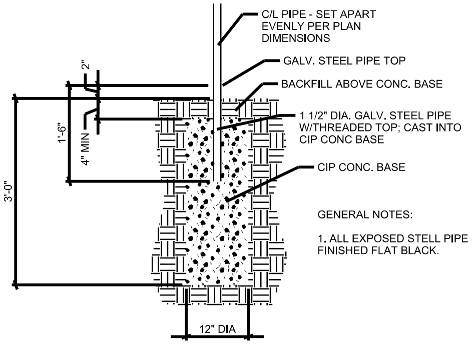
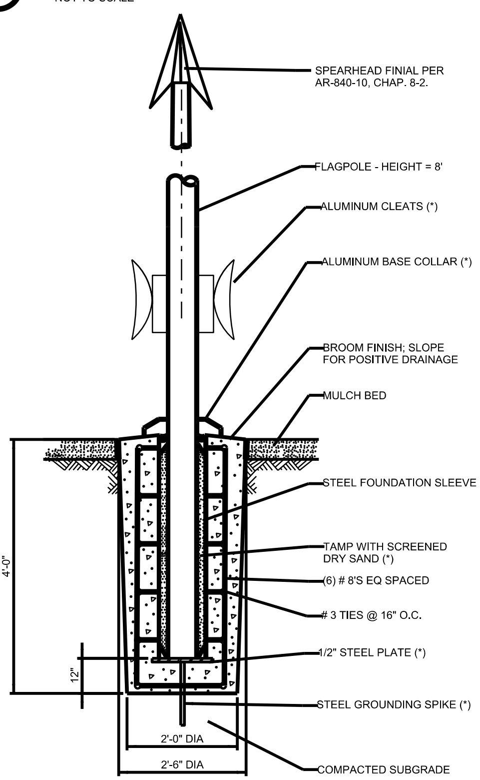


GENERAL NOTES:

1. ALL EXPOSED STELL PIPE & PIPE TOPS TO BE FINISHED FLAT BLACK.

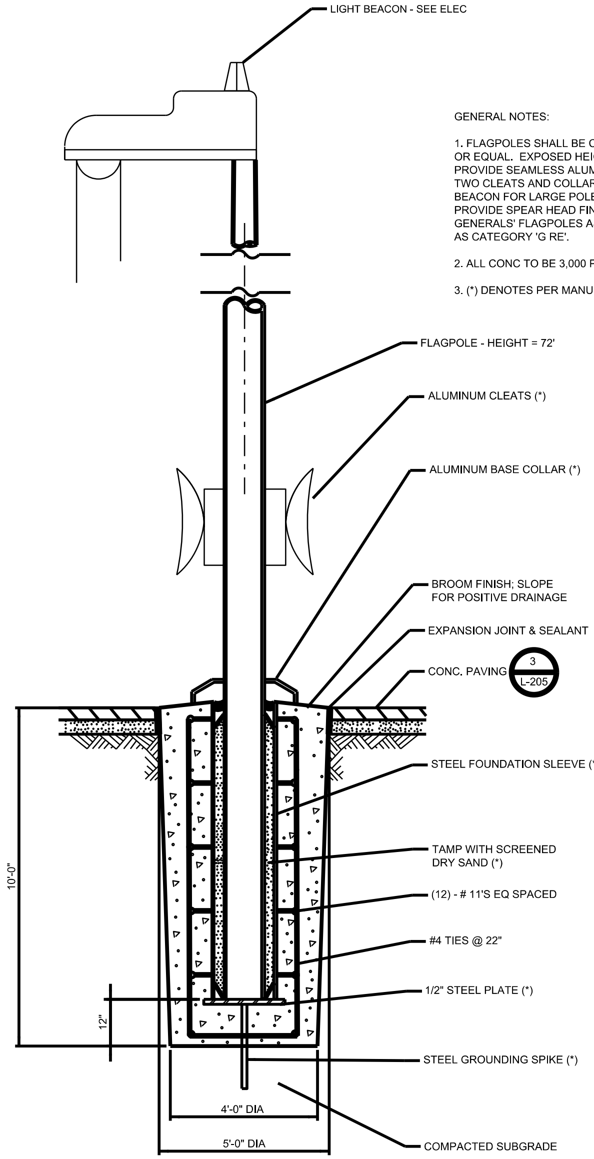
3 L-101 SECTION - COLOR GUARD & STATE/TERRITORY FLAGSTAND

NOT TO SCALE



2 L-101 SECTION - GENERAL FLAG POLES

NOT TO SCALE



GENERAL NOTES:

1. FLAGPOLES SHALL BE CONTINENTAL EXTERNAL ROPE FLAGPOLES, OR EQUAL. EXPOSED HEIGHT AS INDICATED ON THE DRAWINGS. PROVIDE SEAMLESS ALUMINUM POLE WITH TRUCK, HALYARD, TWO CLEATS AND COLLAR. PROVIDE OBSTRUCTION LIGHT BEACON FOR LARGE POLE, AS INDICATED ON THE DRAWINGS. PROVIDE SPEAR HEAD FINIAL FOR EACH OF THE FOUR (4) GENERALS' FLAGPOLES AS INDICATED ON THE DRAWINGS. SUBMIT AS CATEGORY 'G RE'.

2. ALL CONC TO BE 3,000 PSI.

3. (*) DENOTES PER MANUFACTURER.

1 L-101 SECTION - MAIN FLAG POLE

NOT TO SCALE

US Army Corps of Engineers
Kansas City District

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

APPROVED FOR CONSTRUCTION

Date: SEPT 2006

Drawing code: F:178-59-01

Plot scale:

CADD File Name:

Designed by: KrS

Drawn by: KrS

Checked by:

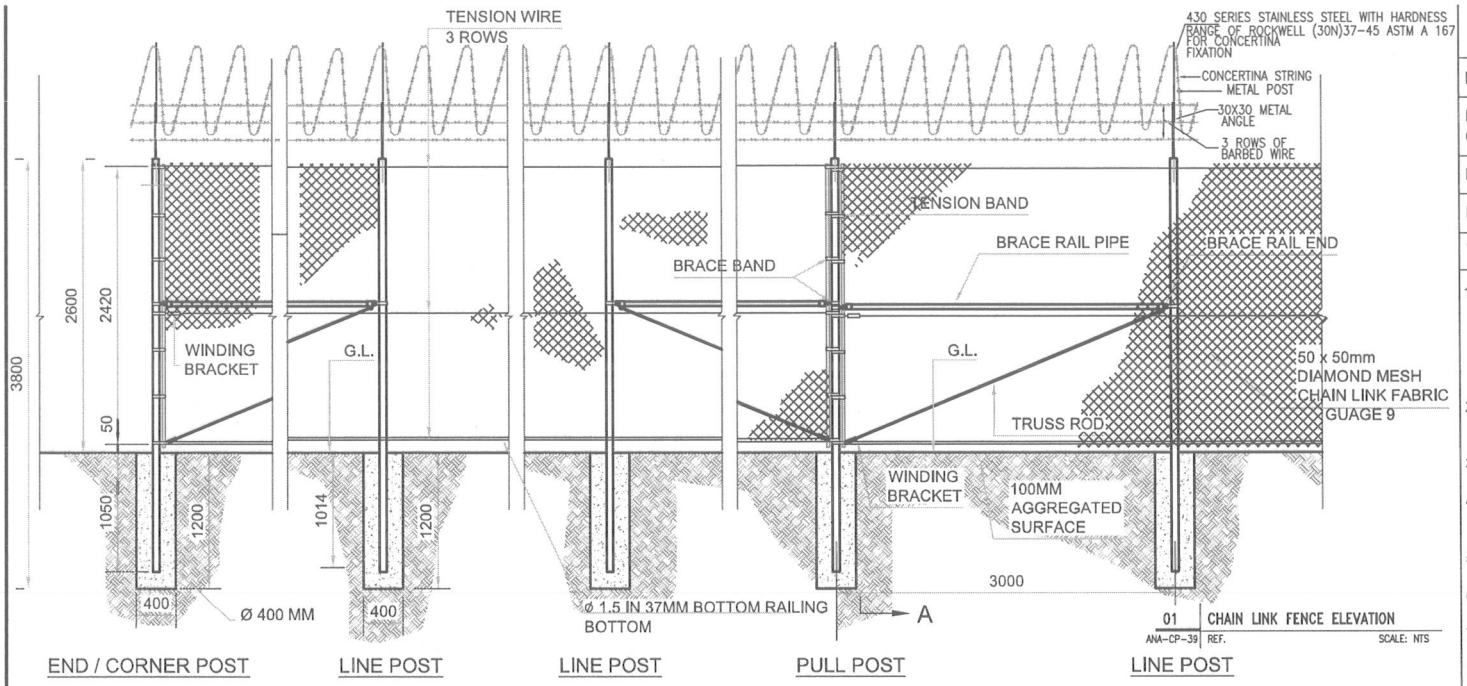
Submitted by:

FORT RILEY, KANSAS
1ST INFANTRY DIVISION
COMMAND HEADQUARTERS
PN 63983, FY06

MISC. SITE DETAILS
FLAGPOLES

Sheet Reference Number:

L-204



01 CHAIN LINK FENCE ELEVATION
ANA-CP-39 REF. SCALE: NTS

NOTES

LINE POST	60.3mm O.D. x 3.91mm WALL THICK
PULL / END / CORNER POST	73.0mm O.D. x 5.16mm WALL THICK
BRACE RAIL PIPE	42.2mm O.D. x 3.56mm WALL THICK
FABRIC	3.0mm DIA GALVANISED WIRE
TENSION WIRE	3.76mm DIA GALVANISED WIRE

1) FABRIC :- "CLICLINK" GALVANISED CHAIN LINK FABRIC,
50 x 50mm DIAMOND MESH, 3.0mm DIA GALVANISED WIRE,
FABRIC HEIGHT 2.42 M, BARBED SELVAGE.

2) TENSION WIRE :- "CLICLINK" 3.76mm DIA GALVANISED WIRE.

3) FITTINGS :- GALVANISED.

4) PIPES :- GALVANISED, CONFORMS TO ASTM A 53 SCH 40.

5) LINE POST SPACING @ EVERY 3.0 M.

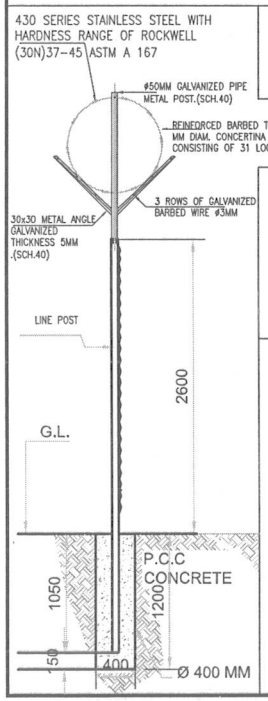
6) ALL DIMENSIONS ARE IN mm U.N.O.

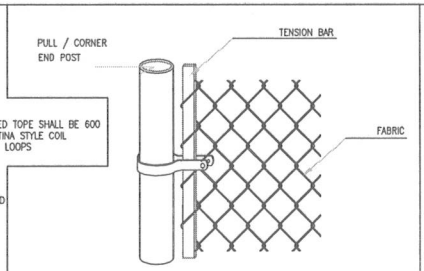
7) TENTION BAR: SIZE 30MM X 3MM STEEL GALVANIZED ALONG THE POST

8)BOTTOM RAILING Ø 1.5 IN

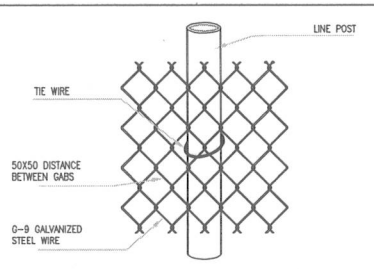
9) REINFORCED BARBED

REINFORCED BARBED TAPE SHALL BE 600 MM DIAMETER CONCERTINA STYLE COIL CONSISTING OF 31 LOOPS. EACH LOOP SHALL CONSIST OF 19 BARB CLUSTERS PER LOOP. ADJACENT COILS LOOPS SHALL BE ALTERNATELY CLIPPED TOGETHER AT THREE POINTS ABOUT THE CIRCUMFERENCE TO PRODUCE THE CONCERTINA EFFECT UPON DEPLOYMENT. SPACING BETWEEN ATTACHMENTS POINTS WHEN DEPLOYED SHALL BE 400 MM. THE REINFORCED BARBED TAPE SHALL BE FABRICATED FROM 430 SERIES STAINLESS STEEL WITH HARDNESS RANGE OF ROCKWELL (30N) 37-45 CONFORMING TO THE REQUIREMENTS OF ASTM A 176. EACH BARB SHALL BE A MINIMUM OF 30.5 MM (1.2 INCH) IN LENGTH, IN GROUPS OF 4, SPACED ON 102 MM (4 INCH) CENTERS. THE STAINLESS STEEL CORE WIRE SHALL HAVE A 2.5 MM (0.098 INCH) DIAMETER WITH A MINIMUM TENSILE STRENGTH OF 895 MPA. SIXTEEN GAUGE STAINLESS STEEL TWISTABLE WIRE TIES SHALL BE USED FOR ATTACHING THE BARBED TAPE TO THE BARBED WIRE. THE REINFORCED BARBED TAPE SHALL BE EQUIVALENT TO NSN: 5660-01-457-9852.

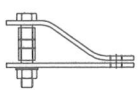




TENSION BAR CONNECTION

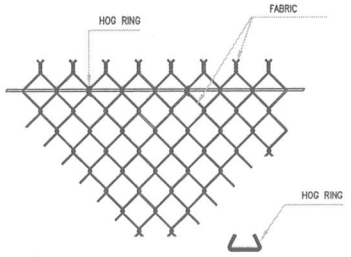


FIXING OF THE TIE WIRE ON LINE POST / BRACE RAIL PIPE

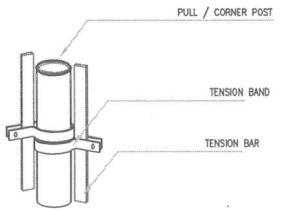


WINDING BRACKET

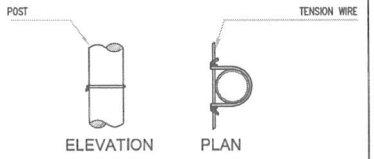
POST CAP



TYING FABRIC TO TENSION WIRE

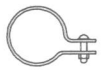


PULL / CORNER POST CONNECTION



TYING TENSION WIRE

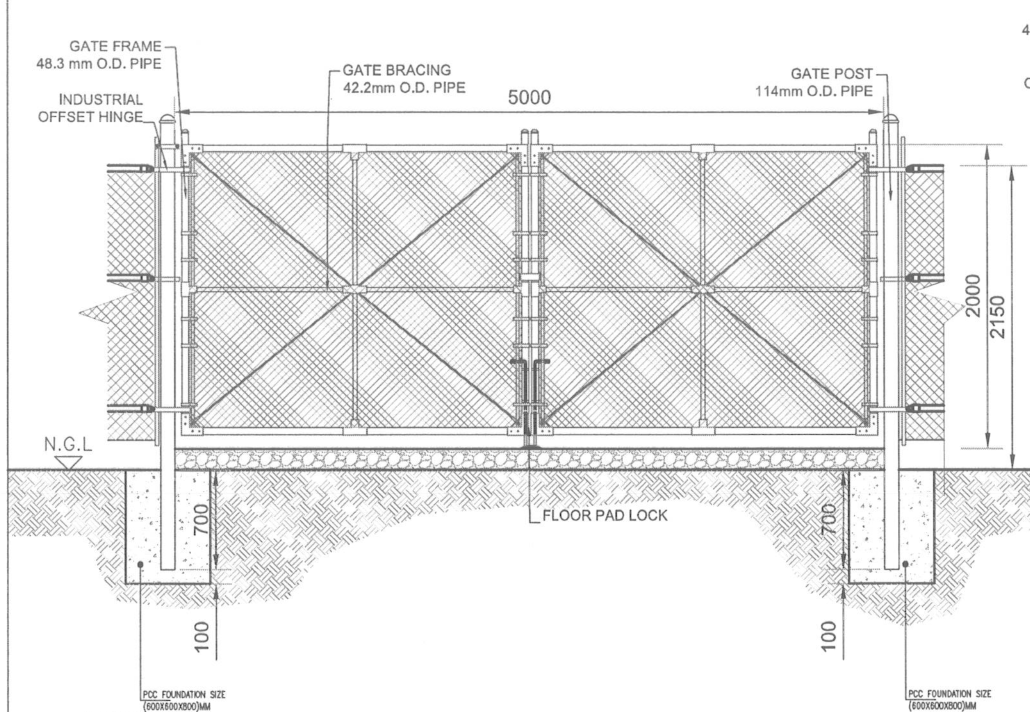
BRACE BAND



TENSION BAND

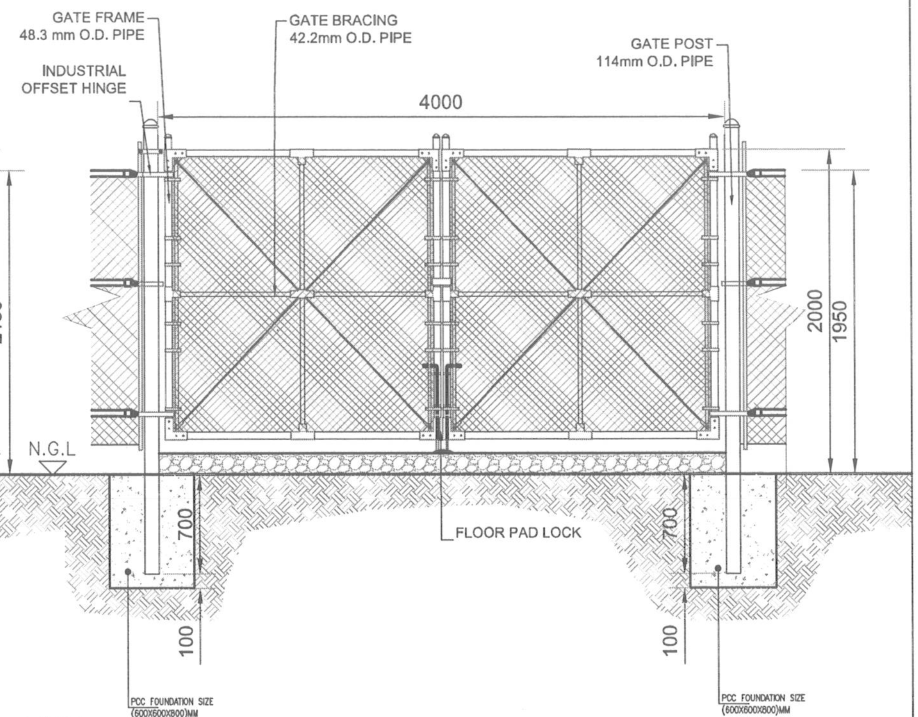
02 CHAIN LINK FENCE SECTION-01
ANA-CP-39 REF. SCALE: NTS

03 DETAILS
ANA-CP-39 REF. SCALE: NTS



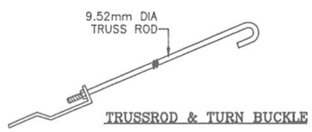
01 | 5 METER WIDTH CHAIN LINK GATE ELEVATION

CO-A-05 | REF. 116-A-80 SCALE: 1:20

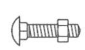


02 | 4 METER CHAIN LINK GATE ELEVATION

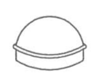
CO-A-05 | REF. 116-A-80 SCALE: 1:20



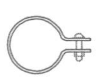
TRUSSROD & TURN BUCKLE



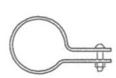
CARRIAGE BOLT



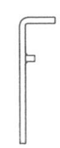
POST CAP



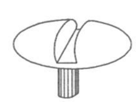
BRACE BAND



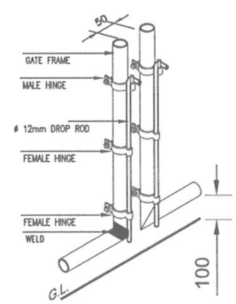
TENSION BAND



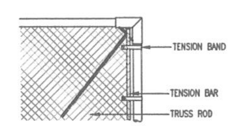
GATE DROP ROD



GATE CENTER STOP

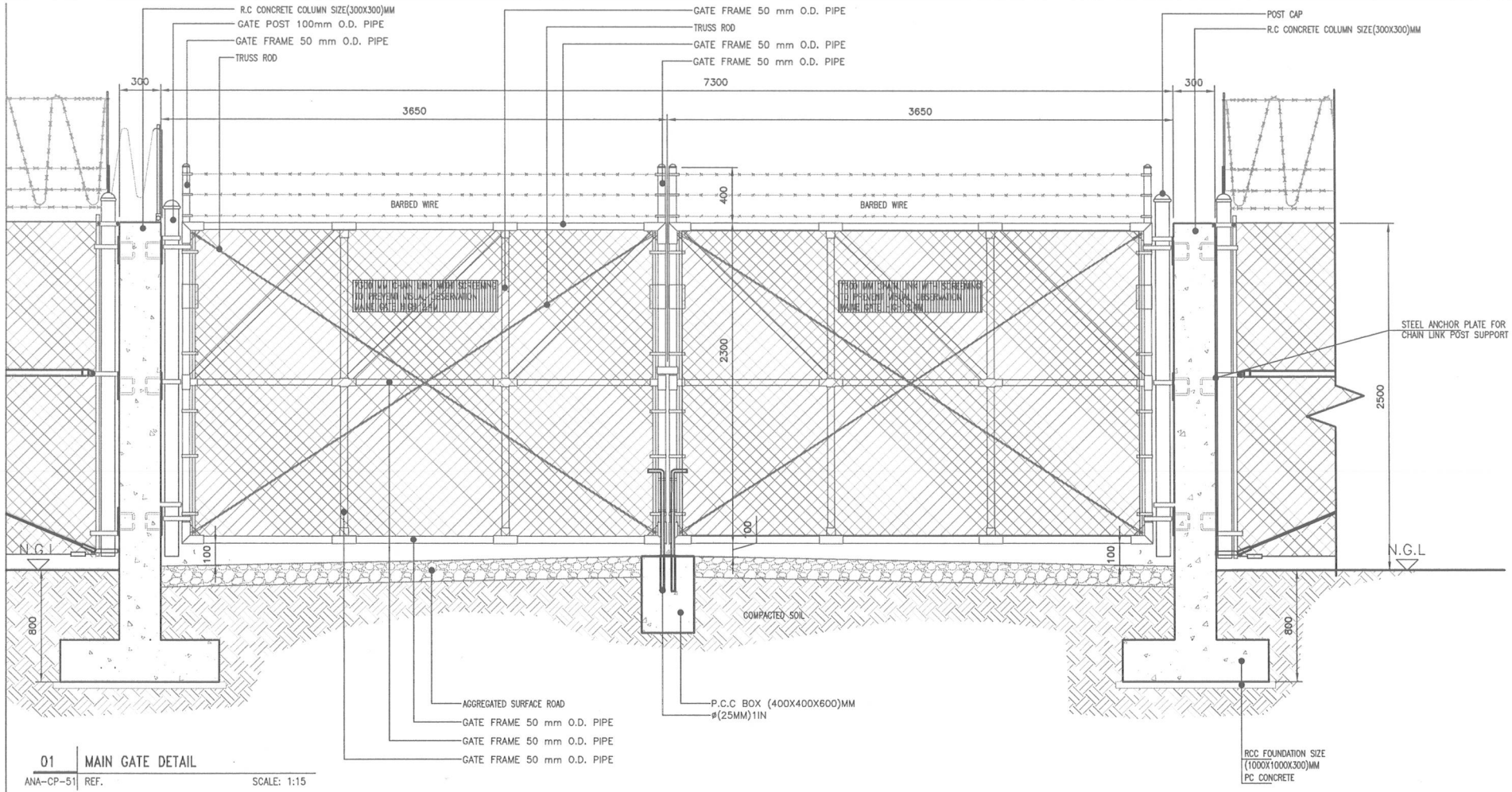


GATE DROP ROD ASSEMBLY



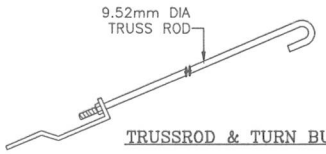
GATE FRAME DETAIL

Contract Date:
Drawn BY:
Designed BY:
DEPARTMENT OF THE ARMY
AFGHAN NATIONAL ARMY (ANA) PROGRAM

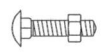


01 | MAIN GATE DETAIL

ANA-CP-51 | REF. SCALE: 1:15

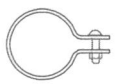


TRUSSROD & TURN BUCKLE



CARRIAGE BOLT

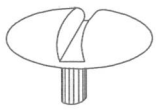
POST CAP



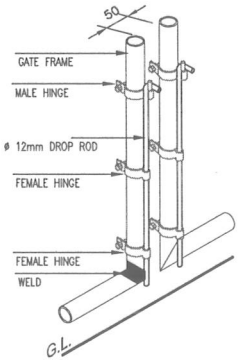
BRACE BAND

TENSION BAND

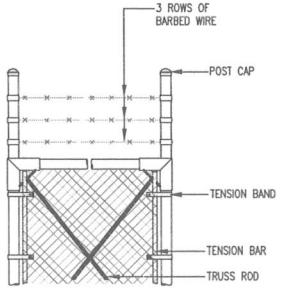
GATE DROP ROD



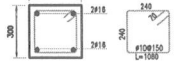
GATE CENTER STOP



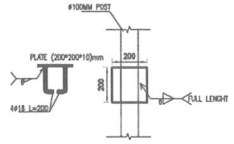
GATE DROP ROD ASSEMBLY



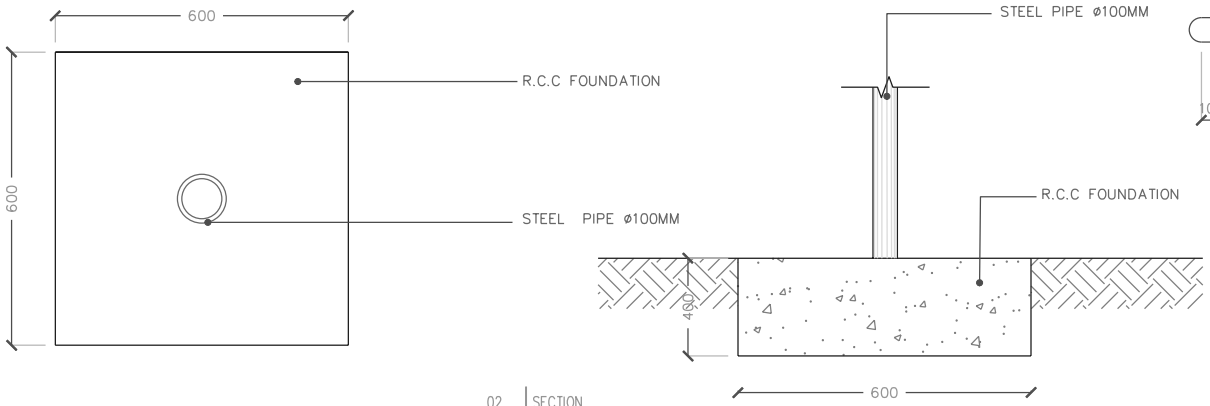
GATE FRAME DETAIL



RCC COLUMN REINFORCEMENT

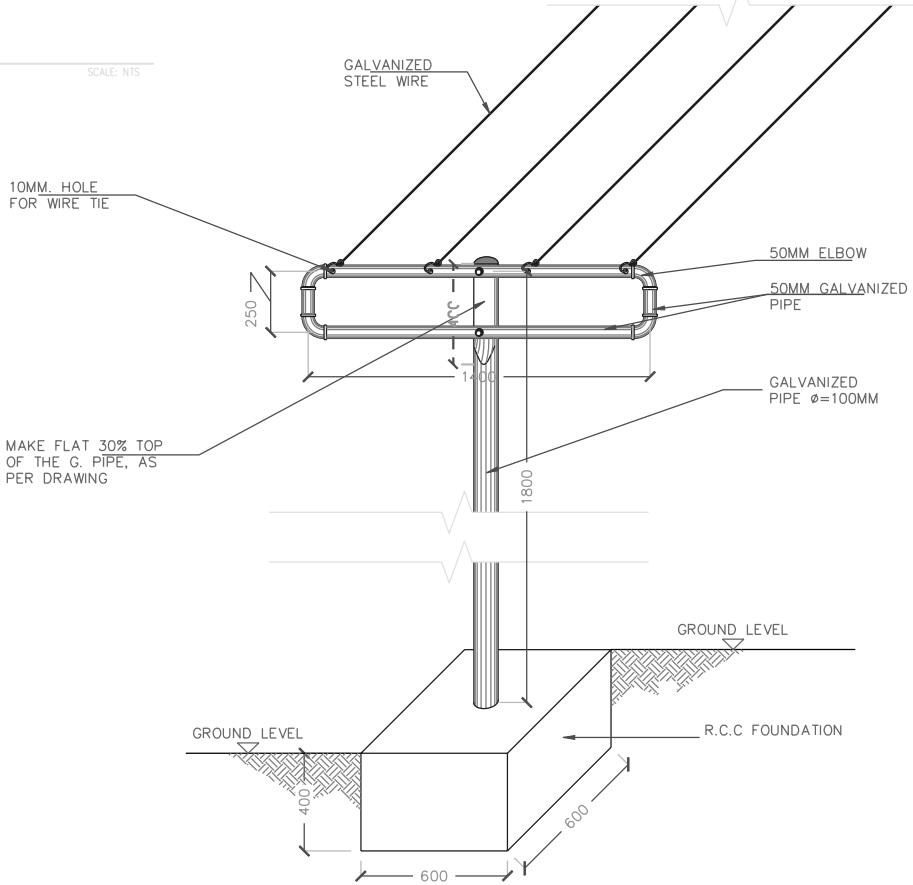


STEEL ANCHOR PLATE

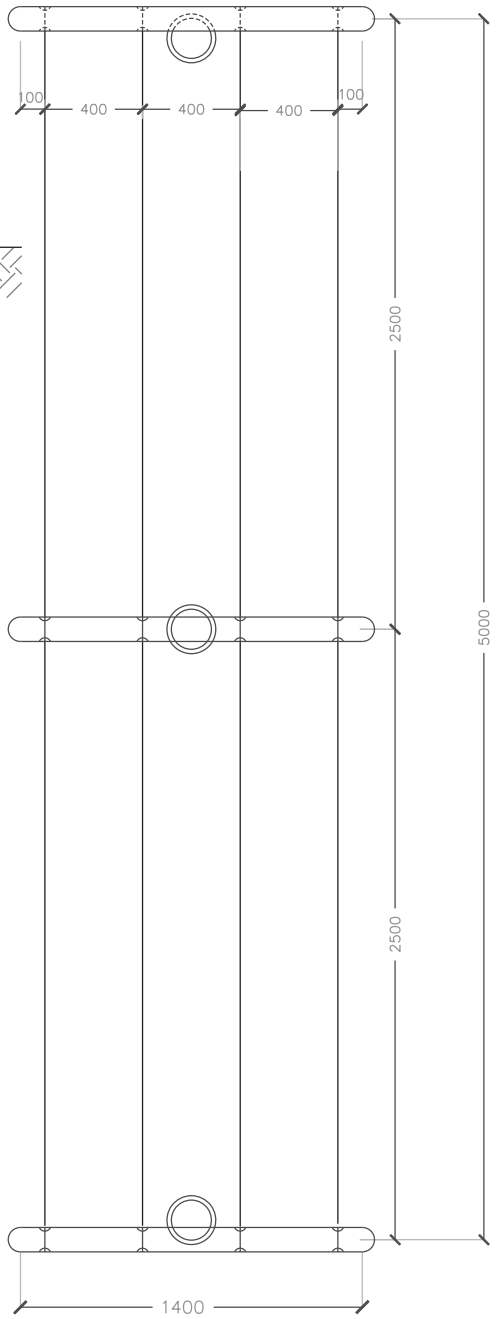


02 SECTION
100-CP-64 REF. SCALE: NTS

01 PLAN
100-CP-64 REF. 100-CP-01 SCALE: NTS



02 ISOMETRIC VIEW
100-CP-64 REF. SCALE: NTS



03 TOP VIEW
100-CP-64 REF. SCALE: NTS

STANDARD DETAIL-CLOTHESLINE

U.S. ARMY CORPS OF ENGINEERS
AFGHANISTAN ENGINEER DISTRICT

Symbol	Description	Date	Appr.
A	35% DESIGN SUBMITTAL	27-05-10	

Designed By: A.FAREED
Drawn By: DAUD
Contract Date: 20-MAR-2010
Reviewed by: A. FARYAD
Drew Code: RMTC
FILE NAME: 100-CP-64
Submitted by: FAWAD OSMAN
Plot Date: 26-MAY-2010
Chf., E & C
Plot Scale: NTS
Solicitation No: W917PM-09-R-0111
Contract No: W5J9JE-10-C-0017

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
AFGHANISTAN ENGINEERS DISTRICT
KABUL, AFGHANISTAN

Contractor: PCBE
Designer: Unified Infrastructure Projects

AFGHAN NATIONAL ARMY (ANA)
SHINDAND, AFGHANISTAN
PDC: RMTC
ANA REGIONAL MILITARY TRAINING CENTER
FY-10

GENERAL DETAILS
CLOTHES LINES DETILES

Sheet Reference Number:
XXX-CP-64

23
STANDARD BUILDING DESIGNS

V10 - VEHICLE MAINTENANCE (3 BAY)

with DESIGN/BUILD SMALL ARMS ROOM

SHEET INDEX

SHEET INDEX (CONTINUED)

US Army Corps of Engineers®
AFGHANISTAN ENGINEER DISTRICT

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
AFGHANISTAN DISTRICT
APO AE 09356

DESIGNED BY: | DATE:
DWN BY: | CKD BY: | SOLICITATION NO.:
SUBMITTED BY: | CONTRACT NO.:
PLOT SCALE: 1 = 1 | PLOT DATE: $DATE$ | FILE NUMBER:
SIZE: ANSI D | FILE NAME: $FILE$

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

COVER SHEET

SHEET IDENTIFICATION
G1
SHEET 1 OF 25

$FILE$ $DATE$ $TIME$

STRUCTURAL ABBREVIATIONS:

ACI	AMERICAN CONCRETE INSTITUTE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
ARCH	ARCHITECTURAL
B	BOTTOM
BLDG	BUILDING
BOTT	BOTTOM
℄	CENTER LINE
CFMF	COLD FORM METAL FRAME
CFS	COLD FORMED STEEL
CIP	CAST IN PLACE
CIPL	CAST-IN-PLACE LINTEL
CJ	CONTROL JOINT
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COEFF	COEFFICIENT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
COORD	COORDINATE
CSJ	CONSTRUCTION JOINT
CTJ	CONTROL JOINT
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DWG	DRAWING
DWL	DOWEL
EA	EACH
ELEC	ELECTRICAL
ELEV	ELEVATION
EMBED	EMBEDMENT
EQUIV	EQUIVALENT
ETC	ET CETERA
E.W.	EACH WAY
EXT	EXTERIOR
FTG	FOOTING
GA	GAUGE
HORIZ	HORIZONTAL
HRS	HOURS
IBC	INTERNATIONAL BUILDING CODE
INT	INTERIOR
Kg	KILOGRAM
KIP	KIPS (1 KIP = 1,000 POUNDS)
kN	KILONEWTON
kPa	KILOPASCAL
L#	ANGLE (# INDICATES SIZE)
LLV	LONG LEG VERTICAL
M	METER
MAX	MAXIMUM
MBM	METAL BUILDING MANUFACTURER
MBMA	METAL BUILDING MANUFACTURERS ASSOCIATION
MECH	MECHANICAL
MFG	MANUFACTURER
MID	MIDDLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MM	MILLIMETER
MPa	MEGAPASCAL
MTL	METAL
MWFRS	MAIN WIND FORCE RESISTING SYSTEM
N	NEWTON
N	NORTH
N/A	NOT APPLICABLE
#	NUMBER SYMBOL FOR REBAR SIZE
NTS	NOT TO SCALE
O.C.	ON CENTER
OPNG	OPENING
P or PL	PLATE
PRE-ENG	PRE-ENGINEERED
REINF	REINFORCED
REQ'D	REQUIRED
SIM	SIMILAR
SPECS	SPECIFICATIONS
STD	STANDARD
STRUCT	STRUCTURAL
T	TOP
T/	TOP OF
T/ELEV	TOP ELEVATION
T&B	TOP AND BOTTOM
THK	THICK
TM	TRADE MARK
TYP	TYPICAL
UFC	UNIFIED FACILITIES CRITERIA
UON	UNLESS OTHERWISE NOTED
VERT	VERTICAL
W	WIDTH
W/	WITH

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 CRITERIA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ALLOWABLE CONSTRUCTION LOADS AND TO PROVIDE PROPER DESIGN AND CONSTRUCTION OF FALSEWORK, FORMWORK, STAGING, BRACING, SHEETING AND SHORING, ETC.

1.1 COORDINATE THESE SHEETS WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND CIVIL SHEETS. ALL DIMENSIONS SHOWN ON THE SHEETS ARE MILLIMETERS UNLESS NOTED OTHERWISE.

1.2 THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL FLOOR AND ROOF OPENING SIZES AND LOCATIONS, EQUIPMENT PAD SIZES AND LOCATIONS, ANCHOR BOLT LAYOUTS, ETC WITH EQUIPMENT SELECTED. THE CONTRACTOR SHALL MAKE ANY REQUIRED MODIFICATIONS AT NO ADDITIONAL COST.

1.3 THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING SHEETS FOR SLEEVES, CURBS, INSERTS OR OPENINGS, ETC. NOT HEREIN INDICATED.

1.4 SLAB OPENINGS SMALLER THAN 250mm DIA TO BE CORE DRILLED IN FIELD UON. SEE MECHANICAL, ELECTRICAL AND PLUMBING SHEETS FOR LOCATIONS OF THESE OPENINGS.

1.5 WORK NOT INCLUDED ON THE SHEETS BUT IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES ELSEWHERE ON THE SHEETS SHALL BE REPEATED.

1.6 IN CASE OF CONFLICT BETWEEN THE NOTES, DETAILS AND SPECIFICATIONS THE MOST RIGID REQUIREMENTS SHALL GOVERN.

1.7 SEE ARCHITECTURAL SHEETS FOR LOCATIONS OF MASONRY AND DRYWALL NON-LOAD BEARING PARTITIONS. PROVIDE COMPRESSIBLE FIRESAFING AT TOP OF WALL AS REQUIRED BY ARCHITECTURAL SHEETS.

1.8 COORDINATE FINISHED FLOOR DATUM ELEVATION 0.0m WITH THE CIVIL SHEETS.

1.9 DESIGN PRE-ENGINEERED METAL BUILDINGS IN ACCORDANCE W/ MBMA LATEST EDITION PER DESIGN CRITERIA ON SHEET S2.

2.0 FOUNDATION NOTES

2.1 THE GEOTECHNICAL ANALYSIS FOR THIS PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR AWARDED THE WORK. DESIGN VALUES USED IN THE STRUCTURAL ANALYSIS OF THE BUILDINGS HEREIN INDICATED HAVE BEEN ASSUMED AND SHALL BE CONFIRMED AND VERIFIED AS PART OF THE GEOTECHNICAL INVESTIGATION. VALUES WHICH DO NOT MEET THE REQUIREMENTS INDICATED ON SHEET S2 SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER FOR CONSIDERATION AND DETERMINATION ON THE NEXT APPROPRIATE COURSE OF ACTION.

2.2 SEE THE SPECIFICATION FOR ADDITIONAL REQUIREMENTS TO THOSE OUTLINED IN THE GEOTECHNICAL INVESTIGATION FOR EXCAVATION AND PREPARATION OF THE FOUNDATION AND THE SLAB ON GRADE SUBGRADE INCLUDING COMPACTION PROCEDURES.

2.3 EXCAVATIONS FOR FOOTINGS SHALL HAVE THE SIDES AND BOTTOMS TEMPORARILY LINED WITH 0.25mm POLYETHYLENE IF PLACEMENT OF CONCRETE DOES NOT OCCUR WITHIN 24 HRS OF THE EXCAVATION OF THE FOOTING.

2.4 FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION WHICH DIFFER FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT SHALL BE REPORTED TO THE GENERAL CONTRACTOR BEFORE FURTHER CONSTRUCTION IS ATTEMPTED. SEE PROJECT SPECIFICATIONS.

2.5 NO FOOTINGS OR SLABS SHALL BE POURED INTO OR AGAINST SUBGRADE CONTAINING FREE WATER, FROST, ICE OR LOOSE MATERIAL. FROST DEPTH ASSUMED TO BE 800MM

2.6 ALL SLAB-ON-GRADE, TRENCH BOTTOMS AND OTHER ON-GRADE INTERIOR HORIZONTAL SURFACES SHALL BE PLACED OVER A 0.25mm VAPOR RETARDER OVER A 100mm #57 STONE WATER BARRIER PLACED ON SUBGRADE PROPERLY PREPARED IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS. (UON)

2.7 SEE PLUMBING, ELECTRICAL & CIVIL SHEETS FOR REQUIRED UNDERSLAB UTILITIES.

2.8 SEE ARCHITECTURAL SHEETS FOR ALL WATERPROOFING DETAILS AND MATERIALS.

2.9 IF UNDERMINING OF FOOTINGS OCCURS, FILL VOIDS WITH 15MPa CONCRETE. DO NOT ATTEMPT TO REPLACE AND RECOMPACT SOIL.

3.0 CONCRETE

3.1 CONCRETE SHALL HAVE THE UNIT WEIGHT AND THE MINIMUM COMPRESSIVE STRENGTHS (f'c) AT 28 DAYS AS SHOWN IN THE CONCRETE MATERIALS SCHEDULE ON SHEET S3. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION. ENTRAIN AIR TO PRODUCE TOTAL AIR CONTENT ACCORDING TO THE SPECIFICATIONS FOR CONCRETE EXPOSED TO FREEZING TEMPERATURES (EXTERIOR FOOTINGS, SLAB TURNDOWNS, EXTERIOR SLABS AND SLABS-ON-GRADE, EXTERIOR RETAINING WALLS, AND EXTERIOR GRADE BEAMS.)

3.2 GROUT FOR BASE PLATES SHALL BE NON-SHRINKABLE GROUT AND SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH AT 28 DAYS OF 35MPa, UNLESS NOTED OTHERWISE.

3.3 NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE.

3.4 MIXING, TRANSPORTING AND PLACING OF CONCRETE SHALL CONFORM TO ACI 301M-05

3.5 ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN CONCRETE INSTITUTE (ACI) 318M MANUAL (metric), "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", AND REQUIREMENTS OUTLINED IN THE CONTRACT SPECIFICATIONS. WHEN THERE IS A CONFLICT BETWEEN ACI AND THE SPECIFICATIONS, THE MORE STRINGENT SHALL GOVERN.

3.6 CHAMFER ALL EXPOSED EXTERNAL CORNERS OF CONCRETE WITH 20mm x45 DEGREE CHAMFER UON.

3.7 CONCRETE REINFORCEMENT BARS SHALL CONFORM TO ASTM A615M-96a, GRADE 420 MPa. REINFORCING BARS SHALL NOT BE TACK WELDED, WELDED, HEATED OR CUT, UNLESS INDICATED ON THE CONTRACT DOCUMENTS. ALL LAP SPLICES SHALL BE CLASS "B" UON.

3.8 HORIZONTAL FOOTING AND HORIZONTAL WALL REINFORCEMENT SHALL BE CONTINUOUS AND SHALL HAVE 90 DEGREE BENDS AND EXTENSIONS, OR CORNER BARS OF EQUIVALENT SIZE LAPPED WITH A CLASS B TENSION SPLICE AT CORNERS AND INTERSECTIONS. TOP BAR CRITERIA SHALL APPLY IF 300mm OR MORE OF FRESH CONCRETE IS PLACED BELOW BAR.

3.9 SLABS-ON-GRADE SHALL HAVE CONSTRUCTION JOINTS OR CRACK CONTROL JOINTS AS SHOWN ON THE SHEETS. CONSTRUCTION JOINTS CAN BE USED AT CONTROL JOINT LOCATIONS AT CONTRACTORS OPTION. SEE SLAB PLANS & JOINT DETAILS FOR ADDITIONAL INFORMATION. FOR AREAS NOT SHOWN ON SHEETS, THE MAXIMUM SPACING OF CONSTRUCTION/ CRACK CONTROL JOINTS SHALL BE 4800mm

3.10 SEE SPECIFICATIONS FOR ALL WATERPROOFING/DAMPPROOFING REQUIREMENTS.

3.11 ALL CONCRETE REINFORCEMENT SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED, AND SPACED IN FORMS AND SECURED IN PLACE IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OUTLINED IN THE LATEST EDITION OF THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318M, AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315M, LATEST EDITION.

3.12 SHOP DRAWINGS SHOWING REINFORCING DETAILS, INCLUDING STEEL SIZES, SPACING AND PLACEMENT, SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION.

3.13 ALL DOWELS SHALL MATCH SIZE AND NUMBER OF MAIN REINFORCING, UNLESS NOTED OTHERWISE ON SHEETS.

3.14 ADDITIONAL BARS SHALL BE PROVIDED AROUND ALL FLOOR AND WALL OPENINGS AS SHOWN ON THE SHEETS.

3.15 SEE ARCHITECTURAL SHEETS FOR TYPE AND LOCATION OF ALL FLOOR FINISHES.

3.16 THE CONTRACTOR SHALL COORDINATE ADDITIONAL WALL/SLAB OPENINGS NOT SHOWN ON STRUCTURAL SHEETS. SEE MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL SHEETS.

3.17 UNLESS NOTED OTHERWISE, ALL CURBS SHALL BE REINFORCED WITH AT LEAST (1)-#13 CONTINUOUS AND #13 AT 300mm O.C. DOWELS TO STRUCTURE BELOW.

3.18 THE SUB-CONTRACTOR SHALL VERIFY ALL OPENINGS, PAD SIZES, AND ANCHOR BOLTS WITH EQUIPMENT SELECTED.

3.19 FOR ALL WALLS & PIERS, PROVIDE DOWELS INTO FOOTING AT EACH VERT REINF BAR, UON DOWEL SIZE SHALL BE SAME AS VERT REINF.

3.20 ALL DEFORMED BAR ANCHORS SHALL BE TRS NELSON DIVISION OR EQUAL 15mm DIA (UON) CONFORMING TO ASTM A-496M WITH A MINIMUM TENSILE STRENGTH OF 550 MPa. ANCHOR DIMENSIONS SHALL BE IN ACCORDANCE WITH ASTM D-19. INSTALL ANCHORS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS BY AUTOMATIC END WELDING AS INDICATED ON THE DRAWINGS. NO UNAUTHORIZED OR FIELD WELDING SHALL BE MADE WITHOUT AUTHORIZATION FROM THE MANUFACTURER.

3.21 ALL REINFORCING INDICATED TO BE WELDED SHALL BE IN ACCORDANCE WITH ASTM A706M. "LOW ALLOY STEEL DEFORMED BARS FOR CONCRETE REINFORCEMENT". ANY INSTALLATIONS USING MANUFACTURER'S EQUIPMENT SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.

3.22 PROVIDE CONCRETE POUR STOPS OR FORMS AS REQUIRED FOR INSTALLATION OF ALL CONCRETE WORK.

3.23 PROVIDE ADDITIONAL (2)-#13 x 600mm REINFORCING BARS IN SLAB-ON-GRADE AT ALL RE-ENTRANT CORNERS. PLACE BARS AT MID-DEPTH OF SLAB WITH A CLEARANCE OF 50mm FROM CORNER UON.

4.0 CONCRETE MASONRY

4.1 MASONRY CONSTRUCTION AND MATERIALS SHALL CONFORM TO ALL REQUIREMENTS OF THESE CONTRACT DOCUMENTS AND THE PROJECT SPECIFICATIONS.

4.2 THE SPECIFIED ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE MASONRY (f'm) ON THE NET AREA IS A MINIMUM OF 10.4 MPa.

4.3 PROVIDE TWO #16 BARS CONTINUOUS IN ALL CMU AND CAST-IN-PLACE BOND BEAMS UON ON THE SHEETS. INTERMEDIATE BOND BEAMS SHALL BE CONTINUOUS AND SPACED AT A MAXIMUM OF 1200mm OC VERTICALLY. ALL BOND BEAMS SHALL BE A MINIMUM OF 200mm IN DEPTH WITH REINFORCING BEING CONTINUOUS AND HAVING STANDARD ACI HOOKS AT EACH END. PROVIDE STANDARD BAR SPLICES AS SPECIFIED.

4.4 FOR MINIMUM WALL REINFORCING, SEE MIN CMU WALL REINFORCING DETAILS ON SHEET S10.

4.5 CMU CELLS THAT REQUIRE VERTICAL REINFORCING BARS AS INDICATED ON THE CONTRACT DRAWINGS AND/OR SPECS SHALL HAVE REINF BAR PLACED IN CENTERS OF CMU CELLS AND CONTINUOUSLY GROUTED UON.

4.6 PROVIDE LADDER TYPE JOINT REINFORCEMENT AT 200mm FOR EXTERIOR & 400mm FOR INTERIOR ON CENTER MAXIMUM, UON MINIMUM ROD SIZE USED SHALL BE 9 GA. DEFORMED WIRE AND CONFORM TO ASTM A82M, UON.

4.7 PROVIDE CONTROL JOINTS AS INDICATED ON THE ARCHITECTURAL SHEETS.

4.8 GROUT FOR MASONRY SHALL BE NORMAL WEIGHT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 25 MPa AT 28 DAYS. GROUT SHALL CONFORM TO ASTM C476M. GROUT LIFTS SHALL NOT EXCEED 1400mm.

4.9 USE MORTAR TYPE S CONFORMING TO ASTM C270M, SEE SPECIFICATIONS.

4.10 CONCRETE MASONRY UNITS SHALL BE NORMAL WEIGHT AND CONFORM TO ASTM C90M.

4.11 ALL CMU CELLS, OPEN CAVITIES, AND AIR SPACES SHALL BE GROUTED. TO STOP FRAGMENTS FROM MORTAR BLAST

4.12 BOND BEAM REINFORCING SHALL BE DISCONTINUOUS AT CONTROL JOINTS (UON). MAXIMUM CONTROL JOINT SPACING SHALL BE AS INDICATED ON THE ARCHITECTURAL SHEETS.

4.13 CONTRACTOR SHALL COORDINATE LOCATION OF ALL OPENINGS SEE ARCH, MECH, ELEC, AND PLUMBING SHEETS. FOR SIZE AND LOCATION OF OPENINGS.

4.14 MASONRY WALLS SHALL NOT BE BACK FILLED PRIOR TO THE MORTAR AND GROUT ATTAINING THEIR RESPECTIVE MAXIMUM DESIGN STRENGTHS PER SPECIFICATIONS.

5.0 STEEL DECK

5.1 STEEL DECK SHALL BE ASTM A611M, GRADES C & D OR A653M STRUCTURAL QUALITY HAVING A MINIMUM YIELD STRENGTH OF 345 MPa AS PER THE STEEL DECK INSTITUTE (SDI) DESIGN MANUAL.

5.2 STEEL DECK SHALL BE ERECTED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND ERECTION LAYOUTS AND CONNECTED TO SUPPORTING MEMBERS AS INDICATED.

5.3 COMPOSITE FLOOR DECK

5.3.1 STEEL FLOOR DECK SHALL BE 51mm RIB HEIGHT, 18 GA HOT-DIP GALVANIZED (SDI TYPE 2VLI-18) UON.

5.3.2 FLOOR DECK SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

	18 GAUGE
MOMENT OF INERTIA, Ip	760mm4/mm WIDTH
SECTION MODULUS (TOP OF DECK), Sn	27.5mm3/mm WIDTH
SECTION MODULUS (BOTT OF DECK) Sp	27.8mm3/mm WIDTH

5.3.3 FLOOR DECK SHALL BE FASTENED TO THE SUPPORTS AS INDICATED IN THE BOTTOM OF THE FLUTES USING A SDI 36/7 PATTERN. DECK SIDELAPS SHALL BE ATTACHED USING #10 SELF-TAPPING TEK SCREWS WITH A MINIMUM 3-SIDE LAP CONNECTIONS PER SPAN.

5.3.4 SUSPENDED CEILINGS, LIGHT FIXTURES, DUCTS, CONDUITS, PIPING OR OTHER UTILITIES SHALL NOT BE SUPPORTED BY THE STEEL FLOOR DECK.

5.3.5 IN ADDITION TO MEETING THE MINIMUM REQUIREMENTS ABOVE, THE DECK MANUFACTURER SHALL DESIGN THE FLOOR DECK AND ATTACHMENTS TO STEEL FOR A MAXIMUM DEFLECTION DUE TO WET CONCRETE & 1 KPa CONSTANT LOAD OF L/240. FLOOR DECK SHALL NOT REQUIRE SHORING DURING CONCRETE PLACEMENT.

6.0 STRUCTURAL STEEL

6.1 STRUCTURAL STEEL ROLLED SHAPES AND PLATES SHALL CONFORM TO THE MATERIAL INFORMATION SCHEDULE. DIMENSIONS AND PROPERTIES SHALL BE IN ACCORDANCE TO ASTM A36M.

6.2 ANCHOR BOLTS SHALL CONFORM TO ASTM A36M HEAVY HEX UNLESS NOTED OTHERWISE.

6.3 CONNECTION BOLTS FOR STRUCTURAL STEEL MEMBERS SHALL BE 20 DIA ASTM A325M-N, UON; NUTS SHALL CONFORM TO ASTM A563M; WASHERS SHALL CONFORM TO ASTM F436M. CONNECTION BOLTS SHALL HAVE A HARDENED WASHER PLACED UNDER THE ELEMENT TO BE TIGHTENED.

6.4 DETAILING OF STRUCTURAL STEEL CONNECTIONS MUST BE CONSISTENT WITH RECOGNIZED, PUBLISHED METHODS SUCH AS IN THE AISC "STEEL CONSTRUCTION MANUAL", THIRTEENTH EDITION; "ENGINEERING FOR STEEL CONSTRUCTION", OR "VOLUME II CONNECTIONS MANUAL OF STEEL CONSTRUCTION".

6.4.1 THE CODE OF STANDARD PRACTICE OF AISC THIRTEENTH EDITION IS AMENDED SUCH THAT THE FABRICATOR/DETAILER IS RESPONSIBLE FOR THE DESIGN AND DETAILING OF ALL CONNECTIONS.

6.5 STANDARD FRAMING CONNECTIONS SHALL BE DETAILED BY THE FABRICATOR IN ACCORDANCE WITH THE AISC "STEEL CONSTRUCTION MANUAL", THIRTEENTH EDITION. CONNECTIONS SHALL BE DESIGNED TO DEVELOP A MINIMUM END REACTION OF 54kN.

6.5.1 UNLESS NOTED OTHERWISE AS THUS: (##kN), CONNECTIONS SHALL BE DESIGNED AND DETAILED FOR THE END REACTION DETERMINED FROM PART 2 - "ALLOWABLE UNIFORM LOAD TABLES" FROM THE AISC STEEL CONSTRUCTION MANUAL 13TH EDITION OR A MINIMUM OF 54 kN WHICH EVER IS GREATER.

6.6 ALL MEMBERS AND CONNECTIONS ON THE CONTRACT DRAWINGS AND CONNECTIONS NOT SHOWN SHALL BE DESIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER, DETAILED AND SUBMITTED FOR APPROVAL AND SHOWN ON THE SHOP DRAWINGS.

6.7 ALTERNATIVE CONNECTION DETAILS MAY BE SUBMITTED ON SHOP DRAWINGS BY THE CONTRACTOR ONLY IF ACCOMPANIED BY COMPLETE STRUCTURAL CALCULATIONS PREPARED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER AND SUBMITTED FOR REVIEW.

6.8 CALCULATIONS FOR DETAILS MUST SHOW A RATIONAL ANALYSIS OF A COMPLETE LOAD PATH, INCLUDING LOCAL EFFECTS ON WEBS, FLANGES, ETC OF THE CONNECTED MEMBERS AND THE DEVICES (PLATES, SEATS, BRACKETS, BOLTS, WEBS, ETC) AFFECTING ALL CONNECTIONS. FAILURE TO SUBMIT SUCH CALCULATIONS FOR REVIEW CONCURRENT WITH SHOP DRAWING ERECTION PLANS AND DETAILS WILL BE CAUSE FOR REJECTION OF THAT SUBMITTAL.

6.8.1 ALL SHEAR TAB CONNECTIONS SUBMITTED AS AN ALTERNATE FOR APPROVAL SHALL BE DESIGNED USING A FLEXIBLE SUPPORT CONDITION.

6.8.2 BEAM AND GIRDER CONNECTIONS SHALL BE DESIGNED SUCH THAT ALL ADDITIONAL STRESSES DUE TO CONNECTION ECCENTRICITY SHALL BE DEVELOPED BY THE CONNECTION AND NOT INDUCE ANY ADDITIONAL STRESSES INTO SUPPORTING MEMBERS.

6.9 STRUCTURAL STEEL DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO THE AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS - ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN" AND THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" - LATEST EDITIONS.

6.10 WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE AWS D1.1. ELECTRODES FOR SHOP AND FIELD WELDS SHALL BE CLASS E70XX. ALL WELDING SHALL BE DONE BY QUALIFIED, CERTIFIED WELDERS PER THE ABOVE STANDARD.

6.11 SHOP AND FIELD TESTING OF WELDS AND BOLTS SHALL BE AS OUTLINED IN THE SPECIFICATIONS.

6.12 ALL FILLET WELDS SHALL BE A MINIMUM OF 5mm UNLESS NOTED OTHERWISE

6.13 THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT PRIOR APPROVAL OF THE CONTRACTING OFFICER.

6.14 FOR FLOOR AND ROOF OPENINGS, THE FABRICATOR SHALL VERIFY OPENING LOCATIONS WITH EQUIPMENT SELECTED AND MAKE ANY NECESSARY MODIFICATIONS AT NO ADDITIONAL COST. THE CONTRACTOR SHALL COORDINATE MECHANICAL UNITS AND OPENINGS & ARCHITECTURAL ITEMS REQUIRED FOR COMPLETE INSTALLATION OF WORK. IT IS THE RESPONSIBILITY OF FABRICATOR TO RECEIVE ALL NECESSARY INFORMATION PRIOR TO FABRICATION OF THE STEEL.

6.15 ALL STRUCTURAL STEEL SHALL BE PRIMED AS PER THE SPECIFICATIONS.

6.16 ALL PLATES NOT INDICATED SHALL BE 13mm MIN THICKNESS. ALL ANGLES NOT INDICATED SHALL BE 76x76x7.9 MIN. ALL WELDS NOT INDICATED SHALL BE 6mm MIN ALL AROUND UON.

6.17 SEE MECHANICAL, ELECTRICAL, AND PLUMBING SHEETS FOR ADDITIONAL OPENINGS NOT SHOWN. ALL OPENINGS SHALL BE FRAMED 4 SIDES WITH C200x17'S UON.

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MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: | DRWN BY: | SUBMITTED BY: | DATE: | SOLICITATION NO.: | CONTRACT NO.: | PLOT SCALE: 1:1 | PLOT DATE: 11/23/2011 | FILE NUMBER: | FILE NAME: VM10_S-001.dgn | SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
AFGHANISTAN DISTRICT
APO AE 09356

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

GENERAL NOTES

SHEET IDENTIFICATION
S1
SHEET 2 OF 26

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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 – PRE-ENGINEERED FRAMING

	MAXIMUM GRAVITY LOAD	MINIMUM GRAVITY LOAD
STEEL FRAMING	0.20 KPa	0.15 KPa
METAL DECKING/ROOFING	0.14 KPa	0.05 KPa
MECH/ELEC/PLUMBING	0.15 KPa	0.10 KPa
METAL PANEL CEILING	0.15 KPa	0.15 KPa
MISC	0.40 KPa	0.00 KPa
	1.00 KPa	0.45 KPa

1.2 LIVE LOADS (PER IBC 2006)

1.2.1 ELEVATED SLAB

STORAGE AREA 4.80 KPa

1.2.2 ROOF LIVE LOADS: ALL BUILDINGS

GREATER OF 1.0 KPa MINIMUM OR SNOW LOAD

1.2.3 SLAB-ON-GRADE LIVE LOADS

ALL BUILDINGS 4.80 KPa

1.3 SNOW LOADS (PER IBC 2006)

1.3.1 DESIGN PARAMETERS

GROUND SNOW LOAD (per UFC 3-310-01)	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 – PRE-ENGINEERED BUILDINGS

SEISMIC OCCUPANCY CATEGORY	II
SEISMIC IMPORTANCE FACTOR (I)	1.0
SEISMIC SITE CLASS	D
Ss	1.280
S1	0.510
Sds	0.853
Sd1	0.510
SEISMIC DESIGN CATEGORY	D
SEISMIC RESISTING SYSTEM	MOMENT RESISTING FRAME INTERMEDIATE STEEL MOMENT FRAMES
RESPONSE MODIFICATION FACTOR (R)	4.5
RESPONSE COEFFICIENT (Cs)	EQUIV LATERAL FORCE
SEISMIC ANALYTICAL PROCEDURE	111.2kn
SEISMIC BASE SHEAR	0.133

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

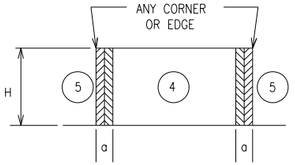
1.5.2 DESIGN WIND PRESSURE – MAIN WINDFORCE RESISTING SYSTEM

LOCATION	CORNER ZONE WIDTH "a"	MEAN ROOF HEIGHT (h)	WINDWARD WALL (@ MEAN ROOF HEIGHT)	LEEWARD WALL (@ MEAN ROOF HEIGHT)	ROOF
FIELD ZONE	N/A	6544mm	600 N/m^2	-570 N/m^2	-780 N/m^2
CORNER ZONE	1440mm	6544mm	830 N/m^2	-680 N/m^2	-1130 N/m^2

a = 10% OF LEAST HORIZONTAL DIMENSION OR 0.4h, WHICHEVER IS SMALLER, BUT NOT LESS THAN EITHER 4% OF LEAST HORIZONTAL DIMENSION OR 0.9M.
h = MEAN ROOF HIEGHT, IN METERS, EXCEPT THAT EAVE HIEGHT 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:



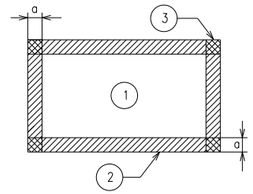
LOCATION	WINDWARD PRESSURE N/m^2 (inward)		LEEWARD PRESSURE N/m^2 (outward)		a
	(4)	(5)	(4)	(5)	
MAIN BUILDING					(mm)
AREA = 1 m^2	1050	1050	-1140	-1410	1440
AREA = 2 m^2	1010	1010	-1100	-1310	1440
AREA = 5 m^2	910	910	-1000	-1120	1440
AREA = 10 m^2	820	820	-910	-930	1440

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^2 (upward)			a
	(1)	(2)	(3)	
MAIN BUILDING				(mm)
AREA = 1 m^2	-970	-1670	-2480	1440
AREA = 2 m^2	-950	-1540	-2320	1440
AREA = 5 m^2	-880	-1260	-1990	1440
AREA = 10 m^2	-880	-1240	-1960	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^3
COEFF ACTIVE EARTH PRESSURE (Kpa)	0.30
COEFF PASSIVE EARTH PRESSURE (Kpp)	3.33
COEFF AT-REST EARTH PRESSURE (Kpr)	.55
COEFF OF SOIL FRICTION	.35
SUBGRADE MODULUS	4120 g/m^3
MINIMUM BEARING DEPTH BELOW GRADE	800mm
SEISMIC SITE CLASS (based on in-situ soil)	D

US Army Corps of Engineers
AFGHANISTAN ENGINEER DISTRICT

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: | DATE:
DWN BY: | CKD BY: | SOLICITATION NO.:
SUBMITTED BY: | CONTRACT NO.:
PLOT SCALE: 1 = 1 | PLOT DATE: 11/23/2011 | FILE NUMBER:
SIZE: ANSI D | FILE NAME: VM10_S-002.dgn

U.S. ARMY CORPS OF ENGINEERS
AFGHANISTAN DISTRICT
APO AE 09356

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

GENERAL NOTES

SHEET IDENTIFICATION
S2
SHEET 3 OF 26

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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--) LESS THAN 4db	(---TOP BARS--) 4db OR MORE	(--OTHER BARS--) LESS THAN 4db	(--OTHER BARS--) 4db OR MORE	4db
#10	460	460	410	410	40
#13	660	610	510	480	50
#16	1020	760	790	580	60
#19	1450	910	1120	710	80
#22	1960	1090	1500	840	90
#25	2590	1450	1980	1120	100
#29	3280	1830	2510	1420	110
#32	4140	2340	3200	1780	130
#36	5080	2840	3910	2180	140

NOTES:

1. LAP SPLICES ABOVE ARE IN MILLIMETERS UON.
2. YIELD STRENGTH OF REINFORCEMENT, fy, IS 400MPa (LAP SPLICE LENGTH IS IN MILLIMETERS).
3. CONCRETE IS NORMAL WEIGHT (2400Kg/m^3).
4. TOP BAR INDICATES HORIZONTAL REINFORCEMENT WHICH IS PLACED ABOVE 300mm OR MORE OF FRESH CONCRETE.
5. SEE COLUMN SCHEDULE FOR COLUMN AND SHEAR WALL VERTICAL LAP SPLICE.
6. STRAIGHT DEVELOPMENT LENGTH OF AN UNLAPPED BAR IS EQUAL TO VALUE FROM TABLE DIVIDED BY 1.3.
7. 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.

STEEL MATERIALS SCHEDULE

STRUCTURAL ELEMENT	FY YIELD STRENGTH (MPa)	REMARKS
BEAMS & GIRDERS	250	ASTM A36M ASTM A6M
COLUMNS	240	ASTM A53-95 GRADE B ASTM A6M
MISC BRACING	250	ASTM A572M ASTM A6M
CONNECTIONS, PLATES, & ALL OTHERS	250	ASTM A36M ASTM A6M
ANCHOR BOLTS	-	ASTM A36M or A307M ASTM A6M
PIPES	240	ASTM A53-95 GRADE B ASTM A6M
TUBING	345	ASTM A500-93 GRADE C ASTM A6M
HIGH STRENGTH BOLTS	-	ASTM A325M-N
WELDING ELECTRODES	-	AWS D1.1-90 E70xx

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)	#16 BAR & SMALLER	40
	#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.

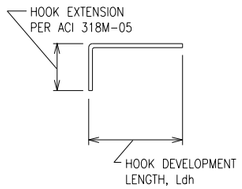
CONCRETE MATERIALS SCHEDULE

STRUCTURAL ELEMENT	f'c CONCRETE COMPRESSIVE STRENGTH @ 28 DAYS (MPa)
SLAB-ON-GRADE/TURN-DOWN SLABS	28
ROOF AND 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:
1. ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE (2400 Kg/m^3 UON)
2. 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



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

SPREAD FOOTING AND PIER SCHEDULE

MARK	FOOTING SIZE LENGTH	FOOTING SIZE WIDTH	FOOTING SIZE THICKNESS	FOOTING REINFORCING	PIER SIZE	PIER T/PIER	PIER VERT. BARS	PIER TIES	REMARKS
F1	2500	2500	300	(7)-#16 EW T&B	900	-150	(8)-#19	2 SETS #13 @ 125	HAIRPINS REQ'D. SEE DETAILS
F2	1800	1800	300	(5)-#16 EW T&B	900	-150	(8)-#19	#13 @ 250 TOP 2 @ 75	----

NOTES:
1. DIMENSIONS NOTED ARE MILLIMETERS (mm) UON
2. T/PIER ELEV GIVEN IN REFERENCE TO 0.0 mm DATUM OR FINISH FLOOR ELEV/SLAB ELEV, DISTANCE ABOVE OR BELOW INDICATED AS NEGATIVE OR POSITIVE.
3. PIER SIZE INDICATED IS SQUARE (DIMENSION SAME IN BOTH DIRECTIONS) UON

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U.S. ARMY CORPS OF ENGINEERS
AFGHANISTAN DISTRICT
APO AE 09356

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

GENERAL NOTES

SHEET IDENTIFICATION
S3
SHEET 4 OF 26

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CMU 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 WALL OPENING, 1-STORY BLDG	1800	400	(2)-#13	(2)-#13		----
EXT WALL OPENING, 1-STORY BLDG	900	200		(2)-#13		----
INT WALL OPENING, NON-BEARING	2400	400		(2)-#13		----
INT WALL OPENING, NON-BEARING	1800	200		(2)-#13		----
INT WALL OPENING, NON-BEARING	900	200		(2)-#13		----
INT WALL OPENING, SHEAR WALL	900	200		(2)-#13		----
INT WALL OPENING, SHEAR WALL	1800	200	(2)-#13	(2)-#13		----
INT WALL OPENING, SHEAR WALL	2400	400	(2)-#16	(2)-#16		#13 @ 300

1. 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.
2. PROVIDE 200mm BEARING EA END FOR 200mm DEEP CMU LINTEL BB PROVIDE 400mm BEARING EA END FOR 400mm DEEP CMU LINTEL BB.
3. FOR HEAD DETAILS REFER TO ARCHITECTURAL SHEETS.
4. 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.
5. CONTRACTOR SHALL SUBMIT FOR APPROVAL SHOP DRAWINGS AND SCHEDULES SHOWING SIZE, DETAILS, LOCATIONS, ETC FOR ALL CAST-IN-PLACE BEAMS IN CMU WALLS.

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.

MASONRY REINFORCING MINIMUM LAP SPLICES

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

TYPICAL CMU WALL REINFORCING SCHEDULE

WALL TYPE OR LOCATION	WALL THICKNESS (mm)	CONT VERT REINF (CENTERED IN CMU, UON)	CONT CAST IN PLACE BOND BEAM			REMARKS
			DEPTH (mm)	REINF (BOTT UON)	MAX BOND BEAM 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:
1. REINFORCING SIZES AND SPACING GIVEN IN SECTIONS AND DETAILS SHALL SUPERSEDE THE ABOVE SCHEDULE REQUIREMENTS.
2. PROVIDE CONTINUOUS CAST IN PLACE CONCRETE BOND BEAM AT ALL WALL LATERAL SUPPORT LOCATIONS.
3. REINFORCING INDICATED SHALL BE CONTINUOUS FOR FULL EXTENT OF SPLICE FOLLOWING THE REQUIREMENTS OF THE LAP SPLICE TABLE SHOWN ON THIS SHEET.
4. 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.
5. ALL CMU WALLS SHALL BE FULLY GROUTED IN LIFTS NOT EXCEEDING THOSE BY CODE (UON)
6. SEE TYPICAL CMU WALL DETAILS ON SHEET S10.

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APO AE 09356

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

GENERAL NOTES

SHEET IDENTIFICATION
S4
SHEET 5 OF 26

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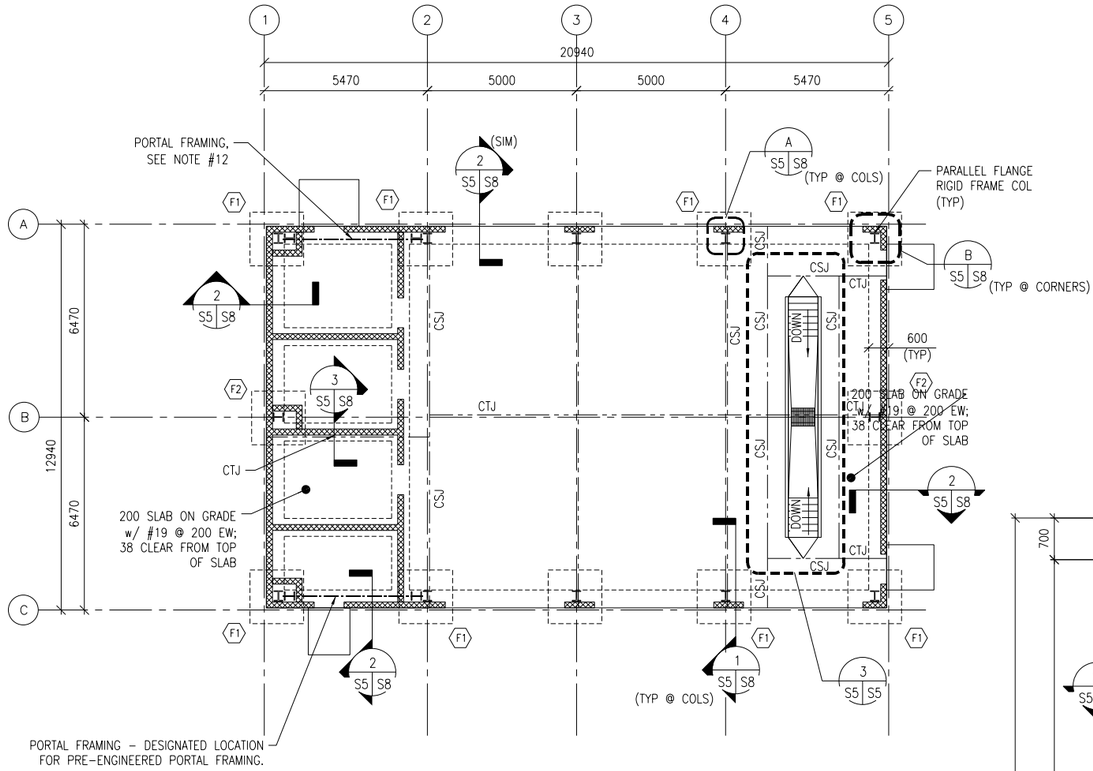

1 S5 S5 VEHICLE MAINTENANCE FOUNDATION/ SLAB PLAN

SCALE: 1:100

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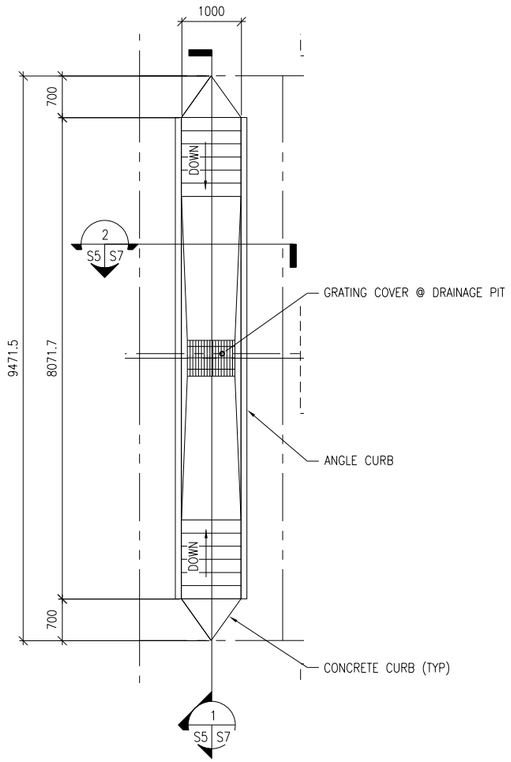

3 S5 S5 ENLARGED PIT PLAN

SCALE: 1:50

N

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 FOOTINGS SHALL BE -950 UNLESS OTHERWISE INDICATED.
3. UNLESS OTHERWISE INDICATED, FLOORS SHALL BE 200 THICK (UON) CONCRETE SLAB-ON-GRADE W/ #19 REBAR @ 200 OC E.W. (38 CLR. TOP) OVER 100 COMPACTED POROUS FILL (#57 STONE)
4. SPREAD FOOTINGS INDICATED THUS (XXXX) ON PLAN. REFER TO SPREAD FOOTING SCHEDULE ON SHEET S3.
5. REFER TO SHEETS S1 TO S3 FOR STRUCTURAL NOTES, BASIS OF DESIGN, SYMBOLS AND ABBREVIATIONS.
6. CTJ & CJ INDICATES SLAB CONTROL OR CONSTRUCTION JOINTS. RESPECTIVELY, REFER TO SHEET S10 FOR SECTIONS & DETAILS.
7. REFER TO ARCHITECTURAL SHEETS FOR MASONRY PARTITION TYPES.
8. ALL CMU TO BE FULLY GROUTED UNLESS OTHERWISE NOTED. SEE CMU WALL REINFORCING SCHEDULE ON SHEET S4.
9. SEE MECHANICAL AND ELECTRICAL SHEETS FOR CONCRETE PAD LOCATIONS, SIZES, AND THICKNESS NOT SHOWN. SEE SHEET S11 FOR DETAILS.
10. PRIOR TO CONSTRUCTION OF FOUNDATIONS, THE CONTRACTOR SHALL COORDINATE THE LOCATIONS OF ALL FOOTINGS, PIERS, AND TURN DOWN SLAB EDGES WITH THE PRE-ENGINEERED BUILDING DRAWINGS AND REVISE AS NECESSARY.
11. PRE-ENGINEERED COLUMN BASES SHALL BE DESIGNED AS PINNED ONLY.
12. LOCATIONS OF PORTAL FRAMES HAVE BEEN SHOWN IN PLAN AND SHALL NOT BE MODIFIED UNLESS APPROVED BY THE CONTRACTING OFFICER.
13. ALL PIERS FOR PRE-ENGINEERED BUILDING COLUMNS SHALL HAVE HAIR-PIN TIES AS INDICATED IN THE DETAILS.
14. ANCHOR BOLTS FOR PRE-ENGINEERED BUILDING COLUMNS SHALL BE (4)-20 DIA A36M ANCHOR BOLTS WITH 300 EMBED MIN.
15. TOP OF PIER ELEVATION SET AT -200. COORDINATE BOTTOM/BASE PLATE AND GROUT REQUIREMENTS WITH PRE-ENGINEERED BUILDING MANUFACTURER.

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

0 2000 4000 8000

SCALE: 1: 100

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STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

FOUNDATION PLAN

SHEET IDENTIFICATION
S5
SHEET 6 OF 26

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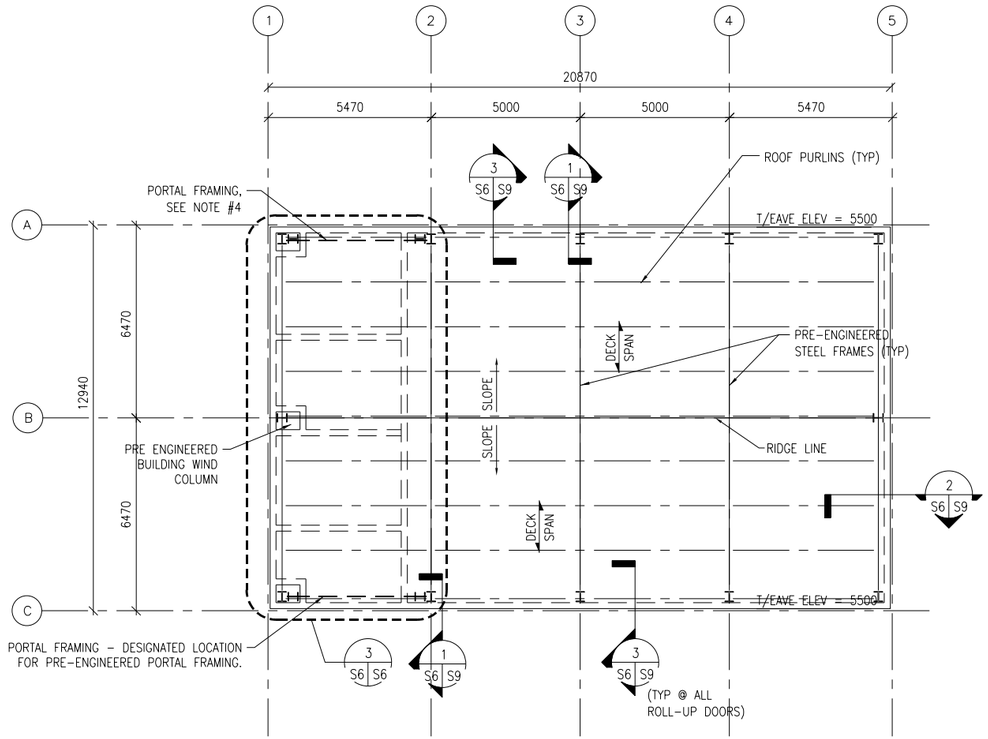


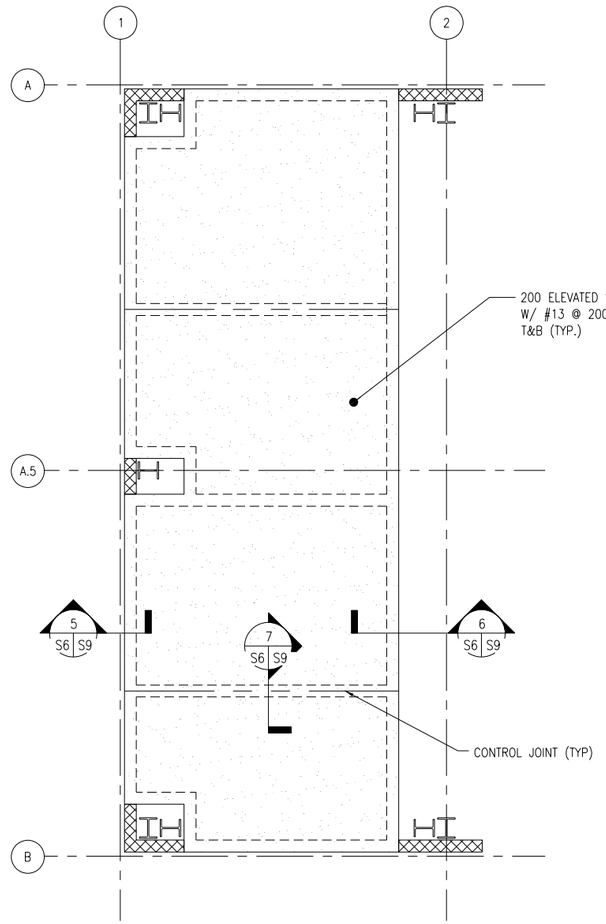
VEHICLE MAINTENANCE ROOF FRAMING PLAN

1 / S6 | S6 — SCALE: 1:100

N

NOTES:

1. REFER TO SHEETS S1 TO S3 FOR STRUCTURAL NOTES, BASIS OF DESIGN SYMBOLS AND ABBREVIATIONS.
2. THE PRE-ENGINEERED BUILDING MANUFACTURER SHALL COORDINATE ALL LOADING REQUIREMENTS INDICATED ON THE SHEETS AND SPECIFICATIONS WITH ARCH., STRUCT., MECH., AND ELEC.
3. PRE-ENGINEERED BUILDING COLUMN BASES SHALL BE DESIGNED AS PINNED ONLY.
4. LOCATIONS OF PORTAL FRAMES HAVE BEEN SHOWN IN PLAN AND SHALL NOT BE MODIFIED UNLESS APPROVED BY THE ENGINEER OF RECORD.
5. THE PRE-ENGINEERED BUILDING MANUFACTURER SHALL COORDINATE ALL HANGING LOADING FROM EQUIPMENT OR ARCHITECTURAL ELEMENTS AND INCLUDE IN THE DESIGN OF THE FRAMING.
6. SEE SPECIFICATION FOR LATERAL DRIFT REQUIREMENTS.
7. LOCATIONS OF END WALL COLUMNS SHALL BE MAINTAINED AT LOCATIONS INDICATED. THE BUILDING DOES NOT NEED PROVISIONS FOR FUTURE EXPANSION AT END WALLS.
8. THE PRE-ENGINEERED BUILDING MANUFACTURER IS RESPONSIBLE TO DESIGN ALL JAMB AND HEAD CONDITION SUPPORT SUB-FRAMING AS REQUIRED FOR THE LOADING INDICATED AND THE REQUIREMENTS OF THE ATTACHED COMPONENTS.
9. SEE CMU WALL REINFORCING SCHEDULE ON SHEET S4.



ENLARGED ELEVATED SLAB STORAGE AREA FRAMING PLAN

3 / S6 | S6 — SCALE: 1:50

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

0 2000 4000 8000

SCALE: 1: 100

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STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

VEHICLE MAINTENANCE/POL BUILDING
ROOF FRAMING PLAN

SHEET IDENTIFICATION
S6
SHEET 7 OF 26

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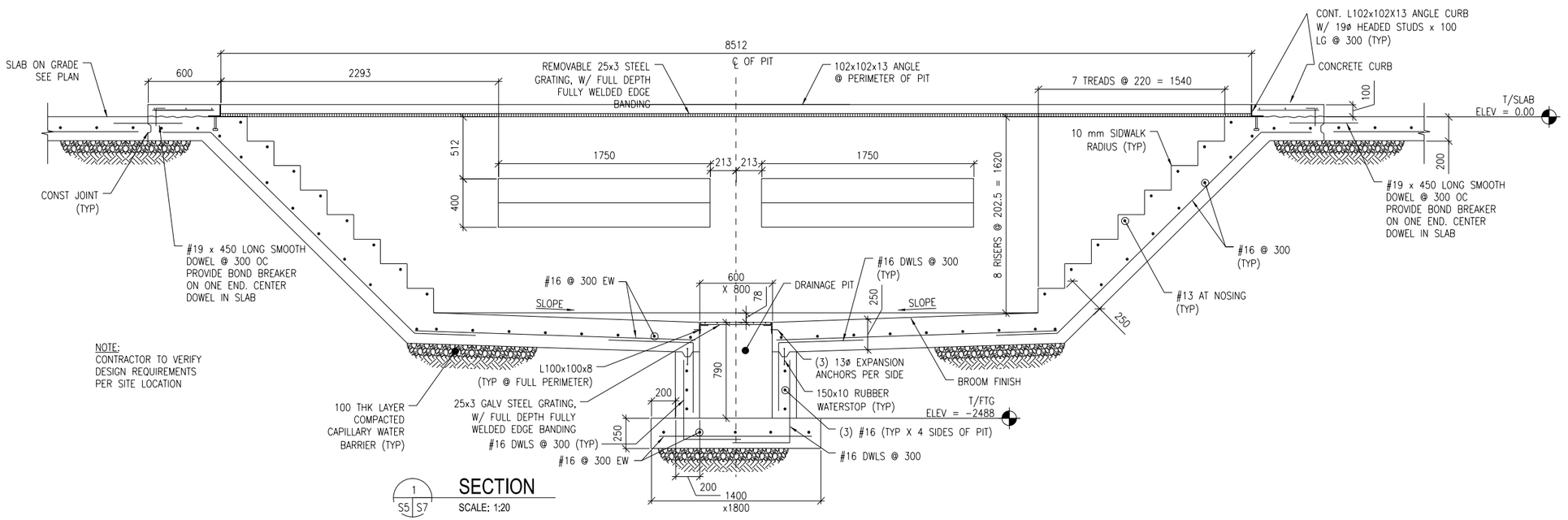
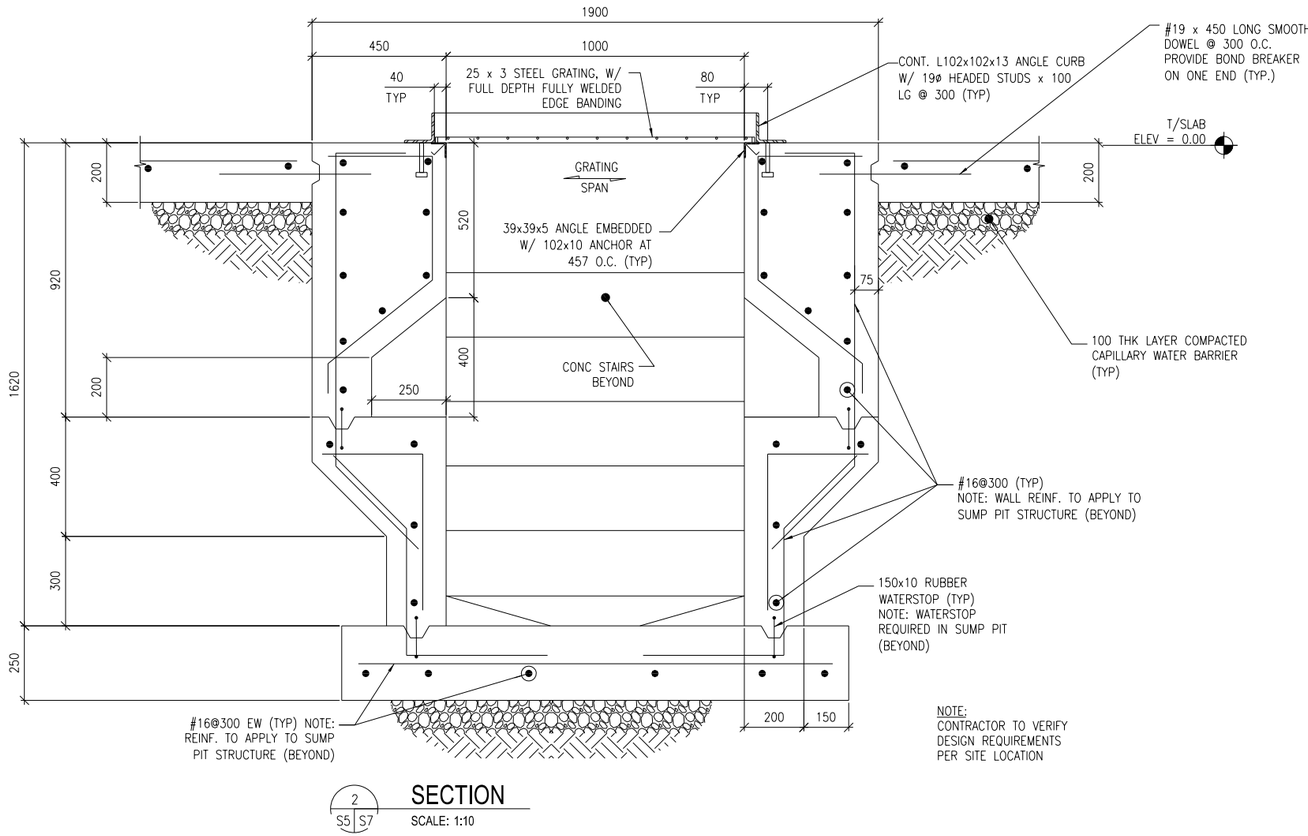


1
S5 S7
SECTION
SCALE: 1:20



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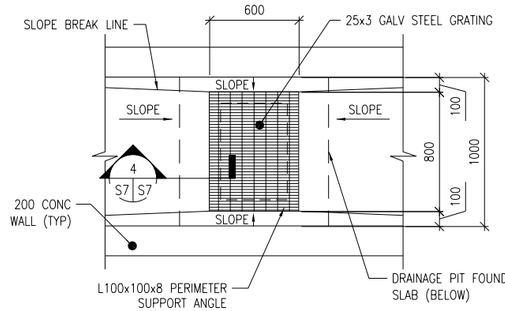
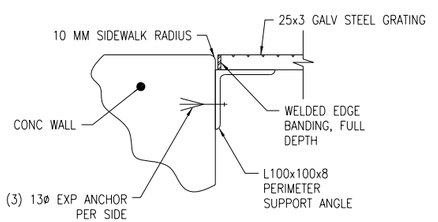
S5 S7
SECTION
SCALE: 1:10



3
S7 S7
DRAINAGE PIT DETAIL
SCALE: 1:20



4
S7 S7
SECTION
SCALE: 1:5

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0 100 200 400
SCALE: 1: 5

0 200 400 800
SCALE: 1: 10

0 400 800 1600
SCALE: 1: 20

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STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

VEHICLE MAINTENANCE/POL BUILDING
SECTIONS AND DETAILS

SHEET IDENTIFICATION
S7
SHEET 8 OF 26

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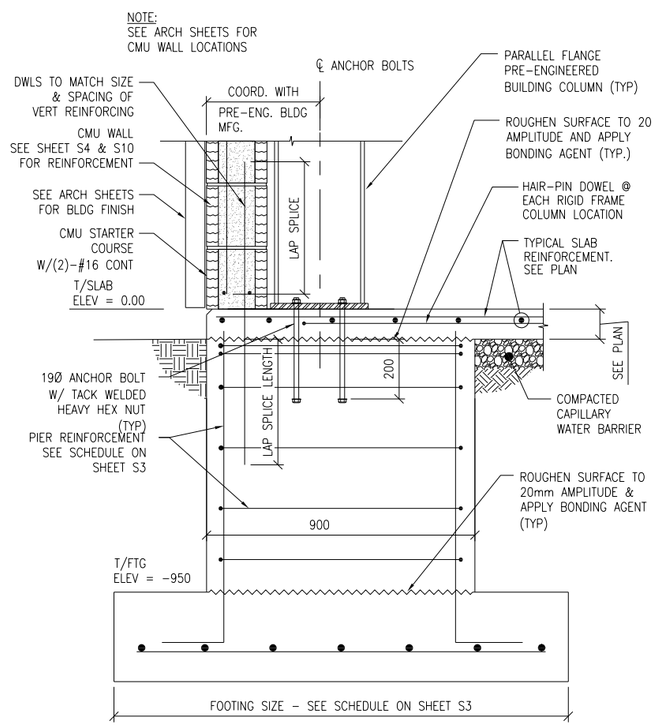
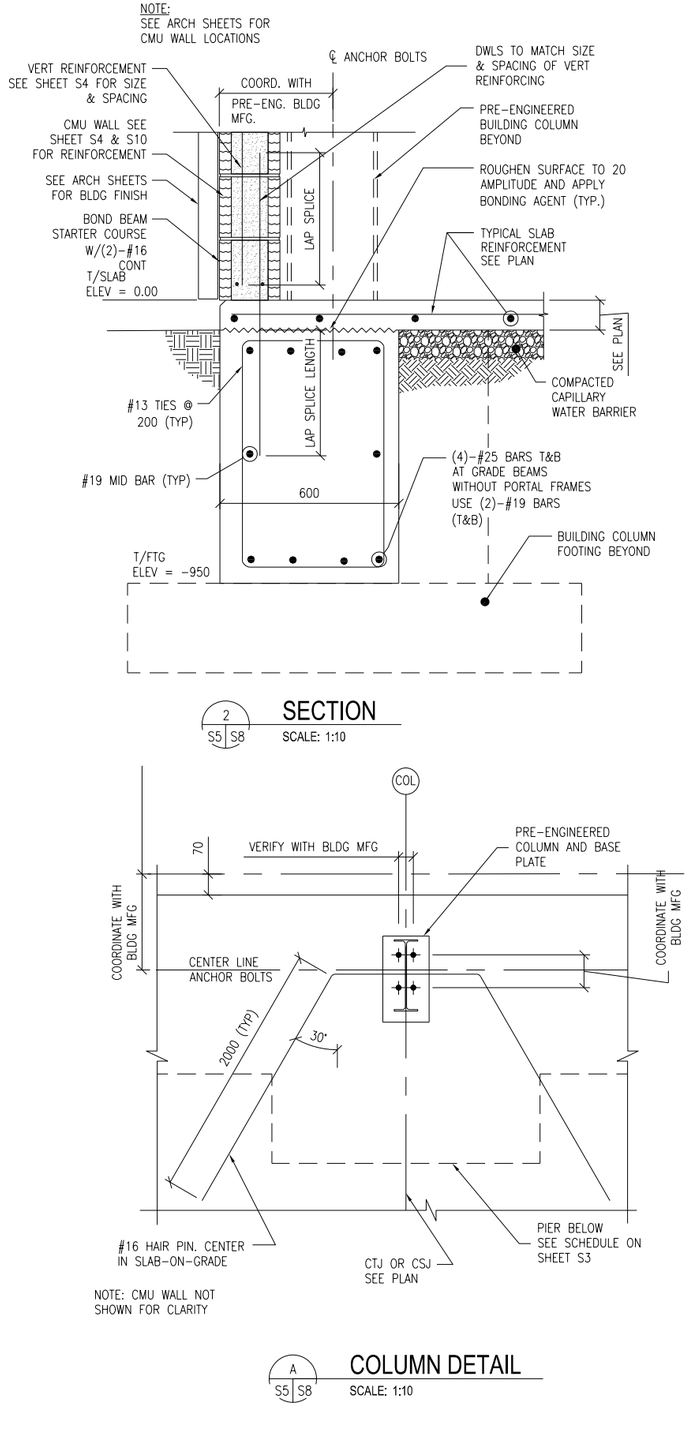


1 S5 S8 **SECTION**
SCALE: 1:10



2 S5 S8 **SECTION**
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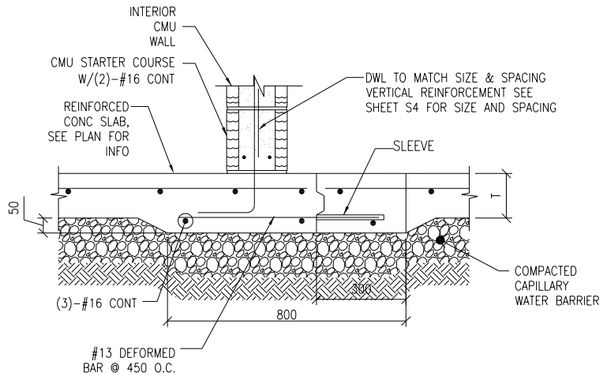

3 S5 S8 **SECTION**
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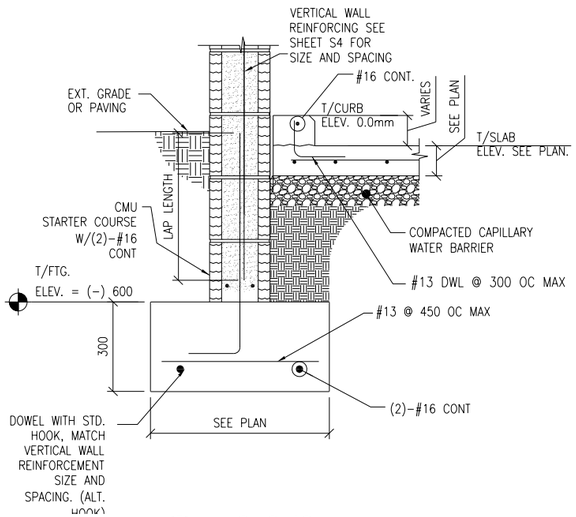
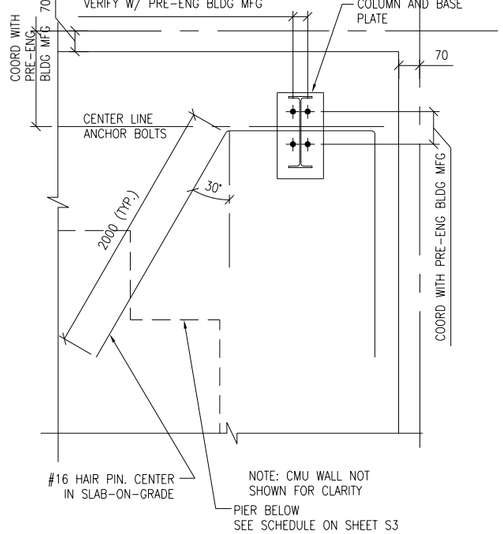


4 S5 S8 **SECTION**
SCALE: 1:10

A S5 S8 **COLUMN DETAIL**
SCALE: 1:10



B S5 S8 **COLUMN DETAIL**
SCALE: 1:10

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0 200 400 800
SCALE: 1: 10

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AFGHANISTAN DISTRICT
APO AE 09356

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

SECTIONS AND DETAILS

SHEET IDENTIFICATION
S8
SHEET 9 OF 26

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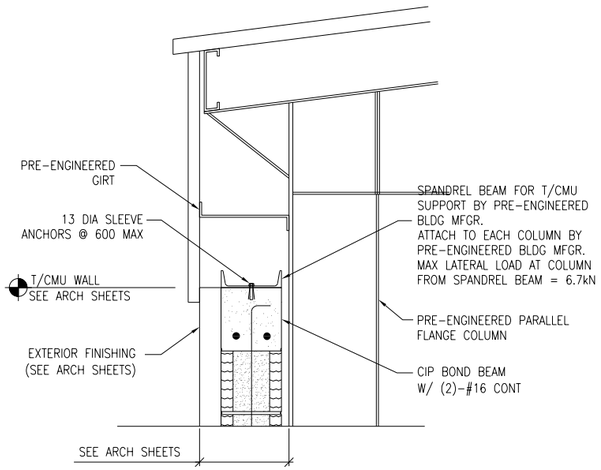
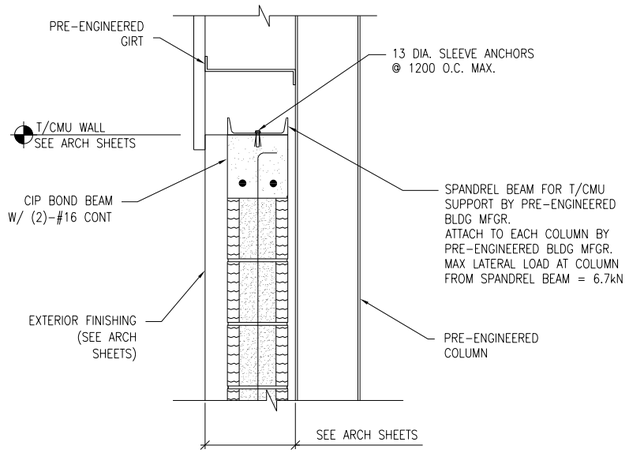


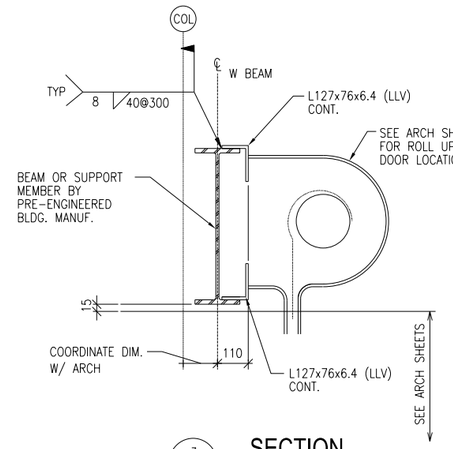
NOTE:
VERTICAL CMU WALL REINF NOT SHOWN FOR CLARITY, SEE SHEET S4 FOR SIZE AND SPACING (TYP)

1 S6 S9 **SECTION**
SCALE: 1:10



NOTE:
VERTICAL CMU WALL REINF NOT SHOWN FOR CLARITY, SEE SHEET S4 FOR SIZE AND SPACING (TYP)

2 S6 S9 **SECTION**
SCALE: 1:10



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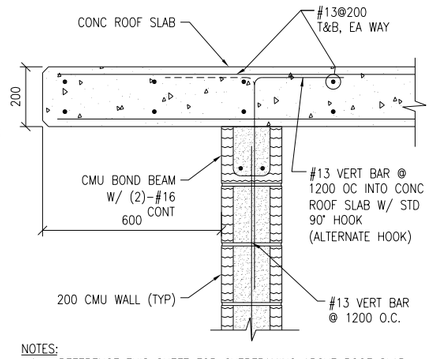
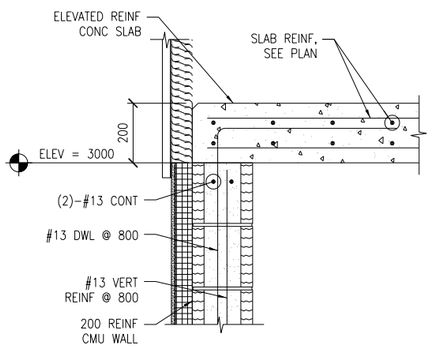


NOTES:
1. REFERENCE THIS SHEET FOR OVERFRAMING ABOVE ROOF SLAB.

4 S6 S9 **SECTION**
SCALE: 1:10



5 S6 S9 **SECTION**
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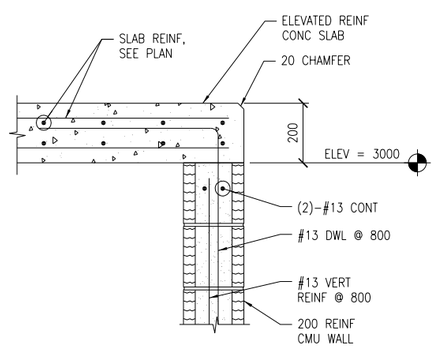
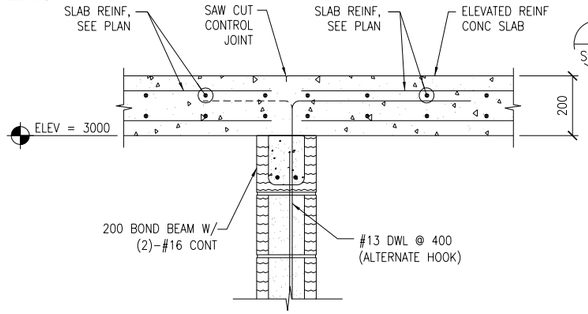
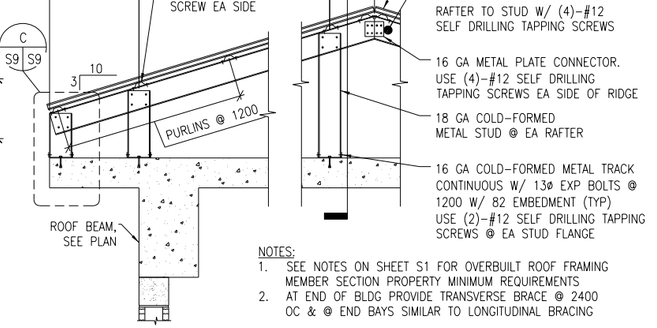


6 S6 S9 **SECTION**
SCALE: 1:10

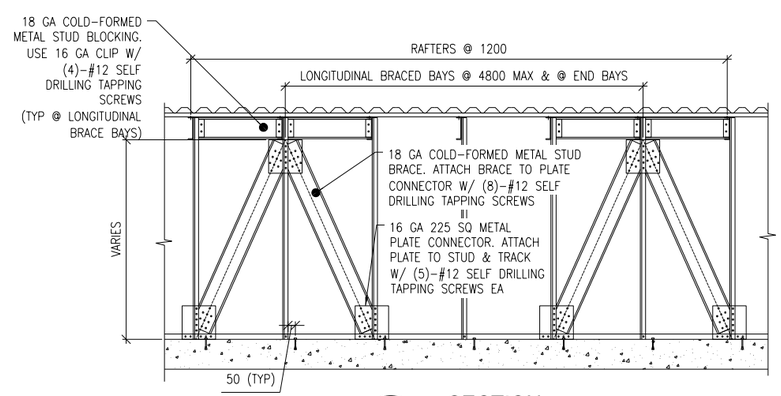


7 S6 S9 **SECTION**
SCALE: 1:10



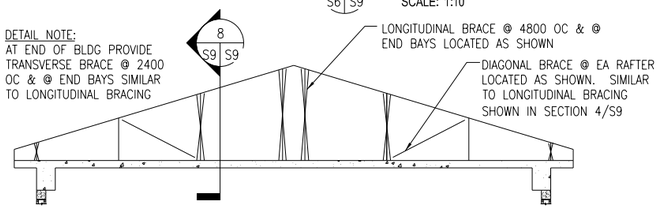
NOTES:
1. SEE NOTES ON SHEET S1 FOR OVERBUILT ROOF FRAMING MEMBER SECTION PROPERTY MINIMUM REQUIREMENTS
2. AT END OF BLDG PROVIDE TRANSVERSE BRACE @ 2400 OC & @ END BAYS SIMILAR TO LONGITUDINAL BRACING

A S9 S9 **TYPICAL ROOF BRACE LAYOUT DETAIL**
SCALE: NTS

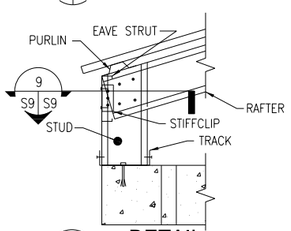


8 S9 S9 **SECTION**
SCALE: NTS

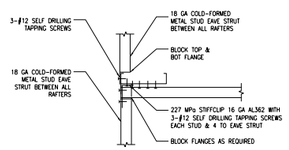
DETAIL NOTE:
AT END OF BLDG PROVIDE TRANSVERSE BRACE @ 2400 OC & @ END BAYS SIMILAR TO LONGITUDINAL BRACING



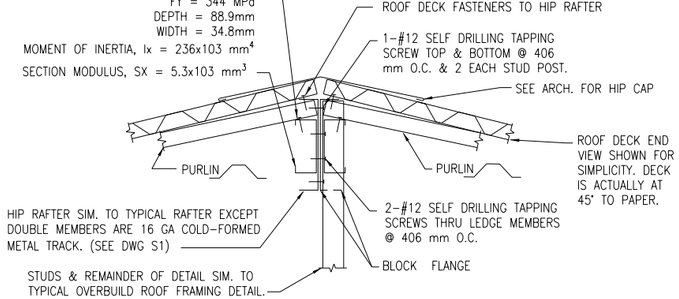
B S9 S9 **TYPICAL OVERBUILT ROOF FRAMING DETAIL**
SCALE: NTS



C S9 S9 **DETAIL**
SCALE: 1:10



9 S9 S9 **SECTION**
SCALE: 1:5



TYPICAL HIP FRAMING DETAIL
SCALE: 1:5

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

0 100 200 400
SCALE: 1: 5
0 200 400 800
SCALE: 1: 10

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MARK	DESCRIPTION	DATE	APPR.

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DATE:
SOLICITATION NO.:
CONTRACT NO.:
PLOT SCALE: 1:1
PLOT DATE: 11/23/2017
FILE NUMBER:
SIZE: ANSI D
FILE NAME: VM10_S-309.dgn

U.S. ARMY CORPS OF ENGINEERS
AFGHANISTAN DISTRICT
APO AE 09356

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

SECTIONS AND DETAILS

SHEET IDENTIFICATION
S9
SHEET 10 OF 26

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11/23/2017 12:54:30 PM

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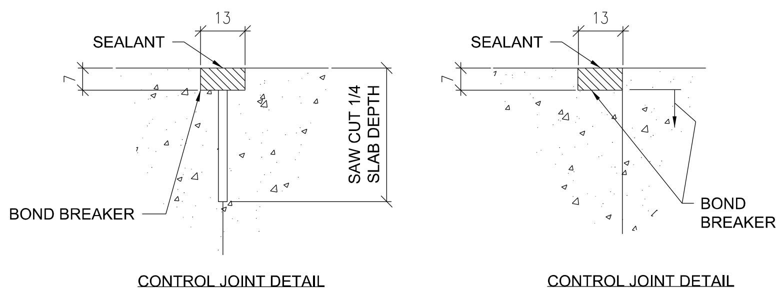
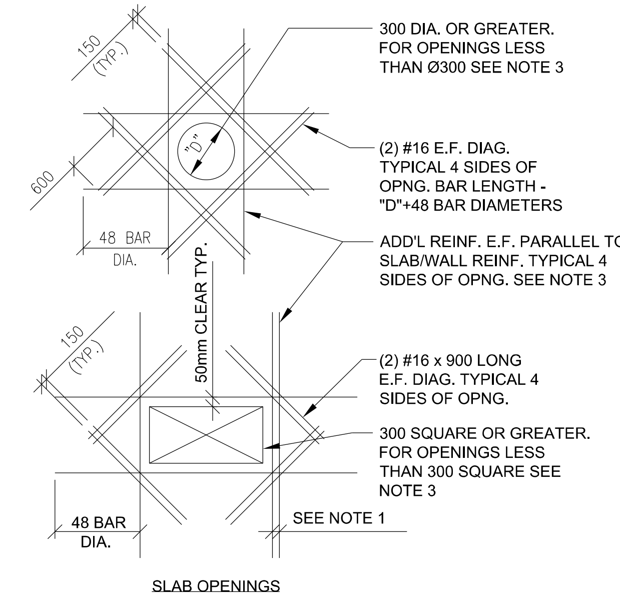


TYPICAL CONCRETE SLAB JOINT FINISH DETAIL

1 S10 SCALE: NTS

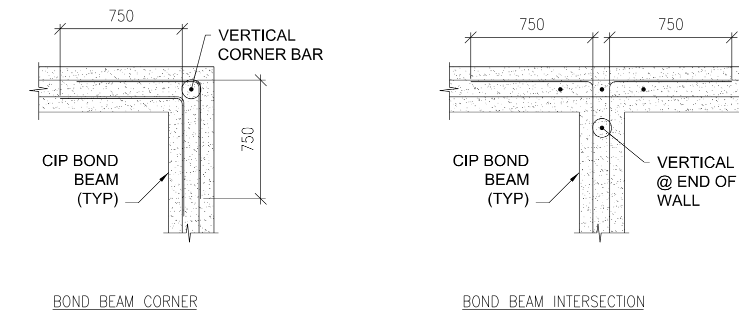


DETAIL NOTES:

1. 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.
2. 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.
3. FOR OPENINGS WITH SIDES OR DIAMETERS LESS THAN 300 SPREAD THE SLAB/WALL REINFORCING TO CLEAR THE OPENING.

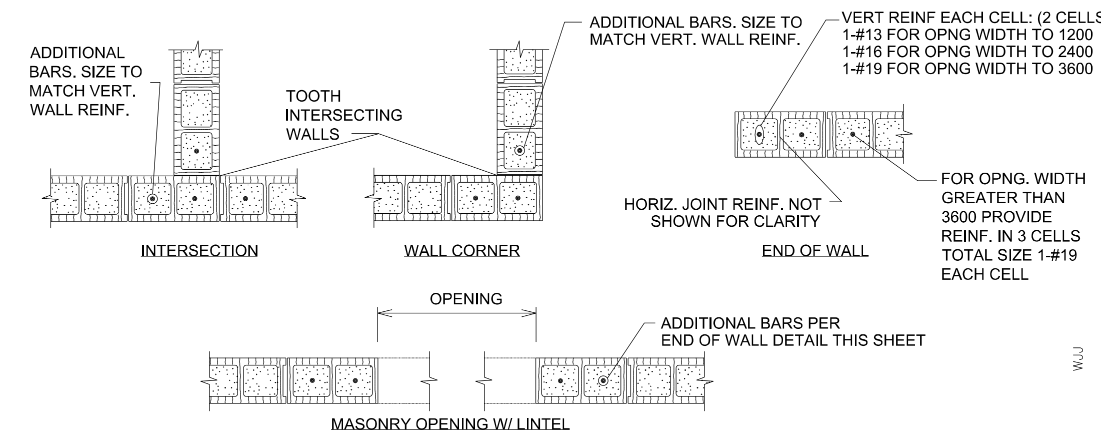
ADD'L CONCRETE REINFORCEMENT DETAILS

4 S10 SCALE: NTS



CIP BOND BEAM DETAILS

5 S10 SCALE: NTS

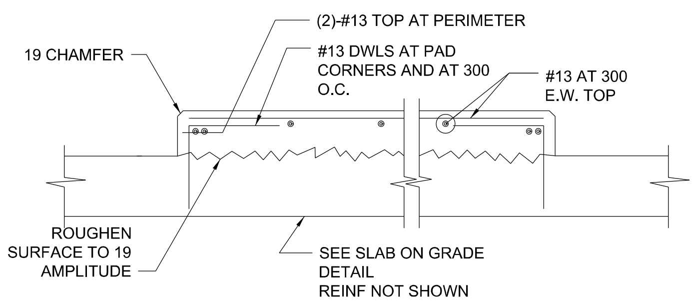


NOTE:

1. ALL CELLS TO BE FULLY GROUTED

TYPICAL CMU DETAILS

6 S10 SCALE: NTS

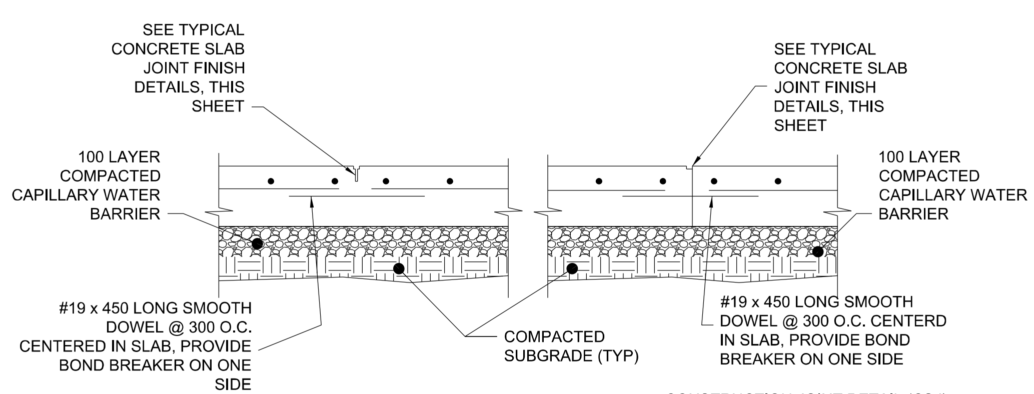


INTERIOR EQUIPMENT PAD DETAIL

2 S10 SCALE: NTS

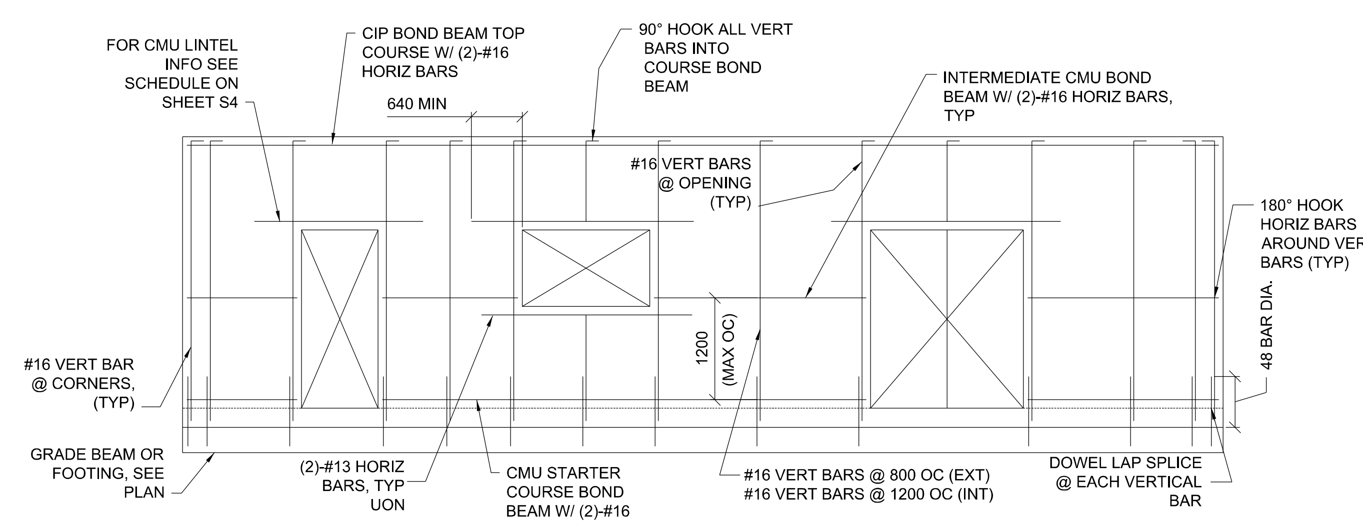
DETAIL NOTE:

1. COORDINATE EQUIPMENT PAD SIZE AND LOCATIONS W/ ELECTRICAL/MECHANICAL SHEETS AND EQUIPMENT MANUFACTURER.



TYPICAL SLAB ON GRADE JOINT DETAILS

3 S10 SCALE: NTS



MIN CMU WALL REINFORCING

7 S10 SCALE: NTS

LINTEL NOTES:
CMU LINTEL REINFORCEMENT AS PER SCHEDULE ON SHEET S4

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

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SUBMITTED BY: | CONTRACT NO.:
PLOT SCALE: 1:1 | PLOT DATE: 11/23/2011 | FILE NUMBER:
SIZE: ANSI D | FILE NAME: VM10_S-510.dgn

U.S. ARMY CORPS OF ENGINEERS
AFGHANISTAN DISTRICT
APO AE 09356

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

TYPICAL DETAILS (VEHICLE MAINTENANCE BUILDING)

SHEET IDENTIFICATION
S10
SHEET 11 OF 26

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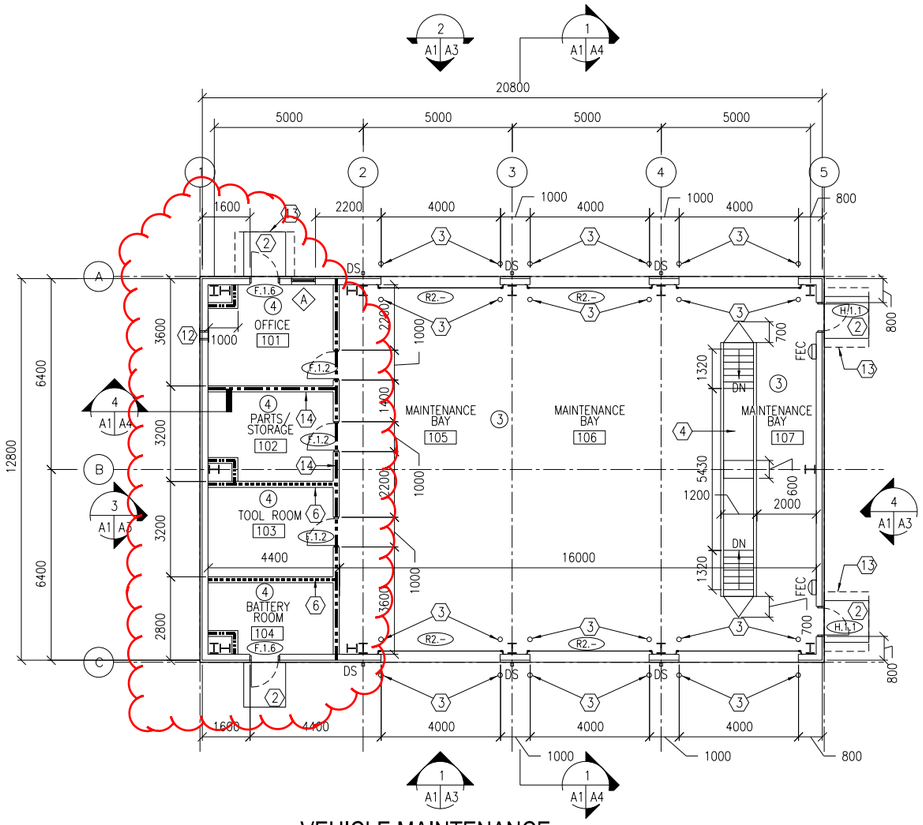
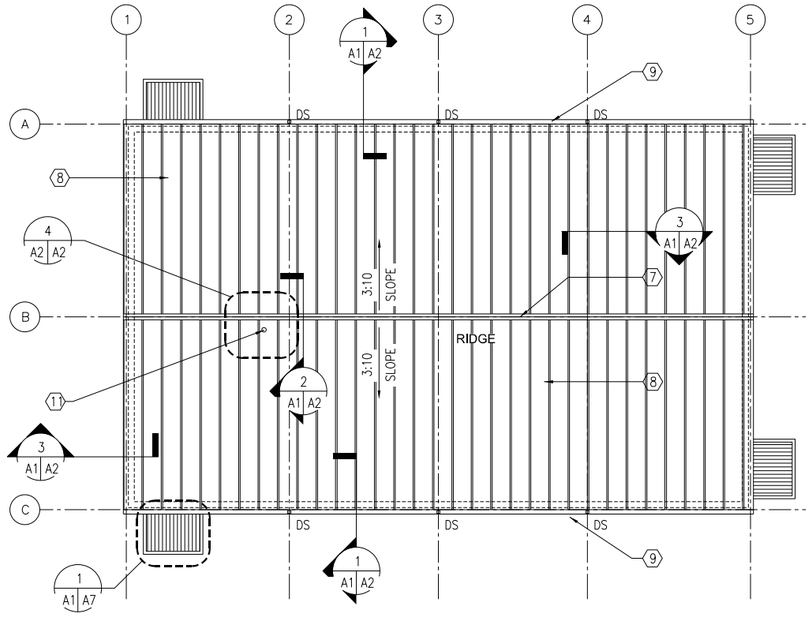


VEHICLE MAINTENANCE FLOOR PLAN

SCALE: 1:100

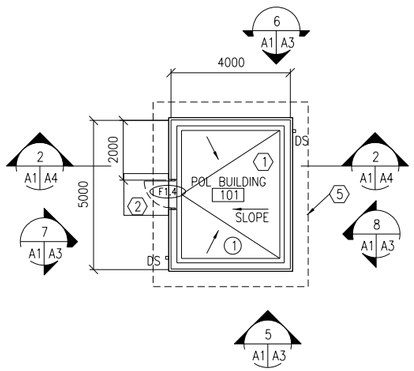
206.3 GSM



VEHICLE MAINTENANCE ROOF PLAN

SCALE: 1:100

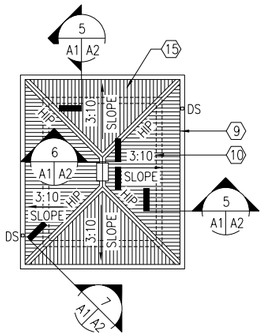
REFER TO FOLLOWING SHEET FOR REQUIRED DESIGN/BUILD REVSION TO STANDARD PLAN.



POL BUILDING FLOOR PLAN

SCALE: 1:100

21.5 GSM



POL BUILDING ROOF PLAN

SCALE: 1:100

VEHICLE MAINTENANCE ROOF PLAN NOTES:

1. PRODUCTS BY METAL BUILDING MANUFACTUER:
   - A. PRE-FINISHED METAL ROOF PANELS.
   - B. STEEL PURLINS
   - C. VINYL FACED FIBERGLASS INSULATION.
   - D. ACCESSORIES.
   - E. GUTTERS, DOWNSPOUTS AND SUPPORTS.
2. ROOFING INSTALLTION SHALL BE CONTINUOUS WITH ALL OPERATIONS PROCEEDING TOGETHER. BEFORE CESSATION OF WORK ON EACH WORKING DAY OR WHEN WORK IS INTERRUPTED DUE TO RAINFALL OR OTHER CAUSES, THE ROOF SHALL BE SEALED AGAINST WATER INTRUSION.

POL BUILDING ROOF PLAN NOTES:

1. PRODUCTS:
   - A. CORRUGATED METAL ROOF PANELS.
2. ROOFING INSTALLATION SHALL BE CONTINUOUS WITH ALL OPERATIONS PROCEEDING TOGETHER. BEFORE CESSATION OF WORK ON EACH WORKING DAY OR WHEN WORK IS INTERRUPTED DUE TO RAINFALL OR OTHER CAUSES, THE ROOF SHALL BE SEALED AGAINST WATER INTRUSION.

GENERAL NOTES:

A. INTERIOR PARTITIONS ARE 3000 mm HIGH. INTERIOR PARTITIONS SHALL BE 200 mm CMU UNLESS OTHERWISE NOTED.

B. OPENINGS FOR DOORS SHALL BE LOCATED A MINIMUM OF 200 mm FROM THE ADJACENT WALL.

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. THE 2 HOUR SEPARATION BETWEEN THE MAINTENANCE BAY AND ALL OTHER ANCILLARY INTERIOR SPACES IS PROVIDED AS DIRECTED IN THE SCOPE OF WORK TO COMPLY WITH NFPA 101, 40.2.4.1.2 AND 40.2.5.1. IN ACCORDANCE WITH NFPA 101, TABLE 6.1.14.4.1, THE OFFICE MUST HAVE A 2 HOUR SEPARATION FROM ALL OTHER INTERIOR SPACES. THE BATTERY ROOM MUST HAVE A MINIMUM 1 HOUR SEPARATION FROM ALL OTHER INTERIOR SPACES. PROVIDE SEPARATION AS INDICATED.

K. FILL ANULAR SPACE AT ANY AND ALL PENETRATIONS IN FIRE RATED PARTITIONS AND CEILINGS WITH APPROPRIATE FIRE STOPPING MATERIALS.

ROOM FINISHES: (X)

1. WALLS: PAINTED PLASTER
   FLOOR: SEALED CONCRETE
   CEILING: PAINTED PLASTER APPLIED TO STRUCTURE
3. WALLS: METAL LINER PANEL ABOVE PAINTED PLASTER
   FLOOR: SEALED CONCRETE
   CEILING: METAL LINER PANEL
4. WALLS: PAINTED PLASTER
   FLOOR: SEALED CONCRETE
   CEILING: EXPOSED METAL DECK

KEY NOTES: (X)

1 DEPRESS SLAB 100 mm TO 150 mm - RE: 9,10/A5
2 CONCRETE STOOP - RE: DETAIL 1/A6.
3 GALVANIZED STEEL BOLLARD FILLED WITH CONCRETE ON BOTH SIDE OF ROLL UP DOOR, TYPICAL. SEE DETAIL 4/A6.
4 MAINTENANCE PIT. SEE SECTION 2/A6 AND 3/A6.
5 LINE OF ROOF OVERHANG ABOVE.
6 1-HOUR RATED PARTITION.
7 CONTINUOUS RIDGE FLASHING.
8 PRE-FINISHED METAL ROOF PANELS OVER STEEL PURLINS WITH VINYL FACED FIBERGLASS INSULATION BY METAL BUILDING MANUFACTURER.
9 METAL GUTTERS AND DOWNSPOUTS WITH SPLASH BLOCK.
10 LINE OF BUILDING WALL, BELOW
11 ROOF PENETRATION RE: PLUMBING DRAWINGS
12 TWO-PIECE WALL THIMBLE AND TRIM PLATE FOR OPTIONAL WOOD BURNING STOVE CHIMNEY PIPE. STOVE AND PIPE BY OTHERS.
13 LINE OF CANOPY ABOVE-SEE SHEET A7.
14 2-HOUR RATED PARTITION.
15 CORRUGATED METAL ROOF PANELS N COLD-FORMED METAL FRAMING.

LEGEND:

- F.1.4 — DOOR TYPE, SEE SHEET A5
- A — WINDOW TYPE, SEE SHEET A5
- X — KEY NOTE
- FEC — FIRE EXTINGUISHER CABINET
- 1 — ROOM FINISH TYPE DESIGNATION
- 1-HOUR RATED PARTITION
- 2-HOUR RATED PARTITION

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

0 2000 4000 8000

SCALE: 1: 100

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PLOT SCALE: 1:1
PLOT DATE: 11/23/2011
FILE NAME: VM10_A-101.dgn
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
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APO AE 09356

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

FLOOR AND ROOF PLANS

SHEET IDENTIFICATION
A1
SHEET 12 OF 26

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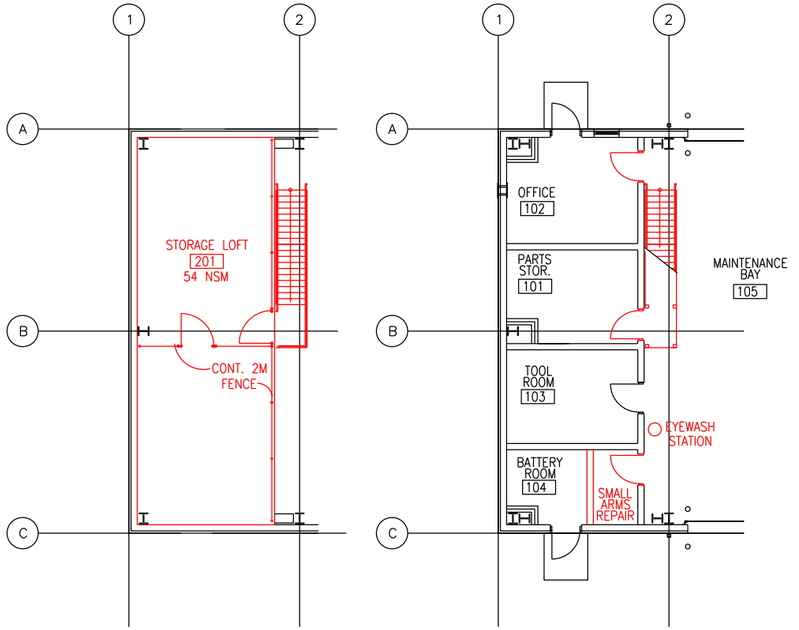


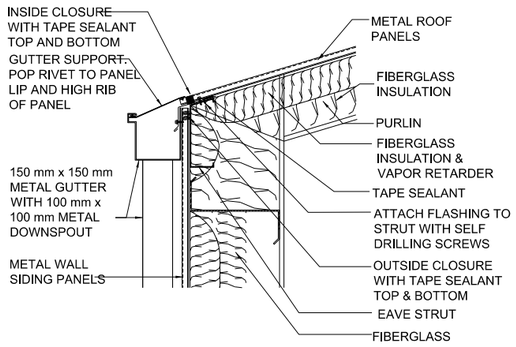
CONCEPT SKETCH
STORAGE LOFT

1

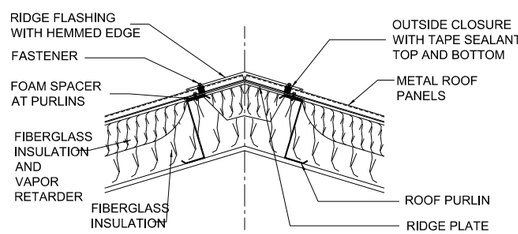
CONCEPT SKETCH
LATRINE RM. - LOFT STAIR

2

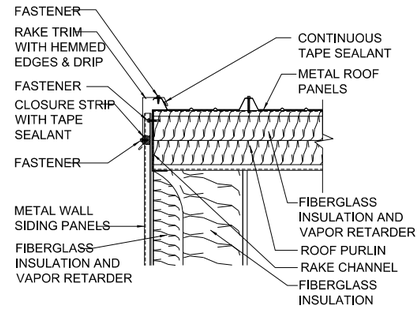
1:1



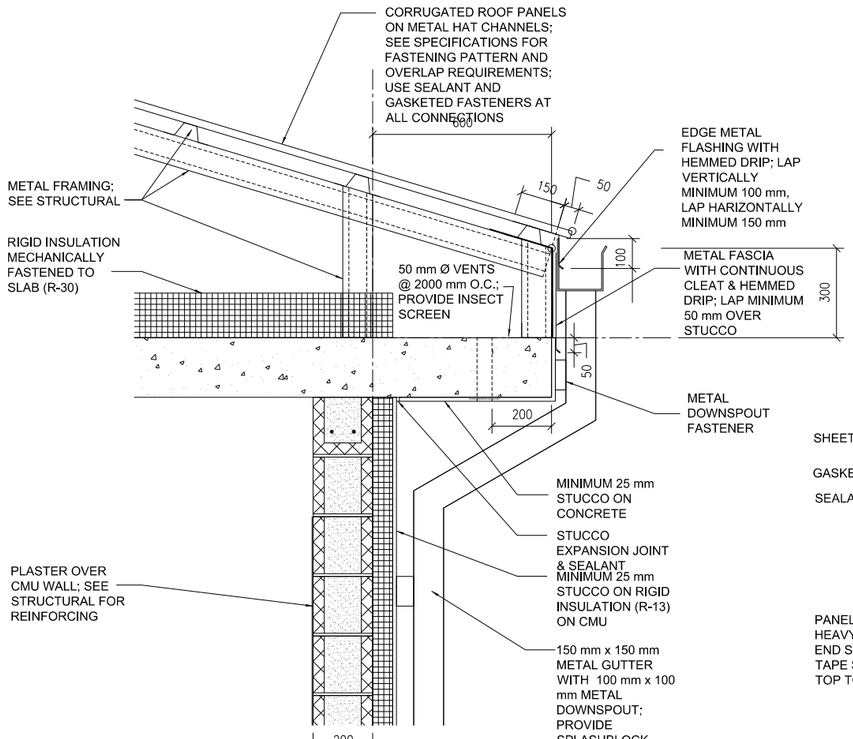
1 A1 A2 EAVE WITH GUTTER DETAIL
SCALE: 1:10



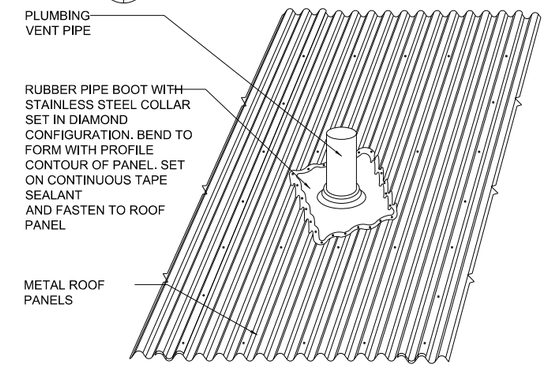
2 A1 A2 RIDGE DETAIL
SCALE: 1:10



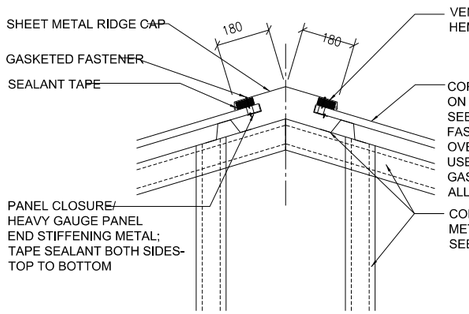
3 A1 A2 RAKE DETAIL
SCALE: 1:10



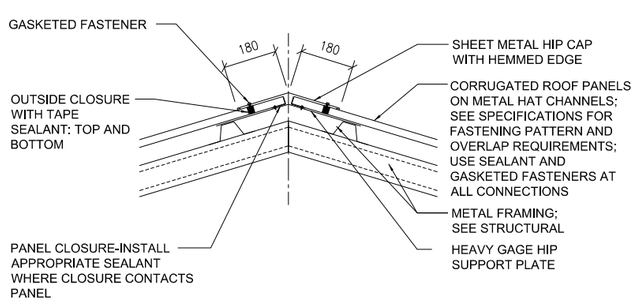
5 A1 A2 POL EAVE DETAIL
SCALE: 1:10



4 A1 A2 PLUMBING VENT DETAIL
SCALE: NONE



6 A1 A2 POL RIDGE VENT DETAIL
SCALE: 1:10



7 A1 A2 POL HIP DETAIL
SCALE: 1:10

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (mm)
0 200 400 800
SCALE: 1: 10

US Army Corps of Engineers
AFGHANISTAN ENGINEER DISTRICT

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CKD BY:
SUBMITTED BY:
DATE:
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CONTRACT NO.:
FILE NUMBER:
PLOT SCALE: 1:1
PLOT DATE: 11/23/2011
SIZE: ANSI D
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U.S. ARMY CORPS OF ENGINEERS
AFGHANISTAN DISTRICT
APO AE 09356

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

ROOF DETAILS

SHEET IDENTIFICATION
A2
SHEET 13 OF 26

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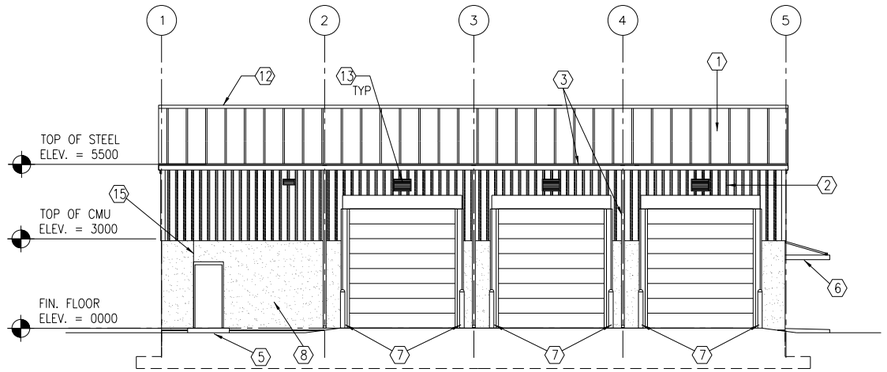
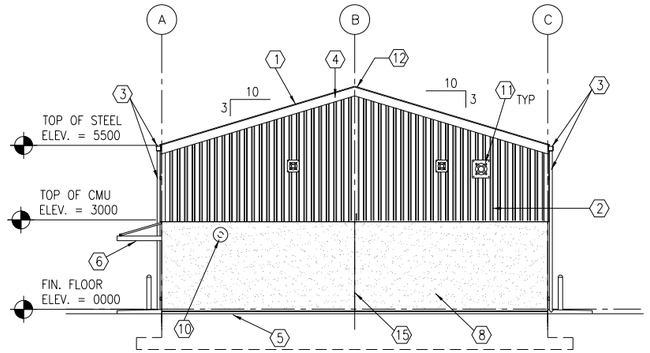
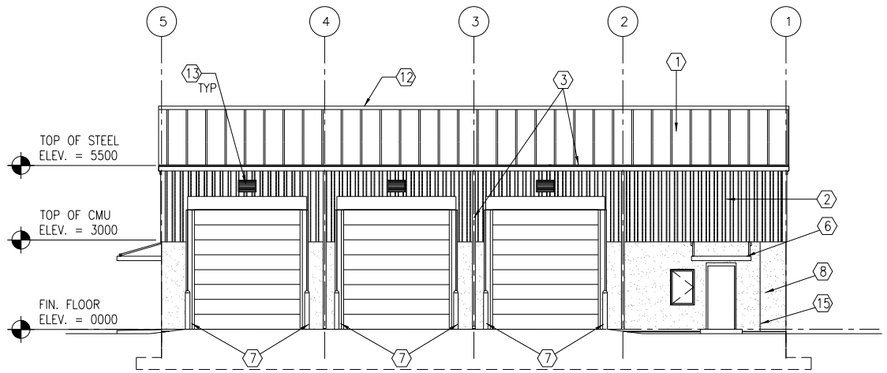


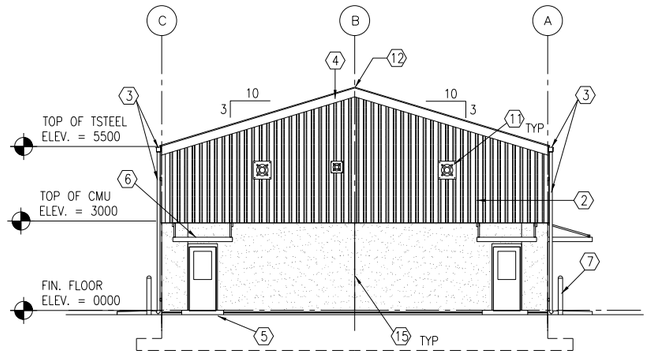
1 / A1 A3 **EAST ELEVATION**
SCALE: 1:100
VEHICLE MAINTENNCE BUILDING



3 / A1 A3 **SOUTH ELEVATION**
SCALE: 1:100
VEHICLE MAINTENNCE BUILDING



2 / A1 A3 **WEST ELEVATION**
SCALE: 1:100
VEHICLE MAINTENNCE BUILDING



4 / A1 A3 **NORTH ELEVATION**
SCALE: 1:100
VEHICLE MAINTENNCE BUILDING

KEY NOTES:

1. PRE-FINISHED METAL ROOF PANELS BY METAL BUILDING MANUFACTURER.
2. PRE-FINISHED METAL WALL PANELS BY METAL BUILDING MANUFACTURER.
3. METAL GUTTERS AND DOWNSPOUTS BY METAL BUILDING MANUFACTURER, TYPICAL.
4. RAKE TRIM BY METAL BUILDING MANUFACTURER.
5. CONCRETE STOOP - RE: DETAIL 1/A6
6. METAL CANOPY BY METAL BUILDING MANUFACTURER.
7. GALVANIZED STEEL BOLLARD FILLED WITH CONCRETE ON EACH SIDE OF ROLL UP DOOR.
8. STUCCO AND RIGID INSULATION SYSTEM OVER CMU.
9. CORRUGATED METAL ROOF PANELS ON COLD-FORMED METAL FRAMING.
10. 275 mm SLEEVE THROUGH WALL WITH CAP FOR FUTURE WOOD BURNING STOVE. MOUNT SLEEVE 2400 mm ABOVE FINISH FLOOR. STOVE BY OTHERS.
11. EXHAUST FAN - RE: MECH
12. CONTINUOUS RIDGE FLASHING - RE: 2/A2
13. LOUVER - RE: MECH
14. RIDGE VENT AND FLASHING - RE: 6,7/A2
15. CMU CONTROL JOINT, TYPICAL.

GENERAL NOTES:

1. COORDINATE SIZE AND LOCATION OF OPENINGS FOR MECHANICAL ITEMS WITH MECHANICAL DRAWINGS.
2. PROVIDE STRUCTURAL LINTELS AS REQUIRED - RE: STRUCT.
3. PROVIDE CMU CONTROL JOINT AT EACH STEEL COLUMN - RE: DETAIL 8/A4.

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

0 2000 4000 8000

SCALE: 1: 100

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CONTRACT NO.:
PLOT SCALE: 1:1
PLOT DATE: 11/23/2017
FILE NUMBER:
SIZE: ANSI D
FILE NAME: VM10_A-203.dgn

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APO AE 09356

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

EXTERIOR ELEVATIONS

SHEET IDENTIFICATION
A3
SHEET 14 OF 26

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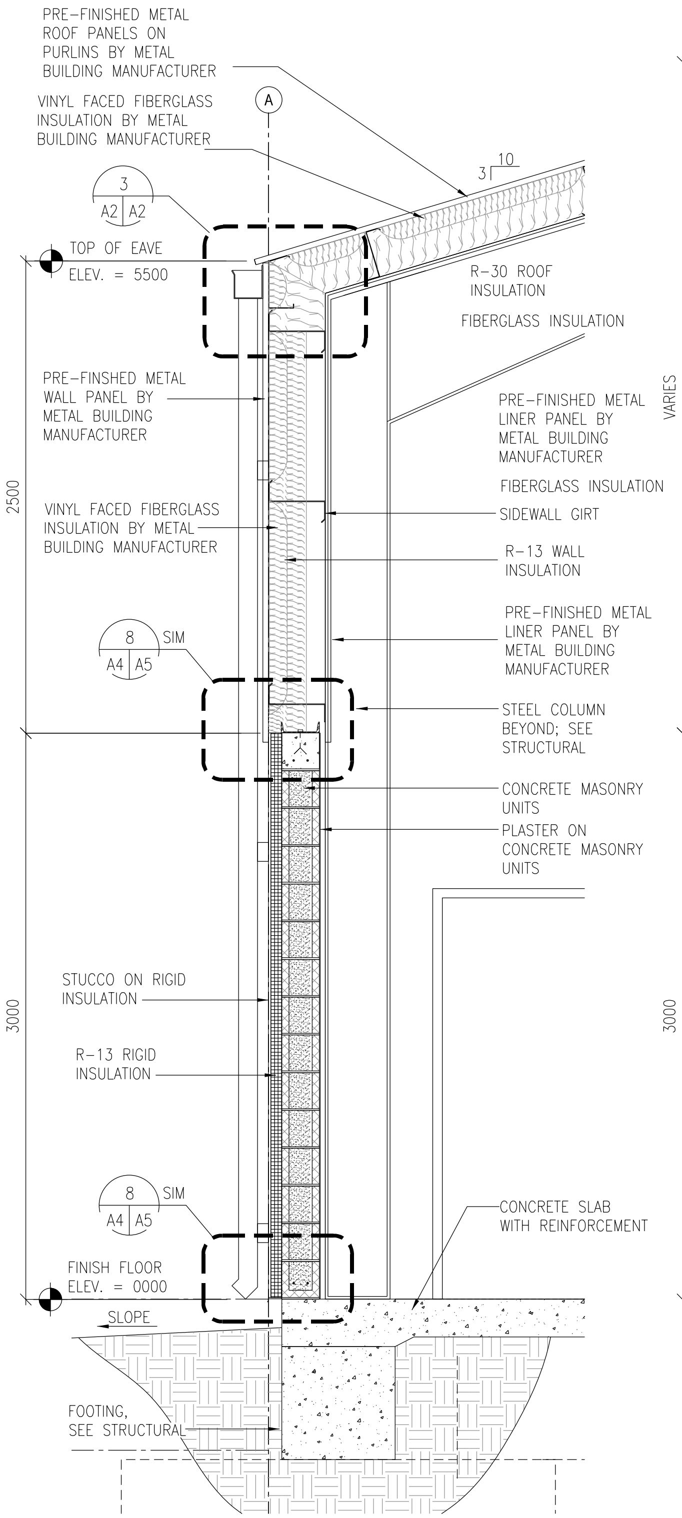
11/23/2017 01:11 AM



3 A4 A4 **WALL SECTION**
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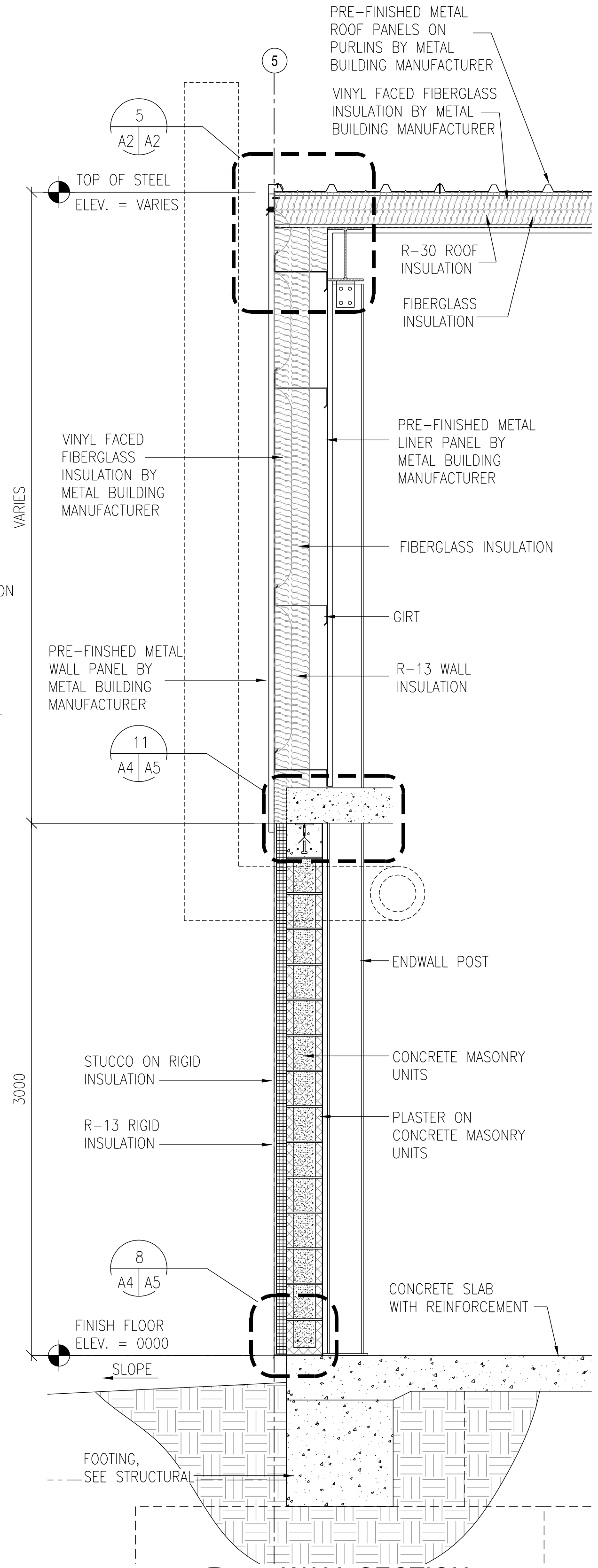
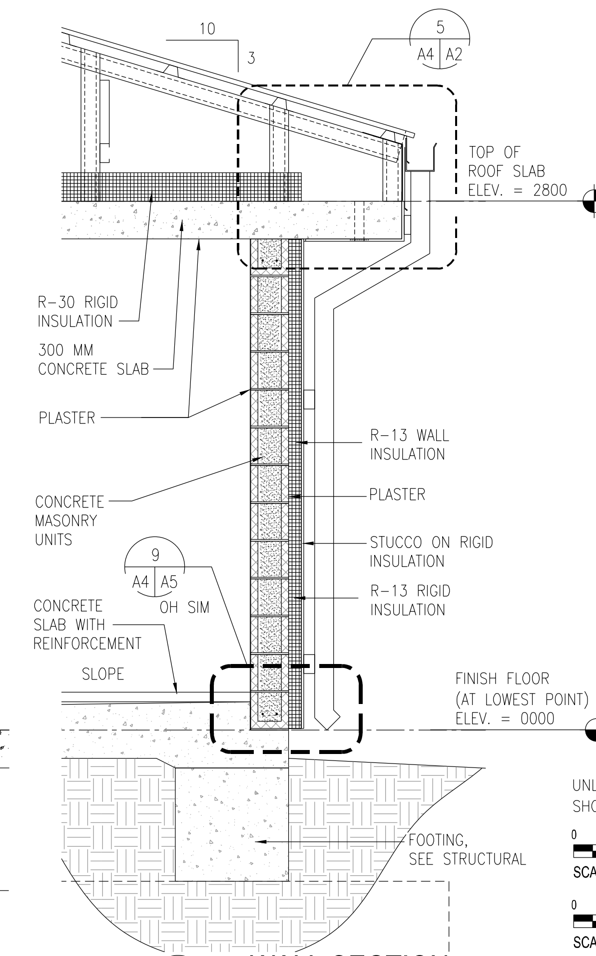
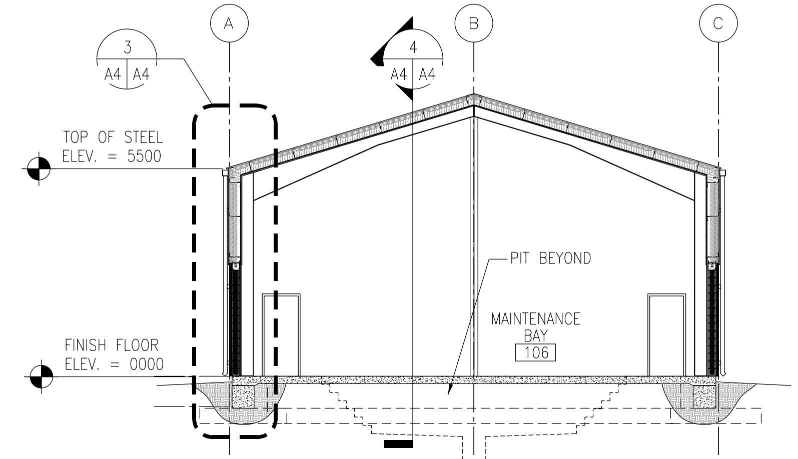


4 A4 A4 **WALL SECTION**
SCALE: 1:20



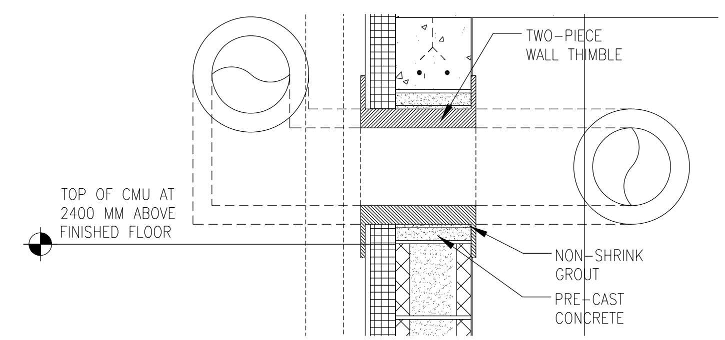
5 A4 A4 **WALL SECTION**
SCALE: 1:20



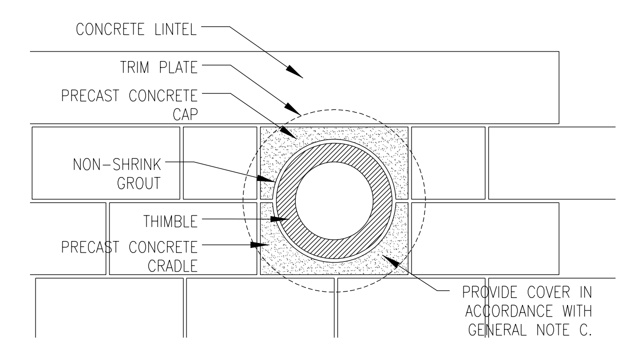
1 A1 A4 **VEHICLE MAINTENANCE BUILDING SECTION**
SCALE: 1:100

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.

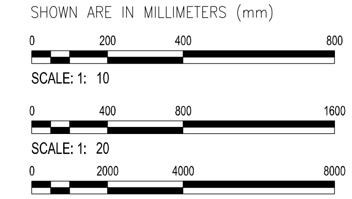


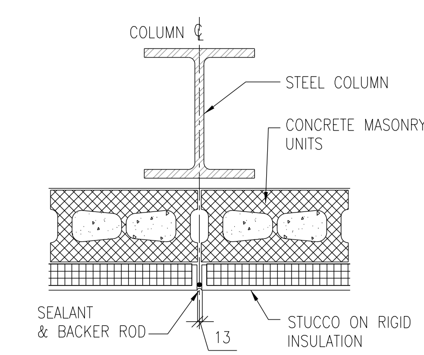
6 A4 A4 **THIMBLE DETAIL, TYPICAL**
SCALE: 1:10



7 A4 A4 **THIMBLE DETAIL, TYPICAL**
SCALE: 1:10

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





8 A4 A4 **TYPICAL CMU CONTROL JOINT**
SCALE: 1:10

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SUBMITTED BY: | CONTRACT NO.:
PLOT SCALE: 1:1 | PLOT DATE: 11/23/2011 | FILE NUMBER:
SIZE: ANSI D | FILE NAME: VM10_A-304.dgn

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

BUILDING AND WALL SECTIONS

SHEET IDENTIFICATION
A4
SHEET 15 OF 26

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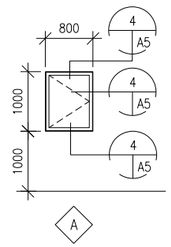

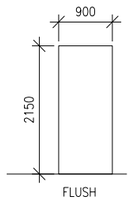

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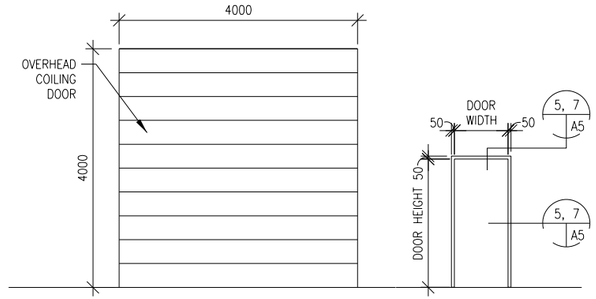

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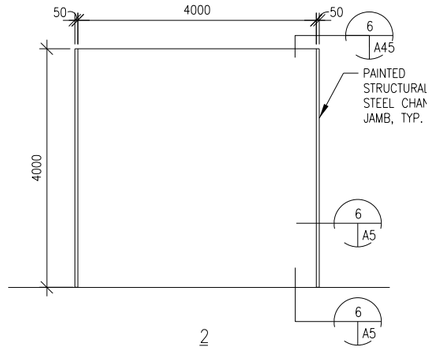


2

WINDOW TYPES NOTES:

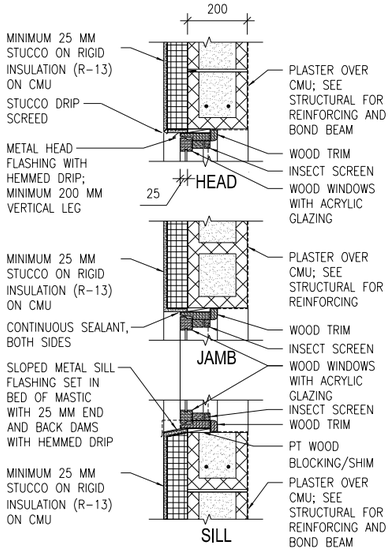
1. ALL EXTERIOR WINDOWS SHALL BE WOOD WITH INSECT SCREENS. WINDOWS SHALL BE COMMERCIAL GRADE.
2. GLAZING SHALL BE ACRYLIC SHEET.

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 90 MINUTE DOORS AS REQUIRED IN 2 HOUR RATED WALLS (IBC TABLE 7.5.4) AND NFPA (TABLE 8.3.4.2).

1 WINDOW TYPE

A5 | A5 SCALE: 1:50

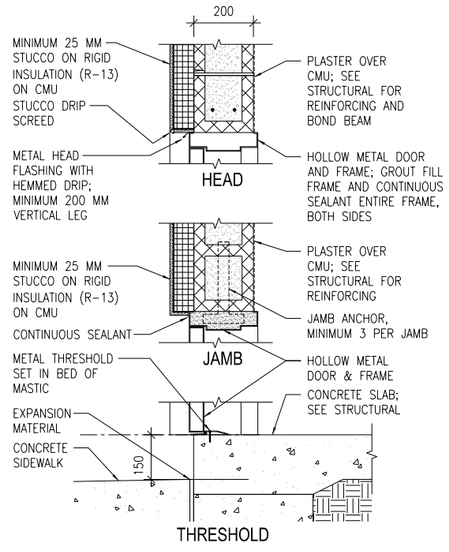


4 WINDOW DETAILS

A5 | A5 SCALE: 1:10

2 DOOR TYPES

A5 | A5 SCALE: 1:50



5 EXTERIOR DOOR DETAILS

A5 | A5 SCALE: 1:10

3 FRAME TYPES

A5 | A5 SCALE: 1:50

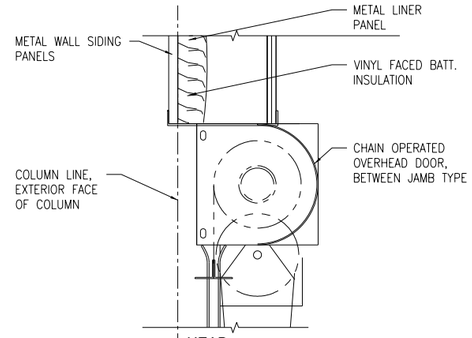
DOOR HARDWARE TYPES:

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-2 1-1/2 PR HINGES
1 EA LOCKSET W/LEVERS. GRADE 1
1 EA DOOR CLOSER, C02061,LOW RESISTANCE

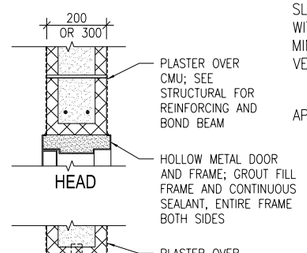
HW-4 1-1/2 PR HINGES
1 EA LOCKSET W/LEVERS. GRADE 1
1 EA STOP L02101 OR L02161

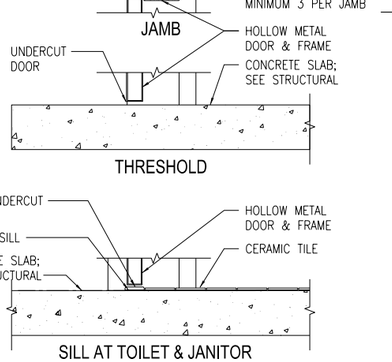
HW-6 1-1/2 PR HINGES
1 EA LOCKSET,F93 ENTRY LOCK W/LEVERS. GRADE 1
1 EA DOOR CLOSER, C02061,LOW RESISTANCE
1 EA THRESHOLD J32130



6 OVERHEAD DOOR DETAILS

A5 | A5 SCALE: 1:10





7 INTERIOR DOOR DETAILS

A5 | A5 SCALE: 1:10

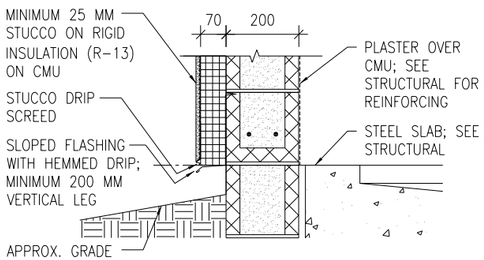
UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (mm)

0 1000 2000 4000

SCALE: 1: 50

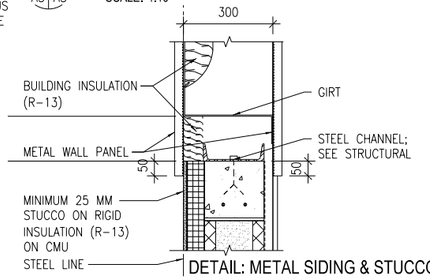
0 200 400 800

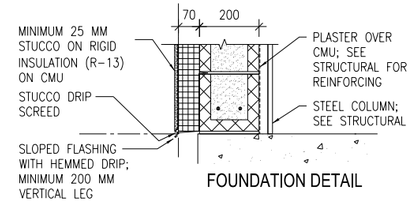
SCALE: 1: 10



9 FOUNDATION DETAIL @ POL

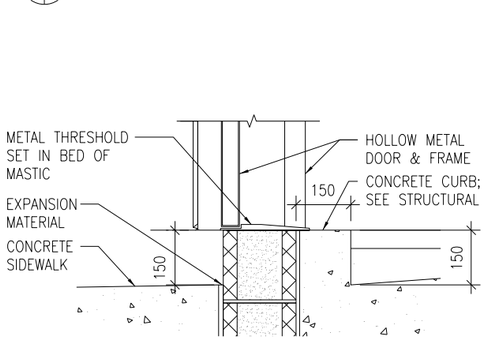
A5 | A5 SCALE: 1:10





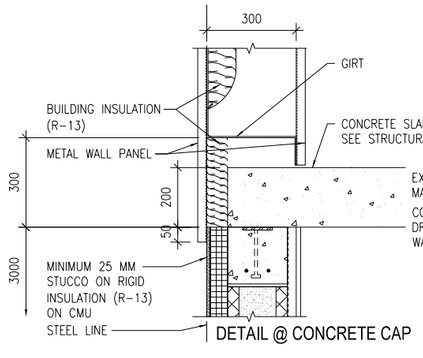
8 EXTERIOR STUCCO DETAILS

A4 | A5 SCALE: 1:10



10 THRESHOLD DETAIL @ POL

A5 | A5 SCALE: 1:10



11 STUCCO DETAILS

A5 | A5 SCALE: 1:10

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PLOT SCALE:
PLOT DATE:
SIZE: ANSI D
FILE NAME: VM10_A-505.dgn

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STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

DOOR, WINDOW AND HARDWARE TYPES AND DETAILS

SHEET IDENTIFICATION
A5
SHEET 16 OF 26

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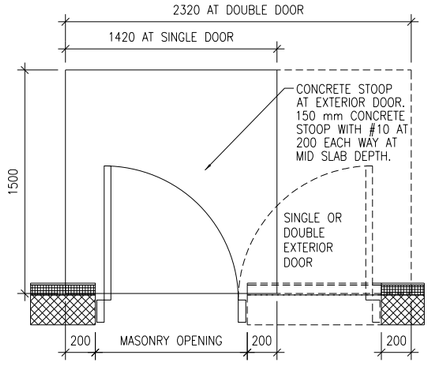
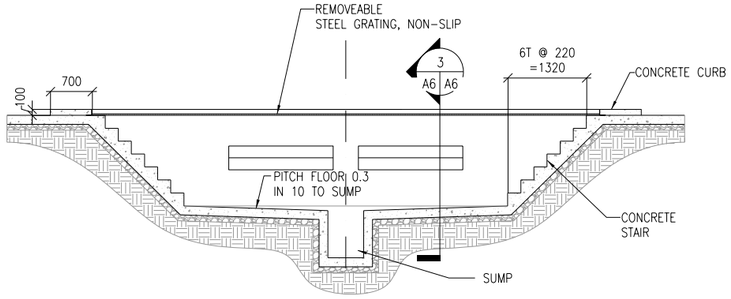


1 A6 A6 **CONCRETE STOOP PLAN DETAIL**

SCALE: 1:20



2 A6 A6 **VEHICLE MAINTENANCE PIT SECTION**

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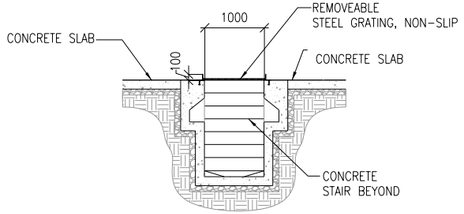
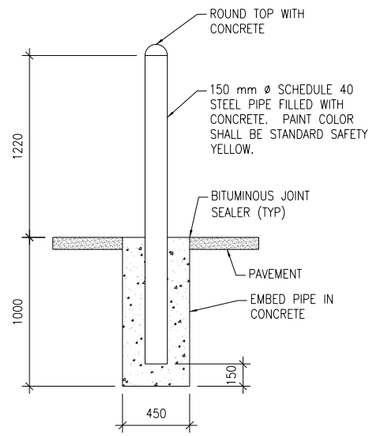


3 A6 A6 **VEHICLE MAINTENANCE PIT SECTION**

SCALE: 1:50



4 A6 A6 **STEEL PIPE BOLLARD DETAIL**

SCALE: 1:20

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

0 400 800 1600

SCALE: 1: 20

0 1000 2000 4000

SCALE: 1: 50

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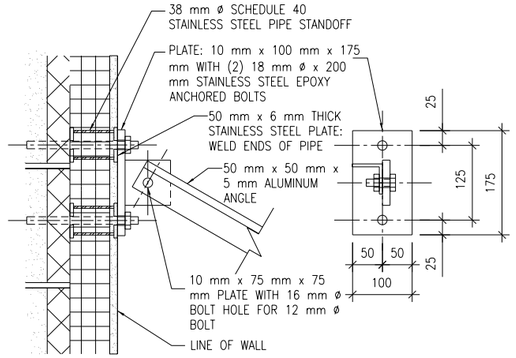
STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

SECTION DETAILS

SHEET IDENTIFICATION
A6
SHEET 17 OF 26



3 / A7 A7 **TOP CONNECTION DETAIL**

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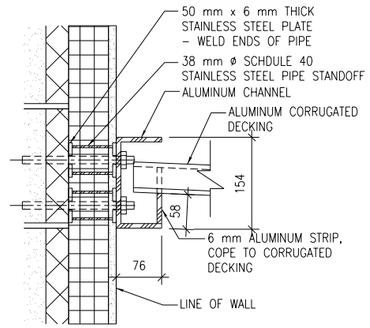
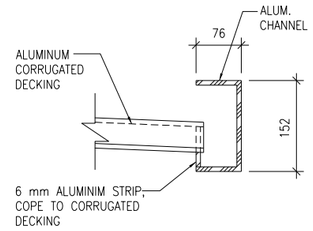


4 / A7 A7 **BOTTOM CONNECTION DETAIL**

SCALE: 1:5



5 / A7 A7 **FRONT SECTION**

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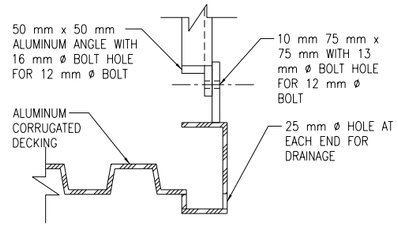
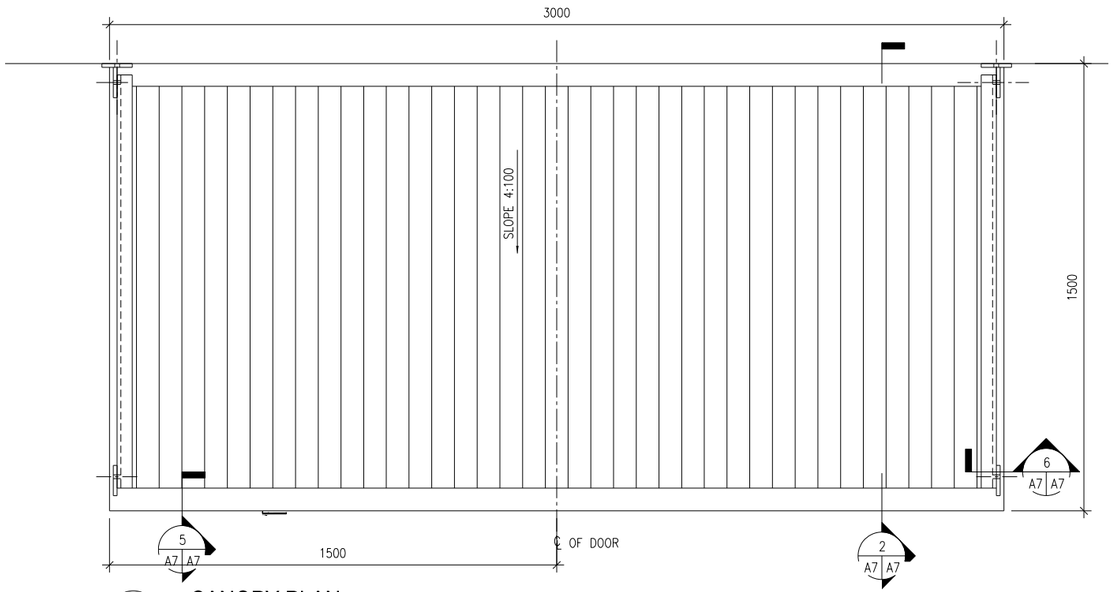


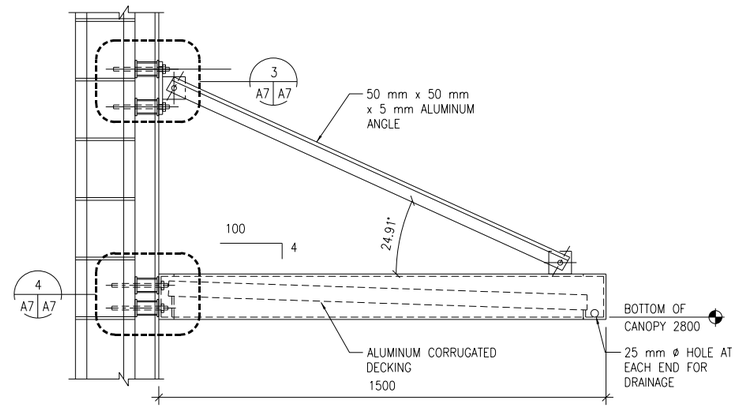
6 / A7 A7 **SIDE SECTION**

SCALE: 1:5 1 AS SHOWN 1 OPP. HAND



1 / A1 A7 **CANOPY PLAN**

SCALE: 1:10



2 / A7 A7 **CANOPY SECTION**

SCALE: 1:10

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

0 100 200 400

SCALE: 1: 5

0 200 400 800

SCALE: 1: 10

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SOLICITATION NO.:
CONTRACT NO.:
PLOT SCALE: 1:1
PLOT DATE:
FILE NAME: $FILE$
SIZE: ANSI D
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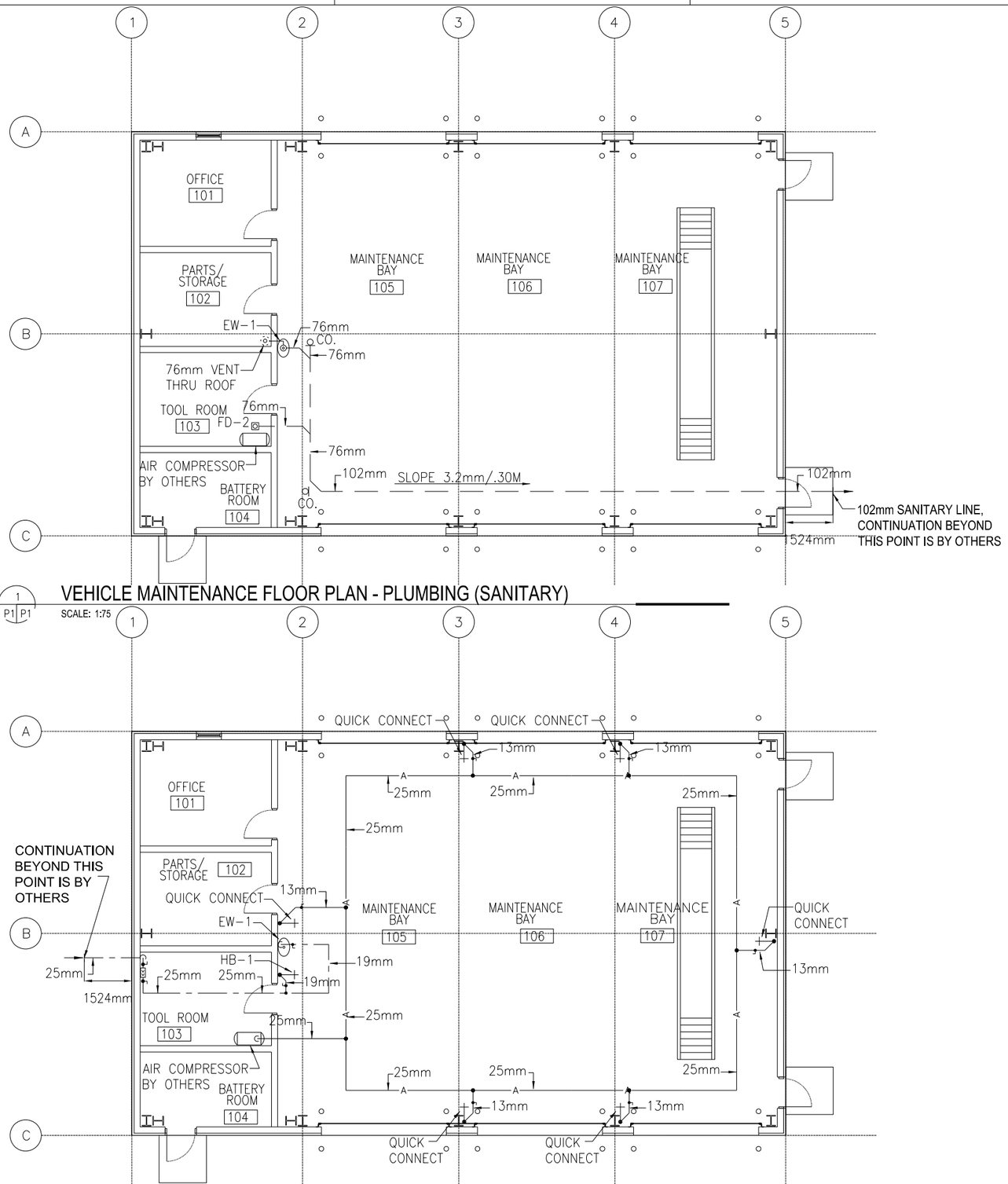
APO AE 09356

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

MISCELLANEOUS DETAILS

SHEET IDENTIFICATION
A7
SHEET 18 OF 26

$FILE\$
$DATE\$ $TIME$

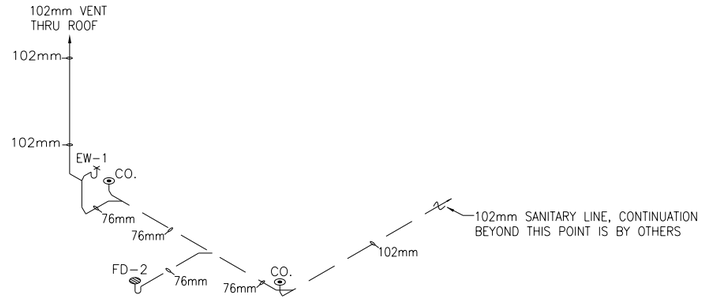


1 P1 P1 VEHICLE MAINTENANCE FLOOR PLAN - PLUMBING (SANITARY)

SCALE: 1:75

2 P1 P1 VEHICLE MAINTENANCE FLOOR PLAN - PLUMBING (WATER & AIR)

SCALE: 1:75

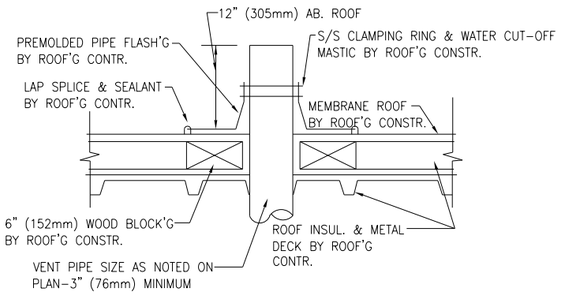


3 P1 P1 DRAINAGE ISOMETRIC

SCALE: NO SCALE

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. 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.
6. ALL WATER LINES TO BE EXPOSED. RUN LINES TIGHT TO CEILING AND WALL.



TYPICAL DETAIL – VENT THRU ROOF

NO SCALE

LEGEND

COLD WATER

HOT WATER

SANITARY ABOVE GROUND

SANITARY UNDER GROUND

VENT LINE — V —

1:100

US Army Corps of Engineers
AFGHANISTAN ENGINEER DISTRICT

MARK	DESCRIPTION	DATE	APPR.
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CONTRACT NO.:
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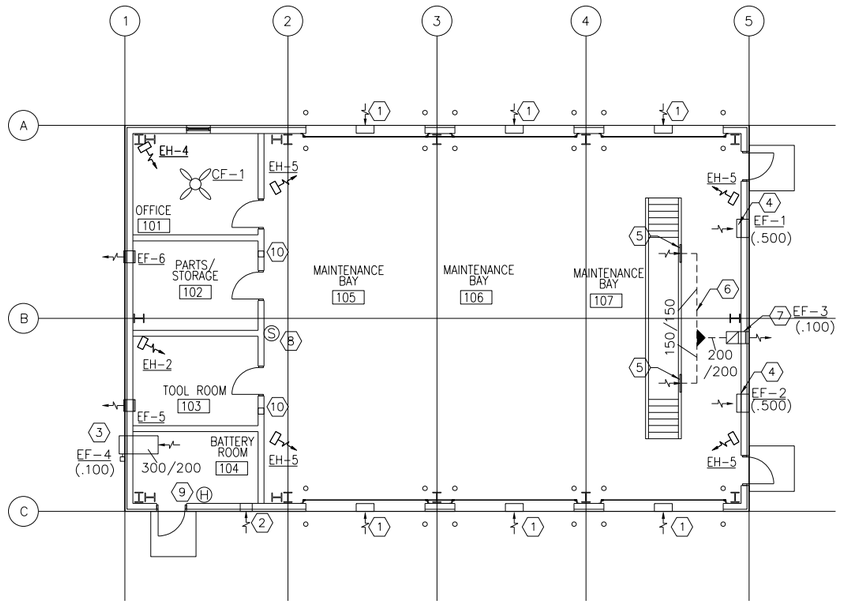
U.S. ARMY CORPS OF ENGINEERS
AFGHANISTAN DISTRICT
APO AE 09356

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

FLOOR PLAN - PLUMBING
AND DRAINAGE ISOMETRIC

SHEET IDENTIFICATION
P1
SHEET 19 OF 26

$FILE$ $TIME$
$DATE$



1 M1 | M1

FLOOR HVAC PLAN

SCALE: 1:100

GENERAL NOTES:

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

BATTERY ROOM FAN OPERATION:

THE BATTERY ROOM WILL BE PROVIDED WITH A DEDICATED EXHAUST FAN INTERLOCKED WITH A HYDROGEN SENSOR TO PROVE FAN IS OPERATING. AN ALARM SHALL SOUND WITH INCREASED HYDROGEN LEVELS AND THE CHARGERS SHALL BE SHUT DOWN. THE FAN SHALL BE INTERLOCKED WITH THE BATTERY CHARGER SO THAT THE CHARGER WILL NOT OPERATE WITHOUT VENTILATION. A WALL MOUNTED FAN SWITCH SHALL BE PROVIDED TO CONTROL THE FAN. FAN MOTORS WILL BE INSTALLED OUTSIDE THE BATTERY ROOM. THE BLOWER WILL HAVE A NON-SPARKING FAN AND THE MOTOR SHALL BE OUT OF THE AIR STREAM.

FAN SCHEDULE

NO.	TYPE	FAN CMS	DRIVE	HP	SP mmH2O	ELECT. CHAR.	SWITCH
EF-1	WALL	0.500	DIRECT	1/4	20	220/1/50	@ WALL
EF-2	WALL	0.500	DIRECT	1/4	20	220/1/50	@ WALL
EF-3	WALL	0.100	DIRECT	1/30	25	220/1/50	@ WALL
EF-4	WALL	0.100	DIRECT	1/30	13	220/1/50	@ PANEL
EF-5	WALL	0.050	DIRECT	FRACT	13	220/1/50	@ WALL
EF-6	WALL	0.050	DIRECT	FRACT	13	220/1/50	@ WALL

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
EH-4	.200	4	38	370/1/50	WALL HUNG
EH-5	.200	5	38	370/1/50	WALL HUNG

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

○ CEILING FAN

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

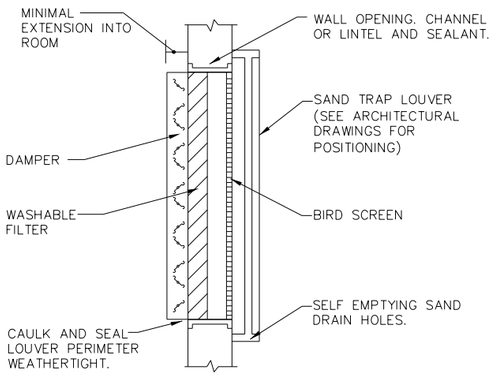
NOTE:
1. FINAL ELECTRICAL CONNECTIONS BY EC.

SYMBOLS:

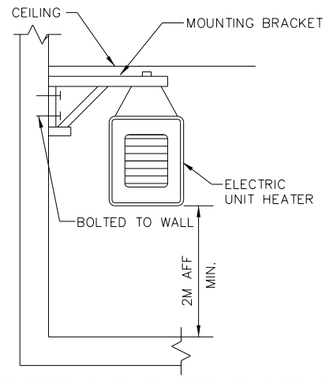
- (X) KEY NOTE
- (.050) AIR VOLUME IN CUBIC METERS PER SECOND (CMS)
- ¬ VOLUME DAMPER
- FD FIRE DAMPER
- (X) SENSOR

NUMBERED NOTE:

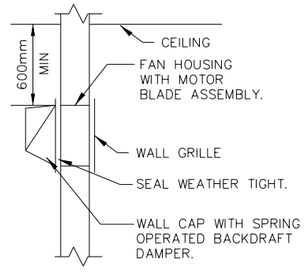
1. 600X400 (24X16) LOW LEAKAGE GRAVITY WALL LOUVER FOR INTAKE. PROVIDE WEATHER PROOF LOUVER W/ 50mm (2") WASH DOWN FILTER AND SAND TRAP.
2. 400X200 (16X8) LOW LEAKAGE GRAVITY WALL LOUVER FOR INTAKE. PROVIDE WEATHER PROOF LOUVER W/ 50mm (2") WASH DOWN FILTER AND SAND TRAP.
3. WALL EXHAUST FAN MOUNTED AS HIGH AS POSSIBLE, EXTEND DUCT INTO BATTERY ROOM WITH END OPEN. FAN MOTOR SHALL BE OUT OF THE AIR STREAM. FAN TO BE EXPLOSION PROOF.
4. WALL EXHAUST FAN MOUNTED AS HIGH AS POSSIBLE, EXTEND DUCT DOWN TO 150mm ABOVE FLOOR. PROVIDE 2 300X300 (12X12) GRILLES ONE LOCATED 300 (12") AFF AND THE OTHER AT 300 (12") BELOW CEILING. SEE DETAIL THIS SHEET.
5. 300X300 (12X12) WALL EXHAUST GRILLE LOCATED 300mm (12") AFF OF PIT.
6. EXTEND DUCT UNDERGROUND OVER TO WALL AND UP TO EXHAUST FAN.
7. EXHAUST FAN WITH DUCT DOWN BELOW FLOOR TO PIT AS SHOWN.
8. COMBINATION NITROGEN DIOXIDE / CARBON MONOXIDE SENSOR INTERLOCKED WITH EF-1 & EF-2 TO TURN FANS ON WITH INCREASED LEVELS AS SPECIFIED.
9. HYDROGEN SENSOR INTERLOCKED W/ EF-4 MOUNTED AT CEILING.
10. 200X200 (8X8) TRANSFER GRILLE.



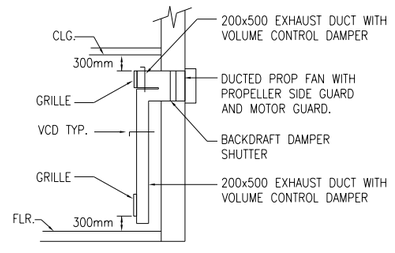
FILTERED SAND TRAP LOUVER
N.T.S.



ELECTRIC UNIT HEATER MOUNTING
N.T.S.



WALL MOUNTED EXHAUST FAN DETAIL
N.T.S.



TYPICAL FAN HIGH LOW GRILLE DETAIL
N.T.S.

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U.S. ARMY CORPS OF ENGINEERS
AFGHANISTAN DISTRICT
APO AE 09356

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

HVAC FLOOR PLAN

SHEET IDENTIFICATION
M1
SHEET 20 OF 26

$FILE$ $DATE$ $TIME$

POWER

- DISTRIBUTION PANELBOARD
- NEW PANELBOARD – SURFACE
- NEW PANELBOARD – RECESSED
- EXISTING PANELBOARD
- GENERATOR
- TVSS — TRANSIENT VOLTAGE SURGE SURPRESSOR
- TRANSFORMER (DRAWN TO SIZE)
- PS — POWER SUPPLY
- CP — CONTROL PANEL
- TC — TIME CLOCK
- TIM — ASTRONOMICAL TIME CLOCK– "SEE SPEC."
- R — RELAY WITH RATING AND NUMBER OF POLES AS NOTED ON DRAWINGS– "SEE SPEC."
- J — JUNCTION BOX
- J — JUNCTION BOX – CEILING
- PB — PULL BOX
- BD — BUS DUCT HORIZONTAL
- BUS DUCT VERTICAL
- D — EMERGENCY POWER OFF PUSH BUTTON
- NON–FUSIBLE SAFETY SWITCH
- FUSIBLE SAFETY SWITCH
- M — MOTOR
- $M — MOTOR STARTING SWITCH – 20A RATED
- $K — KEY SWITCH – 20A RATED
- FC — FAN COIL – FURNISHED BY MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR SHALL INSTALL AND PROVIDE POWER CONNECTION
- UH — UNIT HEATER – FURNISHED BY MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR SHALL INSTALL AND PROVIDE POWER CONNECTION
- D — JUNCTION BOX FOR CONNECTION TO GARBAGE DISPOSAL
- CF — LIGHT/HEATER/FAN – FURNISHED BY MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR SHALL INSTALL AND PROVIDE POWER CONNECTION
- ELECTRIC WATER HEATER
- EPO — WEATHERPROOF / EXPLOSION PROOF EMERGENCY POWER OFF PUSH–BUTTON TO BE INTERCONNECTED WITH GENERATOR SHUT DOWN CONTROL
- CEILING FAN – REFER TO SPECIFICATION SECTION 26 20 00

RECEPTACLES

- DUPLEX 20A BRITISH STANDARD UNSWITCHED SOCKETS
- GF — DUPLEX 20A BRITISH STANDARD UNSWITCHED SOCKETS – 10mA GROUND FAULT INTERRUPTER TYPE
- WP — DUPLEX 20A BRITISH STANDARD UNSWITCHED SOCKETS – 10mA GROUND FAULT INTERRUPTER TYPE WITH WEATHERPROOF COVER
- EXP — DUPLEX 20A BRITISH STANDARD UNSWITCHED SOCKETS – EXPLOSION PROOF
- * — INDICATES MOUNT DEVICE ABOVE COUNTER TOP

LIGHTNING PROTECTION

- AIR TERMINAL 20mm O.D. X 4m SOLID COPPER, NICKEL PLATED ON ADHESIVE BASE.
- EQ — EQUIPMENT AIR TERMINAL
- TEST WELL WITH GROUND ROD(S)
- GROUND ROD
- G — GROUND PLATE
- G — MAIN GROUND CONDUCTER CONCEALED WITHIN CONSTRUCTION
- G — MAIN GROUND CONDUCTOR EXPOSED ON EXPOSED ON BUILDING EXTERIOR SURFACE
- G — GROUND CONDUCTOR CAD WELDED TO GROUND CABLE OR EQUIPMENT
- G — GROUND CONDUCTOR CAD WELDED TO BUILDING STEEL COLUMN
- G — GROUND ROD TRIPOD, SPACED 10 FEET APART.
- LEVEL TO LEVEL CABLE

LIGHTING

- LIGHTING FIXTURE – SEE FIXTURE SCHEDULE FOR MORE INFORMATION
- LIGHTING FIXTURE – SEE FIXTURE SCHEDULE FOR MORE INFORMATION
- DOWNLIGHT
- LIGHTING FIXTURE ON NORMAL/EMERGENCY
- WALL MOUNTED LIGHT FIXTURE
- E — EXIT SIGN – DIRECTIONAL ARROWS AS INDICATED ON DRAWINGS
- B — BATTERY PACK WITH HEADS AS INDICATED ON DRAWINGS
- REMOTE HEAD FOR BATTERY PACK
- $ — SINGLE POLE SWITCH – 20A RATED
- $3 — 3–WAY SWITCH – 20A RATED
- $4 — 4–WAY SWITCH – 20A RATED
- PC — PHOTOCELL VOLTAGE TO MATCH CIRCUITRY
- LC — LIGHTING CONTACTOR
- POLE MOUNTED SITE LIGHTING FIXTURE– NUMBER OF FIXTURES PER POLE AS INDICATED ON DRAWINGS
- EXTERIOR DIRECTIONAL LIGHTING FIXTURE
- SMALL CASE LETTERS REPRESENTS LAMP(S) / SWITCHES. WHEN USED WITH AN OCCUPANCY SENSOR THIS INDICATES SENSOR WITH MANUAL OVERRIDE SWITCH

TELECOMMUNICATIONS

- TELEPHONE OUTLET(S) @ 18" AFF. U.N.O. WITH 3/4" RACEWAY TERMINATED ABOVE NEAREST ACCESSIBLE CEILING OR TO TELEPHONE TERMINAL BOARD IF NO ACCESSIBLE CEILING AVAILABLE. SEE TELE/DATA RISER DIAGRAM FOR OUTLET AND CABLE DESCRIPTION
- DATA OUTLET(S) @ 18" AFF. U.N.O. WITH 3/4" RACEWAY TERMINATED ABOVE NEAREST ACCESSIBLE CEILING OR TO DATA EQUIPMENT RACK IF NO ACCESSIBLE CEILING AVAILABLE. SEE TELE/DATA RISER DIAGRAM FOR OUTLET AND CABLE DESCRIPTION

TELECOMMUNICATIONS (CONTINUED)

- COMBINATION TELEPHONE/DATA OUTLET(S) @ 18" AFF. U.N.O. WITH 1" RACEWAY TERMINATED ABOVE NEAREST ACCESSIBLE CEILING OR TO TELE/DATA TERMINAL AREA IF NO ACCESSIBLE CEILING AVAILABLE. SEE TELE/DATA RISER DIAGRAM FOR OUTLET AND CABLE DESCRIPTION
- W — WALL MTD. TELEPHONE OUTLET WITH 3/4" RACEWAY TERMINATED ABOVE NEAREST ACCESSIBLE CEILING OR TO TELEPHONE TERMINAL BOARD IF NO ACCESSIBLE CEILING AVAILABLE. SEE TELE/DATA RISER DIAGRAM FOR OUTLET AND CABLE DESCRIPTION
- (x)T — INDICATES NUMBER OF TELEPHONE OUTLET(S) AND ASSOCIATED CABLING
- (x)D — INDICATES NUMBER OF DATA OUTLET(S) AND ASSOCIATED CABLING
- (x)TF — INDICATES NUMBER OF TELEPHONE OUTLETS AND ASSOCIATED CABLING WITH 1 OUTLET AND CABLE DEDICATED FOR FAX

SINGLE LINE SYMBOLS

- SWITCH
- BREAKER
- FUSE
- TRANSFORMER
- CAPACITOR
- GROUND
- CONTACT (NORMALLY OPEN)
- CONTACT (NORMALLY CLOSED)
- AUTOMATIC TRANSFER SWITCH
- MANUAL DOUBLE THROW SWITCH
- CURRENT TRANSFORMER
- INDICATES NEW ELECTRICAL EQUIPMENT
- C — INDICATES NEW CONTROL WIRING AND CONDUIT
- EQUIPMENT OUTLINE

MISCELLANEOUS

- BRANCH CIRCUIT WIRING CONCEALED ABOVE CEILINGS, SURFACE MOUNTED ON WALLS
- BRANCH CIRCUIT WIRING – #10 AWG
- BRANCH CIRCUIT WIRING – UNDER FLOOR
- HOME RUN BACK TO PANEL
- CONDUIT TURNED DOWN
- CONDUIT TURNED UP
- LV — LOW VOLTAGE WIRING AND CONDUIT
- CT–x — CABLE TRAY ("X" DENOTES WIDTH)
- INDICATES CONTINUATION OF LINE

FIRE ALARM

- FACP — FIRE ALARM CONTROL PANEL WITH BATTERY BACKUP
- F — FIRE ALARM PULL STATION

FIRE ALARM (CONTINUED)

- F — FIRE ALARM STROBE – WALL MOUNTED
- F — FIRE ALARM AUDIBLE/STROBE – WM
- F — FIRE ALARM HORN/STROBE – WM
- S — SMOKE DETECTOR
- H — HEAT DETECTOR CEILING MOUNTED
- D — DUCT DETECTOR – PROVIDED BY EC, INSTALLED BY MC AND CONNECTED BY EC

DENOTATIONS & ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
C	CEILING MOUNTED
E	EMERGENCY
EC	ELECTRICAL CONTRACTOR
EPO	EMERGENCY POWER OFF
EXP	EXPLOSION PROOF
F	FIRE ALARM
FF	FLUSH FLOOR MOUNTED
FL	FLUORESCENT
FO	FIBER OPTIC
FSS	FUSED SAFETY SWITCH
G	GROUND FAULT INTERRUPTER
GC	GENERAL CONTRACTOR
HOA	HAND–OFF AUTO
I	INFRARED
ICD	INCANDESCENT
IG	ISOLATED GROUND
K	KEY
LV	LOW VOLTAGE
M	MOTOR
MC	MECHANICAL CONTRACTOR
NE	NORMAL/EMERGENCY
NFSS	NON–FUSED SAFETY SWITCH
PA	PAGING SYSTEM
PLC	PLUMBING CONTRACTOR
REL	RELOCATE
RED	RELOCATED
SL	SINGLE LINE
SS	SURGE SUPPRESSION
T	TELEPHONE
TL	TWIST LOCK

DENOTATIONS & ABBREVIATIONS (CONT.)

TP	TAMPER PROOF
UE	UNDERGROUND ELECTRIC
UF	UNDERGROUND FIBER
UT	UNDERGROUND TELEPHONE
W	WALL MOUNTED
WG	WIRE GUARD
WP	WEATHERPROOF
WPG	WEATHERPROOF/GROUND FAULT INTERRUPTER
WT	WATER TIGHT

GENERAL PROJECT NOTES:

G1. UNLESS OTHERWISE NOTED, PROVIDE ALL EQUIPMENT SHOWN ON THE PLANS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL SYMBOLS SHOWN ON THE PLANS WITH THE SYMBOL LIST. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE INTENT OF ANY SYMBOL THAT IS SHOWN ON THE PLANS AND NOT INDICATED ON THE SYMBOL LIST WITH THE ENGINEER PRIOR TO BID.

G2. COORDINATE THE FINAL LOCATIONS OF ALL LIGHT FIXTURES WITH THE ARCHITECT'S REFLECTED CEILING PLANS. REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO INSTALLATION.

G3. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES WITHIN THE CONSTRUCTION AREA THREE (3) WORKING DAYS NOTICE BEFORE COMMENCE DIGGING. NOTIFY THE LOCAL OR STATE AUTHORITY HAVING JURISDICTION AND WAIT THE REQUIRED TIME BEFORE COMMENCING TO DIG.

G4. THE CONTRACTOR SHALL COORDINATE CONDUIT RUNS, CABLE TRAY, LIGHTING FIXTURES AND OTHER EQUIPMENT LOCATIONS WITH THE OTHER TRADE CONTRACTORS TO AVOID CONFLICTS.

G5. WHERE VOLTAGES AND FREQUENCIES ON THE DRAWINGS AND IN THE SPECIFICATIONS DIFFER FROM THE LOCAL ONES, ALL WORK SHALL BE PERFORMED USING THE LOCAL VOLTAGES AND FREQUENCIES.

G6. THE MINIMUM WIRE SIZE ON THE PROJECT SHALL BE 4mm2. THE MINIMUM CONDUIT SIZE SHALL BE 20mm. THE MINIMUM BREAKER SIZE SHALL BE 20 AMPS.

G7. THE CONTRACTOR SHALL PUT A MAXIMUM OF 6 DUPLEX SOCKETS ON A 20A SINGLE POLE CIRCUIT.

G8. WHERE THE 1010 SCOPE REVIEW, 1015 TECHNICAL REVIEW, DRAWINGS, AND SPECIFICATIONS DIFFER FROM AMERICAN CODES OR STANDARDS THE 1010, 1015, DRAWINGS, AND SPECIFICATIONS SHALL RULE.

G9. WORK FOR THE AMMUNITION SUPPLY POINT SHALL BE DONE IN ACCORDANCE WITH DEPARTMENT OF DEFENSE STANDARD DOD 6055.9–STD.

G10. ALL CONDUIT AND DEVICES SHALL BE SURFACE MOUNTED UNLESS OTHERWISE INDICATED.

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U.S. ARMY CORPS OF ENGINEERS
AFGHANISTAN DISTRICT
APO AE 09356

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

ELECTRICAL SYMBOLS AND ABBREVIATIONS

SHEET IDENTIFICATION
E0
SHEET 21 OF 26

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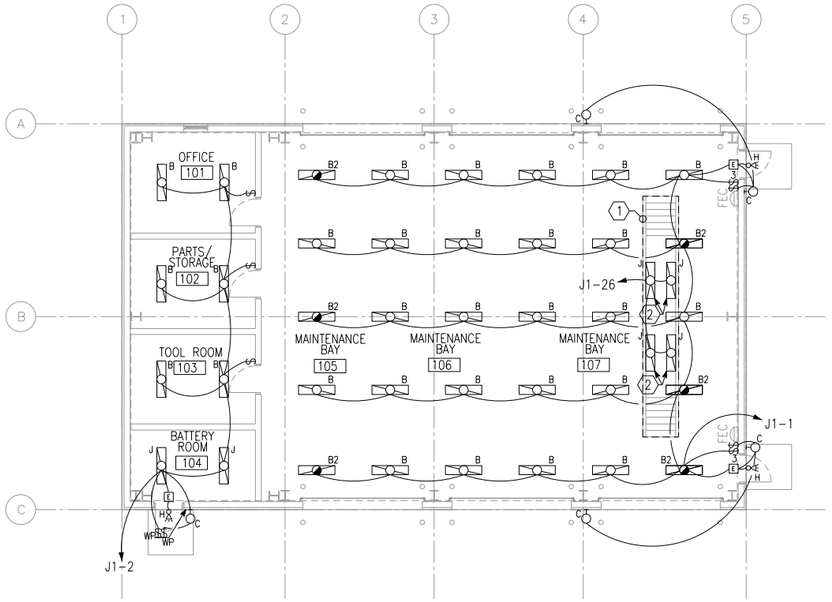

1 / E1 | E1 LIGHTING PLAN (VEHICLE MAINTENANCE)

SCALE: 1:100

N

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 #E4 FOR THE LIGHTING FIXTURE SCHEDULE.
4. REFER TO DRAWING #E3 FOR THE POWER RISER.
5. REFER TO DRAWING #E5 FOR PANEL SCHEDULES.
6. LIGHT FIXTURES INDICATED AS EMERGENCY SHALL BE PROVIDED WITH A BATTERY BACKUP BALLAST.

NUMBERED NOTES:

(1) ALL WORK IN MAINTENANCE PIT SHALL BE IN ACCORDANCE WITH NEC ARTICLE 511. EXPLOSION PROOF EQUIPMENT SHALL BE USED FOR ALL FIXTURES AND DEVICES. PROVIDE CONDUIT SEALS WHERE REQUIRED. ALL WIRING SHALL BE IN ACCORDANCE WITH NEC ARTICLE 501. FOR CLASS I LOCATIONS.

(2) FIXTURE SHALL BE MOUNTED TO WALL OF MAINTENANCE PIT.

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

1 0 1 2 3 4 5 6 7 8 9

1:100

E1

LIGHTING PLANS

US Army Corps of Engineers
AFGHANISTAN ENGINEER DISTRICT

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STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

LIGHTING PLANS

SHEET IDENTIFICATION
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SHEET 22 OF 26

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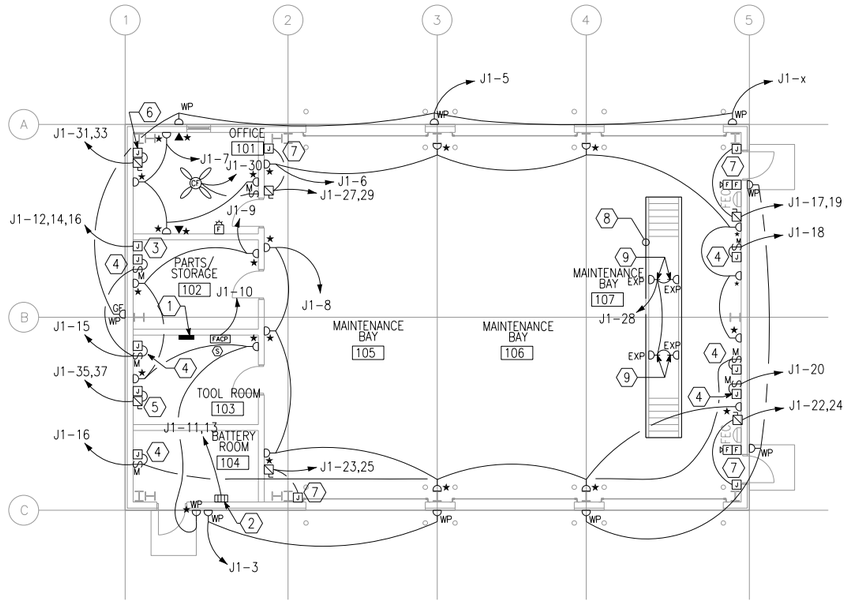

1 / E2 | E2 POWER AND SYSTEMS PLAN (VEHICLE MAINTENANCE)

SCALE: 1:100

N

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) PANEL J1.

(2) BATTERY CHARGER

(3) PROVIDE ELECTRICAL CONNECTION TO AIR COMPRESSOR (BY OTHERS). COORDINATE ELECTRICAL CONNECTION WITH MODEL PURCHASED PRIOR TO ROUGH IN OF ELECTRICAL EQUIPMENT.

(4) PROVIDE POWER CONNECTION TO EXHAUST FANS. SEE DRAWINGS #M1 AND #E5 FOR MORE INFORMATION.

(5) PROVIDE POWER CONNECTION TO ELECTRIC HEATER #2. SEE DRAWINGS #M1 AND #E5 FOR MORE INFORMATION.

(6) PROVIDE POWER CONNECTION TO ELECTRIC HEATER #4. SEE DRAWINGS #M1 AND #E5 FOR MORE INFORMATION.

(7) PROVIDE POWER CONNECTION TO ELECTRIC HEATER #5. SEE DRAWINGS #M1 AND #E5 FOR MORE INFORMATION.

(8) ALL WORK DONE IN THE MAINTENANCE PIT SHALL BE IN ACCORDANCE WITH NEC ARTICLE 511. EXPLOSION PROOF EQUIPMENT SHALL BE USED FOR A FIXTURES AND DEVICES. PROVIDE CONDUIT SEALS WHERE REQUIRED. ALL WIRING SHALL BE IN ACCORDANCE WITH NEC ARTICLE 501. FOR CLASS I LOCATIONS.

(9) RECEPTACLE SHALL BE MOUNTED TO WALL OF MAINTENANCE PIT AT 1070mm ABOVE FINISHED FLOOR OF MAINTENANCE PIT.

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

1 0 1 2 3 4 5 6 7 8 9
1:100

US Army Corps of Engineers
AFGHANISTAN ENGINEER DISTRICT

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APO AE 09356

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

POWER AND SYSTEMS PLAN

SHEET IDENTIFICATION
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SHEET 23 OF 26

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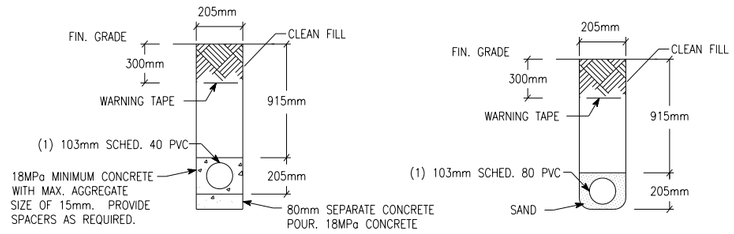
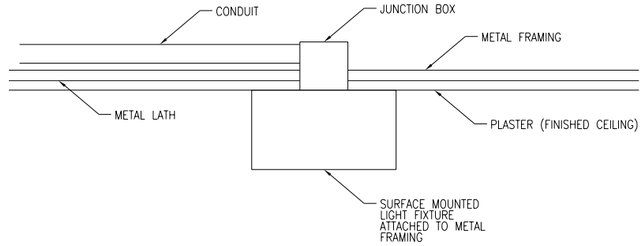


NOTE: PVC CONDUIT SHALL BE DIRECT BURIED SCHEDULE 80 FOR NO TRAFFIC AREAS AND CONCRETE-ENCASED SCHEDULE 40 FOR UNDER ROADWAYS OR TRAFFIC AREAS.

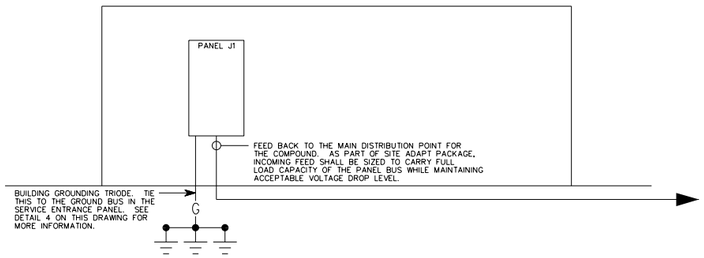
1 E3 E3 TYPICAL DUCT BANK DETAILS FOR CONDUIT IN SAND OR CONCRETE

SCALE: N.T.S.



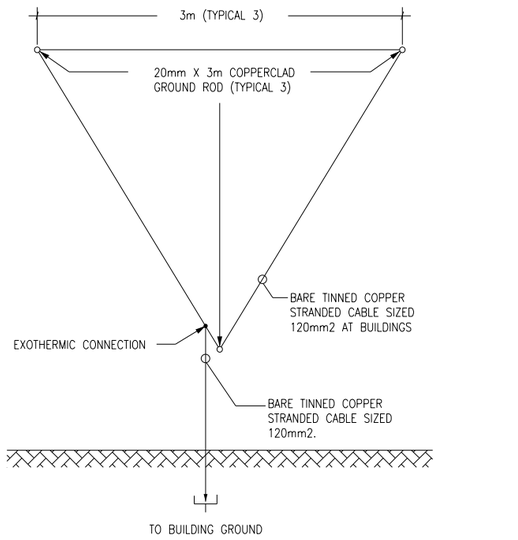
2 E3 E3 TYPICAL DETAIL FOR SURFACE MOUNTED LIGHT FIXTURES

SCALE: N.T.S.



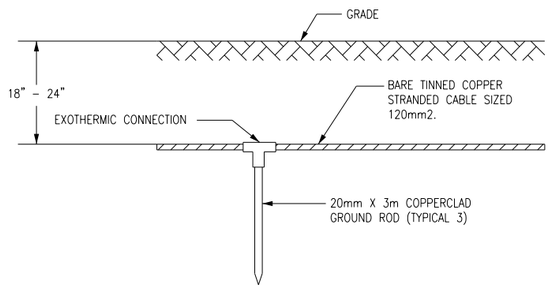
3 E3 E3 VEHICLE/POL RISER DIAGRAM

SCALE: N.T.S.



4 E3 E3 GROUND TRIPOD SYSTEM DETAIL - PLAN

SCALE: N.T.S.



5 E3 E3 GROUND TRIPOD SYSTEM DETAIL - ELEVATION

SCALE: N.T.S.

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SOLICITATION NO.:
CONTRACT NO.:
FILE NUMBER:
PLOT SCALE: 1.0000
PLOT DATE:
FILE NAME: VM10_E-503.dgn
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
AFGHANISTAN DISTRICT
APO AE 09356

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

DETAILS

SHEET IDENTIFICATION
E3
SHEET 24 OF 26

LIGHTING FIXTURE SCHEDULE

FIXTURE MARK	STYLE NUMBER AND TYPE	NUMBER AND TYPE OF LAMPS	VOLTAGE	MOUNTING	NOTES
B	WET LOCATION WRAP AROUND SURFACE/PENDANT MOUNTED FLUORESCENT FIXTURE WITH PRISMATIC ACRYLIC LENS AND ELECTRONIC BALLAST	(2) 32W 3500K	220V – 1ø 50HZ	PENDANT MOUNTED FROM SLOPED CEILINGS	FURNISHED WITH ELECTRONIC BALLAST, VIRGIN ACRYLIC WRAP AROUND LENS.
B2	SAME AS FIXTURE 'B' WITH EMERGENCY BALLAST	(2) 32W 3500K	220V – 1ø 50HZ	PENDANT MOUNTED FROM SLOPED CEILINGS	FURNISHED WITH ELECTRONIC BALLAST, VIRGIN ACRYLIC WRAP AROUND LENS. EMERGENCY BALLAST WITH SELF TEST SWITCH.
C	INCANDESCENT ONE PIECE W/ APPROVED LENS STABILIZED HIGH IMPACT POLY CARBONATE.	(1) A19 – 100W INCANDESCENT	220V – 1ø 50HZ	WALL MOUNTED ABOVE EXTERIOR DOORS	
H	REMOTE HEAD EXTERIOR LIGHT HEAD POWERED FROM EXIT SIGN BATTERY– 12V DOUBLE HEAD CORROSION RESISTANT WITH UL34 WEATHERPROOF CONSTRUCTION	(2) 12W/12V HALOGEN LAMP	12V – 1ø 50HZ	EXTERIOR WALL MOUNTED AT TOP OF DOOR HEIGHT	
J	EXPLOSION–PROOF (2) LAMP FIXTURE PROVIDED WITH LAMPS. COPPER FREE, ALUMINUM HOUSING, TEMPERED BOROSILICATE GLASS, AND BIAX LAMPS WITH WIRE GUARD	(2) 40W 3500K BIAX FLUORESCENT LAMPS	220V – 1ø 50HZ	PENDANT MOUNTED FROM SLOPED CEILINGS	FURNISHED WITH LAMPS AND WIRE GUARD
[E]	UNIVERSAL MOUNT ENGINEER GRADE THERMOPLASTIC HOUSING EXIT SIGN WITH LED LAMPS, RED LETTERS 6" IN HEIGHT WITH ARROWS AS INDICATED, WITH 12V CADMIUM BATTERY WITH REMOTE HEAD CAPABILITY	LED LAMPS	220V – 1ø 50HZ	UNIVERSAL MOUNTING	

FIXTURE MARK 'B'

WET LOCATION WRAP AROUND SURFACE/PENDANT MOUNTED FLUORESCENT FIXTURE WITH PRISMATIC ACRYLIC LENS AND ELECTRONIC BALLAST.

FIXTURE MARK 'B2':
SAME FIXTURE AS 'B' WITH EMERGENCY BALLAST.

FIXTURE MARK 'C'

INCANDESCENT ONE PIECE WITH APPROVED LENS, STABILIZED HIGH IMPACT POLY CARBONATE

FIXTURE MARK 'H'

REMOTE HEAD EXTERIOR LIGHT HEAD POWERED FROM EXIT SIGN BATTERY– 12V DOUBLE HEAD CORROSION RESISTANT WITH UL34 WEATHERPROOF CONSTRUCTION

FIXTURE MARK '[E]'

UNIVERSAL MOUNT ENGINEER GRADE THERMOPLASTIC HOUSING EXIT SIGN WITH LED LAMPS, RED LETTERS 6" IN HEIGHT WITH ARROWS AS INDICATED, WITH 12V CADMIUM BATTERY

FIXTURE MARK 'J'

EXPLOSION–PROOF (2) LAMP FIXTURE PROVIDED WITH LAMPS. COPPER FREE, ALUMINUM HOUSING, TEMPERED BOROSILICATE GLASS, AND BIAX LAMPS WITH WIRE GUARD

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SUBMITTED BY: | CONTRACT NO.:
PLOT SCALE: 1:1 | PLOT DATE: 11/22/2017 | FILE NUMBER:
SIZE: ANSI D | FILE NAME: VM10_E-604.dgn

STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

LIGHT FIXTURE SCHEDULE

SHEET IDENTIFICATION
E4
SHEET 25 OF 26

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PANELBOARD J1 SURFACE MOUNTED ASYM. A.I.C. MIN.

AMP. MAIN LUGS (OR) 150 AMP. MAIN BREAKER W/ 150 AMP. TRIP

CIRCUIT BREAKER TYPE 380/220 VOLTS 3 PHASE 4 WIRE 50 HZ 150 AMP. BUS

CKT. NO.	TRIP AMPS	NO. POLES	WIRE MM 2	GND MM2	CONDUIT MM	LOAD SERVED	LOAD-V.A. AO	LOAD-V.A. BO	LOAD-V.A. CO	LOAD-V.A. AO	LOAD-V.A. BO	LOAD-V.A. CO	LOAD SERVED	CONDUIT MM	GND MM2	WIRE MM2	NO. POLES	TRIP AMPS	CKT. NO.
1	20	1	4.0	4.0	20	LIGHTING – 105, 106	1.7			0.7			LIGHTING – 101–105	20	4.0	4.0	1	20	2
3	20	1	4.0	4.0	20	RECEPTACLES – EXTERIOR		0.8			0.3		LIGHTING – POL BUILDING	20	4.0	4.0	1	20	4
5	20	1	4.0	4.0	20	RECEPTACLES – EXTERIOR			0.6			1.0	RECEPTACLES – 105, 106	20	4.0	4.0	1	20	6
7	20	1	4.0	4.0	20	RECEPTACLES – 101	0.8			1.0			RECEPTACLES – 105, 106	20	4.0	4.0	1	20	8
9	20	1	4.0	4.0	20	RECEPTACLES – 102–104		1.0			0.5		F.A.C.P.	20	4.0	4.0	1	20	10
11	60	2	16.0	16.0	32	BATTERY CHARGER	9.1		9.1				AIR COMPRESSOR (BY OTHERS)	20	4.0	4.0	2	20	12
13																			14
15	20	1	4.0	4.0	20	EXHAUST FAN – 102, 103		0.5			0.5		EXHAUST FAN – 104, 106	20	4.0	4.0	1	20	16
17	20	2	4.0	4.0	20	ELECTRIC HEAT – 106	2.5		2.5			0.7	EXHAUST FAN – 106	20	4.0	4.0	1	20	18
19										0.7			EXHAUST FAN – 106	20	4.0	4.0	1	20	20
21	20	1	4.0	4.0	20	RECEPTACLES – POL BUILDING		0.6			2.5		ELECTRIC HEAT – 106	20	4.0	4.0	2	20	22
23	20	2	4.0	4.0	20	ELECTRIC UNIT HEATER – 106			2.5			2.5							24
25							2.5			0.5			LIGHTING–MAINTENANCE PIT	20	4.0	4.0	1	20	26
27	20	2	4.0	4.0	20	ELECTRIC UNIT HEATER – 106		2.5			1.0		RECEPTACLES–MAINTENANCE PIT	20	4.0	4.0	1	20	28
29									2.5			0.2	CEILING FAN	20	4.0	4.0	1	20	30
31	20	2	4.0	4.0	20	ELECTRIC UNIT HEATER – 101	2.0						SPARE				1	20	32
33								2.0					SPARE				1	20	34
35	20	2	4.0	4.0	20	ELECTRIC UNIT HEATER – 103			1.3				SPARE				1	20	36
37							1.3						SPARE				1	20	38
39	20	1				SPARE							SPARE				1	20	40
41	20	1				SPARE							SPARE				1	20	42
							19.9	7.4	18.5	2.9	4.8	4.4							

TOTAL CONN. LOAD PER PHASE (KVA): AO 22.8 BO 12.2 CO 22.9

TOTAL CONN. LOAD 57.9 KVA. 70 % DEMAND = ESTIMATED DEMAND LOAD 40.5 SUPPLIED FROM SWITCHGEAR MAIN DISTRIBUTION

* MAIN BREAKER SHALL BE EARTH GROUND TYPE

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STANDARD DESIGN
V10 - VEHICLE MAINTENANCE - 3 BAY

PANEL SCHEDULES AND RISER DIAGRAM

SHEET IDENTIFICATION
E5
SHEET 26 OF 26

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