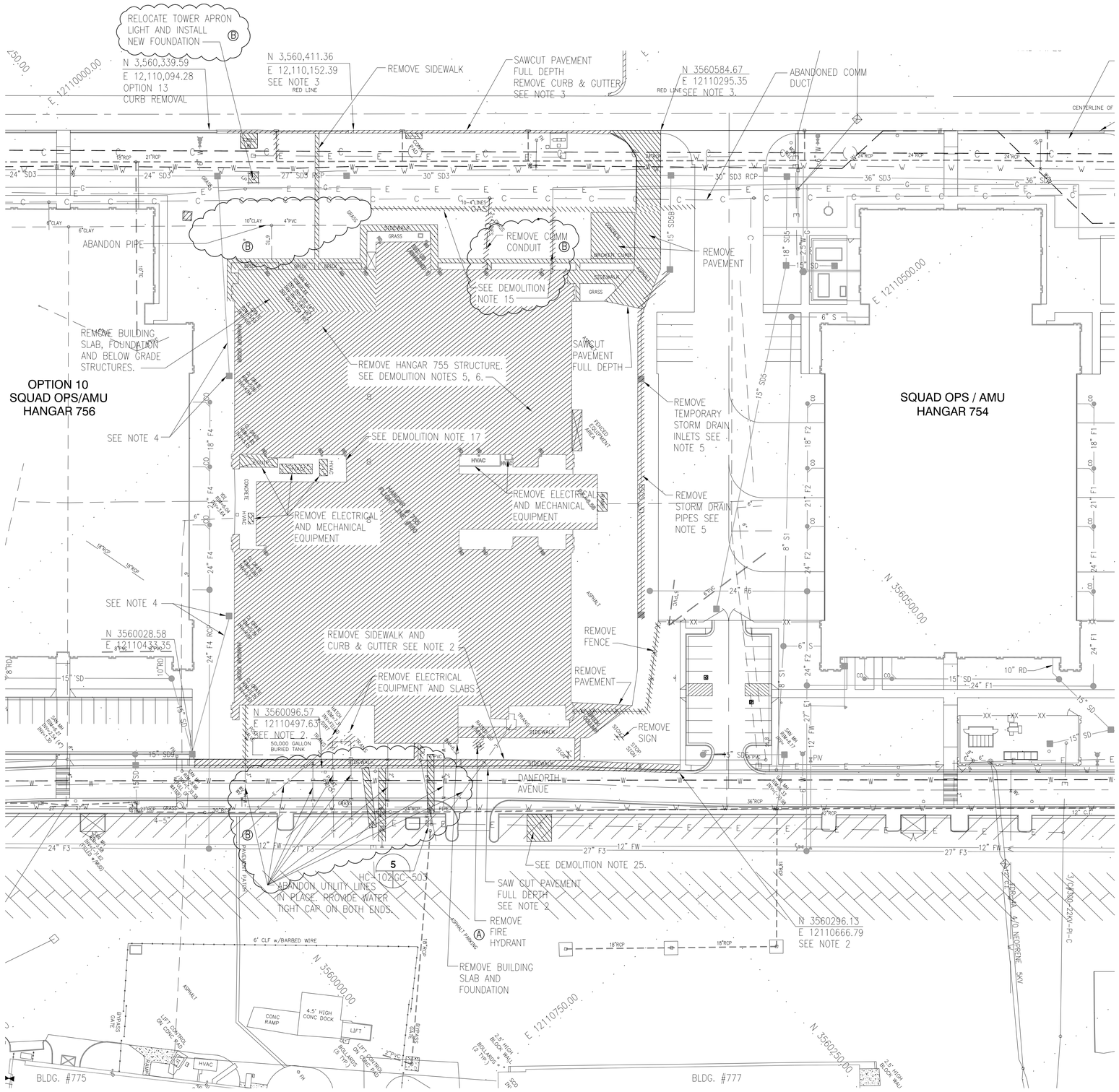


NOTES:

1. SEE DEMOLITION NOTES ON HC-100.
2. SIDEWALK AND CURB AND GUTTER ALONG NORTH SIDE OF DANFORTH AVENUE BETWEEN POINTS NOTED SHALL BE REMOVED UNDER OPTION 16.
3. CURB AND GUTTER ALONG SOUTH SIDE OF FLIGHTLINE ROAD BETWEEN POINTS NOTED SHALL BE REMOVED UNDER OPTION 16.
4. REMOVE TEMPORARY STORM DRAIN PIPES AND INLETS.
5. REMOVE TEMPORARY STORM DRAINS, PIPES, AND INLET UNDER BID ITEM OPTION 16.

SITE DEMOLITION PLAN - OPTION 13

40 0 40 80
SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV	DATE	DESCRIPTION	BY	APP
A	11/20/01	REMOVED EXISTING FIRE HYDRANT	RRB	ERK
B	10/24/01	REVISED DEMO HATCHING, ADDED AND REVISED NOTES.	RRB	ERK
C	01/24/01	REISSUED PER AMENDMENT 9	RRB	ERK

DESIGNED: RRB
CHECKED: RRM
DATE: OCT 2001
DRAWN: RSH
SUBMITTED: ERK
SCALE: AS SHOWN
PROJECT NO. 711-18-13
NORFOLK DISTRICT FILE NO. DACA65-01-R-0025
DRAWING NO. 711-18-13
SPECIFICATION NO. DACA65-01-R-0025
Last worked on: 11-27-01
File name: \DR342\CIVIL\ HC-102DM.DWG
Plot scale: 1=40

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

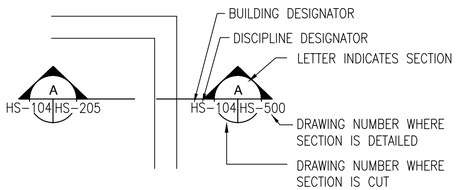
BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA

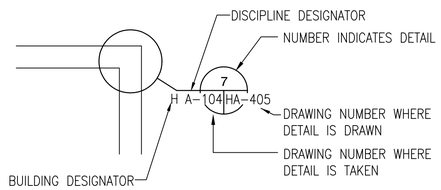
SQUADRON OPERATIONS/AMU HANGAR
SITE DEMOLITION PLAN
OPTION 13

HC-102
SHEET 15 OF 769

SECTION AND DETAIL IDENTIFICATION



SECTION IDENTIFICATION



BUILDING DESIGNATOR

H= SQUAD OPS/AMU HANGAR
L= LOW OBSERVABLE/COMPOSITE REPAIR FACILITY
O= BASE OPERATIONS
V= AIRFIELD LIGHTING VAULT
P= FIRE PUMP HOUSE
G= GENERAL

DISCIPLINE DESIGNATOR

A= ARICHETECTURAL
C= CIVIL
L= LANDSCAPING
E= ELECTRICAL
M= MECHANICAL HVAC
P= MECHANICAL PLUMBING
S= STRUCTURAL

DETAIL IDENTIFICATION

LEGENDS

LEGEND

ASPHALT PAVEMENT 12 HC-001GC-500

AIRFIELD CONCRETE PAVEMENT 10 HC-001GC-500

VEHICULAR CONCRETE PAVEMENT 11 HC-001GC500

PAVEMENT/BUILDING TO BE REMOVED

TEMPORARY ASPHALT CONSTRUCTION ENTRANCE WITH FOD SHAKER 7 GC502 HC-002 HC-003 HC-004

AGGREGATE SURFACE YARD 7 OC-001 A

UTILITIES TO BE REMOVED

FENCE TO BE REMOVED

7.8 PROPOSED GRADE

7.8 EXISTING GRADE

TOE OF SWALE (DRAINAGE PATH)

X X CHAINLINK FOD FENCE

CONCRETE JERSEY BARRIER

CONSTRUCTION LIMITS

XX XX DECORATIVE AIRFIELD FENCE

XXX XXX SILT FENCE

INLET PROTECTION

COORDINATE GRID LINES

SPOT ELEVATION A

EXISTING		PROPOSED
	ABANDONED IN PLACE UTILITIES	
	NEW UTILITIES INSTALLED BY OTHERS	
	HIGH EXPANSION FOAM FORCE MAIN	FM FOAM
E	UNDERGROUND ELECTRICAL	E
ES	ELECTRICAL SERVICE	ES
W	DOMESTIC WATER MAIN	W
C	UNDERGROUND TELEPHONE CONDUIT	C
OE	OVERHEAD UTILITY	OE
RCP	STORM DRAIN	SD1
S	SANITARY SEWER	S1
GAS	GAS MAIN	G
	HIGH EXPANSION FOAM DRAIN	F1
	INDUSTRIAL WASTE	IW
	FIREWATER LINE	FW
FMS	SANITARY FORCE MAIN	FM SAN
	ELEC/COMM DUCT BANK A	E/C
FUEL	AVIATION FUEL	FUEL
OMH	MANHOLE	
	WATER VALVE	
	FIRE HYDRANT	
WM	WATER METER	
EL	ELEVATION	EL
	THRUST BLOCK	
LP	LIGHT POLE	LP
A/C	AIR CONDITIONER	
	GUARD PIPE	
SIGN	SIGN	
	PUMP STATION (LIFT STATION)	PS
PP	UTILITY POLE	
	STREET LAMP	
	STORM INLET	
	SANITARY SEWER CLEAN-OUT	CO
	BENCHMARK	
	TRANSFORMER	
E	ELECTRICAL MANHOLE	E
C	COMMUNICATIONS HANDHOLE	C
	GEOTECH TEST LOCATION	
	MONITORING WELL LOCATION	
	RECOVERY WELL LOCATION	

LANDSCAPE LEGEND

EXISTING		NEW
	TREE	
	SHRUB	

GEOTECH LEGEND

AMU	SQUAD OPS/AMU TEST LOCATION
PH	FIRE PUMP HOUSE TEST LOCATION
BO	BASE OPERATIONS TEST LOCATION
LO	LO/CRF TEST LOCATION
VT	VERTICAL WING TANK TEST LOCATION
C	EXISTING HANGAR SLAB CORING LOCATION

ABBREVIATIONS

ACC	ASPHALTIC CONCRETE PAVEMENT
AMU	AIRCRAFT MAINTENANCE UNIT
AMU-1	AIRCRAFT MAINTENANCE UNITS
BO	BASE OPERATIONS
BMP	BEST MANAGEMENT PRACTICES A
B/W	BOTTOM OF WALL ELEVATION
CI	CAST IRON
℄	CENTER LINE
CEV	CIVIL ENVIRONMENTAL
CEVP	CIVIL ENVIRONMENTAL PROGRAM
CMU	CONCRETE MASONRY UNIT
CDI	CURB DRAIN INLET
CDI1	CURB DRAINAGE INLET #1
DI1	DRAINAGE INLET #1
ERP	ENVIRONMENTAL RESTORATION PROGRAM
FDPC	FIRE DEPARTMENT PAMPER CONNNECTION
FH1	FIRE HYDRANT #1
F.E.S.	FLARED END SECTION
FL	FLOW LINE ELEVATION
FMH1	FOAM DRAIN MANHOLE #1
FOD	FOREIGN OBJECT DAMAGE
C1	HANGAR SLAB PAVEMENT CORE
LAFB	LANGLEY AIR FORCE BASE
LO	LO/CRF FACILITY
LO/CRF	LOW OBSERVABILITY/COMPOSITE REPAIR FACILITY
OWS	OIL/WATER SEPARATOR
O.C.	ON CENTER
POL	PETROLEUM, OIL, LUBRICANTS
POC	POINT OF CONTACT
PCC	PORTLAND CEMENT CONCRETE PAVEMENT
PH	PUMP HOUSE
PH-1	PUMP HOUSE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN A
SDMH1	STORM DRAIN MANHOLE #1
SMH1	SANITARY MANHOLE #1
T/C	TOP OF CURB ELEVATION
TG	TOP OF GROUND ELEVATION
TI	TOP OF INLET ELEVATION
TP	TOP OF PAVEMENT ELEVATION
T/W	TOP OF WALL ELEVATION
TYP	TYPICAL
UTO	UNABLE TO OPEN
VT	VERTICAL WING TANK
VDEQ	VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
YDI	YARD DRAIN INLET

US Army Corps of Engineers Norfolk District

REV.	DATE	DESCRIPTION	BY	APP.
A	07/16/01	ISSUED FOR SANITARY SEWER LIFT STATION PERMIT		
	11/16/01	ISSUED FOR STORMWATER QUALITY & EROSION CONTROL PERMIT	RRB	ERK
	11/20/01	REVISED FOR PERMITTING		

DESIGNED: RRB | CHECKED: RMM | DATE: OCT 2001
DRAWN: RSH | SUBMITTED: ERK | SCALE: AS SHOWN
PROJECT NO. HACC023 010/01/012 | NORFOLK DISTRICT FILE NO. LF-F-22-1.8
DRAWING NO: | SPECIFICATION NO.
Last worked on: 11-19-01 | Plot scale: 1:1
File name: \JR342\CIVIL\HC-001LG.DWG

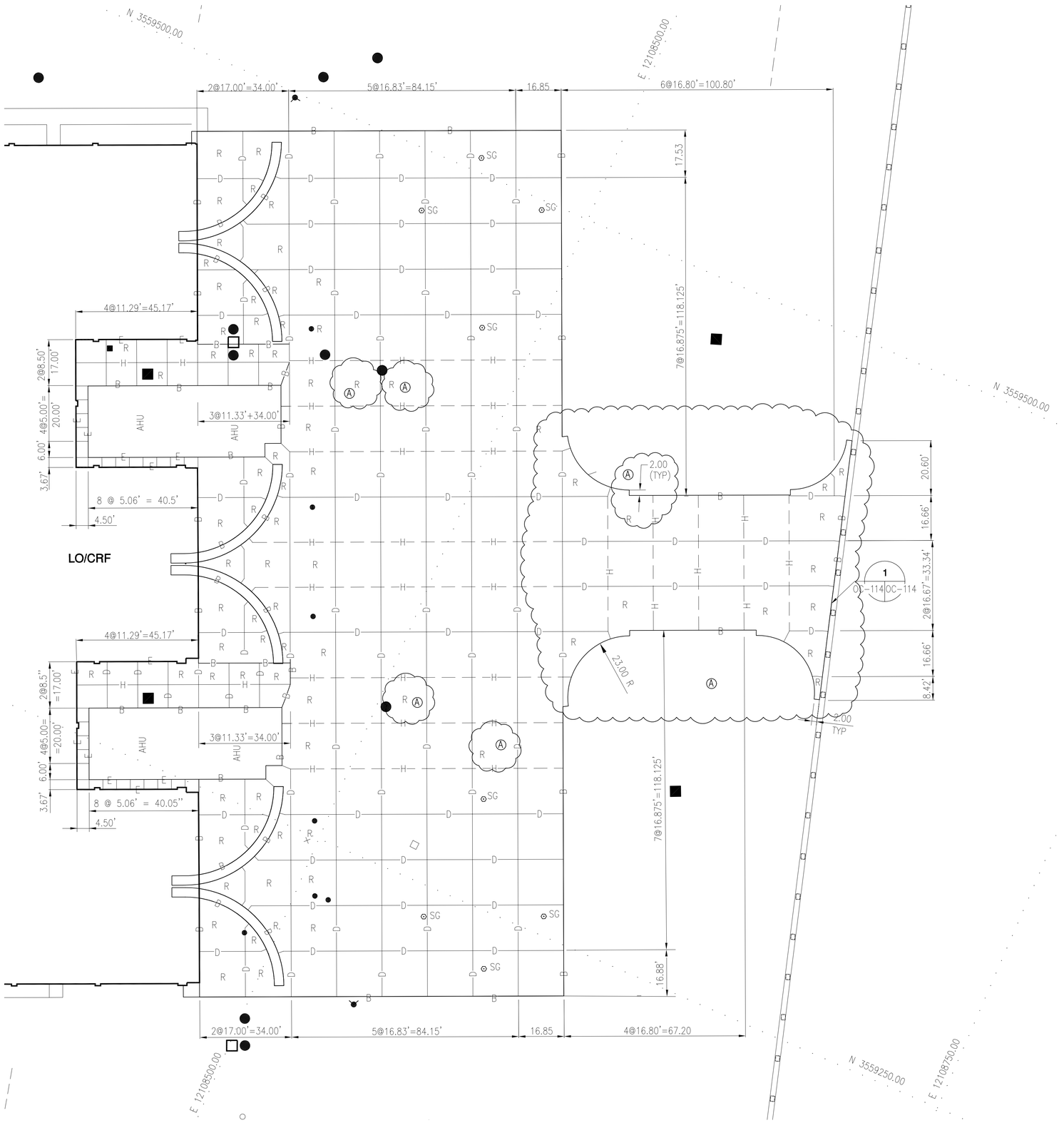
NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS/MAINTENANCE FACILITIES AND UTILITY UPGRADES
LANGLEY AIR FORCE BASE, VIRGINIA

CIVIL LEGEND SHEET

HC-001
SHEET 8 OF 769



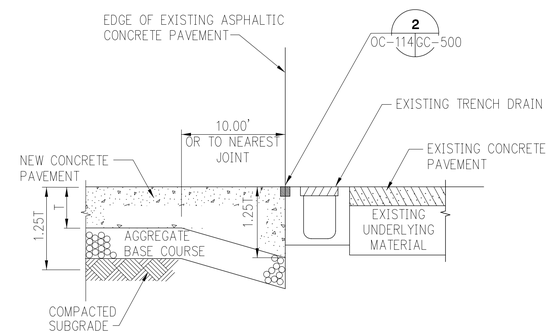
LEGEND

—H—	CONTRACTION JOINT
—D—	DOWELED CONSTRUCTION JOINT
—B—	THICKENED EDGE EXPANSION JOINT
—AP—	JUNCTURE OF CONCRETE AND ASPHALT
R	REINFORCED SLAB
—E—	EXPANSION JOINT
Ⓐ SG	STATIC GROUND
●	MANHOLE
■	DRAINAGE INLET

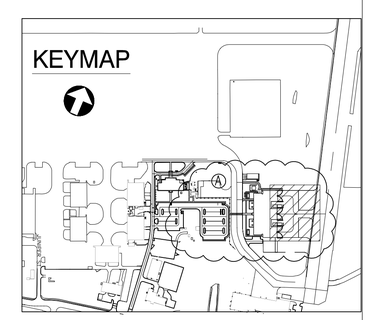
8 OC-114 GC-500
6 OC-114 GC-500
5 OC-114 GC-500
1 OC-114 GC-500
9 OC-114 GC-500
7 OC-114 GC-500

NOTES:

1. ALL COORDINATES AND DIMENSIONS ARE TO EXTERIOR CORNER OF BUILDING SLAB, FACE OF CURB, OR EDGE OF PAVEMENT AND ARE IN FEET UNLESS OTHERWISE NOTED.
2. SIDEWALKS AT BUILDING DOORS ARE CENTERED ON DOOR STOOP. SEE STRUCTURAL AND ARCHITECTURAL SHEETS.
3. SEE SHEET OC-002 FOR HORIZONTAL AND VERTICAL CONTROL POINTS. SEE SHEET HC-001 FOR CIVIL LEGEND.
4. MECHANICAL EQUIPMENT YARD SHALL BE COVERED WITH LANDSCAPING GEOTEXTILE FABRIC AND RIVER BANK STONE PER SPECIFICATION SECTION 02930. MASONRY SCREEN WALL SHALL ENCOMPASS EQUIPMENT AS SHOWN AND SHALL BE CONSTRUCTED PER DETAILS ON GL-500.
5. TYPE B JOINTS AROUND ALL INLETS, MANHOLES, AND STRUCTURES.



JUNCTURE BETWEEN NEW CONCRETE APRON AND BOX DRAIN 1 OC-114 OC-114



JOINTING PLAN

20 0 20 40
SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP'D
A	11/20/01	REMOVED 2 STATIC GROUND LOCATIONS, ADDED LABELS	RRB	ERK
B	01/25/02	ADDED DIMENSION AND REVISED KEYMAP. REVISED JOINTING PER AMENDMENT 9.	RRB	ERK

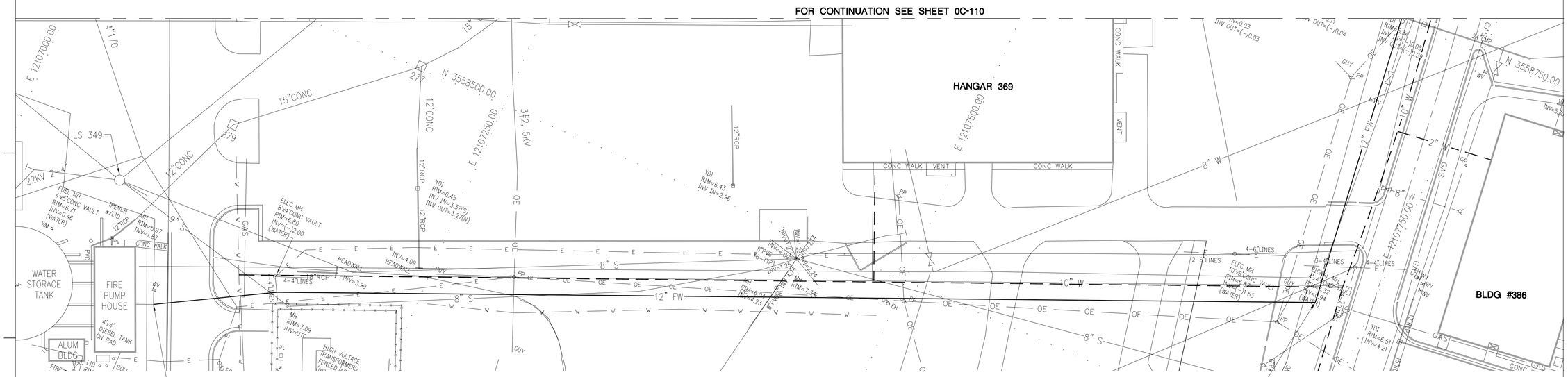
DESIGNED: R.B. | CHECKED: R.M. | DATE: OCT 2001
DRAWN: R.H. | SUBMITTED: E.K. | SCALE: AS SHOWN
PROJECT NO. 71903814 | NORFOLK DISTRICT FILE NO. LF-422-133
DRAWING NO. 71903814153DWG | SPECIFICATION NO. DACA65-01-R-0025
Last worked on: 11-30-01 | Plot scale: 1:1
File name: 26342\CIVIL\OC-114.DWG

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS, LO/CRF, & LIGHTING VAULT
RIGID PAVEMENT JOINTING PLAN

OC-114
SHEET 53 OF 769

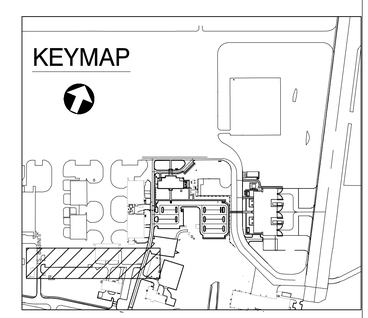


CONNECT 12" FW LINE TO OUTLET OF EXISTING FIRE PUMP STATION. INSTALL NEW TEE. COORDINATE WORK WITH BASE FIRE DEPARTMENT, BASE CIVIL ENGINEER'S OFFICE, AND CONTRACTING OFFICER.

LOW POINT DRAIN VALVE WITH BLIND FLANGE IN VAULT.

NOTE

1. SEE UTILITY NOTES ON OC-110.



SITE UTILITY PLAN 4

30 0 30 60

SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP'D
A	10/24/01	REISSUED PER AMENDMENT 9	RRB	ERK

DESIGNED: RRB
DRAWN: RSH
CHECKED: RMM
SUBMITTED: ERK
DATE: OCT 2001
SCALE: AS SHOWN
PROJECT NO. F-22 OPS & MAINT FACILITIES 23010/011
NORFOLK DISTRICT FILE NO. 711-18-13
DRAWING NO. 711-18-13
SPECIFICATION NO. DACA65-01-R-0025
Last worked on: 03-26-01
File name: 20342\CIVIL\OC-113UT.DWG
Plot scale: 1:1

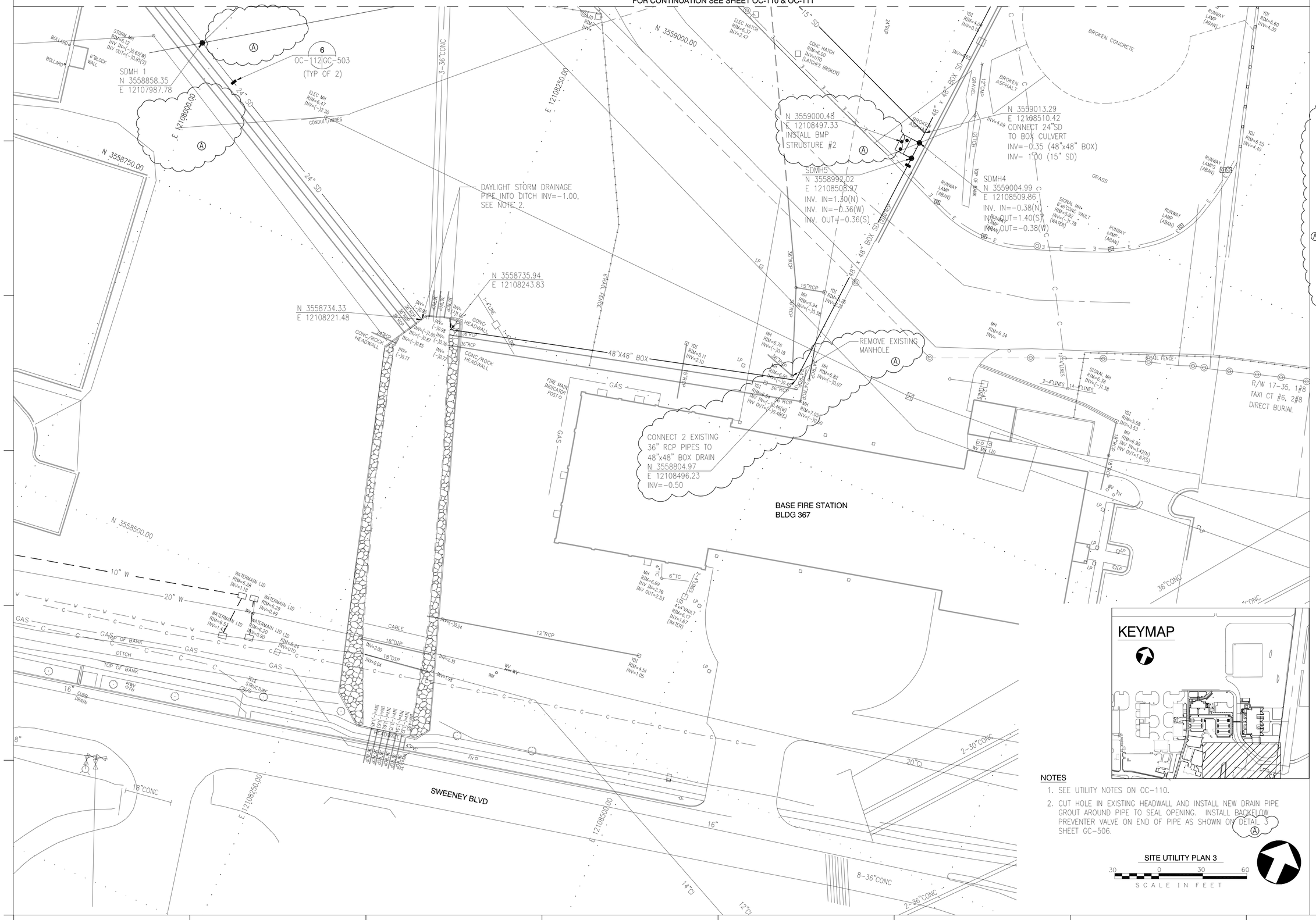
NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS, LO/CRF, & LIGHTING VAULT
SITE UTILITY PLAN
SHEET 4 OF 4

OC-113
SHEET 52 OF 769

FOR CONTINUATION SEE SHEET OC-110 & OC-111



NOTES

1. SEE UTILITY NOTES ON OC-110.
2. CUT HOLE IN EXISTING HEADWALL AND INSTALL NEW DRAIN PIPE GROUT AROUND PIPE TO SEAL OPENING. INSTALL BACKFLOW PREVENTER VALVE ON END OF PIPE AS SHOWN ON DETAIL 3 SHEET GC-506.

SITE UTILITY PLAN 3

30 0 30 60

SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP'D
A	11/16/01	ISSUED FOR STORM WATER QUALITY & EROSION CONTROL PERMIT	RRB	ERK
B	11/20/01	REVISED FOR PERMITTING	RRB	ERK
C	10/24/02	REISSUED PER AMENDMENT 9		

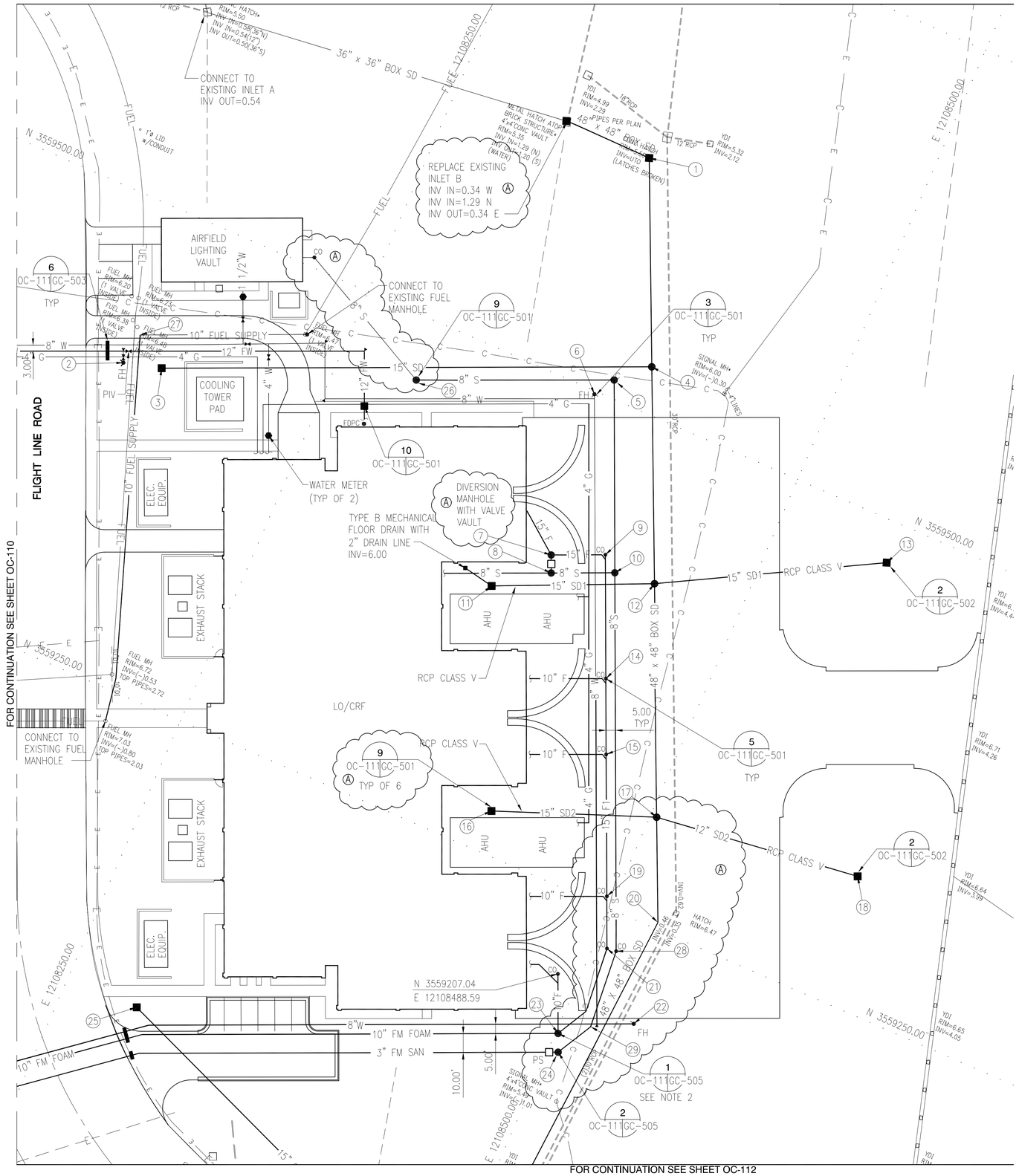
DESIGNED: RRB
CHECKED: RMM
DATE: OCT 2001
DRAWN: RSH
SUBMITTED: ERK
SCALE: AS SHOWN
PROJECT NO. F-22-023010/011
NORFOLK DISTRICT FILE NO. 711-13
DRAWING NO. 711-13
SPECIFICATION NO. DACA65-01-R-0025
Last worked on: 11-30-01
File name: 30342\C\OC-112UT.DWG
Plot scale: 1:30

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS, LO/CRF, & LIGHTING VAULT
SITE UTILITY PLAN
SHEET 3 OF 4

OC-112
SHEET 51 OF 769

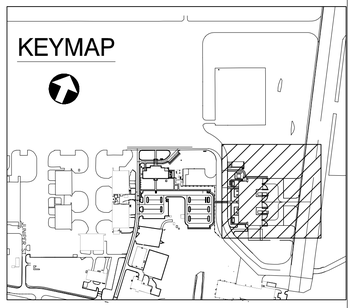


UTILITY STRUCTURES TABLE (SHEET OC-110)			
	NUMBER	NORTH	EAST
1	DI 1	N 3559414.04	E 12107806.71
2	DI 2	N 3559345.71	E 12107695.38
3	DI 3	N 3559303.42	E 12107599.48
4	DI 4	N 3559225.20	E 12107585.54
5	FH 4	N 3559169.89	E 12107604.05
6	DI 5	N 3559118.10	E 12107676.24
7	DI 6	N 3559159.33	E 12107770.52
8	DI 7	N 3559032.42	E 12107713.70
9	DI 8	N 3559068.57	E 12107796.33
10	DI 9	N 3559011.73	E 12107821.09
11	DI 10	N 3558960.93	E 12107705.62
12	DI 11	N 3559221.98	E 12107952.86
13	FH 1	N 3559202.02	E 12108080.15
14	DI 12	N 3559132.18	E 12107970.04
15	DI 13	N 3559183.09	E 12108090.60
16	FH 2	N 3559075.37	E 12108136.60
17	CDI 1	N 3559069.48	E 12108140.29
18	CDI 2	N 3559018.50	E 12108019.66
19	SDMH 2	N 3558964.77	E 12108044.25
20	FH 3	N 3559046.59	E 12108211.67
21	FH 7	N 3559337.97	E 12107710.71
22	FH 5	N 3559083.75	E 12107655.51
23	FH 6	N 3558956.96	E 12107696.85

UTILITY STRUCTURES CHART (SHEET OC-111)			
	NUMBER	NORTH	EAST
1	DI 14	N 3559625.43	E 12108358.67
2	FH 8	N 3559412.94	E 12108145.52
3	DI 15	N 3559418.41	E 12108165.41
4	SDMH 3	N 3559523.89	E 12108404.61
5	SMH 2	N 3559509.38	E 12108389.05
6	FH 9	N 3559498.25	E 12108382.41
7	SMH 3	N 3559410.41	E 12108395.70
8	SMH 4	N 3559401.59	E 12108399.56
9	CO-F1	N 3559422.08	E 12108422.12
10	SMH 5	N 3559415.31	E 12108430.61
11	DI 16	N 3559382.53	E 12108373.22
12	SDMH 6	N 3559418.43	E 12108452.33
13	DI 17	N 3559428.40	E 12108561.29
14	CO-F2	N 3559330.23	E 12108462.73
15	CO-F3	N 3559272.47	E 12108421.28
16	DI 18	N 3559305.30	E 12108503.96
17	SDMH 7	N 3559304.73	E 12108503.31
18	DI 19	N 3559253.93	E 12108526.46
19	CO-F4	N 3559224.22	E 12108509.57
20	BEND (A)	N 3559253.58	E 12108526.46
21	CO-F5	N 3559229.95	E 12108507.10
22	FH 10	N 3559181.48	E 12108511.56
23	FPS 2 (A)	N 3559177.94	E 12108501.41
24	SPS 1	N 3559168.81	E 12108505.44
25	DI 20	N 3559100.64	E 12108289.92
26	SMH 1	N 3559467.08	E 12108292.33
27	BEND	N 3559430.06	E 12108147.75
28	CO-S1 (A)	N 3,559,230.57	E 12,108,512.20
29	BEND (A)	N 3,559,188.18	E 12,108,515.89

NOTES

1. SEE UTILITY NOTES ON OC-110.
2. FOAM PUMP STATION 2 SHALL NOT BE ACTIVATED UNLESS FIRE ALARM SYSTEM IN LO/CRF PAINT/COATINGS BAYS IS ACTIVATED. THE ELECTRICAL POWER SUPPLY WILL RUN THROUGH THE FIRE ALARM SYSTEM PANEL. IN THE EVENT OF A FIRE ALARM ACTIVATION, IN THE AIRCRAFT BAYS, POWER WILL BE SUPPLIED TO THE PUMP STATION AND THE FLOAT CONTROLS IN THE VAULT WILL THEN ACTIVATE THE PUMP. IN THE EVENT OF A FLUID SPILL IN THE HANGAR BAY THE FLUID WILL BE CONTAINED IN THE PUMP STATION VAULT AND SHALL BE PUMPED OUT MANUALLY THROUGH THE ACCESS HATCH. SEE SPECIFICATIONS AND ELECTRICAL CONTROL DRAWINGS.
3. FIELD VERIFY FUEL PIPE ROUTE AND PIPE MATERIAL. INSTALL AND TEST PIPE. FUEL LINE CLOSURE AND RELOCATION SHALL BE COMPLETED IN 7 DAYS. COORDINATE FUEL LINE CLOSURE AND RELOCATION WITH CONTRACTING OFFICER, BASE FIRE DEPARTMENT, LFM, BASE POL, AND BASE CIVIL ENGINEER.
4. SEE UTILITY STRUCTURES TABLES ON GC-507 FOR INVERTS ON UTILITY STRUCTURES AND LINES.



SITE UTILITY PLAN 2

30 0 30 60

SCALE IN FEET

US Army Corps of Engineers Norfolk District

REV.	DATE	DESCRIPTION	BY	APP.
	11/16/01	ISSUED FOR SANITARY SEWER LIFT STATION PERMIT		
	11/16/01	ISSUED FOR STORMWATER QUALITY & EROSION CONTROL PERMIT		
A	11/30/01	REVISED FOR PERMITTING.	RRB	ERK
B	12/24/01	REISSUED PER AMENDMENT 9	RRB	ERK

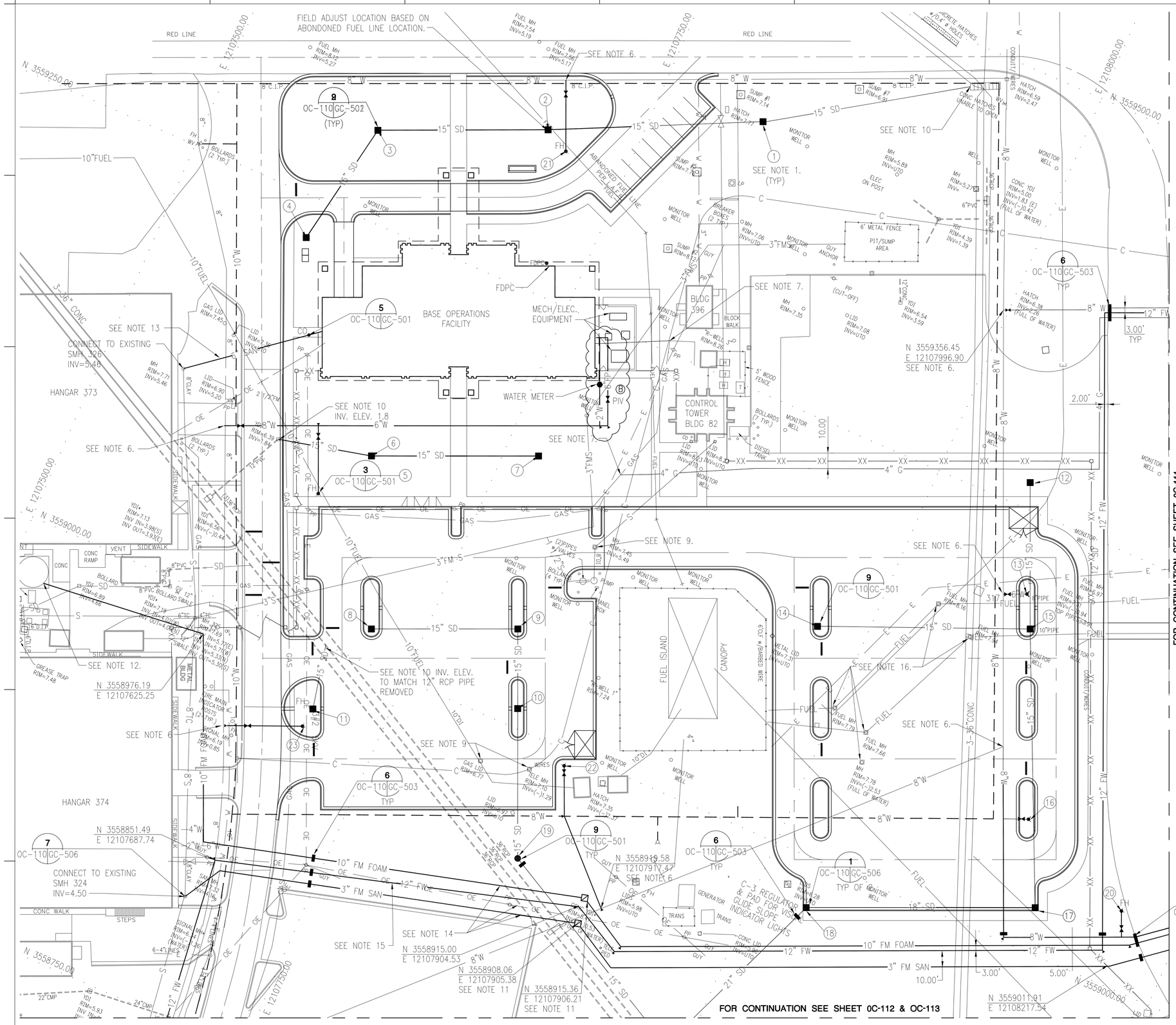
DESIGNED: RRB
CHECKED: RMM
DATE: OCT 2001
DRAWN: RSH
SUBMITTED: ERK
SCALE: AS SHOWN
PROJECT NO. FAC-023010/011
NORFOLK DISTRICT FILE NO. LF-22
DRAWING NO. 711-18-13
SPECIFICATION NO. DACA65-01-R-0025
Last worked on: 11-30-01
File name: 20342\C\OC\OC-111UT.DWG
Plot scale: 1:30

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS, LO/CRF, & LIGHTING VAULT
SITE UTILITY PLAN
SHEET 2 OF 4

OC-111
SHEET 50 OF 769



UTILITY NOTES

1. COORDINATES OF INLETS AND STRUCTURES ARE GIVEN TO STRUCTURE CENTERS. SEE UTILITY STRUCTURES TABLE ON OC-111 FOR COORDINATES LOCATIONS AND SEE STRUCTURES TABLE ON GC-507 FOR RIM AND INVERT ELEVATIONS.
2. CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING WORK. CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER OF ANY DISCREPANCIES BETWEEN THE FIELD LOCATED UTILITIES AND THE UTILITIES SHOWN ON THE PLAN.
3. SEE MECHANICAL DRAWINGS FOR CONTINUATION OF UTILITY LINES INSIDE OF THE BUILDING.
4. TOP OF ALL WATER MAINS SHALL BE A MINIMUM OF 3 FEET BELOW GRADE UNLESS OTHERWISE INDICATED. ALL FIRE WATER MAINS SHALL BE 3.5 FEET BELOW GRADE UNLESS OTHERWISE INDICATED.
5. INSTALL REDUCERS 5 FEET FROM BUILDING ON THE SANITARY SEWER SERVICE LINES. THE REDUCERS MARK THE INTERFACE BETWEEN THE 4" MECHANICAL AND 8" CIVIL SERVICE.
6. INSTALL TEE AND VALVE TO CONNECT WATER LINE TO EXISTING WATER MAIN. COORDINATE WITH CONTRACTING OFFICER AND BASE CIVIL ENGINEERS OFFICE.
7. CONTRACTOR SHALL COORDINATE ALL UTILITY WORK WITH PROPER AUTHORITY. ALL NATURAL GAS LINE WORK TO BE COORDINATED WITH VIRGINIA NATURAL GAS, CONTACT MICHELLE CENTER 757-873-6246. VNG TO COMPLETE ALL WORK ON GAS LINES UP TO BUILDING METER. CONTRACTOR TO PAY ALL FEES AND CONNECTION CHARGES IN REGARD TO NEW GAS SERVICE INCLUDING METER, CONNECTION, AND OTHER ASSOCIATED FEES. NATURAL GAS LINES TO BE SEPARATED A MINIMUM OF 18" HORIZONTALLY AND VERTICALLY FROM ALL BURIED/UNDERGROUND ELECTRICAL LINES.
8. DO NOT CLOSE FLIGHT LINE ROAD COMPLETELY AT ANY TIME DUE TO FIRE TRUCK ACCESS. JACK AND BORE UTILITY PIPES OR OPEN CUT ROAD ONE LANE AT A TIME TO KEEP OPEN TO TRAFFIC. HICKORY ROAD MAY ONLY BE CLOSED FOR A PERIOD OF 5 WORKING DAYS. COORDINATE WITH CONTRACTING OFFICER.
9. CONSTRUCT 30" SQUARE BY 8" THICK CONCRETE PAD AROUND EXISTING MANHOLE COVERS. ADJUST FRAME AND COVER TO MATCH PROPOSED GRADE.
10. BREAKOUT PORTION OF STORM DRAIN STRUCTURE TO INSTALL 15" RCP. GROUT AROUND PIPE TO SEAL OPENING AND PROVIDE WATER TIGHT FIT.
11. INSTALL LOW POINT DRAIN IN A PRECAST VAULT ON UTILITY LINE.
12. CONNECT 10" FM TO SIDE OF TANK AND ROUTE TO THE TOP OF THE TANK. PIPE SHALL BE INSERTED INTO THE TOP OF THE TANK. COORDINATE WITH CONTRACTING OFFICER AND BASE FIRE DEPARTMENT.
13. CONCRETE ENCASE SANITARY LINE FOR 10.00 FEET EACH SIDE OF WATERLINE CROSSINGS.
14. CONCRETE ENCASE UTILITY LINES 5.00' EACH SIDE OF 36" SD PIPES. CONCRETE SHALL BE A MINIMUM OF 6" THICK ON ALL SIDES.
15. CONTRACTOR SHALL WORK WITH EXTREME CAUTION NEAR AND AROUND OVERHEAD POWER LINES AND POLES. CONTRACTOR SHALL FOLLOW ALL FEDERAL, STATE AND LOCAL SAFETY LAWS.
16. CONSTRUCT 30" SQUARE BY 8" THICK CONCRETE PAD AROUND EXISTING FUEL MANHOLE COVERS. ADJUST PROPOSED PAVEMENT GRADES TO MATCH EXISTING MANHOLE RIM ELEVATIONS.

KEYMAP

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP.
0	11/16/01	ISSUED FOR SANITARY SEWER LIFT STATION PERMIT		
0	11/16/01	ISSUED FOR STORMWATER QUALITY & EROSION CONTROL PERMIT		
A	11/20/01	REISSUED DRAWING PER AMENDMENT.	RRB	ERK
B	01/14/02	REVISED WATER LINE AT BASE OPERATIONS FACILITY	RRB	ERK
C	01/24/02	REISSUED PER AMENDMENT 9	RRB	ERK

DESIGNED: RBB
DRAWN: RSH
CHECKED: RMM
SUBMITTED: ERK
DATE: OCT 2001
SCALE: AS SHOWN
PROJECT NO. DACA65-01-B-0023010/011
NORFOLK DISTRICT FILE NO. 1-F22-18-13
SPECIFICATION NO. DACA65-01-R-0025
DRAWING NO. 711-18-13
Last revised on: 11-30-01
File name: 26343\C\01\OC-110UT.DWG
Plot scale: 1:30

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

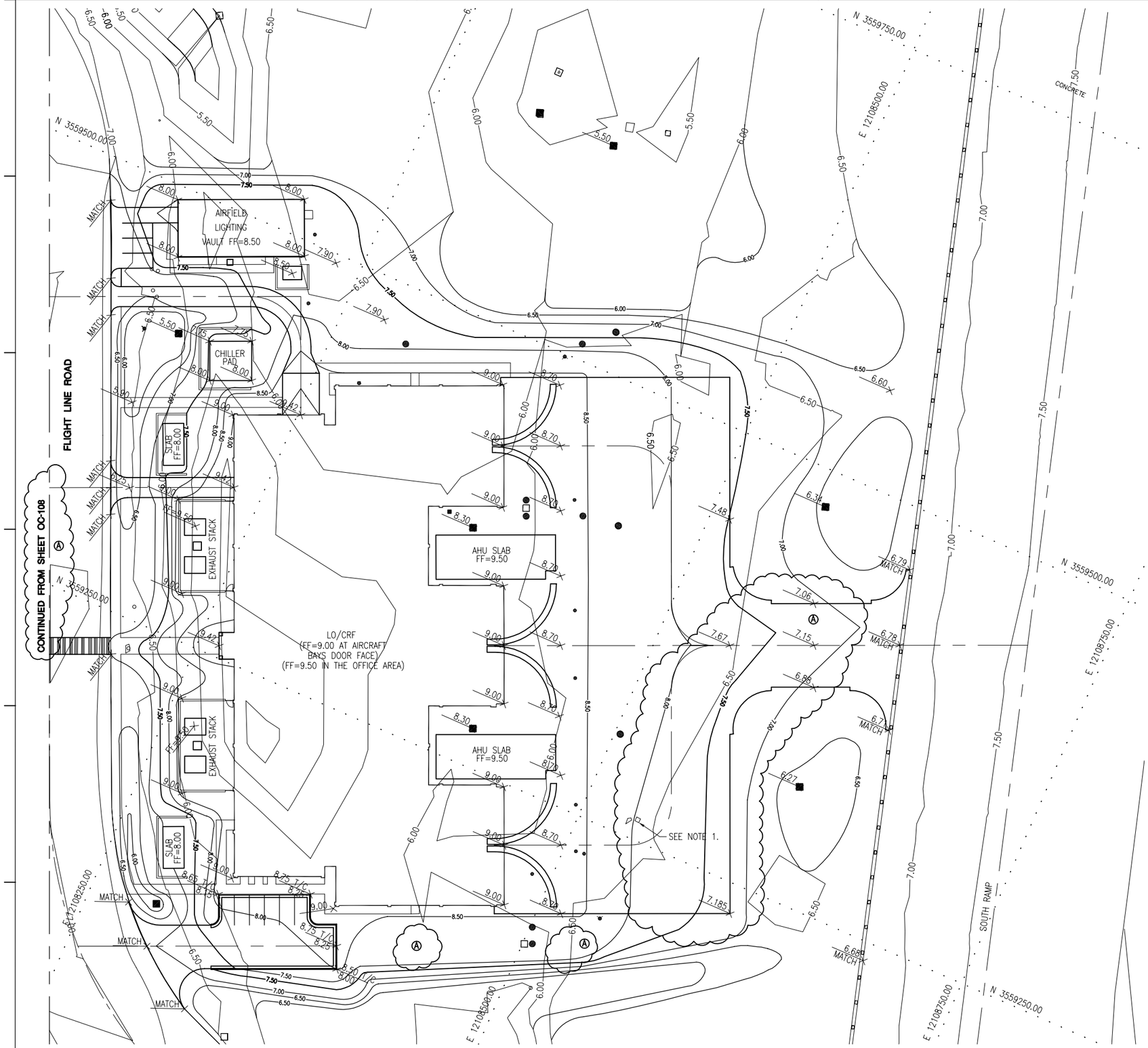
BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

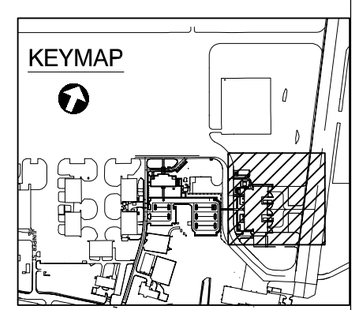
F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS, LO/CRF, & LIGHTING VAULT
SITE UTILITY PLAN
SHEET 1 OF 4

OC-110
SHEET 49 OF 769

NOTES

Ⓐ 1. ADJUST MANHOLE FRAME AND TOP TO NEW PROPOSED GRADE. STRUCTURES IN AIRFIELD PAVEMENTS SHALL BE AIRCRAFT RATED FOR TRAFFIC LOAD OF 30,000 LBS SINGLE WHEEL LOAD AND A CONTACT PRESSURE OF 292 PSI AND A CONTACT AREA OF 102 SQUARE INCHES. CONTRACTOR SHALL SUBMIT STRUCTURAL DRAWINGS, DESIGN CALCULATIONS, AND WATERPROOFING METHOD, BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF VIRGINIA, FOR APPROVAL.





SITE GRADING PLAN Ⓐ

30 0 30 60
SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP.
Ⓐ	11/16/01	ISSUED FOR SANITARY SEWER LIFT STATION PERMIT		
	11/16/01	ISSUED FOR STORMWATER QUALITY & EROSION CONTROL PERMIT	XXX	ERK
Ⓑ	11/30/01	REVISED FOR PERMIT	RRB	ERK
	12/24/02	REISSUED PER AMENDMENT 9		

DESIGNED: RRB
DRAWN: RSH
CHECKED: RRB
SUBMITTED: ERK
DATE: OCT 2001
SCALE: AS SHOWN
PROJECT NO. HACC023010/011
NORFOLK DISTRICT FILE NO. LF-422-1.48
SPECIFICATION NO. DACA65-01-R-0025
DRAWING NO. 711-18-13
Plot scale: 1:40
Last worked on: 11-30-01
File name: 38342CIVIL\OC-109GP.DWG

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
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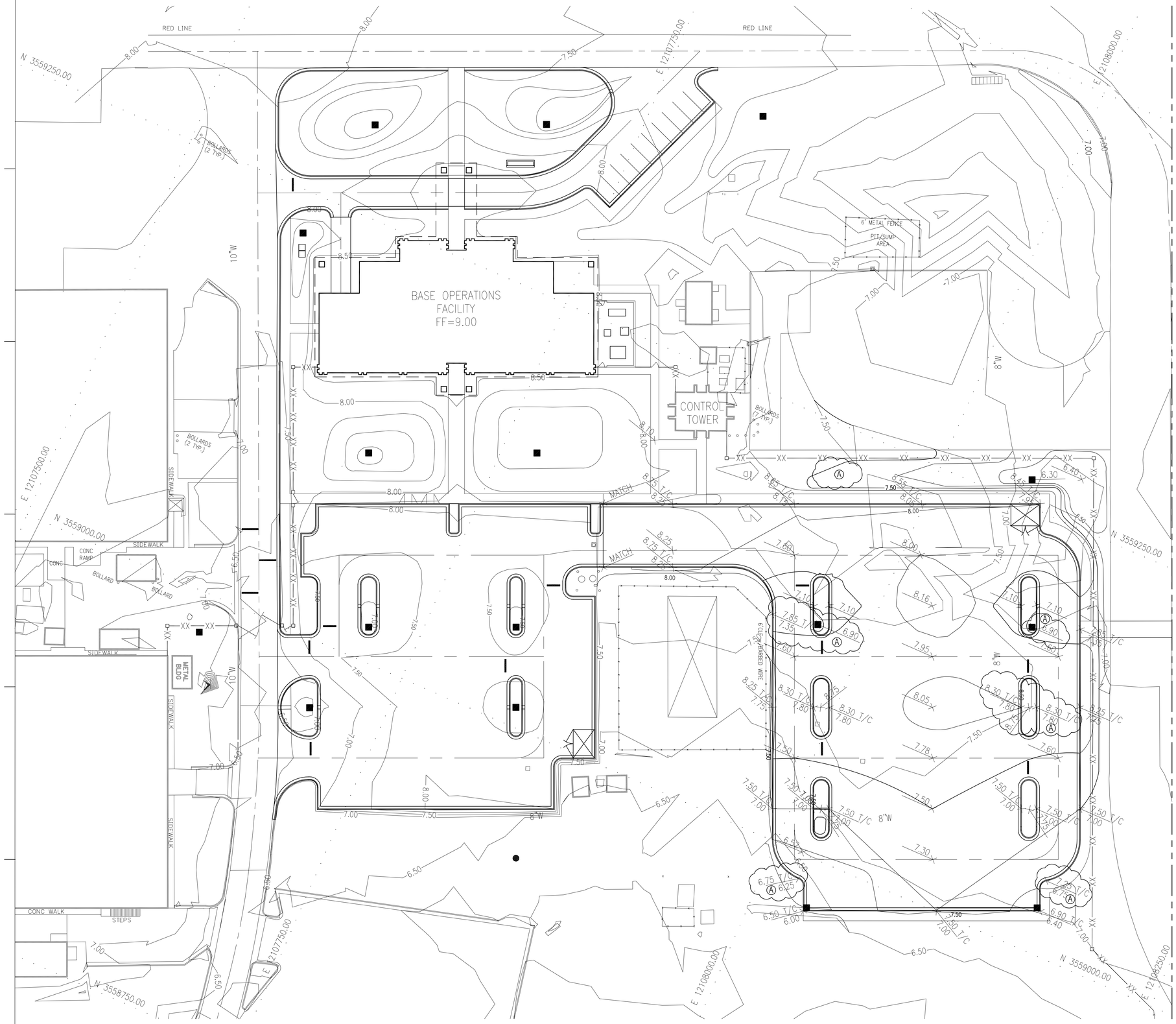
F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS, LO/CRF, & LIGHTING VAULT
SITE GRADING PLAN
SHEET 4 OF 4

OC-109
SHEET 48 OF 769

OC-109GP.dwg 11-30-2001 13:57 RSH

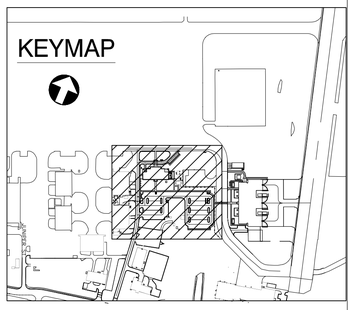


FOR CONTINUATION SEE SHEET OC-109

GRADING NOTES

1. ALL CONTOUR LABELS AND ELEVATION CALLOUTS ARE IN FEET.
2. WHERE NOTED AS "MATCH" NEW PAVEMENTS, SIDEWALKS, AND GRADES SHALL MEET EXISTING GRADE ELEVATIONS.
3. FINISH GRADES ADJACENT TO BUILDING ARE 0.5' BELOW FINISH FLOOR ELEVATION UNLESS OTHERWISE NOTED.

KEYMAP



SITE GRADING PLAN

30 0 30 60
SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP.
A	11/16/01	ISSUED FOR SANITARY SEWER LIFT STATION PERMIT		
B	11/16/01	ISSUED FOR STORMWATER QUALITY & EROSION CONTROL PERMIT	RRB	ERK
A	11/20/01	REVISED FOR PERMITTING AND REMOVED STRIPING.	RRB	ERK
B	11/24/01	REISSUED PER AMENDMENT 9		

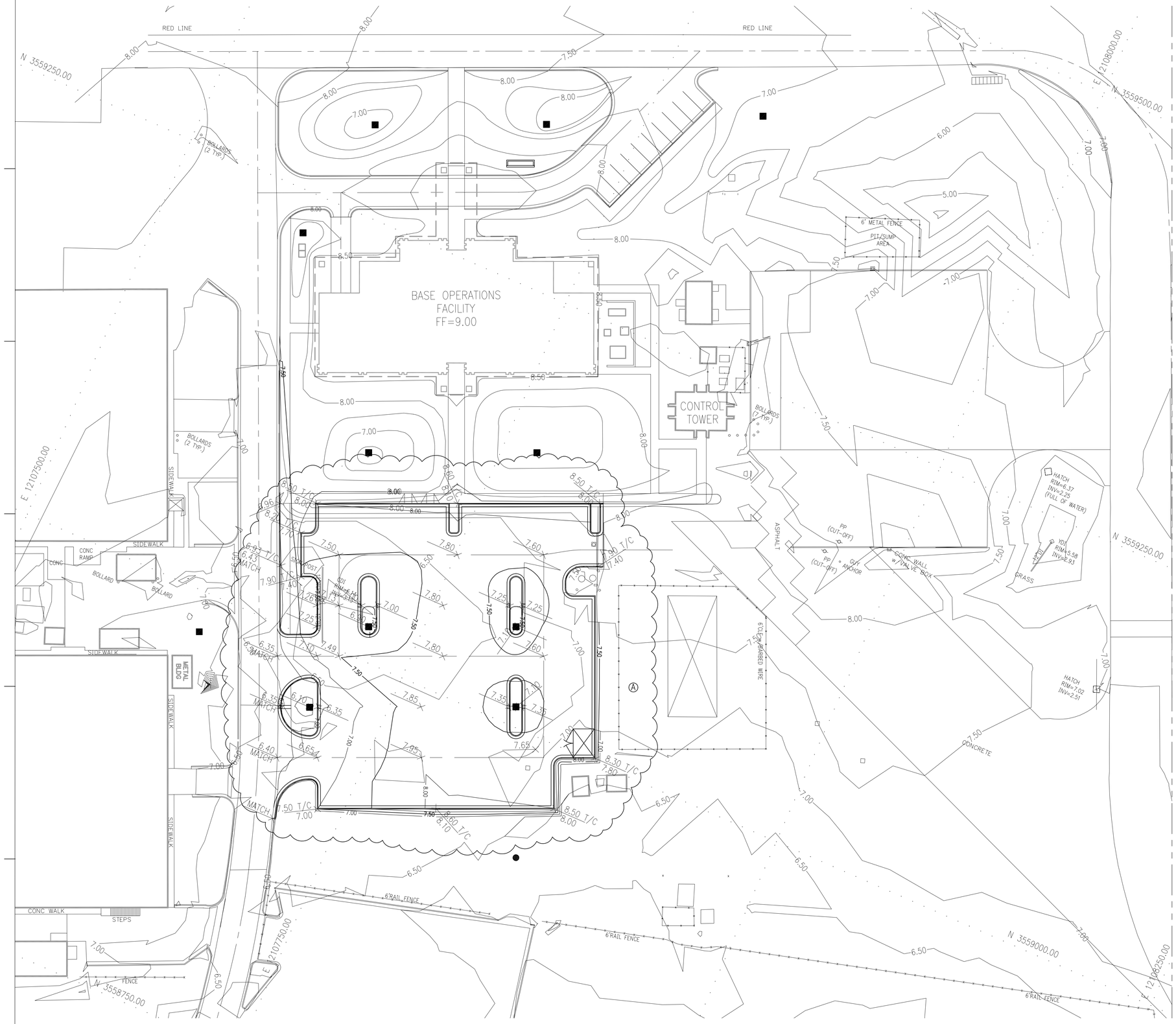
DESIGNED: RRB
CHECKED: RMM
DATE: OCT 2001
DRAWN: RSH
SUBMITTED: ERK
SCALE: AS SHOWN
PROJECT NO. 711-18-13
NORFOLK DISTRICT FILE NO. LFC2-77
SPECIFICATION NO. DACA65-01-R-0025
DRAWING NO. 711-18-13
Last worked on: 11-30-01
File name: /26342/CIVIL/OC-108GP.DWG
Plot scale: 1:30

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS, LO/CRF, & LIGHTING VAULT
SITE GRADING PLAN
SHEET 3 OF 4

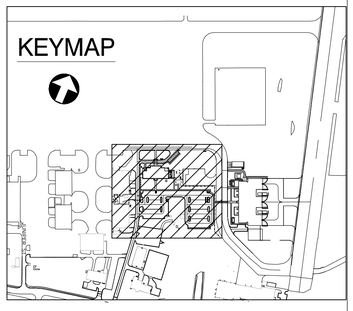
OC-108
SHEET 47 OF 769



FOR CONTINUATION SEE SHEET OC-109

GRADING NOTES

1. ALL CONTOUR LABELS AND ELEVATION CALLOUTS ARE IN FEET.
2. WHERE NOTED AS "MATCH" NEW PAVEMENTS, SIDEWALKS, AND GRADES SHALL MEET EXISTING GRADE ELEVATIONS.
3. FINISH GRADES ADJACENT TO BUILDING ARE 0.5' BELOW FINISH FLOOR ELEVATION UNLESS OTHERWISE NOTED.



SITE GRADING PLAN

30 0 30 60
SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APD
A	11/16/01	ISSUED FOR SANITARY SEWER LIFT STATION PERMIT		
	11/16/01	ISSUED FOR STORMWATER QUALITY & EROSION CONTROL PERMIT		
A	11/20/01	REVISED FOR PERMITTING, REMOVED STRIPING.	RRB	ERK
B	11/24/01	REISSUED PER AMENDMENT 9	RRB	ERK

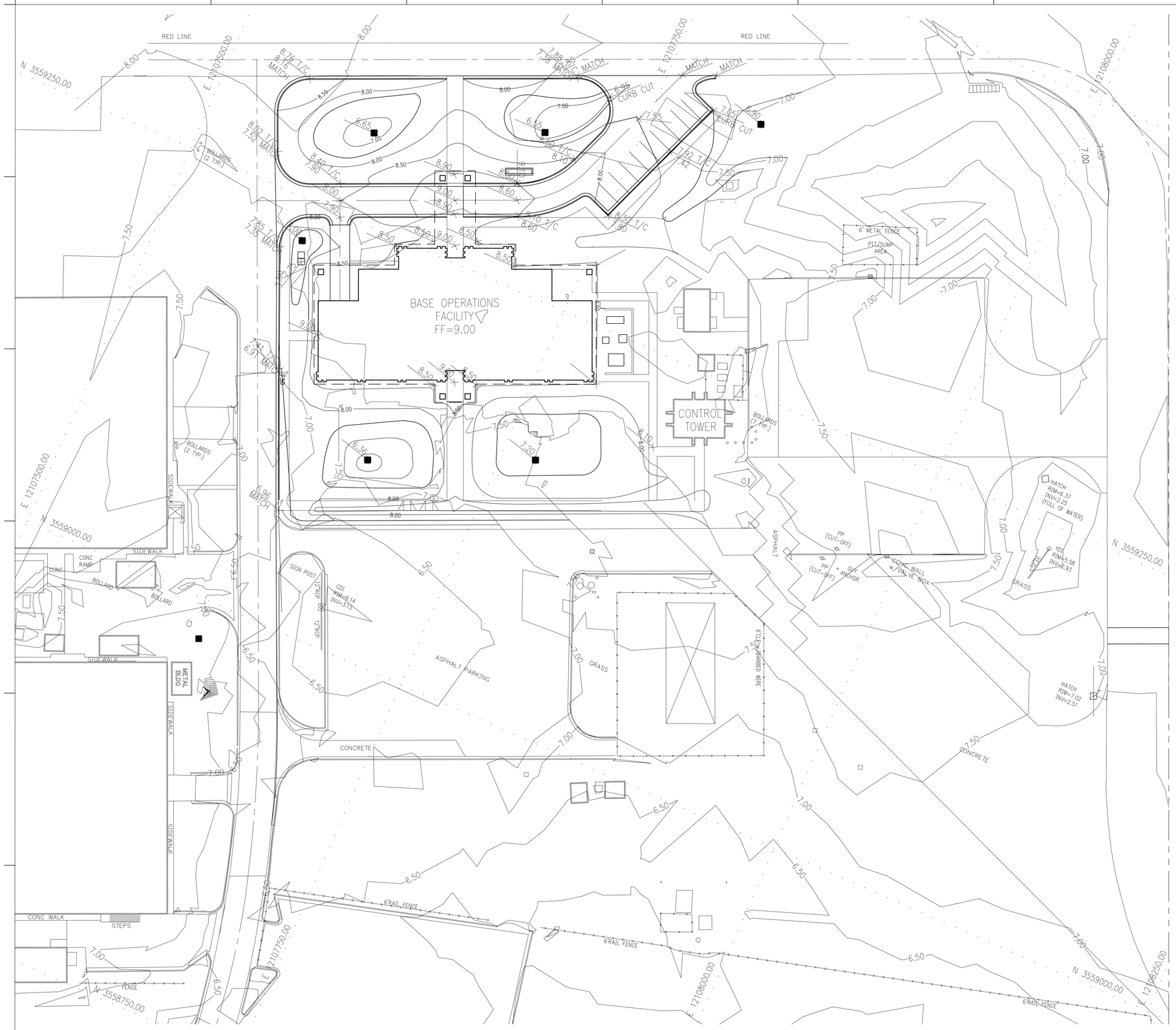
DESIGNED: RRB
CHECKED: RMM
DATE: OCT 2001
DRAWN: RSH
SUBMITTED: ERK
SCALE: AS SHOWN
PROJECT NO. 711-18-13
NORFOLK DISTRICT FILE NO. LF22-146
SPECIFICATION NO. DACA65-01-R-0025
DRAWING NO. 711-18-13
Last worked on: 11-30-01
File name: 26342/CIVIL/OC-106GP.DWG
Plot scale: 1:30

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS, LO/CRF, & LIGHTING VAULT
SITE GRADING PLAN
SHEET 2 OF 4

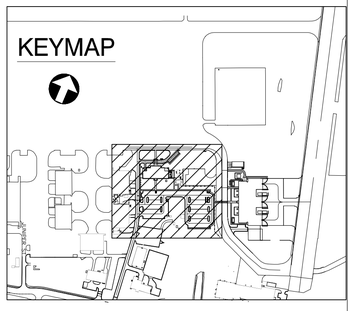
OC-107
SHEET 46 OF 769



FOR CONTINUATION SEE SHEET OC-109

GRADING NOTES

1. ALL CONTOUR LABELS AND ELEVATION CALLOUTS ARE IN FEET.
2. WHERE NOTED AS "MATCH" NEW PAVEMENTS, SIDEWALKS, AND GRADES SHALL MEET EXISTING GRADE ELEVATIONS.
3. FINISH GRADES ADJACENT TO BUILDING ARE 0.5' BELOW FINISH FLOOR ELEVATION UNLESS OTHERWISE NOTED.



SITE GRADING PLAN

30 0 30 60
SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP.
(A)	11/20/01	REVISED FOR PERMITTING.	RRB	ERK
(B)	01/24/02	REISSUED PER AMENDMENT 9	RRB	ERK
(C)	11/16/01	ISSUED FOR STORMWATER QUALITY & EROSION CONTROL PERMIT		
(D)	07/10/01	ISSUED FOR SANITARY SEWER LIFT STATION PERMIT		

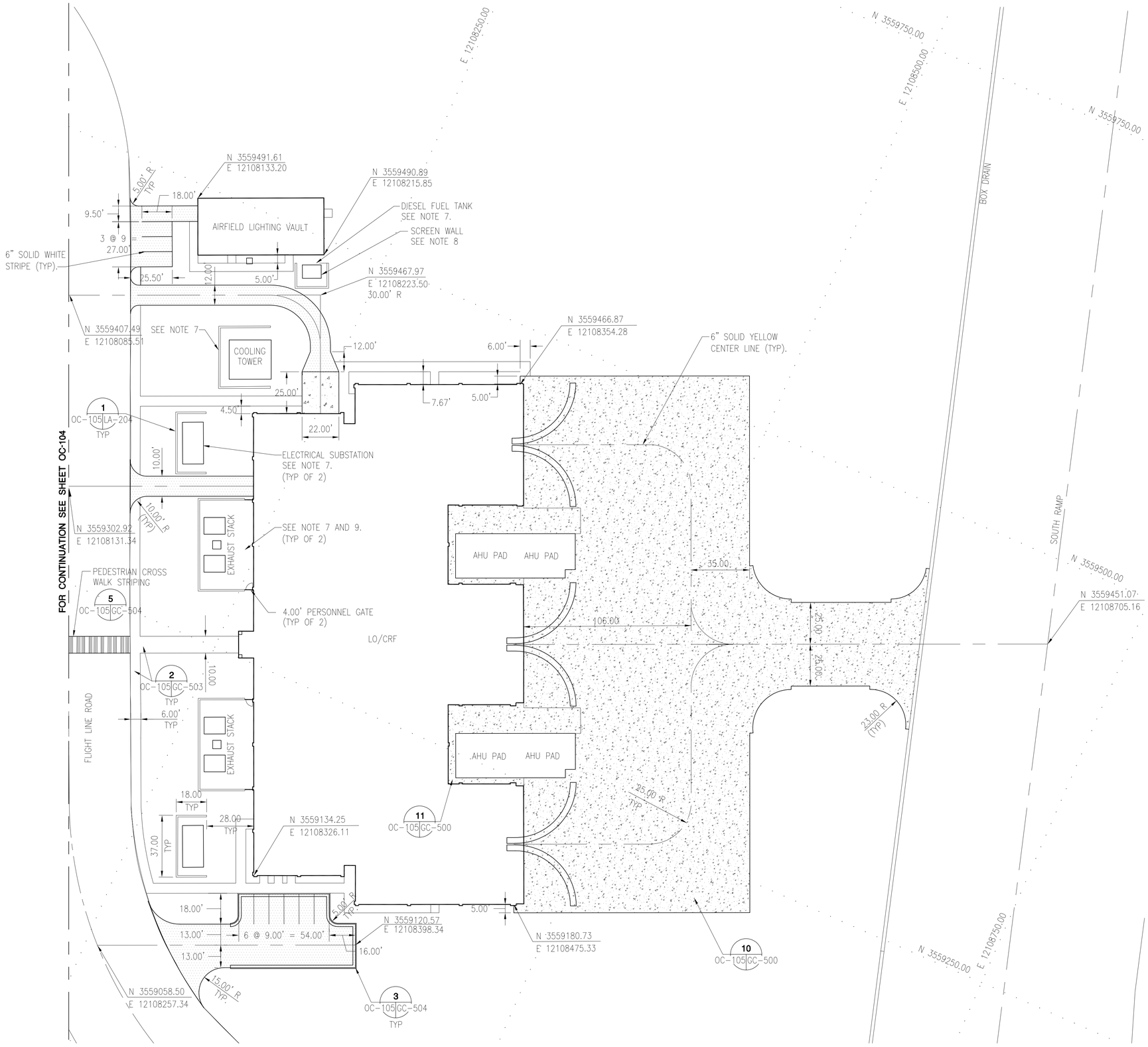
DESIGNED: RRB
CHECKED: RMM
DRAWN: RSH
SUBMITTED: ERK
DATE: OCT 2001
SCALE: AS SHOWN
PROJECT NO. 711-18-13
NORFOLK DISTRICT FILE NO. LF22-2-15
SPECIFICATION NO. DACA65-01-R-0025
DRAWING NO. 711-18-13
Last worked on: 11-30-01
File name: /26342/CIVIL/OC-106GP.DWG
Plot scale: 1:30

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

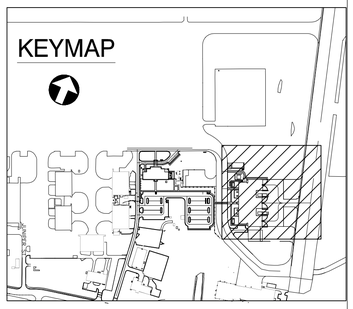
F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS, LO/CRF, & LIGHTING VAULT
SITE GRADING PLAN
SHEET 1 OF 4

OC-106
SHEET 45 OF 769



NOTES:

1. ALL COORDINATES AND DIMENSIONS ARE TO EXTERIOR CORNER OF BUILDING SLAB, FACE OF CURB, OR EDGE OF PAVEMENT AND ARE IN FEET UNLESS NOTED OTHERWISE.
2. SIDEWALKS AT BUILDING DOORS ARE CENTERED ON DOOR STOOP. SEE STRUCTURAL AND ARCHITECTURAL SHEETS.
3. SEE SHEET OC-002 FOR HORIZONTAL AND VERTICAL CONTROL POINTS. SEE SHEET HC-001 FOR CIVIL LEGEND.
4. SEE RIGID PAVEMENT AND JOINTING PLAN ON SHEET OC-114 FOR CONCRETE PAVEMENT JOINTS AND DIMENSIONS.
5. CONTRACTOR SHALL COORDINATE NEW PAVEMENT JOINTS AROUND HANGAR DOOR TRACK RAILS WITH DOOR TRACK INSTALLER. JOINTS MAY BE MODIFIED BY THE CONTRACTING OFFICER AS NECESSARY AROUND DOOR TRACK UNITS.
6. CONTRACTOR SHALL COORDINATE PAVEMENT JOINTS AROUND EQUIPMENT PADS AS DIRECTED BY THE CONTRACTING OFFICER.
7. EQUIPMENT YARD SHALL BE COVERED WITH LANDSCAPING GEOTEXTILE FABRIC AND RIVER BANK STONE PER SPECIFICATION SECTION 02930.
8. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR TYPICAL SCREEN WALL DETAILS AND SECTIONS.
9. HORIZONTAL FORCE PROTECTION CHAINLINK FENCE SHALL ENCLOSE OVER THE TOP OF MECHANICAL EQUIPMENT AS NOTED IN SPECIFICATIONS AND SHOWN ON ARCHITECTURAL DRAWINGS.



SITE LAYOUT PLAN 2

30 0 30 60
SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP'D
A	10/24/02	REISSUED PER AMENDMENT 9	RRB	ERK

DESIGNED: RRB
CHECKED: RRM
DRAWN: RSH
SUBMITTED: ERK
DATE: OCT 2001
SCALE: AS SHOWN
PROJECT NO. FY-02-3010/011
NORFOLK DISTRICT FILE NO. LF-F22-144
DRAWING NO. 711-18-13
SPECIFICATION NO. DACA65-01-R-0025
Last worked on: 06-14-01
File name: 20342\CV\OC-105ST.DWG
Plot scale: 1:1

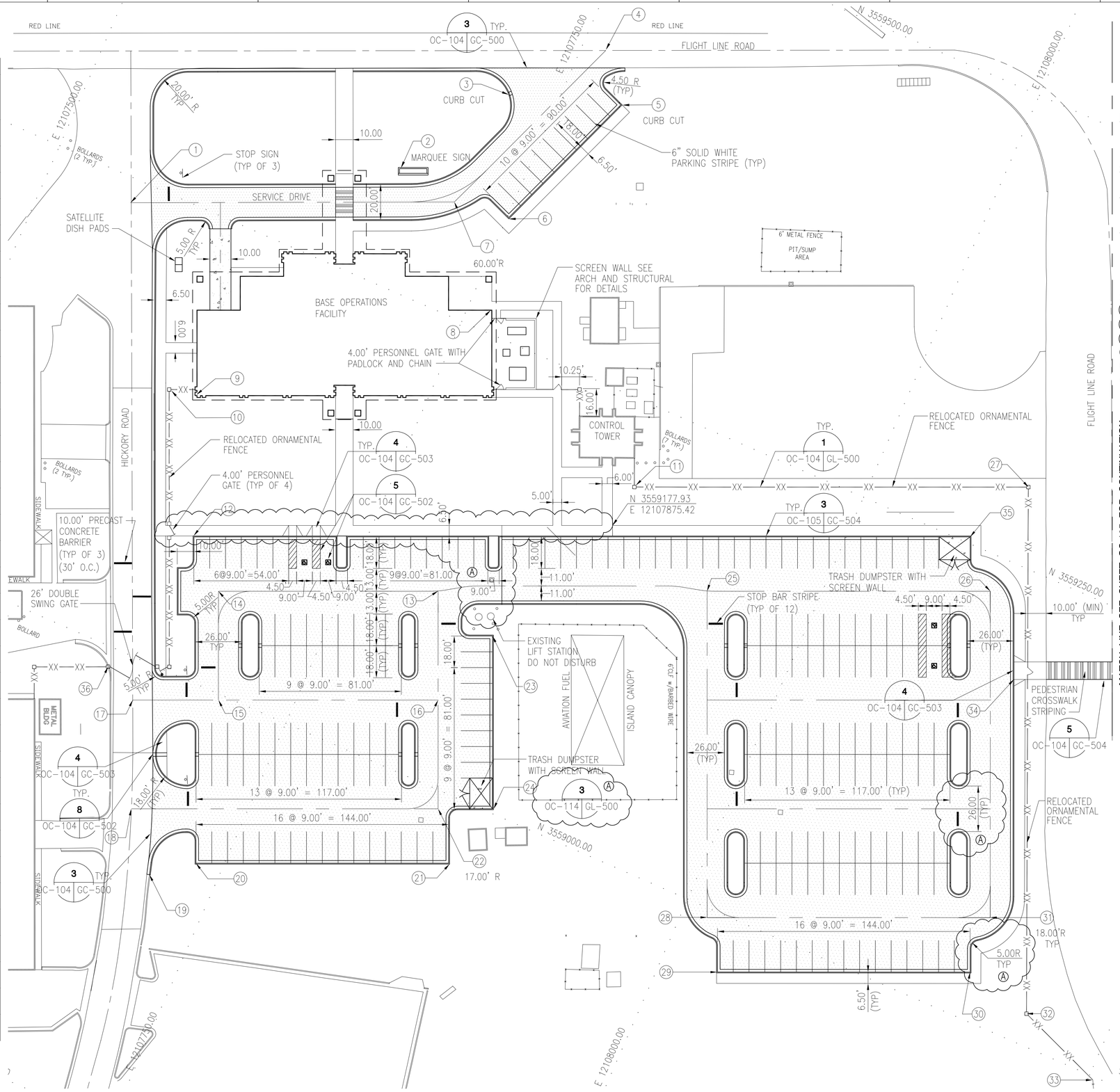
NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS, LO/CRF, & LIGHTING VAULT
SITE LAYOUT PLAN
SHEET 2 OF 2

OC-105
SHEET 44 OF 769

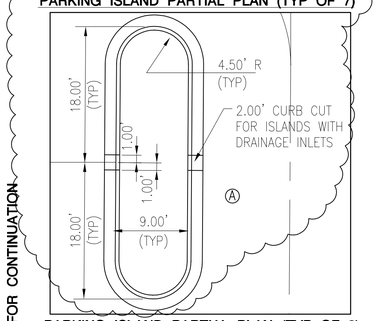
COORDINATE TABLE		
	NORTH	EAST
1	3559236.62	12107549.55
2	3559315.89	12107681.76
3	3559380.10	15107721.95
4	3559424.62	12107762.82
5	3559399.71	12107784.32
6	3559314.39	12107751.18
7	3559311.15	12107718.74
8	3559262.99	12107762.71
9	3559151.08	12107628.29
10	3559147.52	12107614.39
11	3559218.45	12107870.87
12	3559076.77	12107660.36
13	3559103.74	12107799.39
14	3559053.57	12107684.70
15	3558996.77	12107709.54
16	3559046.94	12107824.24
17	3558977.19	12107664.78
18	3558920.10	12107688.96
19	3558889.80	12107713.41
20	3558906.43	12107735.08
21	3558964.14	12107867.01
22	3558990.14	12107849.09
23	3559092.80	12107838.02
24	3559002.75	12107878.11
25	3559165.17	12107939.82
26	3559229.84	12108087.67
27	3559292.94	12108083.72
28	3558994.79	12108014.43
29	3558968.72	12108032.20
30	3559026.43	12108164.13
31	3559059.43	12108162.21
32	3559017.55	12108203.09
33	3558998.14	12108252.79
34	3559236.62	12107549.55
35	3559253.64	12108064.75
36	3558988.96	12107644.32



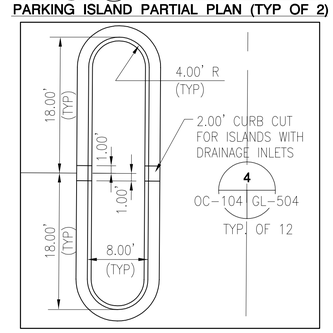
NOTES:

1. ALL COORDINATES AND DIMENSIONS ARE TO BE EXTERIOR CORNER OF BLDG. SLAB, FACE OF CURB, OR EDGE OF PAVEMENT AND ARE IN FEET UNLESS OTHERWISE NOTED.
2. SIDEWALKS AT BUILDING DOORS ARE CENTERED ON DOOR STOOP. SEE STRUCTURAL AND ARCHITECTURAL SHEETS.
3. ALL SIDEWALKS THAT ADJOIN CURB AND GUTTER SHALL HAVE HANDICAP RAMPS INSTALLED WITH THE DIRECTION OF PEDESTRIAN TRAFFIC PER DETAILS ON GC-503.
4. SEE SHEET OC-002 FOR HORIZONTAL AND VERTICAL CONTROL POINTS. SEE SHEEET HC-001 FOR CIVIL LEGEND.

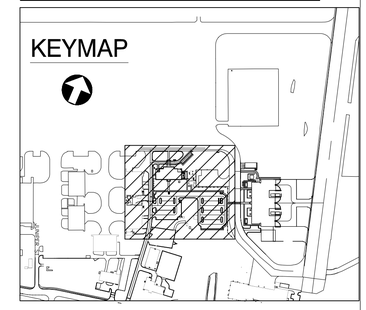
PARKING ISLAND PARTIAL PLAN (TYP OF 7)



PARKING ISLAND PARTIAL PLAN (TYP OF 2)



KEYMAP



SITE LAYOUT PLAN

30 0 30 60
SCALE IN FEET

US Army Corps of Engineers Norfolk District

REV.	DATE	DESCRIPTION	BY	APP.
A	11/20/01	REMOVED LIMITS, ADDED LABELS AND REVISED DETAIL.	RRB	ERK
B	10/24/01	REISSUED PER AMENDMENT 9	RRB	ERK

DATE: OCT 2001
SCALE: AS SHOWN
DESIGNED: ERK
CHECKED: RRB
DRAWN: RSH
SUBMITTED: RRM
PROJECT NO. F-22 FLIGHT LINE
NORFOLK DISTRICT FILE NO. DACA65-01-R-0025
SPECIFICATION NO. 01 23 10/011
DRAWING NO. 711-18-13
Plot scale: 1:1
Last saved on: 11-29-01
File name: \UK342\CIVIL\OC-104ST.DWG

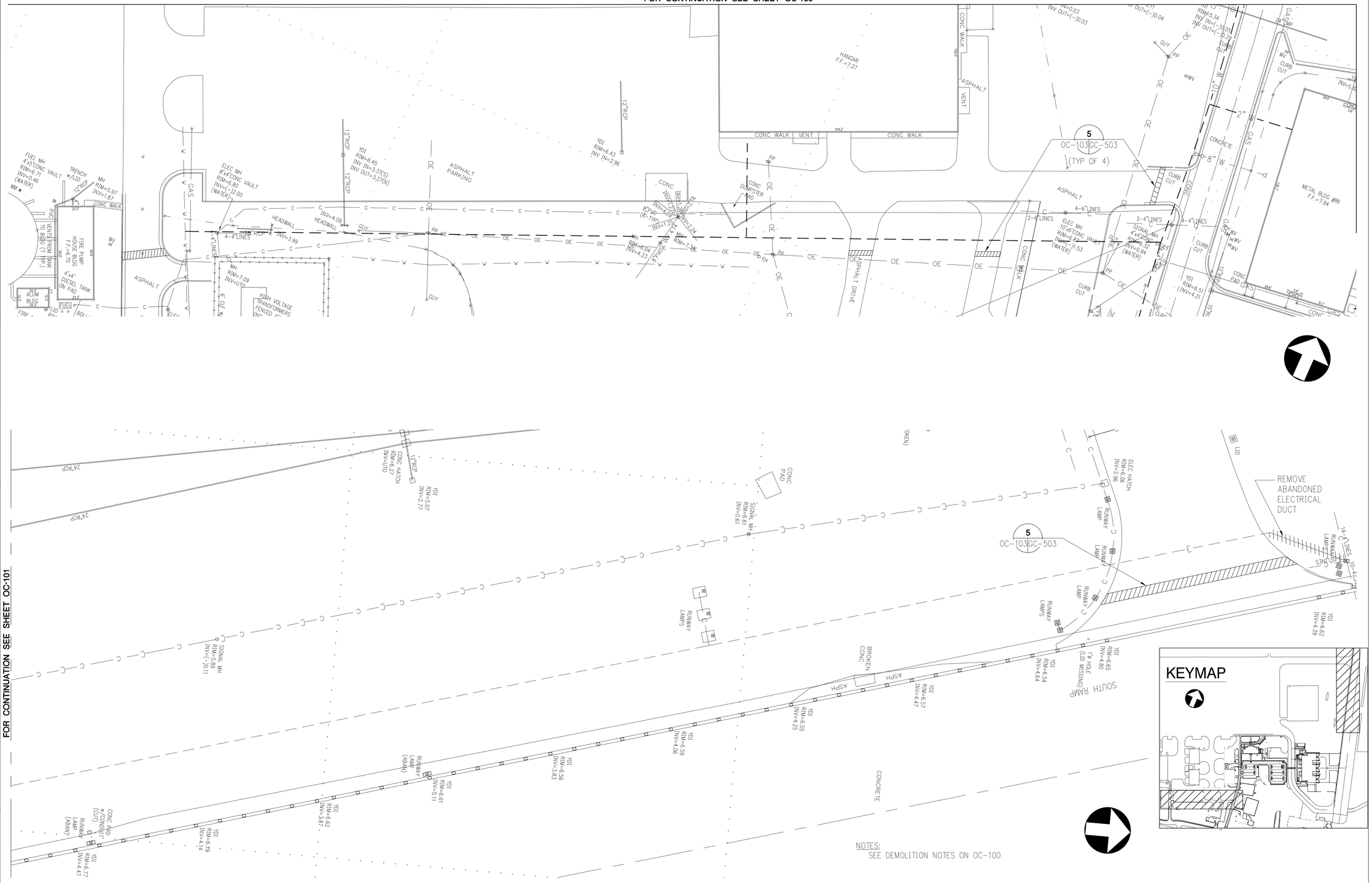
NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS, LO/CRF, & LIGHTING VAULT
SITE LAYOUT PLAN
SHEET 1 OF 2

OC-104
SHEET 43 OF 769

FOR CONTINUATION SEE SHEET OC-100



NOTES:
SEE DEMOLITION NOTES ON OC-100

SITE DEMOLITION PLAN 4

SCALE IN FEET

FOR CONTINUATION SEE SHEET OC-101

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP
A	10/24/01	REISSUED PER AMENDMENT 9	RRB	ERK

DESIGNED: RRB
DRAWN: RSH
CHECKED: RRM
SUBMITTED: ERK
DATE: OCT 2001
SCALE: AS SHOWN
PROJECT NO. FAC-F22-023010/011
NORFOLK DISTRICT FILE NO. LF-F22-A-42
SPECIFICATION NO. DACA65-01-R-0025
DRAWING NO. 711-18-13
Plot scale: 1:1
Last worked on: 10-19-01
File name: \JR342\CIVIL\OC-103DM.DWG

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS, LO/CRF, & LIGHTING VAULT
SITE DEMOLITION PLAN
SHEET 4 OF 4

OC-103
SHEET 42 OF 769

FOR CONTINUATION SEE SHEET OC-100, OC-101

ABANDON STORM DRAIN PIPE
CONC HATCH RIM=6.00 INV=UTO (LATCHES BROKEN)
ELEC HATCH RIM=6.37 INV=2.47
REMOVE CMP PIPE
REMOVE BROKEN ASPHALT
ABANDONED ELECTRICAL DUCT
ABANDONED ELECTRICAL DUCT
REMOVE PAVEMENT AND BASE. GRADE AREA TO DRAIN.
SAWCUT PAVEMENT FULL DEPTH
DO NOT DISTURB COMMUNICATION DUCT. SEE ELEC DRWGS FOR. CONCRETE ENCASEMENT DETAILS.
SEE DEMOLITION NOTE 1.
REMOVE STORM DRAIN PIPES
REMOVE MANHOLE AND CONNECT TWO 36" RCP PIPES TO NEW STORM DRAIN LINE. SEE OC-112.
REMOVE AIRFIELD LIGHT BASE AND FOUNDATION. (TYP OF 13)
5 OC-102 GC-503
FLIGHT LINE ROAD
ASPHALT
CONCRETE
GRASS
WATER
GAS
CABLE
12"RCP
18"DIP
20" W
TOP OF BANK
DITCH
TELE STRUCTURE
CONC/ROCK HEADWALL
FIRE MAIN INDICATOR POST
CONC PAD
BASE FIRE STATION F.F.=7.55 BLDG 367
COLUMN
CONC PAD w/BRICK WALL
ASPHALT DRIVE
2" EARTH SWALE
ELEC LID RIM=6.72 INV=2.12
SIGNAL MH 6'x6'CONC VAULT RIM=5.92 INV=(-)1.78 (WATER)
RUNWAY LAMP (ABAN)
10-4"LINES
2-4"LINES
14-4"LINES
CHAIN LINK FENCE
TRAFFIC CTRL BOX ON CONC
TRAFFIC SIGNAL
WATERMAIN LID
18"CONC
2-30"CONC
20"CI
N 3559000.00
N 3558750.00
N 3558500.00
E 12108000.00
E 12108250.00
E 12108500.00
E 12108750.00
22KV 4-5" E-12 SB-2

NOTES:

1. SEE DEMOLITION NOTES ON OC-100.

KEYMAP

SITE DEMOLITION PLAN 3

30 0 30 60
SCALE IN FEET

US Army Corps of Engineers Norfolk District

REV	DATE	DESCRIPTION	BY	APP
A	10/24/01	REISSUED PER AMENDMENT 9	RRB	ERK

DATE: OCT 2001
SCALE: AS SHOWN
NORFOLK DISTRICT FILE NO.
SPECIFICATION NO. DACA65-01-R-0025
Plot scale: 1:1

DESIGNED: RRB
DRAWN: RSH
CHECKED: RRM
SUBMITTED: ERK
PROJECT NO. HAC-023010/6911
DRAWING NO. 711-18-13
Last worked on:10-19-01
File name: \2K54X2\CIVIL\OC-102DM.DWG

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS, LO/CRF, & LIGHTING VAULT
SITE DEMOLITION PLAN
SHEET 3 OF 4

OC-102
SHEET 41 OF 769

OC-102DM.dwg 10-18-2001 08:24 CWF

FOR CONTINUATION SEE SHEET OC-103

FOR CONTINUATION SEE SHEET OC-100

FLIGHT LINE ROAD

ABANDON STORM DRAIN LINE

N 3559509.10
E 12108152.40

REMOVE STORM DRAIN LINES, INLETS, AND MANHOLES AFTER INSTALLING NEW LINE. SEE DWG. OC-108 FOR LAYOUT OF NEW STORM DRAIN.

REMOVE FUEL MANHOLE SEE NOTES 2 AND 3

DO NOT DISTURB COMMUNICATION LINE SEE ELECTRICAL DRAWINGS FOR CONCRETE ENCASEMENT DETAIL.

5
OC-101 CC-503
(TYP)

REMOVE FUEL LINE AND MANHOLE SEE NOTES 2 AND 3

REMOVE FUEL LINE SEE NOTE 3.

REMOVE STORM DRAIN LINE

REMOVE STORM DRAIN PIPE AND INLET

ABANDON STORM DRAIN LINE

N 3559509.53
E 12108338.52

BROKEN CONCRETE

REMOVE CONCRETE PAVEMENT

REMOVE DUCT AND LIGHT STRUCTURES.

DO NOT DISTURB COMMUNICATION LINE. SEE ELECTRICAL DRAWINGS FOR CONCRETE ENCASEMENT DETAIL.

ABANDONED ELECTRICAL DUCT

REMOVE AIRFIELD LIGHT BASE AND FOUNDATION (TYP)

N 3559572.45
E 12108542.32

REMOVE STORM DRAIN LINES, INLETS, AND MANHOLES AFTER INSTALLATION OF NEW LINE. SEE SHEET OC-108.

REMOVE AIRFIELD LIGHT BASE AND FOUNDATION (TYP)

SEE DEMOLITION NOTE 1.

N 3559065.71
E 12108360.63

ABANDON STORM DRAIN LINE

2-3" CONDUITS UNDER TAXIWAY

N 3559126.72
E 12108429.67

REMOVE BROKEN CONCRETE PAVEMENT

SAWCUT PAVEMENT EDGE

REMOVE AIRFIELD LIGHT BASE AND FOUNDATION (TYP)

SOUTH RAMP

GRASS

CONCRETE

N 3559500.00
N 3559750.00
N 3559250.00
E 12108500.00
E 12108750.00

NOTES:

1. SEE DEMOLITION NOTES ON OC-100
2. CONTRACTOR TO FOLLOW ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS IN CONSTRUCTING FUEL LINES. CONNECT TO EXISTING MANHOLE AT EACH END. EXISTING FUEL LINE TO REMAIN OPERATIONAL TO MAXIMUM EXENT POSSIBLE. COORDINATE WITH BASE OPERATIONS, BASE CIVIL ENGINEERING, AND CONTRACTING OFFICER. SEE SPECIFICATION SECTION -- FOR MORE DETAIL AND SHEET OC-111 FOR LAYOUT.
3. BEFORE BEGINNING WORK ON RELOCATION OF THE 10 INCH FUEL LINE, THE CONTRACTOR SHALL COORDINATE THE FUEL LINE SHUT DOWN TIMING AND WORK SHEDULE WITH THE CONTRACTING OFFICER, BASE CIVIL ENGINEER, LFM, BASE FIRE DEPARTMENT AND BASE POL. RELOCATION OF THE 10 INCH PIPE LINE SHALL BE STARTED AND COMPLETED WITHIN 7 DAYS. LOCATE THE FUEL SHUTOFF VALVES, LOW POINT DRAINS AND HIGH POINT VENTS ON THE 10 INCH FUEL SUPPLY LINE. ISOLATE THE 10 INCH FUEL LINE. DRAIN THE FUEL LINE OF FUEL. USE HIGH POINT VENTS TO INTRODUCE AIR INTO THE LINE. USE THE LOW POINT DRAIN TO REMOVE THE FUEL. COLD CUT THE LINE AND REMOVE SMALL SECTIONS OF THE LINE. ESTABLISH A "GAS FREE" WORK AREA. INSPECT THE REMAINING PIPE AND REPORT CONDITIONS TO THE CONTRACTING OFFICER. CAP AND PROTECT THE REMAINING PIPE ENDS. SEE DRAWING OC-111 FOR ROUTING OF PIPE.

KEYMAP

SITE DEMOLITION PLAN 2

30 0 30 60
SCALE IN FEET

FOR CONTINUATION SEE SHEET OC-102

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP'D
A	10/24/01	REISSUED PER AMENDMENT 9	RRB	ERK

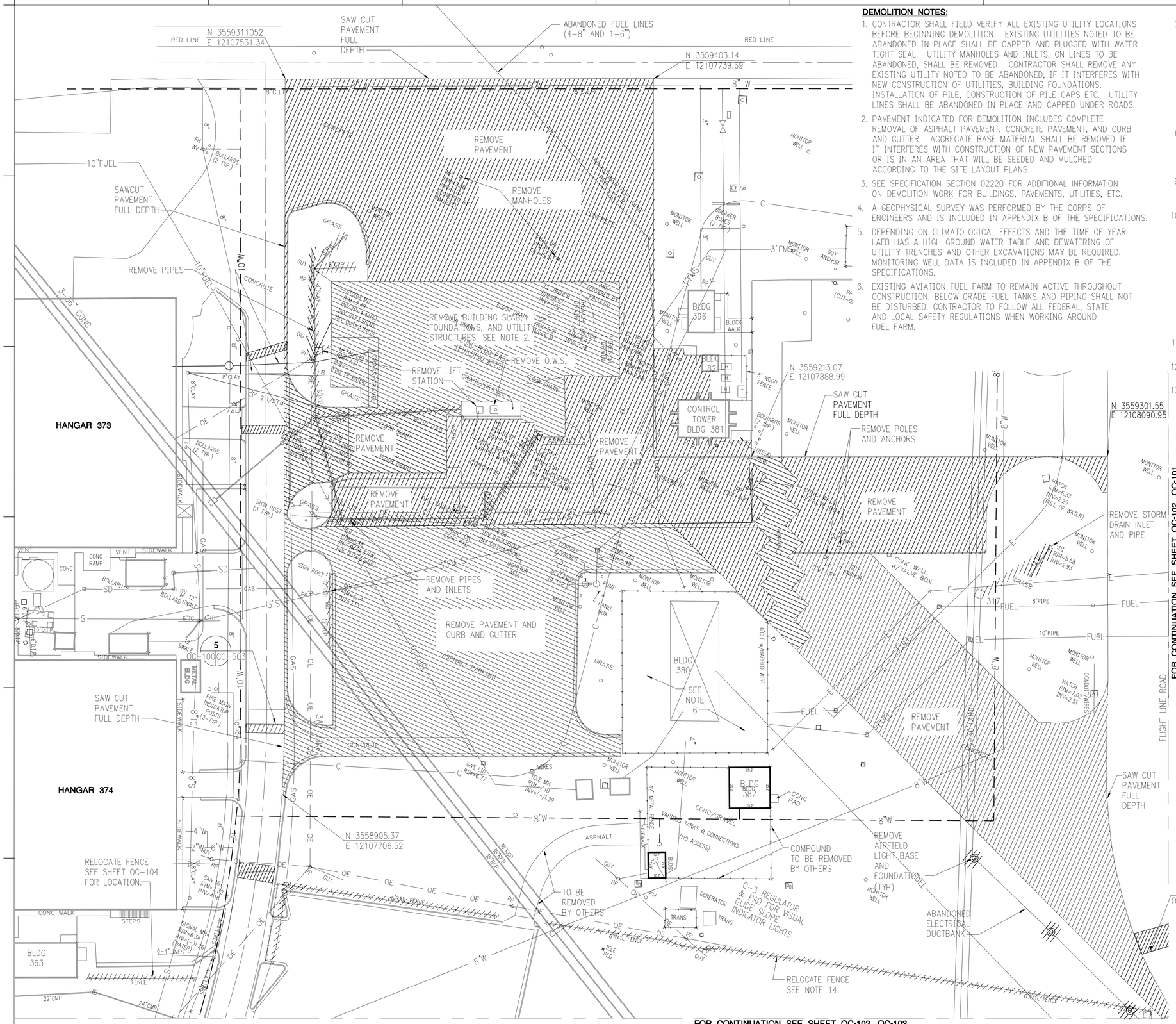
DESIGNED: RRB
DRAWN: TSH
CHECKED: RRM
SUBMITTED: ERK
DATE: OCT 2001
SCALE: AS SHOWN
PROJECT NO. FAC023010/011
NORFOLK DISTRICT FILE NO. LF-F22-10
SPECIFICATION NO. DACA65-01-R-0025
DRAWING NO. 711-18-13
Last worked on: 10-19-01
File name: \26342\CIVIL\OC-101DM.DWG
Plot scale: 1:1

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

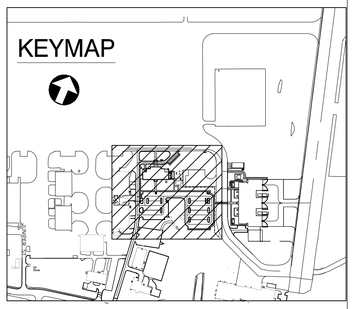
F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS, LO/CRF, & LIGHTING VAULT
SITE DEMOLITION PLAN
SHEET 2 OF 4

OC-101
SHEET 40 OF 769



DEMOLITION NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS BEFORE BEGINNING DEMOLITION. EXISTING UTILITIES NOTED TO BE ABANDONED IN PLACE SHALL BE CAPPED AND PLUGGED WITH WATER TIGHT SEAL. UTILITY MANHOLES AND INLETS, ON LINES TO BE ABANDONED, SHALL BE REMOVED. CONTRACTOR SHALL REMOVE ANY EXISTING UTILITY NOTED TO BE ABANDONED, IF IT INTERFERES WITH NEW CONSTRUCTION OF UTILITIES, BUILDING FOUNDATIONS, INSTALLATION OF PILE, CONSTRUCTION OF PILE CAPS ETC. UTILITY LINES SHALL BE ABANDONED IN PLACE AND CAPPED UNDER ROADS.
2. PAVEMENT INDICATED FOR DEMOLITION INCLUDES COMPLETE REMOVAL OF ASPHALT PAVEMENT, CONCRETE PAVEMENT, AND CURB AND GUTTER. AGGREGATE BASE MATERIAL SHALL BE REMOVED IF IT INTERFERES WITH CONSTRUCTION OF NEW PAVEMENT SECTIONS OR IS IN AN AREA THAT WILL BE SEEDED AND MULCHED ACCORDING TO THE SITE LAYOUT PLANS.
3. SEE SPECIFICATION SECTION 02220 FOR ADDITIONAL INFORMATION ON DEMOLITION WORK FOR BUILDINGS, PAVEMENTS, UTILITIES, ETC.
4. A GEOPHYSICAL SURVEY WAS PERFORMED BY THE CORPS OF ENGINEERS AND IS INCLUDED IN APPENDIX B OF THE SPECIFICATIONS.
5. DEPENDING ON CLIMATOLOGICAL EFFECTS AND THE TIME OF YEAR LAFB HAS A HIGH GROUND WATER TABLE AND DEWATERING OF UTILITY TRENCHES AND OTHER EXCAVATIONS MAY BE REQUIRED. MONITORING WELL DATA IS INCLUDED IN APPENDIX B OF THE SPECIFICATIONS.
6. EXISTING AVIATION FUEL FARM TO REMAIN ACTIVE THROUGHOUT CONSTRUCTION. BELOW GRADE FUEL TANKS AND PIPING SHALL NOT BE DISTURBED. CONTRACTOR TO FOLLOW ALL FEDERAL, STATE AND LOCAL SAFETY REGULATIONS WHEN WORKING AROUND FUEL FARM.
7. SCRAP METAL MAY BE TURNED OVER TO THE GOVERNMENT AND BE DELIVERED TO THE LANGLEY SCRAP METAL YARD. CONTACT MR. HENRY BRYSON (1 SVS) AT 764-4616. SEE SPECIFICATION SECTION 02220 FOR SIZES ALLOWED FOR RECYCLING. CONTRACTOR TO INCLUDE BID OPTION FOR TURNING OVER TO THE GOVERNMENT. ALL SCRAP METAL NOT TURNED OVER TO THE GOVERNMENT FOR RECYCLING SHALL BE RECYCLED OFF BASE. CONTRACTOR SHALL PROVIDE THE WEIGHT OF ALL DEMOLITION DEBRIS AND RECYCLED SCRAP METAL TO 1 CES/CEVR.
8. THE WEIGHT OF CONCRETE TAKEN FOR RECYCLING SHALL BE REPORTED TO 1 CES/CEVR. THE WEIGHT OF ALL CONCRETE THAT IS DISPOSED OF AS SOLID WASTE SHALL ALSO BE REPORTED TO CEVP AS DEMOLITION DEBRIS.
9. CONTRACTOR IS REQUIRED TO OBTAIN A STORM WATER GENERAL PERMIT FOR LAND DISTURBANCE OF MORE THAN 1 ACRE FROM VIRGINA DEPARTMENT OF ENVIRONMENTAL QUALITY.
10. CONSTRUCTION AT THIS SITE SHALL IMPACT ERP SITE ST-26 AND OT-56. BASE STORM SEWER SYSTEM IS ERP SITE OT-56. ALL MATERIAL WITHIN STORM SEWER PIPES BEING REMOVED WILL REQUIRE TESTING PRIOR TO DISPOSAL OFF BASE. COORDINATE WITH CONTRACTING OFFICER AND CEVP. IF CONTRACTOR ENCOUNTERS CONTAMINATED SOIL/FUEL, CONTACT CONTRACTING OFFICER AND BASE ENVIRONMENTAL OFFICE, AND IF REQUIRED BY CEVP THROUGH CONTRACTING OFFICE, REMOVE CONTAMINATED MATERIAL PER STATE AND FEDERAL REGULATIONS AND SPECIFICATIONS. SEE ENVIROMENTAL MONITORING WELL DATA AND ERP SITE DATA IN APPENDIX B OF THE SPECIFICATIONS.
11. SEE DETAIL 6 ON GC-506 FOR MODIFICATION OF EXISTING MONITORING WELL.
12. REFER TO APPENDIX A OF THE SPECIFICATIONS FOR SOIL BORING LOGS, PAVEMENT CORINGS, ETC.
13. REMOVE AND RELOCATE ORNAMENTAL FENCE MATERIAL TO LOCATION AS SHOWN ON OC-104. INCLUDES ALL HARDWARE AND MATERIAL EXCEPT MASONRY COLUMNS OR FOUNDATIONS.



SITE DEMOLITION PLAN 1

30 0 30 60
SCALE IN FEET

US Army Corps of Engineers Norfolk District

REV	DATE	DESCRIPTION	BY	APD
A	10/24/01	REISSUED PER AMENDMENT 9	RRB	ERK

FOR CONTINUATION SEE SHEET OC-102, OC-103

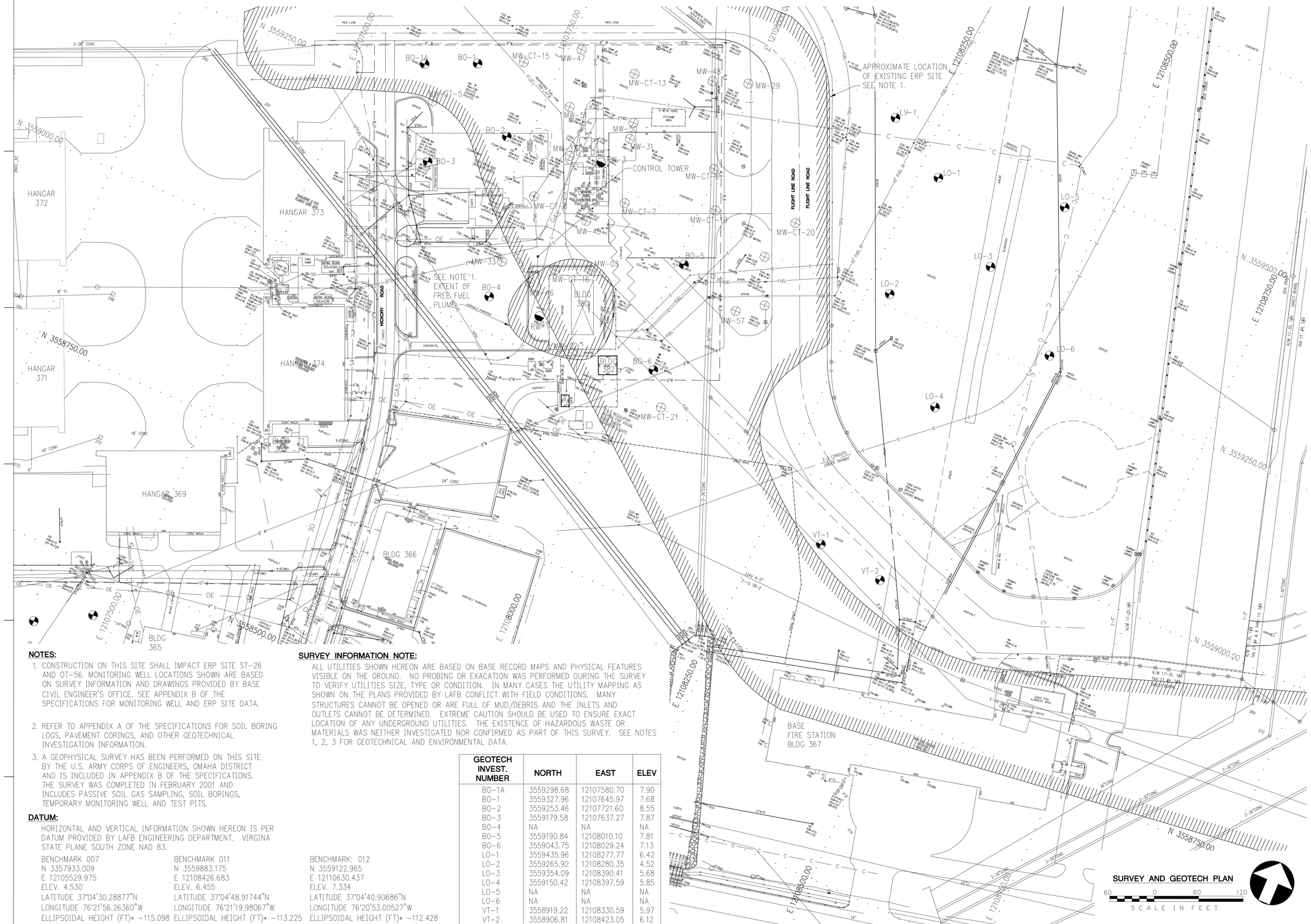
NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

DESIGNED: RRB | CHECKED: RMM | DATE: OCT 2001
DRAWN: RSH | SUBMITTED: ERK | SCALE: AS SHOWN
PROJECT NO. 1423010/011 | NORFOLK DISTRICT FILE NO. LF-22-1-103
DRAWING NO. 711-18-13 | SPECIFICATION NO. DACA65-01-R-0025
Last worked on: 10-19-01 | Plot scale: 1:30
File name: \JR342\CIVIL\OC-100DM.DWG

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS, LO/CRF, & LIGHTING VAULT
SITE DEMOLITION PLAN
SHEET 1 OF 4

OC-100
SHEET 39 OF 769



NOTES:

1. CONSTRUCTION ON THIS SITE SHALL IMPACT ERP SITE ST-26 AND OT-56. MONITORING WELL LOCATIONS SHOWN ARE BASED ON SURVEY INFORMATION AND DRAWINGS PROVIDED BY BASE CIVIL ENGINEER'S OFFICE. SEE APPENDIX B OF THE SPECIFICATIONS FOR MONITORING WELL AND ERP SITE DATA.
2. REFER TO APPENDIX A OF THE SPECIFICATIONS FOR SOIL BORING LOGS, PAVEMENT CORINGS, AND OTHER GEOTECHNICAL INVESTIGATION INFORMATION.
3. A GEOPHYSICAL SURVEY HAS BEEN PERFORMED ON THIS SITE BY THE U.S. ARMY CORPS OF ENGINEERS, OMAHA DISTRICT AND IS INCLUDED IN APPENDIX B OF THE SPECIFICATIONS. THE SURVEY WAS COMPLETED IN FEBRUARY 2001 AND INCLUDES PASSIVE SOIL GAS SAMPLING, SOIL BORINGS, TEMPORARY MONITORING WELL AND TEST PITS.

DATUM:

HORIZONTAL AND VERTICAL INFORMATION SHOWN HEREON IS PER DATUM PROVIDED BY LAFB ENGINEERING DEPARTMENT. VIRGINA STATE PLANE SOUTH ZONE NAD 83.

BENCHMARK 007	BENCHMARK 011	BENCHMARK: 012
N 3357933.009	N 3559883.175	N 3559122.965
E 12105529.975	E 12108426.683	E 12110630.437
ELEV. 4.530	ELEV. 6.455	ELEV. 7.334
LATITUDE 37°04'30.28877"N	LATITUDE 37°04'48.91744"N	LATITUDE 37°04'40.90686"N
LONGITUDE 76°21'56.26360"W	LONGITUDE 76°21'19.98067"W	LONGITUDE 76°20'53.00527"W
ELLIPSOIDAL HEIGHT (FT)* -115.098	ELLIPSOIDAL HEIGHT (FT)* -113.225	ELLIPSOIDAL HEIGHT (FT)* -112.428

SURVEY INFORMATION NOTE:

ALL UTILITIES SHOWN HEREON ARE BASED ON BASE RECORD MAPS AND PHYSICAL FEATURES VISIBLE ON THE GROUND. NO PROBING OR EXACATION WAS PERFORMED DURING THE SURVEY TO VERIFY UTILITIES SIZE, TYPE OR CONDITION. IN MANY CASES THE UTILITY MAPPING AS SHOWN ON THE PLANS PROVIDED BY LAFB CONFLICT WITH FIELD CONDITIONS. MANY STRUCTURES CANNOT BE OPENED OR ARE FULL OF MUD/DEBRIS AND THE INLETS AND OUTLETS CANNOT BE DETERMINED. EXTREME CAUTION SHOULD BE USED TO ENSURE EXACT LOCATION OF ANY UNDERGROUND UTILITIES. THE EXISTENCE OF HAZARDOUS WASTE OR MATERIALS WAS NEITHER INVESTIGATED NOR CONFIRMED AS PART OF THIS SURVEY. SEE NOTES 1, 2, 3 FOR GEOTECHNICAL AND ENVIRONMENTAL DATA.

GEOTECH INVEST. NUMBER	NORTH	EAST	ELEV
BO-1A	3559298.68	12107580.70	7.90
BO-1	3559327.96	12107645.97	7.68
BO-2	3559253.46	12107721.60	8.55
BO-3	3559179.58	12107637.27	7.87
BO-4	NA	NA	NA
BO-5	3559190.84	12108010.10	7.81
BO-6	3559043.75	12108029.24	7.13
LO-1	3559435.96	12108277.77	6.42
LO-2	3559265.92	12108280.35	4.52
LO-3	3559354.09	12108390.41	5.68
LO-4	3559150.42	12108397.59	5.85
LO-5	NA	NA	NA
LO-6	NA	NA	NA
VT-1	3558919.22	12108330.59	5.97
VT-2	3558906.81	12108423.05	6.12

SURVEY AND GEOTECH PLAN

60 0 60 120
SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APD
A	10/24/02	REISSUED PER AMENDMENT 9	RRB	ERK

DESIGNED: RRB
CHECKED: RRM
DATE: OCT 2001
DRAWN: RSH
SUBMITTED: ERK
SCALE: AS SHOWN
PROJECT NO. LAF023010/011
NORFOLK DISTRICT FILE NO. LAF022-A-30
DRAWING NO. 711-18-13
SPECIFICATION NO. DACA65-01-R-0025
Last worked on: 10-19-01
File name: \JB342\CIVIL\OC-002SV.DWG
Plot scale: 1:1

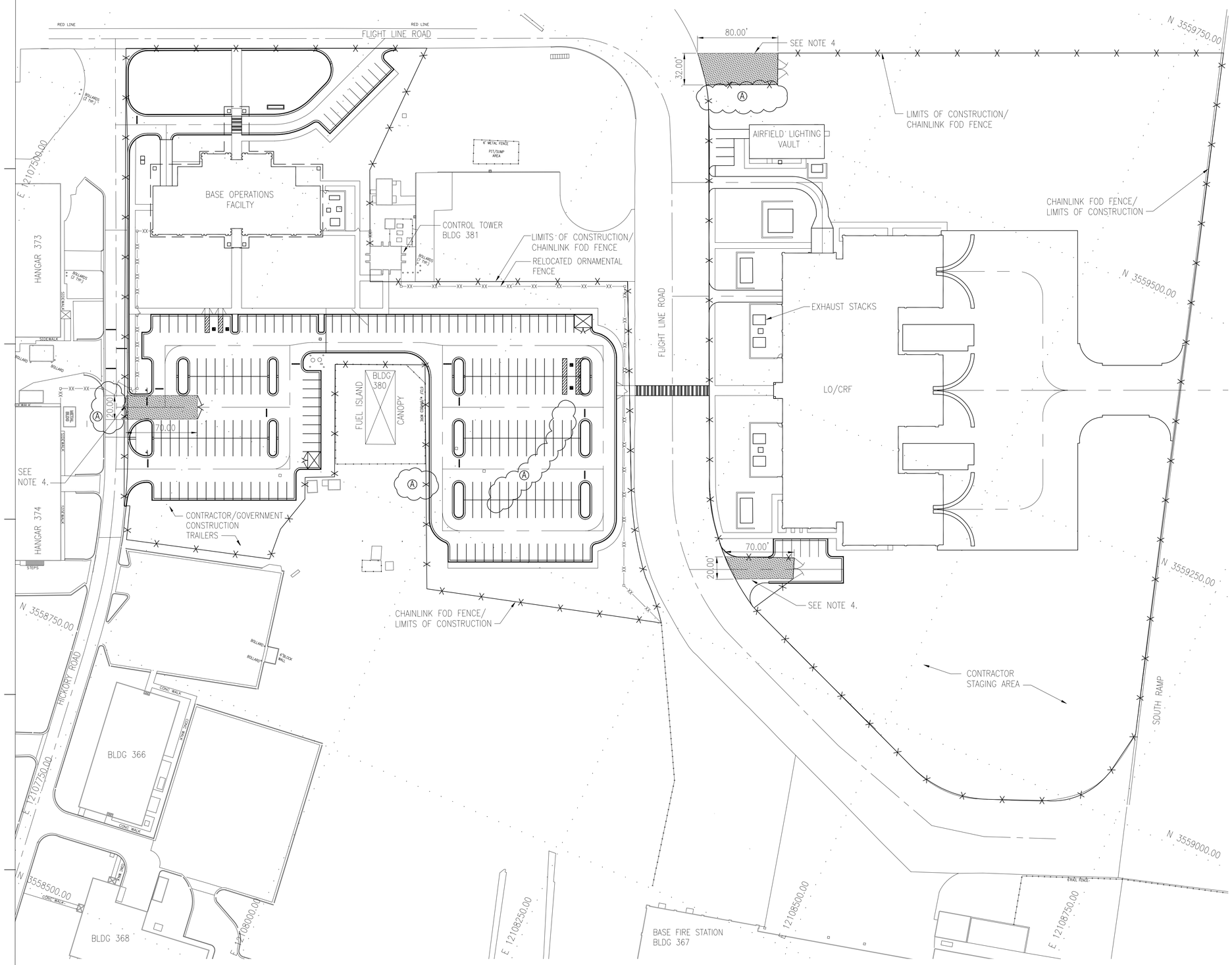
NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS, LO/CRF, & LIGHTING VAULT
SURVEY AND GEOTECH PLAN

OC-002
SHEET 38 OF 769

OC-002SV.dwg 10-18-2001 09:17 MRM



NOTES:

1. ENCLOSE THE PROJECT WORK AREA AND CONTRACTOR STAGING AREA WITH A 6 FEET HIGH CHAIN LINK FENCE AND GATES WITH BROWN, UV LIGHT RESISTANT, PLASTIC FABRIC MESH NETTING, (SIMILAR TO TENNIS COURT OR OTHER SCREENING). REMOVE THE FENCE UPON COMPLETION AND ACCEPTANCE OF THE WORK. INTENT IS TO CONTAIN FOD ON THE CONSTRUCTION SITE. FENCE AND FABRIC SHALL BE SECURED TO WITHSTAND JET BLAST FROM ON GOING ACTIVITIES ON THE APRON. FOD FENCE AND FABRIC SHALL MEET THE CRITERIA AS LISTED IN SPECIFICATION SECTION 02821.
2. CONTRACTOR SHALL RESTORE/MAINTAIN EXISTING PAVEMENTS, STRIPING, LANDSCAPING, FENCES, ETC. TO PRECONSTRUCTION CONDITION PRIOR TO COMPLETION OF THE PROJECT. CONTRACTOR SHALL VIDEOTAPE CONDITIONS OF ROADS AND OTHER IMPROVEMENTS THAT REMAIN PRIOR TO COMMENCEMENT OF WORK AND PROVIDE 2 COPIES TO CONTRACTING OFFICER.
3. IF ADJUSTMENTS TO TEMPORARY FOD FENCE LOCATION ARE NEEDED FOR EQUIPMENT/CONSTRUCTION OPERATIONS SUBMIT PROPOSED CHANGE TO CONTRACTING OFFICER FOR WRITTEN APPROVAL.
4. ASPHALT CONSTRUCTION ENTRANCE WITH FOD SHAKER AND 20.00' DOUBLE SWING GATE.

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APD
A	11/20/01	REMOVED OR RELOCATED DIMENSIONS AND LABELS.	RRB	ERK
B	10/24/01	REISSUED PER AMENDMENT 9	RRB	ERK

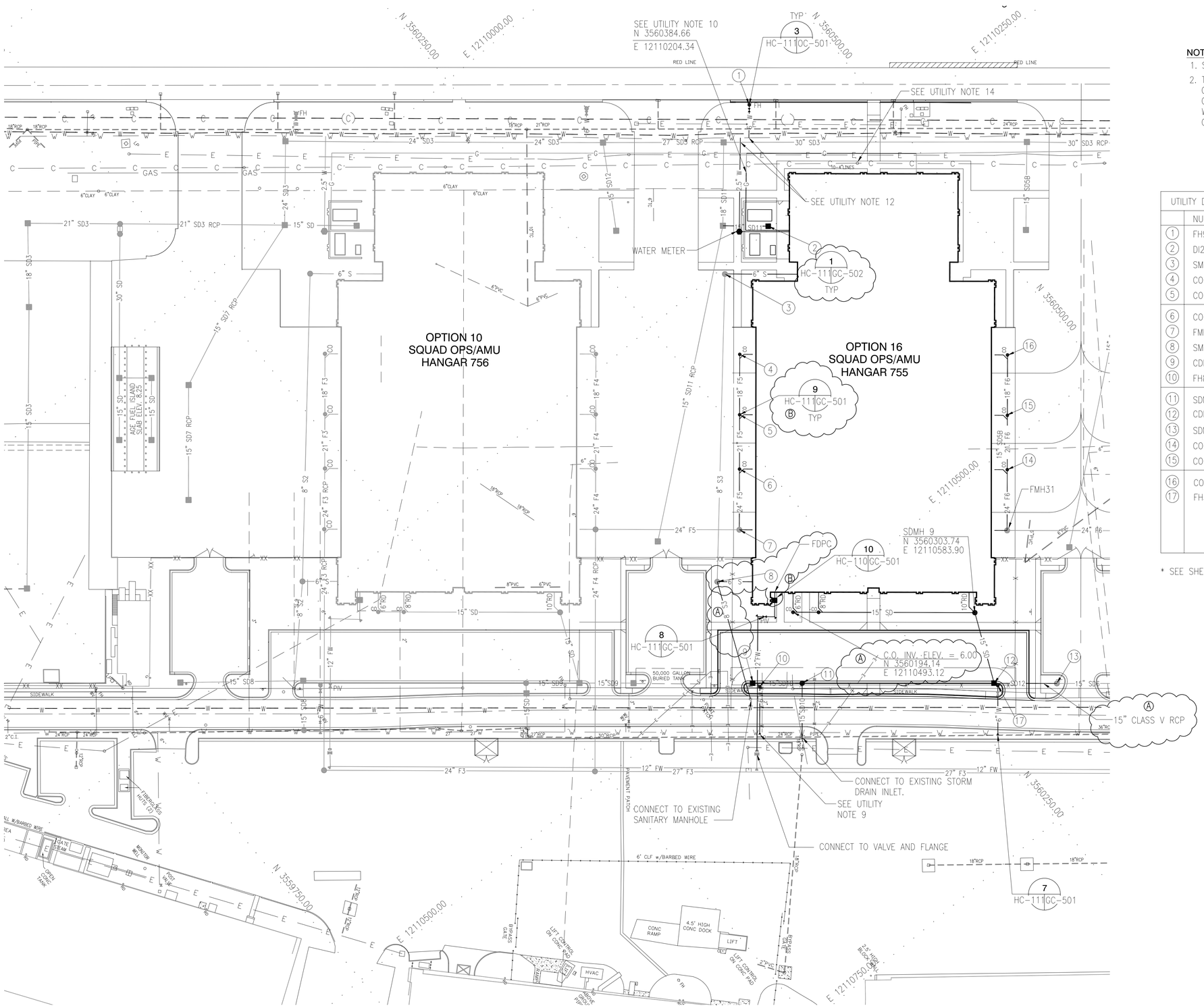
DESIGNED: RRB
CHECKED: RMM
DATE: OCT 2001
DRAWN: RSH
SUBMITTED: ERK
SCALE: AS SHOWN
PROJECT NO. FA-ACC023011
NORFOLK DISTRICT FILE NO. F-22 Facilities Improvements
SPECIFICATION NO. DACA65-01-R-0025
DRAWING NO. 711-18-13
Last worked on: 11-29-01
File name: \JR342\CIVIL\OC-001PH.DWG
Plot scale: 1:50

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS FACILITY
STAGING/LAYDOWN AREA PLAN

OC-001
SHEET 37 OF 769



NOTES:

1. SEE UTILITY NOTES ON HC-109.
2. THERE ARE ABANDONED FUEL LINES ALONG THE NORTH SIDE OF DANFORTH AVENUE. IF EXCAVATED NOTIFY CONTRACTING OFFICER. PIPE SHALL BE CUT AS NEEDED AND PLUGGED WITH WATER TIGHT SEAL AS DIRECTED BY CONTRACTING OFFICER.

UTILITY DATA CHART (SEE GC-507 FOR RIM & INVERTS)

	NUMBER	NORTH	EAST
1	FH9	N 3560420.39	E 12110164.86
2	DI23	N 3560371.40	E 12110247.59
3	SMH6 (EXIST)	*	*
4	CO-F27	N 3560290.38	E 12110310.80
5	CO-F26	N 3560260.22	E 12110347.22
6	CO-25	N 3560233.09	E 12110379.97
7	FMH24 (EXIST)	*	*
8	SMH5 (EXIST)	*	*
9	CDI3	N 3560134.41	E 12110515.89
10	FH8	N 3560136.91	E 12110521.62
11	SDMH1	N 3560164.30	E 12110540.57
12	CDI4	N 3560280.25	E 12110636.03
13	SDMH2 (EXIST)	*	*
14	CO-30	N 3560394.51	E 12110513.66
15	CO-29	N 3560421.64	E 12110480.90
16	CO-28	N 3560451.80	E 12110444.49
17	FH3	N 3560303.74	E 12110583.90

* SEE SHEET HC-110 FOR UTILITY DATA

SITE UTILITY PLAN - OPTION 16

40 0 40 80

SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP'D
A	07/16/01	ISSUED FOR STORM WATER QUALITY & EROSION CONTROL PERMIT	RRB	ERK
B	11/30/01	REVISED FOR PERMITTING AND REMOVED EXISTING FH.	RRB	ERK
C	01/24/02	REVISED, REMOVED AND ADDED LABELS.	RRB	ERK
D	01/24/02	REISSUED PER AMENDMENT 9		

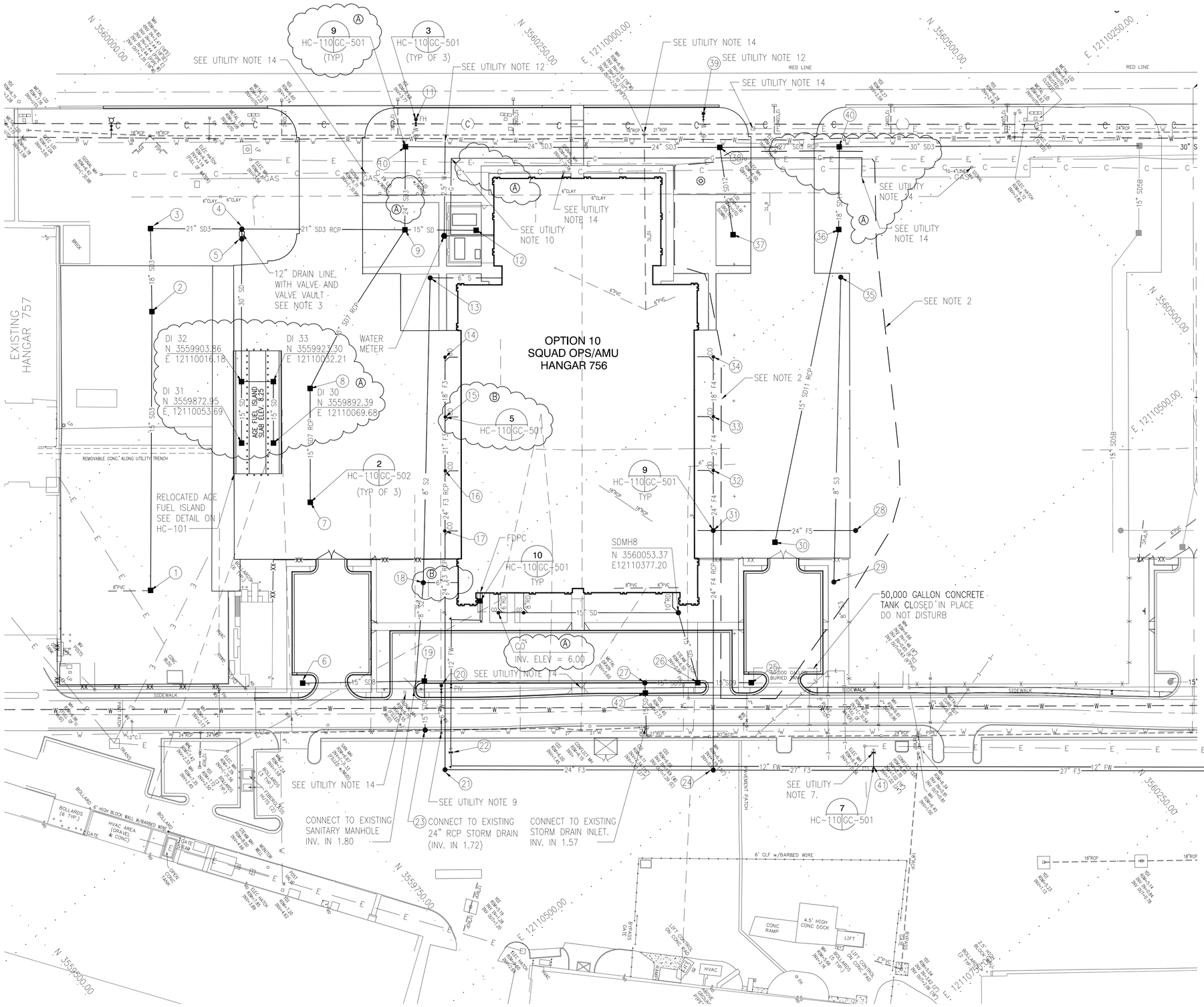
DESIGNED: RRB
CHECKED: RRM
DRAWN: RSH
SUBMITTED: ERK
DATE: OCT 2001
SCALE: AS SHOWN
PROJECT NO. FA-ACC023011
NORFOLK DISTRICT FILE NO. LEF-422-14
SPECIFICATION NO. DACA65-01-R-0025
DRAWING NO. 711-18-13
Plot scale: 1=40
Last worked on: 11-29-01
File name: 726342/CIVIL/HC-111UT.DWG

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
SQUADRON OPERATIONS/AMU HANGAR
SITE UTILITY PLAN
OPTION 16

HC-111
SHEET 24 OF 769



UTILITY DATA CHART (SEE GC-507 FOR RIM & INVERTS)			
	NUMBER	NORTH	EAST
1	DI28	N 3559743.28	E 12110097.39
2	DI27	N 3559884.64	E 12109928.38
3	DI26	N 3559925.62	E 12109877.12
4	SDMH4	N 3559981.02	E 12109923.46
5	SDMH5	N 3559975.95	E 12109929.52
6	DI18	N 3559789.11	E 12110230.59
7	DI14	N 3559884.93	E 12110124.34
8	DI15	N 3559884.93	E 12110124.34
9	DI16	N 3560079.95	E 12110006.19
10	DI17	N 3560122.04	E 12109955.91
11	FH5	N 3560142.23	E 12109944.60
12	DI16A	N 3560123.04	E 12110042.40
13	SMH3	N 3560071.04	E 12110048.16
14	CO F-16	N 3560040.14	E 12110103.94
15	CO F-17 (A)	N 3560010.14	E 12110140.48
16	CO F-18	N 3559983.02	E 12110173.24
17	CO F-19	N 3559952.34	E 12110209.56
18	SMH4	N 3559913.19	E 12110230.26
19	CDI1	N 3559864.19	E 12110290.65
20	FH6	N 3559872.27	E 12110301.99
21	FMH15	N 3559832.14	E 12110355.08
22	TEE W/ VALVE	N 3559866.45	E 12110362.24
23	SDMH3	N 3559839.98	E 12110320.91
24	FMH14	N 3559995.27	E 12110490.63
25	DI20	N 3560062.48	E 12110456.54
26	CDI2	N 3560029.87	E 12110429.58
27	SDMH6	N 3559997.59	E 12110402.98
28	FMH24	N 3560202.77	E 12110416.58
29	SMH5	N 3560233.09	E 12110379.97
30	DI21	N 3560147.74	E 12110383.02
31	FMH23	N 3560116.07	E 12110344.77
32	CO-F22	N 3560146.39	E 12110308.16
33	CO-F21	N 3560173.52	E 12110275.41
34	CO-F20	N 3560203.68	E 12110238.99
35	SMH6	N 3560321.41	E 12110254.86
36	DI22	N 3560344.23	E 12110224.76
37	DI24	N 3560277.29	E 12110174.66
38	DI19	N 3560313.22	E 12110114.82
39	FH7	N 3560320.28	E 12110086.01
40	DI25	N 3560386.22	E 12110174.74
41	TEE W/ VALVE	N 3560094.61	E 12110569.29
42	CDI5	N 3559992.75	E 12110409.45

NOTES:

1. SEE UTILITY NOTES ON HC-109.
2. ALL NEW UTILITY WORK SHOWN WITHIN OPTION LIMITS SHALL BE BID AS PART OF OPTION 13. ALL OTHER NEW UTILITY WORK SHOWN SHALL BE BID AS PART OF HANGAR 756-OPTION 10.
3. DRAIN LINE WITH VALVE IS FOR CONTROLLING FUEL SPILLS. VALVE SHALL NORMALLY BE OPEN EXCEPT DURING FUELING OPERATIONS, THEN THE VALVE SHALL BE CLOSED. UPON COMPLETION OF FUELING OPERATION THE VALVE SHALL BE OPENED TO ALLOW STORM WATER TO DRAIN.
4. SEE GC-507 FOR UTILITY STRUCTURES TABLES WITH INVERT AND RIM ELEVATIONS.

SITE UTILITY PLAN - OPTIONS 10 & 13

40 0 40 80
SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP.
1	11/16/01	ISSUED FOR STORM WATER QUALITY & EROSION CONTROL PERMIT	RRB	ERK
2	11/26/01	REVISED FOR PERMITTING	RRB	ERK
3	11/29/01	ADDED UTILITY LABEL AND DETAIL CALL OUT.	RRB	ERK
4	01/24/02	REISSUED PER AMENDMENT 9	RRB	ERK

DESIGNED: RRB
CHECKED: RRM
DRAWN: TSH
SUBMITTED: ERK
DATE: OCT 2001
SCALE: AS SHOWN
PROJECT NO. FACC023011
NORFOLK DISTRICT FILE NO. LEF22-13
SPECIFICATION NO. DACA65-01-R-0025
DRAWING NO. 711-18-13
Last worked on: 11-29-01
File name: /26342/CIVIL/HC-110UT.DWG
Plot scale: 1:40

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
SQUADRON OPERATIONS/AMU HANGAR
SITE UTILITY PLAN
OPTIONS 10 & 13

HC-110
SHEET 23 OF 769

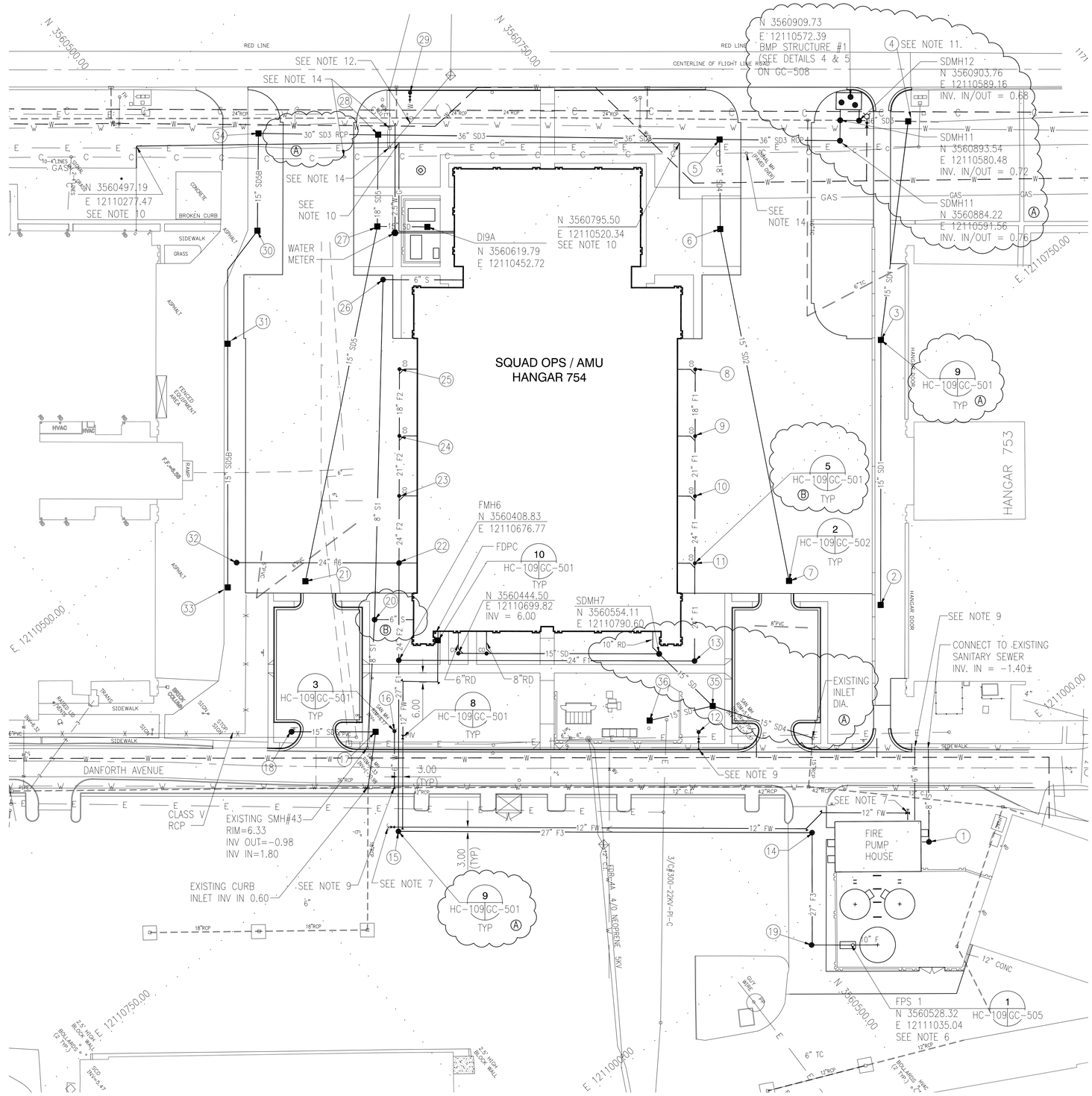
HC-110UT.dwg 11-29-2001 09:13 RSH

UTILITY NOTES

1. COORDINATES OF INLETS OR STRUCTURES ARE GIVEN TO STRUCTURE CENTERS. ALL DIMENSIONS ARE IN FEET UNLESS NOTED OTHERWISE.
2. CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING WORK. CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER OF ANY DISCREPANCIES BETWEEN THE FIELD LOCATED UTILITIES AND THE UTILITIES SHOWN ON THE PLAN.
3. SEE MECHANICAL DRAWINGS FOR CONTINUATION OF UTILITY LINES INSIDE OF THE BUILDING.
4. ALL WATER MAINS SHALL BE A MINIMUM OF 3 FEET BELOW GRADE UNLESS OTHERWISE INDICATED. ALL FIRE WATER MAINS SHALL BE 3.5' BELOW GRADE UNLESS INDICATED OTHERWISE.
5. INSTALL REDUCERS 5 FEET FROM BUILDING ON THE SANITARY SEWER SERVICE LINES. THE REDUCERS MARK THE INTERFACE BETWEEN THE 4" MECHANICAL AND 6" CIVIL SERVICE.
6. FOAM PUMP STATION 1 SHALL NOT BE ACTIVATED UNLESS FIRE ALARM SYSTEM IN ANY HANGAR IS ACTIVATED. THE ELECTRICAL POWER SUPPLY TO THE PUMPS WILL BE RUN THROUGH THE FIRE PUMP HOUSE CONTROLS. IN THE EVENT OF A FIRE ALARM ACTIVATION IN ANY HANGAR BAY, POWER WILL BE SUPPLIED TO THE PUMP STATION AND THE FLOAT CONTROLS IN THE VAULT WILL THEN ACTIVATE THE PUMPS. IN THE EVENT OF A FLUID SPILL IN THE HANGAR BAY, THE FLUID WILL BE CONTAINED IN THE PUMP STATION VAULT AND SHALL BE PUMPED OUT MANUALLY THROUGH THE ACCESS HATCH. SEE SPECIFICATIONS AND ELECTRICAL CONTROLS FOR MORE DETAILS.
7. INSTALL FOAM MANHOLE OR VALVE VAULT, VALVE, AND BLIND FLANGE FOR FUTURE CONNECTION OF OTHER HANGAR FACILITIES.
8. THERE ARE ABANDONED FUEL LINES ALONG THE NORTH SIDE OF DANFORTH AVENUE. IF EXCAVATED NOTIFY CONTRACTING OFFICER. PIPE SHALL BE CUT AS NEEDED AND PLUGGED WITH WATER TIGHT SEAL AS DIRECTED BY CONTRACTING OFFICER.
9. CONNECT TO TEE AND VALVE ON EXISTING WATER MAIN. COORDINATE WITH CONTRACTING OFFICER AND BASE CIVIL ENGINEERING OFFICE.
10. VIRGINIA NATURAL GAS TO PERFORM ALL WORK ON GAS LINES UP TO BUILDING METER. CONTRACTOR SHALL COORDINATE AND PAY ALL FEES AND CONNECTION CHARGES IN REGARD TO NEW GAS SERVICE, INCLUDING METER, CONNECTION, AND OTHER ASSOCIATED FEES FOR GAS SERVICE. COORDINATE WITH VIRGINIA NATURAL GAS AND BASE CIVIL ENGINEERS OFFICE. AN 18" SEPERATION IS REQUIRED BETWEEN NATURAL GAS SERVICE LINES AND BURIED ELECTRICAL LINES BOTH HORIZONTALLY AND VERTICALLY. CONTACT MICHELLE CENTER AT 757-873-6246 FOR V.N.G.
11. CONNECTION TO EXISTING 24" DOWNSTREAM RCP IS TEMPORARY UNTIL STORM DRAIN LINE IS REPLACED IN THE FUTURE.
12. CONNECT DOMESTIC WATER TO TEE AND VALVE ON EXISTING WATER MAIN. COORDINATE WITH CONTRACTING OFFICER AND BASE CIVIL ENGINEERING OFFICE.
13. SEE UTILITY STRUCTURES TABLE ON DRAWING GC-507.
14. ADJUST MANHOLE FRAME AND TOP TO NEW PROPOSED GRADE. STRUCTURES IN AIRFIELD PAVEMENTS SHALL BE AIRCRAFT RATED FOR TRAFFIC LOAD OF 30,000 LBS SINGLE WHEEL LOAD AND A CONTACT PRESSURE OF 292 PSI AND A CONTACT AREA OF 102 SQUARE INCHES. CONTRACTOR SHALL SUBMIT STRUCTURAL DRAWINGS, DESIGN CALCULATIONS, AND WATERPROOFING METHOD, BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF VIRGINIA, FOR APPROVAL.

UTILITY DATA CHART (SEE GC-507 FOR RIM & INVERTS)

	NUMBER	NORTH	EAST
1	SMH9	N 3560616.91	E 12111015.09
2	DI1	N 3560697.26	E 12110863.71
3	DI2	N 3560816.80	E 12110718.92
4	DI3	N 3560930.28	E 12110611.69
5	DI4	N 3560818.96	E 12110536.65
6	DI5	N 3560778.96	E 12110585.91
7	DI6	N 3560658.01	E 12110809.25
8	CO-F1	N 3560702.08	E 12110650.71
9	CO-F2	N 3560671.88	E 12110687.76
10	CO-F3	N 3560644.75	E 12110720.51
11	CO-F4	N 3560614.43	E 12110757.12
12	FH1	N 3560540.49	E 12110851.10
13	FMH5	N 3560570.25	E 12110810.46
14	FMH12	N 3560557.14	E 12110957.27
15	FMH7	N 3560331.54	E 12110770.08
16	FH2	N 3560374.54	E 12110713.54
17	DI7	N 3560363.93	E 12110705.41
18	SDMH2	N 3560318.01	E 12110667.51
19	FMH13	N 3560506.25	E 12111018.43
20	SMH1	N 3560413.93	E 12110643.65
21	DI8	N 3560393.40	E 12110591.46
22	FMH11	N 3560452.81	E 12110623.67
23	CO-F10	N 3560483.14	E 12110587.06
24	CO-F9	N 3560510.26	E 12110554.31
25	CO-F8	N 3560540.42	E 12110517.89
26	SMH2	N 3560571.78	E 12110461.56
27	DI9	N 3560592.63	E 12110429.90
28	DI10	N 3560634.46	E 12110380.11
29	FH4	N 3560670.76	E 12110371.56
30	DI11	N 3560525.05	E 12110378.40
31	DI12	N 3560457.94	E 12110426.57
32	FMH31	N 3560364.19	E 12110550.27
33	DI12A	N 3560348.16	E 12110559.82
34	DI13	N 3560569.54	E 12110325.47
35	DI29	N 3560559.88	E 12110843.23
36	DI34	N 3560518.88	E 12110822.78



US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP.
0	12/16/01	ISSUED FOR STORM WATER QUALITY & EROSION CONTROL PERMIT	RRB	ERK
A	11/20/02	REVISED FOR PERMITTING, REVISED & ADDED LABELS.	RRB	ERK
B	01/14/03	REVISED & ADDED LABELS.	RRB	ERK
C	01/24/03	REISSUED PER AMENDMENT 9	RRB	ERK

DESIGNED: RRB
CHECKED: RRM
DRAWN: RSH
SUBMITTED: ERK
DATE: OCT 2001
SCALE: AS SHOWN
NORFOLK DISTRICT FILE NO. LF-F22-22
SPECIFICATION NO. DACA65-01-R-0025
PROJECT NO. HAC023011/012
DRAWING NO. 711-18-13
Last worked on: 11-28-01
File name: 20342/CIVIL/HC-109UT.DWG
Plot scale: 1=40

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
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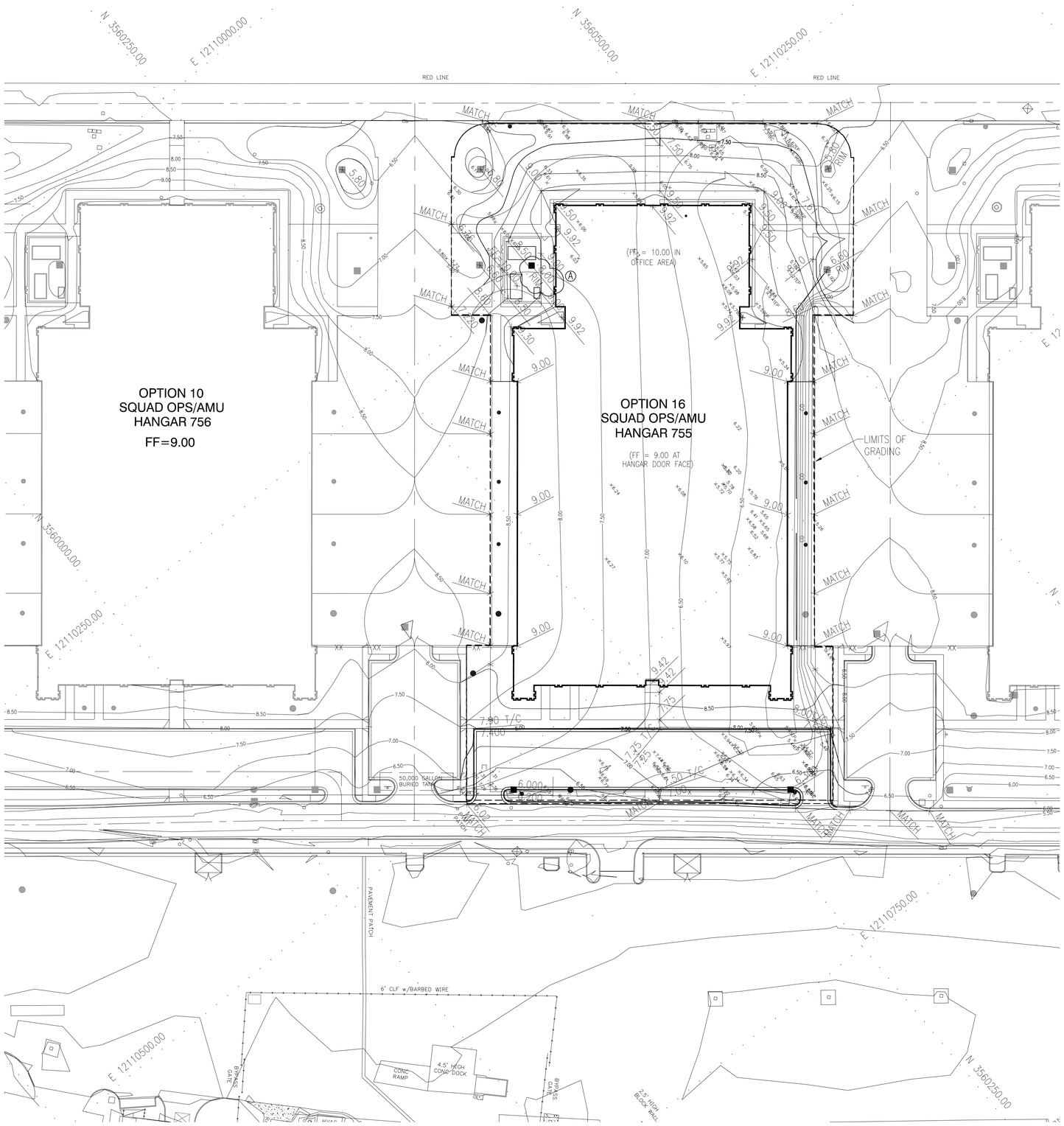
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
SQUAD OPS, AMU HANGAR, & PUMP HOUSE
SITE UTILITY PLAN

HC-109
SHEET 22 OF 769



NOTES:

1. SEE GRADING NOTES ON HC-105.
2. REFER TO SHEET HC-114 FOR APRON PAVEMENT JOINT ELEVATIONS.

SITE GRADING PLAN - OPTION 16

40 0 40 80

SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP.
A	11/16/01	ISSUED FOR STORM WATER QUALITY & EROSION CONTROL PERMIT	RRB	ERK
B	11/30/01	REVISED FOR PERMITTING	RRB	ERK
C	01/24/02	REISSUED PER AMENDMENT 9		

DATE: OCT 2001
SCALE: AS SHOWN
NORFOLK DISTRICT FILE NO. LF-F22-2001-71
SPECIFICATION NO. DACA65-01-R-0025
Plot scale: 1:40

DESIGNED: RRB
CHECKED: RMM
DRAWN: RSH
SUBMITTED: ERK
PROJECT NO. FA8903-01-A-0001 ACC023011
DRAWING NO. 711-18-13
Last worked on: 11-28-01
File name: \JB342\CIVIL\ HC-107GP.DWG

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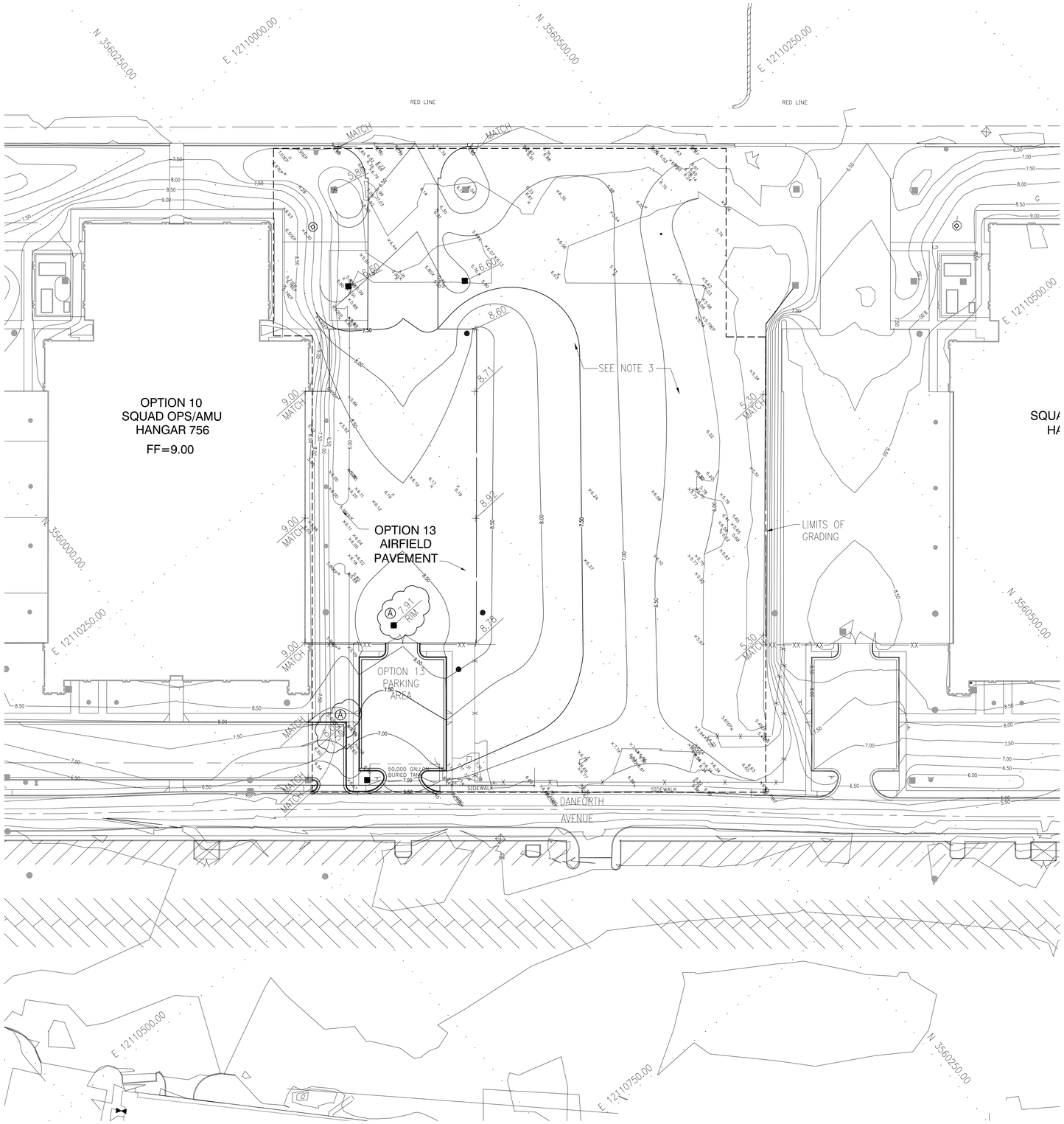
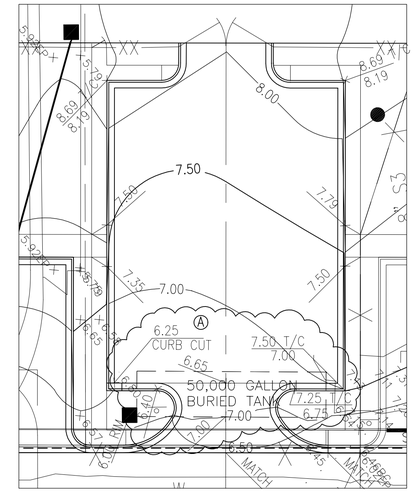
F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
SQUADRON OPERATIONS/AMU HANGAR
SITE GRADING PLAN
OPTION 16

HC-108
SHEET 21 OF 769





OPTION 13 - PARKING AREA

20 0 20 40

SCALE IN FEET

NOTES:

1. SEE GRADING NOTES ON HC-105.
2. REFER TO SHEET HC-114 FOR APRON PAVEMENT JOINT ELEVATIONS.
3. OPTION 13 INCLUDES CONSTRUCTION OF AIRFIELD PAVEMENT ON THE EAST SIDE OF NEW HANGAR 756 AND THE GRADING OF EXISTING HANGAR 755 AREA AFTER DEMOLITION OF THE STRUCTURE.

SITE GRADING PLAN - OPTION 13

40 0 40 80

SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP'D
A	11/26/01	ISSUED FOR STORM WATER QUALITY & EROSION CONTROL PERMIT	XXX	ERK
B	11/29/01	REVISED FOR PERMITTING	RRB	ERK
C	01/24/02	REISSUED PER AMENDMENT 9		

DESIGNED: RRB
CHECKED: RMM
DATE: OCT 2001
DRAWN: RSH
SUBMITTED: ERK
SCALE: AS SHOWN
PROJECT NO. HACC023011
NORFOLK DISTRICT FILE NO. LF-22-2-01
SPECIFICATION NO. DACA65-01-R-0025
DRAWING NO. 711-18-13
Last worked on: 11-28-01
File name: \JB342\CIVIL\ HC-107GP.DWG
Plot scale: 1:1

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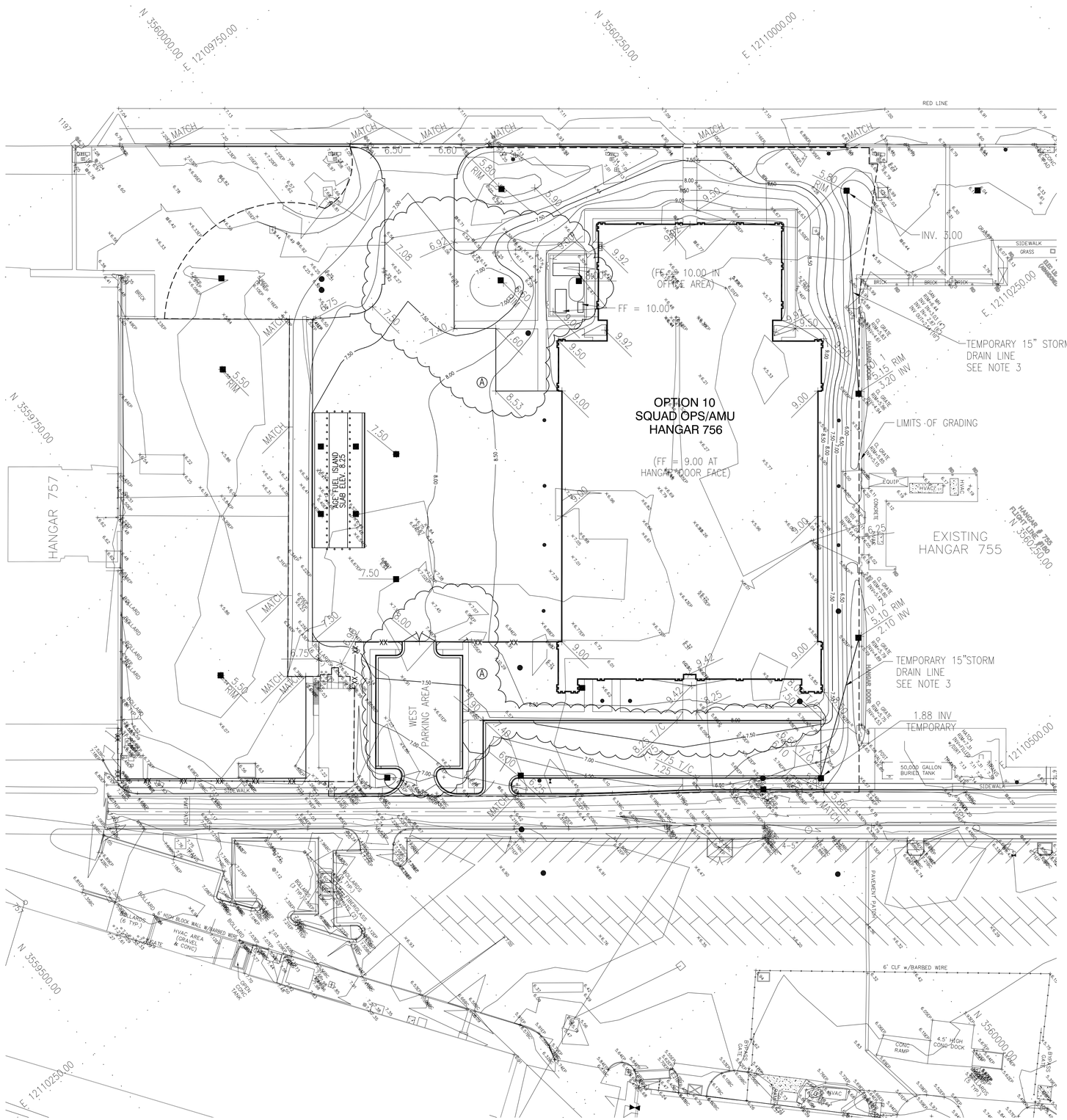
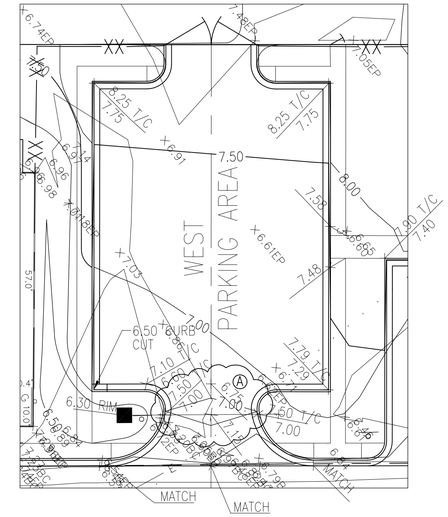
F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA

SQUADRON OPERATIONS/AMU HANGAR
SITE GRADING PLAN - OPTION 13

HC-107
SHEET 20 OF 769





WEST PARKING AREA

20 0 20 40

SCALE IN FEET

NOTES:

1. SEE GRADING NOTES ON HC-105.
2. REFER TO SHEET HC-113 FOR APRON PAVEMENT JOINT ELEVATIONS.
3. INSTALL TEMPORARY STORM DRAIN LINE AND INLETS TO DRAIN SLOPE ADJACENT TO HANGAR 755. STORM DRAIN LINES AND INLETS TO BE REMOVED PRIOR TO CONSTRUCTION OF APRON PAVEMENT UNDER OPTION 13 BID ITEM. COORDINATE WITH CONTRACTING OFFICER.

SITE GRADING PLAN - OPTION 10

40 0 40 80

SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP'D
A	11/16/01	ISSUED FOR STORM WATER QUALITY & EROSION CONTROL PERMIT	RRB	ERK
B	11/26/01	REVISED FOR PERMITTING.	RRB	ERK
C	01/24/02	REISSUED PER AMENDMENT 9		

DESIGNED: RRB
CHECKED: RMM
DATE: OCT 2001
DRAWN: RSH
SUBMITTED: ERK
SCALE: AS SHOWN
PROJECT NO. FACCO23011
NORFOLK DISTRICT FILE NO. LF22-01-01
DRAWING NO. 711-18-13
SPECIFICATION NO. DACA65-01-R-0025
Last worked on: 11-28-01
File name: \USJ42\CIVIL\HC-106GP.DWG
Plot scale: 1=40

NORFOLK DISTRICT
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NORFOLK, VIRGINIA

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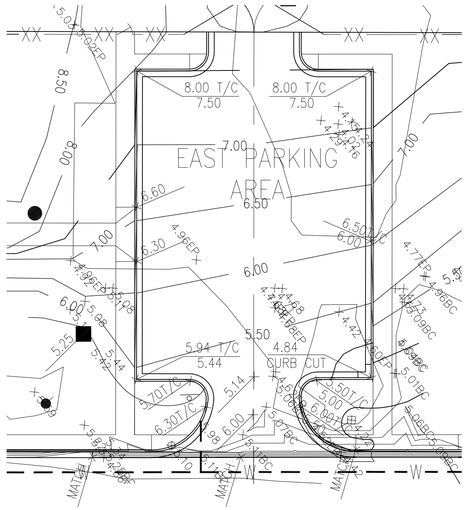
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA

SQUADRON OPERATIONS/AMU HANGAR
SITE GRADING PLAN
OPTION 10

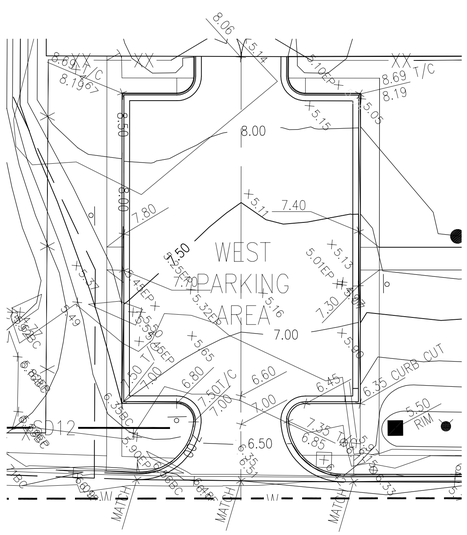
HC-106
SHEET 19 OF 769



EAST PARKING AREA

20 0 20 40

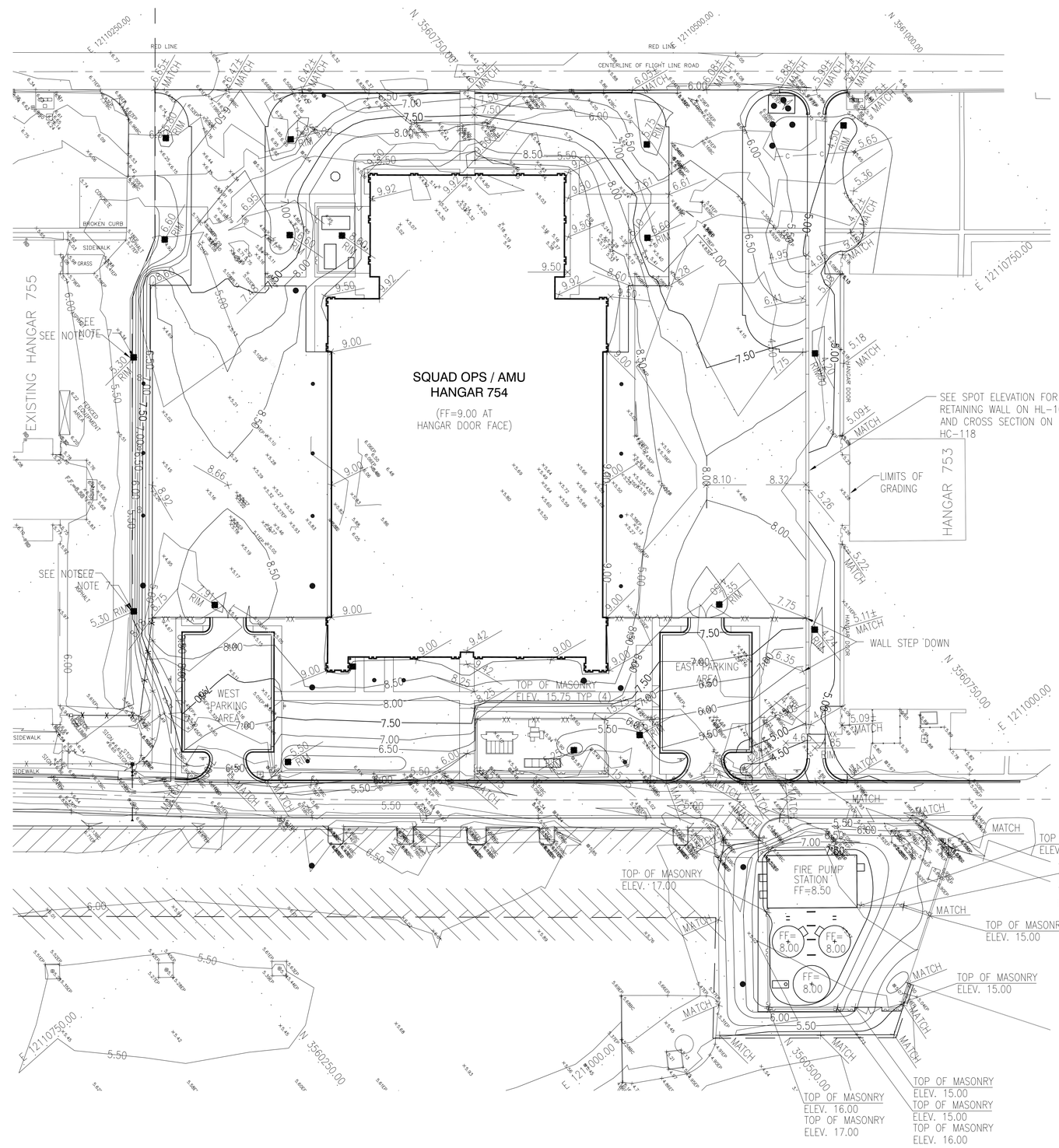
SCALE IN FEET



WEST PARKING AREA

20 0 20 40

SCALE IN FEET



SITE GRADING PLAN

40 0 40 80

SCALE IN FEET

GRADING NOTES

1. ALL CONTOUR LABELS AND ELEVATION CALLOUTS ARE IN FEET.
2. WHERE NOTED AS "MATCH" NEW PAVEMENTS, SIDEWALKS, AND GRADES SHALL MEET EXISTING GRADE ELEVATIONS.
3. REFER TO SHEET HC-112 FOR APRON PAVEMENT JOINT ELEVATIONS.
4. FINISH GRADES ADJACENT TO BUILDING ARE 0.5' BELOW FINISH FLOOR ELEVATION UNLESS OTHERWISE NOTED.
5. SPOT ELEVATIONS ALONG CURB AND GUTTER ARE AT BACK OF GUTTER/BOTTOM FACE OF CURB UNLESS NOTED OTHERWISE WITH T/C (TOP OF CURB) NOTATION.
6. CONTRACTOR SHALL VERIFY ELEVATIONS AT TIE-IN AND/OR MATCH POINTS PRIOR TO STARTING PAVEMENT SECTION CONSTRUCTION.
7. INSTALL TEMPORARY STORM DRAIN LINE AND INLETS TO DRAIN SLOPE AND PAVEMENT ADJACENT TO EXISTING HANGAR 755. STORM DRAIN LINES AND INLETS TO BE REMOVED PRIOR TO CONSTRUCTION OF NEW HANGAR 755 UNDER BID ITEM OPTION 16. COORDINATE WITH CONTRACTING OFFICER.

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP'D
	11/16/01	ISSUED FOR STORM WATER QUALITY & EROSION CONTROL PERMIT	RRB	ERK
A	11/26/01	REISSUED DRAWING PER AMENDMENT.	RRB	ERK
B	01/24/02	REISSUED PER AMENDMENT 9		

DESIGNED: RRB
DRAWN: RSH
CHECKED: RRM
SUBMITTED: ERK
DATE: OCT 2001
SCALE: AS SHOWN
PROJECT NO. 726342/23011/012
NORFOLK DISTRICT FILE NO. LF-22-01-18
SPECIFICATION NO. DACA65-01-R-0025
DRAWING NO. 711-18-13
Last worked on: 11-28-01
File name: 726342/CIVIL/HC-105GP.DWG
Plot scale: 1=40

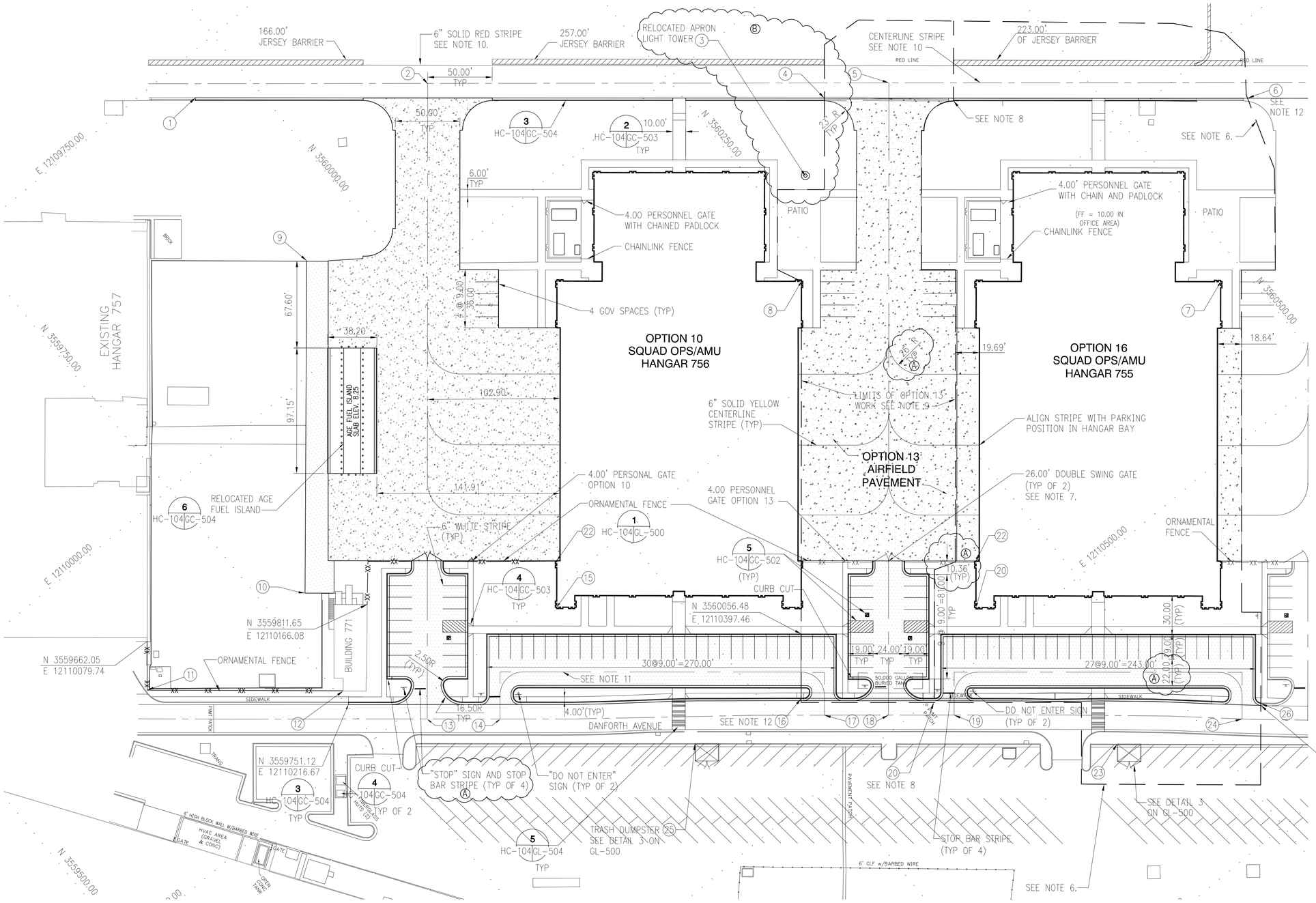
NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA

SQUAD OPS, AMU HANGAR, & PUMP HOUSE
SITE GRADING PLAN

HC-105
SHEET 18 OF 769



NOTES:

1. ALL COORDINATES AND DIMENSIONS ARE TO EXTERIOR CORNER OF BUILDING SLAB, FACE OF CURB, OR EDGE OF PAVEMENT AND ARE IN FEET UNLESS NOTED OTHERWISE
2. SIDEWALKS AT BUILDING DOORS ARE CENTERED ON DOOR STOOP. SEE STRUCTURAL AND ARCHITECTURAL SHEETS. ALL SIDEWALKS THAT ADJOIN CURB AND GUTTER SHALL HAVE HANDICAP RAMPS INSTALLED PER DETAILS ON GC-503.
3. SEE SHEET HC-005 FOR HORIZONTAL AND VERTICAL CONTROL POINTS. SEE SHEET HC-001 FOR CIVIL LEGEND.
4. SEE ARCHITECTURAL PLAN FOR SIDEWALK JOINTING LAYOUT. ALL SIDEWALKS THAT ADJOIN CURB AND GUTTER SHALL HAVE HANDICAP RAMPS INSTALLED PER DETAILS ON GC-503.
5. CONTRACTOR SHALL REINFORCE ALL CONCRETE PANELS THAT HAVE MANHOLES, (A) CLEANOUTS, GUARD POSTS, OR ARE IRREGULAR IN SHAPE AS INDICATED ON HC-113 AND HC-114 OR AS DIRECTED BY CONTRACTING OFFICER.
6. ALL WORK NOTED WITHIN BOUNDARY SHALL BE BID AS PART OF HANGAR 755 – OPTION 16.
7. ALL VEHICLE ACCESS GATES SHALL BE PROVIDED WITH CHAIN AND PADLOCK PER SPECIFICATIONS.
8. MATCHLINE BETWEEN OPTION 13 AND OPTION 16 CURB AND GUTTER AND SIDEWALK.
9. ALL WORK WITHIN BOUNDARY SHALL BE BID AS PART OF OPTION 13.
10. CONTRACTOR SHALL RESTRIPE REDLINE AND FLIGHTLINE ROAD CENTERLINE AS INDICATED UPON COMPLETION OF CONSTRUCTION AND REMOVAL OF TEMPORARY BARRIER AND FOD FENCE.
11. ROAD CENTERLINE STRIPE 6" YELLOW DASHED, 10.00' LONG AND 25.00' O.C.
12. MATCHLINE BETWEEN BASE BID AND OPTION 16 CURB AND GUTTER AND SIDEWALK CONSTRUCTION.

COORDINATE TABLE

	NORTH	EAST		NORTH	EAST		NORTH	EAST		NORTH	EAST		NORTH	EAST
1	N 3559958.62	E 12109778.64	6	N 3560587.08	E 12110297.34	11	N 3559638.00	E 12110108.87	16	N 3560022.74	E 12110438.32	21	N 3560173.92	E 12110467.77
2	N 3560104.49	E 12109884.55	7	N 3560480.82	E 12110393.68	12	N 3559754.66	E 12110205.91	17	N 3560030.28	E 12110457.39	22	N 3560196.85	E 12110439.99
3	N 3560284.48	E 12110126.29	8	N 3560230.32	E 12110186.88	13	N 3559791.19	E 12110264.04	18	N 3560068.67	E 12110488.95	23	N 3560191.12	E 12110618.93
4	N 3560334.32	E 12110088.63	9	N 3559944.85	E 12109930.85	14	N 3559834.68	E 12110299.93	19	N 3560107.92	E 12110521.28	24	N 3560278.08	E 12110665.43
5	N 3560380.38	E 12110111.38	10	N 3559780.11	E 12110128.71	15	N 3559923.55	E 12110261.07	20	N 3560101.97	E 12110503.73	25	N 3559939.08	E 12110410.65
												26	N 3560297.13	E 12110665.66

SITE LAYOUT PLAN - OPTION 10, 13 & 16

40 0 40 80
SCALE IN FEET

US Army Corps of Engineers Norfolk District

SYM	DATE	REV.	DESCRIPTION	BY	APP'D
A	11/20/01		REVISED AND ADDED DIMENSIONS, REVISED NOTES.	RRB	ERK
B	10/14/02		REVISED OPTION 13 LIMITS.	RRB	ERK
C	01/24/03		REISSUED PER AMENDMENT 9	RRB	ERK

DESIGNED: RRB
DRAWN: R.S.H.
CHECKED: RMM
SUBMITTED: ERK
DATE: OCT 2001
SCALE: AS SHOWN
PROJECT NO. ACC023011
NORFOLK DISTRICT FILE NO. 711-18-13
DRAWING NO. 711-18-13
SPECIFICATION NO. DACA65-01-R-0025
Last worked on: 11-28-01
File name: \JR342\CIVIL\HC-104ST.DWG
Plot scale: 1:40

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
SQUADRON OPERATIONS/AMU HANGAR
SITE LAYOUT PLAN
OPTIONS 10, 13 & 16

HC-104
SHEET 17 OF 769

LOCATION POINT CHART		
	NORTH	EAST
1	N 3560631.47	E 12110317.25
2	N 3560881.83	E 12110523.94
3	N 3560939.54	E 12110571.55
4	N 3560641.55	E 12110418.76
5	N 3560887.77	E 12110670.99
6	N 3560856.07	E 12110664.23
7	N 3560731.06	E 12110600.27
8	N 3560424.29	E 12110674.47
9	N 3560258.47	E 12110625.14
10	N 3560316.75	E 12110698.45
11	N 3560481.55	E 12110765.20
12	N 3560547.99	E 12110820.06
13	N 3560459..58	E 12110791.81
14	N 3560526.03	E 12110846.67
15	N 3560566.63	E 12110905.72
16	N 3560624.54	E 12110953.40
17	N 3560656.84	E 12110914.38
18	N 3560647.93	E 12110958.10
19	N 3560622.76	E 12110999.89
20	N 3560551.99	E 12110989.18
21	N 3560548.60	E 12111016.35
22	N 3560543.30	E 12111047.91
23	N 3560573.12	E 12111036.28
24	N 3560563.90	E 12111082.67
25	N 3560509.88	E 12111041.76
26	N 3560401.62	E 12110793.38
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28	N 3560578.59	E 12111098.49
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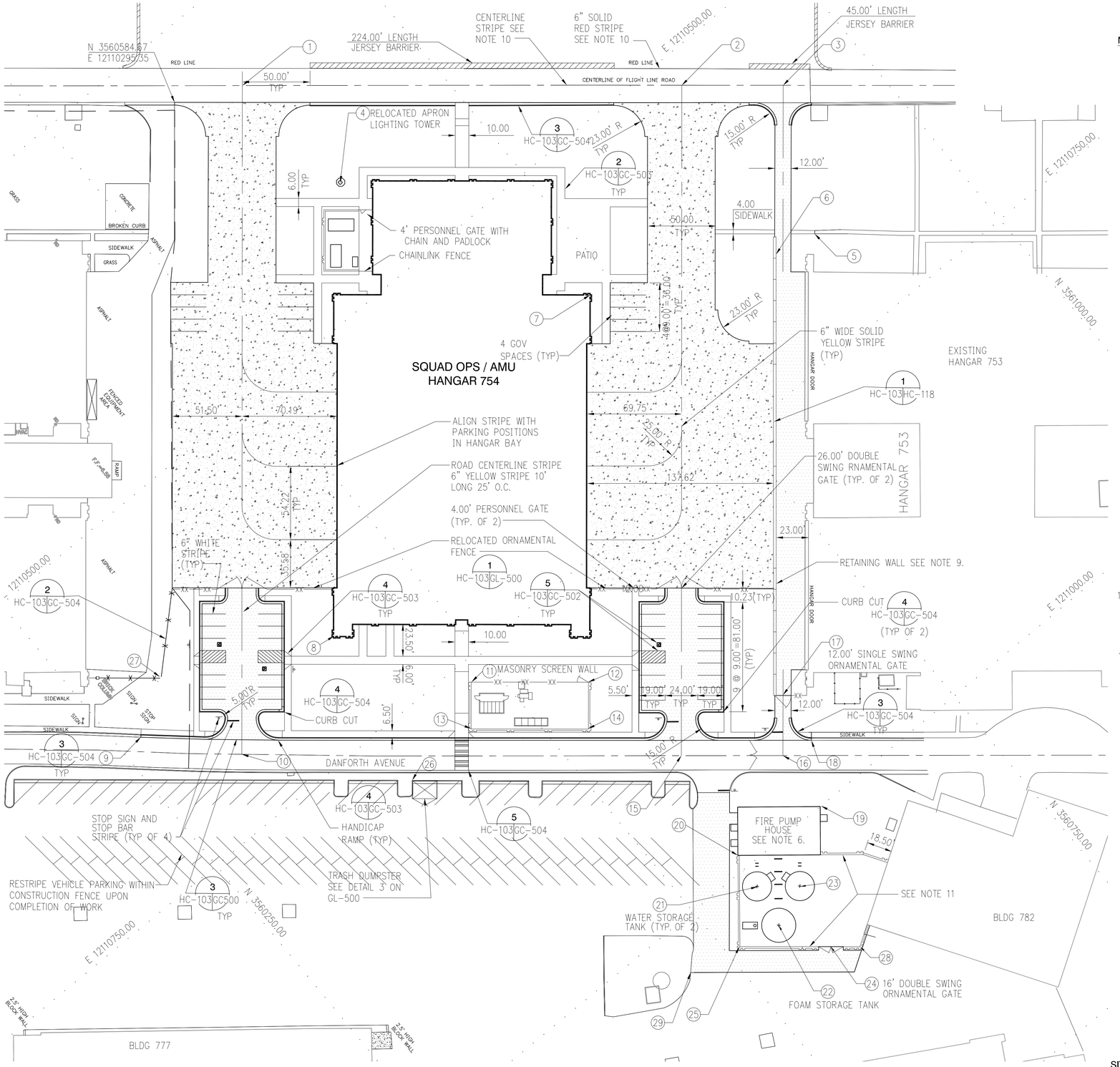


SITE LAYOUT PLAN

40 0 40 80

SCALE IN FEET

NOTES:

1. ALL COORDINATES AND DIMENSIONS ARE TO EXTERIOR CORNER OF BUILDING SLAB, FACE OF CURB, OR EDGE OF PAVEMENT AND ARE IN FEET UNLESS NOTED OTHERWISE
2. SIDEWALKS AT BUILDING DOORS ARE CENTERED ON DOOR STOOP. SEE STRUCTURAL AND ARCHITECTURAL SHEETS. ALL SIDEWALKS THAT ADJOIN CURB AND GUTTER SHALL HAVE HANDICAP RAMPS INSTALLED PER DETAILS ON GC-503.
3. SEE SHEET HC-005 FOR HORIZONTAL AND VERTICAL CONTROL POINTS. SEE SHEET HC-001 FOR CIVIL LEGEND.
4. SEE ARCHITECTURAL PLAN FOR SIDEWALK JOINTING LAYOUT. ALL SIDE WALKS THAT ADJOIN CURB AND GUTTER SHALL HAVE HANDICAP RAMPS INSTALLED PER DETAILS ON GC-503.
5. CONTRACTOR SHALL REINFORCE ALL CONCRETE PANELS THAT HAVE MANHOLES, CLEANOUTS, GUARD POSTS, OR ARE IRREGULAR IN SHAPE AS INDICATED ON HC-112 OR AS DIRECTED BY CONTRACTING OFFICER.
6. SEE MECHANICAL SHEETS FOR DETAILS OF PIPING AND WATER STORAGE TANKS. SEE STRUCTURAL SHEETS FOR TANK FOUNDATIONS.
7. ALL VEHICLE ACCESS GATES SHALL BE PROVIDED WITH CHAIN AND PADLOCK PER SPECIFICATIONS.
8. FOAM RETENTION TANK SHALL BE FILLED WITH WATER AND ALLOWED TO SET FOR 6-8 WEEKS TO ACHIEVE REQUIRED SETTLEMENT, PER GEOTECHNICAL REPORT. TANK SHALL BE EMPTIED AFTER THIS SURCHARGE PERIOD IS COMPLETED.
9. SEE STRUCTURAL HC-510 AND ARCHITECTURAL DRAWINGS FOR DETAILS OF RETAINING WALL. SEE HL-100 AND HC-118 FOR DIMENSIONS AND LAYOUT OF RETAINING WALL.
10. CONTRACTOR SHALL RESTRIPE REDLINE AND FLIGHTLINE ROAD CENTERLINE AS INDICATED UPON COMPLETION OF CONSTRUCTION AND RELOCATION OF JERSEY BARRIER AND FOD FENCE.
11. SCREEN WALL AT FIRE PUMP HOUSE. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR DETAILS AND SECTIONS. SECTION C PA-300.

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP'D
A	11/20/01	REISSUED DRAWING PER AMENDMENT.	RRB	ERK
B	10/24/02	REISSUED PER AMENDMENT 9	RRB	ERK

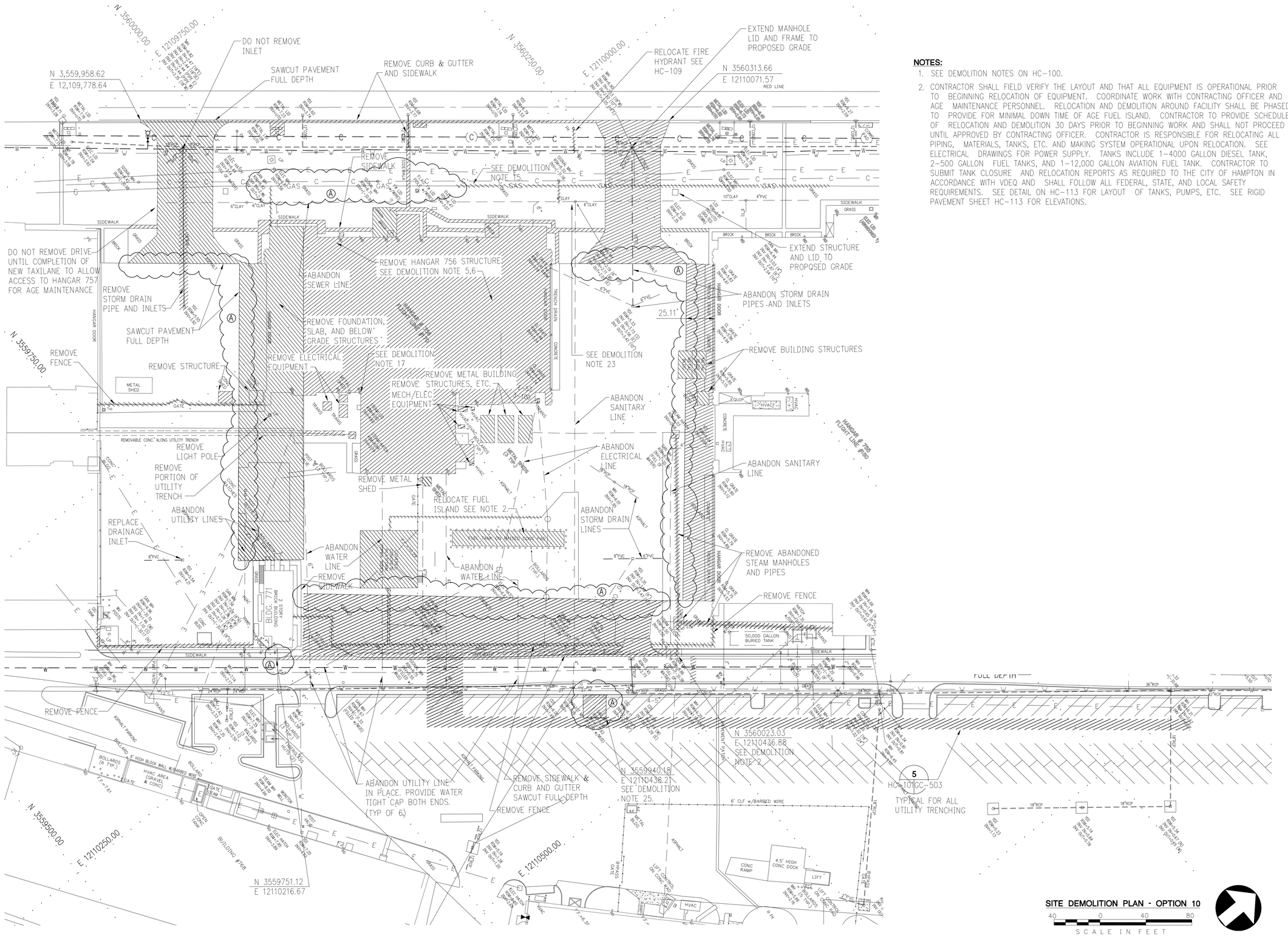
DATE: OCT 2001
SCALE: AS SHOWN
NORFOLK DISTRICT FILE NO. 14-4-22411
SPECIFICATION NO. DACA65-01-R-0025
Plot scale: 1=40
DESIGNED: RRB
CHECKED: RMM
DRAWN: RSH
SUBMITTED: ERK
PROJECT NO. F022301/012
DRAWING NO. 711-18-13
Last worked on: 11-28-01
File name: /26342/CIVIL/HC-103ST.DWG

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
SQUAD OPS, AMU HANGAR, & PUMP HOUSE SITE LAYOUT PLAN

HC-103
SHEET 16 OF 769



NOTES:

1. SEE DEMOLITION NOTES ON HC-100.
2. CONTRACTOR SHALL FIELD VERIFY THE LAYOUT AND THAT ALL EQUIPMENT IS OPERATIONAL PRIOR TO BEGINNING RELOCATION OF EQUIPMENT. COORDINATE WORK WITH CONTRACTING OFFICER AND AGE MAINTENANCE PERSONNEL. RELOCATION AND DEMOLITION AROUND FACILITY SHALL BE PHASED TO PROVIDE FOR MINIMAL DOWN TIME OF AGE FUEL ISLAND. CONTRACTOR TO PROVIDE SCHEDULE OF RELOCATION AND DEMOLITION 30 DAYS PRIOR TO BEGINNING WORK AND SHALL NOT PROCEED UNTIL APPROVED BY CONTRACTING OFFICER. CONTRACTOR IS RESPONSIBLE FOR RELOCATING ALL PIPING, MATERIALS, TANKS, ETC. AND MAKING SYSTEM OPERATIONAL UPON RELOCATION. SEE ELECTRICAL DRAWINGS FOR POWER SUPPLY. TANKS INCLUDE 1-4000 GALLON DIESEL TANK, 2-500 GALLON FUEL TANKS, AND 1-12,000 GALLON AVIATION FUEL TANK. CONTRACTOR TO SUBMIT TANK CLOSURE AND RELOCATION REPORTS AS REQUIRED TO THE CITY OF HAMPTON IN ACCORDANCE WITH VDEQ AND SHALL FOLLOW ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS. SEE DETAIL ON HC-113 FOR LAYOUT OF TANKS, PUMPS, ETC. SEE RIGID PAVEMENT SHEET HC-113 FOR ELEVATIONS.

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP'D
A	01/14/02	REVISED DEMO AREA AND ADDED DEMO BOUNDARY	RRB	ERK
B	01/24/02	REISSUED PER AMENDMENT 9	RRB	ERK

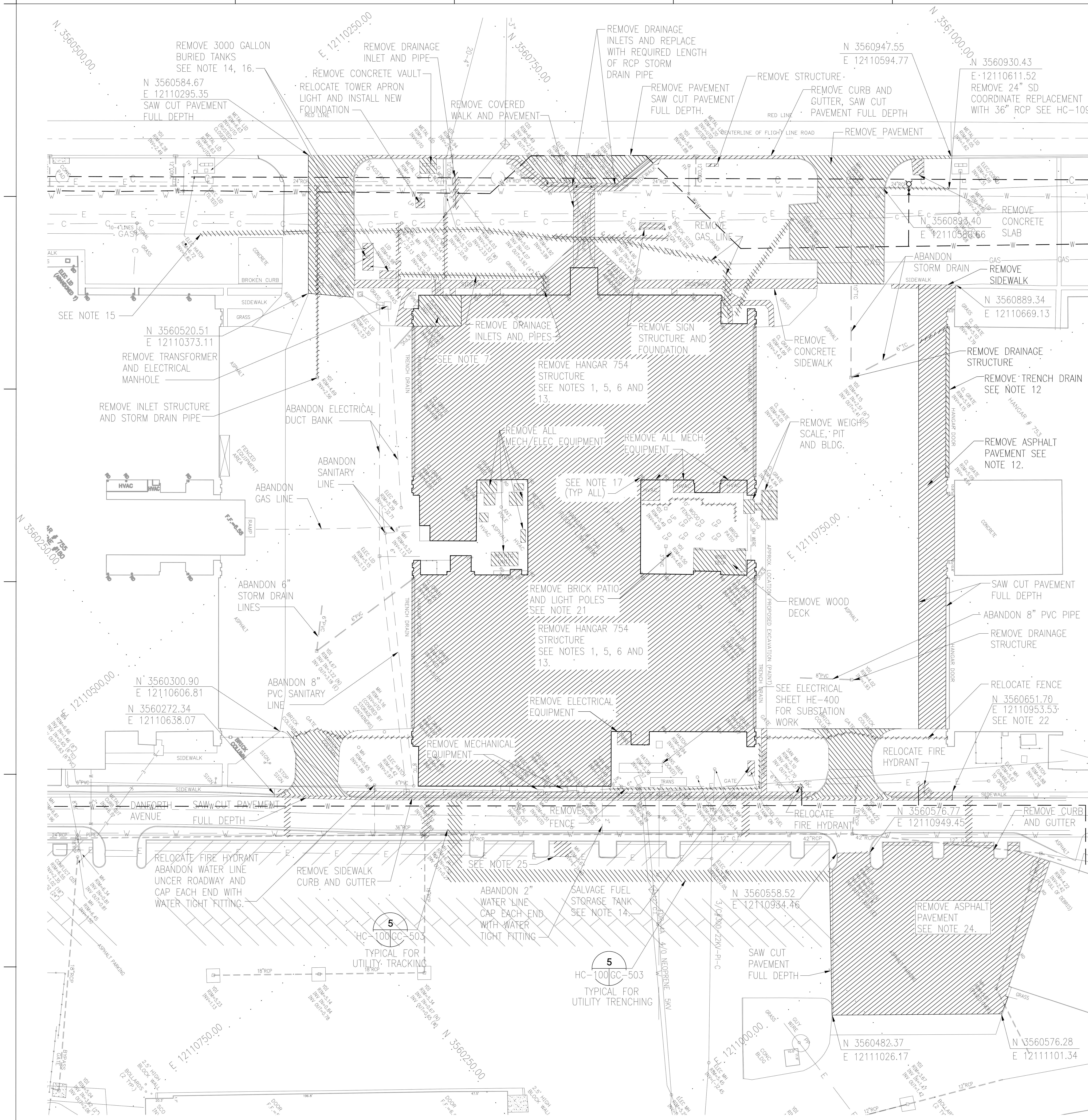
DESIGNED: RRB
CHECKED: RMM
DRAWN: RSH
SUBMITTED: ERK
DATE: OCT 2001
SCALE: AS SHOWN
PROJECT NO. FA ACC023011
NORFOLK DISTRICT FILE NO. LF22-2114
DRAWING NO. 711-18-13
SPECIFICATION NO. DACA65-01-R-0025
Last worked on: 10-19-01
File name: \DR342\CIVIL\ HC-1020M.DWG
Plot scale: 1=40

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
SQUADRON OPERATIONS/AMU HANGAR
SITE DEMOLITION PLAN
OPTION 10

HC-101
SHEET 14 OF 769



DEMOLITION NOTES:

1. BUILDING DEMOLITION INCLUDES ALL INTERIOR WALLS, ROOF STRUCTURE, MECHANICAL, ELECTRICAL EQUIPMENT, ALL EXTERIOR WALLS, MECHANICAL, AND ELECTRICAL EQUIPMENT. CONTRACTOR SHALL REMOVE BUILDING SLAB, FOUNDATION, PAVEMENTS AND BELOW GRADE STRUCTURES AS NEEDED TO INSTALL PILES, CONSTRUCT PILE CAPS, CONSTRUCT NEW BUILDING FOUNDATION, AND INSTALL NEW UTILITIES. ALL OTHER PAVEMENTS, SLABS, ETC SHALL BE ABANDONED IN PLACE TO THE MAXIMUM EXTENT POSSIBLE AS LONG AS IT DOES NOT INTERFERE WITH NEW CONSTRUCTION. AN ASBESTOS REPORT IS INCLUDED AS PART OF SPECIFICATIONS. CONTRACTOR TO FOLLOW ALL FEDERAL, STATE, LOCAL AND SPECIFICATION REQUIREMENTS IN THE DEMOLITION, HANDLING, AND DISPOSAL OF HAZARDOUS MATERIAL AND HAZARDOUS WASTE.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS BEFORE BEGINNING DEMOLITION. EXISTING UTILITIES NOTED TO BE ABANDONED IN PLACE SHALL BE CAPPED AND PLUGGED WITH WATER TIGHT SEAL. UTILITY MANHOLES AND INLETS ON LINES TO BE ABANDONED IN PLACE SHALL BE REMOVED. CONTRACTOR SHALL REMOVE ANY EXISTING UTILITIES, NOTED TO BE ABANDONED, IF THEY INTERFERE WITH NEW CONSTRUCTION OF UTILITIES, BUILDING FOUNDATIONS, CONSTRUCTION OF PILES, AND PILE CAPS. THERE ARE ABANDONED FUEL LINES AND OTHER MISCELLANEOUS UTILITIES ALONG DANFORTH AVE. CONTACT CONTRACTING OFFICER IF UNKNOWN UTILITIES ARE ENCOUNTERED. CONTRACTING OFFICER TO NOTIFY IN WRITING OF REQUIRED ACTION.
3. PAVEMENT INDICATED FOR DEMOLITION INCLUDES COMPLETE REMOVAL OF ASPHALT PAVEMENT, CONCRETE PAVEMENT, AND CURB AND GUTTER. AGGREGATE BASE MATERIAL WILL BE REMOVED IF IT INTERFERES WITH CONSTRUCTION OF NEW PAVEMENT SECTION.
4. REFER TO APPENDIX A OF THE SPECIFICATIONS FOR SOIL BORING LOGS, PAVEMENT CORINGS, ETC.
5. CONTRACTOR TO SALVAGE ALL STAR MEDALLIONS FROM EXISTING HANGAR AND TURN OVER TO GOVERNMENT. SEE SPEC. SECTION 02220 AND 02226 AND ARCHITECTURAL DRAWINGS FOR MORE DETAIL.
6. CONTRACTOR TO SALVAGE WING EMBLEM FROM NORTH FACE OF HANGAR AND INSTALL AS NOTED ON ARCHITECTURAL PLANS INTO NEW HANGAR FACILITY SEE SPEC. SECTION 02220 AND 02226 AND ARCHITECTURAL DRAWINGS FOR MORE DETAIL.
7. CONTRACTOR TO SALVAGE EQUIPMENT LISTED ON DRAWING VE-110 FROM EXISTING AIRFIELD LIGHTING VAULT AND INSTALL IN NEW AIRFIELD LIGHTING VAULT AND MAKE THE SYSTEM OPERATIONAL PRIOR TO BEGINNING ANY DEMOLITION OF EXISTING HANGAR STRUCTURE. CONTRACTOR SHALL VERIFY THAT EQUIPMENT IS IN SERVICEABLE CONDITION PRIOR TO REMOVAL AND AFTER INSTALLATION IN THE NEW VAULT. NOTIFY THE CONTRACTING OFFICER IMMEDIATELY IF ANY EQUIPMENT IS FOUND TO BE UNSERVICEABLE PRIOR TO REMOVAL.
8. SCRAP METAL MAY BE TURNED OVER TO THE GOVERNMENT AND BE DELIVERED TO THE LANGLEY SCRAP METAL YARD, CONTACT MR. HENRY BRYSON (1 SVS) AT 764-4616. SEE SPECIFICATION SECTION 02220 FOR SIZES ALLOWED FOR RECYCLING. CONTRACTOR TO INCLUDE AS BID OPTION THE COST OF TURNING OVER TO THE GOVERNMENT. ALL SCRAP METAL NOT TURNED OVER TO THE GOVERNMENT FOR RECYCLING SHALL BE RECYCLED OFF BASE. CONTRACTOR SHALL PROVIDE THE WEIGHT OF ALL DEMOLITION DEBRIS AND RECYCLED SCRAP METAL TO CEVP.
9. THE WEIGHT OF CONCRETE TAKEN OFF BASE FOR RECYCLING SHALL BE REPORTED TO CEVP. THE WEIGHT OF ALL CONCRETE THAT IS DISPOSED OF AS SOLID WASTE SHALL ALSO BE REPORTED TO CEVP AS DEMOLITION DEBRIS.
10. CONTRACTOR IS REQUIRED TO OBTAIN A STORM WATER GENERAL PERMIT FOR LAND DISTURBANCE OF MORE THAN 1 ACRE FROM VIRGINA DEPARTMENT OF ENVIRONMENTAL QUALITY.
11. CONTRACTOR SHALL COORDINATE ALL UTILITY WORK WITH CONTRACTING OFFICER.
12. DO NOT REMOVE PAVEMENT, TRENCH DRAIN, OR PORTION OF 6" TC STORM DRAIN LINE UNTIL RETAINING WALL AND NEW HANGAR CONSTRUCTION IS SUBSTANTIALLY COMPLETE SO ACCESS TO HANGAR 753 IS NOT INTERRUPTED. MAINTAIN MINIMUM 20' DRIVING SPACE FOR BASE OPERATIONS. DEMO AND REPAVING OF AREA SHALL BE DONE IN TWO STAGES TO ALLOW ACCESS TO HALF OF THE FACILITY AT ONE TIME. COORDINATE WITH BASE CIVIL ENGINEERS OFFICE AND CONTRACTING OFFICER.
13. SEE SPECIFICATION SECTION 02220 FOR ADDITIONAL INFORMATION ON DEMOLITION WORK FOR BUILDINGS, PAVEMENTS, UTILITIES, ETC.
14. CONTRACTOR SHALL REMOVE TWO A.S.T AND ONE U.S.T. THERE ARE 2-3,000 GALLON U.S.T. AT THE WEST CORNER OF HANGAR 754. ONE TANK IS FILLED WITH SLURRY AND CLOSED. THE SECOND IS A DIESEL FUEL TANK FOR THE EXISTING LIGHTING VAULT AND SHALL NOT BE REMOVED UNTIL THE NEW LIGHTING VAULT IS ACTIVE. CONTRACTOR IS REQUIRED TO SUBMIT TANK CLOSURE REPORTS WITHIN 30 DAYS SATISFYING VDEQ COORDINATE WITH BASE ENVIRONMENT OFFICE. THE A.S.T. EAST OF THE HANGAR 754, SHALL BE REMOVED AND SALVAGED TO THE GOVERNMENT. CONTRACTOR SHALL FOLLOW ALL FEDERAL, STATE, AND LOCAL SAFETY AND DISPOSAL REGULATIONS. CONTRACTOR TO SALVAGE AND TURN OVER TO GOVERNMENT THE 500 GALLON A.S.T. BY CONVAULT. COORDINATE WITH CONTRACTING OFFICER.
15. CONTRACTOR SHALL COORDINATE AND PAY ALL FEES AND CONNECTION CHARGES IN REGARD TO NEW GAS SERVICE, INCLUDING METER, CONNECTION, AND OTHER ASSOCIATED FEES FOR GAS SERVICE. COORDINATE WITH VIRGINIA NATURAL GAS AND BASE CIVIL ENGINEERS OFFICE. CONTACT MICHELLE CENTER AT 757-873-6246 FOR V.N.G.
16. CONSTRUCTION AT THIS SITE SHALL IMPACT ERP SITES ST-27, ST-33, AND OT-56, IF CONTRACTOR ENCOUNTERS CONTAMINATED SOIL/FUEL; CONTACT CONTRACTING OFFICER AND BASE ENVIRONMENTAL DEPARTMENT, AND IF REQUIRED BY VDEQ, REMOVE CONTAMINATED MATERIAL PER STATE AND FEDERAL REGULATIONS AND CONTRACT SPECIFICATIONS. SEE SHEET HC-005 FOR APPROXIMATE LOCATIONS OF ERP SITES. SEE ENVIRONMENTAL MONITORING WELL DATA AND ERP SITE DATA IN APPENDIX B TO THE SPECIFICATIONS.
17. REMOVE EXISTING ROOF DRAINS, DOWNSPOUTS AND BELOW GRADE PIPE UP TO STORM DRAIN MAIN PIPING COMPLETELY. PROVIDE WATER TIGHT PLUG OR CAP ON THE STORM DRAIN TO PREVENT INFILTRATION OR EROSION.
18. BASE STORM SEWER SYSTEM IS ERP SITE OT-56. ALL MATERIAL WITHIN STORM SEWER PIPES BEING REMOVED WILL REQUIRE TESTING PRIOR TO DISPOSAL OFF BASE. COORDINATE WITH CONTRACTING OFFICER AND CEVP.
19. A GEOPHYSICAL SURVEY WAS PERFORMED BY THE CORPS OF ENGINEERS AND IS INCLUDED IN APPENDIX B OF THE SPECIFICATIONS.
20. DEPENDING ON CLIMATOLOGICAL EFFECTS AND THE TIME OF YEAR LAFB HAS A HIGH GROUNDWATER TABLE AND DEWATERING OF UTILITY TRENCHES AND OTHER EXCAVATIONS MAY BE REQUIRED. MONITORING WELL DATA IS INCLUDED IN THE APPENDIX OF THE SPECIFICATIONS.
21. CONTRACTOR TO SALVAGE PATIO PAVER BLOCKS AND TURN OVER TO GOVERNMENT. COORDINATE WITH CONTRACTING OFFICER.
22. REMOVE AND RELOCATE ORNAMENTAL FENCE MATERIAL AS SHOWN ON HC-103 AND HC-104. INCLUDES ALL HARDWARE AND MATERIAL EXCEPT MASONRY COLUMNS OR FOUNDATIONS.
23. UTILITY STRUCTURES AND MANHOLES TO BE ABANDONED SHALL HAVE FRAME AND COVER REMOVED, SHALL BE FILLED WITH SAND, AND BACKFILLED TO MEET PROPOSED GRADE.
24. COORDINATE PAVEMENT REMOVAL WITH CONTRACTING OFFICER TO LIMIT EFFECT OF ADJOINING PARKING LOT TRAFFIC AND ENTRANCE FROM DANFORTH AVENUE.
25. REMOVE PAVEMENT TO ALLOW FOR CONSTRUCTION OF NEW DUMPSTER PAD AND SCREEN WALL SEE SITE LAYOUT PLANS ON HC-103 AND HC-104.
26. THERMOSTATS CONTAINING MERCURY SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

SITE DEMOLITION PLAN

40 0 40 80
SCALE IN FEET

US Army Corps of Engineers
Norfolk District

A 01/24/02 REISSUED PER AMENDMENT 9 RRB ERK

DESIGNED: RRB | CHECKED: RMM | DATE: OCT 2001
DRAWN: RSH | SUBMITTED: ERK | SCALE: AS SHOWN
PROJECT NO. HACC023011 | NORFOLK DISTRICT FILE NO. LF-422-113
DRAWING NO. 711-18-13 | SPECIFICATION NO. DACA65-01-R-0025

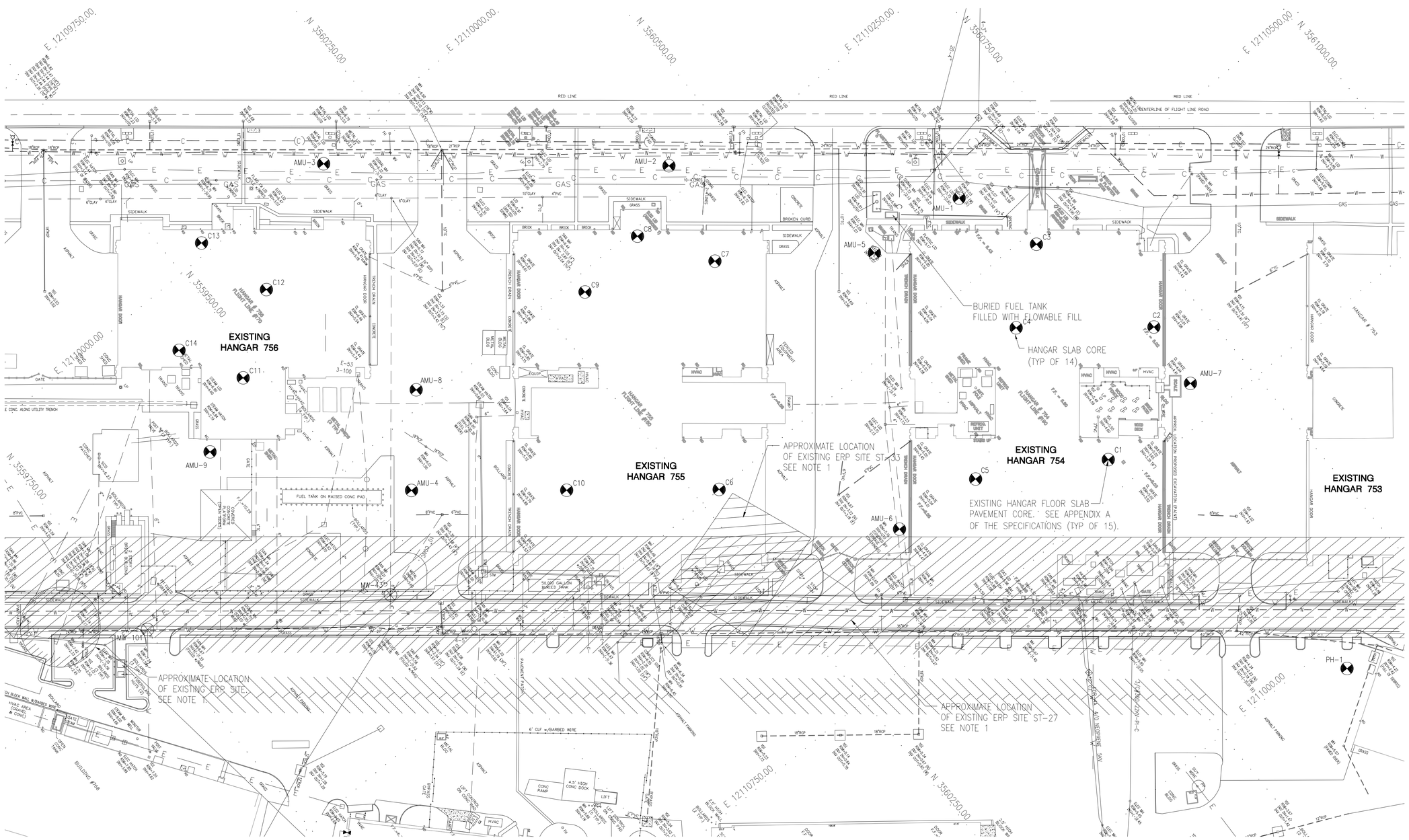
NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
SQUADRON OPERATIONS/AMU HANGAR
SITE DEMOLITION PLAN

HC-100
SHEET 13 OF 769

HC-100DM.dwg 10-18-2001 15:54 MRM



NOTES:

1. CONSTRUCTION TO IMPACT ERP SITE ST-27,ST-33, AND OT-56. MONITORING WELL LOCATIONS SHOWN ARE BASED ON SURVEY AND ALSO DRAWINGS PROVIDED BY BASE CIVIL ENGINEERS OFFICE. SEE APPENDIX B OF THE SPECIFICATIONS FOR MONITORING WELL AND ERP SITE DATA.
2. REFER TO APPENDIX A OF THE SPECIFICATIONS FOR SOIL BORING LOGS, PAVEMENT CORINGS, ETC
3. A GEOPHYSICAL SURVEY HAS BEEN PERFORMED ON THIS SITE BY THE U.S. ARMY CORPS OF ENGINEERS, OMAHA DISTRICT AND IS IN APPENDIX B OF THE SPECIFICATIONS. THE SURVEY WAS COMPLETED IN FEBRUARY 2001 AND INCLUDES PASSIVE SOIL GAS SAMPLING, SOIL BORINGS, TEMPORARY MONITORING WELL, AND TEST PITS.

SURVEY INFORMATION NOTE:

ALL UTILITIES SHOWN HEREON ARE BASED ON BASE RECORD MAPS AND PHYSICAL FEATURES VISIBLE ON THE GROUND. NO PROBING OR EXCAVATION WAS PERFORMED DURING THE SURVEY TO VERIFY UTILITIES SIZE, TYPE OR CONDITION. IN MANY CASES THE UTILITY MAPPING AS SHOWN ON THE PLANS PROVIDED BY LAFB CONFLICT WITH FIELD CONDITIONS. MANY STRUCTURES CANNOT BE OPENED OR ARE FULL OF MUD/DEBRIS AND THE INLETS AND OUTLETS CANNOT BE DETERMINED. EXTREME CAUTION SHOULD BE USED TO ENSURE EXACT LOCATION OF ANY UNDERGROUND UTILITIES. THE EXISTENCE OF HAZARDOUS WASTE OR MATERIALS WAS NEITHER INVESTIGATED NOR CONFIRMED AS PART OF THIS SURVEY. SEE APPENDICES TO THE SPECIFICATIONS AND NOTES 2 AND 3.

DATUM:

HORIZONTAL AND VERTICAL INFORMATION SHOWN HEREON IS PER DATUM PROVIDED BY LAFB ENGINEERING DEPARTMENT. VIRGINA STATE PLANE SOUTH ZONE NAD 83 AND NAVD 88.

BENCHMARK 007
N 3557933.009
E 12105529.975
ELEV. 4.530
LATITUDE 37°04'30.28877"N
LONGITUDE 76°21'56.26360"W
ELLIPSOIDAL HEIGHT (FT)* −115.098

BENCHMARK 011
N 3559883.175
E 12108426.683
ELEV. 6.455
LATITUDE 37°04'48.91744"N
LONGITUDE 76°21'19.98067"W
ELLIPSOIDAL HEIGHT (FT)* −113.225

BENCHMARK: 012
N 3559122.965
E 12110630.437
ELEV. 7.334
LATITUDE 37°04'40.90686"N
LONGITUDE 76°20'53.00527"W
ELLIPSOIDAL HEIGHT (FT)* −112.428

* U.S. SURVEY FOOT

GEOTECH INVEST. NUMBER	NORTH	EAST	ELEV
AMU-1	3560635.90	12110428.97	4.18
AMU-2	3560436.14	12110223.13	6.21
AMU-3	3560175.59	12110005.83	6.55
AMU-4	3560038.06	12110308.37	5.96
AMU-5	3560537.40	12110417.54	5.15
AMU-6	3560383.82	12110642.63	5.15
AMU-7	3560695.46	12110713.96	5.10
AMU-8	3560104.50	12110235.01	6.10
AMU-9	3559909.41	12110153.26	7.44
PH-1	3560635.98	12111027.99	5.69

SURVEY AND GEOTECH PLAN

50 0 50 100
SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP
A	10/24/02	REISSUED PER AMENDMENT 9	RRB	ERK

DESIGNED: RRB
DRAWN: RSH
CHECKED: RMM
SUBMITTED: ERK
DATE: OCT 2001
SCALE: AS SHOWN
PROJECT NO. 96-023011/012
NORFOLK DISTRICT FILE NO. F-22-2
SPECIFICATION NO. DACA65-01-R-0025
DRAWING NO. 711-18-13
Plot scale: 1:50
Last worked on: 10-19-01
File name: \26342\CIVIL\ HC-005SV.DWG

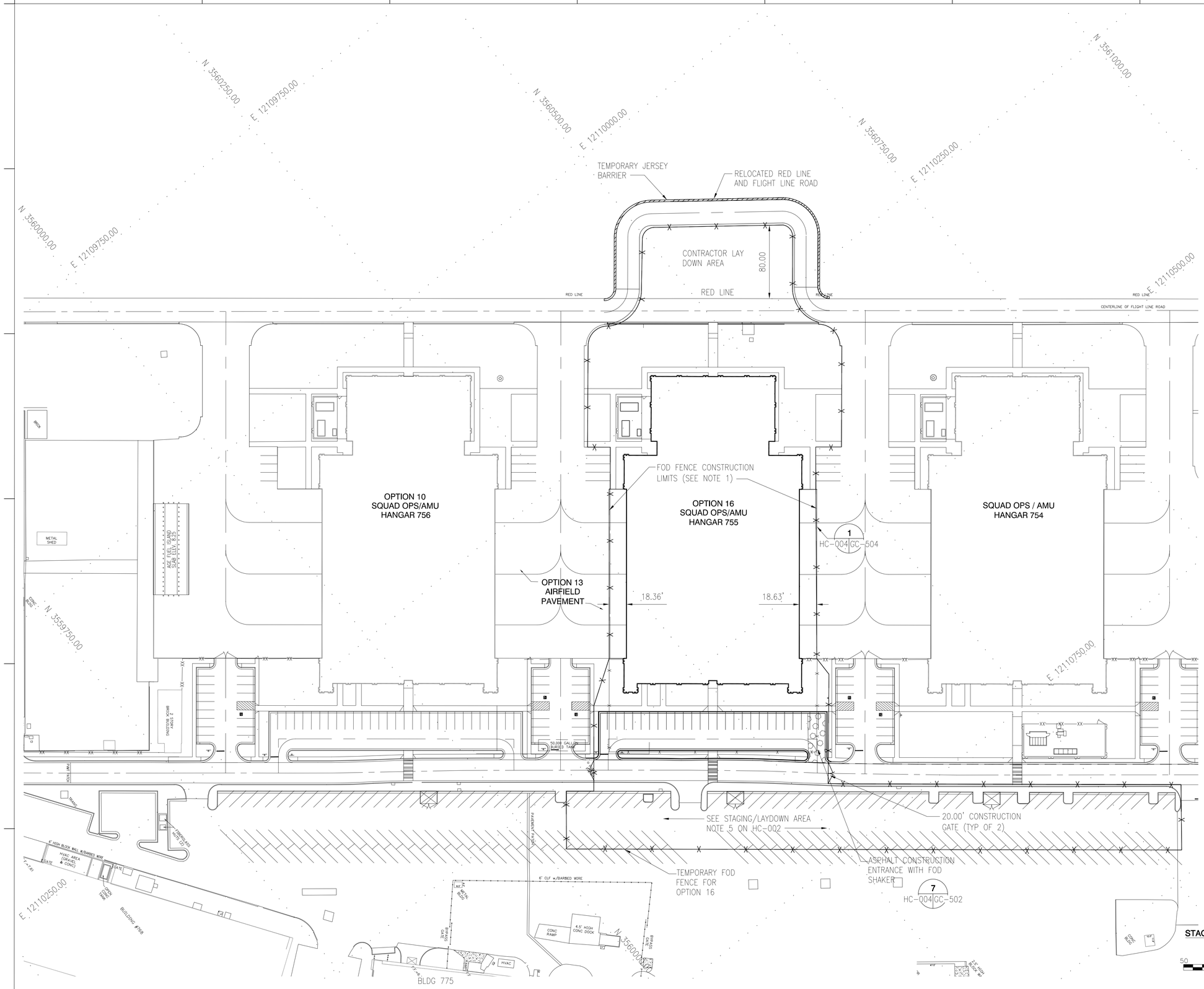
NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
SQUAD OPS, AMU HANGAR, & PUMP HOUSE SURVEY AND GEOTECH PLAN

HC-005
SHEET 12 OF 769

HC-005SV.dwg 10-19-2001 15:49 RSH



NOTE:

1. SEE STAGING/LAYDOWN AREA NOTES ON HC-002.

STAGING/ LAYDOWN AREA PLAN - OPTION 16

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP'D
A	10/24/02	REISSUED PER AMENDMENT 9	RRB	ERK

DESIGNED: RRB
CHECKED: RMM
DATE: OCT 2001
DRAWN: RSH
SUBMITTED: ERK
SCALE: AS SHOWN
PROJECT NO. 14402-02-23011/012
NORFOLK DISTRICT FILE NO. LF-422-11
DRAWING NO. 711-18-1-13
SPECIFICATION NO. DACA65-01-R-0025
Last worked on: 10-19-01
File name: \263423\civil\HC-004PH.DWG
Plot scale: 1:200

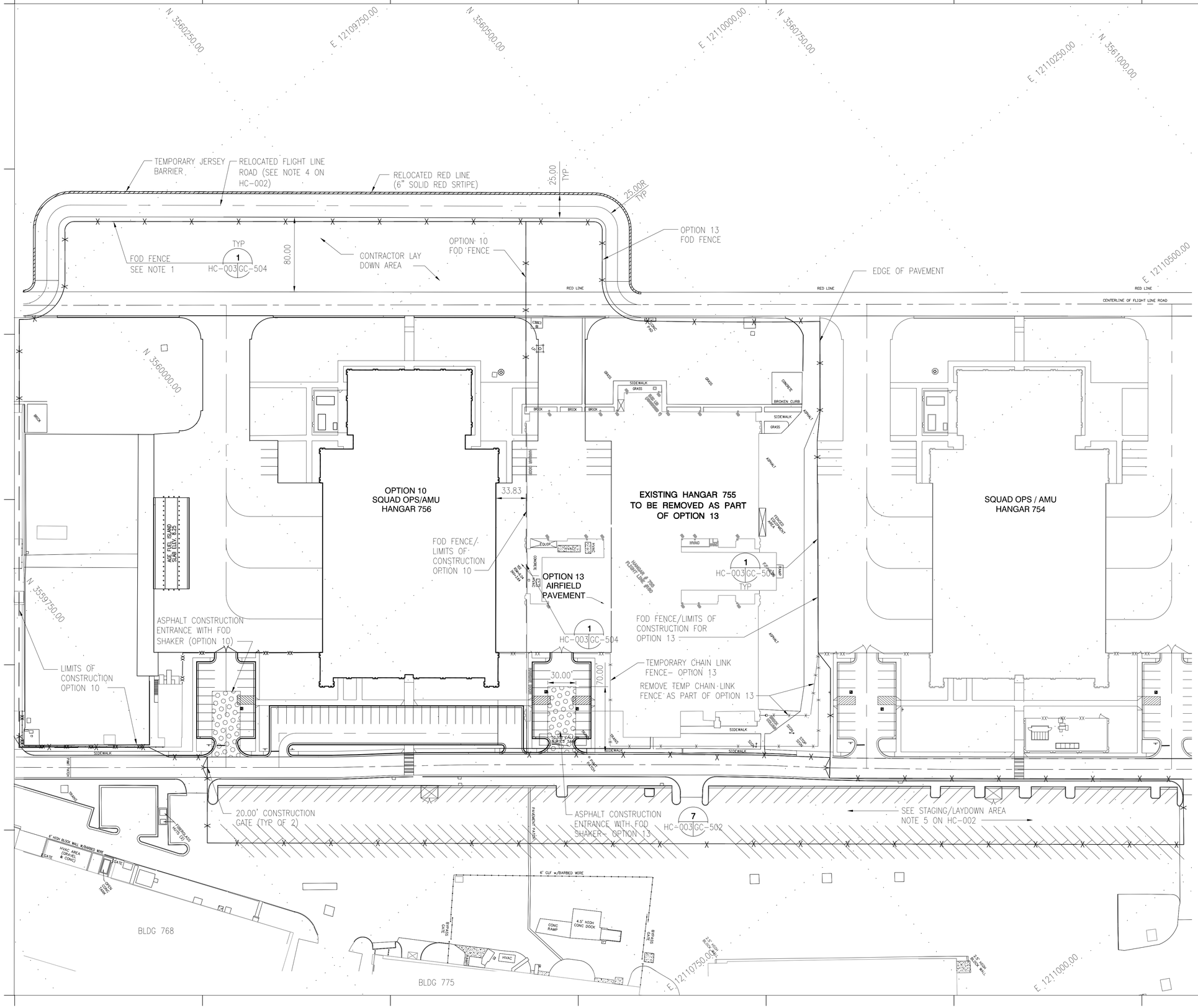
NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
SQUAD OPS, AMU HANGAR, & PUMP HOUSE
STAGING/LAYDOWN AREA PLAN
OPTION 16

HC-004
SHEET 11 OF 769

HC-004PH.dwg 10-18-2001 15:08 MRM



NOTE:

SEE STAGING/LAYDOWN AREA NOTES ON HC-002.

STAGING/LAYDOWN AREA PLAN - OPTION 10 & 13

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP'D
A	10/24/02	REISSUED PER AMENDMENT 9	RRB	ERK

DESIGNED: RRB
DRAWN: RSH
CHECKED: RRM
SUBMITTED: ERK
DATE: OCT 2001
SCALE: AS SHOWN
PROJECT NO. H4A002-02-3011/012
NORFOLK DISTRICT FILE NO. L-F422-10
SPECIFICATION NO. DACA65-01-R-0025
DRAWING NO. 711-18-13
Plot scale: 1:200
Last worked on: 10-19-01
File name: \26342\CIVIL\HC-003PH.DWG

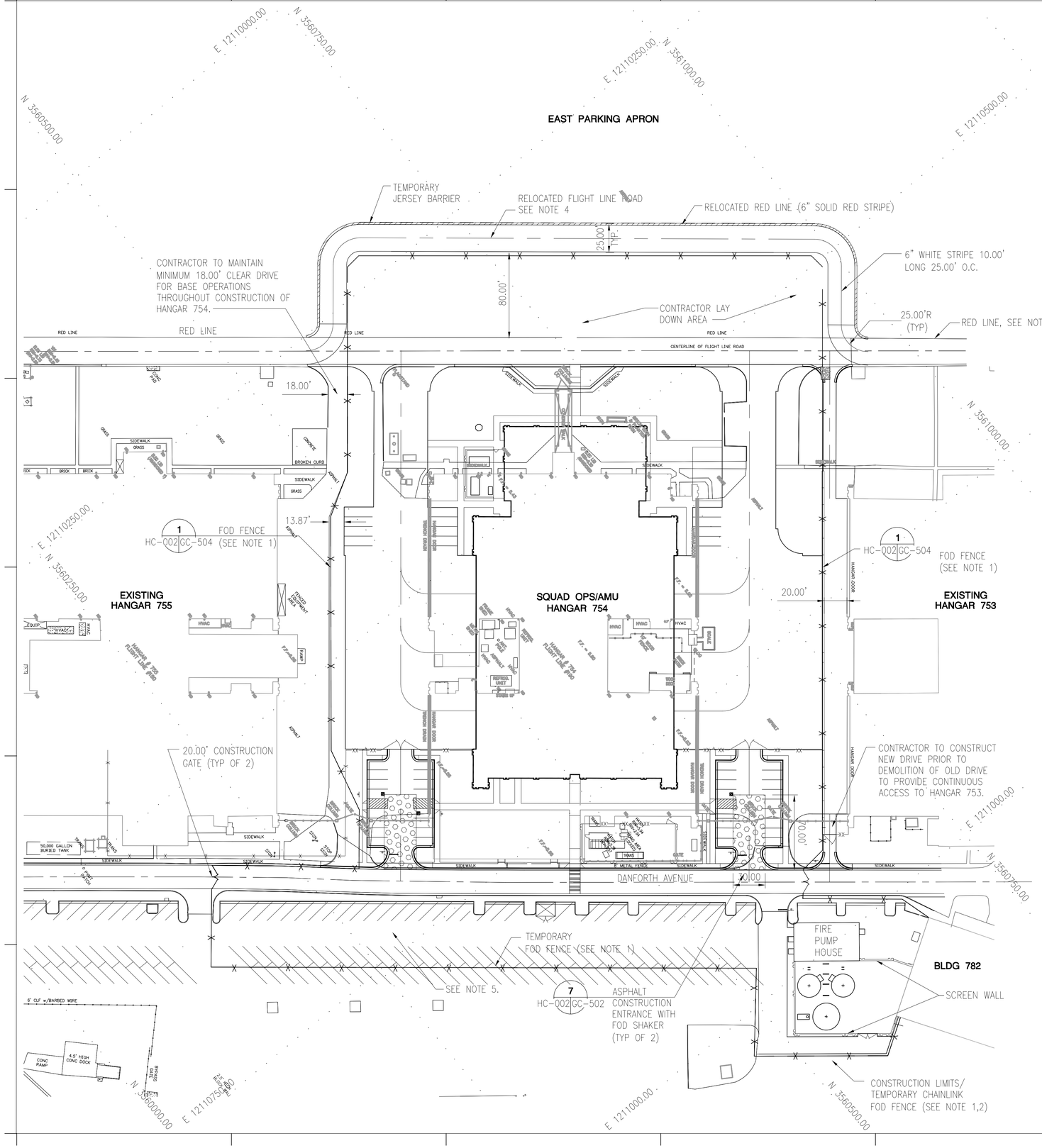
NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA

SQUAD OPS, AMU HANGAR, & PUMP HOUSE
STAGING/LAYDOWN AREA PLAN
OPTION 10 & 13

HC-003
SHEET 10 OF 769



STAGING/LAYDOWN AREA NOTES:

1. ENCLOSE THE PROJECT WORK AREA AND CONTRACTOR LAY-DOWN AREA WITH A 6 FOOT HIGH CHAIN LINK FENCE AND GATES WITH BROWN, UV LIGHT RESISTANT, PLASTIC FABRIC MESH NETTING, (SIMILAR TO TENNIS COURT OR OTHER SCREENING). REMOVE THE FENCE UPON COMPLETION AND ACCEPTANCE OF THE WORK. INTENT IS TO CONTAIN FOD ON THE CONSTRUCTION SITE AND LIMIT VIEW FROM SURROUNDING AREA INTO CONSTRUCTION SITE. FENCE AND FABRIC SHALL BE SECURED TO WITHSTAND JET BLAST FROM ONGOING ACTIVITIES ON THE AIRCRAFT RAMP. FOD FENCE AND FABRIC SHALL MEET THE CRITERIA IN SPECIFICATION SECTION 02821 AND DETAIL 1 ON GC-504.
2. IF ADJUSTMENTS TO TEMPORARY FOD FENCE RELOCATION ARE NEEDED FOR EQUIPMENT/CONSTRUCTION OPERATION SUBMIT PROPOSED CHANGE TO CONTRACTING OFFICER FOR WRITTEN APPROVAL.
3. CONTRACTOR SHALL MAINTAIN/RESTORE EXISTING PAVEMENTS/LANDSCAPING/FENCE/ETC. TO PRE-CONSTRUCTION CONDITION AS REQUIRED BY THE CONTRACTING OFFICER PRIOR TO COMPLETION OF PROJECT. CONTRACTOR SHALL COORDINATE WITH CONTRACTING OFFICER TO NOTE EXISTING CONDITIONS PRIOR TO STARTING WORK AND HAVE CLEAR AGREEMENT ON PRESENT CONDITION. CONTRACTOR SHALL VIDEOTAPE CONDITIONS OF EXISTING ROADS AND OTHER IMPROVEMENTS THAT REMAIN PRIOR TO COMMENCEMENT OF WORK AND PROVIDE 2 COPIES TO CONTRACTING OFFICER.
4. CONTRACTOR SHALL RESTRIPE CENTERLINE OF FLIGHT LINE ROAD AND RELOCATE JERSEY BARRIER TO ORIGINAL LOCATION UPON COMPLETION OF WORK AS DIRECTED BY CONTRACTING OFFICER AND AS SHOWN ON HC-103 AND HC-104. UPON MOVING JERSEY BARRIERS THE CONTRACTOR IS TO CAREFULLY SWEEP THE AREA TO REMOVE ALL RESIDUAL DEBRIS AND SPALLS FROM BARRIERS GENERATED DURING MOVEMENT.
5. CONTRACTOR PARKING, CONSTRUCTION TRAILERS, AND GOVERNMENT TRAILERS SHALL BE LOCATED ALONG FIRST TWO ROWS OF PARKING SOUTH OF DANFORTH. CONTRACTOR SHALL RESTRIPE AREA UPON COMPLETION OF WORK TO PRE-CONSTRUCTION CONDITION CONTRACTOR SHALL CLOSE DANFORTH AVENUE TO PUBLIC ACCESS BUT SHALL MAINTAIN FIRE/EMERGENCY VEHICLE ACCESS. CONTRACTOR SHALL PATCH EXISTING PARKING AREA THAT HAS BEEN USED FOR TEMPORARY MOBILE OFFICE TRAILERS AND FOR TEMPORARY FENCE INSTALLATION WHERE EXISTING PAVEMENT HAS BEEN PENETRATED FOR TIE DOWNS AND FOR FENCE POSTS.

STAGING/LAYDOWN AREA PLAN

50 0 50 100
SCALE IN FEET

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP'D
A	10/24/02	REISSUED PER AMENDMENT 9	RRB	ERK

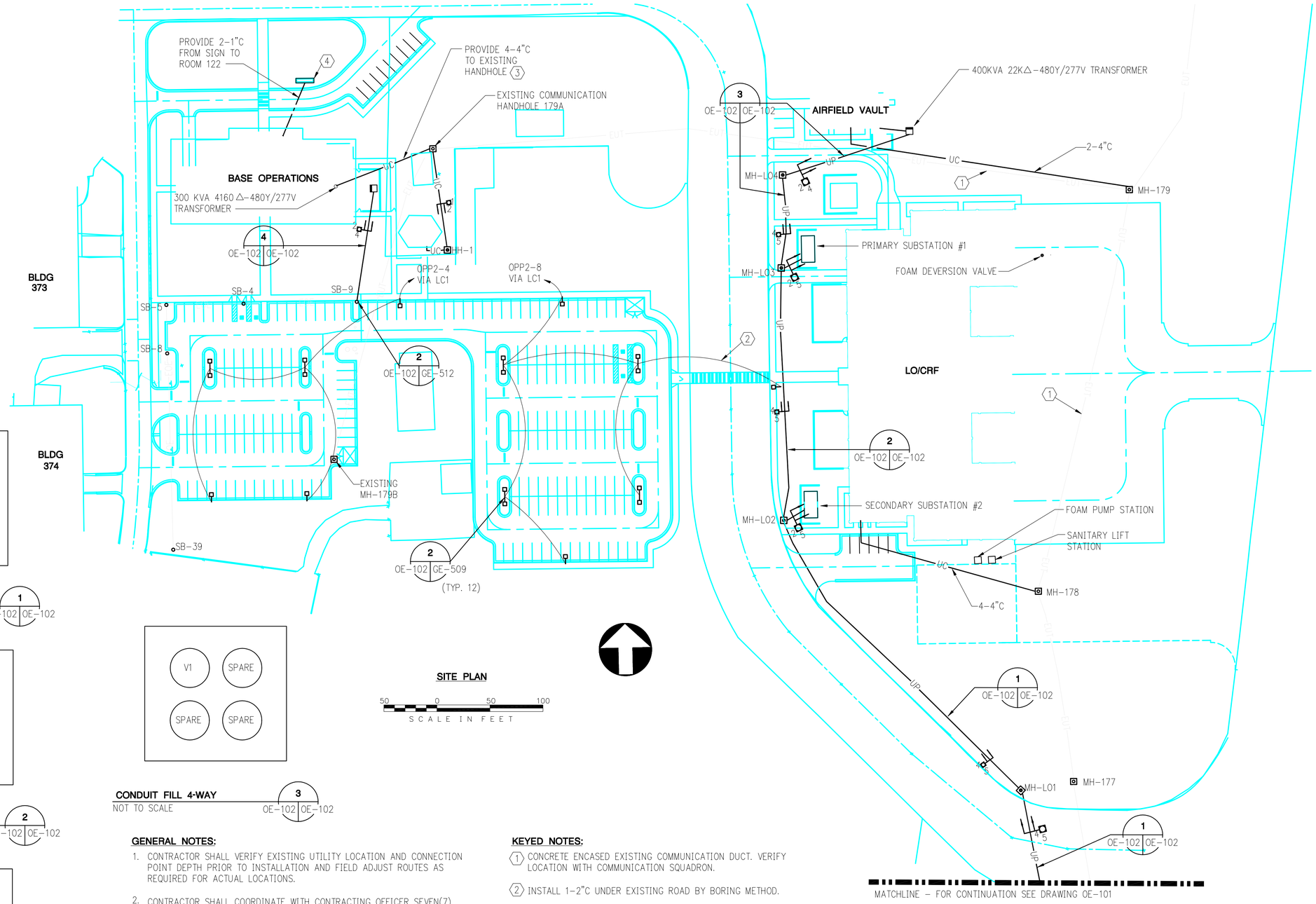
DESIGNED: RRB
DRAWN: RSH
CHECKED: RMM
SUBMITTED: ERK
DATE: OCT 2001
SCALE: AS SHOWN
PROJECT NO. F-22 OPS/AMU/MAINT FACILITIES
NORFOLK DISTRICT FILE NO. DACA65-01-R-0025
DRAWING NO. 711-18-13
SPECIFICATION NO. DACA65-01-R-0025
Last worked on: 10-19-01
File name: \JB342\CIVIL\HC-002.DWG
Plot scale: 1:50

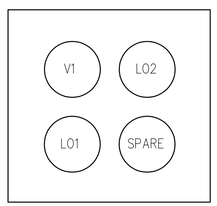
NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

BURNS & McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114

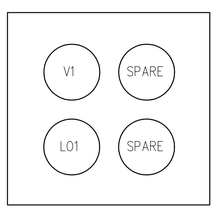
F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
SQUAD OPS, AMU HANGAR, & PUMP HOUSE
STAGING/LAYDOWN AREA PLAN

HC-002
SHEET 9 OF 769





CONDUIT FILL 4-WAY (1 / OE-102 OE-102)
NOT TO SCALE



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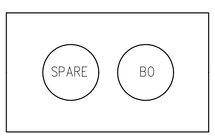
NOT TO SCALE



CONDUIT FILL 2-WAY (4 / OE-102 OE-102)
NOT TO SCALE

CONDUIT FILL 4-WAY (3 / OE-102 OE-102)
NOT TO SCALE

SITE PLAN

50 0 50 100
SCALE IN FEET

GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY EXISTING UTILITY LOCATION AND CONNECTION POINT DEPTH PRIOR TO INSTALLATION AND FIELD ADJUST ROUTES AS REQUIRED FOR ACTUAL LOCATIONS.
2. CONTRACTOR SHALL COORDINATE WITH CONTRACTING OFFICER SEVEN(7) DAYS PRIOR TO SCHEDULED POWER OUTAGES.
3. COORDINATE ALL COMMUNICATION OUTAGES WITH CONTRACTING OFFICER AND BASE COMMUNICATION DETACHMENT.
4. COORDINATE WITH CIVIL DRAWINGS THE LOCATION OF ALL UTILITIES(ie: SANITARY, STORM SEWER...)
5. SEE DRAWING GE-513 FOR DUCTBANK CONSTRUCTION DETAILS.
6. SEE DRAWINGS GE-510 AND GE-511 FOR MANHOLE DETAILS.
7. PARKING LOT LIGHTING SHALL BE BID UNDER OPTION NUMBER 1.

KEYED NOTES:

1. CONCRETE ENCASED EXISTING COMMUNICATION DUCT. VERIFY LOCATION WITH COMMUNICATION SQUADRON.
2. INSTALL 1-2"C UNDER EXISTING ROAD BY BORING METHOD.
3. COORDINATE LOCATION OF COMMUNICATION DUCT WITH ELECTRICAL AND MECHANICAL EQUIPMENT.
4. MARQUEE SIGN, COORDINATE LOCATION WITH ARCHITECTURAL DRAWING. PROVIDE ELECTRICAL AND DATA CONNECTIONS PER MANUFACTURERS RECOMMENDATIONS. POWER SHALL BE FROM PANELBOARD OLP1 CIRCUIT 28.

CABLE SCHEDULE	
V1	3-#4/0 AWG, 35KV
LO1	3-#4/0 AWG, 35KV
LO2	3-#4/0 AWG, 35KV
BO	3-#6 AWG, 5KV

US Army Corps of Engineers
Norfolk District

REV.	DATE	DESCRIPTION	BY	APP.

DESIGNED: SDS
CHECKED: CWW
DATE: OCT 2001
DRAWN: JLP
SUBMITTED: ERK
SCALE: AS SHOWN
PROJECT NO. ACC023011
NORFOLK DISTRICT FILE NO. LEC-24-01
DRAWING NO. 711-18-13
SPECIFICATION NO. DACA65-01-R-0025
Last worked on: 10/17/01
File name: \JR342\ELEC\BASE_OPS\OE-102SP.DWG
File scale: 1:50

NORFOLK DISTRICT
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F-22 OPERATIONS AND MAINTENANCE FACILITIES
LANGLEY AIR FORCE BASE, VIRGINIA
BASE OPERATIONS FACILITY
SITE PLAN

OE-102
SHEET 610 OF 769