CITY OF ALBUQUERQUE

March 10, 2005

David Soule, PE
Rio Grande Engineering
1606 Central SE, Ste 201
Albuquerque, NM 87106

Re: Paseo del Norte Sportsplex Drainage Report
Engineer's Stamp dated 12-29-04

Dear Mr. Soule,

Based upon the information provided in your submittal dated 12-29-04, the above referenced report is approved for Site Development Plan. Prior to Building Permit approval, please address the following comments.

- Please direct the emergency spillway toward Paseo del Norte.
- How does the runoff leave the pond? Does it daylight to the existing grade?
- Please check the volumes of the pond – they appear small. This will probably affect the AHYMO run.
- Pipes 7 and 8 are undersized. Also, please check your weir calculation.
- Please include exhibit from the previous report (C17-D19) showing allowable discharge to the property to the west.

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

Sincerely,

Bradley L. Bingham, PE
Principal Engineer, Planning Dept.
Development and Building Services

C: file

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

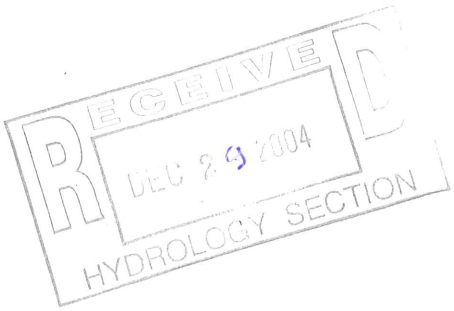
DRAINAGE REPORT

for

Paseo Del Norte Sportsplex Albuquerque, New Mexico

Prepared by
Rio Grande Engineering
1606 Central Ave. SE, Suite 201
Albuquerque, New Mexico 87106

December 2004



David Soule P.E. No. 14522

PURPOSE

The purpose of this report is to provide the Drainage Management Plan for the development of indoor/ outdoor sports complex. The proposed development will consist of an approximately 56,000 square foot building, 11outdoor volley-ball courts, a miniature baseball field and their associated parking lot. The site contains 9.48 acres. This plan will identify the upstream and downstream hydraulic constraints affecting the subject property. This plan was prepared in accordance with the City of Albuquerque's Development Process Manual Drainage Criterion. This report will demonstrate that the proposed improvements do not adversely affect the surrounding properties, nor the upstream or downstream facilities.

INTRODUCTION

The subject of this report, as shown on the Exhibit A - vicinity map, is a 9.48-acre parcel of land located on the north side of Paseo Del Norte Avenue west of Washington Avenue NE. The site is currently undeveloped. The legal description of the parcel is tracts 1 & 2 Loop Industrial Park. The site is bounded by an inlet to the North AMAFCA Diversion Channel on the North, the Paseo Del Norte Frontage Road on the south, a railroad spur to the east and a partially developed parcel to the west. Due to the surrounding improvements, this site is not impacted by any significant offsite flow. The site currently discharges 21.16 cfs directly to the adjacent tract of land to the west of the site. A drainage plan (C17-D19) was completed for the adjacent tract which allows for 16.01cfs to leave enter this site from the subject site. Due to the existing drainage facilities and the fact the site is significantly lower than the adjacent AMAFCA channel and Paseo Del Norte, the existing patterns will be maintained and the development of this site shall be in conformance to the approved plan for the adjacent tract.

EXISTING CONDITIONS

This site is currently undeveloped. It appears this site has never been developed. The site is covered by native grasses and indigenous plants. The site drains from northeast to the southwest with general grades between 2-3 %. As shown in appendix A, the site currently discharges 21.16 cfs upon the adjacent westerly tract at the southwest corner of the site. This site and the adjacent site to the west are significantly lower than the adjacent roadway. Once the flow enters the adjacent tract, it combines with the developed flows and enters the North Diversion channel just west of the adjacent tract. Due to the existing grades, the adjacent site was designed to accommodate 16.01 cfs from this site. This report was prepared by BHI with a stamp date of April 22, 1998 and is located in C17-D19. This report defines this site as offsite basin B-1 and accounts for 16.01 cfs to discharge at the southern boundary. There no visual evidence that the existing drainage patterns have any negative impacts onsite or offsite.

PROPOSED CONDITIONS

As shown in Map Pocket A, the site contains a 15 drainage basin. Each basin drains to an underground storm drainage system. As shown in Appendix A, the weighted E method was used to quantify the peak rates generated within each basin. The underground drainage system drains to a detention pond located at the historical low point of the site. As shown in Appendix B, the inlets and drainage conduit are adequately sized. The proposed detention pond discharge 16.295 cfs via a 24" outfall pipe with a 16.5" orifice plate. This pond was modeled using AHYMO and the pond routing function. The input and output files of the model are included within Appendix C. As shown from the hydraulic pond model, the peak discharge leaving the site is throttled to 16.3 cfs during a 100-year, six hour storm event. A 24' wide emergency overflow has been included should the outlet become plugged. The proposed discharge rate leaving the site is

slightly greater than the rate of 16.01 cfs accounted for within the drainage plan for the westerly site. This increase of less than 0.3 cfs is insignificant and will be not have any adverse impact on the adjacent tract.

SUMMARY AND RECOMMENDATIONS

This project consists of the development of an undeveloped site. The site is surrounded by streets that are fully developed. No significant offsite flows impact the site. The site currently discharges 21.16 cfs to the adjacent tract during a 100-year, 6-hour storm event. This flow passes through the adjacent site where it is captured by an permanent drainage structure and conveyed to the North Diversion Channel. The proposed development will discharge a peak rate of 16.3 cfs, while maintaining the existing drainage patterns. The adjacent tract was designed and approved to accept the flow from this site. The grading plan and drainage report was prepared in conformance with the City of Albuquerque Development Process Manual's drainage criteria. The existing and proposed storm discharge rates have been calculated using the City of Albuquerque's Weighted E method as prescribed in the DPM. The pond function was modeled using AHYMO 97. Since the proposed redevelopment of an existing site as shown within this plan do not adversely affects the upstream or downstream facilities, we recommend approval of the site-grading plan. Since this site encompasses more than 1 acre, a NPDES permit will be required prior to any construction activity.

Weighted E Method

Existing Basins

											100-Year		
Basin	Area (sf)	Area (acres)	Treatment A		Treatment B		Treatment C		Treatment D		Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
			%	(acres)	%	(acres)	%	(acres)	%	(acres)			
ONSITE	412805.05	9.48	64%	6.0672	15%	1.422	6%	0.5688	15%	1.422	0.861	0.680	21.18
Total	412805.05	9.48		6.0672		1.422		0.5688		1.422		0.680	21.18

Proposed Developed Basins

											100-Year, 6-hr.			10-day
Basin	Area (sf)	Area (acres)	Treatment A		Treatment B		Treatment C		Treatment D		Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Volume (ac-ft)
			%	(acres)	%	(acres)	%	(acres)	%	(acres)				
A	35518.82	0.815	5%	0.04077	10%	0.082	5%	0.04077	80%	0.652	1.859	0.126	3.44	0.213
B	15424.60	0.354	2%	0.007082	3%	0.011	5%	0.01771	90%	0.319	1.999	0.059	1.59	0.101
C	25234.31	0.579	2%	0.011586	5%	0.029	6%	0.03476	87%	0.504	1.962	0.095	2.56	0.162
D	7623.00	0.175	2%	0.0035	6%	0.011	8%	0.014	84%	0.147	1.929	0.028	0.76	0.048
E	36024.12	0.827	10%	0.0827	20%	0.165	20%	0.1654	50%	0.414	1.498	0.103	2.97	0.158
F	7104.64	0.163	8%	0.013048	12%	0.020	20%	0.03262	60%	0.098	1.636	0.022	0.63	0.035
G	19514.88	0.448	1%	0.00448	4%	0.018	5%	0.0224	90%	0.403	2.001	0.075	2.01	0.128
G-1	30823.06	0.708	30%	0.21228	30%	0.212	20%	0.14152	20%	0.142	1.052	0.062	1.92	0.081
H(FUTURE)	95919.12	2.202	5%	0.1101	10%	0.220	10%	0.2202	75%	1.652	1.809	0.332	9.13	0.552
I	15472.51	0.355	30%	0.10656	20%	0.071	10%	0.03552	40%	0.142	1.285	0.038	1.11	0.057
J	66337.52	1.523	20%	0.30458	30%	0.457	25%	0.38073	25%	0.381	1.159	0.147	4.50	0.198
J-1	16282.73	0.374	0%	0	5%	0.019	5%	0.01869	90%	0.336	2.004	0.062	1.68	0.107
K	16674.77	0.383	0%	0	5%	0.019	5%	0.01914	90%	0.345	2.004	0.064	1.72	0.110
L	8842.68	0.203	8%	0.01624	18%	0.037	16%	0.03248	58%	0.118	1.596	0.027	0.76	0.043
M	16030.08	0.368	0%	0	5%	0.018	5%	0.0184	90%	0.331	2.004	0.061	1.66	0.106
Total	412826.83	9.48		0.91		1.39		1.19		5.98		1.30	36.45	2.10

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

Where for 100-year, 6-hour storm

Ea= 0.56	Qa= 1.56
Eb= 0.78	Qb= 2.28
Ec= 1.13	Qc= 3.14
Ed= 2.12	Qd= 4.7

VOLUME CALCULATIONS

DETENTION POND

Ab - Bottom Of The Pond Surface Area
At - Top Of The Pond Surface Area
D - Water Depth
Dt - Total Pond Depth
C - Change In Surface Area / Water Depth

Volume = Ab * D + 0.5 * C * D^2
C = (At - Ab) / Dt

Ab =	2,080.00
At =	5,269.00
Dt =	6.25
C =	510.24

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
68.75	0	0	0.000
70.00	1.25	0.0597	3.997
70.75	2.00	0.0988	7.370
71.25	2.50	0.1285	8.937
71.75	3.00	0.1612	10.268
72.25	3.50	0.1968	11.445
72.75	4.00	0.2353	12.512
73.25	4.50	0.2767	13.495
73.75	5.00	0.3211	14.411
74.25	5.50	0.3684	15.272
74.75	6.00	0.4186	16.087
75.00	6.25	0.4449	16.479

CHECK VOLUME & FLOW CALCS

0.5272 16.863

Orifice Equation
Q = CA SQRT(2gH)

C =	0.6
Diameter (in)	16.5
Area (ft^2)=	1.4848934
g =	32.2
H (Ft) =	Depth of water above center of orifice
Q (CFS)=	Flow

Existing Condition

Discharge to adjacent tract 21.18 cfs

Developed Conditons	PIPE		CONTRIBUTING PIPES	CONTRIBUTING BASINS		CALCULATED Q
	PIPE	1	13,1A	E	2.97	27.33
	PIPE	1A	2,3	C	2.56	22.01
	PIPE	2	10	A	3.44	5.10
	PIPE	10	14			1.66
	PIPE	14		M	1.66	1.66
	PIPE	13	12	D	0.76	2.35
	PIPE	12		B	1.59	1.59
	PIPE	3	4,6	F	0.63	14.34
	PIPE	4		G-1	1.92	1.92
	PIPE	6	7	I,G	3.12	11.79
	PIPE	7	8			8.67
	PIPE	8	9	J	4.50	8.67
	PIPE	9	11	J1,L	2.45	4.17
	PIPE	11		K	1.72	1.72
	PIPE	5		H	9.13	9.13
	TOTAL FLOW TO POND					36.45

Pipe Capacity

Pipe	D	Slope	Area	R	Q Provided	Q Required	Velocity
	(in)	(%)	(ft^2)		(cfs)	(cfs)	(ft/s)
1	30	0.6	4.91	0.625	31.86	27.33	5.57
1A	30	0.6	4.91	0.625	31.86	22.01	4.48
2	18	0.6	1.77	0.375	8.16	5.10	2.89
10	12	0.6	0.79	0.25	2.77	1.66	2.11
14	12	0.6	0.79	0.25	2.77	1.66	2.11
13	15	0.6	1.23	0.3125	5.02	2.35	1.91
12	12	0.6	0.79	0.25	2.77	1.59	2.02
3	24	0.6	3.14	0.5	17.57	14.34	4.56
4	12	0.6	0.79	0.25	2.77	1.92	2.44
6	24	0.6	3.14	0.5	17.57	11.79	3.75
7	18	0.6	1.77	0.375	8.16	8.67	4.91
8	18	0.6	1.77	0.375	8.16	8.67	4.91
9	15	0.6	1.23	0.3125	5.02	4.17	3.40
11	12	0.6	0.79	0.25	2.77	1.72	2.19
5	21	0.6	2.41	0.4375	12.31	9.13	3.80

} UNDER SIZED

Manning's Equation:

Q = 1.49/n * A * R^(2/3) * S^(1/2)

A = Area
R = D/4
S = Slope
n = 0.013

DROP INLET CALCULATIONS

INLET	TYPE OF INLET	AREA (SF)	Q (CFS)	H (FT)	H ALLOW (FT)
ALL	Single 'D'	5.92	4.5	0.0249	0.5

ORIFICE EQUATION

Q = CA sqrt(2gH)

C = 0.6

g = 32.2

Overflow Channel

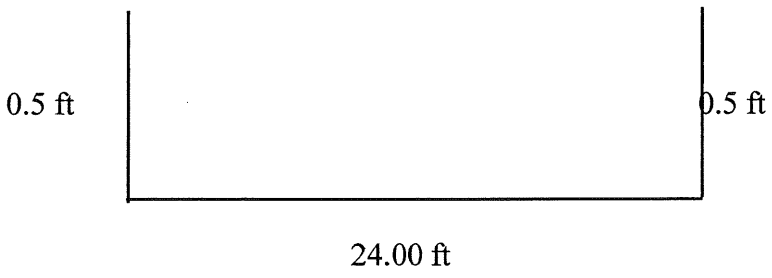
Weir Equation:

$$Q = CLH^{3/2}$$

Q= 36.45 cfs
C = 2.95
H = 0.5 ft
L = Length of weir

$$L = \frac{36.45}{2.95(0.5)^{3/2}} = 34.95'$$

L = 23.98 ft
Use 24.00 feet for length of weir



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*                  PASEO DEL NORTE SPORTS PLEX                *
**************************************************************
*          100-YEAR, 6-HR STORM  (PONDING CALCULATIONS)       *
**************************************************************
START                TIME=0.0
*
* ROUTE 1
*
* OVERALL SITE*
RAINFALL             TYPE=1 RAIN QUARTER=0.0 IN
                     RAIN ONE=2.01 IN RAIN SIX=2.35 IN
                     RAIN DAY=2.75 IN DT=0.03333 HR
COMPUTE NM HYD       ID=1 HYD NO=101.1 AREA=0.0148125 SQ MI
                     PER A=10.0 PER B=14.0 PER C=12.0 PER D=64.0
                     TP=-0.1333 HR MASS RAINFALL=-1
* BASIN 1 PONDING
*
ROUTE RESERVOIR      ID=2 HYD NO=501.1 INFLOW ID=1 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                        0.0000            0.0000          68.75
                         3.997            0.0597          70.00
                         7.370            0.0988          70.75
                         8.937            0.1285          71.25
                        10.268            0.1612          71.75
                        11.445            0.1968          72.25
                        12.512            0.2353          72.75
                        13.495            0.2767          73.25
                        14.411            0.3211          73.75
                        15.272            0.3684          74.25
                        16.087            0.4186          74.75
                        16.479            0.4449          75.00

*
*
FINISH
```

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        AHYMO PROGRAM (AHYMO_97) -                          - Version:  1997.02d
              RUN DATE (MON/DAY/YR) = 12/28/2004
              START TIME (HR:MIN:SEC) = 17:27:31     USER NO.= AHYMO-S-
9702d2TierraW-AH
              INPUT FILE = C:\DOCUME~1\David\Desktop\2453\POND.txt

     ************************************************************
     *                  PASEO DEL NORTE SPORTS PLEX                *
     ************************************************************
     *          100-YEAR, 6-HR STORM  (PONDING CALCULATIONS)       *
     ************************************************************
     START               TIME=0.0
     *
     * ROUTE 1
     *
     * OVERALL SITE*
     RAINFALL            TYPE=1 RAIN QUARTER=0.0 IN
                         RAIN ONE=2.01 IN RAIN SIX=2.35 IN
                         RAIN DAY=2.75 IN DT=0.03333 HR

                    COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2
- PEAK AT 1.40 HR.
                    DT =    .033330 HOURS       END TIME =     5.999400 HOURS
                       .0000   .0016   .0033   .0049   .0066   .0084   .0102
                       .0120   .0139   .0158   .0178   .0199   .0219   .0241
                       .0263   .0286   .0309   .0333   .0358   .0384   .0411
                       .0439   .0467   .0497   .0529   .0561   .0596   .0631
                       .0669   .0709   .0751   .0807   .0866   .0930   .1066
                       .1371   .1840   .2514   .3434   .4644   .6186   .8106
                      1.0449  1.2624  1.3533  1.4300  1.4982  1.5602  1.6174
                      1.6704  1.7200  1.7664  1.8102  1.8514  1.8904  1.9273
                      1.9622  1.9953  2.0268  2.0566  2.0850  2.0915  2.0976
                      2.1033  2.1088  2.1140  2.1191  2.1239  2.1285  2.1329
                      2.1373  2.1414  2.1454  2.1494  2.1531  2.1568  2.1604
                      2.1639  2.1673  2.1706  2.1739  2.1771  2.1802  2.1832
                      2.1862  2.1891  2.1919  2.1947  2.1975  2.2002  2.2028
                      2.2054  2.2080  2.2105  2.2130  2.2154  2.2178  2.2202
                      2.2225  2.2248  2.2270  2.2293  2.2315  2.2336  2.2358
                      2.2379  2.2399  2.2420  2.2440  2.2460  2.2480  2.2500
                      2.2519  2.2538  2.2557  2.2576  2.2594  2.2612  2.2631
                      2.2648  2.2666  2.2684  2.2701  2.2718  2.2735  2.2752
                      2.2769  2.2785  2.2802  2.2818  2.2834  2.2850  2.2866
                      2.2881  2.2897  2.2912  2.2928  2.2943  2.2958  2.2973
                      2.2987  2.3002  2.3017  2.3031  2.3045  2.3060  2.3074
                      2.3088  2.3102  2.3115  2.3129  2.3143  2.3156  2.3169
                      2.3183  2.3196  2.3209  2.3222  2.3235  2.3248  2.3261
                      2.3273  2.3286  2.3298  2.3311  2.3323  2.3335  2.3348
                      2.3360  2.3372  2.3384  2.3396  2.3408  2.3419  2.3431
                      2.3443  2.3454  2.3466  2.3477  2.3488  2.3500

     COMPUTE NM HYD      ID=1 HYD NO=101.1 AREA=0.0148125 SQ MI
                         PER A=10.0 PER B=14.0 PER C=12.0 PER D=64.0
                         TP=-0.1333 HR MASS RAINFALL=-1

          K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000
SHAPE CONSTANT, N =  7.106420
```

```
          UNIT PEAK =   37.428    CFS   UNIT VOLUME =    .9991       B =
526.28      P60 = 2.0100
          AREA =      .009480 SQ MI    IA =    .10000 INCHES    INF =    .04000
INCHES PER HOUR
          RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT
=   .033330


          K =   .131670HR    TP =   .133300HR    K/TP RATIO =   .987773
SHAPE CONSTANT, N =  3.574608
          UNIT PEAK =   13.031    CFS   UNIT VOLUME =    .9993       B =
325.73      P60 = 2.0100
          AREA =      .005333 SQ MI    IA =    .49167 INCHES    INF =   1.22667
INCHES PER HOUR
          RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT
=   .033330

     * BASIN 1 PONDING
     *
     ROUTE RESERVOIR     ID=2 HYD NO=501.1 INFLOW ID=1 CODE=24
                         OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                            0.0000            0.0000          68.75
                            3.997             0.0597          70.00
                            7.370             0.0988          70.75
                            8.937             0.1285          71.25
                           10.268             0.1612          71.75
                           11.445             0.1968          72.25
                           12.512             0.2353          72.75
                           13.495             0.2767          73.25
                           14.411             0.3211          73.75
                           15.272             0.3684          74.25
                           16.087             0.4186          74.75
                           16.479             0.4449          75.00


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

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

          .00        .00     68.75       .000       .00
          .80        .00     68.75       .000       .00
         1.60      25.87     74.51       .394     15.69
         2.40       1.48     70.47       .084      6.11
         3.20        .29     68.89       .007       .46
         4.00        .17     68.81       .003       .19
         4.80        .16     68.80       .002       .16
         5.60        .18     68.81       .003       .18
         6.40        .02     68.77       .001       .07
         7.20        .00     68.75       .000       .00
      PEAK DISCHARGE =       16.295 CFS - PEAK OCCURS AT HOUR    1.70
      MAXIMUM WATER SURFACE ELEVATION =       74.883
      MAXIMUM STORAGE =         .4325 AC-FT      INCREMENTAL TIME=
.033330HRS

     *
     *
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FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 17:27:31
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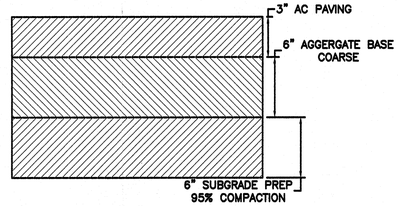
MAP POCKET A

DRAINAGE BASIN MAP

STORM DRAIN LINE TABLE				
LINE	LENGTH	BEARING	SIZE	SLOPE
L1	178.35	N41°55'19"E	30" HDPE	0.60%
L1A	110.76	N41°55'19"E	30" HDPE	0.60%
L2	127.89	N14°00'08"W	18" HDPE	0.60%
L3	107.76	S86°57'15"E	24" HDPE	0.60%
L4	82.58	N03°02'45"E	12" HDPE	0.60%
L5	144.23	N86°06'33"E	21" HDPE	0.57%
L6	260.39	S82°56'08"E	24" HDPE	0.60%
L7	140.35	S84°56'21"E	18" HDPE	0.60%
L8	62.76	N32°31'14"E	18" HDPE	0.60%
L9	259.69	N00°00'00"E	15" HDPE	0.60%
L10	233.13	N44°01'09"E	12" HDPE	0.60%
L11	110.97	S90°00'00"W	12" HDPE	0.60%
L12	93.01	S12°20'42"W	12" HDPE	0.60%
L13	91.43	N48°04'41"W	15" HDPE	0.60%
L14	279.51	S90°00'00"W	12" HDPE	0.60%

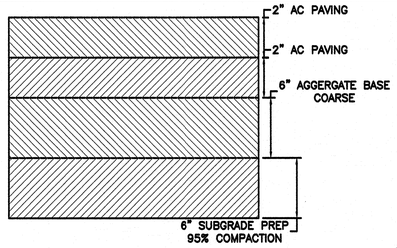
ROOF DRAIN LINE TABLE		
LINE	SIZE	INV @ MAIN SD LINE
RD-1	6" PVC	5073.88
RD-2	6" PVC	5074.13
RD-3	6" PVC	5074.35
RD-4	6" PVC	5074.71
RD-5	6" PVC	5075.00
RD-6	6" PVC	5075.29
RD-7	6" PVC	5075.80
RD-8	6" PVC	5075.52
RD-9	6" PVC	5074.41
RD-10	6" PVC	5074.41
RD-11	6" PVC	5074.41
RD-12	6" PVC	5071.89
RD-14	6" PVC	5071.89
RD-15	6" PVC	5071.89
RD-16	6" PVC	5071.89
RD-17	6" PVC	5071.89
RD-18	6" PVC	5074.41
RD-19	6" PVC	5074.10



PAVING SECTION–FOR DRIVEWAY AND PARKING AREA

NTS

FOR BIDDING PURPOSES ONLY SEE GEOTECH REPORT FOR SECTION



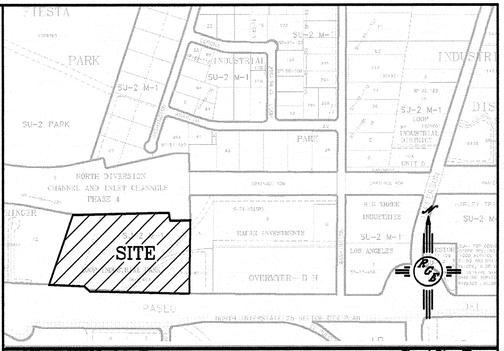
PAVING SECTION–FOR DECELERATION LANE

NTS

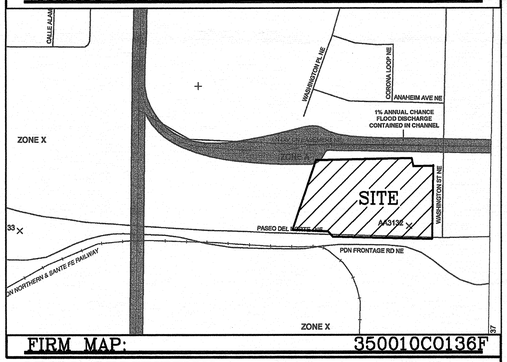
FOR BIDDING PURPOSES ONLY SEE NMDOT REQUIREMENTS FOR SECTION

EROSION CONTROL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN–OFF ON SITE DURING CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT–OF–WAY.
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL (CITY) ACCEPTANCE OF ANY PROJECT.



VICINITY MAP: C-17-Z



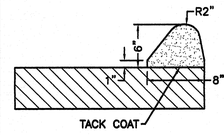
FIRM MAP: 350010C0136F

LEGAL DESCRIPTION:

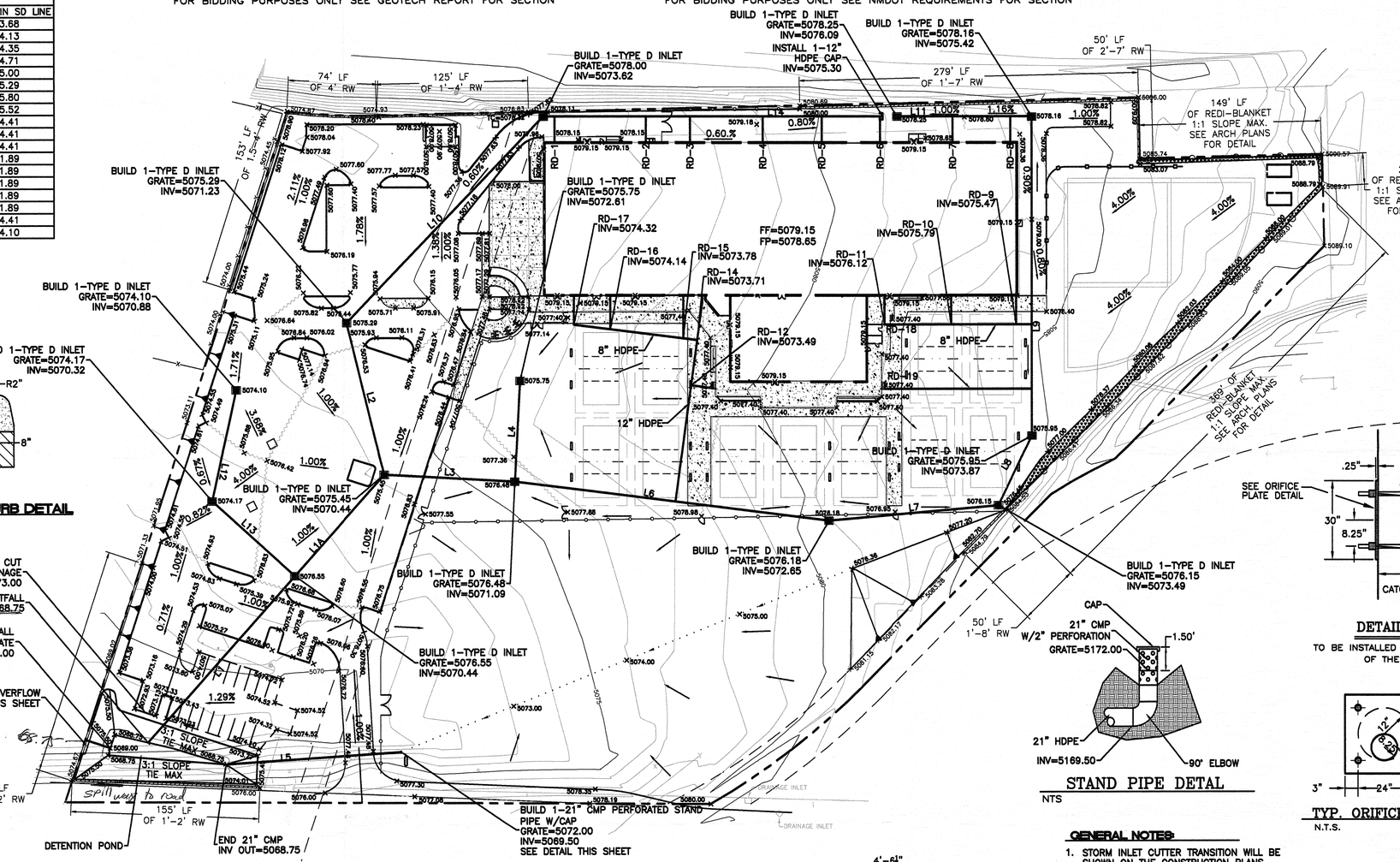
TRACT 1 AND 2, LOOP INDUSTRIAL PARK

NOTES:

1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.
2. ALL RETAINING WALLS TO BE DESIGNED BY OTHERS.

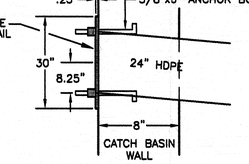


ASPHALT CURB DETAIL



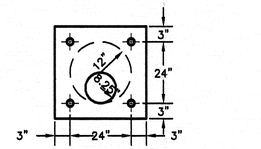
STAND PIPE DETAL

NTS



DETAIL A

TO BE INSTALLED @ THE OUTFLOW OF THE POND

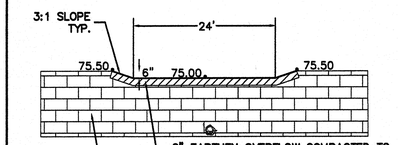


TYP. ORIFICE PLATE DETAIL

N.T.S.

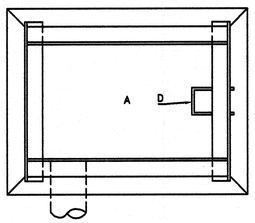
LEGEND

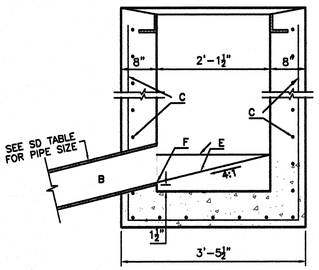
- EXISTING STORM SEWER MANHOLE
- EXISTING STORM SEWER INLET
- EX. 24" RCP — EXISTING STORM SEWER LINE
- 6" PVC — PROPOSED STORM SEWER LINE
- EXISTING FENCE
- EXISTING CURB & GUTTER
- PROPOSED CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- PROPOSED PERIMETER WALL
- PROPOSED RETAINING WALL
- 5411 EXISTING CONTOUR
- 5410 EXISTING INDEX CONTOUR
- FLOW ARROW
- SLOPE TIE
- 5048.25 PROPOSED SPOT ELEVATION
- 5048.25 EXISTING SPOT ELEVATION
- CENTERLINE
- RIGHT–OF–WAY
- PROPOSED POND

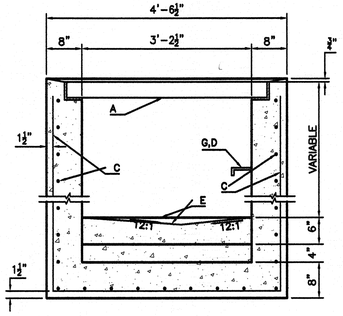


EMERGENCY SPILLWAY DETAIL

NTS







D INLET DETAIL

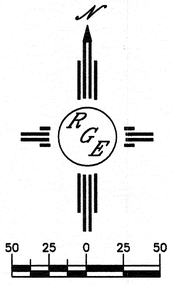
NTS

GENERAL NOTES:

1. STORM INLET CUTTER TRANSITION WILL BE SHOWN ON THE CONSTRUCTION PLANS.
2. OUTLET PIPE, PER DESIGN REQUIREMENT.
3. FOR FRAME & GRATING, SEE DWG. 2216, 2220 & 2221

CONSTRUCTION NOTES:

A. FRAME & GRATE
B. CUT ONE HORIZONTAL AND ONE VERTICAL BAR MAX. AT PIPE OPENING.
C. NO. 4 BARS @ 6" O.C. EACH WAY
D. USE STANDARD STEPS, SEE DWG 2229.
E. CONC. FILL, SEE NOTE C DWG 2201
F. INVERT PER DESIGN
G. INSTALL STEPS ON DOWNSTREAM FACE
H. CENTER SUPPORT ASSEMBLY



CAUTION:

EXISTING UTILITIES ARE NOT SHOWN. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATION TO DETERMINE THE ACTUAL LOCATION OF UTILITIES & OTHER IMPROVEMENTS.

3- provide excerpts from (C17-D19) denote allowable runoff
1. point spill to road
2. ~~Route~~ How deep
Water get out of pond?

RECEIVED
DEC 29 2004
FEB 0 5 2005
HYDROLOGY SECTION

ROUGH GRADING APPROVAL DATE

ENGINEER'S SEAL

DAVID SOULE NEW MEXICO 14522 REGISTERED PROFESSIONAL ENGINEER

DAVID SOULE P.E. #14522

PASEO SPORTS COMPLEX

GRADING AND DRAINAGE PLAN

Rio Grande Engineering
1606 CENTRAL AVENUE SE SUITE 201
ALBUQUERQUE, NM 87106
(505) 872-0999

DRAWN BY	WCWJ
DATE	1-27-05
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JOB #	2453

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