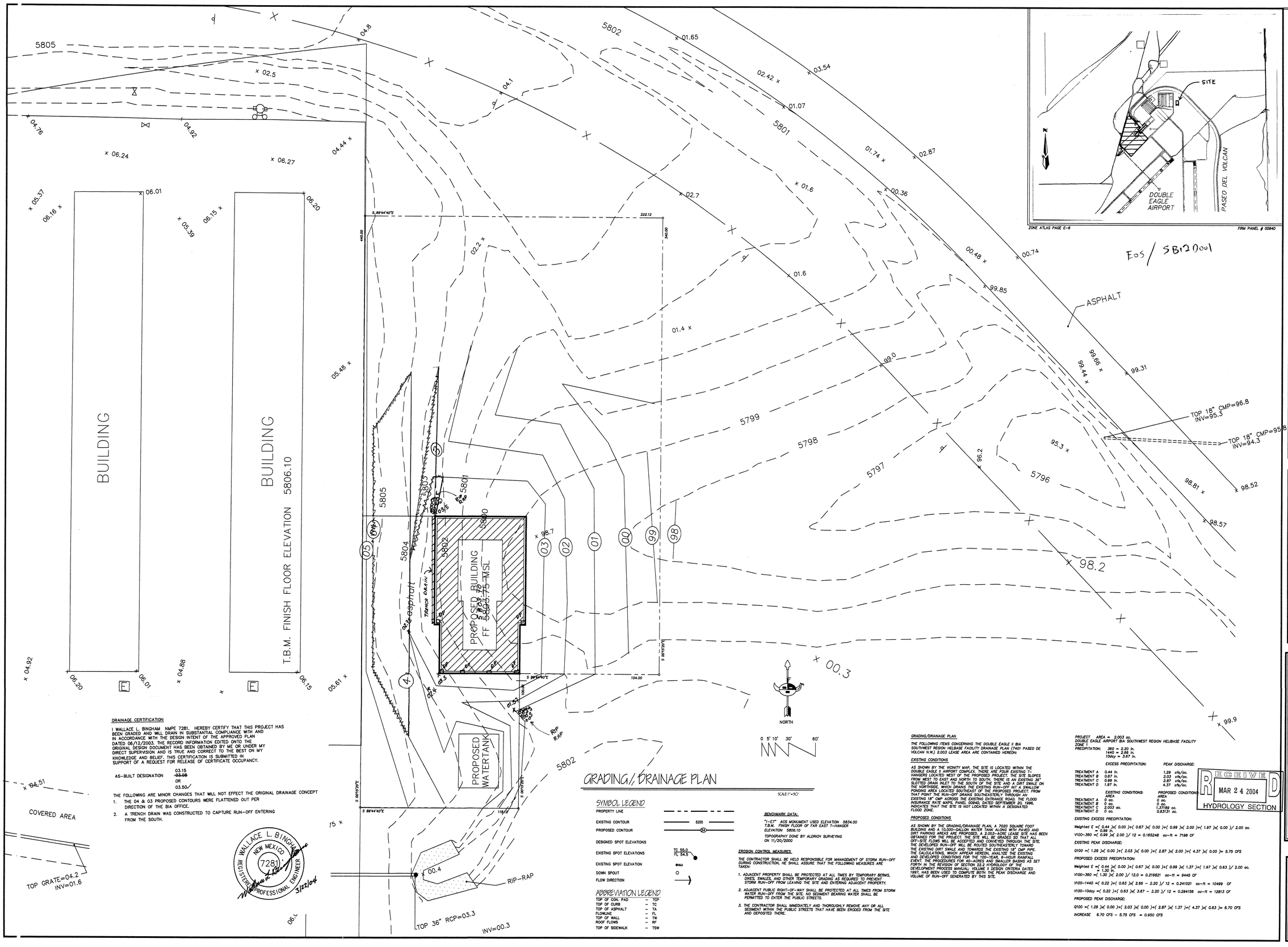

E05 / SB120001

WALLACE L. BINGHAM
NEW MEXICO
7281
REGISTERED PROFESSIONAL ENGINEER
6/12/03

JOB NO: XXXXXXXXXX
May 2003
REVISIONS

GRADING & DRAINAGE PLAN

Sheet Title

Drawn By: H Hood & B.M.

Checked By: B.M. & W.B.

Project Name

PROPOSED BUILDING FOR
SOUTHWEST REGION HELIBASE FACILITY AT
DOUBLE EAGLE AIRPORT
7401 PASEO DE VOLCAN N.W.
ALBUQUERQUE, NEW MEXICO 87121

SHEET NO.

GD

RECEIVED
MAR 24 2004
HYDROLOGY SECTION

DRAINAGE CERTIFICATION

I WALLACE L. BINGHAM NMPE 7281. HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 06/12/2003. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY ME OR UNDER MY DIRECT SUPERVISION AND IS TRUE AND CORRECT TO THE BEST ON MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR RELEASE OF CERTIFICATE OCCUPANCY.

AS-BUILT DESIGNATION 03.15 ~~03.08~~ OR 03.50

THE FOLLOWING ARE MINOR CHANGES THAT WILL NOT EFFECT THE ORIGINAL DRAINAGE CONCEPT

1. THE 04 & 03 PROPOSED CONTOURS WERE FLATTENED OUT PER DIRECTION OF THE BIA OFFICE.
2. A TRENCH DRAIN WAS CONSTRUCTED TO CAPTURE RUN-OFF ENTERING FROM THE SOUTH.

WALLACE L. BINGHAM NEW MEXICO 7281 REGISTERED PROFESSIONAL ENGINEER 3/22/04

GRADING // DRAINAGE PLAN

SYMBOL LEGEND

PROPERTY LINE
EXISTING CONTOUR 5255
PROPOSED CONTOUR 52
DESIGNED SPOT ELEVATIONS
EXISTING SPOT ELEVATIONS TC 55.0 FL 54.5
EXISTING SPOT ELEVATION ⊕155
DOWN SPOUT
FLOW DIRECTION

ABBREVIATION LEGEND

TOP OF CON. PAD	–	TCP
TOP OF CURB	–	TC
TOP OF ASPHALT	–	TA
FLOWLINE	–	FL
TOP OF WALL	–	TW
ROOF FLOWS	–	RF
TOP OF SIDEWALK	–	TSW

BENCHMARK DATA:

"I-27" ACS MONUMENT USED ELEVATION 5834.00
T.B.M. FINISH FLOOR OF FAR EAST T-HANGER ELEVATION 5806.10

TOPOGRAPHY DONE BY ALDRICH SURVEYING ON 11/20/2000

EROSION CONTROL MEASURES:

THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR MANAGEMENT OF STORM RUN-OFF DURING CONSTRUCTION, HE SHALL ASSURE THAT THE FOLLOWING MEASURES ARE TAKEN:

1. ADJACENT PROPERTY SHALL BE PROTECTED AT ALL TIMES BY TEMPORARY BERMS, DIKES, SWALES, AND OTHER TEMPORARY GRADING AS REQUIRED TO PREVENT STORM RUN-OFF FROM LEAVING THE SITE AND ENTERING ADJACENT PROPERTY.
2. ADJACENT PUBLIC RIGHT-OF-WAY SHALL BE PROTECTED AT ALL TIMES FROM STORM WATER RUN-OFF FROM THE SITE. NO SEDIMENT BEARING WATER SHALL BE PERMITTED TO ENTER THE PUBLIC STREETS.
3. THE CONTRACTOR SHALL IMMEDIATELY AND THOROUGHLY REMOVE ANY OR ALL SEDIMENT WITHIN THE PUBLIC STREETS THAT HAVE BEEN ERODED FROM THE SITE AND DEPOSITED THERE.

GRADING/DRAINAGE PLAN

THE FOLLOWING ITEMS CONCERNING THE DOUBLE EAGLE II BIA SOUTHWEST REGION HELIBASE FACILITY DRAINAGE PLAN (7401 PASEO DE VOLCAN N.W.) 2.003 LEASE AREA ARE CONTAINED HEREON:

EXISTING CONDITIONS

AS SHOWN BY THE VICINITY MAP, THE SITE IS LOCATED WITHIN THE DOUBLE EAGLE II AIRPORT COMPLEX. THERE ARE FOUR EXISTING T-HANGERS LOCATED WEST OF THE PROPOSED PROJECT. THE SITE SLOPES FROM WEST TO EAST AND NORTH TO SOUTH. THERE IS AN EXISTING 30' SLOTTED DRAIN INLET TO THE SOUTH OF THE SITE AND A DIRT SWALE ON THE NORTHSIDE, WHICH DRAINS THE EXISTING RUN-OFF INT A SWALLOW PONDING AREA LOCATED SOUTHEAST OF THE PROPOSED PROJECT. FROM THAT POINT THE RUN-OFF DRAINS SOUTHEASTERLY THROUGH AN EXISTING 18" CMP ACROSS THE EXISTING ENTRANCE ROAD. THE FLOOD INSURANCE RATE MAPS, PANEL 00940, DATED SEPTEMBER 20, 1996, INDICATES THAT THE SITE IS NOT LOCATED WITHIN A DESIGNATED FLOOD ZONE.

PROPOSED CONDITIONS

AS SHOWN BY THE GRADING/DRAINAGE PLAN, A 7020 SQUARE FOOT BUILDING AND A 10,000-GALLON WATER TANK ALONG WITH PAVED AND DIRT PARKING AREAS ARE PROPOSED. A 2.003-ACRE LEASE AREA HAS BEEN OBTAINED FOR THE PROJECT. THE SITE WILL BE GRADED SO THAT ALL OFF-SITE FLOWS WILL BE ACCEPTED AND CONVEYED THROUGH THE SITE. THE DEVELOPED RUN-OFF WILL BE ROUTED SOUTHEASTERLY TOWARD THE EXISTING DRY SWALE AND TOWARDS THE EXISTING 18" CMP PIPE. THE CALCULATIONS, WHICH APPEAR HEREON, ANALYZE THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT. THE PROCEDURES FOR 40-ACRES AND SMALLER BASINS AS SET FORTH IN THE REVISION OF SECTION 22.2 HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL; VOLUME II DESIGN CRITERIA DATED 1997, HAS BEEN USED TO COMPUTE BOTH THE PEAK DISCHARGE AND VOLUME OF RUN-OFF GENERATED BY THIS SITE.

PROJECT AREA = 2.003 ac.
DOUBLE EAGLE AIRPORT BIA SOUTHWEST REGION HELIBASE FACILITY
ZONE 1
PRECIPITATION: 360 = 2.20 in.
1440 = 2.88 in.
10day = 3.67 in.

	EXCESS PRECIPITATION:	PEAK DISCHARGE:
TREATMENT A	0.44 in.	1.29 cfs/ac.
TREATMENT B	0.67 in.	2.03 cfs/ac.
TREATMENT C	0.99 in.	2.87 cfs/ac.
TREATMENT D	1.97 in.	4.37 cfs/ac.

	EXISTING CONDITIONS: AREA	PROPOSED CONDITIONS: AREA
TREATMENT A	0 ac.	0 ac.
TREATMENT B	0 ac.	0 ac.
TREATMENT C	2.003 ac.	1.37189 ac.
TREATMENT D	0 ac.	0.63131 ac.

EXISTING EXCESS PRECIPITATION:

Weighted E =(0.44)x(0.00)+(0.67)x(0.00)+(0.99)x(2.00)+(1.97)x(0.00)/ 2.00 ac.
= 0.99 in.
V100-360 =(0.99)x(2.00)/ 12 = 0.165248 ac-ft = 7198 CF

EXISTING PEAK DISCHARGE:

Q100 =(1.29)x(0.00)+(2.03)x(0.00)+(2.87)x(2.00)+(4.37)x(0.00)= 5.75 CFS

PROPOSED EXCESS PRECIPITATION:

Weighted E =(0.44)x(0.00)+(0.67)x(0.00)+(0.99)x(1.37)+(1.97)x(0.63)/ 2.00 ac.
= 1.30 in.
V100-360 =(1.30)x(2.00)/ 12.0 = 0.216821 ac-ft = 9445 CF
V100-1440 =(0.22)x(0.63)x(2.65 – 2.20)/ 12 = 0.241021 ac-ft = 10499 CF
V100-10day =(0.22)x(0.63)x(3.67 – 2.20)/ 12 = 0.294156 ac-ft = 12813 CF

PROPOSED PEAK DISCHARGE:

Q100 =(1.29)x(0.00)+(2.03)x(0.00)+(2.87)x(1.37)+(4.37)x(0.63)= 6.70 CFS

INCREASE 6.70 CFS – 5.75 CFS = 0.950 CFS