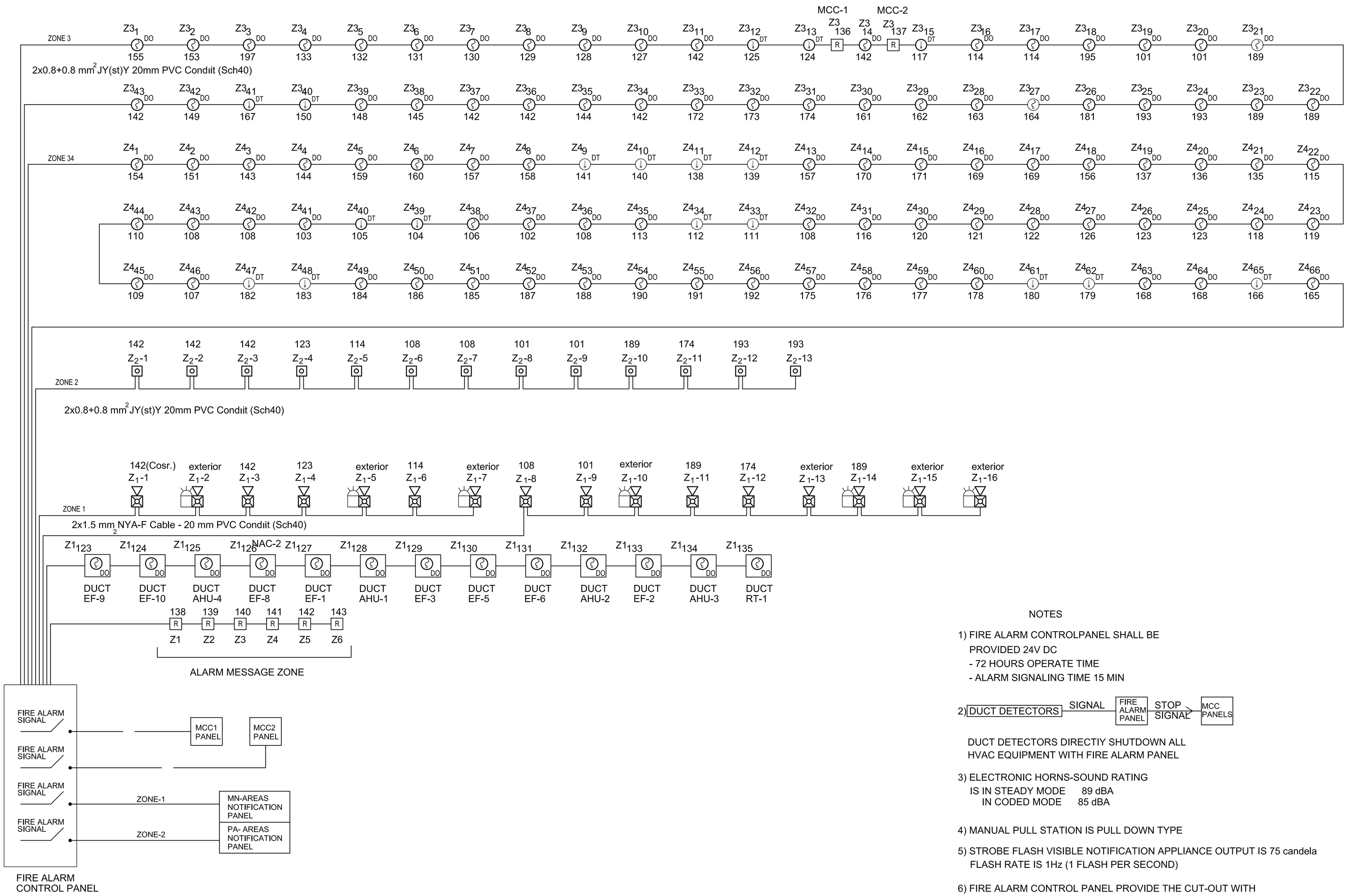


NOTES

1) FIRE ALARM CONTROLPANEL SHALL BE PROVIDED 24V DC
- 72 HOURS OPERATE TIME
- ALARM SIGNALING TIME 15 MIN

2) DUCT DETECTORS — SIGNAL — FIRE ALARM PANEL — STOP SIGNAL — MCC PANELS

DUCT DETECTORS DIRECTIY SHUTDOWN ALL HVAC EQUIPMENT WITH FIRE ALARM PANEL

3) ELECTRONIC HORNS-SOUND RATING
IS IN STEADY MODE 89 dBA
IN CODED MODE 85 dBA

4) MANUAL PULL STATION IS PULL DOWN TYPE

5) STROBE FLASH VISIBLE NOTIFICATION APPLIANCE OUTPUT IS 75 candela
FLASH RATE IS 1Hz (1 FLASH PER SECOND)

6) FIRE ALARM CONTROL PANEL PROVIDE THE CUT-OUT WITH NON-ENERGIZED AUXILIARY RELAY CONTACTS

AS-BUILT

SYMBOL	DESCRIPTION	DATE	APPR.
	REVISED AS-BUILT	05-JUNE-2006	
	100% DESIGNS	11.15.05	

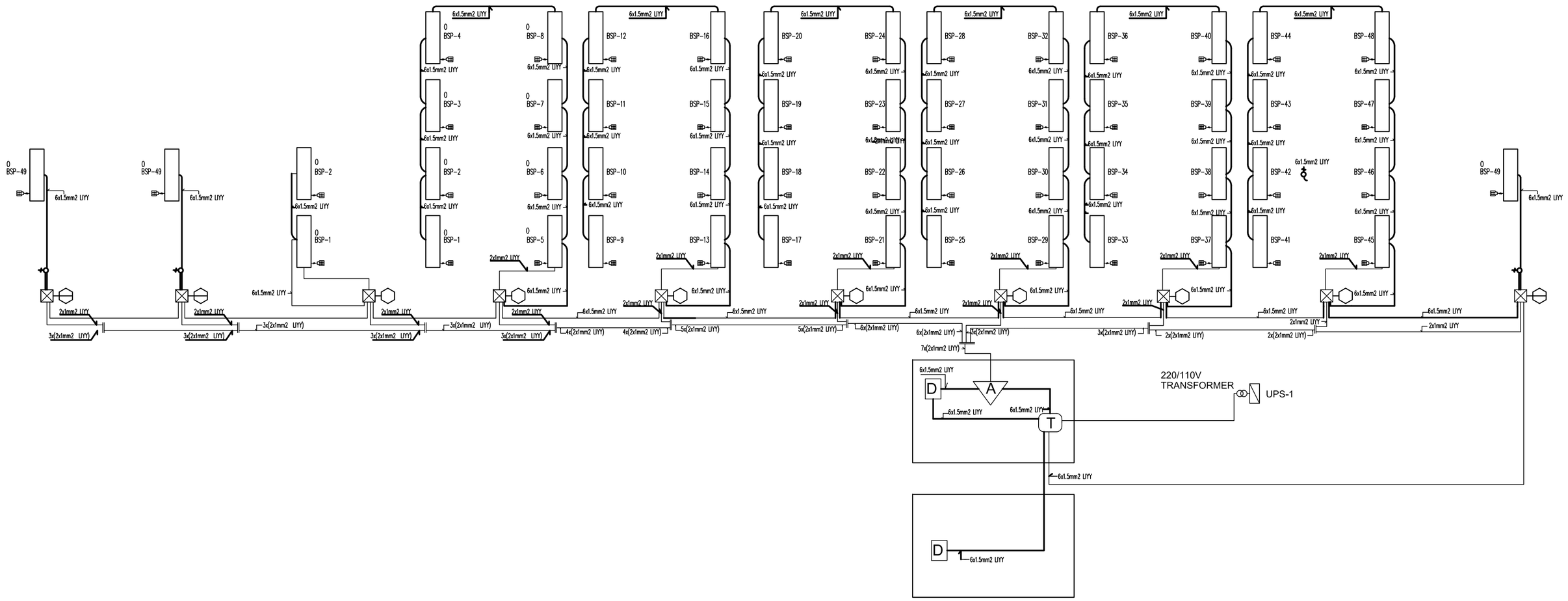
DESIGNED BY : E. Benli
DATE : 06-05-2006
DWN BY : U. PENEKLI
SUBMITTED BY : DELTA OM
CHK BY : A. LOK
FILE NO : DP01-HH - E17

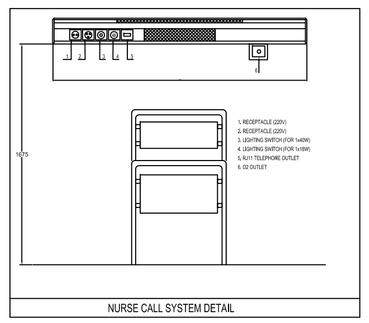
US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLIN CO.INC in association with IRMAK, STAND, BESELI, DELTA OM

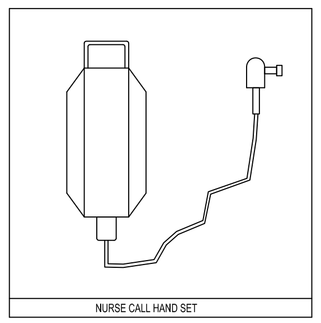
DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS-BUILT
FIRE ALARM SINGLE LINE DIAGRAM

SHEET REFERENCE NUMBER :
DP01-HH-E17

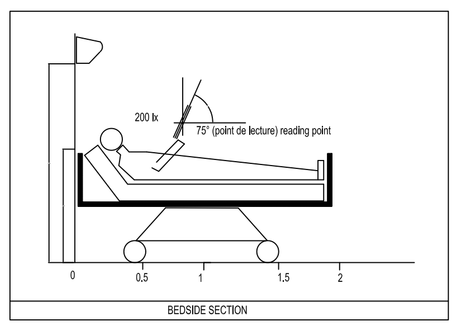




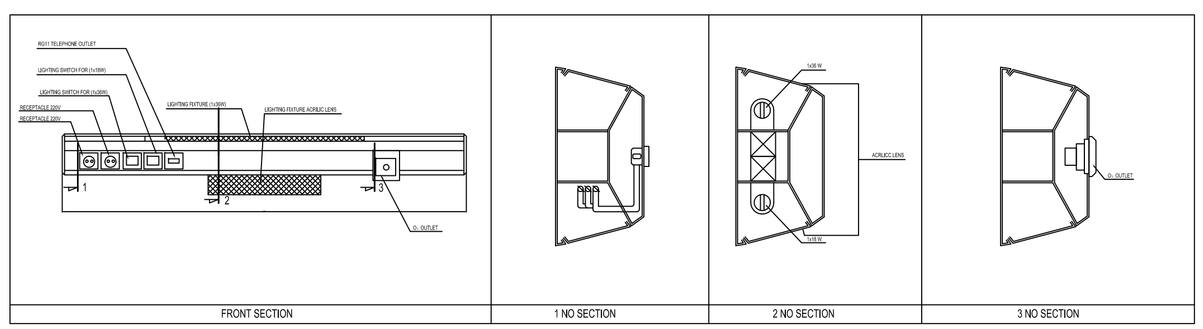
NURSE CALL SYSTEM DETAIL



NURSE CALL HAND SET



BEDSIDE SECTION



FRONT SECTION | 1 NO SECTION | 2 NO SECTION | 3 NO SECTION

SYMBOLS LIST

⊠	JUNCTION BOX
⬡	SINGLE CORRIDOR LIGHT
⬢	DUAL CORRIDOR LIGHT
A	ANNUNCIATOR PANEL (SALAVY)
D	DUTY STATION
T	CENTRAL EQUIPMENT
	EMERGENCY/LAVATORYSTATION
	RECEPTACLE OUTLET – 220V – 50Hz
	LIGHTING SWITCH – 220V – 50Hz
	RJ11 TELEPHONE OUTLET

AS-BUILT

SYMBOL	DESCRIPTION	DATE	APPR.
	REVISED AS-BUILT	05-JUNE-2006	
	100% DESIGNS	11.15.05	

DESIGNED BY : E. Benli
DATE : 06-05-2006
DWN BY : U. PENEKLI
SUBMITTED BY : DELTA OM
CHK BY : A. LOK
FILE NO : DP01-HH - E18

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLIN CO.INC in association with IRMAK, STAND, BESELI, DELTA OM

Design/Builder

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN

DRAWING OF WORK AS-BUILT
NURSE CALL SINGLE LINE DIAGRAM PLAN

SHEET REFERENCE NUMBER :

DP01-HH-E18

AS-BUILT

SYMBOL	DESCRIPTION	DATE	APR.
1	REVISED AS-BUILT	05-JUNE-2006	
2	100% DESIGNS	11.16.05	

DESIGNED BY : E. Benli
DATE : 06-05-2006
DWN BY : U. PENEKLI
SUBMITTED BY : DELTA OM
CHK BY : A. LOK
FILE NO : DP01-HH - E19

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

Design/Builder
KOLIN CO.INC in association with IRMAK, STAND, BESELI, DELTA OM

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS-BUILT
JUNCTION BOX SYSTEM AND CABLE TRAY PLAN

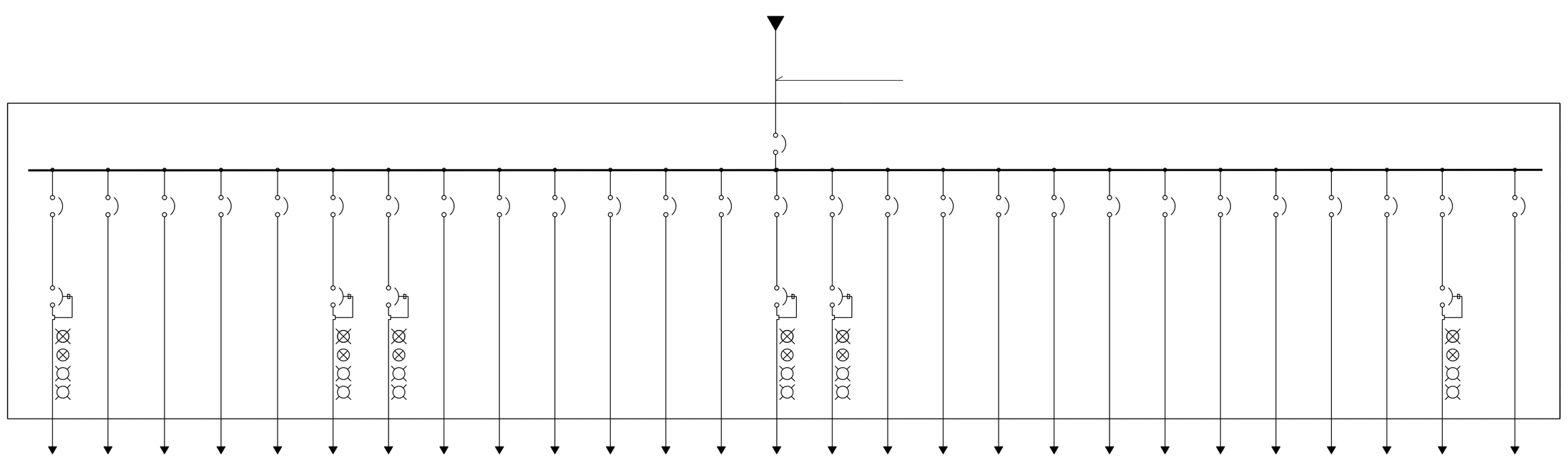
SHEET REFERENCE NUMBER :
DP01-HH-E19

A B C D E F G H

6 5 4 2

SYMBOLS LIST

SYMBOL	DESCRIPTION
	MOTOR STARTER
	CIRCUIT BREAKER
	START
	STOP
	FAULT LIGHT
	START LIGHT



AS-BUILT

SYMBOL	DESCRIPTION	DATE	APR.
1	REVISED AS-BUILT	05-JUNE-2006	
	100% DESIGNS	11.16.05	

DESIGNED BY : E. Benli
DATE : 06-05-2006
DWN BY : U. PENEKLI
SUBMITTED BY : DELTA OM
CHK BY : A. LOK
FILE NO : DP01-HH - E20

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLIN CO.INC in association with IRMAK, STAND, BESELI, DELTA OM

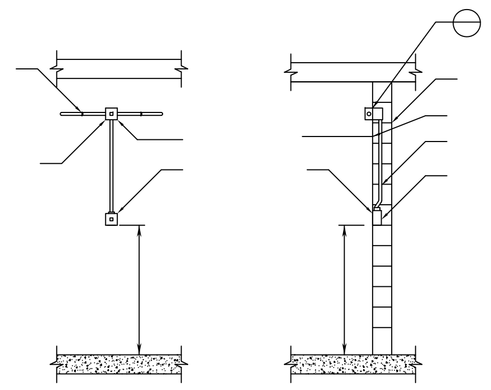
Design/Builder

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN

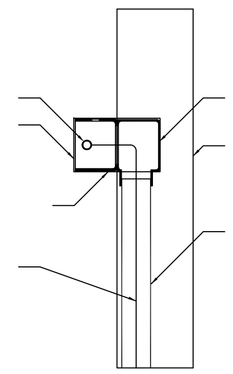
DRAWING OF WORK AS-BUILT
MCC SCHEDULES

SHEET REFERENCE NUMBER :

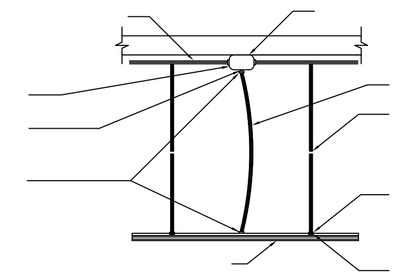
DP01-HH-E20-A



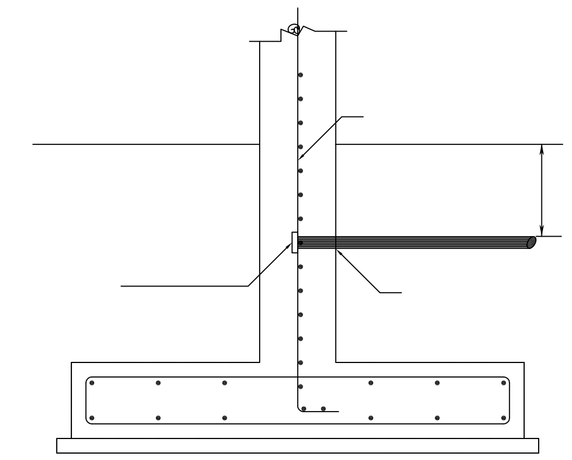
1 E19 GENERAL INSTALLATION DETAIL FOR RECESSED MOUNTED SOCKET IN WET AREA



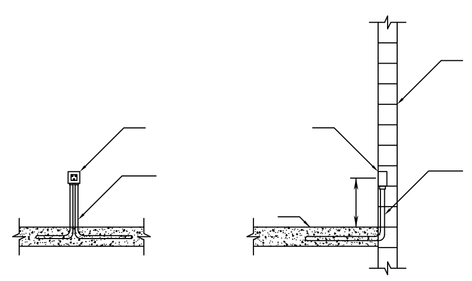
2 E21 CONVERTING FROM EXPOSED TO EMBEDDED ROUTING IN WALL



3 E19 PENDANT LIGHT FIXTURE DETAIL

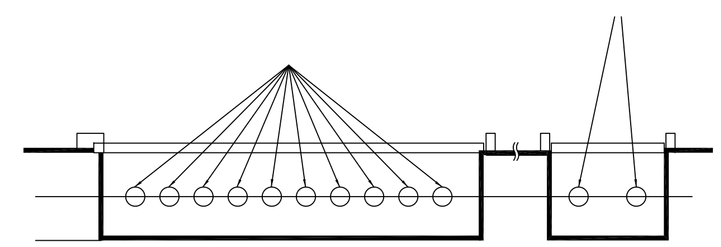


4 E02 STRUCTURAL BONDING DETAIL TYPICAL

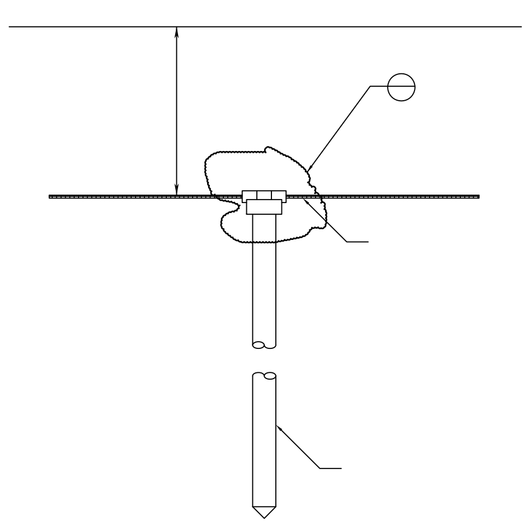


5 E04 E08 GENERAL INSTALLATION DETAIL FOR RECESSED SOCKET (CONDUIT BELOW SLAB)

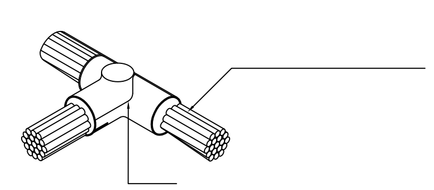
6 NOT USED



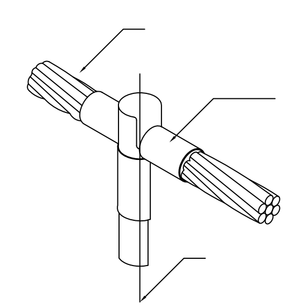
7 E24 SECTION A-A



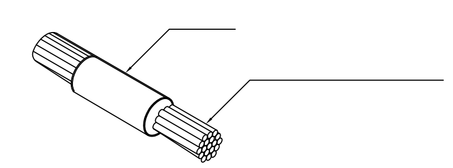
8 E02 GROUND ROD INSTALLATION DETAIL



9 E02 T-CONNECTION WELDING POINT



10 E02 E21 GROUND ROD CONNECTION POINT



11 E02 HORIZONTAL SPLICE

AS-BUILT

SYMBOL	DESCRIPTION	DATE	APPR.
1	REVISED AS-BUILT 100% DESIGNS	05-JUNE-2006 11.16.05	

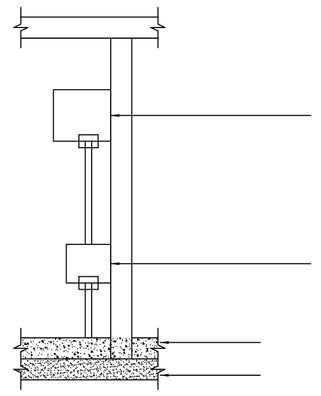
DESIGNED BY E. Benli	DATE : 06-05-2006
DWN BY : U. PENEKLI	SUBMITTED BY : DELTA OM
CHK BY : A. LOK	FILE NO : DP01-HH - E21

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

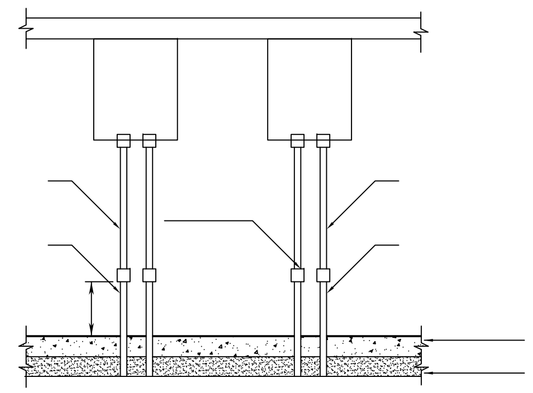
KOLIN CO.INC in association with IRMAK, STAND, BESELI, DELTA OM
Design/Builder

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS-BUILT
DETAILS - 1

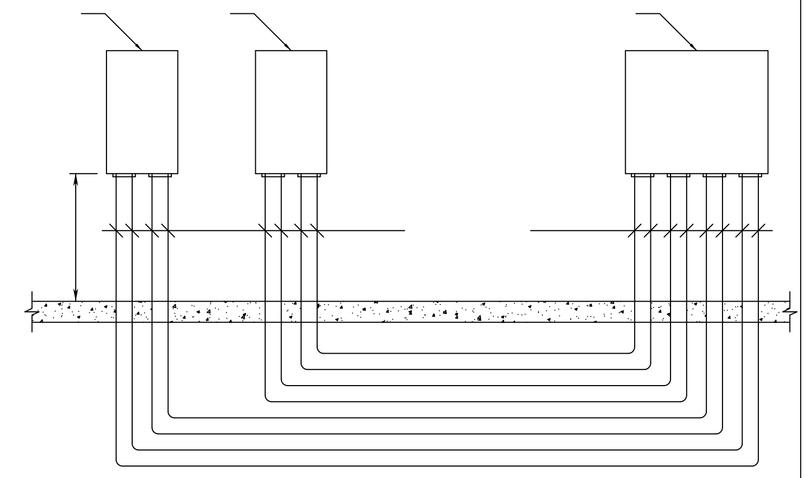
SHEET REFERENCE NUMBER :
DP01-HH-E21



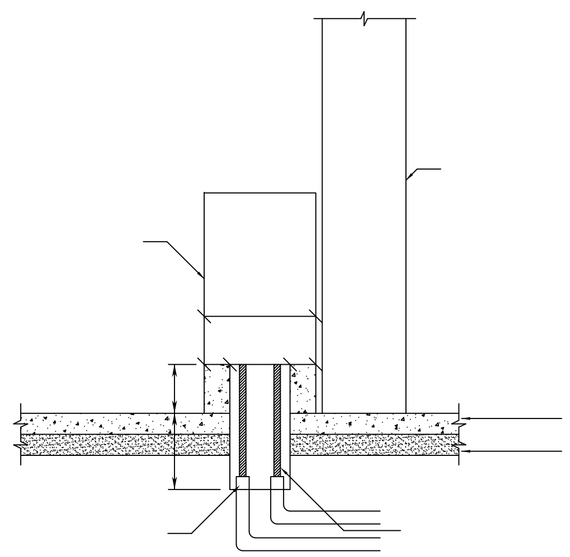
11 E21 DISCONNECTING SWITCH CONNECTION DETAIL



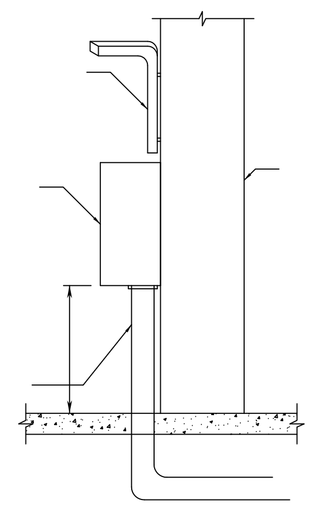
12 E21 ELECTRICAL PANEL BOARD PVC PIPE CONNECTION DETAILS



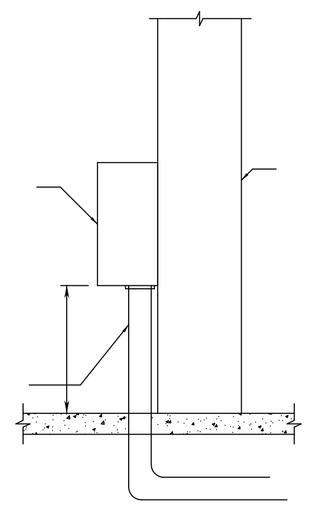
18 E21 MAIN PANEL AND DISTRIBUTION PANEL CONNECTION DETAILS



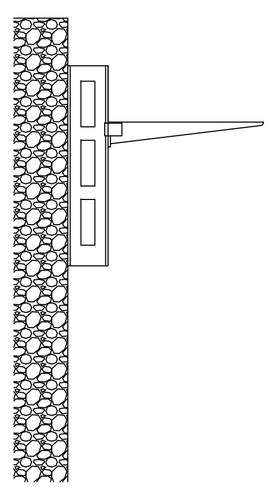
13 E21 STANDING MAIN PANEL CONSRUCTION DETAIL



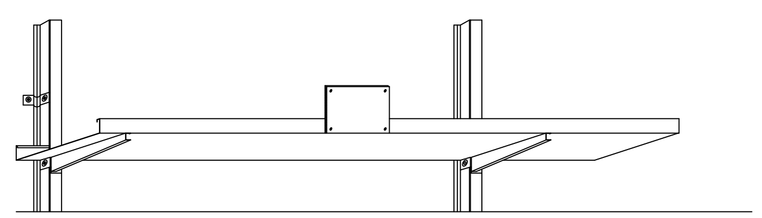
14 E25 PANEL BOARD AND CABLE TRAY ENTRANCE DETAIL



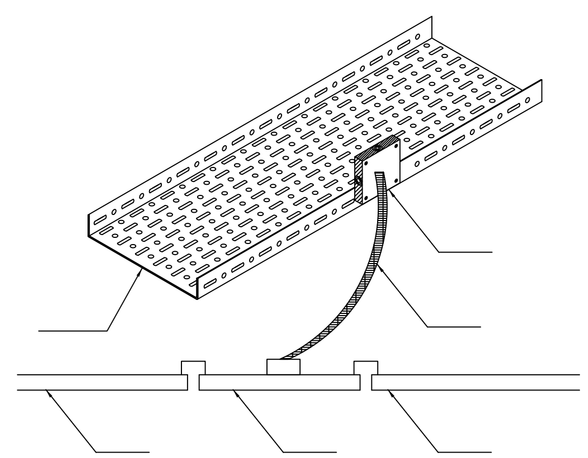
15 E21 SERVICE ENTRANCE DETAIL



16 E25 CABLE TRAY WALL SUPPORT DETAIL



17 E25 CABLE TRAY WALL DETAIL



18 E25 CABLE TRAY & LIGHTING FIXTURE CABLE CONNECTION DETAIL

AS-BUILT

SYMBOL	DESCRIPTION	DATE	APR.
1	REVISED AS-BUILT 100% DESIGNS	05-JUNE-2006 11.16.05	

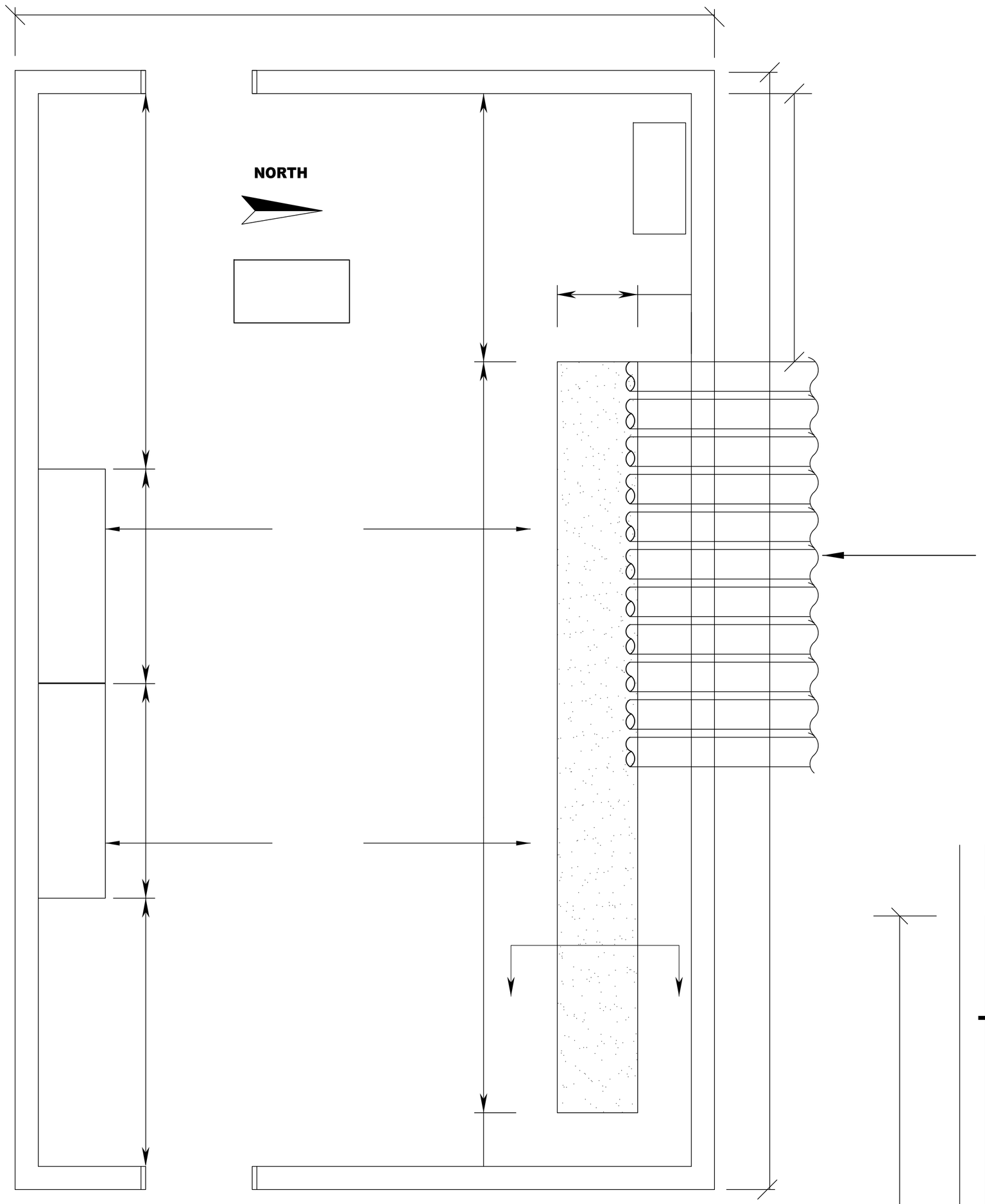
DESIGNED BY : E. Benli	DATE : 06-05-2006
DWN BY : U. PENEKLI	SUBMITTED BY : DELTA OM
CHK BY : A. LÖK	FILE NO : DP01-HH - E22

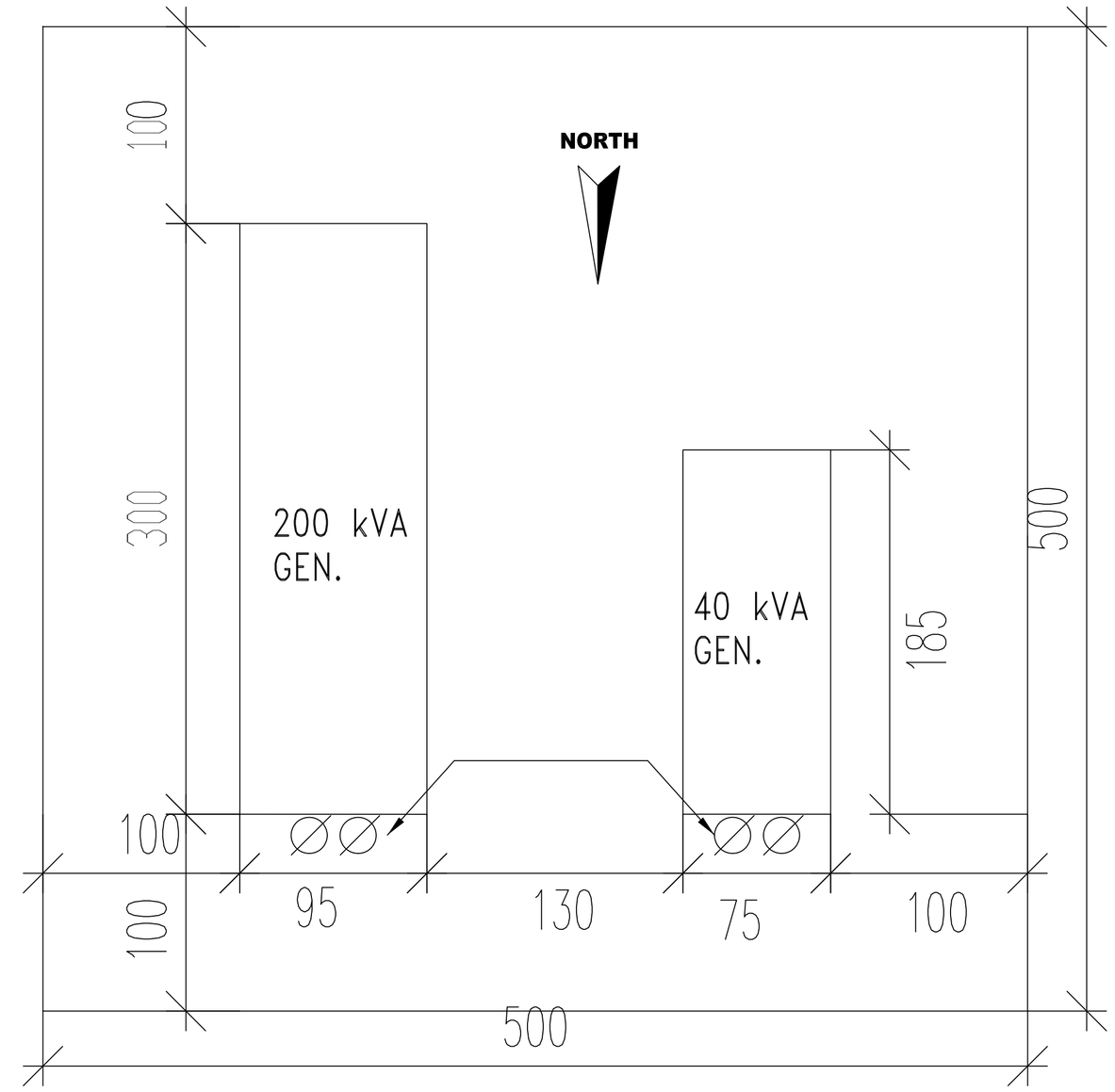
US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLIN CO.INC in association with IRMAK, STAND, BESELI, DELTA OM
Design/Builder

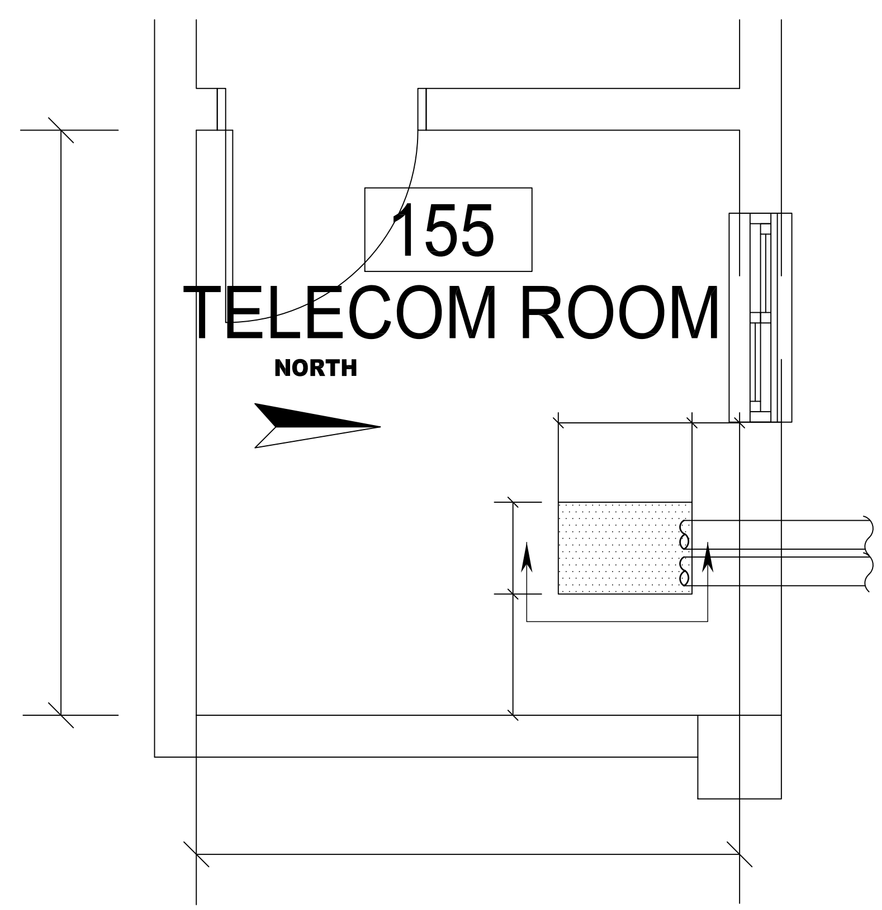
DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS-BUILT
DETAILS - 2

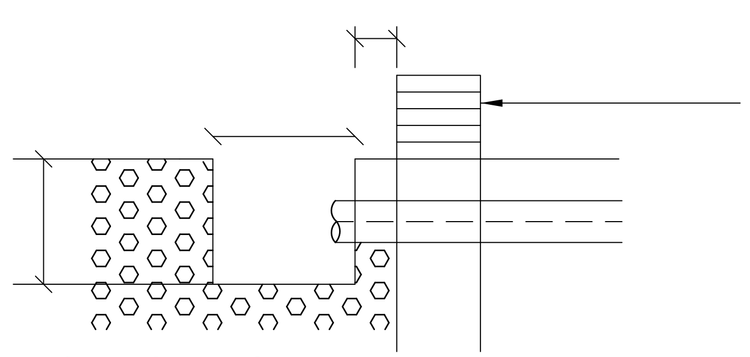
SHEET REFERENCE NUMBER :
DP01-HH-E22



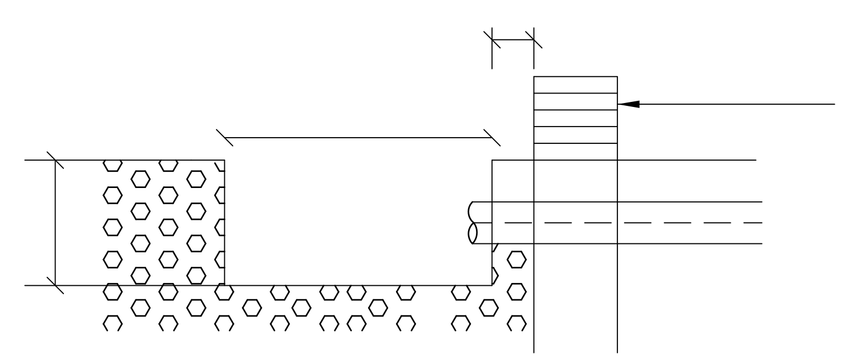


GENERATOR FOUNDATION PLAN





SECTION A-A



SECTION B-B

AS-BUILT

SYMBOL	DESCRIPTION	DATE	APR.
1	REVISED AS-BUILT 100% DESIGNS	05-JUNE-2006 11:16:05	

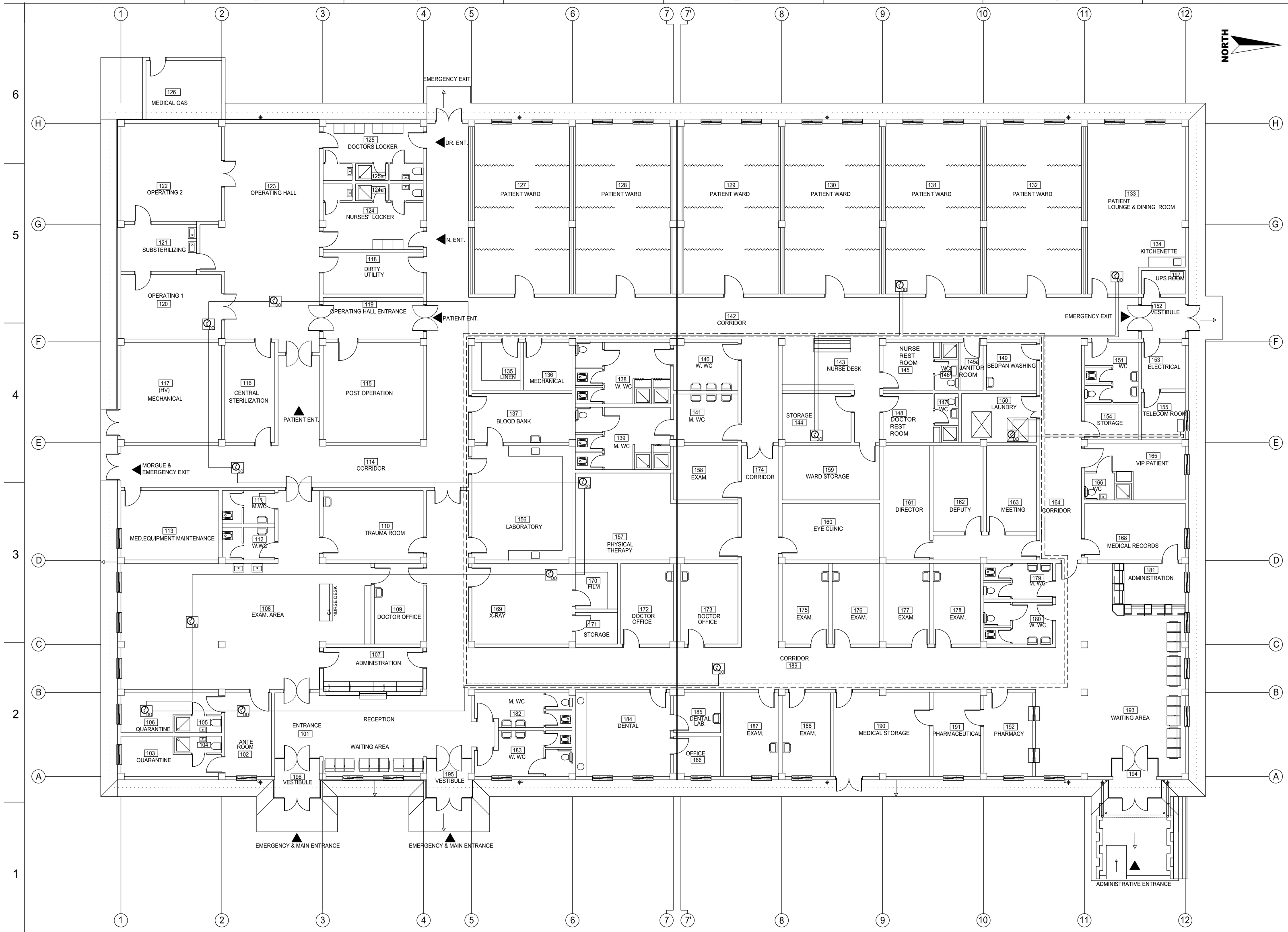
DESIGNED BY: E. Benli
DATE: 06-05-2006
DWN BY: U. PENEKLI
SUBMITTED BY: DELTA OM
CHK BY: A. LOK
FILE NO: DP01-HH - E23

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLIN CO.INC in association with IRMAK, STAND, BESELI, DELTA OM
Design/Builder

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT, AFGHANISTAN
DRAWING OF WORK AS-BUILT
DETAILS - 3

SHEET REFERENCE NUMBER :
DP01-HH-E23



SYMBOL	DESCRIPTION	DATE	APR.
1	REVISED AS-BUILT	05-JUNE-2006	
	100% DESIGNS	11.16.05	

DESIGNED BY : E. Benli
DWN BY : U. PENEKLI
CHK BY : A. LOK
DATE : 06-05-2006
SUBMITTED BY : DELTA OM
FILE NO : DP01-HH - E24

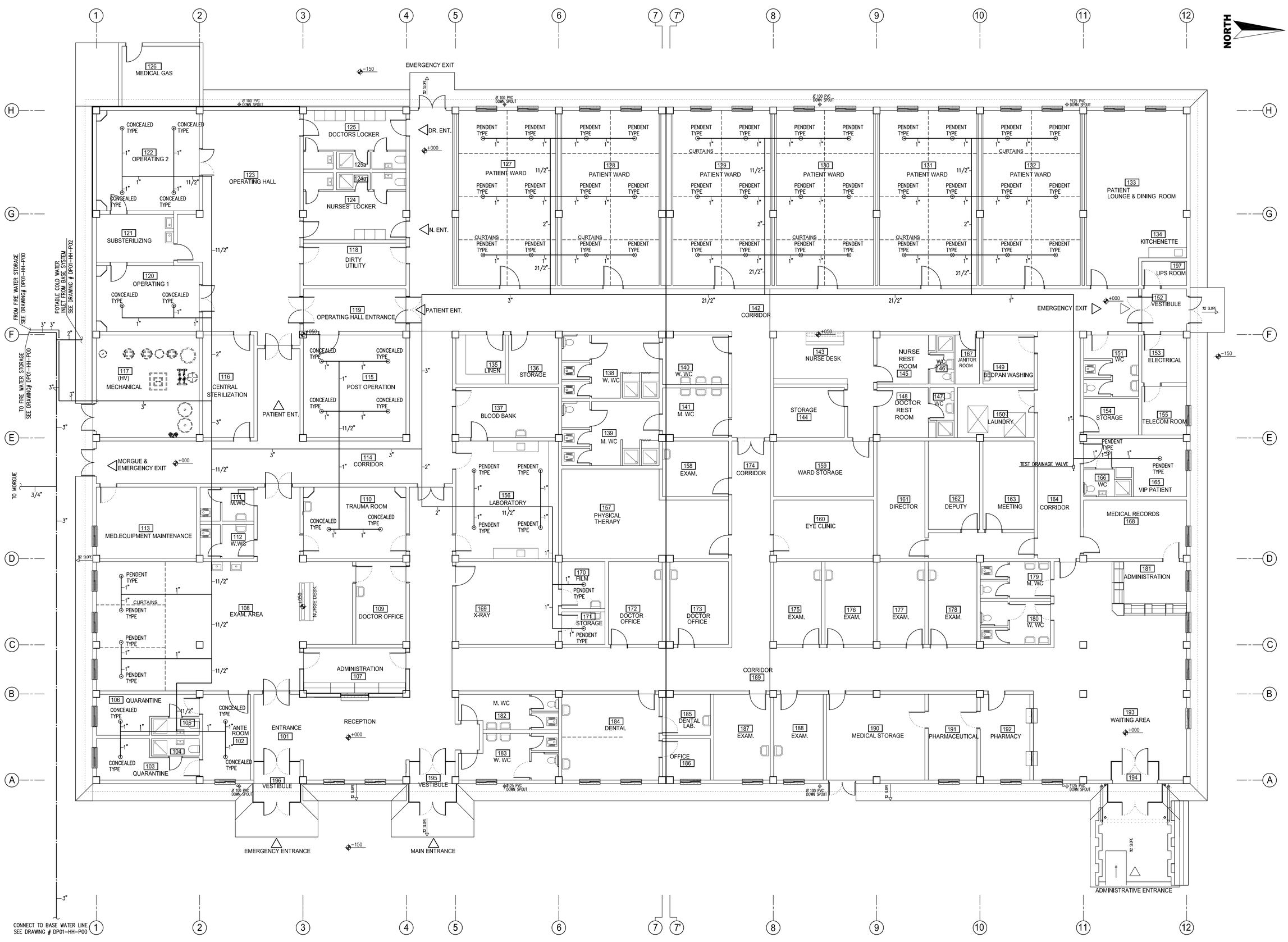
US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLIN CO.INC in association with IRMAK, STAND, BESELI, DELTA OM

DesignBuilder

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS-BUILT
DUCT TYPE FIRE ALARM SENSORS CONNECTION DIAGRAM

SHEET REFERENCE NUMBER :
DP01-HH-E24



AS BUILT

SYMBOL	DESCRIPTION	DATE	APR
2	REVISED AS BUILT	08-09-06	
1	REVISED AS BUILT	06-05-06	
	% 100 DESIGNS	11-16-05	

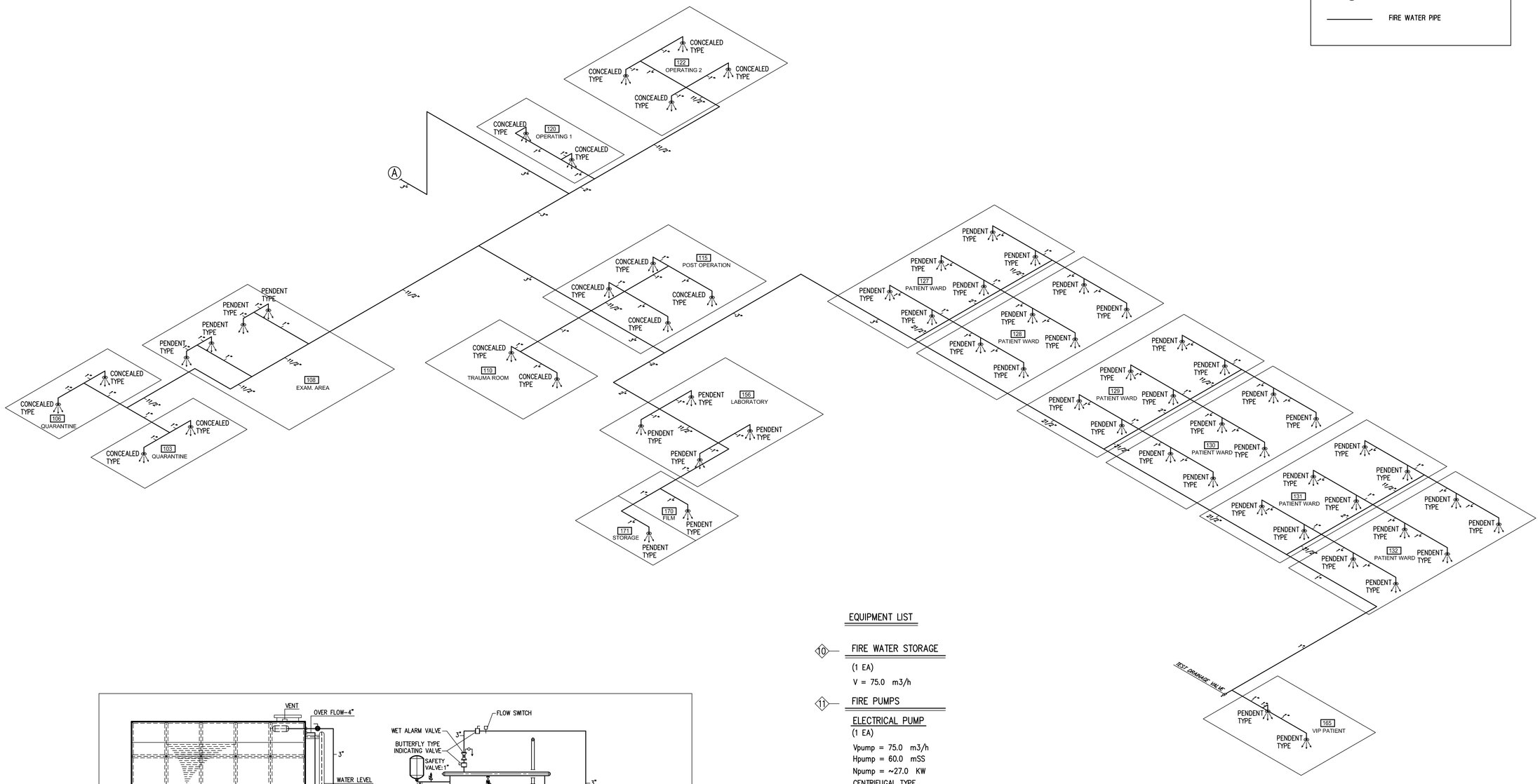
DESIGNED BY : I. Beseli
DWN BY : Z. Simsek
CHK BY : I. Beseli
DATE : 08-09-2006
SUBMITTED BY : BESELI
FILE NO : DP01-HH-F01

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLÝN CO.INC in association with IRMAK, STAND, BESELI, DELTA OM
Design/Builder

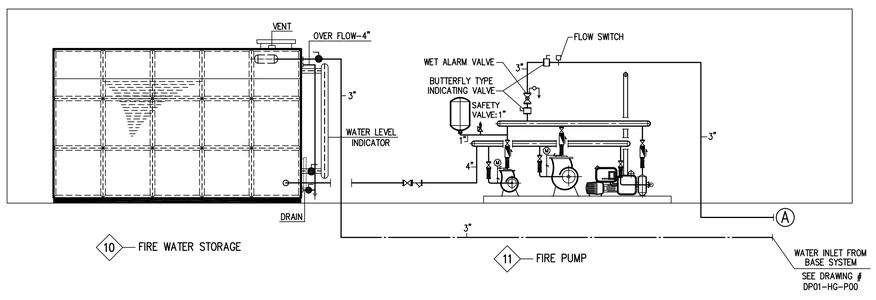
DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS BUILT
FIRE FIGHTING SYSTEM
FLOOR PLAN

SHEET REFERENCE NUMBER :
DP01-HH-F01



LEGEND

- SPRINKLER HEAD
- FIRE WATER PIPE



EQUIPMENT LIST

10 FIRE WATER STORAGE

(1 EA)

V = 75.0 m3/h

11 FIRE PUMPS

ELECTRICAL PUMP

(1 EA)

Vpump = 75.0 m3/h
Hpump = 60.0 mSS
Npump = ~27.0 KW
CENTRIFUGAL TYPE

DIESEL PUMP

(1 EA)

Vpump = 75.0 m3/h
Hpump = 60.0 mSS
CENTRIFUGAL TYPE

JOCKEY PUMP

(1 EA, ELECTRICAL PUMP)

Vpump = 2.0 m3/h
Hpump = 70.0 mSS
Npump = 1.5 KW
CENTRIFUGAL TYPE

MEMBRANE TANK

Vtank = 100 lt (PN16)

AS BUILT

SYMBOL	DESCRIPTION	DATE	APR
A	REVISED AS BUILT	08-09-06	
	REVISED AS BUILT	06-05-06	
	% 100 DESIGNS	11-16-05	

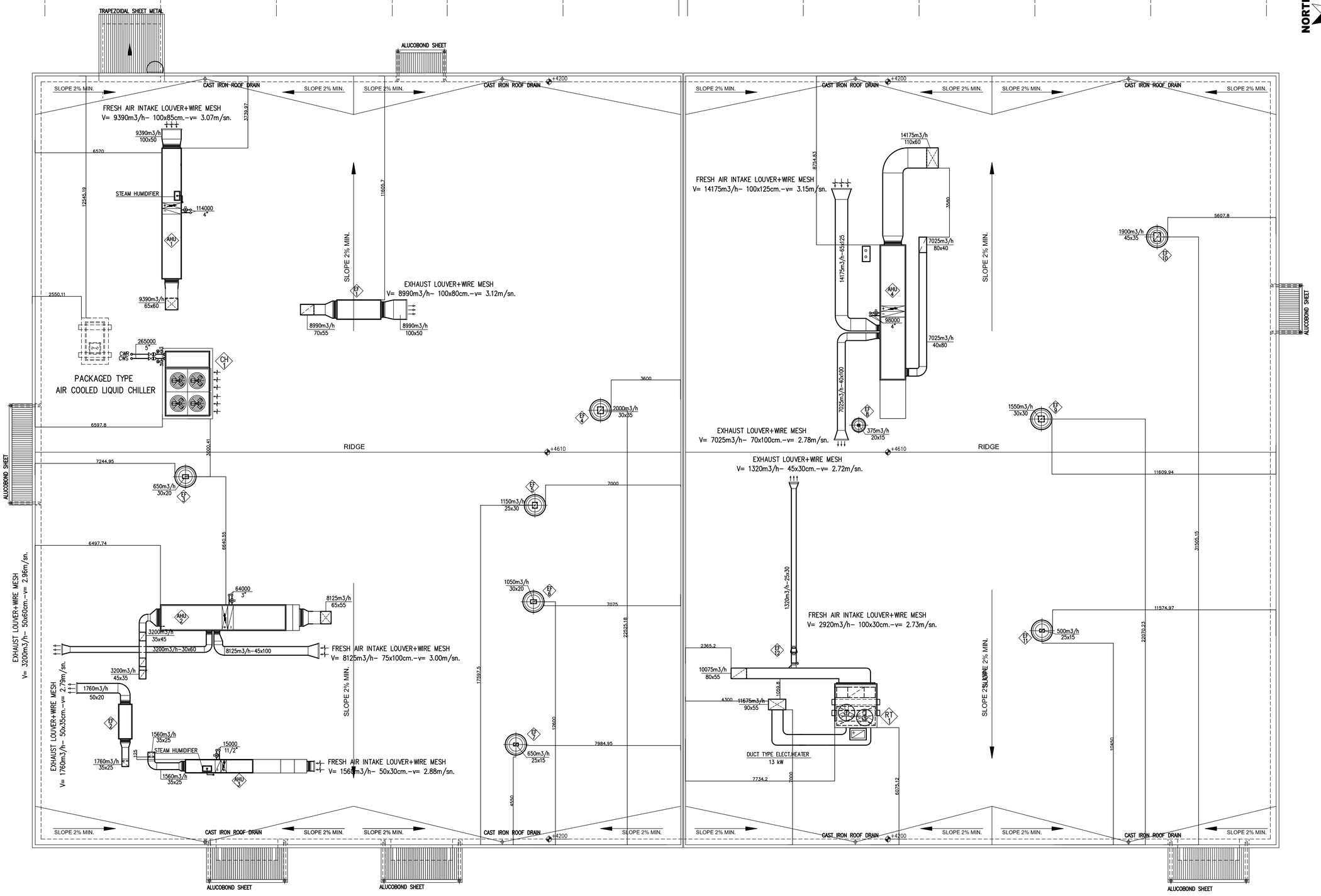
DESIGNED BY : I. Beseli
DATE : 08-09-2006
DWN BY : Z. Şimşek
SUBMITTED BY : BESELI
CHK BY : I. Beseli
FILE NO : DP01-HH-F02

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLÝN CO.INC in association with Design/Builder
IRMAK, STAND, BESELI, DELTA OM

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS BUILT
FIRE FIGHTING SYSTEM
RISER DIAGRAM

SHEET REFERENCE NUMBER :
DP01-HH-F02



NORTH

AS BUILT

SYMBOL	DESCRIPTION	DATE	APR
A	REVISED AS BUILT	08-09-06	
	REVISED AS BUILT	06-05-06	
	% 100 DESIGNS	11-16-05	

DESIGNED BY : I. Beseli	DATE : 08-09-2006
DWN BY : M. Ganeg	SUBMITTED BY : BESELI
CHK BY : I. Beseli	FILE NO : DP01-HH-M01

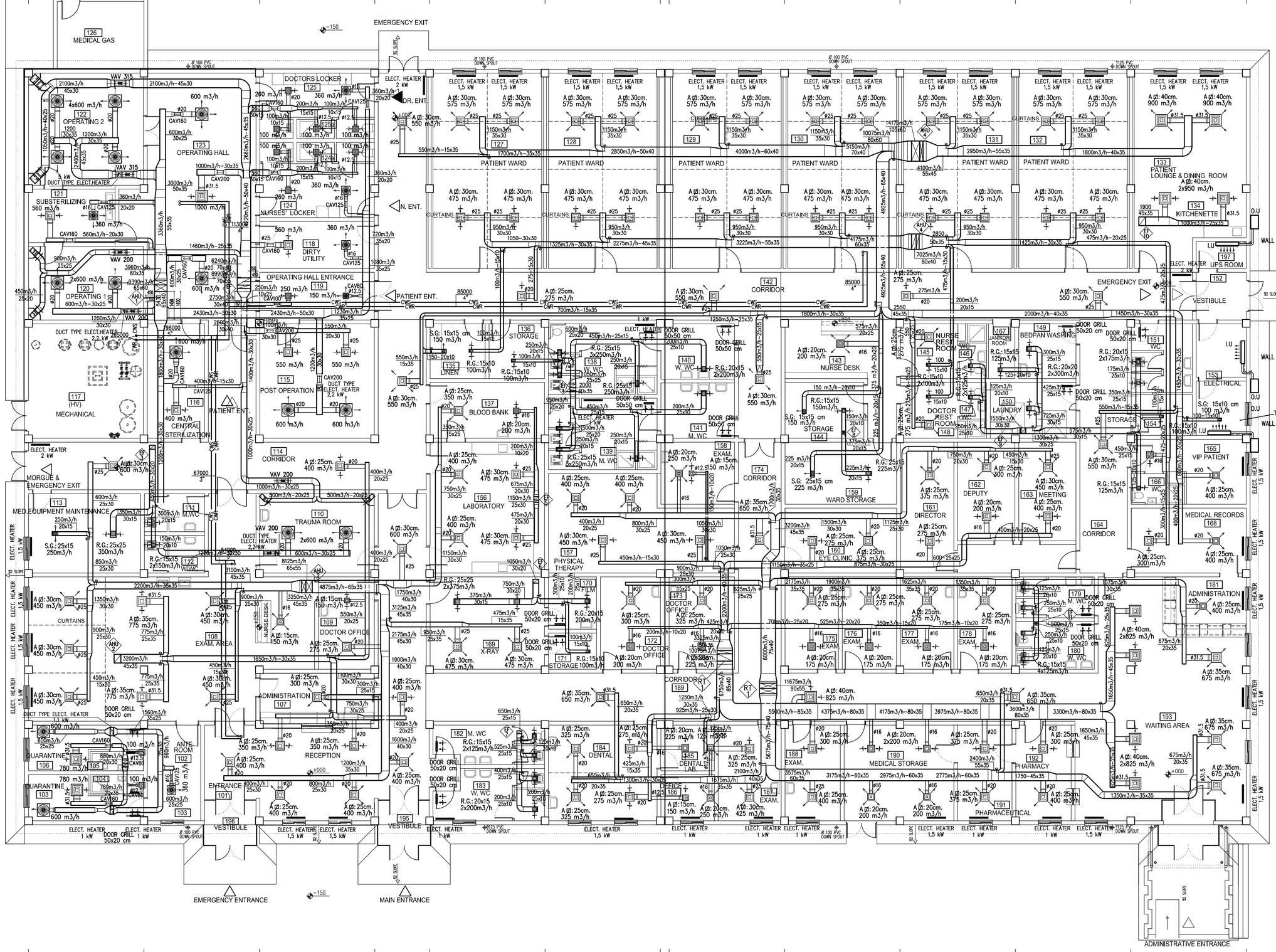
US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLÝN CO.INC in association with IRMAK, STAND, BESELI, DELTA OM
Design/Builder

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS BUILT
HVAC SYSTEM
ROOF PLAN

SHEET REFERENCE NUMBER :
DP01-HH-M01

ROOF PLAN
SCALE 1:100



AS BUILT

SYMBOL	DESCRIPTION	DATE	APR
3	REVISED AS BUILT	08-09-06	
2	REVISED AS BUILT	06-05-06	
1	% 100 DESIGNS	11-16-05	

DESIGNED BY : I. Beseli
DWN BY : M. Güneş
CHK BY : I. Beseli
DATE : 08-09-2006
SUBMITTED BY : BESELI
FILE NO : DP01-HH-M02

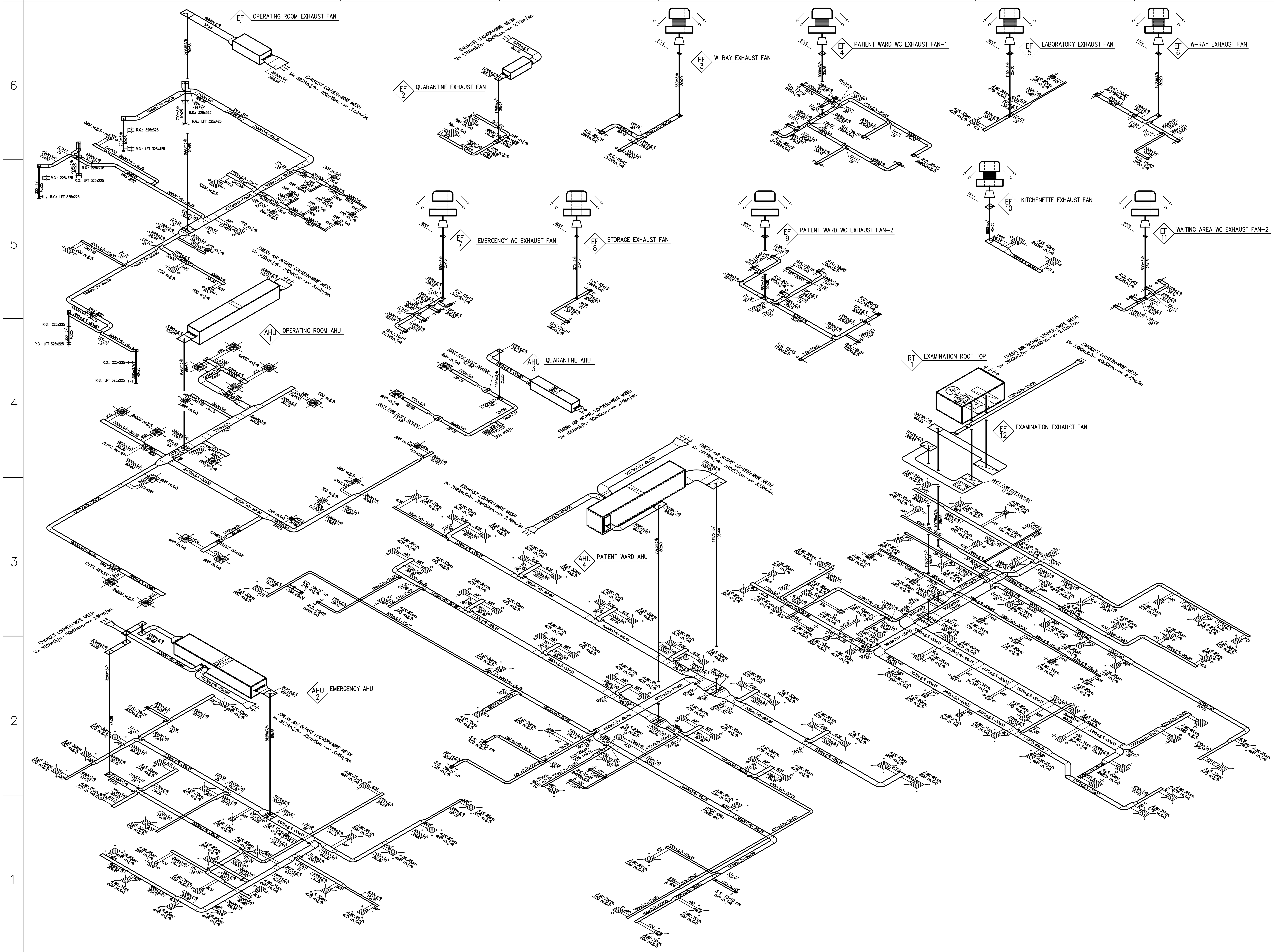
US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLÝN CO.INC in association with Design/Build

IRMAK, STAND, BESELI, DELTA OM

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS BUILT
HVAC SYSTEM
FLOOR PLAN

SHEET REFERENCE NUMBER :
DP01-HH-M02



AS BUILT

SYMBOL	DESCRIPTION	DATE	APR.
	REVISED AS BUILT	08-09-06	
	REVISED AS BUILT	06-05-06	
	% 100 DESIGNS	11-16-05	

DESIGNED BY : I. Beşeli	DATE : 08-09-2006	
DWN BY : M. Güneş	SUBMITTED BY : BESELI	
CHK BY : I. Beşeli	FILE NO : DP01-HH-M03	

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLYN CO.INC in association with
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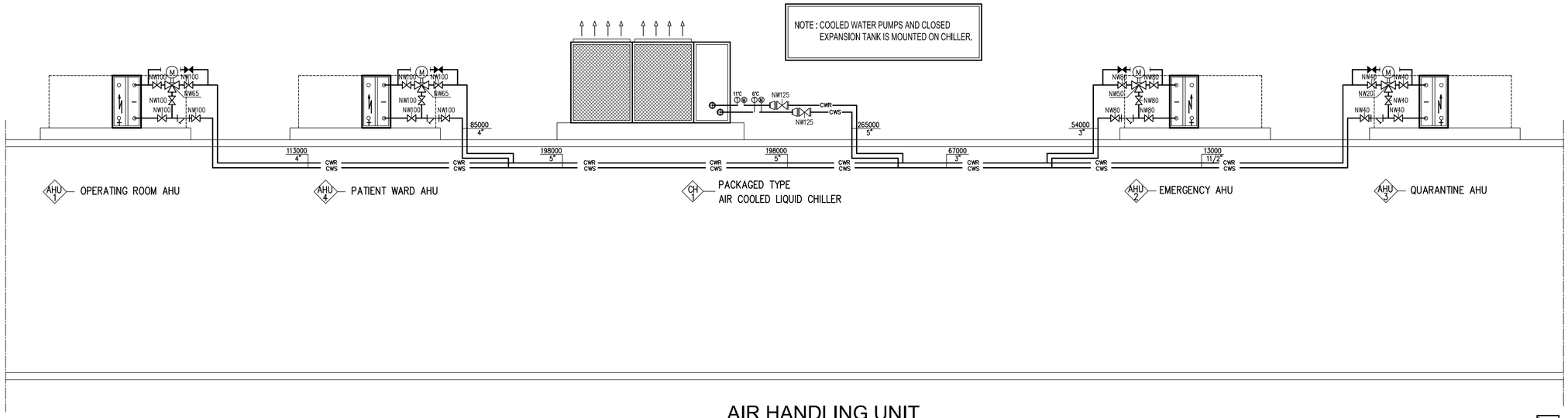
Design/Builder

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS BUILT
HVAC SYSTEM
ISOMETRIC DIAGRAM

SHEET REFERENCE NUMBER :

DP01-HH-M03



AIR HANDLING UNIT

COOLING & HEATING SYSTEM SCHEME

EQUIPMENT LIST

AHU 1 — OPERATING ROOM AIR HANDLING UNIT
(%100 Outdoor air, hygienic type,with frequency controller –1ea.)

SUPPLY FAN (DOUBLE SUCTION RADIAL FAN)
V = 9.390 m3/h
Hst = 85,0 mmWG (E.S.P.including hepa filter)
Nmot = ~ 7,5 KW

ELECTRIC HEATER
Qheating = 106,0 kW
Tleaving air (DB) = 25,0 ℃
Tentering air (DB) = –6,6℃

COOLING COIL
Qcooling = 113.000 Kcal/h
Water = 6/11 ℃
Entering air (DB/WB) = 39,9/23,8 ℃
Leaving air (DB/WB) = 11,9/10,7 ℃
Three way mixing valve = Kv=> 49,0 ; NW 65 ; dP=~2.127 mmWG

SILENCER :
Mounted on apparatus

FILTER:
1.st stage :EU5 (for fresh air inlet)
2.st stage :EU9 (for fresh air outlet)
3.rd stage :Hepa Filter (for supply grill)

Steam Humidifier :
1 x 90 kg/h
N = 2 x 33,8 kW

AHU 3 — QURANTINE AIR HANDLING UNIT
(%100 Outdoor air, hygienic type,with frequency controller –1ea.)

SUPPLY FAN (DOUBLE SUCTION RADIAL FAN)
V = 1.560 m3/h
Hst = 60,0 mmWG (E.S.P.including hepa filter)
Nmot = ~ 1,1 KW

ELECTRIC HEATER
Qheating = 20,0 kW
Tleaving air (DB) = 29,0 ℃
Tentering air (DB) = –6,6℃

COOLING COIL
Qcooling = 13.000 Kcal/h
Water = 6/11 ℃
Entering air (DB/WB) = 40,5/23,8 ℃
Leaving air (DB/WB) = 17,6/16,0 ℃
Three way mixing valve = Kv=> 6,3 ; NW 20; dP=~1.703 mmWG

SILENCER :
Mounted on apparatus

FILTER:
1.st stage :EU5 (for fresh air inlet)
2.st stage :EU9 (for fresh air outlet)
3.rd stage :Hepa Filter (for supply grill)

Steam Humidifier :
1 x 17 kg/h
N =12,8 kW

AHU 2 — EMERGENCY AIR HANDLING UNIT
(%60 Outdoor air –1ea.)

SUPPLY FAN
V = 8.125 m3/h
Hst = 25,0 mmWG (E.S.P.)
Nmot = ~ 4,0 KW

RETURN FAN
V = 3.200 m3/h
Hst = 25,0 mmWG (E.S.P.)
Nmot = ~ 1,1 KW

ELECTRIC HEATER
Qheating = 59,0 kW
Tleaving air (DB) = 26,0 ℃
Tentering air (DB) = 5,64℃

COOLING COIL
Qcooling = 54.000 Kcal/h
Water = 6/11 ℃
Entering air (DB/WB) = 34,4/21,9 ℃
Leaving air (DB/WB) = 16,0/14,9 ℃
Three way mixing valve = Kv=> 31,0 ; NW 50 ; dP=~1.214 mmWG

SILENCER :
Mounted on unit

FILTER:
EU4

AHU 4 — PATIENT WARD AIR HANDLING UNIT
(%50 Outdoor air –1ea.)

SUPPLY FAN
V = 14.175 m3/h
Hst = 25,0 mmWG (E.S.P.)
Nmot = ~ 7,5 KW

RETURN FAN
V = 7.025 m3/h
Hst = 25,0 mmWG (E.S.P.)
Nmot = ~ 2,2 KW

ELECTRIC HEATER
Qheating = 88,0 kW
Tleaving air (DB) = 26,0 ℃
Tentering air (DB) = 8,7 ℃

COOLING COIL
Qcooling = 85.000 Kcal/h
Water = 6/11 ℃
Entering air (DB/WB) = 32,5/21,4 ℃
Leaving air (DB/WB) = 16,0/15,0 ℃
Three way mixing valve = Kv=> 49 ; NW 65 ; dP=~1.204 mmWG

SILENCER :
Mounted on unit

FILTER:
EU4

RT 1 — ROOFTOP HEAT PUMP UNIT
(2920 m3/h Outdoor air, 1ea.)

V = 11.675 m3/h
Hst = 30,0 mmWG (E.S.P)
Nmot = ~ 7,5 KW

ELECTRIC HEATER
Qheating = ~ 27,0 kW (MOUNTED ON ROOF TOP UNIT)
Qheating = ~ 13,0 kW (DUCT MOUNTED ELECTRIC HEATER)
Tleaving air (DB) = 26,0 ℃
Tentering air (DB) = 16,35 ℃
Toutdoorair (DB) (WINTER) = –6,6 ℃

COOLING COIL
Qcooling = 55,000 Kcal/h
Entering air (DB/WB) = 29,2/20,3 ℃
Leaving air (DB/WB) = 16,1/15,2 ℃
Toutdoorair (DB) = 40,5 ℃

EF 1 — OPERATING ROOM EXHAUST FAN
(Double suction radial fan with frequency controller and silencer 1 ea.)
V = 8.990 m3/h
Hst = 55,0 mmWG (E.S.P.)
Nmot = ~ 4,0 KW

EF 2 — QUARANTINE EXHAUST FAN
(Double suction radial fan with frequency controller and silencer 1 ea.)
V = 1.760 m3/h
Hst = 60,0 mmWG (E.S.P.including hepa filter)
Nmot = ~ 2,2 KW

EF 3 — EMERGENCY WC EXHAUST FAN
(ROOF TYPE)
V = 650 m3/h
Htotal = 20,0 mmWG
Nmot = ~ 0,25 KW

EF 4 — PATIENT WARD WC EXHAUST FAN–1
(ROOF TYPE)
V = 2,000 m3/h
Htotal = 20,0 mmWG
Nmot = ~ 0,55 KW

EF 5 — LABORATORY EXHAUST FAN
(ROOF TYPE)
V = 1,150 m3/h
Htotal = 25,0 mmWG
Nmot = ~ 0,37 KW

EF 6 — X–RAY EXHAUST FAN
(ROOF TYPE)
V = 1,050 m3/h
Htotal = 20,0 mmWG
Nmot = ~ 0,37 KW

EF 7 — WAITING AREA WC EXHAUST FAN–1
(ROOF TYPE)
V = 650 m3/h
Htotal = 20,0 mmWG
Nmot = ~ 0,25 KW

EF 8 — STORAGE EXHAUST FAN
(ROOF TYPE)
V = 375 m3/h
Htotal = 20,0 mmWG
Nmot = ~ 0,25 KW

EF 9 — PATIENT WARD WC EXHAUST FAN–2
(ROOF TYPE)
V = 1,550 m3/h
Htotal = 20,0 mmWG
Nmot = ~ 0,55 KW

EF 10 — KITCHENETTE EXHAUST FAN
(ROOF TYPE)
V = 1,900 m3/h
Htotal = 25,0 mmWG
Nmot = ~ 0,55 KW

EF 11 — WAITING AREA WC EXHAUST FAN–2
(ROOF TYPE)
V = 500 m3/h
Htotal = 20,0 mmWG
Nmot = ~ 0,25 KW

EF 12 — EXAMINATION EXHAUST FAN
(DUCT TYPE–1ea)
V = 1,320 m3/h
Hst = 15,0 mmWG (ESP)
Nmot = ~ 0,55 KW

CH 01 — AIR COOLED LIQUID CHILLER
(1 EA)
Qchiller = 250,000 Kcal/h (~ 291 kW)
Water Inlet = 11 ℃
Water Outlet = 6 ℃
Ambient temperature = 40.5℃
With hydronic module
Nunit = ~ 130 KW

PUMP
(Twin pump,mounted on chiller)
Vpump = 55,0 m3/h
Hpump = 15,0 mWG

EXPANSION TANK
(1 ea. mounted on chiller)
Vtank = 80 lt.
Pf = 1.0 ata
Po = 3.5 ata
Pvent = 4.0 ata

SP 1 — ELECTRIC ROOM SPLIT TYPE HEAT PUMP
(CEILING TYPE–1 EA)
Qcooling = 10,5 KW
Qheating = 10,7 KW
Nmot = ~ 4,0 KW

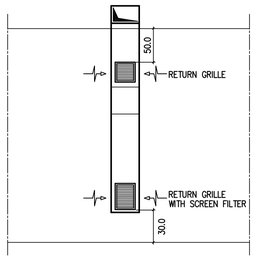
SP 2 — TELECOM ROOM SPLIT TYPE HEAT PUMP
(WALL TYPE–1 EA)
Qcooling = 5,4 KW
Qheating = 5,6 KW
Nmot = ~ 2,2 KW

SP 3 — UPS SPLIT TYPE HEAT PUMP
(WALL TYPE–1 EA)
Qcooling = 6,9 KW
Qheating = 7,8 KW
Nmot = ~ 3,0 KW

NOTE:
Given split type heat pump cooling and heating capacities are capacities at following conditions;
Toutdoorsummer (DB) = 35℃
Troomsummer (DB) = 27℃
Toutdoorwinter (DB) = 7℃
Troomwinter (DB) = 20℃

LEGEND

- SWIRL DIFFUSER (SUPPLY) / PARTICULATE FILTER (HIGH EFFICIENCY)
- RETURN DIFFUSER WITH DAMPER
- SUPPLY GRILLE WITH DAMPER & PLENUM BOX
- RETURN GRILLE WITH DAMPER
- RETURN GRILLE WITH SCREEN FILTER
- VERTICAL SUPPLY DUCT
- VERTICAL RETURN DUCT
- FLEXIBLE DUCT
- VOLUME DAMPER (MANUALLY OPERATED)
- EF — EXHAUST FAN
- AHU — AIR HANDLING UNIT
- RT — PACKAGED ROOFTOP HEAT PUMP (WITH SUPPLEMENTARY HEATER)
- CH — PACKAGED TYPE AIR COOLED LIQUID CHILLER
- SPLITTER DAMPER
- DOOR GRILLE
- VAV — VAV (VOLUME FLOW RATE CONTROLLER FOR VARIABLE VOLUME SYSTEMS)
- CAV — CAV (VOLUME FLOW RATE CONTROLLER FOR CONSTANT VOLUME SYSTEMS)
- DUCT TYPE ELECTRIC HEATER



OPERATION ROOM'S RETURN GRILLES
NOT TO SCALE

LEGEND

- THREE WAY MOTORIZED VALVE
- STRAINER
- BALL VALVE (FLANGED)
- BALL VALVE (SCREWED)
- CWS — CHILLED WATER SUPPLY (6°C)
- CWR — CHILLED WATER RETURN (11°C)
- MANOMETER
- THERMOMETER
- AIR TUBE
- EMPTYING

AS BUILT

SYMBOL	DESCRIPTION	DATE	APR
	REVISED AS BUILT	08–09–06	
	REVISED AS BUILT	06–05–06	
	% 100 DESIGNS	11–16–05	

DESIGNED BY : I. Beşeli
DWN BY : M. Ganeş
CHK BY : I. Beşeli
DATE : 08–09–2006
SUBMITTED BY : BESELI
FILE NO : DP01–HH–M04

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

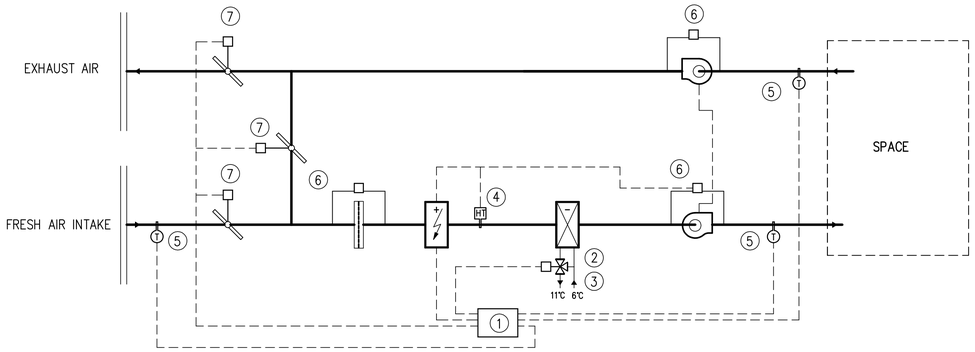
KOLÝN
CO.INC in association with Design/Builder
IRMAK, STAND, BESELI, DELTA OM

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS BUILT
HVAC SYSTEM
RISER DIAGRAM&EQUIPMENT LIST

SHEET REFERENCE NUMBER :
DP01–HH–M04

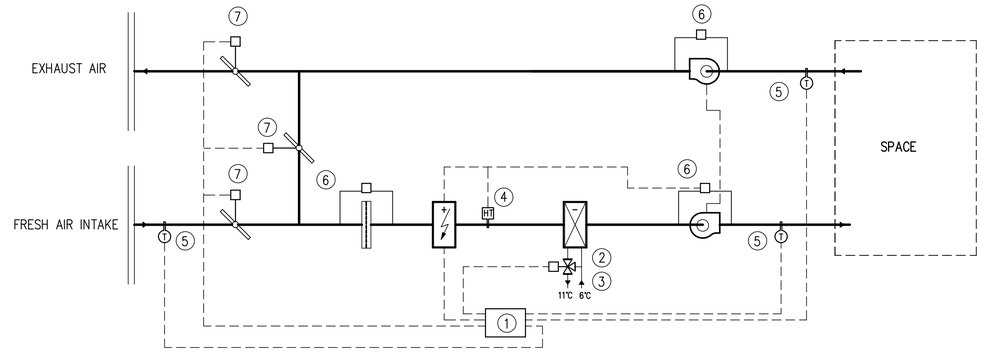
AHU-2 EMERGENCY AIR HANDLING UNIT

NO	NAME	EACH
1	TEMPERATURE CONTROLLER	1
2	THREE WAY MIXING VALVE-COOLING	1
3	PROPORTIONAL ELECTRIC ACTUATOR	1
4	HIGH TEMPERATURE THERMOSTAT	1
5	DUCT TEMPERATURE SENSOR	3
6	DIFFERENTIAL PRESSURE SWITCH	3
7	PROPORTIONAL ELECTRIC ACTUATOR	3



AHU-4 PATIENT WARD AIR HANDLING UNIT

NO	NAME	EACH
1	TEMPERATURE CONTROLLER	1
2	THREE WAY MIXING VALVE-COOLING	1
3	PROPORTIONAL ELECTRIC ACTUATOR	1
4	HIGH TEMPERATURE THERMOSTAT	1
5	DUCT TEMPERATURE SENSOR	3
6	DIFFERENTIAL PRESSURE SWITCH	3
7	PROPORTIONAL ELECTRIC ACTUATOR	3

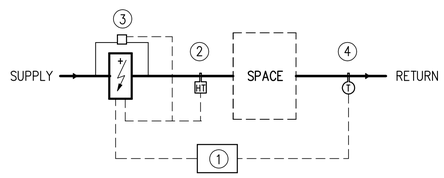


AHU-1 OPERATING ROOM AIR HANDLING UNIT

NO	NAME	EACH
1	TEMPERATURE CONTROLLER	1
2	THREE WAY MIXING VALVE-COOLING	1
3	PROPORTIONAL ELECTRIC ACTUATOR	1
4	HIGH TEMPERATURE THERMOSTAT	1
5	DUCT TEMPERATURE SENSOR	1
6	DIFFERENTIAL PRESSURE SWITCH	4
7	DUCT DIFFERENTIAL PRESSURE SENSOR	2
8	DUCT TEMPERATURE AND HUMIDITY SENSOR	1
9	TWO POSITION ELECTRIC ACTUATOR	2
10	TEMPERATURE CONTROLLER	1

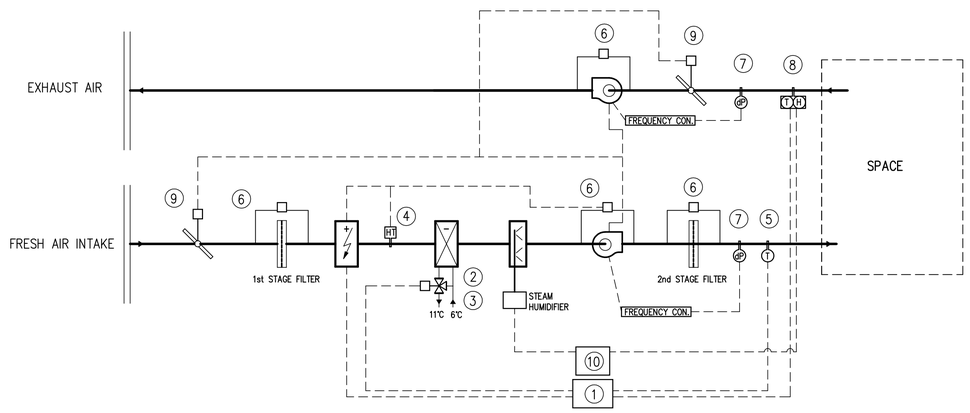
DUCT TYPE ELECTRIC HEATERS

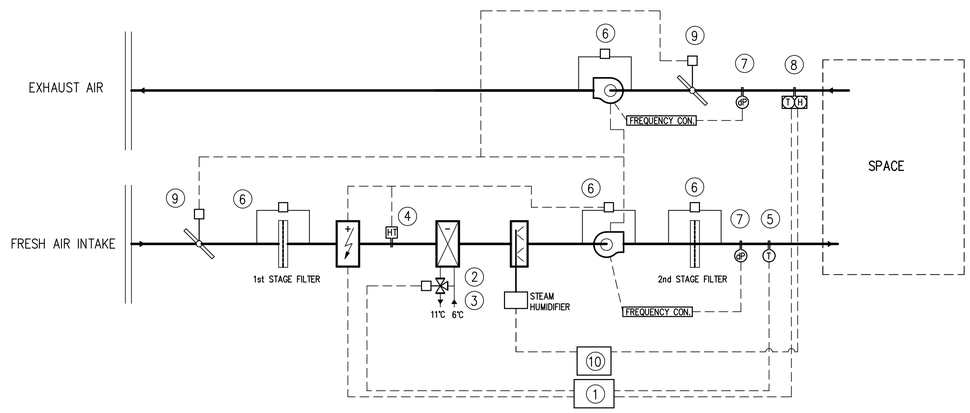
NO	NAME	EACH
1	TEMPERATURE CONTROLLER	1
2	HIGH TEMPERATURE THERMOSTAT	1
3	DIFFERENTIAL PRESSURE SWITCH	1
4	DUCT TEMPERATURE SENSOR	1



AHU-3 QUARANTINE ROOM AIR HANDLING UNIT

NO	NAME	EACH
1	TEMPERATURE CONTROLLER	1
2	THREE WAY MIXING VALVE-COOLING	1
3	PROPORTIONAL ELECTRIC ACTUATOR	1
4	HIGH TEMPERATURE THERMOSTAT	1
5	DUCT TEMPERATURE SENSOR	1
6	DIFFERENTIAL PRESSURE SWITCH	4
7	DUCT DIFFERENTIAL PRESSURE SENSOR	2
8	DUCT TEMPERATURE AND HUMIDITY SENSOR	1
9	TWO POSITION ELECTRIC ACTUATOR	2
10	TEMPERATURE CONTROLLER	1





AS BUILT

SYMBOL	DESCRIPTION	DATE	APR
4	REVISED AS BUILT	08-09-06	
3	REVISED AS BUILT	06-05-06	
2	% 100 DESIGNS	11-16-05	

DESIGNED BY : I. Beseli
DATE : 08-09-2006
DWN BY : M. Ganes
SUBMITTED BY : BESELI
CHK BY : I. Beseli
FILE NO : DP01-HH-M05

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

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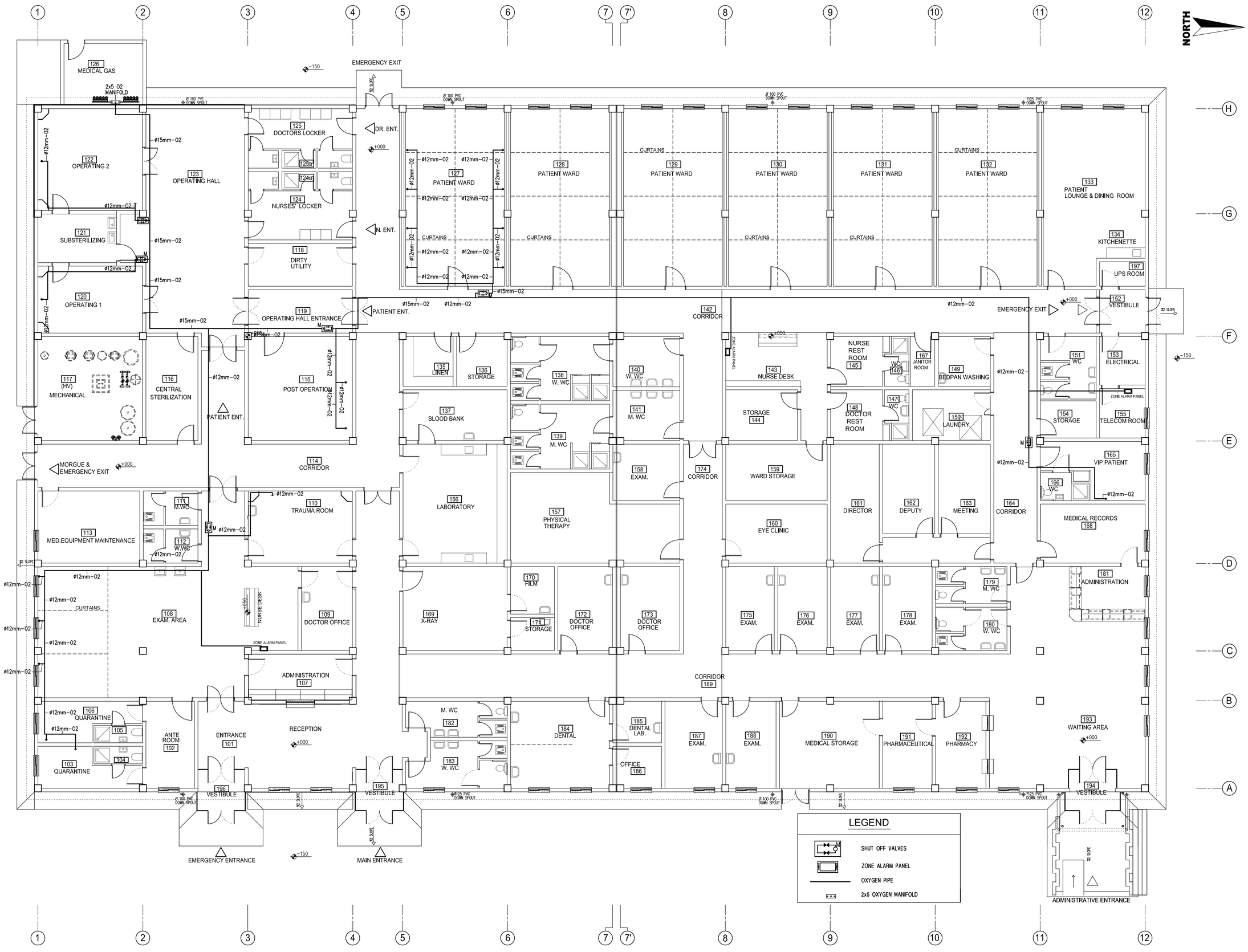
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS BUILT
AUTOMATIC CONTROL

SHEET REFERENCE NUMBER :
DP01-HH-M05



AS BUILT

SYMBOL	DESCRIPTION	DATE	APR
1	REVISED AS BUILT	08-09-06	
2	REVISED AS BUILT	06-05-06	
3	% 100 DESIGNS	11-16-05	

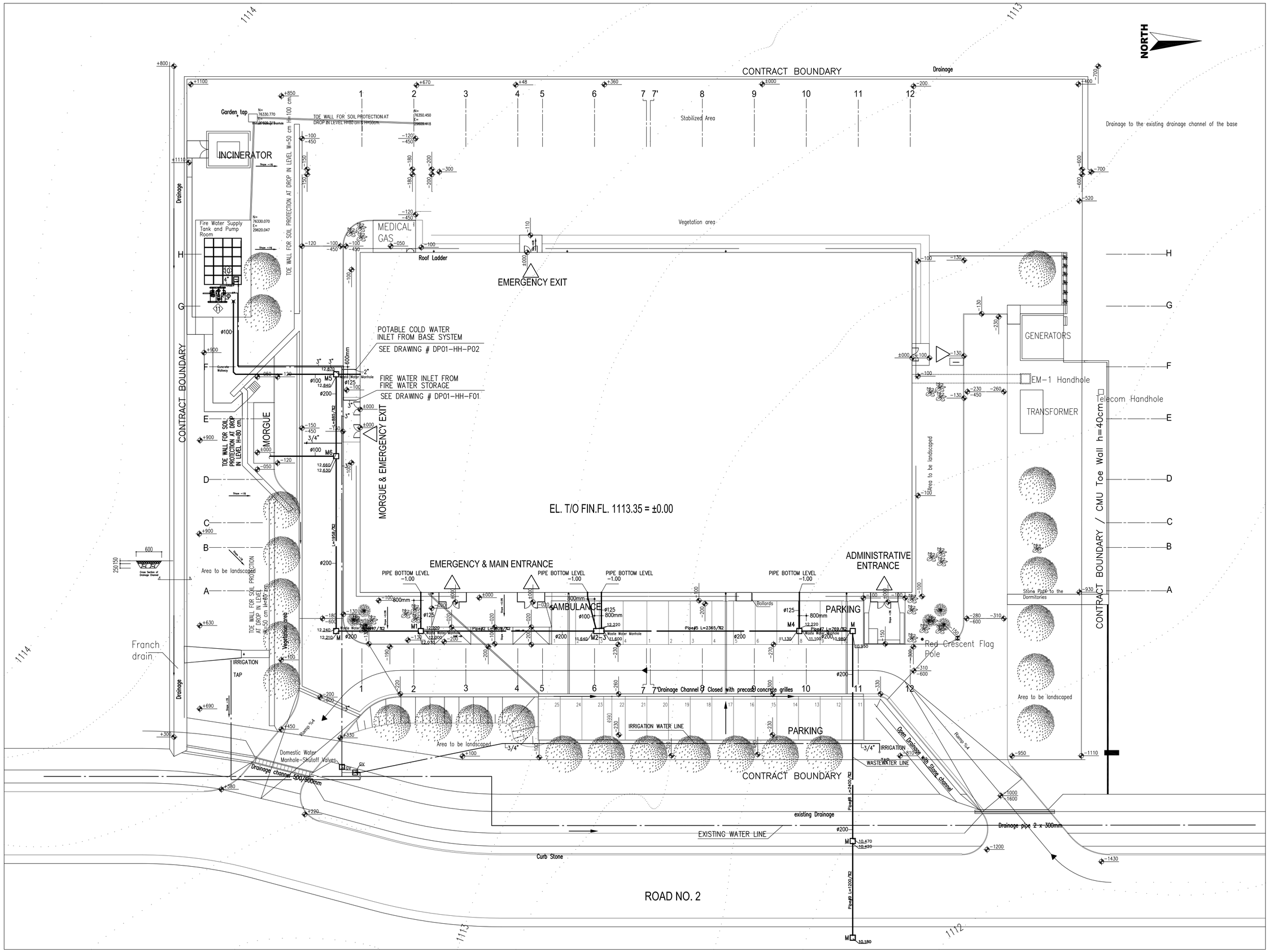
DESIGNED BY : I. Beseli
DWN BY : Z. Şimşek
CHK BY : I. Beseli
DATE : 08-09-2006
SUBMITTED BY : BESELI
FILE NO : DP01-HH-G01

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLÝN CO.INC in association with IRMAK, STAND, BESELI, DELTA OM
Design/Builder

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT, AFGHANISTAN
DRAWING OF WORK AS BUILT
OXYGEN SYSTEM
FLOOR PLAN

SHEET REFERENCE NUMBER :
DP01-HH-G01



AS BUILT

SYMBOL	DESCRIPTION	DATE	APP.
	REVISED AS BUILT	08-09-06	
	REVISED AS BUILT	06-05-06	
	% 100 DESIGNS	11-16-05	

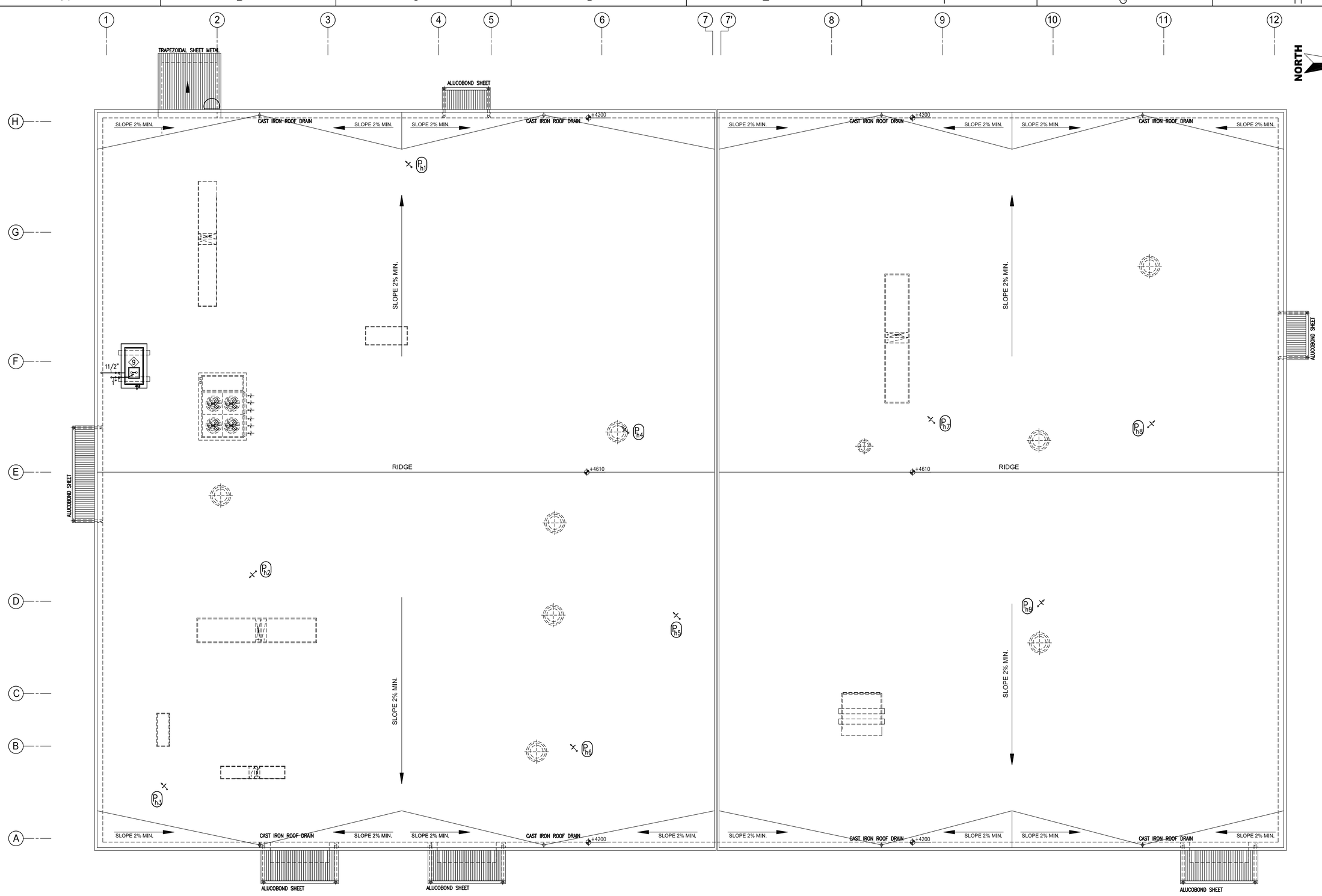
DESIGNED BY : I. Beseli	DATE : 08-09-2006
DWN BY : Z. Şimşek	SUBMITTED BY : BESELI
CHK BY : I. Beseli	FILE NO : DP01-HH-P00

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLÝN CO.INC in association with Design/Builder
IRMAK, STAND, BESELI, DELTA OM

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF AS BUILT
POTABLE WATER AND DRAINAGE SYSTEM
(PLUMBING SYSTEM)
SITE PLAN

SHEET REFERENCE NUMBER :
DP01-HH-P00



ROOF PLAN
SCALE 1:100

AS BUILT

SYMBOL	DESCRIPTION	DATE	APR
1	REVISED AS BUILT	08-09-06	
2	REVISED AS BUILT	06-05-06	
3	% 100 DESIGNS	11-16-05	

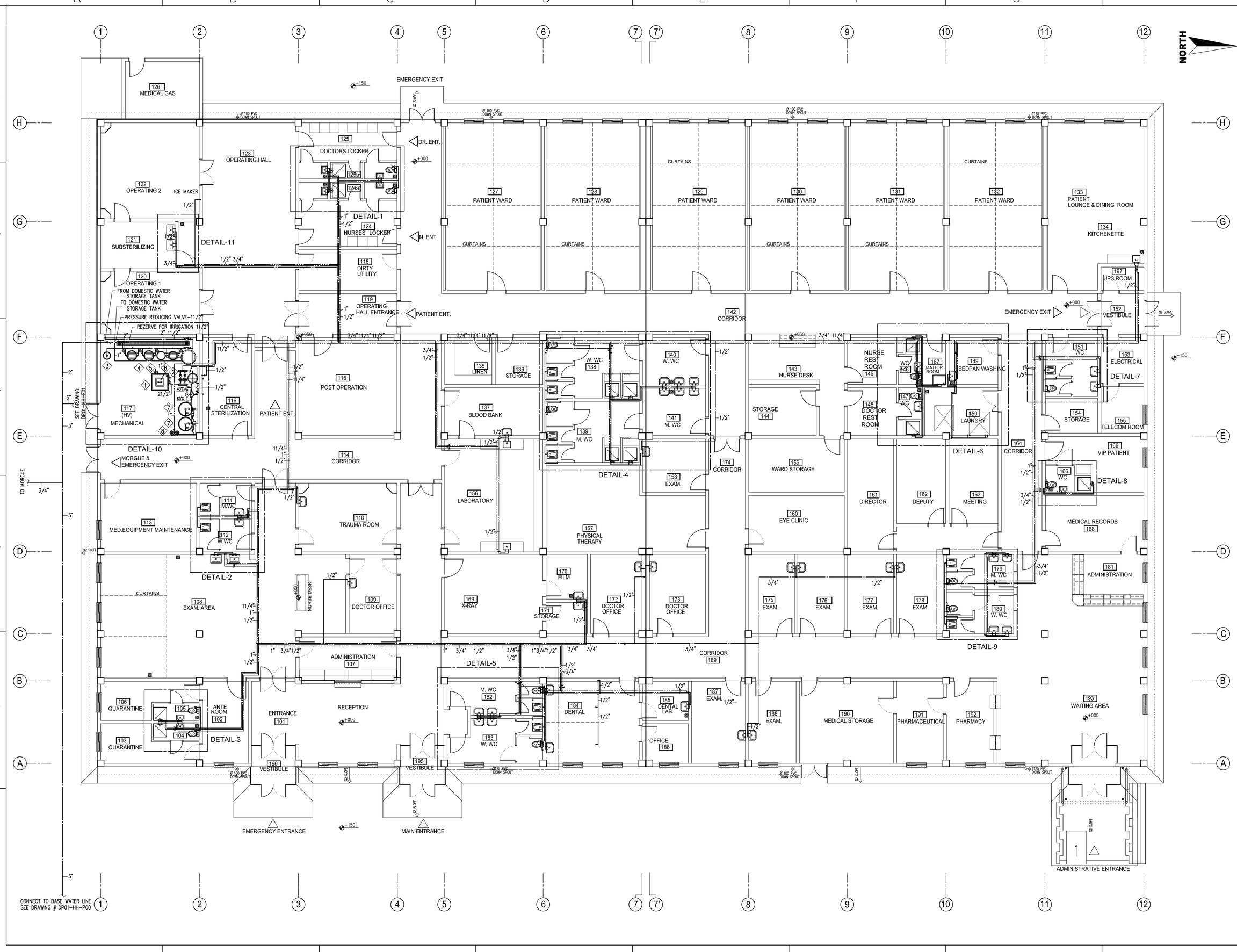
DESIGNED BY : I. Beşeli	DWN BY : Z. Şimşek	CHK BY : I. Beşeli
DATE : 08-09-2006	SUBMITTED BY : BESELI	FILE NO : DP01-HH-P01

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLÝN CO.INC in association with Design/Builder
IRMAK, STAND, BESELI, DELTA OM

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS BUILT
POTABLE COLD & HOT WATER – DRAINAGE SYSTEM
(PLUMBING SYSTEM)
ROOF PLAN

SHEET REFERENCE NUMBER :
DP01-HH-P01



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	REVISED AS BUILT	06-05-06	
	% 100 DESIGNS	11-16-05	

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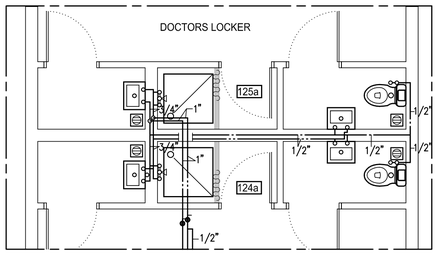
DWN BY : Z. Şimşek
SUBMITTED BY : BESELI
CHK BY : I. Beşeli
FILE NO : DP01-HH-P02

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

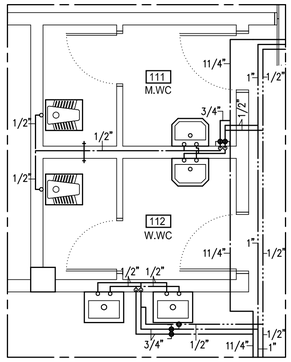
KOLÝN
CO.INC in association with Design/Builder
IRMAK, STAND, BESELI, DELTA OM

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS BUILT
POTABLE COLD & HOT WATER SYSTEM
FLOOR PLAN

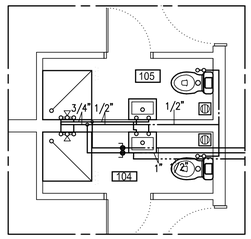
SHEET REFERENCE NUMBER :
DP01-HH-P02



DETAIL-1 SCALE:1/50



DETAIL-2 SCALE:1/50



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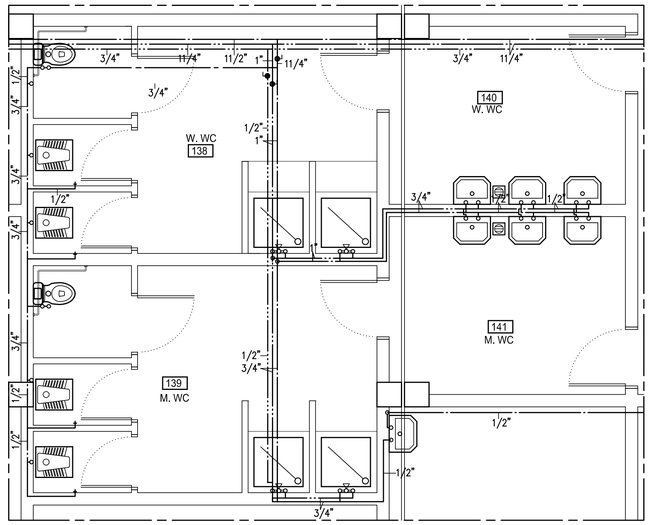
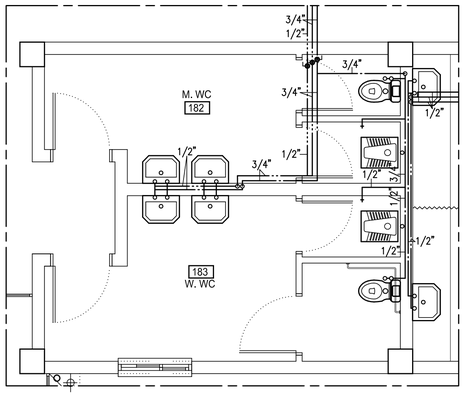


DETAIL-4 SCALE:1/50

LEGEND

- COLD WATER PIPING
- HOT WATER PIPING
- HOT WATER RETURN PIPING
- CHECK VALVE
- STRAINER
- BALL VALVE (SCREWED)



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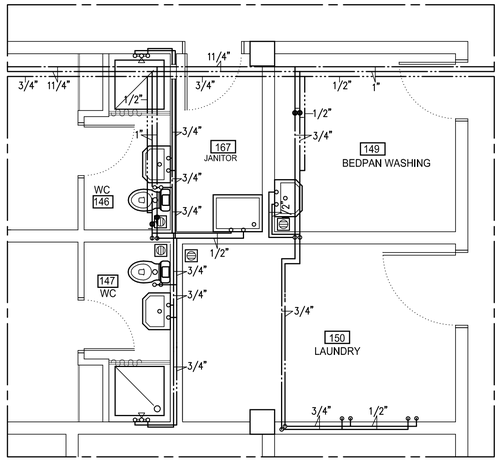

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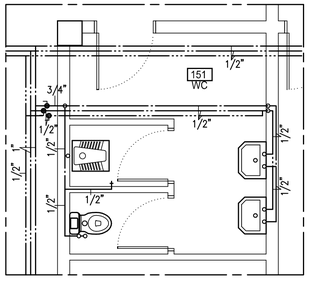
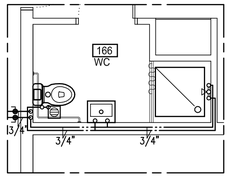


DETAIL-7 SCALE:1/50



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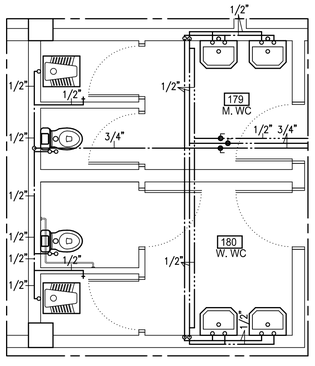
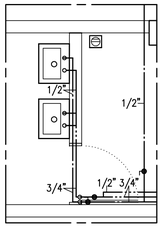


DETAIL-9 SCALE:1/50



DETAIL-11 SCALE:1/50

AS BUILT

SYMBOL	DESCRIPTION	DATE	APR
	REVISED AS BUILT	08-09-06	
	REVISED AS BUILT	06-05-06	
	% 100 DESIGNS	11-16-05	

DESIGNED BY : I. Beşeli		DATE : 08-09-2006	
DWN BY : Z. Şimşek		SUBMITTED BY : BESELI	
CHK BY : I. Beşeli		FILE NO : DP01-HH-P03	

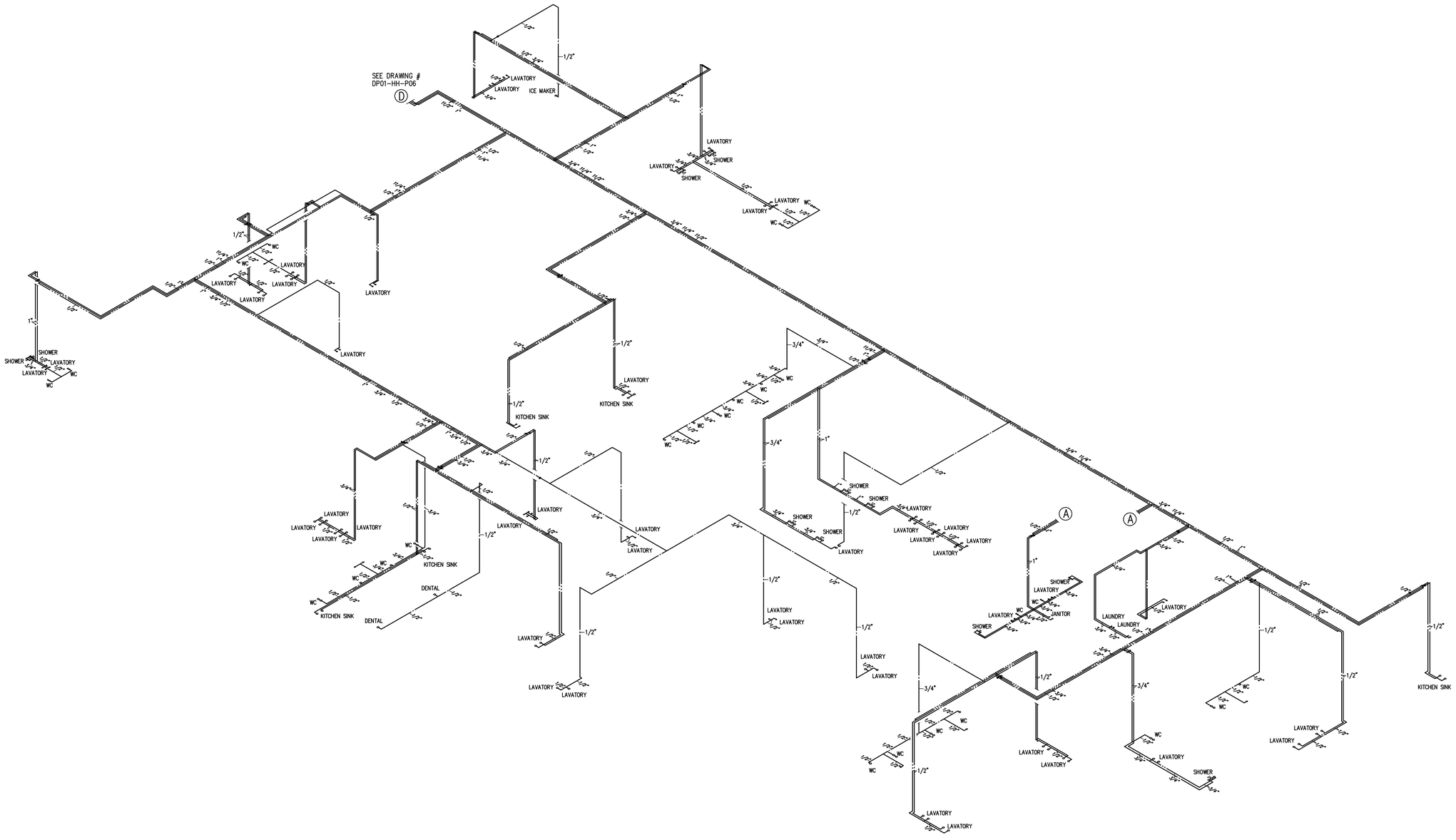
US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLÝN CO.INC in association with IRMAK, STAND, BESELI, DELTA OM
Design/Builder

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS BUILT
POTABLE COLD & HOT WATER SYSTEM
DETAIL DRAWINGS

SHEET REFERENCE NUMBER :

DP01-HH-P03



COLD & HOT WATER RISER DIAGRAM
SCALE N.T.S

AS BUILT

SYMBOL	DESCRIPTION	DATE	APR
	REVISED AS BUILT	08-09-06	
	REVISED AS BUILT	06-05-06	
A	% 100 DESIGNS	11-16-05	

DESIGNED BY : I. Beşeli
DATE : 08-09-2006
DWN BY : Z. Şimşek
SUBMITTED BY : BESELI
CHK BY : I. Beşeli
FILE NO : DP01-HH-P04

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLÝN
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IRMAK, STAND, BESELI, DELTA OM
Design/Builder

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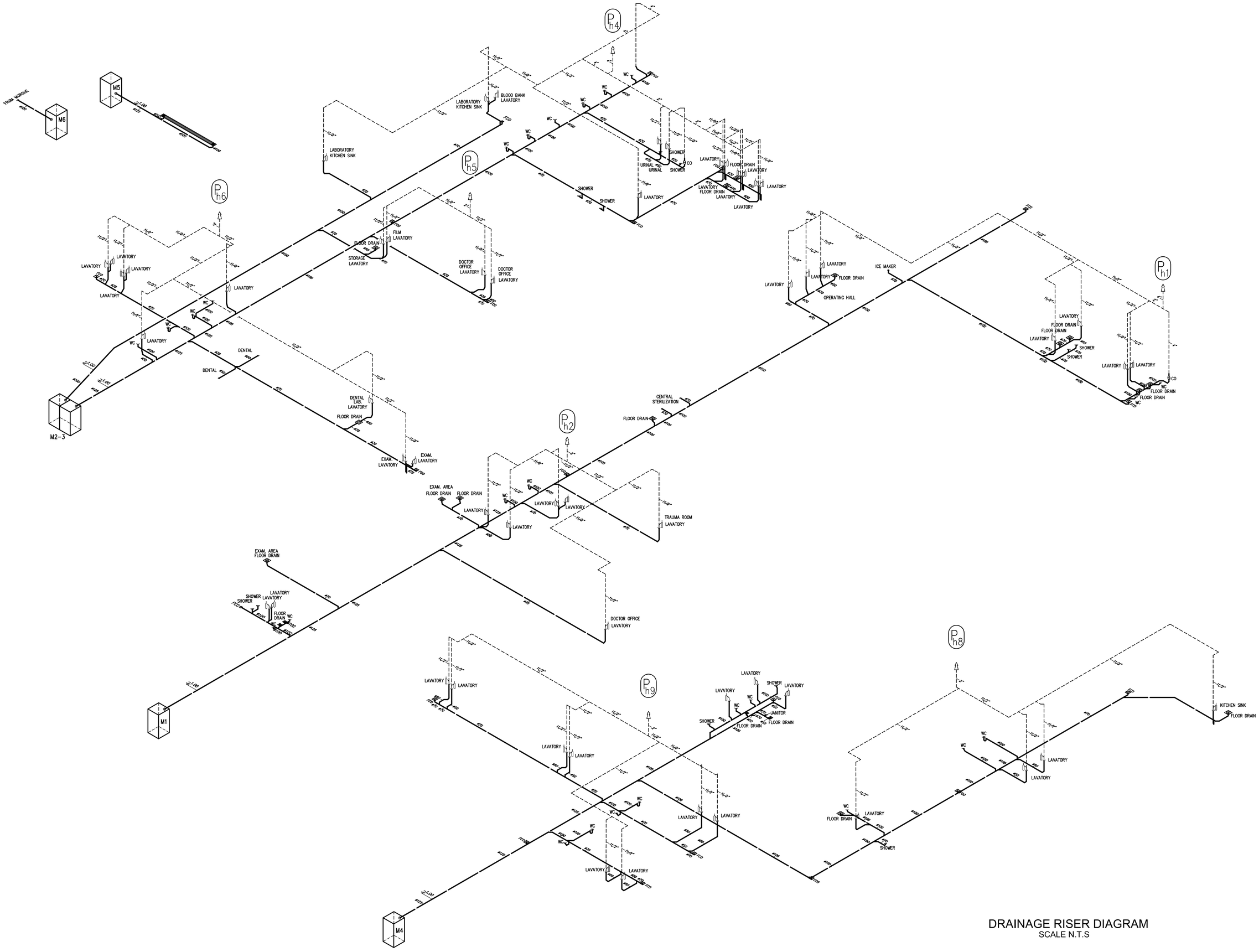
50 BED REGIONAL HOSPITAL
HERAT, AFGHANISTAN
DRAWING OF WORK AS BUILT
POTABLE COLD & HOT WATER SYSTEM
RISER DIAGRAM

SHEET REFERENCE NUMBER :
DP01-HH-P04



DRAINAGE RISER DIAGRAM

SCALE N.T.S

AS BUILT

SYMBOL	DESCRIPTION	DATE	APR
	REVISED AS BUILT	08-09-06	
	REVISED AS BUILT	06-05-06	
A	% 100 DESIGNS	11-16-05	

DESIGNED BY : I. Beseli	DATE : 08-09-2006		
DWN BY : Z. Şimşek	SUBMITTED BY : BESELI		
CHK BY : I. Beseli	FILE NO : DP01-HH-P05		

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

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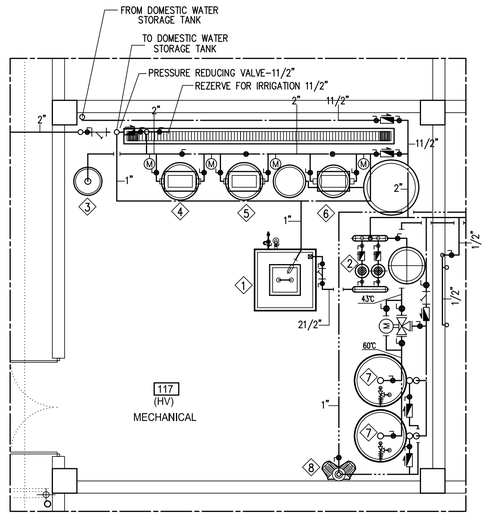
IRMAK, STAND, BESELI, DELTA OM

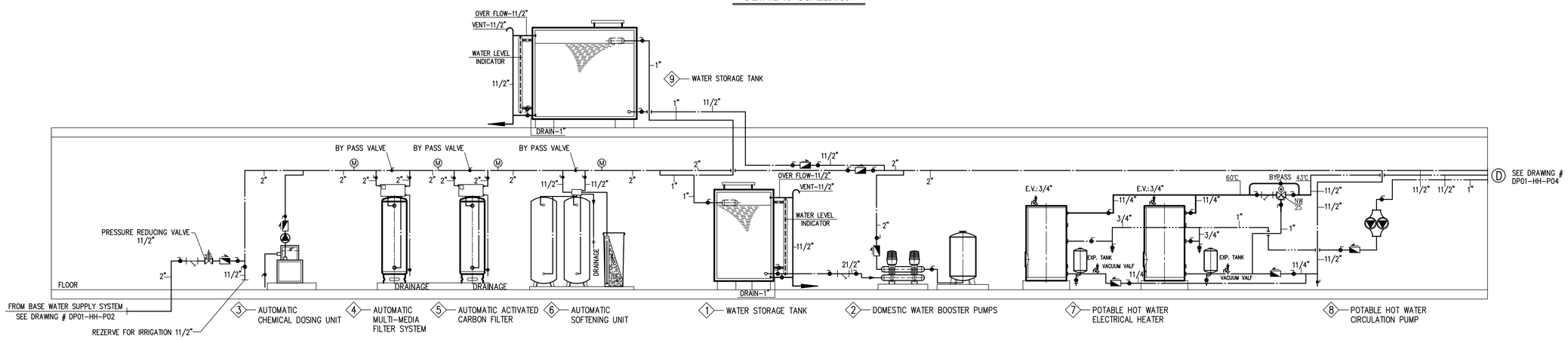
DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT, AFGHANISTAN
DRAWING OF WORK AS BUILT
DRAINAGE SYSTEM
RISER DIAGRAM

SHEET REFERENCE NUMBER :

DP01-HH-P05



DETAIL-10 SCALE:1/50



EQUIPMENT LIST

1 — WATER STORAGE TANK

(1 EA)
Vtank = 2000 lt (1,0 x 1,0 x 2,0 mt)

2 — DOMESTIC WATER BOOSTER PUMPS

(2 EA, ONE AS STAND BY)

Vtank = 200 lt (PN 10)
Vpump = 2x6.0 m3/h
Hpump = 40–60 mWG
Npump = ~2x1.5 kW

3 — AUTOMATIC CHEMICAL DOSING UNIT

(1 EA)

Chemical to be dosing : Sodium hypo chlorite
Type : %12 fluid

Pump (1 ea.)

Type : Automatic metering pump
Capacity : 3,47 lt/hour
Max. operating pressure : 7 bar

Solution Tank (1 ea.)
Material : Polyethylene
Capacity : 100 lt

4 — AUTOMATIC MULTI–MEDIA FILTER SYSTEM

(1 EA, WITH TIME CONTROLLER)

Capacity : 6.0 m3/h
Filtration velocity : 21.0 m/hour
Operating pressure : 2–8 bar
Pressure loss : ~1 bar

Filtration size : >=20 micron

Backwash flow : 8.7 m3/hour
Tank : 1 ea.

5 — AUTOMATIC ACTIVATED CARBON FILTER

(1 EA, WITH TIME CONTROLLER)

Capacity : 6.0 m3/h
Filtration velocity : 21.0 m/hour
Operating pressure : 2–8 bar
Pressure loss : ~1 bar
Backwash flow : 7.0 m3/hour
Tank : 1 ea.

6 — AUTOMATIC SOFTENING UNIT

(1 EA, WITH VOLUMETRIC CONTROLLER)

Quantity : 1/twin (1 duty/1stand by)
Capacity : 6.0 m3/h
Raw water hardness : 30 Fr
Product water hardness : < 1 Fr

Operating pressure : 4–8 bar
Pressure loss : ~1 bar
Pressure loss (backwash) : ~2 bar
Tank : 2 ea.
Brine tank : 1 ea.

7 — POTABLE HOT WATER ELECTRICAL HEATER

(2 EA)

V = 750lt.
N = 3x6.0 kW

8 — POTABLE HOT WATER CIRCULATION PUMP

(TWIN PUMP, 1 EA)

Vpump = 2.0 m3/h
Hpump = 5.0 mSS
Npump = ~0.37 kW

9 — WATER STORAGE TANK

(1 EA)
Vtank = 4000 lt (2,0 x 1,0 x 2,0 mt)

AS BUILT

SYMBOL	DESCRIPTION	DATE	APR
	REVISED AS BUILT	08-09-06	
	REVISED AS BUILT	06-05-06	
A	% 100 DESIGNS	11-16-05	

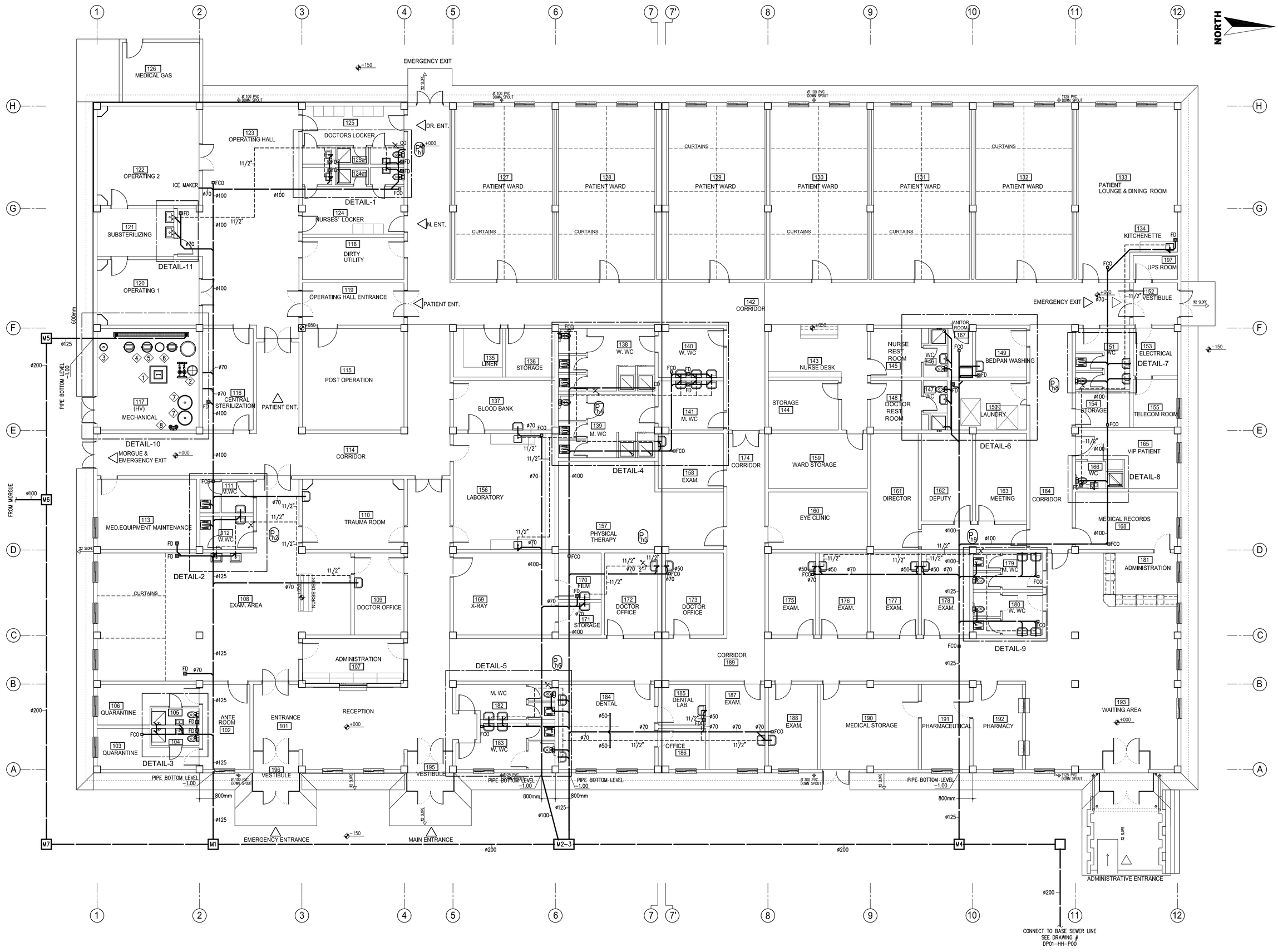
DESIGNED BY : I. Beseli
DWN BY : Z. Şimşek
CHK BY : I. Beseli
DATE : 08-09-2006
SUBMITTED BY : BESELI
FILE NO : DP01-HH-P06

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLÝN CO.INC in association with Design/Builder
IRMAK, STAND, BESELI, DELTA ÖM

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS BUILT
POTABLE COLD & HOT WATER – DRAINAGE SYSTEM
MECHANICAL ROOM DETAIL
SYSTEM DIAGRAM AND EQUIPMENT LIST

SHEET REFERENCE NUMBER :
DP01–HH–P06



AS BUILT

SYMBOL	DESCRIPTION	DATE	APR
1	REVISED AS BUILT	08-09-06	
2	REVISED AS BUILT	06-05-06	
3	% 100 DESIGNS	11-16-05	

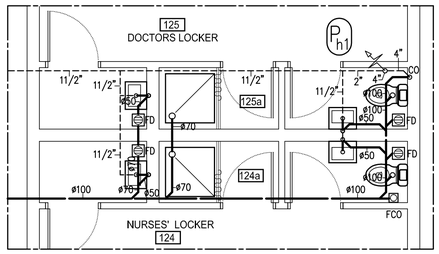
DESIGNED BY : I. Beşeli
DATE : 08-09-2006
DWN BY : Z. Şimşek
SUBMITTED BY : BESELI
CHK BY : I. Beşeli
FILE NO : DP01-HH-P07

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

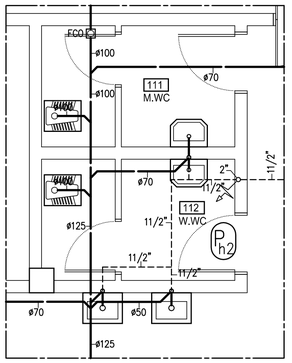
KOLÝN CO.INC in association with Design/Builder
IRMAK, STAND, BESELI, DELTA OM

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS BUILT
DRAINAGE SYSTEM
FLOOR PLAN

SHEET REFERENCE NUMBER :
DP01-HH-P07



DETAIL-1 SCALE:1/50



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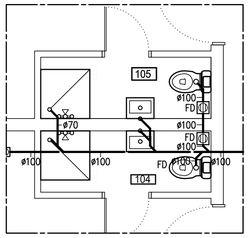
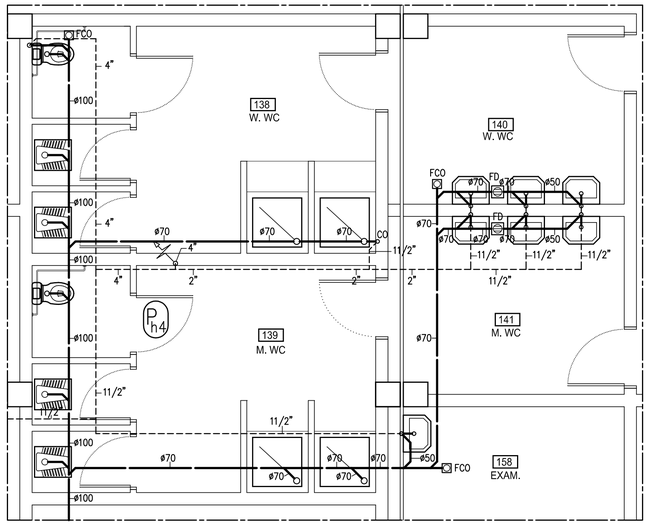


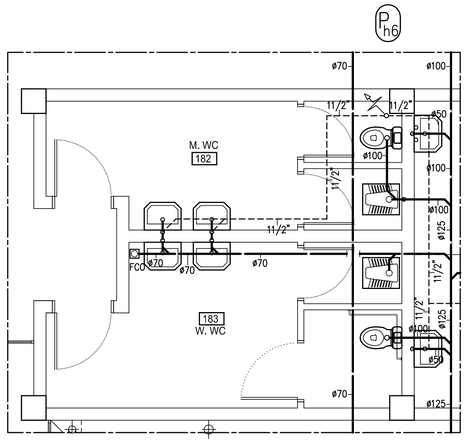
DETAIL-3 SCALE:1/50



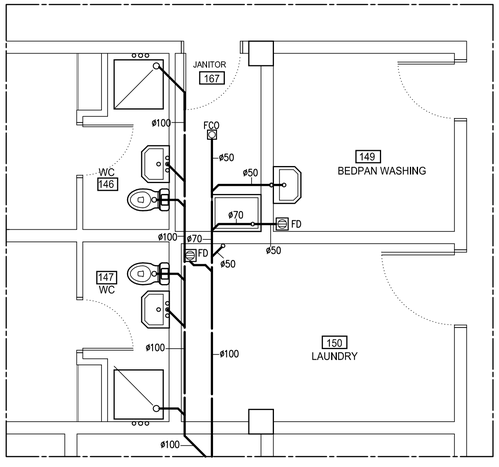
DETAIL-4 SCALE:1/50

LEGEND

——— ———	SOIL&WASTE WATER PIPING
- - - - -	VENT PIPING
M	MANHOLE
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
Ph	VENT RISER
CO	CLEAN OUT



DETAIL-5 SCALE:1/50



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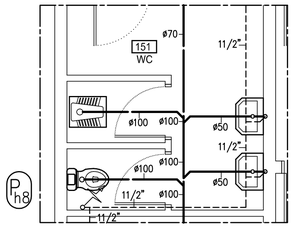
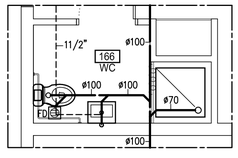


DETAIL-7 SCALE:1/50



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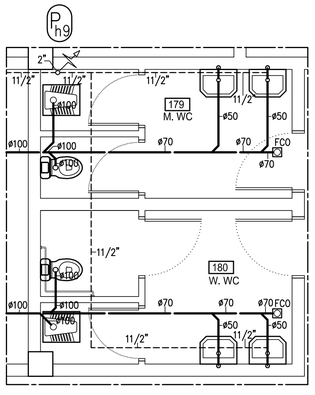
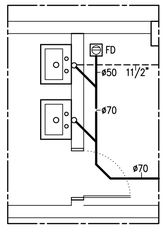


DETAIL-9 SCALE:1/50



DETAIL-11 SCALE:1/50

AS BUILT

SYMBOL	DESCRIPTION	DATE	APR
	REVISED AS BUILT	08-09-06	
	REVISED AS BUILT	06-05-06	
	% 100 DESIGNS	11-16-05	

DESIGNED BY : I. Beşeli	DATE : 08-09-2006	
DWN BY : Z. Şimşek	SUBMITTED BY : BESELI	
CHK BY : I. Beşeli	FILE NO : DP01-HH-P08	

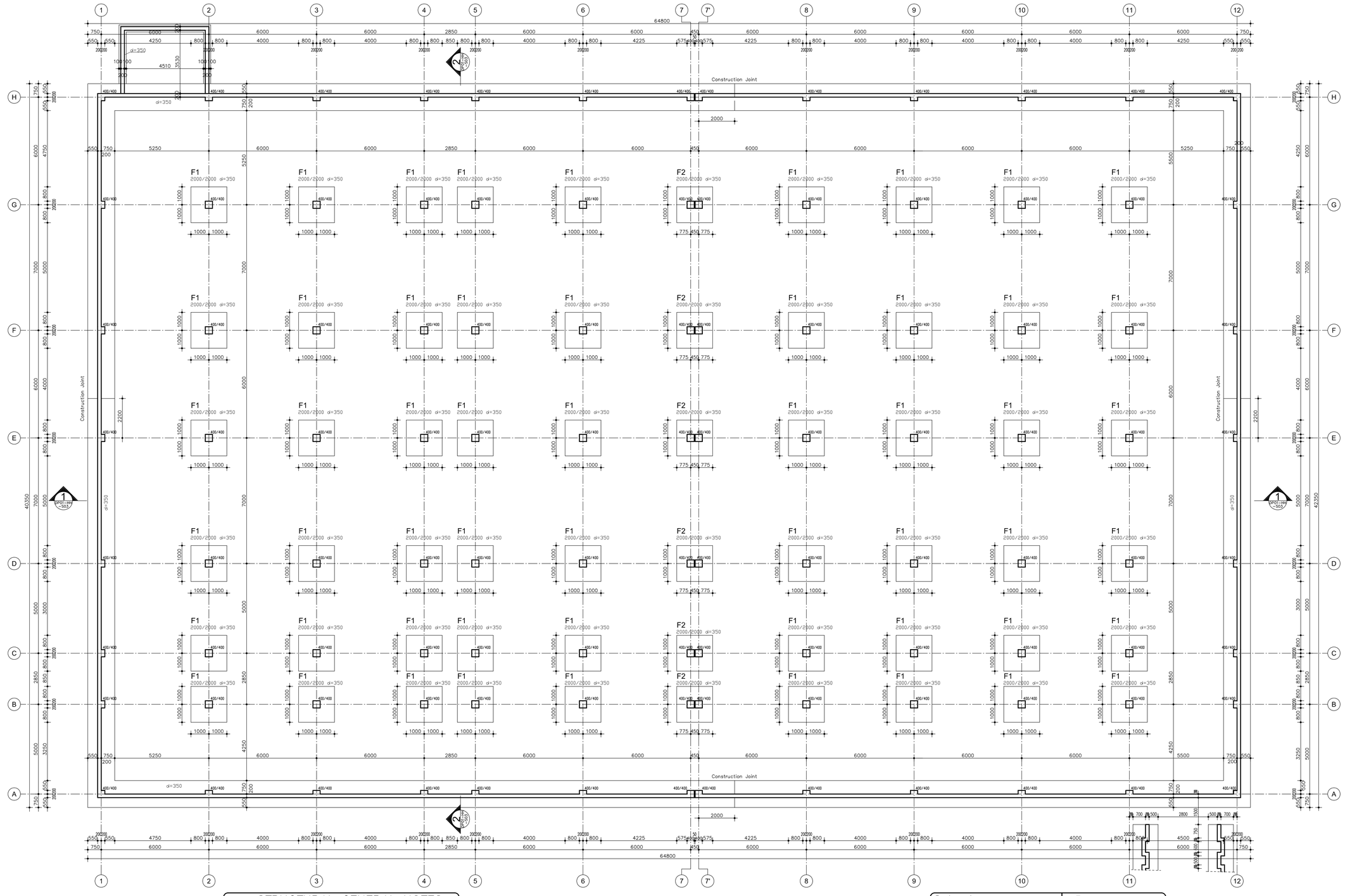
US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLÝN
CO.INC in association with
IRMAK, STAND, BESELI, DELTA OM
Design/Builder

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT , AFGHANISTAN
DRAWING OF WORK AS BUILT
DRAINAGE SYSTEM
DETAIL DRAWINGS

SHEET REFERENCE NUMBER :

DP01-HH-P08



ASBUILT

SYMBOL	DESCRIPTION	DATE	APR
	REVISED AS BUILT	06.05.06	
	100% DESIGNS	11.16.05	

DESIGNED BY : S. BAKIR
DATE : 06–05–2006
DWN BY : S. OZDOGAN
SUBMITTED BY : STAND
CHK BY : A.R. BAKIR
FILE NO : DP01–HH–S01

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLİN CO.INC in association with IRMAK, STAND, BESELI, DELTA OM Design/Builder

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT, AFGHANISTAN
DRAWING OF WORK AS–BUILT
FOUNDATION PLAN

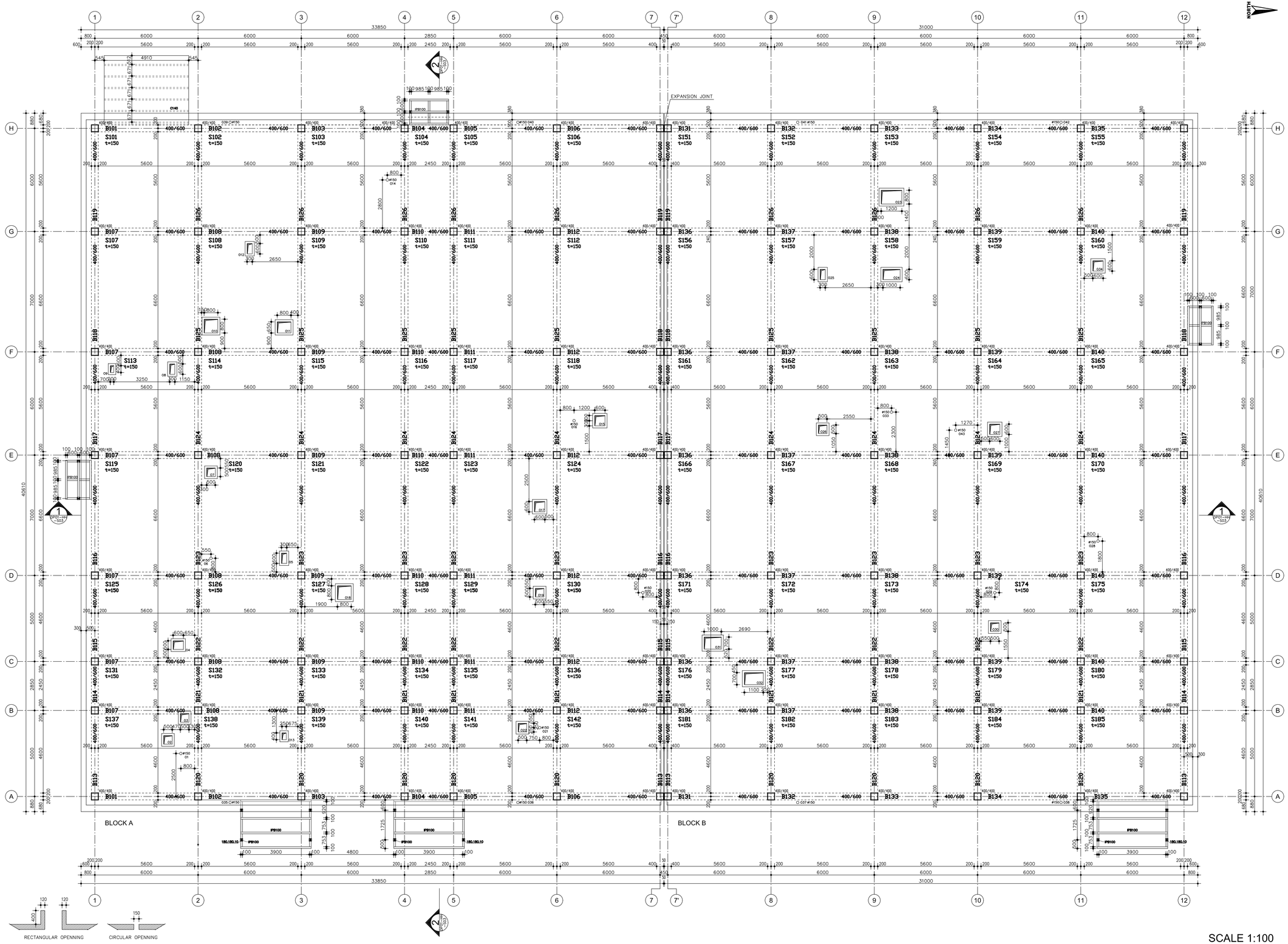
SHEET REFERENCE NUMBER :
DP01–HH–S01

REFER TO DRAWING DP01-HH-S03 FOR SECTIONS, CANOPY DETAILS & SCREEN WALL DETAILS
REFER TO RELATED ELECTRICAL & MECHANICAL DRAWINGS FOR THE SLEEVES PLACED FOR THE FIRE WATER, DOMESTIC WATER, ELECTRIC, TELECOM AND SEWAGE PIPES IN THE PLINT

STRUCTURAL GENERAL NOTES

Dead Load	1,350 kN/m2	All. Soil Bearing Pres.	333 kN/m2	Wind	Importance	1,0	Seismic Importance 1,5
Live Load	1,000 kN/m2	Concrete Strength	25 MPa		Exposure	C	Site Class. D
Snow Load	0,736 kN/m2	Steel Strength	415 MPa		Speed	130 km/h	Use Group I
							Spec. Acc. Coef. Ss: 1,65 S1: 0,75

SCALE 1:100



ASBUILT

SYMBOL	DESCRIPTION	DATE	APR
	REVISED AS BUILT	06.05.06	
	100% DESIGNS	11.16.05	

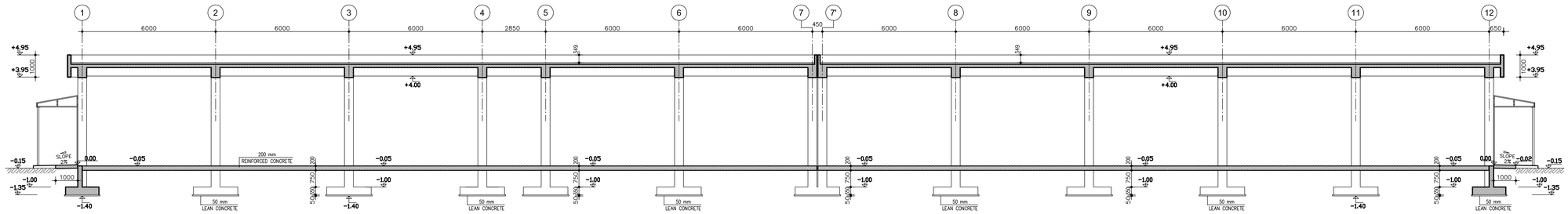
DESIGNED BY : S. BAKIR
DATE : 06–05–2006
DWN BY : S. OZDOGAN
SUBMITTED BY : STAND
CHK BY : A.R. BAKIR
FILE NO : DP01–HH–S02

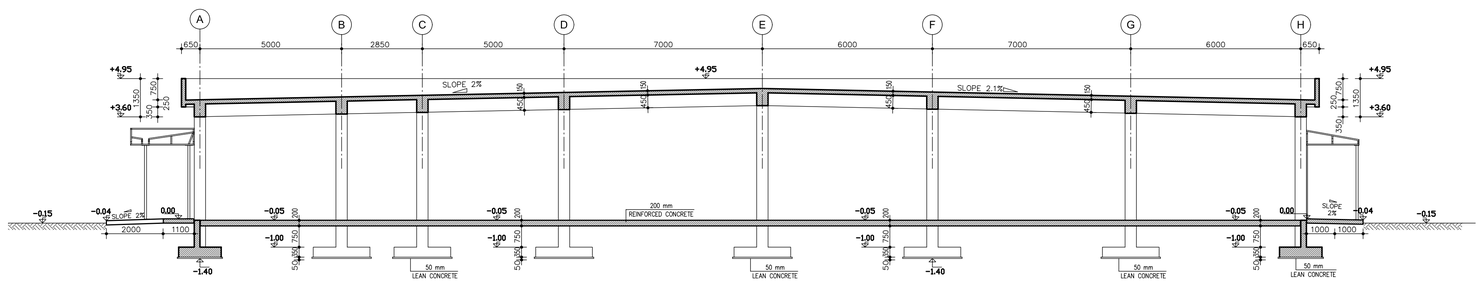
US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLIN CO.INC in association with IRMAK, STAND, BESELI, DELTA OM Design/Builder

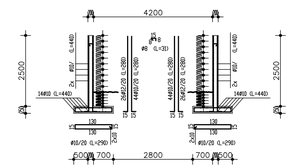
DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT, AFGHANISTAN
DRAWING OF WORK AS–BUILT
ROOF PLAN

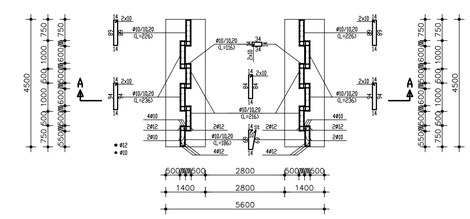
SHEET REFERENCE NUMBER :
DP01–HH–S02

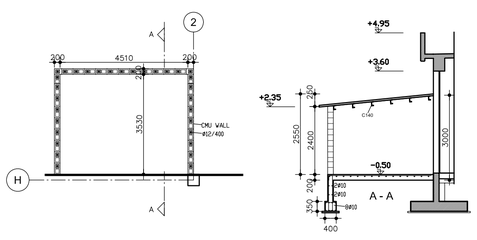




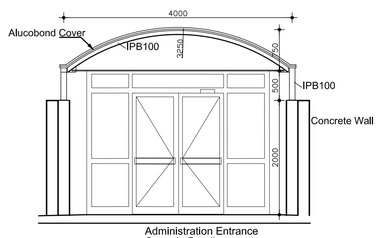
SECTION 2-2


Administration Entrance
Screen Wall
Section A Reinforcement

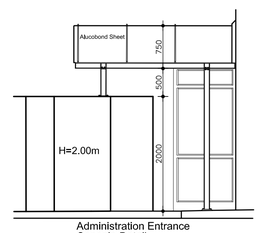

Administration Entrance
Screen Wall
Reinforcement Plan



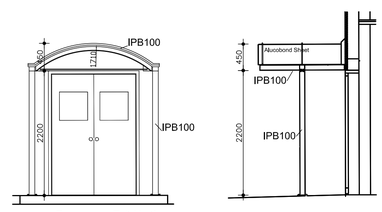
1:100
MEDICAL GAS ROOM



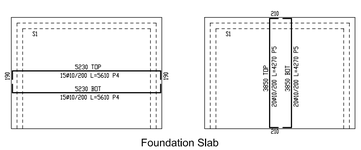
Administration Entrance
Canopie Detail
East Elevation 1:50

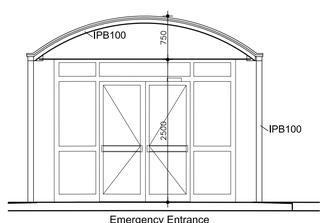


Administration Entrance
Canopie Detail
North Elevation 1:50

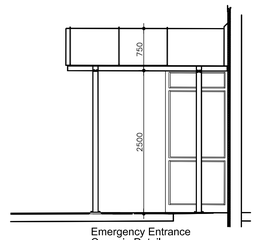


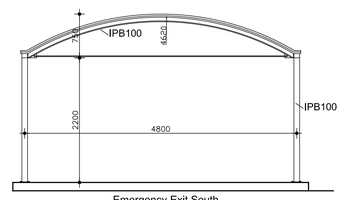
Emergency Exit North
Canopie Detail
West & North Elevation 1:50


Foundation Slab

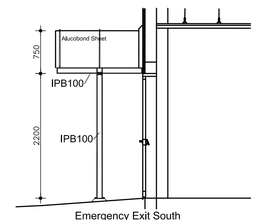


Emergency Entrance
Canopie Detail
East Elevation 1:50


Emergency Entrance
Canopie Detail
North Elevation 1:50



Emergency Exit South
Canopie Detail
South Elevation 1:50



Emergency Exit South
Canopie Detail
East Elevation 1:50

REFER TO DRAWING DP01-HH-S01 S02 FOR THE PLANS

ASBUILT

SYMBOL	DESCRIPTION	DATE	APR
	REVISED AS BUILT	06.05.06	
	100% DESIGNS	11.16.05	

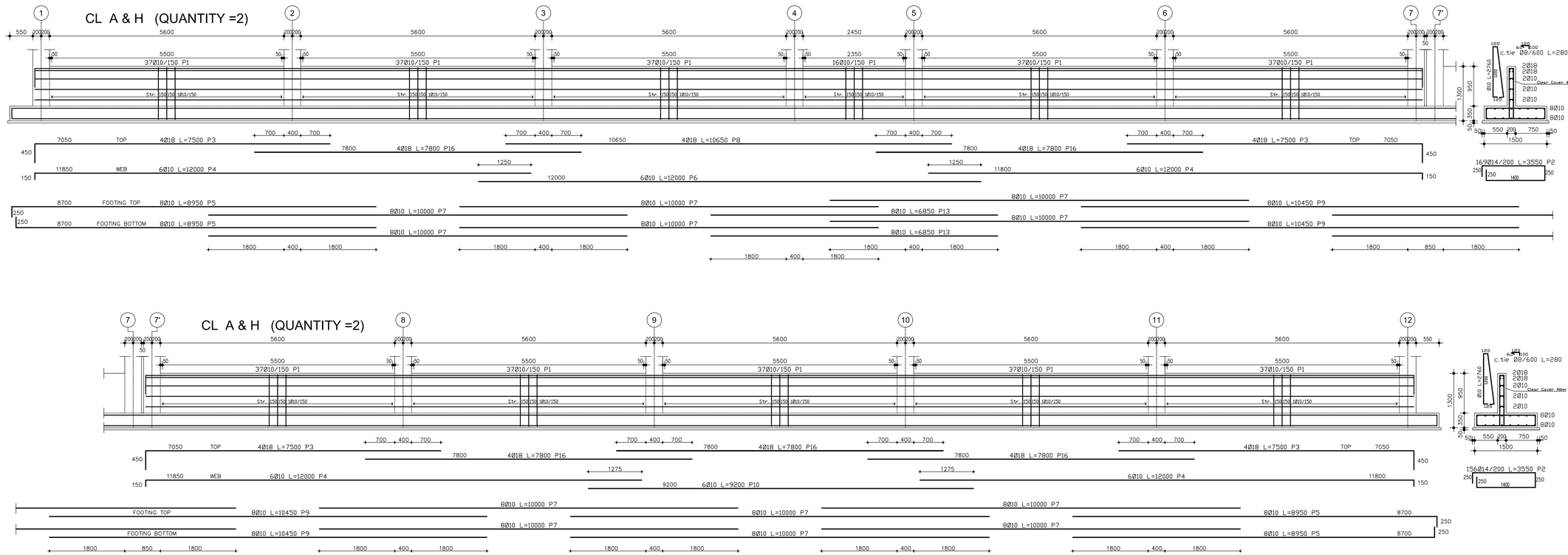
DESIGNED BY : S. BAKIR	DATE : 06-05-2006
DWN BY : S. OZDOGAN	SUBMITTED BY : STAND
CHK BY : A.R. BAKIR	FILE NO : DP01-HH-S03

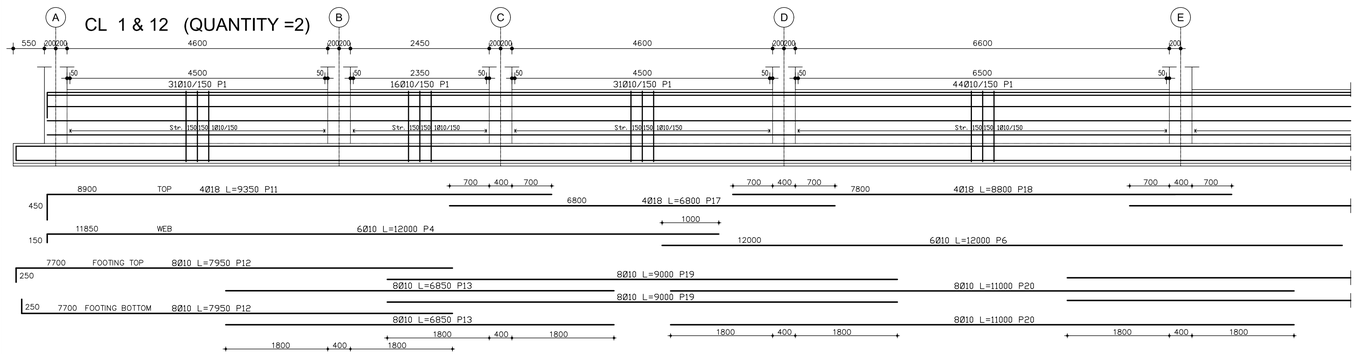
US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

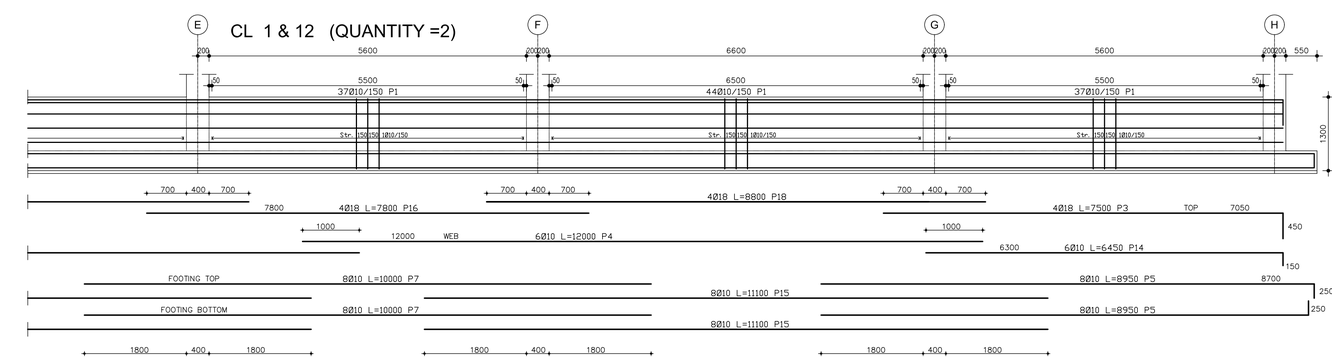
KOLIN CO.INC in association with
IRMAK, STAND, BESELLI, DELTA OM
Design/Builder

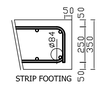
DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT, AFGHANISTAN
DRAWING OF WORK AS-BUILT
SECTIONS
MEDICAL GAS ROOM
EMERGENCY EXITS

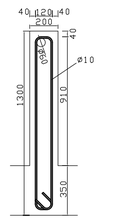
SHEET REFERENCE NUMBER :
DP01-HH-S03









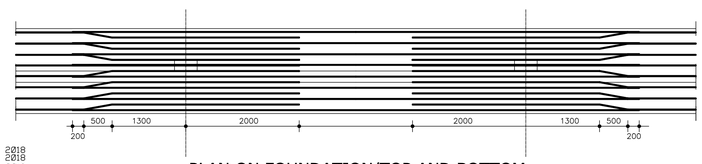


SCALE 1:20

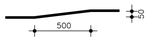
Pos	Dia	#	Leng.(mm)	Total(mm)
1	10	1252	2760	3455520
2	14	1056	3550	3748800
3	18	40	7500	300000
4	10	72	12000	864000
5	10	96	8950	859200
6	10	24	12000	288000
7	10	224	10000	2240000
8	18	8	10650	85200
9	10	64	10450	668800
10	10	12	9200	110400
11	18	8	9350	74800
12	10	32	7950	254400
13	10	64	6850	438400
14	10	12	6450	77400
15	10	32	11100	355200
16	18	48	7800	374400
17	18	8	6800	54400
18	18	16	8800	140800
19	10	32	9000	288000
20	10	32	11000	352000

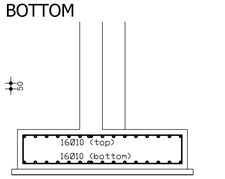
Dia	Total Length(m)	Weight(kg)
10	10251	6318
14	3749	4528
18	1030	2056

Total Weight = 12902 Kg.



PLAN ON FOUNDATION/TOP AND BOTTOM





SECTION UNDER COLUMN

CL: COLUMN LINE

REFER TO DRAWING DP01-HH-S05 FOR SINGLE FOOTINGS

COLUMN REINFORCEMENTS NOT SHOWN FOR CLARITY

SCALE 1:50

ASBUILT

SYMBOL	DESCRIPTION	DATE	APR
	REVISED AS BUILT	06.05.06	
	100% DESIGNS	11.16.05	

DESIGNED BY :	DATE :
S. BAKIR	06-05-2006
DWN. BY : S. OZDOGAN	SUBMITTED BY : STAND
CHK BY : A.R. BAKIR	FILE NO : DP01-HH-S04

US Army Corps of Engineers
Afghanistan Engineer District
Kabul, Afghanistan

KOLİN CO.INC in association with IRMAK, STAND, BESELI, DELTA OM
Design/Builder

DESIGN/BUILD
50 BED REGIONAL HOSPITAL
HERAT, AFGHANISTAN

DRAWING OF WORK AS-BUILT
FOUNDATION BEAM DETAILS

SHEET REFERENCE NUMBER :
DP01-HH-S04