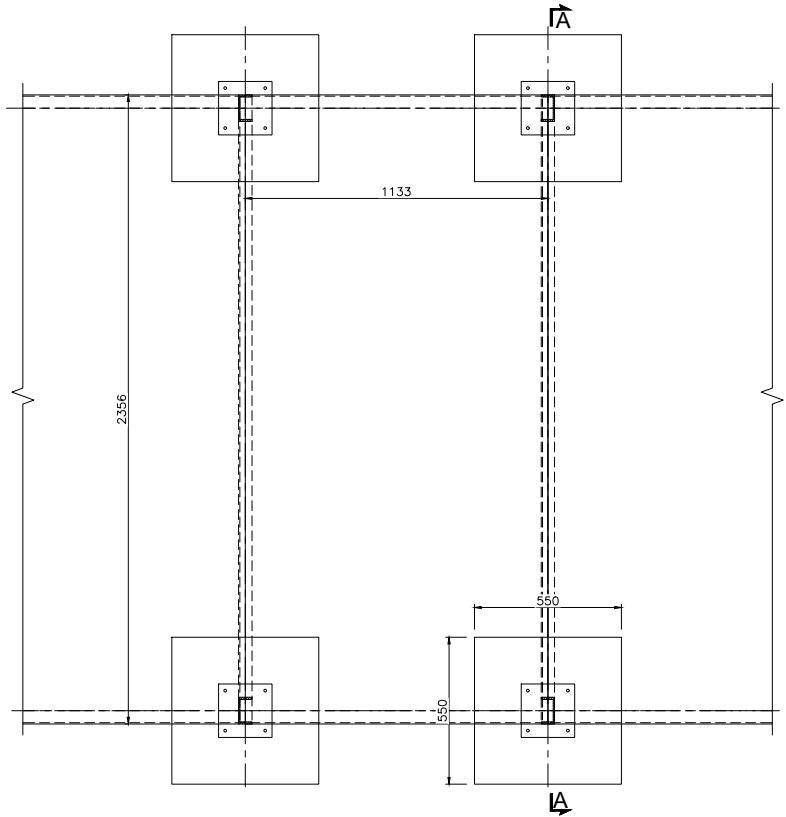


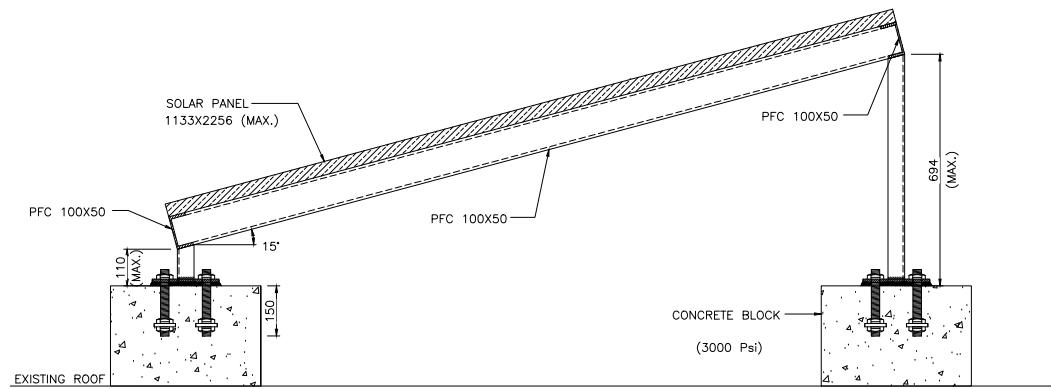
Annexure B

LIST OF DRAWINGS

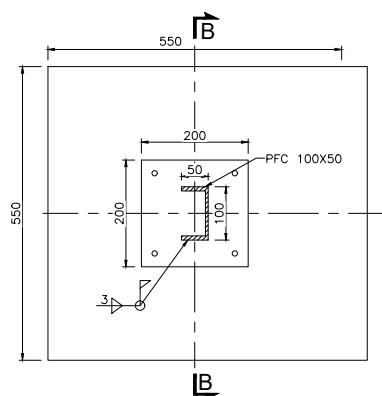
S. No.	DESCRIPTION	DWG. No.
1	TYPICAL SOLAR PANEL FRAMING FOR R.C.C ROOF MOUNTED STRUCTURE	STR/05
2	CGI STRUCTURE	STR/01
3	TYPICAL SOLAR PANEL FRAMING FOR GROUND ELEVATED STRUCTURE	03/01
4	TYPICAL SOLAR PANEL FRAMING FOR GROUND ELEVATED STRUCTURE	03/02
5	TYPICAL SOLAR PANEL FRAMING FOR GROUND ELEVATED 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



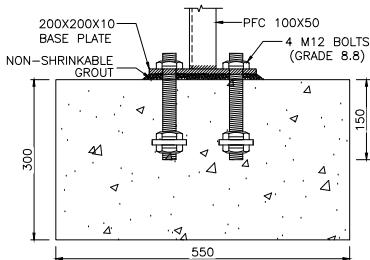
TYPICAL STRUCTURAL FRAMING PLAN



SECTION A-A



CONCRETE BLOCK DETAIL

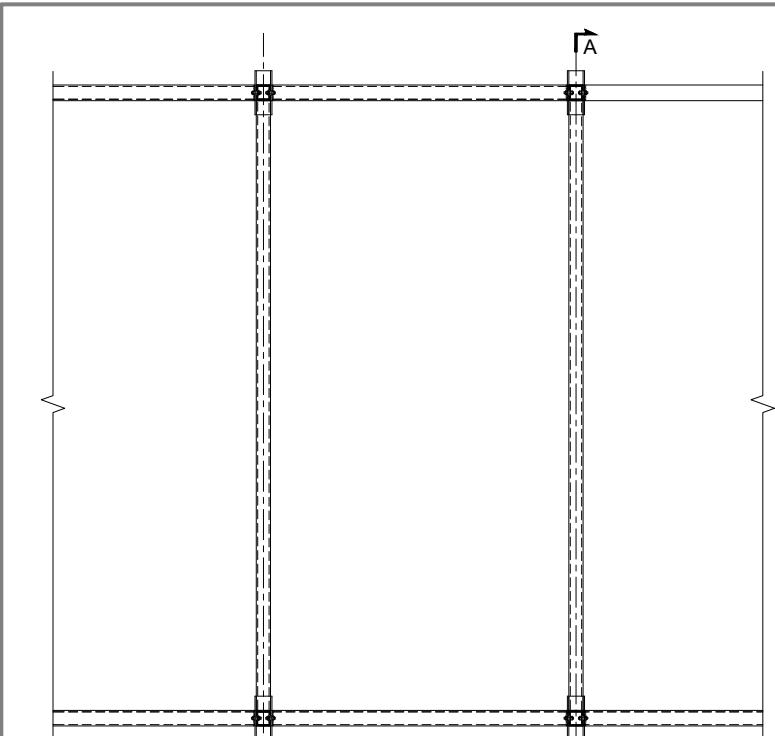


SECTION B-B

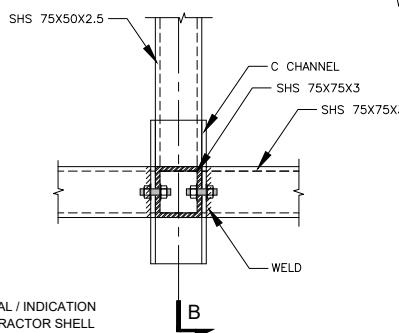
NOTE:

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



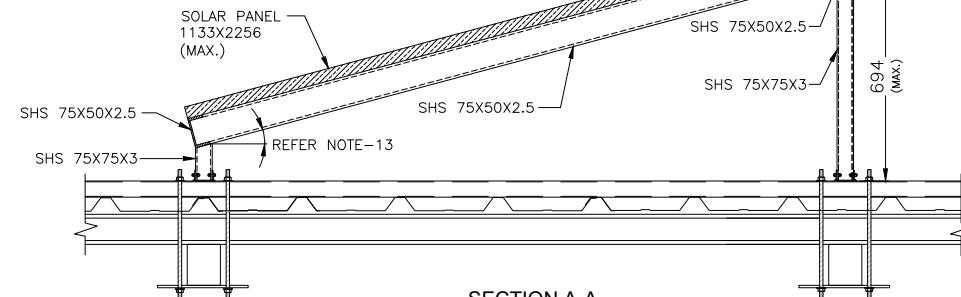
TYPICAL STRUCTURAL FRAMING AND SHEETING PLAN



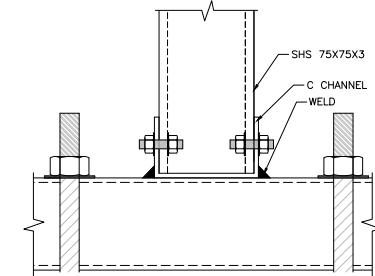
NOTE:

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.

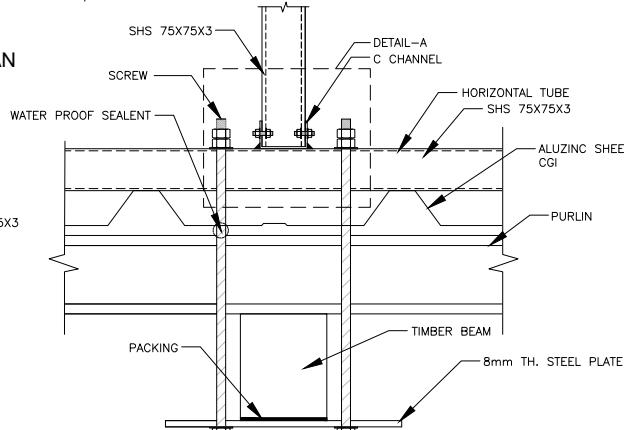
FIXING DETAIL



SECTION A-A



DETAIL-A



SECTION B-B

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,

CONCEPTUAL DESIGN

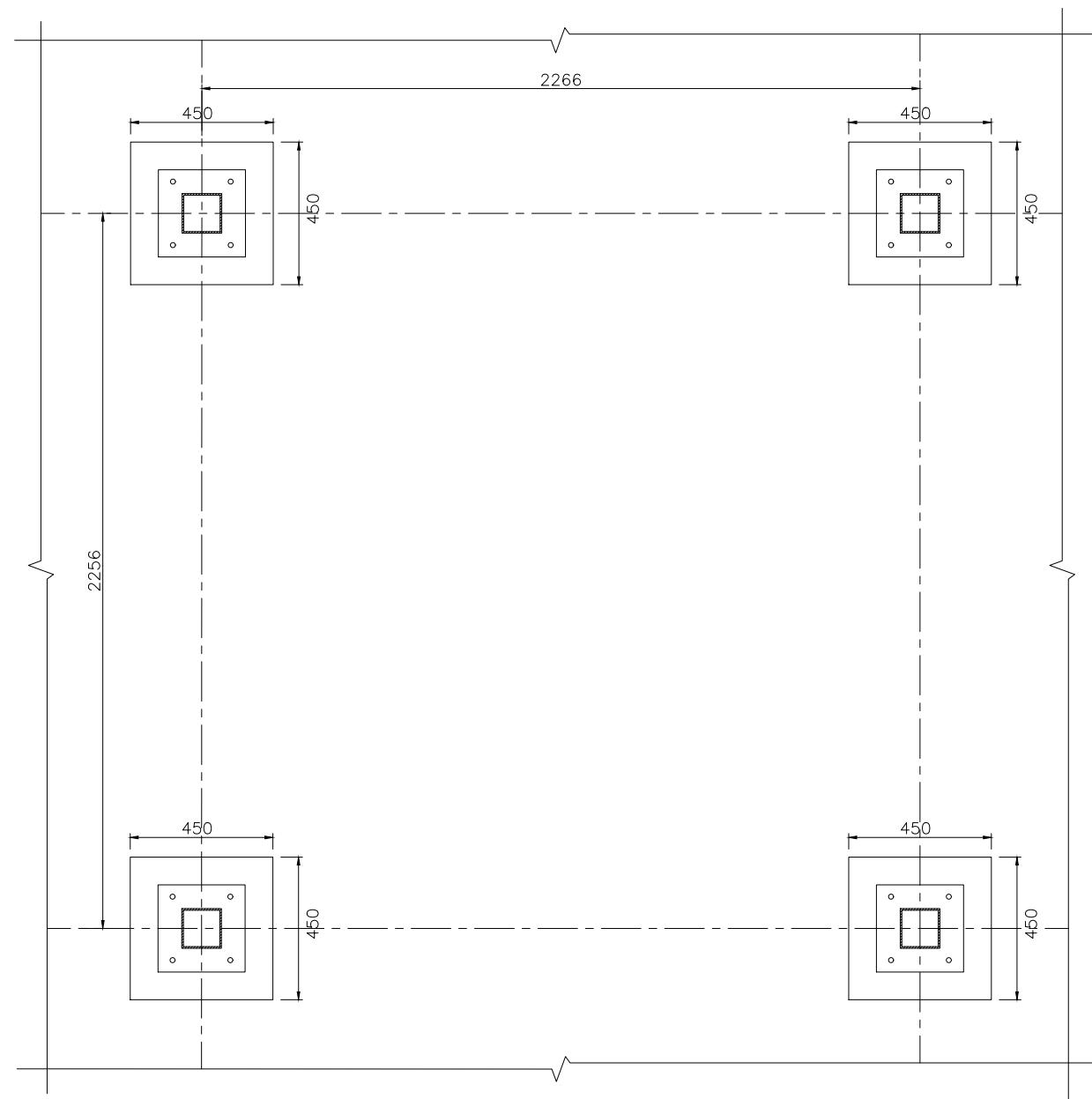
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	CLIENT
HEAD OFFICE- NESPAK HOUSE, I-C, BLOCK-N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.	WATER & POWER GILGAT BALTISTAN

04		DRAWN	M.A.
03		SUBMITTED	
02		RECOMMENDED	
01		CHD/VER.	
REV.	DATE	DESCRIPTION	APPROVED

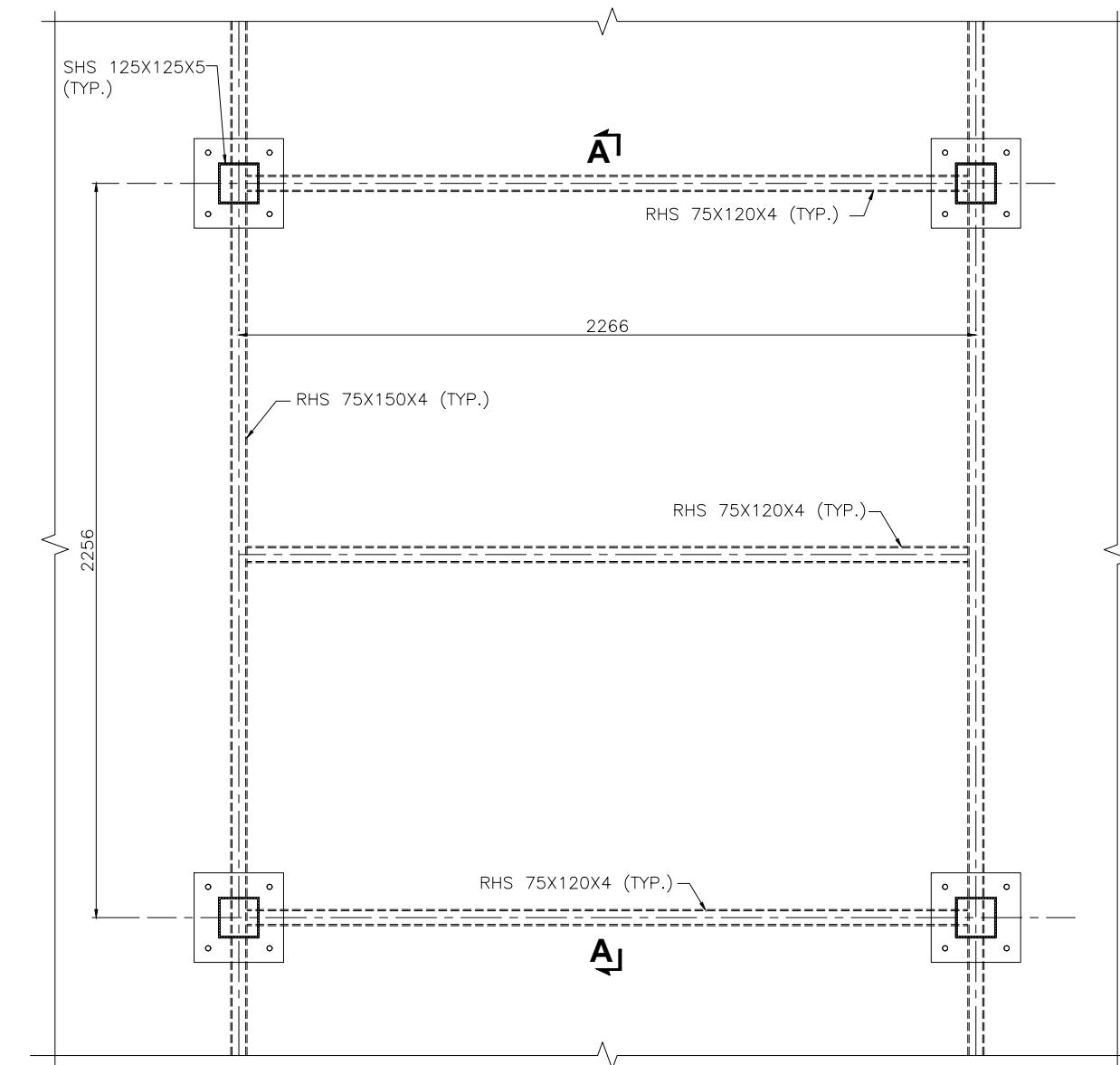
PROJECT			
100 WM DISTRIBUTED SOLAR PV PLANTS AT VARIOUS SITES IN GILGAT BALTISTAN			

CGI STRUCTURE		SCALE
DATE	DRAWING No.	NTS
MAR. 2025	4898/TD/STR/01	REV. 0

NOTES:
1. REFER NOTE ON SHEET G02.



FOUNDATION LAYOUT PLAN

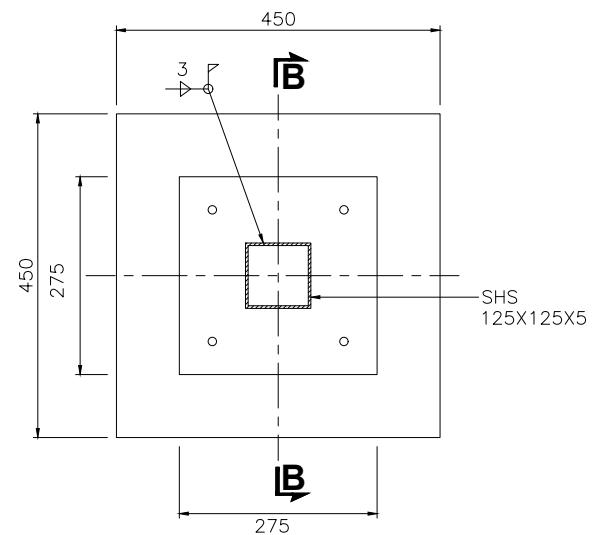


TYPICAL STRUCTURAL FRAMING PLAN

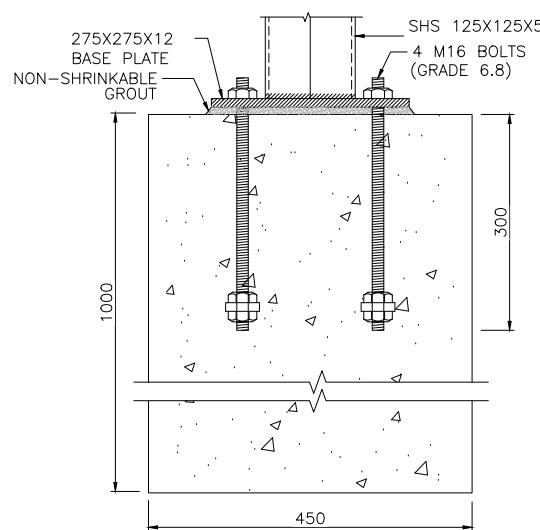
NOTES:

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

CLIENT  NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	WATER AND POWER GILGAT BALSTAN	04			DRAWN	S.A	PROJECT 100MW DISTRIBUTED SOLAR PV PLANTS AT VARIES SITES IN GILGAT BALSTAN	TYPICAL SOLAR PANEL FRAMING FOR GROUND ELEVATED STRUCTURE		SCALE
		03			SUBMITTED					NTS
		02			RECOMMENDED					
		01			CHD.VER.					
		REV.	DATE	DESCRIPTION	APPROVED	APPROVED				REV.
								MAR-2025	4851/TD/STR/03/01	0



CONCRETE BLOCK DETAIL



SECTION B-B

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.

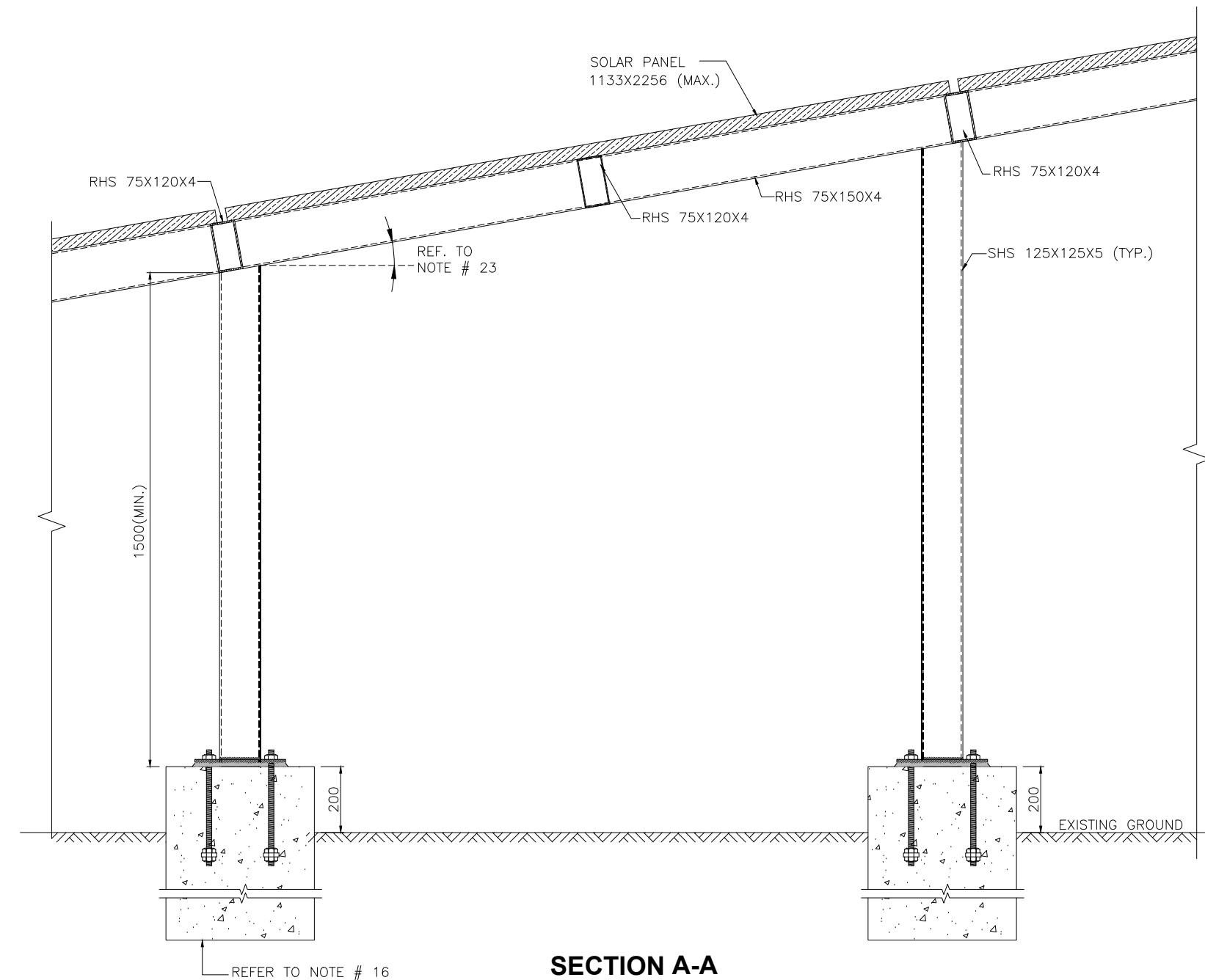
NOTES:

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

CLIENT	PROJECT					TYPICAL SOLAR PANEL FRAMING FOR GROUND/ELEVATED STRUCTURE	SCALE					
	04	03	02	01	REV.	DATE	DESCRIPTION	APPROVED	APPROVED	DATE	DRAWING No.	REV.
NATIONAL ENGINEERING SERVICES PAK PAKISTAN (PVT.) LTD. HEAD OFFICE:- NESPAK HOUSE, I-C, BLOCK-N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.	WATER AND POWER GILGAT BALTISTAN									MAR-2025	4851/TD/STR/03/02	0

NOTES:
1. REFER NOTE ON SHEET G02.

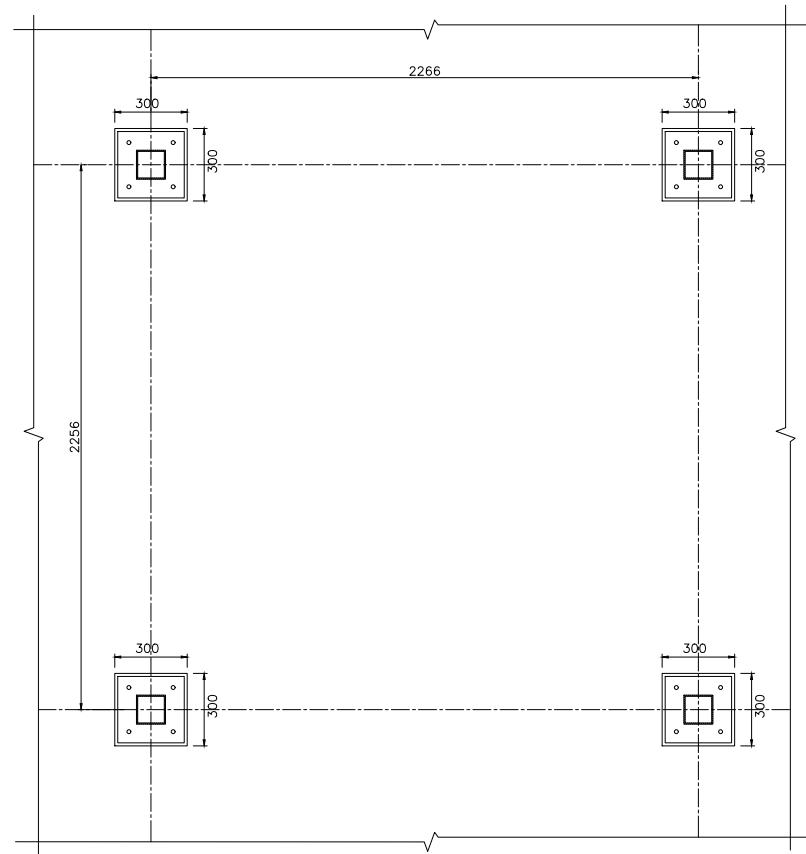


NOTES:
THESE ARE MINIMUM REQUIRED CONCEPTUAL/INDICATIVE DRAWINGS ONLY HOWEVER THE EPC CONTRACTOR SHOULD SUBMIT THE DETAIL DRAWINGS ALONG WITH FEM BASED ANALYSIS MODEL FOR APPROVAL PURPOSES.

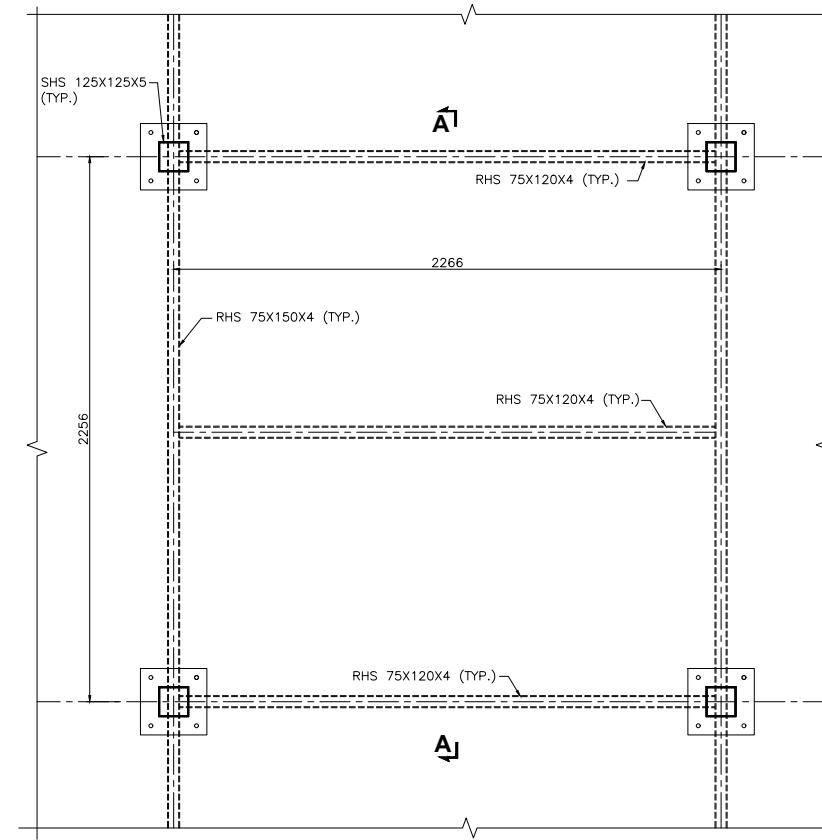
CONCEPTUAL DESIGN

CLIENT	PROJECT					SCALE	
	100MW DISTRIBUTED SOLAR PV PLANTS AT VARIES SITES IN GILGAT BALTISTAN						
REV.	DATE	DESCRIPTION	APPROVED	APPROVED	DATE	DRAWING No.	REV.
04			DRAWN	S.A			
03			SUBMITTED				
02			RECOMMENDED				
01			CHD/VER.				
REV.	DATE	DESCRIPTION	APPROVED	APPROVED	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.

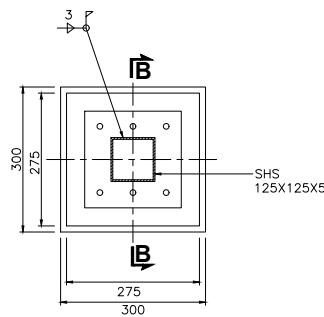
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.
HEAD OFFICE: NESPAK HOUSE, I-C, BLOCK-N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.

CLIENT	
WATER AND POWER GILGAT BALTISTAN	

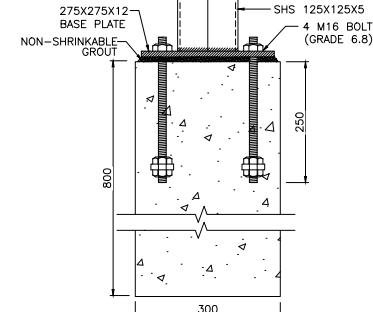
04	03	02	01	DRAWN	S.A.
REV.	DATE	DESCRIPTION	APPROVED	APPROVED	
				SUBMITTED	
				RECOMMENDED	
				CHD/VER.	

PROJECT	
100MW DISTRIBUTED SOLAR PV PLANTS AT VARIES SITES IN GILGAT BALTISTAN	

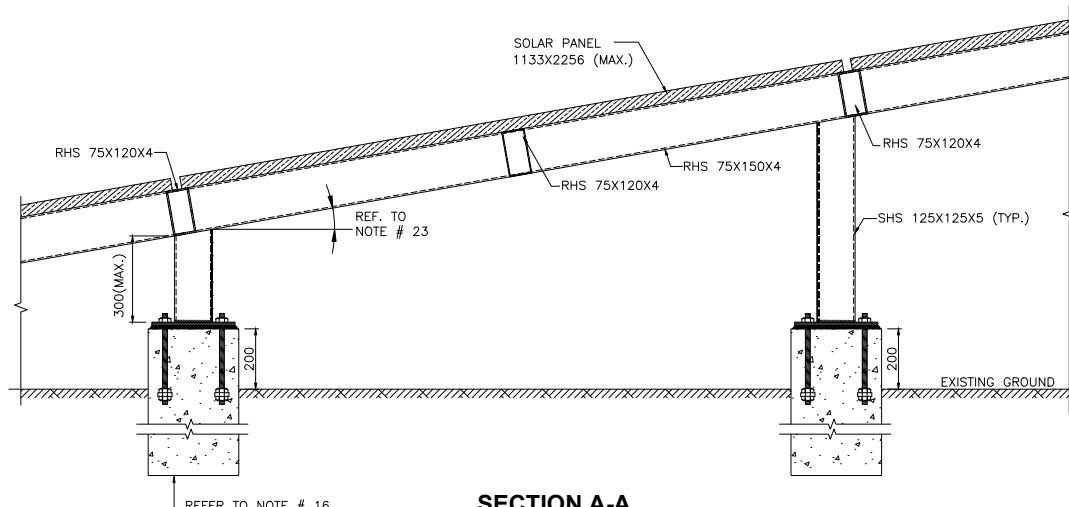
TYPICAL SOLAR PANEL FRAMING FOR GROUND MOUNTED STRUCTURE		SCALE
DATE	DRAWING No.	REV.
MAR-2025	4898/TD/STR/04/01	0



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.

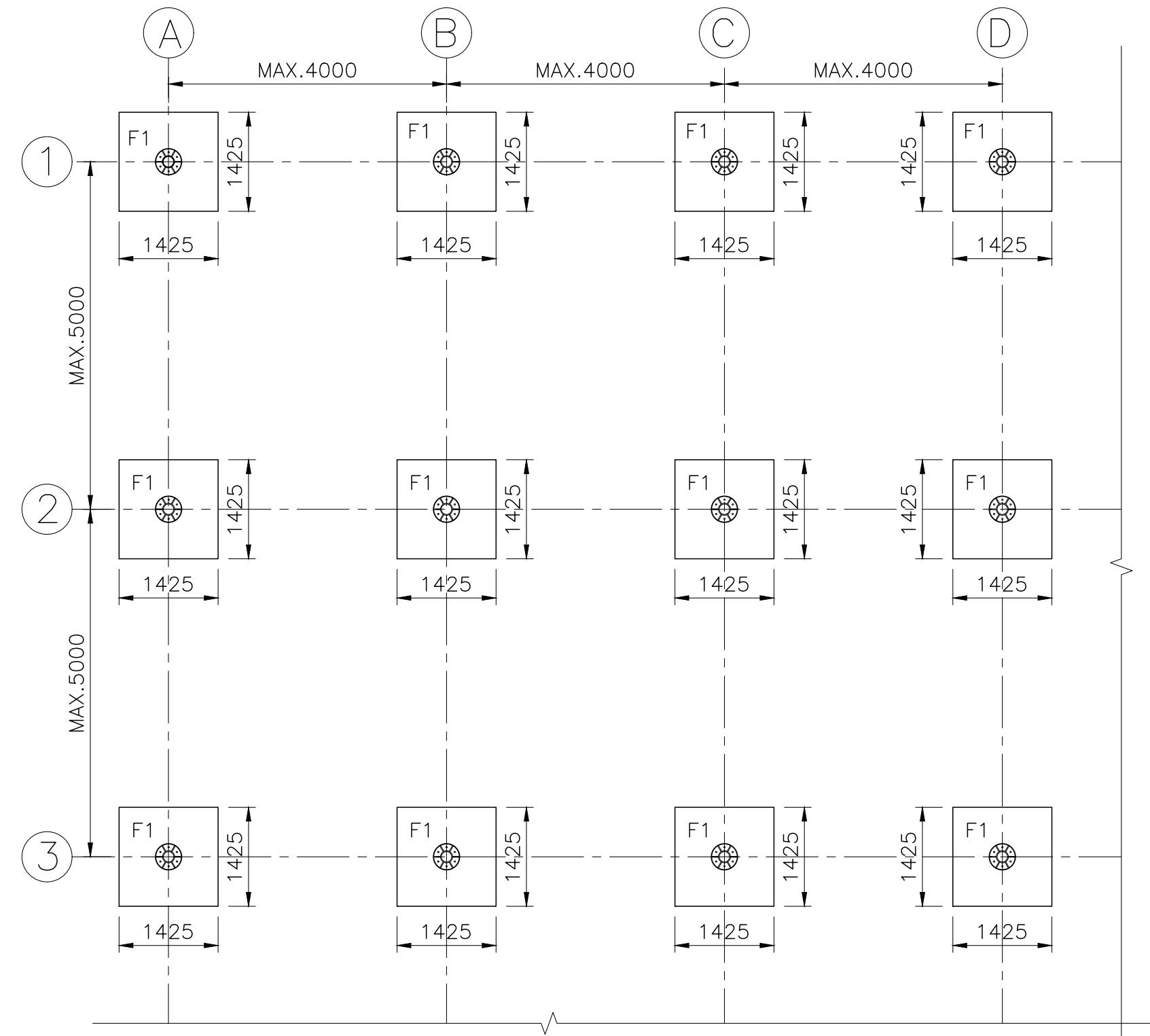
GENERAL NOTES:

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 1.5FT^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

CLIENT	PROJECT					TYPICAL SOLAR PANEL FRAMING FOR GROUND MOUNTED STRUCTURE	SCALE
	04	03	02	01	DATE		
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. HEAD OFFICE: NEPAK HOUSE, I-C, BLOCK-N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.	REV.	REV.	RECOMMENDED	CHD/VER.	APPROVED	APPROVED	NTS
					MAR-2025	DRAWING No. 4898/TD/STR/04/02	REV. 0

NOTES:
1. REFER NOTE ON SHEET G03.



FOUNDATION LAYOUT PLAN

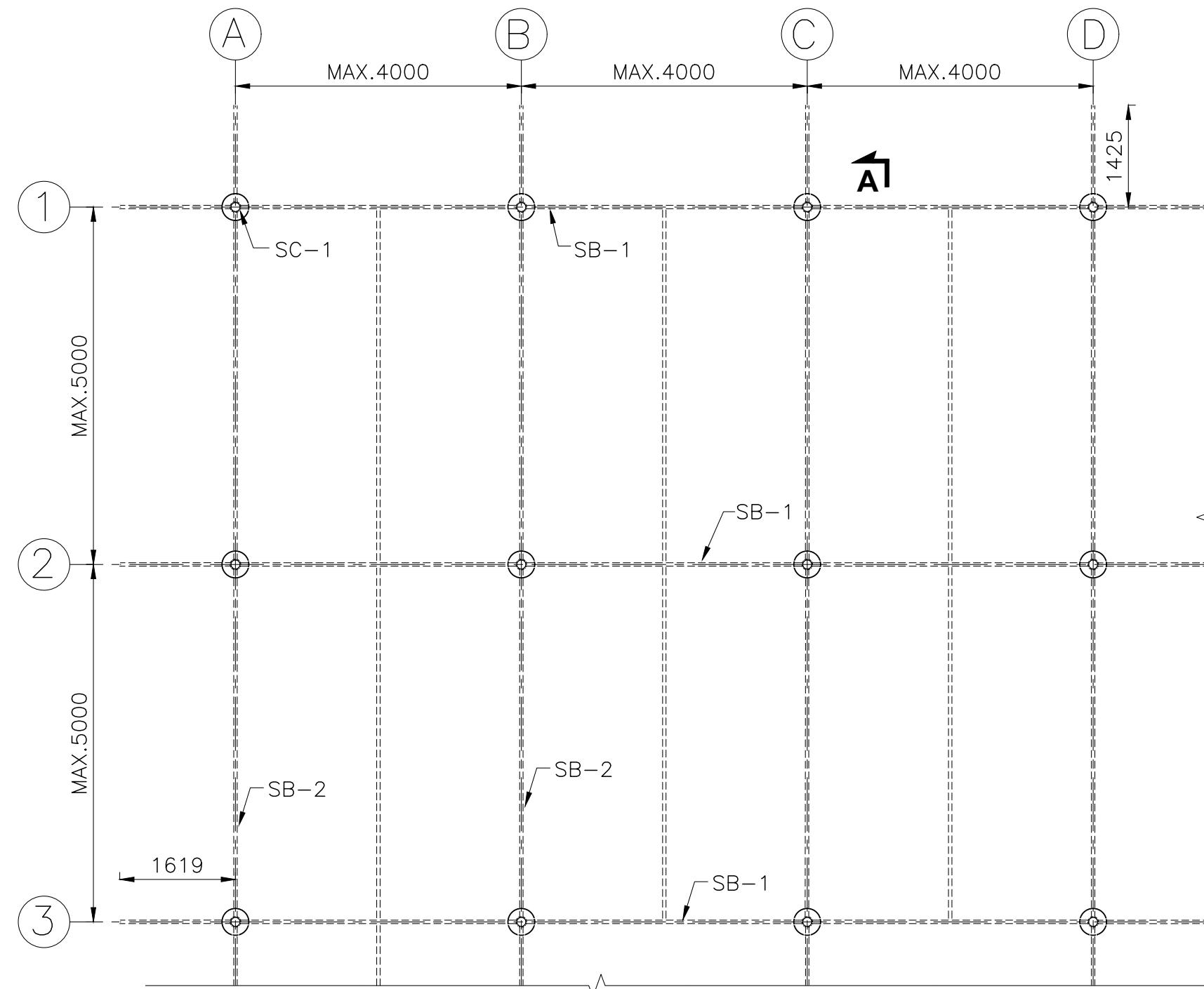
NOTES:

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

CLIENT	PROJECT					SOLAR PANEL FRAMING FOR PARKING SHED	SCALE NTS
	04	03	02	01	DRAWN S.A.		
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	WATER AND POWER GILGAT BALSTAN	04	03	02	01	SUBMITTED	REV. 0
HEAD OFFICE:- NESPAK HOUSE, I-C, BLOCK-N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.					RECOMMENDED		
					CHD./VER.		
					APPROVED		
	REV.	DATE	DESCRIPTION	APPROVED	APPROVED		

NOTES:
1. REFER NOTE ON SHEET G03.



FRAMING LAYOUT PLAN

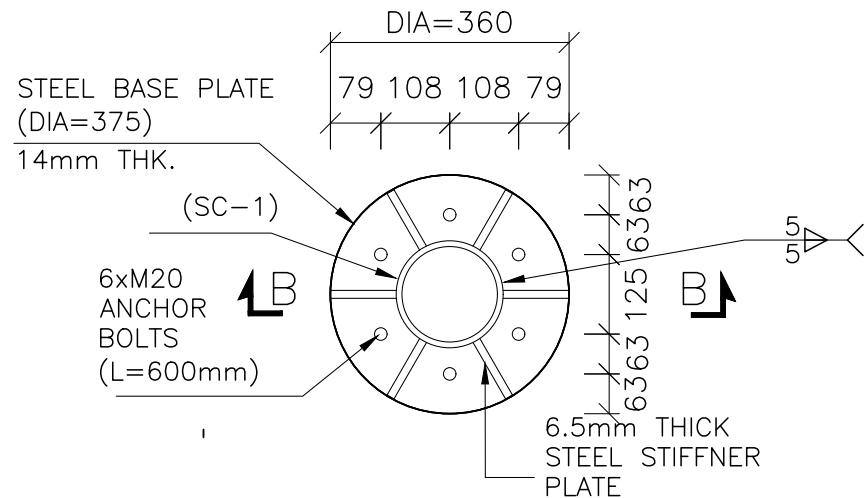
MEMBERS	SIZE/DESIGNATION
SC-1	I-SECTION OF 150X75X6mm
SB-1	I-SECTION OF 150X75X6mm
SB-2	C-CHANNEL OF 125X75X3mm

NOTES:

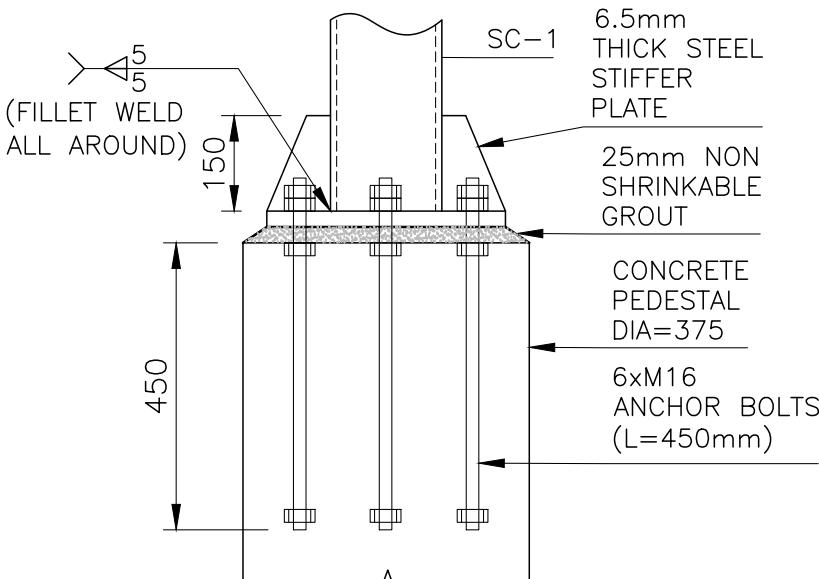
THESE ARE MINIMUM REQUIRED CONCEPTUAL/INDICATIVE DRAWINGS ONLY HOWEVER THE EPC CONTRACTOR SHOULD SUBMIT THE DETAIL DRAWINGS ALONG WITH FEM BASED ANALYSIS MODEL FOR APPROVAL PURPOSES.

CONCEPTUAL DESIGN

CLIENT  NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	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				

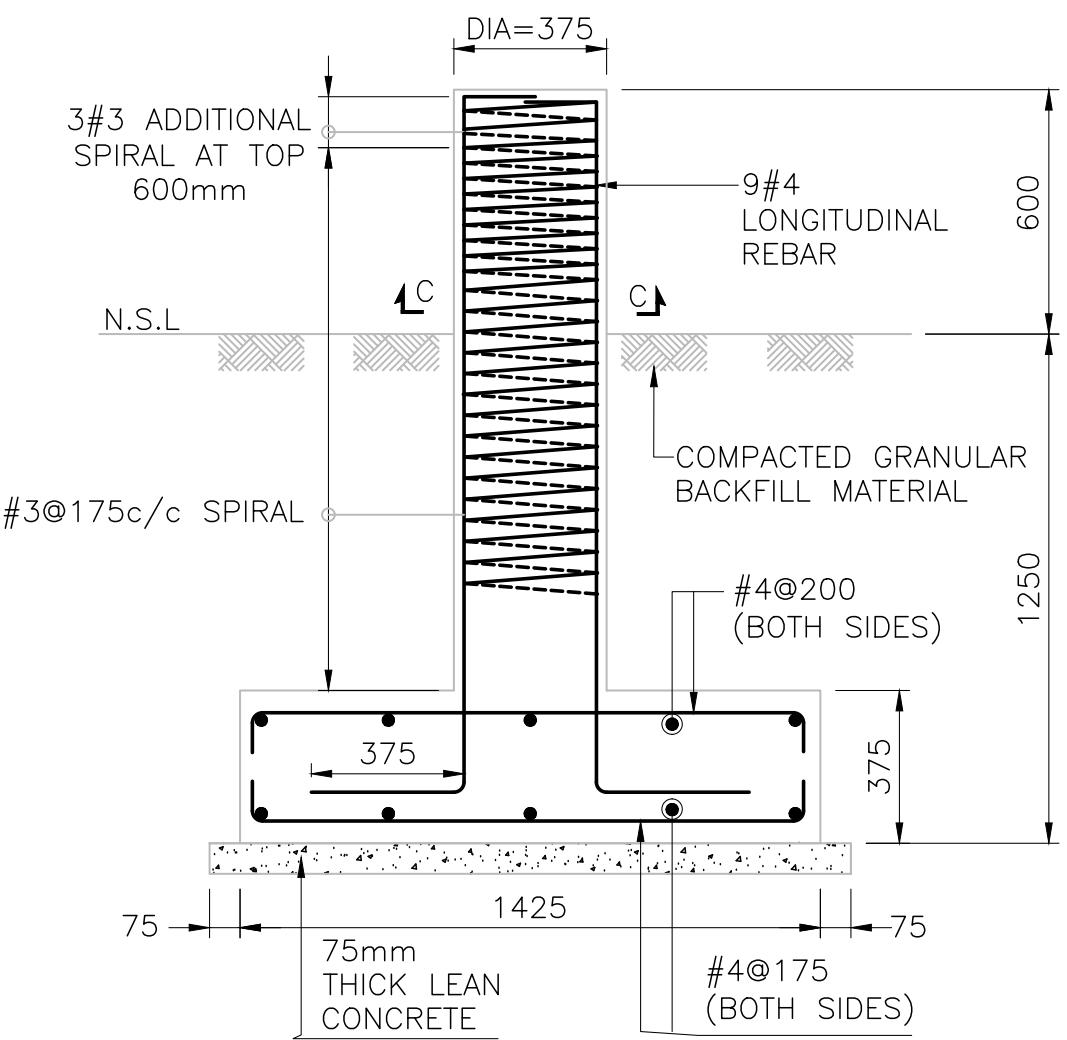


TYPICAL BASE PLATE DETAIL



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 $1.5\text{t}/\text{ft}^2$.
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.

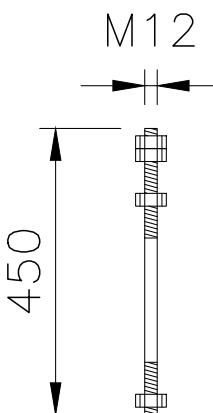


TYPICAL FOUNDATION REBAR DETAIL (F1)

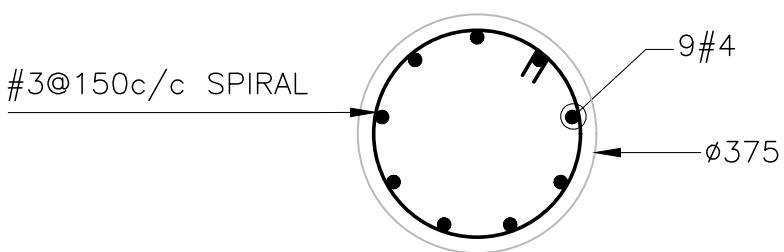
NOTES:

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.

SECTION B-B



TYPICAL BOLT DETAIL



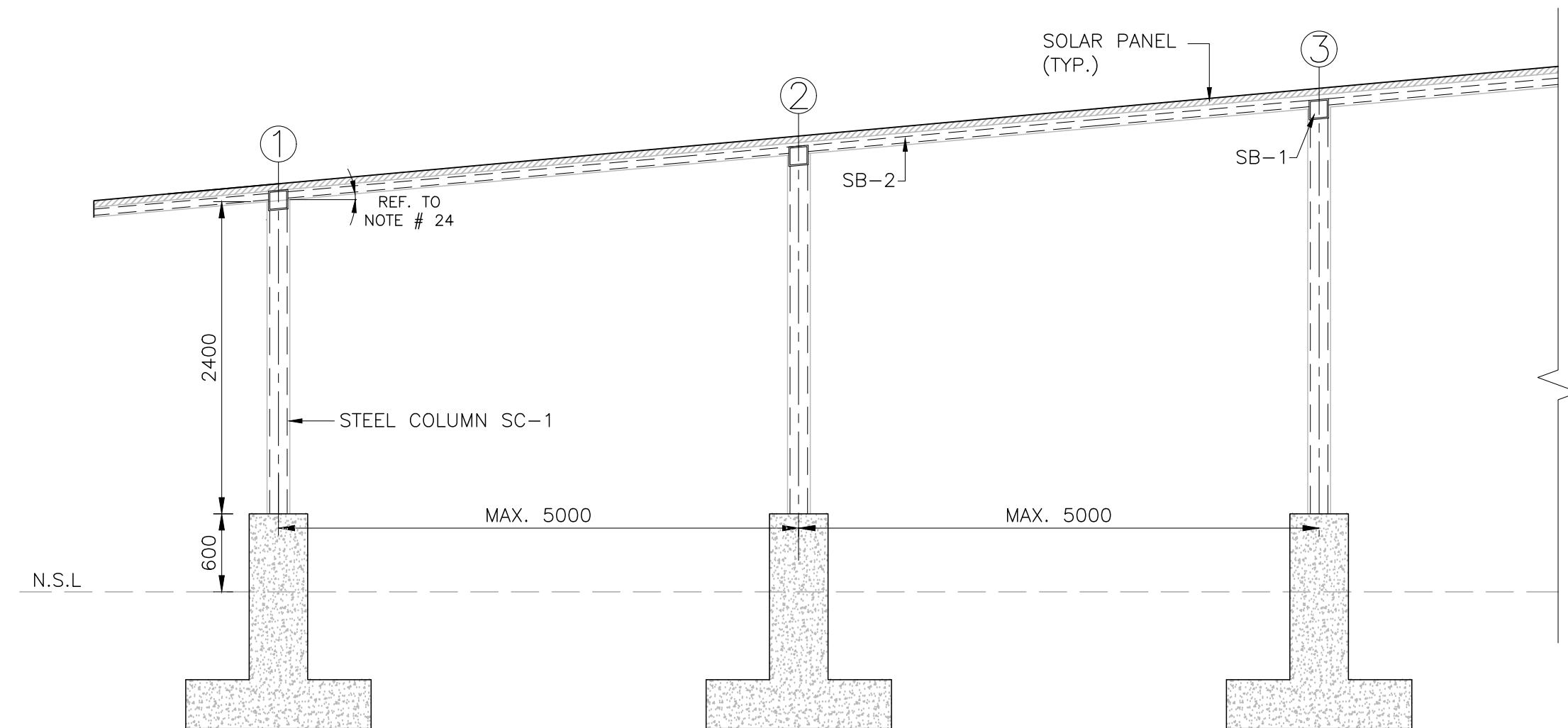
SECTION C-C

CONCEPTUAL DESIGN

CLIENT	PROJECT						SCALE
	04	03	02	01	DRAWN	S.A	
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.					SUBMITTED		NTS
WATER AND POWER GILGAT BALTISTAN					RECOMMENDED		
HEAD OFFICE:- NESPAK HOUSE, I-C, BLOCK-N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.					CHD.VER.		
	REV.	DATE	DESCRIPTION	APPROVED	APPROVED		REV.

SOLAR PANEL FRAMING FOR PARKING SHED

DATE: MAR-2025 | DRAWING NO.: 4898/TD/STR/02/03



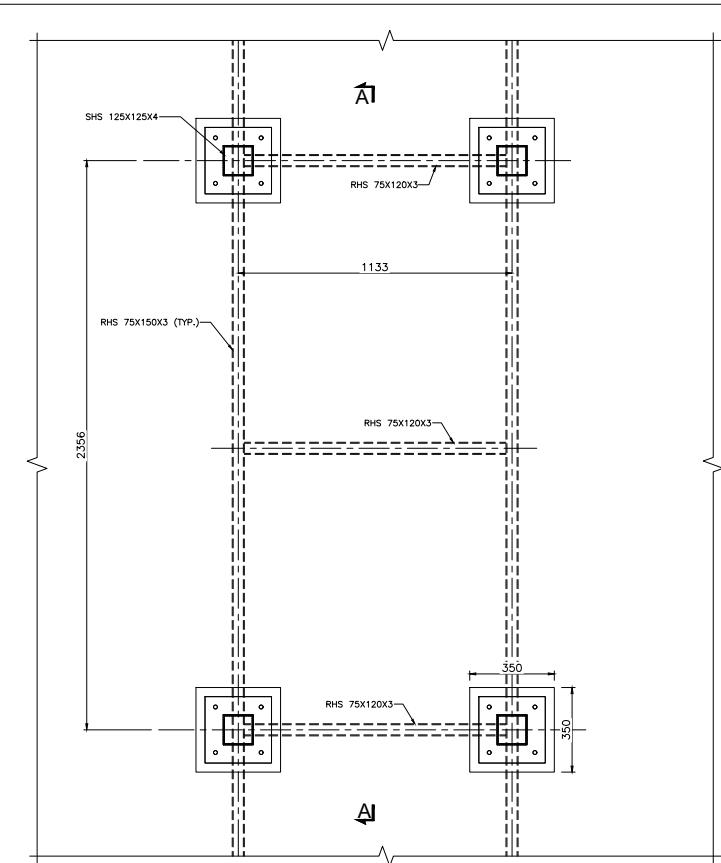
SECTION A-A

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.

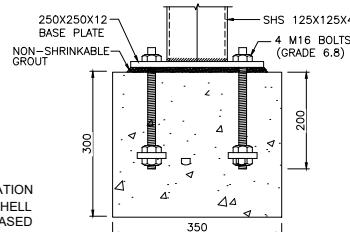
MEMBERS	SIZE/DESIGNATION
SC-1	I-SECTION OF 150X75X6mm
SB-1	I-SECTION OF 150X75X6mm
SB-2	C-CHANNEL OF 125X75X3mm

CONCEPTUAL DESIGN

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



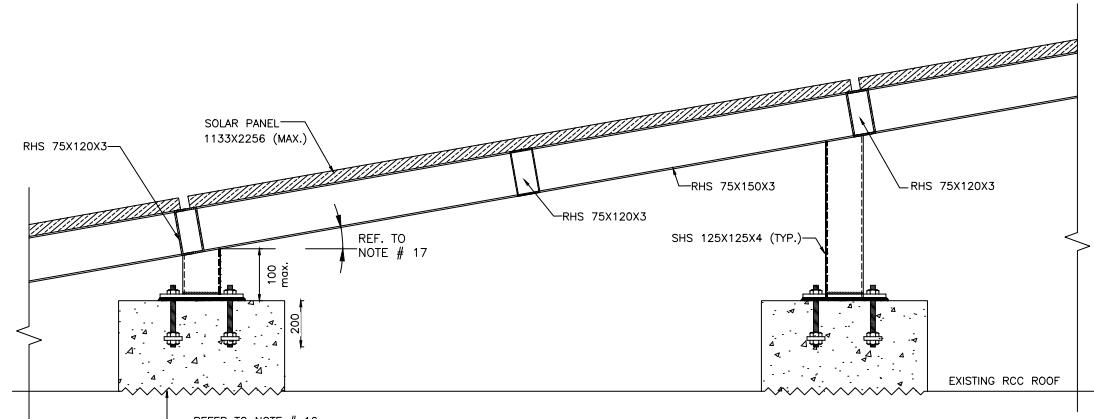
TYPICAL STRUCTURAL FRAMING PLAN



SECTION B-B

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.

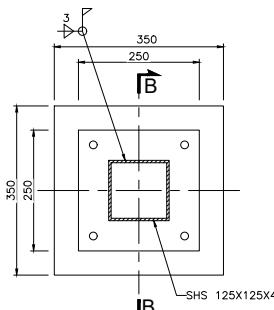


SECTION A-A

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



CONCEPTUAL DESIGN

CLIENT		04			DRAWN	M.A	PROJECT	TYPICAL SOLAR PANEL FRAMING FOR R.C.C ROOF MOUNTED STRUCTURE		SCALE
WATER & POWER GILGAT BALTISTAN		03			SUBMITTED		100 WM DISTRIBUTED SOLAR PV PLANTS AT VARIOUS SITES IN GILGAT BALTISTAN	DATE MAR- 2025 DRAWING No. 4898/TD/STR/05/01	REV. 0	
		02			RECOMMENDED					
		01			CHD./VER					
		REV.	DATE	DESCRIPTION	APPROVED	APPROVED				