

PROVINCIAL RESPONSE COMPANY & FIRE STATION CLASS B RELOCATION TERIN KOWT, URUZGAN	NEW FACILITIES	SIZE(GSM)	PEOPLE
100 ADMIN BUILDING	508	18p	
101 DINING FACILITIES BUILDING	384	132p	
102 WOOD STOVE KITCHEN, CANOPY	384	18p	
103 SENIOR/HIGH BARRACKS (ONE STORY)	579	100p	
104 OPEN BAY BARRACKS	54	#6-8p	
105 FEMALE BARRACKS	54	#6-8p	
106 FEMALE BARRACKS	180	100p	
107 TOILET AND SHOWER BUILDING	90		
108 SECURE STORAGE BUILDING (ASP)	20		
109 WELL HOUSE			
110 WATER TANK			
111 GENERATOR ENCLOSURE			
112 FUEL STORAGE TANK, CANOPY	65		
113 WAREHOUSE			
114 PETROLEUM, OIL, AND LUBRICANT STORAGE	22		
115 GUARD HOUSE	54		
116a-b GUARD SHACKS	12		
117a-d GUARD TOWERS	12		
118a-b TRASH POINTS			
119 PRIMARY ENTRY CONTROL POINT, CANOPY			
120 SECONDARY ENTRY GATE			
121 CAR PARKING (62 CARS)			
122 TRUCK PARKING (8 TRUCKS)	632	lm	
123 FORCE PROTECTION WALL	1100		
124 ASSEMBLY AREA	80		
125 SEPTIC TANK	3080	250p	
126 LEACH FIELD			
TASHKEL:			
PER MOI	UNKNOWN		
PER COMMANDER	UNKNOWN		
BILLETED ON-SITE	UNKNOWN		
BILLETING DESIGN CAPACITY:			
ONE SENIOR BARRACKS	18p		
ONE OPEN BAY BARRACKS	100p		
ONE FEMALE BARRACKS	#6-8p		
SUBTOTAL	£124-126p		
FUTURE BARRACKS			
ONE FEMALE BARRACKS	#6-8p		
TOTAL	£130-134p		
FIRE STATION FACILITIES:			
200 ADMINISTRATION			
201 DINING FACILITIES (DFAC)			
202 BARRACKS			
203 VEHICLE / APPARATUS BAY			
204 WOOD STOVE KITCHEN, CANOPY			
205 TRAINING TOWER			
206 NOT USED			
207 NOT USED			
208 CISTERN / TANK 95³			
209 HYDRANT (TRUCK FILL POINT)			
210 TRASH POINT			

AFCEE CONTRACT # FA8903-08-D-8775

DESIGNED: AMEC

DRAWN: Abdul Basir Rahmy, Rafi Ghafori

CHECKED: Nino Spahic

APPROVED: Nino Spahic

IN CHARGE: David Wheeler

WBS NO: 05.0P.00815

SCALE: 1 : 1500

DATE: 30 JAN 2012

CJ.ENG. PROJ.#: PRCS050501RC

FIGURE:

SHEET FORMAT: A3

SITE ASSESSMENT SITE PLAN

Adding a Class B Fire Station in the Site

REV	DATE	BY	APP	DESCRIPTION
1	28 Jan 2012	CJ.ENG.		

AFGHAN NATIONAL SECURITY FORCE
Comprehensive Plan For Facilities Development

PROVINCIAL RESPONSE COMPANY & FIRE STATION CLASS B RELOCATION TERIN KOWT, URUZGAN
PROPOSED SITE PLAN
 SCALE: 1:1500
NOT FOR CONSTRUCTION

LEGEND:

 ADMINISTRATION	 FUTURE BUILDING
 HOUSING	 CONCRETE WALL
 DFAC	 STONE WALL
 SECURITY	 LICENSE FOR CONSTRUCTION LINE
 SUPPORTING	 CHAIN LINK FENCE
 ARMORY	 SECURITY STANDOFF
	 PROPOSED ROAD



STRUCTURAL DESIGN CRITERIA

ALL DESIGNS SHALL CONFORM TO THE PROVISIONS OF THE IBC 2006 AS APPLICABLE

1.0 DESIGN LOADS

1.1 DEAD LOADS

1.1.1 ROOF DEAD LOADS – CONVENTIONAL FRAMING

	MAXIMUM GRAVITY LOAD	MINIMUM GRAVITY LOAD
LIGHT GAUGE FRAMING	0.20 KPa	0.15 KPa
METAL ROOFING	0.14 KPa	0.05 KPa
INSULATION	0.10 KPa	0.05 KPa
MISC	0.05 KPa	0.00 KPa
	0.49 KPa	0.25 KPa

1.1.2 ROOF DEAD LOADS – CONCRETE FRAMING

	MAXIMUM GRAVITY LOAD
CONC FLAT SLAB	4.80 KPa
MECH/ELEC/PLUMBING	0.15 KPa
MISC	0.05 KPa
	5.00 KPa

1.2 LIVE LOADS (PER IBC 2006)

1.2.1 ROOF LIVE LOADS: ALL BUILDINGS

GREATER OF 1.0 KPa MINIMUM OR SNOW LOAD

1.2.2 SLAB-ON-GRADE LIVE LOADS

ALL BUILDINGS 4.80 KPa

1.3 SNOW LOADS (PER IBC 2006)

1.3.1 DESIGN PARAMETERS

GROUND SNOW LOAD (per UFC 3-310-01)	PER LOCAL CONDITION
SNOW IMPORTANCE FACTOR	1.0 KPa
SNOW EXPOSURE FACTOR	1.0 KPa

1.4 SEISMIC LOADS (PER IBC 2006 & UFC 3-310-04)

1.4.1 SEISMIC PARAMETERS – LOAD BEARING MASONRY

SEISMIC OCCUPANCY CATEGORY	II
SEISMIC IMPORTANCE FACTOR (I)	1.0
SEISMIC SITE CLASS	D
Ss	1.280
S1	0.510
Sds	0.853
Sd1	0.510
SEISMIC DESIGN CATEGORY	D
SEISMIC RESISTING SYSTEM	BEARING WALL SYSTEM
	SPECIAL REINF MASONRY SHEAR WALLS
RESPONSE MODIFICATION FACTOR (R)	5.0
RESPONSE COEFFICIENT (Cs)	0.17
SEISMIC ANALYTICAL PROCEDURE	EQUIV LATERAL FORCE
SEISMIC BASE SHEAR	49 kN

1.6 WIND LOADS (PER IBC 2006)

1.6.1 DESIGN PARAMETERS

BASIC WIND SPEED	137 Km/h
WIND IMPORTANCE FACTOR	1.0
WIND EXPOSURE CATEGORY	D
DIRECTIONALITY COEFFICIENT (Kd)	0.85
TOPOGRAPHIC FACTOR (Kzt)	1.0

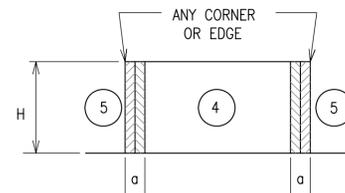
1.6.2 DESIGN WIND PRESSURE – MAIN WINDFORCE RESISTING SYSTEM

LOCATION	CORNER ZONE WIDTH "a"	MEAN ROOF HEIGHT (h)	WINDWARD WALL (@ MEAN ROOF HEIGHT)	LEEWARD WALL (@ MEAN ROOF HEIGHT)	ROOF
FIELD ZONE	N/A	3890mm	582 N/m ²	-463 N/m ²	-803 N/m ²
CORNER ZONE	900mm	3890mm	883 N/m ²	-689 N/m ²	-1244 N/m ²

a = 10% OF LEAST HORIZONTAL DIMENSION OR 0.4h, WHICHEVER IS SMALLER, BUT NOT LESS THAN EITHER 4% OF LEAST HORIZONTAL DIMENSION OR 0.9M.
h = MEAN ROOF HEIGHT, IN METERS, EXCEPT THAT EAVE HEIGHT SHALL BE USED FOR ANGLE GREATER THAN 10°.

1.6.3 DESIGN WIND PRESSURE – WALL COMPONENTS AND CLADDING

EXTERIOR WALL SYSTEMS & THEIR ATTACHMENTS TO THE PRIMARY STRUCTURE SHALL BE DESIGNED FOR THE PRESSURES SHOWN IN THE DIAGRAM BELOW.



LOCATION	WINDWARD PRESSURE N/m ² (inward)		LEEWARD PRESSURE N/m ² (outward)		a
	④	⑤	④	⑤	
MAIN BUILDING					(mm)
AREA = 1 m ²	627	627	-986	-1216	900
AREA = 2 m ²	589	589	-948	-1134.8	900
AREA = 5 m ²	565	565	-910	-1086.9	900
AREA = 10 m ²	565	565	-910	-1086.9	900

NOTES:

- DESIGN WIND PRESSURES ABOVE REPRESENT THE NET PRESSURE (SUM OF INTERNAL AND EXTERNAL PRESSURE) APPLIED NORMAL TO ALL SURFACES.
- LINEAR INTERPOLATION BETWEEN VALUES OF TRIBUTARY AREA IS PERMISSIBLE.
- PLUS AND MINUS SIGNS SIGNIFY PRESSURE TOWARD AND AWAY FROM THE EXTERIOR SURFACE, RESPECTIVELY.

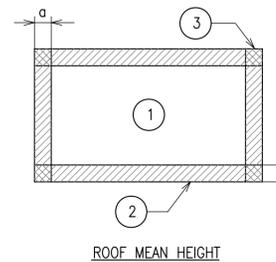
MASONRY CONCRETE LINTEL SCHEDULE

OPENING TYPE OR SIZE, BEAM LOCATION OR TYPE	MAX SPAN (mm)	BEAM DEPTH (mm)	MAIN REINFORCING			SHEAR REINF STIRRUPS
			TOP	BOTTOM	OTHER	
EXT WINDOW OR DOOR	900	400	(2)-#13	(2)-#13		----
INT WALL OPENING, NON-BEARING	1800	400	(2)-#13			----
INT WALL OPENING, NON-BEARING	900	200	(2)-#13			----

- STRUCTURAL DRAWINGS DO NOT INDICATE ALL OPENINGS IN MASONRY WALLS. VERIFY NUMBER, SIZE AND LOCATION OF ALL OPENINGS IN MASONRY WALLS FROM ARCHITECTURAL SHEETS AND APPROVED PLUMBING, MECHANICAL, AND ELECTRICAL SHOP DRAWINGS.
- PROVIDE 200mm BEARING EA END FOR 200mm DEEP CMU LINTEL PROVIDE 400mm BEARING EA END FOR 400mm DEEP CIPL.
- FOR HEAD DETAILS REFER TO ARCHITECTURAL SHEETS.
- REINFORCING SHALL BE ASTM A615M, GRADE 400. CONCRETE FOR CAST-IN-PLACE BEAMS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 28 MPa AT 28 DAYS.
- CONTRACTOR SHALL SUBMIT FOR APPROVAL SHOP DRAWINGS AND SCHEDULES SHOWING SIZE, DETAILS, LOCATIONS, ETC FOR ALL CAST-IN-PLACE BEAMS IN CMU WALLS.

1.6.4 DESIGN WIND PRESSURE – ROOF COMPONENTS AND CLADDING

ROOF COMPONENTS & THEIR ATTACHMENTS SHALL BE DESIGNED FOR THE PRESSURES SHOWN IN THE ADJACENT DIAGRAM & TABLE BELOW.



1.6 WIND LOADS (CON'T)

LOCATION	GROSS UPLIFT PRESSURE N/m ² (upward)			a
	①	②	③	
MAIN BUILDING				(mm)
AREA = 1 m ²	-838	-1460	-1460	900
AREA = 2 m ²	-838	-1460	-1460	900
AREA = 5 m ²	-838	-1460	-1460	900
AREA = 10 m ²	-838	-1460	-1460	900

NOTES:

- DESIGN WIND PRESSURES ABOVE REPRESENT THE NET PRESSURE (SUM OF INTERNAL AND EXTERNAL PRESSURE) APPLIED NORMAL TO ALL SURFACES.
- LINEAR INTERPOLATION BETWEEN VALUES OF TRIBUTARY AREA IS PERMISSIBLE.
- PLUS AND MINUS SIGNS SIGNIFY PRESSURE TOWARD AND AWAY FROM THE EXTERIOR SURFACE, RESPECTIVELY.

2.0 FOUNDATION DESIGN CRITERIA (TO BE CONFIRMED BY THE CONTRACTOR)

THE GEOTECHNICAL ANALYSIS FOR THIS PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR AWARDED THE WORK. DESIGN VALUES USED IN THE STRUCTURAL ANALYSIS OF THE BUILDINGS HEREIN INDICATED HAVE BEEN ASSUMED AND SHALL BE CONFIRMED AND VERIFIED AS PART OF THE GEOTECHNICAL INVESTIGATION. VALUES WHICH DO NOT MEET THE REQUIREMENTS INDICATED BELOW SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER FOR CONSIDERATION AND DETERMINATION ON THE NEXT APPROPRIATE COURSE OF ACTION.

2.1.1 SOIL DESIGN PARAMETERS

NET ALLOWABLE SOIL BEARING CAPACITY	96.0 KPa
UNIT WEIGHT OF SOIL (moist)	1800 Kg/m ³
COEFF ACTIVE EARTH PRESSURE (Kpa)	0.30
COEFF PASSIVE EARTH PRESSURE (Kpp)	3.33
COEFF AT-REST EARTH PRESSURE (Kpr)	.55
COEFF OF SOIL FRICTION	.35
SUBGRADE MODULUS	4120 g/m ³
MINIMUM BEARING DEPTH BELOW GRADE	800mm
SEISMIC SITE CLASS (based on in-situ soil)	D

CONCRETE COVER SCHEDULE

MINIMUM CONCRETE COVER PROTECTION FOR REINFORCEMENT BARS SHALL BE AS FOLLOWS: (SEE ACI 318M-05, SECTION 7.7 FOR CONDITIONS NOT NOTED). DIMENSIONS FOR BAR PLACEMENT GIVEN IN SECTIONS AND DETAILS SHALL SUPERSEDE MINIMUM COVER REQUIREMENTS GIVEN HERE. DIMENSIONS ARE IN mm.

FOOTINGS (EARTH FORMED)	70
COLUMNS / PIERS (TO TIES)	40
GRADE BEAMS OR SLAB TURNED DOWN EDGES:	
TOP	40
BOTTOM (EARTH FORMED)	70
SIDES (EARTH FORMED)	70
SIDES (BOARD FORMED)	40
	#16 BAR & SMALLER
	#19 THRU #36 BAR
ELEVATED BEAMS & SLABS:	
BEAM TIES & STIRRUPS (NOT EXPOSED TO WEATHER)	40
BEAM TIES & STIRRUPS (EXPOSED TO WEATHER)	50
FLOOR SLABS (NOT EXPOSED TO WEATHER)	20
FLOOR SLABS (EXPOSED TO WEATHER)	
#19 & LARGER	50
#13 & SMALLER	40
ROOF SLAB BARS	25
SLABS-ON-GRADE (NO EXPOSURE TO WEATHER) FROM TOP	20
SLABS-ON-GRADE (EXPOSURE TO WEATHER) FROM TOP	40
UTILITY TUNNEL WALLS, RETAINING WALLS AND SHEAR WALLS, (NO SURFACES SHALL BE EARTH FORMED)	
EARTH SIDE AND FRONT SIDE (EXPOSED TO WEATHER):	
#16 BAR AND SMALLER	40
#19 THRU #36 BAR	50
PROVIDE STANDARD BAR CHAIRS AND SPACERS AS REQUIRED TO MAINTAIN CONCRETE PROTECTION SPECIFIED.	

US Army Corps of Engineers
Afghanistan Engineer District

DATE	DESCRIPTION	SYMBOL

DESIGNED BY: GDH	DATE: 09-30-09
DWN BY: MDB	SUBMITTED BY: BAKER
CHK BY: CWV	FILE NO: ANPSDS-002XXX

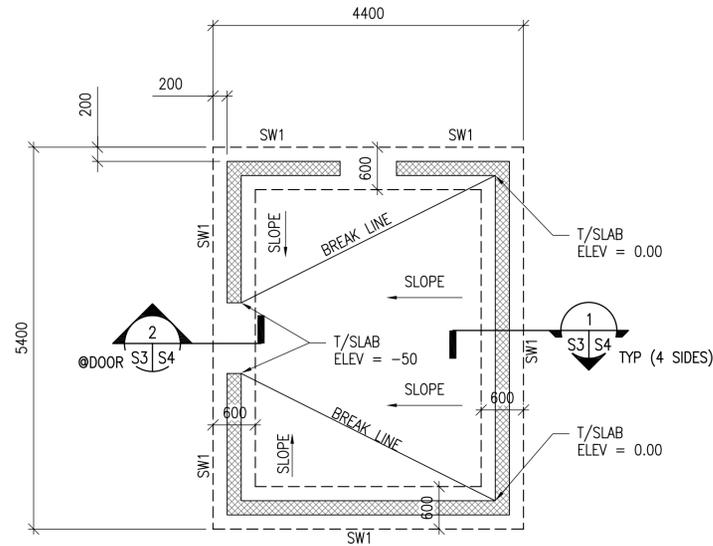
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A Unit of Michael Baker Corporation
1000 Business Park
Moon Township, PA 15108
www.mbakercorp.com

AFGHAN NATIONAL POLICE
STANDARD DESIGN
WELL HOUSE
DESIGN CRITERIA & SCHEDULES

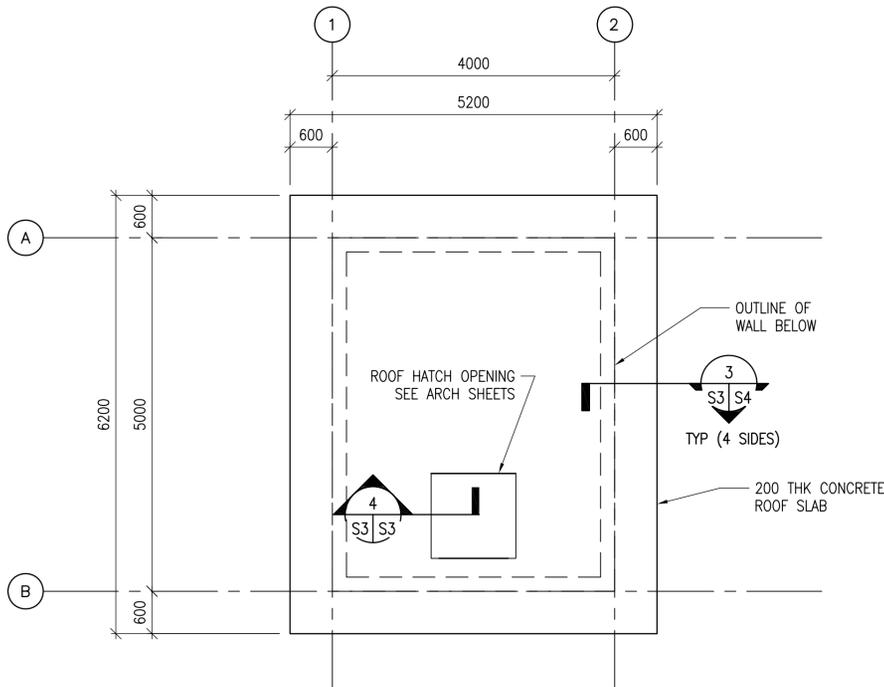
SHEET REFERENCE NUMBER:
S2

A B C D E F G H

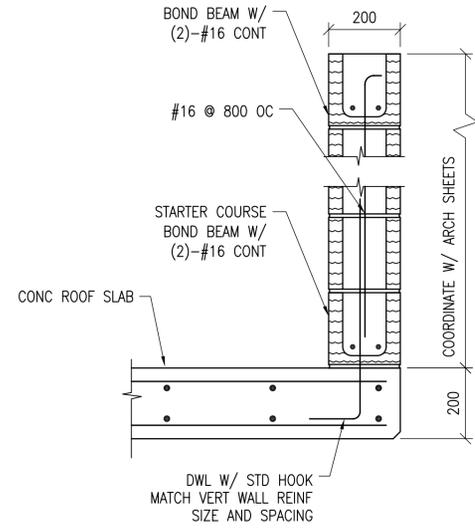
6
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1 WELL HOUSE FOUNDATION PLAN
SCALE: 1:50



2 WELL HOUSE ROOF FRAMING PLAN
SCALE: 1:50



4 SECTION
SCALE: 1:10

- NOTES:
1. FINISH FIRST FLOOR ELEVATION SHALL BE (DATUM 0.0) ALL PLUS OR MINUS DIMENSIONS INDICATED ON PLAN OR REFERRED TO IN NOTES RELATE TO FINISH FIRST FLOOR ELEVATION.
 2. TOP OF EXTERIOR FOOTINGS SHALL BE -600 UNLESS OTHERWISE INDICATED.
 3. UNLESS OTHERWISE INDICATED, FLOORS SHALL BE 150 THICK CONCRETE SLAB-ON-GRADE W/ 13 DIA REBAR @ 450 OC E.W. (38 CLR. TOP)
 4. REFER TO SHEET S1 AND S2 FOR STRUCTURAL NOTES, ABBREVIATIONS AND SYMBOLS.
 5. REFER TO ARCHITECTURAL SHEETS FOR MASONRY PARTITION TYPES AND SHEET S5 REINFORCEMENT.
 6. SEE MECHANICAL AND ELECTRICAL SHEETS FOR CONCRETE PAD LOCATIONS, SIZES, AND THICKNESS NOT SHOWN. SEE SHEET S5 FOR DETAILS.
 7. ——— INDICATES SLOPE IN SLAB ON GRADE. COORDINATE LOCATION AND ELEVATION WITH ARCHITECTURAL AND PLUMBING SHEETS (TYP).
 8. COORD W/ ARCHITECTURAL SHEETS FOR COLD-FORMED STEEL OVERBUILT FRAMING ABOVE ROOF SLAB.
 9. COLD-FORMED METAL OVERBUILT ROOF FRAMING NOT SHOWN FOR CLARITY. SEE OVERBUILT ROOF FRAMING DETAILS AND SECTIONS ON SHEET S4.

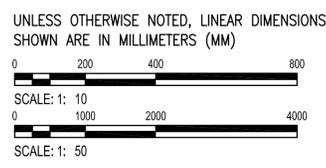
US Army Corps of Engineers
Afghanistan Engineer District

SYMBOL	DESCRIPTION	DATE	APP

DESIGNED BY:	DATE:	09-30-09
DWN BY:	SUBMITTED BY:	BAKER
CHK BY:	FILE NO.:	ANFSDS-103XXX
CWW		

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AFGHAN NATIONAL POLICE
STANDARD DESIGN
WELL HOUSE
FOUNDATION & ROOF FRAMING PLANS



SHEET REFERENCE NUMBER:
S3

100% SUBMISSION

SYMBOL	DESCRIPTION	DATE

DESIGNED BY:	BAKER	DATE:	09-30-09
DWN BY:	BAKER	SUBMITTED BY:	BAKER
CHK BY:	GPH	FILE NO.:	ANPSDP-501XXX

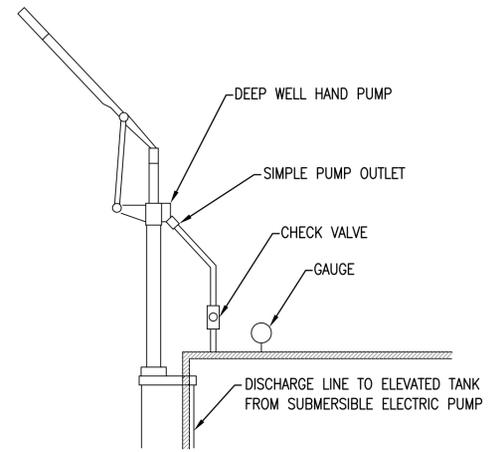
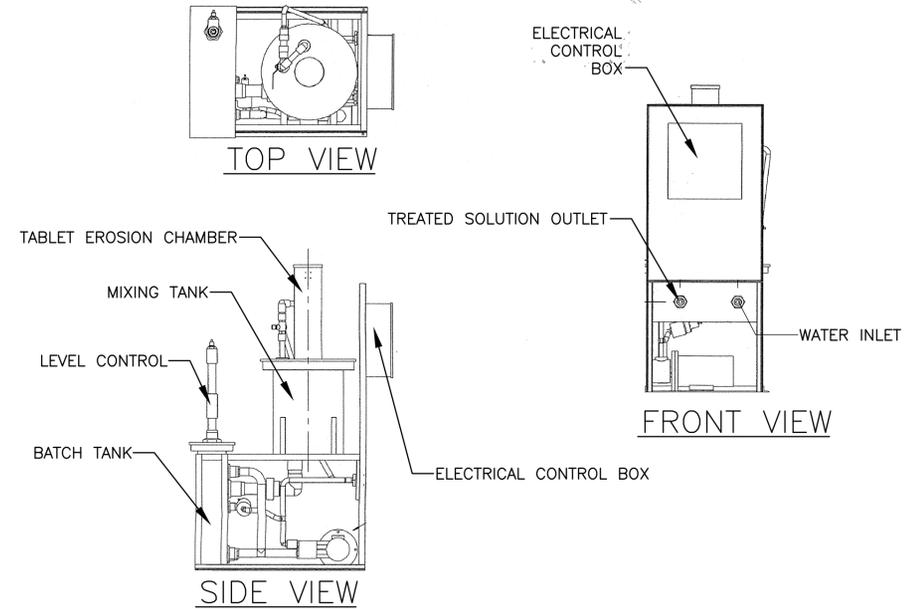
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Moon Township, PA 15108
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AFGHAN NATIONAL POLICE
STANDARD DESIGN
WELL HOUSE
PLUMBING SCHEMATIC AND DETAILS

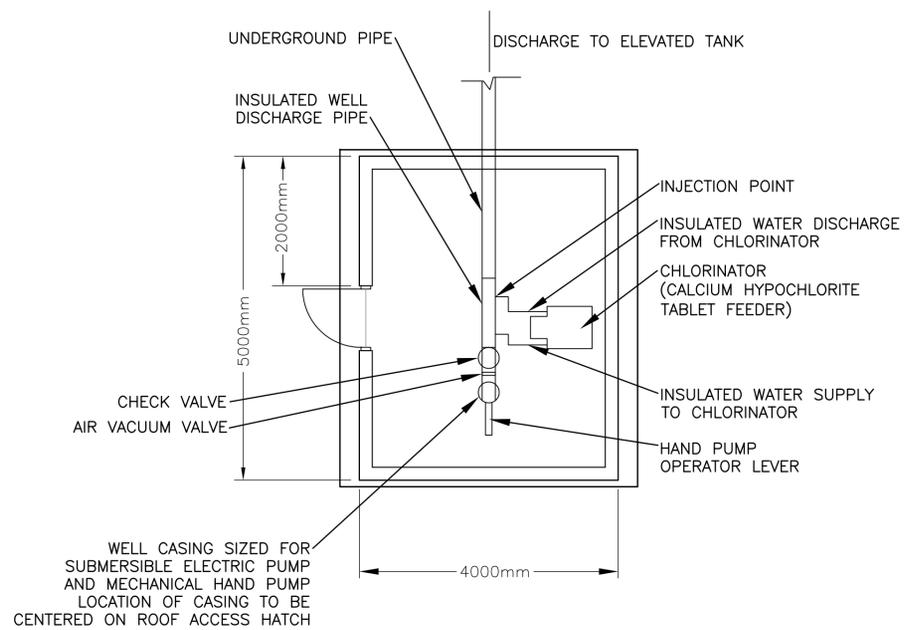
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P1

A B C D E F G H

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1

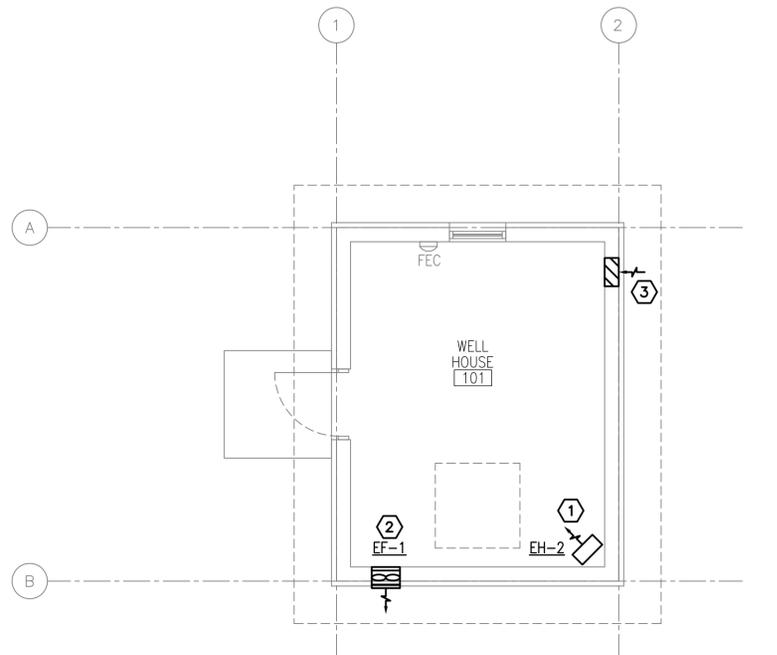


HAND PUMP
INSTALLATION DETAIL
N.T.S.



WELL HOUSE
PLUMBING SCHEMATIC
N.T.S.

WELL CASING SIZED FOR
SUBMERSIBLE ELECTRIC PUMP
AND MECHANICAL HAND PUMP
LOCATION OF CASING TO BE
CENTERED ON ROOF ACCESS HATCH



1
M1 | M1 HVAC PLAN
SCALE: 1:50

GENERAL NOTES:

1. DO NOT SCALE DRAWINGS – ALL DIMENSIONS AND CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE.
2. ALL WORK PERFORMED ON THIS BUILDING SHALL BE IN COMPLIANCE WITH ALL PERTINENT CODES, RULES, ORDINANCES AND REGULATIONS OF THE GOVERNING AUTHORITIES.
3. ALL WORK PERFORMED UNDER AND IN CONNECTION WITH THESE DRAWINGS AND SPECIFICATIONS SHALL BE IN STRICT COMPLIANCE WITH THE LATEST SAFETY AND HEALTH STANDARDS.

NUMBERED NOTE:

- ① CORROSION RESISTANT ELECTRIC UNIT HEATER SUSPENDED FROM STRUCTURE ABOVE.
- ② CORROSION RESISTANT WALL MOUNTED EXHAUST FAN.
- ③ 200x400 (8x16) LOW LEAKAGE GRAVITY WALL LOUVER FOR INTAKE. PROVIDE WEATHER PROOF LOUVER W/0.05mm (2") WASH DOWN FILTER AND SAND TRAP.

ELECTRIC UNIT HEATER SCHEDULE

NO.	CMS	KW	F.A.T. °C	ELECT. CHAR.	MOUNTING
EH-2	.200	2.6	33	370/1/50	CEILING

NOTES:

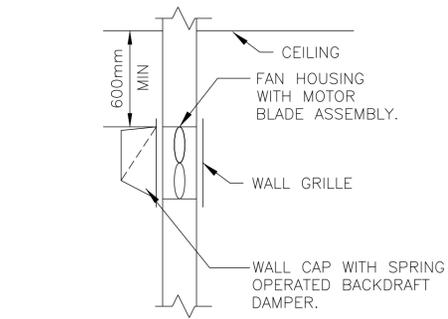
1. HEATERS SHALL BE CORROSION RESISTANT

EXHAUST FAN SCHEDULE

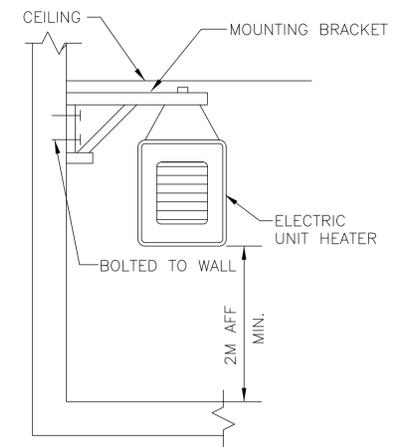
NO.	TYPE	FAN CMS	DRIVE	HP	SP mmH2O	ELECT. CHAR.	SWITCH
EF-1	WALL	0.100	DIRECT	FRACT	13	220/1/50	⊙ WALL

NOTES:

1. WALL MOUNTED EXHAUST FAN MOUNT AT 600mm BELOW CEILING.
2. FANS SHALL HAVE LOW LEAKAGE GRAVITY LOUVER AND SECURITY GRILLE.
3. FANS SHALL BE EXPLOSION PROOF.



WALL MOUNTED EXHAUST FAN DETAIL
N.T.S.



ELECTRIC UNIT HEATER MOUNTING
N.T.S.

US Army Corps
of Engineers
Afghanistan
Engineer
District

SYMBOL	DESCRIPTION	DATE

DESIGNED BY: DATE: 09-30-09
RML
SUBMITTED BY: BAKER
OWN BY: JUN
CHK BY: CJM
FILE NO.: ANPSDM-101XXX

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AFGHAN NATIONAL POLICE
STANDARD DESIGN
WELL HOUSE
HVAC PLAN

SHEET
REFERENCE
NUMBER:
M1

SYMBOL	DESCRIPTION	DATE

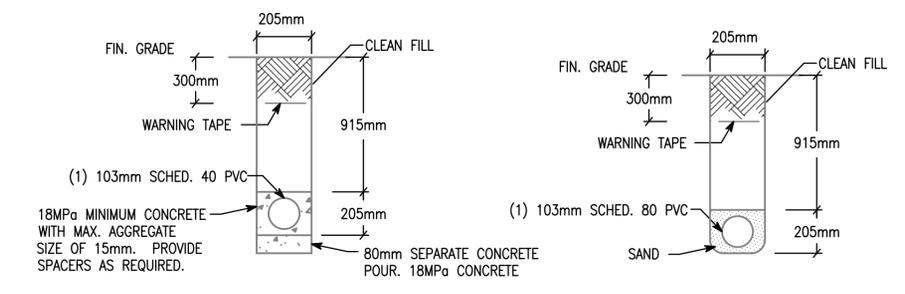
DESIGNED BY:	JRG	DATE:	09-30-09
DWN BY:	JRG	SUBMITTED BY:	BAKER
CHK BY:	JRG	FILE NO.:	ANPSDE-502XXX

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AFGHAN NATIONAL POLICE
STANDARD DESIGN
WELL HOUSE
DETAILS

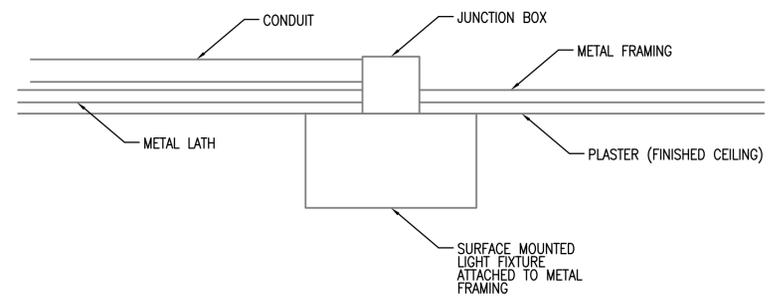
SHEET REFERENCE NUMBER:
E2

100% SUBMISSION

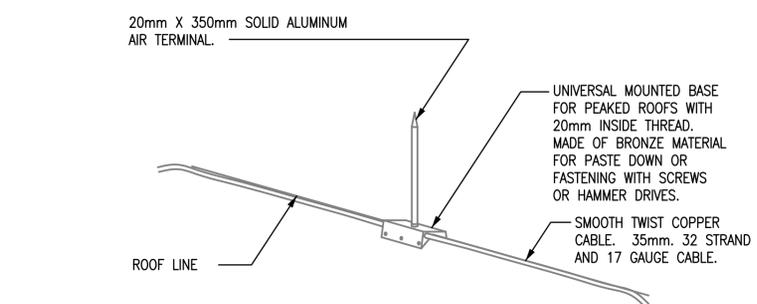


NOTE: PVC CONDUIT SHALL BE DIRECT BURIED SCHEDULE 80 FOR NO TRAFFIC AREAS AND CONCRETE-ENCASED SCHEDULE 40 FOR UNDER ROADWAYS OR TRAFFIC AREAS.

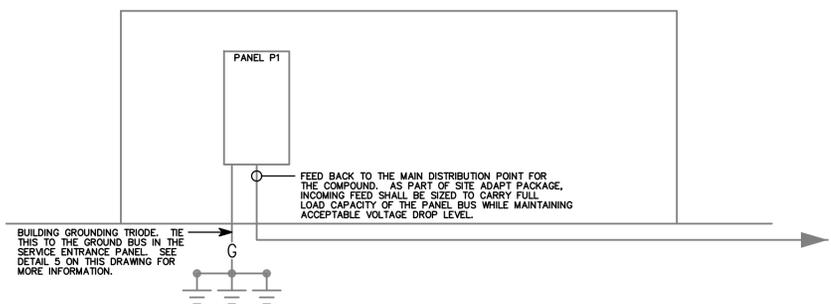
1 TYPICAL DUCT BANK DETAILS FOR CONDUIT IN SAND OR CONCRETE
SCALE: N.T.S.



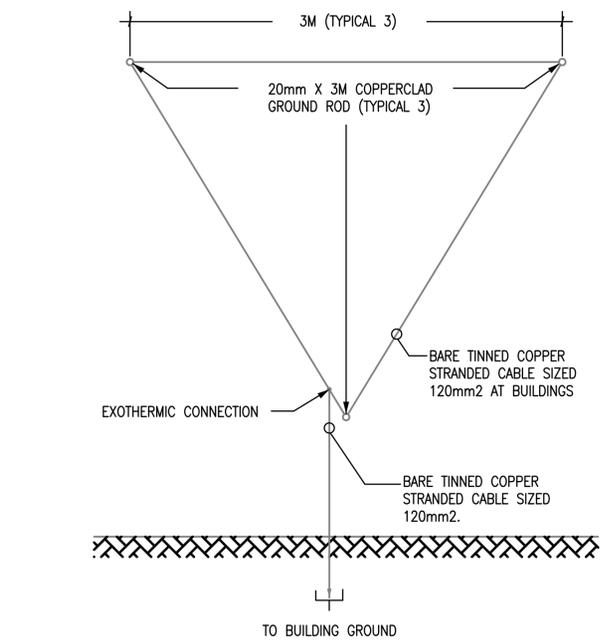
2 TYPICAL DETAIL FOR SURFACE MOUNTED LIGHT FIXTURES
SCALE: N.T.S.



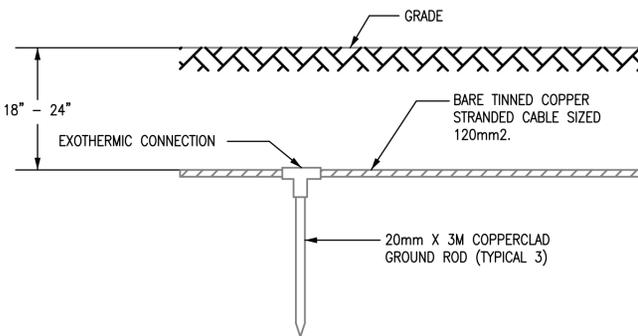
3 LIGHTNING PROTECTION AIR TERMINAL DETAIL
SCALE: N.T.S.



4 WELLHOUSE RISER DIAGRAM
SCALE: N.T.S.



5 GROUND TRIPOD SYSTEM DETAIL - PLAN
SCALE: N.T.S.



6 GROUND TRIPOD SYSTEM DETAIL - ELEVATION
SCALE: N.T.S.

A

B

C

D

E

F

G

H

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1



20 METER WATER TOWER



U.S. Army Corps
OF Engineers
AFGHANISTAN ENGINEER DISTRICT
AFGHANISTAN, APO AE, 09356

17 DECEMBER 2009



US Army Corps of Engineers
Mobile District

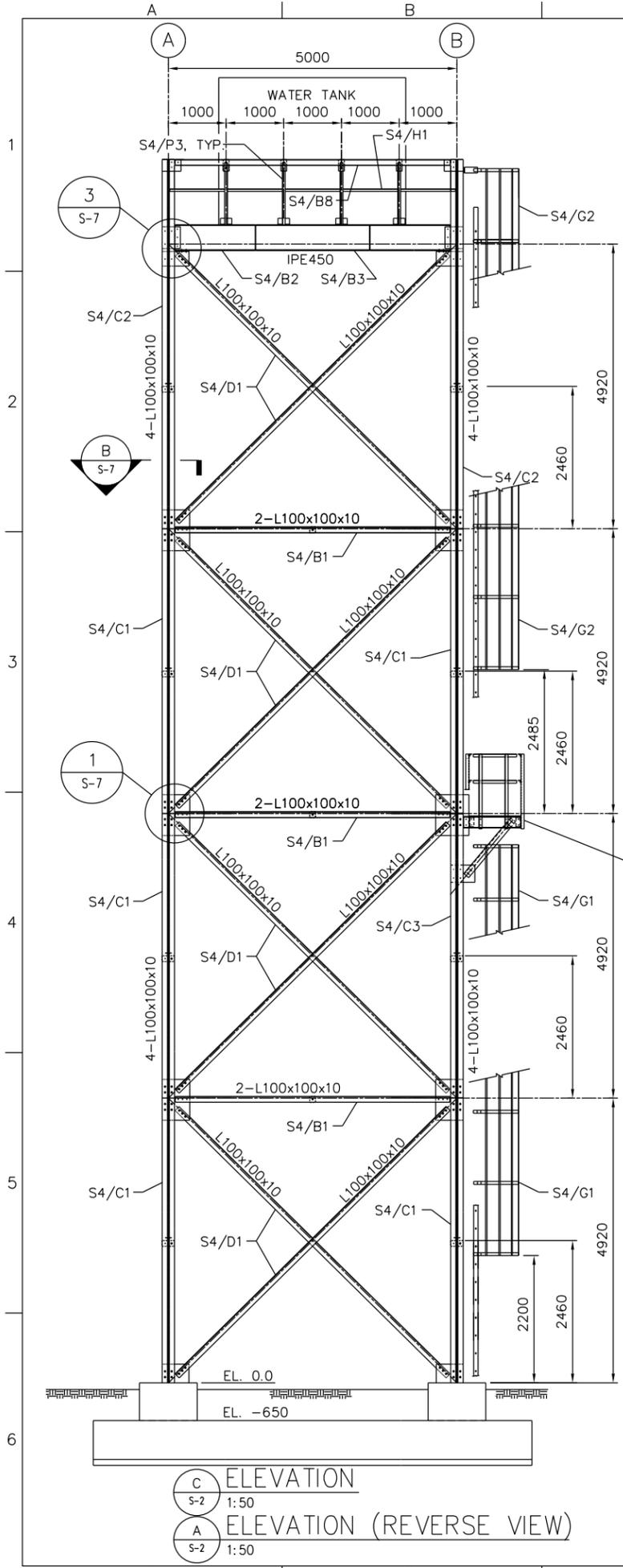
Symbol No.	Description	Date	Approved

Designed By:	Date: 17 DECEMBER 2009
Drawn By:	Contract No:
Checked By:	CADD CODE: M010TC17
Reviewed By:	Solicitation Number:
SIZE: 559x864mm	FILENAME:

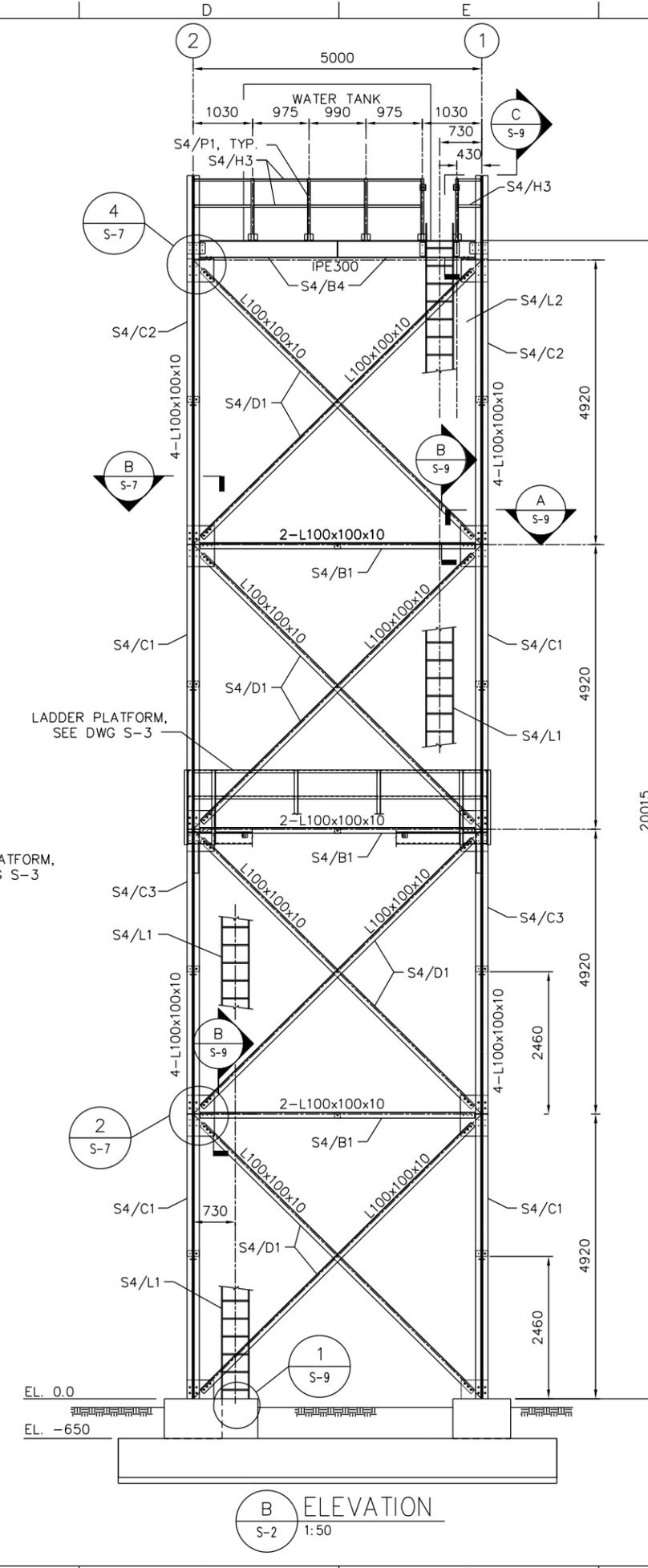
AFGHANISTAN ENGINEER DISTRICT
20 METER WATER TOWER
ELEVATIONS

SHEET IDENTIFICATION

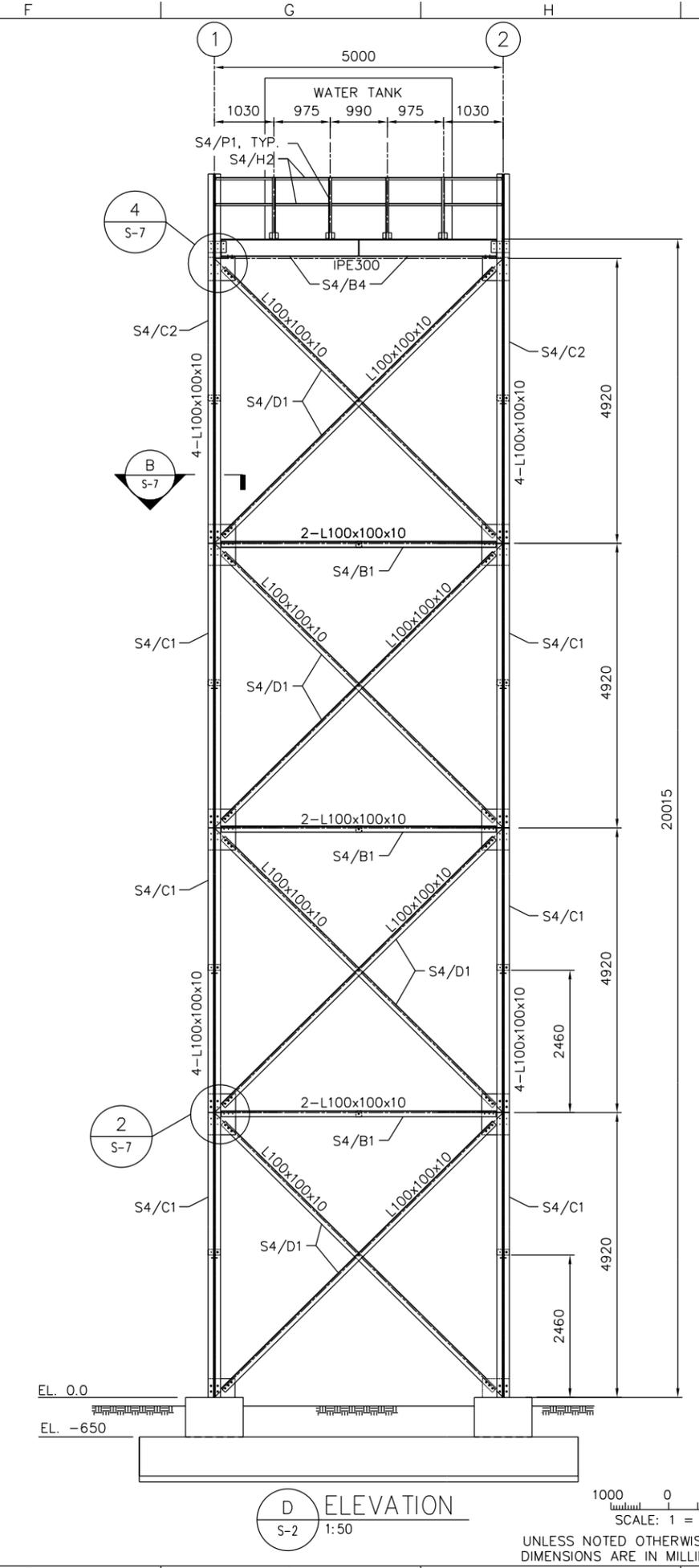
S-4



A ELEVATION (REVERSE VIEW)
S-2 1:50



B ELEVATION
S-2 1:50



D ELEVATION
S-2 1:50

1000 0 1000mm
SCALE: 1 = 50

UNLESS NOTED OTHERWISE, LINEAR DIMENSIONS ARE IN MILLIMETERS.



US Army Corps of Engineers
Mobile District

Symbol No.	Description	Date	Approved

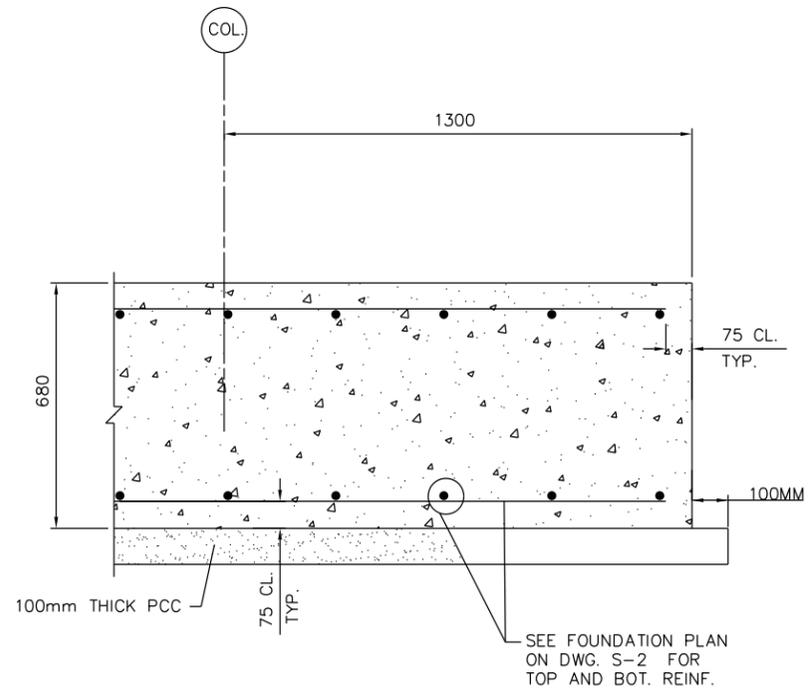
Designed By:	Date:	17 DECEMBER, 2009
Drawn By:	Contract No:	
Checked By:	CADD CODE:	MO10TG17
Reviewed By:	Specification Number:	
	FILENAME:	

AFGHANISTAN ENGINEER DISTRICT
20 METER WATER TOWER

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MOBILE, ALABAMA

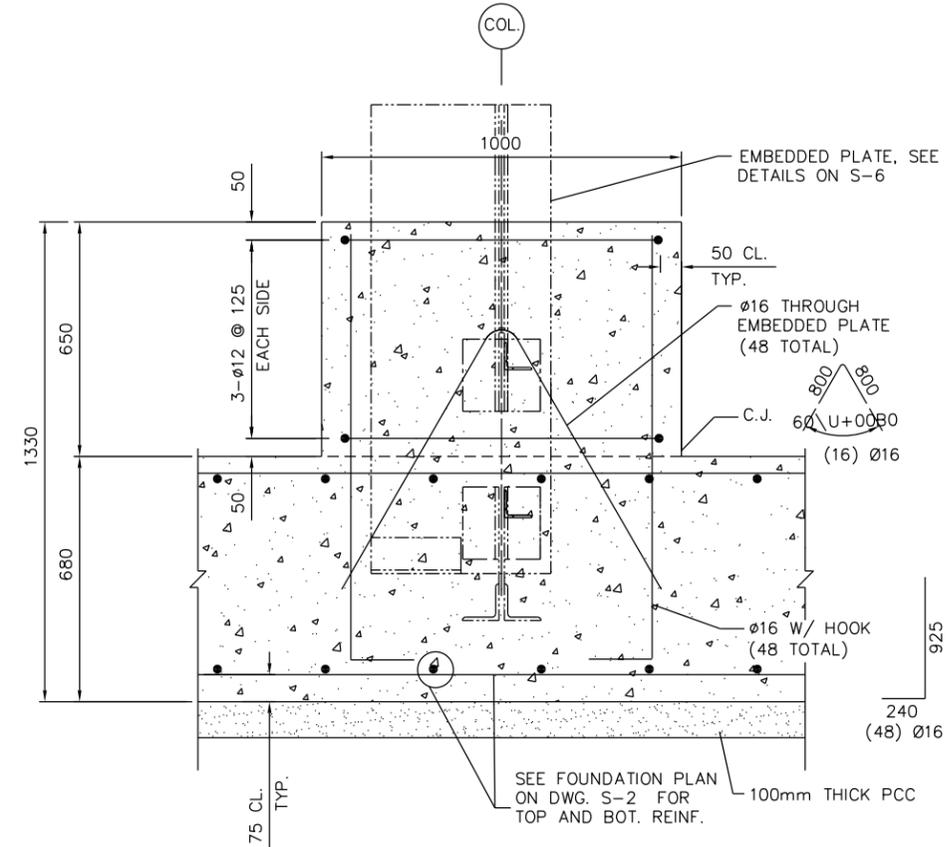
FOUNDATION SECTIONS

SHEET IDENTIFICATION
S-5



SECTION A
1:10
S-2

SEE FOUNDATION PLAN ON DWG. S-2 FOR TOP AND BOT. REINF.



SECTION B
1:10
S-2
S-5

EMBEDDED PLATE, SEE DETAILS ON S-6

50 CL. TYP.

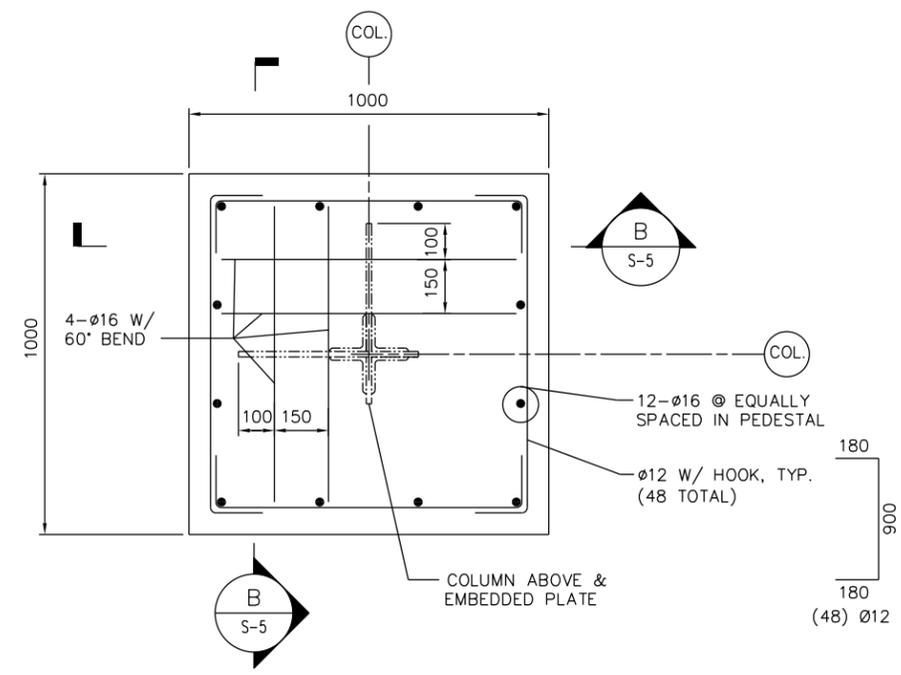
Ø16 THROUGH EMBEDDED PLATE (48 TOTAL)

C.J.

Ø16 W/ HOOK (48 TOTAL)

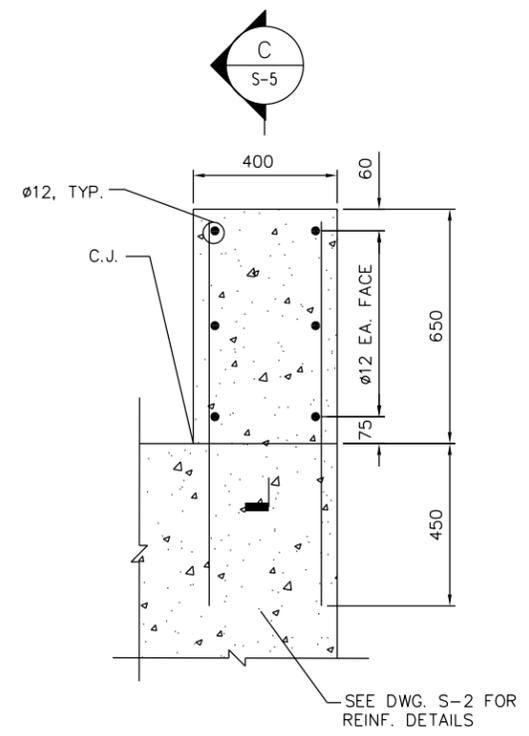
100mm THICK PCC

SEE FOUNDATION PLAN ON DWG. S-2 FOR TOP AND BOT. REINF.



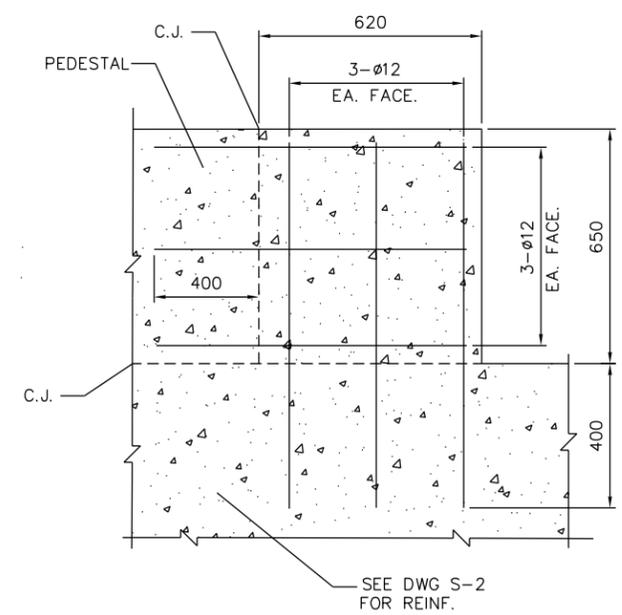
DETAIL 1
1:10
S-2

COLUMN ABOVE & EMBEDDED PLATE



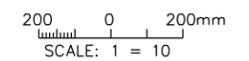
DETAIL 2
1:10
S-2

SEE DWG. S-2 FOR REINF. DETAILS



SECTION C
1:10
S-5

SEE DWG S-2 FOR REINF.



NOTE: SEPARATE CONCRETE PLACEMENT. SEE DETAIL 1 ON DRAWING S-9 FOR ANCHOR BOLT REQUIREMENTS.

UNLESS NOTED OTHERWISE, LINEAR DIMENSIONS ARE IN MILLIMETERS.

A B C D E F G H

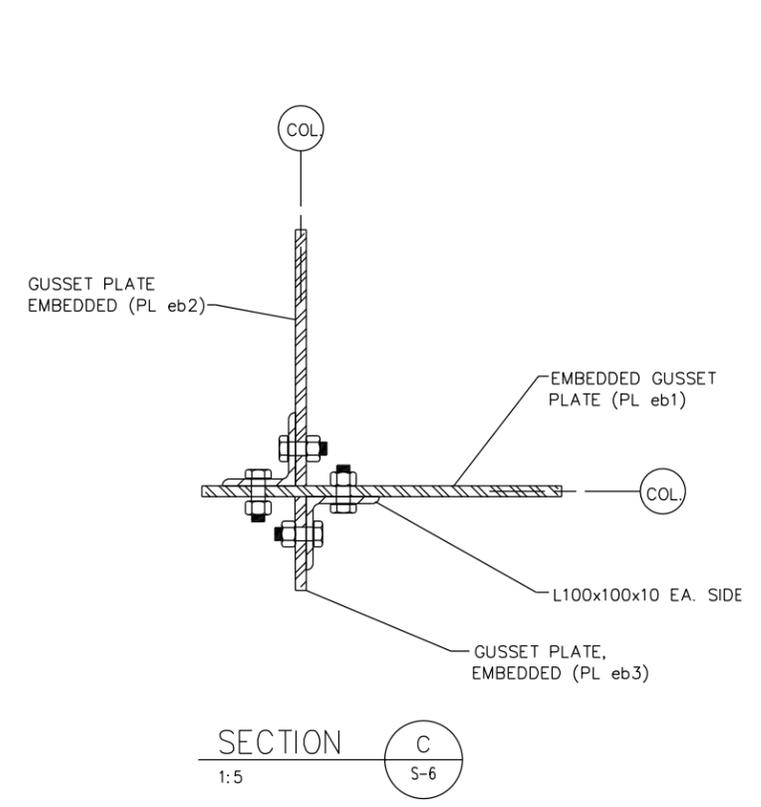
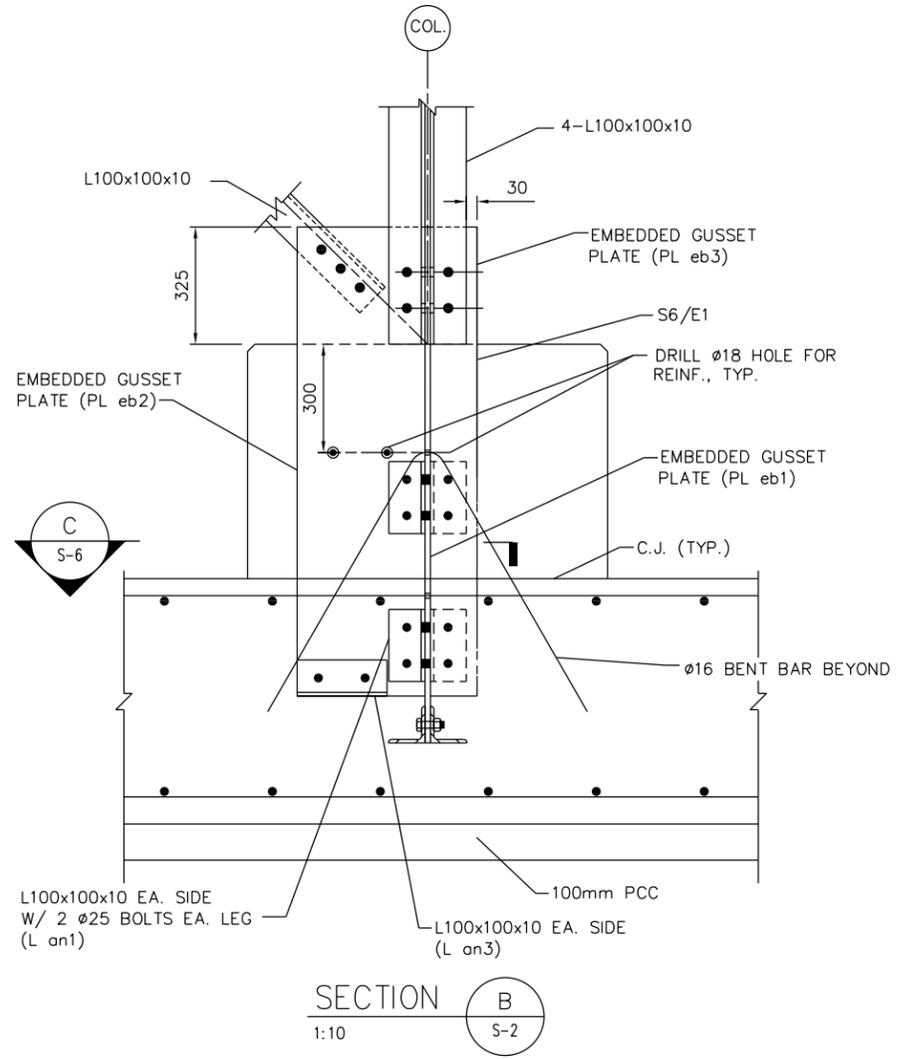
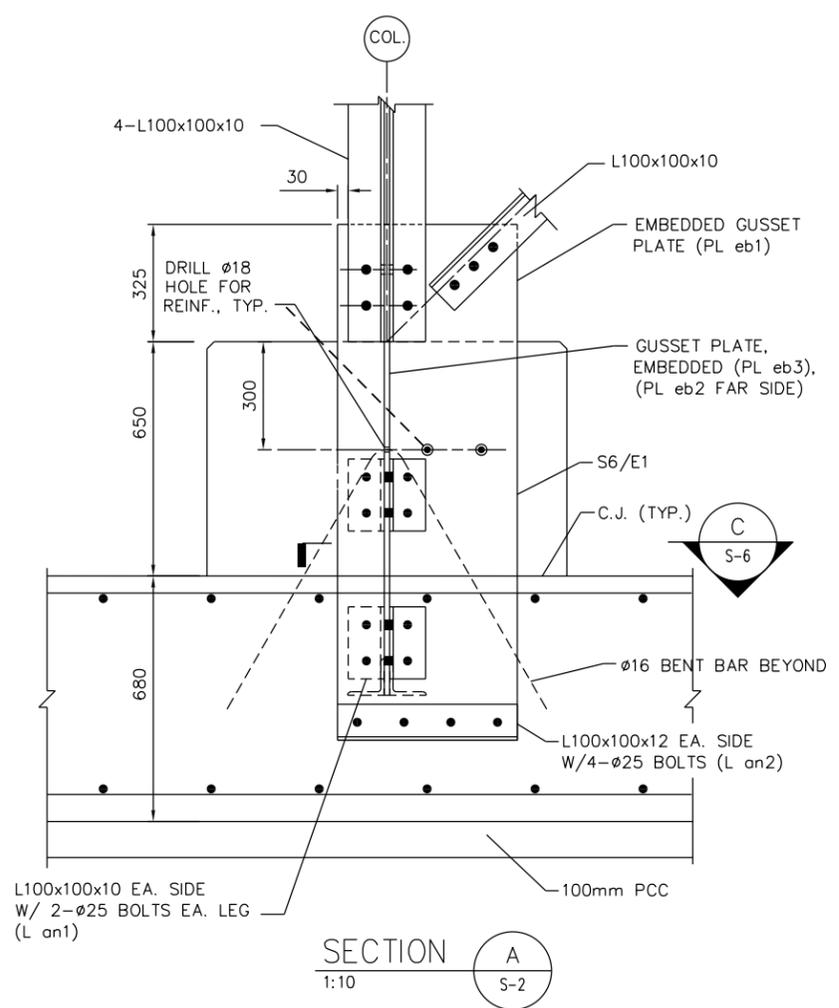


Symbol No	Description	Date	Approved

Designed By:	Date:	17 DECEMBER 2009
Drawn By:	Contract No:	
Checked By:	CADD CODE:	MO10TG17
Reviewed By:	Solicitation Number:	
SIZE:	FILENAME:	

AFGHANISTAN ENGINEER DISTRICT
20 METER WATER TOWER
FOUNDATION STEEL
FRAMING SECTIONS

SHEET IDENTIFICATION
S-6



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A B C D E F G H



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Mobile District

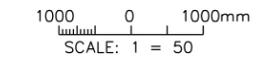
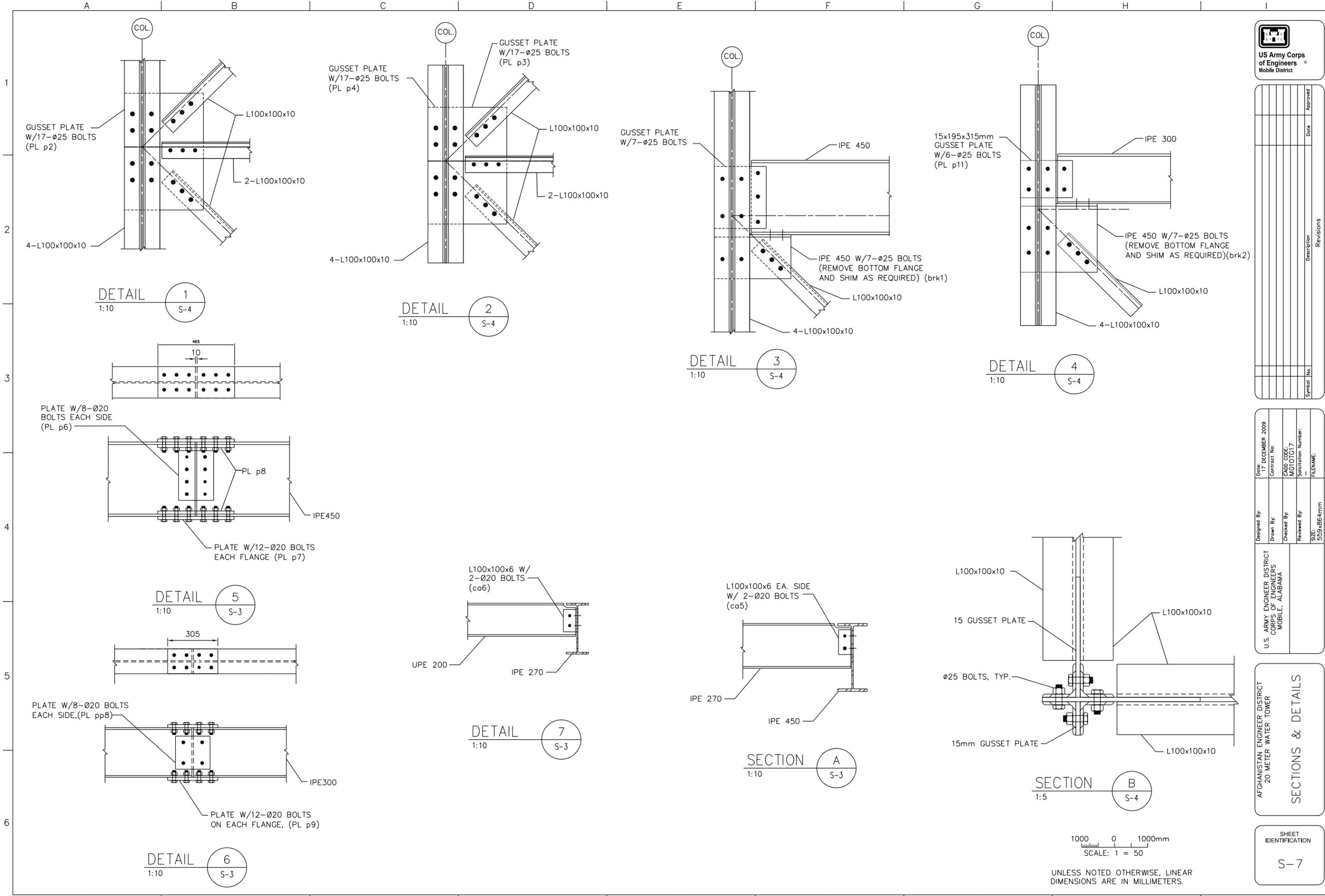
Symbol No	Description	Date	Approved

Designed By:	Date:	17 DECEMBER 2009
Drawn By:	Contract No:	
Checked By:	CADD CODE:	MO10TG17
Reviewed By:	Solicitation Number:	
	FILENAME:	
	SIZE:	559x864mm

AFGHANISTAN ENGINEER DISTRICT
20 METER WATER TOWER

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MOBILE, ALABAMA

SHEET IDENTIFICATION
S-7



UNLESS NOTED OTHERWISE, LINEAR DIMENSIONS ARE IN MILLIMETERS.



US Army Corps
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Mobile District

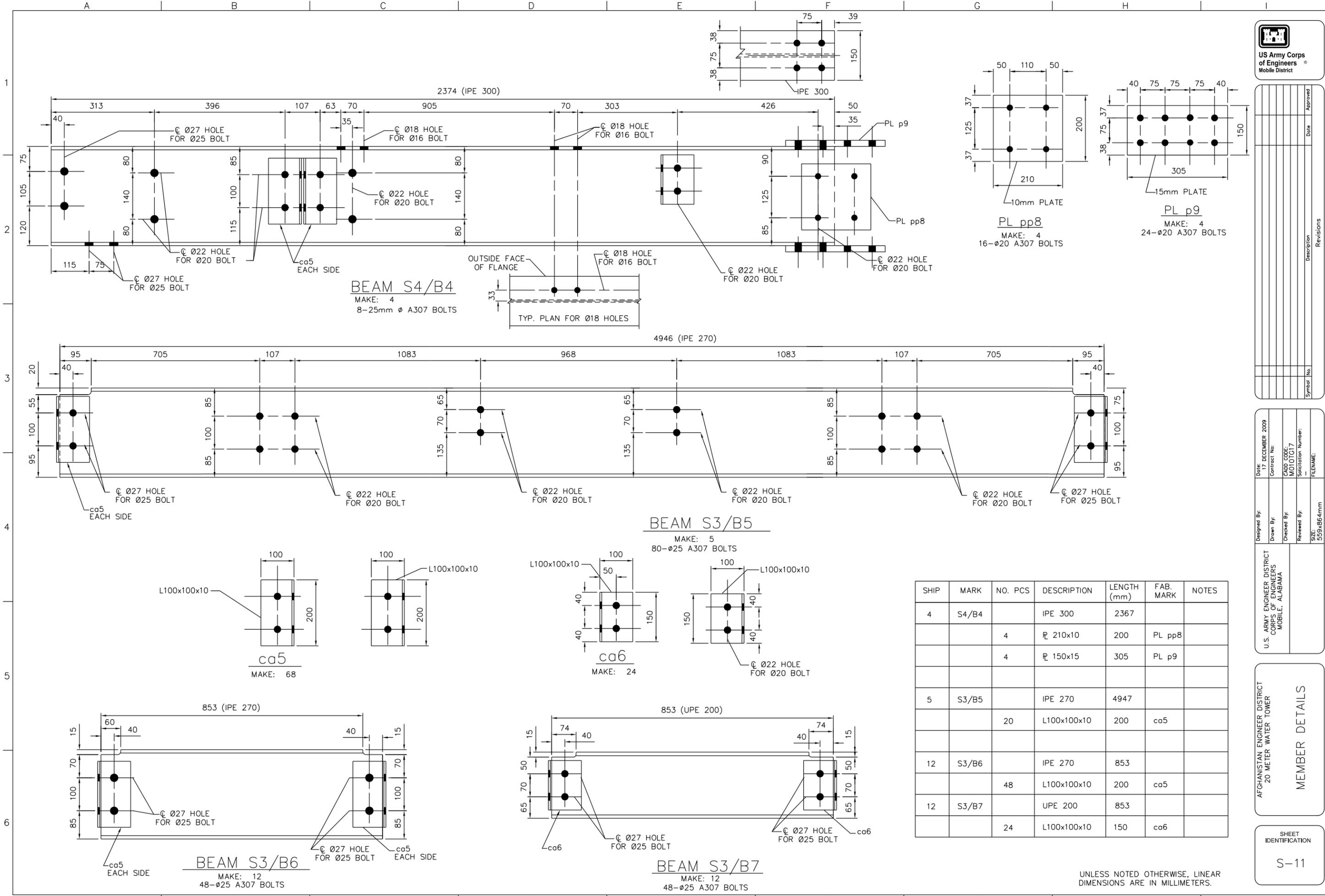
Symbol No	Description	Date	Approved

Designed By:	Date:	7 DECEMBER 2009
Drawn By:	Contract No:	
Checked By:	CADD CODE:	M010TG17
Reviewed By:	Solicitation Number:	
SIZE:	FILENAME:	

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MOBILE, ALABAMA

AFGHANISTAN ENGINEER DISTRICT
20 METER WATER TOWER
MEMBER DETAILS

SHEET IDENTIFICATION
S-11



UNLESS NOTED OTHERWISE, LINEAR DIMENSIONS ARE IN MILLIMETERS.



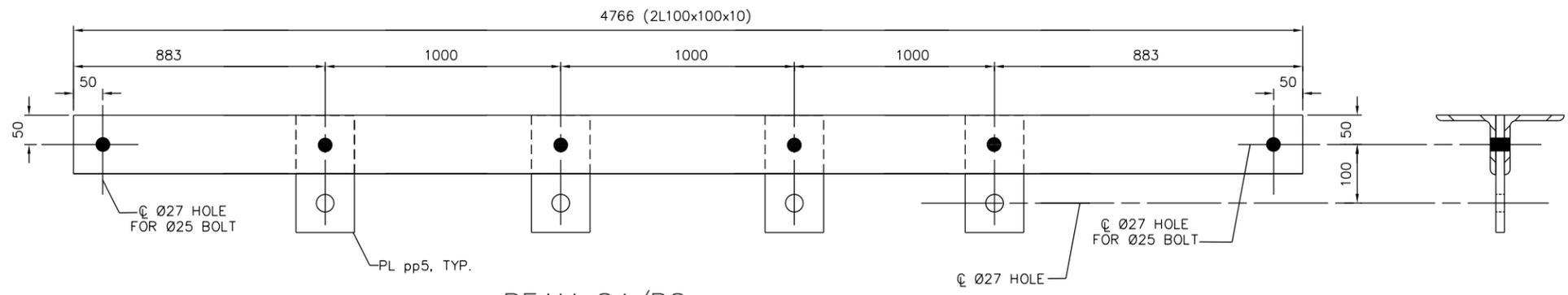
US Army Corps
of Engineers
Mobile District

Symbol No	Description	Date	Approved

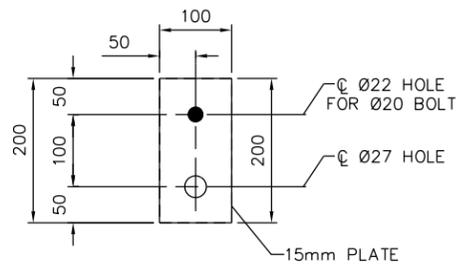
Designed By:	Date:	17 DECEMBER 2009
Drawn By:	Contract No:	
Checked By:	CADD CODE:	MO10TG17
Reviewed By:	Solicitation Number:	
SIZE:	FILENAME:	

AFGHANISTAN ENGINEER DISTRICT
20 METER WATER TOWER
MEMBER DETAILS

SHEET IDENTIFICATION
S-12



BEAM S4/B8
MAKE: 2
4-Ø25 A307 BOLTS



PL pp5
MAKE: 8
8-Ø20 A307 BOLTS

SHIP	MARK	NO. PCS	DESCRIPTION	LENGTH (mm)	FAB. MARK	NOTES
4	S4/B8		2L100x100x10	4766		
		4	PL 15x100	200	PL pp5	

UNLESS NOTED OTHERWISE, LINEAR DIMENSIONS ARE IN MILLIMETERS.



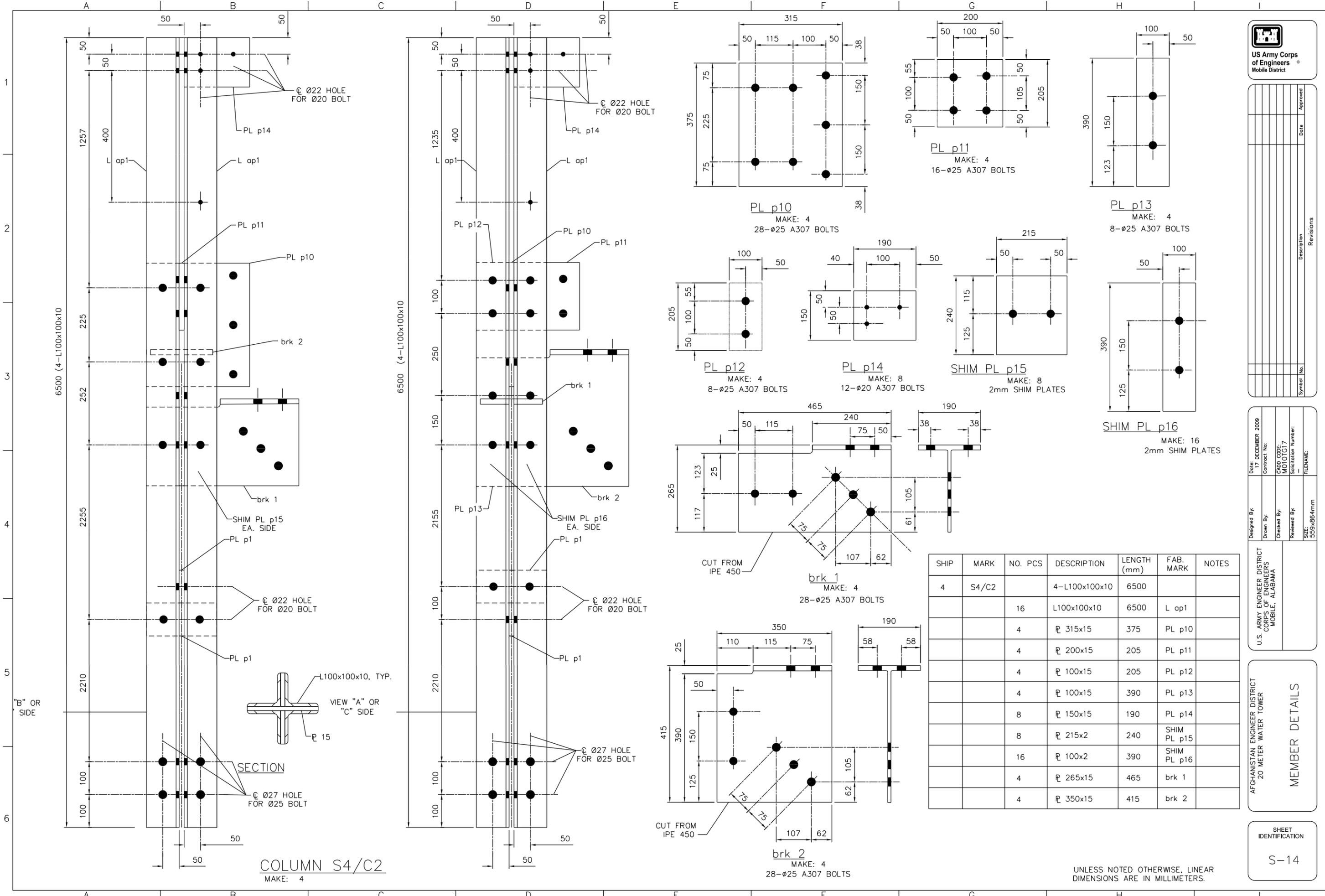
US Army Corps
of Engineers
Mobile District

Symbol No	Description	Date	Approved

Designed By:	Date:	Contract No:
Drawn By:	17 DECEMBER 2009	
Checked By:	CADD CODE:	MO10TC17
Reviewed By:	Solicitation Number:	
	FILENAME:	
	SIZE:	559x864mm

AFGHANISTAN ENGINEER DISTRICT
20 METER WATER TOWER
MEMBER DETAILS

SHEET IDENTIFICATION
S-14



6500 (4-L100x100x10)

6500 (4-L100x100x10)

1
2
3
4
5
6

1
2
3
4
5
6

SHIP	MARK	NO. PCS	DESCRIPTION	LENGTH (mm)	FAB. MARK	NOTES
4	S4/C2		4-L100x100x10	6500		
		16	L100x100x10	6500	L op1	
		4	PL 315x15	375	PL p10	
		4	PL 200x15	205	PL p11	
		4	PL 100x15	205	PL p12	
		4	PL 100x15	390	PL p13	
		8	PL 150x15	190	PL p14	
		8	PL 215x2	240	SHIM PL p15	
		16	PL 100x2	390	SHIM PL p16	
		4	PL 265x15	465	brk 1	
		4	PL 350x15	415	brk 2	

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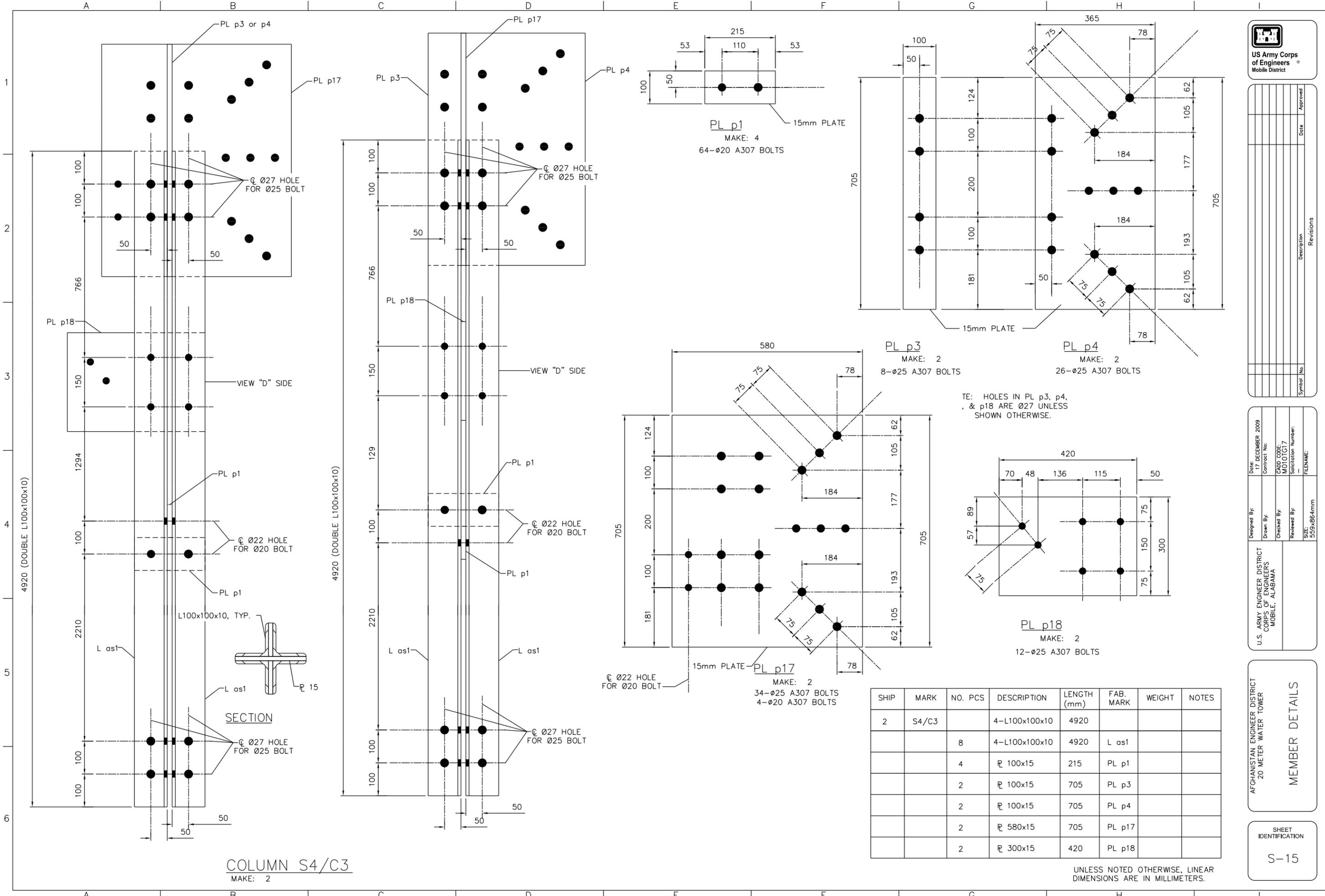
US Army Corps
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Mobile District

Symbol No	Description	Date	Approved

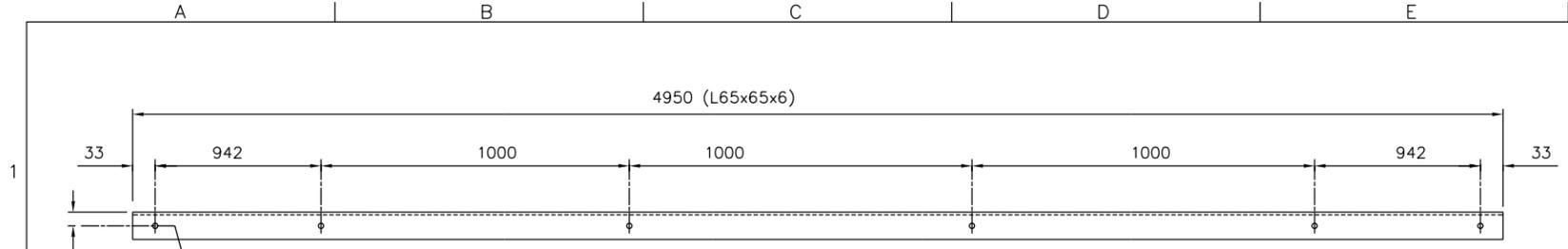
Designed By:	Date:	17 DECEMBER, 2009
Drawn By:	Contract No:	
Checked By:	CADD CODE:	MO10TG17
Reviewed By:	Solicitation Number:	
SIZE:	FILENAME:	

AFGHANISTAN ENGINEER DISTRICT
20 METER WATER TOWER
MEMBER DETAILS

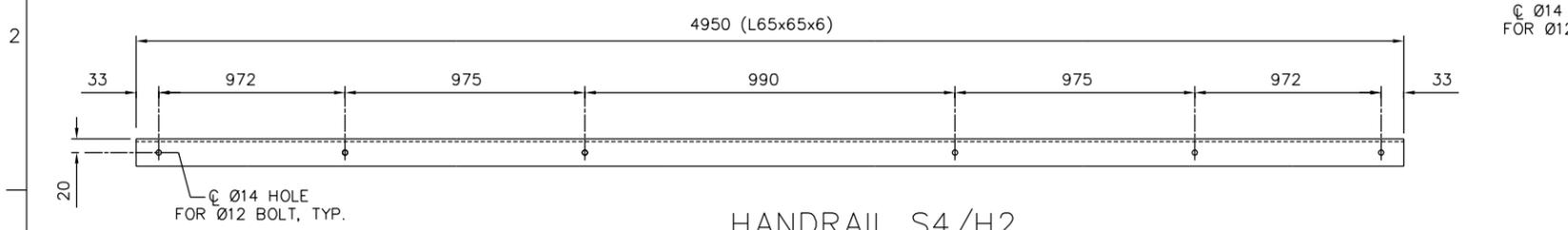
SHEET IDENTIFICATION
S-15



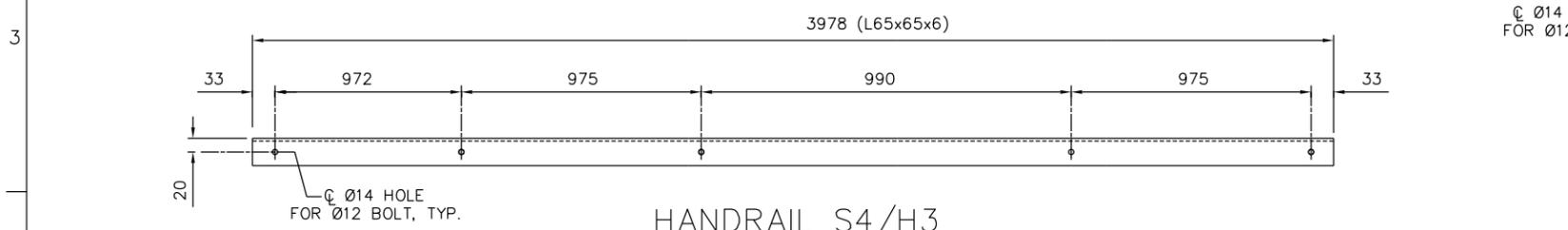
COLUMN S4/C3
MAKE: 2



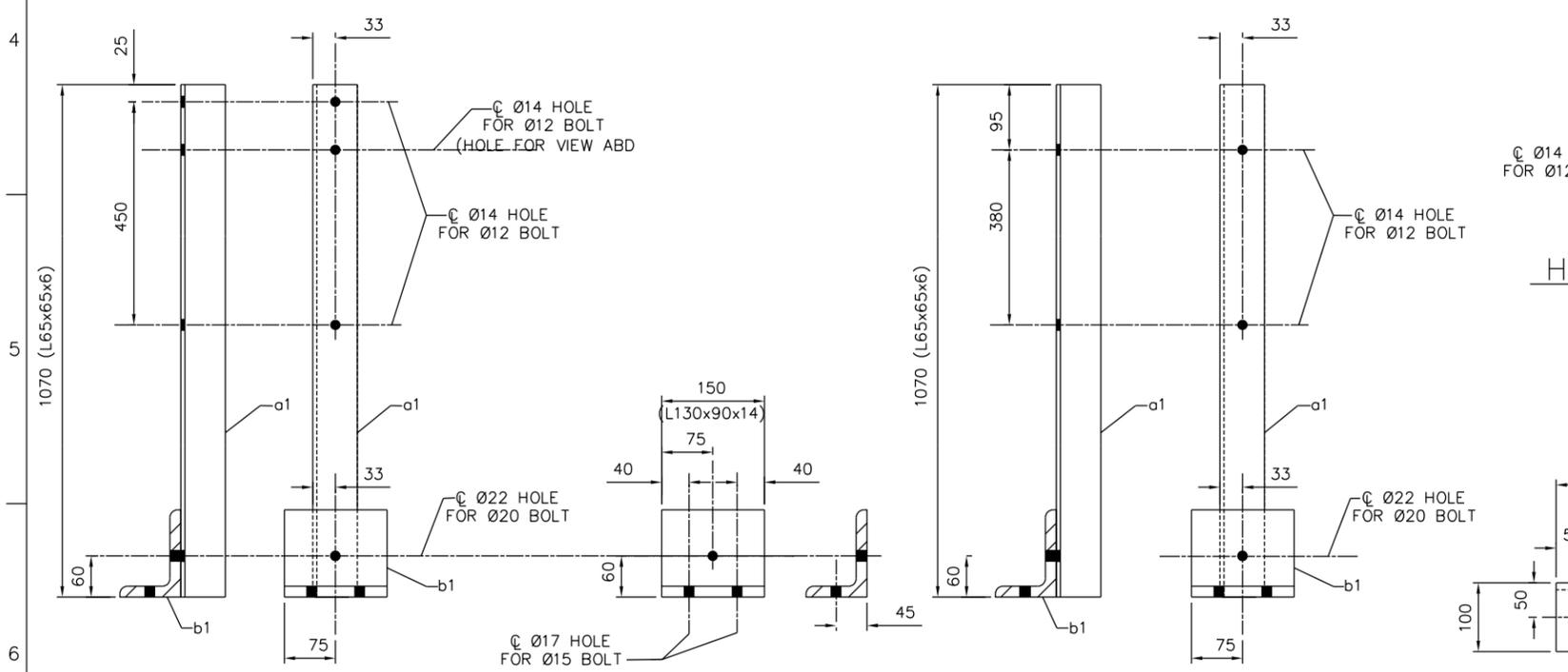
HANDRAIL S4/H1
MAKE: 2
24-Ø12 A307 BOLTS



HANDRAIL S4/H2
MAKE: 2
20-Ø12 A307 BOLTS

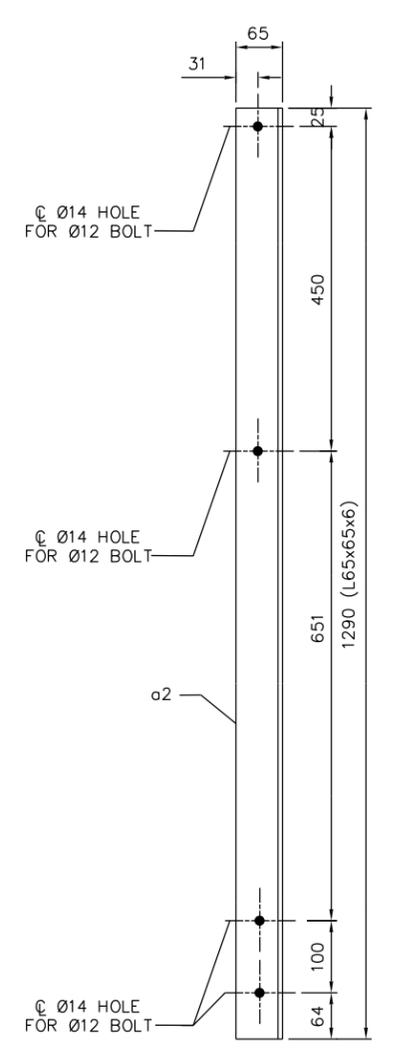


HANDRAIL S4/H3
MAKE: 2
10-Ø12 A307 BOLTS

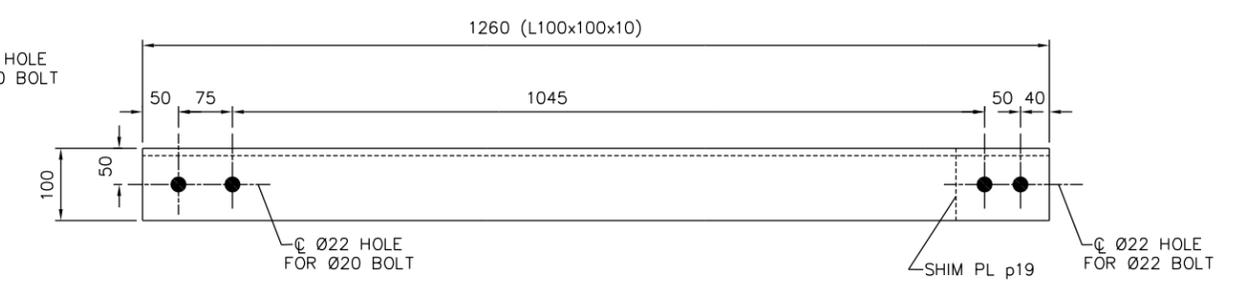


HANDRAIL POST S4/P1
MAKE: 9
28-Ø12 A307 BOLTS
42-Ø15 A307 BOLTS

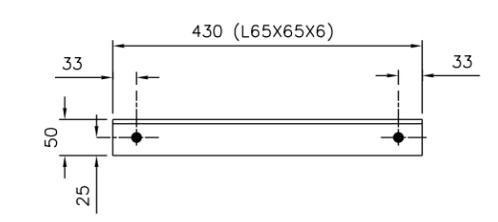
HANDRAIL POST S4/P3
MAKE: 8
28-Ø12 A307 BOLTS
42-Ø15 A307 BOLTS



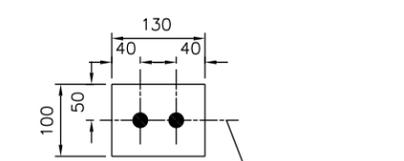
HANDRAIL POST S8/P2
MAKE: 12
48-12 Ø A307 BOLTS



BEAM S8/BR1
MAKE: 2
4-Ø15 A307 BOLTS



HANDRAIL S4/H4
MAKE: 2
4-Ø12 A307 BOLTS



SHIM PL_p19
MAKE: 2
15mm SHIM PLATES

SHIP	MARK	NO. PCS	DESCRIPTION	LENGTH (mm)	FAB. MARK	NOTES
2	S4/H1		L65x65x6	4950		
2	S4/H2		L65x65x6	4950		
2	S4/H3		L65x65x6	3978		
2	S4/H4		L65x65x6	3978		
14	S4/P1		L65x65x6	1070		
		14	L130x90x14	150	b1	
12	S4/P2		HANDRAIL POST	1290		
		14	L65x65x6	1290	a2	
2	S8/BR1		L100x100x10	1260		
		2	PL 100x15	130	PL p19	



Symbol No	Description	Date	Approved

Designed By:	Date:	Contract No:
Drawn By:	17 DECEMBER 2009	
Checked By:	CADD CODE:	MO10TG17
Reviewed By:	Solicitation Number:	
	FILENAME:	

AFGHANISTAN ENGINEER DISTRICT
20 METER WATER TOWER
MEMBER DETAILS

SHEET IDENTIFICATION
S-16

UNLESS NOTED OTHERWISE, LINEAR DIMENSIONS ARE IN MILLIMETERS.



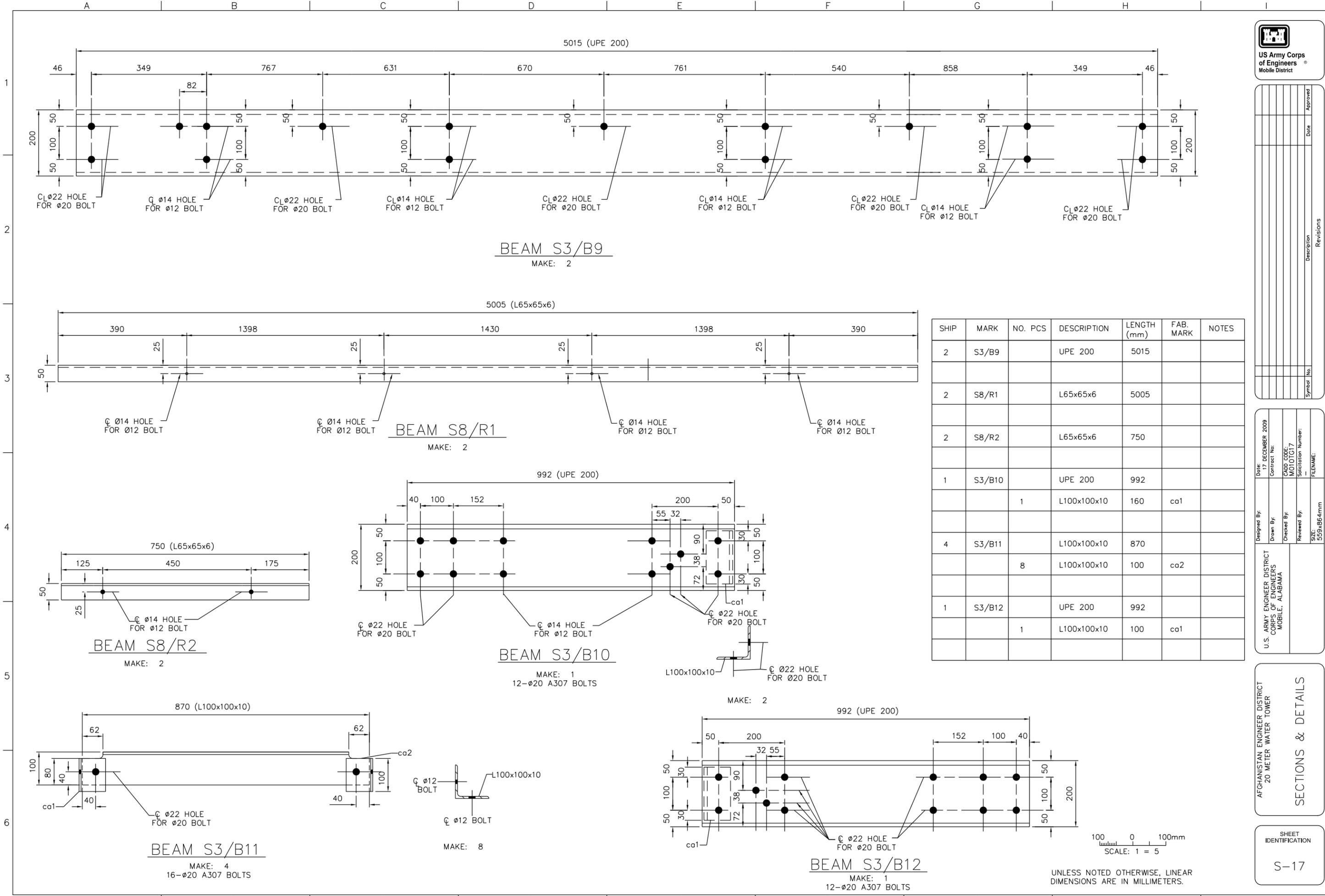
US Army Corps
of Engineers®
Mobile District

Symbol No	Description	Date	Approved

Designed By:	Date: 7 DECEMBER 2009
Drawn By:	Contract No:
Checked By:	CADD CODE: M010TG17
Reviewed By:	Solicitation Number:
SIZE: 559x864mm	FILENAME:

AFGHANISTAN ENGINEER DISTRICT
20 METER WATER TOWER

SHEET IDENTIFICATION
S-17



BEAM S3/B9
MAKE: 2

SHIP	MARK	NO.	PCS	DESCRIPTION	LENGTH (mm)	FAB. MARK	NOTES
2	S3/B9			UPE 200	5015		
2	S8/R1			L65x65x6	5005		
2	S8/R2			L65x65x6	750		
1	S3/B10			UPE 200	992		
		1		L100x100x10	160	ca1	
4	S3/B11			L100x100x10	870		
		8		L100x100x10	100	ca2	
1	S3/B12			UPE 200	992		
		1		L100x100x10	100	ca1	

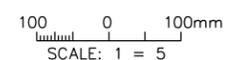
BEAM S8/R1
MAKE: 2

BEAM S3/B10
MAKE: 1
12-Ø20 A307 BOLTS

BEAM S8/R2
MAKE: 2

BEAM S3/B11
MAKE: 4
16-Ø20 A307 BOLTS

BEAM S3/B12
MAKE: 1
12-Ø20 A307 BOLTS



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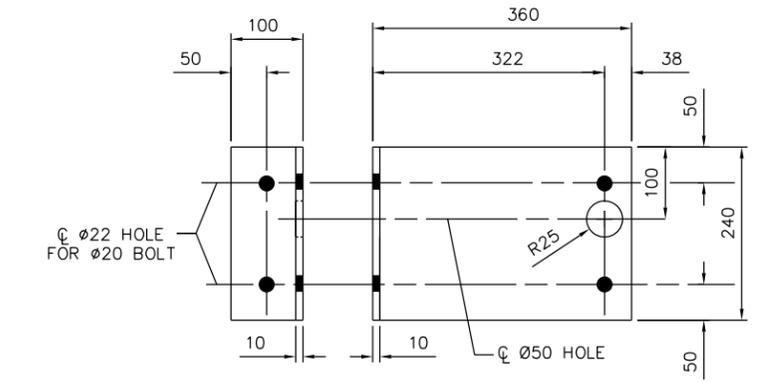
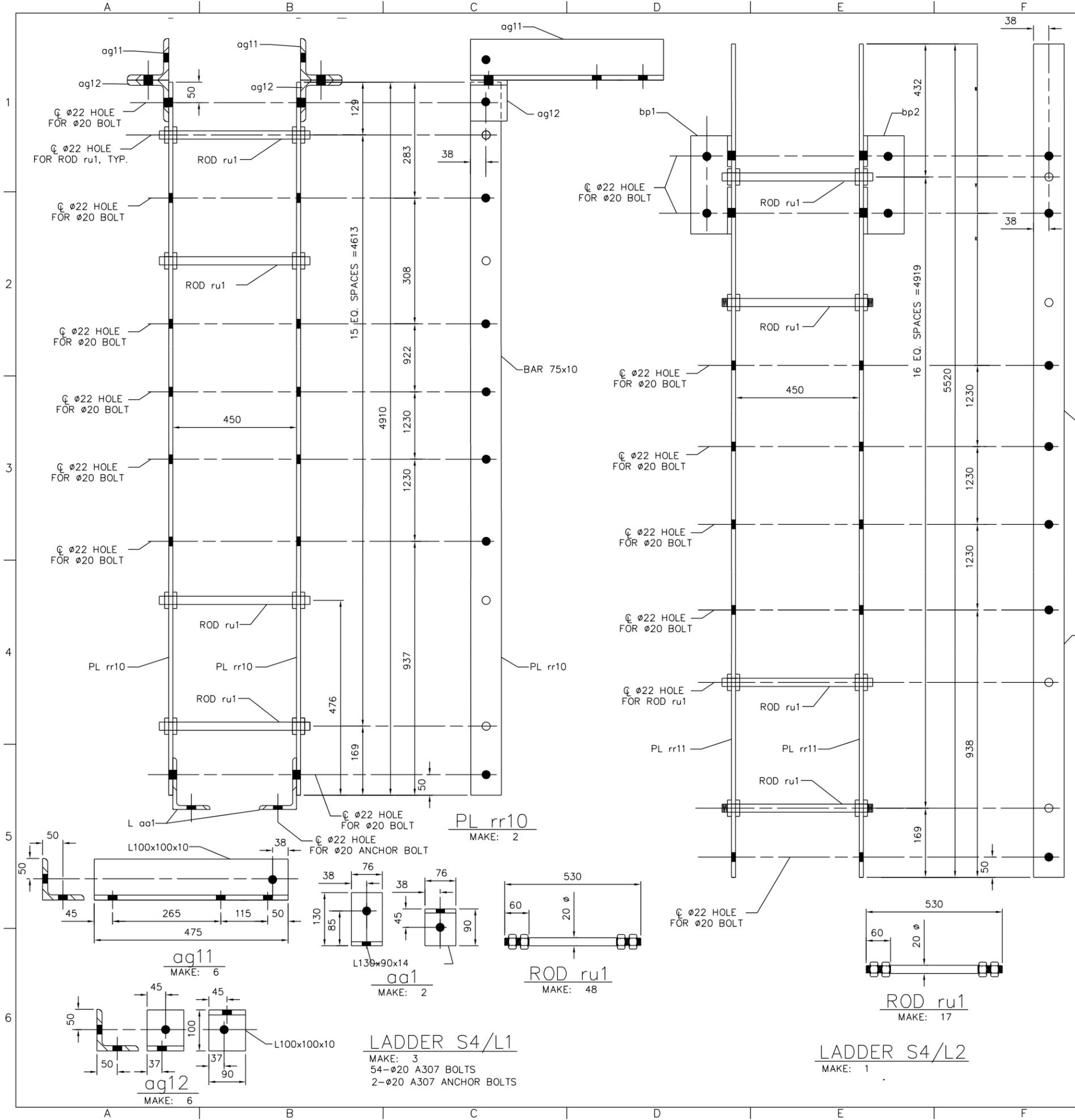
Symbol No	Description	Date	Approved

Designed By:	Date:	17 DECEMBER 2009
Drawn By:	Contract No:	
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SIZE:	FILENAME:	

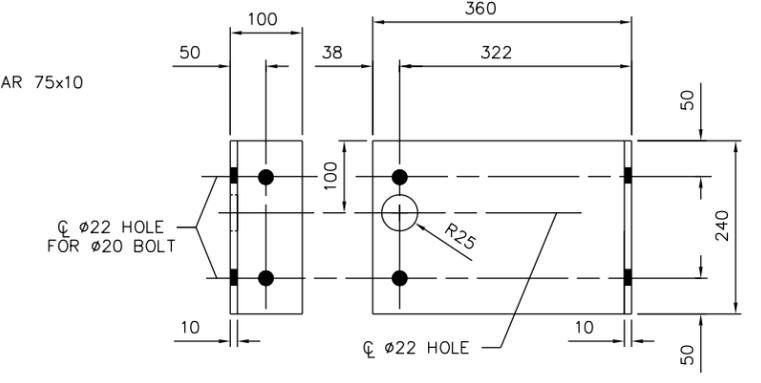
AFGHANISTAN ENGINEER DISTRICT
20 METER WATER TOWER

SECTIONS & DETAILS

SHEET IDENTIFICATION
S-18



bp1
MAKE: 1



bp2
MAKE: 1

SHIP	MARK	NO. PCS	DESCRIPTION	LENGTH (mm)	FAB. MARK	WEIGHT	NOTES
3	S4/L1		LADDER	4910			
		6	PL 10x75	4910	PL rr10		
		48	Ø20	530	ROD ru1		
		2	L130x90x14	75	aa1		
		6	L100x100x10	475	ag11		
		6	L100x100x10	76	ag12		
1	S4/L2		LADDER	4910			
		2	PL 10x75	5920	PL rr11		
		17	Ø20	530	ROD ru1		
		1	PL 10x460	240	bp1		
		1	PL 10x460	240	bp2		

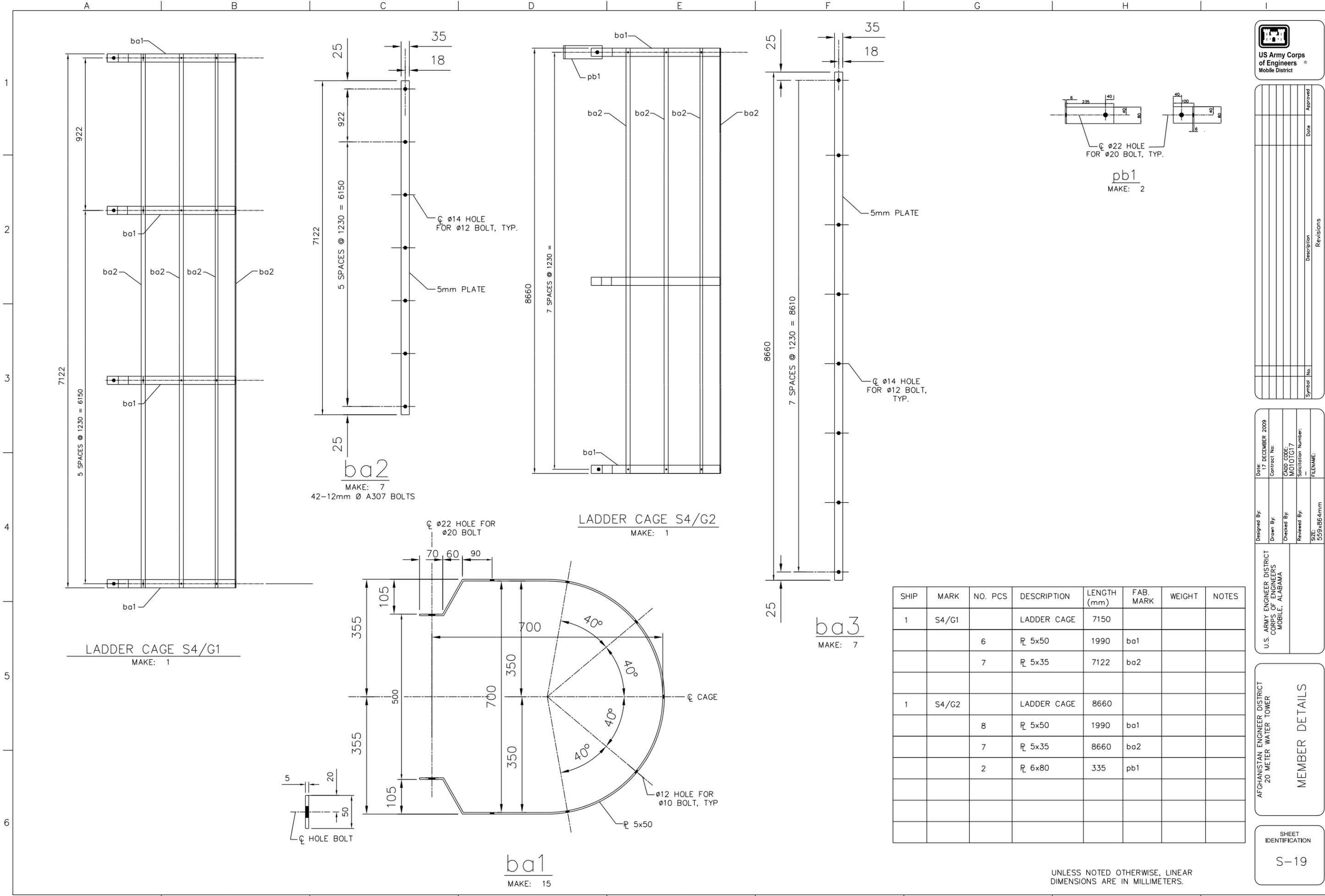
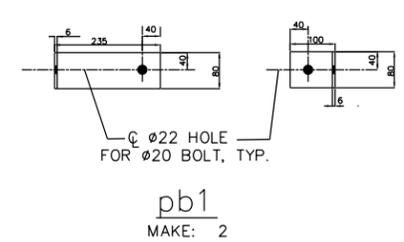
UNLESS NOTED OTHERWISE, LINEAR DIMENSIONS ARE IN MILLIMETERS.

Symbol No	Description	Date	Approved

Designed By:	Date:	17 DECEMBER 2009
Drawn By:	Contract No:	
Checked By:	CADD CODE:	MO10TG17
Reviewed By:	Solicitation Number:	
SIZE:	FILENAME:	
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS MOBILE, ALABAMA		

AFGHANISTAN ENGINEER DISTRICT
20 METER WATER TOWER
MEMBER DETAILS

SHEET IDENTIFICATION
S-19



SHIP	MARK	NO. PCS	DESCRIPTION	LENGTH (mm)	FAB. MARK	WEIGHT	NOTES
1	S4/G1		LADDER CAGE	7150			
		6	R 5x50	1990	ba1		
		7	R 5x35	7122	ba2		
1	S4/G2		LADDER CAGE	8660			
		8	R 5x50	1990	ba1		
		7	R 5x35	8660	ba2		
		2	R 6x80	335	pb1		

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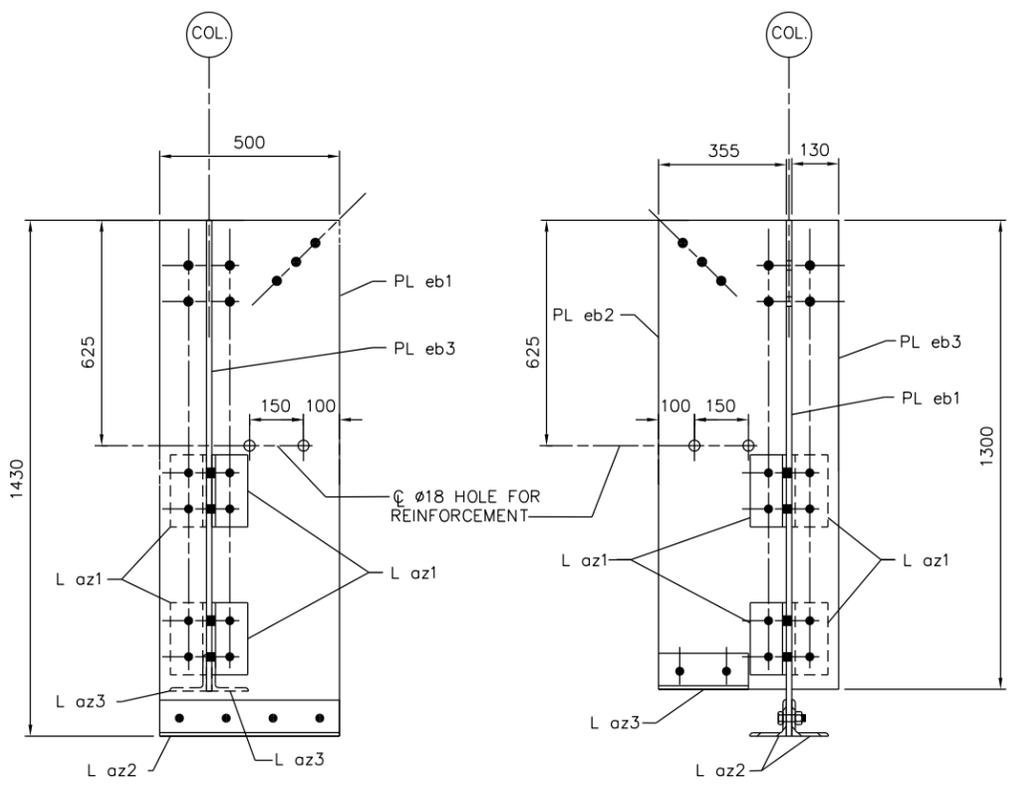
Symbol No	Description	Date	Approved

Designed By:	Date:	17 DECEMBER 2009
Drawn By:	Contract No:	
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Reviewed By:	Solicitation Number:	
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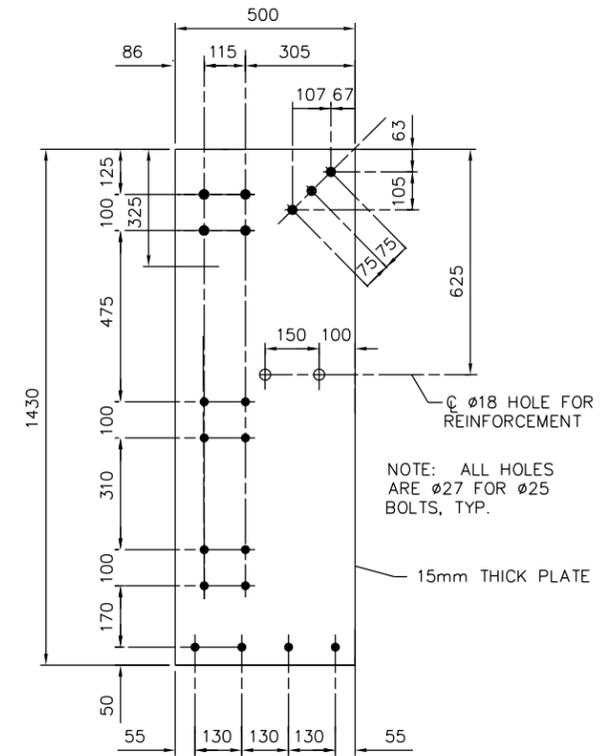
AFGHANISTAN ENGINEER DISTRICT
20 METER WATER TOWER

MEMBER DETAILS

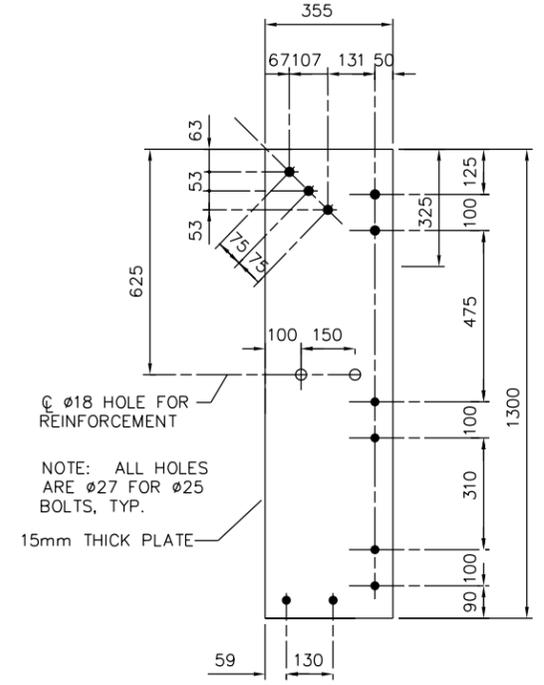
SHEET IDENTIFICATION
S-20



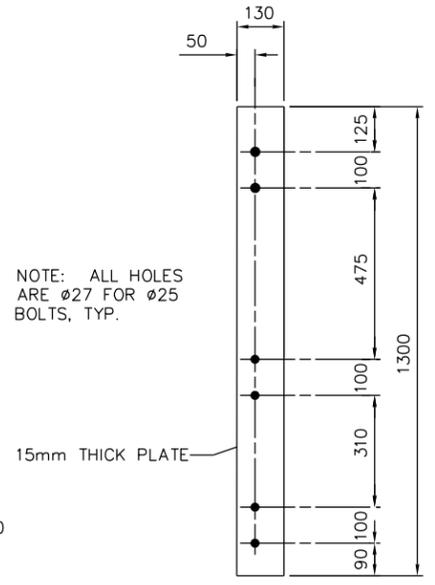
EMBEDDED ANCHOR PLATE S6/E1
MAKE: 4



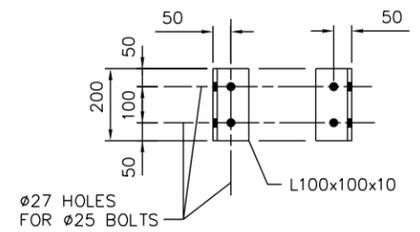
PL eb1
MAKE: 4
76-Ø25 A307 BOLTS



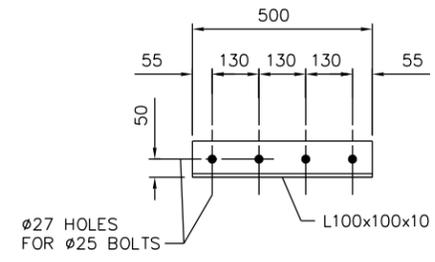
PL eb2
MAKE: 4
44-Ø25 A307 BOLTS



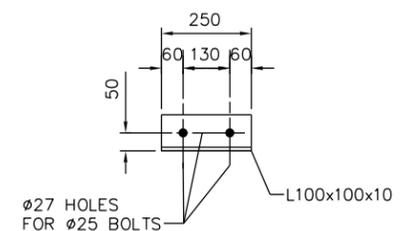
PL eb3
MAKE: 4
24-Ø25 A307 BOLTS



L az1
MAKE: 16



L az2
MAKE: 8



L az3
MAKE: 8

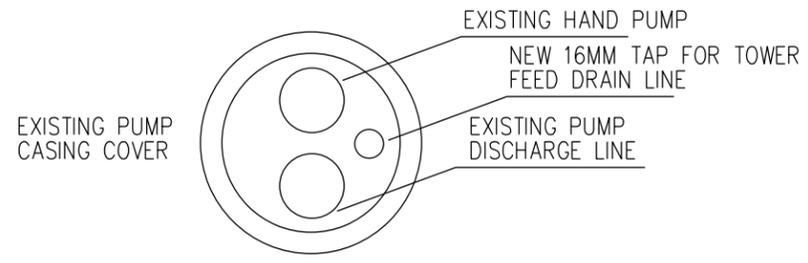
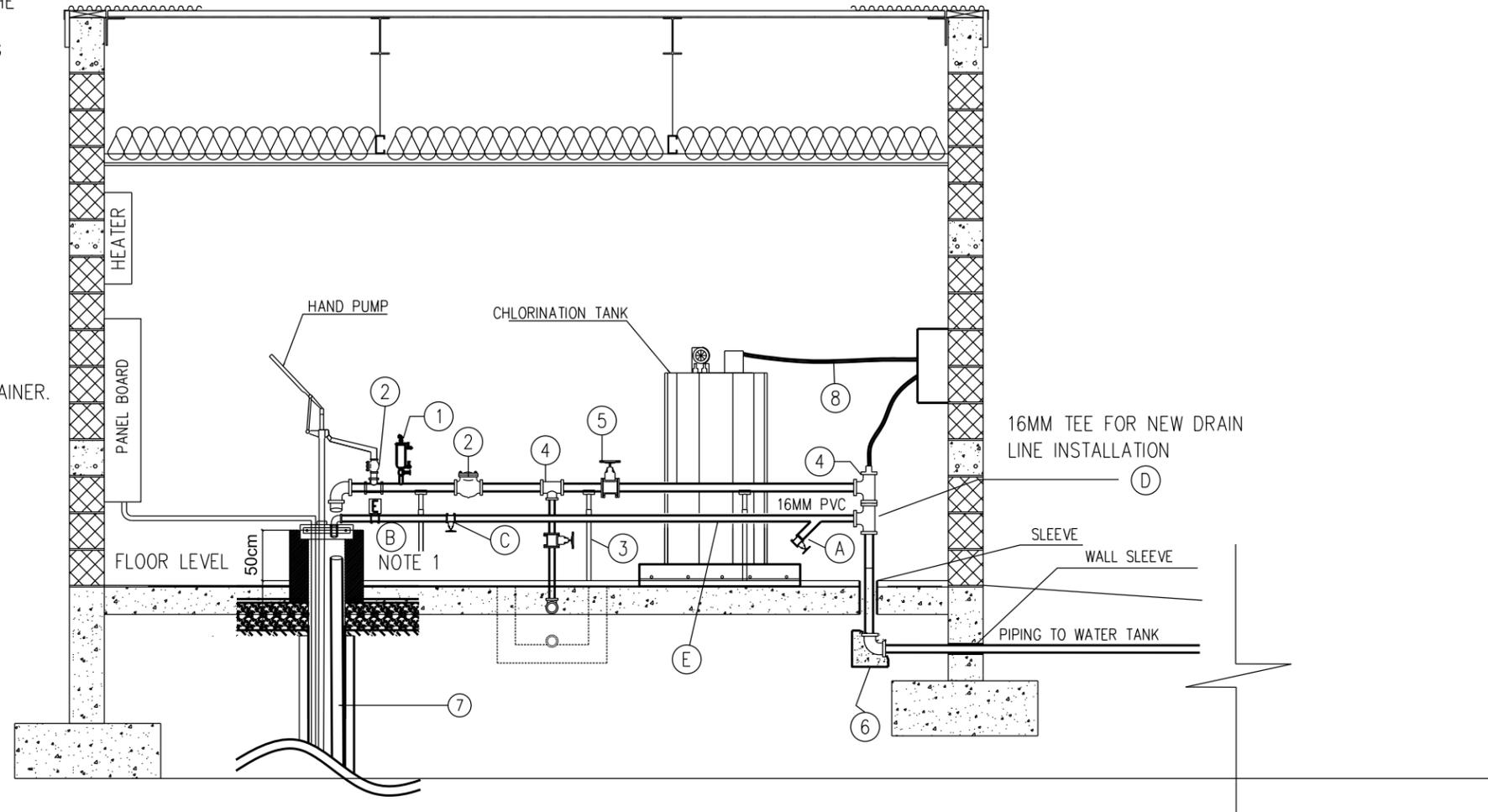
SHIP	MARK	NO. PCS	DESCRIPTION	LENGTH (mm)	FAB. MARK	WEIGHT	NOTES
4	S6/E1		EMBEDDED ANCHOR PLATE	1430			
		4	PL 15x500	1430	PL eb1		
		4	PL 15x355	1300	PL eb2		
		4	PL 15x130	1300	PL eb3		
		16	L100x100x10	200	L az1		
		8	L100x100x10	500	L az2		
		8	L100x100x10	250	L az3		

UNLESS NOTED OTHERWISE, LINEAR DIMENSIONS ARE IN MILLIMETERS.

NOTES FOR SCOPE ITEMS INCLUDED IN WATER TOWER CONSTRUCTION:

COMPONENTS LISTED AND SHOWN ARE INTENDED TO PROVIDE A DRAIN LINE FOR THE FEED POWER TO THE WATER TOWER. THE SOLENOID VALVE IS TO REMAIN OPEN EXCEPT WHEN THE PUMP IS RUNNING. PIPING FROM THE TOWER WILL DRAIN BACK INTO THE WELL.

1. 16MM SOLENOID VALVE; NORMALLY OPEN; POWER TO CLOSE; SPRING OPEN; FAIL OPEN. PROVIDE POWER TO OPEN THE SOLENOID FROM THE WELL PUMP CONTROL PANEL. POWER SHALL CLOSE THE VALVE WHEN THE PUMP TURNS ON AND INTERNAL VALVE SPRING SHALL OPEN THE VALVE WHEN THE PUMP MOTOR IS TURNED OFF.
2. SUPPORT 16MM PVC DRAIN LINE AT EVERY PIPE SUPPORT USING PIPE CLAMPS.
3. 16MM DRAIN PIPING WITH GATE VALVE AND STRAINER.



EXISTING EQUIPMENT DESCRIPTION

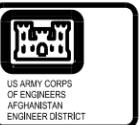
ITEM	DESCRIPTION
1	AIR RELEASE VALVE
2	CHECK VALVE
3	PIPE SADDLE SUPPORT
4	TEE
5	GATE VALVE
6	90° ELBOW
7	RISER PIPE 80
8	Ø12MM FLEXIBLE PVC PIPE

TOWER ADDITION EQUIPMENT DESCRIPTION

ITEM	DESCRIPTION
A	16MM STRAINER W/ GATE VALVE
B	16MM ELECTRIC SOLENOID
C	GATE VALVE
D	16MM TEE
E	16MM SCH 80 PVC

WELL HOUSE SECTION PIPING

NTS



SYMBOL	DESCRIPTION	DATE	APPR.	ESTIMD.	DATE	APPR.

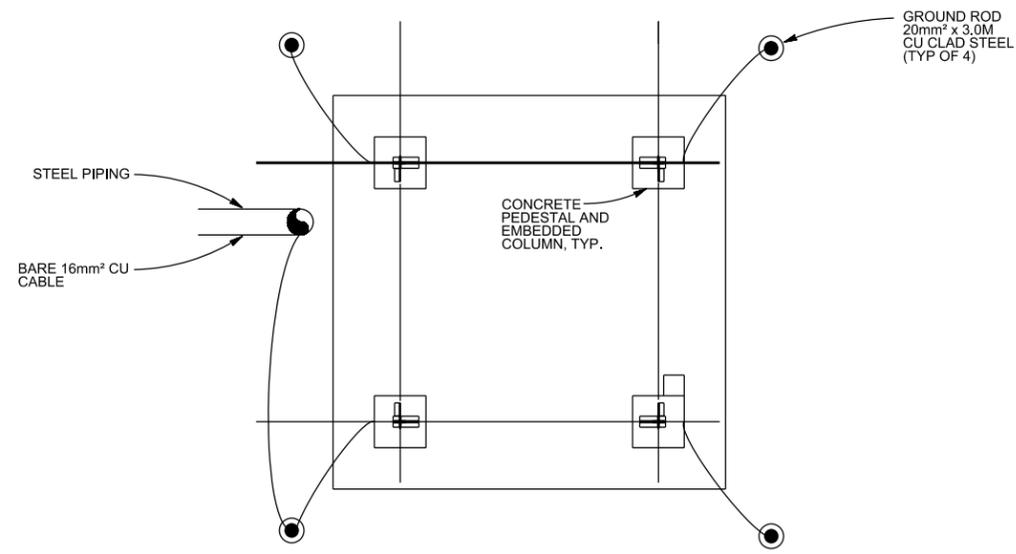
DESIGNED BY: _____	DATE: 17 DEC 2010	REV: _____
DRAWN BY: _____	DESIGN FILE NO. _____	FILE NAME: _____
CHECKED BY: _____	DRAWING CODE: _____	PLOT SCALE: _____
REVIEWED BY: _____	DATE: _____	PLOT DATE: _____
SUBMITTED BY: _____	DATE: _____	APPROVED: _____
U.S. ARMY ENGINEER DISTRICT AFGHANISTAN		
CORPS OF ENGINEERS		
APO AE 96338		
ENGINEERING AND CONSTRUCTION DIVISION		

20 METER WATER TANK
AFGHANISTAN
WELL HOUSE SECTION PIPING

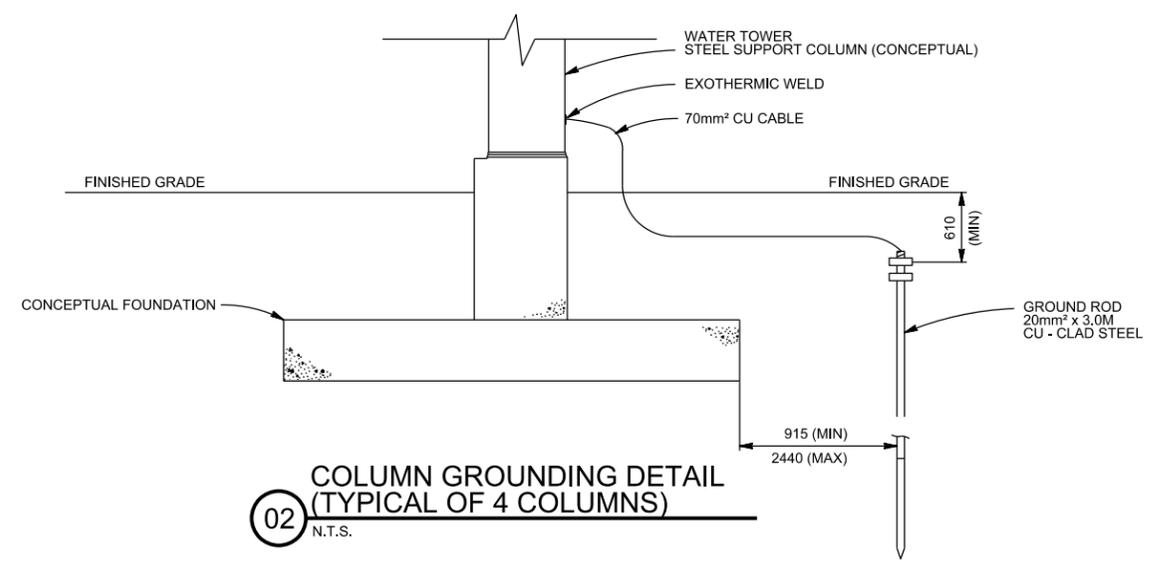
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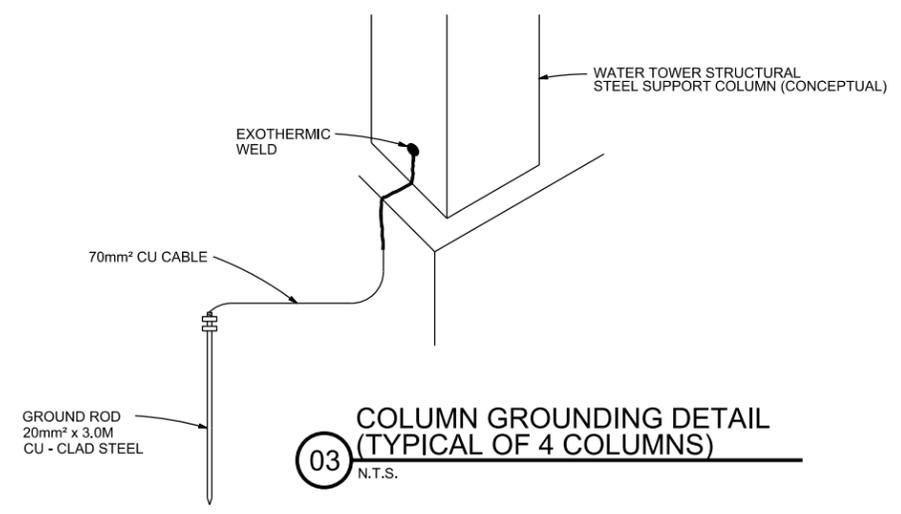
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01 GROUNDING ELECTRODE PLAN
N.T.S.



02 COLUMN GROUNDING DETAIL (TYPICAL OF 4 COLUMNS)
N.T.S.



03 COLUMN GROUNDING DETAIL (TYPICAL OF 4 COLUMNS)
N.T.S.

LIGHTING PROTECTION PLANS AND DETAILS
N.T.S.

- NOTES:**
1. CONTRACTOR SHALL MAKE ALL METALLIC ELEMENTS OF WATER TOWER TANK AND SUPPORT STRUCTURE ELECTRICALLY CONTINUOUS BY BOLTING REINFORCEMENT STEEL SHALL BE MADE ELECTRICALLY CONTINUOUS BY METALLIC WIRE TIES.
 2. BOND EACH METALLIC UNDERGROUND PIPE TO AT LEAST ONE GROUND ROD WITH 16mm² CU CABLE.
 3. EACH COLUMN SHALL BE BONDED TO A 20mm² x 3.0M CU CLAD STEEL GROUND ROD VIA A BARE 70mm² CU CABLE. CABLE SHALL BE EXOTHERMIC ALLY WELDED TO COLUMN 150mm ABOVE CONCRETE FOUNDATION.



US ARMY CORPS OF ENGINEERS
AFGHANISTAN ENGINEER DISTRICT

SYMBOL	DESCRIPTION	DATE	APPR.	STATION	DATE	APPR.

DESIGNED BY: _____	DATE: 17 DEC 2010	REV: _____
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SUBMITTED BY: _____	PLOT DATE: _____	APPROVAL: _____
U.S. ARMY ENGINEER DISTRICT AFGHANISTAN		
CORPS OF ENGINEERS		
APO AE 96338		
ENGINEERING AND CONSTRUCTION DIVISION		

20 METER WATER TANK
AFGHANISTAN
LIGHTING PROTECTION DETAILS

SHEET REFERENCE NUMBER:
E-01

CANOPY NOTES:

1. STRUCTURE SHALL BE PRE-ENGINEERED METAL BUILDING SYSTEM
2. SURFACES TO BE PAINTED SHALL BE CLEAN AND FREE OF FOREIGN MATTER BEFORE APPLICATION OF PAINT. CLEANING SHALL BE SCHEDULED SO THAT DUST AND OTHER CONTAMINANTS WILL NOT FALL ON WET, NEWLY PAINTED SURFACES.
3. PAINTS CONTAINING LEAD IN EXCESS OF 0.06 PERCENT BY WEIGHT OF THE TOTAL NONVOLATILE CONTENT SHALL NOT BE USED.
4. MERCURIAL FUNGICIDES SHALL NOT BE USED IN OIL-BASE PAINT.
5. REMOVE LOOSE DIRT AND CLEAN SURFACES BEFORE PAINTING. APPLY PAINT TO INTERIOR STRUCTURAL RIGID FRAMINGS AND CEILINGS AND TEST FOR ADHESION. PRIMER COAT FOR MASONRY. INITIAL FIRST COAT WITH AN ACRYLIC LATEX PAINT FOR EXTERIOR SURFACES AND A SECOND COAT WITH A WATER REPELLANT ACRYLIC LATEX PAINT.

SYMBOL	DESCRIPTION	DATE	APP

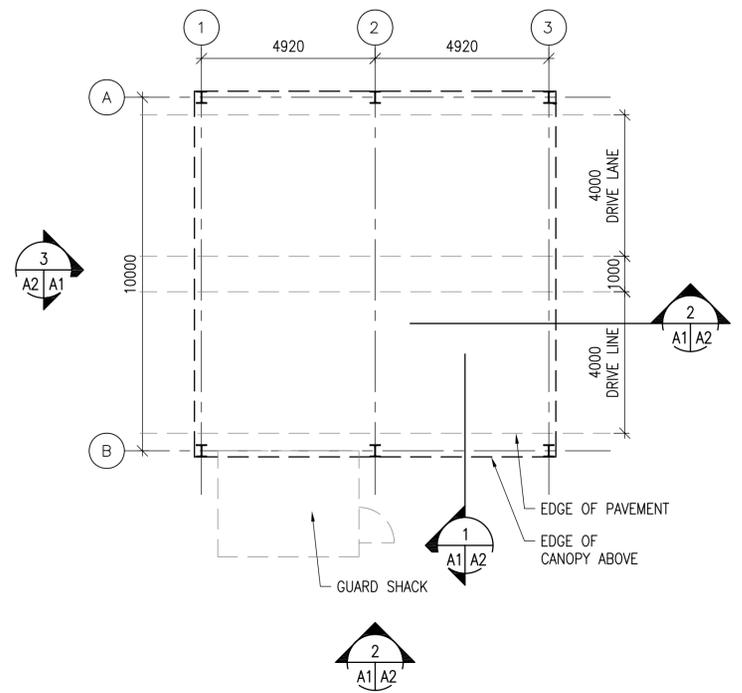
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DWN BY:	JDS	SUBMITTED BY:	BAKER
CHK BY:	RTD	FILE NO.:	ANPSDA-101XXX

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Moon Township, PA 15108
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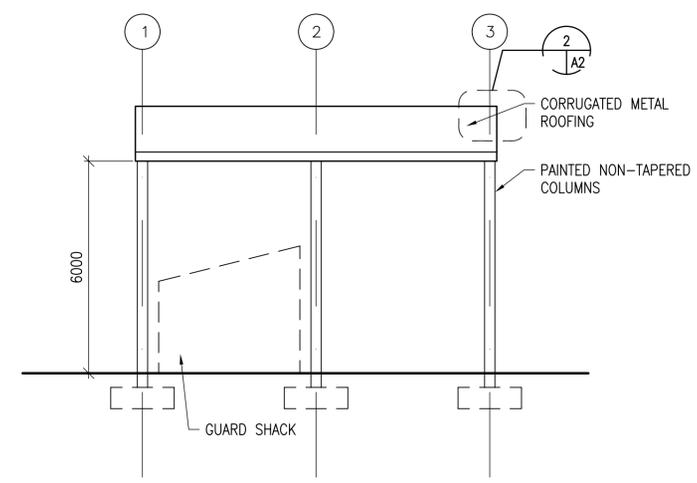
AFGHAN NATIONAL POLICE
STANDARD DESIGN
ENTRY CONTROL POINT CANOPY
CANOPY PLAN, ELEVATIONS, AND SECTIONS

SHEET REFERENCE NUMBER:
A1

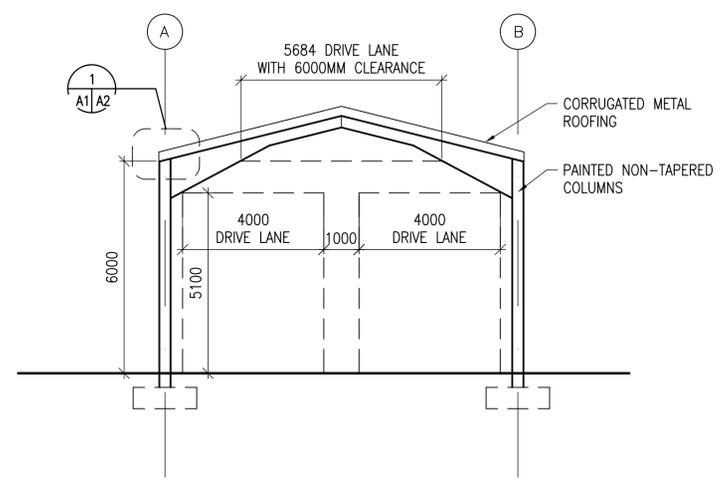
100% SUBMISSION



1 CANOPY PLAN
SCALE: 1:100



2 CANOPY ELEVATION
SCALE: 1:100



3 CANOPY ELEVATION
SCALE: 1:100

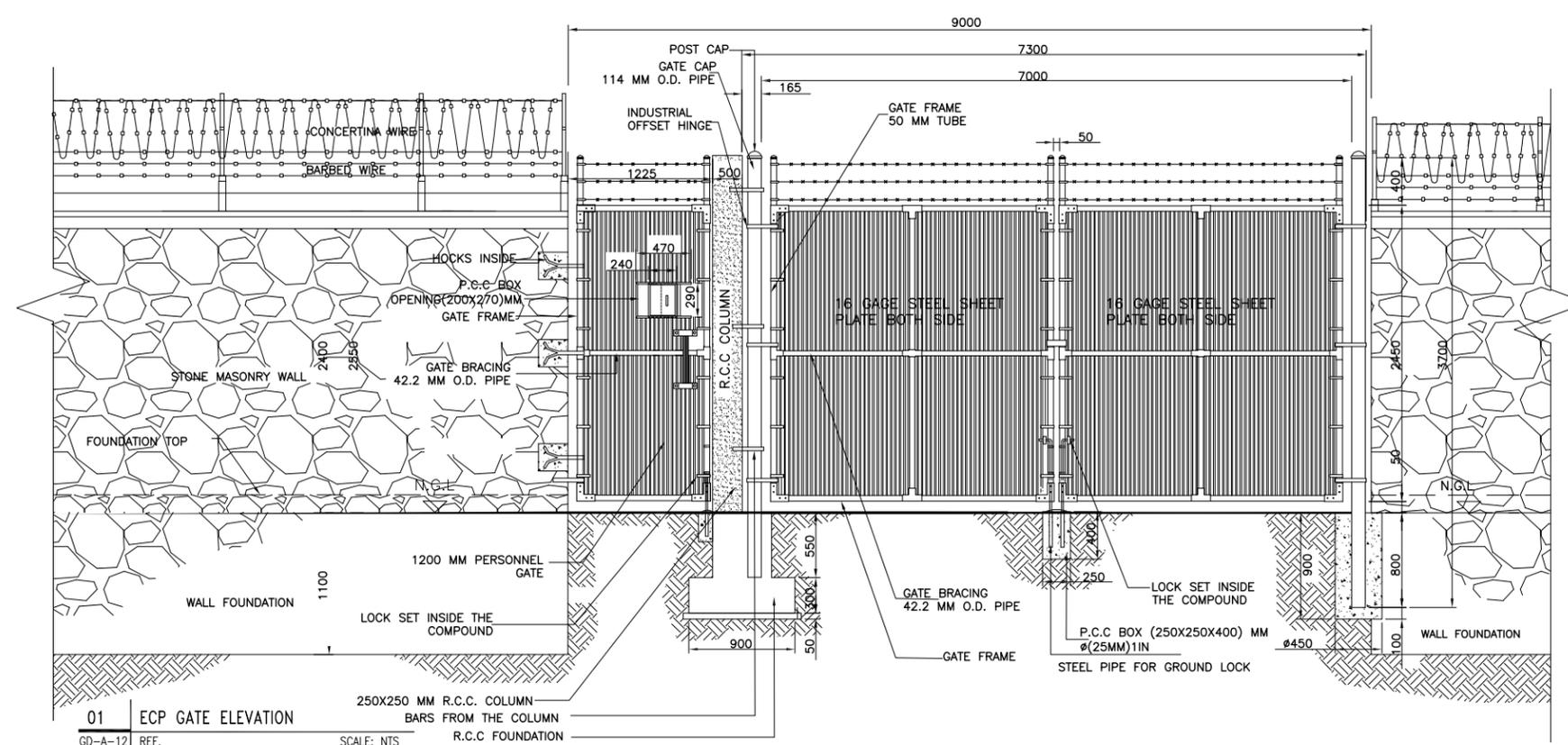




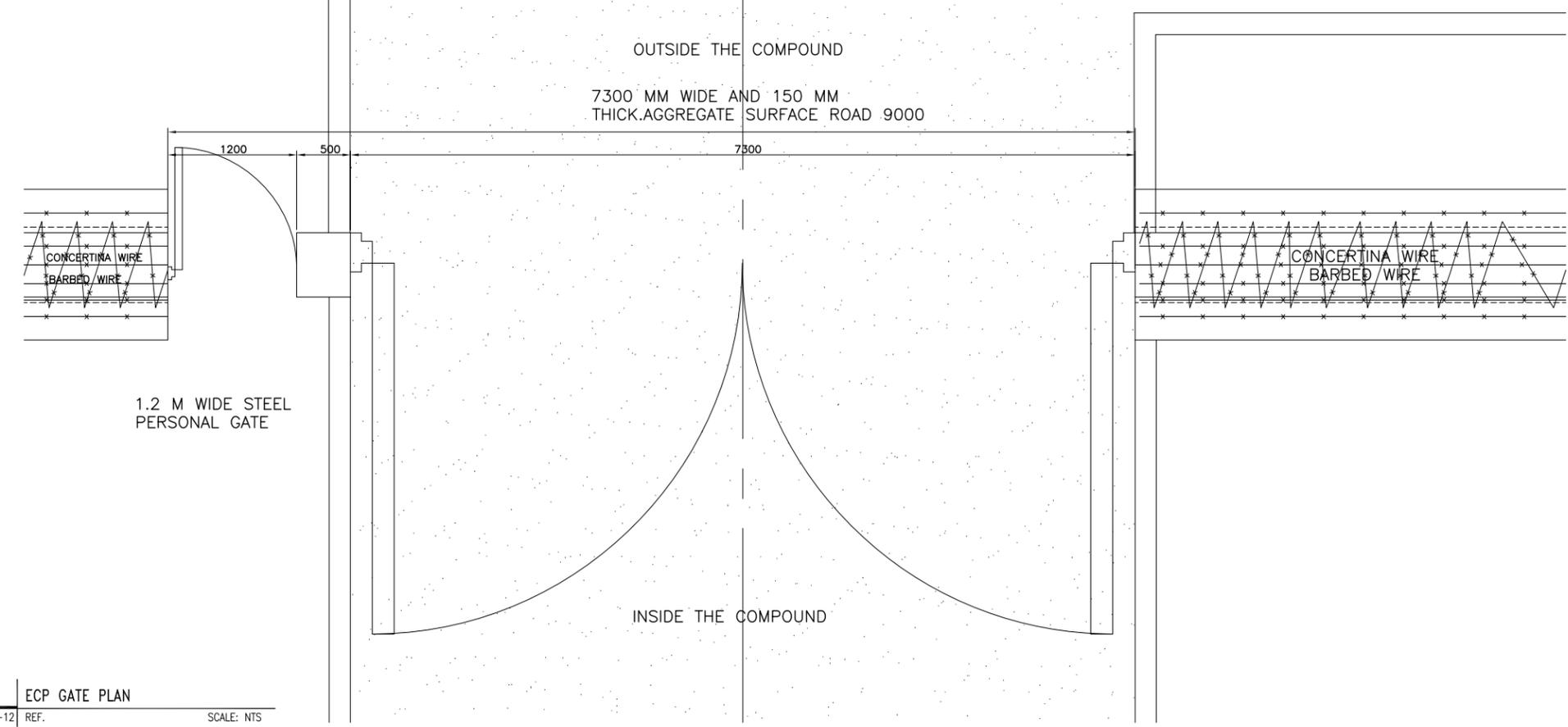
NOTES

GATE POST	115MMX115MM WALL THK.
GATE FRAME	50MMX50MM WALL THK.
GATE BRACING	40MMX50MM WALL THK.
INFILL-FABRIC	30MMX30MM GALVANIZED
BARBED WIRE	STANDARD-GALVANIZED
FITTINGS	GALVANIZED

- 1) FITTINGS: - GALVANIZED
- 2) STEEL TUBE: ALL PIPES ARE GALVANIZED, CONFORMS TO ASTM A 53, SCH-40
- 3) BARBED WIRE: GALVANIZED BARBED WIRE "IOWA" PATTERN, 2PLY, 4 POINT STRAND WIRE 2.5 MM DIA, BARBING WIRE 2.0 MM DIA GALV., SPACING BETWEEN BARBS 101 MM



01 ECP GATE ELEVATION
 GD-A-12 REF. SCALE: NTS



02 ECP GATE PLAN
 GD-A-12 REF. SCALE: NTS

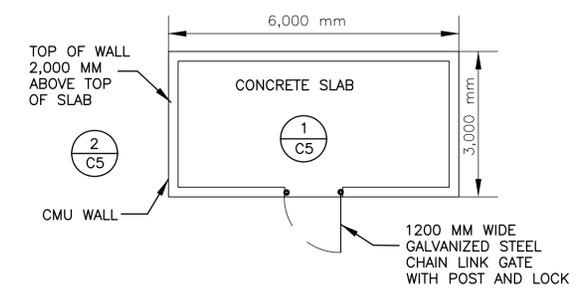
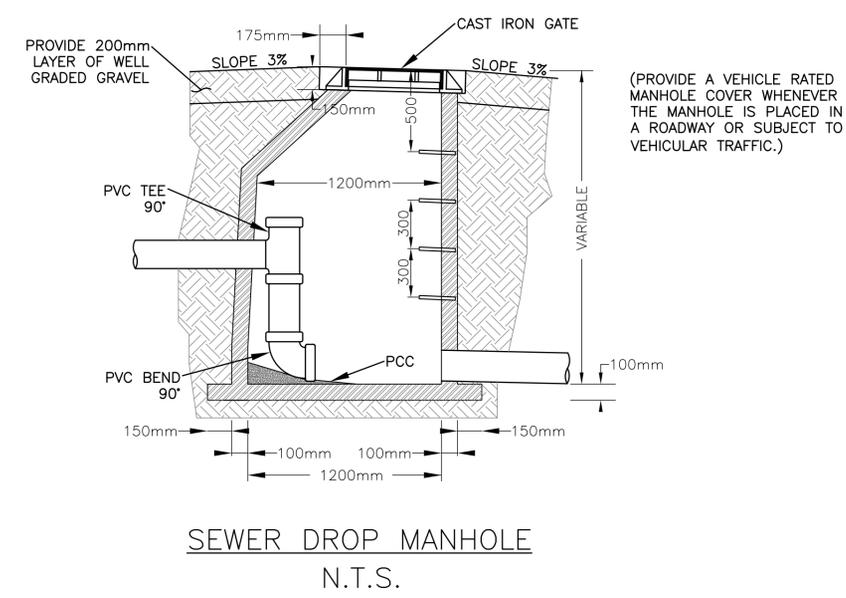
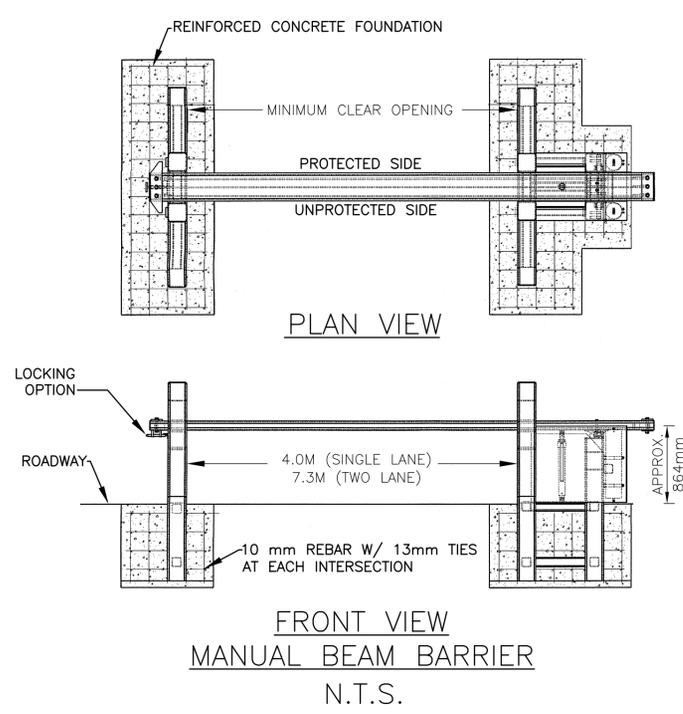
Contract Date:	Contract No.:
Drawn By:	Draw Code:
Designed By:	Reviewed by:
US ARMY CORPS OF ENGINEERS	Submitted by:
AFGHANISTAN ENGINEER DISTRICT SOUTH	Validation No.:
HERAT, AFGHANISTAN	Contract No.:
Contractor:	Contract No.:
Designer:	Contract No.:

ANP (AFGHAN NATIONAL POLICE)
 STANDARD DESIGN DRAWING
 ENTRY CONTROL POINT (ECP) GATE

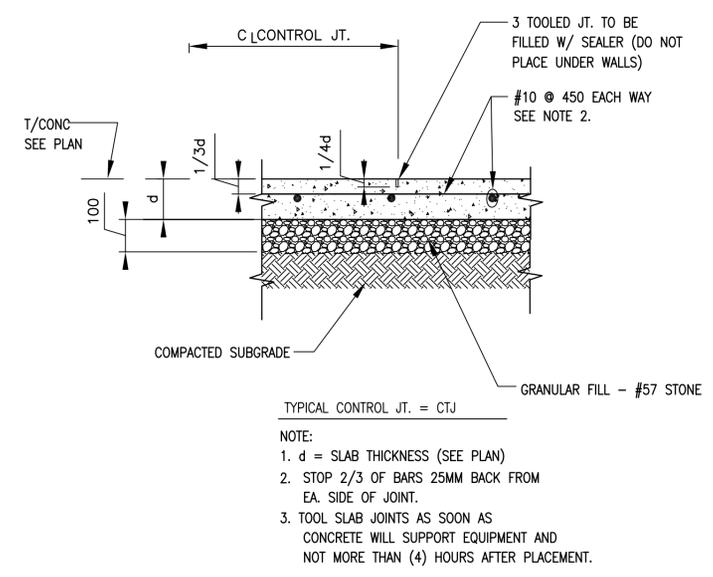
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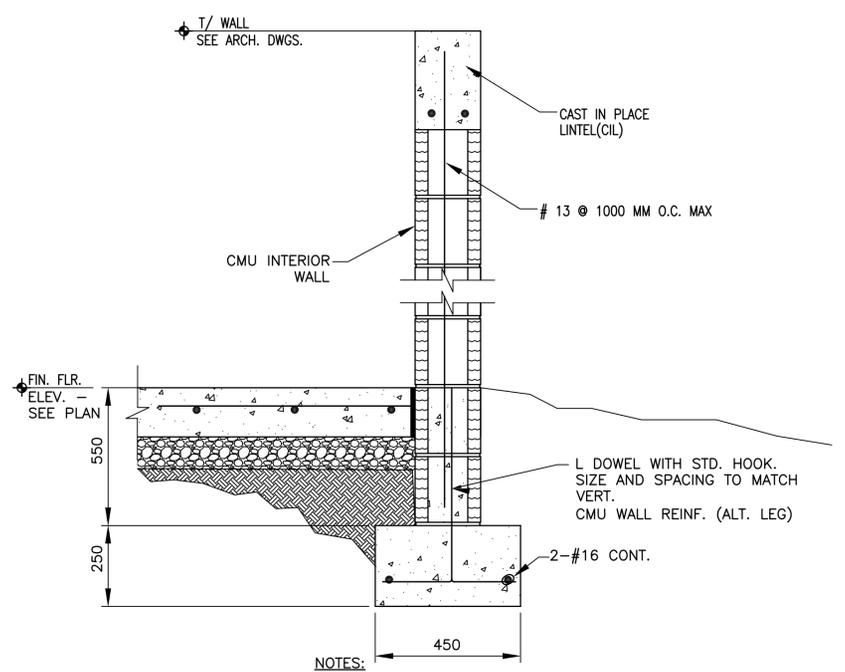
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- NOTES:
- 1) THE CMU WALLS SHALL RECEIVE STUCCO ON BOTH SIDES AND TOP.
 - 2) PROPANE STORAGE AREA TO BE LOCATED NO LESS THAN 6.1 METERS FROM ANY STRUCTURE.



- TYPICAL CONTROL JT. = CTJ
- NOTE:
1. d = SLAB THICKNESS (SEE PLAN)
 2. STOP 2/3 OF BARS 25MM BACK FROM EA. SIDE OF JOINT.
 3. TOOL SLAB JOINTS AS SOON AS CONCRETE WILL SUPPORT EQUIPMENT AND NOT MORE THAN (4) HOURS AFTER PLACEMENT.



- NOTES:
1. VERT. CMU WALL REINF. NOT SHOWN FOR CLARITY.
 2. REQUIRED AT INTERIOR CMU WALL LENGTHS THAT EXCEED 3600mm BETWEEN OPPOSING CMU WALLS THAT ARE TIED.

US Army Corps of Engineers
Afghanistan Engineer District

SYMBOL	DESCRIPTION	DATE	APP

DESIGNED BY:	DATE:	09-30-09
BAKER	SUBMITTED BY:	BAKER
DWN BY:	JDS	
CHK BY:	GPH	
FILE NO.:	ANFSDC-505XXX	

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AFGHAN NATIONAL POLICE
STANDARD DESIGN
SITE DETAILS
CIVIL DETAILS

SHEET REFERENCE NUMBER:
C5

100% SUBMISSION

SYMBOL	DESCRIPTION	DATE	APP

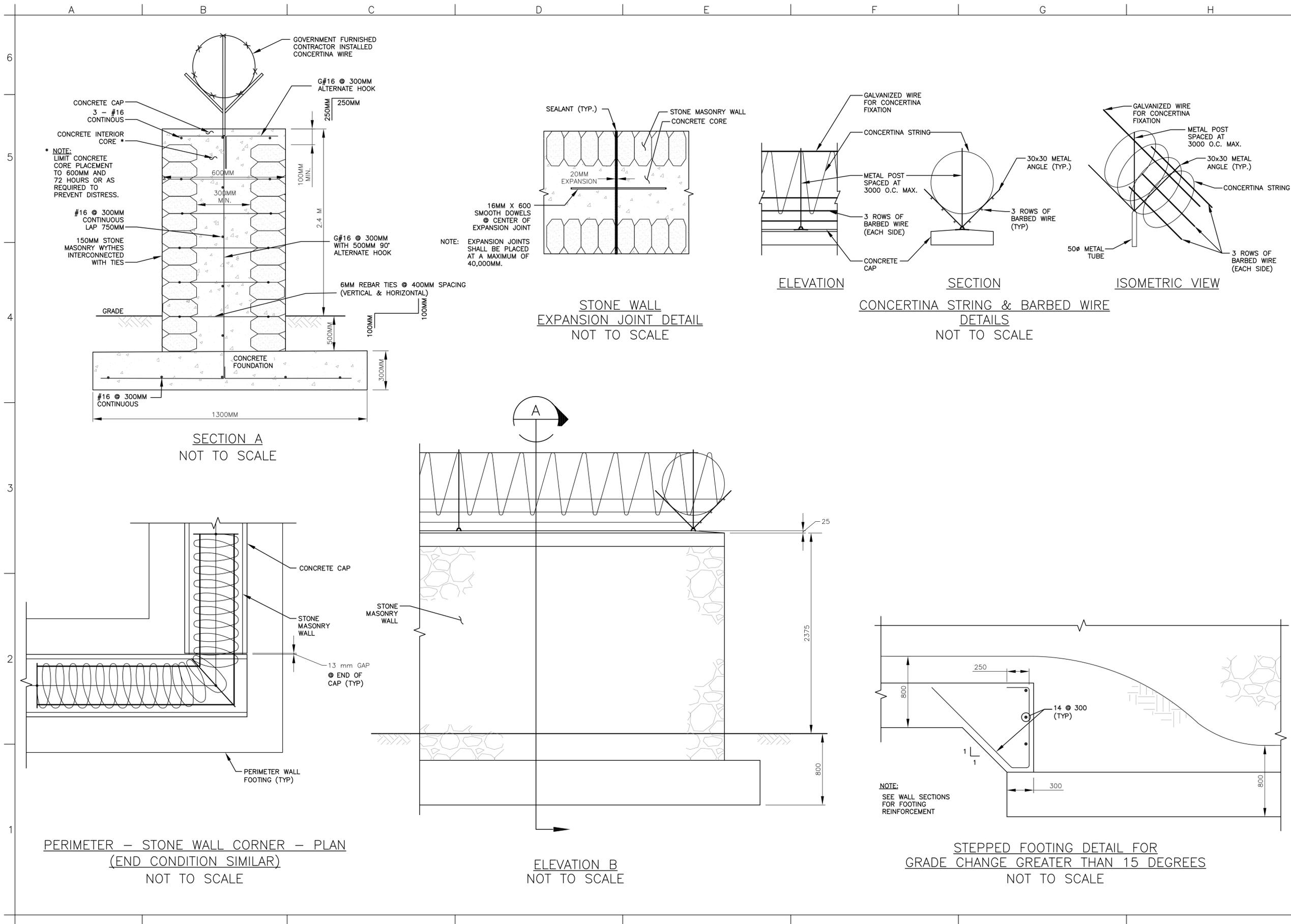
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DWN BY:	JDS	SUBMITTED BY:	BAKER
CHK BY:	GPH	FILE NO.:	ANFSDC-507XXX

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AFGHAN NATIONAL POLICE
STANDARD DESIGN
SITE DETAILS
CIVIL DETAILS

SHEET REFERENCE NUMBER:
C7

100% SUBMISSION



	A	B	C	D	E	F	G	H					
	STRUCTURAL ABBREVIATIONS:	GENERAL NOTES											
6	ACI AMERICAN CONCRETE INSTITUTE AISC AMERICAN INSTITUTE OF STEEL CONSTRUCTION ALT ALTERNATE ASTM AMERICAN SOCIETY FOR TESTING AND MATERIALS AWS AMERICAN WELDING SOCIETY ARCH ARCHITECTURAL B BOTTOM BLDG BUILDING BOTT BOTTOM ? CENTER LINE CFMF COLD FORM METAL FRAME CFS COLD FORMED STEEL CIP CAST IN PLACE CIPL CAST-IN-PLACE LINTEL CJ CONTROL JOINT CLG CEILING CLR CLEAR CMU CONCRETE MASONRY UNIT COEFF COEFFICIENT COL COLUMN CONC CONCRETE CONT CONTINUOUS COORD COORDINATE CSJ CONSTRUCTION JOINT CTJ CONTROL JOINT DIA DIAMETER DIAG DIAGONAL DIM DIMENSION DWG DRAWING DWL DOWEL EA EACH ELEC ELECTRICAL ELEV ELEVATION EMBED EMBEDMENT EQUIV EQUIVALENT ETC ET CETERA E.W EACH WAY EXT EXTERIOR FTG FOOTING GA GAUGE HORIZ HORIZONTAL HRS HOURS IBC INTERNATIONAL BUILDING CODE INT INTERIOR Kg KILOGRAM KIP KIPS (1 KIP = 1,000 POUNDS) KN KILONEWTON kPa KILOPASCAL L# ANGLE (# INDICATES SIZE) LLV LONG LEG VERTICAL M METER MAX MAXIMUM MBM METAL BUILDING MANUFACTURER MBMA METAL BUILDING MANUFACTURERS ASSOCIATION MECH MECHANICAL MFG MANUFACTURER MID MIDDLE MIN MINIMUM MISC MISCELLANEOUS MM MILLIMETER MPa MEGAPASCAL MTL METAL MWFRS MAIN WIND FORCE RESISTING SYSTEM N NEWTON N NORTH N/A NOT APPLICABLE # NUMBER SYMBOL FOR REBAR SIZE NTS NOT TO SCALE O.C. ON CENTER OPNG OPENING ? or PL PLATE PRE-ENG PRE-ENGINEERED REINF REINFORCED REQ'D REQUIRED SIM SIMILAR SPECS SPECIFICATIONS STD STANDARD STRUCT STRUCTURAL T TOP T/ TOP OF T/ELEV TOP ELEVATION T&B TOP AND BOTTOM THK THICK TM TRADE MARK TYP TYPICAL UFC UNIFIED FACILITIES CRITERIA UON UNLESS OTHERWISE NOTED VERT VERTICAL W WIDTH W/ WITH	1.0 THIS PROJECT HAS BEEN DESIGNED FOR THE WEIGHTS AND MATERIALS INDICATED ON THE SHEETS AND FOR THE LIVE LOADS INDICATED IN THE DESIGN CRITERIA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ALLOWABLE CONSTRUCTION LOADS AND TO PROVIDE PROPER DESIGN AND CONSTRUCTION OF FALSEWORK, FORMWORK, STAGING, BRACING, SHEETING AND SHORING, ETC. 1.1 COORDINATE THESE SHEETS WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND CIVIL SHEETS. ALL DIMENSIONS SHOWN ON THE SHEETS ARE MILLIMETERS UNLESS NOTED OTHERWISE. 1.2 THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL FLOOR AND ROOF OPENING SIZES AND LOCATIONS, EQUIPMENT PAD SIZES AND LOCATIONS, ANCHOR BOLT LAYOUTS, ETC WITH EQUIPMENT SELECTED. THE CONTRACTOR SHALL MAKE ANY REQUIRED MODIFICATIONS AT NO ADDITIONAL COST. 1.3 THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING SHEETS FOR SLEEVES, CURBS, INSERTS OR OPENINGS, ETC. NOT HEREIN INDICATED. 1.4 SLAB OPENINGS SMALLER THAN 250mm DIA TO BE CORE DRILLED IN FIELD UON. SEE MECHANICAL, ELECTRICAL AND PLUMBING SHEETS FOR LOCATIONS OF THESE OPENINGS. 1.5 WORK NOT INCLUDED ON THE SHEETS BUT IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES ELSEWHERE ON THE SHEETS SHALL BE REPEATED. 1.6 IN CASE OF CONFLICT BETWEEN THE NOTES, DETAILS AND SPECIFICATIONS THE MOST RIGID REQUIREMENTS SHALL GOVERN. 1.7 SEE ARCHITECTURAL SHEETS FOR LOCATIONS OF MASONRY AND DRYWALL NON-LOAD BEARING PARTITIONS. PROVIDE COMPRESSIBLE FIRESAFING AT TOP OF WALL AS REQUIRED BY ARCHITECTURAL SHEETS. 1.8 COORDINATE FINISHED FLOOR DATUM ELEVATION 0.0m WITH THE CIVIL SHEETS. 1.9 DESIGN PRE-ENGINEERED METAL BUILDINGS IN ACCORDANCE W/ MBMA LATEST EDITION PER DESIGN CRITERIA ON SHEET S2. 2.0 FOUNDATION NOTES 2.1 THE GEOTECHNICAL ANALYSIS FOR THIS PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR AWARDED THE WORK. DESIGN VALUES USED IN THE STRUCTURAL ANALYSIS OF THE BUILDINGS HEREIN INDICATED HAVE BEEN ASSUMED AND SHALL BE CONFIRMED AND VERIFIED AS PART OF THE GEOTECHNICAL INVESTIGATION. VALUES WHICH DO NOT MEET THE REQUIREMENTS INDICATED ON SHEET S2 SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER FOR CONSIDERATION AND DETERMINATION ON THE NEXT APPROPRIATE COURSE OF ACTION. 2.2 SEE THE SPECIFICATION FOR ADDITIONAL REQUIREMENTS TO THOSE OUTLINED IN THE GEOTECHNICAL INVESTIGATION FOR EXCAVATION AND PREPARATION OF THE FOUNDATION AND THE SLAB ON GRADE SUBGRADE INCLUDING COMPACTION PROCEDURES. 2.3 EXCAVATIONS FOR FOOTINGS SHALL HAVE THE SIDES AND BOTTOMS TEMPORARILY LINED WITH 0.25mm POLYETHYLENE IF PLACEMENT OF CONCRETE DOES NOT OCCUR WITHIN 24 HRS OF THE EXCAVATION OF THE FOOTING. 2.4 FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION WHICH DIFFER FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT SHALL BE REPORTED TO THE GENERAL CONTRACTOR BEFORE FURTHER CONSTRUCTION IS ATTEMPTED. SEE PROJECT SPECIFICATIONS. 2.5 NO FOOTINGS OR SLABS SHALL BE POURED INTO OR AGAINST SUBGRADE CONTAINING FREE WATER, FROST, ICE OR LOOSE MATERIAL. FROST DEPTH ASSUMED TO BE 800MM 2.6 ALL SLAB-ON-GRADE, TRENCH BOTTOMS AND OTHER ON-GRADE INTERIOR HORIZONTAL SURFACES SHALL BE PLACED OVER A 0.25mm VAPOR RETARDER OVER A 100mm #57 STONE WATER BARRIER PLACED ON SUBGRADE PROPERLY PREPARED IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS. (UON) 2.7 SEE PLUMBING, ELECTRICAL & CIVIL SHEETS FOR REQUIRED UNDERSLAB UTILITIES. 2.8 SEE ARCHITECTURAL SHEETS FOR ALL WATERPROOFING DETAILS AND MATERIALS. 2.9 IF UNDERMINING OF FOOTINGS OCCURS, FILL VOIDS WITH 15MPa CONCRETE. DO NOT ATTEMPT TO REPLACE AND RECOMPACT SOIL. 3.0 CONCRETE 3.1 CONCRETE SHALL HAVE THE UNIT WEIGHT AND THE MINIMUM COMPRESSIVE STRENGTHS (f'c) AT 28 DAYS AS SHOWN IN THE CONCRETE MATERIALS SCHEDULE ON SHEET S3. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION. ENTRAIN AIR TO PRODUCE TOTAL AIR CONTENT ACCORDING TO THE SPECIFICATIONS FOR CONCRETE EXPOSED TO FREEZING TEMPERATURES (EXTERIOR FOOTINGS, SLAB TURNDOWNS, EXTERIOR SLABS AND SLABS-ON-GRADE, EXTERIOR RETAINING WALLS, AND EXTERIOR GRADE BEAMS.) 3.2 GROUT FOR BASE PLATES SHALL BE NON-SHRINKABLE GROUT AND SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH AT 28 DAYS OF 35MPa, UNLESS NOTED OTHERWISE. 3.3 NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE. 3.4 MIXING, TRANSPORTING AND PLACING OF CONCRETE SHALL CONFORM TO ACI 301M-05	3.5 ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN CONCRETE INSTITUTE (ACI) 318M MANUAL (metric), "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", AND REQUIREMENTS OUTLINED IN THE CONTRACT SPECIFICATIONS. WHEN THERE IS A CONFLICT BETWEEN ACI AND THE SPECIFICATIONS, THE MORE STRINGENT SHALL GOVERN. 3.6 CHAMFER ALL EXPOSED EXTERNAL CORNERS OF CONCRETE WITH 20mm x45 DEGREE CHAMFER UON. 3.7 CONCRETE REINFORCEMENT BARS SHALL CONFORM TO ASTM A615M-96a, GRADE 420 MPa. REINFORCING BARS SHALL NOT BE TACK WELDED, WELDED, HEATED OR CUT, UNLESS INDICATED ON THE CONTRACT DOCUMENTS. ALL LAP SPLICES SHALL BE CLASS "B" UON. 3.8 HORIZONTAL FOOTING AND HORIZONTAL WALL REINFORCEMENT SHALL BE CONTINUOUS AND SHALL HAVE 90 DEGREE BENDS AND EXTENSIONS, OR CORNER BARS OF EQUIVALENT SIZE LAPPED WITH A CLASS B TENSION SPLICE AT CORNERS AND INTERSECTIONS. TOP BAR CRITERIA SHALL APPLY IF 300mm OR MORE OF FRESH CONCRETE IS PLACED BELOW BAR. 3.9 SLABS-ON-GRADE SHALL HAVE CONSTRUCTION JOINTS OR CRACK CONTROL JOINTS AS SHOWN ON THE SHEETS. CONSTRUCTION JOINTS CAN BE USED AT CONTROL JOINT LOCATIONS AT CONTRACTOR'S OPTION. SEE SLAB PLANS & JOINT DETAILS FOR ADDITIONAL INFORMATION. FOR AREAS NOT SHOWN ON SHEETS, THE MAXIMUM SPACING OF CONSTRUCTION/ CRACK CONTROL JOINTS SHALL BE 4800mm 3.10 SEE SPECIFICATIONS FOR ALL WATERPROOFING/DAMPPOOFING REQUIREMENTS. 3.11 ALL CONCRETE REINFORCEMENT SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED, AND SPACED IN FORMS AND SECURED IN PLACE IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OUTLINED IN THE LATEST EDITION OF THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318M, AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315M, LATEST EDITION. 3.12 SHOP DRAWINGS SHOWING REINFORCING DETAILS, INCLUDING STEEL SIZES, SPACING AND PLACEMENT, SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION. 3.13 ALL DOWELS SHALL MATCH SIZE AND NUMBER OF MAIN REINFORCING, UNLESS NOTED OTHERWISE ON SHEETS. 3.14 ADDITIONAL BARS SHALL BE PROVIDED AROUND ALL FLOOR AND WALL OPENINGS AS SHOWN ON THE SHEETS. 3.15 SEE ARCHITECTURAL SHEETS FOR TYPE AND LOCATION OF ALL FLOOR FINISHES. 3.16 THE CONTRACTOR SHALL COORDINATE ADDITIONAL WALL/SLAB OPENINGS NOT SHOWN ON STRUCTURAL SHEETS. SEE MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL SHEETS. 3.17 UNLESS NOTED OTHERWISE, ALL CURBS SHALL BE REINFORCED WITH AT LEAST (1)-#13 CONTINUOUS AND #13 AT 300mm O.C. DOWELS TO STRUCTURE BELOW. 3.18 THE SUB-CONTRACTOR SHALL VERIFY ALL OPENINGS, PAD SIZES, AND ANCHOR BOLTS WITH EQUIPMENT SELECTED. 3.19 FOR ALL WALLS & PIERS, PROVIDE DOWELS INTO FOOTING AT EACH VERT REINF BAR, UON DOWEL SIZE SHALL BE SAME AS VERT REINF. 3.20 ALL DEFORMED BAR ANCHORS SHALL BE TRS NELSON DIVISION OR EQUAL 15mm DIA (UON) CONFORMING TO ASTM A-496M WITH A MINIMUM TENSILE STRENGTH OF 550 MPa. ANCHOR DIMENSIONS SHALL BE IN ACCORDANCE WITH ASTM D-19. INSTALL ANCHORS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS BY AUTOMATIC END WELDING AS INDICATED ON THE DRAWINGS. NO UNAUTHORIZED OR FIELD WELDING SHALL BE MADE WITHOUT AUTHORIZATION FROM THE MANUFACTURER. 3.21 ALL REINFORCING INDICATED TO BE WELDED SHALL BE IN ACCORDANCE WITH ASTM A706M. "LOW ALLOY STEEL DEFORMED BARS FOR CONCRETE REINFORCEMENT". ANY INSTALLATIONS USING MANUFACTURER'S EQUIPMENT SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. 3.22 PROVIDE CONCRETE POUR STOPS OR FORMS AS REQUIRED FOR INSTALLATION OF ALL CONCRETE WORK. 3.23 PROVIDE ADDITIONAL (2)-#13 x 600mm REINFORCING BARS IN SLAB-ON-GRADE AT ALL RE-ENTRANT CORNERS. PLACE BARS AT MID-DEPTH OF SLAB WITH A CLEARANCE OF 50mm FROM CORNER UON. 4.0 CONCRETE MASONRY 4.1 MASONRY CONSTRUCTION AND MATERIALS SHALL CONFORM TO ALL REQUIREMENTS OF THESE CONTRACT DOCUMENTS AND THE PROJECT SPECIFICATIONS. 4.2 THE SPECIFIED ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE MASONRY (f'm) ON THE NET AREA IS A MINIMUM OF 10.4 MPa. 4.3 PROVIDE TWO #16 BARS CONTINUOUS IN ALL CMU AND CAST-IN-PLACE BOND BEAMS UON ON THE SHEETS. INTERMEDIATE BOND BEAMS SHALL BE CONTINUOUS AND SPACED AT A MAXIMUM OF 1200mm OC VERTICALLY. ALL BOND BEAMS SHALL BE A MINIMUM OF 200mm IN DEPTH WITH REINFORCING BEING CONTINUOUS AND HAVING STANDARD ACI HOOKS AT EACH END. PROVIDE STANDARD BAR SPLICES AS SPECIFIED.	4.4 FOR MINIMUM WALL REINFORCING, SEE MIN CMU WALL REINFORCING DETAILS ON SHEET S10. 4.5 CMU CELLS THAT REQUIRE VERTICAL REINFORCING BARS AS INDICATED ON THE CONTRACT DRAWINGS AND/OR SPECS SHALL HAVE REINF BAR PLACED IN CENTERS OF CMU CELLS AND CONTINUOUSLY GROUTED UON. 4.6 PROVIDE LADDER TYPE JOINT REINFORCEMENT AT 200mm FOR EXTERIOR & 400mm FOR INTERIOR ON CENTER MAXIMUM, UON MINIMUM ROD SIZE USED SHALL BE 9 GA. DEFORMED WIRE AND CONFORM TO ASTM A82M, UON. 4.7 PROVIDE CONTROL JOINTS AS INDICATED ON THE ARCHITECTURAL SHEETS. 4.8 GROUT FOR MASONRY SHALL BE NORMAL WEIGHT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 25 MPa AT 28 DAYS. GROUT SHALL CONFORM TO ASTM C476M. GROUT LIFTS SHALL NOT EXCEED 1400mm. 4.9 USE MORTAR TYPE S CONFORMING TO ASTM C270M, SEE SPECIFICATIONS. 4.10 CONCRETE MASONRY UNITS SHALL BE NORMAL WEIGHT AND CONFORM TO ASTM C90M. 4.11 ALL CMU CELLS, OPEN CAVITIES, AND AIR SPACES SHALL BE GROUTED. TO STOP FRAGMENTS FROM MORTAR BLAST 4.12 BOND BEAM REINFORCING SHALL BE DISCONTINUOUS AT CONTROL JOINTS (UON). MAXIMUM CONTROL JOINT SPACING SHALL BE AS INDICATED ON THE ARCHITECTURAL SHEETS. 4.13 CONTRACTOR SHALL COORDINATE LOCATION OF ALL OPENINGS SEE ARCH, MECH, ELEC, AND PLUMBING SHEETS. FOR SIZE AND LOCATION OF OPENINGS. 4.14 MASONRY WALLS SHALL NOT BE BACK FILLED PRIOR TO THE MORTAR AND GROUT ATTAINING THEIR RESPECTIVE MAXIMUM DESIGN STRENGTHS PER SPECIFICATIONS. 5.0 STEEL DECK 5.1 STEEL DECK SHALL BE ASTM A611M, GRADES C & D OR A653M STRUCTURAL QUALITY HAVING A MINIMUM YIELD STRENGTH OF 345 MPa AS PER THE STEEL DECK INSTITUTE (SDI) DESIGN MANUAL. 5.2 STEEL DECK SHALL BE ERECTED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND ERECTION LAYOUTS AND CONNECTED TO SUPPORTING MEMBERS AS INDICATED. 5.3 COMPOSITE FLOOR DECK 5.3.1 STEEL FLOOR DECK SHALL BE 51mm RIB HEIGHT, 18 GA HOT-DIP GALVANIZED (SDI TYPE 2VL1-18) UON. 5.3.2 FLOOR DECK SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: <table border="1" style="margin-left: 20px;"> <tr> <td>MOMENT OF INERTIA, I_p</td> <td>18 GAUGE</td> </tr> <tr> <td>SECTION MODULUS (TOP OF DECK), S_n</td> <td>760mm⁴/mm WIDTH</td> </tr> <tr> <td>SECTION MODULUS (BOTT OF DECK) S_p</td> <td>27.5mm³/mm WIDTH</td> </tr> <tr> <td></td> <td>27.8mm³/mm WIDTH</td> </tr> </table> 5.3.3 FLOOR DECK SHALL BE FASTENED TO THE SUPPORTS AS INDICATED IN THE BOTTOM OF THE FLUTES USING A SDI 36/7 PATTERN. 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ALL WELDS NOT INDICATED SHALL BE 6mm MIN ALL AROUND UON. 6.17 SEE MECHANICAL, ELECTRICAL, AND PLUMBING SHEETS FOR ADDITIONAL OPENINGS NOT SHOWN. ALL OPENINGS SHALL BE FRAMED 4 SIDES WITH C200x17'S UON.
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ON CENTER OPNG OPENING ? or PL PLATE PRE-ENG PRE-ENGINEERED REINF REINFORCED REQ'D REQUIRED SIM SIMILAR SPECS SPECIFICATIONS STD STANDARD STRUCT STRUCTURAL T TOP T/ TOP OF T/ELEV TOP ELEVATION T&B TOP AND BOTTOM THK THICK TM TRADE MARK TYP TYPICAL UFC UNIFIED FACILITIES CRITERIA UON UNLESS OTHERWISE NOTED VERT VERTICAL W WIDTH W/ WITH	1.1 COORDINATE THESE SHEETS WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND CIVIL SHEETS. ALL DIMENSIONS SHOWN ON THE SHEETS ARE MILLIMETERS UNLESS NOTED OTHERWISE. 1.2 THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL FLOOR AND ROOF OPENING SIZES AND LOCATIONS, EQUIPMENT PAD SIZES AND LOCATIONS, ANCHOR BOLT LAYOUTS, ETC WITH EQUIPMENT SELECTED. THE CONTRACTOR SHALL MAKE ANY REQUIRED MODIFICATIONS AT NO ADDITIONAL COST. 1.3 THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING SHEETS FOR SLEEVES, CURBS, INSERTS OR OPENINGS, ETC. NOT HEREIN INDICATED. 1.4 SLAB OPENINGS SMALLER THAN 250mm DIA TO BE CORE DRILLED IN FIELD UON. SEE MECHANICAL, ELECTRICAL AND PLUMBING SHEETS FOR LOCATIONS OF THESE OPENINGS. 1.5 WORK NOT INCLUDED ON THE SHEETS BUT IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES ELSEWHERE ON THE SHEETS SHALL BE REPEATED. 1.6 IN CASE OF CONFLICT BETWEEN THE NOTES, DETAILS AND SPECIFICATIONS THE MOST RIGID REQUIREMENTS SHALL GOVERN. 1.7 SEE ARCHITECTURAL SHEETS FOR LOCATIONS OF MASONRY AND DRYWALL NON-LOAD BEARING PARTITIONS. PROVIDE COMPRESSIBLE FIRESAFING AT TOP OF WALL AS REQUIRED BY ARCHITECTURAL SHEETS. 1.8 COORDINATE FINISHED FLOOR DATUM ELEVATION 0.0m WITH THE CIVIL SHEETS. 1.9 DESIGN PRE-ENGINEERED METAL BUILDINGS IN ACCORDANCE W/ MBMA LATEST EDITION PER DESIGN CRITERIA ON SHEET S2. 2.0 FOUNDATION NOTES 2.1 THE GEOTECHNICAL ANALYSIS FOR THIS PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR AWARDED THE WORK. DESIGN VALUES USED IN THE STRUCTURAL ANALYSIS OF THE BUILDINGS HEREIN INDICATED HAVE BEEN ASSUMED AND SHALL BE CONFIRMED AND VERIFIED AS PART OF THE GEOTECHNICAL INVESTIGATION. VALUES WHICH DO NOT MEET THE REQUIREMENTS INDICATED ON SHEET S2 SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER FOR CONSIDERATION AND DETERMINATION ON THE NEXT APPROPRIATE COURSE OF ACTION. 2.2 SEE THE SPECIFICATION FOR ADDITIONAL REQUIREMENTS TO THOSE OUTLINED IN THE GEOTECHNICAL INVESTIGATION FOR EXCAVATION AND PREPARATION OF THE FOUNDATION AND THE SLAB ON GRADE SUBGRADE INCLUDING COMPACTION PROCEDURES. 2.3 EXCAVATIONS FOR FOOTINGS SHALL HAVE THE SIDES AND BOTTOMS TEMPORARILY LINED WITH 0.25mm POLYETHYLENE IF PLACEMENT OF CONCRETE DOES NOT OCCUR WITHIN 24 HRS OF THE EXCAVATION OF THE FOOTING. 2.4 FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION WHICH DIFFER FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT SHALL BE REPORTED TO THE GENERAL CONTRACTOR BEFORE FURTHER CONSTRUCTION IS ATTEMPTED. SEE PROJECT SPECIFICATIONS. 2.5 NO FOOTINGS OR SLABS SHALL BE POURED INTO OR AGAINST SUBGRADE CONTAINING FREE WATER, FROST, ICE OR LOOSE MATERIAL. FROST DEPTH ASSUMED TO BE 800MM 2.6 ALL SLAB-ON-GRADE, TRENCH BOTTOMS AND OTHER ON-GRADE INTERIOR HORIZONTAL SURFACES SHALL BE PLACED OVER A 0.25mm VAPOR RETARDER OVER A 100mm #57 STONE WATER BARRIER PLACED ON SUBGRADE PROPERLY PREPARED IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS. (UON) 2.7 SEE PLUMBING, ELECTRICAL & CIVIL SHEETS FOR REQUIRED UNDERSLAB UTILITIES. 2.8 SEE ARCHITECTURAL SHEETS FOR ALL WATERPROOFING DETAILS AND MATERIALS. 2.9 IF UNDERMINING OF FOOTINGS OCCURS, FILL VOIDS WITH 15MPa CONCRETE. DO NOT ATTEMPT TO REPLACE AND RECOMPACT SOIL. 3.0 CONCRETE 3.1 CONCRETE SHALL HAVE THE UNIT WEIGHT AND THE MINIMUM COMPRESSIVE STRENGTHS (f'c) AT 28 DAYS AS SHOWN IN THE CONCRETE MATERIALS SCHEDULE ON SHEET S3. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION. ENTRAIN AIR TO PRODUCE TOTAL AIR CONTENT ACCORDING TO THE SPECIFICATIONS FOR CONCRETE EXPOSED TO FREEZING TEMPERATURES (EXTERIOR FOOTINGS, SLAB TURNDOWNS, EXTERIOR SLABS AND SLABS-ON-GRADE, EXTERIOR RETAINING WALLS, AND EXTERIOR GRADE BEAMS.) 3.2 GROUT FOR BASE PLATES SHALL BE NON-SHRINKABLE GROUT AND SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH AT 28 DAYS OF 35MPa, UNLESS NOTED OTHERWISE. 3.3 NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE. 3.4 MIXING, TRANSPORTING AND PLACING OF CONCRETE SHALL CONFORM TO ACI 301M-05	3.5 ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN CONCRETE INSTITUTE (ACI) 318M MANUAL (metric), "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", AND REQUIREMENTS OUTLINED IN THE CONTRACT SPECIFICATIONS. WHEN THERE IS A CONFLICT BETWEEN ACI AND THE SPECIFICATIONS, THE MORE STRINGENT SHALL GOVERN. 3.6 CHAMFER ALL EXPOSED EXTERNAL CORNERS OF CONCRETE WITH 20mm x45 DEGREE CHAMFER UON. 3.7 CONCRETE REINFORCEMENT BARS SHALL CONFORM TO ASTM A615M-96a, GRADE 420 MPa. REINFORCING BARS SHALL NOT BE TACK WELDED, WELDED, HEATED OR CUT, UNLESS INDICATED ON THE CONTRACT DOCUMENTS. ALL LAP SPLICES SHALL BE CLASS "B" UON. 3.8 HORIZONTAL FOOTING AND HORIZONTAL WALL REINFORCEMENT SHALL BE CONTINUOUS AND SHALL HAVE 90 DEGREE BENDS AND EXTENSIONS, OR CORNER BARS OF EQUIVALENT SIZE LAPPED WITH A CLASS B TENSION SPLICE AT CORNERS AND INTERSECTIONS. TOP BAR CRITERIA SHALL APPLY IF 300mm OR MORE OF FRESH CONCRETE IS PLACED BELOW BAR. 3.9 SLABS-ON-GRADE SHALL HAVE CONSTRUCTION JOINTS OR CRACK CONTROL JOINTS AS SHOWN ON THE SHEETS. CONSTRUCTION JOINTS CAN BE USED AT CONTROL JOINT LOCATIONS AT CONTRACTOR'S OPTION. SEE SLAB PLANS & JOINT DETAILS FOR ADDITIONAL INFORMATION. FOR AREAS NOT SHOWN ON SHEETS, THE MAXIMUM SPACING OF CONSTRUCTION/ CRACK CONTROL JOINTS SHALL BE 4800mm 3.10 SEE SPECIFICATIONS FOR ALL WATERPROOFING/DAMPPOOFING REQUIREMENTS. 3.11 ALL CONCRETE REINFORCEMENT SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED, AND SPACED IN FORMS AND SECURED IN PLACE IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OUTLINED IN THE LATEST EDITION OF THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318M, AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315M, LATEST EDITION. 3.12 SHOP DRAWINGS SHOWING REINFORCING DETAILS, INCLUDING STEEL SIZES, SPACING AND PLACEMENT, SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION. 3.13 ALL DOWELS SHALL MATCH SIZE AND NUMBER OF MAIN REINFORCING, UNLESS NOTED OTHERWISE ON SHEETS. 3.14 ADDITIONAL BARS SHALL BE PROVIDED AROUND ALL FLOOR AND WALL OPENINGS AS SHOWN ON THE SHEETS. 3.15 SEE ARCHITECTURAL SHEETS FOR TYPE AND LOCATION OF ALL FLOOR FINISHES. 3.16 THE CONTRACTOR SHALL COORDINATE ADDITIONAL WALL/SLAB OPENINGS NOT SHOWN ON STRUCTURAL SHEETS. SEE MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL SHEETS. 3.17 UNLESS NOTED OTHERWISE, ALL CURBS SHALL BE REINFORCED WITH AT LEAST (1)-#13 CONTINUOUS AND #13 AT 300mm O.C. DOWELS TO STRUCTURE BELOW. 3.18 THE SUB-CONTRACTOR SHALL VERIFY ALL OPENINGS, PAD SIZES, AND ANCHOR BOLTS WITH EQUIPMENT SELECTED. 3.19 FOR ALL WALLS & PIERS, PROVIDE DOWELS INTO FOOTING AT EACH VERT REINF BAR, UON DOWEL SIZE SHALL BE SAME AS VERT REINF. 3.20 ALL DEFORMED BAR ANCHORS SHALL BE TRS NELSON DIVISION OR EQUAL 15mm DIA (UON) CONFORMING TO ASTM A-496M WITH A MINIMUM TENSILE STRENGTH OF 550 MPa. ANCHOR DIMENSIONS SHALL BE IN ACCORDANCE WITH ASTM D-19. INSTALL ANCHORS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS BY AUTOMATIC END WELDING AS INDICATED ON THE DRAWINGS. NO UNAUTHORIZED OR FIELD WELDING SHALL BE MADE WITHOUT AUTHORIZATION FROM THE MANUFACTURER. 3.21 ALL REINFORCING INDICATED TO BE WELDED SHALL BE IN ACCORDANCE WITH ASTM A706M. "LOW ALLOY STEEL DEFORMED BARS FOR CONCRETE REINFORCEMENT". ANY INSTALLATIONS USING MANUFACTURER'S EQUIPMENT SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. 3.22 PROVIDE CONCRETE POUR STOPS OR FORMS AS REQUIRED FOR INSTALLATION OF ALL CONCRETE WORK. 3.23 PROVIDE ADDITIONAL (2)-#13 x 600mm REINFORCING BARS IN SLAB-ON-GRADE AT ALL RE-ENTRANT CORNERS. PLACE BARS AT MID-DEPTH OF SLAB WITH A CLEARANCE OF 50mm FROM CORNER UON. 4.0 CONCRETE MASONRY 4.1 MASONRY CONSTRUCTION AND MATERIALS SHALL CONFORM TO ALL REQUIREMENTS OF THESE CONTRACT DOCUMENTS AND THE PROJECT SPECIFICATIONS. 4.2 THE SPECIFIED ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE MASONRY (f'm) ON THE NET AREA IS A MINIMUM OF 10.4 MPa. 4.3 PROVIDE TWO #16 BARS CONTINUOUS IN ALL CMU AND CAST-IN-PLACE BOND BEAMS UON ON THE SHEETS. INTERMEDIATE BOND BEAMS SHALL BE CONTINUOUS AND SPACED AT A MAXIMUM OF 1200mm OC VERTICALLY. ALL BOND BEAMS SHALL BE A MINIMUM OF 200mm IN DEPTH WITH REINFORCING BEING CONTINUOUS AND HAVING STANDARD ACI HOOKS AT EACH END. 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MOMENT OF INERTIA, I _p	18 GAUGE	SECTION MODULUS (TOP OF DECK), S _n	760mm ⁴ /mm WIDTH	SECTION MODULUS (BOTT OF DECK) S _p	27.5mm ³ /mm WIDTH		27.8mm ³ /mm WIDTH	6.5.1 UNLESS NOTED OTHERWISE AS THUS: (##N), CONNECTIONS SHALL BE DESIGNED AND DETAILED FOR THE END REACTION DETERMINED FROM PART 2 - "ALLOWABLE UNIFORM LOAD TABLES" FROM THE AISC STEEL CONSTRUCTION MANUAL 13TH EDITION OR A MINIMUM OF 54 kN WHICH EVER IS GREATER. 6.6 ALL MEMBERS AND CONNECTIONS ON THE CONTRACT DRAWINGS AND CONNECTIONS NOT SHOWN SHALL BE DESIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER, DETAILED AND SUBMITTED FOR APPROVAL AND SHOWN ON THE SHOP DRAWINGS. 6.7 ALTERNATIVE CONNECTION DETAILS MAY BE SUBMITTED ON SHOP DRAWINGS BY THE CONTRACTOR ONLY IF ACCOMPANIED BY COMPLETE STRUCTURAL CALCULATIONS PREPARED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER AND SUBMITTED FOR REVIEW. 6.8 CALCULATIONS FOR DETAILS MUST SHOW A RATIONAL ANALYSIS OF A COMPLETE LOAD PATH, INCLUDING LOCAL EFFECTS ON WEBS, FLANGES, ETC OF THE CONNECTED MEMBERS AND THE DEVICES (PLATES, SEATS, BRACKETS, BOLTS, WEBS, ETC) AFFECTING ALL CONNECTIONS. FAILURE TO SUBMIT SUCH CALCULATIONS FOR REVIEW CONCURRENT WITH SHOP DRAWING ERECTION PLANS AND DETAILS WILL BE CAUSE FOR REJECTION OF THAT SUBMITTAL. 6.8.1 ALL SHEAR TAB CONNECTIONS SUBMITTED AS AN ALTERNATE FOR APPROVAL SHALL BE DESIGNED USING A FLEXIBLE SUPPORT CONDITION. BEAM AND GIRDER CONNECTIONS SHALL BE DESIGNED SUCH THAT ALL ADDITIONAL STRESSES DUE TO CONNECTION ECCENTRICITY SHALL BE DEVELOPED BY THE CONNECTION AND NOT INDUCE ANY ADDITIONAL STRESSES INTO SUPPORTING MEMBERS. 6.8.2 STRUCTURAL STEEL DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO THE AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS - ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN" AND THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" - LATEST EDITIONS. 6.10 WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE AWS D1.1. ELECTRODES FOR SHOP AND FIELD WELDS SHALL BE CLASS E70XX. ALL WELDING SHALL BE DONE BY QUALIFIED, CERTIFIED WELDERS PER THE ABOVE STANDARD. 6.11 SHOP AND FIELD TESTING OF WELDS AND BOLTS SHALL BE AS OUTLINED IN THE SPECIFICATIONS. 6.12 ALL FILLET WELDS SHALL BE A MINIMUM OF 5mm UNLESS NOTED OTHERWISE 6.13 THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT PRIOR APPROVAL OF THE CONTRACTING OFFICER. 6.14 FOR FLOOR AND ROOF OPENINGS, THE FABRICATOR SHALL VERIFY OPENING LOCATIONS WITH EQUIPMENT SELECTED AND MAKE ANY NECESSARY MODIFICATIONS AT NO ADDITIONAL COST. THE CONTRACTOR SHALL COORDINATE MECHANICAL UNITS AND OPENINGS & ARCHITECTURAL ITEMS REQUIRED FOR COMPLETE INSTALLATION OF WORK. IT IS THE RESPONSIBILITY OF FABRICATOR TO RECEIVE ALL NECESSARY INFORMATION PRIOR TO FABRICATION OF THE STEEL. 6.15 ALL STRUCTURAL STEEL SHALL BE PRIMED AS PER THE SPECIFICATIONS. 6.16 ALL PLATES NOT INDICATED SHALL BE 13mm MIN THICKNESS. ALL ANGLES NOT INDICATED SHALL BE 76x76x7.9 MIN. ALL WELDS NOT INDICATED SHALL BE 6mm MIN ALL AROUND UON. 6.17 SEE MECHANICAL, ELECTRICAL, AND PLUMBING SHEETS FOR ADDITIONAL OPENINGS NOT SHOWN. ALL OPENINGS SHALL BE FRAMED 4 SIDES WITH C200x17'S UON.
MOMENT OF INERTIA, I _p	18 GAUGE												
SECTION MODULUS (TOP OF DECK), S _n	760mm ⁴ /mm WIDTH												
SECTION MODULUS (BOTT OF DECK) S _p	27.5mm ³ /mm WIDTH												
	27.8mm ³ /mm WIDTH												
4	CFMF COLD FORM METAL FRAME CFS COLD FORMED STEEL CIP CAST IN PLACE CIPL CAST-IN-PLACE LINTEL CJ CONTROL JOINT CLG CEILING CLR CLEAR CMU CONCRETE MASONRY UNIT COEFF COEFFICIENT COL COLUMN CONC CONCRETE CONT CONTINUOUS COORD COORDINATE CSJ CONSTRUCTION JOINT CTJ CONTROL JOINT DIA DIAMETER DIAG DIAGONAL DIM DIMENSION DWG DRAWING DWL DOWEL EA EACH ELEC ELECTRICAL ELEV ELEVATION EMBED EMBEDMENT EQUIV EQUIVALENT ETC ET CETERA E.W EACH WAY EXT EXTERIOR FTG FOOTING GA GAUGE HORIZ HORIZONTAL HRS HOURS IBC INTERNATIONAL BUILDING CODE INT INTERIOR Kg KILOGRAM KIP KIPS (1 KIP = 1,000 POUNDS) KN KILONEWTON kPa KILOPASCAL L# ANGLE (# INDICATES SIZE) LLV LONG LEG VERTICAL M METER MAX MAXIMUM MBM METAL BUILDING MANUFACTURER MBMA METAL BUILDING MANUFACTURERS ASSOCIATION MECH MECHANICAL MFG MANUFACTURER MID MIDDLE MIN MINIMUM MISC MISCELLANEOUS MM MILLIMETER MPa MEGAPASCAL MTL METAL MWFRS MAIN WIND FORCE RESISTING SYSTEM N NEWTON N NORTH N/A NOT APPLICABLE # NUMBER SYMBOL FOR REBAR SIZE NTS NOT TO SCALE O.C. ON CENTER OPNG OPENING ? or PL PLATE PRE-ENG PRE-ENGINEERED REINF REINFORCED REQ'D REQUIRED SIM SIMILAR SPECS SPECIFICATIONS STD STANDARD STRUCT STRUCTURAL T TOP T/ TOP OF T/ELEV TOP ELEVATION T&B TOP AND BOTTOM THK THICK TM TRADE MARK TYP TYPICAL UFC UNIFIED FACILITIES CRITERIA UON UNLESS OTHERWISE NOTED VERT VERTICAL W WIDTH W/ WITH	1.1 COORDINATE THESE SHEETS WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND CIVIL SHEETS. ALL DIMENSIONS SHOWN ON THE SHEETS ARE MILLIMETERS UNLESS NOTED OTHERWISE. 1.2 THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL FLOOR AND ROOF OPENING SIZES AND LOCATIONS, EQUIPMENT PAD SIZES AND LOCATIONS, ANCHOR BOLT LAYOUTS, ETC WITH EQUIPMENT SELECTED. THE CONTRACTOR SHALL MAKE ANY REQUIRED MODIFICATIONS AT NO ADDITIONAL COST. 1.3 THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING SHEETS FOR SLEEVES, CURBS, INSERTS OR OPENINGS, ETC. NOT HEREIN INDICATED. 1.4 SLAB OPENINGS SMALLER THAN 250mm DIA TO BE CORE DRILLED IN FIELD UON. SEE MECHANICAL, ELECTRICAL AND PLUMBING SHEETS FOR LOCATIONS OF THESE OPENINGS. 1.5 WORK NOT INCLUDED ON THE SHEETS BUT IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES ELSEWHERE ON THE SHEETS SHALL BE REPEATED. 1.6 IN CASE OF CONFLICT BETWEEN THE NOTES, DETAILS AND SPECIFICATIONS THE MOST RIGID REQUIREMENTS SHALL GOVERN. 1.7 SEE ARCHITECTURAL SHEETS FOR LOCATIONS OF MASONRY AND DRYWALL NON-LOAD BEARING PARTITIONS. PROVIDE COMPRESSIBLE FIRESAFING AT TOP OF WALL AS											

- POWER**
- DISTRIBUTION PANELBOARD
 - NEW PANELBOARD - SURFACE
 - NEW PANELBOARD - RECESSED
 - EXISTING PANELBOARD
 - GENERATOR
 - TRANSIENT VOLTAGE SURGE SUPPRESSOR
 - TRANSFORMER (DRAWN TO SIZE)
 - POWER SUPPLY
 - CONTROL PANEL
 - TIME CLOCK
 - ASTRONOMICAL TIME CLOCK - "SEE SPEC."
 - RELAY WITH RATING AND NUMBER OF POLES AS NOTED ON DRAWINGS - "SEE SPEC."
 - JUNCTION BOX
 - JUNCTION BOX - CEILING
 - PULL BOX
 - BUS DUCT HORIZONTAL
 - BUS DUCT VERTICAL
 - EMERGENCY POWER OFF PUSH BUTTON
 - NON-FUSIBLE SAFETY SWITCH
 - FUSIBLE SAFETY SWITCH
 - MOTOR
 - MOTOR STARTING SWITCH - 20A RATED
 - KEY SWITCH - 20A RATED
 - FAN COIL - FURNISHED BY MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR SHALL INSTALL AND PROVIDE POWER CONNECTION
 - UNIT HEATER - FURNISHED BY MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR SHALL INSTALL AND PROVIDE POWER CONNECTION
 - JUNCTION BOX FOR CONNECTION TO GARBAGE DISPOSAL
 - LIGHT/HEATER/FAN - FURNISHED BY MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR SHALL INSTALL AND PROVIDE POWER CONNECTION
 - ELECTRIC WATER HEATER
 - WEATHERPROOF / EXPLOSION PROOF EMERGENCY POWER OFF PUSH-BUTTON TO BE INTERCONNECTED WITH GENERATOR SHUT DOWN CONTROL
 - CEILING FAN - REFER TO SPECIFICATION SECTION 26 20 00
- RECEPTACLES**
- DUPLEX 20A BRITISH STANDARD UNSWITCHED SOCKETS
 - DUPLEX 20A BRITISH STANDARD UNSWITCHED SOCKETS - 10mA GROUND FAULT INTERRUPTER TYPE
 - DUPLEX 20A BRITISH STANDARD UNSWITCHED SOCKETS - 10mA GROUND FAULT INTERRUPTER TYPE WITH WEATHERPROOF COVER
 - DUPLEX 20A BRITISH STANDARD UNSWITCHED SOCKETS - EXPLOSION PROOF
 - INDICATES MOUNT DEVICE ABOVE COUNTER TOP

- LIGHTING PROTECTION**
- AIR TERMINAL 20mm O.D. X 4m SOLID COPPER, NICKEL PLATED ON ADHESIVE BASE.
 - EQUIPMENT AIR TERMINAL
 - TEST WELL WITH GROUND ROD(S)
 - GROUND ROD
 - GROUND PLATE
 - MAIN GROUND CONDUCTOR CONCEALED WITHIN CONSTRUCTION
 - MAIN GROUND CONDUCTOR EXPOSED ON BUILDING EXTERIOR SURFACE
 - GROUND CONDUCTOR CAD WELDED TO GROUND CABLE OR EQUIPMENT
 - GROUND CONDUCTOR CAD WELDED TO BUILDING STEEL COLUMN
 - GROUND ROD TRIPOD, SPACED 10 FEET APART
 - LEVEL TO LEVEL CABLE
- LIGHTING**
- LIGHTING FIXTURE - SEE FIXTURE SCHEDULE FOR MORE INFORMATION
 - LIGHTING FIXTURE - SEE FIXTURE SCHEDULE FOR MORE INFORMATION
 - DOWNLIGHT
 - LIGHTING FIXTURE ON NORMAL/EMERGENCY
 - WALL MOUNTED LIGHT FIXTURE
 - EXIT SIGN - DIRECTIONAL ARROWS AS INDICATED ON DRAWINGS
 - BATTERY PACK WITH HEADS AS INDICATED ON DRAWINGS
 - REMOTE HEAD FOR BATTERY PACK
 - SINGLE POLE SWITCH - 20A RATED
 - 3-WAY SWITCH - 20A RATED
 - 4-WAY SWITCH - 20A RATED
 - PHOTOCELL VOLTAGE TO MATCH CIRCUITRY
 - LIGHTING CONTACTOR
 - POLE MOUNTED SITE LIGHTING FIXTURE - NUMBER OF FIXTURES PER POLE AS INDICATED ON DRAWINGS
 - EXTERIOR DIRECTIONAL LIGHTING FIXTURE
 - SMALL CASE LETTERS REPRESENTS LAMP(S) / SWITCHES. WHEN USED WITH AN OCCUPANCY SENSOR THIS INDICATES SENSOR WITH MANUAL OVERRIDE SWITCH
- TELECOMMUNICATIONS**
- TELEPHONE OUTLET(S) @ 18" AFF. U.N.O. WITH 3/4" RACEWAY TERMINATED ABOVE NEAREST ACCESSIBLE CEILING OR TO TELEPHONE TERMINAL BOARD IF NO ACCESSIBLE CEILING AVAILABLE. SEE TELE/DATA RISER DIAGRAM FOR OUTLET AND CABLE DESCRIPTION
 - DATA OUTLET(S) @ 18" AFF. U.N.O. WITH 3/4" RACEWAY TERMINATED ABOVE NEAREST ACCESSIBLE CEILING OR TO DATA EQUIPMENT RACK IF NO ACCESSIBLE CEILING AVAILABLE. SEE TELE/DATA RISER DIAGRAM FOR OUTLET AND CABLE DESCRIPTION

- TELECOMMUNICATIONS (CONTINUED)**
- COMBINATION TELEPHONE/DATA OUTLET(S) @ 18" AFF. U.N.O. WITH 1" RACEWAY TERMINATED ABOVE NEAREST ACCESSIBLE CEILING OR TO TELE/DATA TERMINAL AREA IF NO ACCESSIBLE CEILING AVAILABLE. SEE TELE/DATA RISER DIAGRAM FOR OUTLET AND CABLE DESCRIPTION
 - WALL MTD. TELEPHONE OUTLET WITH 3/4" RACEWAY TERMINATED ABOVE NEAREST ACCESSIBLE CEILING OR TO TELEPHONE TERMINAL BOARD IF NO ACCESSIBLE CEILING AVAILABLE. SEE TELE/DATA RISER DIAGRAM FOR OUTLET AND CABLE DESCRIPTION
 - INDICATES NUMBER OF TELEPHONE OUTLET(S) AND ASSOCIATED CABLING
 - INDICATES NUMBER OF DATA OUTLET(S) AND ASSOCIATED CABLING
 - INDICATES NUMBER OF TELEPHONE OUTLETS AND ASSOCIATED CABLING WITH 1 OUTLET AND CABLE DEDICATED FOR FAX
- SINGLE LINE SYMBOLS**
- SWITCH
 - BREAKER
 - FUSE
 - TRANSFORMER
 - CAPACITOR
 - GROUND
 - CONTACT (NORMALLY OPEN)
 - CONTACT (NORMALLY CLOSED)
 - AUTOMATIC TRANSFER SWITCH
 - MANUAL DOUBLE THROW SWITCH
 - CURRENT TRANSFORMER
 - INDICATES NEW ELECTRICAL EQUIPMENT
 - INDICATES NEW CONTROL WIRING AND CONDUIT
 - EQUIPMENT OUTLINE
- MISCELLANEOUS**
- BRANCH CIRCUIT WIRING CONCEALED ABOVE CEILINGS, SURFACE MOUNTED ON WALLS
 - BRANCH CIRCUIT WIRING - /10 ANG
 - BRANCH CIRCUIT WIRING - UNDER FLOOR
 - HOME RUN BACK TO PANEL
 - CONDUIT TURNED DOWN
 - CONDUIT TURNED UP
 - LOW VOLTAGE WIRING AND CONDUIT
 - CABLE TRAY ("X" DENOTES WIDTH)
 - INDICATES CONTINUATION OF LINE
- FIRE ALARM**
- FIRE ALARM CONTROL PANEL WITH BATTERY BACKUP
 - FIRE ALARM PULL STATION

- FIRE ALARM (CONTINUED)**
- FIRE ALARM STROBE - WALL MOUNTED
 - FIRE ALARM AUDIBLE/STROBE - WM
 - FIRE ALARM HORN/STROBE - WM
 - SMOKE DETECTOR
 - HEAT DETECTOR CEILING MOUNTED
 - DUCT DETECTOR - PROVIDED BY EC, INSTALLED BY MC AND CONNECTED BY EC
- NOTATIONS & ABBREVIATIONS**
- AFF ABOVE FINISHED FLOOR
 - C CEILING MOUNTED
 - E EMERGENCY
 - EC ELECTRICAL CONTRACTOR
 - EPO EMERGENCY POWER OFF
 - EXP EXPLOSION PROOF
 - F FIRE ALARM
 - FF FLUSH FLOOR MOUNTED
 - FL FLUORESCENT
 - FO FIBER OPTIC
 - FSS FUSED SAFETY SWITCH
 - G GROUND FAULT INTERRUPTER
 - GC GENERAL CONTRACTOR
 - HOA HAND-OFF AUTO
 - I INFRARED
 - ICD INCANDESCENT
 - IG ISOLATED GROUND
 - K KEY
 - LV LOW VOLTAGE
 - M MOTOR
 - MC MECHANICAL CONTRACTOR
 - NE NORMAL/EMERGENCY
 - NFSS NON-FUSED SAFETY SWITCH
 - PA PAGING SYSTEM
 - PLC PLUMBING CONTRACTOR
 - REL RELOCATE
 - RED RELOCATED
 - SL SINGLE LINE
 - SS SURGE SUPPRESSION
 - T TELEPHONE
 - TL TWIST LOCK

- NOTATIONS & ABBREVIATIONS (CON'L)**
- TP TAMPER PROOF
 - UE UNDERGROUND ELECTRIC
 - UF UNDERGROUND FIBER
 - UT UNDERGROUND TELEPHONE
 - W WALL MOUNTED
 - WG WIRE GUARD
 - WP WEATHERPROOF
 - WPG WEATHERPROOF/GROUND FAULT INTERRUPTER
 - WT WATER TIGHT
- GENERAL PROJECT NOTES:**
- G1. UNLESS OTHERWISE NOTED, PROVIDE ALL EQUIPMENT SHOWN ON THE PLANS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL SYMBOLS SHOWN ON THE PLANS WITH THE SYMBOL LIST. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE INTENT OF ANY SYMBOL THAT IS SHOWN ON THE PLANS AND NOT INDICATED ON THE SYMBOL LIST WITH THE ENGINEER PRIOR TO BID.
- G2. COORDINATE THE FINAL LOCATIONS OF ALL LIGHT FIXTURES WITH THE ARCHITECT'S REFLECTED CEILING PLANS. REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO INSTALLATION.
- G3. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES WITHIN THE CONSTRUCTION AREA THREE (3) WORKING DAYS NOTICE BEFORE COMMENCE DIGGING. NOTIFY THE LOCAL OR STATE AUTHORITY HAVING JURISDICTION AND WAIT THE REQUIRED TIME BEFORE COMMENCING TO DIG.
- G4. THE CONTRACTOR SHALL COORDINATE CONDUIT RUNS, CABLE TRAY, LIGHTING FIXTURES AND OTHER EQUIPMENT LOCATIONS WITH THE OTHER TRADE CONTRACTORS TO AVOID CONFLICTS.
- G5. WHERE VOLTAGES AND FREQUENCIES ON THE DRAWINGS AND IN THE SPECIFICATIONS DIFFER FROM THE LOCAL ONES, ALL WORK SHALL BE PERFORMED USING THE LOCAL VOLTAGES AND FREQUENCIES.
- G6. THE MINIMUM WIRE SIZE ON THE PROJECT SHALL BE 4mm². THE MINIMUM CONDUIT SIZE SHALL BE 20mm. THE MINIMUM BREAKER SIZE SHALL BE 20 AMPS.
- G7. THE CONTRACTOR SHALL PUT A MAXIMUM OF 6 DUPLEX SOCKETS ON A 20A SINGLE POLE CIRCUIT.
- G8. WHERE THE 1010 SCOPE REVISION, 1015 TECHNICAL REVISION, DRAWINGS, AND SPECIFICATIONS DIFFER FROM AMERICAN CODES OR STANDARDS THE 1010, 1015, DRAWINGS, AND SPECIFICATIONS SHALL RULE.
- G9. WORK FOR THE AMMUNITION SUPPLY POINT SHALL BE DONE IN ACCORDANCE WITH DEPARTMENT OF DEFENSE STANDARD DOD 6035.9-S1D.
- G10. ALL CONDUIT AND DEVICES SHALL BE SURFACE MOUNTED UNLESS OTHERWISE INDICATED.

US Army Corps
of Engineers
Afghanistan
Engineer
District

DATE	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SYMBO	DESCRIPTION

DESIGNED BY: JRG

DWN BY: JRG

DATE: 09-30-09

SUBMITTED BY: BAKER

FILE NO.: DRAWING1

CHK BY: JRG

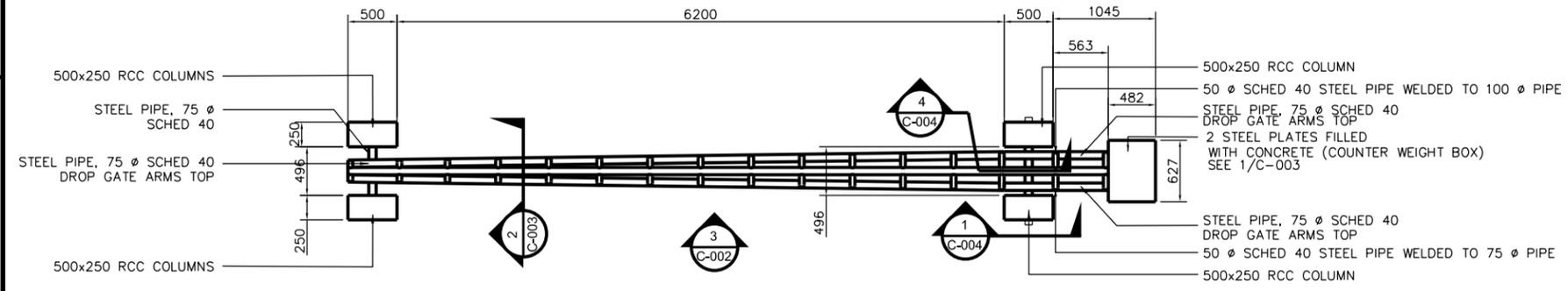
AFGHAN NATIONAL POLICE
STANDARD DESIGN
POL BUILDING

ELECTRICAL SYMBOLS AND ABBREVIATIONS

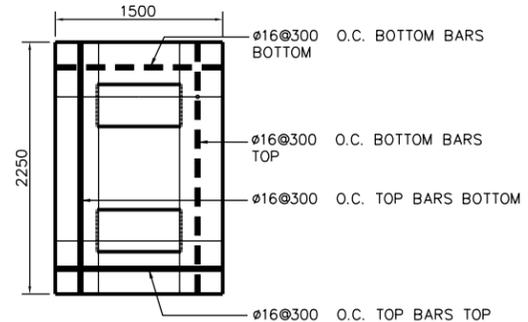
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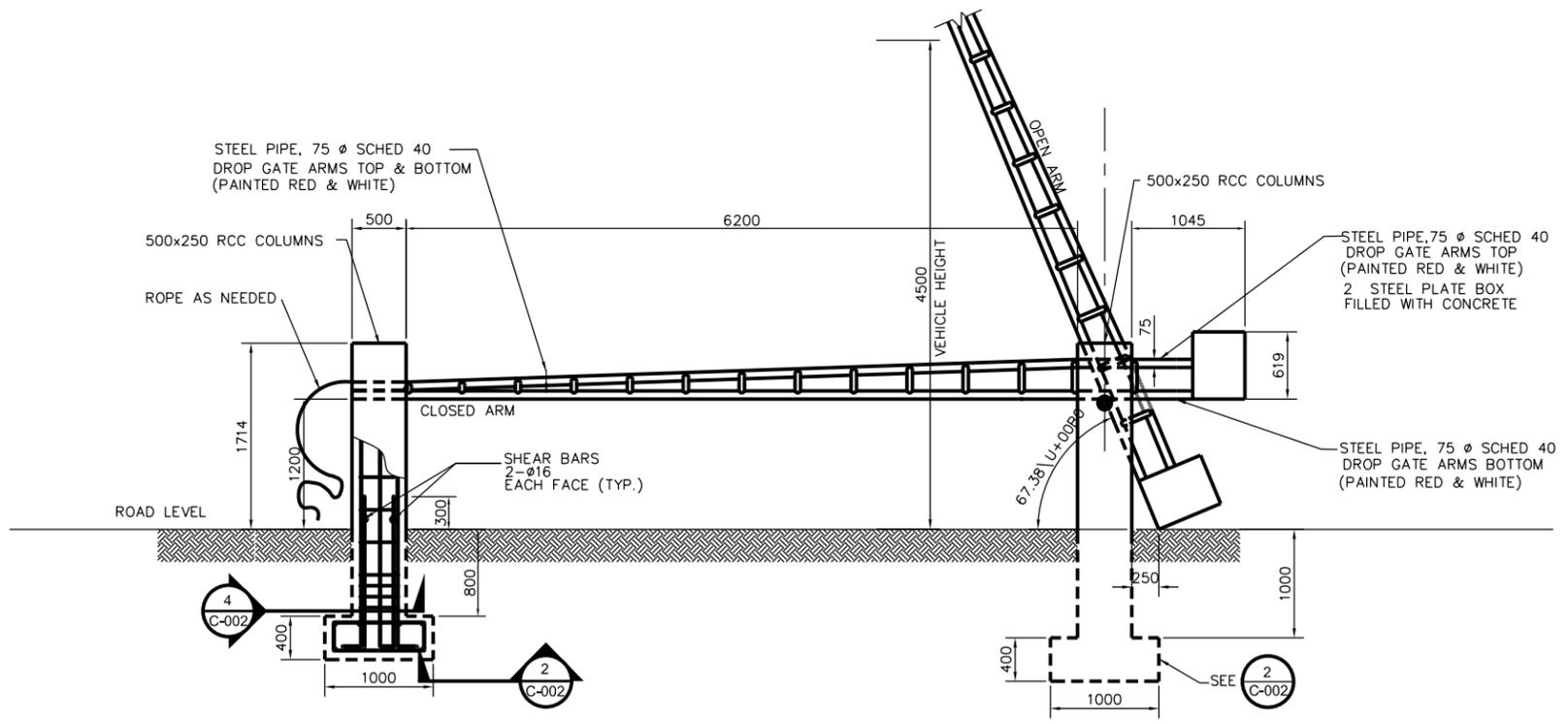
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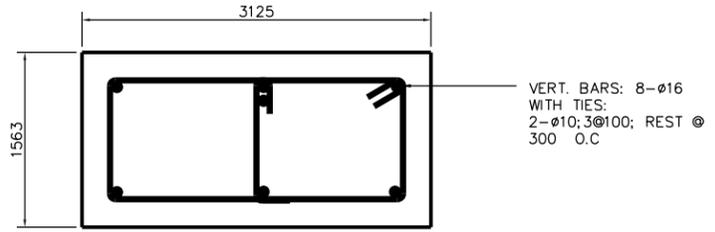
1 PLAN
C-002 1:30



2 DETAIL
C-002 NTS



3 ELEVATION
C-002 1:30



4 DETAIL
C-002 NTS

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (MM) UNLESS NOTED OTHERWISE.



REV.	DATE	DESCRIPTION

DESIGNED BY:	DATE:	REV.
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CHECKED BY:	DRAWING CODE:	
REVIEWED BY:	FILE NAME:	
SUBMITTED BY:	PLOT SCALE:	
	PLOT DATE:	

AFGHAN NATIONAL POLICE
 STANDARD DESIGN
 DROP ARM BARRIER

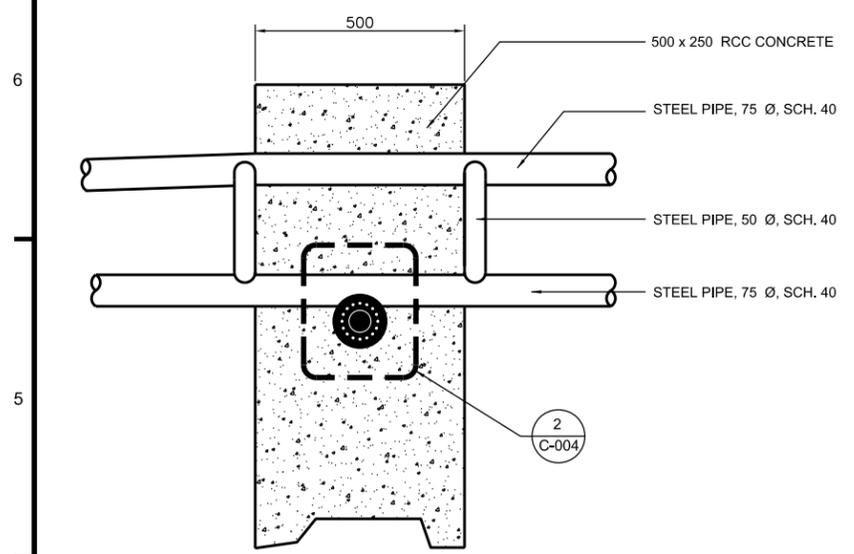
ELEVATION, COLUMN AND FOOTING

SHEET REFERENCE NUMBER:
C2

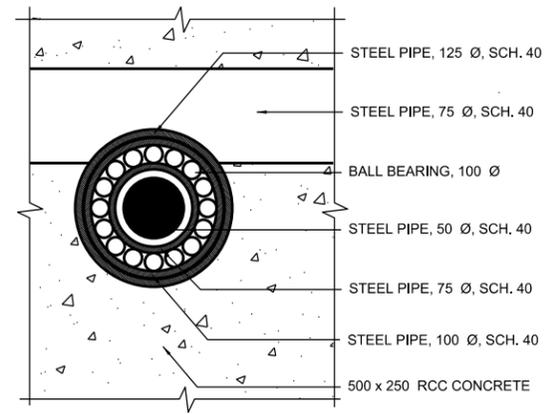
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 SCHEDULE OF DRAWINGS

X-XXX

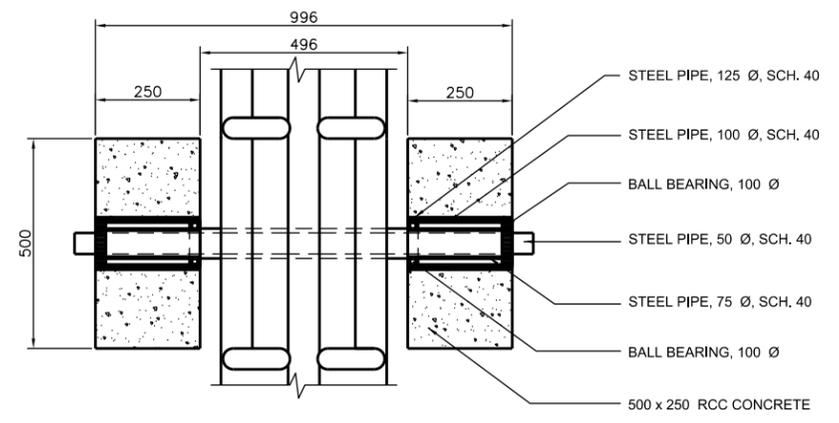
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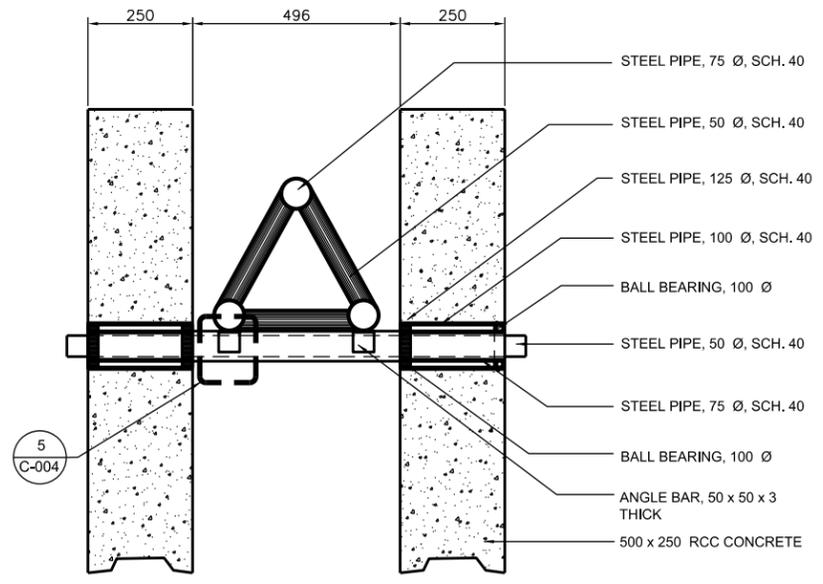
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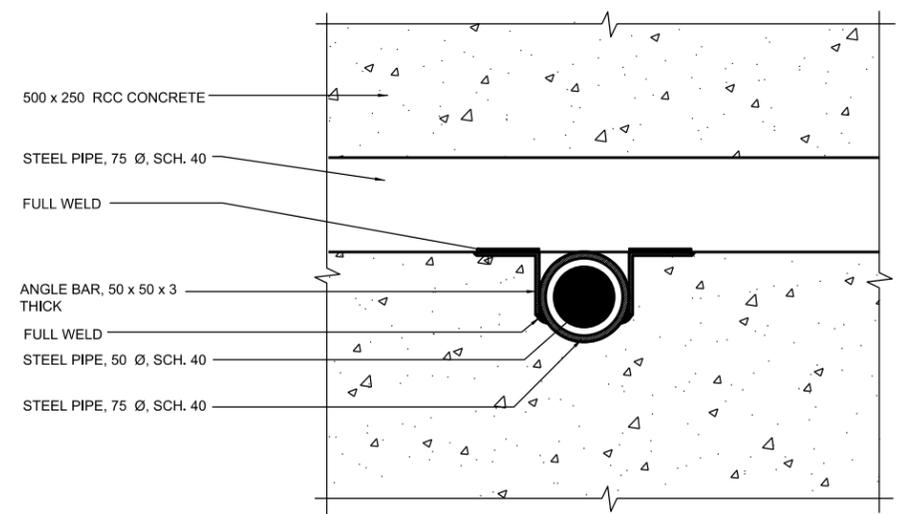
2 DROP ARM DETAIL
C-004/NTS



3 DROP ARM PLAN SECTION
C-004/NTS



4 DROP ARM SECTION
C-004/NTS



5 DROP ARM SECTION
C-004/NTS

NOTE: ALL DIMENSIONS ARE IN MILLIMETER (MM) UNLESS NOTED OTHERWISE.



DATE	APPR.	SYMBOL	DESCRIPTION

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REVIEWED BY:	FILE NAME:	
SUBMITTED BY:	PLOT SCALE:	
	PLOT DATE:	

AFGHAN NATIONAL POLICE
STANDARD DESIGN
DROP ARM BARRIER

DETAILS

SHEET REFERENCE NUMBER:
C4

TITLE SHEET
SCHEDULE OF DRAWINGS

X-XXX

