=1 L=1200 SLP=0.020

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.050	.05	.3403
.105	.201	.31	.2144
.158	.526	.90	.1943

.211	1.127	2.36	.1592
.263	2.005	5.00	.1338
.316	3.161	9.09	.1159
.368	4.593	14.90	.1028
.421	6.254	23.76	.0877
.474	7.938	35.29	.0750
.526	9.622	48.52	.0661
.579	11.306	63.36	.0595
.632	12.991	79.69	.0543
.684	14.680	96.07	.0509
.737	16.481	110.39	.0498
.789	18.432	126.55	.0486
.842	20.535	144.65	.0473
.895	22.789	164.77	.0461
.947	25.194	186.98	.0449
1.000	27.750	211.39	.0438

```
ROUTE              ID=2  HYD=102.2  INFLOW ID=3  DT=0.033333
PRINT HYD          ID=2       CODE=1

                                PARTIAL HYDROGRAPH   102.20


    RUNOFF VOLUME =     1.49149 INCHES     =        .8476 ACRE-FEET
    PEAK DISCHARGE RATE =     14.75 CFS  AT   1.600 HOURS   BASIN AREA =   .0107 SQ. MI.


** COMPUTE BASIN A-2b RUNOFF
COMPUTE NM HYD     ID=1  HYD=1021  DA=0.0176 SQ MI
                   PER A=0 PER B=38 PER C=0 PER D=62
                   TP=0.133333 MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   43.070    CFS   UNIT VOLUME =    .9991       B =   526.28      P60 = 2.1300
    AREA =      .010912 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .133568HR    TP =   .133333HR    K/TP RATIO =  1.001765     SHAPE CONSTANT, N =  3.524016
    UNIT PEAK =   16.155    CFS   UNIT VOLUME =    .9995       B =   322.08      P60 = 2.1300
    AREA =      .006688 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD          ID=1      CODE=1

                                HYDROGRAPH FROM AREA  1021.00


    RUNOFF VOLUME =     1.78030 INCHES     =       1.6711 ACRE-FEET
    PEAK DISCHARGE RATE =     45.81 CFS  AT   1.500 HOURS   BASIN AREA =   .0176 SQ. MI.


** ADD BASIN A-2b TO THE REMAINDER OF THE RUNOFF AT A.P.7
```

```
ADD HYD            ID=2  HYD=1021.4  ID I=1  ID II=2
PRINT HYD          ID=2  CODE=1

                                   HYDROGRAPH FROM AREA  1021.40


   RUNOFF VOLUME =     1.67135 INCHES     =       2.5186 ACRE-FEET
   PEAK DISCHARGE RATE =    56.63 CFS  AT   1.533 HOURS   BASIN AREA =   .0283 SQ. MI.


** ROUTE THE RUNOFF THROUGH THE STREET FROM A.P.7 TO A.P.3,
**  TO THE INTERSECTION OF GENERAL BRADLEY STREET AND OSUNA RD.
COMPUTE RATING CURVE CID=1  VS=1  SEG=1  MIN EL=0  MAX EL=1.00
                  CH SLP=.007  FP SLP=.007  N=.0183  DIST=50
                  DIST   ELEV
                   0     1.00
                  9.0    0.67
                  9.0    0.00
                 11.0    0.11
                 25.0    0.39
                 39.0    0.11
                 41.0    0.00
                 41.0    0.67
                 50.0    1.00
```

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
.00	.0	.0
.05	.1	.0
.11	.2	.2
.16	.5	.5
.21	1.1	1.4
.26	2.0	3.0
.32	3.2	5.4
.37	4.6	8.8
.42	6.3	14.1
.47	7.9	20.9
.53	9.6	28.7
.58	11.3	37.5
.63	13.0	47.1
.68	14.7	56.8
.74	16.5	65.3
.79	18.4	74.9
.84	20.5	85.6
.89	22.8	97.5
.95	25.2	110.6
1.00	27.7	125.1

```
COMPUTE TRAVEL TIME ID=3  REACH=1  NO VS=1  L=930  SLP=0.007
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.050	.03	.4458
.105	.201	.19	.2809
.158	.526	.53	.2545
.211	1.127	1.40	.2086
.263	2.005	2.96	.1753
.316	3.161	5.38	.1518
.368	4.593	8.81	.1346
.421	6.254	14.06	.1149
.474	7.938	20.88	.0982
.526	9.622	28.71	.0866
.579	11.306	37.48	.0779
.632	12.991	47.14	.0712
.684	14.680	56.83	.0667
.737	16.481	65.30	.0652
.789	18.432	74.87	.0636
.842	20.535	85.58	.0620
.895	22.789	97.48	.0604
.947	25.194	110.62	.0588
1.000	27.750	125.06	.0573

```
ROUTE              ID=3  HYD=102.3  INFLOW ID=2  DT=0.033333
PRINT HYD          ID=3      CODE=1

                              PARTIAL HYDROGRAPH   102.30


   RUNOFF VOLUME =     1.67136 INCHES     =       2.5187 ACRE-FEET
   PEAK DISCHARGE RATE =     51.95 CFS  AT   1.567 HOURS   BASIN AREA =   .0283 SQ. MI.


** COMPUTE BASIN A-2a RUNOFF -
COMPUTE NM HYD     ID=1  HYD=102  DA=0.0216 SQ MI
                   PER A=0 PER B=38 PER C=0 PER D=62
                   TP=0.133333 MASSRAIN=-1

   K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   52.859    CFS   UNIT VOLUME =    .9992       B =   526.28      P60 = 2.1300
   AREA =      .013392 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


   K =   .133568HR    TP =   .133333HR    K/TP RATIO =  1.001765     SHAPE CONSTANT, N =  3.524016
   UNIT PEAK =   19.827    CFS   UNIT VOLUME =    .9996       B =   322.08      P60 = 2.1300
   AREA =      .008208 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD          ID=1      CODE=1

                              PARTIAL HYDROGRAPH   102.00
```

RUNOFF VOLUME = 1.78030 INCHES = 2.0509 ACRE-FEET
PEAK DISCHARGE RATE = 56.22 CFS AT 1.500 HOURS BASIN AREA = .0216 SQ. MI.

** ADD BASIN A-2a TO THE REMAINDER OF THE RUNOFF AT A.P.3
ADD HYD ID=3 HYD=102.4 ID I=1 ID II=3
PRINT HYD ID=3 CODE=1

PARTIAL HYDROGRAPH 102.40

RUNOFF VOLUME = 1.71854 INCHES = 4.5695 ACRE-FEET
PEAK DISCHARGE RATE = 103.17 CFS AT 1.533 HOURS BASIN AREA = .0499 SQ. MI.

** ROUTE THE RUNOFF TO THE INTERSECTION OF WYOMING AND OSUNA
** (A.P.4).
COMPUTE RATING CURVE CID=1 VS=1 SEG=1 MIN EL=0 MAX EL=1.00
CH SLP=.024 FP SLP=.024 N=.0183 DIST=50

DIST	ELEV
0	1.00
9.0	0.67
9.0	0.00
11.0	0.11
25.0	0.39
39.0	0.11
41.0	0.00
41.0	0.67
50.0	1.00

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
.00	.0	.0
.05	.1	.1
.11	.2	.3
.16	.5	1.0
.21	1.1	2.6
.26	2.0	5.5
.32	3.2	10.0
.37	4.6	16.3
.42	6.3	26.0
.47	7.9	38.7
.53	9.6	53.2
.58	11.3	69.4
.63	13.0	87.3
.68	14.7	105.2
.74	16.5	120.9
.79	18.4	138.6
.84	20.5	158.5
.89	22.8	180.5

.95	25.2	204.8
1.00	27.7	231.6

COMPUTE TRAVEL TIME ID=1 REACH=1 NO VS=1 L=500 SLP=0.024

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.050	.05	.1295
.105	.201	.34	.0815
.158	.526	.99	.0739
.211	1.127	2.59	.0606
.263	2.005	5.47	.0509
.316	3.161	9.96	.0441
.368	4.593	16.32	.0391
.421	6.254	26.03	.0334
.474	7.938	38.65	.0285
.526	9.622	53.16	.0251
.579	11.306	69.40	.0226
.632	12.991	87.29	.0207
.684	14.680	105.23	.0194
.737	16.481	120.92	.0189
.789	18.432	138.63	.0185
.842	20.535	158.46	.0180
.895	22.789	180.49	.0175
.947	25.194	204.83	.0171
1.000	27.750	231.56	.0166

ROUTE ID=1 HYD=101.1 INFLOW ID=3 DT=0.033333
PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 101.10

RUNOFF VOLUME = 1.71855 INCHES = 4.5695 ACRE-FEET
PEAK DISCHARGE RATE = 102.43 CFS AT 1.533 HOURS BASIN AREA = .0499 SQ. MI.

** COMPUTE BASIN A-1 RUNOFF
COMPUTE NM HYD ID=3 HYD=101 DA=0.0219 SQ MI
PER A=0 PER B=38 PER C=0 PER D=62
TP=0.133333 MASSRAIN=-1

K = .072666HR TP = .133333HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 53.593 CFS UNIT VOLUME = .9992 B = 526.28 P60 = 2.1300
AREA = .013578 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

K = .133568HR TP = .133333HR K/TP RATIO = 1.001765 SHAPE CONSTANT, N = 3.524016
UNIT PEAK = 20.103 CFS UNIT VOLUME = .9996 B = 322.08 P60 = 2.1300
AREA = .008322 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR

RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

PRINT HYD ID=3 CODE=1

PARTIAL HYDROGRAPH 101.00

RUNOFF VOLUME = 1.78030 INCHES = 2.0794 ACRE-FEET
PEAK DISCHARGE RATE = 57.00 CFS AT 1.500 HOURS BASIN AREA = .0219 SQ. MI.

** ADD BASIN A=1 TO THE REMAINDER OF THE RUNOFF AT A.P.4
** FOR THE TOTAL RUNOFF INTO WYOMING AT OSUNA.
ADD HYD ID=3 HYD=101.2 ID I=1 ID II=3
PRINT HYD ID=3 CODE=1

PARTIAL HYDROGRAPH 101.20

RUNOFF VOLUME = 1.73738 INCHES = 6.6488 ACRE-FEET
PEAK DISCHARGE RATE = 157.17 CFS AT 1.533 HOURS BASIN AREA = .0718 SQ. MI.

** ROUTE THE RUNOFF DOWN AVENALES AVE. FROM THE DIVIDE AT
** A.P.2 TO A.P.5.
COMPUTE RATING CURVE CID=1 VS=1 SEG=1 MIN EL=0 MAX EL=1.00
CH SLP=.024 FP SLP=.024 N=.0183 DIST=50

DIST	ELEV
0	1.00
9.0	0.67
9.0	0.00
11.0	0.11
25.0	0.39
39.0	0.11
41.0	0.00
41.0	0.67
50.0	1.00

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
.00	.0	.0
.05	.1	.1
.11	.2	.3
.16	.5	1.0
.21	1.1	2.6
.26	2.0	5.5
.32	3.2	10.0
.37	4.6	16.3
.42	6.3	26.0
.47	7.9	38.7

.53	9.6	53.2
.58	11.3	69.4
.63	13.0	87.3
.68	14.7	105.2
.74	16.5	120.9
.79	18.4	138.6
.84	20.5	158.5
.89	22.8	180.5
.95	25.2	204.8
1.00	27.7	231.6

```
COMPUTE TRAVEL TIME ID=1  REACH=1  NO VS=1  L=1150  SLP=0.024
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.050	.05	.2977
.105	.201	.34	.1876
.158	.526	.99	.1700
.211	1.127	2.59	.1393
.263	2.005	5.47	.1171
.316	3.161	9.96	.1014
.368	4.593	16.32	.0899
.421	6.254	26.03	.0767
.474	7.938	38.65	.0656
.526	9.622	53.16	.0578
.579	11.306	69.40	.0520
.632	12.991	87.29	.0475
.684	14.680	105.23	.0446
.737	16.481	120.92	.0435
.789	18.432	138.63	.0425
.842	20.535	158.46	.0414
.895	22.789	180.49	.0403
.947	25.194	204.83	.0393
1.000	27.750	231.56	.0383

```
ROUTE              ID=1  HYD=202.2  INFLOW ID=4  DT=0.033333
PRINT HYD          ID=1      CODE=1
```

PARTIAL HYDROGRAPH 202.20

RUNOFF VOLUME = 1.49136 INCHES = .4564 ACRE-FEET
PEAK DISCHARGE RATE = 7.78 CFS AT 1.600 HOURS BASIN AREA = .0057 SQ. MI.

```
** COMPUTE BASIN B-2 RUNOFF
COMPUTE NM HYD      ID=4  HYD=202  DA=0.0138 SQ MI
                    PER A=0 PER B=38 PER C=0 PER D=62
                    TP=0.133333 MASSRAIN=-1
```

K = .072666HR TP = .133333HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420

```
UNIT PEAK =   33.771    CFS   UNIT VOLUME =    .9990       B =   526.28      P60 = 2.1300
AREA =      .008556 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


K =   .133568HR    TP =   .133333HR    K/TP RATIO =  1.001765     SHAPE CONSTANT, N =  3.524016
UNIT PEAK =   12.667    CFS   UNIT VOLUME =    .9993       B =   322.08      P60 = 2.1300
AREA =      .005244 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD          ID=4      CODE=1

                                PARTIAL HYDROGRAPH   202.00


RUNOFF VOLUME =     1.78030 INCHES     =       1.3103 ACRE-FEET
PEAK DISCHARGE RATE =      35.92 CFS  AT   1.500 HOURS   BASIN AREA =   .0138 SQ. MI.


** ADD BASIN B-2 TO THE REMAINDER OF THE RUNOFF AT A.P.5
ADD HYD            ID=4  HYD=202.2  ID I=1  ID II=4
PRINT HYD          ID=4  CODE=1

                                PARTIAL HYDROGRAPH   202.20


RUNOFF VOLUME =     1.69540 INCHES     =       1.7666 ACRE-FEET
PEAK DISCHARGE RATE =      41.12 CFS  AT   1.533 HOURS   BASIN AREA =   .0195 SQ. MI.


** ROUTE THE RUNOFF TO THE INTERSECTION OF WYOMING AND LOS
** CAMAS RD. (A.P.6).
COMPUTE RATING CURVE CID=1  VS=1  SEG=1  MIN EL=0  MAX EL=1.00
                   CH SLP=.020  FP SLP=.020  N=.0183  DIST=50
                   DIST   ELEV
                    0     1.00
                   9.0    0.67
                   9.0    0.00
                   11.0   0.11
                   25.0   0.39
                   39.0   0.11
                   41.0   0.00
                   41.0   0.67
                   50.0   1.00

                   RATING CURVE VALLEY SECTION  1.0
                      WATER      FLOW      FLOW
                     SURFACE     AREA      RATE
                      ELEV       SQ FT     CFS
                       .00        .0        .0
                       .05        .1        .0
                       .11        .2        .3
```

.16	.5	.9
.21	1.1	2.4
.26	2.0	5.0
.32	3.2	9.1
.37	4.6	14.9
.42	6.3	23.8
.47	7.9	35.3
.53	9.6	48.5
.58	11.3	63.4
.63	13.0	79.7
.68	14.7	96.1
.74	16.5	110.4
.79	18.4	126.6
.84	20.5	144.7
.89	22.8	164.8
.95	25.2	187.0
1.00	27.7	211.4

COMPUTE TRAVEL TIME ID=1 REACH=1 NO VS=1 L=850 SLP=0.020

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.050	.05	.2411
.105	.201	.31	.1519
.158	.526	.90	.1376
.211	1.127	2.36	.1128
.263	2.005	5.00	.0948
.316	3.161	9.09	.0821
.368	4.593	14.90	.0728
.421	6.254	23.76	.0621
.474	7.938	35.29	.0531
.526	9.622	48.52	.0468
.579	11.306	63.36	.0421
.632	12.991	79.69	.0385
.684	14.680	96.07	.0361
.737	16.481	110.39	.0353
.789	18.432	126.55	.0344
.842	20.535	144.65	.0335
.895	22.789	164.77	.0327
.947	25.194	186.98	.0318
1.000	27.750	211.39	.0310

ROUTE ID=1 HYD=201.1 INFLOW ID=4 DT=0.033333

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 201.10

RUNOFF VOLUME = 1.69542 INCHES = 1.7666 ACRE-FEET

PEAK DISCHARGE RATE = 39.33 CFS AT 1.567 HOURS BASIN AREA = .0195 SQ. MI.

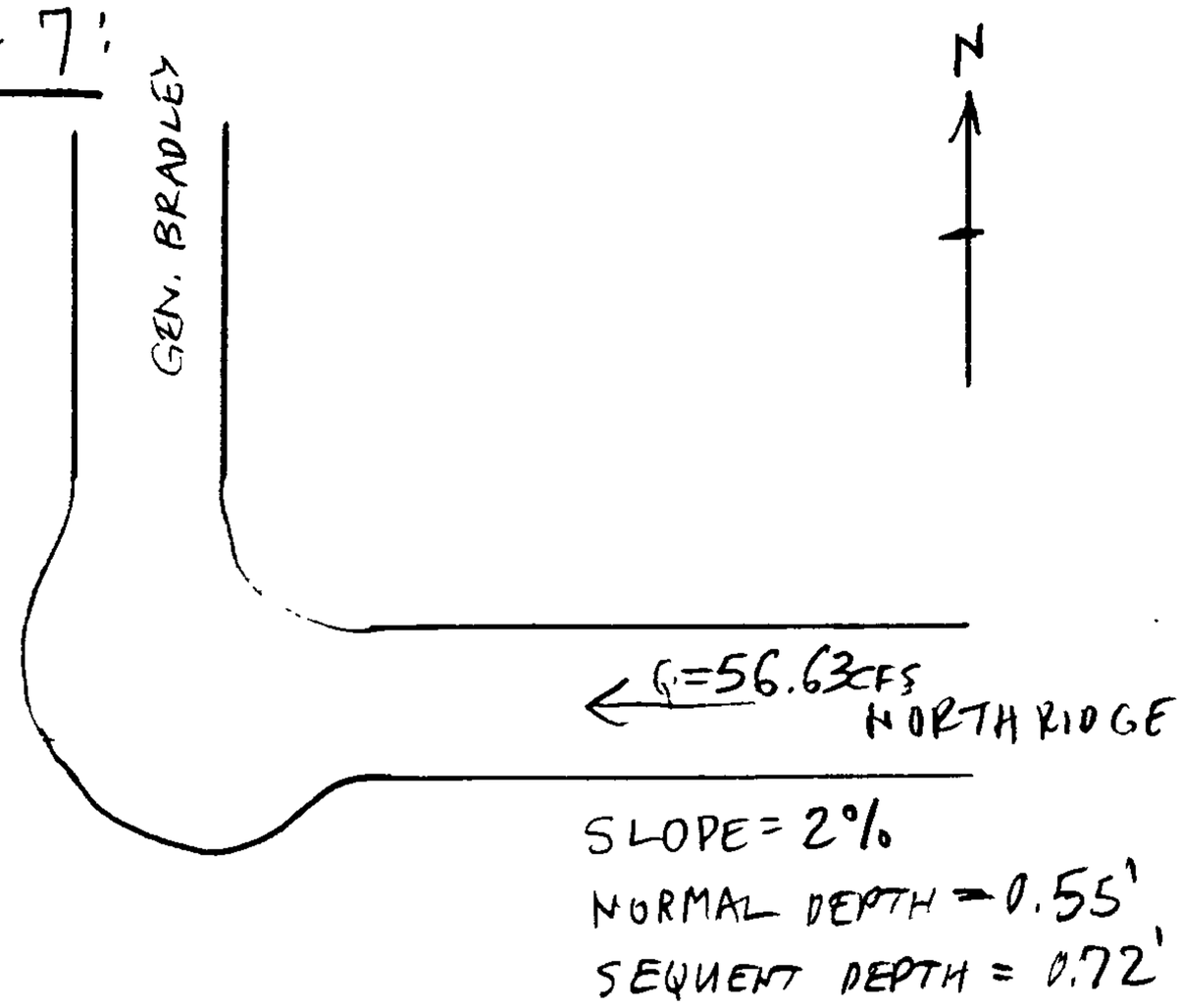
```
** COMPUTE BASIN B-1 RUNOFF
COMPUTE NM HYD      ID=4  HYD=201  DA=0.0133 SQ MI
                    PER A=0 PER B=38 PER C=0 PER D=62
                    TP=0.133333 MASSRAIN=-1

   K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   32.548    CFS   UNIT VOLUME =    .9990       B =   526.28      P60 = 2.1300
   AREA =      .008246 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


   K =   .133568HR    TP =   .133333HR    K/TP RATIO =  1.001765     SHAPE CONSTANT, N =  3.524016
   UNIT PEAK =   12.208    CFS   UNIT VOLUME =    .9992       B =   322.08      P60 = 2.1300
   AREA =      .005054 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=4      CODE=1

                                   PARTIAL HYDROGRAPH   201.00


   RUNOFF VOLUME =     1.78030 INCHES     =       1.2628 ACRE-FEET
   PEAK DISCHARGE RATE =      34.62 CFS  AT   1.500 HOURS   BASIN AREA =   .0133 SQ. MI.


** ADD BASIN B-1 TO THE REMAINDER OF THE RUNOFF AT A.P.6
** FOR THE TOTAL RUNOFF INTO WYOMING AT LOS CAMAS.
ADD HYD             ID=4  HYD=201.2  ID I=1  ID II=4
PRINT HYD           ID=4  CODE=1

                                   PARTIAL HYDROGRAPH   201.20


   RUNOFF VOLUME =     1.72977 INCHES     =       3.0294 ACRE-FEET
   PEAK DISCHARGE RATE =      72.12 CFS  AT   1.533 HOURS   BASIN AREA =   .0328 SQ. MI.


FINISH

   NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 11:27:35
```

Job OSUNA ELEMENTARY
Subject ANALYSIS POINT 7 CALCULATIONS
Client

Sheet No. 1 of 3
Job. No.
By JPK Date 5/25/94

CHAVEZ - GRIEVES / CONSULTING ENGINEERS, Inc. Albuquerque, NM

ANALYSIS POINT 7:



1. FLOW IN NORTHRIDGE:

$Q = 56.63$ CFS

FROM THE RATING CURVE IN THE AHYMO TABLE FOR NORTHRIDGE:

@ $Q = 56.63$ CFS, $D = 0.55'$, $A = 10.53$ SF

$$\therefore V = \frac{Q}{A} = 56.63/10.53 = 5.38 \text{ FPS}$$

$$\text{FROUDE \#} = \frac{V}{\sqrt{gD}} = \frac{5.38}{\sqrt{32.17(0.55)}} = 1.27$$

FLOW IS SUPERCRITICAL.

USE PLATE 22.3 E-1 TO FIND THE SEQUENT DEPTH:

FROM THE TABLE, FOR $F_R = 1.27$:

$$\frac{\text{TW DEPTH}}{D_1} = 1.3 \rightarrow \text{TW DEPTH} = 1.3(0.55') = 0.72'$$

$$D_2 = \frac{.55}{2}\left(\sqrt{1+8(1.27)^2} - 1\right) = 1.36(0.55) = 0.75'$$

CHAVEZ - GRIEVES / CONSULTING ENGINEERS, Inc. Albuquerque, NM

2. FLOW IN GEN. BRADLEY:

$Q = 56.63$ CFS

FROM THE RATING CURVE IN THE AHYMO TABLE FOR NORTHRIDGE:

@ $Q = 56.63$ CFS, $D = 0.68'$, $A = 14.7$ SF

$\therefore V = \frac{Q}{A} = 56.63/14.7 = 3.85$ FPS

$$\text{FROUDE\#} = \frac{V}{\sqrt{gD}} = \frac{3.85}{\sqrt{32.17(0.68)}} = 0.67$$

FLOW IS SUBCRITICAL, NO JUMP CAN OCCUR.

3. CONCLUSION

A JUMP OCCURS AS THE RUNOFF ROUNDS THE CORNER AT A.P.7. DEPTH GOES FROM 0.55' (SUPERCRITICAL) TO 0.67' (SUBCRITICAL). SOME SUPERELEVATION WILL OCCUR AS THE RUNOFF TURNS THE CORNER, AND RUNOFF MAY COME CLOSE TO THE 1.00' ELEVATION AT THE PROPERTY LINE.

TAIL WATER DEPTH VS. D_1

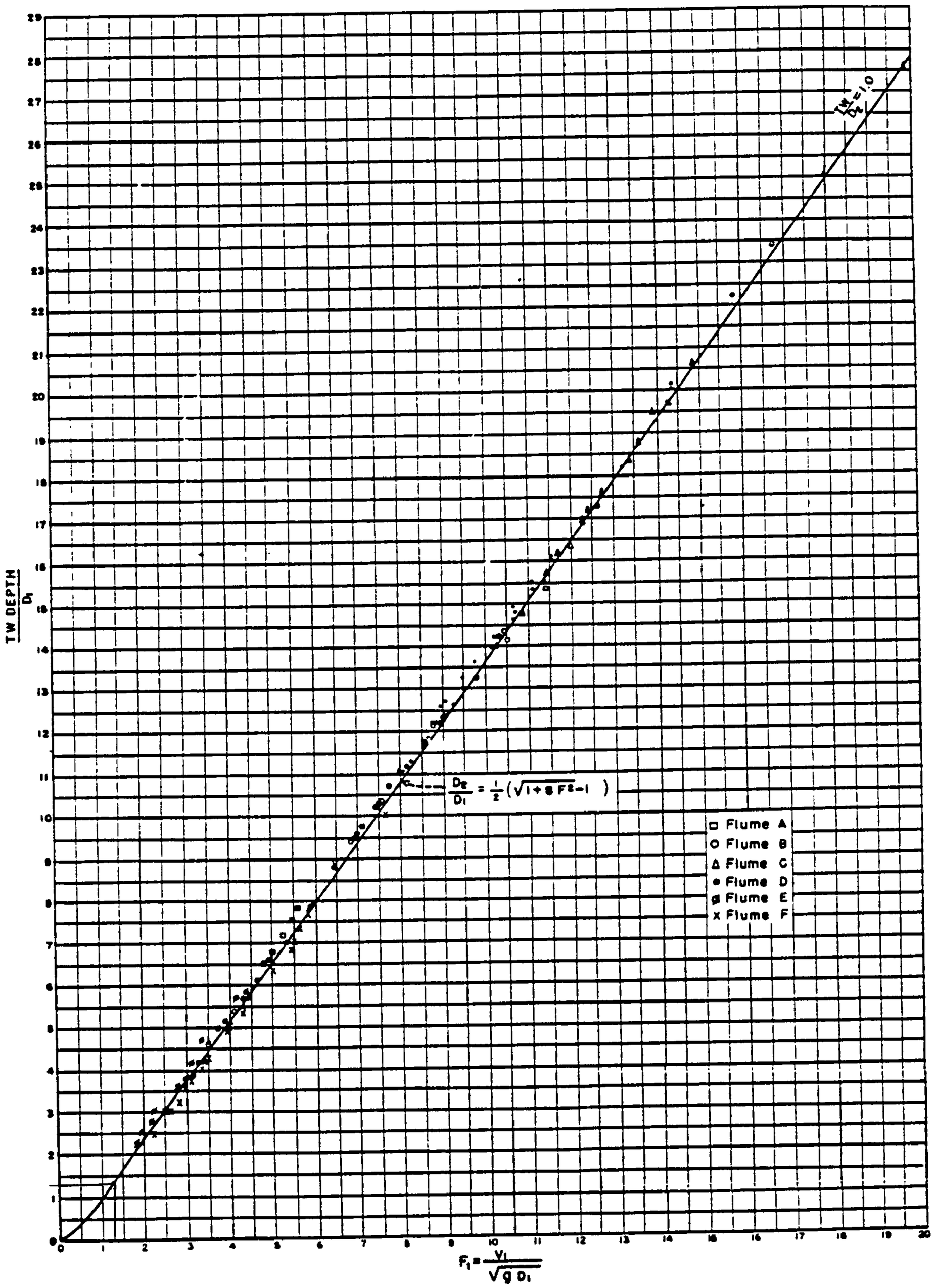


FIGURE 5.—*Ratio of tail water depth to D_1 (Basin I).*

DRAINAGE INFORMATION SHEET

PROJECT TITLE: OSUNA ELEMENTARY ZONE ATLAS/DRNG. FILE #: F-20/D18A

LEGAL DESCRIPTION: BOARD OF EDUC. OSUNA ADD'N, BERN. COUNTY ALBUQ, NM

CITY ADDRESS: 4715 MOON NE

ENGINEERING FIRM: CHAVEZ-GRIEVES CONTACT: MIKE WALLA

ADDRESS: 5639 JEFFERSON PHONE: 344-4080

OWNER: APS CONTACT: GERRY BROWN

ADDRESS: PHONE: 242-5865

ARCHITECT: VGA CONTACT: MIKE HILL

ADDRESS: 319 CENTRAL NW PHONE: 247.9955

SURVEYOR: JMA CONTACT: JEFF MORTENSEN

ADDRESS: PHONE: 345-4250

CONTRACTOR: GEMRCON CONTACT: PAULA

ADDRESS: PHONE:

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO.

EPC NO.

PROJ. NO.

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

X DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

X GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

___ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

X CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 4/28/94

BY: [signature]

RECEIVED APR 28 1994

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.
THE ENGINEERING FIRM OF CHOICE
5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344-4080 FAX (505) 343-8759

LETTER OF TRANSMITTAL

TO: COA - HYDROLOGY

ATTN: JOHN CURTIN

DATE: 4/28/94

JOB # 615-100.5291

RE: OSUNA ELEM

WE ARE SENDING YOU X ATTACHED ___ UNDER SEPARATE COVER, THE FOLLOWING ITEMS:

___ SHOP DRAWINGS	X PLANS	___ SPECIFICATIONS	___ DISKETTE
___ CHANGE ORDER	___ PRINTS	___ CALCULATIONS	___
___ COPY OF LETTER	___ SAMPLES	X REPORT	___

COPIES	DATE	NO.	DESCRIPTION
2EA	AS-BUILT G&D PLAN		
2EA	DOWNSTREAM HYD. ANALYSIS		

THESE ARE TRANSMITTED AS CHECKED BELOW:

X FOR YOUR USE
___ AS REQUESTED
___ PLEASE CORRECT AND RESUBMIT
___ RESUBMITTAL IS NOT REQUIRED
CORRECTIONS, IF ANY, ARE NOTED

X FOR REVIEW & COMMENT
___ RETURNED AFTER LOAN TO US
___ SUBMIT ___ COPIES FOR DISTRIBUTION
___ RETURN ___ CORRECTED PRINTS
X PLEASE COMMENT ASAP

REMARKS: JOHN, A SUMMARY OF THIS ANALYSIS IS ENCLOSED ON ~~THE~~ PAGE 2 & 3 SHOWING VERY LITTLE CHANGE TO EXISTING CONDITIONS WHICH APPEAR TO BE ADEQUATE FOR EXPECTED RUNOFF. CALL IF YOU HAVE QUESTIONS.

THANKS,

RECEIVED
APR 28 1994

COPIES TO: FILE

SIGNED: [signature]

IF ENCLOSURES ARE NOT AS NOTED, KINDLY NOTIFY US AT ONCE.

REV 1/92

DRAINAGE INFORMATION SHEET

PROJECT TITLE: OSUNA ELEMENTARY ZONE ATLAS/DRNG. FILE #: F-20/dl 10A

LEGAL DESCRIPTION: BOARD OF EDUC. OSUNA ADD'N, BERN. COUNTY ALBUQ, NM

CITY ADDRESS: 4715 MOON NE

ENGINEERING FIRM: CUMNEZ-GRIEVES CONTACT: MIKE NALLA

ADDRESS: 5639 JEFFERSON PHONE: 344-4080

OWNER: APS CONTACT: GERRY BROWN

ADDRESS: PHONE: 242-5865

ARCHITECT: VGA CONTACT: MIKE HILL

ADDRESS: 319 CENTRAL NW PHONE: 247.9955

SURVEYOR: JMA CONTACT: JEFF MORTENSEN

ADDRESS: PHONE: 345-4250

CONTRACTOR: GENRCON CONTACT: PAULA

ADDRESS: PHONE:

PRE-DESIGN MEETING:

X YES

____ NO

____ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. ____

EPC NO. ____

PROJ. NO. ____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

X DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

X GRADING PLAN

____ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ SITE DEVELOPMENT PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ BUILDING PERMIT APPROVAL

____ FOUNDATION PERMIT APPROVAL

X CERTIFICATE OF OCCUPANCY APPROVAL - TEMP.

____ ROUGH GRADING PERMIT APPROVAL

____ GRADING/PAVING PERMIT APPROVAL

____ OTHER ____ (SPECIFY)

DATE SUBMITTED: 4/25/94

BY: [signature]

RECEIVED APR 25 1994 HYDROLOGY

Approved for
Temporary
C.O. 4-28-94

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.
THE ENGINEERING FIRM OF CHOICE
5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344-4080 · FAX (505) 343 8759

LETTER OF TRANSMITTAL

TO: COA

ATTN: JOHN CURTIN

DATE: 4/25/94

JOB #

RE: OSUNA ELEM

WE ARE SENDING YOU X ATTACHED ___ UNDER SEPARATE COVER, THE FOLLOWING ITEMS:

___ SHOP DRAWINGS	X PLANS	___ SPECIFICATIONS	___ DISKETTE
___ CHANGE ORDER	___ PRINTS	___ CALCULATIONS	___
___ COPY OF LETTER	___ SAMPLES	___ REPORT	___

COPIES	DATE	NO.	DESCRIPTION
2EA	G+D PLANS		FOR TEMP. CERT. OF OCCUP.

THESE ARE TRANSMITTED AS CHECKED BELOW:

X FOR YOUR USE	X FOR REVIEW & COMMENT
X AS REQUESTED	___ RETURNED AFTER LOAN TO US
___ PLEASE CORRECT AND RESUBMIT	___ SUBMIT ___ COPIES FOR DISTRIBUTION
___ RESUBMITTAL IS NOT REQUIRED	___ RETURN ___ CORRECTED PRINTS
CORRECTIONS, IF ANY, ARE NOTED	___

REMARKS: Called Vicki 4-25-94 to release Temporary C.O.

RECEIVED
APR 25 1994
HYDROLOGY

COPIES TO: FILE

SIGNED:

IF ENCLOSURES ARE NOT AS NOTED, KINDLY NOTIFY US AT ONCE.

REV 1/92

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

July 23, 1993

Mike Walla, P.E.
Chavez-Grieves
5639 Jefferson NE
Albuquerque, N.M. 87109

RE: GRADING & DRAINAGE PLAN FOR OSUNA ELEMENTARY (F-20/D10A)
RECEIVED JULY 16, 1993 FOR BUILDING PERMIT APPROVAL
ENGINEER'S STAMPED DATED 7/15/93

Dear Mr. Walla:

Based on the information included in the submittal referenced above, City Hydrology APPROVES this project for Foundation Permit.

The following comments must be addressed prior to Building Permit approval:

1. Downstream capacity must be verified all the way to Wyoming. Drainage study for Northridge Extension by Stewart Whittier in 1969 indicates that the streets downstream of the school were not designed for the runoff from Osuna Elementary. Any on-site drainage problems need to be identified. The City Park is Treatment B except for the dirt parking lot which is Treatment C. This should reduce the runoff from Basin 2.

2. The detention pond must be designed for atleast the runoff from Basins 1 & 2. Check the swale that drains Basin 2 into the pond. Does it need erosion protection? The property line needs to be shown on Section A-A. The spillway structure needs a longitudinal section that dimensions the length and indicates how it connects to the existing asphalt channel.

3. The classroom relocated to the north blocks an existing swale. Provide spot elevation to indicate how runoff is diverted around the classroom and the retaining wall.

If you have any questions about this project, you may contact me at 768-2727.

Sincerely,

John P. Curtin

John P. Curtin, P.E.
Civil Engineer/Hydrology

xc: Alan Martinez

WPHYD+7832;jpc

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

May 13, 1994

Mike Walla, P.E.
Chavez-Grieves
5639 Jefferson NE
Albuquerque, N.M. 87109

RE: ENGINEER'S CERTIFICATION FOR OSUNA ELEMENTARY (F-20/D10A)
RECEIVED APRIL 28, 1994 FOR CERTIFICATE OF OCCUPANCY APPROVAL
ENGINEER'S STAMP DATED 4/28/94

Dear Mr. Walla:

Based on the information included in the submittal referenced above, City Hydrology releases a Temporary Certificate of Occupancy.

The following comments must be addressed before a Permanent Certificate of Occupancy will be released:

1. Revise land treatment percentages for Basins A-4 & A-5. Percentages used in AHYMO nust match table on Sheet 3 of 4. This site consists of grassed area (B), compacted dirt (C) and impervious areas (D). None of the site is undisturbed (A). The work sheets received July 16, 1993 did not include the parking lot in Basin A-4 nor the concrete play area in Basin A-5. The soccer field and the park are the only grassed areas in Basin A-5. Based on these observations, City Hydrology came up with these approximate percentages:

	%B	%C	%D (Pre/Post)
A-4	0/0	49/48	51/52
A-5	58/58	31/28	11/14

2. Add an analysis point at the intersection of Northridge & Gen Bradley. It appears that about half of Basin A-2 drains to this point which would make the Q approximately 65cfs. On page 88 of the DPM it states that "the (hydraulic) jump should be contained within the street right-of-way." Based on the travel time table for Northridge the energy grade line (potential hydraulic jump) exceeds 1.0'. Street capacity values must be based on the jump depth not the normal depth.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

John P. Curtin

John P. Curtin, P.E.
Civil Engineer/Hydrology

c: Andrew Garcia

WPHYD/7832/jpc

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

DRAINAGE INFORMATION SHEET

PROJECT TITLE: OSUNA ELEMENTARY ZONE ATLAS/DRNG.FILE #: F-20/D10A

LEGAL DESCRIPTION: BOARD OF EDUCATION OSUNA ADDITION, BERN. COUNTY ALBUQ., NEW MEXICO

CITY ADDRESS: 4715 MOON NE

ENGINEERING FIRM: CHAVEZ-GRIEVES CONTACT: MIKE WALLA

ADDRESS: 5639 JEFFERSON NE PHONE: 344-4080

OWNER: APS CONTACT: GERRY BROWN

ADDRESS: PHONE: 242-5865

ARCHITECT: VAN GILBERT CONTACT: MIKE HILL

ADDRESS: 319 CENTRAL NW PHONE: 247-9955

SURVEYOR: JMA CONTACT: JEFF MORTENSEN

ADDRESS: PHONE: 345-4250

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

Fax 343-8759

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO.

EPC NO.

PROJ. NO.

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

X DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

X GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

X BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 7/16/93

BY: M. Walla

JUL 16 1993

HYDROLOGY

CHAVEZ-GRIEVES/CONSULTING ENGINEERS, INC.

5639 JEFFERSON N. E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 344 - 4080 FAX (505) 343 - 8759

July 15, 1993

Mr. John Curtin, P.E.
Civil Engineer/Hydrology
Public Works Dept. Eng. Group
The City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

RE: GRADING AND DRAINAGE PLAN FOR OSUNA ELEMENTARY SCHOOL (F-20/D10A)

Dear Mr. Curtin:

The following responses are in reference to the comments included in your letter of July 7, 1993 regarding the above-referenced project.

1. The calculations interpreting this drainage submittal are revised and enclosed, herein.

2. I am not sure what it is about the detention pond grading that is hard to read. However, I have added some clarification notes and information in order to help clarify this area. The 97 contour connects at the area you questioned and as shown on the plan now. The plan now indicates what the spillway discharges to and that is an asphalt paved alley way which, as shown on the vicinity map, dumps into Northridge Court public street right-of-way. At the west property line, as well as at the south property line, a masonry property wall is constructed and separates the residential housing from the school site.

3. The dimension of the spillway structure is indicated in the proposed pond section detail included on the plans. I have included additional information to describe the side slopes of the berm per Chapter 22, Section F, Guidelines for Berms and Levys included in the DPM. There is no existing spillway, at present, on the site. However, our construction will provide one.

4. The plan is designed to eliminate the present downstream erosion problems as identified in the pre-design conference. Construction of the on-site pond and overflow structure control runoff to the residential subdivision west of the school, therefore, downstream capacity shouldn't be an issue. Analysis of downstream capacity became a non issue when the ponding scheme was proposed.

If you have any questions regarding these responses, please contact me at 344-4080.

Sincerely,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Mike J. Walla, P.E.

MJW:ms

Osuna Elementary School Grading / Drainage Information

DRAINAGE BASIN #1

Building	Area
1A	3,360
1B	1,680
1C	3,000
1D	3,300
1E	1,680
1F	1,680
1G	3,300
1H	1,680
1I	3,516
1J	896
1K	896 — in Basin #2?
SUBTOTAL	**25,884**

Relocated Buildings	Area			
			25,884	
1W	896	Not Relocated to this site	896	
1X	896	Not Relocated to this site	896	
1Y	1,680	Relocated as Building 1E	n/a	
1Z	3,300	Relocated to Basin #2	3,300	
SUBTOTAL	**6,772**	********	**30,976**	Total Building Area Pre-Construction

Proposed New Building	Area			
1	**4,960**	********	**30,844**	Total Building Area Post-Construction

JUL 16 1993

HYDROLOGY DIVISION

MIKE J. WA[illegible]

11330

REGISTERED PROFESSIONAL ENGINEER

DRAINAGE BASIN #1

Sidewalk	Area
1A	653
1B	200
1C	2,900
1D	1,706
1E	0
1F	2,160
1G	1,795
1H	0
1I	1,470
1J	0
1K	0
1L	0
SUBTOTAL	**10,884** Total Sidewalk Area Pre-Construction

Proposed Sidewalk	Area
1	2458
1	390
1	89
1	0
SUBTOTAL	**2,937** ******* **13,821** Total Sidewalk Area Post-Constr

Parking Lot. 11,650 sf

Pre = 55,190 sf
= 1.27 Ac

Post = 56,315
= 1.29

Osuna Elementary School Grading / Drainage Information

DRAINAGE BASIN #2

Building	Area
Media Center	3,245
Restrooms	1,058
Classroom	3,360
SUBTOTAL	**7,663**

clsrm A 896
~~clsrm B 896~~

Relocated Buildings	Area			
				7,663
1Z	3,300	Relocated from Basin #1		3,300
SUBTOTAL	**3,300**		********	**10,963** Total Building Area Pre-Construction

Concrete Play Area
70'x90' = 6,300 ~~X~~

DRAINAGE BASIN #2

Sidewalk	Area	
SUBTOTAL	**8,805**	Total Sidewalk Area Pre-Construction

Proposed Sidewalk	Area
1	1,490
SUBTOTAL	**1,490**

****

10,295 Total Sidewalk Area Post-Constr

Pre D = 22,768 sf = .52 Ac
Post D = 28,454 sf = .65 Ac

Grassed Area ≈ 380' x 320' = 121,600 sf
= 2.79 Ac

4/24/93

HYDROLOGY COMPUTATION WORKSHEET

City of Albuquerque DPM Section 22.2
(January, 1993)

PRECIPITATION ZONE "4"

Site Information:

Project Name: *Osuna Elementary School Site*
Project Location: *Osuna / Moon*
Analysis Condition *Pre-Construction - Drainage Basin #1 - 2.5071 Acres*
Analysis Date: *4/23/93*

Summary Table of Land Treatments		
Treatment	Area (Ac.)	
A	*0.0000*	
B	*0.0000*	
C	*1.5461*	
D	1.27 *0.9610*	38.3% Impervious 50.7 %
Total Area =	**2.5071 Acres**	

Peak Discharge Rate:

Treatment	Peak Discharge Rate (cfs/Acre)	Q x A
A	2.20	0.00
B	2.92	0.00
C	3.73	5.77
D	5.25	5.05
	Total Qp =	**10.81 cfs**

Utilizing the Rational Method: Peak Intensity = 5.61 IN/HR. at Tc=0.2 Hr.

Treatment	Rational Method Coefficient, C	Q x A
A	0.39	0.00
B	0.52	0.00
C	0.66	5.72
D	0.94	5.07
	Total Qp =	**10.79 cfs**

Volumetric Runoff:

Treatment	Excess Precipitation, E (Inches)	E x A
A	0.8	0.00
B	1.08	0.00
C	1.46	2.26
D	2.64	2.54
	Total E x A =	**4.79**

Weighted E = 1.912 inches

Volume (360) = 0.40 Acre-Ft.

4/24/93

HYDROLOGY COMPUTATION WORKSHEET
City of Albuquerque DPM Section 22.2
(January, 1993)
PRECIPITATION ZONE "4"

Site Information:

Project Name: *Osuna Elementary School Site*
Project Location: *Osuna / Moon*
Analysis Condition: *Post Construction - Drainage Basin #1 - 2.5071 Acres*
Analysis Date: *4/23/93*

Summary Table of Land Treatments		
Treatment	Area (Ac.)	
A	*0.0000*	
B	*0.0000*	
C	*1.4817*	
D	1.29 *1.0254*	40.9% Impervious 51.6
Total Area =	**2.5071 Acres**	

Peak Discharge Rate:

Treatment	Peak Discharge Rate (cfs/Acre)	Q x A
A	2.20	0.00
B	2.92	0.00
C	3.73	5.53
D	5.25	5.38
	Total Qp =	**10.91 cfs**

Utilizing the Rational Method: Peak Intensity = 5.61 IN/HR. at Tc=0.2 Hr.

Treatment	Rational Method Coefficient, C	Q x A
A	0.39	0.00
B	0.52	0.00
C	0.66	5.49
D	0.94	5.41
	Total Qp =	**10.89 cfs**

Volumetric Runoff:

Treatment	Excess Precipitation, E (Inches)	E x A
A	0.8	0.00
B	1.08	0.00
C	1.46	2.16
D	2.64	2.71
	Total E x A =	**4.87**

Weighted E = 1.943 inches

Volume (360) = 0.41 Acre-Ft.

= 17,860 cf

4/24/93

HYDROLOGY COMPUTATION WORKSHEET
City of Albuquerque DPM Section 22.2
(January, 1993)
PRECIPITATION ZONE "4"

Site Information:

Project Name: *Osuna Elementary School Site*
Project Location: *Osuna / Moon*
Analysis Condition: *Pre-Construction - Drainage Basin #2 - 4.8103 Acres*
Analysis Date: *4/23/93*

Summary Table of Land Treatments		
Treatment	Area (Ac.)	
A	0.0000	
B	2.79 0.0000	58%
C	4.4322	31%
D	.52 0.3781	7.9% Impervious 10.9
Total Area =	**4.8103 Acres**	

Peak Discharge Rate:

Treatment	Peak Discharge Rate (cfs/Acre)	Q x A
A	2.20	0.00
B	2.92	0.00
C	3.73	16.53
D	5.25	1.98
	Total Qp =	**18.52 cfs**

Utilizing the Rational Method: Peak Intensity = 5.61 IN/HR. at Tc=0.2 Hr.

Treatment	Rational Method Coefficient, C	Q x A
A	0.39	0.00
B	0.52	0.00
C	0.66	16.41
D	0.94	1.99
	Total Qp =	**18.40 cfs**

Volumetric Runoff:

Treatment	Excess Precipitation, E (Inches)	E x A
A	0.8	0.00
B	1.08	0.00
C	1.46	6.47
D	2.64	1.00
	Total E x A =	**7.47**

Weighted E = 1.553 inches

Volume (360) = 0.62 Acre-Ft.

4/24/93

HYDROLOGY COMPUTATION WORKSHEET
City of Albuquerque DPM Section 22.2
(January, 1993)
PRECIPITATION ZONE "4"

Site Information:

Project Name: *Osuna Elementary School Site*
Project Location: *Osuna / Moon*
Analysis Condition: *Post-Construction - Drainage Basin #2 - 4.8103 Acres*
Analysis Date: *4/23/93*

Summary Table of Land Treatments		
Treatment	Area (Ac.)	
A	0.0000	
B	2.79 0.0000	58.0%
C	4.3223	28.4%
D	0.65 0.4880	10.1% Impervious 13.6%
Total Area =	**4.8103 Acres**	

Peak Discharge Rate:

Treatment	Peak Discharge Rate (cfs/Acre)	Q x A
A	2.20	0.00
B	2.92	0.00
C	3.73	16.12
D	5.25	2.56
	Total Qp =	**18.68 cfs**

Utilizing the Rational Method: Peak Intensity = 5.61 IN/HR. at Tc=0.2 Hr.

Treatment	Rational Method Coefficient, C	Q x A
A	0.39	0.00
B	0.52	0.00
C	0.66	16.00
D	0.94	2.57
	Total Qp =	**18.58 cfs**

Volumetric Runoff:

Treatment	Excess Precipitation, E (Inches)	E x A
A	0.8	0.00
B	1.08	0.00
C	1.46	6.31
D	2.64	1.29
	Total E x A =	**7.60**

Weighted E = 1.580 inches

Volume (360) = 0.63 Acre-Ft.

= 27,443 cf

4/24/93

HYDROLOGY COMPUTATION WORKSHEET

City of Albuquerque DPM Section 22.2
(January, 1993)

PRECIPITATION ZONE "4"

Site Information:

Project Name: *Osuna Elementary School Site*
Project Location: *Osuna / Moon*
Analysis Condition *Drainage Basin #3 Unchanged for this project*
Analysis Date: *4/23/93*

Summary Table of Land Treatments		
Treatment	Area (Ac.)	
A	*0.0000*	
B	*0.0000*	
C	*0.5529*	
D	*0.0000*	0.0% Impervious
Total Area =	**0.5529 Acres**	

Peak Discharge Rate:

Treatment	Peak Discharge Rate (cfs/Acre)	Q x A
A	2.20	0.00
B	2.92	0.00
C	3.73	2.06
D	5.25	0.00
	Total Qp =	**2.06 cfs**

Utilizing the Rational Method: Peak Intensity = 5.61 IN/HR. at Tc=0.2 Hr.

Treatment	Rational Method Coefficient, C	Q x A
A	0.39	0.00
B	0.52	0.00
C	0.66	2.05
D	0.94	0.00
	Total Qp =	**2.05 cfs**

Volumetric Runoff:

Treatment	Excess Precipitation, E (Inches)	E x A
A	0.8	0.00
B	1.08	0.00
C	1.46	0.81
D	2.64	0.00
	Total E x A =	**0.81**

Weighted E = 1.460 inches

Volume (360) = 0.07 Acre-Ft.

Spreadsheet for Computation of Hydraulic Characteristes of Rectangular Channels

Q = AV V = (1.49/n)(R^2/3)(S^1/2)

n = Manning Roughness Coefficient

R = Hydraulic Radius = A/P = Cross Sectional Area / Wetted Perimet

S = Longitudinal Slope of Channel in ft./ft.

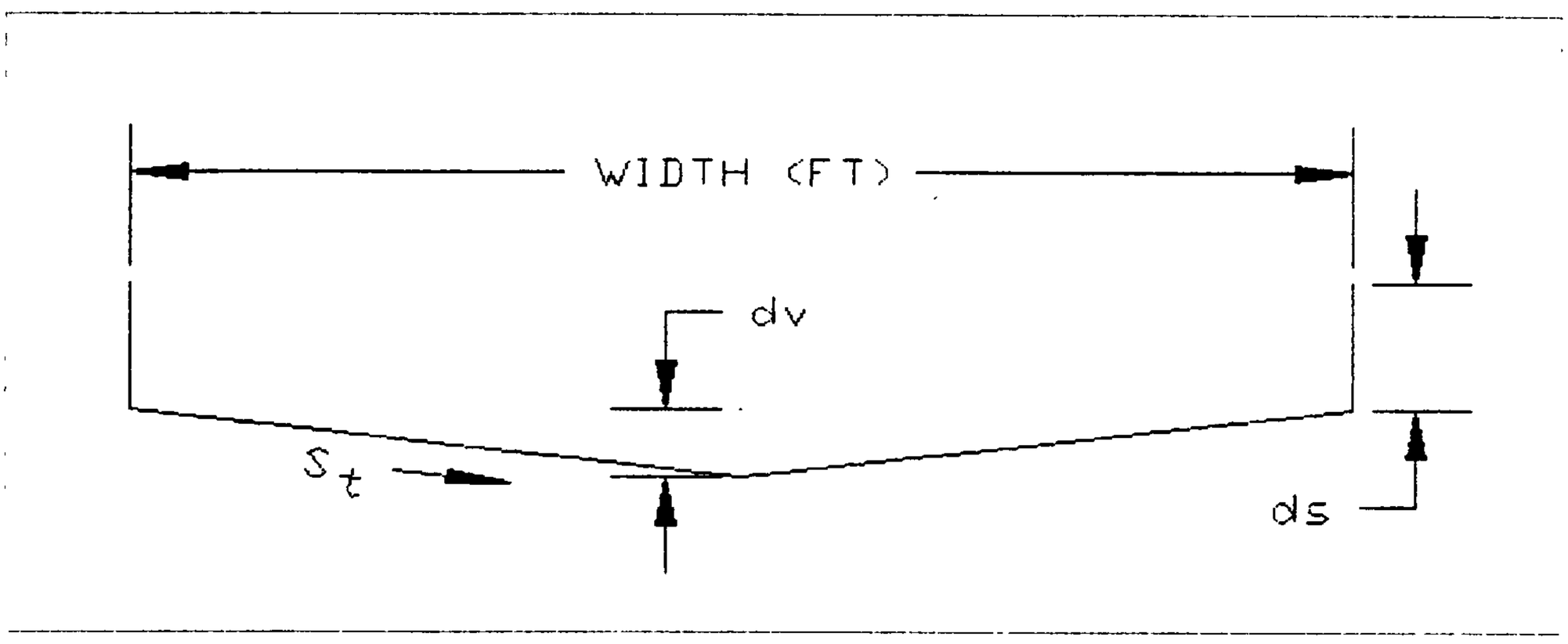
n=	0.017	
R=	0.28	
S=	0.0412	ft./ft.
St=	0.045	ft./ft.
ds=	0.4	ft.
Width(W)=	10	ft.
dv=	0.23	ft.

Cross Sectional Area = 3.0125 S.F.

Wetted Perimeter = 10.81

Velocity = 7.59 fps

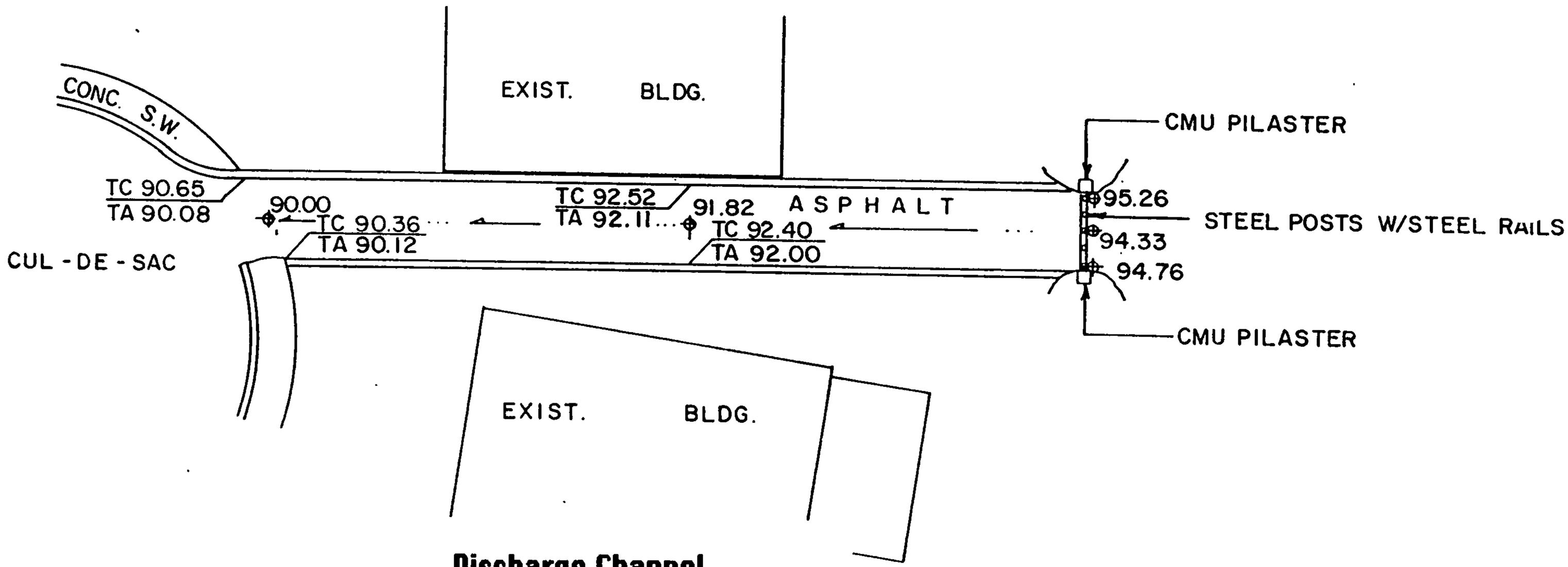
Q = 22.88 cfs



ds = depth of sides (vertical)

dv = depth of vertex from bottom of vertical sides.

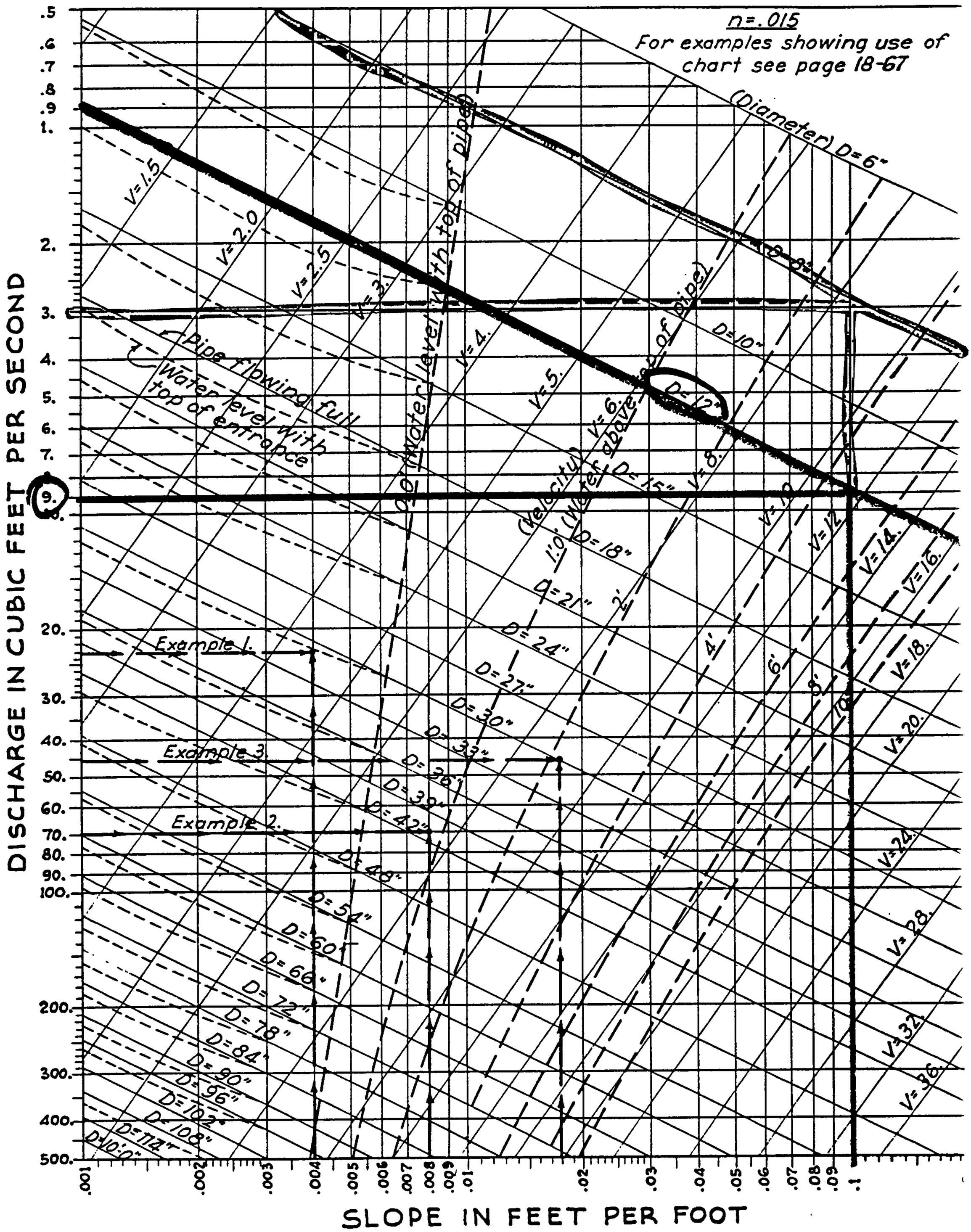
st = transverse slope in ft./ft.



Discharge Channel
Osuna Elementary School
Discharge from Prop. SW Pond

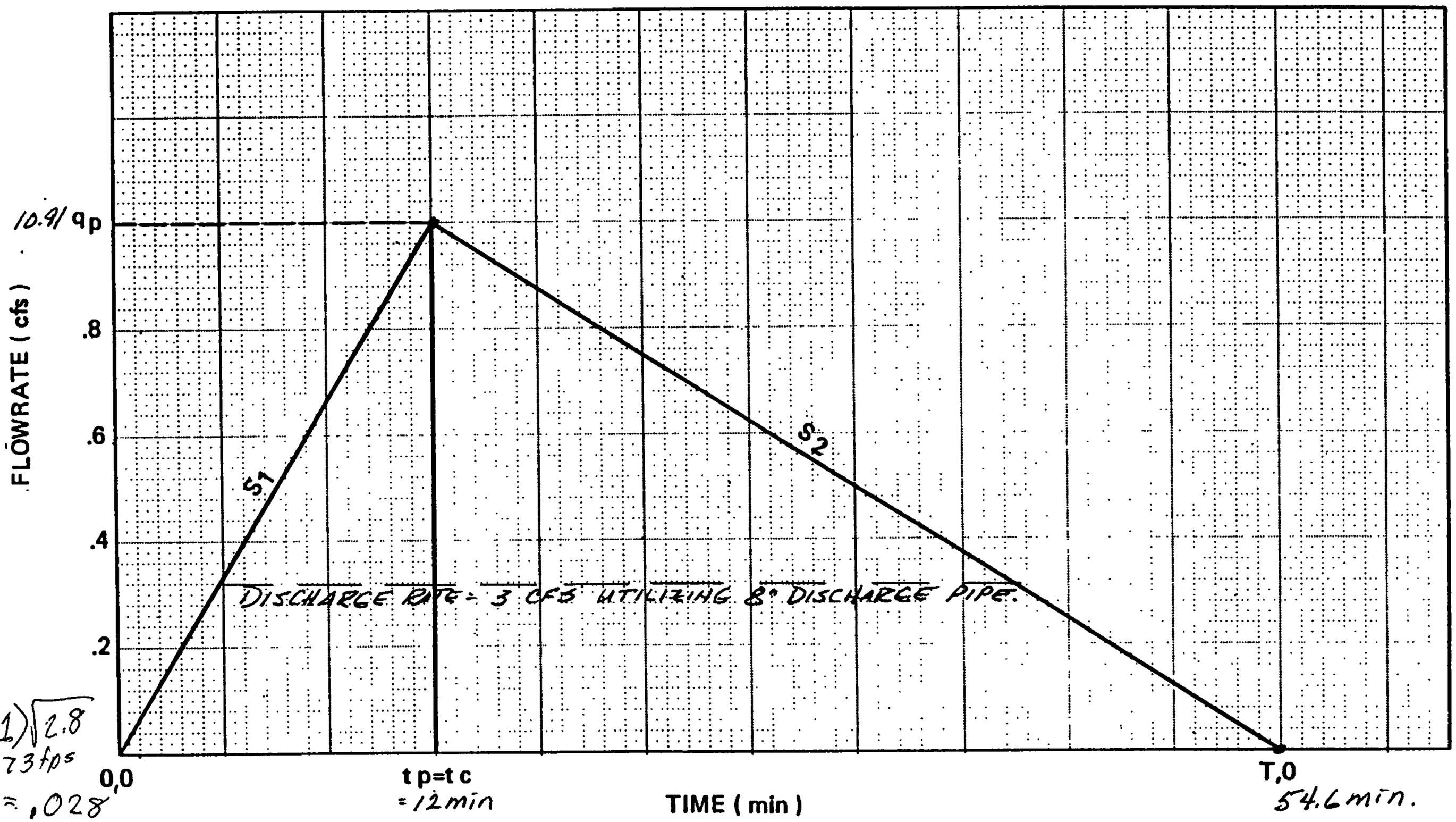
SCALE: 1" = 20'

DRAINAGE & SEWERAGE – PIPE CAPACITIES-1



* Adapted from Gohi Culvert Manufacturing Corp.

RUNOFF HYDROGRAPH (for on-site routing purposes)



t_c =

$V = (1)\sqrt{2.8}$
$= 1.673$ fps

$S = \frac{17}{600} = .028$

qp = maximum runoff rate (in cfs)
$= 10.91 + 18.68 = 29.59$ cfs

tp = time to peak
$= 12(2/3) = 8$ min

t c = time of concentration
$= (600/1.673)/60 = 6$ min < 12

∀ = volume of runoff
$17{,}860 + 27{,}443 = 45{,}303$

T = total duration of runoff = 2∀/q p = $2(17{,}860)/10.9 = 3{,}277$ secs
$= 54.6$ min.

S_1 = slope of rising side = q p / t p

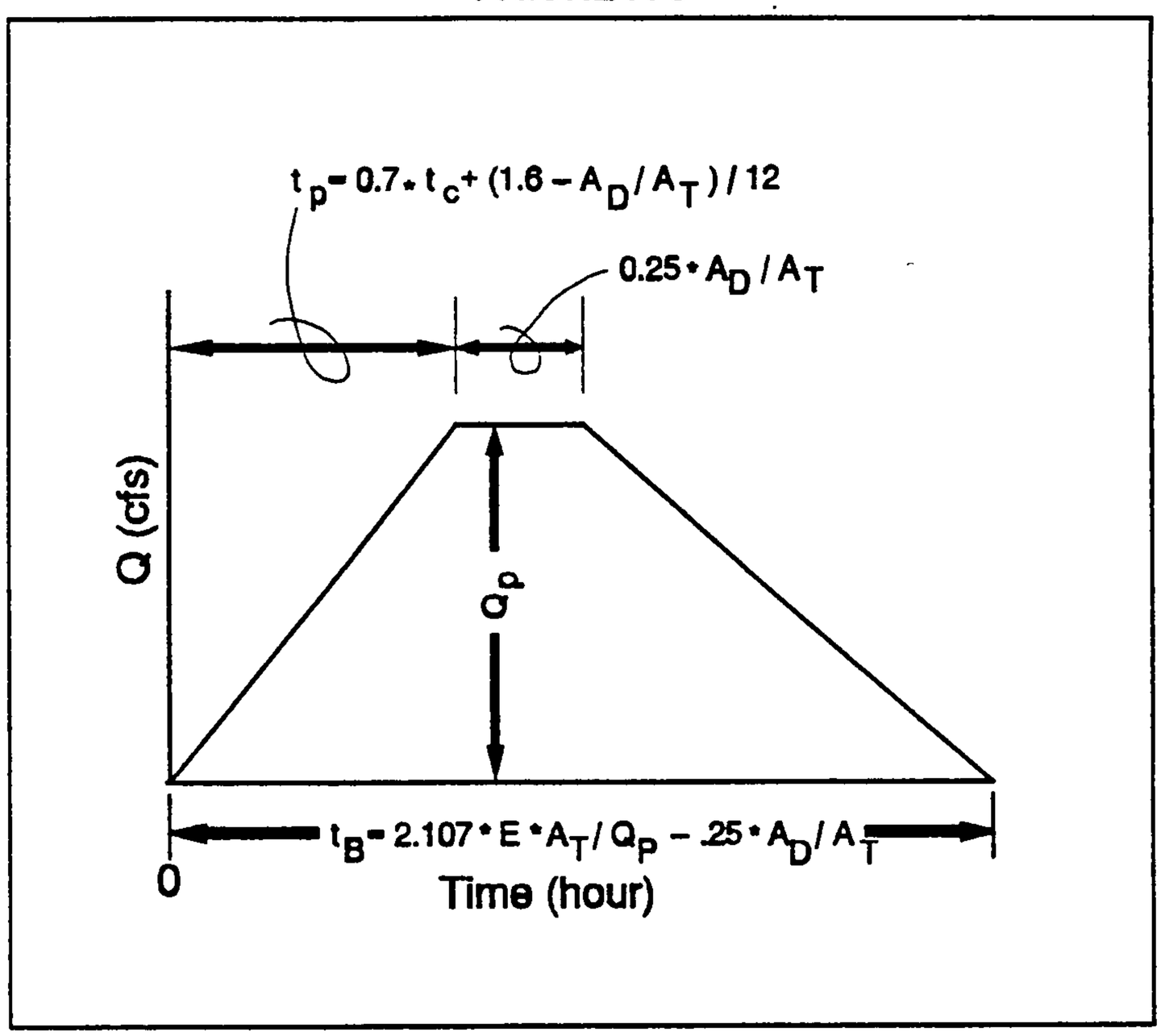
S_2 = slope of recession side = q p / t p - T

Regd Pond Vol. = $\frac{1}{2}(7.91) \times 2{,}275$ secs. = 9,000 C.F.

Actual Pond Vol. = 9060 C.F.

Continue the peak for 0.25 * A_D / A_T hours. When A_D is zero, the hydrograph will be triangular. When A_D is not zero, the hydrograph will be trapezoidal. FIGURE A-3 shows the hydrograph in graphic form.

FIGURE A-3



Example A-8

Determine the hydrograph for Example A-5.

A_T = 14.0 acres A_D = 4.0 acres t_c = 0.2 hour Q_P = 37.24 cfs

E = ((3 * .44) + (5 * .67) + (2 * .99) + (4 * 1.97)) / (3 + 5 + 2 + 4) = 1.038 inches

t_P = (0.7 * 0.2) + (1.6 - (4 / 14)) / 12) = 0.2495 hours

t_B = (2.017 * 1.038 * 14 / 37.24) - (0.25 * 4 / 14) = 0.7157 hours

Duration of peak = 0.25 * 4 / 14 = 0.0714 hours

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

July 7, 1993

Mike Walla, P.E.
Chavez-Grieves
5639 Jefferson NE
Albuquerque, N.M. 871

RE: GRADING & DRAINAGE PLAN FOR OSUNA ELEMENTARY (F-20/D10A)
RECEIVED JUNE 22, 1993 FOR BUILDING PERMIT APPROVAL
ENGINEER'S STAMPED DATED 6/21/93

Dear Mr. Walla:

Based on the information included in the submittal referenced above, City Hydrology REJECTS this project for Building Permit.

The following comments must be addressed prior to Building Permit approval:

1. Use current criteria dated January 1993 for calculations. Include design calculations for detention pond. Calculations separate for plan should be stamped and signed by the Engineer that did them.

2. Grading for detention pond as shown on the plan is hard to read. I recommend that you draw this area at a larger scale, say 1"=20'. At the SE corner of the pond the 97 contour appears to be erased. The Plan must indicate what the spillway discharges to. Currently there is no information as to what is adjacent on the west & south side of the project.

3. Dimension the top width & side slopes of the berm shown in Section A-A. Chapter 22, Section F has guidelines for berms & levees on page 91 of the DPM. Does the existing spillway need to be removed to install the new 8" discharge pipe?

4. The Plan must address the downstream capacity and any erosion problems as requested at the pre-design conference.

If you have any questions about this project, you may contact me at 768-2727.

Sincerely,

John P. Curtin

John P. Curtin, P.E.
Civil Engineer/Hydrology

WPHYD+7832;jpc

RAINAGE INFORMATION SHEET

PROJECT TITLE: OSUNA ELEMENTARY ZONE ATLAS/DRNG.FILE #: F-20 / D10A

LEGAL DESCRIPTION:

CITY ADDRESS: 4715 MOON NE

ENGINEERING FIRM: CHAVEZ-GRIEVES CONTACT: MIKE WALLA

ADDRESS: 5639 JEFFERSON NE PHONE: 344-4080

OWNER: APS CONTACT: GERRY BROWN

ADDRESS: PHONE: 242-5865

ARCHITECT: VAN GILBERT CONTACT: MIKE HILL

ADDRESS: 319 CENTRAL NW PHONE: 247-9855

SURVEYOR: JMA CONTACT: JEFF MORTENSEN

ADDRESS: PHONE: 345-4250

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO.

EPC NO.

PROJ. NO.

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

X DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

X GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

X BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER ___ (SPECIFY)

DATE SUBMITTED: 6/21/93

BY: Mike Walla

7832

RECEIVED
JUN 22 1993
HYDROLOGY DIVISION

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DEVELOPMENT DIVISION/HYDROLOGY SECTION

PRE-DESIGN CONFERENCE

DRAINAGE FILE/ZONE ATLAS PAGE NO.: F20-D10A DATE: 10/30/91

EPC NO.: _____ DRB NO.: _____ ZONE: _____

SUBJECT: _____

STREET ADDRESS: Osuna Elementary Sch (≈ 6000 ft² addn)

LEGAL DESCRIPTION: O.

APPROVAL REQUESTED:

____	PRELIMINARY PLAT	____	FINAL PLAT
____	SITE DEVELOPMENT PLAN	X	BUILDING PERMIT
____	GRADING/PAVING PERMIT	____	OTHER

ATTENDANCE:	WHO	REPRESENTING
	Mike Walla	
	Fred J. Aguirre	

FINDINGS:
An updated drainage plan that reflects the as-built conditions and confirmations of the existing hydrologic & hydraulic conditions that were previously approved. The proposed development will need to address downstream capacity (i.e. the residential subdivision) for its allowable discharge.

The plan will need to address any erosion problem created by this site.

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: [signature] SIGNED: [signature]

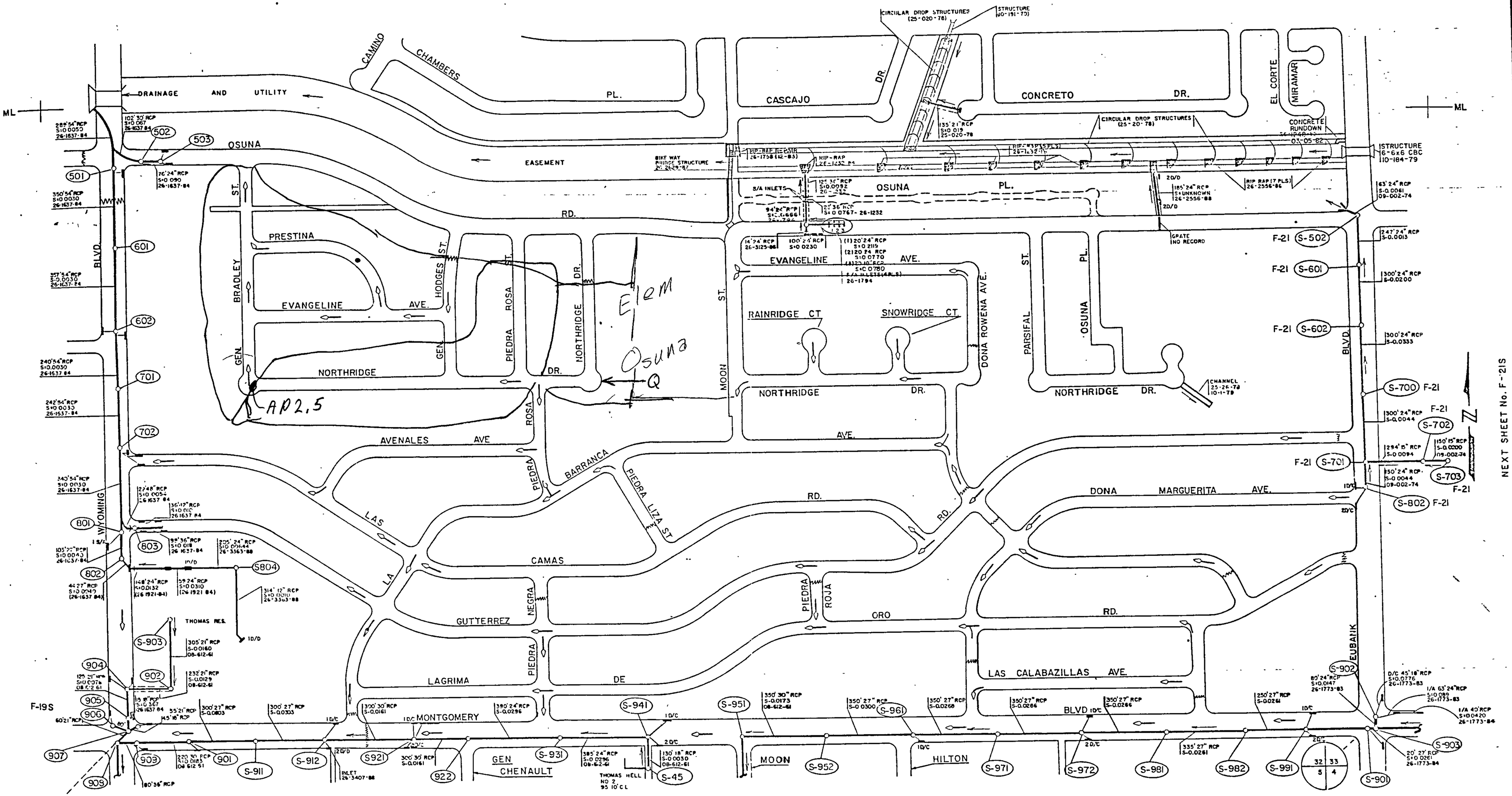
TITLE: _____ TITLE: PROJ. ENGR

DATE: 10/30/91 DATE: 10/30/91

NOTE PLEASE PROVIDE A COPY OF THIS PRE-DESIGN FORM WITH THE DRAINAGE SUBMITTAL.

NEXT SHEET No. F-20N

NEXT SHEET No. F-19S



DRAINAGE FACILITY MAP

REVISIONS	
DATE	REMARKS
12-12-84	BRIDGE STRUCTURE 26-2029-87

LEGEND

- STORM SEWER LINE
- MANHOLE

NOTES

1. MANHOLE IDENTIFICATION REQUIRES BOTH THE MAP GRID & MANHOLE No.

REVISIONS	
DATE	REMARKS
4-26-88	ADDED INLETS CHANGED DWY RT 8-17

MAP GRID

F-20S

CITY OF ALBUQUERQUE

THREE HUNDRED YEARS
1706 • 2006
ALBUQUERQUE
Making History

January 20, 2005

D. James See, R.A.
Edith Cherry / D. James See Architects
220-A Gold Ave. SW
Albuquerque, NM 87102

Re: Osuna Elementary Classroom / Cafeteria / Kitchen Addition, 4715 Moon St NE, Traffic Circulation Layout
Architect's Stamp dated 1-19-05 (F20-D10A)

Dear Mr. See,

The TCL submittal received 1-19-05 is approved for Building Permit. The plan is stamped and signed as approved. A copy of this plan will be needed for each of the building permit plans. Please keep the original to be used for certification of the site for final C.O. for Transportation.

If a temporary CO is needed, a copy of the original TCL that was stamped as approved by the City will be needed. This plan must include a statement that identifies the outstanding items that need to be constructed or the items that have not been built in "substantial compliance," as well as the signed and dated stamp of a NM registered architect or engineer. Submit this TCL with a completed Drainage and Transportation Information Sheet to Hydrology at the Development Services Center of Plaza Del Sol Building.

When the site is completed and a final C.O. is requested, use the original City stamped approved TCL for certification. A NM registered architect or engineer must stamp, sign, and date the certification TCL along with indicating that the development was built in "substantial compliance" with the TCL. Submit this certification TCL with a completed Drainage and Transportation Information Sheet to Hydrology at the Development Services Center of Plaza Del Sol Building.

Once verification of certification is completed and approved, notification will be made to Building Safety to issue Final C.O. To confirm that a final C.O. has been issued, call Building Safety at 924-3306.

Sincerely,

Kristal D. Metro
Engineering Associate, Planning Dept.
Development and Building Services

cc: file

P.O. Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: Osuna Elem. Sch. ZONE MAP/DRG. FILE #: (F20 - D104)
DRB #: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: _____
CITY ADDRESS: 4715 Moon St. NE

ENGINEERING FIRM: Jeff Mortensen CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

OWNER: APS CONTACT: Roldan Pasion
ADDRESS: _____ PHONE: 242-5865
CITY, STATE: _____ ZIP CODE: _____

ARCHITECT: Cherry/Sae Architects CONTACT: Charles Rowland
ADDRESS: _____ PHONE: 842-1278
CITY, STATE: _____ ZIP CODE: _____

SURVEYOR: Jeff Mortensen CONTACT: _____
ADDRESS _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: T.A. Cole & Sons - Building CONTACT: Skip Cole
ADDRESS: _____ PHONE: 888-8698
CITY, STATE: _____ ZIP CODE: _____

CHECK TYPE OF SUBMITTAL:

- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN 1st SUBMITTAL, ***REQUIRES TCL or equal***
- ____ DRAINAGE PLAN RESUBMITTAL
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ____ CLOMR/LOMR
- ✓ TRAFFIC CIRCULATION LAYOUT (TCL) (resubmittal)
- ____ ENGINEERS CERTIFICATION (TCL)
- ____ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ____ OTHER

Approve
- Call, leave plans out

CHECK TYPE OF APPROVAL SOUGHT:

- ____ SIA / FINANCIAL GUARANTEE RELEASE
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D. APPROVAL
- ____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY (PERM.)
- ____ CERTIFICATE OF OCCUPANCY (TEMP.)
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ____ YES
- ____ NO
- ____ COPY PROVIDED

DATE SUBMITTED: 1.19.05 BY: Charles Rowland

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature , location and scope ot the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

RECEIVED
JAN 19 2005
HYDROLOGY SECTION