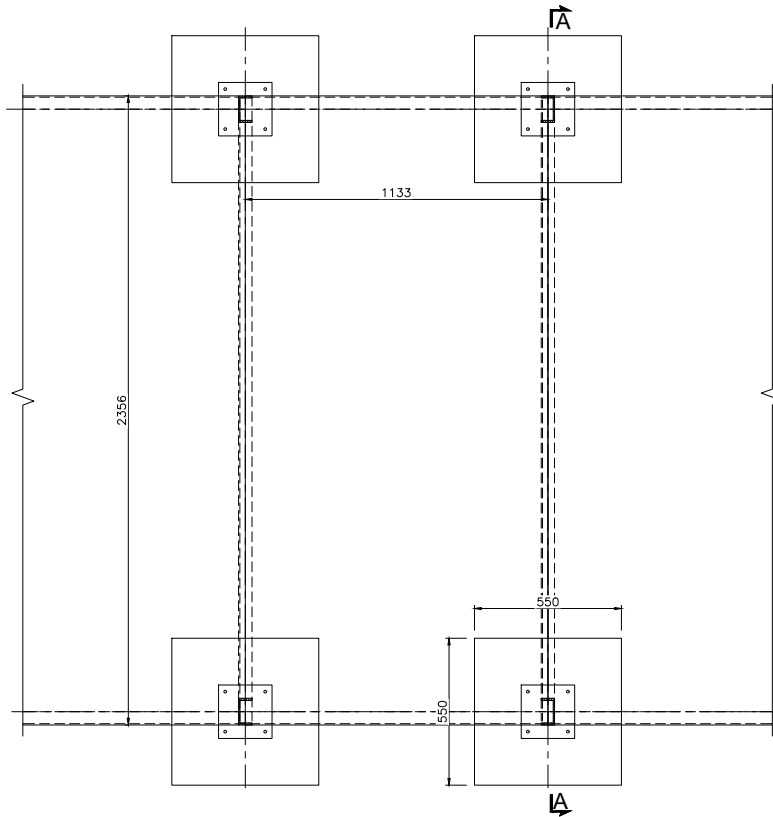


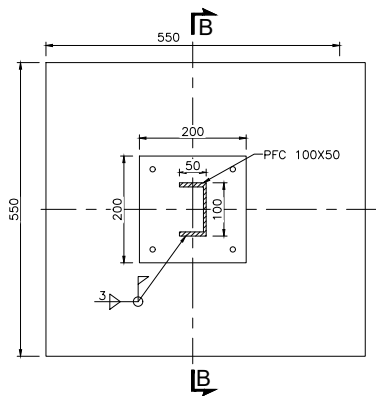
Annexure B

LIST OF DRAWINGS

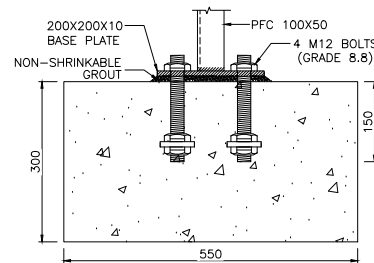
S. No.	DESCRIPTION	DWG. No.
1	TYPICAL SOLAR PANEL FRAMING FOR R.C.C ROOF MOUNTED STRUCTURE	STR/05
2	CGI STRUCTURE	STR/01
3	TYPICAL SOLAR PANEL FRAMING FOR GROUND ELEVATED STRUCTURE	03/01
4	TYPICAL SOLAR PANEL FRAMING FOR GROUND ELEVATED STRUCTURE	03/02
5	TYPICAL SOLAR PANEL FRAMING FOR GROUND ELEVATED STRUCTURE	03/03
6	TYPICAL SOLAR PANEL FRAMING FOR GROUND MOUNTED STRUCTURE	04/01
7	TYPICAL SOLAR PANEL FRAMING FOR GROUND MOUNTED STRUCTURE	04/02
8	TYPICAL SOLAR PANEL FRAMING FOR PARKING SHED	02/01
9	TYPICAL SOLAR PANEL FRAMING FOR PARKING SHED	02/02
10	TYPICAL SOLAR PANEL FRAMING FOR PARKING SHED	02/03
11	TYPICAL SOLAR PANEL FRAMING FOR PARKING SHED	02/04
12	TYPICAL SOLAR PANEL FRAMING FOR R.C.C ROOF MOUNTED STRUCTURE	05/01



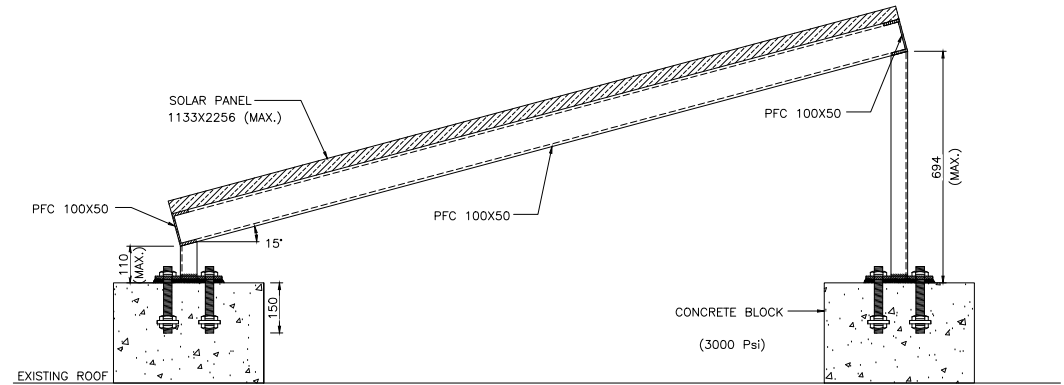
TYPICAL STRUCTURAL FRAMING PLAN



CONCRETE BLOCK DETAIL



SECTION B-B

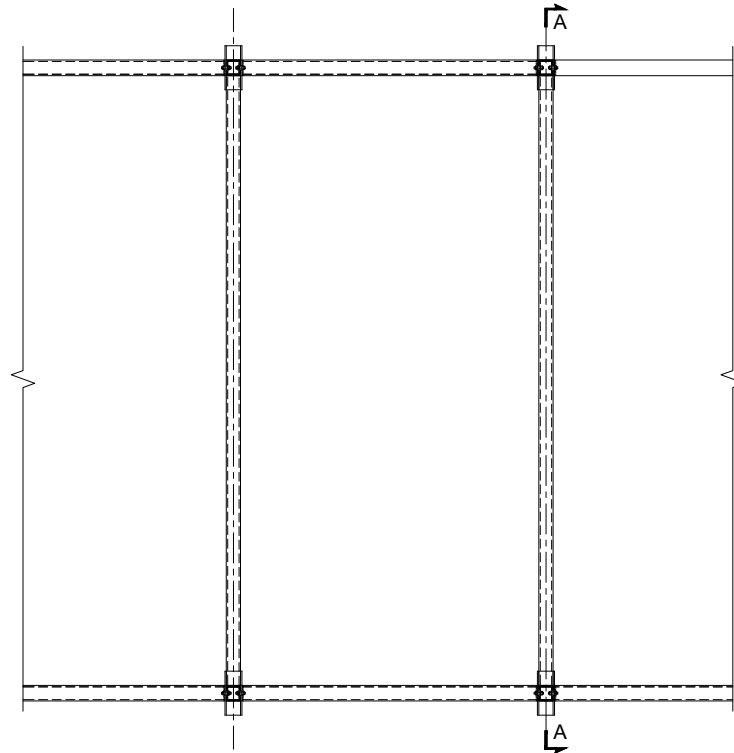


SECTION A-A

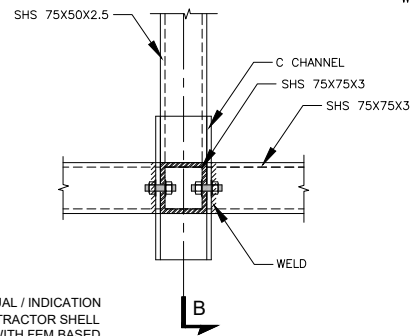
NOTE:

1. ALL DIMENSION ARE IN MILLIMETER.
2. ALL CONNECTIONS TO BE DESIGNED AND DETAILED BY CONTRACTOR.
3. ALL STEEL GRADE SHALL HAVE MINIMUM YIELD STRENGTH OF 250 Mpa.
4. ALL WELD SHALL BE OF E70XX ELECTRODE.
5. ALL STEEL STRUCTURE AND ANCHOR BOLTS SHALL BE HOT DIP GALVANIZED (MIN 85 MICRON).
6. ALL NUT BOLTS SHALL BE OF STAINLESS STEEL MATERIAL (NON-METALLIC, GRADE 325 ANTI-THEFT).
7. IT IS ASSUMED THAT THE EXISTING STRUCTURE IS ADEQUATE TO BEAR THE LOADINGS FROM STRUCTURAL FRAMING OF SOLAR PANEL.
8. TWO DRAINAGE CLIPS SHALL BE PROVIDED FOR EACH MODULE IN THE LAST/LOWEST ROW OF THE MODULES IN A SHED.
9. ALL BEAM TO BEAM & BEAM TO COLUMN CONNECTION ARE FULLY WELDED CONNECTION WHICH IS HAVING AT LEAST 4MM THICKNESS.
10. NON-SHRINKAGE GROUT OF AT LEAST 20MM THICKNESS SHALL BE PROVIDED UNDER ALL BASE PLATES.
11. ANCHOR BOLT (GRADE A490) SHOULD PROJECT A MINIMUM OF 3 THREADS ABOVE THE FULLY ENGAGED NUT(S).
12. A PROTECTION MAT OF APPROVED TYPE SHALL BE PROVIDED BETWEEN ROOF TOP LAYER AND MOUNTING STRUCTURE/CONCRETE BLOCKS.
13. CONTRACTOR TO ENSURE THAT THE EXISTING DRAINAGE CHARACTERISTICS OF THE ROOF TOP ARE NOT COMPROMISED.

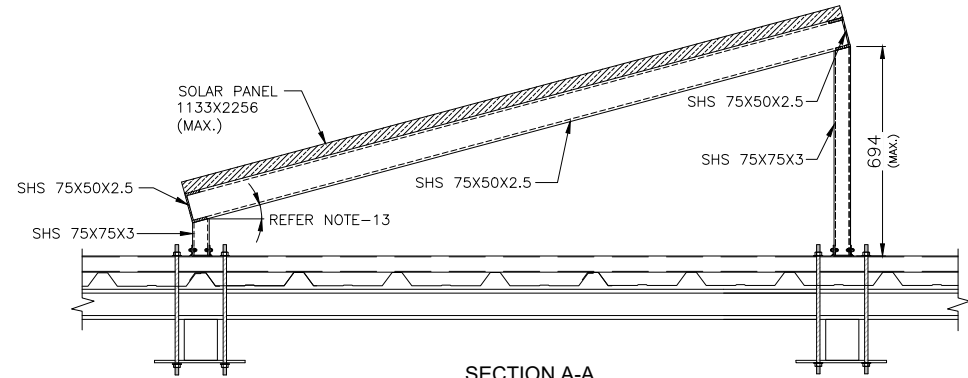
CONCEPTUAL DESIGN



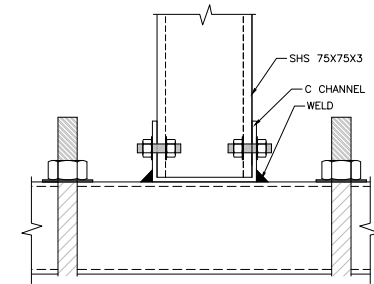
TYPICAL STRUCTURAL FRAMING AND SHEETING PLAN



FIXING DETAIL



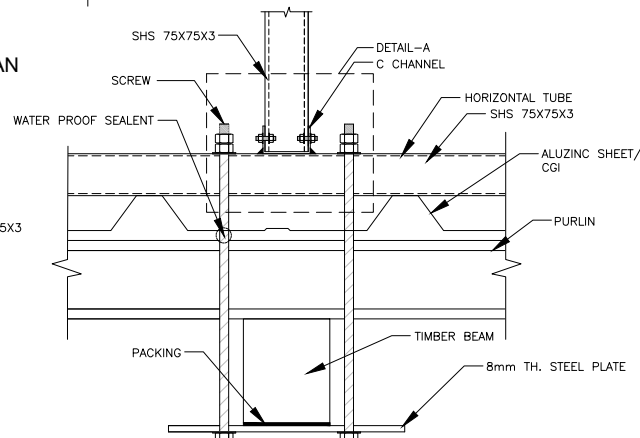
SECTION A-A



DETAIL-A

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETER.
2. ALL CONNECTIONS TO BE DESIGNED AND DETAILED BY CONTRACTOR.
3. ALL STEEL GRADE SHALL HAVE MINIMUM YIELD STRENGTH OF 250 Mpa.
4. ALL WELD SHALL BE OF E70XX ELECTRODE.
5. ALL STEEL STRUCTURE AND ANCHOR BOLTS SHALL BE HOT DIP GALVANIZED (MIN 85 MICRON).
6. ALL NUT BOLTS SHALL BE OF STAINLESS STEEL MATERIAL (NON-METALLIC, GRADE 304) AND ANTI-THEFT.
7. IT IS ASSUMED THAT THE EXISTING STRUCTURE IS ADEQUATE TO BEAR THE LOADINGS FROM STRUCTURAL FRAMING OF SOLAR PANEL.
8. TWO DRAINAGE CLIPS SHALL BE PROVIDED FOR EACH MODULE IN THE LAST/LOWEST ROW OF THE MODULES IN A SHED.
9. ALL BEAM TO BEAM & BEAM TO COLUMN CONNECTION ARE FULLY WELDED CONNECTION WHICH IS HAVING AT LEAST 4MM THICKNESS.
10. AN APPROVED WATER PROOF SEALANT SHOULD BE PROVIDED AT EACH PUNCHING POINT IN ORDER TO AVOID WATER LEAKAGE.
11. ANCHOR BOLT SHOULD PROJECT A MINIMUM OF 3 THREADS ABOVE THE FULLY ENGAGED NUT(S).
12. CONTRACTOR TO ENSURE THAT THE EXISTING DRAINAGE CHARACTERISTICS OF THE ROOF TOP ARE NOT COMPROMISED.
13. FOR ANGLE REFER TO SIMULATION DRAWINGS/REPORT,



SECTION B-B

CONCEPTUAL DESIGN

NESPAK NATIONAL ENGINEERING SERVICES
PAKISTAN (PVT.) LTD.
HEAD OFFICE- NESPAK HOUSE, I.C. BLOCK-N,
MODEL TOWN EXTENSION, LAHORE, PAKISTAN.

CLIENT
WATER & POWER GILGAT BALTISTAN

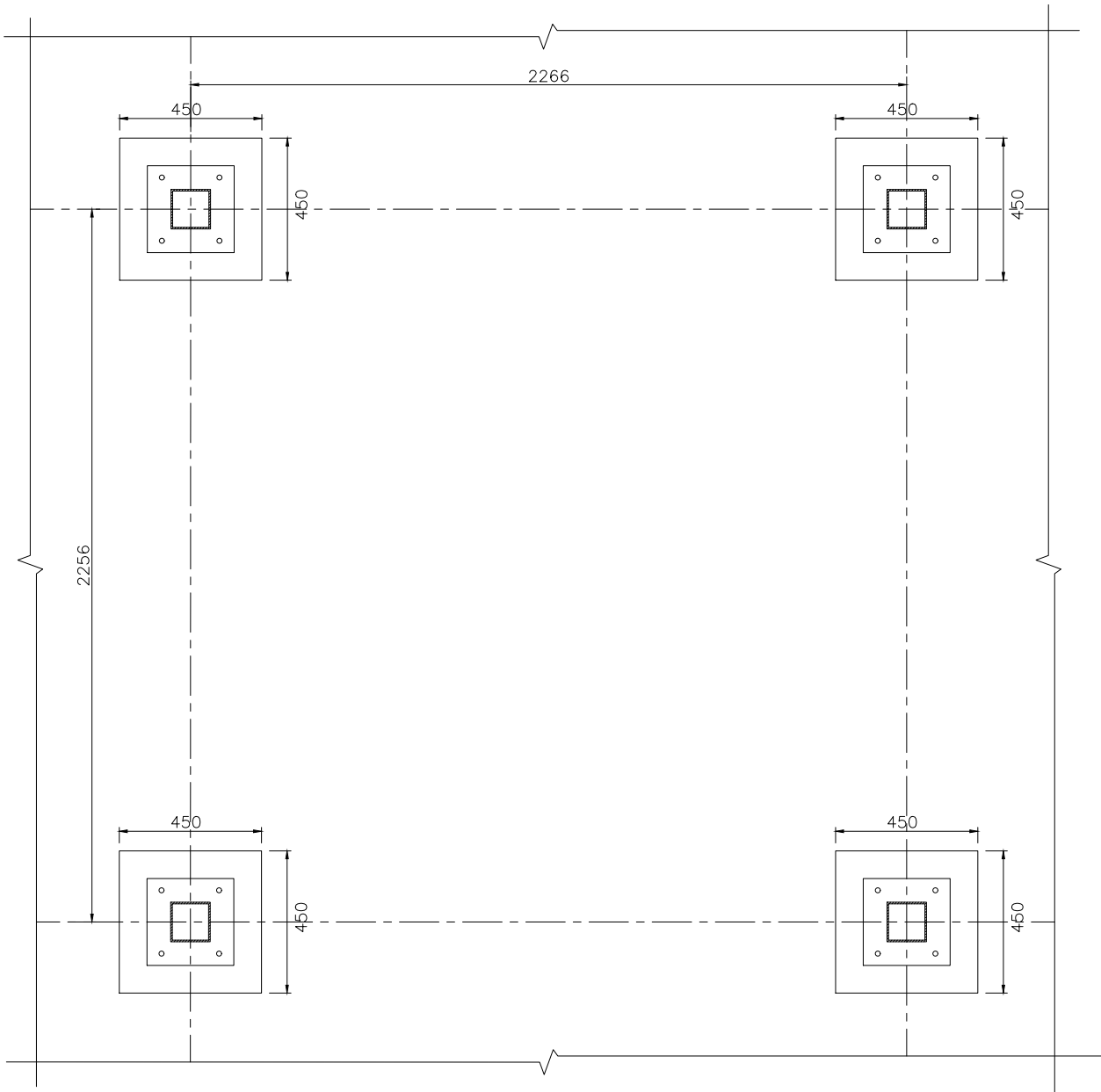
REV.	DATE	DESCRIPTION	APPROVED	APPROVED
04				
03				
02				
01				

PROJECT
100 WM DISTRIBUTED SOLAR PV PLANTS
AT VARIOUS SITES IN
GILGAT BALTISTAN

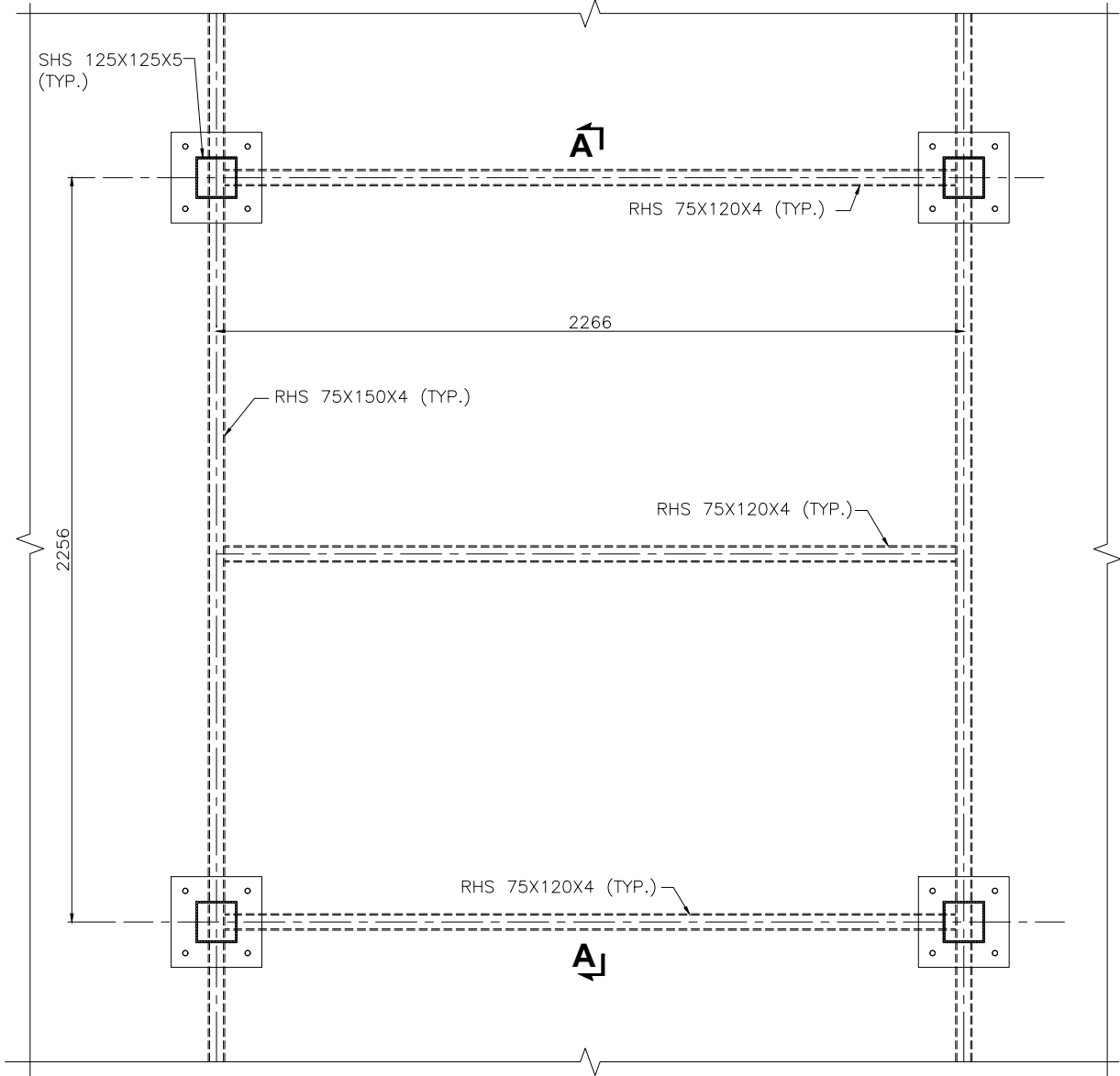
CGI STRUCTURE
DATE MAR. 2025
DRAWING No. 4898/TD/STR/01

SCALE
NTS
REV.

NOTES:
1. REFER NOTE ON SHEET G02.



FOUNDATION LAYOUT PLAN



TYPICAL STRUCTURAL FRAMING PLAN

NOTES:
THESE ARE MINIMUM REQUIRED CONCEPTUAL/INDICATIVE DRAWINGS ONLY HOWEVER THE EPC CONTRACTOR SHOULD SUBMIT THE DETAIL DRAWINGS ALONG WITH FEM BASED ANALYSIS MODEL FOR APPROVAL PURPOSES.


<div><div><div></div><div></div><div></div></div><div>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.</div></div> <div>HEAD OFFICE:- NESPAK HOUSE, I-C, BLOCK-N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.</div>	CLIENT WATER AND POWER GILGAT BALTISTAN	04				DRAWN	S.A	PROJECT 100MW DISTRIBUTED SOLAR PV PLANTS AT VARIES SITES IN GILGAT BALTISTAN	TYPICAL SOLAR PANEL FRAMING FOR GROUND ELEVATED STRUCTURE		SCALE
		03				SUBMITTED					NTS
		02				RECOMMENDED					
		01				CHD./VER.					REV.
		REV.	DATE	DESCRIPTION	APPROVED	APPROVED					0
								DATE	DRAWING No.		
								MAR-2025	4851/TD/STR/03/01		



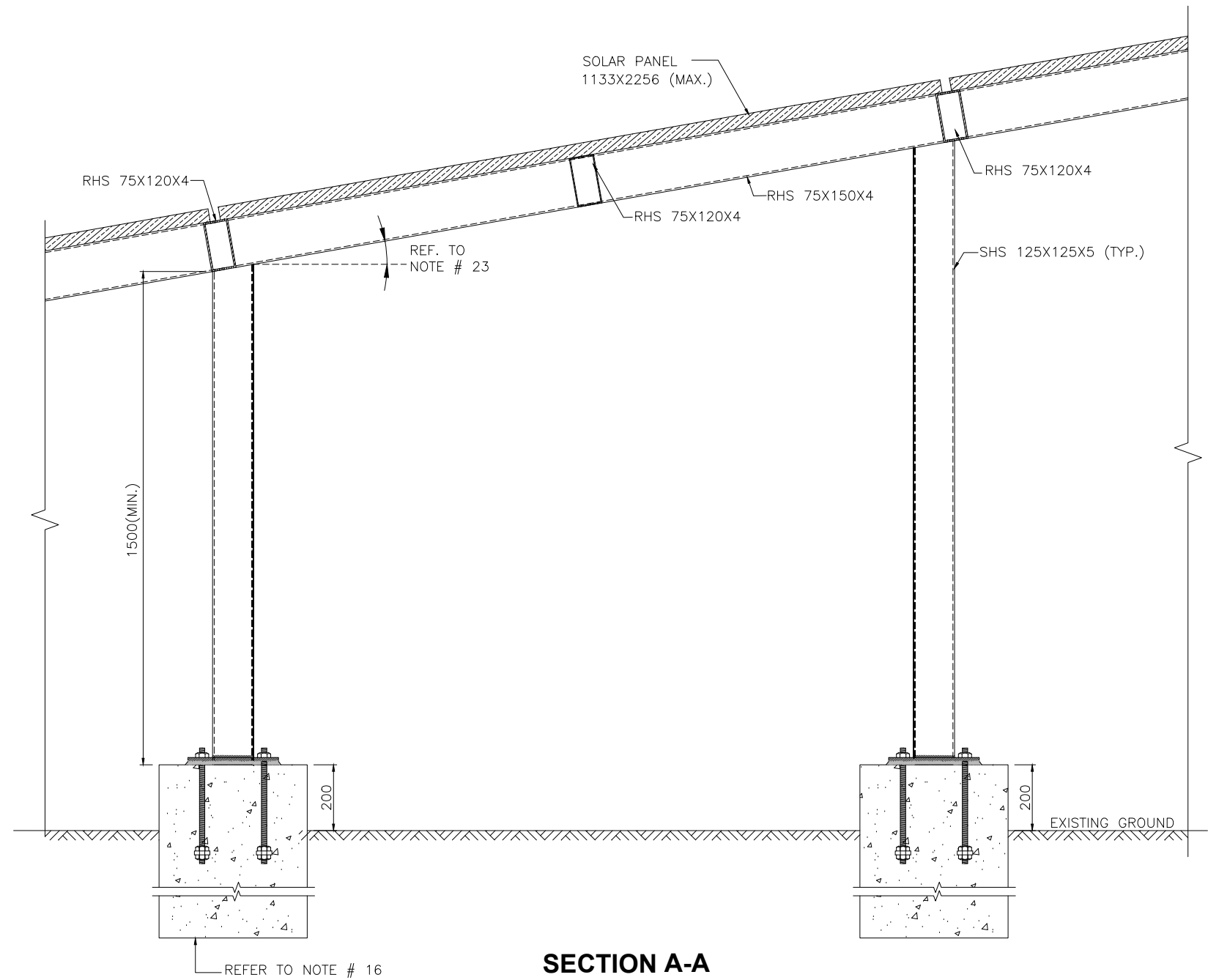
- GENERAL NOTES:
1. ALL DIMENSIONS ARE IN MM.
 2. ALL CONNECTIONS TO BE DESIGNED AND DETAILED BY CONTRACTOR.
 3. ALL NUT BOLTS SHALL BE OF STAINLESS STEEL MATERIAL (NON-METALLIC, GRADE A325 ANTI-THEFT).
 4. ALL BEAM TO BEAM AND BEAM TO COLUMN CONNECTION ARE FULLY WELDED CONNECTION WHICH IS HAVING ATLEAST 4MM THICKNESS.
 5. NON-SHRINKAGE GROUT OF ATLEAST 25MM THICKNESS SHALL BE PROVIDED UNDER ALL BASE PLATES.
 6. ALL STEEL MEMBERS STRENGTH SHALL BE MINIMUM $F_y = 250\text{MPa}$.
 7. ALL STEEL MEMBERS ARE HAVING WELDED CONNECTIONS.
 8. MINIMUM WELD THICKNESS SHALL BE 4mm UNLESS NOTED OTHERWISE.
 9. TYPE OF CEMENT SHALL BE DECIDED AS PER SOIL CHEMICAL ANALYSIS.
 10. ALL THE STEEL MEMBERS, BOLTS (ANTI-THEFT) AND PLATES SHALL BE HOT DIPPED GALVANIZED (100 MICRON MINIMUM).
 11. WELDED ELECTRODES SHALL BE 70XX.
 12. ALL THE ANCHOR BOLTS SHALL BE OF A325 (105KSI TENSILE) OR EQUIVALENT (NON-METALLIC).
 13. ALL THE MATERIAL SHALL BE TESTED AS PER AISC GUIDELINES.
 14. CONTRACTOR SHOULD SUBMIT THE SHOP DRAWING BEFORE EXECUTION.
 15. FOUNDATION IS DESIGNED BY ASSUMING ALLOWABLE BEARING CAPACITY OF 1.5 TSF. CONTRACTOR TO VERIFY PRIOR TO EXECUTION.
 16. ENGINEERING BACKFILL MATERIAL SHALL BE USED BELOW THE FOUNDATION IF THE BEARING CAPACITY FOR THE NATURAL STRATA IS LESSER THAN 1.5T/FT^2 .
 17. MINIMUM OF 95% MODIFIED AASHTO DENSITY SHALL BE ACHIEVED FOR EACH LAYER OF COMPACTION.
 18. WELDING/BOLTING FOR ALL THE CONNECTION SHALL BE CONDUCTED AS PER ENGINEER APPROVED.
 19. ANCHOR BOLT SHOULD PROJECT A MINIMUM OF 3 THREADS ABOVE THE FULLY ENGAGED NUT(S).
 20. INSTALLATION SHOULD NOT BE DONE BEFORE BACKFILLING.
 21. THE STRENGTH OF P.C.C IS 14MPa , AND R.C.C SHOULD HAVE 28 DAYS CONCRETE CYLINDER STRENGTH OF 21MPa .
 22. BEFORE COMMENCEMENT OF THE CONSTRUCTION WORK COMPLETE SITE CLEARANCE SHALL BE PERFORMED BY CONTRACTOR.
 23. REFER TO SIMULATION REPORT FOR ANGLE.

THESE ARE MINIMUM REQUIRED CONCEPTUAL/INDICATIVE DRAWINGS ONLY HOWEVER THE EPC CONTRACTOR SHOULD SUBMIT THE DETAIL DRAWINGS ALONG WITH FEM BASED ANALYSIS MODEL FOR APPROVAL PURPOSES.

CONCEPTUAL DESIGN


	NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	CLIENT	WATER AND POWER GILGAT BALTISTAN	04				DRAWN	S.A	PROJECT	100MW DISTRIBUTED SOLAR PV PLANTS AT VARIES SITES IN GILGAT BALTISTAN	TYPICAL SOLAR PANEL FRAMING FOR GROUND ELEVATED STRUCTURE		SCALE
				03				SUBMITTED				NTS		
				02				RECOMMENDED						
				01				CHD./VER.						
				REV.	DATE	DESCRIPTION	APPROVED	APPROVED						
HEAD OFFICE:- NESPAK HOUSE, I-C, BLOCK-N, MODEL TOWN EXTENSION. LAHORE, PAKISTAN.												DATE	DRAWING No.	REV.
												MAR-2025	4851/TD/STR/03/02	0

NOTES:
1. REFER NOTE ON SHEET G02.

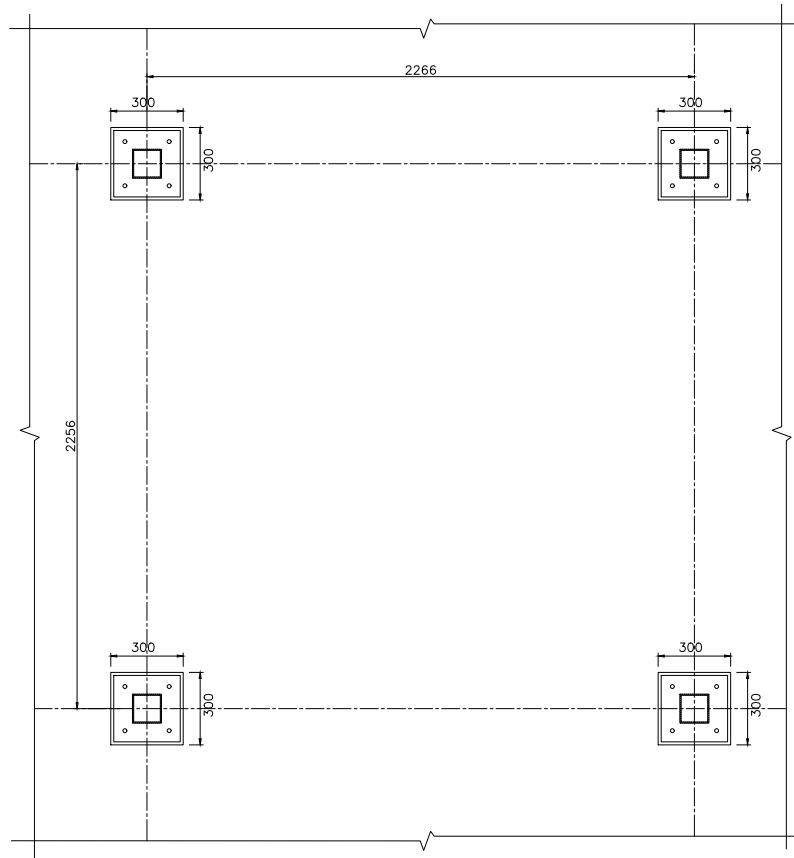


NOTES:
THESE ARE MINIMUM REQUIRED CONCEPTUAL/INDICATIVE DRAWINGS ONLY HOWEVER THE EPC CONTRACTOR SHOULD SUBMIT THE DETAIL DRAWINGS ALONG WITH FEM BASED ANALYSIS MODEL FOR APPROVAL PURPOSES.

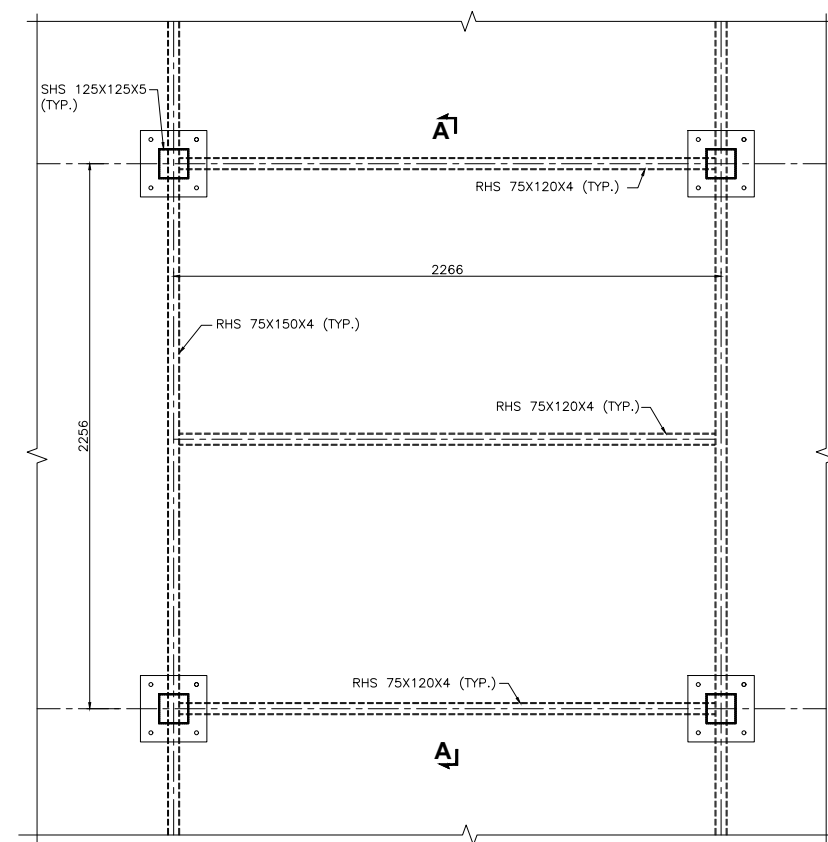
CONCEPTUAL DESIGN

 NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. HEAD OFFICE:- NESPAK HOUSE, I-C, BLOCK-N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.	CLIENT WATER AND POWER GILGAT BALTISTAN	04				DRAWN	S.A	PROJECT 100MW DISTRIBUTED SOLAR PV PLANTS AT VARIES SITES IN GILGAT BALTISTAN	TYPICAL SOLAR PANEL FRAMING FOR GROUND ELEVATED STRUCTURE		SCALE
		03				SUBMITTED					NTS
		02				RECOMMENDED					
		01				CHD./VER.					REV.
		REV.	DATE	DESCRIPTION	APPROVED	APPROVED			DATE	DRAWING No.	REV.
									MAR-2025	4851/TD/STR/03/03	0

NOTES:
1. REFER NOTE ON SHEET G02.




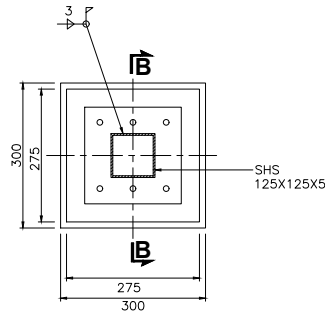
FOUNDATION LAYOUT PLAN



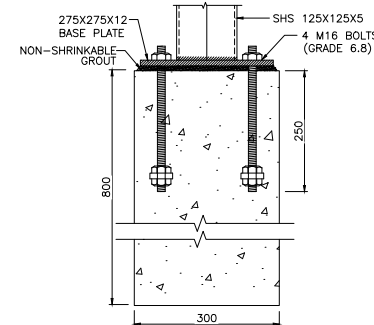
TYPICAL STRUCTURAL FRAMING PLAN

NOTES:
THESE ARE MINIMUM REQUIRED CONCEPTUAL/INDICATIVE DRAWINGS ONLY HOWEVER THE EPC CONTRACTOR SHOULD SUBMIT THE DETAIL DRAWINGS ALONG WITH FEM BASED ANALYSIS MODEL FOR APPROVAL PURPOSES.

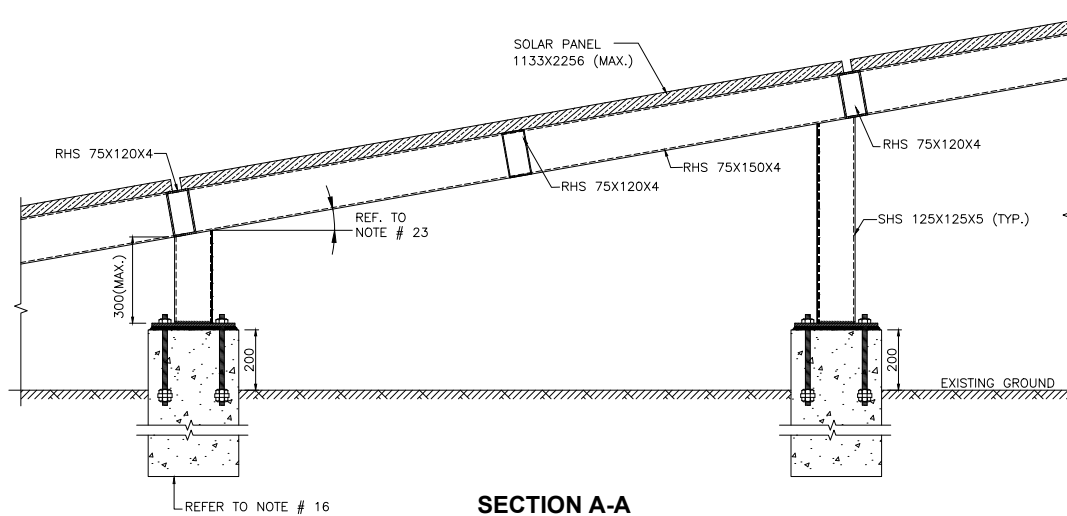
 NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. <small>HEAD OFFICE:- NESPAK HOUSE, I-C, BLOCK-N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.</small>	CLIENT WATER AND POWER GILGAT BALTISTAN	04				DRAWN	S.A	PROJECT 100MW DISTRIBUTED SOLAR PV PLANTS AT VARIES SITES IN GILGAT BALTISTAN	TYPICAL SOLAR PANEL FRAMING FOR GROUND MOUNTED STRUCTURE		SCALE NTS	
		03										
		02										
		01										
		REV.	DATE	DESCRIPTION		APPROVED	APPROVED		DATE	DRAWING No.	REV.	
									MAR-2025	4898/TD/STR/04/01		



CONCRETE BLOCK DETAIL



SECTION B-B



SECTION A-A


NOTES:

THESE ARE MINIMUM REQUIRED CONCEPTUAL/INDICATIVE DRAWINGS ONLY HOWEVER THE EPC CONTRACTOR SHOULD SUBMIT THE DETAIL DRAWINGS ALONG WITH FEM BASED ANALYSIS MODEL FOR APPROVAL PURPOSES.

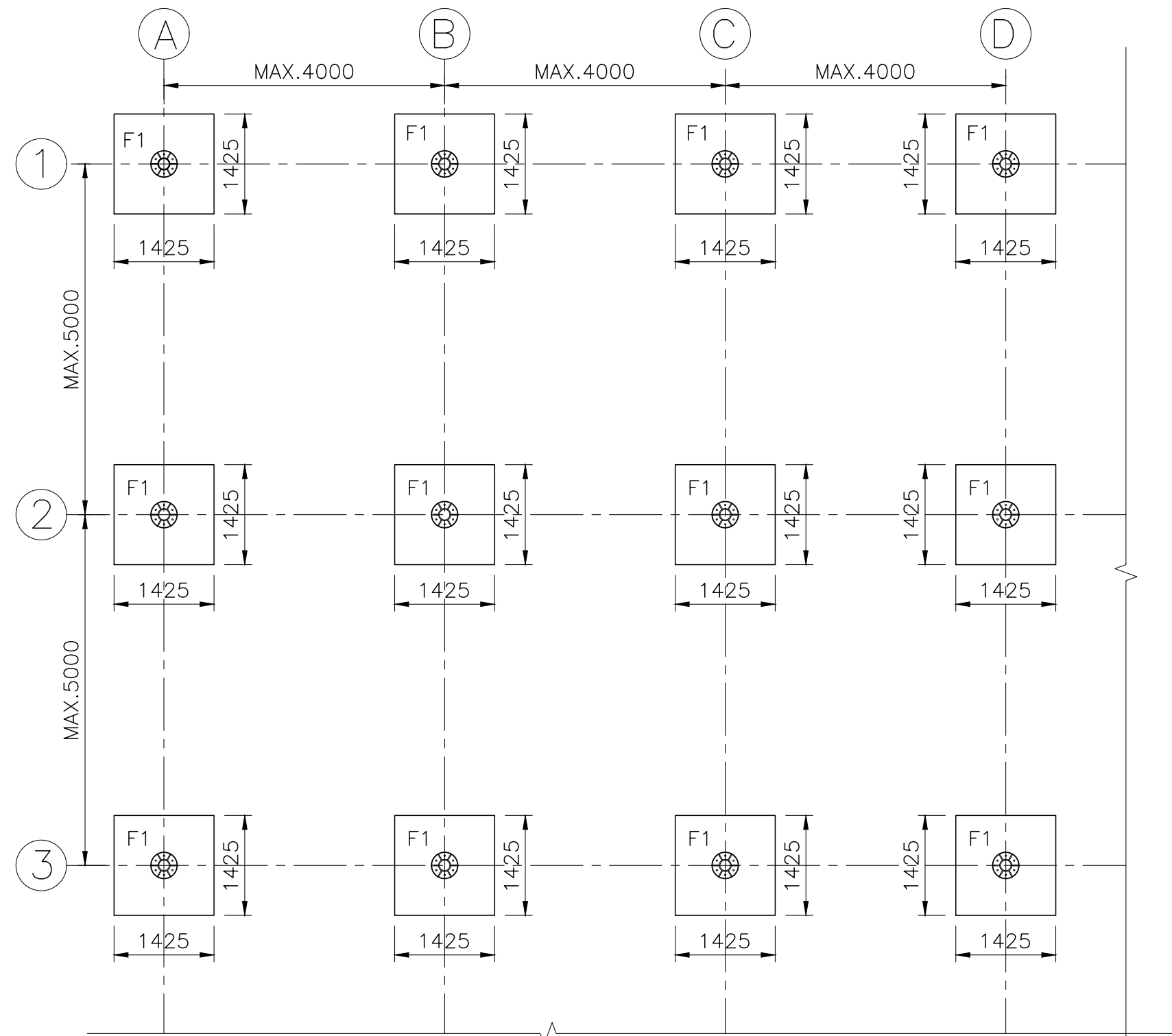
GENERAL NOTES:

1. ALL DIMENSIONS ARE IN MM.
2. ALL CONNECTIONS TO BE DESIGNED AND DETAILED BY CONTRACTOR.
3. ALL NUT BOLTS SHALL BE OF STAINLESS STEEL MATERIAL (NON-METALLIC, GRADE A325 ANTI-THEFT).
4. ALL BEAM TO BEAM AND BEAM TO COLUMN CONNECTION ARE FULLY WELDED CONNECTION WHICH IS HAVING ATLEAST 4MM THICKNESS.
5. NON-SHRINKAGE GROUT OF ATLEAST 25MM THICKNESS SHALL BE PROVIDED UNDER ALL BASE PLATES.
6. ALL STEEL MEMBERS STRENGTH SHALL BE MINIMUM $F_y = 250\text{MPa}$.
7. ALL STEEL MEMBERS ARE HAVING WELDED CONNECTIONS.
8. MINIMUM WELD THICKNESS SHALL BE 4mm UNLESS NOTED OTHERWISE.
9. TYPE OF CEMENT SHALL BE DECIDED AS PER SOIL CHEMICAL ANALYSIS.
10. ALL THE STEEL MEMBERS, BOLTS (ANTI-THEFT) AND PLATES SHALL BE HOT DIPPED GALVANIZED (100 MICRON MINIMUM).
11. WELDED ELECTRODES SHALL BE 70XX.
12. ALL THE ANCHOR BOLTS SHALL BE OF A325 (105KSI TENSILE) OR EQUIVALENT (NON-METALLIC).
13. ALL THE MATERIAL SHALL BE TESTED AS PER AISC GUIDELINES.
14. CONTRACTOR SHOULD SUBMIT THE SHOP DRAWING BEFORE EXECUTION.
15. FOUNDATION IS DESIGNED BY ASSUMING ALLOWABLE BEARING CAPACITY OF 1.5 TSF. CONTRACTOR TO VERIFY PRIOR TO EXECUTION.
16. ENGINEERING BACKFILL MATERIAL SHALL BE USED BELOW THE FOUNDATION IF THE BEARING CAPACITY FOR THE NATURAL STRATA IS LESSER THAN 1.5T/FT^2 .
17. MINIMUM OF 95% MODIFIED AASHTO DENSITY SHALL BE ACHIEVED FOR EACH LAYER OF COMPACTION.
18. WELDING/BOLTING FOR ALL THE CONNECTION SHALL BE CONDUCTED AS PER ENGINEER APPROVED.
19. ANCHOR BOLT SHOULD PROJECT A MINIMUM OF 3 THREADS ABOVE THE FULLY ENGAGED NUT(S).
20. INSTALLATION SHOULD NOT BE DONE BEFORE BACKFILLING.
21. THE STRENGTH OF P.C.C IS 14MPa , AND R.C.C SHOULD HAVE 28 DAYS CONCRETE CYLINDER STRENGTH OF 21MPa .
22. BEFORE COMMENCEMENT OF THE CONSTRUCTION WORK COMPLETE SITE CLEARANCE SHALL BE PERFORMED BY CONTRACTOR.
23. REFER TO SIMULATION REPORT FOR ANGLE.

CONCEPTUAL DESIGN

<div></div> <div>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.</div>	CLIENT	WATER AND POWER GILGAT BALTISTAN	04			DRAWN	S.A	PROJECT	100MW DISTRIBUTED SOLAR PV PLANTS AT VARIES SITES IN GILGAT BALTISTAN	TYPICAL SOLAR PANEL FRAMING FOR GROUND MOUNTED STRUCTURE		SCALE
			03			SUBMITTED				NTS		
			02			RECOMMENDED						
			01			CHD./VER.						
			REV.	DATE	DESCRIPTION	APPROVED	APPROVED				DATE	DRAWING No.
						MAR-2025	4898/TD/STR/04/02	<div>0</div>				

NOTES:
1. REFER NOTE ON SHEET G03.



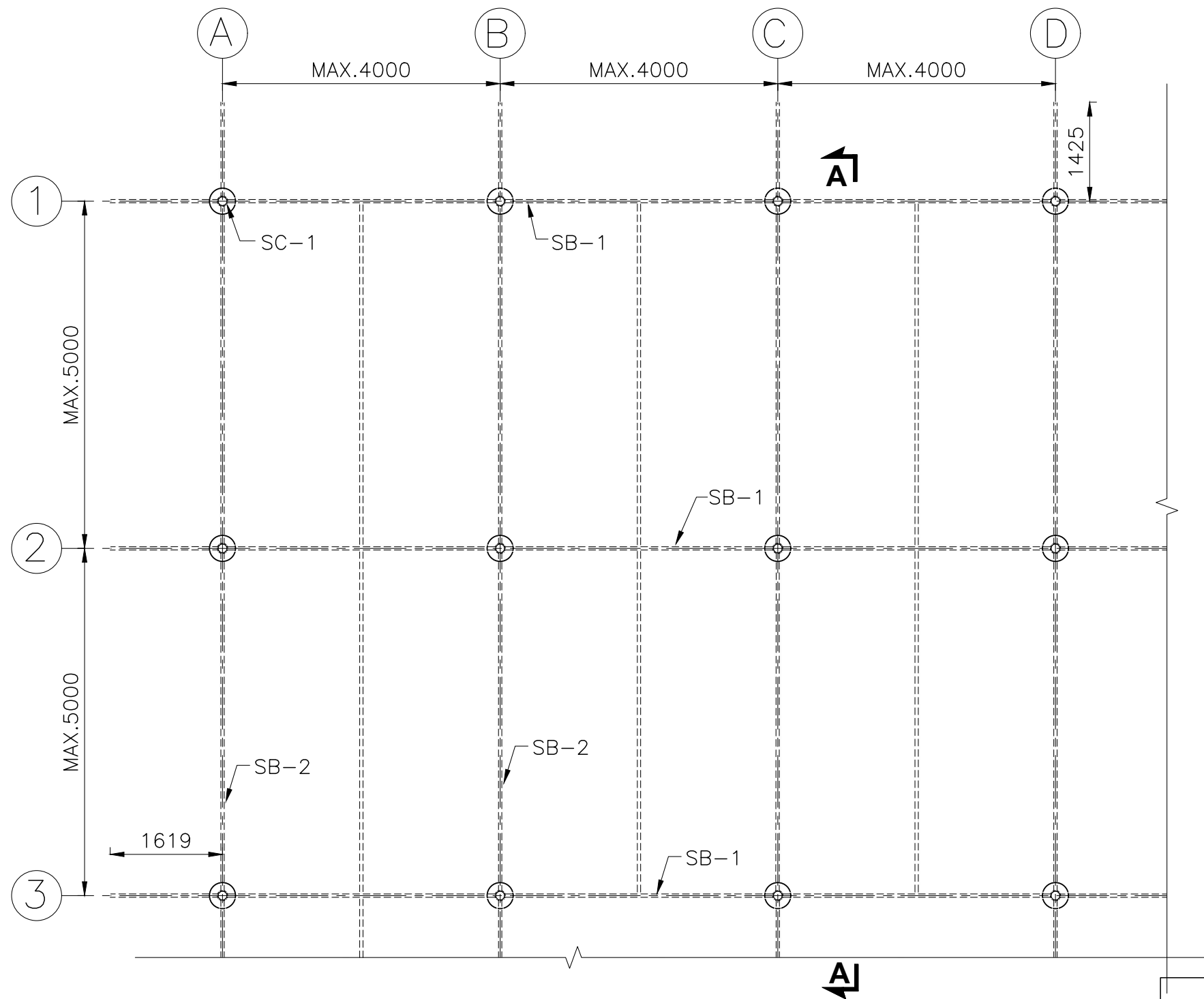
FOUNDATION LAYOUT PLAN

NOTES:
THESE ARE MINIMUM REQUIRED CONCEPTUAL/INDICATIVE DRAWINGS ONLY HOWEVER THE EPC CONTRACTOR SHOULD SUBMIT THE DETAIL DRAWINGS ALONG WITH FEM BASED ANALYSIS MODEL FOR APPROVAL PURPOSES.

CONCEPTUAL DESIGN

<div><div></div><div>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.</div></div>	CLIENT	WATER AND POWER GILGAT BALTISTAN	04				DRAWN	S.A	PROJECT	100MW DISTRIBUTED SOLAR PV PLANTS AT VARIES SITES IN GILGAT BALTISTAN	SOLAR PANEL FRAMING FOR PARKING SHED		SCALE
			03				SUBMITTED				NTS		
			02				RECOMMENDED						
			01				CHD./VER.				REV.		
			REV.	DATE	DESCRIPTION	APPROVED	APPROVED				DATE	DRAWING No.	
HEAD OFFICE:- NESPAK HOUSE, I-C, BLOCK-N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.										MAR-2025	4898/TD/STR/02/01	0	

NOTES:
1. REFER NOTE ON SHEET G03.




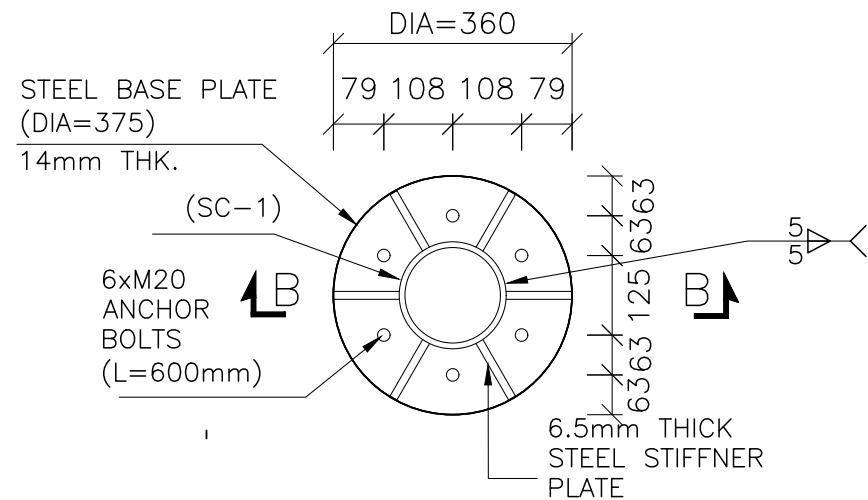
FRAMING LAYOUT PLAN

MEMBERS	SIZE/DESIGNATION
SC-1	I-SECTION OF 150X75X6mm
SB-1	I-SECTION OF 150X75X6mm
SB-2	C-CHANNEL OF 125X75X3mm

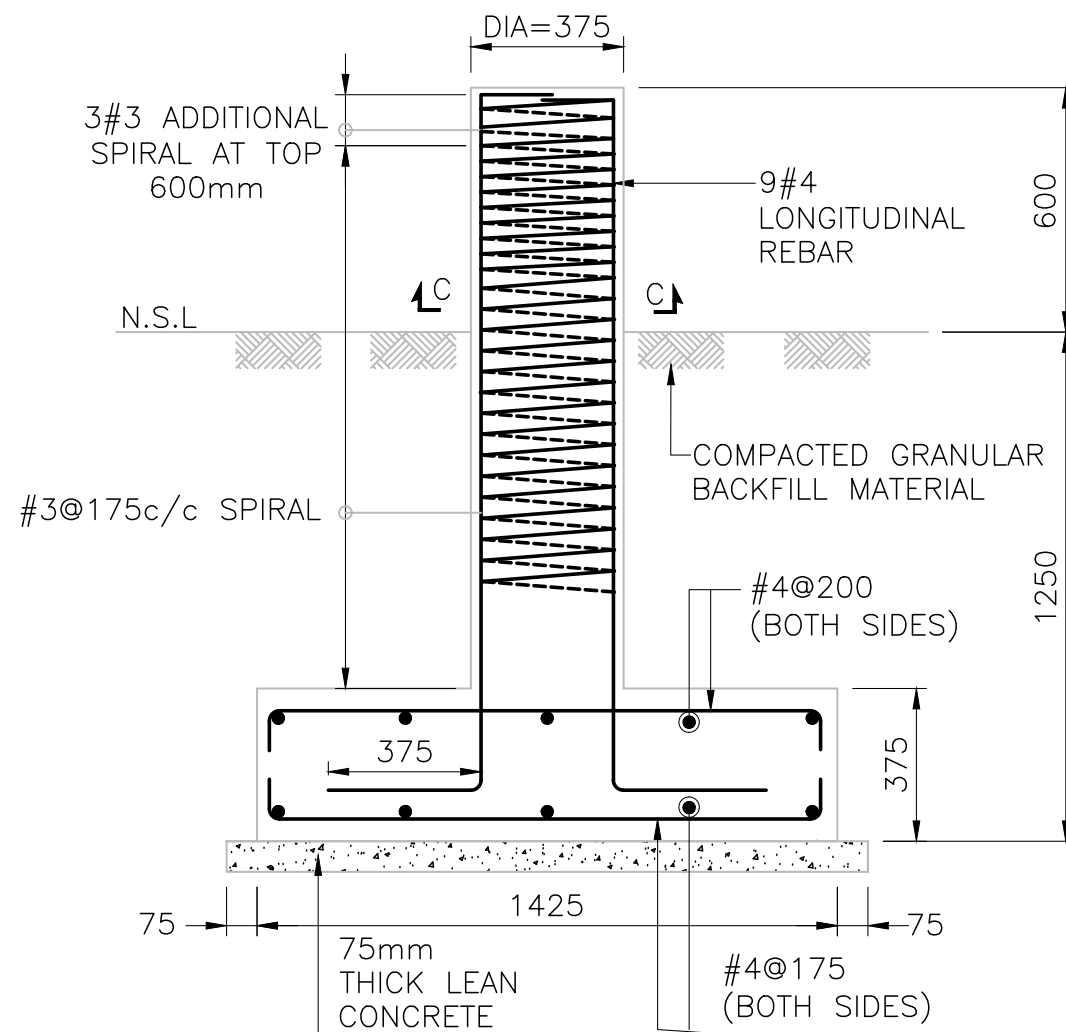
CONCEPTUAL DESIGN

NOTES:
THESE ARE MINIMUM REQUIRED CONCEPTUAL/INDICATIVE DRAWINGS ONLY HOWEVER THE EPC CONTRACTOR SHOULD SUBMIT THE DETAIL DRAWINGS ALONG WITH FEM BASED ANALYSIS MODEL FOR APPROVAL PURPOSES.

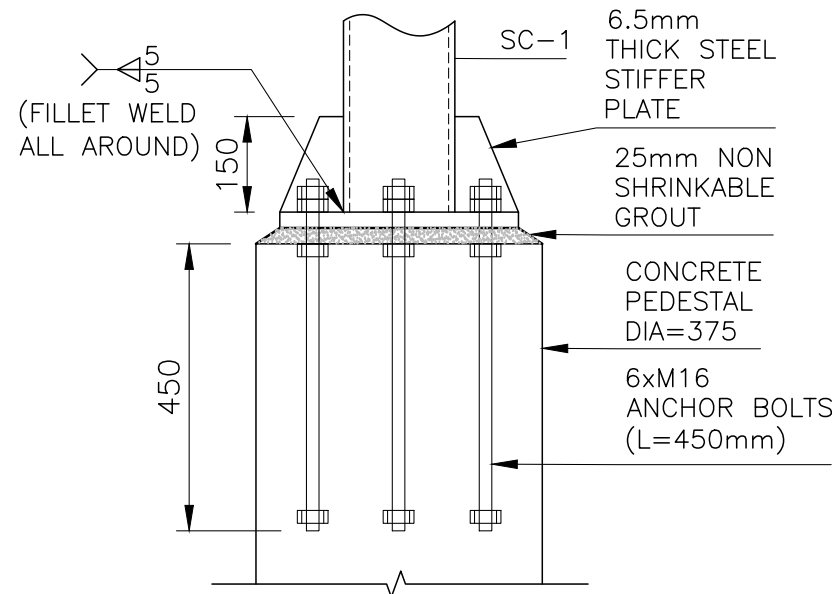
 NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. HEAD OFFICE:- NESPAK HOUSE, I-C, BLOCK-N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.	CLIENT WATER AND POWER GILGAT BALTISTAN	04				DRAWN	S.A	PROJECT 100MW DISTRIBUTED SOLAR PV PLANTS AT VARIES SITES IN GILGAT BALTISTAN	SOLAR PANEL FRAMING FOR PARKING SHED		SCALE NTS		
		03				SUBMITTED							
		02				RECOMMENDED							
		01				CHD./VER.							
		REV.	DATE	DESCRIPTION	APPROVED	APPROVED							
									DATE	DRAWING No.	REV.		
									MAR-2025	4898/TD/STR/02/02		⬆	



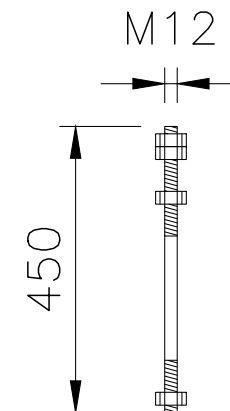
TYPICAL BASE PLATE DETAIL



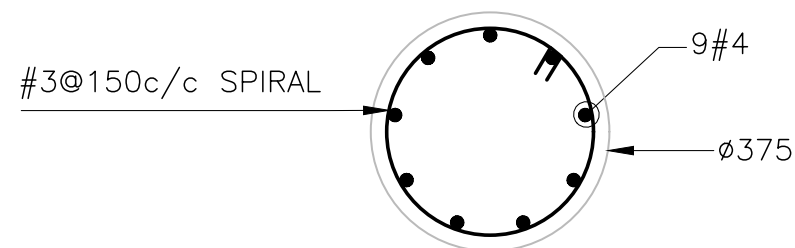
TYPICAL FOUNDATION REBAR DETAIL (F1)



SECTION B-B



TYPICAL BOLT DETAIL




SECTION C-C

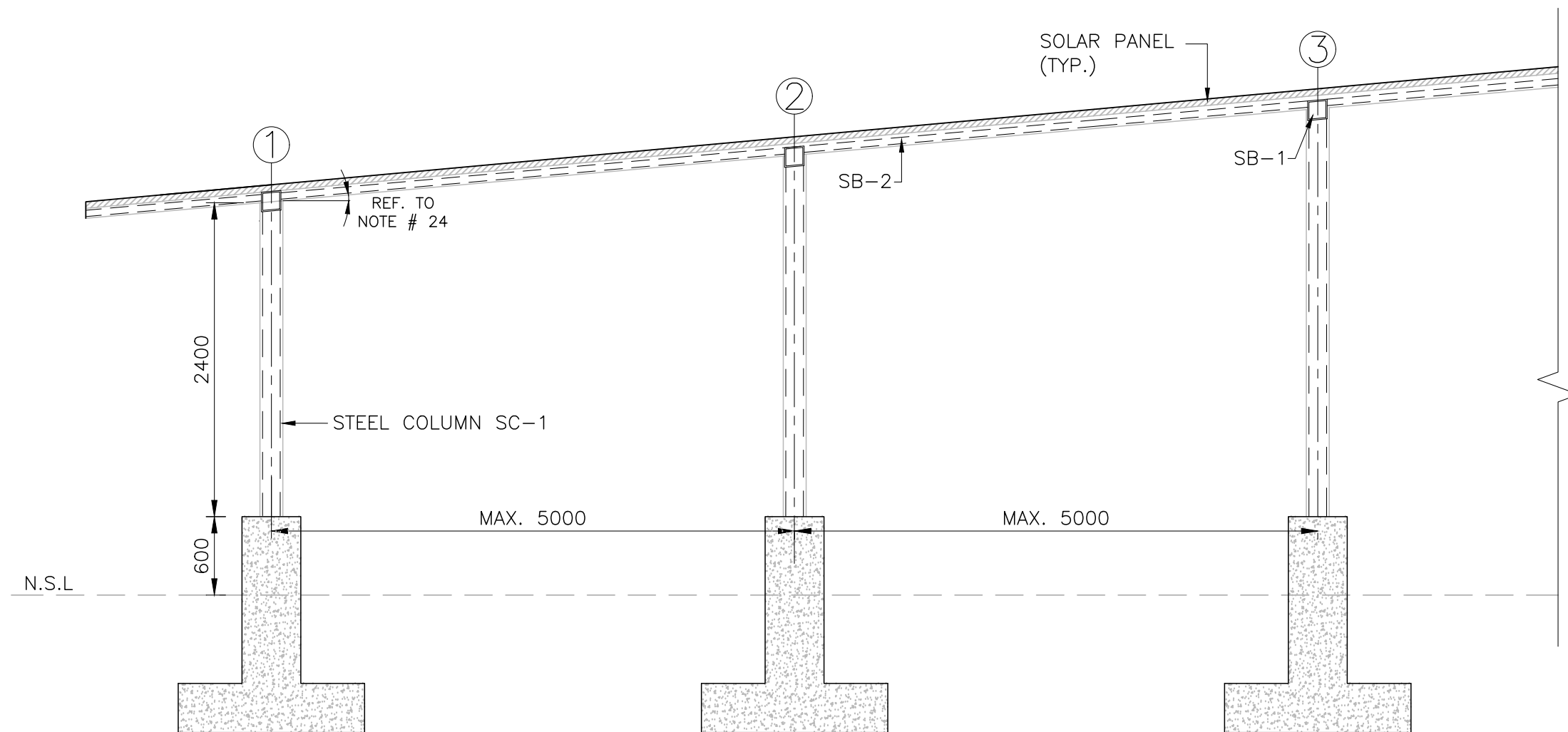
GENERAL NOTES:

1. ALL DIMENSIONS ARE IN MM.
2. ALL CONNECTIONS TO BE DESIGNED AND DETAILED BY CONTRACTOR.
3. ALL NUT BOLTS SHALL BE OF STAINLESS STEEL MATERIAL (NON-METALLIC, GRADE A325 ANTI-THEFT).
4. ALL BEAM TO BEAM AND BEAM TO COLUMN CONNECTION ARE FULLY WELDED CONNECTION WHICH IS HAVING ATLEAST 4MM THICKNESS.
5. NON-SHRINKAGE GROUT OF ATLEAST 25MM THICKNESS SHALL BE PROVIDED UNDER ALL BASE PLATES.
6. ALL STEEL MEMBERS STRENGTH SHALL BE MINIMUM $F_y = 250\text{MPa}$.
7. ALL STEEL MEMBERS ARE HAVING WELDED CONNECTIONS.
8. MINIMUM WELD THICKNESS SHALL BE 4mm UNLESS NOTED OTHERWISE.
9. TYPE OF CEMENT SHALL BE DECIDED AS PER SOIL CHEMICAL ANALYSIS.
10. ALL THE STEEL MEMBERS, BOLTS (ANTI-THEFT) AND PLATES SHALL BE HOT DIPPED GALVANIZED (100 MICRON MINIMUM).
11. WELDED ELECTRODES SHALL BE 70XX.
12. ALL THE ANCHOR BOLTS SHALL BE OF A325 (105KSI TENSILE) OR EQUIVALENT (NON-METALLIC).
13. ALL THE MATERIAL SHALL BE TESTED AS PER AISC GUIDELINES.
14. CONTRACTOR SHOULD SUBMIT THE SHOP DRAWING BEFORE EXECUTION.
15. FOUNDATION IS DESIGNED BY ASSUMING ALLOWABLE BEARING CAPACITY OF 1.0 TSF. CONTRACTOR TO VERIFY PRIOR TO EXECUTION.
16. ENGINEERING BACKFILL MATERIAL SHALL BE USED BELOW THE FOUNDATION IF THE BEARING CAPACITY FOR THE NATURAL STRATA IS LESSER THAN 1.5T/FT^2 .
17. MINIMUM OF 95% MODIFIED AASHTO DENSITY SHALL BE ACHIEVED FOR EACH LAYER OF COMPACTION.
18. WELDING/BOLTING FOR ALL THE CONNECTION SHALL BE CONDUCTED AS PER ENGINEER APPROVED.
19. ANCHOR BOLT SHOULD PROJECT A MINIMUM OF 3 THREADS ABOVE THE FULLY ENGAGED NUT(S).
20. INSTALLATION SHOULD NOT BE DONE BEFORE BACKFILLING.
21. THE STRENGTH OF P.C.C IS 14MPa , AND R.C.C SHOULD HAVE 28 DAYS CONCRETE CYLINDER STRENGTH OF 21MPa .
22. THE CABLE TRAY WILL BE ATTACH WITH THE STRUCTURE IF REQUIRED.
23. BEFORE COMMENCEMENT OF THE CONSTRUCTION WORK COMPLETE SITE CLEARANCE SHALL BE PERFORMED BY CONTRACTOR.
24. REFER TO SIMULATION REPORT/DRAWING FOR ANGLE.

CONCEPTUAL DESIGN

NOTES:
THESE ARE MINIMUM REQUIRED CONCEPTUAL/INDICATIVE DRAWINGS ONLY HOWEVER THE EPC CONTRACTOR SHOULD SUBMIT THE DETAIL DRAWINGS ALONG WITH FEM BASED ANALYSIS MODEL FOR APPROVAL PURPOSES.

<div></div> <div>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.</div>	CLIENT	WATER AND POWER GILGAT BALTISTAN	04				DRAWN	S.A	PROJECT	100MW DISTRIBUTED SOLAR PV PLANTS AT VARIES SITES IN GILGAT BALTISTAN	SOLAR PANEL FRAMING FOR PARKING SHED		SCALE
			03				SUBMITTED				NTS		
			02				RECOMMENDED						
			01				CHD./VER.						
			REV.	DATE	DESCRIPTION	APPROVED	APPROVED						
HEAD OFFICE:- NESPAK HOUSE, I-C, BLOCK-N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.											DATE	DRAWING No.	REV.
											MAR-2025	4898/TD/STR/02/03	0




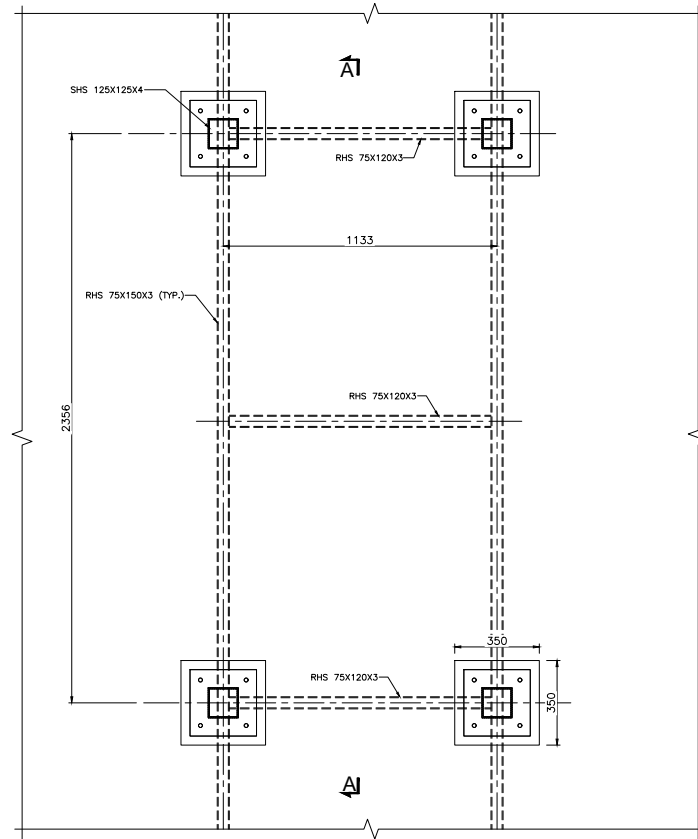
SECTION A-A

NOTES:
THESE ARE MINIMUM REQUIRED CONCEPTUAL/INDICATIVE DRAWINGS ONLY HOWEVER THE EPC CONTRACTOR SHOULD SUBMIT THE DETAIL DRAWINGS ALONG WITH FEM BASED ANALYSIS MODEL FOR APPROVAL PURPOSES.

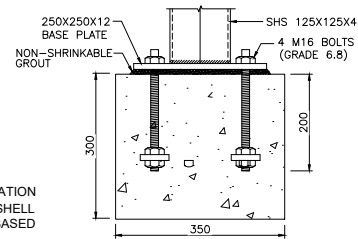
MEMBERS	SIZE/DESIGNATION
SC-1	I-SECTION OF 150X75X6mm
SB-1	I-SECTION OF 150X75X6mm
SB-2	C-CHANNEL OF 125X75X3mm

CONCEPTUAL DESIGN

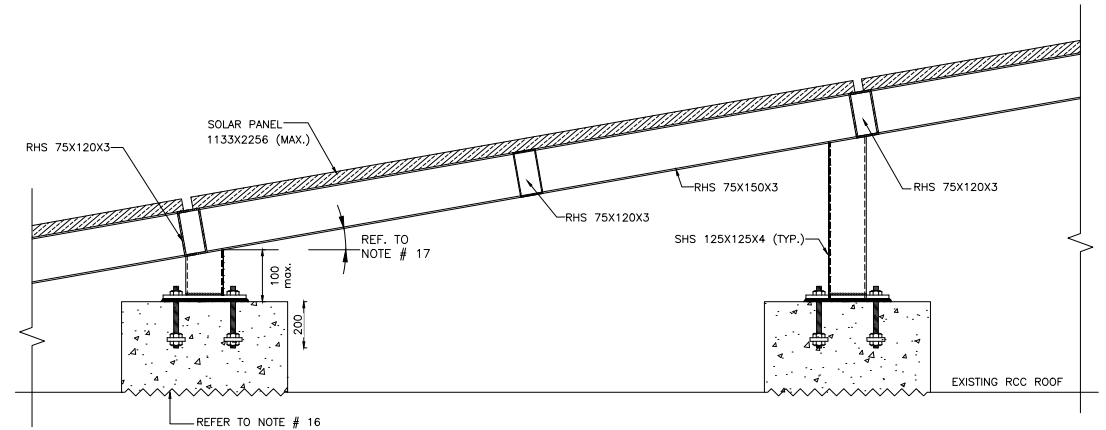
<div></div> <div>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.</div>	CLIENT	WATER AND POWER GILGAT BALTISTAN	04				DRAWN	S.A	PROJECT	100MW DISTRIBUTED SOLAR PV PLANTS AT VARIES SITES IN GILGAT BALTISTAN	SOLAR PANEL FRAMING FOR PARKING SHED		SCALE	
			03				SUBMITTED				NTS			
			02				RECOMMENDED							
			01				CHD./VER.							
			REV.	DATE	DESCRIPTION	APPROVED	APPROVED							
HEAD OFFICE:- NESPAK HOUSE, I-C, BLOCK-N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.											DATE	MAR-2025	DRAWING No. 4898/TD/STR/02/04	REV. 0



TYPICAL STRUCTURAL FRAMING PLAN



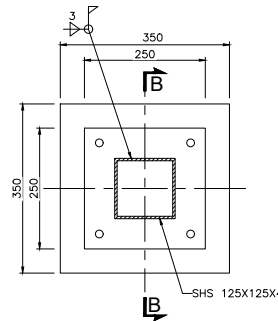
SECTION B-B



SECTION A-A

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETER.
2. ALL CONNECTIONS TO BE DESIGNED AND DETAILED BY CONTRACTOR.
3. ALL STEEL GRADE SHALL HAVE MINIMUM YIELD STRENGTH OF 250 Mpa.
4. ALL WELD SHALL BE OF E70XX ELECTRODE.
5. ALL STEEL STRUCTURE AND ANCHOR BOLTS SHALL BE HOT DIP GALVANIZED (MIN 85 MICRON).
6. ALL NUT BOLTS SHALL BE OF STAINLESS STEEL MATERIAL (NON-METALLIC, GRADE A325 ANTI-THEFT).
7. IT IS ASSUMED THAT THE EXISTING ELEVATED SURFACE OF ROOF IS ADEQUATE TO BEAR THE LOADINGS FROM STRUCTURAL FRAMING OF SOLAR PANEL.
8. MINIMUM CLEARANCE OF PV MODULE SHALL BE 6 FEET ABOVE THE ROOF LEVEL.
9. TWO DRAINAGE CLIPS SHALL BE PROVIDED FOR EACH MODULE IN THE LAST/LOWEST ROW OF THE MODULES IN A SHED.
10. ALL BEAM TO BEAM & BEAM TO COLUMN CONNECTION ARE FULLY WELDED CONNECTION WHICH IS HAVING AT LEAST 4MM THICKNESS.
11. NON-SHRINKAGE GROUT OF AT LEAST 25MM THICKNESS SHALL BE PROVIDED UNDER ALL BASE PLATES.
12. ANCHOR BOLT (GRADE A490) SHOULD PROJECT A MINIMUM OF 3 THREADS ABOVE THE FULLY ENGAGED NUT(S).
14. CONTRACTOR TO ENSURE THAT THE EXISTING DRAINAGE CHARACTERISTICS OF THE ROOF TOP ARE NOT COMPROMISED.
15. A PROTECTION MAT OF APPROVED TYPE SHALL BE PROVIDED BETWEEN ROOF TOP LAYER AND MOUNTING STRUCTURE/CONCRETE BLOCKS.
16. EXISTING SURFACE TO BE ROUGHENED & APPLY EPOXY CHEMICAL PRIOR TO CASTING OF NEW CONCRETE.
17. REFER TO SIMULATION REPORT FOR ANGLE.
18. COMMENCEMENT OF WORK SHOULD BE CARRIED OUT AFTER CLEARING OF SITE AND APPROVAL FROM CONSULTANT.




CONCRETE BLOCK DETAIL

NOTE:

THESE ARE MINIMUM REQUIRED CONCEPTUAL / INDICATION DRAWINGS ONLY HOWEVER, THE EPC CONTRACTOR SHALL SUBMIT THE DETAILED DRAWINGS ALONG WITH FEM BASED MODEL FOR APPROVAL PURPOSES.

CONCEPTUAL DESIGN

<div></div> <div>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.</div>	CLIENT WATER & POWER GILGAT BALTISTAN	04			DRAWN	M.A.	PROJECT 100 WM DISTRIBUTED SOLAR PV PLANTS AT VARIOUS SITES IN GILGAT BALTISTAN	TYPICAL SOLAR PANEL FRAMING FOR R.C.C ROOF MOUNTED STRUCTURE		SCALE
		03			SUBMITTED			NTS		
		02			RECOMMENDED					
		01			CHD./VER.					
		REV.	DATE	DESCRIPTION	APPROVED	APPROVED				
HEAD OFFICE:- NESPAK HOUSE, I-C, BLOCK-N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.								DATE	DRAWING No.	REV.
								MAR- 2025	4898/TD/STR/05/01	⬆