

CITY OF ALBUQUERQUE

Planning Department
Suzanne Lubar, Director



Mayor Richard J. Berry

October 23, 2015

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

**Re: Highland High School
4700 Coal Ave SE
Grading and Drainage Master Plan
Engineer's Stamp dated 10-18-15 (K17D021)**

Dear Mr. Mortensen,

Based upon the information provided in your submittal received 10-20-15, the above referenced plan is approved for Master Plan requirements. Please note that a site specific grading and drainage plan will need to be submitted for each phase of this project.

If you have any questions, you can contact me at 924-3695 or Rudy Rael at 924-3977.

Albuquerque

Sincerely,

New Mexico 87103

Rita Harmon, PE
Senior Engineer, Hydrology
Planning Department

www.cabq.gov

RR/RH
C: File

CALCULATIONS

I. SITE CHARACTERISTICS

A. PRECIPITATION ZONE =	2
B. $P_{100, 6 \text{ HR}} = P_{360} =$	2.35
C. TOTAL SITE (A_T) =	1,417,230 SF 32.5 AC

D. LAND TREATMENTS

1. EXISTING LAND TREATMENT

a. BASIN N (DISCHARGE TO HIGHLAND DETENTION POND)
 $A_T = 784,800 \text{ SF} / 18.0 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	226,450 / 5.20	29
C	76,100 / 1.74	10
D	482,250 / 11.06	61

i. SUB-BASIN N-1 (DRAINS TO SILVER AVE.)

$A_T = 324,500 \text{ SF} / 7.45 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	26,030 / 0.60	8
C	45,370 / 1.04	14
D	253,100 / 5.81	78

ii. SUB-BASIN N-2 (DRAINS TO VACATED COAL AVE.)

$A_T = 460,300 \text{ SF} / 10.55 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	200,420 / 4.60	44
C	32,130 / 0.73	6
D	227,750 / 5.22	50

b. BASIN S (DISCHARGE TO ZUNI ROAD SE)

$A_T = 632,430 \text{ SF} / 14.5 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	130,820 / 3.00	21
C	82,370 / 1.89	13
D	419,240 / 9.61	66

i. SUB-BASIN S-1 (DRAINS TO JEFFERSON STREET SE)

$A_T = 76,050 \text{ SF} / 1.74 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	3,180 / 0.07	4
C	6,700 / 0.15	9
D	66,170 / 1.52	87

ii. SUB-BASIN S-2 (DRAINS TO JEFFERSON STREET / HIGHLAND AVE INTERSECTION)

$A_T = 282,310 \text{ SF} / 6.48 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	27,660 / 0.63	10
C	35,100 / 0.81	12
D	219,550 / 5.04	78

iii. SUB-BASIN S-3 (DRAINS DIRECTLY TO ZUNI ROAD)

$A_T = 79,650 \text{ SF} / 1.82 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	0 / 0	0
C	12,400 / 0.28	15
D	67,250 / 1.54	85

iv. SUB-BASIN S-4 (TRACK & FIELD DRAIN SYSTEM DRAINS DIRECTLY TO ZUNI ROAD)

$A_T = 194,420 \text{ SF} / 4.46 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	99,980 / 2.30	52
C	28,170 / 0.64	14
D	66,270 / 1.52	34

2. DEVELOPED LAND TREATMENT

a. BASIN N (DISCHARGE TO HIGHLAND DETENTION POND)
 $A_T = 784,800 \text{ SF} / 18.0 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	220,450 / 5.05	28
C	76,100 / 1.75	10
D	488,250 / 11.20	62

i. SUB-BASIN N-1 (DRAINS TO SILVER AVE.) - NO CHANGE

ii. SUB-BASIN N-2 (DRAINS TO VACATED COAL AVE.)
 $A_T = 460,300 \text{ SF} / 10.55 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	194,420 / 4.45	42
C	30,730 / 0.70	6
D	235,150 / 5.40	52

b. BASIN S (DISCHARGE TO ZUNI ROAD SE)

$A_T = 632,430 \text{ SF} / 14.5 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	133,300 / 3.05	21
C	35,130 / 0.80	6
D	464,000 / 10.65	73

i. SUB-BASIN S-1 (DRAINS TO JEFFERSON STREET SE)

$A_T = 76,050 \text{ SF} / 1.74 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	3,180 / 0.07	4
C	6,700 / 0.15	9
D	66,170 / 1.52	87

ii. SUB-BASIN S-2 (DRAINS TO JEFFERSON STREET / HIGHLAND AVE INTERSECTION)

$A_T = 289,080 \text{ SF} / 6.18 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	22,500 / 0.52	8
C	6,000 / 0.14	2
D	240,580 / 5.52	90

iii. SUB-BASIN S-3 (DRAINS DIRECTLY TO ZUNI ROAD)

$A_T = 96,420 \text{ SF} / 2.21 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	7,640 / 0.17	8
C	0 / 0	0
D	88,780 / 2.04	92

iv. SUB-BASIN S-4 (TRACK & FIELD DRAIN SYSTEM DRAINS DIRECTLY TO ZUNI ROAD)

$A_T = 190,870 \text{ SF} / 4.38 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	99,980 / 2.30	52
C	22,420 / 0.51	12
D	68,470 / 1.57	36

II. HYDROLOGY

A. EXISTING CONDITION

1. BASIN N

a. SUB-BASIN N-1

i. VOLUME		
$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$		
$E_W = (0.53 * 0.00) + (0.78 * 0.60) + (1.13 * 1.04) + (2.12 * 5.81) / 7.45 =$	1.87 IN	
$V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.87 / 12) 7.45 =$	1.1610 AC-FT =	50,570 CF
ii. PEAK DISCHARGE		
$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$		
$Q_p = Q_{100} = (1.56 * 0.00) + (2.28 * 0.60) + (3.14 * 1.04) + (4.70 * 5.81) =$	31.9 CFS	

b. SUB-BASIN N-2

i. VOLUME		
$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$		
$E_W = (0.53 * 0.00) + (0.78 * 0.60) + (1.13 * 0.73) + (2.12 * 5.22) / 10.55 =$	1.47 IN	
$V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.47 / 12) 10.55 =$	1.2924 AC-FT =	56,300 CF
ii. PEAK DISCHARGE		
$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$		
$Q_p = Q_{100} = (1.56 * 0.00) + (2.28 * 0.60) + (3.14 * 0.73) + (4.70 * 5.22) =$	37.3 CFS	

c. OVERALL BASIN N

i. VOLUME		
$V_{N, 100} = V_{N-1} + V_{N-2} = 50,570 + 56,300 =$	106870 CF	
ii. PEAK DISCHARGE		
$Q_{N, 100} = Q_{N-1} + Q_{N-2} = 31.9 + 37.3 =$	69.2 CFS	

2. BASIN S

a. SUB-BASIN S-1

i. VOLUME		
$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$		
$E_W = (0.53 * 0.00) + (0.78 * 0.07) + (1.13 * 0.15) + (2.12 * 1.52) / 1.74 =$	1.98 IN	
$V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.98 / 12) 1.74 =$	0.2871 AC-FT =	12,510 CF
ii. PEAK DISCHARGE		
$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$		
$Q_p = Q_{100} = (1.56 * 0.00) + (2.28 * 0.07) + (3.14 * 0.15) + (4.70 * 1.52) =$	7.8 CFS	

b. SUB-BASIN S-2

i. VOLUME		
$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$		
$E_W = (0.53 * 0.00) + (0.78 * 0.63) + (1.13 * 0.81) + (2.12 * 5.04) / 6.48 =$	1.87 IN	
$V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.87 / 12) 6.48 =$	1.0098 AC-FT =	43,990 CF
ii. PEAK DISCHARGE		
$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$		
$Q_p = Q_{100} = (1.56 * 0.00) + (2.28 * 0.63) + (3.14 * 0.81) + (4.70 * 5.04) =$	27.7 CFS	

iii. PEAK DISCHARGE TO EXIST 10" PRIVATE STORM DRAIN
CONTRIBUTING AREA = 139,400 SF (3.20 AC)
• 22,000 SF (0.51 AC) LAND TREATMENT B; 8,800 SF (0.20 AC) LAND TREATMENT C
& 108,600 SF (2.49 AC) LAND TREATMENT D

$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$
 $Q_p = Q_{100, 10"} = (1.56 * 0.00) + (2.28 * 0.51) + (3.14 * 0.20) + (4.70 * 2.49) =$ 13.5 CFS

iv. EXIST 10" STORM DRAIN CAPACITY (S = 0.0050)

$$Q = 1.49 / n * A * R^{2/3} * S^{1/2}$$

$$n = 0.013$$

$$A = 0.54 \text{ SF}$$

$$R = A / P = 0.54 / 2.62 = 0.21$$

$$S = 0.0050$$

$$Q_{10"} \text{ CAP} = 1.5 \text{ CFS}$$

$$Q_{10"} \text{ CAP} = 1.5 \text{ CFS} << Q_{100, 10"} = 13.5 \text{ CFS} \therefore \text{INSUFFICIENT CAPACITY}$$

c. SUB-BASIN S-3

i. VOLUME		
$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$		
$E_W = (0.53 * 0.00) + (0.78 * 0.00) + (1.13 * 0.28) + (2.12 * 1.54) / 1.82 =$	1.97 IN	
$V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.97 / 12) 1.82 =$	0.2988 AC-FT =	13,020 CF

ii. PEAK DISCHARGE		
$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$		
$Q_p = Q_{100} = (1.56 * 0.00) + (2.28 * 0.00) + (3.14 * 0.28) + (4.70 * 1.54) =$	8.1 CFS	

d. SUB-BASIN S-4

i. VOLUME		
$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$		
$E_W = (0.53 * 0.00) + (0.78 * 2.30) + (1.13 * 0.64) + (2.12 * 1.52) / 4.46 =$	1.29 IN	
$V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.29 / 12) 4.46 =$	0.4795 AC-FT =	20,880 CF

ii. PEAK DISCHARGE		
$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$		
$Q_p = Q_{100} = (1.56 * 0.00) + (2.28 * 2.30) + (3.14 * 0.64) + (4.70 * 1.52) =$	14.4 CFS	

e. OVERALL BASIN S

i. VOLUME		
$V_{S, 100} = V_{S-1} + V_{S-2} + V_{S-3} + V_{S-4} = 12,510 + 13,990 + 13,020 + 20,880 =$	90,400 CF	

ii. PEAK DISCHARGE		
$Q_{S, 100} = Q_{S-1} + Q_{S-2} + Q_{S-3} + Q_{S-4} = 7.8 + 27.7 + 8.1 + 14.4 =$	58 CFS	

B. DEVELOPED CONDITION

1. BASIN N

a. SUB-BASIN N-1 (NO CHANGE)

i. $V_{100} = 50,570 \text{ CF}$

ii. $Q_{100} = 31.9 \text{ CFS}$

b. SUB-BASIN N-2

i. VOLUME		
$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$		
$E_W = (0.53 * 0.00) + (0.78 * 4.45) + (1.13 * 0.70) + (2.12 * 5.40) / 10.55 =$	1.49 IN	
$V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.49 / 12) 10.55 =$	1.3100 AC-FT =	57,060 CF

ii. PEAK DISCHARGE		
$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$		
$Q_p = Q_{100} = (1.56 * 0.00) + (2.28 * 4.45) + (3.14 * 0.70) + (4.70 * 5.40) =$	37.7 CFS	

c. OVERALL BASIN N

i. VOLUME		
$V_{N, 100} = V_{N-1} + V_{N-2} = 50,570 + 57,060 =$	107,630 CF	

ii. PEAK DISCHARGE		
$Q_{N, 100} = Q_{N-1} + Q_{N-2} = 31.9 + 37.7 =$	69.6 CFS	

2. BASIN S

a. SUB-BASIN S-1

i. VOLUME		
$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$		
$E_W = (0.53 * 0.00) + (0.78 * 0.07) + (1.13 * 0.15) + (2.12 * 1.52) / 1.74 =$	1.98 IN	
$V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.98 / 12) 1.74 =$	0.2871 AC-FT =	12,510 CF

ii. PEAK DISCHARGE		
$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$		
$Q_p = Q_{100} = (1.56 * 0.00) + (2.28 * 0.07) + (3.14 * 0.15) + (4.70 * 1.52) =$	7.8 CFS	

iii. FIRST FLUSH (90TH PERCENTILE STORM EVENT)

$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$		
$E_W = (0.00 * 0.00) + (0.00 * 0.07) + (0.09 * 0.15) + (0.34 * 1.52) / 1.74 =$	0.30 IN	
$V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (0.30 / 12) 1.74 =$	0.0435 AC-FT =	1,890 CF

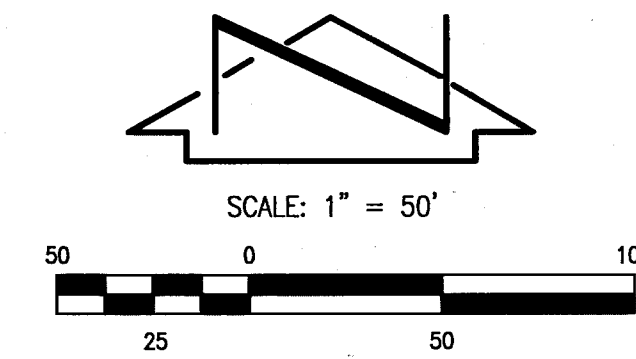
b. SUB-BASIN S-2

i. VOLUME		
$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$		
$E_W = (0.53 * 0.00) + (0.78 * 0.52) + (1.13 * 0.14) + (2.12 * 5.52) / 6.18 =$	1.98 IN	
$V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.98 / 12) 6.18 =$	1.0197 AC-FT =	44,420 CF

ii. PEAK DISCHARGE		
$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$		
$Q_p = Q_{100} = (1.56 * 0.00) + (2.28 * 0.52) + (3.14 * 0.14) + (4.70 * 5.52) =$	27.6 CFS	

iii. FIRST FLUSH (90TH PERCENTILE STORM EVENT)

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA
C5	25.00'	39.27'	S 44°44'24" E	35.36'	90°00'21"
C6	25.00'	39.29'	S 44°45'52" E	35.37'	90°02'48"



LEGAL DESCRIPTION

TRACT A-1-A, HIGHLAND HIGH SCHOOL, ALBUQUERQUE, NEW MEXICO, AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO ON JUNE 18, 2009, BOOK 2009C, PAGE 96, DOC# 2009068233.

BENCHMARKS

PROJECT BENCHMARK

ACS 2" BRASS DISC SET STAMPED "6-K18A ACS" SET IN SIDEWALK AT THE INTERSECTION OF CENTRAL AVENUE AND JACKSON STREET. ELEVATION = 5249.99 FEET (NAVD 1988)

T.B.M. #1

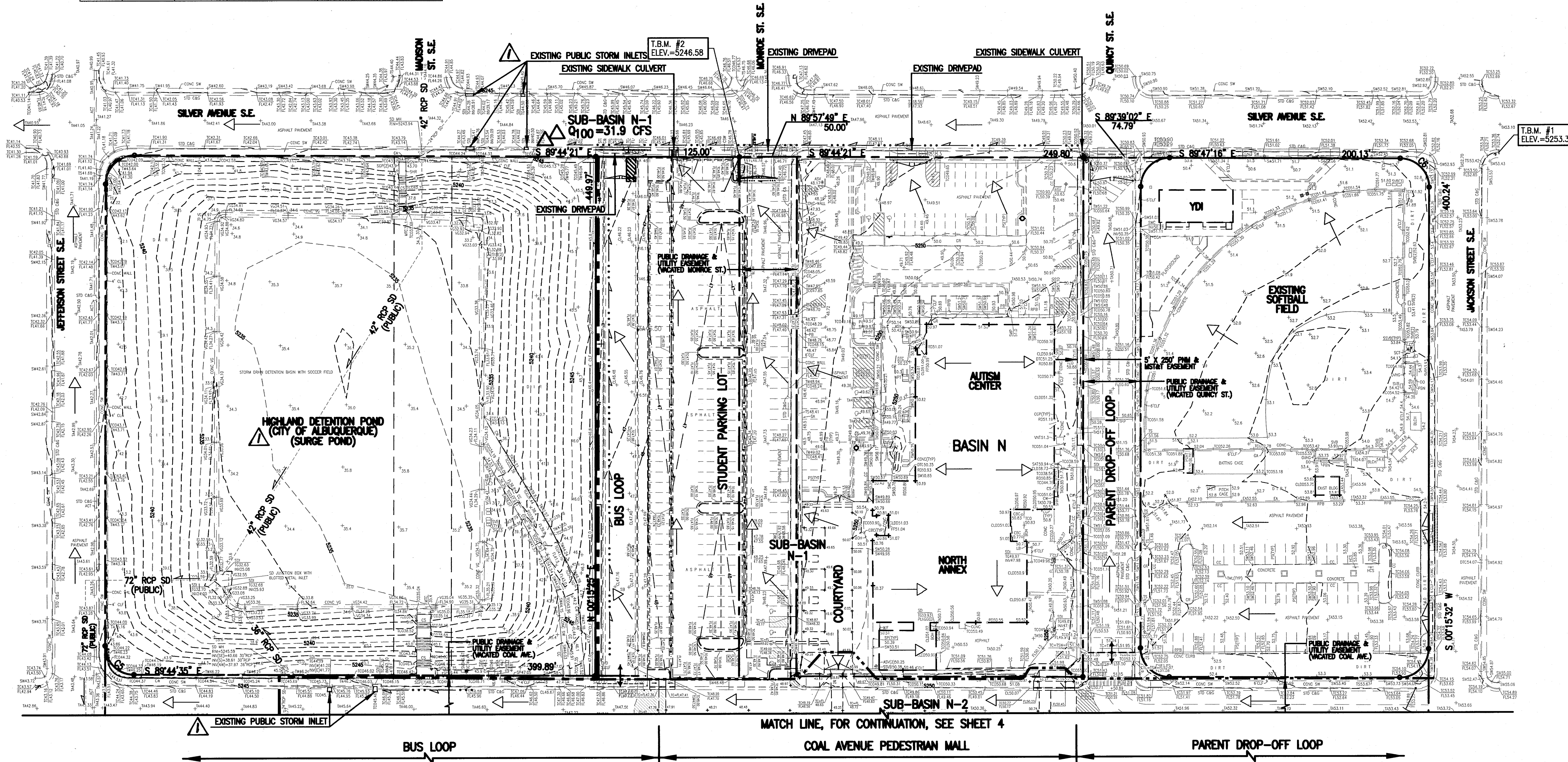
A CHISELED "X" AT THE SOUTHEAST QUADRANT OF SILVER AVENUE AND JACKSON AVENUE, AS SHOWN ON THIS SHEET. ELEVATION = 5253.35 FEET (NAVD 1988)

T.B.M. #2

A CHISELED "+" ON THE HANDICAP RAMP AT THE SOUTHWEST QUADRANT OF SILVER AVENUE AND MONROE STREET, AS SHOWN ON THIS SHEET. ELEVATION = 5246.58 FEET (NAVD 1988)

LEGEND

- EXISTING FLOWLINE
- EXISTING DIRECTION OF FLOW
- EXISTING DRAINAGE BASIN BOUNDARY
- EXISTING DRAINAGE SUB-BASIN BOUNDARY
- HIGH POINT / DIVIDE
- GRAPHIC POINT OF DISCHARGE



File Path: P:\DWG\2014\10\14\101413.DWG Plot Date: 10-14-2015
File Name: 141835_30F.DWG Plot Time: 10:54 am

HIGH MESA Consulting Group

6010-B MIDWAY PARK BLVD. NE • ALBUQUERQUE, NEW MEXICO 87109
PHONE: 505.345.4250 • FAX: 505.345.4254 • www.highmesacg.com

**EXISTING CONDITIONS PLAN-NORTH
MASTER DRAINAGE PLAN
HIGHLAND HIGH SCHOOL**

DESIGNED BY	DATE	BY	REVISIONS	JOB NO.
J.D.S.	10/15	JDS	PROVIDE BASIN FLOW CLARIFICATION; IDENTIFY PRIVATE VS PUBLIC DRAINAGE IMPROVEMENTS	2014.183.5
DRAWN BY	DATE	BY		
S.C.C.				8-2015
APPROVED BY	DATE	BY		
J.G.M.				3 OF 8

10-18-2015
09-02-2015
JEFFREY G. MORTENSEN
8547
PROFESSIONAL ENGINEER

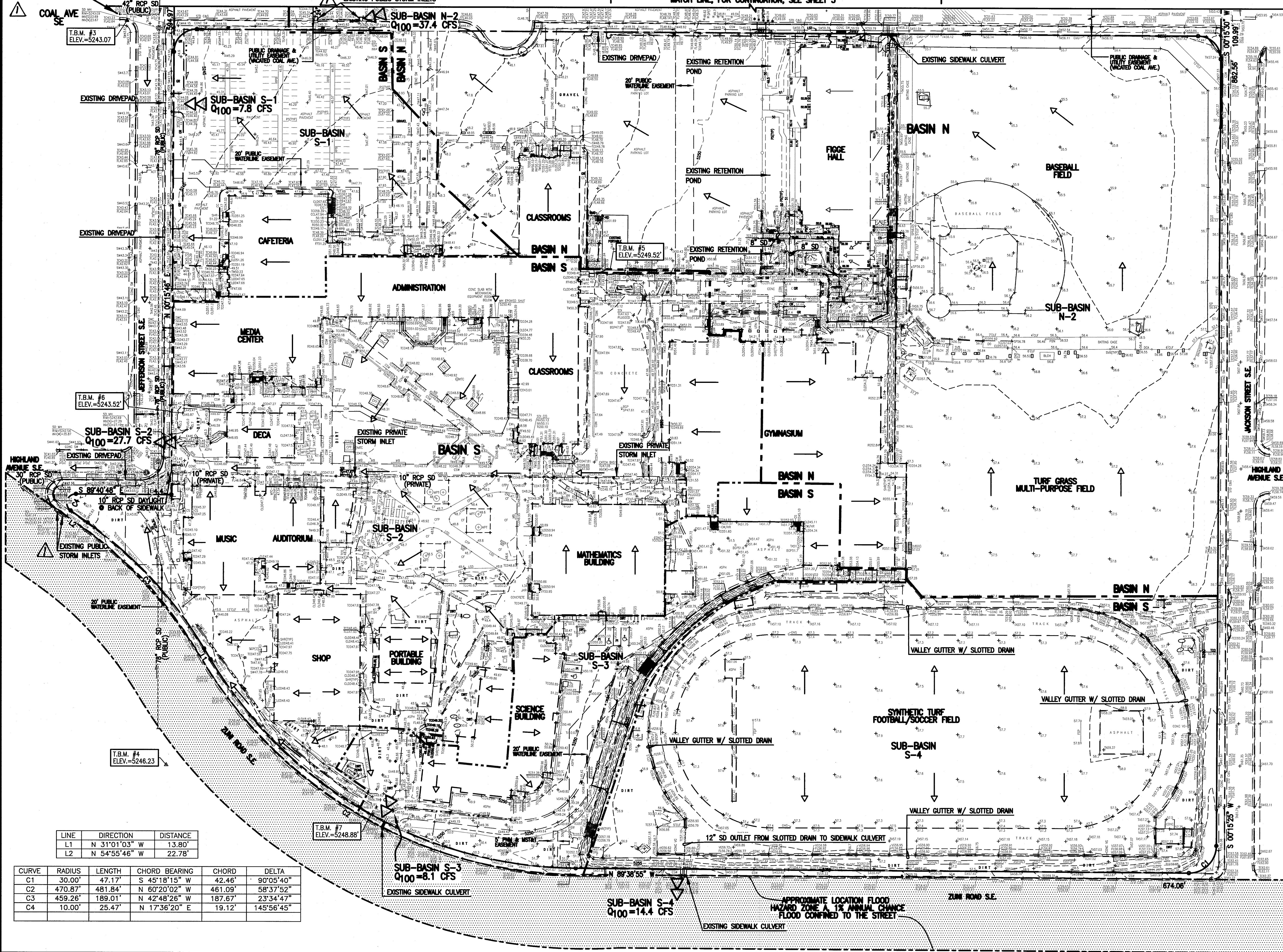
HIGHLAND DETENTION POND CONTROLLED DISCHARGE -
42" SD DISCHARGES TO 80" MAIN IN ZUNI RD SE

BUS LOOP

COAL AVENUE PEDESTRIAN MALL

PARENT DROP-OFF LOOP

MATCH LINE, FOR CONTINUATION, SEE SHEET 3



LEGAL DESCRIPTION

TRACT A-1-A, HIGHLAND HIGH SCHOOL, ALBUQUERQUE, NEW MEXICO,
AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT FILED IN
THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY,
NEW MEXICO ON JUNE 18, 2009, BOOK 2009C, PAGE 96,
DOC# 2009068233.

BENCHMARKS

PROJECT BENCHMARK

ACS 2" BRASS DISC SET STAMPED "6-K18A ACS" SET
IN SIDEWALK AT THE INTERSECTION OF CENTRAL AVENUE
AND JACKSON STREET.
ELEVATION = 5249.99 FEET (NAVD 1988)

T.B.M. #3

A FLAGGED NAIL AT THE SOUTHWEST QUADRANT OF
JEFFERSON STREET AND COAL AVENUE, AS SHOWN ON
THIS SHEET.
ELEVATION = 5243.07 FEET (NAVD 1988)

T.B.M. #4

A #5 REBAR WITH CONTROL CAP STAMPED "NMP
#1184" ON ISLAND AT THE INTERSECTION OF ZUNI
ROAD AND JACKSON STREET, AS SHOWN ON THIS
SHEET.
ELEVATION = 5246.23 FEET (NAVD 1988)

T.B.M. #5

A MAG NAIL SET IN ASPHALT, AS SHOWN ON THIS
SHEET.
ELEVATION = 5249.52 FEET (NAVD 1988)

T.B.M. #6

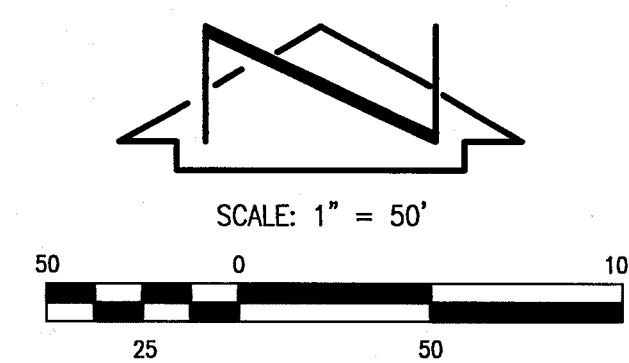
A MAG NAIL SET IN ASPHALT, AS SHOWN ON THIS
SHEET.
ELEVATION = 5243.52 FEET (NAVD 1988)

T.B.M. #7

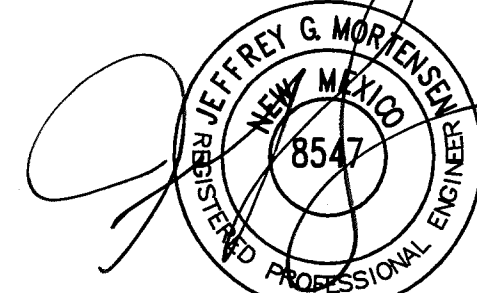
A MAG NAIL SET IN ASPHALT, AS SHOWN ON THIS
SHEET.
ELEVATION = 5248.88 FEET (NAVD 1988)

LEGEND

- EXISTING FLOWLINE
- EXISTING DIRECTION OF FLOW
- - - EXISTING DRAINAGE BASIN BOUNDARY
- - - EXISTING DRAINAGE SUB-BASIN BOUNDARY
- HIGH POINT / DIVIDE
- GRAPHIC POINT OF DISCHARGE



10-13-2015



09-02-2015

LINE	DIRECTION	DISTANCE
L1	N 31°01'03" W	13.80'
L2	N 54°55'46" W	22.78'

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA
C1	30.00'	47.17'	S 45°18'15" W	42.46'	90°05'40"
C2	470.87'	481.84'	N 60°20'02" W	461.09'	58°37'52"
C3	459.26'	189.01'	N 42°48'26" W	187.67'	23°34'47"
C4	10.00'	25.47'	N 17°36'20" E	19.12'	145°56'45"

HIGH MESA Consulting Group

6010-B MIDWAY PARK BLVD. NE • ALBUQUERQUE, NEW MEXICO 87109
PHONE: 505.345.4250 • FAX: 505.345.4254 • www.highmesacg.com

EXISTING CONDITIONS PLAN-SOUTH MASTER DRAINAGE PLAN HIGHLAND HIGH SCHOOL

DESIGNED BY: JDS
DRAWN BY: SCC
APPROVED BY: JGM

NO.	DATE	BY	REVISIONS	JOB NO.
1	10/15	JDS	PROVIDE BASIN FLOW CLARIFICATION; IDENTIFY PRIVATE VS PUBLIC DRAINAGE IMPROVEMENTS	2014.183.5
				DATE: 8-2015
				SHEET: 4 OF 8

LEGAL DESCRIPTION

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PROJECT BENCHMARK
ACS 2" BRASS DISC SET STAMPED "6-K18A ACS" SET IN SIDEWALK AT THE INTERSECTION OF CENTRAL AVENUE AND JACKSON STREET.
ELEVATION = 5249.99 FEET (NAVD 1988)

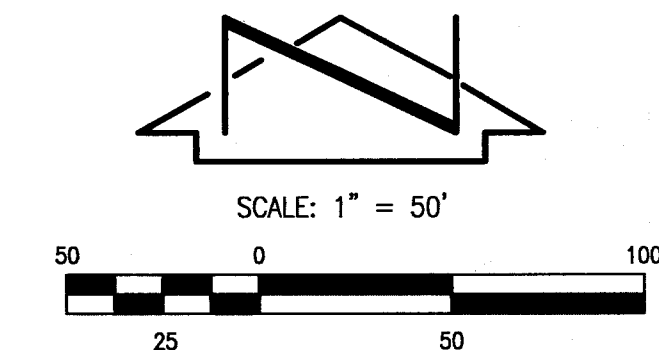
T.B.M. #1
A CHISELED "X" AT THE SOUTHEAST QUADRANT OF SILVER AVENUE AND JACKSON AVENUE, AS SHOWN ON THIS SHEET.
ELEVATION = 5253.35 FEET (NAVD 1988)

T.B.M. #2
A CHISELED "+" ON THE HANDICAP RAMP AT THE SOUTHWEST QUADRANT OF SILVER AVENUE AND MONROE STREET, AS SHOWN ON THIS SHEET.
ELEVATION = 5246.58 FEET (NAVD 1988)

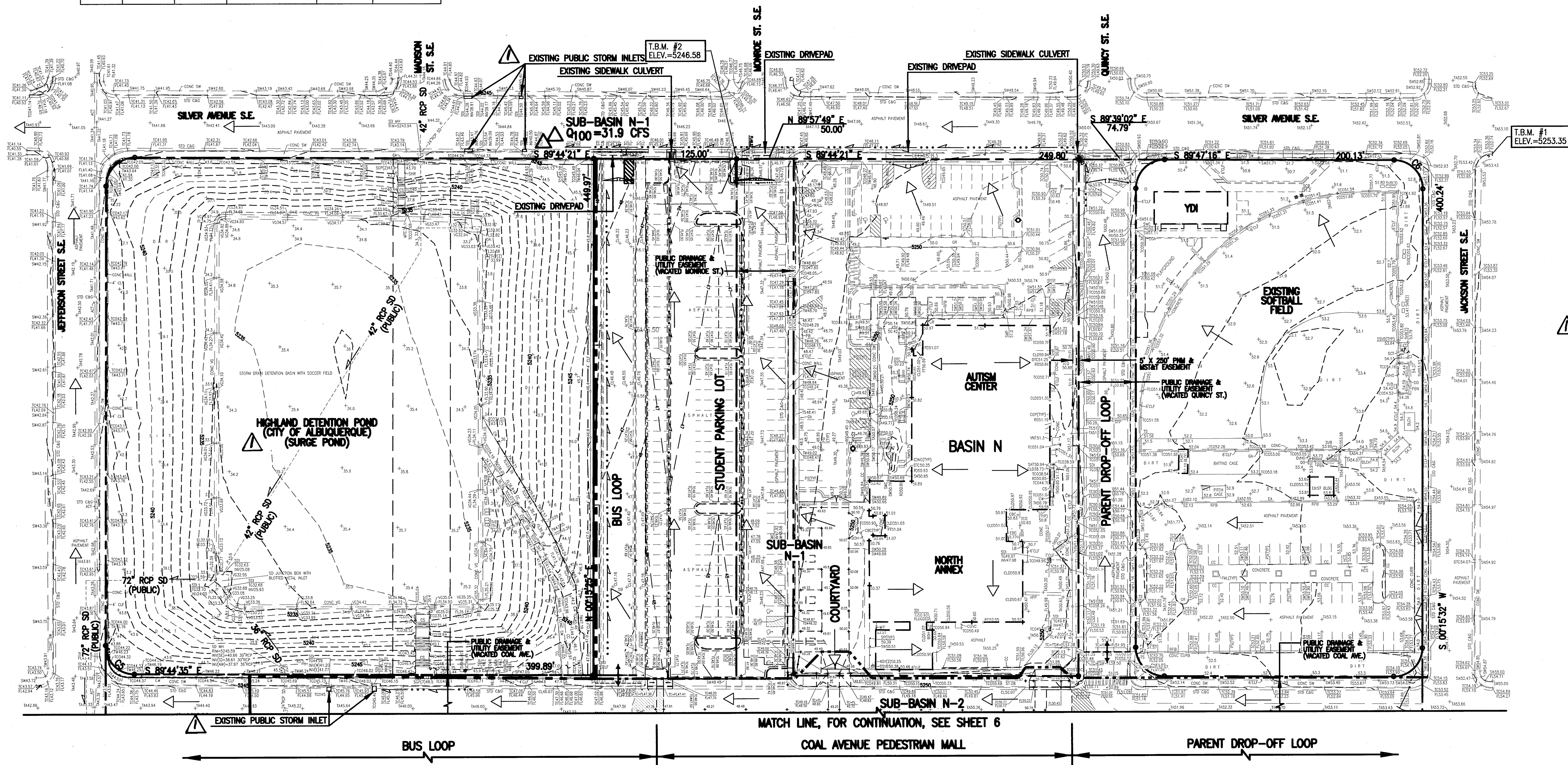
LEGEND

EXISTING FLOWLINE
EXISTING DIRECTION OF FLOW
DEVELOPED DRAINAGE BASIN BOUNDARY
DEVELOPED DRAINAGE SUB-BASIN BOUNDARY
HIGH POINT / DIVIDE
GRAPHIC POINT OF DISCHARGE

NOTE:
NO MASTER PLAN WORK PROPOSED FOR NORTHERLY PORTION OF CAMPUS AT THIS TIME.



CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA
C5	25.00'	39.27'	S 44°44'24" E	35.36'	90°00'21"
C6	25.00'	39.29'	S 44°45'52" E	35.37'	90°02'48"



File Path: P:\M\2014\2014183.DWG Plot Date: 10-14-2015
File Name: 141835_S05FELD.DWG Plot Time: 10:51 am

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DEVELOPED CONDITIONS PLAN-NORTH
MASTER DRAINAGE PLAN
HIGHLAND HIGH SCHOOL

DESIGNED BY			DATE			BY			REVISIONS			JOB NO.		
J.D.S.			10/15			J.D.S.			PROVIDE BASIN FLOW CLARIFICATION; IDENTIFY PRIVATE VS PUBLIC DRAINAGE IMPROVEMENTS			2014.183.5		
S.C.C.												8-2015		
J.G.M.												5 OF 8		

10-18-2015
JEFFREY G. MORTENSEN
NEW MEXICO
8547
PROFESSIONAL ENGINEER
09-02-2015

HIGHLAND DETENTION POND CONTROLLED DISCHARGE - 42" SD DISCHARGES TO 80" MAIN IN ZUNI RD SE

BUS LOOP

COAL AVENUE PEDESTRIAN MALL

PARENT DROP-OFF LOOP

MATCH LINE: FOR CONTINUATION, SEE SHEET 5

LEGAL DESCRIPTION

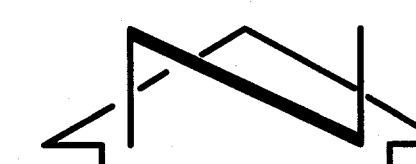
TRACT A-1-A, HIGHLAND HIGH SCHOOL, ALBUQUERQUE, NEW MEXICO, AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNILLO COUNTY, NEW MEXICO ON JUNE 18, 2009, BOOK 2009C, PAGE 96, DOC# 2009068233.

LEGEND

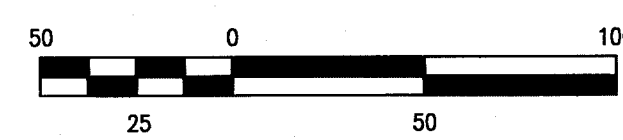
- EXISTING FLOWLINE
- PROPOSED FLOWLINE
- EXISTING DIRECTION OF FLOW
- PROPOSED DIRECTION OF FLOW
- DEVELOPED DRAINAGE BASIN BOUNDARY
- DEVELOPED DRAINAGE SUB-BASIN BOUNDARY
- HIGH POINT / DIVIDE
- GRAPHIC POINT OF DISCHARGE

KEYED NOTES

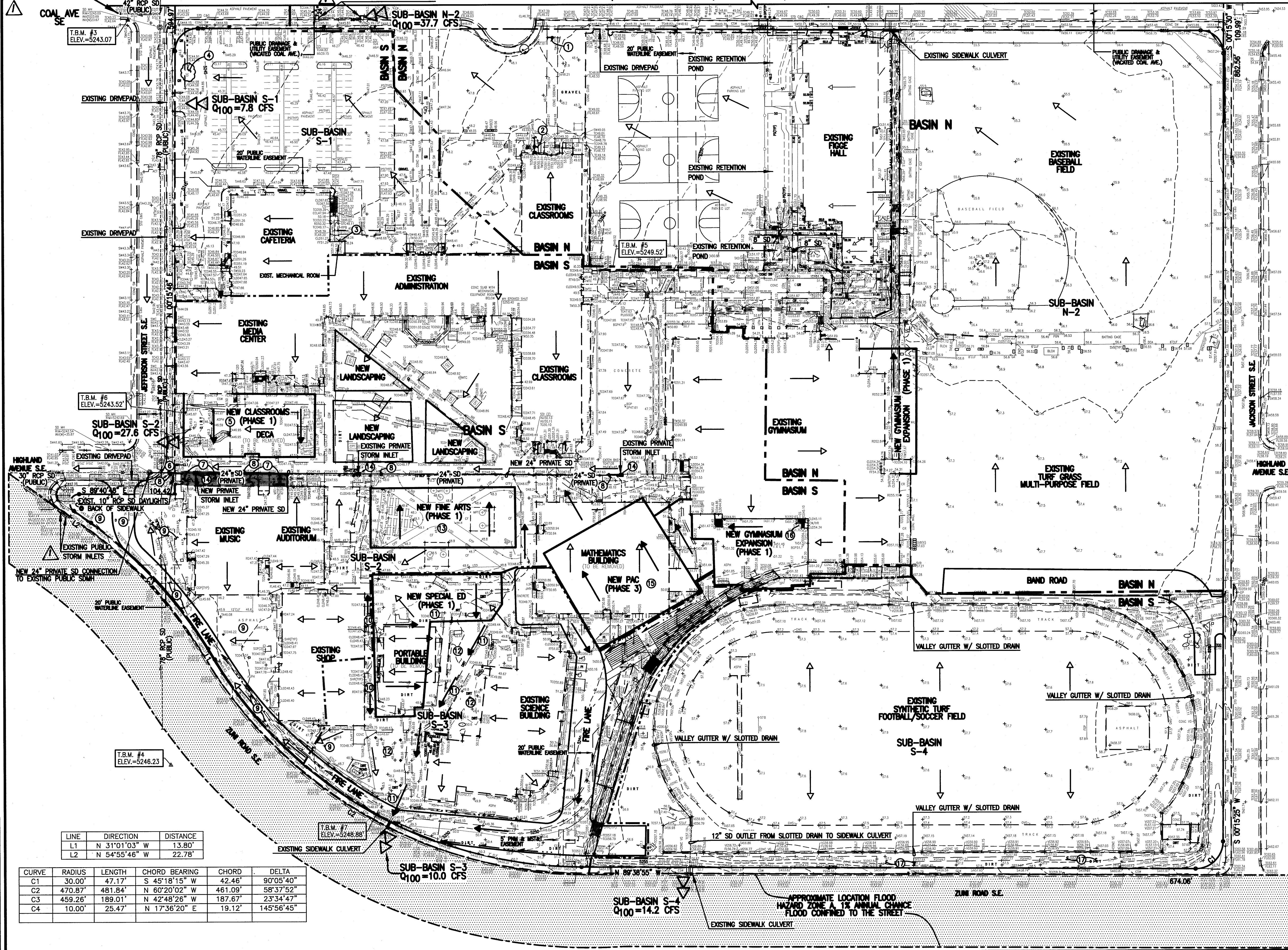
- EXISTING SIDEWALK CULVERT NO LONGER REQUIRED FOR POSITIVE DRAINAGE; EXISTING FINISHED GRADE OF GRAVEL LANDSCAPE MATCHES EXISTING TOP OF CULVERT. REMOVE EXISTING SIDEWALK CULVERT AND REPLACE WITH CONCRETE PAVING TO MATCH EXISTING SIDEWALK.
- VISUAL SITE INSPECTION OF GRAVEL INLET @ NW CORNER OF CLASSROOM BUILDING NOTED AN EXISTING 12" STORM DRAIN WITH NO KNOWN OUTLET; LOCATE OUTFALL OF 12" STORM DRAIN TO VERIFY EXISTING STORM DRAIN IS IN USE OR ABANDONED IN PLACE.
- ELIMINATE EXISTING LOW POINT @ EXISTING MECHANICAL ROOM ROOF DRAIN BY PROVIDING POSITIVE DRAINAGE NORTH THROUGH EXIST. CURB INTO PAVED PARKING LOT.
- REMOVE AND REPLACE/REGRADE EXISTING ASPHALT PAVEMENT TO ELIMINATE LOW POINT AND PROVIDE POSITIVE DRAINAGE.
- DISCHARGE RUNOFF FROM NEW PHASE 1 CLASSROOM BUILDING ADDITION TO NEW 24" PRIVATE STORM DRAIN TO MITIGATE SURFACE RUNOFF TO JEFFERSON STREET.
- REGRADE ASPHALT PAVING / INSTALL SIDEWALK CULVERTS AS NECESSARY TO MITIGATE SURFACE RUNOFF DRAINING ACROSS THE EXISTING PUBLIC SIDEWALK INTO JEFFERSON STREET.
- REMOVE AND REPLACE EXISTING ASPHALT PAVEMENT IN POOR CONDITION BETWEEN EXISTING DECA AND MUSIC BUILDINGS TO ELIMINATE EXISTING EROSION ONTO PUBLIC SIDEWALKS AND INTO JEFFERSON STREET SE.
- REMOVE AND REPLACE (UPSIZE) EXISTING 10" PRIVATE STORM DRAIN WITH 24" PRIVATE STORM DRAIN. EXTEND 24" SD TO EXISTING PUBLIC STORM DRAIN WITHIN HIGHLAND AVE SE. CONNECT VIA EXISTING SDWH.
- NEW FIRE LANE SHALL DISCHARGE RUNOFF TO INTERSECTION OF JEFFERSON STREET & HIGHLAND AVENUE SE VIA EXISTING DRIVEPAD. UTILIZE ASSOCIATED LANDSCAPED AREAS FOR WATER HARVESTING, MANAGING FIRST FLUSH GENERATED BY NEW IMPROVEMENTS TO MAXIMUM EXTENT PRACTICABLE.
- PROVIDE POSITIVE DRAINAGE NORTH AND SOUTH AWAY FROM EAST SIDE OF THE EXISTING SHOP BUILDING TO ELIMINATE EXISTING PONDING AGAINST FACE OF BUILDING.
- PROVIDE POSITIVE DRAINAGE FROM NEW SPECIAL EDUCATION BUILDING TO EXISTING SIDEWALK CULVERT ALONG ZUNI ROAD SE.
- UTILIZE LANDSCAPED AREAS FOR WATER HARVESTING, MANAGING FIRST FLUSH GENERATED BY NEW IMPROVEMENTS TO THE MAXIMUM EXTENT PRACTICABLE.
- DISCHARGE RUNOFF FROM FINE ARTS BUILDING AND ASSOCIATED SURFACE IMPROVEMENTS TO NEW 24" PRIVATE STORM DRAIN; UTILIZE LANDSCAPED AREAS FOR WATER HARVESTING, MANAGING FIRST FLUSH GENERATED BY NEW IMPROVEMENTS TO THE MAXIMUM EXTENT PRACTICABLE.
- DESIGN AND CONSTRUCT ADDITIONAL INLETS / REPLACE EXISTING INLETS AS NECESSARY TO ACCEPT AND CONVEY RUNOFF FROM NEW SURFACE AND BUILDING IMPROVEMENTS.
- DISCHARGE RUNOFF FROM PERFORMING ARTS CENTER BUILDING AND ASSOCIATED SURFACE IMPROVEMENTS TO NEW 24" PRIVATE STORM DRAIN; UTILIZE LANDSCAPED AREAS FOR WATER HARVESTING, MANAGING FIRST FLUSH GENERATED BY NEW IMPROVEMENTS TO THE MAXIMUM EXTENT PRACTICABLE.
- ISSUE OF MINOR RUNOFF FLOWS ENTERING GYMNASIUM STAIRWELL DOORWAY WILL BE ELIMINATED UPON CONSTRUCTION OF GYMNASIUM EXPANSION.
- MITIGATE SLOPE EROSION ON THE SOUTH SIDE OF THE TRACK VIA SLOPE PROTECTION IMPROVEMENTS.



SCALE: 1" = 50'



09-02-2015
10-18-2015



LINE	DIRECTION	DISTANCE
L1	N 31°01'03" W	13.80'
L2	N 54°55'46" W	22.78'

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA
C1	30.00'	47.17'	S 45°18'15" W	42.46'	90°05'40"
C2	470.87'	481.84'	N 60°20'02" W	461.09'	58°37'52"
C3	459.26'	189.01'	N 42°48'26" W	187.67'	23°34'47"
C4	10.00'	25.47'	N 17°36'20" E	19.12'	145°56'45"

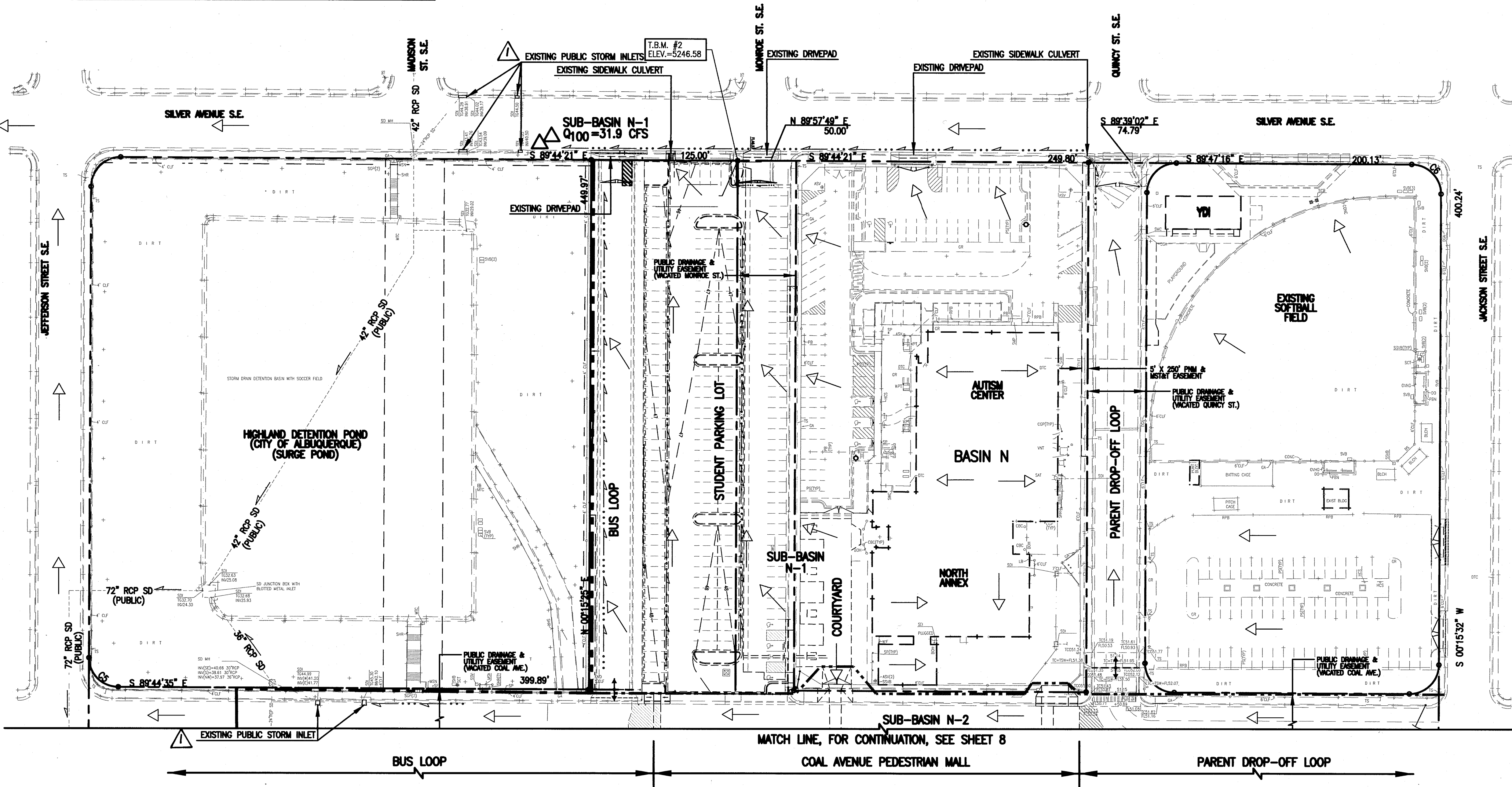
DEVELOPED CONDITIONS PLAN-SOUTH
MASTER DRAINAGE PLAN
HIGHLAND HIGH SCHOOL

	NO.	DATE	BY	REVISIONS	JOB NO.		
DESIGNED BY	J.D.S.		10/15	JDS	PROVIDE BASIN FLOW CLARIFICATION; IDENTIFY PRIVATE VS PUBLIC DRAINAGE IMPROVEMENTS	2014.183.	
DRAWN BY	S.C.C.					DATE	8-2015
APPROVED BY	J.G.M.					SHEET	6 OF 8

HIGH MESA Consulting Group
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Plot Date: 10-14-2015
Plot Time: 14:00 pm
File Path: P:\MIDWAY PARK BLVD. NE\141835_60F8.DWG
File Name: 141835_60F8.DWG

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA
C5	25.00'	39.27'	S 44°44'24" E	35.36'	90°00'21"
C6	25.00'	39.29'	S 44°45'52" E	35.37'	90°02'48"



LEGAL DESCRIPTION
 TRACT A-1-A, HIGHLAND HIGH SCHOOL, ALBUQUERQUE, NEW MEXICO, AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO ON JUNE 18, 2009, BOOK 2009C, PAGE 96, DOC# 2009068233.

BENCHMARKS

PROJECT BENCHMARK
 ACS 2" BRASS DISC SET STAMPED "6-K18A ACS" SET IN SIDEWALK AT THE INTERSECTION OF CENTRAL AVENUE AND JACKSON STREET.
 ELEVATION = 5249.99 FEET (NAVD 1988)

T.B.M. #1
 A CHISELED "X" AT THE SOUTHEAST QUADRANT OF SILVER AVENUE AND JACKSON AVENUE, AS SHOWN ON THIS SHEET.
 ELEVATION = 5253.35 FEET (NAVD 1988)

T.B.M. #2
 A CHISELED "+" ON THE HANDICAP RAMP AT THE SOUTHWEST QUADRANT OF SILVER AVENUE AND MONROE STREET, AS SHOWN ON THIS SHEET.
 ELEVATION = 5246.58 FEET (NAVD 1988)

LEGEND

- EXISTING FLOWLINE
- EXISTING DIRECTION OF FLOW
- DEVELOPED DRAINAGE BASIN BOUNDARY
- DEVELOPED DRAINAGE SUB-BASIN BOUNDARY
- HIGH POINT / DIVIDE
- PHASE 1
- PHASE 2
- PHASE 3

NOTE:
 NO MASTER PLAN WORK PROPOSED FOR NORTHERLY PORTION OF CAMPUS AT THIS TIME.

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 Plot Date: 10-14-2015
 Plot Time: 10:40 am

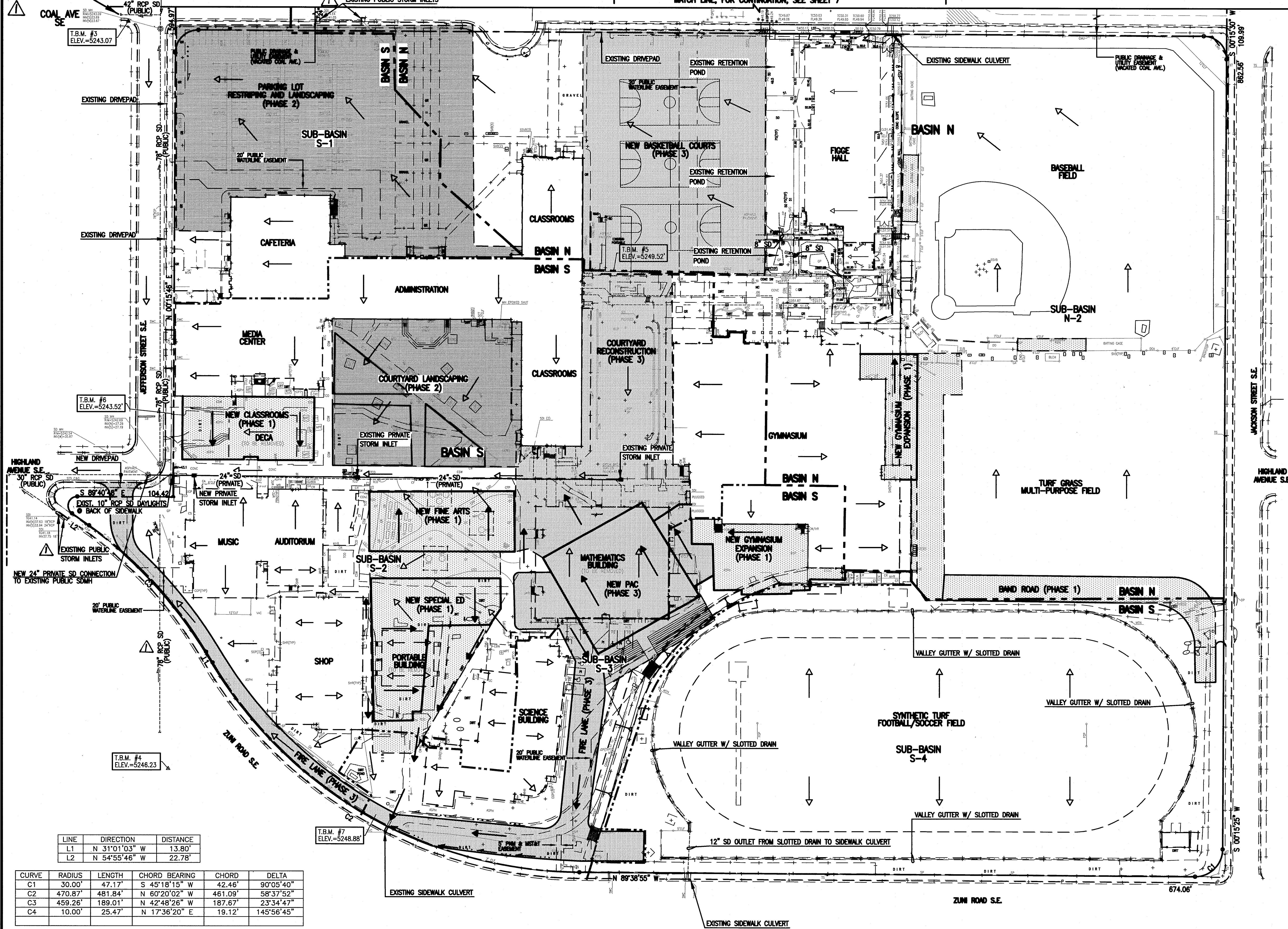
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**PHASING PLAN-NORTH
 MASTER DRAINAGE PLAN
 HIGHLAND HIGH SCHOOL**

DESIGNED BY	DATE	BY	REVISIONS	JOB NO.
J.D.S.	10/15	J.D.S.	PROVIDE BASIN FLOW CLARIFICATION; IDENTIFY PRIVATE VS PUBLIC DRAINAGE IMPROVEMENTS	2014.183.5
DRAWN BY	DATE	BY		
S.C.C.				8-2015
APPROVED BY	DATE	BY		
J.G.M.				7 OF 8

10-18-2015
 09-02-2015
 JEFFREY G. MORTENSEN
 8347
 PROFESSIONAL ENGINEER

HIGHLAND DETENTION POND CONTROLLED DISCHARGE -
42" SD DISCHARGES TO 80" MAIN IN ZUNI RD SE



LEGAL DESCRIPTION

TRACT A-1-A, HIGHLAND HIGH SCHOOL, ALBUQUERQUE, NEW MEXICO,
AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT FILED IN
THE OFFICE OF THE COUNTY CLERK OF BERNILLO COUNTY,
NEW MEXICO ON JUNE 18, 2009, BOOK 2009C, PAGE 96,
DOC# 2009068233.

BENCHMARKS

PROJECT BENCHMARK

ACS 2" BRASS DISC SET STAMPED "6-K18A ACS" SET
IN SIDEWALK AT THE INTERSECTION OF CENTRAL AVENUE
AND JACKSON STREET.
ELEVATION = 5249.99 FEET (NAVD 1988)

T.B.M. #3

A FLAGGED NAIL AT THE SOUTHWEST QUADRANT OF
JEFFERSON STREET AND COAL AVENUE, AS SHOWN ON
THIS SHEET.
ELEVATION = 5243.07 FEET (NAVD 1988)

T.B.M. #4

A #5 REBAR WITH CONTROL CAP STAMPED "NMP
#11184" ON ISLAND AT THE INTERSECTION OF ZUNI
ROAD AND JEFFERSON STREET, AS SHOWN ON THIS
SHEET.
ELEVATION = 5246.23 FEET (NAVD 1988)

T.B.M. #5

A MAG NAIL SET IN ASPHALT, AS SHOWN ON THIS
SHEET.
ELEVATION = 5249.52 FEET (NAVD 1988)

T.B.M. #6

A MAG NAIL SET IN ASPHALT, AS SHOWN ON THIS
SHEET.
ELEVATION = 5243.52 FEET (NAVD 1988)

T.B.M. #7

A MAG NAIL SET IN ASPHALT, AS SHOWN ON THIS
SHEET.
ELEVATION = 5248.88 FEET (NAVD 1988)

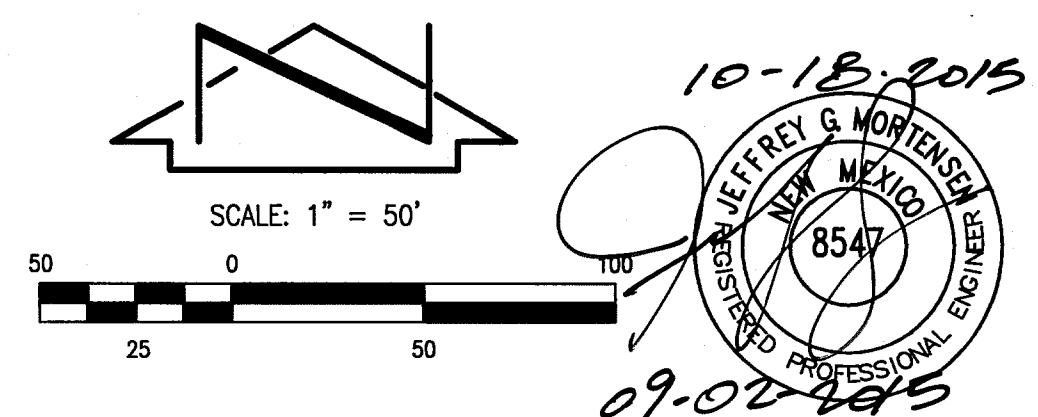
LEGEND

- EXISTING FLOWLINE
- PROPOSED FLOWLINE
- EXISTING DIRECTION OF FLOW
- DEVELOPED DIRECTION OF FLOW
- DEVELOPED DRAINAGE BASIN BOUNDARY
- DEVELOPED DRAINAGE SUB-BASIN BOUNDARY
- HIGH POINT / DWIDE
- PHASE 1
- PHASE 2
- PHASE 3

LINE	DIRECTION	DISTANCE
L1	N 31°01'03" W	13.80'
L2	N 54°55'46" W	22.78'

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA
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C3	459.26'	189.01'	N 42°48'26" W	187.67'	23°34'47"
C4	10.00'	25.47'	N 17°36'20" E	19.12'	145°56'45"

T.B.M. #7
ELEV.=5248.88'



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PHASING PLAN-SOUTH MASTER DRAINAGE PLAN HIGHLAND HIGH SCHOOL

DESIGNED BY J.D.S.
DRAWN BY S.C.C.
APPROVED BY J.G.M.

NO.	DATE	BY	REVISIONS	JOB NO.
1	10/15	J.D.S.	PROMOTE BASIN FLOW CLARIFICATION; IDENTIFY PRIVATE VS PUBLIC DRAINAGE IMPROVEMENTS	2014.183.5
				DATE
				8-2015
				SHEET
				8 OF 8

DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THIS PROJECT, LOCATED IN THE LOWER SOUTHEAST HEIGHTS OF THE ALBUQUERQUE METROPOLITAN AREA, REPRESENTS A MODIFICATION TO AN EXISTING SITE WITHIN AN INFILL AREA. AT PRESENT, THE SITE IS DEVELOPED AS AN ALBUQUERQUE PUBLIC SCHOOLS HIGH SCHOOL. THIS MASTER DRAINAGE PLAN FOR THE SITE SHALL IDENTIFY DRAINAGE DEFICIENCIES, PRESENT PERMANENT DRAINAGE SOLUTIONS, AND IDENTIFY THE INDIVIDUAL PHASES OF FUTURE DEVELOPMENT FOR THE HIGH SCHOOL CAMPUS.

THE PROPOSED DRAINAGE CONCEPT WILL BE THE CONTINUED FREE DISCHARGE OF RUNOFF FROM THE NORTH PORTION OF CAMPUS TO THE HIGHLAND DETENTION BASIN, WITH THE SOUTH PORTION OF CAMPUS CONTINUING TO FREE DISCHARGE TO ZUNI ROAD SE.

THIS SUBMITTAL IS MADE FOR APPROVAL OF A MASTER DRAINAGE PLAN. PHASED DEVELOPMENT INCLUDED HEREIN WILL REQUIRE SEPARATE SITE SPECIFIC SUBMITTALS FOR BUILDING AND/OR GRADING AND PAVING PERMIT.

II. PROJECT DESCRIPTION

AS SHOWN BY THE VICINITY MAP, THE SCHOOL SITE IS LOCATED NEAR THE SOUTHEAST CORNER OF THE INTERSECTION OF SILVER AVENUE SE AND JACKSON STREET SE. THE CURRENT LEGAL DESCRIPTION IS TRACT A-1-A, HIGHLAND HIGH SCHOOL, AS SHOWN BY PANEL 354 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED BY FEMA FOR BERNALILLO COUNTY, NEW MEXICO, SEPTEMBER 26, 2008, THIS SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE, HOWEVER, IT DOES LIE IMMEDIATELY NORTH OF A DESIGNATED FLOOD HAZARD ZONE A THAT COINCIDES WITH ZUNI ROAD SE. A FULLY DEVELOPED PUBLIC STREET, THE 100 YEAR STORM EVENT ASSOCIATED WITH THIS FLOOD HAZARD ZONE IS CONFINED TO THE PUBLIC STREET. THE SOUTH PORTION OF CAMPUS CURRENTLY FREE DISCHARGES TO THIS DESIGNATED FLOOD HAZARD ZONE.

III. BACKGROUND DOCUMENTS & RESEARCH

THE PREPARATION OF THIS PLAN RELIED UPON THE FOLLOWING DOCUMENTS:

- TOPOGRAPHIC SURVEY PREPARED BY HIGH MESA CONSULTING GROUP (NMP5 11184) DATED 03-30-2010 AND UPDATED 08-08-2014. THIS REFERENCED SURVEY PROVIDES THE BASIS FOR THE EXISTING CONDITIONS OF THE SCHOOL SITE.
- RECORD DRAWINGS OF THE HIGHLAND HIGH SCHOOL COAL AVENUE PEDESTRIAN MALL PREPARED BY HIGH MESA CONSULTING GROUP (NMP5 8547) DATED 8-09-2011 AND CERTIFIED 1-22-2012. THESE REFERENCED DRAWINGS PROVIDE THE BASIS FOR THE EXISTING CONDITIONS OF THIS PORTION OF THE SCHOOL SITE.
- RECORD DRAWINGS OF THE HIGHLAND HIGH SCHOOL VACATION & TCL IMPROVEMENTS PHASE 2 PREPARED BY HIGH MESA CONSULTING GROUP DATED 11-03-2010 AND CERTIFIED 3-18-2011. THESE REFERENCED DRAWINGS PROVIDE THE BASIS FOR THE EXISTING CONDITION OF THE STUDENT PARKING LOT AND PARENT DROP-OFF LOOP.
- RECORD DRAWINGS OF THE HIGHLAND HIGH SCHOOL AUTISM CENTER PARKING LOT PREPARED BY HIGH MESA CONSULTING GROUP DATED 12-01-2010 AND CERTIFIED 6-21-2011. THESE RECORD DRAWINGS PROVIDE THE BASIS FOR THE EXISTING CONDITION OF THIS PORTION OF THE SCHOOL SITE.
- RECORD DRAWINGS OF THE HIGHLAND HIGH SCHOOL SCIENCE BUILDING IMPROVEMENTS PREPARED BY HIGH MESA CONSULTING GROUP (NMP5 8547) DATED 5-25-2010 AND CERTIFIED 10-02-2010. THESE REFERENCED DRAWINGS ESTABLISHED THAT FREE DISCHARGE OF RUNOFF FROM THE SCIENCE BUILDING AND SURROUNDING PERMANENT IMPROVEMENTS TO ZUNI ROAD SE, A FULLY DEVELOPED PUBLIC STREET, IS APPROPRIATE.
- RECORD DRAWINGS OF THE HIGHLAND HIGH SCHOOL NEW FIGGE HALL PREPARED BY HIGH MESA CONSULTING GROUP (NMP5 8547) DATED 11-17-2008 AND CERTIFIED 02-24-2010. THESE REFERENCED DRAWINGS PROVIDE THE BASIS FOR THE EXISTING CONDITIONS OF THIS PORTION OF THE SCHOOL SITE.
- GRADING AND DRAINAGE PLANS OF THE HIGHLAND HIGH SCHOOL VACATION & TCL IMPROVEMENTS PHASE 1 PREPARED BY HIGH MESA CONSULTING GROUP DATED 7-30-2009 AND UPDATED 8-24-2009. THESE REFERENCED DRAWINGS PROVIDE THE BASIS FOR THE EXISTING CONDITION OF THE BUS DROP-OFF LOOP.
- PLAY OF TRACT A-1-A, HIGHLAND HIGH SCHOOL, APPROVED BY DRB, PROJECT NUMBER 1007472, DATED 06/18/2009. THE REFERENCED PLATTING ACTION RETAINED THE VACATED COAL RIGHT-OF-WAY AS A PUBLIC DRAINAGE EASEMENT.
- GRADING AND DRAINAGE PLAN OF THE HIGHLAND HIGH SCHOOL TRACK PREPARED BY HIGH MESA CONSULTING GROUP (FORMERLY JEFF WORTENREITH & ASSOC.) DATED 4-7-1993. THIS PLAN ESTABLISHED THAT FREE DISCHARGE TO ZUNI ROAD SE FROM THE TRACK AND FIELD IS APPROPRIATE.
- PLATE K17, THE ALBUQUERQUE MASTER DRAINAGE STUDY (AMDS) PREPARED BY BOHANNAN-HUSTON FOR THE CITY OF ALBUQUERQUE DATED JANUARY, 1981. THE AMDS PROVIDES BACKGROUND INFORMATION RELATIVE TO THE CONDITION OF FLOODING IN THE PROXIMITY OF THE HIGHLAND HIGH SCHOOL CAMPUS. IN PARTICULAR, THE COMPLETION OF THE HIGHLAND DETENTION POND HAS RELIEVED DISCHARGE CONSTRAINTS THEREBY ALLOWING THE FREE DISCHARGE OF RUNOFF FROM THE HIGHLAND HIGH SCHOOL SITE.
- PLATE K17, STORM FACILITIES MAPS, CITY OF ALBUQUERQUE, JULY 30, 2002. THIS MAPPING VERIFIED THE PRESENCE OF LARGE DIAMETER PUBLIC STORM DRAIN FACILITIES IMMEDIATELY WEST OF THE HIGHLAND HIGH SCHOOL SUPPORTING THE FREE DISCHARGE OF DEVELOPED RUNOFF FROM THE HIGH SCHOOL SITE TO ZUNI ROAD SE.

IV. EXISTING CONDITIONS

THE SITE IS CHARACTERIZED BY TWO (2) DRAINAGE BASINS, BASIN N AND BASIN S. BASIN N CONSISTS OF THE NORTHERN PORTION OF THE SITE, RUNOFF FROM THIS BASIN FREE DISCHARGES TO THE HIGHLAND DETENTION POND LOCATED IMMEDIATELY DOWNSTREAM OF THE HIGH SCHOOL SITE. HIGHLAND DETENTION POND IS A CITY OF ALBUQUERQUE OWNED AND OPERATED PUBLIC STORMWATER DETENTION BASIN. BASIN S CONSISTS OF THE SOUTHERN PORTION OF THE SITE; RUNOFF FROM THIS BASIN FREE DISCHARGES TO ZUNI ROAD SE, A FULLY DEVELOPED PUBLIC STREET WITH PUBLIC STORM DRAIN IMPROVEMENTS. BASINS N AND S ARE FURTHER DIVIDED INTO SUB-BASINS WITH THE CONDITIONS AND DRAINAGE DEFICIENCIES FOR EACH SUB-BASIN DESCRIBED BELOW.

A. BASIN N

1. SUB-BASIN N-1

- EXISTING CONDITIONS
 - THIS BASIN CONSISTS OF THE PORTIONS OF CAMPUS NORTH OF THE COAL AVENUE PEDESTRIAN MALL, INCLUDING THE EXISTING SOFTBALL FIELD AND PARKING LOT, THE NORTH ANNEX, THE AUTISM CENTER AND PARKING LOT, THE STUDENT PARKING LOT AND THE BUS DROP-OFF LOOP. THESE AREAS GENERALLY SURFACE DRAIN SOUTH TO NORTH TO FREE DISCHARGE INTO SILVER AVENUE SE, A FULLY DEVELOPED PUBLIC STREET. FROM THIS POINT, RUNOFF FLOWS EAST TO WEST WITHIN SILVER AVENUE SE TO TWO PUBLIC STORM INLETS NEAR THE INTERSECTION OF SILVER AVENUE SE AND MADISON STREET SE. THE PUBLIC STORM INLETS DISCHARGE RUNOFF VIA PUBLIC STORM DRAIN DIRECTLY INTO THE HIGHLAND DETENTION POND, A CITY OF ALBUQUERQUE OWNED AND OPERATED PUBLIC STORMWATER DETENTION FACILITY LOCATED AT THE NORTHWEST CORNER OF THE SCHOOL SITE.

b. DEFICIENCIES

- NO DRAINAGE DEFICIENCIES WERE OBSERVED OR REPORTED IN THIS SUB-BASIN.

2. SUB-BASIN N-2

- EXISTING CONDITIONS
 - THIS BASIN CONSISTS OF THE COAL AVENUE PEDESTRIAN MALL AND PORTIONS OF THE CAMPUS IMMEDIATELY SOUTH, INCLUDING THE BASEBALL FIELD, MULTI-PURPOSE FIELD, FIGGE HALL, THE SPECIAL EVENTS PARKING LOT, THE NORTHEAST PORTION OF THE MAIN ADMINISTRATION / CLASSROOM BUILDING, THE EAST PORTION OF THE GYMNASIUM AND THE PAVED PEDESTRIAN ACCESS AND LANDSCAPED AREAS NORTH OF THE ADMINISTRATION BUILDING. THESE AREAS GENERALLY SURFACE DRAIN SOUTH TO NORTH TO FREE DISCHARGE INTO THE COAL AVENUE PEDESTRIAN MALL, A CONCRETE AND ASPHALT PAVED ROAD WITH CURB AND GUTTER ON BOTH SIDES. COAL AVENUE IS A FORMER FULLY DEVELOPED PUBLIC STREET THAT WAS VACATED AS A PUBLIC RIGHT-OF-WAY BUT MAINTAINED AS A PUBLIC DRAINAGE EASEMENT. FROM THIS POINT, RUNOFF FLOWS EAST TO WEST WITHIN THE PEDESTRIAN MALL TO TWO PUBLIC STORM INLETS LOCATED IMMEDIATELY SOUTH OF THE HIGHLAND DETENTION POND. PUBLIC STORM DRAINS CONVEY THE RUNOFF NORTH DIRECTLY INTO THE HIGHLAND DETENTION POND, A CITY OF ALBUQUERQUE OWNED AND OPERATED PUBLIC STORMWATER DETENTION FACILITY LOCATED AT THE NORTHWEST CORNER OF THE SCHOOL SITE.

b. DEFICIENCIES

- A ROOF DRAIN AT THE NORTHEAST CORNER OF THE GYMNASIUM CAUSES EROSION IN THE ADJACENT LANDSCAPING, RESULTING IN SEDIMENT DEPOSITS ON THE NEARBY PAVED PEDESTRIAN WALKWAYS.
- A GRATED ENCLOSURE LOCATED AT THE NORTHEAST CORNER OF THE ADMINISTRATION / CLASSROOM BUILDING CONTAINS A 12" ROOF DRAIN AND A 12" STORM DRAIN OUTLET, HOWEVER NO OUTFALL FOR THE 12" STORM DRAIN COULD BE LOCATED. SITE OBSERVATION SHORTLY AFTER A RAINFALL EVENT OBSERVED NO STANDING WATER WITHIN THE ENCLOSURE, AND THERE IS NO OBSERVABLE EVIDENCE OF ANY OVERFLOW FROM THE GRATED ENCLOSURE. IT IS BELIEVED THAT THIS 12" STORM DRAIN OUTLET ULTIMATELY DISCHARGES TO THE HIGHLAND DETENTION POND, BUT NO RECORD DRAWINGS COULD BE LOCATED FOR VERIFICATION.

B. BASIN S

1. SUB-BASIN S-1

- EXISTING CONDITIONS
 - THIS SUB-BASIN CONSISTS OF A PORTION OF THE ADMINISTRATION / CLASSROOM BUILDING, THE ADMINISTRATION BUILDING PARKING LOT, AND ASSOCIATED PEDESTRIAN WALKWAYS AND LANDSCAPE IMPROVEMENTS. SUB-BASIN S-1 GENERALLY DRAINS EAST TO WEST ACROSS THE PARKING LOT WITH FREE DISCHARGE THROUGH TWO DRIVEPADS INTO JEFFERSON STREET SE, A FULLY DEVELOPED PUBLIC STREET. FROM THIS POINT, RUNOFF FLOWS SOUTH WITHIN THE PUBLIC STREET TO THE INTERSECTION OF JEFFERSON STREET SE AND HIGHLAND AVENUE SE, AND THEN WEST TO DISCHARGE INTO ZUNI ROAD SE. FROM THIS POINT, RUNOFF DRAINS WEST ALONG ZUNI ROAD SE INTO SEVERAL PUBLIC STORM INLETS NEAR THE INTERSECTION OF ZUNI ROAD AND ADAMS STREET SE; THESE INLETS DISCHARGE INTO A 54" PUBLIC STORM DRAIN WITHIN ZUNI ROAD SE.

b. DEFICIENCIES

- A ROOF DRAIN AT THE MECHANICAL ROOM DOOR WEST OF THE ADMINISTRATION BUILDING MAIN ENTRANCE LACKS POSITIVE DRAINAGE AWAY FROM THE BUILDING; HOWEVER, NO FLOODING OF THE MECHANICAL ROOM ENTRANCE WAS OBSERVED OR REPORTED, AND ANY ROOF RUNOFF APPEARS TO INFILTRATE THE SURROUNDING LANDSCAPING.
- A SIDEWALK CULVERT LOCATED EAST OF THE BUS DROP-OFF LANE TURN-ABOUT LACKS POSITIVE DRAINAGE. THE SIDEWALK CULVERT IS FILLED WITH SEDIMENT AND THE FINISHED GRADE AT INLET AND OUTLET MATCHES THE TOP OF GRADE ELEVATION.
- STANDING WATER POOLS AT A LOW AREA IN THE ADMINISTRATION BUILDING / VISITOR PARKING LOT AFTER RAINFALL EVENTS. THE LOW AREA IS LOCATED ADJACENT TO THE CURB IMMEDIATELY NORTH OF THE JEFFERSON STREET NORTHWEST ENTRANCE. THE ASPHALT PAVEMENT APPEARS TO BE IN FAIR CONDITION AT THE TIME OF THIS REPORT.

2. SUB-BASIN S-2

a. EXISTING CONDITIONS

- THIS SUB-BASIN IS LOCATED AT THE SOUTHWEST CORNER OF THE SITE AND CONSISTS OF THE ADMINISTRATION / CLASSROOM / MEDIA CENTER BUILDING, THE DECA BUILDING, THE MUSIC AND AUDITORIUM BUILDING, THE SHOP BUILDING, THE MATHEMATICS BUILDING, THE WEST PORTION OF THE GYMNASIUM AND A PORTION OF THE SCIENCE BUILDING. AN EXISTING PAVED FIRE ACCESS ROAD, BASKETBALL COURT, PEDESTRIAN ACCESS WALKWAYS, LANDSCAPED TURF GRASS COURTYARD, AND MISCELLANEOUS LANDSCAPED IMPROVEMENTS MAKE UP THE REMAINDER OF THE SUB-BASIN. SUB-BASIN S-2 GENERALLY DRAINS FROM EAST TO WEST VIA SURFACE SHEETFLOW, CONCENTRATED PAVED FLOWLINES, AND AN EXISTING 10" PRIVATE STORM DRAIN.

ROOF RUNOFF FROM THE ADMINISTRATION / CLASSROOM BUILDING, MATHEMATICS BUILDING, AND MUSIC / AUDITORIUM BUILDING, ALONG WITH SURFACE RUNOFF FROM THE COURTYARD SOUTH OF THE ADMINISTRATION / CLASSROOM BUILDING AND BASKETBALL COURTS DRAIN INTO THE 10" STORM DRAIN VIA BOTH DIRECT ROOF DRAIN CONNECTION AND TWO PRIVATE STORM INLETS. THE 10" STORM DRAIN CONVEYS RUNOFF EAST TO WEST AND DAYLIGHTS NORTHWEST OF THE MUSIC BUILDING. RUNOFF FROM THE FIRE ACCESS ROAD, THE SHOP BUILDING, A PORTION OF THE SCIENCE BUILDING AND ASSOCIATED PAVED AND LANDSCAPED IMPROVEMENTS SURFACE DRAIN EAST TO WEST TO AN AREA WEST OF THE MUSIC BUILDING, WHERE IT COMBINES WITH FLOWS FROM THE 10" PRIVATE STORM DRAIN OUTLET. THE COMBINED RUNOFF FREE DISCHARGES ACROSS THE PUBLIC SIDEWALK INTO JEFFERSON STREET SE AT THE INTERSECTION OF JEFFERSON STREET SE AND HIGHLAND AVE SE. FROM THIS POINT, RUNOFF FLOWS WEST ALONG HIGHLAND AVENUE SE INTO ZUNI ROAD SE. RUNOFF DRAINS WEST WITHIN ZUNI ROAD SE INTO SEVERAL PUBLIC STORM INLETS NEAR THE INTERSECTION OF ZUNI ROAD AND ADAMS STREET SE; THESE INLETS DISCHARGE INTO A 54" PUBLIC STORM DRAIN WITHIN ZUNI ROAD SE.

b. DEFICIENCIES

- A SIDEWALK CULVERT AT THE SOUTH SIDE OF THE MEDIA CENTER BUILDING IS FULL OF SEDIMENT, DEBRIS, AND AN ELECTRICAL CONDUIT THAT APPEARS TO RUN THROUGH IT. THE ASPHALT PAVED FLOWLINE DOWNSTREAM OF THIS CULVERT HAS ERODED AND IS IN POOR CONDITION, RESULTING IN SEDIMENT AND DEBRIS BEING DEPOSITED ONTO THE DOWNSTREAM PUBLIC SIDEWALK AND INTO JEFFERSON STREET SE.
- THE ASPHALT PAVED FLOWLINE DOWNSTREAM OF THE DECA BUILDING ROOF DRAIN OUTLET IS ERODED AND IN POOR CONDITION, RESULTING IN SEDIMENT AND DEBRIS BEING DEPOSITED ONTO THE DOWNSTREAM PUBLIC SIDEWALK AND INTO JEFFERSON STREET SE.
- THE EXISTING 10" PRIVATE STORM DRAIN THAT COLLECTS RUNOFF FROM SUB-BASIN S-2 DAYLIGHTS NEAR THE NORTHWEST CORNER OF THE MUSIC BUILDING AND DISCHARGES RUNOFF ACROSS THE PUBLIC SIDEWALK AND INTO JEFFERSON STREET SE. CALCULATIONS INCLUDED HEREIN INDICATE THIS PRIVATE STORM DRAIN IS UNDERSIZED AND DOES NOT HAVE CAPACITY TO CONVEY THE FLOWS DISCHARGED TO IT.
- THE ASPHALT PAVED FLOWLINE DOWNSTREAM OF THE ROOF DRAIN AT THE NORTHWEST CORNER OF THE MUSIC BUILDING IS ERODED AND IN POOR CONDITION, RESULTING IN SEDIMENT AND DEBRIS BEING DEPOSITED ONTO THE DOWNSTREAM PUBLIC SIDEWALK AND INTO THE INTERSECTION OF JEFFERSON STREET SE AND HIGHLAND AVE SE.
- THE ASPHALT PAVED FLOWLINE DOWNSTREAM OF THE ROOF DRAIN AT THE NORTH SIDE OF THE MUSIC BUILDING IS ERODED AND IN POOR CONDITION, RESULTING IN SEDIMENT AND DEBRIS BEING DEPOSITED ONTO THE ADJACENT PEDESTRIAN WALKWAY.
- SEVERAL LOW AREAS ARE LOCATED IMMEDIATELY SOUTHWEST OF THE FIRE ACCESS ROAD ON THE WEST SIDE OF THE MUSIC BUILDING. EROSION IS OBSERVED IN SEVERAL OF THESE LOW AREAS.
- THE ASPHALT PAVED FLOWLINE WITHIN THE FIRE ACCESS ROAD SHOWS SIGNS OF DETEIORATION AND PAVEMENT CRACKING, HOWEVER, THE FLOWLINE APPEARS TO MAINTAIN POSITIVE DRAINAGE FOR THIS PORTION OF THE SITE.
- ROOF DRAINS ALONG THE EAST SIDE OF THE SHOP BUILDING APPEAR TO LACK POSITIVE DRAINAGE AWAY FROM THE BUILDING, RESULTING IN AREAS OF STANDING WATER AT THE FACE OF THE BUILDING. IT IS NOTED THAT THE ENTRANCES ALONG THIS SIDE OF THE BUILDING SHOW NO SIGNS OF FLOODING.
- A 6" PVC CULVERT IN THE EXISTING SIDEWALK NEAR THE NORTHWEST CORNER OF THE SCIENCE BUILDING IS FILLED WITH SEDIMENT AND DOES NOT APPEAR TO PROVIDE POSITIVE DRAINAGE FOR THE UPSTREAM LANDSCAPED AREA.
- THE GRAVEL AND BARE SOIL NORTH OF THE CLASSROOM PORTABLE BUILDING IN THIS SUB-BASIN LACKS POSITIVE DRAINAGE, RESULTING IN AREAS OF STANDING WATER, OVERFLOW FROM THIS AREA DRAINS WEST, DEPOSITING SEDIMENT ONTO THE PEDESTRIAN WALKWAYS NORTH OF THE SHOP BUILDING.
- NON-STANDARD STORM INLET LOCATED AT THE SOUTH END OF THE BASKETBALL COURT IS CLOGGED WITH DEBRIS; THIS AREA APPEARS TO SUFFER FROM POOR DRAINAGE AS INDICATED BY ALLIGATOR CRACKING AND SEDIMENT DEPOSITS IN THE SURROUNDING ASPHALT AND CONCRETE PAVEMENT.
- A STORM INLET LOCATED AT THE NORTH END OF THE BASKETBALL COURT APPEARS TO LACK INLET AND OUTLET PIPING. STANDING WATER WAS OBSERVED IN THE BOTTOM OF THE INLET. THIS INLET MAY ACT AS A FRENCH DRAIN, DUE TO THE FACT THAT A RELATIVELY MINOR PORTION OF THE SUB-BASIN CONTRIBUTES RUNOFF TO THIS INLET.

SUB-BASIN S-3

a. EXISTING CONDITIONS

- THIS SUB-BASIN CONSISTS OF THE MAJORITY OF THE SCIENCE BUILDING, A PORTION OF THE EXISTING FIRE ACCESS ROAD, AND PAVING BETWEEN THE SCIENCE BUILDING AND TRACK AND FIELD. A CONCRETE VALLEY GUTTER LOCATED EAST AND SOUTH OF THE SCIENCE BUILDING COLLECTS THE RUNOFF FROM SUB-BASIN S-3 AND CONVEYS IT SOUTH WHERE IT FREE DISCHARGES THROUGH A SIDEWALK CULVERT INTO ZUNI ROAD SE. FROM THIS POINT, RUNOFF WITHIN ZUNI ROAD DRAINS WEST INTO SEVERAL PUBLIC STORM INLETS NEAR THE INTERSECTION OF ZUNI ROAD AND ADAMS STREET SE; THESE INLETS DISCHARGE INTO A 54" PUBLIC STORM DRAIN WITHIN ZUNI ROAD SE.

b. DEFICIENCIES

- FLOODING IS REPORTED BY SCHOOL CUSTOMERS AT THE STAIRWELL GYMNASIUM ENTRANCE NEAR THE SOUTHWEST CORNER OF THE GYM. SANDWAS ARE PERMANENTLY PLACED AROUND THIS ENTRANCE AT THE BOTTOM OF THE STAIRWELL WHICH IMPEDES ACCESS. IT IS NOTED THAT THE ASPHALT PAVING AT THE TOP OF THE STAIRWELL APPEARS TO SLOPE AWAY FROM THE BUILDING / STAIRWELL.
- A LARGE UNPAVED AREA WEST OF THE SCIENCE BUILDING LACKS POSITIVE DRAINAGE, RESULTING IN A LARGE AREA OF STANDING WATER. A PORTABLE CLASSROOM WAS PREVIOUSLY LOCATED IN THIS AREA; IT APPEARS THAT UPON REMOVAL NO REGRAINDING WAS DONE TO PROVIDE POSITIVE DRAINAGE SOUTH TO THE ZUNI ROAD SIDEWALK CULVERT.

SUB-BASIN S4

a. EXISTING CONDITIONS

- THIS SUB-BASIN CONSISTS OF THE TRACK AND FOOTBALL / SOCCER FIELD AT THE SOUTHEAST CORNER OF THE CAMPUS. THE TRACK AND FIELD DRAINS INTO A SUB-SURFACE PRIVATE DRAINAGE SYSTEM THAT FREE DISCHARGES THROUGH A SIDEWALK CULVERT INTO ZUNI ROAD SE. FROM THIS POINT, RUNOFF FLOWS WEST WITHIN ZUNI ROAD SE INTO SEVERAL PUBLIC STORM INLETS NEAR THE INTERSECTION OF ZUNI ROAD AND ADAMS STREET SE; THESE INLETS DISCHARGE INTO A 54" PUBLIC STORM DRAIN WITHIN ZUNI ROAD SE.

b. DEFICIENCIES

- THE BARE SOIL SLOPE SOUTH OF THE TRACK IS ERODING AND DEPOSITING SEDIMENT ONTO THE ADJACENT PUBLIC SIDEWALK AND INTO ZUNI ROAD SE.

1. OFFSITE FLOWS

OFFSITE FLOWS WITHIN SILVER AVENUE SE TO THE NORTH ARE CONFINED WITHIN THE FULLY DEVELOPED PUBLIC STREET AND DO NOT IMPACT THE SITE. OFFSITE FLOWS WITHIN JACKSON STREET SE TO THE EAST ARE ACCEPTED AND TRANSMITTED THROUGH THE SITE TO THE HIGHLAND DETENTION POND VIA COAL AVENUE NE, A FORMER PUBLIC STREET THAT WAS VACATED AS A PUBLIC RIGHT-OF-WAY BUT IS MAINTAINED AS A PUBLIC STORM DRAIN EASEMENT. THE FULLY DEVELOPED PUBLIC STREET OF ZUNI ROAD SE AND JEFFERSON STREET SE TO THE SOUTH AND WEST ARE LOWER THAN THE SCHOOL SITE AND DO NOT CONTRIBUTE OFFSITE FLOWS.

IT IS NOTED THAT A DESIGNATED FLOOD HAZARD ZONE A COINCIDES WITH ZUNI ROAD SE, HOWEVER, PER THE FEMA FLOOD INSURANCE RATE MAP REFERENCED ABOVE, THE 100% STORM EVENT IS CONFINED WITHIN THE PUBLIC STREET AND DOES NOT IMPACT THE HIGH SCHOOL SITE.

V. DEVELOPED CONDITIONS

DEVELOPMENT OF THE SITE WILL BE DONE IN SEVERAL PHASES, BASED UPON SCHOOL NEEDS AND BUDGETARY ALLOWANCES. AT THIS TIME, THREE PHASES OF DEVELOPMENT ARE PROJECTED, WITH MINOR IMPROVEMENTS PROPOSED FOR THE NORTH BASIN, AND MAJOR CONSTRUCTION FOCUSED ON THE SOUTH BASIN. THE DEVELOPED CONDITIONS FOR EACH DRAINAGE BASIN (N AND S) AND THEIR RESPECTIVE SUB-BASINS ARE DISCUSSED BELOW:

A. PROPOSED DEVELOPMENT IN BASIN N CONSIST OF A SMALL BUILDING ADDITION AT THE NORTHEAST CORNER OF THE GYMNASIUM AND A NEW PAVED 'BAND ROAD' ALONG THE SOUTH EDGE OF THE MULTI-PURPOSE FIELD EAST OF THE GYMNASIUM. THIS BASIN IS DIVIDED INTO TWO SUB-BASINS.

- NO DEVELOPMENT IS CURRENTLY PLANNED FOR SUB-BASIN N-1; RUNOFF GENERATED BY THIS SUB-BASIN WILL CONTINUE TO FREE DISCHARGE TO THE HIGHLAND DETENTION POND AS DEMONSTRATED IN THE EXISTING CONDITIONS LISTED ABOVE. DUE TO THE PROXIMITY OF THE DOWNSTREAM PUBLIC DRAINAGE FACILITY, FREE DISCHARGE IS APPROPRIATE FOR FUTURE DEVELOPMENT AND/OR REDEVELOPMENT OF THIS SUB-BASIN.

FUTURE DEVELOPMENT AND/OR REDEVELOPMENT OF SUB-BASIN N-1 MUST MANAGE THE FIRST FLUSH AND CONTROL RUNOFF GENERATED BY CONTRIBUTING IMPERVIOUS SURFACES, AND MUST INCLUDE FIRST FLUSH AND WATER HARVESTING AREA CALCULATIONS WITH BUILDING PERMIT SUBMITTAL.

- CONSTRUCTION IN SUB-BASIN N-2 CONSISTS OF A SMALL BUILDING ADDITION AT THE NORTHEAST CORNER OF THE GYMNASIUM AND A NEW PAVED BAND ROAD ALONG THE SOUTH EDGE OF THE MULTI-PURPOSE FIELD EAST OF THE GYMNASIUM. DEVELOPED RUNOFF GENERATED FROM SUB-BASIN N-2 WILL CONTINUE TO FREE DISCHARGE TO THE HIGHLAND DETENTION POND AS DEMONSTRATED IN THE EXISTING CONDITIONS LISTED ABOVE. DUE TO THE PROXIMITY OF THE DOWNSTREAM PUBLIC DRAINAGE FACILITY, FREE DISCHARGE IS APPROPRIATE FOR FUTURE DEVELOPMENT AND/OR REDEVELOPMENT OF THIS SUB-BASIN.

WATER HARVESTING AREA MUST BE INCLUDED WITH ANY PROPOSED CONSTRUCTION THAT IS SIZED TO MANAGE THE FIRST FLUSH AND CONTROL RUNOFF GENERATED BY CONTRIBUTING IMPERVIOUS SURFACES. FIRST FLUSH AND WATER HARVESTING AREA CALCULATIONS MUST BE INCLUDED WITH BUILDING AND/OR GRADING AND PAVING PERMIT SUBMITTALS.

- SEVERAL PHASES OF DEVELOPMENT ARE PROPOSED FOR BASIN S, CONSISTING OF SEVERAL NEW CLASSROOM BUILDINGS, A NEW GYMNASIUM ADDITION, COURTYARD AND PARKING LOT IMPROVEMENTS, A NEW PAVED FIRE ACCESS ROAD, AND ASSOCIATED SIDEWALK AND LANDSCAPED IMPROVEMENTS. THIS BASIN IS DIVIDED INTO FOUR SUB-BASINS.

- CONSTRUCTION IN SUB-BASIN S-1 WILL BE INCLUDED AS PART OF PHASE 2 DEVELOPMENT AND CONSISTS OF INTERNAL RENOVATIONS TO THE EXISTING ADMINISTRATION BUILDING, AS WELL AS MINOR LANDSCAPING MODIFICATIONS TO THE PARKING LOT AND THE PEDESTRIAN WALKWAYS IMMEDIATELY EAST OF THE PARKING LOT. EXISTING DRAINAGE DEFICIENCIES WITHIN SUB-BASIN S-1 REFERENCED ABOVE SHALL BE CORRECTED AS PART OF ANY PARKING LOT AND/OR BUILDING IMPROVEMENTS. A MARGINAL DECREASE IN RUNOFF GENERATED IS ANTICIPATED DUE TO THE PROPOSED PHASE 2 IMPROVEMENTS. RUNOFF FROM SUB-BASIN S-1 WILL CONTINUE TO FREE DISCHARGE TO JEFFERSON STREET SE AS DEMONSTRATED IN THE EXISTING CONDITIONS PLAN. IN THE EVENT NEW LANDSCAPED ISLANDS ARE CONSTRUCTED WITHIN THE PARKING LOT, WATER HARVESTING MUST BE INCLUDED IN EACH ISLAND TO THE MAXIMUM EXTENT PRACTICABLE.

- CONSTRUCTION IN SUB-BASIN S-2 IS ANTICIPATED TO BE PART OF ALL THREE PHASES OF DEVELOPMENT, FOR SEQUENCE OF CONSTRUCTION, SEE THE PHASING PLAN BELOW. THE PROPOSED DEVELOPMENT WILL REQUIRE REMOVAL OF THE EXISTING DECA BUILDING, A PORTABLE CLASSROOM BUILDING, AND THE MATHEMATICS BUILDING. PROPOSED CONSTRUCTION WILL CONSIST OF AN ADDITION TO THE ADMINISTRATION/CLASSROOM BUILDING, A NEW FINE ARTS BUILDING, AN ADDITION TO THE EXISTING GYMNASIUM, A NEW PERFORMING ARTS CENTER BUILDING, A NEW PAVED FIRE ACCESS ROAD AND ASSOCIATED SIDEWALK AND LANDSCAPED IMPROVEMENTS. EXISTING DRAINAGE DEFICIENCIES WITHIN SUB-BASIN S-2 REFERENCED ABOVE SHALL BE CORRECTED AS PART OF THE BUILDING AND ASSOCIATED SURFACE IMPROVEMENTS. THE DEVELOPED DRAINAGE PATTERN CONSIDERED FOR THIS SUB-BASIN WILL BE TO DRAIN RUNOFF EAST TO WEST VIA SURFACE AND SUB-SURFACE DRAINAGE IMPROVEMENTS TO ULTIMATELY FREE DISCHARGE TO THE INTERSECTION OF JEFFERSON STREET AND HIGHLAND AVE SE. FROM THIS POINT, RUNOFF FLOWS WEST ALONG HIGHLAND AVENUE SE INTO ZUNI ROAD SE. RUNOFF FLOWS WEST WITHIN ZUNI ROAD SE INTO SEVERAL PUBLIC STORM INLETS NEAR THE INTERSECTION OF ZUNI ROAD AND ADAMS STREET SE; THE INLETS DISCHARGE INTO A 54" PUBLIC STORM DRAIN WITHIN ZUNI ROAD SE. THIS PROPOSED DRAINAGE PATTERN IS CONSISTENT WITH PREVIOUSLY APPROVED DRAINAGE PLANS FOR THE SITE THAT ALLOW FREE DISCHARGE TO THE PUBLIC RIGHT-OF-WAY AND ULTIMATELY TO THE PUBLIC STORM DRAIN SYSTEM IN ZUNI ROAD SE.

TO FACILITATE THE PROPOSED IMPROVEMENTS, THE EXISTING 10" PRIVATE STORM DRAIN MUST BE REMOVED AND REPLACED WITH A NEW 24" PRIVATE STORM DRAIN, SIZED TO CONVEY THE RUNOFF FROM THE NEW BUILDING ROOF DRAINS AND ASSOCIATED SURFACE IMPROVEMENTS. THE NEW 24" PRIVATE STORM DRAIN MUST EXTEND WEST TO CONNECT TO THE PUBLIC STORM DRAIN LOCATED IN HIGHLAND AVENUE SE. THIS WILL MITIGATE THE DRAINAGE DEFICIENCY WHEREIN SURFACE RUNOFF CURRENTLY SHEETFLOWS OVER THE PUBLIC SIDEWALK TO ENTER JEFFERSON STREET SE, AS WELL AS IMPROVE OVERALL SITE DRAINAGE. THE EXISTING PRIVATE STORM INLET MUST BE RESIZED TO ACCOMMODATE THE LARGER PRIVATE STORM DRAIN, AND EACH PHASE OF CONSTRUCTION MUST BE EVALUATED TO DETERMINE IF NEW STORM INLETS ARE NECESSARY.

ALL PHASES OF DEVELOPMENT AND/OR REDEVELOPMENT OF SUB-BASIN S-2 MUST MANAGE THE FIRST FLUSH AND CONTROL RUNOFF GENERATED BY CONTRIBUTING IMPERVIOUS SURFACES, AND MUST INCLUDE FIRST FLUSH AND WATER HARVESTING AREA CALCULATIONS WITH BUILDING PERMIT SUBMITTAL. EFFORT MUST BE MADE TO MANAGE THE FIRST FLUSH FROM EACH PROJECT ONSITE, TO THE MAXIMUM EXTENT PRACTICABLE.

- CONSTRUCTION IN SUB-BASIN S-3 IS ANTICIPATED TO BE PART OF PHASES 1 AND 3 OF DEVELOPMENT. IT CONSISTS OF CONSTRUCTION OF A NEW SPECIAL EDUCATION BUILDING, A NEW PAVED FIRE ACCESS ROAD SOUTH AND EAST OF THE EXISTING SCIENCE BUILDING, PEDESTRIAN ACCESS IMPROVEMENTS BETWEEN THE NEW PHASE 3 PERFORMING ARTS CENTER AND THE TRACK, AND ASSOCIATED LANDSCAPED IMPROVEMENTS. EXISTING DRAINAGE DEFICIENCIES WITHIN SUB-BASIN S-3 REFERENCED ABOVE SHALL BE CORRECTED AS PART OF THE BUILDING AND ASSOCIATED SURFACE IMPROVEMENTS. THE DEVELOPED DRAINAGE PATTERN FOR THE SUB-BASIN IS TO SURFACE DRAIN RUNOFF NORTH TO SOUTH TO AN EXISTING SIDEWALK CULVERT THAT FREE DISCHARGES RUNOFF INTO ZUNI ROAD SE. FROM THIS POINT, RUNOFF WITHIN ZUNI ROAD DRAINS WEST INTO SEVERAL PUBLIC STORM INLETS NEAR THE INTERSECTION OF ZUNI ROAD AND ADAMS STREET SE; THESE INLETS DISCHARGE INTO A 54" PUBLIC STORM DRAIN WITHIN ZUNI ROAD SE. FREE DISCHARGE TO ZUNI ROAD IS CONSISTENT WITH THE EXISTING DRAINAGE PATTERN ESTABLISHED BY PREVIOUSLY APPROVED DRAINAGE PLANS FOR THE SITE.

ALL PHASES OF DEVELOPMENT AND/OR REDEVELOPMENT OF SUB-BASIN S-3 MUST MANAGE THE FIRST FLUSH AND CONTROL RUNOFF GENERATED BY CONTRIBUTING IMPERVIOUS SURFACES, AND MUST INCLUDE FIRST FLUSH AND WATER HARVESTING AREA CALCULATIONS WITH BUILDING PERMIT SUBMITTAL. EFFORT MUST BE MADE TO MANAGE THE FIRST FLUSH FROM EACH PROJECT ONSITE, TO THE MAXIMUM EXTENT PRACTICABLE.

- CONSTRUCTION IN SUB-BASIN S-4 IS RECOMMENDED AS PART OF PHASE 1 DEVELOPMENT. THIS CONSTRUCTION CONSISTS OF PROVIDING SLOPE PROTECTION TO STABILIZE THE AREA TO MITIGATE EXISTING EROSION THAT DEPOSITS SEDIMENT AND DEBRIS ONTO THE PUBLIC SIDEWALK AND INTO ZUNI ROAD SE.

WHILE THE IMMEDIATE PROXIMITY TO THE PUBLIC STREET DOES NOT ALLOW FOR FIRST FLUSH MANAGEMENT FROM THE PROPOSED SLOPE PROTECTION, ANY FUTURE DEVELOPMENT AND/OR REDEVELOPMENT OF SUB-BASIN S-4 MUST MANAGE THE FIRST FLUSH AND CONTROL RUNOFF GENERATED BY CONTRIBUTING IMPERVIOUS SURFACES, AND MUST INCLUDE FIRST FLUSH AND WATER HARVESTING AREA CALCULATIONS WITH BUILDING AND/OR GRADING AND PAVING PERMIT SUBMITTAL. EFFORT MUST BE MADE TO MANAGE THE FIRST FLUSH FROM EACH PROJECT ONSITE, TO THE MAXIMUM EXTENT PRACTICABLE.

VI. PHASING

MOVING FORWARD, THIS EXISTING AND ALREADY DEVELOPED SITE WILL BE DEVELOPED IN PHASES DEPENDENT UPON FUNDING. INASMUCH AS THE EXISTING SCHOOL SITE IS DEVELOPED, INFILL AREAS EXIST WHERE ADDITIONAL DEVELOPMENT CAN OCCUR AND OTHER AREAS WHERE EXISTING DRAINAGE DEFICIENCIES WITHIN SUB-BASIN S-3 REFERENCED ABOVE SHALL BE CORRECTED AS PART OF THE BUILDING AND ASSOCIATED SURFACE IMPROVEMENTS. REDEVELOPMENT PROJECTS ALREADY UTILIZE PRIVATE DRAINAGE INFRASTRUCTURE AND WILL RELY UPON EXISTING DRAINAGE AND LANDSCAPE AREAS FOR WATER HARVESTING OPPORTUNITIES TO CONTINUE TO SUPPORT THESE AREAS.

A DIAGRAMMATIC PHASING PLAN IS INCLUDED AS PART OF THIS SUBMITTAL FOR ORIENTATION. INDIVIDUAL SITE SPECIFIC DRAINAGE SUBMITTALS WILL ADDRESS CHANGES IN SCOPE, SEQUENCE AND PHASING. THE PHASING PLAN PRESENTED BELOW, HOWEVER, IS THE MOST RELIABLE TOOL AVAILABLE TO THE OWNER, PLANNERS AND ENGINEER AT THIS TIME. THE CURRENT SEQUENCE OF PHASING IS SET FORTH BELOW.

PHASE 1: THIS PHASE CONSISTS OF MULTIPLE AREAS OF DEVELOPMENT THROUGHOUT THE SOUTH PORTION OF THE SCHOOL CAMPUS. THE EXISTING DECA BUILDING WILL BE REMOVED TO ACCOMMODATE A NEW CLASSROOM ADDITION AT THE SOUTHWEST CORNER OF THE MAIN ADMINISTRATION AND CLASSROOM BUILDING. TWO NEW BUILDINGS, FOR FINE ARTS AND SPECIAL EDUCATION, ARE PROPOSED IN THE SOUTHWEST PORTION OF CAMPUS BETWEEN THE AUDITORIUM, SHOP, MATHEMATICS AND SCIENCE BUILDINGS. BUILDING ADDITIONS ARE PROPOSED TO THE EXISTING GYMNASIUM. A NEW PAVED 'BAND ROAD' AND MISCELLANEOUS SURFACE IMPROVEMENTS ARE PROPOSED TO THE MULTI-PURPOSE FIELD EAST OF THE GYMNASIUM. IN ADDITION, IT IS RECOMMENDED THAT THE EXISTING PRIVATE STORM DRAIN SYSTEM BE UPSIZED DURING THIS PHASE TO PROVIDE ADEQUATE DRAINAGE FOR THE NEW BUILDINGS / ADDITIONS, AND TO ACCOMMODATE SUBSEQUENT PHASES OF DEVELOPMENT. FINALLY, IT IS RECOMMENDED THAT SLOPE PROTECTION ALONG THE SOUTH SIDE OF THE EXISTING TRACK AND FIELD BE INCLUDED IN PHASE 1 TO MITIGATE EXISTING EROSION INTO ZUNI ROAD SE. THIS PHASE WILL REQUIRE BUILDING PERMIT, HENCE A GRADING AND DRAINAGE SUBMITTAL FOR BUILDING PERMIT WILL BE REQUIRED.

PHASE 2: THIS PHASE WILL OCCUR WITHIN THE SOUTHWEST PORTION OF CAMPUS AND PRIMARILY CONSIST OF EXISTING BUILDING RENOVATIONS, WITH ASSOCIATED PAVED AND LANDSCAPING IMPROVEMENTS. RENOVATIONS WILL OCCUR WITHIN THE EXISTING ADMINISTRATION BUILDING AND CLASSROOM BUILDING, AS WELL AS THE MUSIC AND AUDITORIUM BUILDING, BUT ARE NOT PROPOSED TO MODIFY THE FOOTPRINT OF THESE BUILDINGS. PROPOSED MODIFICATIONS TO THE EXISTING ADMINISTRATION BUILDING PARKING LOT AND NORTH PEDESTRIAN ACCESS INCLUDE LANDSCAPED ISLANDS, RESTRIPPING, AND MINOR LANDSCAPING IMPROVEMENTS. PROPOSED IMPROVEMENTS TO THE TURF GRASS COURTYARD SOUTH OF THE ADMINISTRATION BUILDING INCLUDE ADDITIONAL PAVED PEDESTRIAN WALKWAYS AND MODIFICATIONS TO THE EXISTING TURF GRASS LANDSCAPED AREAS. THIS PHASE WILL REQUIRE A GRADING AND PAVING PERMIT HENCE A GRADING AND DRAINAGE SUBMITTAL IS WARRANTED.

PHASE 3: THIS PHASE CONSISTS OF DEVELOPMENT WITHIN THE SOUTH-CENTRAL PORTION OF CAMPUS. THE EXISTING MATHEMATICS BUILDING WILL BE REMOVED TO ACCOMMODATE A NEW PERFORMING ARTS CENTER BUILDING IMMEDIATELY SOUTHWEST OF THE EXISTING GYMNASIUM. ASSOCIATED IMPROVEMENTS WILL INCLUDE NEW PEDESTRIAN ACCESS BETWEEN THE NEW PERFORMING ARTS CENTER AND THE EXISTING TRACK AND FIELD. MODIFICATIONS TO REPLACE THE EXISTING BASKETBALL COURTS WEST OF THE GYMNASIUM WITH A NEW STUDENT COURTYARD AREA, AND RESTRIPPING AND LANDSCAPED IMPROVEMENTS TO THE EXISTING 'SPECIAL EVENTS' PARKING LOT WHICH WILL REMOVE THE PARKING AND CREATE SEVERAL NEW BASKETBALL COURTS. THIS PHASE WILL REQUIRE A BUILDING PERMIT HENCE A GRADING AND DRAINAGE SUBMITTAL FOR BUILDING PERMIT WILL BE REQUIRED.

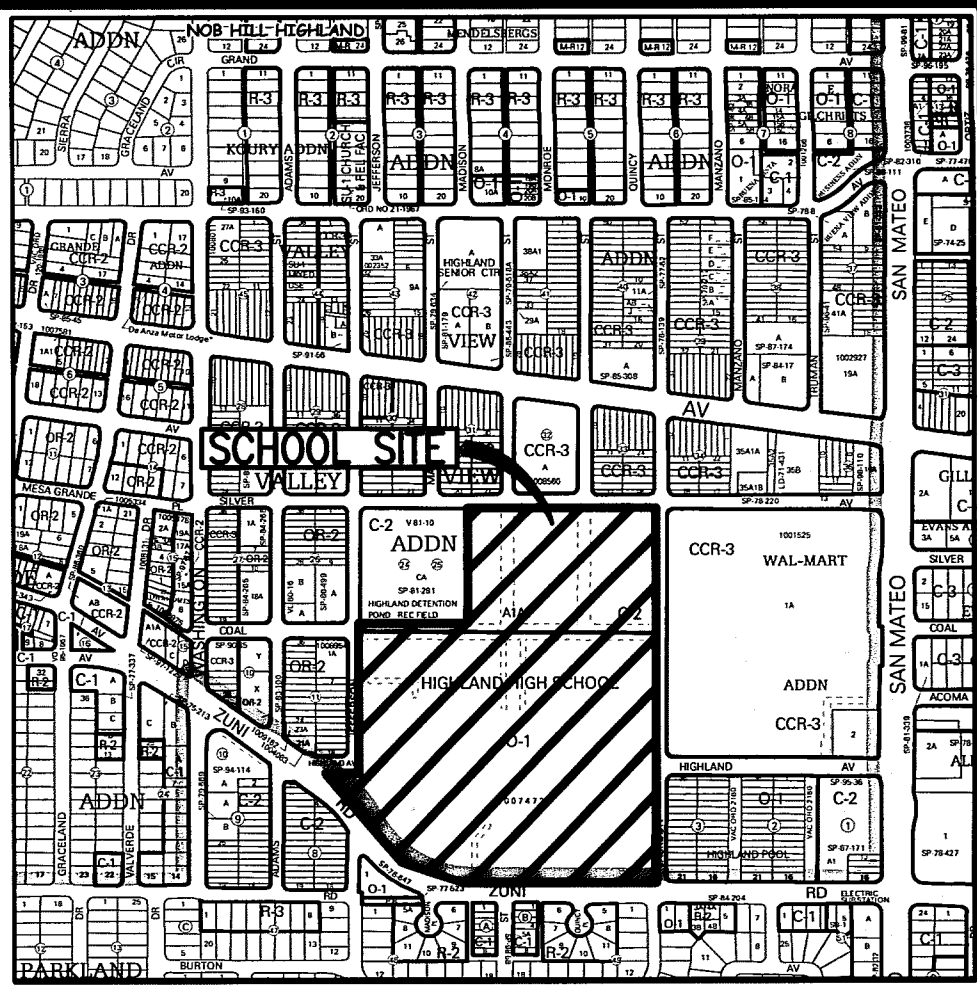
VII. CALCULATIONS

THE CALCULATIONS CONTAINED HEREON ANALYZE THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT FOR EACH DRAINAGE BASIN (BASINS N AND S) AND SUB-BASIN (SUB-BASINS N-1, N-2, S-1, S-2, S-3 AND S-4). 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 1983, HAS BEEN USED TO QUANTIFY THE PEAK RATE OF DISCHARGE AND VOLUME OF RUNOFF GENERATED. IN ADDITION, FIRST FLUSH CALCULATIONS ARE INCLUDED FOR EACH SUB-BASIN THAT INCLUDES PROPOSED FUTURE DEVELOPMENT, AS DEMONSTRATED BY THESE CALCULATIONS, THE PROPOSED FUTURE DEVELOPMENT WILL RESULT IN A NEGLIGIBLE INCREASE IN RUNOFF GENERATED BY BASIN N (0.4 CFS), AND A MINOR INCREASE IN RUNOFF GENERATED BY BASIN S (1.6 CFS). PROPOSED SITE SPECIFIC DEVELOPMENT IN BASIN S SHALL INCLUDE LANDSCAPED WATER HARVESTING AREAS SIZED TO OFFSET THE MINOR INCREASE IN RUNOFF TO THE MAXIMUM EXTENT PRACTICABLE; THESE WATER HARVESTING AREAS SHALL ALSO MANAGE AND CONTROL THE FIRST FLUSH RUNOFF FROM THE CONTRIBUTING IMPERVIOUS AREAS.

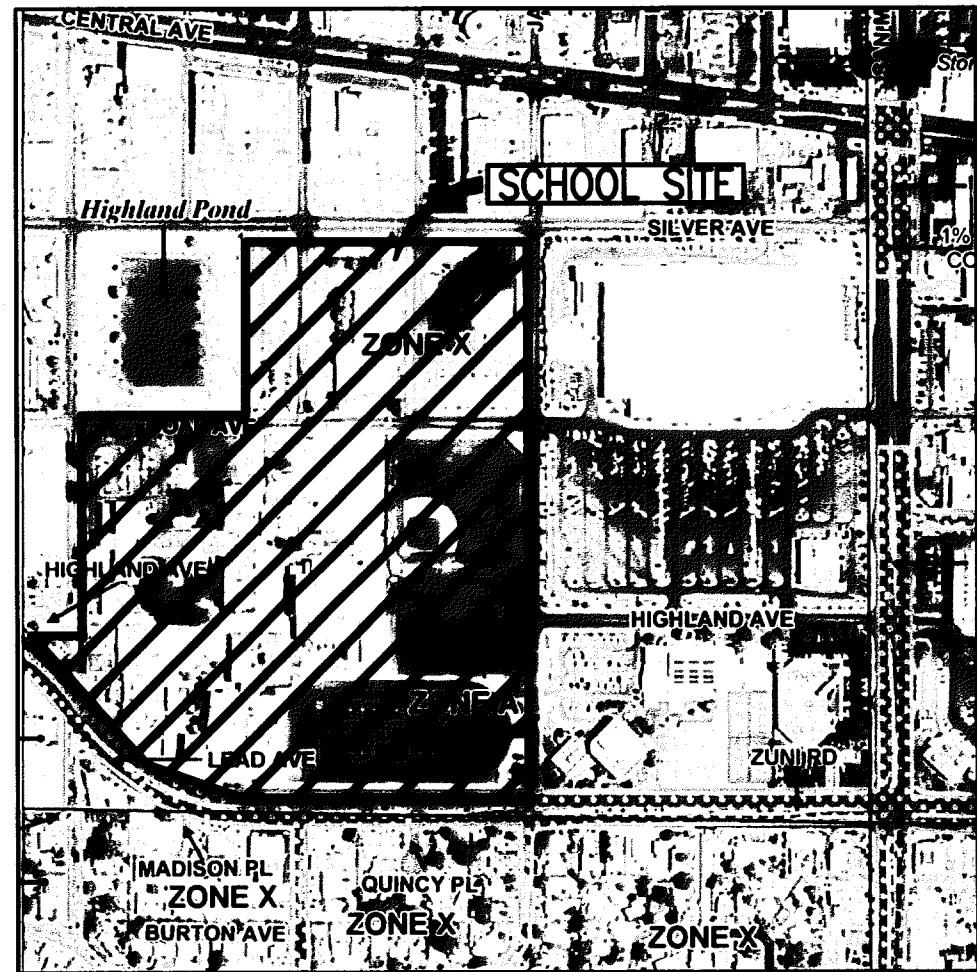
VIII. CONCLUSIONS

THIS MASTER DRAINAGE PLAN WILL SERVE AS A GUIDANCE DOCUMENT FOR CURRENT AND FUTURE DEVELOPMENT OF THE SITE. THE FOLLOWING CONCLUSIONS HAVE BEEN ESTABLISHED AS A RESULT OF THE EVALUATIONS AND ANALYSES CONTAINED HEREIN:

- MODIFICATION TO AN EXISTING SITE WITHIN AN INFILL AREA.
- THE SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE, HOWEVER, IT DOES DISCHARGE TO A DESIGNATED FLOOD HAZARD ZONE A COINCIDING WITH ZUNI ROAD SE. WHILE BASIN S IS ALLOWED FREE DISCHARGE TO ZUNI ROAD SE PER PRIOR APPROVED DRAINAGE SUBMITTALS, PROPOSED AND FUTURE DEVELOPMENT SHALL INCLUDE WATER HARVESTING TO THE MAXIMUM EXTENT PRACTICABLE TO MITIGATE ANY INCREASES IN DEVELOPED RUNOFF TO THIS FLOOD HAZARD ZONE.
- NO ADVERSE IMPACT ON ADJACENT OR DOWNSTREAM FLOOD ZONES IS ANTICIPATED.
- MINIMAL INCREASE IN DEVELOPED RUNOFF GENERATED BY THE PROPOSED PHASED IMPROVEMENTS.
- THE EXISTING DRAINAGE PATTERN (STATUS QUO) WILL BE MAINTAINED OR IMPROVED.
- CONFORMANCE WITH PREVIOUSLY APPROVED DRAINAGE PLANS FOR THE SITE, CONTINUING FREE DISCHARGE TO THE HIGHLAND DETENTION POND FROM BASIN N AND FREE DISCHARGE TO ZUNI ROAD SE FROM BASIN S.
- DEVELOPMENT OF THE HIGH SCHOOL WILL PROCEED IN PHASES. THE PHASING PLAN PRESENTED HEREIN IS THE MOST RELIABLE TOOL AVAILABLE TO THE OWNER, PLANNERS AND ENGINEER AT THIS TIME. CHANGES IN SCOPE, SEQUENCE AND PHASING TO THAT PRESENTED HEREIN WILL BE ADDRESSED BY INDIVIDUAL SITE SPECIFIC DRAINAGE SUBMITTALS.
- THE PLAN SUPPORTS GRADING AND DRAINAGE PLAN SUBMITTALS FOR SITE SPECIFIC BUILDING PERMIT AND/OR GRADING AND PAVING PERMIT.
- PHASED PROJECT THAT DISTURB GREATER THAN ONE ACRE OF LAND, OR ARE PART OF A LARGER PLAN OF COMMON DEVELOPMENT THAT WILL DISTURB GREATER THAN ONE ACRE OF LAND, WILL REQUIRE A SITE SPECIFIC EROSION AND SEDIMENT CONTROL PLAN (ESCP) AS A CONDITION FOR BUILDING AND/OR GRADING AND PAVING PERMIT APPROVAL.



VICINITY MAP
SCALE: 1" = 750'



F.I.R.M. PANEL 354
SCALE: 1" = 500'
OF 825
DATE 08-16-2012

LEGAL DESCRIPTION

TRACT A-1-A, HIGHLAND

CALCULATIONS

I. SITE CHARACTERISTICS

A. PRECIPITATION ZONE = 2

B. $P_{100, 6 \text{ HR}} = P_{360} = 2.35$

C. TOTAL SITE (A_T) = 1,417,230 SF
32.5 AC

D. LAND TREATMENTS

1. EXISTING LAND TREATMENT

a. BASIN N (DISCHARGE TO HIGHLAND DETENTION POND)
 $A_T = 784,800 \text{ SF} / 18.0 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	226,450 / 5.20	29
C	76,100 / 1.74	10
D	482,250 / 11.06	61

i. SUB-BASIN N-1 (DRAINS TO SILVER AVE.)
 $A_T = 324,500 \text{ SF} / 7.45 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	26,030 / 0.60	8
C	45,370 / 1.04	14
D	253,100 / 5.81	78

ii. SUB-BASIN N-2 (DRAINS TO VACATED COAL AVE.)
 $A_T = 460,300 \text{ SF} / 10.55 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	200,420 / 4.60	44
C	32,130 / 0.73	6
D	227,750 / 5.22	50

b. BASIN S (DISCHARGE TO ZUNI ROAD SE)
 $A_T = 632,430 \text{ SF} / 14.5 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	130,820 / 3.00	21
C	82,370 / 1.89	13
D	419,240 / 9.61	66

i. SUB-BASIN S-1 (DRAINS TO JEFFERSON STREET SE)
 $A_T = 76,050 \text{ SF} / 1.74 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	3,180 / 0.07	4
C	6,700 / 0.15	9
D	66,170 / 1.52	87

ii. SUB-BASIN S-2 (DRAINS TO JEFFERSON STREET / HIGHLAND AVE INTERSECTION)
 $A_T = 282,310 \text{ SF} / 6.48 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	27,660 / 0.63	10
C	35,100 / 0.81	12
D	219,550 / 5.04	78

iii. SUB-BASIN S-3 (DRAINS DIRECTLY TO ZUNI ROAD)
 $A_T = 79,550 \text{ SF} / 1.82 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	0 / 0	0
C	12,400 / 0.28	15
D	67,250 / 1.54	85

iv. SUB-BASIN S-4 (TRACK & FIELD DRAIN SYSTEM DRAINS DIRECTLY TO ZUNI ROAD)
 $A_T = 194,420 \text{ SF} / 4.46 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	99,980 / 2.30	52
C	28,170 / 0.64	14
D	66,270 / 1.52	34

2. DEVELOPED LAND TREATMENT

a. BASIN N (DISCHARGE TO HIGHLAND DETENTION POND)
 $A_T = 784,800 \text{ SF} / 18.0 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	220,450 / 5.05	28
C	76,100 / 1.75	10
D	488,250 / 11.20	62

i. SUB-BASIN N-1 (DRAINS TO SILVER AVE.) - NO CHANGE

ii. SUB-BASIN N-2 (DRAINS TO VACATED COAL AVE.)
 $A_T = 460,300 \text{ SF} / 10.55 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	194,420 / 4.45	42
C	30,730 / 0.70	6
D	235,150 / 5.40	52

b. BASIN S (DISCHARGE TO ZUNI ROAD SE)
 $A_T = 632,430 \text{ SF} / 14.5 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	133,300 / 3.05	21
C	35,130 / 0.80	6
D	464,000 / 10.65	73

i. SUB-BASIN S-1 (DRAINS TO JEFFERSON STREET SE)
 $A_T = 76,050 \text{ SF} / 1.74 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	3,180 / 0.07	4
C	6,700 / 0.15	9
D	66,170 / 1.52	87

ii. SUB-BASIN S-2 (DRAINS TO JEFFERSON STREET / HIGHLAND AVE INTERSECTION)
 $A_T = 289,090 \text{ SF} / 6.18 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	22,500 / 0.52	8
C	6,000 / 0.14	2
D	240,580 / 5.52	90

iii. SUB-BASIN S-3 (DRAINS DIRECTLY TO ZUNI ROAD)
 $A_T = 96,420 \text{ SF} / 2.21 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	7,640 / 0.17	8
C	0 / 0	0
D	88,780 / 2.04	92

iv. SUB-BASIN S-4 (TRACK & FIELD DRAIN SYSTEM DRAINS DIRECTLY TO ZUNI ROAD)
 $A_T = 190,870 \text{ SF} / 4.38 \text{ AC}$

TREATMENT	AREA (SF/AC)	%
A	0 / 0	0
B	99,980 / 2.30	52
C	22,420 / 0.51	12
D	68,470 / 1.57	36

II. HYDROLOGY

A. EXISTING CONDITION

1. BASIN N

a. SUB-BASIN N-1

i. VOLUME
 $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$
 $E_W = (0.53 \times 0.00) + (0.78 \times 0.60) + (1.13 \times 1.04) + (2.12 \times 5.81) / 7.45 = 1.87 \text{ IN}$
 $V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.87 / 12) 7.45 = 1.1610 \text{ AC-FT} = 50,570 \text{ CF}$

ii. PEAK DISCHARGE
 $Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$
 $Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.60) + (3.14 \times 1.04) + (4.70 \times 5.81) = 31.9 \text{ CFS}$

b. SUB-BASIN N-2

i. VOLUME
 $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$
 $E_W = (0.53 \times 0.00) + (0.78 \times 4.60) + (1.13 \times 0.73) + (2.12 \times 5.22) / 10.55 = 1.47 \text{ IN}$
 $V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.47 / 12) 10.55 = 1.2924 \text{ AC-FT} = 56,300 \text{ CF}$

ii. PEAK DISCHARGE
 $Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$
 $Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 4.60) + (3.14 \times 0.73) + (4.70 \times 5.22) = 37.3 \text{ CFS}$

c. OVERALL BASIN N

i. VOLUME
 $V_{N, 100} = V_{N-1} + V_{N-2} = 50,570 + 56,300 = 106,870 \text{ CF}$

ii. PEAK DISCHARGE
 $Q_{N, 100} = Q_{N-1} + Q_{N-2} = 31.9 + 37.3 = 69.2 \text{ CFS}$

2. BASIN S

a. SUB-BASIN S-1

i. VOLUME
 $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$
 $E_W = (0.53 \times 0.00) + (0.78 \times 0.07) + (1.13 \times 0.15) + (2.12 \times 1.52) / 1.74 = 1.98 \text{ IN}$
 $V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.98 / 12) 1.74 = 0.2871 \text{ AC-FT} = 12,510 \text{ CF}$

ii. PEAK DISCHARGE
 $Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$
 $Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.07) + (3.14 \times 0.15) + (4.70 \times 1.52) = 7.8 \text{ CFS}$

b. SUB-BASIN S-2

i. VOLUME
 $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$
 $E_W = (0.53 \times 0.00) + (0.78 \times 0.63) + (1.13 \times 0.81) + (2.12 \times 5.04) / 6.48 = 1.87 \text{ IN}$
 $V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.87 / 12) 6.48 = 1.0098 \text{ AC-FT} = 43,990 \text{ CF}$

ii. PEAK DISCHARGE
 $Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$
 $Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.63) + (3.14 \times 0.81) + (4.70 \times 5.04) = 27.7 \text{ CFS}$

iii. PEAK DISCHARGE TO EXIST 10" PRIVATE STORM DRAIN
CONTRIBUTING AREA = 139,400 SF (3.20 AC)
• 22,000 SF (0.51 AC) LAND TREATMENT B; 8,800 SF (0.20 AC) LAND TREATMENT C
& 108,600 SF (2.49 AC) LAND TREATMENT D

$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$
 $Q_p = Q_{100, 10"} = (1.56 \times 0.00) + (2.28 \times 0.51) + (3.14 \times 0.20) + (4.70 \times 2.49) = 13.5 \text{ CFS}$

iv. EXIST 10" STORM DRAIN CAPACITY ($S = 0.0050$)
 $Q = 1.49 / n \times A \times R^{2/3} \times S^{1/2}$
 $n = 0.013$
 $A = 0.54 \text{ SF}$
 $R = A/P = 0.54 / 2.62 = 0.21$
 $S = 0.0050$
 $Q_{10"} \text{ CAP} = 1.5 \text{ CFS}$

$Q_{10"} \text{ CAP} = 1.5 \text{ CFS} < Q_{100, 10"} = 13.5 \text{ CFS} \therefore \text{INSUFFICIENT CAPACITY}$

c. SUB-BASIN S-3

i. VOLUME

$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$
 $E_W = (0.53 \times 0.00) + (0.78 \times 0.00) + (1.13 \times 0.28) + (2.12 \times 1.54) / 1.82 = 1.97 \text{ IN}$
 $V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.97 / 12) 1.82 = 0.2988 \text{ AC-FT} = 13,020 \text{ CF}$

ii. PEAK DISCHARGE

$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$
 $Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.00) + (3.14 \times 0.28) + (4.70 \times 1.54) = 8.1 \text{ CFS}$

d. SUB-BASIN S-4

i. VOLUME

$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$
 $E_W = (0.53 \times 0.00) + (0.78 \times 2.30) + (1.13 \times 0.64) + (2.12 \times 1.52) / 4.46 = 1.29 \text{ IN}$
 $V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.29 / 12) 4.46 = 0.4795 \text{ AC-FT} = 20,880 \text{ CF}$

ii. PEAK DISCHARGE

$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$
 $Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 2.30) + (3.14 \times 0.64) + (4.70 \times 1.52) = 14.4 \text{ CFS}$

e. OVERALL BASIN S

i. VOLUME
 $V_{S, 100} = V_{S-1} + V_{S-2} + V_{S-3} + V_{S-4} = 12,510 + 13,990 + 13,020 + 20,880 = 90,400 \text{ CF}$

ii. PEAK DISCHARGE

$Q_{S, 100} = Q_{S-1} + Q_{S-2} + Q_{S-3} + Q_{S-4} = 7.8 + 27.7 + 8.1 + 14.4 = 58 \text{ CFS}$

B. DEVELOPED CONDITION

1. BASIN N

a. SUB-BASIN N-1 (NO CHANGE)

i. $V_{100} = 50,570 \text{ CF}$

ii. $Q_{100} = 31.9 \text{ CFS}$

b. SUB-BASIN N-2

i. VOLUME

$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$
 $E_W = (0.53 \times 0.00) + (0.78 \times 4.45) + (1.13 \times 0.70) + (2.12 \times 5.40) / 10.55 = 1.49 \text{ IN}$
 $V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.49 / 12) 10.55 = 1.3100 \text{ AC-FT} = 57,060 \text{ CF}$

ii. PEAK DISCHARGE

$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$
 $Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 4.45) + (3.14 \times 0.70) + (4.70 \times 5.40) = 37.7 \text{ CFS}$

c. OVERALL BASIN N

i. VOLUME
 $V_{N, 100} = V_{N-1} + V_{N-2} = 50,570 + 57,060 = 107,630 \text{ CF}$

ii. PEAK DISCHARGE
 $Q_{N, 100} = Q_{N-1} + Q_{N-2} = 31.9 + 37.7 = 69.6 \text{ CFS}$

2. BASIN S

a. SUB-BASIN S-1

i. VOLUME

$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$
 $E_W = (0.53 \times 0.00) + (0.78 \times 0.07) + (1.13 \times 0.15) + (2.12 \times 1.52) / 1.74 = 1.98 \text{ IN}$
 $V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (1.98 / 12) 1.74 = 0.2871 \text{ AC-FT} = 12,510 \text{ CF}$

ii. PEAK DISCHARGE

$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$
 $Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.07) + (3.14 \times 0.15) + (4.70 \times 1.52) = 7.8 \text{ CFS}$

iii. FIRST FLUSH (90TH PERCENTILE STORM EVENT)

$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$
 $E_W = (0.00 \times 0.00) + (0.00 \times 0.07) + (0.09 \times 0.15) + (0.34 \times 1.52) / 1.74 = 0.30 \text{ IN}$
 $V_{100, 6 \text{ HR}} = (E_W / 12) A_T = (0.30 / 12) 1.74 = 0.0435 \text{ AC-FT} = 1,890 \text{ CF}$

$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$
 $Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.07) + (3.14 \times 0.15) + (4.70 \times 1.52) = 7.8 \text{ CFS}$

$Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.07) + (3.14 \times 0.15) + (4.70 \times 1.52) = 7.8 \text{ CFS}$

$Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.07) + (3.14 \times 0.15) + (4.70 \times 1.52) = 7.8 \text{ CFS}$

$Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.07) + (3.14 \times 0.15) + (4.70 \times 1.52) = 7.8 \text{ CFS}$

$Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.07) + (3.14 \times 0.15) + (4.70 \times 1.52) = 7.8 \text{ CFS}$

$Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.07) + (3.14 \times 0.15) + (4.70 \times 1.52) = 7.8 \text{ CFS}$

$Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.07) + (3.14 \times 0.15) + (4.70 \times 1.52) = 7.8 \text{ CFS}$

$Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.07) + (3.14 \times 0.15) + (4.70 \times 1.52) = 7.8 \text{ CFS}$

$Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.07) + (3.14 \times 0.15) + (4.70 \times 1.52) = 7.8 \text{ CFS}$

$Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.07) + (3.14 \times 0.15) + (4.70 \times 1.52) = 7.8 \text{ CFS}$

$Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.07) + (3.14 \times 0.15) + (4.70 \times 1.52) = 7.8 \text{ CFS}$

$Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.07) + (3.14 \times 0.15) + (4.70 \times 1.52) = 7.8 \text{ CFS}$

$Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.07) + (3.14 \times 0.15) + (4.70 \times 1.52) = 7.8 \text{ CFS}$

$Q_p = Q_{100} = (1.56 \times 0.00) + (2.28 \times 0.07) + (3.14 \times 0.15) + (4.70 \times 1.52) = 7.8 \text{ CFS}$

LEGAL DESCRIPTION

TRACT A-1-A, HIGHLAND HIGH SCHOOL, ALBUQUERQUE, NEW MEXICO, AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO ON JUNE 18, 2009, BOOK 2009C, PAGE 96, DOC# 2009068233.

BENCHMARKS

PROJECT BENCHMARK

ACS 2" BRASS DISC SET STAMPED "6-K18A ACS" SET IN SIDEWALK AT THE INTERSECTION OF CENTRAL AVENUE AND JACKSON STREET.
ELEVATION = 5249.99 FEET (NAVD 1988)

T.B.M. #1

A CHISELED "X" AT THE SOUTHEAST QUADRANT OF SILVER AVENUE AND JACKSON AVENUE, AS SHOWN ON SHEET 4 OF 6.
ELEVATION = 5253.35 FEET (NAVD 1988)

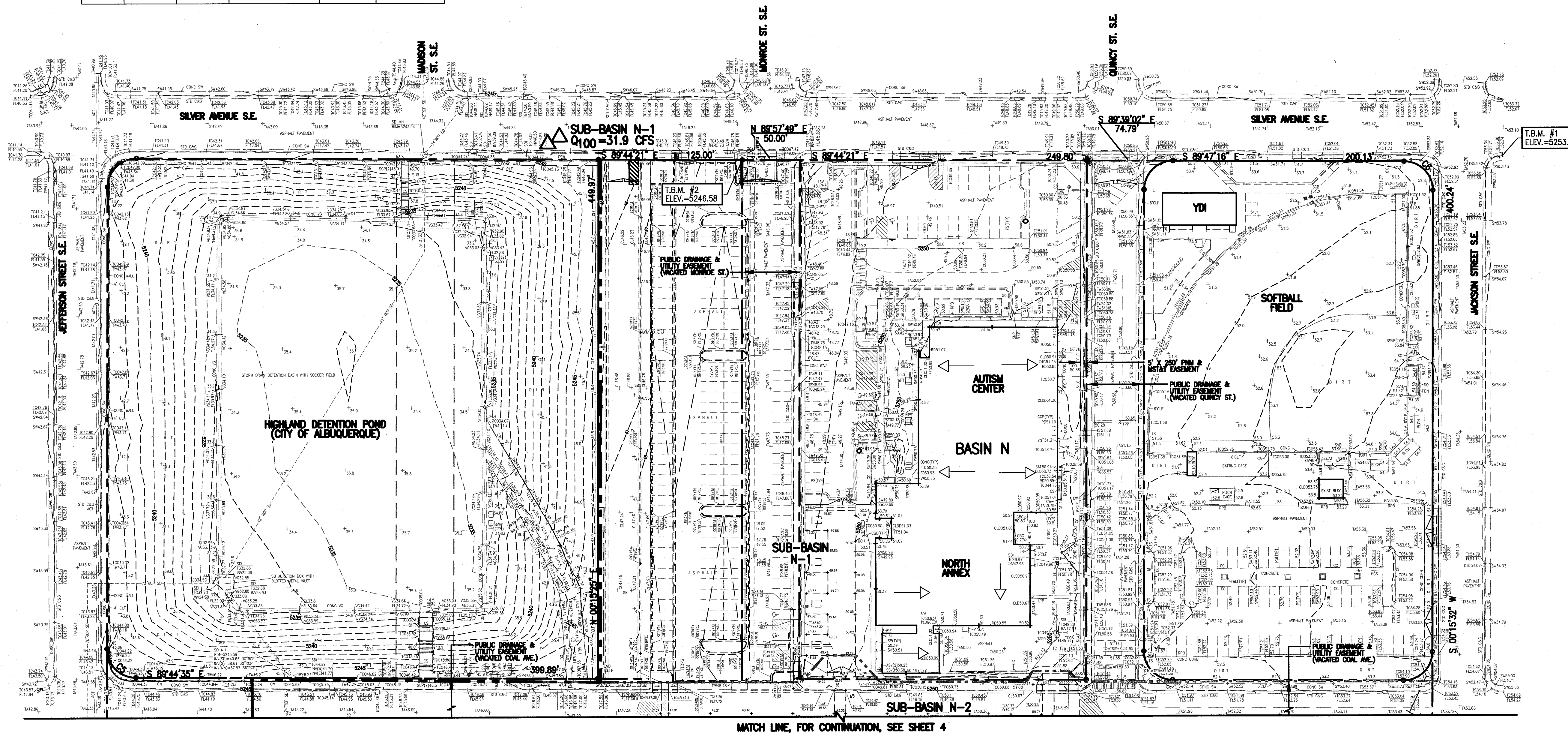
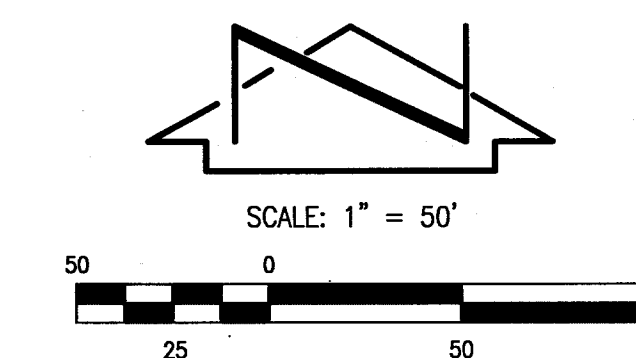
T.B.M. #2

A CHISELED "+" ON THE HANDICAP RAMP AT THE SOUTHWEST QUADRANT OF SILVER AVENUE AND MONROE STREET, AS SHOWN ON SHEET 3 OF 6.
ELEVATION = 5246.58 FEET (NAVD 1988)

LEGEND

- EXISTING FLOWLINE
- EXISTING DRAINAGE BASIN BOUNDARY
- EXISTING DRAINAGE SUB-BASIN BOUNDARY
- HIGH POINT / DNDE
- GRAPHIC POINT OF DISCHARGE

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA
C5	25.00'	39.27'	S 44°44'24" E	35.36'	90°00'21"
C6	25.00'	39.29'	S 44°45'52" E	35.37'	90°02'48"



MATCH LINE, FOR CONTINUATION, SEE SHEET 3

LEGAL DESCRIPTION

TRACT A-1-A, HIGHLAND HIGH SCHOOL, ALBUQUERQUE, NEW MEXICO, AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNILLO COUNTY, NEW MEXICO ON JUNE 18, 2009, BOOK 2009C, PAGE 96, DOC# 2009068233.

BENCHMARKS

PROJECT BENCHMARK

ACS 2" BRASS DISC SET STAMPED "6-K18A ACS" SET IN SIDEWALK AT THE INTERSECTION OF CENTRAL AVENUE AND JACKSON STREET.
ELEVATION = 5249.99 FEET (NAVD 1988)

T.B.M. #3

A FLAGGED NAIL AT THE SOUTHWEST QUADRANT OF JEFFERSON STREET AND COAL AVENUE, AS SHOWN ON SHEET 3 OF 6.
ELEVATION = 5243.07 FEET (NAVD 1988)

T.B.M. #4

A #5 REBAR WITH CONTROL CAP STAMPED "NMPS #11184" ON ISLAND AT THE INTERSECTION OF ZUNI ROAD AND JEFFERSON STREET, AS SHOWN ON THIS SHEET.
ELEVATION = 5246.23 FEET (NAVD 1988)

T.B.M. #5

A MAG NAIL SET IN ASPHALT, AS SHOWN ON THIS SHEET.
ELEVATION = 5249.52 FEET (NAVD 1988)

T.B.M. #6

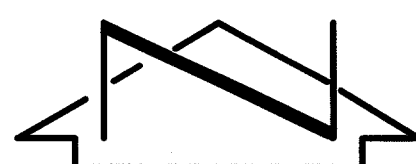
A MAG NAIL SET IN ASPHALT, AS SHOWN ON THIS SHEET.
ELEVATION = 5243.52 FEET (NAVD 1988)

T.B.M. #7

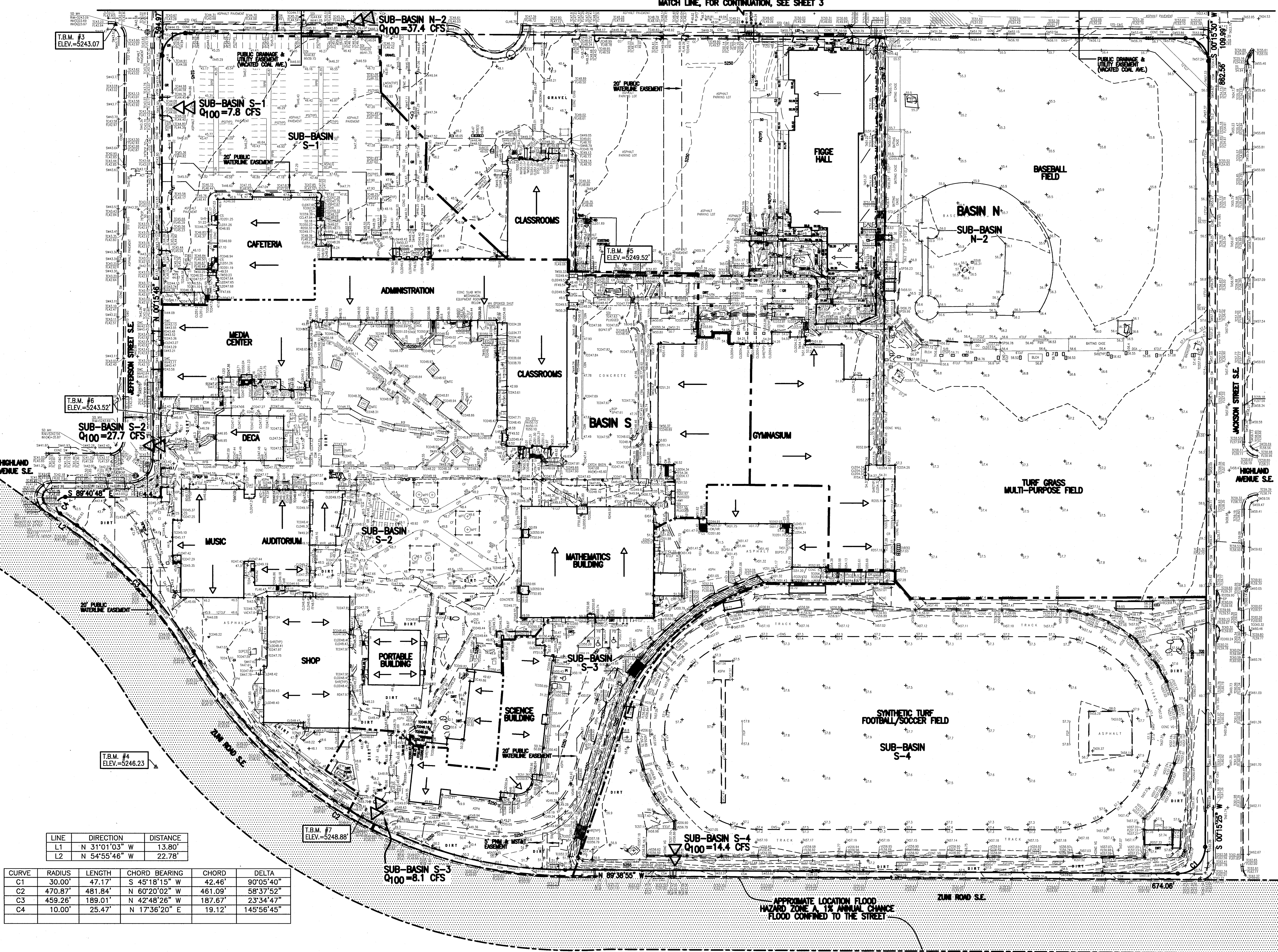
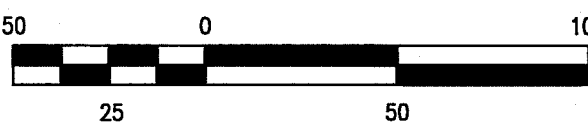
A MAG NAIL SET IN ASPHALT, AS SHOWN ON THIS SHEET.
ELEVATION = 5248.88 FEET (NAVD 1988)

LEGEND

- EXISTING FLOWLINE
- EXISTING DIRECTION OF FLOW
- EXISTING DRAINAGE BASIN BOUNDARY
- EXISTING DRAINAGE SUB-BASIN BOUNDARY
- HIGH POINT / DWIDE
- GRAPHIC POINT OF DISCHARGE



SCALE: 1" = 50'



LINE	DIRECTION	DISTANCE
L1	N 31°01'03" W	13.80'
L2	N 54°55'46" W	22.78'

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA
C1	30.00'	47.17'	S 45°18'15" W	42.46'	90°09'40"
C2	470.87'	481.84'	N 60°20'02" W	461.09'	58°37'52"
C3	459.26'	189.01'	N 42°48'26" W	187.67'	23°34'47"
C4	10.00'	25.47'	N 17°36'20" E	19.12'	145°56'45"

T.B.M. #7
ELEV.=5248.88'

SUB-BASIN S-3
Q100=8.1 CFS

SUB-BASIN S-4
Q100=14.4 CFS

APPROXIMATE LOCATION FLOOD
HAZARD ZONE A 1% ANNUAL CHANCE
FLOOD CONFINED TO THE STREET

HIGH MESA Consulting Group

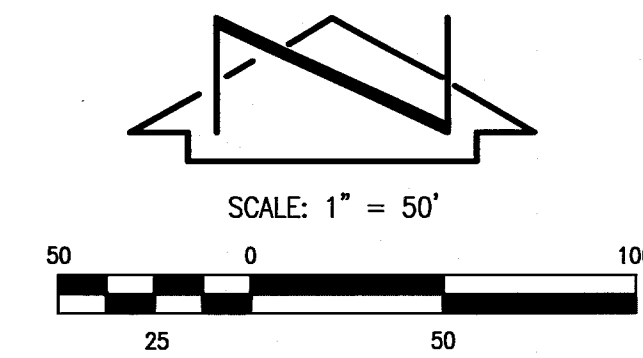
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PHONE: 505.345.4250 • FAX: 505.345.4254 • www.highmesacg.com

**MASTER DRAINAGE PLAN
EXISTING CONDITIONS PLAN-SOUTH
HIGHLAND HIGH SCHOOL**

DESIGNED BY: J.D.S.
DRAWN BY: S.C.C.
APPROVED BY: J.G.M.

NO.	DATE	BY	REVISIONS	JOB NO.
				2014.183.5
				DATE
				8-2015
				SHEET
				4 OF 8

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA
C5	25.00'	39.27'	S 44°44'24" E	35.36'	90°00'21"
C6	25.00'	39.29'	S 44°45'52" E	35.37'	90°02'48"



LEGAL DESCRIPTION

TRACT A-1-A, HIGHLAND HIGH SCHOOL, ALBUQUERQUE, NEW MEXICO, AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO ON JUNE 18, 2009, BOOK 2009C, PAGE 96, DOC# 2009068233.

BENCHMARKS

PROJECT BENCHMARK

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ELEVATION = 5249.99 FEET (NAVD 1988)

T.B.M. #1

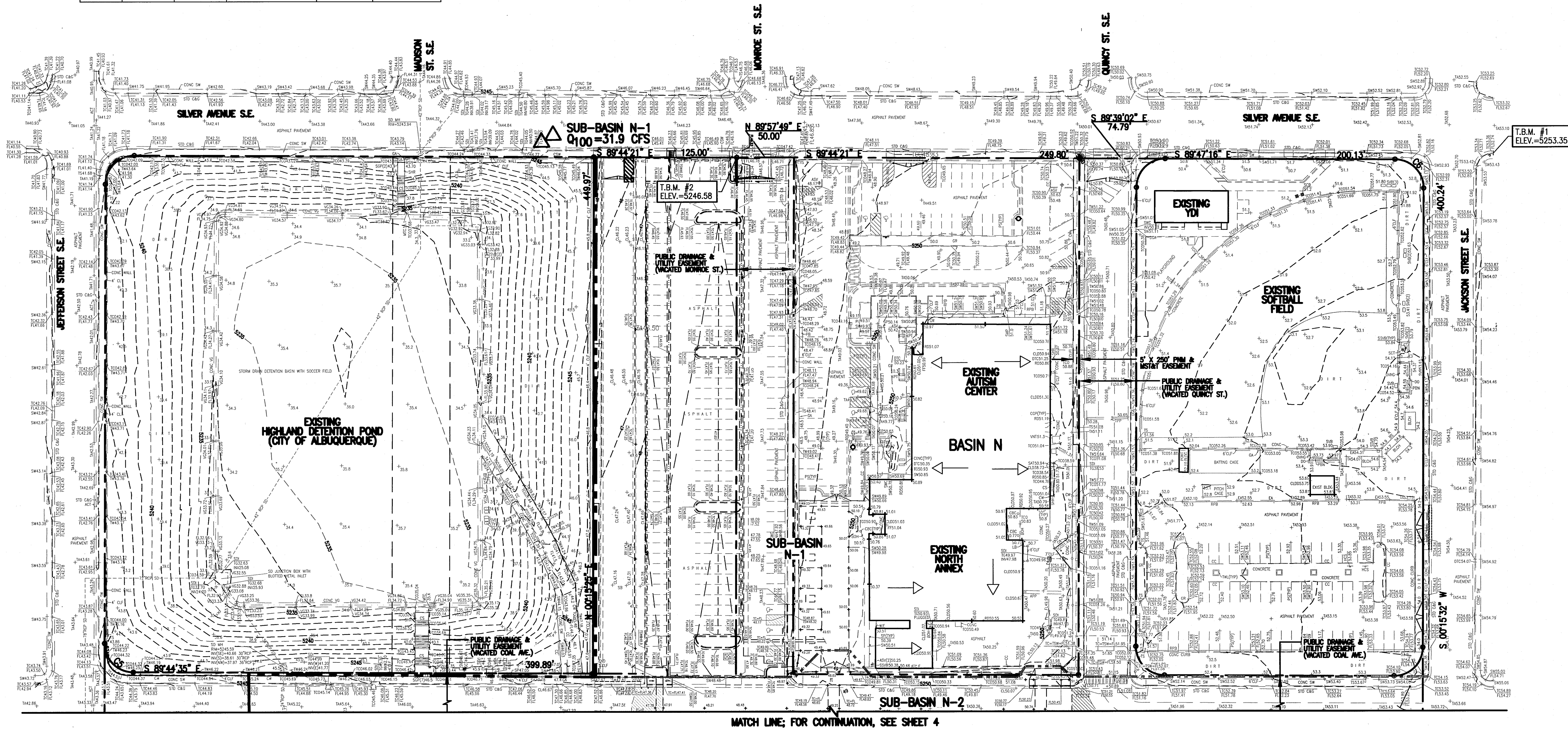
A CHISELED "□" AT THE SOUTHEAST QUADRANT OF SILVER AVENUE AND JACKSON AVENUE, AS SHOWN ON SHEET 4 OF 6.
ELEVATION = 5253.35 FEET (NAVD 1988)

T.B.M. #2

A CHISELED "+" ON THE HANDICAP RAMP AT THE SOUTHWEST QUADRANT OF SILVER AVENUE AND MONROE STREET, AS SHOWN ON SHEET 3 OF 6.
ELEVATION = 5246.58 FEET (NAVD 1988)

LEGEND

- EXISTING FLOWLINE
- EXISTING DIRECTION OF FLOW
- DEVELOPED DRAINAGE BASIN BOUNDARY
- DEVELOPED DRAINAGE SUB-BASIN BOUNDARY
- HIGH POINT / DIVIDE
- GRAPHIC POINT OF DISCHARGE



MATCH LINE; FOR CONTINUATION, SEE SHEET 4

File Path: P:\000\0014\0014183\DWG Plot Date: 09-02-2015
File Name: 141835_50F.DWG Plot Time: 10:01 am

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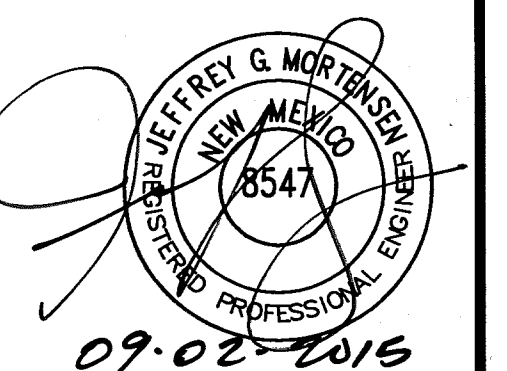
MASTER DRAINAGE PLAN DEVELOPED CONDITIONS PLAN-NORTH HIGHLAND HIGH SCHOOL

DESIGNED BY J.D.S.

DRAWN BY S.C.C.

APPROVED BY J.G.M.

NO.	DATE	BY	REVISIONS	JOB NO.
				2014.183.5
				DATE 8-2015
				SHEET 5 OF 8



MATCH LINE; FOR CONTINUATION, SEE SHEET 3

LEGAL DESCRIPTION

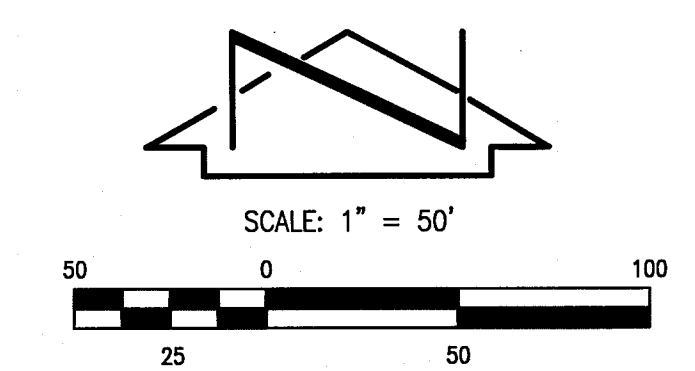
TRACT A-1-A, HIGHLAND HIGH SCHOOL, ALBUQUERQUE, NEW MEXICO, AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNILLO COUNTY, NEW MEXICO ON JUNE 18, 2009, BOOK 2009C, PAGE 96, DOC# 200906233.

LEGEND

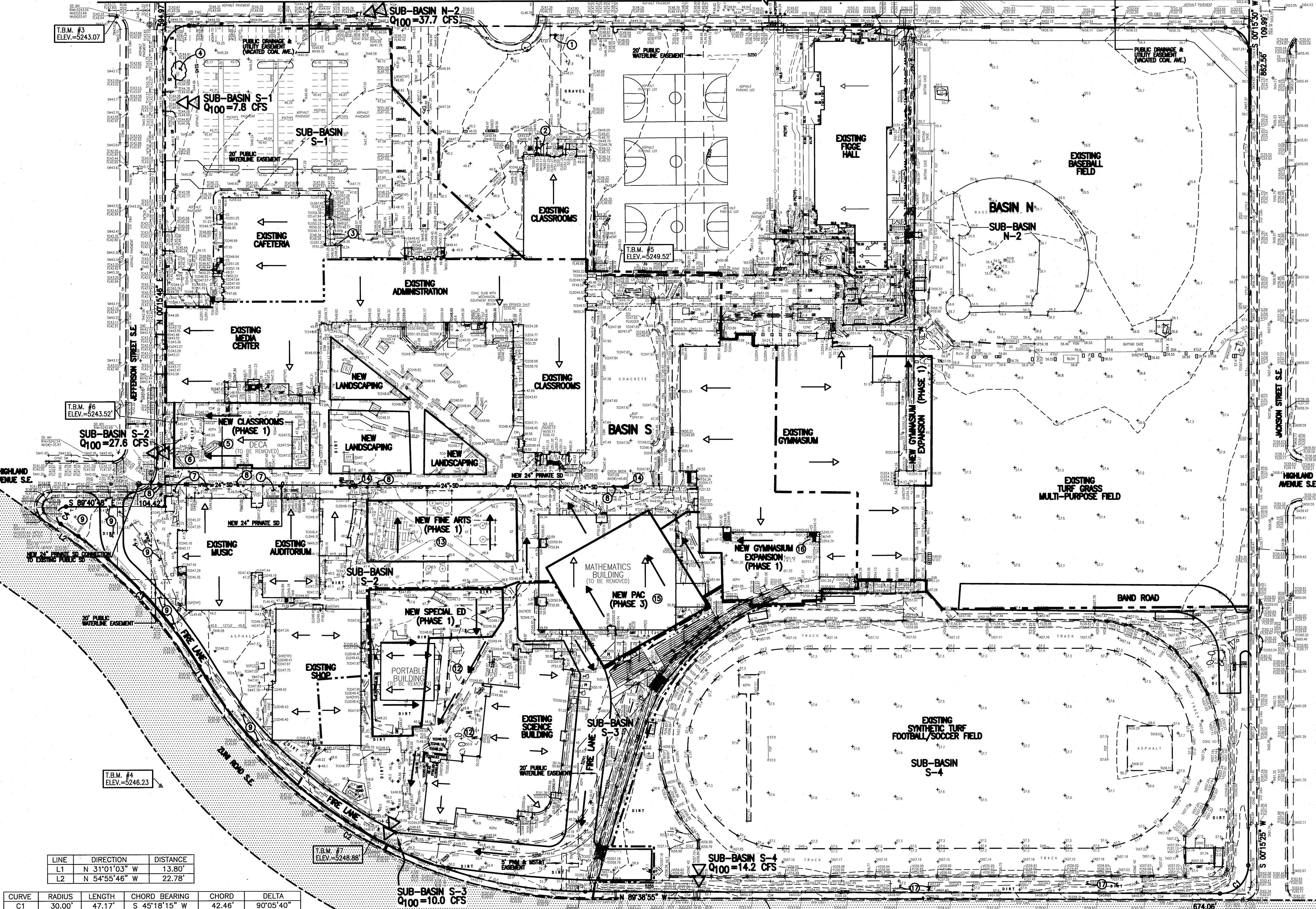
- EXISTING FLOWLINE
- PROPOSED FLOWLINE
- EXISTING DIRECTION OF FLOW
- PROPOSED DIRECTION OF FLOW
- DEVELOPED DRAINAGE BASIN BOUNDARY
- DEVELOPED DRAINAGE SUB-BASIN BOUNDARY
- HIGH POINT / DVINE
- GRAPHIC POINT OF DISCHARGE

KEYED NOTES

- REMOVE EXISTING SIDEWALK CULVERT; REPLACE WITH CONCRETE SIDEWALK TO MATCH EXISTING SIDEWALK.
- LOCATE 12" STORM DRAIN OUTLET; VERIFY EXISTING STORM DRAIN IS IN USE OR ABANDONED IN PLACE.
- PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING @ EXISTING MECHANICAL ROOM ROOF DRAIN.
- REMOVE AND REPLACE/REGRADE EXISTING ASPHALT PAVEMENT TO ELIMINATE LOW POINT.
- NEW PHASE 1 CLASSROOM BUILDING ADDITION SHALL REPLACE EXISTING ASPHALT PAVED FLOWLINE IN POOR CONDITION @ SOUTH SIDE OF MEDIA CENTER.
- REMOVE AND REPLACE THE EXISTING DETERIORATED ASPHALT PAVING WEST OF THE DECA BUILDING. DISCHARGE RUNOFF TO JEFFERSON STREET VIA EITHER DRIVEPAD OR SIDEWALK CULVERT, NOT OVER EXISTING PUBLIC SIDEWALK.
- REMOVE AND REPLACE EXISTING ASPHALT PAVEMENT IN POOR CONDITION BETWEEN EXISTING DECA AND MUSIC BUILDINGS. DISCHARGE RUNOFF TO JEFFERSON STREET VIA EITHER DRIVEPAD OR SIDEWALK CULVERT, NOT OVER EXISTING PUBLIC SIDEWALK.
- REMOVE AND REPLACE (UPSIZE) EXISTING 10" PRIVATE STORM DRAIN WITH 24" PRIVATE STORM DRAIN. EXTEND 24" SD TO EXISTING PUBLIC STORM DRAIN WITHIN HIGHLAND AVE SE.
- NEW FIRE LANE SHALL DISCHARGE RUNOFF TO INTERSECTION OF JEFFERSON STREET & HIGHLAND AVENUE SE VIA EXISTING DRIVEPAD. UTILIZE LANDSCAPED AREAS FOR WATER HARVESTING, MANAGING FIRST FLUSH GENERATED BY NEW IMPROVEMENTS TO MAXIMUM EXTENT PRACTICABLE.
- PROVIDE POSITIVE DRAINAGE AWAY FROM EAST SIDE OF THE EXISTING SHOP BUILDING.
- PROVIDE POSITIVE DRAINAGE FROM NEW SPECIAL EDUCATION BUILDING TO EXISTING SIDEWALK CULVERT ALONG ZUNI ROAD SE.
- UTILIZE LANDSCAPED AREAS FOR WATER HARVESTING, MANAGING FIRST FLUSH GENERATED BY NEW IMPROVEMENTS TO THE MAXIMUM EXTENT PRACTICABLE.
- DISCHARGE RUNOFF FROM FINE ARTS BUILDING AND ASSOCIATED SURFACE IMPROVEMENTS TO NEW 24" PRIVATE STORM DRAIN; UTILIZE LANDSCAPED AREAS FOR WATER HARVESTING, MANAGING FIRST FLUSH GENERATED BY NEW IMPROVEMENTS TO THE MAXIMUM EXTENT PRACTICABLE.
- EVALUATE EXISTING STORM INLETS BASED UPON COMPLETE BUILD-OUT (PHASES 1-3) AND REPLACE AS NECESSARY TO PROVIDE POSITIVE DRAINAGE. EVALUATION AND/OR REPLACEMENT SHOULD CONSIDER REMOVAL AND REPLACEMENT OF THE EXISTING PRIVATE 10" STORM DRAIN WITH NEW 24" STORM DRAIN.
- DISCHARGE RUNOFF FROM PERFORMING ARTS CENTER BUILDING AND ASSOCIATED SURFACE IMPROVEMENTS TO NEW 24" PRIVATE STORM DRAIN; UTILIZE LANDSCAPED AREAS FOR WATER HARVESTING, MANAGING FIRST FLUSH GENERATED BY NEW IMPROVEMENTS TO THE MAXIMUM EXTENT PRACTICABLE.
- FLOODING REPORTED AT GYMNASIUM STAIRWELL WILL BE CORRECTED UPON CONSTRUCTION OF GYMNASIUM EXPANSION.
- MITIGATE SLOPE EROSION ON THE SOUTH SIDE OF THE TRACK VIA SLOPE PROTECTION IMPROVEMENTS.



09-02-2015



LINE	DIRECTION	DISTANCE
L1	N 31°01'03" W	13.80'
L2	N 54°55'46" W	22.78'

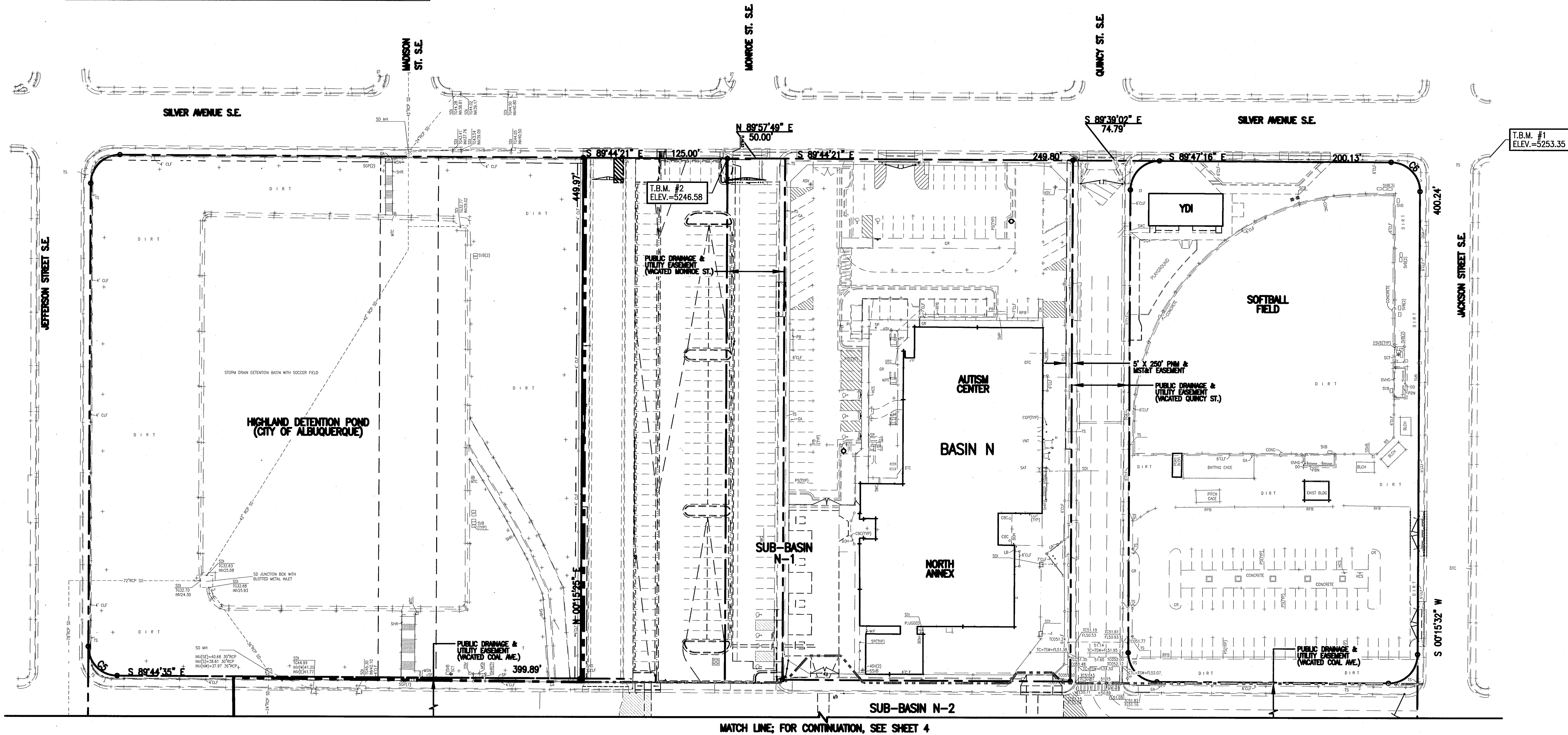
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA
C1	30.00'	47.17'	S 45°18'15" W	42.46'	90°05'40"
C2	470.87'	481.84'	N 60°20'02" W	461.09'	58°37'52"
C3	459.26'	189.01'	N 42°48'26" W	187.67'	23°34'47"
C4	10.00'	25.47'	N 17°36'20" E	19.12'	145°56'45"

MASTER DRAINAGE PLAN
DEVELOPED CONDITIONS PLAN-SOUTH
HIGHLAND HIGH SCHOOL

HIGH MESA Consulting Group
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	NO.	DATE	BY	REVISIONS	JOB NO.
DESIGNED BY	J.D.S.				2014.183.5
DRAWN BY	S.C.C.				8-2015
APPROVED BY	J.G.M.				SHEET 6 OF 8

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA
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T.B.M. #1

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T.B.M. #2

A CHISELED "+" ON THE HANDICAP RAMP AT THE SOUTHWEST QUADRANT OF SILVER AVENUE AND MONROE STREET, AS SHOWN ON SHEET 3 OF 6.
ELEVATION = 5246.58 FEET (NAVD 1988)

LEGEND

	DEVELOPED DRAINAGE BASIN BOUNDARY
	DEVELOPED DRAINAGE SUB-BASIN BOUNDARY
	PHASE 1
	PHASE 2
	PHASE 3

File Path: P:\JUN\2014\183\183.DWG | Plot Date: 09-02-2015 | Plot Time: 09:58 am
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HIGH MESA Consulting Group

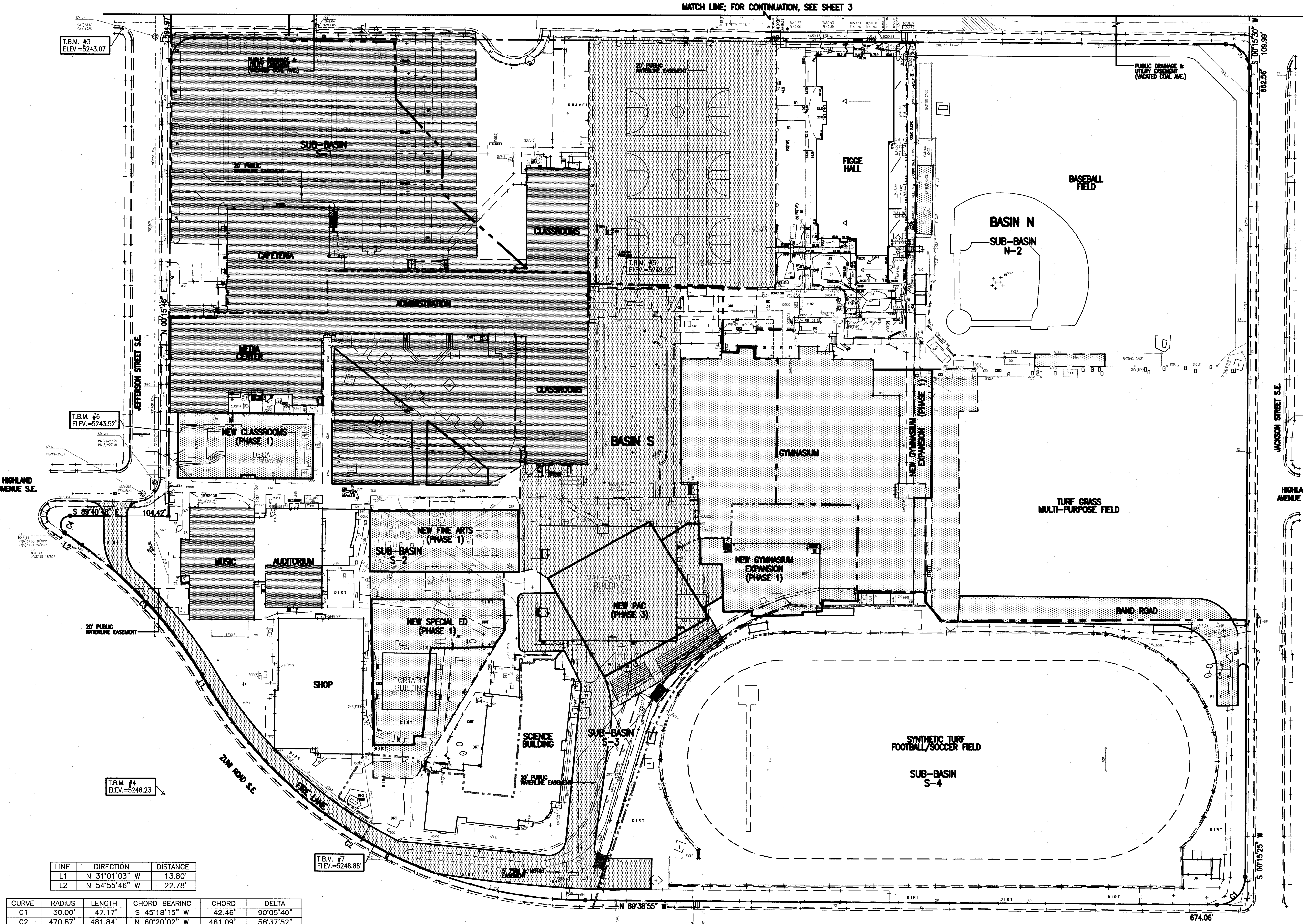
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MASTER DRAINAGE PLAN PHASING PLAN-NORTH HIGHLAND HIGH SCHOOL

DESIGNED BY J.D.S.
DRAWN BY S.C.C.
APPROVED BY J.G.M.

NO.	DATE	BY	REVISIONS	JOB NO.
				2014.183.5
				DATE 8-2015
				SHEET 7 OF 8





LINE		DIRECTION	DISTANCE
L1	N 31°01'03" W	13.80'	
L2	N 54°55'46" W	22.78'	

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T.B.M. #3

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A MAG NAIL SET IN ASPHALT, AS SHOWN ON THIS SHEET.
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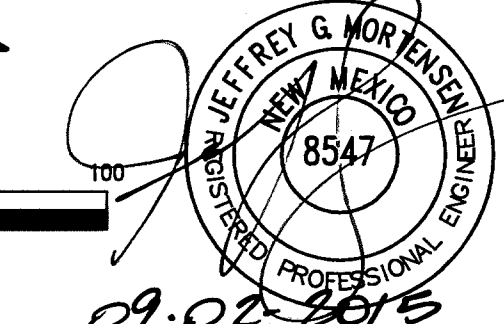
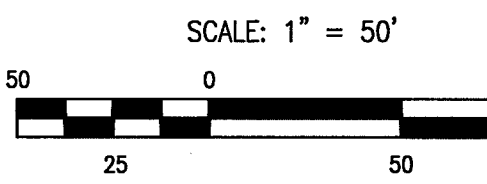
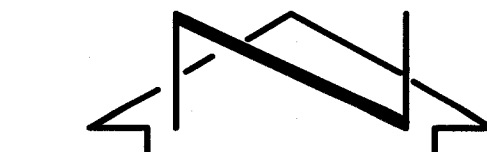
A MAG NAIL SET IN ASPHALT, AS SHOWN ON THIS SHEET.
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T.B.M. #7

A MAG NAIL SET IN ASPHALT, AS SHOWN ON THIS SHEET.
ELEVATION = 5248.88 FEET (NAVD 1988)

LEGEND

---	DEVELOPED DRAINAGE BASIN BOUNDARY
- - -	DEVELOPED DRAINAGE SUB-BASIN BOUNDARY
[Pattern]	PHASE 1
[Pattern]	PHASE 2
[Pattern]	PHASE 3



File Path: P:\MIDWAY\HIGHLAND\DWG File Name: 141835_80F8.DWG Plot Date: 09-02-2015 Plot Time: 10:00 am

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MASTER DRAINAGE PLAN
PHASING PLAN-SOUTH
HIGHLAND HIGH SCHOOL

DESIGNED BY J.D.S.
DRAWN BY S.C.C.
APPROVED BY J.G.M.

NO.	DATE	BY	REVISIONS

JOB NO.	2014.183.5
DATE	8-2015
SHEET	8 OF 8