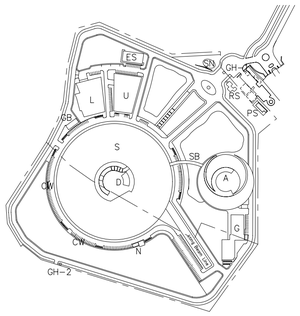
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS (NEW SITE)
PAYUBNAI SUBDISTRICT, WANG CHAN DISTRICT, RAYONG PROVINCE



Work Phase 3 : Construction Drawing

3G Project Site Office (PS)

3.3 Structural drawing

20 January 2025

OWNER

Siam Photon

SYNCHROTRON LIGHT RESEARCH INSTITUTE (PUBLIC ORGANIZATION)

DKW CONSORTIUM

DESIGN+DEVELOP

Structural drawing

3G Project Site Office (PS)

DRAWING LIST

DRAWING NO.	DESCRIPTOR	SIZE	ISSUE	REV					REMARK
-	COVER SHEET-1								
-	COVER SHEET-2								
SPSII-C-PS-ST-011	DRAWING LIST	A1		0					
SPSII-C-PS-ST-012	SPECIAL PROVISION	A1		0					
SPSII-C-PS-ST-013	NOTE FOR REINFORCEMENT CONCRETE STRUCTURE	A1		0					
SPSII-C-PS-ST-014	TYPICAL REINFORCEMENT DETAILS (SHEET 1)	A1		0					
SPSII-C-PS-ST-015	TYPICAL REINFORCEMENT DETAILS (SHEET 2)	A1		0					
SPSII-C-PS-ST-016	TYPICAL REINFORCEMENT DETAILS (SHEET 3)	A1		0					
SPSII-C-PS-ST-017	NOTE FOR STEEL STRUCTURE	A1		0					
SPSII-C-PS-ST-018	TYPICAL DETAILS FOR STEEL BEAM	A1		0					
SPSII-C-PS-ST-101	PILING PLAN	A1		0					
SPSII-C-PS-ST-102	LEVEL 1 FRAMING PLAN	A1		0					
SPSII-C-PS-ST-103	ROOF PLAN 1	A1		0					
SPSII-C-PS-ST-104	ROOF PLAN 2	A1		0					
SPSII-C-PS-ST-201	FOOTING, COLUMN AND SLAB DETAIL	A1		0					
SPSII-C-PS-ST-202	STAIR DETAIL	A1		0					

OWNER :
SYNCHROTRON LIGHT RESEARCH INSTITUTE (PUBLIC ORGANIZATION)

Siam Photon

PROJECT TITLE :
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS

PROJECT LOCATION :
PAYUBNAI SUBDISTRICT, WANG CHAN DISTRICT, RAYONG PROVINCE

DESIGNER :
DKW CONSORTIUM

DESIGN+DEVELOP
DESIGN+DEVELOP CO.,LTD.
383 RAMA 9 RD. SOI 13
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702/5-6 PHATTHANAKAN ROAD, SUAN LUANG,
SUAN LUANG, BANGKOK, 10250
TEL. 02-319-2045

WEP
WEP ENGINEERING PARTNERS CO., LTD.
89/1 KASEMSAP BUILDING. 8TH FLOOR.
VIBHAVADI-RANGSIT ROAD. CHOMPOL. CHATUCHAK
10900 BANGKOK THAILAND. TEL. 02-5122873 TO 7

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Pongsaton	Rattanapriyanuch	
Punyaphon	Jantasuriya	

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Saovanee	Kiram	
Bussaporn	Doungnet	Assoc.IA. 1096.

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Wacharapong	Prasarnklieo	Prof.CE. 8872
Pongsak	Vichaiyo	Prof.CE. 10489
Kanyapak	Chareerak	Prof.CE. 11227
Thitiporn	Atthanan	Assoc.CE. 74938

STRUCTURAL CALCULATION REPORT INSPECTOR

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Sudjai	Hiriwatanawong	Se.Prof.EE. 679
Khomeak	Khosirayothin	Se.Prof.EE. 1130
Supaporn	Rattanasuwan	Prof.EE. 5436
Kasidit	Sudklab	Prof.EE. 6991

SANITARY AND FIRE PROTECTION ENGINEER

Siriporn	Akaniwan	Se.Prof.ENV. 86
Theerawat	Pitiyananont	Prof.ENV. 453
Darin	Sanguansermsri	Prof.ENV. 593
Nunthit	Thongrak	Prof.ENV. 609
Nattapat	Ngaosa	Assoc.ENV. 4803

AIR-CONDITIONING AND VENTILATION SYSTEM ENGINEER

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Montol	Praekunnatham	Prof.ME. 3350
Wandee	Kuarod	Prof.ME. 5010
Boonpipat	Nimnuanpanich	Assoc.ME. 45561
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LANDSCAPE ARCHITECT

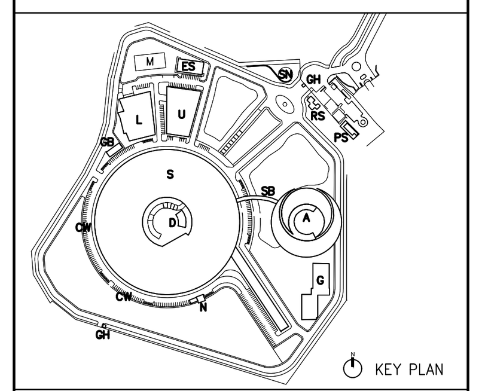
Chansang	Jariyasopit	Lic.LA. 112
Theepipach	Ngoenchan	Assoc.LA. 171

REVISION

NO.	DATE	DESCRIPTION

....

Dr. Prapong Klysubun
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT MANAGER



KEY PLAN

BUILDING : 3G Project Site Office (PS)	
DRAWN BY: -	CHECKED BY: -
DATE 20 January 2025	SCALE A1 1:50 A3 1:100

DRAWING TITLE :

DRAWING LIST

DRAWING NUMBER :
SPSII-C-PS-ST-011

PROJECT CODE : 2404SPSII | TOTAL SHEET :

CAD FILE :
SPSII-C-PS-ST-011-018.DWG

Work Phase 3 :Construction Drawing

1. DO NOT SCALE OFF THIS DRAWING. WORK FROM THE INDICATED DIMENSION ONLY, ALL SITE DIMENSIONS TO BE VERIFIED BY CONTRACTOR AND ANY DISCREPANCIES REPORTED BACK TO "DKW CONSORTIUM".
2. MANUFACTURERS MUST SUBMIT SHOP DRAWING AND ALL FINISH SAMPLES PRIOR TO PRODUCTION FOR APPROVAL BY DESIGNER.
3. ALL DIMENSIONS ARE MILLIMETRES UNLESS OTHERWISE NOTED.

STRUCTURAL PROVISION

1) GENERAL SPECIFICATIONS

1.1 ALL DETAILS, MATERIALS, METHOD STATEMENTS WITH RELATED TEMPORARY STRUCTURES, AND SHOP DRAWINGS SHALL BE SUBMITTED AND APPROVED BY CONSTRUCTION MANAGEMENT TEAM PRIOR TO CONSTRUCTION.

1.2 ALL CONSTRUCTION MATERIALS SHALL BE TIS CERTIFIED.

1.3 ALL CONSTRUCTION MATERIALS, METHODS, QUALITIES, AND REQUIRED TESTS SHALL BE ACCORDING TO DPT 1101-64 TO DPT 1106-64 STANDARDS (SPECIFICATION STANDARDS FOR MATERIALS IN BUILDING CONSTRUCTION).

DPT 1101-64 STANDARD FOR CONCRETE AND REINFORCED CONCRETE
DPT 1102-64 STANDARD FOR PRESTRESSED CONCRETE
DPT 1103-64 STANDARD FOR REINFORCING BARS
DPT 1104-64 STANDARD FOR WOOD STRUCTURE
DPT 1105-64 STANDARD FOR FOOTING
DPT 1106-64 STANDARD FOR PILE

1.4 IF NOT LISTED IN DPT 1101-64 TO DPT 1106-64, CONSTRUCTION MATERIALS, METHODS, QUALITIES, AND REQUIRED TESTS SHALL BE ACCORDING TO ACI, ASTM, AISC, AWS, CRP, OR OTHER INTERNATIONAL ACCEPTED STANDARDS.

1.5 ALL MARKED STRUCTURAL LEVELS ARE ONLY FOR THE PURPOSE OF INDICATING DIFFERENTIAL LEVELS. THE EXACT ELEVATION SHALL BE AS SPECIFIED IN THE ARCHITECTURAL DRAWINGS.

1.6 IN CASE OF CONTRASTING ARCHITECTURAL AND STRUCTURAL DETAILS AND SPECIFICATIONS, FINAL JUDGEMENT SHALL BE OBTAINED FROM THE OWNER'S REPRESENTATIVE BEFORE CONSTRUCTION.

2) BORED PILE

2.1 CONCRETE
- f'c (CYLINDER) = 280 ksc
- SULPHATE RESISTANCE CONCRETE

2.2 REINFORCING BARS
REINFORCING BARS WHICH ARE GREATER THAN Ø 9mm SHALL BE DEFORMED BARS
(Ø= ROUND BAR, Ø<= DEFORMED BAR)
- ∅ 6mm - ∅ 9mm (ROUND BAR SR24) , fy = 2,400 ksc
- ∅< 12mm (DEFORMED BAR SD40) , fy = 4,000 ksc
- ∅< 16mm - ∅< 32mm (DEFORMED BAR SD50), fy = 5,000 ksc

2.3 REQUIRED PILE TESTS
PILE TEST SHALL BE ACCORDING TO DPT 1252-51

2.3.1 PILE INTEGRITY TEST
- SEISMIC TEST ON ALL BORED PILES

2.3.2 PILE LOAD TEST
- DYNAMIC LOAD TEST ON BORED PILE Ø 0.60 m.,12 PILES, SAFETY FACTOR = 2.5

3) TEMPORARY STRUCTURE FOR UNDERGROUND CONSTRUCTION

3.1 DESIGN, MATERIALS, AND CONSTRUCTION PROCEDURES SHALL BE ACCORDING TO DPT 1911-52 TO DPT 1914-52 STANDARDS (STANDARDS FOR EARTH EXCAVATION AND EARTH FILLING).

4) FOUNDATION, LOWEST BASEMENT, RETAINING WALL, AND UNDERGROUND WATER TANK

(REINFORCED CONCRETE PERMANENTLY EXPOSED AGAINST EARTH OR SUBMERGED IN WATER)

4.1 CONCRETE
- f'c (CYLINDER) = 280 ksc (= 320 ksc CUBE)
- SULPHATE RESISTANCE CONCRETE
- WATERTIGHT CONCRETE USING CRYSTALLINE ADMIXTURE
- PVC WATERSTOP AND EXPANDABLE WATERSTOP TO BE APPLIED TO ALL CONSTRUCTION AND EXPANSION JOINTS

4.2 REINFORCING BARS
REINFORCING BARS WHICH ARE GREATER THAN Ø 9 mm SHALL BE DEFORMED BARS
(Ø = ROUND BAR, Ø < = DEFORMED BAR)
- Ø 6mm - Ø 9mm (ROUND BAR SR24), fy = 2,400 ksc
- Ø < 12mm (DEFORMED BAR SD40), fy = 4,000 ksc
- Ø < 16mm - 32mm (DEFORMED BAR SD50), fy = 5,000 ksc

5) GENERAL REINFORCED CONCRETE STRUCTURE (EXCLUDE 2, 3, AND 4)

5.1 CONCRETE
- f'c (CYLINDER) = 280 ksc (= 320 ksc CUBE)
- WATERTIGHT CONCRETE USING CRYSTALLINE ADMIXTURE (FOR ROOF SLAB, WATER TANK, PLANTER, AND OTHER STRUCTURE WHICH ARE IN CONTACT WITH WATER)
- PVC WATERSTOP AND EXPANDABLE WATERSTOP TO BE APPLIED TO ALL CONSTRUCTION AND EXPANSION JOINTS (FOR ROOF SLAB, WATER TANK, PLANTER, AND OTHER STRUCTURE WHICH ARE IN CONTACT WITH WATER)

5.2 REINFORCING BARS
REINFORCING BARS WHICH ARE GREATER THAN Ø 9MM SHALL BE DEFORMED BARS
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- Ø < 16mm - Ø < 32mm (DEFORMED BAR SD50), fy = 5,000 ksc

6) STEEL STRUCTURE

6.1 CLASSIFICATIONS
SM 400 or SS 400 Fy = 2,400 ksc FOR HOT ROLLED STRUCTURAL STEEL SECTION AND BUILT UP SECTION

6.2 ALL STEEL SECTIONS SHALL BE ACCORDING TO DPT 1107-61 AND DPT 1333-61 STANDARDS

6.3 BOLTS AND WELDING CONNECTIONS SHALL BE ACCORDING TO DPT 1107-61 STANDARD

7) FIRE RESISTANCE RATING REQUIREMENTS (ALL STRUCTURES)

7.1 INTERIOR MINISTRIAL REGULATION (2566 B.E.)

NO. OF FLOOR FROM TOP OF BUILDING	REQUIRED FIRE PROOFED RATING (hrs)	
	PRIMARY STRUCTURE	SECONDARY STRUCTURE
1st FL. - 4th FL.	1	1
5th FL. - 14th FL.	2	2
15th FL. & DOWN	3	2
BASEMENT FL.	3	2
ROOF	1	1

7.2 REINFORCING STEEL COVERING SHALL BE ACCORDING TO DPT 1101-64 STANDARD

7.3 STEEL STRUCTURE
- FIREPROOFED COVERING AND OR COATING SHALL BE ACCORDING TO DPT 8304-61 STANDARD

8) WIND CONTROL BUILDING

8.1 WIND DESIGN WILL BE DESIGNED ACCORDING TO DPT 1311-50

OWNER :
SYNCHROTRON LIGHT RESEARCH INSTITUTE (PUBLIC ORGANIZATION)

PROJECT TITLE :
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT LOCATION :
PAYUBNAI SUBDISTRICT, WANG CHAN DISTRICT, RAYONG PROVINCE

DESIGNER :
DKW CONSORTIUM

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KEEN CONSULTANTS CO.LTD.
WEP ENGINEERING PARTNERS CO., LTD.

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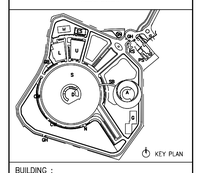
Pitchakorn Loraphong Assoc.ME. 44181

LANDSCAPE ARCHITECT
Chansang Jariyasopit Lic.LA. 112
Theepipoch Ngoenchan Assoc.LA. 171

REVISION

NO.	DATE	DESCRIPTION

Dr. Prapong Klysubun
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS PROJECT MANAGER



KEY PLAN

BUILDING :
3G Project Site Office (PS)

DRAWN BY: –
CHECKED BY: –
DATE: 20 January 2025
SCALE: A1 1:50 A3 1:100

DRAWING TITLE :
SPECIAL PROVISION

DRAWING NUMBER :
SPSII-C-PS-ST-012

PROJECT CODE : 2404SPSII
TOTAL SHEET :

CAD FILE :
SPSII-C-RS-ST2-011-018.DWG

Work Phase 3 :Construction Drawing

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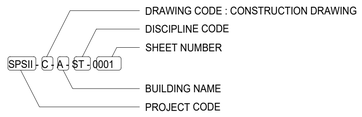
2. MANUFACTURERS MUST SUBMIT SHOP DRAWING AND ALL FINISH SAMPLES PRIOR TO PRODUCTION FOR APPROVAL BY DESIGNER.
3. ALL DIMENSIONS ARE MILLIMETRES UNLESS OTHERWISE NOTED.

GENERAL NOTE

1. THESE NOTES APPLY TO ALL DRAWINGS.
2. ALL WORKS SHALL CONFORM TO STANDARD DRAWINGS., DETAIL DRAWING SHALL GOVERN WHERE ANY CONTRADICTION IS FOUND IN THE STANDARD DRAWING.
3. WHERE REQUIREMENTS IN DETAIL DRAWING ARE CONTRADICTION TO REQUIREMENT IN STANDARD DRAWINGS. DETAIL DRAWING SHALL GOVERN.
4. ALL DIMENSION AND ELEVATIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE, WRITTEN DIMENSION SHALL GOVERN WHERE ANY NON-SCALED DIMENSION IS FOUND.
5. ALL STRUCTURAL DRAWING SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, PLUMBING, ELECTRICAL, MECHANICAL AND OTHER SERVICES DRAWING.
6. ALL CHASES, CHAMFERS, POCKET, OPENINGS FIXINGS TO BE BUILT IN FOR OTHER TRADES, ETC. SHALL BE PROVIDED IN THE LOCATIONS AND TO THE SIZE SHOWN ON THE DRAWINGS OR AS REQUIRED. THE CONTRACTOR SHALL CHECK ALL DRAWINGS AND VERIFY LEVELS AND DIMENSIONS IN ADVANCE OF THE WORK AND REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
7. ANY DISCREPANCY ON THE DRAWINGS OR BETWEEN THE DRAWINGS AND/OR THE SPECIFICATION AND/OR SPECIFIED STANDARD SHALL BE REFERRED TO THE ENGINEER AND A WRITTEN INSTRUCTION RECEIVED PRIOR TO PROCEEDING WITH THE WORK. RECEIVED PRIOR TO PROCEEDING WITH THE WORK. DURING TENDERING, THE TENDER SHALL ASSUME THE LARGER/GREATER CRITERIA IN TERMS OF COST IN THE ABSENCE OF OTHER INSTRUCTION.
8. DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE A STABLE CONDITION, ENSURING NO PART SHALL BE OVER-STRESSED DURING CONSTRUCTION ACTIVITIES.
9. IN CASE THE CONTRACTOR COMBINES THE STRUCTURAL DETAILS TOGETHER WHICH THOSE DETAILS CLEARLY SPECIFIED AND SHOWN IN THE DRAWING SUCH AS THE NUMBER OF REINFORCEMENT, SIZE OF REINFORCEMENT, AND TYPICAL DETAILS, THESE WILL BE CONSIDERED AND APPROVED BY CM.
10. IN CASE THE CONFLICTS FOUND WHEN THE CONTRACTOR COMBINES THE STRUCTURAL DRAWINGS, ARCHITECTURAL DRAWINGS, AND/OR M&E DRAWINGS TOGETHER, THE CONTRACTOR HAS TO ISSUE THE REQUEST FOR INFORMATION DOCUMENT TO CM AND/OR DESIGNERS.
11. IN CASE UNCLEARLY DETAILS SPECIFIED AND SHOWN THE STRUCTURAL DRAWINGS, THE CONTRACTOR HAS TO ISSUE REQUEST FOR INFORMATION DOCUMENT TO CM AND/OR DESIGNERS.

DRAWING FILE NAME :



TYPE CODING :

00: DRAWING LIST, STRUCTURAL PROVISION, GENERAL NOTES
01: EARTH REINTAINING SYSTEM
02: PLAN
03: PILING AND/OR FOOTING DETAILS
04: COLUMN DETAILS
05: CORE WALLS AND/OR SHEAR WALL DETAILS
06: WALL DETAILS
07: BEAM DETAILS
08: SLAB DETAILS
09: STAIR DETAILS
10: ROOF STRUCTURE STEEL DETAILS
1x: SPECIAL STRUCTURES DETAILS
e.g., - LANDSCAPE
- LINK BRIDGE
- MISCELLANEOUS STRUCTURE
99: TYPICAL DETAILS

NAME SYMBOLS NUMBER :

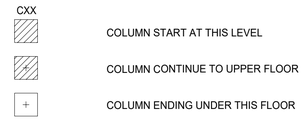
REINFORCEMENT :

RB = Ø
DB = Ø<

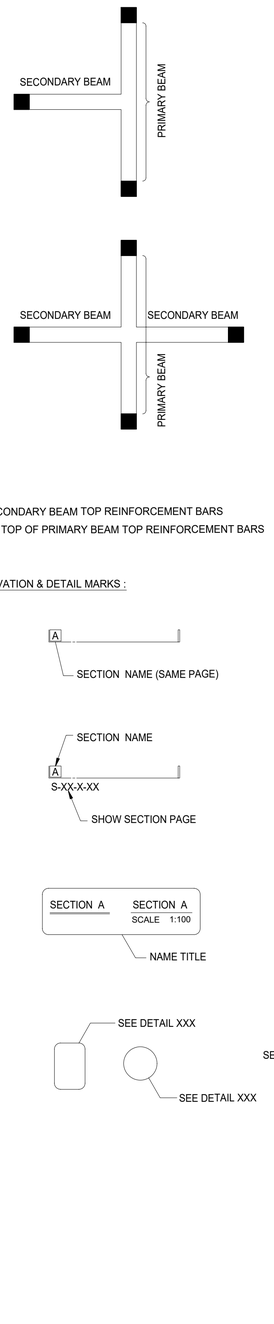
REINFORCEMENT NOTATION :

DRAWING STANDARDS

COLUMN SYMBOLS :



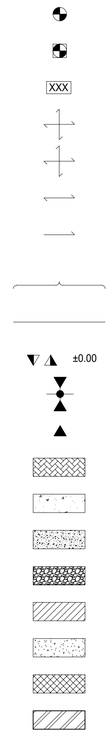
BEAM SYMBOLS :



** SECONDARY BEAM TOP REINFORCEMENT BARS ON TOP OF PRIMARY BEAM TOP REINFORCEMENT BARS

SECTION, ELEVATION & DETAIL MARKS :

GRAPHIC SYMBOLS :



STRUCTURAL ABBREVIATIONS

GENERAL :

@	AT
APPROX.	APPROXIMATELY
AP	ALTERNATELY PLACED
AR	ALTERNATELY REVERSED
AS	ALTERNATELY STAGGERED
B	BOTTOM
B1	BOTTOM LAYER OF BOTTOM REINFORCEMENT (IN TWO WAY SLABS)
BF	BOTH FACES
BS	BRITISH STANDARD
BW	BOTH WAYS
C/C	CENTER TO CENTER
CG	CENTER OF GRAVITY
CHS	CIRCULAR HOLLOW SECTION
℄	CENTER LINE
CJ	CONTROL OR CONSTRUCTION JOINT
Ø< or DB	DEFORMED BAR
DEG	DEGREE
DWG	DRAWING
DIA	DIAMETER
FL	FINISHED LEVEL
EL	EXISTING LEVEL
EF	EACH FACE
EJ	EXPANSION JOINT
EQ	EQUAL
EW	EACH WAY
FF	FAR FACE
FFL	FINISHED FLOOR LEVEL
GWL	GROUND WATER LEVEL
HOR	HORIZONTAL
IL	INVERT LEVEL
L BAR	L BAR
LLB	LONG LEG BOTTOM (FOR U BAR)
MAX	MAXIMUM
MIN	MINIMUM
MJ	MOVEMENT JOINT
MS	MILD STEEL
NF	NEAR FACE
NO	NUMBER
NTS	NOT TO SCALE
O/A	OVERALL
PD	PRINCIPAL DATUM
PC	PRESTRESSED CONCRETE
R	RADIUS
Ø or RB	ROUND BAR
RC	REINFORCED CONCRETE
REINF	REINFORCEMENT
RHS	RECTANGULAR HOLLOW SECTION
SFL	STRUCTURAL FINISHED LEVEL
SIM	SIMILAR
SL	STRUCTURAL LEVEL
SYM	SYMMETRY
T	TOP
THK	THICKNESS
T1	TOP LAYER OF TOP REINFORCEMENT (IN TWO WAY SLABS)
TOS	TOP OF SLAB
TOB	TOP OF BEAM
TOC	TOP OF COLUMN
TOW	TOP OF WALL
TOF	TOP OF FOOTING
TYP	TYPICAL
U BAR	'U' BAR
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VL	VARYING LENGTH
VOL	VOLUME
WL	WATER LEVEL
WT	WEIGHT

UNITS :

cm	CENTIMETER
cm2	SQUARE CENTIMETER
m3	CUBIC METER
km	KILOMETER
kN	KILONEWTON
kPa	KILOPASCAL
ksc	KILOGRAM PER SQUARE CENTIMETER
MPa	MAGEPASCAL
m	METER
mm	MILLIMETER
N	NEWTON
Pa	PASCAL
km2	SQUARE KILOMETER
m2	SQUARE METER
mm2	SQUARE MILLIMETER

OWNER :
SYNCHROTRON LIGHT RESEARCH INSTITUTE (PUBLIC ORGANIZATION)

PROJECT TITLE :
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS

PROJECT LOCATION :
PAYUBNAI SUBDISTRICT, WANG CHAN DISTRICT, RAYONG PROVINCE

DESIGNER :
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Uthai	Wannaphok	Assoc.Arch. 10825
Potanakajohn	Phadungchat	Assoc.Arch. 14702
Pongsaton	Rattanapriyanuch	
Punyaphon	Jantasuriya	
INTERIOR ARCHITECT		
Kris	Chotipanich	Assoc.Arch. 8384, Lic.IA. 100
Soovanee	Kiram	
Bussaporn	Doungnet	Assoc.IA. 1096.
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Wacharapong	Prasamkieo	Prof.CE. 8872
Pongsak	Vichaiyo	Prof.CE. 10489
Kanyapak	Charoenrak	Prof.CE. 11227
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ELECTRICAL ENGINEER		
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Suojai	Hiriwatanawong	Se.Prof.EE. 679
Khomesk	Khosinayothin	Se.Prof.EE. 1130
Supaporn	Rattanaswan	Prof.EE. 5436
Kasidit	Sucklab	Prof.EE. 6991
SANITARY AND FIRE PROTECTION ENGINEER		
Siriporn	Akaniwan	Se.Prof.ENV. 86
Theerawat	Pitiyananont	Prof.ENV. 453
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Nattapat	Ngaosa	Assoc.ENV. 4803
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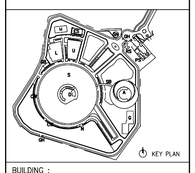
Montol	Praekunnatham	Prof.ME. 3350
Wandee	Kusrod	Prof.ME. 5010
Boonpipat	Nimnuanpanich	Assoc.ME. 45561
Pitchakorn	Laraphong	Assoc.ME. 44181
LANDSCAPE ARCHITECT		
Chansong	Jariyasopit	Lic.LA. 112
Theepipach	Ngoenchan	Assoc.LA. 171

REVISION

NO.	DATE	DESCRIPTION

Dr. Prapong Klyaubun
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT MANAGER



BUILDING :
3G Project Site Office (PS)

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DATE	SCALE			
20 January 2025	A1	1:50	A3	1:100

DRAWING TITLE :
NOTE FOR REINFORCEMENT CONCRETE STRUCTURE

DRAWING NUMBER :
SPSII-C-PS-ST-013

PROJECT CODE :	TOTAL SHEET :
2404SPSII	

CAD FILE :
SPSII-C-PS-ST-011-018.DWG

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3. ALL DIMENSIONS ARE MILLIMETRES UNLESS OTHERWISE NOTED.

NOTE FOR REINFORCEMENT CONCRETE STRUCTURE

TABLE 10.01: SPECIFIED CONCRETE COVER FOR CAST - IN - PLACE NONPRESTRESSED CONCRETE MEMBER

CONCRETE EXPOSURE	MEMBER	REINFORCEMENT	SPECIFIED COVER, (mm)
CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND	ALL	ALL	75
EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	ALL	∅<20 THROUGH ∅<40 BARS	50
		∅<16 BAR AND SMALLER	40
NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	SLABS, JOISTS, AND WALLS	∅<40	40
		∅<36 BAR AND SMALLER	20
	BEAM, COLUMN, PEDESTALS, AND TENSION TIES.	PRIMARY REINFORCEMENT, STIRRUPS, TIES, SPIRALS, AND HOOPS	40

REF : ACI 318M-14, CHAPTER 20.6 (TABLE 20.6.1.3.1)

TABLE 10.02: SPECIFIED CONCRETE COVER FOR CAST - IN - PLACE PRESTRESSED CONCRETE MEMBER

CONCRETE EXPOSURE	MEMBER	REINFORCEMENT	SPECIFIED COVER, (mm)
CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND	ALL	ALL	75
EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	SLABS, JOISTS, AND WALLS	ALL	25
	ALL OTHER	ALL	40
NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	SLABS, JOISTS, AND WALLS	ALL	20
	BEAM, COLUMN, PEDESTALS, AND TENSION TIES.	PRIMARY REINFORCEMENT,	40
		STIRRUPS, TIES, SPIRALS, AND HOOPS	25

REF : ACI 318M-14, CHAPTER 20.6 (TABLE 20.6.1.3.2)

TABLE 10.03: SPECIFIED CONCRETE COVER FOR PRECAST NONPRESTRESSED OR PRESTRESSED CONCRETE MEMBER MANUFACTURED UNDER PLANT CONDITIONS

CONCRETE EXPOSURE	MEMBER	REINFORCEMENT	SPECIFIED COVER, (mm)
EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	WALLS	∅<40 BARS; TENDONS LARGER THAN 40 mm DIAMETER	40
		∅<36 BARS AND SMALLER, TENDONS AND STRANDS 40 mm DIAMETER AND SMALLER	20
	ALL OTHER	∅<40 BARS; TENDONS LARGER THAN 40 mm DIAMETER	50
		∅<20 THROUGH∅<36 BARS; TENDONS AND STRANDS LARGER THAN 16 mm DIAMETER THROUGH 40 mm DIAMETER	40
		∅<16 BARS TENDONS AND STRANDS 16 mm DIAMETER AND SMALLER	30
NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	SLAB JOISTS, AND WALLS	∅<40 BARS; TENDONS LARGER THAN 40 mm DIAMETER	30
		TENDONS AND STRANDS 40 mm DIAMETER AND SMALLER	20
		∅<36 BAR AND SMALLER	16
	BEAM, COLUMN, PEDESTALS, AND TENSION TIES	PRIMARY REINFORCEMENT	GREATER OF db 16 AND NEED NOT EXCEED 40
		STIRRUPS,TIES, SPIRALS, AND HOOPS	10

REF : ACI 318M-14, CHAPTER 20.6 (TABLE 20.6.1.3.3)

TABLE 10.04: COMPRESSIVE STRENGTH OF CONCRETE (STANDARD CYLINDER∅150 mm x 300 mm, AT 28 DAYS)

ELEMENT	COMPRESSIVE STRENGTH (f'c)
LEAN	150 KSC
CONCRETE TOPPING OF HOLLOW / PRECAST PLANK OR FILLED CONCRETE	280 KSC
RC SLAB AND BEAM	280 KSC
PT SLAB AND BEAM	280 KSC
STAIR	280 KSC
PRECAST MEMBER	280 KSC
CORE WALL(A)	280 KSC
COLUMN(B)	280 KSC
WALL (WATER TANK, WWTP, RETAINING WALL)	280 KSC
PILE CAPE / RAFT	400 KSC
BORED PILE (WET PROCESS)	280 KSC
BORED PILE (DRY PROCESS)	210 KSC
RC. ROAD (ON GRADE)	280 KSC

(A) : SEE MORE DETAIL IN DETAIL DRAWING.

(B) : SEE MORE DETAIL IN DETAIL DRAWING.

NOTE FOR MASS CONCRETE, MAT FOUNDATION AND FOOTING

1. MAXIMUM TEMPERATURE OF FRESH CONCRETE BEFORE PLACING SHOULD NOT OVER 36 C°
2. PEAK TEMPERATURE OF CONCRETE SHOULD NOT OVER 75 C°
3. MAXIMUM ALLOWABLE OF DIFFERENTIAL TEMPERATURE BETWEEN CORE AND SURFACE OF CONCRETE SHOULD NOT OVER 20 C°
4. CONTRACTOR MUST PROVIDED METHOD OF CONSTRUCTION TO CONSULTANT AND DESIGNER FOR APPROVAL BEFORE CONSTRUCTION

NOTE FOR CRACKING CONTROL OF REINFORCED CONCRETE STRUCTURE

1. PROVIDE ADEQUATE JOINT ACCORDING TO ACI 224.3 R
2. LOCATION OF THE JOINT SHOULD BE BETWEEN 1/5 - 1/3 OF THE SPAN LENGTH
3. ALLOW AT LEAS T 7 DAYS FOR THE FIRST CAST TO SHRINK BEFORE CASTING THE SUCCESSIVE PORTION
4. EXECUTE 7 DAYS CURING BY ADOPTING PROPER MOISTURE CONTROL
5. USE LOW WATER - CEMENT RATIO CONCRETE (W/C < 0.45) AND ENHANCE WORKABILITY BY ADDING PROPER SUPER - PLASTICIZER

OWNER :
SYNCHROTRON LIGHT RESEARCH INSTITUTE (PUBLIC ORGANIZATION)
Siam Photon

PROJECT TITLE :
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT LOCATION :
PAYUBNAI SUBDISTRICT, WANG CHAN DISTRICT, RAYONG PROVINCE

DESIGNER :
DKW CONSORTIUM

DESIGN+DEVELOP CO.,LTD. 383 RAMA 9 RD. SOI 13 BANGKAPI HUAIKWANG BANGKOK 10310 THAILAND TEL.+66 (0) 2716 8099 , FAX.+66 (0) 2716 8880 E-MAIL: dd@designdevelop.co.th WEB: www.designdevelop.co.th

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WEP ENGINEERING PARTNERS CO., LTD. 89/1 KASEMSAP BUILDING. 8TH FLOOR. VIBHAVADI-RANGSIT ROAD. CHOMPOL. CHATUCHAK 10900 BANGKOK THAILAND. TEL. 02-5122873 TO 7

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LANDSCAPE ARCHITECT
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REVISION

NO.	DATE	DESCRIPTION

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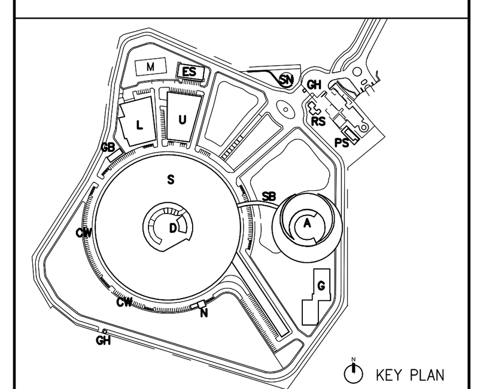
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT MANAGER



BUILDING :
3G Project Site Office (PS)

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DATE	SCALE			
20 January 2025	A1	1:50	A3	1:100

DRAWING TITLE :
TYPICAL REINFORCEMENT DETAILS (SHEET 1)

DRAWING NUMBER :
SPSII-C-PS-ST-014

PROJECT CODE : 2404SPSII
TOTAL SHEET :

CAD FILE :
SPSII-C-PS-ST-011-018.DWG

Work Phase 3 :Construction Drawing

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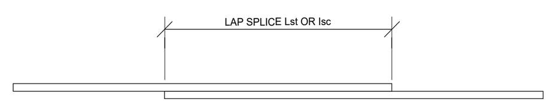
TYPICAL REINFORCEMENT DETAILS (SHEET 1)

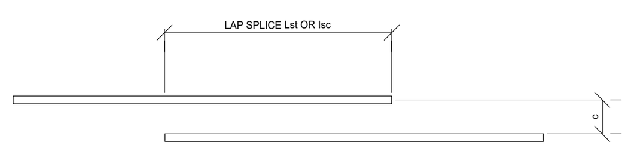
TABLE 11.01 :DIMENSION, WEIGHT, PERIMETER, AND CROSS SECTION OF REINFORCING BARS.

BAR SIZE	NOMINAL DIAMETER (mm)	WEIGHT (kg/m)	PERIMETER (cm)	CROSS SECTION AREA (cm^2)	GRADE
Ø6	6	0.222	0.886	0.283	SR24
Ø9	9	0.499	2.829	0.636	SR24
Ø12	12	0.888	3.771	1.13	SR24
Ø<10	10	0.616	3.140	0.78	SD40
Ø<12	12	0.888	3.771	1.13	SD40
Ø<16	16	1.578	5.029	2.01	SD50
Ø<20	20	2.466	6.290	3.14	SD50
Ø<25	25	3.858	7.857	4.91	SD50
Ø<28	28	4.834	8.800	6.16	SD50
Ø<32	32	6.313	10.06	8.04	SD50
Ø<36	36	7.990	11.31	10.18	SD50
Ø<40	40	9.865	12.57	12.57	SD50

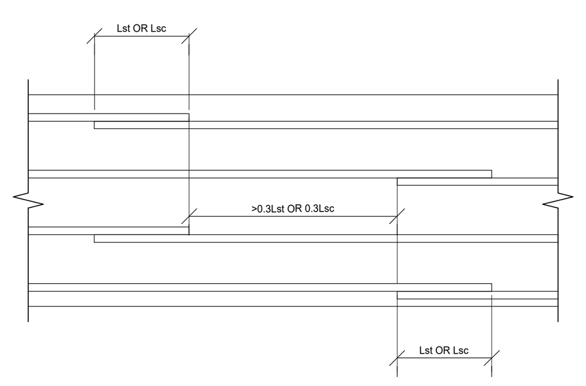
REF : TIS 20-2543 (FOR ROUND BAR)
TIS 20-2543 (FOR DEFORMED BAR)



(A) CONTACT LAP SPLICE

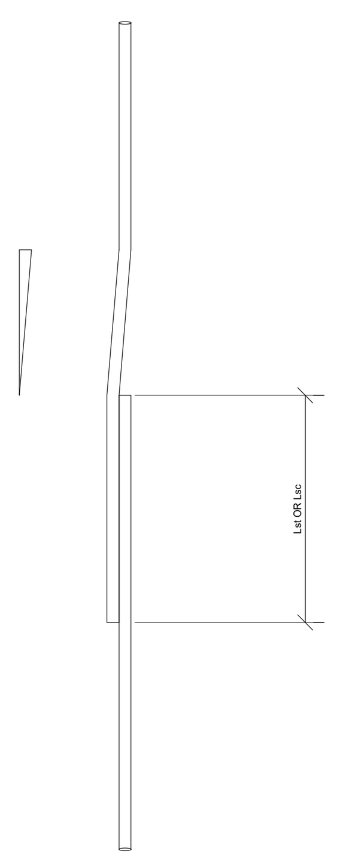


C < Ls/5 OR 150 mm
(B) NON - CONTACT LAP SPLICE



(C) STAGGERED LAP SPLICE

TYPICAL LAP SPLICE DETAIL

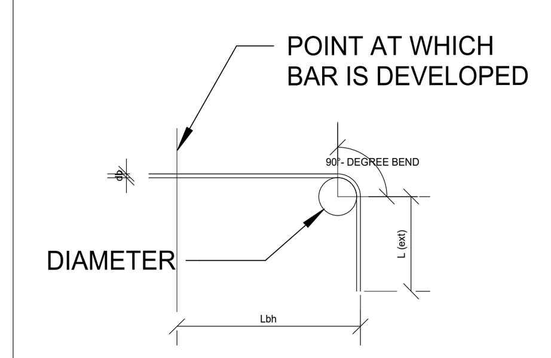
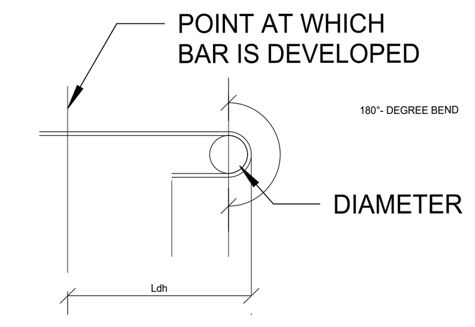


TYPICAL CRANK UP DETAIL

NOTE :

L_{ST} : TENSION LAP SPLICE LENGTHS (SEE MORE DETAIL IN TABLE 11.04)
IN CASE OF TOP BAR l_{ST} SHALL BE USED
L_{SC} : COMPRESSION LAP SPLICE LENGTHS (SEE MORE DETAIL IN TABLE 11.04)

TABLE 11.01 :STANDARD HOOK GEOMETRY FOR DEVELOPMENT OF DEFORMED BAR IN TENSION

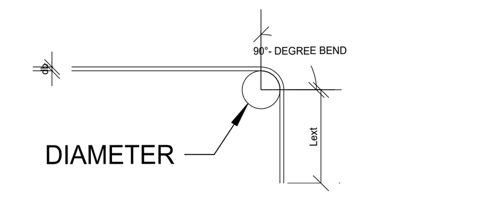
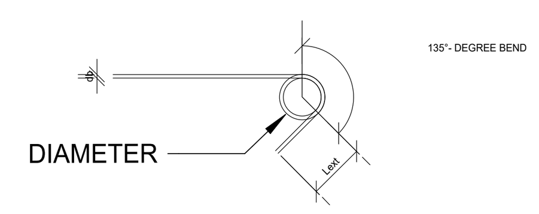
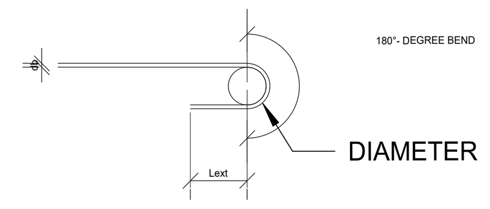
TYPE OF STANDARD HOOK	BAR SIZE	MINIMUM INSIDE BEND DIAMETER (mm)	STRAIGHT EXTENSION[1] L_{ext}(mm)	TYPE OF STANDARD HOOK
90 - DEGREE HOOK	Ø<6 THROUGH Ø<25	$8d_b$	$12d_b$	
	Ø<28 THROUGH Ø<36	$8d_b$		
	Ø<40	$10d_b$		
180 - DEGREE HOOK	Ø<6 THROUGH Ø<25	$6d_b$	GREATER OF $4d_b$ AND 65 mm	
	Ø<28 THROUGH Ø<36	$8d_b$		
	Ø<40	$10d_b$		

NOTE :

[1] A STANDARD HOOK FOR STIRRUP, TIES, AND HOOPS INCLUDES THE SPECIFIC INSIDE BEND AND STRAIGHT EXTENSION LENGTH. IT SHALL BE PERMITTED TO USE A LONG STRAIGHT EXTENSION AT THE END OF A HOOK. A LONGER EXTENSION SHALL NOT BE CONDIDERED TO INCREAE CAPCITY OF THE HOOK.

REF : ACI 318M-14, CHAPTER 25.3 (TABLE 25.3.1)

TABLE 11.03 :MINIMUM INSIDE BEND DIAMETERS AND STANDARD HOOK GEOMETRY FOR STIRRUPS, TIES, AND HOOK

TYPE OF STANDARD HOOK	BAR SIZE	MINIMUM INSIDE BEND DIAMETER (mm)	STRAIGHT EXTENSION[1] L_{ext}(mm)	TYPE OF STANDARD HOOK
90 - DEGREE HOOK	∅6 - THROUGH∅<16	$4d_b$	GREATER OF $6d_b$ AND 75 mm	
	∅<20 - THROUGH∅<25	$6d_b$	$12d_b$	
135 - DEGREE HOOK	∅6 - THROUGH∅<16	$4d_b$	GREATER OF $6d_b$ AND 75 mm	
	∅<20 - THROUGH∅<25	$6d_b$		
180 - DEGREE HOOK	∅<10 - THROUGH∅<16	$4d_b$	GREATER OF $4d_b$ AND 65 mm	
	∅<20 - THROUGH∅<25	$6d_b$		

NOTE :

[1] A STANDARD HOOK FOR STIRRUP, TIES, AND HOOPS INCLUDES THE SPECIFIC INSIDE BEND AND STRAIGHT EXTENSION LENGTH. IT SHALL BE PERMITTED TO USE A LONG STRAIGHT EXTENSION AT THE END OF A HOOK. A LONGER EXTENSION SHALL NOT BE CONDIDERED TO INCREAE CAPCITY OF THE HOOK.

REF : ACI 318M-14, CHAPTER 25.3 (TABLE 25.3.2)

OWNER :
SYNCHROTRON LIGHT RESEARCH INSTITUTE (PUBLIC ORGANIZATION)

PROJECT TITLE :
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT LOCATION :
PAYUBNAI SUBDISTRICT, WANG CHAN DISTRICT, RAYONG PROVINCE

DESIGNER :
DKW CONSORTIUM

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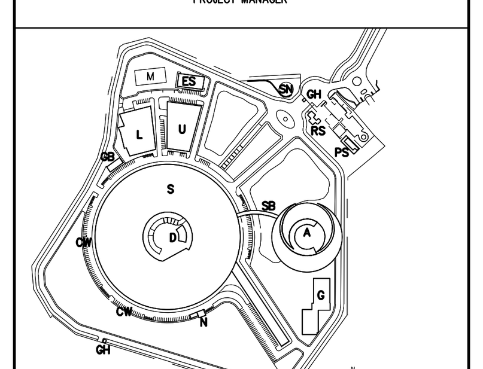
REVISION

NO.	DATE	DESCRIPTION

Dr. Prapong Klysubun
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT MANAGER



KEY PLAN

BUILDING :
3G Project Site Office (PS)

DRAWN BY:	CHECKED BY:
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DATE: 20 January 2025
SCALE: A1 1:50 A3 1:100

DRAWING TITLE :
TYPICAL REINFORCEMENT DETAILS (SHEET 2)

DRAWING NUMBER :
SPSII-C-PS-ST-015

PROJECT CODE :
2404SPSII

TOTAL SHEET :

CAD FILE :
SPSII-C-PS-ST-011-018.DWG

Work Phase 3 :Construction Drawing

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TYPICAL REINFORCEMENT DETAILS (SHEET 2)

TABLE : STANDARD DEVELOPMENT LENGTH

f'c (ksc)	BAR SIZE	f'y (ksc)	DEVELOPMENT LENGTH (mm)				LAP SPLICE LENGTH (mm)		
			TENSION			COMPRESSION	TENSION (CLASS B)		COMPRESSION
			TOP BAR	OTHER BAR	STANDARD HOOK		TOP BAR	OTHER BAR	
			L*dt	Ldt	Ldh	Ldc	L*st	Lst	Lsc
210	Ø6	2,400	275	275	200	275	425	400	300
	Ø9	2,400	425	425	300	425	650	450	400
	Ø<12	4,000	675	525	250	250	875	675	350
	Ø<16	5,000	1,100	850	425	425	1,425	1,100	675
	Ø<20	5,000	1,725	1,325	525	525	2,225	1,725	825
	Ø<25	5,000	2,150	1,650	650	650	2,800	2,150	1,025
	Ø<28	5,000	2,400	1,875	725	725	3,125	2,400	1,150
	Ø<32	5,000	2,750	2,125	875	850	3,575	2,750	1,325
240	Ø6	2,400	275	275	200	275	425	400	300
	Ø9	2,400	425	425	300	425	650	450	360
	Ø<12	4,000	625	475	250	250	800	625	350
	Ø<16	5,000	1,025	800	400	400	1,375	1,025	675
	Ø<20	5,000	1,600	1,250	500	500	2,100	1,600	825
	Ø<25	5,000	2,000	1,550	625	625	2,600	2,000	1,025
	Ø<28	5,000	2,250	1,725	700	700	2,925	2,250	1,150
	Ø<32	5,000	2,575	1,975	775	775	3,325	2,575	1,312
280	Ø6	2,400	275	275	200	275	425	400	300
	Ø9	2,400	500	425	300	425	650	450	350
	Ø<12	4,000	575	450	225	225	750	575	350
	Ø<16	5,000	950	750	375	375	1,250	950	675
	Ø<20	5,000	1,500	1,150	450	450	1,925	1,500	825
	Ø<25	5,000	1,850	1,425	575	575	2,425	1,850	1,025
	Ø<28	5,000	2,075	1,600	650	650	2,700	2,075	1,150
	Ø<32	5,000	2,375	1,825	725	725	3,100	2,375	1,325
320	Ø6	2,400	275	275	200	275	425	400	300
	Ø9	2,400	425	425	300	425	650	450	350
	Ø<12	4,000	550	425	225	225	700	550	350
	Ø<16	5,000	900	700	350	375	1,175	900	675
	Ø<20	5,000	1,400	1,075	425	450	1,825	1,400	825
	Ø<25	5,000	1,750	1,350	525	550	2,250	1,750	1,025
	Ø<28	5,000	1,950	1,500	600	625	2,525	1,950	1,150
	Ø<32	5,000	2,250	1,725	675	725	2,900	2,225	1,325
400	Ø6	2,400	275	275	200	275	425	400	300
	Ø9	2,400	425	425	300	425	650	450	350
	Ø<12	4,000	500	375	200	225	625	500	350
	Ø<16	5,000	800	625	300	375	1,050	800	675
	Ø<20	5,000	1,250	975	375	450	1,625	1,250	825
	Ø<25	5,000	1,550	1,200	475	550	2,025	1,550	1,025
	Ø<28	5,000	1,750	1,350	525	625	2,275	1,750	1,150
	Ø<32	5,000	2,000	1,525	600	725	2,575	2,000	1,325

TABLE 11.04 (COLUMN): STANDARD DEVELOPMENT LENGTH

f'c (ksc)	BAR SIZE	f'y (ksc)	DEVELOPMENT LENGTH (mm)				LAP SPLICE LENGTH (mm)		
			TENSION			COMPRESSION	TENSION (CLASS B)		COMPRESSION
			TOP BAR	OTHER BAR	STANDARD HOOK		TOP BAR	OTHER BAR	
			L*dt	Ldt	Ldh	Ldc	L*st	Lst	Lsc
450	Ø6	2,400	275	275	200	275	425	400	300
	Ø9	2,400	425	425	300	425	650	450	350
	Ø<12	4,000	450	350	175	225	600	450	350
	Ø<16	5,000	750	575	300	375	975	750	675
	Ø<20	5,000	1,175	900	375	450	1,525	1,175	825
	Ø<25	5,000	1,475	1,125	450	550	1,900	1,475	1,025
	Ø<28	5,000	1,650	1,275	500	625	2,125	1,650	1,150
	Ø<32	5,000	1,875	1,450	575	725	2,450	1,875	1,325
500	Ø6	2,400	275	275	200	275	425	400	300
	Ø9	2,400	425	425	300	425	650	450	342
	Ø<12	4,000	425	350	175	225	575	425	350
	Ø<16	5,000	709	550	275	375	925	725	675
	Ø<20	5,000	1,125	875	350	450	1,450	1,125	825
	Ø<25	5,000	1,400	1,075	425	550	1,825	1,400	1,025
	Ø<28	5,000	1,575	1,200	475	625	2,002	1,575	1,150
	Ø<32	5,000	1,775	1,375	550	725	2,325	1,775	1,325
550	Ø6	2,400	275	275	200	275	425	400	300
	Ø9	2,400	425	425	300	425	650	450	350
	Ø<12	4,000	425	325	175	225	550	425	350
	Ø<16	5,000	700	525	275	375	900	700	675
	Ø<20	5,000	1,075	825	325	450	1,375	1,075	825
	Ø<25	5,000	1,325	1,025	400	550	1,725	1,325	1,025
	Ø<28	5,000	1,500	1,150	450	625	1,925	1,500	1,150
	Ø<32	5,000	1,700	1,300	525	725	2,200	1,700	1,325
600	Ø6	2,400	275	275	200	275	425	400	300
	Ø9	2,400	425	425	300	425	650	450	350
	Ø<12	4,000	400	300	150	225	525	400	350
	Ø<16	5,000	650	500	250	375	850	650	675
	Ø<20	5,000	1,025	800	325	450	1,325	1,025	825
	Ø<25	5,000	1,275	975	400	550	1,650	1,275	1,025
	Ø<28	5,000	1,425	1,100	450	625	1,850	1,425	1,150
	Ø<32	5,000	1,625	1,250	500	725	2,150	1,625	1,325
700	Ø6	2,400	275	275	200	275	425	400	300
	Ø9	2,400	425	425	300	425	650	450	350
	Ø<12	4,000	400	300	150	225	525	400	350
	Ø<16	5,000	600	475	250	375	800	600	675
	Ø<20	5,000	950	725	300	450	1,225	950	825
	Ø<25	5,000	1,175	900	375	550	1,525	1,175	1,025
	Ø<28	5,000	1,325	1,025	400	625	1,725	1,325	1,150
	Ø<32	5,000	1,500	1,175	475	725	1,950	1,500	1,325

NOTE :

1. TOP BARS ARE HORIZONTAL BARS SO PLACED THAT MORE THAN 300 mm OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BARS.
2. LENGTH REDUCTION FOR DEVELOPMENT AND SPLICE LENGTH SHALL BE SPECIFIED ON DESIGN DRAWING, OTHERWISE THOSE LENGTH SHOWN IN THE TABLE SHALL BE USED.
3. DEVELOP LENGTH OR SPLICE LENGTH OF INDIVIDUAL BARS IN A BUNDLE, IN TENSION OR COMPRESSION, TO BE 1.20 TIME FOR THREE-BAR BUNDLE, AND 1.33 TIMES FOR FOUR-BAR BUNDLE.
4. CONTRACTOR CAN PROPOSE COUPLER CONNECTOR (MECHANICAL SPLICE) INSTEAD OF LAP SPLICE AND COUPLER CONNECTOR SHALL DEVELOP IN TENSION OR COMPRESSION AS REQUIRED, AT LEAST 125 PERCENT OF SPECIFIED YIELD STRENGTH OF REBAR.

(A) : COUPLER CONNECTOR SHOULD BE A PARALLEL-THREADED ROLLING SYSTEM WITH AN ENLARGED CROSS SECTION AREA AT BAR END, OBTAINED BY COLD FORGING PROCESS.
: TAPER THREAD AND/OR CUT THREADING IS NOT PERMITTED TO USE
: THE CROSS SECTION AT THREADED AREA HENCE REMAINS LARGER THAN THE NOMINAL DIAMETER OF THE REBAR.
: PRODUCTION AND QUALITY INSURANCE ACCORDING TO ISO 9001 OR OTHERS EQUIVALENT STANDARD.

REF : ACI 318M-14, CHAPTER 25.4

OWNER :
SYNCHROTRON LIGHT RESEARCH INSTITUTE
(PUBLIC ORGANIZATION)
Siam Photon

PROJECT TITLE :
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT LOCATION :
PAYUBNAI SUBDISTRICT, WANG CHAN DISTRICT, RAYONG PROVINCE

DESIGNER :
DKW CONSORTIUM
DESIGN+DEVELOP — DESIGN+DEVELOP CO.,LTD. 383 RAMA 9 RD. SOI 13 BANGKAPI HUAIKWANG BANGKOK 10310 THAILAND TEL.+66 (0) 2716 8099 , FAX.+66 (0) 2716 8880 E-MAIL: dd@designdevelop.co.th WEB: www.designdevelop.co.th
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WEP ENGINEERING PARTNERS CO., LTD. — 89/1 KASEMSAP BUILDING. 8TH FLOOR. VIBHAVADI-RANGSIT ROAD. CHOMPOL. CHATUCHAK 10900 BANGKOK THAILAND. TEL. 02-5122873 TO 7

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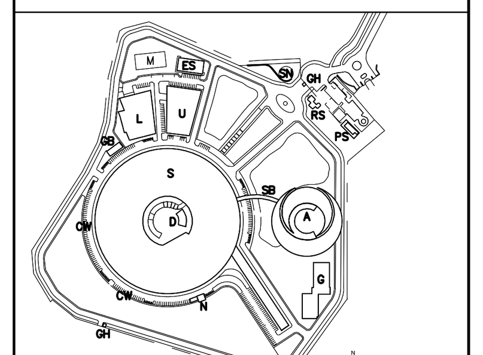
REVISION

NO.	DATE	DESCRIPTION

Dr. Prapong Klysubun
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT MANAGER



BUILDING :
3G Project Site Office (PS)

DRAWN BY: –
CHECKED BY: –

DATE: 20 January 2025
SCALE: A1 1:50 A3 1:100

DRAWING TITLE :
TYPICAL REINFORCEMENT DETAILS (SHEET 3)

DRAWING NUMBER :
SPSII-C-PS-ST-016

PROJECT CODE : 2404SPSII
TOTAL SHEET :

CAD FILE :
SPSII-C-PS-ST-011-018.DWG

Work Phase 3 :Construction Drawing

1. DO NOT SCALE OFF THIS DRAWING. WORK FROM THE INDICATED DIMENSION ONLY, ALL SITE DIMENSIONS TO BE VERIFIED BY CONTRACTOR AND ANY DISCREPANCIES REPORTED BACK TO "DKW CONSORTIUM".
2. MANUFACTURERS MUST SUBMIT SHOP DRAWING AND ALL FINISH SAMPLES PRIOR TO PRODUCTION FOR APPROVAL BY DESIGNER.
3. ALL DIMENSIONS ARE MILLIMETRES UNLESS OTHERWISE NOTED.

TYPICAL REINFORCEMENT DETAILS (SHEET 3)

TABLE : STANDARD DEVELOPMENT LENGTH FOR HEADED DEFORMED BAR

f'c(ksc)	BAR SIZE	fy(ksc)	Lht (mm)	ANCHOR PLATE	
				B x W (mm)	t (mm)
210	Ø<12mm	4,000	200	25 x 25	15
	Ø<16mm	4,200	300	35 x 35	19
	Ø<20mm	4,200	350	40 x 40	20
	Ø<25mm	4,200	450	50 x 50	22
	Ø<28mm	4,200	500	55 x 55	25
	Ø<32mm	4,200	575	65 x 65	28
240	Ø<12mm	4,000	200	25 x 25	15
	Ø<16mm	4,200	275	35 x 35	19
	Ø<20mm	4,200	325	40 x 40	20
	Ø<25mm	4,200	425	50 x 50	22
	Ø<28mm	4,200	475	55 x 55	25
	Ø<32mm	4,200	525	65 x 65	28
280	Ø<12mm	4,000	175	25 x 25	15
	Ø<16mm	4,200	250	35 x 35	19
	Ø<20mm	4,200	325	40 x 40	20
	Ø<25mm	4,200	400	50 x 50	22
	Ø<28mm	4,200	425	55 x 55	25
	Ø<32mm	4,200	500	65 x 65	28
320	Ø<12mm	4,000	175	25 x 25	15
	Ø<16mm	4,200	225	35 x 35	19
	Ø<20mm	4,200	300	40 x 40	20
	Ø<25mm	4,200	375	50 x 50	22
	Ø<28mm	4,200	400	55 x 55	25
	Ø<32mm	4,200	475	65 x 65	28
400 TO 700	Ø<12mm	4,000	150	25 x 25	15
	Ø<16mm	4,200	225	35 x 35	19
	Ø<20mm	4,200	275	40 x 40	20
	Ø<25mm	4,200	325	50 x 50	22
	Ø<28mm	4,200	375	55 x 55	25
	Ø<32mm	4,200	425	65 x 65	28

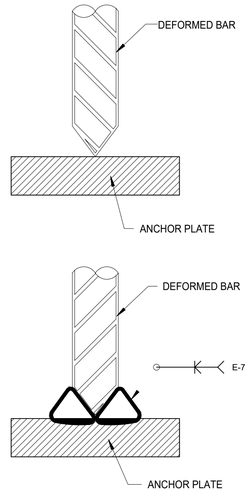
NOTE :

1 HEADED DEFORMED BAR CAN USE ONLY WHEN DESIGNER SPECIFIED IN DRAWING. CONTRACTOR CAN NOT EQUIVALENT THIS DETAIL TO STANDARD DEVELOPMENT LENGTH OR STANDARD HOOK.

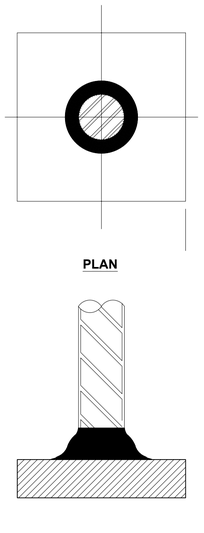
2 CONTRACTOR CAN PROFUSE MECHANICAL DEVICE CAPABLE OF DEVELOPING fy OF DEFORMED BAR

3 YIELD STRENGTH OF ANCHOR PLATE (fy = 2400 ksc)
(A) LIMITED BY CODE
(B) LIMITED BY CODE

REF : ACI 318M - 14, CHAPTER 25.4
AWS D1.4-98



SECTION

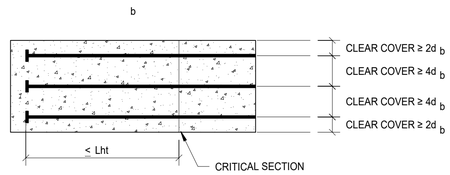


PLAN

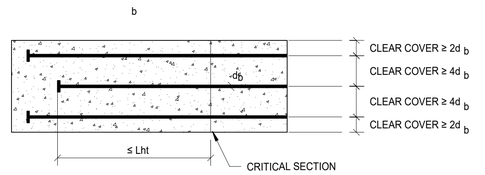
ELEVETION

CONNECTION DETAIL BETWEEN DEFORMED BAR AND ANCHOR PLATE

REF:AWSD1.4-98



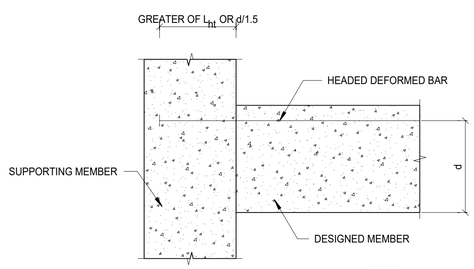
CASE 1: GENERAL



CASE 2: STACK

TYPCAL HEADED DEFORMED BAR ARRANGEMENT

REF:AWSD1.4-98



NOTE :

OTHER REINFORCEMENT OMITTED FOR CLARITY

TYPCAL DETAIL FOR HEADED DEFORMED BAR EXTENDED TO FAR SIDE OF COLUMN (OR WALL,OR SUPPORTING BEAM

REF:ACI318M-14,CHAPTER25.4

OWNER :
SYNCHROTRON LIGHT RESEARCH INSTITUTE
(PUBLIC ORGANIZATION)

PROJECT TITLE :
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS

PROJECT LOCATION :
PAYUBNAI SUBDISTRICT, WANG CHAN DISTRICT, RAYONG PROVINCE

DESIGNER :
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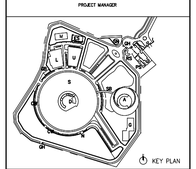
REVISION

NO.	DATE	DESCRIPTION

Dr. Prapong Klysubun
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT MANAGER



BUILDING :
3G Project Site Office (PS)

DRAWN BY: –
CHECKED BY: –
DATE: 20 January 2025
SCALE: A1 1:50 A3 1:100

DRAWING TITLE :
NOTE FOR STEEL STRUCTURE

DRAWING NUMBER :
SPSII-C-PS-ST-017

PROJECT CODE : 2404SPSII
TOTAL SHEET :

CAD FILE :
SPSII-C-PS-ST-011-018.DWG

Work Phase 3 : Construction Drawing

1. DO NOT SCALE OFF THIS DRAWING. WORK FROM THE INDICATED DIMENSION ONLY. ALL SITE DIMENSIONS TO BE VERIFIED BY CONTRACTOR AND ANY DISCREPANCIES REPORTED BACK TO "DKW CONSORTIUM".
2. MANUFACTURERS MUST SUBMIT SHOP DRAWING AND ALL FINISH SAMPLES PRIOR TO PRODUCTION FOR APPROVAL BY DESIGNER.
3. ALL DIMENSIONS ARE MILLIMETRES UNLESS OTHERWISE NOTED.

NOTE FOR STEEL STRUCTURE

NOTE

1. ALL SHOP CONNECTIONS SHALL BE WELDED OR BOLTED, FILLED CONNECTIONS SHALL BE BOLTED EXCEPT WHERE FIELD WELDING IS SHOWN ON DRAWING.
2. FIELD BOLTING SHALL USE HIGHT STRENGTH BOLTS EXCEPT FOR SECONDARY MEMBER SUCH AS GIRTHS, PURLINS, HANDRAILS AND ETC OF WHICH CONNECTIONS MAY BE MADE WITH ORDINARY BOLTS.
3. IF MEMBER CONNECTIONS HAVE NOT BEEN SPECIFIED, JOINT SHALL BE COMPLETE PENETRATION GROOVE WELDS (WITH E70XX) TO FULLY STRENGTH OF MEMBER.
4. ALL WELDING SHALL BE DONE IN ACCORDANCE WITH AWS CODE BY EXPERIENCED AND CERTIFIED WELDERS.
5. CUT, DRILL OR PUNCH HOLES PERPENDICULAR TO METAL SURFACES, DO NOT FLAME-CUT HOLES OR ENLARGE HOLES BY BURNING.
6. THE STEEL FABRICATOR IS TO PROVIDE THE ENGINEER WITH WORKSHOP DRAWING FOR INSPECTION PRIOR TO THE COMMENCEMENT OF FABRICATION.
7. THE FABRICATION AND ERECTION OF STRUCTURAL STEEL WORK SHALL BE SUPERVISED BY A QUALIFIED ENGINEER EXPERIENCED IN SUCH SUPERVISION TO ENSURE THAT ALL THE REQUIREMENTS OF THE DESIGN ARE MET.
8. THE STRUCTURAL ENGINEER HAS DESIGNED THE STRUCTURAL STEEL MEMBER IN SERVICE CONDITION ONLY, THE STEEL ERECTOR IS PROVIDED COMPUTATIONS TO THE STRUCTURAL ENGINEER FOR REVIEW OR STRESSES INDUCED DURING HANDLING, LIFTING, TRANSPORTATION AND ERECTION. ADDITIONS BRACING OR STRENGTHENING REQUIRED FOR THESE CONDITIONS IS THE RESPONSIBILITY OF THE STEEL ERECTOR.
9. ALL STEELWORK BELOW GROUND OR FINISHED SURFACE LEVEL IS TO BE ENCASED IN 75 mm CONCRETE (UNLESS NOTED OTHERWISE)
10. ALL STEELWORK NOT ENCASED IN CONCRETE SHALL HAVE A MINIMUM PROTECTIVE COATING AS FOLLOWS : OR AS STATED IN THE ARCHITECTURAL SPECIFICATIONS, WHICHEVER PROVIDES BETTER PROTECTION.

    10.1 BLAST CLEAN TO SSPC-SP10 STANDARD.
    10.2 APPLY ONE COAT OF 75 MICRONS OF INORGANIC ZINC PRIMER.
    10.3 APPLY 50 MICRONS FINISHING COAT.

11. THE CONTRACTOR SHALL PROVIDE FIREPROOFING MATERIAL TO ALL STRUCTURAL STEEL MEMBERS WITH MINIMUM FIRE RATING RESISTANCE AS STIPULATED BY THAILAND MINISTERIAL REGULATIONS. THE CONTRACTOR SHALL SUBMIT THE MATERIAL SPECIFICATIONS AND FIRE RATING CALCULATIONS WITH P.E. ENDORSEMENT TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR TO PROVIDE AND ELECTRONIC GAUGE TO MEASURE THE ACTUAL THICKNESS OF THE INTUMESCENT COATING APPLIED ON STEEL MEMBER.

TABLE xx.xx : MATERIAL STANDARD

MATERIALS	TIS STANDARD	INTERNATIONAL STANDARD	DESIGN PROPERTY
STEEL SHAPES	TIS 1227 - 2558 : SM400	ASTM A36 JIS G3106 : SM400A	Fy > 2400 ksc Fu > 4000 ksc
STEEL PLATE	TIS 1499 - 2541 : SM400A	ASTM A36 JIS G3106 : SM400A	Fy > 2400 ksc Fu > 4000 ksc
LIGHT GAUGE STEEL	TIS 1228 - 2549 : SSC400	JIS G3350 : SSC400	Fy > 2400 ksc Fu > 4000 ksc
STEEL PIPE (CIRCULAR)	TIS 107 - 2533 : HS41	ASTM A500 : Grade D JIS G3444 : STK400	Fy > 2400 ksc Fu > 4000 ksc
STEEL PIPE (SQUARE & RECTANGULAR)	TIS 107 - 2533 : HS41	ASTM A500 : Grade D JIS G3444 : STKR400	Fy > 2400 ksc Fu > 4000 ksc
ANCHOR BOLT	TIS 171 - 2530 : Gr 4.6	ASTM A36 JIS G3101 : SS400	Ft > 1380 ksc Fv > 690 ksc
ORDINARY BOLT	TIS 171 - 2530 : Gr 4.6	ASTM A307 JIS B1180	Ft > 1380 ksc Fv > 690 ksc
HIGH STRENGTH BOLT (BEARING TYPE)	TIS 171 - 2530 : Gr 8.8	ASTM A325 JIS B1186 (F8T)	Ft > 3030 ksc Fv > 1450 ksc
HIGH STRENGTH BOLT (SLIP - CRITICAL TYPE)	TIS 171- 2530 : Gr 10.9	ASTM A490 JIS B1186 (F10T)	Ft > 3720 ksc Fv > 1450 ksc
WELDING ROD	TIS 49 - 2556	AWS A5.1 E70xx	ALLOWABLE STRESS Fa E70> 1470 ksc

TABLE xx.xx : STANDARD WELDING SYMBOL

BASIC WELD SYMBOLS

BACK	FILLET	PLUG OR SLOT	GROOVE BUTT						
			SQUARE	V	BEVEL	U	J	FLARE	FLARE BEVEL
⌓	◺	▭	‖	V	╱	Y	⅄	⋎	⅄

SUPPLEMENTARY WELD SYMBOLS

BACKING	SPACER	WELD ALL AROUND	FIELD WELD	CONTOUR		FOR OTHER BASIC AND SUPPLEMENTARY WELD SYMBOL SEE...
				FLUSH	CONVEX	
M	M	○	⚑	—	⌒	

STANDARD LOCATION OF ELEMENTS OF WELDING SYMBOL

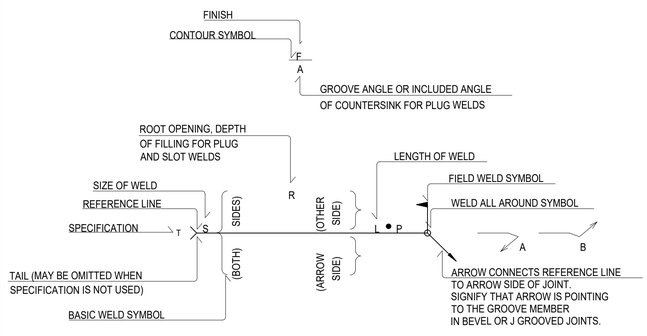
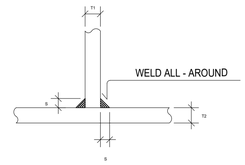


TABLE xx.xx : STANDARD WELDING DETAILS FOR FILLET WELD

TYPE	SECTION	DIMENSION	
		T (mm)	S (mm)
T - JOINTS	T = MIN (T1, T2)	LESS THAN 6	S = T
		6 TO 7	6
		8 TO 10	7
		11 TO 12	10
		13 TO 15	11
		16 TO 19	14
		20 TO 22	16
		23 TO 25	19
		26 TO 28	22
		29 TO 32	24
		33 TO 35	26
LAP - JOINTS	T = MIN (T1, T2)	LESS THAN 6	S = T
		6 TO 7	4
		8 TO 10	6
		11 TO 12	6
		13 TO 15	9
		16 TO 19	9
		20 TO 22	12
		23 TO 25	12
		26 TO 28	12
		29 TO 32	12
		33 TO 35	12



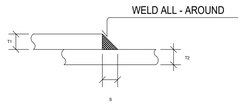
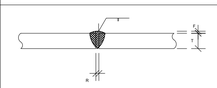
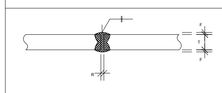
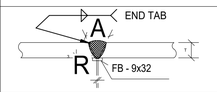
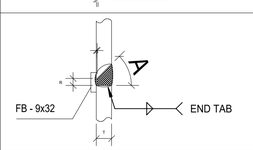
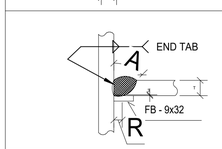
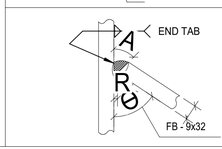


TABLE xx.xx : STANDARD WELDING DETAILS FOR COMPLETE PENETRATION GROOVE WELDS

TYPE	SECTION	DIMENSION
SINGLE GROOVE		T < 3.2 mm F = 0.8 TO 3.2 mm R = 0 TO 1.6 mm
		T < 6 mm F = 0.8 TO 3.2 mm R = 0 TO 1.6 mm
SINGLE - VEE GROOVE		T : UNLIMITED THICKNESS R = 7 mm A = 45°
SINGLE - BEVEL GROOVE		T : UNLIMITED THICKNESS R = 7 mm A = 45°
		T : UNLIMITED THICKNESS R = 7 mm A = 45°
		T : UNLIMITED THICKNESS R = 7 mm A = 45° = 45° TO 90°

OWNER :
SYNCHROTRON LIGHT RESEARCH INSTITUTE (PUBLIC ORGANIZATION)

PROJECT TITLE :
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS

PROJECT LOCATION :
PAYUBNAI SUBDISTRICT, WANG CHAN DISTRICT, RAYONG PROVINCE

DESIGNER :
DKW CONSORTIUM

DESIGN+DEVELOP CO.,LTD.
KEEN CONSULTANTS CO.LTD
WEP ENGINEERING PARTNERS CO., LTD.

ARCHITECTURAL CONSULTANT

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Chatchai	Teerawongpairoj	Se.Lic.Arch. 556

STRUCTURAL CONSULTANT

Assoc. Prof. Dr.	Wanchai Thepparuk	Se.Prof.CE. 1331

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Uthai	Wannaphak	Assoc.Arch. 10825
Potanakajohn	Phadungchot	Assoc.Arch. 14702
Pongsatorn	Rattanaprayoonuch	
Punyaphon	Jantasuriya	

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Saovanee	Kiram	
Bussaporn	Daungnet	Assoc.IA. 1096.

STRUCTURAL ENGINEER

Dr. Tongchate	Nakhata	Se.Prof.CE. 1751
Wacharapong	Prasamkleo	Prof.CE. 8872
Pongsak	Vichaiyo	Prof.CE. 10489
Kanyapak	Chareerak	Prof.CE. 11227
Thitiporn	Atthanan	Assoc.CE. 74938

STRUCTURAL CALCULATION REPORT INSPECTOR

ELECTRICAL ENGINEER

Kiat	Uscharapong	Se.Prof.EE. 441
Sudjai	Hirisintaneong	Se.Prof.EE. 679
Khomeak	Khosirayatithi	Se.Prof.EE. 1130
Supaporn	Rattanaswan	Prof.EE. 5436
Kasidit	Sudklab	Prof.EE. 6991

SANITARY AND FIRE PROTECTION ENGINEER

Siriporn	Akaniwan	Se.Prof.ENV. 86
Theerawat	Pitiyanonant	Prof.ENV. 453
Darin	Sanguansermsri	Prof.ENV. 593
Nuntisit	Thongrak	Prof.ENV. 609
Nattapat	Ngaosa	Assoc.ENV. 4803

AIR-CONDITIONING AND VENTILATION SYSTEM ENGINEER

Anan	Werawuttipon	Se.Prof.ME. 913
Montol	Praekunnatham	Prof.ME. 3350
Wandee	Kusrod	Prof.ME. 5010
Boonpipat	Nimnuanpanich	Assoc.ME. 45561
Pitchakorn	Loraphong	Assoc.ME. 44181

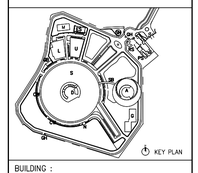
LANDSCAPE ARCHITECT

Chansang	Jarlyasopit	Lic.LA. 112
Theepipach	Ngoenchan	Assoc.LA. 171

REVISION

NO.	DATE	DESCRIPTION

Dr. Prapong Klysubun
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS PROJECT MANAGER



BUILDING :
3G Project Site Office (PS)

DRAWN BY: –
CHECKED BY: –
DATE: 20 January 2025
SCALE: A1 1:50 A3 1:100

DRAWING TITLE :
TYPICAL DETAILS FOR STEEL BEAM

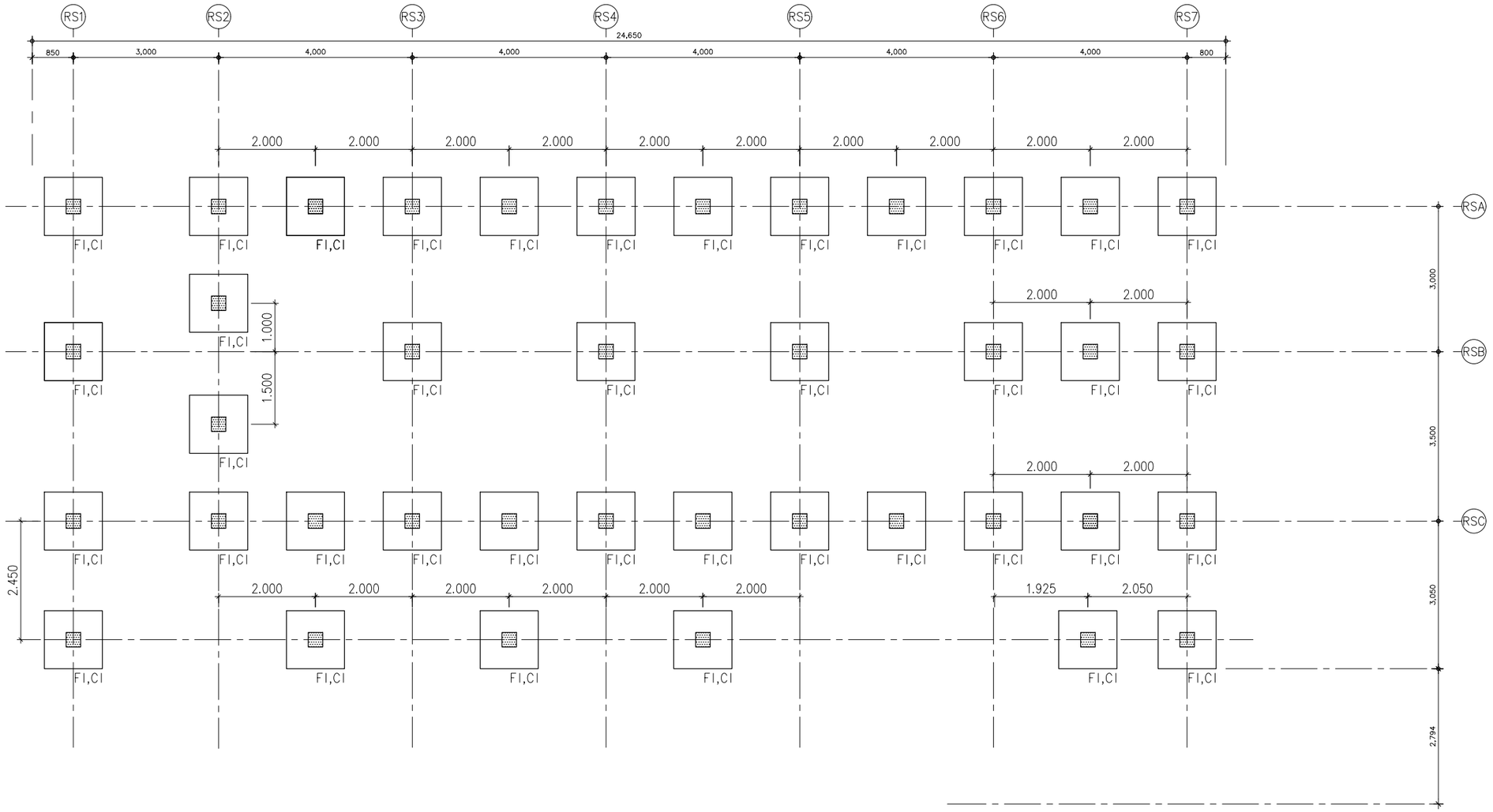
DRAWING NUMBER :
SPSII-C-PS-ST-018

PROJECT CODE : 2404SPSII
TOTAL SHEET :

CAD FILE :
SPSII-C-PS-ST-011-018.DWG

Work Phase 3 :Construction Drawing

1. DO NOT SCALE OFF THIS DRAWING. WORK FROM THE INDICATED DIMENSION ONLY. ALL SITE DIMENSIONS TO BE VERIFIED BY CONTRACTOR AND ANY DISCREPANCIES REPORTED BACK TO "DKW CONSORTIUM".
2. MANUFACTURERS MUST SUBMIT SHOP DRAWING AND ALL FINISH SAMPLES PRIOR TO PRODUCTION FOR APPROVAL BY DESIGNER.
3. ALL DIMENSIONS ARE MILLIMETRES UNLESS OTHERWISE NOTED.



PILING PLAN

SCALE 1:100

OWNER :
SYNCHROTRON LIGHT RESEARCH INSTITUTE
(PUBLIC ORGANIZATION)

PROJECT TITLE :
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING
AND OPERATION BUILDINGS

PROJECT LOCATION :
PAYAMBHA SUBDISTRICT, MUANG CHAM DISTRICT, RAYONG PROVINCE

DESIGNER :
DKW CONSORTIUM

DESIGN+DEVELOP CO.,LTD.
KEEN CONSULTANTS CO.LTD
WEP ENGINEERING PARTNERS CO., LTD.

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Sunsak	Nuanwanthiah	Lic.Arch. 3205
Uthai	Wannaphak	Assoc.Arch. 10825
Patanikajohn	Phadungchat	Assoc.Arch. 14702
Paegaeloa	Rattanapriyanuch	
Punyaphon	Jantaseriya	
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Seevanee	Kiram	
Bussaporn	Daungnet	Assoc.IA. 1096.
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Wacharapong	Prasarnsiloo	Prof.CE. 8872
Pongsak	Wichaiyo	Prof.CE. 10489
Kanyapak	Charoensk	Prof.CE. 11227
Thitiporn	Atthanan	Assoc.CE. 74938
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Sudjai	Hirkwatanawong	Se.Prof.EE. 879
Khomsak	Khaolraythin	Se.Prof.EE. 1130
Supaporn	Rattanaruean	Prof.EE. 5436
Kosidit	Sucklab	Prof.EE. 6991
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Theerawat	Pitiyanarant	Prof.ENV. 453
Dorin	Sangvansermsri	Prof.ENV. 583
Nuntiti	Thongrak	Prof.ENV. 609
Nattapat	Ngoosa	Assoc.ENV. 4803
AIR-CONDITIONING AND VENTILATION SYSTEM ENGINEER		
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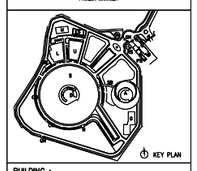
Montol	Praekunnetham	Prof.ME. 3350
Wandee	Kuarod	Prof.ME. 5010
Boonpipat	Nimnuanparich	Assoc.ME. 45561
Pitchakorn	Loraphong	Assoc.ME. 44181
LANDSCAPE ARCHITECT		
Chaosang	Jariyasopit	Lic.LA. 112
Theepipach	Ngoenchan	Assoc.LA. 171

REVISION

NO.	DATE	DESCRIPTION

Dr. Prapong Kiyasubun
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT MANAGER



KEY PLAN

BUILDING :
3G Project Site Office (PS)

DRAWN BY:	CHECKED BY:
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DATE	SCALE
20 January 2025	A1 1:50 A3 1:100

DRAWING TITLE :
PILING PLAN

DRAWING NUMBER :
SPSII-C-PS-ST-101

PROJECT CODE :	TOTAL SHEET :
2404SPSII	

CAD FILE :
SPSII-C-PS-ST-101-202.DWG

Work Phase 3 : Construction Drawing

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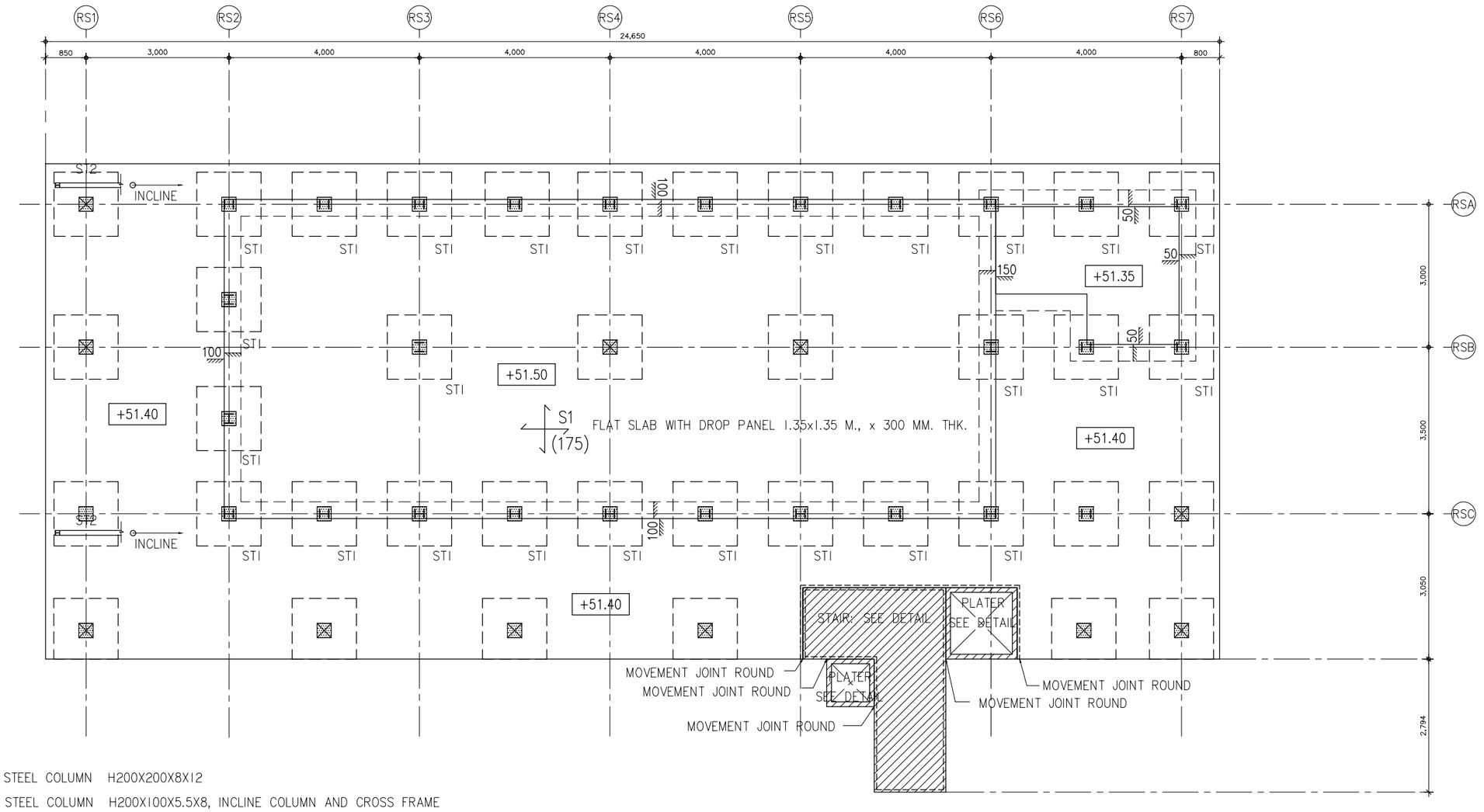


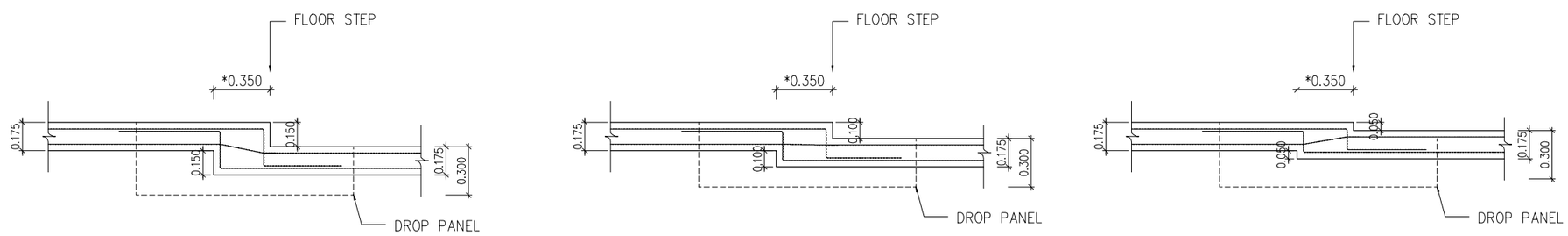
ST1: STEEL COLUMN H200X200X8X12

ST2: STEEL COLUMN H200X100X5.5X8, INCLINE COLUMN AND CROSS FRAME

BASE PLATE 300X300X22 MM. WITH 6-M20 J-BOLT(GRADE 8.8)

1st FLOOR PLAN

SCALE 1:100



TYPICAL FLOOR STEP

SCALE N.T.S.

OWNER :
SYNCHROTRON LIGHT RESEARCH INSTITUTE
(PUBLIC ORGANIZATION)

PROJECT TITLE :
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS

PROJECT LOCATION :
PAYAMAN SUBDISTRICT, WANG CHAN DISTRICT, RAYONG PROVINCE

DESIGNER :
DKW CONSORTIUM

DESIGN+DEVELOP CO.,LTD.
KEN CONSULTANTS CO.LTD
WEP ENGINEERING PARTNERS CO., LTD.

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Puriyaphon Jantasuriya

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Pongsak Vichaiyo Prof.CE. 10489
Kanyapak Chareerak Prof.CE. 11227
Thitiporn Atthanan Assoc.CE. 74638

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Khomeak Khosinaythin Se.Prof.EE. 1130
Supaporn Rattanaseuan Prof.EE. 5436
Kosidit Sucktab Prof.EE. 6991

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Siriporn Akaniean Se.Prof.ENV. 86
Theerawat Pitiyananont Prof.ENV. 453
Darin Songvanseemari Prof.ENV. 503
Nunthit Thongrak Prof.ENV. 609
Nattapat Ngoosa Assoc.ENV. 4803

AIR-CONDITIONING AND VENTILATION SYSTEM ENGINEER
Anan Werawuttipon Se.Prof.ME. 913
Montol Proskunnotham Prof.ME. 3350
Wandee Kusrad Prof.ME. 5010
Boonplipot Nimmuangnoich Assoc.ME. 45561
Pitchakorn Lerophong Assoc.ME. 44181

LANDSCAPE ARCHITECT
Chanseng Jariyangkit Lic.LA. 112
Theeplpach Ngoenchan Assoc.LA. 171

REVISION

NO.	DATE	DESCRIPTION

Dr. Prapong Klyaubun
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT MANAGER

KEY PLAN

BUILDING :
3G Project Site Office (PS)

DRAWN BY:	CHECKED BY:
-	-

DATE	SCALE
20 January 2025	A1 1:50 A3 1:100

DRAWING TITLE :
1st FLOOR PLAN

DRAWING NUMBER :
SPSII-C-PS-ST-102

PROJECT CODE : 2404SPSII	TOTAL SHEET :

CAD FILE :
SPSII-C-PS-ST-101-202.DWG

Work Phase 3 : Construction Drawing

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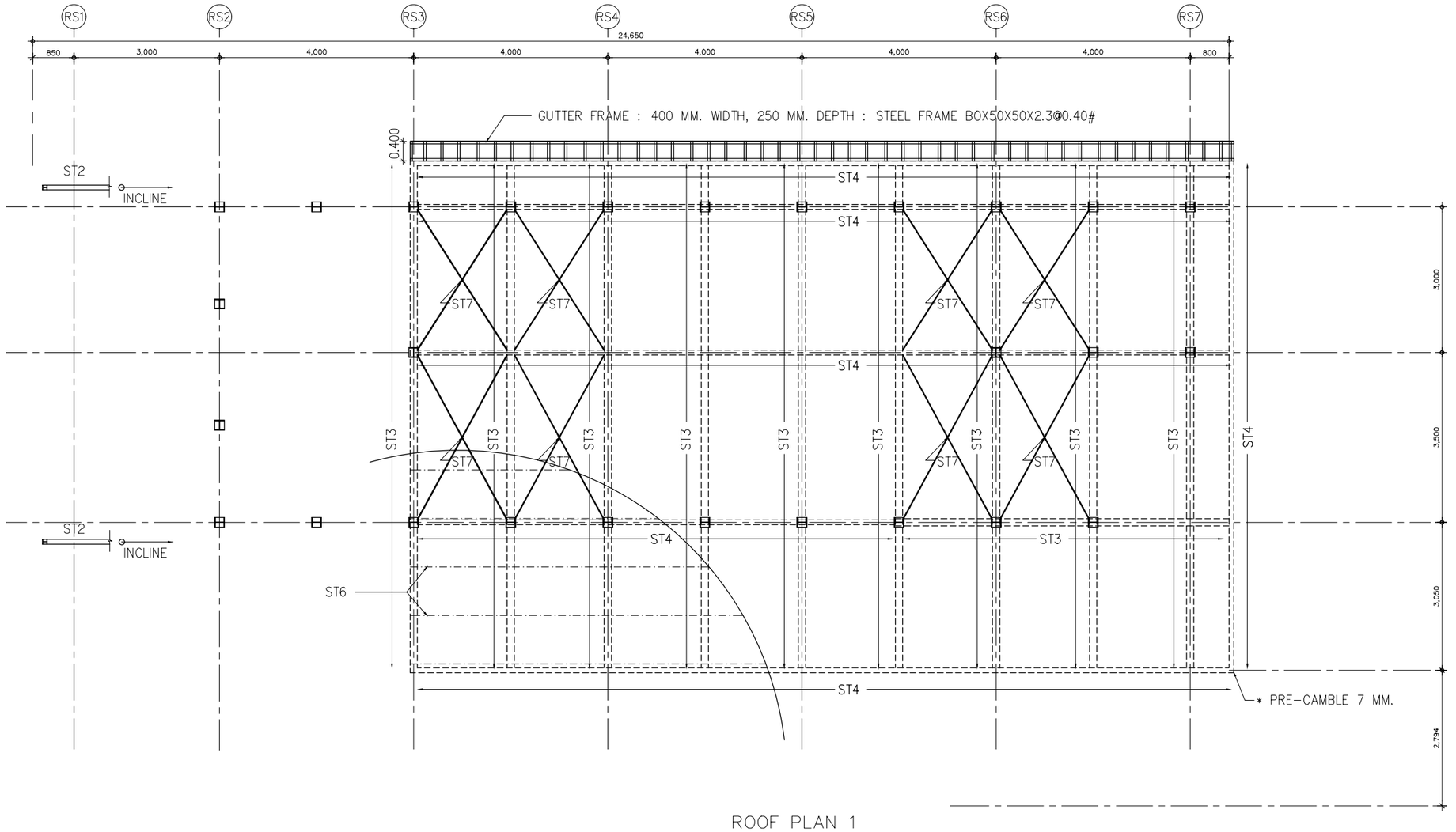

ROOF PLAN 1

SCALE 1:100

ST1: STEEL COLUMN H200X200X8X12, MAIN COLUMN, TOP PLATE 200X200X12 MM. AT TOP LEVEL OF COLUMN

ST2: STEEL COLUMN H200X100X5.5X8, INCLINE COLUMN AND CROSS FRAME

ST3: STEEL BEAM H200X150X6X9, MAIN BEAM

ST4: STEEL BEAM H200X100X5.5X8, SECONDARY BEAM

ST5: STEEL PURLIN C75X45X15X2.3@ 0.80 M.

ST6: STEEL PURLIN C75X45X15X2.3@ 1.00 M.

ST7: X-BRACING, ROD DIA. 16 MM. INCLUDING TURNBUCKLE AND INSTALLATION ACCESSORIES AT LOWER FLANGE LEVEL OF BEAM

OWNER :
SYNCHROTRON LIGHT RESEARCH INSTITUTE (PUBLIC ORGANIZATION)

PROJECT TITLE :
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS

PROJECT LOCATION :
PAYUBNAI SUBDISTRICT, WANG CHAN DISTRICT, RAYONG PROVINCE

DESIGNER :
DKW CONSORTIUM

DESIGN+DEVELOP CO.,LTD.
KEEN CONSULTANTS CO.,LTD.
WEP ENGINEERING PARTNERS CO., LTD.

ARCHITECTURAL CONSULTANT

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Chatchai	Teerawongsairoj	Se.Lic.Arch. 556

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Assoc. Prof. Dr. Wanchai	Thepanuk	Se.Prof.CE. 1331

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Pongsaton	Rattanapiyanuch	
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Kris	Chotipanich	Assoc.Arch. 8384, Lic.IA. 100
Saovanee	Kiram	
Busaaporn	Dounguet	Assoc.IA. 1096.

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Dr. Tongchete	Nokhoto	Se.Prof.CE. 1751
Wacharapong	Prasarnklao	Prof.CE. 8872
Pongpak	Vichaiya	Prof.CE. 10489
Kanyapak	Charoensik	Prof.CE. 11227
Thitiporn	Atthanan	Assoc.CE. 74938

STRUCTURAL CALCULATION REPORT INSPECTOR

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Khomedt	Khoeirayathin	Se.Prof.EE. 1130
Supaporn	Rattanasuwan	Prof.EE. 5436
Kasidit	Sudkob	Prof.EE. 6991

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Theeravat	Pitiyanonont	Prof.ENV. 453
Darin	Sangsanaserrmart	Prof.ENV. 593
Nuntitit	Thongrak	Prof.ENV. 609
Natapat	Ngaosa	Assoc.ENV. 4803

AIR-CONDITIONING AND VENTILATION SYSTEM ENGINEER

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Montol	Prookunnatham	Prof.ME. 3350
Wandee	Kuarod	Prof.ME. 5010
Boonsiput	Ninnuanpanich	Assoc.ME. 45561
Pitchakarn	Laraphong	Assoc.ME. 44181

LANDSCAPE ARCHITECT

Chaiwang	Jarlyaspit	Lic.LA. 112
Theeptpach	Ngoenchan	Assoc.LA. 171

REVISION

NO.	DATE	DESCRIPTION

Dr. Prapong Klyaubun
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT MANAGER

KEY PLAN

BUILDING :
3G Project Site Office (PS)

DRAWN BY:	CHECKED BY:
-	-

DATE	SCALE			
20 January 2025	A1	1:50	A3	1:100

DRAWING TITLE :
ROOF PLAN 1

DRAWING NUMBER :
SPSII-C-PS-ST-103

PROJECT CODE :	TOTAL SHEET :
2404SPSII	

CAD FILE :
SPSII-C-PS-ST-101-202.DWG

Work Phase 3 :Construction Drawing

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2. MANUFACTURERS SHOP DRAWINGS AND ALL FIELD SAMPLES SHALL BE APPROVED BY DESIGNER BEFORE INSTALLATION.
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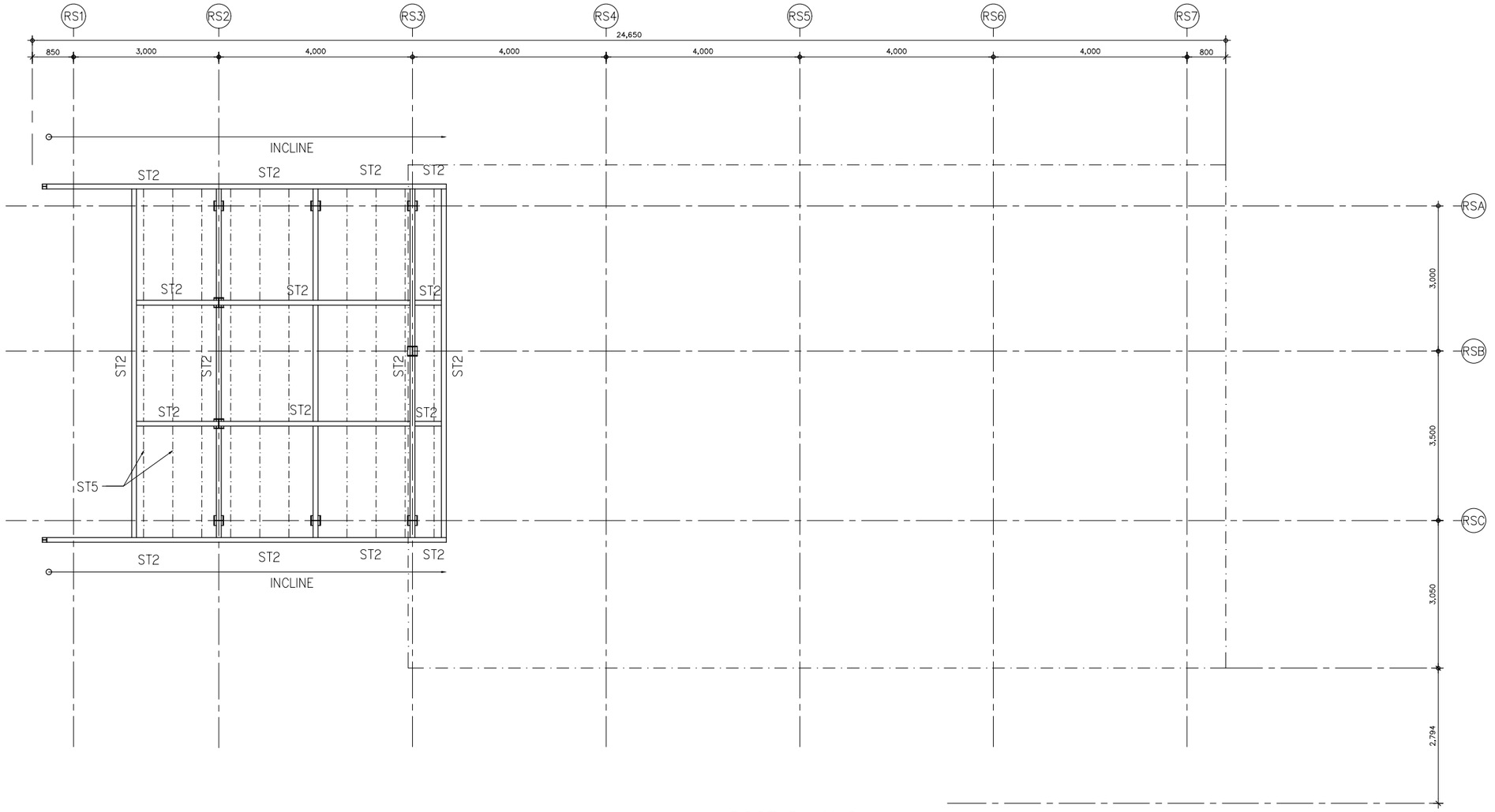

ROOF PLAN 2

SCALE 1:100

ST1: STEEL COLUMN H200X200X8X12, MAIN COLUMN, TOP PLATE 200X200X12 MM. AT TOP LEVEL OF COLUMN

ST2: STEEL COLUMN H200X100X5.5X8, INCLINE COLUMN AND CROSS FRAME

ST3: STEEL BEAM H200X150X6X9, MAIN BEAM

ST4: STEEL BEAM H200X100X5.5X8, SECONDARY BEAM

ST5: STEEL PURLIN C75X45X15X2.3@ 0.80 M.

ST6: STEEL PURLIN C75X45X15X2.3@ 1.00 M.

ST7: X-BRACING, ROD DIA. 16 MM. INCLUDING TURNBUCKLE AND INSTALLATION ACCESSORIES AT LOWER FLANGE LEVEL OF BEAM

OWNER :
SYNCHROTRON LIGHT RESEARCH INSTITUTE
(PUBLIC ORGANIZATION)

PROJECT TITLE :
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS

PROJECT LOCATION :
PAYAYAN SUBDISTRICT, WANG CHAN DISTRICT, RAYONG PROVINCE

DESIGNER :
DKW CONSORTIUM

DESIGN+DEVELOP CO.,LTD.
KIEN CONSULTANTS CO.LTD
WEP ENGINEERING PARTNERS CO., LTD.

ARCHITECTURAL CONSULTANT		
Kulthorn	Luemshavee	Se.Lic.Arch. 668
Chotchai	Teerawongpairoj	Se.Lic.Arch. 556
STRUCTURAL CONSULTANT		
Assoc. Prof. Dr. Wanchai Thoparuk		Se.Prof.CE. 1331
ARCHITECT		
Chuvadrat	Piyathammakun	Se.Lic.Arch. 631
Surasak	Nuamsanitkhlh	Lic.Arch. 3208
Utsai	Wannaphak	Assoc.Arch. 10825
Patanakajohn	Phadungchot	Assoc.Arch. 14702
Pongsiton	Rattanaprijanuch	
Punyaphon	Jantasuriya	
INTERIOR ARCHITECT		
Kris	Chotipanich	Assoc.Arch. 8384, Lic.IA. 103
Soovanee	Kiram	
Bussaporn	Daungnet	Assoc.IA. 1096.
STRUCTURAL ENGINEER		
Dr. Tongdate	Nakhata	Se.Prof.CE. 1751
Wacharapong	Prasamkiao	Prof.CE. 8872
Pongsak	Vichaiya	Prof.CE. 10489
Kanyapak	Charoerak	Prof.CE. 11227
Thitiporn	Atthanan	Assoc.CE. 74638
STRUCTURAL CALCULATION REPORT INSPECTOR		
ELECTRICAL ENGINEER		
Klat	Ucharapong	Se.Prof.EE. 441
Sudjai	Kitvetanasong	Se.Prof.EE. 678
Khamaok	Khaikeyathin	Se.Prof.EE. 1130
Supaporn	Rattanaseuan	Prof.EE. 5436
Kasidit	Sudklab	Prof.EE. 6991
SANITARY AND FIRE PROTECTION ENGINEER		
Siriporn	Akaniwan	Se.Prof.ENV. 86
Theerawat	Pitiyananont	Prof.ENV. 453
Darin	Songunseermari	Prof.ENV. 583
Nuntbilt	Thongrak	Prof.ENV. 609
Nattapat	Ngaosa	Assoc.ENV. 4803
AIR-CONDITIONING AND VENTILATION SYSTEM ENGINEER		
Anan	Werawuttipon	Se.Prof.ME. 913
Montol	Proekunmotham	Prof.ME. 3350
Wandee	Kusrad	Prof.ME. 5010
Boonplpat	Nimnuanpanich	Assoc.ME. 45561
Pitchakorn	Laraphang	Assoc.ME. 44181
LANDSCAPE ARCHITECT		
Charoang	Jariyasapit	Lic.LA. 112
Thanpipach	Ngoenchan	Assoc.LA. 171

REVISION

NO.	DATE	DESCRIPTION

Dr. Prapong Klyaubun
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT MANAGER

KEY PLAN

BUILDING :
3G Project Site Office (PS)

DRAWN BY:	CHECKED BY:
-	-
DATE	SCALE
20 January 2025	A1 1:50 A3 1:100

DRAWING TITLE :
ROOF PLAN 2

DRAWING NUMBER :
SPSII-C-PS-ST-104

PROJECT CODE :	TOTAL SHEET :
2404SPSII	

CAD FILE :
SPSII-C-PS-ST-101-202.DWG

Work Phase 3 : Construction Drawing

1. DO NOT SCALE OFF THIS DRAWING. WORK FROM THE INDICATED DIMENSION ONLY. ALL SITE DIMENSIONS TO BE VERIFIED BY CONTRACTOR AND ANY DISCREPANCIES REPORTED BACK TO TWIN CONSORTIUM.
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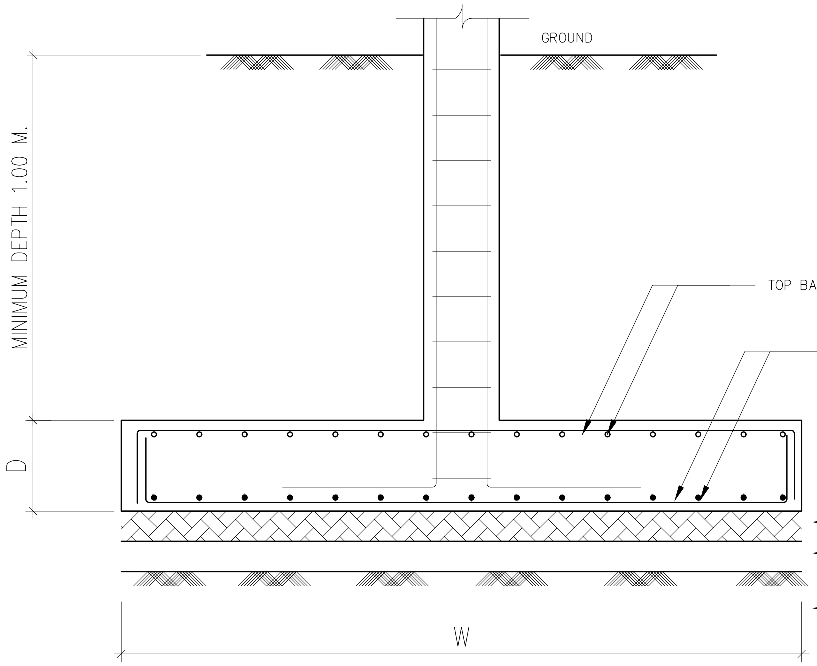
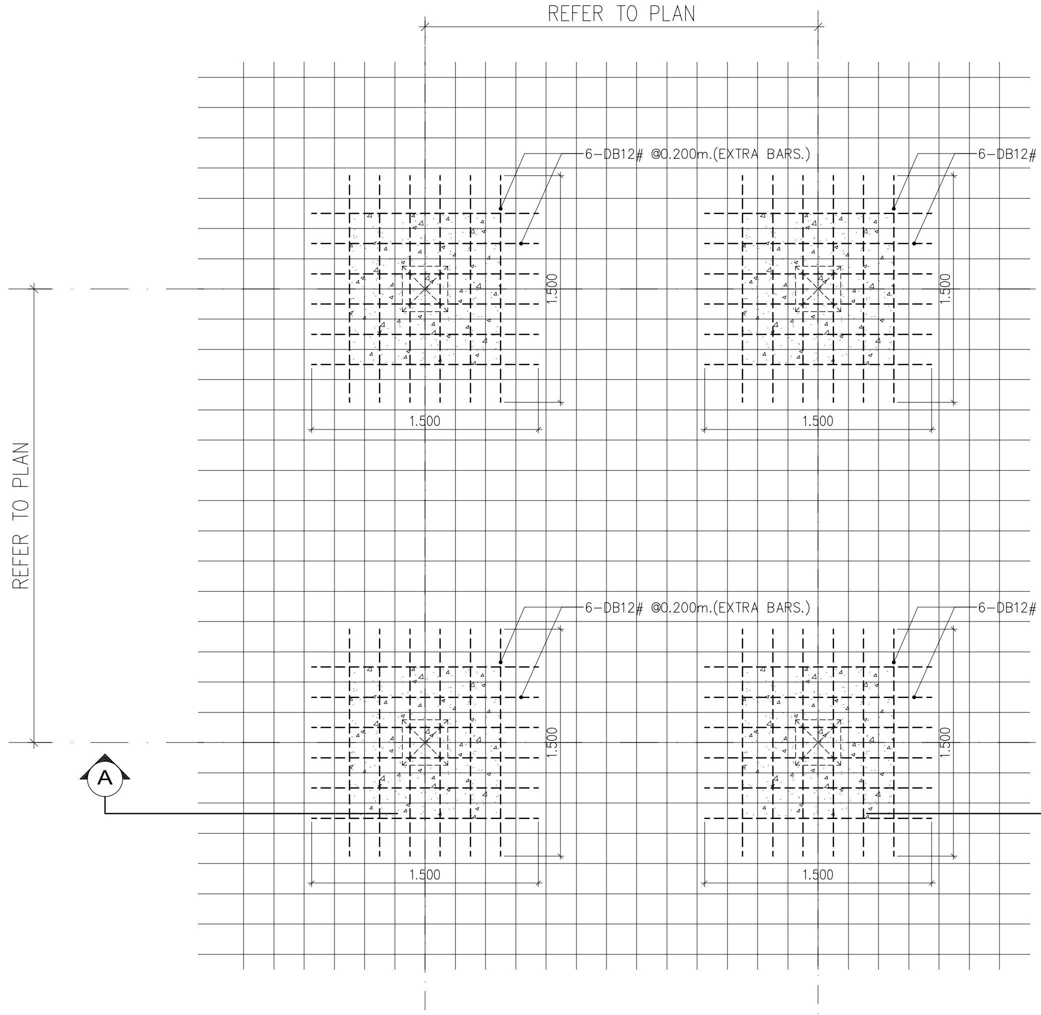
3. ALL DIMENSIONS ARE MILLIMETRES UNLESS OTHERWISE NOTED.

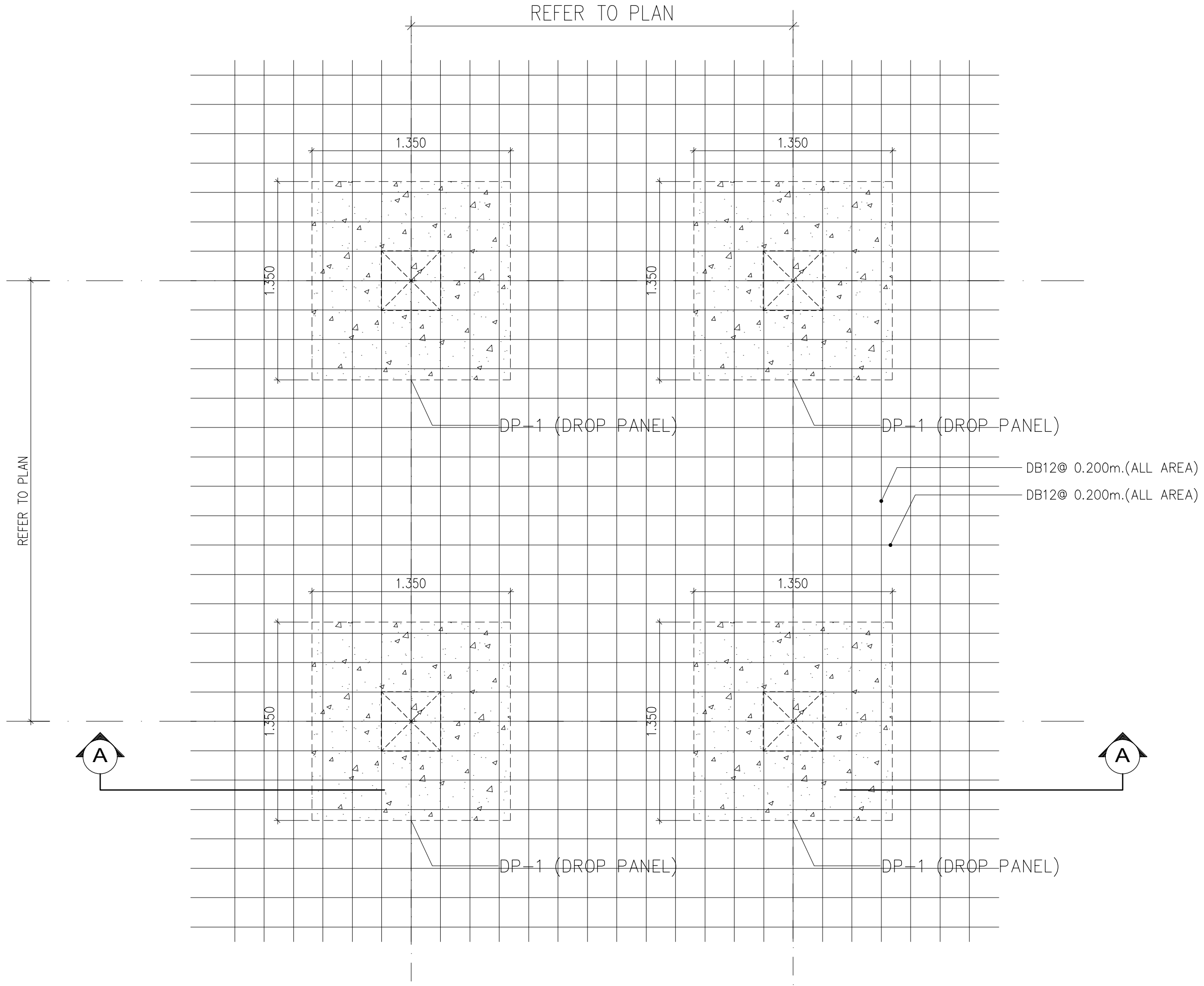


FOUNDATION ID.	W(M.)	D(M.)	TOP BAR	BOTTOM BAR
F1	1.20X1.20	0.30	RB9@0.150#	DB12@0.150#

LEVEL / COL NO.	C1
FL. L1	0.300 × 0.300
FOOTING	MAIN BAR = 4-DB12(CONNER) +4-DB12 (MIDDLE) STIRRUP = RB9@0.150 m.



S1 TOP REINFORCEMENT
SCALE 1:25



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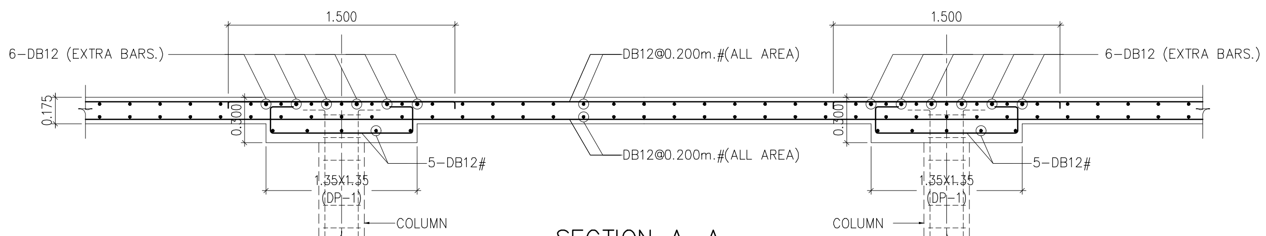

SECTION A–A
SCALE 1:50

OWNER :
SYNCHROTRON LIGHT RESEARCH INSTITUTE (PUBLIC ORGANIZATION)

PROJECT TITLE :
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT LOCATION :
PAYUBNAI SUBDISTRICT, WANG CHAN DISTRICT, RAYONG PROVINCE

DESIGNER :
DKW CONSORTIUM

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WEP ENGINEERING PARTNERS CO., LTD.
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VIBHAVADI-RANGSIT ROAD. CHOMPOL. CHATUCHAK
10900 BANGKOK THAILAND. TEL. 02-5122873 TO 7

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INTERIOR ARCHITECT
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Saovanee Kiram
Bussaporn Doungnet Assoc.IA. 1096.

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Kanyapak Chareerak Prof.CE. 11227
Thitiporn Atthanan Assoc.CE. 74938

STRUCTURAL CALCULATION REPORT INSPECTOR

ELECTRICAL ENGINEER
Kiat Uscharapong Se.Prof.EE. 441
Sudjai Hiriwatanawong Se.Prof.EE. 679
Khomeak Khosirayothin Se.Prof.EE. 1130
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SANITARY AND FIRE PROTECTION ENGINEER
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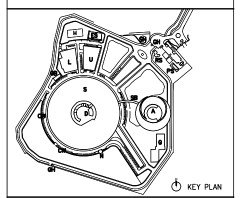
Boonpipat Nimnuanpanich Assoc.ME. 45561
Pitchakorn Loraphong Assoc.ME. 44181

LANDSCAPE ARCHITECT
Chansang Jariyasopit Lic.LA. 112
Theepipach Ngoenchan Assoc.LA. 171

REVISION

NO.	DATE	DESCRIPTION

Dr. Prapong Klysubun
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT MANAGER



BUILDING :
3G Project Site Office (PS)

DRAWN BY:	CHECKED BY:
–	–

DATE	SCALE
20 January 2025	A1 1:50 A3 1:100

DRAWING TITLE :
FOOTING, COLUMN AND SLAB DETAIL

DRAWING NUMBER :
SPSII-C-PS-ST-201

PROJECT CODE : 2404SPSII
TOTAL SHEET :

CAD FILE :
SPSII-C-PS-ST-101-202.DWG

Work Phase 3 :Construction Drawing

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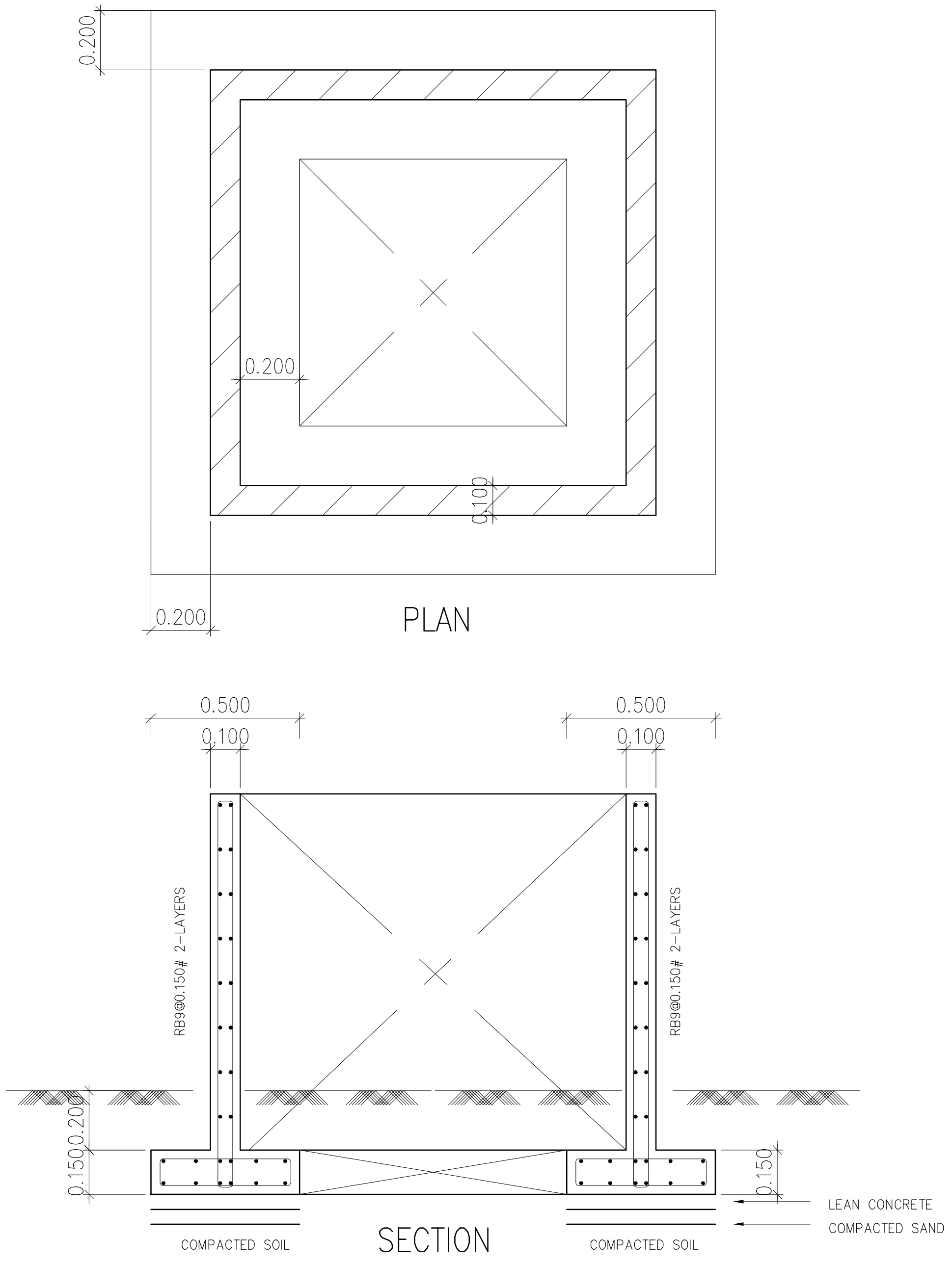
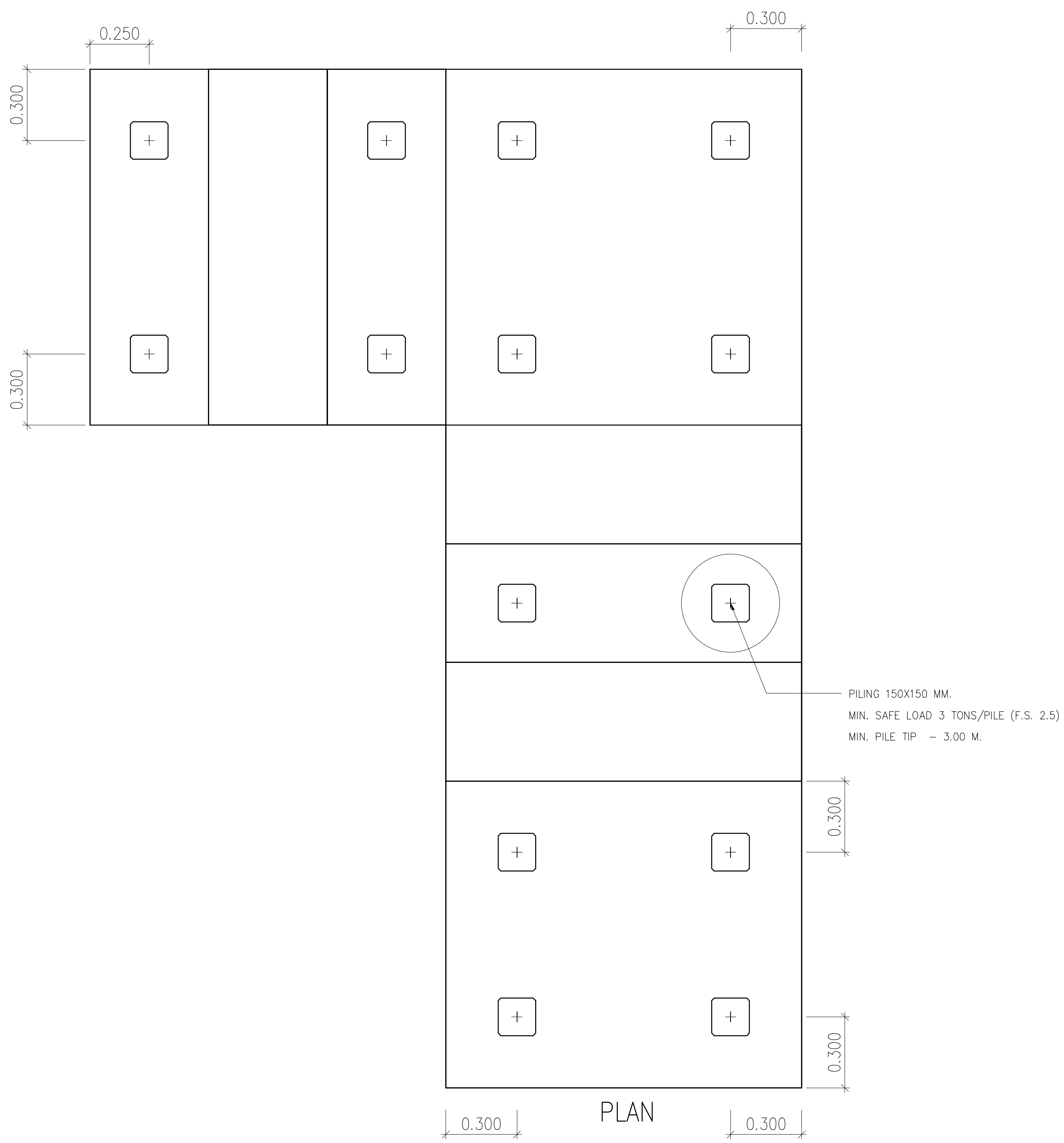
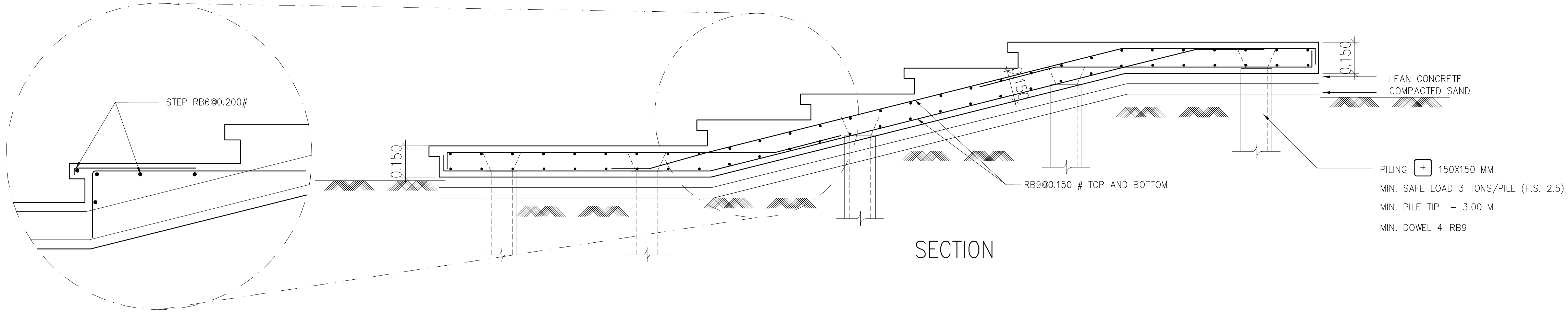


PLANTER
SCALE 1:25



STAIR
SCALE 1:25



OWNER :
SYNCHROTRON LIGHT RESEARCH INSTITUTE (PUBLIC ORGANIZATION)

Siam Photon

PROJECT TITLE :
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS

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LANDSCAPE ARCHITECT

Chansang	Jariyasopit	Lic.LA. 112
Theepipach	Ngoenchan	Assoc.LA. 171

REVISION

NO.	DATE	DESCRIPTION

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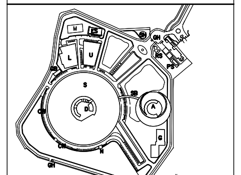
3 GeV SYNCHROTRON LIGHT SOURCE BUILDING AND OPERATION BUILDINGS
PROJECT MANAGER



KEY PLAN

BUILDING :
3G Project Site Office (PS)

DRAWN BY:	CHECKED BY:
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DATE	SCALE			
20 January 2025	A1	1:50	A3	1:100

DRAWING TITLE :
STAIR DETAIL

DRAWING NUMBER :
SPSII-C-PS-ST-202

PROJECT CODE :	TOTAL SHEET :
2404SPSII	

CAD FILE :
SPSII-C-PS-ST-101-202.DWG

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