

ANNEX () DESIGNS AND DRAWINGS.

PREPARED BY:



UNOPS



UNITED NATIONS OFFICE FOR PROJECT SERVICES

FUNDED BY:



WORLD BANK GROUP

PROJECT.

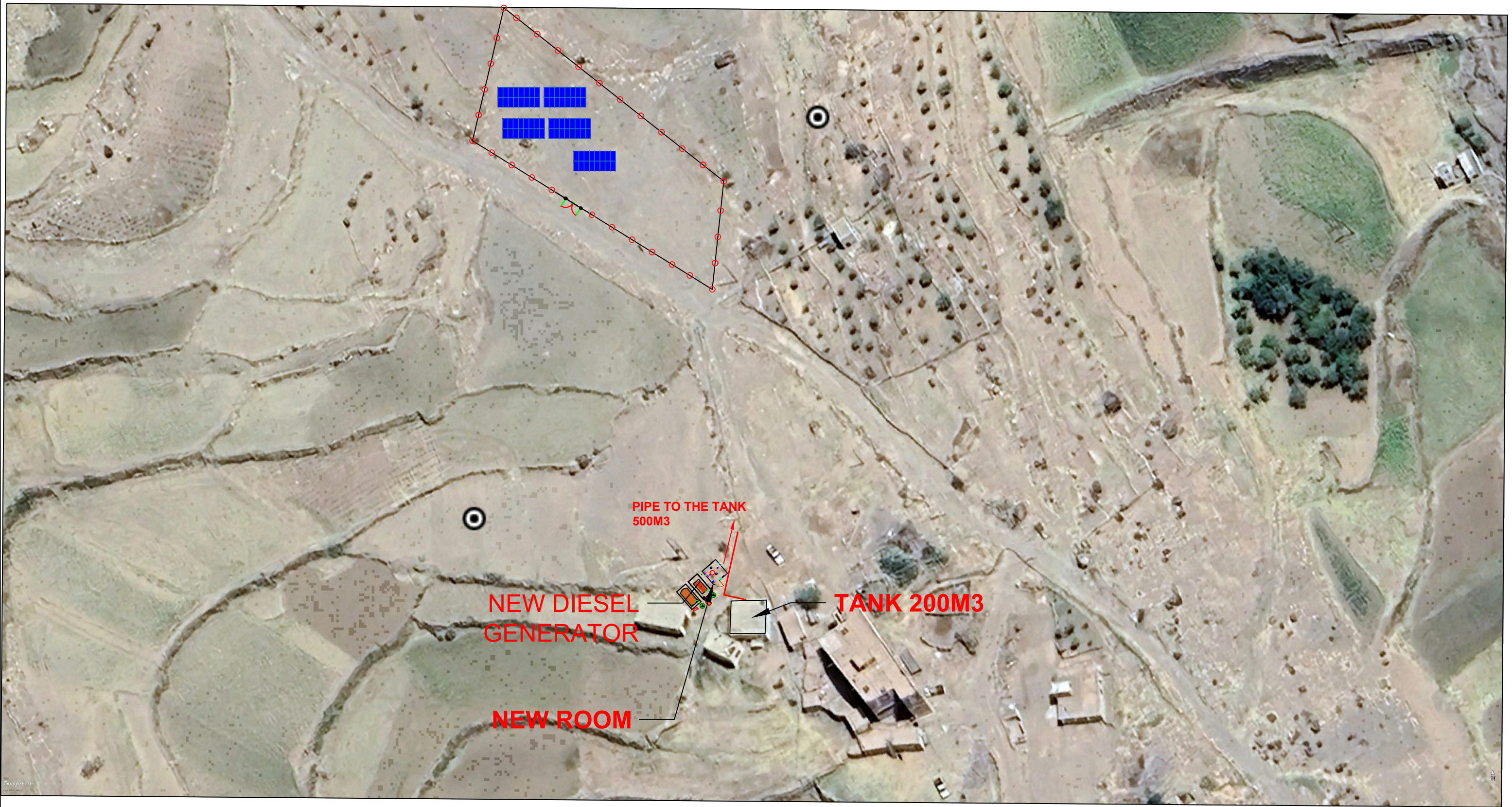
SUPPLY AND INSTALL OF SOLAR SYSTEM FOR
BAREHOLE STAGE #03 (WATER TANK) IN MATNAH CITY

PROJECT REFERENCE NO.

STRUCTURAL DRAWINGS

EHC-AF-WS-SAN-008

JAN, 2023



PREPARED BY:

UNOPS
OPERATIONAL EXCELLENCE
FOR RESULTS THAT MATTER

USS
URBAN WATER SUPPLY & SANITATION
PROJECT MANAGEMENT (UWSP)
ADEN-YEMEN

SANAA YEMEN

FUNDED BY:

THE WORLD BANK

WORLD BANK GROUP

PROJECT TITLE:

**YEMEN EMERGENCY HUMAN
CAPITAL PROJECT(YEHCP)**

PROJECT LOCATION:

MATNAH - CITY-YEMEN

DRAWING TITLE:

**PV MODULES DIFTRIBUTION AND
FENCING PLAN LAYOUT**

WELL CODE:

DESIGN BY:

CHECKED BY:

APPROVED BY:

UNOPS DESIGN REVIEW

PARTNER:

STATUS:

TENDER DOCUMENTS

PROJECT NO:

EHC-AF-WS-SAN-008

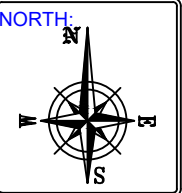
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A3

SCALE:

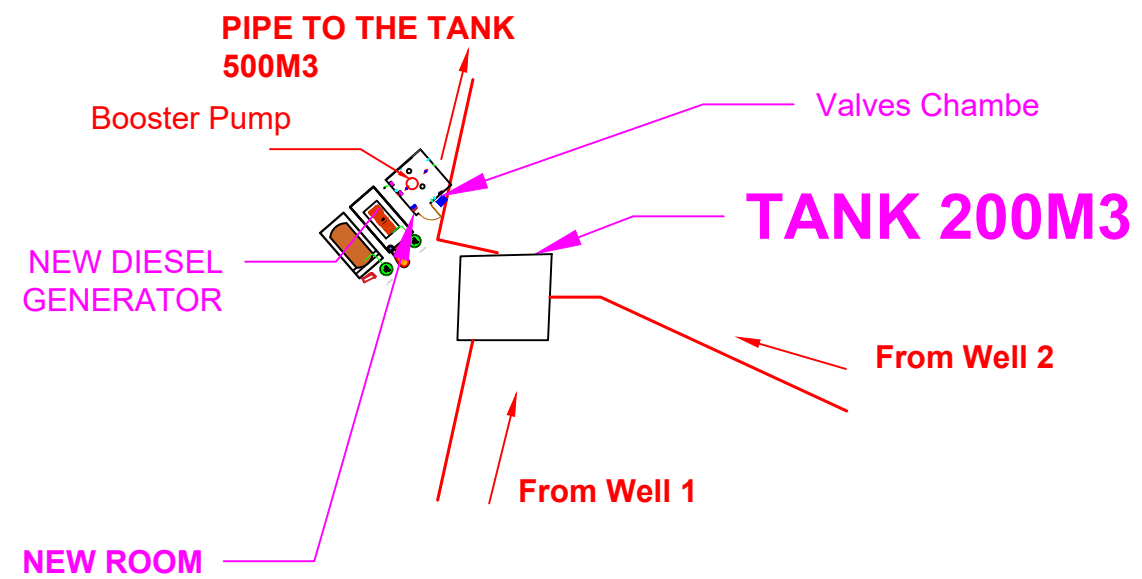
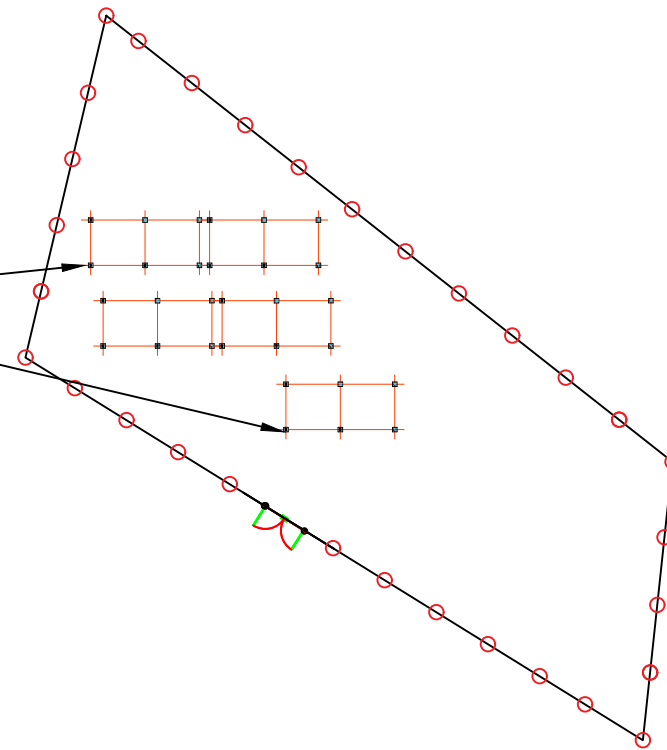
AS SHOWN



DRAWING NO:

S1 - 01

Mounting Structure



PREPARED BY:



SANAA YEMEN

FUNDED BY:



PROJECT TITLE:

YEMEN EMERGENCY HUMAN
CAPITAL PROJECT(YEHCP)

PROJECT LOCATION:

MATNAH - CITY-YEMEN

DRAWING TITLE:

Mounting Structure General site
plane Details

WELL CODE:

DESIGN BY:

CHECKED BY:
APPROVED BY:

UNOPS DESIGN REVIEW

PARTNER:

STATUS:

TENDER DOCUMENTS

PROJECT NO:

EHC-AF-WS-SAN-008

DATE:

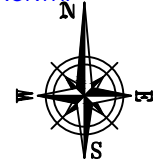
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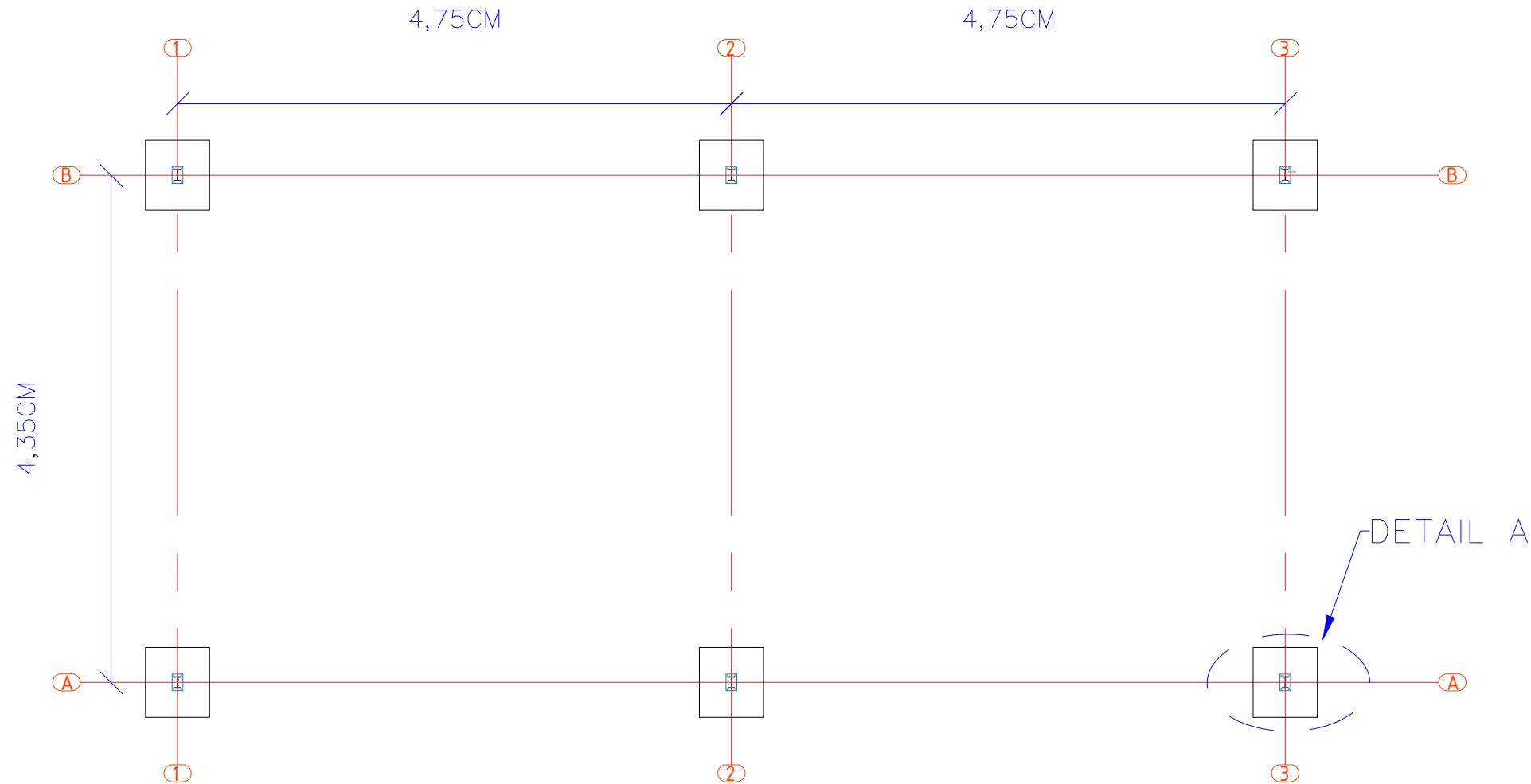
AS SHOWN

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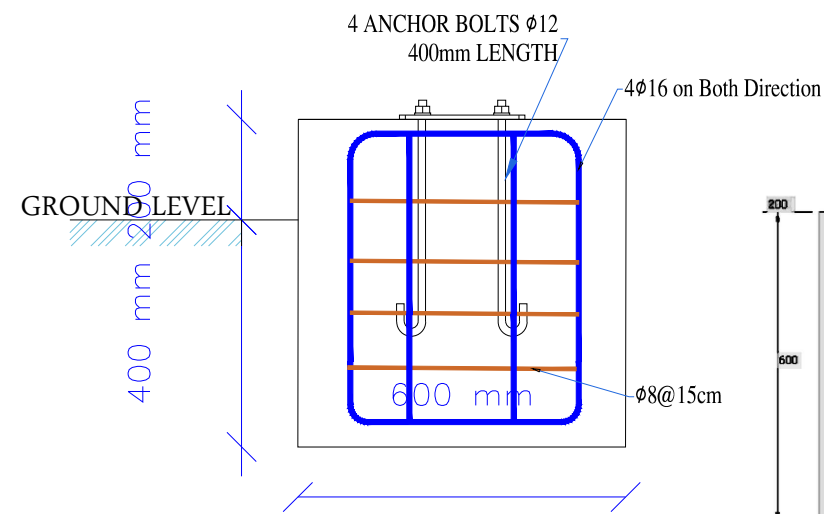


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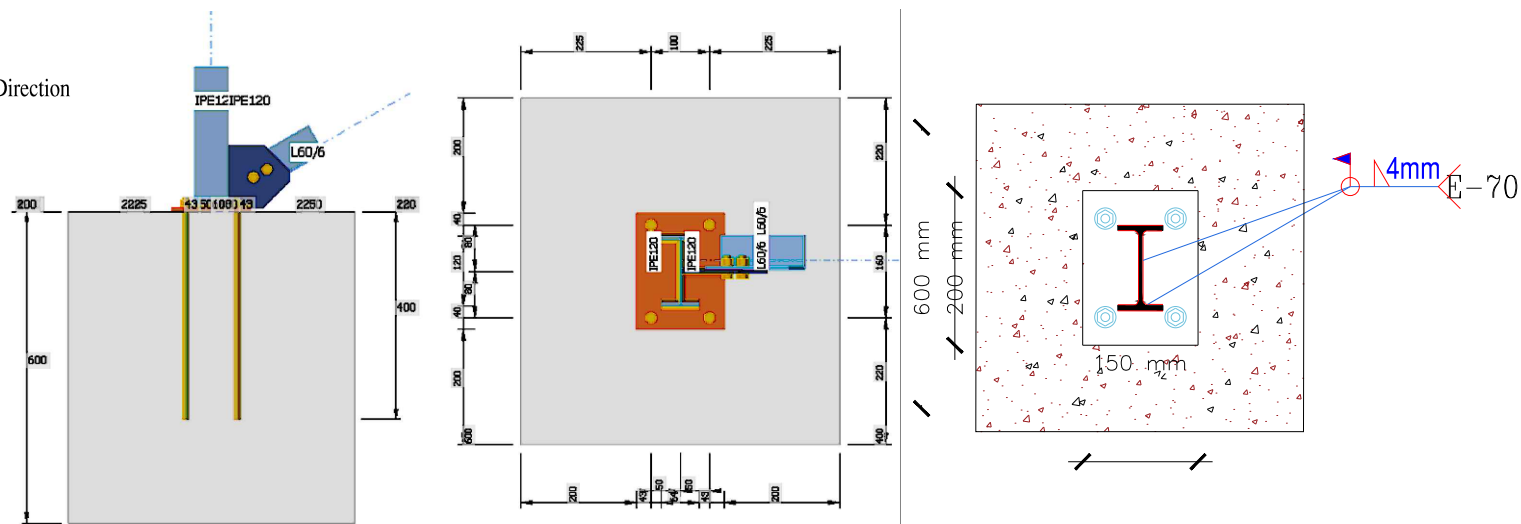
S1 - 02



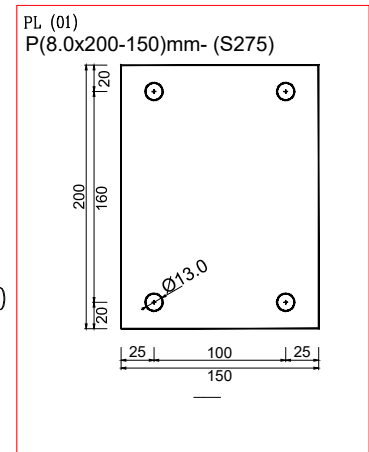
1 BEAMS & ANCHOR BOLTS PLAN - TYPE 2
STRUCTURE DETAILS TYPE 2

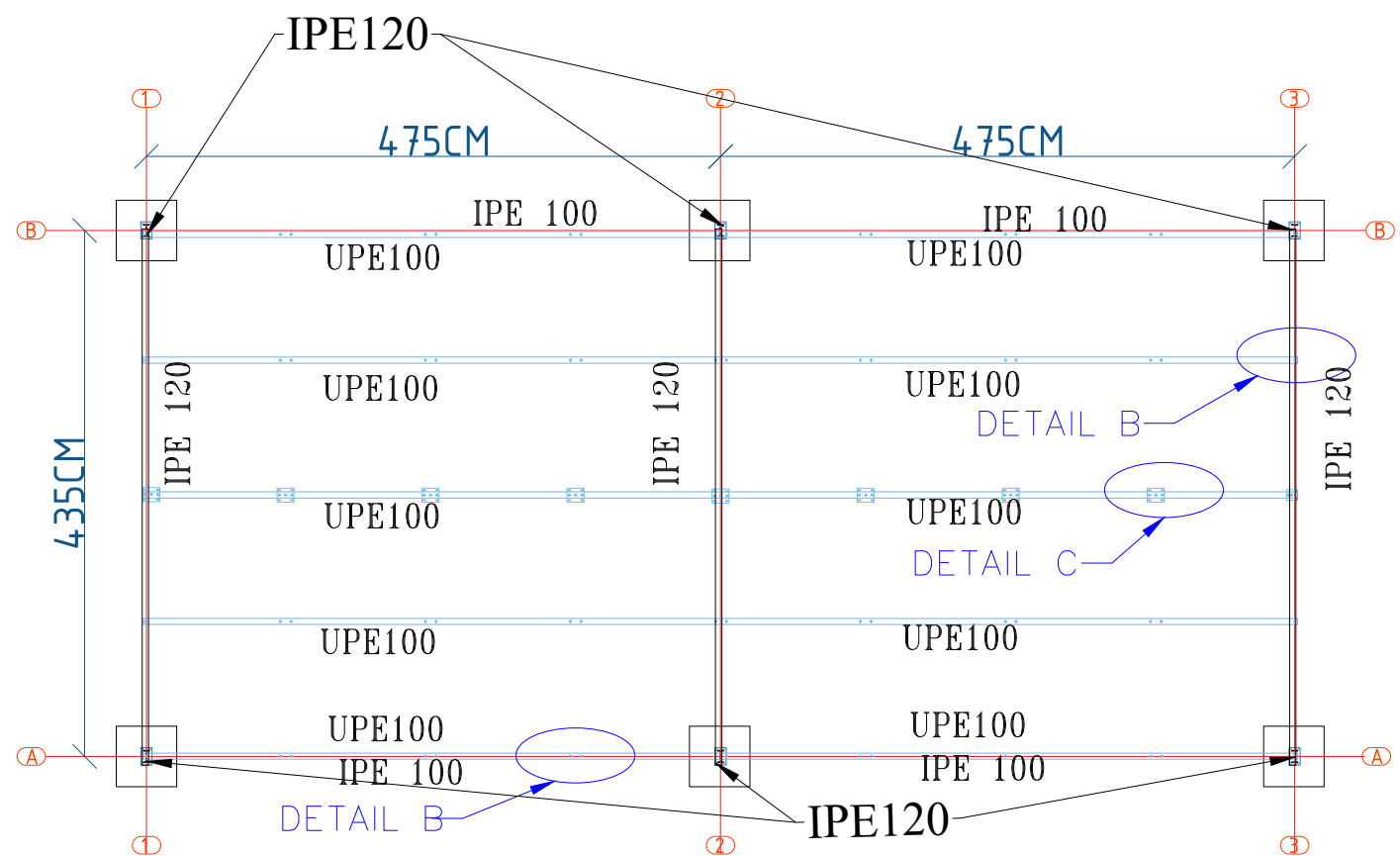


2 CONCRETE FOOTING - DETAIL A
STRUCTURE DETAILS

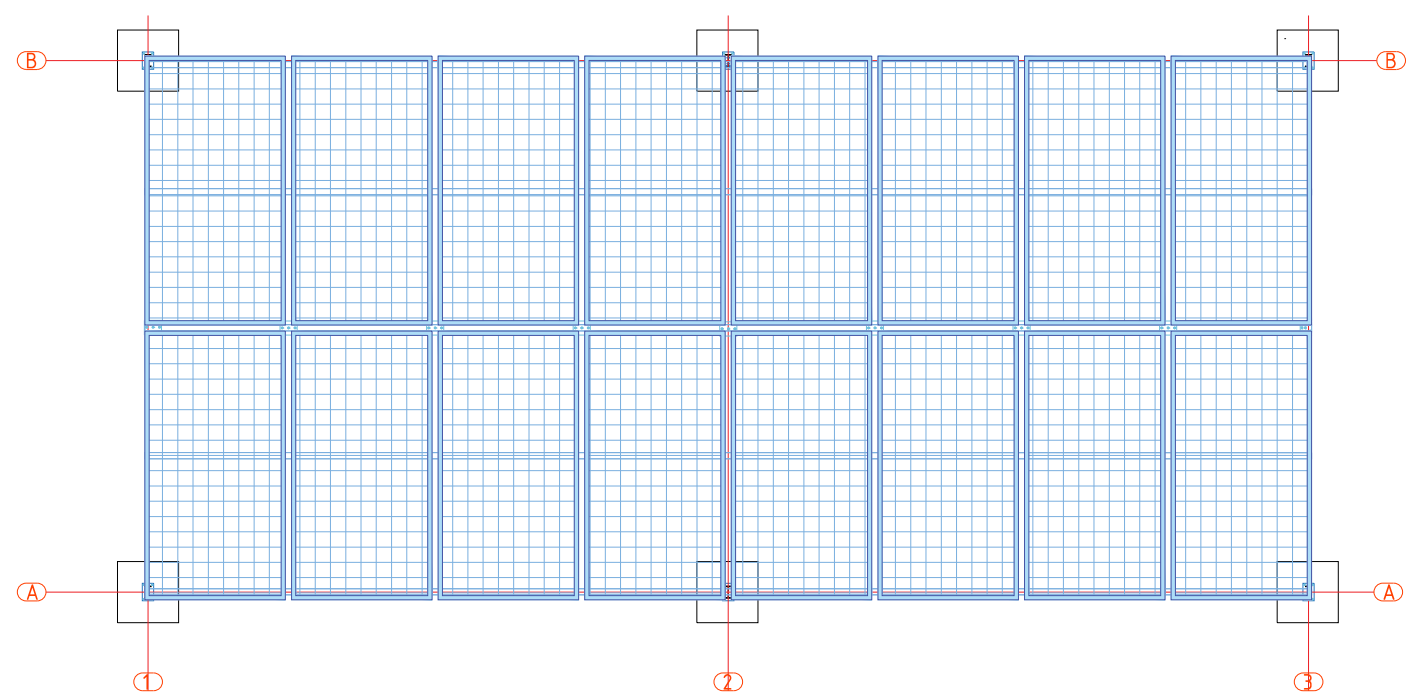


3 BASE PLATE - DETAIL A
STRUCTURE DETAILS

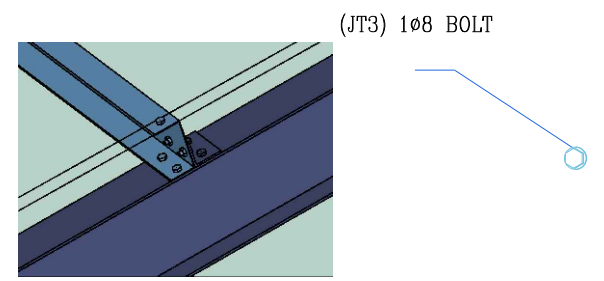




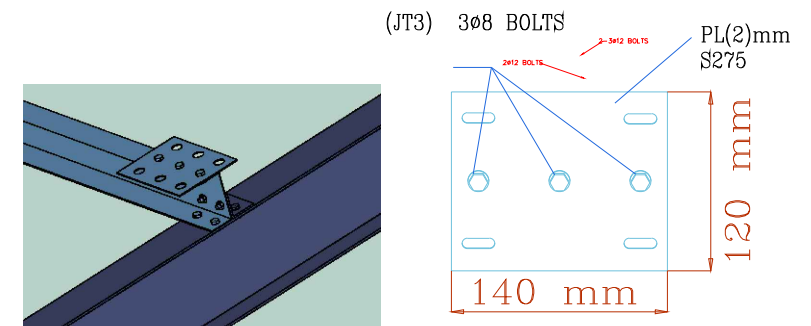
1 PURLOINS PLAN - TYPE 2
STRUCTURE DETAILS



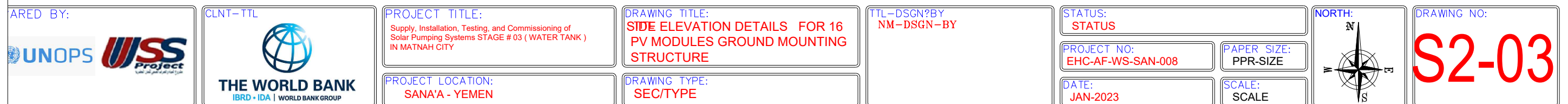
2 PV PANELS PLAN - TYPE 2
STRUCTURE DETAILS

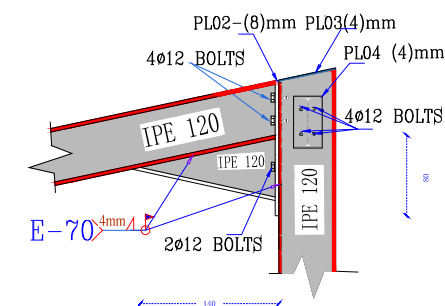
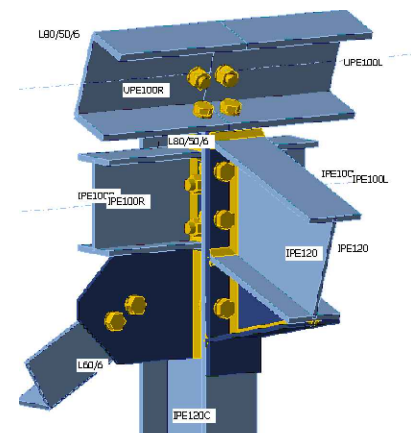
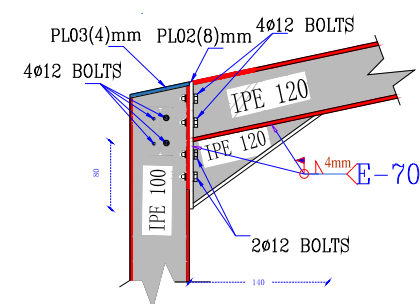
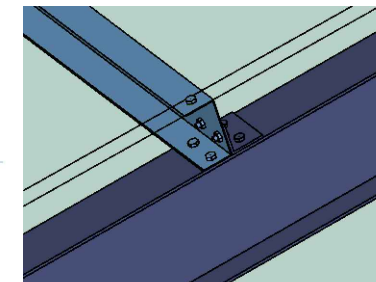
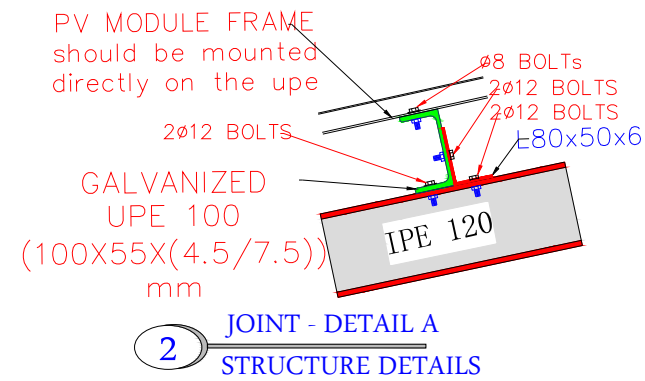
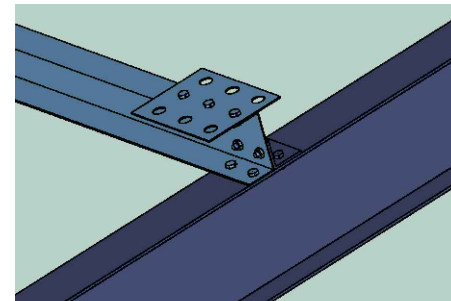
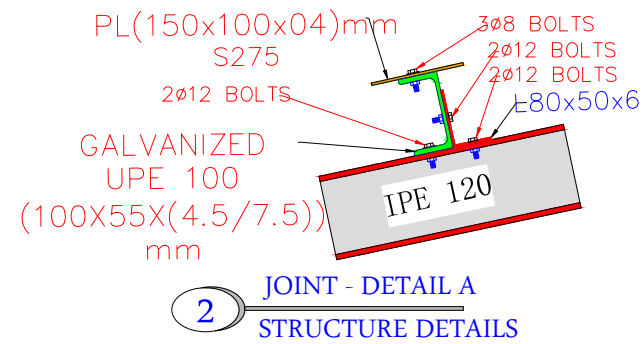
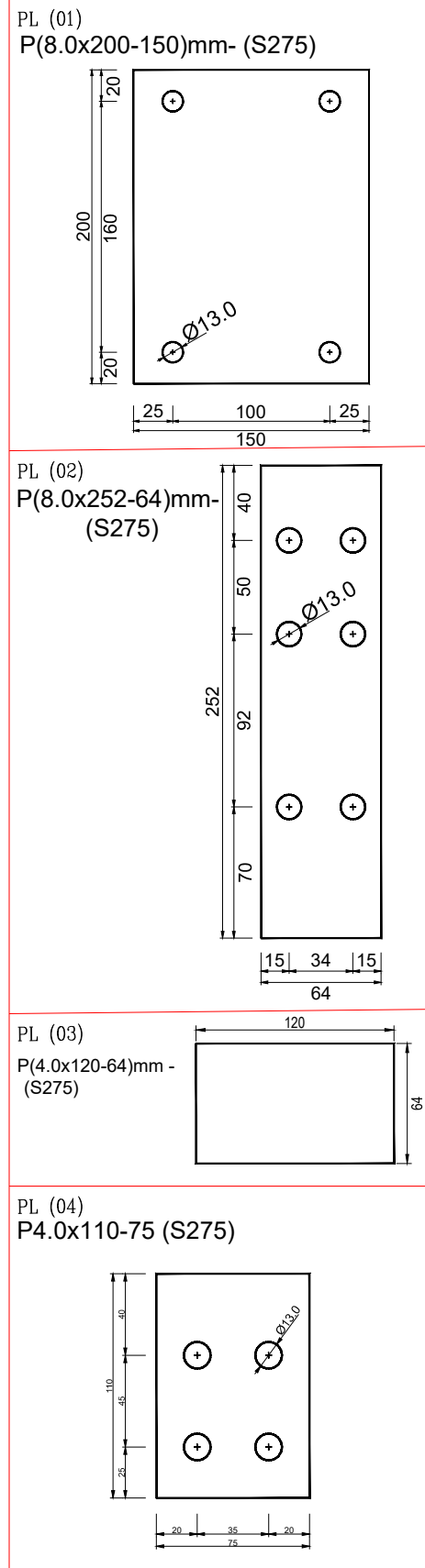


4 PV PANELS JOINT - DETAIL B - TYPE 2
STRUCTURE DETAILS



5 PV PANELS JOINT - DETAIL C - TYPE 2
STRUCTURE DETAILS





PREPARED BY:



CLNT-TTL



PROJECT TITLE:

Supply, Installation, Testing, and Commissioning of Solar Pumping Systems STAGE # 03 (WATER TANK) IN MATNAH CITY

PROJECT LOCATION:

SANA'A - YEMEN

DRAWING TITLE:

BACK ELEVATION DETAILS FOR 16 PV MODULES GROUND MOUNTING STRUCTURE

DRAWING TYPE:

SEC/TYPE

TTL-DSGN?BY

NM-DSGN-BY

STATUS:

STATUS

PROJECT NO:

EHC-AF-WS-SAN-008

DATE:

JAN-2023

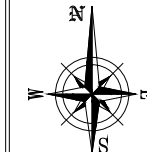
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PPR-SIZE

SCALE:

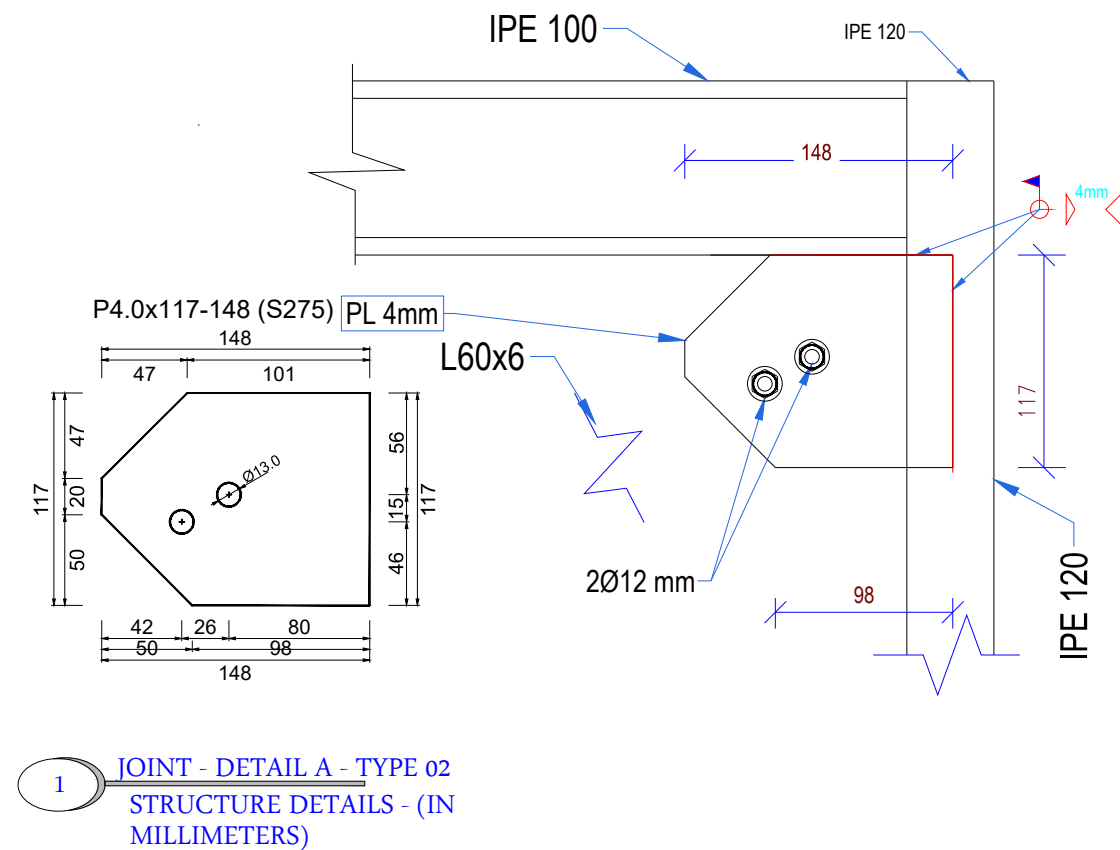
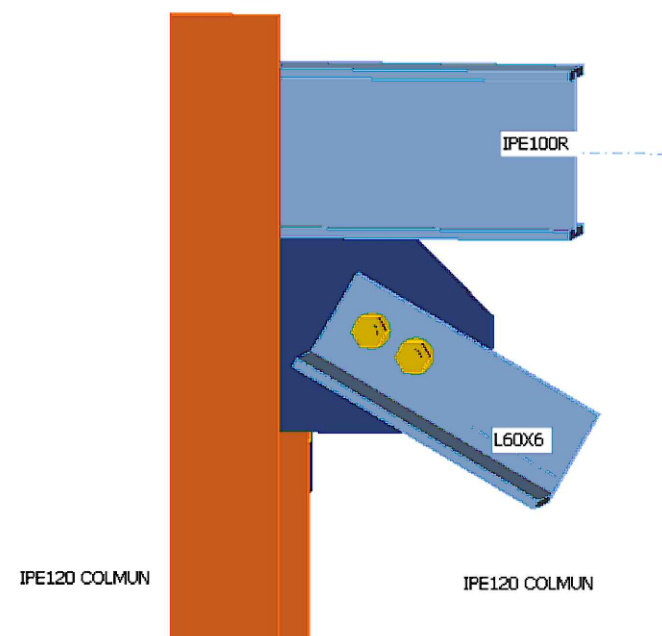
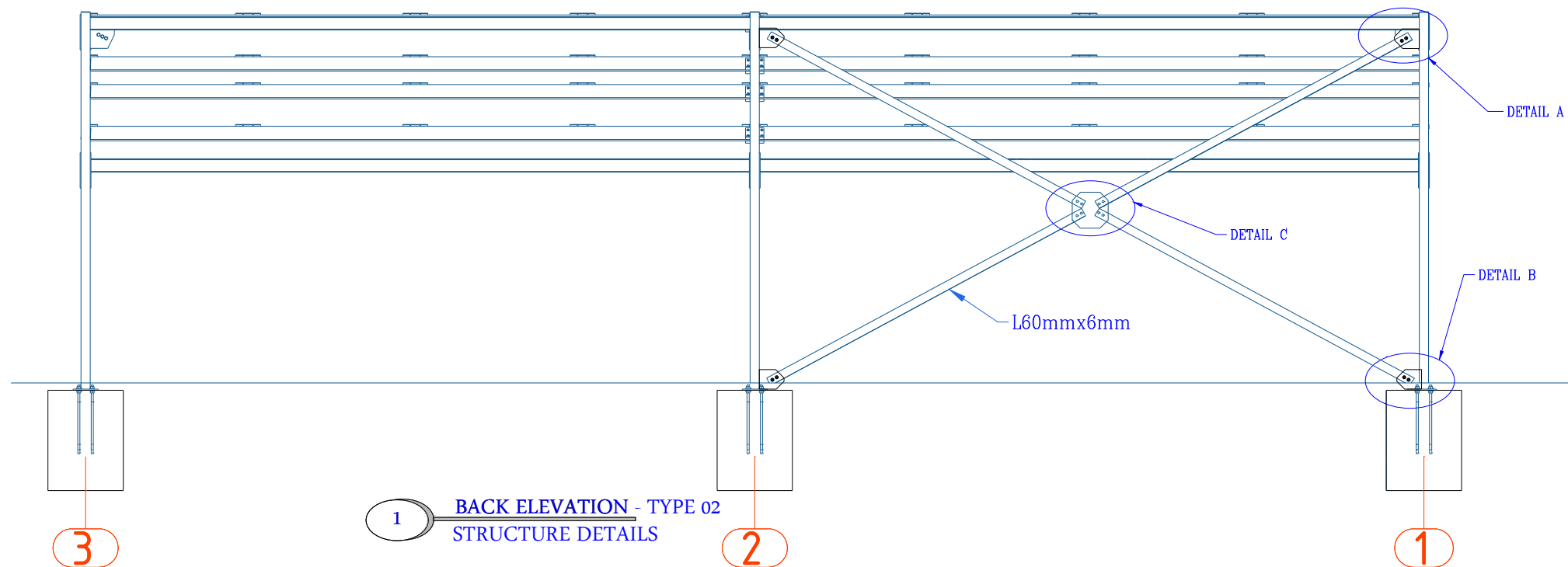
SCALE

NORTH:



DRAWING NO:

S2-04



PREPARED BY:



CLNT-TTL



PROJECT TITLE:

Supply, Installation, Testing, and Commissioning of Solar Pumping Systems STAGE # 03 (WATER TANK) IN MATNAH CITY

PROJECT LOCATION:

SANA'A - YEMEN

DRAWING TITLE:

BACK ELEVATION DETAILS FOR
16 PV MODULES GROUND
MOUNTING STRUCTURE

DRAWING TYPE:

SEC/TYPE

TTL-DSGN?BY

NM-DSGN-BY

STATUS:

STATUS

PROJECT NO:

EHC-AF-WS-SAN-008

DATE:

JAN-2023

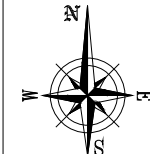
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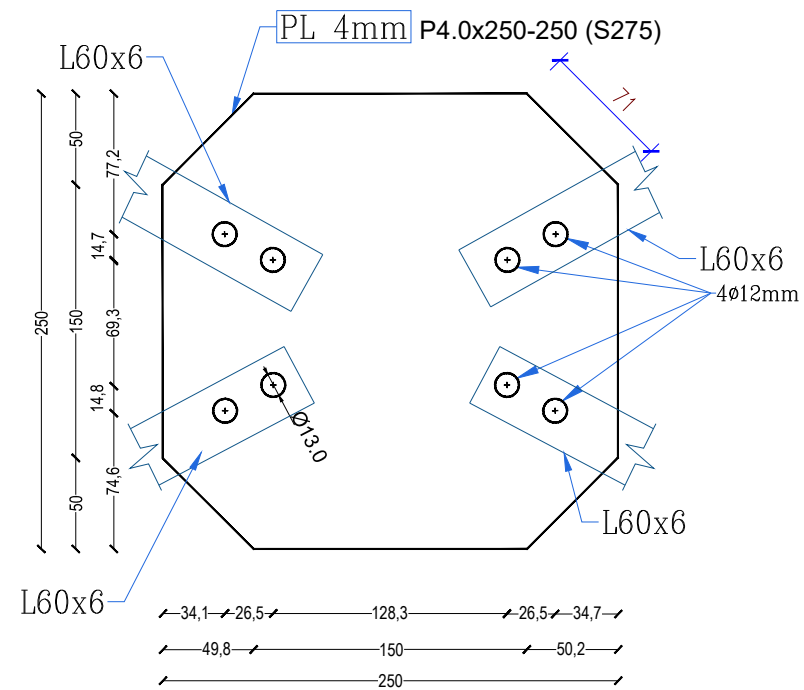
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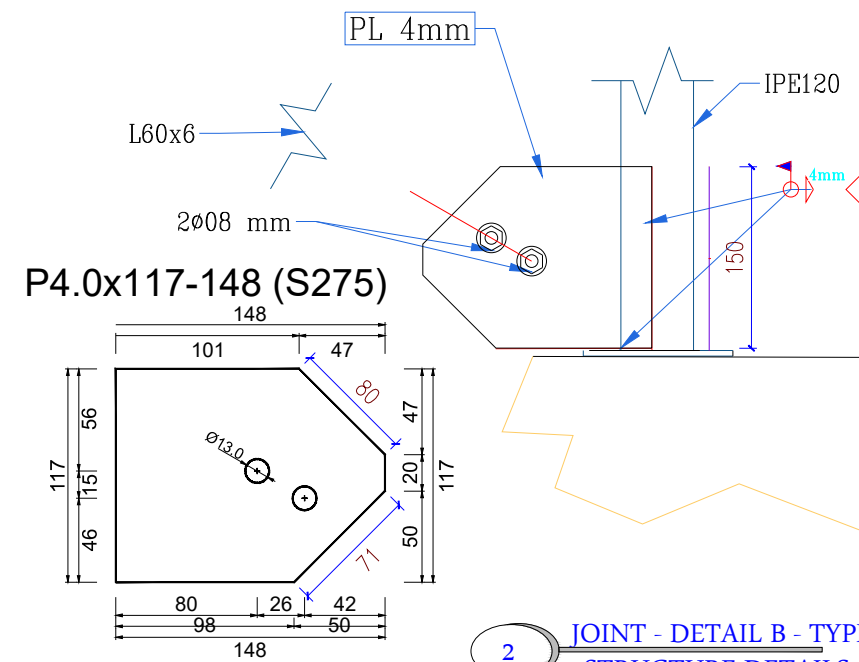


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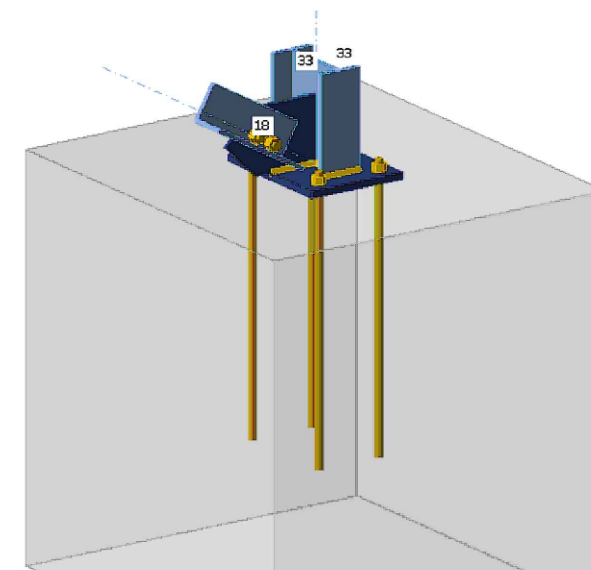
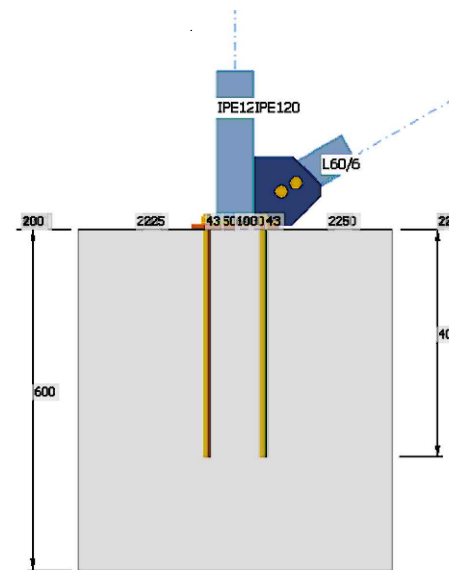
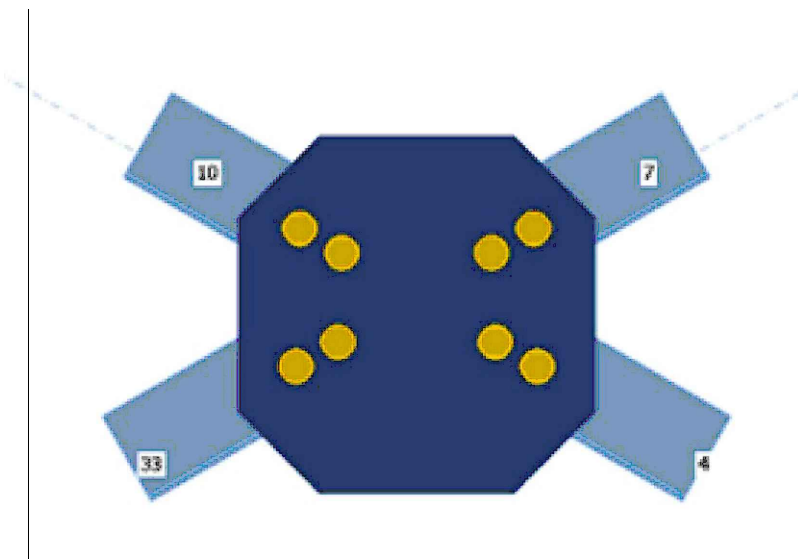
S2-05



3 JOINT - DETAIL C - TYPE 02&03
STRUCTURE DETAILS - (IN MILLIMETERS)



2 JOINT - DETAIL B - TYPE 02&03
STRUCTURE DETAILS - (IN MILLIMETERS)



PREPARED BY:



CLNT-TTL



PROJECT TITLE:

Supply, Installation, Testing, and Commissioning of Solar Pumping Systems STAGE # 03 (WATER TANK) IN MATNAH CITY

PROJECT LOCATION:

SANA'A - YEMEN

DRAWING TITLE:

BACK ELEVATION DETAILS FOR 16 PV MODULES GROUND MOUNTING STRUCTURE

DRAWING TYPE:

SEC/TYPE

TTL-DSGN?BY

NM-DSGN-BY

STATUS:

STATUS

PROJECT NO:

EHC-AF-WS-SAN-008

DATE:

JAN-2023

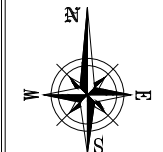
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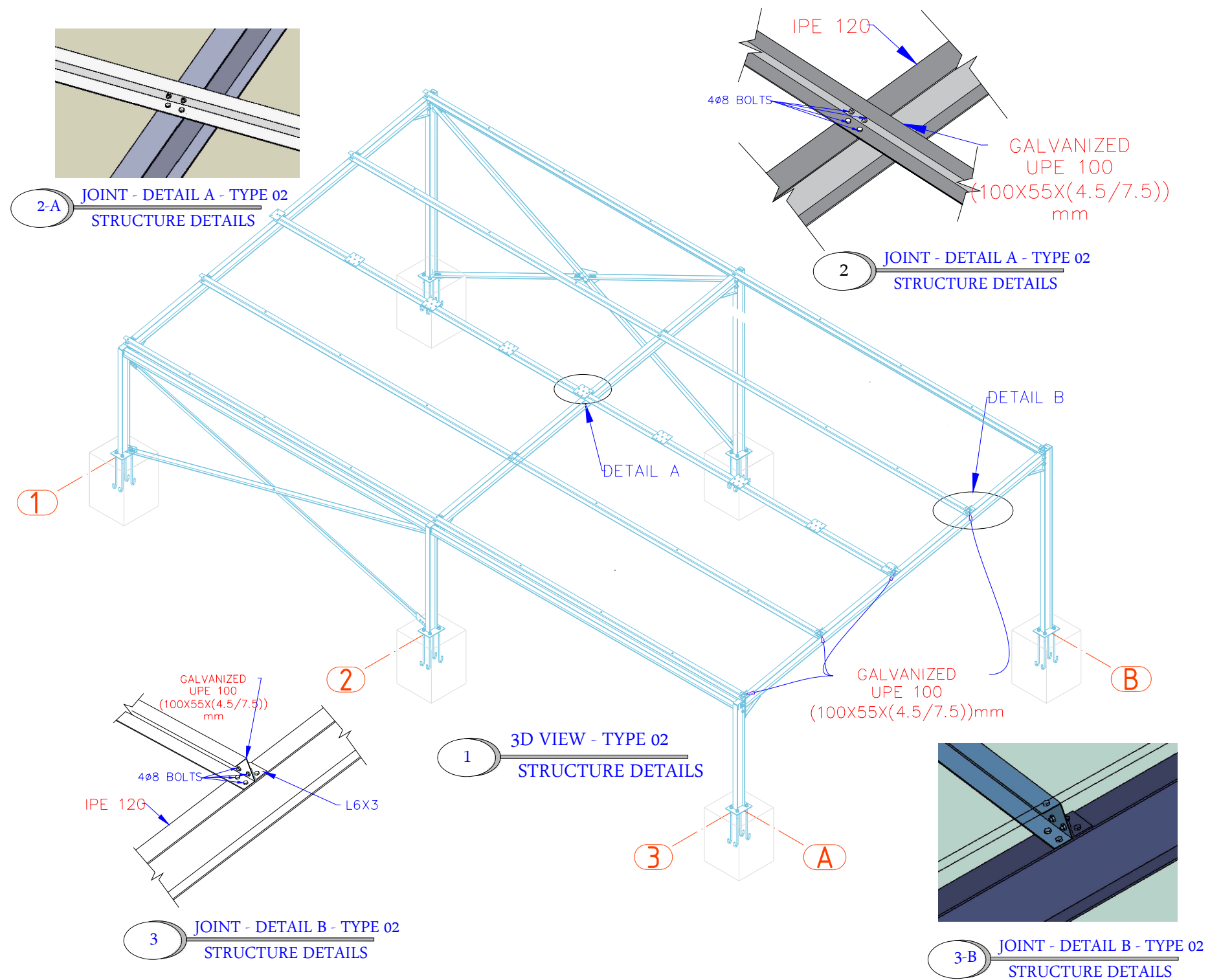
SCALE

NORTH:



DRAWING NO:

S2-06



PREPARED BY:



CLNT-TTL



PROJECT TITLE:

Supply, Installation, Testing, and Commissioning of Solar Pumping Systems STAGE # 03 (WATER TANK) IN MATNAH CITY

PROJECT LOCATION:

SANA'A - YEMEN

DRAWING TITLE:

3D VIEW FOR 16 PV MODULES GROUND MOUNTING STRUCTURE

DRAWING TYPE:

SEC/TYPE

TTL-DSGN?BY

NM-DSGN-BY

STATUS:

STATUS

PROJECT NO:

EHC-AF-WS-SAN-008

DATE:

JAN-2023

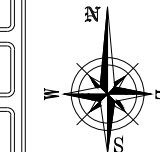
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PPR-SIZE

SCALE:

SCALE

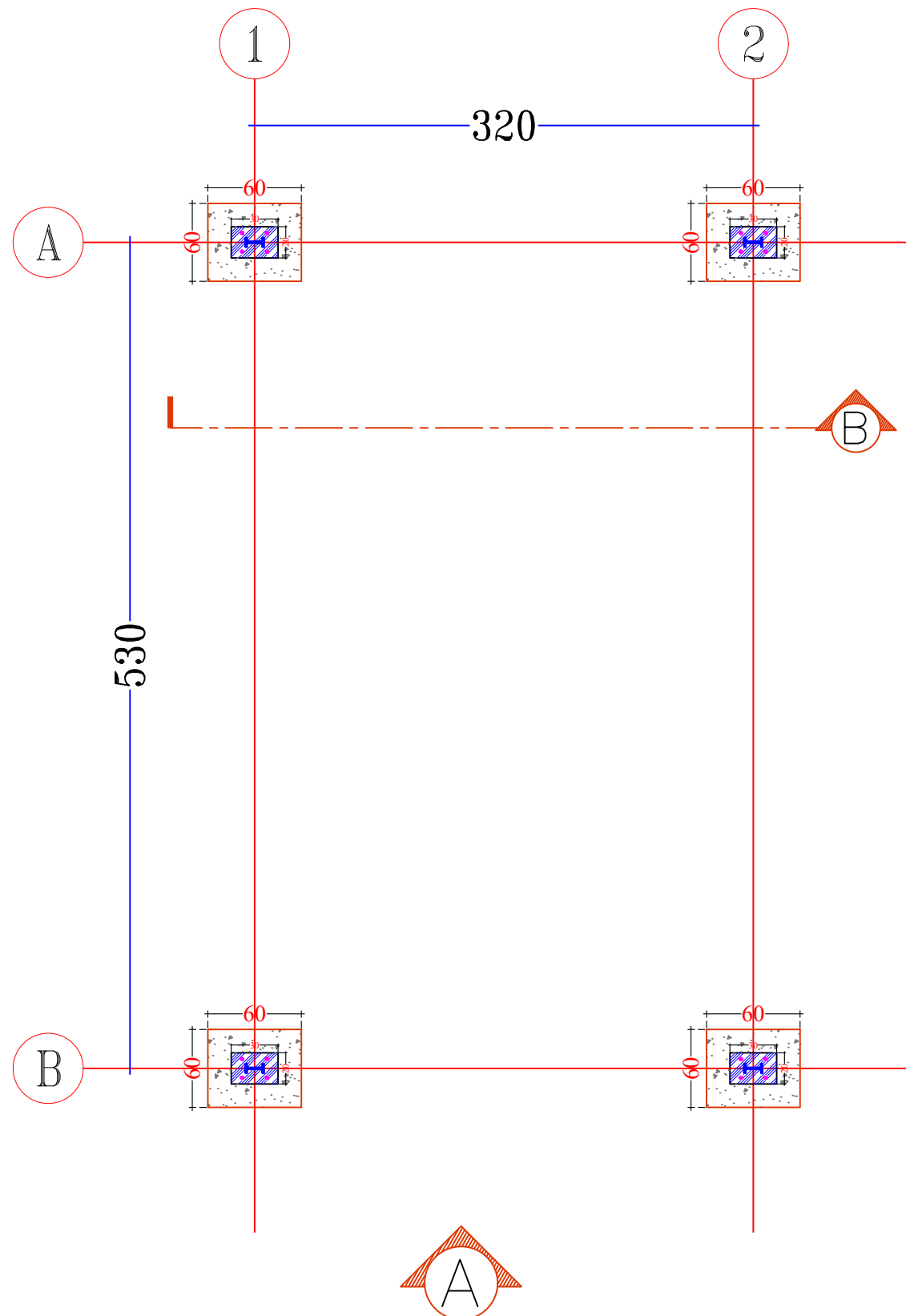
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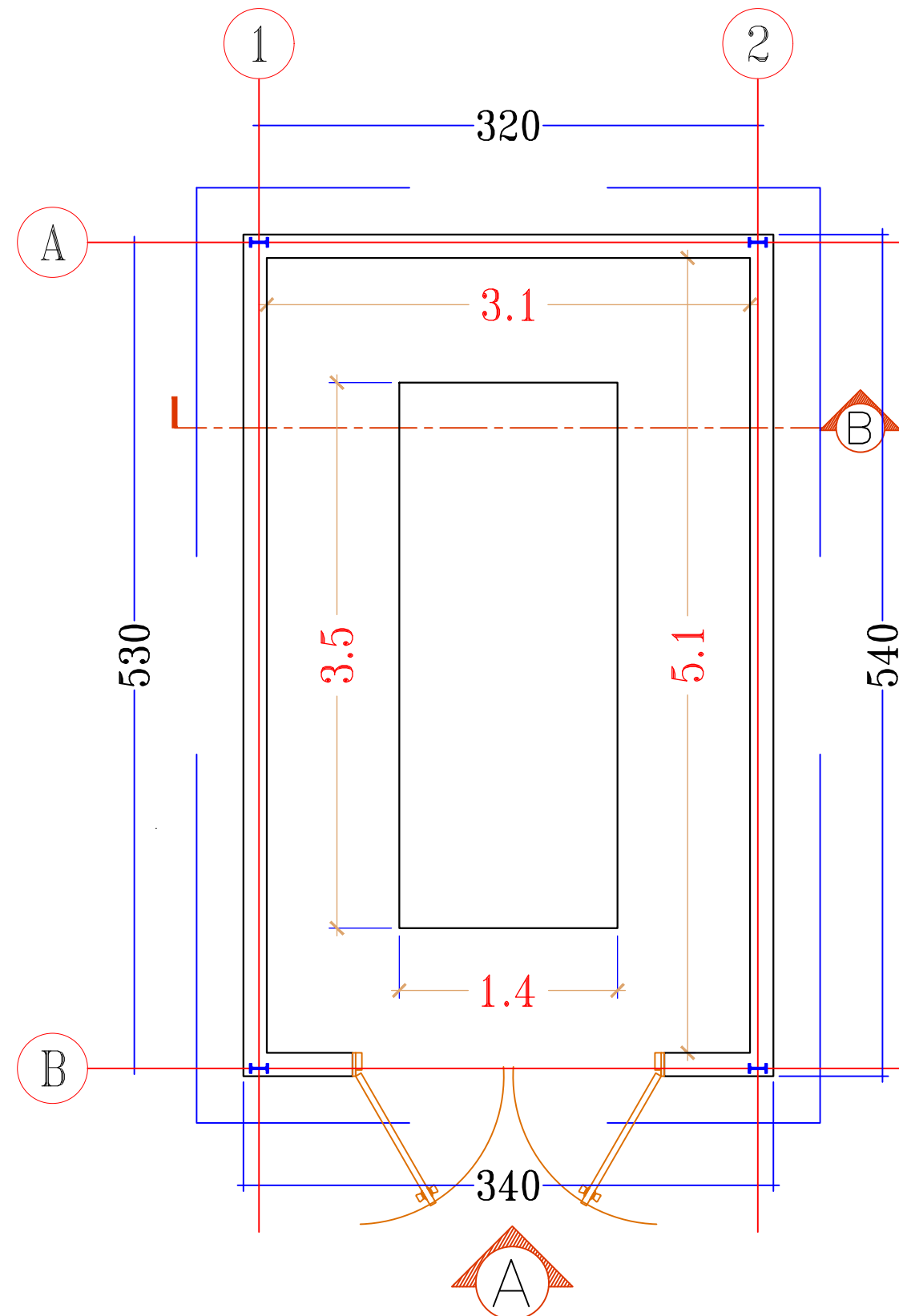
DRAWING NO:

S2-07

G1 GENERATOR SHELTER STRUCTURE



FOUNDATION PLAN DETAILS.
SCALE: 1:40.

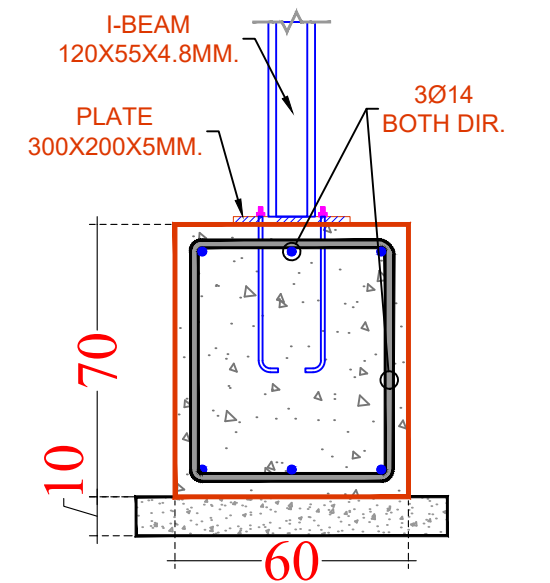


PLAN DETAILS.
SCALE: 1:40.

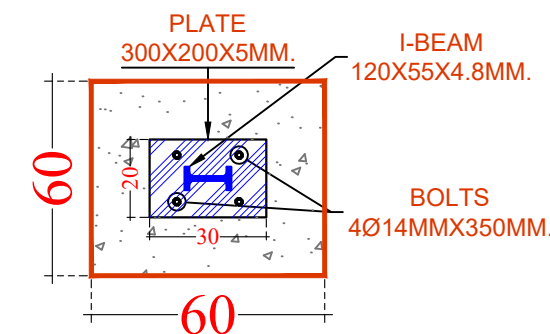
GENERATOR SHELTER PLAN DETAILS.

REMARKS:

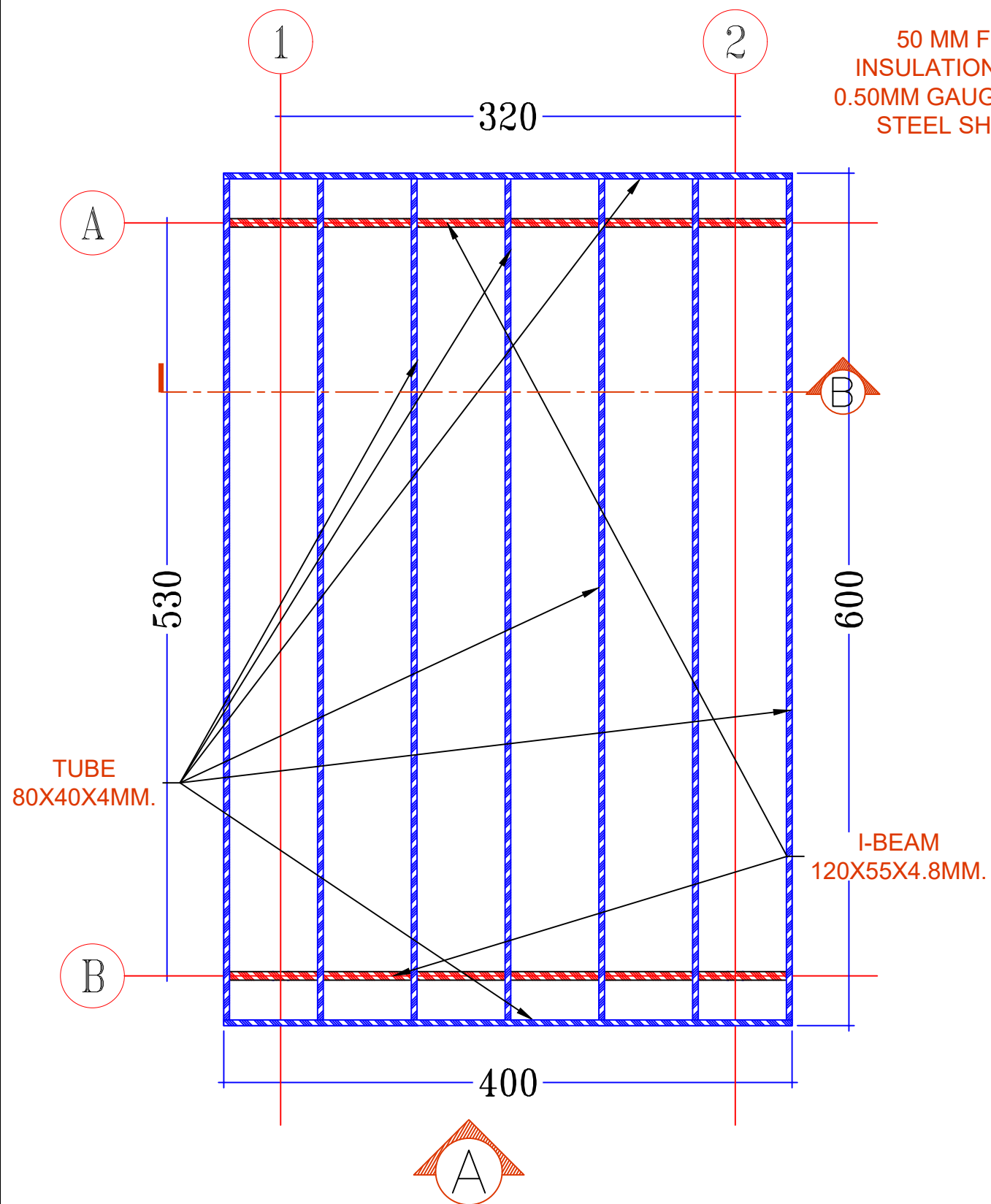
1. ALL DIMENSIONS AND ELEVATIONS ARE IN CENTIMETERS AND METERS RESPECTIVELY, UNLESS OTHERWISE MENTIONED.
2. ALL DIMENSIONS TO BE CHECKED AND CONFIRMED ON SITE BEFORE COMMENCEMENT OF ANY WORK.
3. ANY DISCREPANCY TO BE REPORTED TO THE UNOPS SITE ENGINEER/ PROJECT MANAGER PROMPTLY BEFORE PROCEEDING.



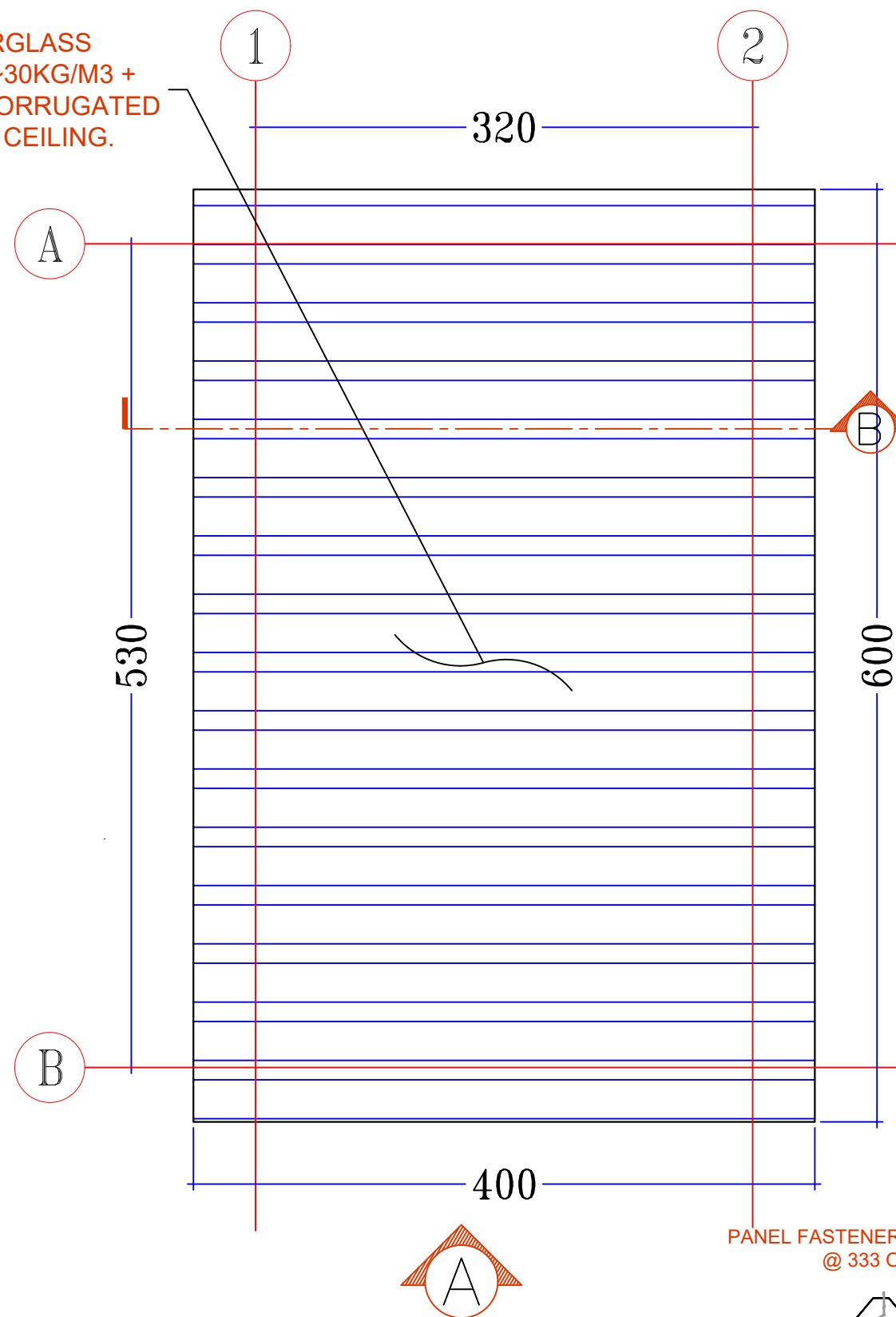
SECTION.
SCALE: 1:20.



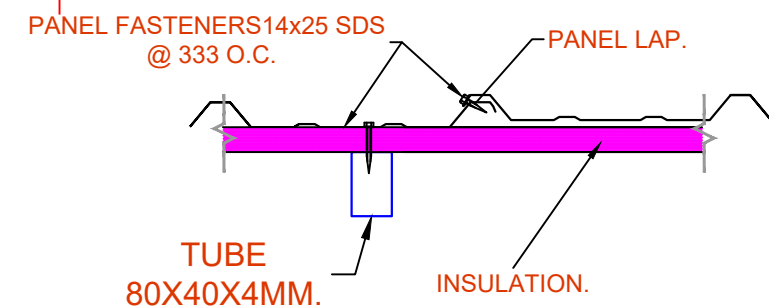
SECTION.
SCALE: 1:20.



ROOF METAL FRAME PLAN DETAILS.
SCALE: 1:40.



ROOF PLAN DETAILS.
SCALE: 1:40.



ROOF PANEL DETAILS.

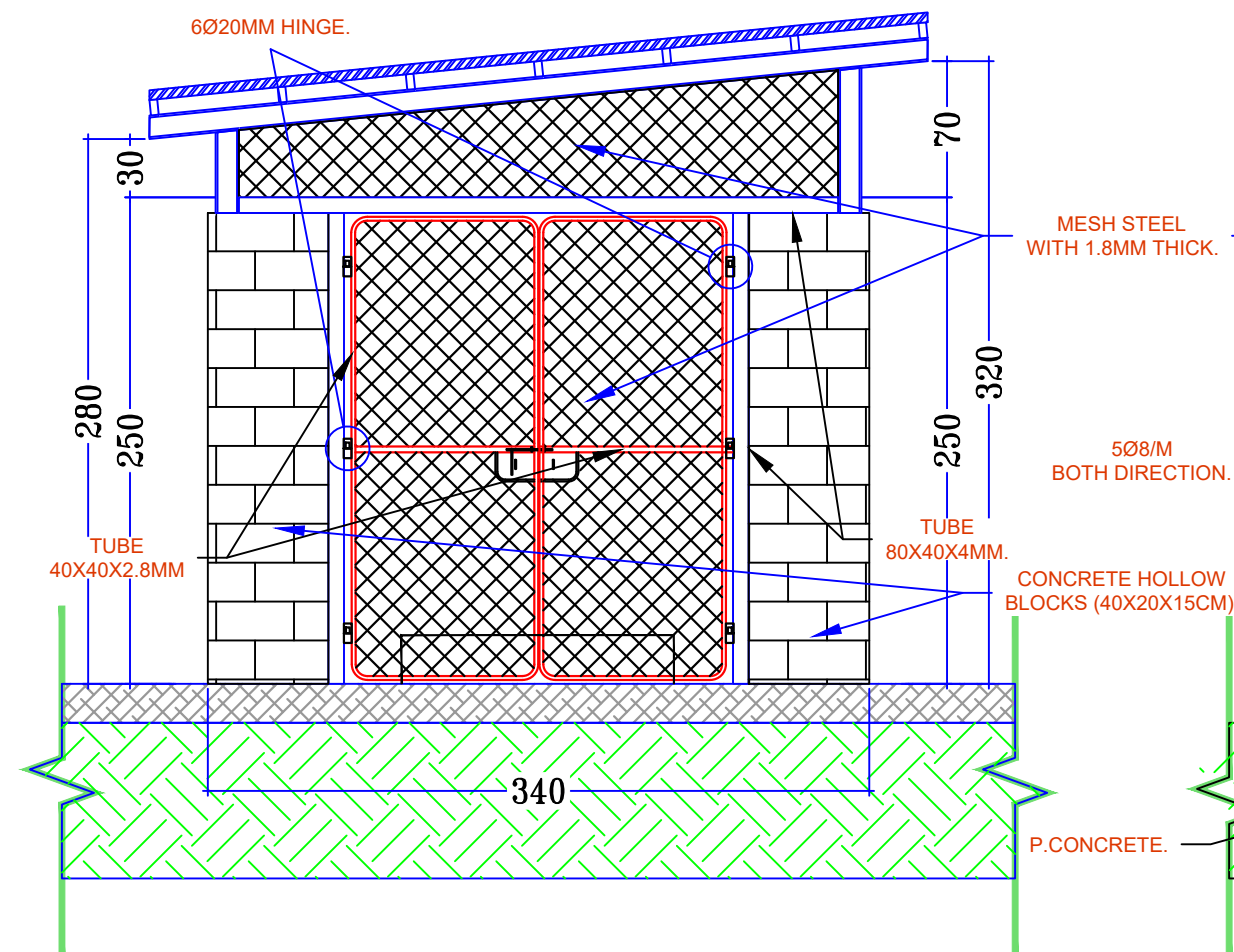
REMARKS:

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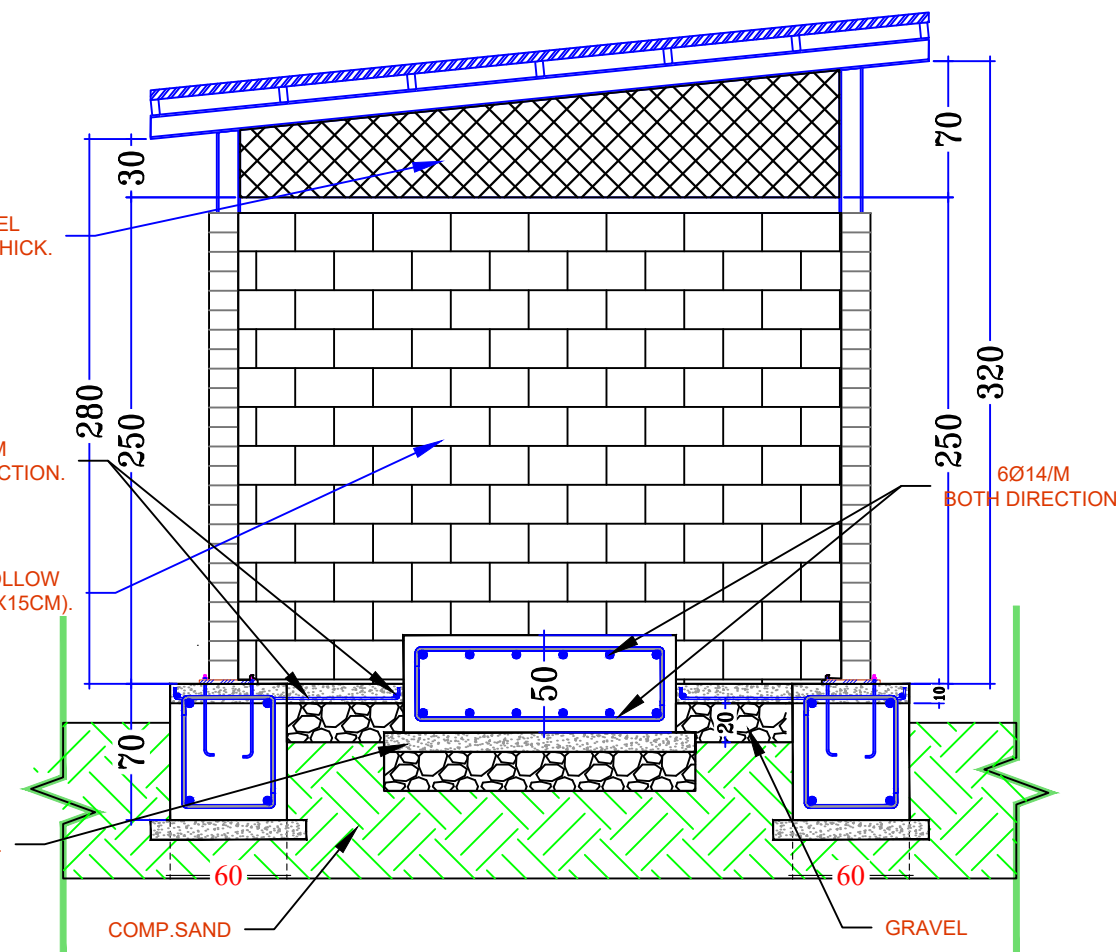
GENERATOR SHELTER ROOF PLAN DETAILS.

REMARKS:

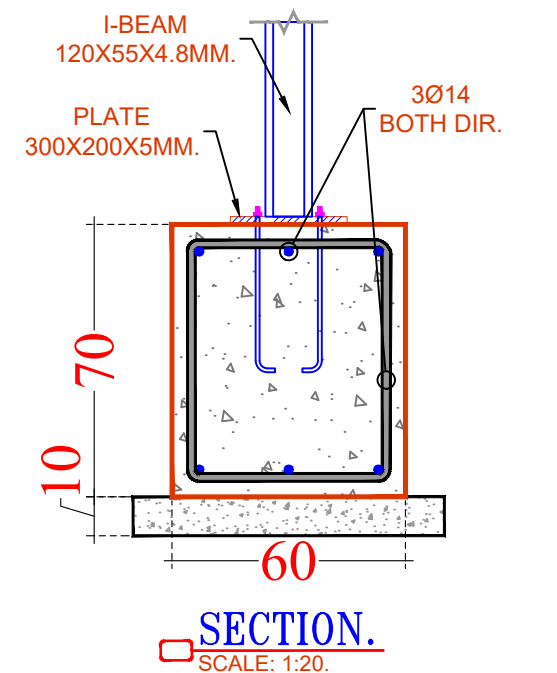
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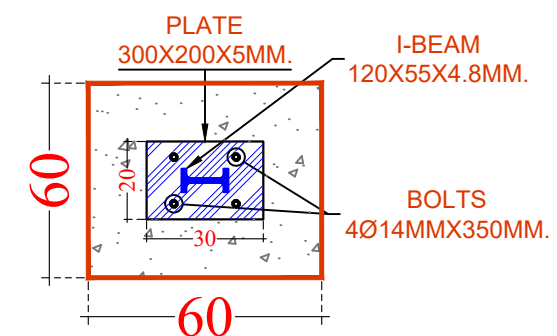
ELEVATION A PLAN DETAILS.
SCALE: 1:40.



SECTION B-B DETAILS.
SCALE: 1:40.



SECTION.
SCALE: 1:20.



PLAN DETAILS.
SCALE: 1:20.

GENERATOR SHELTER ELEVATION DETAILS.

PREPARED BY:



FUNDED BY:



PROJECT TITLE:

YEMEN EMERGENCY HUMAN CAPITAL PROJECT(YEHCP)

PROJECT LOCATION:

MATNAH - CITY-YEMEN

DRAWING TITLE:

GENERATOR SHELTER ELEVATION DETAILS

DRAWING TYPE:

STRUCTURAL PLAN

DESIGN & DRAW BY:

SUPERVISED & CHECKED BY:

APPROVED BY:

UNOPS DESIGN REVIEW.

STATUS:

TENDER DOCUMENTS.

PROJECT NO:

EHC-AF-WS-SAN-008

DATE:

May. 2023

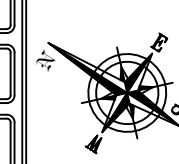
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

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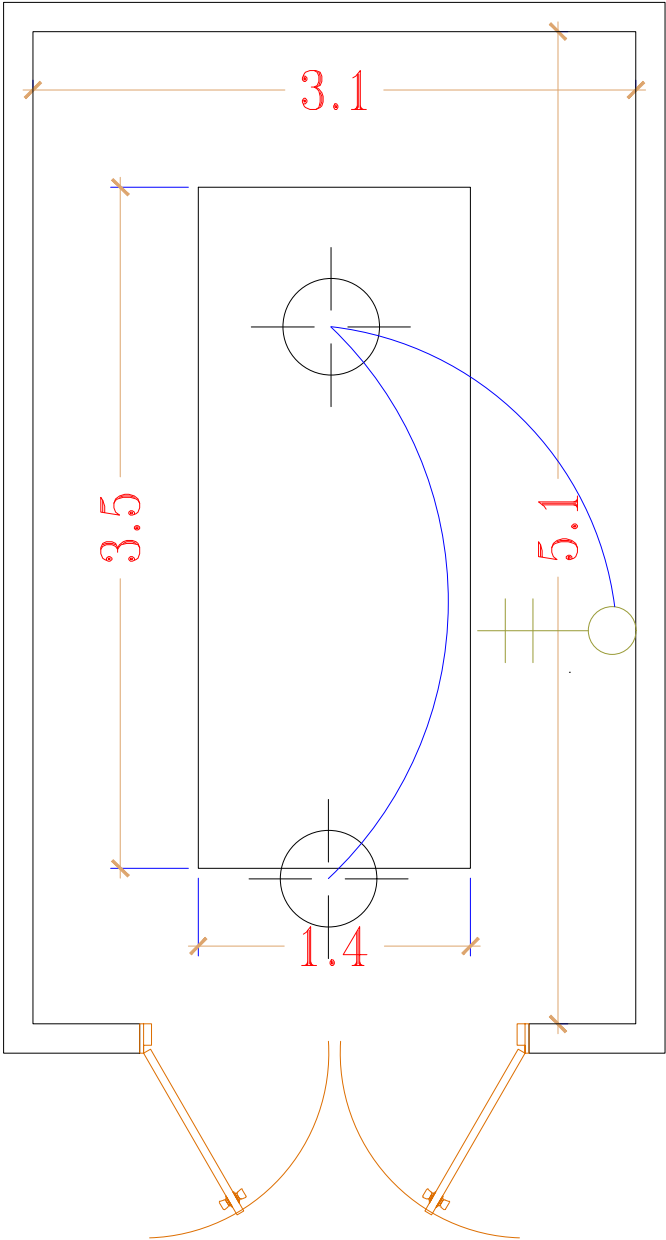


DRAWING NO:

G1-3

- REMARKS:
- 1. ALL DIMENSIONS AND ELEVATIONS ARE IN CENTIMETERS AND METERS RESPECTIVELY, UNLESS OVER WISE MENTIONED.
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SYMBOL	DESCRIPTION
	LED LIGHTING FIXTURE
	10A TOW GANG LIGHTING SWITCH.



GENERATOR SHELTER LIGHTING

PREPARED BY:



FUNDED BY:



THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

PROJECT TITLE:

YEMEN EMERGENCY HUMAN CAPITAL
PROJECT(YEHCP)

PROJECT LOCATION:

MATNAH - CITY-YEMEN

DRAWING TITLE:

GENERATOR SHELTER ELEVATION
DETAILS

DRAWING TYPE:

STRUCTURAL PLAN

DESIGN & DRAW BY:

SUPERVISED & CHECKED BY:

APPROVED BY:

UNOPS DESIGN REVIEW.

STATUS:

TENDER DOCUMENTS.

PROJECT NO:

EHC-AF-WS-SAN-008

DATE:

May. 2023

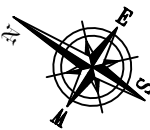
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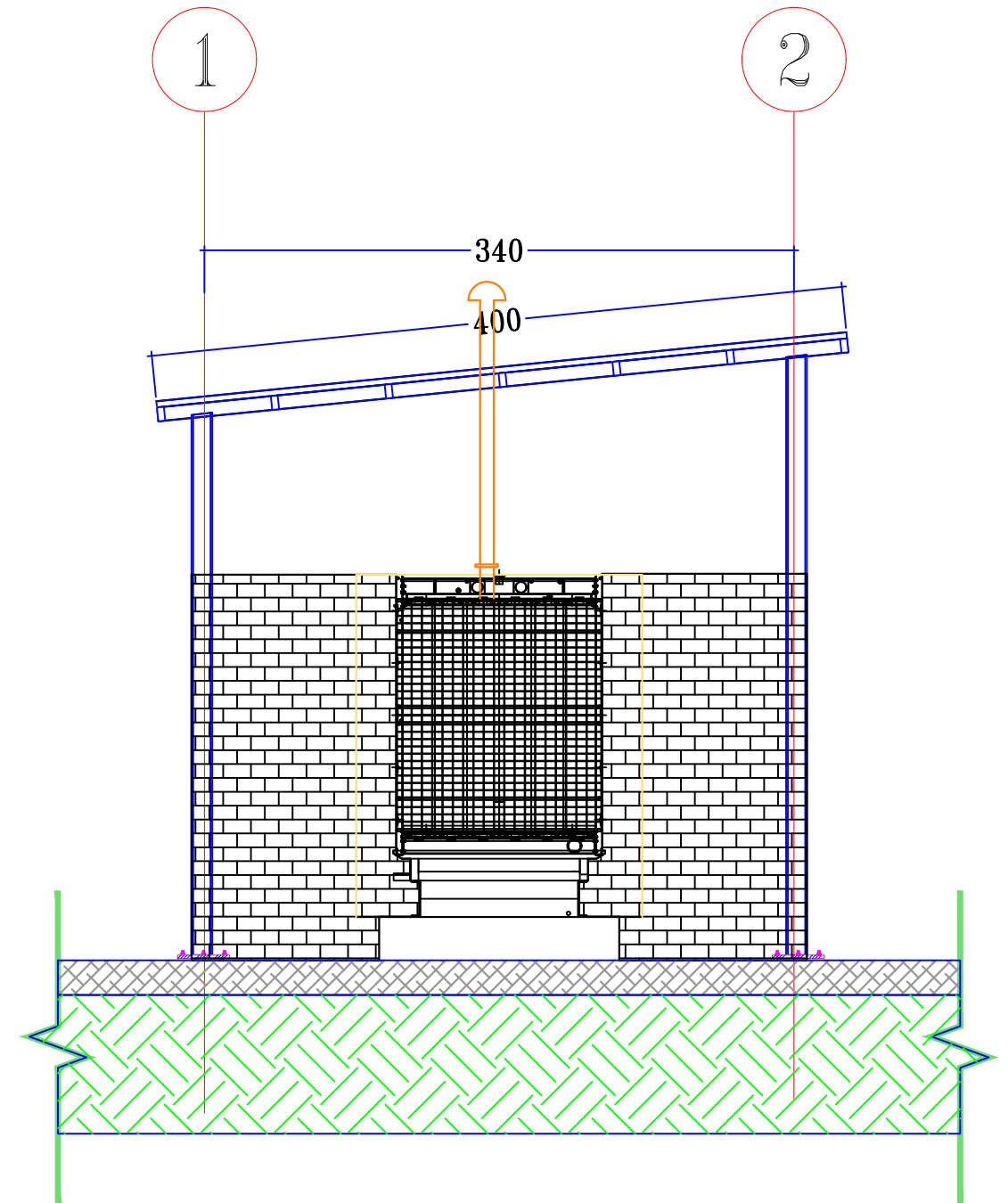
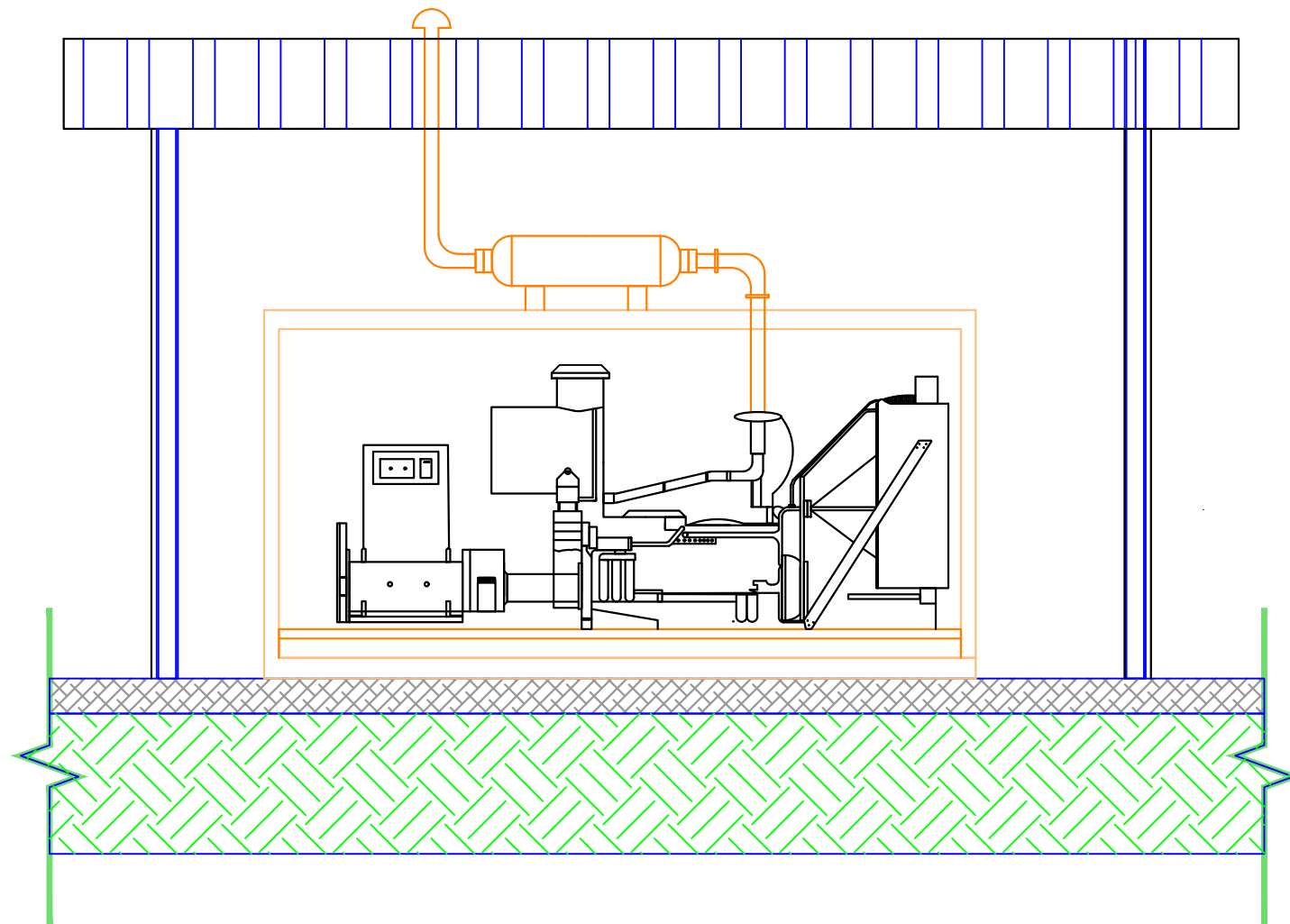
AS SHOWN

NORTH:



DRAWING NO:

G1-4



GENERATOR Exhaust System

PREPARED BY:



FUNDED BY:



PROJECT TITLE:

YEMEN EMERGENCY HUMAN CAPITAL
PROJECT(YEHCP)

PROJECT LOCATION:

MATNAH - CITY-YEMEN

DRAWING TITLE:

GENERATOR SHELTER ELEVATION
DETAILS

DRAWING TYPE:

STRUCTURAL PLAN

DESIGN & DRAW BY:

SUPERVISED & CHECKED BY:

APPROVED BY:

UNOPS DESIGN REVIEW.

STATUS:

TENDER DOCUMENTS.

PROJECT NO:

EHC-AF-WS-SAN-008

DATE:

May. 2023

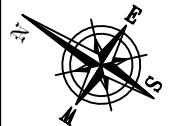
PAPER SIZE:

A3

SCALE:

AS SHOWN

NORTH:



DRAWING NO:

G1-5

PANEL FASTENERS
14x25 SDS
@ 333 O.C.

PANEL WITH
INSULATION.

TUBE
80X40X4MM.

I-BEAM
120X55X4.8MM.

ARC WELDING
E7018 OR E6013
Ø2.5MM.

All steel materials,
columns, sunshade,
beams and projections
must to painting two
coat of exterior
primer/sealer, two
coats of epoxy weather
shield paint as per
manufacturer
instruction.

BASE PLATE WELDIN

A.
SCALE: 1:20.

A'.
SCALE: 1:20.

WELDING DETAILS.

PREPARED BY:



FUNDED BY:



THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

PROJECT TITLE:

YEMEN EMERGENCY HUMAN CAPITAL
PROJECT(YEHCP)

PROJECT LOCATION:

MATNAH - CITY-YEMEN

DRAWING TITLE:

GENERATOR SHELTER ELEVATION
DETAILS

DRAWING TYPE:

STRUCTURAL PLAN

DESIGN & DRAW BY:

SUPERVISED & CHECKED BY:

APPROVED BY:

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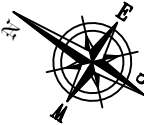
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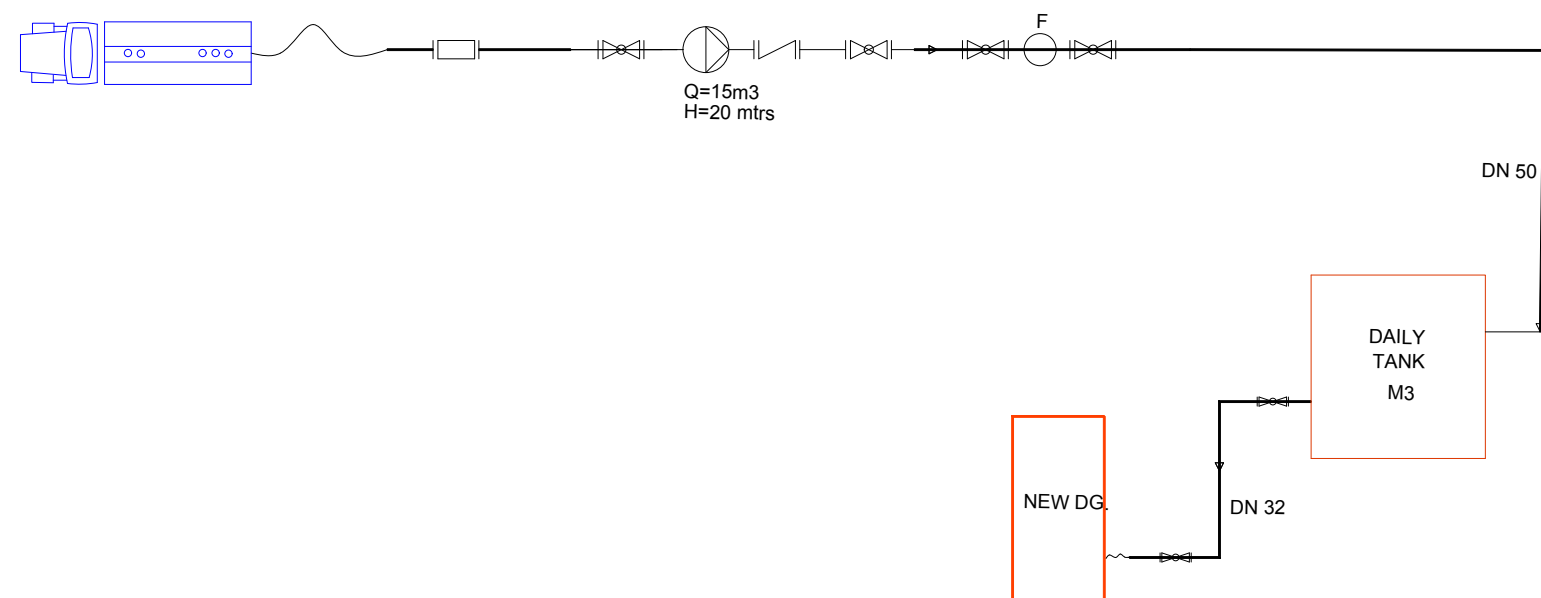
G1-6

REMARKS:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN CENTIMETERS AND METERS RESPECTIVELY, UNLESS OVER WISE MENTIONED.
2. ALL DIMENSIONS TO BE CHECKED AND CONFIRMED ON SITE BEFORE COMMENCEMENT OF ANY WORK.
3. ANY DISCREPANCY TO BE REPORTED TO THE UNOPS SITE ENGINEER/ PROJECT MANAGER PROMPTLY BEFORE PROCEEDING.
4. ALL OUTDOOR OUTLETS, SOCKET OR WIRING ACCESSORIES SHALL BE WEATHER PROOF TYPE.

DESIGN DATA OF LUBE OIL STORAGE TANK

TANK DESIGN DATA				MATERIALS AND SPECS			
1	NUMBER REQUIRED	ONE (1)		1	SHELL AND BOTTOM	ASTM A 36.	
2	NOMNAL CAPACITY cu.m	5		2	ROOF	ASTM A 36.	
3	DESIGN AND FAB CODE	API 650		3	INTERNAL STEEL	ASTM A 36.	
4	SP GRAVITY OF PRODUCT	0.89		4	EXTERNAL STEEL	ASTM A 36.	
5	OP PRESSURE	FLUID FULL		5	PIPE NOZZLE	ASTM A106 Gr.B	
6	DESIGN PRESS INT/EXT	WATER FULL KG/m²		6	NOZZLE FLANGES	ASTM A105	
7	OP TEMPERATURE °C	AMBIENT		7	MANHOLE NOZZLES	ASTM A 516 Gr.60	
8	DESIGN TEMPERATURE°C	50 DEG C		8	M/H FLG & COVER	ASTM A 516 Gr.60	
9	HYDROSTATIC TEST	WATER FILLING		9	BOLTS AND STUDS	ASTM A307//A193 Gr.B7	
10	STRESS RELIEF	NIL		10	NUTS	ASTM A307/A193 Gr.B7	
11	RADIOGRAPHY	JOINT EFFICIENCY	10 % 85 %	11	GASKETS	CAF 3mm THK.	
12	CORROSION ALLOWANCE	HEAD SHELL & (TOP) BOTTOM OTHERS	1.5 3.0 3.0	12	PAINTING	TWO EPOXY COATS (200 MICRON)	
				13	CONSTRUCTION	WELDED	
				14	INSPECTION	API 650	



DIESEL TANK AND PIPE CONNECTION DETAILS.
SCALE: AS SHOWN5.

PREPARED BY:



CLNT-TTL



PROJECT TITLE:

Supply, Installation, Testing, and Commissioning of
Solar Pumping Systems STAGE # 03 (WATER TANK)
IN MATNAH CITY

PROJECT LOCATION:

SANA'A - YEMEN

DRAWING TITLE:

DRAWING TYPE:

SEC/TYPE

TTL-DSGN?BY

STATUS:

STATUS

PROJECT NO:

EHC-AF-WS-SAN-008

DATE:

JAN-2023

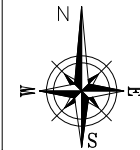
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SCALE:

SCALE

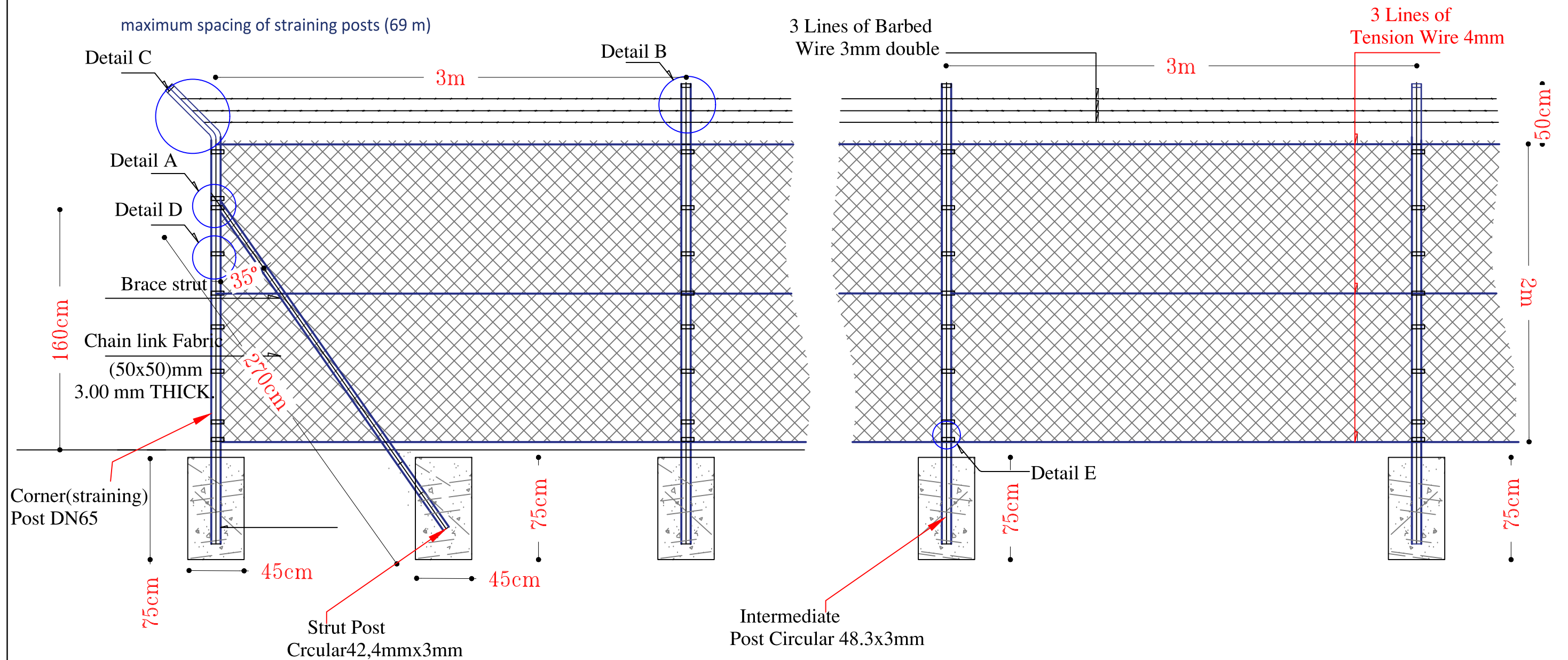
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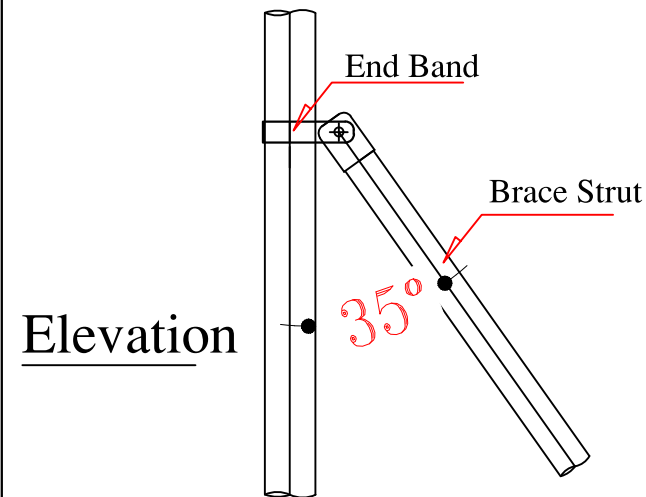
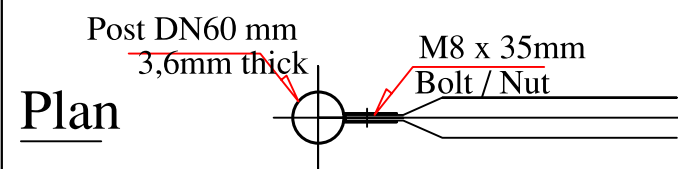
G1-08

SECURITY FENCE DRAWING

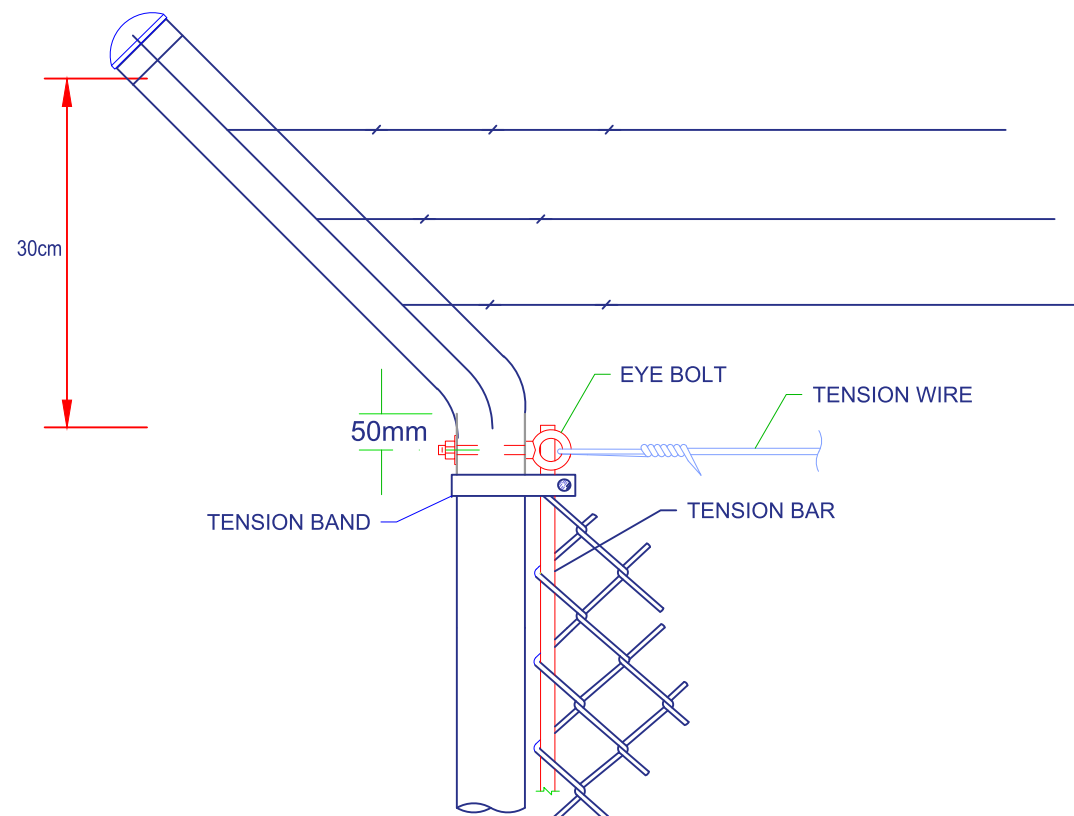


Concrete shall be cast against excavated face of the soil.

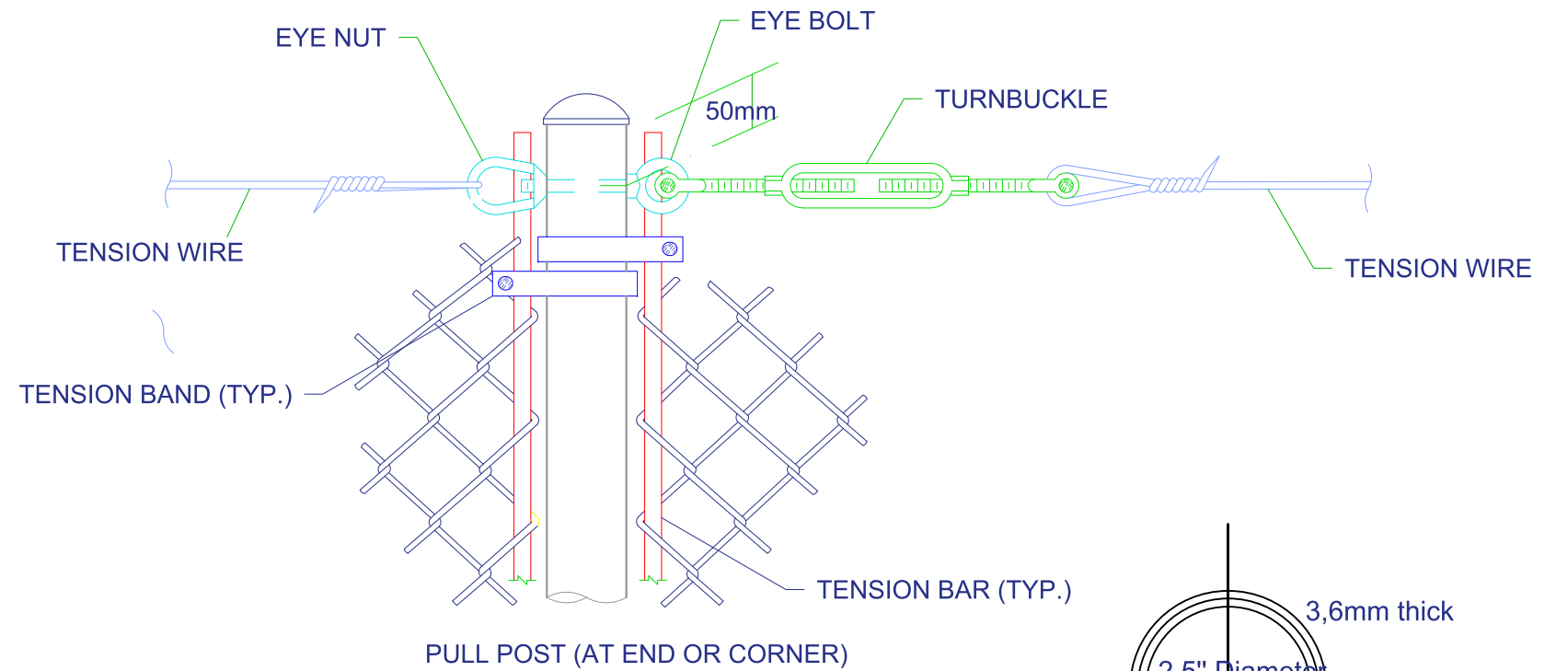
Fence Elevation



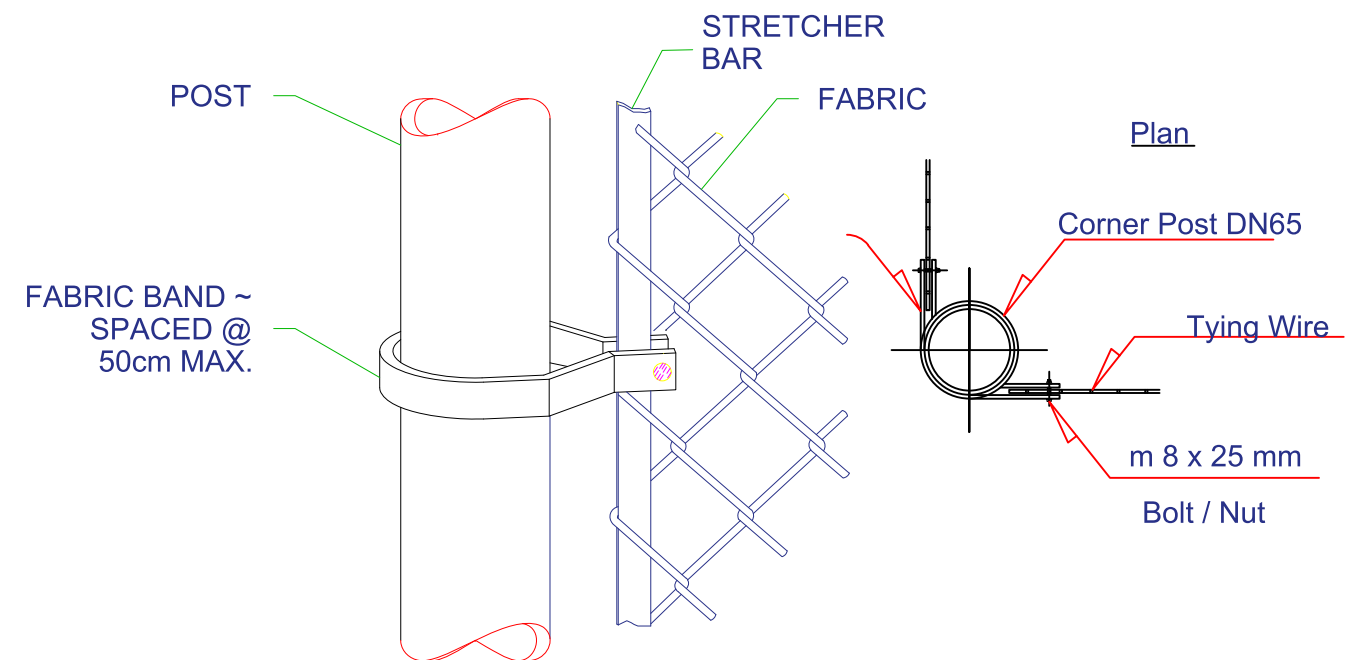
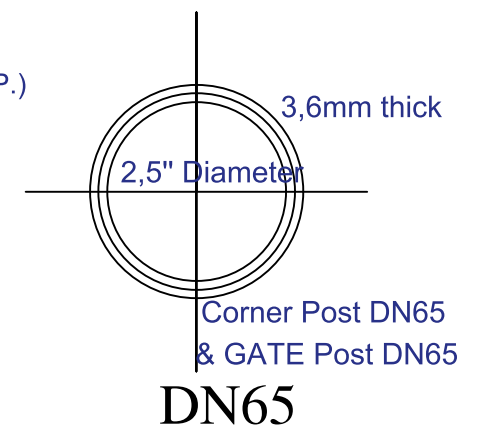
Detail A Brace Strut



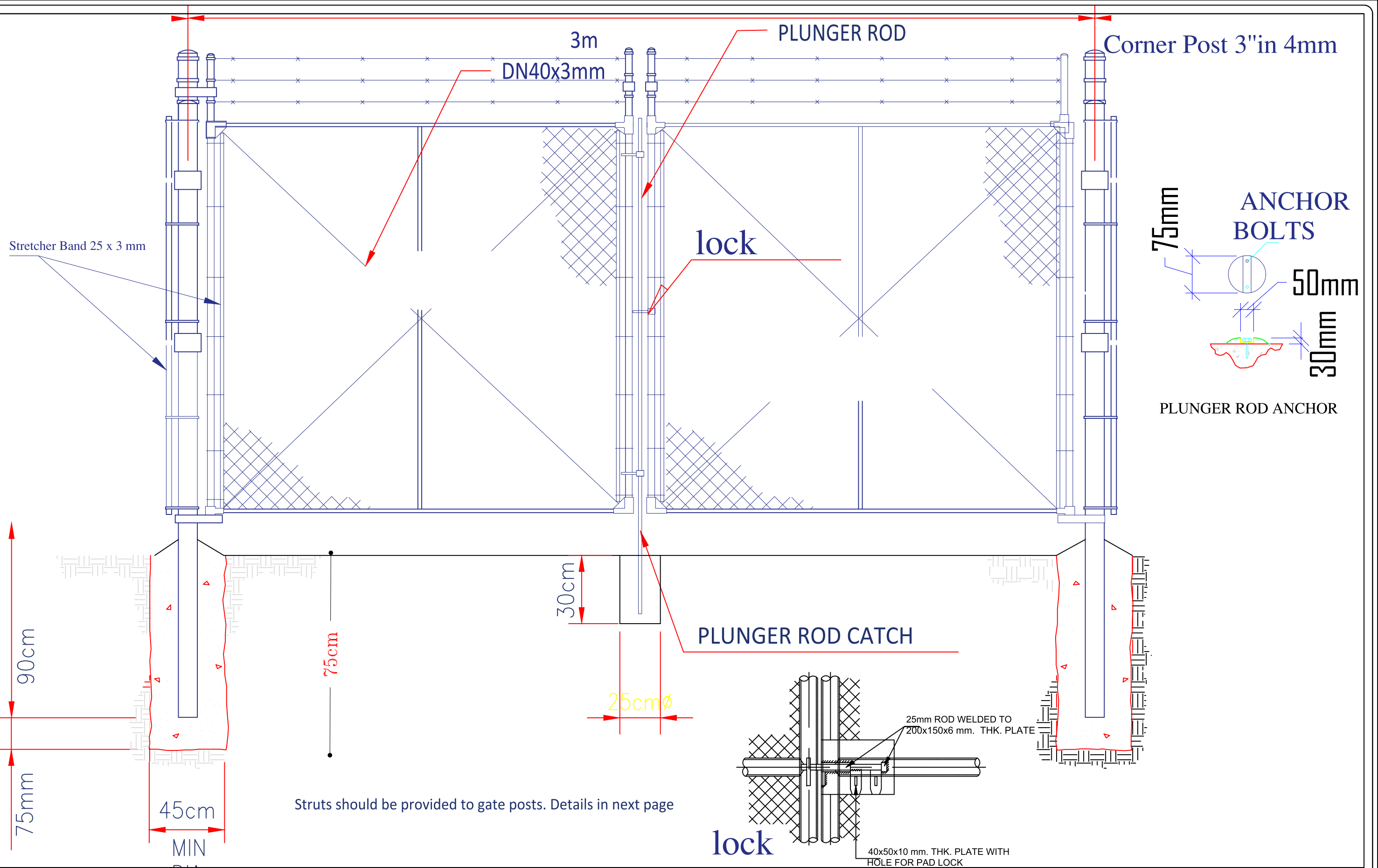
Detail C Corner Post



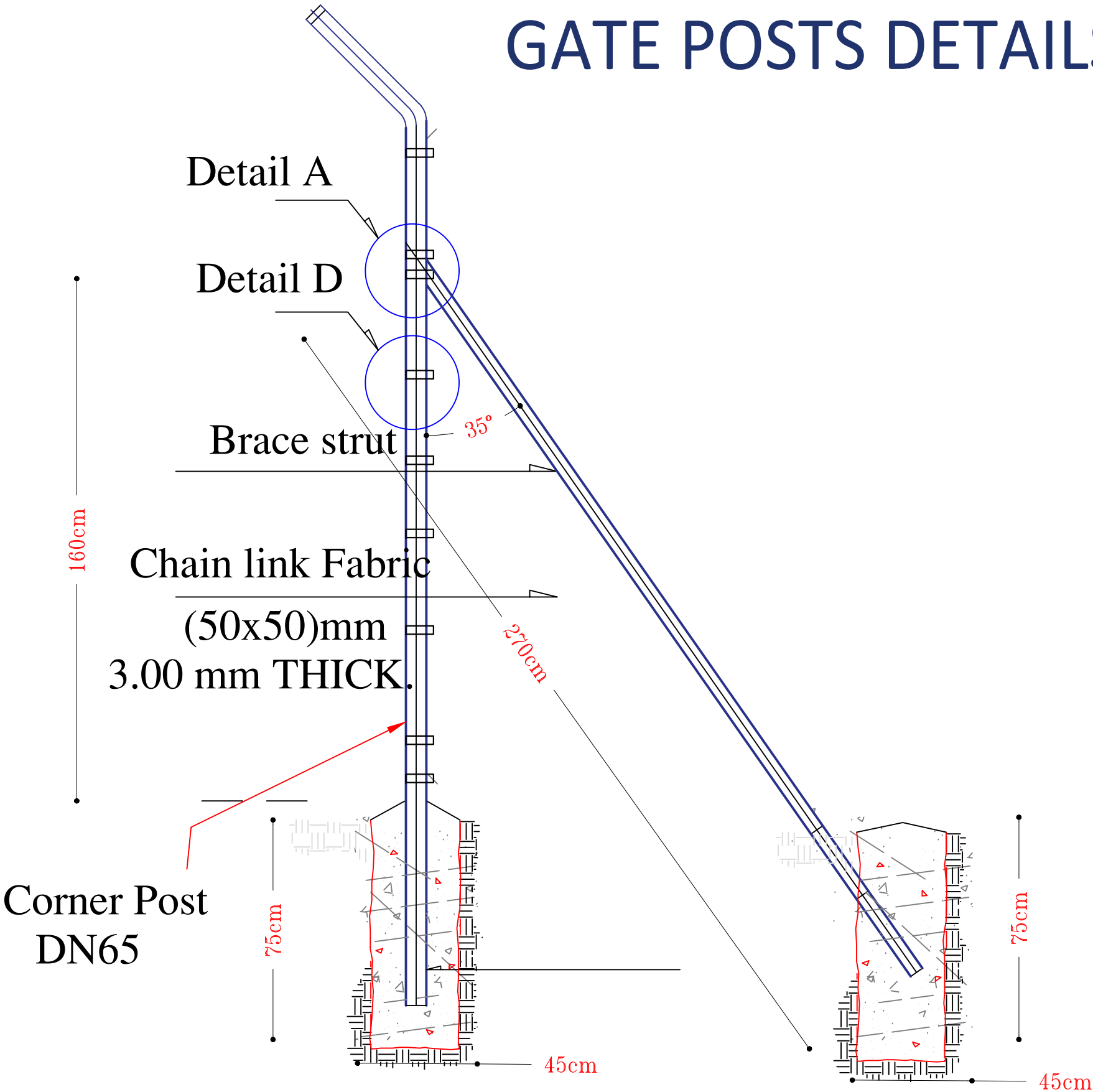
Detail B Eye Bolts



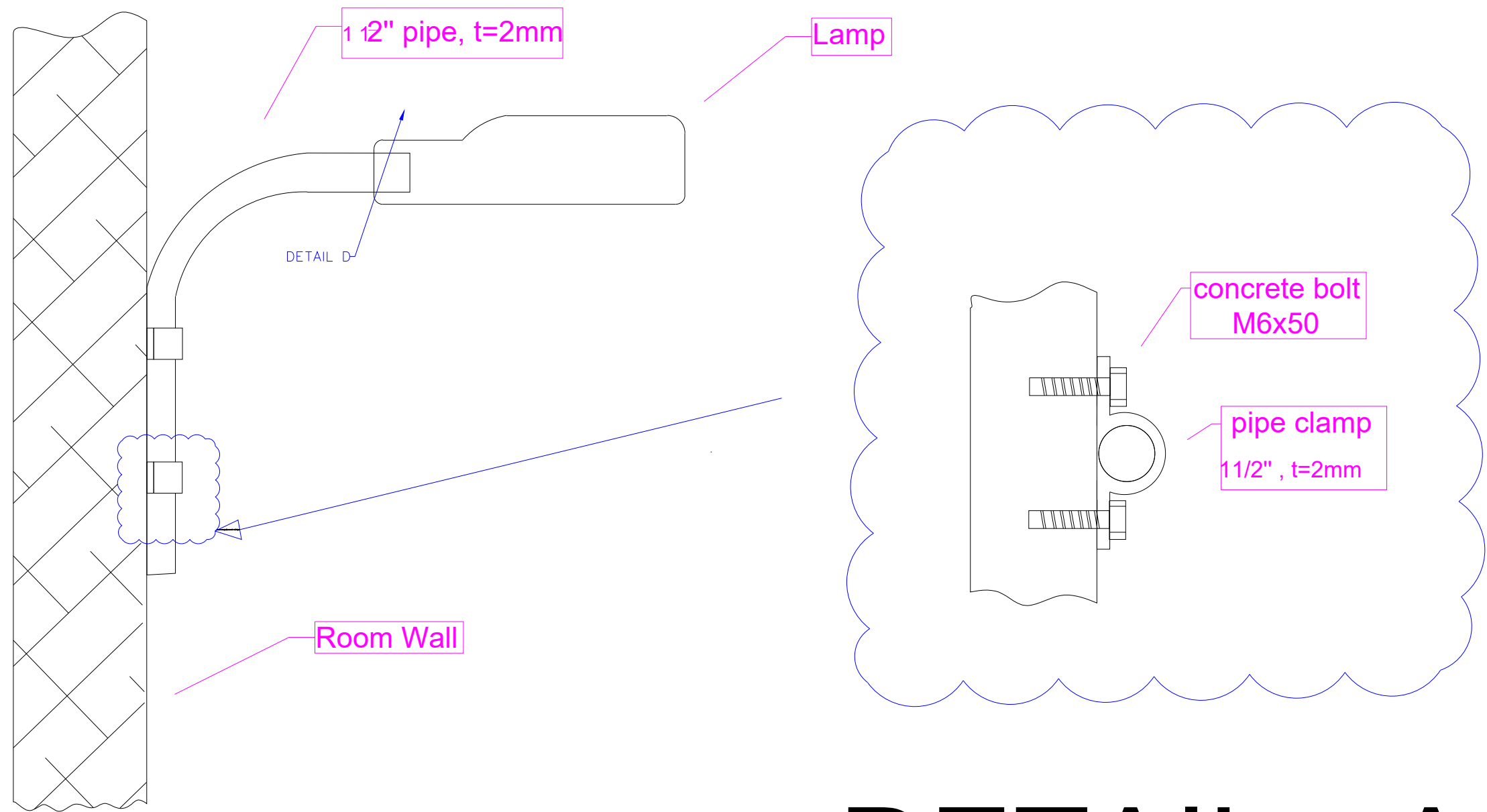
Detail D Stretcher Bar



GATE POSTS DETAILS



PV Panel of WALL lighting typical installation



DETAIL - A