



STRUCTURAL ABBREVIATIONS:

ACI	AMERICAN CONCRETE INSTITUTE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ARCH	ARCHITECTURAL
B	BOTTOM
BLDG	BUILDING
BOTT	BOTTOM
CL	CENTER LINE
CFMRF	COLD FORM METAL ROOF FRAME
CFMF	COLD FORM METAL FRAME
CFS	COLD FORMED STEEL
CIP	CAST-IN-PLACE
CIPL	CAST-IN-PLACE LINTEL
CJ	CONTROL JOINT
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
EF	EACH FACE
ELEC	ELECTRICAL
ELEV	ELEVATION
EMBED	EMBEDMENT
EQUIV	EQUIVALENT
ETC	ET CETERA
EW	EACH WAY
EXP	EXPANSION
EXT	EXTERIOR
FTG	FOOTING
GA	GAUGE
HORIZ	HORIZONTAL
HRS	HOURS
IBC	INTERNATIONAL BUILDING CODE
INFO	INFORMATION
INT	INTERIOR
Kg	KILOGRAM
Km	KILOMETER
kPa	KILOPASCAL
L#	ANGLE (# INDICATES SIZE)
LONG	LONGITUDINAL
LLV	LONG LEG VERTICAL
M	METER
MAX	MAXIMUM
MBM	METAL BUILDING MANUFACTURER
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
PL or PL	PLATE
PRE-ENG	PRE-ENGINEERED
REINF	REINFORCED
REQ'D	REQUIRED
SIM	SIMILAR
SPECS	SPECIFICATIONS
STD	STANDARD
STRUCT	STRUCTURAL
SW	SHEAR WALL
T	TOP
T/	TOP OF
T/ELEV	TOP ELEVATION
T&B	TOP AND BOTTOM
THK	THICK
TYP	TYPICAL
UFC	UNIFIED FACILITIES CRITERIA
UON	UNLESS OTHERWISE NOTED
VERT	VERTICAL
W	WIDTH
W/	WITH

GENERAL NOTES

- 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 DATA. 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. 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.
- 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 THE BASIS OF DESIGN SHEET 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 VERTICAL 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 NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE.
- 3.3 MIXING, TRANSPORTING AND PLACING OF CONCRETE SHALL CONFORM TO ACI 301M-05.
- 3.4 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.
- 3.5 CHAMFER ALL EXPOSED EXTERNAL CORNERS OF CONCRETE WITH 20mm x45 DEGREE CHAMFER UON.

- 3.6 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.
- 3.7 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.
- 3.8 SLABS-ON-GRADE SHALL HAVE CONSTRUCTION JOINTS OR CRACK CONTROL JOINTS AS SHOWN ON THE DRAWINGS. CONSTRUCTION JOINTS CAN BE USED AT CONTROL JOINT LOCATIONS AT CONTRACTORS OPTION. SEE SLAB PLANS & JOINT DETAILS FOR ADDITIONAL INFORMATION. FOR AREAS NOT SHOWN ON DWGS, THE MAXIMUM SPACING OF CONSTRUCTION/ CRACK CONTROL JOINTS SHALL BE 4800mm
- 3.9 SEE SPECIFICATIONS FOR ALL WATERPROOFING/DAMP-PROOFING REQUIREMENT.
- 3.10 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.
- 3.11 SHOP DRAWINGS SHOWING REINFORCING DETAILS, INCLUDING STEEL SIZES, SPACING AND PLACEMENT, SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION.
- 3.12 ALL DOWELS SHALL MATCH SIZE AND NUMBER OF MAIN REINFORCING, UNLESS NOTED OTHERWISE ON THE SHEETS.
- 3.13 ADDITIONAL BARS SHALL BE PROVIDED AROUND ALL FLOOR AND WALL OPENINGS AS SHOWN ON THE SHEETS.
- 3.14 SEE ARCHITECTURAL SHEETS FOR TYPE AND LOCATION OF ALL FLOOR FINISHES.
- 3.15 THE CONTRACTOR SHALL COORDINATE ADDITIONAL WALL/SLAB OPENINGS NOT SHOWN ON STRUCTURAL SHEETS. SEE MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL SHEETS.
- 3.16 UNLESS NOTED OTHERWISE, ALL CURBS SHALL BE REINFORCED WITH AT LEAST (1)-#13 CONTINUOUS AND #13 AT 300mm O.C. DOWELS TO STRUCTURE BELOW.
- 3.17 THE SUB-CONTRACTOR SHALL VERIFY ALL OPENINGS, PAD SIZES, AND ANCHOR BOLTS WITH EQUIPMENT SELECTED.
- 3.18 FOR ALL WALLS & PIERS, PROVIDE DOWELS INTO FOOTING AT EACH VERT REINF BAR, UON DOWEL SIZE SHALL BE SAME AS VERT REINF.
- 3.19 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. 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.
- 3.20 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.
- 3.21 PROVIDE CONCRETE POUR STOPS OR FORMED AS REQUIRED FOR INSTALLATION OF ALL CONCRETE WORK.
- 3.22 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 MASONRY LINTELS UON ON THE SHEETS. BOND BEAM REINFORCING 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 WALL REINFORCING SEE "MIN CMU WALL REINFORCING" DETAILS ON SHEET S8. PROVIDE STANDARD BAR SPLICES AS SPECIFIED. ALL VERTICAL REINFORCEMENT EXTENDS FULL HEIGHT OF WALL.
- 4.5 CMU CELLS THAT REQUIRE VERTICAL REINFORCING BARS AS INDICATED ON THE CONTRACT DRAWINGS AND/OR SPECS SHALL HAVE REINF BARS PLACED IN CENTERS OF CMU CELLS AND CONTINUOUSLY GROUTED UON.
- 4.6 PROVIDE LADDER TYPE JOINT REINFORCEMENT AT 200mm EXTERIOR, & 400mm 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 CFMRF - COLD FORM METAL ROOF FRAMING SYSTEM
- 5.1 CFMRF SHALL BE DESIGNED BY CFMRF MANUFACTURER'S ENGINEER FOR ALL LOADING PER CODE AND AS INDICATED ON THE SHEETS.
- 5.2 FOR WIND LOADS, SEE THE DESIGN CRITERIA ON SHEET S2.
- 5.3 SUBMIT VENDOR'S PUBLISHED LITERATURE, TEST DATA AND INSTALLATION INSTRUCTIONS FOR METAL STUD ASSEMBLY AND ACCESSORIES INCLUDING OTHER DATA AS MAY BE REQUIRED TO CERTIFY COMPLIANCE WITH PERFORMANCE REQUIREMENTS SPECIFIED HEREIN.
- 5.4 SHOP DRAWINGS AND DESIGN ANALYSIS SHALL BE STAMPED AND APPROVED BY A LICENSED PROFESSIONAL ENGINEER.
- 5.5 CONNECTIONS AND GAUGE SIZES ARE MINIMUM AND SHALL BE INCREASED AS NECESSARY TO PROVIDE A STRUCTURALLY ADEQUATE SYSTEM. KICKERS MAY BE ADDED TO REDUCE THE STUD HEIGHTS WHERE ACCEPTABLE AND COORDINATED WITH THE ARCHITECTURAL DRAWINGS.
- 5.6 CRMRF SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:  
 STUD/RAFTER/EAVE STRUT/BRACE/BLOCKING:  
 Fy = 344 MPa  
 GAUGE = 18  
 DEPTH = 152.3 mm  
 WIDTH = 34.8 mm  
 MOMENT OF INERTIA, Ix = 847x10<sup>3</sup> mm<sup>4</sup>  
 SECTION MODULUS, Sx = 11.2x10<sup>3</sup> mm<sup>3</sup>  
  
 TRACK:  
 Fy = 344 MPa  
 GAUGE = 16  
 DEPTH = 152.3 mm  
 WIDTH = 38 mm  
 MOMENT OF INERTIA, Ix = 1083x10<sup>3</sup> mm<sup>4</sup>  
 SECTION MODULUS, Sx = 13.8x10<sup>3</sup> mm<sup>3</sup>  
  
 PURLIN/SUBGIRT:  
 Fy = 393 MPa  
 GAUGE = 16  
 MOMENT OF INERTIA (TOP COMPRESSION), Ixt = 23.7x10<sup>3</sup> mm<sup>4</sup>  
 MOMENT OF INERTIA (BOTT COMPRESSION), Ixb = 22.7x10<sup>3</sup> mm<sup>4</sup>  
 SECTION MODULUS (TOP COMPRESSION), Sxt = 1.8x10<sup>3</sup> mm<sup>3</sup>  
 SECTION MODULUS (BOTT COMPRESSION), Sxb = 1.7x10<sup>3</sup> mm<sup>3</sup>

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 - CONCRETE FRAMING

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

1.1.2 ROOF DEAD LOADS - CONVENTIONAL LIGHT FRAMING

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

1.1.3 FLOOR PARTITION ALLOWANCE

0.96 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 ELEVATED FLOOR UNIFORM LIVE LOADS

CORRIDOR	4.80 KPa
ALL OTHER	2.40 KPa

1.2.3 SLAB-ON-GRADE LIVE LOADS

ALL BUILDINGS	4.80 KPa
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1.3 SNOW LOADS (PER IBC 2006)

1.3.1 DESIGN PARAMETERS

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

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

1.4.1 SEISMIC PARAMETERS - CAST-IN-PLACE CONCRETE STRUCTURES

SEISMIC OCCUPANCY CATEGORY	II
SEISMIC IMPORTANCE FACTOR (I)	1.0
SEISMIC SITE CLASS	D
Ss	1.28
S1	0.51
Sds	0.853
Sd1	0.51
SEISMIC DESIGN CATEGORY	D
SEISMIC RESISTING SYSTEM	SPECIAL REINFORCED MASONRY SHEAR WALLS
RESPONSE MODIFICATION FACTOR (R)	5.0
RESPONSE COEFFICIENT (Cs)	0.17
SEISMIC ANALYTICAL PROCEDURE	EQUIV LATERAL FORCE
SEISMIC BASE SHEAR	1000 kN



NO.	DATE	DESCRIPTION	SYMBOL

DESIGNED BY: DATE: 09-30-09  
 MMY  
 SUBMITTED BY: BAKER  
 DWN BY: RCG  
 FILE NO.: ANP/SDS-001XXX  
 CHK BY: CWW

Michael Baker Corp.  
 A unit of Michael Baker Corporation  
 4000 Business Park  
 Moon Township, PA 15108  
 www.mbakercorp.com

STANDARD DESIGN  
 BARRACK BUILDING, OPEN BAY (579 GSM)  
 WOOD FIRED HEAT OPTION

GENERAL NOTES & DESIGN CRITERIA

SHEET  
 REFERENCE  
 NUMBER:  
 S1

100% SUBMISSION

**STRUCTURAL DESIGN CRITERIA (CONT)**

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

**1.5 WIND LOADS (PER IBC 2006)**

**1.5.1 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

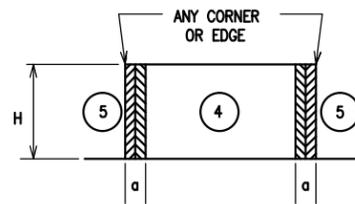
**1.5.2 DESIGN WIND PRESSURE - MAIN WINDFORCE RESISTING SYSTEM**

LOCATION	CORNER ZONE WIDTH "a"	MEAN ROOF HEIGHT (H)	WINDWARD WALL (⊙ MEAN ROOF HEIGHT)	LEEWARD WALL (⊙ MEAN ROOF HEIGHT)	ROOF
FIELD ZONE	N/A	5115 mm	680 N/m	2 -480 N/m <sup>2</sup>	-470 N/m <sup>2</sup>
CORNER ZONE	1440mm	5115 mm	800 N/m	2 -418 N/m <sup>2</sup>	-750 N/m <sup>2</sup>

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°.

**1.5.3 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:



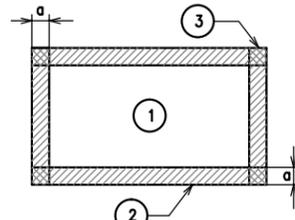
LOCATION	WINDWARD PRESSURE N/m <sup>2</sup> (inward)		LEEWARD PRESSURE N/m <sup>2</sup> (outward)		a
	④	⑤	④	⑤	
MAIN BUILDING					(mm)
AREA = 1 m <sup>2</sup>	788	788	-850	-1050	1440
AREA = 2 m <sup>2</sup>	748	748	-815	-967	1440
AREA = 5 m <sup>2</sup>	700	700	-765	-880	1440
AREA = 10 m <sup>2</sup>	648	648	-715	-750	1440

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

**1.5 WIND LOADS (CONT)**

**1.5.4 DESIGN WIND PRESSURE - ROOF COMPONENTS AND CLADDING**

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



ROOF MEAN HEIGHT

LOCATION	GROSS UPLIFT PRESSURE N/m <sup>2</sup> (upward)			a
	①	②	③	
MAIN BUILDING				(mm)
AREA = 1 m <sup>2</sup>	-787	-931	-1738	1440
AREA = 2 m <sup>2</sup>	-787	-931	-1738	1440
AREA = 5 m <sup>2</sup>	-787	-931	-1738	1440
AREA = 10 m <sup>2</sup>	-787	-931	-1738	1440

**NOTES:**  
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 2. LINEAR INTERPOLATION BETWEEN VALUES OF TRIBUTARY AREA IS PERMISSIBLE.  
 3. 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 <sup>3</sup>
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/cm <sup>3</sup>
MINIMUM BEARING DEPTH BELOW GRADE	800mm
SEISMIC SITE CLASS (based on in-situ soil)	D

**CONCRETE BEAM SCHEDULE**

GRADE BEAM						
MARK	SIZE (BxH)	REINFORCING			REMARKS	
		TOP	BOTTOM	STIRRUPS		
GB1	400x750	(3)-#22	(3)-#22	#13 ⊙ 200	(1) #22 EF	TOP BAR LAP AT CENTER BOT BAR LAP PAST COL

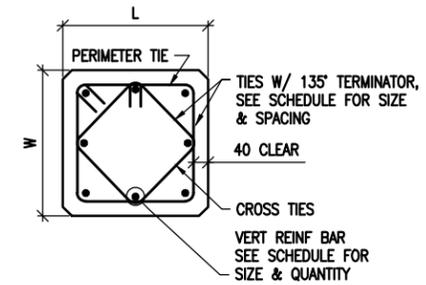
ROOF BEAM						
MARK	SIZE (BxH)	REINFORCING			REMARKS	
		TOP	BOTTOM	STIRRUPS		
RB1	400x600	(2)-#19	(2)-#19	#13 ⊙ 250	N/A	TOP BAR LAP AT CENTER BOT BAR LAP PAST COL

**NOTE:**  
 1. DIMENSIONS NOTED ARE MILLIMETERS (mm) UON.

**CONCRETE COLUMN SCHEDULE**

MARK	SIZE (LxW)	REINFORCING	
		VERT BARS	TIES
C1	400x400	(8)-#25	#13 ⊙ 100 (CORE OF EXT & CORNER COLUMNS) #13 ⊙ 150 (CORE OF INTERIOR COLUMNS) #13 ⊙ 200 (OTHER)

**NOTE:**  
 1. DIMENSIONS NOTED ARE MILLIMETERS (mm) UON.  
 2. SECOND STORY COLUMNS ARE SAME AS FIRST STORY COLUMNS.  
 3. CORE INDICATES THE AREA OF COLUMN & BEAM INTERSECTION  
 4. TIE INDICATES PERIMETER & CROSS TIE COMBINED



**1 COLUMN DETAIL**  
 SCALE: 1:10

**SPREAD FOOTING SCHEDULE**

MARK	FOOTING SIZE (mm)			FOOTING REINFORCING	REMARKS
	LENGTH	WIDTH	THICKNESS		
F1	3500	2000	300	(7)-#22 SHORT BOTT (4)-#22 LONG BOTT	----
F2	3900	1600	300	(10)-#22 SHORT BOTT (4)-#22 LONG BOTT	----

**NOTES:**  
 1. DIMENSIONS NOTED ARE MILLIMETERS (mm) UON.

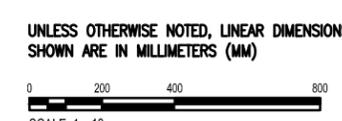
**US Army Corps of Engineers**  
 Afghanistan Engineer District

NO.	DATE	DESCRIPTION	SYMBOL

DESIGNED BY: DATE: 09-30-09  
 MMY  
 SUBMITTED BY: BAKER  
 DWN BY: RCG  
 CHK BY: CMW  
 FILE NO.: ANP/SDS-002XXX  
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STANDARD DESIGN  
 BARRACK BUILDING, OPEN BAY (579 GSM)  
 WOOD FIRED HEAT OPTION  
 DESIGN CRITERIA & SCHEDULES

SHEET REFERENCE NUMBER:  
**S2**



100% SUBMISSION



SYMBOL	DESCRIPTION	DATE	APP

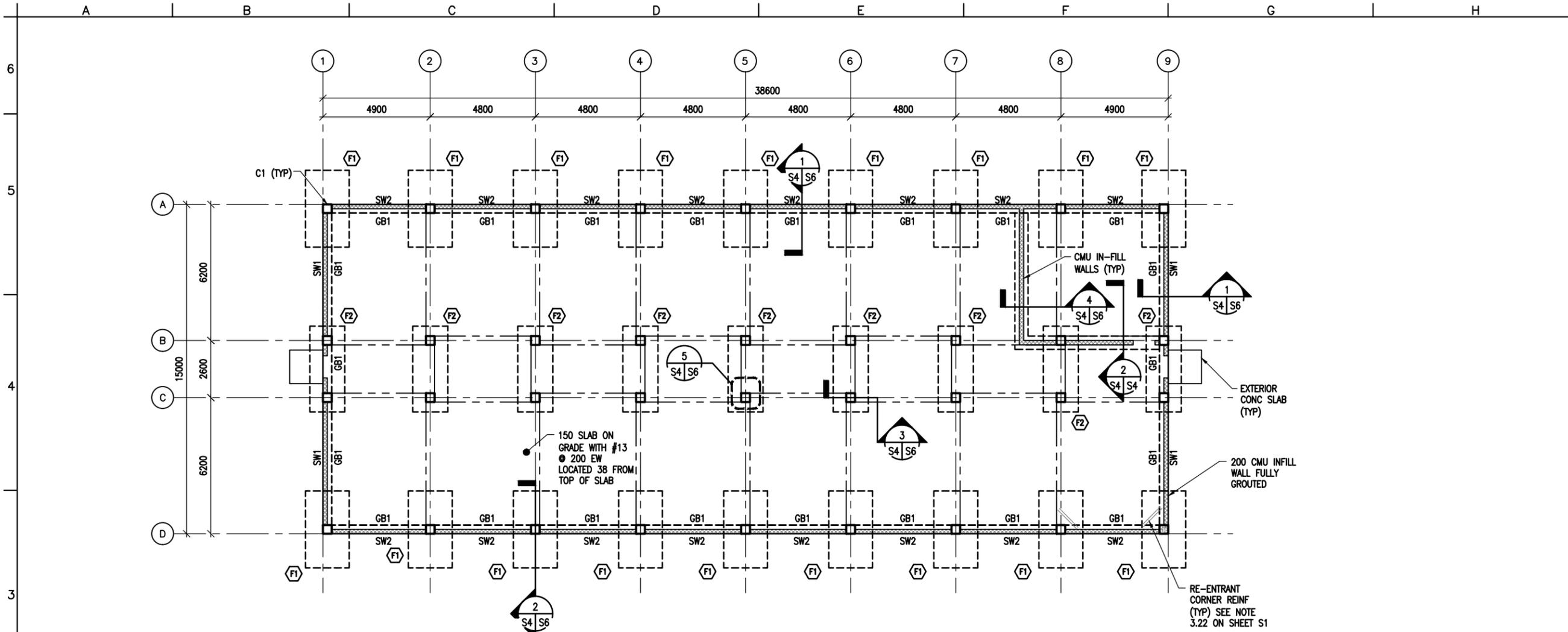
DESIGNED BY:	DATE:	09-30-09
MMY	SUBMITTED BY:	BAKER
DWN BY:	RCG	
CHK BY:	CWW	
FILE NO.:	ANP/SDS-104XXX	

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1000 Business Park  
Moon Township, PA 15108  
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STANDARD DESIGN  
BARRACK BUILDING, OPEN BAY (579 GSM)  
WOOD FIRED HEAT OPTION  
FOUNDATION PLAN

SHEET REFERENCE NUMBER:  
S4

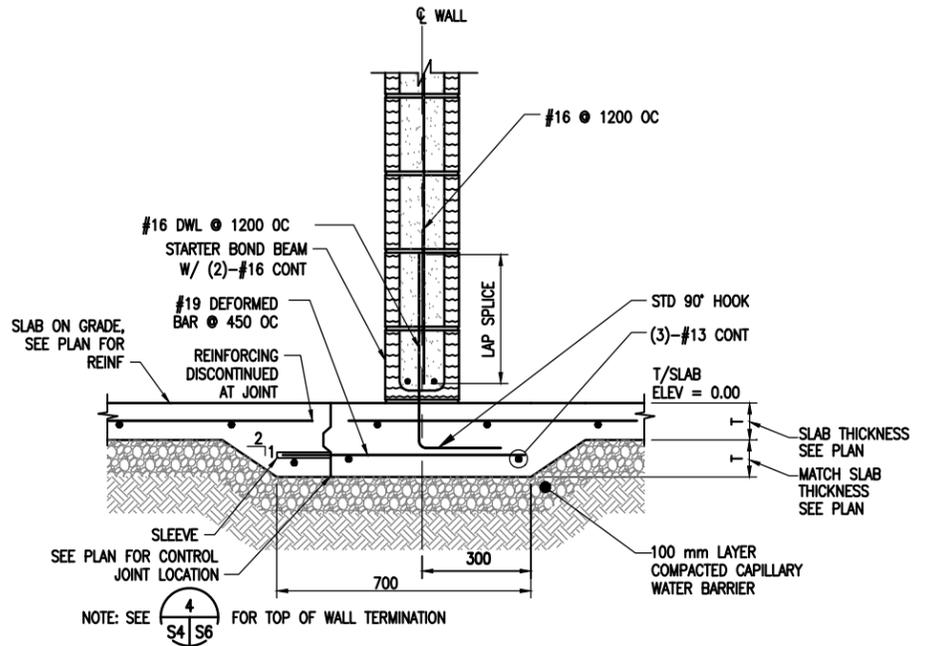
100% SUBMISSION



1 FOUNDATION PLAN  
SCALE: 1:100

PLAN NOTES:

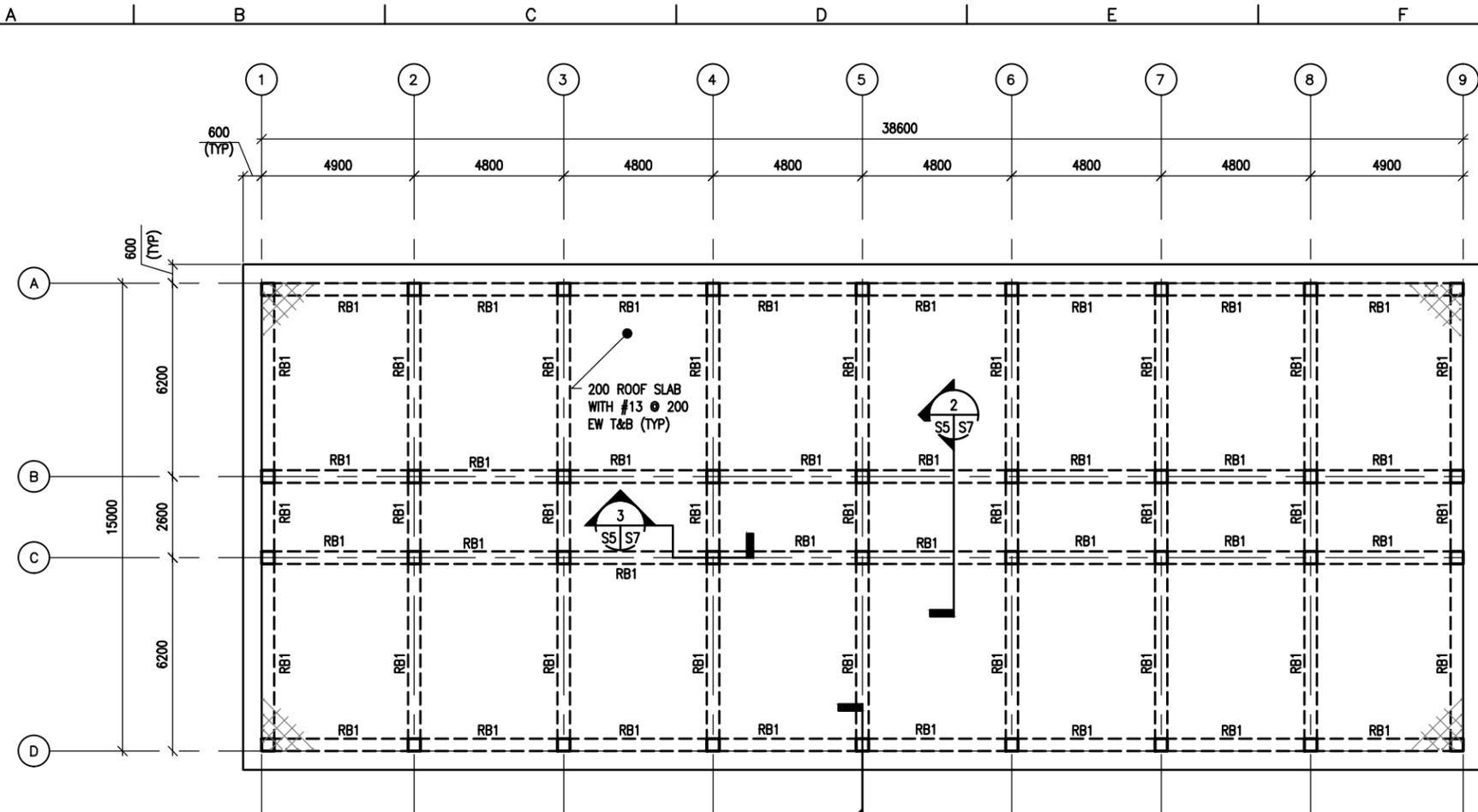
1. FINISH FIRST FLOOR ELEVATION SHALL BE (DATUM 0.0). ALL PLUS OR MINUS DIMENSIONS INDICATED ON PLAN OR REFERRED TO IN NOTES RELATE TO FINISH FIRST FLOOR ELEVATION.
2. TOP OF EXTERIOR FOOTINGS SHALL BE -950 UNLESS OTHERWISE INDICATED.
3. TOP OF INTERIOR FOOTING SHALL BE -600 UNLESS OTHERWISE INDICATED.
4. SPREAD FOOTINGS INDICATED BY F# ON PLAN. REFER TO SPREAD FOOTING SCHEDULE ON SHEET S2.
5. COLUMNS INDICATED THUS C# ON PLAN. REFER TO COLUMN SCHEDULE ON SHEET S2.
6. REFER TO SHEETS S1 TO S3 FOR STRUCTURAL NOTES AND BASIS OF DESIGN.
7. CTJ & CSJ INDICATES SLAB CONTROL OR CONSTRUCTION JOINTS. RESPECTIVELY, REFER TO SHEET S8 FOR DETAILS.
8. SEE CMU WALL REINFORCING SCHEDULE ON SHEET S3.
9. REFER TO ARCHITECTURAL SHEETS FOR MASONRY PARTITION TYPES.
10. SEE MECHANICAL AND ELECTRICAL SHEETS FOR CONCRETE PAD LOCATIONS, SIZES, AND THICKNESS NOT SHOWN. SEE SHEET S8 FOR DETAILS.



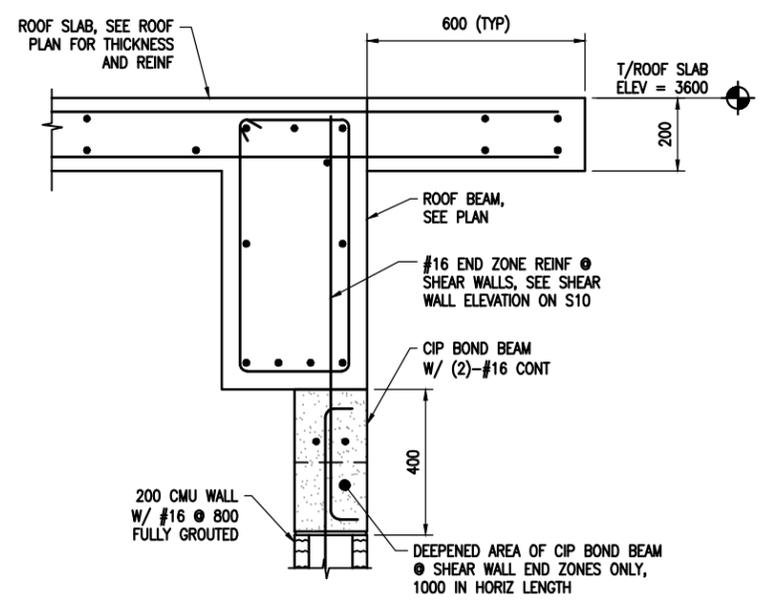
2 SECTION  
SCALE: 1:10

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)

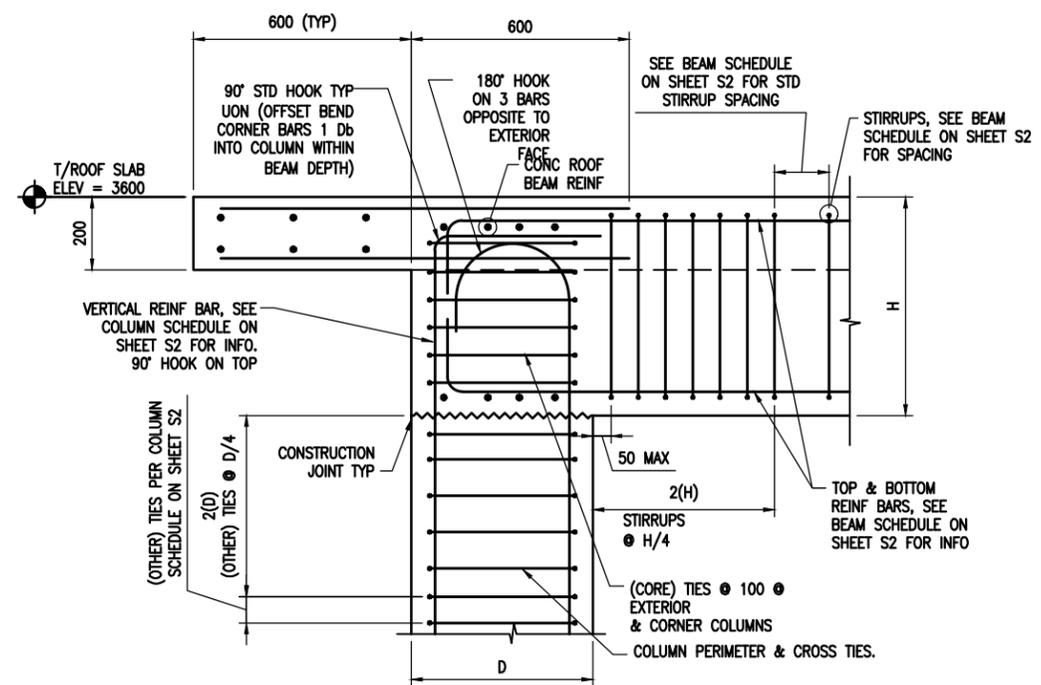




1 ROOF FRAMING PLAN  
SCALE: 1:100



3 SECTION  
SCALE: 1:10



2 SECTION  
SCALE: 1:10

PLAN NOTES:

1. TOP OF SLAB ELEVATION = 3600 UNLESS NOTED OTHERWISE
2. RB# DENOTES ROOF BEAM TYPE. SEE BEAM SCHEDULE ON SHEET S2.
3. REFER TO SHEETS S1 AND S2 FOR STRUCTURAL NOTES AND BASIS OF DESIGN.
4. COORDINATE WITH ARCHITECTURAL SHEETS FOR COLD-FORMED STEEL OVERBUILT FRAMING ABOVE ROOF SLAB.
5. COLD-FORMED METAL OVERBUILT ROOF FRAMING NOT SHOWN FOR CLARITY. SEE OVERBUILT ROOF FRAMING DETAILS AND SECTIONS ON SHEET S7.



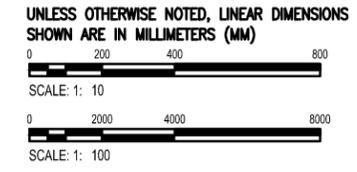
SYMBOL	DESCRIPTION	DATE	APP

DESIGNED BY:	DATE:	09-30-09
MMY	SUBMITTED BY:	BAKER
DWN BY:	RCG	
CHK BY:	CWW	
FILE NO.:	ANP/SOS-105XXX	

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STANDARD DESIGN  
BARRACK BUILDING, OPEN BAY (S79 GSM)  
WOOD FIRED HEAT OPTION  
ROOF FRAMING PLAN

SHEET REFERENCE NUMBER:  
S5



100% SUBMISSION

SYMBOL	DESCRIPTION	DATE	APP

DESIGNED BY:	DATE:	09-30-09
MMY		
DWN BY:	SUBMITTED BY:	BAKER
RCG		
CHK BY:	FILE NO.:	ANP/SDS-306XXX
CWW		

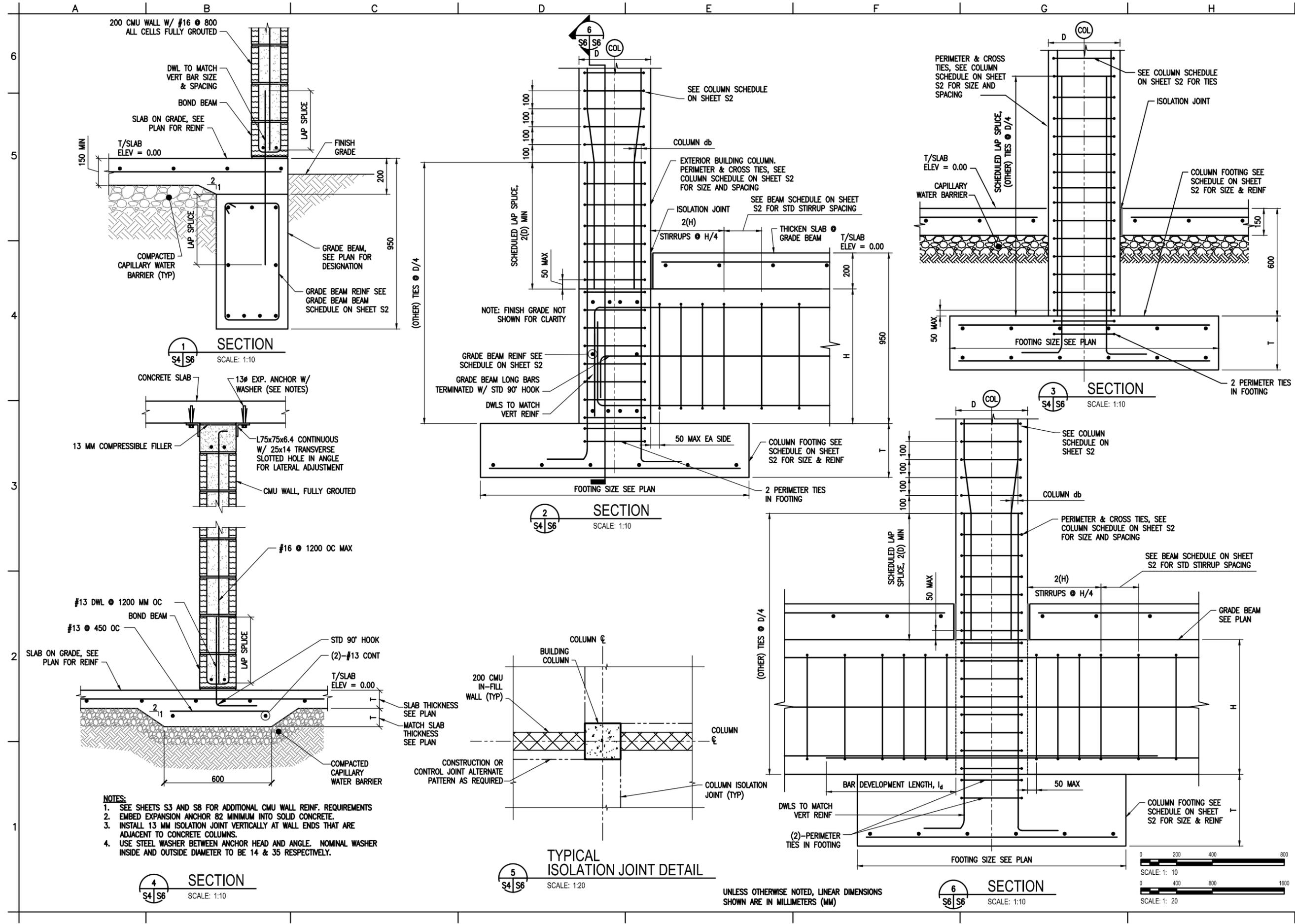
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1000 Business Park  
Monroeville, PA 15108  
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STANDARD DESIGN  
BARRACK BUILDING, OPEN BAY (579 GSM)  
WOOD FIRED HEAT OPTION

FOUNDATION SECTIONS & DETAILS

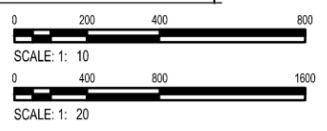
SHEET REFERENCE NUMBER:  
S6

100% SUBMISSION



- NOTES:**
- SEE SHEETS S3 AND S8 FOR ADDITIONAL CMU WALL REINF. REQUIREMENTS
  - EMBED EXPANSION ANCHOR 82 MINIMUM INTO SOLID CONCRETE.
  - INSTALL 13 MM ISOLATION JOINT VERTICALLY AT WALL ENDS THAT ARE ADJACENT TO CONCRETE COLUMNS.
  - USE STEEL WASHER BETWEEN ANCHOR HEAD AND ANGLE. NOMINAL WASHER INSIDE AND OUTSIDE DIAMETER TO BE 14 & 35 RESPECTIVELY.

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)







SYMBOL	DESCRIPTION	DATE	APP

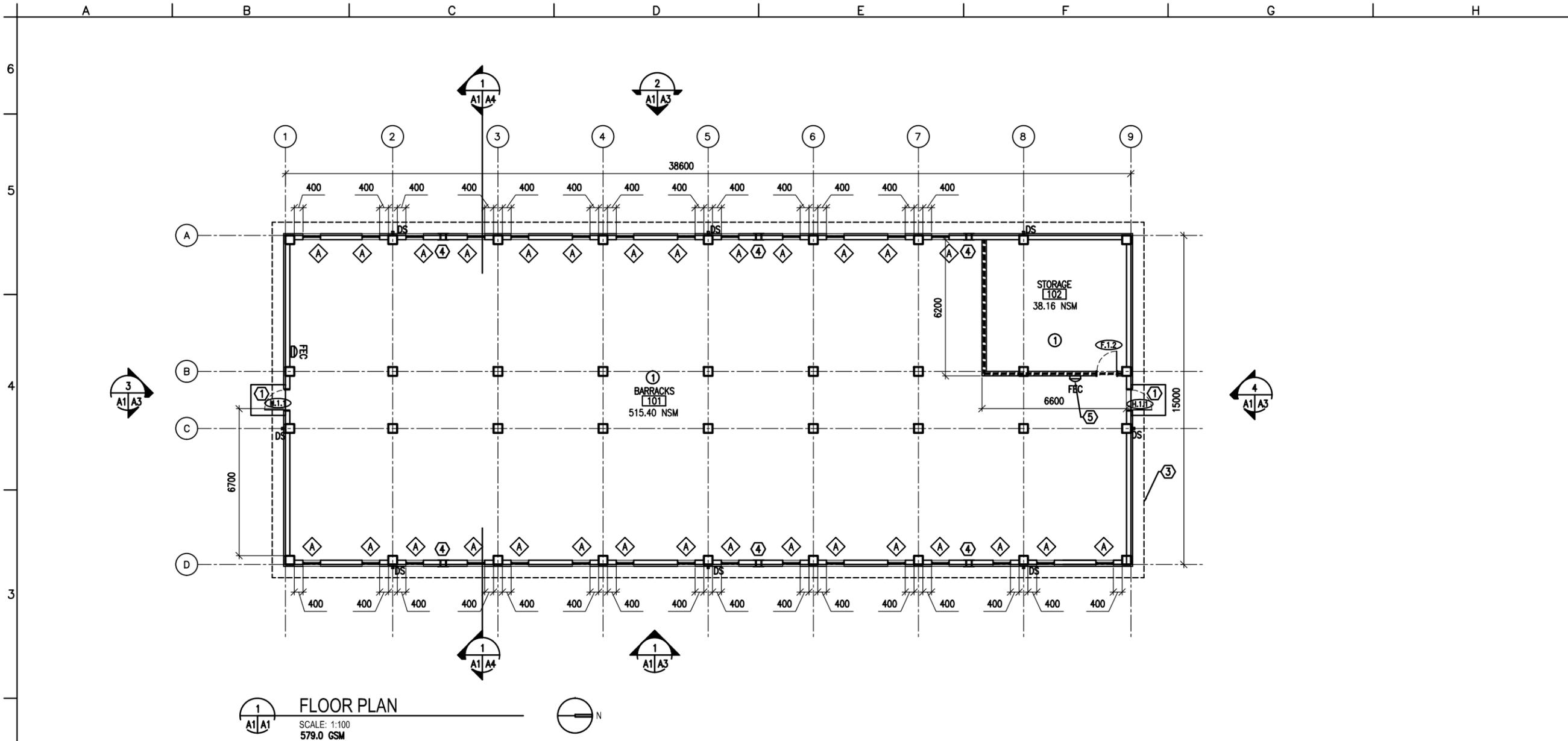
DESIGNED BY:	DLB	DATE:	09-30-09
DWN BY:	AAR	SUBMITTED BY:	BAKER
CHK BY:	KRC	FILE NO.:	ANPSDA-101XXX

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100 North 15th Street, PA 15108  
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STANDARD DESIGN  
BARRACK BUILDING, OPEN BAY (579 GSM)  
WOOD FIRED HEAT OPTION  
FLOOR PLAN

SHEET  
REFERENCE  
NUMBER:  
A1

100% SUBMISSION



**FLOOR PLAN**  
SCALE: 1:100  
579.0 GSM

**GENERAL NOTES:**

- A. INTERIOR PARTITIONS SHALL BE 200 MM CMU UNLESS NOTED OTHERWISE
- B. OPENINGS FOR DOORS SHALL BE LOCATED 200 MM FROM THE ADJACENT WALL UNLESS NOTED OTHERWISE
- C. 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.
- D. CONCRETE AND INTERIOR MASONRY SURFACES GROUTED SOLID SHALL BE ALLOWED TO DRY AT LEAST 30 DAYS BEFORE PAINTING EXCEPT CONCRETE SLAB ON GRADE WHICH SHALL BE ALLOWED TO CURE 90 DAYS BEFORE PAINTING.
- E. PAINTS CONTAINING LEAD IN EXCESS OF 0.06 PERCENT BY WEIGHT OF THE TOTAL NONVOLATILE CONTENT SHALL NOT BE USED.
- F. MERCURIAL FUNGICIDES SHALL NOT BE USED IN OIL-BASE PAINT.
- G. 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 REPELLENT ACRYLIC LATEX PAINT.
- H. METAL DOORS AND FRAMES SHALL RECEIVE A PRIMER COAT PLUS TWO COATS OF PAINT.
- I. DIMENSIONS ARE TO STRUCTURAL COLUMN GRID, EDGE OF WINDOW OPENINGS, AND TO HINGE SIDE OF DOOR OPENINGS.

- J. PROVIDE 1 HOUR RATED PARTITIONS AT STORAGE ROOM IN ACCORDANCE WITH NFPA 101, TABLE 28.3.2.2.2. FILL ANULAR SPACE AT ANY AND ALL PENETRATIONS IN FLOORS, WALLS, OR CEILINGS WITH APPROPRIATE FIRE STOPPING MATERIALS.

**ROOM FINISHES:**

- 1. WALLS: PAINTED PLASTER,  
FLOOR: SEALED CONCRETE  
CEILING: PAINTED PLASTER APPLIED TO STRUCTURE

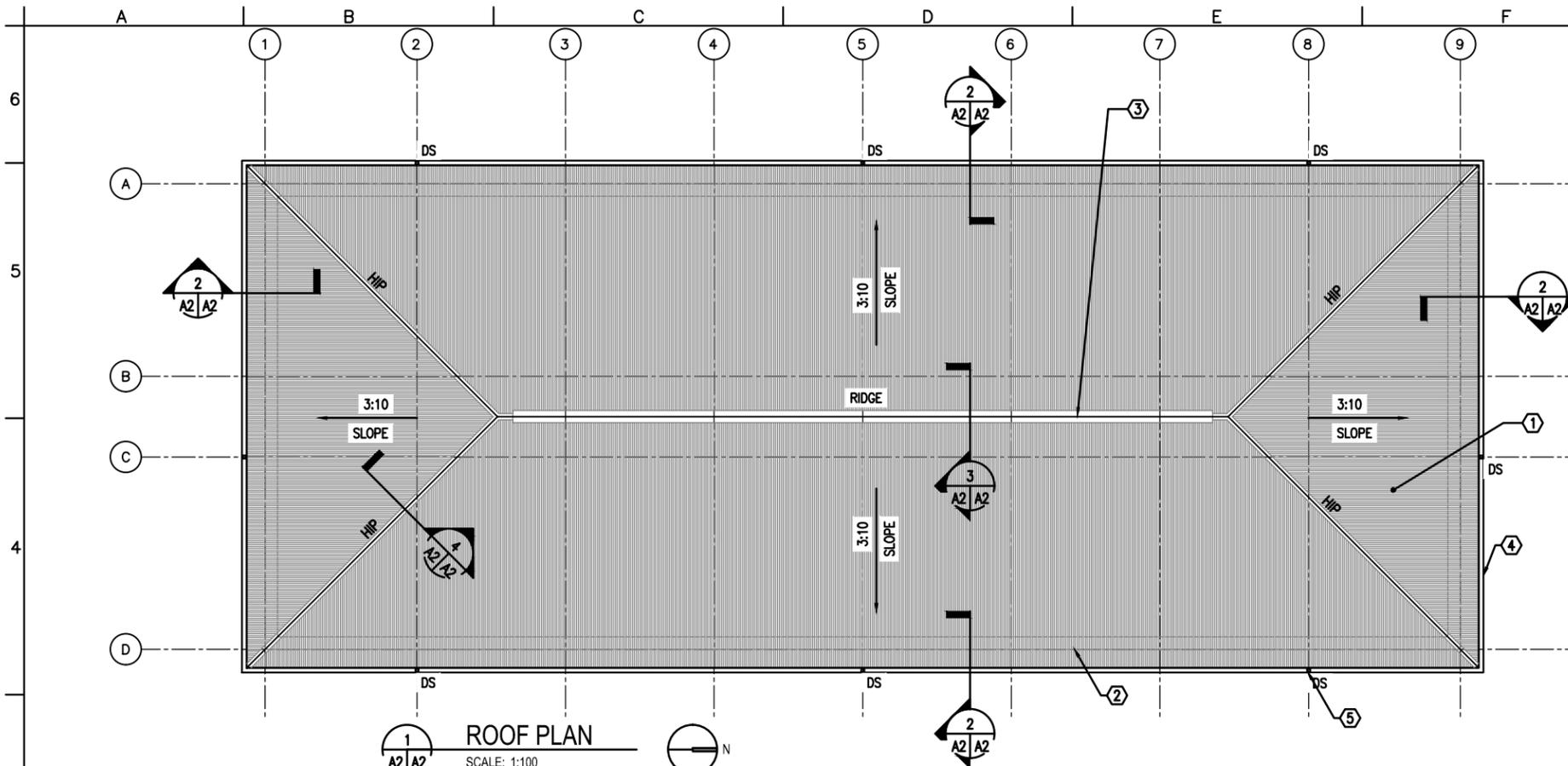
**KEY NOTES:**

- 1. CONCRETE STOOP - RE: DETAIL 2/A6.
- 2. NOT USED
- 3. LINE OF ROOF OVERHANG ABOVE
- 4. TWO-PIECE WALL THIMBLE AND TRIM PLATE FOR OPTIONAL WOOD BURNING STOVE CHIMNEY PIPE. STOVE AND PIPE BY OTHERS.
- 5. PROVIDE FEC AT STORAGE ROOM IN ACCORDANCE WITH NFPA 101, 28.3.5.8.

**LEGEND:**

- (F.1.4) DOOR TYPE, SEE SHEET A5
- (A) WINDOW TYPE, SEE SHEET A5
- (X) KEY NOTE
- (FEC) FIRE EXTINGUISHER CABINET
- (-----) 1-HOUR RATED PARTITION
- (1) ROOM FINISH TYPE DESIGNATION
- (DS) METAL DOWNSPOUT

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)  
SCALE: 1: 100



**1**  
A2 | A2  
**ROOF PLAN**  
SCALE: 1:100

- KEY NOTES:** (X)
- CORRUGATED METAL ROOF PANELS ON COLD-FORMED METAL FRAMING
  - LINE OF BUILDING WALL BELOW
  - CONTINUOUS RIDGE VENT
  - METAL GUTTER
  - METAL DOWNSPOUT WITH SPLASHBLOCK

**US Army Corps of Engineers**  
Afghanistan Engineer District

SYMBOL	DESCRIPTION	DATE	APP

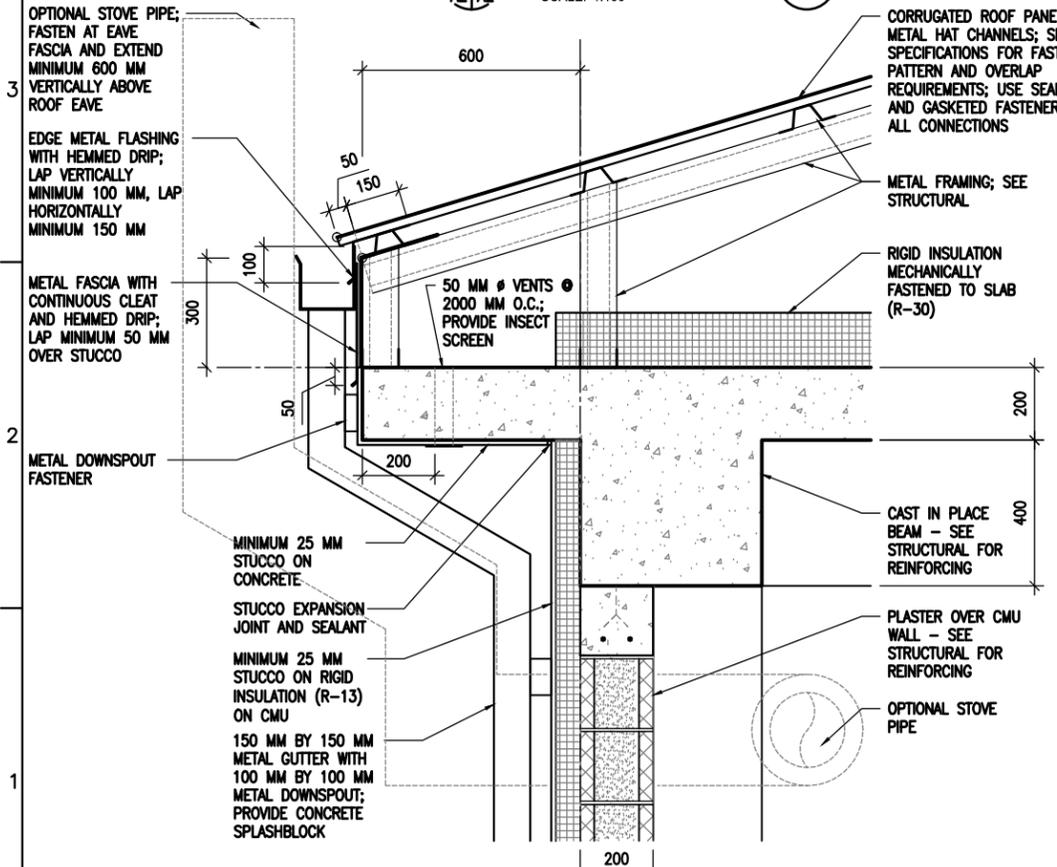
DESIGNED BY:	DLB	DATE:	09-30-09
DWN BY:	AAR	SUBMITTED BY:	BAKER
CHK BY:	KRC	FILE NO.:	ANPSDA-102XXX

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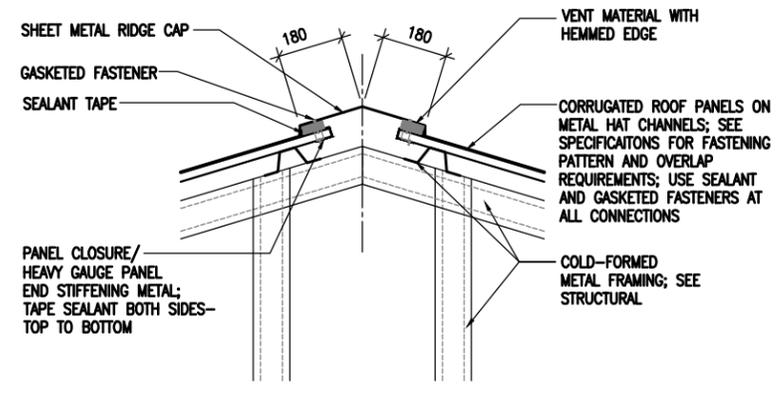
STANDARD DESIGN  
BARRACK BUILDING, OPEN BAY (579 GSM)  
WOOD FIRED HEAT OPTION

ROOF PLAN AND DETAILS

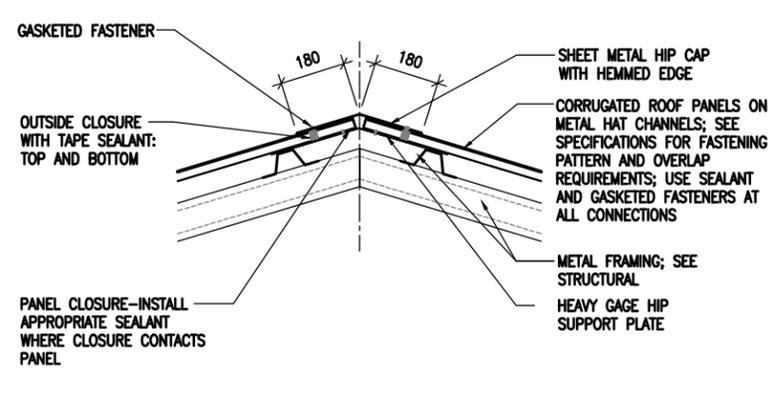
SHEET REFERENCE NUMBER:  
**A2**



**2**  
A2 | A2  
**EAVE DETAIL**  
SCALE: 1:10



**3**  
A2 | A2  
**RIDGE VENT DETAIL**  
SCALE: 1:10



**4**  
A2 | A2  
**HIP DETAIL**  
SCALE: 1:10

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)



100% SUBMISSION



SYMBOL	DESCRIPTION	DATE	APP

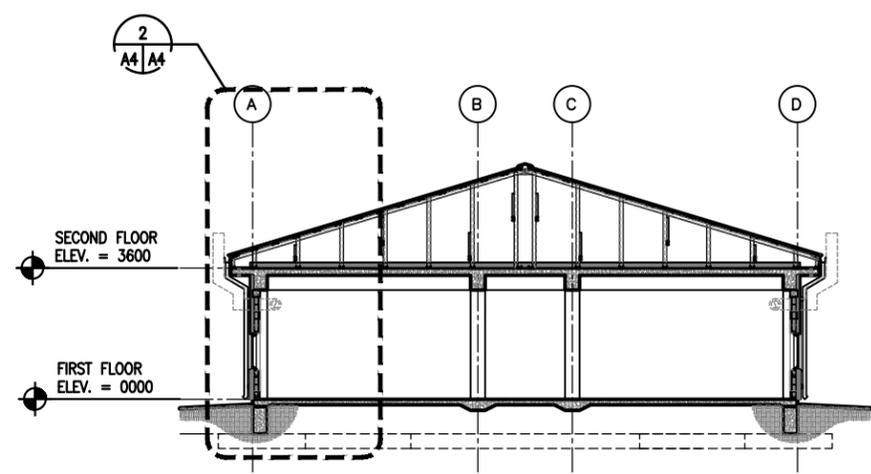
DESIGNED BY:	DLB	DATE:	09-30-09
DWN BY:	AAR	SUBMITTED BY:	BAKER
CHK BY:	KRC	FILE NO.:	ANPSDA-304XXX

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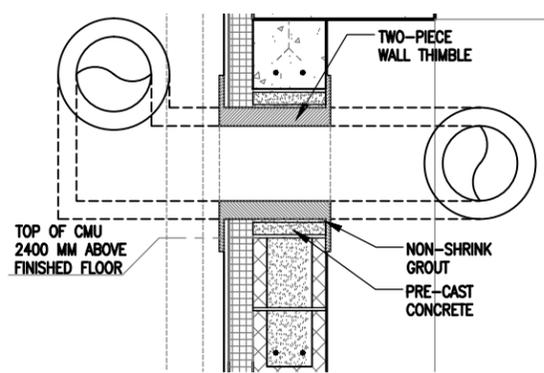
STANDARD DESIGN  
BARRACK BUILDING, OPEN BAY (579 GSM)  
WOOD FIRED HEAT OPTION  
BUILDING & WALL SECTIONS

SHEET REFERENCE NUMBER:  
A4

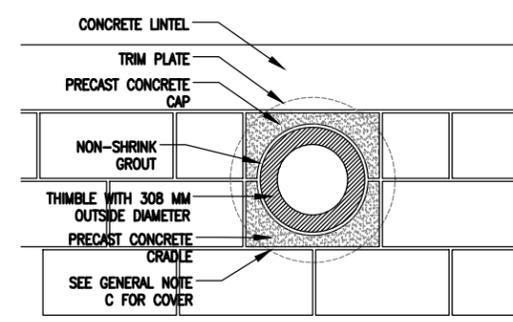
100% SUBMISSION



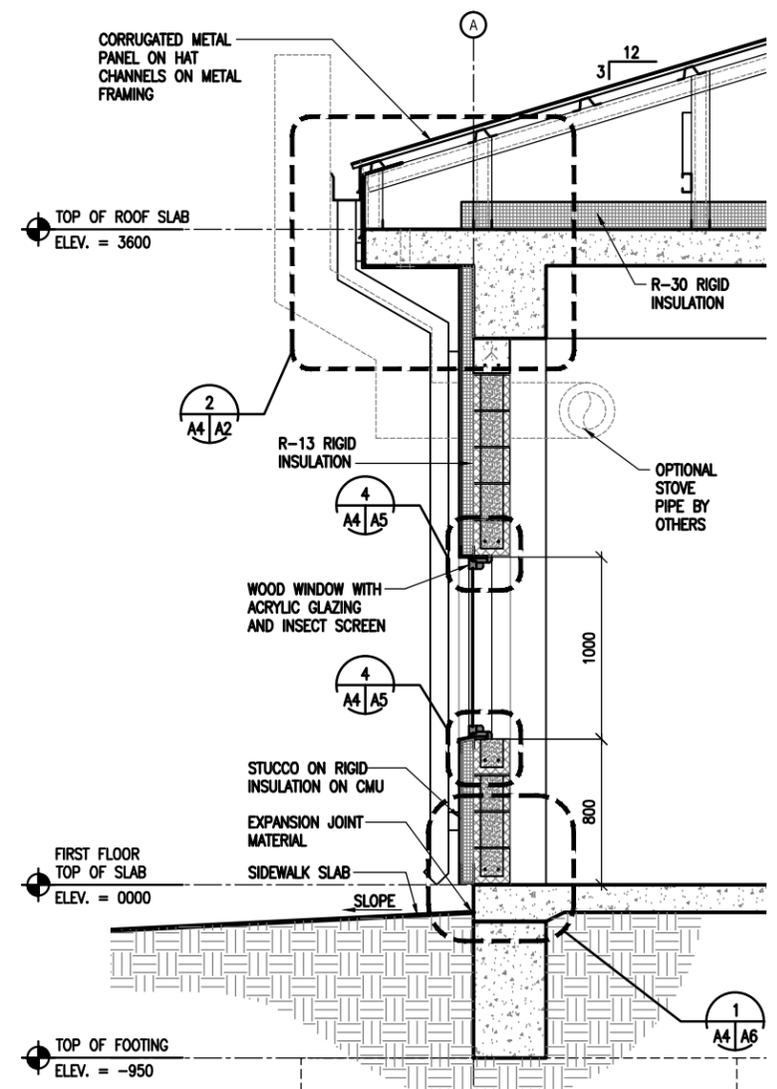
1 BUILDING SECTION  
SCALE: 1:100



3 THIMBLE DETAIL, TYPICAL  
SCALE: 1:10



4 THIMBLE DETAIL, TYPICAL  
SCALE: 1:10



2 WALL SECTION  
SCALE: 1:20

GENERAL NOTES:

- A. COORDINATE SIZE AND LOCATION OF OPENINGS FOR MECHANICAL ITEMS WITH MECHANICAL DRAWINGS.
- B. PROVIDE STRUCTURAL LINTELS AS REQUIRED - RE: STRUCT
- C. PROVIDE 480 MM SQUARE, 1.5 MM THICK GALVANIZED SHEET METAL COVER WITH 13 MM HEMMED EDGE FOR WALL THIMBLE UNTIL STOVE PIPE IS PROVIDED. INSTALL COVER ON EXTERIOR FACE OF THIMBLE TRIM PLATE. COVER SHALL BE SET IN SILICONE SEALANT AND FASTENED WITH 4 STAINLESS STEEL SCREWS. ALIGN FASTENER LOCATIONS WITH COVER PLATE FASTENER OPENINGS SO ADDITIONAL FASTENER PENETRATIONS ARE NOT CREATED IN EXTERIOR FINISH.

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)

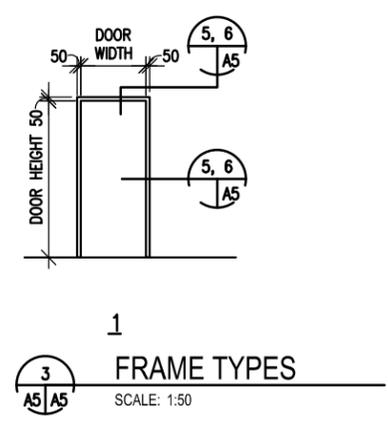
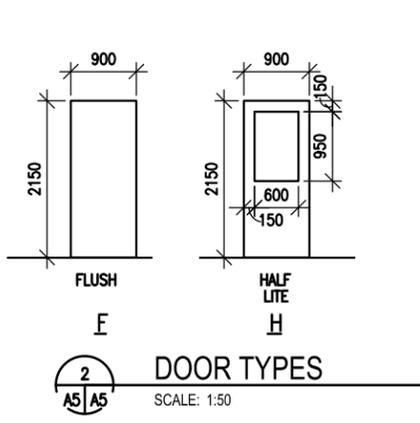
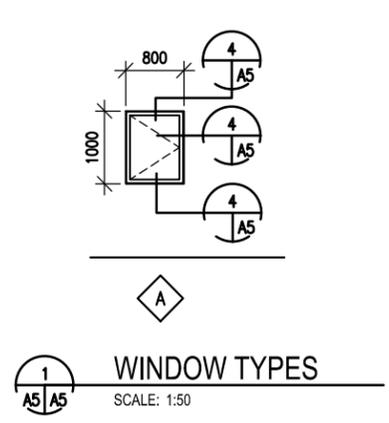


SCALE: 1: 20



SCALE: 1: 100

A B C D E F G H

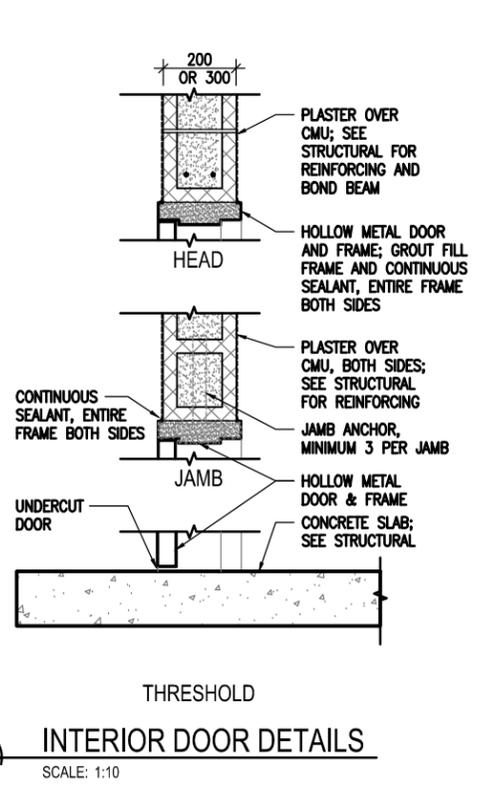
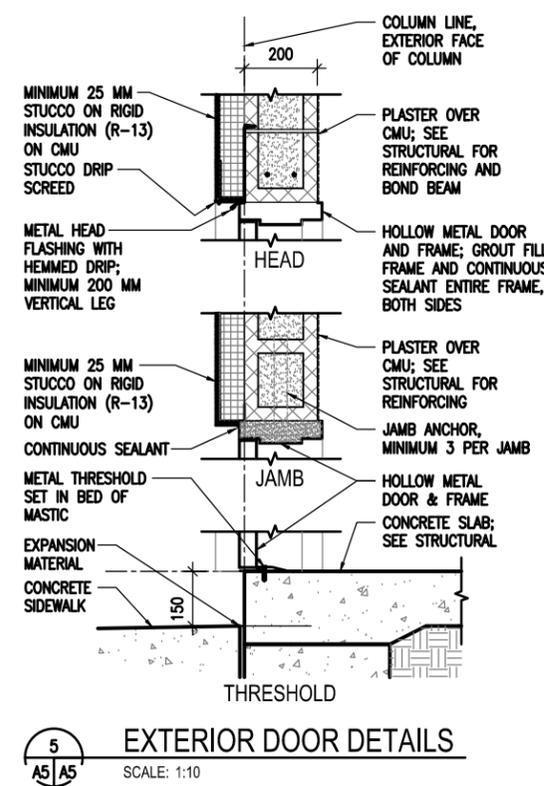
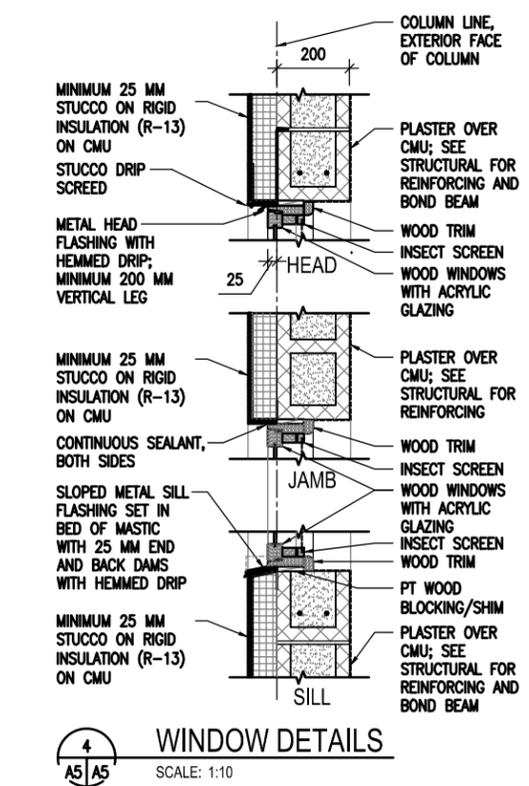


**WINDOW TYPES NOTES:**

1. ALL EXTERIOR WINDOWS SHALL BE WOOD WITH INSECT SCREENS. WINDOWS SHALL BE COMMERCIAL GRADE.
2. GLAZING SHALL BE ACRYLIC SHEET.

**DOOR TYPES NOTES:**

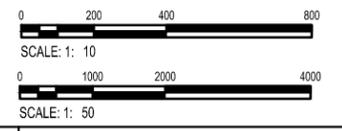
1. INTERIOR AND EXTERIOR METAL DOORS AND FRAME COLORS SHALL MATCH ADJACENT WALL COLORS AS SELECTED BY THE CONTRACTING OFFICER.
2. HARDWARE SHALL BE HEAVY DUTY, COMMERCIAL GRADE, STAINLESS STEEL WITH A MATTE FINISH.
3. FRAMES, EXCEPT FIRE-RATED FRAMES, SHALL BE MOUNTED AND ADJUSTED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. FRAMES SHALL BE FASTENED WITH MINIMUM OF THREE FASTENING POINTS PER SIDE AT REGULAR INTERVALS.
4. DIMENSIONS SHOWN ON DOOR SCHEDULE ARE BASED UPON MODULAR MASONRY (OR ROUGH OPENING), HEIGHT OF 2200mm FOR STANDARD PERSONNEL DOORS. CONTRACTOR SHALL COORDINATE WITH DOOR SUPPLIER TO ENSURE THAT DIMENSIONS OF DOORS AND FRAMES PROVIDED ARE COMPATIBLE WITH DOOR OPENING DIMENSIONS.
5. DOORS SHALL BE 45 MINUTE DOORS AS REQUIRED IN 1 HOUR RATED WALLS. (NFPA 101, TABLE 8.3.4.2.).



**DOOR HARDWARE TYPES:**

- HW-1** 1-1/2 PR HINGES  
 1 EA EXIT DEVICE, SURFACE MOUNTED FOB  
 1 EA CYLINDER, GRADE 1  
 1 EA DOOR CLOSER, C02061, LOW RESISTANCE  
 1 EA THRESHOLD J32130
- HW-2** 1-1/2 PR HINGES  
 1 EA LOCKSET W/LEVERS, GRADE 1  
 1 EA DOOR CLOSER, C02061, LOW RESISTANCE

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)



SYMBOL	DESCRIPTION	DATE	APP

DESIGNED BY: DLB	DATE: 09-30-09
DWN BY: AAR	SUBMITTED BY: BAKER
CHK BY: KRC	FILE NO.: ANPSDA-305XXX

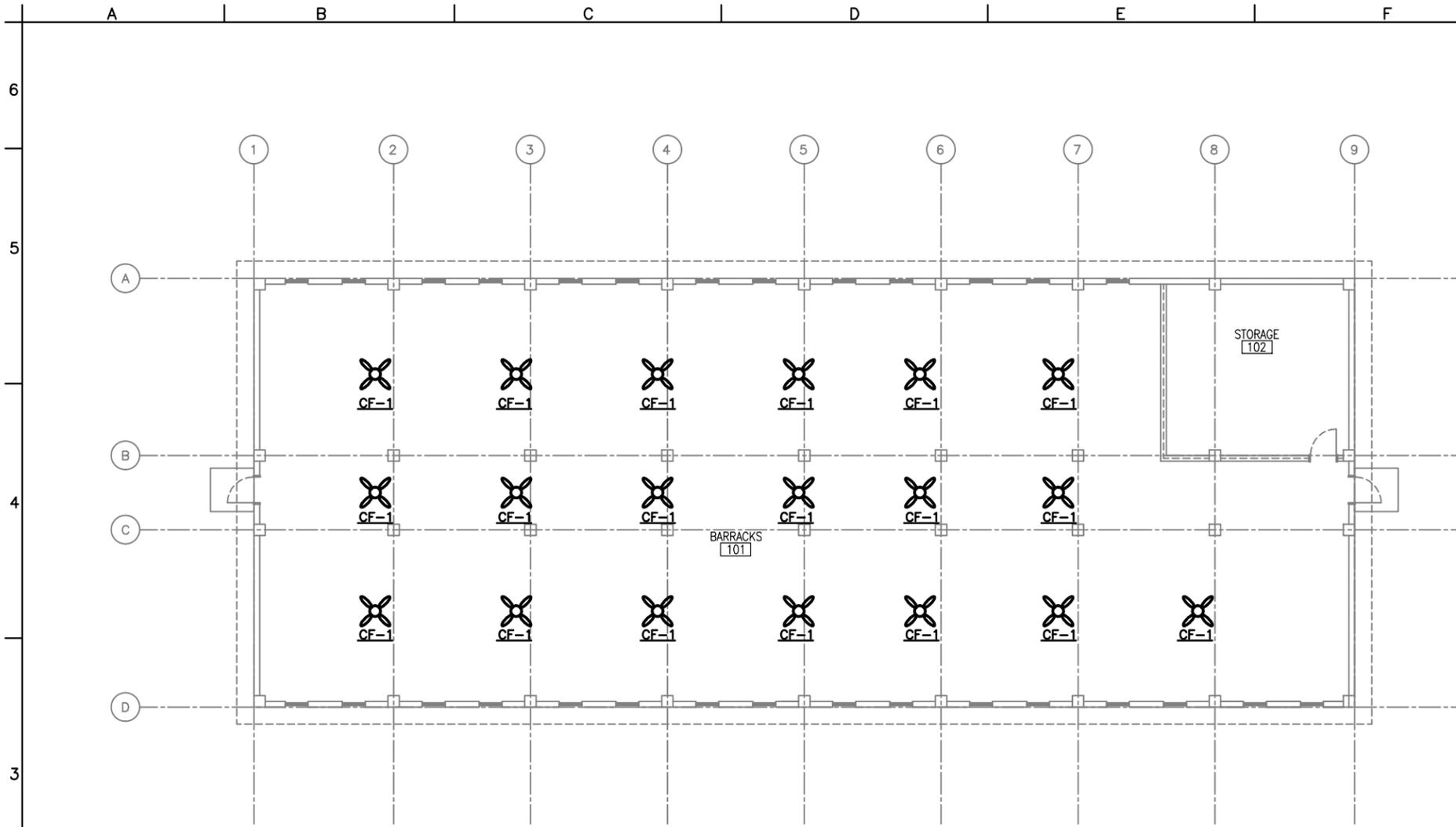
Michael Baker Jr. Inc.  
 A unit of Michael Baker Corporation  
 Health, Business Park  
 1000 Route 100, Suite 100  
 Monroeville, PA 15108  
 www.mbakercorp.com

STANDARD DESIGN  
 BARRACK BUILDING, OPEN BAY (579 GSM)  
 WOOD FIRED HEAT OPTION  
 DOOR, WINDOW & FINISH TYPES & DETAILS

SHEET REFERENCE NUMBER:  
**A5**

100% SUBMISSION





1  
M1 M1  
PLAN - HVAC  
SCALE: 1:100



**GENERAL NOTES:**

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

NO.	BLADE SIZE		VOLTAGE	SWITCH
	mm	IN		
CF-1	1320	52	220/1/50	● WALL

NOTES:  
1. FINAL ELECTRICAL CONNECTIONS BY EC.



NO.	DATE	DESCRIPTION	BY

DESIGNED BY:	RML	DATE:	09-30-09
DWN BY:	JUN	SUBMITTED BY:	BAKER
CHK BY:	CJM	FILE NO.:	ANP/SDM-101XXX

Michael Baker Jr. Inc.  
A unit of Michael Baker Corporation  
Health Business Park  
100 Pennsylvania PA 15108  
Mon, Tues, Wed, Thurs, Fri, 8:00am - 5:00pm  
www.mbakercorp.com

STANDARD DESIGN  
BARRACK BUILDING, OPEN BAY (579 GSM)  
WOOD FIRED HEAT OPTION  
PLAN - HVAC

SHEET  
REFERENCE  
NUMBER:  
M1

100% SUBMISSION





A B C D E F G H

6  
5  
4  
3  
2  
1

**GENERAL NOTES:**

1. REFER TO DRAWING #E0 FOR THE ELECTRICAL SYMBOLS LIST.
2. REFER TO DRAWING #E3 FOR THE POWER RISER.
3. REFER TO DRAWING #E5 FOR PANEL SCHEDULES.
4. COORDINATE EXACT MOUNTING LOCATION OF DISCONNECTING MEANS FOR MECHANICAL AND PLUMBING EQUIPMENT IN THE FIELD.
5. FUSIBLE SAFETY SWITCHES THAT ARE NOT OTHERWISE IDENTIFIED SHALL BE 380V, 1P, 30A FUSED SAFETY SWITCHES WITH 20A FUSES.

**NUMBERED NOTE:**

- ① SURFACE MOUNTED ON COLUMN (TYPICAL OF 4).
- ② PANEL B1.
- ③ TELECOMMUNICATIONS CONDUIT STUB-UP



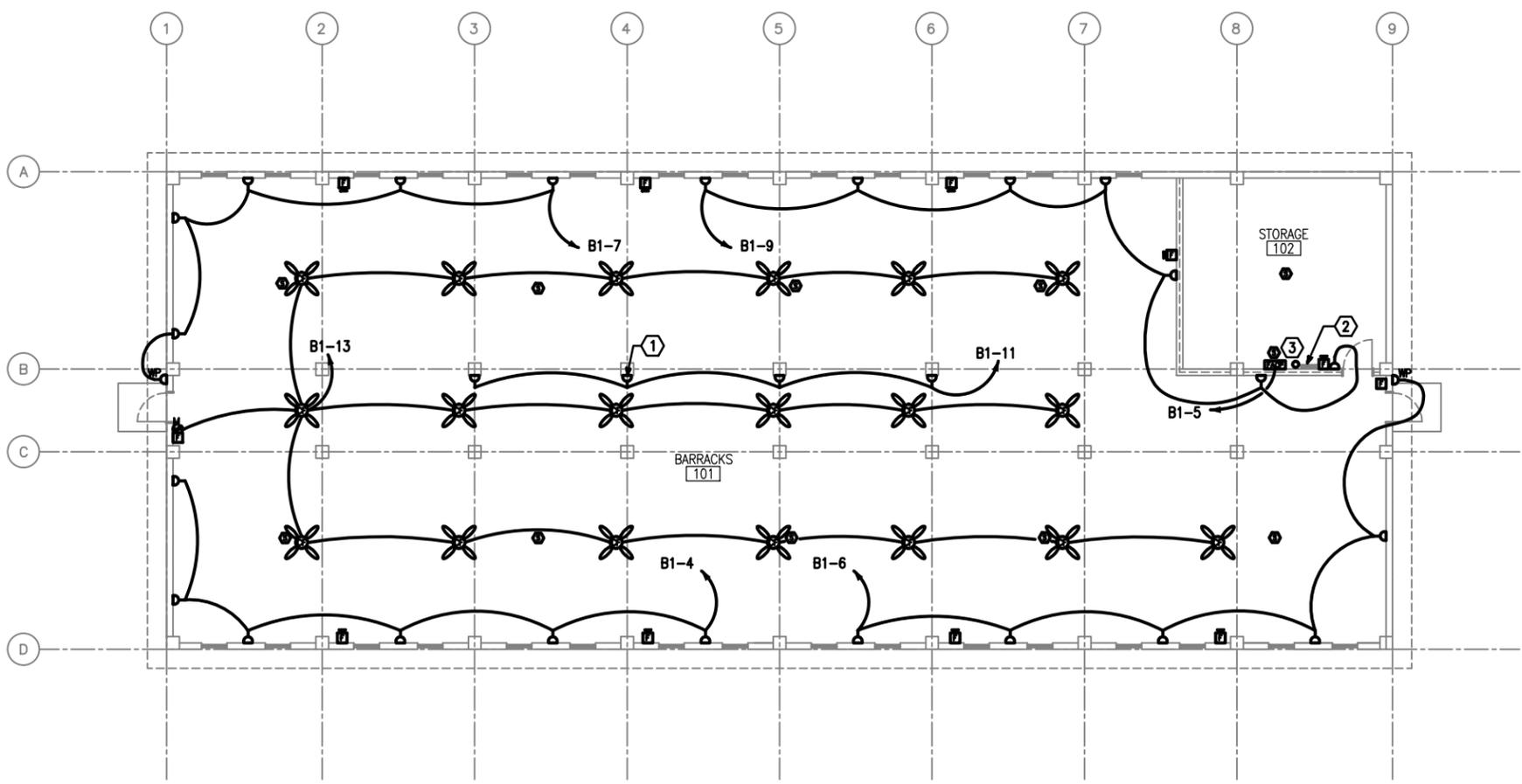
SYMBOL	DESCRIPTION	DATE	APP

DESIGNED BY: JRG	DATE: 09-30-09
DWN BY: JRG	SUBMITTED BY: BAKER
CHK BY: JRG	FILE NO: ANP/SE-102XXX

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A unit of Michael Baker Corporation  
Harris Business Park  
100 North State Street, PA 15108  
www.mbakercorp.com

STANDARD DESIGN  
BARRACK BUILDING, OPEN BAY (579 GSM)  
WOOD FIRED HEAT OPTION  
POWER AND SYSTEMS PLAN

SHEET REFERENCE NUMBER:  
E2



**1** POWER AND SYSTEMS PLAN  
SCALE: 1:100

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)  
1 0 1 2 3 4 5 6 7 8 9  
1:100

100% SUBMISSION









**STRUCTURAL DESIGN CRITERIA (CONT)**

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

**1.5 WIND LOADS (PER IBC 2006)**

**1.5.1 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

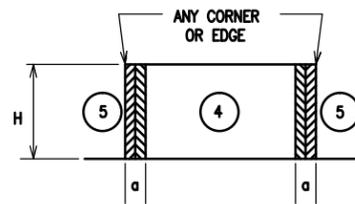
**1.5.2 DESIGN WIND PRESSURE - MAIN WINDFORCE RESISTING SYSTEM**

LOCATION	CORNER ZONE WIDTH "a"	MEAN ROOF HEIGHT (H)	WINDWARD WALL (⊕ MEAN ROOF HEIGHT)	LEEWARD WALL (⊖ MEAN ROOF HEIGHT)	ROOF
FIELD ZONE	N/A	8535 mm	680 N/m <sup>2</sup>	-480 N/m <sup>2</sup>	-470 N/m <sup>2</sup>
CORNER ZONE	1440mm	8535 mm	800 N/m <sup>2</sup>	-418 N/m <sup>2</sup>	-750 N/m <sup>2</sup>

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°.

**1.5.3 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:



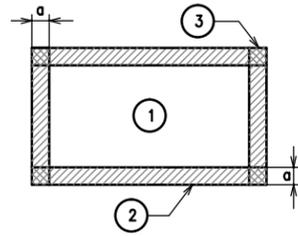
LOCATION	WINDWARD PRESSURE N/m <sup>2</sup> (inward)		LEEWARD PRESSURE N/m <sup>2</sup> (outward)		a
	④	⑤	④	⑤	
MAIN BUILDING					(mm)
AREA = 1 m <sup>2</sup>	788	788	-850	-1050	1440
AREA = 2 m <sup>2</sup>	748	748	-815	-967	1440
AREA = 5 m <sup>2</sup>	700	700	-765	-880	1440
AREA = 10 m <sup>2</sup>	648	648	-715	-750	1440

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

**1.5 WIND LOADS (CONT)**

**1.5.4 DESIGN WIND PRESSURE - ROOF COMPONENTS AND CLADDING**

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



LOCATION	GROSS UPLIFT PRESSURE N/m <sup>2</sup> (upward)			a
	①	②	③	
MAIN BUILDING				(mm)
AREA = 1 m <sup>2</sup>	-787	-931	-1738	1440
AREA = 2 m <sup>2</sup>	-787	-931	-1738	1440
AREA = 5 m <sup>2</sup>	-787	-931	-1738	1440
AREA = 10 m <sup>2</sup>	-787	-931	-1738	1440

**NOTES:**  
 1. DESIGN WIND PRESSURES ABOVE REPRESENT THE NET PRESSURE (SUM OF INTERNAL AND EXTERNAL PRESSURE) APPLIED NORMAL TO ALL SURFACES.  
 2. LINEAR INTERPOLATION BETWEEN VALUES OF TRIBUTARY AREA IS PERMISSIBLE.  
 3. 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 <sup>3</sup>
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/cm <sup>3</sup>
MINIMUM BEARING DEPTH BELOW GRADE	800mm
SEISMIC SITE CLASS (based on in-situ soil)	D

**CONCRETE BEAM SCHEDULE**

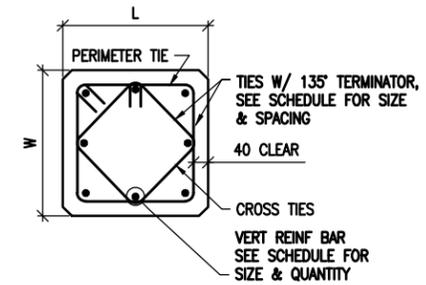
GRADE BEAM						
MARK	SIZE (BxH)	REINFORCING				REMARKS
		TOP	BOTTOM	STIRRUPS	MIDBAR	
GB1	500x750	(5)-#25	(4)-#25	#13 @ 200	#25 EF	TOP BAR LAP AT CENTER BOT BAR LAP PAST COL
FLOOR BEAM						
MARK	SIZE (BxH)	REINFORCING				REMARKS
		TOP	BOTTOM	STIRRUPS	MIDBAR	
FB1	500x800	(3)-#22	(3)-#22	#13 @ 225	N/A	TOP BAR LAP AT CENTER BOT BAR LAP PAST COL
FB2	500x500	(3)-#22	(3)-#22	#13 @ 225	N/A	TOP BAR LAP AT CENTER BOT BAR LAP PAST COL
ROOF BEAM						
MARK	SIZE (BxH)	REINFORCING				REMARKS
		TOP	BOTTOM	STIRRUPS	MIDBAR	
RB1	500x800	(2)-#19	(2)-#19	#13 @ 250	N/A	TOP BAR LAP AT CENTER BOT BAR LAP PAST COL

**NOTE:**  
 1. DIMENSIONS NOTED ARE MILLIMETERS (mm) UON.

**CONCRETE COLUMN SCHEDULE**

MARK	SIZE (LxW)	REINFORCING	
		VERT BARS	TIES
C1	500x500	(8)-#32	#16 @ 100 (CORE OF EXT & CORNER COLUMNS) #16 @ 150 (CORE OF INTERIOR COLUMNS) #13 @ 200 (OTHER)

**NOTE:**  
 1. DIMENSIONS NOTED ARE MILLIMETERS (mm) UON.  
 2. SECOND STORY COLUMNS ARE SAME AS FIRST STORY COLUMNS.  
 3. CORE INDICATES THE AREA OF COLUMN & BEAM INTERSECTION  
 4. TIE INDICATES PERIMETER & CROSS TIE COMBINED



**1 COLUMN DETAIL**  
 SCALE: 1:10

**SPREAD FOOTING SCHEDULE**

MARK	FOOTING SIZE (mm)			FOOTING REINFORCING	REMARKS
	LENGTH	WIDTH	THICKNESS		
F1	6000	3700	300	(18)-#22 SHORT, T&B (11)-#22 LONG, T&B	-----
F2	5200	3700	300	(19)-#22 SHORT, T&B (13)-#22 LONG, T&B	-----
F3	5300	3700	350	(17)-#22 SHORT, T&B (12)-#22 LONG, T&B	-----
F4	3350	3350	350	(11)-#22 EW BOTT	-----

**NOTES:**  
 1. DIMENSIONS NOTED ARE MILLIMETERS (mm) UON

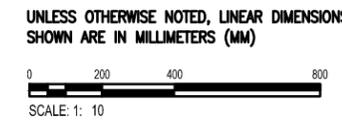
US Army Corps of Engineers  
 Afghanistan Engineer District

DATE	DESCRIPTION	SYMBOL

DESIGNED BY: MMY DATE: 09-30-09  
 DRAWN BY: RCG SUBMITTED BY: BAKER  
 CHK BY: CWV FILE NO: ANP/SDS-002XXX  
 Michael Baker Corp.  
 A unit of Michael Baker Corporation  
 4000 Business Park  
 Moon Township, PA 15108  
 www.mbakercorp.com

STANDARD DESIGN  
 BARRACK BUILDING, 2-STORY (662 GSM)  
 WOOD FIRED HEAT OPTION  
 DESIGN CRITERIA & SCHEDULES

SHEET REFERENCE NUMBER:  
**S2**



100% SUBMISSION

**MINIMUM LAP SPLICES OF REINFORCING BARS IN TENSION (PER ACI 318M-05)**

f'c = 28 MPa CONCRETE					
BAR SIZE	CENTER TO CENTER BAR SPACING	TOP BARS (mm)		OTHER BARS (mm)	
		LESS THAN 4db	4db OR MORE	LESS THAN 4db	4db OR MORE
#10		460	460	410	40
#13		660	610	510	50
#16		1020	760	790	60
#19		1450	910	1120	80
#22		1960	1090	1500	90
#25		2590	1450	1980	100
#29		3280	1830	2510	110
#32		4140	2340	3200	130
#36		5080	2840	3910	140

**NOTES:**

- LAP SPLICES ABOVE ARE IN MILLIMETERS UON.
- YIELD STRENGTH OF REINFORCEMENT, fy, IS 420MPa (LAP SPLICE LENGTH IS IN MILLIMETERS).
- CONCRETE IS NORMAL WEIGHT (2400kg/m<sup>3</sup>).
- TOP BAR INDICATES HORIZONTAL REINFORCEMENT WHICH IS PLACED ABOVE 300mm OR MORE OF FRESH CONCRETE.
- SEE COLUMN SCHEDULE FOR COLUMN AND SHEAR WALL VERTICAL LAP SPLICE.
- STRAIGHT DEVELOPMENT LENGTH OF AN UNLAPPED BAR IS EQUAL TO VALUE FROM TABLE DIVIDED BY 1.3.
- CATEGORY FOR BARS SPACED LESS THAN 4d, OR ON CENTER CORRESPONDS TO CATEGORY 1 IN THE CRSI HANDBOOK WHEREAS FOR BARS SPACED 4d, OR MORE ON CENTER CORRESPOND TO CRSI CATEGORY 5.

**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	50
#19 THRU #36 BAR	50
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.	

**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	2400	400	(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 MASONRY LINTEL. PROVIDE 400mm BEARING EA END FOR 400mm DEEP MASONRY LINTEL.
- FOR HEAD DETAILS REFER TO ARCHITECTURAL SHEETS.
- REINFORCING SHALL BE ASTM A615M, GRADE 420. 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.



SYMBOL	DESCRIPTION	DATE

DESIGNED BY: MMY	DATE: 09-30-09	SUBMITTED BY: BAKER	FILE NO.: ANP/SDS-00300X
DWN BY: RCG	CHK BY: CWW		

Michael Baker Jr. Inc.  
A unit of Michael Baker Corporation  
1000 Business Park  
Monroeville, PA 15108  
www.mbakercorp.com

STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION

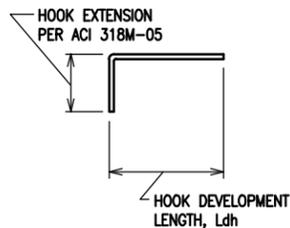
SCHEDULES

SHEET REFERENCE NUMBER:  
S3

100% SUBMISSION

**MASONRY REINFORCING MINIMUM LAP SPLICES**

BAR SIZE	BASIC LAP SPLICE Ld FOR CMU REINFORCING (mm)
#10	450
#13	600
#16	750
#19	900
#22	1050
#25	1200



**NOTES:**

- CONCRETE IS NORMAL WEIGHT CONCRETE.
- BAR YIELD STRENGTH, fy = 420 MPa
- SIDE COVER REQUIREMENTS OF ACI SECT. 12.5.3 ARE ASSUMED TO NOT BE MET.
- TIE OR STIRRUP REQUIREMENTS OF ACI SECT. 12.5.3 ARE ASSUMED TO NOT BE MET.
- REDUCTION FOR EXCESS REINFORCEMENT IS NOT TAKEN.
- HOOK DEVELOPMENT LENGTH IS VALID FOR 180° HOOKS ALSO.

**CONCRETE MATERIALS SCHEDULE**

STRUCTURAL ELEMENT	f'c CONCRETE COMPRESSIVE STRENGTH @ 28 DAYS (MPa)
SLAB-ON-GRADE/TURN-DOWN SLABS	28
FLOOR SLABS	28
ALL FOOTINGS (UON)	28
MISC. CURBS, WALLS AND PADS UON	28
CAST-IN-PLACE LINTEL	28
CONCRETE FRAMING - BEAMS AND COLUMNS	28

**NOTES:**

- ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE. (2400 Kg/m<sup>3</sup> UON)
- ALL CONCRETE SHALL HAVE A MAX WATER-CEMENT RATIO OF 0.45.

**STANDARD HOOKS IN TENSION PER (ACI 318M-05)**

HOOK DEVELOPMENT LENGTH Ldh (mm)	
BAR SIZE	f'c 28 MPa
#10	180
#13	250
#16	300
#19	380
#22	430
#25	480
#29	560
#32	610
#36	690

**TYPICAL CMU WALL REINFORCING SCHEDULE**

WALL TYPE OR LOCATION	WALL THICKNESS (mm)	CONT. VERT. REINF. (CENTERED IN CMU, UON)	CONT. CAST IN PLACE LINTEL (CIP BB)			REMARKS
			DEPTH (mm)	REINF (BOTT UON)	MAX CIPL VERT SPACING (mm)	
ALL PERIMETER/EXTERIOR WALLS (UON)	200	1-#16 @ 800	200	2-#16	1200	----
NON-LOAD BEARING INTERIOR WALLS WITH TOP AND BOTT. SUPPORTS	200	1-#13 @ 1200	200	2-#16	1200	----

**NOTES:**

- REINFORCING SIZES AND SPACING GIVEN IN SECTIONS AND DETAILS SHALL SUPERSEDE THE ABOVE SCHEDULE REQUIREMENTS.
- PROVIDE CONTINUOUS CAST IN PLACE CONCRETE BOND BEAM AT ALL WALL LATERAL SUPPORT LOCATIONS.
- REINFORCING INDICATED SHALL BE CONTINUOUS FOR FULL EXTENT OF SPLICE FOLLOWING THE REQUIREMENTS OF THE LAP SPLICE TABLE SHOWN ON THIS SHEET.
- WALLS HAVE BEEN DESIGNATED AS VERTICALLY SPANNING UON AND THEREFORE MUST BE TEMPORARILY SUPPORTED DURING CONSTRUCTION UNTIL THE SUPPORTING DIAPHRAGMS (FLOOR AND ROOF SYSTEMS) HAVE BEEN COMPLETELY INSTALLED. SHORING IS THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL CMU WALLS SHALL BE FULLY GROUTED IN LIFTS NOT EXCEEDING THOSE BY CODE (UON)
- SEE TYPICAL CMU WALL DETAILS ON SHEET S10.

**MAXIMUM CMU WALL UNSUPPORTED HEIGHT OR LENGTH**

	WALL THICKNESS (mm)	EXTERIOR WALL NON-LOAD BEARING (mm)	INTERIOR NON-LOAD BEARING WALL (mm)
MAX HEIGHT OR LENGTH BETWEEN SUPPORTS	200	4800	7200

NOTE: CMU WALL MAXIMUM LATERAL SUPPORT SPACING GIVEN IN SECTIONS AND DETAILS SHALL SUPERSEDE THE ABOVE SCHEDULE REQUIREMENTS.

SYMBOL	DESCRIPTION	DATE	APP

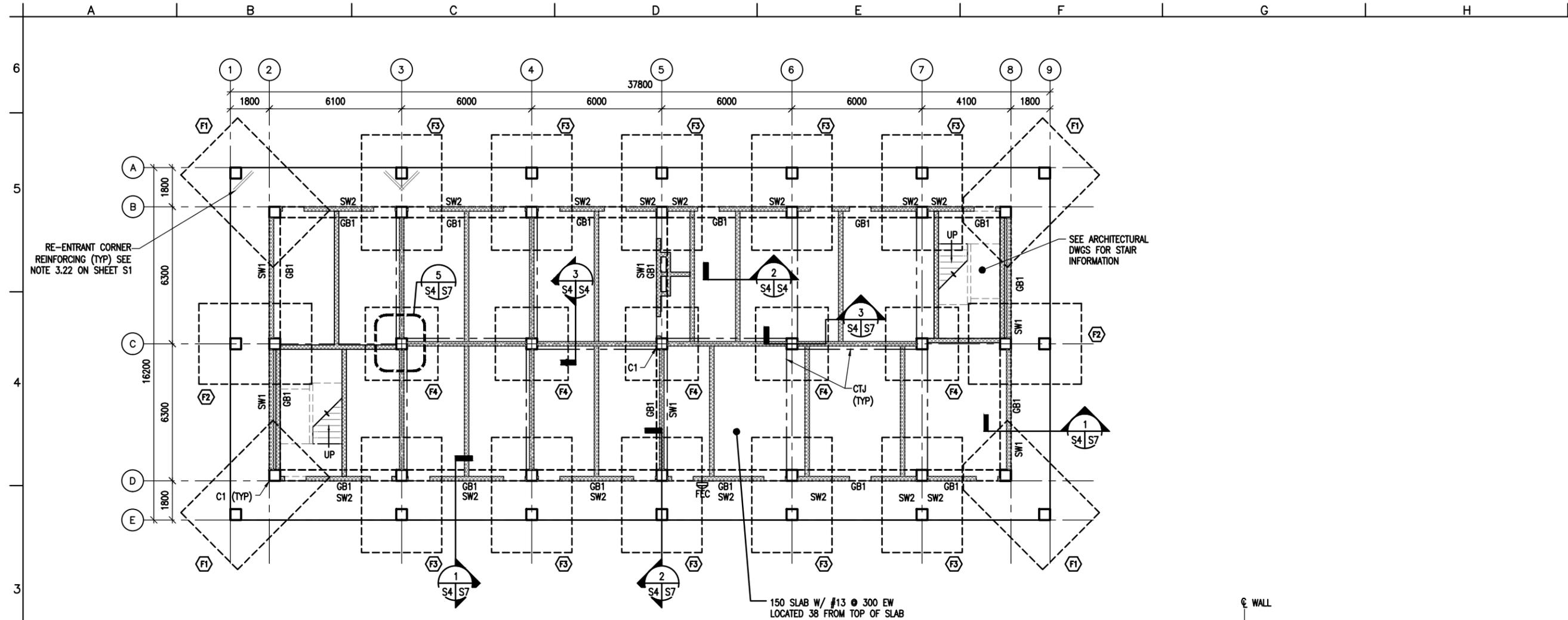
DESIGNED BY:	DATE:	09-30-09
MMY	SUBMITTED BY:	BAKER
DWN BY:	RCG	
CHK BY:	CWW	
FILE NO.:	ANP/SDS-10-XXXX	

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A unit of Michael Baker Corporation  
1000 Business Park  
Monroeville, PA 15108  
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STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION  
FOUNDATION PLAN

SHEET  
REFERENCE  
NUMBER:  
**S4**

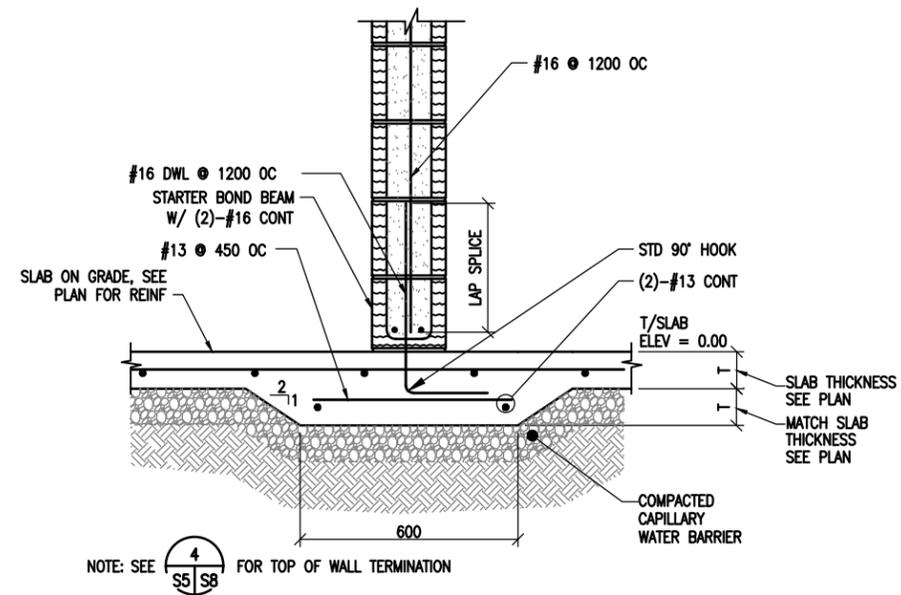
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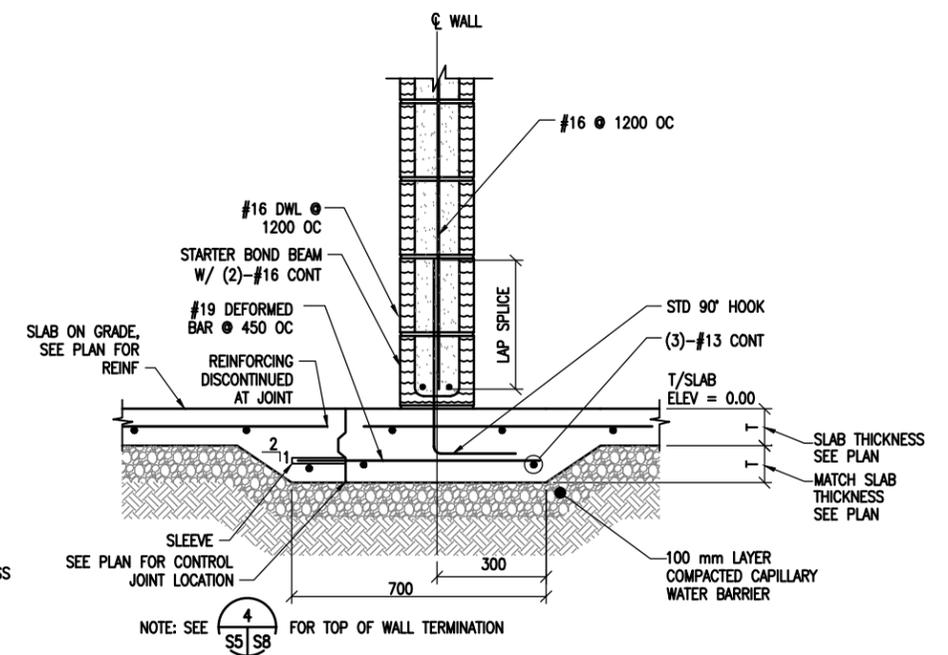
**1 FOUNDATION PLAN**  
SCALE: 1:100

**PLAN 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 -950 UNLESS OTHERWISE INDICATED.
3. TOP OF INTERIOR FOOTING SHALL BE -600 UNLESS OTHERWISE INDICATED.
4. SPREAD FOOTINGS INDICATED THUS F# ON PLAN. REFER TO SPREAD FOOTING SCHEDULE ON SHEET S2.
5. COLUMNS INDICATED THUS C# ON PLAN. REFER TO COLUMN SCHEDULE ON SHEET S2.
6. GRADE BEAM INDICATED THUS GB# ON PLAN, REFER TO BEAM SCHEDULE ON SHEET S2.
7. REFER TO SHEETS S1 TO S3 FOR STRUCTURAL NOTES AND BASIS OF DESIGN.
8. CTJ & CSJ INDICATES SLAB CONTROL OR CONSTRUCTION JOINTS RESPECTIVELY. REFER TO SHEET S10 FOR DETAILS.
9. SEE CMU WALL REINFORCING SCHEDULE ON SHEET S3.
10. REFER TO ARCHITECTURAL SHEETS FOR MASONRY PARTITION TYPES.
11. SEE MECHANICAL AND ELECTRICAL SHEETS FOR CONCRETE PAD LOCATIONS, SIZES, AND THICKNESS NOT SHOWN. SEE SHEET S10 FOR DETAILS.
12. THICKENED SLAB UNDER CMU WALLS NOT SHOWN FOR CLARITY



**2 SECTION**  
SCALE: 1:10



**3 SECTION**  
SCALE: 1:10

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)



SYMBOL	DESCRIPTION	DATE

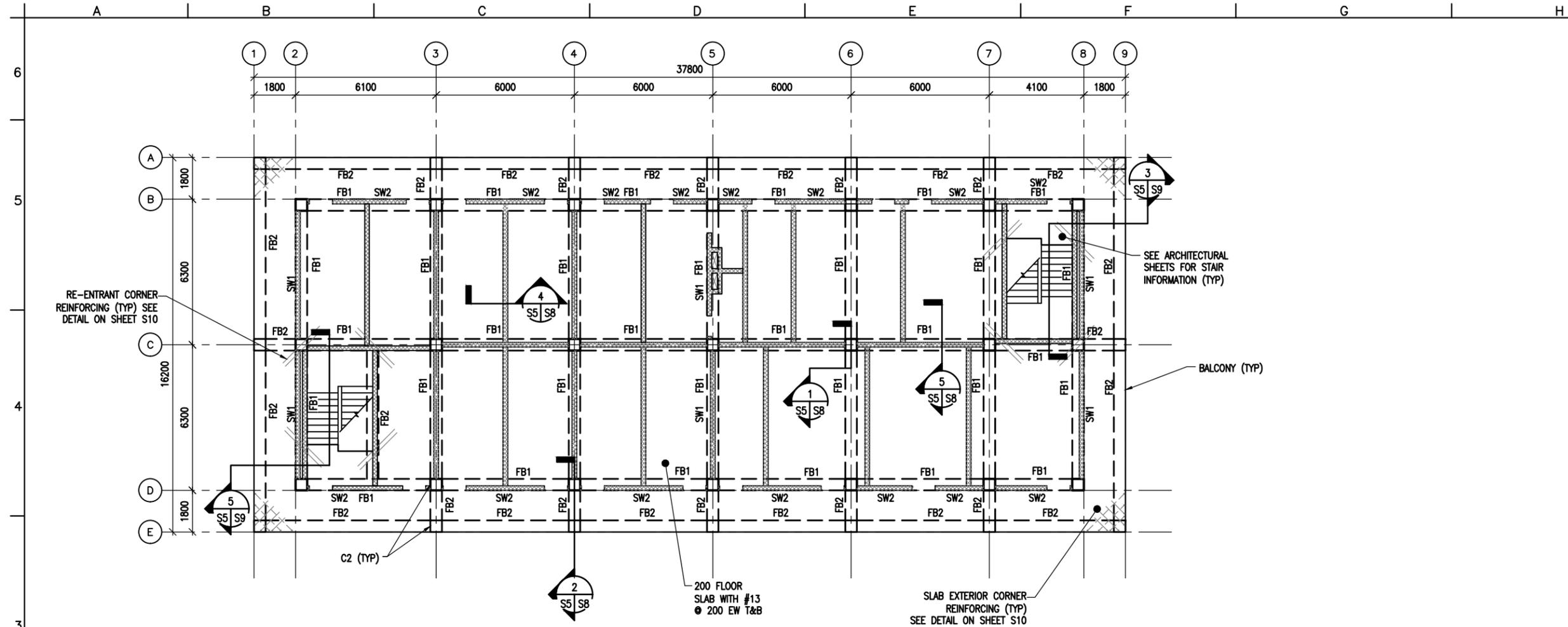
DESIGNED BY:	DATE:
MMY	09-30-09
DWN BY:	SUBMITTED BY:
RCG	BAKER
CHK BY:	FILE NO.:
CWW	ANFSDS-105XXX

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Monroeville, PA 15108  
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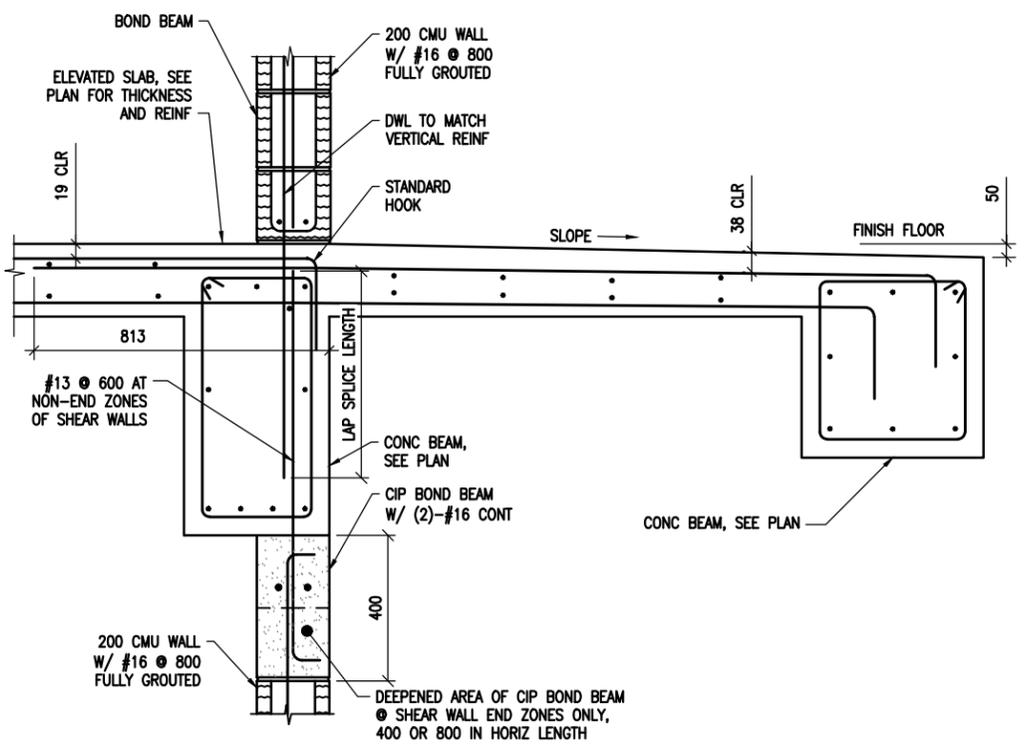
STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FRIED HEAT OPTION  
SECOND FLOOR FRAMING PLAN

SHEET  
REFERENCE  
NUMBER:  
S5

100% SUBMISSION



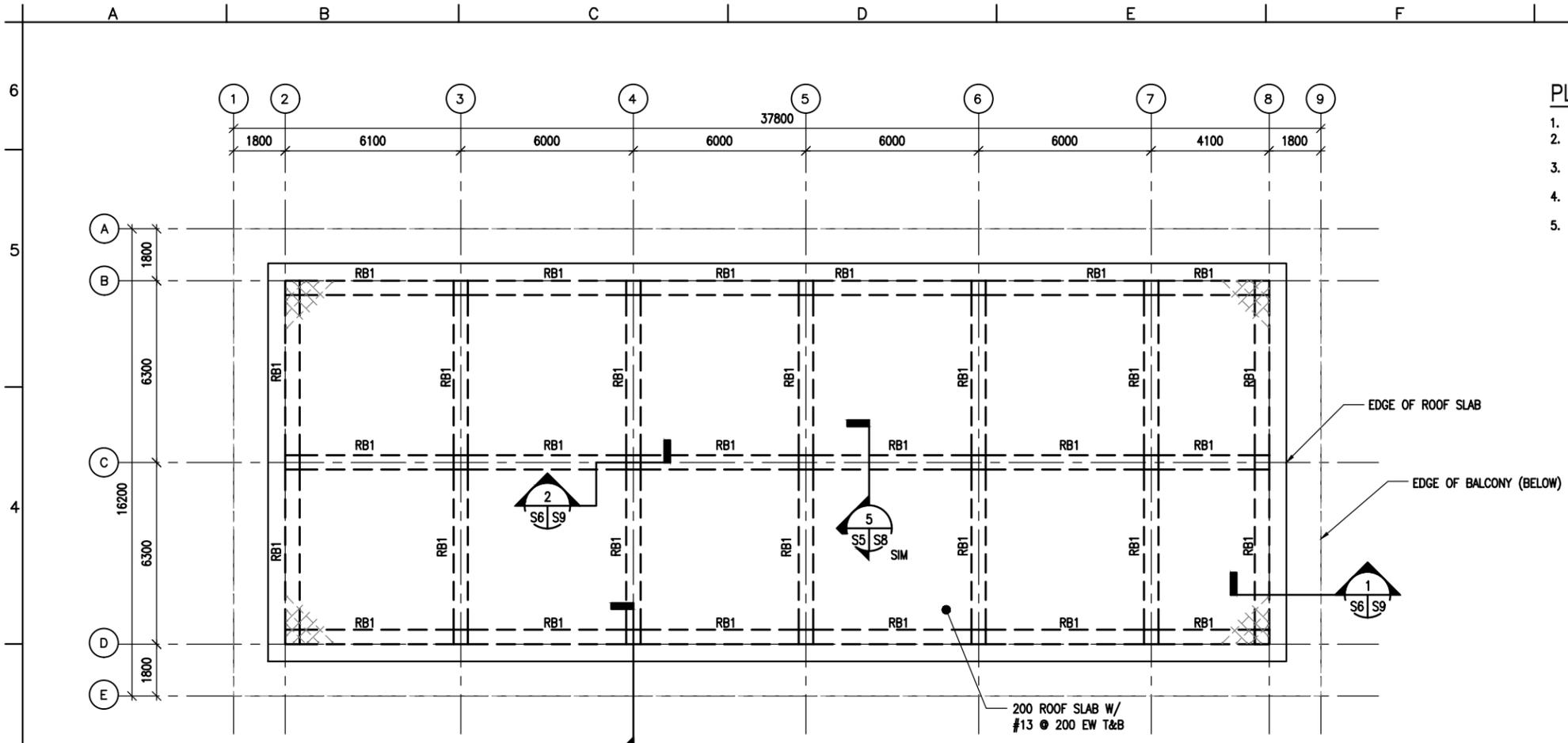
1 2ND FLOOR FRAMING PLAN  
SCALE: 1:100



2 TYP SHEAR WALL END ZONE SECTION  
SCALE: 1:10

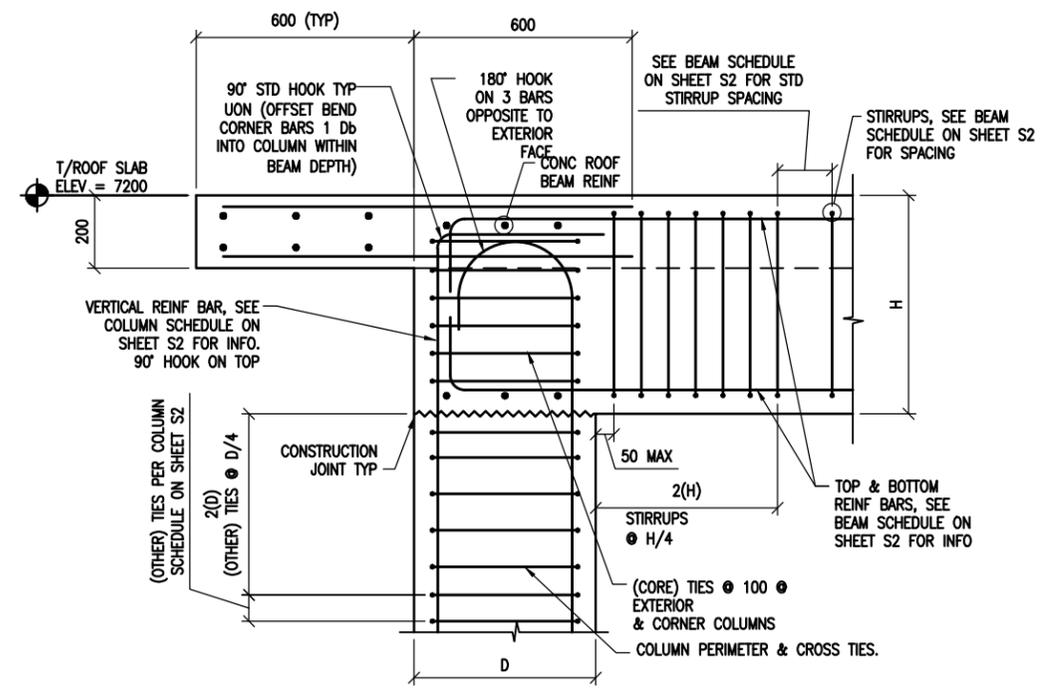
UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)  
SCALE: 1: 100

- PLAN NOTES:**
- TOP OF SLAB ELEVATION = 3600 UNLESS NOTED OTHERWISE.
  - COLUMNS INDICATED BY C# ON PLAN. REFER TO COLUMN SCHEDULE ON SHEET S2.
  - FLOOR BEAM INDICATED BY FB# ON PLAN. REFER TO BEAM SCHEDULE ON SHEET S2.
  - REFER TO SHEETS S1 TO S3 FOR STRUCTURAL NOTES AND BASIS OF DESIGN.
  - SEE CMU WALL REINFORCING SCHEDULE ON SHEET S3.
  - REFER TO ARCHITECTURAL SHEETS FOR FLOOR SLAB OPENING LOCATIONS AND MASONRY PARTITION TYPES.
  - SEE MECHANICAL AND ELECTRICAL SHEETS FOR CONCRETE PAD LOCATIONS, SIZES, AND THICKNESS NOT SHOWN. SEE SHEET S10 FOR DETAILS.



- PLAN NOTES:**
1. TOP OF SLAB ELEVATION = 7200 UNLESS NOTED OTHERWISE.
  2. ROOF BEAM INDICATED BY RB# ON PLAN. REFER TO BEAM SCHEDULE ON SHEET S2
  3. REFER TO SHEETS S1 TO S3 FOR STRUCTURAL NOTES AND BASIS OF DESIGN.
  4. COORDINATE WITH ARCHITECTURAL SHEETS FOR COLD-FORMED STEEL OVERBUILT FRAMING ABOVE ROOF SLAB.
  5. COLD-FORMED METAL OVERBUILT ROOF FRAMING NOT SHOWN FOR CLARITY. SEE OVERBUILT ROOF FRAMING DETAILS AND SECTIONS ON SHEET S9.

**1**  
S6 S6  
**ROOF FRAMING PLAN**  
SCALE: 1:100



**1**  
S6 S6  
**SECTION**  
SCALE: 1:10

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)

0 200 400 800  
SCALE: 1: 10

0 2000 4000 8000  
SCALE: 1: 100

**US Army Corps of Engineers**  
Afghanistan Engineer District

SYMBOL	DESCRIPTION	DATE	APP

DESIGNED BY:	DATE:	SUBMITTED BY:	FILE NO.:
MMY	09-30-09	BAKER	ANP/SDS-106XXX
DWN BY:		RCG	
CHK BY:		CWW	

Michael Baker Corp.  
A unit of Michael Baker Corporation  
1000 Business Park  
Monroeville, PA 15108  
www.mbakercorp.com

STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION  
ROOF FRAMING PLAN

SHEET REFERENCE NUMBER:  
**S6**

100% SUBMISSION

SYMBOL	DESCRIPTION	DATE	APP

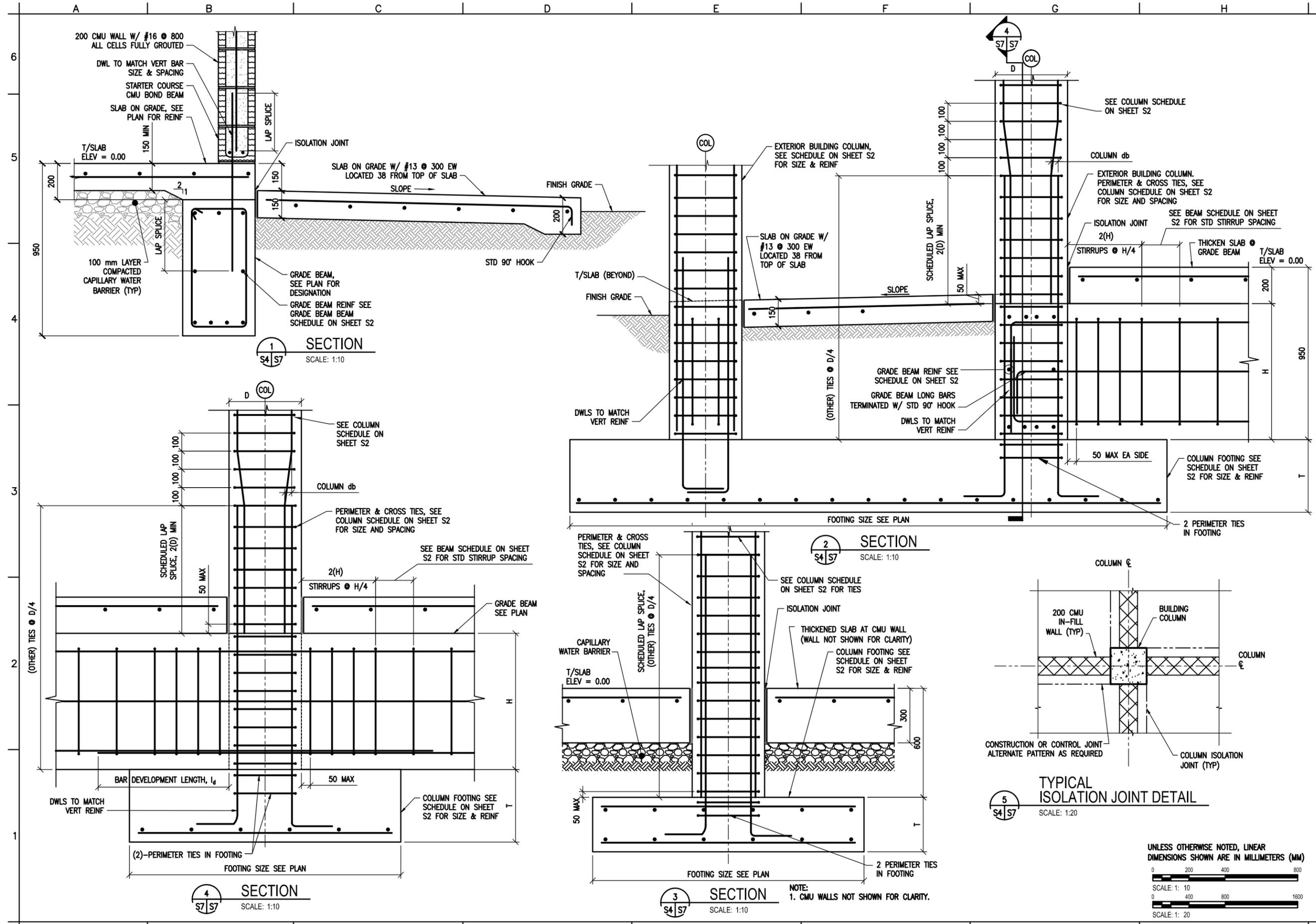
DESIGNED BY:	DATE:	09-30-09
MMY	SUBMITTED BY:	BAKER
DWN BY:	RCG	
CHK BY:	CWW	
FILE NO.:	ANP/SDS-307XXX	

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A unit of Michael Baker Corporation  
1000 Business Park  
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www.mbakercorp.com

STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION  
FOUNDATION SECTIONS & DETAILS

SHEET REFERENCE NUMBER:  
**S7**

100% SUBMISSION



**SECTION 1**  
SCALE: 1:10

**SECTION 2**  
SCALE: 1:10

**SECTION 3**  
SCALE: 1:10

**SECTION 4**  
SCALE: 1:10

**SECTION 5**  
SCALE: 1:20

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)

SCALE: 1: 10  
0 200 400 800

SCALE: 1: 20  
0 400 800 1600

NOTE:  
1. CMU WALLS NOT SHOWN FOR CLARITY.

SYMBOL	DESCRIPTION	DATE	APP

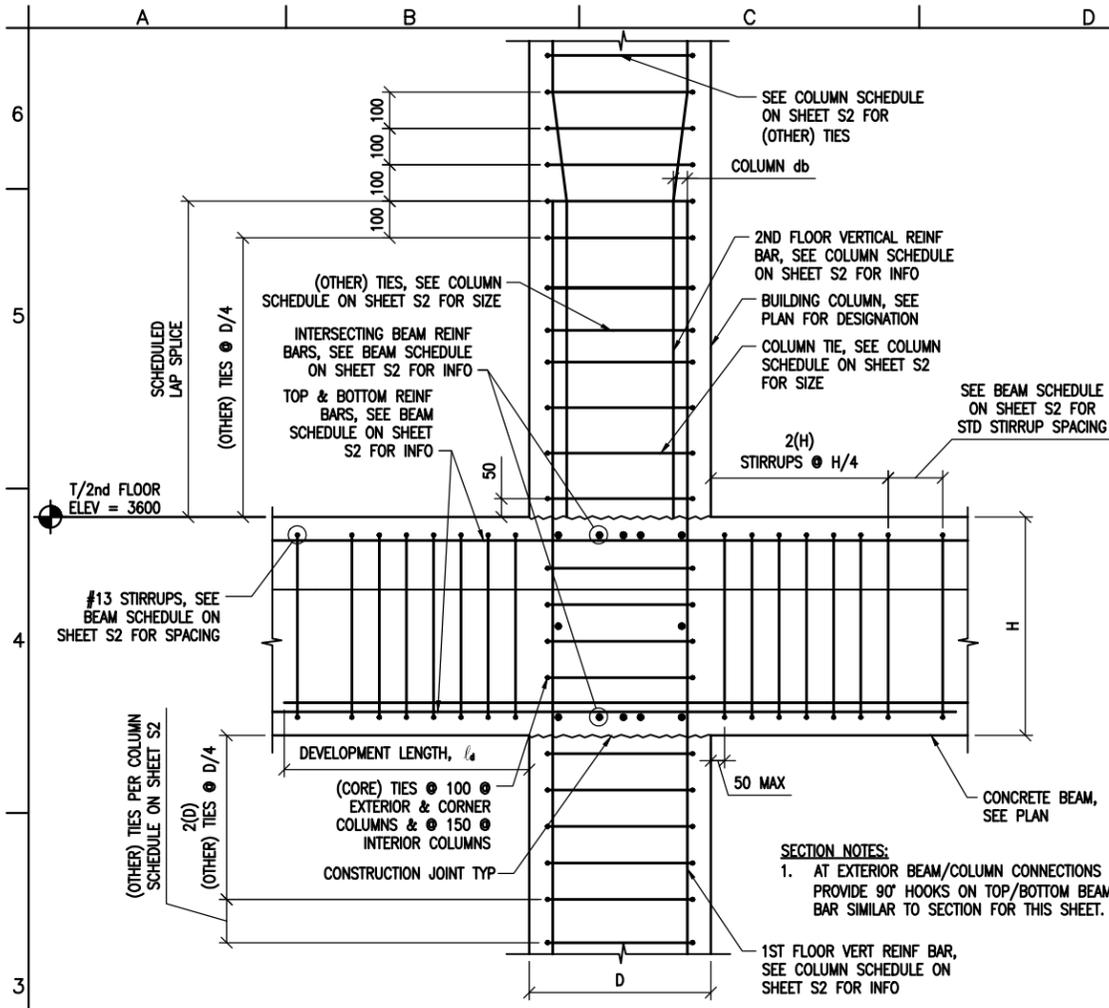
DESIGNED BY:	DATE:	09-30-09
MMY		
DWN BY:	SUBMITTED BY:	BAKER
RCG		
CHK BY:	FILE NO.:	ANP/SDS-30600X
CWW		

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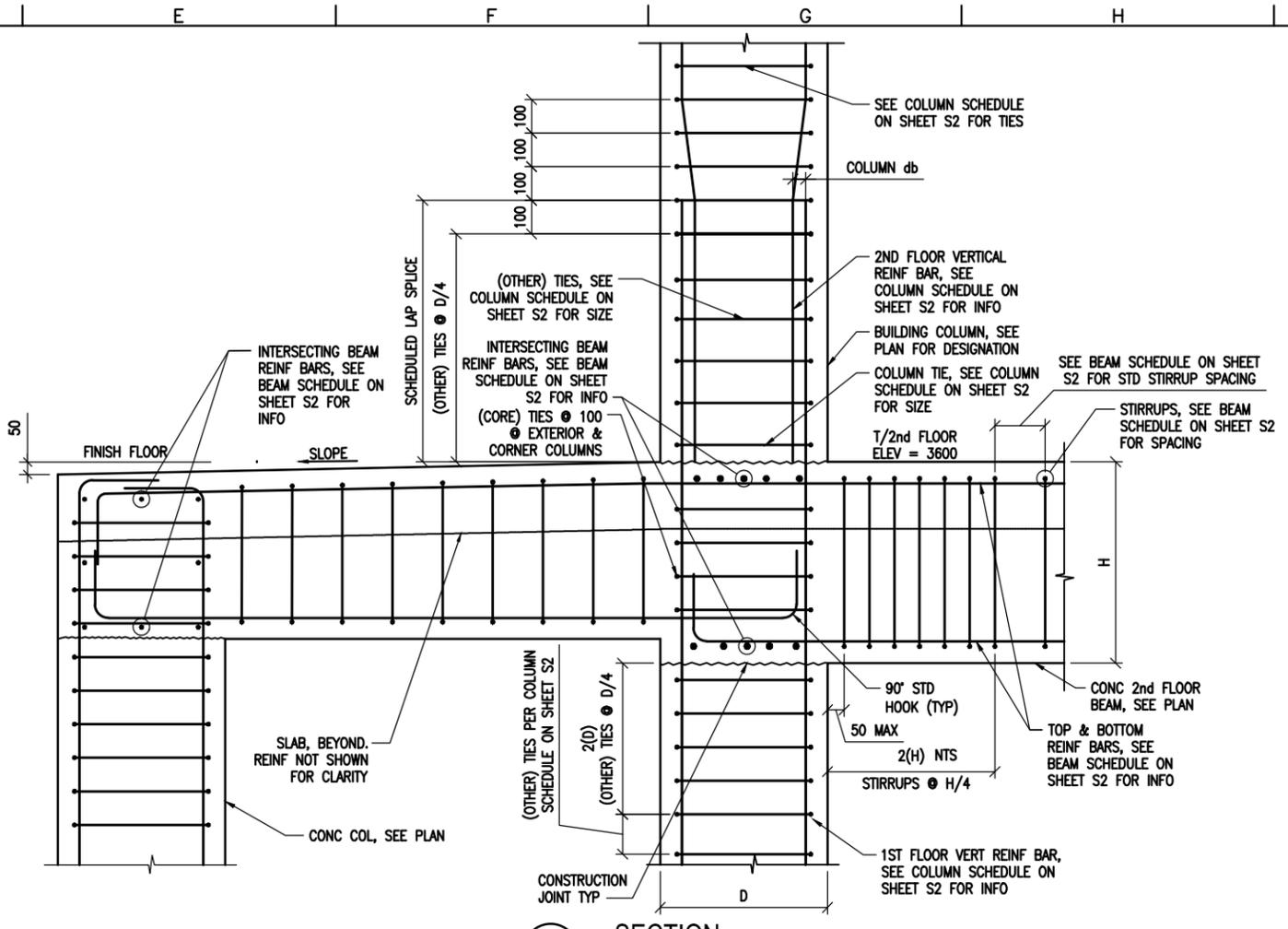
STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION  
FLOOR & ROOF FRAMING SECTIONS & DETAILS

SHEET REFERENCE NUMBER:  
S8

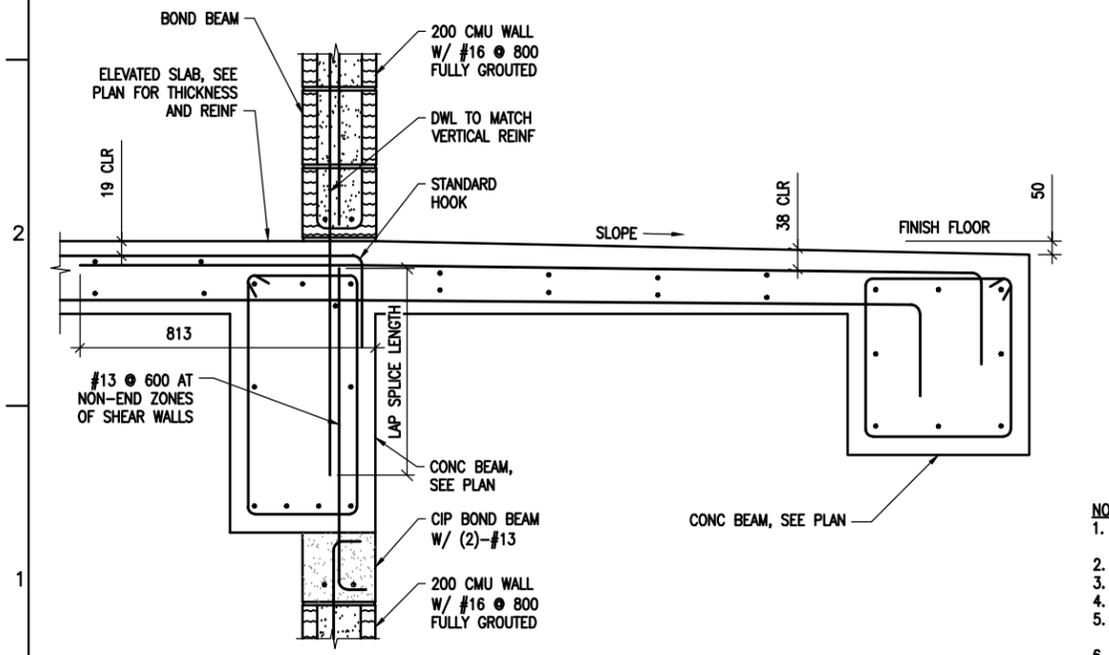
100% SUBMISSION



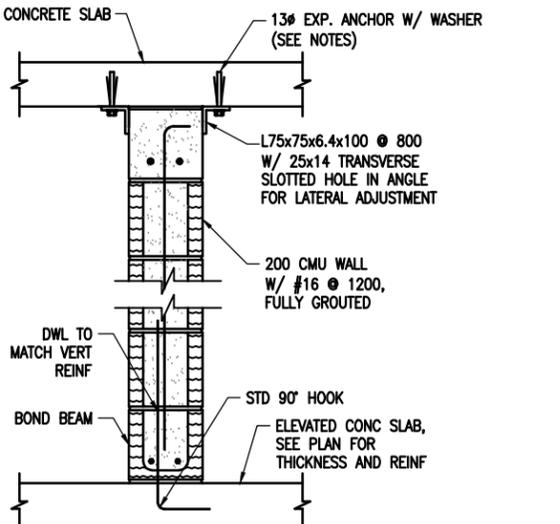
**SECTION 1**  
SCALE: 1:10



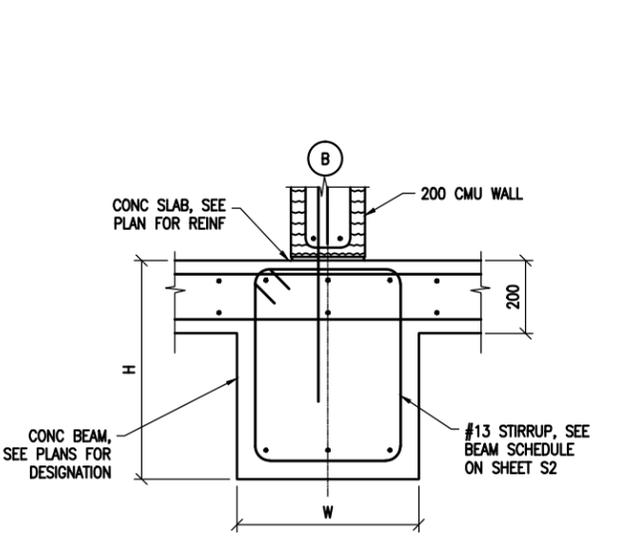
**SECTION 2**  
SCALE: 1:10



**SECTION 3**  
SCALE: 1:10



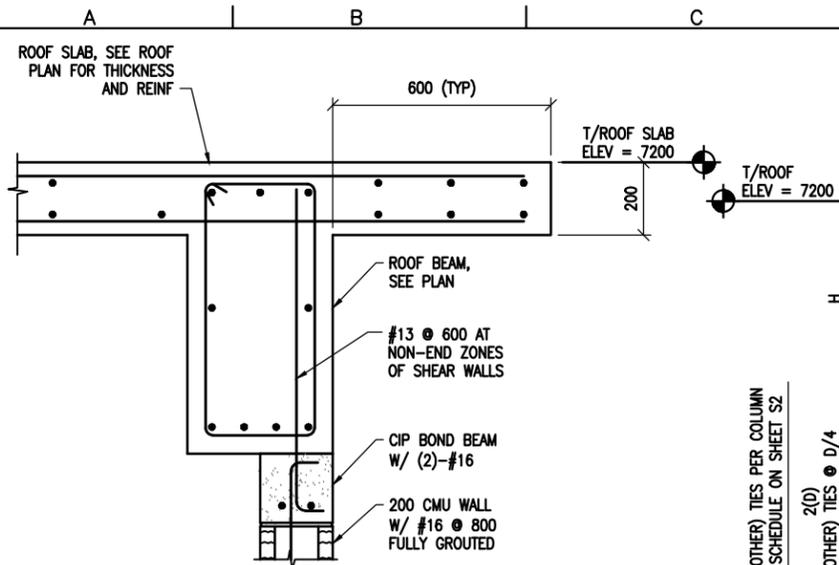
**SECTION 4**  
SCALE: 1:10



**SECTION 5**  
SCALE: 1:10

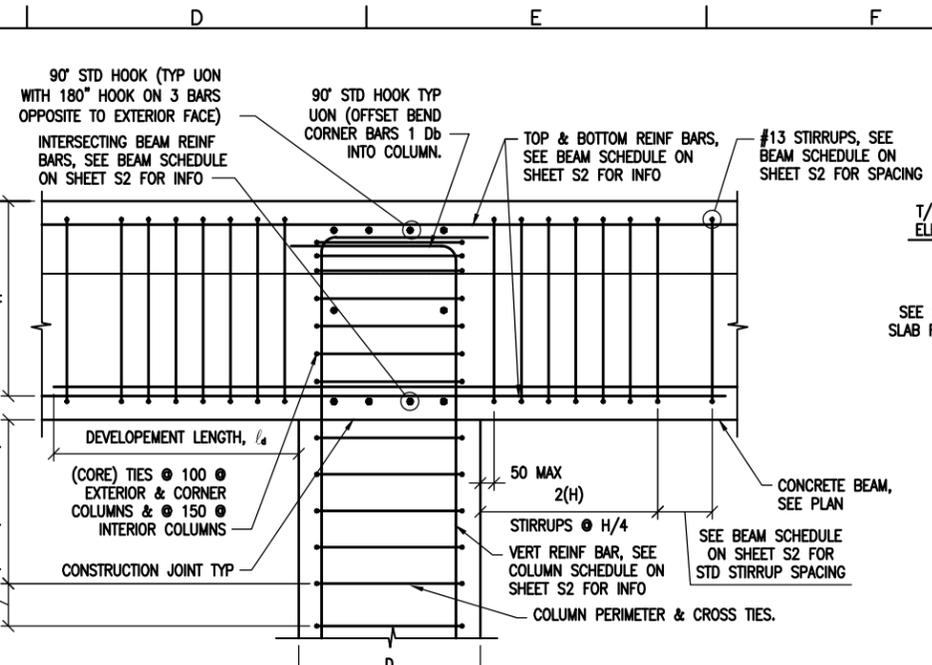
- NOTES:**
- SECTION DEPICTS TYPICAL SECOND FLOOR INTERIOR NON-SHEAR WALL. INTERIOR FIRST FLOOR NON-SHEAR WALL TOP TERMINATION SIMILAR.
  - EMBED EXPANSION ANCHOR 82 MINIMUM INTO SOLID CONCRETE.
  - USE OVERSIZED STEEL PLATE WASHER 3MM THICK BETWEEN ANCHOR HEAD AND ANGLE.
  - SEE SHEETS S3 & S10 FOR CMU WALL REINF
  - INSTALL 13MM ISOLATION JOINT VERTICALLY AT WALL ENDS THAT ARE ADJACENT TO CONCRETE COLUMNS.
  - SLAB REINFORCING NOT SHOWN FOR CLARITY.

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)  
SCALE: 1: 10

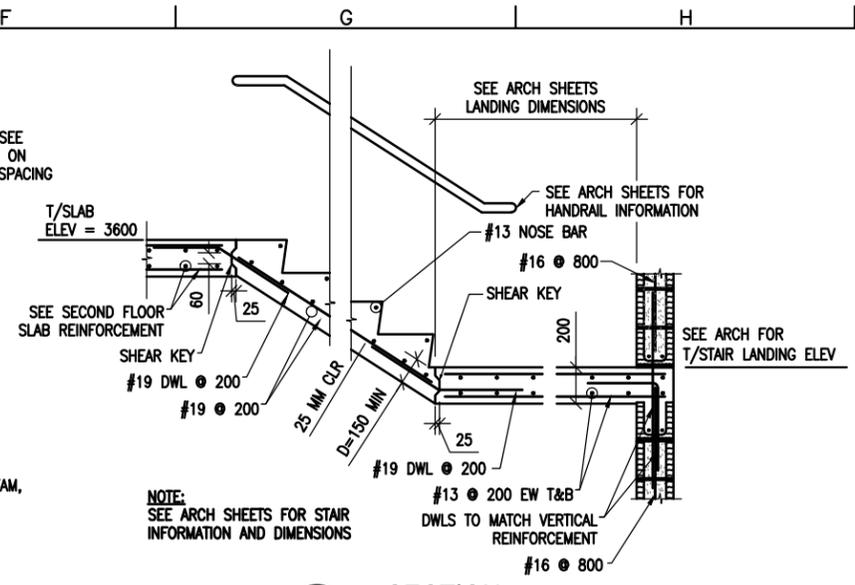


**SECTION 1**  
SCALE: 1:10

NOTES:  
1. REFERENCE THIS SHEETS FOR OVERFRAMING ABOVE ROOF SLAB.

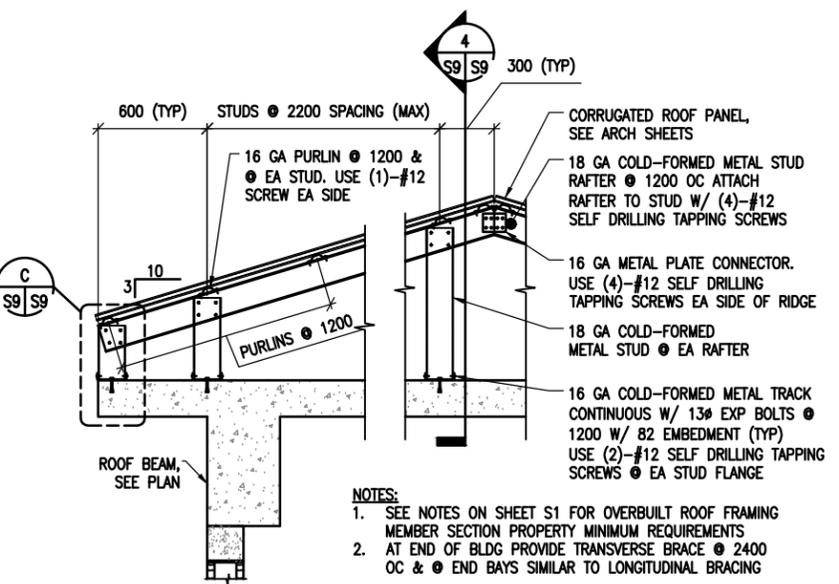


**SECTION 2**  
SCALE: 1:10



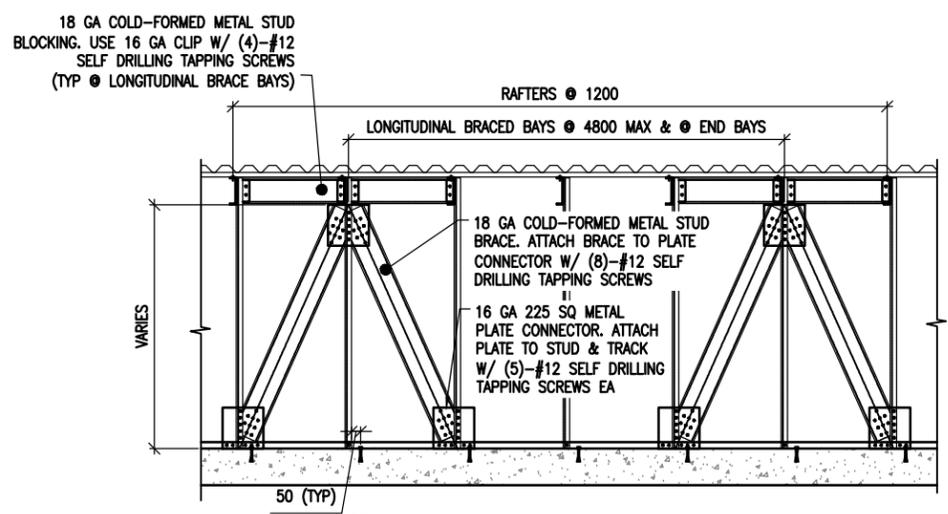
**SECTION 3**  
SCALE: 1:10

NOTE:  
SEE ARCH SHEETS FOR STAIR INFORMATION AND DIMENSIONS

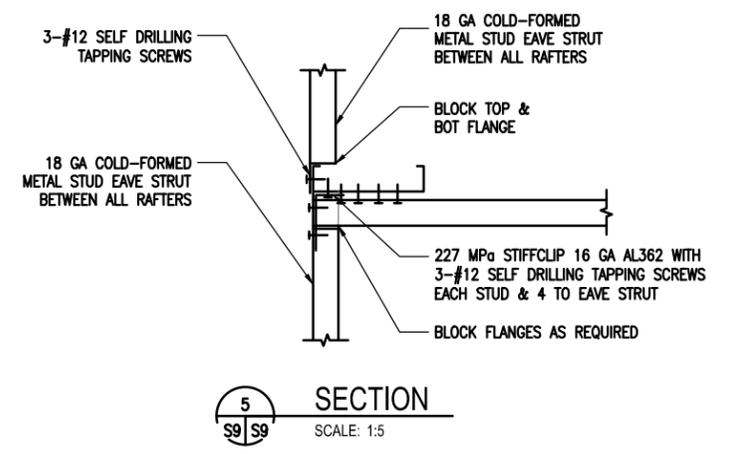


**SECTION 4**  
SCALE: 1:20

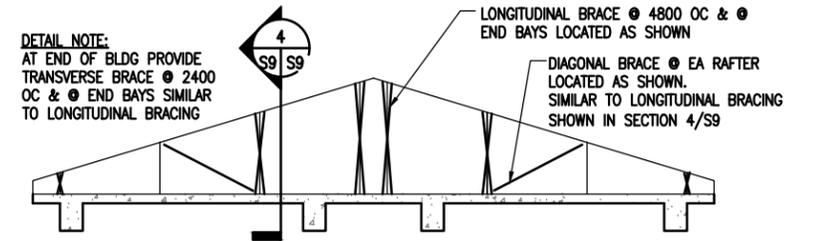
NOTES:  
1. SEE NOTES ON SHEET S1 FOR OVERBUILT ROOF FRAMING MEMBER SECTION PROPERTY MINIMUM REQUIREMENTS  
2. AT END OF BLDG PROVIDE TRANSVERSE BRACE @ 2400 OC & @ END BAYS SIMILAR TO LONGITUDINAL BRACING



**SECTION 5**  
SCALE: NTS

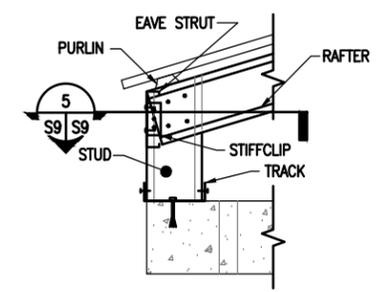


**SECTION 6**  
SCALE: 1:5



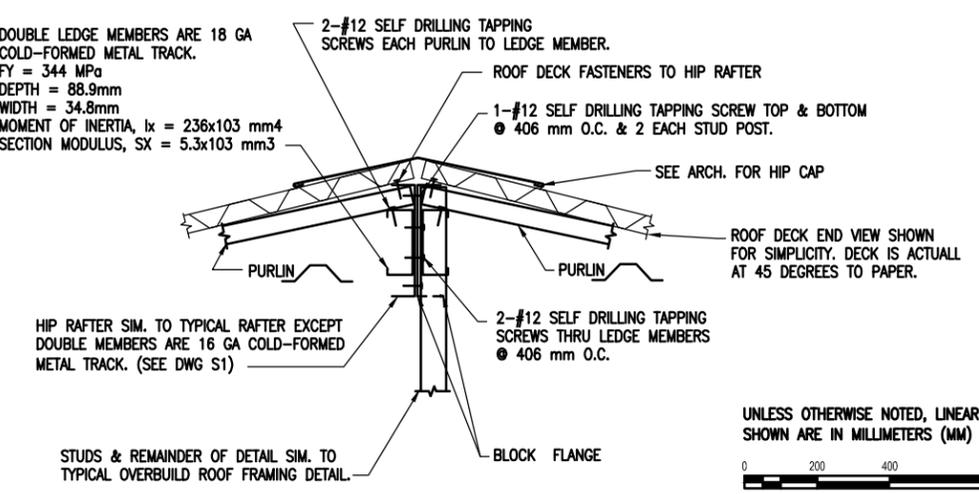
**SECTION 7**  
SCALE: NTS

DETAIL NOTE:  
AT END OF BLDG PROVIDE TRANSVERSE BRACE @ 2400 OC & @ END BAYS SIMILAR TO LONGITUDINAL BRACING



**SECTION 8**  
SCALE: 1:10

DOUBLE LEDGE MEMBERS ARE 18 GA COLD-FORMED METAL TRACK.  
FY = 344 MPa  
DEPTH = 88.9mm  
WIDTH = 34.8mm  
MOMENT OF INERTIA, Ix = 236x103 mm<sup>4</sup>  
SECTION MODULUS, SX = 5.3x103 mm<sup>3</sup>



**SECTION 9**  
SCALE: 1:5

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)  
SCALE: 1: 10  
SCALE: 1: 20

NO.	DATE	DESCRIPTION	BY

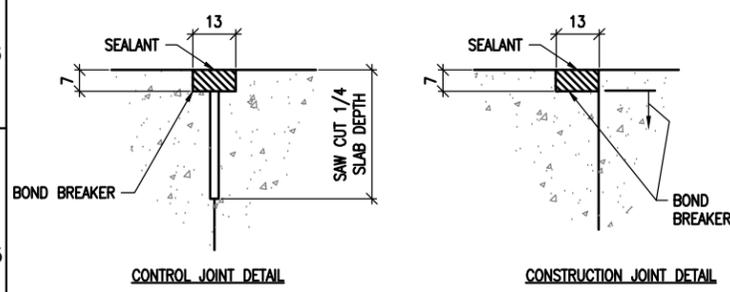
DESIGNED BY:	DATE:	SUBMITTED BY:	FILE NO.:
MAY	09-30-09	BAKER	ANPSDS-309XXX
DWN BY:	RCG	CHK BY:	CWV

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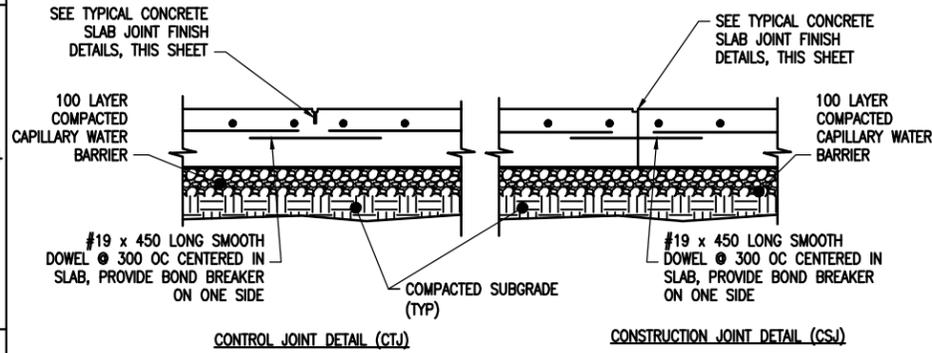
STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION  
FLOOR & ROOF FRAMING SECTIONS & DETAILS

SHEET REFERENCE NUMBER:  
S9

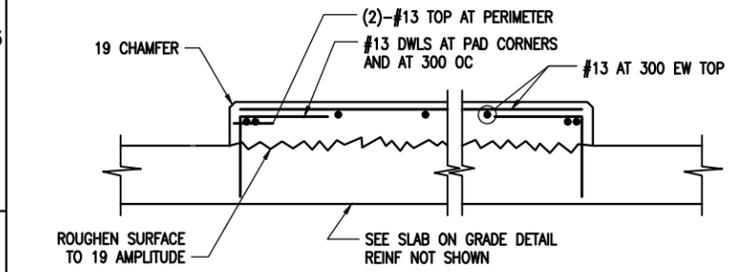
A B C D E F G H



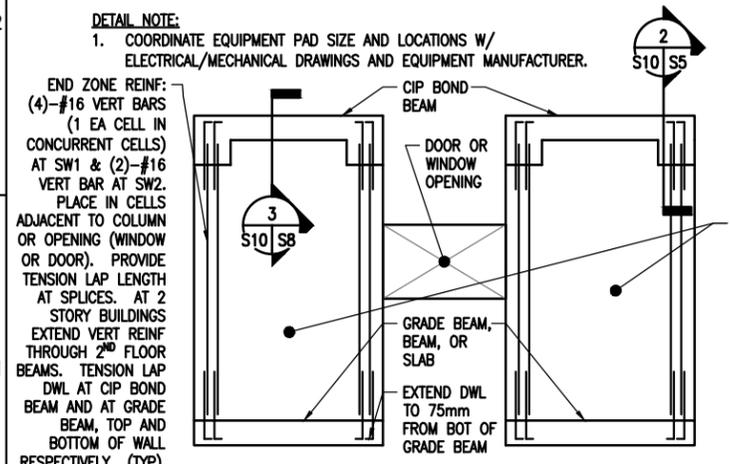
**1** TYPICAL CONCRETE SLAB JOINT FINISH DETAIL  
SCALE: NTS



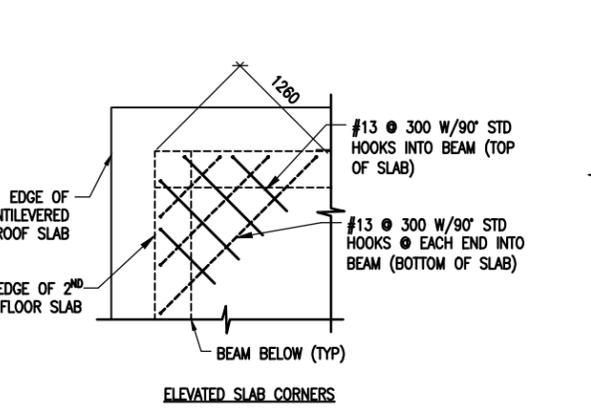
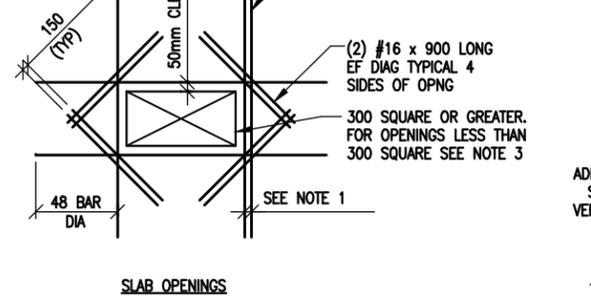
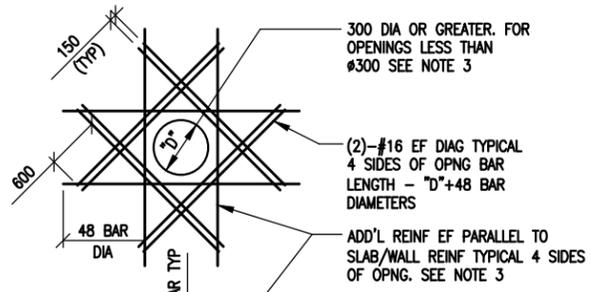
**2** TYPICAL SLAB ON GRADE JOINT DETAILS  
SCALE: NTS



**3** INTERIOR EQUIPMENT PAD DETAIL  
SCALE: NTS



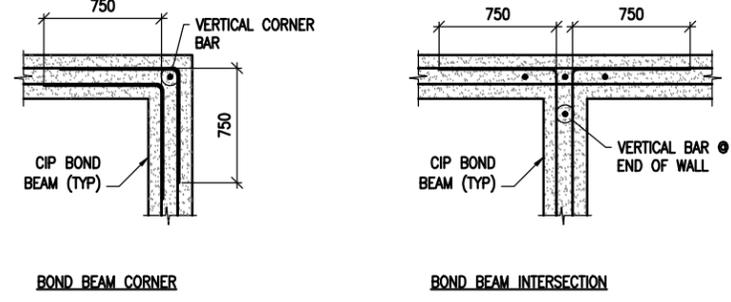
**4** SPECIAL REINFORCED MASONRY SHEAR WALL ELEVATION  
SCALE: NTS



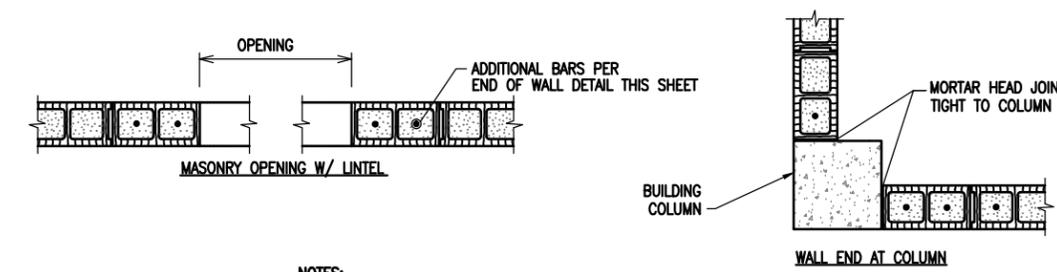
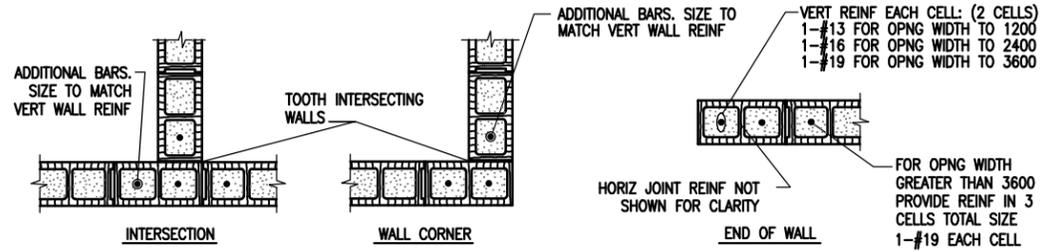
**5** ADD'L REINFORCEMENT DETAILS  
SCALE: NTS

- DETAIL NOTES:**
- WHERE MORE THAN ONE ADDITIONAL BAR IS REQUIRED PARALLEL TO THE EXISTING SLAB/WALL REINFORCING THE ADDITIONAL REINFORCING BARS SHALL BE SPACED AT 100 ON CENTER.
  - ADDITIONAL REINFORCING PARALLEL TO THE SLAB/WALL REINFORCING SHALL BE #16 BARS THAT PROVIDE A STEEL AREA ON EACH SIDE OF THE OPENING EQUAL TO 1/2 THE AREA OF THE REINFORCING CUT BY THE OPENING.
  - FOR OPENINGS WITH SIDES OR DIAMETERS LESS THAN 300 SPREAD THE SLAB/WALL REINFORCING TO CLEAR THE OPENING.

- DETAIL NOTES:**
- AT SW1 AT 2<sup>ND</sup> STORY, END ZONE REINF OF (4)-#16 VERT REINF MAY BE REDUCED TO (3)-#16 VERT REINF.
  - PROVIDE (2)-#16 IN BOND BEAMS AT 1200 OC, NOT SHOWN.

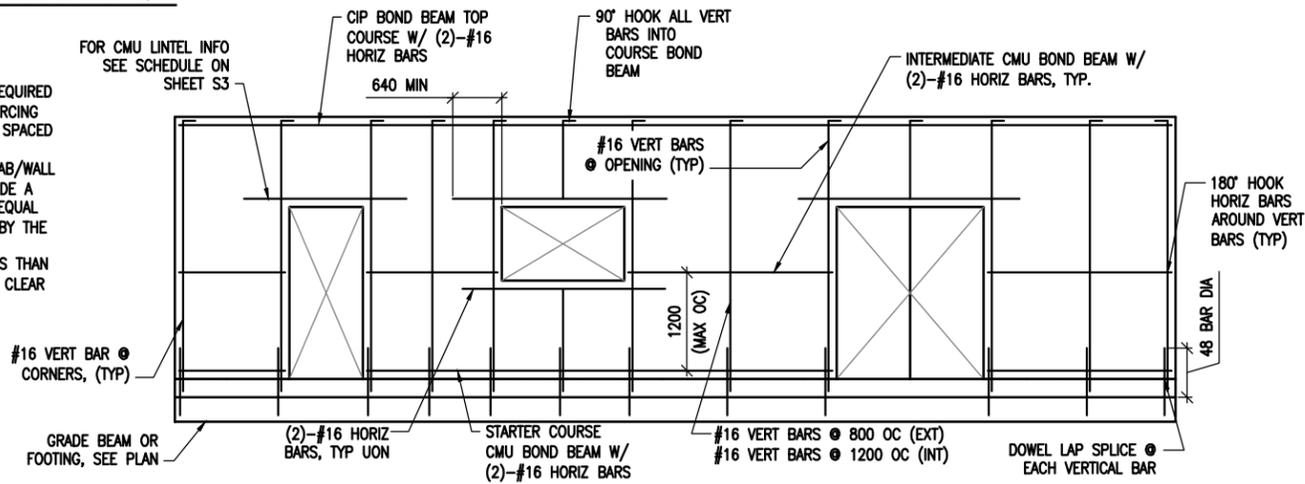


**6** CIP BOND BEAM DETAILS  
SCALE: NTS



**7** TYPICAL CMU DETAILS  
SCALE: NTS

- NOTES:**
- OPENING WIDTH SHALL NOT EXCEED 3600 FOR THIS TYPE OF JAMB
  - ALL CELLS FULLY GROUTED



**8** MIN CMU WALL REINFORCING  
SCALE: NTS

- LINTEL NOTES:**  
MASONRY LINTEL REINFORCEMENT AS PER SCHEDULE ON SHEET S3

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)  
UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)

NO.	DATE	DESCRIPTION	BY

DESIGNED BY:	DATE:	FILE NO.:
MAY	09-30-09	ANP/SDS-5100XX
DWN BY:	SUBMITTED BY:	
RCG	BAKER	
CHK BY:	CWV	

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STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION

TYPICAL DETAILS

SHEET REFERENCE NUMBER:  
S10

100% SUBMISSION

NO.	DATE	DESCRIPTION	BY

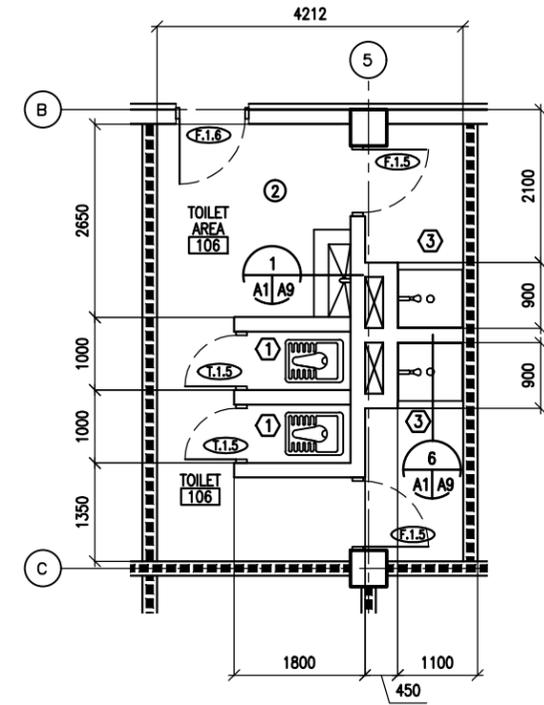
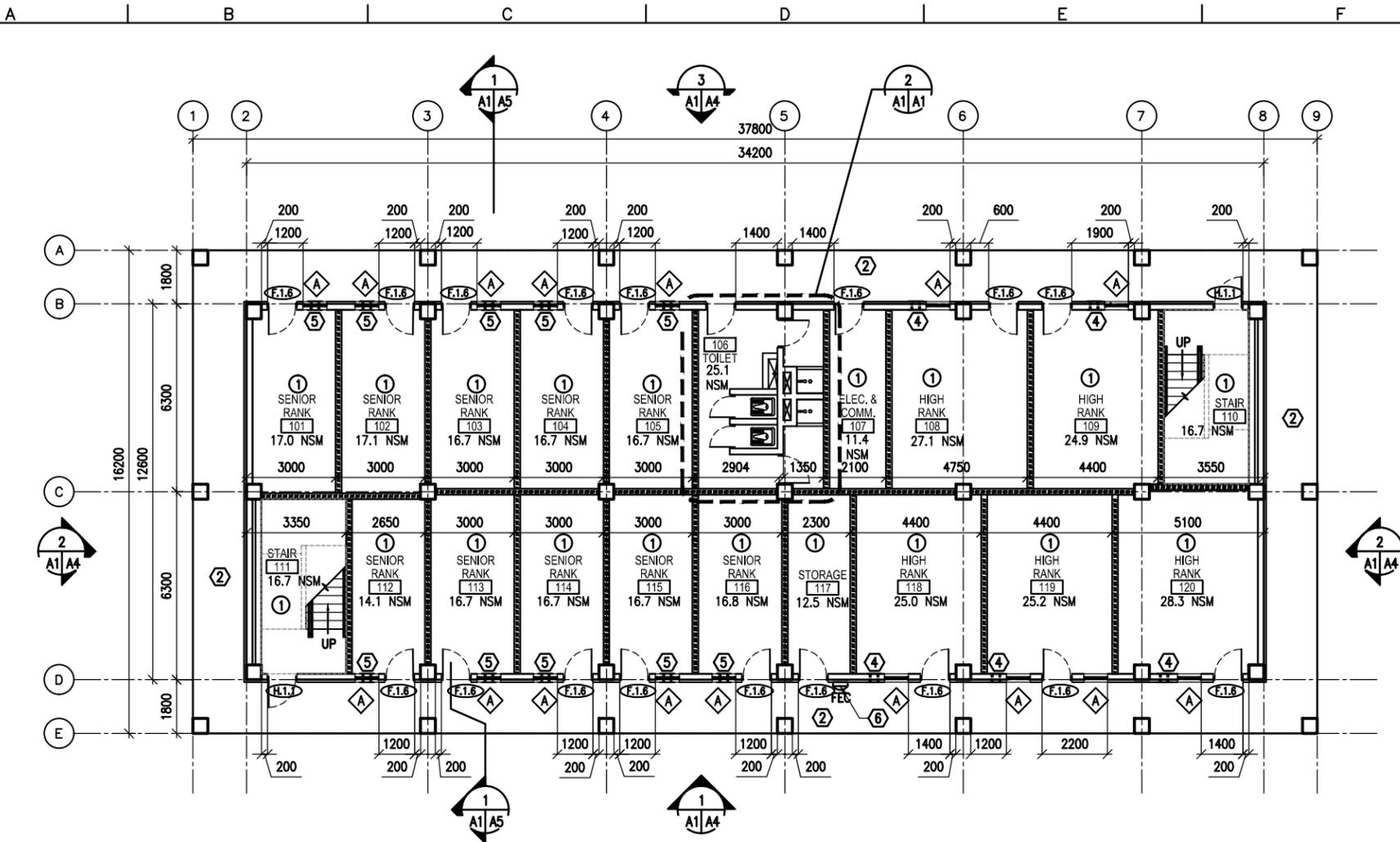
DESIGNED BY:	DATE:	SUBMITTED BY:	FILE NO.:
AWR	09-30-09	BAKER	ANFSDA-101XXX
CHK BY:			
KRC			

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STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (862 GSM)  
WOOD FIRED HEAT OPTION  
FIRST FLOOR PLAN

SHEET REFERENCE NUMBER:  
A1

100% SUBMISSION



**1**  
A1/A1  
**FIRST FLOOR PLAN**  
SCALE: 1:100  
FIRST FLOOR - 431.0 GSM  
SECOND FLOOR - 431.0 GSM  
TOTAL - 862.0 GSM

**2**  
A1, A2/A1  
**ENLARGED TOILET PLAN**  
SCALE: 1:150

**GENERAL NOTES:**

- A. INTERIOR PARTITIONS SHALL BE 200 MM CMU UNLESS NOTED OTHERWISE
- B. OPENINGS FOR DOORS SHALL BE LOCATED 200 MM FROM THE ADJACENT WALL UNLESS NOTED OTHERWISE
- C. 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.
- D. CONCRETE AND INTERIOR MASONRY SURFACES GROUTED SOLID SHALL BE ALLOWED TO DRY AT LEAST 30 DAYS BEFORE PAINTING EXCEPT CONCRETE SLAB ON GRADE WHICH SHALL BE ALLOWED TO CURE 90 DAYS BEFORE PAINTING.
- E. PAINTS CONTAINING LEAD IN EXCESS OF 0.06 PERCENT BY WEIGHT OF THE TOTAL NONVOLATILE CONTENT SHALL NOT BE USED.
- F. MERCURIAL FUNGICIDES SHALL NOT BE USED IN OIL-BASE PAINT.
- G. 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 REPELLENT ACRYLIC LATEX PAINT.
- H. METAL DOORS AND FRAMES SHALL RECEIVE A PRIMER COAT PLUS TWO COATS OF PAINT.
- I. DIMENSIONS ARE TO STRUCTURAL COLUMN GRID, EDGE OF WINDOW OPENINGS, AND TO HINGE SIDE OF DOOR OPENINGS.
- J. PROVIDE 1 HOUR FIRE RATED PARTITIONS IN ACCORDANCE WITH NFPA 101, 28.3.7.1. AND TABLE 28.3.2.2.2. FILL ANULAR SPACE AT ANY AND ALL FLOOR, WALL OR CEILING PENETRATIONS WITH APPROPRIATE FIRE STOPPING MATERIALS.

**ROOM FINISHES:**

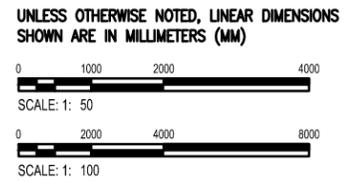
- 1. WALLS: PAINTED PLASTER  
FLOOR: SEALED CONCRETE  
CEILING: PAINTED PLASTER APPLIED TO STRUCTURE
- 2. WALLS: 2400 MM HIGH CERAMIC TILE WAINSCOT,  
PAINTED PLASTER ABOVE WAINSCOT  
FLOOR: CERAMIC TILE  
CEILING: PAINTED PLASTER

**KEY NOTES:**

- 1. TYPICAL TOILET STALL LAYOUT - RE: DETAIL 2/A9
- 2. CONCRETE SIDEWALK RE: 2/A10 AND 3/A10
- 3. SHOWER CURTAIN (TYP)
- 4. TWO-PIECE WALL THIMBLE AND TRIM PLATE FOR OPTIONAL WOOD BURNING STOVE CHIMNEY PIPE. STOVE AND PIPE BY OTHERS.
- 5. TWO-PIECE WALL THIMBLE AND TRIM PLATE MOUNTED IN WALL ABOVE WINDOW.
- 6. PROVIDE FEC AT STORAGE ROOM IN ACCORDANCE WITH NFPA 101, 28.3.5.8.

**LEGEND:**

- F.1.4 DOOR TYPE, SEE SHEET A8
- ◇ WINDOW TYPE, SEE SHEET A8
- ⊗ KEY NOTE
- FEC FIRE EXTINGUISHER CABINET
- 1-HOUR RATED PARTITION
- ① ROOM FINISH TYPE DESIGNATION
- DS METAL DOWNSPOUT



SYMBOL	DESCRIPTION	DATE

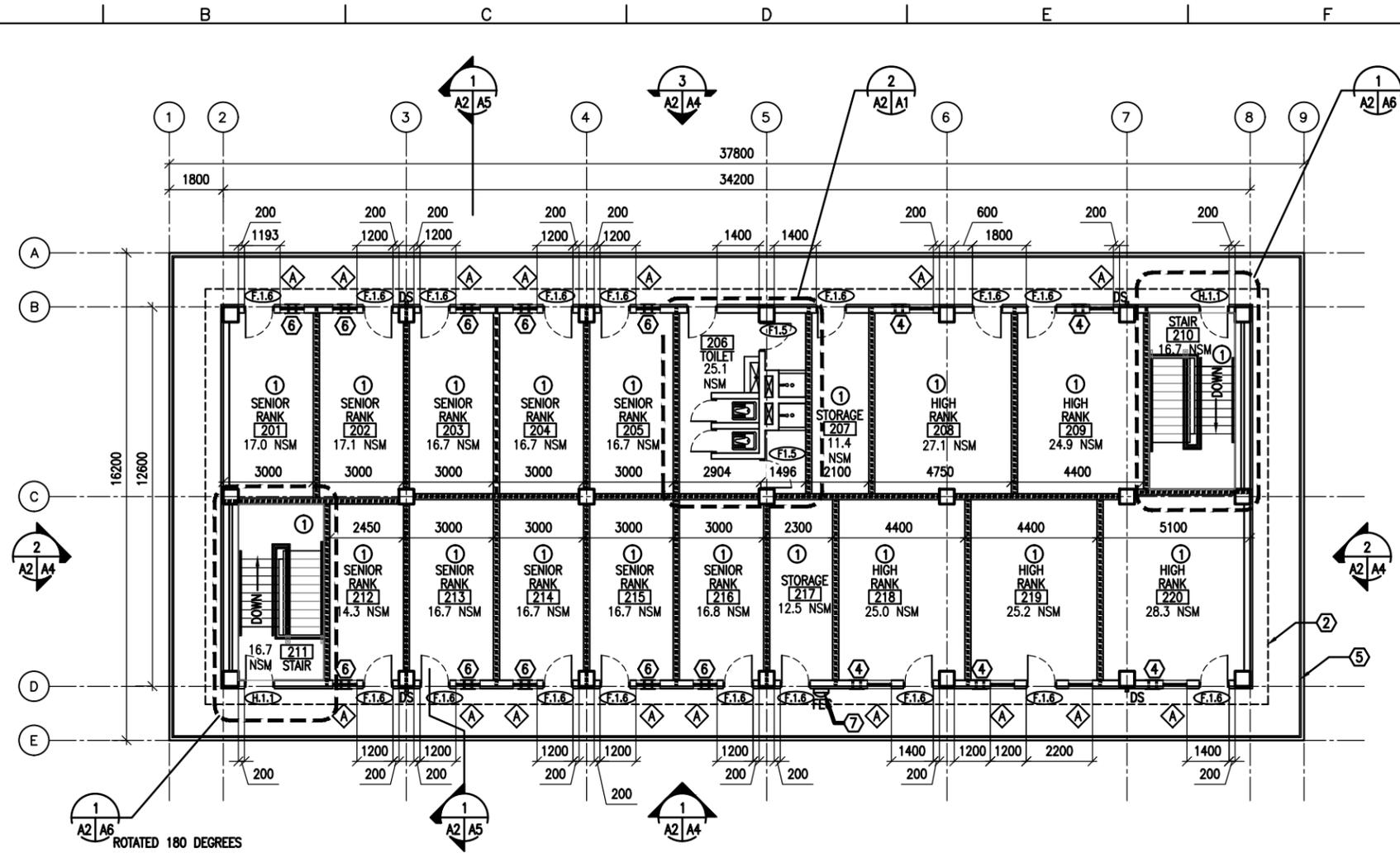
DESIGNED BY:	DATE:	09-30-09
DWN BY:	SUBMITTED BY:	BAKER
CHK BY:	AAR	KRC
FILE NO.:	ANP/SDA-102XXX	

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STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION  
SECOND FLOOR PLAN

SHEET  
REFERENCE  
NUMBER:  
A2

100% SUBMISSION



**SECOND FLOOR PLAN**  
SCALE: 1:100

**ROOM FINISHES:**

- WALLS: PAINTED PLASTER,  
FLOOR: SEALED CONCRETE  
CEILING: PAINTED PLASTER APPLIED TO STRUCTURE
- WALLS: 2400 MM HIGH CERAMIC TILE WAINSCOT,  
PAINTED PLASTER ABOVE WAINSCOT  
FLOOR: CERAMIC TILE  
CEILING: PAINTED PLASTER

**KEY NOTES:**

- TYPICAL TOILET STALL LAYOUT - RE: DETAIL 2/A9
- LINE OF ROOF OVERHANG ABOVE
- SHOWER CURTAIN (TYP) - RE: ENLARGED TOILET PLAN 2/A1
- TWO-PIECE WALL THIMBLE AND TRIM PLATE FOR OPTIONAL WOOD BURNING STOVE CHIMNEY PIPE. STOVE AND PIPE BY OTHERS.
- STEEL PIPE HANDRAIL AT BALCONY.
- TWO-PIECE WALL THIMBLE AND TRIM PLATE MOUNTED IN WALL ABOVE WINDOW.
- PROVIDE FEC AT STORAGE ROOM IN ACCORDANCE WITH NFPA 101, 28.3.5.8.

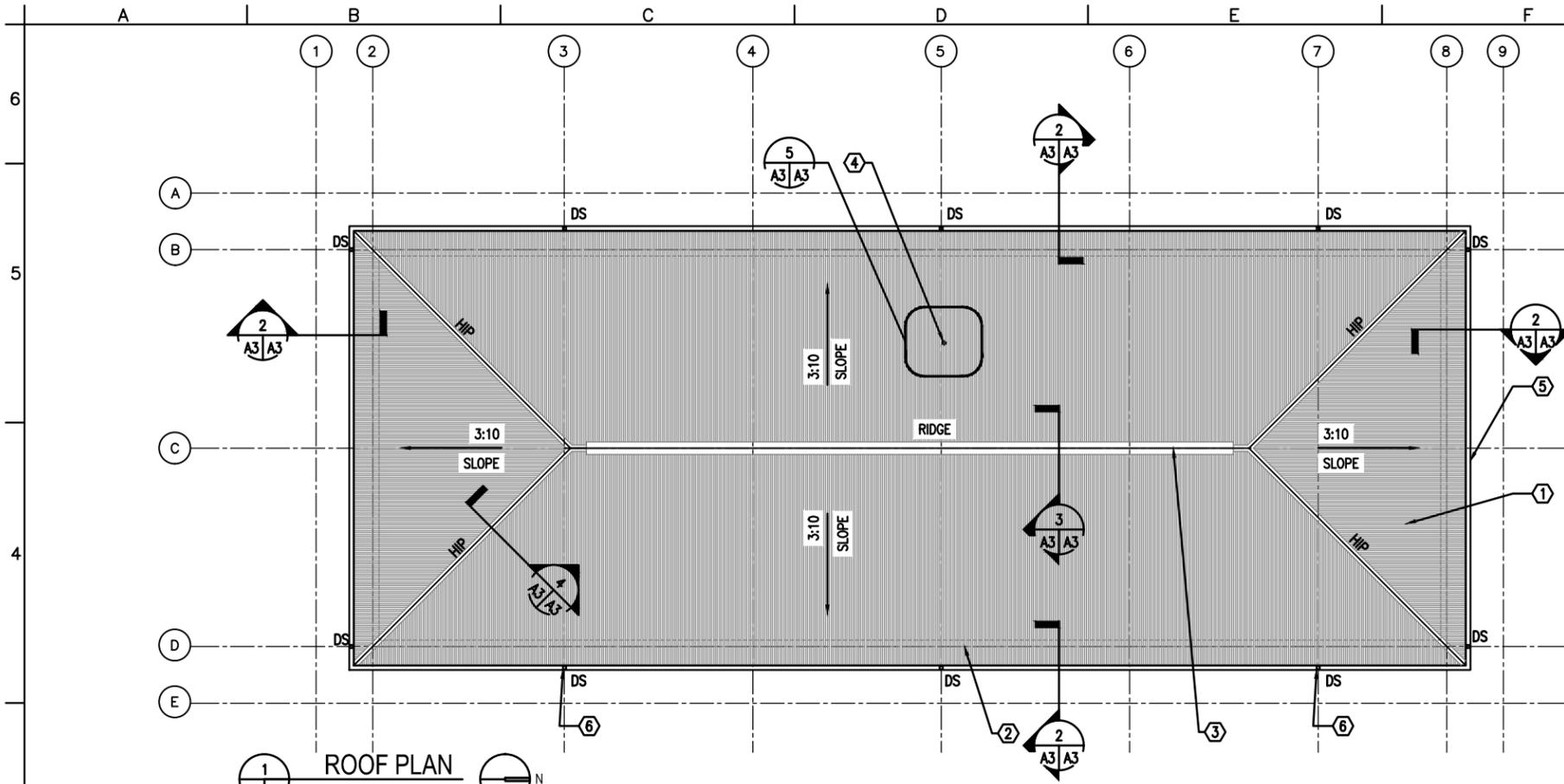
**LEGEND:**

- DOOR TYPE, SEE SHEET A8
- WINDOW TYPE, SEE SHEET A8
- KEY NOTE
- FIRE EXTINGUISHER CABINET
- 1-HOUR RATED PARTITION
- ROOM FINISH TYPE DESIGNATION
- METAL DOWNSPOUT

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)



SCALE: 1: 100

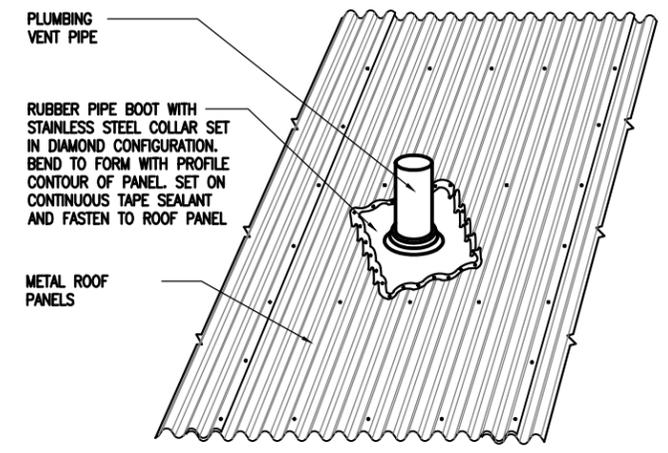


**1** ROOF PLAN  
SCALE: 1:100

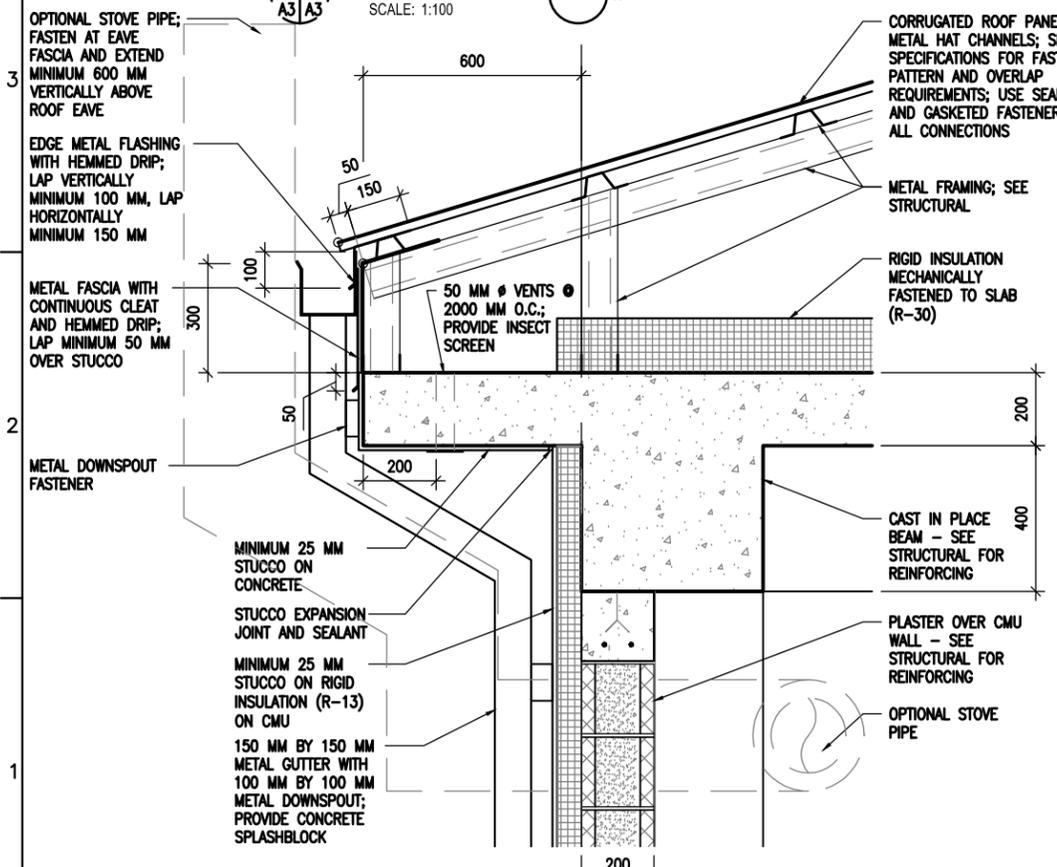
- KEY NOTES:** (X)
- CORRUGATED METAL ROOF PANELS ON COLD-FORMED METAL FRAMING
  - LINE OF BUILDING WALL BELOW
  - CONTINUOUS RIDGE VENT
  - PLUMBING VENT - RE: DETAIL 5/A3
  - METAL GUTTER
  - METAL DOWNSPOUT WITH SPLASHBLOCK

US Army Corps of Engineers  
Afghanistan Engineer District

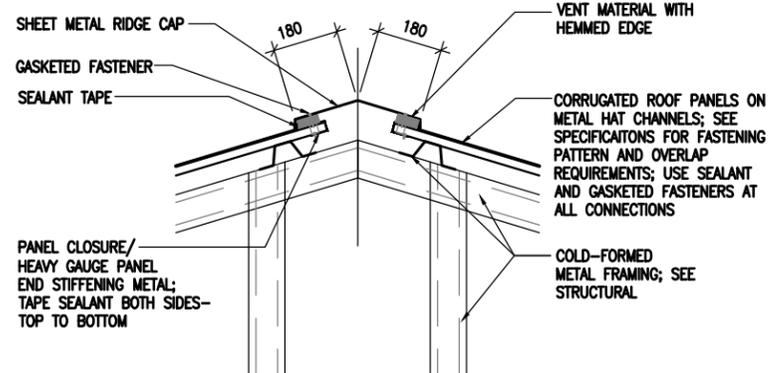
SYMBOL	DESCRIPTION	DATE	APP



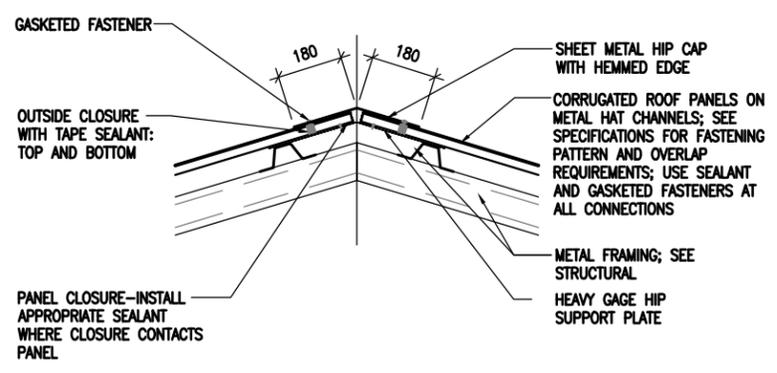
**5** VENT THRU ROOF  
SCALE: 1:10



**2** EAVE DETAIL  
SCALE: 1:10



**3** RIDGE VENT DETAIL  
SCALE: 1:10



**4** HIP DETAIL  
SCALE: 1:10

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)

0 200 400 800  
SCALE: 1: 10

0 2000 4000 8000  
SCALE: 1: 100

DESIGNED BY:	DLB	DATE:	09-30-09
DWN BY:	AAR	SUBMITTED BY:	BAKER
CHK BY:	KRC	FILE NO.:	ANP/SDA-103XXX

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STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION

ROOF PLAN AND DETAILS

SHEET REFERENCE NUMBER:  
**A3**

100% SUBMISSION

SYMBOL	DESCRIPTION	DATE	APP

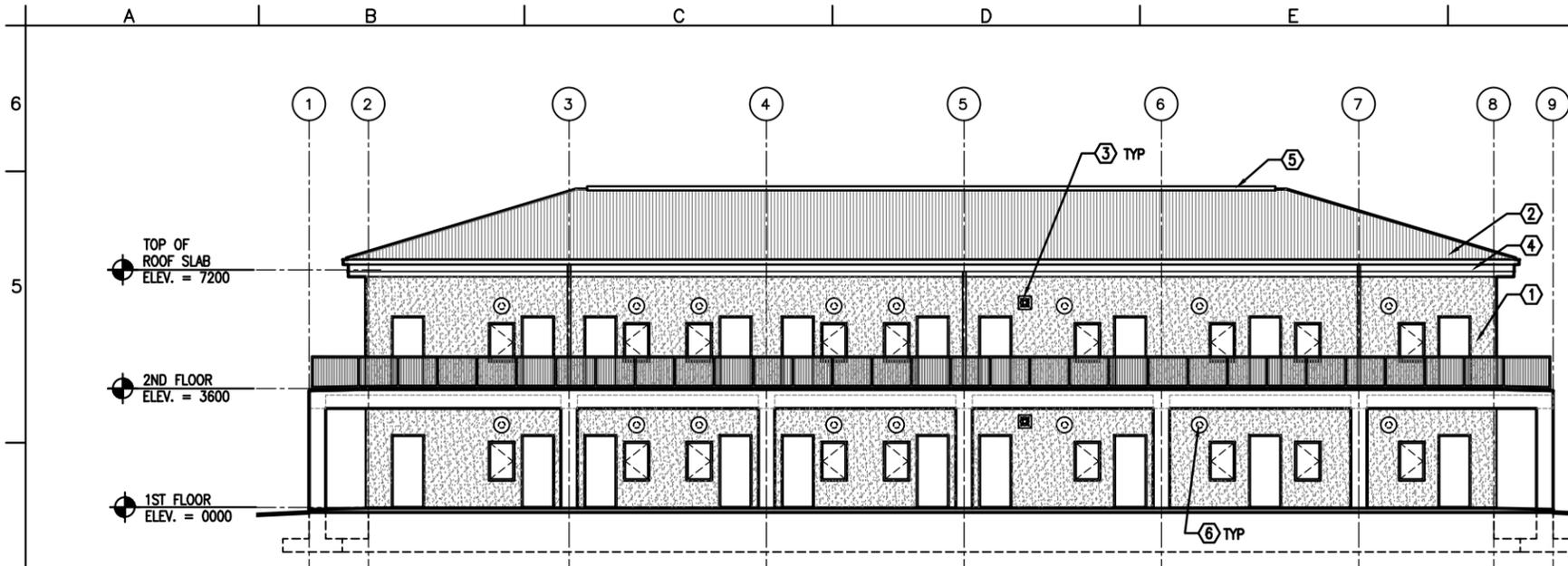
DESIGNED BY:	DLB	DATE:	09-30-09
DWN BY:	AAR	SUBMITTED BY:	BAKER
CHK BY:	KRC	FILE NO.:	ANPSDA-204XXX

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Health, Business Park  
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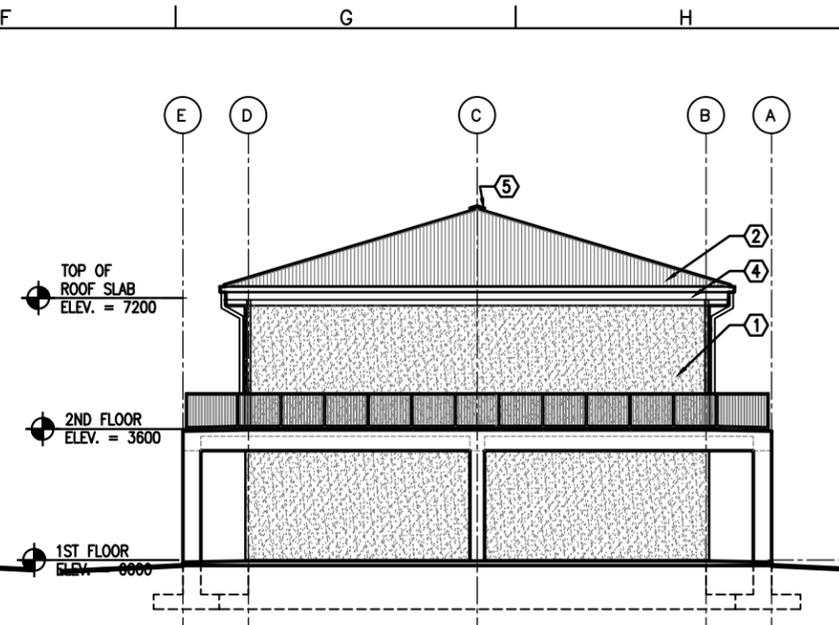
STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION  
EXTERIOR ELEVATIONS

SHEET  
REFERENCE  
NUMBER:  
A4

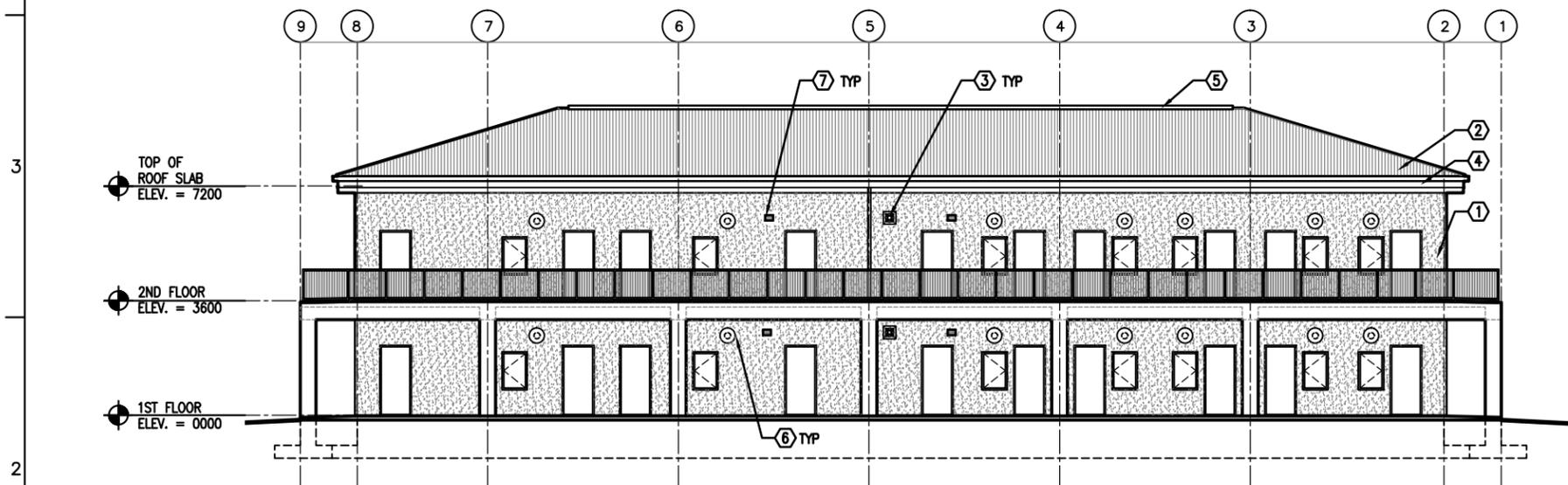
100% SUBMISSION



1 EAST ELEVATION  
SCALE: 1:100



2 NORTH AND SOUTH ELEVATION  
SCALE: 1:100



3 WEST ELEVATION  
SCALE: 1:100

GENERAL NOTES:

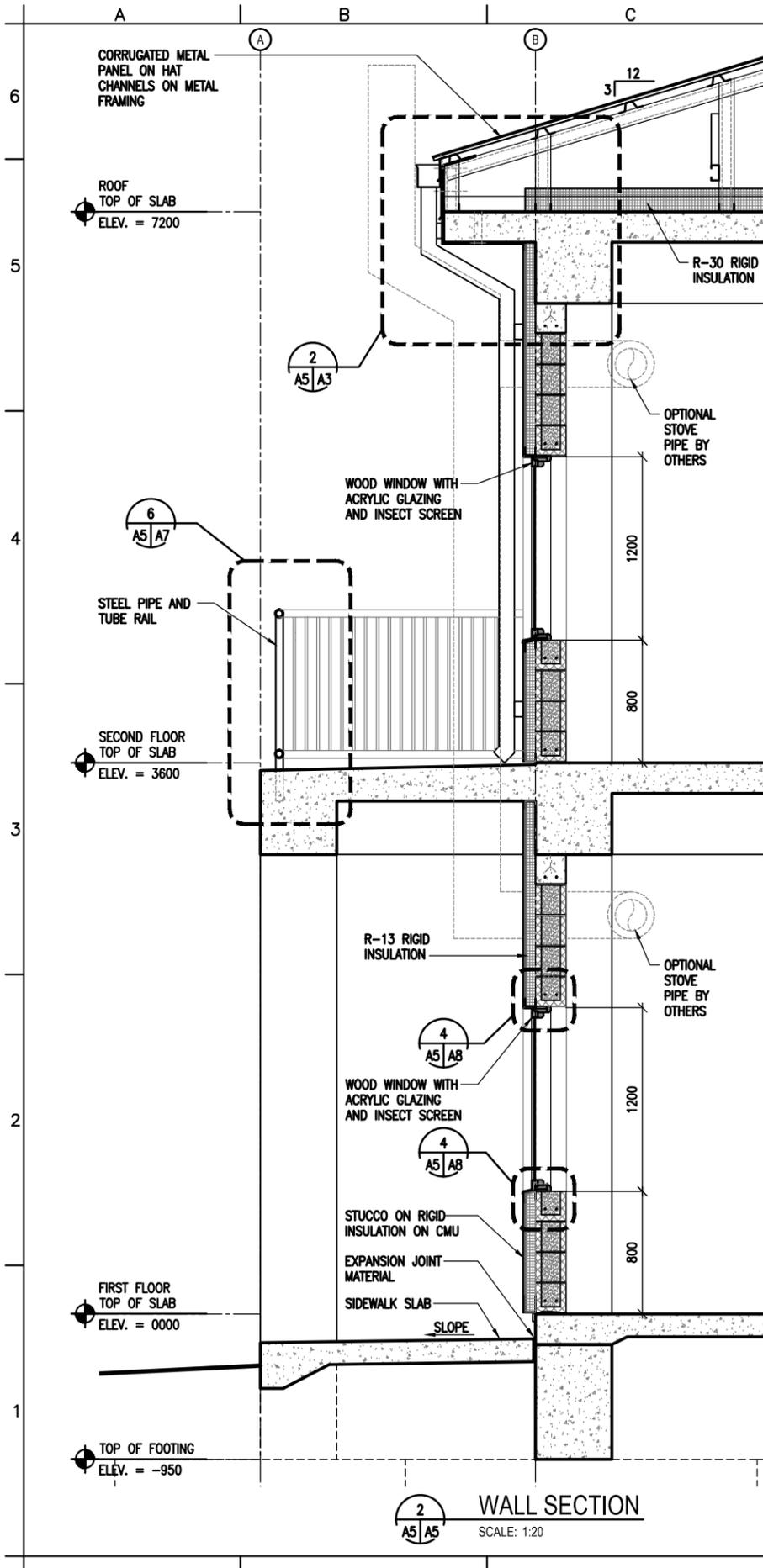
- A. COORDINATE SIZE AND LOCATION OF OPENINGS FOR MECHANICAL ITEMS WITH MECHANICAL DRAWINGS.
- B. PROVIDE STRUCTURAL LINTELS AS REQUIRED - RE: STRUCT

KEY NOTES:

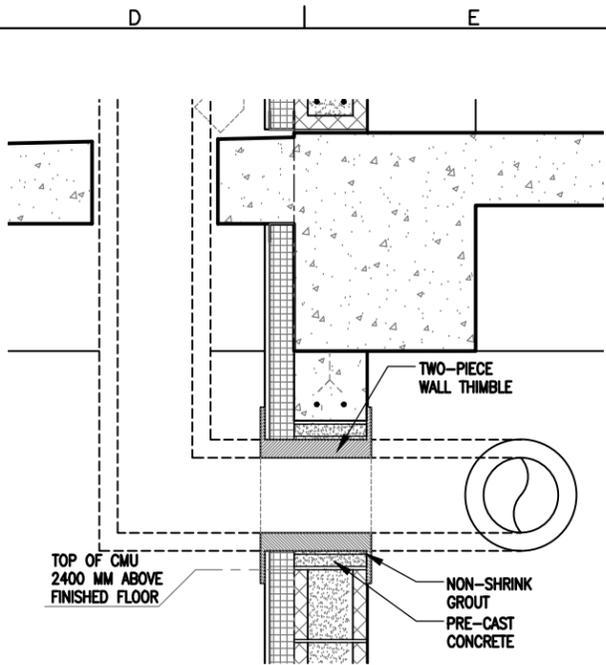
- 1. STUCCO AND RIGID INSULATION SYSTEM OVER CMU AND CONCRETE.
- 2. CORRUGATED METAL ROOF PANELS ON COLD-FORMED METAL FRAMING.
- 3. EXHAUST FAN - RE: MECH
- 4. METAL GUTTER
- 5. CONTINUOUS RIDGE VENT
- 6. TWO-PIECE WALL THIMBLE AND TRIM PLATE FOR OPTIONAL WOOD BURNING STOVE CHIMNEY PIPE. STOVE AND PIPE BY OTHERS.
- 7. LOUVER - RE: MECH

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)

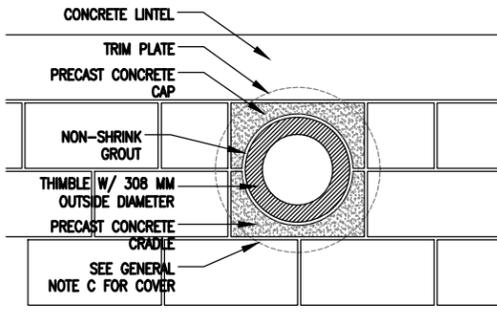




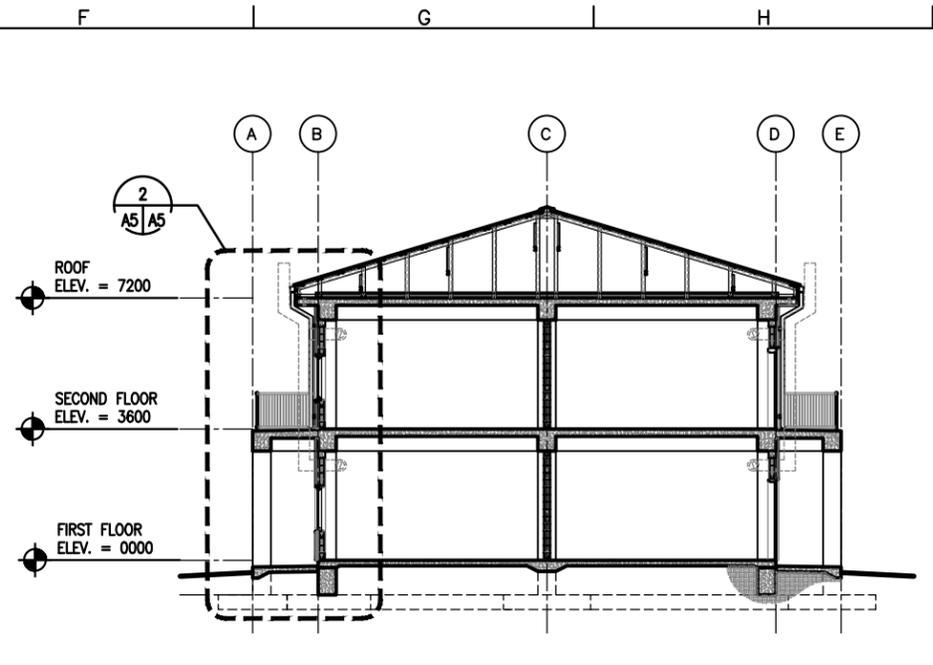
**2** WALL SECTION  
SCALE: 1:20



**3** THIMBLE DETAIL, TYPICAL  
SCALE: 1:10



**4** THIMBLE DETAIL, TYPICAL  
SCALE: 1:10



**1** BUILDING SECTION  
SCALE: 1:100

**GENERAL NOTES:**

- A. COORDINATE SIZE AND LOCATION OF OPENINGS FOR MECHANICAL ITEMS WITH MECHANICAL DRAWINGS.
- B. PROVIDE STRUCTURAL LINTELS AS REQUIRED - RE: STRUCT
- C. PROVIDE 480 MM SQUARE, 1.5 MM THICK GALVANIZED SHEET METAL COVER WITH 13 MM HEMMED EDGE FOR WALL THIMBLE UNTIL STOVE PIPE IS PROVIDED. INSTALL COVER ON EXTERIOR FACE OF THIMBLE TRIM PLATE. COVER SHALL BE SET IN SILICONE SEALANT AND FASTENED WITH 4 STAINLESS STEEL SCREWS. ALIGN FASTENER LOCATIONS WITH COVER PLATE FASTENER OPENINGS SO ADDITIONAL FASTENER PENETRATIONS ARE NOT CREATED IN EXTERIOR FINISH.

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)



SCALE: 1: 20



SCALE: 1: 100

SYMBOL	DESCRIPTION	DATE	APP

DESIGNED BY:	DLB	DATE:	09-30-09
DWN BY:	AAR	SUBMITTED BY:	BAKER
CHK BY:	KRC	FILE NO.:	ANPSDA-305XXX

Michael Baker Corp.  
A unit of Michael Baker Corporation  
1000 Independence Park  
Monroeville, PA 15108  
www.mbakercorp.com

STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION  
BUILDING & WALL SECTIONS

SHEET REFERENCE NUMBER:  
**A5**

SYMBOL	DESCRIPTION	DATE	APP

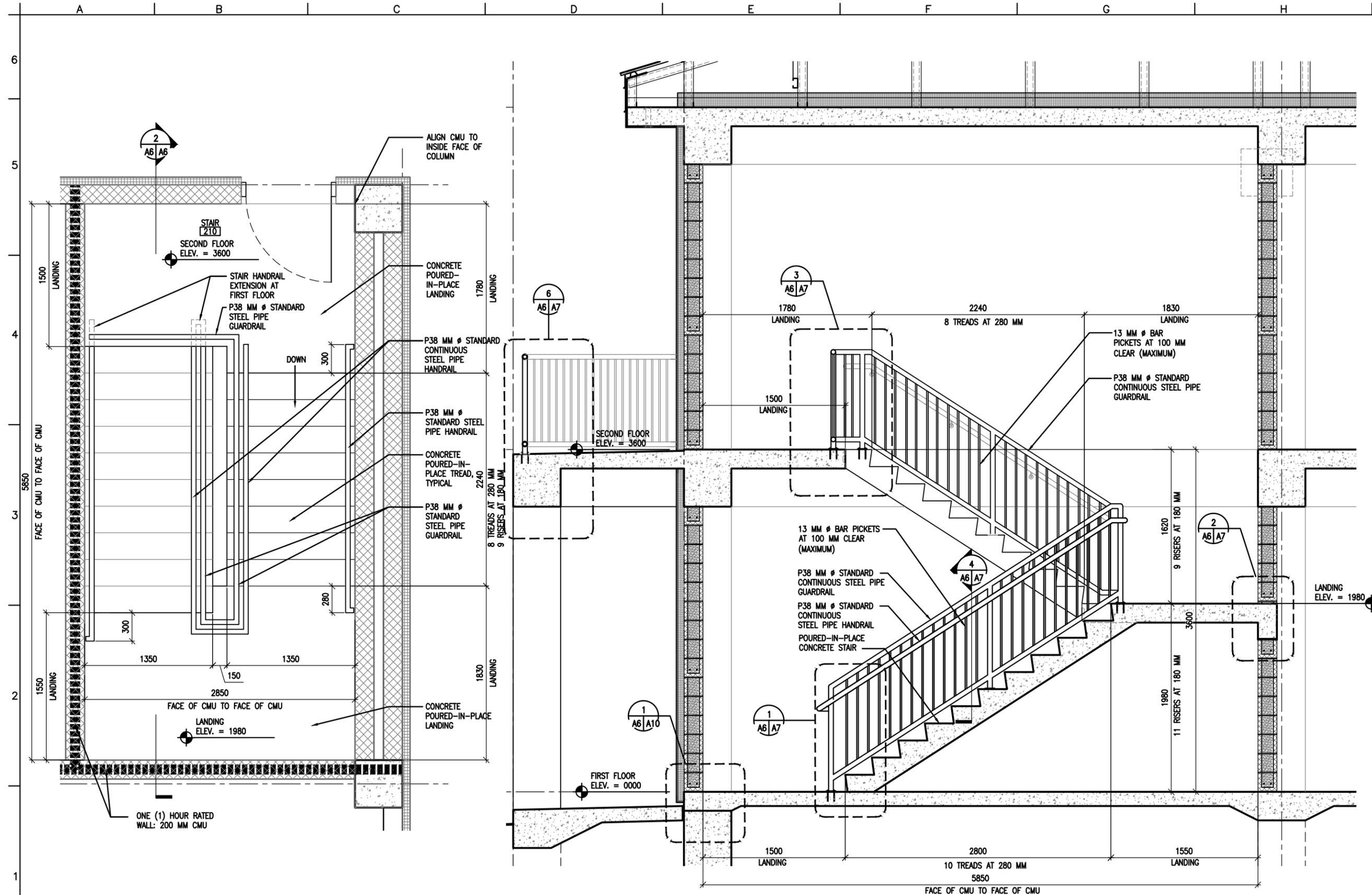
DESIGNED BY:	DLB	DATE:	09-30-09
DWN BY:	AAR	SUBMITTED BY:	BAKER
CHK BY:	KRC	FILE NO.:	ANPSDA-306XXX

Michael Baker Jr. Inc.  
A unit of Michael Baker Corporation  
Health, Business Park  
1000 Route 100, Suite 100  
Monroeville, PA 15108  
www.mbakercorp.com

STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION  
STAIR PLAN & SECTION

SHEET REFERENCE NUMBER:  
A6

100% SUBMISSION

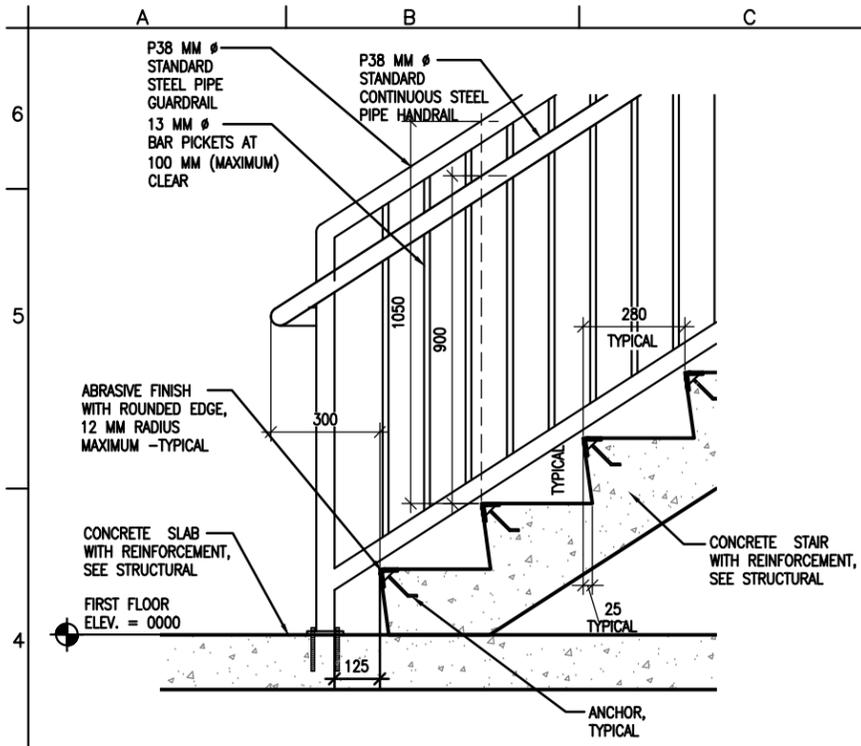


**1**  
A2 | A6  
**STAIR PLAN**  
SCALE: 1:20  
NOTE: STAIR 211 IS THE SAME PLAN, BUT ROTATED 180 DEGREES.

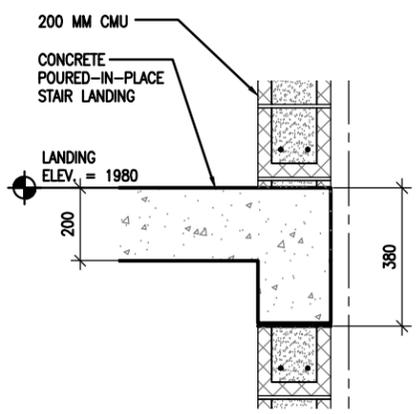
**2**  
A6 | A6  
**STAIR SECTION**  
SCALE: 1:20

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)

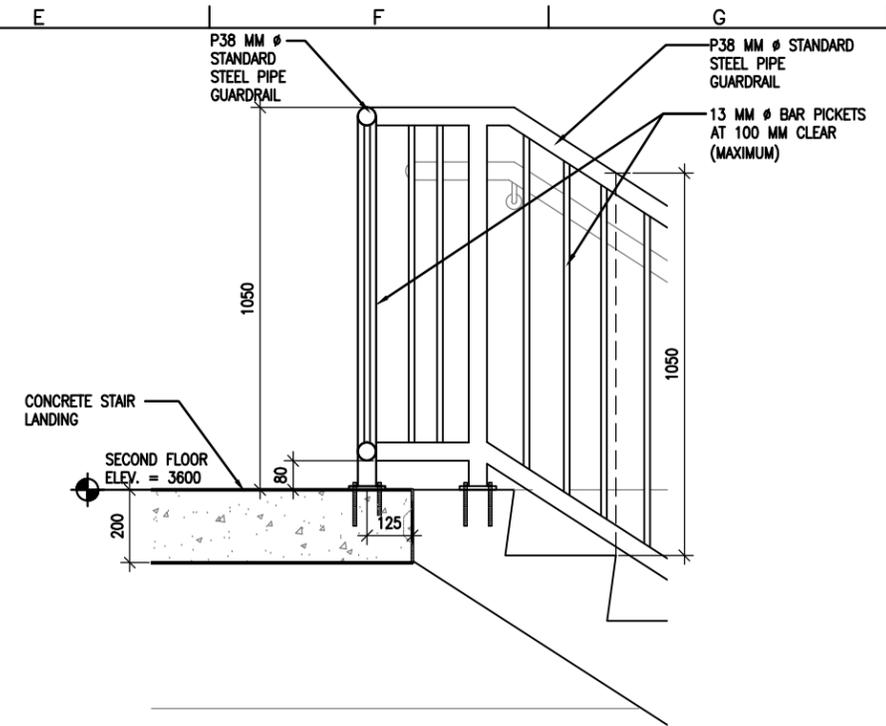
SCALE: 1: 20



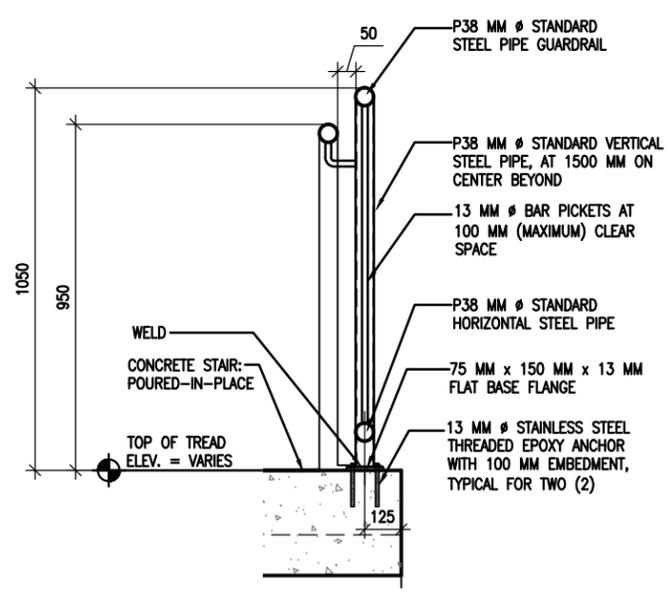
**1** **BOTTOM LANDING DETAIL**  
 SCALE: 1:10



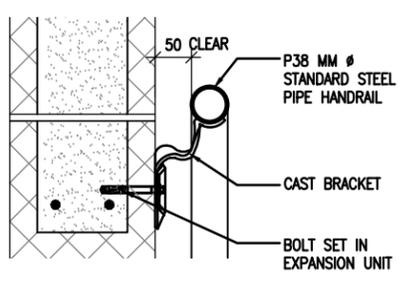
**2** **INTERMEDIATE LANDING DETAIL**  
 SCALE: 1:10



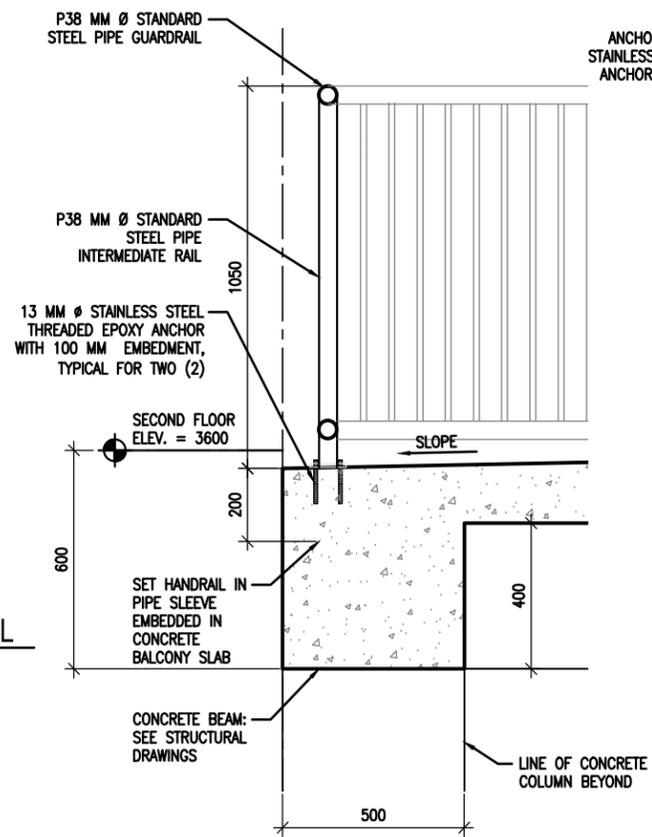
**3** **TOP LANDING DETAIL**  
 SCALE: 1:10



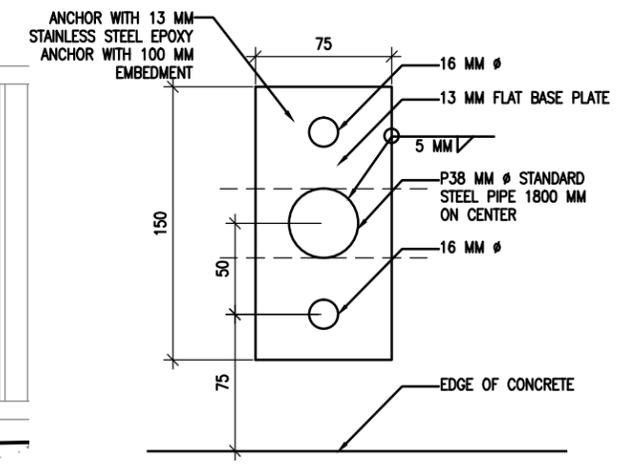
**4** **HANDRAIL & GUARDRAIL DETAIL**  
 SCALE: 1:10



**5** **WALL MOUNTED HANDRAIL DETAIL**  
 SCALE: 1:5



**6** **BALCONY GUARDRAIL DETAIL**  
 SCALE: 1:10



**7** **RAILING BASE PLATE DETAIL**  
 SCALE: 1:2

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)

0 100 200 400  
 SCALE: 1: 5

0 200 400 800  
 SCALE: 1: 10

SYMBOL	DESCRIPTION	DATE	APP

DESIGNED BY:	DLE	DATE:	09-30-09
DWN BY:	AAR	SUBMITTED BY:	BAKER
CHK BY:	KRC	FILE NO.:	ANPSDA-507XXX

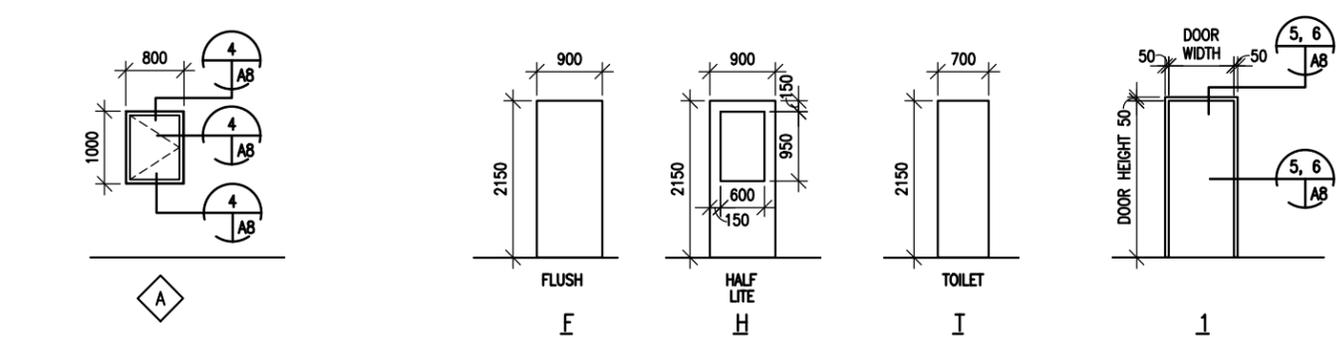
Michael Baker Corp.  
 A unit of Michael Baker Corporation  
 1000 Business Park  
 Monroeville, PA 15108  
 www.mbakercorp.com

STANDARD DESIGN  
 BARRACK BUILDING, 2-STORY (662 GSM)  
 WOOD FIRED HEAT OPTION

STAIR DETAILS

SHEET REFERENCE NUMBER:  
**A7**

A B C D E F G H



**1 WINDOW TYPES** SCALE: 1:50  
**2 DOOR TYPES** SCALE: 1:50  
**3 FRAME TYPES** SCALE: 1:50

**WINDOW TYPES NOTES:**

1. ALL EXTERIOR WINDOWS SHALL BE WOOD WITH INSECT SCREENS. WINDOWS SHALL BE COMMERCIAL GRADE.
2. GLAZING SHALL BE ACRYLIC SHEET.

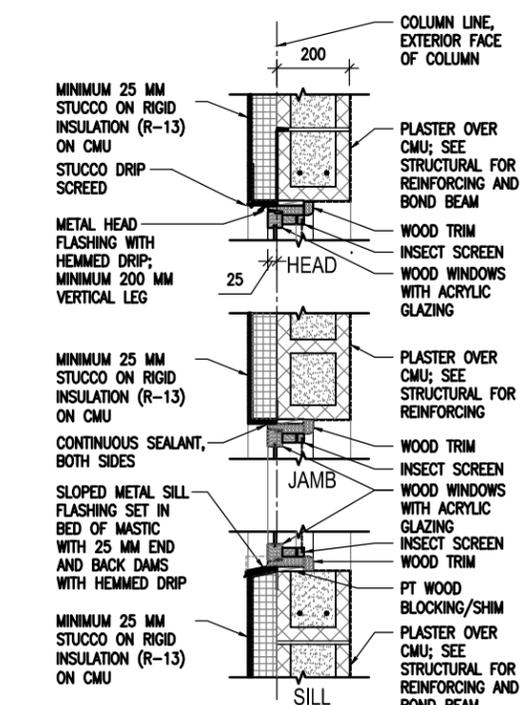
**DOOR TYPES NOTES:**

1. INTERIOR AND EXTERIOR METAL DOORS AND FRAME COLORS SHALL MATCH ADJACENT WALL COLORS AS SELECTED BY THE CONTRACTING OFFICER.
2. HARDWARE SHALL BE HEAVY DUTY, COMMERCIAL GRADE, STAINLESS STEEL WITH A MATTE FINISH.
3. FRAMES, EXCEPT FIRE-RATED FRAMES, SHALL BE MOUNTED AND ADJUSTED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. FRAMES SHALL BE FASTENED WITH MINIMUM OF THREE FASTENING POINTS PER SIDE AT REGULAR INTERVALS. DIMENSIONS SHOWN ON DOOR SCHEDULE ARE BASED UPON MODULAR MASONRY (OR ROUGH OPENING), HEIGHT OF 2200mm FOR STANDARD PERSONNEL DOORS. CONTRACTOR SHALL COORDINATE WITH DOOR SUPPLIER TO ENSURE THAT DIMENSIONS OF DOORS AND FRAMES PROVIDED ARE COMPATIBLE WITH DOOR OPENING DIMENSIONS.

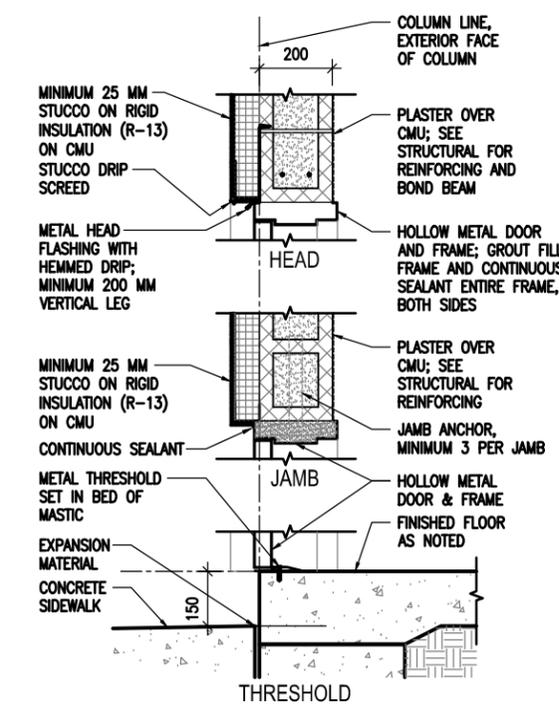


**DOOR HARDWARE TYPES:**

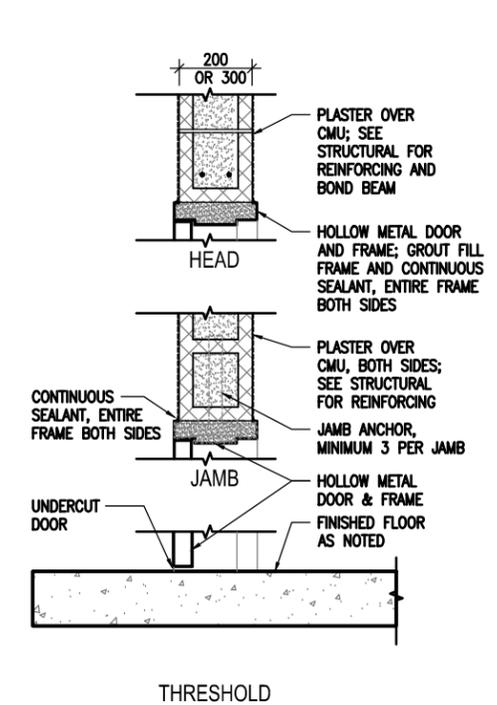
- HW-1** 1-1/2 PR HINGES  
 1 EA EXIT DEVICE, SURFACE MOUNTED F08  
 1 EA CYLINDER, GRADE 1  
 1 EA DOOR CLOSER, C02061, LOW RESISTANCE  
 1 EA THRESHOLD J32130
- HW-5** 1-1/2 PR HINGES, AB112  
 1 EA LOCKSET W/LEVERS, GRADE 1  
 1 EA DOOR STOP, L02101 OR L02161  
 2 EA MOP PLATE, J103
- HW-6** 1-1/2 PR HINGES  
 1 EA LOCKSET, F93 ENTRY LOCK W/LEVERS, GRADE 1  
 1 EA DOOR CLOSER, C02061, LOW RESISTANCE  
 1 EA THRESHOLD J32130



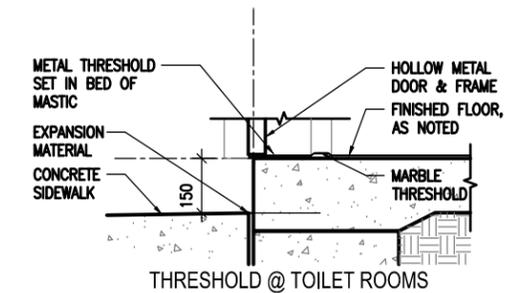
**4 WINDOW DETAILS** SCALE: 1:10



**5 EXTERIOR DOOR DETAILS** SCALE: 1:10

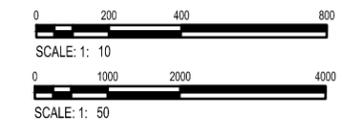


**6 INTERIOR DOOR DETAILS** SCALE: 1:10



**7 EXTERIOR THRESHOLD DETAILS** SCALE: 1:10

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)



**US Army Corps of Engineers**  
 Afghanistan Engineer District

NO.	DATE	DESCRIPTION	SYMBOL

DESIGNED BY:	DLB	DATE:	09-30-09
DWN BY:	AAR	SUBMITTED BY:	BAKER
CHK BY:	KRC	FILE NO.:	ANPSDA-508XXX

Michael Baker Corp.  
 A unit of Michael Baker Corporation  
 Health, Business Park  
 1000 Township Pike, PA 15108  
 www.mbakercorp.com

STANDARD DESIGN  
 BARRACK BUILDING, 2-STORY (662 GSM)  
 WOOD FIRED HEAT OPTION  
 DOOR, WINDOW & FINISH TYPES & DETAILS

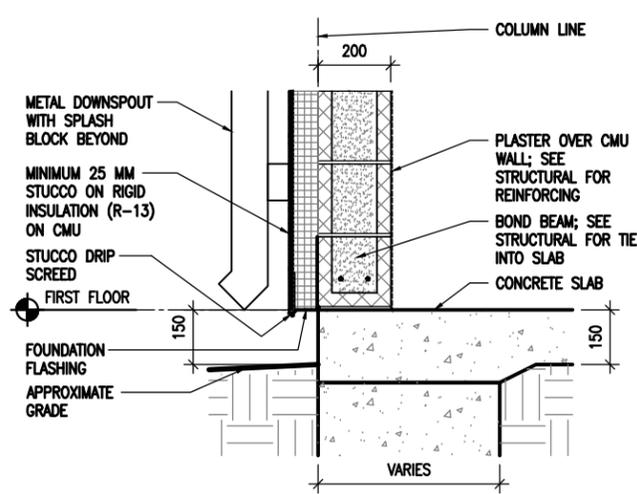
SHEET REFERENCE NUMBER:  
**A8**

100% SUBMISSION

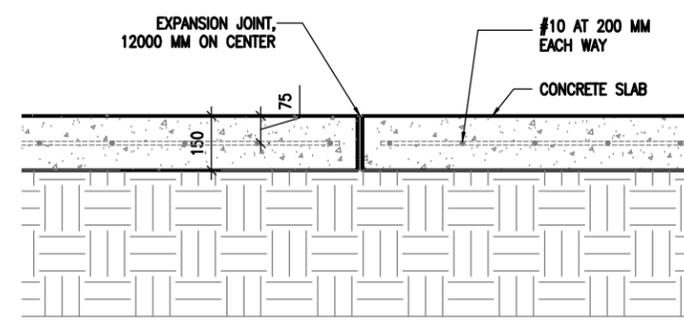


A B C D E F G H

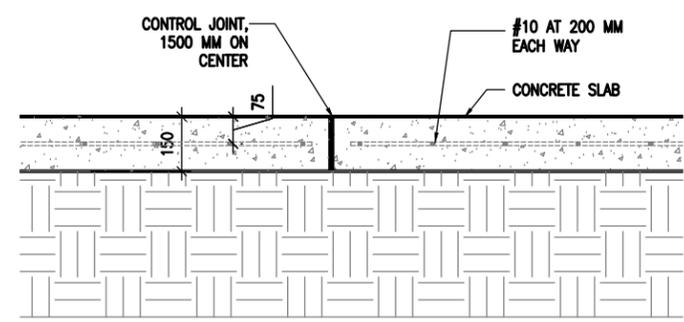
6  
5  
4  
3  
2  
1



**1** STUCCO BASE DETAIL  
A6/A10 SCALE: 1:10



**2** SIDEWALK EXPANSION JOINT DETAIL  
A1/A10 SCALE: 1:10



**3** SIDEWALK CONTROL JOINT DETAIL  
A1/A10 SCALE: 1:10

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM)



SYMBOL	DESCRIPTION	DATE	APP

DESIGNED BY:	DLB	DATE:	09-30-09
DWN BY:	AAR	SUBMITTED BY:	BAKER
CHK BY:	KRC	FILE NO.:	ANPSDA-510XXX

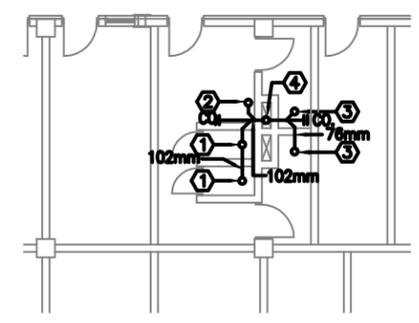
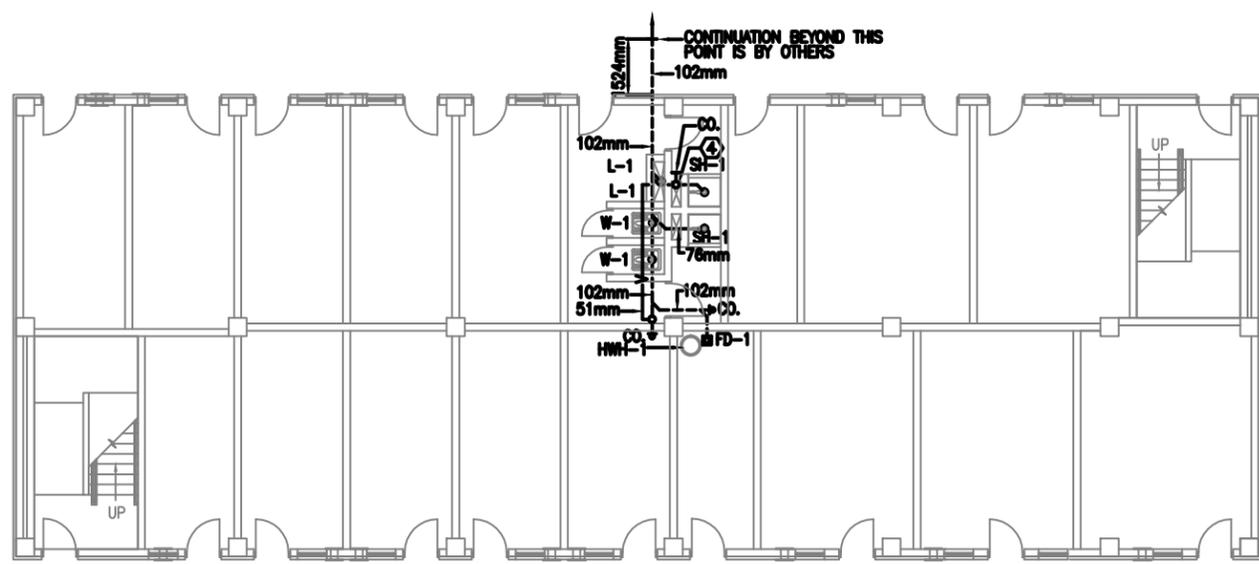
Michael Baker Jr. Inc.  
A unit of Michael Baker Corporation  
1000 Swanton Park  
Monroeville, PA 15108  
www.mbakercorp.com

STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION  
SECTION DETAILS

SHEET REFERENCE NUMBER:  
A10

100% SUBMISSION

A B C D E F G H



**BARRACKS PARTIAL FIRST FLOOR CEILING PLAN - PLUMBING**  
 2 P1/P1 SCALE: 1:100

**BARRACKS FIRST FLOOR PLAN - PLUMBING (SANITARY)**  
 1 P1/P1 SCALE: 1:100

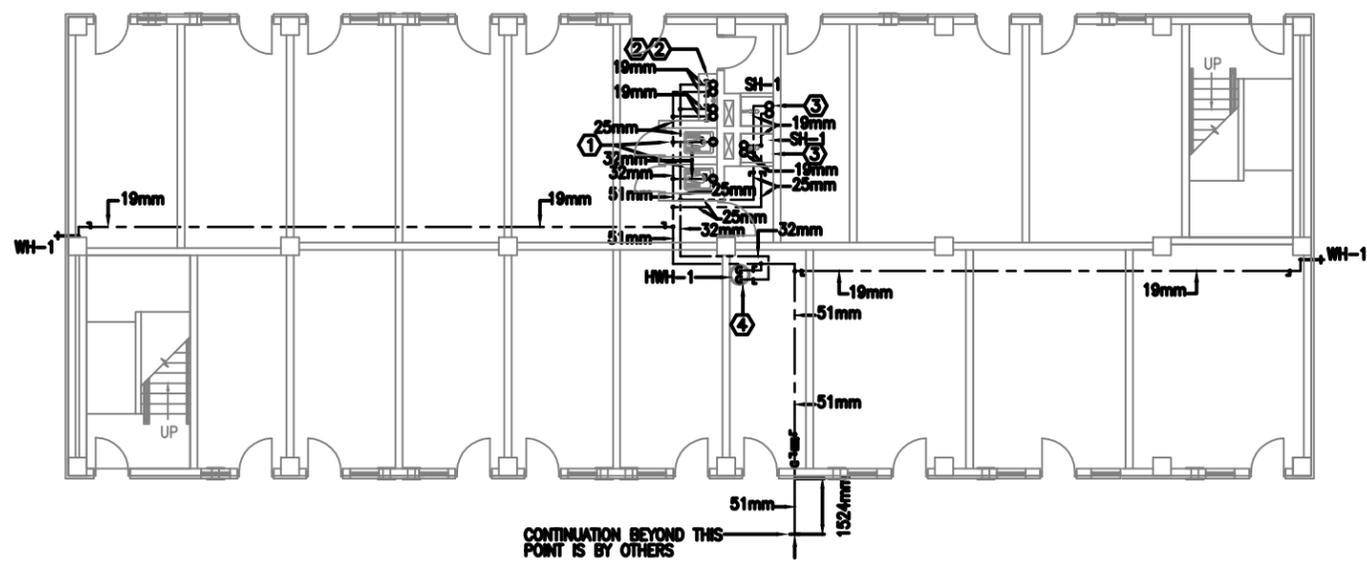
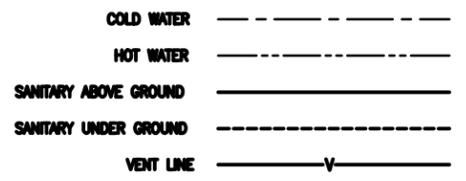
**SANITARY KEY NOTES:**

- ① 102mm SANITARY LINE UP TO EASTERN STYLE WATER CLOSET ON 2nd FLOOR.
- ② 76mm SANITARY LINE UP TO TROUGH ON 2nd FLOOR.
- ③ 76mm SANITARY LINE UP TO SHOWER ON 2nd FLOOR.
- ④ 102mm SANITARY LINE DOWN IN CHASE FROM 2nd FLOOR PLUMBING FIXTURES. EXTEND VENT STACK UP THRU CHASE TO SECOND FLOOR. CONTINUE LINE UP THRU ROOF.

**FLOOR PLAN NOTES:**

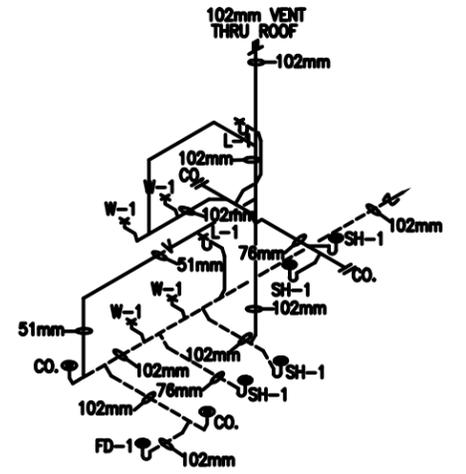
1. DO NOT SCALE DRAWINGS - ALL DIMENSIONS AND CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE.
2. ALL WORK PERFORMED ON THIS BUILDING SHALL BE IN COMPLIANCE WITH ALL PERTINENT CODES, RULES, ORDINANCES AND REGULATIONS OF THE GOVERNING AUTHORITIES.
3. ALL WORK PERFORMED UNDER AND IN CONNECTION WITH THESE DRAWINGS AND SPECIFICATIONS SHALL BE IN STRICT COMPLIANCE WITH THE LATEST SAFETY AND HEALTH STANDARDS.
4. REPORT ANY DISCREPANCIES FOUND IN THE PLUMBING DRAWINGS AND/OR IN THE SPECIFICATIONS DURING THE BIDDING PROCESS FOR CLARIFICATION BY THE ENGINEER.
5. ALL EASTERN STYLE WATER CLOSETS IN THIS FACILITY ARE TO HAVE THE FIXTURE DESIGNATION OF W-1. EACH FIXTURE SHALL HAVE A (1) INCH (25mm) COLD WATER CONNECTION AND A (4) INCH (102mm) SANITARY CONNECTION.
6. ALL TROUGH FIXTURES IN THIS FACILITY ARE TO HAVE THE FIXTURE DESIGNATION OF L-1. EACH FIXTURE SHALL HAVE A (1/2) INCH (13mm) COLD WATER, (1/2) INCH (13mm) HOT WATER CONNECTION AND A (3) INCH (76mm) SANITARY CONNECTION.
7. ALL SHOWER FIXTURES IN THIS FACILITY ARE TO HAVE THE FIXTURE DESIGNATION OF SH-1. EACH FIXTURE SHALL HAVE A (1/2) INCH (13mm) COLD WATER, (1/2) INCH (13mm) HOT WATER CONNECTION AND A (3) INCH (76mm) SANITARY CONNECTION TO A FLOOR DRAIN.
8. PLUMBING CONTRACTOR TO PROVIDE WATER HAMMER ARRESTORS AT ALL WATER CLOSETS.
9. PLUMBING CONTRACTOR TO PROVIDE TRAP PRIMERS AND 1/2" (13mm) COLD WATER LINES FOR ALL FLOOR DRAINS. COLD WATER LINES TO BE UNDER THE FLOOR FROM TRAP PRIMERS TO TRAPS ON FLOOR DRAINS.
10. REFER TO SHEET P3 FOR DETAILS AND SYMBOLS.
11. ALL WATER, SANITARY AND VENT LINES TO BE EXPOSED. RUN LINES TIGHT TO CEILING AND WALL.

**LEGEND**



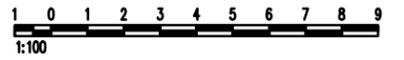
**WATER KEY NOTES:**

- ① 32mm COLD WATER LINE UP TO EASTERN STYLE WATER CLOSET ON 2nd FLOOR.
- ② 13mm COLD WATER LINE & 13mm HOT WATER LINE UP TO TROUGH ON 2nd FLOOR.
- ③ 13mm COLD WATER LINE & 13mm HOT WATER LINE UP TO SHOWER ON 2nd FLOOR.
- ④ SEE DETAIL ON SHEET P3 FOR WATER HEATER AND MIXING VALVE INFORMATION.



**BARRACKS - DRAINAGE ISOMETRIC**  
 4 P1/P1 SCALE: N.T.S.

**BARRACKS FIRST FLOOR PLAN - PLUMBING (WATER)**  
 3 P1/P1 SCALE: 1:100



SYMBOL	DESCRIPTION	DATE	APP

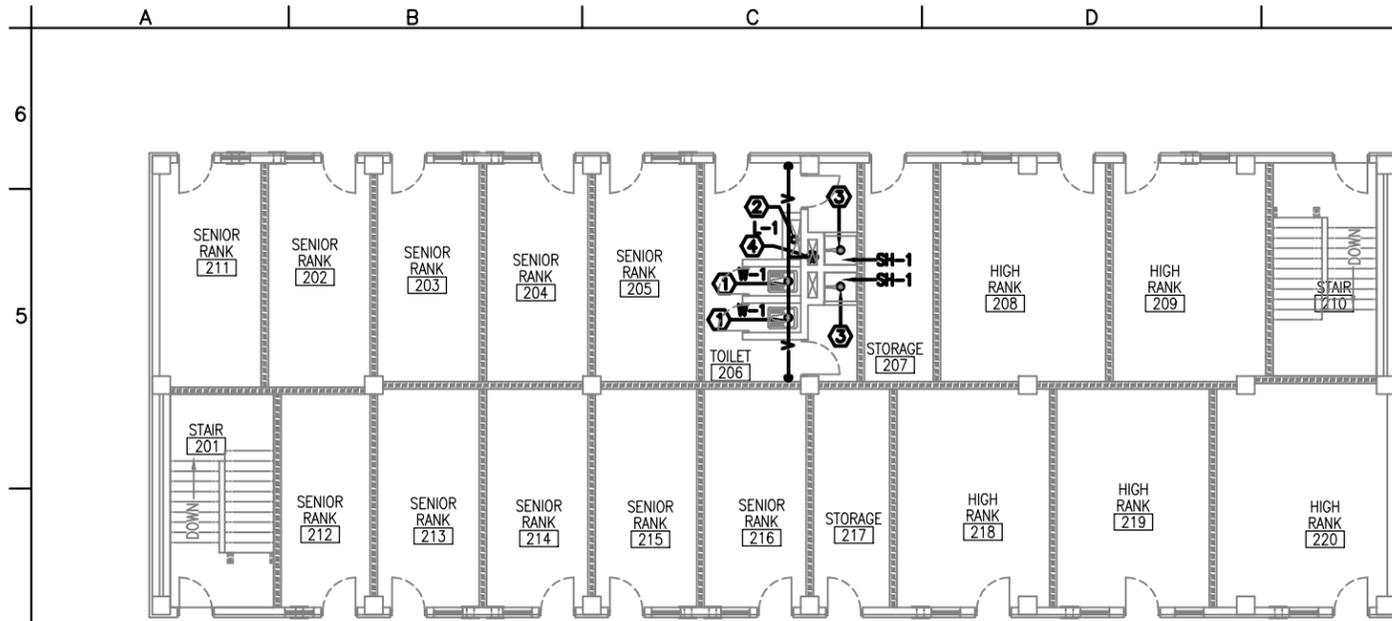
DESIGNED BY:	DATE:	SUBMITTED BY:	FILE NO.:
RMH	09-30-09	BAKER	ANPSP-101XXX
DWN BY:			
RMH			
CHK BY:			
CAM III			

Michael Baker Corp.  
 A unit of Michael Baker Corporation  
 Health, Business Park  
 100 North 15th St., PA 15108  
 www.mbakercorp.com

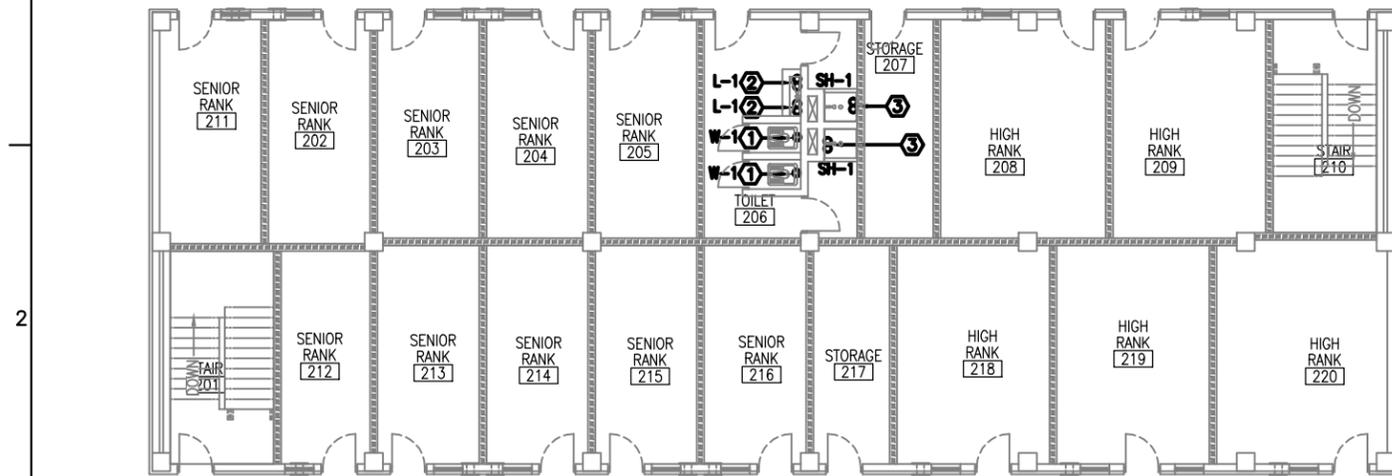
STANDARD DESIGN  
 BARRACK BUILDING, 2-STORY (662 GSM)  
 WOOD FIRED HEAT OPTION  
 FIRST FLOOR PLAN - PLUMBING  
 AND DRAINAGE ISOMETRIC

SHEET  
 REFERENCE  
 NUMBER:  
 P1

100% SUBMISSION



**1**  
P2 | P2  
BARRACKS SECOND FLOOR PLAN - PLUMBING (SANITARY)  
SCALE: 1:100



**2**  
P2 | P2  
BARRACKS SECOND FLOOR PLAN - PLUMBING (WATER)  
SCALE: 1:100

**FLOOR PLAN NOTES:**

- DO NOT SCALE DRAWINGS - ALL DIMENSIONS AND CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE.
- ALL WORK PERFORMED ON THIS BUILDING SHALL BE IN COMPLIANCE WITH ALL PERTINENT CODES, RULES, ORDINANCES AND REGULATIONS OF THE GOVERNING AUTHORITIES.
- ALL WORK PERFORMED UNDER AND IN CONNECTION WITH THESE DRAWINGS AND SPECIFICATIONS SHALL BE IN STRICT COMPLIANCE WITH THE LATEST SAFETY AND HEALTH STANDARDS.
- REPORT ANY DISCREPANCIES FOUND IN THE PLUMBING DRAWINGS AND/OR IN THE SPECIFICATIONS DURING THE BIDDING PROCESS FOR CLARIFICATION BY THE ENGINEER.
- ALL EASTERN STYLE WATER CLOSETS IN THIS FACILITY ARE TO HAVE THE FIXTURE DESIGNATION OF W-1. EACH FIXTURE SHALL HAVE A (1) INCH (25mm) COLD WATER CONNECTION AND A (4) INCH (102mm) SANITARY CONNECTION.
- ALL TROUGH FIXTURES IN THIS FACILITY ARE TO HAVE THE FIXTURE DESIGNATION OF L-1. EACH FIXTURE SHALL HAVE A (1/2 INCH) (13mm) COLD WATER, (1/2 INCH) (13mm) HOT WATER CONNECTION AND A (3 INCH) (76mm) SANITARY CONNECTION.
- ALL SHOWER FIXTURES IN THIS FACILITY ARE TO HAVE THE FIXTURE DESIGNATION OF SH-1. EACH FIXTURE SHALL HAVE A (1/2 INCH) (13mm) COLD WATER, (1/2 INCH) (13mm) HOT WATER CONNECTION AND A (3 INCH) (76mm) SANITARY CONNECTION TO A FLOOR DRAIN.
- PLUMBING CONTRACTOR TO PROVIDE WATER HAMMER ARRESTORS AT ALL WATER CLOSETS.
- PLUMBING CONTRACTOR TO PROVIDE TRAP PRIMERS AND 1/2" (13mm) COLD WATER LINES FOR ALL FLOOR DRAINS. COLD WATER LINES TO BE UNDER THE FLOOR FROM TRAP PRIMERS TO TRAPS ON FLOOR DRAINS.
- REFER TO SHEET P3 & P4 FOR DETAILS AND SYMBOLS.
- ALL WATER, SANITARY AND VENT LINES TO BE EXPOSED. RUN LINES TIGHT TO CEILING AND WALL. WATER, SANITARY AND VENT LINES IN CELL 101 & CELL 102 TO BE PIPED ABOVE CEILING AND IN WALLS.

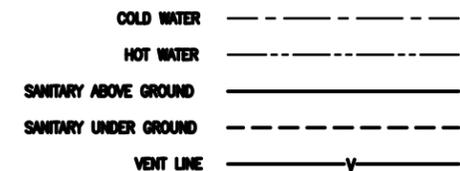
**SANITARY KEY NOTES:**

- 102mm SANITARY LINE UP TO EASTERN STYLE WATER CLOSET FROM 1st FLOOR CEILING SPACE.
- 76mm SANITARY LINE UP TO TROUGH FROM 1st FLOOR CEILING SPACE.
- 76mm SANITARY LINE UP TO SHOWER FROM 1st FLOOR CEILING SPACE.
- 102mm SANITARY STACK DOWN, AND 102mm VENT THRU ROOF.

**WATER KEY NOTES:**

- 32mm COLD WATER LINE UP TO EASTERN STYLE WATER CLOSET FROM 1st FLOOR CEILING SPACE.
- 13mm COLD WATER LINE & 13mm HOT WATER LINE UP TO TROUGH FROM 1st FLOOR CEILING SPACE.
- 13mm COLD WATER LINE & 13mm HOT WATER LINE UP TO SHOWER FROM 1st FLOOR CEILING SPACE.

**LEGEND**



SYMBOL	DESCRIPTION	DATE	APP

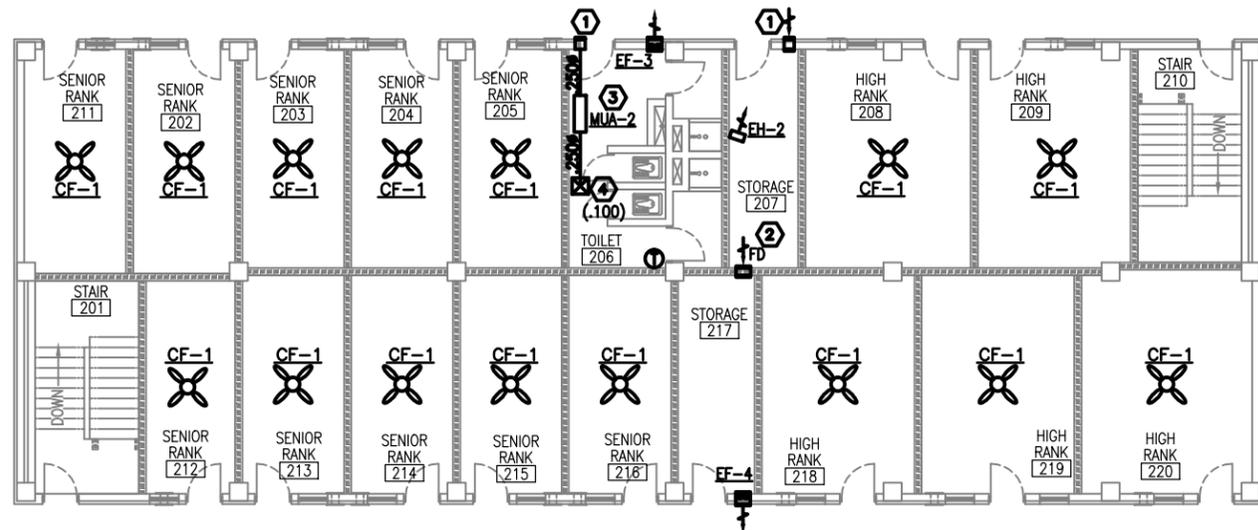
DESIGNED BY:	DATE:
RMH	09-30-09
DWN BY:	SUBMITTED BY:
RMH	BAKER
CHK BY:	FILE NO.:
CAM III	ANP/SOP-102XXX

Michael Baker Jr. Inc.  
A unit of Michael Baker Corporation  
Health, Safety & Environment  
1000 North 17th Street, PA 15108  
www.mbakercorp.com

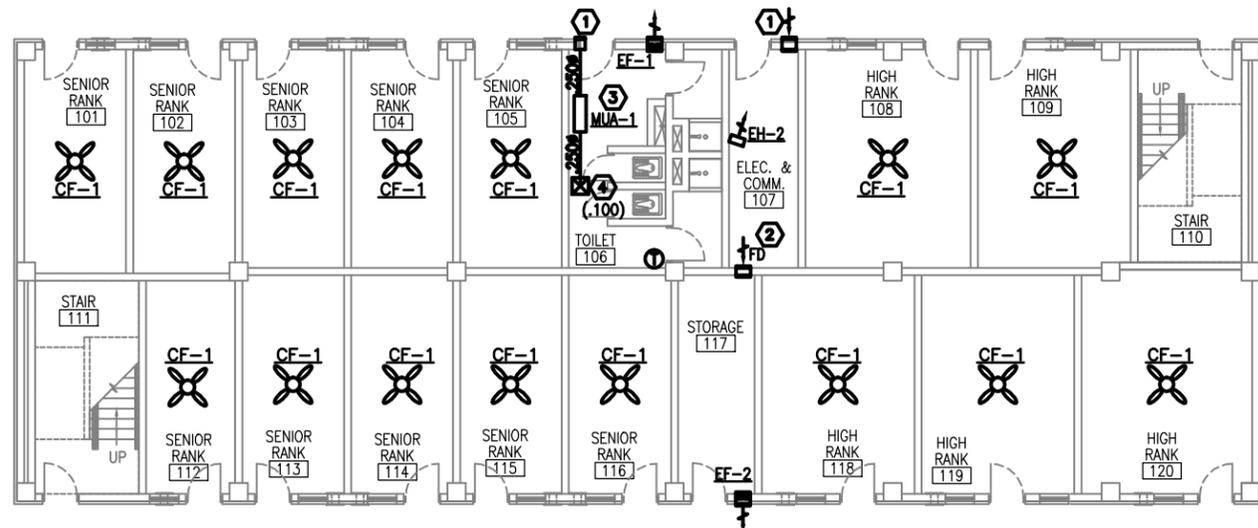
STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION  
SECOND FLOOR PLAN - PLUMBING

SHEET  
REFERENCE  
NUMBER:  
P2

100% SUBMISSION



**2** SECOND FLOOR PLAN - HVAC  
SCALE: 1:100



**1** FIRST FLOOR PLAN - HVAC  
SCALE: 1:100

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
EF-2	WALL	0.050	DIRECT	FRACT	13	220/1/50	● WALL
EF-3	WALL	0.100	DIRECT	FRACT	13	220/1/50	● WALL
EF-4	WALL	0.050	DIRECT	FRACT	13	220/1/50	● WALL

NOTES:  
1. WALL MOUNTED EXHAUST FAN MOUNT AT 600mm BELOW CEILING.

ELECTRIC UNIT HEATER SCHEDULE					
NO.	CMS	KW	F.A.T. °C	ELECT. CHAR.	MOUNTING
EH-2	.200	2.6	38	370/1/50	WALL HUNG

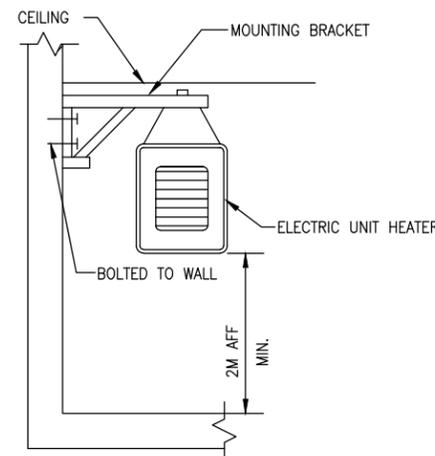
NOTES:  
1. UNIT HEATERS SHALL BE MOUNTED AS HIGH AS POSSIBLE.  
2. UNIT HEATERS SHALL HAVE TAMPER PROOF INTEGRAL STATS.

MAKE UP AIR HEATERS							
NO.	BLOWER CMS	FUSE	KW	MIN. TEMP RISE °C	SP mmH2O	ELECT. CHAR.	CONTROL
MUA-1	0.100	30	5	20	13	220/1/50	REMOTE
MUA-2	0.100	30	5	20	13	220/1/50	REMOTE

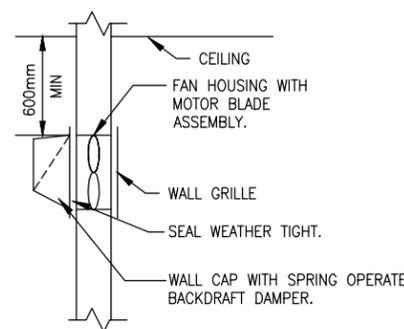
NOTES:  
1. PROVIDE REMOTE MOUNTED THERMOSTAT WITH LOCKING COVER.  
2. INTERLOCK BLOWER OPERATION WITH EXHAUST FANS.  
3. BLOWER SHALL BE SET TO ENERGIZE WITH EXHAUST FAN(S), HEAT SHALL BE CONTROLLED BY THERMOSTAT. PROVIDE AIR SENSING SWITCH FOR HEATING OPERATION.

CEILING FAN				
NO.	BLADE SIZE		VOLTAGE	SWITCH
	mm	IN		
CF-1	1320	52	220/1/50	● WALL

NOTES:  
1. FINAL ELECTRICAL CONNECTIONS BY EC.



ELECTRIC UNIT HEATER MOUNTING  
N.T.S.



WALL MOUNTED EXHAUST FAN DETAIL  
N.T.S.

**GENERAL NOTES:**

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

**SYMBOLS:**

- (X) KEY NOTE
- (.050) AIR VOLUME IN CUBIC METERS PER SECOND (CMS)
- FD FIRE DAMPER

**NUMBERED NOTE:**

- 200X200 (8X8) LOW LEAKAGE GRAVITY WALL LOUVER FOR SUPPLY AIR. PROVIDE WEATHERPROOF LOUVER W/ 2" WASH DOWN FILTER AND SAND TRAP.
- 200X400 (8X16) TRANSFER GRILLE WITH FIRE DAMPER.
- ELECTRIC MAKE UP AIR HEATER SECURED TO STRUCTURE ABOVE. ALL FINAL ELECTRICAL CONNECTIONS SHALL BE BY THE EC.
- 150x150 (6x6) SUPPLY DIFFUSER CEILING WITH THREE WAY BLOW, BALANCE TO CMS IN PARENTHESIS.

US Army Corps of Engineers  
Afghanistan Engineer District

NO.	DATE	DESCRIPTION	BY

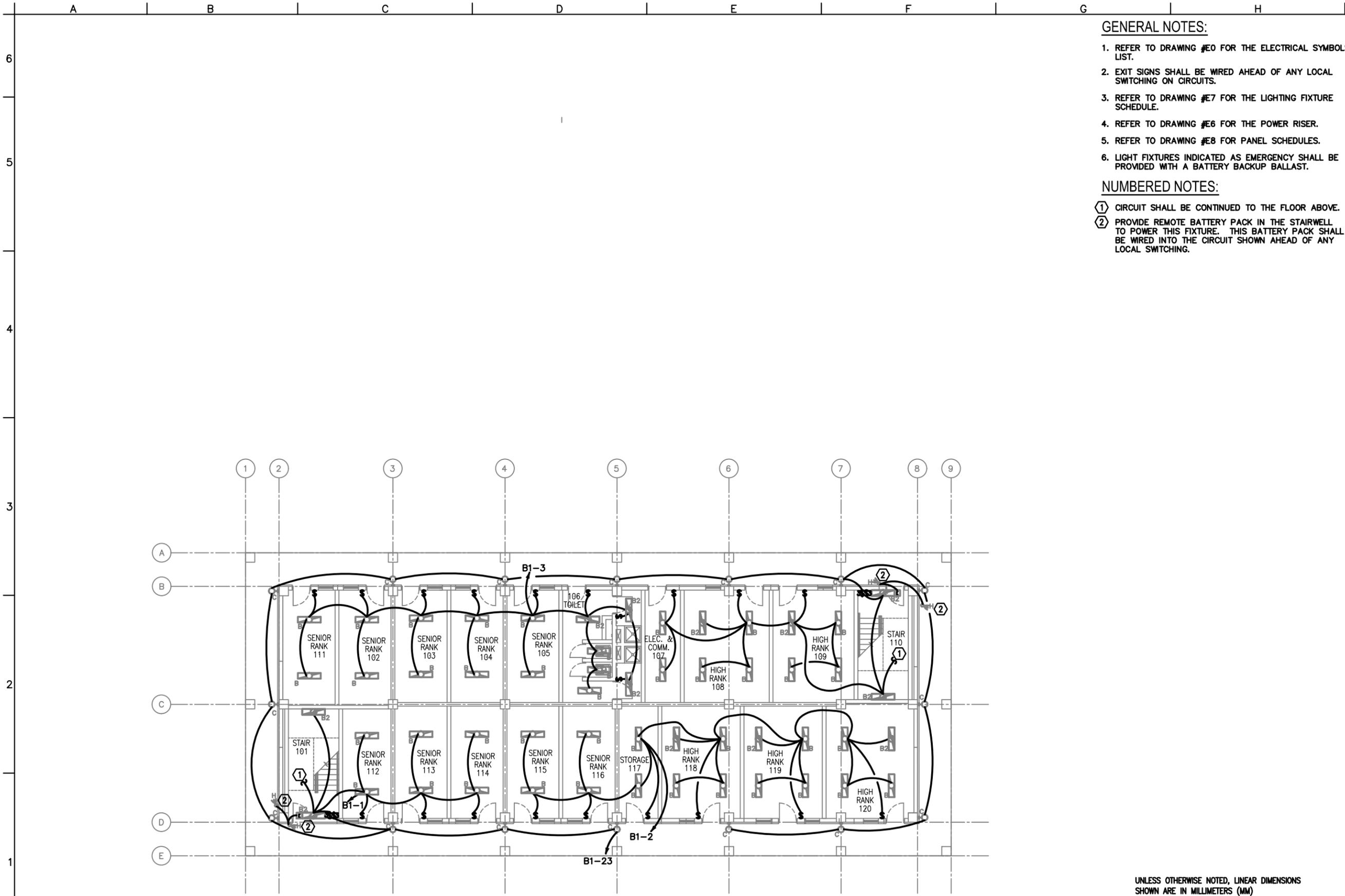
DESIGNED BY: RML  
DATE: 09-30-09  
SUBMITTED BY: BAKER  
JAN  
FILE NO.: ANP/SDM-101XXX  
CHK BY: CAM III

Michael Baker Corp.  
A unit of Michael Baker Corporation  
Health, Business Park  
1000 State College Blvd., PA 15108  
www.mbakercorp.com

STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION  
PLANS - HVAC

SHEET REFERENCE NUMBER:  
M1

100% SUBMISSION



**GENERAL NOTES:**

1. REFER TO DRAWING #E0 FOR THE ELECTRICAL SYMBOLS LIST.
2. EXIT SIGNS SHALL BE WIRED AHEAD OF ANY LOCAL SWITCHING ON CIRCUITS.
3. REFER TO DRAWING #E7 FOR THE LIGHTING FIXTURE SCHEDULE.
4. REFER TO DRAWING #E6 FOR THE POWER RISER.
5. REFER TO DRAWING #E8 FOR PANEL SCHEDULES.
6. LIGHT FIXTURES INDICATED AS EMERGENCY SHALL BE PROVIDED WITH A BATTERY BACKUP BALLAST.

**NUMBERED NOTES:**

- ① CIRCUIT SHALL BE CONTINUED TO THE FLOOR ABOVE.
- ② PROVIDE REMOTE BATTERY PACK IN THE STAIRWELL TO POWER THIS FIXTURE. THIS BATTERY PACK SHALL BE WIRED INTO THE CIRCUIT SHOWN AHEAD OF ANY LOCAL SWITCHING.



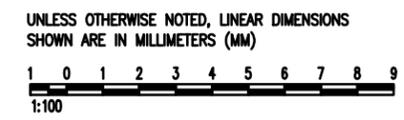
SYMBOL	DESCRIPTION	DATE	APP

DESIGNED BY: JRG	DATE: 09-30-09
DWN BY: JRG	SUBMITTED BY: BAKER
CHK BY: JRG	FILE NO.: ANPSDE-101XXX

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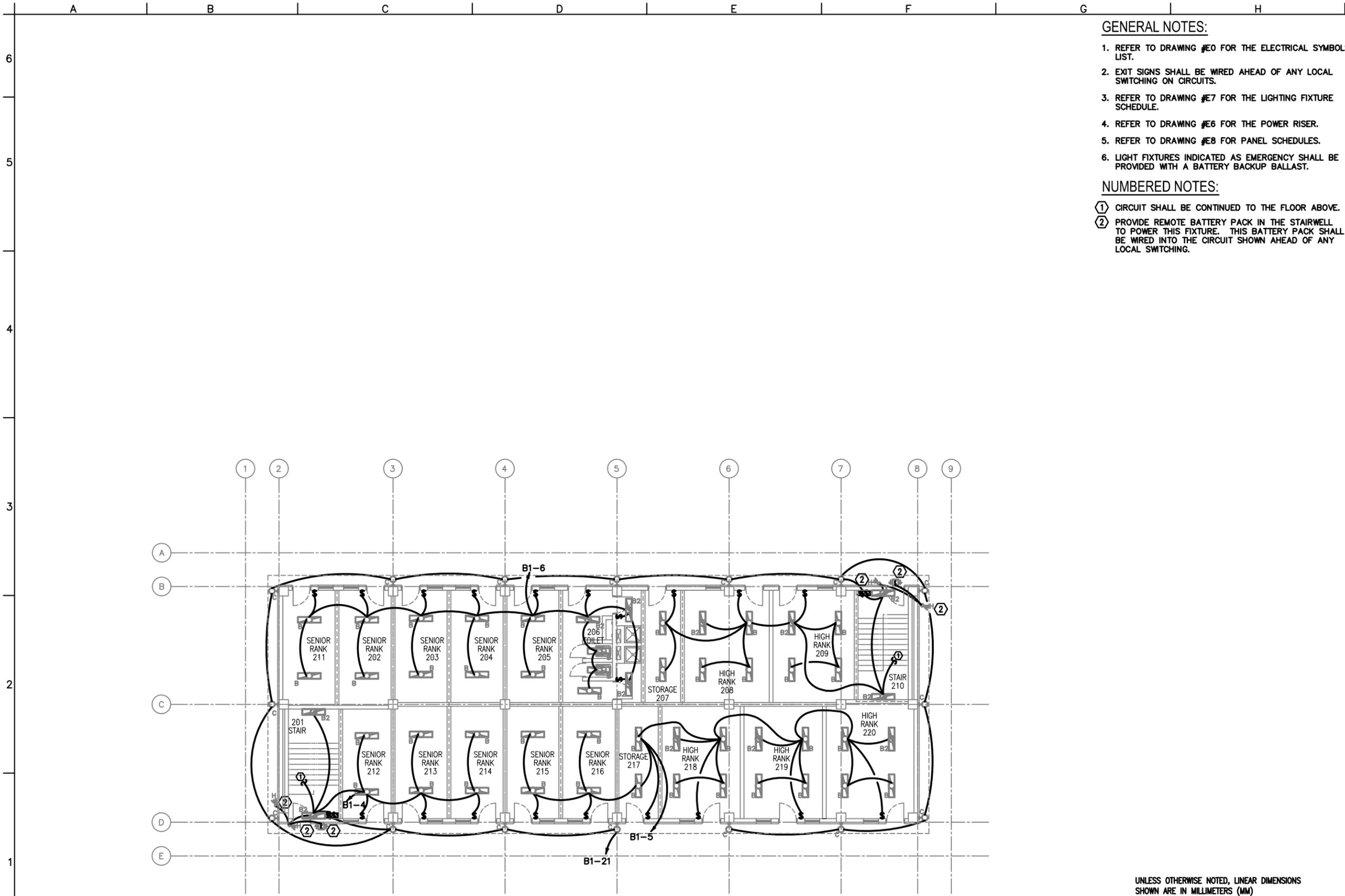
STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION  
FIRST FLOOR LIGHTING PLAN

SHEET  
REFERENCE  
NUMBER:  
**E1**



**1**  
**E1** **E1** **FIRST FLOOR LIGHTING PLAN**  
SCALE: 1:100

100% SUBMISSION



**GENERAL NOTES:**

1. REFER TO DRAWING #E0 FOR THE ELECTRICAL SYMBOLS LIST.
2. EXIT SIGNS SHALL BE WIRED AHEAD OF ANY LOCAL SWITCHING ON CIRCUITS.
3. REFER TO DRAWING #E7 FOR THE LIGHTING FIXTURE SCHEDULE.
4. REFER TO DRAWING #E6 FOR THE POWER RISER.
5. REFER TO DRAWING #E8 FOR PANEL SCHEDULES.
6. LIGHT FIXTURES INDICATED AS EMERGENCY SHALL BE PROVIDED WITH A BATTERY BACKUP BALLAST.

**NUMBERED NOTES:**

- ① CIRCUIT SHALL BE CONTINUED TO THE FLOOR ABOVE.
- ② PROVIDE REMOTE BATTERY PACK IN THE STAIRWELL TO POWER THIS FIXTURE. THIS BATTERY PACK SHALL BE WIRED INTO THE CIRCUIT SHOWN AHEAD OF ANY LOCAL SWITCHING.



SYMBOL	DESCRIPTION	DATE	APP

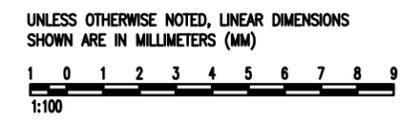
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DWN BY: JRG	SUBMITTED BY: BAKER
CHK BY: JRG	FILE NO.:
	ANPSDE-10200X

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STANDARD DESIGN  
BARRACK BUILDING, 2-STORY (662 GSM)  
WOOD FIRED HEAT OPTION  
SECOND FLOOR LIGHTING PLAN

SHEET  
REFERENCE  
NUMBER:  
E2

**1**  
E2 | E2  
**SECOND FLOOR LIGHTING PLAN**  
SCALE: 1:100

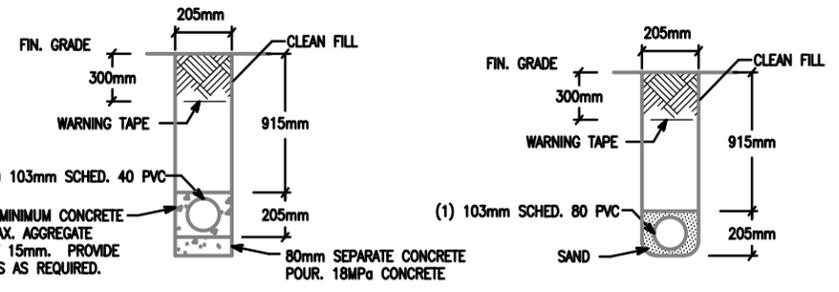


100% SUBMISSION



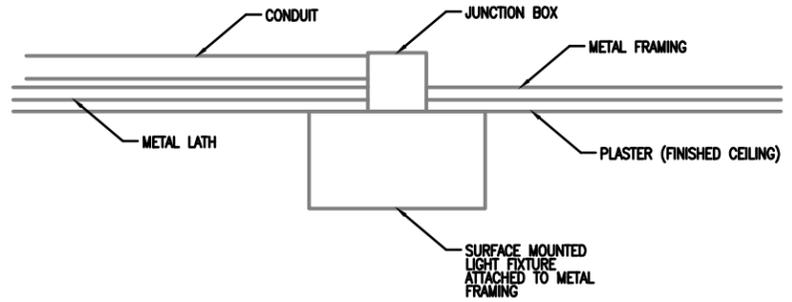




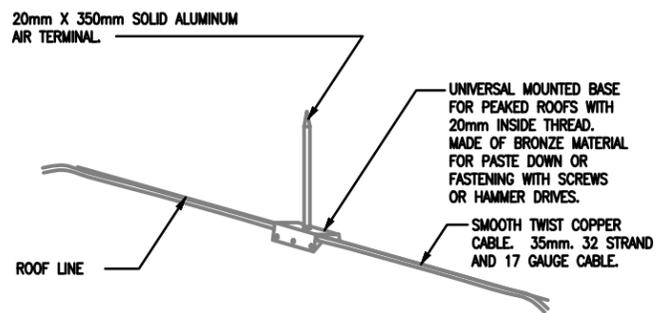


NOTE: PVC CONDUIT SHALL BE DIRECT BURIED SCHEDULE 80 FOR NO TRAFFIC AREAS AND CONCRETE-ENCASED SCHEDULE 40 FOR UNDER ROADWAYS OR TRAFFIC AREAS.

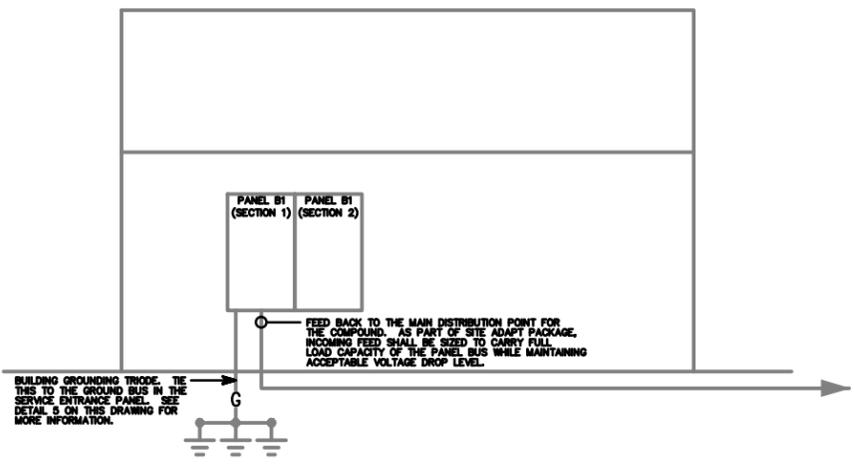
**1** TYPICAL DUCT BANK DETAILS FOR CONDUIT IN SAND OR CONCRETE  
 SCALE: N.T.S.



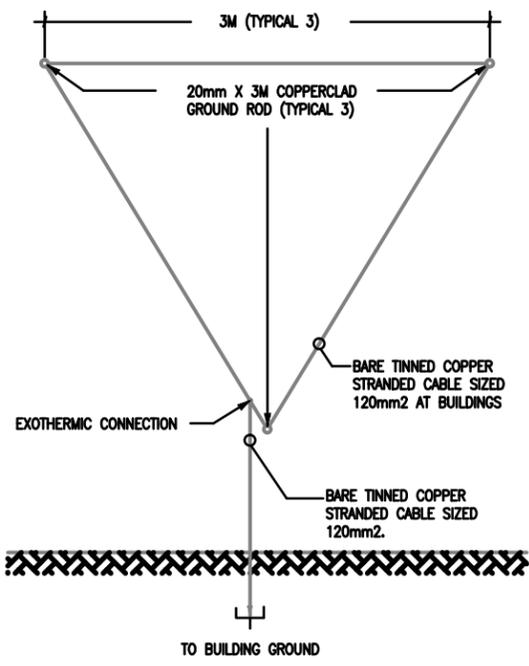
**2** TYPICAL DETAIL FOR SURFACE MOUNTED LIGHT FIXTURES  
 SCALE: N.T.S.



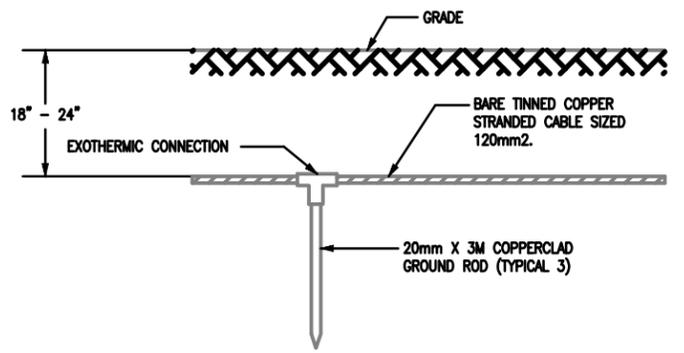
**3** LIGHTNING PROTECTION AIR TERMINAL DETAIL  
 SCALE: N.T.S.



**4** B.1 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.

NO.	DATE	DESCRIPTION	BY

DESIGNED BY:	JRG	DATE:	09-30-09
DWN BY:	JRG	SUBMITTED BY:	BAKER
CHK BY:	JRG	FILE NO.:	ANP/SE-506XXX

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STANDARD DESIGN  
 BARRACK BUILDING, 2-STORY (662 GSM)  
 WOOD FIRED HEAT OPTION  
 DETAILS

SHEET REFERENCE NUMBER:  
**E6**











1

2

3

4

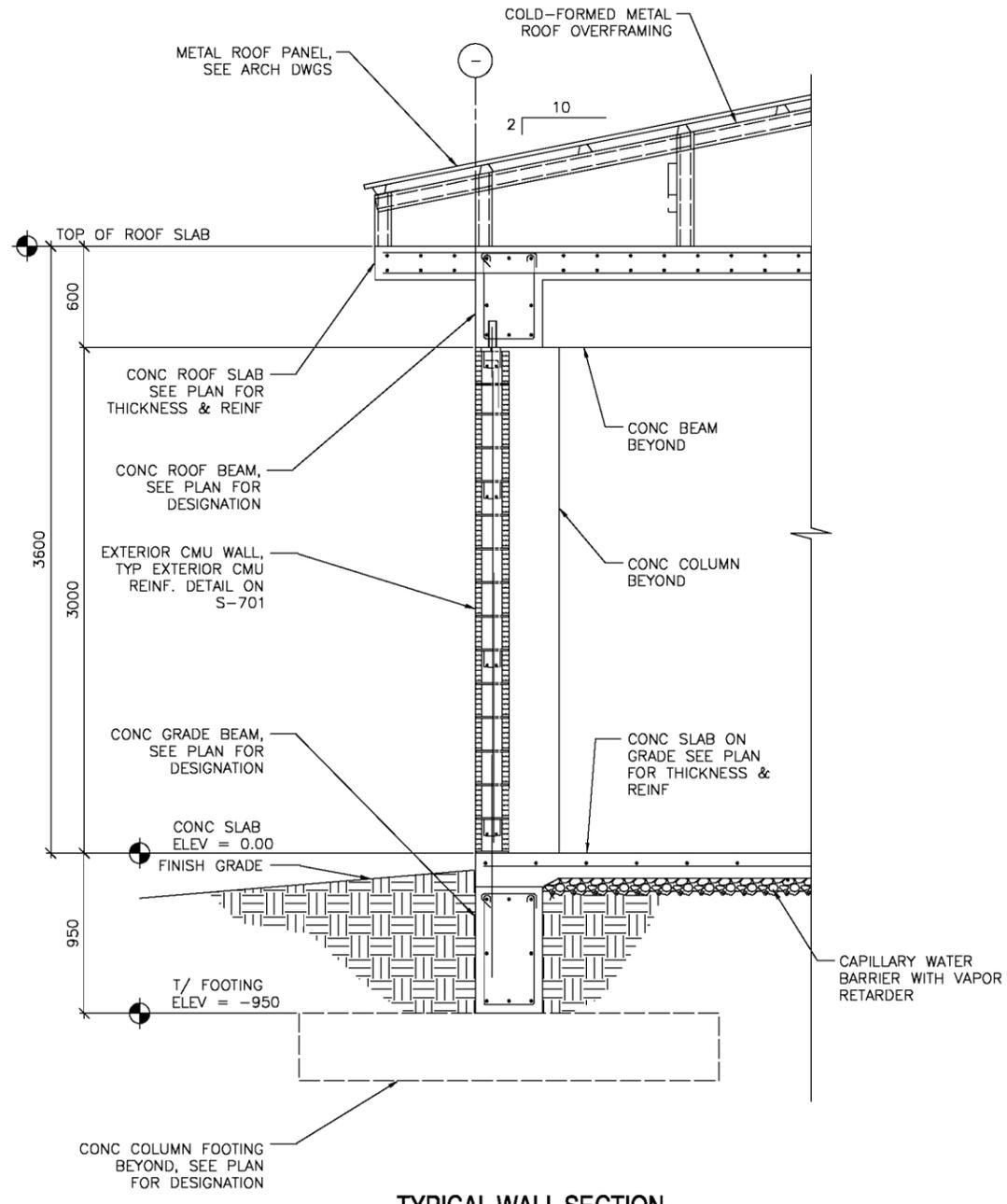
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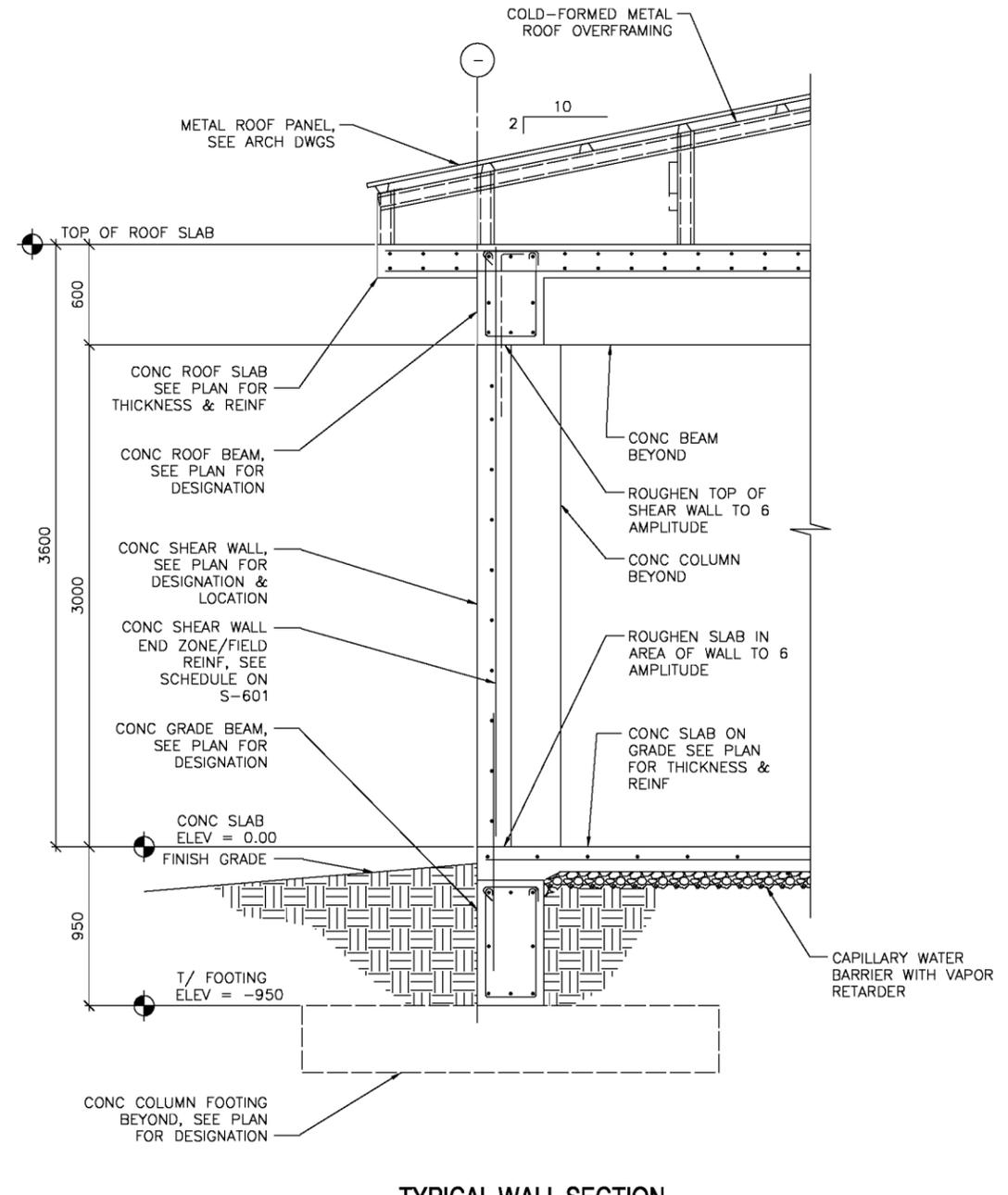
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B

A



1  
S-101  
**TYPICAL WALL SECTION AT EXTERIOR MASONRY WALL**  
SCALE: 1:20



2  
S-101  
**TYPICAL WALL SECTION AT CONCRETE SHEAR WALL**  
SCALE: 1:20



UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ON DRAWINGS ARE IN MILLIMETERS (mm)



DATE	APPR.
DATE	DESCRIPTION
DATE	APPR. MARK
DATE	DESCRIPTION
MARK	

DESIGNED BY:	OWN BY:	DATE:	SOLICITATION NO.:
SUBMITTED BY:		CONTRACT NO.:	
PLOT SCALE:	PLOT DATE:	FILE NUMBER:	
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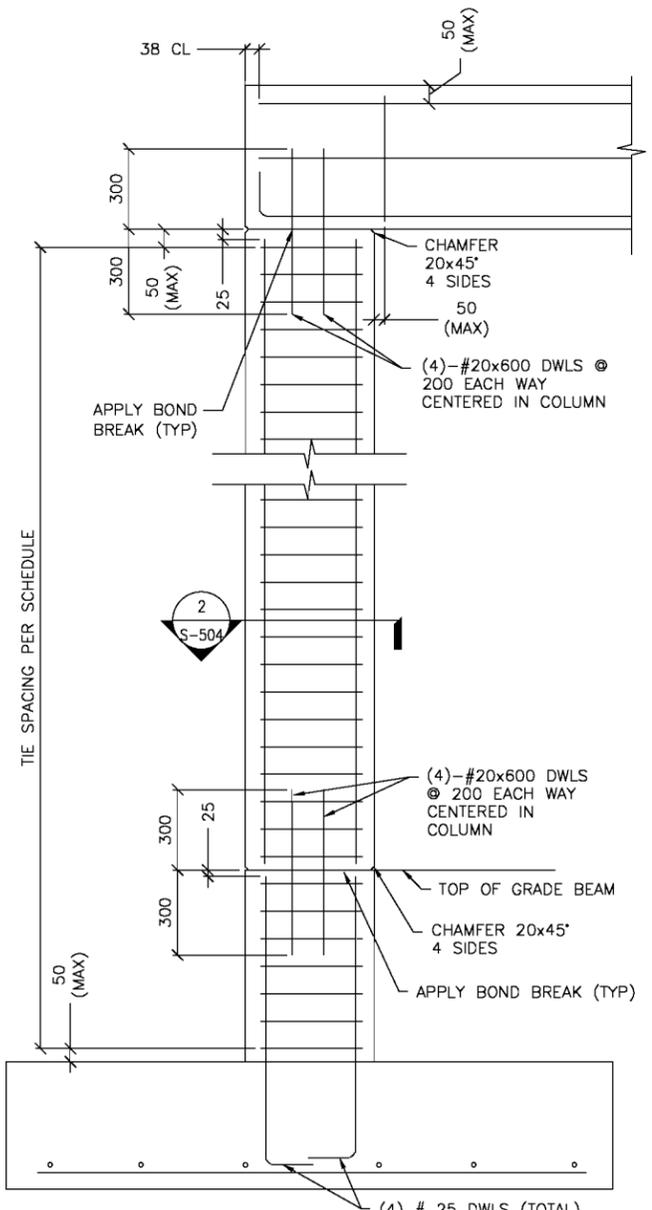
SITE ADAPT DESIGN  
B25 - WOMENS BARRAKS  
BUILDING SECTIONS

SHEET IDENTIFICATION  
**S-401**  
SHEET 4 OF 28





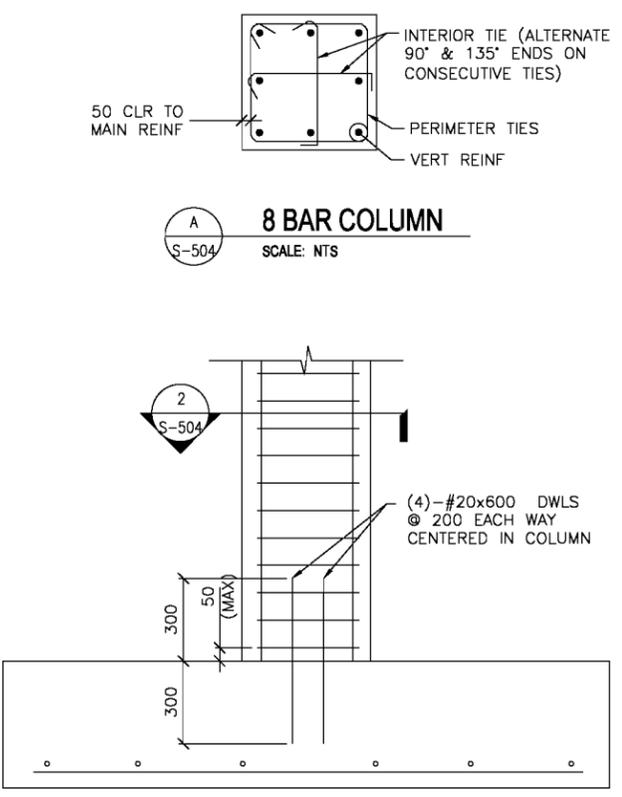




**1**  
S-601

**1-STORY COLUMN REINF DETAILS**  
SCALE: NTS (WITH GRADE BEAM)

**DETAIL NOTE:**  
1. ONLY COLUMN CORNER BARS ARE SHOWN



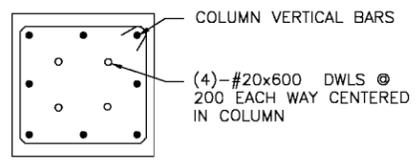
**A**  
S-504

**8 BAR COLUMN**  
SCALE: NTS

**1**  
S-601

**1-STORY COLUMN REINF DETAILS**  
SCALE: NTS (WITHOUT GRADE BEAM)

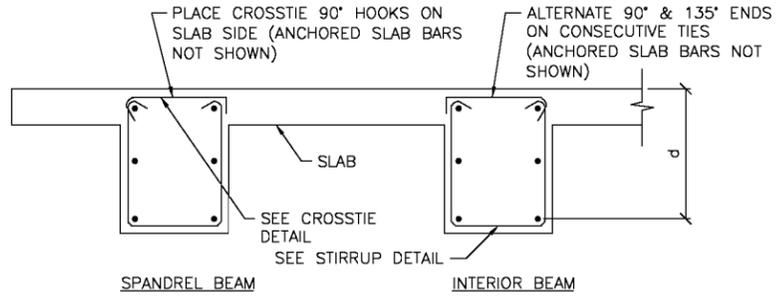
**DETAIL NOTE:**  
1. ONLY COLUMN CORNER BARS ARE SHOWN



**SECTION**  
S-601 S-504

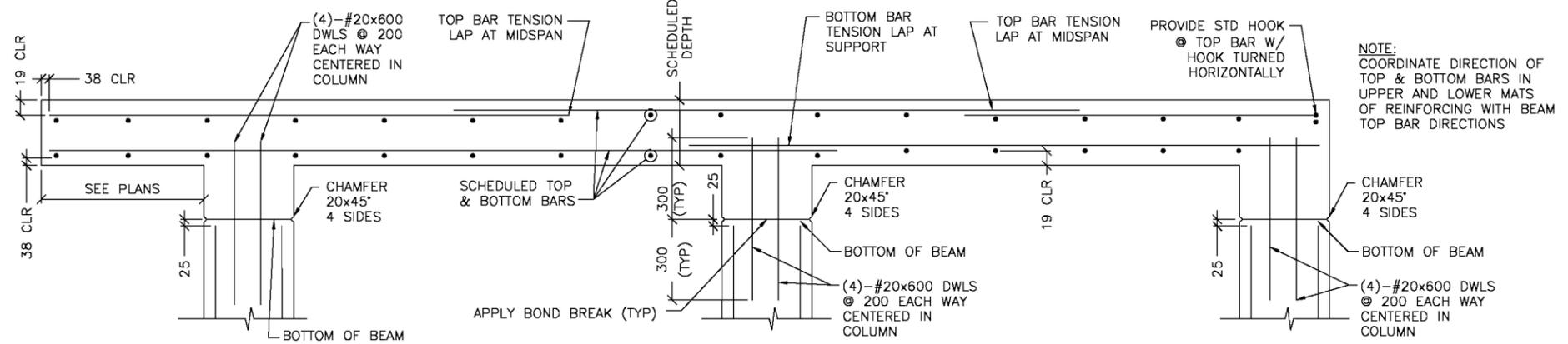
SCALE: NTS

**DETAIL NOTE:**  
1. INTERIOR TIES NOT SHOWN FOR CLARITY. REFER TO DETAIL A THIS SHEET FOR INTERIOR TIE CONFIGURATION.



**B**  
S-601

**BEAM REINFORCEMENT DETAILS**  
SCALE: NTS



**4**  
S-601

**FRAMED SLAB REINFORCING DETAIL**  
SCALE: NTS



US Army Corps of Engineers  
AFGHANISTAN DISTRICT  
ENGINEER DISTRICT

MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY:	DATE:	SOLICITATION NO.:
DWN BY:	CHKD BY:	CONTRACT NO.:
SUBMITTED BY:	PLOT SCALE:	FILE NUMBER:
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FILE NAME:	ANSI D	

U.S. ARMY CORPS OF ENGINEERS  
AFGHANISTAN DISTRICT  
APO AE 96338

**SITE ADAPT DESIGN**  
B25 - WOMENS BARRACKS  
**BEAM & COLUMN DETAILS**

### CONCRETE REINFORCEMENT TENSION DEVELOPMENT/LAP SPLICE SCHEDULE

f'c = 28 MPa	LAP CLASS	UNCOATED BARS			
		TOP BARS		OTHER BARS	
		CASE 1	CASE 2	CASE 1	CASE 2
BAR SIZES					
#10 TO #19	A	50 BAR DIA	74 BAR DIA	38 BAR DIA	57 BAR DIA
	B	64 BAR DIA	96 BAR DIA	50 BAR DIA	74 BAR DIA
#22 TO #57	A	62 BAR DIA	93 BAR DIA	48 BAR DIA	71 BAR DIA
	B	80 BAR DIA	121 BAR DIA	62 BAR DIA	93 BAR DIA

- NOTES:**
- TABULATED TENSION DEVELOPMENT LENGTH VALUES ARE TAKEN FROM CRSI DESIGN HANDBOOK 2008 10TH ED.
  - TENSION DEVELOPMENT & TENSION LAP SPLICE LENGTHS ARE EXPRESSED AS MULTIPLES OF BAR DIAMETERS.
  - TABULATED VALUES ARE BASED ON MINIMUM YIELD STRENGTH OF REINFORCEMENT, fy, OF 420MPa.
  - CONCRETE IS NORMAL WEIGHT (2400Kg/m<sup>3</sup>) AND 28 DAY COMPRESSIVE STRENGTH = 28MPa.
  - TABULATED VALUES FOR BEAMS & COLUMNS ARE BASED ON TRANSVERSE REINFORCEMENT AND CONCRETE COVER MEETING MINIMUM CODE REQUIREMENTS.
  - CASES 1 & 2, WHICH DEPEND ON THE TYPE OF STRUCTURAL MEMBER, CONCRETE COVER, AND CENTER-TO-CENTER SPACING OF THE BARS ARE DEFINED IN THE TABLE BELOW.
  - LAP SPLICE LENGTHS (MINIMUM 300mm) ARE MULTIPLES OF TENSION DEVELOPMENT LENGTHS: CLASS A = 1.0(TENSION DEVELOPMENT LENGTH) & CLASS B = 1.3(TENSION DEVELOPMENT LENGTH)
  - TOP BARS ARE HORIZONTAL REINFORCEMENT WITH MORE THAN 300mm OF CONCRETE CAST BELOW THE BARS.
  - IT SHALL BE PERMISSIBLE TO CALCULATE WALL AND SLAB REINFORCEMENT TENSION DEVELOPMENT/SPLICE LENGTHS IN ACCORDANCE WITH ACI 12.2.3 OR TABLE 5.3(b) OF CRSI 2008 IN LIEU OF VALUES TABULATED ABOVE.

BEAMS, COLUMNS	CASE 1	CONCRETE COVER AT LEAST 1 BAR DIA AND CENTER-TO-CENTER SPACING AT LEAST 2 BAR DIA
	CASE 2	CONCRETE COVER LESS THAN 1 BAR DIA OR CENTER-TO-CENTER SPACING LESS THAN 2 BAR DIA
ALL OTHERS	CASE 1	CONCRETE COVER AT LEAST 1 BAR DIA AND CENTER-TO-CENTER SPACING AT LEAST 3 BAR DIA
	CASE 2	CONCRETE COVER LESS THAN 1 BAR DIA OR CENTER-TO-CENTER SPACING LESS THAN 3 BAR DIA

### CONCRETE COVER SCHEDULE

MINIMUM CONCRETE COVER PROTECTION FOR REINFORCEMENT BARS SHALL BE AS LISTED BELOW: (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. PROVIDE STANDARD BAR CHAIRS AND SUPPORT BARS @1200mm MAXIMUM AS REQUIRED TO MAINTAIN CONCRETE PROTECTION SPECIFIED.

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	
NOT EXPOSED TO WEATHER (FROM TOP)	20
EXPOSED 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

### COLUMN FOOTING SCHEDULE

MARK	FOOTING SIZE (mm)			FOOTING REINFORCING	REMARKS
	LENGTH	WIDTH	THICKNESS		
F1	3000	3000	300	(10)-#20 EW BOTT	-----
F2	2500	2500	250	(7)-#20 EW BOTT	-----

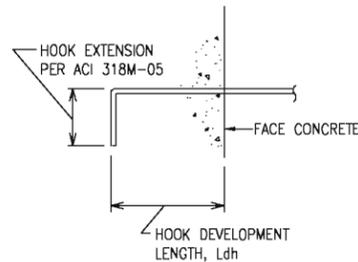
### CONCRETE SHEAR WALL SCHEDULE

MARK	TYPE	WALL LENGTH (L) (mm)	WALL REINFORCEMENT		REMARKS
			END ZONE	FIELD	
SW1	A	1650	(3)-#20 @ 150mm OC	#12 @ 250mm OC	-----
SW2	A	1900	(4)-#20 @ 150mm OC	#12 @ 250mm OC	-----
SW3	B	2700	(5)-#20 @ 150mm OC	#12 @ 250mm OC	-----
SW4	B	3300	(5)-#20 @ 150mm OC	#12 @ 250mm OC	-----

- NOTES:**
- WORK THIS SCHEDULE WITH SHEAR WALL DETAILS ON SHEETS S-702
  - SEE PLAN FOR LOCATION OF SHEAR WALL(S).
  - VERTICAL "FIELD" BARS MAY BE OMITTED IN LOCATION OF "END ZONE" REINFORCEMENT.
  - WALL FIELD REINF LISTED APPLIES TO VERT & HORIZ BARS.
  - WALL FIELD REINFORCEMENT CENTERED IN WALL.
  - END ZONE REINF IS VERTICAL REINF EACH END ZONE.
  - SEE SHEET S-702 FOR ADDITIONAL REINF AT OPENINGS.
  - ONLY LARGE OPENINGS ARE LISTED IN REMARKS COLUMN, FOR ADDITIONAL SMALLER OPENINGS SEE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL SHEETS.

### STANDARD HOOKS IN TENSION PER (ACI 318M-05)

HOOK DEVELOPMENT LENGTH (mm)	
BAR SIZE	f'c 28 MPa
#10	180
#12	230
#16	300
#20	400
#22	430
#25	480
#29	560



- NOTES:**
- CONCRETE IS NORMAL WEIGHT CONCRETE.
  - BAR YIELD STRENGTH, fy = 420 MPa
  - SIDE COVER REQUIREMENTS OF ACI SECT. 12.5.3 ARE ASSUMED TO NOT BE MET.
  - TIE OR STIRRUP REQUIREMENTS OF ACI SECT. 12.5.3 ARE ASSUMED TO NOT BE MET.
  - REDUCTION FOR EXCESS REINFORCEMENT IS NOT TAKEN.
  - HOOK DEVELOPMENT LENGTH IS VALID FOR 180° HOOKS ALSO.

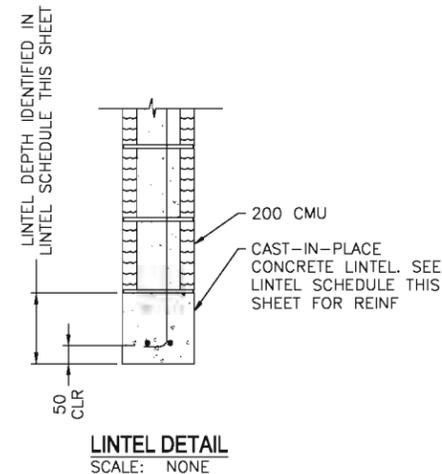
### MASONRY LAP SPLICE SCHEDULE

BAR SIZE	MINIMUM LAP SPLICE (Ld) FOR CMU REINFORCING
#10	450
#12	600
#16	750
#20	950
#22	1050
#25	1200

### CAST-IN-PLACE CONC LINTEL SCHEDULE (TYP)

OPENING TYPE OR SIZE, BEAM LOCATION OR TYPE	MAX SPAN (mm)	LINTEL DEPTH (mm)	REINFORCING BOTTOM
WALL OPENING	4000	600	(2)-#16 T&B
WALL OPENING	1900	400	(2)-#16 T&B
WALL OPENING	1000	200	(2)-#16 B

- NOTES:**
- STRUCTURAL SHEETS 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 HEAD DETAILS REFER TO ARCHITECTURAL SHEETS.
  - REINFORCING SHALL BE ASTM A615M, GRADE 420.
  - CONTRACTOR SHALL SUBMIT FOR APPROVAL SHOP DRAWINGS AND SCHEDULES SHOWING SIZE, SPAN, REINFORCEMENT, DETAILS, LOCATIONS, ETC.



### BEAM SCHEDULE

MARK	BEAM SIZE (mm)		BEAM REINFORCING						STIRRUPS			REMARKS	
	DEPTH	WIDTH	BL	BS	TL	TS	TC	M	SIZE	TYPE	SPACING		
GRADE BEAMS													
GB1	750	400	(3)-#16	---	(3)-#16	---	---	---	(2)-#16	#12	S3 + T9	200	-----
ROOF BEAMS													
RB1	600	400	(2)-#22	(1)-#22	(2)-#19	---	---	---	#12	S3 + T9	200	-----	
RB2	600	400	(2)-#19	(1)-#19	(2)-#19	---	---	---	#12	S3 + T9	200	-----	

- NOTES:**
- WORK THIS SCHEDULE WITH BEAM REINFORCING DETAILS ON SHEETS S-503 AND S-504.
  - HOOKE SHOWN ON SECTIONS AND DETAILS SHALL BE 90° STD UON.
  - M BARS ARE SIDE BARS EACH FACE.

### COLUMN SCHEDULE

COLUMN MARK	TYP UON	---	---	---
DESCRIPTION				
TYPE	8-BAR	---	---	---
DIMENSION	600mm SQ.	---	---	---
VERTICAL REINFORCEMENT	(8)-#25	---	---	---
TIES	#12 @ 150	---	---	---
TOP OF ROOF ELEVATION	3600mm	---	---	---
TOP OF GRADE BEAM ELEVATION	-200mm	---	---	---
TOP OF FOOTING ELEVATION	-950mm	---	---	---

- NOTES:**
- WORK THIS SCHEDULE WITH COLUMN DETAILS ON SHEET S-504.
  - SEE FOOTING SCHEDULE ON THIS SHEET FOR FOOTING INFORMATION.
  - COLUMN TIES: INTERIOR TIES TO MATCH SIZE & SPACING OF PERIMETER TIES.
  - HOOKE SHOWN ON SECTIONS & DETAILS SHALL BE 90° STD UON.



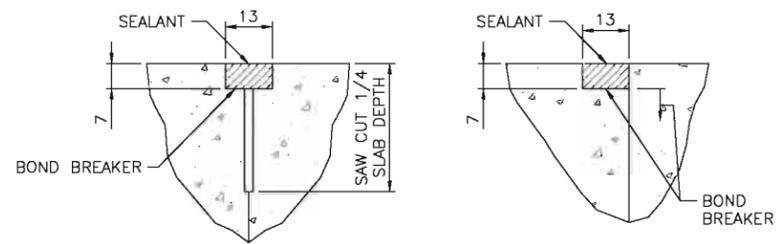
DATE	DESCRIPTION	DATE	DESCRIPTION

DESIGNED BY:	CHKD BY:	DATE:	SUBMITTAL NO.:
DWN BY:	FILE NUMBER:	CONTRACT NO.:	

U.S. ARMY CORPS OF ENGINEERS  
AFGHANISTAN DISTRICT  
APO AE 96338

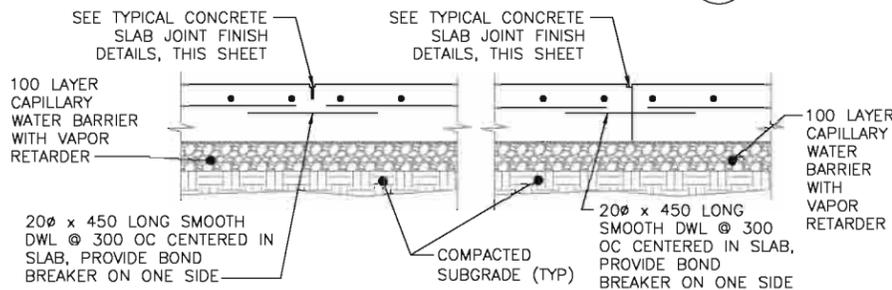
SITE ADAPT DESIGN  
B25 - WOMENS BARRACKS  
SCHEDULES

SHEET IDENTIFICATION  
**S-601**  
SHEET 9 OF 28



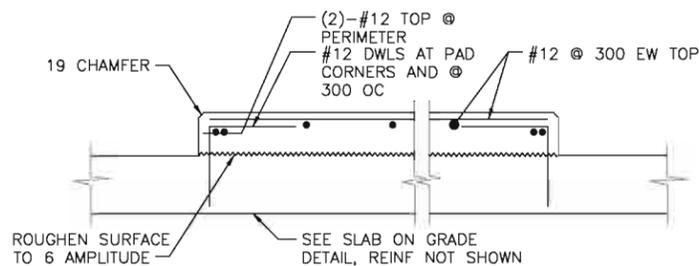
**TYPICAL CONCRETE SLAB JOINT FINISH DETAIL**

SCALE: NONE



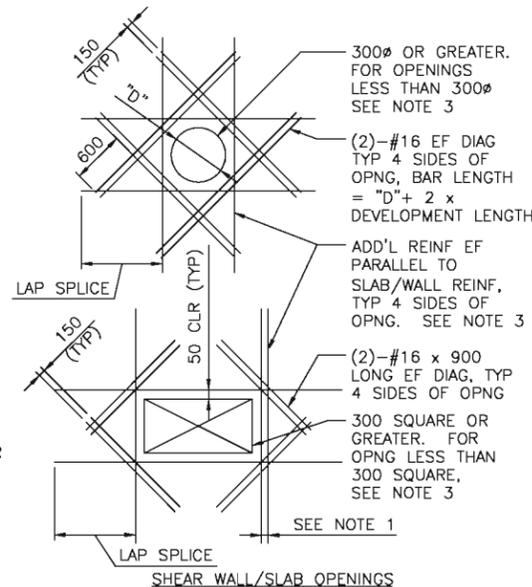
**TYPICAL SLAB ON GRADE JOINT DETAIL**

SCALE: NONE



**INTERIOR EQUIPMENT PAD DETAIL**

SCALE: NONE

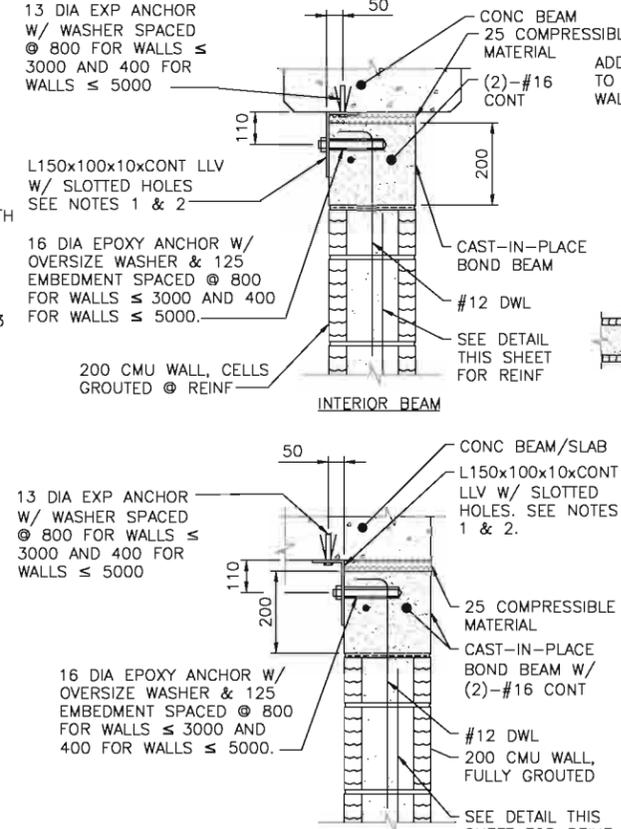


**ADD'L CONCRETE REINFORCEMENT DETAILS**

SCALE: NONE

**DETAIL NOTES:**

- WHERE MORE THAN ONE ADDITIONAL BAR IS REQUIRED PARALLEL TO THE EXISTING SLAB/WALL REINFORCING THE ADDITIONAL REINFORCING BARS SHALL BE SPACED AT 100 ON CENTER.
- ADDITIONAL REINFORCING PARALLEL TO THE SLAB/WALL REINFORCING SHALL BE #16 BARS THAT PROVIDE A STEEL AREA ON EACH SIDE OF THE OPENING EQUAL TO 1/2 THE AREA OF THE REINFORCING CUT BY THE OPENING.
- FOR OPENINGS WITH SIDES OR DIAMETERS LESS THAN 300 SPREAD THE SLAB/WALL REINFORCING TO CLEAR THE OPENING.

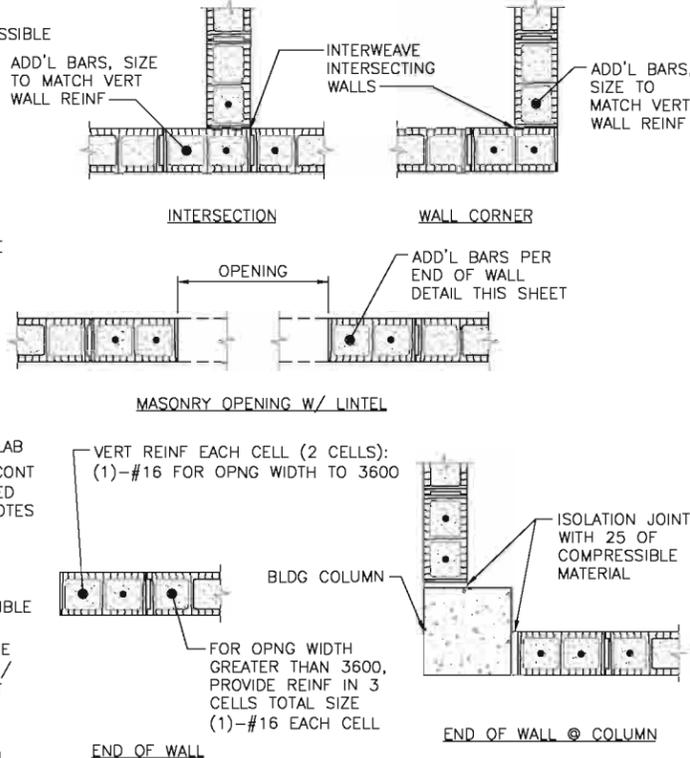


**TOP OF CMU WALL BRACING DETAILS**

SCALE: NONE

**NOTES:**

- PROVIDE 40X20 VERTICAL SLOTTED HOLES IN VERTICAL LEG OF L150X100 CENTERED ON ALL 16 DIA EPOXY ANCHORS.
- PROVIDE 25X14 SLOTTED HOLES (WITH SLOTS PARALLEL TO WALL) IN HORIZONTAL LEG ON L150X100 CENTERED ON ALL 13 DIA EXPANSION ANCHORS.
- CAST-IN-PLACE BOND BEAM SHOWN AT TOP OF WALL IS ALSO APPLICABLE FOR INTERMEDIATE AND STARTER COURSE BOND BEAMS WITHIN WALL.

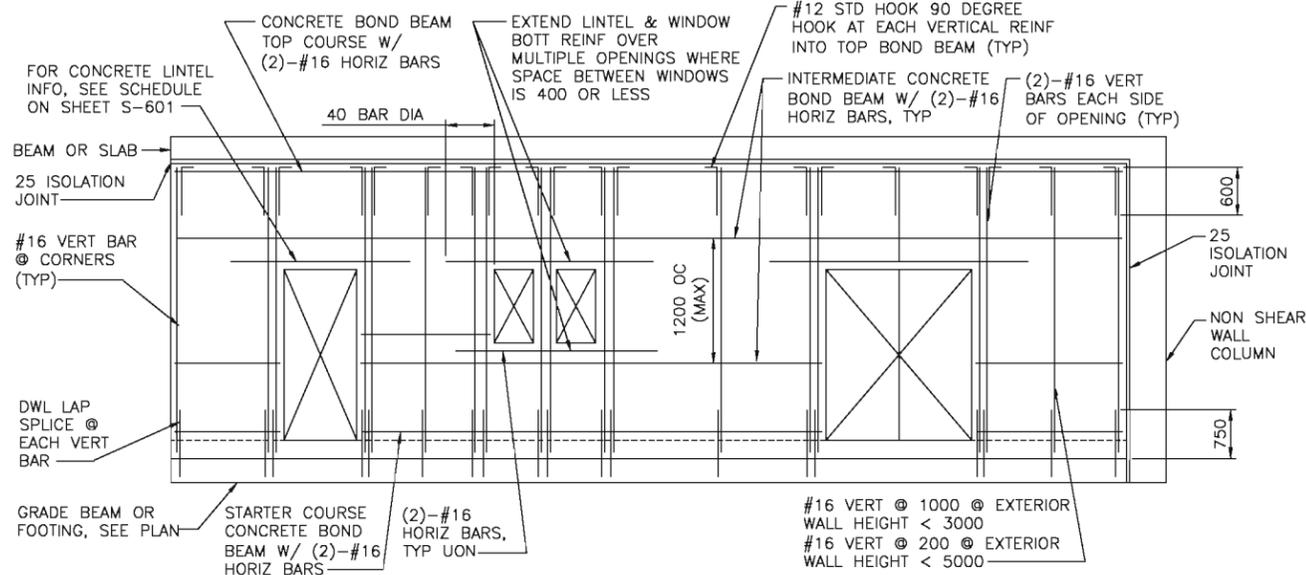


**TYP CMU DETAILS**

SCALE: NONE

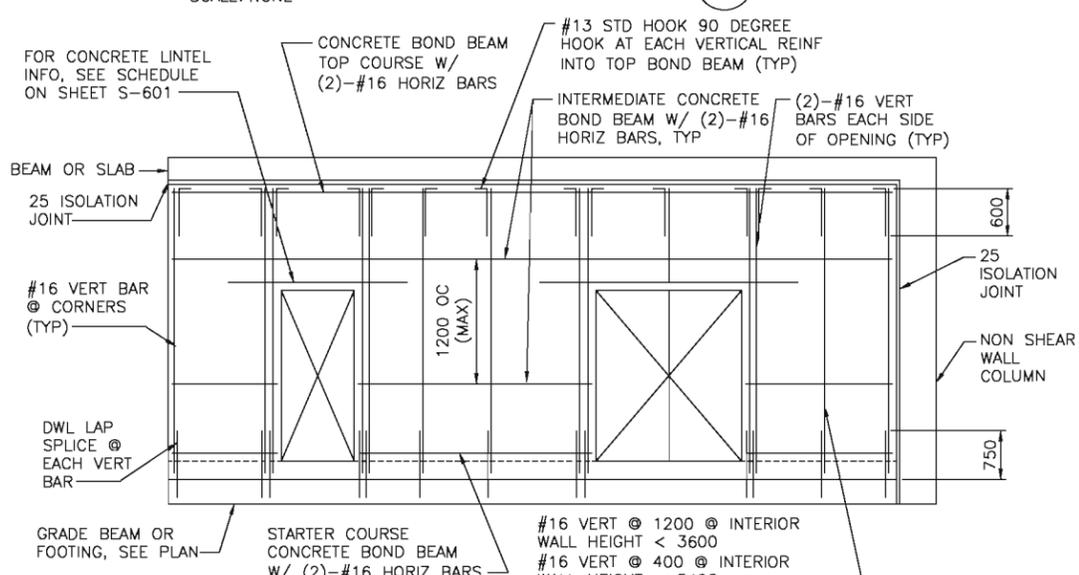
**NOTES:**

- OPENING WIDTH SHALL NOT EXCEED 3600 FOR THIS TYPE OF JAMB.
- ALL CELLS FULLY GROUTED AT EXTERIOR WALLS. AT INTERIOR WALLS, ONLY GROUT CELLS CONTAINING REINF.



**TYPICAL EXTERIOR CMU WALL REINFORCING DETAIL**

SCALE: NONE



**TYPICAL INTERIOR CMU WALL REINFORCING DETAIL**

SCALE: NONE

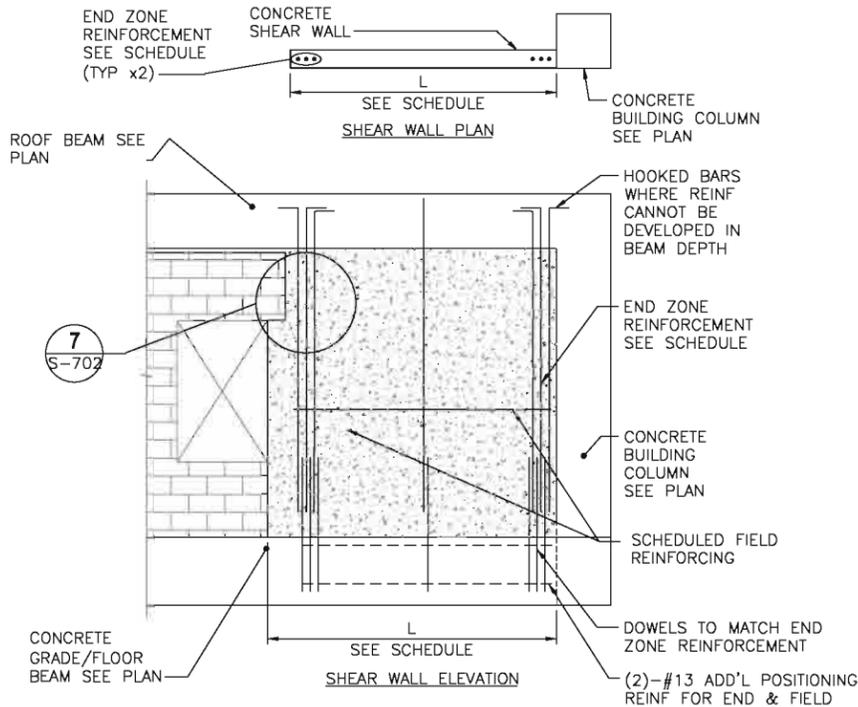
**DETAIL NOTE:**

- CENTER VERT REINF IN WALL.
- GROUT CMU CELLS THAT CONTAIN REINFORCING.
- REFERENCE ARCH DWGS FOR JOINT INFORMATION
- DOWELS BETWEEN TOP BOND BEAM AND BEAM/SLAB ABOVE (INCLUDING EMBEDDED PIPE SLEEVE) NOT SHOWN FOR CLARITY. SEE SPECIFIC S-500 SERIES DWGS FOR INFO.

DATE	DESCRIPTION	DATE	DESCRIPTION

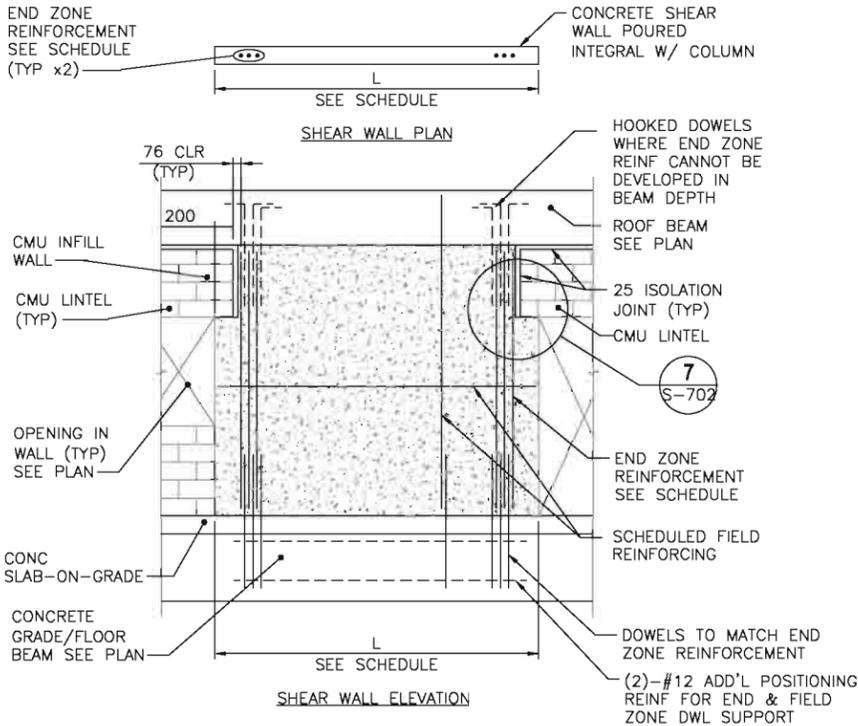
DESIGNED BY:	DATE:	SUBMITTAL NO.:	FILE NUMBER:
DWN BY:		CONTRACT NO.:	
SUBMITTED BY:			

SITE ADAPT DESIGN  
B25 - WOMENS BARRAKS  
TYPICAL DETAILS  
SHEET 1



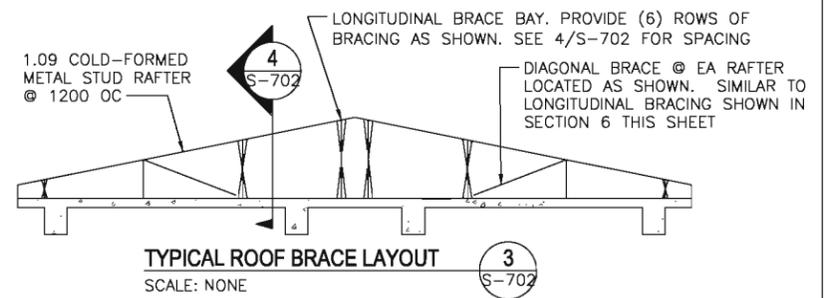
- DETAIL NOTES:**
1. FIELD REINFORCEMENT IN SHEAR WALL NOT COMPLETELY SHOWN FOR CLARITY.
  2. FIELD REINFORCEMENT CENTERED IN WALL.
  3. MINIMUM CONC CLEAR DISTANCE FOR END ZONE REINF = 76
  4. SEE CONC SHEAR WALL SCHEDULE ON SHEET S-601
  5. SEE ARCH DWGS FOR ISOLATION JOINT INFORMATION

**TYPE "B" SHEAR WALL DETAIL**  
SCALE: NONE

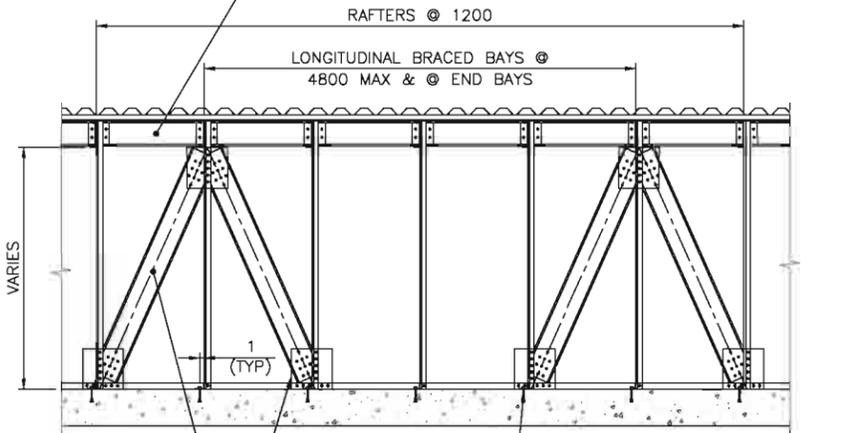


- DETAIL NOTES:**
1. FIELD REINFORCEMENT IN SHEAR WALL NOT COMPLETELY SHOWN FOR CLARITY.
  2. FIELD REINFORCEMENT CENTERED IN WALL.
  3. MINIMUM CONC CLEAR DISTANCE FOR END ZONE REINF = 76
  4. SEE CONC SHEAR WALL SCHEDULE ON SHEET S-601
  5. SEE ARCH DWGS FOR ISOLATION JOINT INFORMATION

**TYPE "A" SHEAR WALL DETAIL**  
SCALE: NONE



CONT. 1.09 COLD-FORMED METAL STUD BLOCKING, USE 1.37 CLIP W/ (4)-#12 SCREWS (TYP EACH END)

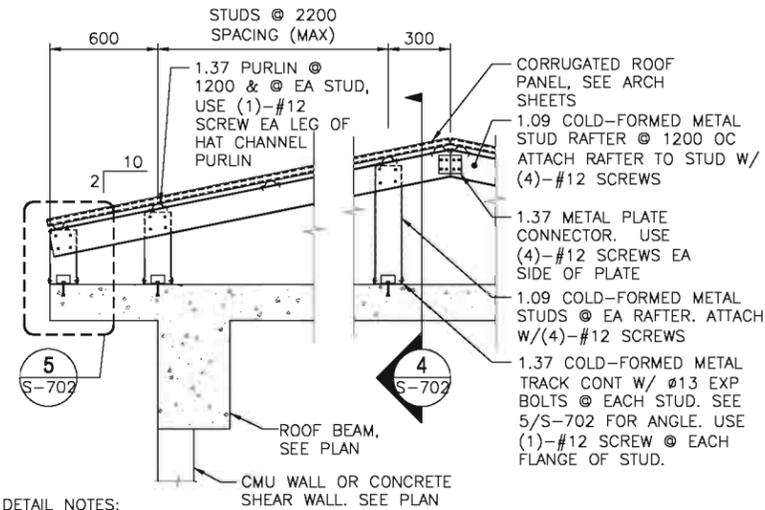


1.09 COLD-FORMED METAL STUD BRACE. ATTACH BRACE TO PLATE CONNECTOR W/ (8)-#12 SCREWS

1.37 x 225 SQ METAL PLATE CONNECTOR. ATTACH PLATE TO STUD & TRACK W/ (5)-#12 SCREWS EA

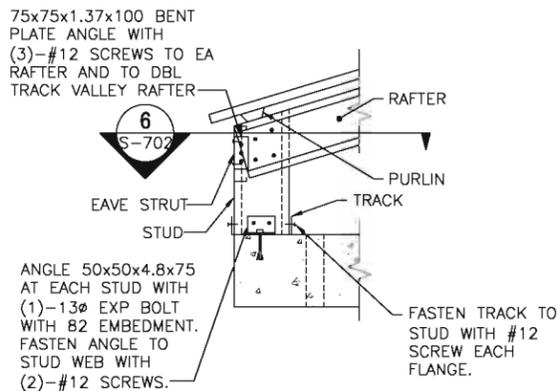
ANGLE 50x50x4.8x75 AT EACH STUD WITH (1)-13Ø EXP BOLT WITH 82 EMBEDMENT. FASTEN ANGLE TO STUD WEB WITH (2)-#12 SCREWS.

**SECTION**  
SCALE: NONE



- DETAIL NOTES:**
1. ALL GABLE END VERTICAL STUDS SHALL BE ORIENTED 90° TO INTERIOR STUDS & SPACED @ 600 OC. GABLE END RAFTER SHALL BE 1.37 METAL TRACK SPANNING CONTINUOUSLY OVER GABLE END STUDS. INSET GIRTS AT GABLE END SHALL BE 1.09 COLD-FORMED METAL STUDS @ 1200 OC ATTACHED VIA 1.37 THICKNESS CLIP ANGLE W/ (2) #12 SCREWS EA LEG.
  2. ALL INTERIOR, NON-GABLE END VERTICAL STUDS GREATER THAN 2400 IN LENGTH SHALL BE BACK-TO-BACK W/ #12 SCREWS @ 200 OC STAGGERED.

**TYPICAL OVERBUILT ROOF FRAMING DETAIL**  
SCALE: NONE



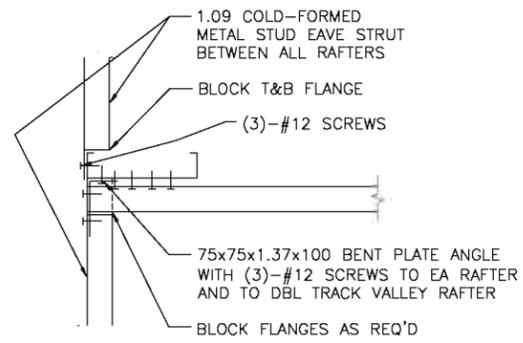
75x75x1.37x100 BENT PLATE ANGLE WITH (3)-#12 SCREWS TO EA RAFTER AND TO DBL TRACK VALLEY RAFTER

1.09 COLD-FORMED METAL STUD RAFTER @ 1200 OC ATTACH RAFTER TO STUD W/ (4)-#12 SCREWS

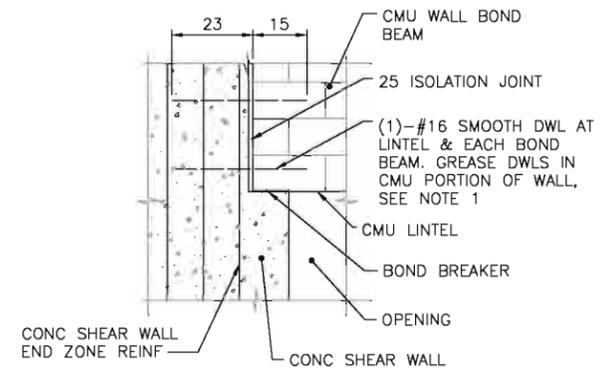
1.37 COLD-FORMED METAL TRACK CONT W/ Ø13 EXP BOLTS @ EACH STUD. SEE 5/S-702 FOR ANGLE. USE (1)-#12 SCREW @ EACH FLANGE OF STUD.

FASTEN TRACK TO STUD WITH #12 SCREW EACH FLANGE.

**DETAIL**  
SCALE: NONE



**SECTION**  
SCALE: NONE



NOTE:  
1. THE SMOOTH DOWEL ROD TO SHEAR WALL END ZONE REINF FOR EACH BOND BEAM AND LINTEL.

**DETAIL**  
SCALE: NONE

NO.	DATE	DESCRIPTION	MARK

DESIGNED BY:	OWNED BY:	DATE:	SOLICITATION NO.:
DRAWN BY:	CONTRACT NO.:		
SUBMITTED BY:	FILE NUMBER:		

U.S. ARMY CORPS OF ENGINEERS  
AFGHANISTAN DISTRICT  
APO AE 96338

SITE ADAPT DESIGN  
B25 - WOMENS BARRACKS  
TYPICAL DETAILS  
SHEET 2



































