DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THIS PROJECT, LOCATED IN THE SOUTHEAST HEIGHTS IMMEDIATELY EAST OF ISOTOPES PARK AT THE NORTHWEST CORNER OF THE INTERSECTION OF AVENIDA CESAR CHAVEZ SE AND BUENA VISTA DRIVE SE, REPRESENTS A MODIFICATION TO AN EXISTING SITE WITHIN AN INFILL AREA. THE PURPOSE OF THIS PROJECT IS THREEFOLD:

- TO REMOVE THE EXISTING PARKING LOT ALONG BUENA VISTA DRIVE SE AND CONSTRUCT A SOUND WALL AND LANDSCAPING AT THE EAST EDGE OF THE SITE BETWEEN THE EXISTING CONCESSIONS BUILDING AND BUENA VISTA DRIVE SE
- TO CLOSE THE EXISTING DRIVEPAD SERVING THE BUENA VISTA PARKING LOT BEING REMOVED TO CONSTRUCT THE SOUND WALL AND LANDSCAPING
- CONSTRUCT A NEW PARKING LOT ENTRANCE (DRIVEPAD) AT THE SOUTHEAST CORNER OF THE SITE
- CONSTRUCT A PUBLIC SIDEWALK ALONG THE SOUTH EDGE OF THE SIDE ON THE NORTH SIDE OF AVENIDA CESAR CHAVEZ SE WITHIN APPARENT PUBLIC RIGHT-OF-WAY

THIS SUBMITTAL IS MADE IN SUPPORT OF BUILDING PERMIT APPROVAL WITHIN THE JURISDICTION OF THE CITY OF ALBUQUERQUE.

II. PROJECT DESCRIPTION

AS SHOWN BY THE VICINITY MAP, THE SITE IS LOCATED AT THE NORTHWEST CORNER OF THE INTERSECTION OF AVENIDA CESAR CHAVEZ SE AND BUENA VISTA DRIVE SE. THE CURRENT LEGAL DESCRIPTION IS TRACT CA, ALBUQUERQUE SPORTS COMPLEX. AS SHOWN BY PANELS 334 AND 353 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED BY FEMA FOR BERNALILLO COUNTY, NEW MEXICO, 2012, THIS SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE. FURTHERMORE, THE LARGE DIAMETER STORM DRAIN WITHIN AVENIDA CESAR CHAVEZ SE ALLOWS FOR THE FREE DISCHARGE OF DEVELOPED RUNOFF FROM THIS SITE, THE CONCEPT ESTABLISHED BY PRIOR SUBMITTALS.

III. BACKGROUND DOCUMENTS

THE PREPARATION OF THIS PLAN RELIED UPON THE FOLLOWING DOCUMENTS AND ACTIVITIES:

- RECORD GRADING AND DRAINAGE PLAN (PHASE 1) PREPARED BY THIS OFFICE (NMPE 8547) DATED 11-14-2005 AND 01-16-2006 AND CERTIFIED 05-08-2007. THIS REFERENCED PLAN PROVIDES THE BASIS FOR THE FREE DISCHARGE OF DEVELOPED RUNOFF FROM THIS SITE TO AVENIDA CESAR CHAVEZ SE. THE RECORD PLAN ALSO DEFINED THE CURRENT ONSITE DRAINAGE BASINS WITHIN THE SITE, QUANTIFIED THE EXISTING HYDROLOGY FOR THOSE BASINS AND ESTABLISHED THE AS-CONSTRUCTED LOCATIONS, SIZES AND CAPACITIES OF THE EXISTING ONSITE PRIVATE STORM DRAIN SYSTEM CONSTRUCTED AS PART OF PHASE 1
- TOPOGRAPHIC SURVEY PREPARED BY BOHANNAN HUSTON (NMPS 18331) DATED 07-08-12. THIS REFERENCED SURVEY PROVIDES THE EXISTING CONDITIONS FOR PORTIONS OF THE SITE
- SITE VISIT ON 09-03-2012 TO VERIFY EXISTING CONDITIONS BY VISUAL SITE INSPECTION.

IV. EXISTING CONDITIONS

THE SITE PRESENTLY CONSISTS OF TWO DRAINAGE BASINS. BASIN A DRAINS TO THE EXISTING ONSITE PRIVATE STORM DRAIN SYSTEM. IT CONSISTS OF SEVEN (7) SUB-BASINS AND DISCHARGES TO THE EXISTING PUBLIC STORM DRAIN IN AVENIDA CESAR CHAVEZ SE. BASIN B DISCHARGES BY SURFACE MEANS TO AVENIDA CESAR CHAVEZ SE. BASIN B CONSISTS OF THREE (3) SUB-BASINS.

NO APPARENT OFFSITE FLOWS ENTER THE SITE CONSISTENT WITH THE RECORD GRADING AND DRAINAGE PLAN FOR PHASE 1 REFERENCED ABOVE.

V. DEVELOPED CONDITIONS

THE PROPOSED CONSTRUCTION CONSISTS OF THE FOLLOWING:

- REMOVAL OF THE EXISTING PARKING LOT AT THE NORTHEAST CORNER OF THE SITE AND REPLACING THOSE IMPROVEMENTS WITH LANDSCAPING AND A SOUND WALL. THIS PROPOSED WORK WILL IMPACT SUB-BASIN B-1. SUB-BASIN B-1 DECREASE IN IMPERVIOUSNESS.
- CONSTRUCTION OF A NEW PARKING LOT ENTRANCE AT THE SOUTHEAST CORNER OF THE SITE. THIS WILL ALSO OCCUR IN SUB-BASIN B-1. SUB-BASIN B-1 WILL EXPEREINCE A NET DECREASE IN IMPERVIOUSNES AND THEREFORE A NET DECREASE IN DEVELOPED RUNOFF.
- CONSTRUCTION OF A SIDEWALK AT THE SOUTH EDGE OF THE SITE ALONG THE NORTH SIDE OF AVENIDA CESAR CHAVEZ WITHIN APPARENT PUBLIC RIGHT-OF-WAY. THIS WILL HAVE NO IMPACT ON THE ONSITE DRAINAGE BASINS. TO FACILITATE THE CONSTRUCTION OF THE SIDEWALK, MINOR GRADING OF THE AREA BEHIND THE CURB PLUS THE EXISTING UNDEVELOPED EARTHEN SLOPE ARE NECESSARY, THE GRADE SLOPE WILL BE STABILIZED WITH CRUSHED GRAVEL MULCH. THE GRADE SLOPE LIES WITHIN SUB-BASIN B-2.

NO IMPROVEMENTS OR CONSTRUCTION ARE PROPOSED WITHIN BASIN A OR SUB-BASIN B-3.

THE PROPOSED GRADING AND DRAINAGE WILL NOT CHANGE THE CONDITION OF OFFSITE FLOWS; NO APPARENT OFFSITE FLOWS ENTER THE SITE

VI. GRADING PLAN

THE GRADING PLAN SHOWS 1.) EXISTING GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS TAKEN FROM THE SURVEY BY BOHANNAN HUSTON (NMPS 18331), DATED 07-18-12, 2.) EXISTING STORM DRAIN IMPROVEMENTS TAKEN FROM THE RECORD GRADING AND DRAINAGE PALN CERTIFIED 05-08-2007 (NMPE 8547), 3.) PROPOSED GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS, 4.) THE LIMIT AND CHARACTER OF THE EXISTING AND PROPOSED IMPROVEMENTS, AND 5.) CONTINUITY BETWEEN EXISTING AND PROPOSED GRADES. AS SHOWN BY THIS PLAN, THE PROPOSED GRADING WILL CONTINUE THE PATTERN OF DISCHARGE TO THE EXISTING ONSITE PRIVATE STORM DRAIN SYSTEM WITHIN BASIN A AND WILL ALSO CONTINUE THE FREE DISCHARGE OF DEVELOPED RUNOFF FROM BASIN B BY SURFACE METHODS TO AVENIDA CESAR CHAVEZ SE. THE GRADING AND DRAINAGE CONCEPT PROPOSED BY THIS PLAN IS CONSISTENT WITH PREVIOUSLY APPROVED PLANS FOR THIS SITE.

VII. CALCULATIONS

THE CALCULATIONS CONTAINED HEREON ANALYZE THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT. THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS, AS SET FORTH IN THE REVISION OF SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA, DATED JANUARY 1993, HAS BEEN USED TO QUANTIFY THE PEAK RATE OF DISCHARGE AND VOLUME OF RUNOFF GENERATED. AS DEMONSTRATED BY THESE CALCULATIONS, THE PROPOSED PROJECT WILL RESULT IN THE FOLLOWING:

- NO CHANGE IN THE AMOUNT OF RUNOFF GENERATED BY BASIN A OR ITS SUB-BASINS
- DECREASE IN THE AMOUNT OF RUNOFF GENERATED BY SUB-BASIN B-1
- NO CHANGE IN THE AMOUNT OF RUNOFF GENERATED BY SUB-BASIN B-2
- NO CHANGE TO SUB-BASIN B-3 (NOT PART OF THIS PROJECT)
- NET DECREASE IN THE AMOUNT OF DEVELOPED RUNOFF GENERATED BY THE OVERALL SITE

VIII. CONCLUSIONS

THE FOLLOWING CONCLUSIONS HAVE BEEN ESTABLISHED AS A RESULT OF THE EVALUATIONS CONTAINED HEREIN:

1. THE PROPOSED IMPROVEMENTS REPRESENT MODIFICATIONS TO AN EXISTING SITE WITHIN AN INFILL AREA
2. THE PROPOSED IMPROVEMENTS WILL MAINTAIN EXISTING DRAINAGE PATTERNS AND CONCEPTS
3. THE PROPOSED DRAINAGE PATTERNS ARE CONSISTENT WITH PREVIOUSLY APPROVED DRAINAGE SUBMITTALS FOR THIS SITE
4. THE PROPOSED IMPROVEMENTS WILL RESULT IN A MINOR DECREASE IN TOTAL RUNOFF GENERATED BY THE OVERALL SITE
5. THE PROPOSED IMPROVEMENTS WILL NOT ADVERSELY IMPACT DOWNSTREAM PROPERTIES OR DOWNSTREAM DRAINAGE CONDITIONS
6. THE FREE DISCHARGE OF DEVELOPED RUNOFF IS APPROPRIATE BASED UPON THE PRECEDENT ESTABLISHED BY PRIOR SUBMITTALS

CALCULATIONS

I. SITE CHARACTERISTICS

A. PRECIPITATION ZONE = 2

B. $P_{6,100} = P_{360}$ = 2.35 IN

C. TOTAL PROJECT AREA (A_T) = 289,650 SF = 6.65 AC

II. HYDROLOGY

A. METHODOLOGY

VOLUME EQUATION

$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D)/A_T$

$V_{100} = (E_W/12)A_T$

PEAK DISCHARGE EQUATION

$Q_P = Q_{PA}A_A + Q_{PB}A_B + Q_{PC}A_C + Q_{PD}A_D$

B. EXISTING CONDITION

BASIN	A_T (SF/AC)	A_B (SF/AC)	A_C (SF/AC)	A_D (SF/AC)	V_{100} (AC-FT)	Q_{100} (CFS)	Q_{100} (CFS) CUM
A-1	26,154 / 0.60	300 / 0.01	0	25,854 / 0.59	0.10	2.80	2.80
A-2	11,475 / 0.26	0	0	11,475 / 0.26	0.05	1.22	4.02
A-3	11,475 / 0.26	0	0	11,475 / 0.26	0.05	1.22	5.24
A-4	13,939 / 0.32	0	0	13,939 / 0.32	0.06	1.50	6.47
A-5	25,560 / 0.59	0	0	25,560 / 0.59	0.10	2.77	9.51
A-6	73,927 / 1.70	0	0	73,927 / 1.70	0.30	7.99	17.50
A-7	37,629 / 0.86	0	0	37,629 / 0.86	0.15	4.04	21.54
B-1	78,408 / 1.80	8,690 / 0.20	0	69,718 / 1.60	0.30	7.98	N/A
B-2	110,209 / 2.53	0	101,819 / 2.34	8,390 / 0.19	0.24	8.15	N/A
B-3	113,256 / 2.60	0	113,256 / 2.60	0	0.24	8.16	N/A
TOTAL	502,029 / 11.5	8,990 / 0.2	223,465 / 5.1	269,580 / 6.2	1.6	45.8	N/A

C. DEVELOPED CONDITION

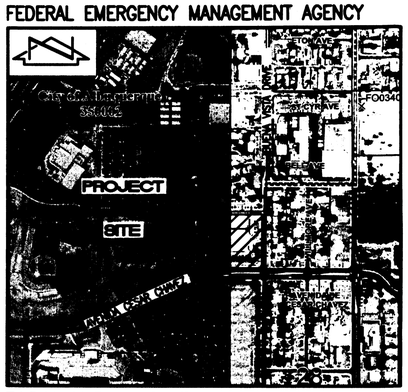
BASIN	A_T (SF/AC)	A_B (SF/AC)	A_C (SF/AC)	A_D (SF/AC)	V_{100} (AC-FT)	Q_{100} (CFS)	Q_{100} (CFS) CUM
A-1	NO CHANGE					2.80	2.80
A-2	NO CHANGE					1.22	4.02
A-3	NO CHANGE					1.22	5.24
A-4	NO CHANGE					1.50	6.47
A-5	NO CHANGE					2.77	9.51
A-6	NO CHANGE					7.99	17.50
A-7	NO CHANGE					4.04	21.54
B-1	78,408 / 1.80	16,350 / 0.38	0	62,058 / 1.42	0.27	7.54	N/A
B-2	NO CHANGE					8.16	N/A
B-3	BASIN NOT INCLUDED IN THIS PROJECT						

D. COMPARISON

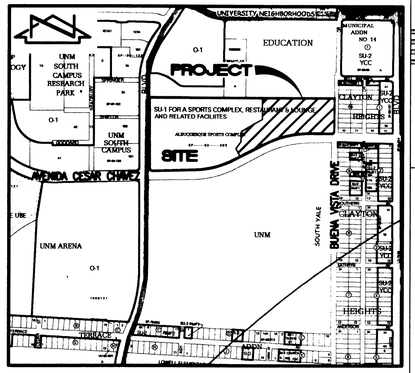
BASIN	VOLUME (AC-FT)			PEAK DISCHARGE (CFS)		
	EXIST	DEV	Δ	EXIST	DEV	Δ
A-1	NO CHANGE					
A-2	NO CHANGE					
A-3	NO CHANGE					
A-4	NO CHANGE					
A-5	NO CHANGE					
A-6	NO CHANGE					
A-7	NO CHANGE					
B-1	0.30	0.27	-0.03	7.98	7.54	-0.44
B-2	NO CHANGE					
B-3	BASIN NOT INCLUDED IN THIS PROJECT					
TOTAL			-0.03			-0.44

NOTE:
REFER TO SHEET C-6 FOR DRAINAGE BASIN BOUNDARIES

FEDERAL EMERGENCY MANAGEMENT AGENCY



F.I.R.M. MAP — PANEL 334 AND 353 OF 825
SCALE: 1" = 500' — DATED 8/16/2012 AND 9/26/2012



VICINITY MAP — L-15
SCALE: 1" = 750'

CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM 260-1990 (ALBUQUERQUE AREA), 1-800-321-ALERT(2537) (STATEWIDE), FOR LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INTERPRETATIONS IT MAKES WITHOUT FIRST CONTACTING THE ENGINEER AS REQUIRED ABOVE.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.
5. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE ENGINEER HAS CONDUCTED ONLY PRELIMINARY INVESTIGATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES. THIS INVESTIGATION IS NOT CONCLUSIVE, AND MAY NOT BE COMPLETE, THEREFORE, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
6. THE DESIGN OF PLANTERS AND LANDSCAPED AREAS IS NOT PART OF THIS PLAN. ALL PLANTERS AND LANDSCAPED AREAS ADJACENT TO THE BUILDING(S) SHALL BE PROVIDED WITH POSITIVE DRAINAGE TO AVOID ANY PONDING ADJACENT TO THE STRUCTURE. FOR CONSTRUCTION DETAILS, REFER TO LANDSCAPING PLAN.

EROSION CONTROL MEASURES:

1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY.
2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
3. WHEN APPLICABLE, CONTRACTOR SHALL SECURE "TOPSOIL DISTURBANCE PERMIT" FROM THE CITY AND/OR FILE A NOTICE OF INTENT (N.O.I.) WITH THE EPA PRIOR TO BEGINNING CONSTRUCTION.
4. UNLESS FINAL STABILIZATION IS OTHERWISE PROVIDED FOR, ANY AREAS OF EXCESS DISTURBANCE (TRAFFIC ACCESS, STORAGE YARD, EXCAVATED MATERIAL, ETC.) SHALL BE RE-SEEDED ACCORDING TO C.O.A. SPECIFICATION 1012 "NATIVE GRASS SEEDING". THIS WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION, THEREFORE, NO SEPARATE PAYMENT WILL BE MADE.

LEGAL DESCRIPTION:

TRACT CA, ALBUQUERQUE SPORTS COMPLEX.

CHERRY/SEE/REAMES ARCHITECTS, LLP
220 gold avenue sw albuquerque, nm 87102
505 - 842 - 1278 fax 505 - 766 - 9269

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
	BHI	7/8/12

BENCH MARK
NMSHC BRASS DISC SET IN A CONCRETE POST FLUSH WITH THE GROUND AND IS STAMPED "NM 47-29"
ELEVATION = 5000.02 FEET

AS BUILT INFORMATION

CONTRACTOR	DATE:
WORK STAKED BY	DATE:
INSPECTOR'S APPROVAL	DATE:
FIELD VERIFICATION BY	DATE:
DRAWING CORRECTED BY	DATE:

T.B.M.#1: 2" ALUMINIMUM CAP MARKED BH 12-374-01
ELEVATION = 5146.00 FEET
T.B.M.#2: 2" ALUMINIMUM CAP MARKED BH 12-374-02
ELEVATION = 5149.48

MICRO-FILM INFORMATION
RECORDED BY DATE:
NO.

G. MORTENSEN LEFFERTS NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER
05-15-2013

NO.	DATE	REVISIONS/REMARKS	BY
		DATE: 05/2013	
		DATE: 05/2013	
		DATE: 05/2013	

DESIGNED BY: J.G.M.
DRAWN BY: E.J.S.
CHECKED BY: J.G.M.

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2012.051.2

CITY OF ALBUQUERQUE
STRATEGIC PLANNING & DESIGN, PARKS & RECREATION DEPARTMENT

TITLE: DUKE CITY BMX PARK AREA
DRAINAGE PLAN AND CALCULATIONS

Design Review Committee	City Engineer Approval	Last Design Update	MO./DAY/YR.	MO./DAY/YR.

City Project No.	Zone Map No.	Sheet	Of
7213	L-15	C-5	

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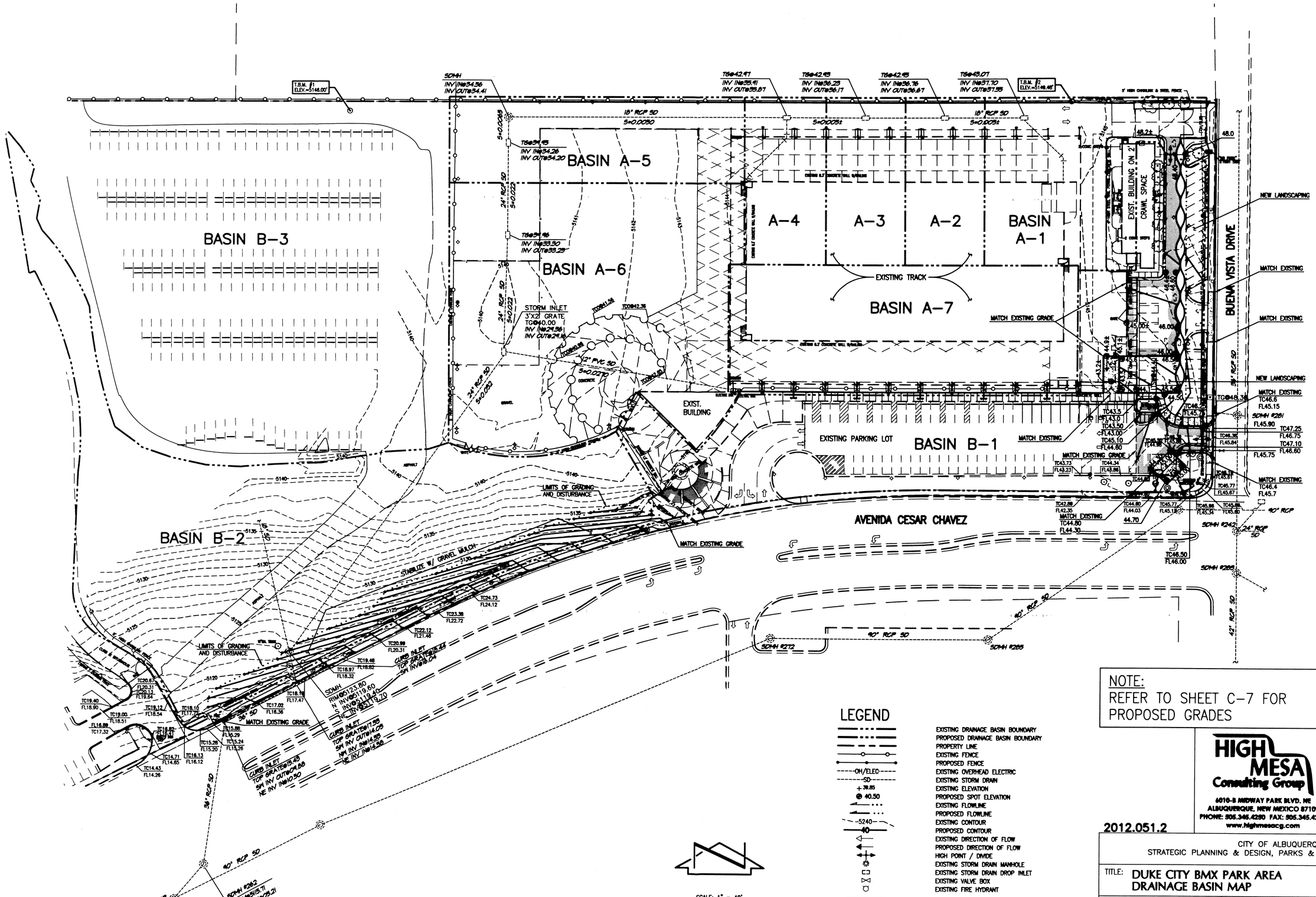
Plot Time: 3:19 pm



LEGEND

- EXISTING DRAINAGE BASIN BOUNDARY
- PROPOSED DRAINAGE BASIN BOUNDARY
- PROPERTY LINE
- EXISTING FENCE
- PROPOSED FENCE
- EXISTING OVERHEAD ELECTRIC
- EXISTING STORM DRAIN
- EXISTING ELEVATION
- PROPOSED SPOT ELEVATION
- EXISTING FLOWLINE
- PROPOSED FLOWLINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING DIRECTION OF FLOW
- PROPOSED DIRECTION OF FLOW
- HIGH POINT / DIVIDE
- EXISTING STORM DRAIN MANHOLE
- EXISTING STORM DRAIN DROP INLET
- EXISTING VALVE BOX
- EXISTING FIRE HYDRANT
- PROPOSED CONCRETE
- PROPOSED ASPHALT PAVING
- RECORD INFORMATION
- EXISTING TREE

SCALE: 1" = 40'

NOTE:
REFER TO SHEET C-7 FOR PROPOSED GRADES

NOTE:
THIS IS NOT A BOUNDARY SURVEY; BOUNDARY DATA IS SHOWN FOR ORIENTATION ONLY. THE BOUNDARY INFORMATION DEPICTED BY THIS PLAN IS BASED UPON THE TOPOGRAPHIC MAP PROVIDED BY BOHANNAN HUSTON, NMPS 18331, DATED 7-18-12. THE TOPOGRAPHIC INFORMATION DEPICTED HEREON IS BASED UPON THE TOPOGRAPHIC MAP PREPARED BY BOHANNAN HUSTON, NMPS 18331, DATED 07-18-12.

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File Name: 120512_C6.DWG | Plot Time: 3:21 pm

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SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
2004.068	BHI	7/8/12
	RECORD DRAWING	

BENCH MARK
NMSHC BRASS DISC SET IN A CONCRETE POST FLUSH WITH THE GROUND AND IS STAMPED "NM 47-29"
ELEVATION = 5000.02 FEET

T.B.M.#1: 2" ALUMINIUM CAP MARKED BH 12-374-01
ELEVATION = 5146.00 FEET

T.B.M.#2: 2" ALUMINIUM CAP MARKED BH 12-374-02
ELEVATION = 5149.48

AS BUILT INFORMATION
CONTRACTOR DATE:
WORK STAKED BY DATE:
INSPECTOR'S APPROVAL DATE:
FIELD VERIFICATION BY DATE:
DRAWING CORRECTED BY DATE:

MICRO-FILM INFORMATION
RECORDED BY DATE:
NO.

NO.	DATE	REVISIONS/REMARKS	BY
		DESIGNED BY: J.G.M. DATE: 05/2013	
		DRAWN BY: E.J.S. DATE: 05/2013	
		CHECKED BY: J.G.M. DATE: 05/2013	

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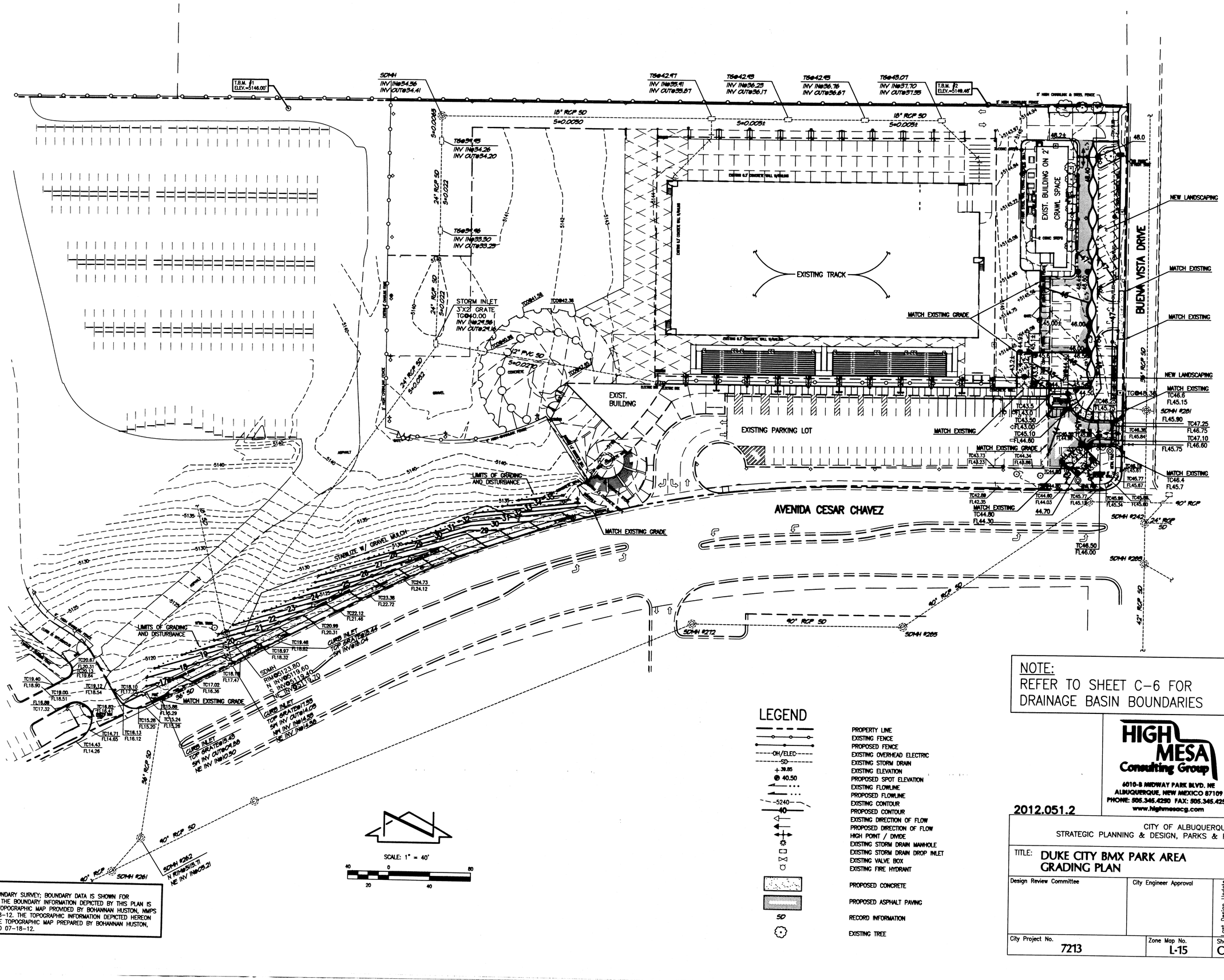
2012.051.2

CITY OF ALBUQUERQUE
STRATEGIC PLANNING & DESIGN, PARKS & RECREATION DEPARTMENT

TITLE: **DUKE CITY BMX PARK AREA DRAINAGE BASIN MAP**

Design Review Committee	City Engineer Approval	Last Design Update	MO./DAY/YR.	MO./DAY/YR.
City Project No. 7213	Zone Map No. L-15	Sheet C-6	Of	


T.B.M. #1
ELEV.=5146.00'
T.B.M. #2
ELEV.=5149.48'
SDMH
INV IN@34.36
INV OUT@34.41
T5@42.97
INV IN@35.91
INV OUT@35.87
T5@42.93
INV IN@36.28
INV OUT@36.17
T5@42.93
INV IN@36.76
INV OUT@36.67
T5@43.07
INV IN@37.70
INV OUT@37.55
18" RCP SD
S=0.0050
S=0.0056
S=0.0056
T5@34.93
INV IN@34.26
INV OUT@34.20
24" RCP SD
S=0.022
T5@34.46
INV IN@33.90
INV OUT@33.25
STORM INLET
3'X2' GRATE
TC@40.00
INV IN@24.36
INV OUT@24.16
12" PVC SD
S=0.0270
24" RCP SD
S=0.052
EXIST. BUILDING
EXISTING TRACK
EXISTING PARKING LOT
EXIST. BUILDING ON 2' CRAWL SPACE
BUENA VISTA DRIVE
AVENIDA CESAR CHAVEZ
NEW LANDSCAPING
MATCH EXISTING
MATCH EXISTING GRADE
LIMITS OF GRADING AND DISTURBANCE
STABILITE W/ GRAVEL MULCH
CURB INLET
TOP GRATE@15.43
SW INV OUT@14.09
SW INV IN@14.59
NE INV IN@14.50
CURB INLET
TOP GRATE@15.88
SW INV OUT@14.80
NE INV IN@14.90
SDMH
RIM@5123.80
N INV@5119.60
S INV@5119.70
NE INV@5119.70
SDMH #261
SDMH #262
N RIM@5115.71
NE INV IN@105.21
SDMH #272
SDMH #285
SDMH #286
SDMH #242
90" RCP SD
40" RCP SD
34" RCP SD
24" RCP SD
36" RCP SD
TC46.5
FL45.15
SDMH #281
FL45.90
TC47.25
FL46.75
TC47.10
FL46.60
FL45.75
TC46.50
FL46.00
TC46.4
FL45.7
TC46.25
FL45.75
TC46.38
FL45.88
TC45.10
FL44.60
TC43.5
FL43.0
TC43.50
FL43.00
TC44.34
FL43.86
TC42.88
FL42.35
TC44.80
FL44.03
44.70
MATCH EXISTING GRADE
MATCH EXISTING
TC44.80
FL44.30
TC43.73
FL43.23
TC45.77
FL45.67
TC45.96
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TC46.81
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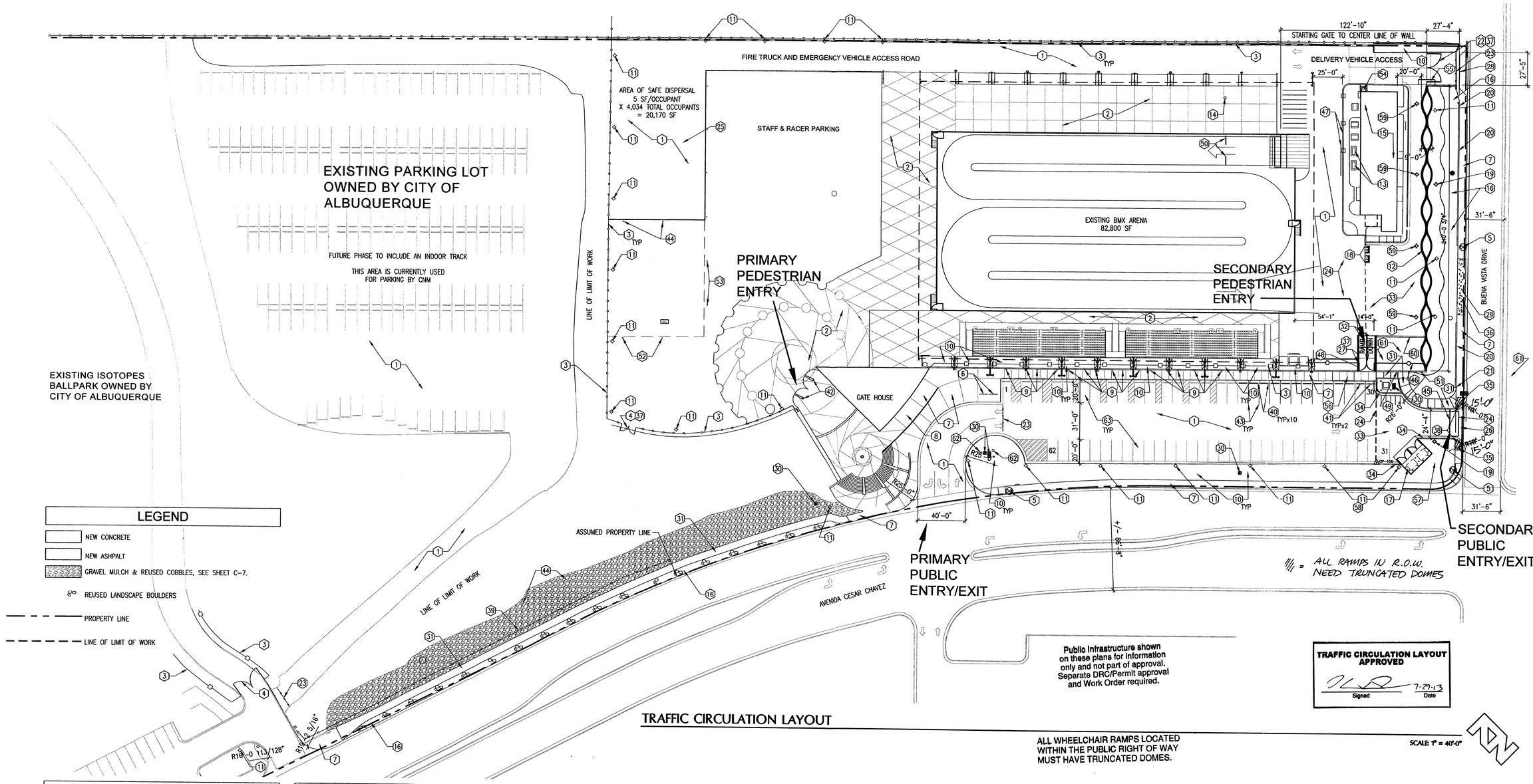
TC45.77
FL45.67



Public Infrastructure shown on these plans for information only and not part of approval. Separate DRC/Permit approval and Work Order required.

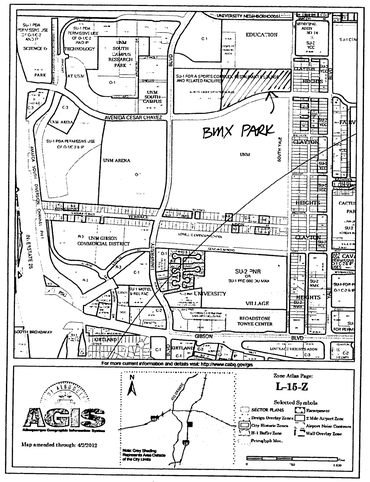
TRAFFIC CIRCULATION LAYOUT APPROVED

Signed 7-29-13 Date

TRAFFIC CIRCULATION LAYOUT

ALL WHEELCHAIR RAMPS LOCATED WITHIN THE PUBLIC RIGHT OF WAY MUST HAVE TRUNCATED DOMES.

SCALE 1" = 40'-0"



APPROVED PARKING CALCULATIONS (as of 11/2005)

NO NEW BUILDING AREAS ARE BEING ADDED.

3,287 OCCUPANTS

TOTAL PARKING REQUIRED:
3,287 / 4 = 821

TOTAL ACCESSIBLE PARKING REQUIRED:
16 ACCESSIBLE SPACES
3 OF WHICH MUST BE VAN ACCESSIBLE

TOTAL PARKING PROVIDED:
62 ON SITE PARKING SPACES
THE REMAINING 759 SPACES WILL BE PROVIDED THROUGH A SHARED PARKING AGREEMENT WITH UNM STADIUM PARKING ON THE SOUTH SIDE OF AVENIDA CESAR CHAVEZ

TOTAL ACCESSIBLE PARKING PROVIDED:
13 PERMANENT ACCESSIBLE SPACES
3 PERMANENT VAN ACCESSIBLE SPACES

BIKE SPACES REQUIRED:
CONDITION 3.c. OF THE EPC NOTICE OF DECISION DATED FEBRUARY 17, 2005 FOR PROJECT #1000500 STATES "The applicant shall provide a total of 25 bicycle parking spaces for both the Albuquerque Bicycle Park, Isotope Stadium..."

BIKE SPACES PROVIDED:
14 PROVIDED IN PHASE 1
THE REMAINING 11 WILL BE PROVIDED IN A FUTURE CONSTRUCTION PHASE.

SHEET KEYNOTES

1. EXISTING ASPHALT SURFACE TO REMAIN.
2. EXISTING 4" THICK CONCRETE PLAZA SURFACE TO REMAIN. REPAIR AS REQUIRED FOR DAMAGE CAUSED DURING CONSTRUCTION.
3. EXISTING CHAIN LINK FENCE TO REMAIN. REPAIR AS REQUIRED.
4. EXISTING CHAIN LINK GATE TO REMAIN.
5. EXISTING FIRE HYDRANT TO REMAIN. ALL SIDEWALKS TO HAVE 3'-0" MIN CLEARANCE AROUND HYDRANTS.
6. EXISTING STEEL PIPE BIKE RACK TO REMAIN.
7. EXISTING SIDEWALK TO REMAIN.
8. EXISTING HANDICAP RAMP TO REMAIN.
9. EXISTING HANDICAP PARKING SIGNS TO REMAIN.
10. EXISTING LANDSCAPING TO REMAIN.
11. EXISTING SITE LIGHT FIXTURE TO REMAIN.
12. NEW CMU HIGH SERPENTINE SOUND WALL AND PLANTER, 240'-0" LONG. SEE SHEETS A-101, A-201 AND A-301.
13. MECHANICAL UNITS TO REMAIN.
14. COMPRESSOR TO REMAIN.
15. EXISTING CONCESSIONS BUILDING TO REMAIN.
16. NEW LANDSCAPED AND VEGETATED GARDEN PARK AREA. SEE LANDSCAPE PLAN, SHEET L-101 AND L-102, FOR MULCH, PLANTINGS AND NEW TREES.
17. NEW DOUBLE REFUSE CONTAINER ENCLOSURE. SEE DETAILS B2 & B3/AS501. INSTALL SALVAGED DUMPSTERS, BOLLARDS AND GATES FROM OLD ENCLOSURE.
18. NEW BIKE RACKS SEE SHEET AS-501 FOR DETAILS.
19. RELOCATED EXISTING SITE LIGHT FIXTURE, SEE ELECTRICAL. MATCH EXISTING CONCRETE LIGHT BASE SIZE AND ANCHOR BOLTS.
20. EXISTING 3'-6" TALL CONCRETE SITE WALL TO REMAIN.
21. CUT CONCRETE WALL AND FOOTING AND REMOVE AT NEW EXIT AND WALKWAY AS REQUIRED. GRIND EXPOSED CUT SURFACE TO BE SMOOTH.
22. RELOCATE EXISTING GATE TO END OF CMU SERPENTINE SOUND WALL.
23. EXISTING PIPE VEHICLE ACCESS GATE.
24. LINE OF TRANSITION. BLEND NEW ASPHALT TO MEET EXISTING ASPHALT WITH SMOOTH TRANSITION.
25. AREA OF SAFE DISPERSAL AND SIGNAGE TO REMAIN AND BE ENLARGED, SEE KEYED NOTE 53 & 54.
26. NEW CURB CUT AND CONCRETE CURB AND GUTTER FOR VEHICLE ACCESS TO PARKING AREA. SEE CIVIL FOR GRADING AND DRAINAGE.
27. NEW CHAIN LINK FENCE WITH TWO 7'-0" GATES MOUNTED ON WHEELS. GATES MUST BE OPEN DURING BMX PARK PUBLIC ACTIVITIES. SEE DETAILS A2/AS501 & A3/AS501.
28. EXISTING NORTH DRIVE FOR USE BY EMERGENCY VEHICLES ONLY. ADD SINAGE AT GATE TO READ "EMERGENCY AND STAFF VEHICLES ONLY".
29. CLOSE EXISTING BUENA VISTA VEHICULAR ENTRANCE. PROVIDE SMOOTH TRANSITION BETWEEN NEW AND EXISTING CONCRETE SIDEWALKS, CURBS AND GUTTERS. PATCH ASPHALT AS REQUIRED. SEE DETAIL C3/AS501.
30. EXISTING VALVE BOX AND IRRIGATION SYSTEM TO REMAIN.
31. **NEW CONCRETE SIDEWALK. SEE CITY STANDARD DETAIL 2430. CONCRETE PAVEMENT AS PER CITY STANDARD DETAIL 2720. SEE LANDSCAPE PLAN ON SHEET L-102. EXPANSION JOINTS AT 18'-0", CONTROL JOINTS AT 6'-0".**
32. PROVIDE NEW 4" CONCRETE WALK, WITH 8" RETAINING WALL CURB ON EITHER SIDE. SLOPE WALK TO MEET ASPHALT LEVEL AT NEW CURB CUT. SLOPE NOT TO EXCEED 1:20. SEE DETAIL C1/AS501.
33. NEW 4" ASPHALT PAVING PER DETAIL C3/AS501.
34. NEW 6" CONCRETE CURB AND GUTTER. SEE DETAIL C2/AS501.
35. RAMP DOWN NEW SIDEWALK PER DETAIL A1/AS501.
36. **NEW CONCRETE SIDEWALK. SEE CITY STANDARD DETAIL 2430. CONCRETE PAVEMENT AS PER CITY STANDARD DETAIL 2720.**
37. PROVIDE A NEW SIGN STATING THESE GATES MUST REMAIN OPEN DURING OPERATIONAL HOURS.
38. **NEW CONCRETE SIDE WALK AT NEW CURB CUTS. RAMP UP PER CITY STANDARD DETAIL 2441.** AND 2426
39. REINSTALL CHAIN LINK FENCE 3'-0" FROM NEW SIDEWALK AFTER GRADING IS COMPLETE. MAKE FENCE REPAIRS AS REQUIRED.
40. RELOCATE EXISTING CONCRETE BUMPERS AS SHOWN. (10 BUMPERS).
41. PROVIDE AND INSTALL NEW CONCRETE CAR BUMPERS TO MATCH EXISTING. (2 NEW BUMPERS). NOTE: EXISTING CONCRETE BUMPERS IN NEW CONDITION MAY BE REPAINTED AND USED, SEE KEYNOTE 40.
42. EXISTING MAIN ENTRY GATES TO REMAIN.
43. RE-STRIPE FOR NEW SPACE LAYOUT AS SHOWN. PAINT OUT EXISTING STRIPES.
44. STABILIZE SLOPE WITH GRAVEL MULCH AND COBBLES REUSED FROM EAST END.
45. RELOCATE EXISTING PIPE VEHICLE ACCESS GATE TO NEW LOCATION SHOWN.
46. NEW CHAIN LINK FENCE, MATCH EXISTING HEIGHT, SEE A2/AS501.
47. CURB, RAILING AND BIKE RACKS TO REMAIN.
48. POUR NEW SIDEWALK. CUT EXISTING WALL AS REQUIRED TO POUR NEW SIDEWALK OVER.
49. NEW 8" CURBS, MATCH EXISTING HEIGHT, SIM C1/AS501.
50. STARTER LIGHTS TO REMAIN.
51. NEW 8" CONCRETE CURB, DTL C1/AS501 SIM.
52. RESET AREA OF SAFE DISBURSAL SIGNS.
53. ADD NEW AREA OF SAFE DISPERSAL SIGN AND BOLLARD TO MATCH EXISTING. SEE DETAIL B5/AS501.
54. PROVIDE A NEW SLOPED HINGED WOOD COVER CLAD IN GALVANIZED METAL WITH A HASPED PAD LOCK TO THE CRAWL SPACE.
55. REPLACE 6" CONCRETE DRIVE.
56. REMOVE 15' OF SIDEWALK AND RE-POUR TO SHALLOWER SLOPE FROM TOP RAMP TO EXISTING SIDEWALK.
57. RETAIN AS MUCH OF THE EXISTING LANDSCAPING IN THE AREA AS POSSIBLE. CUT AND REPAIR SPRINKLER LINES AS NEEDED TO RETAIN THE LANDSCAPING.
58. LOCATE POWER LINE PRIOR TO EXCAVATION FOR NEW DUMPSTER PADS & WALLS. PROTECT ELECTRICAL LINE DURING CONSTRUCTION.
59. NEW LIGHT FIXTURES, SEE ELECTRICAL.
60. 12" WIDE X 6" DEEP CONCRETE MOW STRIP.
61. 4" DEEP CRUSHER FINES.
62. EXISTING IRRIGATION CONTROLLER TO REMAIN.
63. **TYPICAL PARKING SPACE COMPLIES WITH CITY OF ALBUQUERQUE DPM FIGURE 23.7.1. 9'-0" X 20'-0" WITH 5'-0" WIDE ACCESS AISLES TYP HC, AND 8'-0" WIDE ACCESS AISLES FOR VANS.**

GENERAL PROJECT NOTES

1. THE ASSUMED PROPERTY LINES SHOWN ON THE PLANS ARE FROM THE BERNALILLO GIS PARCELS AND ARE FOR INFORMATION ONLY. NO BOUNDARY SURVEY IS AVAILABLE.
2. THE TRACK MUST BE OPERATIONAL DURING THE CONSTRUCTION, THE CONTRACTOR MUST COORDINATE ACTIVITIES WITH THE CITY OF ALBUQUERQUE PARKS AND RECREATION DEPARTMENT AND DUKE CITY BMX.
3. THE CONTRACTOR MUST FENCE THE WORK SITES FROM THE GENERAL PUBLIC DURING CONSTRUCTION BUT MUST NOT FENCE OFF ANY PUBLIC EXIT WAYS. ALL PUBLIC RESTROOMS ARE TO REMAIN OPEN DURING CONSTRUCTION.
4. **ALL NEW AND EXISTING SIDEWALKS TO HAVE A MINIMUM OF 3'-0" CLEAR SIDEWALK AROUND FIRE HYDRANTS.**
5. **ALL NEW SITE RAMPS ARE LESS THAN 1:20 SLOPE.**

NO.	DATE	REVISIONS/REMARKS	BY
		DESIGNED BY: DJS	DATE: 7/16/2013
		DRAWN BY: FAA & RCB	DATE: 7/16/2013
		CHECKED BY: TMR	DATE: 7/16/2013

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

BENCH MARK

AS BUILT INFORMATION

	DATE:
CONTRACTOR	
WORK STAKED BY	DATE:
INSPECTOR'S APPROVAL	DATE:
FIELD VERIFICATION BY	DATE:
DRAWING CORRECTED BY	DATE:
MICRO-FILM INFORMATION	
RECORDED BY	DATE:
NO.	

CHERRY/SEE/REAMES ARCHITECTS, PC
220 gold avenue sw albuquerque, nm 87102
505 - 842 - 1278 fax 505 - 766 - 9269

STATE OF NEW MEXICO TINA M. REAMES NO. 3772 REGISTERED ARCHITECT 7/23/13

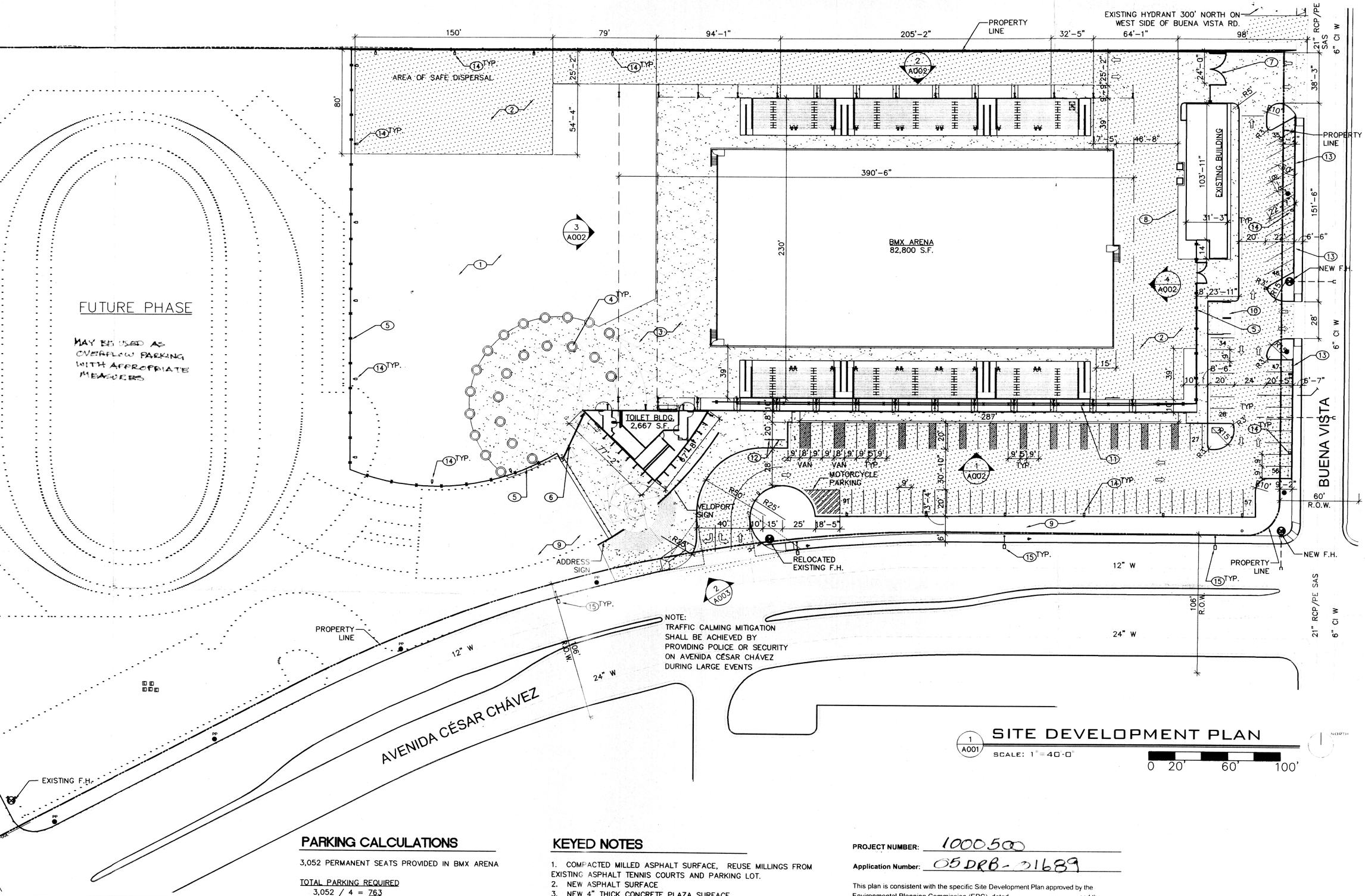
CITY OF ALBUQUERQUE
STRATEGIC PLANNING AND DESIGN DIVISION
PARKS AND RECREATION DEPARTMENT

TITLE: **DUKE CITY BMX PARK AREA SITE PLAN**

Design Review Committee	City Engineer Approval	Last Design Update	NO./DWG'YR.	NO./DWG'YR.

City Project No.	Zone Map No.	Sheet	Of
7213	L-15-Z	TCL101	

X:\U4-Current\COA On-Call\04BMX Park\02 Design\Drawings\3 CD-AS\BMX TCL.dwg, 7/16/2013 12:45:33 PM, ARCH D (24"x36"), 1:1

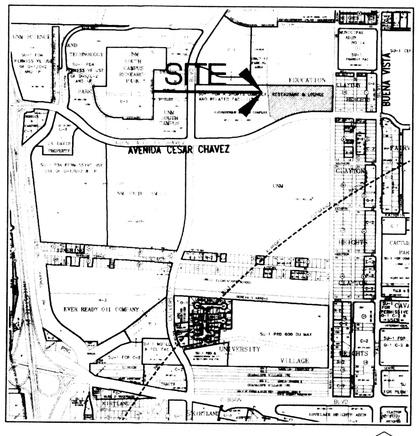


SITE DEVELOPMENT PLAN

1/A001 — SCALE: 1"=40'-0"

0 20' 60' 100'

NORTH



VICINITY MAP – L-15-Z

NORTH

PARKING CALCULATIONS

3,052 PERMANENT SEATS PROVIDED IN BMX ARENA

TOTAL PARKING REQUIRED
3,052 / 4 = 763

TOTAL ACCESSIBLE PARKING REQUIRED
16 ACCESSIBLE SPACES
3 OF WHICH MUST BE VAN ACCESSIBLE

TOTAL PARKING PROVIDED
91 ON SITE PARKING SPACES
THE REMAINING 672 SPACES WILL BE PROVIDED THROUGH A SHARED PARKING AGREEMENT WITH UNM STADIUM PARKING ON THE SOUTH SIDE OF AVENIDA CESAR CHAVEZ

TOTAL ACCESSIBLE PARKING PROVIDED
13 PERMANENT ACCESSIBLE SPACES
3 PERMANENT VAN ACCESSIBLE SPACES
10 TEMPORARY ACCESSIBLE SPACES

BIKE SPACES REQUIRED
CONDITION 3.c. OF THE EPC NOTICE OF DECISION DATED FEB. 17, 2005 FOR PROJECT #1000500 STATES "The applicant shall provide a total of 25 bicycle parking spaces for both the Albuquerque Bicycle Park, Isotope Stadium..."

BIKE SPACES PROVIDED
14 PROVIDED IN PHASE 1
THE REMAINING 11 WILL BE PROVIDED IN A FUTURE CONSTRUCTION PHASE

KEYED NOTES

1. COMPACTED MILLED ASPHALT SURFACE, REUSE MILLINGS FROM EXISTING ASPHALT TENNIS COURTS AND PARKING LOT.
2. NEW ASPHALT SURFACE
3. NEW 4" THICK CONCRETE PLAZA SURFACE
4. 7'-8" DIAMETER RAISED TREE WELL/BENCH, REF. LANDSCAPE PLAN
5. NEW 6' HIGH CHAIN LINK FENCE
6. NEW 10' HIGH CUSTOM DESIGN PIVOT GATES
7. NEW 6' CHAIN LINK VEHICLE ACCESS GATE
8. NEW RETAINING WALL AROUND EXISTING BUILDING
9. PLANTING AREA, REF. LANDSCAPE PLAN
10. DOUBLE REFUSE CONTAINER ENCLOSURE, LOCATION APPROVED BY MICHAEL HOLTON ON 10.19.05, REF. DTL. 5/A003
11. 8' HIGH CHAIN LINK FENCE WITH BLACK PLASTIC COATING, DOUBLE LINES INDICATED SLOPING FENCE IN PLAN VIEW
12. STEEL PIPE BIKE RACK, SPACE FOR 7 BIKES
13. PROVIDE 3' HIGH CMU SCREEN WALL WITH STUCCO FINISH
14. NEW POLE MOUNTED SITE LIGHT, REF. DTL 3/A003
15. EXISTING STREET LIGHTS ALONG AVENIDA CÉSAR CHÁVEZ

PROJECT NUMBER: 1000500

Application Number: 05DRB-01689

This plan is consistent with the specific Site Development Plan approved by the Environmental Planning Commission (EPC), dated _____ and the Findings and Conditions in the Official Notification of Decision are satisfied.

Is an Infrastructure List required? ( ) Yes (X) No If yes, then a set of approved DRC plans with a work order is required for any construction within Public Right-of-Way or for construction or public improvements.

DRB SITE DEVELOPMENT PLAN SIGNOFF APPROVAL:

Traffic Engineering, Transportation Division	11-15-05 Date
William J. Balch, Water Utility Department	11/9/05 Date
Christina Sandoval, Parks and Recreation Department	11/9/05 Date
Bradley L. Bingham, City Engineer	11/9/05 Date
N/A, * Environmental Health Department (conditional)	Date
Michael Holton, Solid Waste Management	11/16/05 Date
DRB Chairperson, Planning Department	11/09/05 Date

NOVEMBER 8, 2005

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

BENCH MARK
ALL ELEVATIONS ARE BASED UPON ALBUQUERQUE CONTROL SURVEY MONUMENT: 7-L15

AS BUILT INFORMATION

CONTRACTOR	DATE:
WORK STAKED BY	DATE:
INSPECTOR'S APPROVAL	DATE:
FIELD VERIFICATION BY	DATE:
DRAWING CORRECTED BY	DATE:
MICRO-FILM INFORMATION	
RECORDED BY	DATE:
NO.	

ARCHITECTS STAMP

NO.	DATE	REVISIONS/REMARKS	BY

DESIGNED BY: DATE:
DRAWN BY: DATE:
CHECKED BY: DATE:

Kells + Craig
Architects, Inc. AIA
400 Gold SW
Suite 880
Albuquerque, New Mexico 87102
(505) 243-2724

ARCHITECT

CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: SITE DEVELOPMENT PLAN FOR BUILDING PERMIT
ALBUQUERQUE BICYCLE PARK PH. 1

Design Review Committee	City Engineer Approval	Design Review Update	MO/DAY/YR	MO/DAY/YR

City Project No. 7345-02

Zone Map No. L-15-Z

A01

DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THIS PROJECT, LOCATED IN THE LOWER SOUTHEAST HEIGHTS REPRESENTS THE DEVELOPMENT OF AN INFILL PROPERTY OWNED BY THE CITY OF ALBUQUERQUE. THE SITE LIES IMMEDIATELY EAST OF THE ISOTOPES BALL PARK. THE DRAINAGE CONCEPT FOR THIS PROJECT WILL BE THE FREE DISCHARGE OF DEVELOPED RUNOFF TO AVENIDA CESAR CHAVEZ SE WHERE A MAJOR PUBLIC STORM DRAIN LIES. THE EXISTING PUBLIC STORM DRAIN COLLECTS RUNOFF CARRIED BY THE STREET AND CONVEYS THAT RUNOFF WEST TO THE SOUTH DIVERSION CHANNEL.

THIS SUBMITTAL IS MADE IN SUPPORT OF WORK ORDER AND BUILDING PERMIT WITHIN THE JURISDICTION OF THE CITY OF ALBUQUERQUE. THIS PLAN SUPERCEDES THE PRIOR CONCEPTUAL PLAN DATED 12-17-2004.

II. PROJECT DESCRIPTION

AS SHOWN BY THE VICINITY MAP, THE SITE IS LOCATED ON THE NORTH SIDE OF AVENIDA CESAR CHAVEZ BETWEEN UNIVERSITY BLVD. SE AND BUENA VISTA DRIVE SE. AT PRESENT, THE SITE IS UNDEVELOPED. THE LAND IMMEDIATELY TO THE WEST IS DEVELOPED AS ISOTOPES BALL PARK. THE LAND TO THE NORTH IS INSTITUTIONAL (TVI AND UNM). THE LAND TO THE EAST IS DEVELOPED AS CITY TENNIS COURTS. AS SHOWN BY PANEL 334 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED BY FEMA FOR BERNALILLO COUNTY, NEW MEXICO, AND INCORPORATED AREAS DATED SEPTEMBER 20, 1996, THIS SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE (ZONE AO). AN AO ZONE IS MAPPED DOWNSTREAM, HOWEVER, IT IS BELIEVED THAT THE MORE RECENT STORM DRAIN IMPROVEMENTS WITHIN AVENIDA CESAR CHAVEZ (FORMERLY STADIUM BLVD.) HAVE ALLEVIATED THE DOWNSTREAM FLOODING.

III. BACKGROUND DOCUMENTS & RESEARCH

THE FOLLOWING ITEMS WERE REVIEWED IN THE PREPARATION OF THIS SUBMITTAL:
A. TOPOGRAPHIC SURVEY OF THE EXISTING SITE PREPARED BY WILSON & CO. DATED 10/21/2004. THE SUBJECT SURVEY SHOWS THE EXISTING IMPROVEMENTS.
B. PRE-DESIGN CONFERENCE WITH THE CITY HYDROLOGIST 08/24/2004. THE OUTCOME OF THAT RECAP CONFIRMED THAT FREE DISCHARGE TO AVENIDA CESAR CHAVEZ IS APPROPRIATE IN LIGHT OF THE RECENT DRAINAGE IMPROVEMENTS TO UNIVERSITY BLVD SE AND AVENIDA CESAR CHAVEZ SE.
C. CONCEPTUAL GRADING AND DRAINAGE PLAN (L15/D13A) PREPARED BY THIS OFFICE DATED 12-17-2004. THIS PRIOR SUBMITTAL ESTABLISHED THE DRAINAGE CRITERIA (FREE DISCHARGE) FOR THIS SITE.

IV. EXISTING CONDITIONS

THE TOPOGRAPHIC DATA PRESENTED HEREWITH, TAKEN FROM THE ABOVE REFERENCED SURVEY BY WILSON & CO., DEMONSTRATES THE EXISTING CONDITIONS OF THE PROJECT SITE. AT PRESENT, THE SITE IS PARTIALLY DEVELOPED WITH CITY TENNIS COURTS AND LIMITED ASPHALT PAVING. THE SITE CURRENTLY DRAINS FROM EAST TO WEST WITH MUCH OF THE DEVELOPED FLOW BEING DIRECTED INTO A TEMPORARY DETENTION POND. IT IS BELIEVED THAT THE TEMPORARY POND WAS CREATED TO MITIGATE THE DISCHARGE OF EXCESS RUNOFF ONTO THE ISOTOPES BALL PARK. THE SITE IS SITUATED TOPOGRAPHICALLY HIGHER THAN AVENIDA CESAR CHAVEZ SE AND AS SUCH DRAINS TO THAT PUBLIC ROADWAY. ISOTOPES BALL PARK IS TOPOGRAPHICALLY LOWER AN HENCE DOES NOT CONTRIBUTE OFFSITE FLOWS. THE INSTITUTIONAL DEVELOPMENT TO THE NORTH HAS BEEN GRADED SUCH THAT IT DOES NOT DRAIN ONTO THE SUBJECT SITE. ITS FLOWS ARE DIRECTED WEST AND EVENTUALLY DISCHARGE TO UNIVERSITY BLVD SE. BUENA VISTA DRIVE LIES TO THE EAST AND APPEARS TO CONTAIN ITS FLOWS AND AS SUCH IS NOT BELIEVED TO CONTRIBUTE OFFSITE FLOWS.

V. PROPOSED CONDITIONS (PHASE 1)

THE PROPOSED IMPROVEMENTS CONSIST OF A BMX TRACK, A NEW BUILDING, PARKING IMPROVEMENTS, PEDESTRIAN PAVING AND ASSOCIATED LANDSCAPING. IN ORDER TO LOCATE THE ABOVE REFERENCED IMPROVEMENTS ON THE SITE, THE EXISTING TENNIS COURTS AND RELATED IMPROVEMENTS MUST BE DEMOLISHED. THE TEMPORARY DETENTION POND WILL REMAIN. THE EXISTING BUILDING AT THE NORTHEAST CORNER WILL BE RENOVATED.
FOR THE PURPOSES OF ANALYSIS, THE SITE HAS BEEN DIVIDED INTO TWO (2) BASIC DRAINAGE AREAS. BASIN A DRAINS INTERNALLY TO A PRIVATE STORM DRAIN SYSTEM THAT ULTIMATELY DISCHARGES TO THE AVENIDA CESAR CHAVEZ STORM DRAIN. PRESENTLY, THE TEMPORARY DETENTION POND OUTLETS TO THE AVENIDA CESAR CHAVEZ STORM DRAIN VIA AN 18-INCH STORM DRAIN CONNECTION TO THE BACK OF A EXISTING STORM INLET IN THE NORTH CURB LINE OF THE ROADWAY. THAT CONNECTION WILL BE UTILIZED FOR THE DISCHARGE OF RUNOFF FROM BASIN A AND ITS SUB-BASINS A-1 THROUGH A-6. THE RUNOFF WILL FLOW A CROSS THE NEW PARKING LOT TO EVENTUALLY DISCHARGE TO AVENIDA CESAR CHAVEZ.
BASIN B IS AN EXISTING CONDITION WHERE NO CHANGES ARE PROPOSED. BASIN B INCLUDES THE EXISTING DETENTION POND.

VI. GRADING PLAN

THE GRADING PLAN SHOWS 1.) EXISTING GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS TAKEN FROM THE SURVEY BY WILSON & CO. REFERENCED ABOVE, 2.) PROPOSED GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS, 3) THE LIMIT AND CHARACTER OF THE EXISTING IMPROVEMENTS TAKEN FROM THE SURVEY BY WILSON & CO. REFERENCED ABOVE, 4.) THE LIMIT AND CHARACTER OF THE PROPOSED IMPROVEMENTS, AND 5.) CONTINUITY BETWEEN EXISTING AND PROPOSED GRADES. AS SHOWN BY THIS PLAN, THE SITE WILL DRAIN BY VARIOUS MEANS. BASIN A, AS INDICATED ABOVE, WILL DRAIN VIA AN INTERNAL PRIVATE STORM DRAIN SYSTEM INTEGRATED WITH A WATER HARVESTING FEATURE. BASIN B WILL CONTINUE TO DRAIN IN THE EXISTING CONDITION UNTIL A SUBSEQUENT PHASE DEVELOPS ON THIS REMAINING PORTION OF THE SITE.

VII. CALCULATIONS

THE CALCULATIONS THAT APPEAR HEREON ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS, FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT. THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS, AS SET FORTH IN THE REVISION OF SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA, DATED JANUARY 1993, HAS BEEN USED TO QUANTIFY THE PEAK RATE OF DISCHARGE AND VOLUME OF RUNOFF GENERATED. THE RESULTS OF THE CALCULATIONS FOR THE DEVELOPED CONDITION ARE PRESENTED IN TABLE FORM. KEY ANALYSIS POINTS, SHOWN ON THE DRAINAGE BASIN MAP PLAN, ARE FURTHER ANALYZED IN ORDER THAT THE PROPOSED PRIVATE STORM DRAIN BE SIZED APPROPRIATELY. THE MANNING EQUATION WAS USED TO EVALUATE PIPE SIZES AND RELATED CAPACITIES. AS A RESULT OF THIS ANALYSIS, THE TOTAL PEAK DISCHARGE CALCULATED FOR BASIN A (16.95 CFS) WILL NOT EXCEED THE CAPACITY (44.4 CFS) OF THE EXISTING 18-INCH STORM DRAIN CONNECTION TO AVENIDA CESAR CHAVEZ.

VIII. CONCLUSIONS

THE FOLLOWING CONCLUSIONS HAVE BEEN ESTABLISHED AS A RESULT OF THE EVALUATIONS CONTAINED HEREIN:
1. THIS SUBMITTAL FOLLOWS THE DRAINAGE CONCEPTS ESTABLISHED BY THE PREVIOUSLY APPROVED CONCEPTUAL PLAN
2. THE SITE DOES NOT LIE WITHIN A DESIGNATED 100-YEAR FLOODPLAIN
3. THIS SITE IS NOT RESTRICTED BY LIMITED OR INADEQUATE DOWNSTREAM CAPACITY
4. THE INCREASED RUNOFF FROM THIS SITE WILL BE HANDLED BY THE EXISTING DOWNSTREAM PUBLIC DRAINAGE IMPROVEMENTS THAT ULTIMATELY DISCHARGE TO THE SOUTH DIVERSION CHANNEL
5. THIS SUBMITTAL IS FOR BUILDING PERMIT APPROVAL.
6. SITE SPECIFIC DRAINAGE SUBMITTALS WILL BE REQUIRED FOR SUBSEQUENT PHASES OF CONSTRUCTION
7. OFFSITE FLOWS DO NOT IMPACT THIS SITE

CALCULATIONS

I SITE CHARACTERISTICS

A) PRECIPITATION ZONE = 2

B) P6,100 = P360 = 2.35 INCHES

C) TOTAL AREA (AT) = 50,1900 SF/11.52 ACRES

D) EXISTING LAND TREATMENT

TREATMENT AREA (SF/AC) %

a) TREATMENT B = 7,525/0.17 02
b) TREATMENT C = 316,573/7.27 63
c) TREATMENT D = 177,802/4.08 35

II EXISTING CONDITION

A) VOLUME
i) WEIGHTED E (EW) = (EAAA+EBAB+ECAC+EDAD)/AT
ii) EW = [0.78(0.17)+1.13(7.27)+2.12(4.08)]/11.52 = 1.48
iii) V360 = EW * AT /12
iv) V360 = 1.48 * 11.52/12 = 1.42 ACRE-FEET = 61,890 CUBIC FEET

B) PEAK DISCHARGE
i) TOTAL QP = QPAAA+QPBAB+ QPCAC+QPDAD
ii) TOTAL QP = 2.28(0.17)+3.14(7.27)+4.70(4.08) = 42.4 CFS

III DEVELOPED CONDITION
THE DEVELOPED CONDITION HAS BEEN INCORPORATED INTO A TABLE FORMAT AS PRESENTED BELOW.

PHASE 1 BASIN ANALYSIS

BASINS	A_T(SF/AC)	A_B(SF/AC)	A_C(SF/AC)	A_D(SF/AC)	V_{100}(AC-FT)	Q_{100}(CFS)	Q_{100}(CFS) CUM
A-1	26,154/0.60	300/0.01		25,854/0.59	0.10	2.80	2.80
A-2	11,475/0.26			11,475/0.26	0.05	1.22	4.02
A-3	11,475/0.26			11,475/0.26	0.05	1.22	5.24
A-4	13,939/0.32			13,939/0.32	0.06	1.50	6.74
A-5	25,560/0.59			25,560/0.59	0.10	2.77	9.51
A-6	73,927/1.70			73,927/1.70	0.30	7.99	17.50
A-7	37,629/0.86			37,629/0.86	0.15	4.04	21.54
B-1	113,256/2.60		113,256/2.60		0.24	8.16	
B-2	110,209/2.53		110,209/2.53		0.24	8.15	
B-3	78,408/1.80	8,890/0.20		69,718/1.60	0.30	7.98	
TOTAL	502,029/11.5	8,990/0.2	223,465/5.1	269,580/6.2	1.6	45.8	

IV COMPARISON

a) VOLUME

△V100 = 1.57-1.42 = 0.15 AC-FT

b) PEAK DISCHARGE

△Q100 = 45.2-42.4 = 2.8 CFS

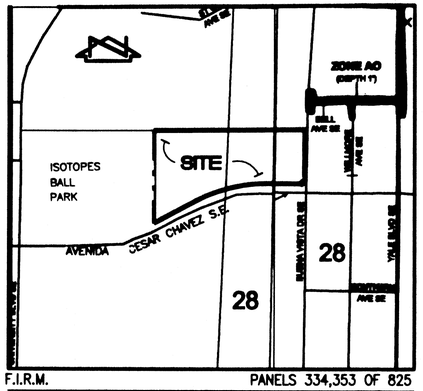
DRAINAGE STRUCTURE SUMMARY TABLE PHASE 1

KEY *	AP	STRUCTURE	RIM/TG	INV. IN	INV. OUT
1	#1	EXIST. SDMH	5123.09'✓	~~.04~~ 5119.80'	~~18.34~~ ~~5118.74~~
2	#2	SINGLE 'D' INLET * *	5140.00'✓	~~24.56~~ 5134.65'	~~24.16~~ ~~5130.95~~
3	N/A	SINGLE 'D' INLET * *	~~24.46~~ 5140.00'	~~29.30~~ ~~5132.61~~	~~28.25~~ ~~5132.71~~
4	#3	SINGLE 'D' INLET * *	~~24.45~~ 5140.00'	~~28~~ 5134.05'	~~24.20~~ ~~5133.95~~
5	#4	4' SDMH * * *	~~.41~~ 5140.78'	~~56~~ 5134.25'	~~41~~ 5134.95'
6	#5	SINGLE 'D' INLET * *	~~42.47~~ 5143.00'	~~58.41~~ ~~5136.75~~	~~87~~ 5135.85'
7	#6	SINGLE 'D' INLET * *	~~42.45~~ 5143.00'	~~23~~ 5136.20'	~~17~~ 5136.35'
8	#7	SINGLE 'D' INLET * *	~~42.45~~ 5143.00'	~~78~~ 5136.75'	~~67~~ 5136.68'
9	#8	SINGLE 'D' INLET * *	~~.07~~ 5143.00'	~~70~~ 5137.25'	~~55~~ 5137.35'
10	#9	~~DELETE SDMH & REPLACE W/ 12" 11 1/4° ELL 4' SDMH * * *~~	~~N/A 5143.70'~~	~~5136.70 5130.70~~	~~5136.70 5130.60'~~
11	N/A	12" CAP	N/A	N/A	5142.00

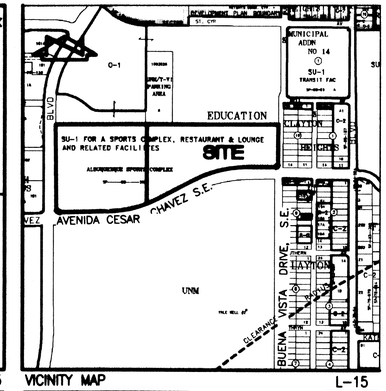
* REFER TO SHEETS C102 & C103
* * CONSTRUCT PER C.O.A. STD. DWG. 2206
* * * CONSTRUCT PER C.O.A. STD. DWG. 2101

△ AREA DRAIN KEYED NOTES:

12. INSTALL 1-3" 45deg PVC ELL WITH WATERTIGHT GASKETS, INV @ 5136.40
13. INSTALL 1-3" 45deg PVC ELL WITH WATERTIGHT GASKETS, INV @ 5137.85
14. INSTALL 1-3" 45deg PVC ELL WITH WATERTIGHT GASKETS, INV @ 5137.75
15. INSTALL 3" PVC (SDR-35) DRAIN LINE @ S=0.0320
16. INSTALL 3" PVC (SDR-35) DRAIN LINE @ S=0.0100
17. FOR CONTINUATION, SEE SHEET M101; INV @ 5138.00



F.I.R.M. PANELS 334,353 OF 825
SCALE: 1" = 500'±



VICINITY MAP
SCALE: 1" = 750'±

L-15

PHASE 1 STORM DRAIN HYDRAULICS

AP TO AP	PIPE SIZE	LENGTH	SLOPE	Q100 (CFS)	QCAP (CFS)	VEL (FPS)	PIPE INVERTS
CURB INLET TO AP1	18"	30'	0.179	37.6	44.4	25.2	5114.53' TO 5119.90'
AP1 TO AP2	24"	350'	0.032	28.36	40.5	12.9	5119.90' TO 5131.00'
AP2 TO AP3	24"	~~191'~~ 210	~~0.016~~ 0.022	24.32	~~27.1~~ 54	9.1	5131.00' TO 5134.00'
AP3 TO AP4	24"	~~17'~~ 25	~~0.017~~ 0.0065	6.74	~~24.8~~ 10.5	7.9	5134.00' TO 5134.20'
AP4 TO AP5	18"	260'✓	0.0050✓	6.74	7.5 ✓	4.2	5134.20' TO 5137.00'
AP5 TO AP6	18"	~~73'~~ 74	~~0.0055~~ 0.0055	5.24	~~8.0~~ 6.4	4.5	5137.00' TO 5137.70'
AP6 TO AP7	18"	~~73'~~ 75	0.0055✓	4.02	8.0 ✓	4.5	5137.70' TO 5138.40'
AP7 TO AP8	18"	~~73'~~ 76	~~0.0066~~ 0.010	2.80	~~8.0~~ 10.8	4.5	5138.40' TO 5139.10'
AP2 TO AP9	12"	210'	0.0270 ~~0.041~~	4.04	~~5.9~~ 7.1	N/A ~~12~~	~~5136.70~~ 5139.00'
AP9 TO AP10	~~12"~~ 18"	330'	0.0130 ~~0.007~~	4.04	4.1 ~~9.0~~	N/A ~~5~~	5136.70' TO 5142.0'

△ NOTES: 1. ALL LENGTHS ABOVE DETERMINED FOR HYDRAULIC ANALYSIS PURPOSES. AS-BUILT DISTANCES MAY VARY.
2. INLETS RECEIVING ROOF RUNOFF AND CONNECTING TO NEW 12" SD BETWEEN AP-9 AND AP-10 SHALL CONNECT TO TOP OF 12" PIPE AND SERVE AS CLEANOUTS FOR FUTURE MAINTENANCE

△ REFER TO SUMMARY TABLE @ LEFT

△ DRAINAGE CERTIFICATION

I, JEFFREY G. MORTENSEN, NMPE 8547, OF THE FIRM JEFF MORTENSEN & ASSOCIATES, INC., HEREBY CERTIFY THAT THOSE PORTIONS OF THIS PROJECT COMPLETED AS OF THE DATE OF THE AS-BUILT SURVEY HAVE BEEN GRADED AND DRAINED IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 11-14-2005, 01-16-2006 AND 08-24-2006. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY JOAQUIN ARGUELLES, NMPS 7472, DATED 04-17-07. BASED UPON MY VISUAL INSPECTION OF THE SITE AND REVIEW OF THE AS-BUILT SURVEY DATA, THE INFORMATION PRESENTED HEREON IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR PERMANENT CERTIFICATE OF OCCUPANCY.

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE WHICH IS BEYOND THE SCOPE OF GRADING AND DRAINAGE. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

JEFFREY G. MORTENSEN, NMPE 8547
DATE 05-08-2007

JEFFREY G. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER

RECEIVED MAY 09 2007 HYDROLOGY SECTION

RECORD INFORMATION

△ 28.00 9.16 RECORD INFORMATION FOR TEMP C.O.
△ 24.0 10.5 RECORD INFORMATION FOR FINAL C.O.
✓ RECORD DATA = AS-DESIGNED

RECORD DRAWING

jma 2004.068.39

JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE NEW MEXICO 87109
ENGINEERS SURVEYORS (505) 345-4250
FAX: 505 345-4254 ESTABLISHED 1977

AS BUILT INFORMATION
CONTRACTOR GERALD MARTIN DATE: 08/07
WORK STAKED BY DATE:
INSPECTOR'S APPROVAL DATE:
FIELD VERIFICATION BY DATE:
DRAWING CORRECTED BY JMA DATE: 08/07
MICRO-FILM INFORMATION
RECORDED BY DATE:
NO.

BENCH MARK
ALL ELEVATIONS ARE BASED UPON ALBUQUERQUE CONTROL SURVEY MONUMENT: 7-L15

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
61401	WILSON & CO	10/20/04
	CITY SURVEYOR	09/06/05
	JOAQUIN ARGUELLES JR. NMPLS 7472	2/27/07

ENGINEER'S STAMP
01-16-2006
JOAQUIN ARGUELLES JR. 4/11/07 NMPLS 7472
11-14-2005

NO.	DATE	REVISIONS/REMARKS	BY
1	01/2006	REVISE FOR AREA DRAIN OUTFLOWS	JGM
2	08/2006	DELETE SDMH (15) AND ADJUST SD DESIGN	JGM
3		CS-01 CERT FOR TEMP C.O.	JMA
4		CS-07 CERT FOR FINAL C.O.	JMA

DESIGNED BY: F.J.A. DATE: 10/05
DRAWN BY: R.R.W. DATE: 10/05
CHECKED BY: J.G.M. DATE: 10/05

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CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: PHASE 1 DRAINAGE PLAN AND CALCULATIONS
ALBUQUERQUE BICYCLE PARK PH. 1

Design Review Committee	City Engineer Approval	Last Design Update	MO./DAY/YR.	MO./DAY/YR.
			01/06/2006	

City Project No. 734502 | Zone Map No. L-15 | Sheet | Of

C101

File Path: C:\MWORK\DRAWINGS\ | Plot Date: 05-08-2007
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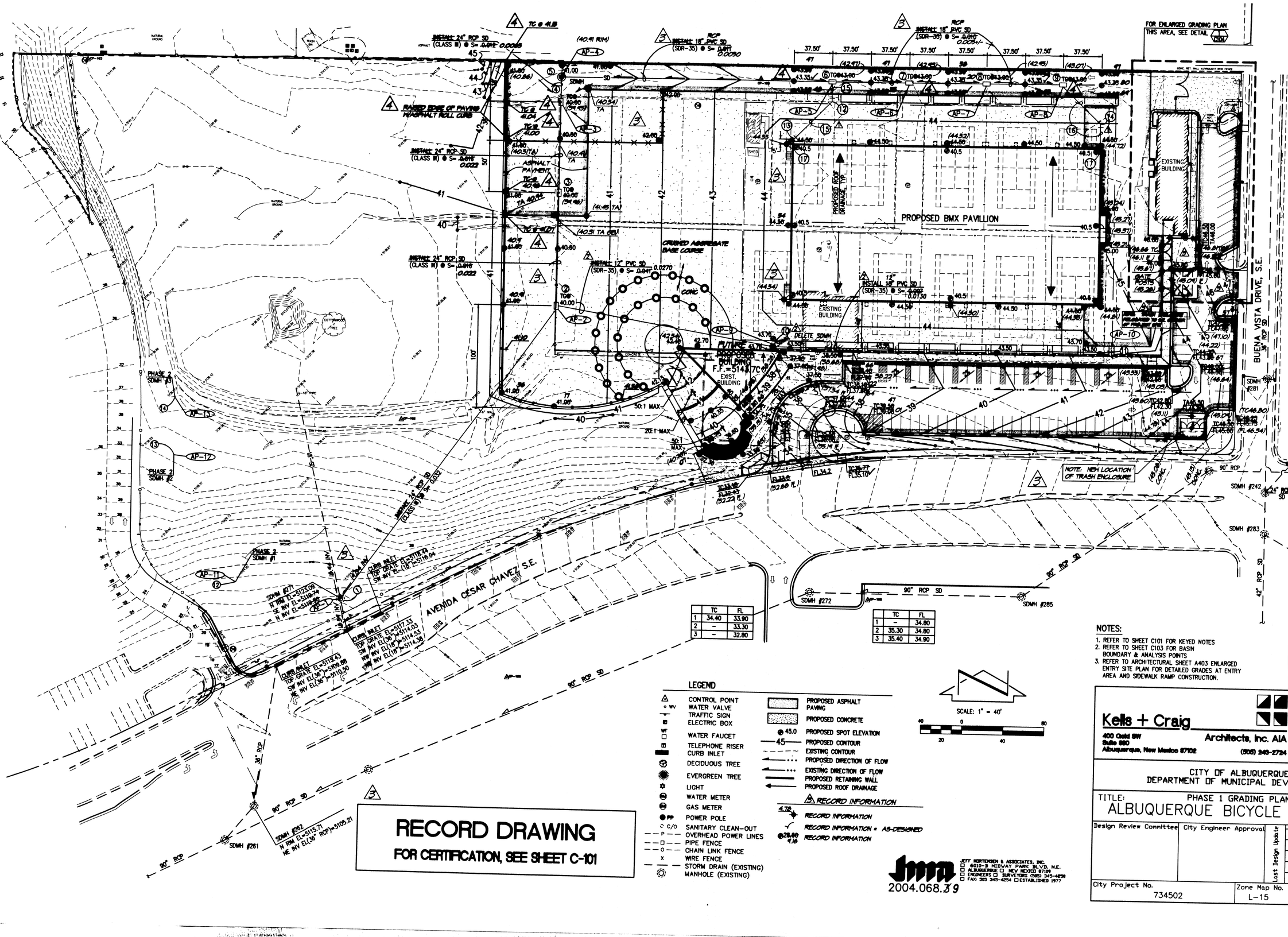

	TC	FL
1	34.40	33.90
2	–	33.30
3	–	32.80

	TC	FL
1	–	34.80
2	35.30	34.80
3	35.40	34.90

NOTES:

1. REFER TO SHEET C101 FOR KEYED NOTES
2. REFER TO SHEET C103 FOR BASIN BOUNDARY & ANALYSIS POINTS
3. REFER TO ARCHITECTURAL SHEET A403 ENLARGED ENTRY SITE PLAN FOR DETAILED GRADES AT ENTRY AREA AND SIDEWALK RAMP CONSTRUCTION.

LEGEND

- CONTROL POINT
- WV WATER VALVE
- TRAFFIC SIGN
- ELECTRIC BOX
- WATER FAUCET
- TELEPHONE RISER
- CURB INLET
- DECIDUOUS TREE
- EVERGREEN TREE
- LIGHT
- WATER METER
- GAS METER
- PP POWER POLE
- C/O SANITARY CLEAN-OUT
- P OVERHEAD POWER LINES
- PIPE FENCE
- CHAIN LINK FENCE
- X WIRE FENCE
- STORM DRAIN (EXISTING)
- MANHOLE (EXISTING)
- PROPOSED ASPHALT PAVING
- PROPOSED CONCRETE
- 45.0 PROPOSED SPOT ELEVATION
- 45 PROPOSED CONTOUR
- EXISTING CONTOUR
- PROPOSED DIRECTION OF FLOW
- EXISTING DIRECTION OF FLOW
- PROPOSED RETAINING WALL
- PROPOSED ROOF DRAINAGE
- RECORD INFORMATION
- 4.78 RECORD INFORMATION
- ✓ RECORD INFORMATION = AS-DESIGNED
- @25.00 41.16 RECORD INFORMATION

SCALE: 1" = 40'

40 0 80
20 40

RECORD DRAWING
FOR CERTIFICATION, SEE SHEET C-101

2004.068.39

JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE, NEW MEXICO 87109
ENGINEERS ☐ SURVEYORS (505) 345-4250
FAX: 505 345-4254 ☐ ESTABLISHED 1977

AS BUILT INFORMATION	
CONTRACTOR GERALD MARTIN	DATE: 08/07
WORK STAKED BY	DATE:
INSPECTOR'S APPROVAL	DATE:
FIELD VERIFICATION BY	DATE: 08/07
DRAWING CORRECTED BY JMA	DATE: 08/07
MICRO-FILM INFORMATION	
RECORDED BY	DATE:
NO.	

BENCH MARK	SURVEY INFORMATION
ALL ELEVATIONS ARE BASED UPON ALBUQUERQUE CONTROL SURVEY MONUMENT: 7-L15	FIELD NOTES
DATE	BY
10/26/04	WILSON & CO
09/08/06	CITY SURVEYOR
2/27/07	JOAQUIN ARGUELLES JR. NMPLS 7472
4/19/07	JOAQUIN ARGUELLES JR. NMPLS 7472

NO.	DATE	REVISIONS/REMARKS	BY
1	01/06	ADD AREA DRAIN OUTFALLS	JGM
2	08/2006	DELETE SDMH (9) AND ADJUST SD DESIGN	JGM
3	08-07	CERT FOR TEMP. C.O.	JMA
4	04-07	CERT FOR PERM. C.O.	JMA

DESIGNED BY: J.G.M. DATE: 10/05
DRAWN BY: RRW/JLP DATE: 10/05
CHECKED BY: J.G.M. DATE: 10/05

ENGINEER'S STAMP
JEFFREY G. MORTENSEN NEW MEXICO 9147 REGISTERED PROFESSIONAL ENGINEER
01-14-2008

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TEL 5 0 5 . 2 4 3 . 2 7 2 4
FAX 5 0 5 . 2 4 3 . 8 1 0 1

CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: PHASE 1 GRADING PLAN
ALBUQUERQUE BICYCLE PARK PH. 1

Design Review Committee	City Engineer Approval	Last Design Update	MO./DAY/YR.	MO./DAY/YR.
			01/06/2006	

City Project No. 734502 | Zone Map No. L-15 | Sheet | Of

C102

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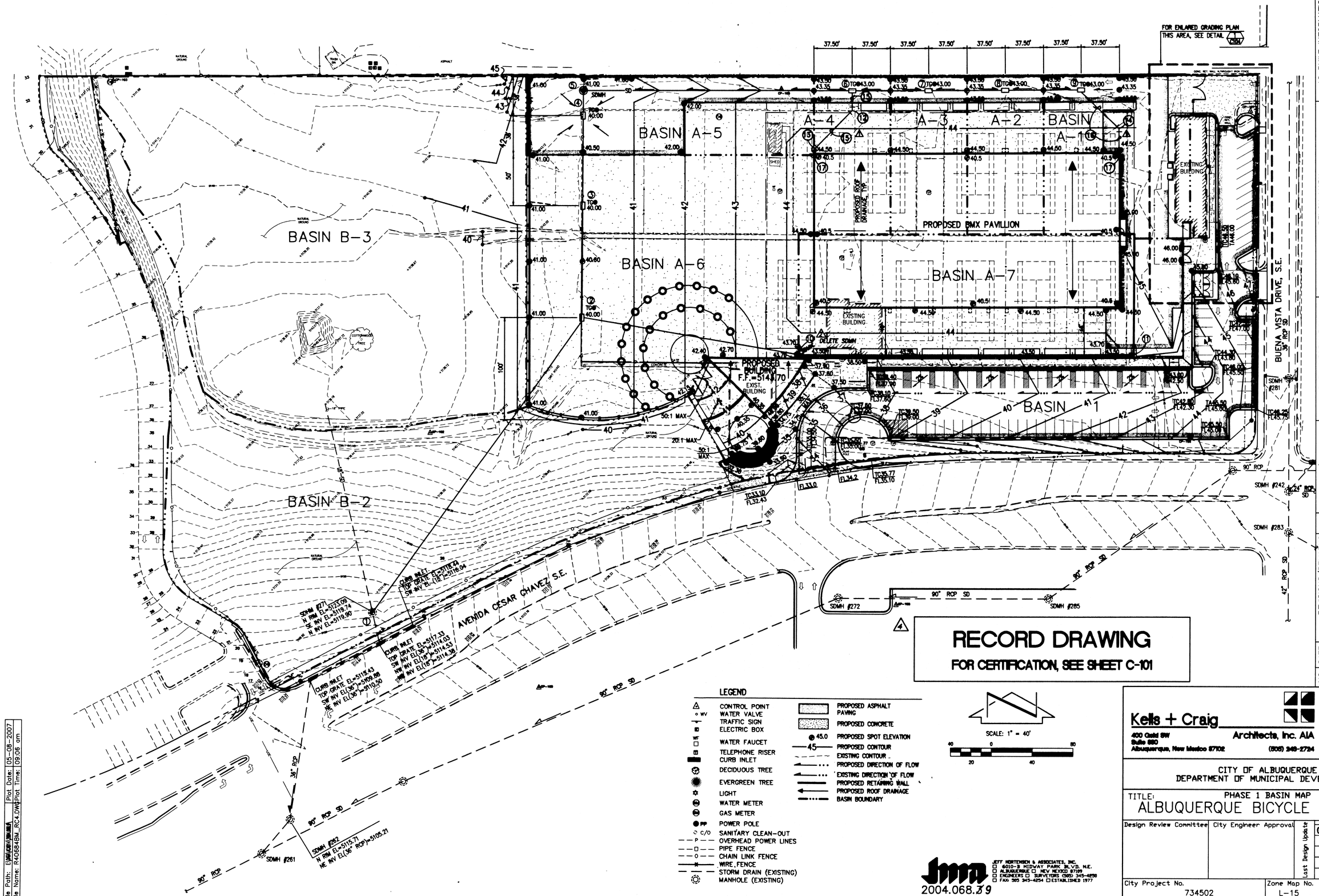
Plot Date: 05-08-2007
Plot Time: 09:19 am



RECORD DRAWING

FOR CERTIFICATION, SEE SHEET C-101

LEGEND

- CONTROL POINT
- WATER VALVE
- TRAFFIC SIGN
- ELECTRIC BOX
- WATER FAUCET
- TELEPHONE RISER
- CURB INLET
- DECIDUOUS TREE
- EVERGREEN TREE
- LIGHT
- WATER METER
- GAS METER
- POWER POLE
- SANITARY CLEAN-OUT
- OVERHEAD POWER LINES
- PIPE FENCE
- CHAIN LINK FENCE
- WIRE FENCE
- STORM DRAIN (EXISTING)
- MANHOLE (EXISTING)
- PROPOSED ASPHALT PAVING
- PROPOSED CONCRETE
- PROPOSED SPOT ELEVATION
- PROPOSED CONTOUR
- EXISTING CONTOUR
- PROPOSED DIRECTION OF FLOW
- EXISTING DIRECTION OF FLOW
- PROPOSED RETAINING WALL
- PROPOSED ROOF DRAINAGE
- BASIN BOUNDARY

SCALE: 1" = 40'

JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
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ENGINEERS SURVEYORS (505) 345-4250
FAX 505 345-4254 ESTABLISHED 1977

2004.068.39

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CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: PHASE 1 BASIN MAP
ALBUQUERQUE BICYCLE PARK PH. 1

Design Review Committee	City Engineer Approval	Last Design Update	MO./DAY/YR.	MO./DAY/YR.
			01/06/2006	

City Project No.	Zone Map No.	Sheet	Of
734502	L-15		

C103

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File Name: R40684BM_RC4.DWG Plot Time: 09:06 am

AS BUILT INFORMATION
CONTRACTOR GERALD MARTIN DATE: 08/07
WORK STAKED BY DATE:
INSPECTOR'S APPROVAL DATE:
FIELD VERIFICATION BY DATE:
DRAWING CORRECTED BY JMA DATE: 08/07
MICRO-FILM INFORMATION
RECORDED BY DATE:
NO.

BENCH MARK
ALL ELEVATIONS ARE BASED UPON ALBUQUERQUE CONTROL SURVEY MONUMENT: 7-L15

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
614019	WILSON & CO	10/20/04
	CITY SURVEYOR	09/08/05

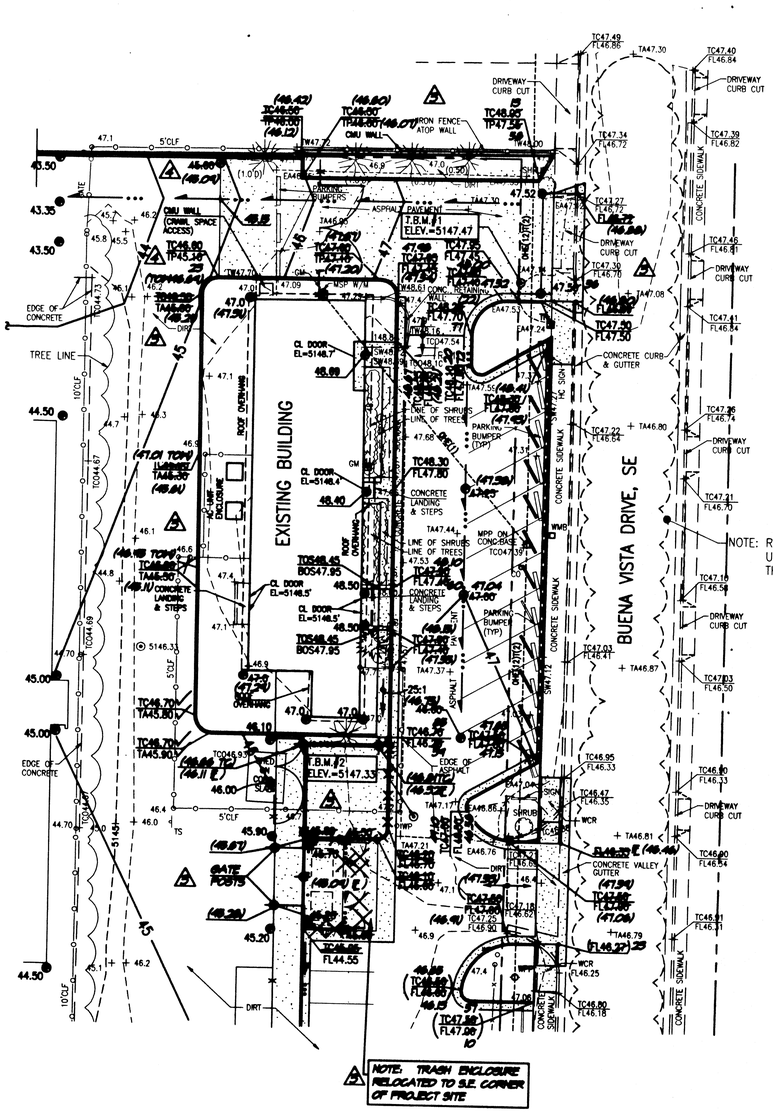
ENGINEER'S STAMP
01-16-2006
05-08-2007
11-14-2005
JEFFREY G. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS/REMARKS	BY
1	01/06	ADD AREA DRAIN OUTFALLS	JGM
2	08/2006	DELETE SDMH (10)	JGM
3	04/07	RECORD DRAWING	JGM

DESIGNED BY: J.G.M. DATE: 10/05
DRAWN BY: RRW/JLP DATE: 10/05
CHECKED BY: J.G.M. DATE: 10/05

SCALE: 1" = 20'

20 0 40
10 20



ENLARGED GRADING PLAN

DETAIL 1 / C102, C103

LEGEND

BOS	BOTTOM OF STEP
CL	CENTER LINE
CLF	CHAIN LINK FENCE
CM	CONCRETE MASONRY
CO	SANITARY SEWER CLEAN-OUT
EA	EDGE OF ASPHALT
EM	ELECTRIC METER
FL	FLOW LINE (OF GUTTER)
GM	GAS METER
MPP	METAL POWER POLE
MSP W/M	METAL SERVICE POLE WITH METER
OHE(1)	OVERHEAD ELECTRIC (NO. OF LINES)
OHT(1)	OVERHEAD TELEPHONE (NO. OF LINES)
PWF	POST & WIRE FENCE
SDMH	STORM DRAIN MAN HOLE
SW	EDGE OF SIDEWALK
TA	TOP OF ASPHALT
TC	TOP OF CURB
TCO	TOP OF CONCRETE
TP	TOP OF PAVEMENT
TOS	TOP OF STEP
TS	TRAFFIC SIGN
TW	TOP OF WALL
WCR	WHEEL CHAIR RAMP
WMB	WATER METER BOX
WP	WOOD POST
WPP	WOOD POWER POLE
+ 46.1	EXISTING SPOT ELEVATION
● 45.0	PROPOSED SPOT ELEVATION
45	PROPOSED CONTOUR
	EXISTING CONTOUR
	PROPOSED DIRECTION OF FLOW
	PROPOSED RETAINING WALL
	PROPOSED HIGHPOINT
	PROPOSED CONCRETE

⚠ RECORD INFORMATION

- 4.39 — RECORD INFORMATION
- RECORD INFORMATION = AS-DESIGNED
- ●28.00 4.18 — RECORD INFORMATION

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
ZONE 13	JMA	11/05
⚠	JOAQUIN ARGUELLES JR. NMPLS 7472	2/27/07
⚠	JOAQUIN ARGUELLES JR. NMPLS 7472	4/17/07

BENCH MARK
PROJECT BENCHMARK
ACS 1-3/4" ALUMINUM DISK STAMPED "ASC BM, 12-L15" EPOXIED ON TOP OF A CONCRETE DROP INLET, ENE QUADRANT OF UNIVERSITY BOULEVARD. & AVENIDA CESAR CHAVEZ SE, CENTERED ON SAD DROP INLET. ELEVATION = 5099.949 (NGVD 1929)
T.B.M. #1: PK MASONRY NAIL W/WASHER AS SHOWN HEREON ELEVATION = 5147.47 (NGVD1929)
T.B.M.#2: PK MASONRY NAIL AS SHOWN HEREON ELEVATION = 5147.33 (NGVD1929)

AS BUILT INFORMATION
CONTRACTOR GERALD MARTIN DATE: 08/07
WORK STAKED BY DATE:
INSPECTOR'S APPROVAL DATE:
FIELD VERIFICATION BY DATE:
DRAWING CORRECTED BY JMA DATE: 08/07
MICRO-FILM INFORMATION
RECORDED BY DATE:
NO.

ENGINEER'S STAMP
05-08-2007
JOAQUIN TEMSEN ARGUELLES JR. 8047 NEW MEXICO REGISTERED PROFESSIONAL ENGINEER
12-09-2005

NO.	DATE	REVISIONS/REMARKS	BY
⚠	3-07	RECORD DRAWING + CERT	JMA
⚠	04-07	CERT. FOR PERM. C.O.	
		FOR TEMP C.O.	

DESIGNED BY: J.G.M. DATE: 11/05
DRAWN BY: JLP / RRW DATE: 11/05
CHECKED BY: J.G.M. DATE: 11/05

⚠

RECORD DRAWING

FOR CERTIFICATION, SEE SHEET C-101

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Albuquerque, New Mexico 87102
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TEL 505.243.6100
FAX 505.243.6101

CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: ENLARGED GRADING PLAN
ALBUQUERQUE BICYCLE PARK PH. 1

Design Review Committee	City Engineer Approval	Last Design Update	MO./DAY/YR.	MO./DAY/YR.

City Project No. 734502 | Zone Map No. L-15 | Sheet C104 OF

JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE ☐ NEW MEXICO 87109
ENGINEERS ☐ SURVEYORS (505) 345-4250
FAX 505 345-4254 ☐ ESTABLISHED 1977

2004.068.39

File Path: D:\WORK\2004\068\
File Name: 40689EGP2_RC.DWG
Plot Date: 05-08-2007
Plot Time: 08:57 am

C104

DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THIS PROJECT, LOCATED IN THE LOWER SOUTHEAST HEIGHTS REPRESENTS THE DEVELOPMENT OF AN INFILL PROPERTY OWNED BY THE CITY OF ALBUQUERQUE. THE SITE LIES IMMEDIATELY EAST OF THE ISOTOPES BALL PARK. THE DRAINAGE CONCEPT FOR THIS PROJECT WILL BE THE FREE DISCHARGE OF DEVELOPED RUNOFF TO AVENIDA CESAR CHAVEZ SE WHERE A MAJOR PUBLIC STORM DRAIN LIES. THE EXISTING PUBLIC STORM DRAIN COLLECTS RUNOFF CARRIED BY THE STREET AND CONVEYS THAT RUNOFF WEST TO THE SOUTH DIVERSION CHANNEL.

THIS SUBMITTAL IS MADE IN SUPPORT OF WORK ORDER AND BUILDING PERMIT WITHIN THE JURISDICTION OF THE CITY OF ALBUQUERQUE. THIS PLAN SUPERCEDES THE PRIOR CONCEPTUAL PLAN DATED 12-17-2004.

II. PROJECT DESCRIPTION

AS SHOWN BY THE VICINITY MAP, THE SITE IS LOCATED ON THE NORTH SIDE OF AVENIDA CESAR CHAVEZ BETWEEN UNIVERSITY BLVD. SE AND BUENA VISTA DRIVE SE. AT PRESENT, THE SITE IS UNDEVELOPED. THE LAND IMMEDIATELY TO THE WEST IS DEVELOPED AS ISOTOPES BALL PARK. THE LAND TO THE NORTH IS INSTITUTIONAL (TVI AND UNM). THE LAND TO THE EAST IS DEVELOPED AS CITY TENNIS COURTS. AS SHOWN BY PANEL 334 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED BY FEMA FOR BERNALILLO COUNTY, NEW MEXICO, AND INCORPORATED AREAS DATED SEPTEMBER 20, 1996, THIS SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE (ZONE AO). AN AO ZONE IS MAPPED DOWNSTREAM, HOWEVER, IT IS BELIEVED THAT THE MORE RECENT STORM DRAIN IMPROVEMENTS WITHIN AVENIDA CESAR CHAVEZ (FORMERLY STADIUM BLVD.) HAVE ALLEVIATED THE DOWNSTREAM FLOODING.

III. BACKGROUND DOCUMENTS & RESEARCH

THE FOLLOWING ITEMS WERE REVIEWED IN THE PREPARATION OF THIS SUBMITTAL:
A. TOPOGRAPHIC SURVEY OF THE EXISTING SITE PREPARED BY WILSON & CO. DATED 10/21/2004. THE SUBJECT SURVEY SHOWS THE EXISTING IMPROVEMENTS.
B. PRE-DESIGN CONFERENCE WITH THE CITY HYDROLOGIST 08/24/2004. THE OUTCOME OF THAT RECAP CONFIRMED THAT FREE DISCHARGE TO AVENIDA CESAR CHAVEZ IS APPROPRIATE IN LIGHT OF THE RECENT DRAINAGE IMPROVEMENTS TO UNIVERSITY BLVD SE AND AVENIDA CESAR CHAVEZ SE.
C. CONCEPTUAL GRADING AND DRAINAGE PLAN (L15/D13A) PREPARED BY THIS OFFICE DATED 12-17-2004. THIS PRIOR SUBMITTAL ESTABLISHED THE DRAINAGE CRITERIA (FREE DISCHARGE) FOR THIS SITE.

IV. EXISTING CONDITIONS

THE TOPOGRAPHIC DATA PRESENTED HEREWITH, TAKEN FROM THE ABOVE REFERENCED SURVEY BY WILSON & CO., DEMONSTRATES THE EXISTING CONDITIONS OF THE PROJECT SITE. AT PRESENT, THE SITE IS PARTIALLY DEVELOPED WITH CITY TENNIS COURTS AND LIMITED ASPHALT PAVING. THE SITE CURRENTLY DRAINS FROM EAST TO WEST WITH MUCH OF THE DEVELOPED FLOW BEING DIRECTED INTO A TEMPORARY DETENTION POND. IT IS BELIEVED THAT THE TEMPORARY POND WAS CREATED TO MITIGATE THE DISCHARGE OF EXCESS RUNOFF ONTO THE ISOTOPES BALL PARK. THE SITE IS SITUATED TOPOGRAPHICALLY HIGHER THAN AVENIDA CESAR CHAVEZ SE AND AS SUCH DRAINS TO THAT PUBLIC ROADWAY. ISOTOPES BALL PARK IS TOPOGRAPHICALLY LOWER AN HENCE DOES NOT CONTRIBUTE OFFSITE FLOWS. THE INSTITUTIONAL DEVELOPMENT TO THE NORTH HAS BEEN GRADED SUCH THAT IT DOES NOT DRAIN ONTO THE SUBJECT SITE. ITS FLOWS ARE DIRECTED WEST AND EVENTUALLY DISCHARGE TO UNIVERSITY BLVD SE. BUENA VISTA DRIVE LIES TO THE EAST AND APPEARS TO CONTAIN ITS FLOWS AND AS SUCH IS NOT BELIEVED TO CONTRIBUTE OFFSITE FLOWS.

V. PROPOSED CONDITIONS (PHASE 1)

THE PROPOSED IMPROVEMENTS CONSIST OF A BMX TRACK, A NEW BUILDING, PARKING IMPROVEMENTS, PEDESTRIAN PAVING AND ASSOCIATED LANDSCAPING. IN ORDER TO LOCATE THE ABOVE REFERENCED IMPROVEMENTS ON THE SITE, THE EXISTING TENNIS COURTS AND RELATED IMPROVEMENTS MUST BE DEMOLISHED. THE TEMPORARY DETENTION POND WILL REMAIN. THE EXISTING BUILDING AT THE NORTHEAST CORNER WILL BE RENOVATED.
FOR THE PURPOSES OF ANALYSIS, THE SITE HAS BEEN DIVIDED INTO TWO (2) BASIC DRAINAGE AREAS. BASIN A DRAINS INTERNALLY TO A PRIVATE STORM DRAIN SYSTEM THAT ULTIMATELY DISCHARGES TO THE AVENIDA CESAR CHAVEZ STORM DRAIN. PRESENTLY, THE TEMPORARY DETENTION POND OUTLETS TO THE AVENIDA CESAR CHAVEZ STORM DRAIN VIA AN 18-INCH STORM DRAIN CONNECTION TO THE BACK OF A EXISTING STORM INLET IN THE NORTH CURB LINE OF THE ROADWAY. THAT CONNECTION WILL BE UTILIZED FOR THE DISCHARGE OF RUNOFF FROM BASIN A AND ITS SUB-BASINS A-1 THROUGH A-6. THE RUNOFF WILL FLOW A CROSS THE NEW PARKING LOT TO EVENTUALLY DISCHARGE TO AVENIDA CESAR CHAVEZ.
BASIN B IS AN EXISTING CONDITION WHERE NO CHANGES ARE PROPOSED. BASIN B INCLUDES THE EXISTING DETENTION POND.

VI. GRADING PLAN

THE GRADING PLAN SHOWS 1.) EXISTING GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS TAKEN FROM THE SURVEY BY WILSON & CO. REFERENCED ABOVE, 2.) PROPOSED GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS, 3) THE LIMIT AND CHARACTER OF THE EXISTING IMPROVEMENTS TAKEN FROM THE SURVEY BY WILSON & CO. REFERENCED ABOVE, 4.) THE LIMIT AND CHARACTER OF THE PROPOSED IMPROVEMENTS, AND 5.) CONTINUITY BETWEEN EXISTING AND PROPOSED GRADES. AS SHOWN BY THIS PLAN, THE SITE WILL DRAIN BY VARIOUS MEANS. BASIN A, AS INDICATED ABOVE, WILL DRAIN VIA AN INTERNAL PRIVATE STORM DRAIN SYSTEM INTEGRATED WITH A WATER HARVESTING FEATURE. BASIN B WILL CONTINUE TO DRAIN IN THE EXISTING CONDITION UNTIL A SUBSEQUENT PHASE DEVELOPS ON THIS REMAINING PORTION OF THE SITE.

VII. CALCULATIONS

THE CALCULATIONS THAT APPEAR HEREON ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS, FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT. THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS, AS SET FORTH IN THE REVISION OF SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA, DATED JANUARY 1993, HAS BEEN USED TO QUANTIFY THE PEAK RATE OF DISCHARGE AND VOLUME OF RUNOFF GENERATED. THE RESULTS OF THE CALCULATIONS FOR THE DEVELOPED CONDITION ARE PRESENTED IN TABLE FORM. KEY ANALYSIS POINTS, SHOWN ON THE DRAINAGE BASIN MAP PLAN, ARE FURTHER ANALYZED IN ORDER THAT THE PROPOSED PRIVATE STORM DRAIN BE SIZED APPROPRIATELY. THE MANNING EQUATION WAS USED TO EVALUATE PIPE SIZES AND RELATED CAPACITIES. AS A RESULT OF THIS ANALYSIS, THE TOTAL PEAK DISCHARGE CALCULATED FOR BASIN A (16.95 CFS) WILL NOT EXCEED THE CAPACITY (44.4 CFS) OF THE EXISTING 18-INCH STORM DRAIN CONNECTION TO AVENIDA CESAR CHAVEZ.

VIII. CONCLUSIONS

THE FOLLOWING CONCLUSIONS HAVE BEEN ESTABLISHED AS A RESULT OF THE EVALUATIONS CONTAINED HEREIN:
1. THIS SUBMITTAL FOLLOWS THE DRAINAGE CONCEPTS ESTABLISHED BY THE PREVIOUSLY APPROVED CONCEPTUAL PLAN
2. THE SITE DOES NOT LIE WITHIN A DESIGNATED 100-YEAR FLOODPLAIN
3. THIS SITE IS NOT RESTRICTED BY LIMITED OR INADEQUATE DOWNSTREAM CAPACITY
4. THE INCREASED RUNOFF FROM THIS SITE WILL BE HANDLED BY THE EXISTING DOWNSTREAM PUBLIC DRAINAGE IMPROVEMENTS THAT ULTIMATELY DISCHARGE TO THE SOUTH DIVERSION CHANNEL
5. THIS SUBMITTAL IS FOR BUILDING PERMIT APPROVAL.
6. SITE SPECIFIC DRAINAGE SUBMITTALS WILL BE REQUIRED FOR SUBSEQUENT PHASES OF CONSTRUCTION
7. OFFSITE FLOWS DO NOT IMPACT THIS SITE

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Plot Date: 03-08-2007
Plot Time: 1:03 pm

CALCULATIONS

I SITE CHARACTERISTICS

A) PRECIPITATION ZONE = 2

B) P6,100 = P360 = 2.35 INCHES

C) TOTAL AREA (AT) = 50,1900 SF/11.52 ACRES

D) EXISTING LAND TREATMENT

TREATMENT AREA (SF/AC) %

a) TREATMENT B = 7,525/0.17 02
b) TREATMENT C = 316,573/7.27 63
c) TREATMENT D = 177,802/4.08 35

II EXISTING CONDITION

A) VOLUME
i) WEIGHTED E (EW) = (EAAA+EBAB+ECAC+EDAD)/AT
ii) EW = [0.78(0.17)+1.13(7.27)+2.12(4.08)]/11.52 = 1.48
iii) V360 = EW * AT /12
iv) V360 = 1.48 * 11.52/12 = 1.42 ACRE-FEET = 61,890 CUBIC FEET

B) PEAK DISCHARGE
i) TOTAL QP = QPAAA+QPBAB+ QPCAC+QPDAD
ii) TOTAL QP = 2.28(0.17)+3.14(7.27)+4.70(4.08) = 42.4 CFS

III DEVELOPED CONDITION
THE DEVELOPED CONDITION HAS BEEN INCORPORATED INTO A TABLE FORMAT AS PRESENTED BELOW.

PHASE 1 BASIN ANALYSIS

BASINS	A_T(SF/AC)	A_B(SF/AC)	A_C(SF/AC)	A_D(SF/AC)	V_{100}(AC-FT)	Q_{100}(CFS)	Q_{100}(CFS) CUM
A-1	26,154/0.60	300/0.01		25,854/0.59	0.10	2.80	2.80
A-2	11,475/0.26			11,475/0.26	0.05	1.22	4.02
A-3	11,475/0.26			11,475/0.26	0.05	1.22	5.24
A-4	13,939/0.32			13,939/0.32	0.06	1.50	6.74
A-5	25,560/0.59			25,560/0.59	0.10	2.77	9.51
A-6	73,927/1.70			73,927/1.70	0.30	7.99	17.50
A-7	37,629/0.86			37,629/0.86	0.15	4.04	21.54
B-1	113,256/2.60		113,256/2.60		0.24	8.16	
B-2	110,209/2.53		110,209/2.53		0.24	8.15	
B-3	78,408/1.80	8,690./0.20		69,718/1.60	0.30	7.98	
TOTAL	502,029/11.5	8,990/0.2	223,465/5.1	269,580/6.2	1.6	45.8	

IV COMPARISON

a) VOLUME

△V100 = 1.57-1.42 = 0.15 AC-FT

b) PEAK DISCHARGE

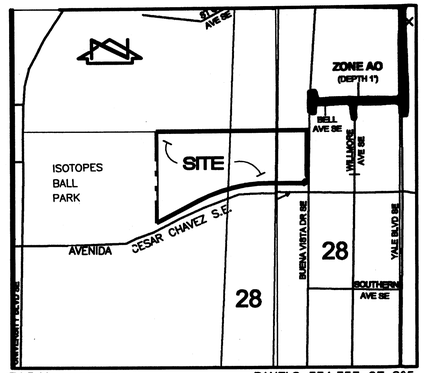
△Q100 = 45.2-42.4 = 2.8 CFS

DRAINAGE STRUCTURE SUMMARY TABLE PHASE 1

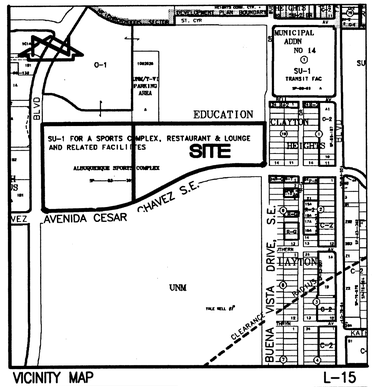
KEY *	AP	STRUCTURE	RIM/TG	INV. IN	INV. OUT
1	#1	EXIST. SDMH	5123.09✓	~~04~~ 5119.90	~~18.59~~ 5119.74
2	#2	SINGLE 'D' INLET * *	5140.00✓	~~29.56~~ 5131.05	~~29.16~~ 5130.95
3	N/A	SINGLE 'D' INLET * *	~~39.96~~ 5140.00	~~33.30~~ 5132.81	~~33.25~~ 5132.71
4	#3	SINGLE 'D' INLET * *	~~39.95~~ 5140.00	~~26~~ 5134.05	~~34.20~~ 5133.95
5	#4	4' SDMH * * *	~~.91~~ 5140.26	~~56~~ 5134.38	~~41~~ 5134.08
6	#5	SINGLE 'D' INLET * *	~~42.97~~ 5143.00	~~35.71~~ 5135.75	~~87~~ 5135.58
7	#6	SINGLE 'D' INLET * *	~~42.98~~ 5143.00	~~23~~ 5136.25	~~17~~ 5136.18
8	#7	SINGLE 'D' INLET * *	~~42.95~~ 5143.00	~~76~~ 5136.75	~~67~~ 5136.65
9	#8	SINGLE 'D' INLET * *	~~.07~~ 5143.08	~~****~~ 5137.25	~~****~~ 5137.15
10	#9	~~DELETE SDMH & REPLACE W/ 12" 11.14° ELL + SDMH * * *~~	~~N/A 5143.70~~	~~5136.70 5130.70~~	~~5136.70 5130.60~~
11	N/A	12" CAP	N/A	N/A	5142.00

* REFER TO SHEETS C102 & C103
* * CONSTRUCT PER C.O.A. STD. DWG. 2206
* * * CONSTRUCT PER C.O.A. STD. DWG. 2101
**** NOT VERIFIED BY CONSTRUCTION PHASE SURVEYOR

AREA DRAIN KEYED NOTES:
12. INSTALL 1-3" 45deg PVC ELL WITH WATERTIGHT GASKETS, INV @ 5136.40
13. INSTALL 1-3" 45deg PVC ELL WITH WATERTIGHT GASKETS, INV @ 5137.95
14. INSTALL 1-3" 45deg PVC ELL WITH WATERTIGHT GASKETS, INV @ 5137.75
15. INSTALL 3" PVC (SDR-35) DRAIN LINE @ S=0.0320
16. INSTALL 3" PVC (SDR-35) DRAIN LINE @ S=0.0100
17. FOR CONTINUATION, SEE SHEET M101; INV @ 5138.00



F.I.R.M. PANELS 334,353 OF 825
SCALE: 1" = 500'±



VICINITY MAP L-15
SCALE: 1" = 750'±

PHASE 1 STORM DRAIN HYDRAULICS

AP TO AP	PIPE SIZE	LENGTH	SLOPE	Q100 (CFS)	QCAP (CFS)	VEL (FPS)	PIPE INVERTS
CURB INLET TO AP1	18"	30'	0.179	37.6	44.4	25.2	5114.53' TO 5119.90'
AP1 TO AP2	24"	350'	0.032	28.36	40.5	12.9	5119.90' TO 5131.00'
AP2 TO AP3	24"	~~191'~~ 210	~~0.015~~ 0.0222	24.32	~~27.7~~ 34	9.1	5131.00' TO 5134.00'
AP3 TO AP4	24"	~~171'~~ 23	~~0.0170~~ 0.0065	6.74	~~24.8~~ 18.5	7.9	5134.00' TO 5134.20'
AP4 TO AP5	18"	260' ✓	0.0050 ✓	6.74	7.5	4.2	5134.20' TO 5137.00'
AP5 TO AP6	18"	~~73'~~ 74	~~0.0055~~ 0.0035	5.24	6.4 ~~8.0~~	4.5	5137.00' TO 5137.70'
AP6 TO AP7	18"	~~73'~~ 75	0.0055 ✓	4.02	8.0	4.5	5137.70' TO 5138.40'
AP7 TO AP8	18"	~~73'~~ 76	0.0055	2.80	8.0 *	4.5	5138.40' TO 5139.10'
AP2 TO AP9	12" ~~18"~~	210'	~~0.0270~~ 0.041	4.04	~~5.9~~ 7.1	N/A ~~12~~	~~5136.70~~ 5131.00' TO ~~5130.60~~
AP9 TO AP10	12" ~~18"~~	330'	~~0.0130~~ 0.007	4.04	~~4.1~~ 9.0	N/A ~~5~~	~~5136.70~~ 5141.00 5139.70' TO 5142.0'

NOTES: 1. ALL LENGTHS ABOVE DETERMINED FOR HYDRAULIC ANALYSIS PURPOSES. AS-BUILT DISTANCES MAY VARY.
2. INLETS RECEIVING ROOF RUNOFF AND CONNECTING TO NEW 12" SD BETWEEN AP-9 AND AP-10 SHALL CONNECT TO TOP OF 12" PIPE AND SERVE AS CLEANOUTS FOR FUTURE MAINTENANCE

REFER TO SUMMARY TABLE @ LEFT
(* COULD NOT VERIFY; INVERT DATA NOT PROVIDED BY CONSTRUCTION PHASE SURVEYOR)

DRAINAGE CERTIFICATION

I, JEFFREY G. MORTENSEN, NMPE 8547, OF THE FIRM JEFF MORTENSEN & ASSOCIATES, INC., HEREBY CERTIFY THAT THOSE PORTIONS OF THIS PROJECT COMPLETED AS OF THE DATE OF THE AS-BUILT SURVEY HAVE BEEN GRADED AND DRAINED IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 11-14-2005, 01-16-2006 AND 08-24-2006. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY JOAQUIN ARGUELLES, NMPS 7472, DATED 2-27-07 ALONG WITH ADDITIONAL AS-BUILT INFORMATION PROVIDED BY JOAQUIN ARGUELLES, NMPS 7472, NO DATE. BASED UPON MY VISUAL INSPECTION OF THE SITE AND REVIEW OF THE AS-BUILT SURVEY DATA, THE INFORMATION PRESENTED HEREON IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR TEMPORARY CERTIFICATE OF OCCUPANCY.

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THIS CERTIFICATION DOES NOT ADDRESS ADA COMPLIANCE WHICH IS BEYOND THE SCOPE OF GRADING AND DRAINAGE. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

JEFFREY G. MORTENSEN, NMPE 8547
03-15-2007
DATE

RECORD INFORMATION
~~28.60~~ 9.16 RECORD INFORMATION

RECORD DRAWING

JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE NEW MEXICO 87109
ENGINEERS SURVEYORS (505) 345-4250
FAX 505 345-4254 ESTABLISHED 1977
2004.068.39

BENCH MARK: ALL ELEVATIONS ARE BASED UPON ALBUQUERQUE CONTROL SURVEY MONUMENT: 7-L15

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
614019	WILSON & CO	10/20/04
	CITY SURVEYOR	09/08/05
	JOAQUIN ARGUELLES JR.	2/23/07

AS BUILT INFORMATION

	DATE:
CONTRACTOR	
WORK STAKED BY	DATE:
INSPECTOR'S APPROVAL	DATE:
FIELD VERIFICATION BY	DATE:
DRAWING CORRECTED BY	DATE:
MICRO-FILM INFORMATION	
RECORDED BY	DATE:
NO.	

ENGINEER'S STAMP
JEFFREY G. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER
11-14-2005
01-16-2006
08-24-2006

NO.	DATE	REVISIONS/REMARKS	BY
1	01/2006	REVISE FOR AREA DRAIN OUTFLOWS	JGM
2	08/2006	DELETE SDMH (10) AND ADJUST SD DESIGN	JGM
3		CHGT CONST FOR TEMP CO	JGM

DESIGNED BY: F.J.A. DATE: 10/05
DRAWN BY: R.R.W. DATE: 10/05
CHECKED BY: J.G.M. DATE: 10/05

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CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: PHASE 1 DRAINAGE PLAN AND CALCULATIONS
ALBUQUERQUE BICYCLE PARK PH. 1

Design Review Committee	City Engineer Approval	Last Design Update	MO./DAY/YR.	MO./DAY/YR.
			01/06/2006	

City Project No. 734502 | Zone Map No. L-15 | Sheet | Of

C101

RECEIVED
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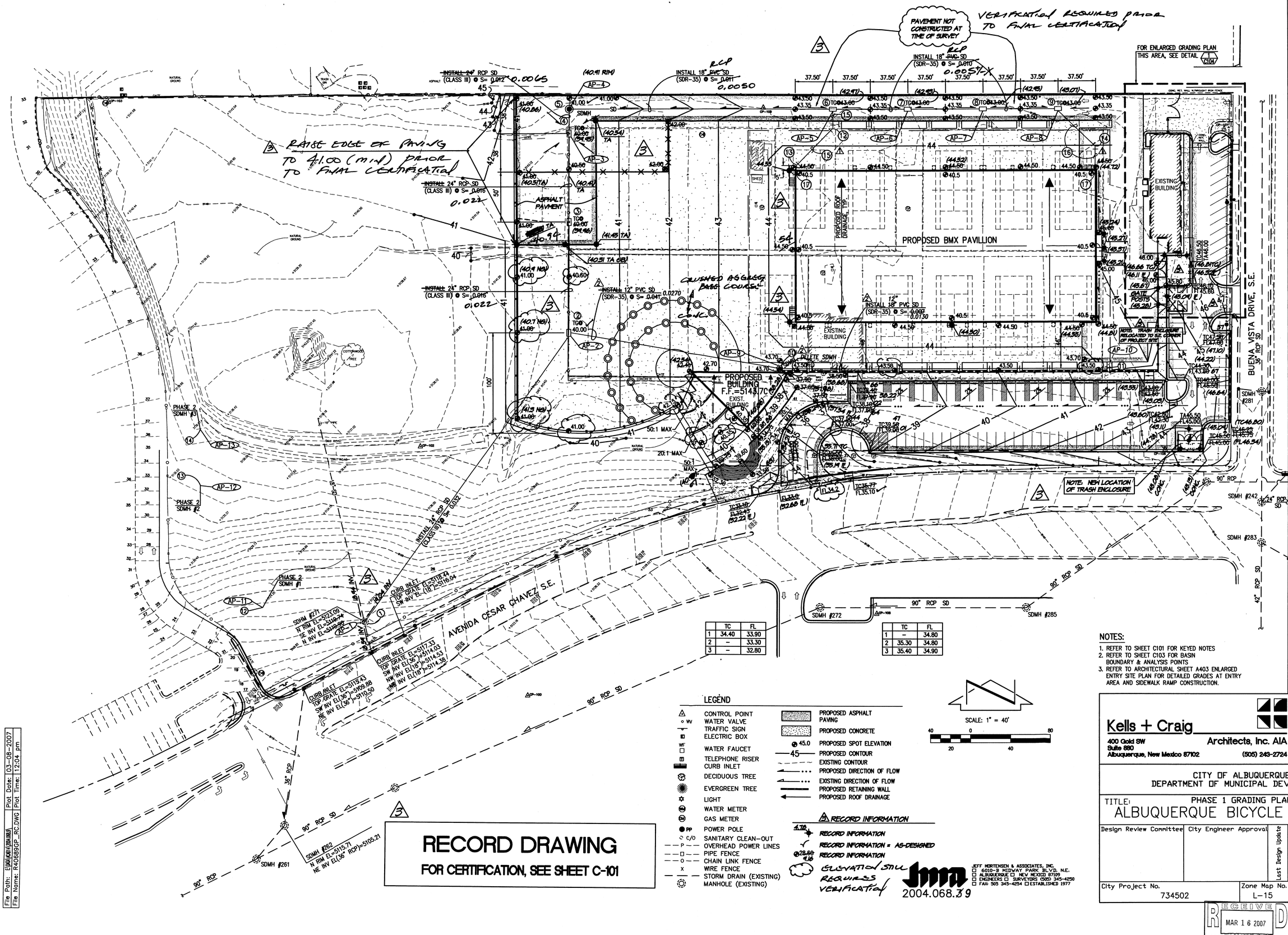
HYDROLOGY SECTION



	TC	FL
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2	–	33.30
3	–	32.80

	TC	FL
1	–	34.80
2	35.30	34.80
3	35.40	34.90

LEGEND

- CONTROL POINT
- WV WATER VALVE
- TRAFFIC SIGN
- ELECTRIC BOX
- WF WATER FAUCET
- TELEPHONE RISER
- CURB INLET
- DECIDUOUS TREE
- EVERGREEN TREE
- LIGHT
- WM WATER METER
- GM GAS METER
- PP POWER POLE
- C/O SANITARY CLEAN-OUT
- P OVERHEAD POWER LINES
- PIPE FENCE
- CHAIN LINK FENCE
- x WIRE FENCE
- STORM DRAIN (EXISTING)
- MANHOLE (EXISTING)
- PROPOSED ASPHALT PAVING
- PROPOSED CONCRETE
- 45.0 PROPOSED SPOT ELEVATION
- 45 PROPOSED CONTOUR
- EXISTING CONTOUR
- PROPOSED DIRECTION OF FLOW
- EXISTING DIRECTION OF FLOW
- PROPOSED RETAINING WALL
- PROPOSED ROOF DRAINAGE

SCALE: 1" = 40'

40 0 80
20 40

RECORD INFORMATION

4.78 RECORD INFORMATION
✓ RECORD INFORMATION = AS-DESIGNED
@28.66 @1.16 RECORD INFORMATION

ELEVATION STILL REQUIRES VERIFICATION

JEFF MORTENSEN & ASSOCIATES, INC.
☐ 6010-B MIDWAY PARK BLVD. N.E. ☐ ALBUQUERQUE ☐ NEW MEXICO 87109
☐ ENGINEERS ☐ SURVEYORS (505) 345-4250
☐ FAX 505 345-4254 ☐ ESTABLISHED 1977

2004.068.39

RECORD DRAWING
FOR CERTIFICATION, SEE SHEET C-101

NOTES:
1. REFER TO SHEET C101 FOR KEYED NOTES
2. REFER TO SHEET C103 FOR BASIN BOUNDARY & ANALYSIS POINTS
3. REFER TO ARCHITECTURAL SHEET A403 ENLARGED ENTRY SITE PLAN FOR DETAILED GRADES AT ENTRY AREA AND SIDEWALK RAMP CONSTRUCTION.

AS BUILT INFORMATION
CONTRACTOR — DATE:
WORK STAKED BY — DATE:
INSPECTOR'S APPROVAL — DATE:
FIELD VERIFICATION BY — DATE:
DRAWING CORRECTED BY — DATE:
MICRO-FILM INFORMATION
RECORDED BY — DATE:
NO.

BENCH MARK: ALL ELEVATIONS ARE BASED UPON ALBUQUERQUE CONTROL SURVEY MONUMENT: 7-L15

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
61401B	WILSON & CO	10/20/04
	CITY SURVEYOR	09/08/05
	JOAQUIN ARGUELLES JR.	2/29/07
	NMPLS 7472	

ENGINEER'S STAMP
GREGORY JEFFREY MORTENSEN NEW MEXICO 9647 REGISTERED PROFESSIONAL ENGINEER
10-24-2006
11-14-2006

NO.	DATE	REVISIONS/REMARKS	BY
1	01/06	ADD AREA DRAIN OUTFALLS	JGM
2	08/2006	DELETE SDMH (19) AND ADJUST SD DESIGN	JGM
3	09-07	CCLR for Temp Co	JGM

DESIGNED BY: J.G.M. DATE: 10/05
DRAWN BY: RRW/JLP DATE: 10/05
CHECKED BY: J.G.M. DATE: 10/05

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CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: PHASE 1 GRADING PLAN
ALBUQUERQUE BICYCLE PARK PH. 1

Design Review Committee	City Engineer Approval	Last Design Update	MO./DAY/YR.	MO./DAY/YR.
			01/06/2006	

City Project No. 734502 | Zone Map No. L-15 | Sheet C102 Of

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MAR 16 2007
HYDROLOGY SECTION

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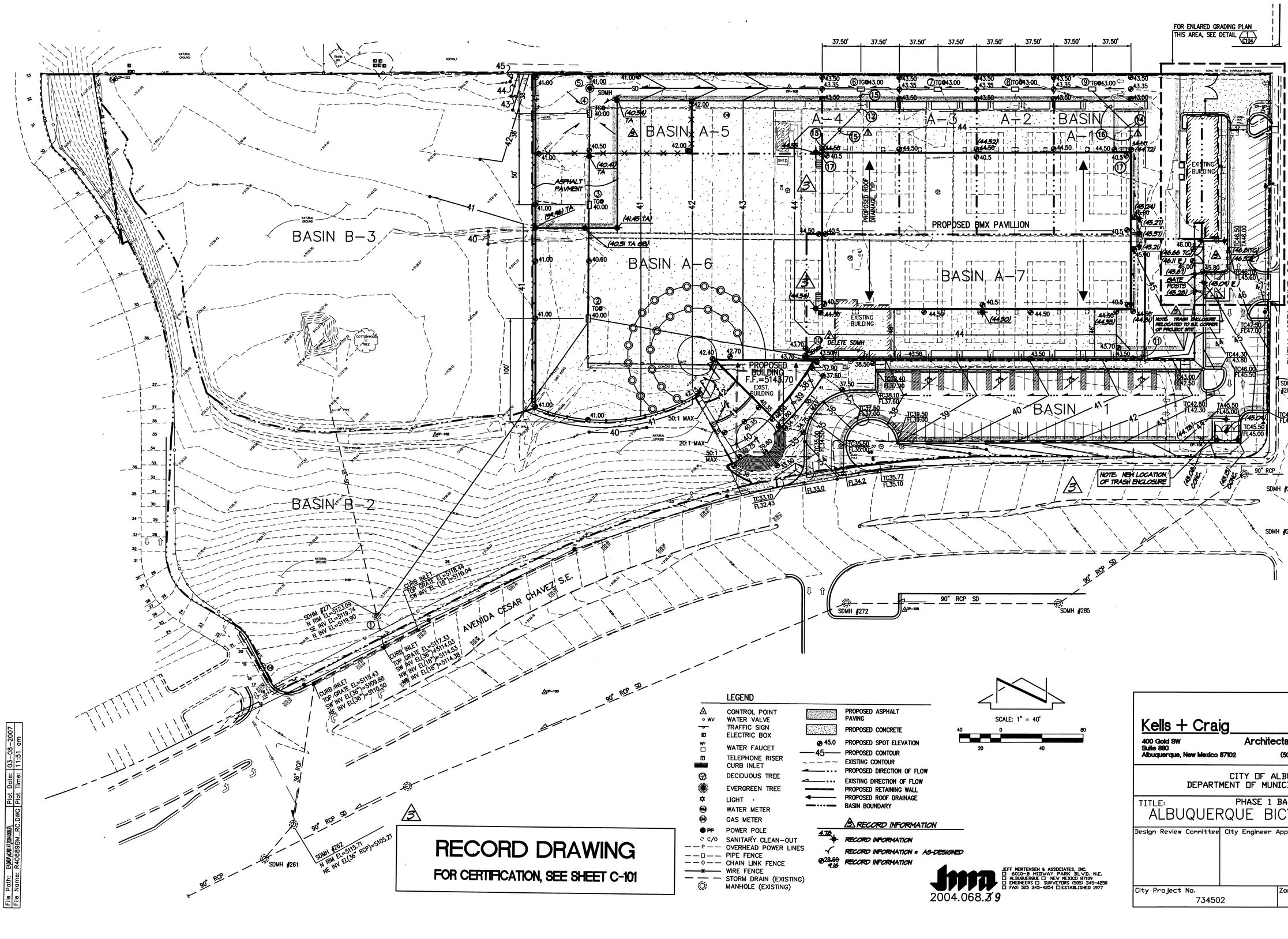
Plot Time: 12:04 pm



RECORD DRAWING

FOR CERTIFICATION, SEE SHEET C-101

LEGEND

- CONTROL POINT
- WATER VALVE
- TRAFFIC SIGN
- ELECTRIC BOX
- WATER FAUCET
- TELEPHONE RISER
- CURB INLET
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- EXISTING CONTOUR
- PROPOSED DIRECTION OF FLOW
- EXISTING DIRECTION OF FLOW
- PROPOSED RETAINING WALL
- PROPOSED ROOF DRAINAGE
- BASIN BOUNDARY

RECORD INFORMATION

- RECORD INFORMATION
- RECORD INFORMATION = AS-DESIGNED
- RECORD INFORMATION

SCALE: 1" = 40'

JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE NEW MEXICO 87109
ENGINEERS SURVEYORS (505) 345-4250
FAX 505 345-4254 ESTABLISHED 1977

2004.068.39

NO.	DATE	REVISIONS/REMARKS	BY
1	01/06	ADD AREA DRAIN OUTFALLS	JGM
2	08/2006	DELETE SDMH (10)	JGM
3	03-07	CERT FOR TEMP C.O	JGM

DESIGNED BY: J.G.M. DATE: 10/05
DRAWN BY: RRW/JLP DATE: 10/05
CHECKED BY: J.G.M. DATE: 10/05

SURVEY INFORMATION

NO.	FIELD NOTES BY	DATE
614019	WILSON & CO	10/20/04
—	CITY SURVEYOR	09/08/05
—	JOAQUIN ARGUELLES JR.	2/29/07
	NMPLS 7472	

BENCH MARK

ALL ELEVATIONS ARE BASED UPON ALBUQUERQUE CONTROL SURVEY MONUMENT: 7-L15

AS BUILT INFORMATION

CONTRACTOR	DATE:
WORK STAKED BY	DATE:
INSPECTOR'S APPROVAL	DATE:
FIELD VERIFICATION BY	DATE:
DRAWING CORRECTED BY	DATE:
MICRO-FILM INFORMATION	
RECORDED BY	DATE:
NO.	

ENGINEER'S STAMP

JEFFREY G. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER

01-16-2006
08-24-2006
11-14-2005

Kells + Craig Architects, Inc. AIA
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CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

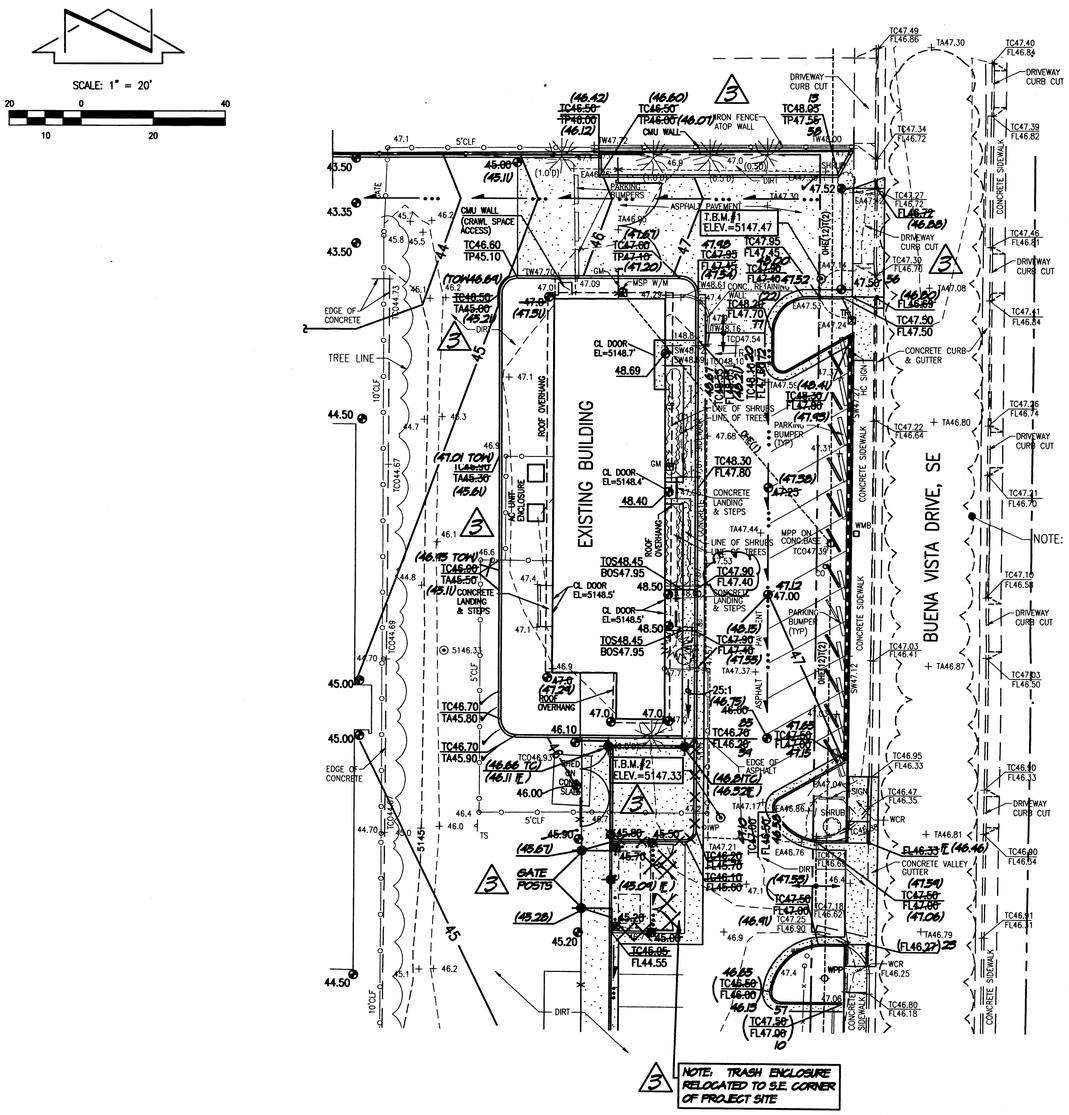
TITLE: PHASE 1 BASIN MAP
ALBUQUERQUE BICYCLE PARK PH. 1

Design Review Committee	City Engineer Approval	Last Design Update	MO/DAY/YR.	MO/DAY/YR.
			01/06/2006	

City Project No.	Zone Map No.	Sheet	Of
734502	L-15		

C103

File Path: E:\DWG\ACAD\2004.068.9 Plot Date: 03-08-2007
File Name: R40689BM_RC.DWG Plot Time: 11:51 am



NOTE: ROADWAY UNDERGOING CONSTRUCTION FOR UNDERGROUND UTILITIES AT TIME OF THIS SURVEY.

ENLARGED GRADING PLAN

DETAIL 1 / C102, C103

LEGEND

BOS	BOTTOM OF STEP
CL	CENTER LINE
CLF	CHAIN LINK FENCE
CM	CONCRETE MASONRY
CO	SANITARY SEWER CLEAN-OUT
EA	EDGE OF ASPHALT
EM	ELECTRIC METER
FL	FLOW LINE (OF GUTTER)
GM	GAS METER
MPP	METAL POWER POLE
MSP W/M	METAL SERVICE POLE WITH METER
OHE(1)	OVERHEAD ELECTRIC (NO. OF LINES)
OHT(1)	OVERHEAD TELEPHONE (NO. OF LINES)
PWF	POST & WIRE FENCE
SDMH	STORM DRAIN MAN HOLE
SW	EDGE OF SIDEWALK
TA	TOP OF ASPHALT
TC	TOP OF CURB
TCO	TOP OF CONCRETE
TP	TOP OF PAVEMENT
TOS	TOP OF STEP
TS	TRAFFIC SIGN
TW	TOP OF WALL
WCR	WHEEL CHAIR RAMP
WMB	WATER METER BOX
WP	WOOD POST
WPP	WOOD POWER POLE
+ 46.1	EXISTING SPOT ELEVATION
⊗ 45.0	PROPOSED SPOT ELEVATION
45	PROPOSED CONTOUR
	EXISTING CONTOUR
	PROPOSED DIRECTION OF FLOW
	PROPOSED RETAINING WALL
	PROPOSED HIGHPOINT
	PROPOSED CONCRETE

3 RECORD INFORMATION

4.76 RECORD INFORMATION

RECORD INFORMATION = AS-DESIGNED

⊗ 28.60 / 9.16 RECORD INFORMATION

ELEVATION STILL REQUIRES VERIFICATION

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
2004.068.8	JMA	11/05
	JOAQUIN ARGUELLES JR.	2/23/07
	NMPLS 7472	

BENCH MARK
PROJECT BENCHMARK
ACS 1-3/4" ALUMINUM DISK STAMPED "ASC BM, 12-L15" EPOXIED ON TOP OF A CONCRETE DROP INLET, ENE QUADRANT OF UNIVERSITY BOULEVARD & AVENIDA CESAR CHAVEZ SE, CENTERED ON SAD DROP INLET. ELEVATION = 5098.949 (NGVD 1929)

T.B.M. T.B.M.#1: PK MASONRY NAIL W/WASHER AS SHOWN HEREON ELEVATION = 5147.47 (NGVD1929)
T.B.M.#2: PK MASONRY NAIL AS SHOWN HEREON ELEVATION = 5147.33 (NGVD1929)

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY DATE:
INSPECTOR'S APPROVAL DATE:
FIELD VERIFICATION BY DATE:
DRAWING CORRECTED BY DATE:
MICRO-FILM INFORMATION
RECORDED BY DATE:
NO.

ENGINEER'S STAMP
JEFFREY A. MORTENSEN 8447 REGISTERED PROFESSIONAL ENGINEER
12-09-2005

NO.	DATE	REVISIONS/REMARKS	BY
A	12-07	RECORD DRAWING & C.O.'s FOR TCM	JGM

DESIGNED BY: J.G.M. DATE: 11/05
DRAWN BY: JLP / RRW DATE: 11/05
CHECKED BY: J.G.M. DATE: 11/05

3

RECORD DRAWING

FOR CERTIFICATION, SEE SHEET C-101

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CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: ENLARGED GRADING PLAN
ALBUQUERQUE BICYCLE PARK PH. 1

Design Review Committee	City Engineer Approval	Last Design Update	MO./DAY/YR.	MO./DAY/YR.

City Project No.	Zone Map No.	Sheet	Of
734502	L-15	C104	

JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE NEW MEXICO 87109
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FAX 505 345-4254 ESTABLISHED 1977
2004.068.3

RECEIVED
MAR 16 2007
HYDROLOGY SECTION

File Path: P:\MWORK\2004\068\A
File Name: 40689EGP2_RC.DWG
Plot Date: 03-08-2007
Plot Time: 12:57 pm

DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THIS PROJECT, LOCATED IN THE LOWER SOUTHEAST HEIGHTS REPRESENTS THE DEVELOPMENT OF AN INFILL PROPERTY OWNED BY THE CITY OF ALBUQUERQUE. THE SITE LIES IMMEDIATELY EAST OF THE ISOTOPES BALL PARK. THE DRAINAGE CONCEPT FOR THIS PROJECT WILL BE THE FREE DISCHARGE OF DEVELOPED RUNOFF TO AVENIDA CESAR CHAVEZ SE WHERE A MAJOR PUBLIC STORM DRAIN LIES. THE EXISTING PUBLIC STORM DRAIN COLLECTS RUNOFF CARRIED BY THE STREET AND CONVEYS THAT RUNOFF WEST TO THE SOUTH DIVERSION CHANNEL.

THIS SUBMITTAL IS MADE IN SUPPORT OF WORK ORDER AND BUILDING PERMIT WITHIN THE JURISDICTION OF THE CITY OF ALBUQUERQUE. THIS PLAN SUPERCEDES THE PRIOR CONCEPTUAL PLAN DATED 12-17-2004.

II. PROJECT DESCRIPTION

AS SHOWN BY THE VICINITY MAP, THE SITE IS LOCATED ON THE NORTH SIDE OF AVENIDA CESAR CHAVEZ BETWEEN UNIVERSITY BLVD. SE AND BUENA VISTA DRIVE SE. AT PRESENT, THE SITE IS UNDEVELOPED. THE LAND IMMEDIATELY TO THE WEST IS DEVELOPED AS ISOTOPES BALL PARK. THE LAND TO THE NORTH IS INSTITUTIONAL (TVI AND UNM). THE LAND TO THE EAST IS DEVELOPED AS CITY TENNIS COURTS. AS SHOWN BY PANEL 334 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED BY FEMA FOR BERNALILLO COUNTY, NEW MEXICO, AND INCORPORATED AREAS DATED SEPTEMBER 20, 1996, THIS SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE (ZONE AO). AN AO ZONE IS MAPPED DOWNSTREAM, HOWEVER, IT IS BELIEVED THAT THE MORE RECENT STORM DRAIN IMPROVEMENTS WITHIN AVENIDA CESAR CHAVEZ (FORMERLY STADIUM BLVD.) HAVE ALLEVIATED THE DOWNSTREAM FLOODING.

III. BACKGROUND DOCUMENTS & RESEARCH

THE FOLLOWING ITEMS WERE REVIEWED IN THE PREPARATION OF THIS SUBMITTAL:
A. TOPOGRAPHIC SURVEY OF THE EXISTING SITE PREPARED BY WILSON & CO. DATED 10/21/2004. THE SUBJECT SURVEY SHOWS THE EXISTING IMPROVEMENTS.
B. PRE-DESIGN CONFERENCE WITH THE CITY HYDROLOGIST 08/24/2004. THE OUTCOME OF THAT RECAP CONFIRMED THAT FREE DISCHARGE TO AVENIDA CESAR CHAVEZ IS APPROPRIATE IN LIGHT OF THE RECENT DRAINAGE IMPROVEMENTS TO UNIVERSITY BLVD SE AND AVENIDA CESAR CHAVEZ SE.
C. CONCEPTUAL GRADING AND DRAINAGE PLAN (L15/D13A) PREPARED BY THIS OFFICE DATED 12-17-2004. THIS PRIOR SUBMITTAL ESTABLISHED THE DRAINAGE CRITERIA (FREE DISCHARGE) FOR THIS SITE.

IV. EXISTING CONDITIONS

THE TOPOGRAPHIC DATA PRESENTED HEREWITH, TAKEN FROM THE ABOVE REFERENCED SURVEY BY WILSON & CO., DEMONSTRATES THE EXISTING CONDITIONS OF THE PROJECT SITE. AT PRESENT, THE SITE IS PARTIALLY DEVELOPED WITH CITY TENNIS COURTS AND LIMITED ASPHALT PAVING. THE SITE CURRENTLY DRAINS FROM EAST TO WEST WITH MUCH OF THE DEVELOPED FLOW BEING DIRECTED INTO A TEMPORARY DETENTION POND. IT IS BELIEVED THAT THE TEMPORARY POND WAS CREATED TO MITIGATE THE DISCHARGE OF EXCESS RUNOFF ONTO THE ISOTOPES BALL PARK. THE SITE IS SITUATED TOPOGRAPHICALLY HIGHER THAN AVENIDA CESAR CHAVEZ SE AND AS SUCH DRAINS TO THAT PUBLIC ROADWAY. ISOTOPES BALL PARK IS TOPOGRAPHICALLY LOWER AN HENCE DOES NOT CONTRIBUTE OFFSITE FLOWS. THE INSTITUTIONAL DEVELOPMENT TO THE NORTH HAS BEEN GRADED SUCH THAT IT DOES NOT DRAIN ONTO THE SUBJECT SITE. ITS FLOWS ARE DIRECTED WEST AND EVENTUALLY DISCHARGE TO UNIVERSITY BLVD SE. BUENA VISTA DRIVE LIES TO THE EAST AND APPEARS TO CONTAIN ITS FLOWS AND AS SUCH IS NOT BELIEVED TO CONTRIBUTE OFFSITE FLOWS.

V. PROPOSED CONDITIONS (PHASE 1)

THE PROPOSED IMPROVEMENTS CONSIST OF A BMX TRACK, A NEW BUILDING, PARKING IMPROVEMENTS, PEDESTRIAN PAVING AND ASSOCIATED LANDSCAPING. IN ORDER TO LOCATE THE ABOVE REFERENCED IMPROVEMENTS ON THE SITE, THE EXISTING TENNIS COURTS AND RELATED IMPROVEMENTS MUST BE DEMOLISHED. THE TEMPORARY DETENTION POND WILL REMAIN. THE EXISTING BUILDING AT THE NORTHEAST CORNER WILL BE RENOVATED.
FOR THE PURPOSES OF ANALYSIS, THE SITE HAS BEEN DIVIDED INTO TWO (2) BASIC DRAINAGE AREAS. BASIN A DRAINS INTERNALLY TO A PRIVATE STORM DRAIN SYSTEM THAT ULTIMATELY DISCHARGES TO THE AVENIDA CESAR CHAVEZ STORM DRAIN. PRESENTLY, THE TEMPORARY DETENTION POND OUTLETS TO THE AVENIDA CESAR CHAVEZ STORM DRAIN VIA AN 18-INCH STORM DRAIN CONNECTION TO THE BACK OF A EXISTING STORM INLET IN THE NORTH CURB LINE OF THE ROADWAY. THAT CONNECTION WILL BE UTILIZED FOR THE DISCHARGE OF RUNOFF FROM BASIN A AND ITS SUB-BASINS A-1 THROUGH A-6. THE RUNOFF WILL FLOW A CROSS THE NEW PARKING LOT TO EVENTUALLY DISCHARGE TO AVENIDA CESAR CHAVEZ.
BASIN B IS AN EXISTING CONDITION WHERE NO CHANGES ARE PROPOSED. BASIN B INCLUDES THE EXISTING DETENTION POND.

VI. GRADING PLAN

THE GRADING PLAN SHOWS 1.) EXISTING GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS TAKEN FROM THE SURVEY BY WILSON & CO. REFERENCED ABOVE, 2.) PROPOSED GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS, 3) THE LIMIT AND CHARACTER OF THE EXISTING IMPROVEMENTS TAKEN FROM THE SURVEY BY WILSON & CO. REFERENCED ABOVE, 4.) THE LIMIT AND CHARACTER OF THE PROPOSED IMPROVEMENTS, AND 5.) CONTINUITY BETWEEN EXISTING AND PROPOSED GRADES. AS SHOWN BY THIS PLAN, THE SITE WILL DRAIN BY VARIOUS MEANS. BASIN A, AS INDICATED ABOVE, WILL DRAIN VIA AN INTERNAL PRIVATE STORM DRAIN SYSTEM INTEGRATED WITH A WATER HARVESTING FEATURE. BASIN B WILL CONTINUE TO DRAIN IN THE EXISTING CONDITION UNTIL A SUBSEQUENT PHASE DEVELOPS ON THIS REMAINING PORTION OF THE SITE.

VII. CALCULATIONS

THE CALCULATIONS THAT APPEAR HEREON ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS, FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT. THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS, AS SET FORTH IN THE REVISION OF SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA, DATED JANUARY 1993, HAS BEEN USED TO QUANTIFY THE PEAK RATE OF DISCHARGE AND VOLUME OF RUNOFF GENERATED. THE RESULTS OF THE CALCULATIONS FOR THE DEVELOPED CONDITION ARE PRESENTED IN TABLE FORM. KEY ANALYSIS POINTS, SHOWN ON THE DRAINAGE BASIN MAP PLAN, ARE FURTHER ANALYZED IN ORDER THAT THE PROPOSED PRIVATE STORM DRAIN BE SIZED APPROPRIATELY. THE MANNING EQUATION WAS USED TO EVALUATE PIPE SIZES AND RELATED CAPACITIES. AS A RESULT OF THIS ANALYSIS, THE TOTAL PEAK DISCHARGE CALCULATED FOR BASIN A (16.85 CFS) WILL NOT EXCEED THE CAPACITY (44.4 CFS) OF THE EXISTING 18-INCH STORM DRAIN CONNECTION TO AVENIDA CESAR CHAVEZ.

VIII. CONCLUSIONS

THE FOLLOWING CONCLUSIONS HAVE BEEN ESTABLISHED AS A RESULT OF THE EVALUATIONS CONTAINED HEREIN:
1. THIS SUBMITTAL FOLLOWS THE DRAINAGE CONCEPTS ESTABLISHED BY THE PREVIOUSLY APPROVED CONCEPTUAL PLAN
2. THE SITE DOES NOT LIE WITHIN A DESIGNATED 100-YEAR FLOODPLAIN
3. THIS SITE IS NOT RESTRICTED BY LIMITED OR INADEQUATE DOWNSTREAM CAPACITY
4. THE INCREASED RUNOFF FROM THIS SITE WILL BE HANDLED BY THE EXISTING DOWNSTREAM PUBLIC DRAINAGE IMPROVEMENTS THAT ULTIMATELY DISCHARGE TO THE SOUTH DIVERSION CHANNEL
5. THIS SUBMITTAL IS FOR BUILDING PERMIT APPROVAL.
6. SITE SPECIFIC DRAINAGE SUBMITTALS WILL BE REQUIRED FOR SUBSEQUENT PHASES OF CONSTRUCTION
7. OFFSITE FLOWS DO NOT IMPACT THIS SITE

CALCULATIONS

I SITE CHARACTERISTICS

A) PRECIPITATION ZONE = 2

B) P6,100 = P360 = 2.35 INCHES

C) TOTAL AREA (AT) = 50,1900 SF/11.52 ACRES

D) EXISTING LAND TREATMENT

TREATMENT AREA (SF/AC) %

a) TREATMENT B = 7,525/0.17 02
b) TREATMENT C = 316,573/7.27 63
c) TREATMENT D = 177,802/4.08 35

II EXISTING CONDITION

A) VOLUME
i) WEIGHTED E (EW) = (EAAA+EBAB+ECAC+EDAD)/AT
ii) EW = [0.78(0.17)+1.13(7.27)+2.12(4.08)]/11.52 = 1.48
iii) V360 = EW * AT /12
iv) V360 = 1.48 * 11.52/12 = 1.42 ACRE-FEET = 61,890 CUBIC FEET

B) PEAK DISCHARGE
i) TOTAL QP = QPAAA+QPBAB+ QPCAC+QPDAD
ii) TOTAL QP = 2.28(0.17)+3.14(7.27)+4.70(4.08) = 42.4 CFS

III DEVELOPED CONDITION
THE DEVELOPED CONDITION HAS BEEN INCORPORATED INTO A TABLE FORMAT AS PRESENTED BELOW.

PHASE 1 BASIN ANALYSIS

BASINS	A_T(SF/AC)	A_B(SF/AC)	A_C(SF/AC)	A_D(SF/AC)	V_{100}(AC-FT)	Q_{100}(CFS)	Q_{100}(CFS) CUM
A-1	26,154/0.60	300/0.01		25,854/0.59	0.10	2.80	2.80
A-2	11,475/0.26			11,475/0.26	0.05	1.22	4.02
A-3	11,475/0.26			11,475/0.26	0.05	1.22	5.24
A-4	13,939/0.32			13,939/0.32	0.06	1.50	6.74
A-5	25,560/0.59			25,560/0.59	0.10	2.77	9.51
A-6	73,927/1.70			73,927/1.70	0.30	7.99	17.50
A-7	37,629/0.86			37,629/0.86	0.15	4.04	21.54
B-1	113,256/2.60		113,256/2.60		0.24	8.16	
B-2	110,209/2.53		110,209/2.53		0.24	8.15	
B-3	78,408/1.80	8,690./0.20		69,718/1.60	0.30	7.98	
TOTAL	502,029/11.5	8,990/0.2	223,465/5.1	269,580/6.2	1.6	45.8	

IV COMPARISON

a) VOLUME

△V100 = 1.57-1.42 = 0.15 AC-FT

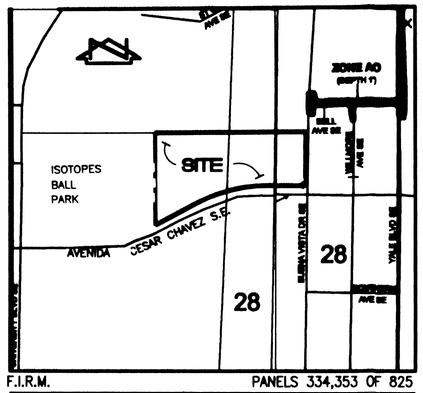
b) PEAK DISCHARGE

△Q100 = 45.2-42.4 = 2.8 CFS

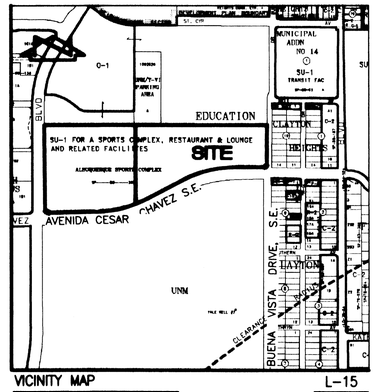
DRAINAGE STRUCTURE SUMMARY TABLE PHASE 1

KEY *	AP	STRUCTURE	RIM/TG	INV. IN	INV. OUT
1	#1	EXIST. SDMH	5123.09'	5119.90'	5119.74'
2	#2	SINGLE 'D' INLET * *	5140.00'	5131.05'	5130.95'
3	N/A	SINGLE 'D' INLET * *	5140.00'	5132.81'	5132.71'
4	#3	SINGLE 'D' INLET * *	5140.00'	5134.05'	5133.95
5	#4	4' SDMH * * *	5140.70'	5134.35'	5134.05'
6	#5	SINGLE 'D' INLET * *	5143.00'	5137.05'	5136.95'
7	#6	SINGLE 'D' INLET * *	5143.00'	5137.75'	5137.65'
8	#7	SINGLE 'D' INLET * *	5143.00'	5138.45'	5138.35'
9	#8	SINGLE 'D' INLET * *	5143.00'	N/A	5139.10'
10	#9	4' SDMH * * *	5143.70'	5139.70	5139.60'
11	N/A	12" CAP	N/A	N/A	5142.00

* REFER TO SHEETS C102 & C103
* * CONSTRUCT PER C.O.A. STD. DWG. 2206
* * * CONSTRUCT PER C.O.A. STD. DWG. 2101



F.I.R.M. PANELS 334,353 OF 825
SCALE: 1" = 500'±



VICINITY MAP
SCALE: 1" = 750'±

L-15

PHASE 1 STORM DRAIN HYDRAULICS

AP TO AP	PIPE SIZE	LENGTH	SLOPE	Q100 (CFS)	QCAP (CFS)	VEL (FPS)	PIPE INVERTS
CURB INLET TO AP1	18"	30'	0.179	37.6	44.4	25.2	5114.53' TO 5119.90'
AP1 TO AP2	24"	350'	0.032	28.36	40.5	12.9	5119.90' TO 5131.00'
AP2 TO AP3	24"	191'	0.016	24.32	27.7	9.1	5131.00' TO 5134.00'
AP3 TO AP4	24"	17'	0.012	6.74	24.8	7.9	5134.00' TO 5134.20'
AP4 TO AP5	18"	255'	0.011	5.74	11.0	6.2	5134.20' TO 5137.00'
AP5 TO AP6	18"	68'	0.010	5.24	10.5	5.9	5137.00' TO 5137.70'
AP6 TO AP7	18"	68'	0.010	4.02	10.5	5.9	5137.70' TO 5138.40'
AP7 TO AP8	18"	68'	0.010	2.80	10.5	5.9	5138.40' TO 5139.10'
AP2 TO AP9	12"	210'	0.041	4.04	7.1	12	5131.00' TO 5139.60
AP9 TO AP10	18"	330'	0.007	4.04	9.0	5	5139.70' TO 5142.0'

NOTE: ALL LENGHTS ABOVE DETERMINED FOR HYDRAULIC ANALYSIS PURPOSES. AS-BUILT DISTANCES MAY VARY.

AS BUILT INFORMATION
CONTRACTOR DATE:
WORK STAKED BY DATE:
INSPECTOR'S APPROVAL DATE:
FIELD VERIFICATION BY DATE:
DRAWING CORRECTED BY DATE:
MICRO-FILM INFORMATION
RECORDED BY DATE:
NO.

BENCH MARK
ALL ELEVATIONS ARE BASED UPON ALBUQUERQUE CONTROL SURVEY MONUMENT: 7-L15

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
614019	WILSON & CO	10/20/04
	CITY SURVEYOR	09/08/05

ENGINEER'S STAMP



NO.	DATE	REVISIONS/REMARKS	BY
		DESIGNED BY: F.J.A.	DATE: 10/05
		DRAWN BY: R.R.W.	DATE: 10/05
		CHECKED BY: J.G.M.	DATE: 10/05

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CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: PHASE 1 DRAINAGE PLAN AND CALCULATIONS
ALBUQUERQUE BICYCLE PARK PH. 1

Design Review Committee	City Engineer Approval	Last Design Update	MO/DAY/YR.	MO/DAY/YR.

City Project No. 734502 | Zone Map No. L-15 | Sheet | Of

C101

jmn 2004.068.3
JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE NEW MEXICO 87109
ENGINEERS SURVEYORS (505) 345-4250
FAX 505 345-4254 ESTABLISHED 1977

RECEIVED
NOV 14 2005
HYDROLOGY SECTION

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NOV 14 2005
HYDROLOGY SECTION

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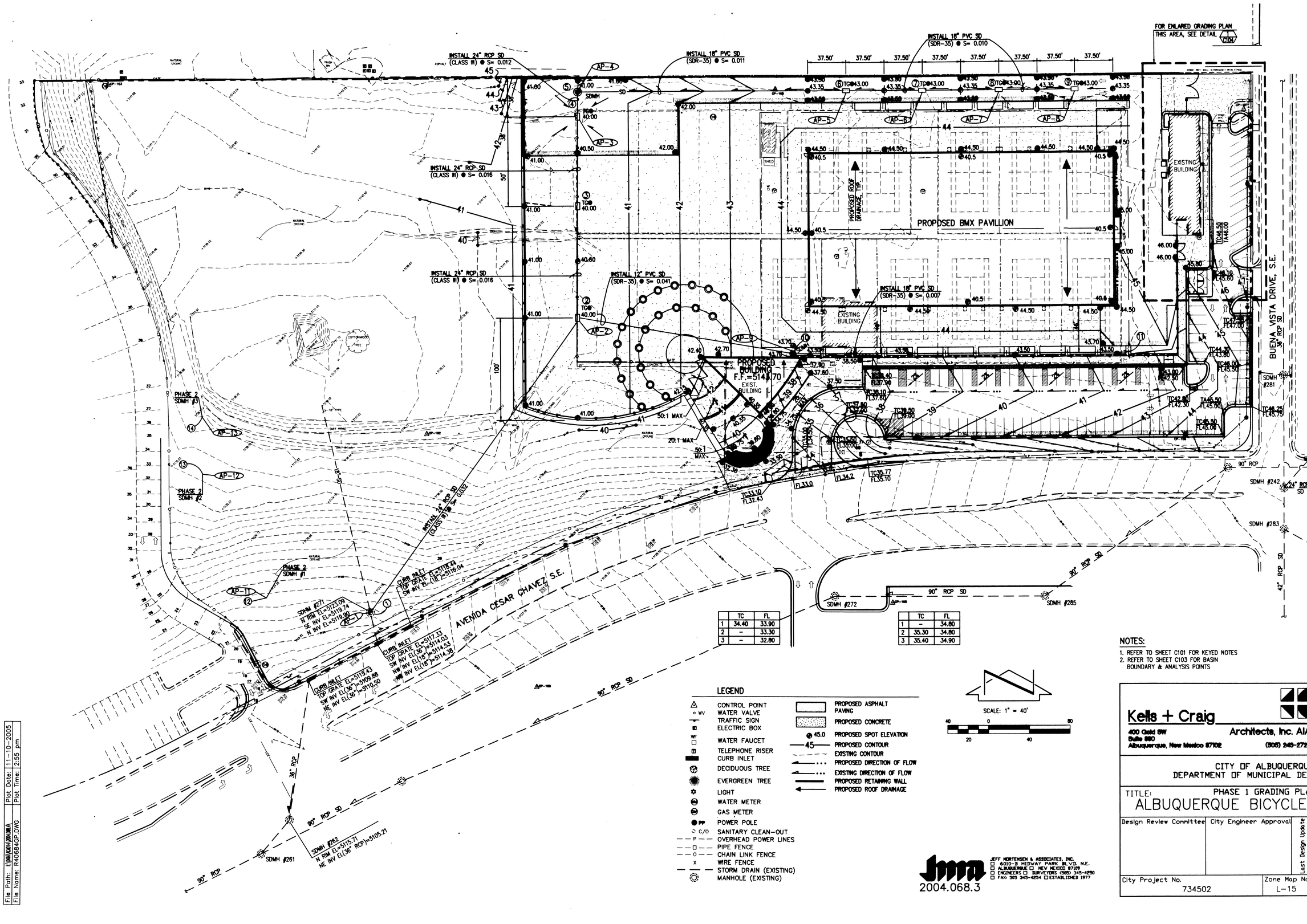
File Name: 40683DC.DWG
Plot Date: 11-10-2005
Plot Time: 2:11 pm



	TC	FL
1	34.40	33.90
2	–	33.30
3	–	32.80

	TC	FL
1	–	34.80
2	35.30	34.80
3	35.40	34.90

LEGEND

- CONTROL POINT
- WV WATER VALVE
- TRAFFIC SIGN
- ELECTRIC BOX
- WF WATER FAUCET
- TELEPHONE RISER
- CURB INLET
- DECIDUOUS TREE
- EVERGREEN TREE
- LIGHT
- WATER METER
- GAS METER
- PP POWER POLE
- C/O SANITARY CLEAN-OUT
- P OVERHEAD POWER LINES
- PIPE FENCE
- CHAIN LINK FENCE
- X WIRE FENCE
- STORM DRAIN (EXISTING)
- MANHOLE (EXISTING)
- PROPOSED ASPHALT PAVING
- PROPOSED CONCRETE
- 45.0 PROPOSED SPOT ELEVATION
- 45 PROPOSED CONTOUR
- EXISTING CONTOUR
- PROPOSED DIRECTION OF FLOW
- EXISTING DIRECTION OF FLOW
- PROPOSED RETAINING WALL
- PROPOSED ROOF DRAINAGE

SCALE: 1" = 40'

40 0 80
20 40

NOTES:

1. REFER TO SHEET C101 FOR KEYED NOTES
2. REFER TO SHEET C103 FOR BASIN BOUNDARY & ANALYSIS POINTS

AS BUILT INFORMATION		
CONTRACTOR		DATE:
WORK STAKED BY		DATE:
INSPECTOR'S APPROVAL		DATE:
FIELD VERIFICATION BY		DATE:
DRAWING CORRECTED BY		DATE:
MICRO-FILM INFORMATION		
RECORDED BY		DATE:
NO.		

BENCH MARK
ALL ELEVATIONS ARE BASED UPON ALBUQUERQUE CONTROL SURVEY MONUMENT: 7-L15

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
614019	WILSON & CO	10/20/04
	CITY SURVEYOR	09/08/05

ENGINEER'S STAMP

JEFFREY G. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER
11-7-2005

NO.	DATE	REVISIONS/REMARKS	BY
		DESIGNED BY: J.G.M.	DATE: 10/05
		DRAWN BY: RRW/JLP	DATE: 10/05
		CHECKED BY: J.G.M.	DATE: 10/05

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CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: PHASE 1 GRADING PLAN
ALBUQUERQUE BICYCLE PARK PH. 1

Design Review Committee	City Engineer Approval	Last Design Update	MO./DAY/YR.	MO./DAY/YR.

City Project No. 734502 | Zone Map No. L-15 | Sheet C102 of

JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE NEW MEXICO 87109
ENGINEERS SURVEYORS (505) 345-4250
FAX: 505 345-4254 ESTABLISHED 1977

2004.068.3

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HYDROLOGY SECTION

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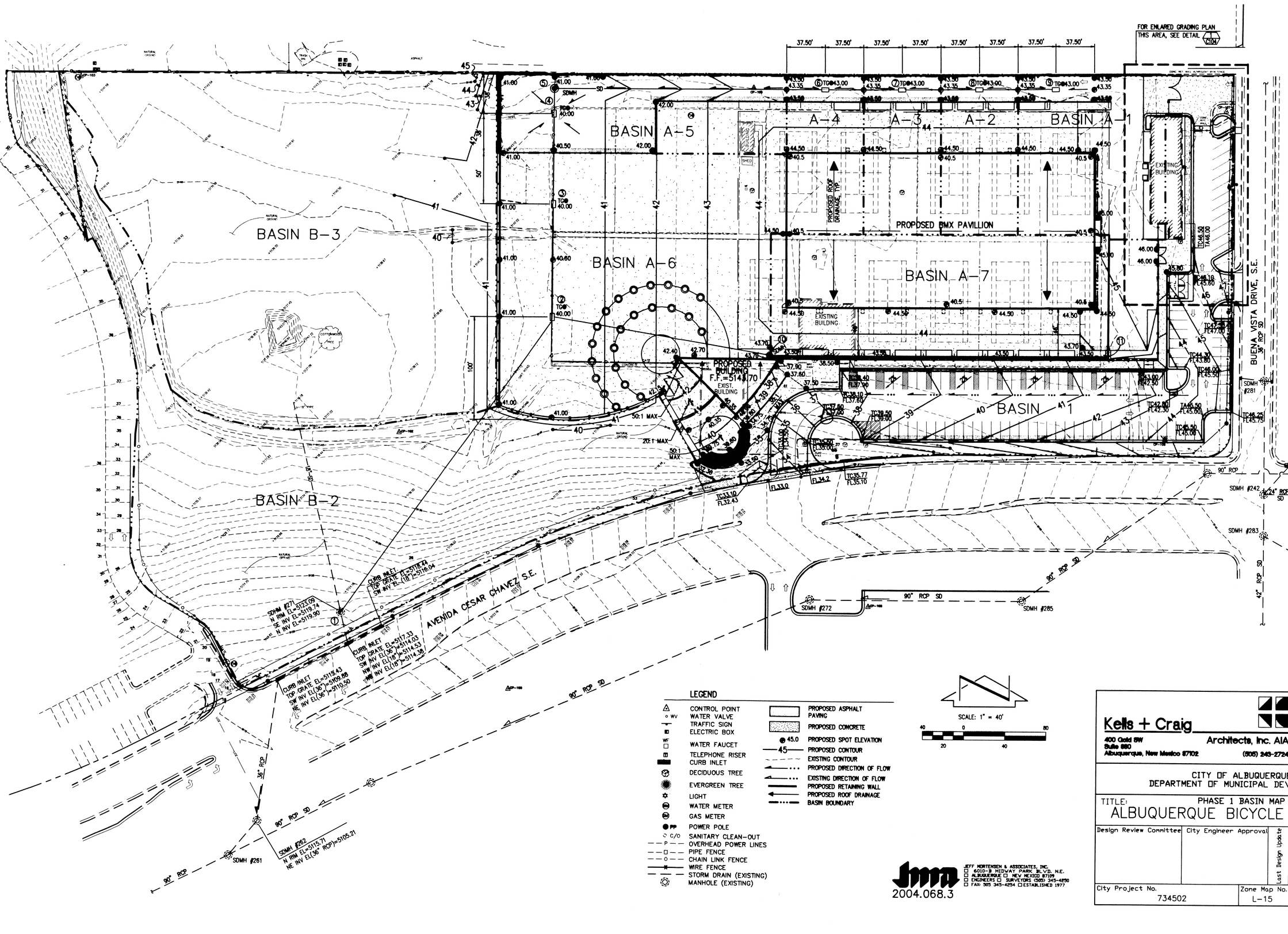

LEGEND

- CONTROL POINT
- WV WATER VALVE
- TRAFFIC SIGN
- ELECTRIC BOX
- WF WATER FAUCET
- TELEPHONE RISER
- CURB INLET
- DECIDUOUS TREE
- EVERGREEN TREE
- LIGHT
- WATER METER
- GAS METER
- PP POWER POLE
- C/O SANITARY CLEAN-OUT
- OVERHEAD POWER LINES
- PIPE FENCE
- CHAIN LINK FENCE
- WIRE FENCE
- STORM DRAIN (EXISTING)
- MANHOLE (EXISTING)
- PROPOSED ASPHALT PAVING
- PROPOSED CONCRETE
- 45.0 PROPOSED SPOT ELEVATION
- 45 PROPOSED CONTOUR
- EXISTING CONTOUR
- PROPOSED DIRECTION OF FLOW
- EXISTING DIRECTION OF FLOW
- PROPOSED RETAINING WALL
- PROPOSED ROOF DRAINAGE
- BASIN BOUNDARY

SCALE: 1" = 40'

40 0 80
20 40

AS BUILT INFORMATION	DATE:
CONTRACTOR	DATE:
WORK STAKED BY	DATE:
INSPECTOR'S APPROVAL	DATE:
FIELD VERIFICATION BY	DATE:
DRAWING CORRECTED BY	DATE:
MICRO-FILM INFORMATION	
RECORDED BY	DATE:
NO.	

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
614019	WILSON & CO	10/20/04
	CITY SURVEYOR	09/08/05

BENCH MARK
ALL ELEVATIONS ARE BASED UPON ALBUQUERQUE CONTROL SURVEY MONUMENT: 7-L15

ENGINEER'S STAMP

JEFFREY A. MORTENSEN
NEW MEXICO
8547
PROFESSIONAL ENGINEER
REGISTERED

11-14-2005

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		DESIGNED BY: J.G.M.	DATE: 10/05
		DRAWN BY: RRW/JLP	DATE: 10/05
		CHECKED BY: J.G.M.	DATE: 10/05

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JMA 2004.068.3
JEFF MORTENSEN & ASSOCIATES, INC.
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CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: PHASE 1 BASIN MAP
ALBUQUERQUE BICYCLE PARK PH. 1

Design Review Committee	City Engineer Approval	Last Design Update	MO./DAY/YR.	MO./DAY/YR.

City Project No.	Zone Map No.	Sheet	Of
734502	L-15		

C103

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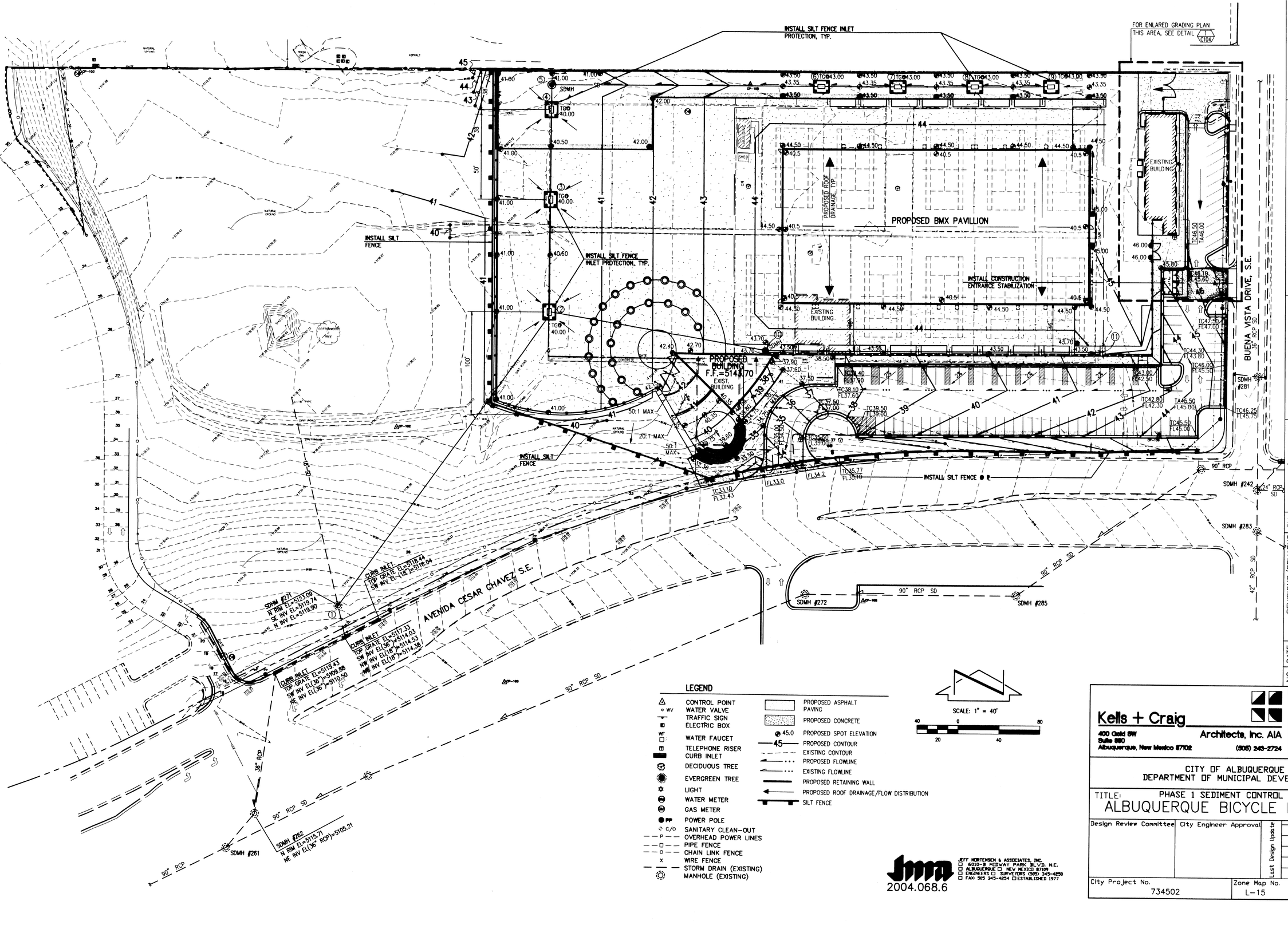
HYDROLOGY SECTION



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JMA 2004.068.6

JEFF MORTENSEN & ASSOCIATES, INC.
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CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: PHASE 1 SEDIMENT CONTROL PLAN
ALBUQUERQUE BICYCLE PARK PH. 1

Design Review Committee	City Engineer Approval	Last Design Update	MO/DAY/YR.	MO/DAY/YR.

City Project No.	Zone Map No.	Sheet	Of
734502	L-15		

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NOV 14 2005
HYDROLOGY SECTION

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DESIGNED BY: J.G.M. DATE: 10/05
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CHECKED BY: J.G.M. DATE: 10/05

ENGINEER'S STAMP
JEFFREY A. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER
11-14-2005

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
614019	WILSON & CO	10/20/04
	CITY SURVEYOR	09/08/05

BENCH MARK
ALL ELEVATIONS ARE BASED UPON ALBUQUERQUE CONTROL SURVEY MONUMENT: 7-L15

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RECORDED BY DATE:
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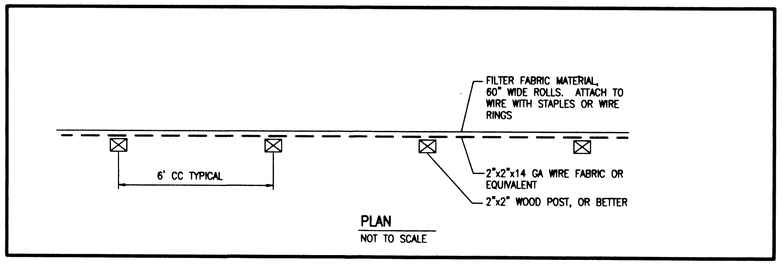
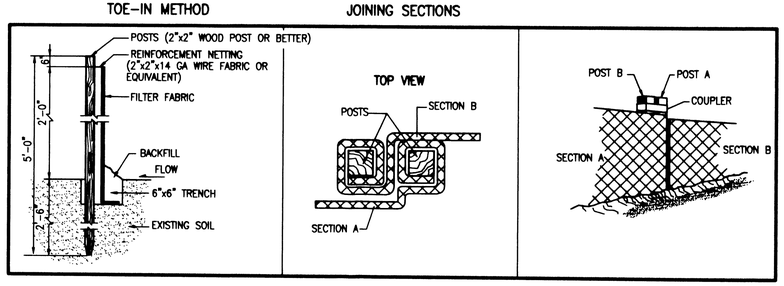
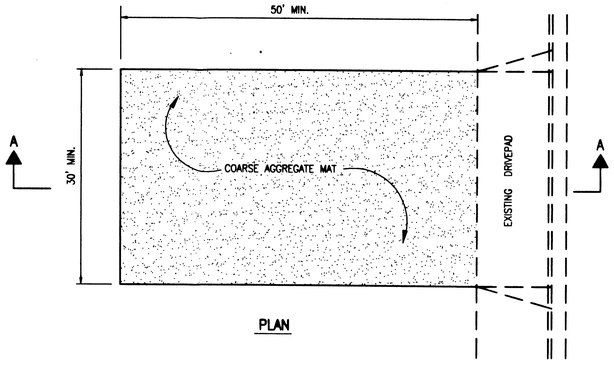


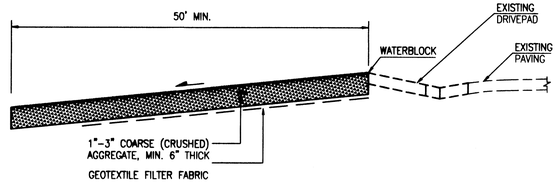
PLAN
NOT TO SCALE



PREFABRICATED SILT FENCE DETAILS
NOT TO SCALE



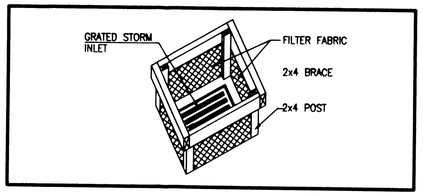
PLAN



CONSTRUCTION ENTRANCE STABILIZATION
SCALE: 1" = 10' HORIZ.
1" = 2' VERT

SECTION A-A

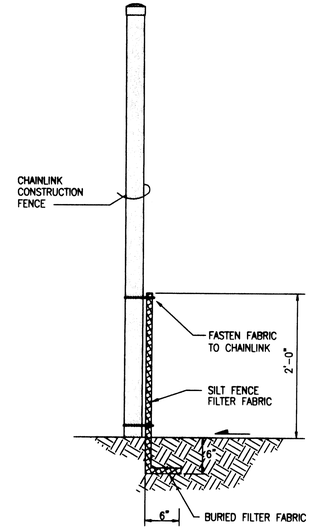
SILT FENCE INLET PROTECTION SECTION
NOT TO SCALE



SILT FENCE INLET PROTECTION
NOT TO SCALE

EROSION CONTROL NOTES:

1. THIS PLAN ADDRESSES GENERAL AND SPECIFIC MEASURES FOR CONSTRUCTION PHASE EROSION AND DUST CONTROL. REFER TO THE GRADING AND DRAINAGE PLAN PREPARED BY JEFF MORTENSEN AND ASSOCIATES, INC. FOR GRADING NOTES AND INFORMATION.
2. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY.
3. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
4. CONCRETE TRUCKS SHALL BE SENT BACK TO PLANT FOR WASHING. THE WASHING OF CONCRETE TRUCKS SHALL NOT BE PERMITTED ON THIS SITE.
5. THE CONTRACTOR SHALL SECURE ALL REQUIRED PERMITS PRIOR TO BEGINNING CONSTRUCTION.
6. THE CONTRACTOR SHALL PROMPTLY REMOVE SEDIMENT ACCUMULATION FROM SILT FENCES WITHIN 48 HOURS OF A RAINFALL EVENT.
7. THE CONTRACTOR SHALL PICK UP LITTER AND CONSTRUCTION DEBRIS ON A DAILY BASIS.
8. OFFSITE MATERIAL STORAGE AREAS USED BY THIS PROJECT ARE CONSIDERED PART OF THE PROJECT AND ARE SUBJECT TO THE REQUIREMENTS OF THIS EROSION CONTROL PLAN.
9. THE CONTRACTOR SHALL IMPLEMENT ON-SITE STRUCTURAL EROSION CONTROL PRACTICES AS REQUIRED TO COMPLY WITH THE EROSION CONTROL PLAN. THESE PRACTICES MAY INCLUDE BUT ARE NOT LIMITED TO: SILT FENCES, EARTHEN DIKES, DRAINAGE SWALES, SEDIMENT TRAPS, CHECK DAMS, SUBSURFACE DRAINS, PIPE SLOPE DRAINS, LEVEL SPREADERS, STORM RETAINING SYSTEM, GABIONS AND TEMPORARY OR PERMANENT SEDIMENT BASINS.
10. THE CONTRACTOR SHALL MINIMIZE OFFSITE VEHICLE TRACKING OF SEDIMENT AND DUST GENERATION.
11. UPON COMPLETION OF MASS GRADING, ALL DISTURBED AREAS SHALL BE STABILIZED WITH PERMANENT CONSTRUCTION, LANDSCAPING, VEGETATION AND/OR GRAVEL MULCH. SILT FENCING CAN BE REMOVED UPON SUCCESSFUL ESTABLISHMENT OF VEGETATION.
12. REFER TO STORM WATER POLLUTION PREVENTION PLAN FOR PROJECT SPECIFIC PHASING AND INFORMATION. THIS PROJECT SHALL BE IMPLEMENTED IN PHASES TO MINIMIZE THE EXTENT AND DURATION OF SURFACE DISTURBANCE.
13. FOR EXAMPLES OF ADDITIONAL BMP'S, REFER TO THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM MANUAL - STORM WATER MANAGEMENT GUIDELINES FOR CONSTRUCTION AND INDUSTRIAL ACTIVITIES, NOVEMBER 2002. COPIES ARE INCLUDED IN THE APPENDIX OF THE PROJECT SWPPP FOR EASE OF REFERENCE.



CONSTRUCTION FENCE/SILT FENCE SECTION
SCALE: 1" = 2'

(ALTERNATE INSTALLATION METHOD)

2004.068.6

JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE NEW MEXICO 87109
ENGINEERS SURVEYORS (505) 345-4250
FAX: 505 345-4254 ESTABLISHED 1977

AS BUILT INFORMATION
CONTRACTOR DATE:
WORK STAKED BY DATE:
INSPECTOR'S APPROVAL DATE:
FIELD VERIFICATION BY DATE:
DRAWING CORRECTED BY DATE:
MICRO-FILM INFORMATION
RECORDED BY DATE:
NO.

BENCH MARK
ALL ELEVATIONS ARE BASED UPON ALBUQUERQUE CONTROL SURVEY MONUMENT: 7-L15

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
614019	WILSON & CO	10/20/04
	CITY SURVEYOR	09/08/05

ENGINEER'S STAMP
NEW MEXICO 8647 JEFFREY G. MORTENSEN REGISTERED PROFESSIONAL ENGINEER
11-14-2005

NO.	DATE	REVISIONS/REMARKS	BY
		DESIGNED BY:	J.G.M.
		DRAWN BY:	JLP
		CHECKED BY:	J.G.M.
		DATE: 09/05	
		DATE: 10/05	
		DATE: 09/05	

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CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: SEDIMENT CONTROL DETAILS
ALBUQUERQUE BICYCLE PARK PH. 1

Design Review Committee	City Engineer Approval	Last Design Update	MO./DAY/YR.	MO./DAY/YR.

City Project No. 734502 | Zone Map No. L-15 | Sheet | Of

C302

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HYDROLOGY SECTION

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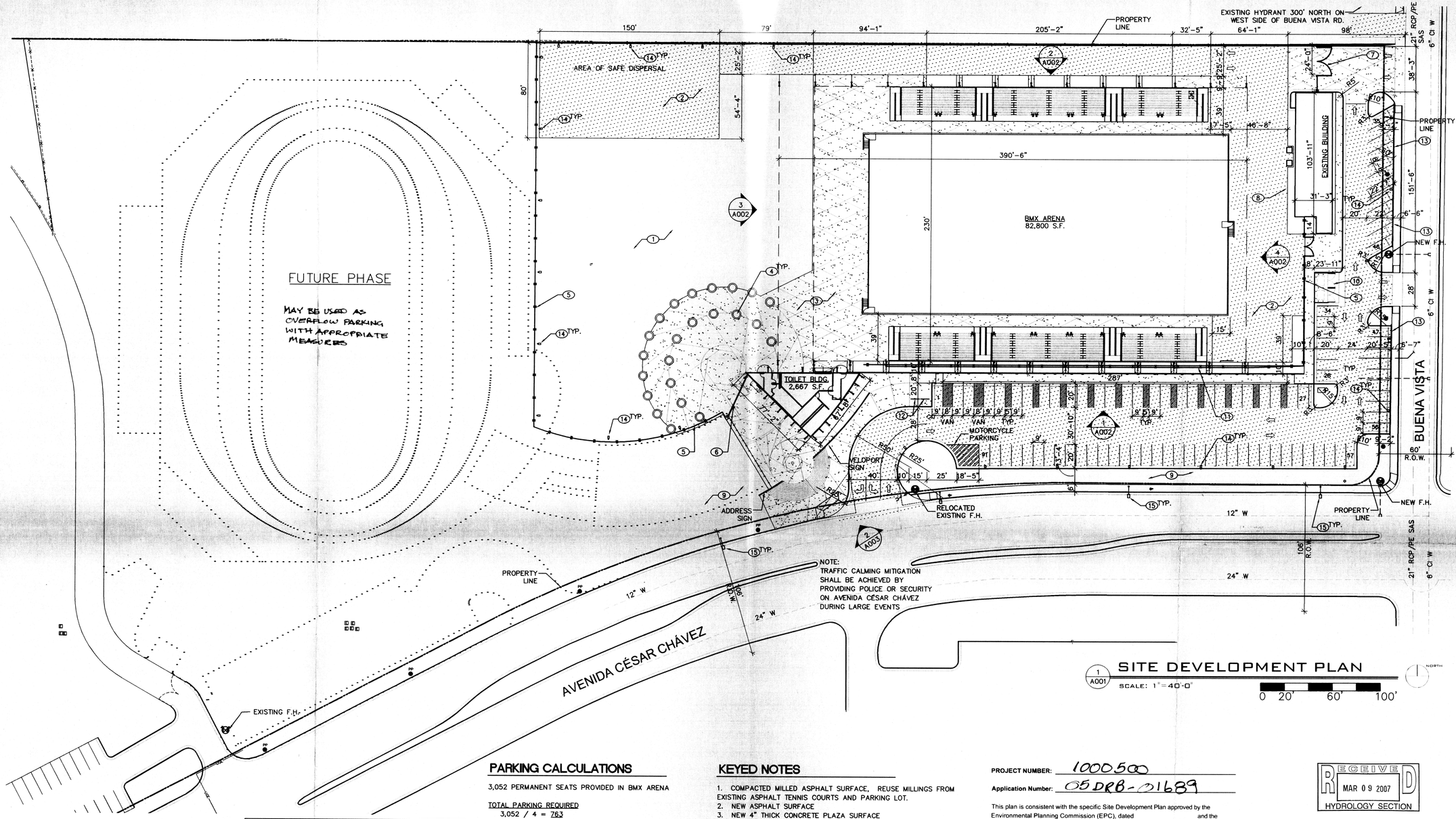
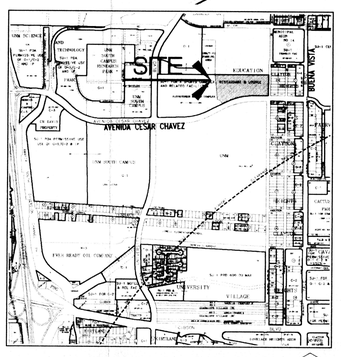
Plot Time: 3:39 pm





VICINITY MAP – L-15-Z NORTH

PARKING CALCULATIONS

3,052 PERMANENT SEATS PROVIDED IN BMX ARENA

TOTAL PARKING REQUIRED
3,052 / 4 = 763

TOTAL ACCESSIBLE PARKING REQUIRED
16 ACCESSIBLE SPACES
3 OF WHICH MUST BE VAN ACCESSIBLE

TOTAL PARKING PROVIDED
91 ON SITE PARKING SPACES
THE REMAINING 672 SPACES WILL BE PROVIDED THROUGH A SHARED PARKING AGREEMENT WITH UNM STADIUM PARKING ON THE SOUTH SIDE OF AVENIDA CESAR CHAVEZ

TOTAL ACCESSIBLE PARKING PROVIDED
13 PERMANENT ACCESSIBLE SPACES
3 PERMANENT VAN ACCESSIBLE SPACES
10 TEMPORARY ACCESSIBLE SPACES

BIKE SPACES REQUIRED
CONDITION 3.c. OF THE EPC NOTICE OF DECISION DATED FEB. 17, 2005 FOR PROJECT #1000500 STATES "The applicant shall provide a total of 25 bicycle parking spaces for both the Albuquerque Bicycle Park, Isotope Stadium..."

BIKE SPACES PROVIDED
14 PROVIDED IN PHASE 1
THE REMAINING 11 WILL BE PROVIDED IN A FUTURE CONSTRUCTION PHASE

KEYED NOTES

1. COMPACTED MILLED ASPHALT SURFACE, REUSE MILLINGS FROM EXISTING ASPHALT TENNIS COURTS AND PARKING LOT.
2. NEW ASPHALT SURFACE
3. NEW 4" THICK CONCRETE PLAZA SURFACE
4. 7'-8" DIAMETER RAISED TREE WELL/BENCH, REF. LANDSCAPE PLAN
5. NEW 6' HIGH CHAIN LINK FENCE
6. NEW 10' HIGH CUSTOM DESIGN PIVOT GATES
7. NEW 6' CHAIN LINK VEHICLE ACCESS GATE
8. NEW RETAINING WALL AROUND EXISTING BUILDING
9. PLANTING AREA, REF. LANDSCAPE PLAN
10. DOUBLE REFUSE CONTAINER ENCLOSURE, LOCATION APPROVED BY MICHAEL HOLTON ON 10.19.05, REF. DTL. 5/A003
11. 8' HIGH CHAIN LINK FENCE WITH BLACK PLASTIC COATING, DOUBLE LINES INDICATED SLOPING FENCE IN PLAN VIEW
12. STEEL PIPE BIKE RACK, SPACE FOR 7 BIKES
13. PROVIDE 3' HIGH CMU SCREEN WALL WITH STUCCO FINISH
14. NEW POLE MOUNTED SITE LIGHT, REF. DTL 3/A003
15. EXISTING STREET LIGHTS ALONG AVENIDA CÉSAR CHÁVEZ

PROJECT NUMBER: 1000500

Application Number: 05DRB-01689

This plan is consistent with the specific Site Development Plan approved by the Environmental Planning Commission (EPC), dated _____ and the Findings and Conditions in the Official Notification of Decision are satisfied.

Is an Infrastructure List required? ( ) Yes (X) No If yes, then a set of approved DRC plans with a work order is required for any construction within Public Right-of-Way or for construction or public improvements.

DRB SITE DEVELOPMENT PLAN SIGNOFF APPROVAL:

Traffic Engineering, Transportation Division	Date 11-15-05
Water Utility Department	Date 11/9/05
Parks and Recreation Department	Date 11/9/05
City Engineer	Date 11/9/05
* Environmental Health Department (conditional)	Date N/A
Solid Waste Management	Date 11/16/05
DRB Chairperson, Planning Department	Date 11/09/05

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HYDROLOGY SECTION

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

BENCH MARK
ALL ELEVATIONS ARE BASED UPON ALBUQUERQUE CONTROL SURVEY MONUMENT: 7-L15

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NO.

NO.	DATE	REVISIONS/REMARKS	BY
		DESIGNED BY: DATE:	
		DRAWN BY: DATE:	
		CHECKED BY: DATE:	

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CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: SITE DEVELOPMENT PLAN FOR BUILDING PERMIT
ALBUQUERQUE BICYCLE PARK PH. 1

NOVEMBER 8, 2005

Design Review Committee	City Engineer Approval	Last Design Update	MO/DAY/YR	MO/DAY/YR

City Project No. 7345-02 | Zone Map No. L-15-Z | Sheet A001 Of

DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THIS PROJECT, LOCATED IN THE LOWER SOUTHEAST HEIGHTS REPRESENTS THE DEVELOPMENT OF AN INFILL PROPERTY OWNED BY THE CITY OF ALBUQUERQUE. THE SITE LIES IMMEDIATELY EAST OF THE ISOTOPES BALL PARK. THE DRAINAGE CONCEPT FOR THIS PROJECT WILL BE THE FREE DISCHARGE OF DEVELOPED RUNOFF TO AVENIDA CESAR CHAVEZ SE WHERE A MAJOR PUBLIC STORM DRAIN LIES. THE EXISTING PUBLIC STORM DRAIN COLLECTS RUNOFF CARRIED BY THE STREET AND CONVEYS THAT RUNOFF WEST TO THE SOUTH DIVERSION CHANNEL.

THIS SUBMITTAL IS MADE IN SUPPORT OF SITE PLAN FOR BUILDING PERMIT (EPC AND DRB) WITHIN THE JURISDICTION OF THE CITY OF ALBUQUERUQE. THIS PLAN SUPERCEDES THE PRIOR PLAN DATED 12-17-2004.

II. PROJECT DESCRIPTION

AS SHOWN BY THE VICINITY MAP, THE SITE IS LOCATED ON THE NORTH SIDE OF AVENIDA CESAR CHAVEZ BETWEEN UNIVERSITY BLVD. SE AND BUENA VISTA DRIVE SE. AT PRESENT, THE SITE IS UNDEVELOPED. THE LAND IMMEDIATELY TO THE WEST IS DEVELOPED AS ISOTOPES BALL PARK. THE LAND TO THE NORTH IS INSTITUTIONAL (TVI AND UNM). THE LAND TO THE EAST IS DEVELOPED AS CITY TENNIS COURTS. AS SHOWN BY PANEL 334 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED BY FEMA FOR BERNALILLO COUNTY, NEW MEXICO, AND INCORPORATED AREAS DATED SEPTEMBER 20, 1996, THIS SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE (ZONE AO). AN AO ZONE IS MAPPED DOWNSTREAM, HOWEVER, IT IS BELIEVED THAT THE MORE RECENT STORM DRAIN IMPROVEMENTS WITHIN AVENIDA CESAR CHAVEZ (FORMERLY STADIUM BLVD.) HAVE ALLEVIATED THE DOWNSTREAM FLOODING.

III. BACKGROUND DOCUMENTS & RESEARCH

THE FOLLOWING ITEMS WERE REVIEWED IN THE PREPARATION OF THIS SUBMITTAL:
A. TOPOGRAPHIC SURVEY OF THE EXISTING SITE PREPARED BY WILSON & CO. DATED 10/21/2004. THE SUBJECT SURVEY SHOWS THE EXISTING IMPROVEMENTS.
B. PRE-DESIGN CONFERENCE WITH THE CITY HYDROLOGIST 08/24/2004. THE OUTCOME OF THAT RECAP CONFIRMED THAT FREE DISCHARGE TO AVENIDA CESAR CHAVEZ IS APPROPRIATE IN LIGHT OF THE RECNET DRAINAGE IMPROVEMENTS TO UNIVERSITY BLVD SE AND AVENIDA CESAR CHAVEZ SE.
C. CONCEPTUAL GRADING AND DRAINAGE PLAN (LIS/D-) PREPARED BY THIS OFFICE DATED 12-17-2004. THIS PRIOR SUBMITTAL ESTABLISHED THE DRAINAGE CRITERIA (FREE DISCHARGE) FOR THIS SITE.

IV. EXISTING CONDITIONS

THE TOPOGRAPHIC DATA PRESENTED HEREWITH, TAKEN FROM THE ABOVE REFERENCED SURVEY BY WILSON & CO., DEMONSTRATES THE EXISTING CONDITIONS OF THE PROJECT SITE. AT PRESENT, THE SITE IS PARTIALLY DEVELOPED WITH CITY TENNIS COURTS AND LIMITED ASPHALT PAVING. THE SITE CURRENTLY DRAINS FROM EAST TO WEST WITH MUCH OF THE DEVELOPED FLOW BEING DIRECTED INTO A TEMPORARY DETENTION POND. IT IS BELIEVED THAT THE TEMPORARY POND WAS CREATED TO MITIGATE THE DISHARGE OF EXCESS RUNOFF ONTO THE ISOTOPES BALL PARK. THE SITE IS SITUATED TOPOGRAPHICALLY HIGHER THAN AVENIDA CESAR CHAVEZ SE AND AS SUCH DRAINS TO THAT PUBLIC ROADWAY. ISOTOPES BALL PARK IS TOPOGRAPHICALLY LOWER AN HENCE DOES NOT CONTRIBUTE OFFSITE FLOWS. THE INSTITUTIONAL DEVELOPMENT TO THE NORTH HAS BEEN GRADED SUCH THAT IT DOES NOT DRAIN ONTO THE SUBJECT SITE. ITS FLOWS ARE DIRECTED WEST AND EVENTUALLY DISCHARGE TO UNIVERSITY BLVD SE. BUENA VISTA DRIVE LIES TO THE EAST AND APPEARS TO CONTAIN ITS FLOWS AND AS SUCH IS NOT BELIEVED TO CONTRIBUTE OFFSITE FLOWS.

V. PROPOSED CONDITIONS

THE PROPOSED IMPROVEMENTS CONSIST OF A VELODROME, A BMX TRACK, SEVERAL BUILDINGS, PARKING IMPROVEMENTS, PEDESTRIAN PAVING AND ASSOCIATED LANDSCAPING. IN ORDER TO LOCATE THE ABOVE REFERENCED IMPROVMENTS ON THE SITE, SEVERAL OF THE EXISTING TENNIS COURTS AND RELATED IMPROVMENTS WILL REQUIRE DEMOLITION. SIMILARLY, THE TEMPORARY DETENTION POND WILL BE REMOVED.

FOR THE PURPOSES OF ANALYSIS, THE SITE HAS BEEN DIVIDED INTO FOUR (4) BASIC DRAINAGE AREAS. BASIN A DRAINS INTERNALLY TO A PRIVATE STORM DRAIN SYSTEM THAT ULTIMATELY DISCHARGES TO THE AVENIDA CESAR CHAVEZ STORM DRAIN. IN AN EFFORT TO COMSERVE WATER RESOURCES, IT IS PROPOSED TO INTERCEPT THE MAJORITY OF THE STORM WATER IN AN UNDERGROUND STORAGE FACILITY TO LATER USE FOR SITE IRRIGATION. ONCE THE UNDERGROUND STORAGE IS FILLED, THE STORM WATER WILL BYPASS THE WATER HARVESTING FEATURE AND RELEASE TO THE AVENIDA CESAR CHAVEZ STORM DRAIN. PRESENTLY, THE TEMPORARY DETENTION POND OUTLETS TO THE AVENIDA CESAR CHAVEZ STORM DRAIN VIA AN 18-INCH STORM DRAIN CONNECTION TO THE BACK OF A EXISTING STORM INLET IN THE NORTH CURB LINE OF THE ROADWAY. THAT CONNECTION WILL BE UTILIZED FOR THE DISCHARGE OF RUNOFF FROM BASIN A AND ITS SUB-BASINS A-1 THROUGH A-9. IN THE EVENT THAT THE SYSTEM BECOMES OVERTAXED, THE EXISTING STORM DRAIN MANHOLE (AP-1) WILL ACT AS A BUBBLER TO RELEASE THE EXCESS VIA A GRATED LID. FROM THIS POINT, THE RUNOFF WILL FLOW ACROSS THE NEW PARKING LOT TO EVENTUALLY DISCHARGE TO AVENIDA CESAR CHAVEZ VIA AN EXISTING PRIVATE ENTRANCE.

BASIN B IS AN EXISTING CONDITION WHERE EXISTING PAVING AND BUILDING IMPROVEMENTS SHEET DRAIN TO BUENA VISTA DRIVE SE. THIS PATTERN WILL REMAIN UNALTERED.
BASIN C REPRESENTS THE MAJORITY OF THE PARKING LOT IMPROVEMENTS THAT WILL FREE DISCHARGE TO AVENIDA CESAR CHAVEZ. DISCHARGE WILL OCCUR VIA EXISTING AND PROPOSED PRIVATE ENTRANCES.
BASIN I IS A VERY SMALL AREA THAT WILL CONTINUE TO DRAIN ONTO THE EXISTING SERVICE ROAD THAT LIES EAST OF AND ABOVE ISOTOPES PARK. THE LIMITED TOPOGRAPHIC DATA PROVIDED DOES NOT ALLOW FOR THE DETERMINATION OF THE ULTIMATE DISCHARGE POINT FOR BASIN I, HOWEVER, THE AREA AND ASSOCIATED RUNOFF ARE SMALL.

VI. GRADING PLAN

THE GRADING PLAN SHOWS 1.) EXISTING GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS TAKEN FROM THE SURVEY BY WILSON & CO. REFERENCED ABOVE, 2.) PROPOSED GRADES INCICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS, 3) THE LIMIT AND CHARACTER OF THE EXISTING IMPROVEMENTS TAKEN FROM THE SURVEY BY WILSON & CO. REFERENCED ABOVE, 4.) THE LIMIT AND CHARACTER OF THE PROPOSED IMPROVEMENTS, AND 5.) CONTINUITY BETWEEN EXISTING AND PROPOSED GRADES. AS SHOWN BY THIS PLAN, THE SITE WILL DRAIN BY VARIOUS MEANS. BASIN A, AS INDICATED ABOVE, WILL DRAIN VIA AN INTERNAL PRIVATE STORM DRAIN SYSTEM INTEGRATED WITH A WATER HARVESTING FEATURE. BASIN B WILL CONTINUE TO SHEET DRAIN TO BUENA VISTA DRIVE SE. BASIN C WILL SURFACE DRAIN TO AVENIDA CESAR CHAVEZ VIA EXISTING AND PROPOSED PRIVATE ENTRANCES.

VII. CALCULATIONS

THE CALCULATIONS THAT APPEAR HEREON ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS, FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT. THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS, AS SET FORTH IN THE REVISION OF SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA, DATED JANUARY 1993, HAS BEEN USED TO QUANTIFY THE PEAK RATE OF DISCHARGE AND VOLUME OF RUNOFF GENERATED. THE RESULTS OF THE CALCULATIONS FOR THE DEVELOPED CONDITION ARE PRESENTED IN TABLE FORM. KEY ANALYSIS POINTS, SHOWN ON THE DRAINAGE BASIN MAP PLAN, ARE FURTHER ANALYZED IN ORDER THAT THE PROPOSED PRIVATE STORM DRAIN BE SIZED APPROPRIATELY. THE MANNING EQUATION WAS USED TO EVALUATE PIPE SIZES AND RELATED CAPACITIES. AS A RESULT OF THIS ANALYSIS, THE TOTAL PEAK DISCHARGE CALCULATED FOR BASIN A (37.6 CFS) WILL NOT EXCEED THE CAPACITY (45.8 CFS) OF THE EXISTING 18-INCH STORM DRAIN CONNECTION TO AVENIDA CESAR CHAVEZ. OVERFLOW RUNOFF WILL ESCAPE AT AP-1 WHERE A GRATED LID WILL BE INCORPORATED INTO THE EXISTING STORM DRAIN MANHOLE WITHIN THE BASIN C-2 PARKING LOT AS FURTHER DESCRIBED ABOVE.

VIII. CONCLUSIONS

THE FOLLOWING CONCLUSIONS HAVE BEEN ESTABLISHED AS A RESULT OF THE EVALUATIONS CONTAINED HEREIN:
1. THIS SUBMITTAL ESTABLISHES THE DRAINAGE CONCEPTS BY WHICH THIS PROJECT WILL DEVELOP
2. THE SITE DOES NOT LIE WITHIN A DESIGNATED 100-YEAR FLOODPLAIN
3. THIS SITE IS NOT RESTRICTED BY LIMITED OR INADEQUATE DOWNSTREAM CAPACITY
4. THE INCREASED RUNOFF FROM THIS SITE WILL BE HANDLED BY THE EXISTING DOWNSTREAM PUBLIC DRAINAGE IMPROVEMENTS THAT ULTIMATELY DISCHARGE TO THE SOUTH DIVERSION CHANNEL
5. THIS SUBMITTAL IS FOR SITE PLAN FOR BUILDING PERMIT (EPC AND DRB) APPROVAL AND AS SUCH REPRESENTS A MASTER DRAINAGE PLAN FOR THE PHASED DEVELOPMENT OF THIS SITE
6. SITE SPECIFIC DRAINAGE SUBMITTALS WILL BE REQUIRED FOR INDIVIDUAL PHASES OF CONSTRUCTION
7. OFFSITE FLOWS DO NOT IMPACT THIS SITE
8. ALL ROOF RUNOFF WILL BE PIPED DIRECTLY INTO THE PRIVATE STORM DRAIN SYSTEM.

CALCULATIONS

I. SITE CHARACTERISTICS

A. PRECIPITATION ZONE = 2

B. $P_{6,100} = P_{360} = 2.35$ IN.

C. TOTAL AREA (A_T) = 501900 SF/11.5 AC

D. EXISTING LAND TREATMENT

TREATMENT	AREA (SF/AC)	%
B	7525/0.17	02
C	316,573/7.27	63
D	177,802/4.08	35

II. EXISTING CONDITION

A. VOLUME

$E_W = (E_A A_+ E_B A_B + E_C A_C E_D A_D)/A_T$

$E_W = [0.78(0.17) + 1.13(7.27) + 2.12(4.08]/11.52 = 1.48$ IN

$V_{100} = (E_W/12)A_T$

$V_{100} = (1.48/12)11.52 = 1.42$ ac-ft = 61890 CF (1.42 AC/FT.)

B. PEAK DISCHARGE

$Q_P = Q_{PA}A_A + Q_{PB}A_B + Q_{PC}A_C + Q_{PD}A_D$

$Q_P = Q_{100} = 2.28(0.17) + 3.14(7.27) + 4.70(4.08) = 42.4$ cfs

III. DEVELOPED CONDITION

THE DEVELOPED CONDITION HYDROLOGY HAS BEEN INCORPORATED INTO TABLE FORMAT AS PRESENTED BELOW.

MASTER PLAN BASIN ANALYSIS

BASINS	A_T(SF/AC)	A_B(SF/AC)	A_C(SF/AC)	A_D(SF/AC)	V_{100}(CFS)	Q_{100}(CFS)	$Q_{100(CFS)}$CUM
A-1	26,154/0.60	300/0.01		25,854/0.59	0.10	2.80	2.80
A-2	11,475/0.26			11,475/0.26	0.05	1.22	4.02
A-3	11,475/0.26			11,475/0.26	0.05	1.22	5.24
A-4	13,939/0.32			13,939/0.32	0.06	1.50	6.74
A-5	25,560/0.59			25,560/0.59	0.10	2.77	9.51
A-6	73,927/1.70			73,927/1.70	0.30	7.99	17.50
A-7	37,629/0.86			37,629/0.86	0.15	4.04	21.54
A-8	63,162/1.45			63,162/1.45	0.26	6.82	28.36
B-1	65,340/1.50	27,663/0.64		37,677/0.86	0.19	5.50	
B-2	64,469/1.48			64,469/1.48	0.26	6.96	
B-3	78,408/1.80	8,690./0.20		69,718/1.60	0.30	7.98	
NW	30,492/0.70			30,492/0.70	0.18	3.29	
TOTAL	502,029/11.52	36,353/0.85		465,377/10.67	1.84	52.09	

IV. COMPARISON

A. VOLUME

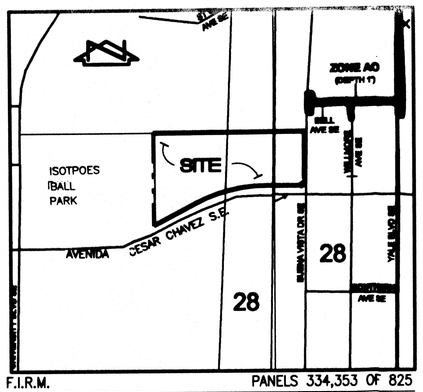
$\Delta V_{100} = 1.84 - 1.42 = 0.42$ AC. FT.
$= 18{,}300$ CF.

B. PEAK DISCHARGE

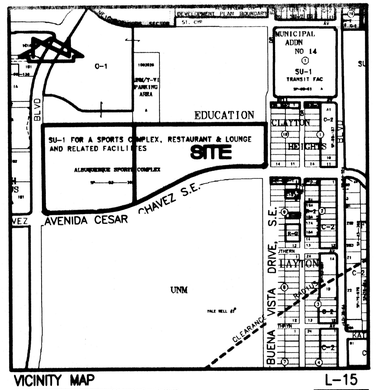
$\Delta Q_{100} = 52.1 - 42.4 = 9.7$ CFS

DRAINAGE STRUCTURE SUMMARY TABLE MASTER PLAN

KEY	AP	STRUCTURE	RIM/TG	INV. IN	INV. OUT
1	#1	EXIST SDMH	5123.09'	5119.90'	5119.74'
2	#2	SINGLE 'D' INLET	5140.00'	5131.05'	5130.95'
3	NA	SINGLE 'D' INLET	5140.00'	5132.81'	5132.71'
4	#3	SINGLE 'D' INLET	5140.00'	5134.05'	5133.95'
5	#4	4' SDMH	5140.70'	5134.35'	5134.05'
6	#5	SINGLE 'D' INLET	5143.00'	5137.05'	5136.95'
7	#6	SINGLE 'D' INLET	5143.00'	5137.75'	5137.65'
8	#7	SINGLE 'D' INLET	5143.00'	5138.45'	5138.35'
9	#8	SINGLE 'D' INLET	5143.00'	N/A	5139.10'
10	#9	4' SDMH	5143.70'	N/A	5137.65'
11	#10	EXIST CURB INLET	5115.43'	5110.5'	5109.88'
12	#11	4' SDMH	5123.00'	5117.10'	5117.00'
13	#12	4' SDMH	5140.00'	5133.90'	5133.80'
14	#13	4' SDMH	5140.50'	N/A	5134.50'



F.I.R.M. PANELS 334,353 OF 825
SCALE: 1" = 500'±



VICINITY MAP
SCALE: 1" = 750'±

L-15

MASTER PLAN STORM DRAIN HYDRAULICS

AP TO AP	PIPE SIZE	LENGTH	SLOPE	Q_{100}(CFS)	Q_{CAP}(CFS)	VEL (FPS)	PIPE INVERTS
SDMH 262 TO AP10	36"	140'	0.033	38.1	121.1	17.1	5105.21' TO 5109.88'
AP10 TO CURB INLET	36"	80'	0.058	37.5	160.6	22.7	5109.88' TO 5114.53'
CURB INLET TO AP1	18"	30'	0.179	37.6	44.4	25.2	5114.53' TO 5119.90'
AP1 TO AP2	24"	350'	0.032	28.36	40.5	12.9	5119.90' TO 5131.00'
AP2 TO AP3	24"	191'	0.016	24.32	27.7	9.1	5131.00' TO 5134.00'
AP3 TO AP4	24"	17'	0.012	6.74	24.8	7.9	5134.00' TO 5134.20'
AP4 TO AP5	18"	255'	0.011	6.74	11.0	6.2	5134.20' TO 5137.00'
AP5 TO AP6	18"	68'	0.010	5.24	10.5	5.9	5137.00' TO 5137.70'
AP6 TO AP7	18"	68'	0.010	4.02	10.5	5.9	5137.70' TO 5138.40'
AP7 TO AP8	18"	68'	0.010	2.80	10.5	5.9	5138.40' TO 5139.10'
AP2 TO AP9	12"	210'	0.032	4.04	6.4	10.6	5131.00 TO 5137.70'
AP10 TO AP11	18"	90'	0.072	6.96	28.2	16.0	5110.5' TO 5117.0'
AP11 TO AP12	18"	140'	0.119	6.96	36.2	20.5	5117.1' TO 5133.8'
AP12 TO AP13	18"	60'	0.010	6.96	10.5	5.9	5133.9' TO 5134.5'

AS BUILT INFORMATION
CONTRACTOR — DATE:
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BENCH MARK
ALL ELEVATIONS ARE BASED UPON ALBUQUERQUE CONTROL SURVEY MONUMENT: 7-L15

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
614019	WILSON & CO	10/20/04
	CITY SURVEYOR	09/08/05

ENGINEER'S STAMP

JEFFREY M. MORTENSEN — NEW MEXICO — 14854 — REGISTERED PROFESSIONAL ENGINEER

10-05-05

NO.	DATE	REVISIONS/REMARKS	BY
		DESIGNED BY: F.J.A.	DATE: 10/05
		DRAWN BY: R.R.W.	DATE: 10/05
		CHECKED BY: J.G.M.	DATE: 10/05

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CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: CONCEPTUAL DRAINAGE PLAN AND CALCULATIONS
ALBUQUERQUE BICYCLE PARK

Design Review Committee	City Engineer Approval	Last Design Update	MO./DAY/YR.	MO./DAY/YR.

City Project No. 2004.068.4 | Zone Map No. L-15 | Sheet 1 Of 3

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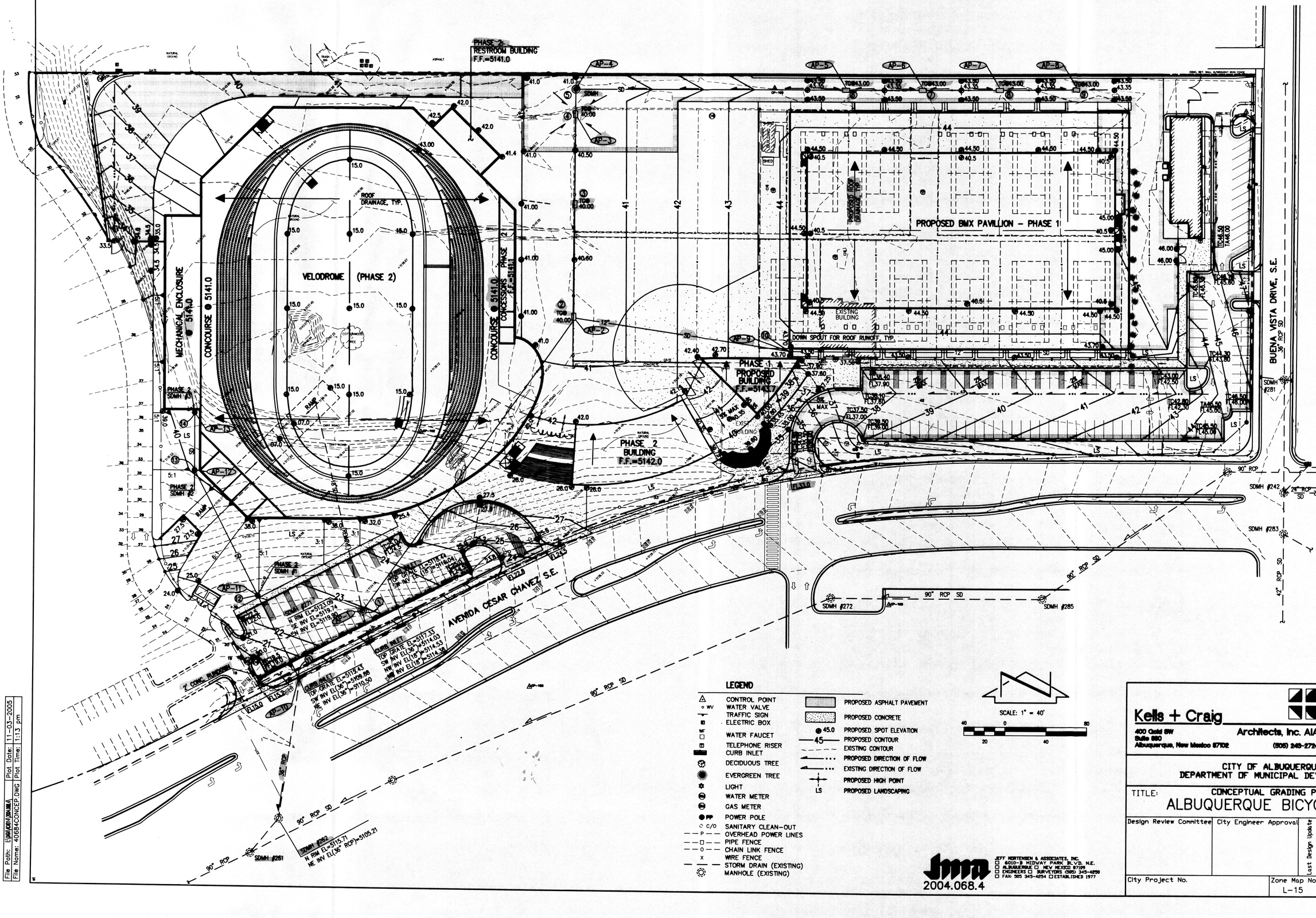

LEGEND

- CONTROL POINT
- WATER VALVE
- TRAFFIC SIGN
- ELECTRIC BOX
- WATER FAUCET
- TELEPHONE RISER
- CURB INLET
- DECIDUOUS TREE
- EVERGREEN TREE
- LIGHT
- WATER METER
- GAS METER
- POWER POLE
- SANITARY CLEAN-OUT
- OVERHEAD POWER LINES
- PIPE FENCE
- CHAIN LINK FENCE
- WIRE FENCE
- STORM DRAIN (EXISTING)
- MANHOLE (EXISTING)
- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE
- PROPOSED SPOT ELEVATION
- PROPOSED CONTOUR
- EXISTING CONTOUR
- PROPOSED DIRECTION OF FLOW
- EXISTING DIRECTION OF FLOW
- PROPOSED HIGH POINT
- PROPOSED LANDSCAPING

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CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: CONCEPTUAL GRADING PLAN
ALBUQUERQUE BICYCLE PARK

Design Review Committee	City Engineer Approval	Last Design Update	MO/DAY/YR.	MO/DAY/YR.

City Project No.	Zone Map No.	Sheet	Of
	L-15	2	3

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BENCH MARK
ALL ELEVATIONS ARE BASED UPON ALBUQUERQUE CONTROL SURVEY MONUMENT: 7-L15

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
614019	WILSON & CO	10/20/04
	CITY SURVEYOR	09/08/05

ENGINEER'S STAMP
JEFFREY G. NORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER
11-03-2005

NO.	DATE	REVISIONS/REMARKS	BY

DESIGNED BY: J.G.M. DATE: 10/05
DRAWN BY: R.R.W. DATE: 10/05
CHECKED BY: J.G.M. DATE: 10/05

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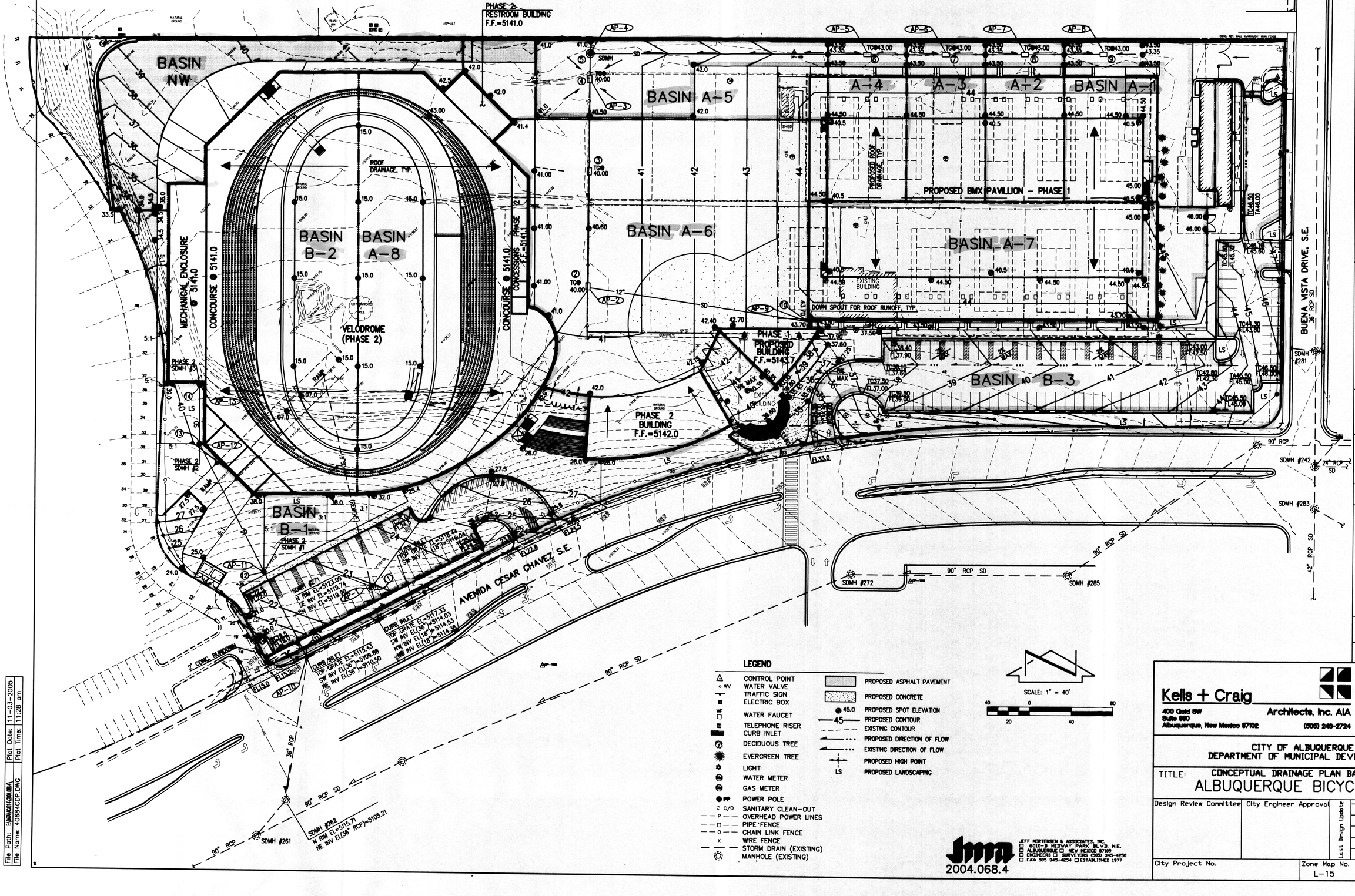

LEGEND

△ CONTROL POINT	PROPOSED ASPHALT PAVEMENT
○ WV WATER VALVE	PROPOSED CONCRETE
TRAFFIC SIGN	● 45.0 PROPOSED SPOT ELEVATION
ELECTRIC BOX	45 PROPOSED CONTOUR
WF WATER FAUCET	EXISTING CONTOUR
TELEPHONE RISER	PROPOSED DIRECTION OF FLOW
CURB INLET	EXISTING DIRECTION OF FLOW
DECIDUOUS TREE	PROPOSED HIGH POINT
EVERGREEN TREE	LS PROPOSED LANDSCAPING
LIGHT	
WATER METER	
GAS METER	
PP POWER POLE	
C/O SANITARY CLEAN-OUT	
—P— OVERHEAD POWER LINES	
—□— PIPE FENCE	
—O— CHAIN LINK FENCE	
—x— WIRE FENCE	
STORM DRAIN (EXISTING)	
MANHOLE (EXISTING)	

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614019	WILSON & CO	10/20/04
	CITY SURVEYOR	08/08/05

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FIELD VERIFICATION BY DATE:
DRAWING CORRECTED BY DATE:
MICRO-FILM INFORMATION
RECORDED BY DATE:
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		DESIGNED BY: F.J.A.	DATE: 09/05
		DRAWN BY: R.R.W.	DATE: 09/05
		CHECKED BY: J.G.M.	DATE: 09/05

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CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: CONCEPTUAL DRAINAGE PLAN BASIN MAP
ALBUQUERQUE BICYCLE PARK

Design Review Committee	City Engineer Approval	Last Design Update	MO/DAY/YR	MO/DAY/YR

City Project No. | Zone Map No. L-15 | Sheet 3 Of 3

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jma 2004.068.4

DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THIS PROJECT, LOCATED IN THE LOWER SOUTHEAST HEIGHTS REPRESENTS THE DEVELOPMENT OF AN INFILL PROPERTY OWNED BY THE CITY OF ALBUQUERQUE. THE SITE LIES IMMEDIATELY EAST OF THE ISOTOPES BALL PARK. THE DRAINAGE CONCEPT FOR THIS PROJECT WILL BE THE FREE DISCHARGE OF DEVELOPED RUNOFF TO AVENIDA CESAR CHAVEZ SE WHERE A MAJOR PUBLIC STORM DRAIN LIES. THE EXISTING PUBLIC STORM DRAIN COLLECTS RUNOFF CARRIED BY THE STREET AND CONVEYS THAT RUNOFF WEST TO THE SOUTH DIVERSION CHANNEL.

THIS SUBMITTAL IS MADE IN SUPPORT OF SITE PLAN FOR BUILDING PERMIT (EPC AND DRB) WITHIN THE JURISDICTION OF THE CITY OF ALBUQUERUQE.

II. PROJECT DESCRIPTION

AS SHOWN BY THE VICINITY MAP, THE SITE IS LOCATED ON THE NORTH SIDE OF AVENIDA CESAR CHAVEZ BETWEEN UNIVERSITY BLVD. SE AND BUENA VISTA DRIVE SE. AT PRESENT, THE SITE IS UNDEVELOPED. THE LAND IMMEDIATELY TO THE WEST IS DEVELOPED AS ISOTOPES BALL PARK. THE LAND TO THE NORTH IS INSTITUTIONAL (TVI AND UNM). THE LAND TO THE EAST IS DEVELOPED AS CITY TENNIS COURTS. AS SHOWN BY PANEL 334 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED BY FEMA FOR BERNALILLO COUNTY, NEW MEXICO, AND INCORPORATED AREAS DATED SEPTEMBER 20, 1996, THIS SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE (ZONE AO). AN AO ZONE IS MAPPED DOWNSTREAM, HOWEVER, IT IS BELIEVED THAT THE MORE RECENT STORM DRAIN IMPROVEMENTS WITHIN AVENIDA CESAR CHAVEZ (FORMERLY STADIUM BLVD.) HAVE ALLEVIATED THE DOWNSTREAM FLOODING.

III. BACKGROUND DOCUMENTS & RESEARCH

THE FOLLOWING ITEMS WERE REVIEWED IN THE PREPARATION OF THIS SUBMITTAL:
A. TOPOGRAPHIC SURVEY OF THE EXISTING SITE PREPARED BY WILSON & CO. DATED 10/21/2004. THE SUBJECT SURVEY SHOWS THE EXISTING IMPROVEMENTS.
B. PRE-DESIGN CONFERENCE WITH THE CITY HYDROLOGIST 08/24/2004. THE OUTCOME OF THAT RECAP CONFIRMED THAT FREE DISCHARGE TO AVENIDA CESAR CHAVEZ IS APPROPRIATE IN LIGHT OF THE RECNET DRAINAGE IMPROVEMENTS TO UNIVERSITY BLVD SE AND AVENIDA CESAR CHAVEZ SE.

IV. EXISTING CONDITIONS

THE TOPOGRAPHIC DATA PRESENTED HEREWITH, TAKEN FROM THE ABOVE REFERENCED SURVEY BY WILSON & CO., DEMONSTRATES THE EXISTING CONDITIONS OF THE PROJECT SITE. AT PRESENT, THE SITE IS PARTIALLY DEVELOPED WITH CITY TENNIS COURTS AND LIMITED ASPHALT PAVING. THE SITE CURRENTLY DRAINS FROM EAST TO WEST WITH MUCH OF THE DEVELOPED FLOW BEING DIRECTED INTO A TEMPORARY DETENTION POND. IT IS BELIEVED THAT THE TEMPORARY POND WAS CREATED TO MITIGATE THE DISHARGE OF EXCESS RUNOFF ONTO THE ISOTOPES BALL PARK. THE SITE IS SITUATED TOPOGRAPHICALLY HIGHER THAN AVENIDA CESAR CHAVEZ SE AND AS SUCH DRAINS TO THAT PUBLIC ROADWAY. ISOTOPES BALL PARK IS TOPOGRAPHICALLY LOWER AN HENCE DOES NOT CONTRIBUTE OFFSITE FLOWS. THE INSTITUTIONAL DEVELOPMENT TO THE NORTH HAS BEEN GRADED SUCH THAT IT DOES NOT DRAIN ONTO THE SUBJECT SITE. ITS FLOWS ARE DIRECTED WEST AND EVENTUALLY DISCHARGE TO UNIVERSITY BLVD SE. BUENA VISTA DRIVE LIES TO THE EAST AND APPEARS TO CONTAIN ITS FLOWS AND AS SUCH IS NOT BELIEVED TO CONTRIBUTE OFFSITE FLOWS.

V. PROPOSED CONDITIONS

THE PROPOSED IMPROVEMENTS CONSIST OF A VELODROME, A BMX TRACK, SEVERAL BUILDINGS, PARKING IMPROVEMENTS, PEDESTRIAN PAVING AND ASSOCIATED LANDSCAPING. IN ORDER TO LOCATE THE ABOVE REFERENCED IMPROVMENTS ON THE SITE, SEVERAL OF THE EXISTING TENNIS COURTS AND RELATED IMPROVMENTS WILL REQUIRE DEMOLITION. SIMILARLY, THE TEMPORARY DETENTION POND WILL BE REMOVED.
FOR THE PURPOSES OF ANALYSIS, THE SITE HAS BEEN DIVIDED INTO FOUR (4) BASIC DRAINAGE AREAS. BASIN A DRAINS INTERNALLY TO A PRIVATE STORM DRAIN SYSTEM THAT ULTIMATELY DISCHARGES TO THE AVENIDA CESAR CHAVEZ STORM DRAIN. IN AN EFFORT TO CONSERVE WATER RESOURCES, IT IS PROPOSED TO INTERCEPT THE MAJORITY OF THE STORM WATER IN AN UNDERGROUND STORAGE FACILITY TO LATER USE FOR SITE IRRIGATION. ONCE THE UNDERGROUND STORAGE IS FILLED, THE STORM WATER WILL BYPASS THE WATER HARVESTING FEATURE AND RELEASE TO THE AVENIDA CESAR CHAVEZ STORM DRAIN. PRESENTLY, THE TEMPORARY DETENTION POND OUTLETS TO THE AVENIDA CESAR CHAVEZ STORM DRAIN VIA AN 18-INCH STORM DRAIN CONNECTION TO THE BACK OF A EXISTING STORM INLET IN THE NORTH CURB LINE OF THE ROADWAY. THAT CONNECTION WILL BE UTILIZED FOR THE DISCHARGE OF RUNOFF FROM BASIN A AND ITS SUB-BASINS A-1 THROUGH A-9. IN THE EVENT THAT THE SYSTEM BECOMES OVERTAXED, THE EXISTING STORM DRAIN MANHOLE (AP-1) WILL ACT AS A BUBBLER TO RELEASE THE EXCESS VIA A GRATED LID. FROM THIS POINT, THE RUNOFF WILL FLOW ACROSS THE NEW PARKING LOT TO EVENTUALLY DISCHARGE TO AVENIDA CESAR CHAVEZ VIA AN EXISTING PRIVATE ENTRANCE.
BASIN B IS AN EXISTING CONDITION WHERE EXISTING PAVING AND BUILDING IMPROVEMENTS SHEET DRAIN TO BUENA VISTA DRIVE SE. THIS PATTERN WILL REMAIN UNALTERED.
BASIN C REPRESENTS THE MAJORITY OF THE PARKING LOT IMPROVEMENTS THAT WILL FREE DISCHARGE TO AVENIDA CESAR CHAVEZ. DISCHARGE WILL OCCUR VIA EXISTING AND PROPOSED PRIVATE ENTRANCES.
BASIN I IS A VERY SMALL AREA THAT WILL CONTINUE TO DRAIN ONTO THE EXISTING SERVICE ROAD THAT LIES EAST OF AND ABOVE ISOTOPES PARK. THE LIMITED TOPOGRAPHIC DATA PROVIDED DOES NOT ALLOW FOR THE DETERMINATION OF THE ULTIMATE DISCHARGE POINT FOR BASIN I, HOWEVER, THE AREA AND ASSOCIATED RUNOFF ARE SMALL.

VI. GRADING PLAN

THE GRADING PLAN SHOWS 1.) EXISTING GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS TAKEN FROM THE SURVEY BY WILSON & CO. REFERENCED ABOVE, 2.) PROPOSED GRADES INCICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS, 3) THE LIMIT AND CHARACTER OF THE EXISTING IMPROVEMENTS TAKEN FROM THE SURVEY BY WILSON & CO. REFERENCED ABOVE, 4.) THE LIMIT AND CHARACTER OF THE PROPOSED IMPROVEMENTS, AND 5.) CONTINUITY BETWEEN EXISTING AND PROPOSED GRADES. AS SHOWN BY THIS PLAN, THE SITE WILL DRAIN BY VARIOUS MEANS. BASIN A, AS INDICATED ABOVE, WILL DRAIN VIA AN INTERNAL PRIVATE STORM DRAIN SYSTEM INTEGRATED WITH A WATER HARVESTING FEATURE. BASIN B WILL CONTINUE TO SHEET DRAIN TO BUENA VISTA DRIVE SE. BASIN C WILL SURFACE DRAIN TO AVENIDA CESAR CHAVEZ VIA EXISTING AND PROPOSED PRIVATE ENTRANCES.

VII. CALCULATIONS

THE CALCULATIONS THAT APPEAR HEREON ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS, FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT. THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS, AS SET FORTH IN THE REVISION OF SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA, DATED JANUARY 1993, HAS BEEN USED TO QUANTIFY THE PEAK RATE OF DISCHARGE AND VOLUME OF RUNOFF GENERATED. THE RESULTS OF THE CALCULATIONS FOR THE DEVELOPED CONDITION ARE PRESENTED IN TABLE FORM. KEY ANALYSIS POINTS, SHOWN ON THE DRAINAGE BASIN MAP PLAN, ARE FURTHER ANALYZED IN ORDER THAT THE PROPOSED PRIVATE STORM DRAIN BE SIZED APPROPRIATELY. THE MANNING EQUATION WAS USED TO EVALUATE PIPE SIZES AND RELATED CAPACITIES. AS A RESULT OF THIS ANALYSIS, THE TOTAL PEAK DISCHARGE CALCULATED FOR BASIN A (37.6 CFS) WILL NOT EXCEED THE CAPACITY (45.8 CFS) OF THE EXISTING 18-INCH STORM DRAIN CONNECTION TO AVENIDA CESAR CHAVEZ. OVERFLOW RUNOFF WILL ESCAPE AT AP-1 WHERE A GRATED LID WILL BE INCORPORATED INTO THE EXISTING STORM DRAIN MANHOLE WITHIN THE BASIN C-2 PARKING LOT AS FURTHER DESCRIBED ABOVE.

VIII. CONCLUSIONS

THE FOLLOWING CONCLUSIONS HAVE BEEN ESTABLISHED AS A RESULT OF THE EVALUATIONS CONTAINED HEREIN:
1. THIS SUBMITTAL ESTABLISHES THE DRAINAGE CONCEPTS BY WHICH THIS PROJECT WILL DEVELOP
2. THE SITE DOES NOT LIE WITHIN A DESIGNATED 100-YEAR FLOODPLAIN
3. THIS SITE IS NOT RESTRICTED BY LIMITED OR INADEQUATE DOWNSTREAM CAPACITY
4. THE INCREASED RUNOFF FROM THIS SITE WILL BE HANDLED BY THE EXISTING DOWNSTREAM PUBLIC DRAINAGE IMPROVEMENTS THAT ULTIMATELY DISCHARGE TO THE SOUTH DIVERSION CHANNEL
5. THIS SUBMITTAL IS FOR SITE PLAN FOR BUILDING PERMIT (EPC AND DRB) APPROVAL AND AS SUCH REPRESENTS A MASTER DRAINAGE PLAN FOR THE PHASED DEVELOPMENT OF THIS SITE
6. SITE SPECIFIC DRAINAGE SUBMITTALS WILL BE REQUIRED FOR INDIVIDUAL PHASES OF CONSTRUCTION
7. OFFSITE FLOWS DO NOT IMPACT THIS SITE
8. WATER HARVESTING WILL BE INCORPORATED INTO THE CONSTRUCTION PLANS FOR THE INTERNAL PRIVATE STORM DRAIN SYSTEM SERVING BASIN A

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CALCULATIONS

I. PRECIPITATION ZONE = 2

II. $P_{6,100} = P_{360} = 2.35$ IN.

III. TOTAL AREA (A_T) = 501900 SF/11.5 AC

IV. EXISTING LAND TREATMENT

TREATMENT	AREA (SF/AC)	%
B	7525/0.17	02
C	316,573/7.27	63
D	177,802/4.08	35

V. EXISTING CONDITION

A. VOLUME

$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D)/A_T$

$E_W = [0.78(0.17) + 1.13(7.27) + 2.12(4.08]/11.52 = 1.48$ IN

$V_{100} = (E_W/12)A_T$

$V_{100} = (1.48/12)11.52 = 1.42$ ac-ft = 61890 CF (1.42 AC/FT.)

B. PEAK DISCHARGE

$Q_P = Q_{PA}A_A + Q_{PB}A_B + Q_{PC}A_C + Q_{PD}A_D$

$Q_p = Q_{100} = 2.28(0.17) + 3.14(7.27) + 4.70(4.08) = 42.4$ cfs

VI. DEVELOPED CONDITION

THE DEVELOPED CONDITION HYDROLOGY HAS BEEN INCORPORATED INTO TABLE FORMAT AS PRESENTED BELOW.

BASIN ANALYSIS

BASINS	A_T(SF/AC)	A_B(SF/AC)	A_C(SF/AC)	A_C(SF/AC)	A_D(SF/AC)	Q_{100}(CFS)
A-1	104,919/2.41	0	20,306/0.47	84,613/1.94	0.39	10.59
A-2	10,036/0.23	5,887/0.14	0	4,149/0.09	0.03	0.74
A-3	24,809/0.57	0	0	24,809/0.57	0.10	2.68
A-4	3,900/0.09	0	0	3,900/0.09	0.02	0.42
A-5	9,962/0.23	77/0.003	0	9,885/0.227	0.04	1.07
A-6	77,044/1.77	693/0.02	0	76,351/1.75	0.31	8.27
A-7	36,570/0.84	0	0	36,570/0.84	0.15	3.95
A-8	34,490/0.79	154/0.01	12,821/0.29	21,515/0.49	0.11	3.24
A-9	66,217/1.52	10,627/0.24	386/0.009	55,204/1.27	0.24	6.54
A-10	5,047/0.12	0	0	5,047/0.12	0.02	0.56
B	11,213/0.26	930/0.02	0	10,283/0.24	0.04	1.17
C-1	80,179/1.84	16,134/0.37	0	64,045/1.47	0.28	7.75
C-2	21,886/0.50	2,360/0.05	0	19,526/0.45	0.08	2.23
I	12,315/0.28	0	1,758/0.04	10,557/0.24	0.05	1.25
TOTAL	498,587/11.5	36,862/0.85	35,271/0.81	426,454/9.79	1.86	[redacted]

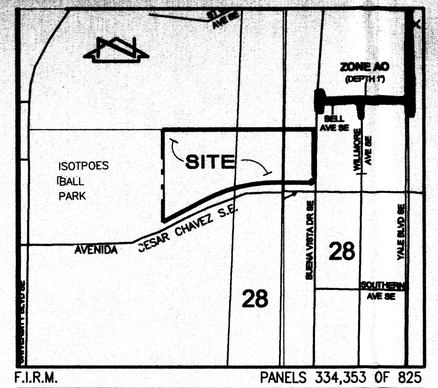
VII. COMPARISON

A. VOLUME

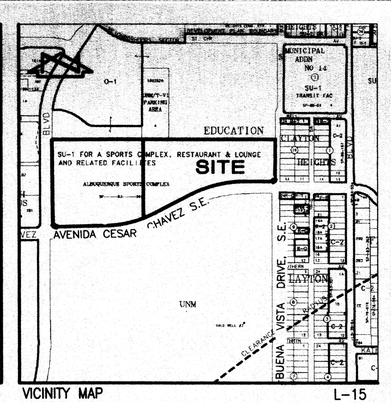
$\Delta V_{100} = 1.86-1.42 = 0.44$ AC. FT.
$= 19,100$ CF.

B. PEAK DISCHARGE

$\Delta Q_{100} = 50.5-42.4 = 8.1$ CFS



F.I.R.M. PANELS 334,353 OF 825
SCALE: 1" = 500'±



VICINITY MAP
SCALE: 1" = 750'±

L-15

STORM DRAIN HYDRAULICS

AP TO AP	PIPE SIZE	LENGTH	SLOPE	Q100 (CFS)	QCAP (CFS)	PIPE INVERTS
SDMH 262 TO AP13	36"	140'	0.033	38.1	121.1	5105.21 (SDMH262)
AP13 TO CURB	36"	80'	0.052	37.5	152.0	5109.88' (AP13)
CURB TOI AP1	18"	30'	0.190	37.6	45.8	5114.53' (CURB)
AP1 TO AP2	36"	185'	0.044	37.6	139.9	5119.9' (AP1)
AP2 TP AP3	36"	40'	0.005	33.6	47.1	5128.1' (AP2)
AP3 TO AP4	36"	110'	0.005	30.3	47.1	5128.3' (AP3)
AP4 TP AP5	36"	207'	0.006	23.8	51.6	5128.8' (AP4)
AP5 TO AP6	24"	80'	0.006	14.4	17.5	5130.0' (AP5)
AP6 TO AP6A	24"	48'	0.010	14.0	22.6	5130.5' (AP6)
AP6A TO AP7	24"	195'	0.010	11.3	22.6	5131.0' (AP6A)
AP7 TO AP8	18"	147'	0.014	11.3	12.4	5133.0' (AP7)
AP8 TO AP9	18"	33'	0.014	10.6	12.4	5135.0' (AP8)
						5139.5' (AP9)
AP4 TO AP15	18"	180'	0.004	6.54	6.6	5128.8' (AP4)
AP15 TO AP16	18"	130'	0.005	6.54	6.6	5129.5' (AP15)
						5130.2' (AP16)
AP13 TO AP14	12"	110'	0.040	0.56	7.1	5110.5' (AP13)
						5114.8' (AP14)
AP2 TO AP11	18"	140'	0.016	7.2	13.3	5128.1' (AP2)
AP11 TO AP12	18"	320'	0.005	3.95	7.4	5130.3' (AP11)
						5131.9' (AP12)
AP6 TO AP10	12"	170'	0.014	0.42	4.2	5130.5' (AP6)
						5132.8' (AP10)

HYDROLOGY SECTION
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HYDROLOGY SECTION

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NEW MEXICO
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REGISTERED PROFESSIONAL ENGINEER

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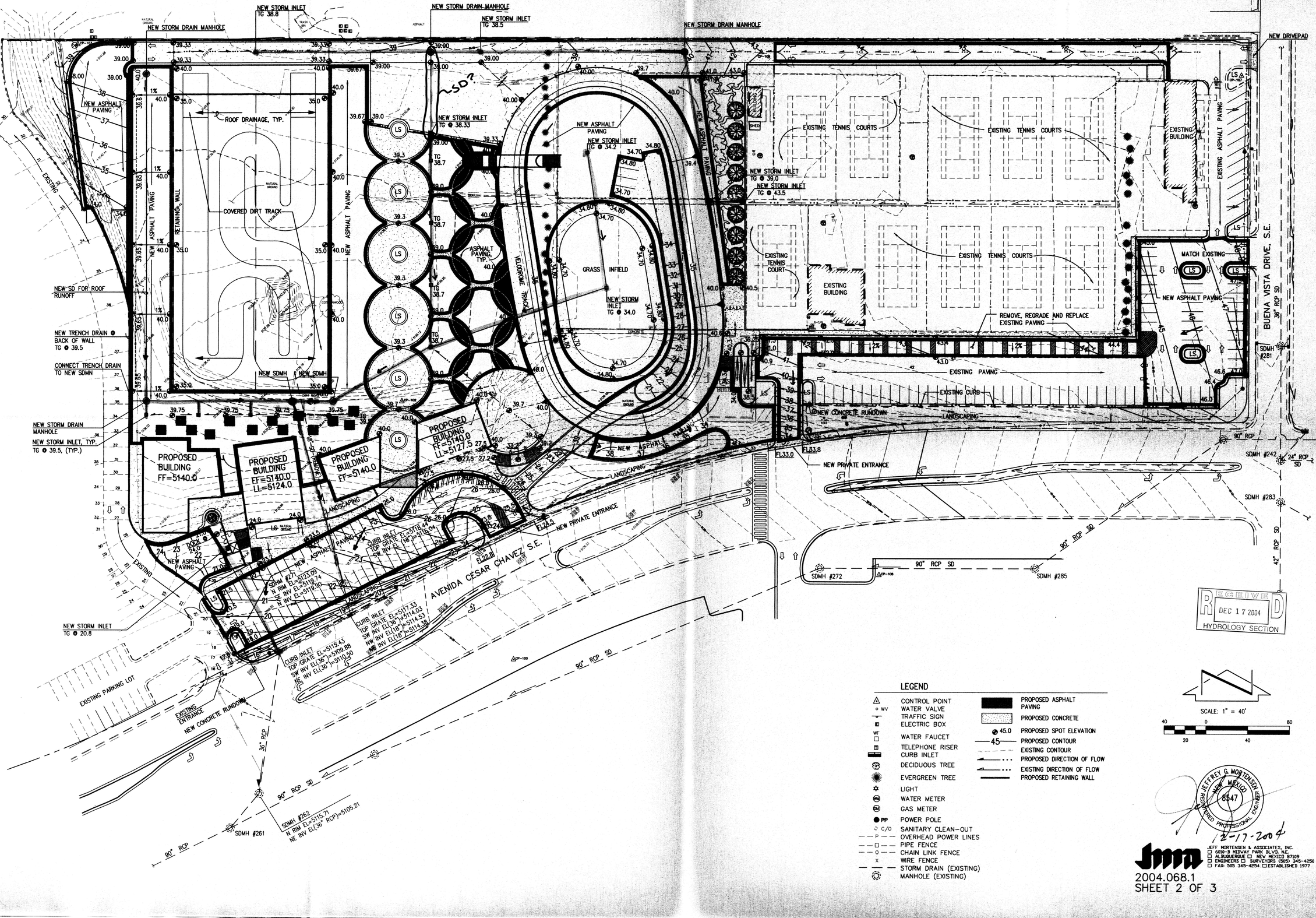
ARCHITECT

CITY OF ALBUQUERQUE
Bicycle Park - Master Plan
DRAINAGE PLAN AND CALCULATIONS

DEC. 17, 2004



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LEGEND

- CONTROL POINT
- WV WATER VALVE
- TRAFFIC SIGN
- ELECTRIC BOX
- WF WATER FAUCET
- TELEPHONE RISER
- CURB INLET
- DECIDUOUS TREE
- EVERGREEN TREE
- LIGHT
- WM WATER METER
- GM GAS METER
- PP POWER POLE
- C/O SANITARY CLEAN-OUT
- OVERHEAD POWER LINES
- PIPE FENCE
- CHAIN LINK FENCE
- WIRE FENCE
- STORM DRAIN (EXISTING)
- MANHOLE (EXISTING)
- PROPOSED ASPHALT PAVING
- PROPOSED CONCRETE
- 45.0 PROPOSED SPOT ELEVATION
- 45 PROPOSED CONTOUR
- EXISTING CONTOUR
- PROPOSED DIRECTION OF FLOW
- EXISTING DIRECTION OF FLOW
- PROPOSED RETAINING WALL

SCALE: 1" = 40'

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jma
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CITY OF ALBUQUERQUE
Bicycle Park - Master Plan
CONCEPTUAL GRADING PLAN

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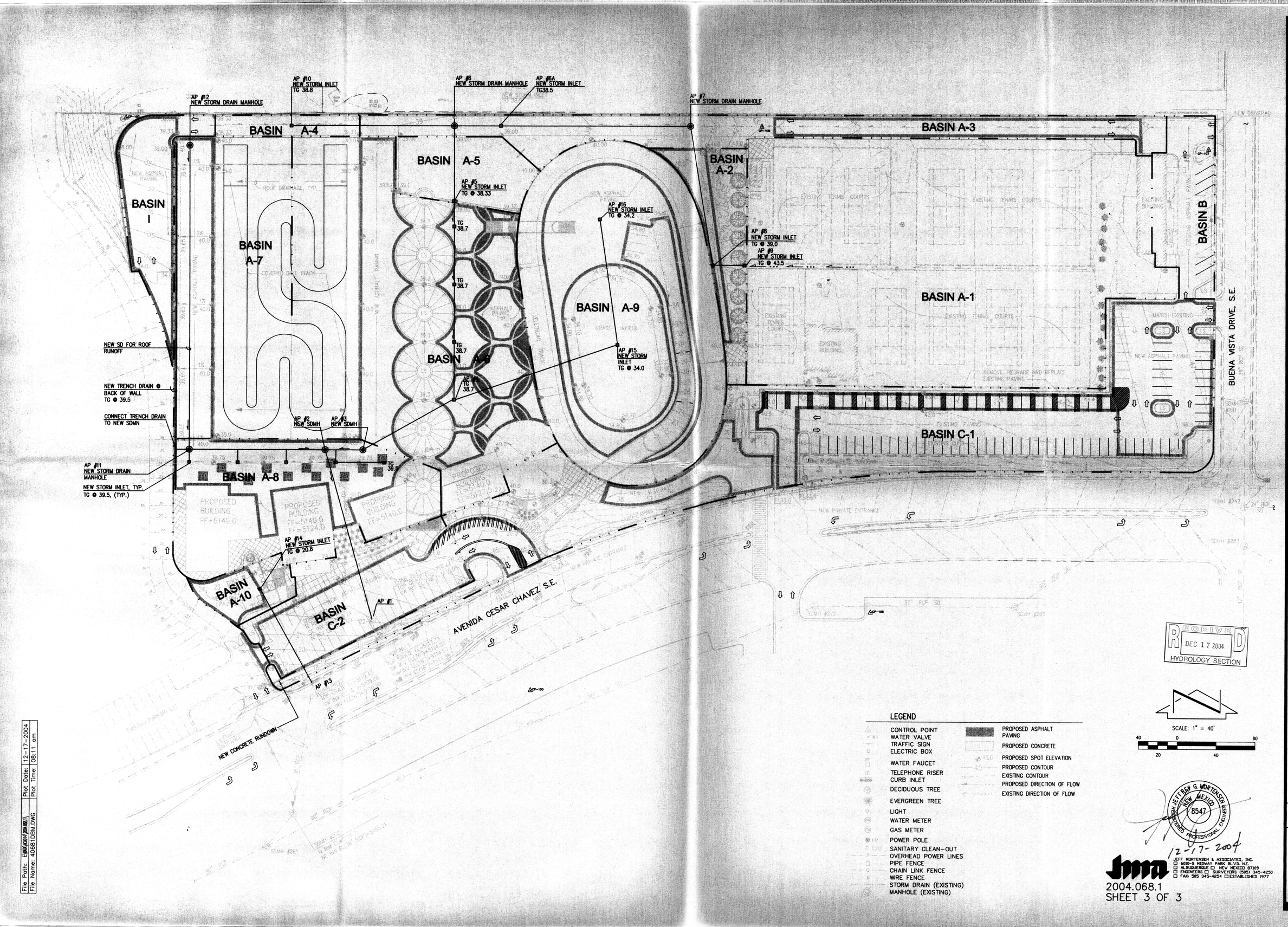

LEGEND

CONTROL POINT	PROPOSED ASPHALT PAVING
WATER VALVE	PROPOSED CONCRETE
TRAFFIC SIGN	PROPOSED SPOT ELEVATION
ELECTRIC BOX	PROPOSED CONTOUR
WATER FAUCET	EXISTING CONTOUR
TELEPHONE RISER	PROPOSED DIRECTION OF FLOW
CURB INLET	EXISTING DIRECTION OF FLOW
DECIDUOUS TREE	
EVERGREEN TREE	
LIGHT	
WATER METER	
GAS METER	
POWER POLE	
SANITARY CLEAN-OUT	
OVERHEAD POWER LINES	
PIPE FENCE	
CHAIN LINK FENCE	
WIRE FENCE	
STORM DRAIN (EXISTING)	
MANHOLE (EXISTING)	

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SHEET 3 OF 3

CITY OF ALBUQUERQUE
Bicycle Park - Master Plan

DRAINAGE BASIN MAP

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