DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THE MASTER DRAINAGE PLAN IMPROVEMENTS PHASE 2B PROJECT IS LOCATED AT THE NORTHWEST CORNER OF THE EXISTING ALBUQUERQUE HIGH SCHOOL CAMPUS, 800 ODELIA ROAD NE THIS PROJECT REPRESENTS A MODIFICATION TO AN EXISTING SITE WITHIN AN INFILL AREA.

THIS SUBMITTAL IS MADE IN SUPPORT OF BUILDING PROJECTS CURRENTLY UNDER CONSTRUCTION ON THIS CAMPUS. THE PROPOSED IMPROVEMENTS OUTLINED BY THIS SUBMITTAL INCLUDE THE EXPANSION OF A DETENTION POND AT THE NORTHWEST CORNER OF THE SITE AND THE INSTALLATION OF LARGER STORM DRAIN PIPE TO CONVEY RUNOFF TO THE POND. THESE IMPROVEMENTS WERE OUTLINED IN THE PREVIOUSLY APPROVED MASTER DRAINAGE PLAN DATED JULY 27, 2008 PREPARED BY HIGH MESA CONSULTING GROUP. THE COMPLETION OF THIS PROJECT WILL DECREASE THE DISCHARGE OF DEVELOPED RUNOFF FROM THIS SITE TO ODELIA ROAD NE BY 10.3 CFS AND ALLOW FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY FOR THE NEW BUILDING ADDITIONS CURRENTLY UNDER CONSTRUCTION IN BASIN A1-C.

II. PROJECT DESCRIPTION

AS SHOWN BY THE VICINITY MAP (J-15), THE SITE IS BORDERED BY ODELIA ROAD TO THE NORTH, INTERSTATE 25 TO THE EAST, MOUNTAIN ROAD TO THE SOUTH, AND RESIDENTIAL HOUSING TO THE WEST. THE PROPERTY IS – UNPLATTED TRACT OF LAND – ALBUQUERQUE HIGH SCHOOL: LOCATED AT 800 ODELIA ROAD N.E. THE PROPERTY IS OWNED BY THE ALBUQUERQUE PUBLIC SCHOOLS AND IS OPERATED AS A HIGH SCHOOL. AS INDICATED BY PANELS 332 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED BY FEMA FOR BERNALILLO COUNTY, NEW MEXICO, NOVEMBER 19, 2003, THIS SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE.

III. BACKGROUND DOCUMENTS & RESEARCH

REVIEW OF THE FOLLOWING DOCUMENTS WERE USED IN THE PREPARATION OF THIS SUBMITTAL:

A. ALBUQUERQUE HIGH SCHOOL MASTER DRAINAGE PLAN PREPARED BY HIGH MESA CONSULTING GROUP DATED NOVEMBER 12, 1992, SUPERSEDED BY THE MASTER DRAINAGE PLAN PREPARED BY HIGH MESA CONSULTING GROUP DATED JULY 27, 2007. THE ORIGINAL MASTER DRAINAGE PLAN OUTLINES A MAXIMUM DISCHARGE RATE OF 3.3 CFS INTO ODELIA ROAD NE.

B. ALBUQUERQUE HIGH SCHOOL MASTER DRAINAGE PLAN PREPARED BY HIGH MESA CONSULTING GROUP DATED JULY 27, 2007. THE MASTER DRAINAGE PLAN (MDP) IDENTIFIES SPECIFIC DRAINAGE BASINS WITHIN THE SITE ALONG WITH THE HYDROLOGY OF EACH BASIN. THE MDP FURTHER ESTABLISHES THE FOLLOWING CRITERIA FOR SUBSEQUENT DEVELOPMENT:

1. CONSTRUCT THREE NEW INLETS ALONG THE WEST ACCESS ROAD (COMPLETED AS PART OF TRACK AND DRAINAGE IMPROVEMENTS PROJECT)
2. ENLARGE THE "UPPER POND" (BASIN A-1C) (COMPLETED AS PART OF TRACK AND DRAINAGE IMPROVEMENTS PROJECT)
3. INSTALL A 24" STAND PIPE AND REPLACE 6" STORM DRAIN CONNECTING THE "UPPER POND" (BASIN A-1C) TO THE "LOWER POND" (BASIN A-1D)
4. CONSTRUCT A SINGLE 'D' INLET WITHIN THE PARKING AREA OF BASIN A-1C TO ELIMINATE SURFACE PONDING AND POTENTIAL OVERFLOW ONTO ADJACENT PROPERTIES
5. ENLARGE THE "LOWER POND" (BASIN A-1D) TO DETAIN DEVELOPED RUNOFF AND RESTRICT DISCHARGE TO PREVIOUSLY APPROVED PEAK RATE OF DISCHARGE OF 3.3 CFS, FROM THE MASTER DRAINAGE PLAN FOR ALBUQUERQUE HIGH SCHOOL DATED 11/12/1992.

THE MDP PROVIDED THE HYDROLOGIC CALCULATIONS FOR BASINS A-1A, A-1C A1-D AND A2-A WHICH ARE INCLUDED IN THIS PLAN.

C. ALBUQUERQUE HIGH SCHOOL TRACK AND DRAINAGE IMPROVEMENTS PREPARED BY HIGH MESA CONSULTING GROUP DATED JULY 10, 2008. THE TRACK AND DRAINAGE IMPROVEMENTS ENLARGED THE UPPER DETENTION BASIN WHICH CONTRIBUTES TO THE DOWNSTREAM DETENTION BASIN IN THIS PROJECT, AND WAS MODIFIED TO DIVERT RUNOFF FROM UPSTREAM BASINS TO THE DETENTION BASIN IN THIS PROJECT, REDUCING THE PEAK RATE OF DISCHARGE FLOWING TO ODELIA ROAD NE, AS IDENTIFIED IN ITEMS 1 & 2., ABOVE.

D. ALBUQUERQUE HIGH SCHOOL 2008 MASTER DRAINAGE PLAN PHASE 2A IMPROVEMENTS AND PORTABLE RELOCATION GRADING PLAN PREPARED BY HIGH MESA CONSULTING GROUP DATED DECEMBER 16, 2008. THIS PROJECT RELOCATED FOUR PORTABLE CLASSROOMS TO ALLOW THE DETENTION BASIN IN THIS PLAN TO BE ENLARGED.

E. ALBUQUERQUE HIGH SCHOOL ADDITION GRADING AND DRAINAGE PLAN PREPARED BY WALLA ENGINEERING, LTD. DATED JANUARY 15, 2009. THE ALBUQUERQUE HIGH SCHOOL ADDITION REQUIRES A PERMANENT CERTIFICATE OF OCCUPANCY, SUPPORTED BY THE IMPROVEMENTS OUTLINED IN THE ALBUQUERQUE HIGH SCHOOL MASTER DRAINAGE PLAN IMPROVEMENTS PHASE 2B.

IV. EXISTING CONDITIONS

THE AREA OF THE SITE OUTLINED IN THIS PROJECT IS CURRENTLY DEVELOPED AS A DETENTION POND AND A PAVED AREA PREVIOUSLY UTILIZED FOR PORTABLE CLASSROOMS. AN UPSTREAM DETENTION POND IN BASIN A1-C WAS ENLARGED AND MODIFIED BY THE ALBUQUERQUE HIGH SCHOOL TRACK AND DRAINAGE IMPROVEMENTS PROJECT CONTRIBUTES TO THIS AREA, DISCHARGING RUNOFF VIA 6" STORM DRAIN PIPES OVERLAND TO BASIN A1-D AND DOWNSTREAM DETENTION POND BEING IMPROVED BY THIS PROJECT.

BASIN A1-C INCLUDES THE UPPER DETENTION POND PREVIOUSLY ENLARGED BY THE ALBUQUERQUE HIGH SCHOOL TRACK AND DRAINAGE IMPROVEMENTS PROJECT. THIS POND WAS ENLARGED TO ACCOMMODATE A LARGER CONTRIBUTING AREA UPSTREAM, INCLUDING THE CONSTRUCTION OF STORM INLETS TO INTRODUCE THE ADDITIONAL RUNOFF TO THE POND AND INTERCEPT ROOF DRAINAGE FROM THE EXISTING GYMNASIUM. THE PREVIOUSLY CONSTRUCTED IMPROVEMENTS DIVERTS 13.4 CFS FROM BASIN A-2B TO BASIN A-1C AND FLOWING INTO ODELIA ROAD NE. THIS PROJECT WILL MODIFY THE EXISTING STANDPIPE TO ADD A 18" DIAMETER DISCHARGE PIPE TO CONVEY RUNOFF TO THE DOWNSTREAM POND IN BASIN A-1D.

V. DEVELOPED CONDITIONS

BASIN A1-D INCLUDES THE LOWER DETENTION POND AND A PAVED AREA PREVIOUSLY OCCUPIED BY PORTABLE CLASSROOM BUILDINGS. THE PORTABLE CLASSROOM BUILDINGS WERE RELOCATED BY THE ALBUQUERQUE HIGH SCHOOL MASTER DRAINAGE PLAN IMPROVEMENTS PHASE 2A. THIS PROJECT WILL REMOVE THE ASPHALT PAVEMENT IN THE PORTABLE PARK AND ENLARGE THE LOWER DETENTION POND. THE IMPROVEMENTS WILL ALSO INCLUDE THE CONSTRUCTION OF A CURB AND GUTTER TO CONTROL FLOWS ENTERING THE POND FROM THE EAST, RIP-RAP APRONS TO MITIGATE THE EROSIVE CONCENTRATED FLOWS ENTERING THE PONDS VIA CURB OPENINGS AND STORM DRAIN PIPE. THE LOWER DETENTION POND WILL ACCEPT THE ADDITIONAL FLOWS FROM THE UPPER DETENTION BASIN VIA A NEW 24" STORM DRAIN PIPE.

THE IMPROVEMENTS OUTLINED IN THIS PROJECT WERE RECOMMENDED BY THE PREVIOUSLY APPROVED MASTER DRAINAGE PLAN AND ARE REQUIRED FOR A CERTIFICATE OF OCCUPANCY OF THE NEW BUILDING ADDITIONS. ONCE COMPLETED, THESE IMPROVEMENTS WILL DECREASE THE PEAK RATE OF DISCHARGE OF THE RUNOFF TO ODELIA ROAD BY 10.3 CFS AS OUTLINED IN THE PREVIOUSLY APPROVED MASTER DRAINAGE PLAN.

VI. CALCULATIONS

CALCULATIONS ANALYZING THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100 – YEAR, 6 – HOUR RAINFALL EVENT WERE PREPARED FOR THIS PROJECT BY THE PREVIOUSLY APPROVED MASTER DRAINAGE PLAN. THE CALCULATIONS FOR BASINS A-1D HAVE BEEN DUPLICATED IN THIS PLAN USING 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, FOR QUANTIFYING THE PEAK RATE OF DISCHARGE, VOLUME OF RUNOFF GENERATED AND RUNOFF HYDROGRAPHS. MANNINGS EQUATION WAS USED TO CALCULATE THE MAXIMUM FLOW RATE IN STORM DRAIN PIPE, AND THE ORIFICE EQUATION WAS USED TO QUANTIFY THE RUNOFF DISCHARGE RATE OF THE LOWER DETENTION POND. AS OUTLINED BY THE PREVIOUSLY APPROVED MASTER DRAINAGE PLAN BASIN A WILL EXPERIENCE A DECREASE IN PEAK RATE OF DISCHARGE TO ODELIA ROAD NE OF 10.3 CFS.

VII. CONCLUSIONS

A. THE SITE IS AN EXISTING HIGH SCHOOL WITHIN AN INFILL AREA
B. DRAINAGE IMPROVEMENTS FOR THE SITE ARE GOVERNED BY A PREVIOUSLY APPROVED MASTER DRAINAGE PLAN PREPARED BY HIGH MESA CONSULTING GROUP
C. THE PROPOSED IMPROVEMENTS ARE CONSISTENT WITH THE IMPROVEMENTS OUTLINED, RECOMMENDED AND APPROVED BY THE PREVIOUSLY APPROVED MASTER DRAINAGE PLAN PREPARED BY MESA CONSULTING GROUP
D. RUNOFF WILL BE CONVEYED TO THE PROPOSED EXPANDED DETENTION POND THAT REDUCES THE PEAK DISCHARGE RATE ENTERING ODELIA ROAD AS OUTLINED BY THE PREVIOUSLY APPROVED MASTER DRAINAGE PLAN, THUS REDUCING THE PEAK RATE OF DISCHARGE FLOWING TO PUBLIC STORM DRAIN FACILITIES
E. THE IMPROVEMENTS SUPPORT THE GYM / PERFORMING ARTS BUILDING ADDITIONS AND OTHER CAMPUS IMPROVEMENTS CURRENTLY UNDER CONSTRUCTION; THESE IMPROVEMENTS ARE REQUIRED TO BE CONSTRUCTED TO SUPPORT THE PERMANENT CERTIFICATE OF OCCUPANCY FOR THE BUILDING ADDITIONS
F. THERE ARE NO DPM DESIGN VARIANCES OR PUBLIC DRAINAGE EASEMENTS REQUIRED BY THIS DEVELOPMENT

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CALCULATIONS

I. SITE CHARACTERISTICS
A. PRECIPITATION ZONE = 2
B. P_{100} = 2.35
C. PROJECT AREA:
1. BASIN A =
SUB-BASIN A1-A = 51,500 SF
SUB-BASIN A1-D = 59,000 SF
D. EXISTING LAND TREATMENTS
1. BASIN A1-D

TREATMENT	AREA (SF/AC)	%
C	16,455 / 0.38	28
D	42,545 / 0.98	72

E. DEVELOPED LAND TREATMENTS
2. BASIN A1-D

TREATMENT	AREA (SF/AC)	%
C	16,455 / 0.38	28
D	42,545 / 0.98	72

II. HYDROLOGY
A. DEVELOPED CONDITIONS
1. BASIN A1-D
a. VOLUME (NO CHANGE)

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

$E_W = [(1.13*0.38)+(2.12*0.98)]/1.35 = 1.84$ IN

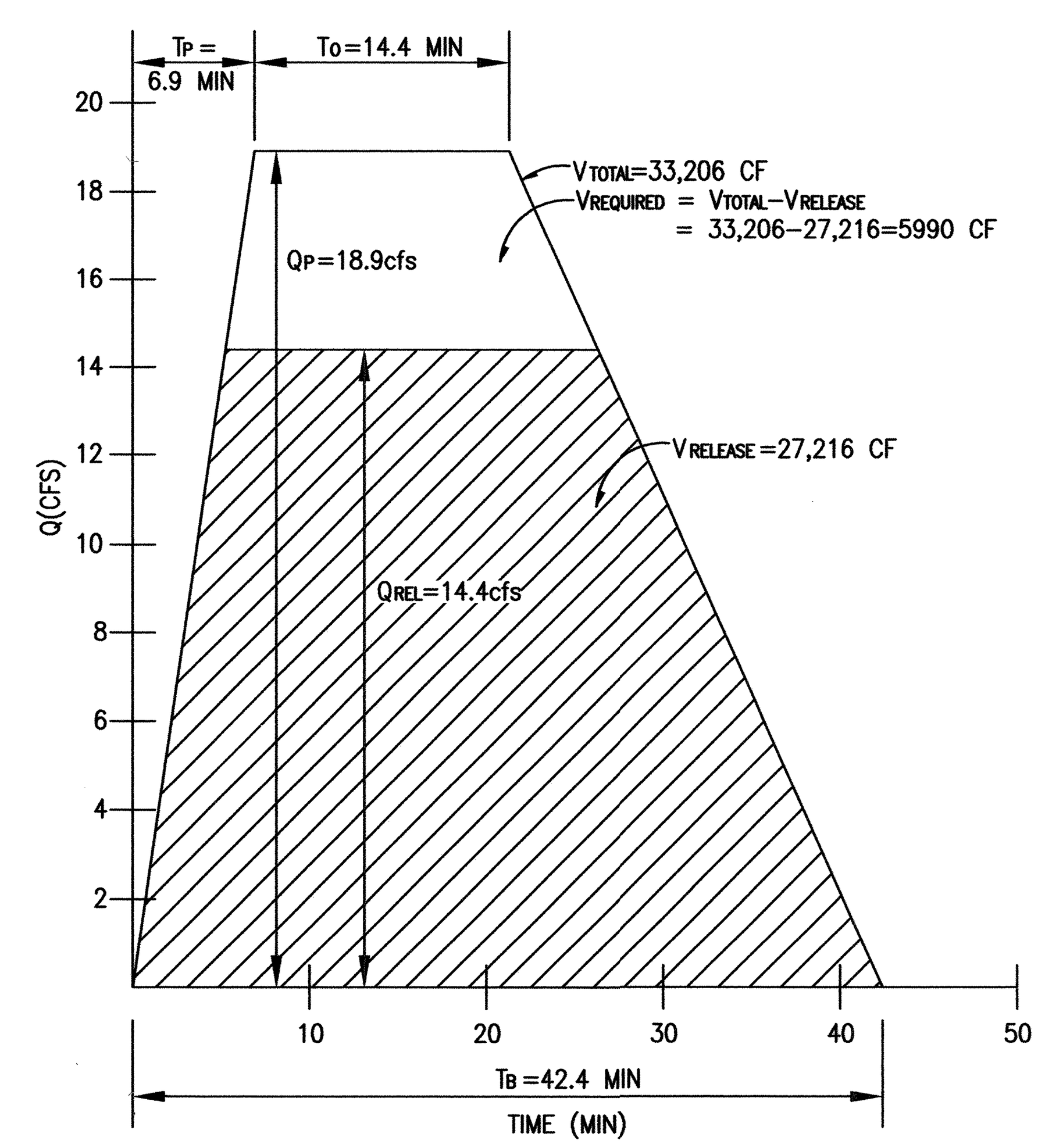
$V_{100} = (E_W/12)A_T = 0.2081$ AC-FT 9,070 CF

b. PEAK DISCHARGE (NO CHANGE)

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

$Q_P = Q_{100} = (3.14*0.38)+(4.70*0.98) = 5.8$ CFS

c. INFLOW/STORAGE (TRAPEZOIDAL) HYDROGRAPH (PHASE 2) – UPPER POND (DPM SECTION 22.2 PAGE A-14)



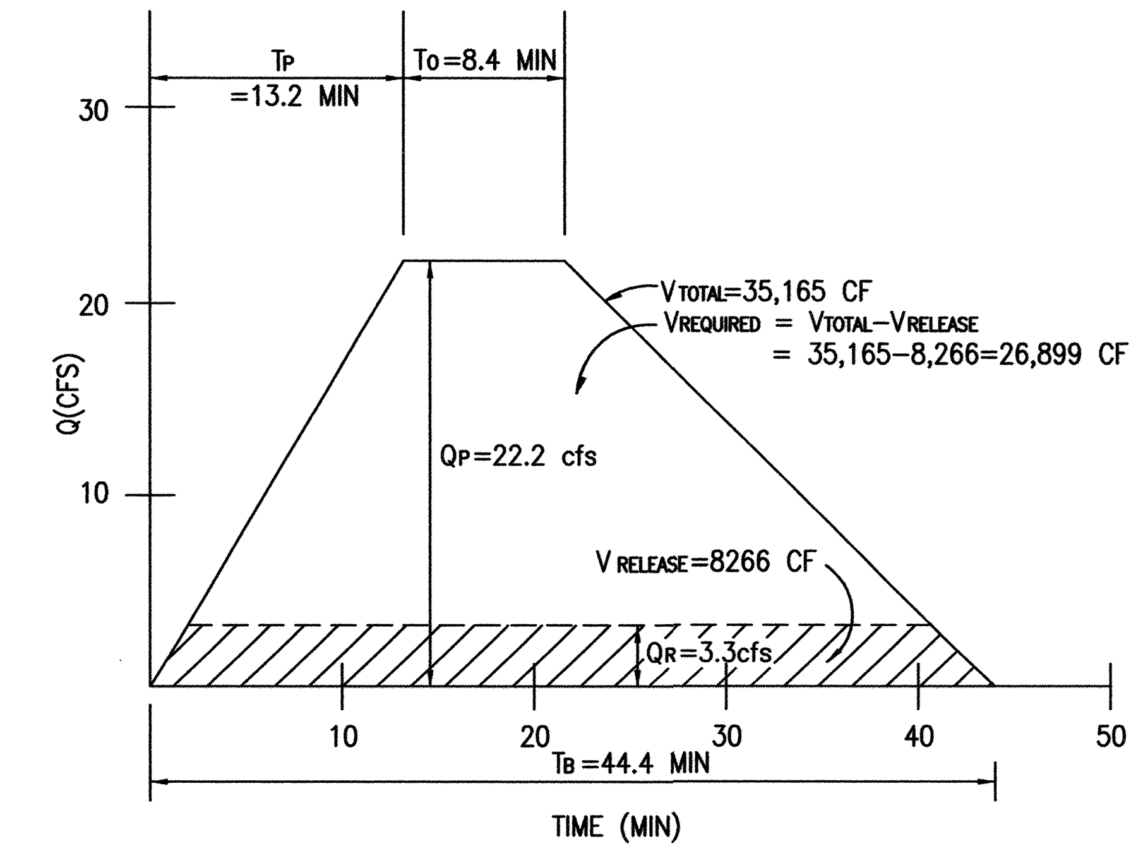
$T_B=[2.107*E*(A_T/Q_P)]-[0.25*(A_D/A_T)]=42.4$ MIN

$T_P=(0.7*T_C)+[(1.6-(A_D/A_T))/12]=6.9$ MIN

$T_D=[0.25*(A_D/A_T)]=14.4$ MIN

WHERE:
$Q_P=Q_{100}$ (BASIN A1-A)+Q_{100} (BASIN A2-B)=18.9 CFS
E=2.07 IN
Tc=0.2 HRS=12MIN
$A_T=A_T$(BASIN A1-A)+A_T(BASIN A2-B)=4.08 AC
$A_D=A_D$(BASIN A1-A)+A_D(BASIN A2-B)=391 AC

d. INFLOW/STORAGE (TRAPEZOIDAL) HYDROGRAPH (PHASE 2) – LOWER POND (DPM SECTION 22.2 PAGE A-14)



$T_B=[2.107*E*(A_T/Q_P)]-[0.25*(A_D/A_T)]=0.74$ HRS ~44.4 MIN

$T_P=(0.7*T_C)+[(1.6-(A_D/A_T))/12=0.22$ HRS ~13.2 MIN

$T_D=[0.25*(A_D/A_T)]=0.14$ HRS ~8.4 MIN

WHERE:
$Q_P=Q_{100\ (A1-D,\ PHASE\ 2)}+Q_{100\ (A1-C)}+Q_{100\ (A1-B)}+Q_{REL\ UPPER\ POND}$ = 22.2 CFS
E=1.69 IN
Tc=12 MIN ~0.2 HRS (MINIMUM TIME)
$A_{T\ (A1-D)}$=1.35 AC
$A_{D\ (A1-D)}$=0.77 AC

d. V_{POND} (AVERAGE END METHOD; DEVELOPED PHASE 2)

ELEVATION	AREA	VOLUME	Σ VOLUME
14.5	0		
		568	568
15	2270		
		6643	7211
16	11016		
		12464	19675
17	13912		
		14752	34427
18	15592		

V_{POND}=ΣVOL=568+7211+19675=34427 CF
V_R= 26,899 CF < V_{POND}=34,427 CF

C. COMPARISONS
1. BASIN A1-D
a. VOLUME
ΔV_{100} = 9,070–9,070 = 0 CF (NO CHANGE)
b. PEAK DISCHARGE
ΔQ_{100} = 5.8–5.8– = 0 CFS (NO CHANGE)

III. HYDRAULICS
A. UPPER POND (BASIN A-1C)
1. STANDPIPE CAPACITY (WEIR EQUATION AT INLET)
$Q = C\ P\ d^{3/2}$
WHERE: C = 3.0 (CONSTANT)
P = 6.28 FT
d = 1.0 FT
THEREFORE: Q = 18.8 CFS > $Q_{RELEASE}$ =14.4 CFS

2. OUTLET PIPE CAPACITY
a. ENTRANCE CONDITIONS – ORIFICE EQUATION – OUTLET CONTROL
$Q = CA\sqrt{2gh}$
LET: Q = 14.4 CFS (MAX DISCHARGE)
C = 0.6
H = 4.4'
THEREFORE: A = 1.43 SF = πr^2
r = 8"; USE 16" DIA. ORIFICE
b. PIPE (NORMAL) FLOW – MANNING'S EQUATION
18" DIAMETER STORM DRAIN
LET: D=18"
S = 0.0123
N = 0.013
THEREFORE: $Q_{CAPACITY}$ = 11.7 CFS;
PRESSURE FLOW GOVERNS
c. PIPE (PRESSURE) FLOW – HAZEN WILLIAMS EQUATION
18" STORM DRAIN
LET: P_1=1.9 PSI (4.4VF OF WATER @ 0.44 PSI/VF)
P_2= 0 PSI
S = 0.0123
C = 135.0
THEREFORE: $Q_{CAPACITY}$ = 34.9 CFS; > $Q_{RELEASE}$=14.4 CFS

B. LOWER POND (BASIN A-1D)
1. SUBMERGED STANDPIPE CAPACITY (ORIFICE EQUATION)
$Q = CA\sqrt{2gh}$
LET: C = 0.6
A = 3.1 SF (24" DIAMETER PIPE)
H = OVERFLOW ELEV. – GRATE ELEV. = 18.0–15.6=2.4'
THEREFORE: Q = 23.1 CFS
2. OUTLET PIPE CAPACITY
a. ENTRANCE CONDITIONS – ORIFICE EQUATION
$Q = CA\sqrt{2gh}$
LET: C = 0.6
A = 0.35 SF (8" DIAMETER PIPE)
H = 4.34'
THEREFORE: Q = 3.5 CFS > ALLOWABLE DISCHARGE = 3.3 CFS
b. ORIFICE PLATE CALCULATIONS–ORIFICE EQUATION (OUTLET CONTROL)
$Q = CA\sqrt{2gh}$
LET: Q = 3.3 CFS (MAX. DISCHARGE)
C = 0.6
H = 4.34'
THEREFORE: A = 0.33 SF: USE 7.75" DIAMETER ORIFICE PLATE ON DISCHARGE PIPE.
c. PIPE (NORMAL) FLOW – MANNING'S EQUATION
8" DIAMETER STORM DRAIN
LET: D = 8"
S = 0.0282
N = 0.013
THEREFORE: $Q_{CAPACITY}$ = 2.0 CFS < $Q_{RELEASE}$=3.3 CFS
PRESSURE FLOW GOVERNS
d. PIPE (PRESSURE) FLOW – HAZEN-WILLIAMS EQUATION
8" DIAMETER STORM DRAIN
LET: P_1 = 1.9 PSI (4.3 VF OF WATER @ 0.44 PSI/VF)
P_2 = 0 PSI
S = 0.0282
C = 135.0
THEREFORE: $Q_{CAPACITY}$ = 6.3 CFS > $Q_{DISCHARGE}$ = 3.3 CFS
e. SPILLWAY CAPACITY – WEIR EQUATION FROM HAESTAD METHODS 6.0
LET: DEPTH = 1.0 FT
DISCHARGE COEFFICIENT = 3.05
CREST LENGTH = 10.0 FT
THEREFORE: $Q_{CAPACITY}$ = 30.5 CFS > Q_{100} = 22.2 CFS
f. SPILLWAY CAPACITY – OPEN CHANNEL FROM HAESTAD METHODS FLOW MASTER 6.0 – MANNING'S EQUATION
LET: Q = 22.2 CFS
S = 0.2128 (4.7:1)
W = 10.0 FT
N = 0.013
THEREFORE: D = 0.11 FT << 1.0 FT = CHANNEL DEPTH
g. HYDRAULIC JUMP CALCULATION
LET: Q = 22.2 CFS

THEREFORE: $V = \frac{Q}{A} = \frac{22.2}{(DEPTH)(WIDTH)} = \frac{22.2}{(0.81')(10')} = 2.7FT/S$

$\frac{V^2}{2g} = \frac{(2.7)^2}{2(32.2)} = 0.11$ FT

ENERGY EQUATION:

$\frac{V_1^2}{2g} + y_1 + Z = \frac{V_2^2}{2g} + y_2$

LET: V_1 = 2.7 FT/S
$\frac{V_1^2}{2g} = \frac{(2.7)^2}{2(32.2)} = 0.11$ FT
y_1 = 0.81 FT (DEPTH AT SPILLWAY)
Z = 10 FT (VERTICAL DROP FROM SPILLWAY TO CHANNEL SLOPE CHANGE)

THEREFORE: $(0.11)+0.81+10 = \frac{Q^2}{(10y_2)^2(64.4)} + y_2$

$10.09 = 0.077/y_2^2 + y_2$

y_2 = 1.03 FT = DEPTH AT JUMP

SURVEY NOTE

THIS IS NOT A BOUNDARY SURVEY; TOPOGRAPHIC INFORMATION IS BASED UPON A PARTIAL TOPOGRAPHIC SURVEY PREPARED BY HIGH MESA CONSULTING GROUP, NMPS NO. 11184, DATED 11/15/2007. SUPPLEMENTAL INFORMATION SHOWN IS BASED UPON RECORD DRAWINGS PREPARED BY HIGH MESA CONSULTING GROUP, CERTIFIED 03/09/09 BY ENGINEER ON RECORD, NMPE 8547

BENCHMARKS

PROJECT BENCHMARK

A NMSHC BRASS DISK STAMPED "STA I-25-30" SET IN TOP OF A CONCRETE POST 0.2' ABOVE GROUND LOCATED ADJACENT TO THE NORTHWEST INTERSECTION OF GIBSON BOULEVARD AND THE I-25 BRIDGE INTERCHANGE.
ELEVATION = 5041.30 FEET (NAVD 88)

T.B.M. #1

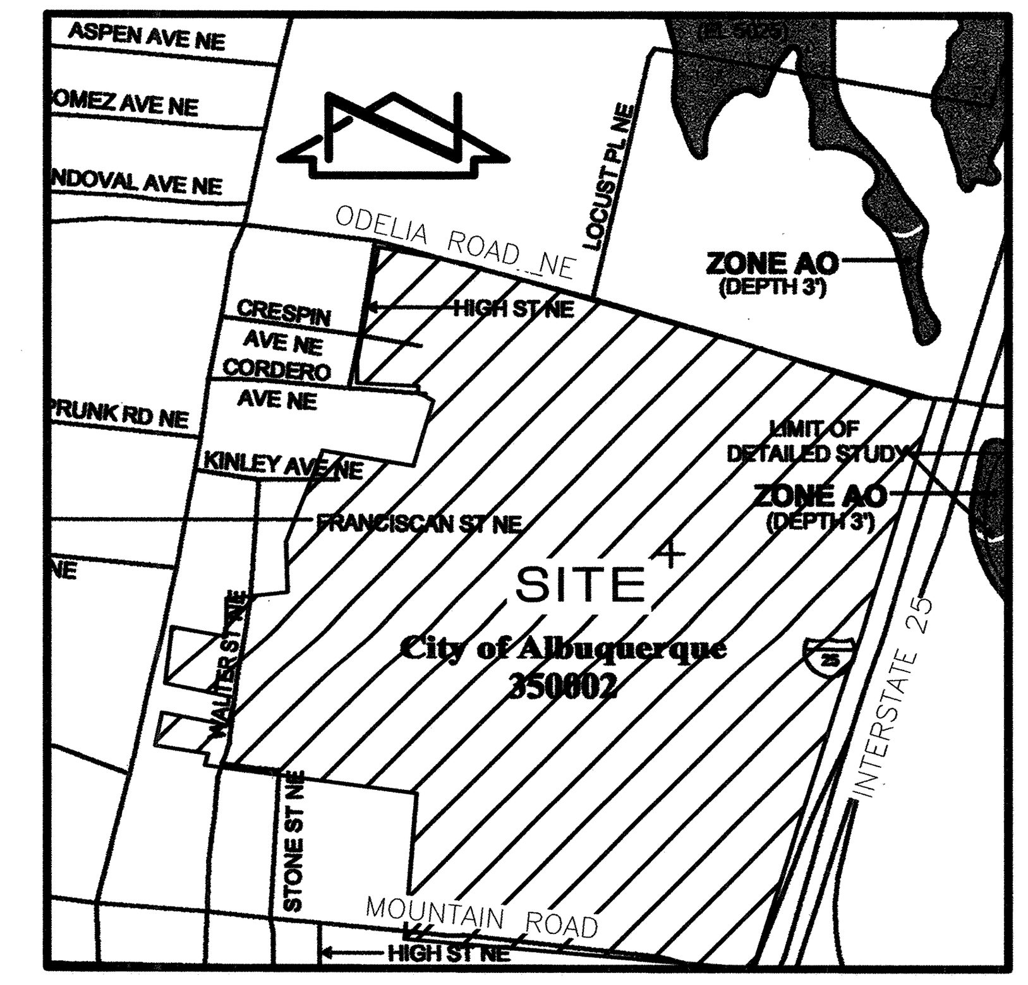
A P.K. NAIL AND SHINER AS SHOWN ON SHEETS 3 & 5.
ELEVATION = 5026.94 FEET (NAVD 88)

LEGAL DESCRIPTION

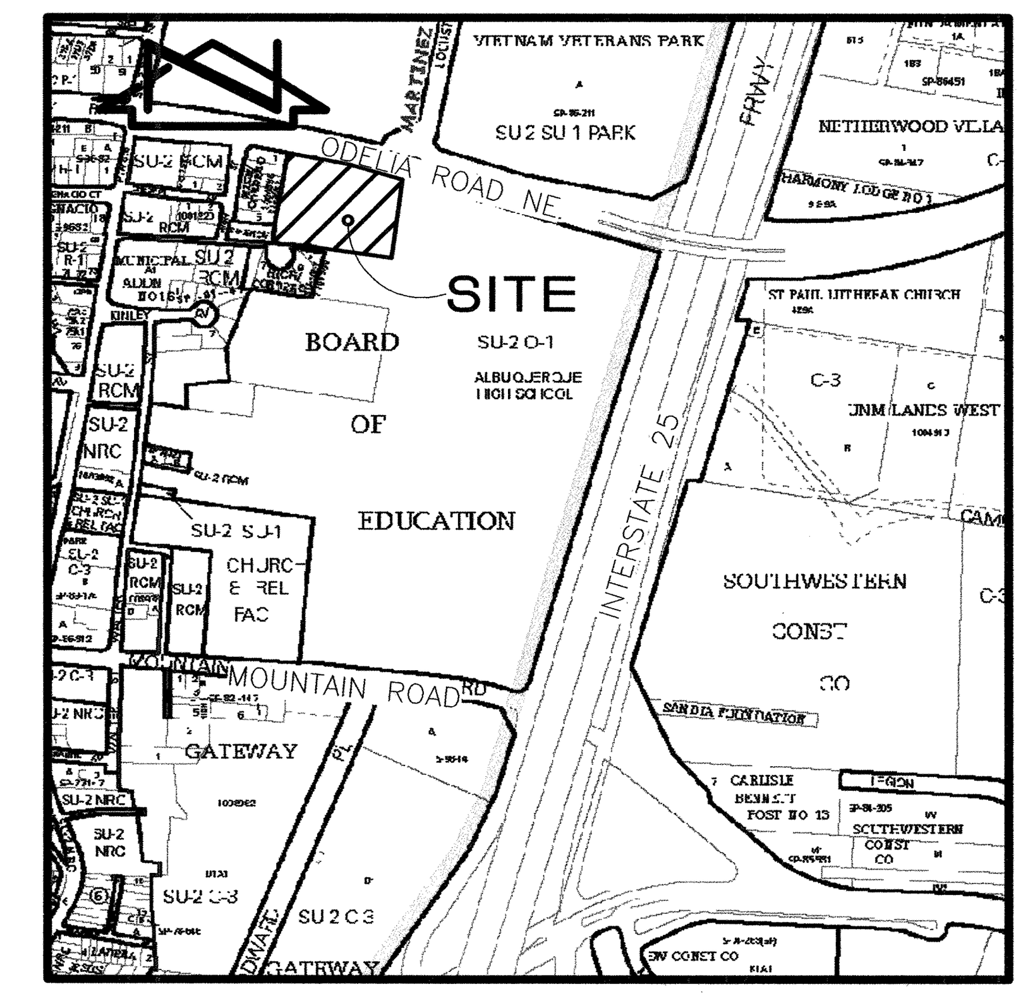
A PORTION OF ALBUQUERQUE HIGH SCHOOL, UNPLATTED.

PROPOSED LEGEND

SYMBOL	DESCRIPTION
	PROPOSED ASPHALT PAVEMENT
25.41	PROPOSED SPOT ELEVATION
08	PROPOSED CONTOUR
	PROPOSED FLOWLINE
	PROPOSED CONCRETE
	PROPOSED RETAINING WALL
	HIGH POINT



(C6) F.I.R.M. 332 OF 825
SCALE: 1" = 750'



(D6) VICINITY MAP J–15
SCALE: 1" = 750'

RECORD DRAWING

EXISTING LEGEND

AHS	ALBUQUERQUE HIGH SCHOOL SIGN	FL	FLOWLINE	STD	STANDARD
AL	AREA LIGHT	FLC	FIRELINE CONNECTION	STR	STORAGE
ANT	ANTENNA	FRL	FIRELINE	SVB	SPRINKLER VALVE BOX
AP	ASPHALT PATH	G/PM	GAS BY PAINT MARK	SW	SIDEWALK
APD	ASPHALT PAD	G/RCD	GAS BY RECORD DRAWING	SWC	SIDEWALK CULVERT
AR	ASPHALT RAMP	GA	GATE	T/RCD	TELEPHONE BY RECORD DRAWING
ARD	ASPHALT RUNDOWN	GM	GAS METER	TA	TOP OF ASPHALT
ASPH	ASPHALT	GPR	GAS PRESSURE REGULATOR	TC	TOP OF CURB
BGP	BASKETBALL GOAL POST	GR	GRAVEL	TCB	TRAFFIC CONTROL BOX
BLDG	BUILDING	GRC	GRATE COVERED	TCO	TOP OF CONCRETE
BOH	BUILDING OVERHANG	GS	GAS SERVICE	TR	TELEPHONE RISER
C	COMMUNICATION	GW	GUY WIRE	TS	TRAFFIC SIGN
C&G	CURB AND GUTTER	HDP	HIGH DENSITY POLYETHYLENE PIPE	TSG	TRAFFIC SIGNAL
CB	CONCRETE BARRIER	INV	INVERT	TST	TRAFFIC SIGNAL TRIPE PER
CC	CONCRETE CURB	MBX	METAL BOX	TW	TOP OF WALL
CCL	CONCRETE BUILDING COLUMN	MCV	METER CAN WITH VALVE	TYP	TYPICAL
CI	CAST IRON PIPE	MED	MEDIAN	UGE	UNDERGROUND ELECTRIC BY PAINT MARK
CL	CENTERLINE	MH	MANHOLE	UGT	UNDERGROUND TELEPHONE BY PAINT MARK
CLD	CENTERLINE OF DOOR	MHR	METAL HANDRAIL	VCP	VITRIFIED CLAY PIPE
CLDD	CENTERLINE OF DOUBLE DOOR	MLP	METAL LIGHT POLE	VG	VALLEY GUTTER
CLF	CHAINLINK FENCE	MR	METAL RAMP	VT	VERTICAL TIMBER
CMP	CORRUGATED METAL PIPE	MRS	METAL RAMP WITH STEPS	WCR	WHEELCHAIR RAMP
CMS	CONCRETE MOW STRIP	MS	METAL STEPS	WF	WATER FAUCET
CMU	CONCRETE MASONRY UNIT WALL	MWS	METAL AND WOOD STEPS	WGP	WOOD GUARD POST
CONC	CONCRETE	OHC(1)	OVERHEAD COMMUNICATION (# OF LINES)	WHB	WATER HOT BOX
CPD	CONCRETE PAD	OHE(1)	OVERHEAD ELECTRIC (# OF LINES)	WL	WATERLINE
CR	CONCRETE RAMP	OHM	OVERHEAD ELECTRIC MAST	WL/RCD	WATERLINE BY RECORD DRAWING
CRD	CONCRETE RUNDOWN	OSP	CONCRETE ENCASED OVERFLOW STAND PIPE	WMB	WATER METER BOX
CRW	CONCRETE RETAINING WALL	OTC	OVERFLOW THROUGH CURB	WPP	WOOD POWER POLE
CS	CONCRETE STEPS	PB	PARKING BUMPER	WPPC	WOOD POWER POLE WITH CONDUIT
CSHR	CONCRETE STEPS WITH METAL HANDRAIL	PG	PIPE GATE	WS	WOOD STEPS
CSW	CONCRETE SIDEWALK	PORT	PORTABLE	WSD	WOOD SHED
CTC	CONCRETE TRASH CAN	PT	PIPE TOWER	WV	WATER VAULT
CTV/RCD	CABLE TELEVISION BY RECORD DRAWING	PVC	POLYVINYL CHLORIDE PIPE	WVB	WATER VALVE BOX
CTVR	CABLE TELEVISION	RB	ROCK BASE	X-WALK	PAINTED CROSSWALK
CUB	CHIN-UP BARS	RCD	RECORD DRAWING		
CW	CONCRETE WALL	RD	ROOF DRAIN		CONIFEROUS TREE
DCO	DOUBLE SANITARY SEWER	RRT	RAILROAD TIE		DECIDUOUS TREE
DGA	DOUBLE GATE	SAS	SANITARY		
DOM	DOMESTIC	SAS/PM	SANITARY SEWER BY PAINT MARK		GROUP OF TREES
E/PM	ELECTRIC BY PAINT MARK	SB	SPEED BUMP		
E/RCD	ELECTRIC BY RECORD DRAWING	SCB	SCORE BOARD		SHRUB
EA	EDGE OF ASPHALT	SCT	SPRINKLER CONTROL TIMER		
ECB	ELECTRIC CABINET	SD	STORM DRAIN		UTILITY MARKER
EC	ELECTRIC CONDUIT	SD/RCD	STORM DRAIN BY RECORD DRAWING		
EPB	ELECTRIC PULLBOX	SDP	SERVICE DROP POLE		
ET	ELECTRIC TRANSFORMER	SGP	STEEL GUARD POST	+24.86	EXISTING FLOWLINE ELEVATION
EV	ELECTRIC VAULT	SHR	STEEL HANDRAIL		
EXIST	EXISTING	SP	STEEL POLE	5008	EXISTING CONTOUR
FF	FINISHED FLOOR	SQG	SQUARE GRATE		
FGP	FOOTBALL GOAL POST	SSVB	SMALL SPRINKLER VALVE BOX		EXISTING FIRE HYDRANT
FH	FIRE HYDRANT				EXISTING GATE VALVE

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01-11-2010
06-05-2009

MASTER DRAINAGE PLAN IMPROVEMENTS PHASE 2-B ALBUQUERQUE HIGH SCHOOL

REVISIONS

NO.	DATE	BY	
2	1209	J.G.M.	RECORD DRAWING

PROJECT No.	2007.183.7
DESIGNED BY	G.R.B.
DRAWN BY	J.Y.R.
APPROVED BY	J.G.M.

SHEET TITLE
DRAINAGE PLAN, CALCULATIONS, EXPANDED LEGEND VICINITY MAP, AND F.I.R.M.

C–302

SHEET 2 OF 14