

BOUNDARY TABLES

LINE	DIRECTION	DISTANCE
L1	N 80°07'58" W	34.64'
L2	S 80°07'58" E	54.74'
L3	N 26°35'33" E	52.68'

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA
C1	55.00'	39.42'	S 03°17'23" E	38.58'	41°04'02"
C2	25.00'	13.35'	S 08°31'44" E	13.19'	30°35'20"
C3	25.00'	21.99'	S 31°57'46" W	21.29'	50°23'40"
C4	55.00'	75.79'	S 17°41'00" W	69.93'	78°57'11"
C5	25.00'	43.63'	S 49°52'02" W	38.30'	100°00'00"
C6	350.00'	44.25'	N 76°30'41" W	44.22'	07°14'35"
C7	25.00'	22.47'	N 47°08'34" W	21.72'	51°29'39"
C8	55.00'	135.70'	S 87°55'26" W	103.81'	141°21'37"

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA
C9	55.00'	48.38'	N 18°25'54" W	46.83'	50°23'40"
C10	25.00'	21.99'	N 18°25'54" W	21.29'	50°23'40"
C11	20.00'	36.10'	N 58°28'39" E	31.40'	103°25'27"
C12	414.00'	74.59'	S 74°58'18" E	74.49'	10°19'21"
C13	25.00'	34.91'	S 40°07'58" E	32.14'	80°00'00"
C14	55.00'	86.39'	N 51°45'56" E	77.78'	90°00'00"
C15	55.00'	58.98'	S 52°30'50" E	56.19'	61°28'28"
C16	380.00'	110.93'	S 71°48'12" E	110.53'	16°43'32"

KEYED NOTES

- VACATED EASEMENT
- PRIVATE, COMMON ACCESS EASEMENT GRANTED BY DOCUMENT FILED 02-03-1988, BOOK MISC. 584-A, PAGES 668-670, DOC. #88 9548 TO BE VACATED BY THIS REQUEST
- EXISTING EASEMENTS
- 10' PNM AND COMMUNICATION EASEMENT GRANTED BY PLAT C32-81
 - PUBLIC STORM SEWER AND SANITARY SEWER EASEMENT GRANTED BY PLAT C34-128
 - 40' PRIVATE DRAINAGE AND PUBLIC SANITARY SEWER EASEMENT GRANTED BY PLAT C27-114
- EXISTING ACCESS CONTROL
- 75' ACCESS CONTROL, NO ACCESS FROM LOT 6B-2 TO UNIVERSITY BLVD. IS PERMITTED ACROSS THIS 75' REACH OF PROPERTY LINE PER PLAT C35-169
- NEW RIGHT-OF-WAY
- CITY OF ALBUQUERQUE PUBLIC RIGHT-OF-WAY TO BE GRANTED BY FORTHCOMING PLATTING ACTION
- NEW EASEMENT
- 10' PUBLIC UTILITY EASEMENT TO BE GRANTED BY FORTHCOMING PLATTING ACTION

PROJECT BENCHMARK

C.O.A. BENCHMARK 2-N16, A STANDARD BRASS CAP SET IN A CONCRETE MONUMENT STAMPED "2-N16" AND PROJECTING 0.1 FT. ABOVE THE GROUND NEAR THE SOUTHWEST CORNER OF THE ALBUQUERQUE INTERNATIONAL AIRPORT ELEVATION = 5304.88 (NGVD 1929) DESTROYED, REFERENCED BY PREVIOUS SURVEYS

T.B.M.

- T.B.M. #1
CENTER LINE OF GRATE OF A SDMH NORTH OF THE NORTH PROPERTY LINE OF LOT 6B-2 AS SHOWN ON DRAWING ELEVATION OBTAINED FROM PREVIOUS TOPOGRAPHIC SURVEY ELEVATION = 5191.78
- T.B.M. #2
A "T" CUT IN IN THE CONCRETE TRANSFORMER PAD NEAR THE NE PROPERTY CORNER. ELEVATION = 5196.41 FEET
- T.B.M. #3
A "T" CUT IN THE CORNER OF THE CONCRETE SIDEWALK EAST OF THE SE CORNER OF LOT 8B. ELEVATION = 5225.84 FEET

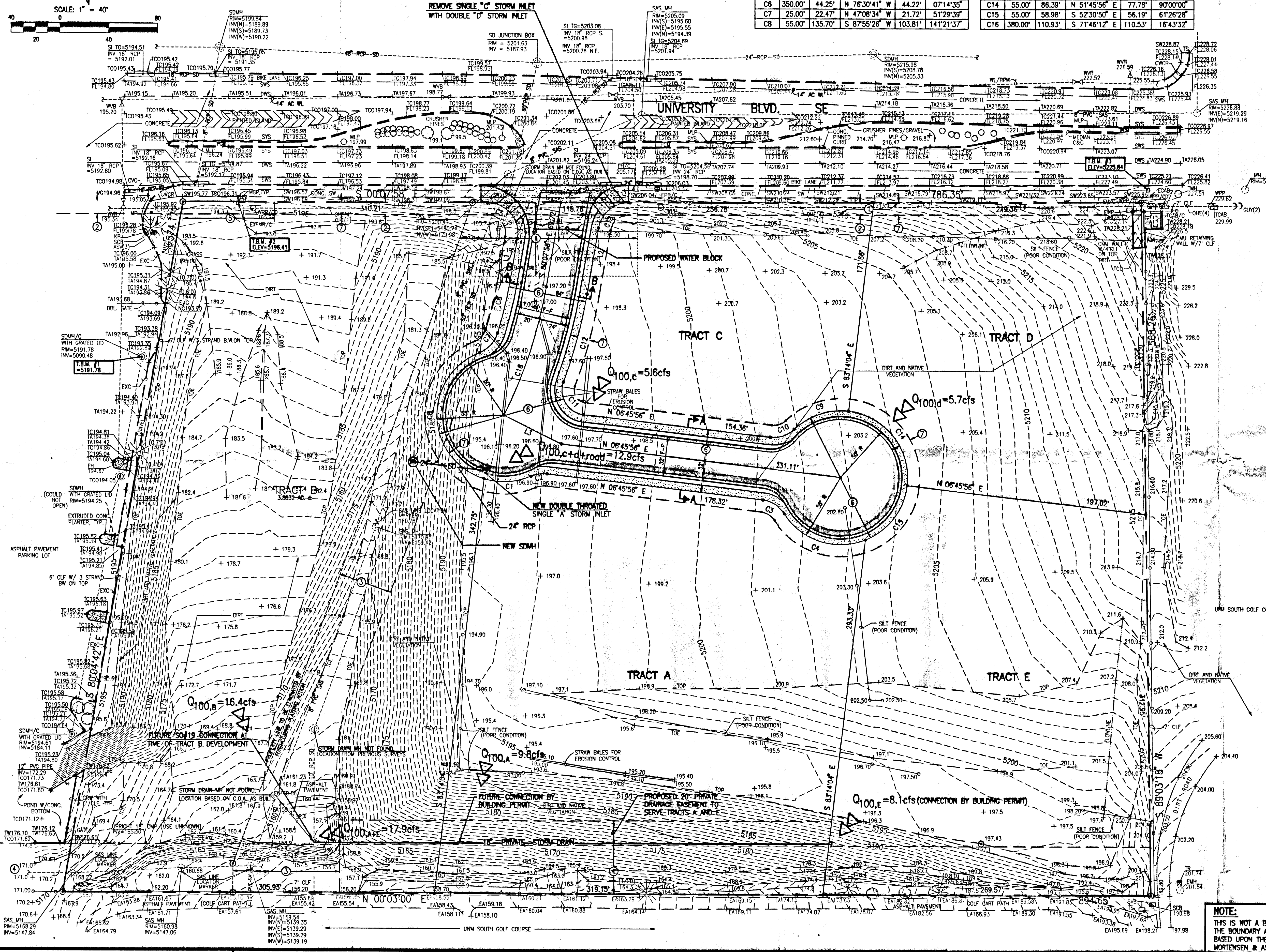
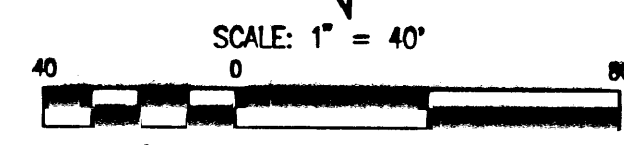
LEGEND

- ASV ANTI-SIPHON VALVE
- C&G CURB AND GUTTER
- CLF CHAINLINK FENCE
- CMU CONCRETE MASONRY UNIT
- CPC CONCRETE PINNED CURBS
- CRW CONCRETE RETAINING WALL
- CWCR CONCRETE WHEELCHAIR RAMP
- DWS DOUBLE WHITE STRIPE
- E/G EDGE OF GRASS
- EA EDGE OF ASPHALT
- EMH ELECTRIC MANHOLE
- EMP ELECTRIC METER PANEL
- EPB/C ELECTRIC PULLBOX ON CONCRETE
- EV/C ELECTRIC VAULT ON CONCRETE
- EXC EXTRUDED CURB
- EXFM/R/C ELECTRIC TRANSFORMER ON CONCRETE
- FH FIRE HYDRANT
- FH/C FIRE HYDRANT ON CONCRETE
- FL FLOWLINE
- INV INVERT ELEVATION
- KP KEY PAD
- MLP METAL LIGHT POLE
- OHE OVERHEAD ELECTRIC (# OF LINES)
- OHT OVERHEAD TELEPHONE (# OF LINES)
- PCW PATTERNEDED CONCRETE MEDIAN
- SAS SANITARY SEWER MANHOLE
- SCB SPRINKLER CONTROL BOX
- SDMH STORM DRAIN MANHOLE
- SDMH/C STORM DRAIN MANHOLE IN CONCRETE
- SI STORM INLET
- SVB SPRINKLER VALVE BOX
- SW SIDEWALK
- SWS SINGLE WHITE STRIPE
- SYS SINGLE YELLOW STRIPE
- TA TOP OF ASPHALT
- TC TOP OF CURB
- TCAB TELEPHONE CABINET
- TCO TELEPHONE CONDUIT
- TG TOP OF CONCRETE
- TG TOP OF GRATE
- TMH TELEPHONE MANHOLE
- TR TELEPHONE RISER
- TS TRAFFIC SIGN
- W/W/WP/CD WITH/WATER LINE BY PAINT MARK/WOOD POWER POLE WITH CONDUIT/WOOD POWER POLE WITH TELEPHONE CONDUIT/WOOD SIGN/WATER VALVE BOX
- W+ 203.2 EXISTING SPOT ELEVATION
- W- EXISTING CONTOUR
- W* EXISTING SHRUB
- (0.70) EXISTING DECIDUOUS TREE (CALIPER SIZE)

NOTE: THIS IS NOT A BOUNDARY SURVEY; DATA IS SHOWN FOR ORIENTATION ONLY. THE BOUNDARY AND TOPOGRAPHIC INFORMATION DEPICTED BY THIS PLAN IS BASED UPON THE BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED BY JEFF MORTENSEN & ASSOCIATES, INC., NMPS NO. 11184, DATED 08-24-2005.

RECEIVED JUN 20 2006 HYDROLOGY SECTION

06 19 2006



Plot Date: 06-19-2006
Plot Name: 5041.MXD
Plot Time: 1:53 pm

JM JEFF MORTENSEN & ASSOCIATES, INC.
6810-B MIDWAY PARK BLVD., N.E.
ALBUQUERQUE, N.M. 87109
ENGINEERS & SURVEYORS 0002-245-4280
FAX: 505-345-4254 (ESTABLISHED 1977)

MASTER DRAINAGE PLAN
LOTS 6B-2 and 8B, AIRPORT TECHNICAL CENTER

DESIGNED BY	JGR/FJA	DATE	BY	REVISIONS	JOB NO.
DRAWN BY	J.P.	06-2006			2005.041.4
APPROVED BY	JGR				1 OF 2

CONCEPTUAL DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THIS PROJECT IS LOCATED AT THE NORTHWEST CORNER OF UNIVERSITY BLVD. AND CLARK CARR RD. AT PRESENT THE SITE IS AN EXISTING TWO LOT UNDEVELOPED SUBDIVISION THAT IS APPROXIMATELY 11 ACRES. IT IS PROPOSED TO SUBDIVIDE THE TWO LOTS INTO FIVE TRACTS FOR HEAVY MANUFACTURING USE. THE PROPOSED DEVELOPMENT IS CONSISTENT WITH THE PRE-DESIGN MEETING CONDUCTED WITH THE CITY ON OCTOBER 24, 2005.

THIS CONCEPTUAL DRAINAGE PLAN SUBMITTAL IS MADE IN SUPPORT OF A PRELIMINARY AND FINAL PLAN FOR A FIVE LOT SUBDIVISION AND SHALL SERVE AS A MASTER DRAINAGE PLAN FOR THE DEVELOPMENT OF THE INDIVIDUAL TRACTS.

II. PROJECT DESCRIPTION

AS SHOWN BY THE VICINITY MAP, THE SITE IS LOCATED AT THE NORTHWEST CORNER OF UNIVERSITY BLVD. AND CLARK CARR RD. THE CURRENT LEGAL DESCRIPTION IS LOTS 6B-2 AND 8B, AIRPORT TECHNICAL CENTER. THE PROPERTY IS PRESENTLY UNDEVELOPED. AS INDICATED BY PANEL 342 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. THE SUBJECT SITE DOES NOT RECEIVE ANY OFFSITE FLOWS FROM THE EAST. ALL UPSTREAM FLOWS ARE INTERCEPTED BY UNIVERSITY BLVD. AND CONVEYED TO AN EXISTING 60" STORM DRAIN THAT IS LOCATED ALONG THE NORTH PROPERTY LINE OF TRACT 8B. THE DEVELOPED RUNOFF FROM THE PROPOSED FIVE TRACT SUBDIVISION WILL DRAIN INTO THE 60" STORM DRAIN.

III. BACKGROUND DOCUMENTS & RESEARCH

A PRE-DESIGN MEETING WAS CONDUCTED WITH THE CITY ON OCTOBER 24, 2005 WHICH CONCLUDED WITH THE REQUIREMENT OF A CONCEPTUAL DRAINAGE PLAN AS A CONDITION OF PRELIMINARY AND FINAL PLAN APPROVAL. THE CONCEPTUAL DRAINAGE PLAN MUST ADDRESS PROPOSED BASINS, FLOW RATES, REQUIRED EASEMENTS AND STORM DRAIN SIZES.

IV. EXISTING CONDITIONS

AT PRESENT, THE SITE IS UNDEVELOPED. EXISTING CONDITIONS ARE ILLUSTRATED BY THE CONCEPTUAL DRAINAGE PLAN. AT PRESENT, THE MAJORITY OF SITE DRAINS IN A NORTHWESTERLY DIRECTION TOWARDS THE EXISTING 60" STORM DRAIN WHICH IS LOCATED IN THE BOTTOM OF AN OLD ARROYO. THIS ARROYO IS BERMED AT THE WEST END WHICH CONTAINS THE EXISTING RUNOFF FROM LOTS 6B-2 & 8B. THE SITE WAS PREVIOUSLY MASS GRADED AND REMNANTS OF SILT FENCES AND HAY BALES ARE STILL VISIBLE ON SITE.

V. DEVELOPED CONDITIONS

THE PROPOSED DEVELOPMENT CONSISTS OF SUBDIVIDING TWO LOTS INTO FIVE TRACTS WITH A PRIVATE ROADWAY, PUBLIC WATER, PUBLIC SEWER AND PRIVATE STORM DRAINS. THE DRAINAGE PATTERN FOR EACH TRACT ARE AS FOLLOWS:

- TRACTS A & E (MINUS THE ROADWAY PORTION) WILL DRAIN TO THE PROPOSED 18" PRIVATE STORM DRAIN TO BE CONSTRUCTED ALONG THE WEST BOUNDARY OF THE EXISTING 40' PRIVATE DRAINAGE AND PUBLIC SANITARY SEWER EASEMENT GRANTED BY PLAT C27-114.
- TRACTS C & D WILL DRAIN DIRECTLY TO THE PROPOSED PRIVATE ROAD THEN INTO A CATCH BASIN LOCATED AT THE NORTH END OF THE PRIVATE ROAD.
- TRACT B (MINUS THE ROADWAY PORTION) WILL DRAIN DIRECTLY INTO THE 60" STORM DRAIN WITHIN TRACT B.
- THE SINGLE A CATCH BASIN WITH A DOUBLE THROAT WILL BE CONNECTED DIRECTLY TO THE 60" STORM DRAIN. THE FLOWS INTERCEPTED BY THE CATCH BASIN IS 12.9 CFS.

VI. GRADING PLAN

THE CONCEPTUAL DRAINAGE PLAN SHOWS 1.) EXISTING GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS, 2.) THE LIMIT AND CHARACTER OF THE EXISTING IMPROVEMENTS, 3.) THE LIMIT AND CHARACTER OF THE PROPOSED IMPROVEMENTS. THE PROPOSED DEVELOPMENT WILL NOT HAVE AN ADVERSE IMPACT ON DOWNSTREAM CONDITIONS.

VII. CALCULATIONS

CALCULATIONS ANALYZING THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT HAVE BEEN PREPARED FOR THIS PROJECT. THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS, AS SET FORTH IN THE REVISION OF SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL VOLUME 2, DESIGN CRITERIA, DATED JANUARY, 1993, HAS BEEN USED TO QUANTIFY THE PEAK RATE OF DISCHARGE AND VOLUME OF RUNOFF GENERATED. AS SHOWN BY THE RESULTS PRESENTED HEREON, THERE WILL BE AN INCREASE IN PEAK DISCHARGE AND RUNOFF VOLUME ASSOCIATED WITH THE PROPOSED DEVELOPMENT. THE RUNOFF FROM THIS DEVELOPMENT CAN BE ACCOMMODATED IN THE 60" STORM DRAIN.

MANNING'S EQUATION WAS USED TO DETERMINE THE PIPE SIZE FOR THE STORM DRAIN LOCATED ALONG THE EAST BOUNDARY OF THE 40' PRIVATE DRAINAGE AND PUBLIC SANITARY SEWER EASEMENT GRANTED BY PLAT C27-114.

VIII. CONCLUSION

THE DEVELOPMENT OF TRACTS A,B,C,D, & E AS PROPOSED BY THIS PLAN IS APPROPRIATE FOR THE FOLLOWING REASONS:

- THE 60" STORM DRAIN CAN ACCOMMODATE THE PROPOSED INCREASED RUNOFF
- THE SUBJECT SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE
- NO ADVERSE IMPACT ON DOWNSTREAM CAPACITY OR DOWNSTREAM PROPERTIES
- THE PROPOSED DEVELOPMENT WILL MINIMIZE ANY SOIL EROSION FROM THE SITE
- THE PLAN IS CONSISTENT WITH THE REQUIREMENTS OF THE PRE-DESIGN MEETING

CALCULATIONS

I. SITE CHARACTERISTICS

- PRECIPITATION ZONE = 2
- $P_{6,100} = P_{360} = 2.35$ INCHES
- TOTAL AREA (A_T) = 476,111 SF/10.93 ACRES
- EXISTING LAND TREATMENT TABLE

EXISTING LAND TREATMENT							
TREATMENTS	AREA $A_{(SF/AC)}$	%	AREA $B_{(SF/AC)}$	%	AREA $C_{(SF/AC)}$	%	AREA $E_{(SF/AC)}$
A							
B							
C	114,563/2.63	100	169,013/3.88	100	55,321/1.27	100	80,586/1.85
D							
		100		100		100	

e. DEVELOPED LAND TREATMENT

DEVELOPED LAND TREATMENT							
TREATMENTS	AREA $A_{(SF/AC)}$	%	AREA $B_{(SF/AC)}$	%	AREA $C_{(SF/AC)}$	%	AREA $E_{(SF/AC)}$
A							
B	6,534/0.15	6					
C	36,590/0.84	32	33,977/0.78	20	10,890/0.25	20	11,326/0.26
D	63,162/1.45	55	129,373/2.97	77	44,431/1.02	80	45,302/1.04
ROADWAY	8,276/0.19	7	5,663/0.13	3			436/0.01
	114,563/2.63	100	169,013/3.88	100	55,321/1.27	100	80,586/1.85

II. DEVELOPED CONDITION TABLE

MASTER PLAN BASIN ANALYSIS							
WEIGHTED E (E_w) = $(E_A A + E_B B + E_C C + E_D D) / A_T$							
$V_{360} = E_w \cdot A_T / 12$							
TOTAL = $Q_p = Q_{PA} A + Q_{PB} B = Q_{PC} C + Q_{PD} D$							
BASINS	AT (SF/AC)	AB (SF/AC)	AC (SF/AC)	AD (SF/AC)	V100(Ac-ft)	Q100 (CFS)	Q100(CFS) CUM
TRACT A	106,286/2.44	6,534/0.15	36,590/0.84	63,162/1.45	0.35	9.8	9.8
ROADWAY-S	8,712/0.20		8,712	0.20	0.03	1.0	10.8
TRACT B	163,350/3.75		33,977/0.78	129,373/2.97	0.60	16.4	27.2
ROADWAY-E	5,663/0.13		5,663/0.13	0.02	0.6	27.8	
TRACT C	55,321/1.27		10,890/0.25	44,431/1.02	0.20	5.6	33.4
TRACT D	56,628/1.30		11,326/0.26	45,302/1.04	0.21	5.7	39.1
TRACT E	80,150/1.84		16,117/0.37	64,033/1.47	0.29	8.1	47.2
TOTAL	476,111/10.93	6,534/0.15	108,900/2.5	360,677/8.28	1.70	47.2	

III. COMPARISON TABLE

COMPARISON					
	TRACT A	TRACT B	TRACT C	TRACT D	TRACT E
EXISTING VOLUME (CF/AC)	10,890/0.25	16,117/0.37	5,227/0.12	5,227/0.12	7,405/0.17
DEVELOPED VOLUME (CF/AC)	16,553/0.38	27,007/0.62	8,712/0.20	9,148/0.21	12,632/0.29
Δ VOLUME $A_{(CF/AC)}$	5,663/0.13	10,890/0.25	3,485/0.08	3,920/0.09	5,227/0.12
EXISTING Q_p cfs	8.3	12.2	4.0	4.1	5.8
DEVELOPED Q_p cfs	10.7	17.0	5.6	5.7	8.1
ΔQ_p cfs	2.4	4.8	1.6	1.6	2.3

IV. STORM DRAIN SIZE (PRIVATE)

$Q_p = 0.463/N D^{8/13} S^{1/2}$ (EQ. 6.28b, BRATER & KING)

$Q_p = 9.8+8.1 = 18$ CFS

$N = 0.013$

$S = 0.07$

$D = 16$ INCHES

USE AN 18 INCH RCP

V. TOTAL RUNOFF TO CATCH BASIN IN ROADWAY

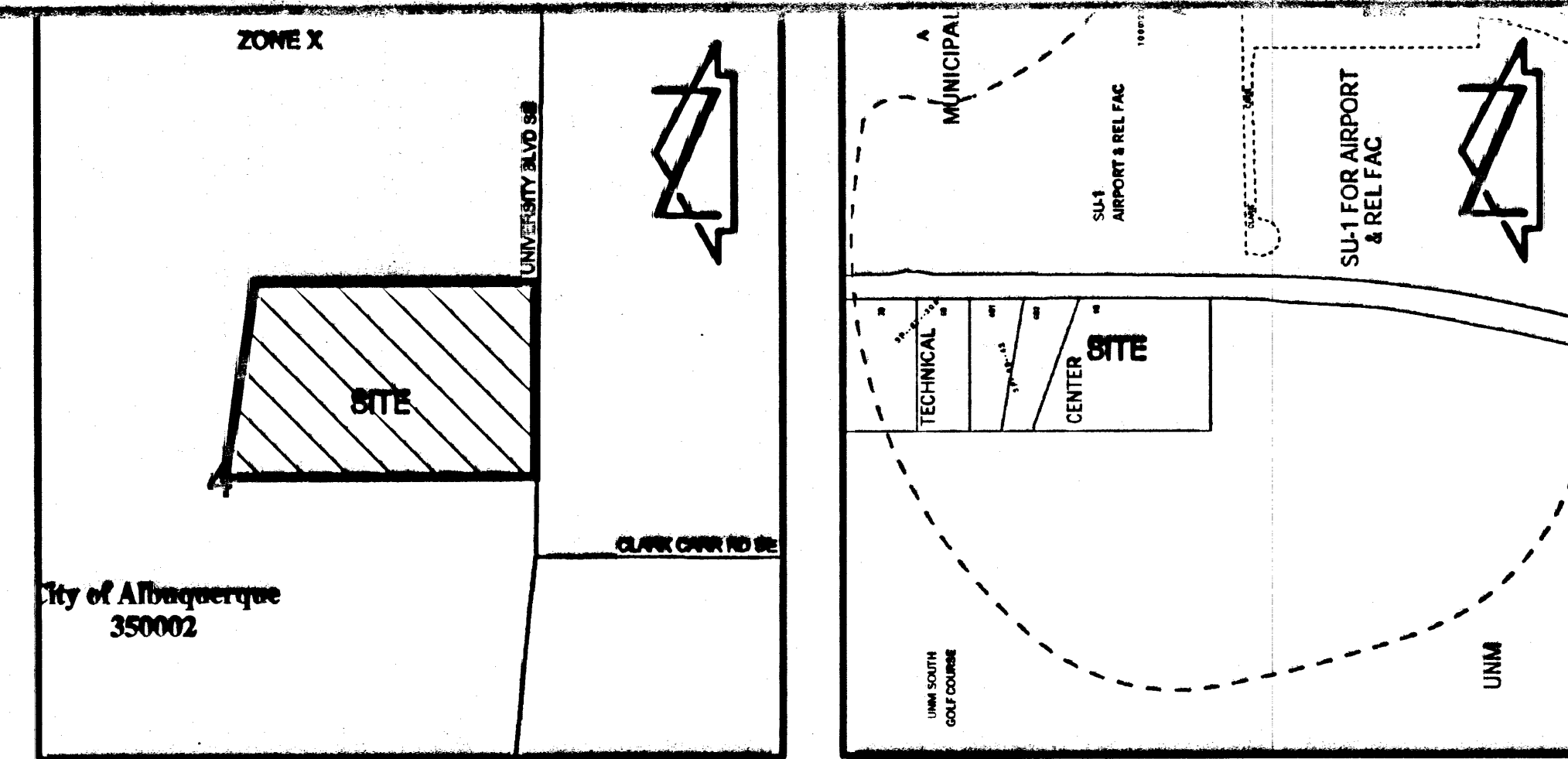
(TRACT C + TRACT D + ROADWAY-S + ROADWAY-E)

ROADWAY $V_{360} = 126,324$ CUBIC FEET/2.9 ACRE-FEET

ROADWAY $Q_p = 12.9$ CFS

EROSION CONTROL MEASURES:

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



F.I.R.M.

SCALE: 1" = 500'

PANEL 342 OF 825

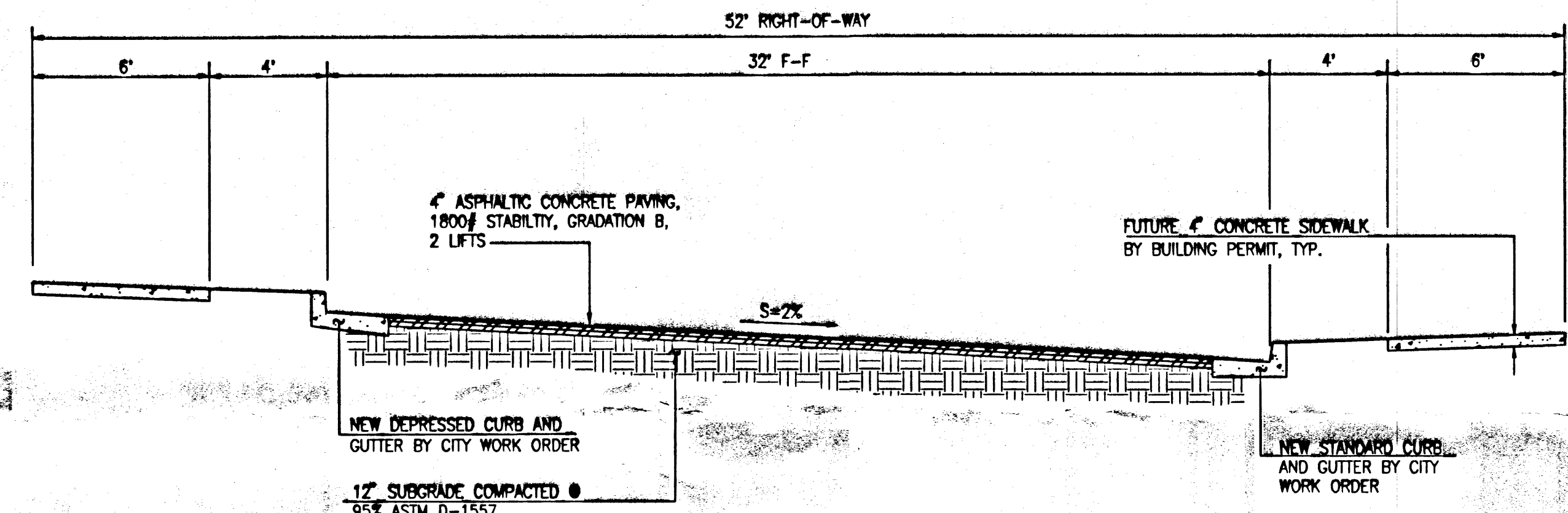
LEGAL DESCRIPTION:

TRACTS 6B-2 AND 8B, AIRPORT TECHNICAL CENTER

VICINITY MAP

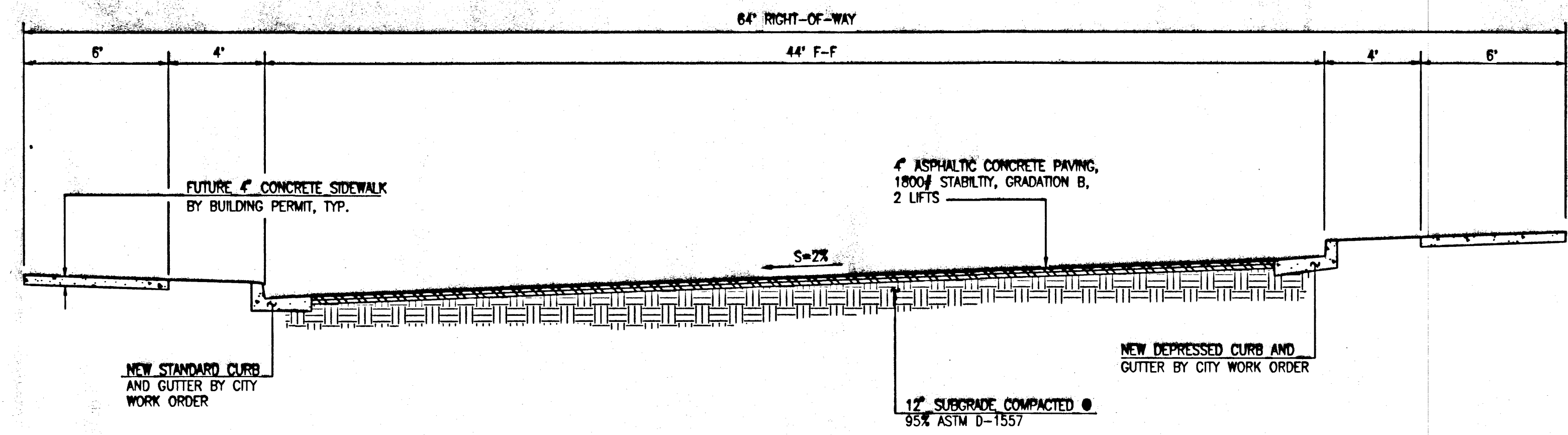
SCALE: 1" = 750'

N-15



SECTION A-A

SCALE: 1" = 4'-0"



SECTION B-B

SCALE: 1" = 4'-0"

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 Plot Time: 2:06 pm



JEFF MORTENSON & ASSOCIATES, INC.
 6805-B HIGHWAY PARK BLVD. N.E.
 ALBUQUERQUE, N.M. 87109
 ENGINEERS & SURVEYORS (SINCE 1945-1977)
 FAX 505 345-4254

DRAINAGE PLAN and CALCULATIONS
 MASTER DRAINAGE PLAN
 LOTS 6B-2 and 8B, AIRPORT TECHNICAL CENTER

DESIGNED BY	J.G.M./E.J.A.	NO.	DATE	BY	REVISIONS	JOB NO.
DRAWN BY	J.P.					2005.041.4
APPROVED BY	J.G.M.					DATE 06-2006
						SHEET 2 OF 2

