

## Project Drawing

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# ORCHID HOUSE

1. GENERAL

GE-001	Cover Sheet	1
GE-101	Sheet List 1	2
GE-102	Sheet List 2	3
GE-103	Sheet List 3	4
GE-201	General Symbols	5
GE-211	General Abbreviations	6
GE-301	Urban Project Location	7
GE-310	Urban Proposal Explanation 1	8
GE-311	Urban Proposal Explanation 2	9
GE-320	Existing Building Drawings and Analysis	10
GE-330	Competition Dwelling	11
GE-401	Pavilion East Side Rendering	12
GE-402	Pavilion West Side Rendering	13

2. ARCHITECTURAL

AR-001	La Cité du Soleil® Plan	14
AR-002	Site Plan	15
AR-011	Solar Envelope	16
AR-014	Architecture Footprint	17
AR-017	Measurable Area	18
AR-021	Ground Level Plan	19
AR-022	Mezzanine Level Plan	20
AR-031	Roof Level Plan	21
AR-041	Reconfigurable Feature 1	22
AR-042	Reconfigurable Feature 2	23
AR-043	Reconfigurable Feature 3	24
AR-044	Reconfigurable Feature 4	25
AR-051	Site Entrance and Exit	26
AR-101	Site Elevation	27
AR-111	East Elevation	28
AR-112	North Elevation	29
AR-113	South Elevation	30
AR-114	West Elevation	31
AR-201	Longitudinal Section 1	32
AR-202	Longitudinal Section 2	33
AR-203	Longitudinal Section 3	34
AR-211	Transversal Section 1	35
AR-212	Transversal Section 2	36
AR-213	Transversal Section 3	37
AR-301	Window Schedule and Details 1	38
AR-302	Window Schedule and Details 2	39
AR-303	Window Schedule and Details 3	40
AR-304	Window Schedule and Details 4	41
AR-305	Window Schedule and Details 5	42
AR-306	Window Schedule and Details 6	43
AR-307	Window Schedule and Details 7	44
AR-308	Window Schedule and Details 8	45
AR-309	Window Schedule and Details 9	46
AR-311	Door Schedule and Details 1	47
AR-312	Door Schedule and Details 2	48
AR-321	Floor Construction Ground Level	49
AR-322	Floor Construction Mezzanine Level	50
AR-323	Floor Construction Details Ground Level 1	51
AR-324	Floor Construction Details Ground Level 2	52
AR-325	Floor Construction Details Ground Level 3	53
AR-326	Floor Construction Details Ground Level 4	54
AR-327	Floor Construction Details Ground Level 5	55
AR-328	Floor Construction Details Mezzanine Level 1	56
AR-329	Floor Construction Details Mezzanine Level 2	57
AR-330	Floor Construction Details Mezzanine Level 3	58
AR-331	Floor Construction Details Mezzanine Level 4	59
AR-332	Ceiling Construction Details Mezzanine Level 1	60
AR-333	Ceiling Construction Details Mezzanine Level 2	61
AR-334	Ceiling Construction Details Mezzanine Level 3	62
AR-336	Roof Construction Details	63
AR-341	Wall Sections and Construction Details 1	64
AR-351	Partitions Details	65

AR-361	Joints Details 1	66
AR-362	Joints Details 2	67
AR-363	Joints Details 3	68
AR-364	Joints Details 4	69
AR-371	Stair Details 1	70
AR-372	Stair Details 2	71
AR-401	Green Core Details 1	72
AR-402	Green Core Details 2	73
AR-403	Green Core Details 3	74
AR-404	Green Core Details 4	75
AR-411	Blue Wall Details	76
AR-421	Smart Skin Details 1	77
AR-422	Smart Skin Details 2	78
AR-431	Thermal Wall Details 1	79
AR-432	Thermal Wall Details 2	80
AR-433	Thermal Wall Details 3	81
AR-434	Thermal Wall Details 4	82
AR-435	Thermal Wall Details 5	83
AR-436	Thermal Wall Details 6	84
AR-437	Thermal Wall Details 7	85
AR-438	Thermal Wall Details 8	86
AR-439	Thermal Wall Details 9	87
AR-440	Thermal Wall Details 10	88
AR-441	Thermal Wall Details 11	89

3. BIOCLIMATIC ANALYSIS (BA)

BA-001	Taipei Climate Analysis	90
BA-002	Taipei Shading Analysis	91
BA-003	Taipei Wind Rose Analysis	92
BA-004	Versailles Climate Analysis	93
BA-005	Versailles Shading Analysis	94
BA-006	Versailles Wind Rose Analysis	95
BA-011	Bioclimatic Strategies	96
BA-012	Natural Ventilation	97
BA-013	Solar Chemny	98
BA-014	Earth/Vegetation cooling	99
BA-015	Evaporative Cooling	100
BA-016	Direct Solar Heating	101
BA-017	Bioclimatic Drawings Heating	102
BA-018	Thermal Wall in Versailles	103
BA-019	Thermal Wall in Taipei	104
BA-020	Heat Exchanger Preheated by Solar Hot Water	105
BA-021	Heat Pump	106

4. INTERIORS (IN)

IN-001	Ground Level Floor	107
IN-002	Mezzanine Level Floor	108
IN-101	Reflected Ceiling	109
IN-201	Interior Elevation 1	110
IN-202	Interior Elevation 2	111
IN-203	Interior Elevation 3	112
IN-204	Interior Elevation 4	112
IN-205	Interior Elevation 5	114
IN-211	Interior Elevation 6	115
IN-212	Interior Elevation 7	116
IN-301	Ground Level Furnishings	117
IN-302	Mezzanine Level Furnishings	118
IN-401	Kitchen Plan 1	119
IN-402	Kitchen Plan 2	120
IN-411	Kitchen Elevations	121
IN-421	Kitchen Section 1	122
IN-422	Kitchen Section 2	123
IN-423	Kitchen Section 3	124
IN-501	Bathroom Plan	125
IN-511	Bathroom Elevations	126



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 Checked by: -  
 Scale: -  
 Unit: -

DWG. Title: SHEET LIST 1  
 DWG. No.: GE-101 PAGE: 2

IN-601	Interior Rendering Entrance	127
IN-602	Interior Rendering Living Room	128
IN-603	Interior Rendering 2nd Floor	129
IN-604	Interior Rendering View From Terrace	130
IN-701	Workstation Plan	131
IN-711	Workstation Elevations	132
IN-721	Workstation Sections	133

**5. STRUCTURAL (ST)**

ST-001	Foundation Plan and Details	134
ST-002	Structural Floor Unit	135
ST-011	Structural Ground Level Plan	136
ST-012	Structural Mezzanine Level Plan	137
ST-013	Structural Elements Marking Ground Level Plan	138
ST-014	Structural Elements Marking Mezzanine Level Plan	139
ST-021	Structural Roof Plan	140
ST-022	Structural Roof Units	141
ST-023	Structural Elements Marking Roof Plan	142
ST-101	Structural Longitudinal Sections Frame 1	143
ST-102	Structural Longitudinal Sections Frame 2	144
ST-103	Structural Longitudinal Sections Frame 3	145
ST-104	Structural Longitudinal Sections Frame 4	146
ST-111	Structural Transversal Sections Frame A	147
ST-112	Structural Transversal Sections Frame A-3	148
ST-113	Structural Transversal Sections Frame A-4	149
ST-114	Structural Transversal Sections Frame B	150
ST-115	Structural Transversal Sections Frame B-1	151
ST-116	Structural Transversal Sections Frame C	152
ST-117	Structural Transversal Sections Frame C-1	153
ST-118	Structural Transversal Sections Frame D	154
ST-201	Structural Blow ups	155
ST-301	Structural Details	156
ST-302	Structural Details Axon	157
ST-401	Structural Axon	158

**6. FIRE PROTECTION (FP)**

FP-001	Fire Protection Details	159
FP-002	Fire Protection : Ground Level	160
FP-003	Fire Protection : Mezzanine Level	161
FP-004	Fire Protection Evacuation Path : Ground Level	162
FP-005	Fire Protection Evacuation Path : Mezzanine Level	163

**7. PLUMBING (PL)**

PL-001	Plumbing Supply and Removal Ground Level Plan.	164
PL-002	Plumbing Supply and Removal Ground Mezzanine Plan.	165
PL-011	Gray Water Ground Level	166
PL-012	Gray Water Mezzanine Level	167
PL-021	Drain / Waste / Vent	168
PL-031	Containers and Fill Locations	169
PL-101	Schematic diagram in Taiwan	170
PL-102	Schematic diagram in Competition	171
PL-201	Supply and removal Clean Water Isometric	172
PL-202	Supply and removal Hot Water Isometric	173
PL-211	Grey water Isometric	174
PL-221	Drain/Waste/Vent Isometric	175
PL-301	Green Core Irrigation Plan	176
PL-302	Green Core Irrigation Elevation 1	177
PL-303	Green Core Irrigation Elevation 2	178

**8. SOLAR WATER HEATING (SW)**

SW-001	Solar Water Plan	179
SW-101	Solar Water Isometric	180
SW-201	Solar Water Schematic	181

**9. MECHANICAL (ME)**

ME-001	HVAC Distribution Plan Ground Level	182
ME-002	HVAC Distribution Plan Mezzanine Level	183
ME-011	HVAC equipment 1	184

ME-012	HVAC equipment 2	185
ME-021	Heating	186
ME-031	Cooling	187
ME-041	Ventilation 1	188
ME-042	Ventilation 2	189
ME-101	Mechanical room elevations	190
ME-201	HVAC System Schematic drawings	191
ME-211	Heating mode Schematic drawings 1	192
ME-212	Heating mode Schematic drawings 2	193
ME-221	Cooling mode Schematic drawings 1	194
ME-222	Cooling mode Schematic drawings 2	195
ME-231	Controls 1	196
ME-232	Controls 2	197
ME-301	Isometric Distribution 1	198
ME-302	Isometric Distribution 2	199

**10. ELECTRICAL (EL)**

EL-001	Grid interconnection	200
EL-201	DC wiring diagram	201
EL-301	Power Plan Ground Level	202
EL-302	Power Plan Mezzanine Level	203
EL-401	Lighting Plan Site	204
EL-402	Lighting Plan Ground Level	205
EL-403	Lighting Plan Mezzanine Level	206
EL-501	One-line Diagram 1	207
EL-502	One-line Diagram 2	208
EL-503	One-line Diagram 3	209
EL-601	AC Circuit layout	210
EL-602	AC Circuit layout	211
EL-603	AC Circuit layout	212

**11. PHOTOVOLTAIC SYSTEM (PV)**

PV-001	Photovoltaic System: General 1	213
PV-002	Photovoltaic System: General 2	214
PV-003	Photovoltaic System: General 3	215
PV-011	Photovoltaic System: DC circuits	216
PV-021	Photovoltaic System: AC circuits	217
PV-031	Photovoltaic System: grounding system	218
PV-041	Photovoltaic System: Module Layout	219
PV-042	Photovoltaic System: Module String Layout	220

**12. TELECOMMUNICATIONS AND BUILDING AUTOMATIZATION SYSTEM (BAS)**

BAS-001	Wiring Plan Ground Level	221
BAS-002	Wiring Plan Mezzanine Level	222
BAS-101	Schematic diagram 1	223
BAS-102	Schematic diagram 2	224
BAS-201	Equipment 1	225
BAS-202	Equipment 2	226

**13. SDE INSTRUMENTATION DRAWINGS (ID)**

ID-001-1	General Monitoring Ground Level	227
ID-001-2	General Monitoring Mezzanine Level	228
ID-002	Monitoring Panel Room	229
ID-003-1	Electricity Meters Topology 1	230
ID-003-2	Electricity Meters Topology 2	231
ID-004	Electricity Meters Connection	232
ID-005-1	House Appliances Ground Level	233
ID-005-2	House Appliances Mezzanine Level	234



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Drawn by	ST
Checked by	-
Scale	-
Unit	-

DWG. Title	
SHEET LIST 2	
DWG. No.	PAGE
GE-102	3

14. SITE OPERATION (SO)

SO-001	Trucks shipment 1	235
SO-011	Trucks Shipment During Assembly Phase 1	236
SO-012	Trucks Shipment During Assembly Phase 2	237
SO-013	Trucks Shipment During Assembly Phase 3	238
SO-014	Trucks Shipment During Assembly Phase 4	239
SO-015	Trucks Shipment During Assembly Phase 5	240
SO-021	Trucks Shipment During Disassembly Phase 1	241
SO-022	Trucks Shipment During Disassembly Phase 2	242
SO-023	Trucks Shipment During Disassembly Phase 3	243
SO-024	Trucks Shipment During Disassembly Phase 4	244
SO-025	Trucks Shipment During Disassembly Phase 5	245
SO-101	La Cité du Soleil® Plan	246
SO-102	Assembly Lot Plan	247
SO-103	Disassembly Lot Plan	248
SO-201	Assembly Phase 1	249
SO-202	Assembly Phase 2	250
SO-203	Assembly Phase 3	251
SO-204	Assembly Phase 4	252
SO-205	Assembly Phase 5	253
SO-206	Assembly Phase 6	254
SO-207	Assembly Phase 7	255
SO-208	Assembly Phase 8	256
SO-209	Assembly Phase 9	257
SO-210	Assembly Phase 10	258
SO-301	Disassembly Phase 1	259
SO-302	Disassembly Phase 2	260
SO-303	Disassembly Phase 3	261
SO-304	Disassembly Phase 4	262
SO-305	Disassembly Phase 5	263
SO-306	Disassembly Phase 6	264
SO-307	Disassembly Phase 7	265
SO-308	Disassembly Phase 8	266
SO-309	Disassembly Phase 9	267
SO-310	Disassembly Phase 10	268
SO-401	Assembly Lot Plan Truck 01	269
SO-402	Assembly Lot Plan Truck 02	270
SO-403	Assembly Lot Plan Truck 03	271
SO-404	Assembly Lot Plan Truck 04	272
SO-405	Assembly Lot Plan Truck 05	273
SO-406	Assembly Lot Plan Truck 06	274
SO-407	Assembly Lot Plan Truck 07	275
SO-408	Assembly Lot Plan Truck 08	276
SO-409	Assembly Lot Plan Truck 09	277
SO-410	Assembly Lot Plan Truck 10	278
SO-411	Assembly Lot Plan Truck 11	279
SO-412	Assembly Lot Plan Truck 12	280
SO-413	Assembly Lot Plan Truck 13	281
SO-414	Assembly Lot Plan Truck 14	282
SO-415	Assembly Lot Plan Truck 15	283
SO-501	Disassembly Lot Plan Truck 01	284
SO-502	Disassembly Lot Plan Truck 02 & 03	285
SO-503	Disassembly Lot Plan Truck 04	286
SO-504	Disassembly Lot Plan Truck 05	287
SO-505	Disassembly Lot Plan Truck 06	288
SO-506	Disassembly Lot Plan Truck 07	289
SO-507	Disassembly Lot Plan Truck 08	290
SO-508	Disassembly Lot Plan Truck 09 & 10	291
SO-509	Disassembly Lot Plan Truck 11	292
SO-510	Disassembly Lot Plan Truck 12	293
SO-511	Disassembly Lot Plan Truck 13	294
SO-512	Disassembly Lot Plan Truck 14	295
SO-513	Disassembly Lot Plan Truck 15 & 16	296

15. HEALTH AND SAFETY (HS)

HS-001	Health and Safety in the lot and surroundings 1	297
HS-002	Health and Safety in the lot and surroundings 2	298
HS-101	Health and Safety during the Outside Logistic	299

HS-201	Health and Safety during the Inside Logistic	300
HS-301	Health and Safety during load / unload	301
HS-302	Health and Safety Signposting	302
HS-303	Health and safety PPE	303
HS-401	Health and Safety during Assembly Phase 1	304
HS-402	Health and Safety during Assembly Phase 2	305
HS-403	Health and Safety during Assembly Phase 3	306
HS-404	Health and Safety during Assembly Phase 4	307
HS-405	Health and Safety during Assembly Phase 5	308
HS-406	Health and Safety during Assembly Phase 6	309
HS-407	Health and Safety during Assembly Phase 7	310
HS-408	Health and Safety during Assembly Phase 8	311
HS-409	Health and Safety during Assembly Phase 9	312
HS-410	Health and Safety during Assembly Phase 10	313
HS-501	Health and Safety during Maintenance	314
HS-601	Health and Safety during Disassembly Phase 1	315
HS-602	Health and Safety during Disassembly Phase 2	316
HS-603	Health and Safety during Disassembly Phase 3	317
HS-604	Health and Safety during Disassembly Phase 4	318
HS-605	Health and Safety during Disassembly Phase 5	319
HS-606	Health and Safety during Disassembly Phase 6	320
HS-607	Health and Safety during Disassembly Phase 7	321
HS-608	Health and Safety during Disassembly Phase 8	322
HS-609	Health and Safety during Disassembly Phase 9	323
HS-610	Health and Safety during Disassembly Phase 10	324

16. PUBLIC TOUR (PT)

PT-001	Site accessibility Plan	325
PT-002	Site accessibility Elevation	326
PT-101	House Tour Plan	327
PT-201	House Tour General Information	328



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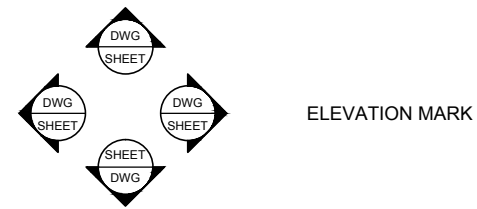
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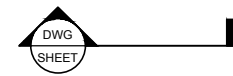
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GE-103 4

GENERAL SYMBOLS



ELEVATION MARK



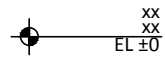
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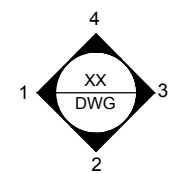
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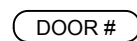
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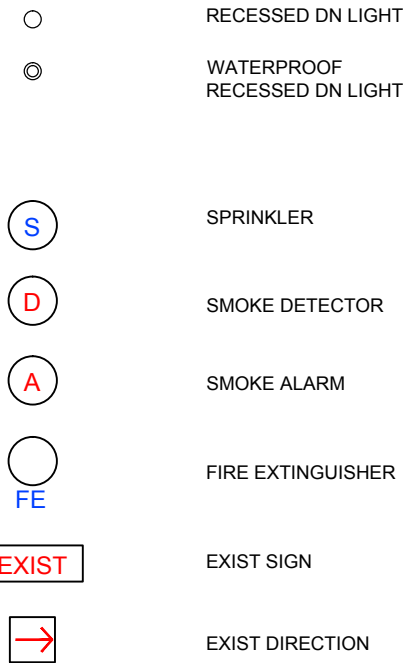
INTERIOR ELEVATION MARKER



DOOR TAG



WINDOW TAG



RECESSED DN LIGHT

WATERPROOF RECESSED DN LIGHT

SPRINKLER

SMOKE DETECTOR

SMOKE ALARM

FIRE EXTINGUISHER

EXIST SIGN

EXIST DIRECTION



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GENERAL SYMBOLS

DWG. No.	PAGE
GE-201	5

**GENERAL ABBREVIATIONS**

# Pound: OR Number  
 &: And  
 @: At  
 ACT: Acoustic Ceiling Tile  
 AD: Area Drain  
 AFF: Above Finished Floor  
 ALUM: Aluminum  
 ANOD: Anodized  
 BSMT: Basement  
 BYND: Beyond  
 BOT: Bottom  
 CIP: Cast In Place  
 CHNL: Channel  
 CJ: Control Joint  
 CLG: Ceiling  
 CLR: Clear  
 CMU: Concrete Masonry Unit  
 COL: Column  
 COMPR: Compressible  
 CONC: Concrete  
 CONT: Continuous  
 CPT: Carpet  
 CT: Ceramic Tile  
 CTYD: Courtyard  
 DBL: Double  
 DEMO: Demolish or Demolition  
 DIA: Diameter  
 DIM: Dimension  
 DIMS: Dimensions  
 DN: Down  
 DR: Door  
 DWG: Drawing  
 EA: Each  
 EJ: Expansion Joint  
 EL: Elevation  
 ELEC: Electrical  
 ELEV: Elevator or Elevation  
 EPDM: Ethylene Propylene Diene M-Class (Roofing)  
 EQ: Equal  
 EXIST: Existing  
 EXP JT: Expansion Joint  
 EXT: Exterior  
 FD: Floor Drain or Fire Department  
 FEC: Fire Extinguisher Cabinet  
 FIXT: Fixture  
 FLR: Floor  
 FM: Filled Metal  
 FO: Face Of  
 FND: Foundation  
 GA: Gauge  
 GALV: Galvanized  
 GWB: Gypsum Wall Board  
 HC: Hollow Core  
 HI: High  
 HM: Hollow Metal  
 HP: High Point  
 HR: Hour  
 HVAC: Heating, Ventilating, And Air Conditioning  
 IRGWB: Impact Resistant Gypsum Wall Board  
 ILO: In Lieu Of  
 INSUL: Insulated or Insulation  
 INT: Interior  
 LO: Low

MAX: Maximum  
 MO: Masonry Opening  
 MECH: Mechanical  
 MEMBR: Membrane  
 MIN: Minimum  
 MRGWB: Moisture-Resistant Gypsum Wall Board  
 MTL: Metal  
 NIC: Not In Contract  
 NO: Number  
 NOM: Nominal  
 OC: On Center  
 OH: Opposite Hand  
 OZ: Ounce  
 PCC: Pre-Cast Concrete  
 PLUMB: Plumbing  
 PLYD: Plywood  
 PT: Pressure Treated  
 PNT: Paint or Painted  
 PVC: Polyvinyl Chloride  
 RBR: Rubber  
 RCP: Reflected Ceiling Plan  
 RD: Roof Drain  
 REQD: Required  
 RM: Room  
 SIM: Similar  
 SPEC: Specified OR Specification  
 SPK: Sprinkler or Speaker  
 SSSL: Stainless Steel  
 STC: Sound Transmission Coefficient  
 STL: Steel  
 STRUCT: Structure or Structural  
 T&G: Tongue And Groove  
 TELE: Telephone  
 TLT: Toilet  
 TO: Top Of  
 TOC: Top Of Concrete  
 TOS: Top Of Steel  
 TPD: Toilet Paper Dispenser  
 T/D: Telephone/Data  
 TYP: Typical  
 UNO: Unless Noted Otherwise  
 U/S: Underside  
 VIF: Verify In Field  
 VP: Vision Panel  
 W/: With  
 WD: Wood



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 Unit: -

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**GENERAL ABBREVIATIONS**  
 DWG. No. **GE-211** PAGE **6**



## INTRODUCTION

Taiwan is a country spanning only 36,193 km<sup>2</sup> but with a population of 23.34 million (compare with France's 674,834 km<sup>2</sup> and 65.7 million people). The population density is especially high because two-thirds of the island is composed of mountains, and as a result most people live along the coastal areas. It is especially crowded in urban areas, such as the capital city, Taipei, which is one of the top ten densest cities in the world. In addition to the high population density, Taipei also developed rapidly over the years, both of which contribute to a random assortment of architecture in the city that expands horizontally instead of vertically to conserve space.

However, also as a result of the rapid development, many of the residential buildings were not built to last and have infrastructure that is now rundown or outdated. In recent years, new residential buildings are sky scraper apartments, which are usually only affordable by the wealthy upper class because of the luxury design and locations in the city center.

This population growth results in the lack of living space and sufficient public amenity, and cause middle classes moving toward the periphery, even outside of city. The majority of these people are young professionals who just graduated from collage whom have worked a few years, and they are not able to afford a house yet. However, most of them works in the city center and commute, and caused major traffic congestions with millions of cars and motorcycle. Consequently, the city is left with a high carbon dioxide pollution, and the decrease living quality.



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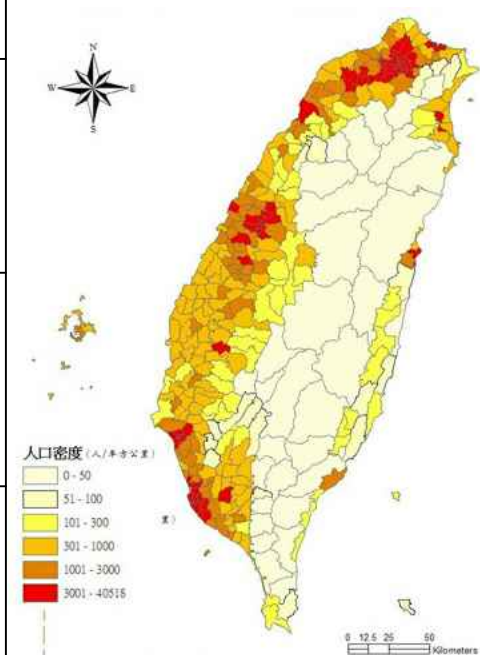
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DWG. Title

Urban Project Location

DWG. No. PAGE

GE-301 7



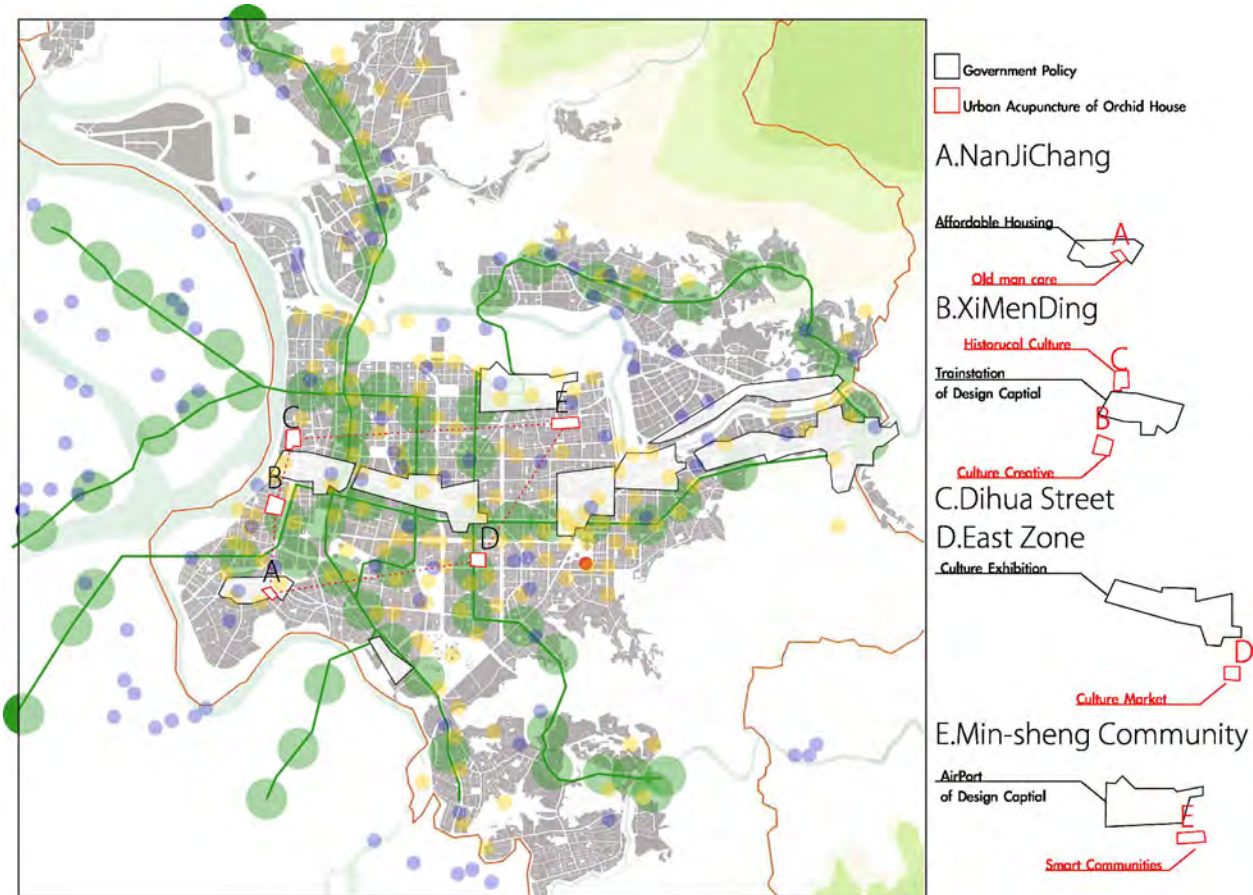
Taipei, Taiwan

Population: 2,650,900  
Area: 271.8 km<sup>2</sup>  
Density: 9,753 Person/km<sup>2</sup>

## Urban Acupuncture

Taipei city population reached its 20-year peak and residential building has been constructed in various types. The majorities are a duplex apartment, which is relatively wide and 4 to 5 story building, and a row house that is extremely narrow and deep single family owned. These two types were constructed during the modern democracy period. Most of flat-roof duplex apartment and row house are facing problems: leakage, heat absorption and no public facilities. Therefore, the illegal make-shift metal roofed shelters have been introduced widely in most of the residential buildings and create unregulated cityscape of Taipei.

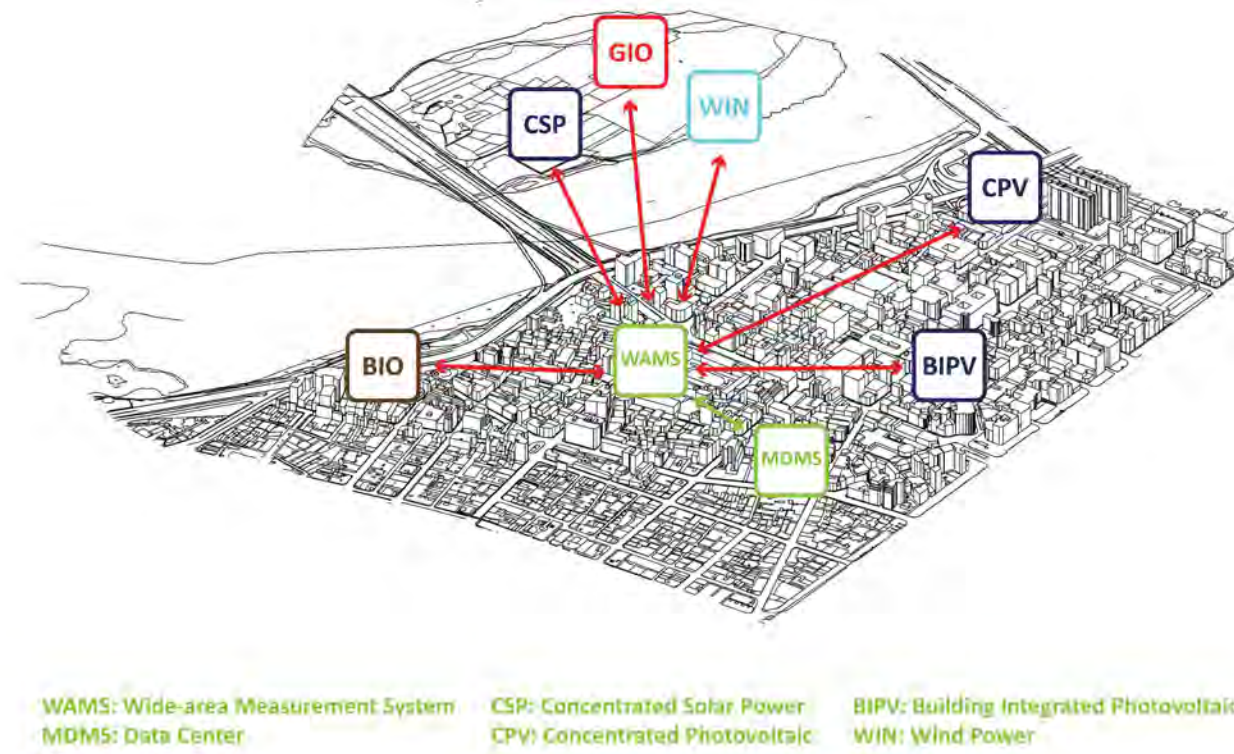
For Orchid House urban design strategy, NCTU UNICODE focus districts where the most of duplex apartment and row house are located as the most needed area for urban regeneration to vitalize not only the residential building, but also these districts.



## Zero Energy District: Ximending

As main focal point of Ximending Zero Energy District plan, NCTU UNICODE proposes not only PV panel implementation to buildings, but also larger scale of renewable energy sources such as CSP (Concentrated Solar Power), Biomass, Wind power and Geothermal. In order for all renewable energy sources to be distributed efficiently, advanced applications of Wide-area-Measurement System (WAMS) is installed one of larger footprint building rooftops, and Data Centre (MDMS) serve all the energy with automation system. Furthermore, AMI (Advanced Metering Infrastructure) is installed to Orchid House Clusters to manage power supply within houses. Please refer Architecture Design Narrative for farther details of AMI integration to housing appliances.

The Orchid House Cluster acts as a pilot project for further development of smart building energy management technology. Eventually, AMI system will be installed to most of buildings in the district to increase 20% energy usage efficiency from conventional grid system.



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URBAN PROPOSAL  
 EXPLANATION 1

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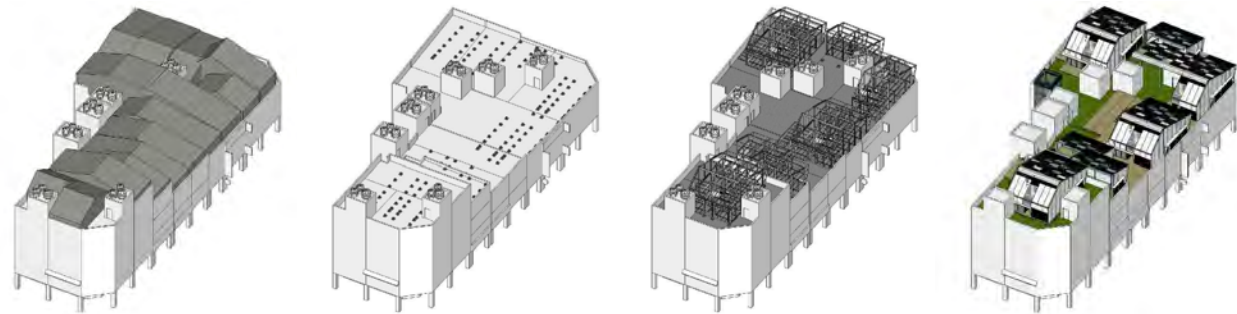
GE-310 8



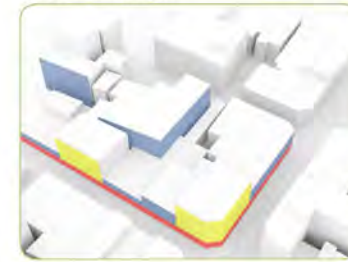
# Orchid Cluster

Orchid House extension on existing building in Taipei city plays not only critical role for Ximending zero energy district urban planning, but also to apply new concept of urban regeneration. Almost 50% of residential building in Taipei city are over 30 years old and typically demolished during the renewal planning. However, NCTU UNICODE points out the problem of city re-development organized by government and executed by private developers. The developer tends to acquire larger number of properties to combine the land FAR (Floor Area Ratio) to build up high-rise residential condominium, which is not affordable for average income level and treated as investment target by investors.

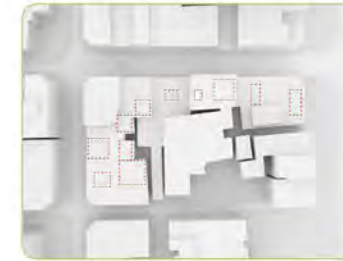
Orchid House will provide unique opportunity for not only the building owner, but also the targeted tenants, who needs housing support to pursue their young profession to promote new creative industry in Taipei.



## Cluster Formation



1. Programme
- Red: shops
  - Yellow: offices
  - Blue: residential



7. Cluster Pockets
- To create a balanced rooftop space, several pockets are designed to host separate meetings



2. Alignments and setback
- Ximending has a distinct characteristics of the "chamfered" corners, which allows a better viewing angle when turning



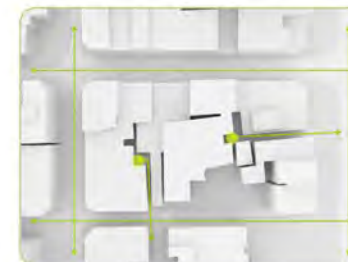
8. Green space
- 2463 square meter (56.5%) of green space is released from the rooftop for public sharing



3. Potential rooftop surfaces
- The highlighted rooftop area adds up to around 4360 square meters



9. Outdoor walkway system
- Elevated circulation path connects different levels of rooftop and create community zones



4. Pedestrian Circulation
- Ximending has several narrow alleys which is good for making a new entrance for the Orchid Cluster



5. Three clusters
- Within the block, 3 locations are identified to locate elevators and staircase



6. Cluster Location
- Two types of units are placed on the roof:  
six one-bedrooms (48sm each)  
ten studios (26 sm each)



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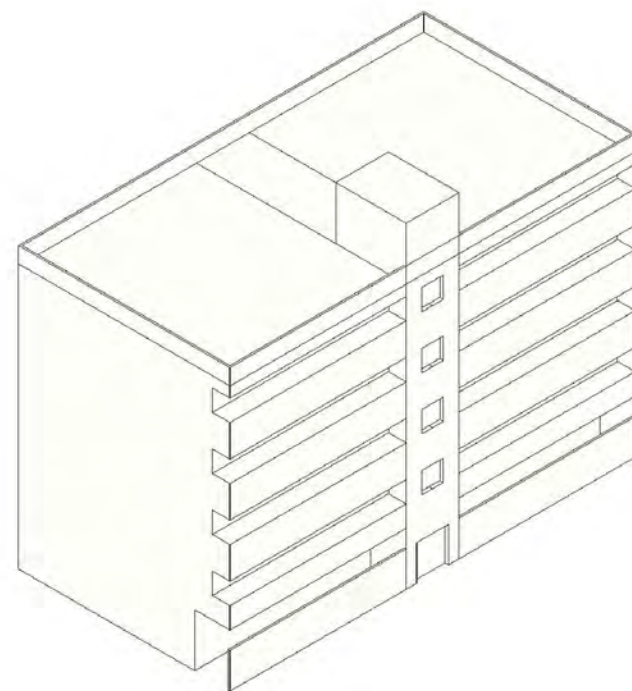
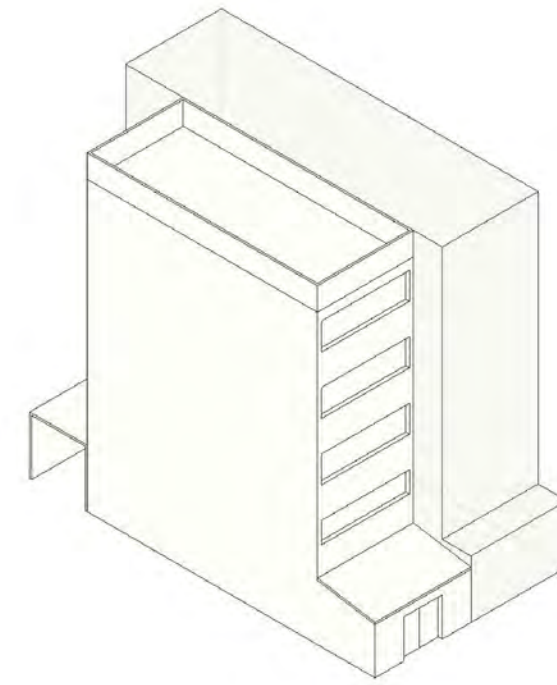
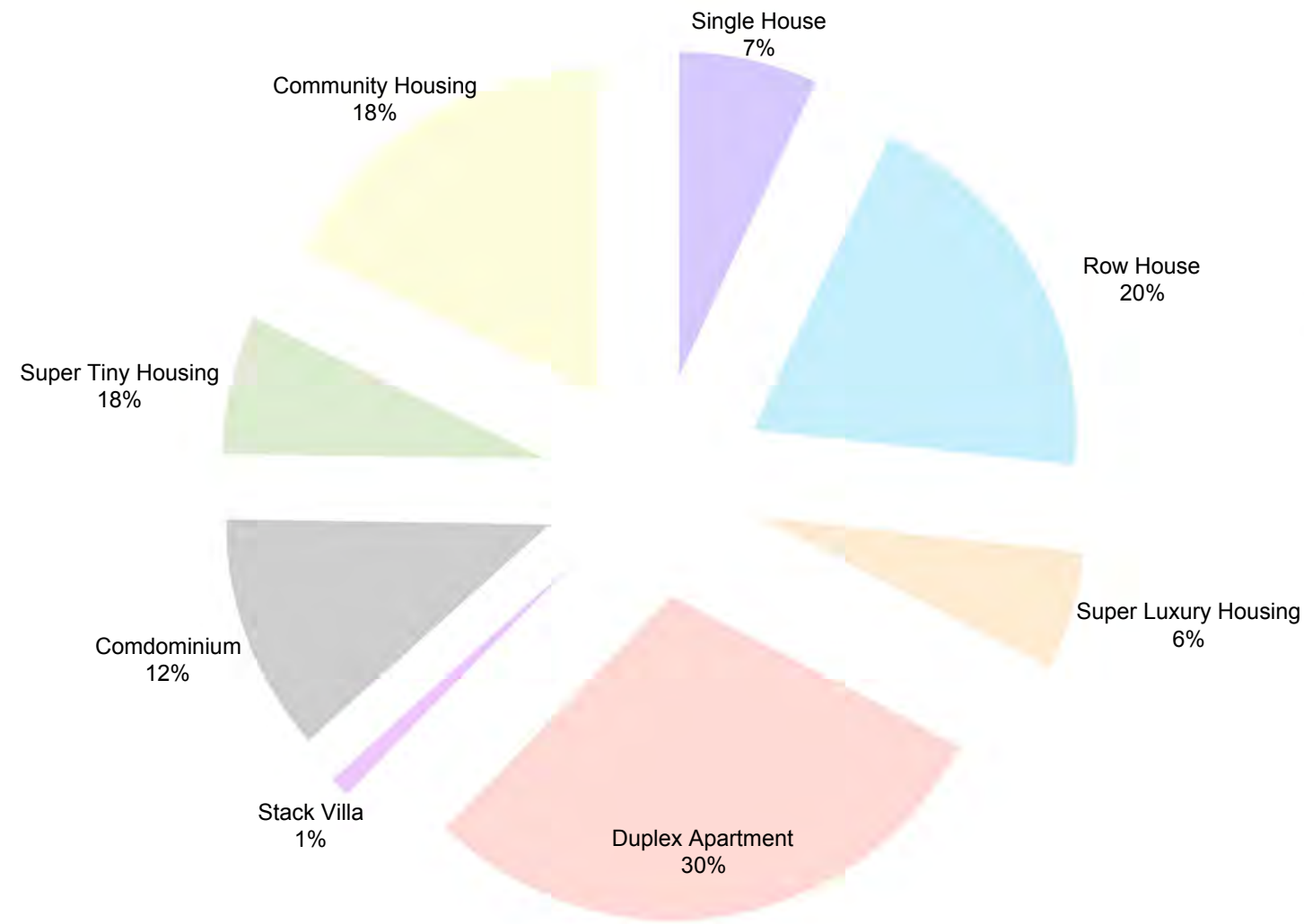
DWG. Title

URBAN PROPOSAL  
EXPLANATION 2

DWG. No. PAGE

GE-311 9

# Taipei Residential Type Analysis



## DESCRIPTION

Row House and Duplex Apartment are the most number of Taipei residential building Type. These two types are usually 4 to 5 floor high and the oldest building in Taipei, which are about 20 to 30 years old and facing some following problems:

1. Top floor Leaking
2. Top floor is too hot
3. No Public Facility

Presently, most households live in flat-roofed row houses and duplex apartments, but due to a lack of space, people try to expand their living area by building on their roofs.

The illegal make-shift metal-roofed shelters that result are unregulated and displeasing to the eye. Lastly, social housing projects have fallen to the wayside and do not adequately consider the needs of disadvantaged groups, social justice, and the problems of housing for those with low-income.



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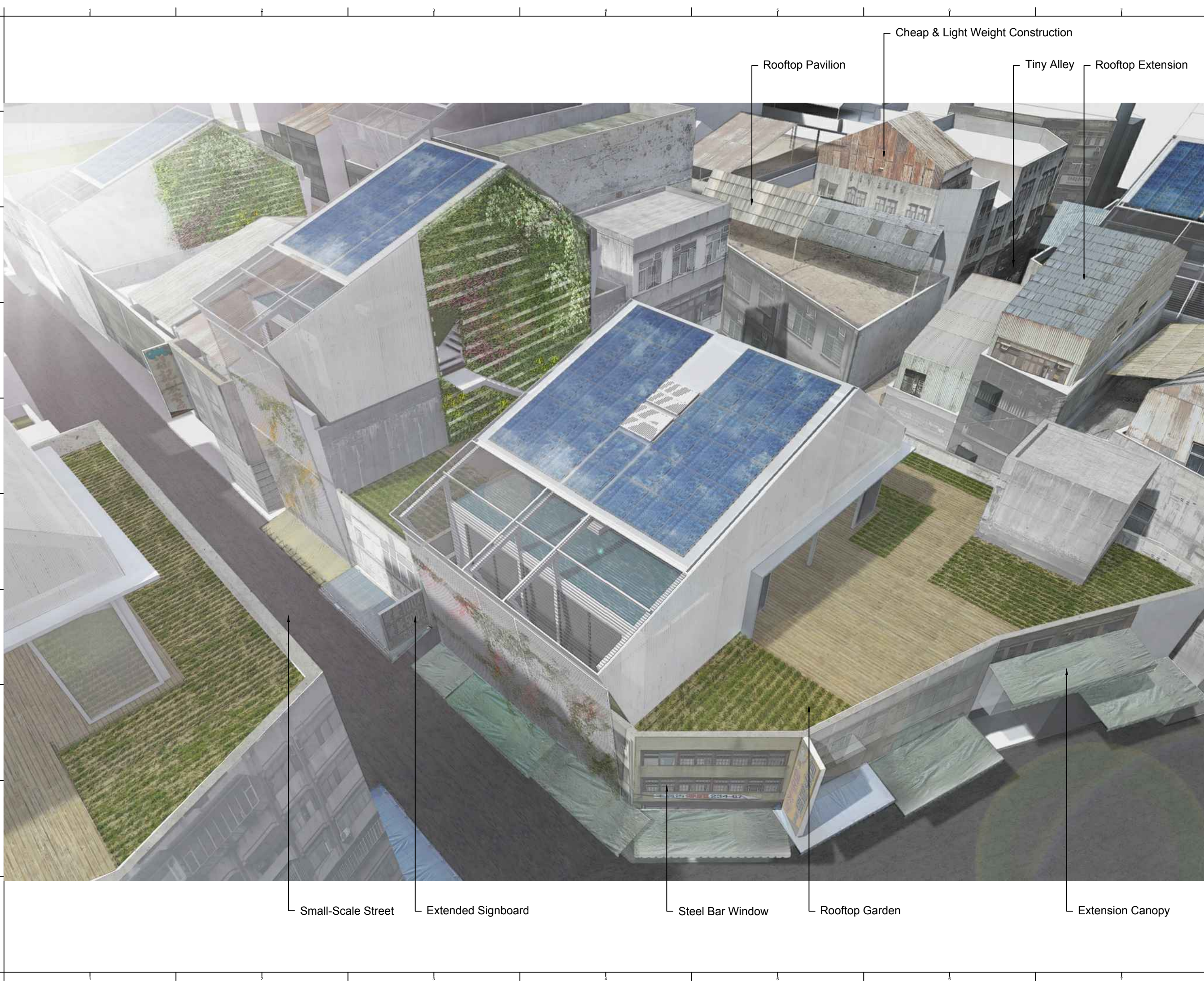
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EXISTING BUILDING  
DRAWING AND ANALYSIS

DWG. No. PAGE

GE-320

10



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COMPETITION DWELLING

DWG. No. PAGE

GE-330

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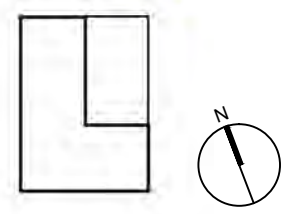


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**DWG. Title**  
PAVILION EAST SIDE  
RENDERING

**DWG. No.** GE-401 **PAGE** 12



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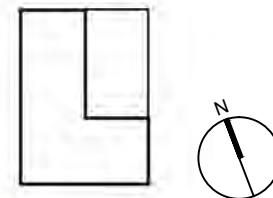
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**PAVILION WEST SIDE  
RENDERING**

DWG. No. **GE-402** PAGE **13**





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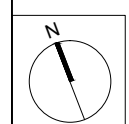
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DWG. Title  
La Cité du Soleil® PLAN

DWG. No.	PAGE
AR-001	14

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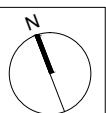
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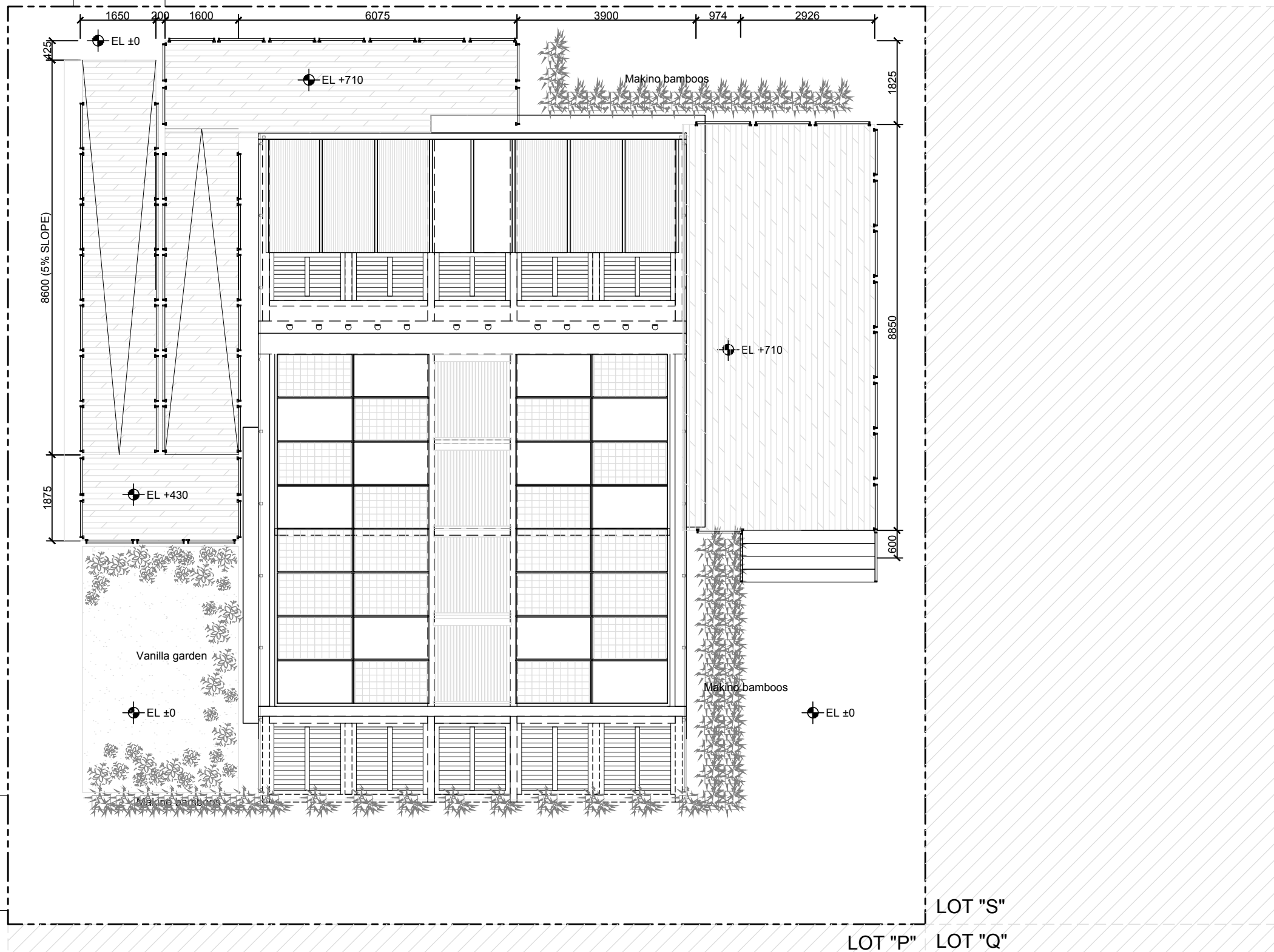
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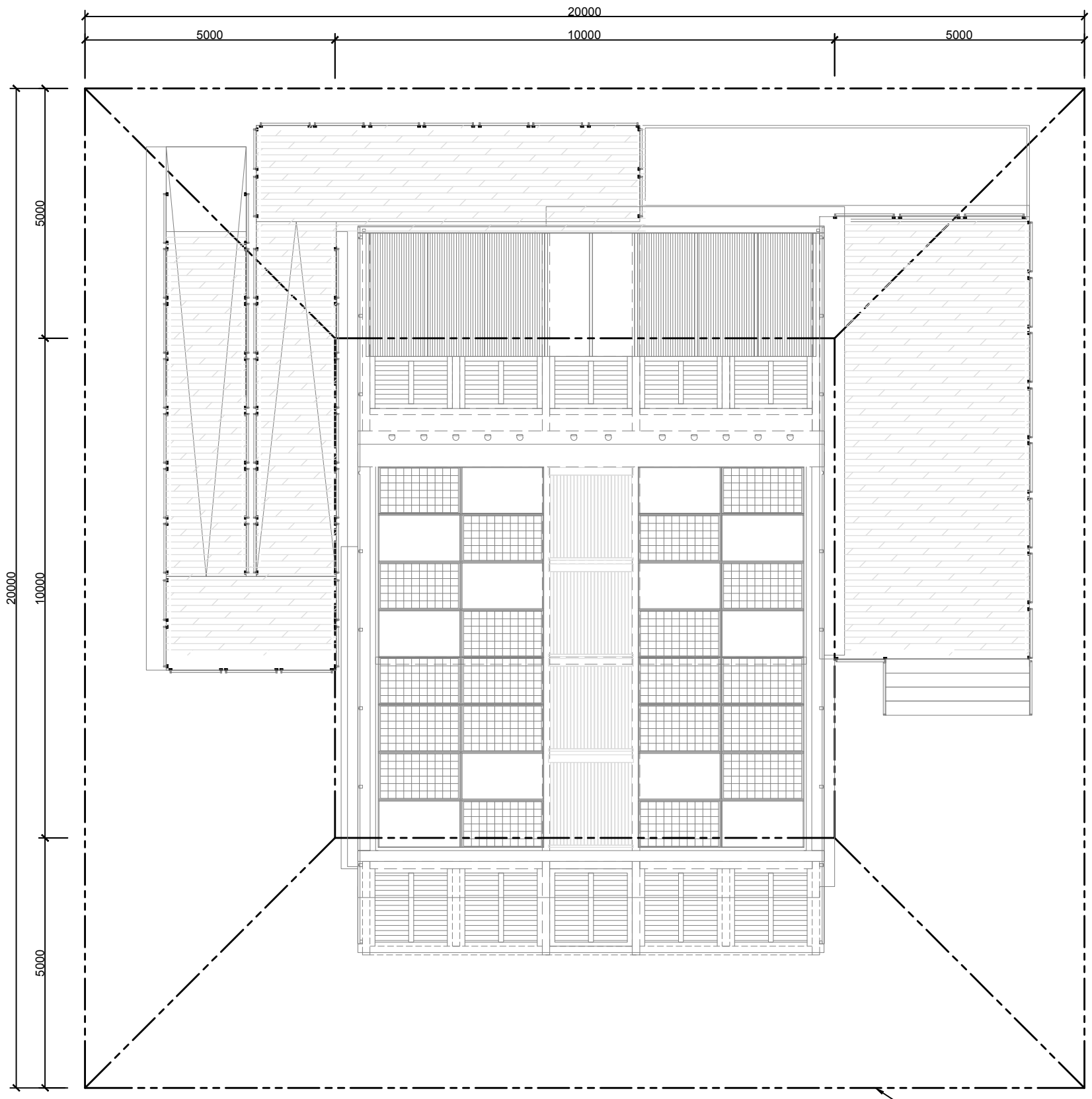
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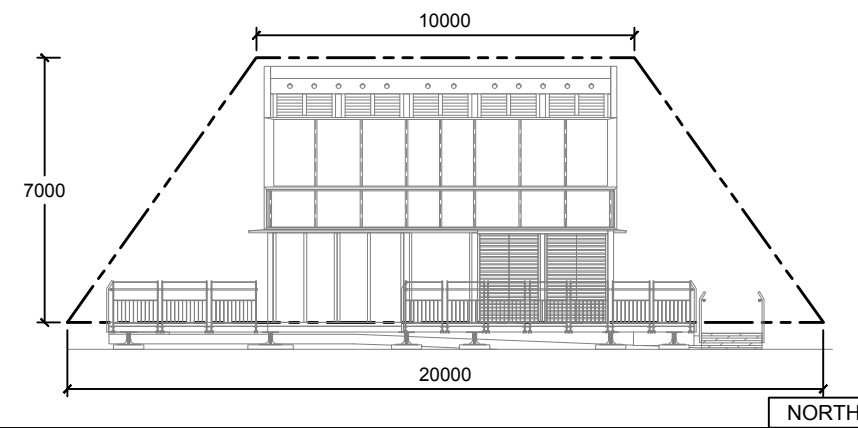
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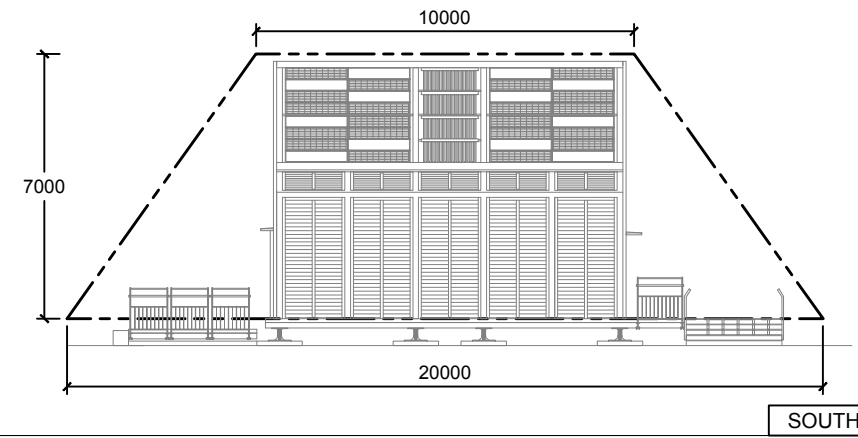




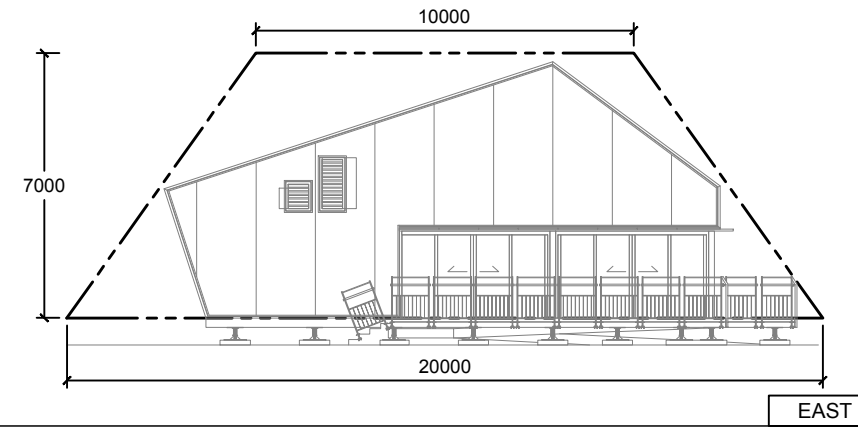
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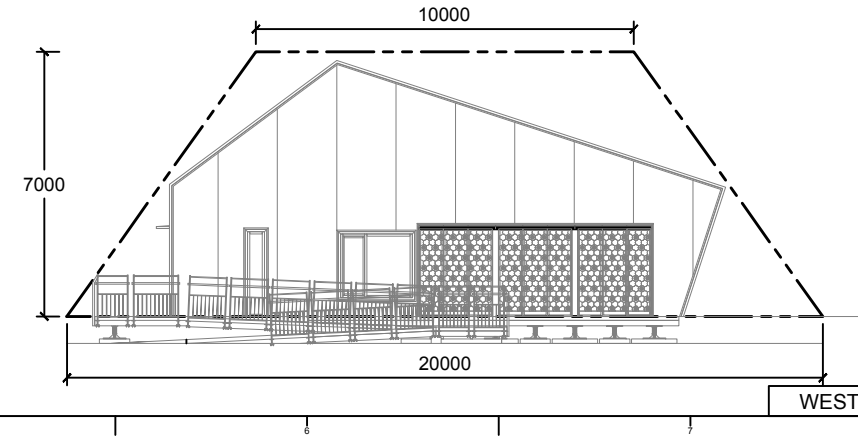
NORTH



SOUTH



EAST



WEST



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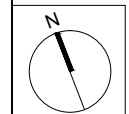
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**SOLAR ENVELOPE**

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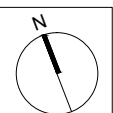
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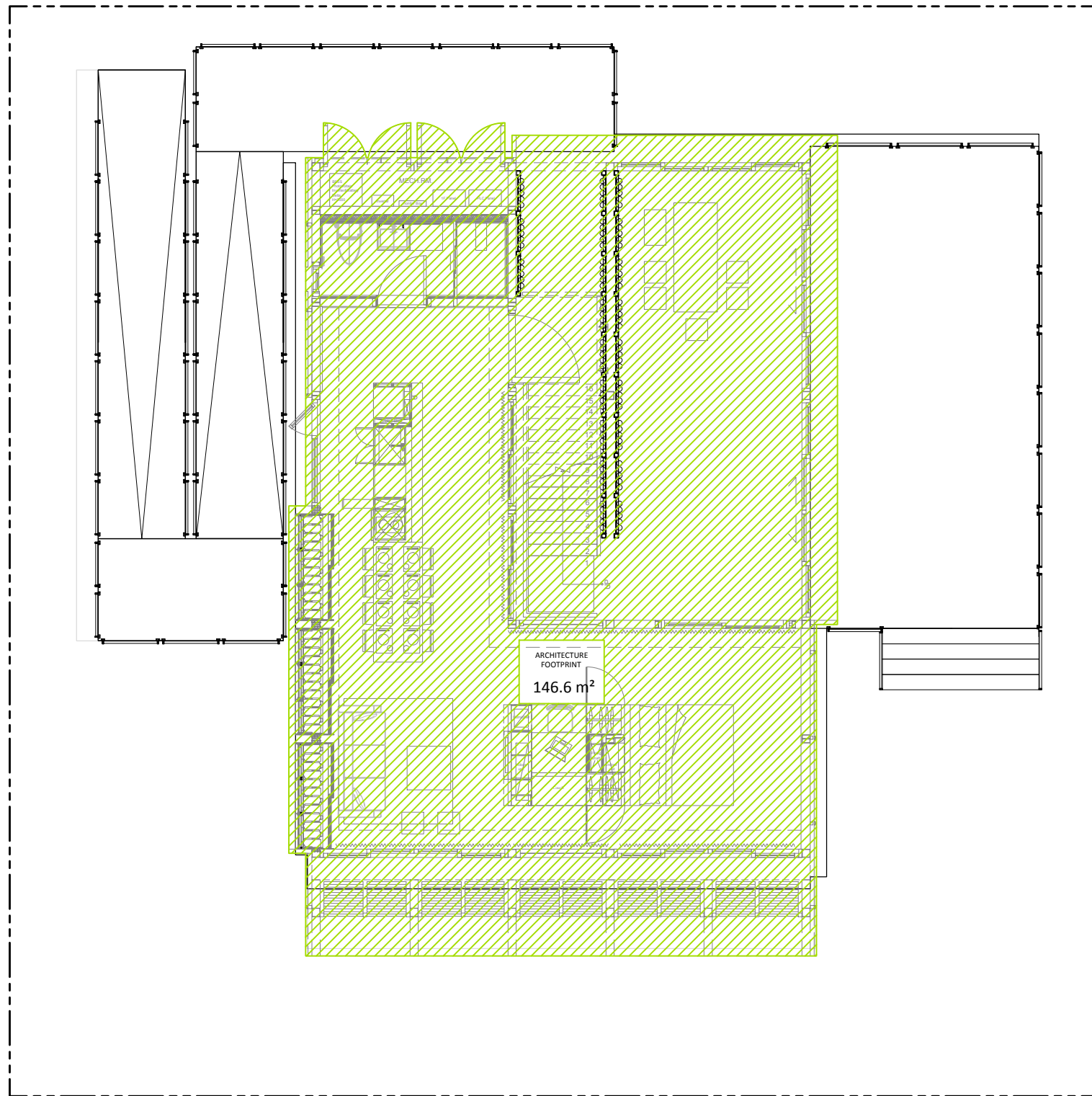
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DWG. Title

ARCHITECTURE FOOTPRINT

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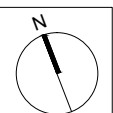
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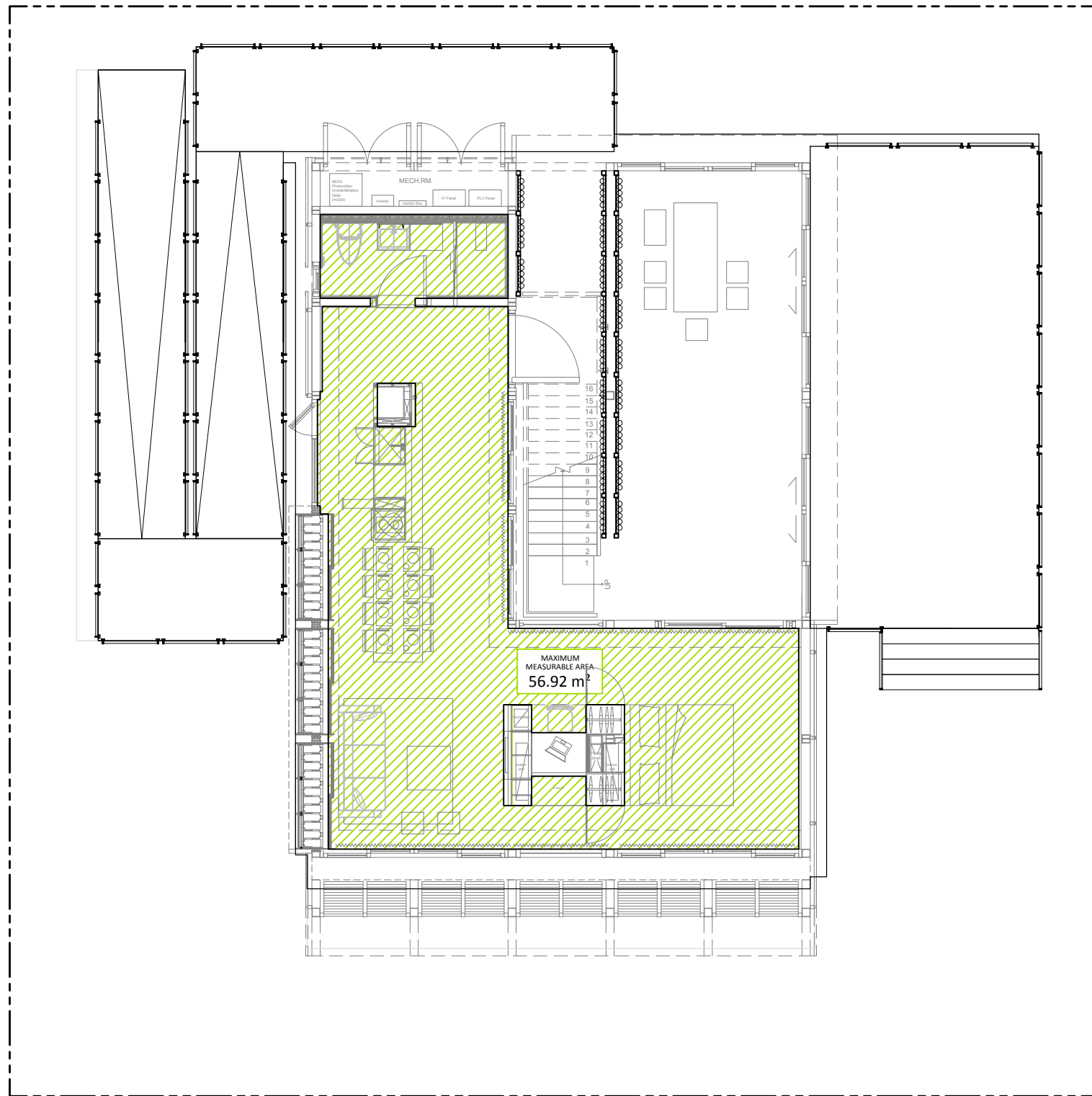
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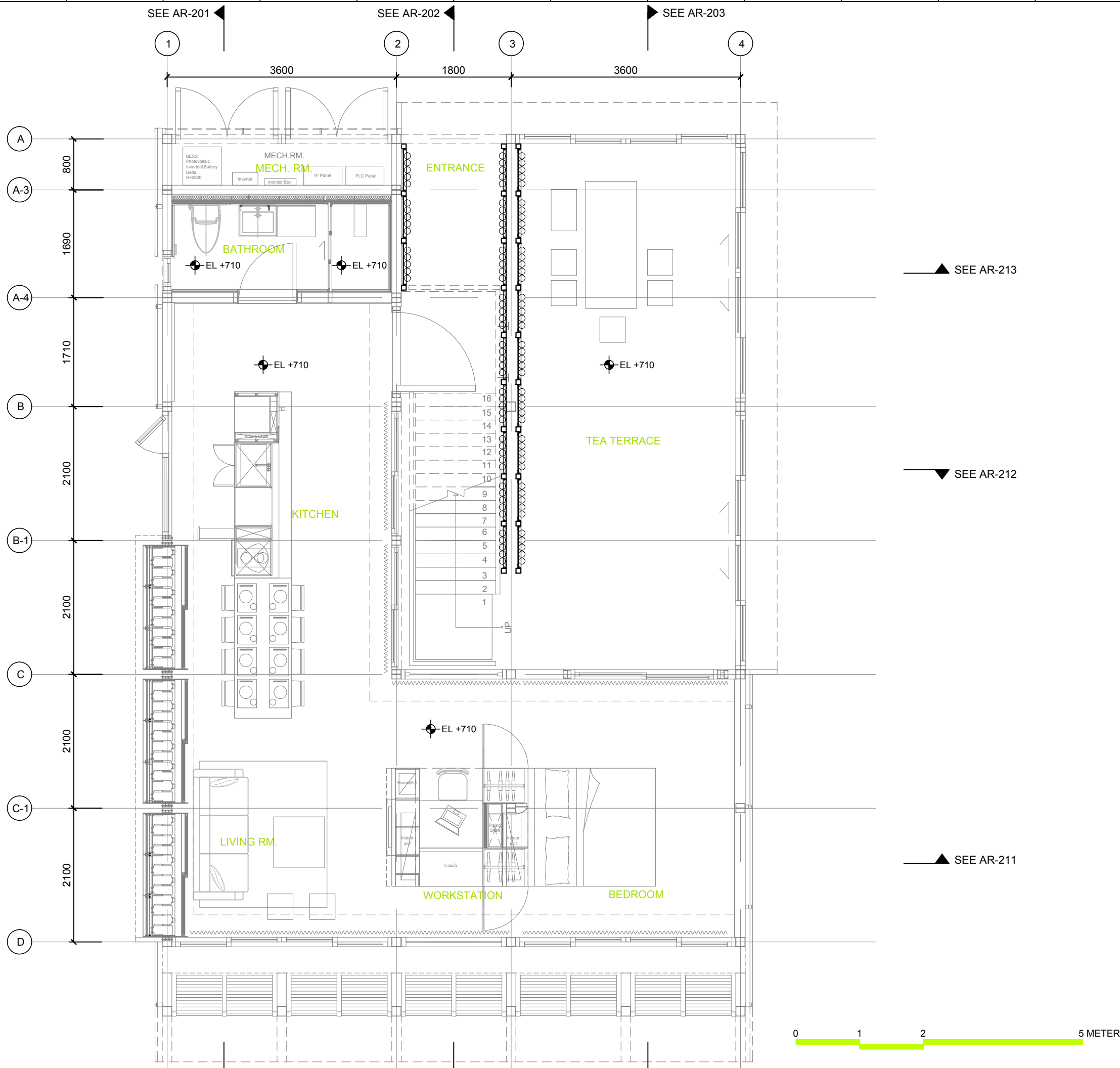
MEASURABLE AREA

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AR-017

18





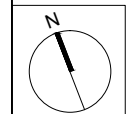
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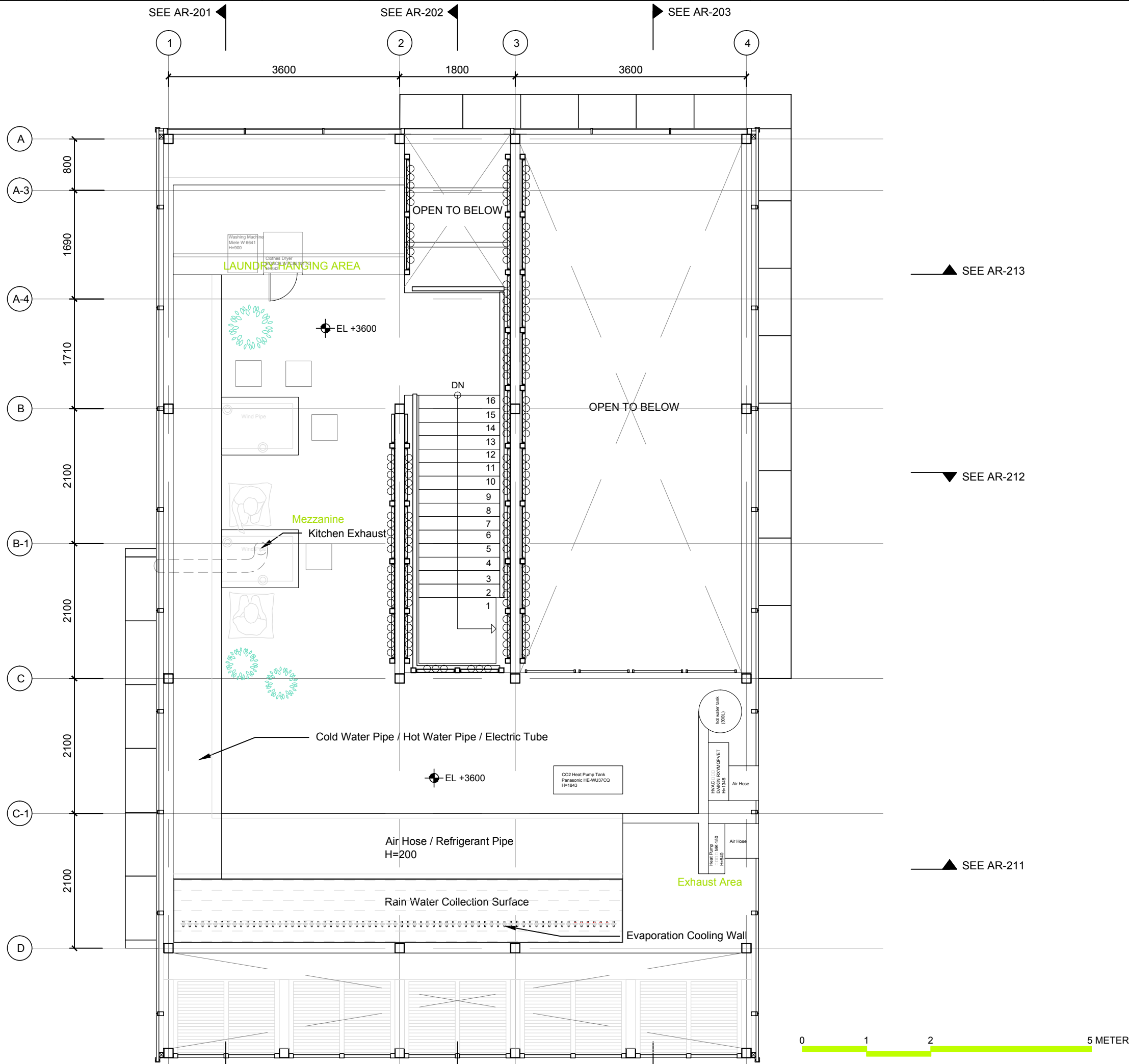
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GROUND LEVEL PLAN	
<b>DWG. No.</b>	<b>PAGE</b>
AR-021	19



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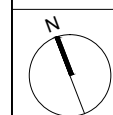
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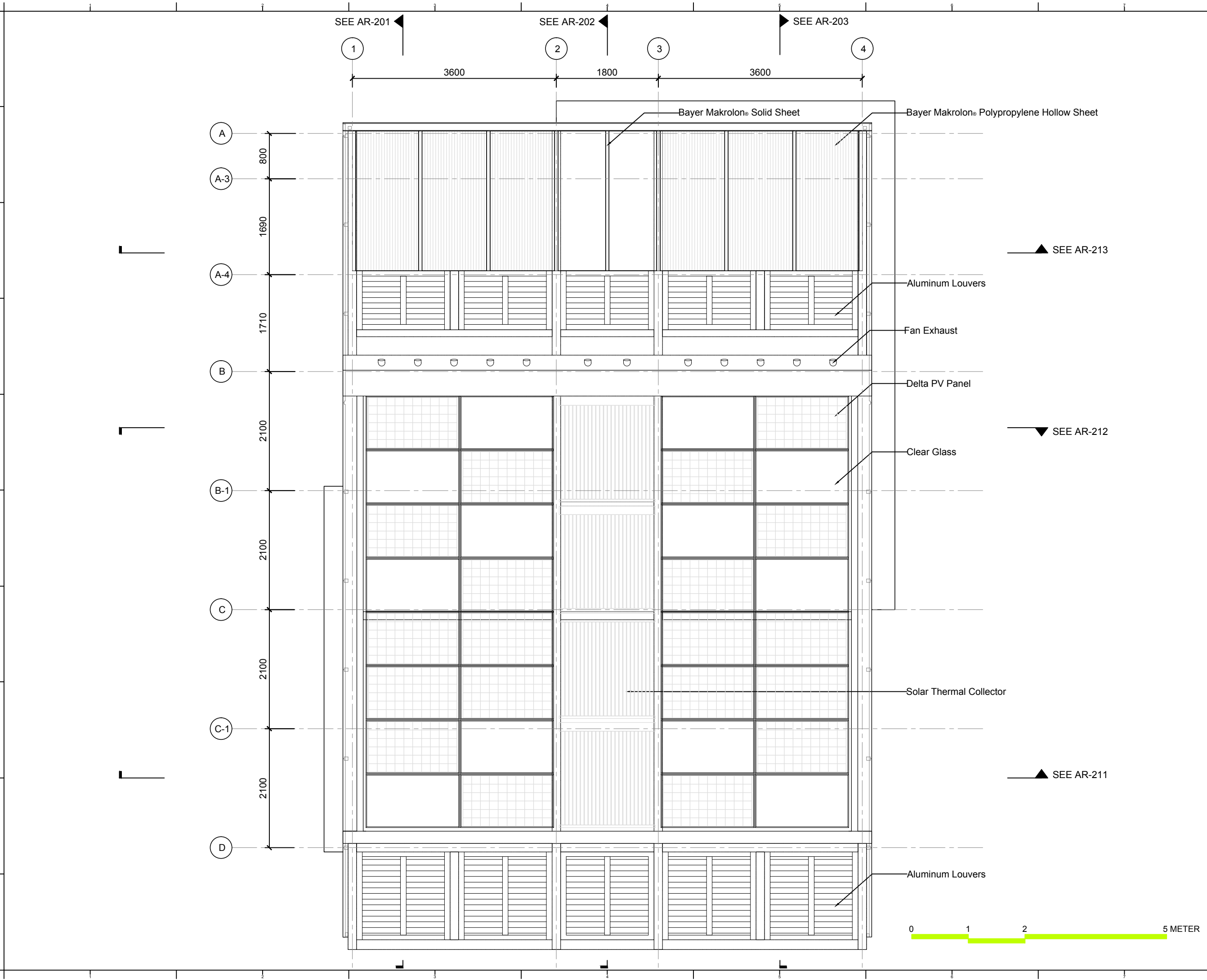


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DWG. Title  
**MEZZANINE LEVEL PLAN**

DWG. No.	PAGE
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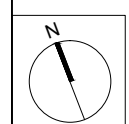
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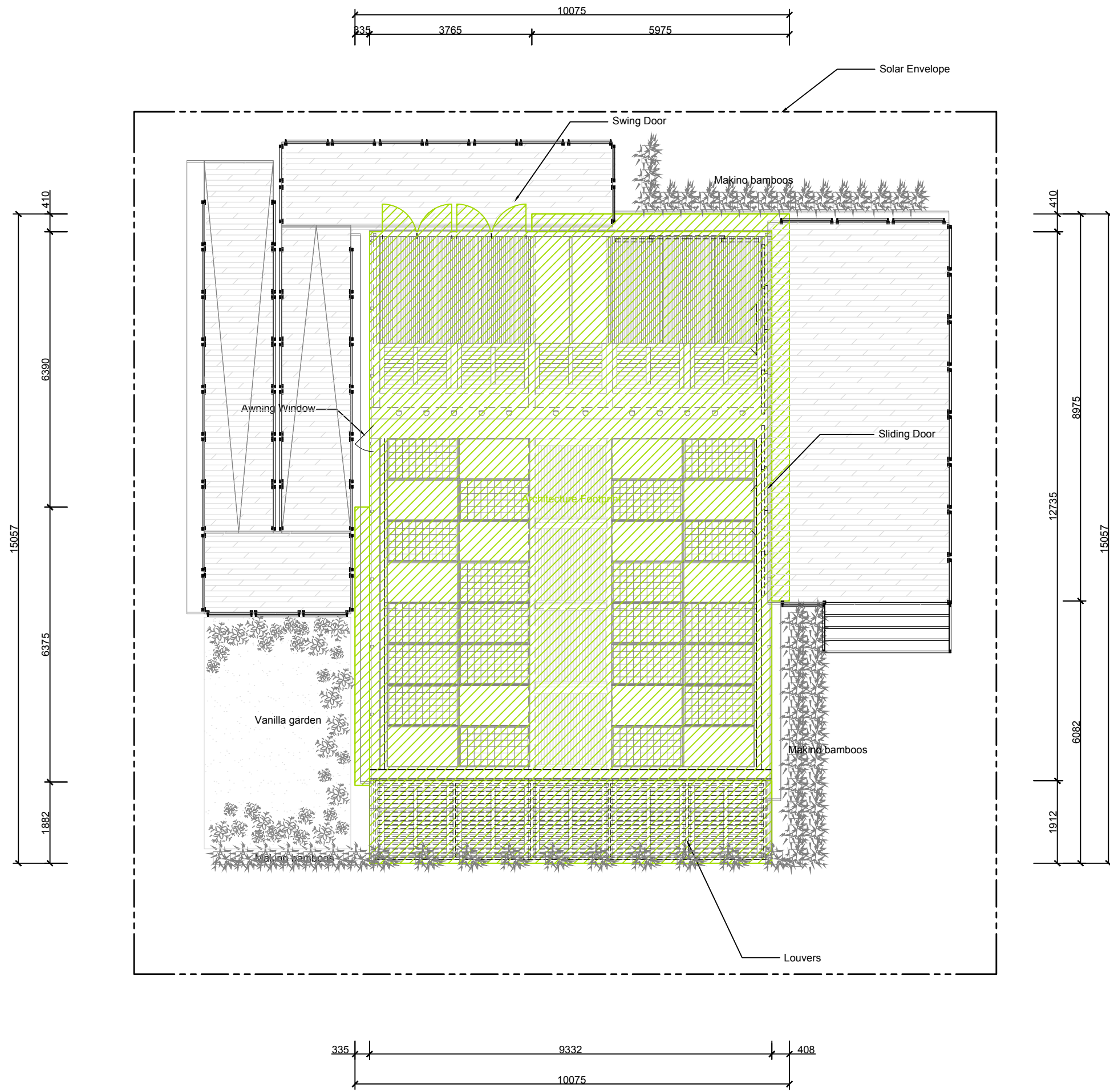
ROOF LEVEL PLAN

DWG. No.

AR-031

PAGE

21



Footprint Calculation

House : 120.4 M2  
 Canopy : 8.7 M2  
 Louvers : 17.8 M2  
 Total : 146.9 M2

House  
 $9.332 \times 12.735 + 0.6375 \times 0.7854 \times 3.14 = 120.4 \text{ (M2)}$   
 Canopy  
 $5.975 \times 0.41 + (8.975 - 0.41) \times 0.408 + 6.375 \times 0.335 = 8.0 \text{ (M2)}$   
 Louvers  
 $9.332 \times 1.912 = 17.8 \text{ (M2)}$   
 Total  
 $120.41 + 8.05 + 17.84 = 146.3 \text{ (M2)}$



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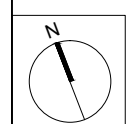
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 RECONFIGURABLE  
 FEATURES 1

DWG. No. AR-041  
 PAGE 22

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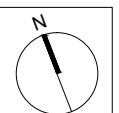
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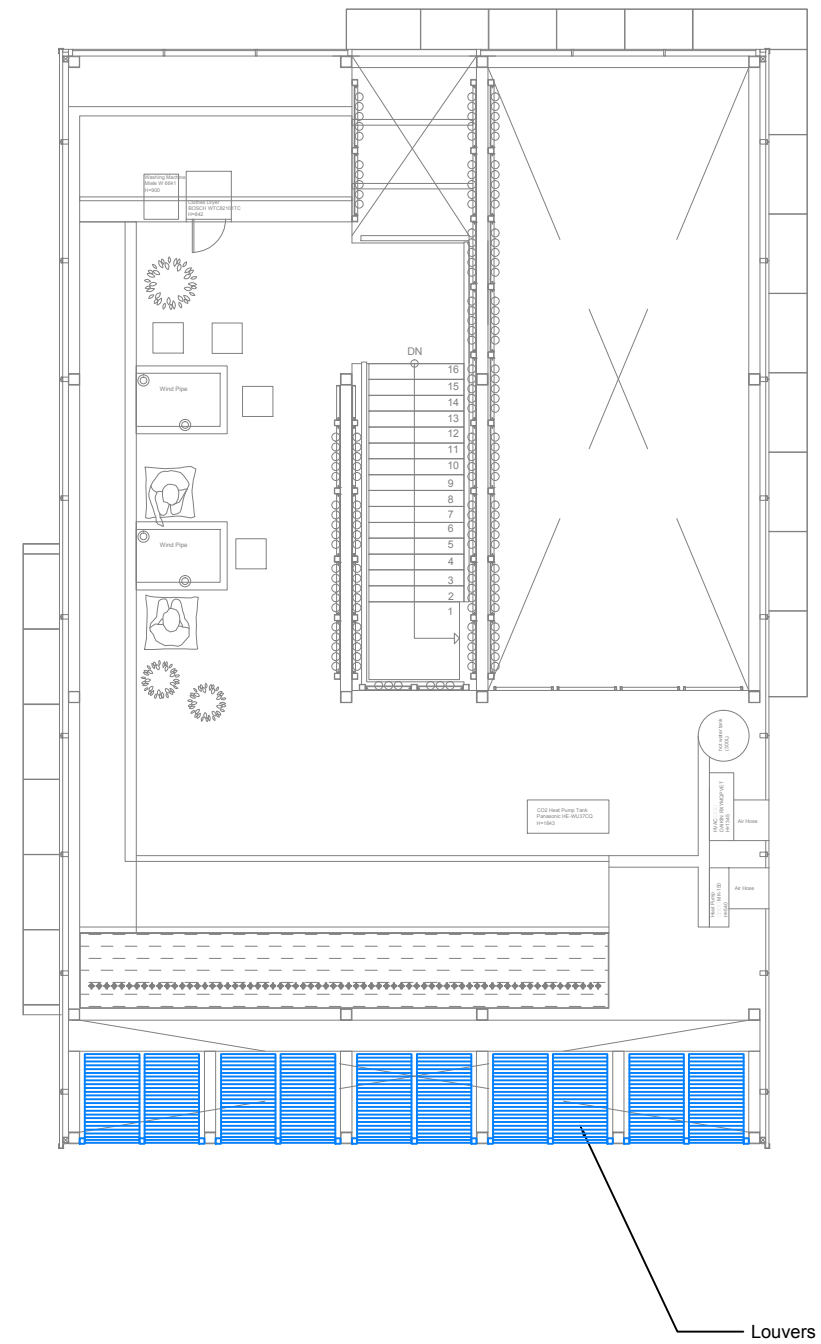
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

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Checked by	DN
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Unit	mm

DWG. Title	
RECONFIGURABLE FEATURES 2	
DWG. No.	PAGE
AR-042	23



Ground Level

Mezzanine Level

Project:



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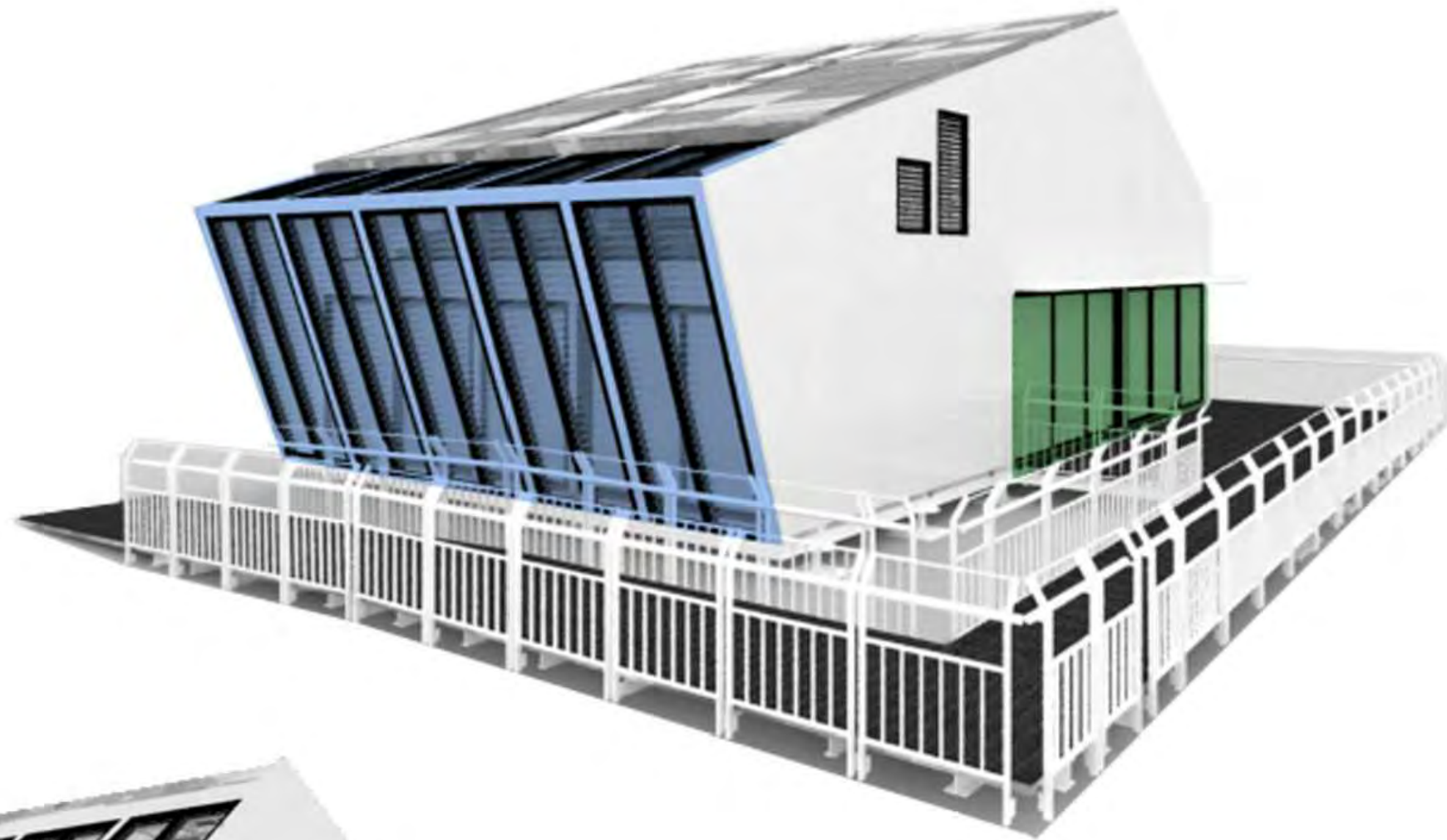
DWG. Title

RECONFIGURABLE  
FEATURES 3

DWG. No. PAGE

AR-043

24



- Louvers ■
- Sliding Door ■
- Swing Door ■
- Awning Window ■



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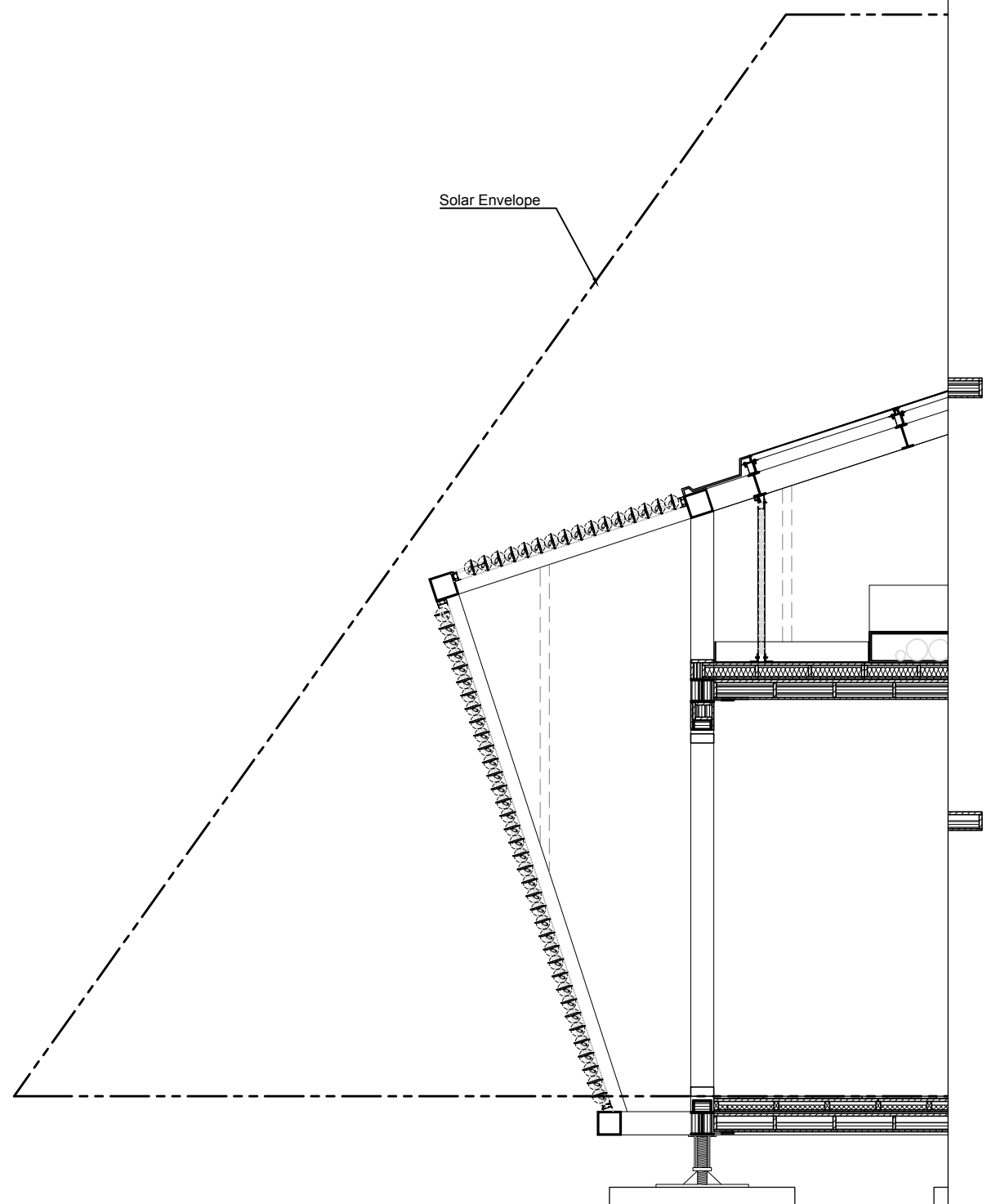
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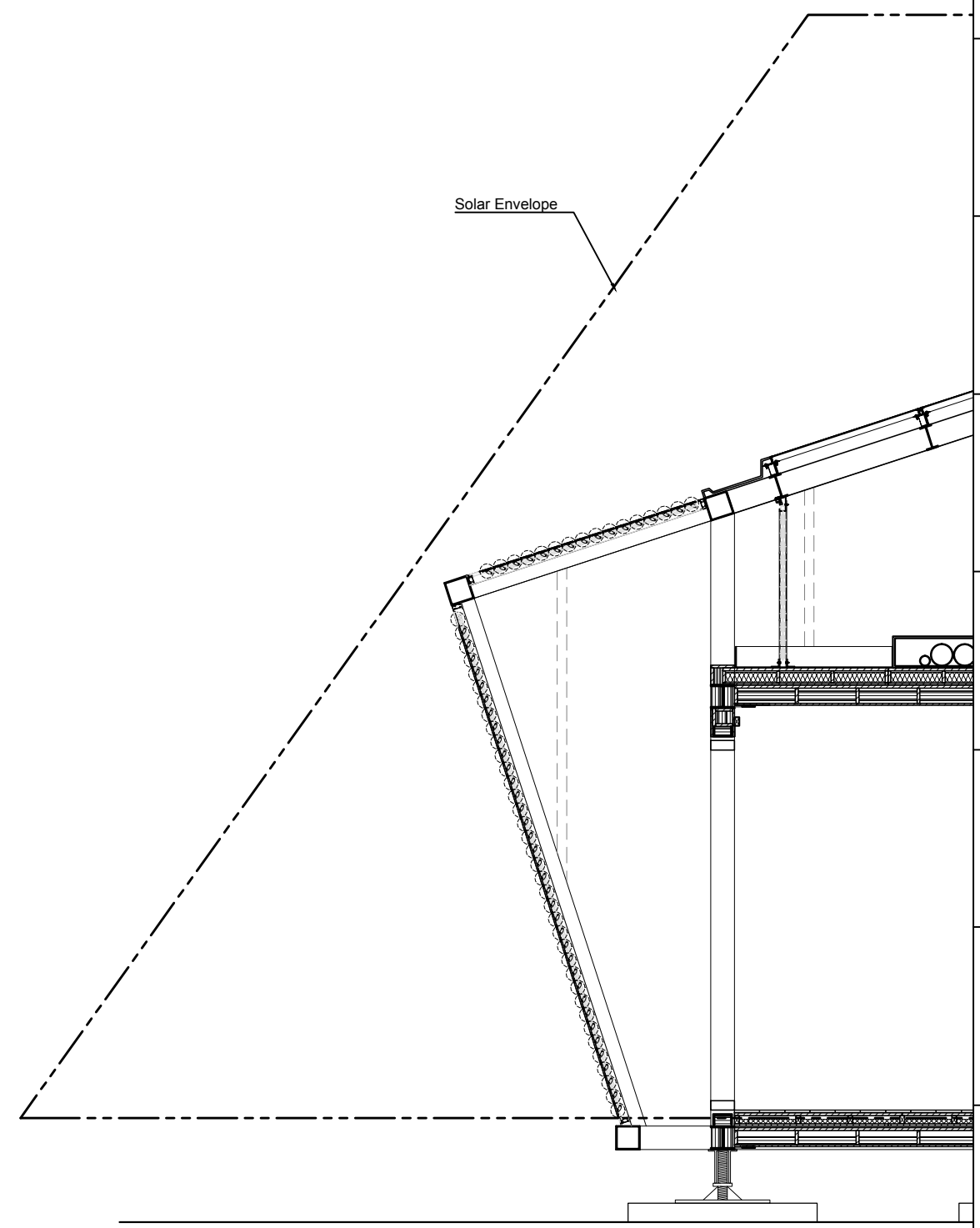
PAGE

25



Solar Envelope

Louvers Open



Solar Envelope

Louvers Closed



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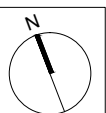
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Checked by

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Scale

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Unit

mm

DWG. Title

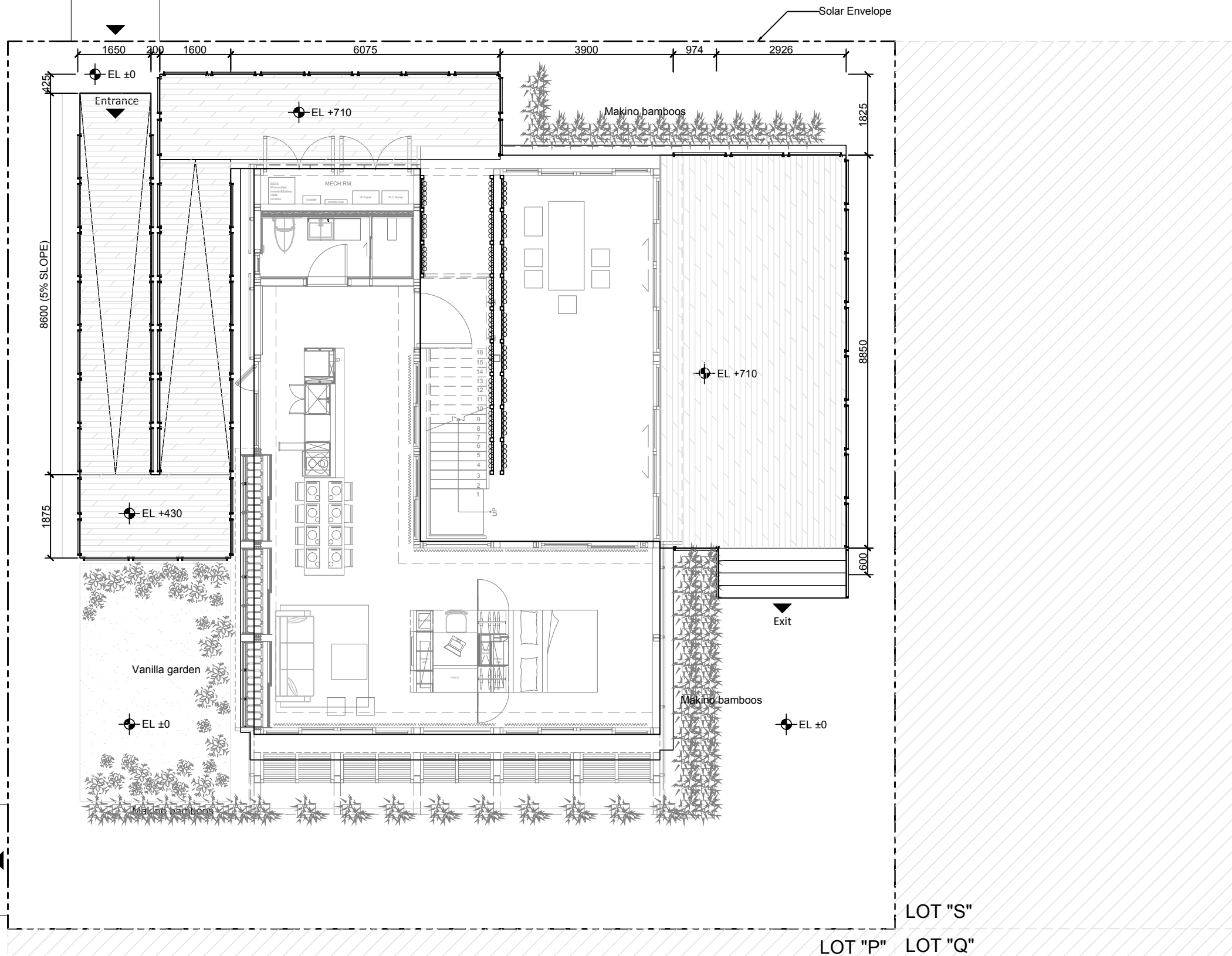
SITE ENTRANCE AND EXIT

DWG. No.

AR-051

PAGE

26



Project:



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Note:

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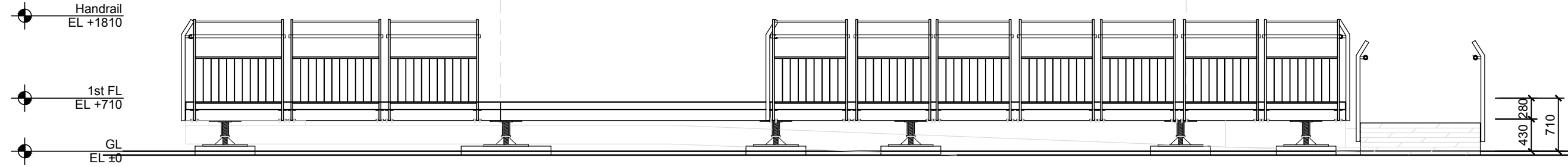
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DWG. Title

SITE ELEVATION

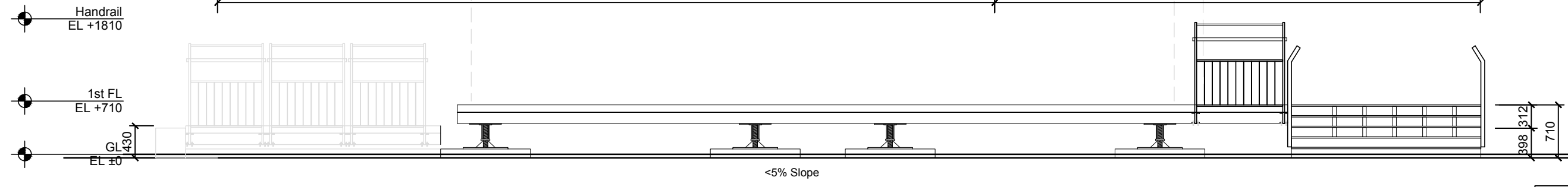
DWG. No. **AR-101** PAGE **27**

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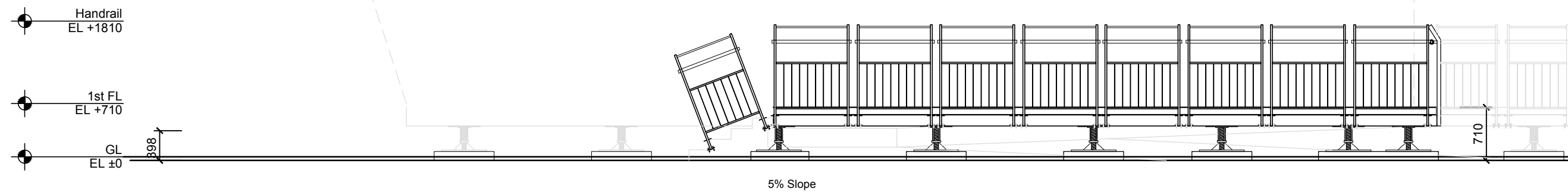
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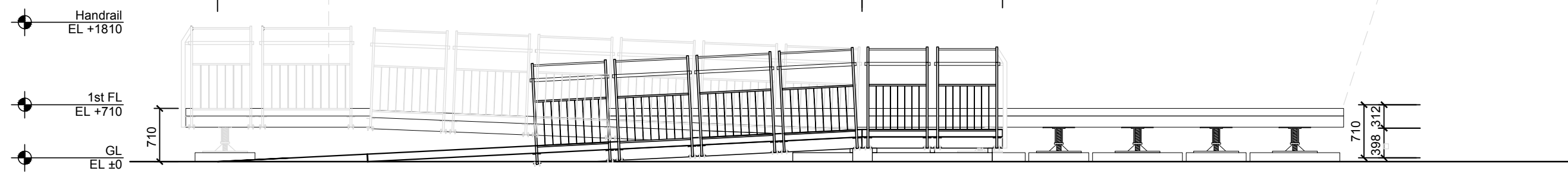
South

1600 6240 8850



East

8600 1875



West

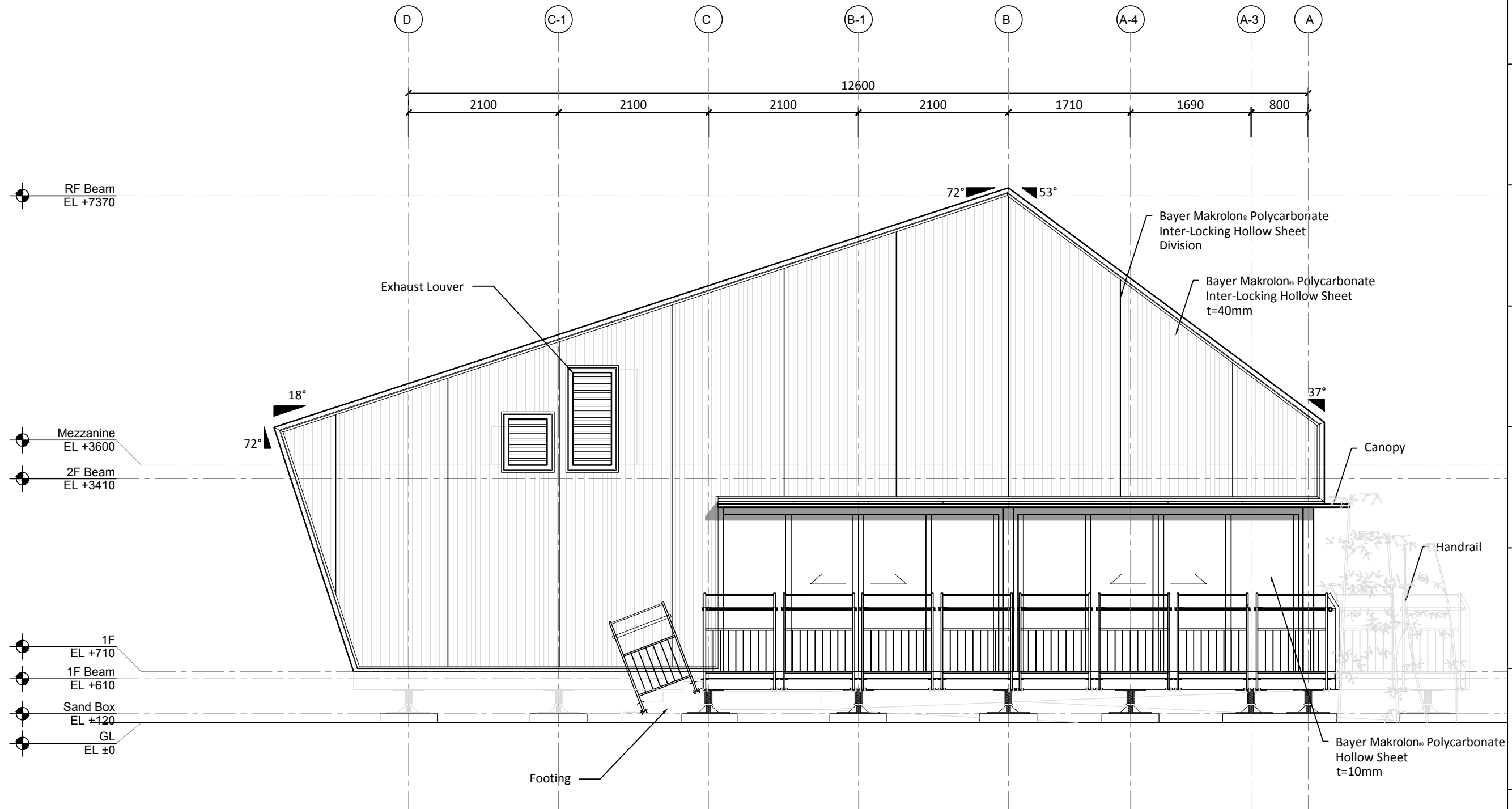


5% Slope



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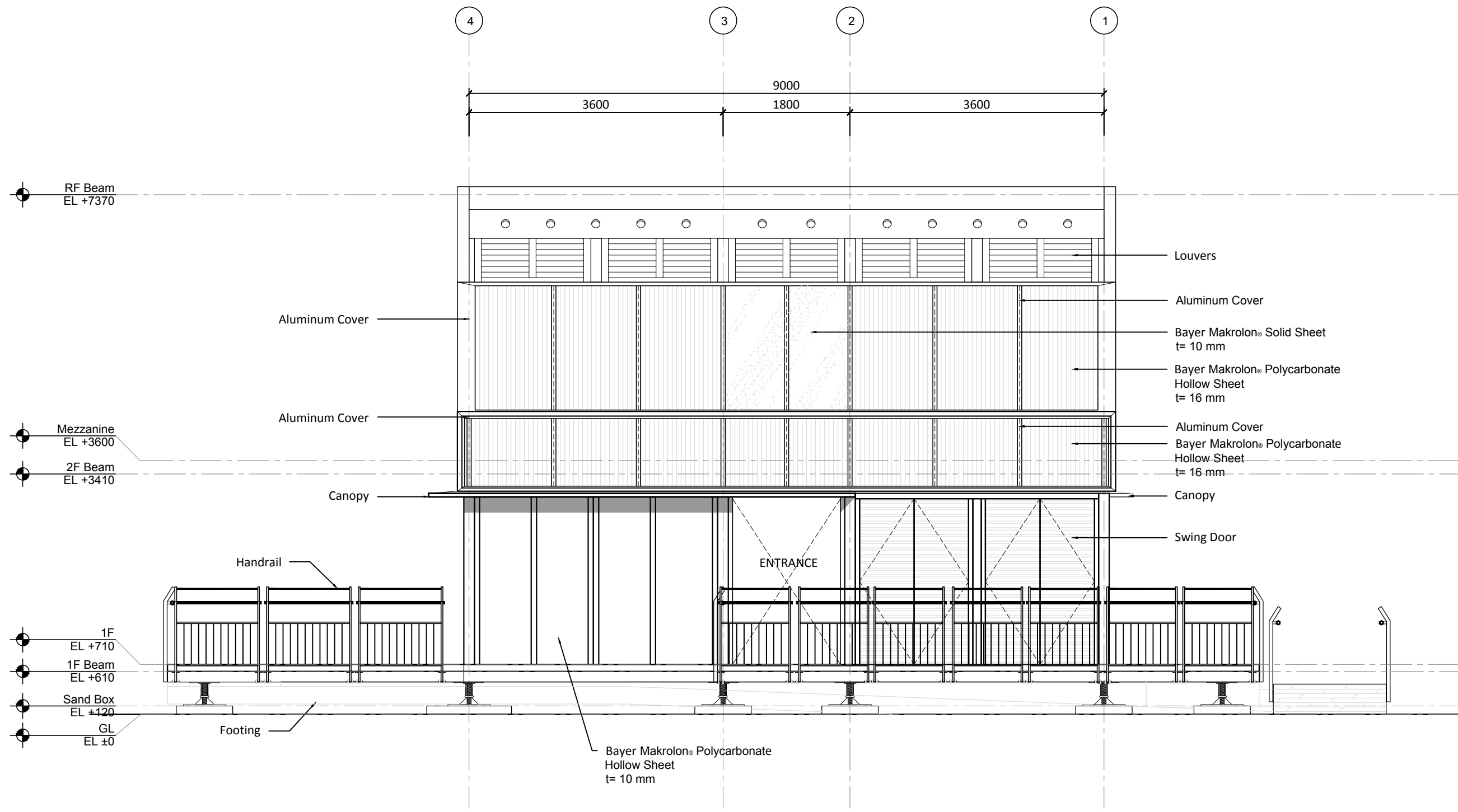




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NORTH ELEVATION	
DWG. No.	PAGE
AR-112	29

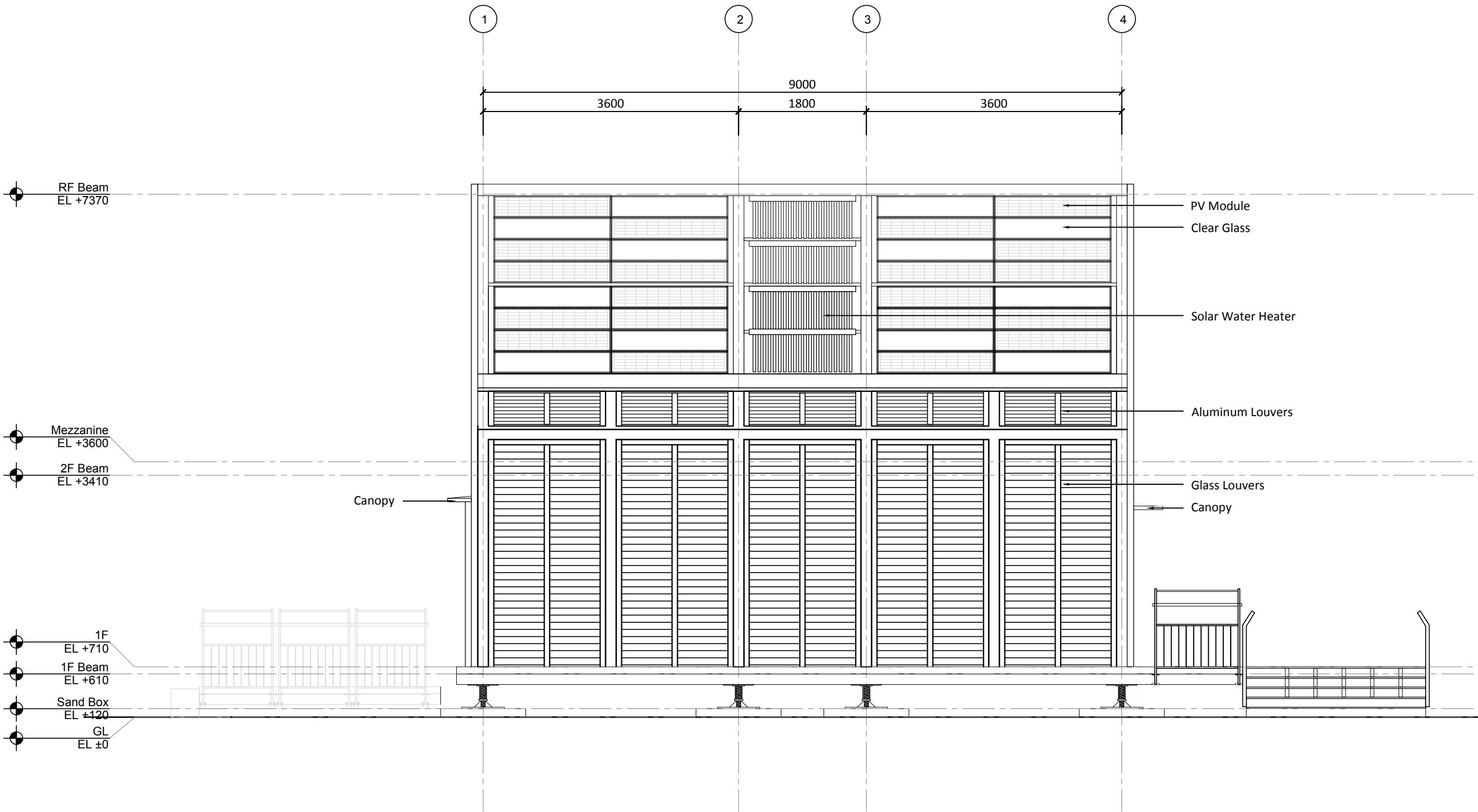




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DWG. Title	
SOUTH ELEVATION	
DWG. No.	PAGE
AR-113	30



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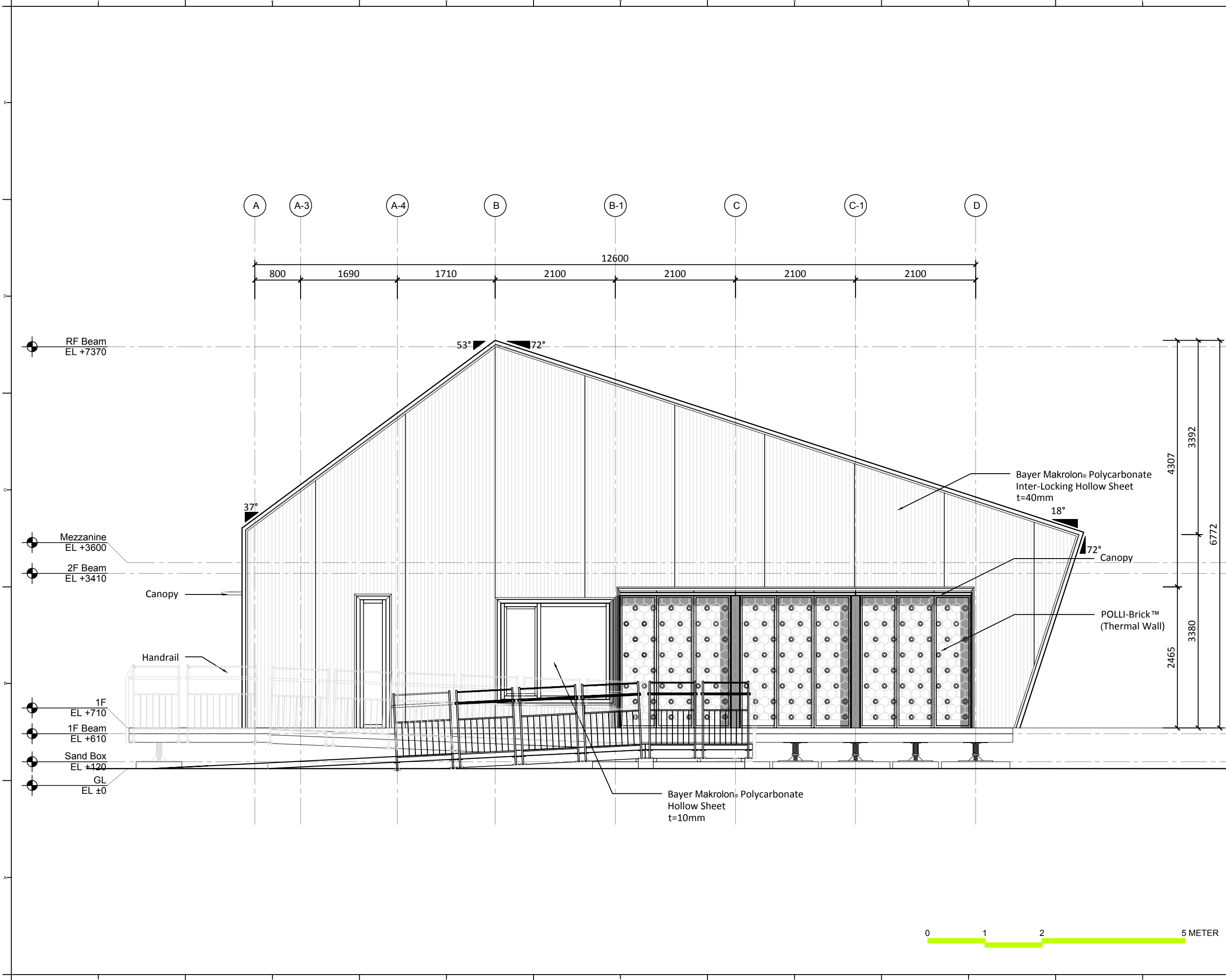
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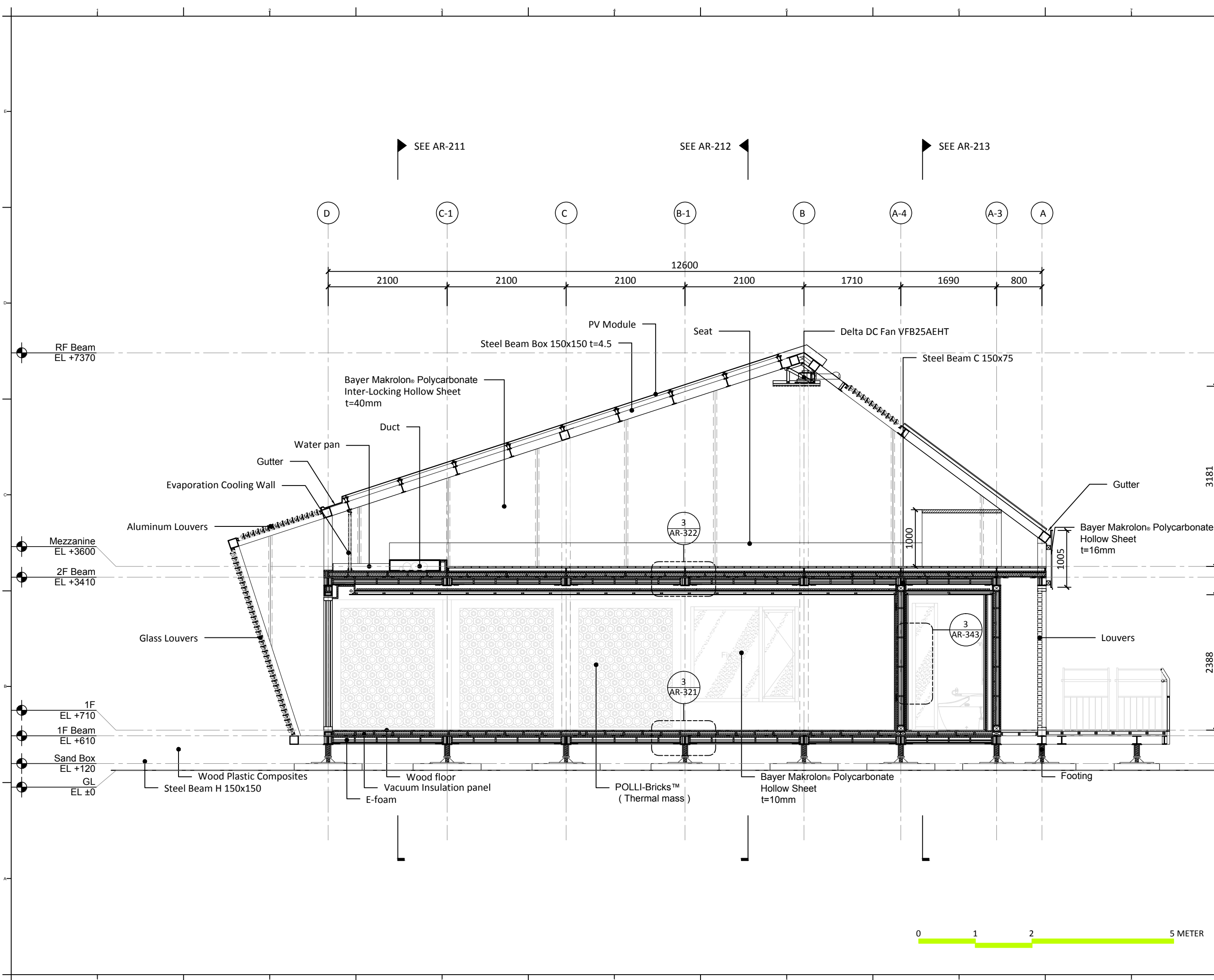
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DWG. Title: WEST ELEVATION  
DWG. No.: AR-114  
PAGE: 31





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SEE AR-211

SEE AR-212

SEE AR-213

D C-1 C B-1 B A-4 A-3 A

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EL +7370

Mezzanine  
EL +3600

2F Beam  
EL +3410

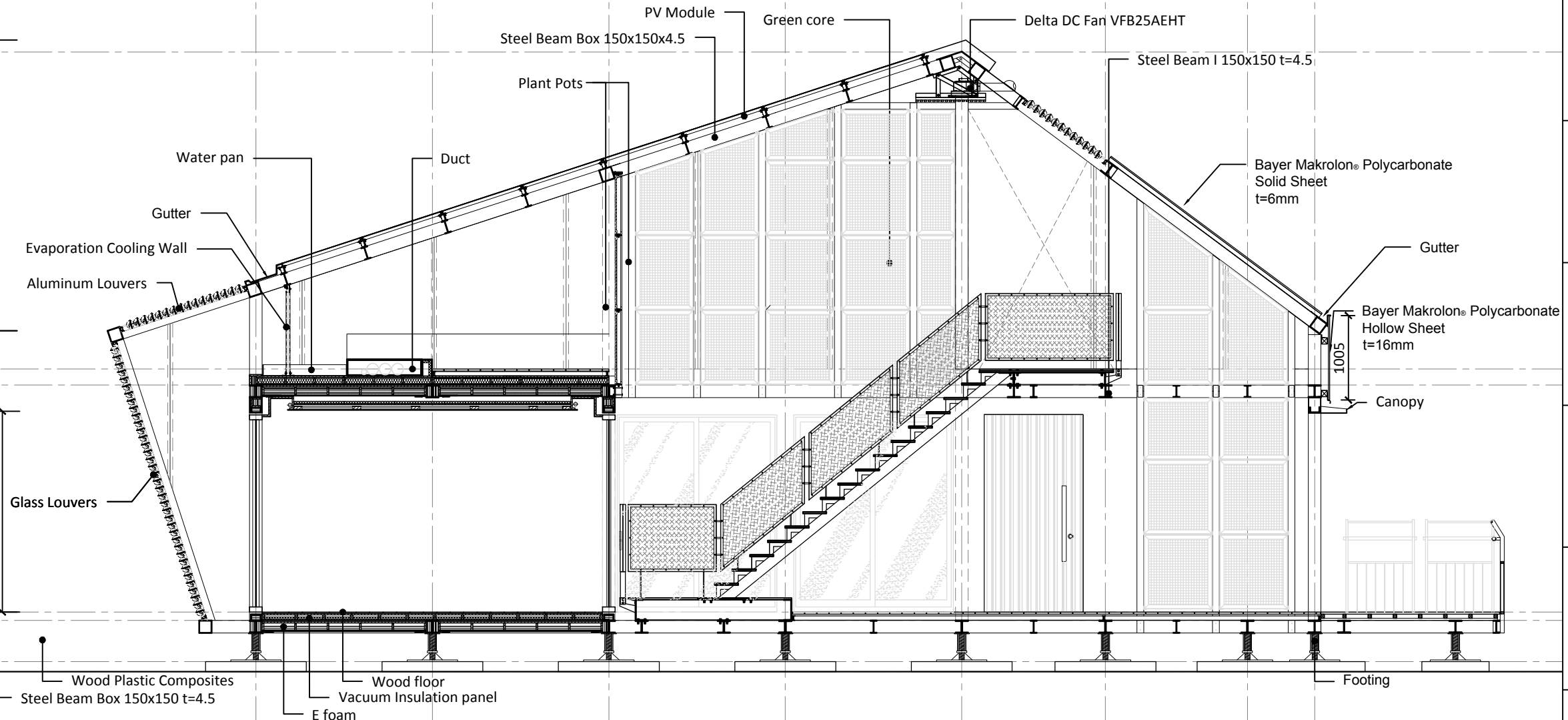
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EL +710

1F Beam  
EL +610

Sand Box  
EL +120

GL  
EL ±0

6802  
3457  
3345  
2388





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ST	2014/11/03	AB Submission

SEE AR-213

SEE AR-212

SEE AR-211

A A-3 A-4 B B-1 C C-1 D

800 1690 1710 2100 12600 2100 2100 2100

RF Beam  
EL +7370

Bayer Makrolon® Polycarbonate  
Inter-Locking Hollow Sheet  
t=40mm

Delta DC Fan VFB25AEHT

PV Module

Steel Beam Box 150x150 t=4.5

Steel Beam C 150x75

Duct

Water pan

Gutter

Evaporation Cooling Wall

Aluminum Louvers

Gutter

Bayer Makrolon® Polycarbonate  
Hollow Sheet  
t=16mm

Mezzanine  
EL +3600

2F Beam  
EL +3410

Canopy

3181

2388

3  
AR-321

1F  
EL +710

1F Beam  
EL +610

Sand Box  
EL +120

GL  
EL ±0

Footing

Wood Plastic Composites  
Steel Beam C 150x75

Bayer Makrolon® Polycarbonate  
Hollow Sheet  
t=10mm

Wood floor  
Vacuum Insulation panel  
E-foam

0 1 2 5 METER

Project:



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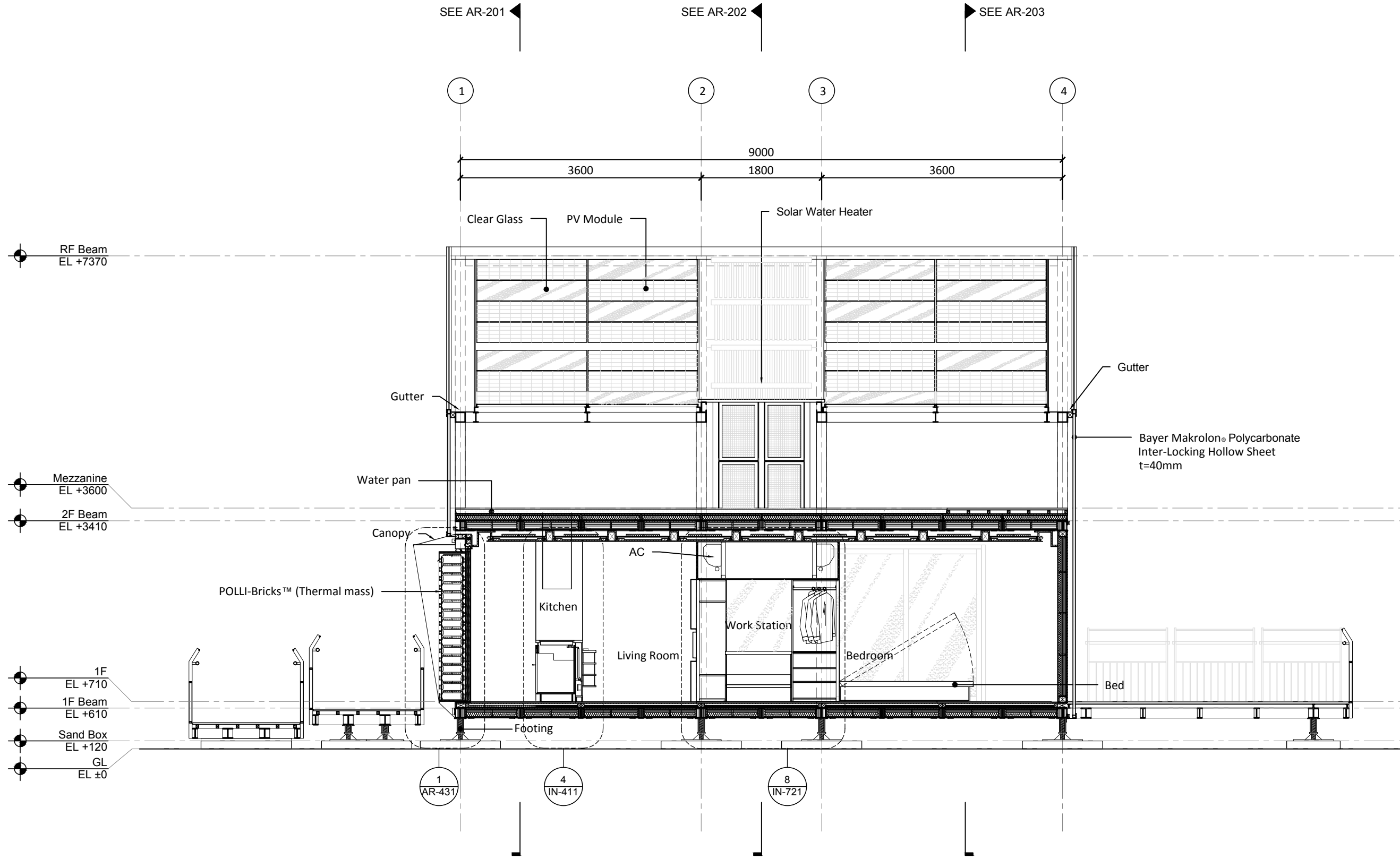
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Unit	mm

DWG. Title  
**TRANSVERSAL SECTIONS**  
1

DWG. No.	PAGE
<b>AR-211</b>	<b>35</b>



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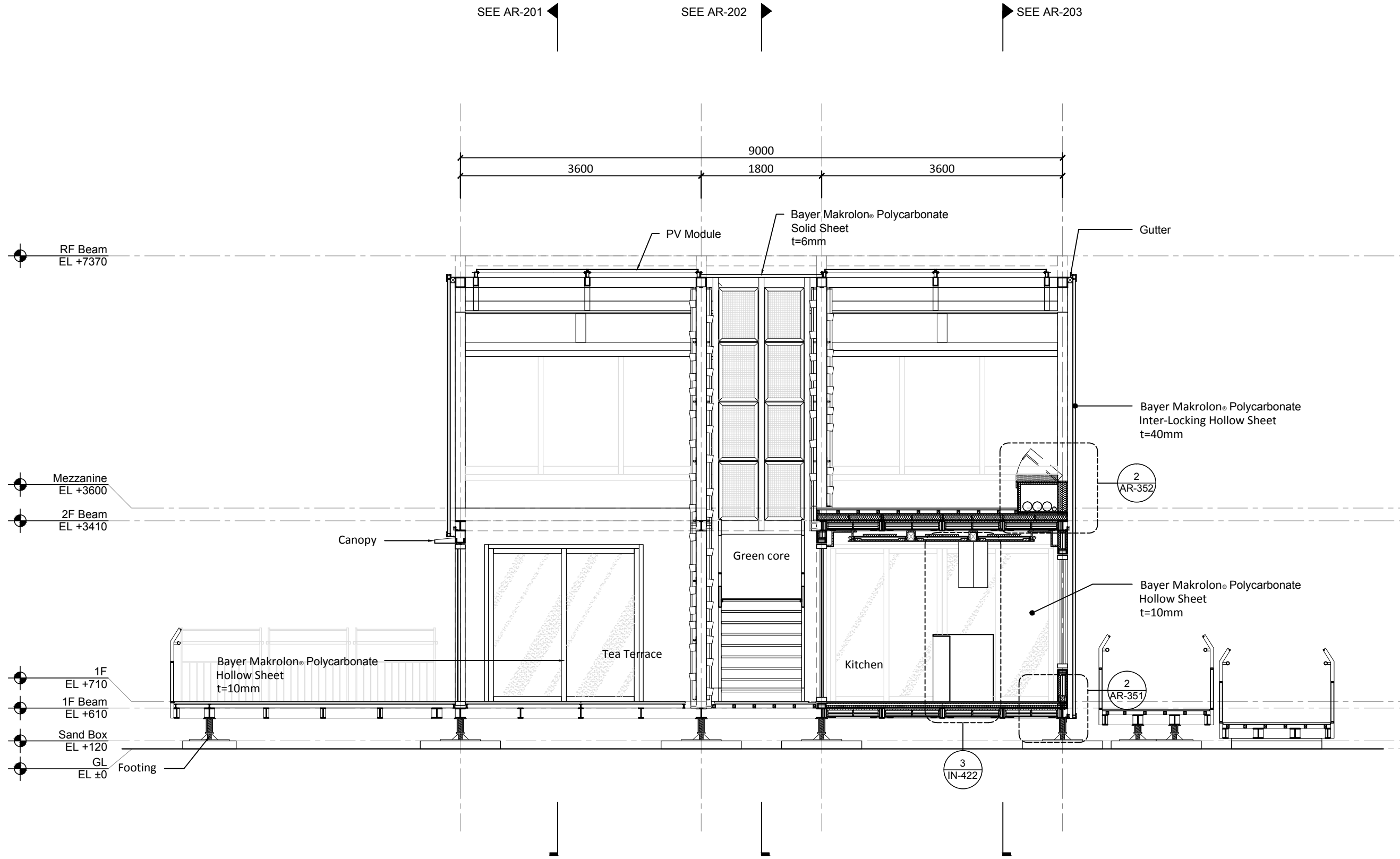
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Unit	mm

DWG. Title  
**TRANSVERSAL SECTIONS**  
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DWG. No.	PAGE
<b>AR-212</b>	<b>36</b>





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Scale	1:60
Unit	mm

DWG. Title  
**TRANSVERSAL SECTIONS**  
3

DWG. No.	PAGE
<b>AR-213</b>	<b>37</b>

SEE AR-201

SEE AR-202

SEE AR-203

1 2 3 4

3600 1800 3600 9000

RF Beam  
EL +7370

Mezzanine  
EL +3600

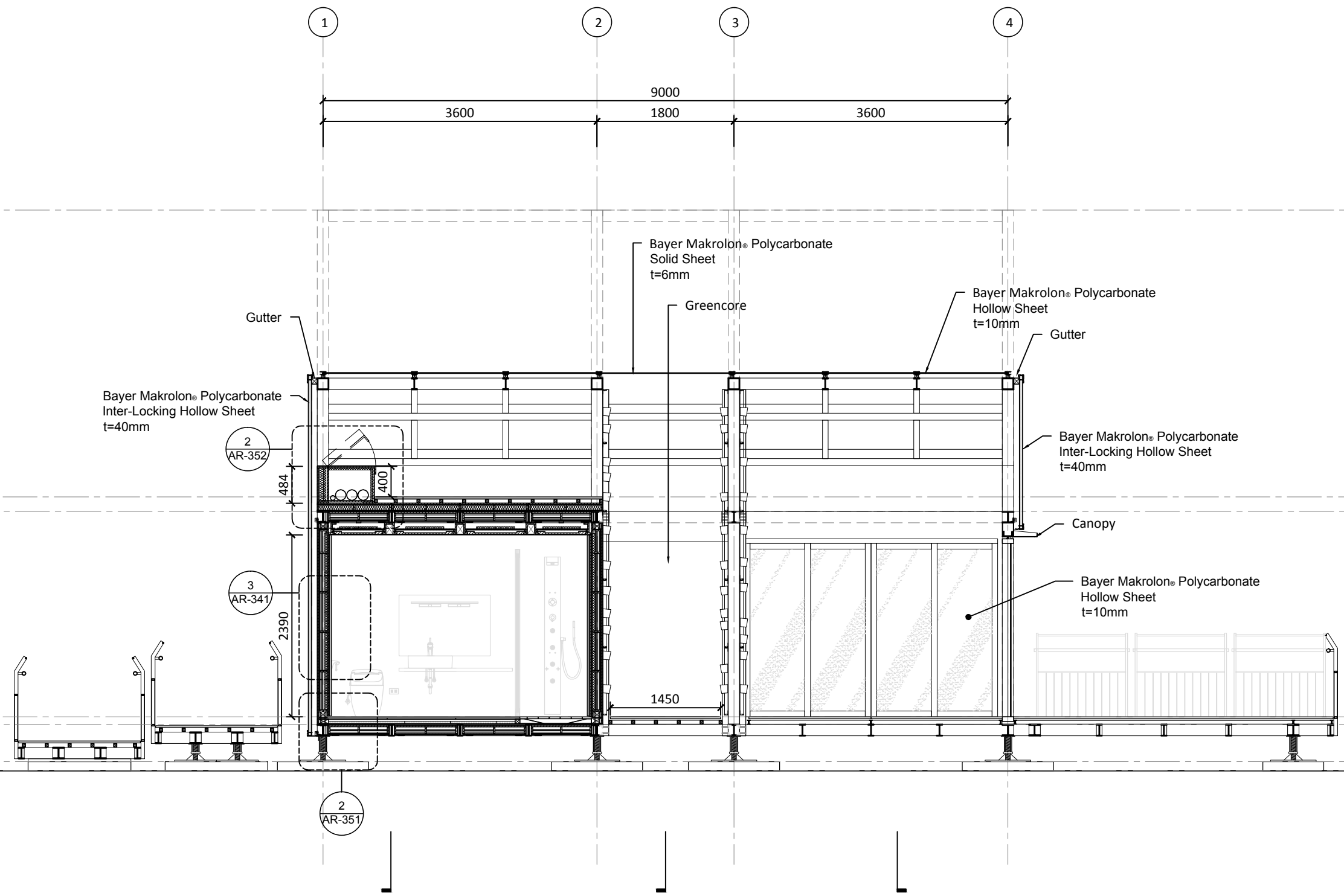
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1F  
EL +710

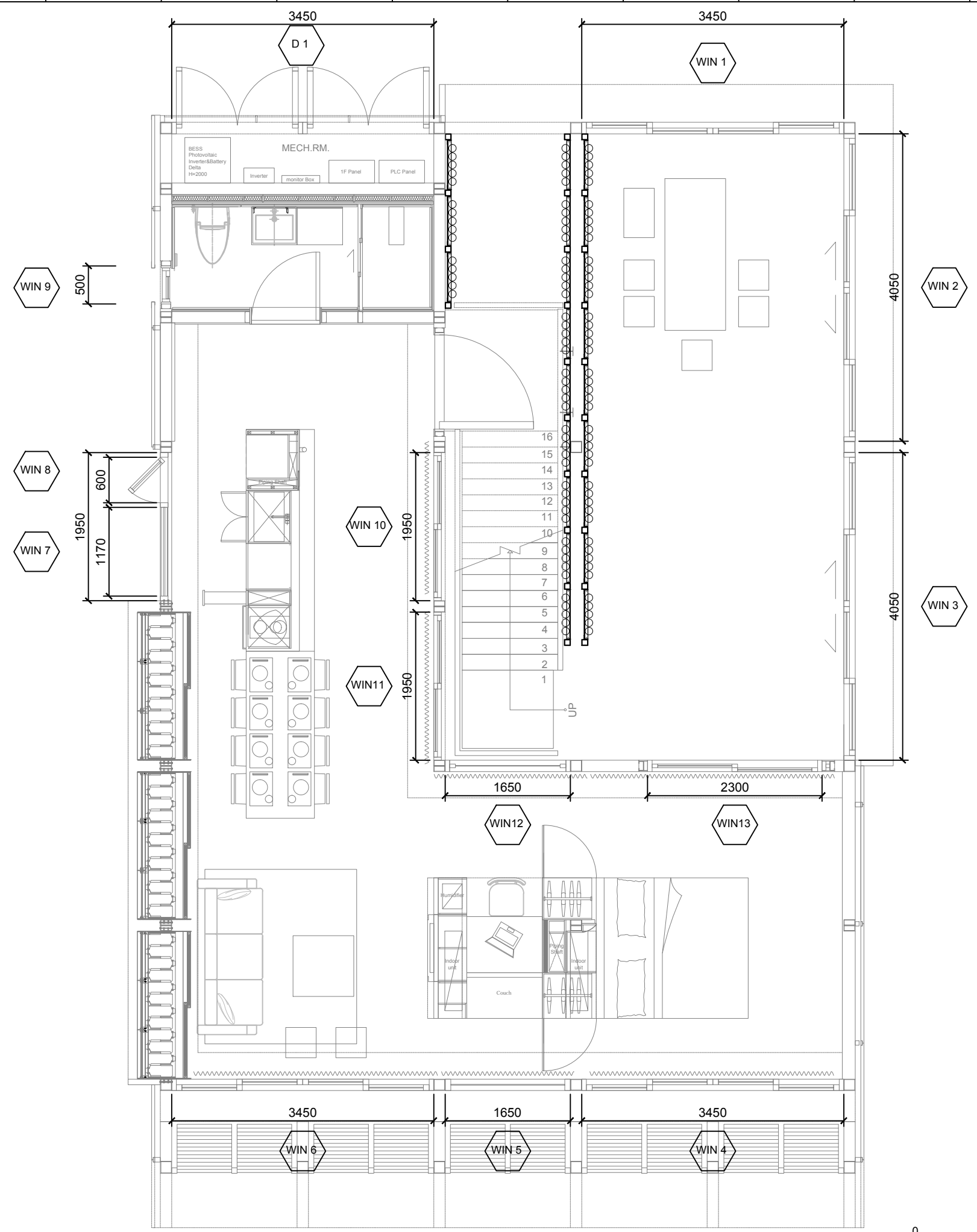
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EL +610

Sand Box  
EL +120

GL  
EL ±0



0 1 2 5 METER



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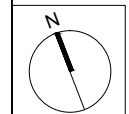
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DWG. Title  
**WINDOW SCHEDULE AND DETAILS 1**

DWG. No. **AR-301** PAGE **38**

Project:



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Checked by

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Unit

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DWG. Title

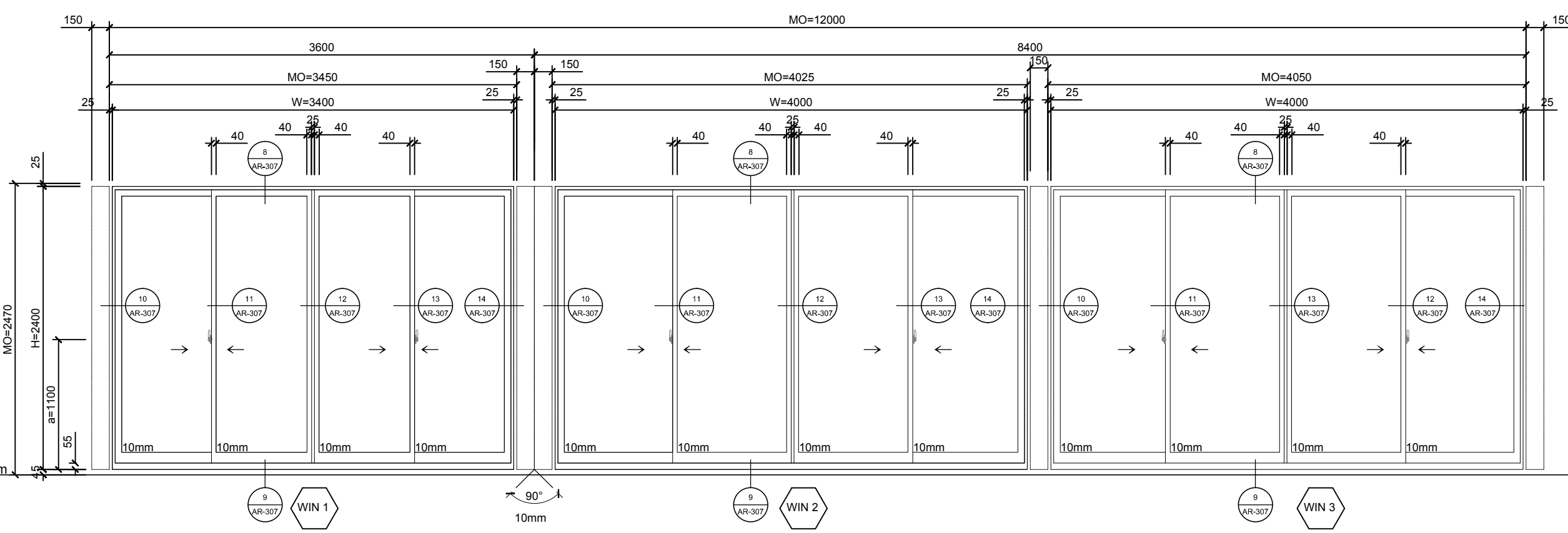
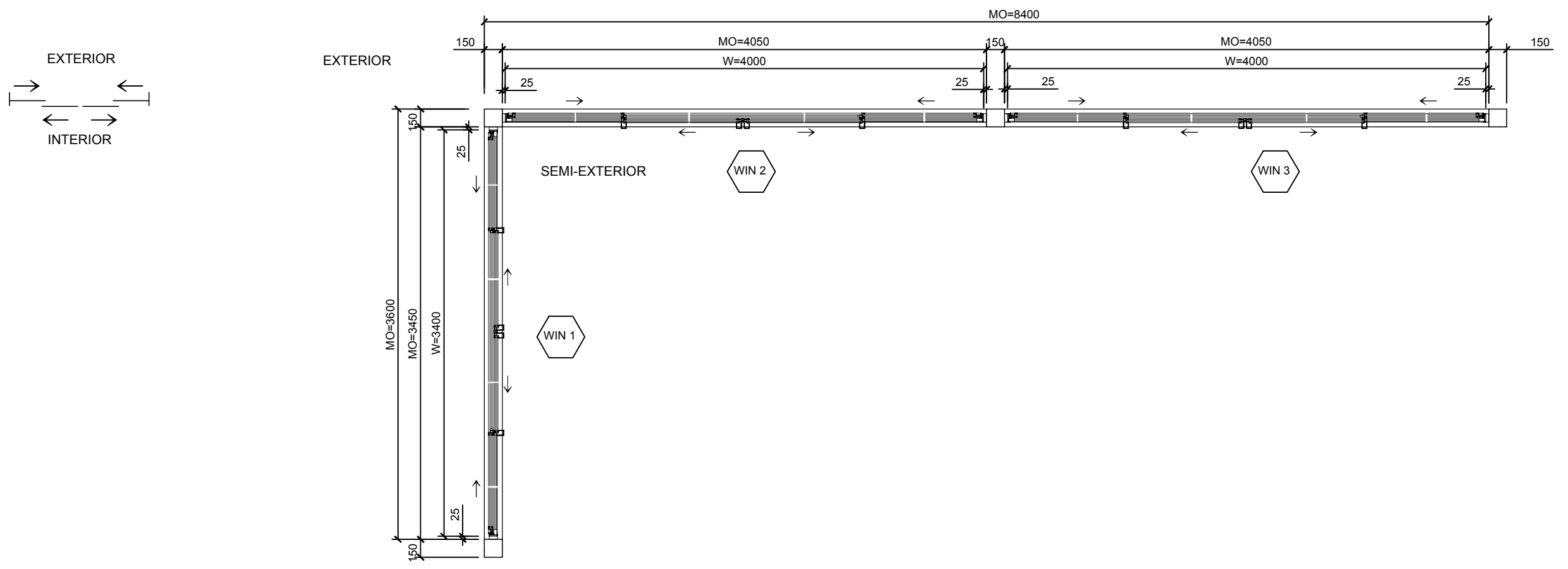
WINDOW SCHEDULE AND DETAILS 2

DWG. No.

AR-302

PAGE

39



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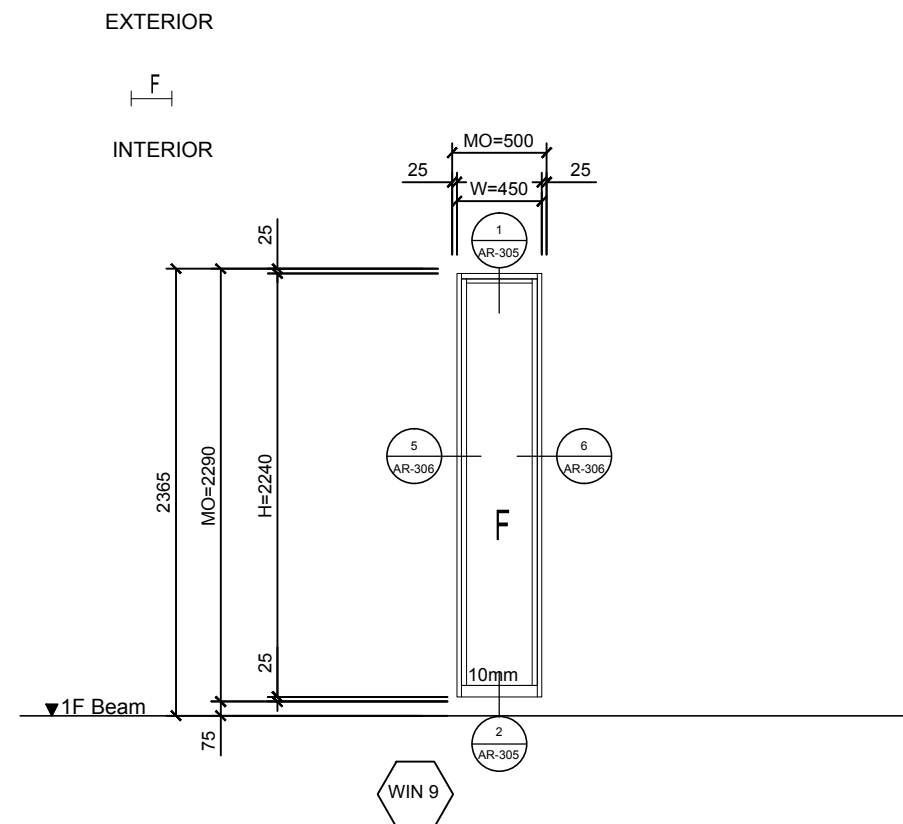
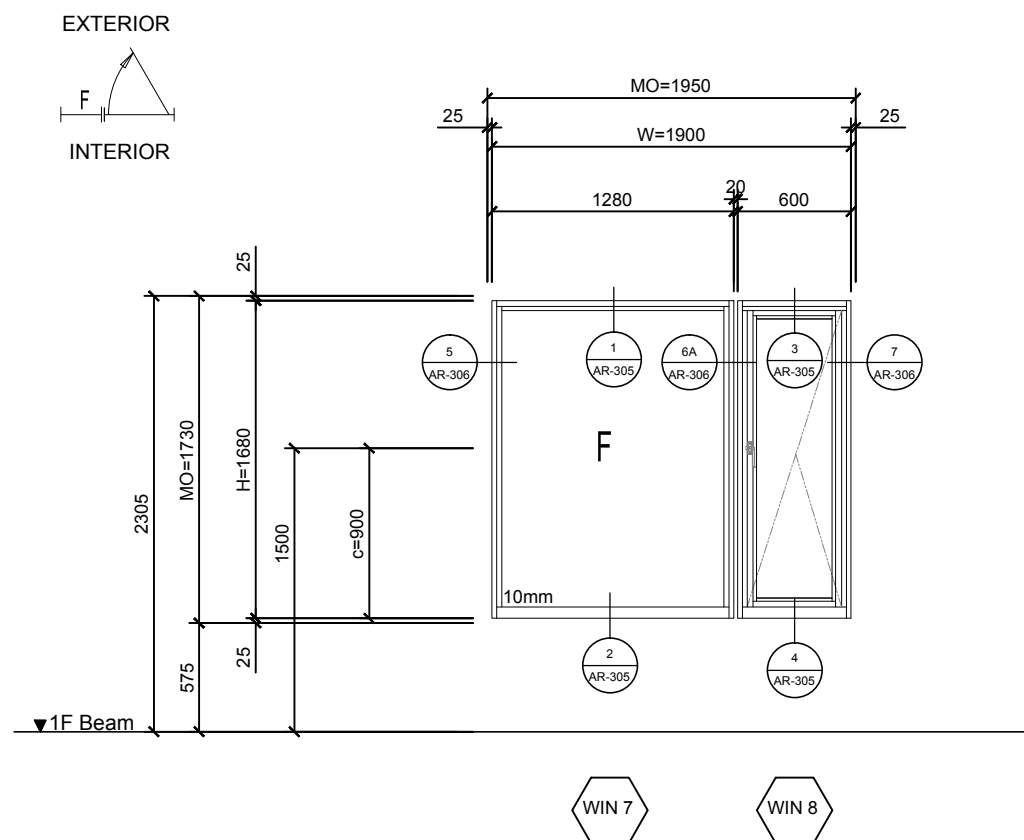
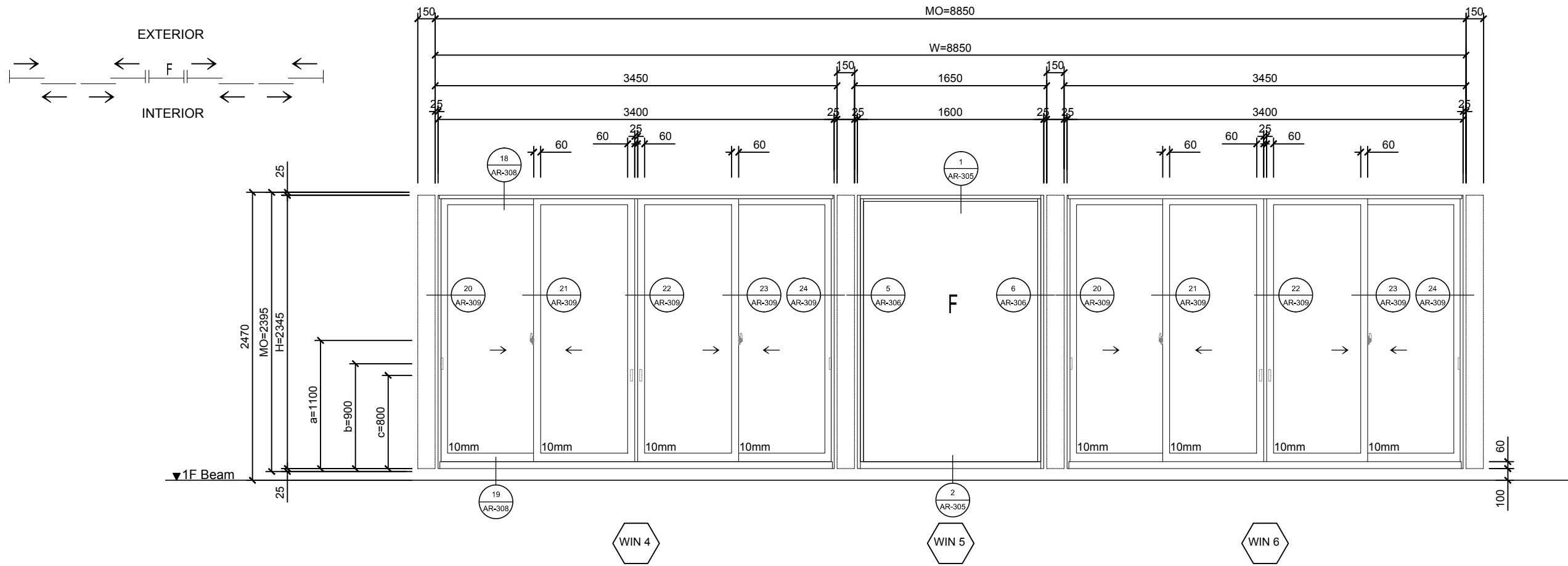
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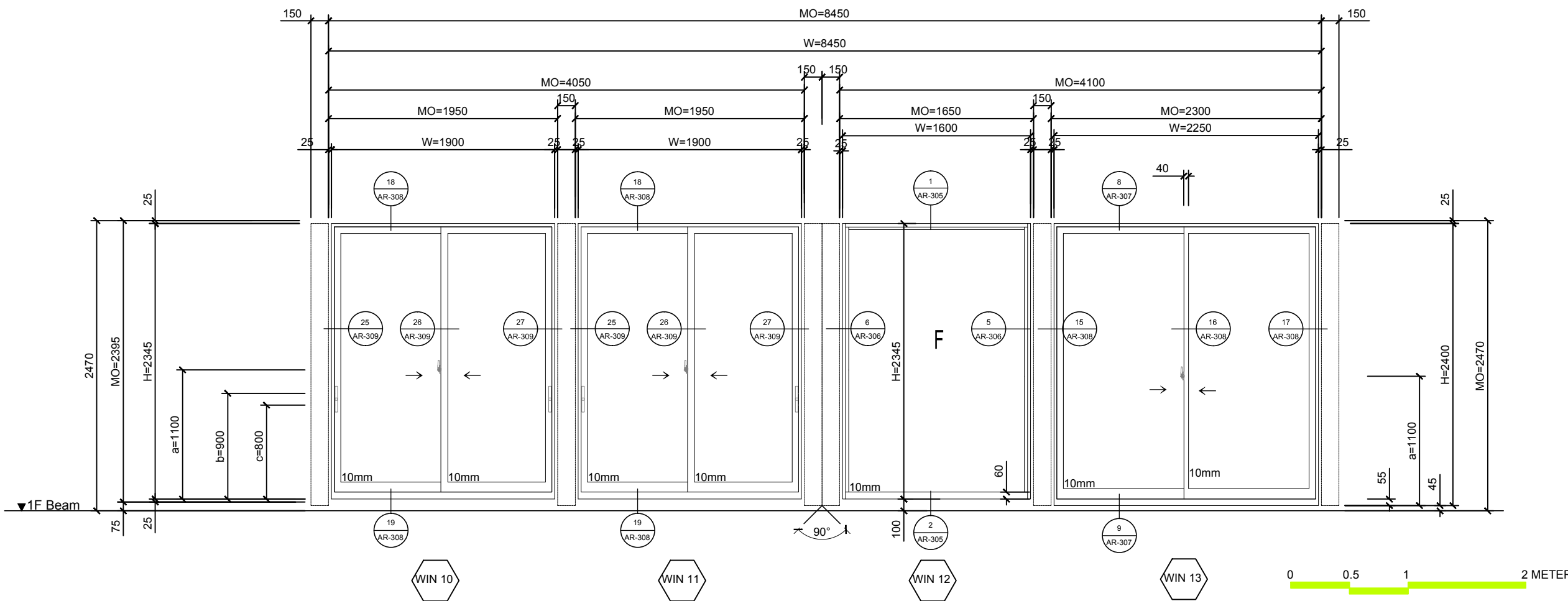
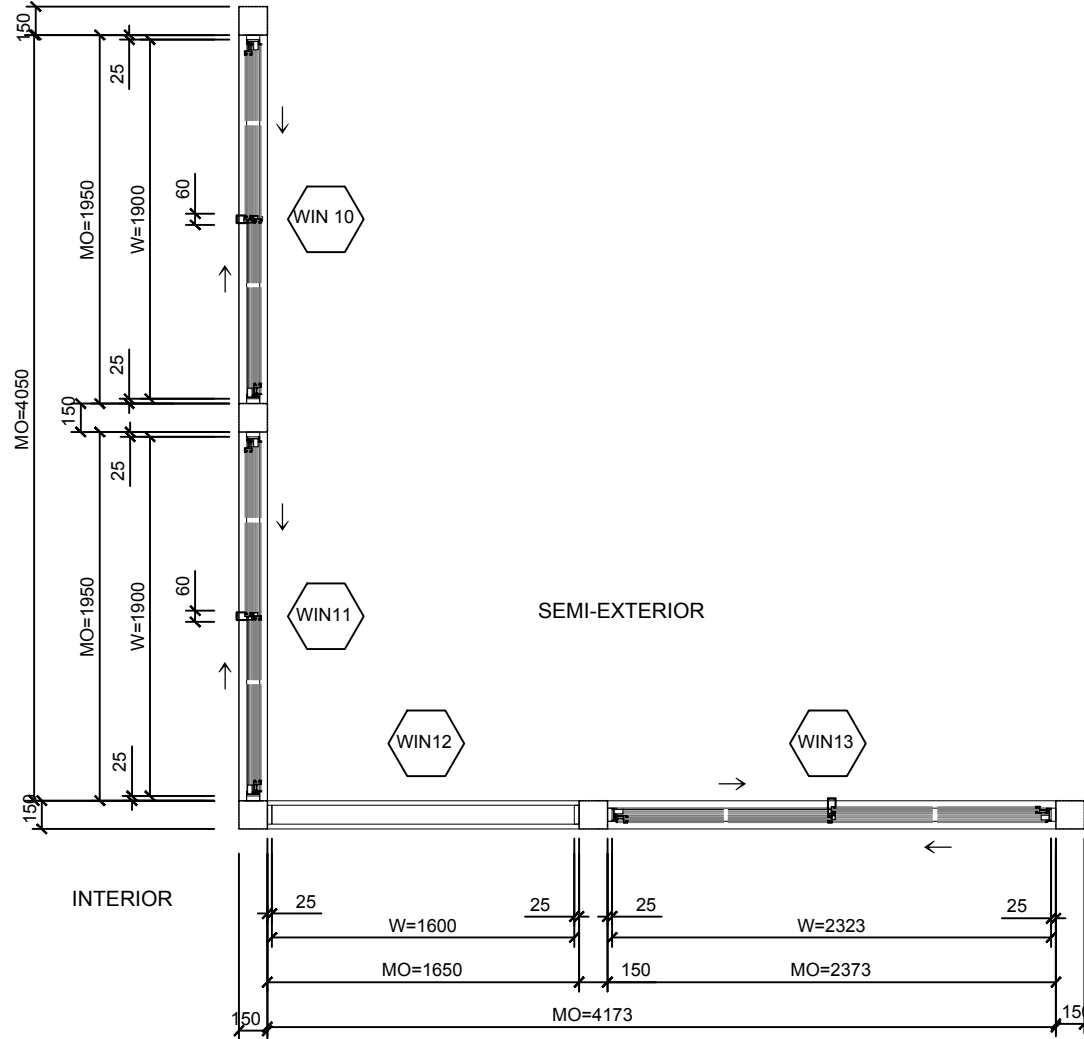
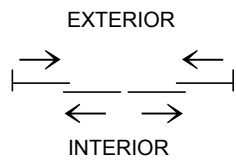
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DWG. No.	PAGE
<b>AR-303</b>	<b>40</b>



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Unit mm

DWG. Title

WINDOW SCHEDULE AND DETAILS 4

DWG. No. AR-304

PAGE

41

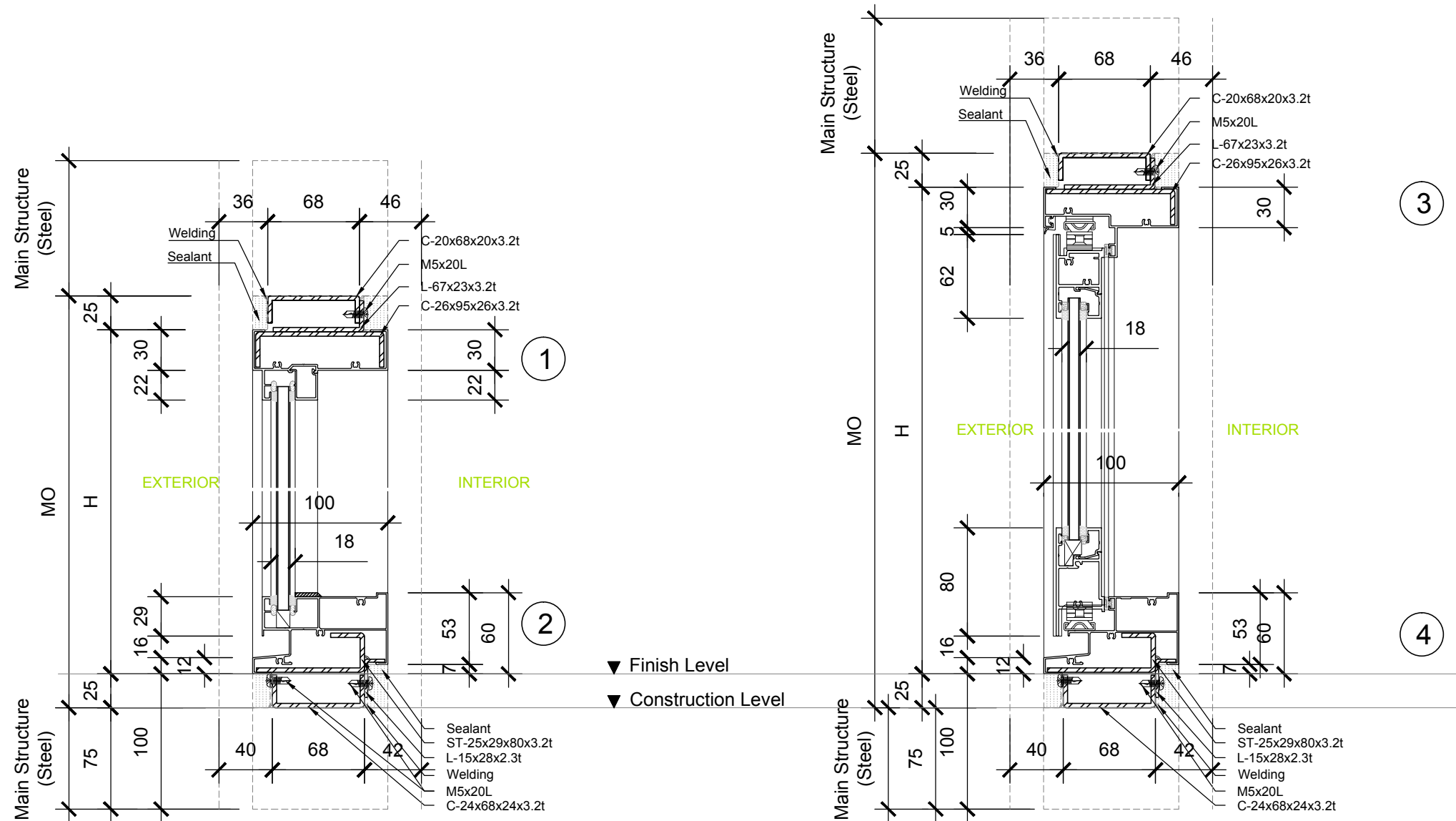


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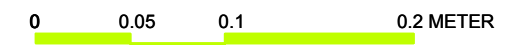
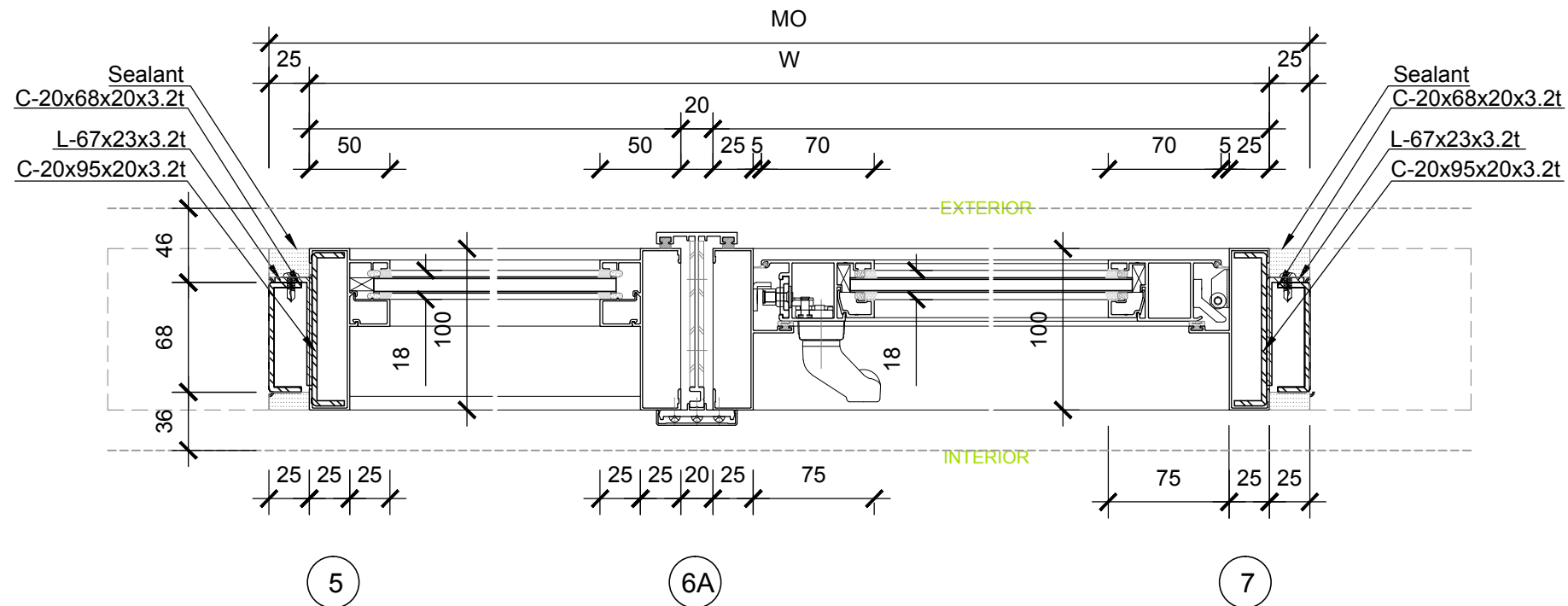
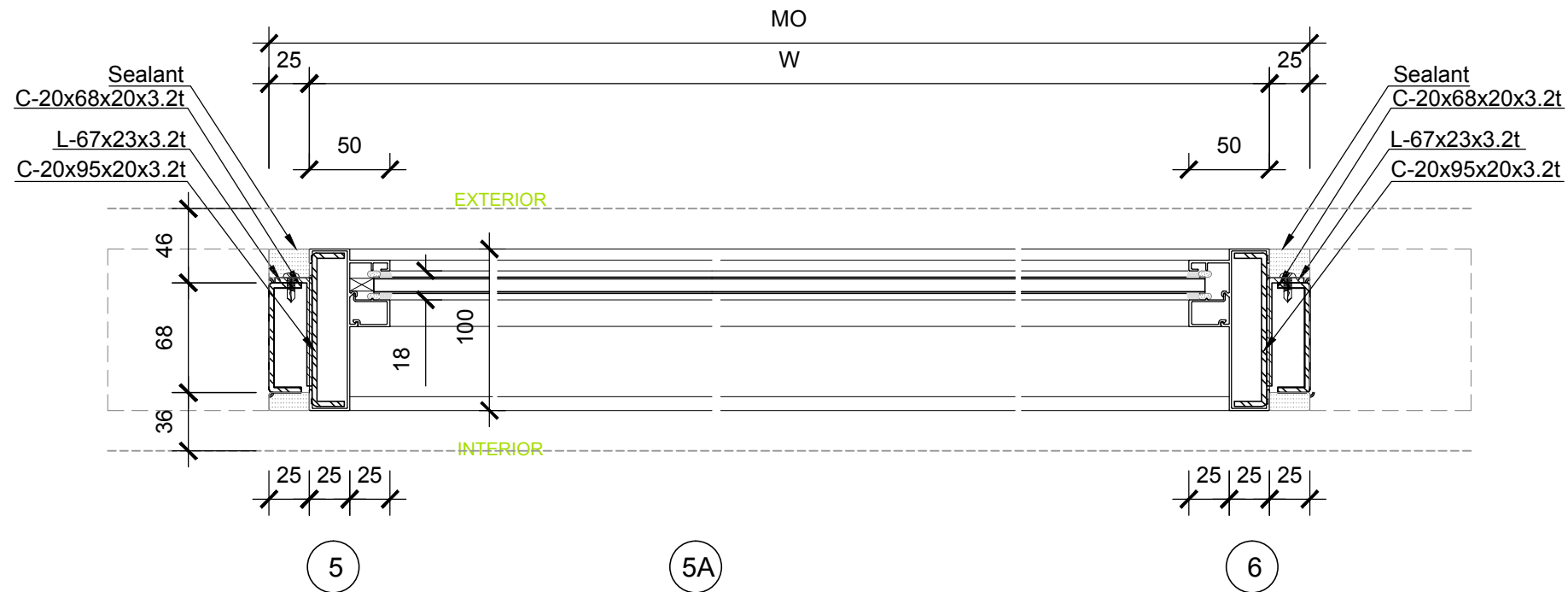
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DWG. No.	PAGE
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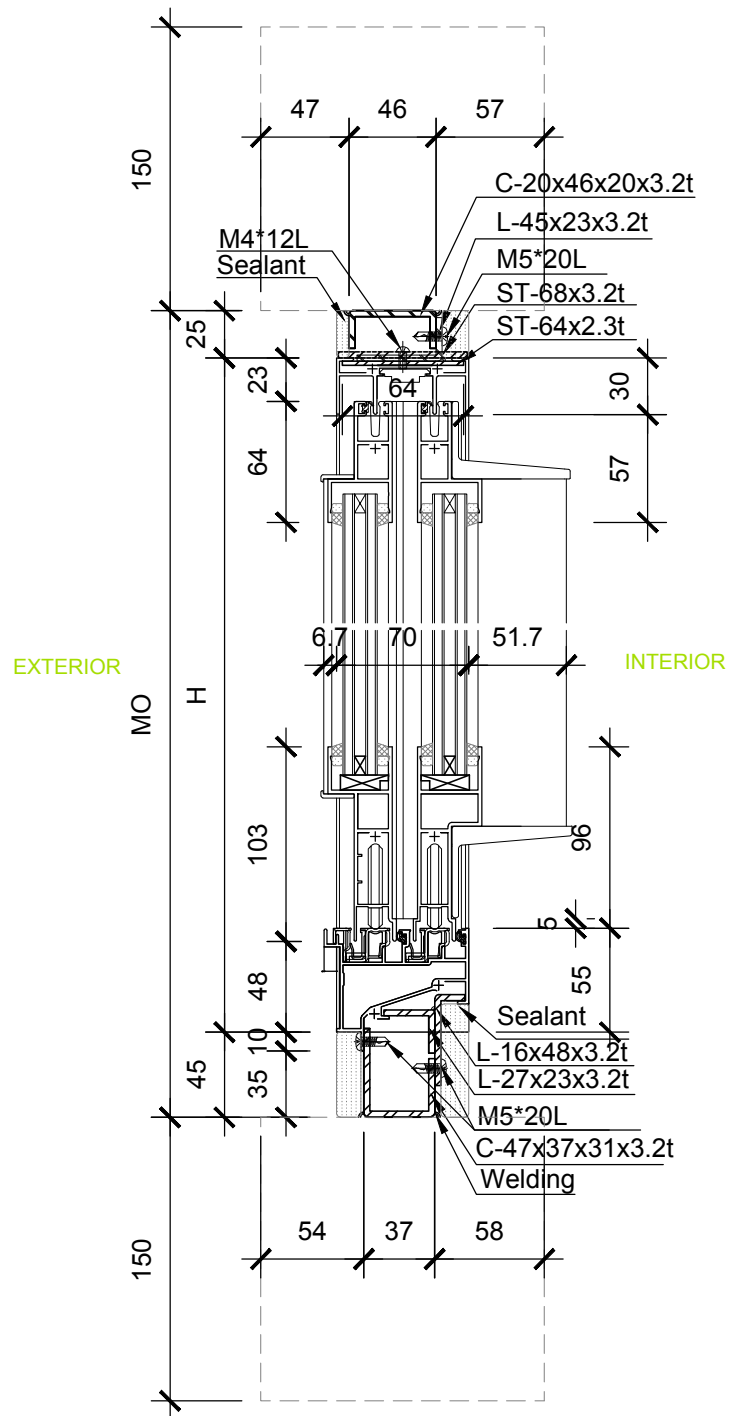


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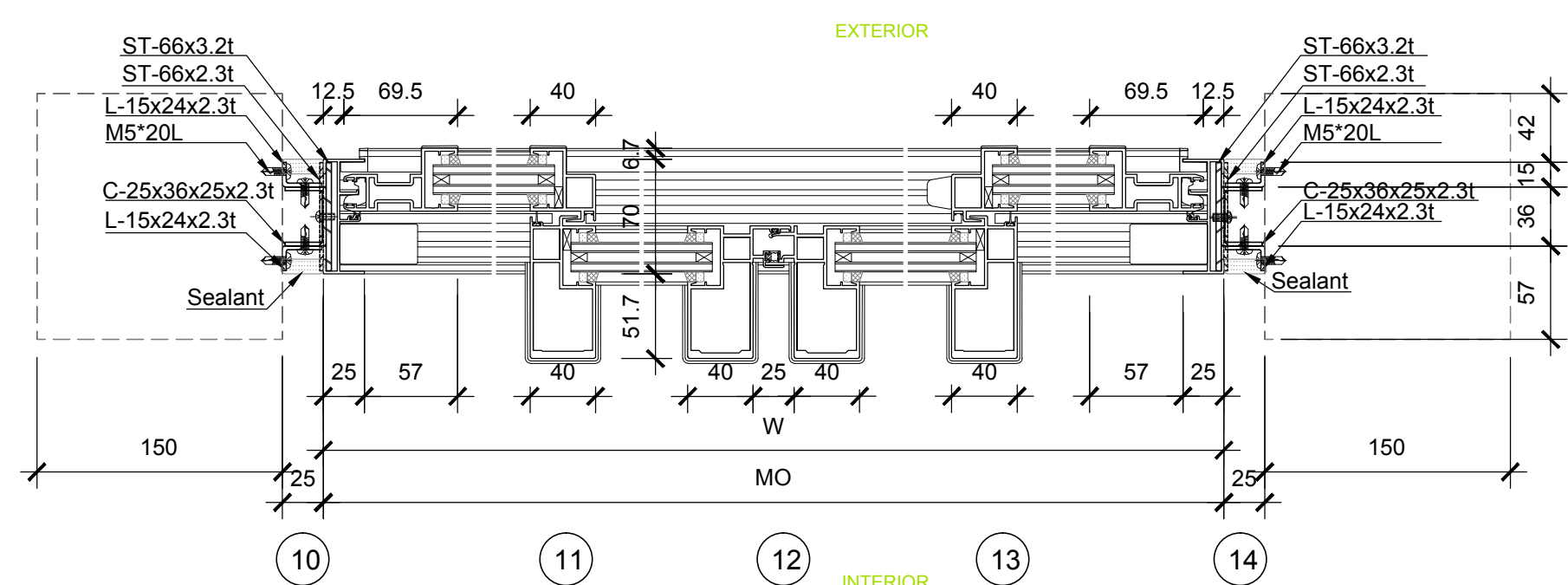
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Unit	mm

DWG. Title  
**WINDOW SCHEDULE AND DETAILS 7**

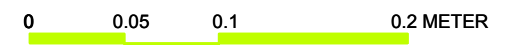
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<b>AR-307</b>	<b>44</b>



8



9





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DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
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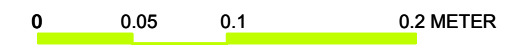
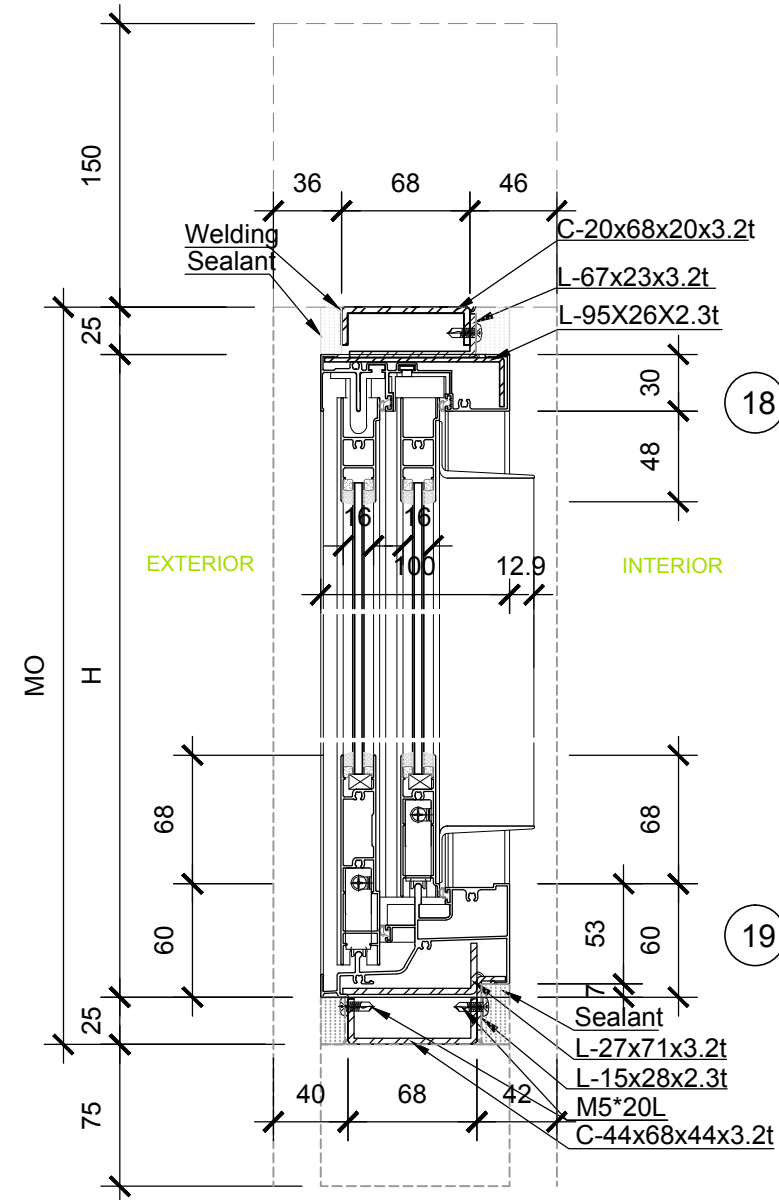
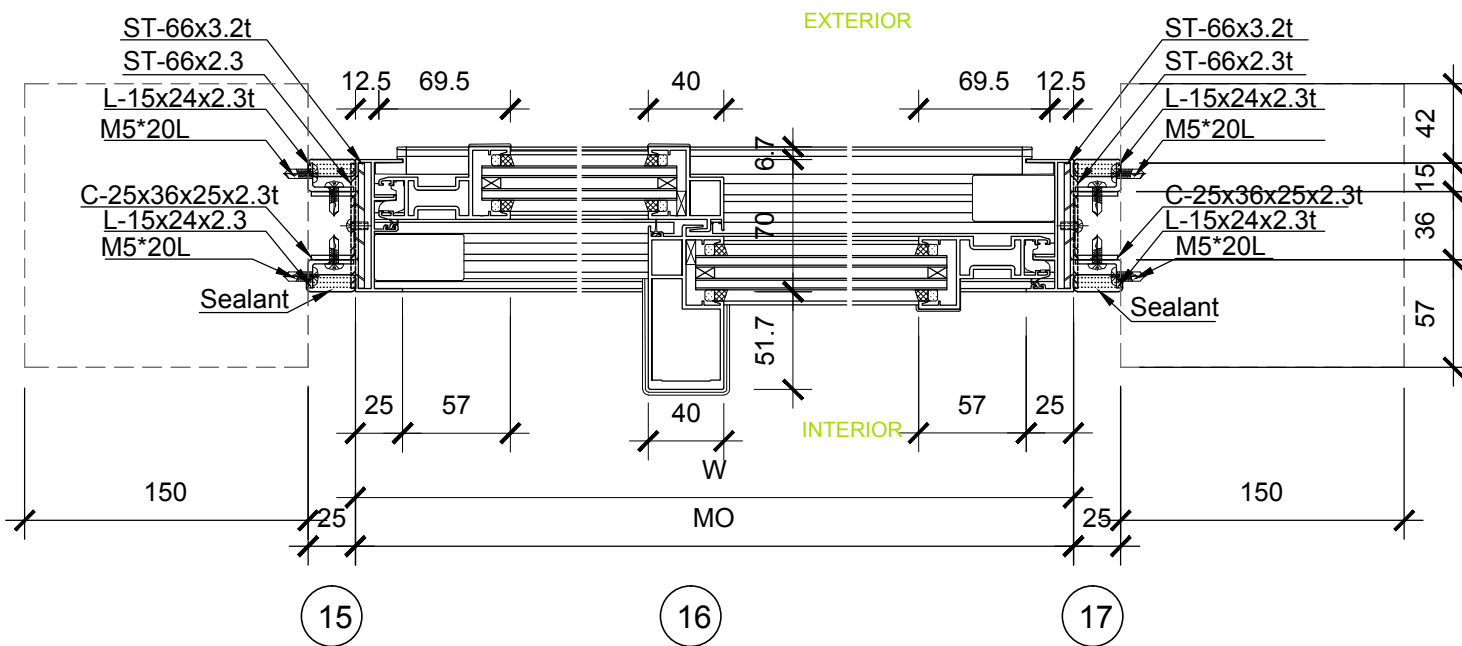
DWG. Title

WINDOW SCHEDULE AND DETAILS 8

DWG. No. AR-308

PAGE

45



Project:



Institution:



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Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
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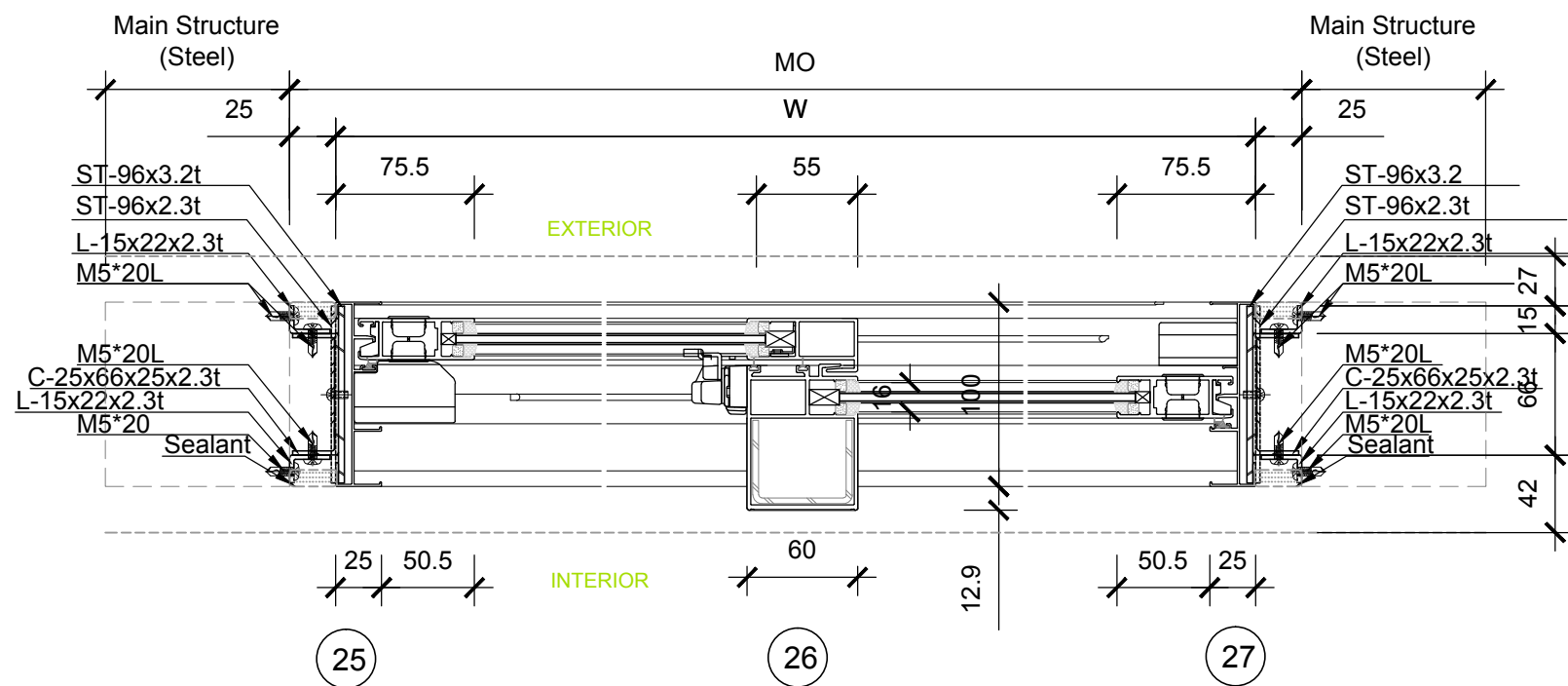
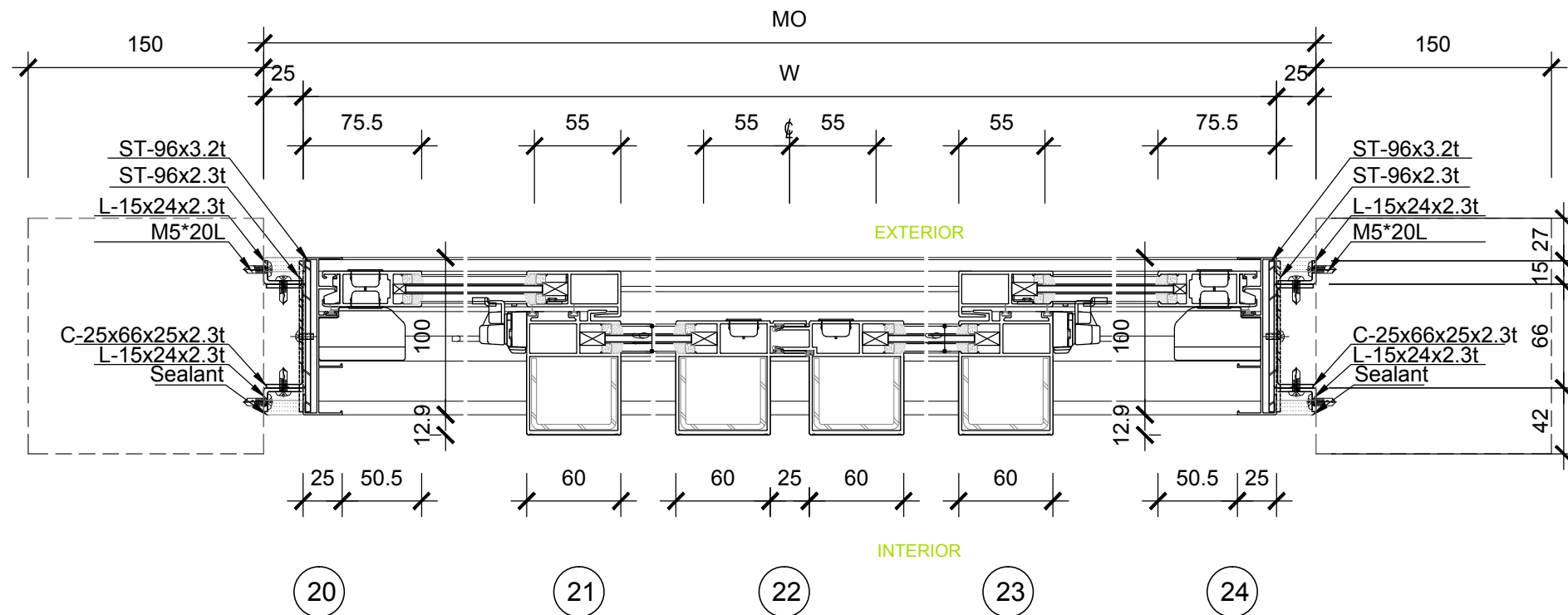
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WINDOW SCHEDULE AND DETAILS 9

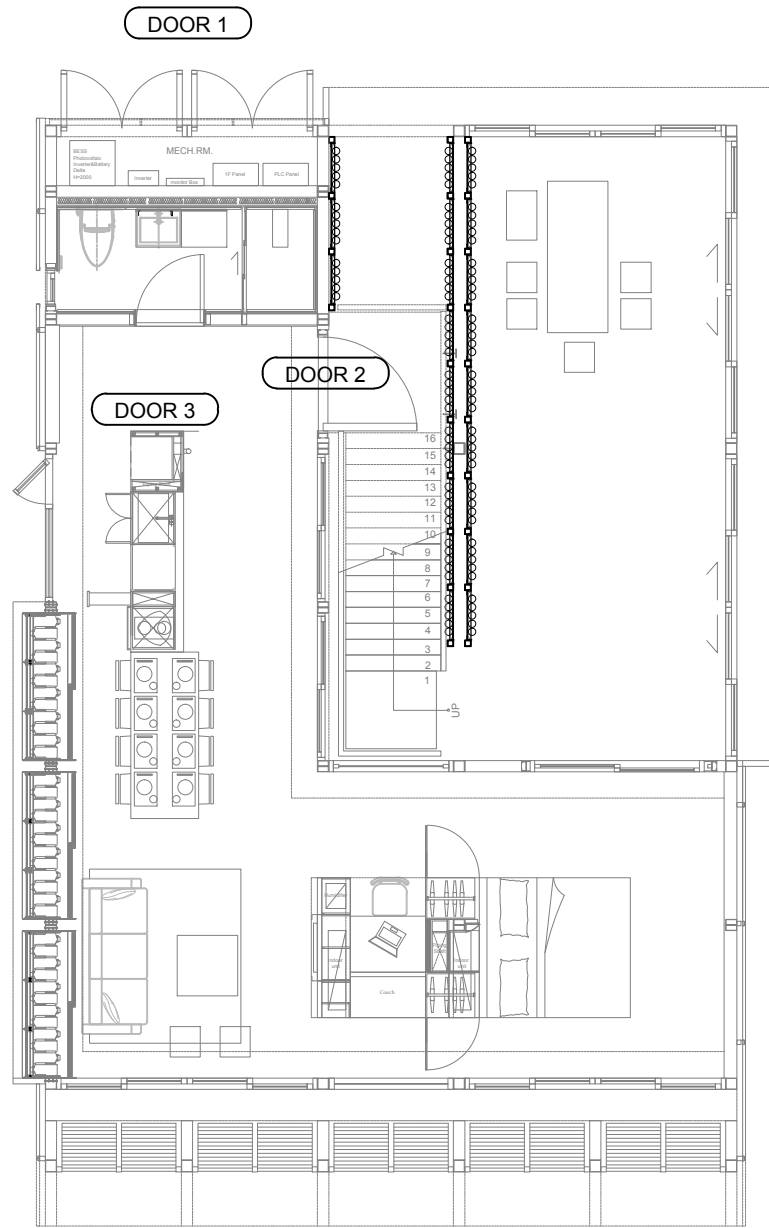
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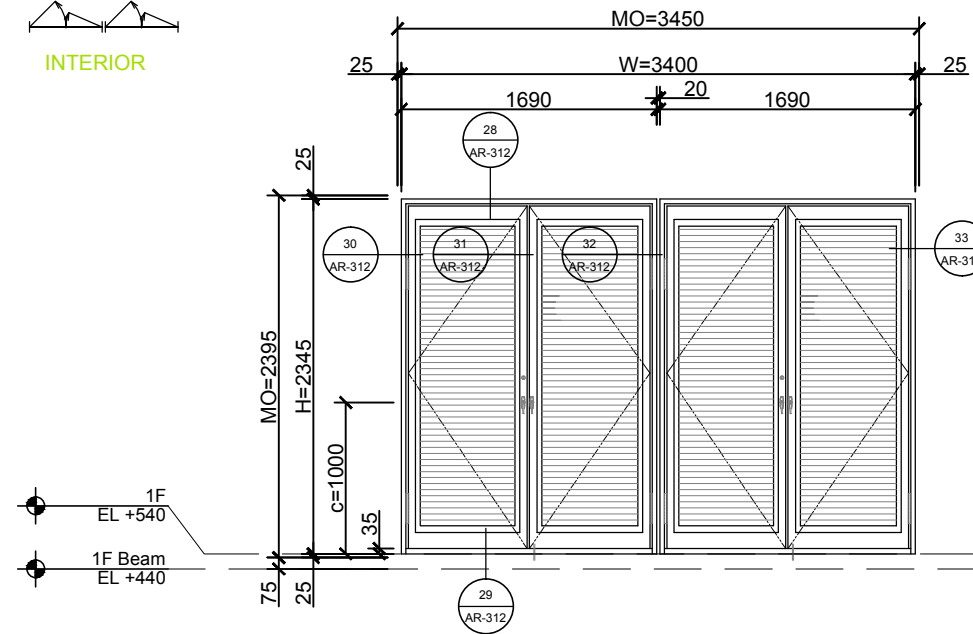
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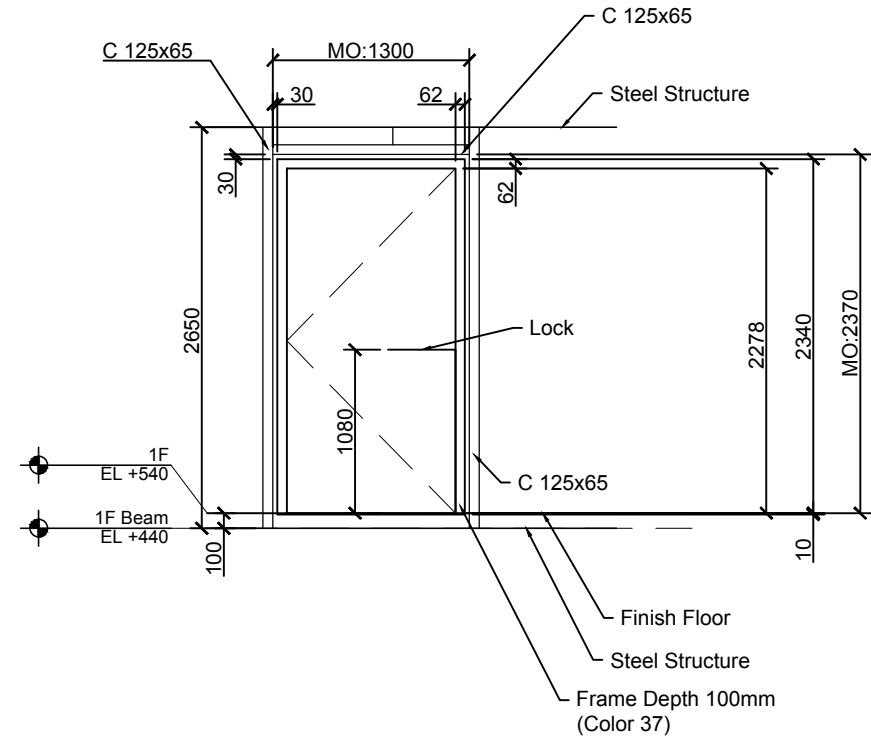
0 0.05 0.1 0.2 METER



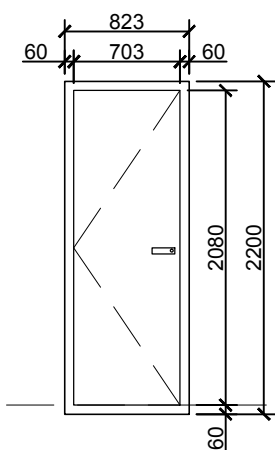
EXTERIOR  
INTERIOR



TYPE	HINGED
LOCATION	MECH RM
NOTE	FIRE RATED
MATERIAL	METEL GRILL



TYPE	HINGED
LOCATION	ENTRANCE
NOTE	FIRE RATED
MATERIAL	METEL+GLASS



TYPE	HINGED
LOCATION	BATH RM
NOTE	FIRE RATED
MATERIAL	WOOD

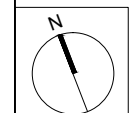


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ST	2013/11/01	DD Submission
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ST	2014/11/03	AB Submission

Drawn by	CF
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Unit	mm

DWG. Title  
DOOR SCHEDULE AND  
DETAILS 1

DWG. No. AR-311  
PAGE 47

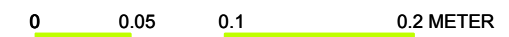
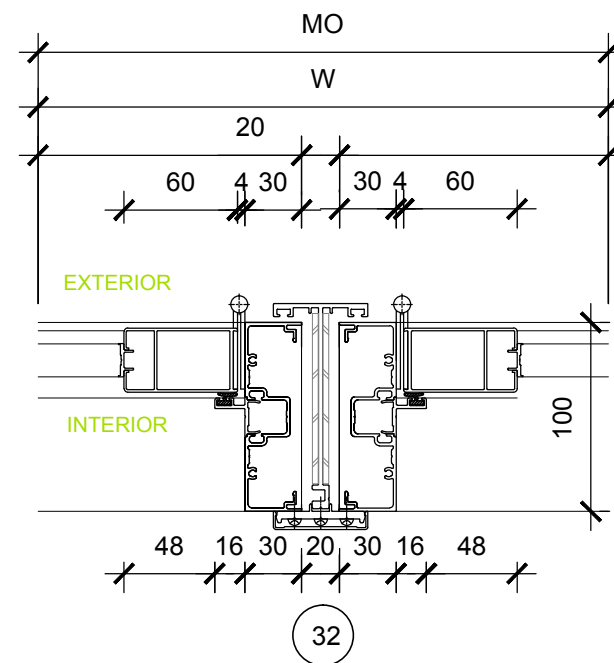
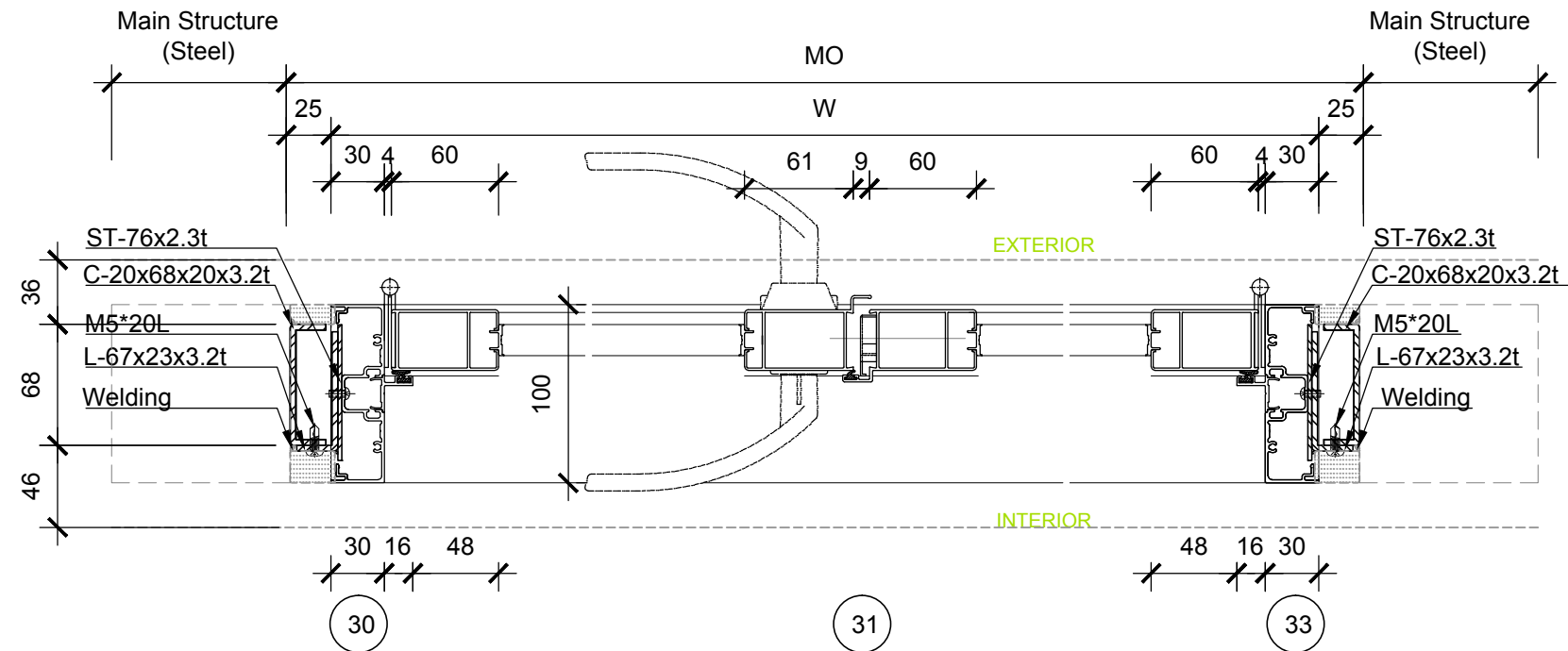
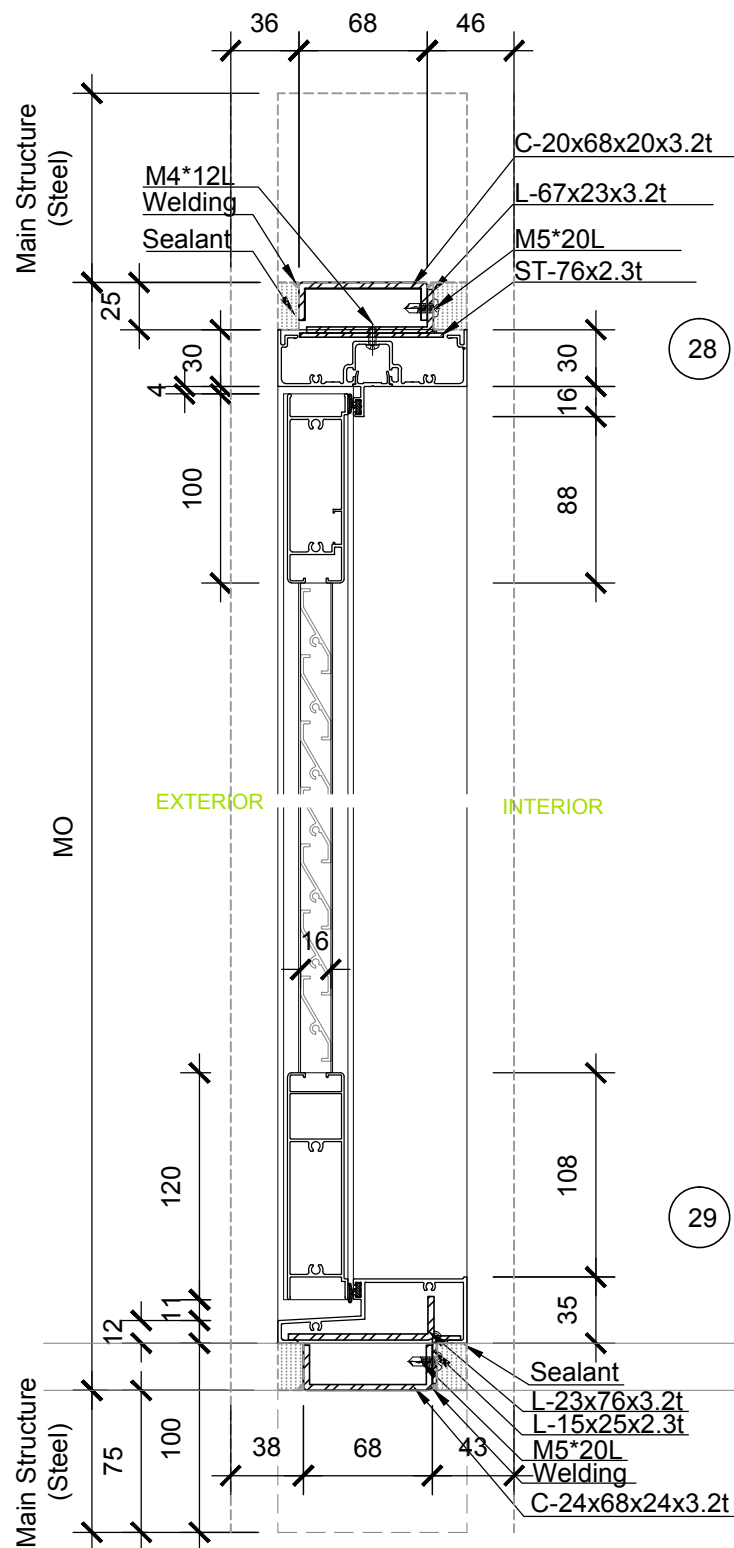


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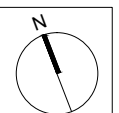
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Unit	mm

DWG. Title  
**DOOR SCHEDULE AND DETAILS 2**

DWG. No.	PAGE
<b>AR-312</b>	<b>48</b>







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DN	2013/07/01	DDc Submission
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Checked by DN

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Unit mm

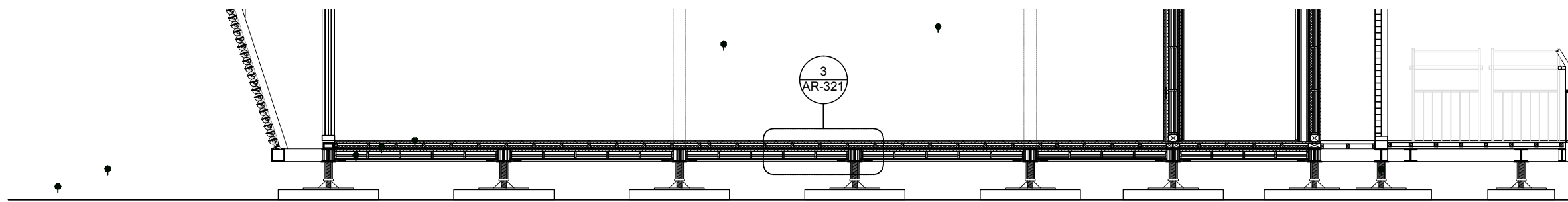
DWG. Title  
**FLOOR CONSTRUCTION  
GROUNDLEVEL**

DWG. No. AR-321

PAGE

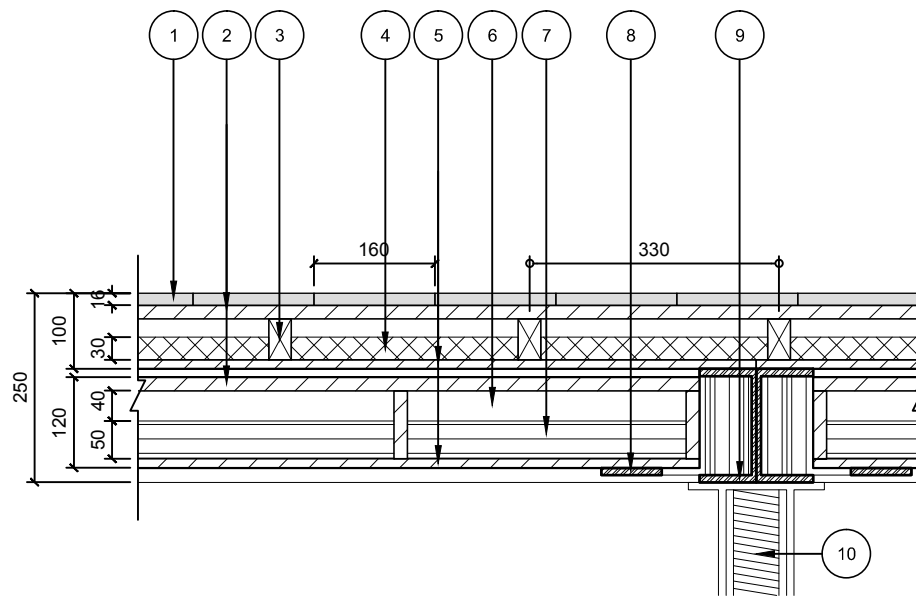
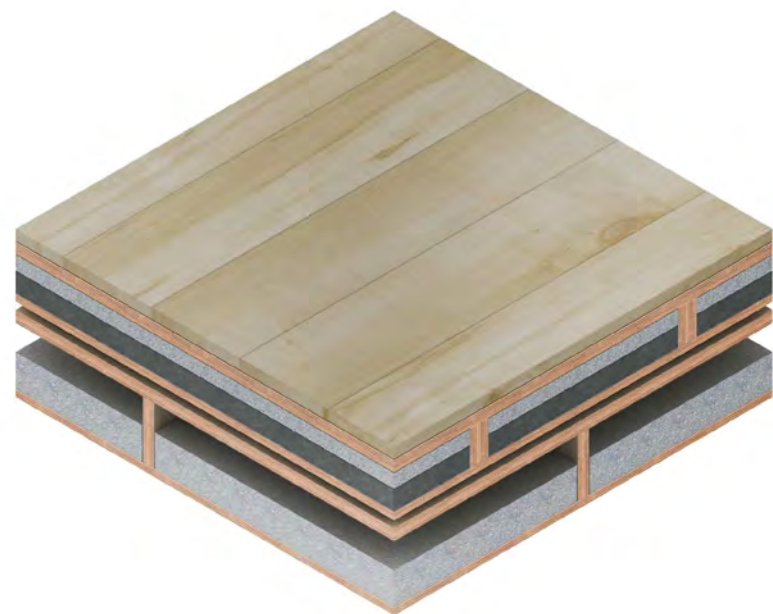
**AR-321**

**49**



0 1 2 5 METER

1



- 1 Finished Flooring 16mm
- 2 Plywood 18mm
- 3 Timber 30mm\*54mm
- 4 Vacuum Insulation 30mm
- 5 Plywood 12mm
- 6 Air gap 40mm
- 7 E-foam 50mm
- 8 Floor supporting
- 9 Girder C-150x75 t=9.5mm
- 10 Footing

Thermal conductivity R = 7.7 (m<sup>2</sup>K/W)

0 0.1 0.2 0.5 METER

4

3

Project:



Institution:



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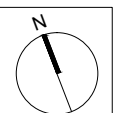
Address: 1001 Ta-Hsueh Road  
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Checked by DN

Scale 1:10

Unit mm

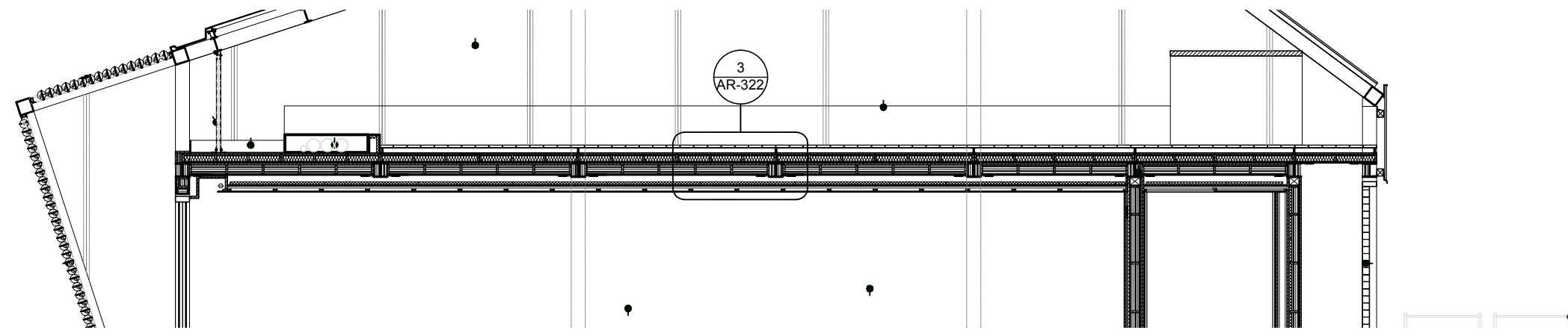
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**FLOOR CONSTRUCTION  
MEZZANINE LEVEL**

DWG. No. AR-322

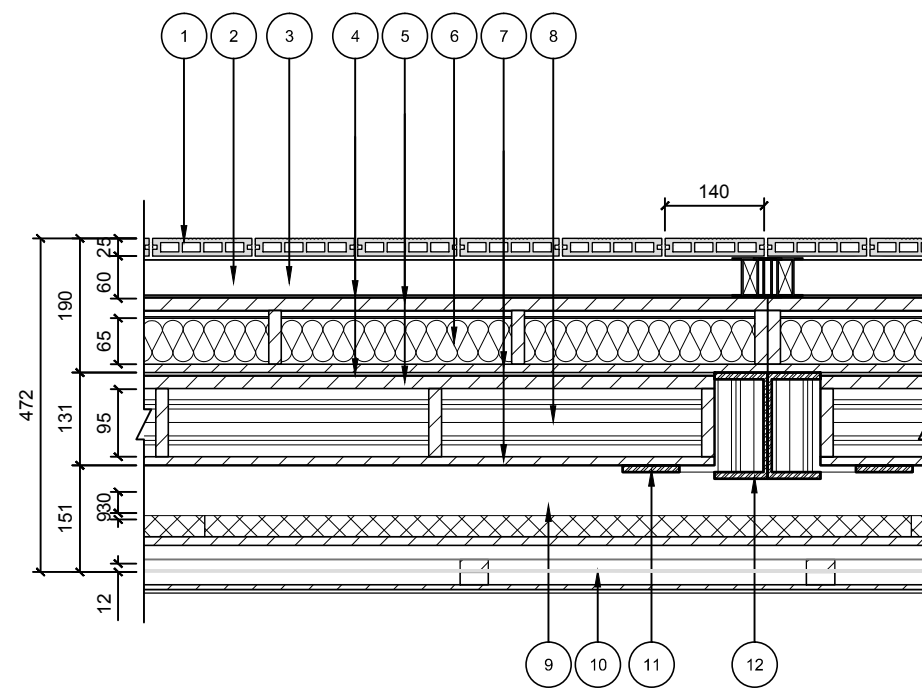
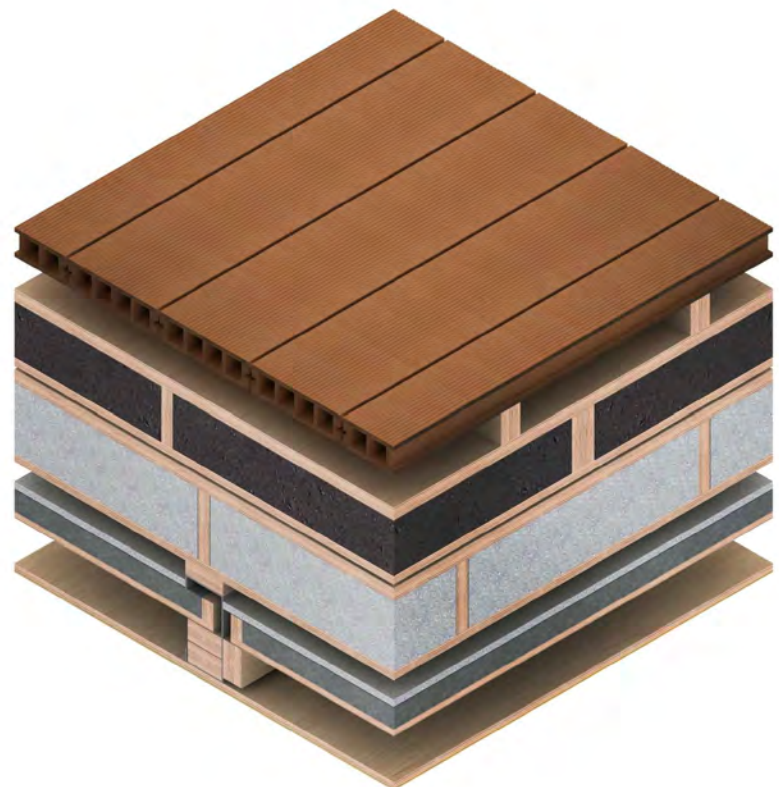
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AR-322

50



1



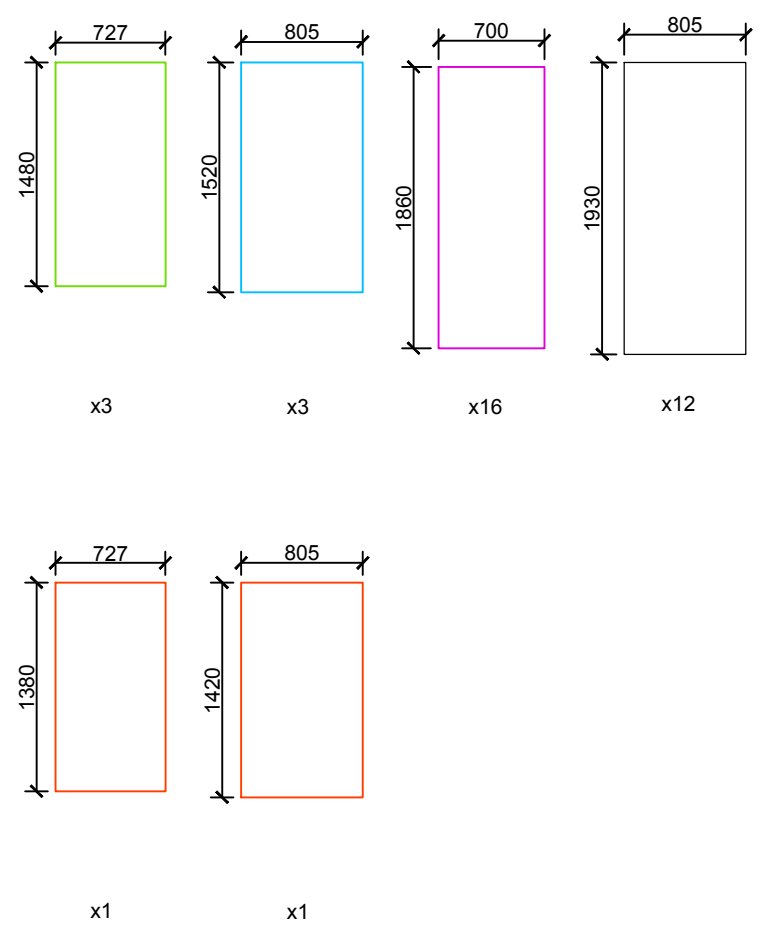
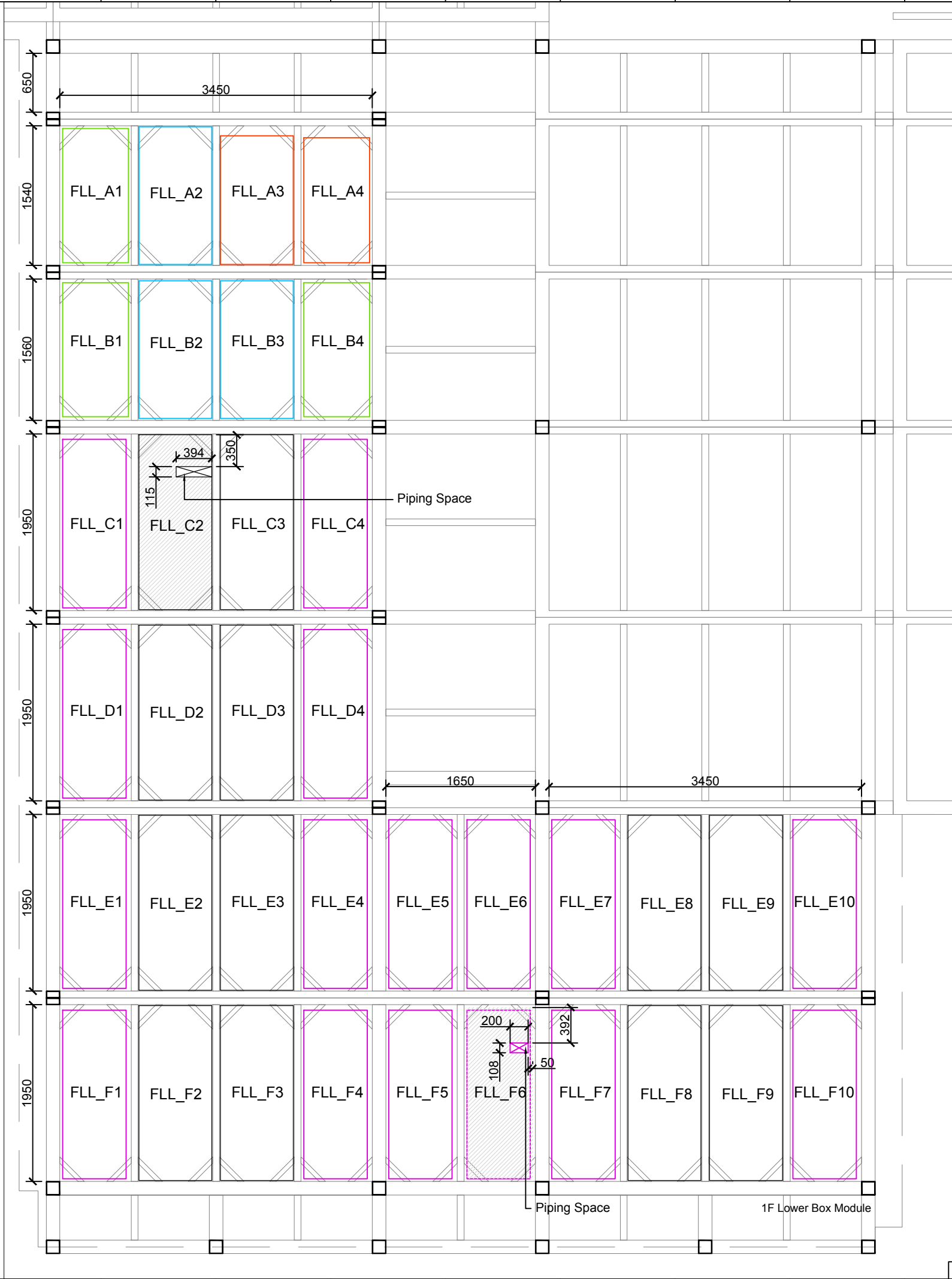
- 1 Wood Plastic Composites 40mm
- 2 Timber 30mm\*44mm
- 3 Air gap 44mm
- 4 Water proving 2mm
- 5 Plywood 18mm
- 6 Glass foam 65mm
- 7 Plywood 12mm
- 8 E-foam 95mm
- 9 Vacuum Insulation 30mm
- 10 Ceiling 12mm
- 11 Floor supporting
- 12 Girder C-150x75 t=9.5mm

Thermal conductivity R = 13.7 (m<sup>2</sup>K/W)



4

3



Special Module



Project:



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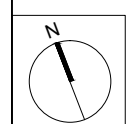
Contact:

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Consultants:

Note:

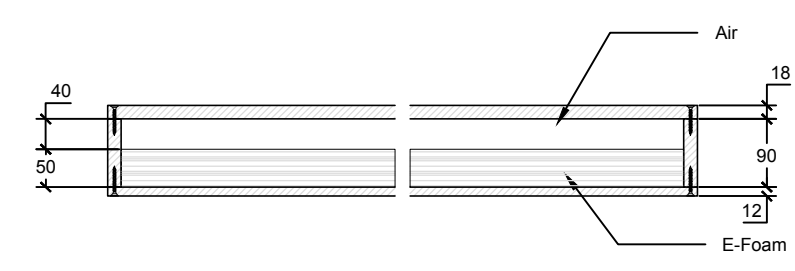
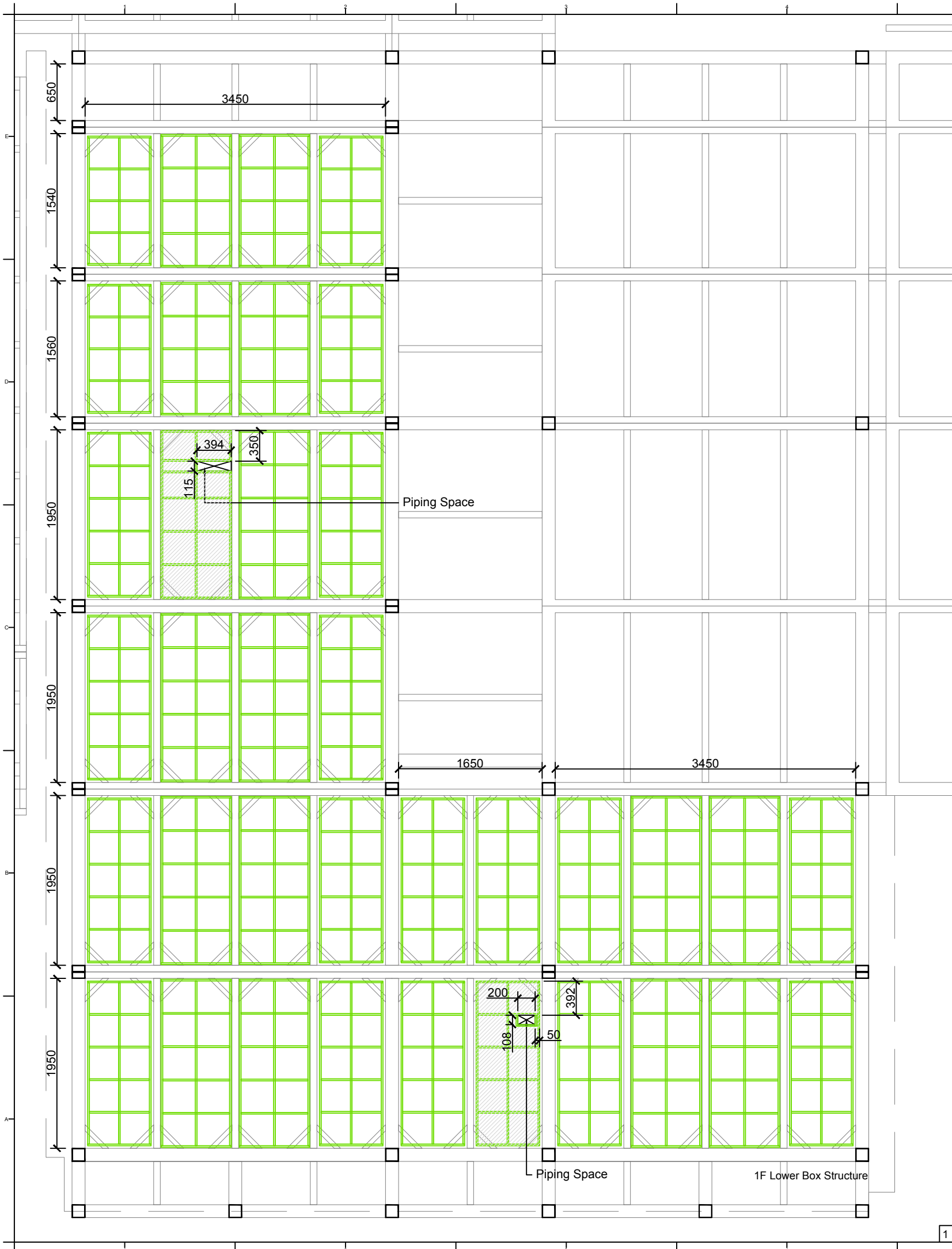


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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by	CF
Checked by	ST
Scale	1:50
Unit	mm

DWG. Title  
FLOOR CONSTRUCTION  
DETAILS  
GROUND LEVEL1

DWG. No.	PAGE
AR-323	51



Special Module



Project:



Institution:



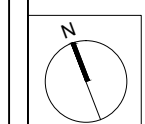
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ST	2014/11/03	AB Submission

Drawn by	CF
Checked by	ST
Scale	1:50
Unit	mm

DWG. Title  
FLOOR CONSTRUCTION  
DETAILS  
GROUND LEVEL 2

DWG. No.	PAGE
AR-324	52

Project:



Institution:



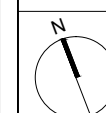
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Note:

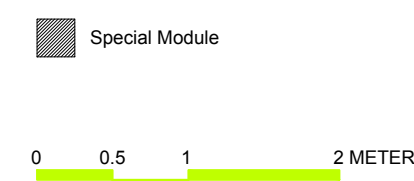
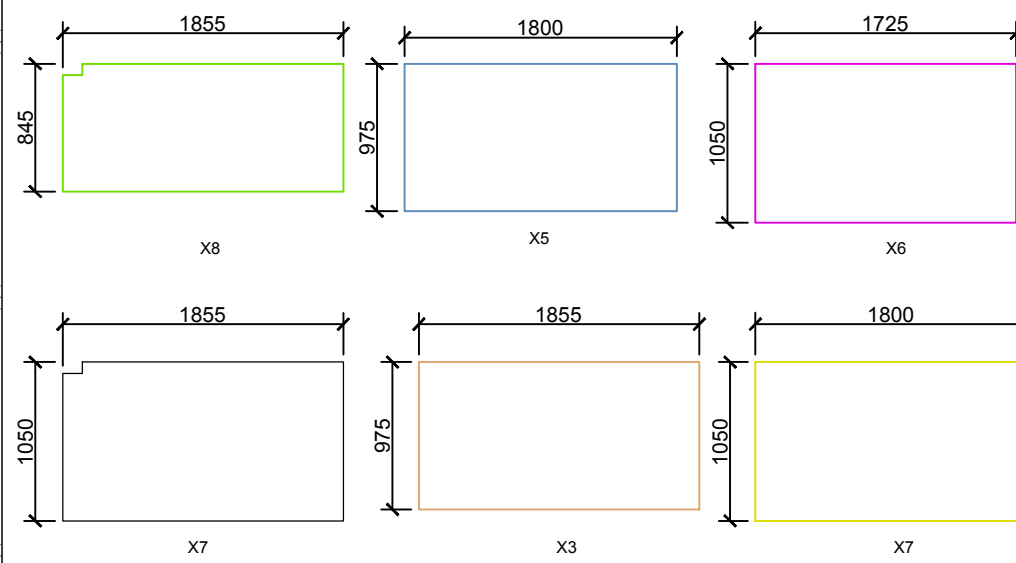
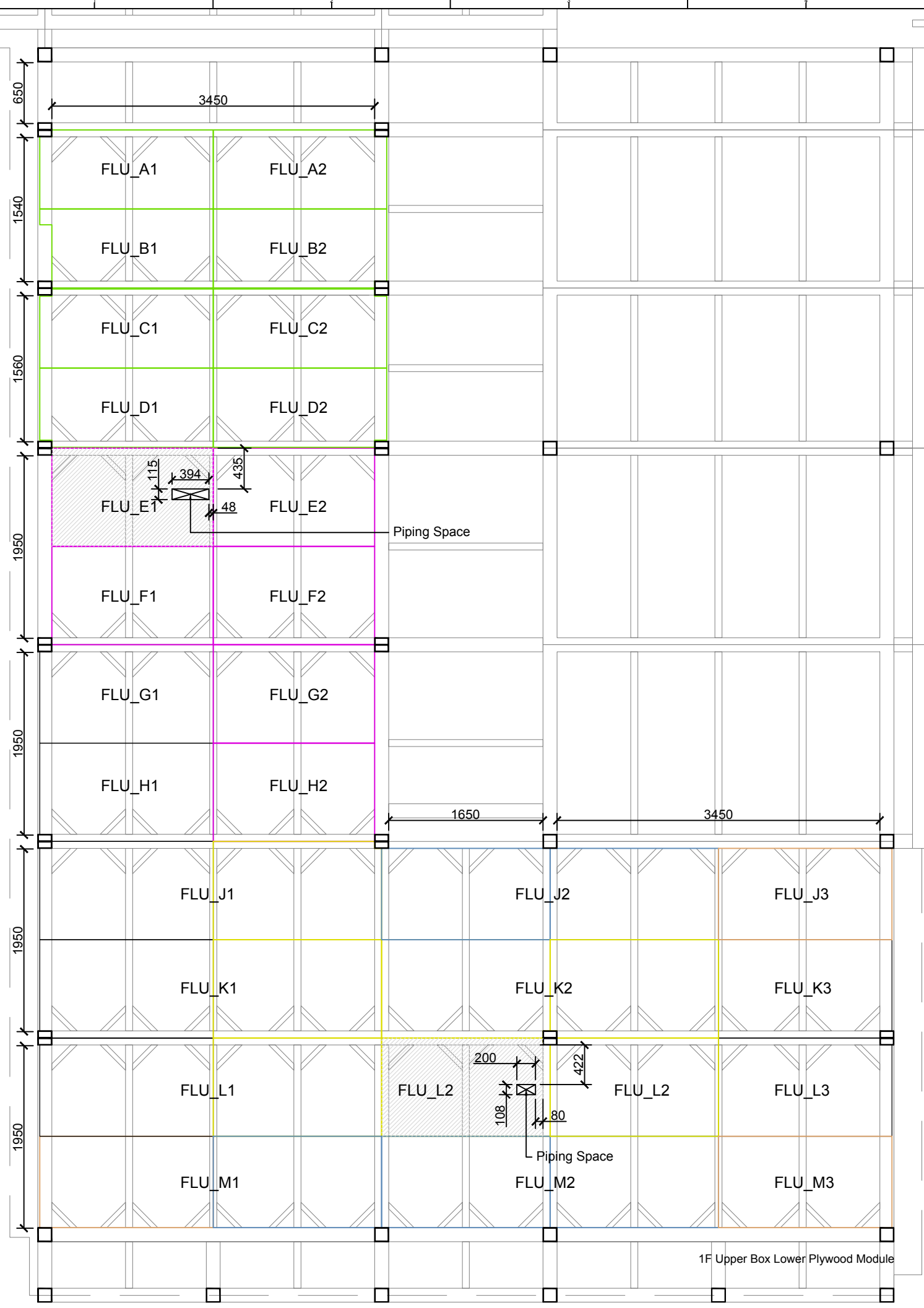


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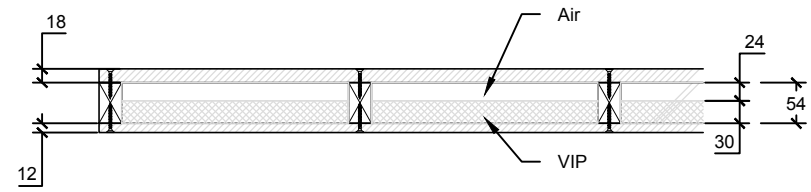
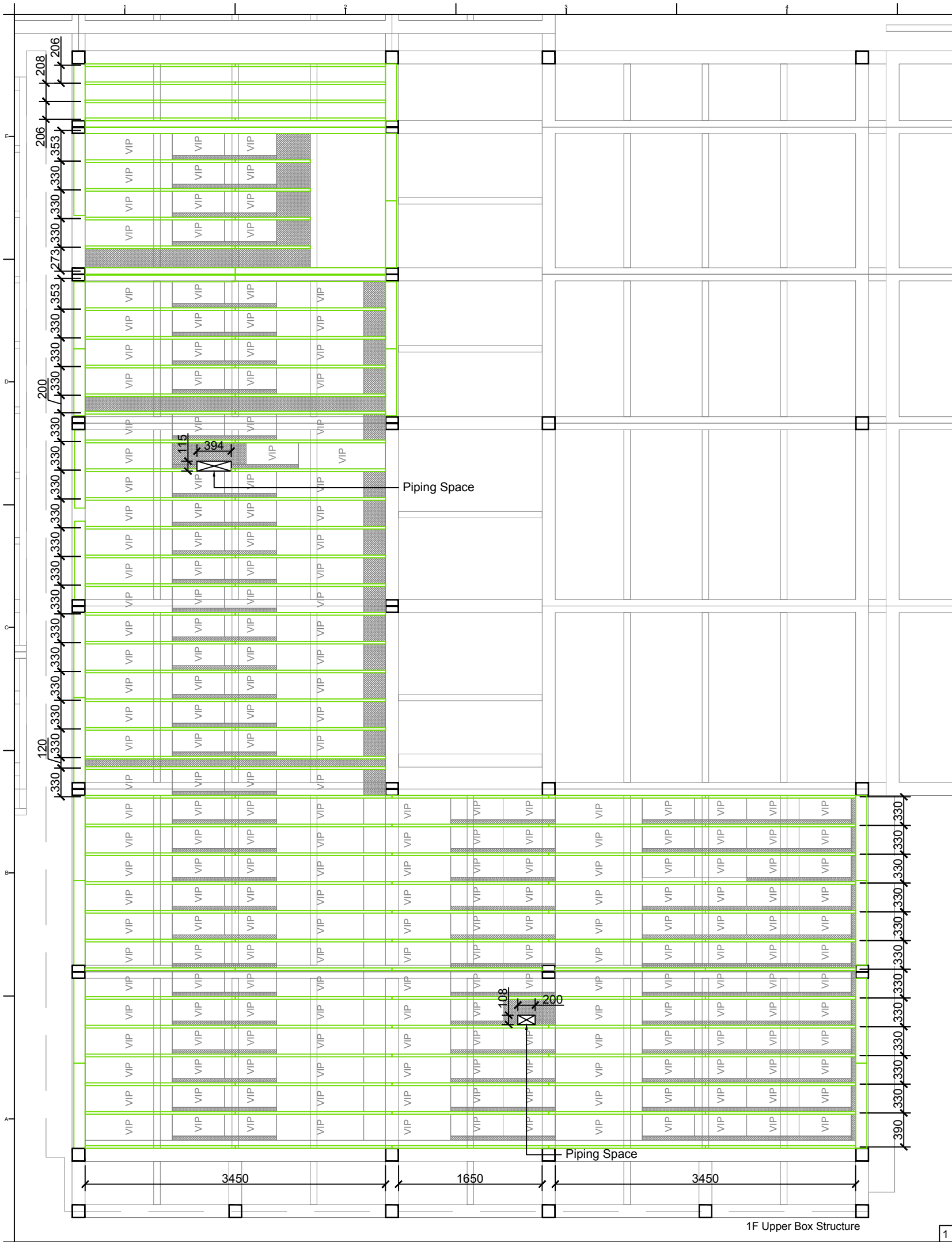
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**FLOOR CONSTRUCTION DETAILS  
GROUND LEVEL 3**

DWG. No. **AR-325** PAGE **53**



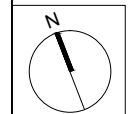
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Consultants:

Note:



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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by	CF
Checked by	ST
Scale	1:50
Unit	mm

DWG. Title  
**FLOOR CONSTRUCTION  
DETAILS  
GROUND LEVEL 4**

DWG. No.	PAGE
<b>AR-326</b>	<b>54</b>

Project:



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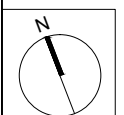
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Checked by

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DWG. Title

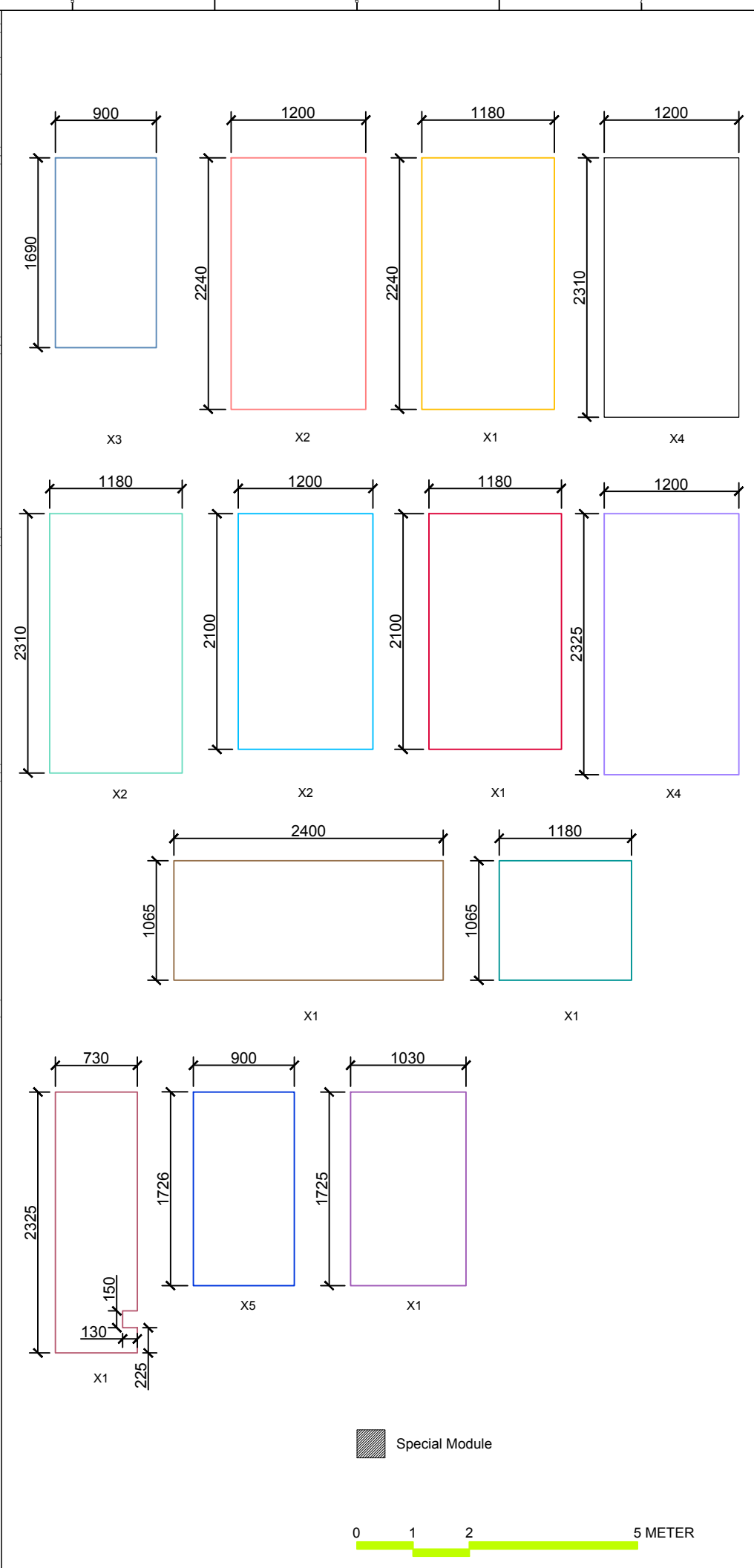
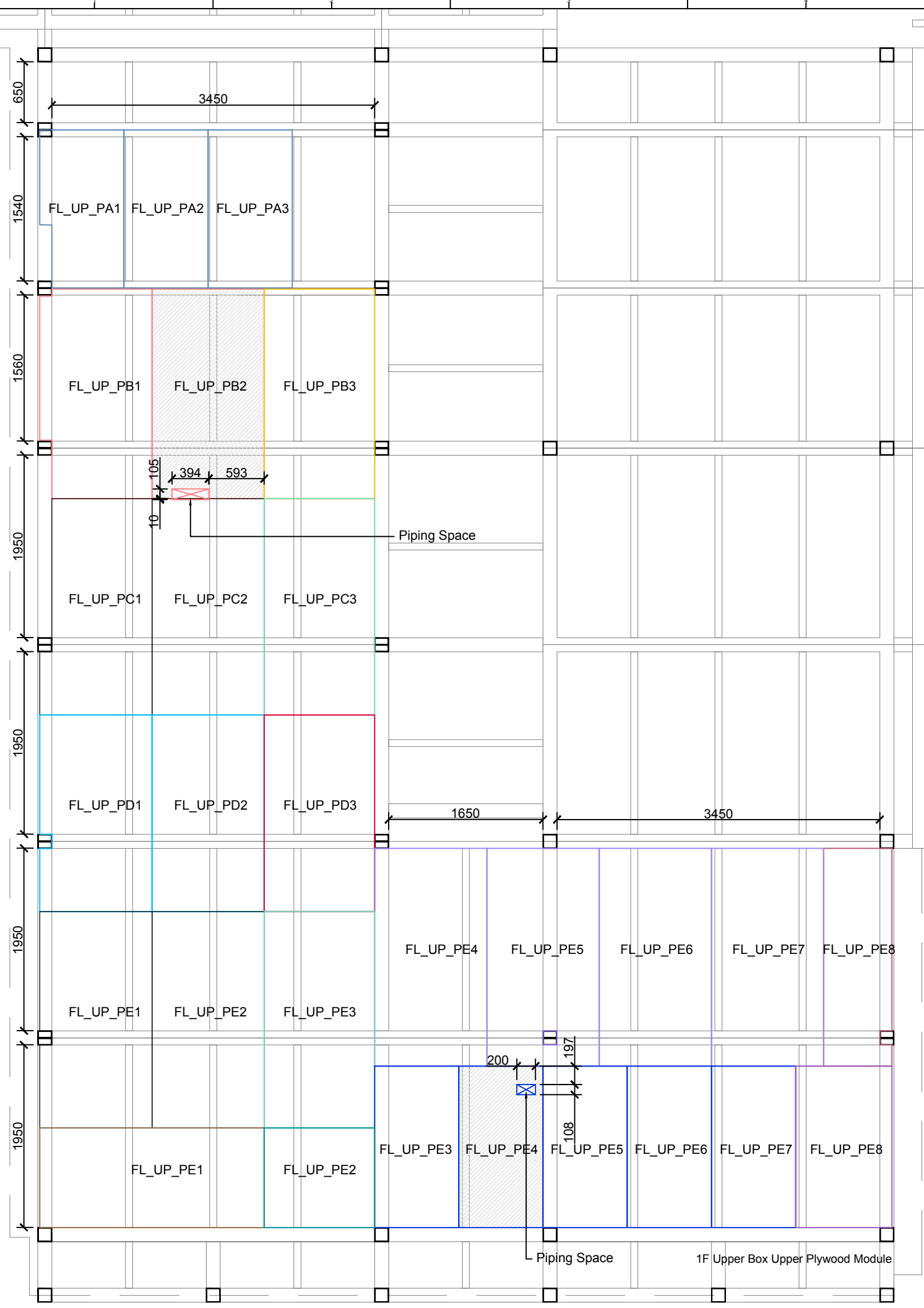
**FLOOR CONSTRUCTION  
DETAILS  
GROUND LEVEL 5**

DWG. No.

**AR-327**

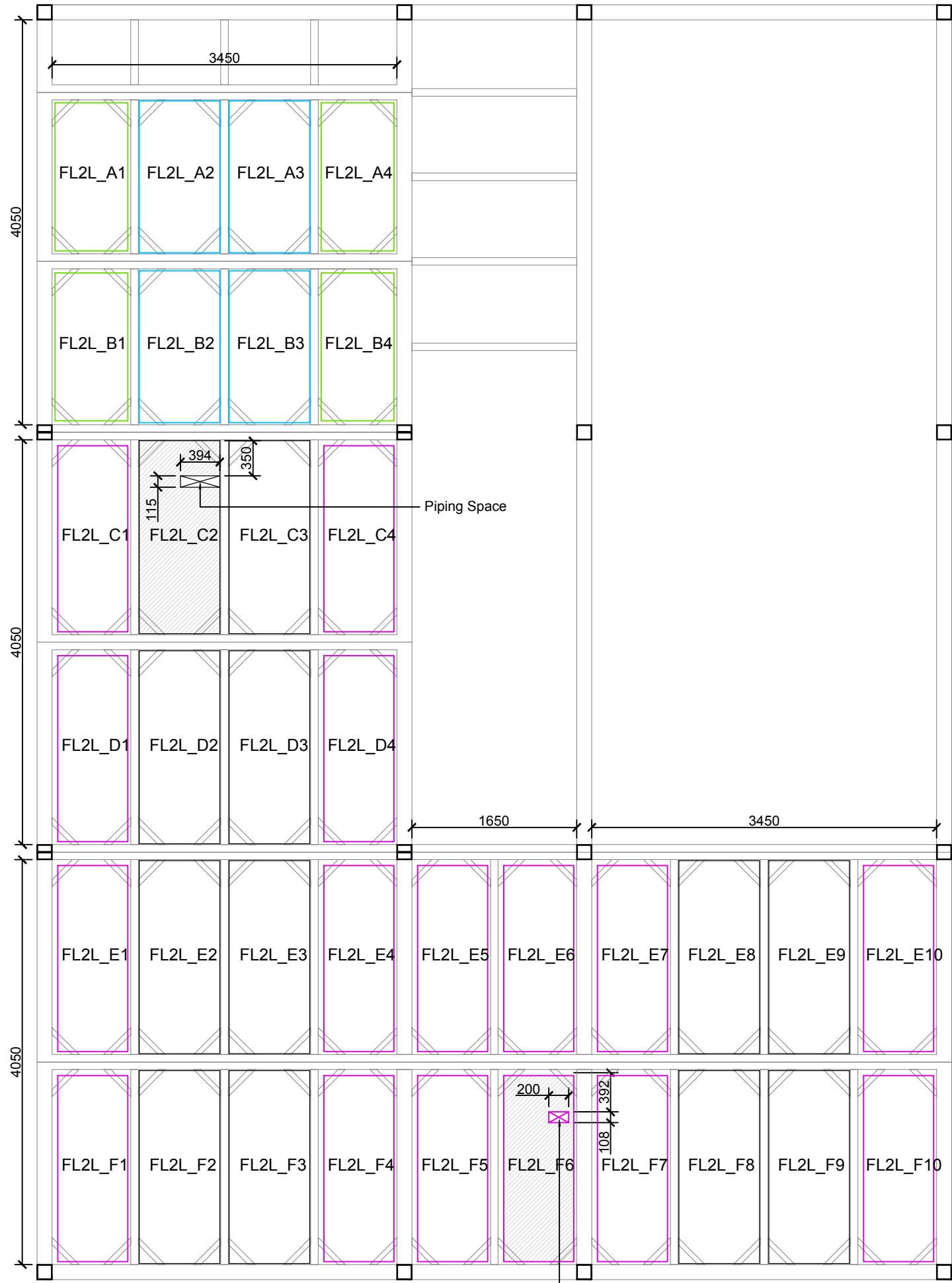
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**55**

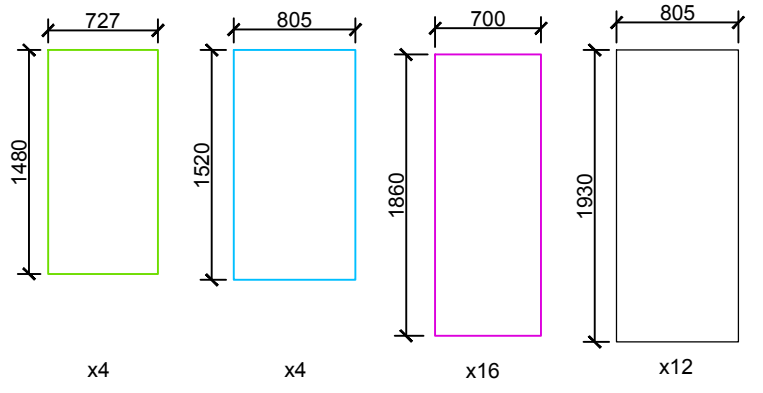


Special Module





2F Lower Box Module



Project:



Institution:



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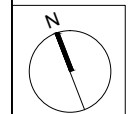
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Consultants:

Note:



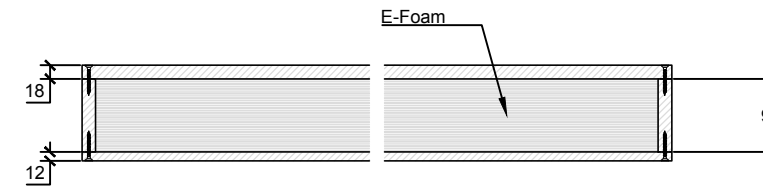
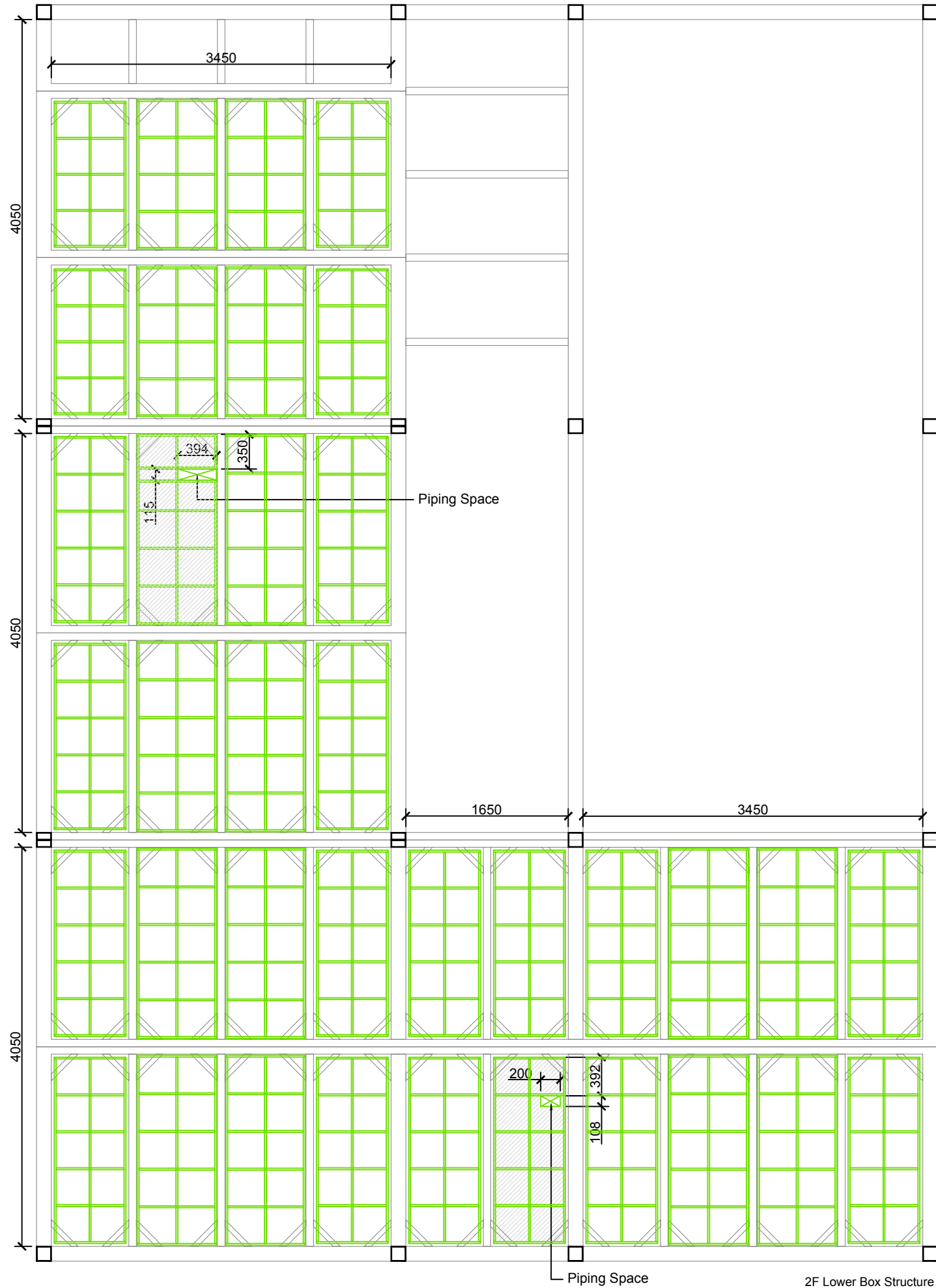
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ST	2014/11/03	AB Submission

Drawn by	CF
Checked by	ST
Scale	1:50
Unit	mm

DWG. Title  
**FLOOR CONSTRUCTION  
DETAILS  
MEZZANINE LEVEL 1**

DWG. No.	PAGE
<b>AR-328</b>	<b>56</b>





Project:



Institution:



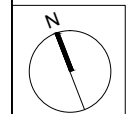
**NCTU Architecture**  
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Hsinchu City 30010  
Taiwan  
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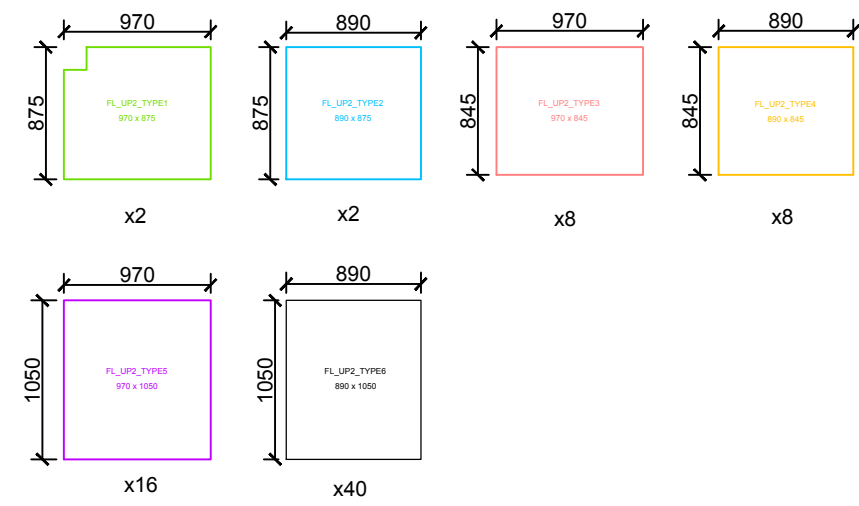
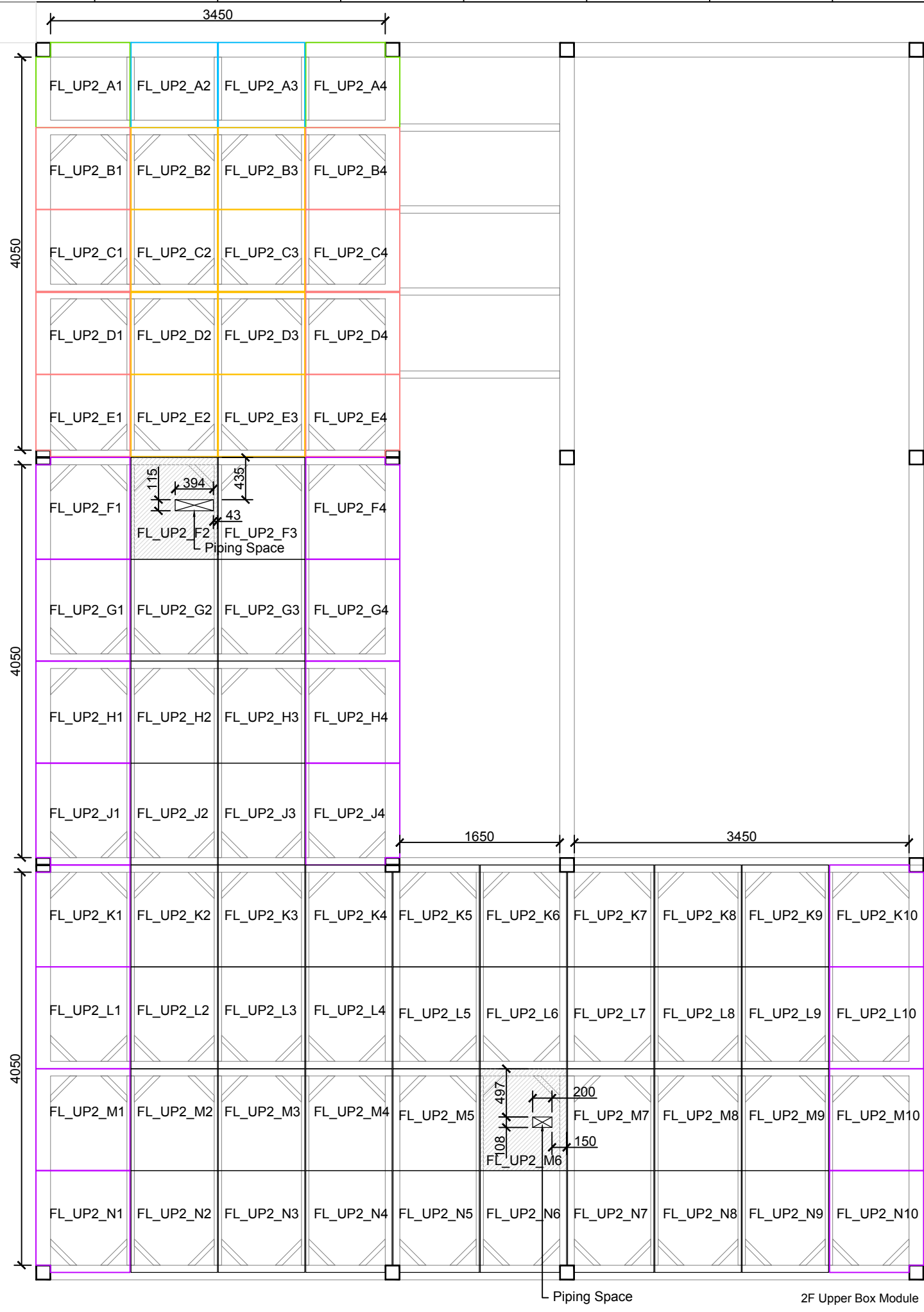


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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by	CF
Checked by	ST
Scale	1:50
Unit	mm

DWG. Title  
**FLOOR CONSTRUCTION  
DETAILS  
MEZZANINE LEVEL 2**

DWG. No.	PAGE
<b>AR-329</b>	<b>57</b>



Project:



Institution:



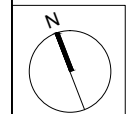
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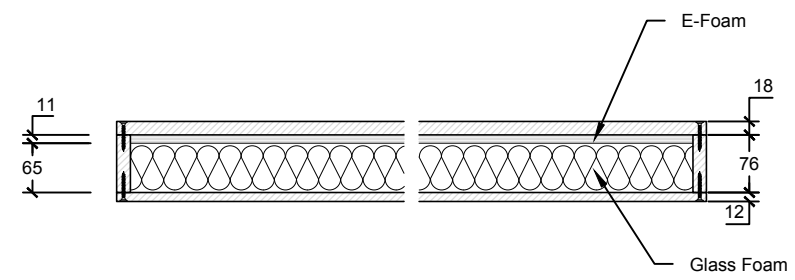
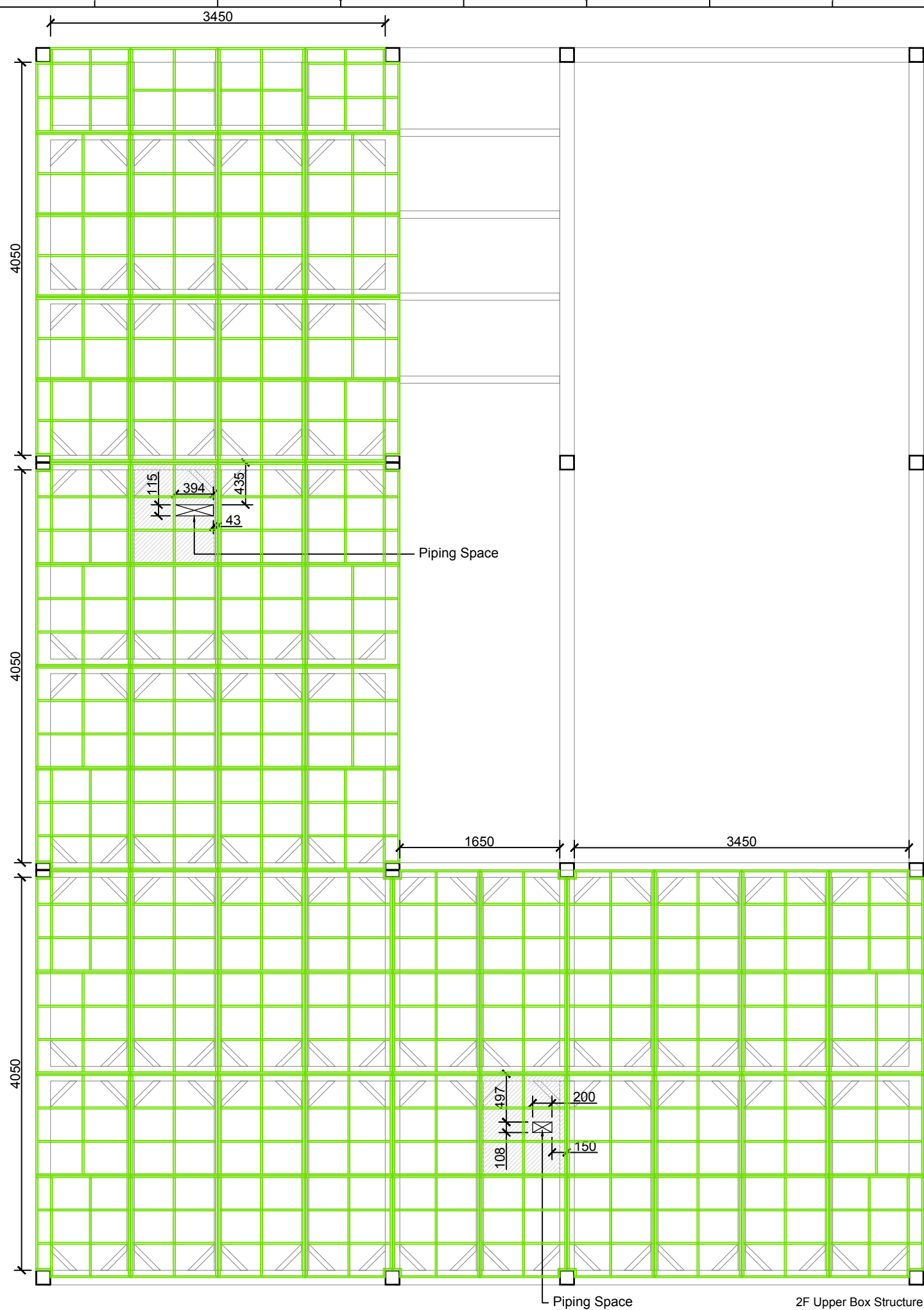
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DWG. Title  
**FLOOR CONSTRUCTION  
DETAILS  
MEZZANINE LEVEL 3**

DWG. No.	PAGE
<b>AR-330</b>	<b>58</b>

Special Module





Special Module



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Institution:

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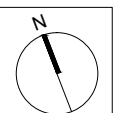
Contact:

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Note:



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DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
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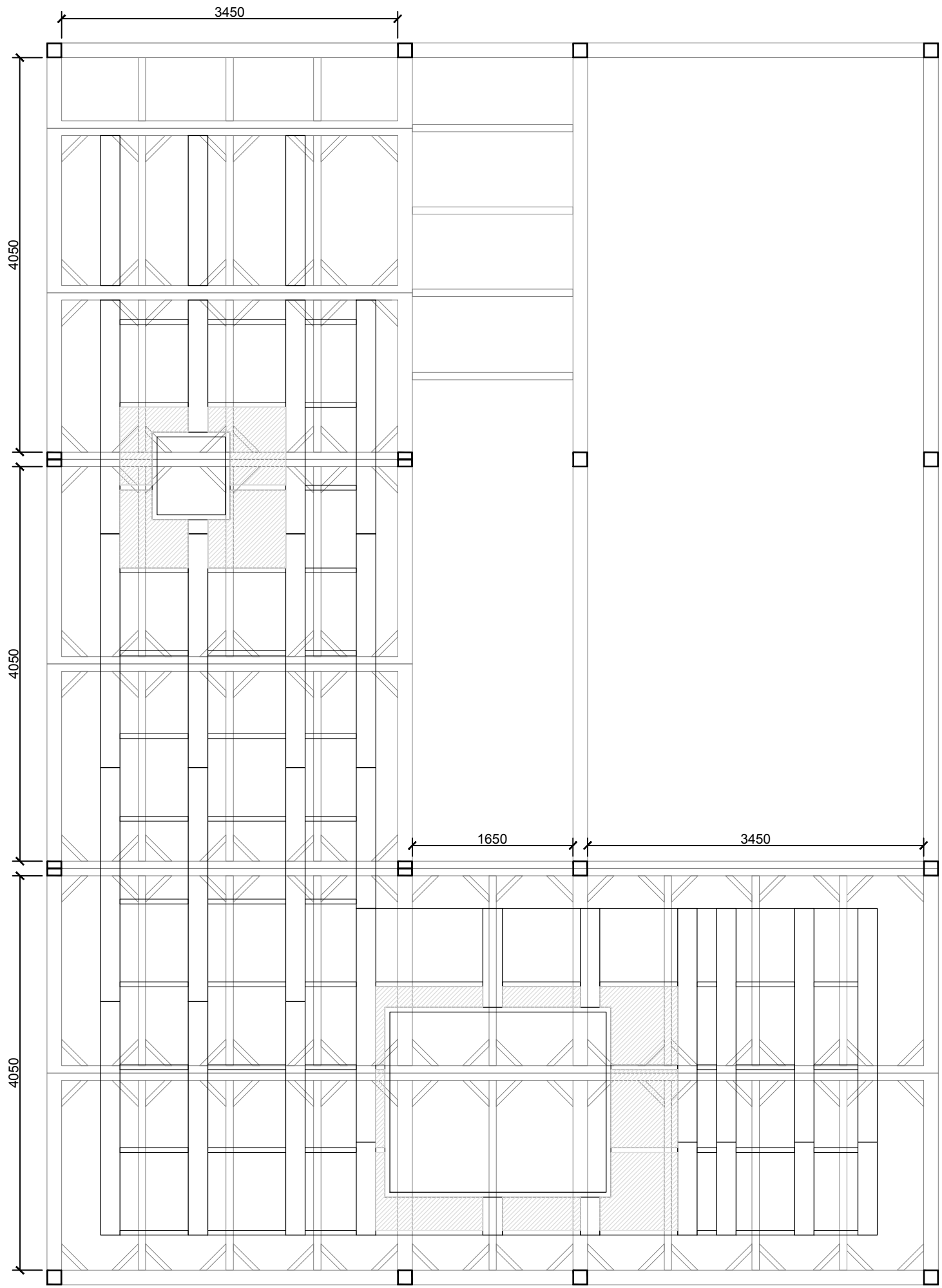
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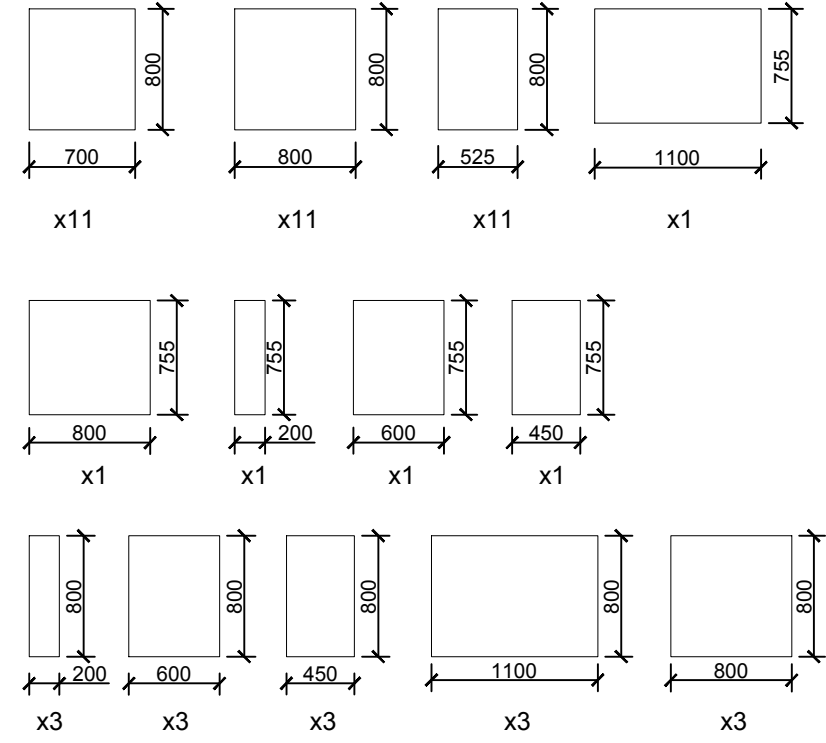
**AR-331**

PAGE

**59**



Ceiling Structure and Module



Special Module



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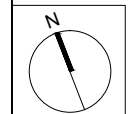
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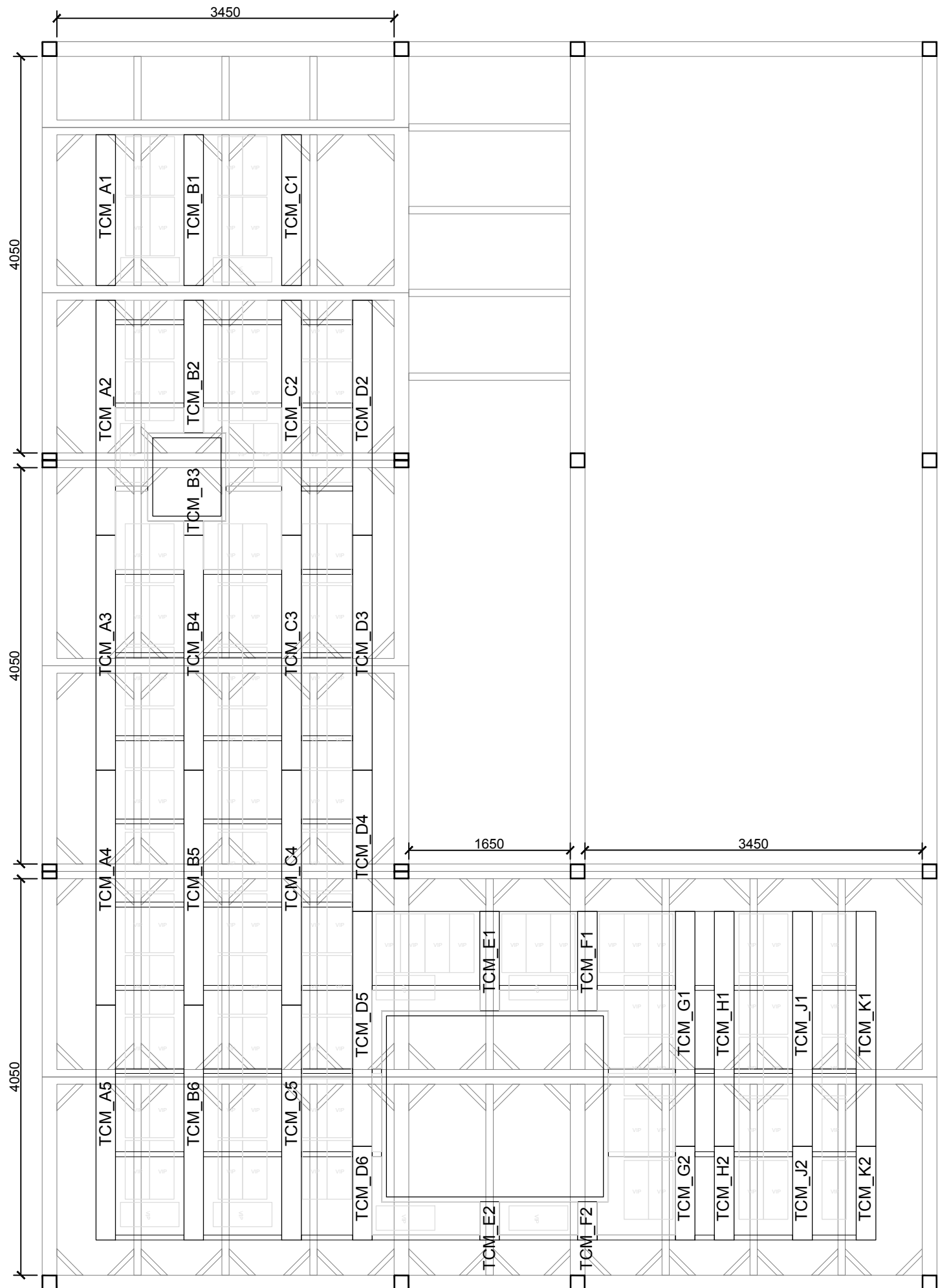


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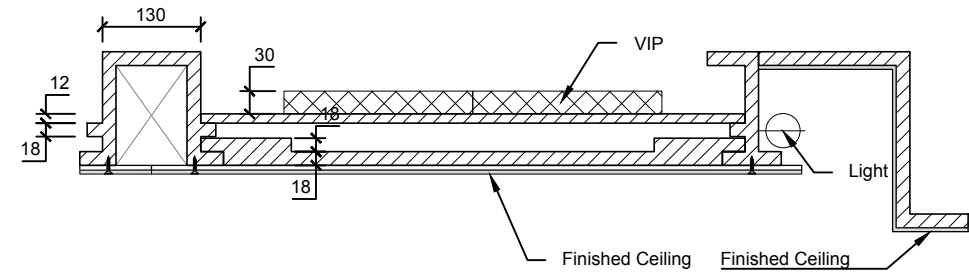
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**CEILING CONSTRUCTION DETAILS**

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Ceiling Module and VIP



Project:



Institution:



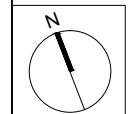
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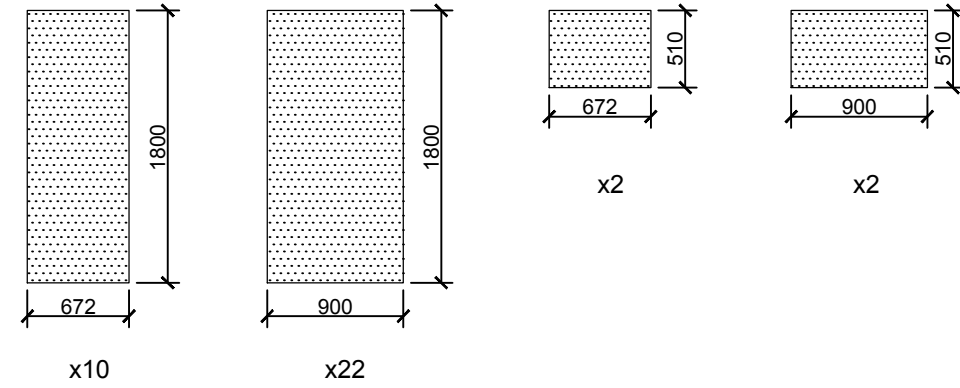
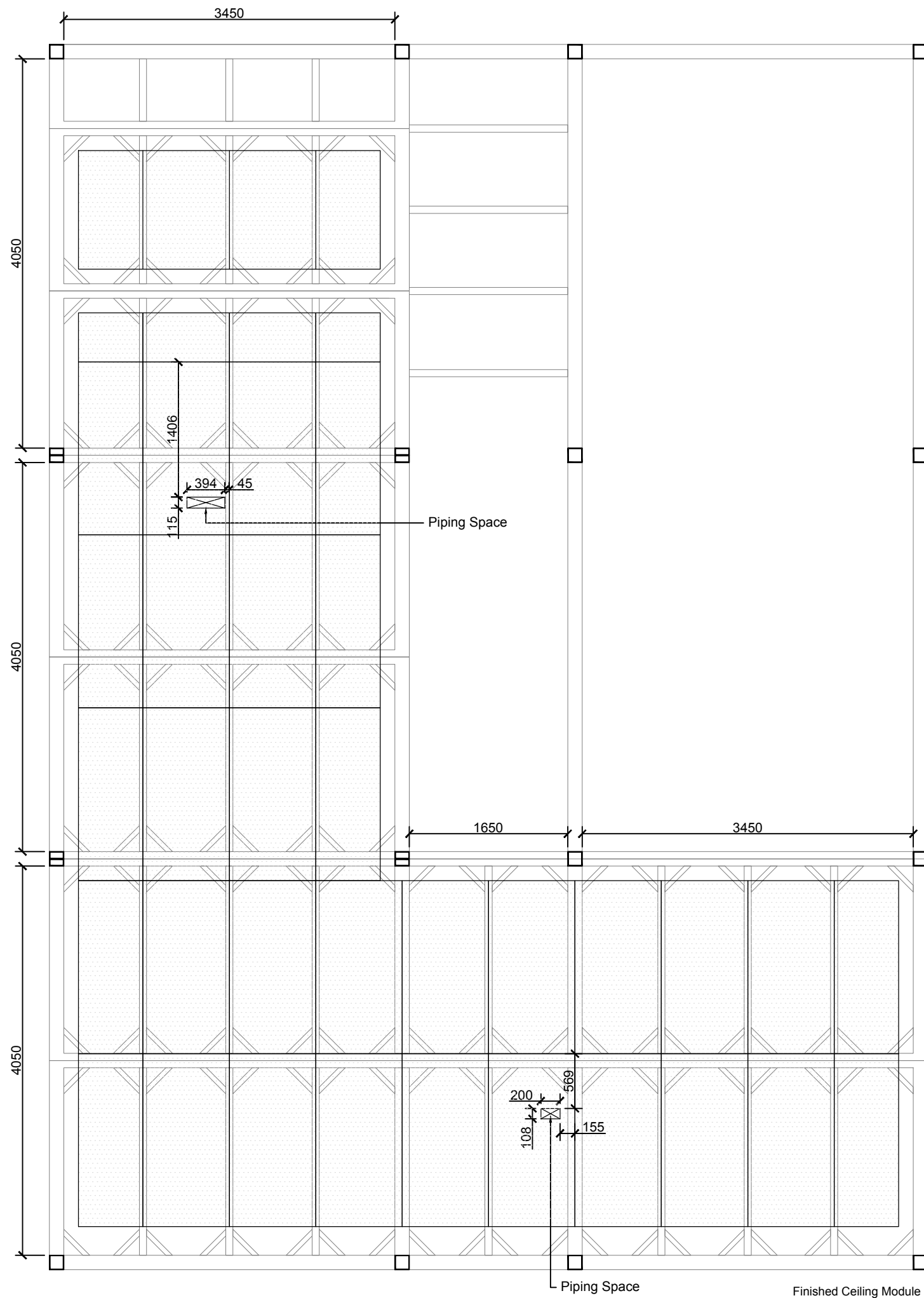


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ST	2014/11/03	AB Submission

Drawn by	CF
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Scale	1:50
Unit	mm

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DWG. No.	PAGE
<b>AR-333</b>	<b>61</b>



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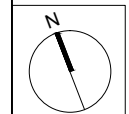
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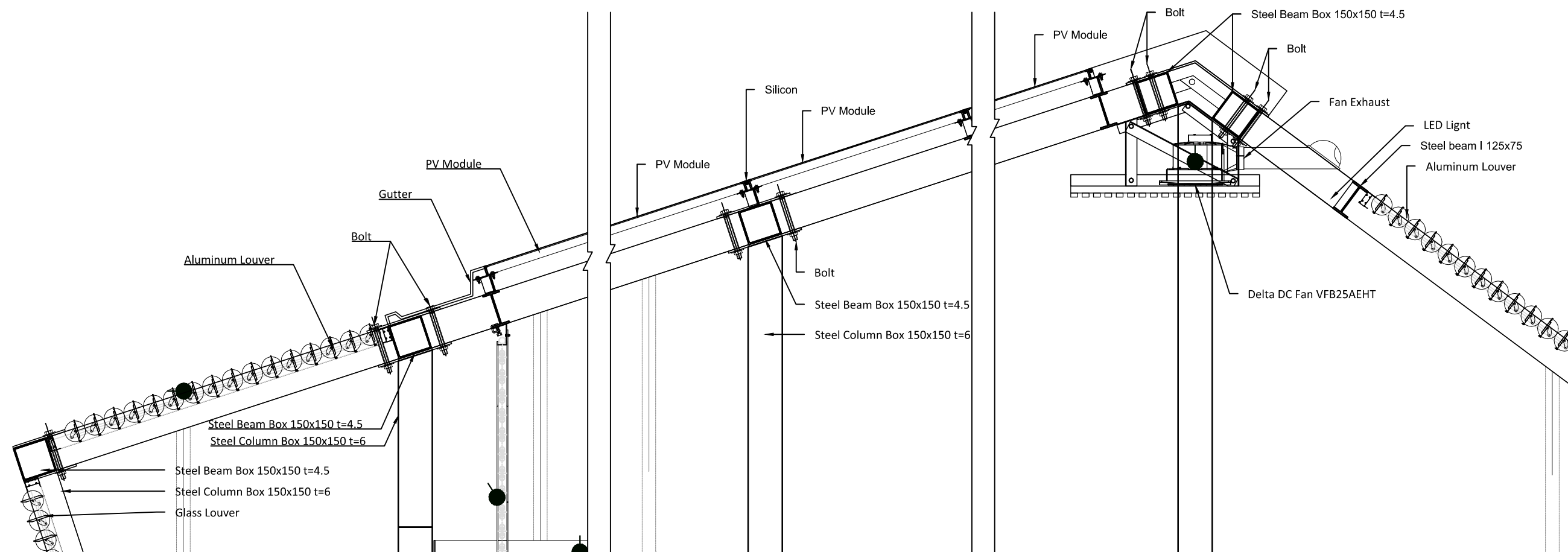


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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

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Scale	1:50
Unit	mm

DWG. Title  
**CEILING CONSTRUCTION  
DETAILS**

DWG. No.	PAGE
<b>AR-334</b>	<b>62</b>



1



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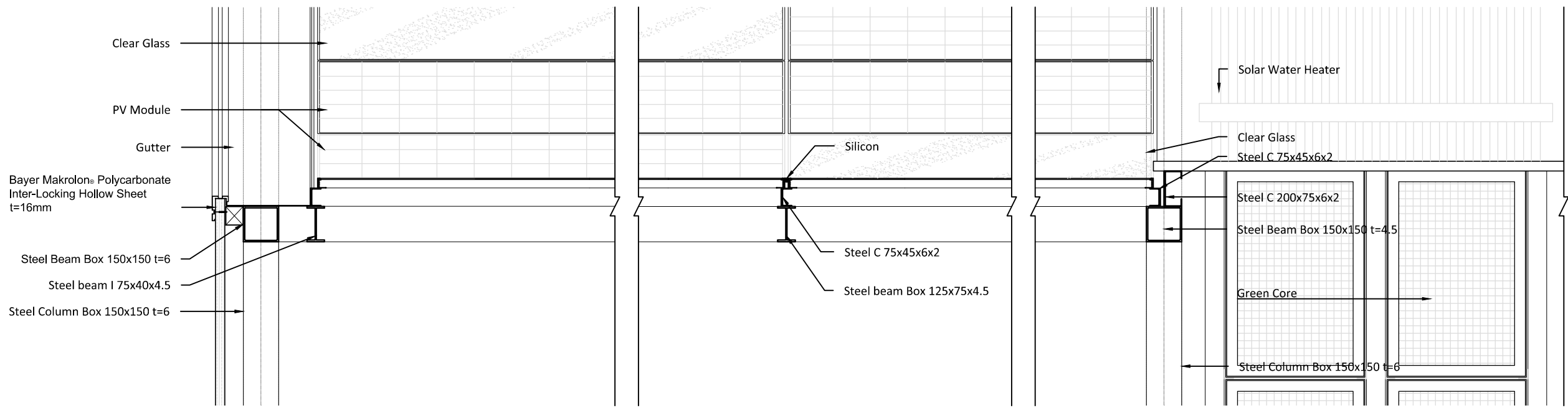
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ST	2014/06/02	CD Submission
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<b>Unit</b>	mm

**DWG. Title**  
ROOF CONSTRUCTION  
DETAILS

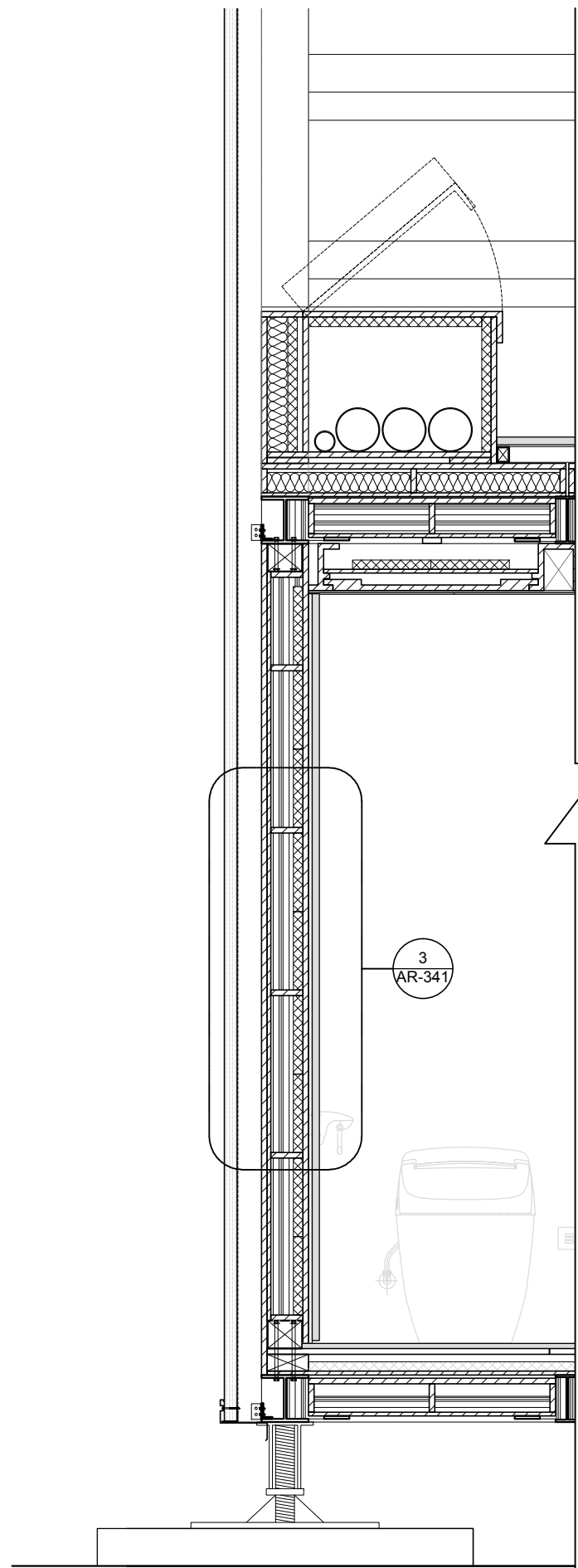
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2



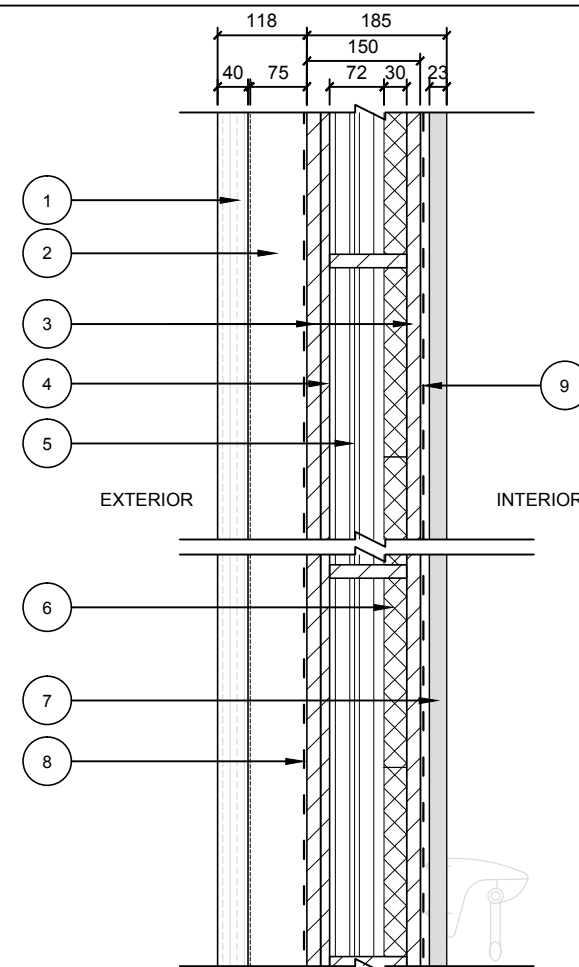
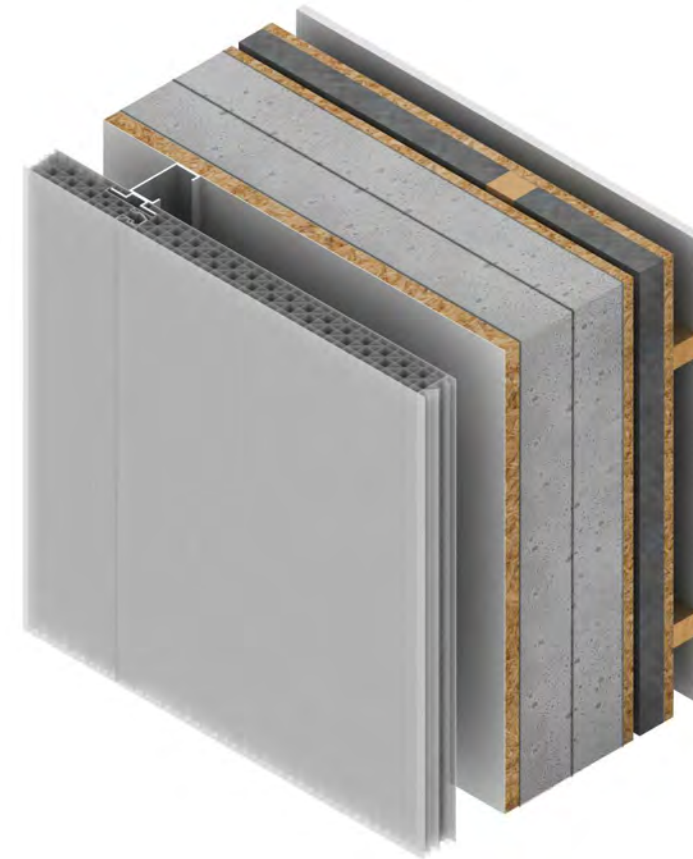
2



3  
AR-341

0 0.2 0.4 1 METER

1



Thermal conductivity  $R = 13.5 \text{ (m}^2\text{K/W)}$

- 1 Bayer Makrolon® Polycarbonate Inter-locking Hollow Sheet t=40mm
- 2 Inter-locking Sheet supporting 75mm
- 3 Plywood 18mm
- 4 Plywood 12mm
- 5 Glass foam 72mm
- 6 Vacuum Insulation 30mm
- 7 Ceramics board 23mm
- 8 Waterproofing 1mm
- 9 Vapor barrier 1mm

0 0.1 0.2 0.5 METER

3

Note:

Mark	Date	Description
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ST	2014/04/30	CD Submission
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ST	2014/11/03	AB Submission

Drawn by CH

Checked by DN

Scale 1:10

Unit mm

DWG. Title  
**WALL SECTION AND CONSTRUCTION DETAILS**  
1

DWG. No. AR-341 PAGE 64





Mark	Date	Description
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ST	2014/11/03	AB Submission

Drawn by CH

Checked by DN

Scale 1:10

Unit mm

DWG. Title

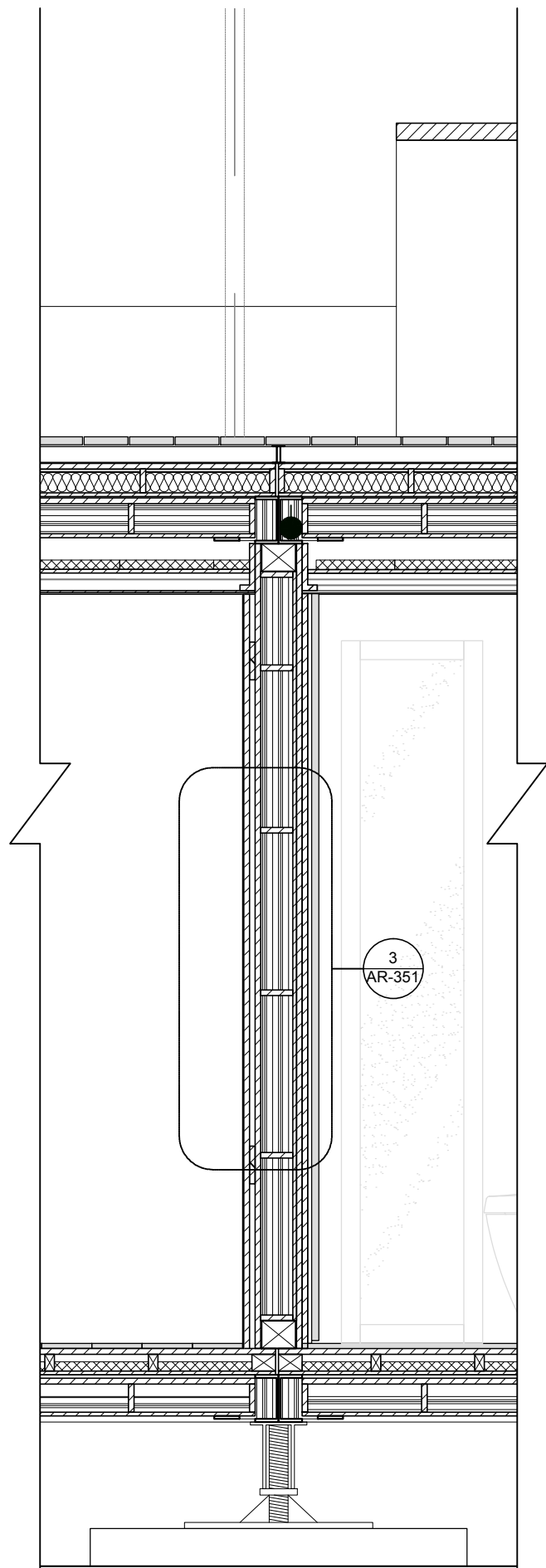
PARTITION DETAILS

DWG. No. AR-351

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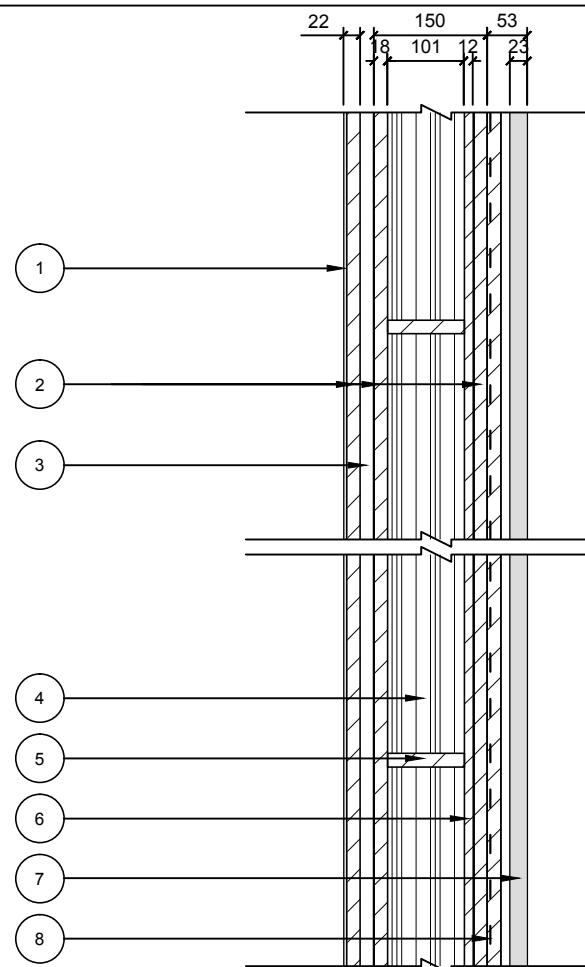
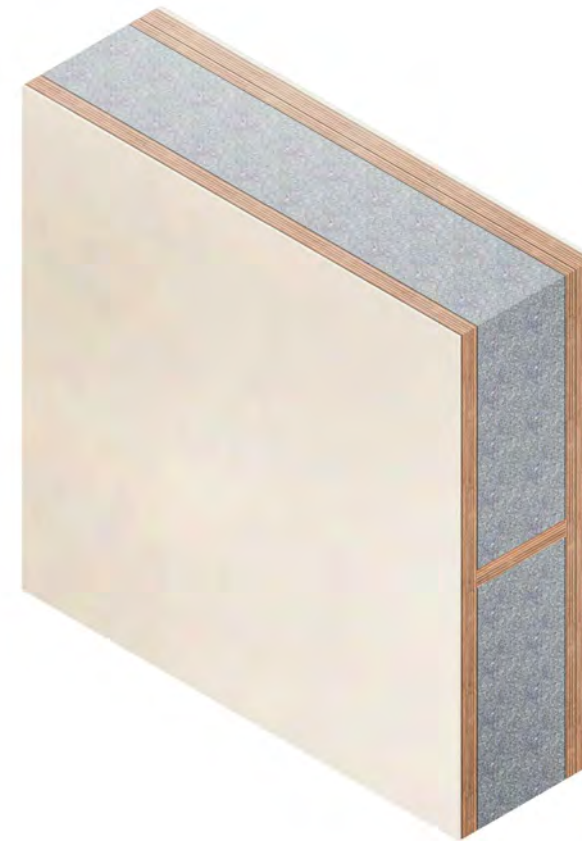
AR-351

65



0 0.2 0.4 1 METER

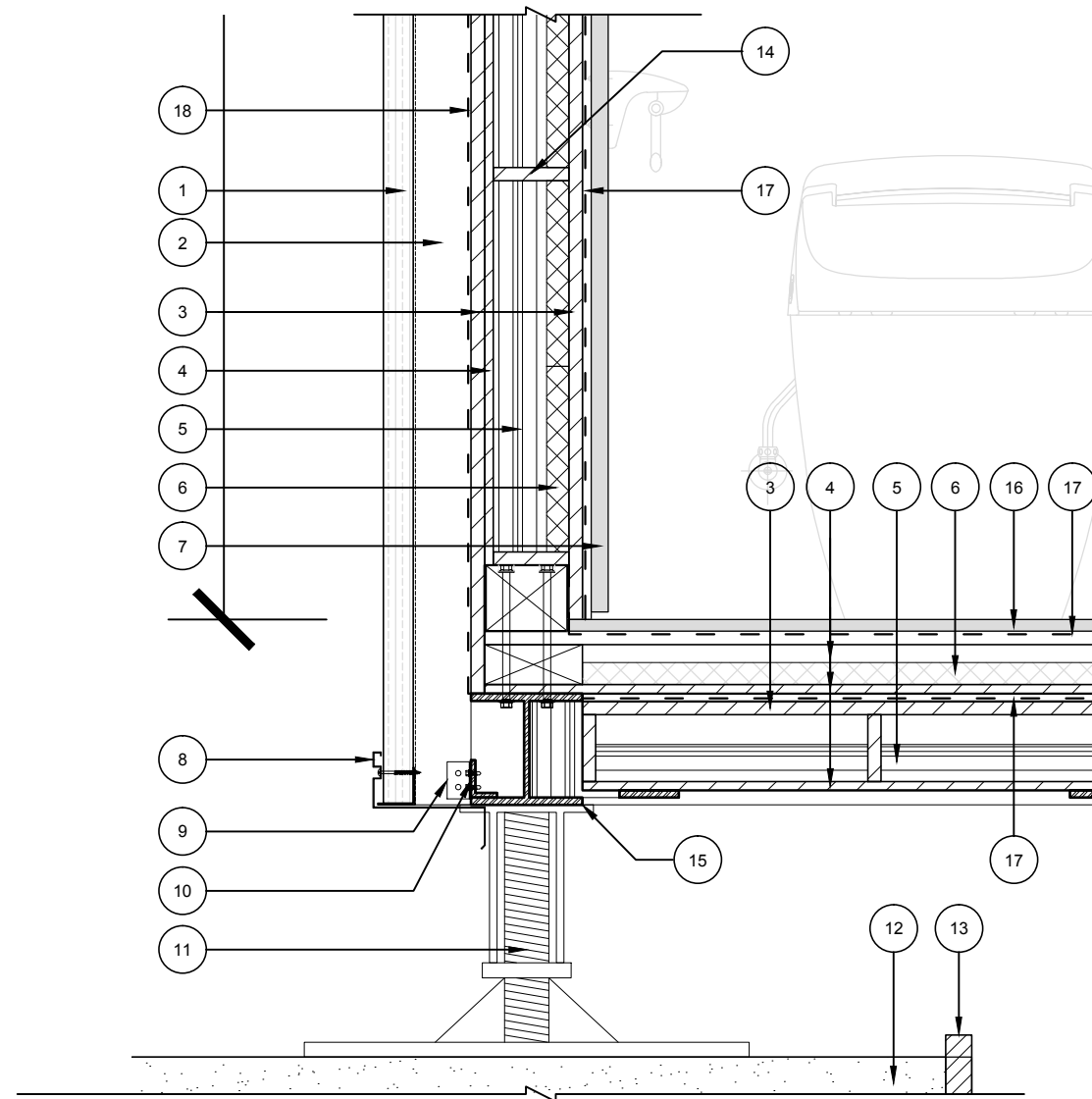
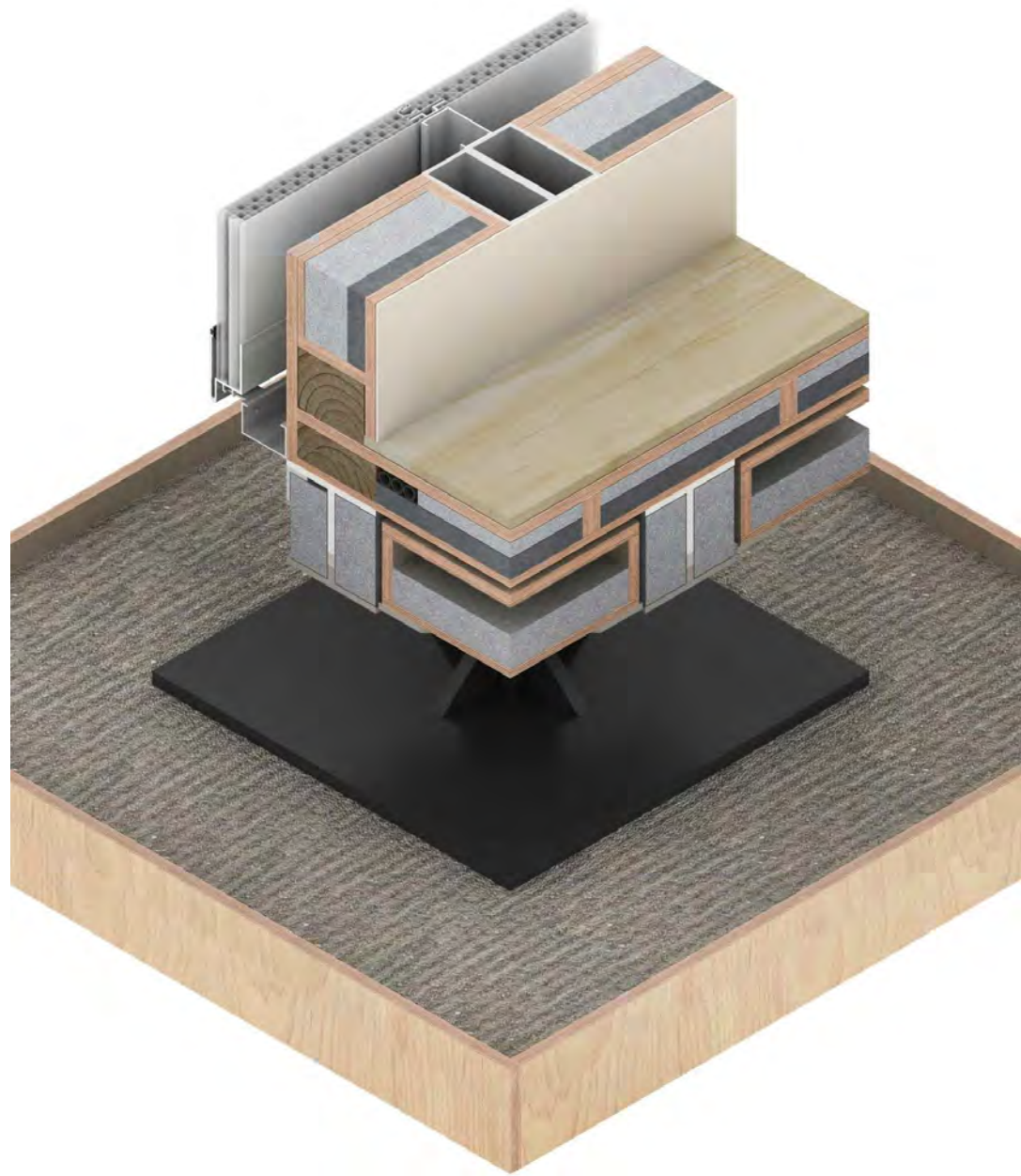
1



- ① Interior finish 3mm
- ② Plywood 18mm
- ③ Air gap 18mm
- ④ E-foam 100mm
- ⑤ Wood framing 18mm\*100mm
- ⑥ Plywood 12mm
- ⑦ Ceramic board 23mm
- ⑧ Waterproofing 1mm

0 0.1 0.2 0.5 METER

3



- |   |                                 |
|---|---------------------------------|
| 1 Bayer Makrolon® Polycarbonate Inter-locking Hollow Sheet t=40mm | 10 L shape steel -50x35 t=6mm   |
| 2 Inter-locking Sheet supporting 75mm                             | 11 Footing                      |
| 3 Plywood 18mm  | 12 Sand                         |
| 4 Plywood 12mm  | 13 Wood frame (sand box)        |
| 5 E-foam 70mm   | 14 Wood frame (wall)            |
| 6 Vacuum Insulation 30mm  | 15 H -150x150 t=10mm            |
| 7 Ceramic board 23mm  | 16 Wood Plastic Composites 25mm |
| 8 Steel enclosure 1mm   | 17 Vapor barrier 1mm            |
| 9 L shape steel -30x30 t=2.3mm                                    | 18 Waterproofing 1mm            |



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ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

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Checked by	DN
Scale	1:10
Unit	mm

DWG. Title  
**JOINT DETAIL 1**

DWG. No.	PAGE
<b>AR-361</b>	<b>66</b>

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Drawn by CH

Checked by DN

Scale 1:10

Unit mm

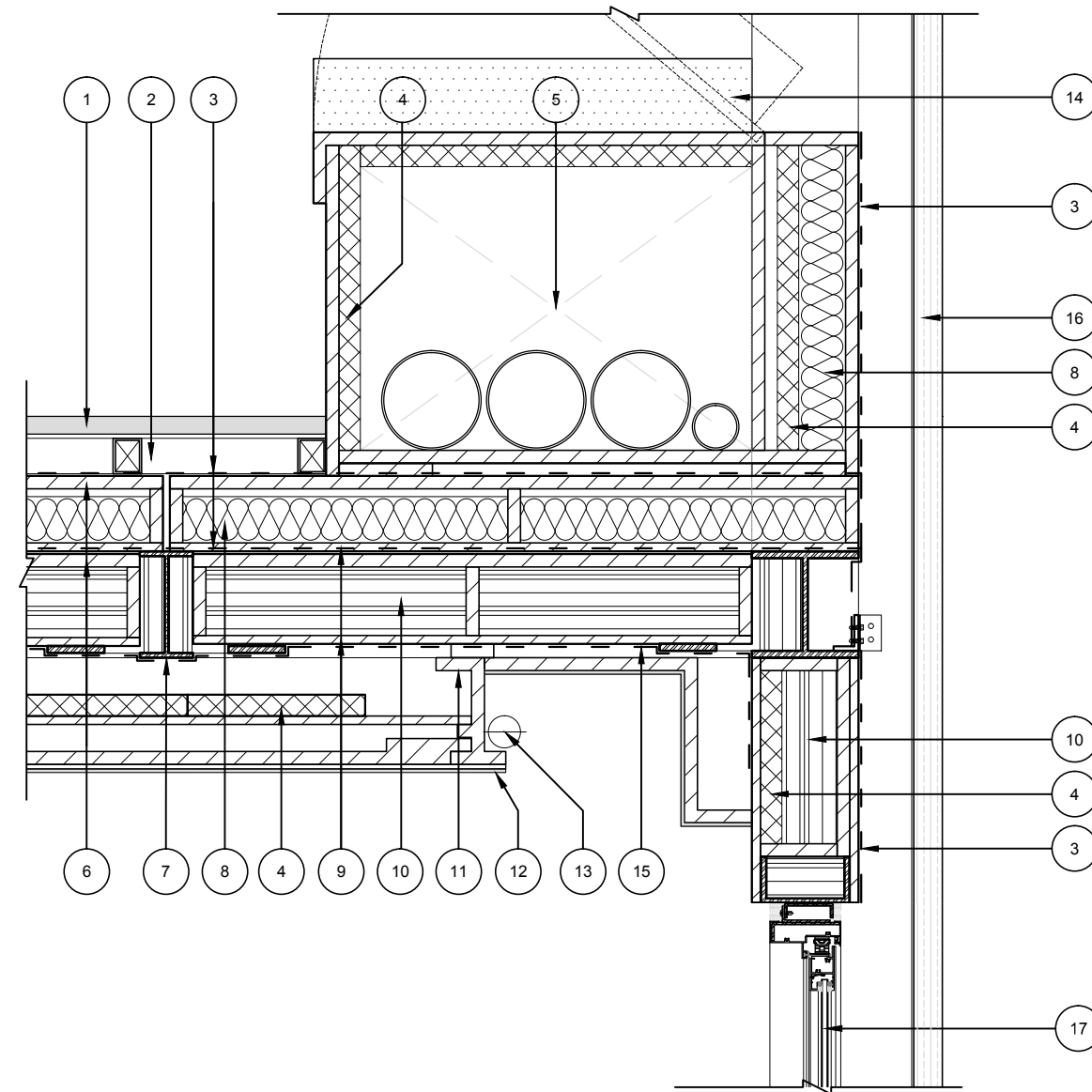
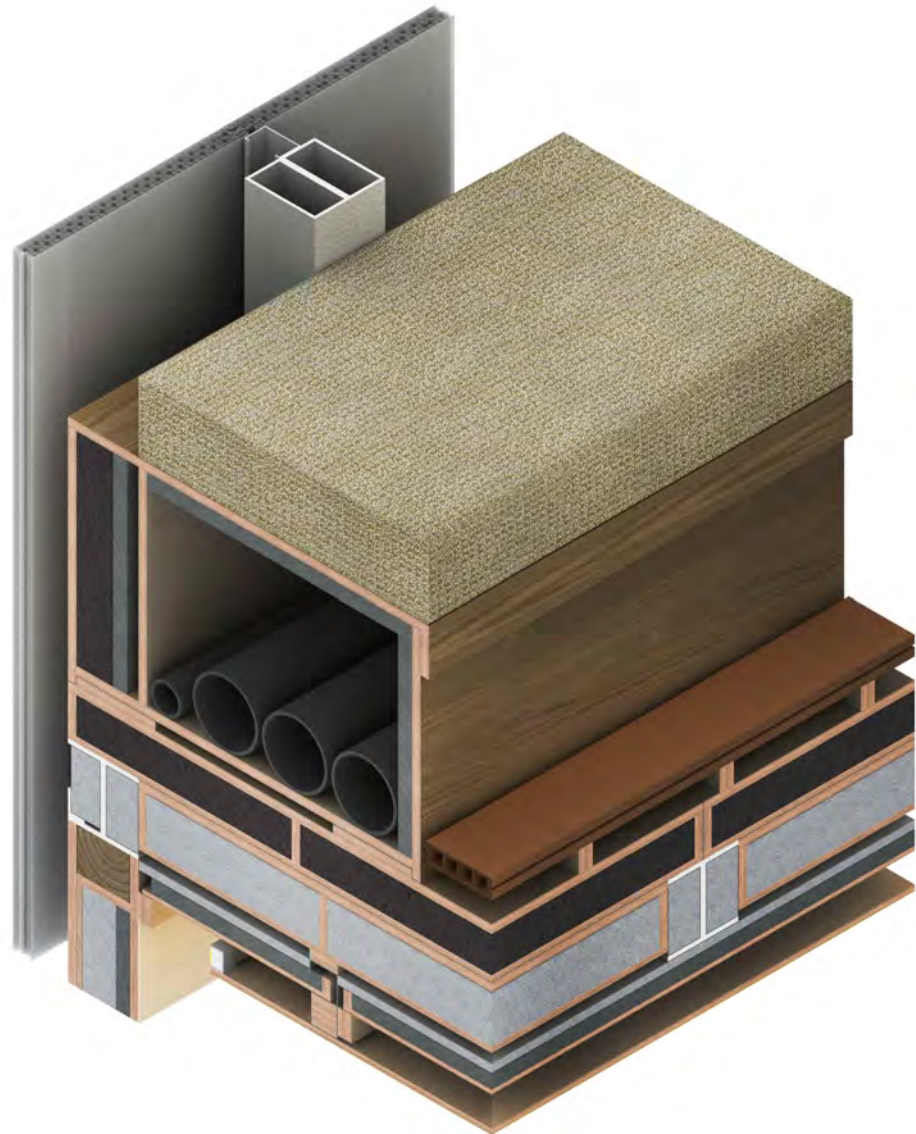
DWG. Title

JOINT DETAIL 2

DWG. No. AR-362

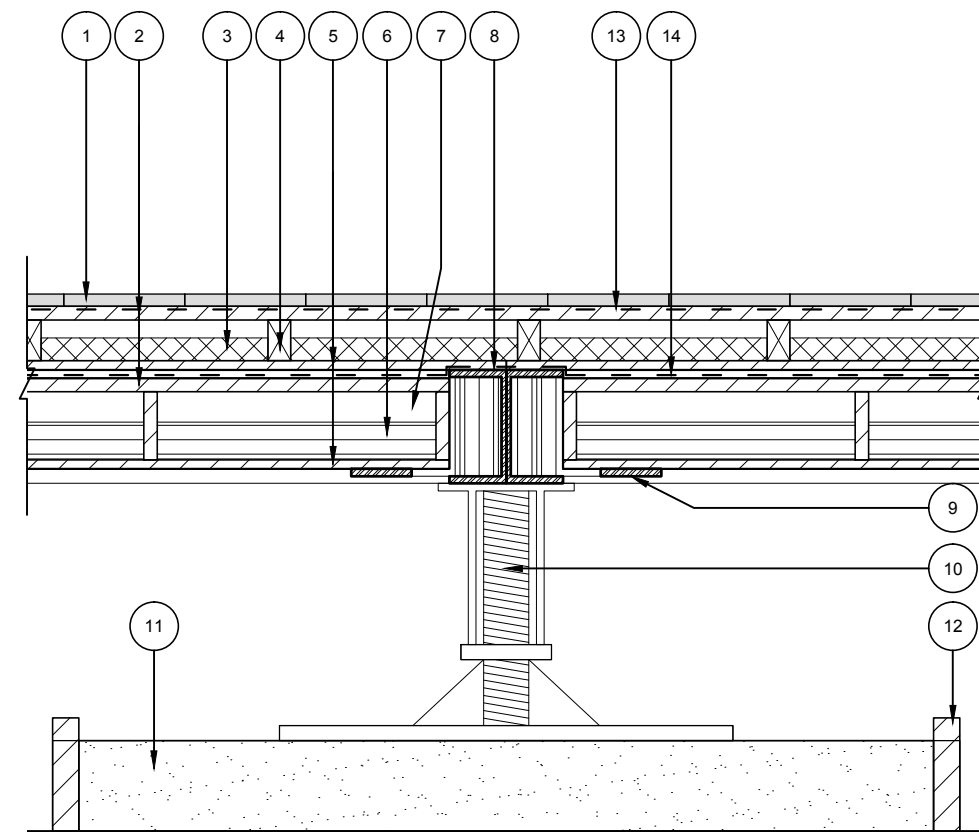
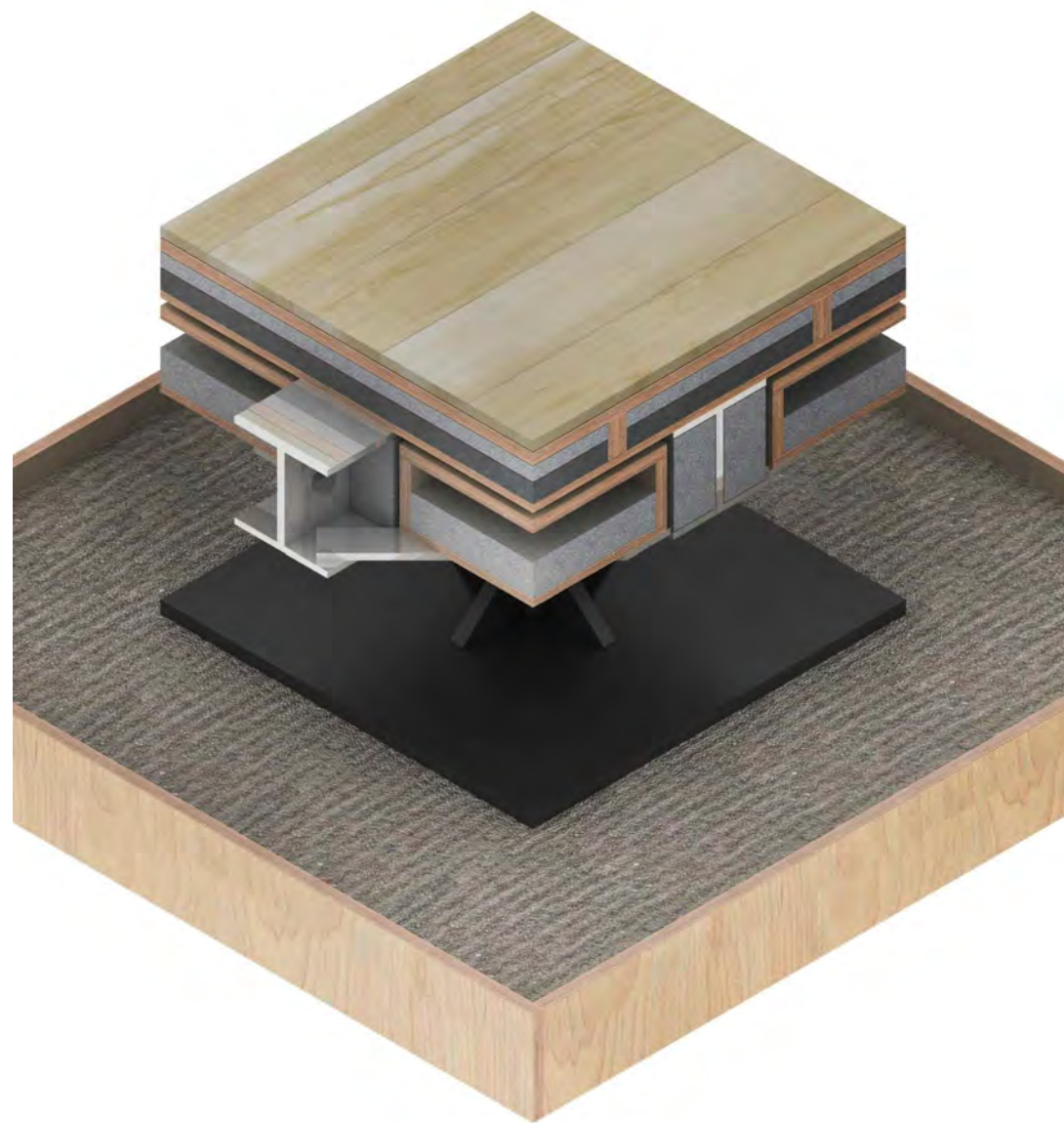
PAGE

67



- 1 Wood Plastic Composites 40mm
- 2 Air gap 44mm
- 3 Waterproofing 1mm
- 4 Vacuum Insulation 30mm
- 5 Duct
- 6 Plywood 18mm
- 7 Sub-beam -150x75 t=7mm
- 8 Glass foam 65mm
- 9 Plywood 12mm
- 10 E-foam 95mm
- 11 C -120x60x20 t=2.3mm (ceiling system)
- 12 Ceiling 12mm (plywood 9mm+ceiling finish 3mm)
- 13 T5 LED Link Light
- 14 Soft seat
- 15 Vapor barrier 1mm
- 16 Bayer Makrolon® Polycarbonate Inter-locking Hollow Sheet t=40mm
- 17 Bayer Makrolon® Polycarbonate Hollow Sheet t=16mm

0 0.1 0.2 0.5 METER



- |                          |                           |
|--------------------------|---------------------------|
| 1 Finished Flooring 16mm | 8 Beam -C -150x75 t=9.5mm |
| 2 Plywood 18mm           | 9 Floor supporting        |
| 3 Vacuum Insulation 30mm | 10 Footing                |
| 4 Wood frame 54mm        | 11 Sand box               |
| 5 Plywood 12mm           | 12 Wood frame             |
| 6 E-foam 50mm            | 13 Waterproofing 1mm      |
| 7 Air gap 40mm           | 14 Vapor barrier 1mm      |



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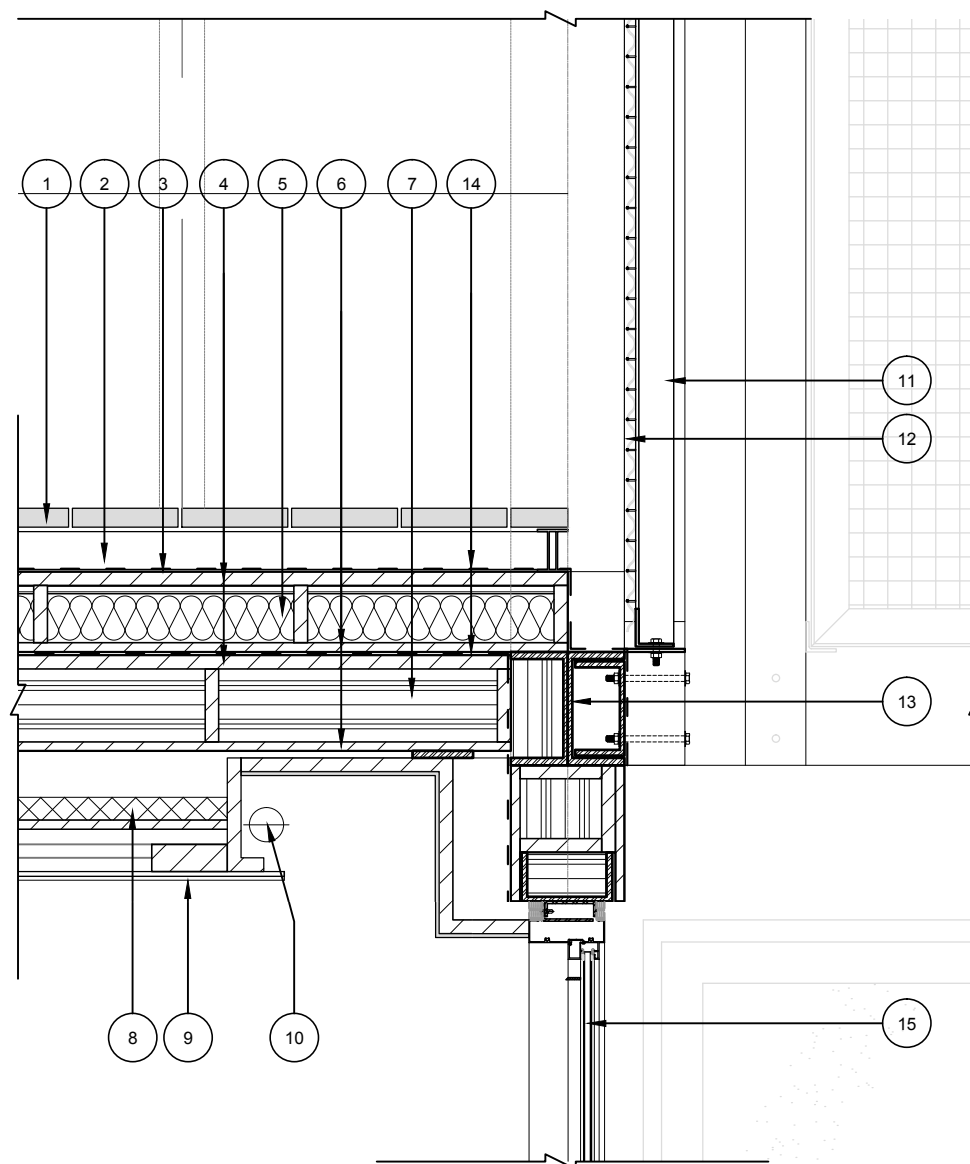
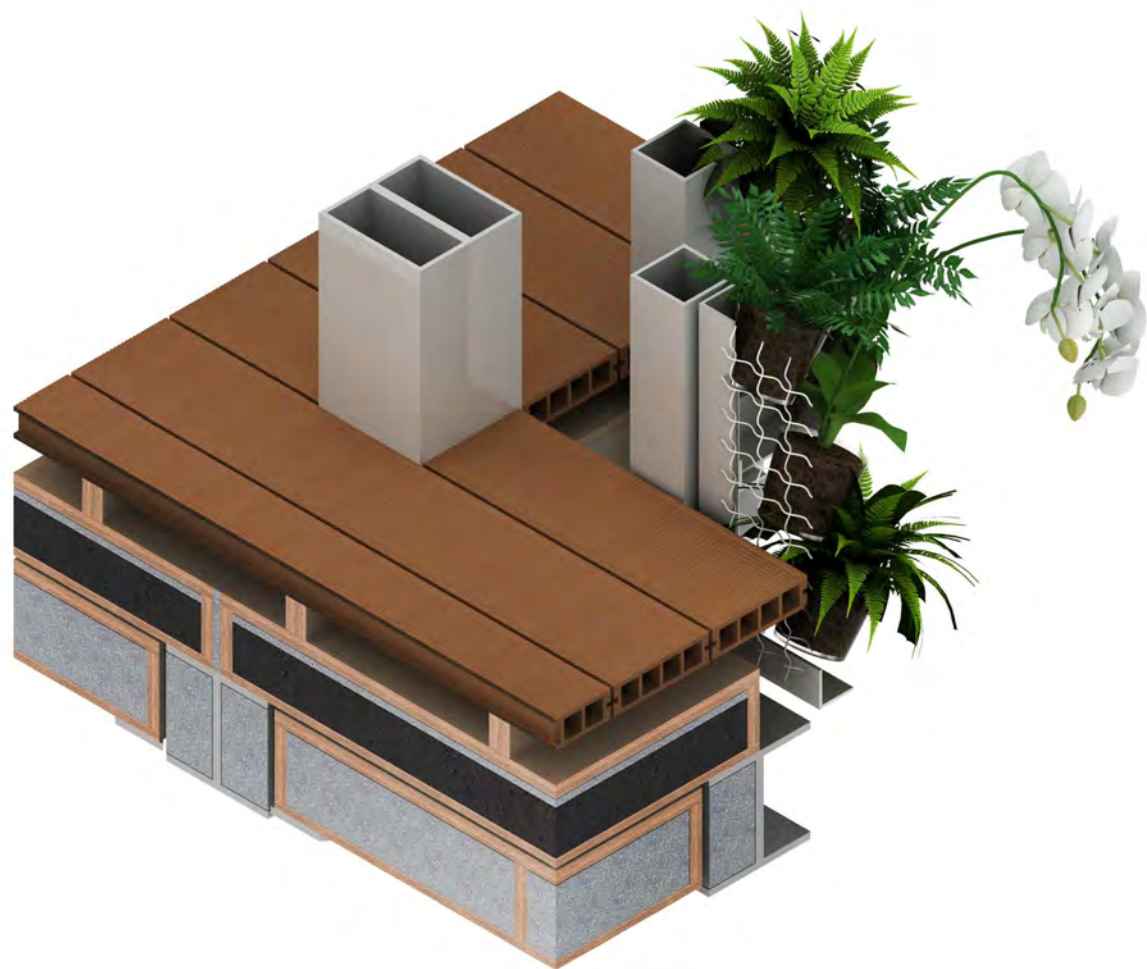
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Unit 1:10

DWG. Title  
JOINT DETAIL 3

DWG. No. AR-363  
PAGE 68

1

2



- |   |                             |    |   |
|---|-----------------------------|----|---|
| 1 | Wooden Flooring 40mm        | 9  | Ceiling 12mm<br>(plywood 9mm+ceiling finish 3mm)        |
| 2 | Framing 60mm / Air gap 44mm | 10 | T5 LED Link Light                                       |
| 3 | Water proofing 2mm          | 11 | Green core  |
| 4 | Plywood 18mm                | 12 | barbed wire $\phi=2\text{mm}$ (for plants supporting)   |
| 5 | Glass foam 65mm             | 13 | Beam C-150x75 t=9.5mm                                   |
| 6 | Plywood 12mm                | 14 | Waterproofing 1mm                                       |
| 7 | E-foam 95mm                 | 15 | Bayer Makrolon® Polycarbonate<br>Hollow Sheet<br>t=16mm |
| 8 | Vacuum Insulation 30mm      |    |   |

0 0.1 0.2 0.5 METER

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DWG. Title

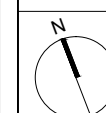
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DWG. No. AR-364

PAGE

69

69



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Unit mm

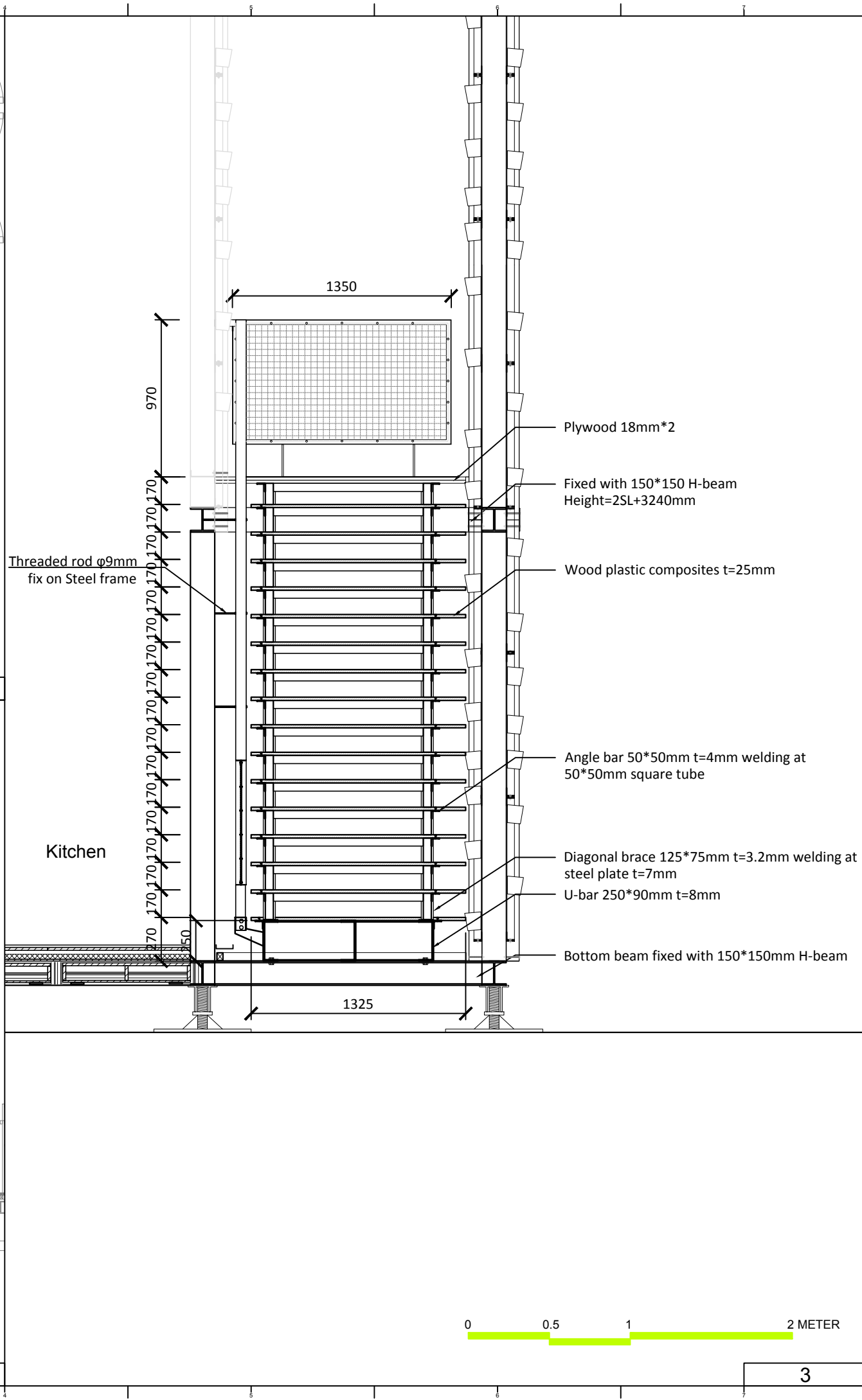
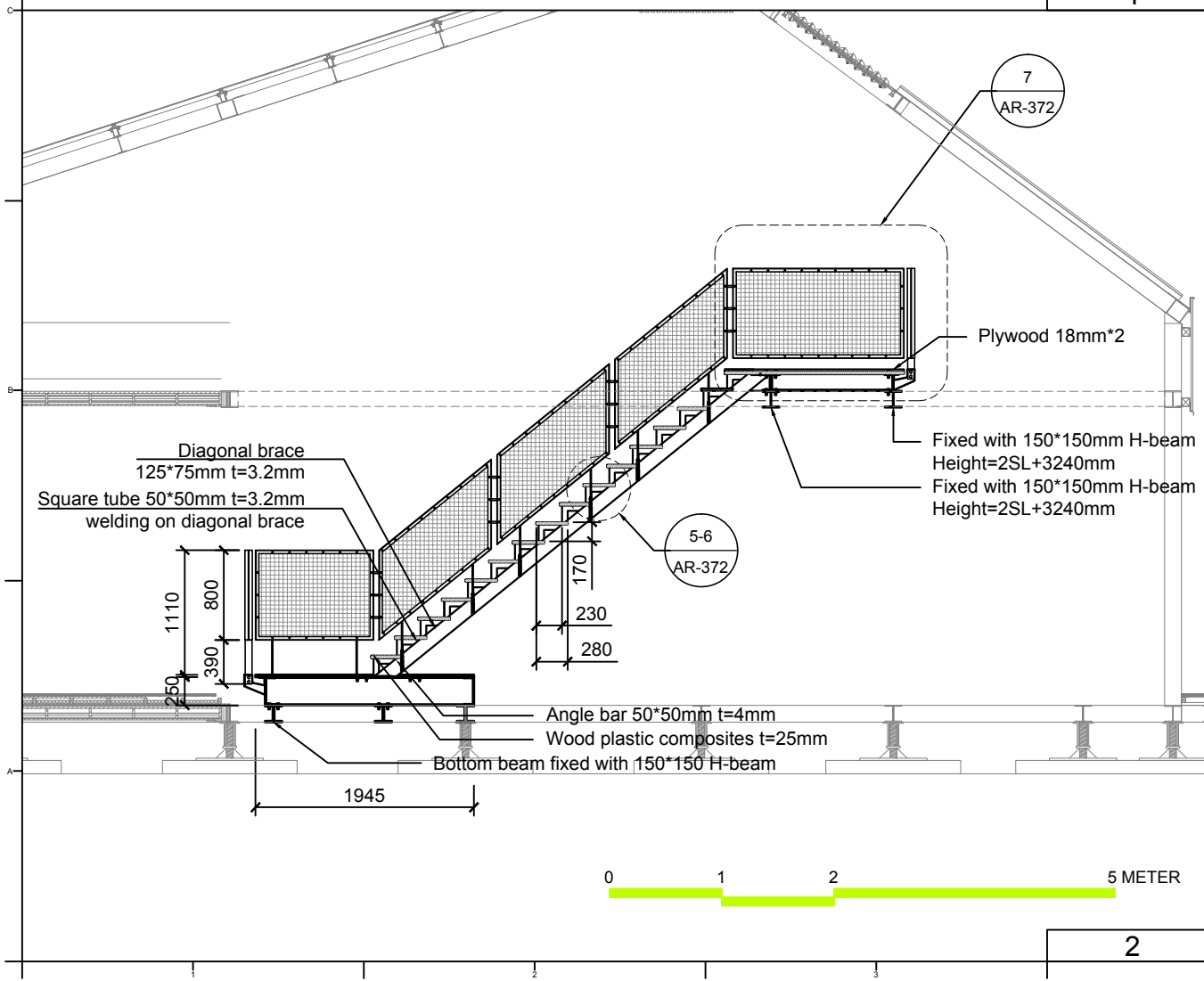
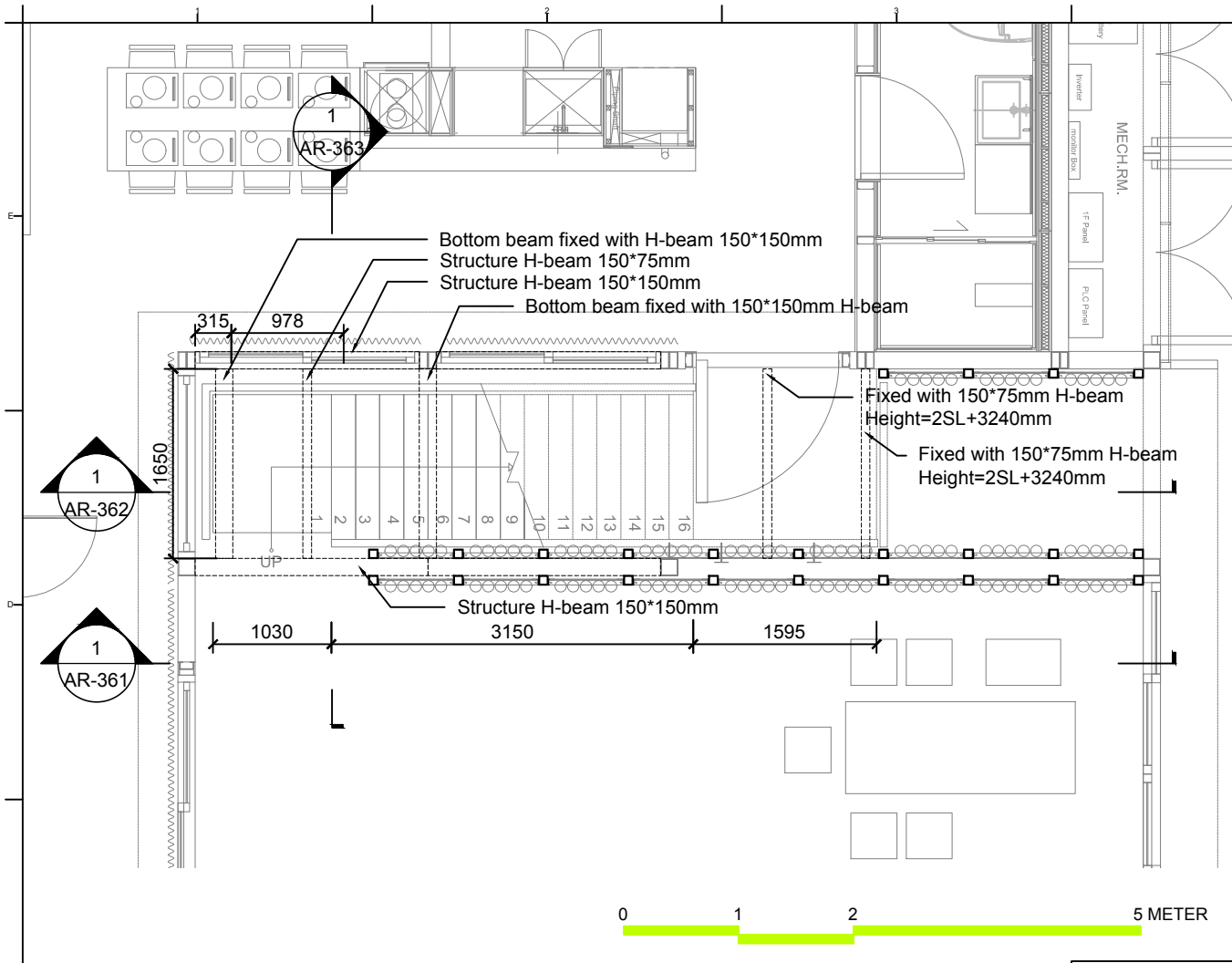
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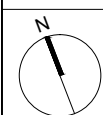
STAIR DETAIL 1

DWG. No. AR-371

PAGE

70

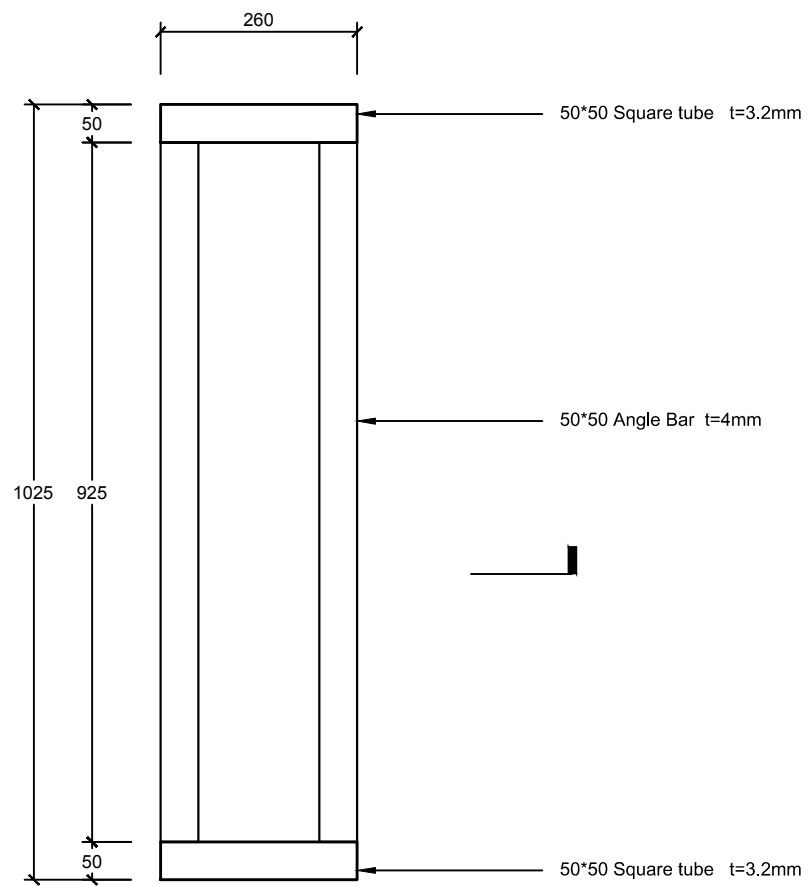




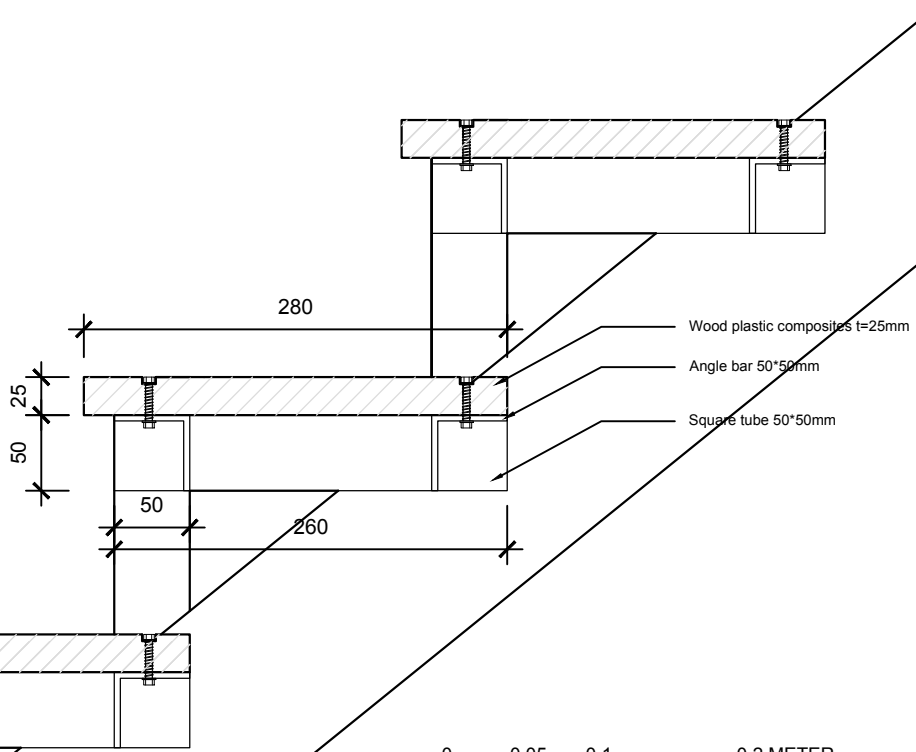
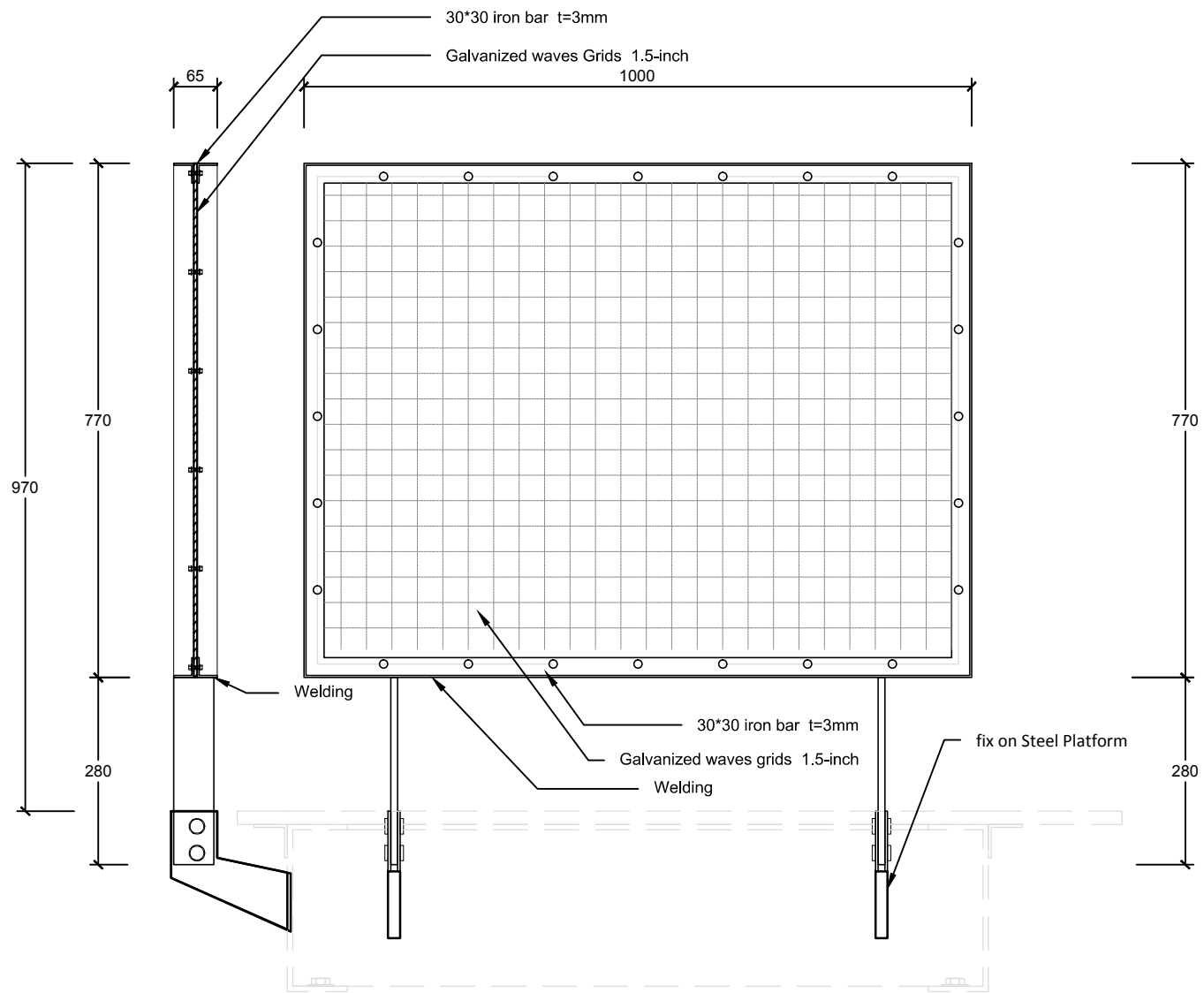
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Checked by	DN
Scale	1:10
Unit	mm

DWG. Title	
STAIR DETAIL 2	
DWG. No.	PAGE
AR-372	71



5



6



7

Project:



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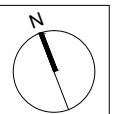
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Unit mm

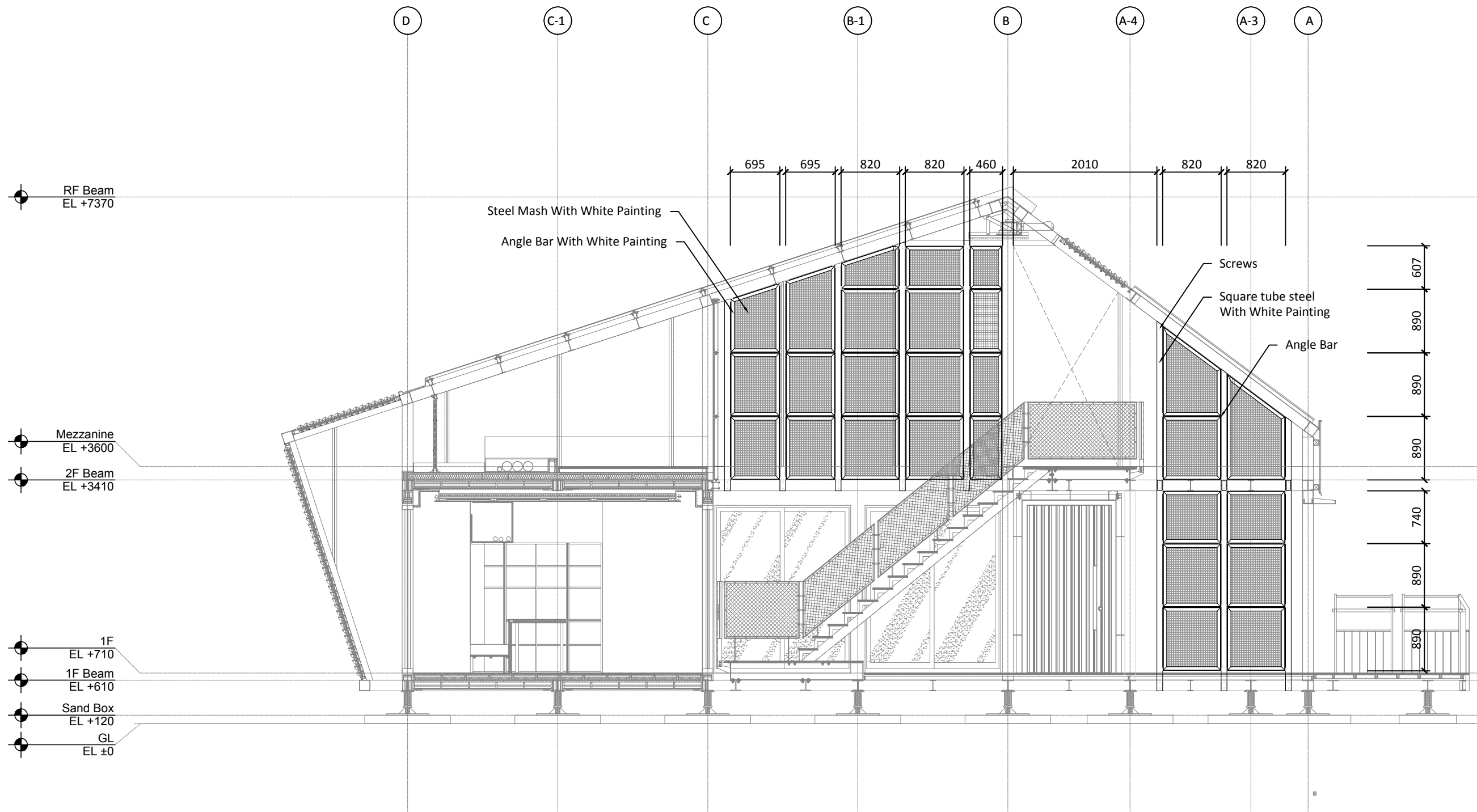
DWG. Title

GREEN CORE DETAIL 1

DWG. No. AR-401

PAGE

72



RF Beam  
EL +7370

Mezzanine  
EL +3600

2F Beam  
EL +3410

1F  
EL +710

1F Beam  
EL +610

Sand Box  
EL +120

GL  
EL ±0

Steel Mesh With White Painting  
Angle Bar With White Painting

Screws  
Square tube steel With White Painting  
Angle Bar

695 695 820 820 460 2010 820 820

607  
890  
890  
890  
740  
890  
890



Project:



Institution:



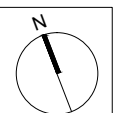
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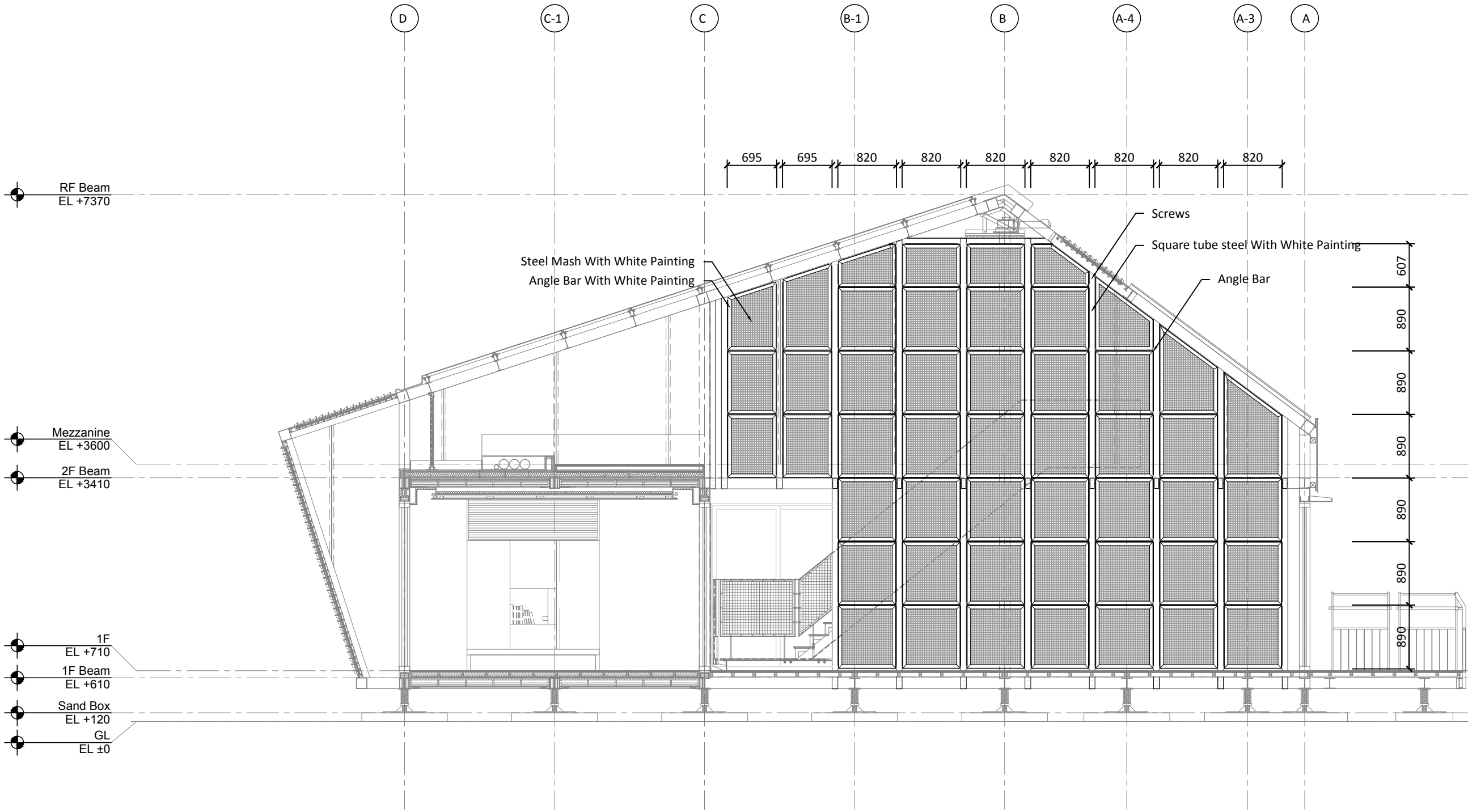
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ST	2014/11/03	AB Submission

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Unit	mm

DWG. Title	
GREEN CORE DETAIL 2	
DWG. No.	PAGE
AR-402	73



Project:



Institution:



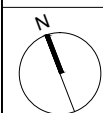
**NCTU Architecture**  
國立交通大學建築研究所

Team Name: NCTU/UNICODE  
Address: 1001 Ta-Hsueh Road  
Hsinchu City 30010  
Taiwan  
Contact: www.sde.tw



Consultants:

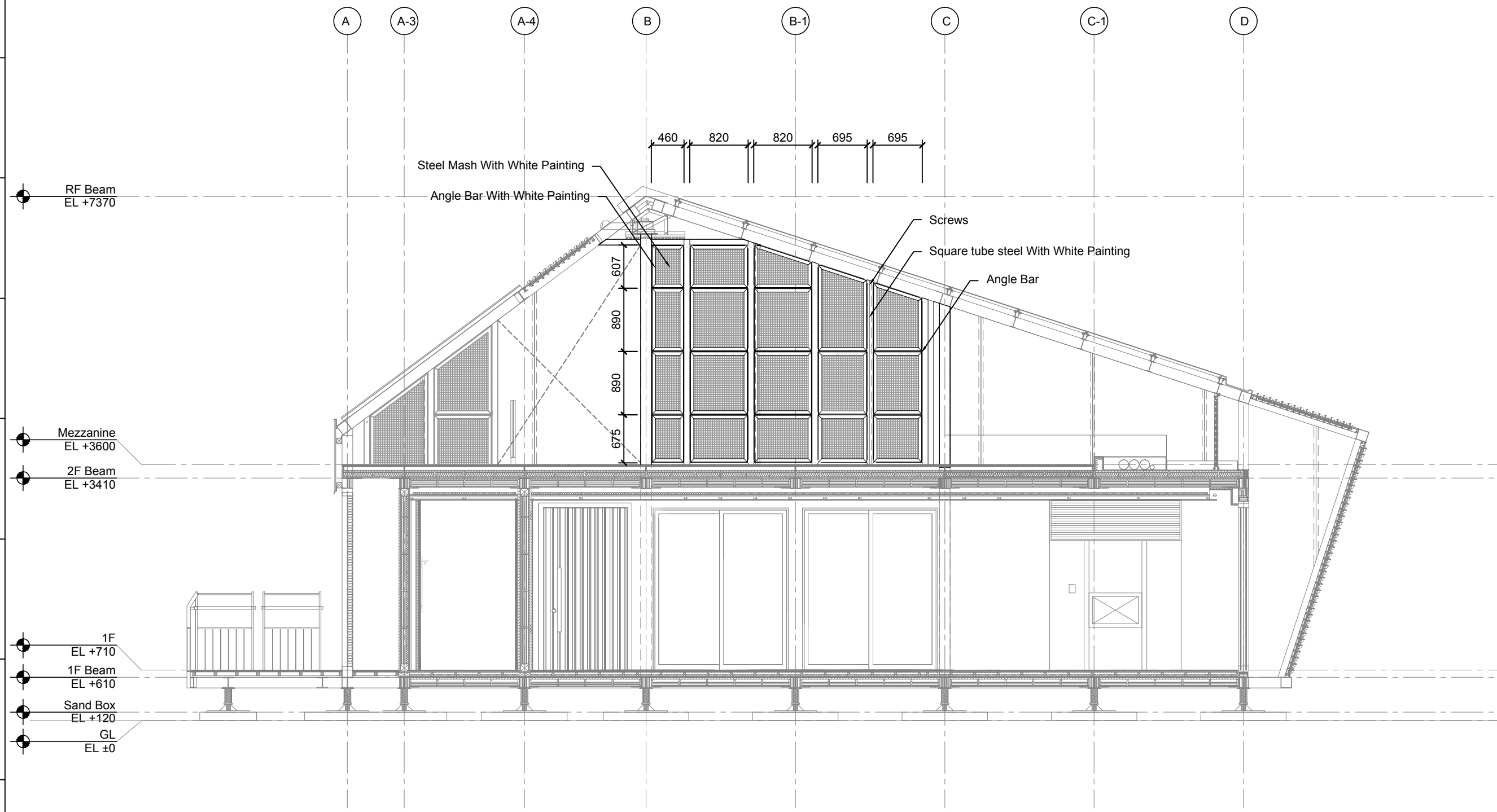
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DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

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Unit	mm

DWG. Title	
GREEN CORE DETAIL 3	
DWG. No.	PAGE
AR-403	74



Project:



Institution:



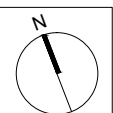
**NCTU Architecture**  
國立交通大學建築研究所

Team Name: NCTU/UNICODE  
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Hsinchu City 30010  
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Consultants:

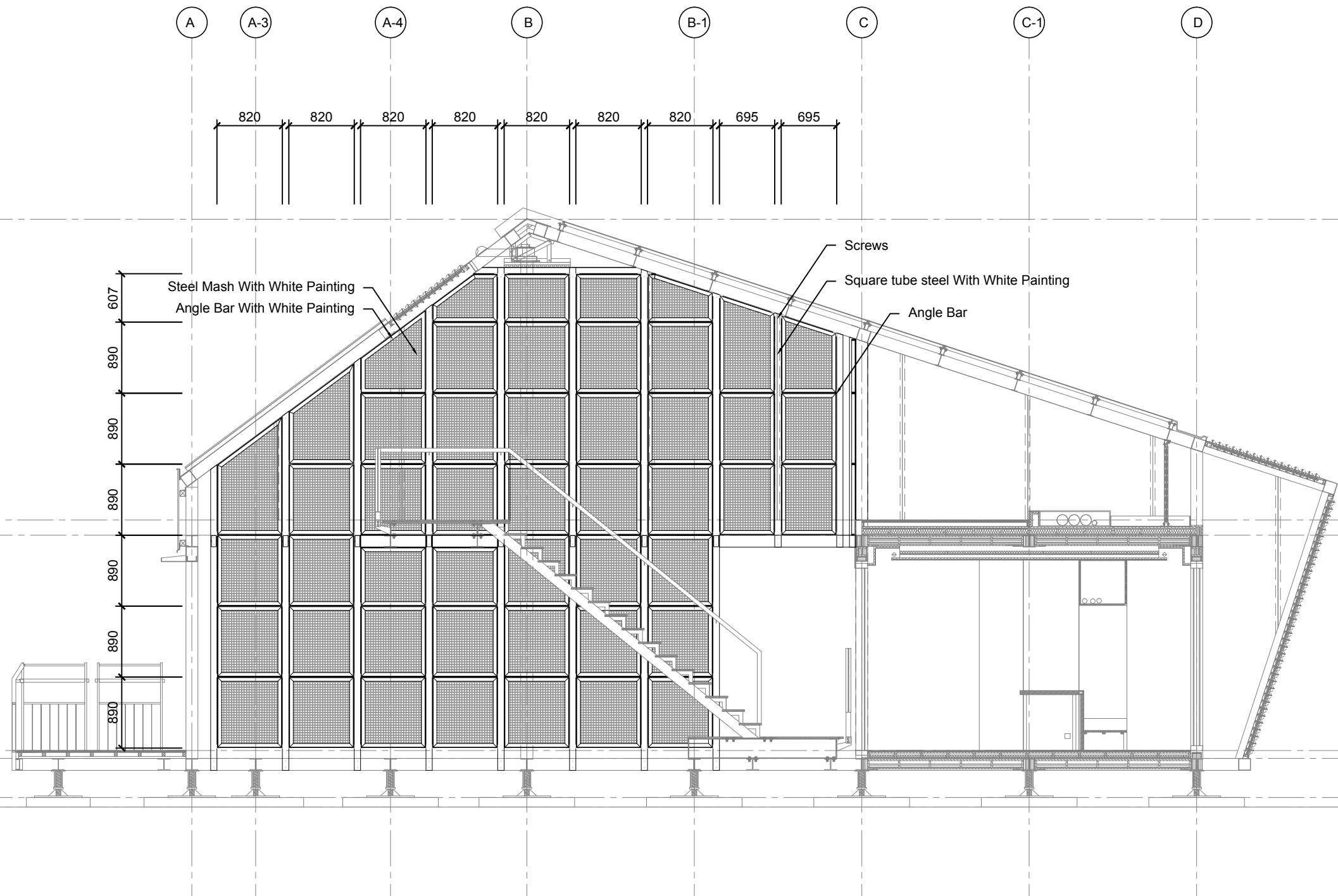
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ST	2013/11/01	DD Submission
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

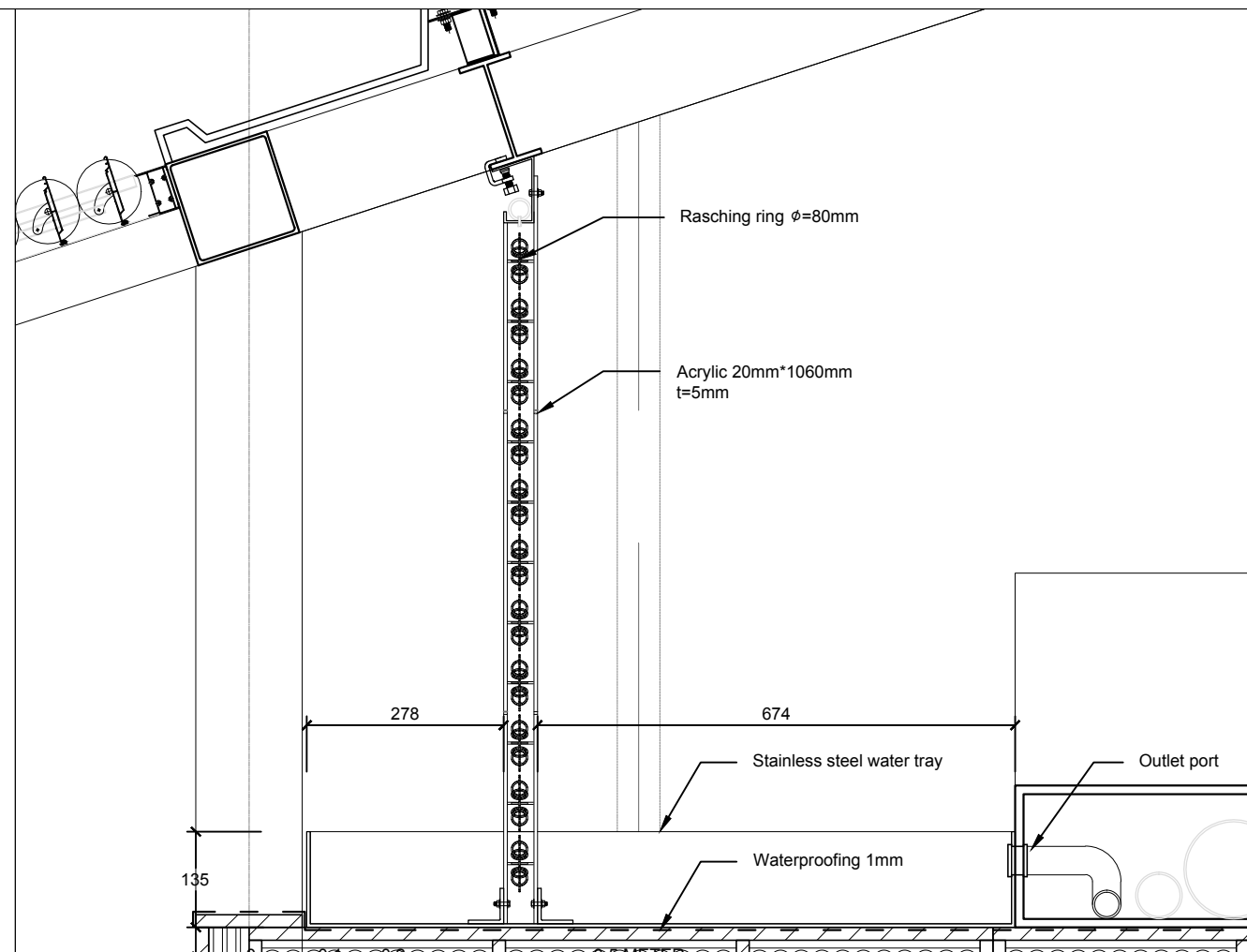
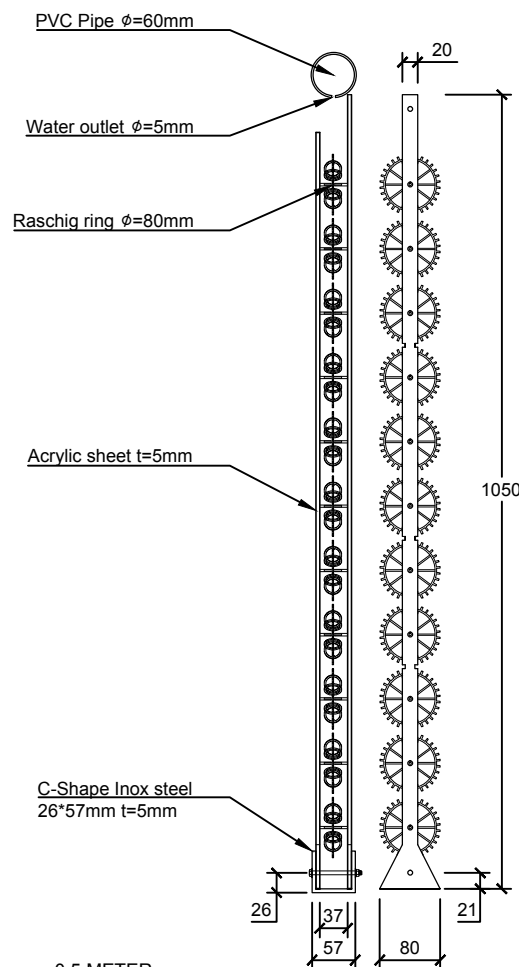
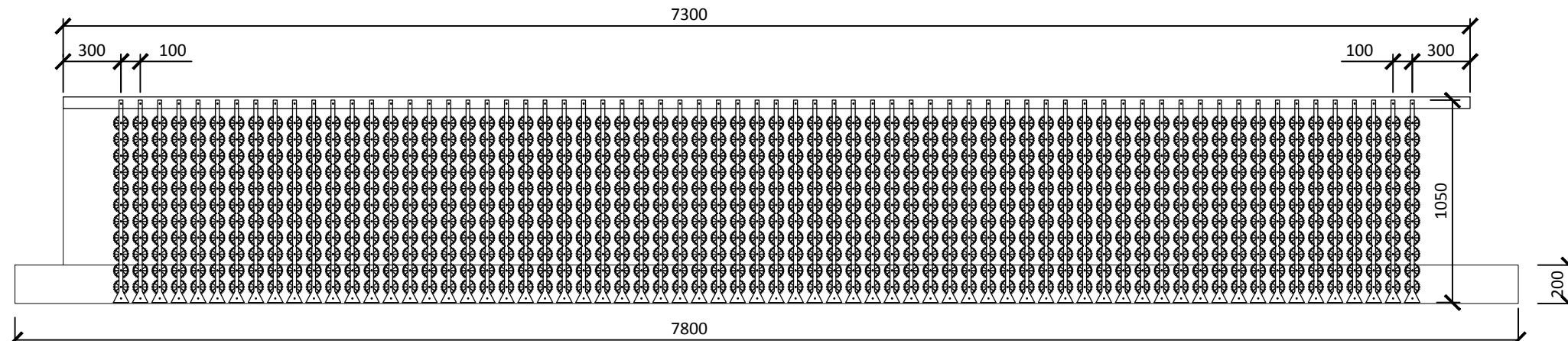
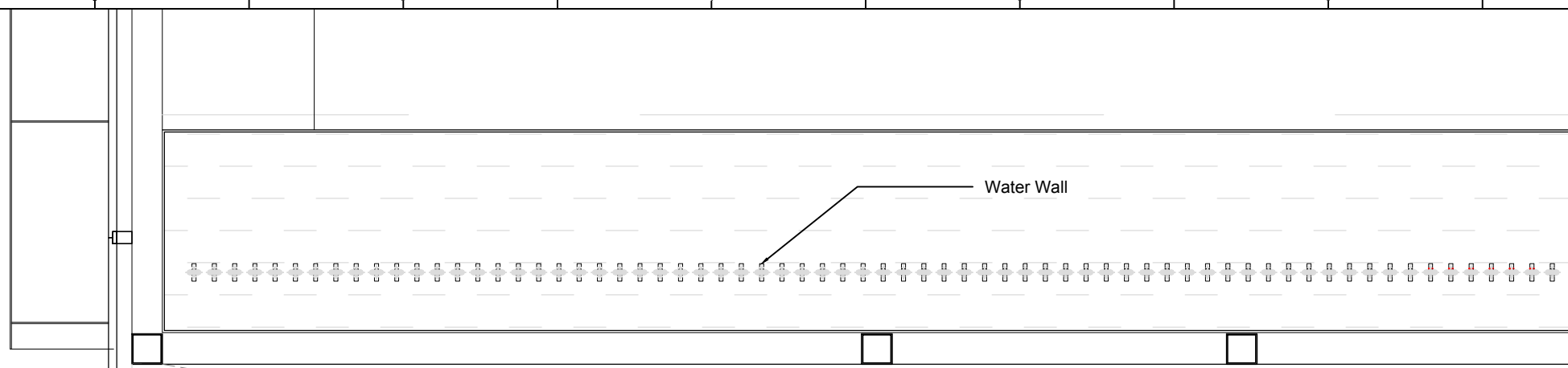
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DWG. No.	PAGE
AR-404	75





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ST	2014/03/03	CD Submission
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission





Mark	Date	Description
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ST	2014/11/03	AB Submission

Drawn by RT

Checked by ST

Scale 1:10

Unit mm

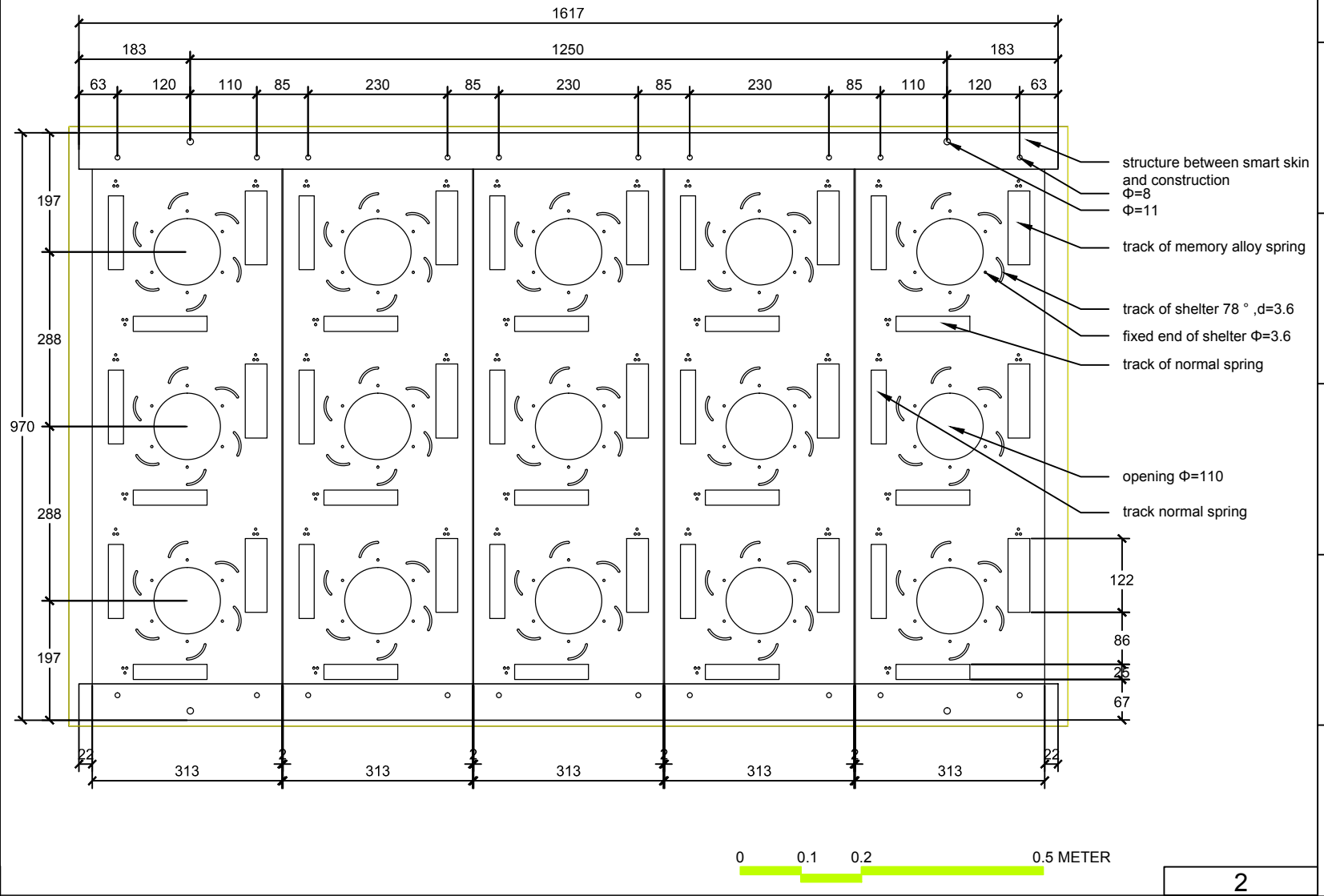
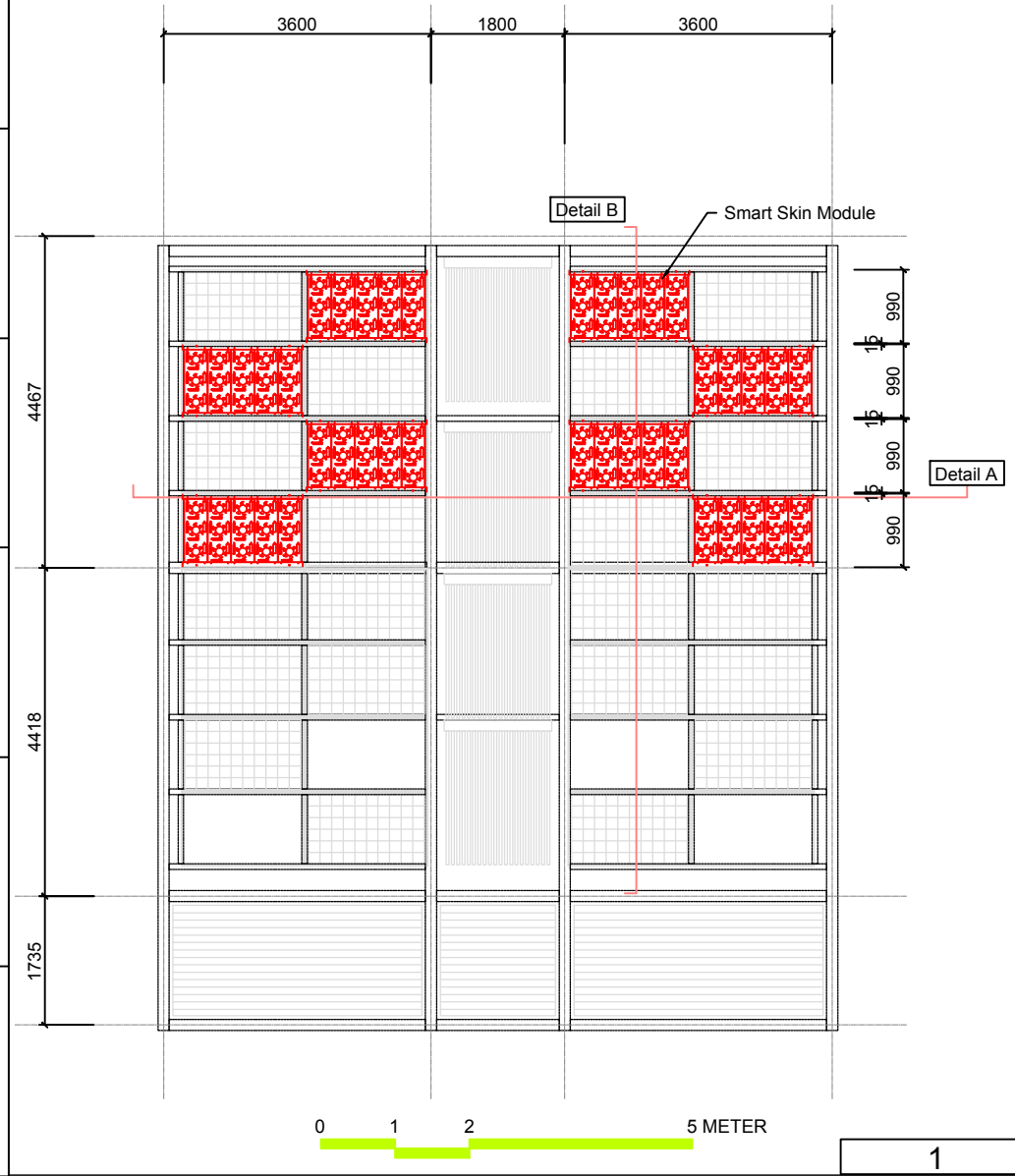
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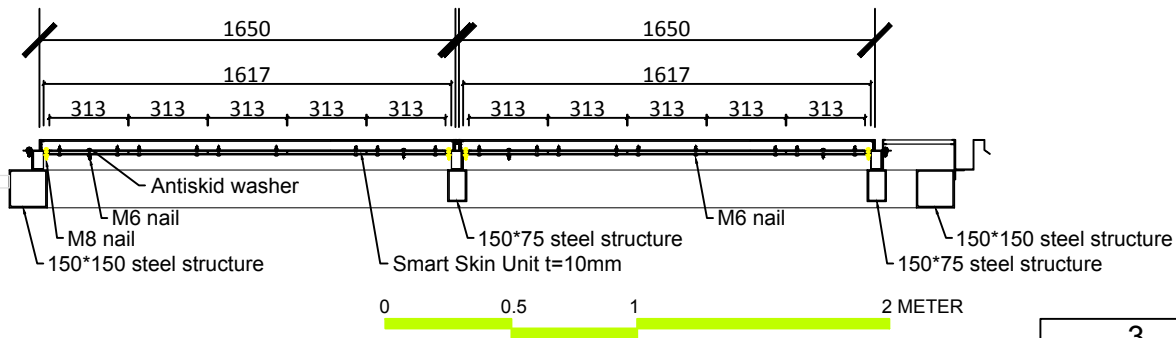
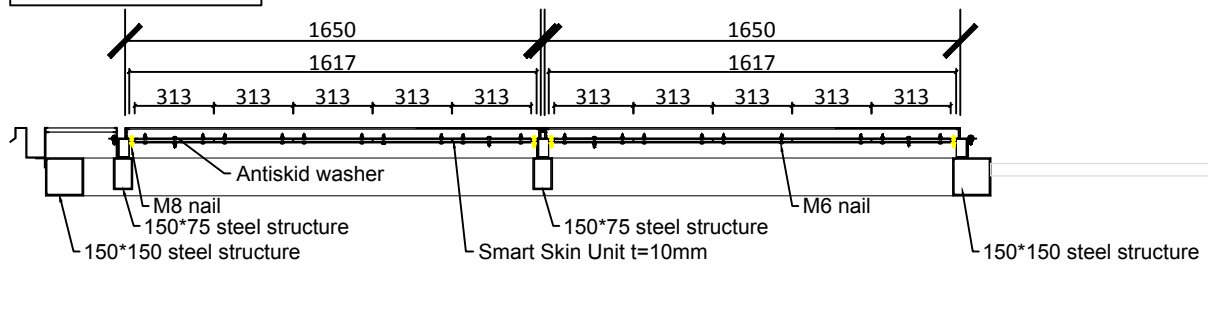
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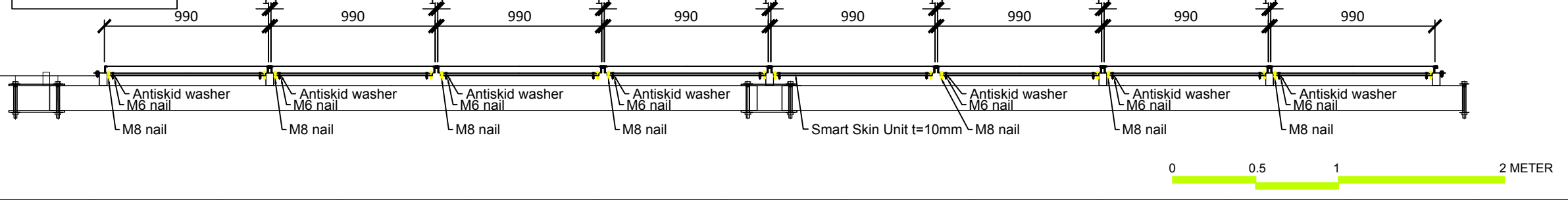
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Detail A



Detail B



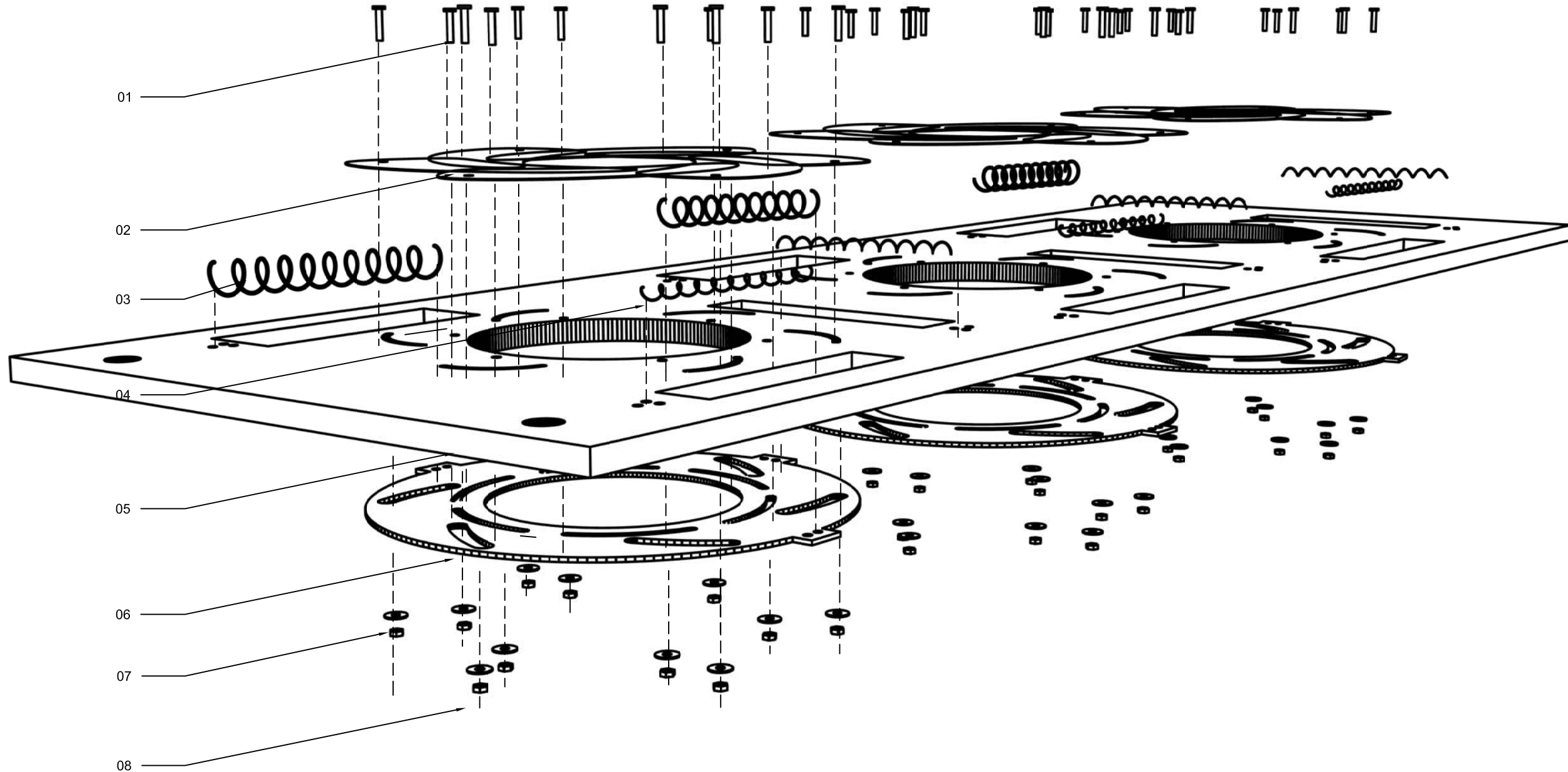
1

2

3

4

- 01- M2 Screw
- 02- Translucent PVC, Shelter
- 03- Memory Alloy Spring
- 04- Normal Spring
- 05- 10mm Acrylic, Base
- 06- 2mm Acrylic, Wheel
- 07- Antiskid Washer
- 08- Screw Cap



Project:



Institution:



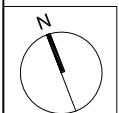
**NCTU Architecture**  
國立交通大學建築研究所

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ST	2014/03/03	CD Submission
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

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Checked by	ST
Scale	1:10
Unit	mm

DWG. Title	
SMART SKIN DETAIL	
DWG. No.	PAGE
AR-422	78

Project:



Institution:



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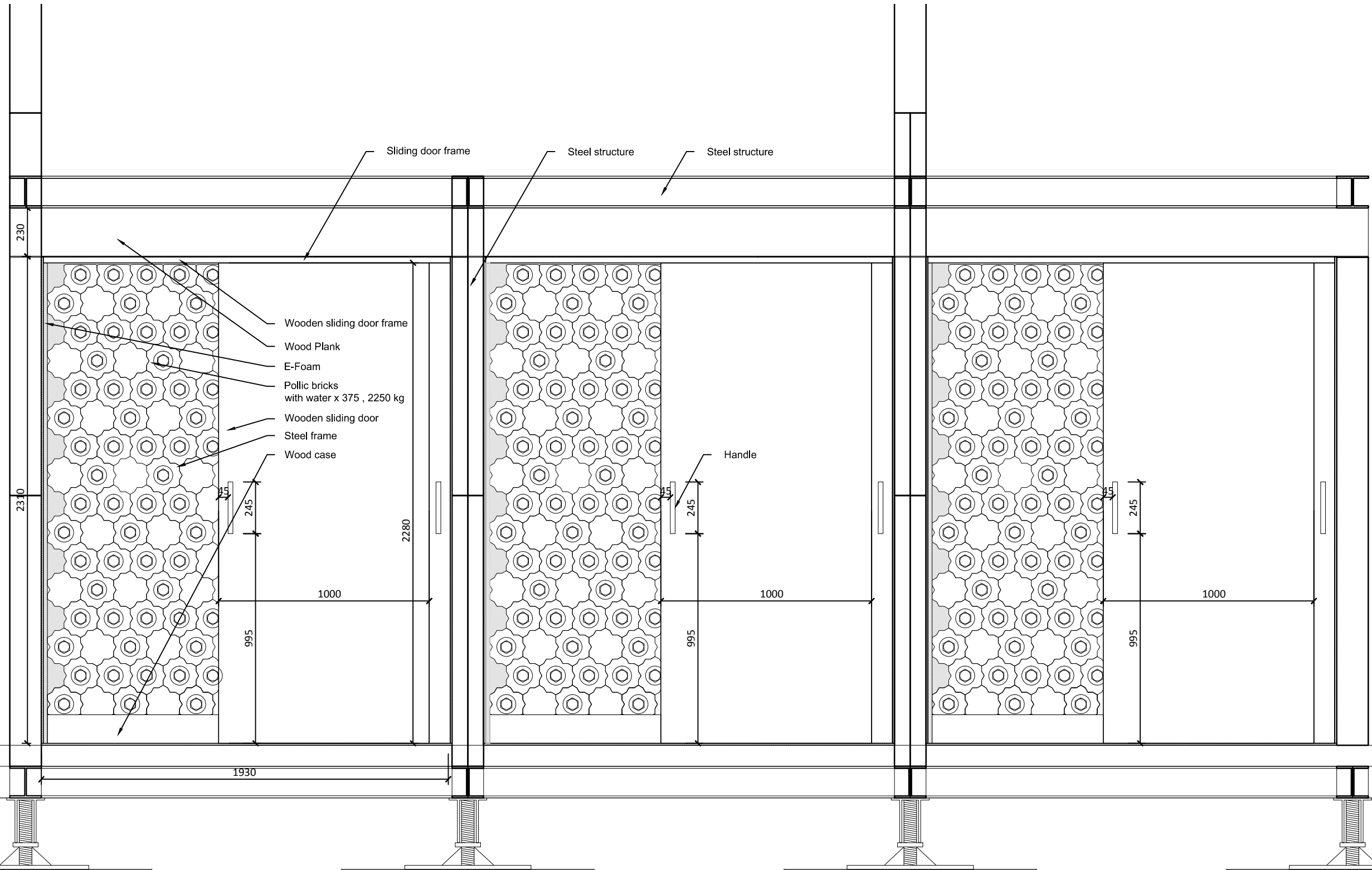
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

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Checked by	DN
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Unit	mm

DWG. Title	
THERMAL WALL DETAILS 1	
DWG. No.	PAGE
AR-431	79



Project:



Institution:



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Taiwan

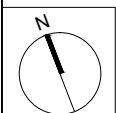
Contact:

www.sde.tw



Consultants:

Note:

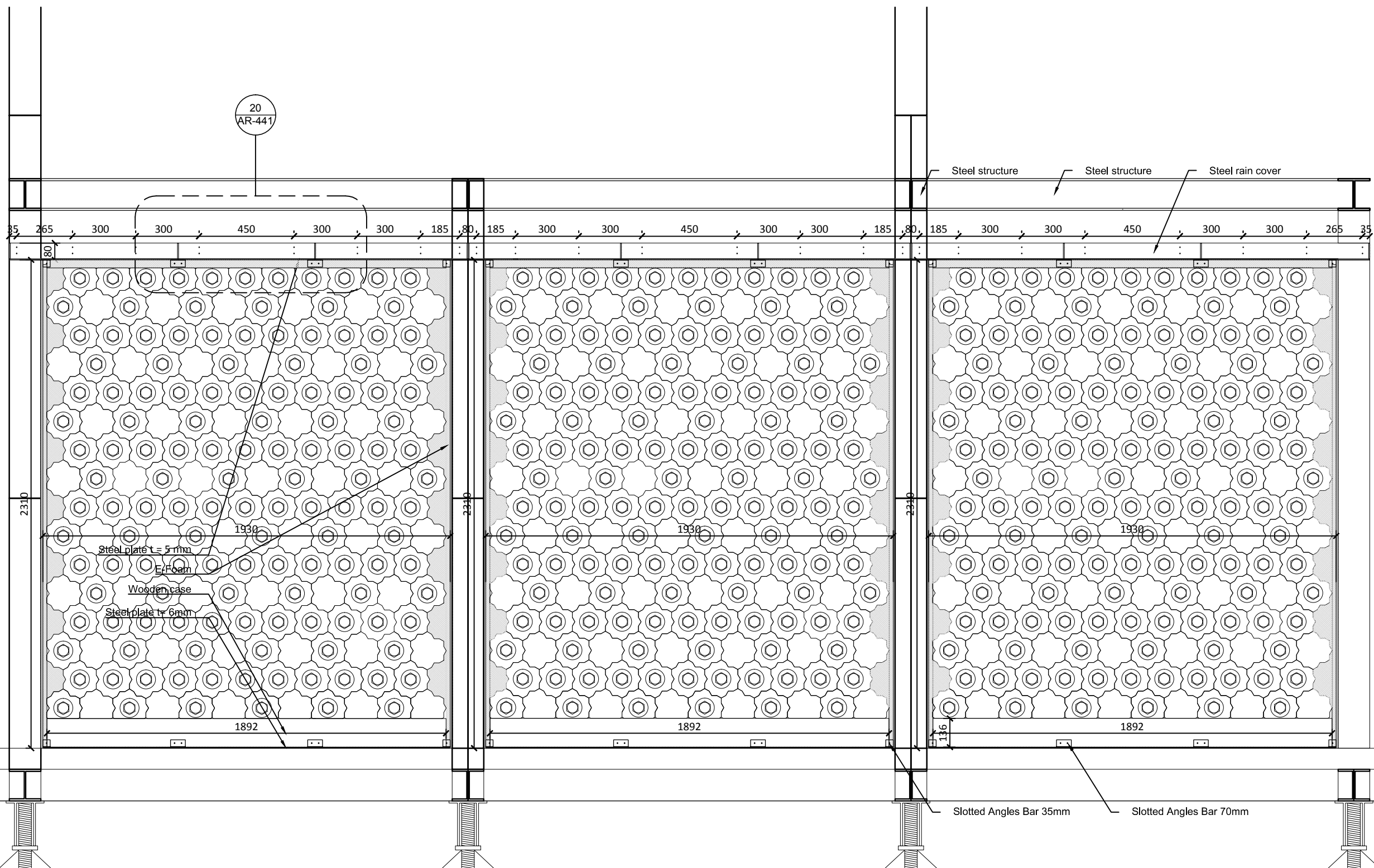


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ST	2014/11/03	AB Submission

Drawn by	JL
Checked by	DN
Scale	1:20
Unit	mm

DWG. Title  
**THERMAL WALL  
DETAILS 2**

DWG. No.	PAGE
<b>AR-432</b>	<b>80</b>



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Project:



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國立交通大學建築研究所

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Note:

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Drawn by

JL

Checked by

DN

Scale

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Unit

mm

DWG. Title

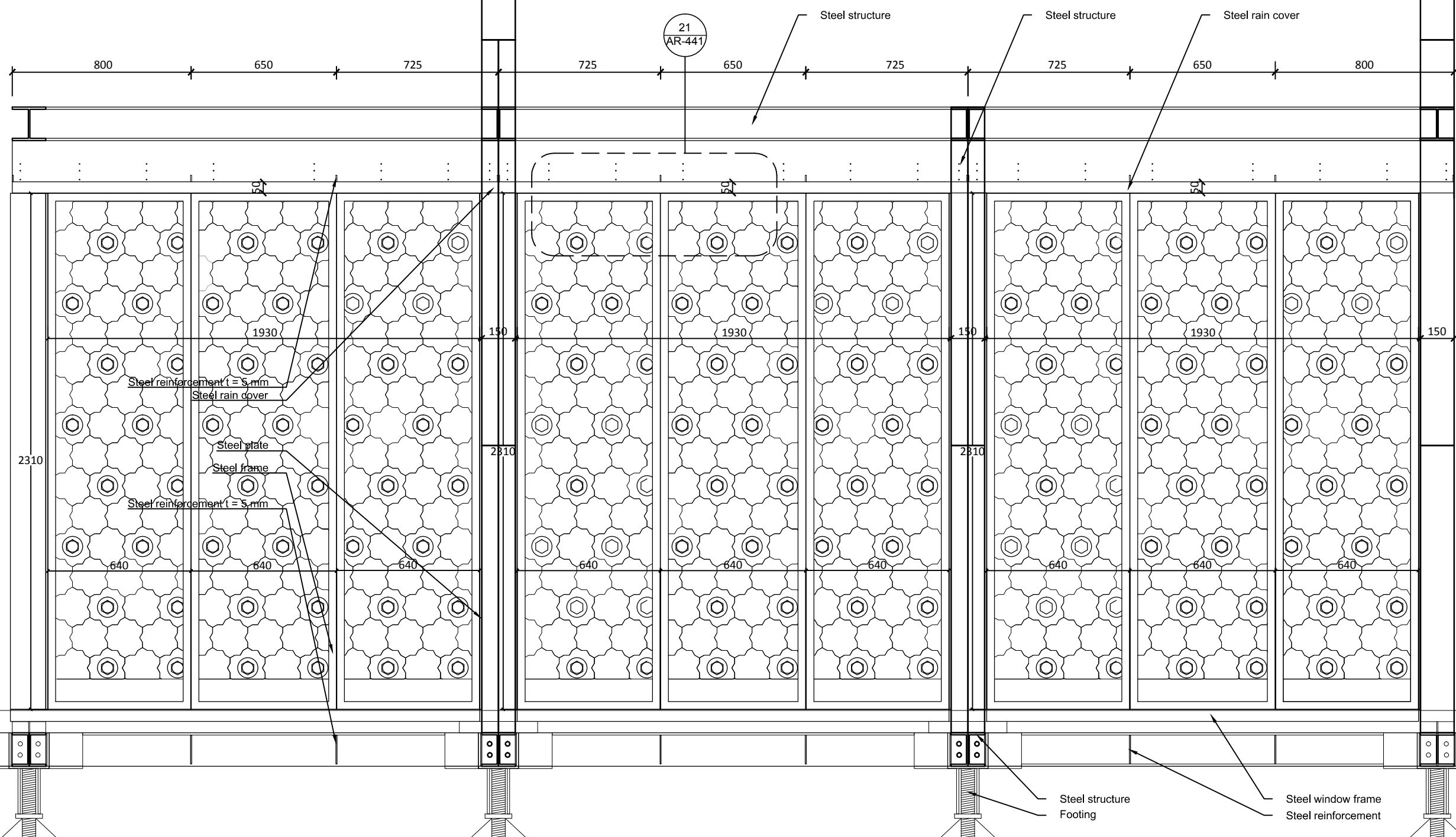
**THERMAL WALL  
DETAILS 3**

DWG. No.

**AR-433**

PAGE

**81**



Project:



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Note:

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DWG. Title

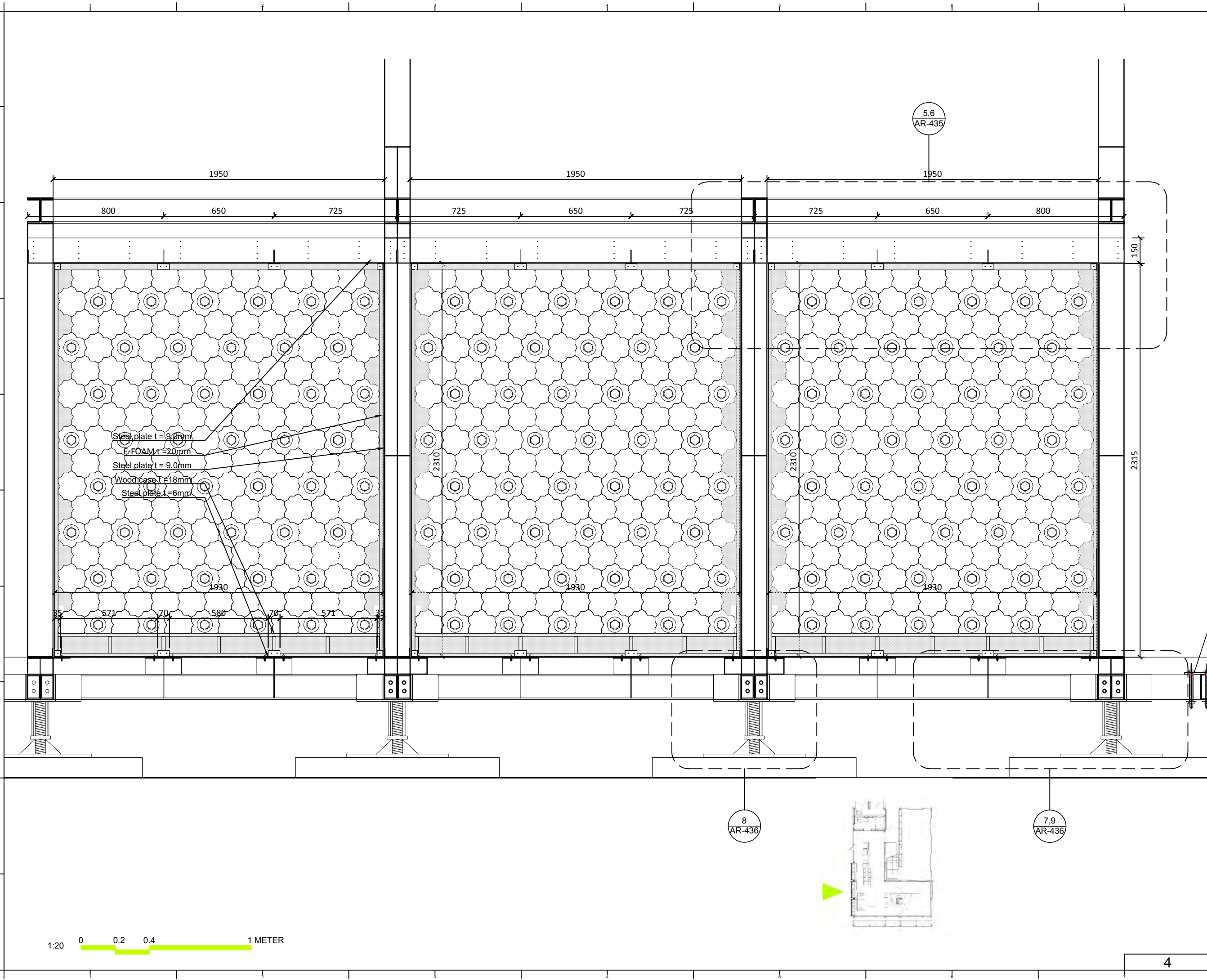
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DETAILS 4**

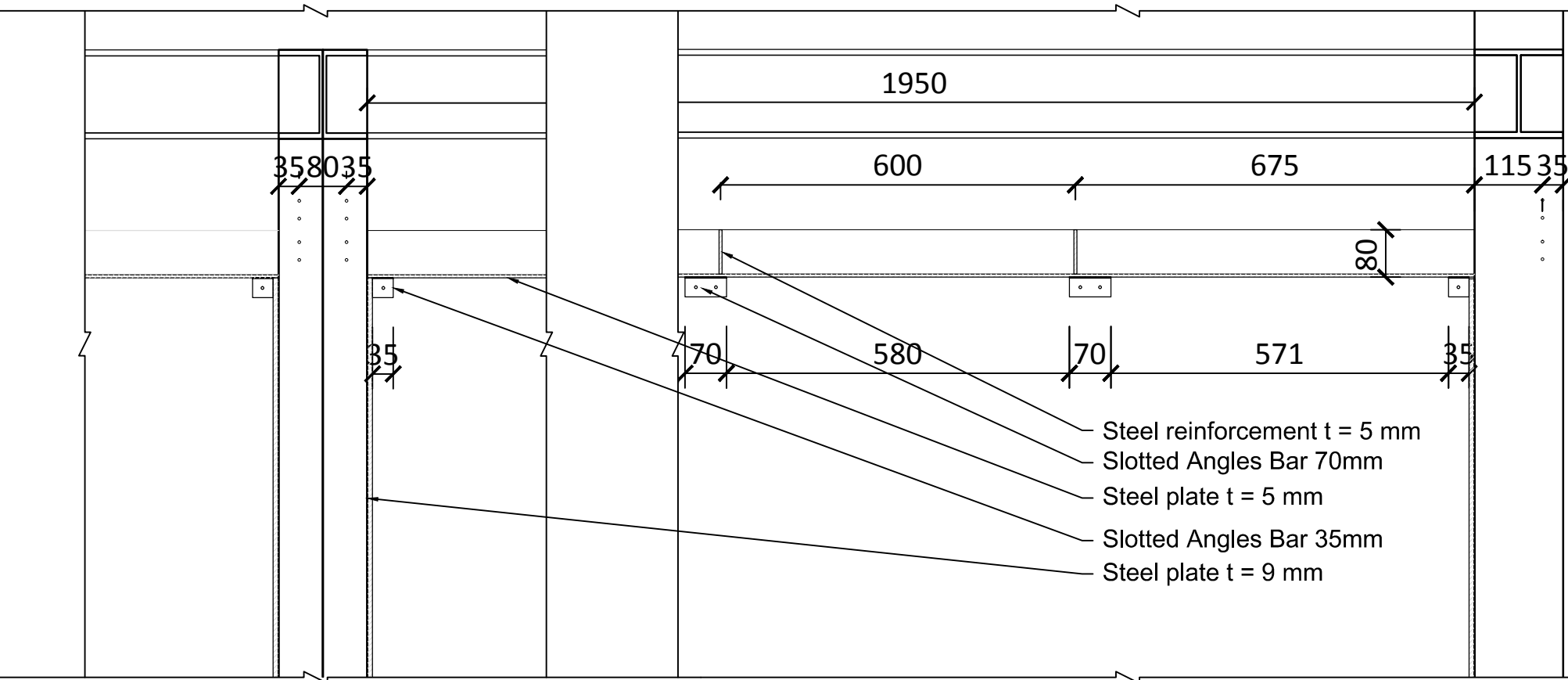
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**AR-434**

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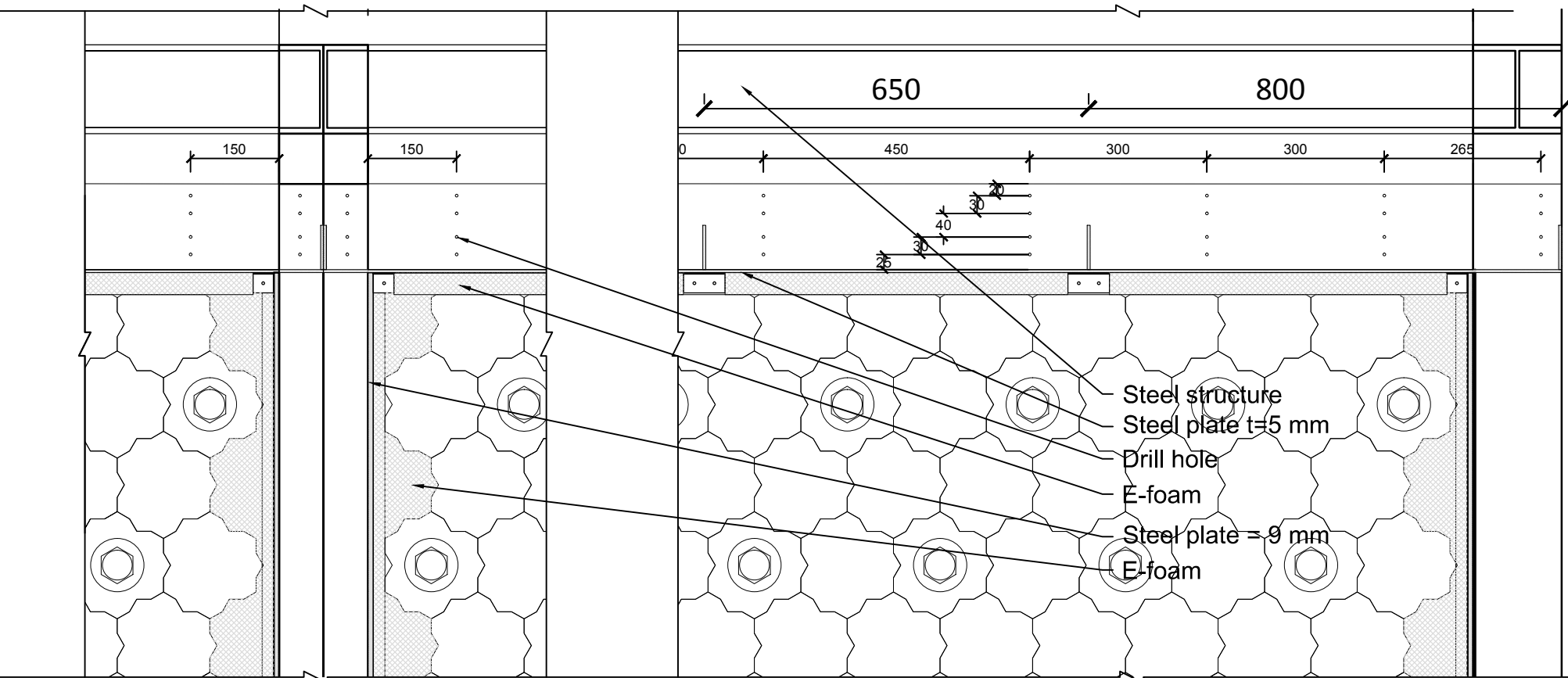
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by	JL
Checked by	DN
Scale	1: 10
Unit	mm

DWG. Title	
THERMAL WALL DETAILS 5	
DWG. No.	PAGE
AR-435	83



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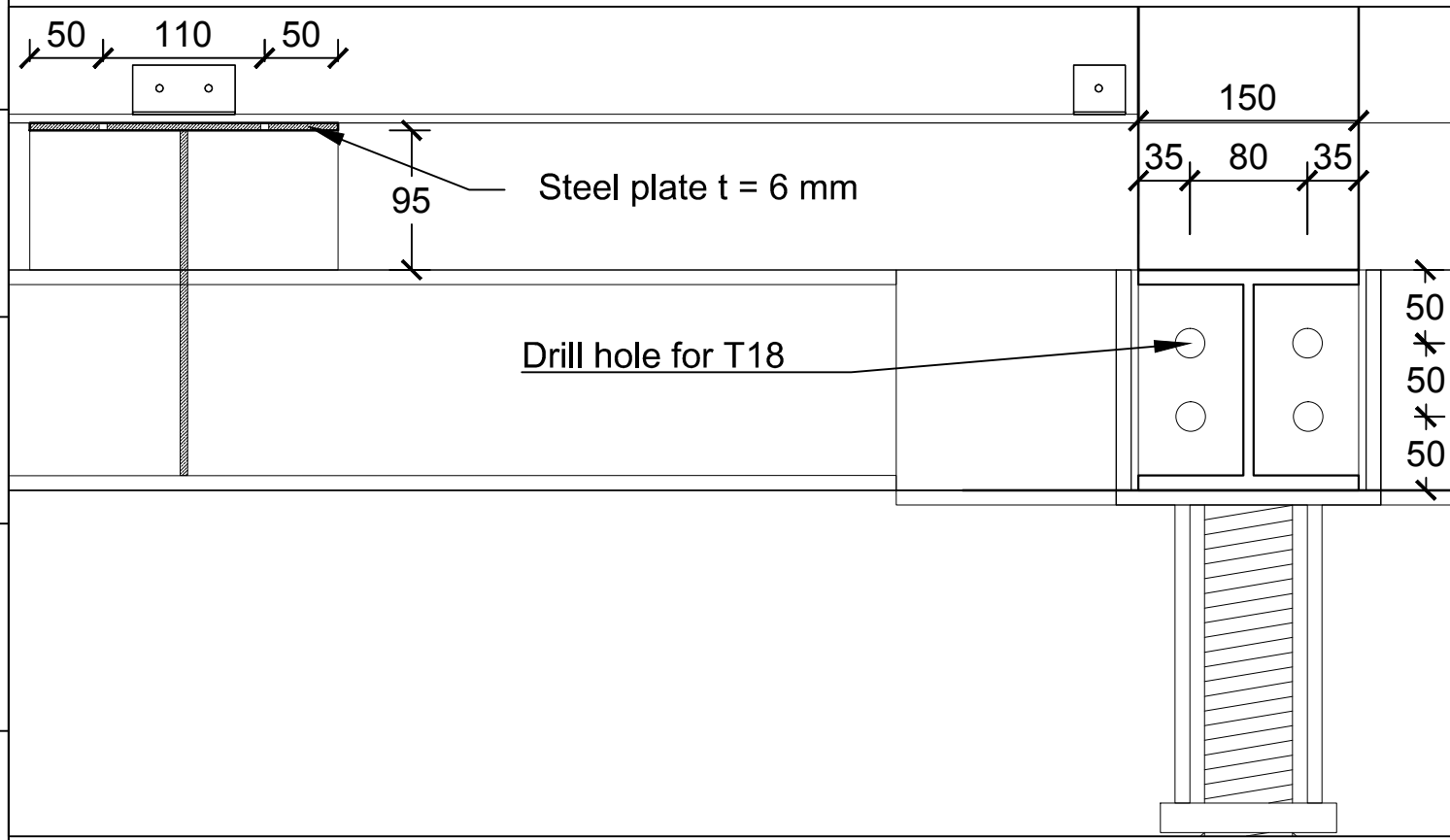
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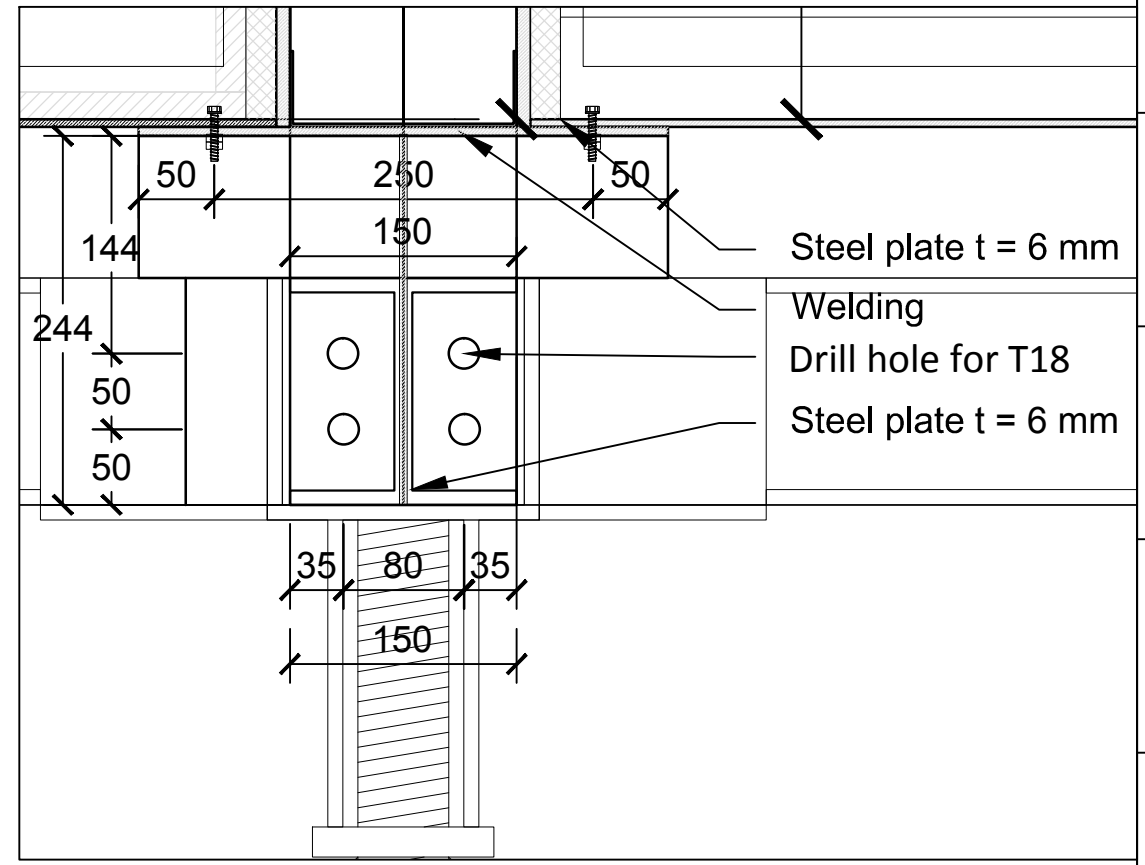
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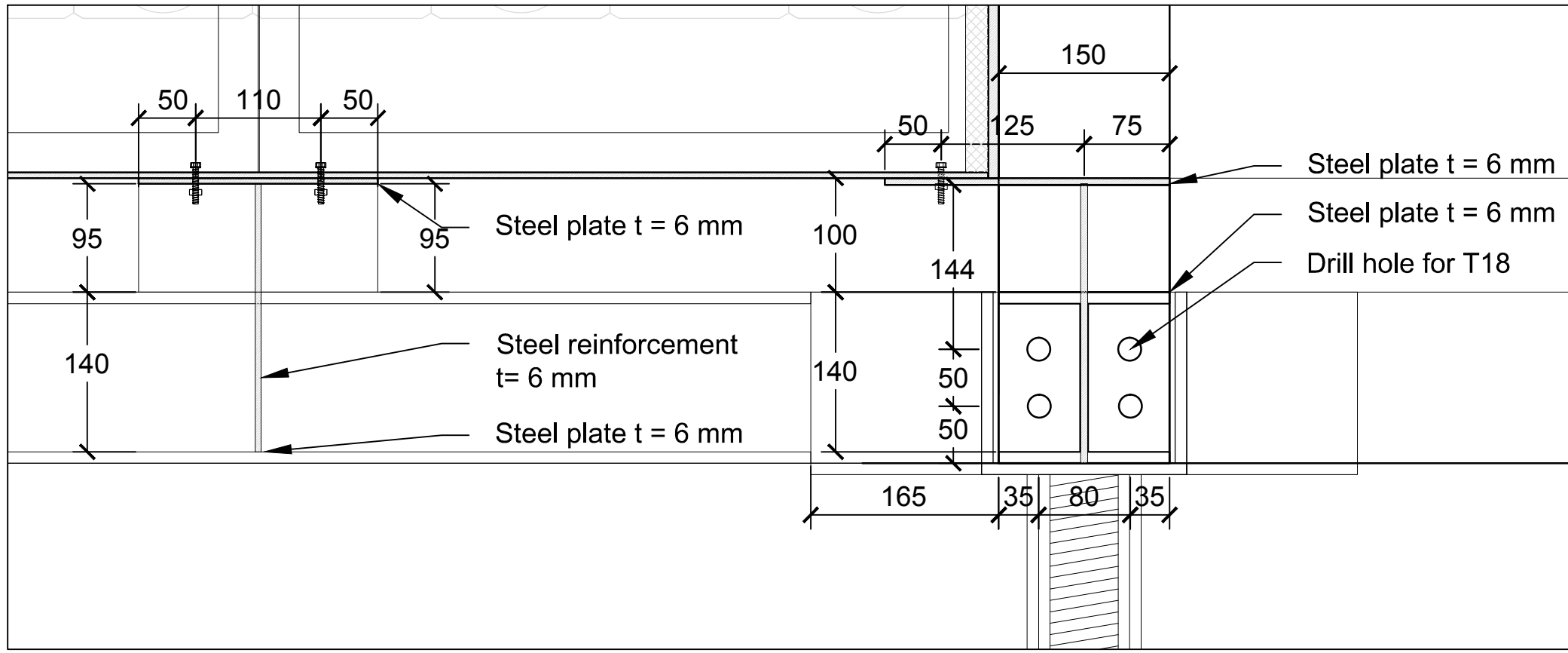
DWG. No. AR-436 PAGE 84



7



8



9



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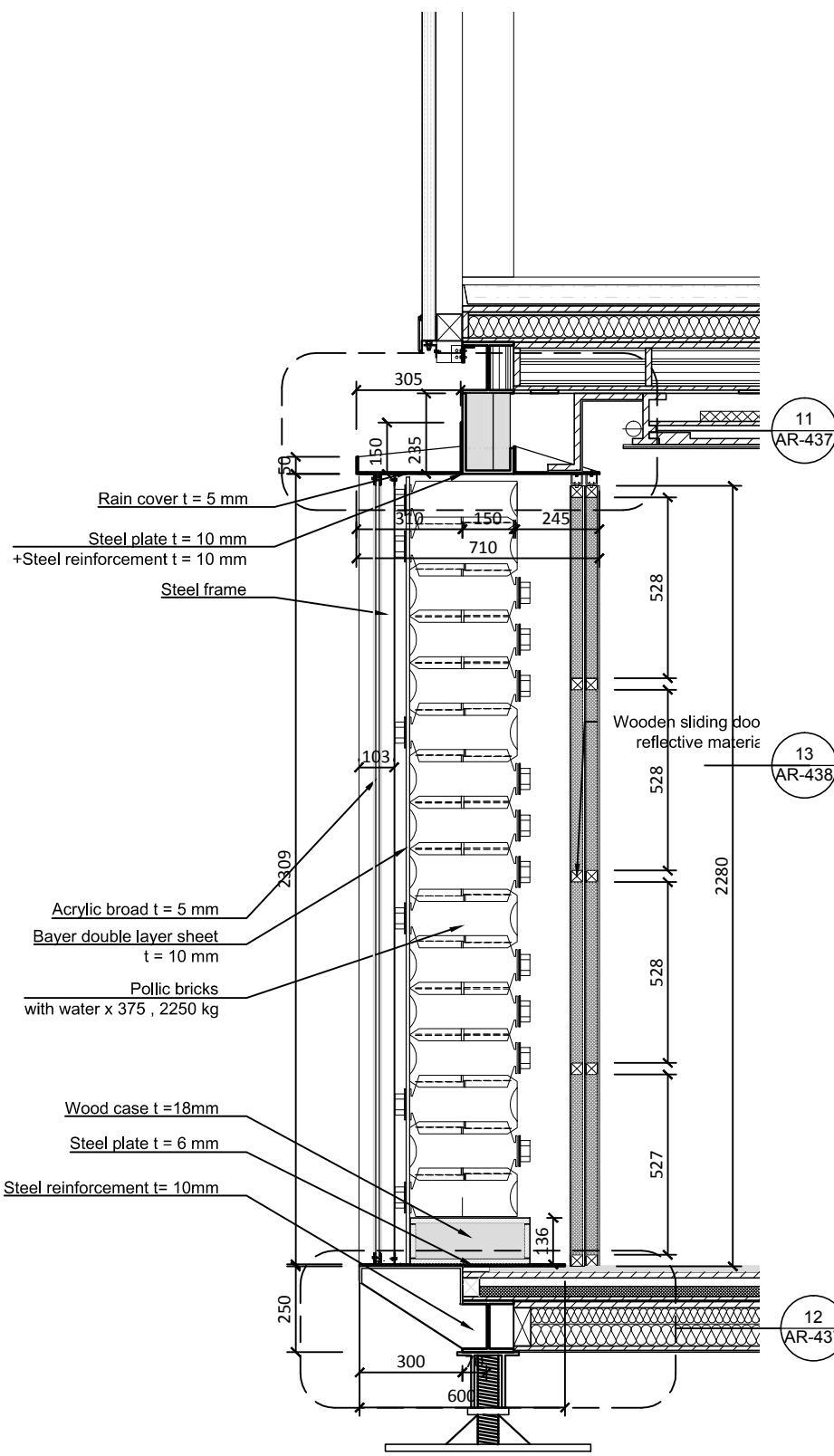
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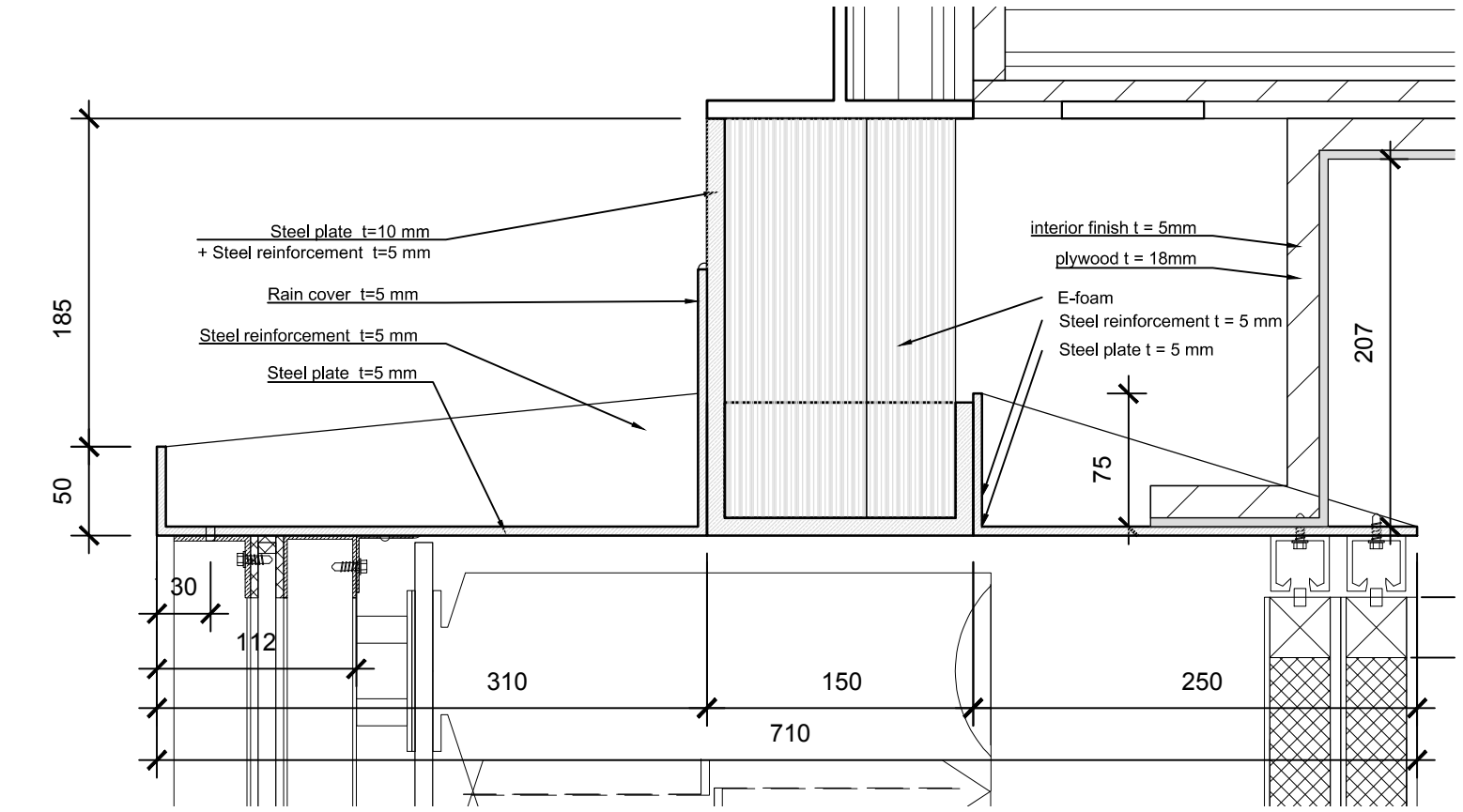
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DETAILS 7**

DWG. No. AR-437 PAGE 85



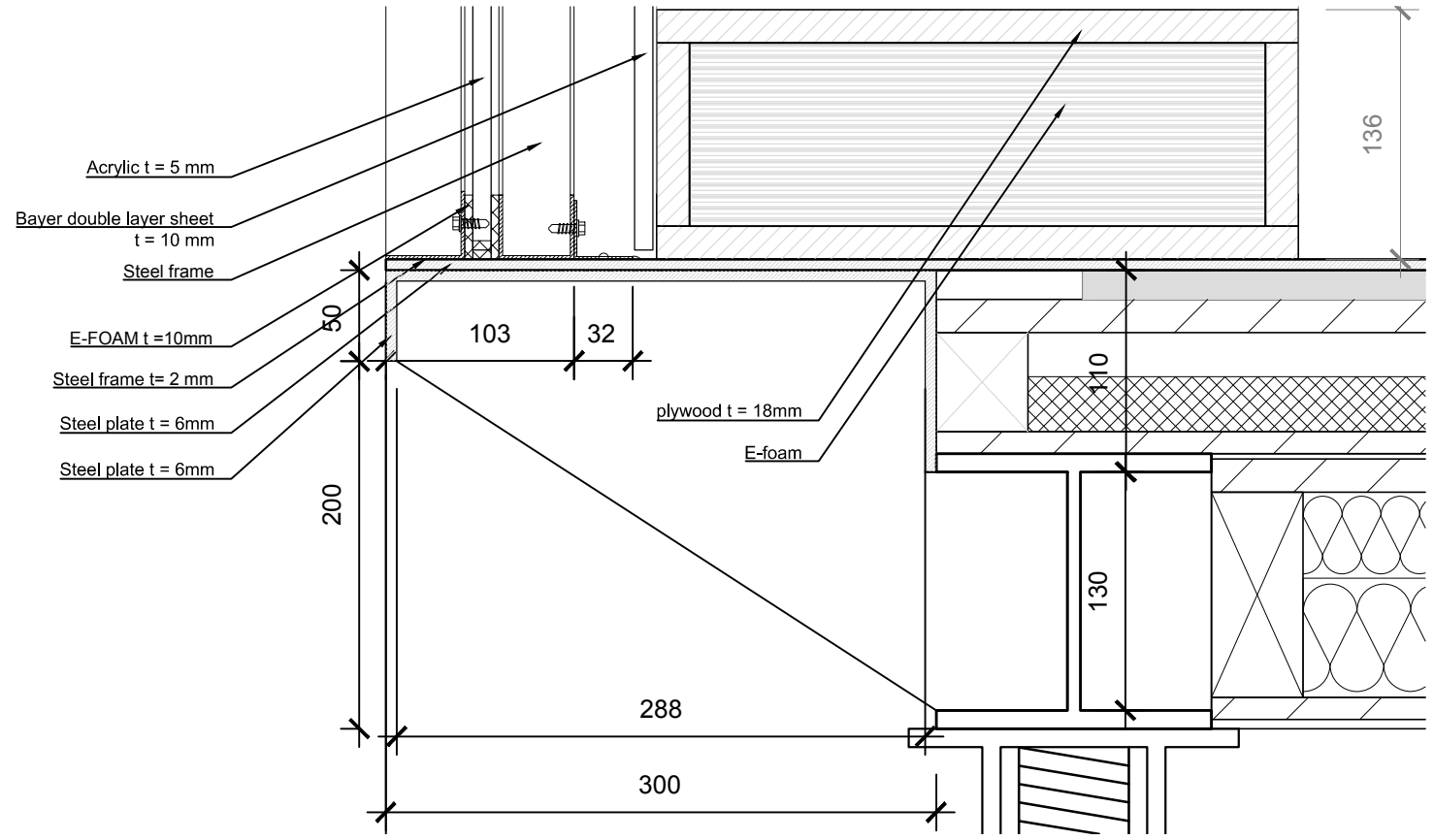
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12

Project:

Institution:

Team Name: NCTU/UNICODE  
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Note:

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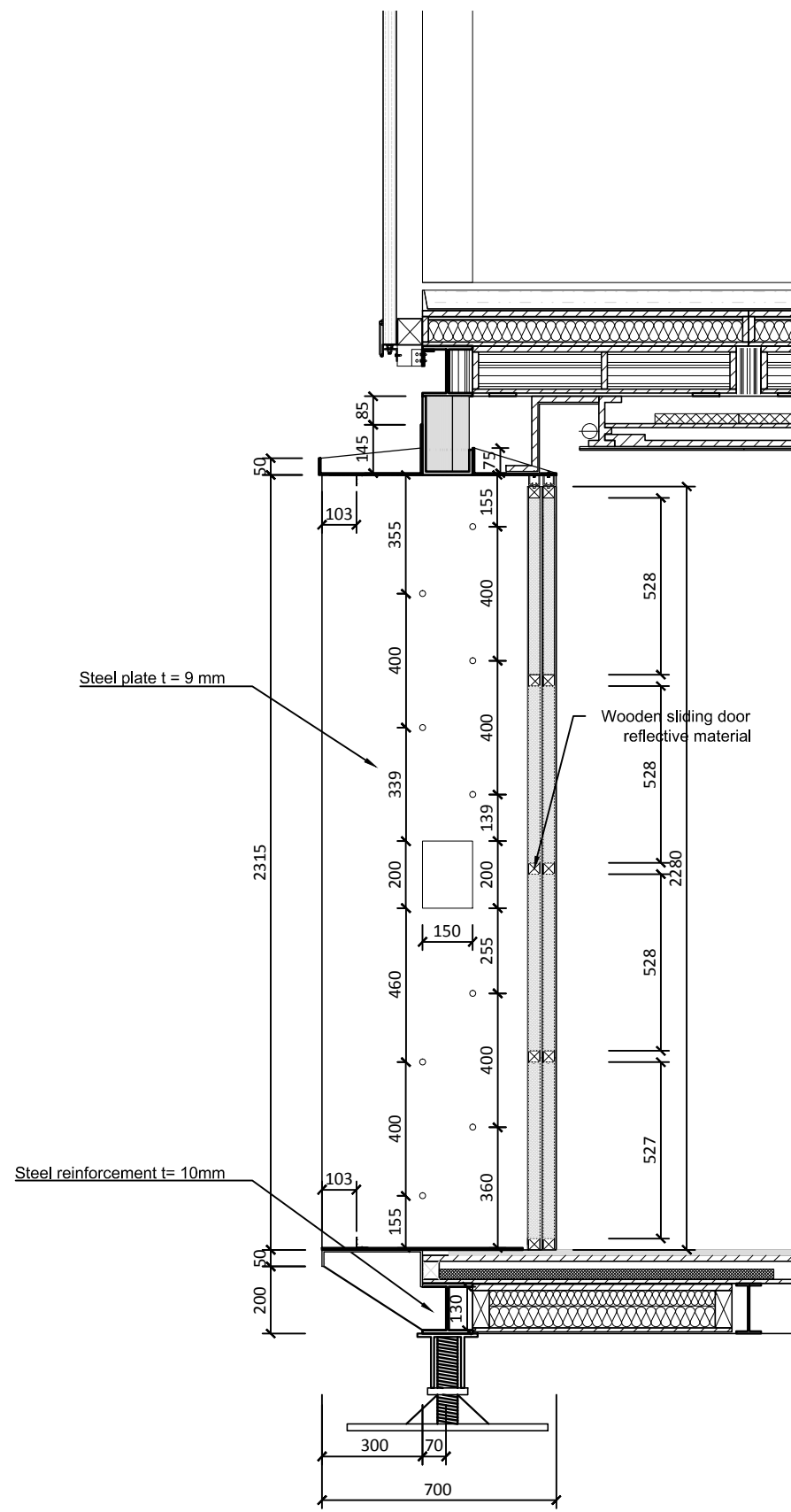
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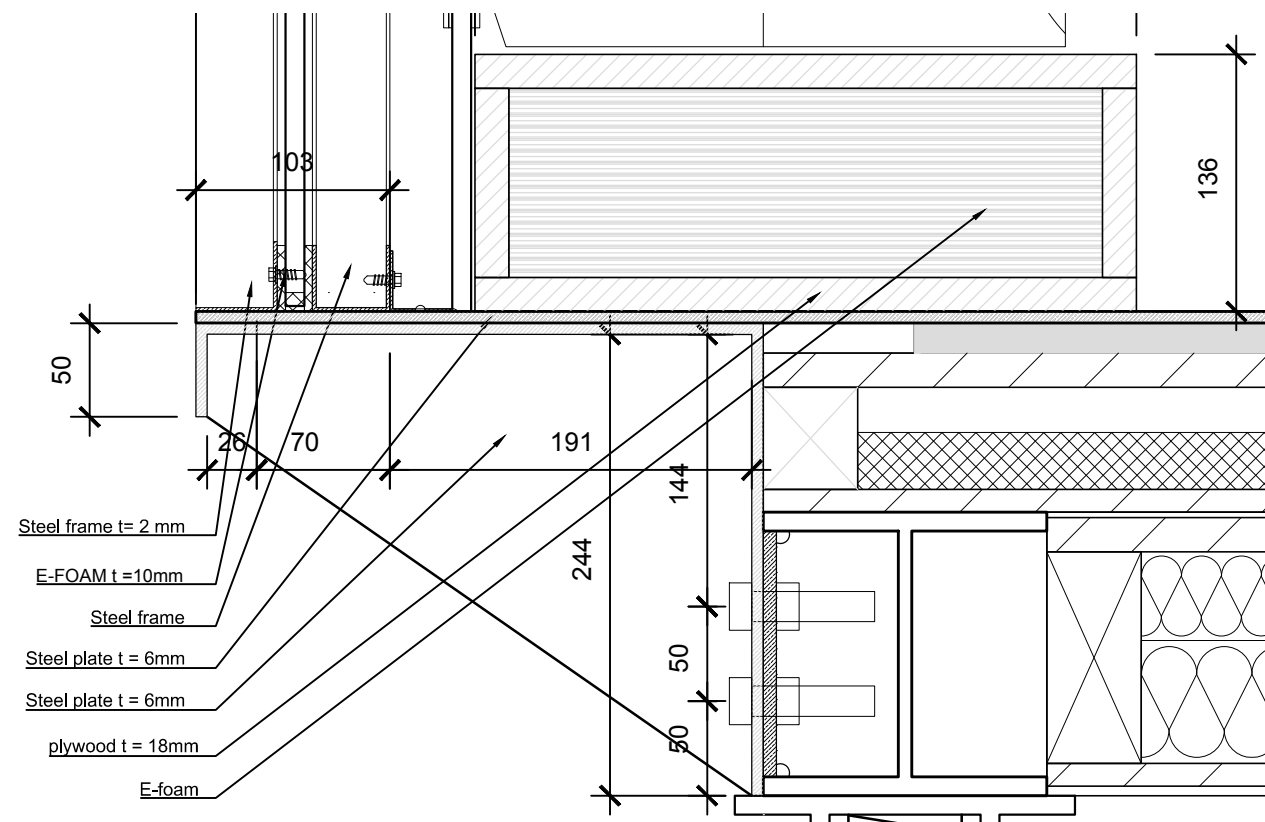
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DWG. Title  
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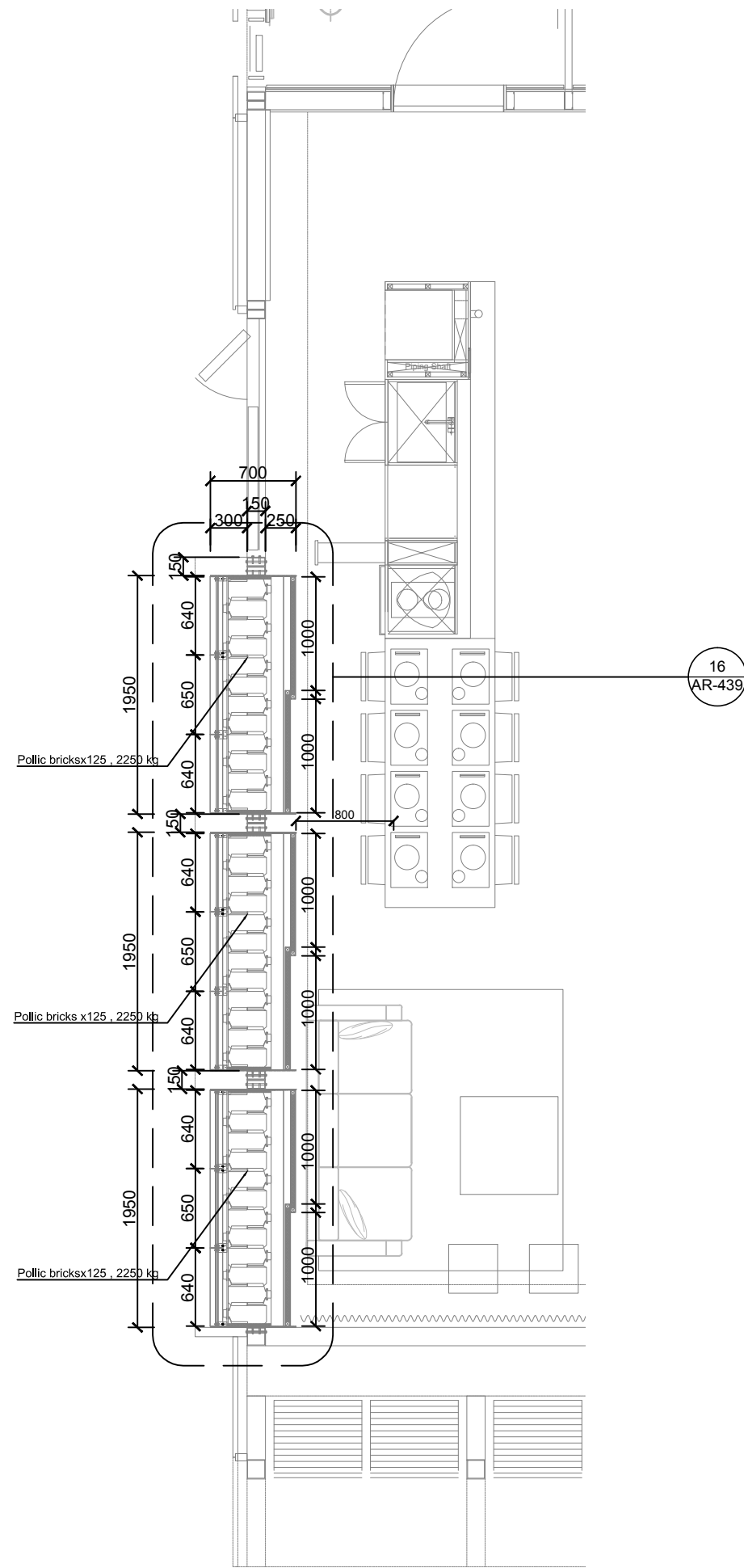
DWG. No. AR-438 PAGE 86



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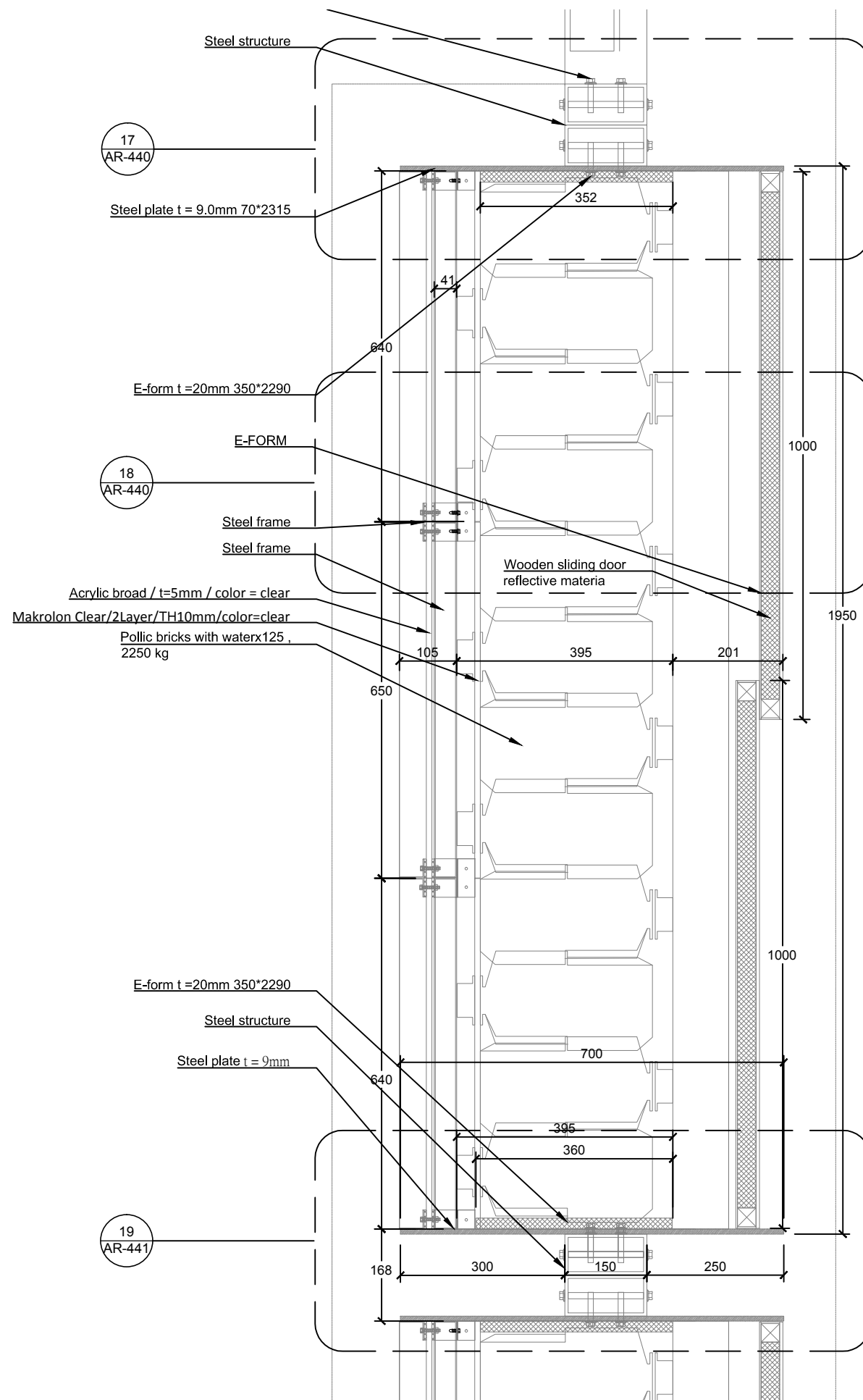


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16

Project:

Institution:

Team Name: NCTU/UNICODE

Address: 1001 Ta-Hsueh Road  
Hsinchu City 30010  
Taiwan

Contact: www.sde.tw



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Note:

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Unit mm

DWG. Title  
**THERMAL WALL DETAILS 9**

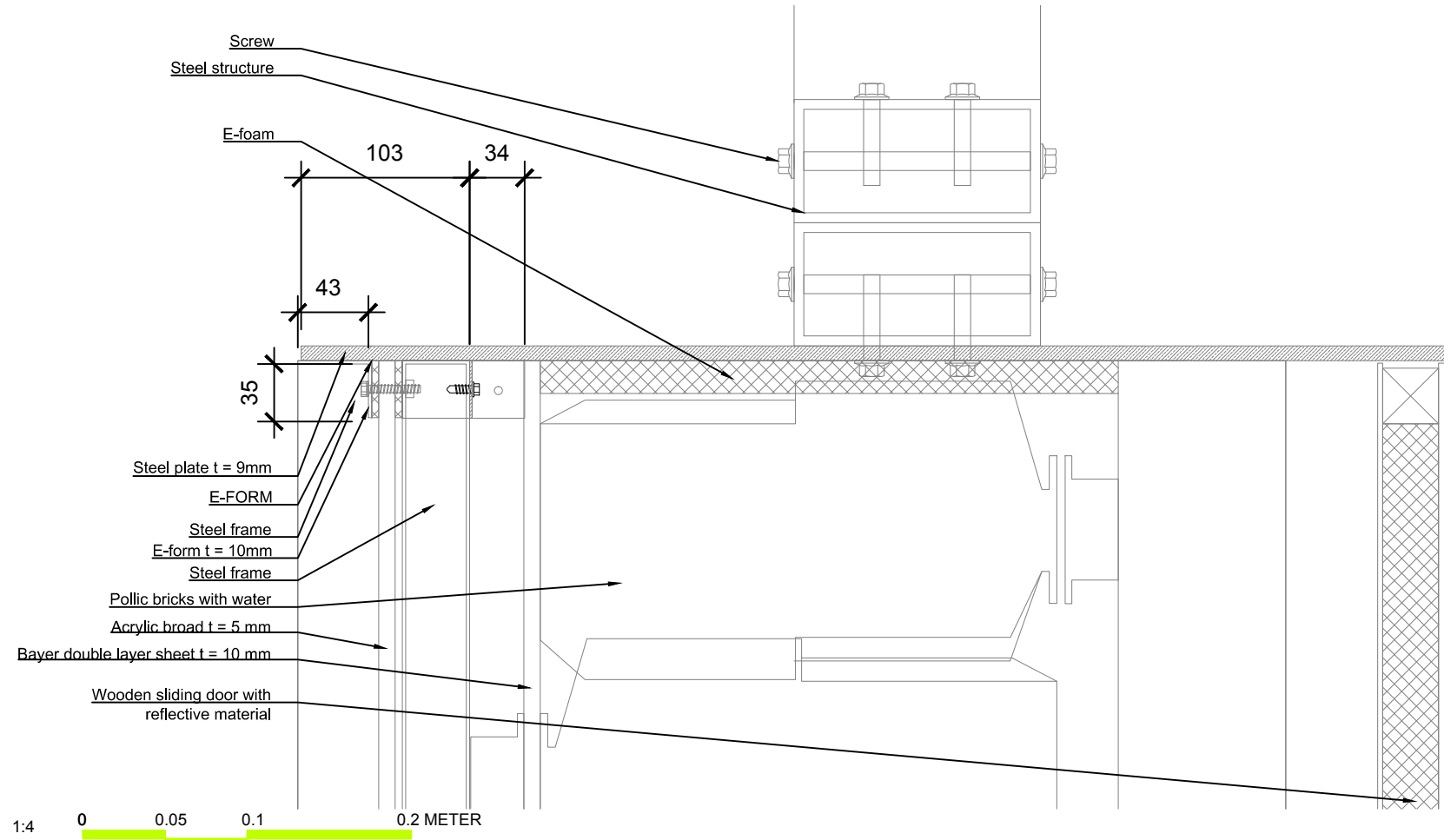
DWG. No. AR-439 PAGE 87



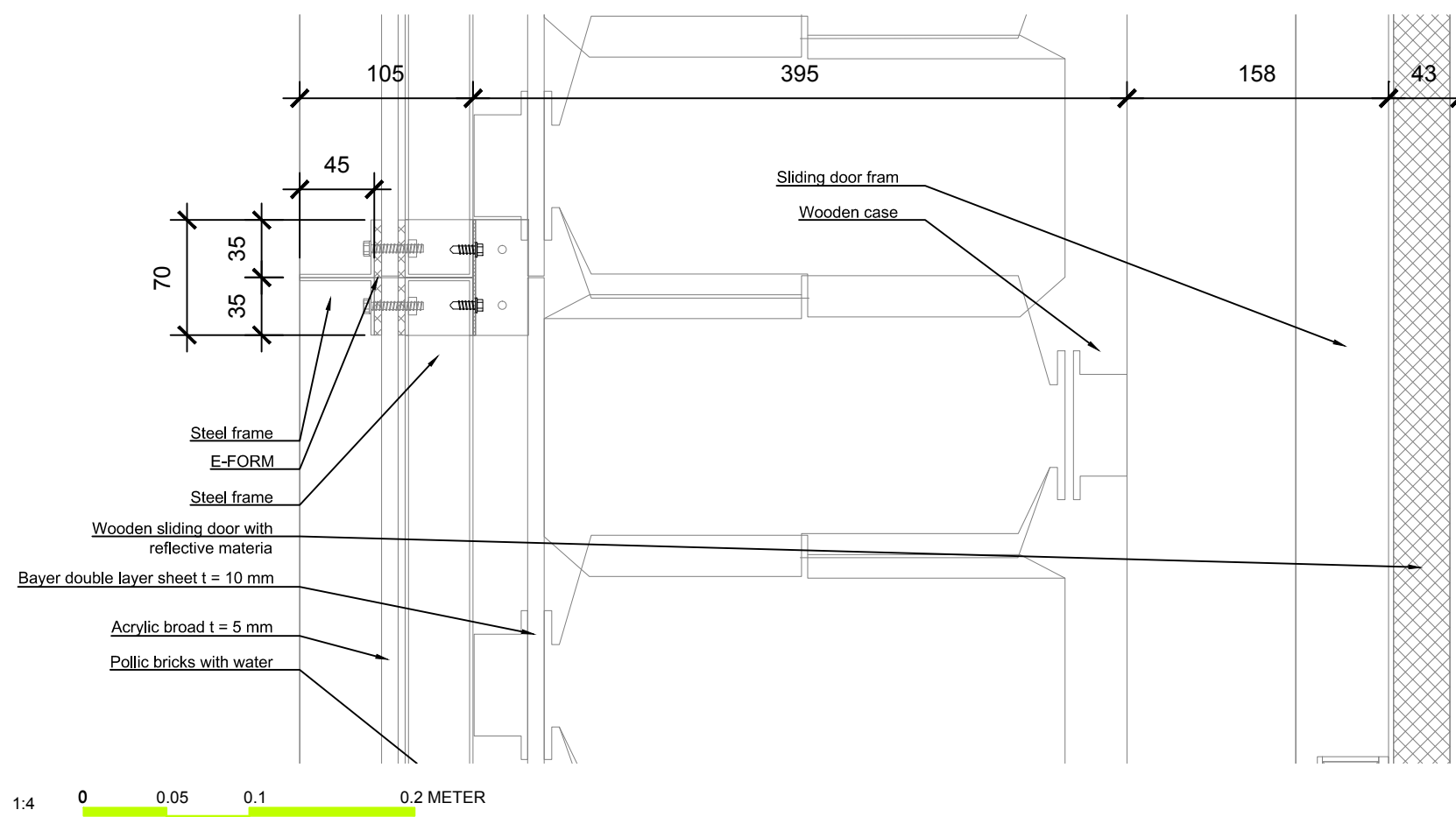
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Drawn by	JL
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Unit	mm

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THERMAL WALL DETAILS 10	
DWG. No.	PAGE
AR-440	88



17

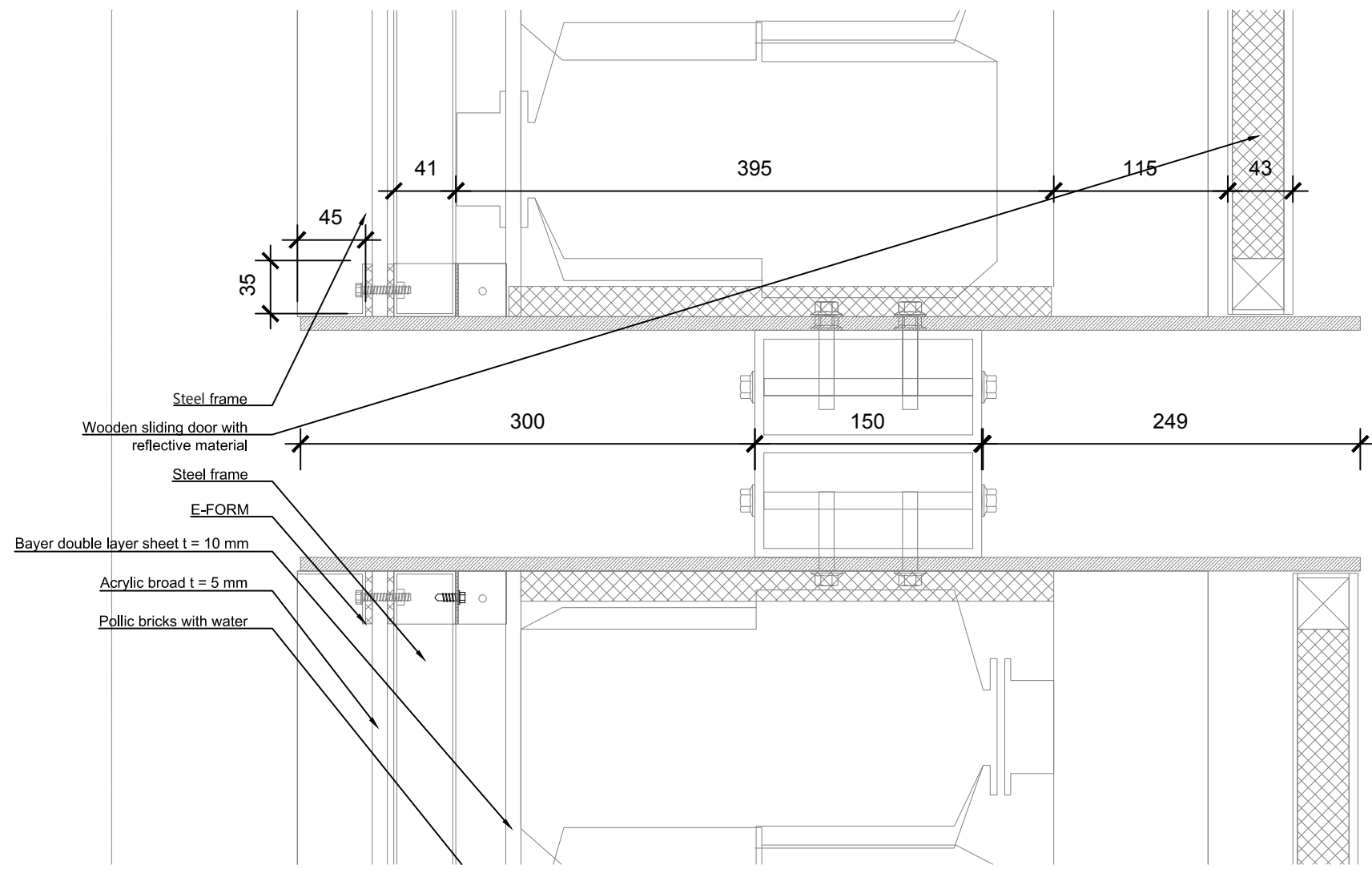


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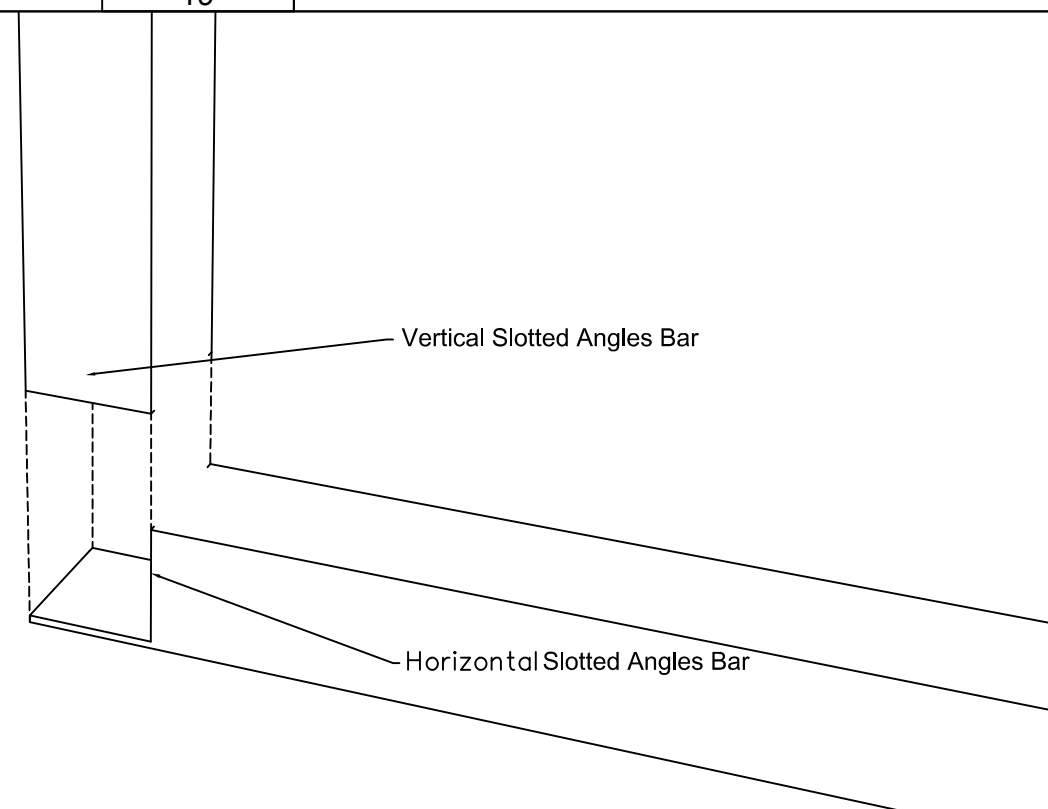
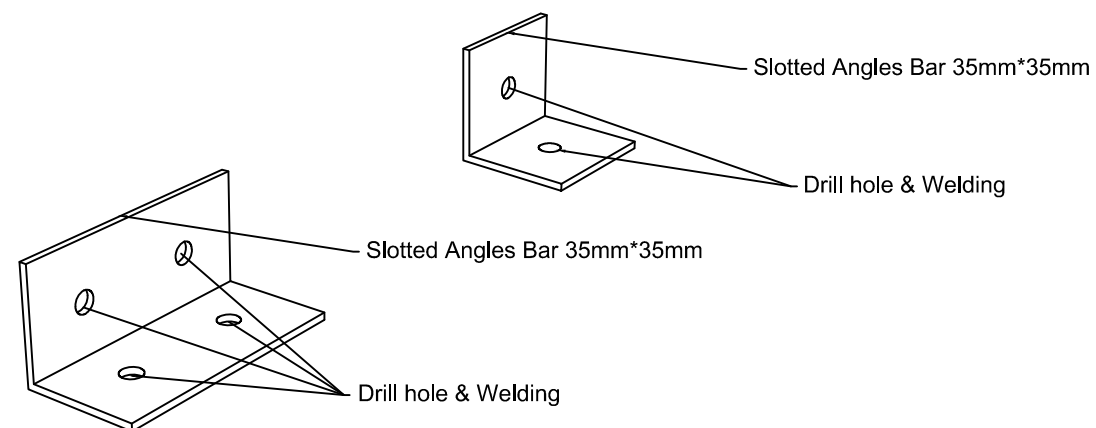


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19

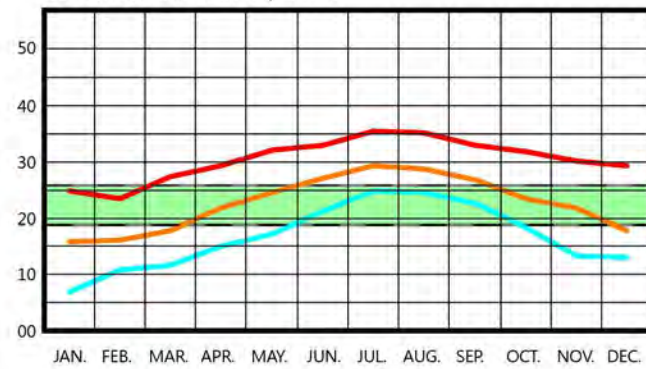


20

21

# TEMPERATURE (°C)

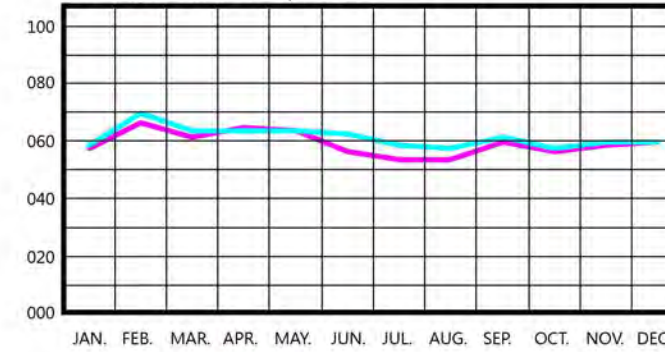
LOCATION: TAIPEI, TWN



- RANGE OF OUTDOOR TEMPERATURE FOR COMFORTABLE INDOOR TEMPERATURE
- MAXIMUM TEMPERATURE
- AVERAGE TEMPERATURE
- MINIMUM TEMPERATURE

# HUMIDITY (%)

LOCATION: TAIPEI, TWN



- RELATIVE HUMIDITY (09:00AM)
- RELATIVE HUMIDITY (03:00PM)

# DEGREE HOURS

(HEATING, COOLING AND SOLAR)

LOCATION: TAIPEI, TWN

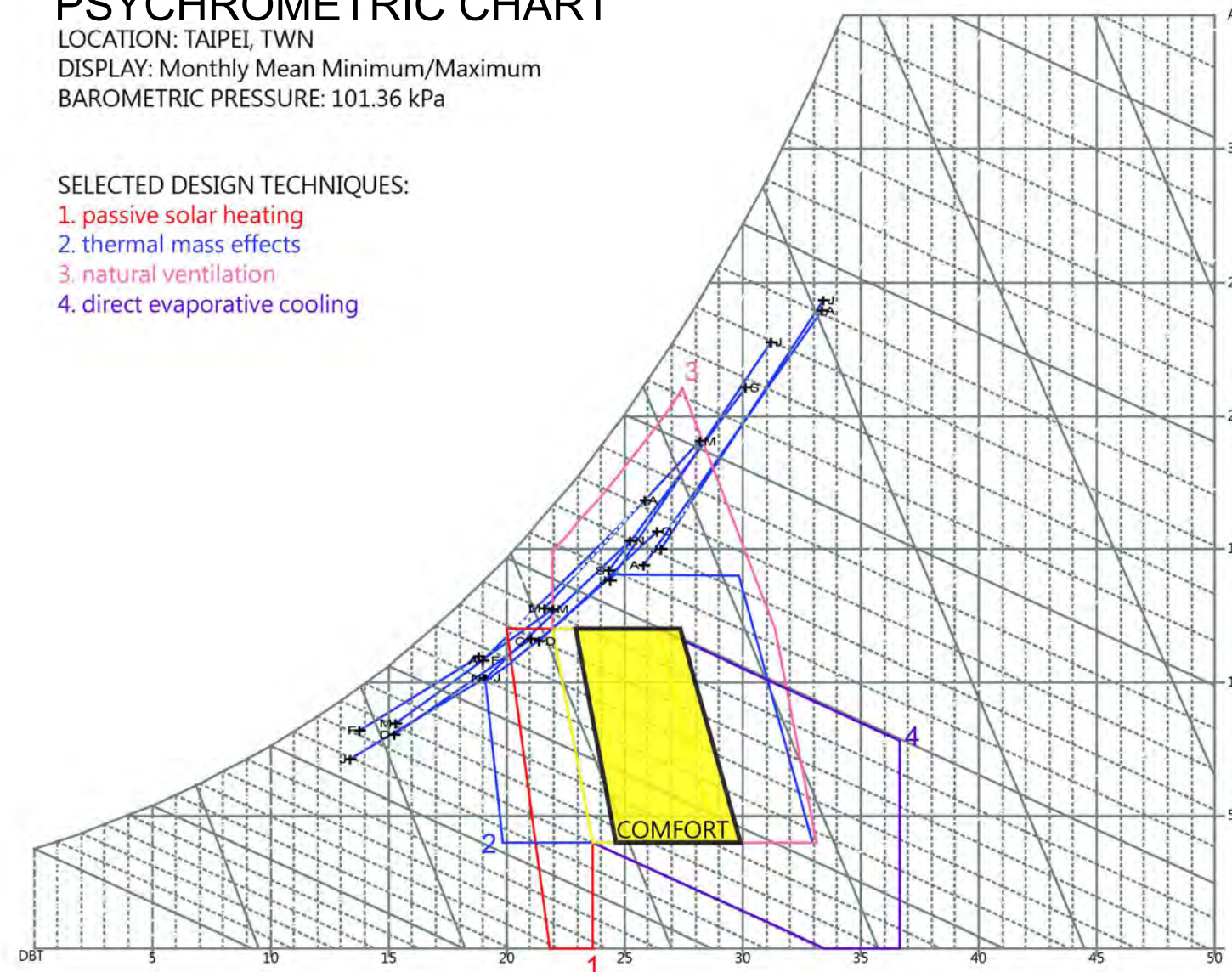


DEGREE-HOURS	ANNUAL
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<span style="color: orange;">—</span> SOLAR EXCESS DEGREE-HOURS	24511
<span style="color: cyan;">—</span> COOLING DEGREE-HOURS	34668

# PSYCHROMETRIC CHART

LOCATION: TAIPEI, TWN  
 DISPLAY: Monthly Mean Minimum/Maximum  
 BAROMETRIC PRESSURE: 101.36 kPa

- SELECTED DESIGN TECHNIQUES:
1. passive solar heating
  2. thermal mass effects
  3. natural ventilation
  4. direct evaporative cooling



Project:



Institution:



**NCTU Architecture**  
 國立交通大學建築研究所

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 Taiwan  
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ST	2014/11/03	AB Submission

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Unit	-

DWG. Title	
TAIPEI CLIMATE ANALYSIS	
DWG. No.	PAGE
BA-001	90

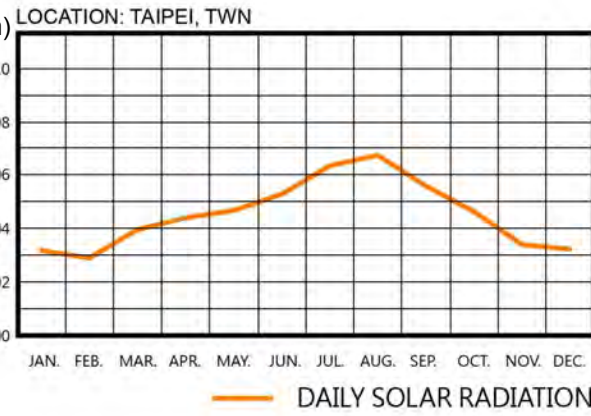


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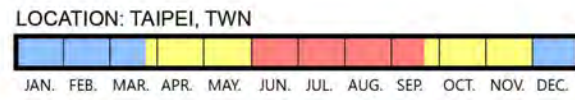
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DWG. Title	
<b>TAIPEI SHADING ANALYSIS</b>	
DWG. No.	PAGE
<b>BA-002</b>	<b>91</b>

# RADIATION (W/m)

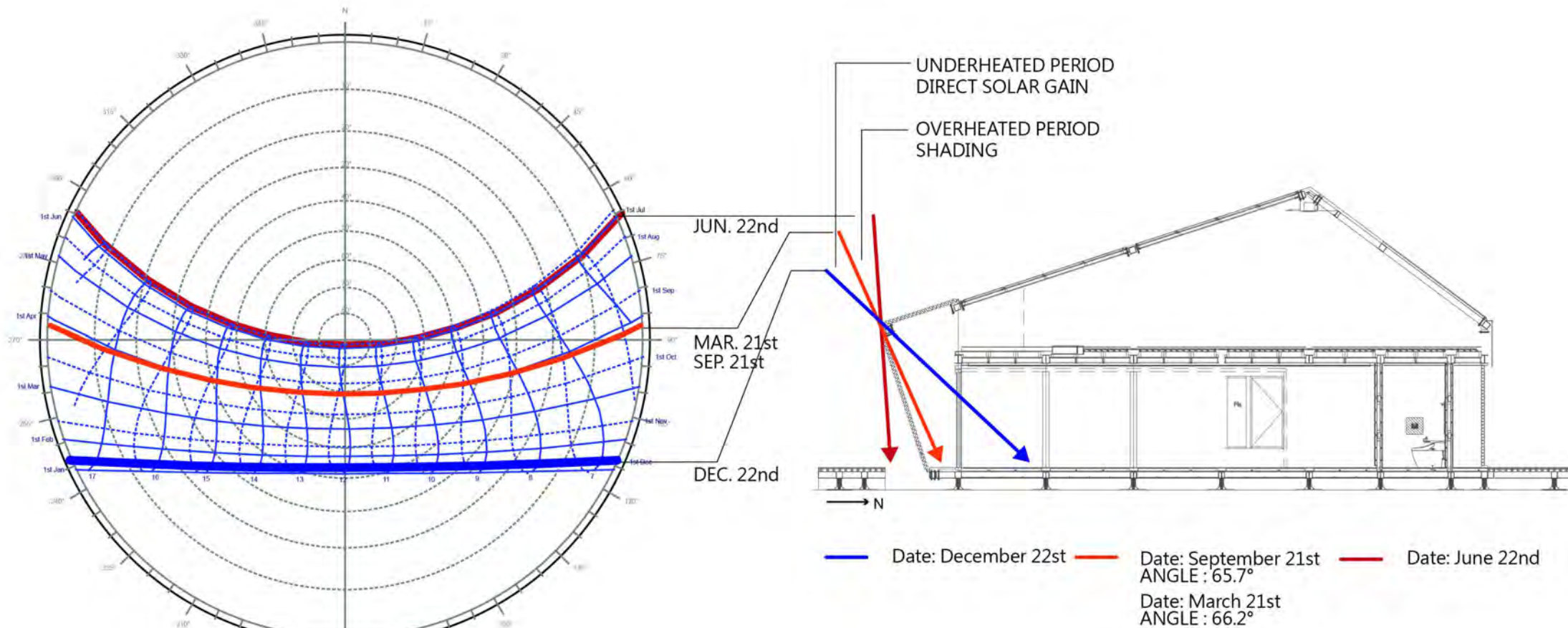


# BASIC CLIMATIC CONDITION



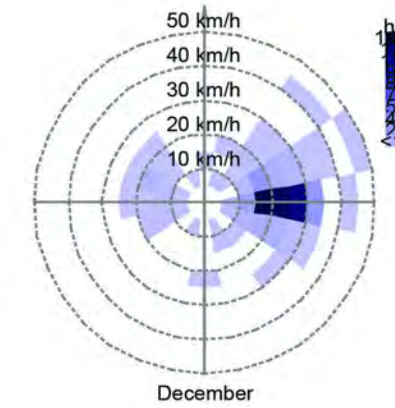
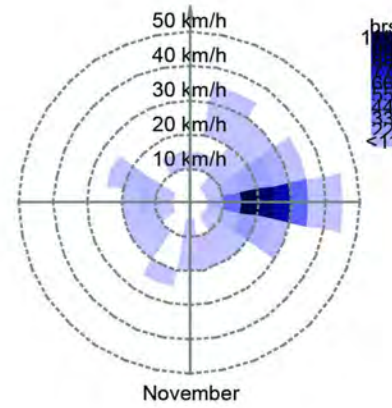
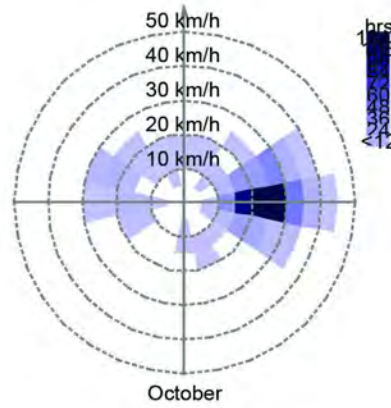
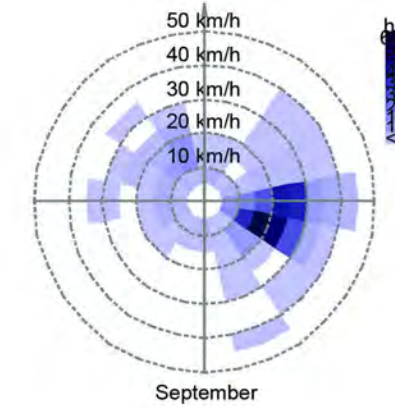
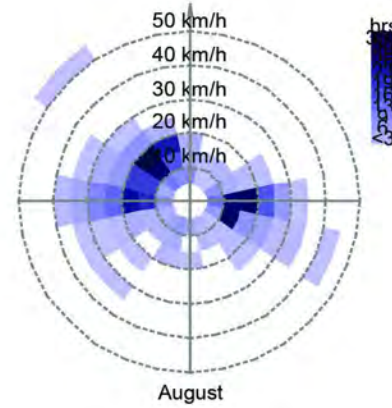
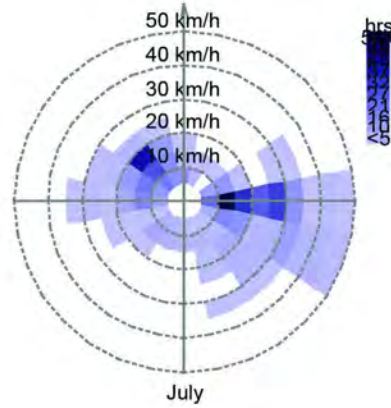
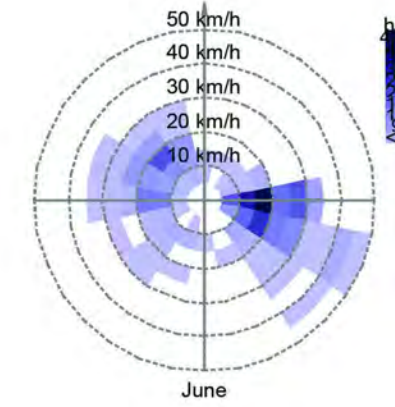
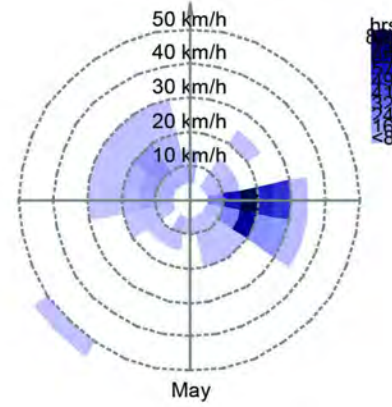
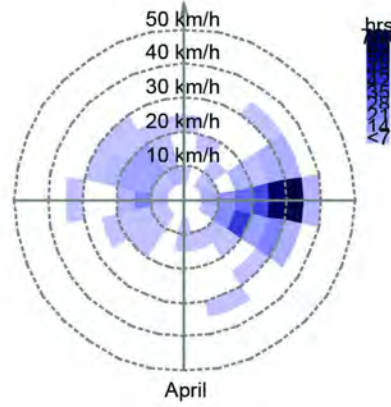
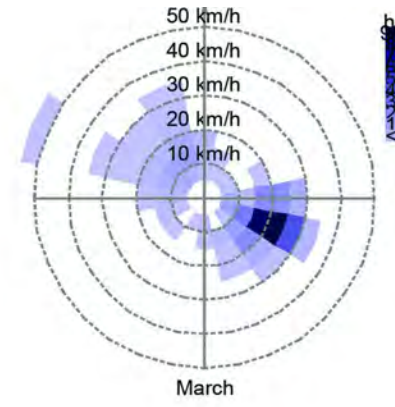
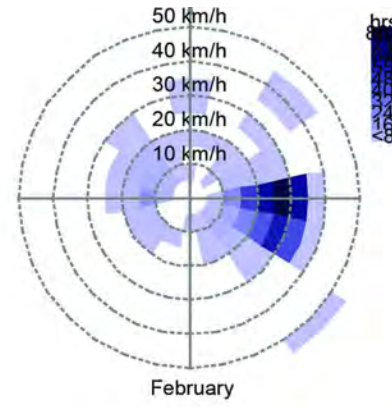
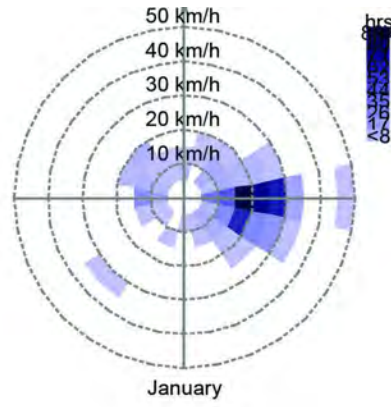
- OVERHEATED PERIOD (JUN.01-SEP.21)
- UNDERHEATED PERIOD (DEC.01-MAR.21)
- COMFORTABLE PERIOD (MAR.21-JUN.01 & SEP.21-DEC.01)

# SOLAR PATH DIAGRAM



# PREVAILING WINDS

Wind Frequency (Hrs)  
 Location: TAIPEI, TWN  
 Date: January 1st - December 31st  
 Time: 00:00 - 24:00



Project:



Institution:



**NCTU Architecture**  
 國立交通大學建築研究所

Team Name: NCTU/UNICODE

Address: 1001 Ta-Hsueh Road  
 Hsinchu City 30010  
 Taiwan

Contact: www.sde.tw



Consultants:

Note:

Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by: JL

Checked by: DN

Scale: -

Unit: -

DWG. Title

TAIPEI WIND ROSE ANALYSIS

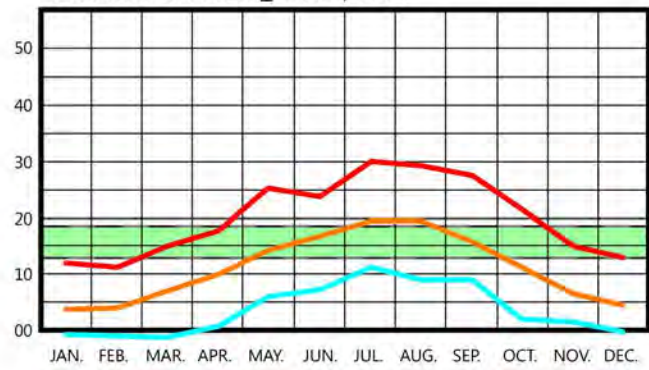
DWG. No. PAGE

BA-003

92

# TEMPERATURE (°C)

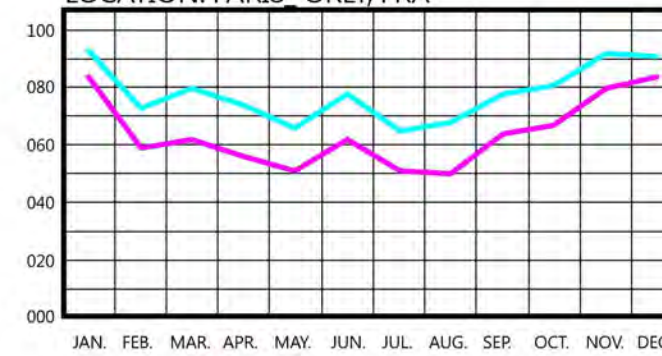
LOCATION: PARIS\_ORLY, FRA



- RANGE OF OUTDOOR TEMPERATURE FOR COMFORTABLE INDOOR TEMPERATURE
- MAXIMUM TEMPERATURE
- AVERAGE TEMPERATURE
- MINIMUM TEMPERATURE

# HUMIDITY (%)

LOCATION: PARIS\_ORLY, FRA



- RELATIVE HUMIDITY (09:00AM)
- RELATIVE HUMIDITY (03:00PM)

# DEGREE HOURS

(HEATING, COOLING AND SOLAR)

LOCATION: PARIS\_ORLY, FRA

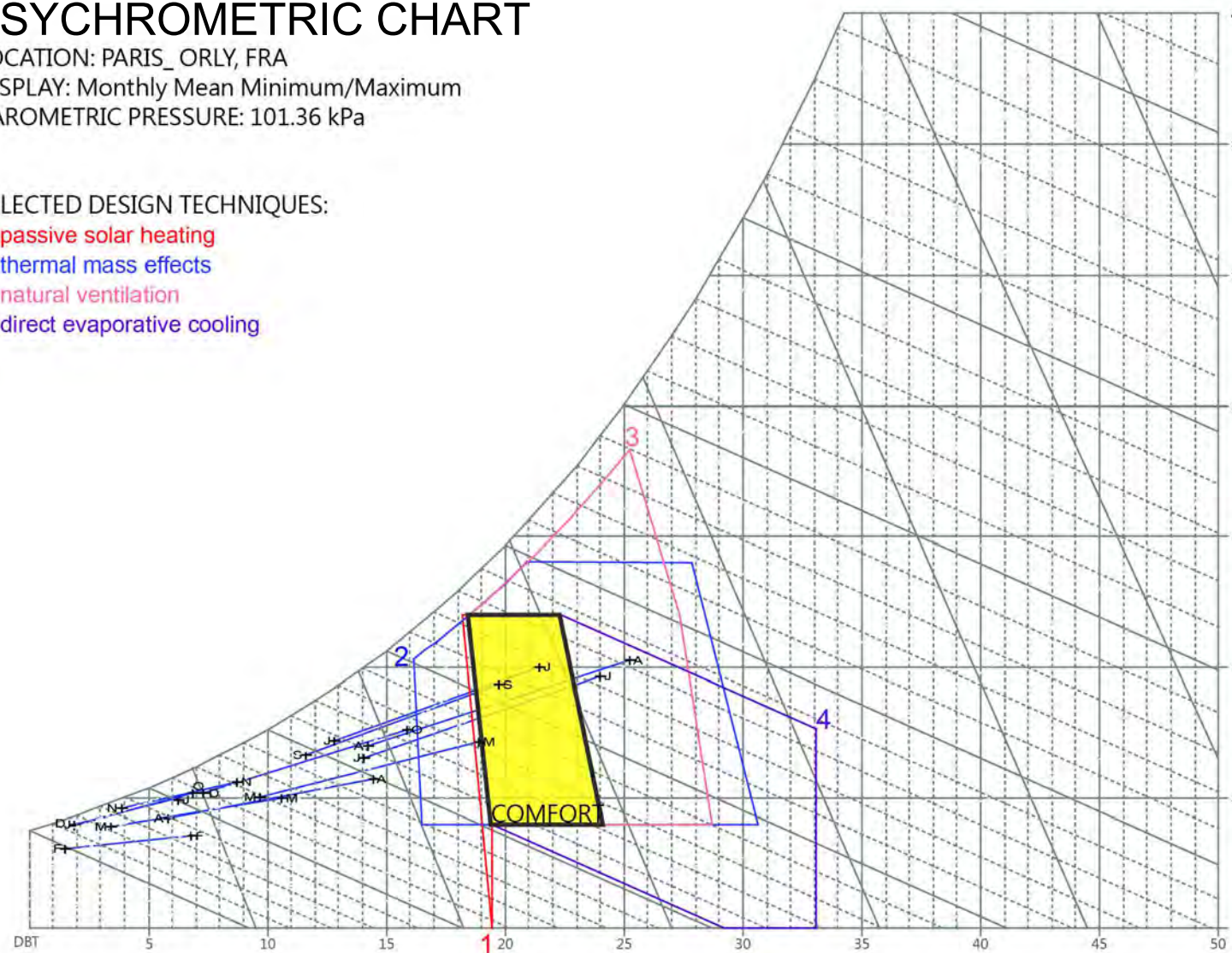


DEGREE-HOURS	ANNUAL
<span style="color: red;">—</span> HEATING DEGREE-HOURS	64193
<span style="color: orange;">—</span> SOLAR EXCESS DEGREE-HOURS	19993
<span style="color: cyan;">—</span> COOLING DEGREE-HOURS	2929

# PSYCHROMETRIC CHART

LOCATION: PARIS\_ORLY, FRA  
 DISPLAY: Monthly Mean Minimum/Maximum  
 BAROMETRIC PRESSURE: 101.36 kPa

- SELECTED DESIGN TECHNIQUES:
1. passive solar heating
  2. thermal mass effects
  3. natural ventilation
  4. direct evaporative cooling



Project:



Institution:



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Consultants:

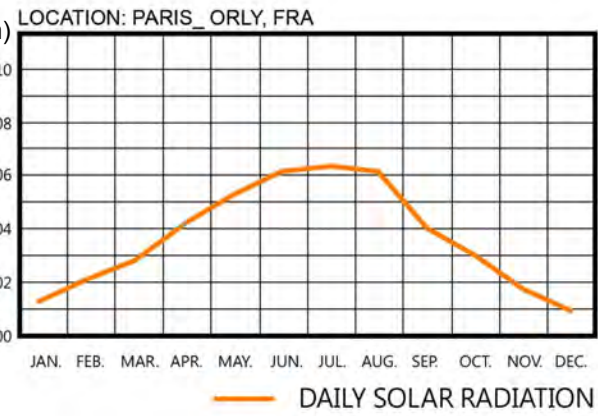
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DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

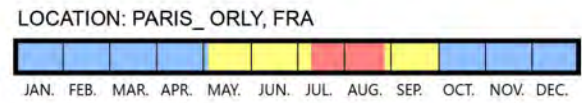
Drawn by	JL
Checked by	DN
Scale	-
Unit	-

DWG. Title	
VERSAILLES CLIMATE ANALYSIS	
DWG. No.	PAGE
BA-004	93

# RADIATION (W/m)

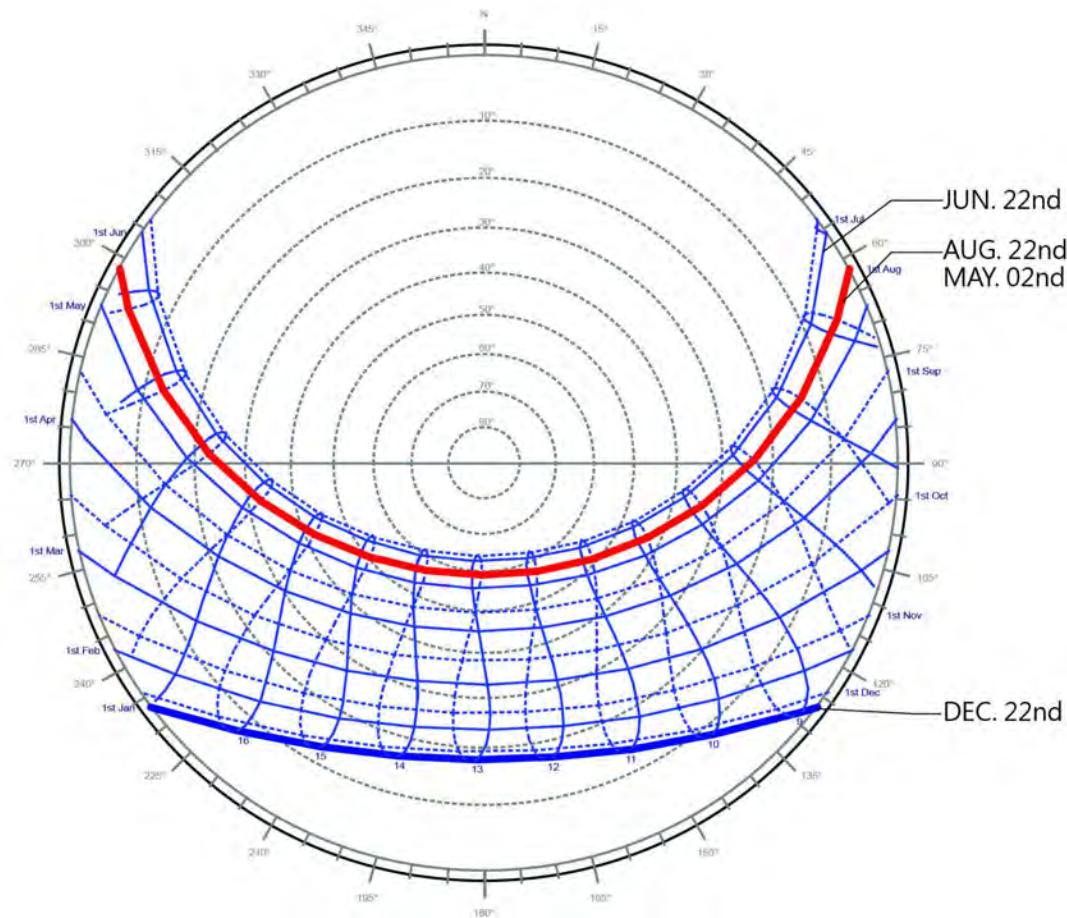


# BASIC CLIMATIC CONDITION



- OVERHEATED PERIOD
- UNDERHEATED PERIOD
- COMFORTABLE PERIOD

# SOLAR PATH DIAGRAM



**NCTU Architecture**  
國立交通大學建築研究所

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Consultants:

Note:

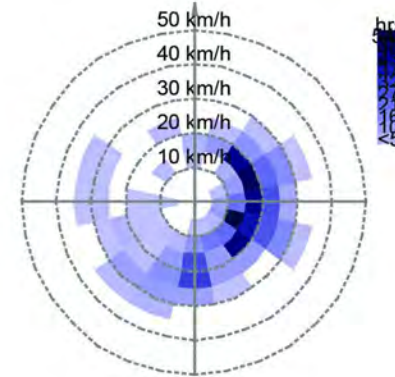
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DN	2013/04/01	SD Submission
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ST	2014/04/30	CD Submission
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ST	2014/11/03	AB Submission

Drawn by	JL
Checked by	DN
Scale	-
Unit	-

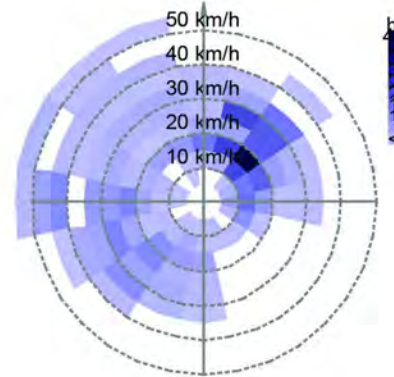
DWG. Title	
VERSAILLES SHADING ANALYSIS	
DWG. No.	PAGE
BA-005	94

# PREVAILING WINDS

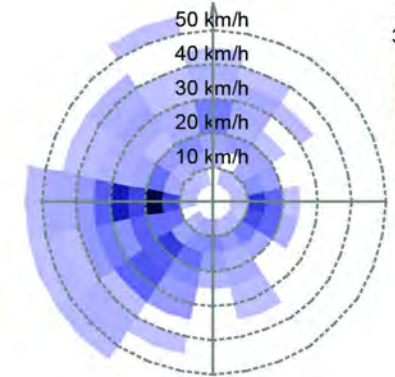
Wind Frequency (Hrs)  
 Location: PARIS\_ORLY, FRA  
 Date: 1st January - 31st December  
 Time: 00:00 - 24:00



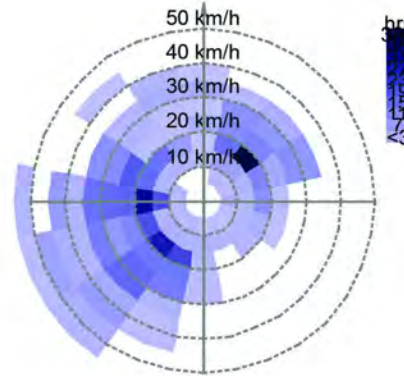
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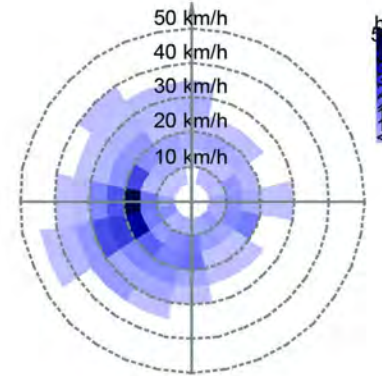
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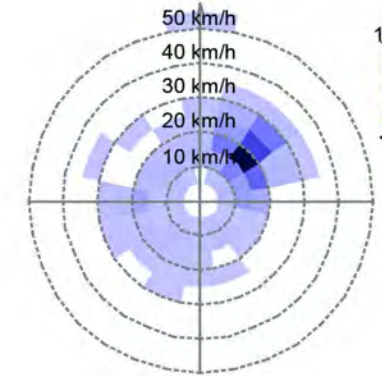
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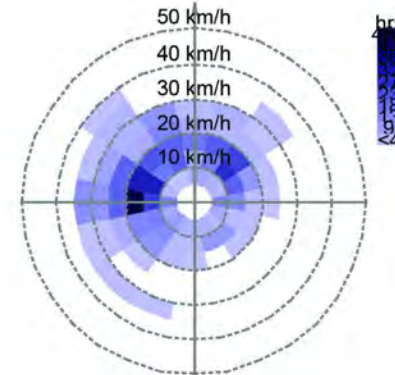
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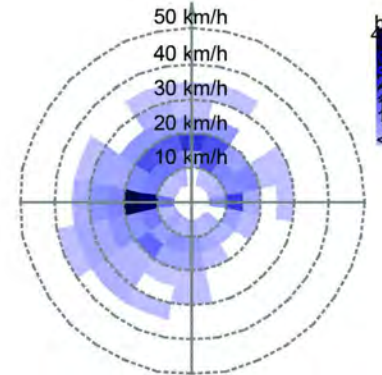
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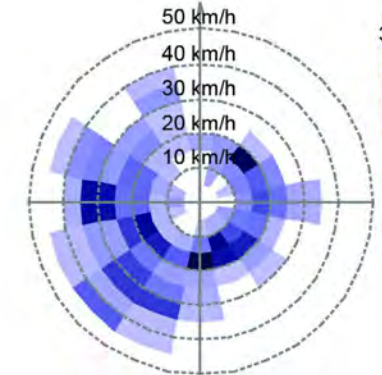
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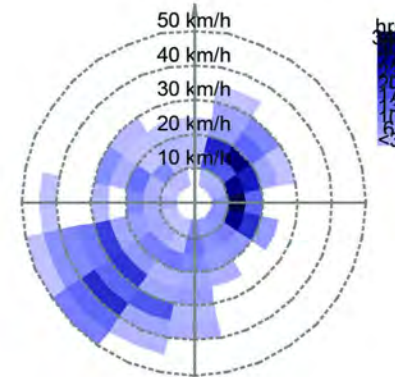
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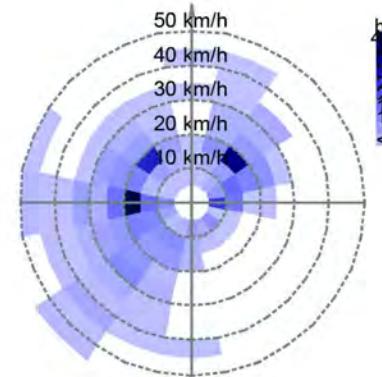
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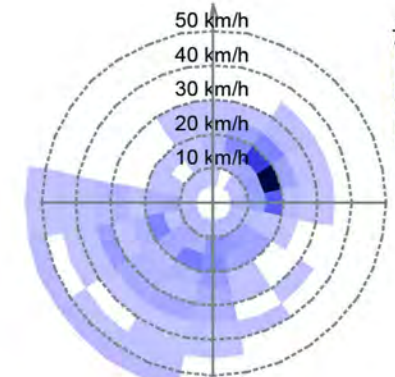
September



October



November



December



Project:



Institution:



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ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by: JL

Checked by: DN

Scale: -

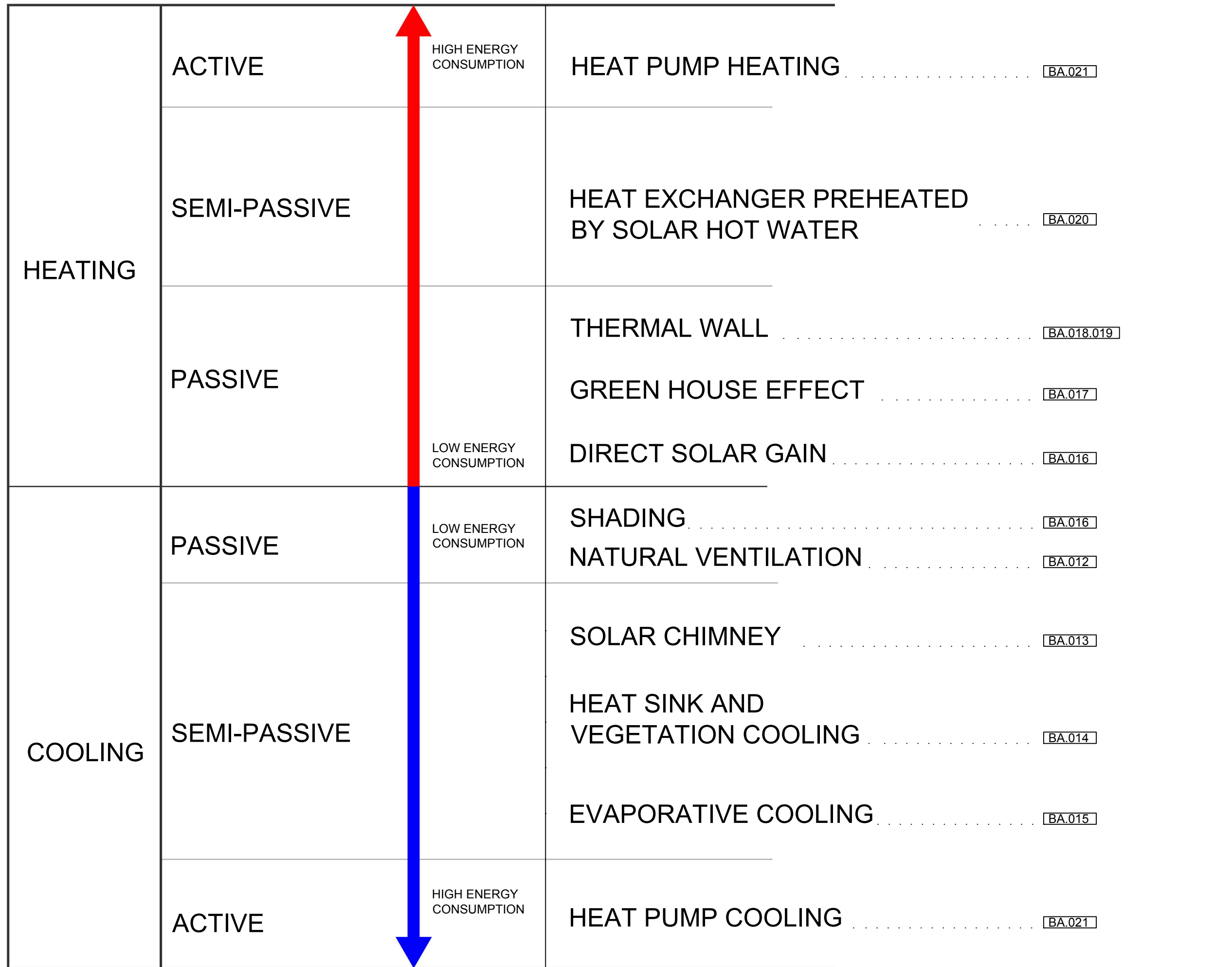
Unit: -

DWG. Title

VERSAILLES WIND ROSE ANALYSIS

DWG. No. PAGE

BA-006 95



Project:



Institution:



NCTU Architecture  
國立交通大學建築研究所

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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by JL

Checked by DN

Scale -

Unit -

DWG. Title

BIOClimatic STRATEGIES

DWG. No.

BA-011

PAGE

96





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ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
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ST	2014/11/03	AB Submission

Drawn by JL

Checked by LY

Scale -

Unit -

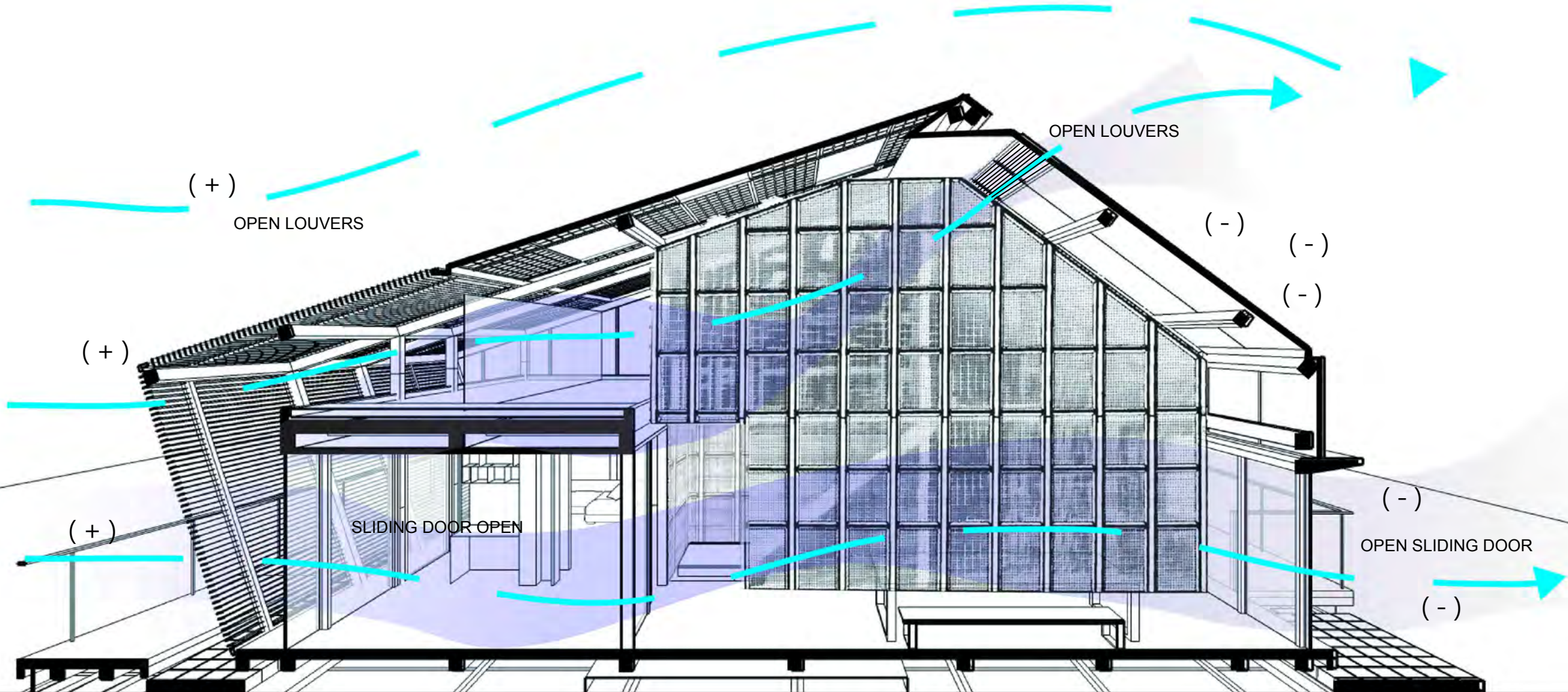
DWG. Title

NATURAL VENTILATION

DWG. No. PAGE

BA-012

97



OUTDOOR TEMPERATURE UNDER 19°C  
WITH WIND



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DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by JL

Checked by LY

Scale -

Unit -

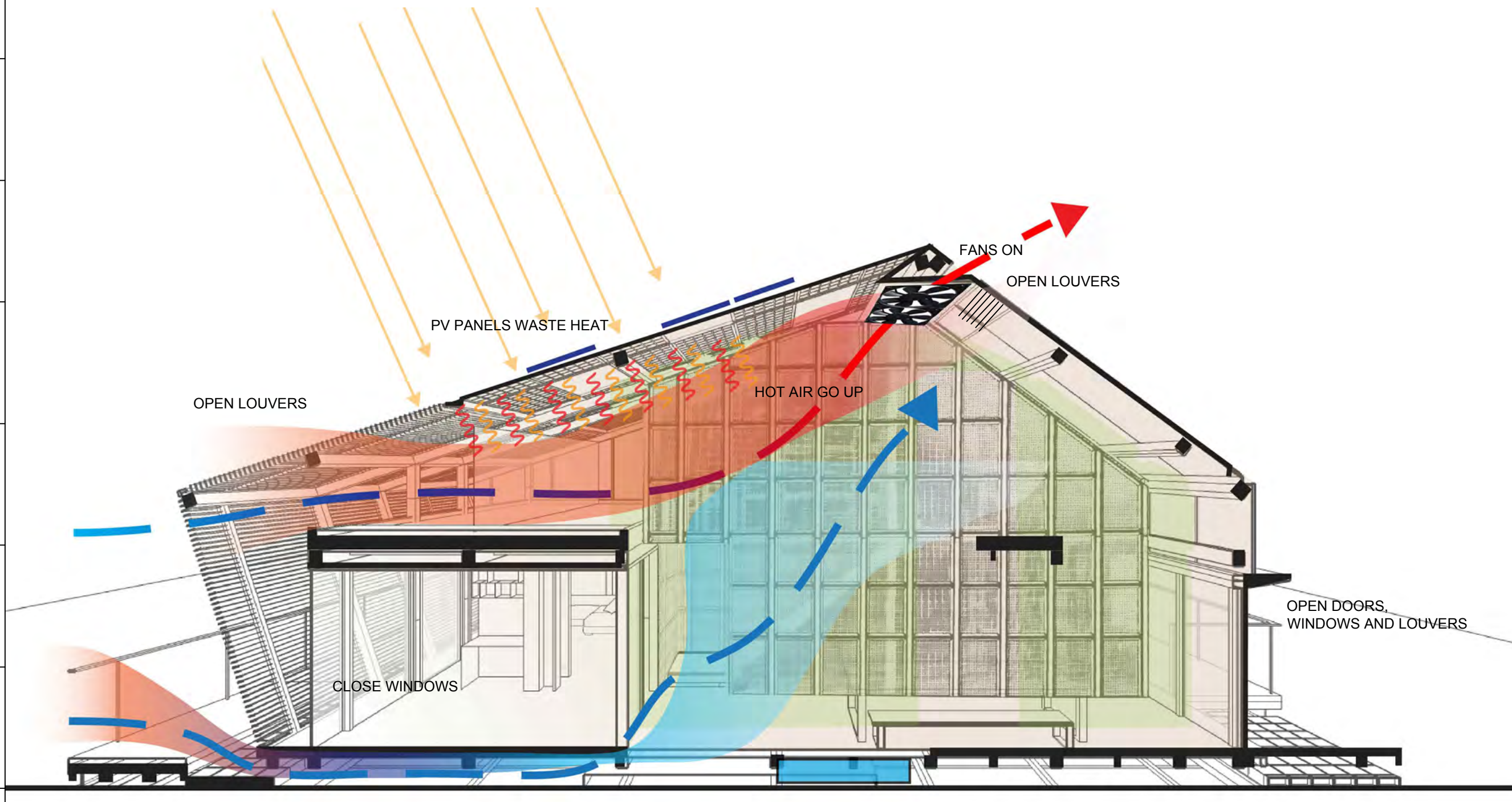
DWG. Title

SOLAR CHIMNEY

DWG. No. PAGE

BA-013

98



EXTERIOR TEMPERATURE UNDER 19°C  
NO WIND

Project:



Institution:



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國立交通大學建築研究所

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Hsinchu City 30010  
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Consultants:

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DN	2013/04/01	SD Submission
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ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by JL

Checked by LY

Scale -

Unit -

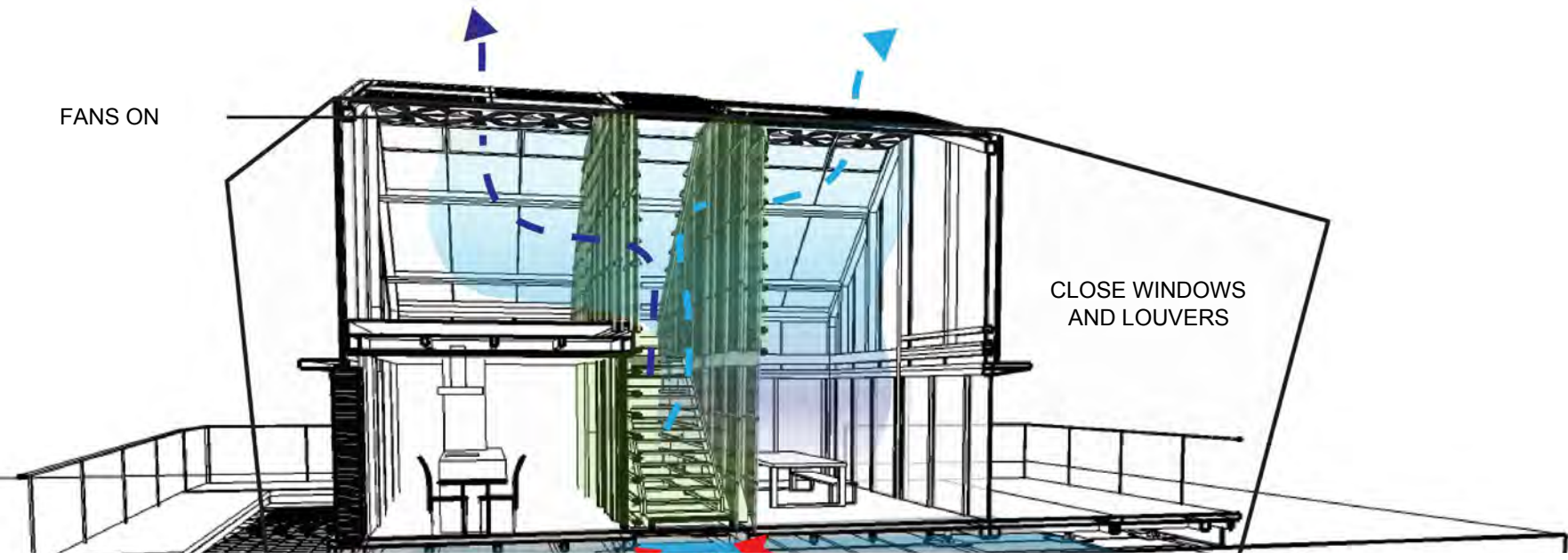
DWG. Title

HEAT SINK AND VEGETATION COOLING

DWG. No. PAGE

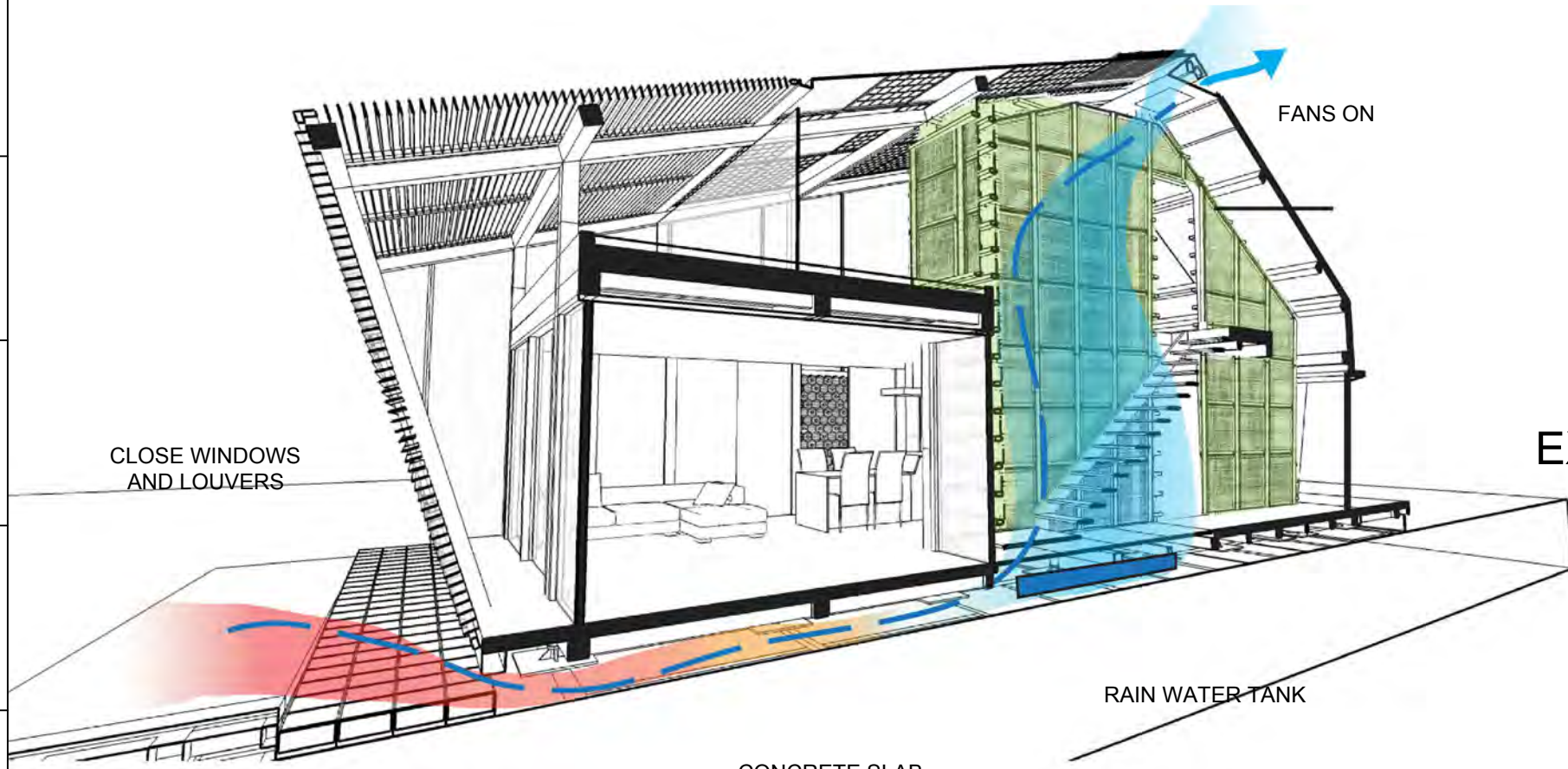
BA-014

99



CONCRETE SLAB COOLING

RAIN WATER TANK



CLOSE WINDOWS AND LOUVERS

FANS ON

RAIN WATER TANK

CONCRETE SLAB COOLING

EXTERIOR TEMPERATURE ABOVE 26°C



Mark	Date	Description
DN	2013/04/01	SD Submission
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ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by JL

Checked by LY

Scale -

Unit -

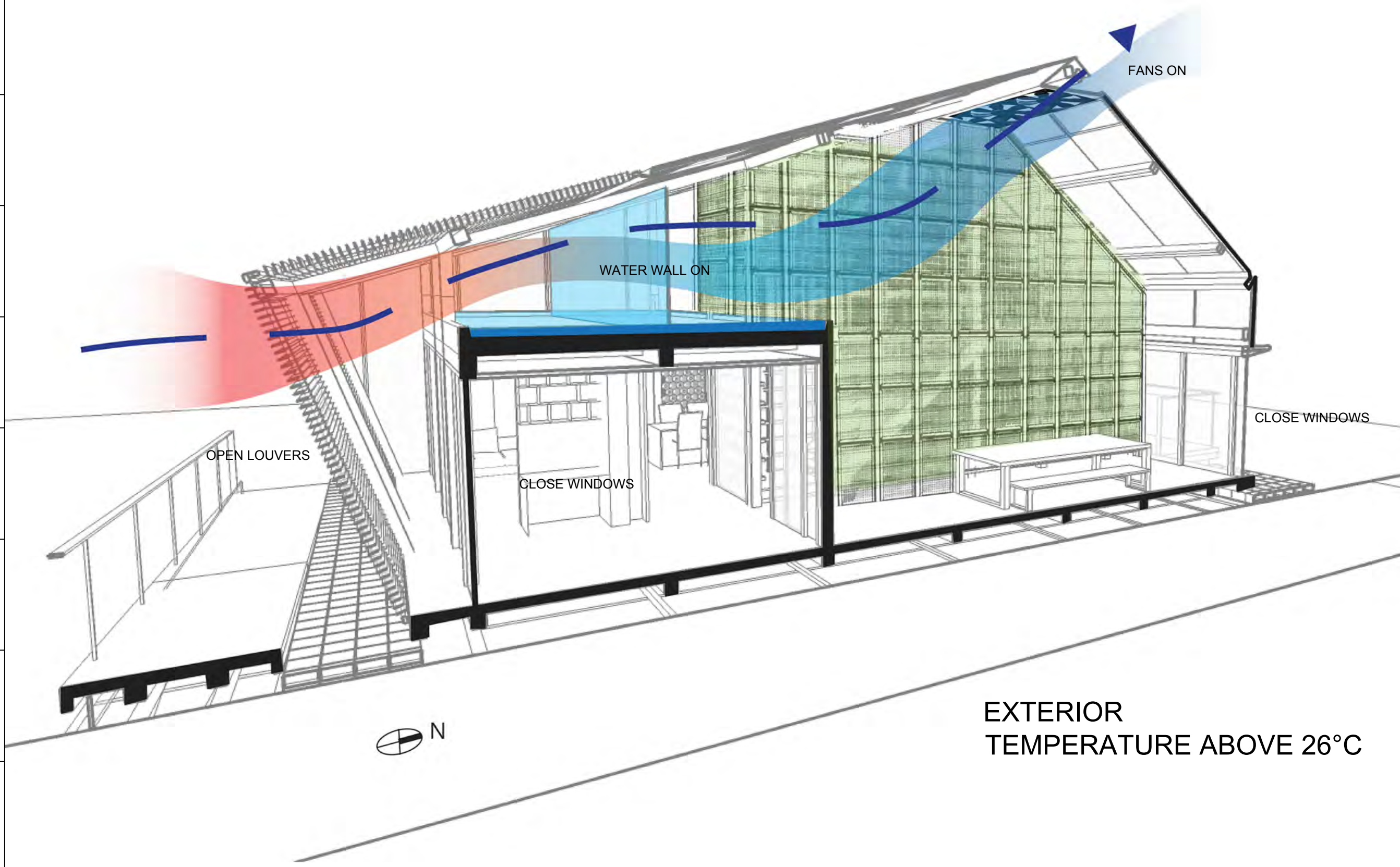
DWG. Title

EVAPORATIVE COOLING

DWG. No. PAGE

BA-015

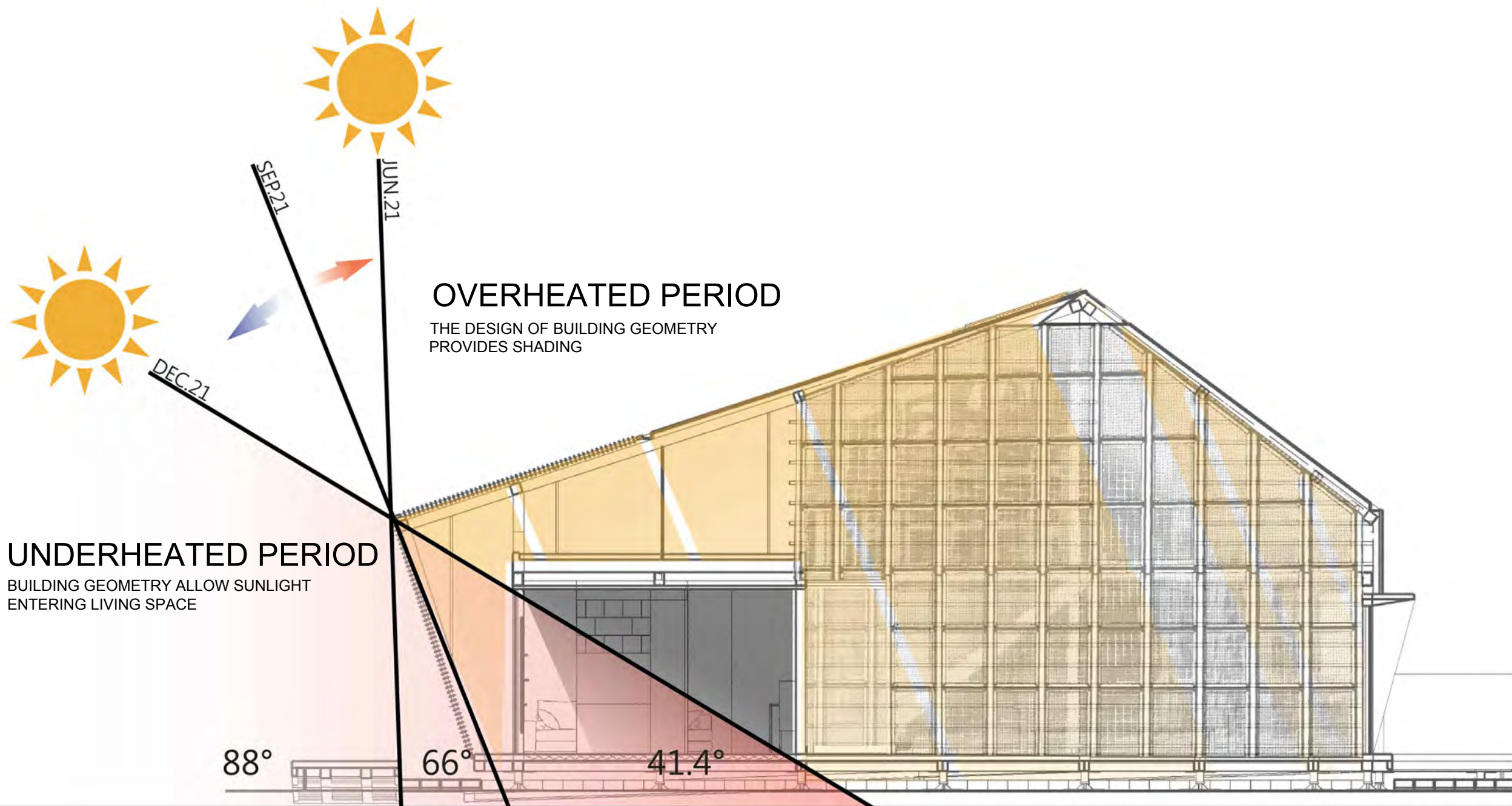
100



EXTERIOR TEMPERATURE ABOVE 26°C



Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission



**OVERHEATED PERIOD**

THE DESIGN OF BUILDING GEOMETRY PROVIDES SHADING

**UNDERHEATED PERIOD**

BUILDING GEOMETRY ALLOW SUNLIGHT ENTERING LIVING SPACE

88°

66°

41.4°

THE HIGHEST ANGLE OF THE SUN

SEP.21; MAR.21  
OVERHEAT/UNDERHEAT  
TRANSITION DATE  
ANGLE OF THE SUN

THE LOWEST ANGLE OF THE SUN



N



Mark	Date	Description
DN	2013/04/01	SD Submission
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ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by JL

Checked by LY

Scale -

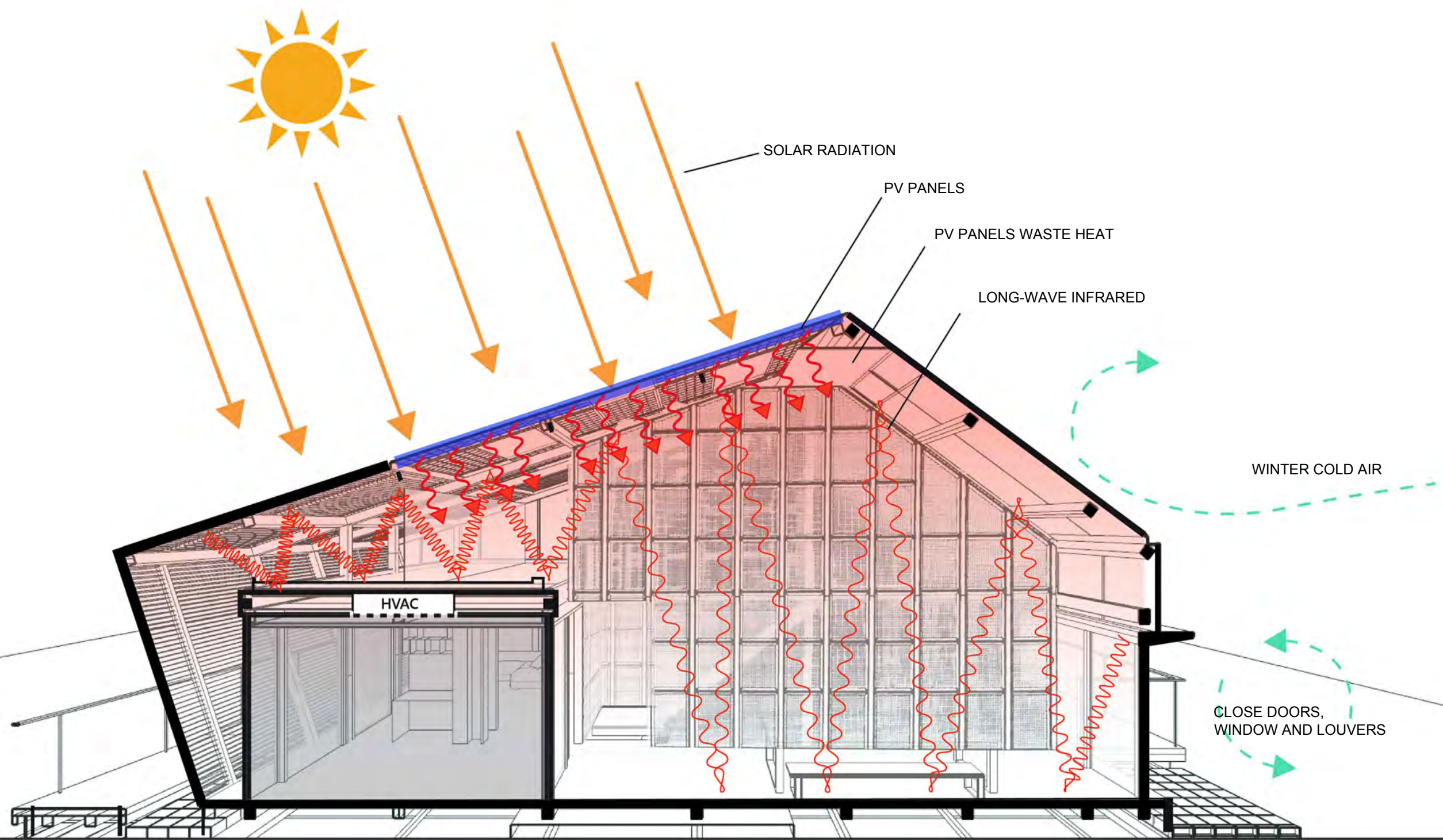
Unit -

DWG. Title

GREEN HOUSE EFFECT

DWG. No. PAGE

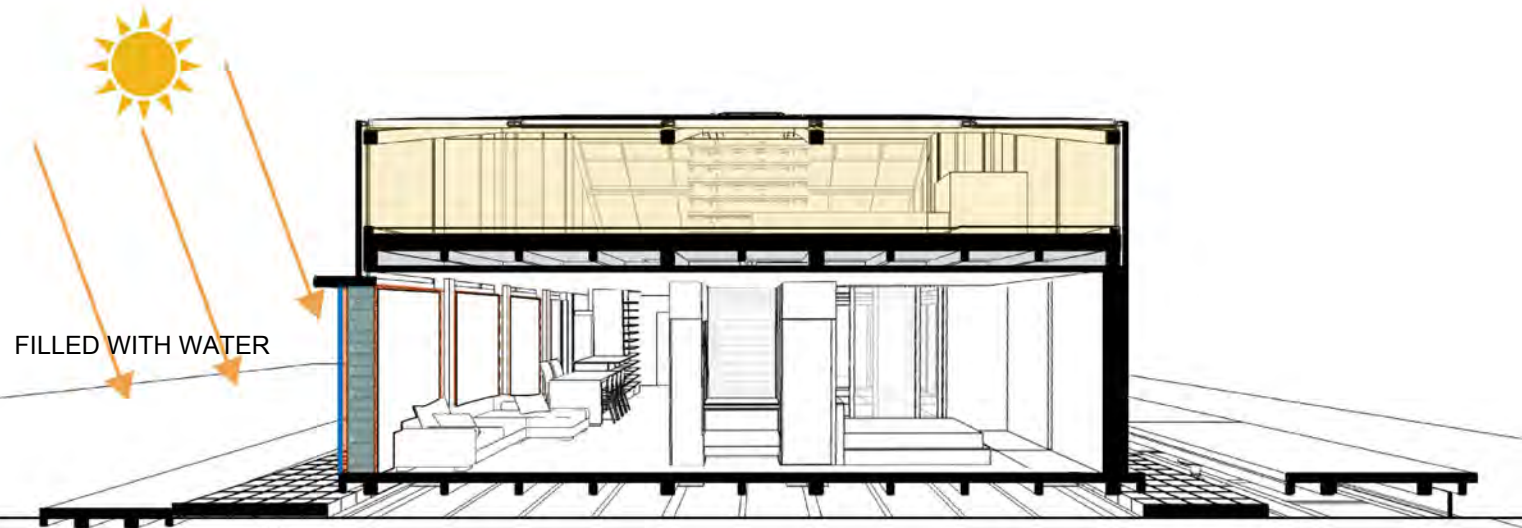
BA-017 102



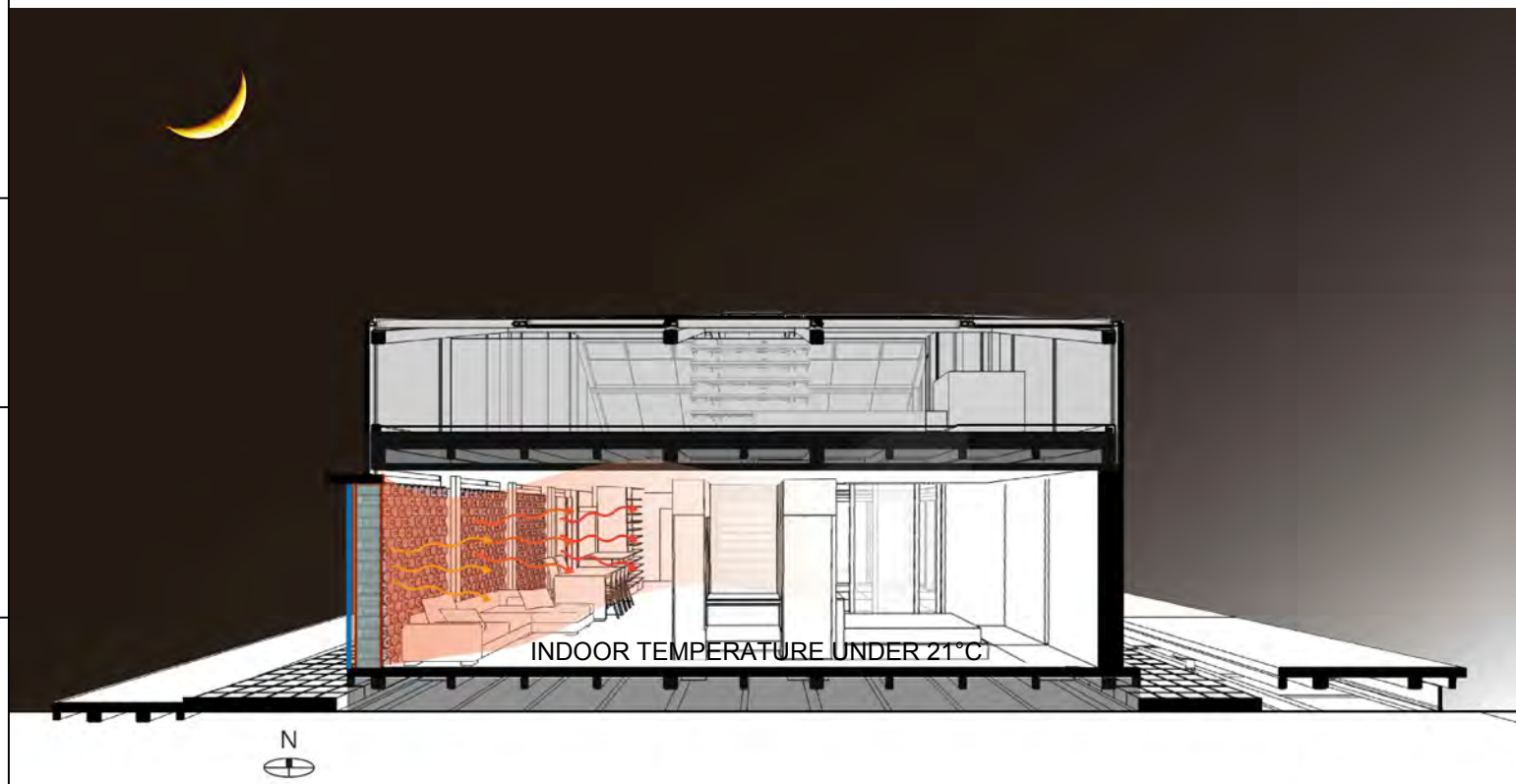
OUTDOOR TEMPERATURE  
BELOW 26°C



Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission



A 30cm water thermal wall is built on the west side of the house. Each bottle contains 6 liter of water. The bottles are piled to 2 meter height-wise and 3 meter length-wise. The bottles are held together and fixated to a transparent acrylic sheet on their exterior side.  
The water in the thermal wall absorbs solar radiation during the day and releases heat to interior space at night.



Project:



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ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by

TW

Checked by

LY

Scale

-

Unit

-

DWG. Title

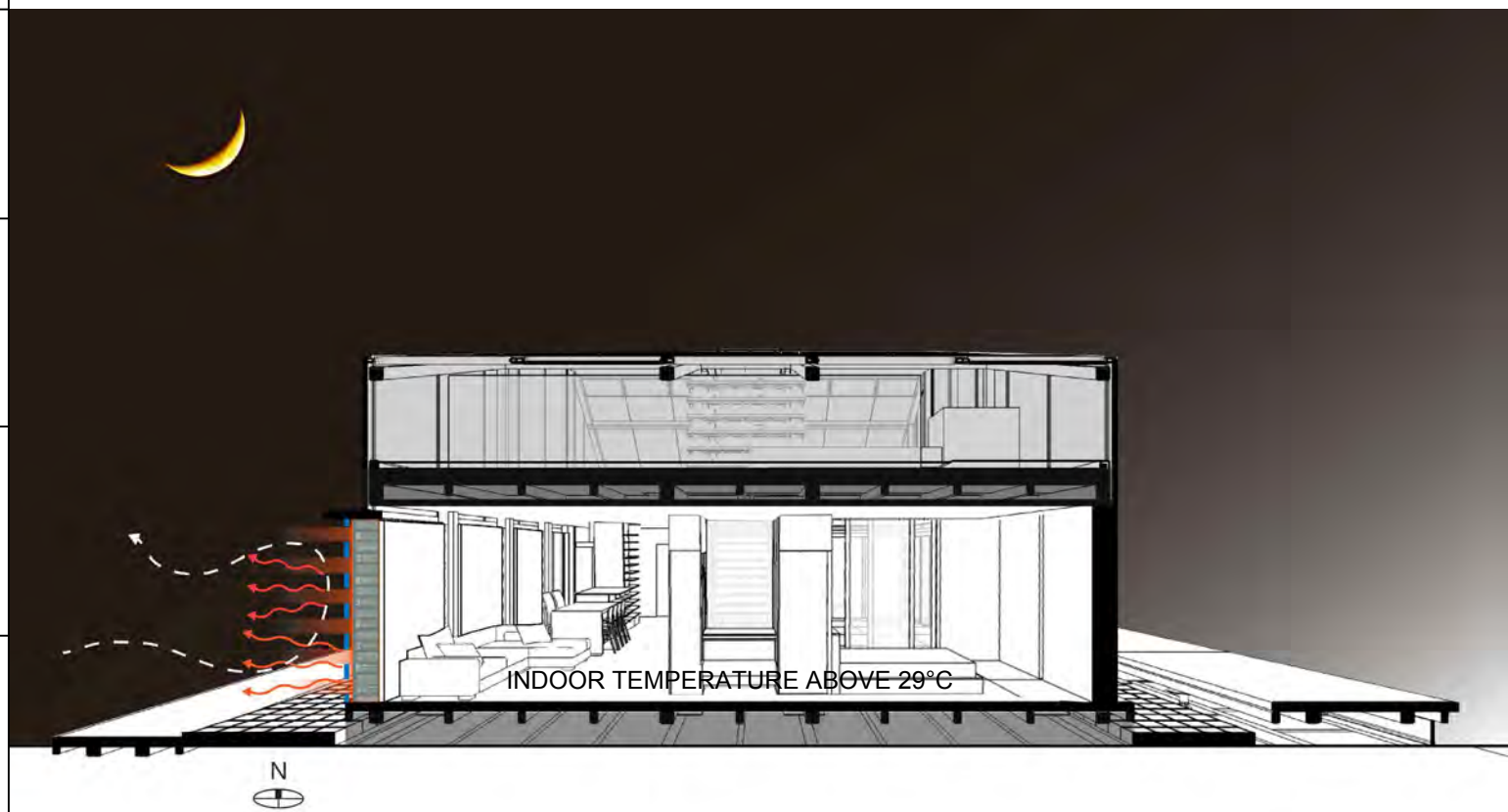
THERMAL WALL  
IN TAIPEI

DWG. No.

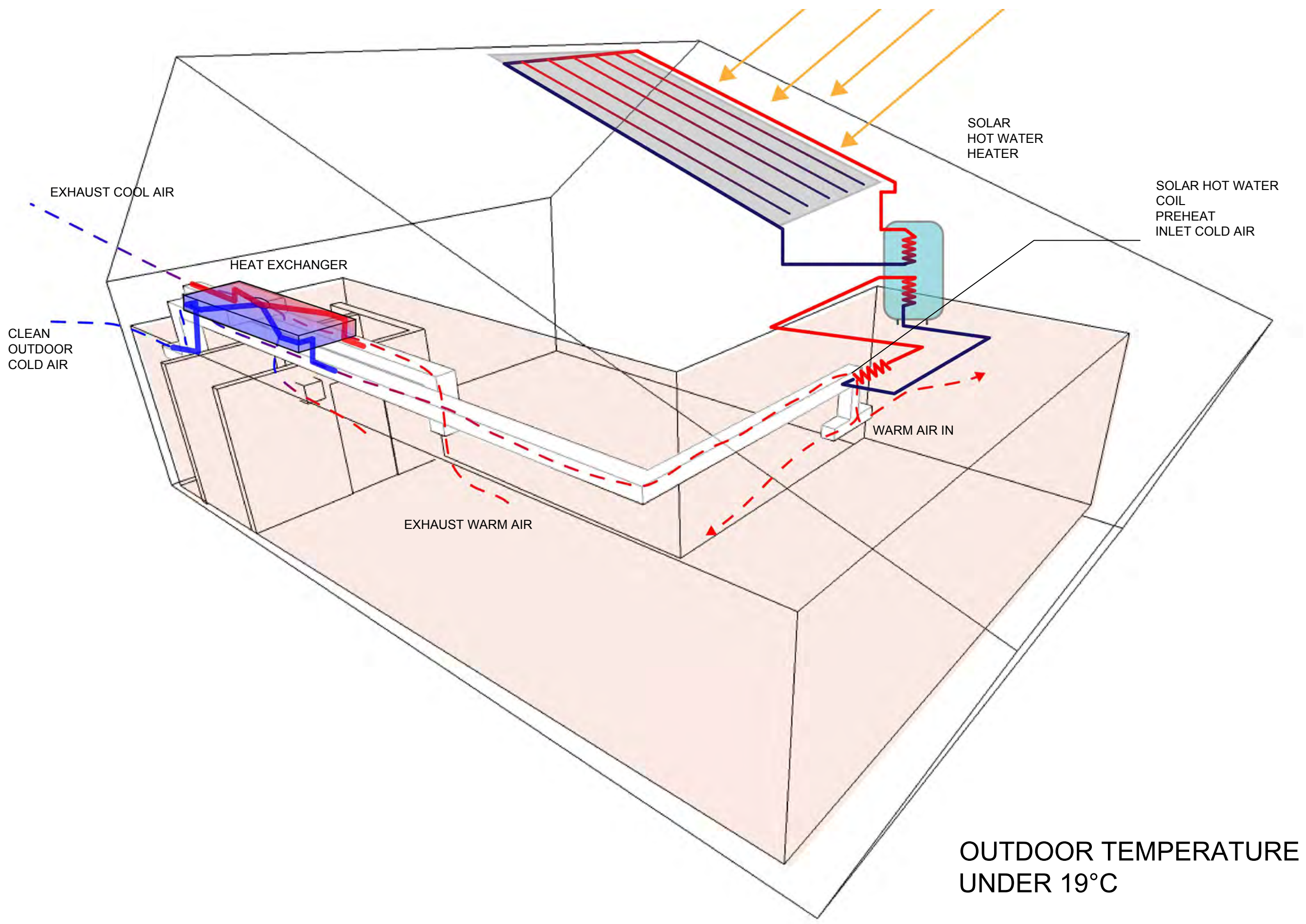
BA-019

PAGE

104







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ST	2014/11/03	AB Submission

Drawn by JL

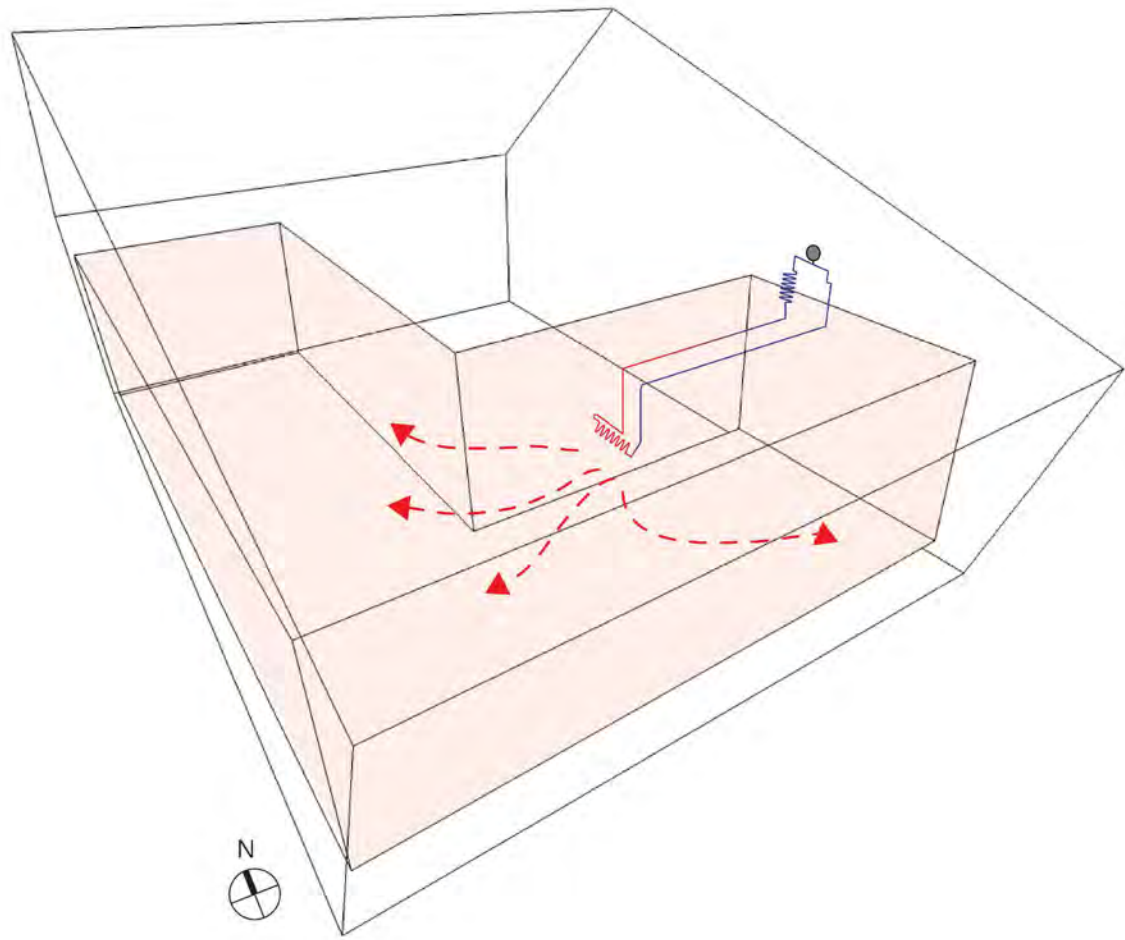
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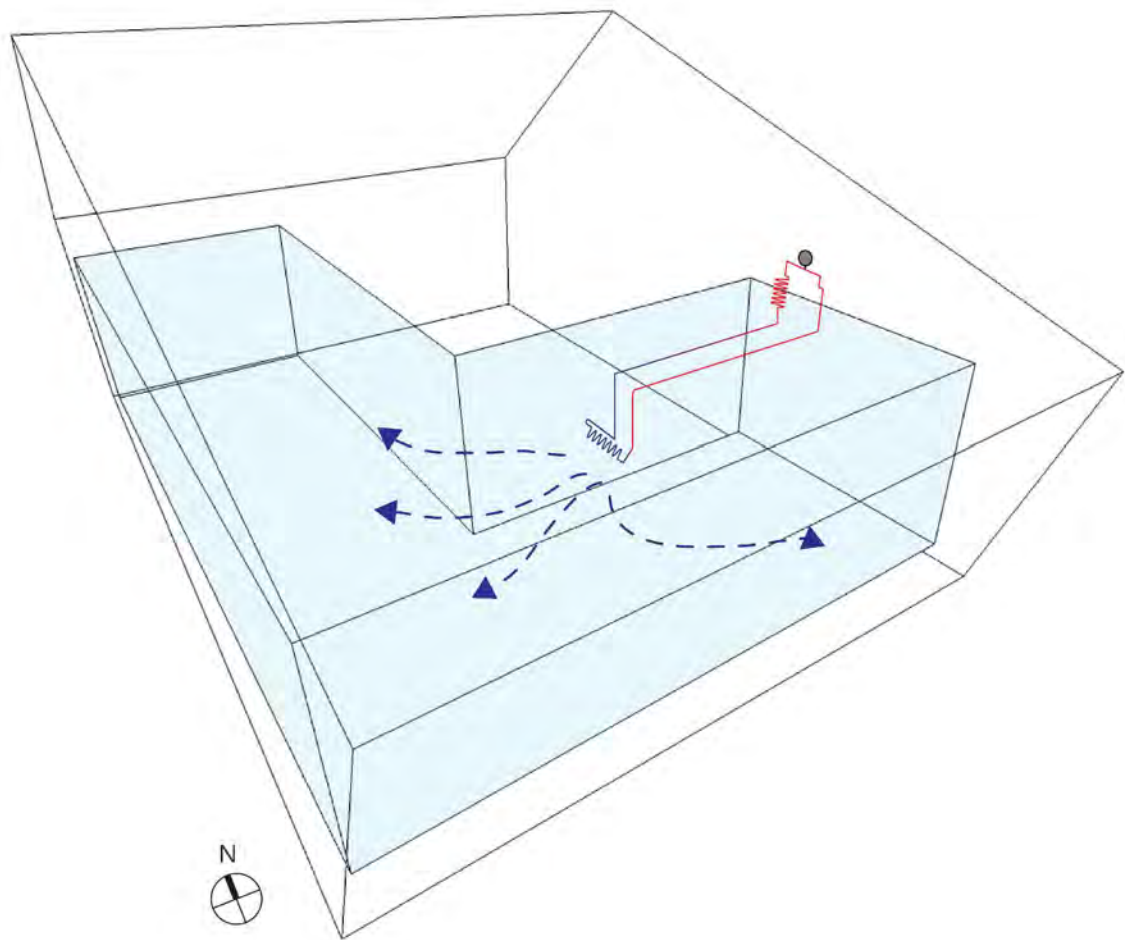
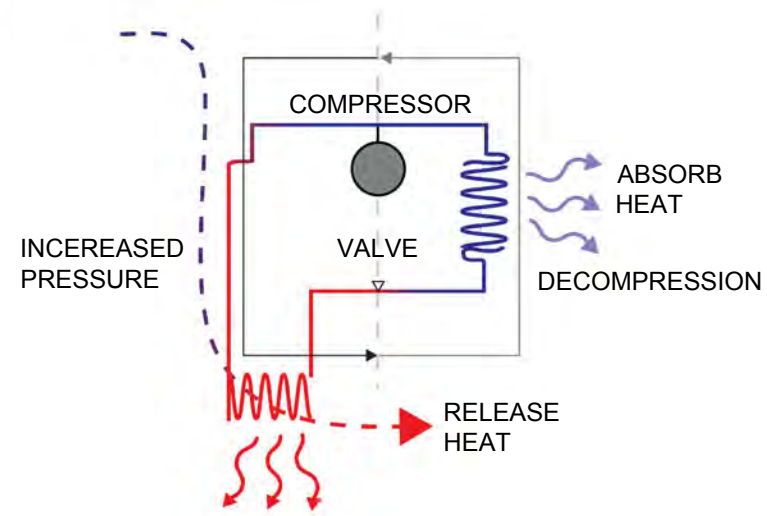
Unit -

DWG. Title  
HEAT EXCHANGER  
PREHEATED BY SOLAR  
HOT WATER

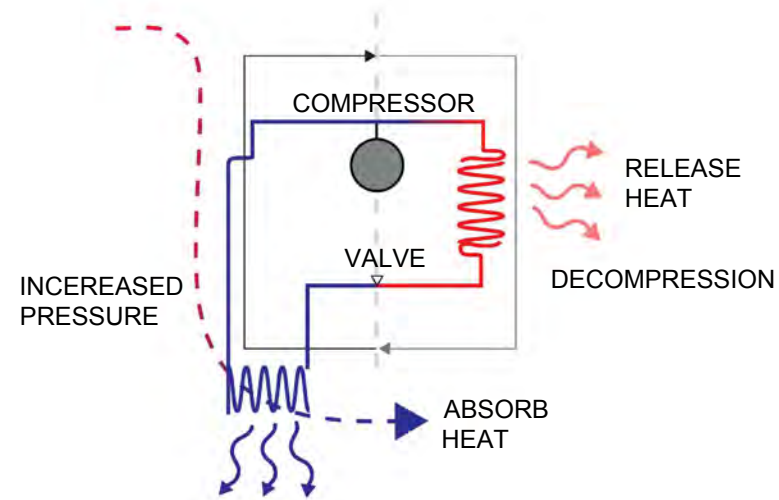
DWG. No.	PAGE
BA-020	105



## HEAT PUMP HEATING



## HEAT PUMP COOLING



Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
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ST	2014/11/03	AB Submission

Drawn by TW

Checked by LY

Scale -

Unit -

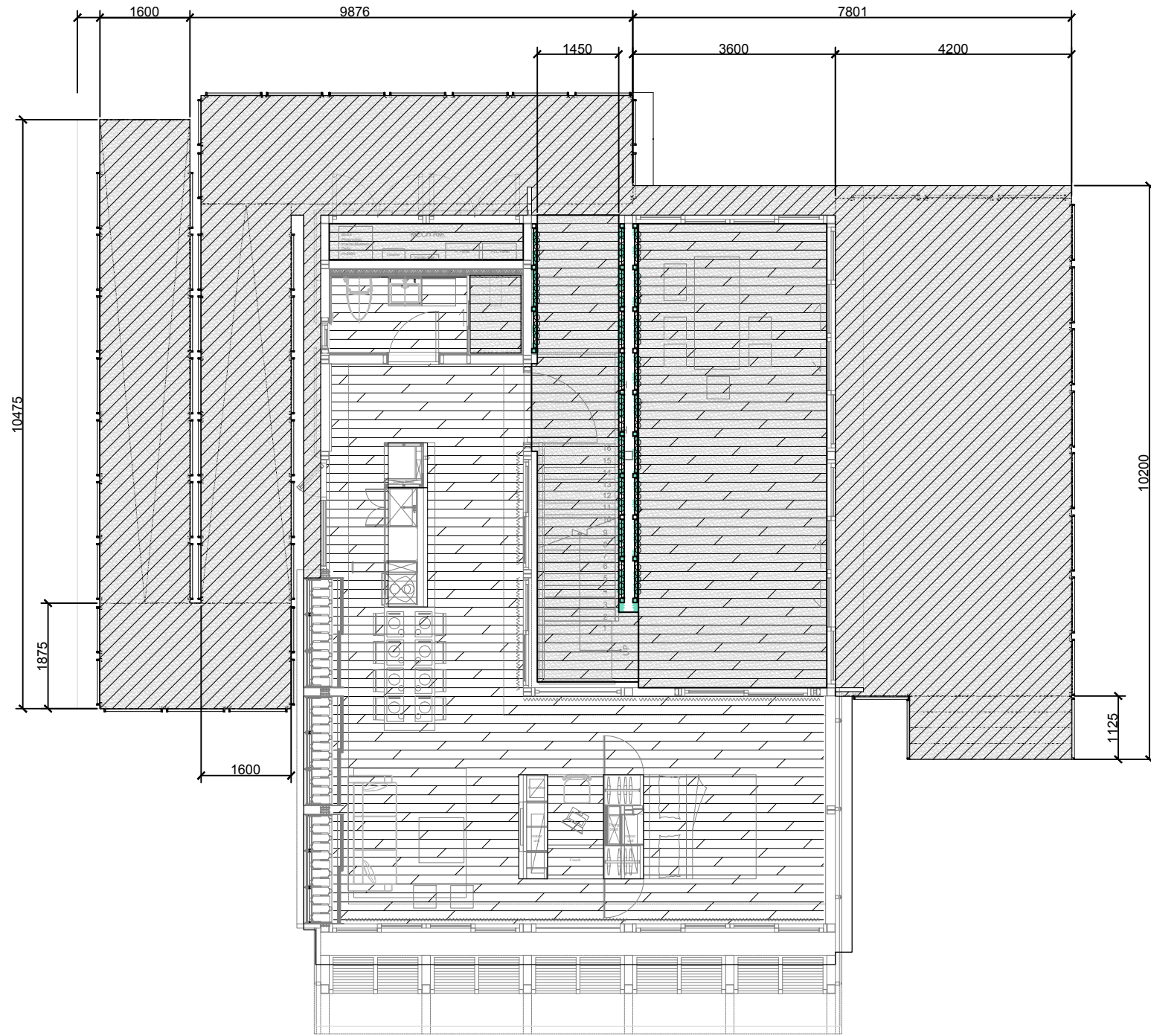
DWG. Title

HEAT PUMP

DWG. No. PAGE

BA-021

106



SYMBOL & LEGEND

HATCH TYP	FLOOR TYPE	AREA	LOCATION
	Modern Tree Laminate Flooring	55.7m <sup>2</sup>	Interior Space
	Wood Plastic Composites	43.75m <sup>2</sup>	Terrace / Mech. RM. Shower RM.
	Wood Plastic Composites	127.7m <sup>2</sup>	Outdoor Deck



Project:



Institution:



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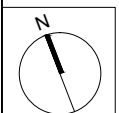
Address: 1001 Ta-Hsueh Road  
Hsinchu City 30010  
Taiwan

Contact: www.sde.tw



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Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
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ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
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ST	2014/11/03	AB Submission

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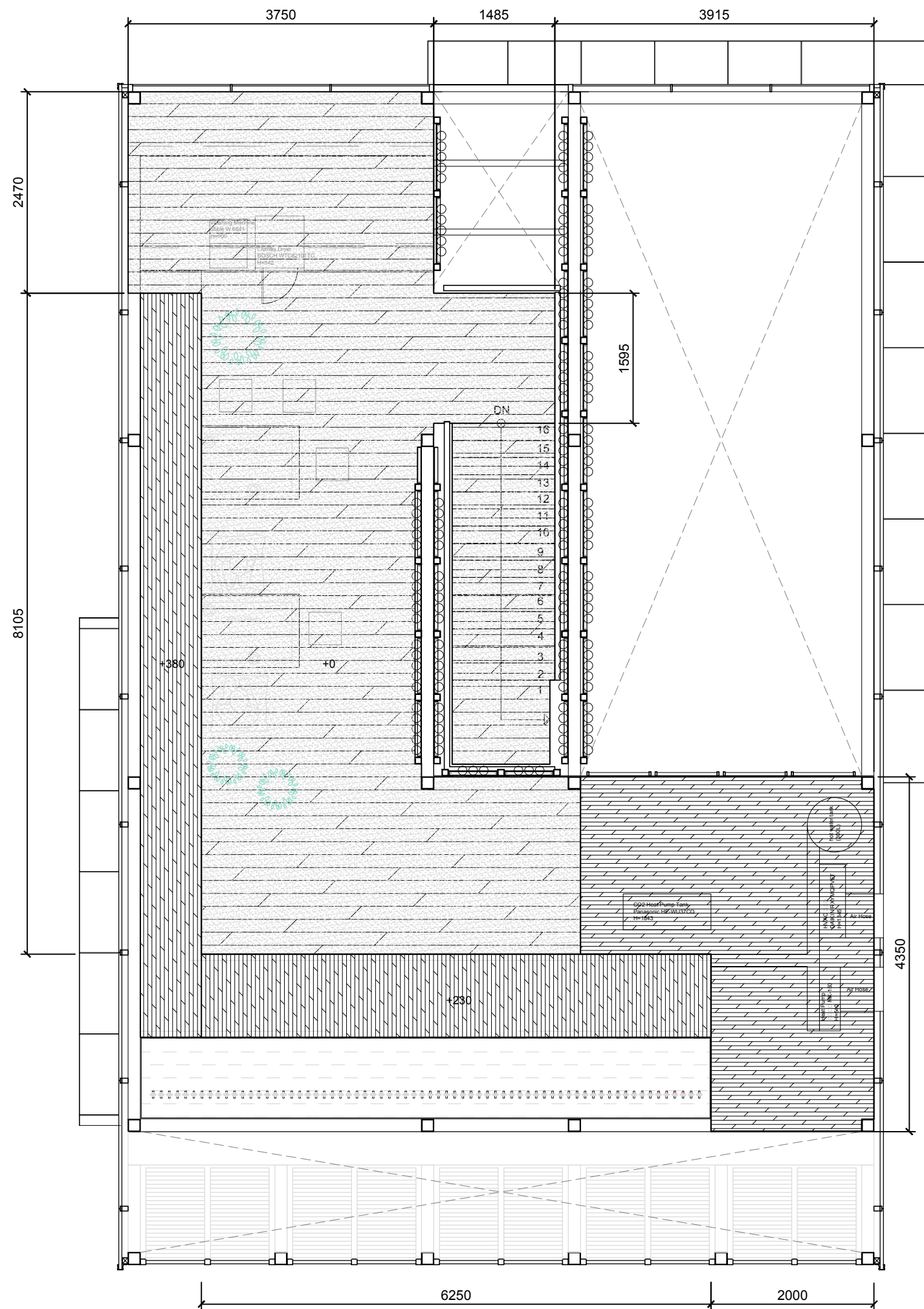
DWG. Title

GROUND LEVEL FLOOR

DWG. No. PAGE

IN-001

107



SYMBOL & LEGEND

HATCH TYP	FLOOR TYPE	AREA	LOCATION
	Wood Plastic Composites	42.84m <sup>2</sup>	
	Solid Wood	25.34m <sup>2</sup>	
	Stainless Steel	7m <sup>2</sup>	



Project:



Institution:



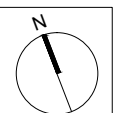
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國立交通大學建築研究所

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Address: 1001 Ta-Hsueh Road  
Hsinchu City 30010  
Taiwan  
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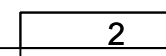
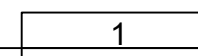


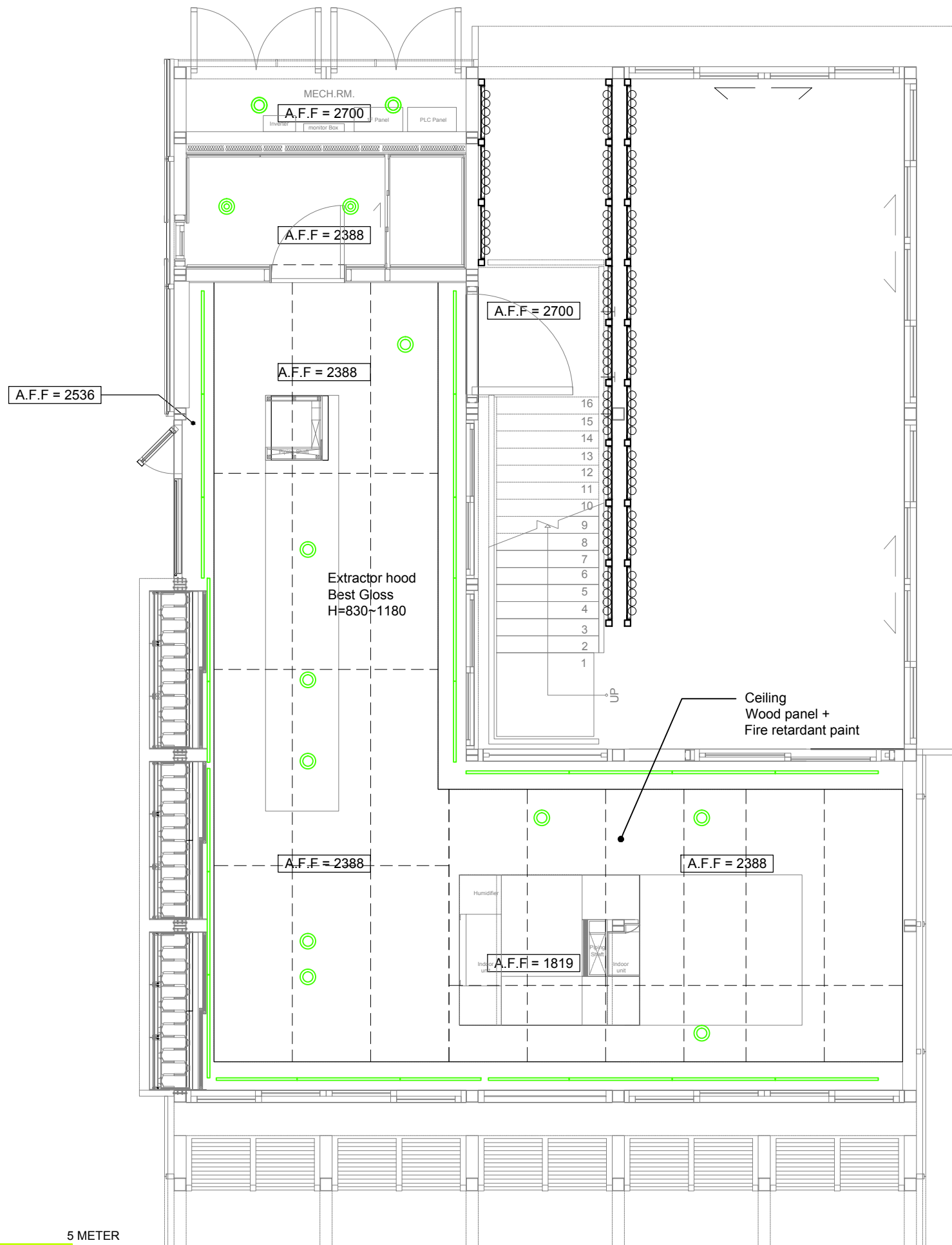
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ST	2014/11/03	AB Submission

Drawn by	TW
Checked by	-
Scale	1:60
Unit	mm

DWG. Title  
**MEZZANINE LEVEL FLOOR**

DWG. No.	PAGE
<b>IN-002</b>	<b>108</b>





SYMBOL & LEGEND	
HATCH TYP	TYPE
	DOWN LIGHT
	WATERPROOFED DOWN LIGHT
	T8 LED



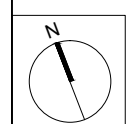
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

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<b>Checked by</b>	DN
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<b>Unit</b>	mm

**DWG. Title**  
REFLECTED CEILING

<b>DWG. No.</b>	<b>PAGE</b>
IN-101	109

Project:



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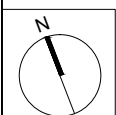
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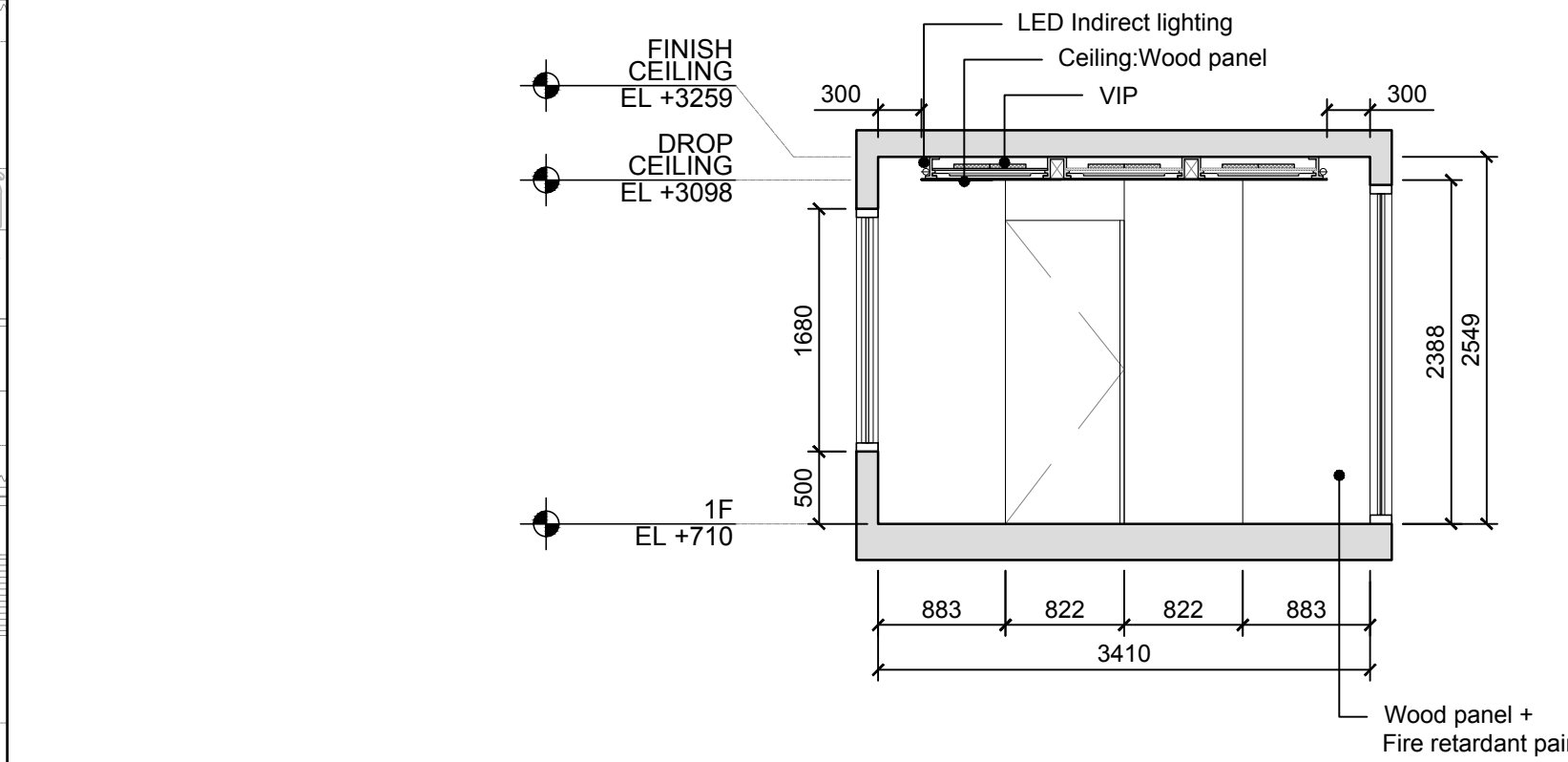
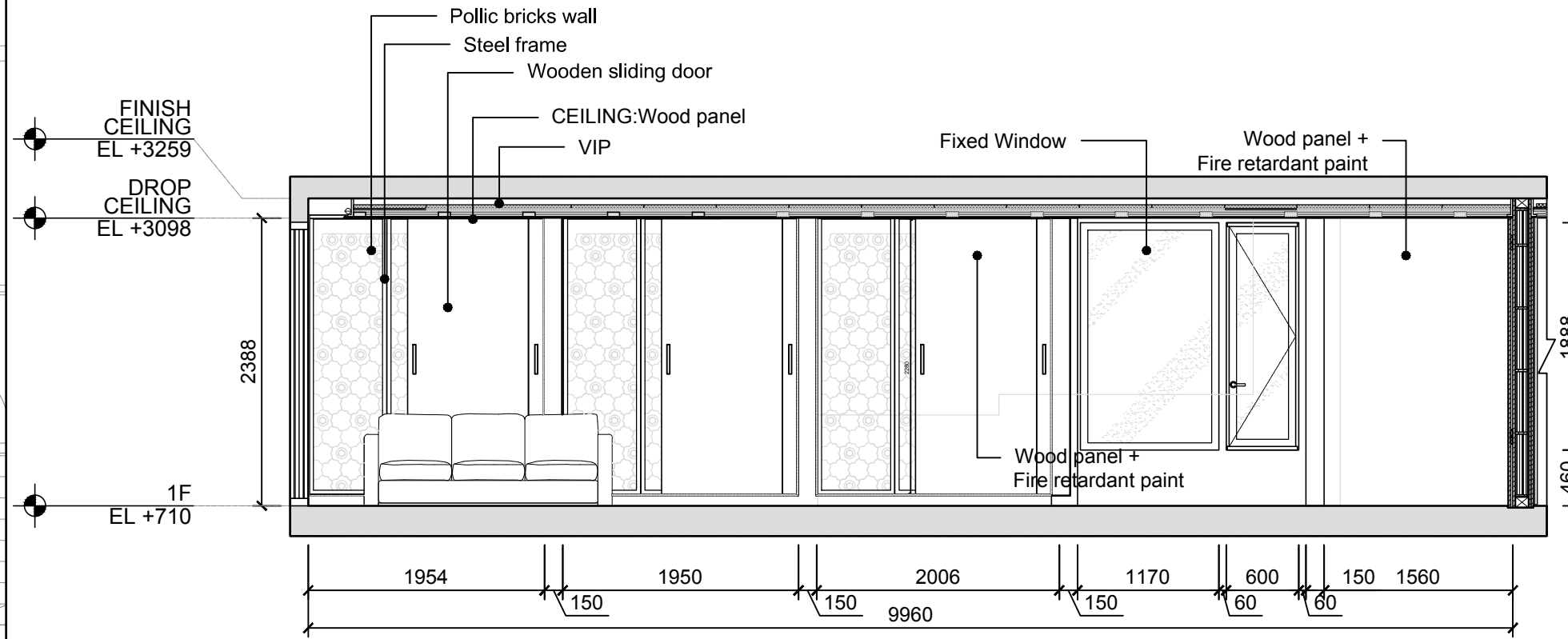
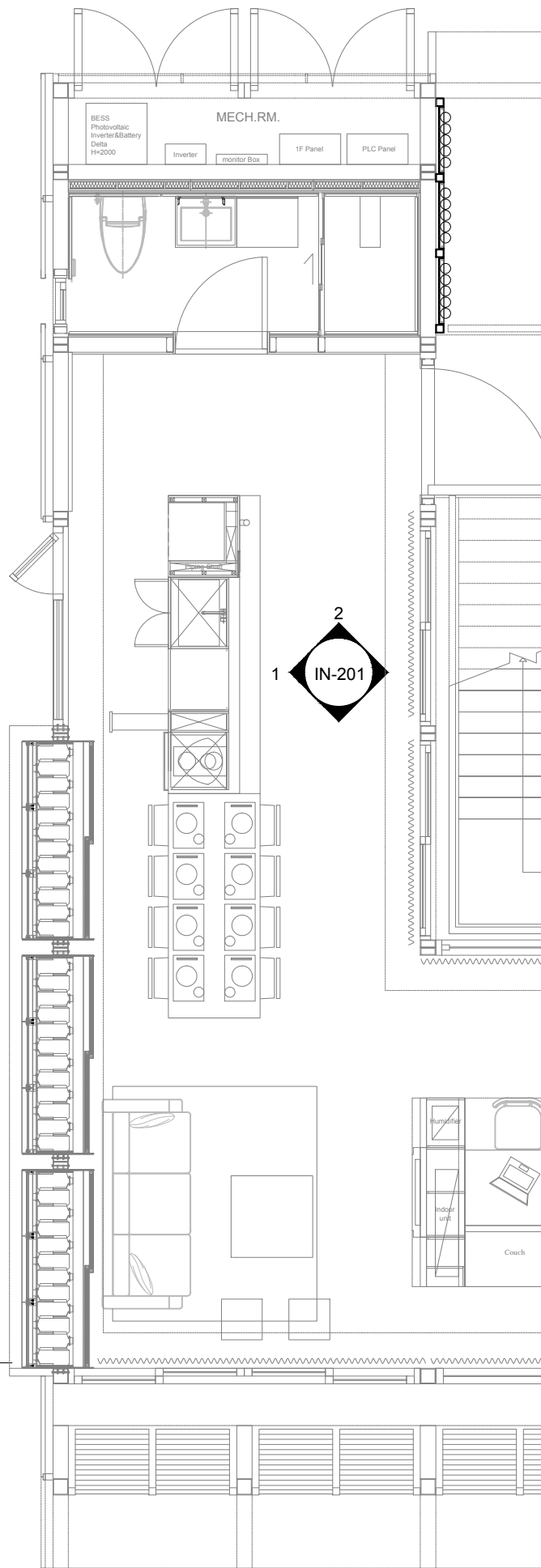


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ST	2014/11/03	AB Submission

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Checked by	DN
Scale	1:50
Unit	mm

DWG. Title  
**INTERIOR ELEVATIONS 1**

DWG. No. **IN-201** PAGE **110**



1

2

Project:



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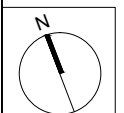
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Unit

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DWG. Title

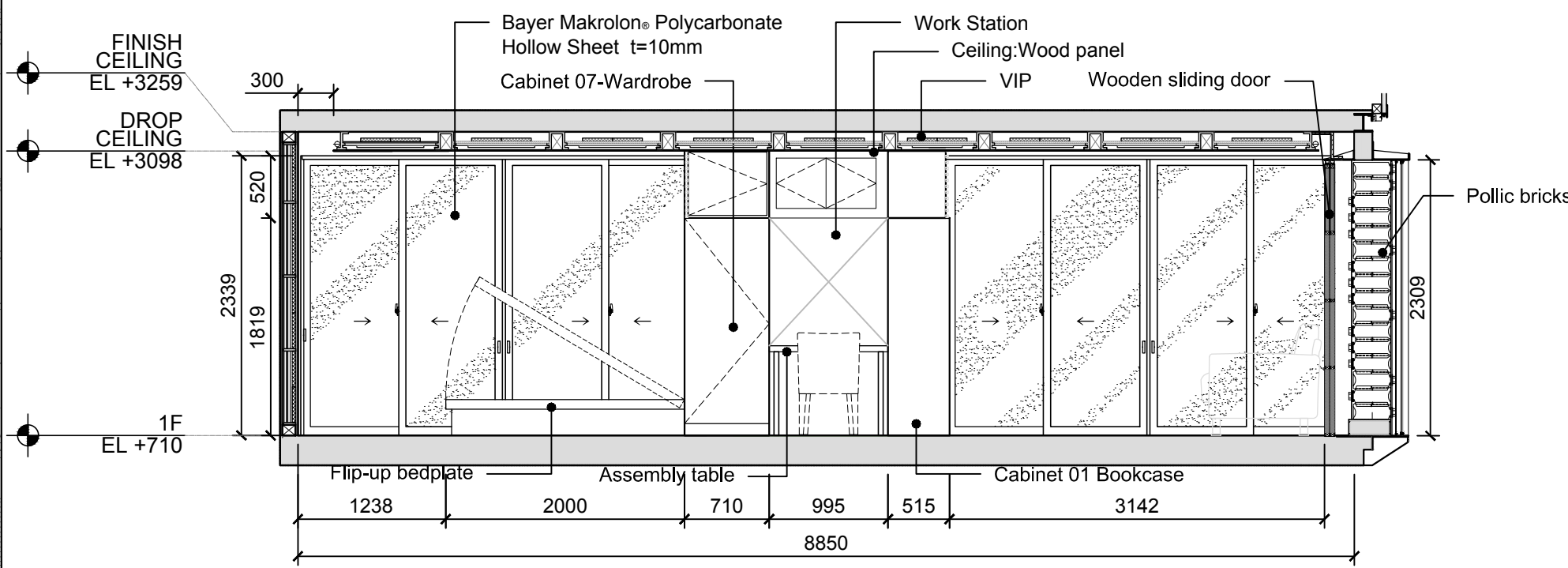
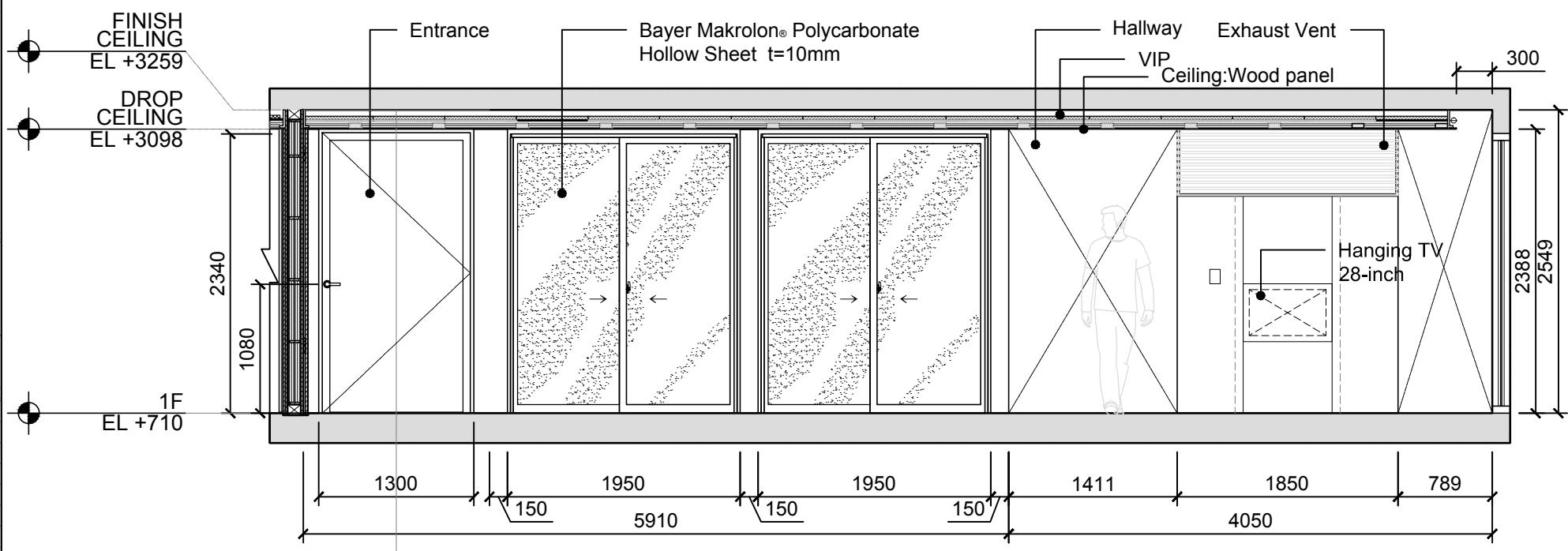
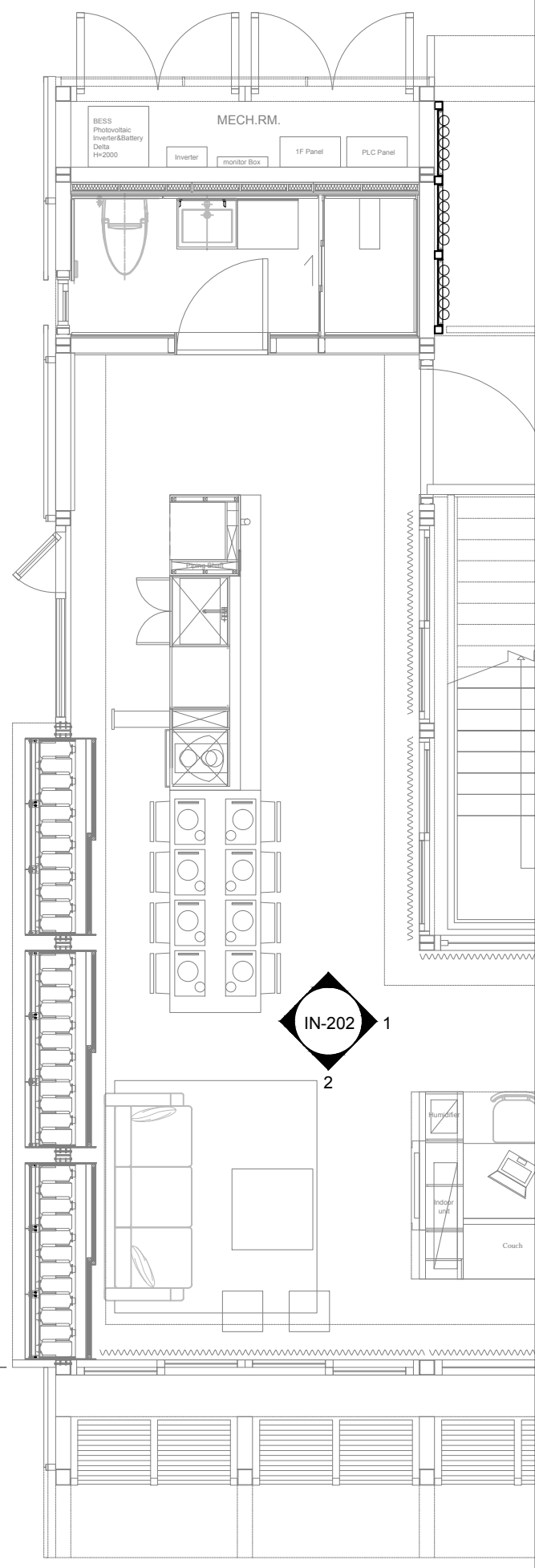
INTERIOR ELEVATIONS 2

DWG. No.

IN-202

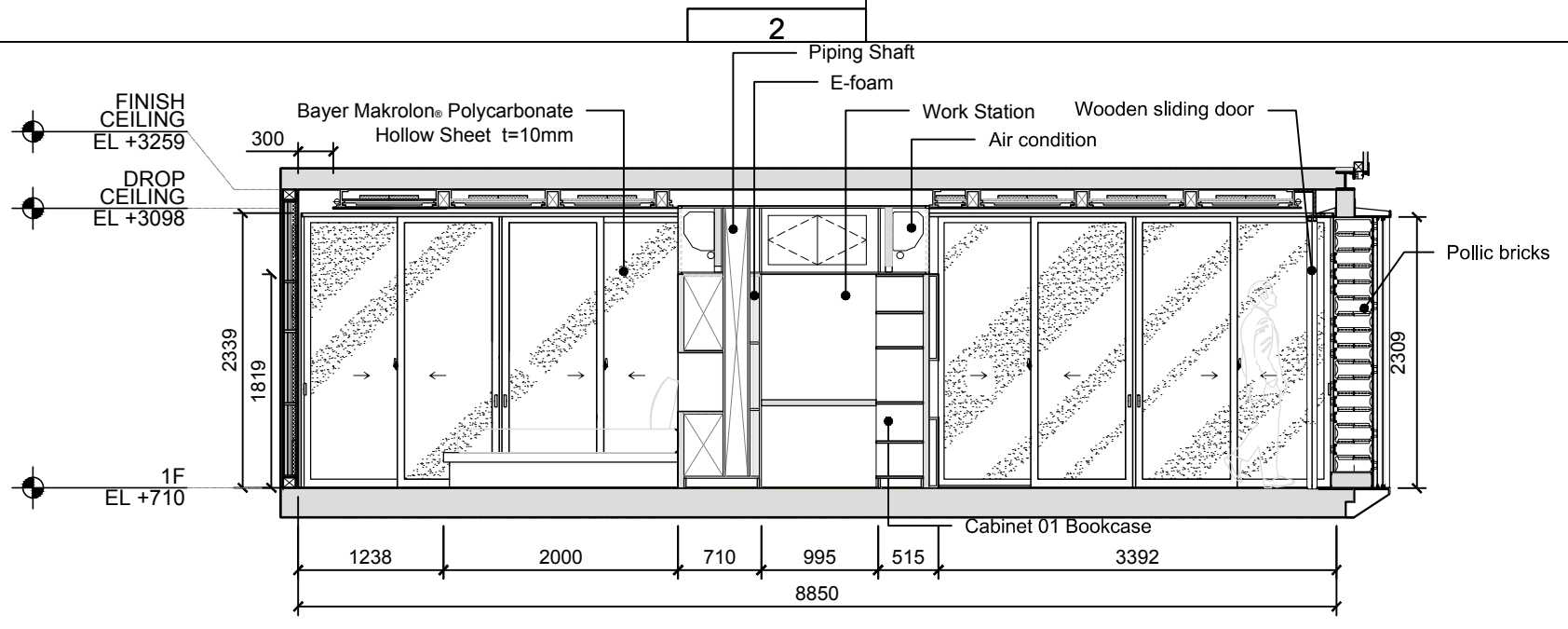
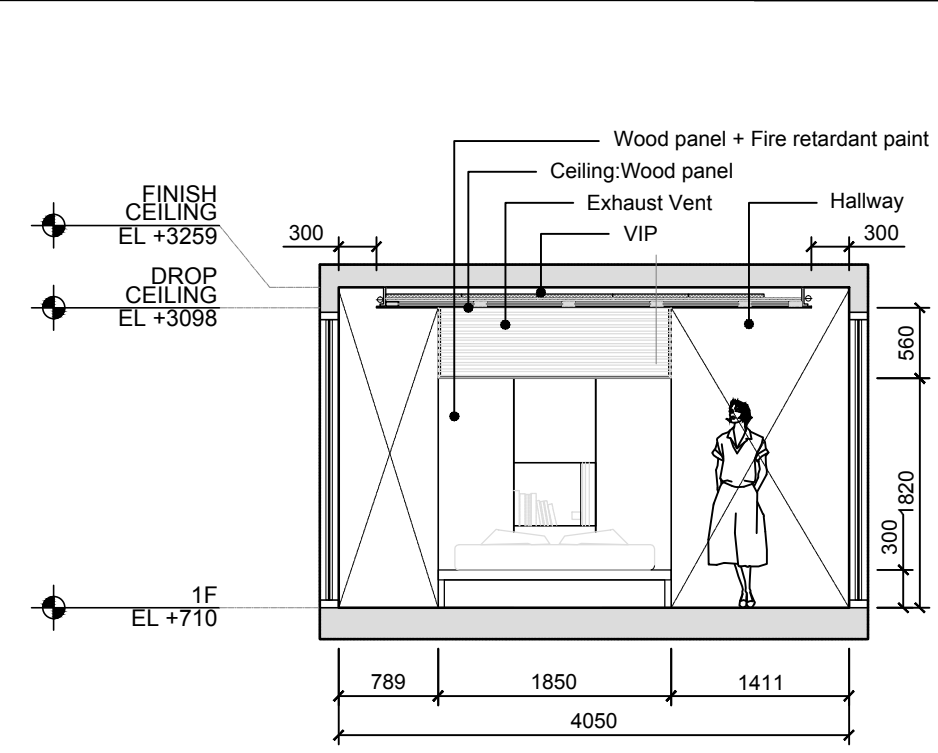
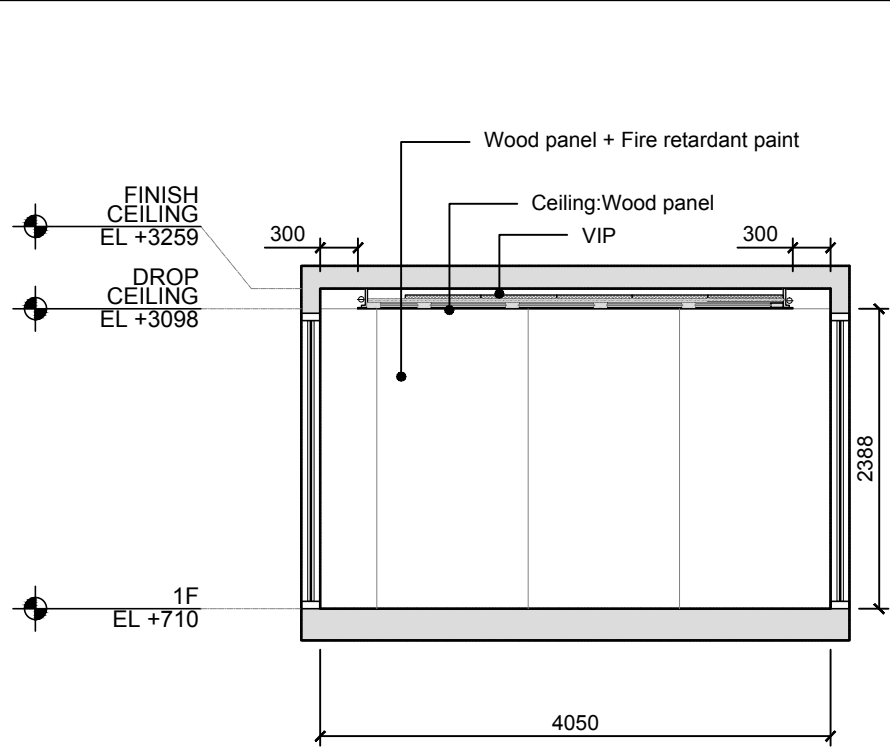
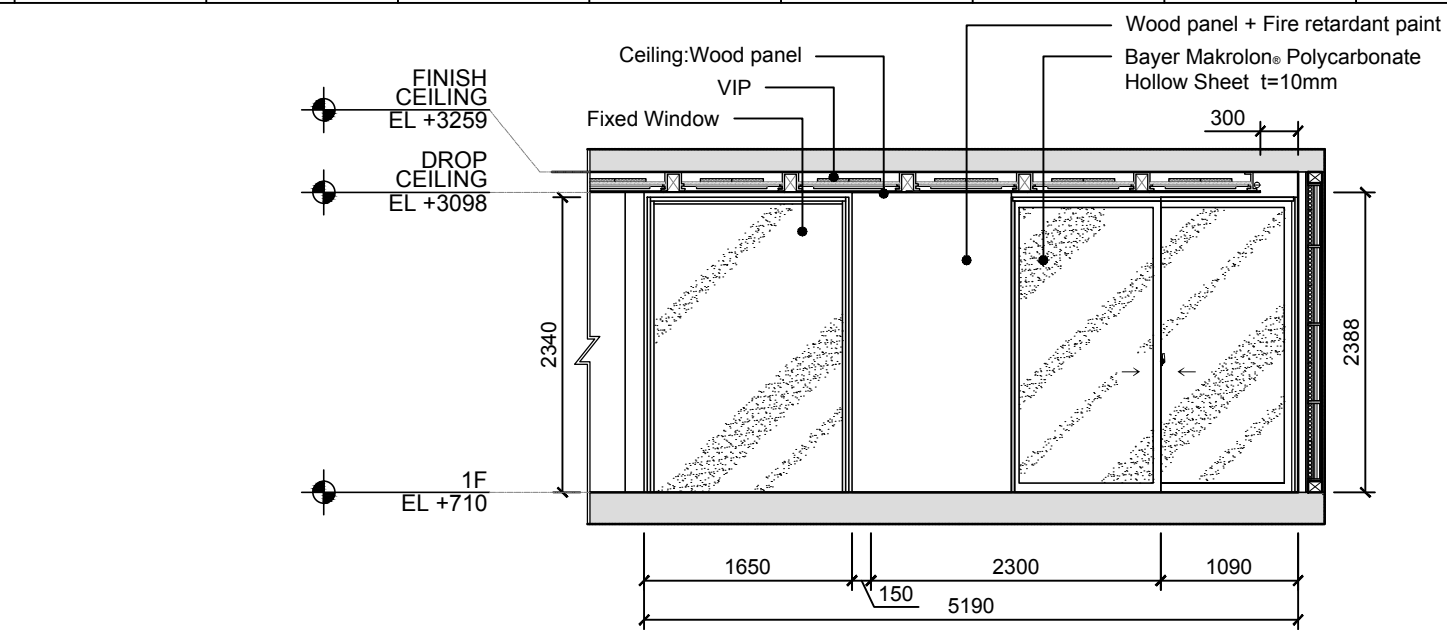
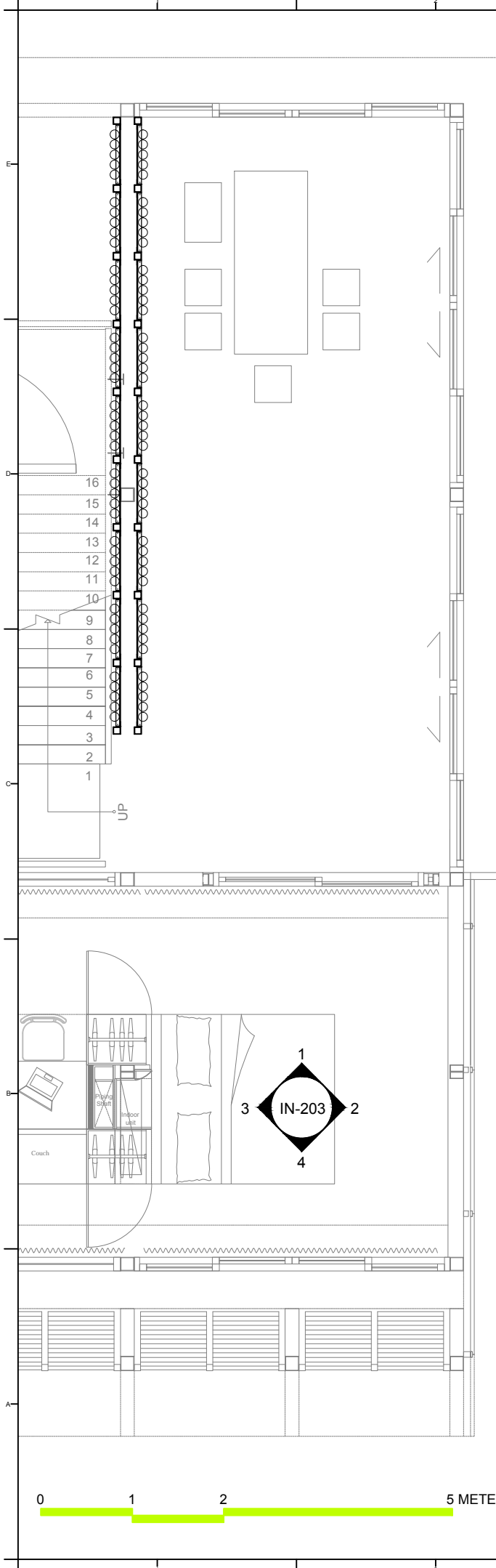
PAGE

111



1

2



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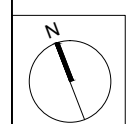
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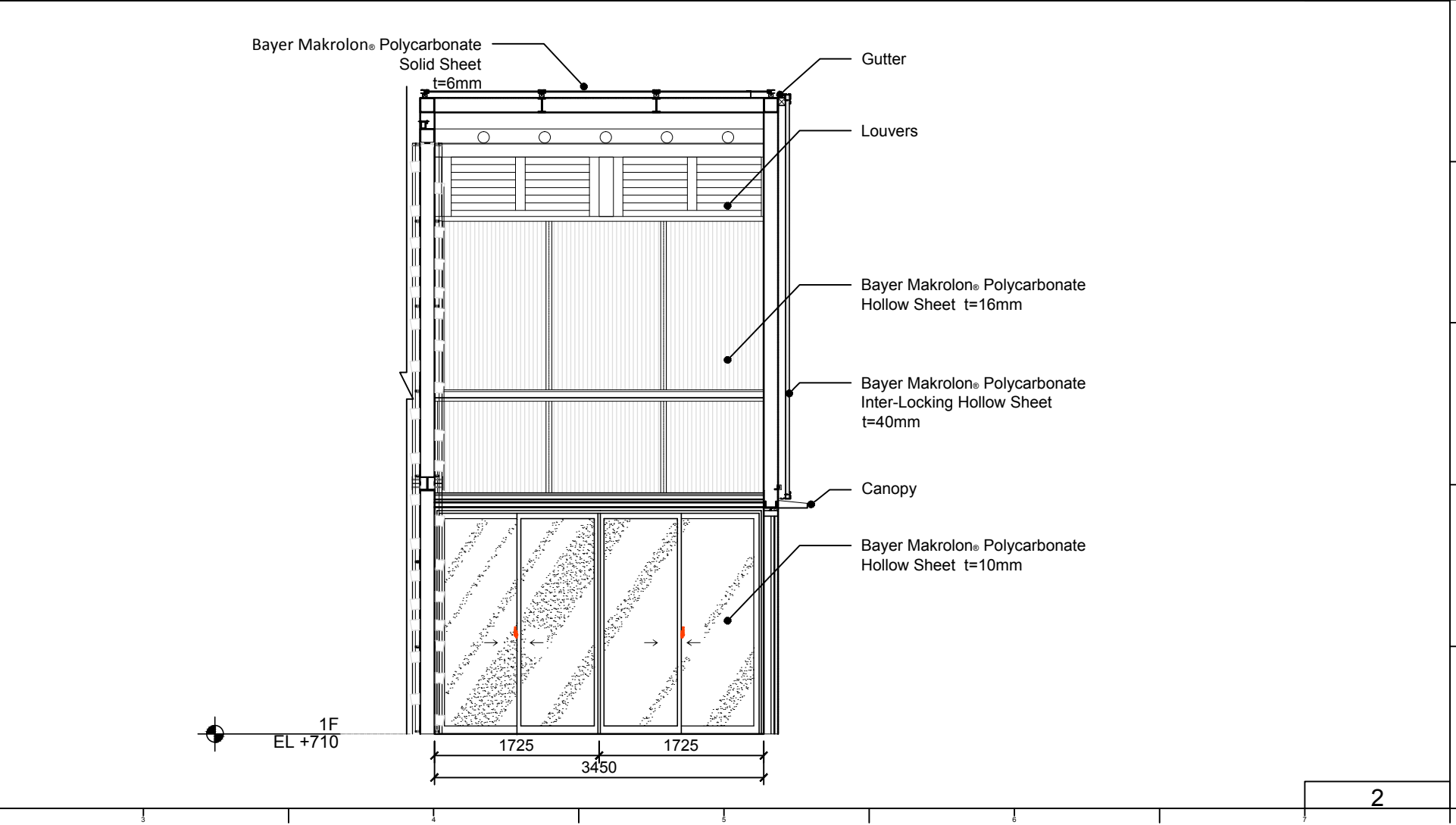
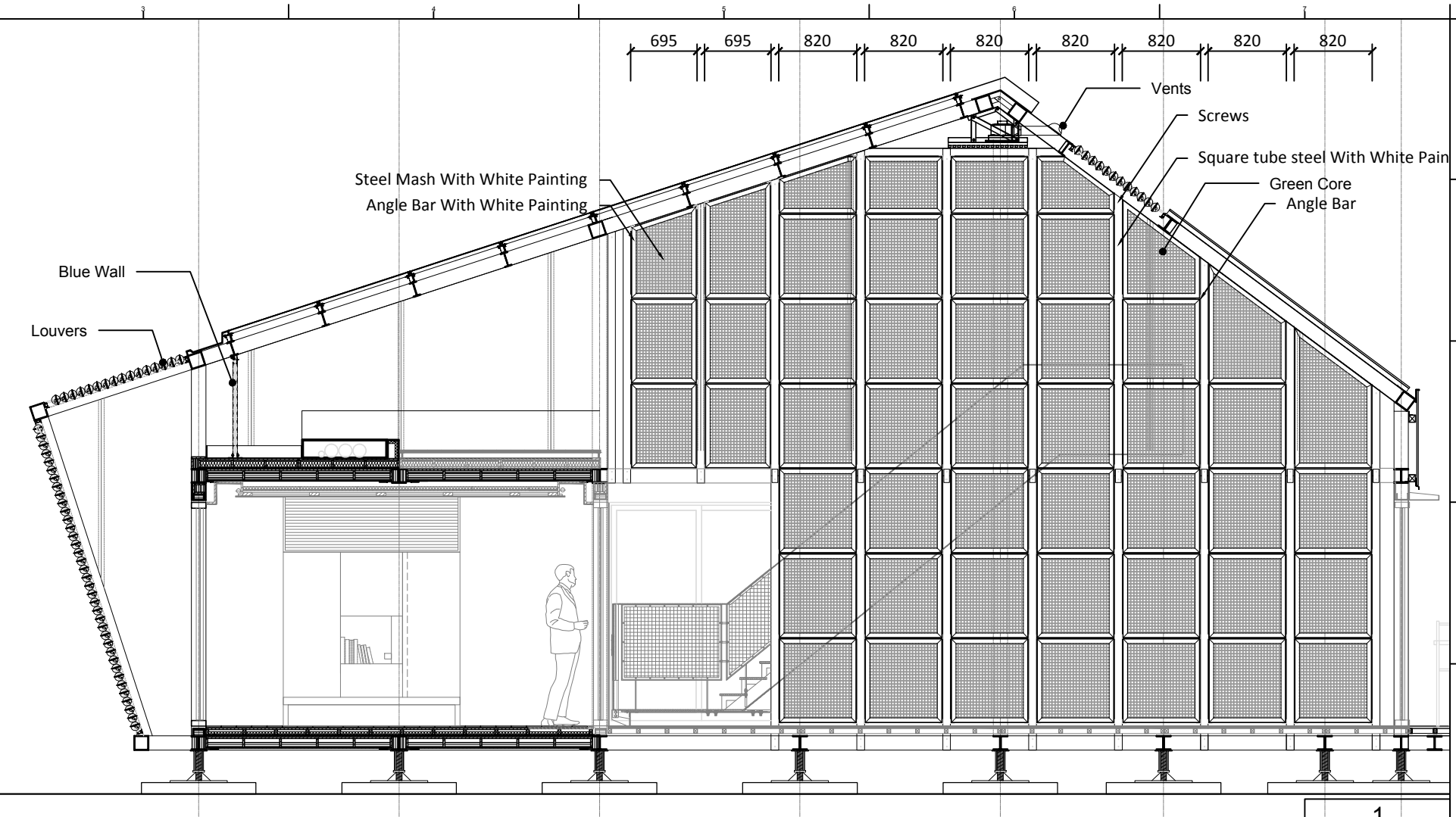
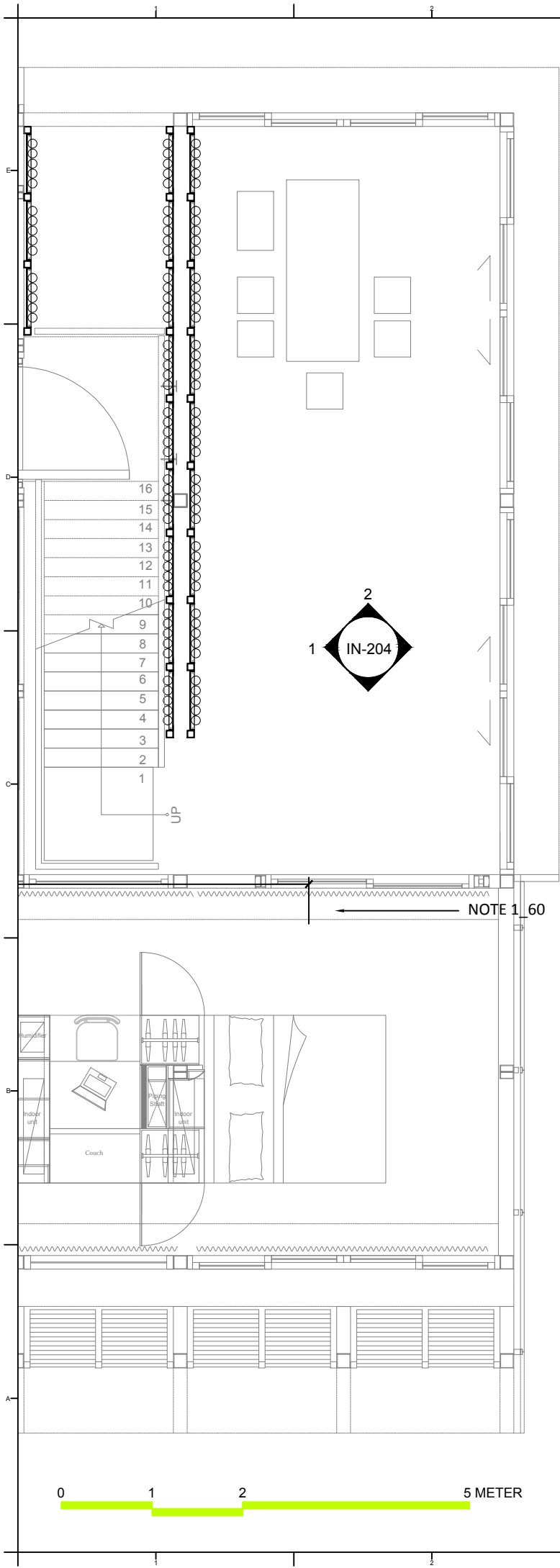
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ST	2014/11/03	AB Submission

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DWG. Title  
**INTERIOR ELEVATIONS 3**

DWG. No.	PAGE
<b>IN-203</b>	<b>112</b>





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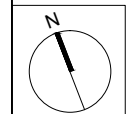
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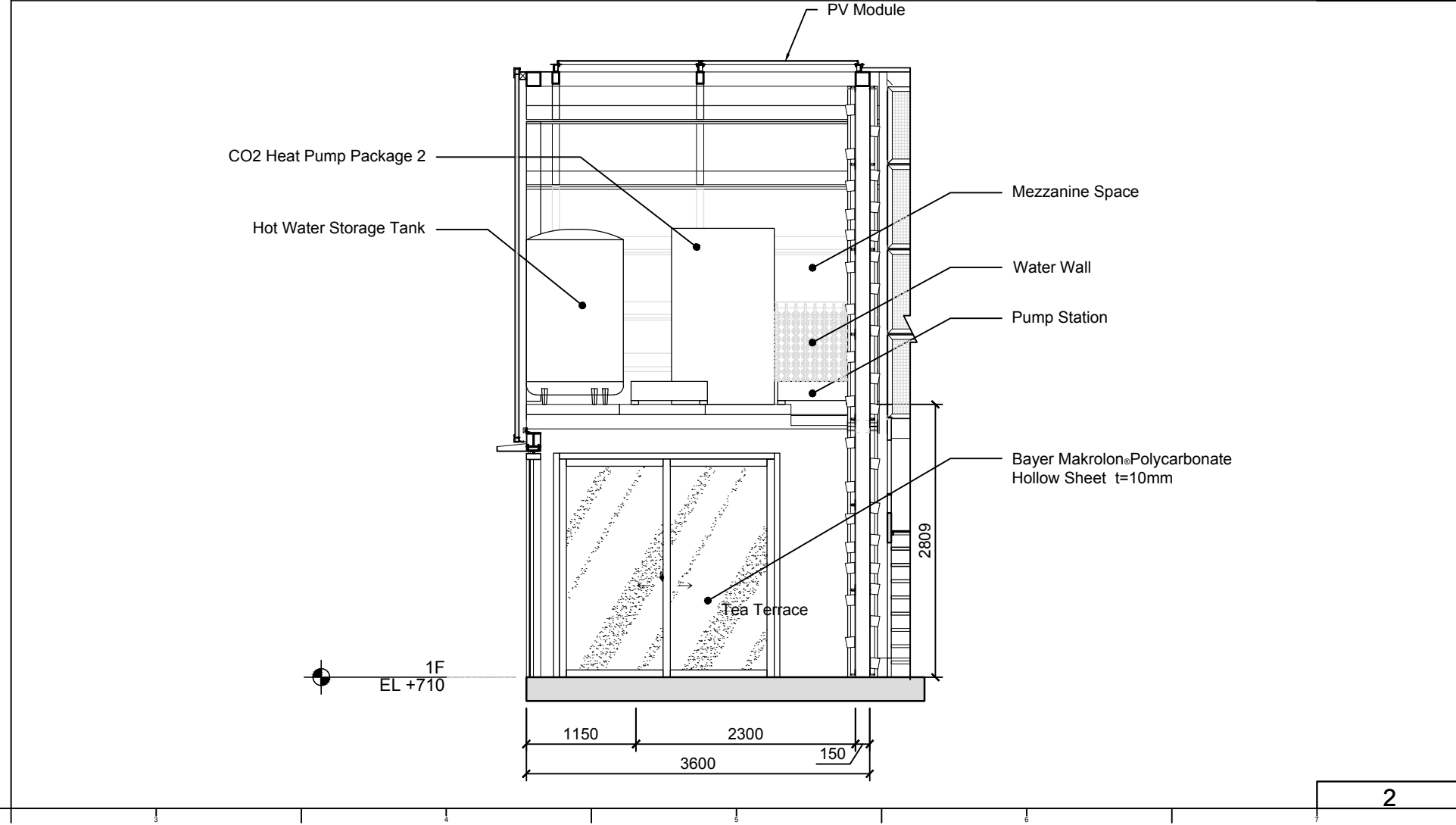
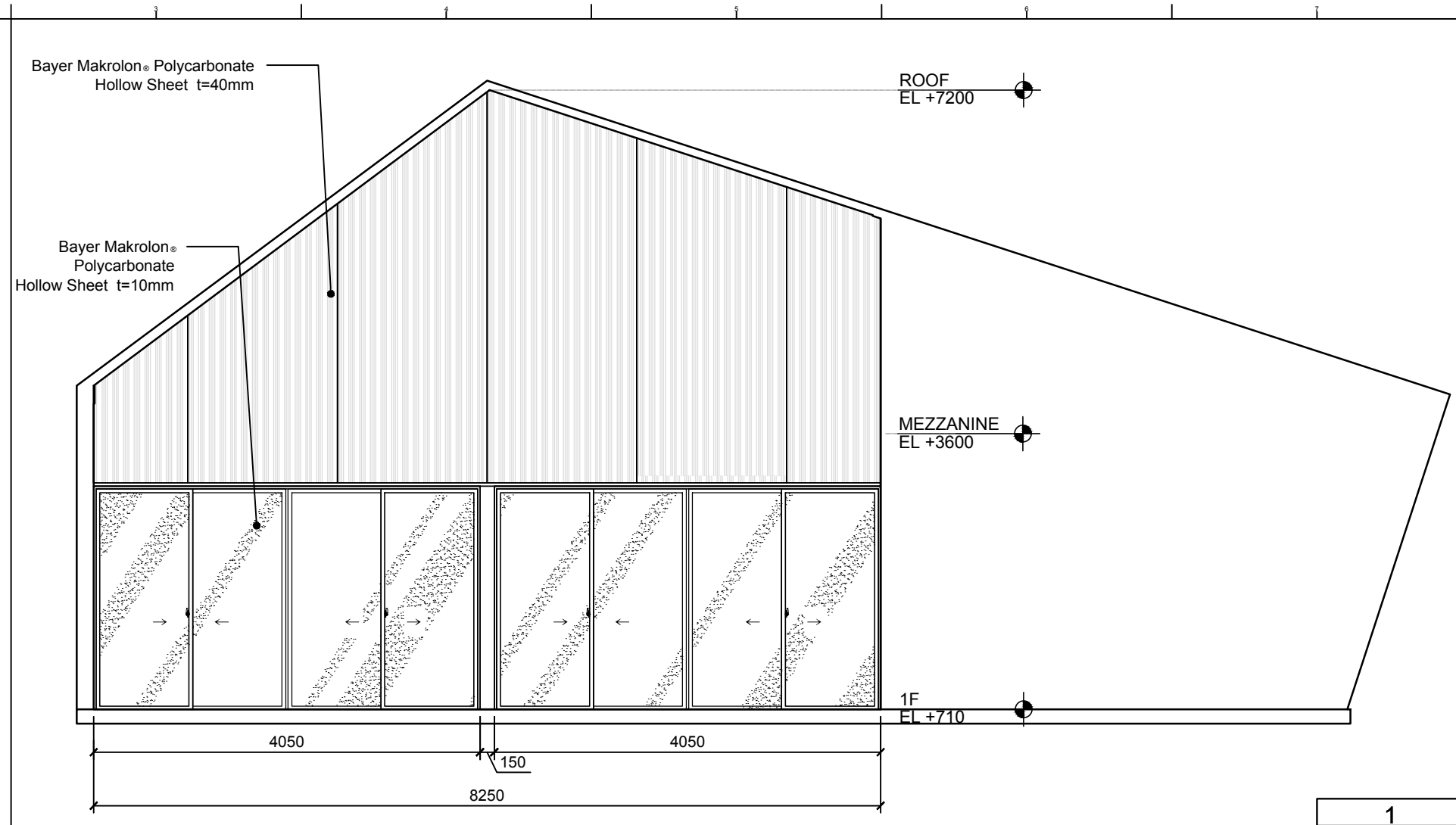
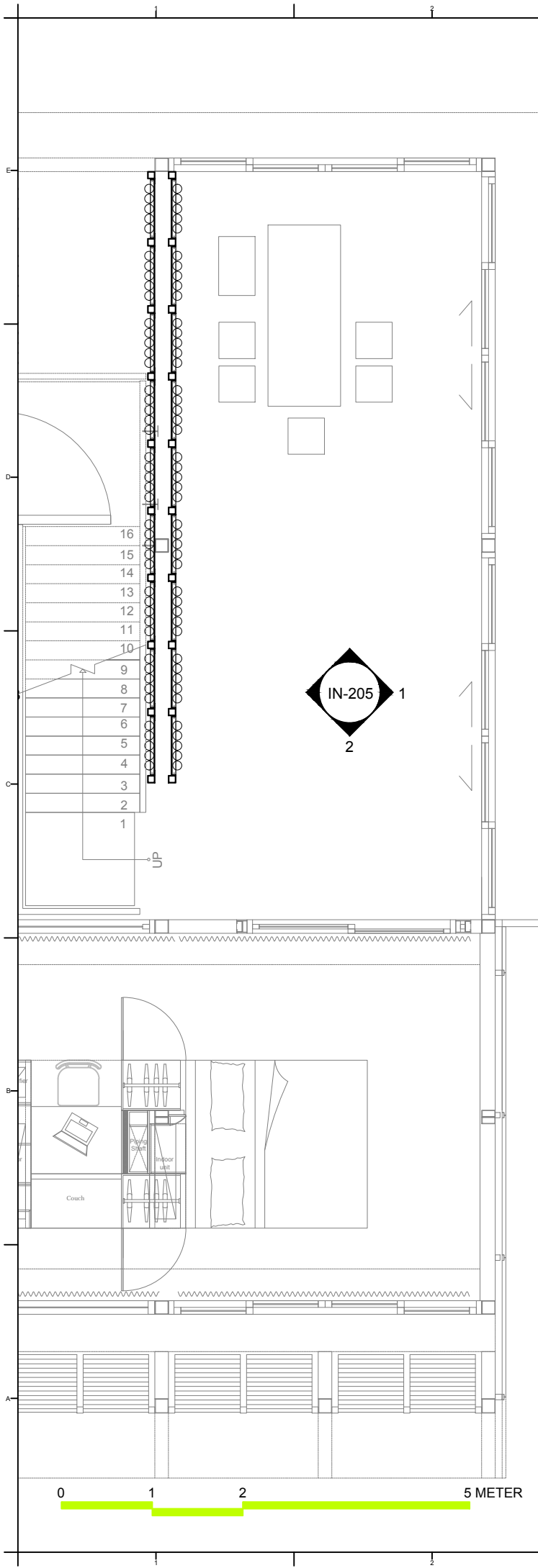
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Unit	mm

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INTERIOR ELEVATIONS 3	
DWG. No.	PAGE
IN-204	113



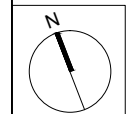
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

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**DWG. Title**  
INTERIOR ELEVATIONS 5

**DWG. No.** IN-205 **PAGE** 114

Project:



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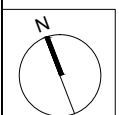
Address: 1001 Ta-Hsueh Road  
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Note:



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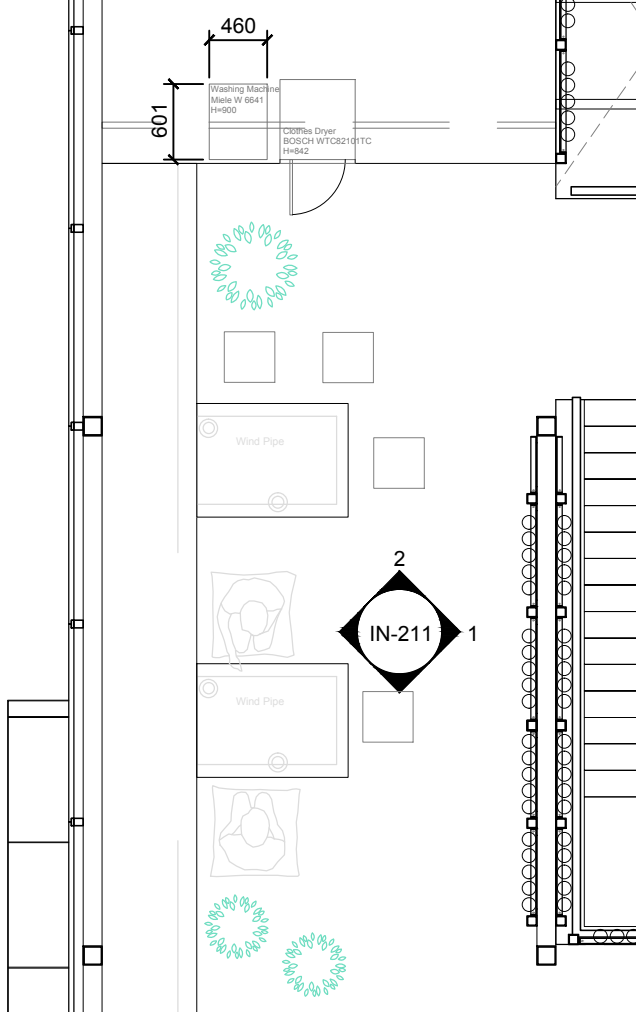
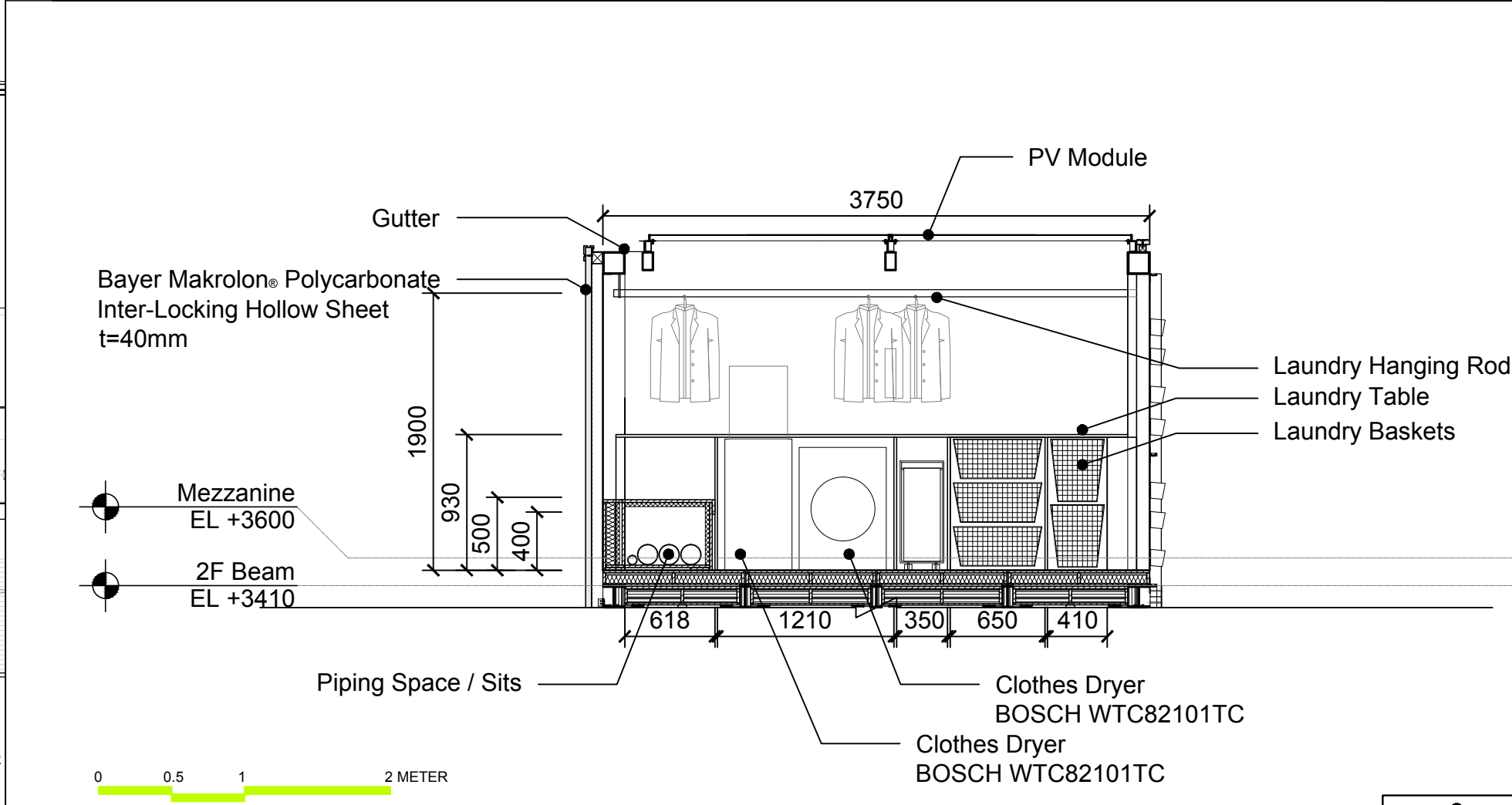
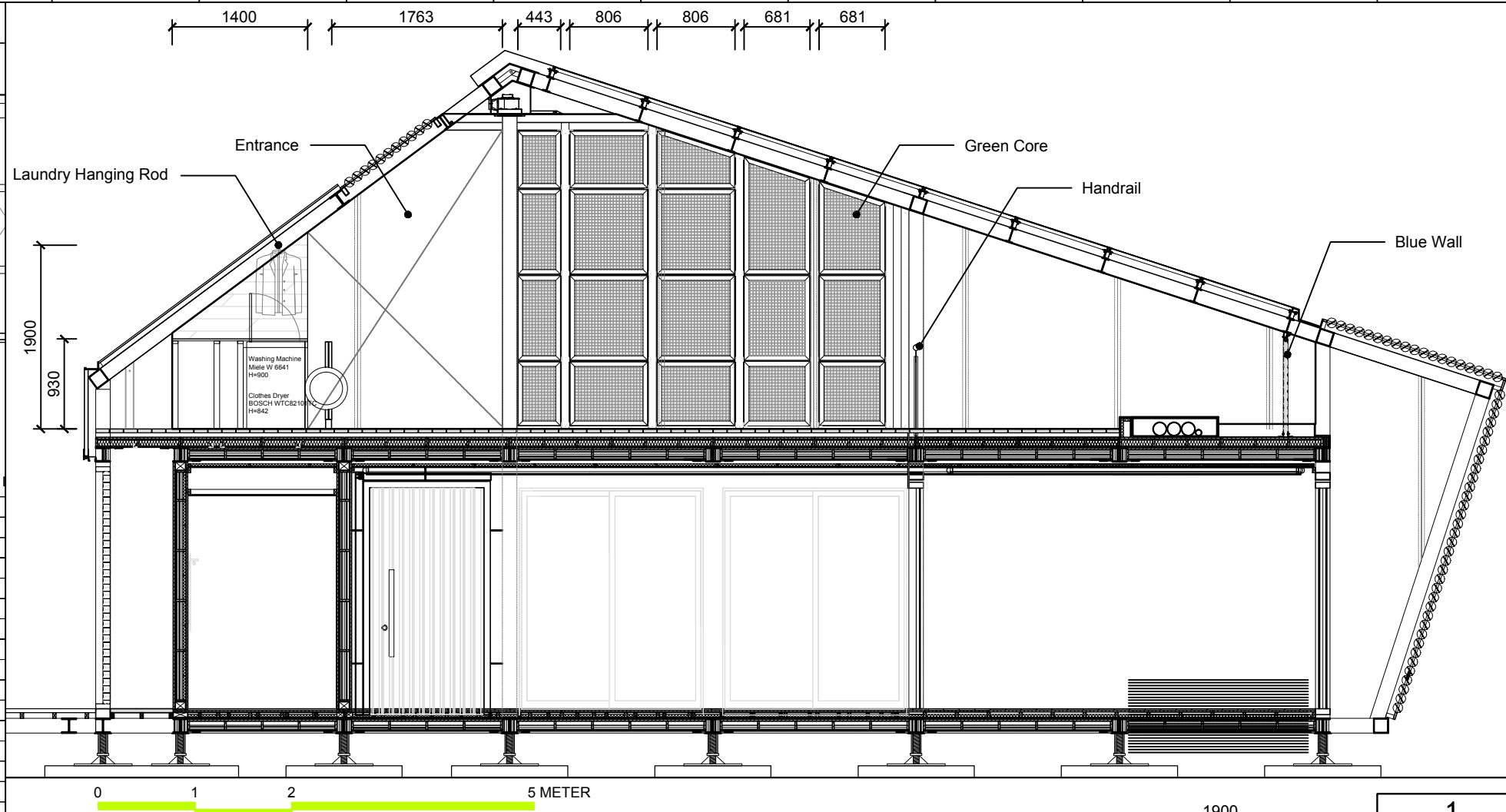
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INTERIOR ELEVATIONS 6

DWG. No. IN-211

PAGE

115



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Institution:



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Taiwan

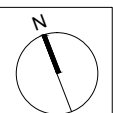
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Unit

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DWG. Title

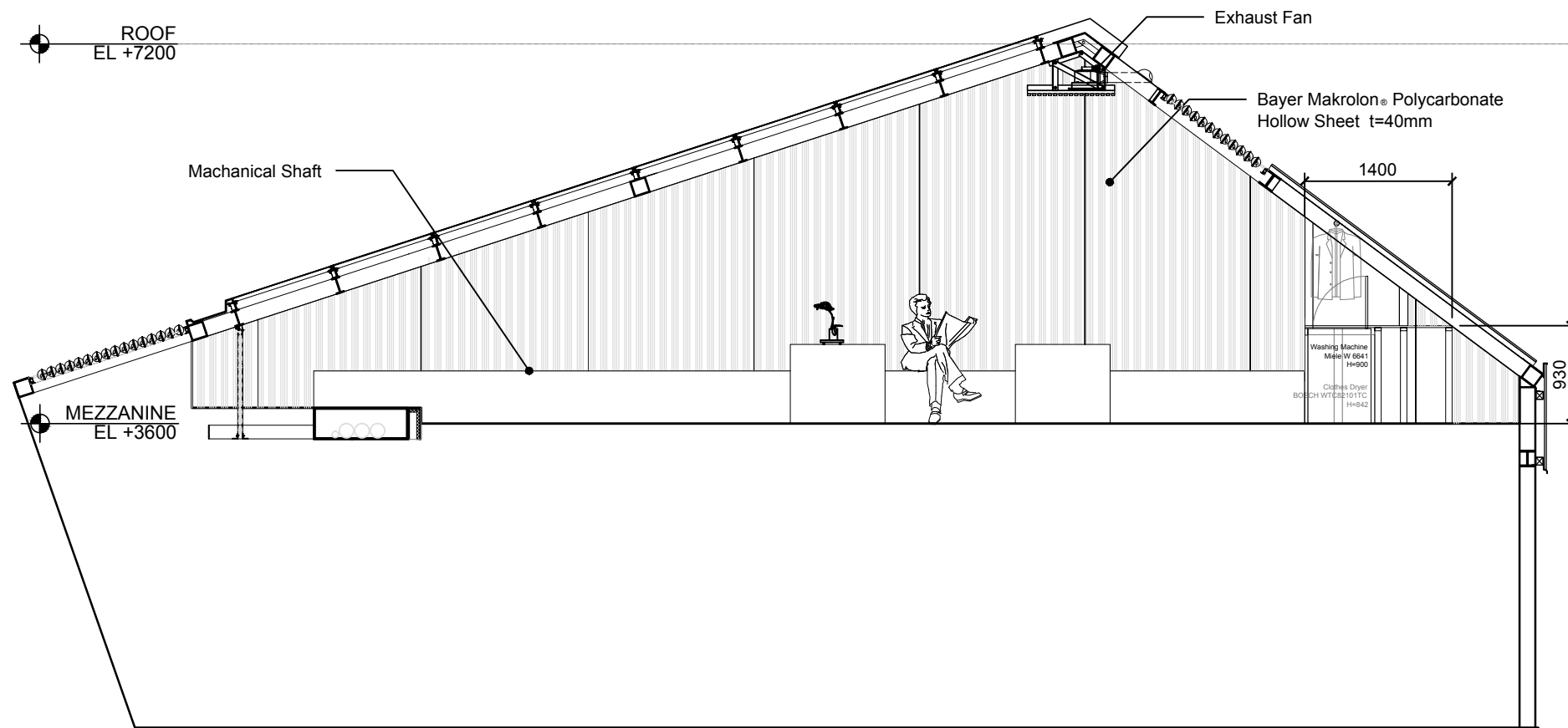
INTERIOR ELEVATIONS 7

DWG. No.

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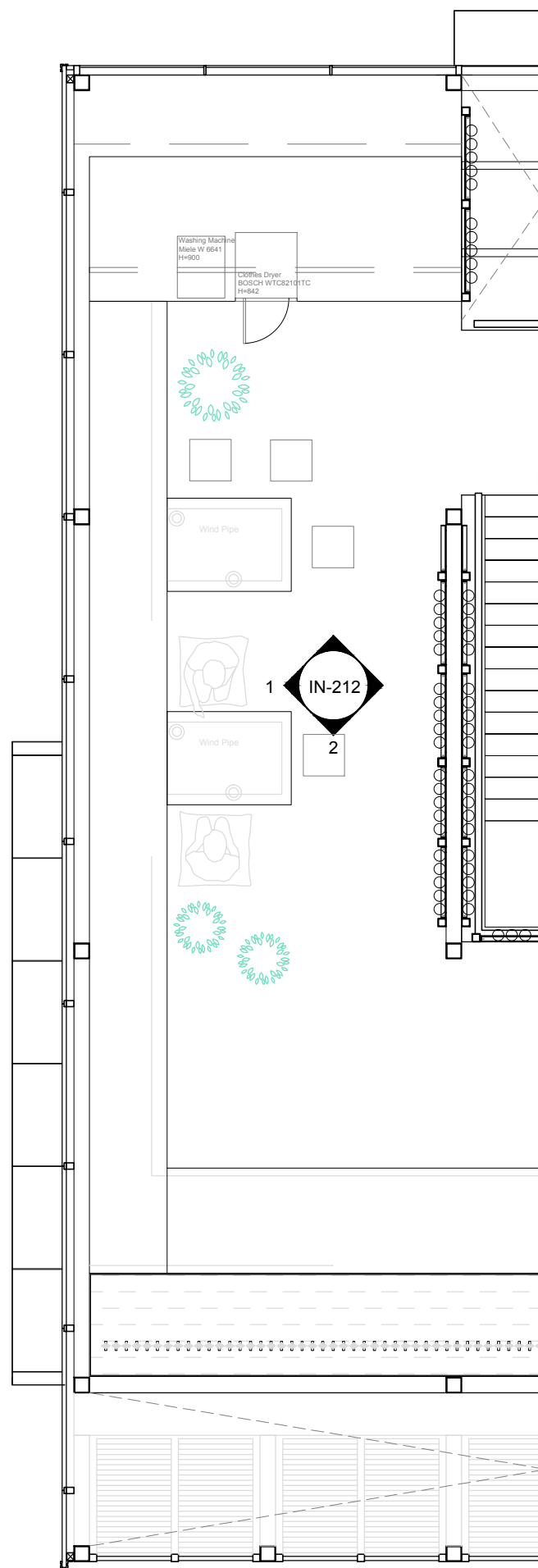
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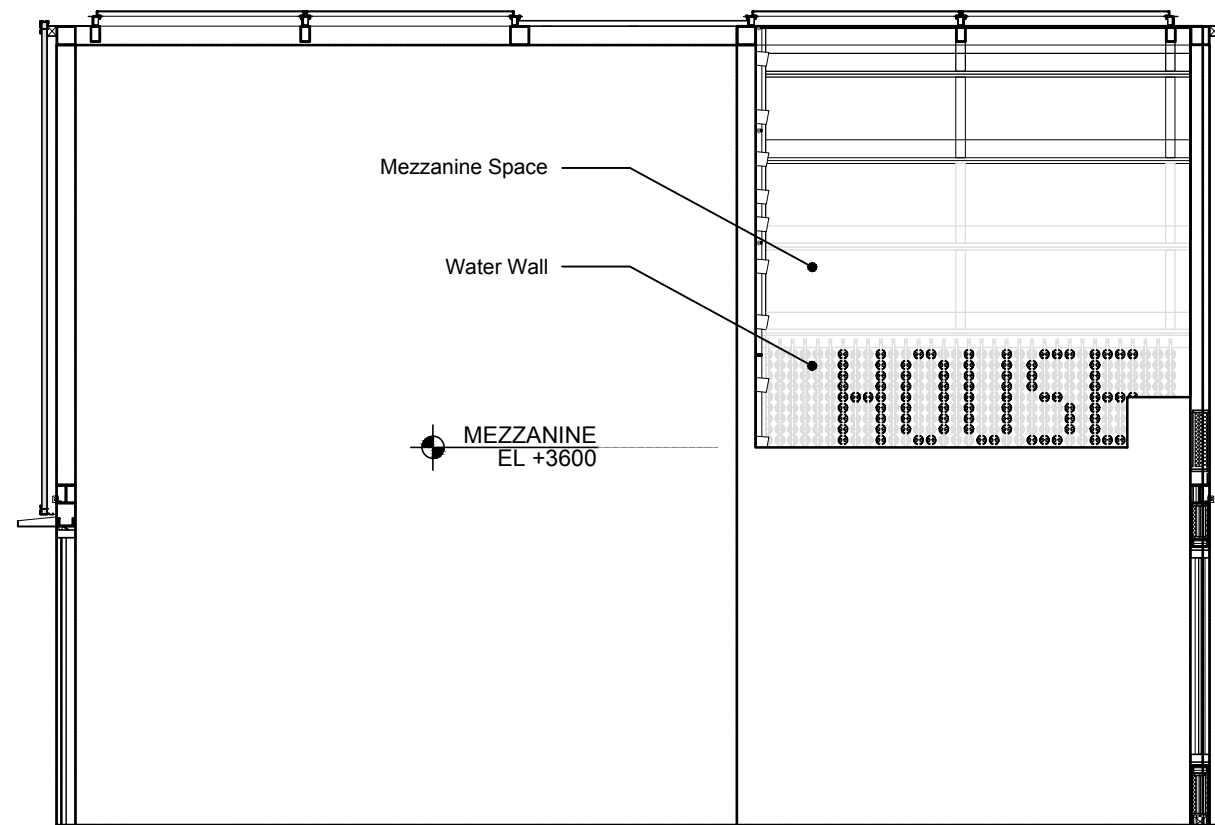


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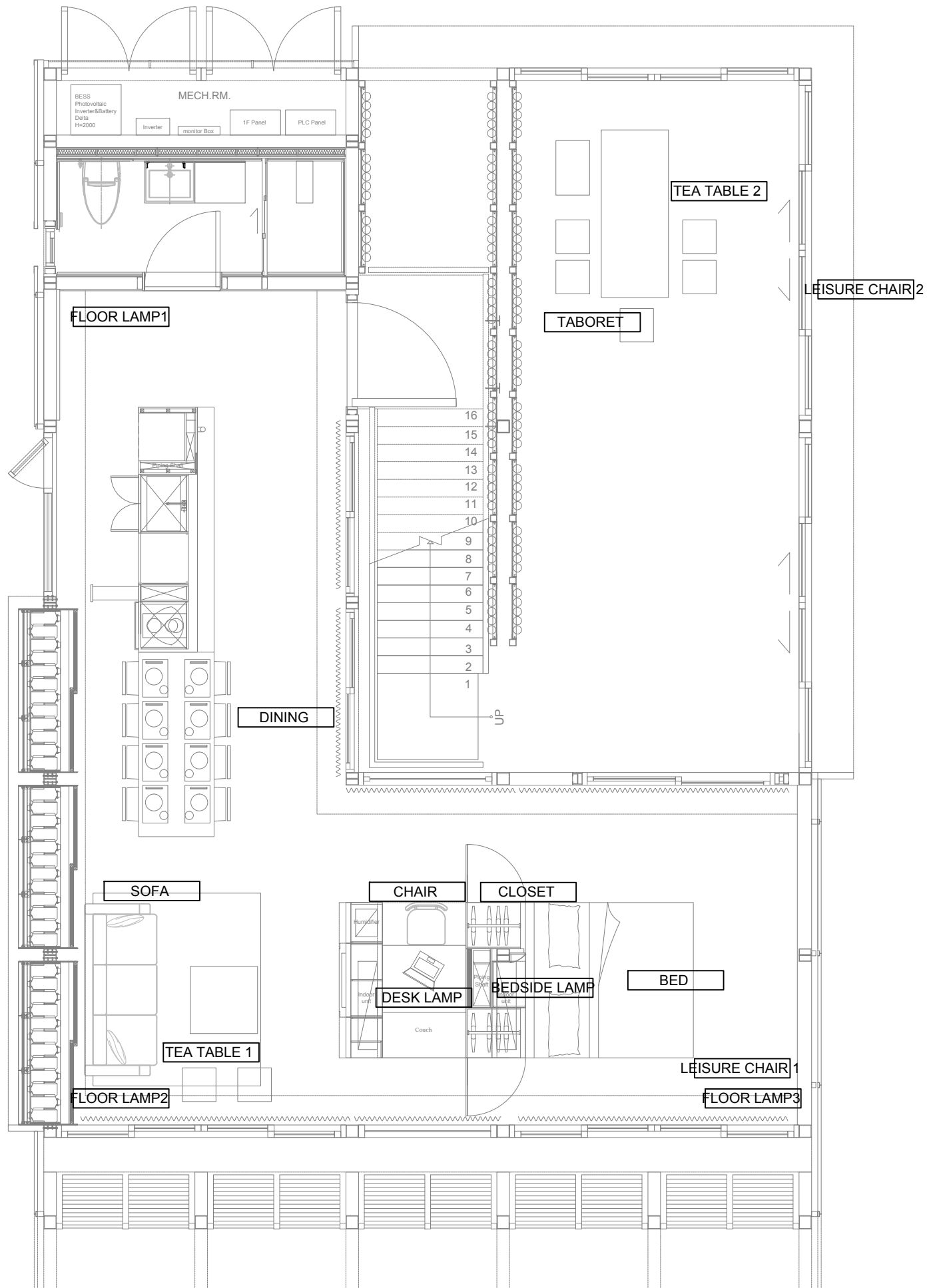


0 1 2 5 METER



3600 0 1 2 5 METER

2



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SOFA		1900*860*700 seat height:
TEA TABLE 1		
BED		1520*1880*210
WORK CHAIR		
TEA TABLE 2		
TABORET		400*400*400
LEISURE CHAIR 1		
LEISURE CHAIR 2		
UMBRELLA BUCKET		
CLOSET	SEE DWG.IN-701	
FLOOR LAMP 1		360*360*1400
FLOOR LAMP 2		360*360*1400
FLOOR LAMP 3		260*250*1450
DESK LAMP		400*160*540
BEDSIDE LAMP		250*250*525



Project:



Institution:



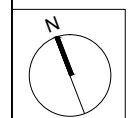
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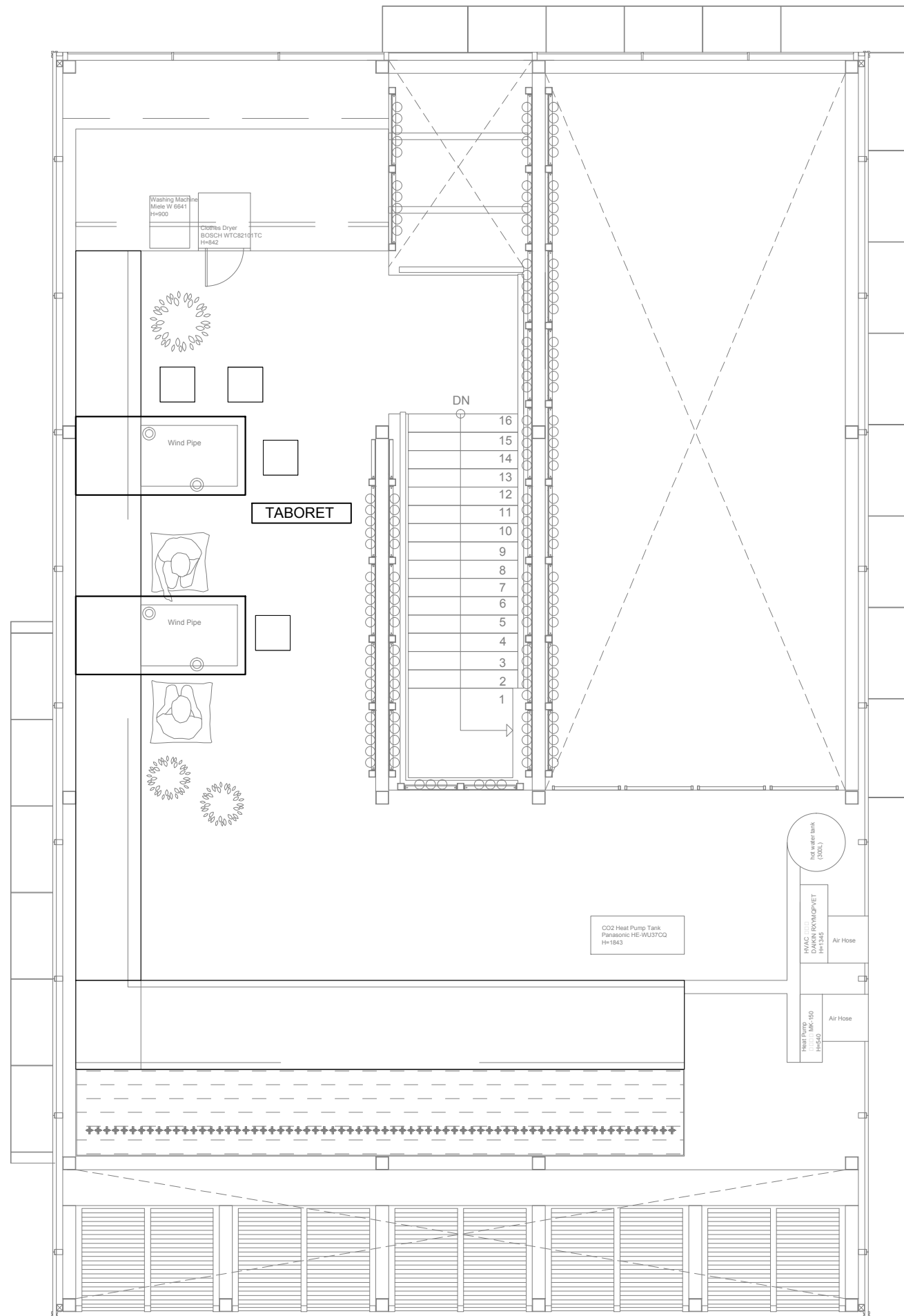


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Scale	1:60
Unit	mm

DWG. Title  
**GROUND FLOOR FURNISHINGS**

DWG. No.	PAGE
<b>IN-301</b>	<b>117</b>



FURNITURE LIST

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Project:



Institution:



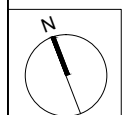
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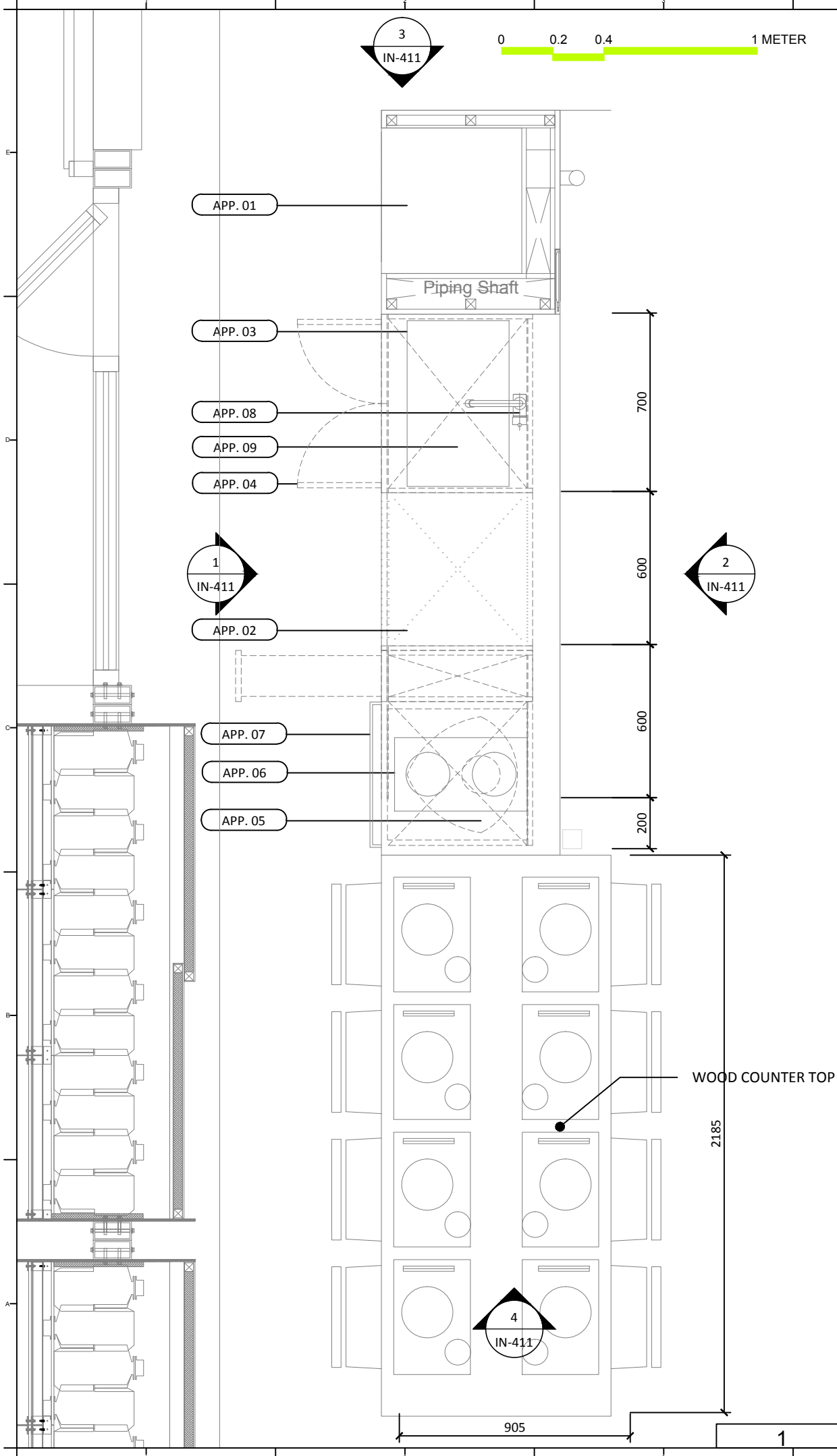
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DWG. Title  
**MEZZANINE FLOOR  
FURNISHINGS**

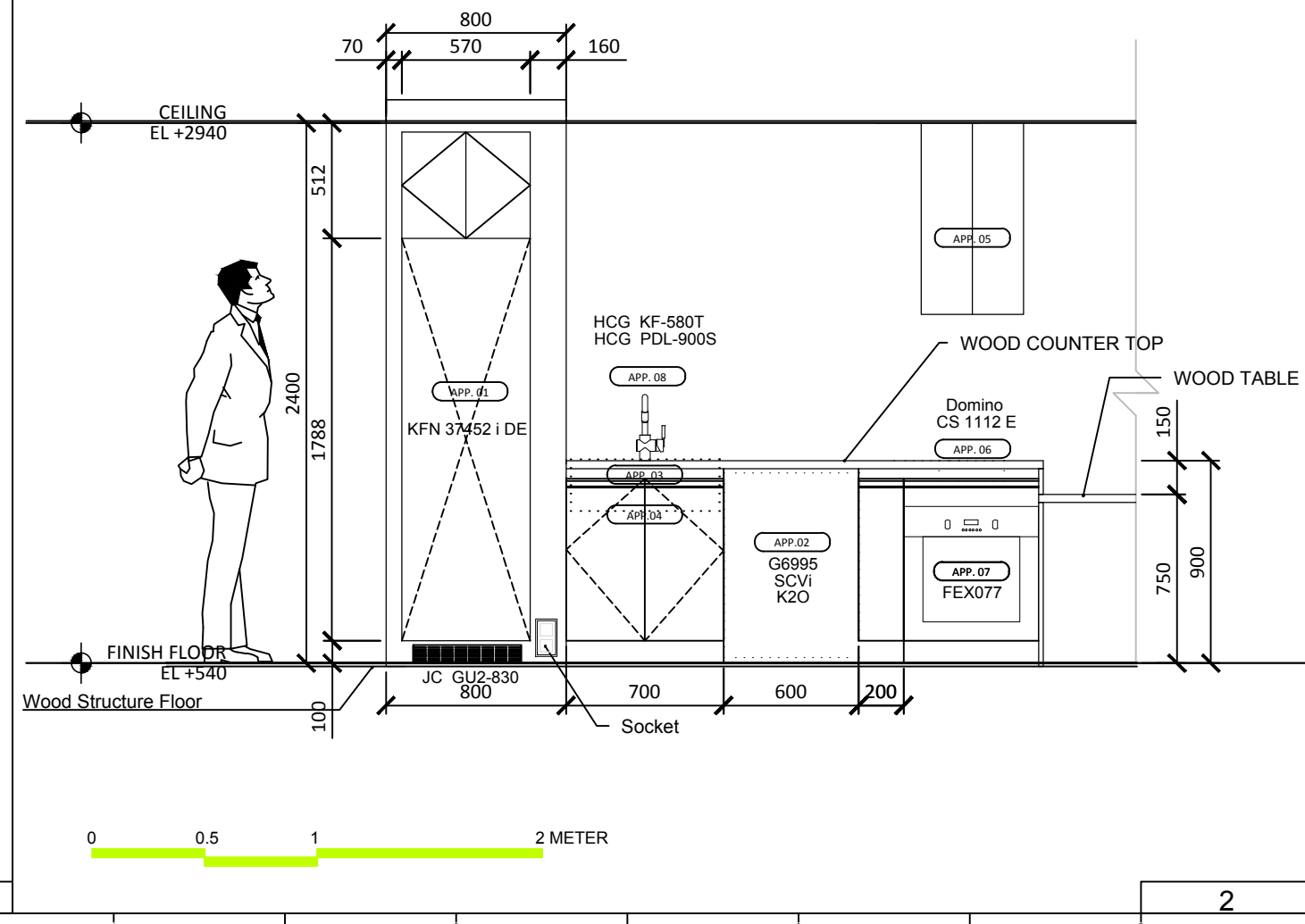
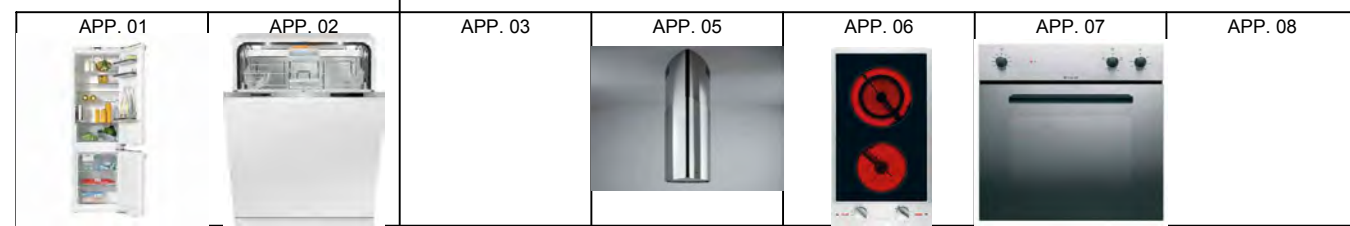
DWG. No.	PAGE
<b>IN-302</b>	<b>118</b>

0 1 2 5 METER



APPLIANCE LIST

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APP. 01	REFRIGERATOR	MIELE	KFN 37452 i DE	KITCHEN	560x550x1772	
APP. 02	DISH WASHER	MIELE	G6995 SCVi K2O	KITCHEN	598*570*845-910	
APP. 03	SINK	HCG	BKJ650	KITCHEN	650x400x190	
APP. 04	CABINET	HCG		KITCHEN	3210x900	
APP. 05	HOOD	BEST	GLOSS	KITCHEN	455x435x830-1180	
APP. 06	INDUCTION TOP	MIELE	Domino CS 1112 E	KITCHEN	272x500	
APP. 07	OVEN	MIELE	H2161 B CLST	KITCHEN	600x600x500	
APP. 08	FAUCET	HCG	KT580T	KITCHEN	25x215x295	
APP. 09	DRAIN	HCG		KITCHEN		



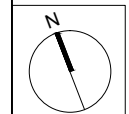
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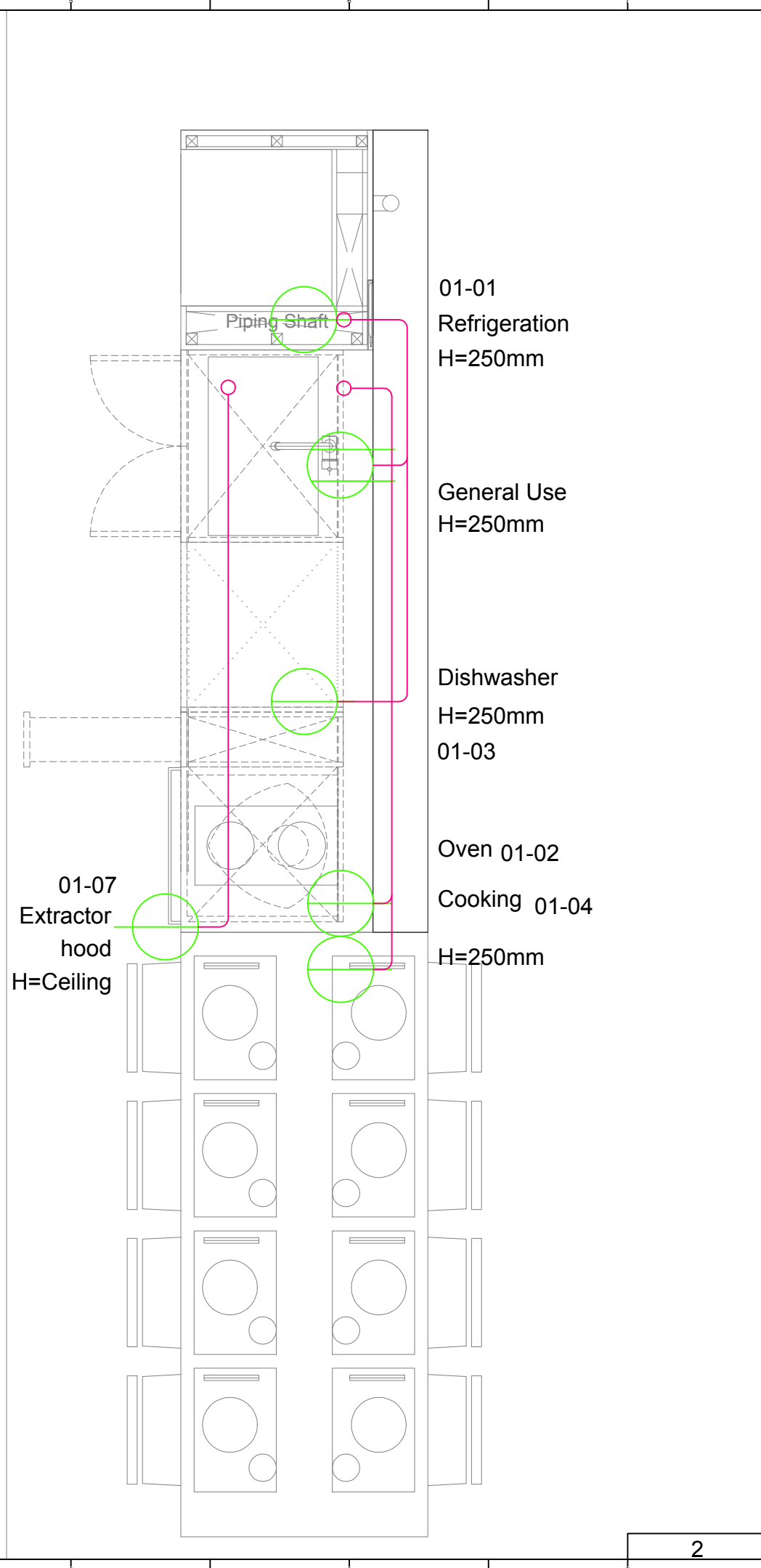
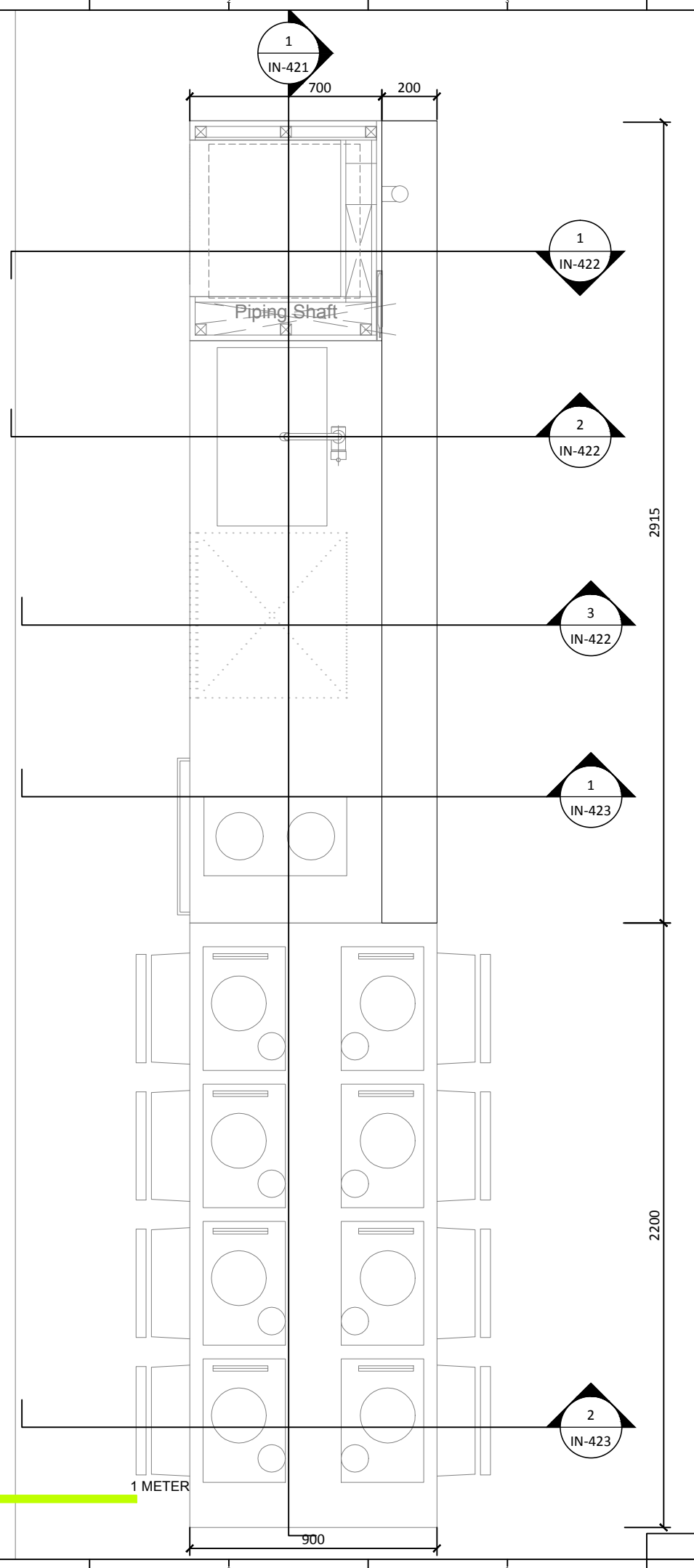
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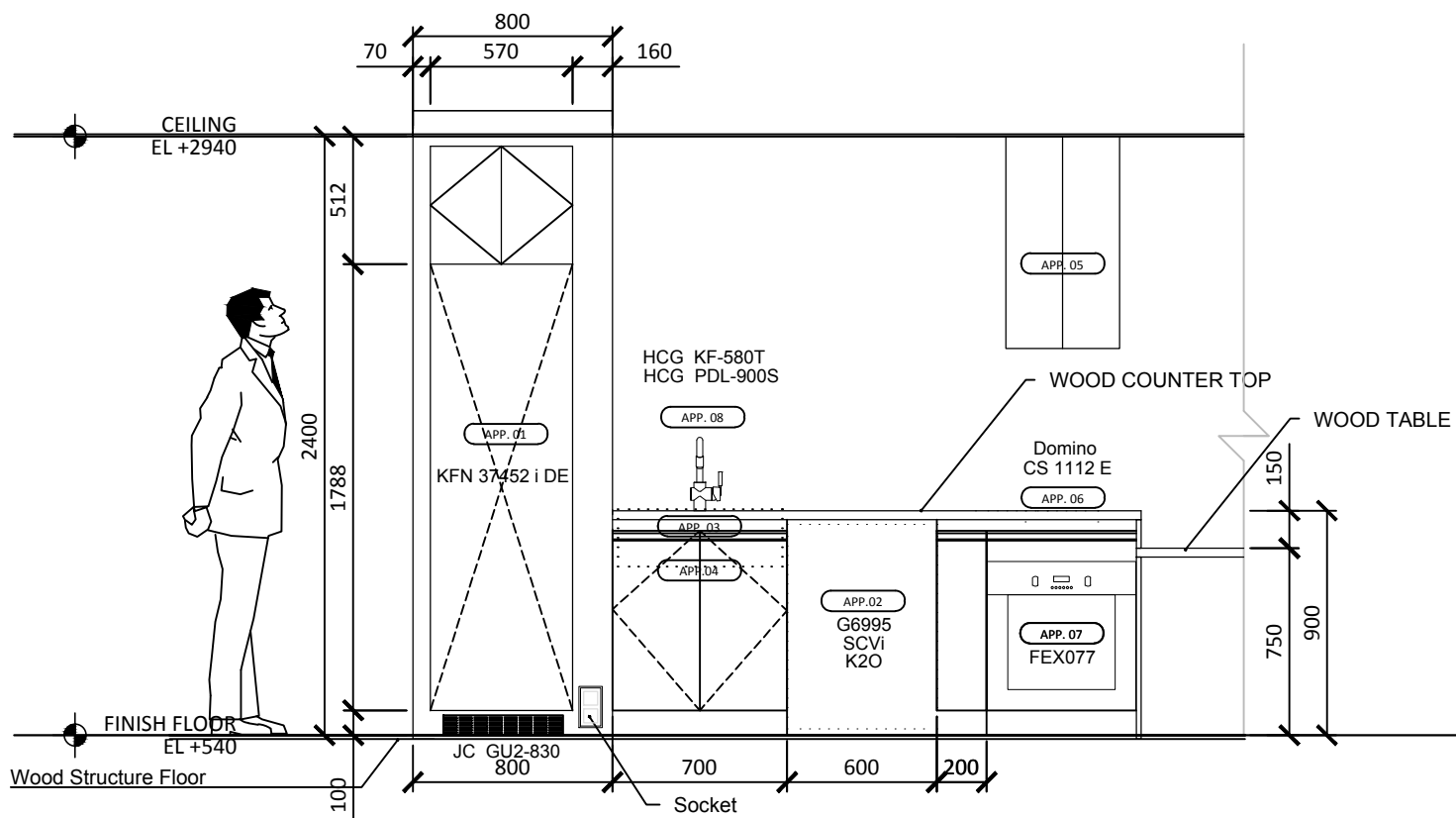
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KITCHEN PLAN 1  
DWG. No. IN-401  
PAGE 119



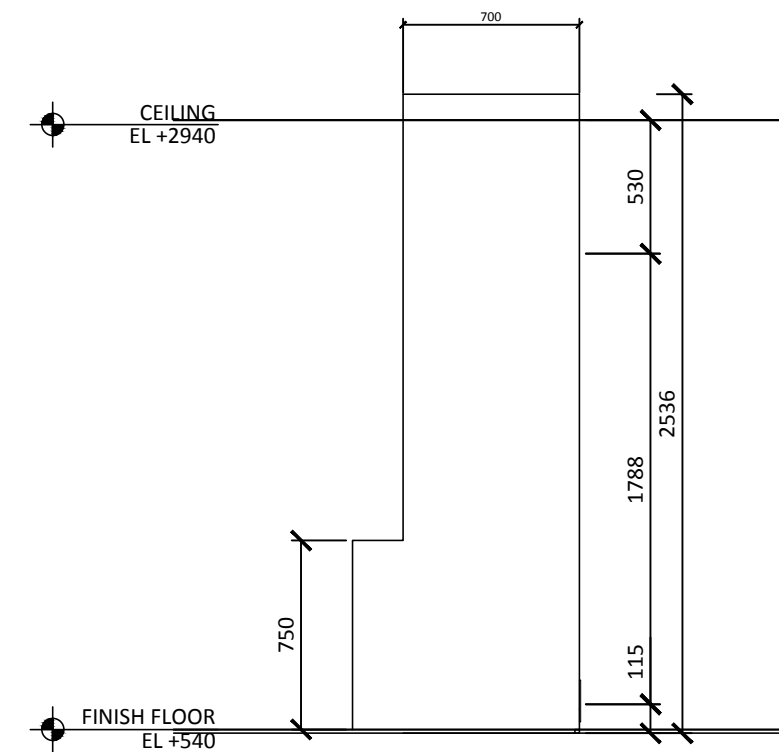
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ST	2014/04/30	CD Submission
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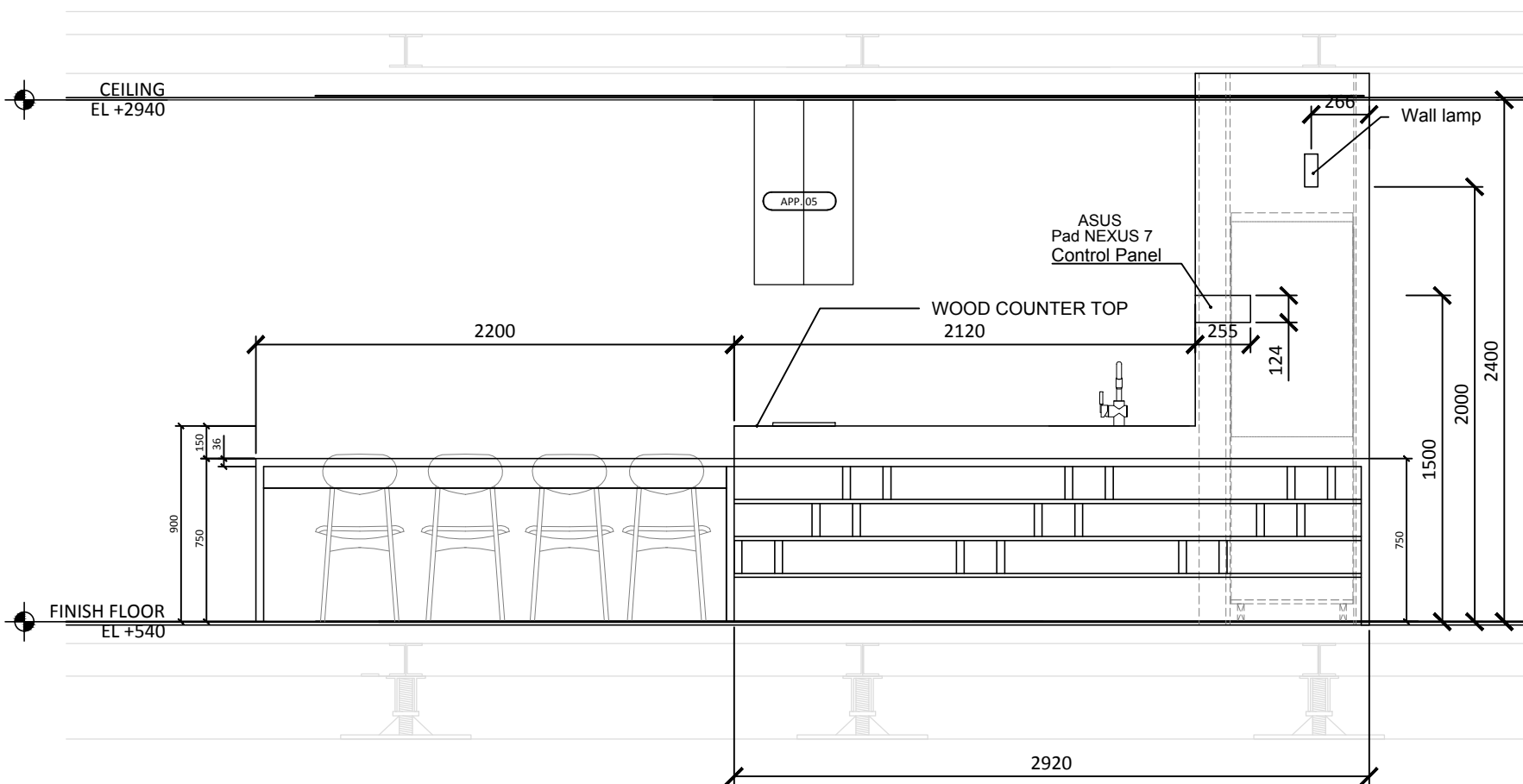




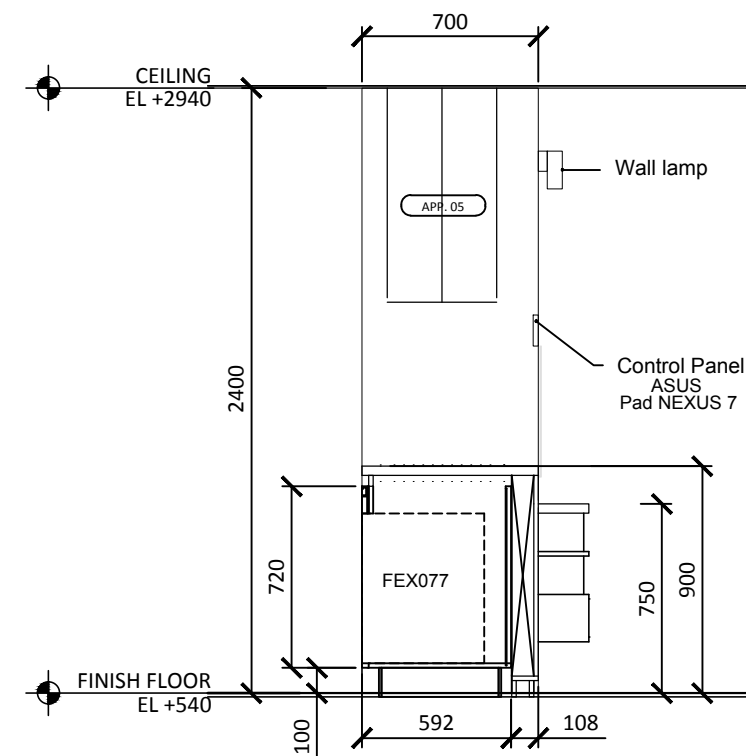
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Checked by -

Scale 1:30

Unit mm

DWG. Title

KITCHEN ELEVATIONS

DWG. No. IN-411

PAGE

121

121



Project:



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Contact: www.sde.tw



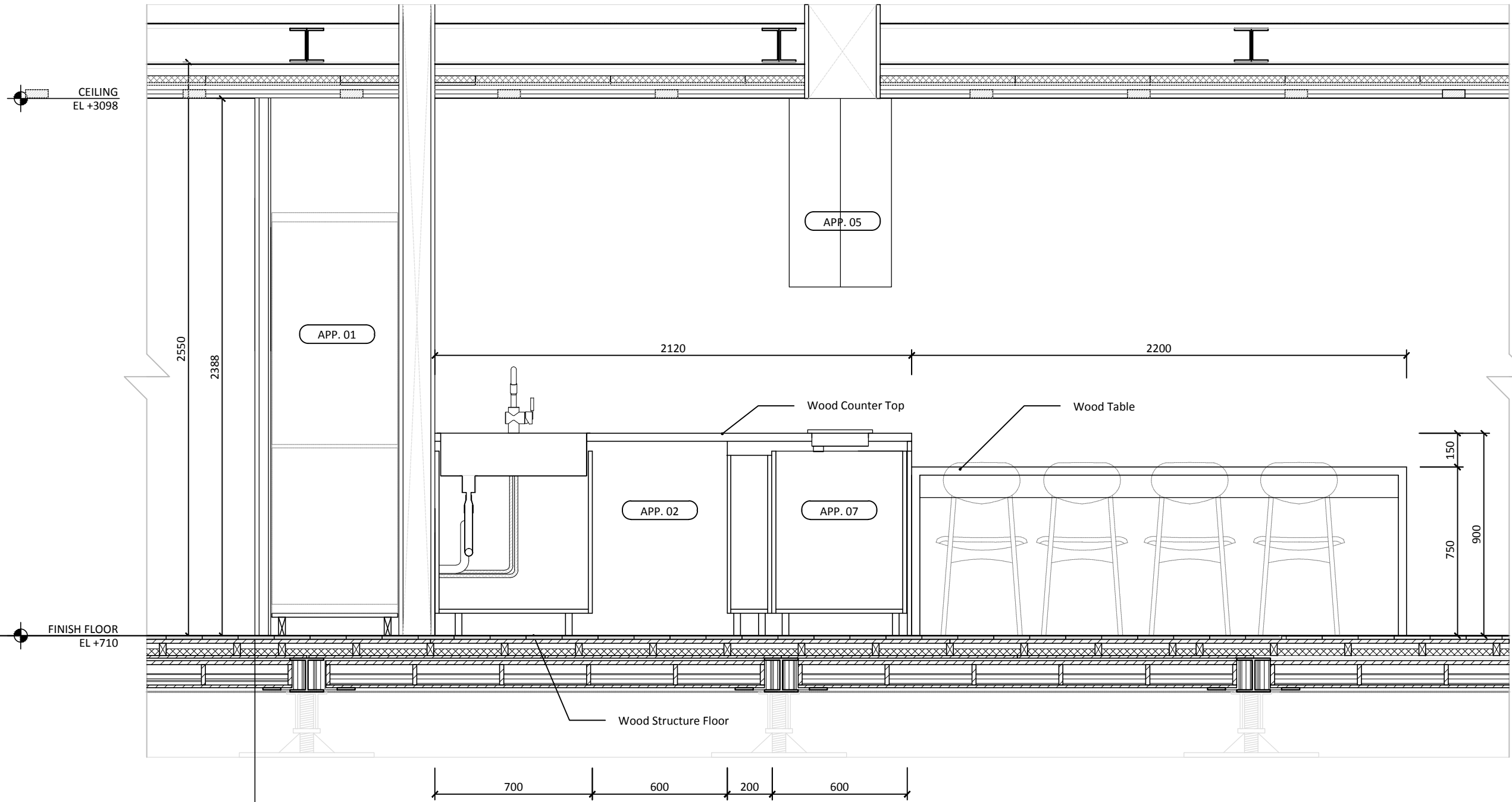
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ST	2014/11/03	AB Submission

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Unit: mm

DWG. Title: **KITCHEN SECTION 1**  
DWG. No.: **IN-421** PAGE: **122**

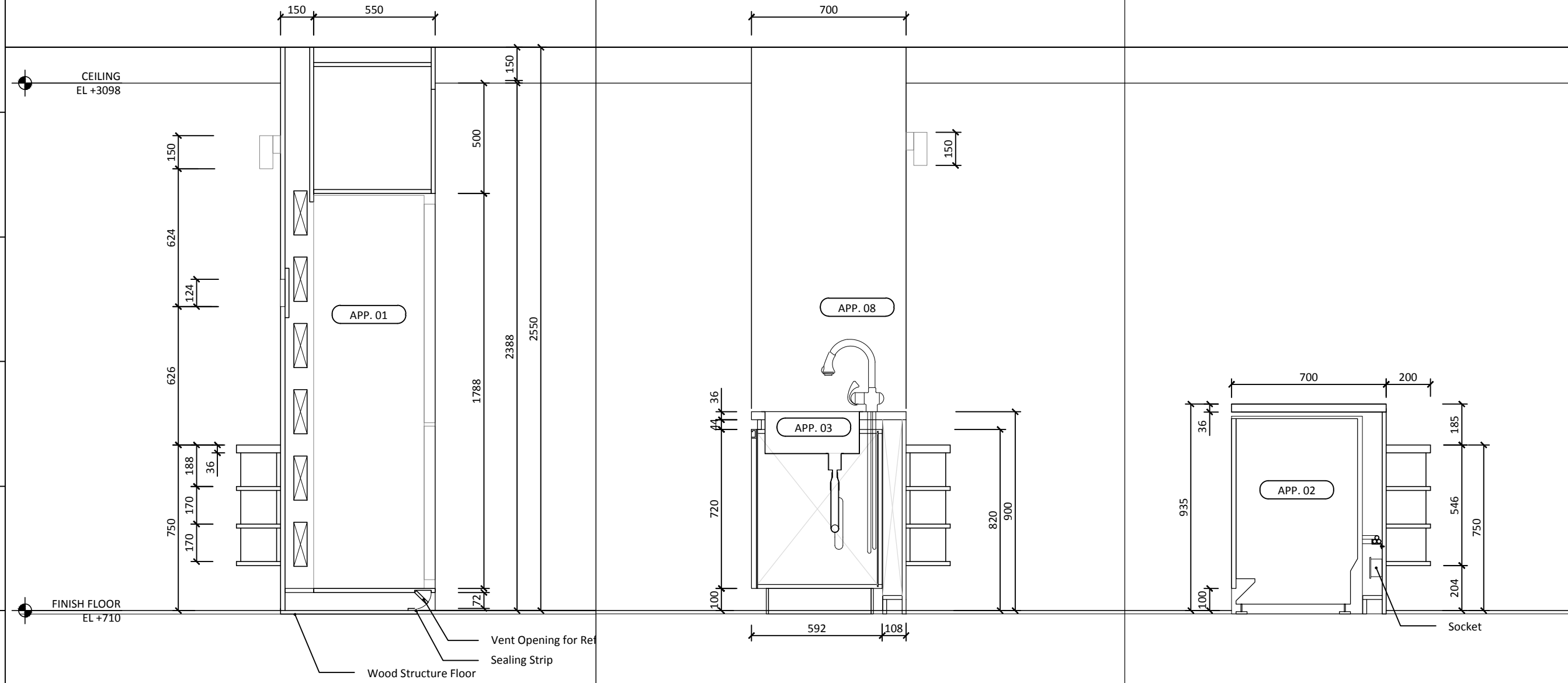




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ST	2014/11/03	AB Submission

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Unit	mm

DWG. Title	
KITCHEN SECTION 2	
DWG. No.	PAGE
IN-422	123



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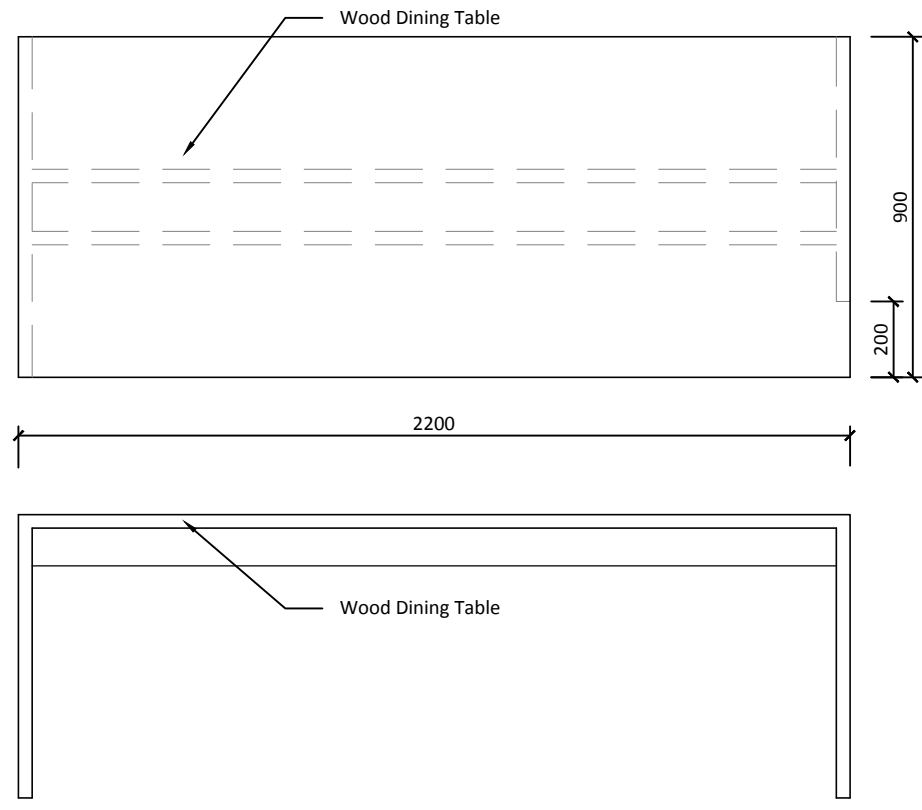
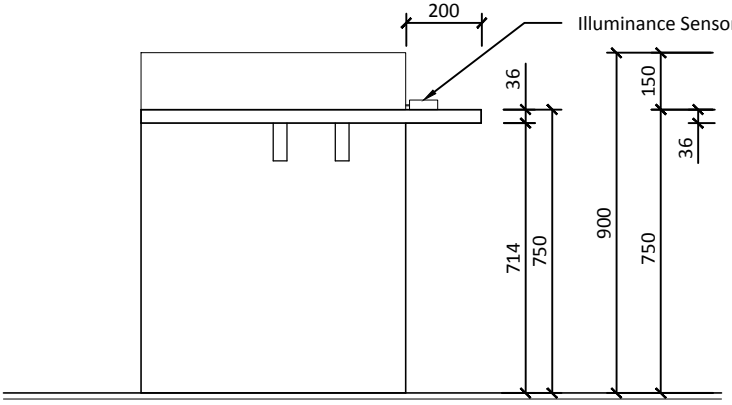
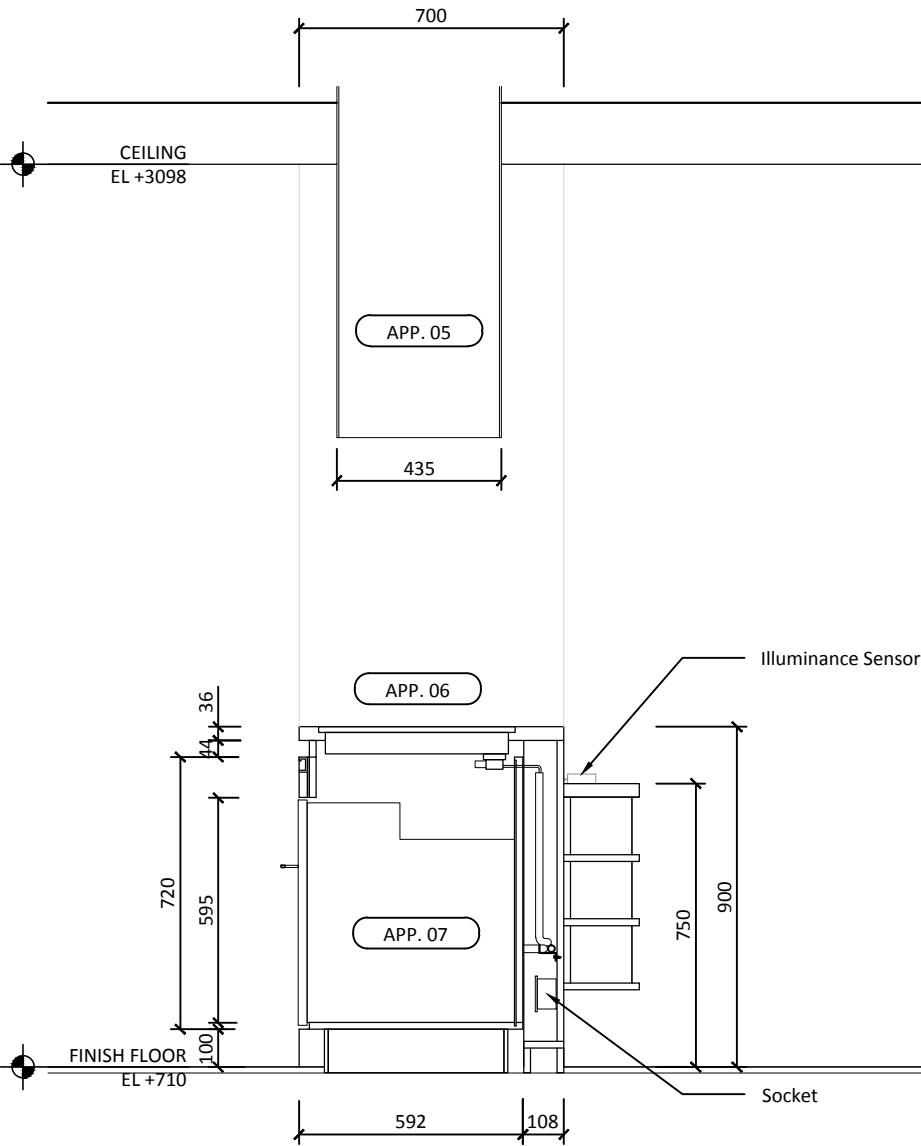


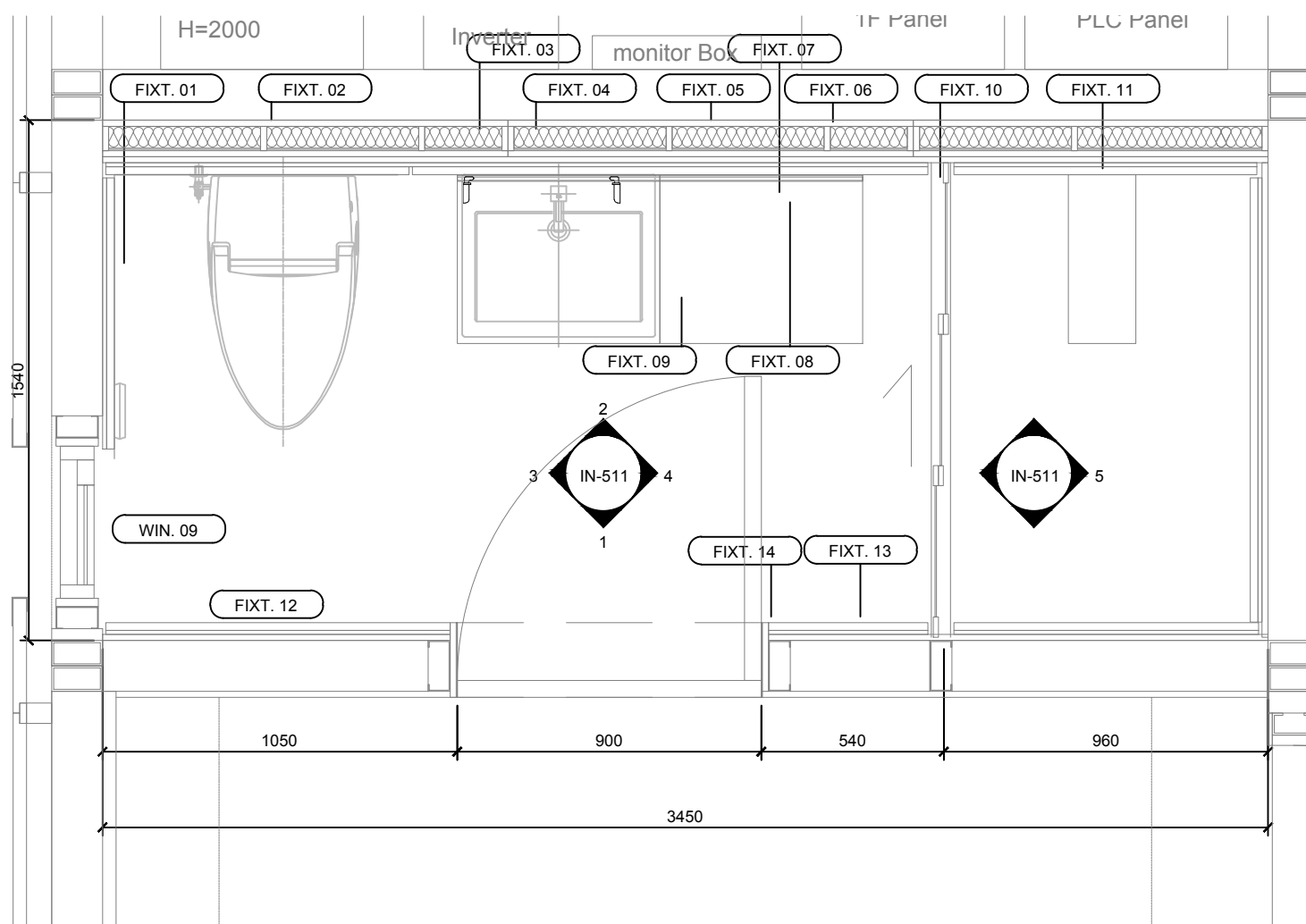
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ST	2014/11/03	AB Submission

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Checked by	ST
Scale	1:20
Unit	mm

DWG. Title  
**KITCHEN SECTION 3**

DWG. No.	PAGE
<b>IN-423</b>	<b>124</b>





**FIXED FURNITURE LIST**

FIXT. No	TYPE	BRAND	LOCATION	SIZE (W*D*H)	TYPE
FIXT. 01	TOILET PAPER HOLDER	HCG	BATHROOM	170x10x135	BA208
FIXT. 02	INTELLIGENT TOLIET	HCG	BATHROOM	800x460x625	C3016
FIXT. 03	CABINET	HCG	BATHROOM	1500x500x700	LCP400-4115NP
FIXT. 04	MIRROR	HCG	BATHROOM	1200x800x80	BA2826
FIXT. 05	TUMBLER HOLDER	HCG	BATHROOM	245x130x105	BA202
FIXT. 06	SOAP DISH	HCG	BATHROOM	300x140x105	BA207
FIXT. 07	TEMPERATURE CONTROL FAUCET	HCG	BATHROOM	235x60x180	LF3167PT(AW)
FIXT. 08	DRAINAGE TAKEOVER	HCG	BATHROOM		LF725L-B1
FIXT. 09	SINK	HCG	BATHROOM	480x570x155	L400SAdb-4115N
FIXT. 10	ACCESSIBLE SHOWER DOOR	HCG	BATHROOM	1541x50x2200	SK2W1619
FIXT. 11	SMART SHOWER COLUM	HCG	BATHROOM	500x190x1400	ST8791
FIXT. 12	SHOWER WALL	HCG	BATHROOM	897x1797x4	STANDARD 4142
FIXT. 13	DOUBLE TOWEL RACK	HCG	BATHROOM	300x110x160	BA203
FIXT. 14	CLOTH HOOK	HCG	BATHROOM	145x110x105	BA206



陶板分割尺寸：

- 1. 897x676 五片
- 2. 897x897 五片
- 3. 1533x676 二片
- 4. 897x835 五片
- 5. 1460x676 一片
- 6. 1460x897 一片
- 7. 1320x835 一片

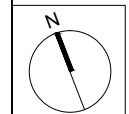


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DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
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ST	2014/11/03	AB Submission

**Drawn by:** TW  
**Checked by:** -  
**Scale:** 1:20  
**Unit:** mm

**DWG. Title:**  
 BATHROOM PLAN  
**DWG. No.:** IN-501 **PAGE:** 125



Project:



Institution:



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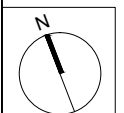
Contact:

www.sde.tw



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Note:



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Drawn by

TW

Checked by

BT

Scale

1:30

Unit

mm

DWG. Title

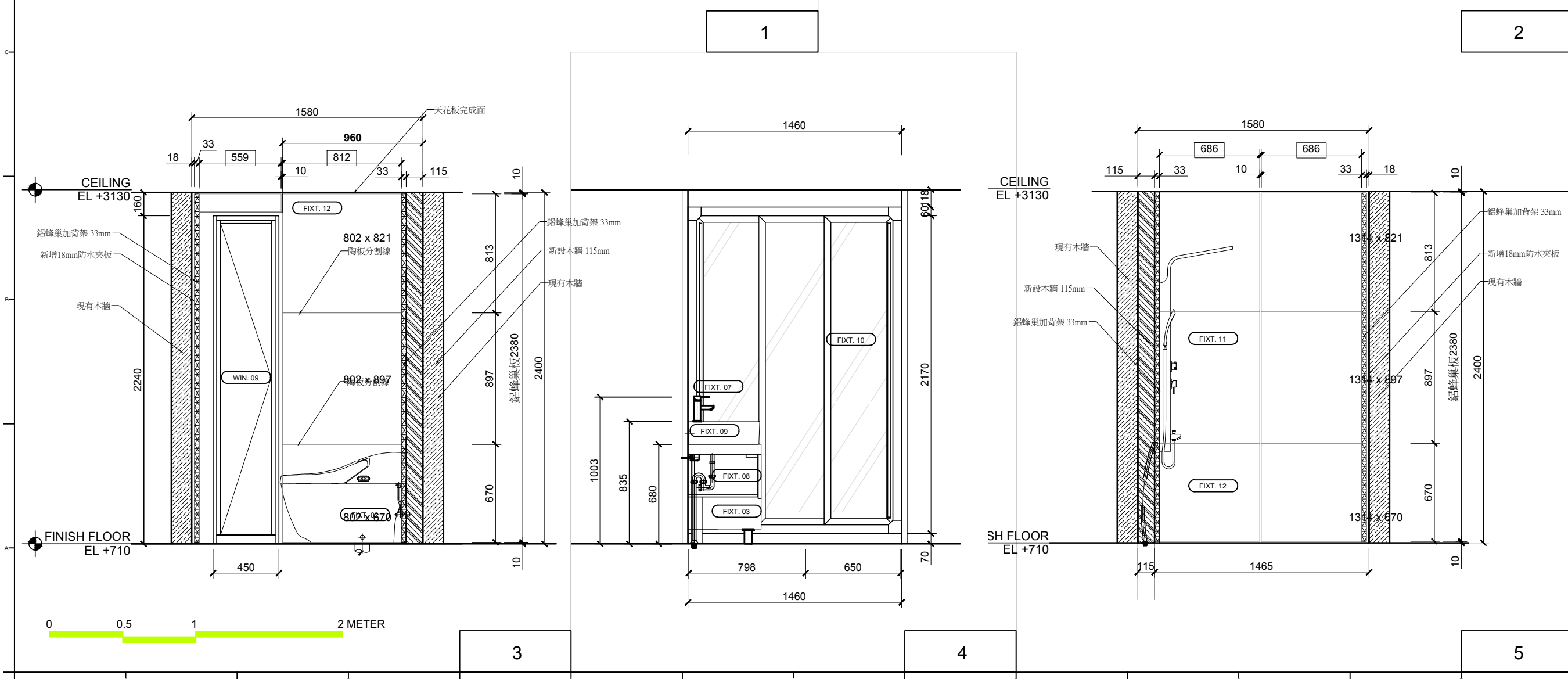
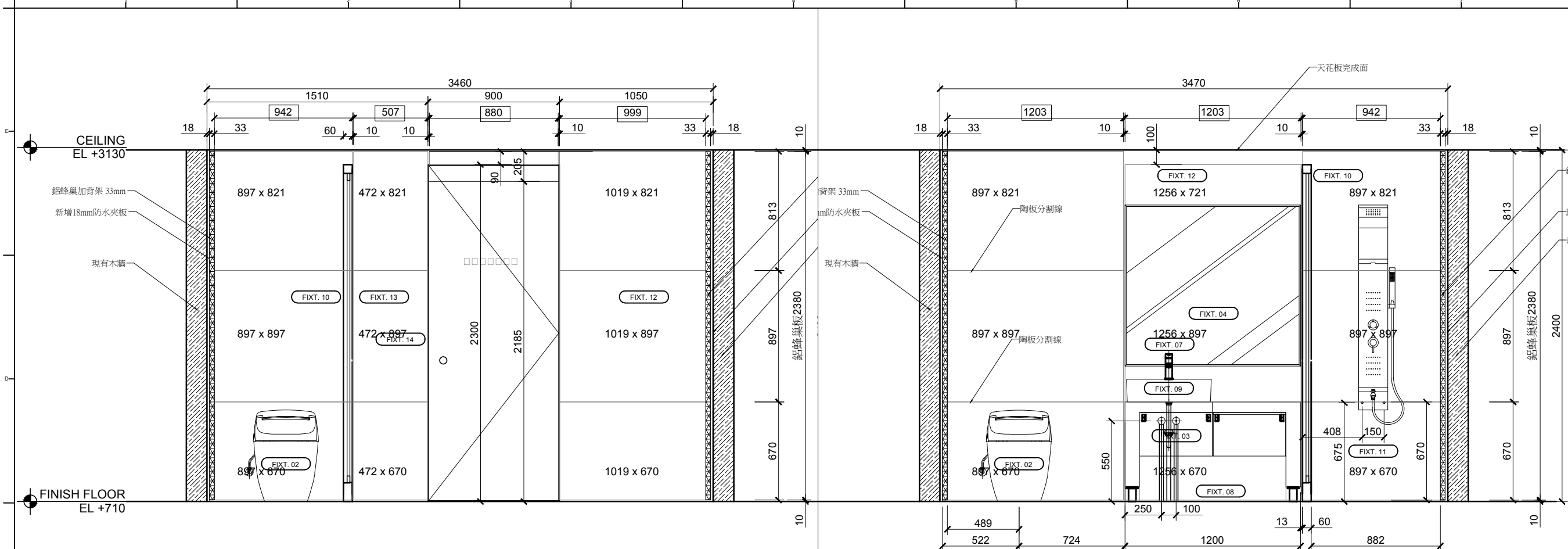
**BATHROOM ELEVATIONS**

DWG. No.

**IN-511**

PAGE

**126**



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Note:

Mark	Date	Description
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by TW

Checked by DN

Scale -

Unit -

DWG. Title  
**INTERIOR RENDERING  
ENTRANCE**

DWG. No. PAGE

**IN-601**

**127**



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Mark	Date	Description
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ST	2013/11/01	DD Submission
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Drawn by TW

Checked by DN

Scale -

Unit -

DWG. Title  
INTERIOR RENDERING  
LIVING ROOM

DWG. No. PAGE

IN-602

128





Project:



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Note:

Mark	Date	Description
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ST	2014/11/03	AB Submission

Drawn by TW

Checked by DN

Scale -

Unit -

DWG. Title  
**INTERIOR RENDERING  
2ND FLOOR**

DWG. No. PAGE

**IN-603**

**129**



Project:



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Drawn by TW

Checked by DN

Scale -

Unit -

DWG. Title  
INTERIOR RENDERING  
VIEW FROM TERRACE

DWG. No. PAGE

IN-604

130



Project:



Institution:

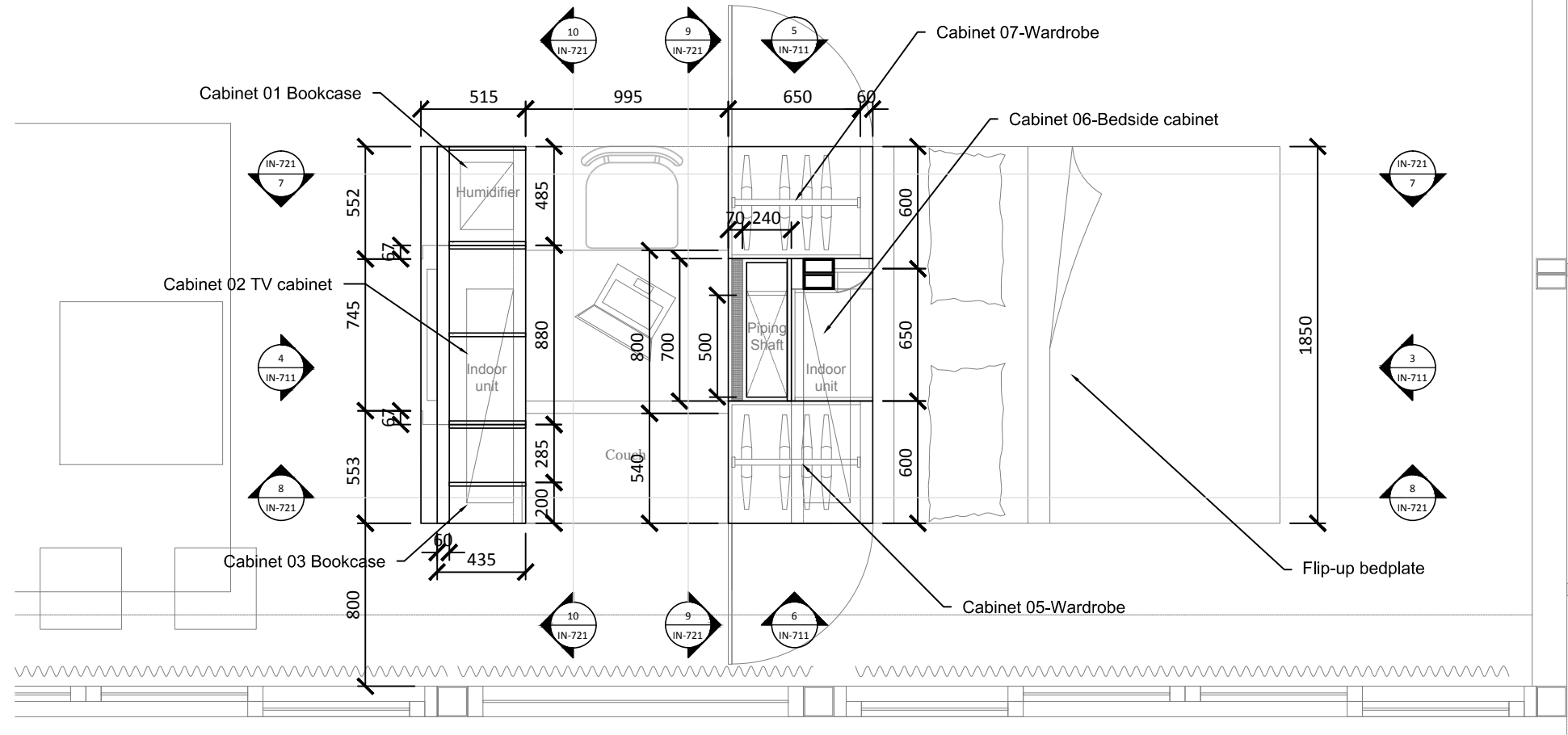


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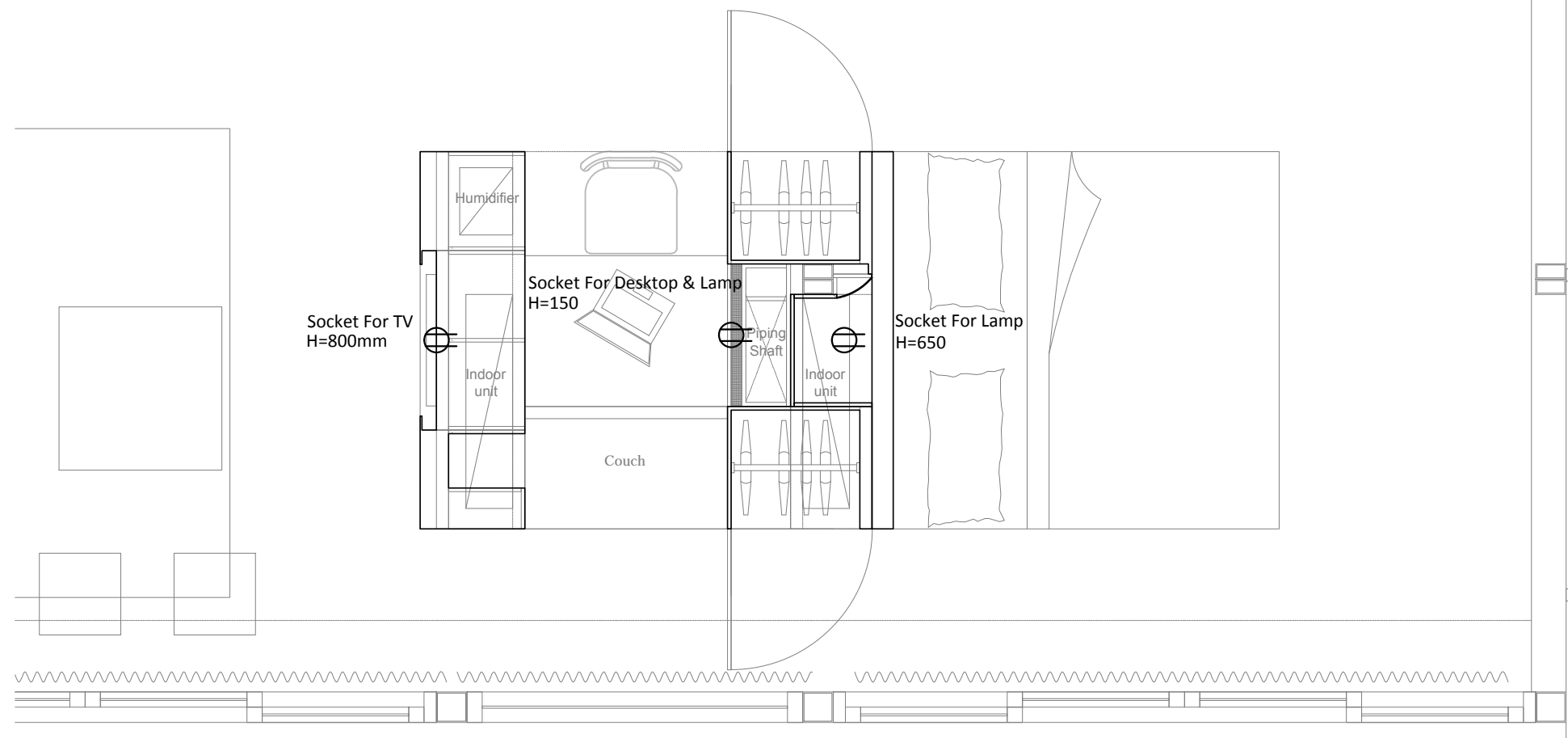
Team Name: NCTU/UNICODE  
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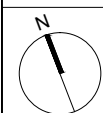
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Drawn by	JL
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Unit	mm

DWG. Title  
**WORKSTATION PLAN**

DWG. No. **IN-701** PAGE **131**

2

Project:



Institution:



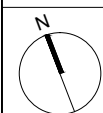
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Taiwan  
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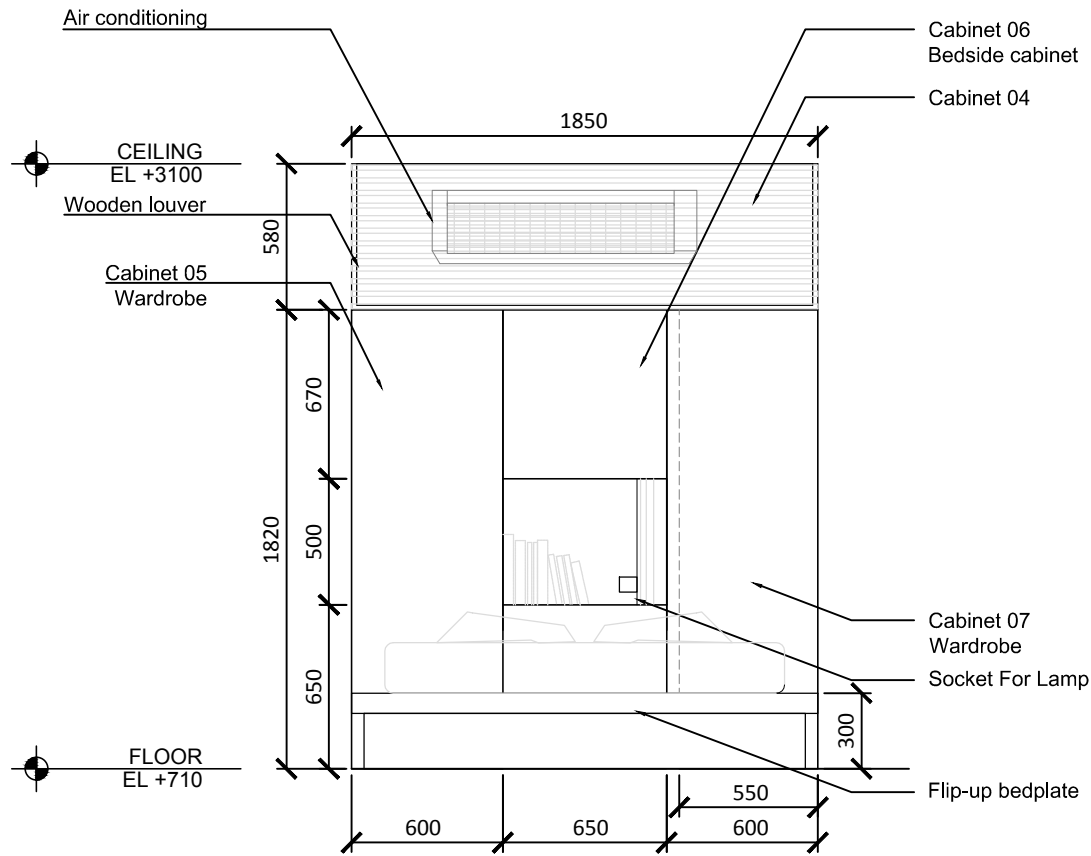
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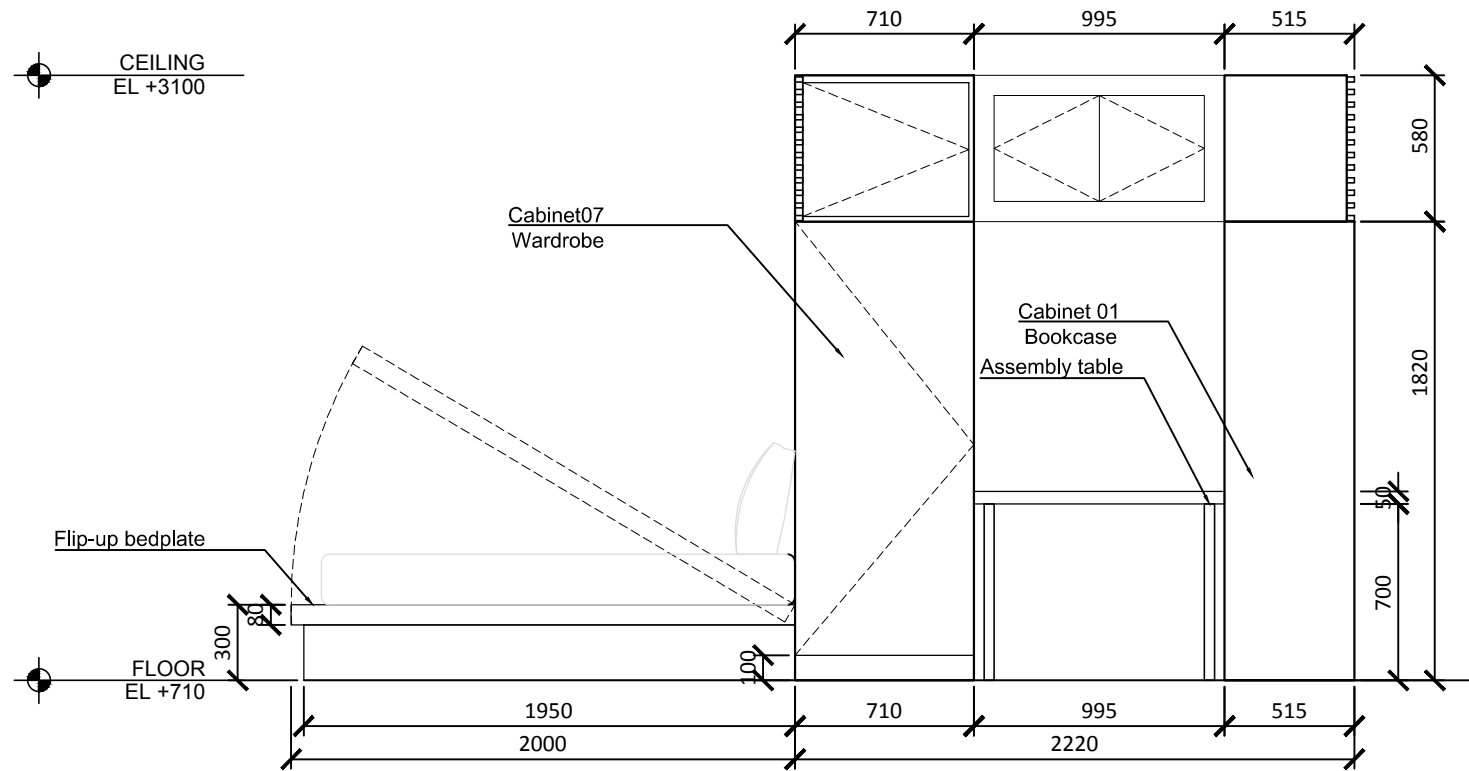
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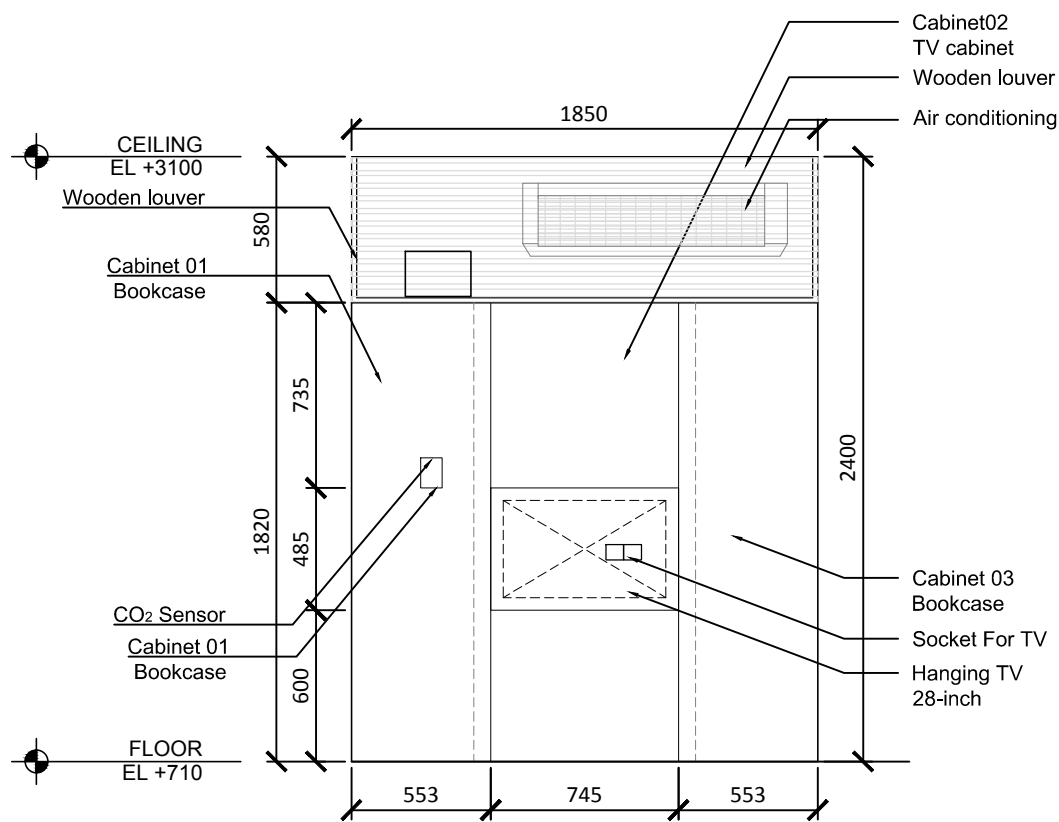
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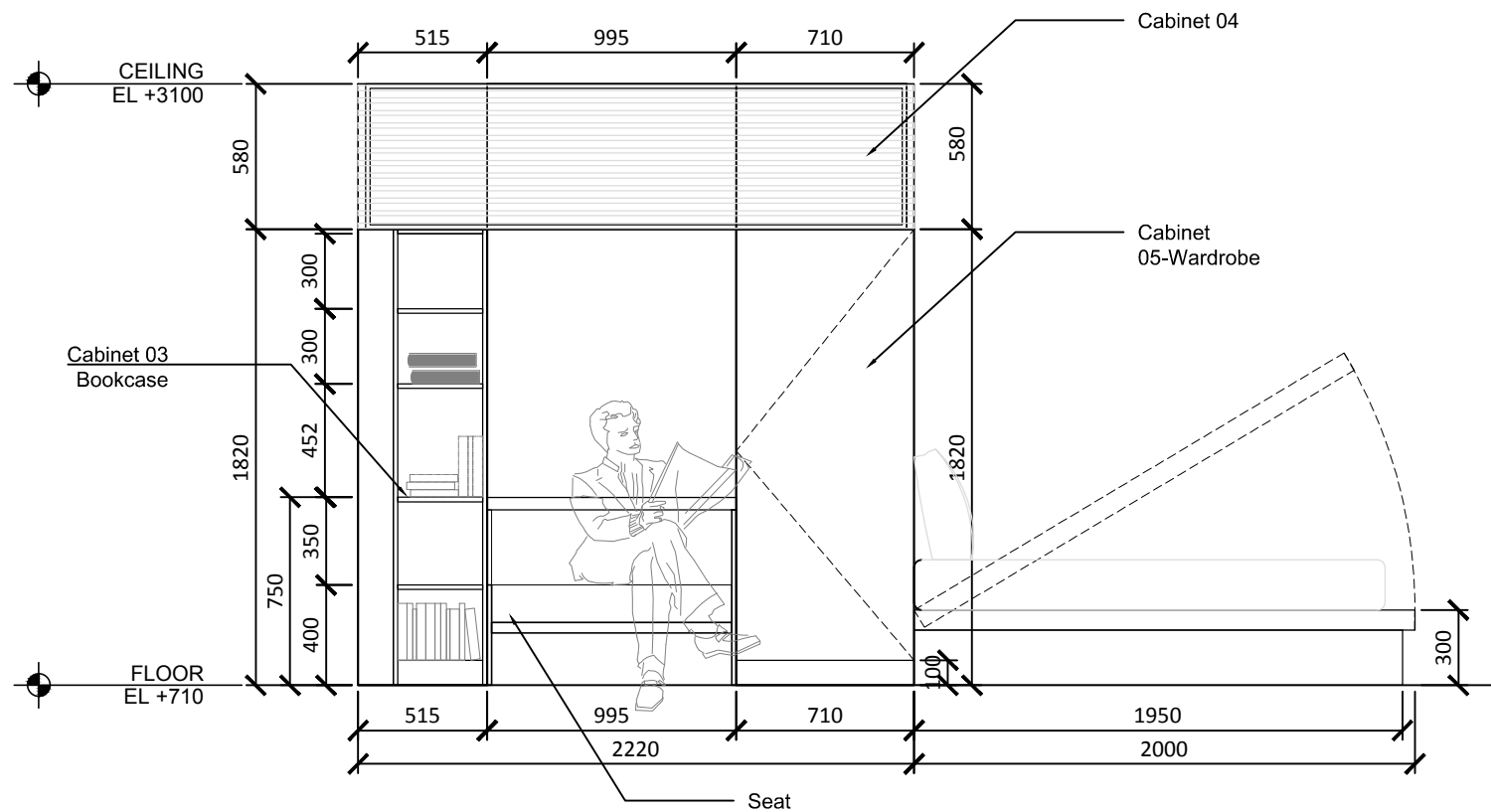
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5



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6



Project:



Institution:



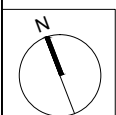
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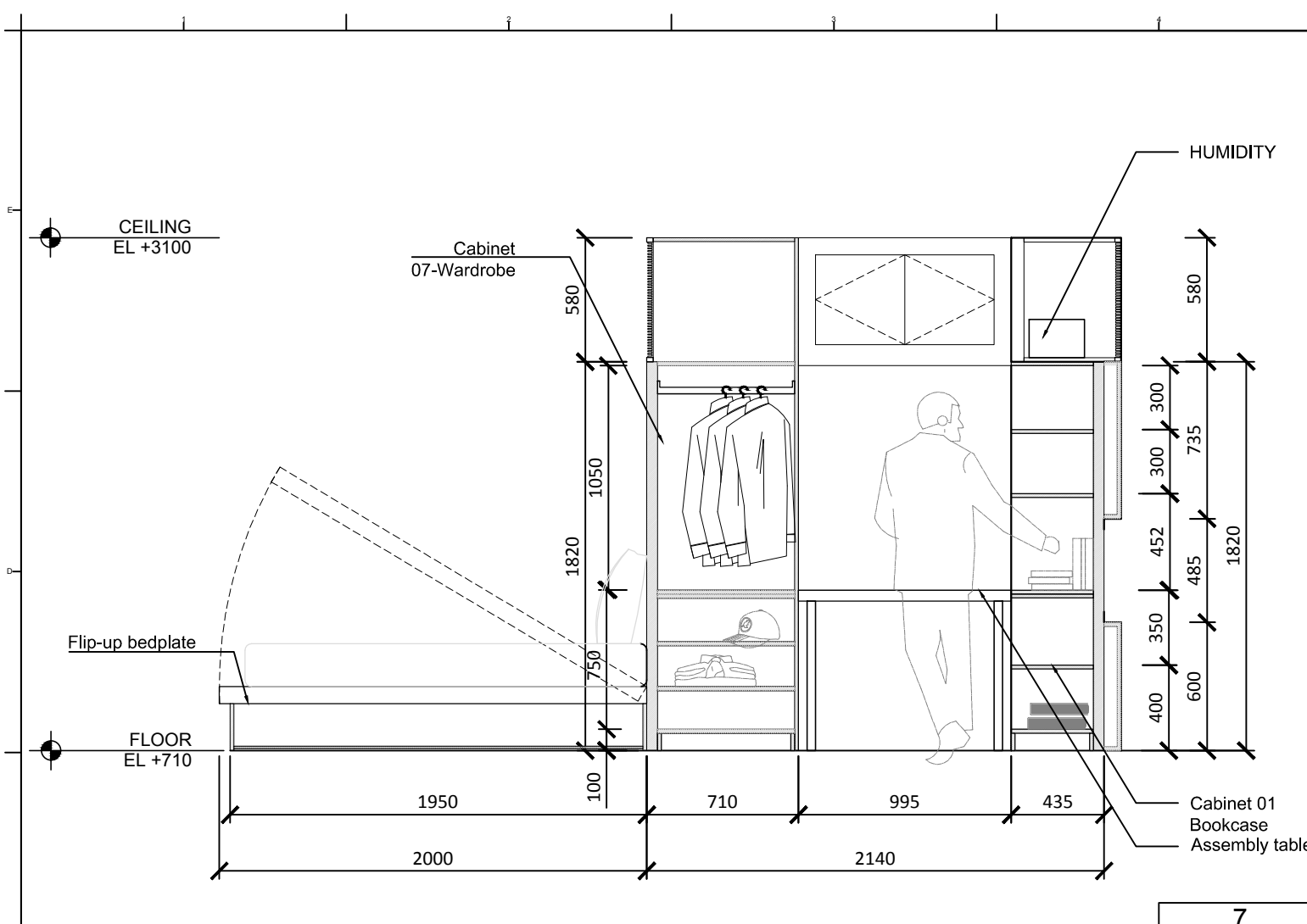
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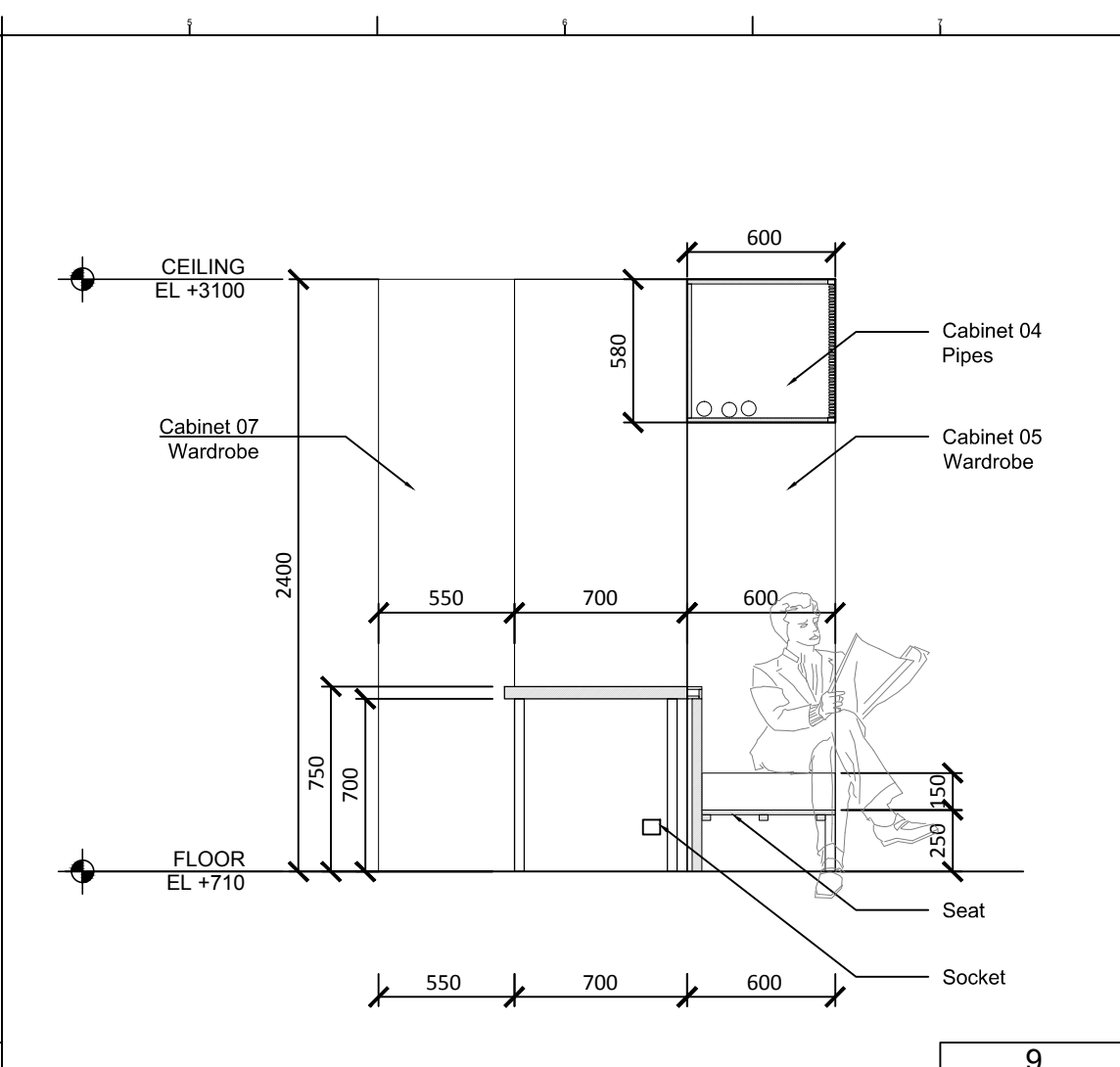
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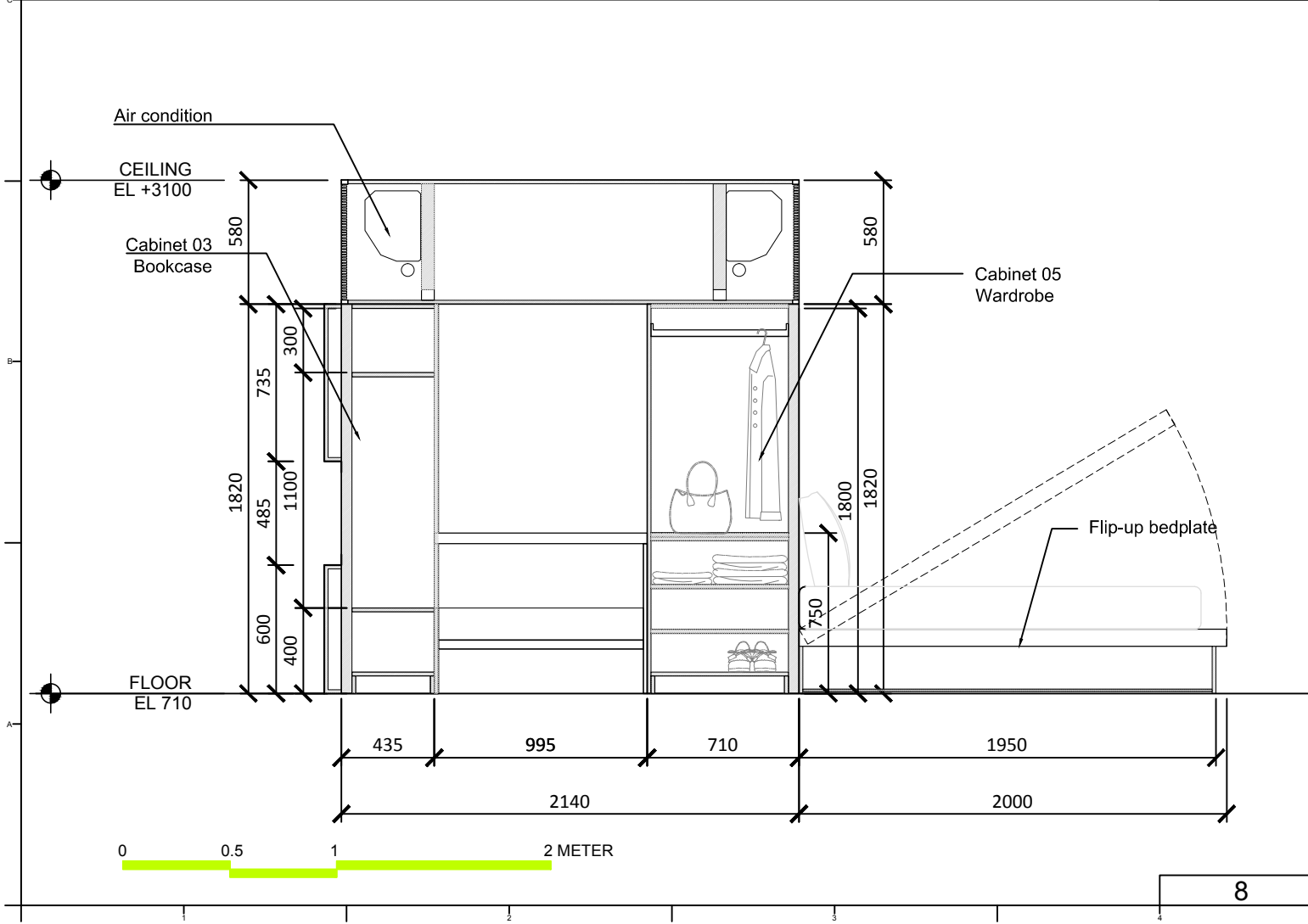
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DWG. No.	PAGE
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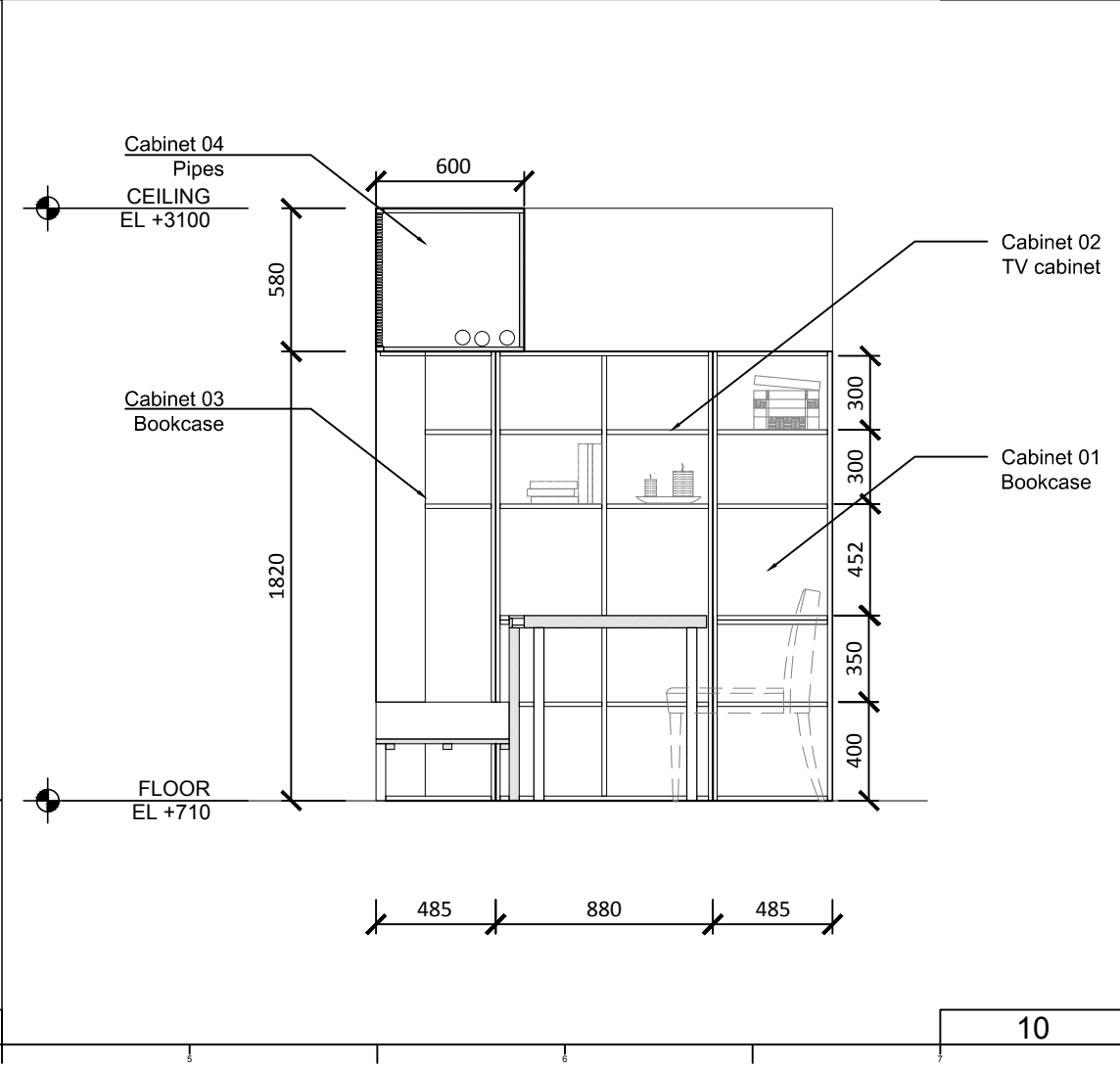
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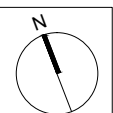
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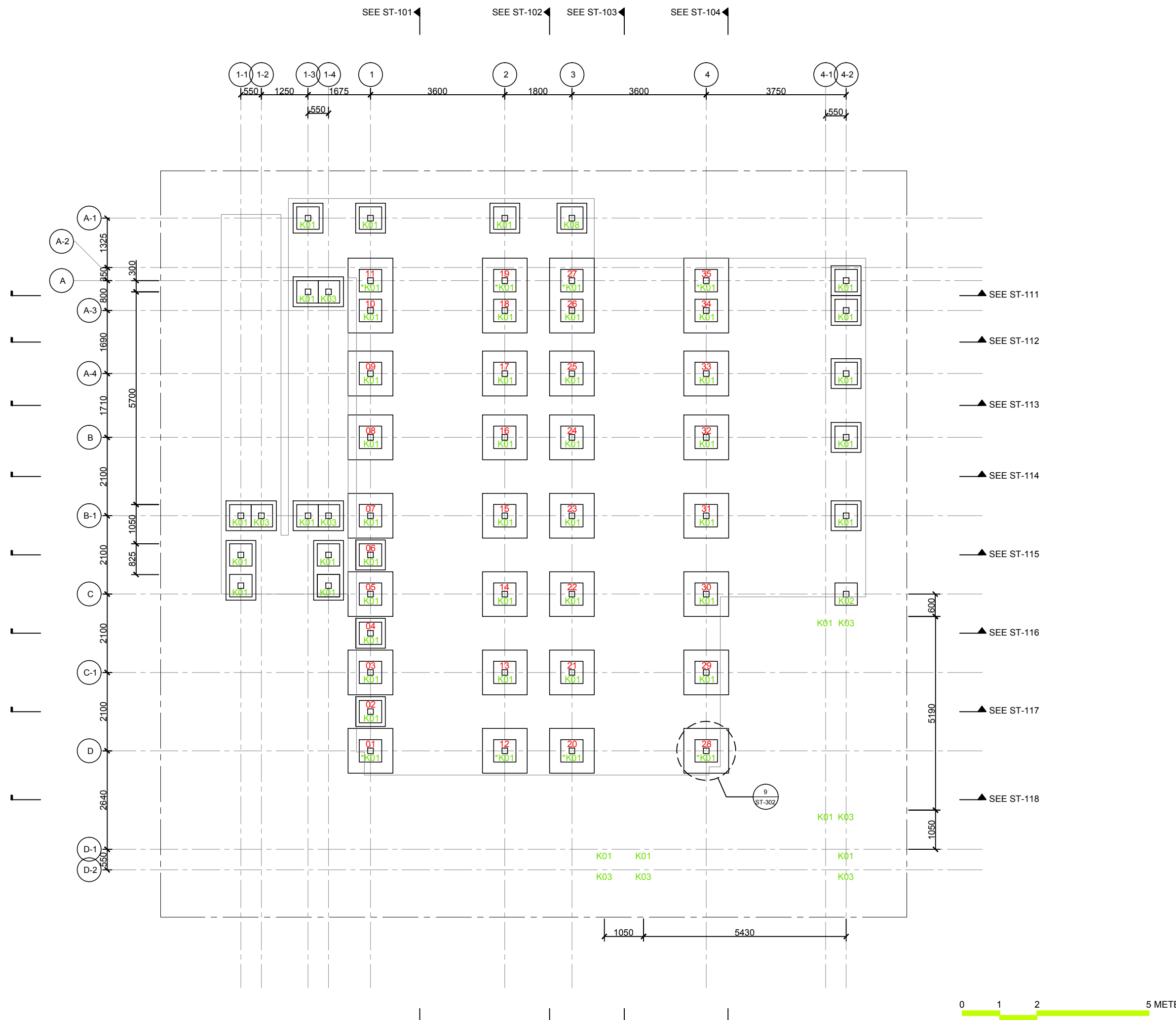


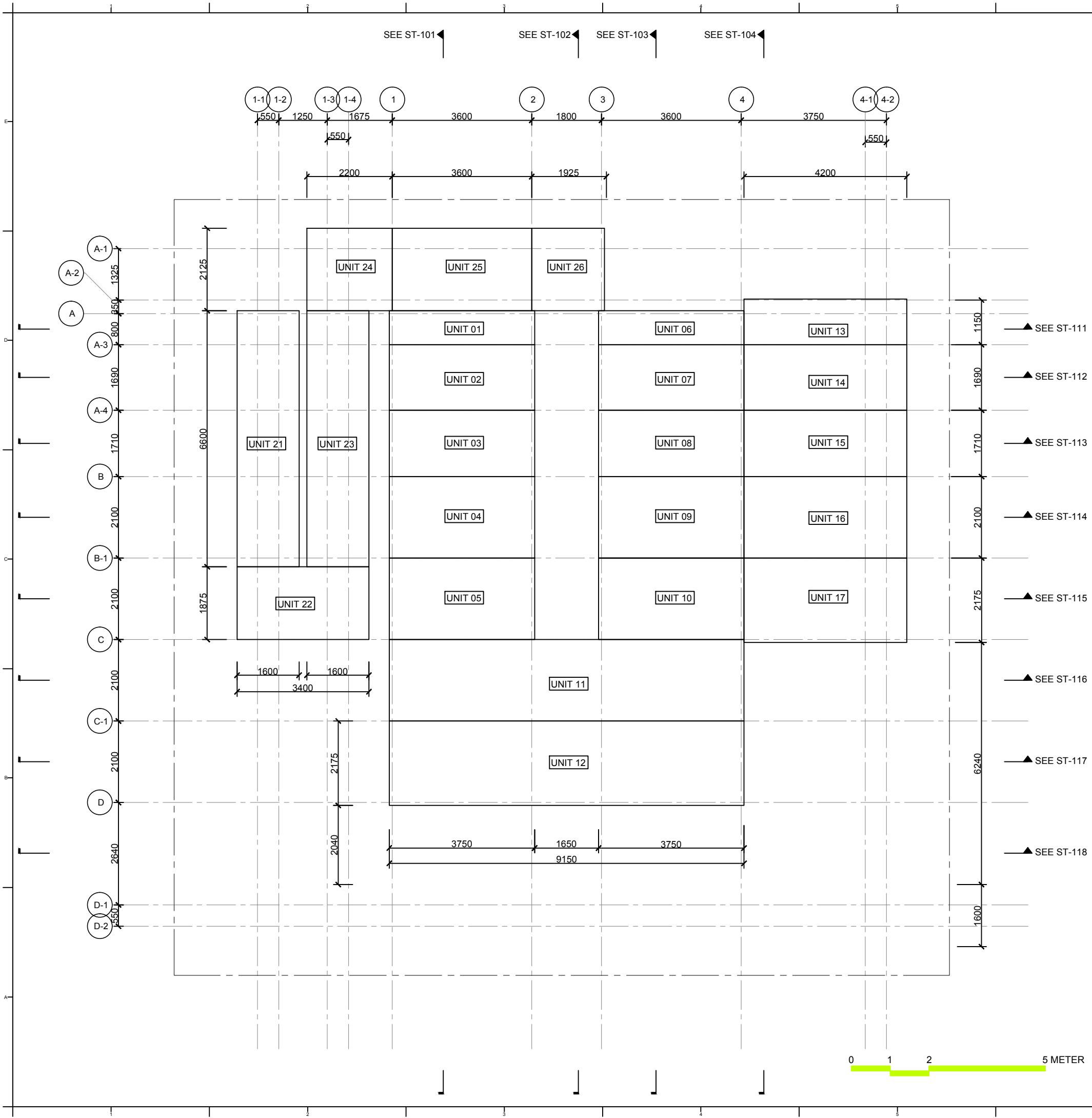
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ST	2014/11/03	AB Submission

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Scale	1:100
Unit	mm

DWG. Title  
**FOUNDATION PLAN AND DETAILS AND MARKING**

DWG. No.	PAGE
<b>ST-001</b>	<b>134</b>





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UNIT 01	3750 x 875 x 150
UNIT 02	3750 x 1690 x 150
UNIT 03	3750 x 1710 x 150
UNIT 04	3750 x 2100 x 150
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UNIT 07	3750 x 1690 x 150
UNIT 08	3750 x 1710 x 150
UNIT 09	3750 x 2100 x 150
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UNIT 11	9150 x 2100 x 150
UNIT 12	9150 x 2175 x 150
UNIT 13	4200 x 1150 x 150
UNIT 14	4200 x 1690 x 150
UNIT 15	4200 x 1710 x 150
UNIT 16	4200 x 2100 x 150
UNIT 17	4200 x 2175 x 150
UNIT 18	6240 x 1600 x 150
UNIT 19	6480 x 1600 x 150
UNIT 20	6960 x 1600 x 150
UNIT 21	6600 x 1600 x 150
UNIT 22	3400 x 1875 x 150
UNIT 23	6600 x 1600 x 150
UNIT 24	2200 x 2125 x 150
UNIT 25	3600 x 2125 x 150
UNIT 26	2125 x 1925 x 150



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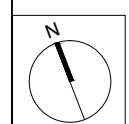
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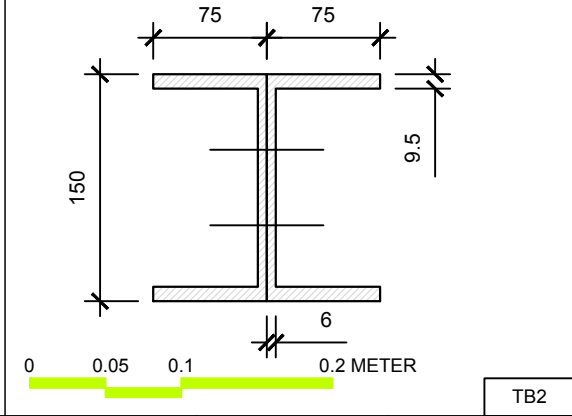
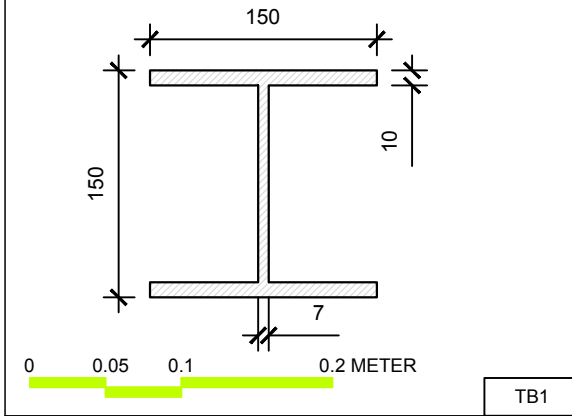
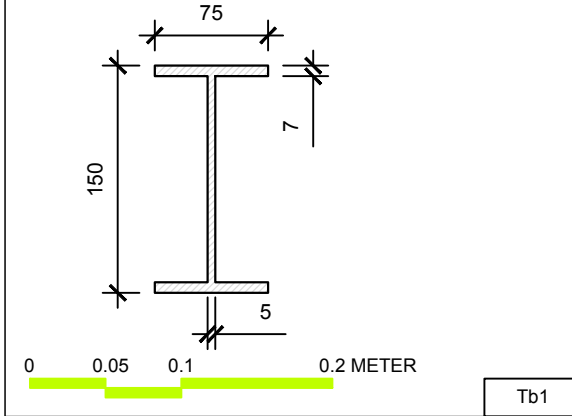
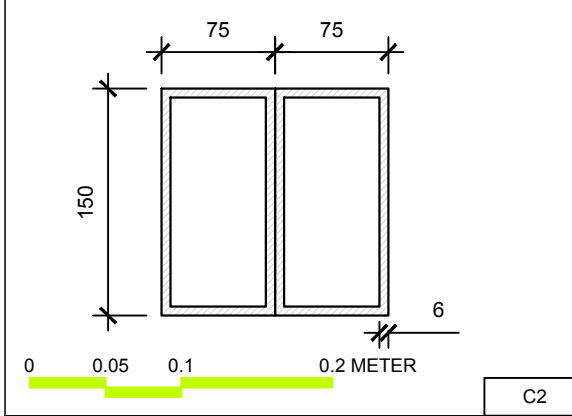
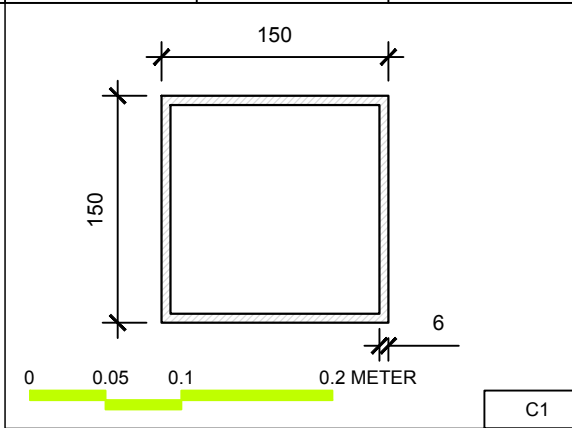
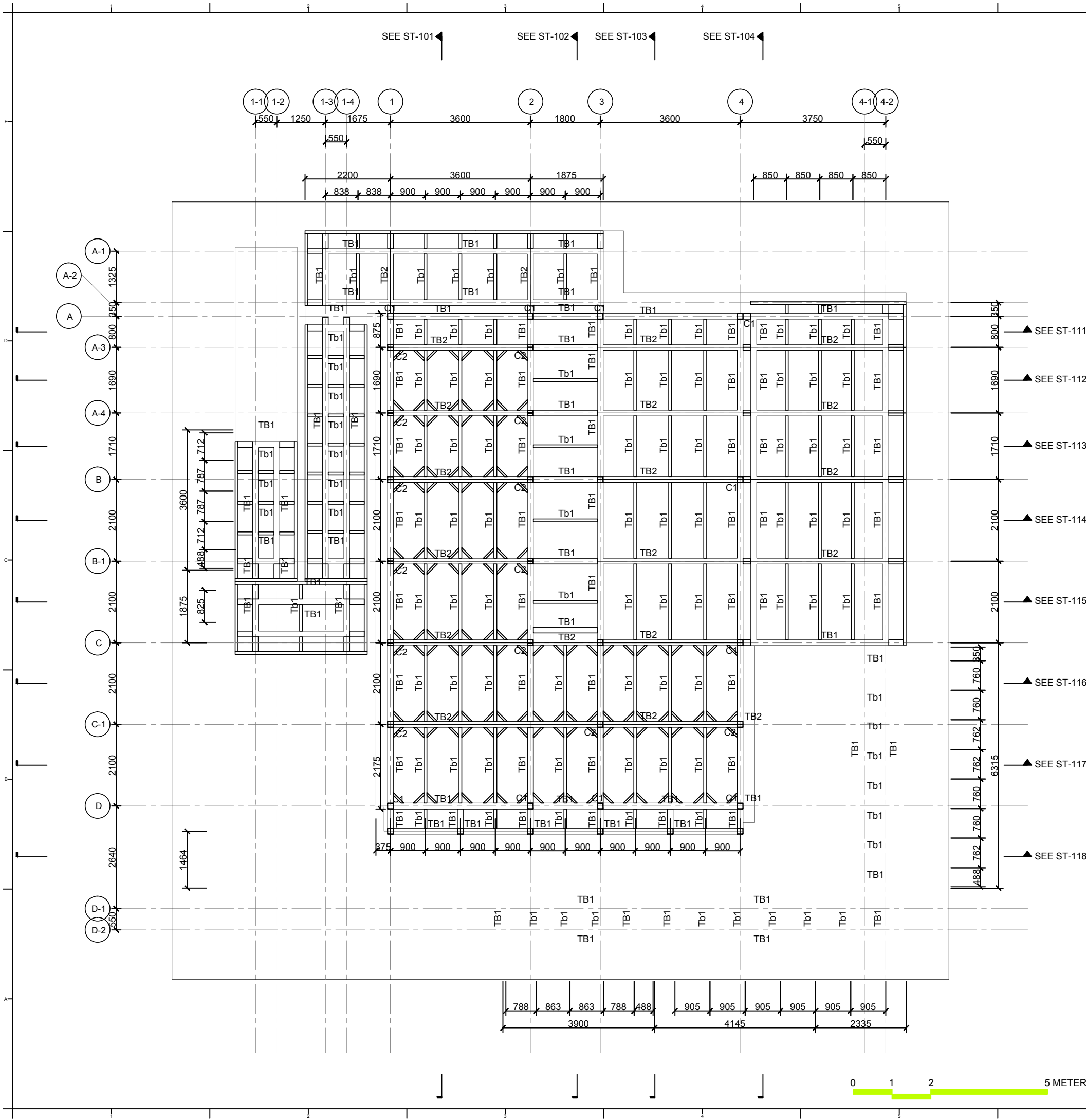
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

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**Checked by:** BT  
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**Unit:** mm

**DWG. Title:**  
STRUCTURAL FLOOR UNITS

**DWG. No.:** ST-002  
**PAGE:** 135





**Solar Decathlon Europe**

Project:

**ORCHID HOUSE**

Institution:

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National Chiao Tung University

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Consultants:

**RUENTEX**  
CONSTRUCTION GROUP

Note:

Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
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ST	2014/11/03	AB Submission

Drawn by	ST
Checked by	BT
Scale	1:100
Unit	mm

DWG. Title

**STRUCTURAL  
GROUND LEVEL PLAN**

DWG. No. **ST-011** PAGE **136**



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Contact:

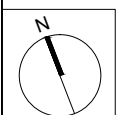
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Note:



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Drawn by

ST

Checked by

BT

Scale

1:60

Unit

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DWG. Title

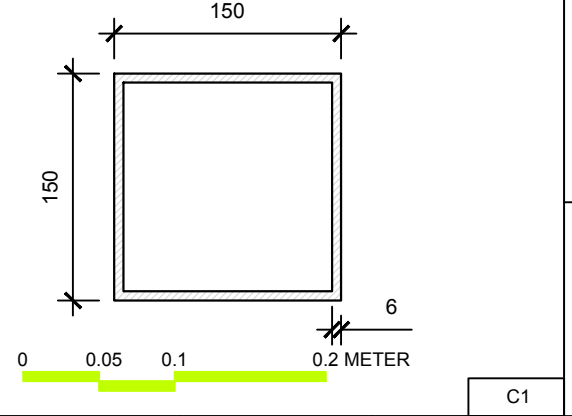
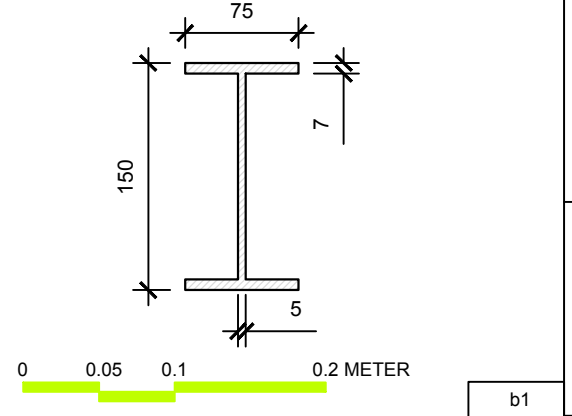
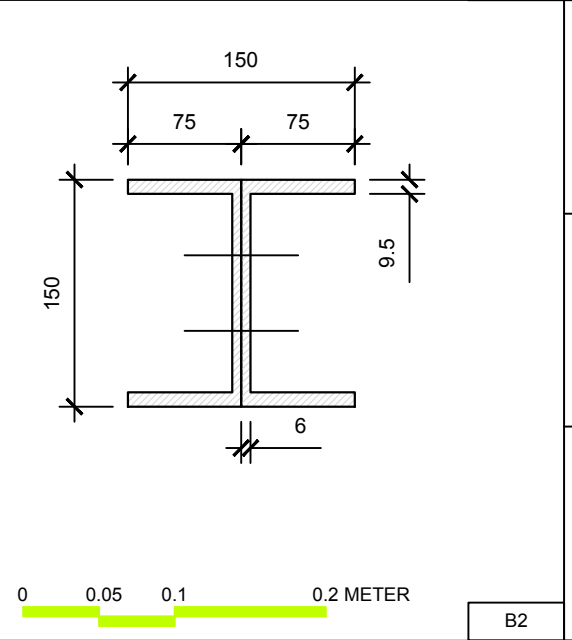
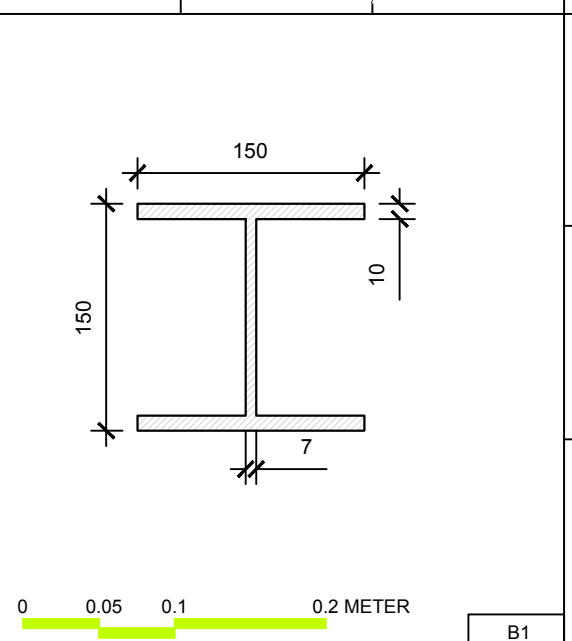
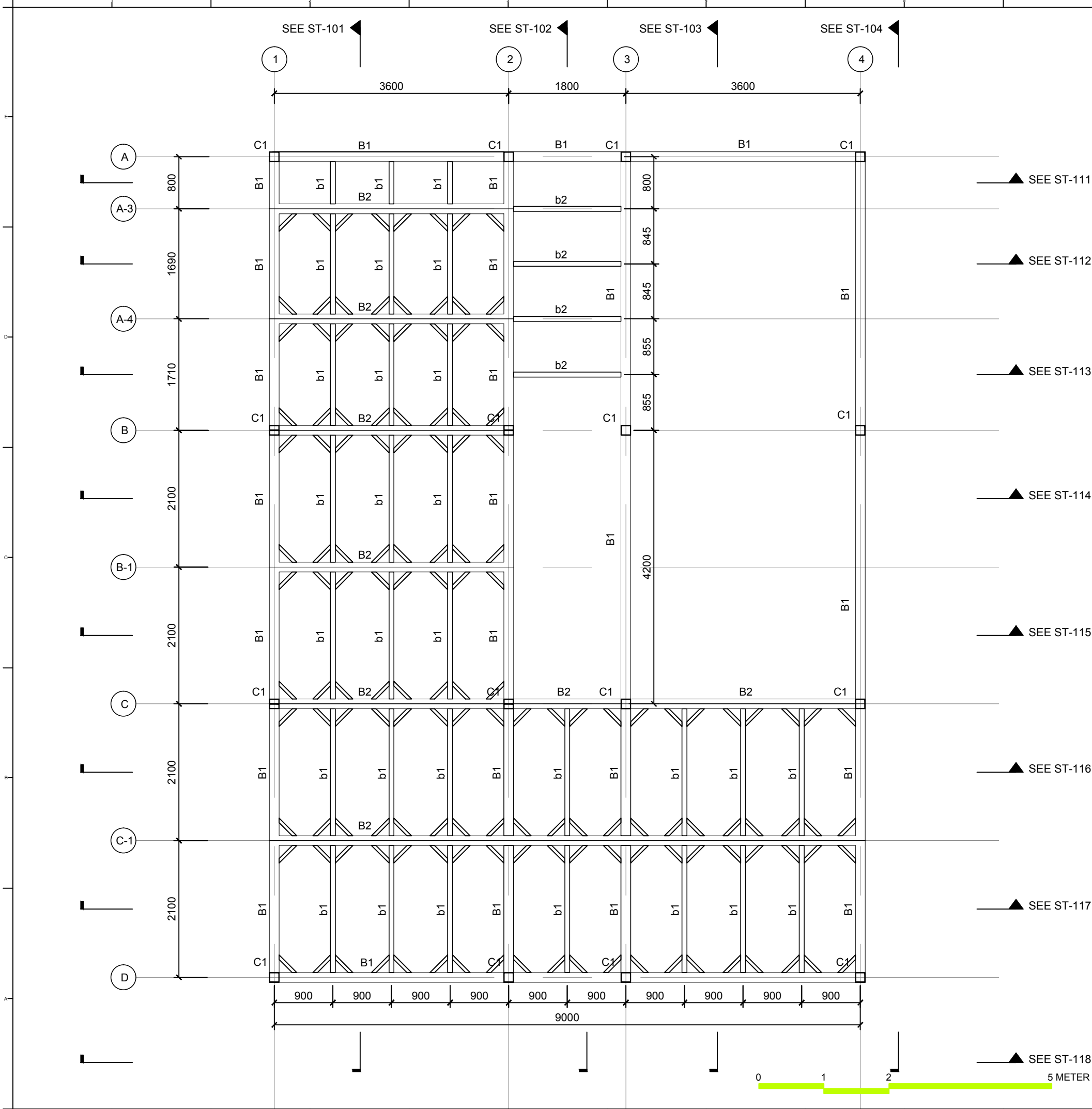
**STRUCTURAL MEZZANINE LEVEL PLAN**

DWG. No.

**ST-012**

PAGE

**137**



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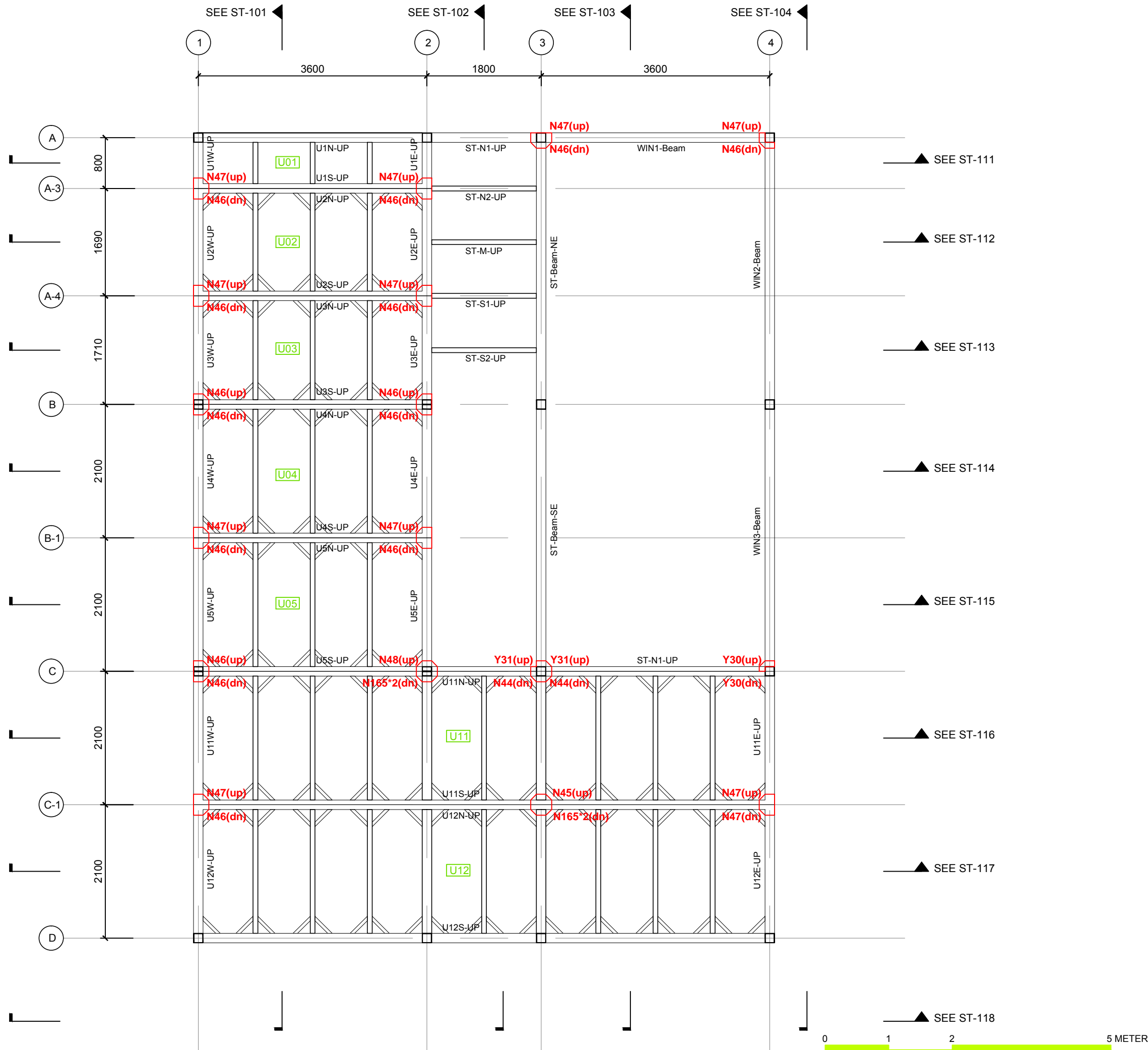
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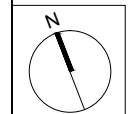
Team Name: NCTU/UNICODE  
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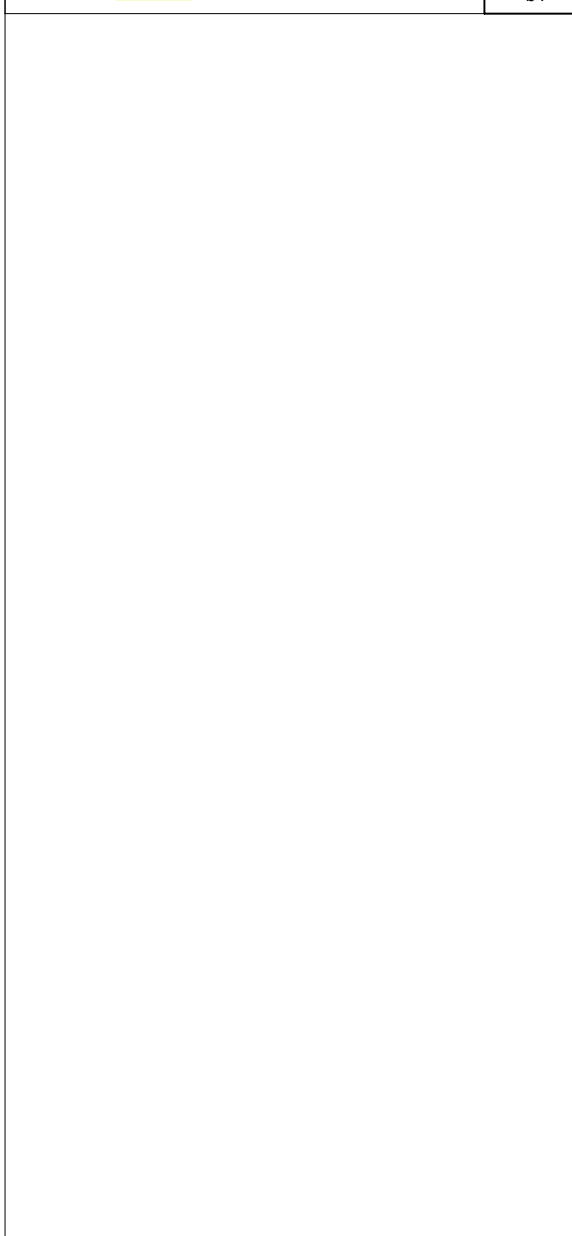
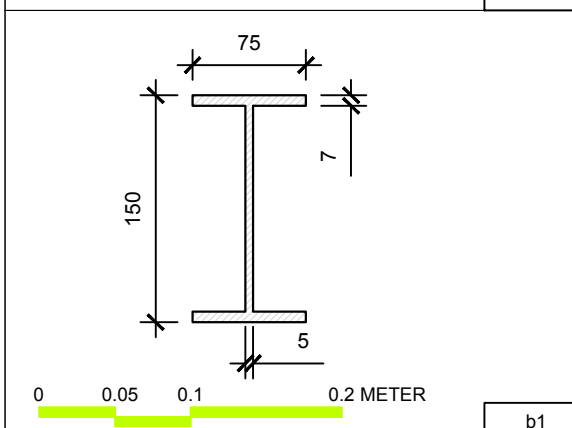
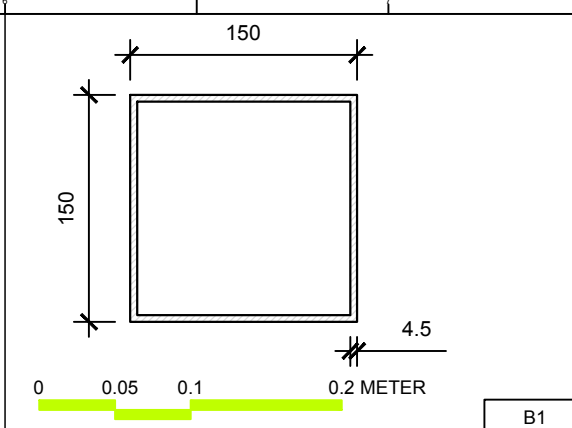
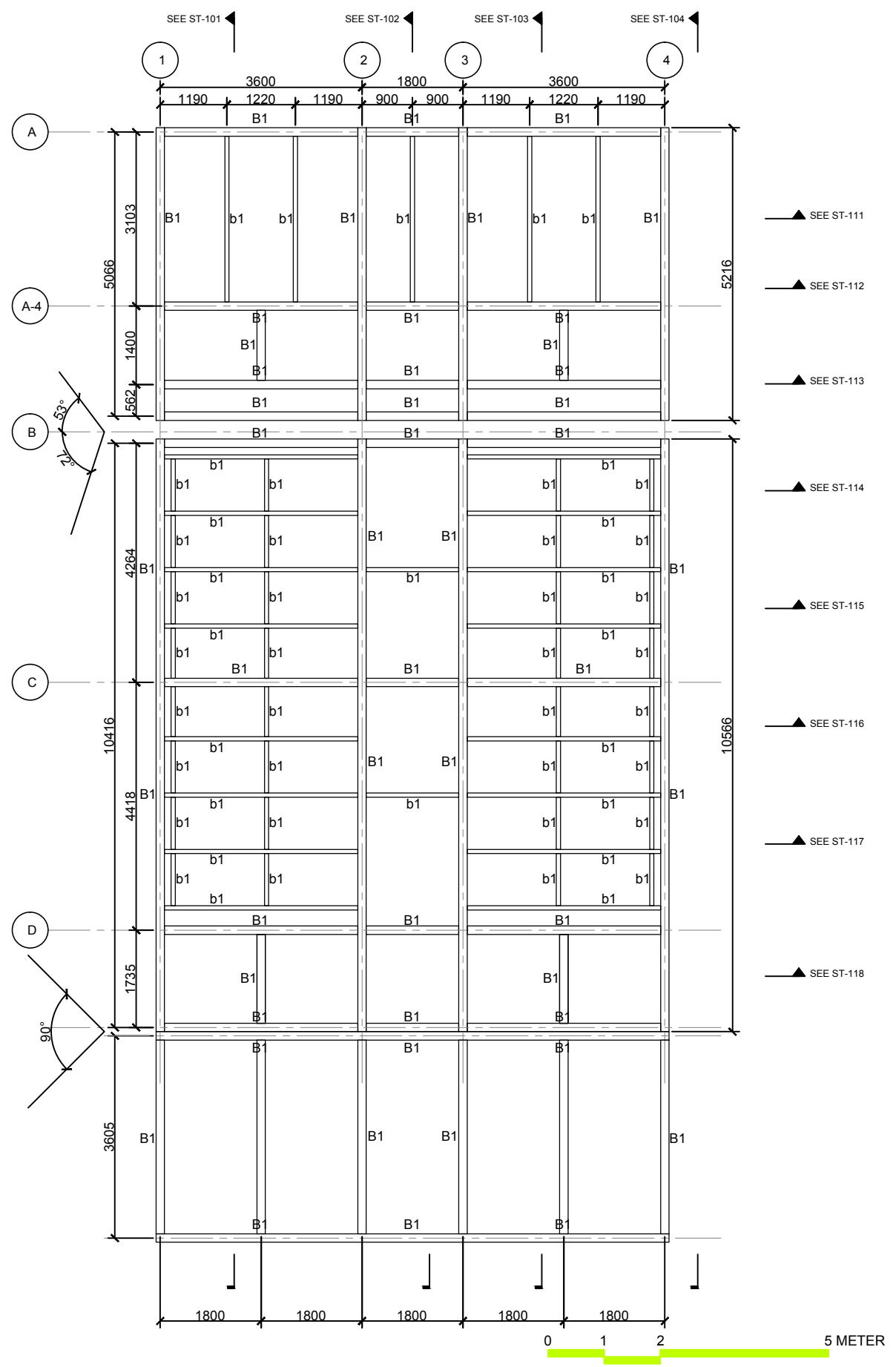
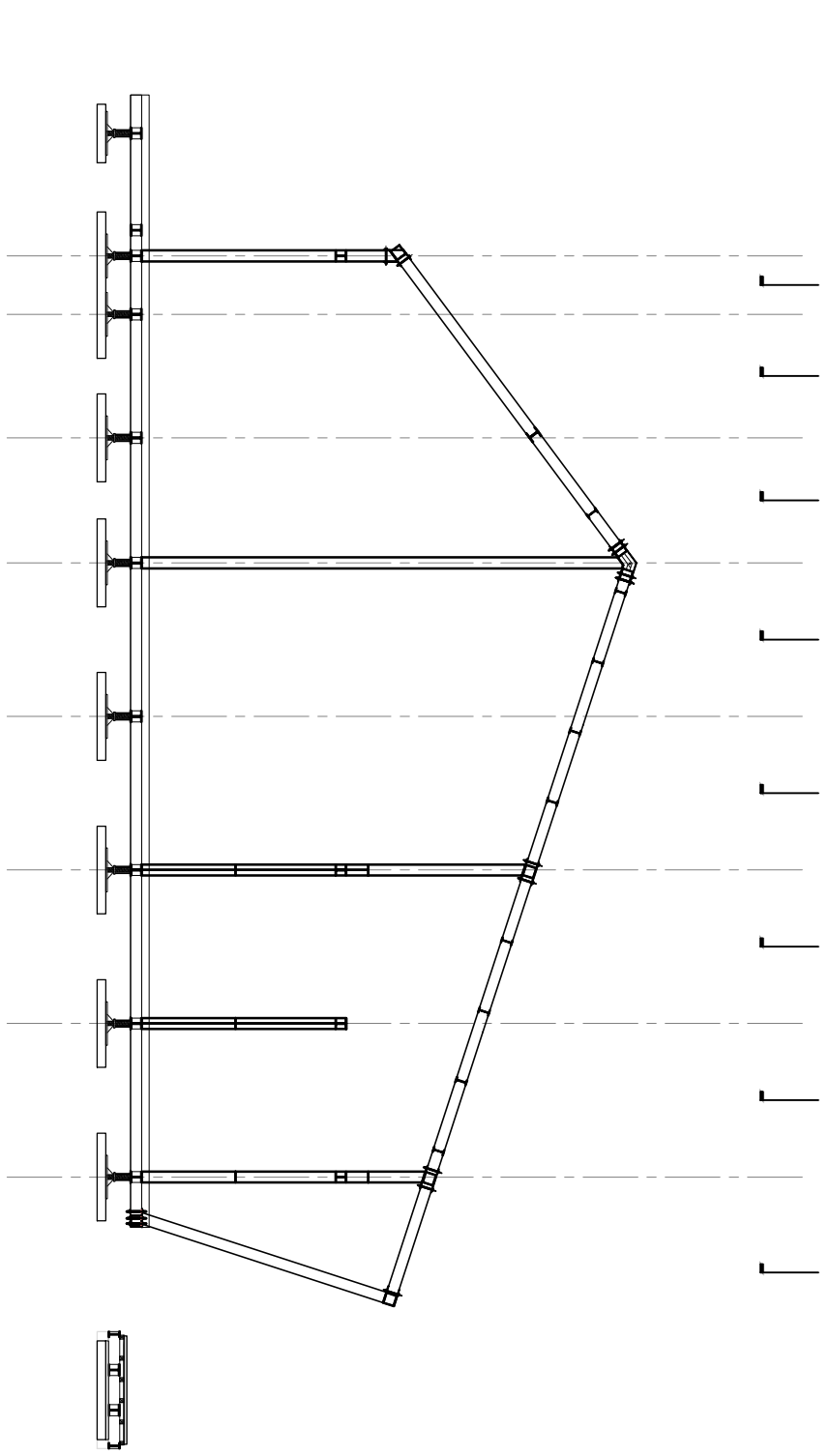


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Checked by	BT
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Unit	mm

DWG. Title  
**STRUCTURAL ELEMENTS MARKING MEZZANINE LEVEL PLAN**

DWG. No.	PAGE
<b>ST-014</b>	<b>139</b>



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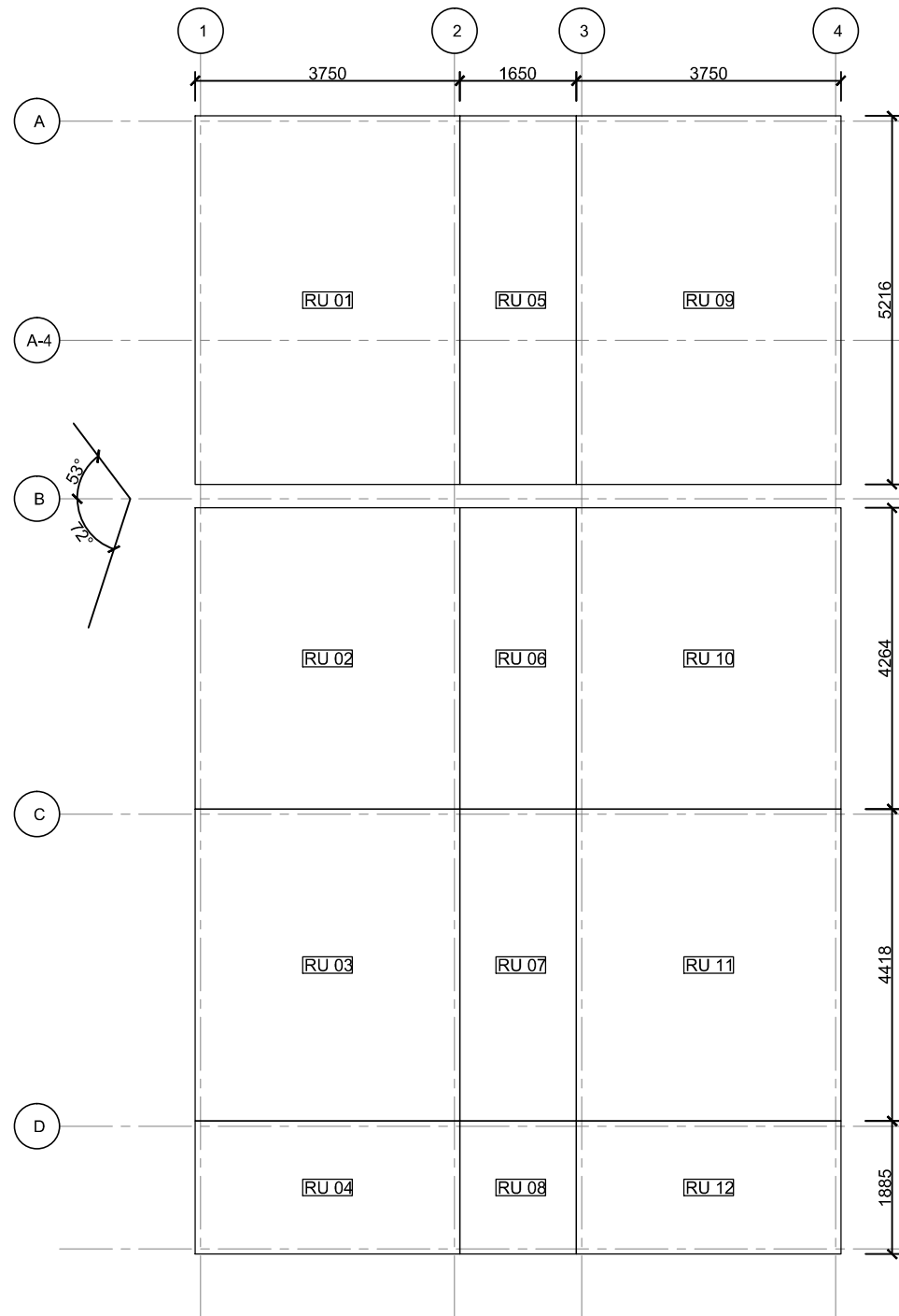


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ST	2014/11/03	AB Submission

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<b>Unit</b>	mm

**DWG. Title**  
STRUCTURAL ROOF PLAN

<b>DWG. No.</b>	<b>PAGE</b>
ST-021	140



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RU 02	4264 x 3750 x 150
RU 03	4418 x 3750 x 150
RU 04	1885 x 3750 x 150
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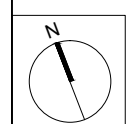


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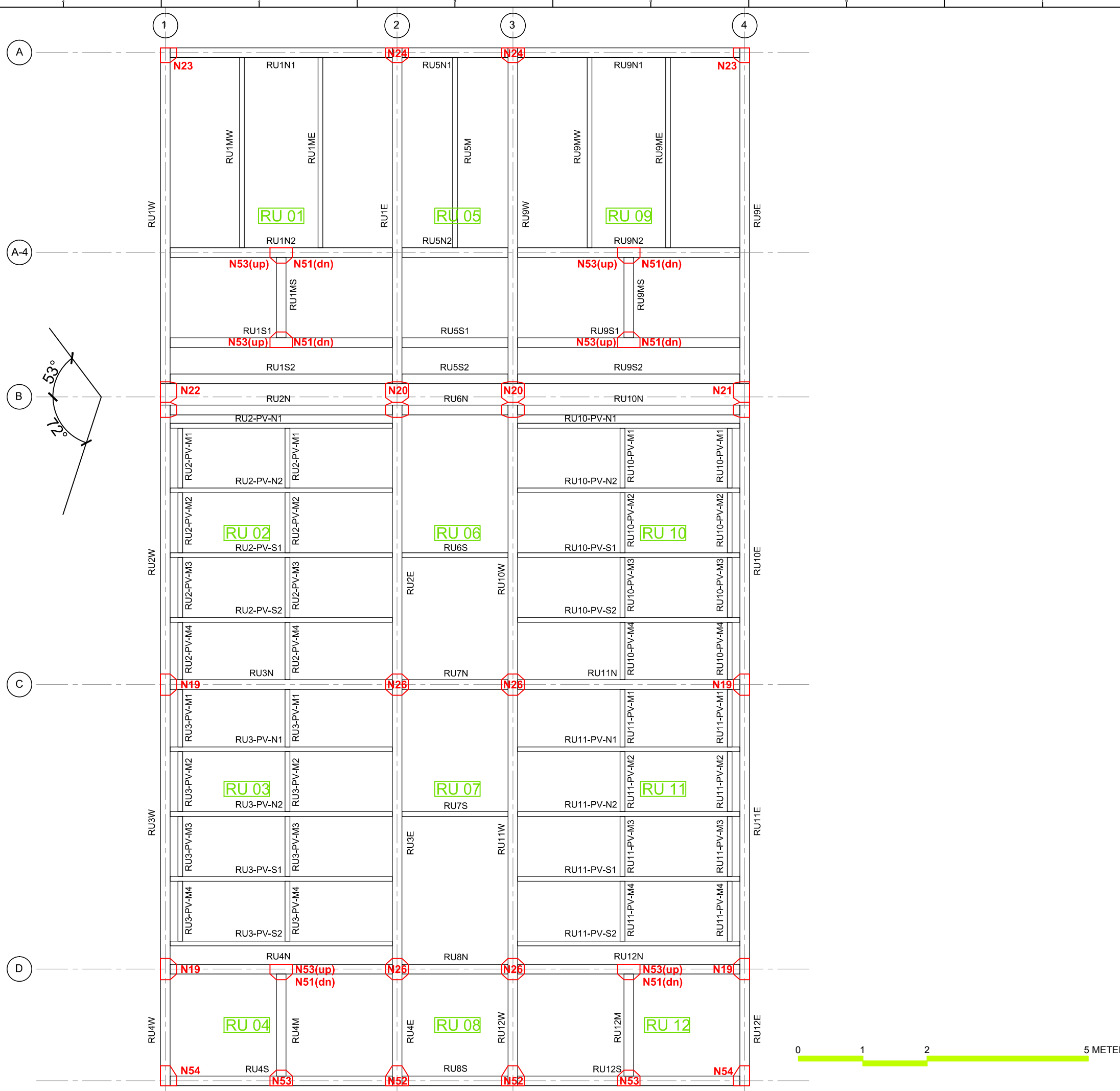
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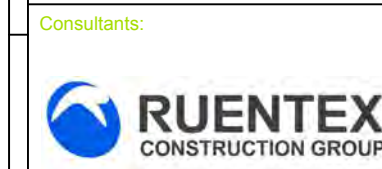
**DWG. No.:** ST-022      **PAGE:** 141





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**STRUCTURAL ELEMENTS MARKING ROOF PLAN**

**DWG. No.:** ST-023  
**PAGE:** 142

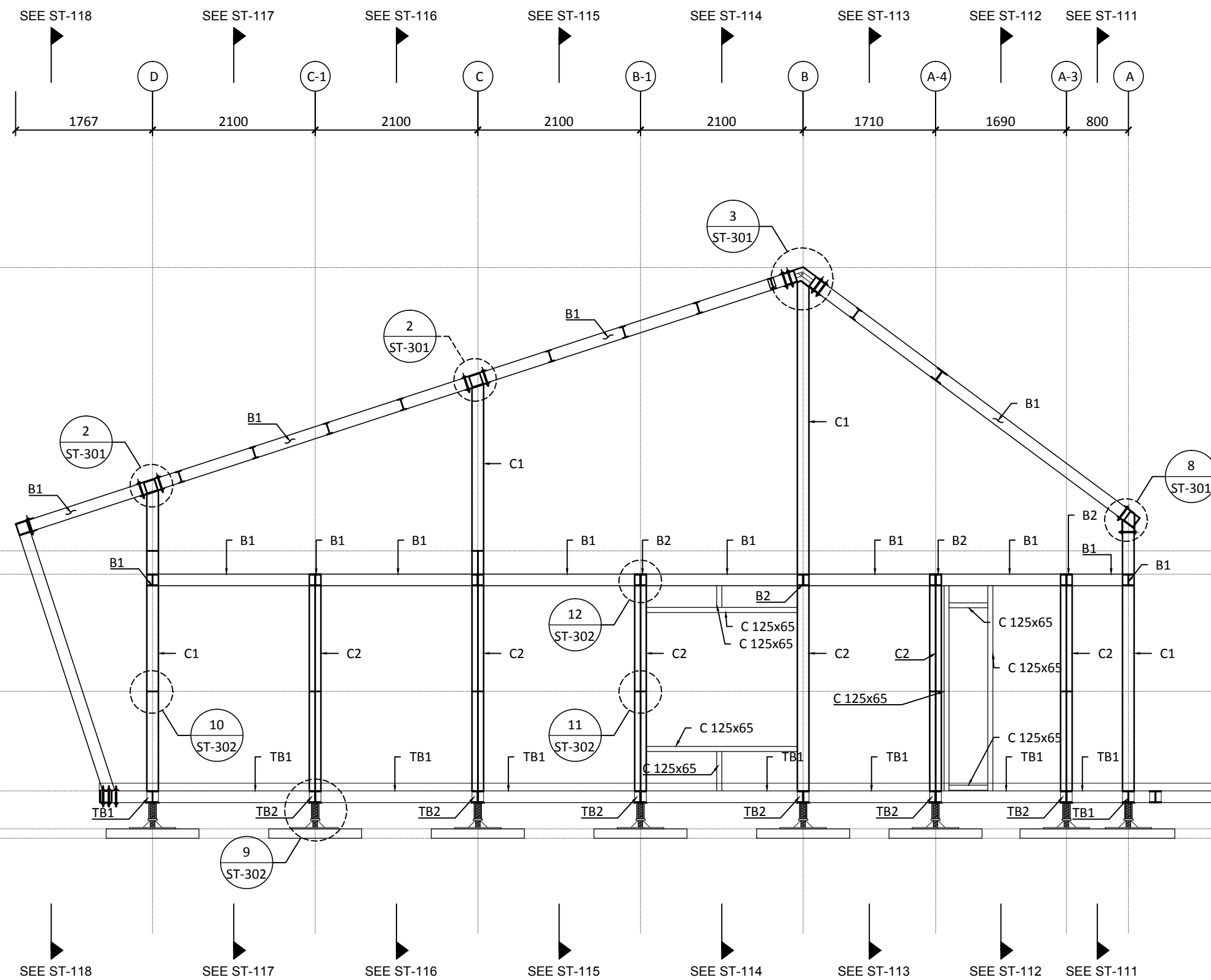


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Scale	1:60
Unit	mm

DWG. Title  
**STRUCTURAL LONGITUDINAL SECTIONS FRAME 1**

DWG. No.	PAGE
<b>ST-101</b>	<b>143</b>



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7250

COL SPLICE  
+3710

2SL +3410

1815

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300

COL SPLICE  
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1285

1SL +610

Sand Box  
EL +120

GL  
EL ±0

490



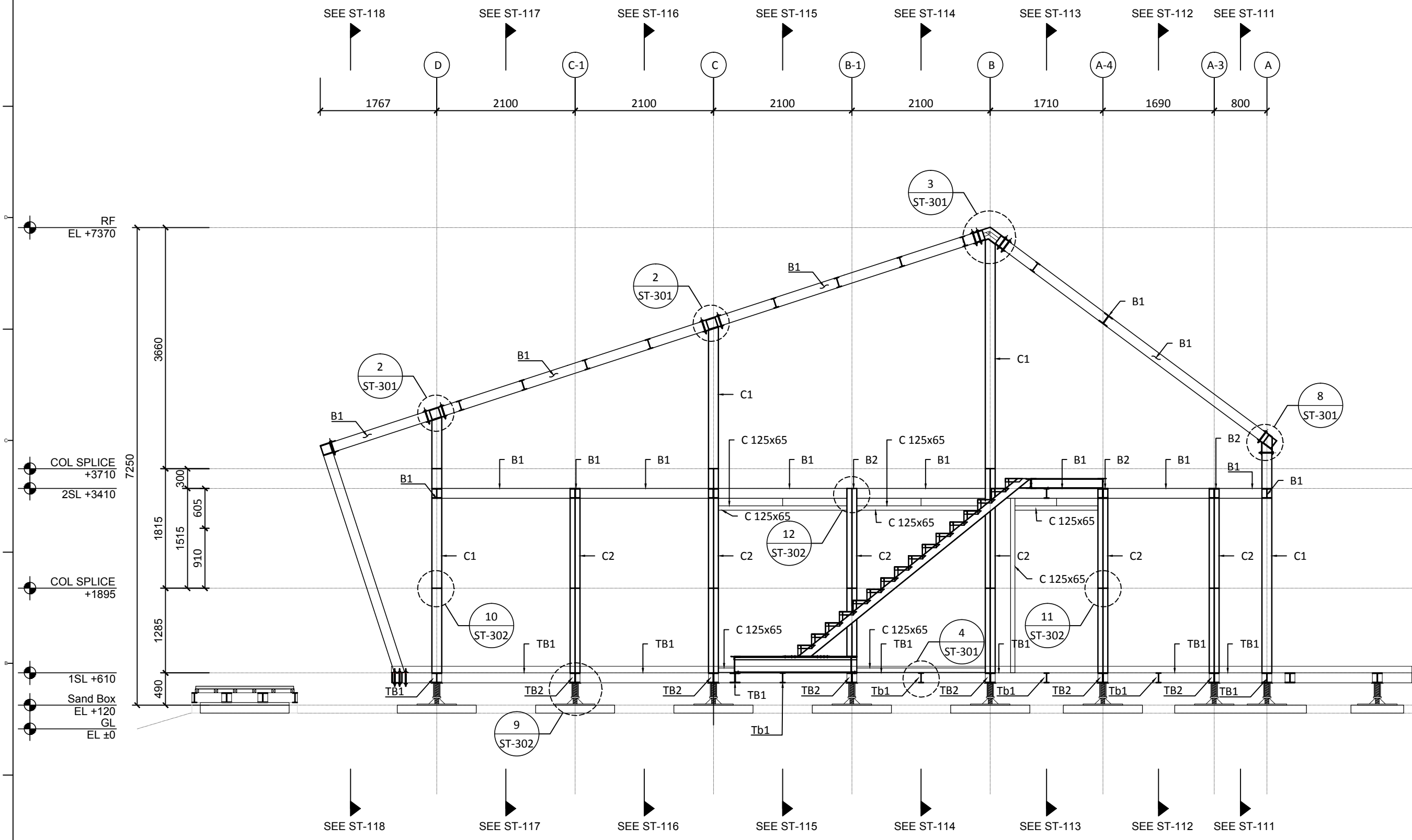


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Unit	mm

DWG. Title  
**STRUCTURAL  
LONGITUDINAL SECTIONS  
FRAME 2**

DWG. No.	PAGE
<b>ST-102</b>	<b>144</b>





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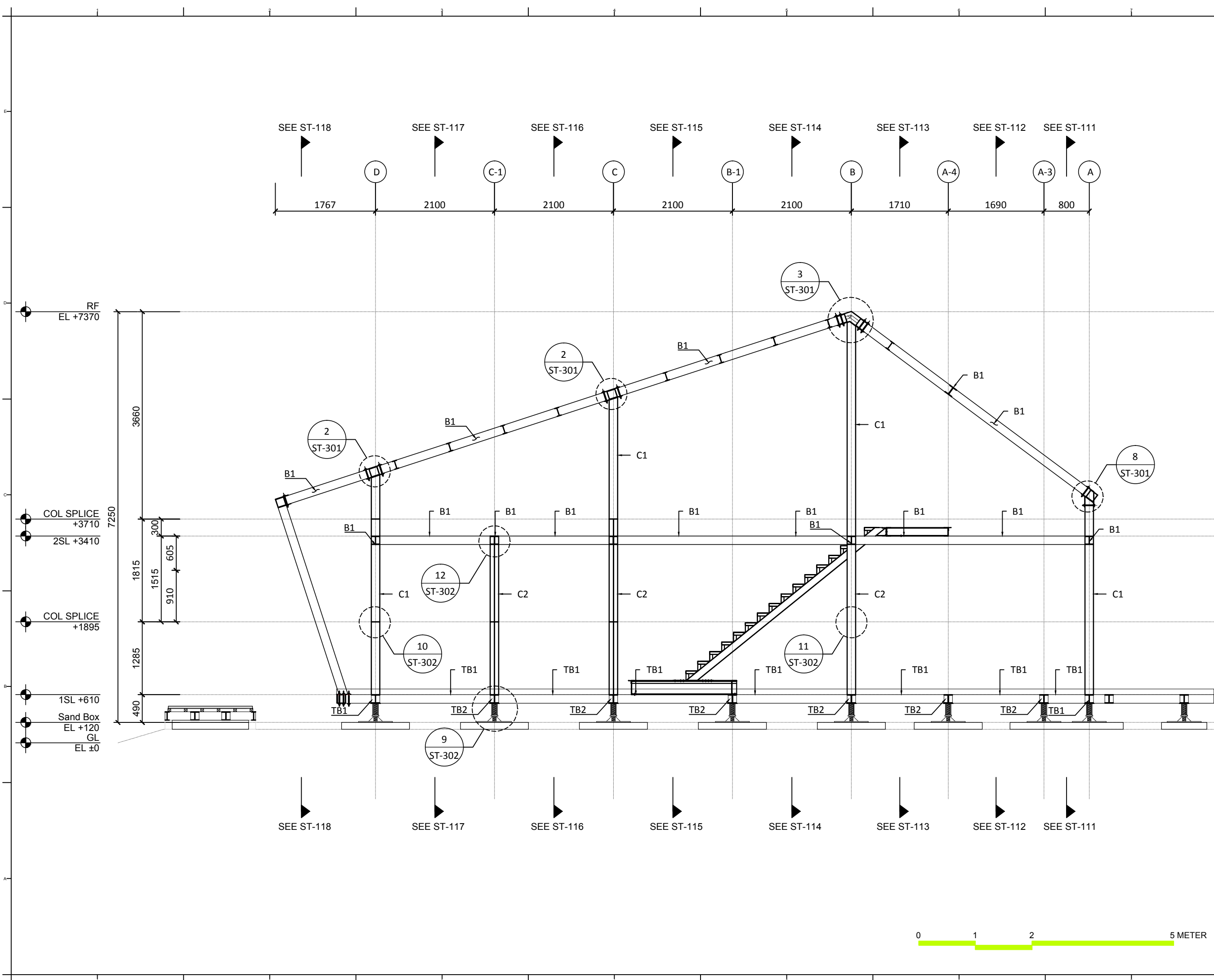
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DWG. Title  
**STRUCTURAL LONGITUDINAL SECTIONS FRAME 3**

DWG. No. **ST-103** PAGE **145**



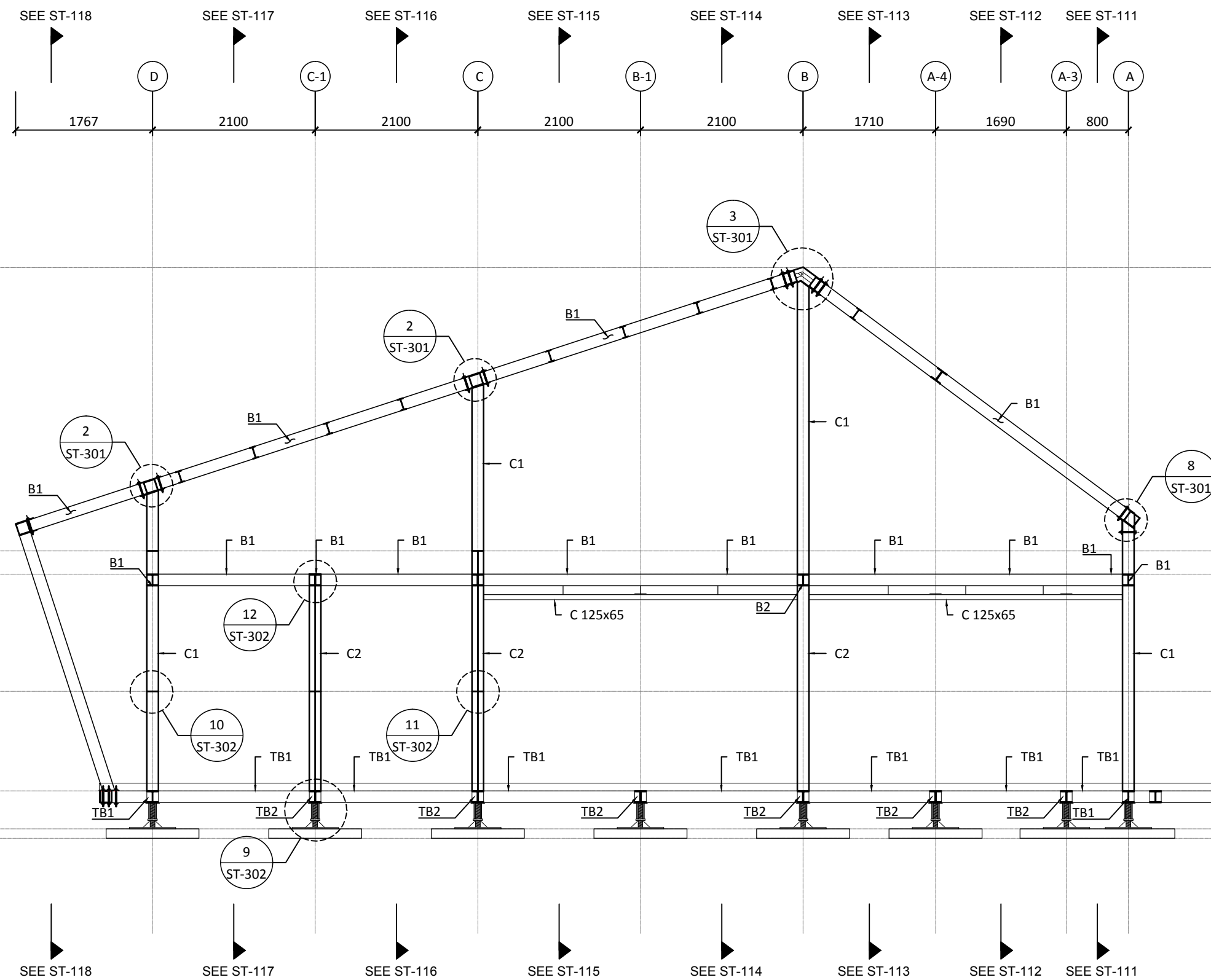


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Unit	mm

DWG. Title  
**STRUCTURAL  
LONGITUDINAL SECTIONS  
FRAME 4**

DWG. No.	PAGE
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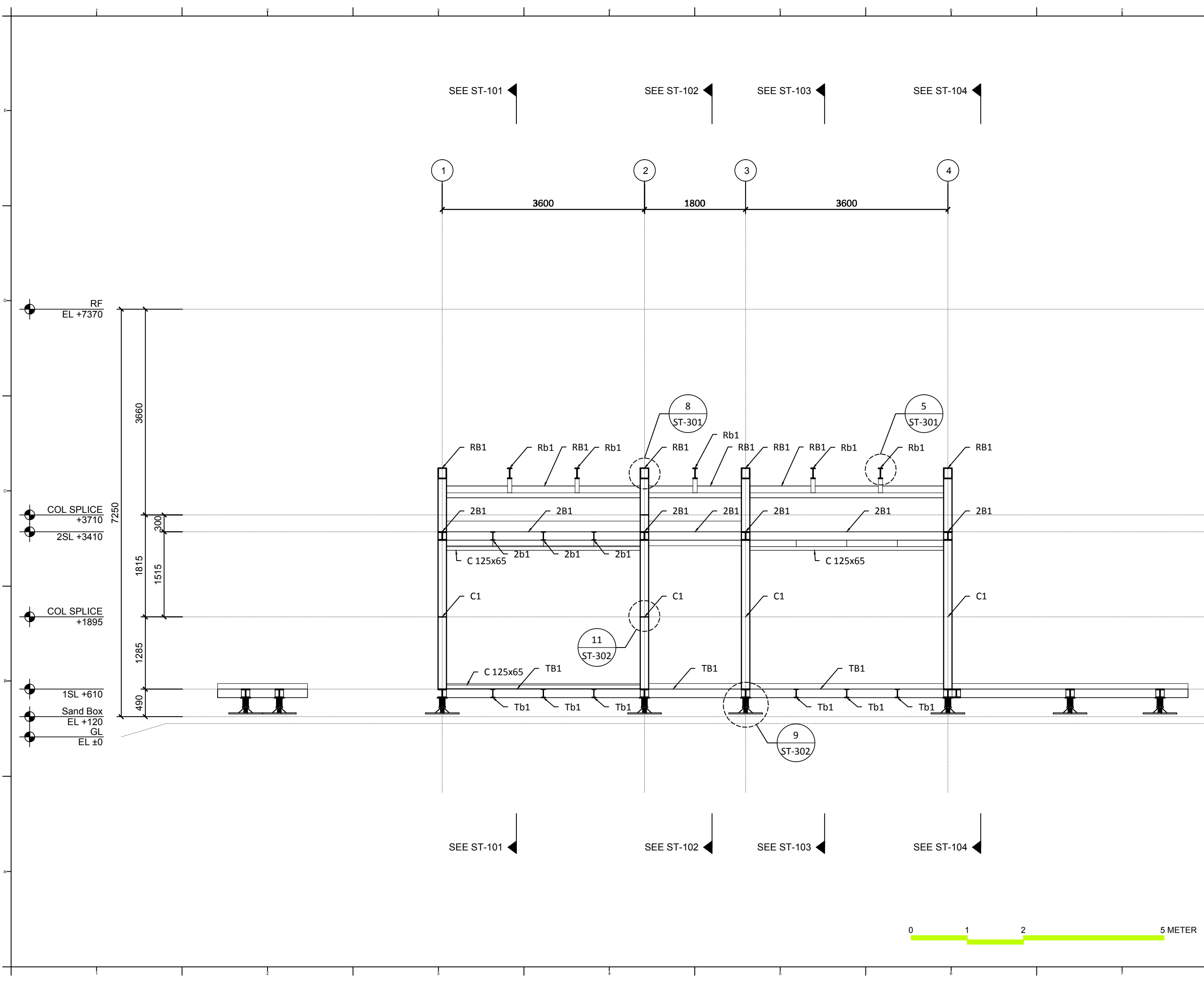
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Unit	mm

DWG. Title  
**STRUCTURAL TRANSVERSAL SECTIONS FRAME A**

DWG. No.	PAGE
<b>ST-111</b>	<b>147</b>



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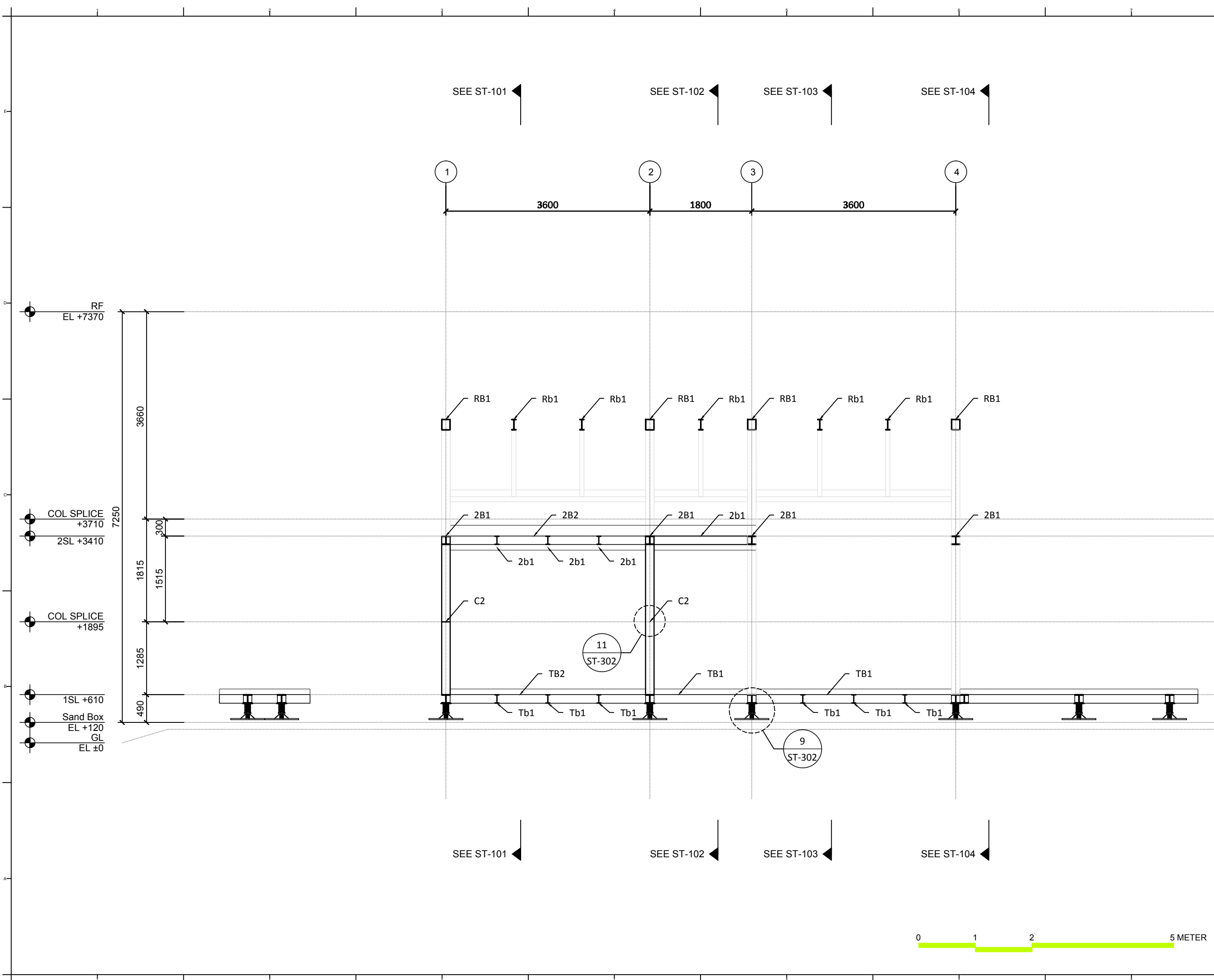
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Scale	1:60
Unit	mm

DWG. Title  
**STRUCTURAL TRANSVERSAL SECTIONS FRAME A-3**

DWG. No.	PAGE
<b>ST-112</b>	<b>148</b>



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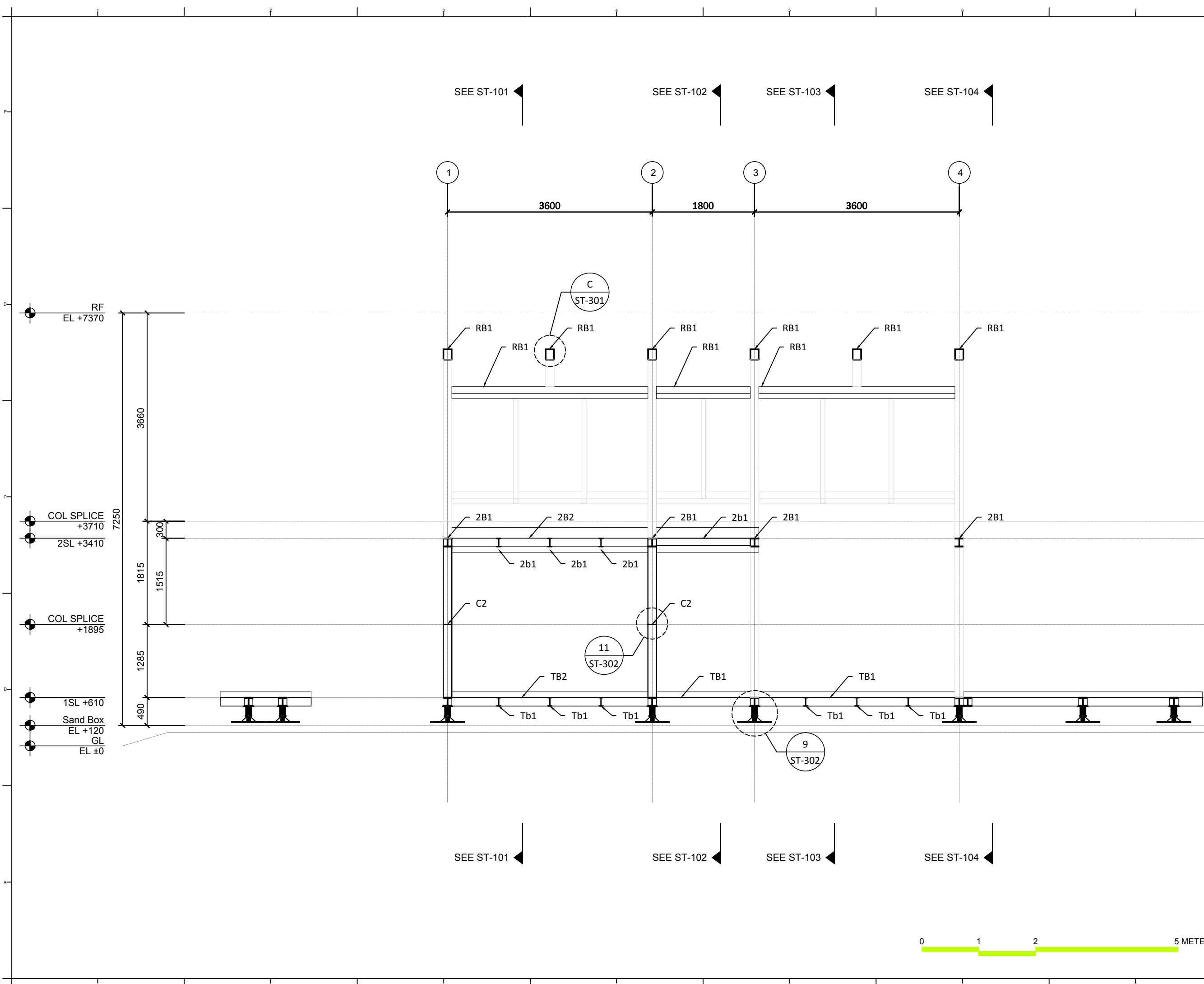
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DWG. Title  
**STRUCTURAL TRANSVERSAL SECTIONS FRAME A-4**

DWG. No. ST-113 PAGE 149



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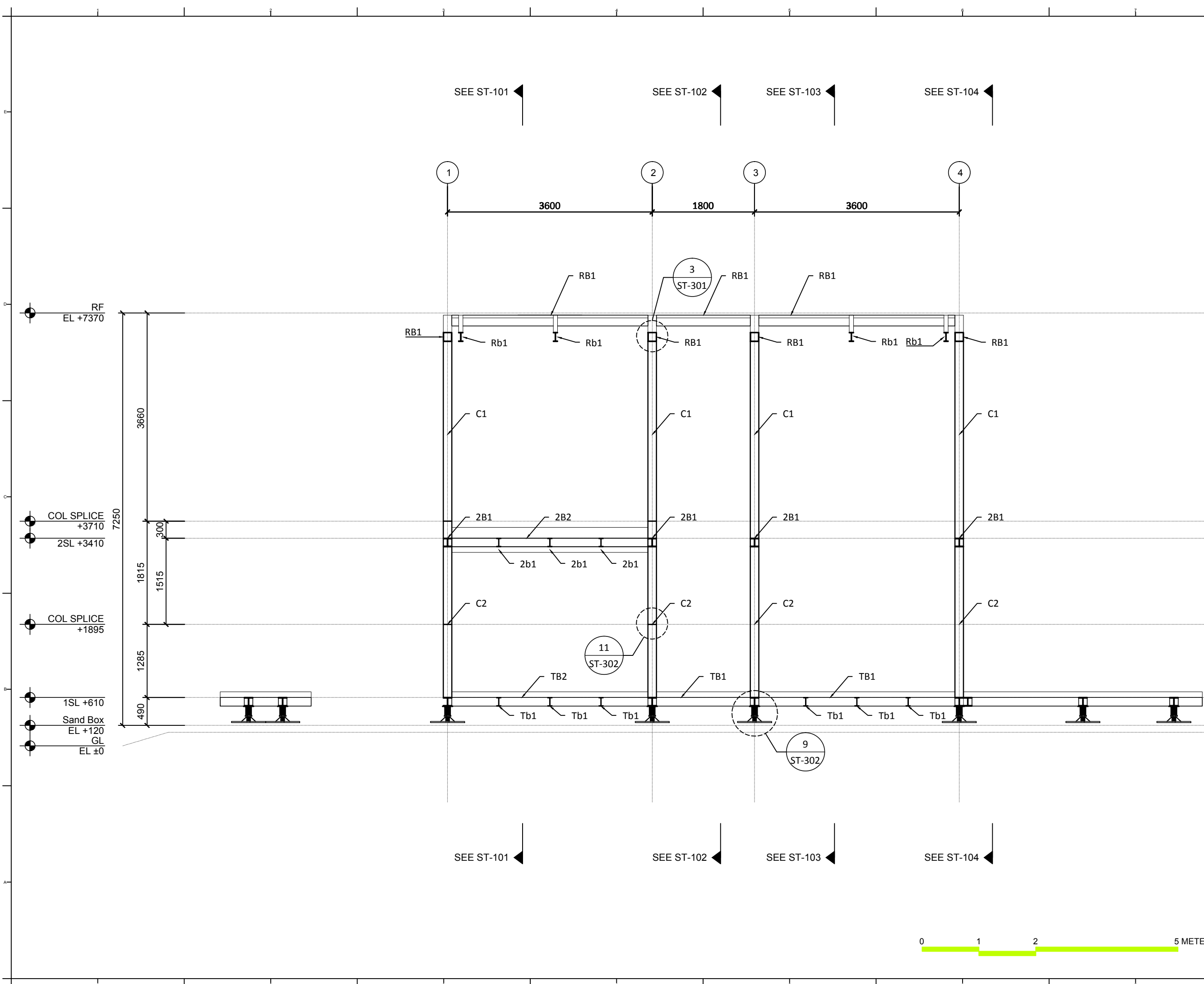
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**STRUCTURAL TRANSVERSAL SECTIONS FRAME B**

DWG. No. ST-114 PAGE 150



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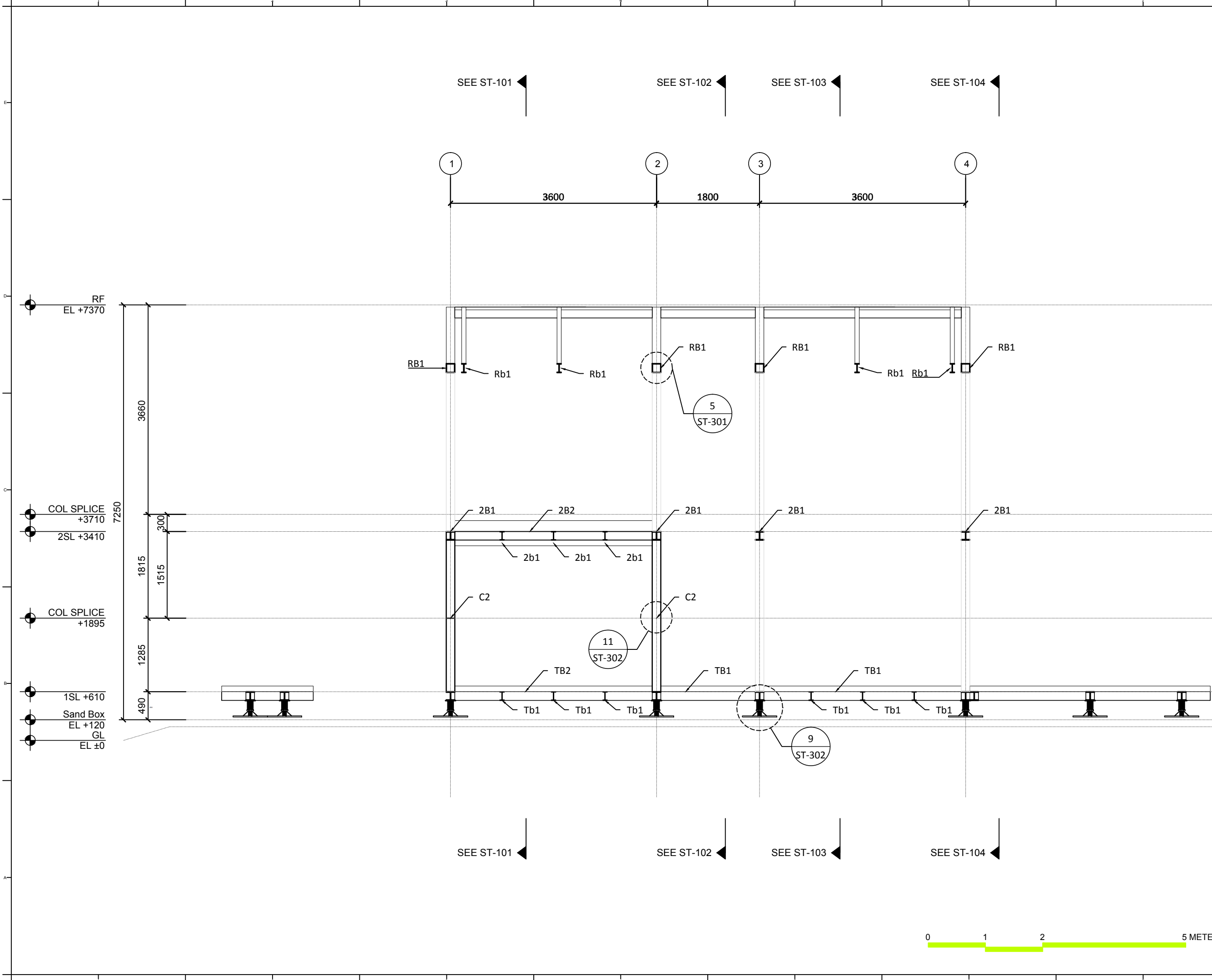
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DWG. Title  
**STRUCTURAL TRANSVERSAL SECTIONS FRAME B-1**

DWG. No. ST-115 PAGE 151



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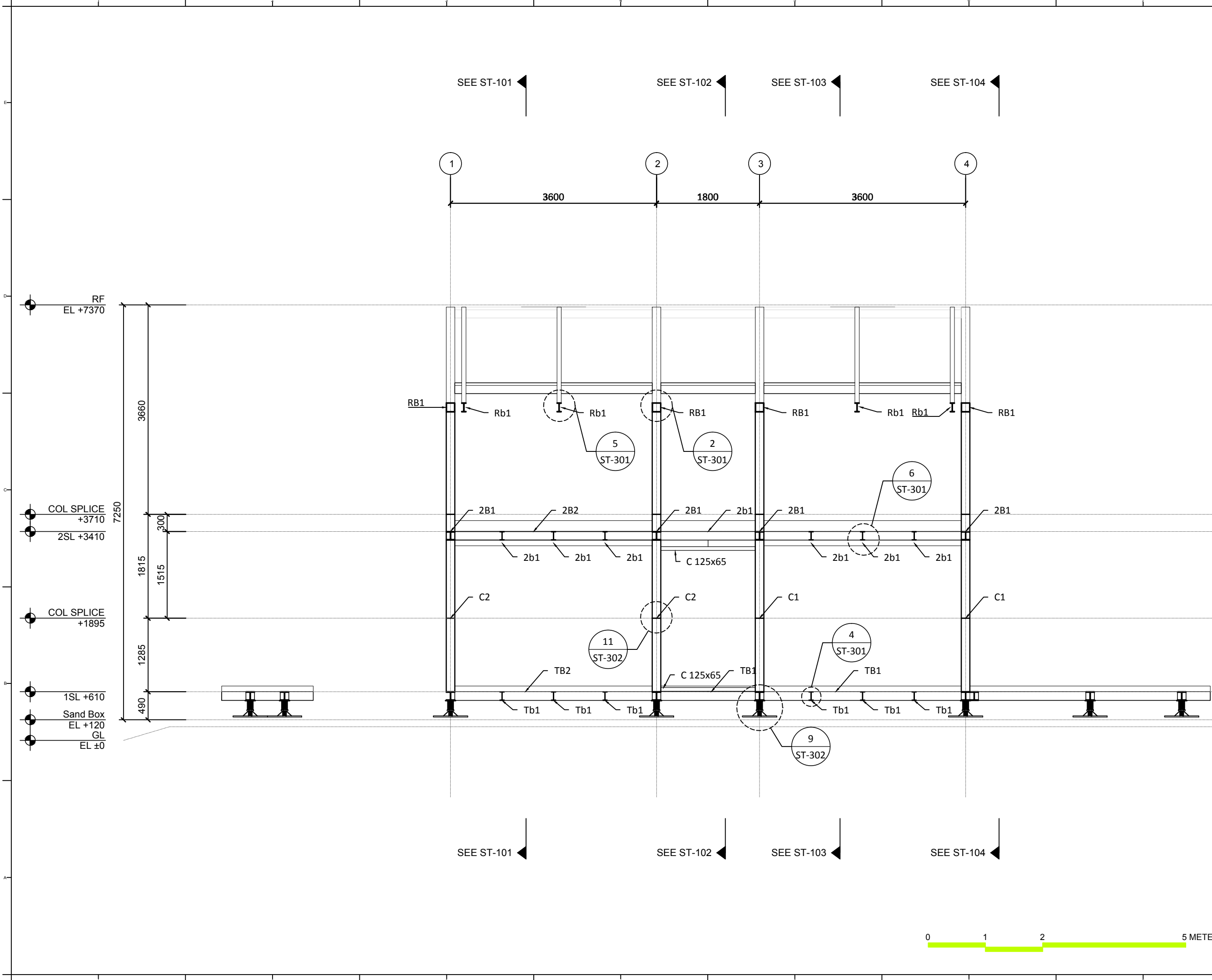
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Scale	1:60
Unit	mm

DWG. Title  
**STRUCTURAL TRANSVERSAL SECTIONS FRAME C**

DWG. No.	PAGE
<b>ST-116</b>	<b>152</b>



SEE ST-101    SEE ST-102    SEE ST-103    SEE ST-104

SEE ST-101    SEE ST-102    SEE ST-103    SEE ST-104

0    1    2    5 METER



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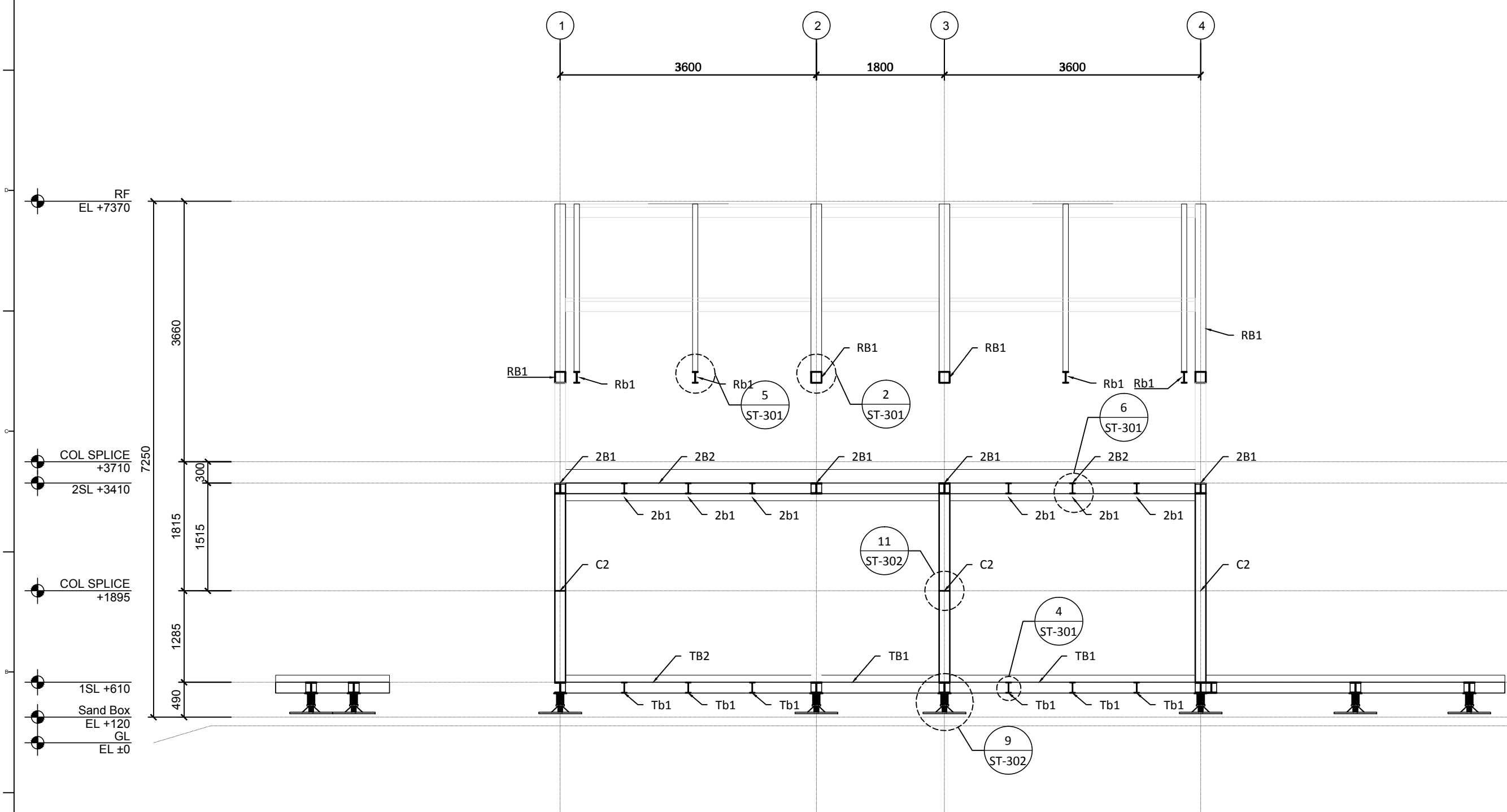
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DWG. Title  
**STRUCTURAL TRANSVERSAL SECTIONS FRAME C-1**

DWG. No.	PAGE
<b>ST-117</b>	<b>153</b>



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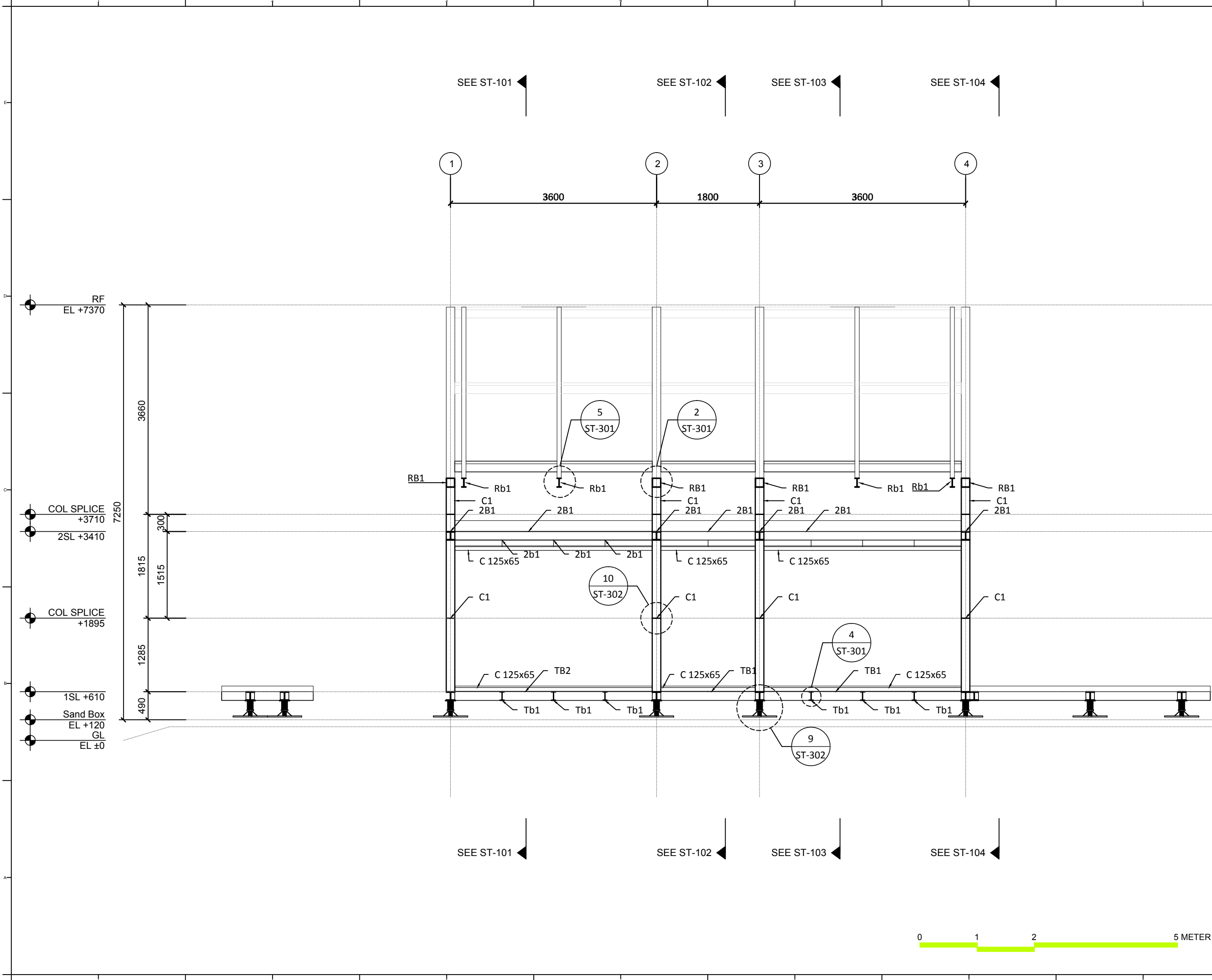
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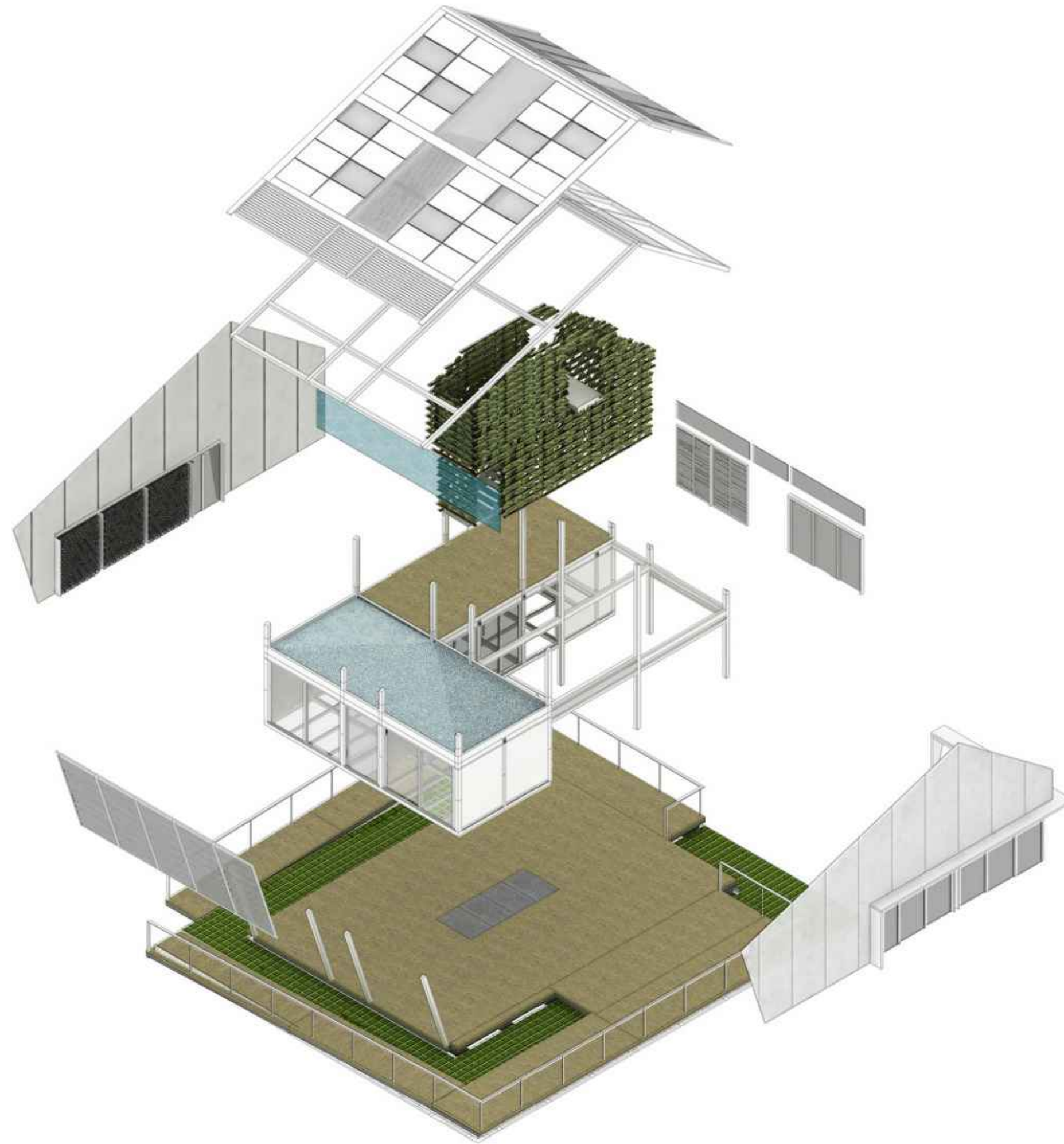
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DWG. Title  
**STRUCTURAL TRANSVERSAL SECTIONS FRAME D**

DWG. No.	PAGE
<b>ST-118</b>	<b>154</b>





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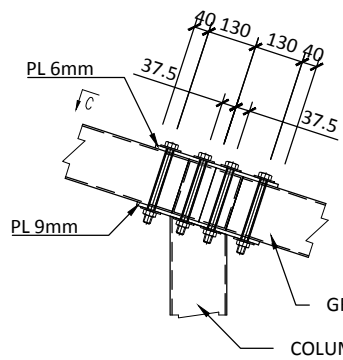
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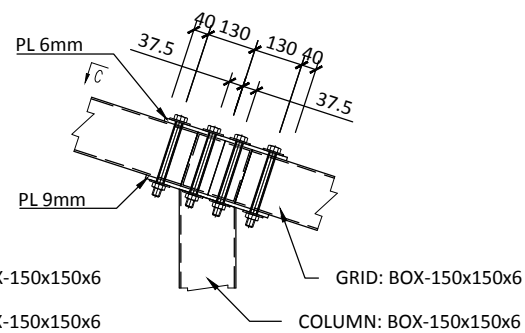
DWG. No. **ST-201** PAGE **155**



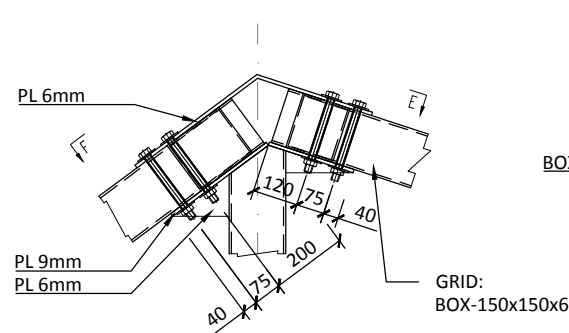
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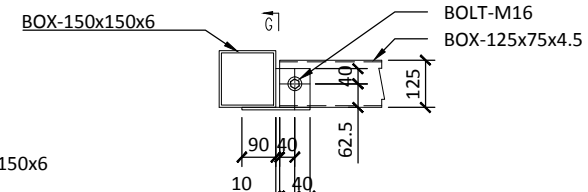
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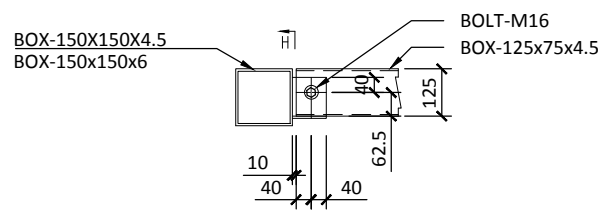
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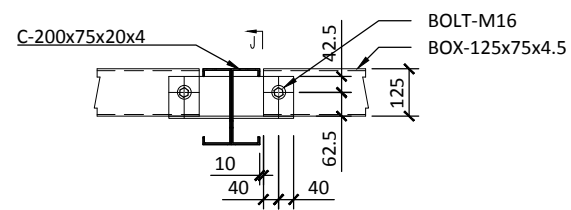
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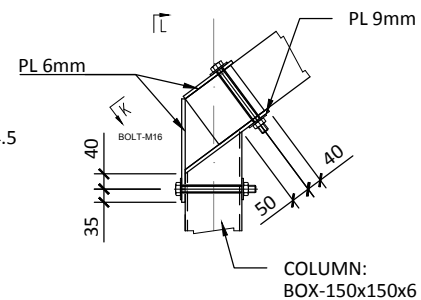
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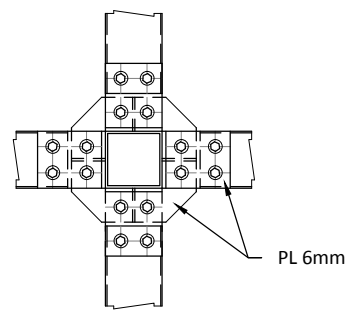
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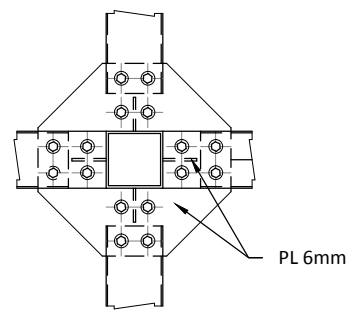
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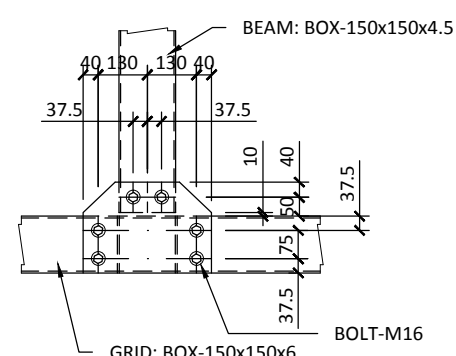
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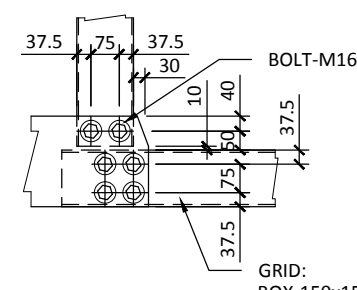
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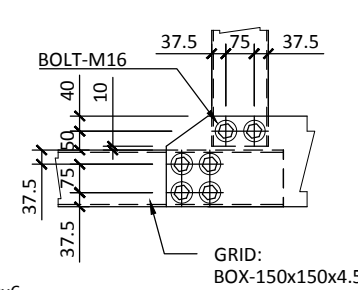
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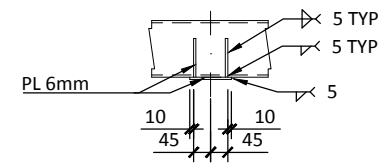
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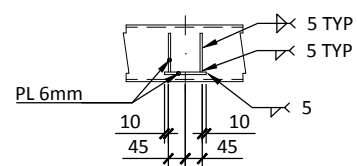
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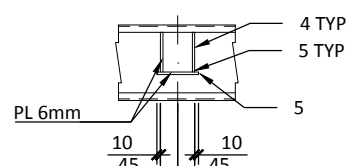
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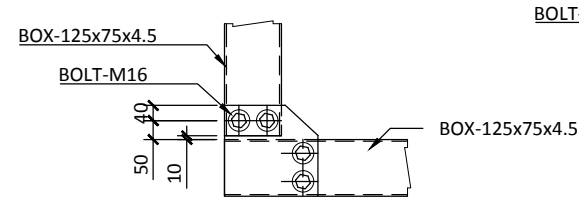
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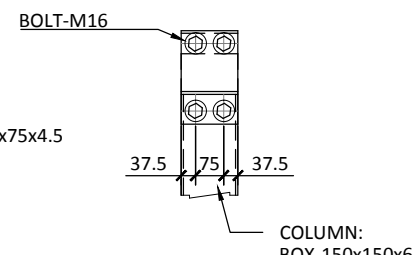
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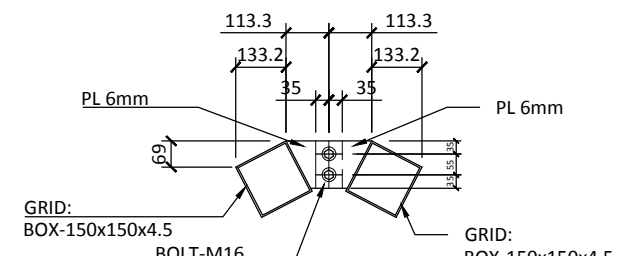
SECTION J



SECTION K



SECTION L



SECTION M



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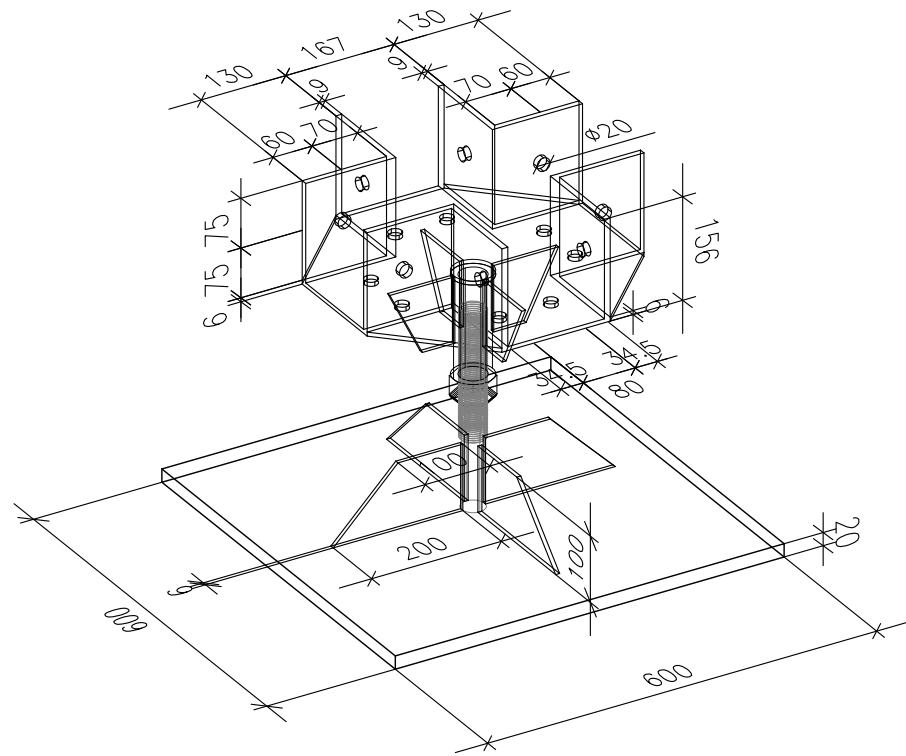
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DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
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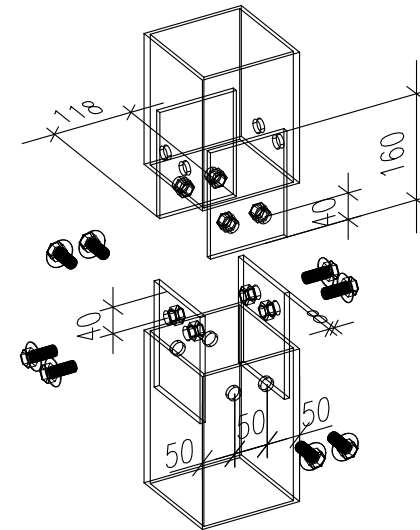
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Checked by	BT
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Unit	mm

DWG. Title  
**STRUCTURE DETAILS  
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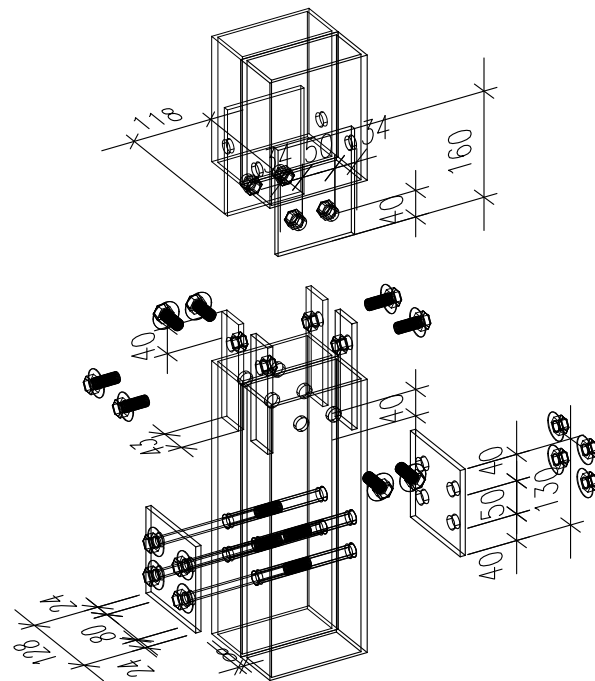
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<b>ST-302</b>	<b>157</b>



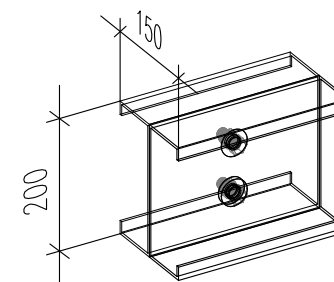
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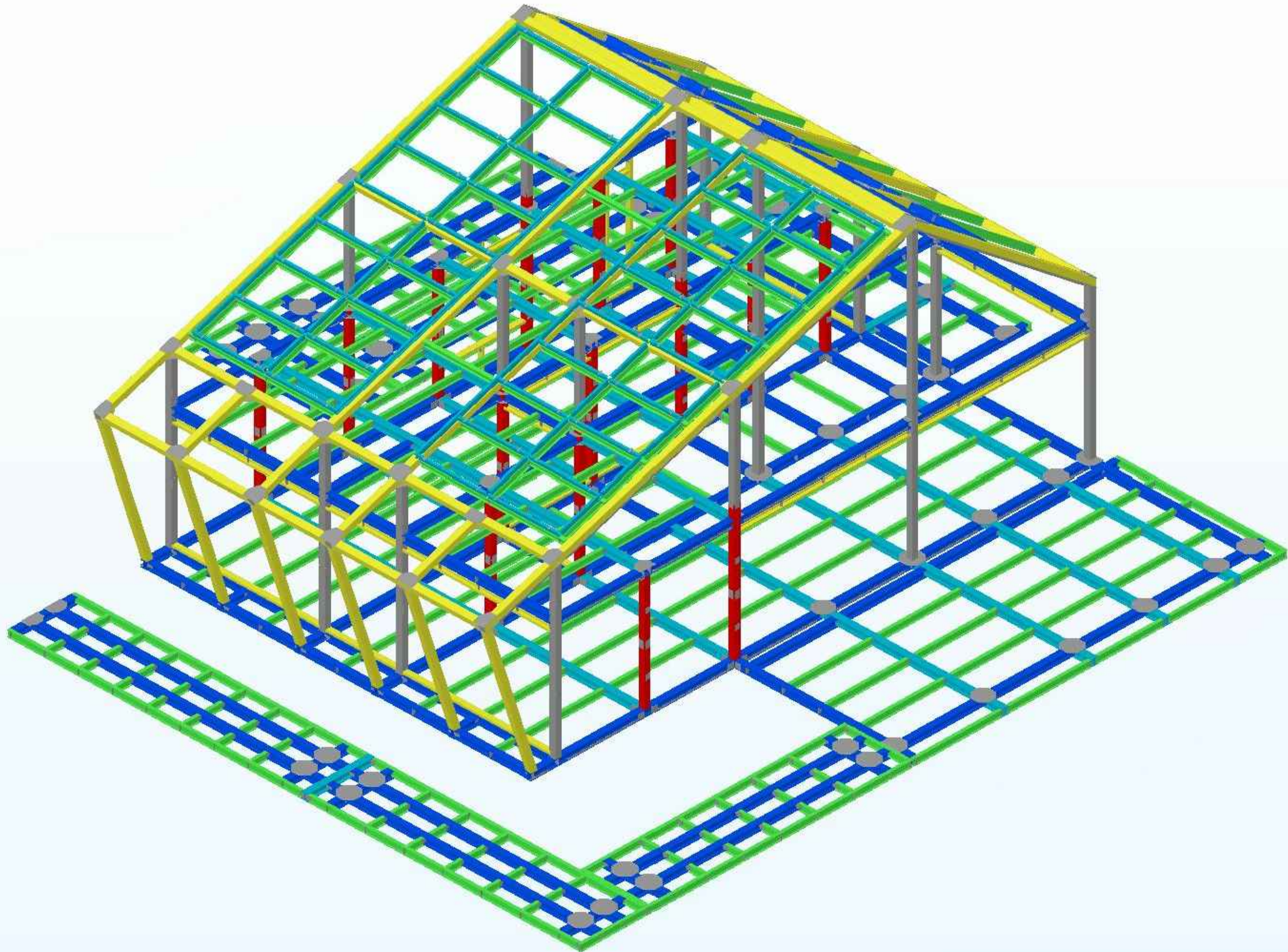


11



12





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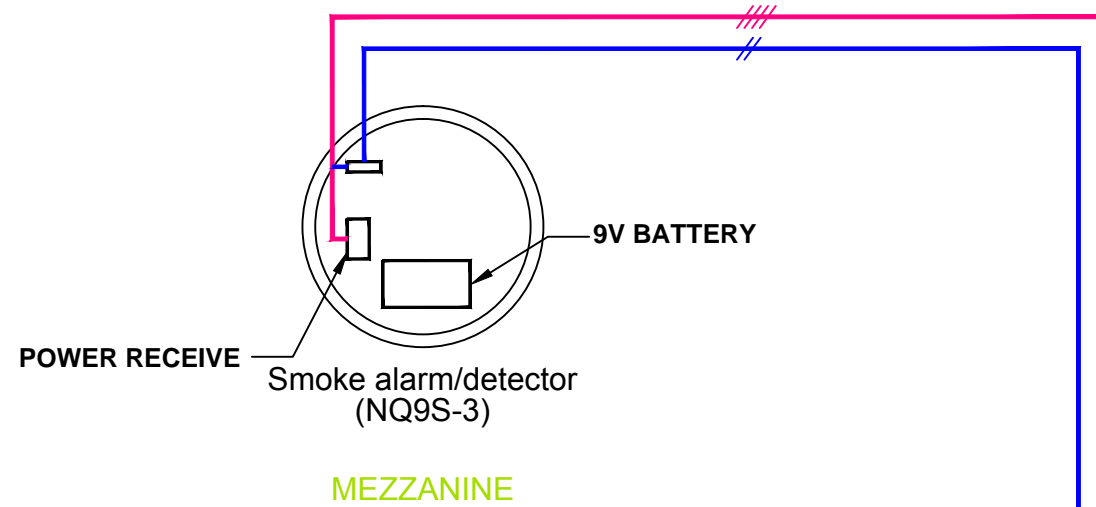
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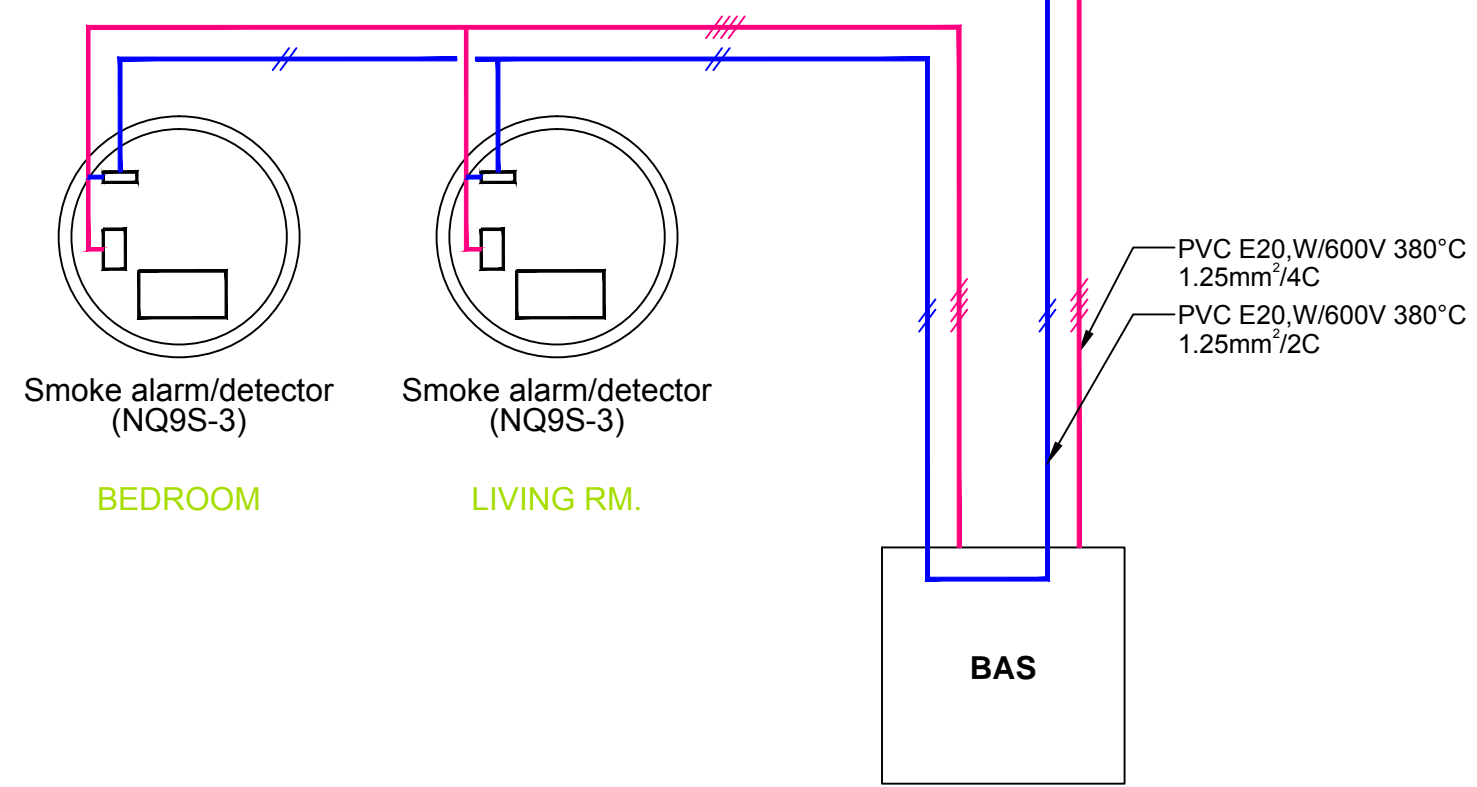
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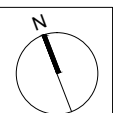
158



MEZZANINE  
GROUND



Note:



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DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
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ST	2014/11/03	AB Submission

Drawn by

HU

Checked by

CHESTER

Scale

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Unit

mm

DWG. Title

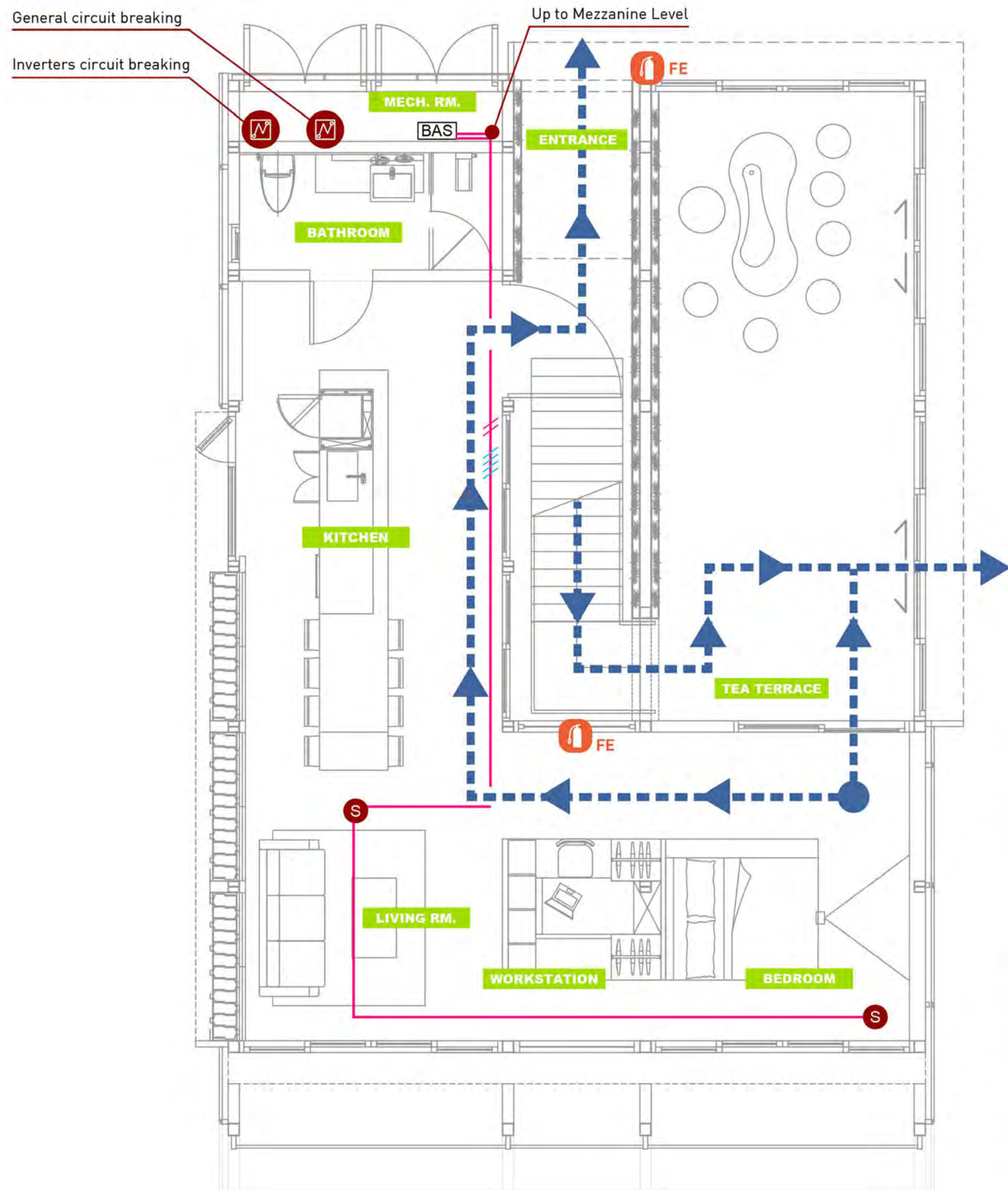
FIRE PROTECTION  
GROUND LEVEL

DWG. No.

FP-001

PAGE

159



— PVC E20, W/600V 380°C  
1.25mm<sup>2</sup>/4C, 1.25mm<sup>2</sup>/2C

**S** **Smoke Alarm/Detector**  
NQ9S-3 :  
-DC 9V Battery  
-Alarm Contacts  
-Interlock with all detectors  
when alarm of any detector  
-AC 220V

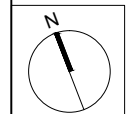
**FE** **Fire Extinguisher**  
ABC-EN3-4K :  
21A/113B/C efficiency

**M** **Power cut ON/OFF**  
General circuit  
breaking

**M** **Power cut ON/OFF**  
Inverters circuit  
breaking



Note:

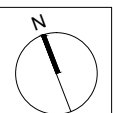


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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by	HU
Checked by	CHESTER
Scale	1:60
Unit	mm

DWG. Title	
<b>FIRE PROTECTION GROUND LEVEL</b>	
DWG. No.	PAGE
<b>FP-002</b>	<b>160</b>





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DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
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Checked by CHESTER

Scale 1:60

Unit mm

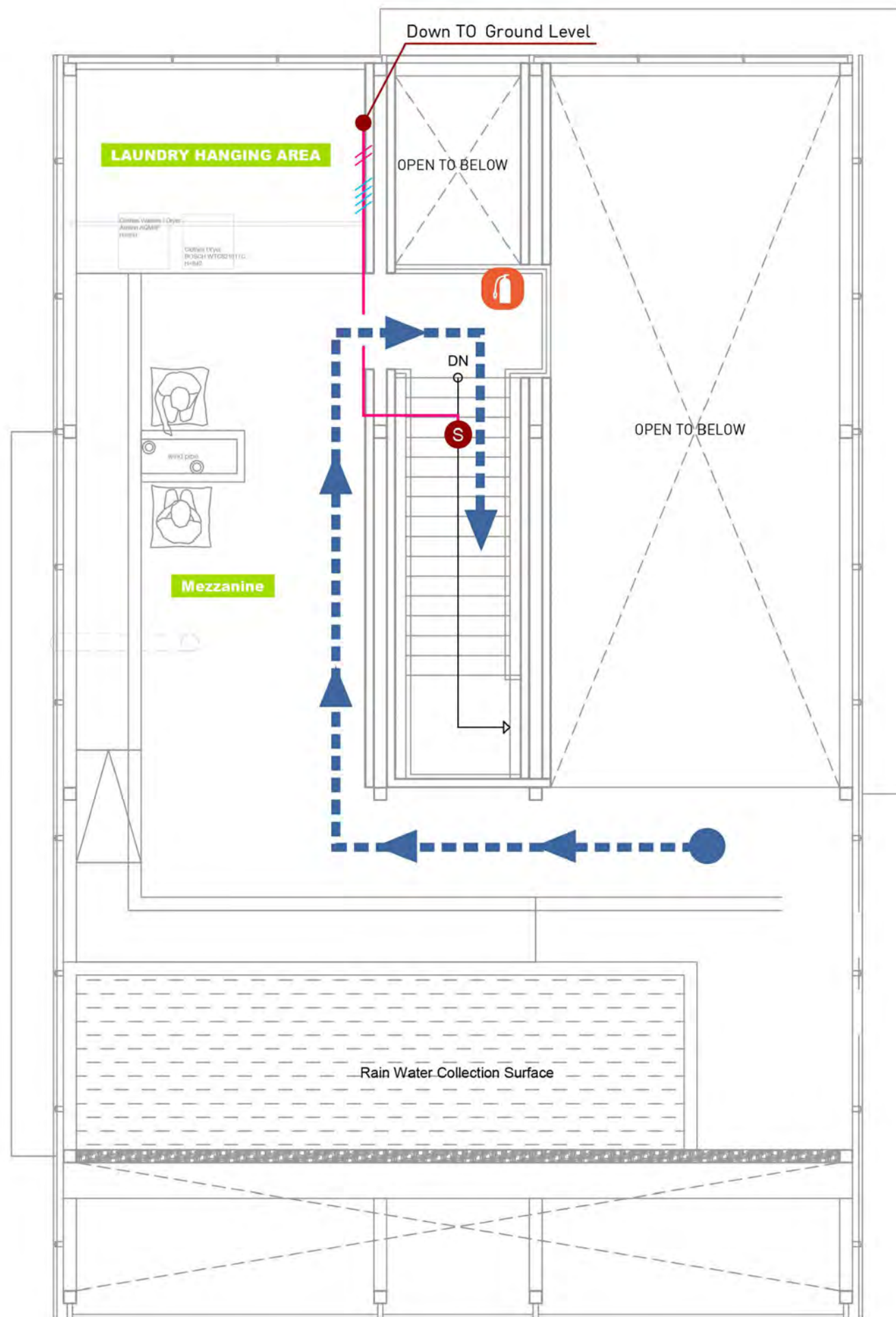
DWG. Title

**FIRE PROTECTION  
MEZZANINE LEVEL**

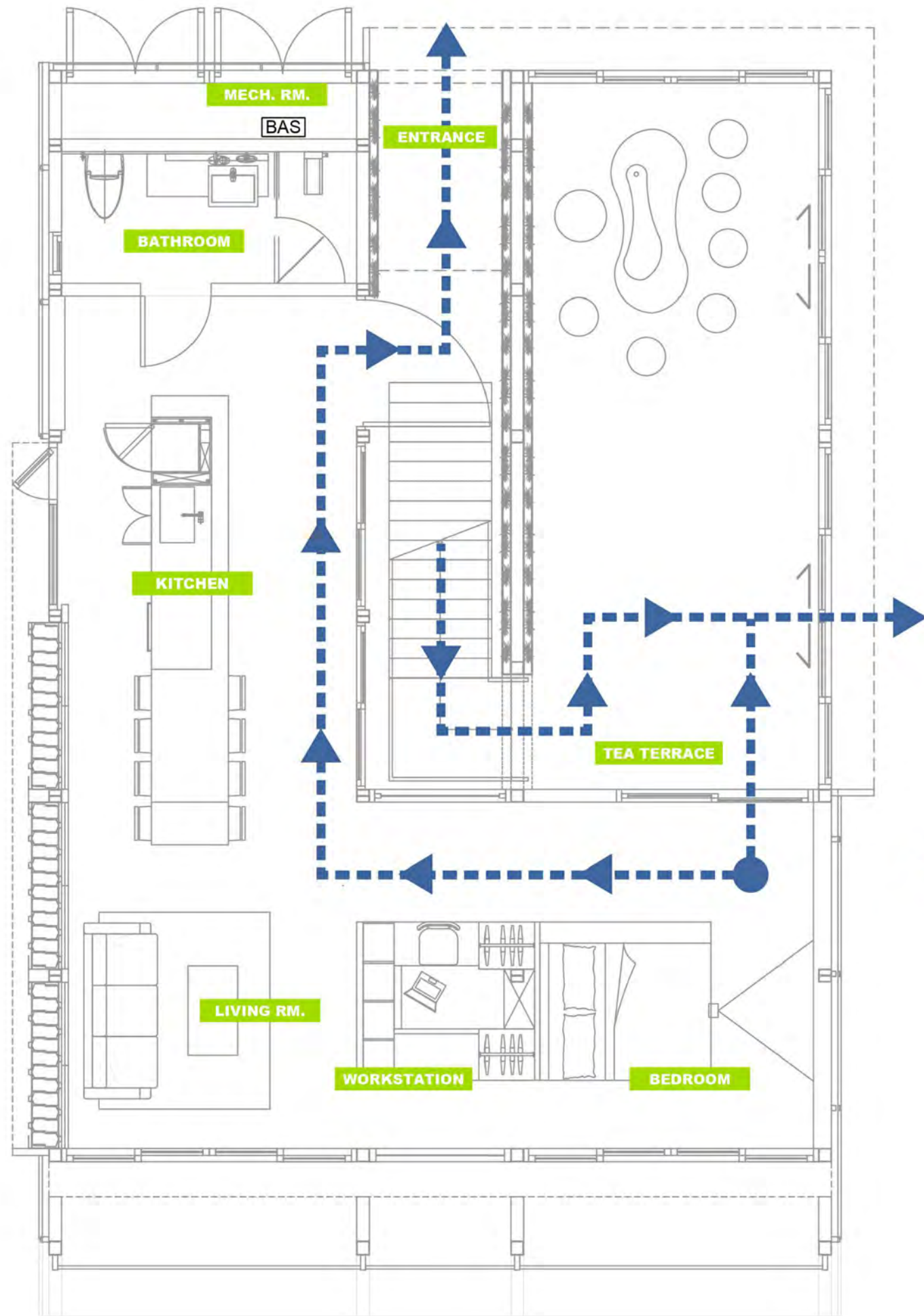
DWG. No. PAGE

**FP-003**

**161**



- 1.25mm<sup>2</sup>/4C, 1.25mm<sup>2</sup>/2C
- NQ9S-3 :  
-DC 9V Battery  
-Alarm Contacts  
-Interlock with all detectors when alarm of any detector  
-AC 220V
- Fire Extinguisher**  
ABC-EN3-4K :  
21A/113B/C efficiency
- Evacuation Route
- Evacuation Origin



- - - - -> Evacuation Route  
 ● Evacuation Origin

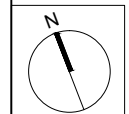


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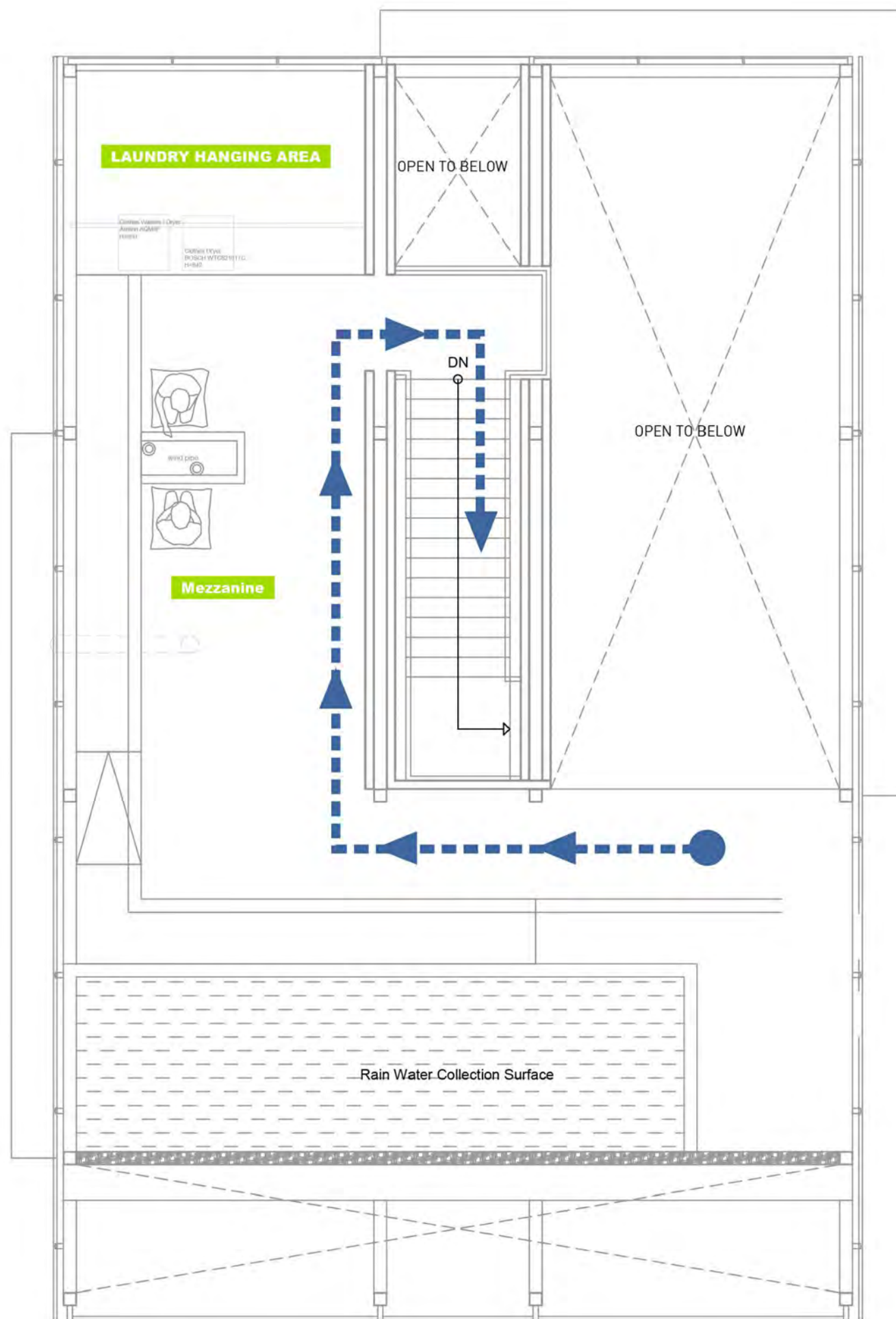







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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by: HU  
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 Scale: 1:60  
 Unit: mm

DWG. Title  
**FIRE PROTECTION  
 EVACUATION PATH  
 GROUND LEVEL**

DWG. No. **FP-004**      PAGE **162**



-  1.25mm<sup>2</sup>/4C, 1.25mm<sup>2</sup>/2C
-  NQ9S-3 :  
-DC 9V Battery  
-Alarm Contacts  
-Interlock with all detectors when alarm of any detector  
-AC 220V
-  **Fire Extinguisher**  
ABC-EN3-4K :  
21A/113B/C efficiency
-  Evacuation Route
-  Evacuation Origin

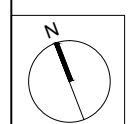


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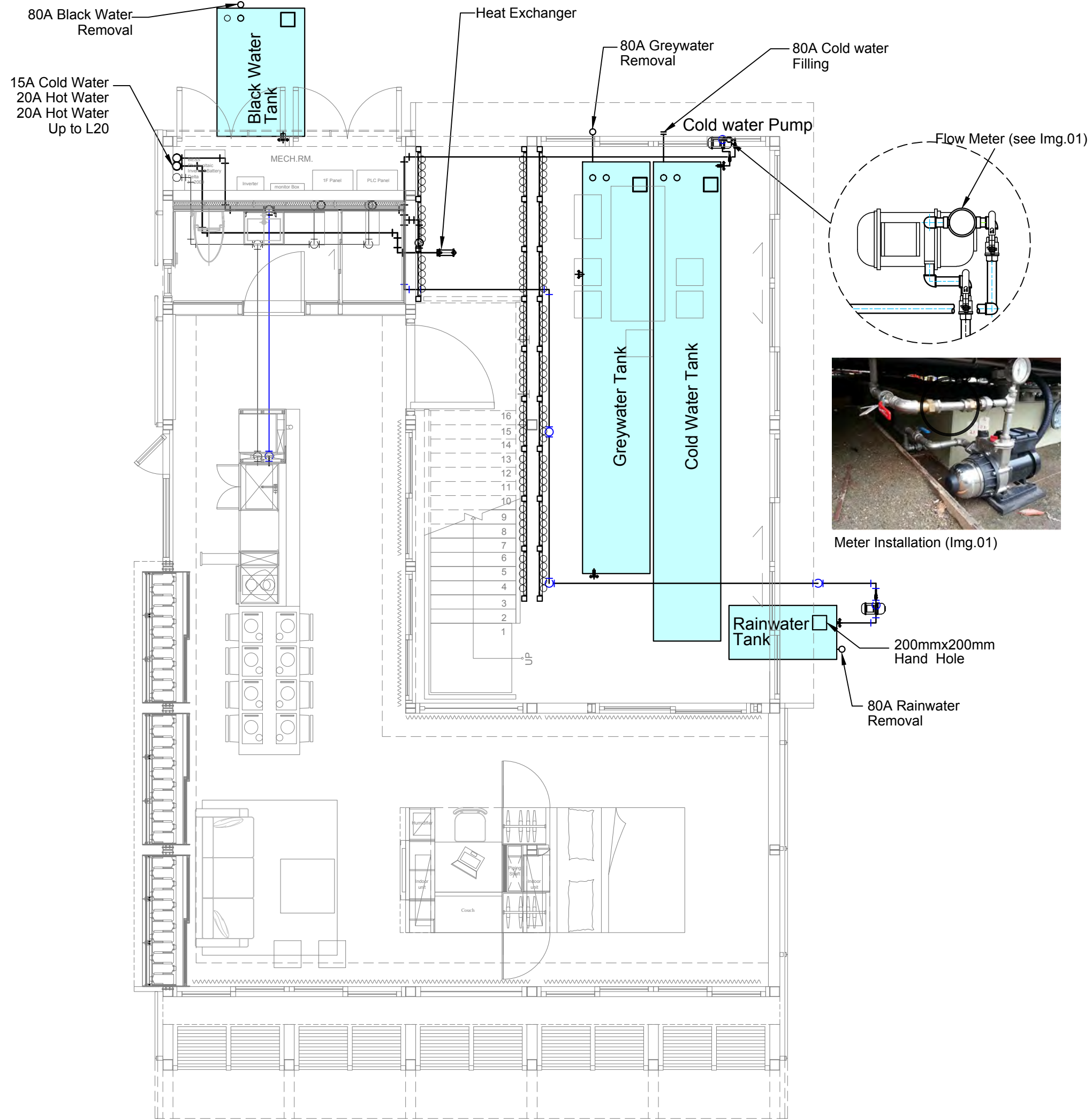


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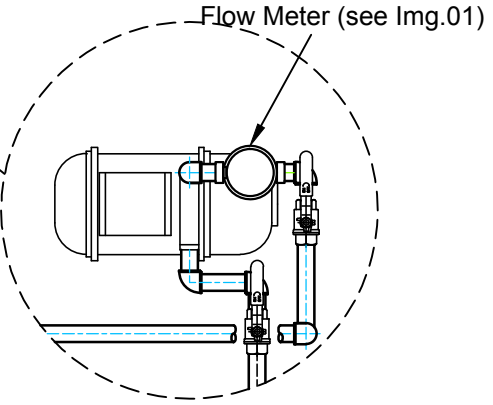
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**Unit** mm

**DWG. Title**  
FIRE PROTECTION  
EVACUATION PATH  
MEZZANINE LEVEL

**DWG. No.** FP-005 **PAGE** 163



1. **Cold Water Tank**  
Size : 1.00x7.00x0.30 m,  
Volume : 2100l.
2. **Greywater tank**  
Size : 1.00x6.00x0.30 m,  
Volume : 1800l.
3. **Black Water Tank**  
Size : 1.20x1.80x0.30 m,  
Volume : 600l.
4. **Rainwater Tank**  
Size : 0.70x1.50x0.30 m,  
Volume : 300l.
5. **Rainwater Pump**  
Flow : 15 lpm  
Head : 15 m
6. **Cold Water Pump**  
Flow : 25 lpm  
Head : 20 m

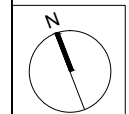


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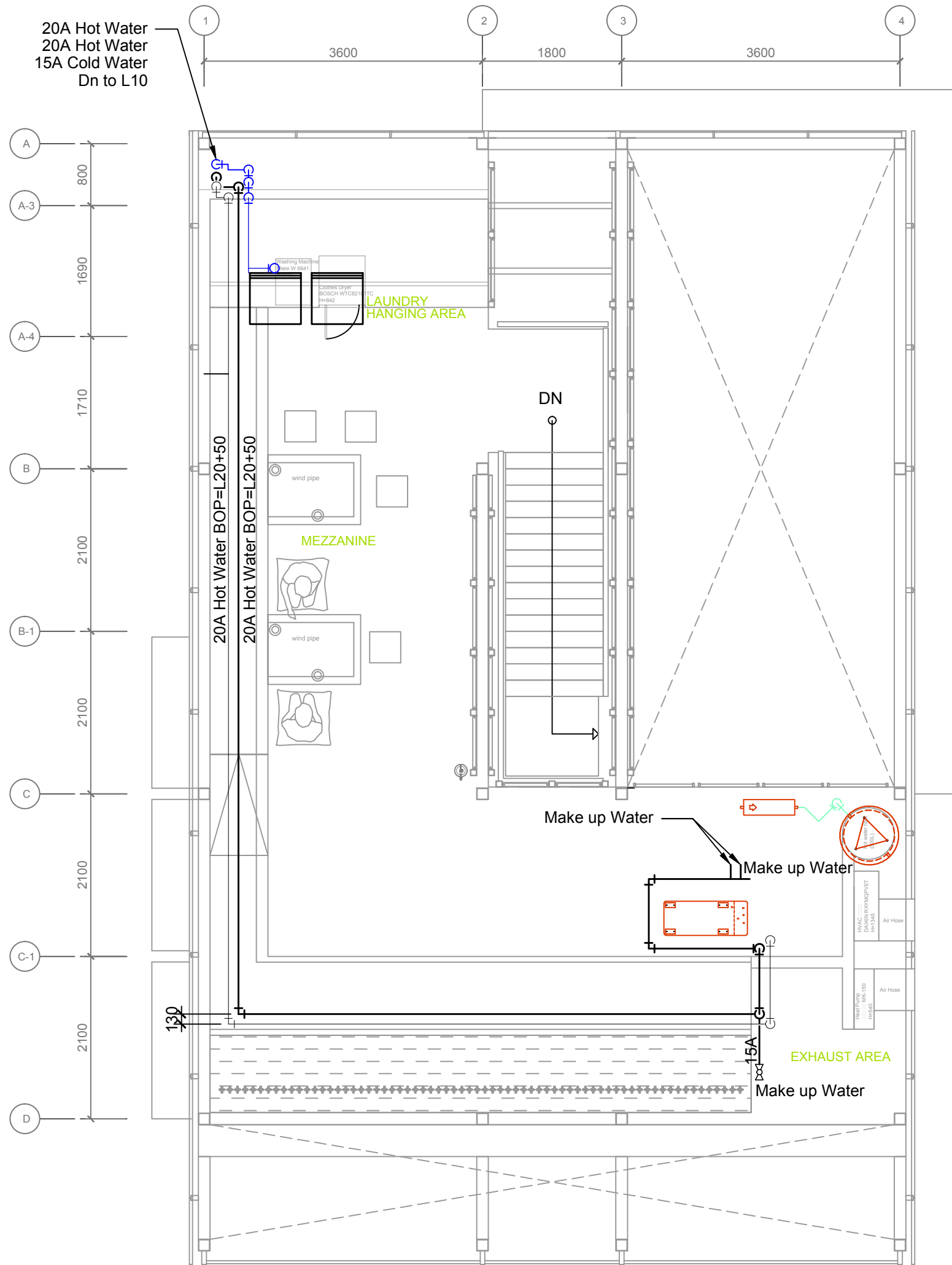


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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

**Drawn by** MH  
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**Unit** mm

**DWG. Title**  
PLUMBING SUPPLY AND  
REMOVAL  
GROUND LEVEL PLAN

**DWG. No.** PL-001 **PAGE** 164



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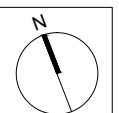
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by

MH

Checked by

-

Scale

1:60

Unit

mm

DWG. Title

**PLUMBING SUPPLY AND  
REMOVAL  
MEZZANINE LEVEL PLAN**

DWG. No.

**PL-002**

PAGE

**165**

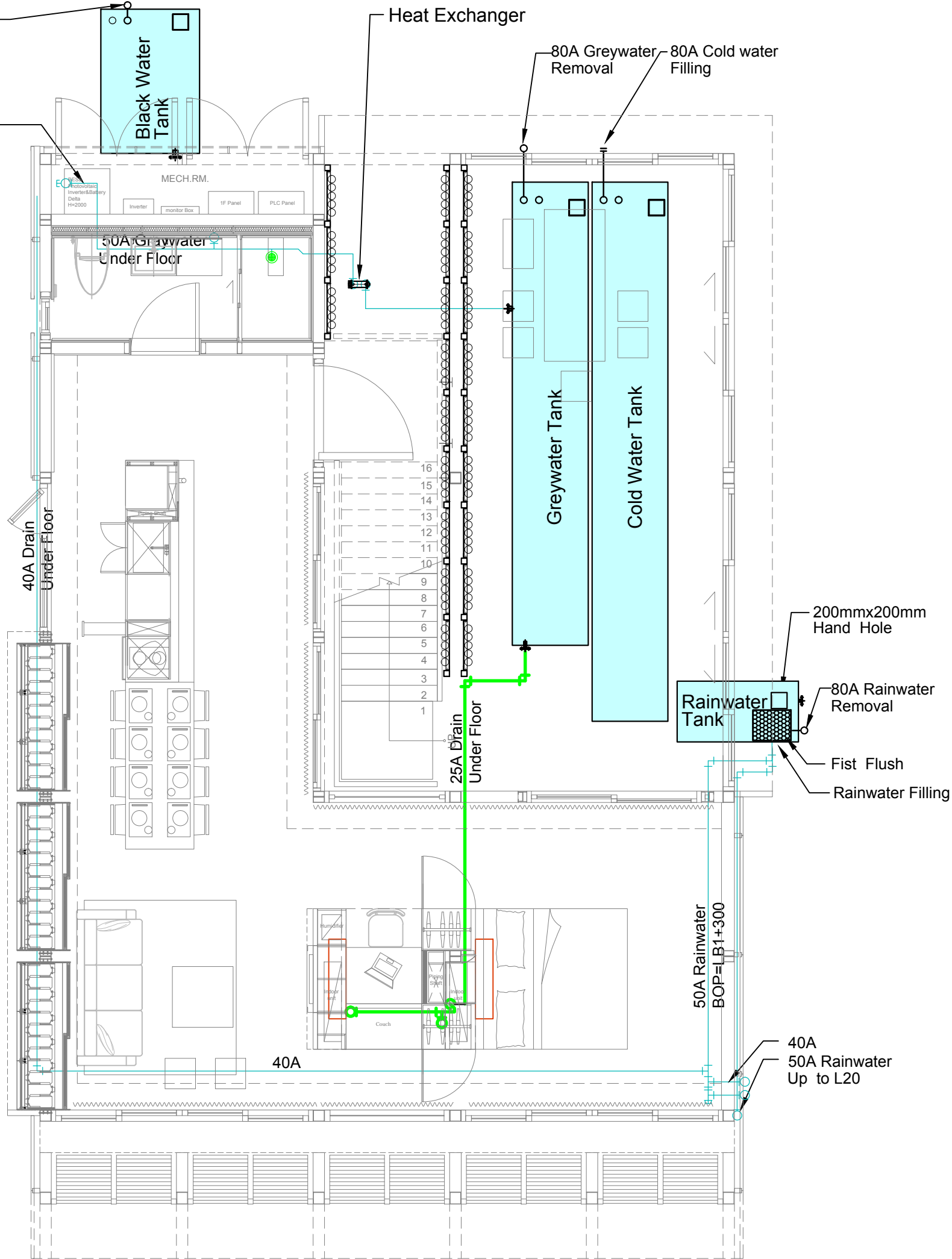
80A Black Water Removal

50A Graywater Up to L20

Heat Exchanger

80A Greywater Removal

80A Cold water Filling



1. Cold Water Tank  
Size : 1.00x7.00x0.30 m,  
Volume : 2100l.

2. Greywater tank  
Size : 1.00x6.00x0.30 m,  
Volume : 1800l.

3. Black Water Tank  
Size : 2.00x1.00x0.30 m,  
Volume : 600l.

4. Rainwater Tank  
Size : 1.50x0.70x0.30 m,  
Volume : 300l.

5. Rainwater Pump  
Flow : 15 lpm  
Head : 15 m

6. Cold Water Pump  
Flow : 20 lpm  
Head : 18 m



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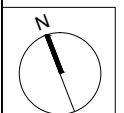
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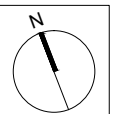
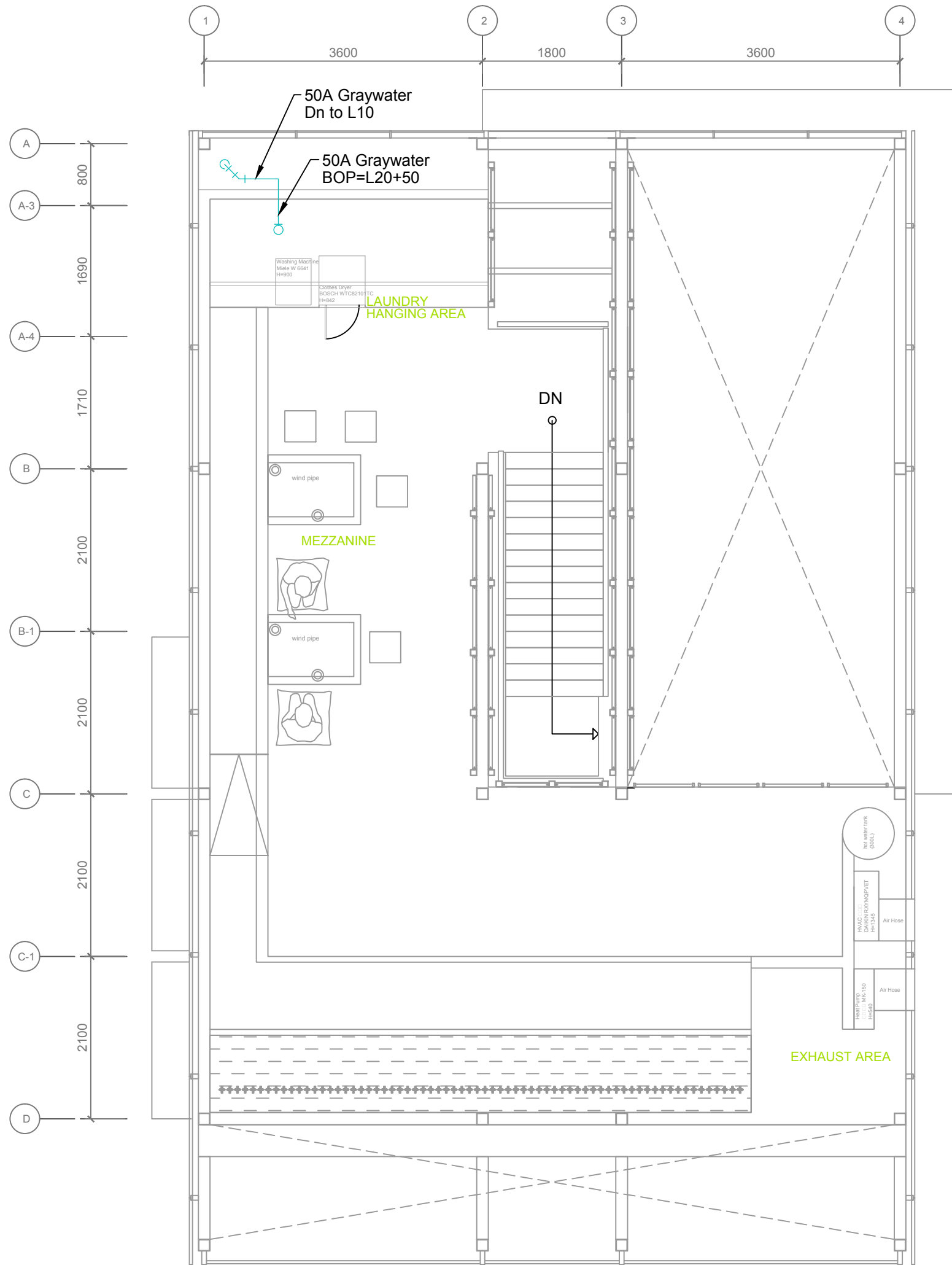
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Unit mm

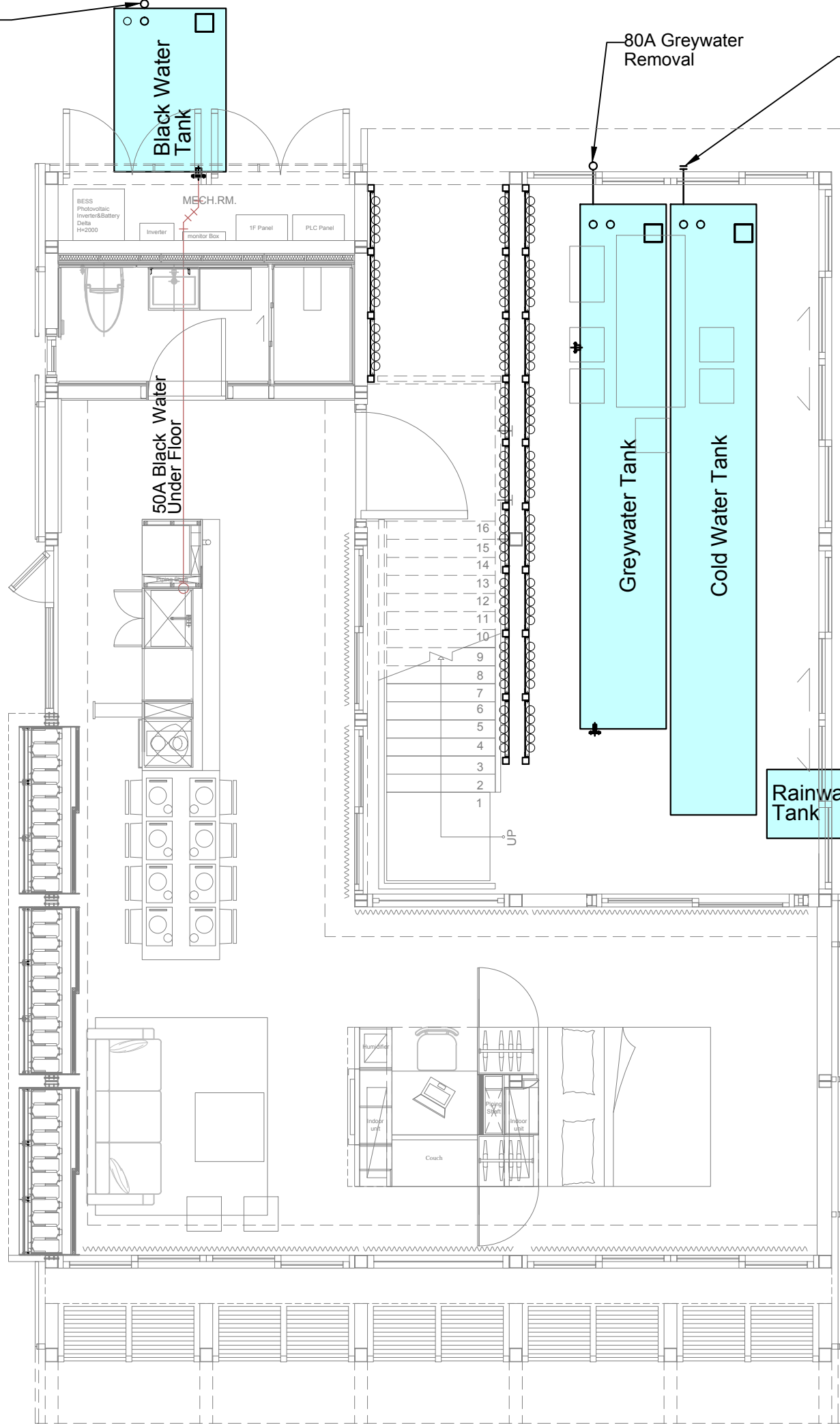
DWG. Title  
GRAY WATER  
GROUND LEVEL

DWG. No. PL-011 PAGE 166



Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

80A Black Water Removal



1. **Cold Water Tank**  
Size : 1.00x7.00x0.30 m,  
Volume : 2100l.
2. **Greywater tank**  
Size : 1.00x6.00x0.30 m,  
Volume : 1800l.
3. **Black Water Tank**  
Size : 1.20x1.80x0.30 m,  
Volume : 600l.
4. **Rainwater Tank**  
Size : 0.70x1.50x0.30 m,  
Volume : 300l.
5. **Rainwater Pump**  
Flow : 15 lpm  
Head : 15 m
6. **Cold Water Pump**  
Flow : 25 lpm  
Head : 20 m



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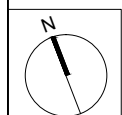
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by

MH

Checked by

-

Scale

1:60

Unit

mm

DWG. Title

DRAIN / WASTE / VENT  
Ground Level

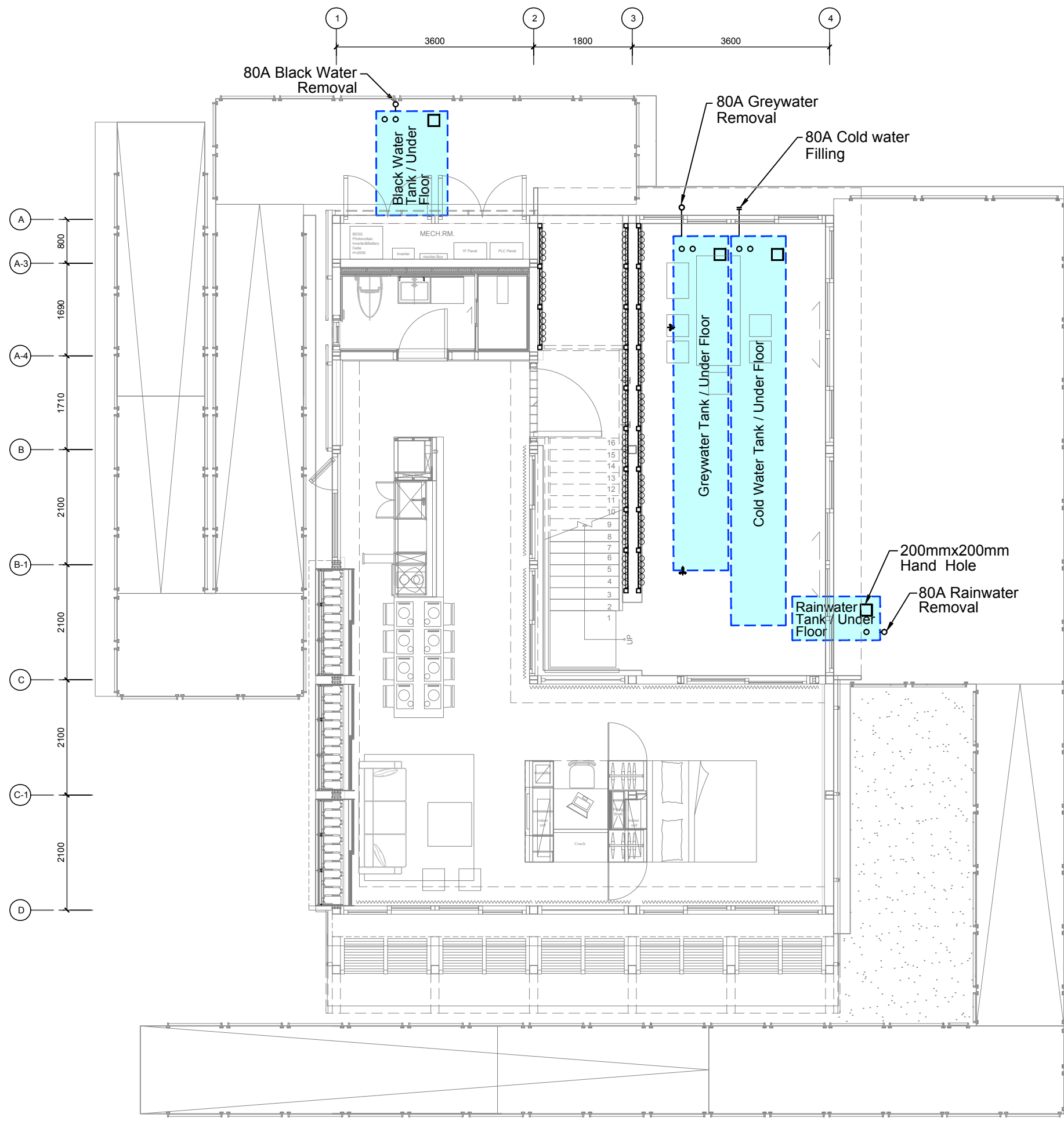
DWG. No.

PL-021

PAGE

168





1. Cold Water Tank  
Size : 1.00x7.00x0.30 m,  
Volume : 2100l.
2. Greywater tank  
Size : 1.00x6.00x0.30 m,  
Volume : 1800l.
3. Black Water Tank  
Size : 1.20x1.80x0.30 m,  
Volume : 600l.
4. Rainwater Tank  
Size : 0.70x1.50x0.30 m,  
Volume : 300l.
5. Rainwater Pump  
Flow : 15 lpm  
Head : 15 m
6. Cold Water Pump  
Flow : 25 lpm  
Head : 20 m



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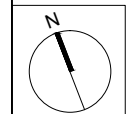
Team Name: NCTU/UNICODE  
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Taiwan  
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Note:



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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by	MH
Checked by	-
Scale	1:60
Unit	mm

DWG. Title  
Containers and Fill Locations

DWG. No.	PAGE
PL-031	169

Project:



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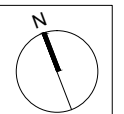
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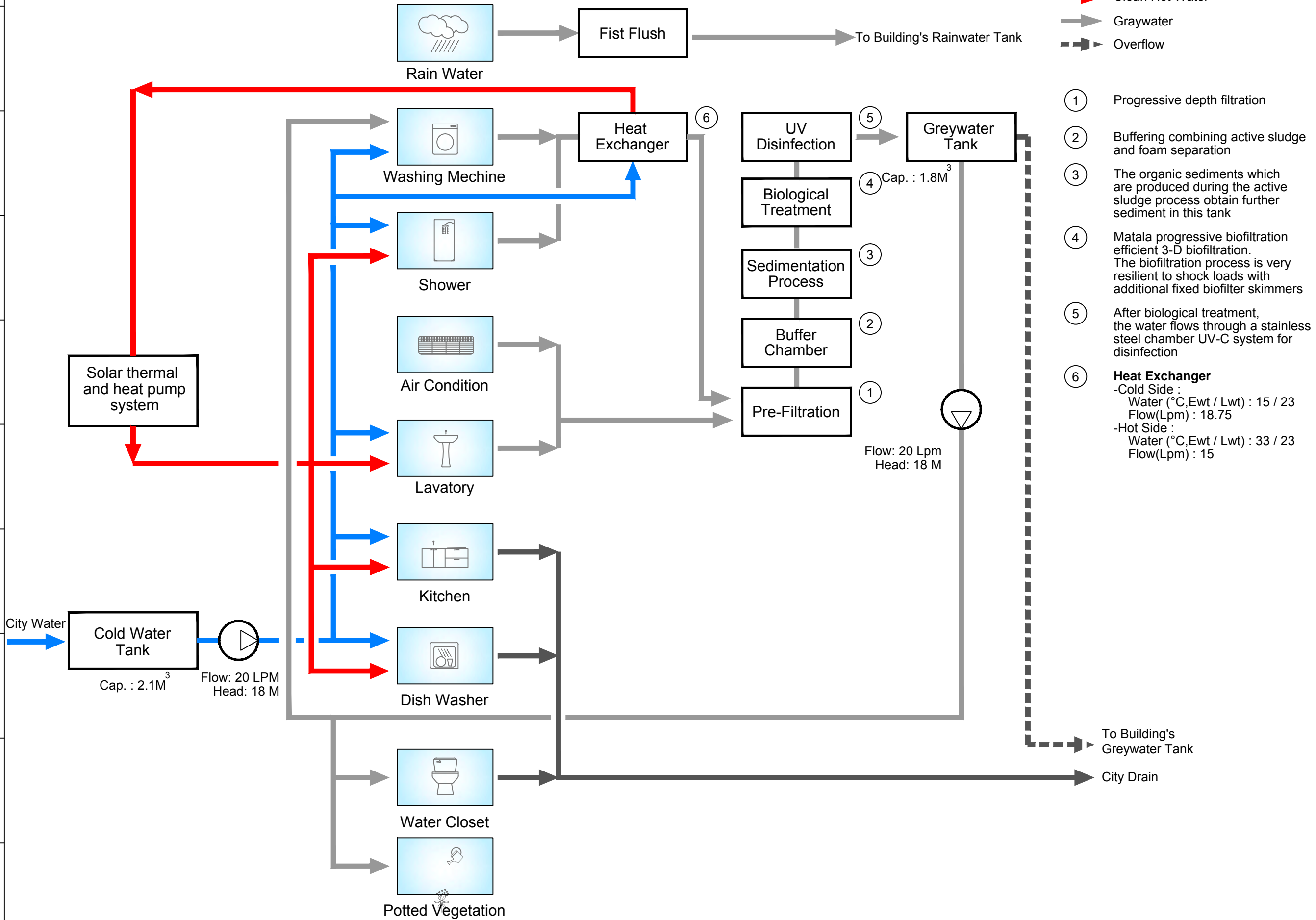
Drawn by: MH  
Checked by: -  
Scale: -  
Unit: -

DWG. Title: SCHEMATIC DIAGRAM IN TAIWAN

DWG. No. PL-101 PAGE 170

- Clean Cold Water
- Clean Hot Water
- Graywater
- Overflow

- ① Progressive depth filtration
- ② Buffering combining active sludge and foam separation
- ③ The organic sediments which are produced during the active sludge process obtain further sediment in this tank
- ④ Matala progressive biofiltration efficient 3-D biofiltration. The biofiltration process is very resilient to shock loads with additional fixed biofilter skimmers
- ⑤ After biological treatment, the water flows through a stainless steel chamber UV-C system for disinfection
- ⑥ **Heat Exchanger**  
-Cold Side :  
Water (°C,Ewt / Lwt) : 15 / 23  
Flow(Lpm) : 18.75  
-Hot Side :  
Water (°C,Ewt / Lwt) : 33 / 23  
Flow(Lpm) : 15



Flow: 20 Lpm  
Head: 18 M

Cap. : 1.8M<sup>3</sup>

Solar thermal and heat pump system

Cold Water Tank  
Cap. : 2.1M<sup>3</sup>

Flow: 20 LPM  
Head: 18 M

Rain Water

Fist Flush

To Building's Rainwater Tank

Heat Exchanger

Washing Mechine

Shower

Air Condition

Lavatory

Kitchen

Dish Washer

Water Closet

Potted Vegetation

UV Disinfection

Biological Treatment

Sedimentation Process

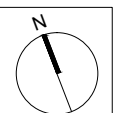
Buffer Chamber

Pre-Filtration

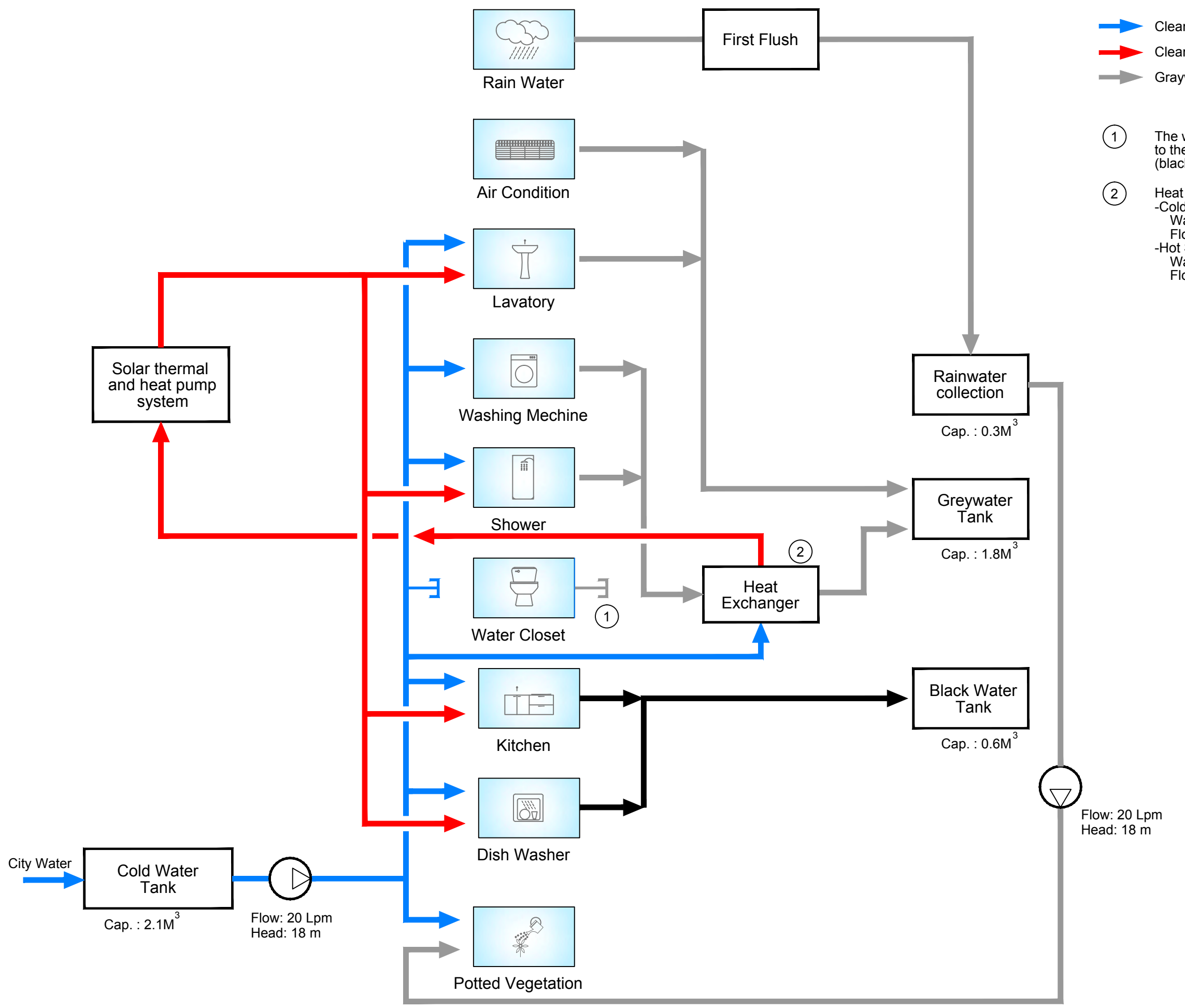
Greywater Tank

To Building's Greywater Tank

City Drain



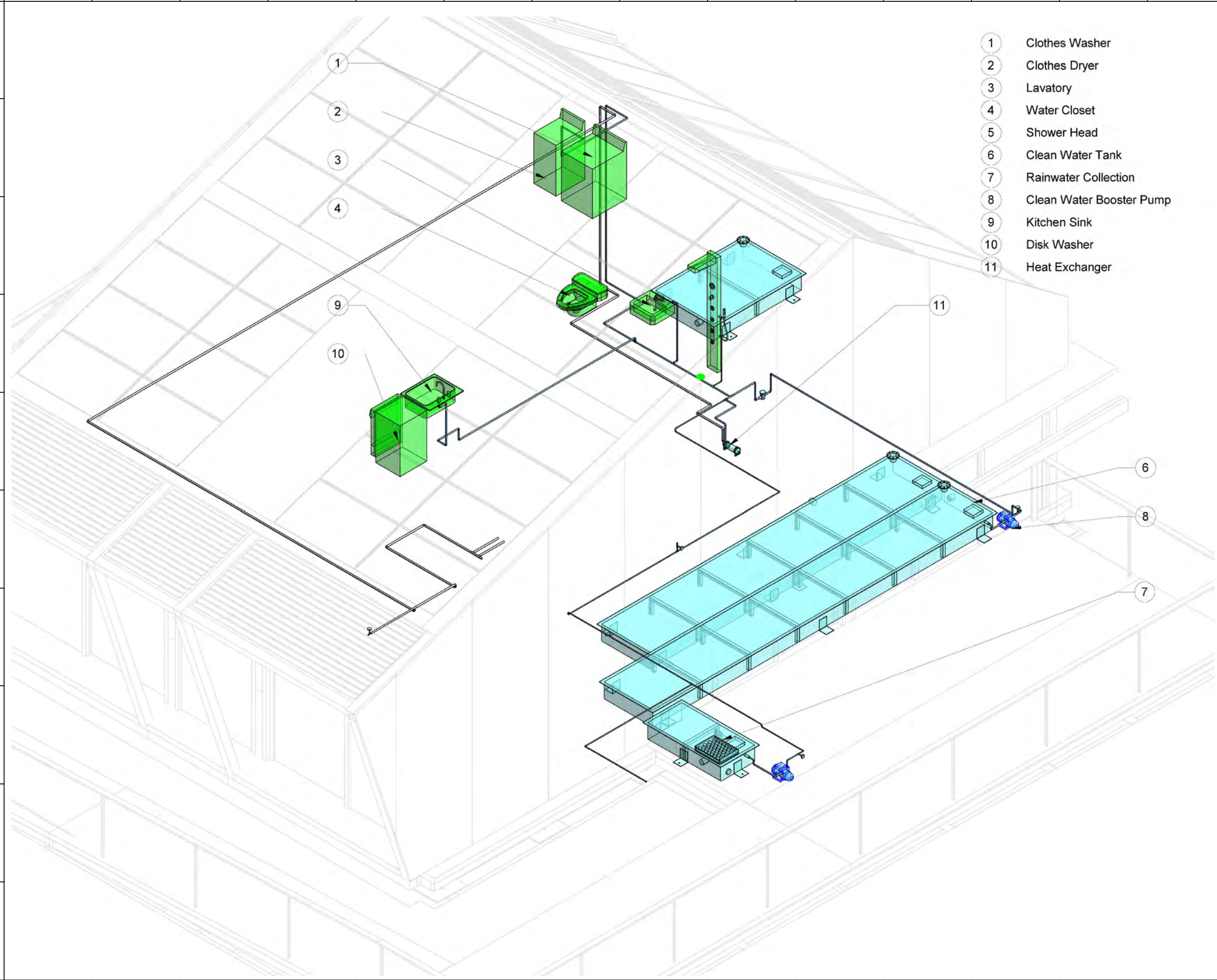
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ST	2014/04/30	CD Submission
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Clean Cold Water  
 Clean Hot Water  
 Graywater

- ① The water closet is not connected to the sewage disposal system (black water tank) during the event.
- ② Heat Exchanger  
 -Cold Side :  
 Water (°C,Ewt / Lwt) : 15 / 23  
 Flow(Lpm) : 18.75  
 -Hot Side :  
 Water (°C,Ewt / Lwt) : 33 / 23  
 Flow(Lpm) : 15

Flow: 20 Lpm  
 Head: 18 m



- ① Clothes Washer
- ② Clothes Dryer
- ③ Lavatory
- ④ Water Closet
- ⑤ Shower Head
- ⑥ Clean Water Tank
- ⑦ Rainwater Collection
- ⑧ Clean Water Booster Pump
- ⑨ Kitchen Sink
- ⑩ Disk Washer
- ⑪ Heat Exchanger



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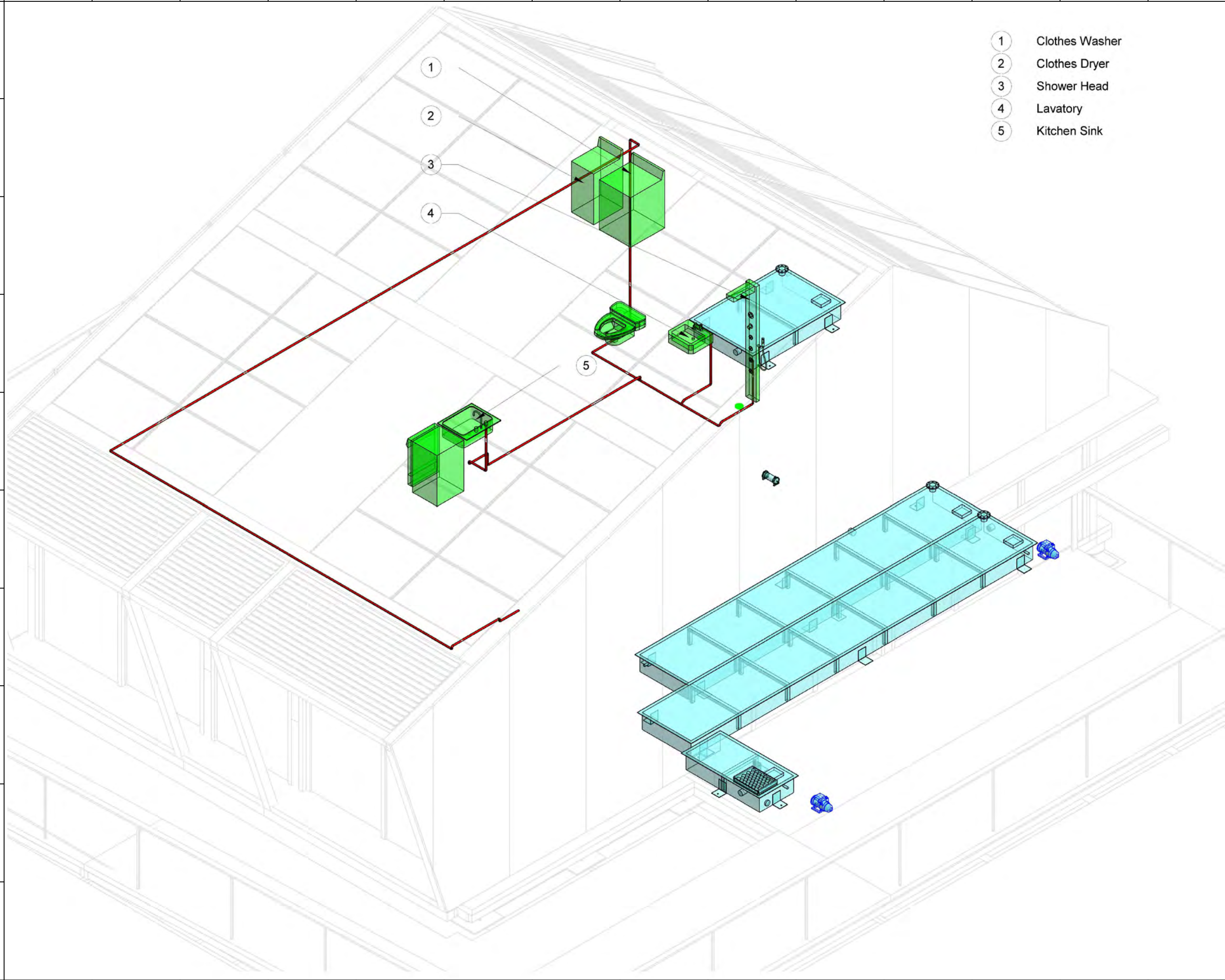
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Checked by: -  
Scale: -  
Unit: -

DWG. Title  
**SUPPLY AND REMOVAL  
CLEAN WATER ISOMETRIC**

DWG. No. **PL-201**      PAGE **172**



- ① Clothes Washer
- ② Clothes Dryer
- ③ Shower Head
- ④ Lavatory
- ⑤ Kitchen Sink



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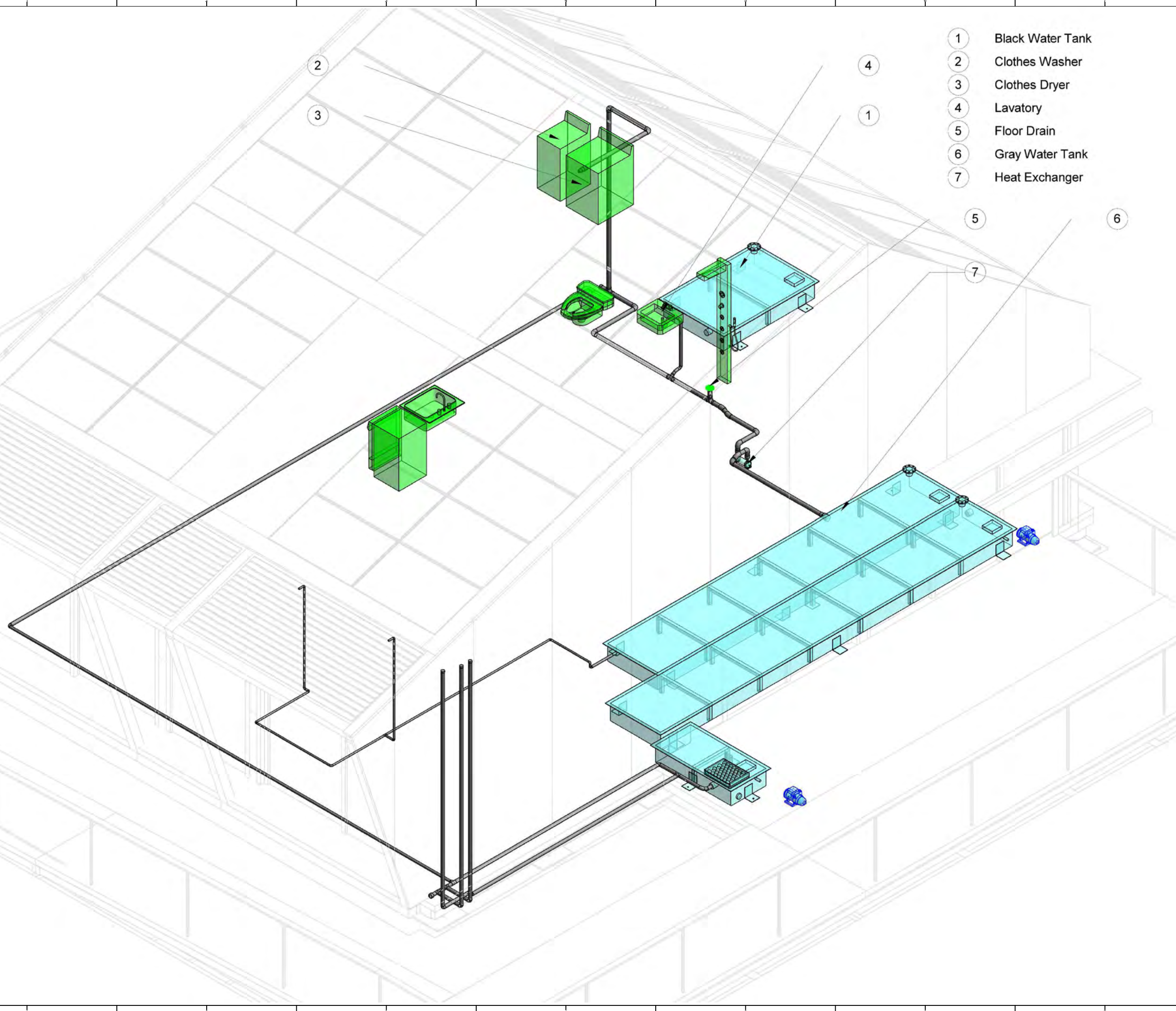
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ST	2014/11/03	AB Submission

**Drawn by:** MH  
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**Scale:** -  
**Unit:** mm

**DWG. Title**  
 SUPPLY AND REMOVAL  
 HOT WATER ISOMETRIC

**DWG. No.** PL-202      **PAGE** 173

- 1 Black Water Tank
- 2 Clothes Washer
- 3 Clothes Dryer
- 4 Lavatory
- 5 Floor Drain
- 6 Gray Water Tank
- 7 Heat Exchanger



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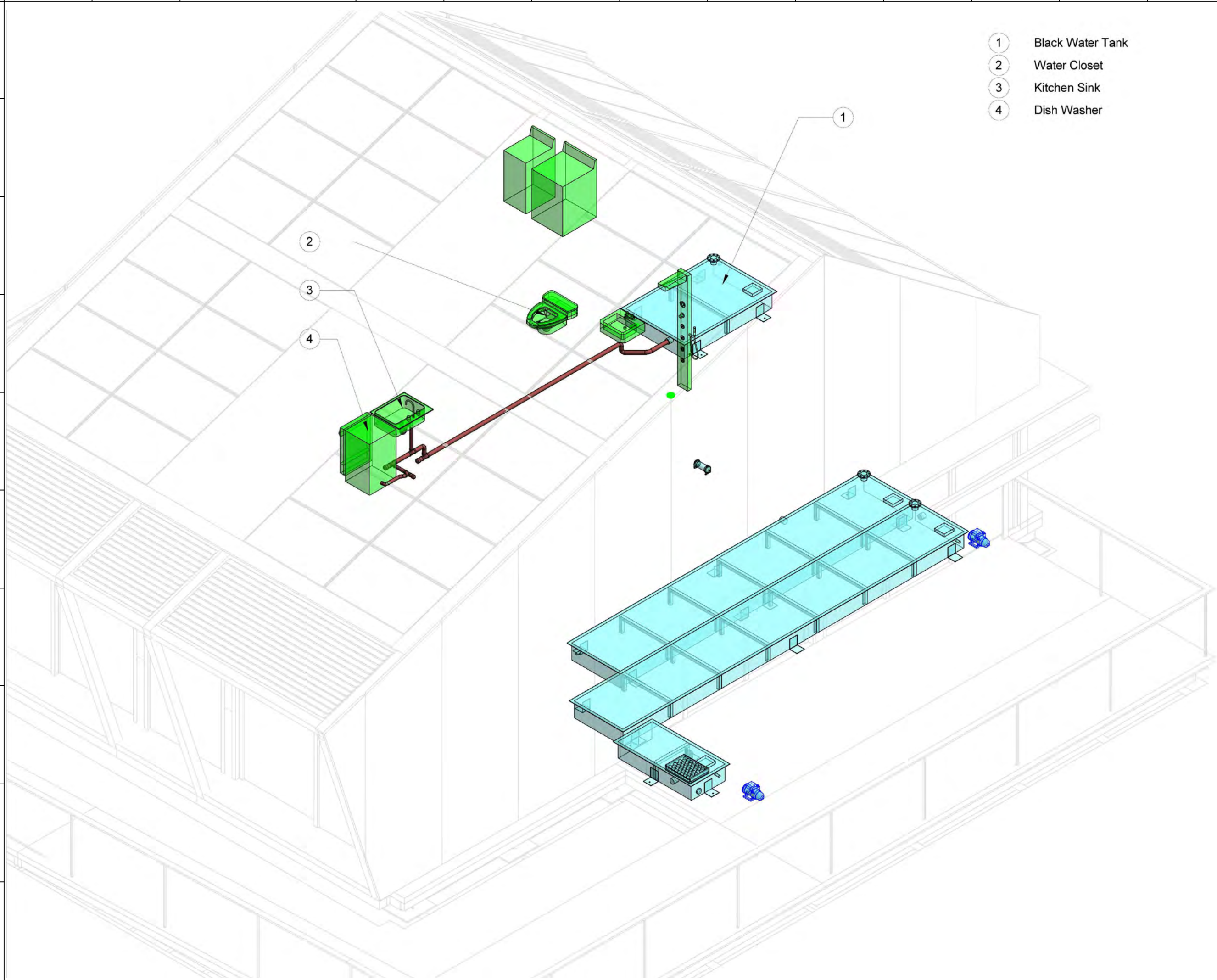
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by	MH
Checked by	-
Scale	-
Unit	-

DWG. Title  
**GRAY WATER ISOMETRIC**

DWG. No.	PAGE
<b>PL-211</b>	<b>174</b>



- 1 Black Water Tank
- 2 Water Closet
- 3 Kitchen Sink
- 4 Dish Washer



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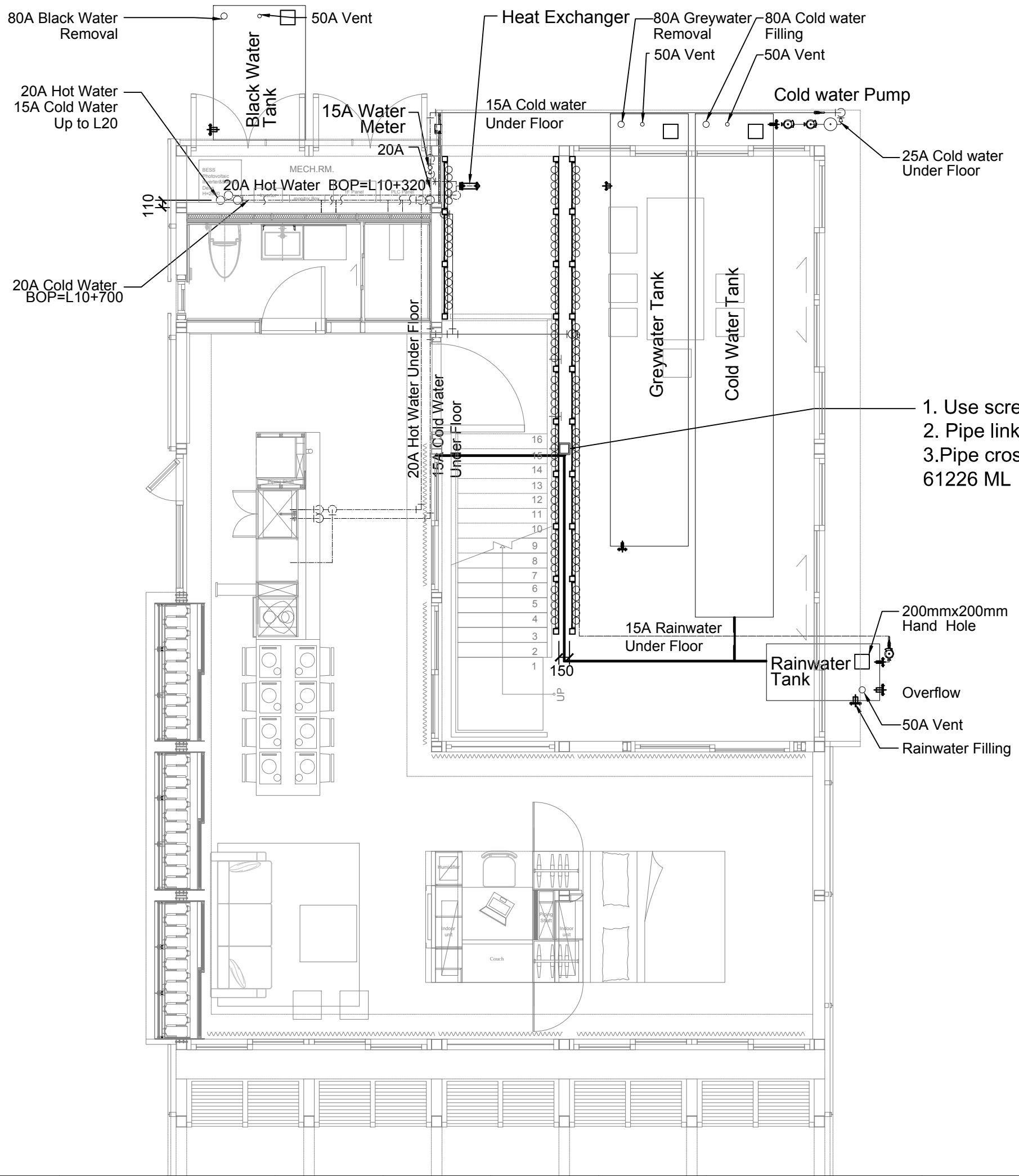
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ST	2014/11/03	AB Submission

**Drawn by** MH  
**Checked by** -  
**Scale** -  
**Unit** -

**DWG. Title**  
DRAIN/WASTE/VENT  
ISOMETRIC

**DWG. No.** PL-221 **PAGE** 175



1. Use screws to secure the pipes on this structure
2. Pipe link with irrigation system at 620 cm high
3. Pipe cross-sectional area (4.7cm<sup>2</sup>) x length (13553 cm) 61226 ML (irrigation)



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ST	2014/11/03	AB Submission

Drawn by: JL  
Checked by: DN  
Scale: 1:60  
Unit: mm

DWG. Title: GREEN CORE IRRIGATION SYSTEM PLAN

DWG. No. PL-301 PAGE 176



Project:



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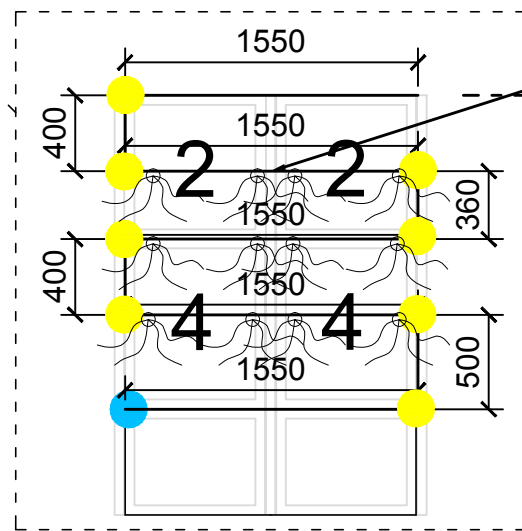
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Scale	1:40
Unit	mm

DWG. Title  
**GREEN CORE IRRIGATION SYSTEM ELEVATION 1**

DWG. No.	PAGE
<b>PL-302</b>	<b>177</b>

1. Use screws to secure the pipes on this structure
2. Pipe link with irrigation system at 620 cm high
3. Pipe cross-sectional area (4.7cm<sup>2</sup>) x lenght (13027 cm) = 61226 ML (irrigation)

**C**  
**12**  
irrigate head



Inner irrigate

**6**  
irrigate head

**G**

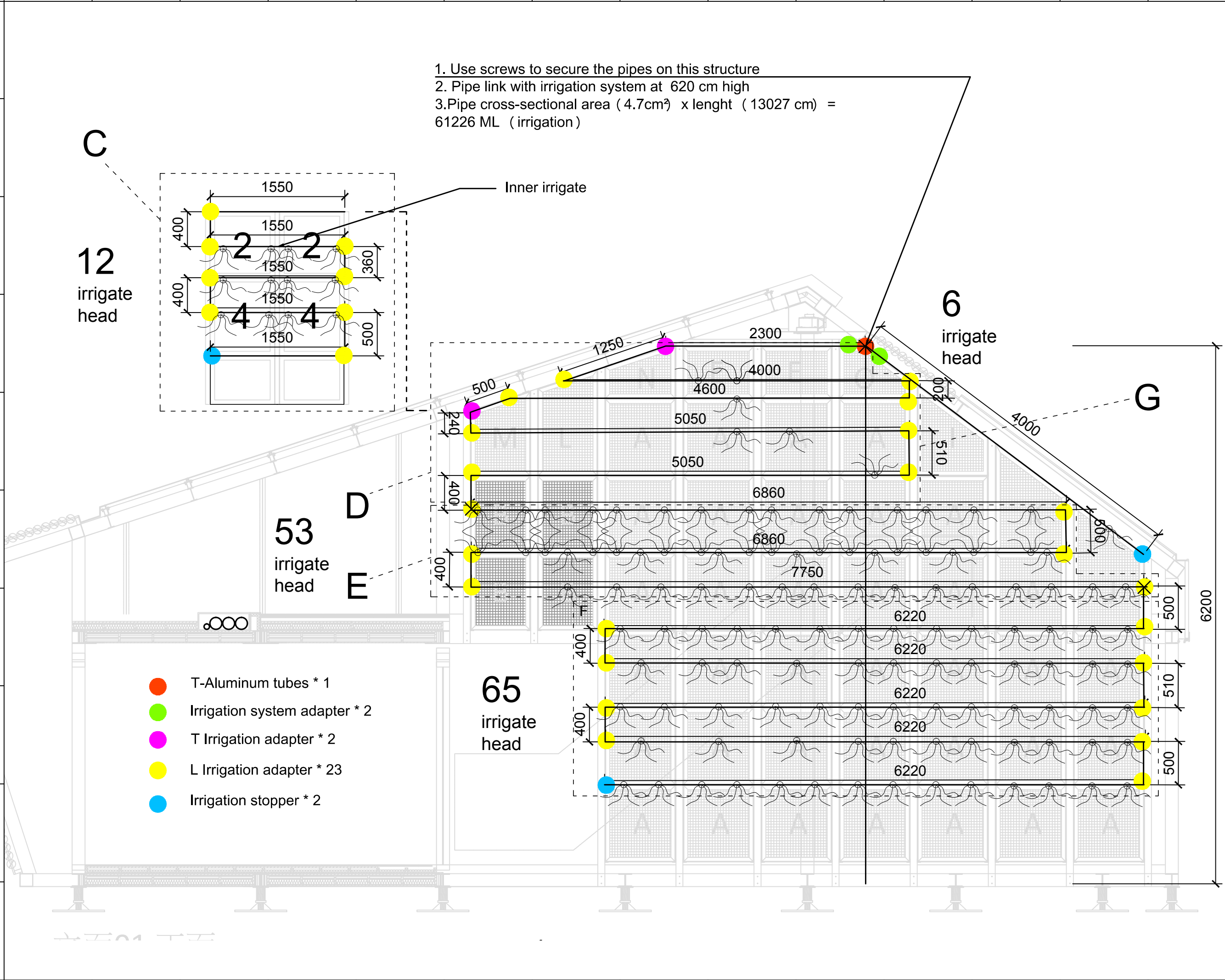
**D**  
**53**  
irrigate head

**E**

**65**  
irrigate head

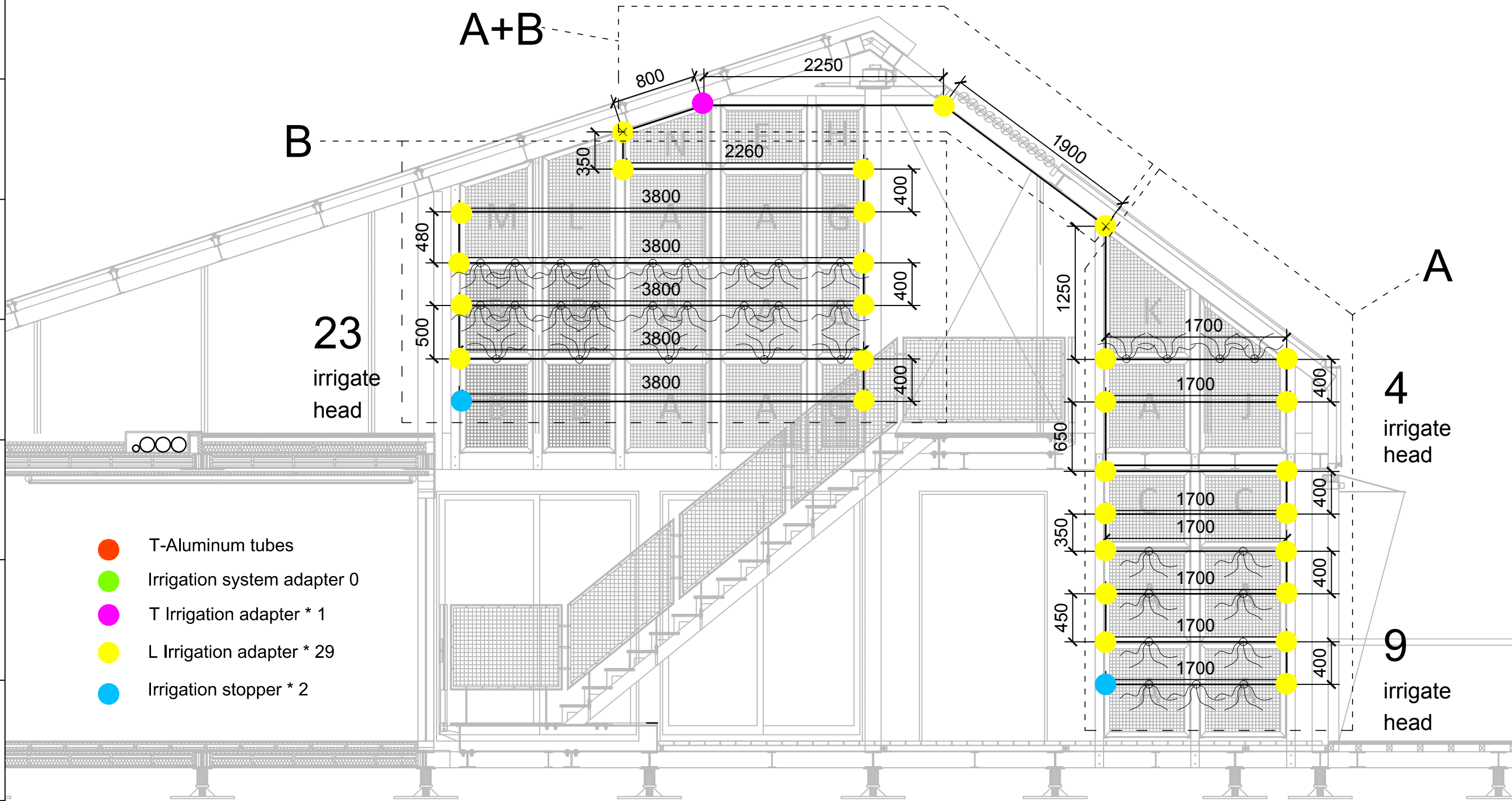
- T-Aluminum tubes \* 1
- Irrigation system adapter \* 2
- T Irrigation adapter \* 2
- L Irrigation adapter \* 23
- Irrigation stopper \* 2

6200

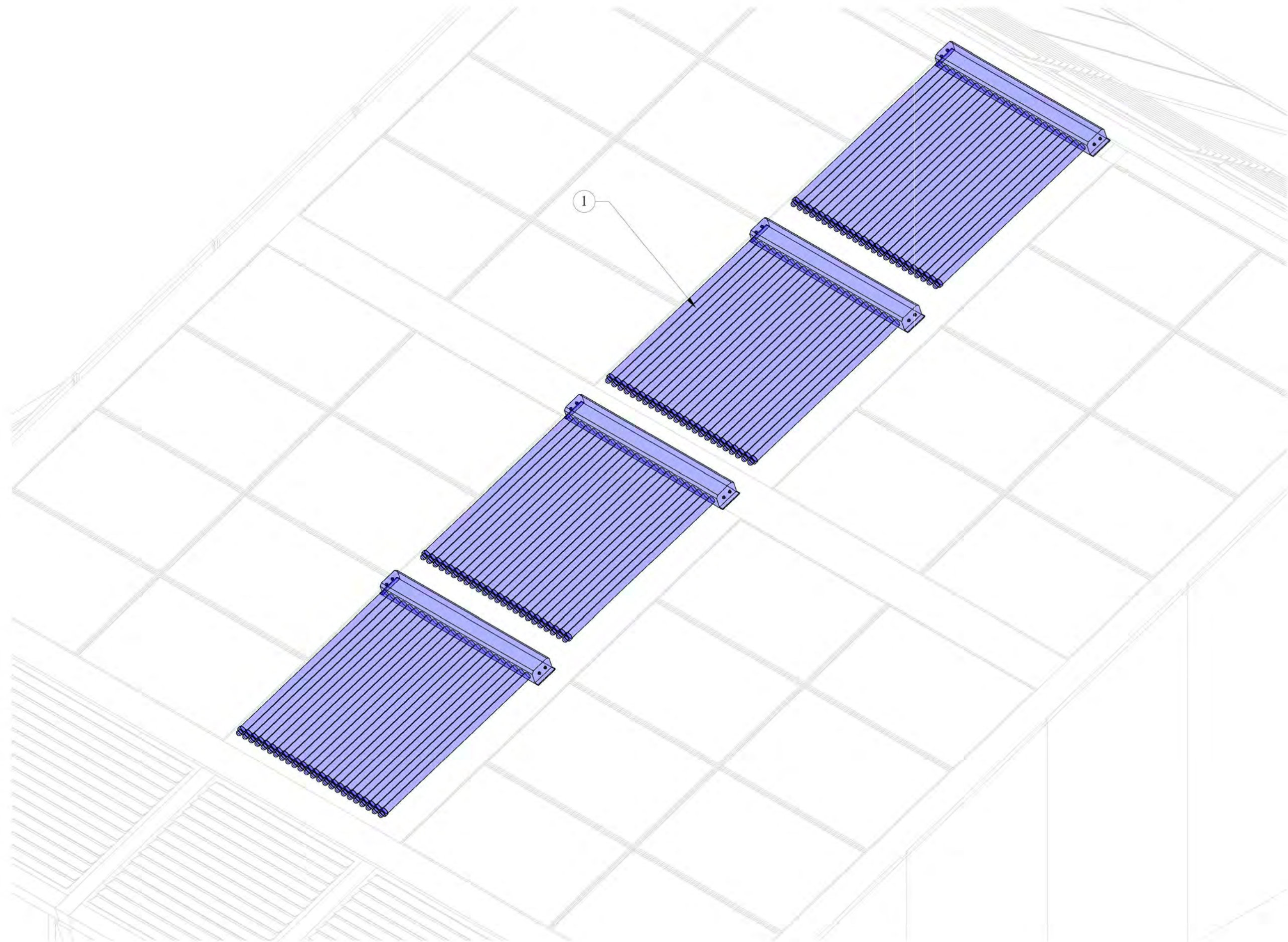




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- T-Aluminum tubes
- Irrigation system adapter 0
- T Irrigation adapter \* 1
- L Irrigation adapter \* 29
- Irrigation stopper \* 2



1 Solar Thermal Collector



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Checked by CHUNG

Scale -

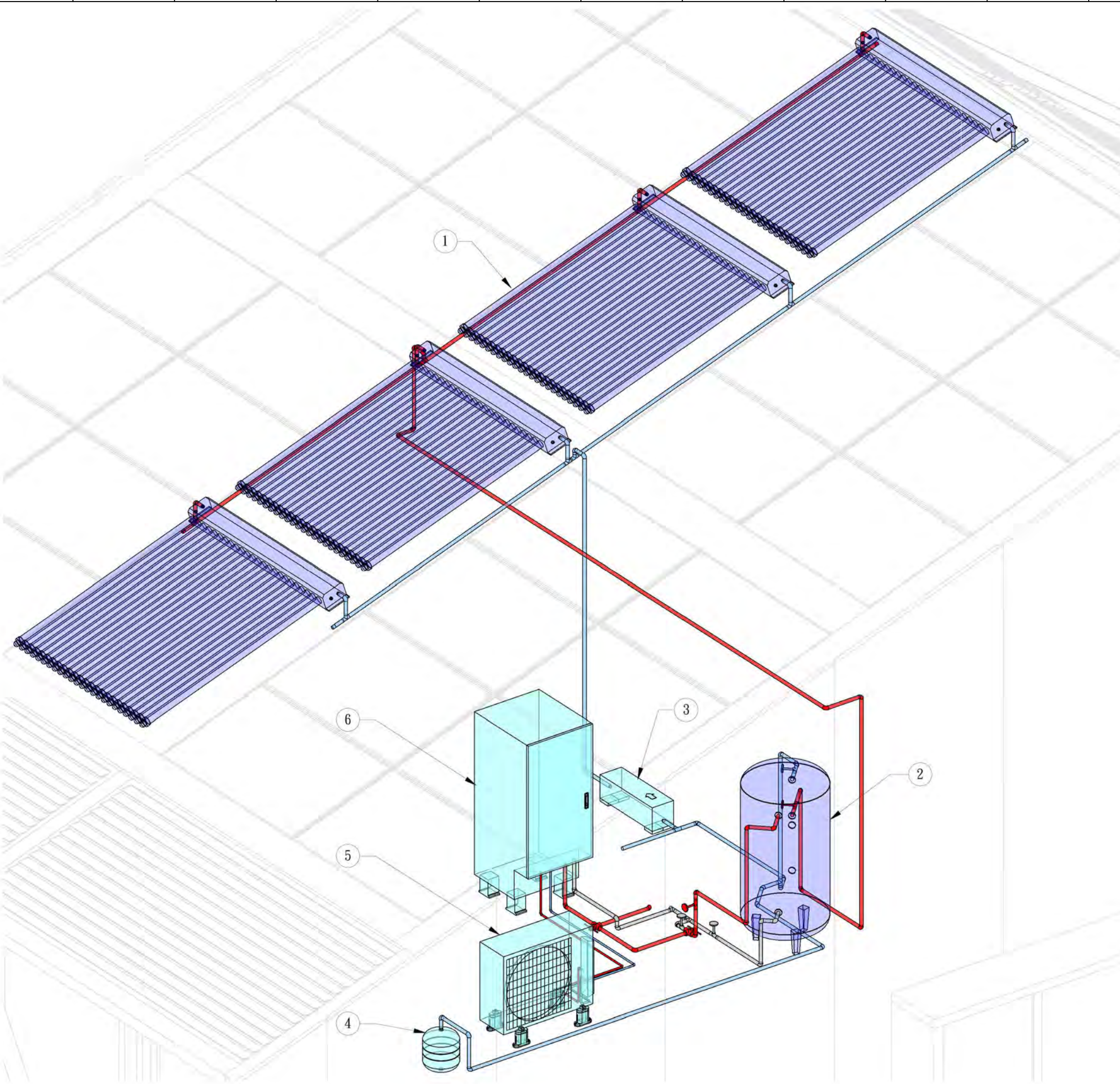
Unit -

DWG. Title

SOLAR WATER PLAN

DWG. No. PAGE

SW-001 179



- ① Solar Thermal Collector
- ② Hot Water Storage Tank
- ③ Pump Station
- ④ Expansion Tank 1
- ⑤ CO2 Heat Pump Package 2
- ⑥ CO2 Heat Pump Package 1



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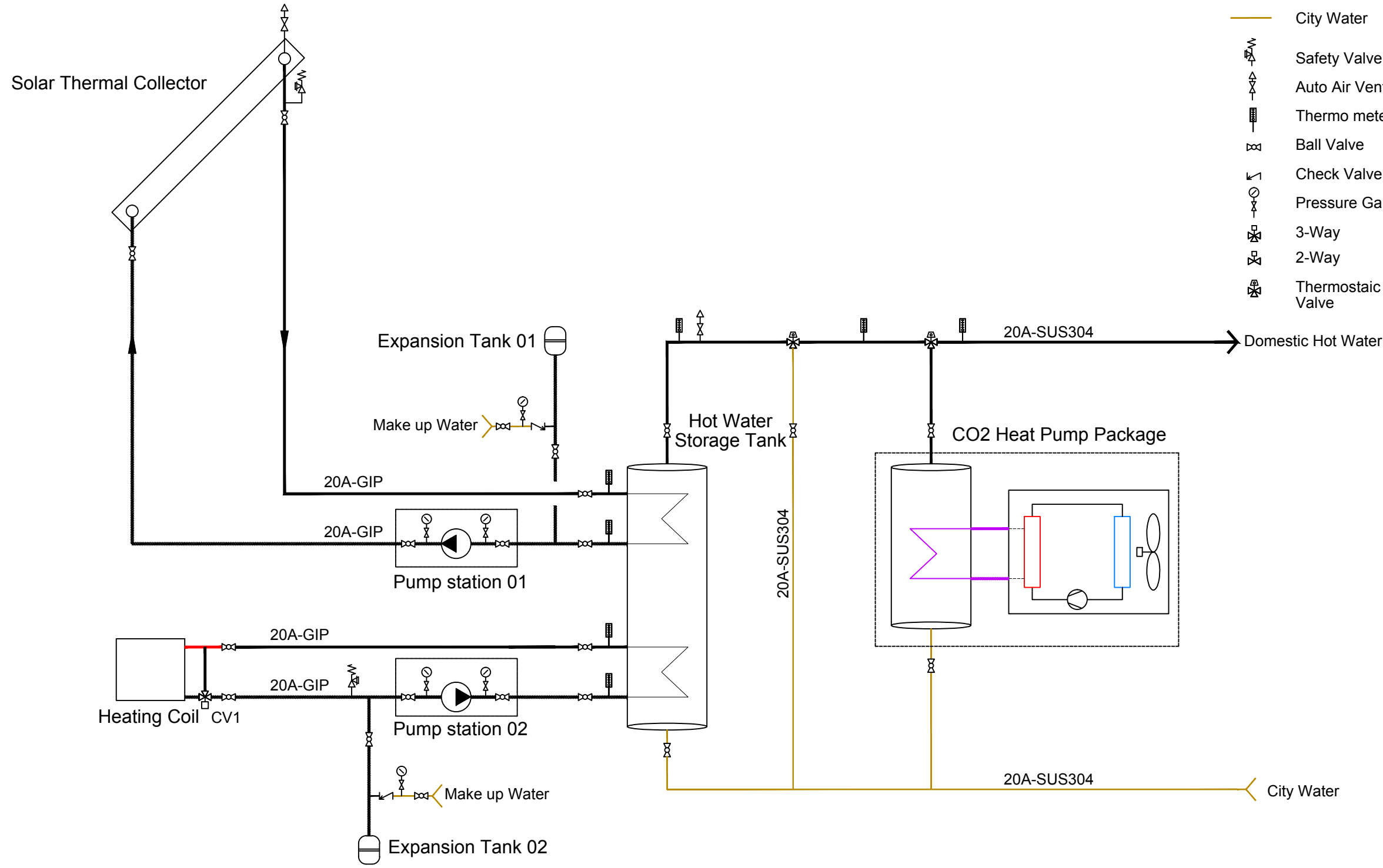
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Checked by	CHUNG
Scale	-
Unit	-

DWG. Title  
**SOLAR WATER ISOMETRIC**

DWG. No.	PAGE
<b>SW-101</b>	<b>180</b>



- Refrigerant Supply
- Refrigerant Return
- Hot Water Supply
- Hot Water Return
- City Water
- Safety Valve
- Auto Air Vent
- Thermo meter
- Ball Valve
- Check Valve
- Pressure Gauge
- 3-Way
- 2-Way
- Thermostaic Mixing Valve



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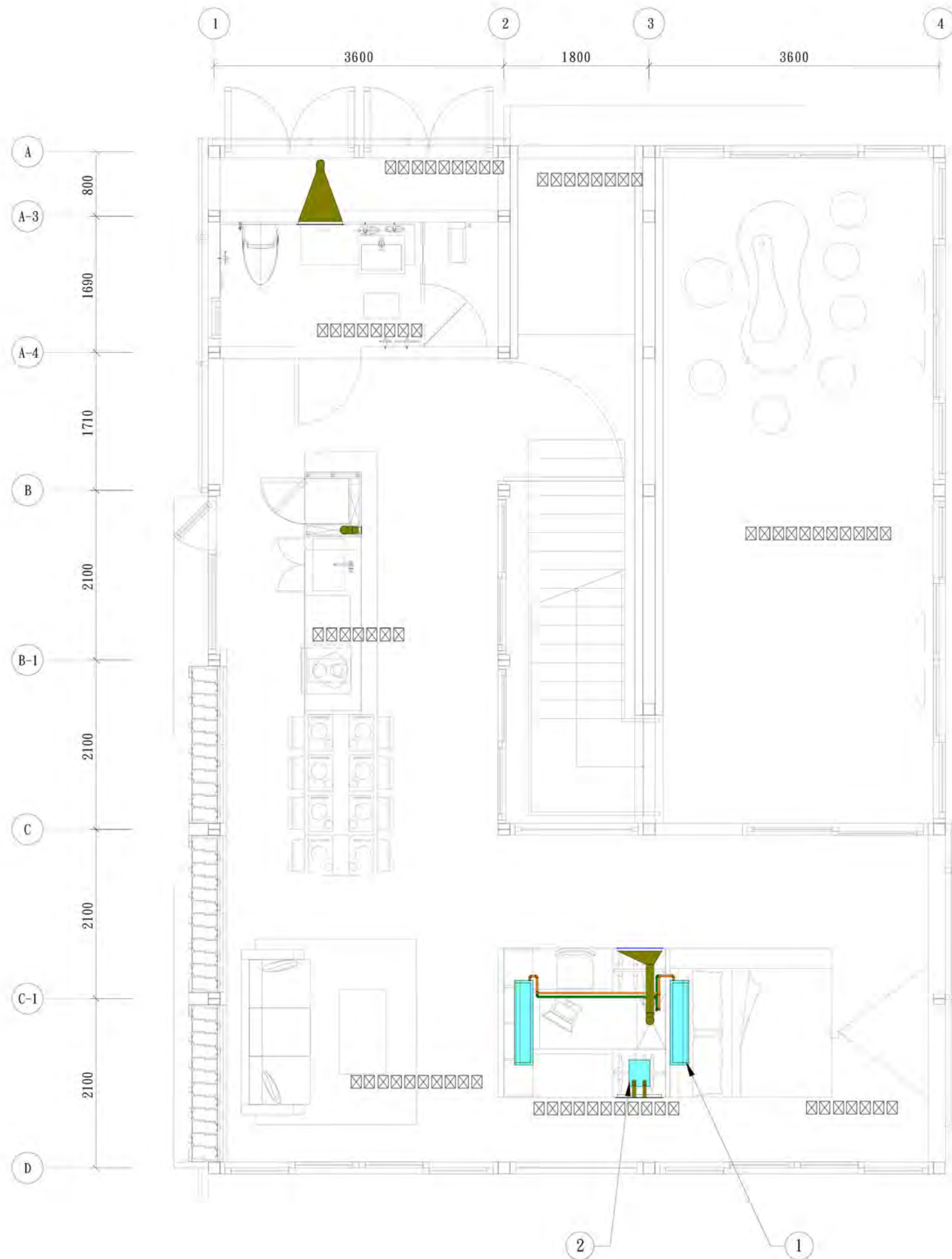
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ST	2014/11/03	AB Submission

Drawn by: BB  
 Checked by: CHUNG  
 Scale: -  
 Unit: -

DWG. Title: SOLAR WATER SCHEMATIC

DWG. No. SW-201      PAGE 181



- Refrigerant Supply
- Refrigerant Return
- Duct

- 1 Indoor Unit of Heat Pump
- 2 Ultrasonic Humidifier



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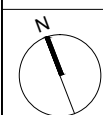
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ST	2014/11/03	AB Submission

Drawn by BB

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Scale 1:60

Unit mm

DWG. Title

HVAC DISTRIBUTION PLAN  
GROUND LEVEL

DWG. No. PAGE

ME-001 182

Project:



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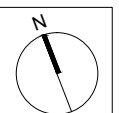
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Scale 1:60

Unit mm

DWG. Title

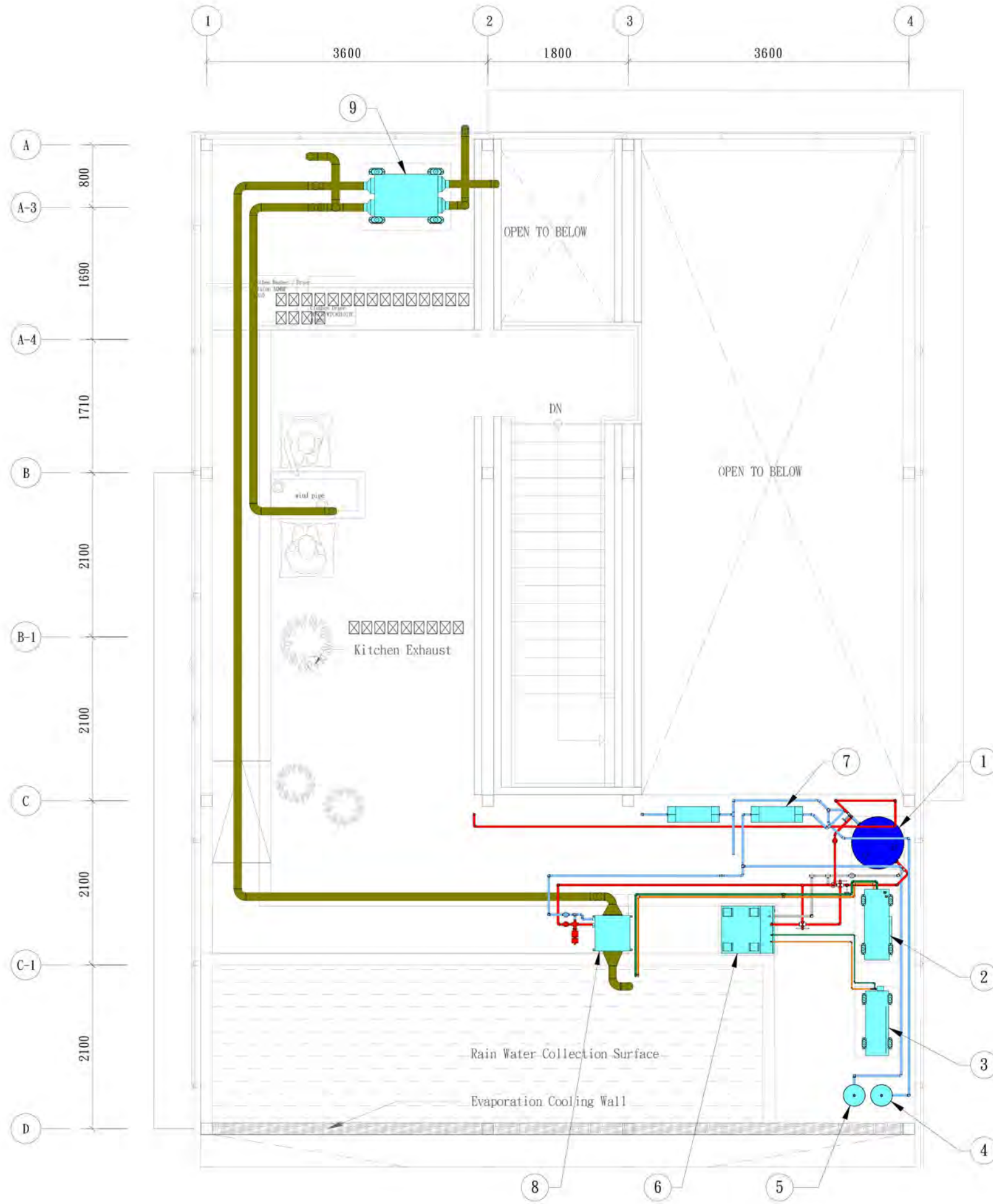
HVAC DISTRIBUTION PLAN  
MEZZANINE LEVEL

DWG. No. PAGE

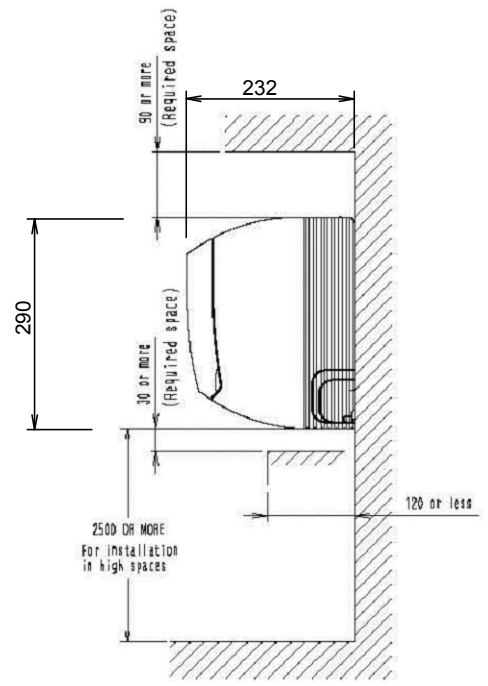
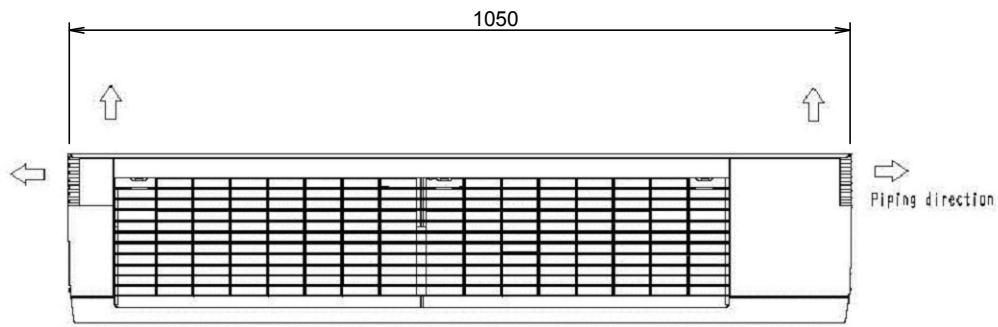
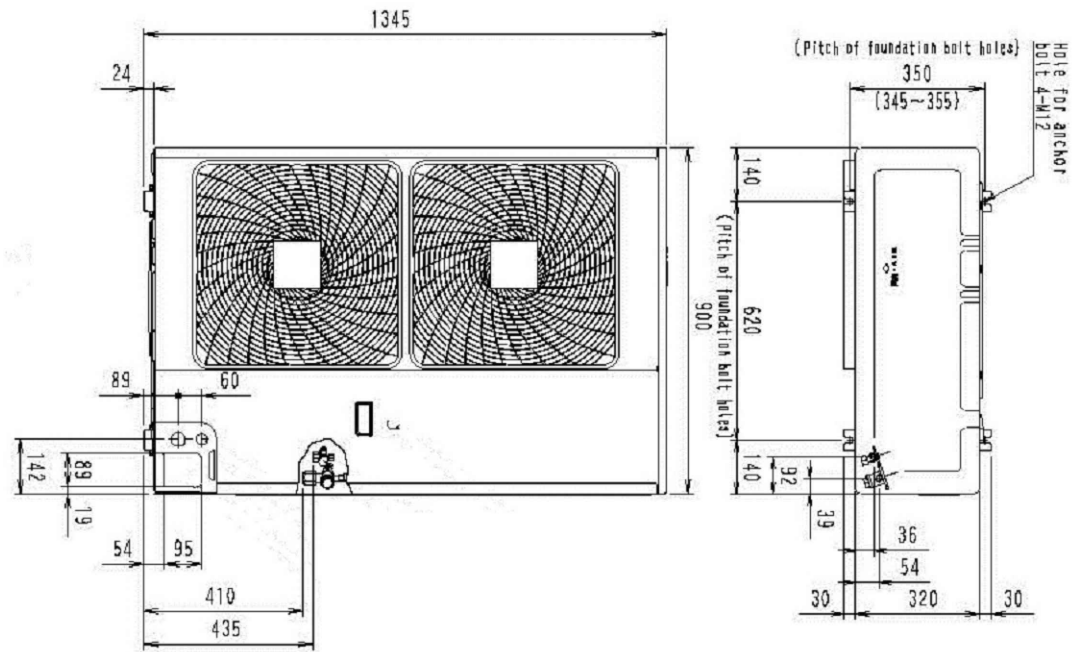
ME-002 183

- Refrigerant Supply
- Refrigerant Return
- Hot Water Supply
- Hot Water Return
- City Water
- Duct

- ① Hot Water Storage Tank
- ② Heat Pump
- ③ CO2 Heat Pump Package1
- ④ Expansion Tank 1
- ⑤ Expansion Tank 2
- ⑥ CO2 Heat Pump Package 2
- ⑦ Pump Station
- ⑧ Heating Coil
- ⑨ Heat Reclaim Ventilator



# Outdoor Unit of Cooling/Heating Heat Pump



Name	Outdoor Unit of Cooling/Heating Heat Pump	
Service	HVAC Cooling and Heating	
Type	Heat Pump	
Cooling Capacity	11.2 KW	
Heating Capacity	12.5 KW	
COP	Cooling = 3.8	Heating = 3.82
EER	Cooling = 4.4	Heating = 4.4
Electrical Power Supply	230 V	
Frequency	50 HZ	
Power Consumption	KW	Cooling = 2.95 Heating = 3.27
Refrigerant	R-410A	

Test condition for outdoor unit:

- Cooling Condition : Indoor Temperature 27°C DB / 19°C WB  
Outdoor Temperature 35°C DB
- Heating Condition : Indoor Temperature 20°C DB  
Outdoor Temperature 7°C DB / 6°C WB

Name	Indoor Unit of Heat Pump	
Service	Room Heating and Cooling	
Type	Wall Mounted	
Quantity	2	
Cooling Capacity	4.5 KW	
Heating Capacity	5 KW	
Fan Flow(High/Low)	12 / 9 m <sup>3</sup> /min	
Air Filter	Washable Resin Net	



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Scale -

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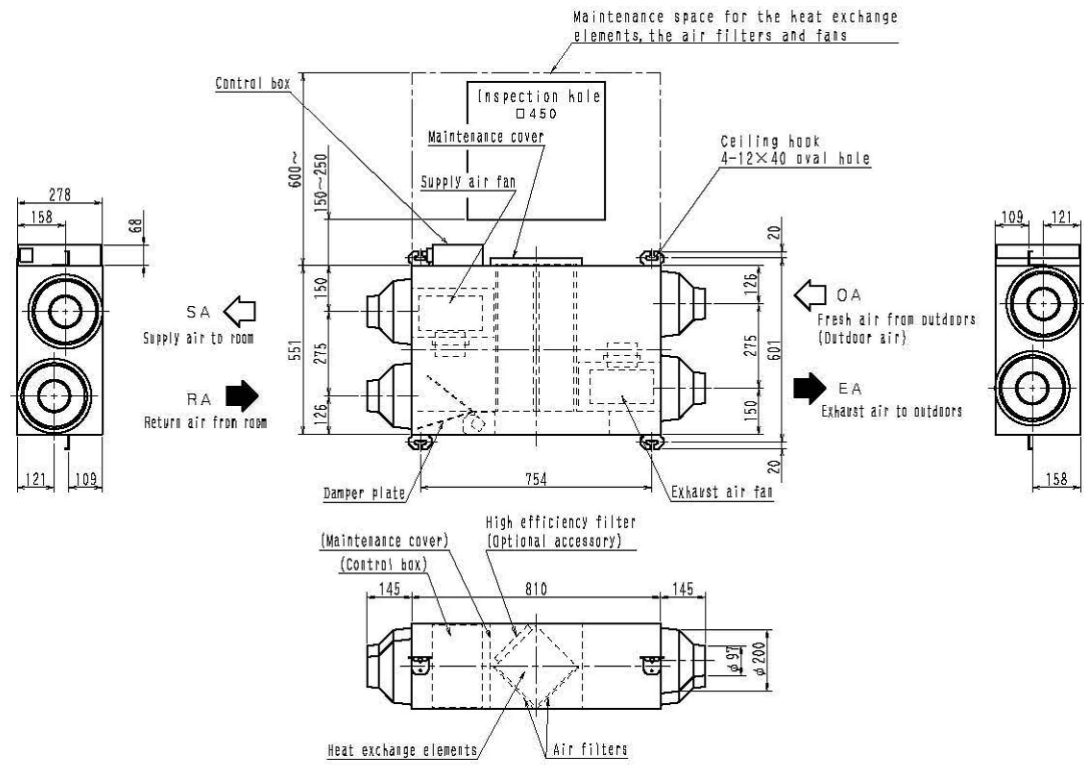
DWG. Title

HVAC EQUIPMENTS 1

DWG. No. ME-011 PAGE 184



# Heat Reclaim Ventilator



Name	Heat Reclaim Ventilator
Service	Room Active Ventilation
Temperature Exchange Efficiency	79%
Enthalpy Exchange Efficiency	
Cooling	66%
Heating	72%
Fan Air Flow Rate	150 m <sup>3</sup> /h
Electrical Power Supply	230 V
Frequency	50 HZ
Power Consumption	30 W × 2

Test condition for exchange efficiency:

Condition	Indoor		Outdoor	
	°Cdb	rh%	°Cdb	rh%
Cooling	27	50	35	60
Heating	20	40	7	70



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Scale -

Unit -

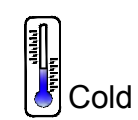
DWG. Title

HVAC EQUIPMENTS 2

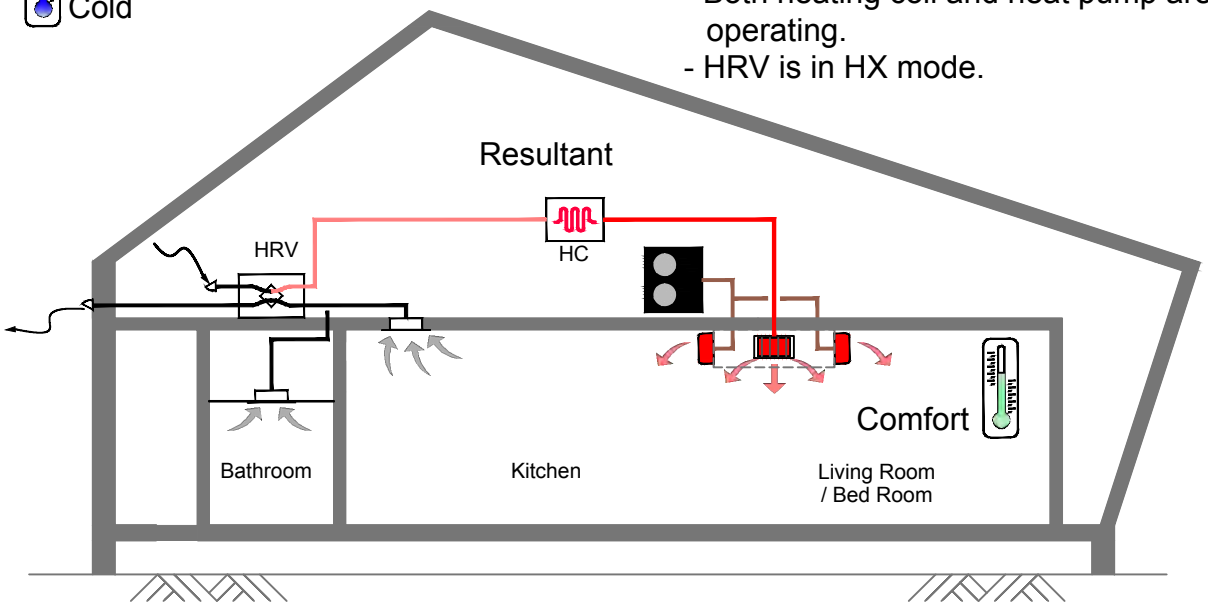
DWG. No. PAGE

ME-012 185

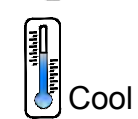
# Winter - Night



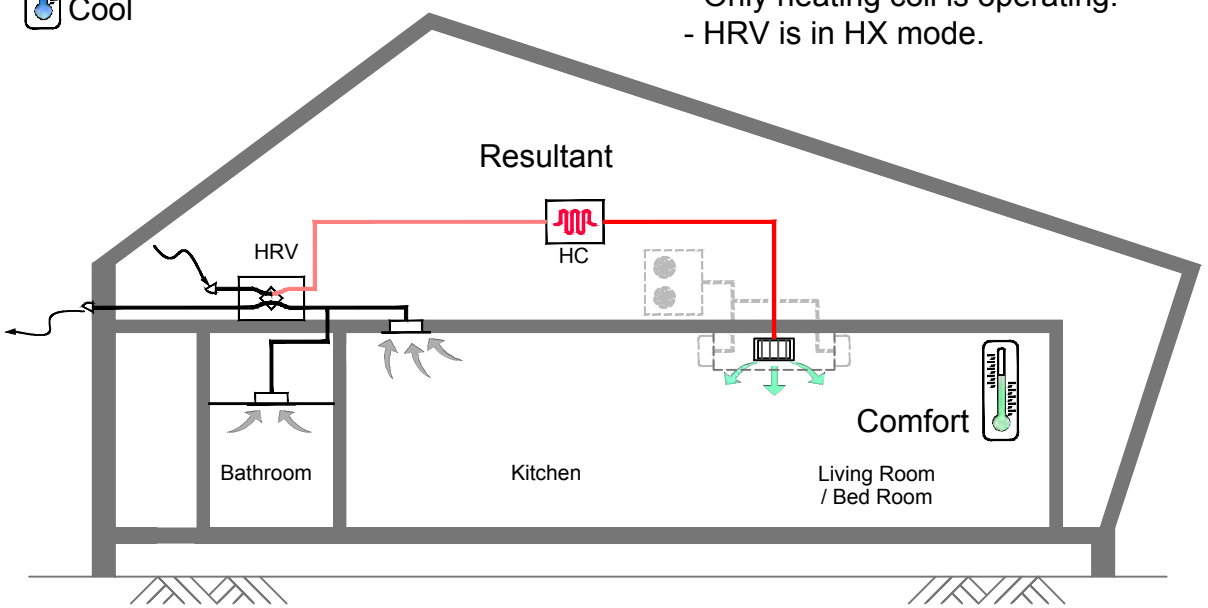
- In cold-stream winter night.
- Space heating is required.
- Both heating coil and heat pump are operating.
- HRV is in HX mode.



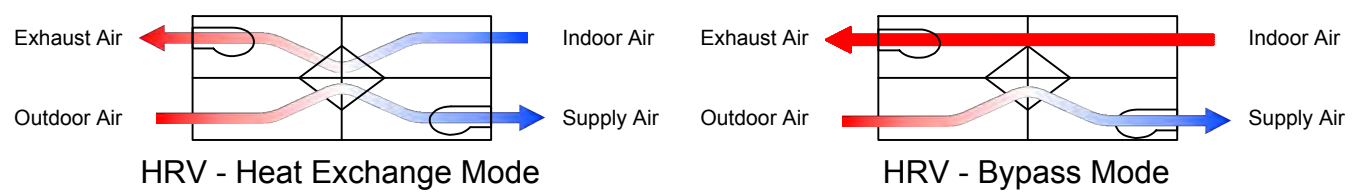
# Winter



- Winter of freezing temperature.
- Space heating is required.
- Only heating coil is operating.
- HRV is in HX mode.



## Legend:



- Hot Air (Red line)
- Warm Air (Light Red line)
- Cool Air (Blue line)
- Cold Air (Black line)
- Exhaust Air (Thick Black line)
- Refrigerant Pipe (Brown line)



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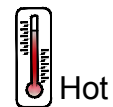
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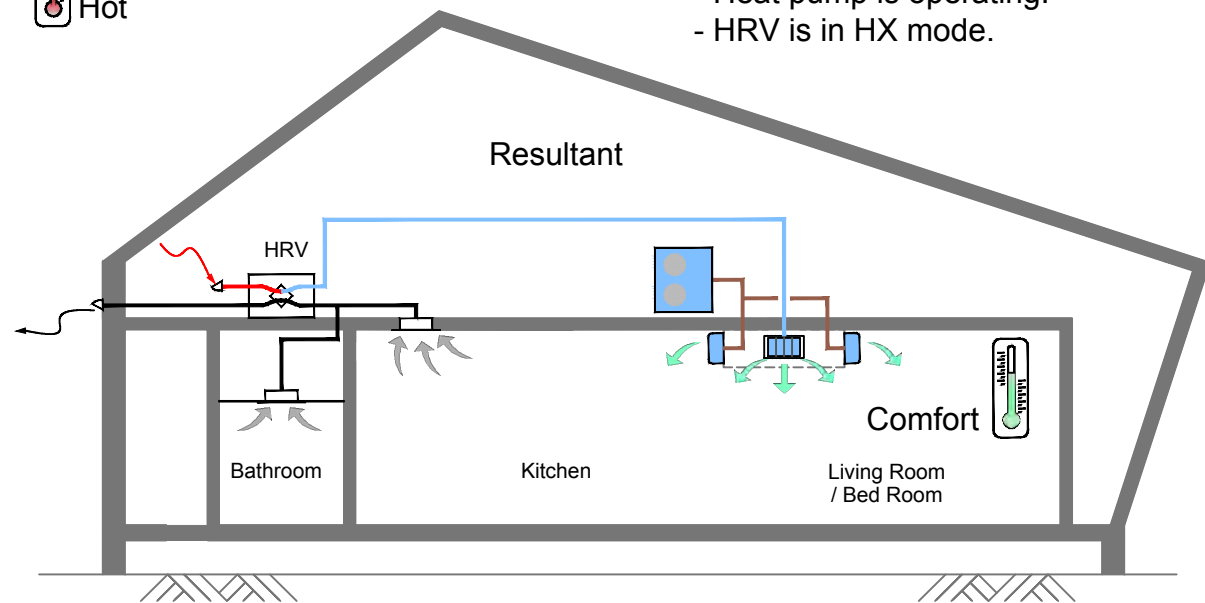
DWG. Title  
**HEATING**

DWG. No.	PAGE
<b>ME-021</b>	<b>186</b>

## Summer - Day



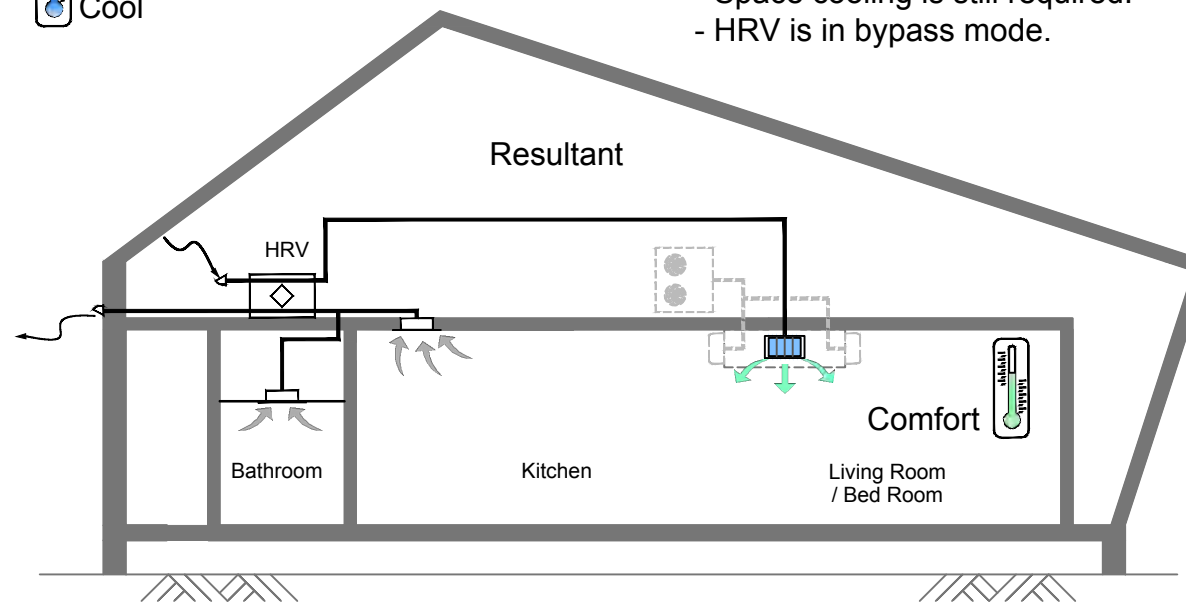
- Typical of summer day.
- Space cooling is required.
- Heat pump is operating.
- HRV is in HX mode.



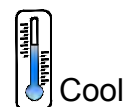
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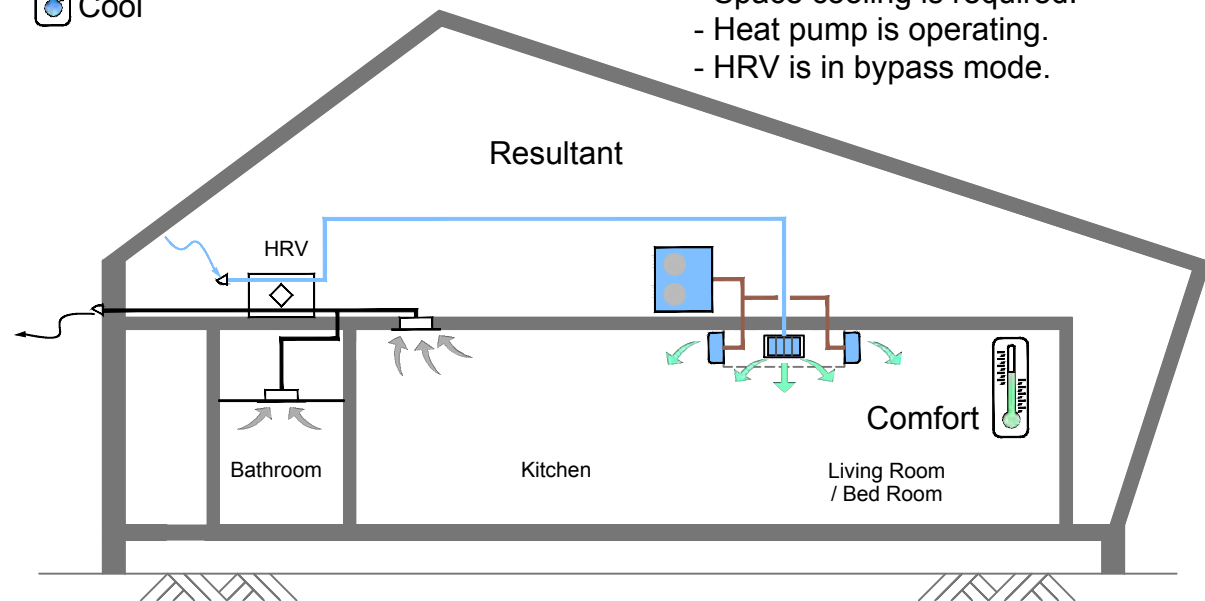
- Outdoor temperature is much less than room temperature.
- Space cooling is still required.
- HRV is in bypass mode.



## Summer - Early Morning



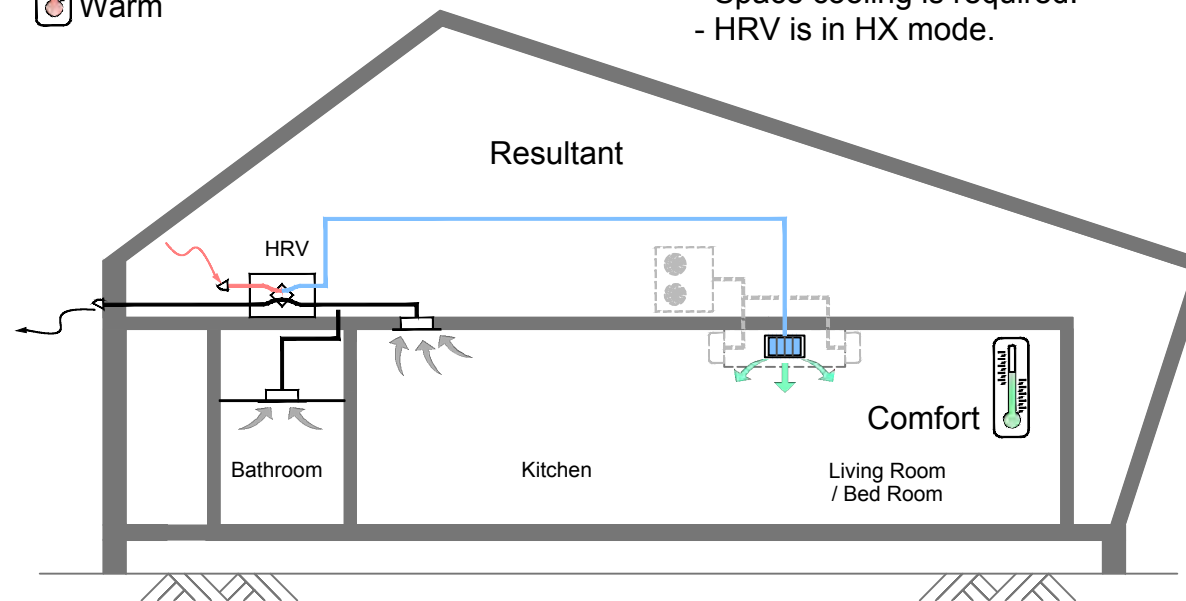
- Outdoor temperature is less than room temperature.
- Space cooling is required.
- Heat pump is operating.
- HRV is in bypass mode.



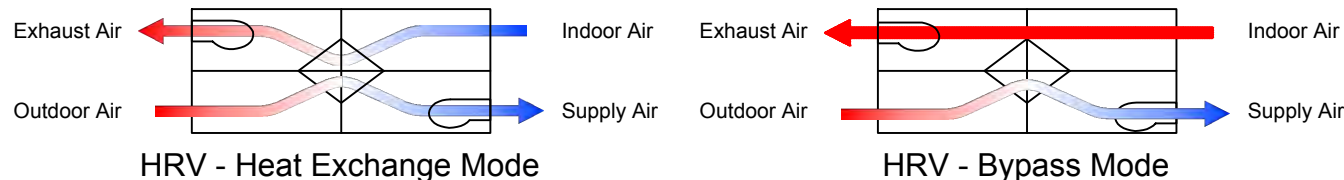
## Spring - Day



- Outdoor temperature is higher than room temperature.
- Space cooling is required.
- HRV is in HX mode.



### Legend:



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ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by CHUNG

Checked by CHUNG

Scale -

Unit -

DWG. Title

COOLING

DWG. No.

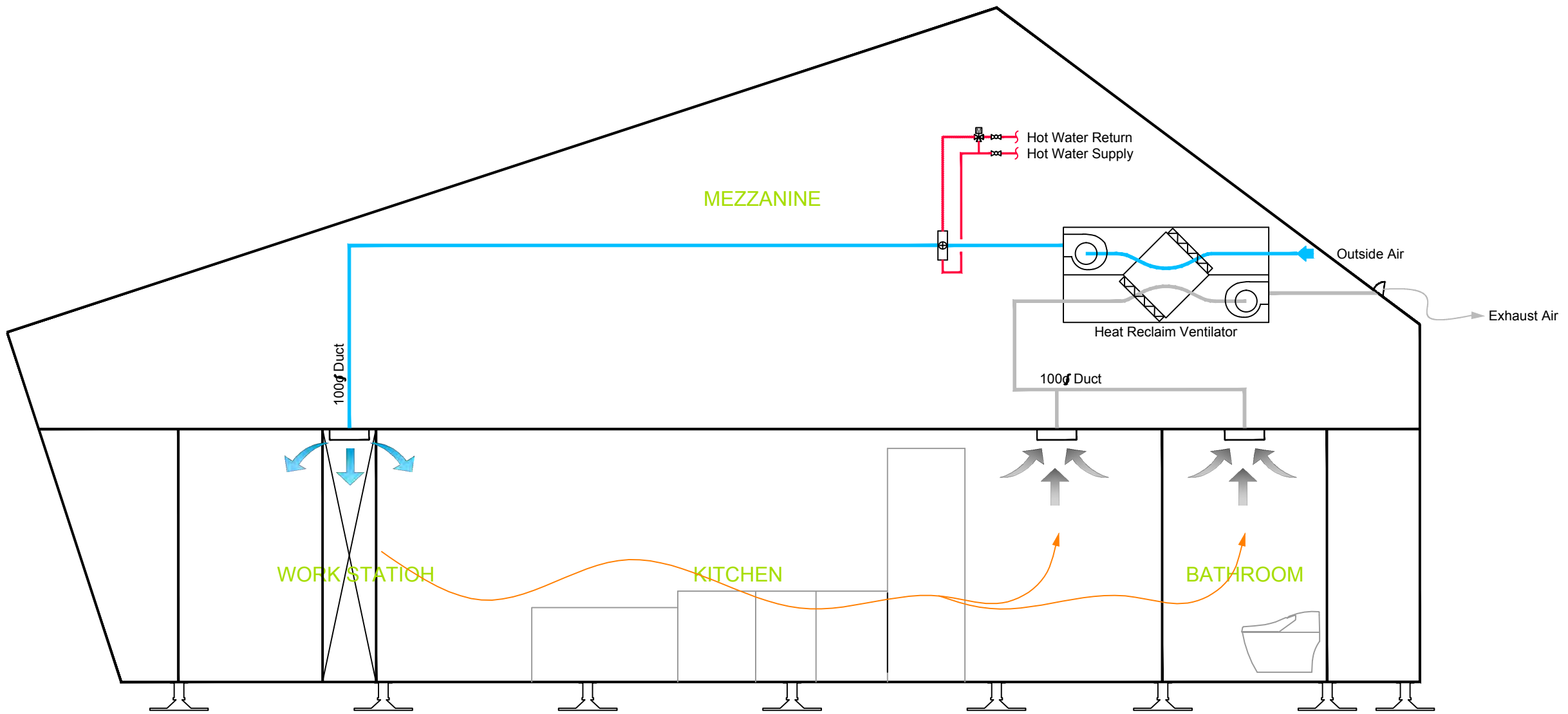
ME-031

PAGE

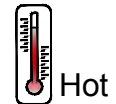
187



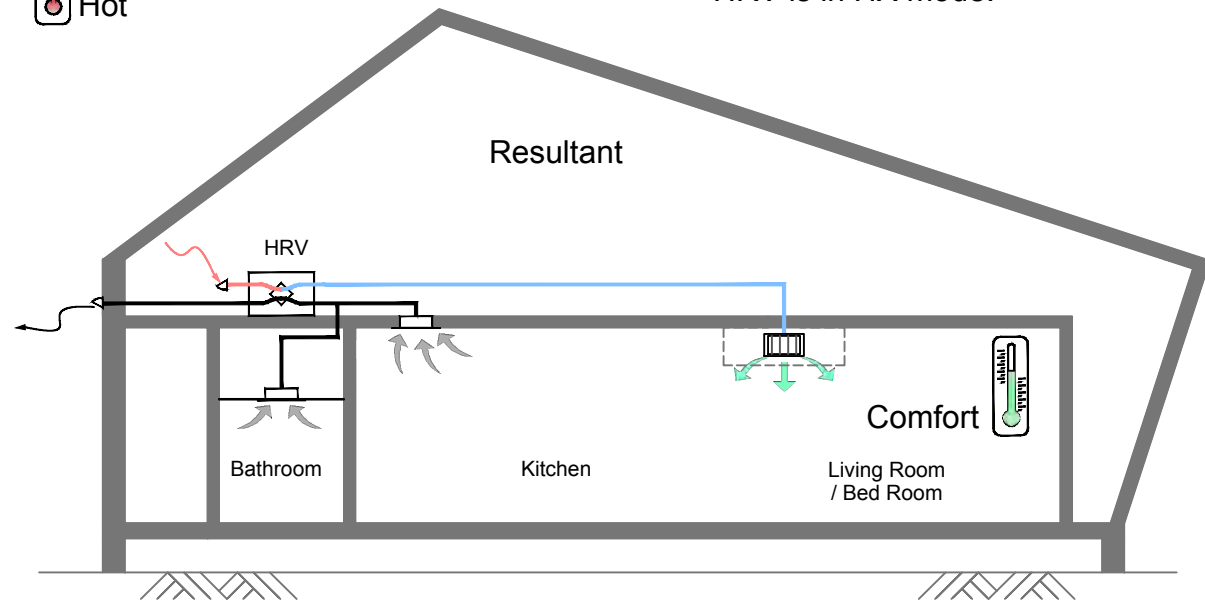
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ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission



## Summer - Day



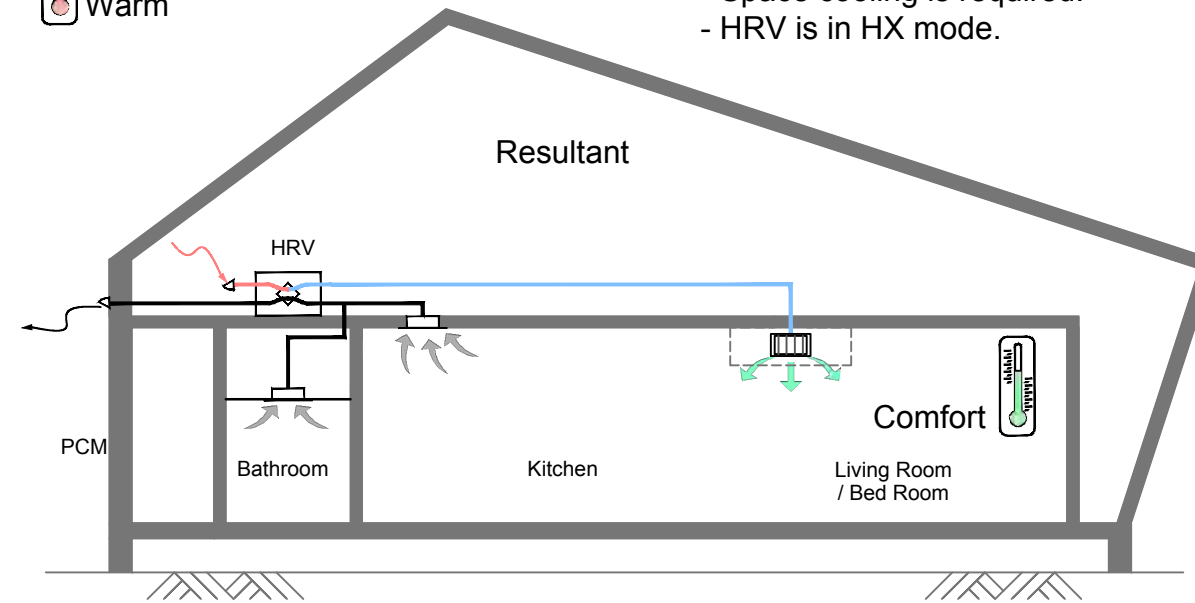
- Outdoor temperature is much higher than room temperature.
- HRV is in HX mode.



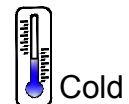
## Spring - Day



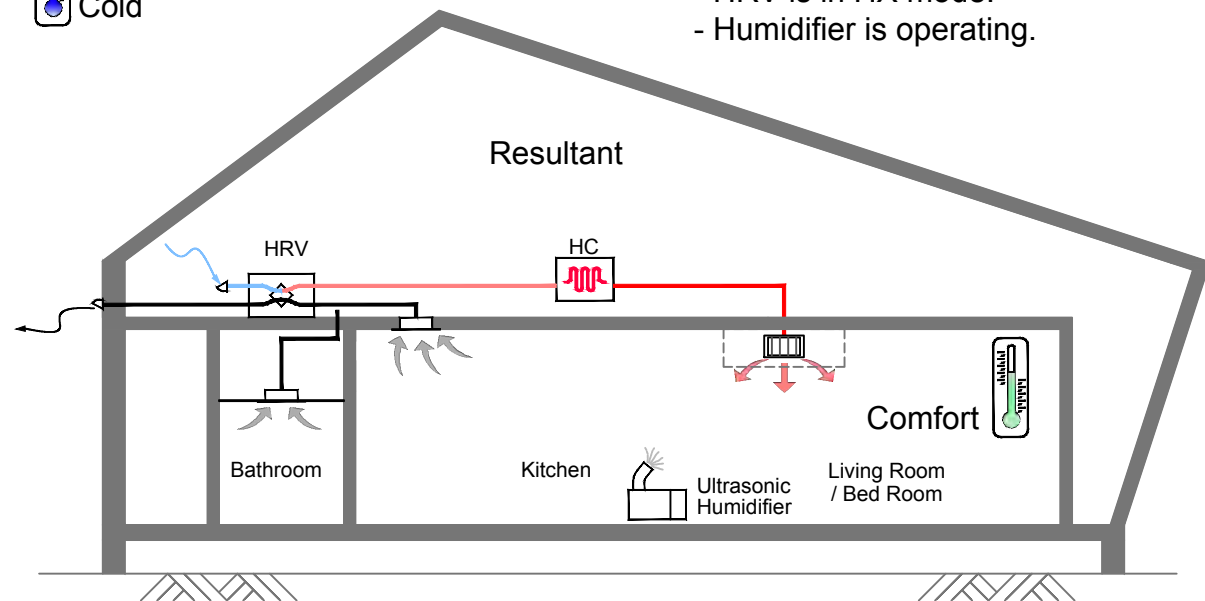
- Outdoor temperature is higher than room temperature.
- Space cooling is required.
- HRV is in HX mode.



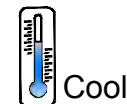
## Winter - Night



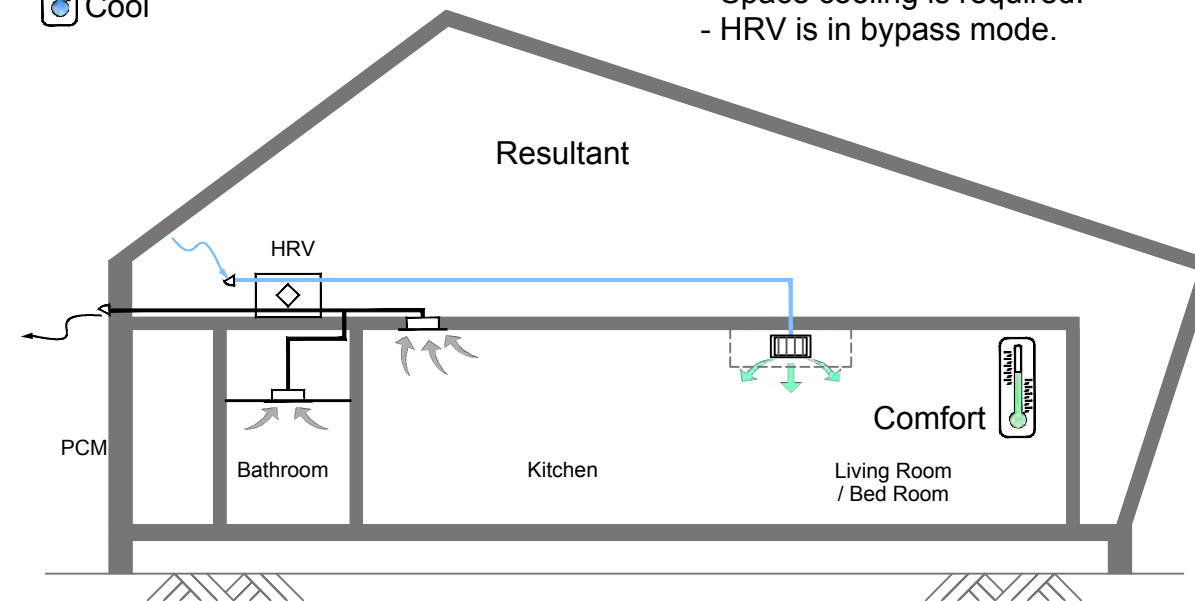
- Outdoor temperature is much less than room temperature.
- HRV is in HX mode.
- Humidifier is operating.



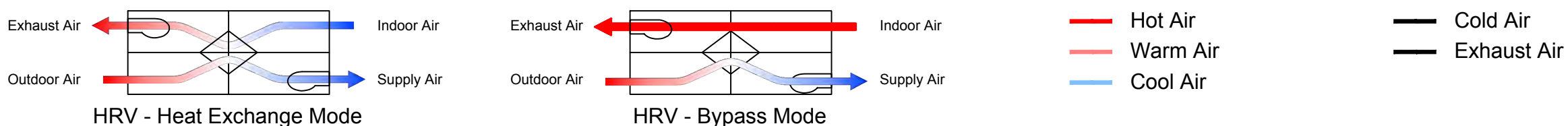
## Spring - Night



- Outdoor temperature is less than room temperature.
- Space cooling is required.
- HRV is in bypass mode.



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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by CHUNG

Checked by CHUNG

Scale -

Unit -

DWG. Title

VENTILATION 2

DWG. No. ME-042

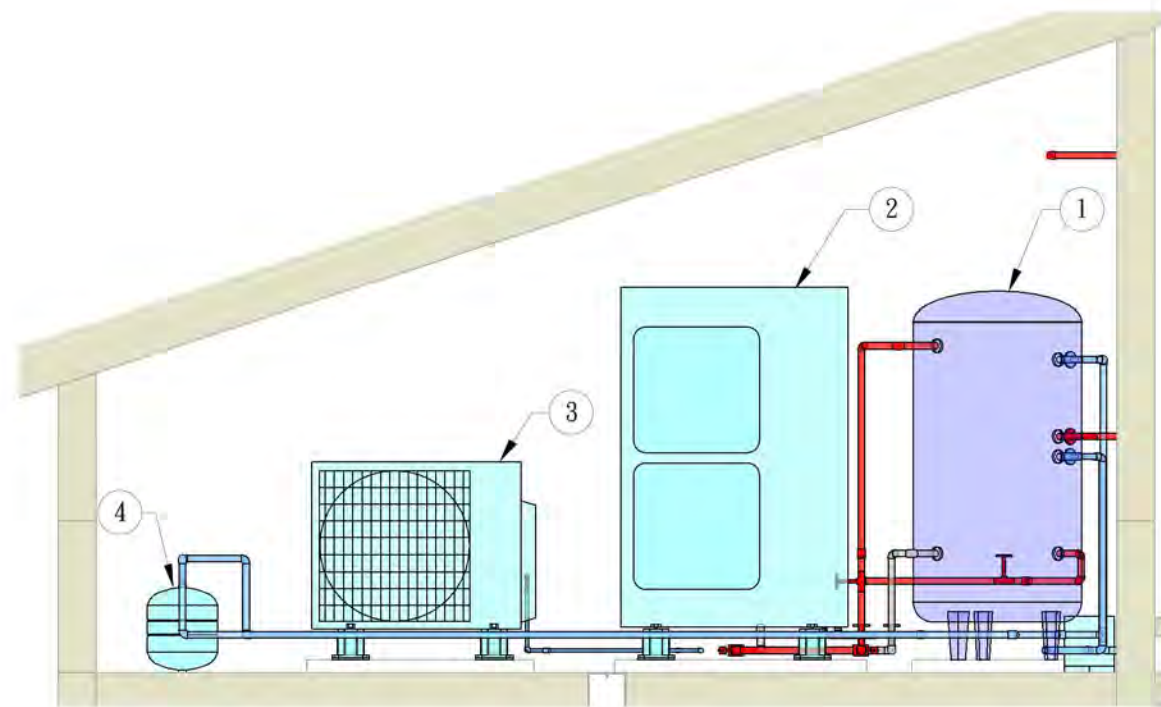
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189

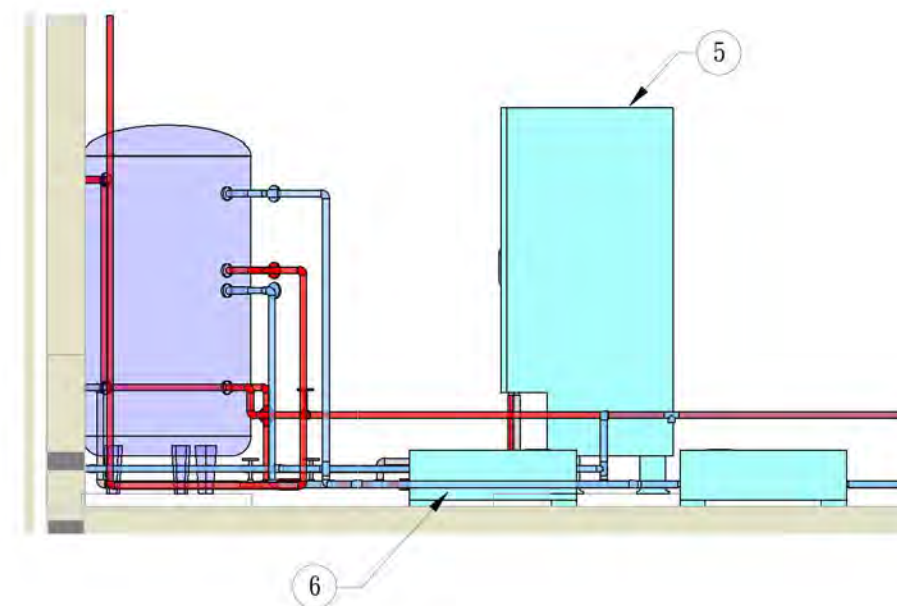


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ST	2014/11/03	AB Submission

- ① Hot Water Storage Tank
- ② Heat Pump
- ③ CO2 Heat Pump Package1
- ④ Expansion Tank 1
- ⑤ CO2 Heat Pump Package 2
- ⑥ Pump Station

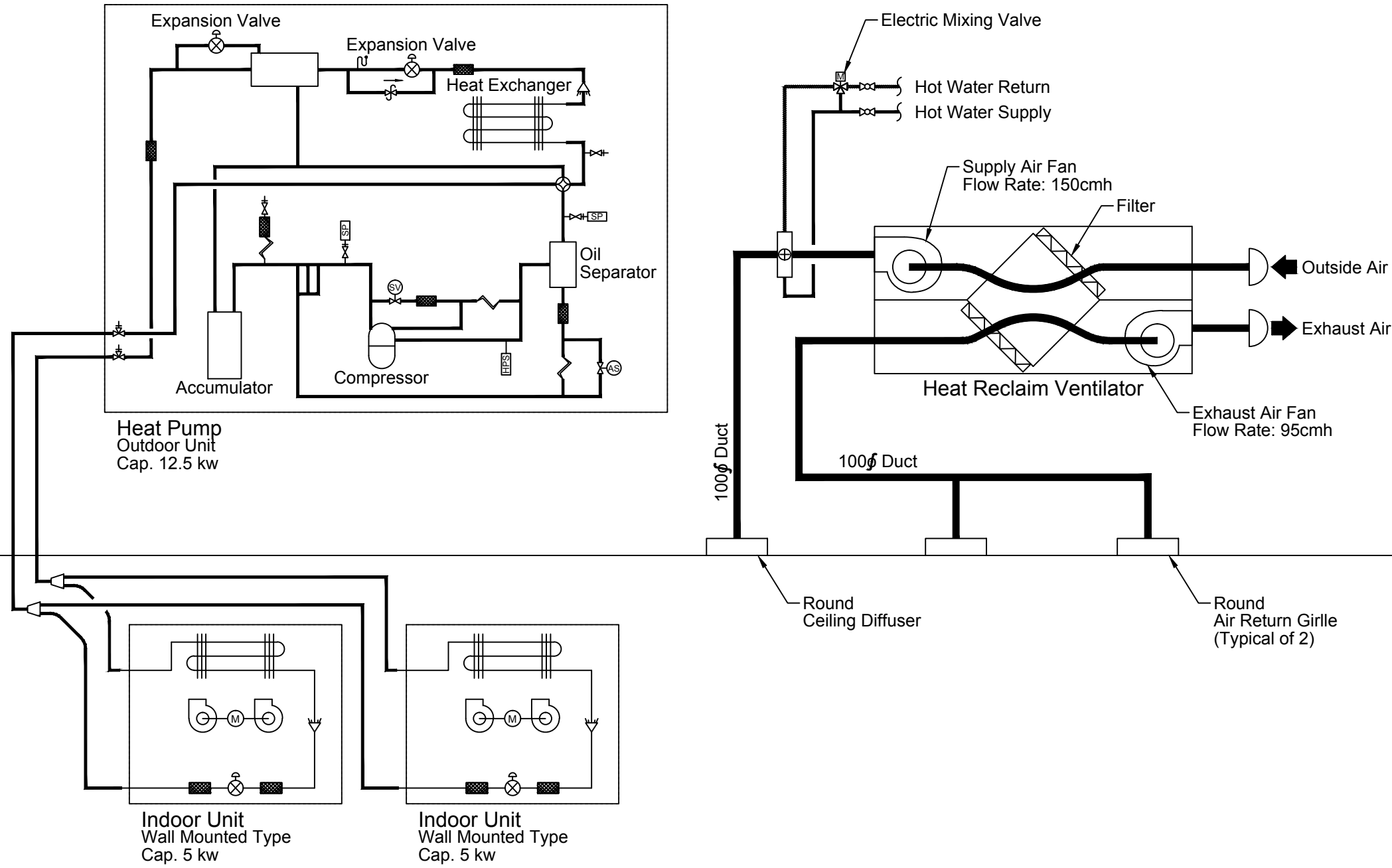


Mechanical Room Elevation(East)



Mechanical Room Elevation(North)

MEZZANINE



BEDROOM

LIVING ROOM

WORK STATION

KITCHEN

BATHROOM



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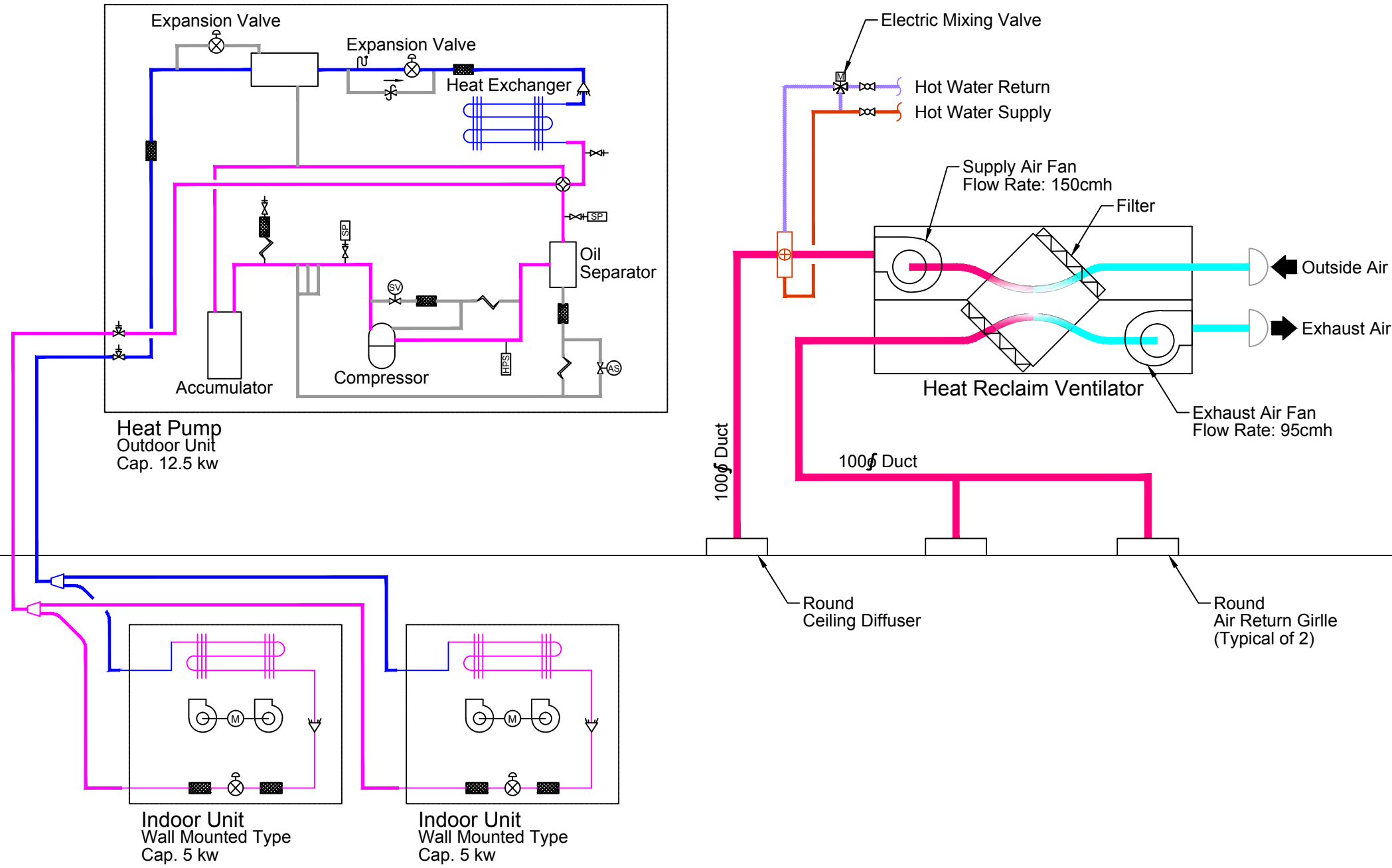
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

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Checked by	LUI
Scale	-
Unit	-

DWG. Title  
HVAC SYSTEM  
SCHEMATIC DRAWINGS

DWG. No.	PAGE
ME-201	191

MEZZANINE



- Gas Pipe
- Liquid Pipe
- Cold Air
- Warm Air
- Hot Water Supply
- Hot Water Return

BEDROOM      LIVING ROOM      WORK STATION      KITCHEN      BATHROOM

When the heat pump is operating in heating mode and the outdoor temperature is lower than the room temperature, the energy recovery ventilator is automatically switched to the heat recovery mode .



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ST	2014/11/03	AB Submission

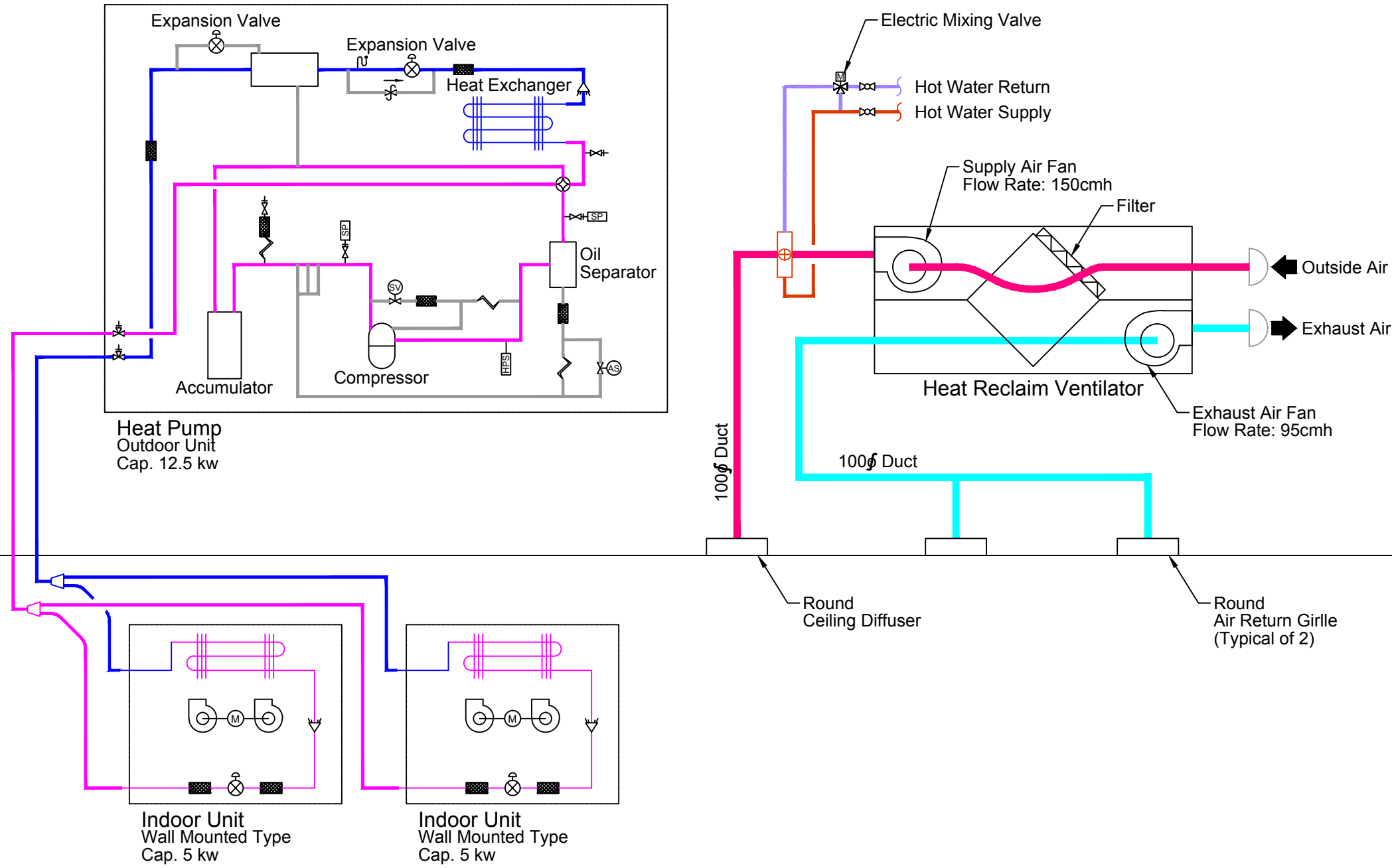
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Scale: -  
Unit: -

DWG. Title  
**HEATING MODE  
SCHEMATIC DRAWINGS**  
1

DWG. No. **ME-211**      PAGE **192**



MEZZANINE



- Gas Pipe
- Liquid Pipe
- Cold Air
- Warm Air
- Hot Water Supply
- Hot Water Return

BEDROOM      LIVING ROOM      WORK STATION      KITCHEN      BATHROOM

When the heat pump is operating in heating mode and the outdoor temperature is higher than the room temperature, the energy recovery ventilator is automatically switched to the bypass mode .



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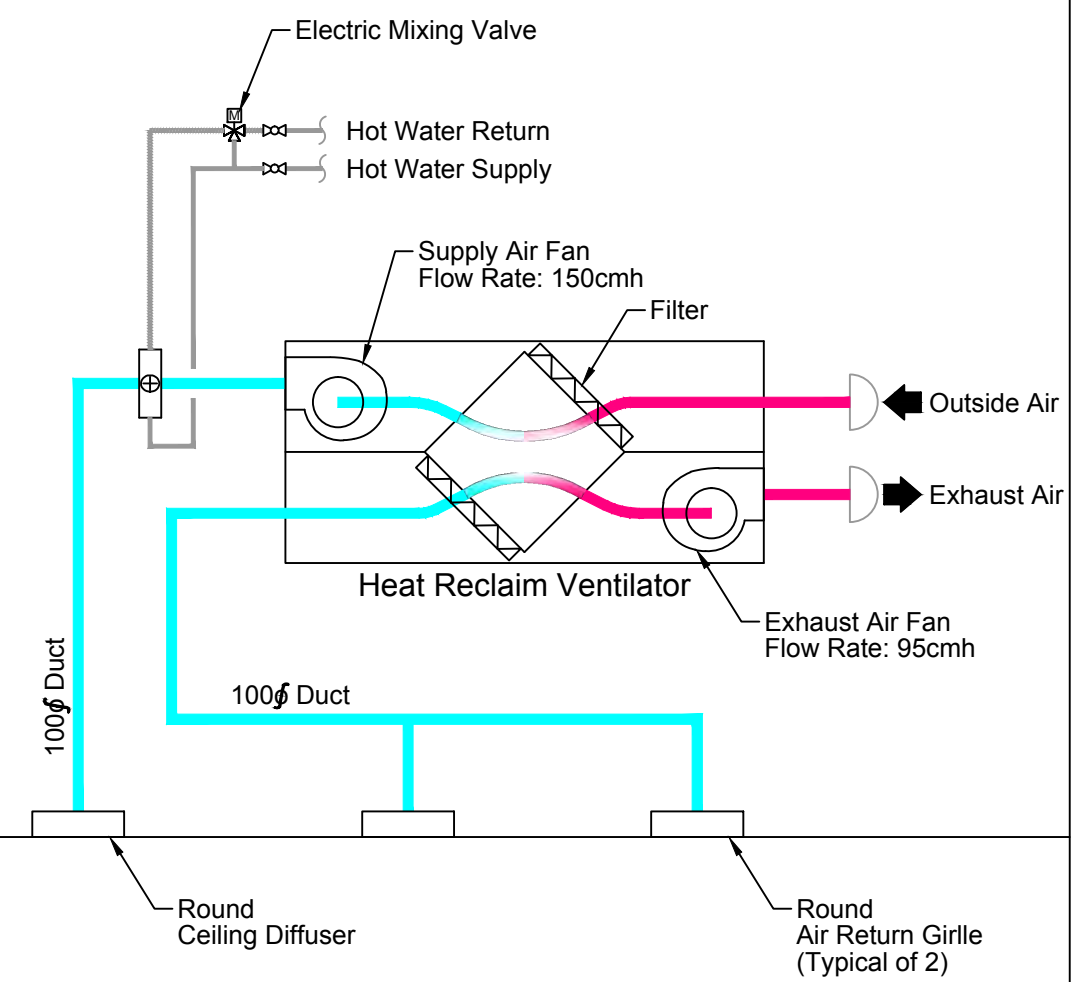
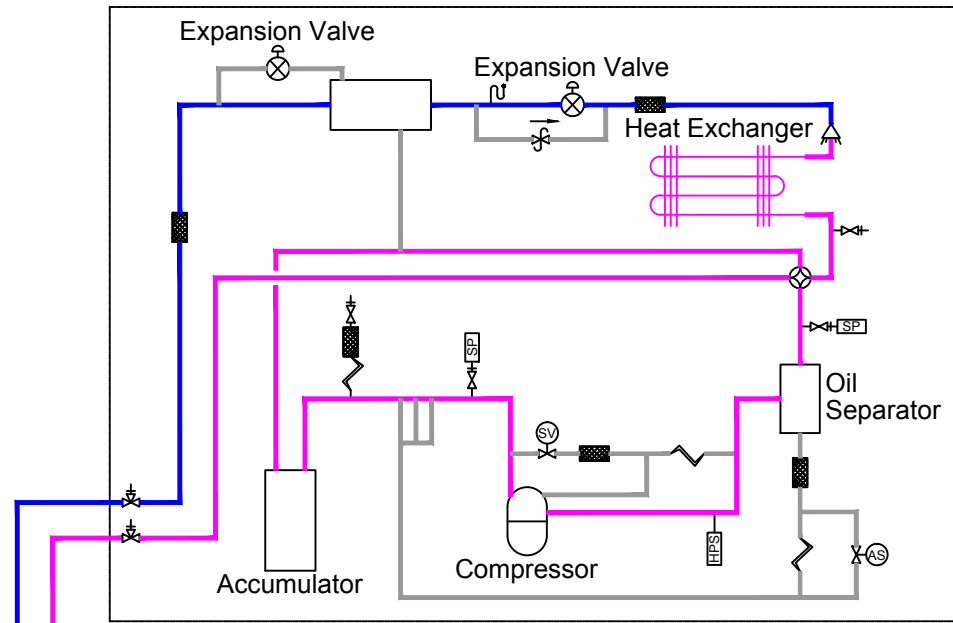
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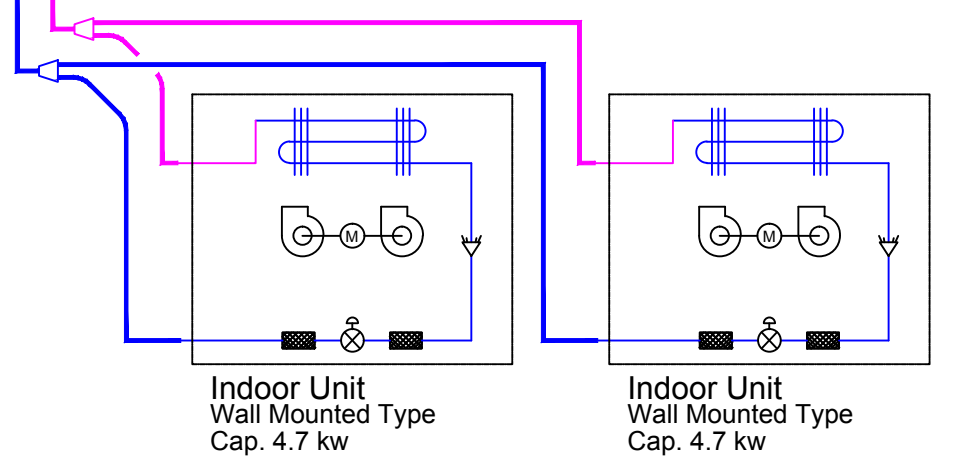
DWG. Title  
HEATING MODE  
SCHEMATIC DRAWINGS  
2

DWG. No.      PAGE  
**ME-212      193**

MEZZANINE



Gas Pipe  
Liquid Pipe



BEDROOM

LIVING ROOM

WORK STATION

KITCHEN

BATHROOM

When the heat pump is operating in cooling mode and the outdoor temperature is higher than the room temperature, the energy recovery ventilator is automatically switched to the heat recovery mode .



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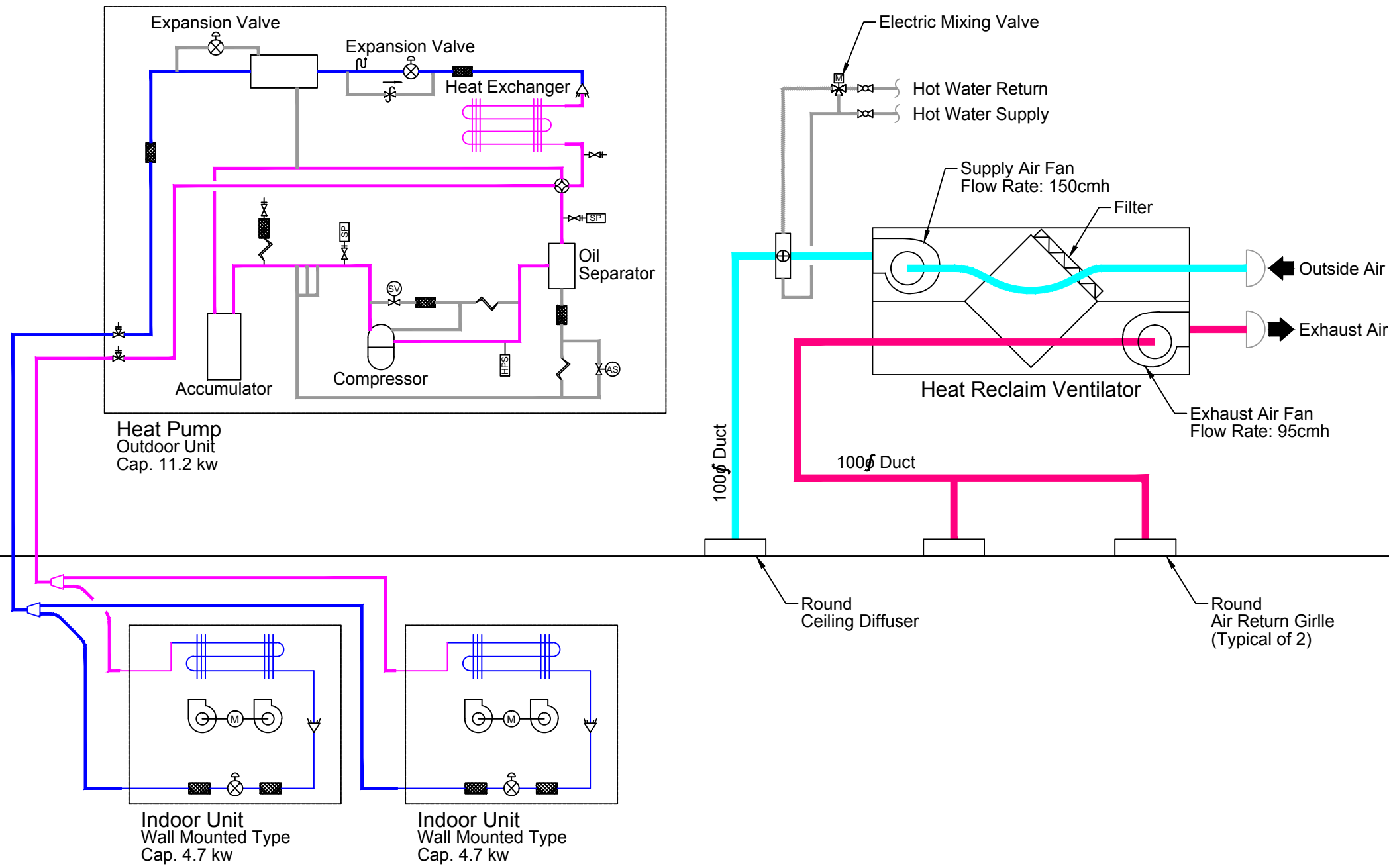
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

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Checked by LUI  
Scale -  
Unit -

DWG. Title  
COOLING MODE  
SCHEMATIC DRAWINGS  
1

DWG. No. ME-221  
PAGE 194

MEZZANINE



Gas Pipe  
Liquid Pipe

BEDROOM      LIVING ROOM      WORK STATION      KITCHEN      BATHROOM

When the heat pump is operating in cooling mode and the outdoor temperature is lower than the room temperature, the energy recovery ventilator is automatically switched to the bypass mode .



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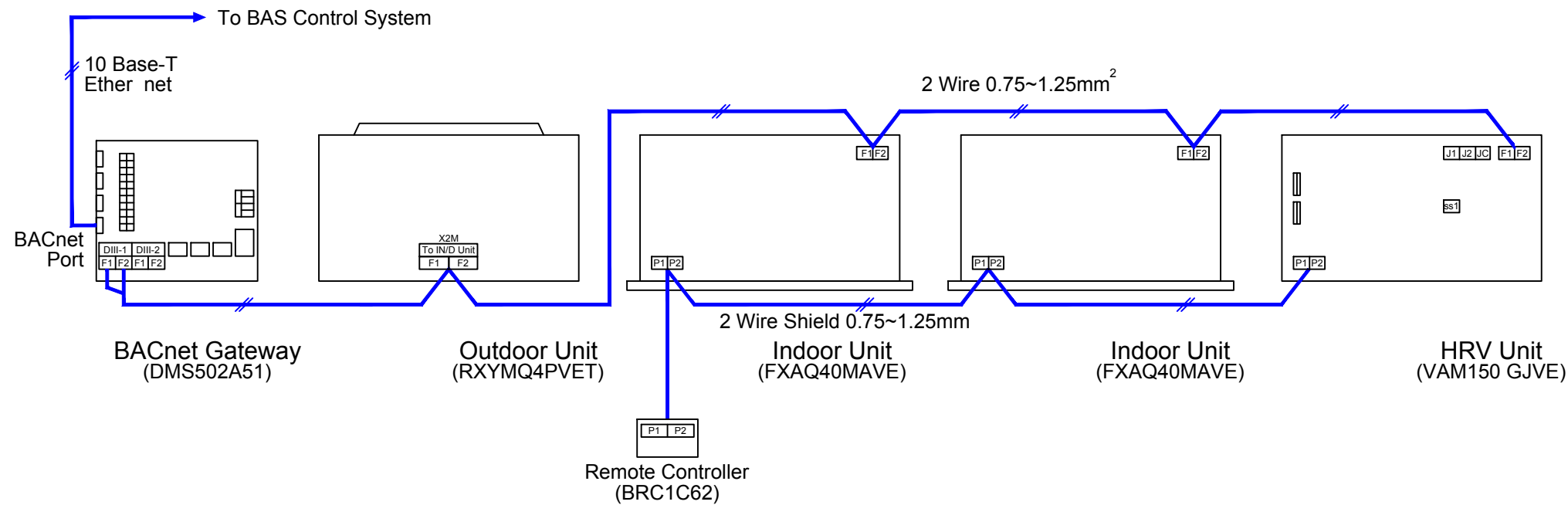
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ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

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Checked by LUI  
Scale -  
Unit -

DWG. Title  
COOLING MODE  
SCHEMATIC DRAWINGS  
2

DWG. No. ME-222      PAGE 195

# Control Wiring Diagram



## Remote Controller Function :

- 1 Cooling
- 2 Heating
- 3 Automatic Heating / Cooling Changeover
- 4 Program Dry Mode
- 5 Fan Mode
- 6 Program Timer
- 7 Program The Start/Stop Time

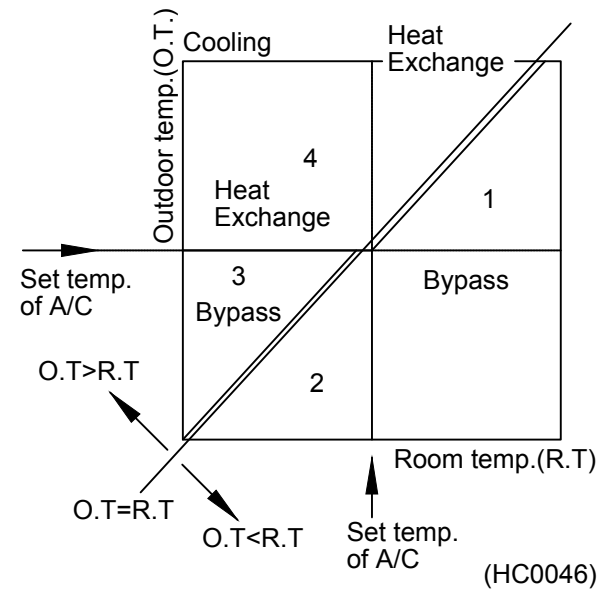


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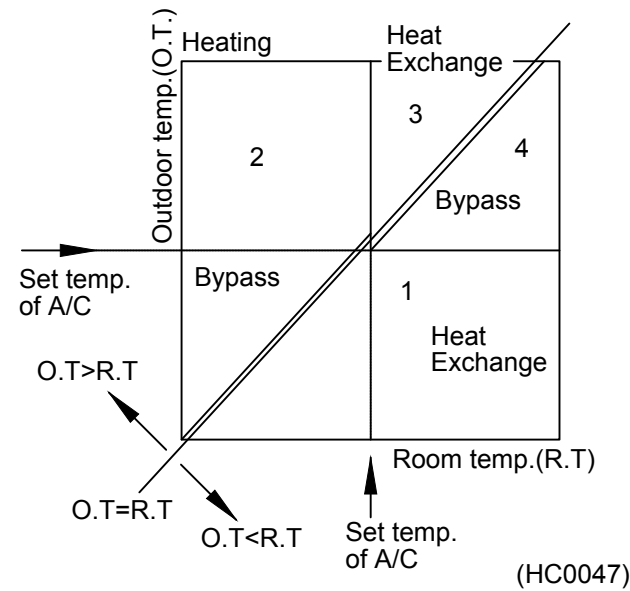


# Operation Mode Of HRV Unit

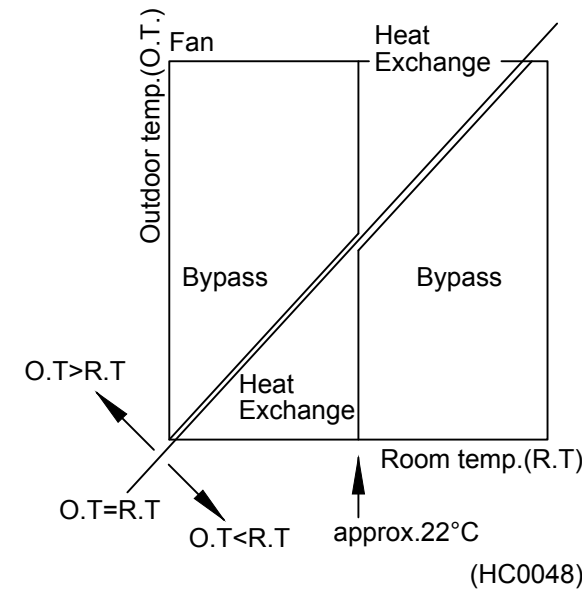
## 1. In case of cooling operation



## 2. In case of heating operation



## 3. In case of fan operation only



Zone 1 : Free cooling (cooling by outdoor air) in bypass mode.  
 Zone 2 : Room temperature to be achieved set temperature by heat exchange mode.  
 Zone 3 : Room temperature to be achieved set temperature in bypass mode.  
 Zone 4 : Fresh air supply is cooled down by indoor air in heat exchange mode (energy saving).  
 \* The air cannot be supplied at the same temperature as the outdoor air because it is partly heat-exchanged.

Zone 1 : Fresh air supply is heated up by indoor air in heat exchange mode (energy saving).  
 Zone 2 : Free heating (heating by outdoor air) in bypass mode.  
 Zone 3 : Room temperature to be achieved set temperature by heat exchange.  
 Zone 4 : Room temperature to be achieved set temperature in bypass mode.  
 \* The air cannot be supplied at the same temperature as the outdoor air because it is partly heat-exchanged.

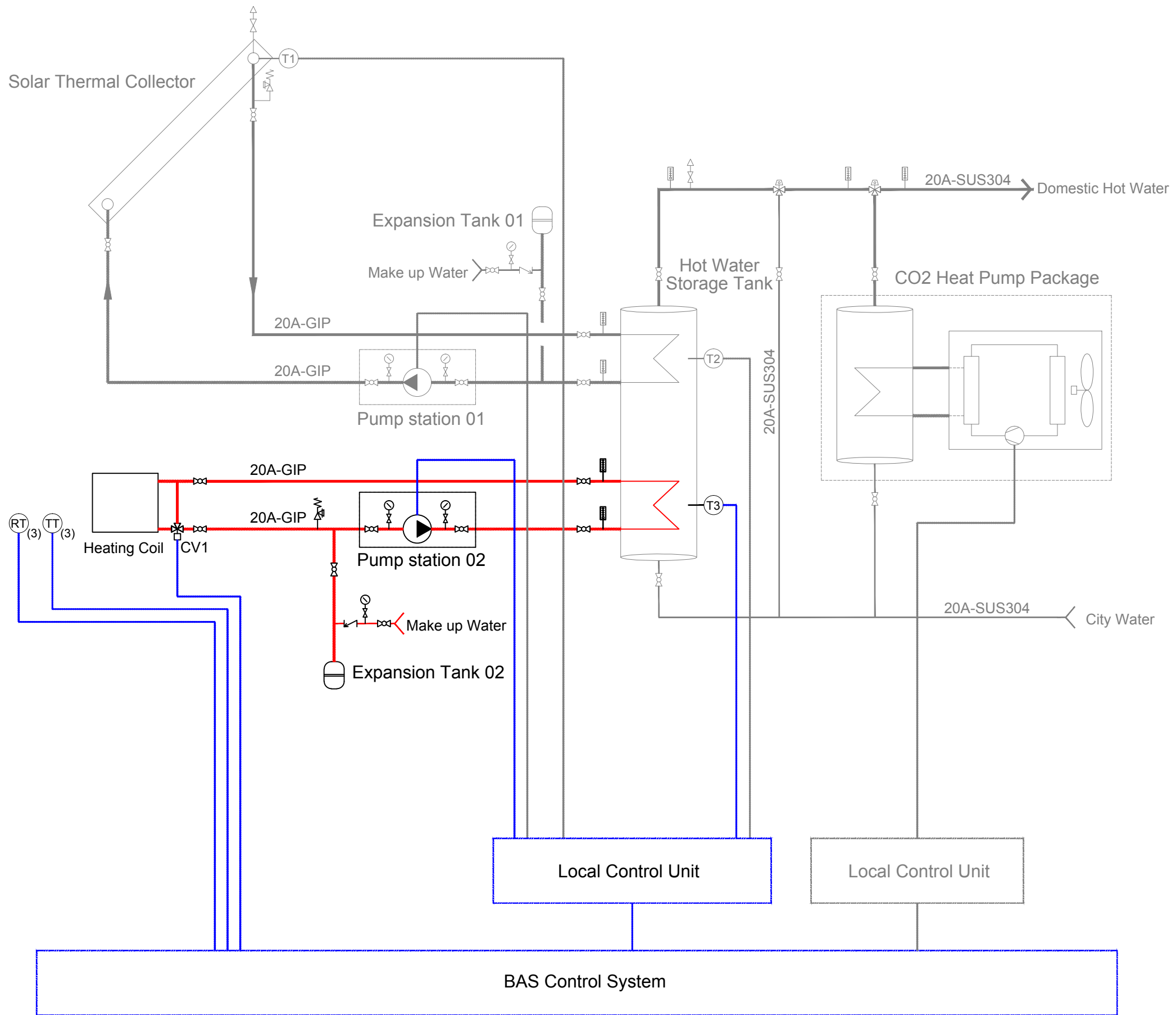
Ventilation mode is individually determined by the original formula of HRV with the temperature sensors.

Note:

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ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by: LUI  
 Checked by: LUI  
 Scale: -  
 Unit: -

DWG. Title: CONTROLS 1  
 DWG. No.: ME-231  
 PAGE: 196



**Remote Controller Function :**

- 1 Cooling
- 2 Heating
- 3 Automatic Heating / Cooling Changeover
- 4 Program Dry Mode
- 5 Fan Mode
- 6 Program Timer
- 7 Program The Start/Stop Time



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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by LUI

Checked by LUI

Scale -

Unit -

DWG. Title

CONTROLS 2

DWG. No. PAGE

ME-232

197

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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by

BB

Checked by

CHUNG

Scale

-

Unit

-

DWG. Title

ISOMETRIC DISTRIBUTION  
1

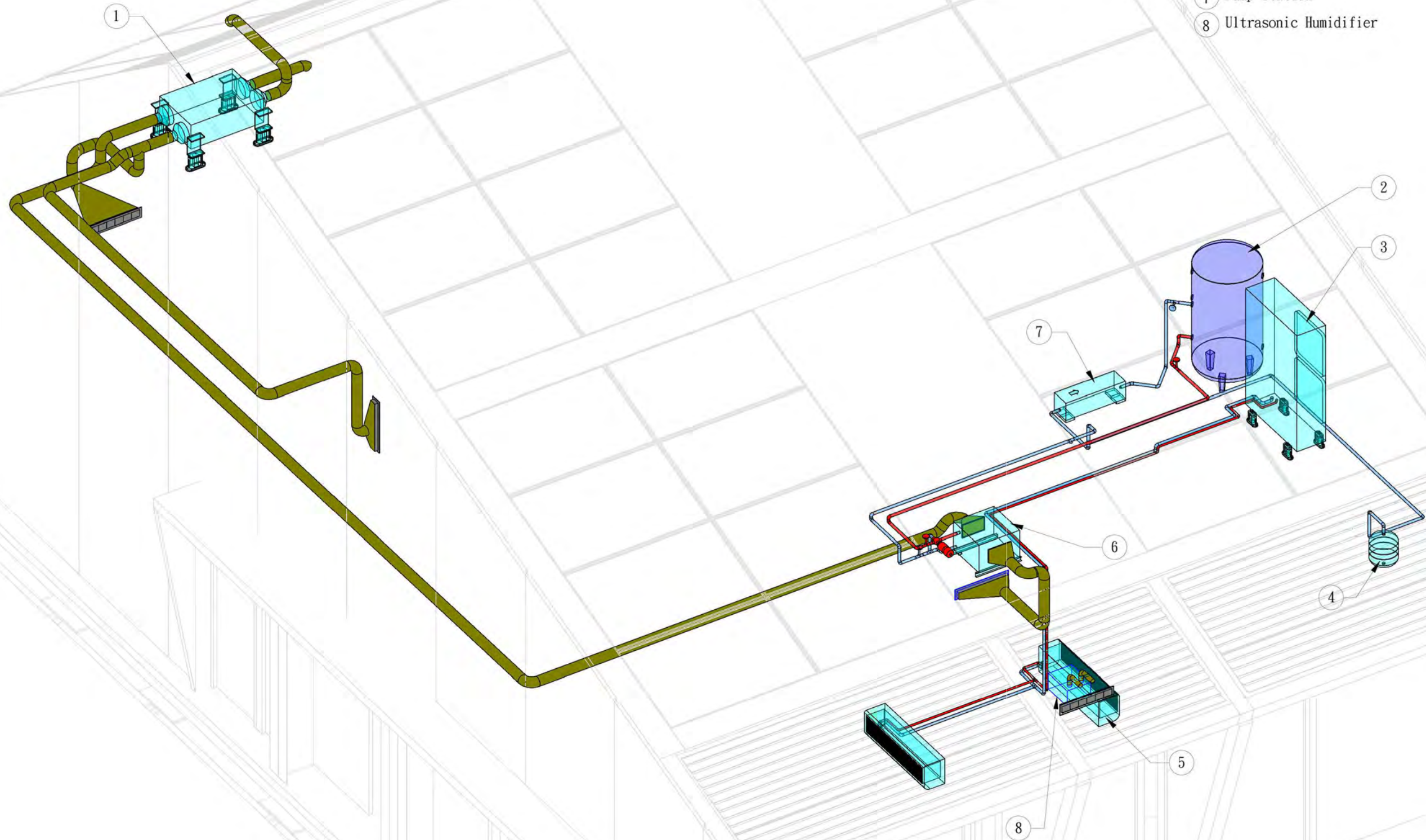
DWG. No.

ME-301

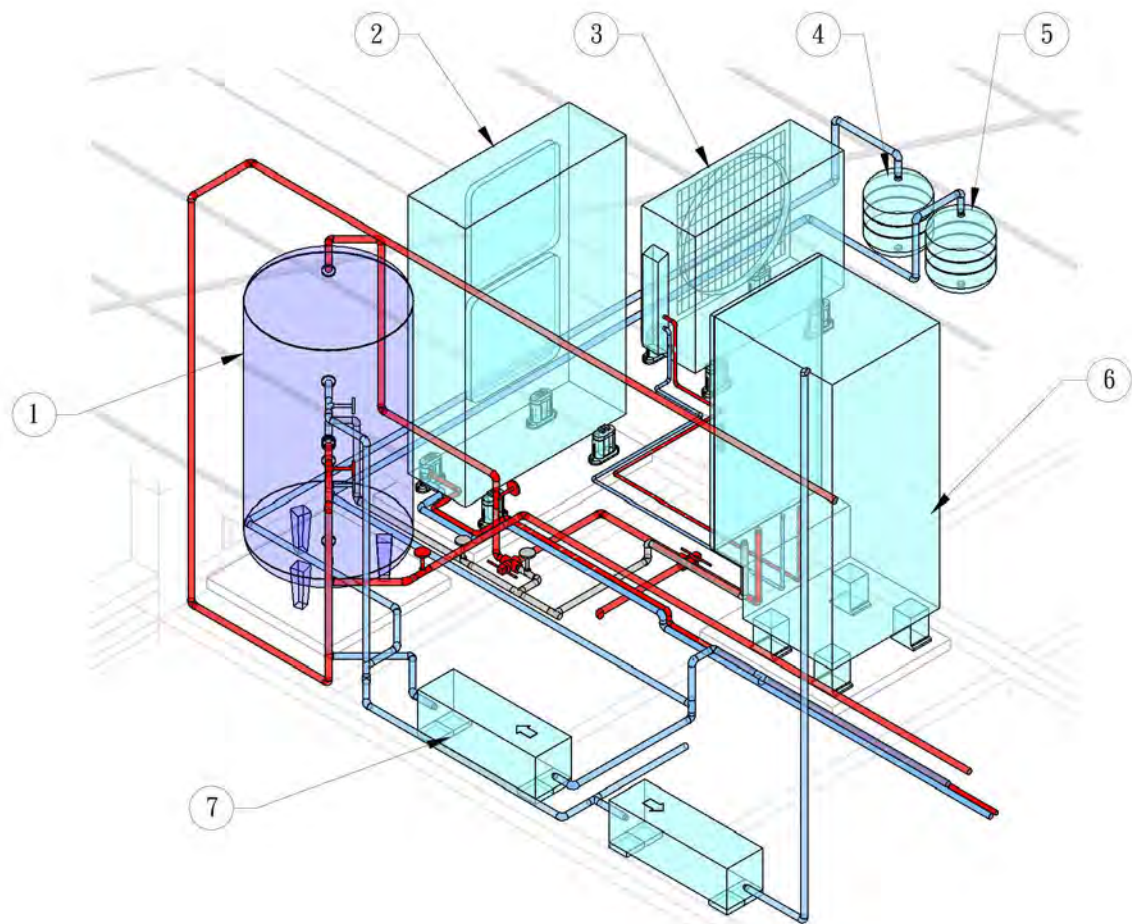
PAGE

198

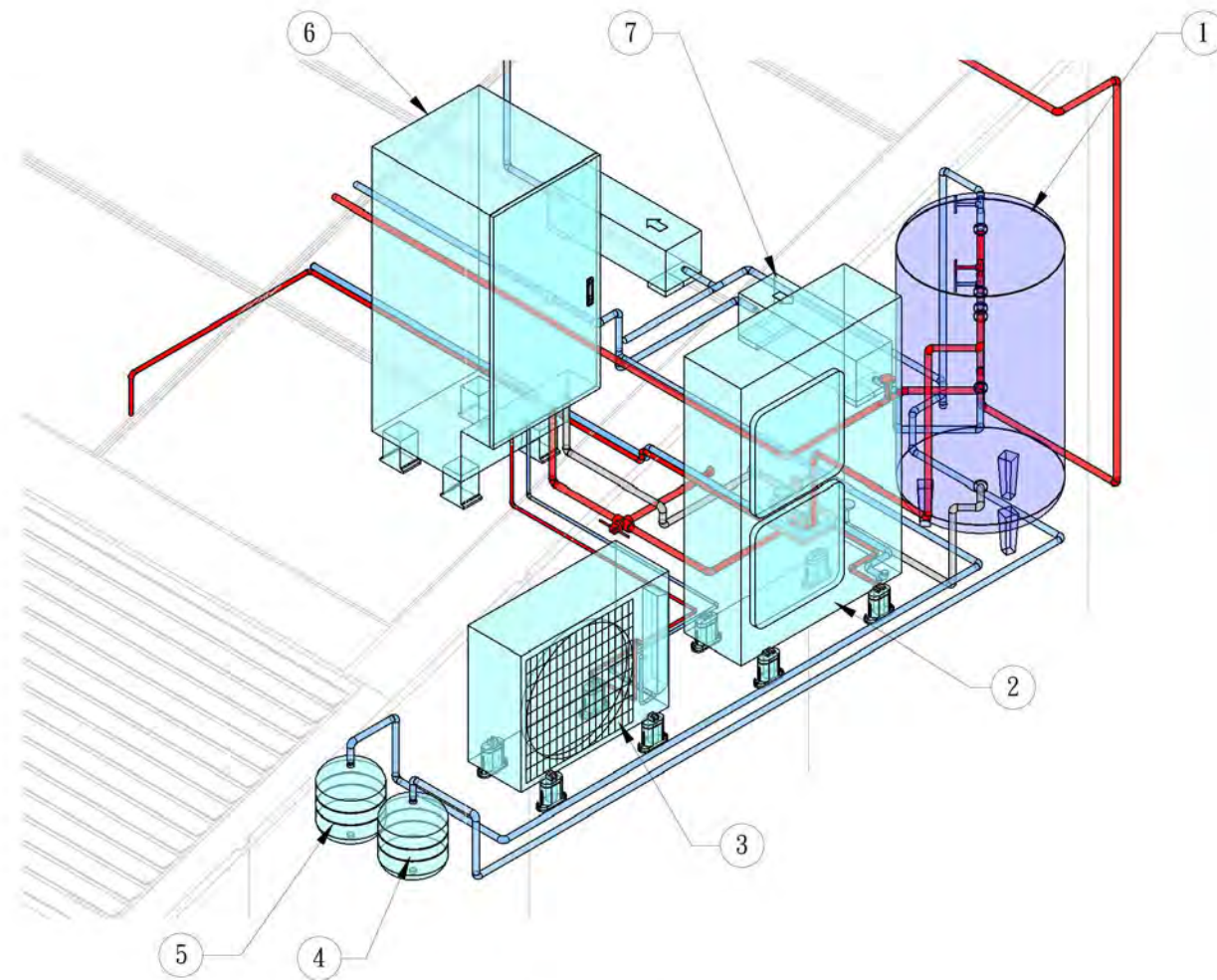
- ① Heat Reclaim Ventilator
- ② Hot Water Storage Tank
- ③ Heat Pump
- ④ Expansion Tank 1
- ⑤ Indoor Unit of Heat Pump
- ⑥ Heating Coil
- ⑦ Pump Station
- ⑧ Ultrasonic Humidifier



- ① Hot Water Storage Tank
- ② Heat Pump
- ③ CO2 Heat Pump Package1
- ④ Expansion Tank 1
- ⑤ Expansion Tank 2
- ⑥ CO2 Heat Pump Package 2
- ⑦ Pump Station



Mechanical Room Elevation(East North)



Mechanical Room Elevation(West South)



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ST	2013/11/01	DD Submission
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Drawn by BB

Checked by CHUNG

Scale -

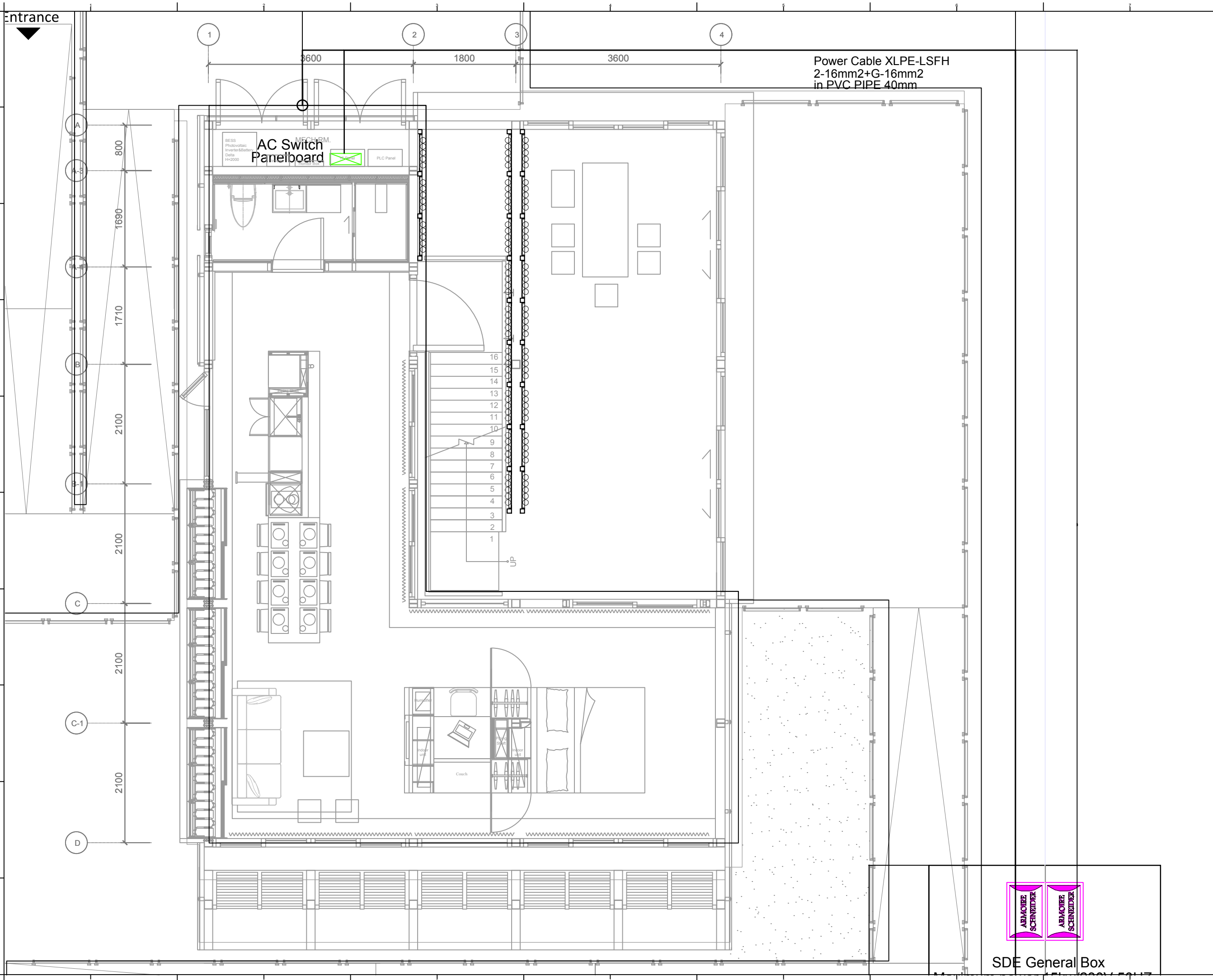
Unit -

DWG. Title

ISOMETRIC DISTRIBUTION  
2

DWG. No. PAGE

ME-302 199



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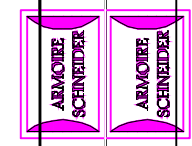
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

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Checked by: RAYS  
Scale: 1:60  
Unit: mm

DWG. Title  
**GRID INTERCONNECTION**

DWG. No. **EL-001**      PAGE **200**



SDE General Box





Mark	Date	Description
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ST	2014/03/03	CD Submission
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by: GK

Checked by: DN

Scale: -

Unit: -

DWG. Title

**DC WIRING DIAGRAM**

DWG. No. EL-201

PAGE 201

**Labels for pv installations:**

**ON DC SIDE**  
All the junction boxes and DC electrical cabling must indicate live conductors or the internal parts of the boxes can remain live even after the opening of the DC switch.

On the front of all junction boxes, insert a label:  
"Attention, cables courant continu sous tension"

In all the junction boxes and in all the DC disconnect boxes, insert a label:  
"Ne pas manoeuvrer en charge"

**ON THE INVERTERS**  
All the inverters shall have clear markings specifying that before all work, all the voltage sources must be electrically isolated.

Insert this label on the inverter front.

Tag	Components	Manufacturer	Model	Q'ty	Notes
①	PV Module	NSP	D6P250B3A	20	
②	Box			1	
	Fuse			4	DC1000V 15A
	Surge Protection Device	ABB	OVR PV 40-600 P	2	Uc:670V,Up:1.4kV,In:20kA(8/20us)
	Disconnecter Switch	MERZ	MDC1A-025-600	2	DC600V 25A
③	Inverter	Delta	Solivia 5.0	1	

**Photovoltaic Module :**  
NSP D6P250B3A  
Max. DC power = 250Wp  
Voc = 37.33 V  
Vmp = 30.34 V  
Isc = 8.69 A  
Temp. Coeff. of Voc = -0.117 V/°C  
Temp. Coeff. of Isc = 0.004 A/°C  
Temp. Coeff. of Vmp = -0.127 V/°C  
Module Efficiency = 15.3 %

**Voltage Calculations :**  
Voc @ coldest expected operating Temp.:  
Low ambient Temp. = -20°C  
Voc(-20°C)=Voc(STC)+(-20°C-25°C)\*(ΔVoc/°C)=37.33-45\*(-0.117) = 42.595V  
Max. modules of string:  
nmax=Vdc(input max)/Voc(-20°C)=600/42.595=14.086 choose 14pcs  
Vmp @ highest expected operating Temp.:  
High ambient Temp. = 75°C  
Vmp(75°C)=Vmp(STC)+(75°C-25°C)\*(ΔVmp/°C)=30.34+50\*(-0.127) = 23.99V  
Min. modules of string:  
nmin=Vmp(min)/Vmp(75°C)=150/23.99=6.25 choose 7pcs  
Selection modules of string = 10 pcs

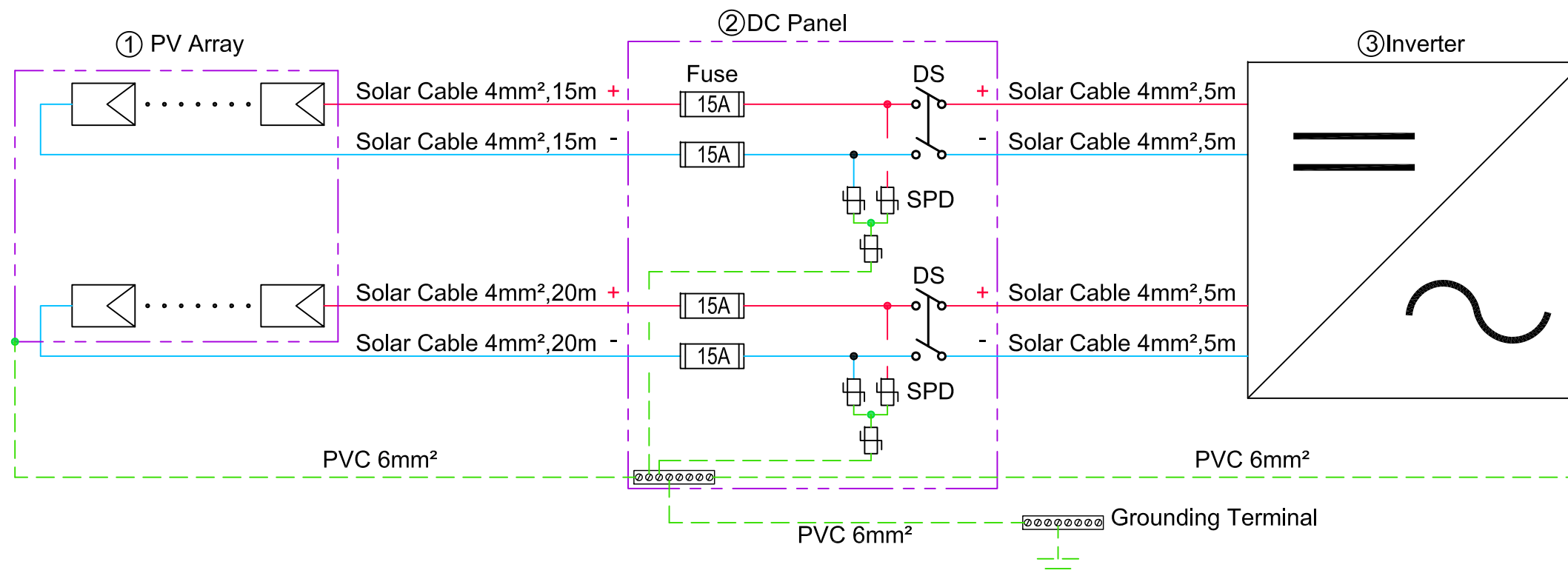
**Inverter :**  
Delta Solivia 5.0  
Max. input power = 6,000Wp  
Input Voltage range = 125 ~ 600V  
Full power MPP range = 150 ~ 480V  
Max. current = 36.6A  
DC connector = 2 pairs  
Nominal apparent power = 5,000VA  
Voltage range = 184~264Vac  
AC output frequency = 50 Hz  
Max. current = 27.2 Aac  
Max. efficiency = 96.1%  
EU efficiency = 94.6%

Voc(-20°C)\_string = Modules\*Voc(-20°C) = 10\*42.595V = 425.95V < 600V  
Vmp(75°C)\_string = Modules\*(75°C) = 10\*23.99V = 239.9V > 150V

**String in parallel :**  
Max. DC power of Charge Controller / Selection modules of string / Module Max. DC power  
= 5,000W / 10pcs / 250W  
= 2.0 ≤ 2parallel

**DC array conductor :**  
1.56 \* Isc \* 2 = 1.56 \* 8.69A \* 2 = 27.11A  
Selected conductor : solar cable 4mm²

**SPD selection of Calculations :**  
Buildings in cities so use TYPE 2-class II  
choose In:20kA(8/20us)  
Max continuous operating voltage Uc:  
426V\*1.1=468.6V choose 670Vdc  
insulation voltage of the equipment:1.2~2kV  
choose Up:1.4kV



Project:



Institution:



**NCTU Architecture**  
國立交通大學建築研究所

Team Name:

NCTU/UNICODE

Address:

1001 Ta-Hsueh Road  
Hsinchu City 30010  
Taiwan

Contact:

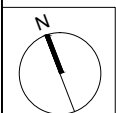
www.sde.tw



Consultants:



Note:



Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by RAYS

Checked by -

Scale 1:60

Unit mm

DWG. Title

**POWER PLAN  
GROUND LEVEL**

DWG. No. EL-301 PAGE 202

**Symbol & Legend**

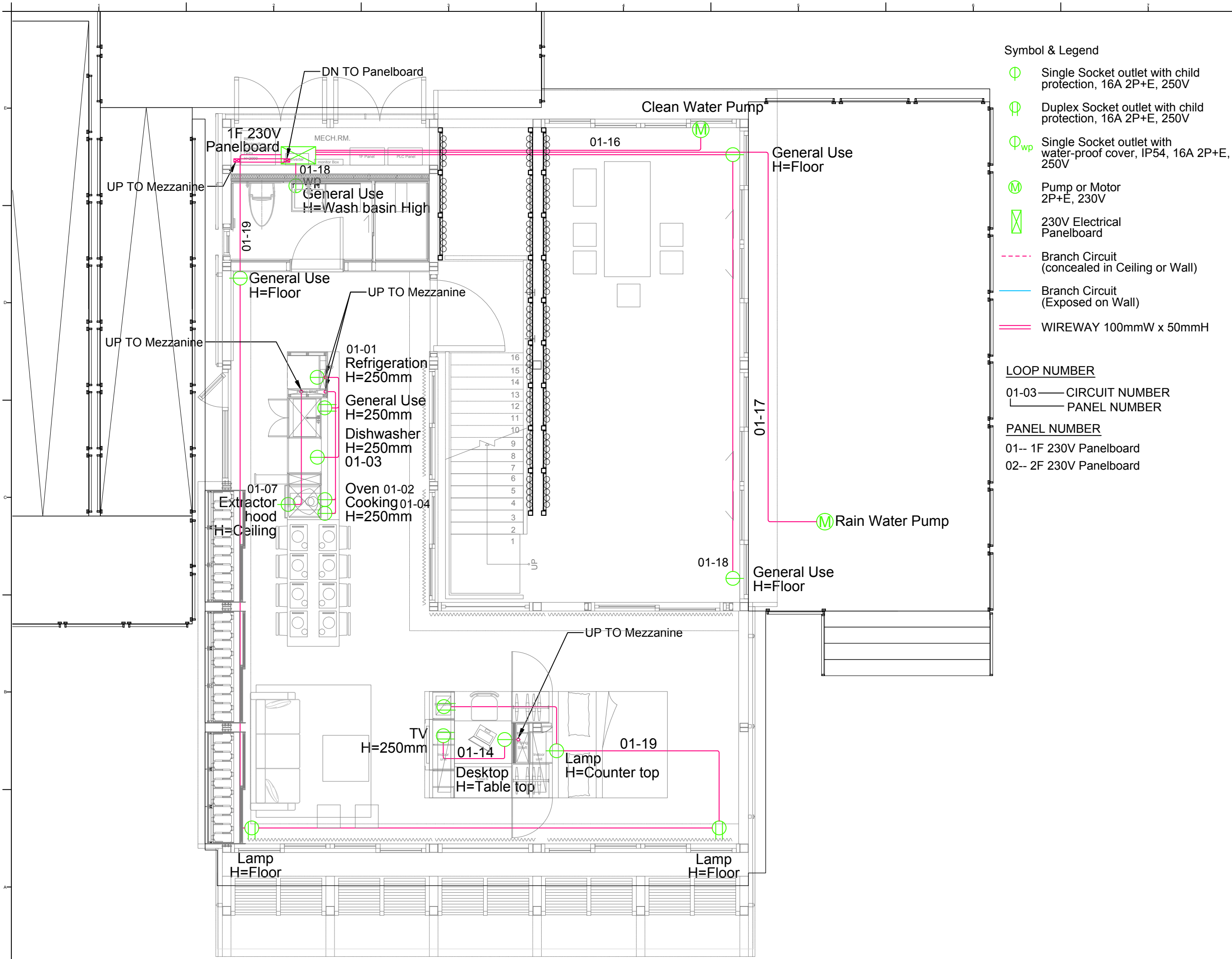
- Single Socket outlet with child protection, 16A 2P+E, 250V
- Duplex Socket outlet with child protection, 16A 2P+E, 250V
- Single Socket outlet with water-proof cover, IP54, 16A 2P+E, 250V
- Pump or Motor 2P+E, 230V
- 230V Electrical Panelboard
- Branch Circuit (concealed in Ceiling or Wall)
- Branch Circuit (Exposed on Wall)
- WIREWAY 100mmW x 50mmH

**LOOP NUMBER**

- 01-03 — CIRCUIT NUMBER
- PANEL NUMBER

**PANEL NUMBER**

- 01-- 1F 230V Panelboard
- 02-- 2F 230V Panelboard



Project:



Institution:



**NCTU Architecture**  
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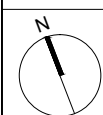
Contact: www.sde.tw



Consultants:



Note:



Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DD Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by RAYS

Checked by

Scale 1:60

Unit mm

DWG. Title

**POWER PLAN  
MEZZANINE LEVEL**

DWG. No. EL-302 PAGE 203

Symbol & Legend

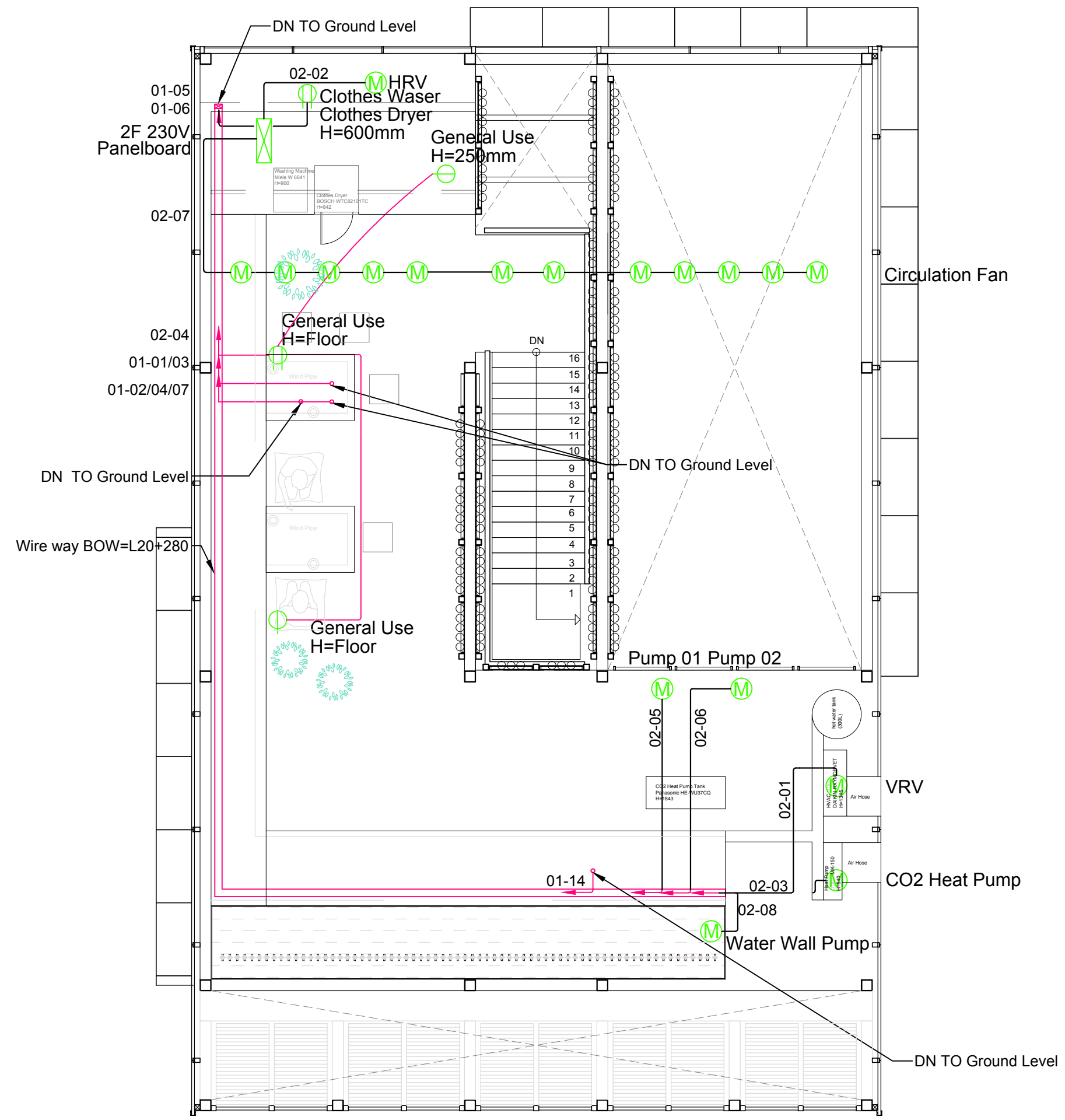
- Single Socket outlet with child protection, 16A 2P+E, 250V
- Duplex Socket outlet with child protection, 16A 2P+E, 250V
- Single Socket outlet with water-proof cover, IP54, 16A 2P+E, 250V
- Pump or Motor 2P+E, 230V
- 230V Electrical Panelboard
- Branch Circuit (concealed in Ceiling or Wall)
- Branch Circuit (Exposed on Wall)
- WIREWAY 100mmW x 58mmH

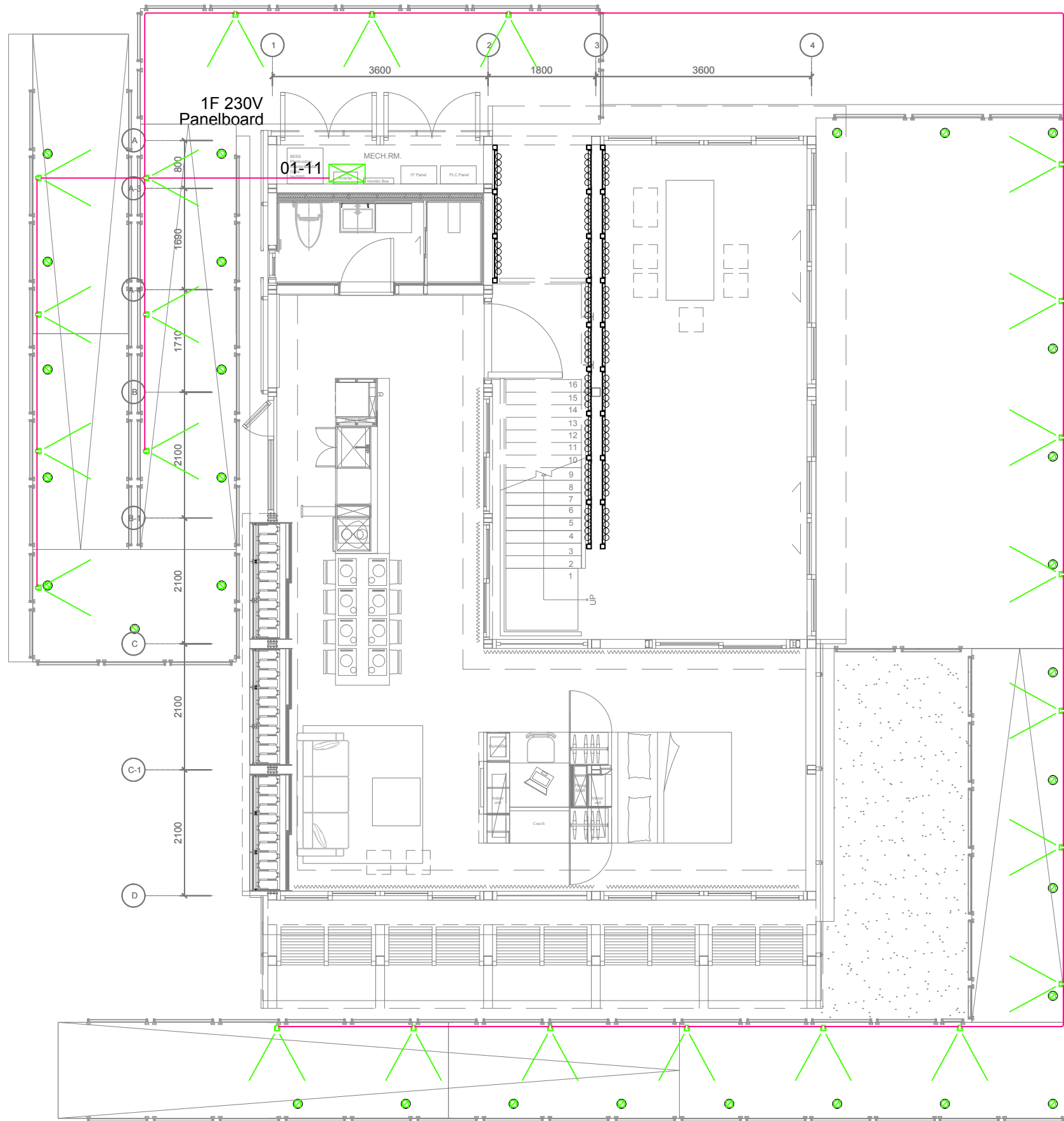
LOOP NUMBER

- 01-03 — CIRCUIT NUMBER
- └── PANEL NUMBER

PANEL NUMBER

- 01-- 1F 230V Panelboard
- 02-- 2F 230V Panelboard





- SYMBOL & LEGEND**
- Taiwan Solar, Solar Underground Light Ni-MH battery 3.6V, 0.3W
  - Floor LED lamp
  - 230V Electrical Panelboard
  - Branch Circuit (concealed in Ceiling or Wall)
  - Branch Circuit (Exposed on Wall)
- LOOP NUMBER**
- 01-03 ——— CIRCUIT NUMBER  
 └─── PANEL NUMBER
- PANEL NUMBER**
- 01-- 1F 230V Panelboard  
 02-- 2F 230V Panelboard



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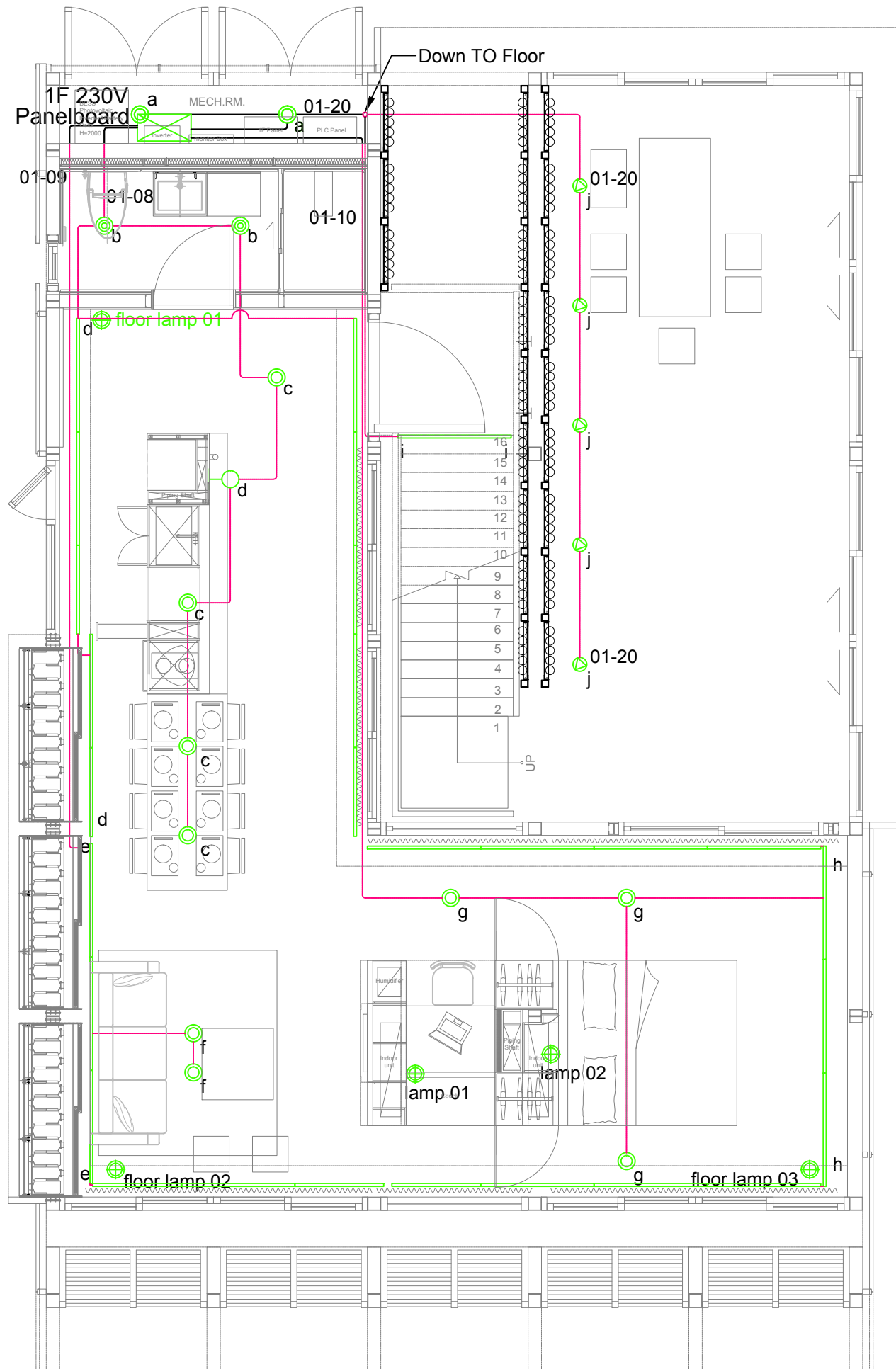
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DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission



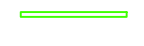










Drawn by DL  
 Checked by -  
 Scale 1:80  
 Unit mm

DWG. Title  
**LIGHTING PLAN SITE**

DWG. No. **EL-401** PAGE **204**



SYMBOL & LEGEND

-  Tons LSP-3106 / 7.2W / Warm White AC 100~240V, Wall mounted / 4000k
-  Tons T8 LED / 1270mm 20W/4000k AC 100~240V, Wall mounted
-  Tons T8 LED / 995mm 20W/4000k AC 100~240V, Wall mounted
-  Tons KA-112R / 3.6W Warm White AC 100~240V, Wall mounted / 4000k
-  Tons DA-504AD / 1.2W / Warm White AC 100~240V, Recess mounted / 4000k
-  Tons DG-913C / 12.6W / Warm White AC 100~240V, Recess mounted / 4000k
-  Tons ODL-005 / 1.2W / Warm White AC 100~240V, Recess mounted / 4000k
-  Delta A60 / DF 10W AC 100~240V / E27 / 4000k
-  Sa Lighting Switch, single-cut
-  S3a Lighting Switch, double-cut
-  230V Electrical Panelboard
-  Branch Circuit (concealed in Ceiling or Wall)
-  Branch Circuit (Exposed on Wall)

LOOP NUMBER

01-03 ——— CIRCUIT NUMBER  
 └─── PANEL NUMBER

PANEL NUMBER

01-- 1F 230V Panelboard  
 02-- 2F 230V Panelboard

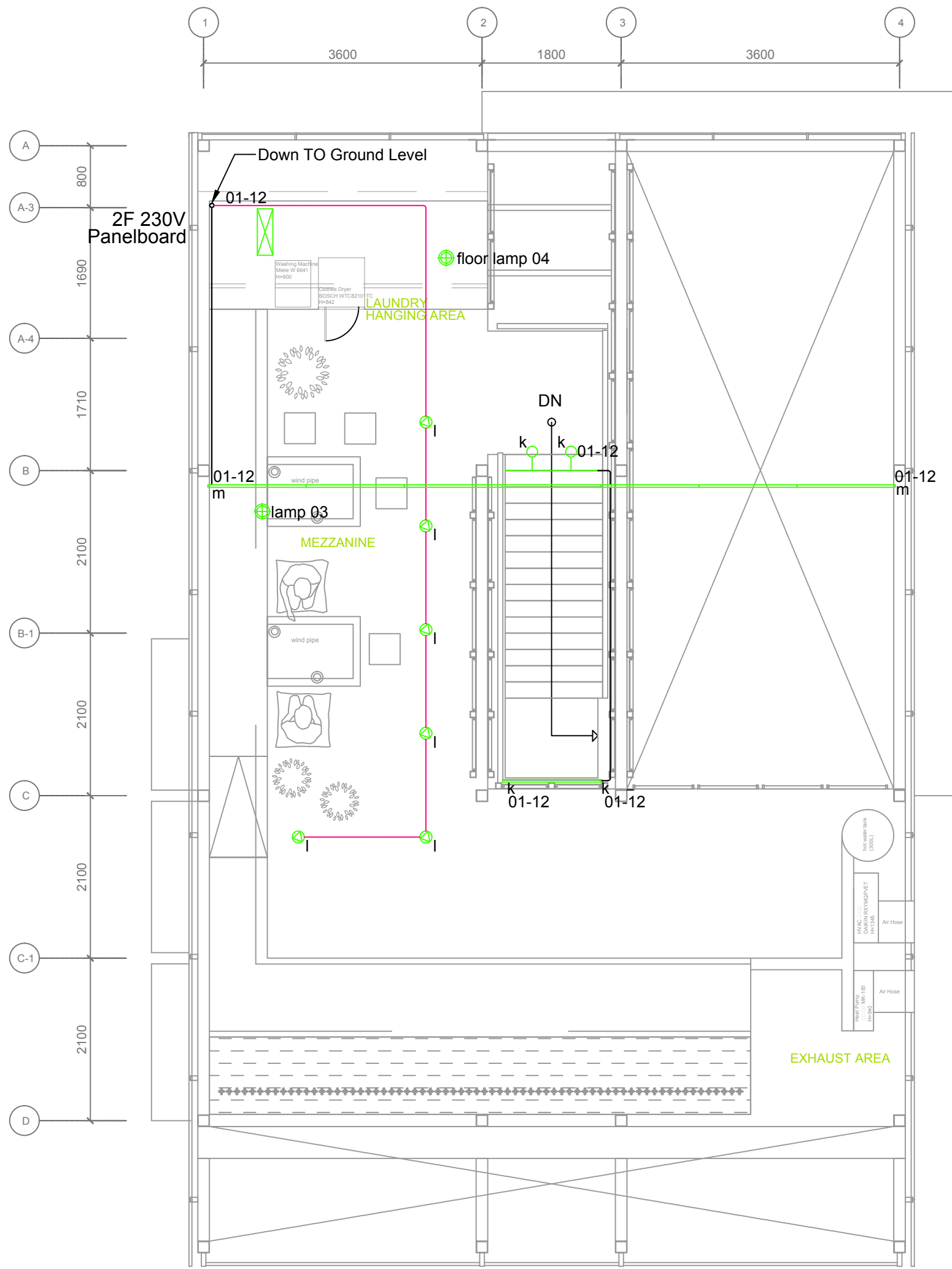


Note:

Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by	RAYS
Checked by	-
Scale	1:60
Unit	mm

DWG. Title  
 LIGHTING PLAN  
 GROUND LEVEL



SYMBOL & LEGEND

- Tons LSP-3106 / 7.2W / Warm White AC 100~240V, Wall mounted / 4000k
- Tons T8 LED / 1270mm 20W/4000k AC 100~240V, Wall mounted
- Tons T8 LED / 995mm 20W/4000k AC 100~240V, Wall mounted
- Tons KA-112R / 3.6W Warm White AC 100~240V, Wall mounted / 4000k
- Tons DA-504AD / 1.2W / Warm White AC 100~240V, Recess mounted / 4000k
- Tons DG-913C / 12.6W / Warm White AC 100~240V, Recess mounted / 4000k
- Tons ODL-005 / 1.2W / Warm White AC 100~240V, Recess mounted / 4000k
- Delta A60 / DF 10W AC 100~240V / E27 / 4000k
- Lighting Switch, single-cut
- Lighting Switch, double-cut
- 230V Electrical Panelboard
- Branch Circuit (concealed in Ceiling or Wall)
- Branch Circuit (Exposed on Wall)

LOOP NUMBER  
 01-03 ——— CIRCUIT NUMBER  
 ———— PANEL NUMBER

PANEL NUMBER  
 01-- 1F 230V Panelboard  
 02-- 2F 230V Panelboard



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ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by: RAYS  
 Checked by: -  
 Scale: 1:60  
 Unit: mm

DWG. Title  
**LIGHTING PLAN  
 MEZZANINE LEVEL**

DWG. No. **EL-403**      PAGE **206**









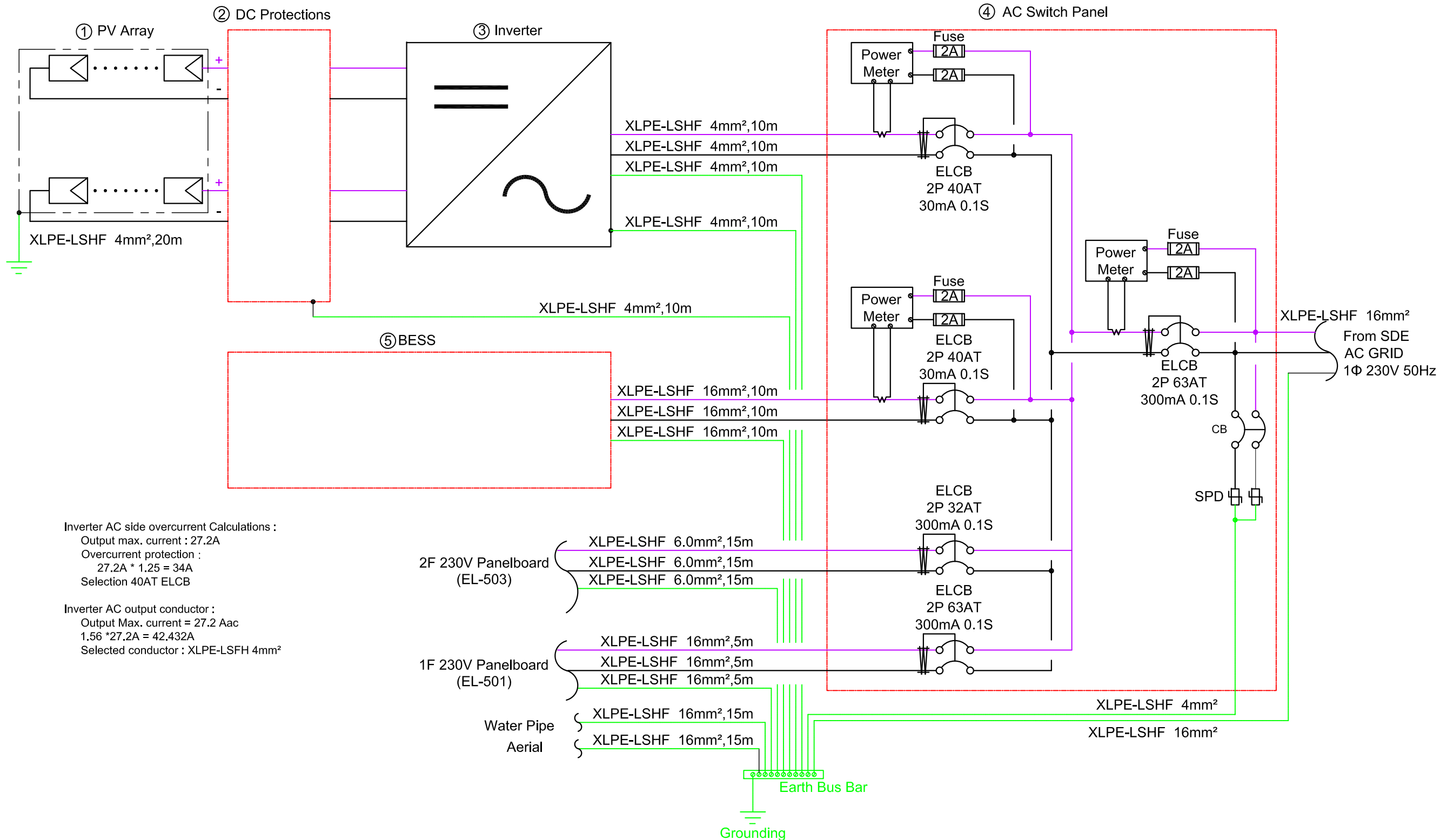
Tag	Components	Manufacturer	Model	Q'ty	Notes
①	PV Module	NSP	D6P250B3A	20	
②	DC Protections	HI BOX		1	
③	Inverter	Delta	Solivia 5.0	1	
④	Box	HI BOX		1	
	Power Meter	Schneider	PM3200	3	
	ELCB	Schneider		4	
	Surge Protection Device	Shihlin	BHP30 1PN	2	Uc:275V, Up: 1.2kV, In:15kA(8/20us)
⑤	BESS	Delta	RenE-ES 6120	1	Battery Energy Storage System

Labels for pv installations:

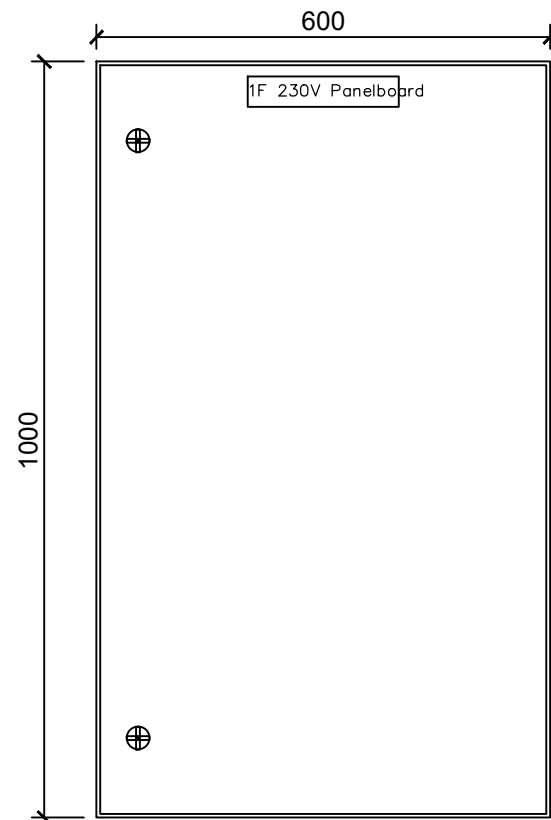
**ON AC SIDE**

On AC side, insert this label near the main AC photovoltaic circuit breaker or near the main AC photovoltaic switch

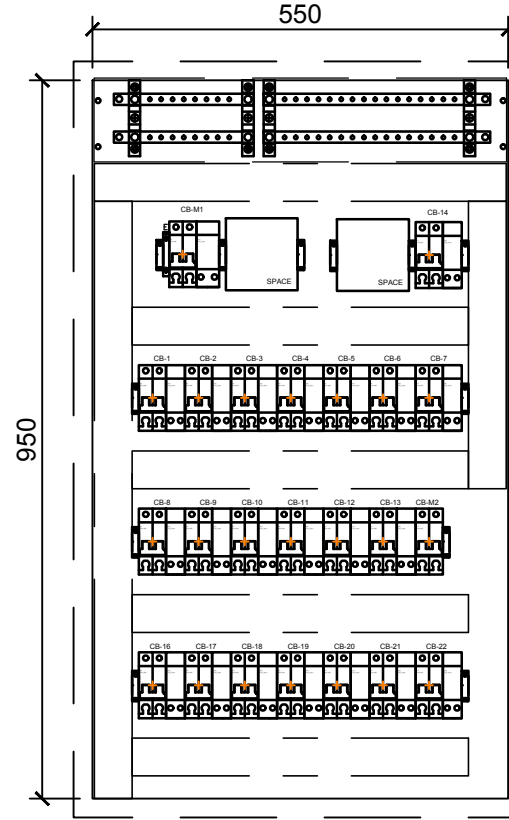
On AC side, insert this label( near the main circuit breaker) if a main circuit breaker cut off simultaneously photovoltaic and electrical loads



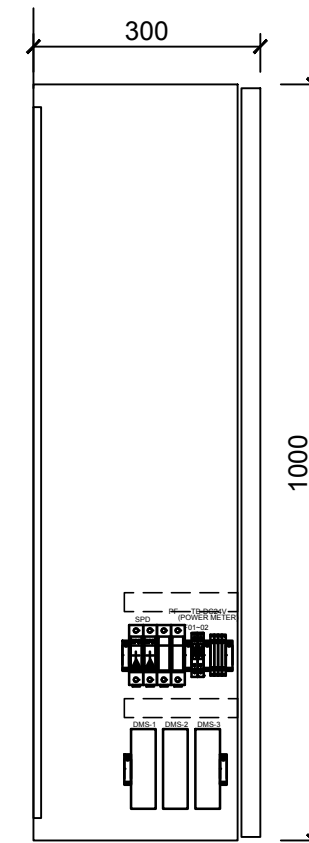
Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DD Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission



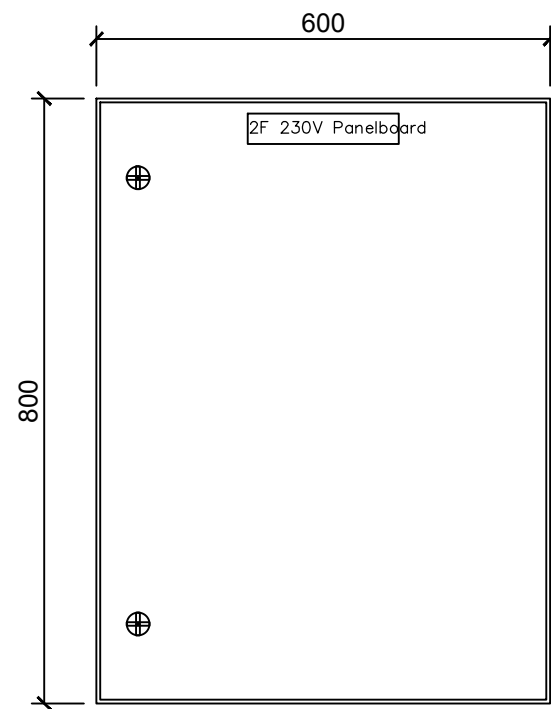
1F 230V Panelboard  
Front View



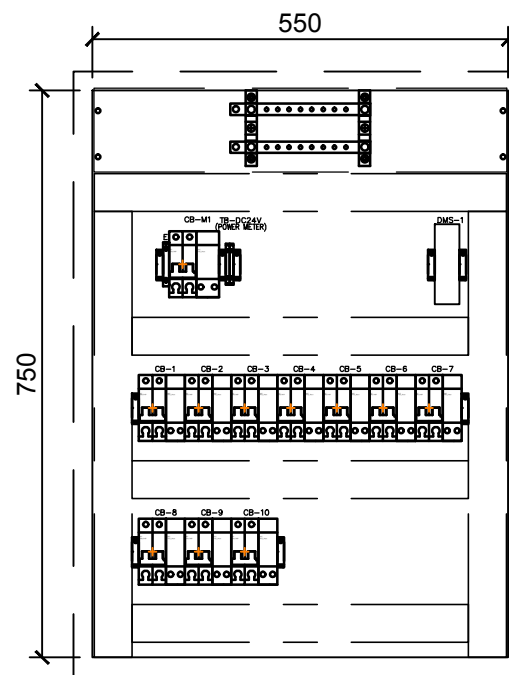
1F 230V  
Panelboard



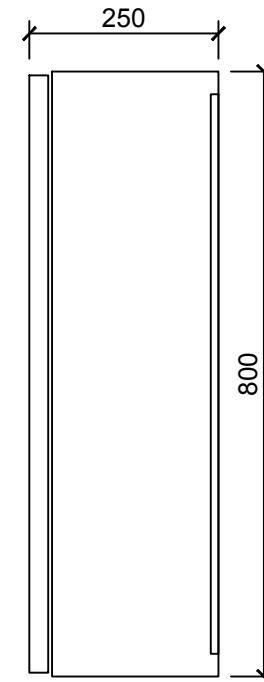
1F 230V Panelboard  
Side View



2F 230V Panelboard  
Front View



2F 230V  
Panelboard



2F 230V Panelboard  
Side View



Project:



Institution:



NCTU Architecture  
國立交通大學建築研究所

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Consultants:



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ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by RAYS

Checked by RAYS

Scale -

Unit -

DWG. Title

AC CIRCUIT LAYOUT

DWG. No. EL-602

PAGE

211



Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by RAYS

Checked by RAYS

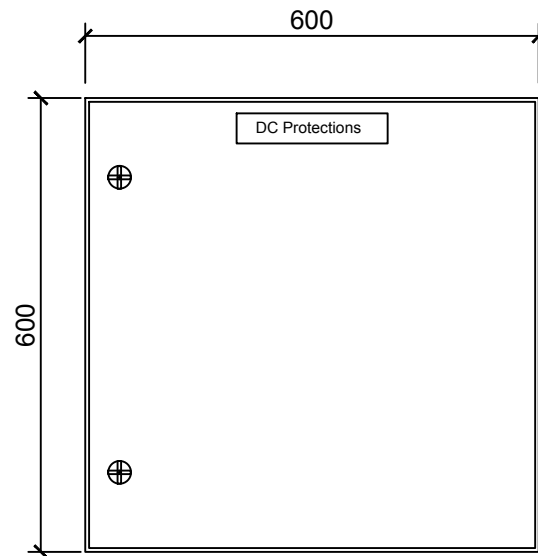
Scale -

Unit -

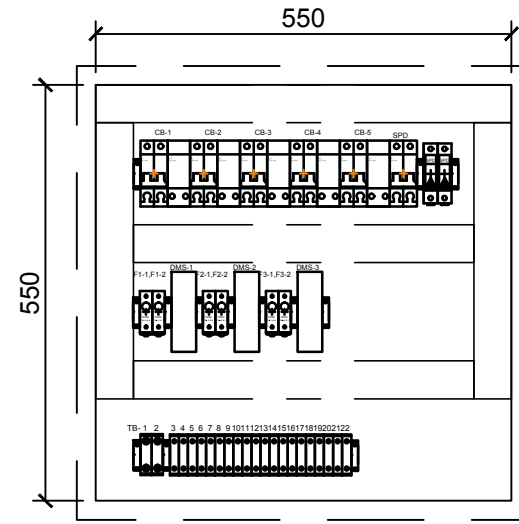
DWG. Title

AC CIRCUIT LAYOUT

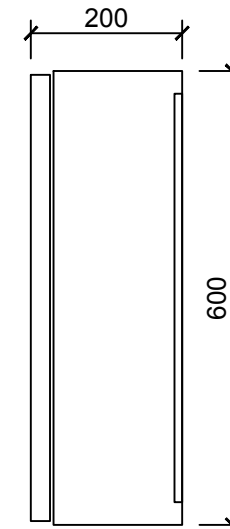
DWG. No. EL-603 PAGE 212



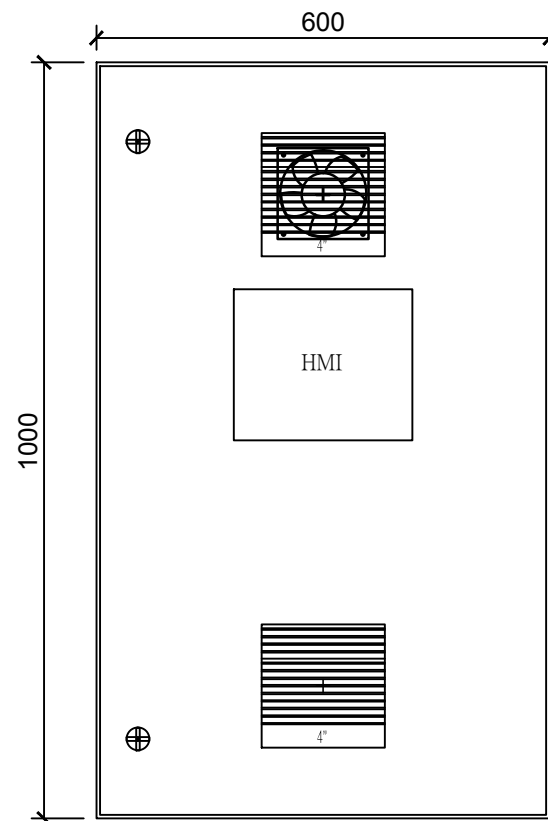
AC Circuit Panel  
Front View



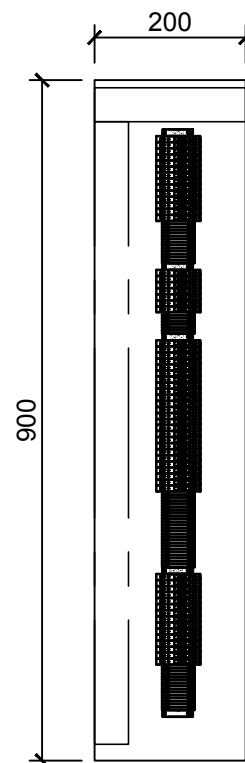
AC Circuit Panel



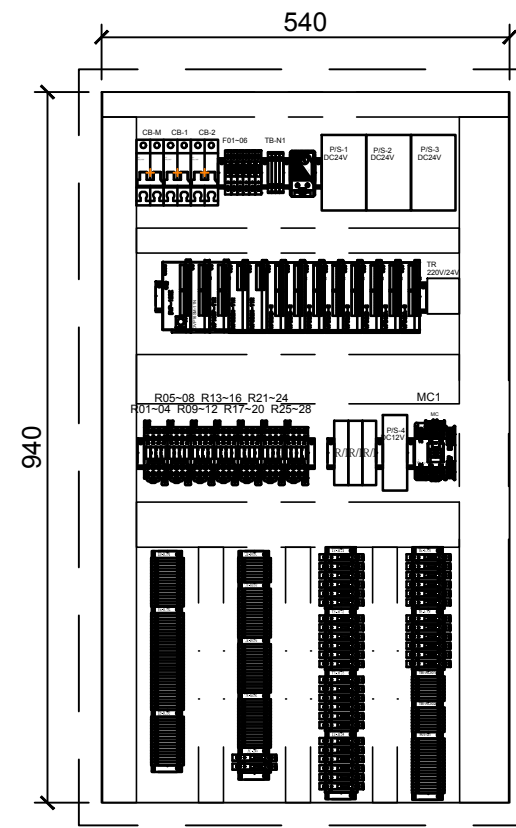
AC Circuit Panel  
Side View



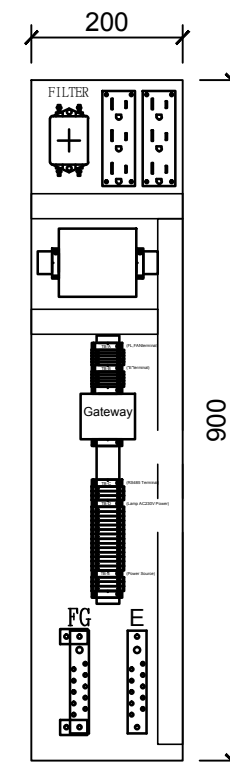
BAS Panel  
Front View



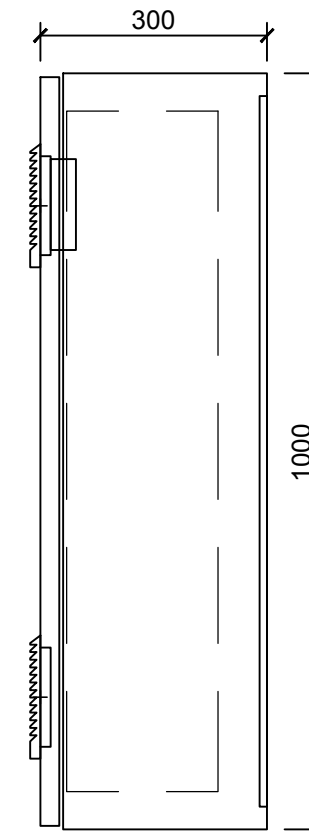
BAS Panel Left  
Side View



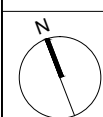
BAS Panel



BAS Panel Right  
Side View



BAS Panel  
Side View



Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by: AW

Checked by: -

Scale: -

Unit: -

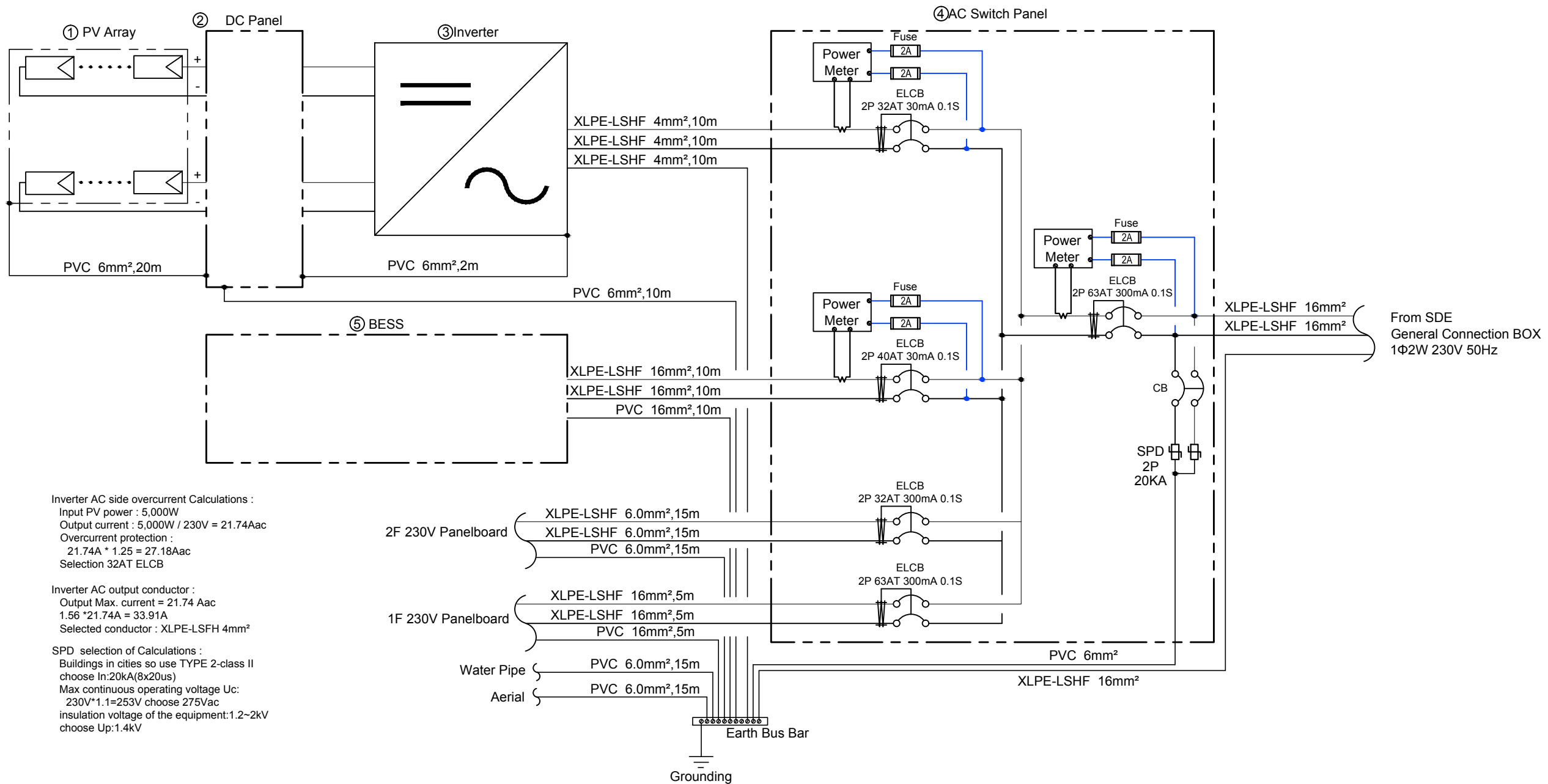
DWG. Title:

PHOTOVOLTAIC SYSTEM:  
GENERAL 1

DWG. No. PAGE

PV-001 213

Tag	Components	Manufacturer	Model	Q'ty	Notes
①	PV Module	NSP	D6P250B3A	20	
②	DC Protections			1	
③	Inverter	Delta	Solivia 5.0	1	
④	Box			1	
	Power Meter	Archmeter	PA33	3	
	ELCB	Schneider		5	
	Surge Protection Device	Shihlin	BHP40, 2P	1	Uc:275V,Up:1.4kV,In:20kA(8/20us)
⑤	BESS	Delta	RenE-ES 6120	1	Battery Energy Storage System



Project:



Institution:



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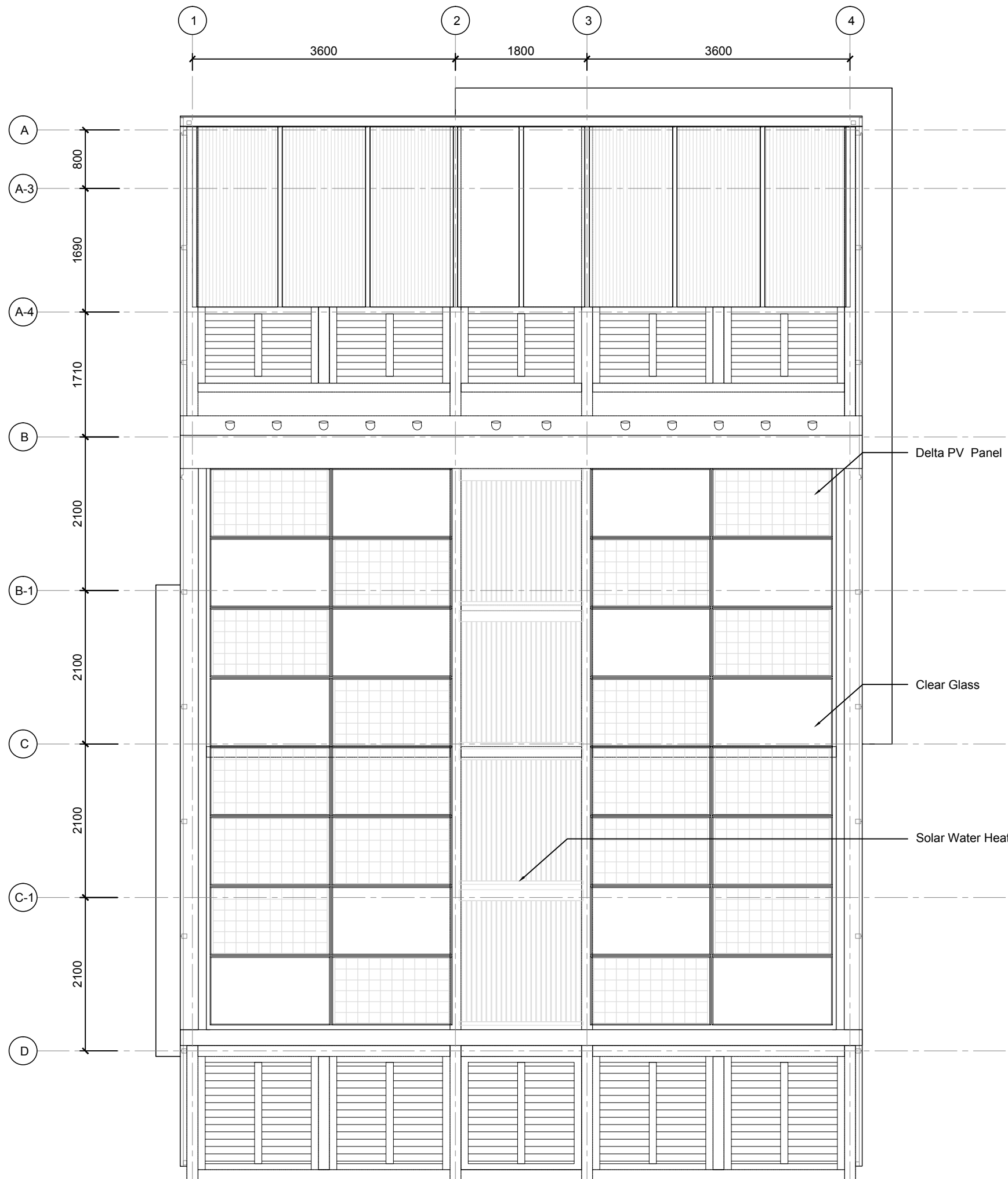
台達電子工業股份有限公司  
DELTA ELECTRONICS, INC.

Note:

Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by	CF
Checked by	DN
Scale	1:60
Unit	mm

DWG. Title	
PHOTOVOLTAIC SYSTEM: GENERAL 2	
DWG. No.	PAGE
PV-002	214



System Design Data	
Module Type	Standard
Module Power	250 Wp
Number of Module	20 pieces
Inverter Type	Solivia 5.0
Number of Inverter	1
System Capacity	5 kWp
Tilt Angle of Modules	18°
Azimuth of Modules	South
System Type	On Grid



Project:



Institution:



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Consultants:

Delta.jpg

台達電子工業股份有限公司  
DELTA ELECTRONICS, INC.

Note:

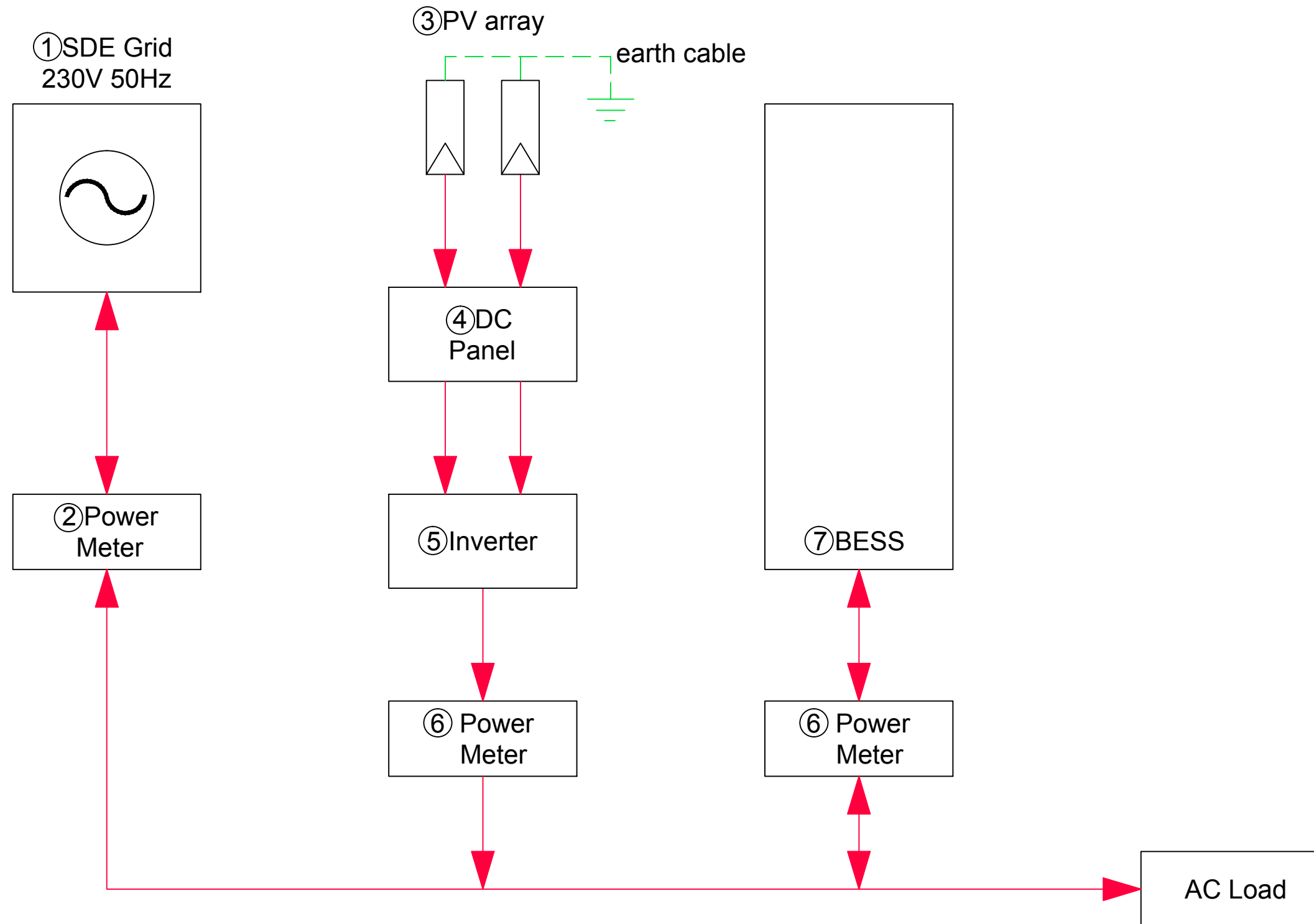
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ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission

Drawn by	AW
Checked by	-
Scale	-
Unit	-

DWG. Title  
PHOTOVOLTAIC SYSTEM:  
GENERAL 3

DWG. No.	PAGE
PV-003	215

Tag	Components	Manufacturer	Model	Q'ty	Notes
①	SDE Grid			1	Organization Supplied Grid Power
②	Power Meter	Archmeter	PA33	1	
③	PV array	NSP	D6P250B3A	20	
④	DC Panel			1	
⑤	Inverter	Delta	Solivia 5.0	1	
⑥	Power Meter	Archmeter	PA33	2	
⑦	BESS	Delta	RenE-ES 6120	1	Battery Energy Storage System





Note:

Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission

Drawn by	GK
Checked by	-
Scale	-
Unit	-

DWG. Title  
**PHOTOVOLTAIC SYSTEM:  
DC CIRCUITS**

DWG. No.	PAGE
<b>PV-011</b>	<b>216</b>

Tag	Components	Manufacturer	Model	Q'ty	Notes
①	PV Module	NSP	D6P250B3A	20	
②	Box			1	
	Fuse			4	DC1000V 15A
	Surge Protection Device	ABB	OVR PV 40-600 P	2	Uc:670V,Up:1.4kV,In:20kA(8/20us)
	Disconnecter Switch	MERZ	MDC1A-025-600	2	DC600V 25A
③	Inverter	Delta	Solivia 5.0	1	

Photovoltaic Module :  
NSP D6P250B3A  
Max. DC power = 250Wp  
Voc = 37.33 V  
Vmp = 30.34 V  
Isc = 8.69 A  
Temp. Coeff. of Voc = -0.117 V/°C  
Temp. Coeff. of Isc = 0.004 A/°C  
Temp. Coeff. of Vmp = -0.127 V/°C  
Module Efficiency = 15.3 %

Inverter :  
Delta Solivia 5.0  
Max. input power = 6,000Wp  
Input Voltage range = 125 ~ 600V  
Full power MPP range = 150 ~ 480V  
Max. current = 36.6A  
DC connector = 2 pairs  
Nominal apparent power = 5,000VA  
Voltage range = 184~264Vac  
AC output frequency = 50 Hz  
Max. current = 27.2 Aac  
Max. efficiency = 96.1%  
EU efficiency = 94.6%

Voltage Calculations :  
Voc @ coldest expected operating Temp.:  
Low ambient Temp. = -20°C  
Voc(-20°C)=Voc(STC)+(-20°C-25°C)\*(ΔVoc/°C)=37.33-45\*(-0.117) = 42.595V  
Max. modules of string:  
nmax=Vdc(input max)/Voc(-20°C)=600/42.595=14.086 choose 14pcs  
Vmp @ highest expected operating Temp.:  
High ambient Temp. = 75°C  
Vmp(75°C)=Vmp(STC)+(75°C-25°C)\*(ΔVmp/°C)=30.34+50\*(-0.127) = 23.99V  
Min. modules of string:  
nmin=Vmp(min)/Vmp(75°C)=150/23.99=6.25 choose 7pcs  
Selection modules of string = 10 pcs

Voc(-20°C)\_string = Modules\*Voc(-20°C) = 10\*42.595V = 425.95V < 600V  
Vmp(75°C)\_string = Modules\*(75°C) = 10\*23.99V = 239.9V > 150V

String in parallel :  
Max. DC power of Charge Controller / Selection modules of string / Module Max. DC power  
= 5,000W / 10pcs / 250W  
= 2.0 ≤ 2parallel

DC array conductor :  
1.56 \* Isc \* 2 = 1.56 \* 8.69A \* 2 = 27.11A  
Selected conductor : solar cable 4mm²

Labels for pv installations:

**ON DC SIDE**  
All the junction boxes and DC electrical cabling must indicate live conductors or the internal parts of the boxes can remain live even after the opening of the DC switch.

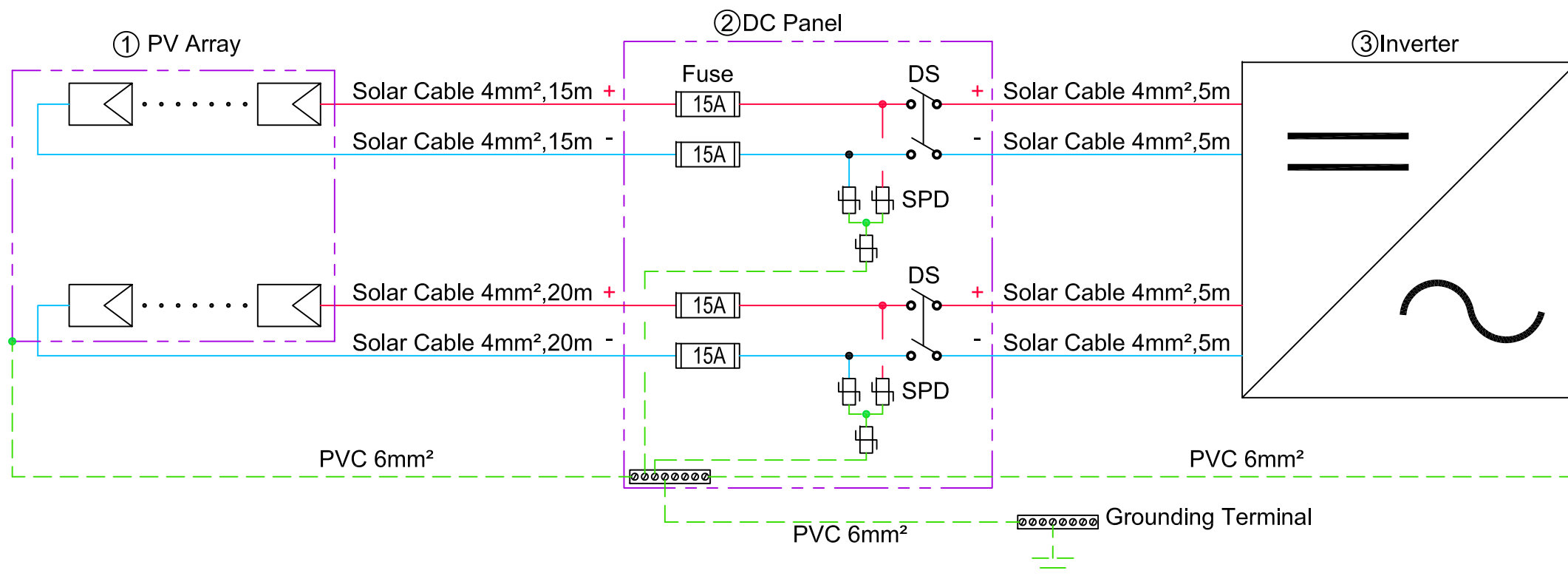
On the front of all junction boxes, insert a label:  
"Attention, cables courant continu sous tension"

In all the junction boxes and in all the DC disconnect boxes, insert a label:  
"Ne pas manoeuvrer en charge"

**ON THE INVERTERS**  
All the inverters shall have clear markings specifying that before all work, all the voltage sources must be electrically isolated.

Insert this label on the inverter front.

SPD selection of Calculations :  
Buildings in cities so use TYPE 2-class II  
choose In:20kA(8/20us)  
Max continuous operating voltage Uc:  
426V\*1.1=468.6V choose 670Vdc  
insulation voltage of the equipment:1.2~2kV  
choose Up:1.4kV







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ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission

Drawn by: GK

Checked by: -

Scale: -

Unit: -

DWG. Title:

**PHOTOVOLTAIC SYSTEM:  
AC CIRCUITS**

DWG. No. PAGE

**PV-021 217**

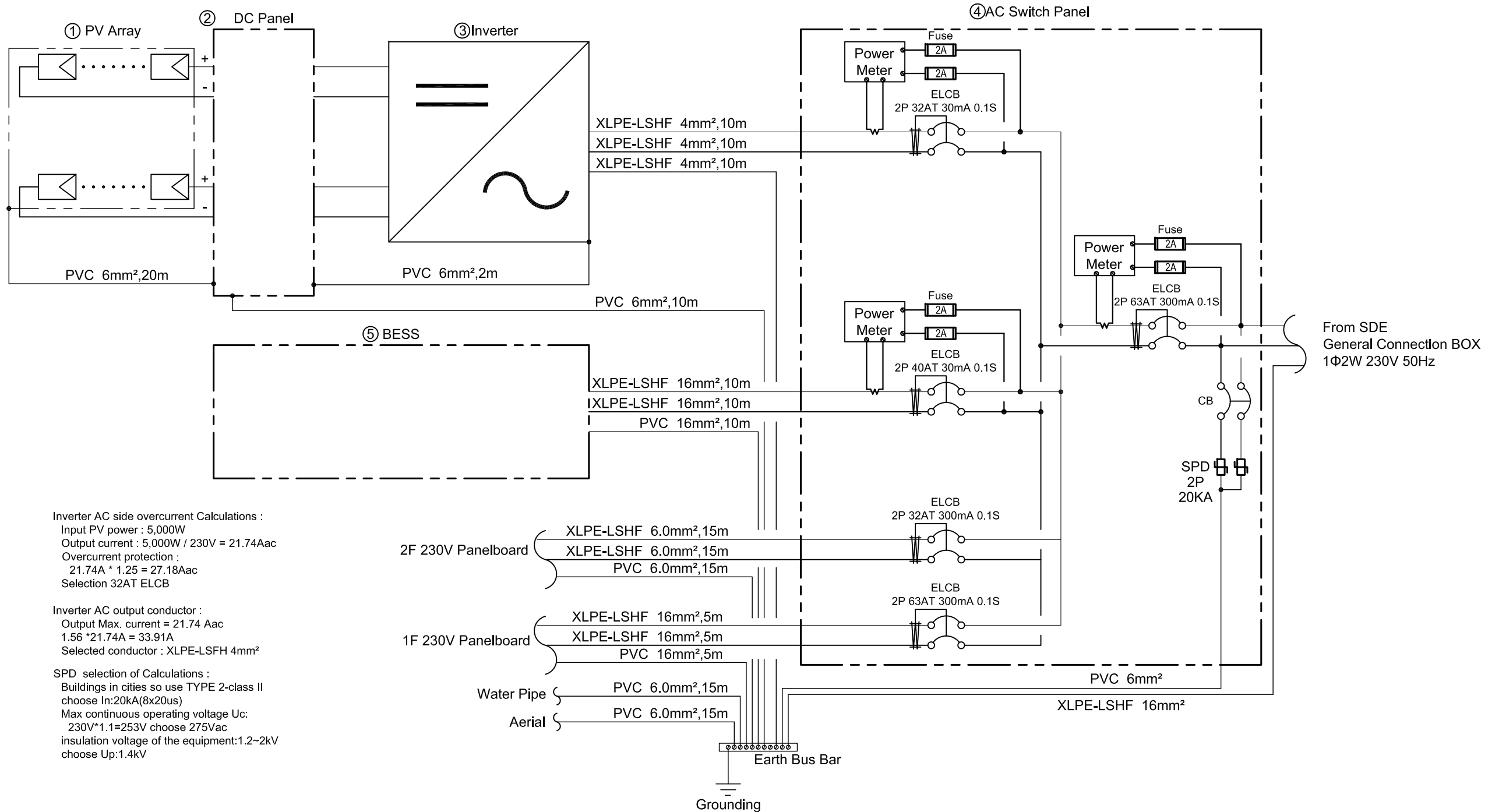
Tag	Components	Manufacturer	Model	Q'ty	Notes
①	PV Module	NSP	D6P250B3A	20	
②	DC Protections			1	
③	Inverter	Delta	Solivia 5.0	1	
④	Box			1	
	Power Meter	Archmeter	PA33	3	
	ELCB	Schneider		5	
	Surge Protection Device	Shihlin	BHP40, 2P	1	Uc:275V,Up:1.4kV,In:20kA(8/20us)
⑤	BESS	Delta	RenE-ES 6120	1	Battery Energy Storage System

Labels for pv installations:

**ON AC SIDE**

On AC side, insert this label near the main AC photovoltaic circuit breaker or near the main AC photovoltaic switch

On AC side, insert this label( near the main circuit breaker) if a main circuit breaker cut off simultaneously photovoltaic and electrical loads



Inverter AC side overcurrent Calculations :  
 Input PV power : 5,000W  
 Output current :  $5,000W / 230V = 21.74Aac$   
 Overcurrent protection :  
 $21.74A * 1.25 = 27.18Aac$   
 Selection 32AT ELCB

Inverter AC output conductor :  
 Output Max. current = 21.74 Aac  
 $1.56 * 21.74A = 33.91A$   
 Selected conductor : XLPE-LSFH 4mm<sup>2</sup>

SPD selection of Calculations :  
 Buildings in cities so use TYPE 2-class II  
 choose In:20kA(8x20us)  
 Max continuous operating voltage Uc:  
 $230V * 1.1 = 253V$  choose 275Vac  
 insulation voltage of the equipment:1.2~2kV  
 choose Up:1.4kV

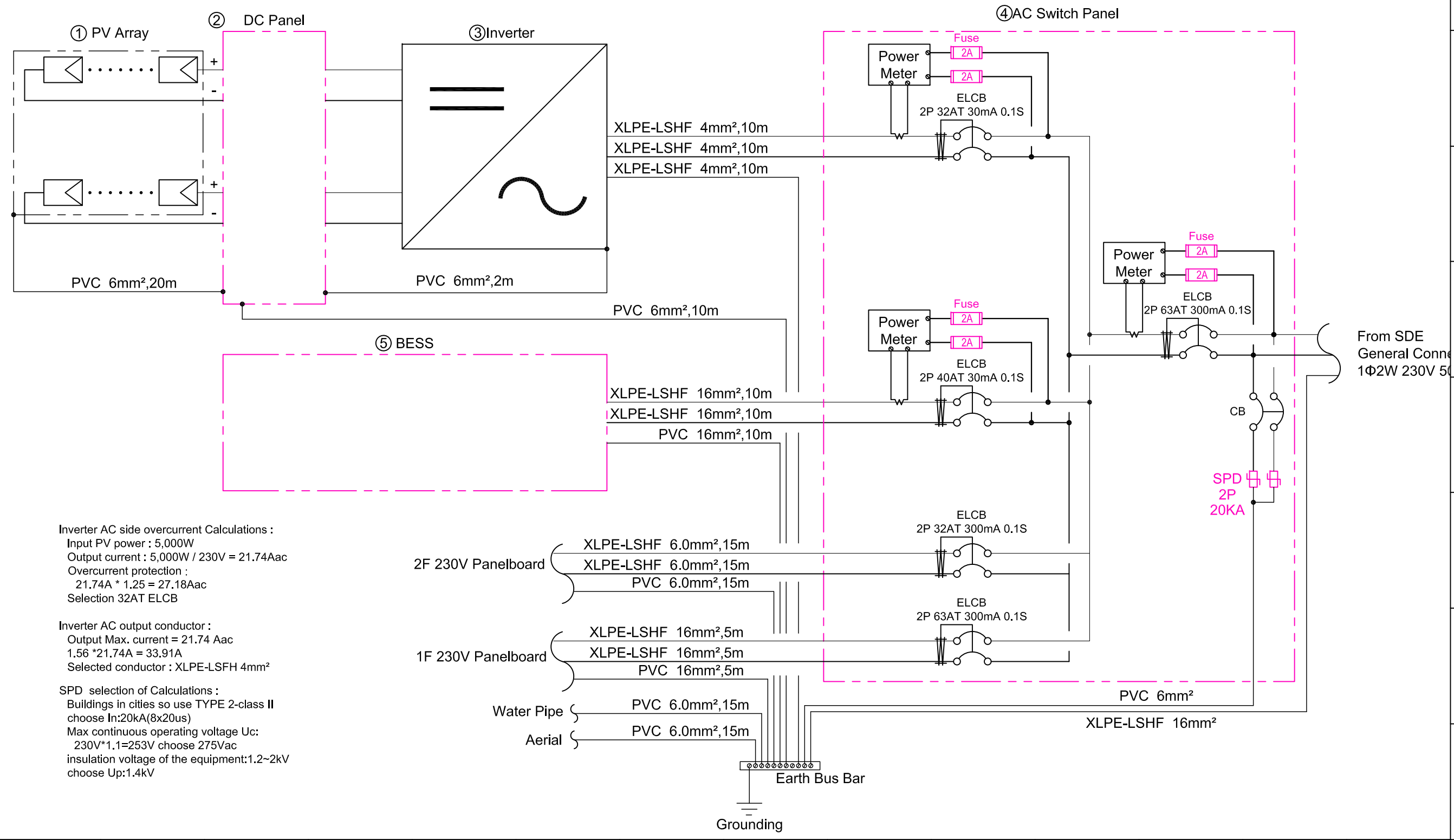
Tag	Components	Manufacturer	Model	Q'ty	Notes
①	PV Module	NSP	D6P250B3A	20	
②	DC Protections			1	
③	Inverter	Delta	Solivia 5.0	1	
④	Box			1	
	Power Meter	Archmeter	PA33	3	
	ELCB	Schneider		5	
	Surge Protection Device	Shihlin	BHP40, 2P	1	Uc:275V,Up□ 1.4kV,In:20kA(8/20us)
⑤	BESS	Delta	RenE-ES 6120	1	Battery Energy Storage System

Labels for pv installations:

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On AC side, insert this label near the main AC photovoltaic circuit breaker or near the main AC photovoltaic switch

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Inverter AC side overcurrent Calculations :  
 Input PV power : 5,000W  
 Output current :  $5,000W / 230V = 21.74Aac$   
 Overcurrent protection :  
 $21.74A * 1.25 = 27.18Aac$   
 Selection 32AT ELCB

Inverter AC output conductor :  
 Output Max. current = 21.74 Aac  
 $1.56 * 21.74A = 33.91A$   
 Selected conductor : XLPE-LSFH 4mm²

SPD selection of Calculations :  
 Buildings in cities so use TYPE 2-class II  
 choose In:20kA(8x20us)  
 Max continuous operating voltage Uc:  
 $230V * 1.1 = 253V$  choose 275Vac  
 insulation voltage of the equipment:1.2~2kV  
 choose Up:1.4kV



Team Name: NCTU/UNICODE  
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Consultants:

**Delta.jpg**  
 台達電子工業股份有限公司  
 DELTA ELECTRONICS, INC.

Note:

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DN	2013/04/01	SD Submission
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ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission

Drawn by: GK  
 Checked by: -  
 Scale: -  
 Unit: -

DWG. Title  
**PHOTOVOLTAIC SYSTEM:  
 GROUNDING SYSTEM**

DWG. No. **PV-031** PAGE **218**

Project:



Institution:



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國立交通大學建築研究所

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ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by: AW

Checked by: -

Scale: 1:30

Unit: mm

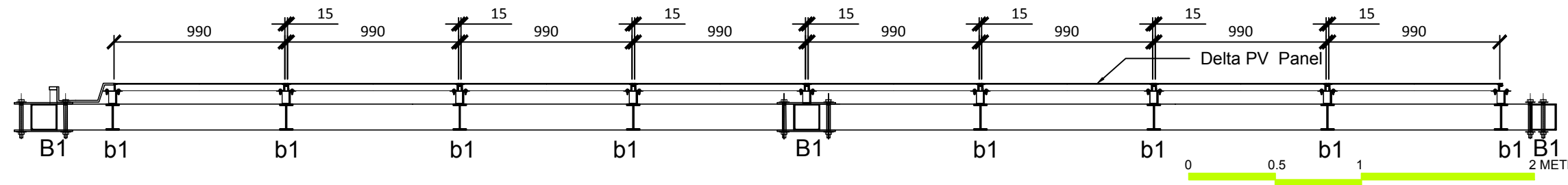
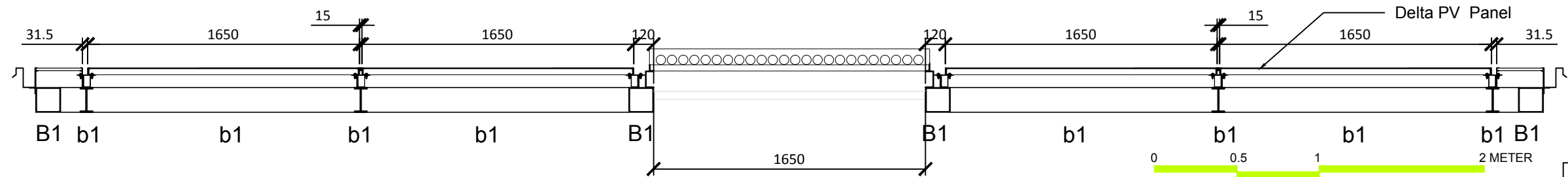
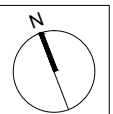
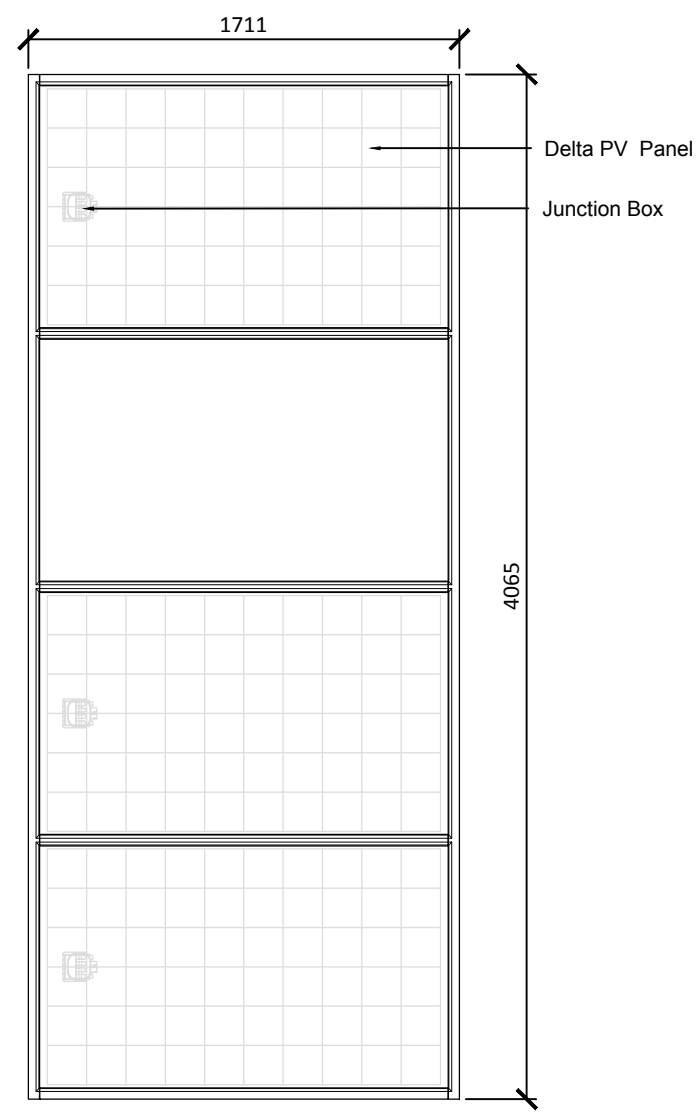
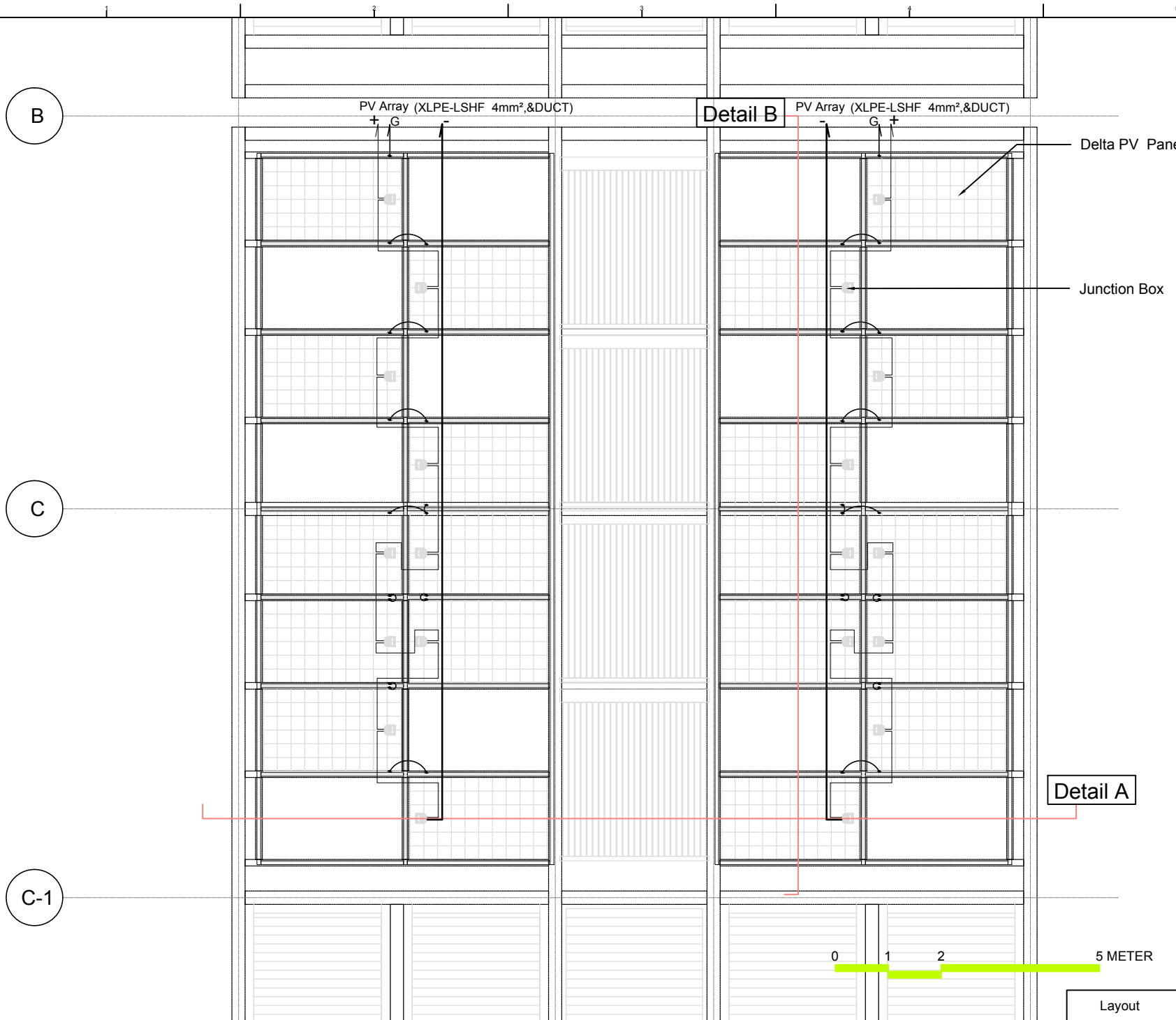
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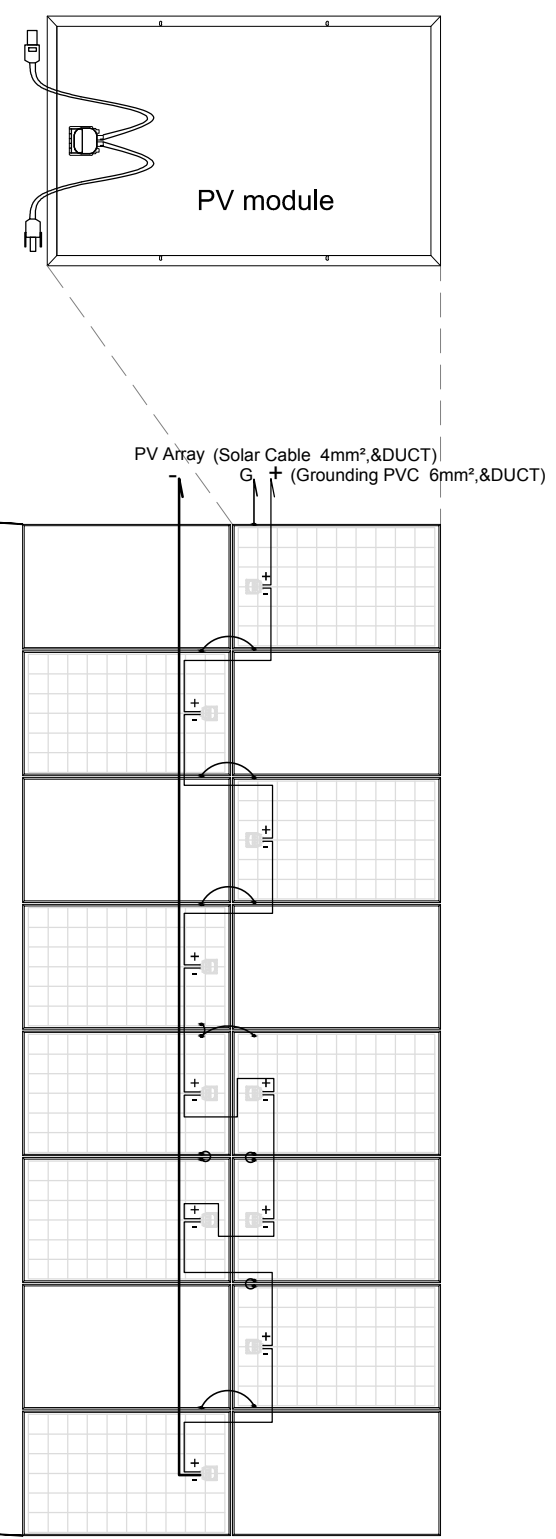
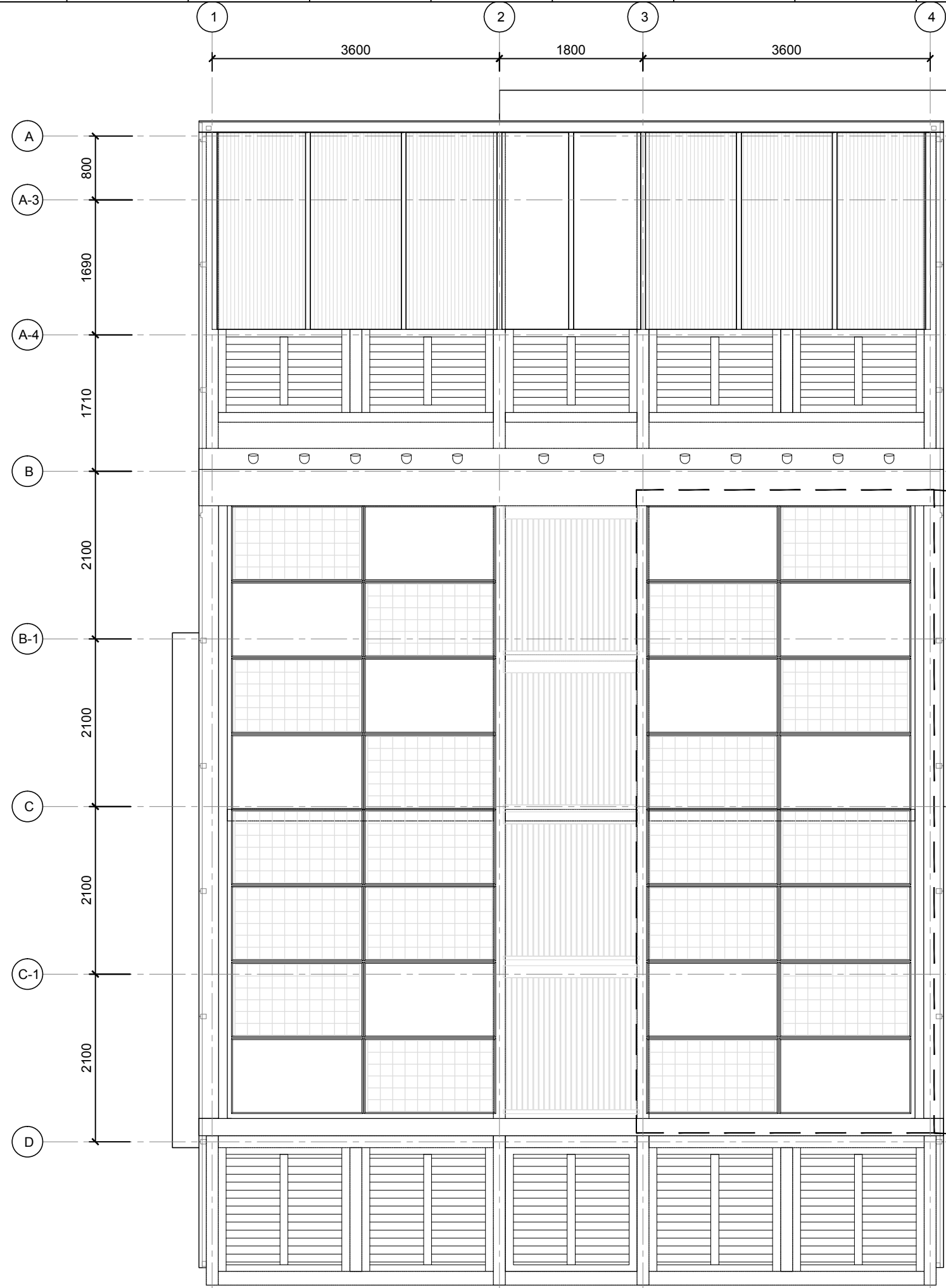
PHOTOVOLTAIC SYSTEM:  
MODULE LAYOUT

DWG. No. PV-041

PAGE

219





Project:



Institution:



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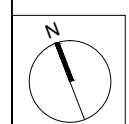


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ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by	ST
Checked by	DN
Scale	1:60
Unit	mm

DWG. Title  
**PHOTOVOLTAIC SYSTEM:  
MODULE STRING LAYOUT**

DWG. No.	PAGE
<b>PV-042</b>	<b>220</b>

Project:



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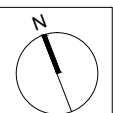


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ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by Aaron Chen

Checked by Steven Yu

Scale 1:60

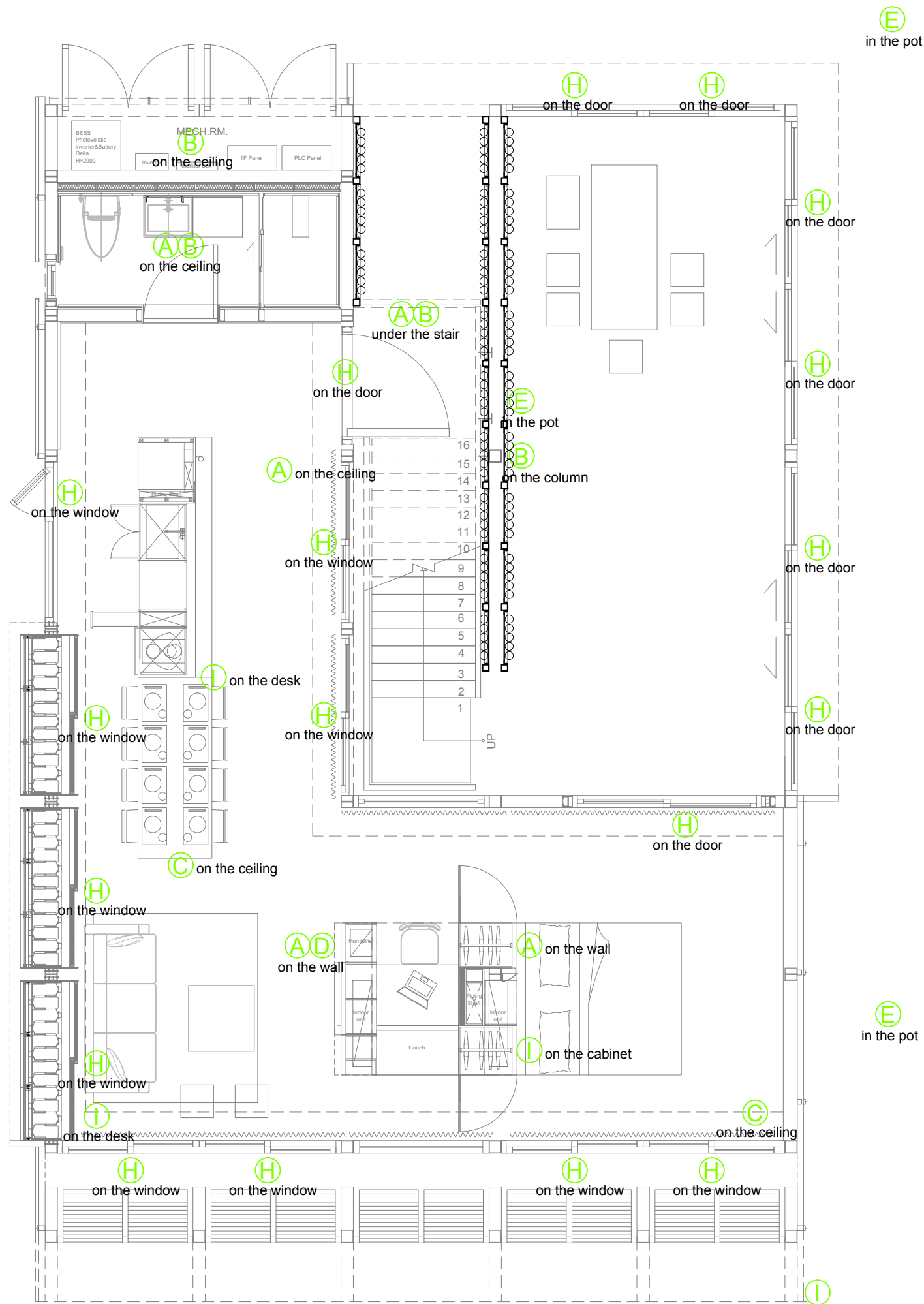
Unit mm

DWG. Title

WIRING PLAN  
GROUND LEVEL

DWG. No. PAGE

BAS-001 221



(A) Temperature & Humidity

(B) Motion detector

(C) Smoke Detector

(D) Air Quality-CO2

(E) Soil Moisture Sensor

(F) Smart Weather Station  
1. Temperature & Humidity  
2. Wind Speed  
3. Raining  
4. Air Quality-CO2  
5. Solar

(G) Light Level Sensor

(H) Door / Windows Position Sensor

Project:



Institution:



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國立交通大學建築研究所

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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by

Aaron Chen

Checked by

Steven Yu

Scale

1:60

Unit

mm

DWG. Title

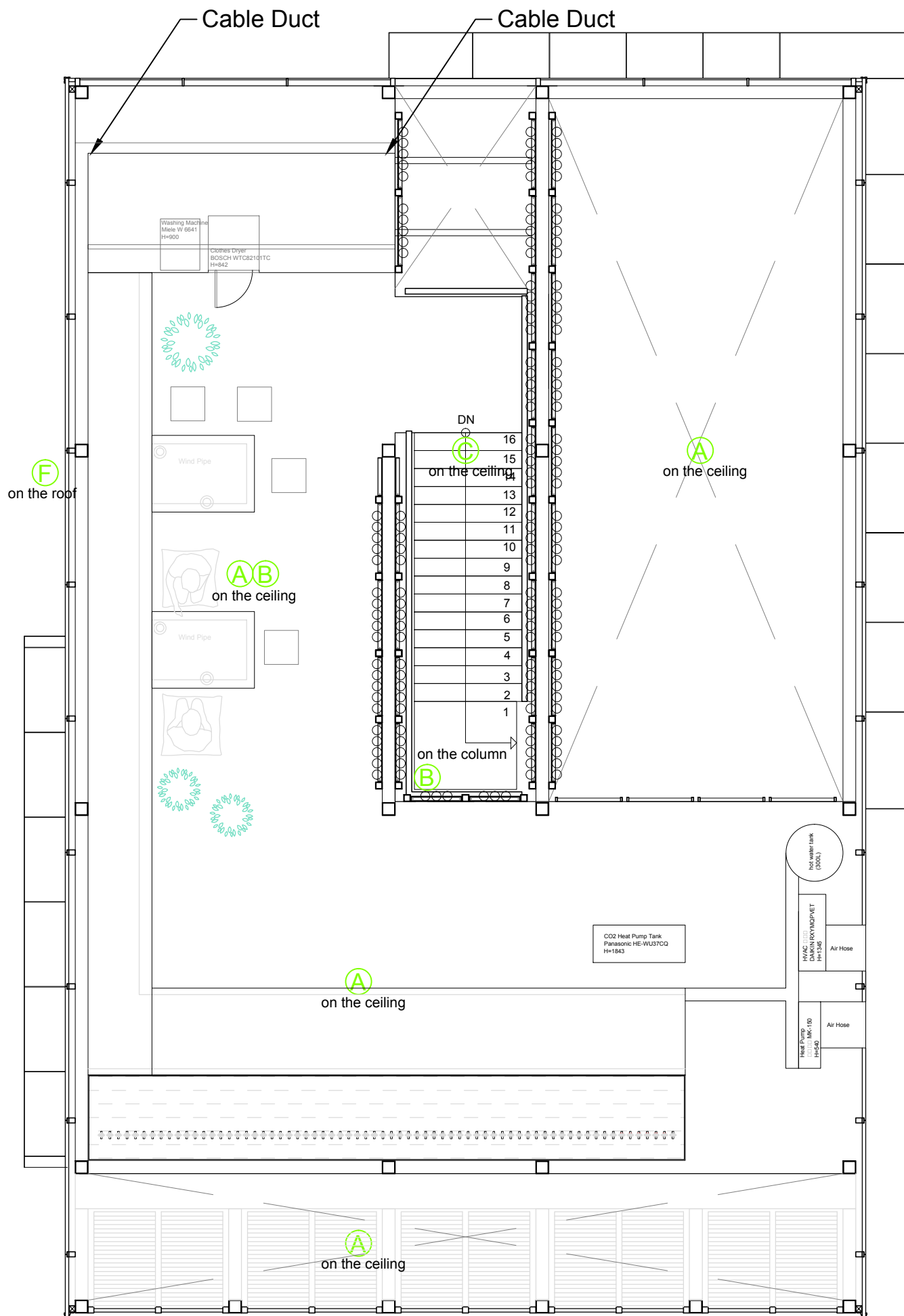
WIRING PLAN  
MEZZANINE LEVEL

DWG. No.

BAS-002

PAGE

222



(A) Temperature & Humidity

(B) Motion detector

(C) Smoke Detector

(D) Air Quality-CO2

(E) Soil Moisture Sensor

(F) Smart Weather Station  
1. Temperature & Humidity  
2. Wind Speed  
3. Raining  
4. Air Quality-CO2  
5. Solar

(G) Light Level Sensor

(H) Door / Windows Position Sensor



Note:

Mark	Date	Description
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ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

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Checked by: Steven Yu

Scale: -

Unit: -

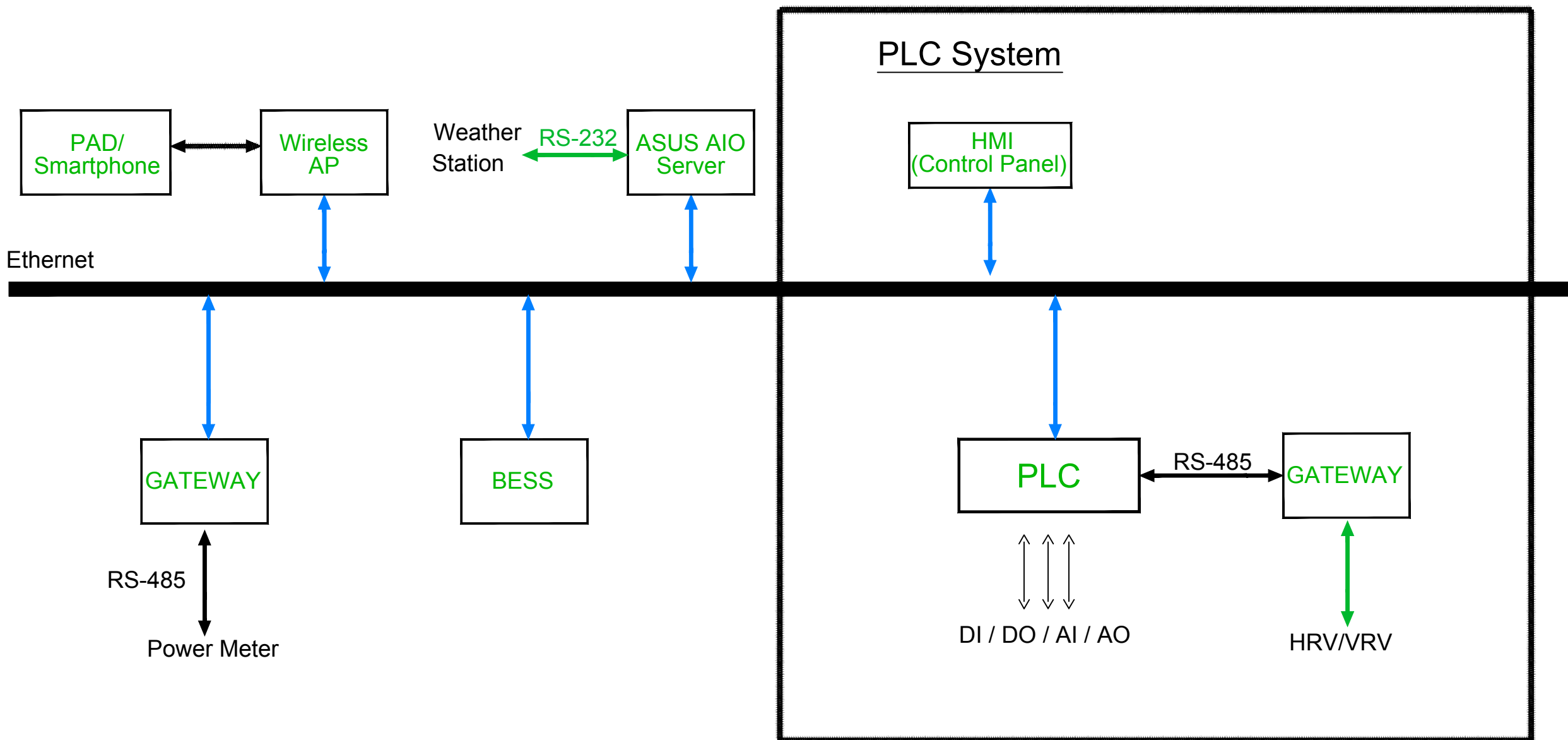
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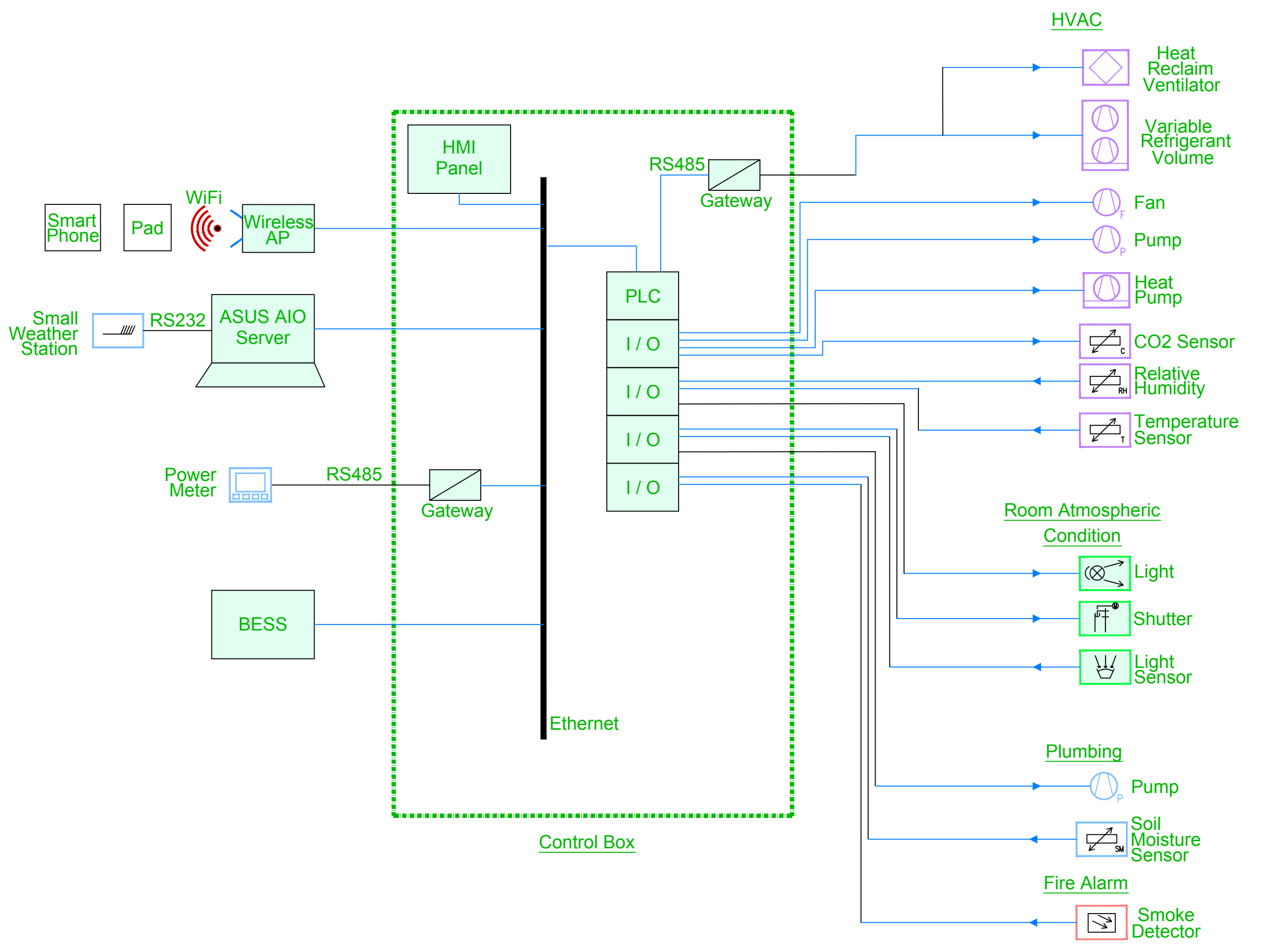
SCHMATIC DIAGRAM 1

DWG. No. PAGE

**BAS-101 223**

# Home Automation System





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ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by: Aaron Chen

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Scale: -

Unit: -

DWG. Title

SCHMATIC DIAGRAM 2

DWG. No. PAGE

BAS-102 224





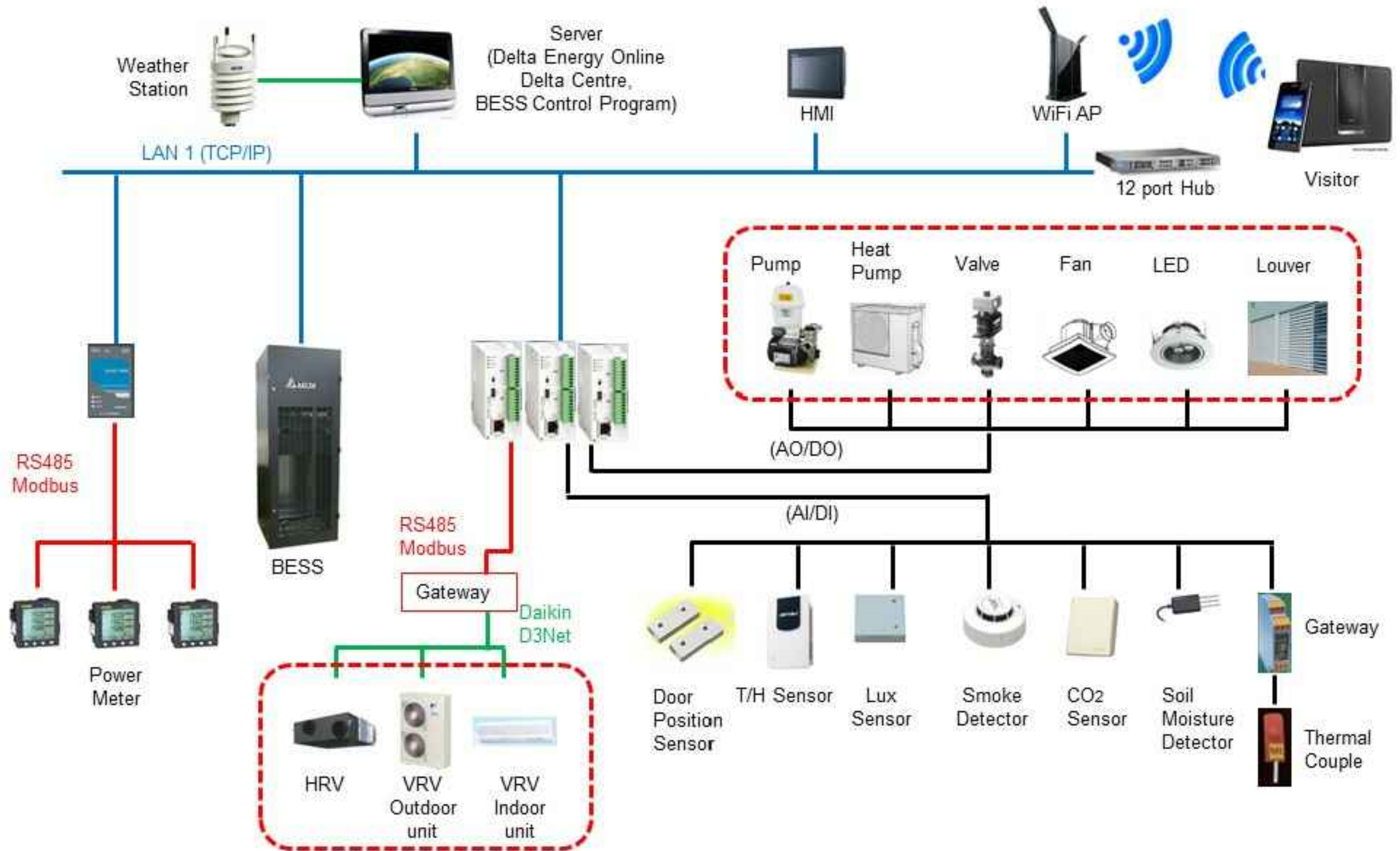


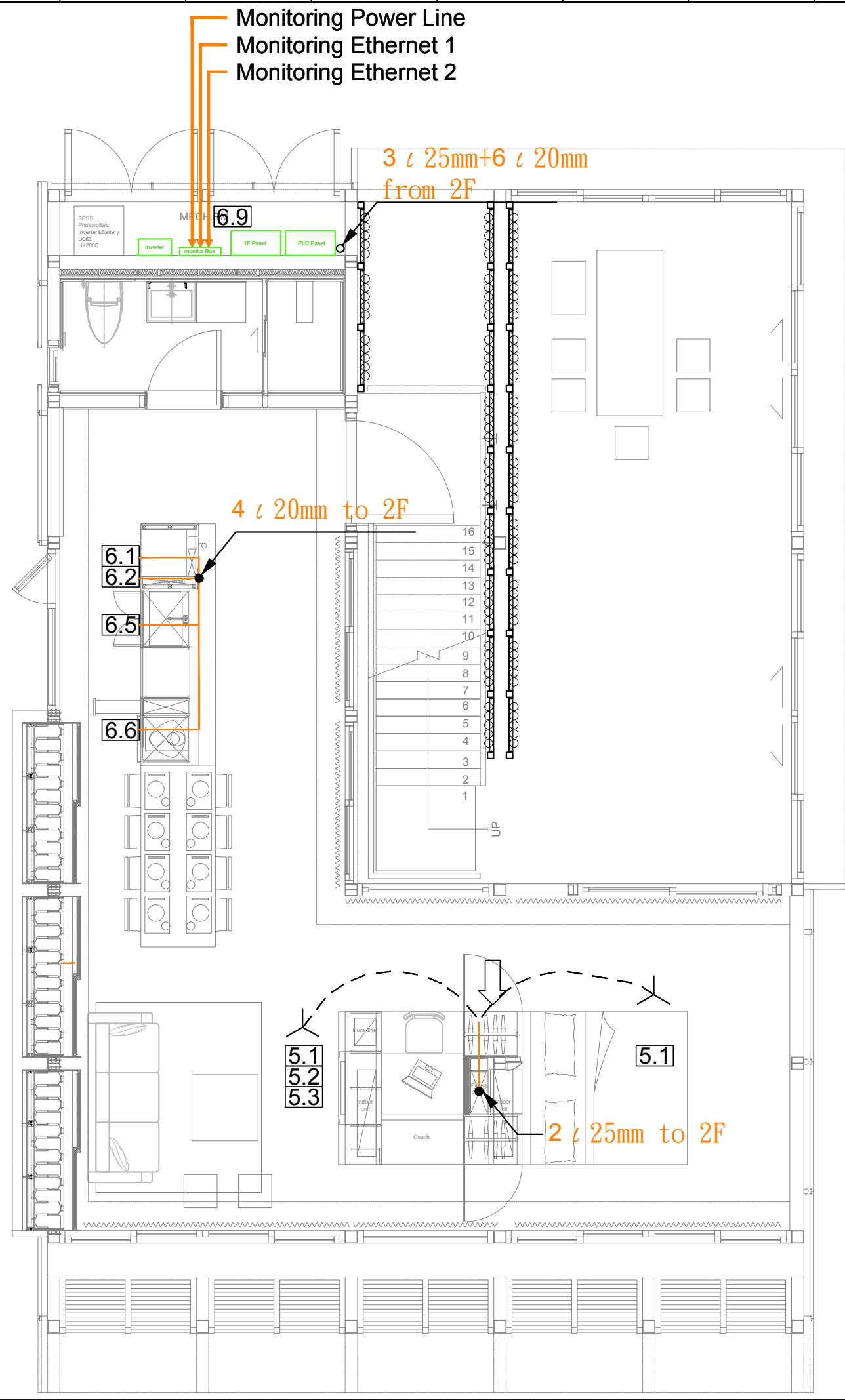
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by	AC
Checked by	SY
Scale	-
Unit	-

DWG. Title  
**EQUIPMENT**





Legend / Channeling / Lenght		
5.1 5.2 5.3	Temperature Humidity Air Quality	21m
5.1	Temperature	28m
6.1	Fridge	15m
6.2	Freezer	15m
6.5	Dish Washer	17m
6.6	Oven	19m
6.9	Home Electronics	
→	Temporal Tripod Location	
Monitor Box	Monitor Box	
----	Sensor Channeling	
└	Tripod	



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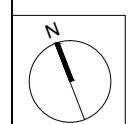
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Address: 1001 Ta-Hsueh Road  
Hsinchu City 30010  
Taiwan  
Contact: www.sde.tw



Consultants:



Note:

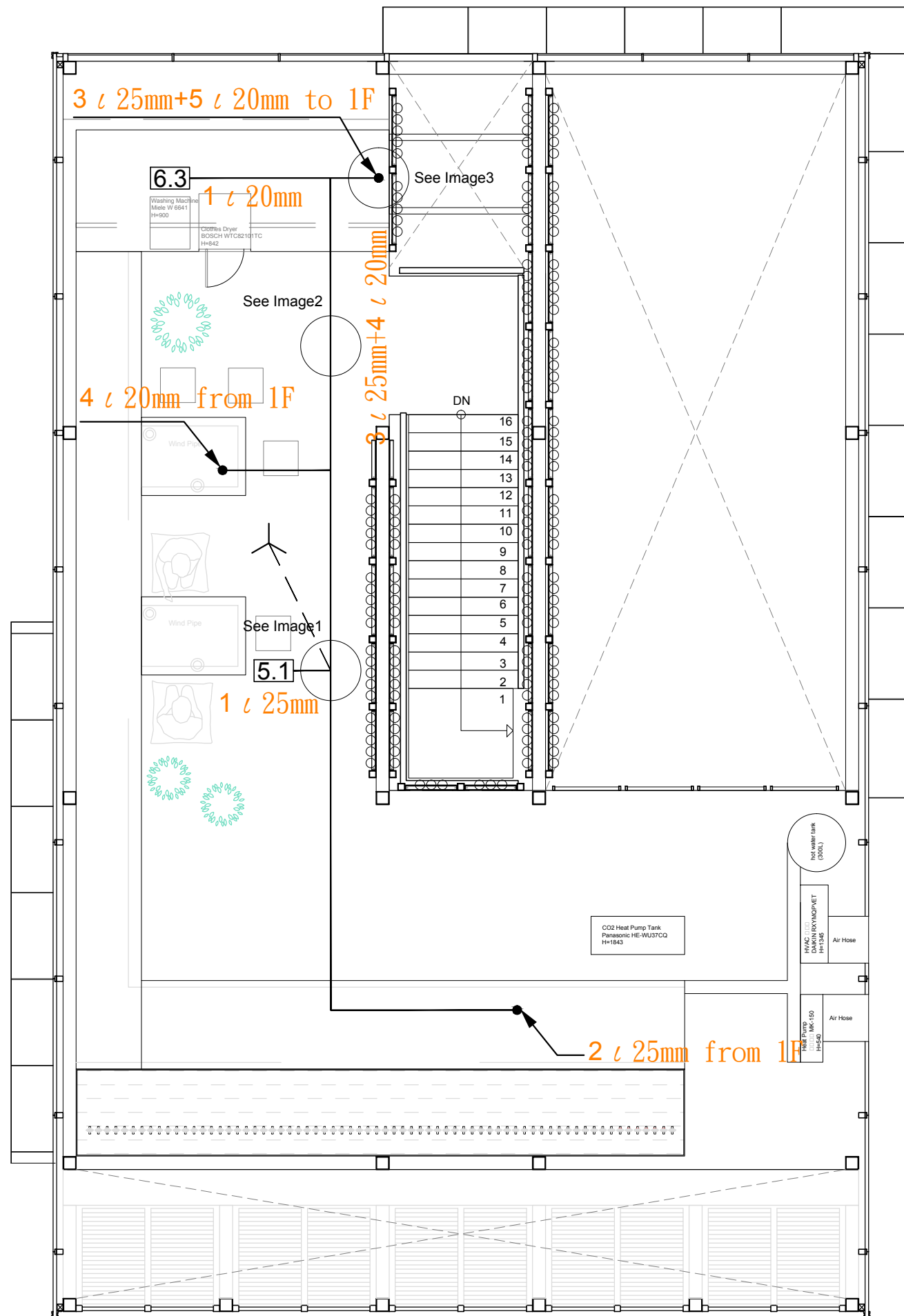


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DN	2013/07/01	DDc Submission
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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by: Aaron Chen  
Checked by: Steven Yu  
Scale: 1:60  
Unit: mm

DWG. Title  
**GENERAL MONITORING  
GROUND LEVEL**

DWG. No. **ID-001-1** PAGE **227**



Legend / Channeling / Length		
5.1	Temperature	15m
6.3	Clothes Washing	10m
	Tripod	



Image1



Image2

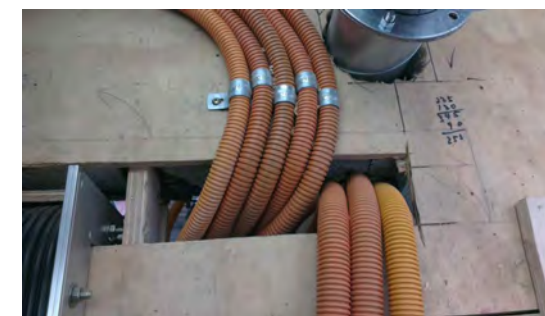
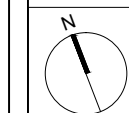


Image3



Note:

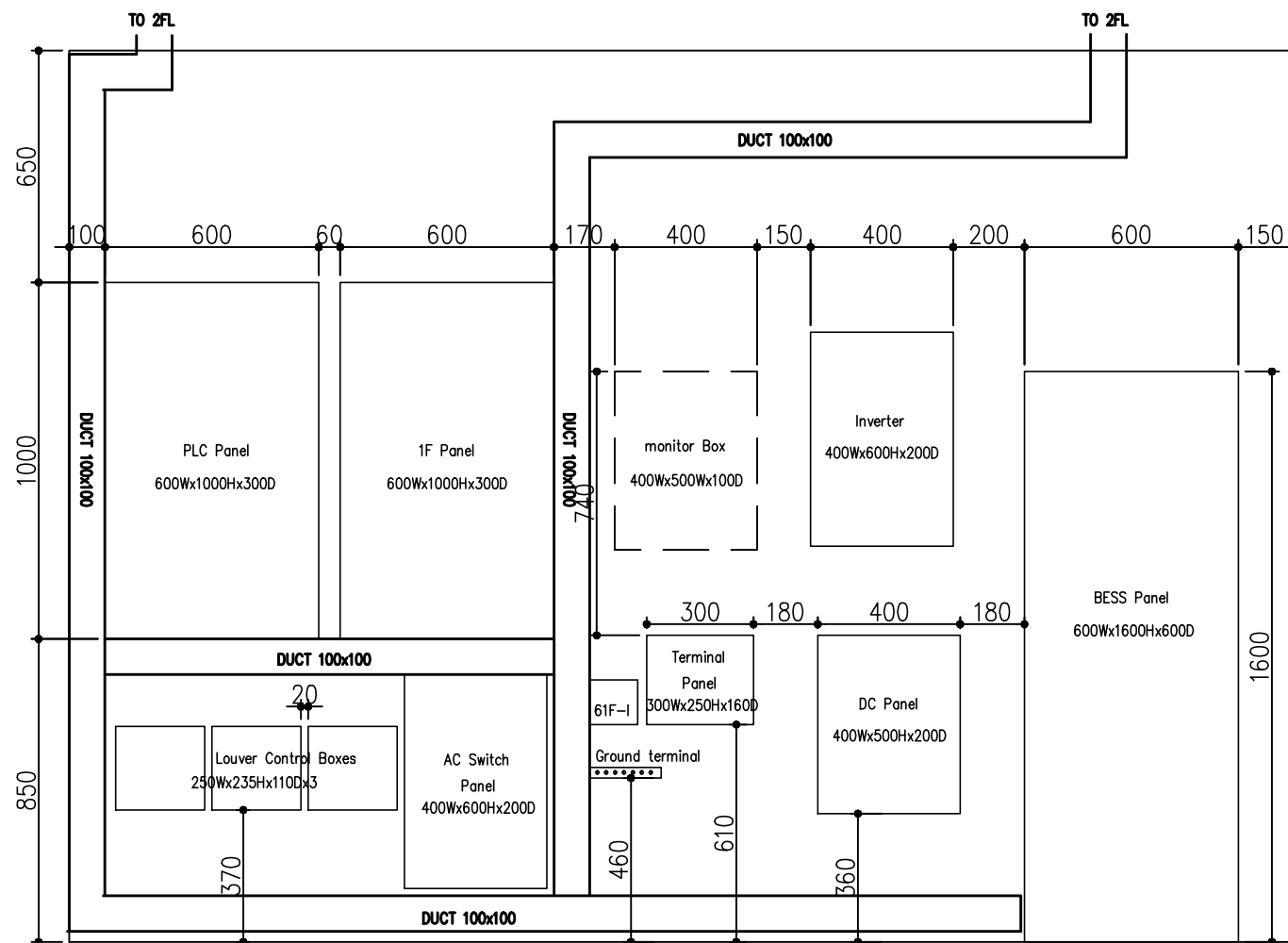


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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

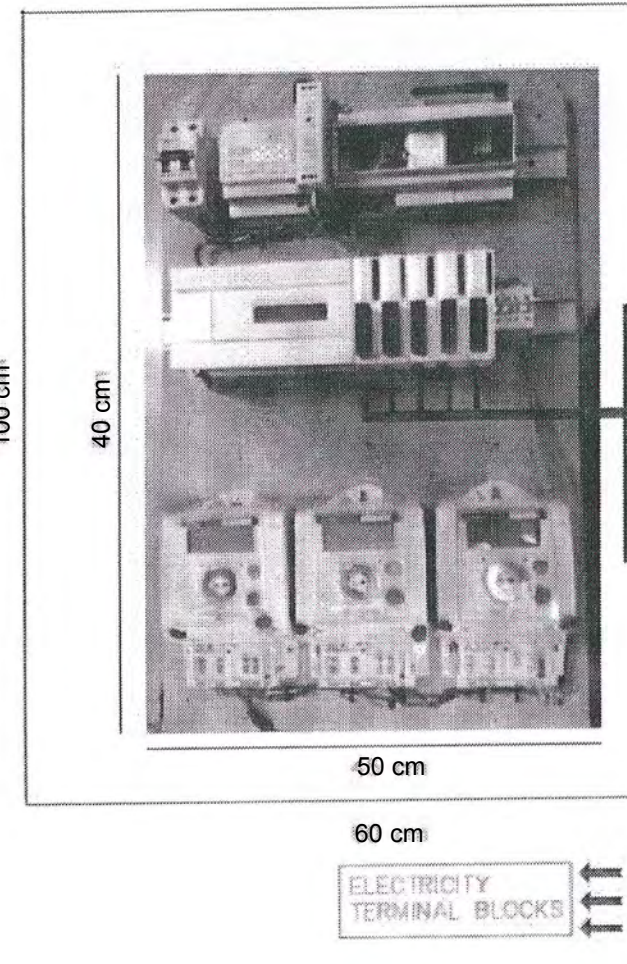
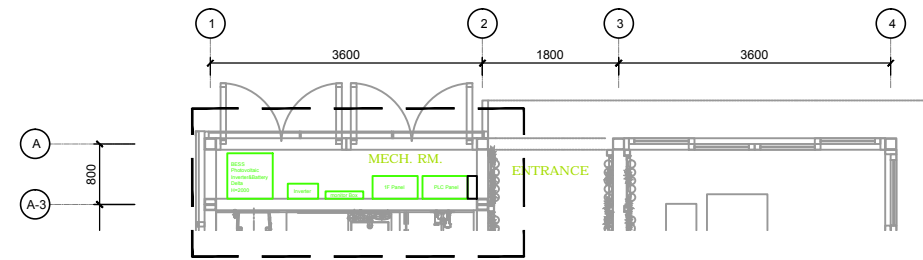
Drawn by	Aaron Chen
Checked by	Steven Yu
Scale	1:60
Unit	mm

DWG. Title  
GENERAL MONITORING  
MEZZANINE LEVEL

DWG. No.	PAGE
ID-001-2	228



**FRONT VIEW**



Monitoring Panel  
Dimensions : 50x40x15 cm

Free Space Left For The  
Monitoring Panel "  
100x60x20 cm

- 5.1 Living Room
- 5.2 Living Room
- 5.3 Living Room
- 5.1 Bed Room
- 5.1 Kitchen Room
- 6.1 Fridge
- 6.2 Freezer
- 6.3 Clothes Washer
- 6.5 Dish Washer
- 6.6 Oven

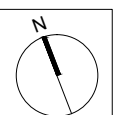
Sensor Entrance

ELECTRICITY  
TERMINAL BLOCKS

- Monitoring Power Line
- Monitoring Ethernet 1
- Monitoring Ethernet 2



Note:

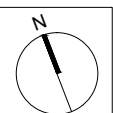


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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by	AC
Checked by	SY
Scale	-
Unit	

DWG. Title  
**MONITORING PANEL ROOM**

DWG. No.	PAGE
<b>ID-002</b>	<b>229</b>



Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
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Drawn by Aaron Chen

Checked by Steven Yu

Scale 1:60

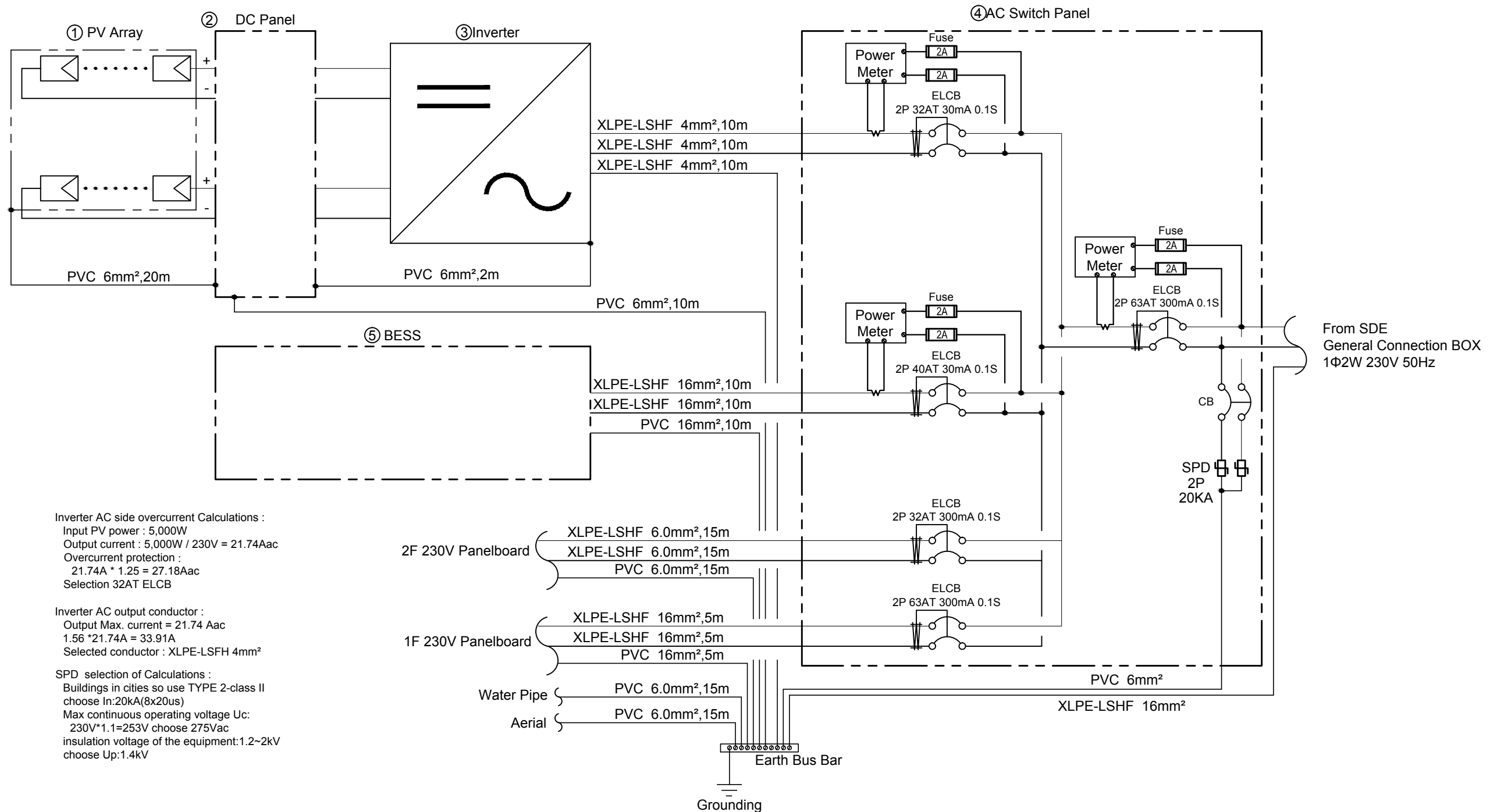
Unit mm

DWG. Title

 ELECTRICITY METERS  
 TOPOLOGY 1

DWG. No. ID-003-1 PAGE 230

Tag	Components	Manufacturer	Model	Q'ty	Notes
①	PV Module	NSP	D6P250B3A	20	
②	DC Protections			1	
③	Inverter	Delta	Solivia 5.0	1	
④	Box			1	
	Power Meter	Archmeter	PA33	3	
	ELCB	Schneider		5	
	Surge Protection Device	Shihlin	BHP40, 2P	1	Uc:275V,Up□1.4kV,In:20kA(8/20us)
⑤	BESS	Delta	RenE-ES 6120	1	Battery Energy Storage System



Inverter AC side overcurrent Calculations :  
 Input PV power : 5,000W  
 Output current :  $5,000W / 230V = 21.74Aac$   
 Overcurrent protection :  
 $21.74A * 1.25 = 27.18Aac$   
 Selection 32AT ELCB

Inverter AC output conductor :  
 Output Max. current = 21.74 Aac  
 $1.56 * 21.74A = 33.91A$   
 Selected conductor : XLPE-LSFH 4mm<sup>2</sup>

SPD selection of Calculations :  
 Buildings in cities so use TYPE 2-class II  
 choose In:20kA(8x20us)  
 Max continuous operating voltage Uc:  
 $230V * 1.1 = 253V$  choose 275Vac  
 insulation voltage of the equipment:1.2~2kV  
 choose Up:1.4kV

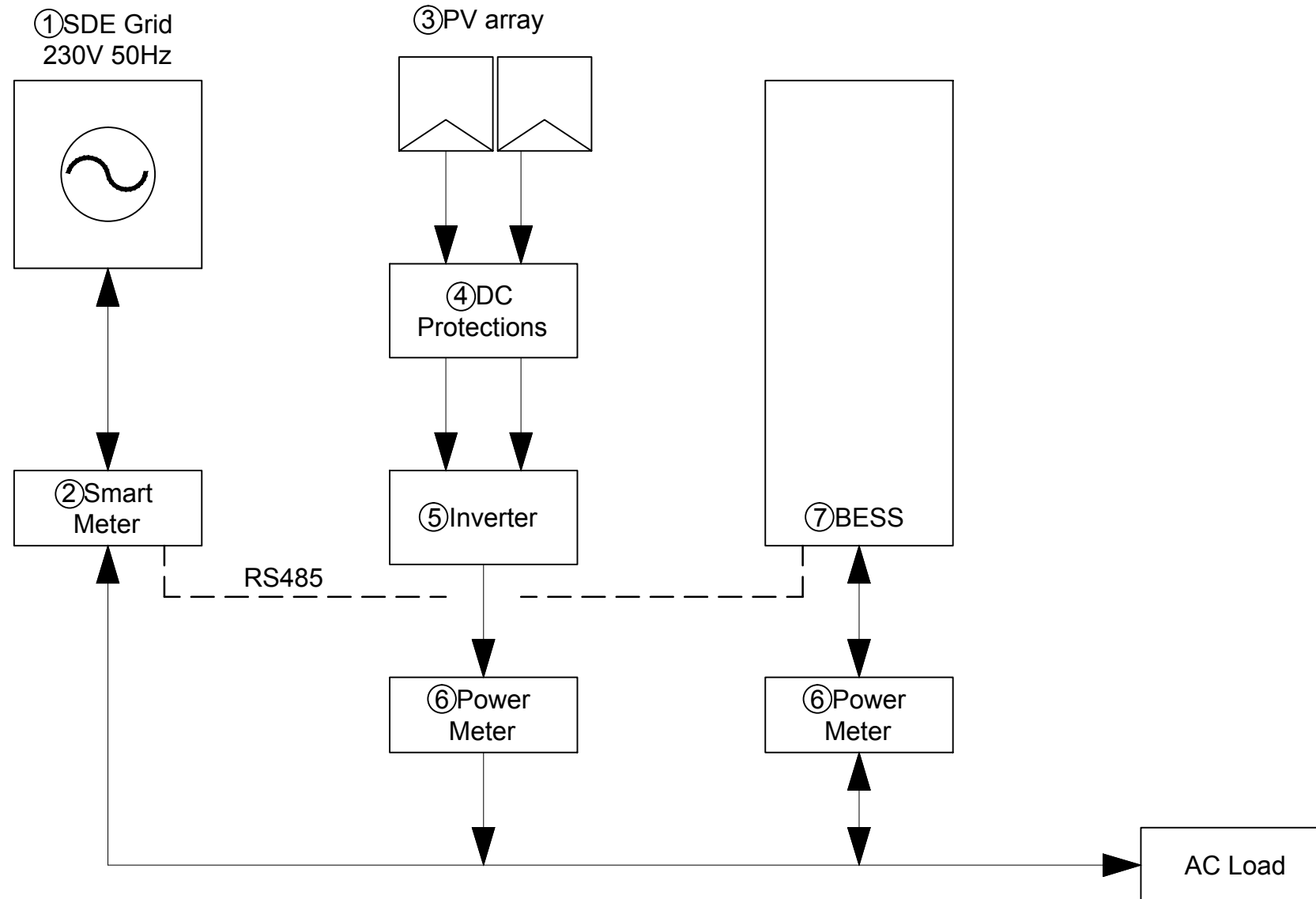


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ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by	GK
Checked by	DN
Scale	-
Unit	-

DWG. Title	
ELECTRICITY METERS TOPOLOGY 2	
DWG. No.	PAGE
ID-003-2	231

Tag	Components	Manufacturer	Model	Q'ty	Notes
①	SDE Grid			1	Organizer Supplied Meter
②	Smart Meter	Schneider	PM3200	1	
③	PV array	DeiSolar	D6P250B3A	24	
④	DC Protections	HI BOX		1	
⑤	Inverter	Delta	Solivia 5.0	1	
⑥	Power Meter	Schneider	PM3200	2	
⑦	BESS	Delta		1	Battery Energy Storage System





Mark	Date	Description
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ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
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Drawn by GK

Checked by DN

Scale -

Unit -

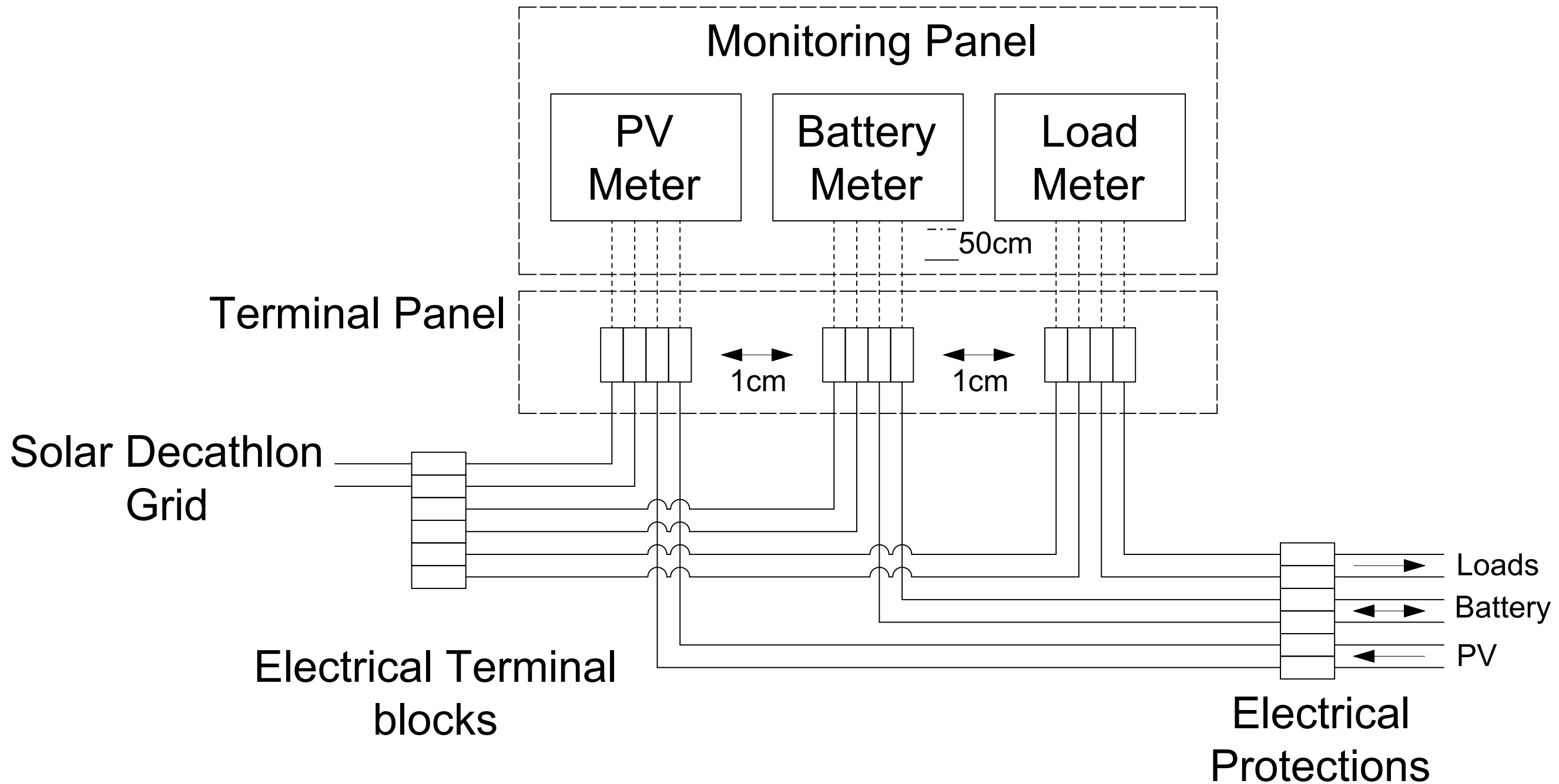
DWG. Title

ELECTRICITY METERS CONNECTION

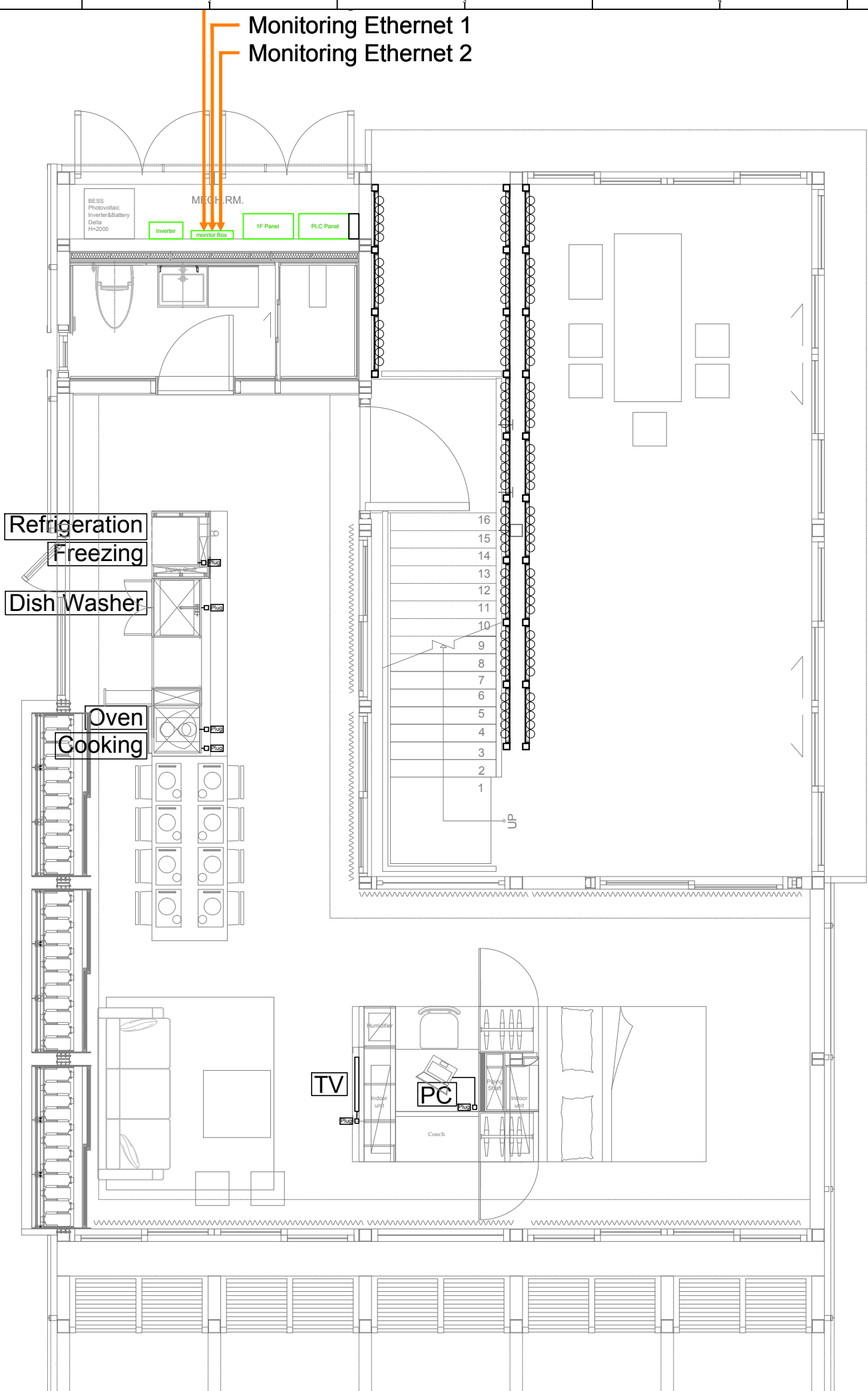
DWG. No. PAGE

ID-004

232







Legend / Brand / Model		
Refrigeration	MIELE	KFN 37452 i DE
Dish Washer	MIELE	G6995 SCVi K2O
Oven	MIELE	H2161 B CLST
TV	Samsung	F4000 Series 4
PC	Asus	Transformer AiO P1801



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**Contact:** www.sde.tw



**Consultants:**



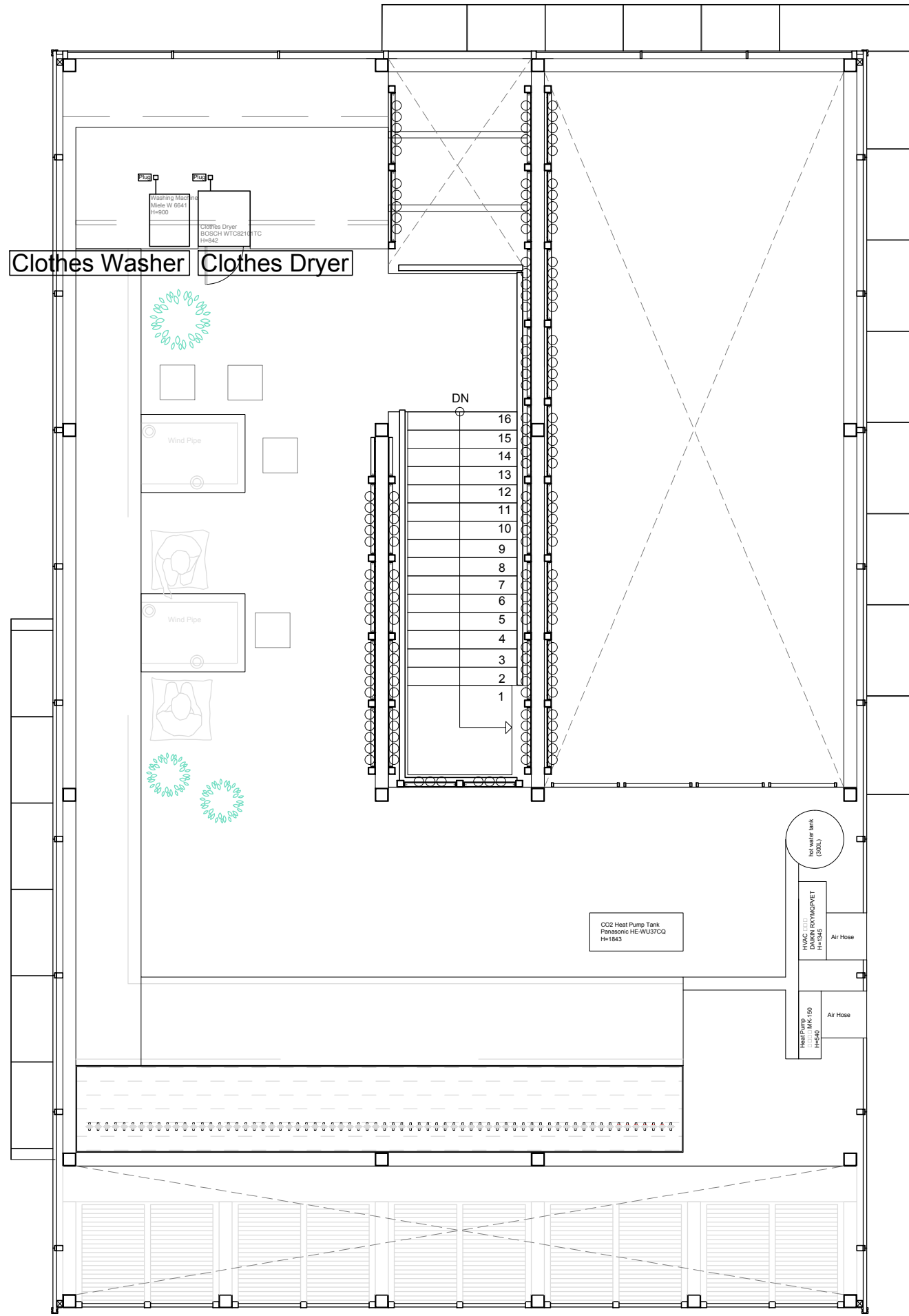
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Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

<b>Drawn by</b>	AC
<b>Checked by</b>	SY
<b>Scale</b>	-
<b>Unit</b>	-

**DWG. Title**  
HOUSE APPLIANCES  
GROUND LEVEL

<b>DWG. No.</b>	<b>PAGE</b>
<b>ID-005-1</b>	<b>233</b>



Legend / Brand / Model		
Clothes Washer	MIELE	W 664
Clothes Dryer	BOSCH	WTW84363NL



Project:



Institution:



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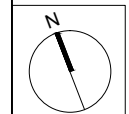
www.sde.tw



Consultants:



Note:



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DN	2013/04/01	SD Submission
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ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

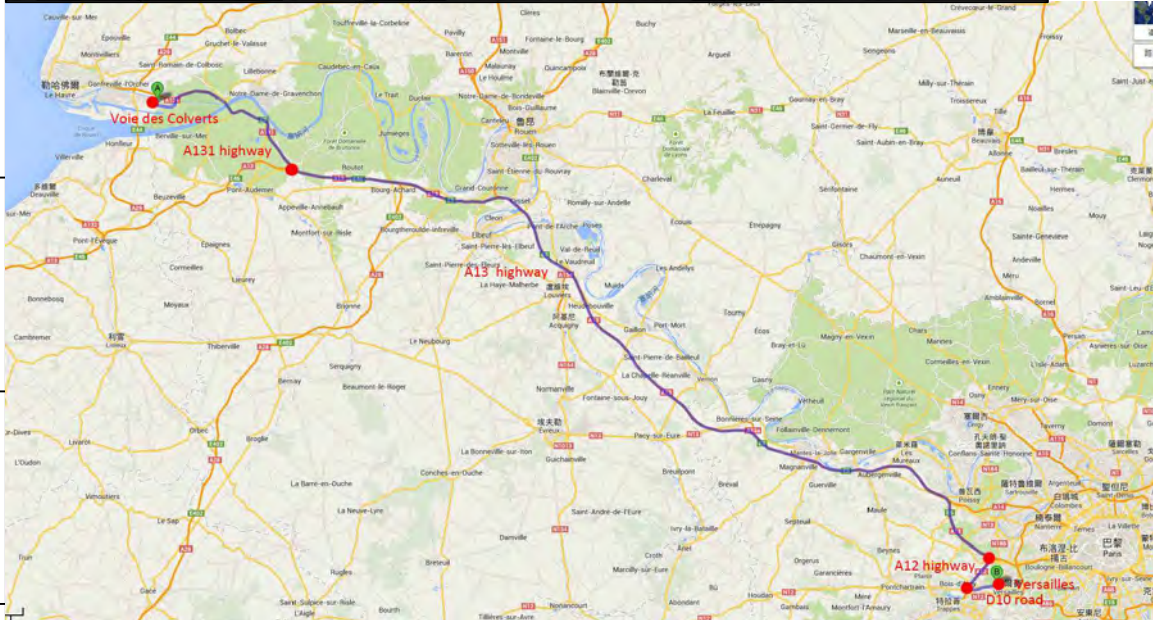
Drawn by	AC
Checked by	SY
Scale	1:60
Unit	mm

DWG. Title  
**HOUSE APPLIANCES  
MEZZANINE LEVEL**

DWG. No.	PAGE
<b>ID-005-2</b>	<b>234</b>



Phase	Port	Arrival	Departure
1	KAOHSIUNG	2014/4/29 10:00	2014/4/30 08:00
2	YANTIAN	2014/5/1 08:00	2014/5/2 08:00
3	SINGAPORE	2014/5/5 16:00	2014/5/6 22:00
4	ROTTERDAM	2014/5/26 01:00	2014/5/27 10:00
5	LE HAVRE	2014/6/1 06:00	2014/6/2 06:00



Trailer Frequency	Transport Date	Location & Directions	Travel time(min)
15	6/16-6/25	Voie des Colverts(start)	0
		A131 Highway	7
		A13 Highway	16
		A12 Highway	60
		D10 Road	26
		Versailles(end)	5
TOTAL			114
16	7/15-7/19	Versailles(start)	0
		D10 Road	5
		A12 Highway	26
		A13 Highway	60
		A131 Highway	16
		Voie des Colverts(end)	7
TOTAL			114

Shipping, Freight, Demand, Process Timetable				
Date	Local	Project target	Demand Help	Self assist
4/16~4/29	Taiwan	Apply to customs	Declaration process guidance	Customs detail, customs declaration
4/7~4/13	Taiwan	Component packaging and protection	Packaging and protective materials to provide	Packaging and Protection
4/13~4/16	Taiwan	Component transport (Container *14)	Hsinchu→Container port	
4/13~4/16	Taiwan	Component Loading(Container*14)	Loading location and Equipment evaluation	Component classification
4/29~6/1	Ship	Taiwan→France	Transport	The number of containers and the declaration content
6/1~6/5	France	Immigration Customs	Declaration process guidance	Customs detail, the number of containers and the
6/5~6/10	France	Component Discharge (Container*14)(Trailers Trucks *15)	Component Discharge	Component Discharge
6/10~6/15	France	Component transport (Trailers Trucks *15)	France transport (Trailers Trucks *13)	Trucks size
6/5~6/25	France	Pre Construction Warehouse (H-5M,400m <sup>2</sup> Warehouse)	Warehouse	Warehouse size
7/15~7/25		Heavy equipment rental	Lodging Near Warehouse Forklift ,Bridge Crane or small crane ,Scaffolding, air Compressors	
6/16~6/25	France	Transport sequence	Transport	Transport sequence in 10 Days
7/15~7/24	France	Disassembly Warehouse (H-5M,400m <sup>2</sup> Warehouse)	Forklift, Bridge crane or small crane ,Scaffolding, air Compressors	
7/19~7/24	France	Component packaging and protection	Packaging and protective materials to provide	Packaging and Protection
7/21~7/24	France	Component transport (Trailers Trucks *14)	Warehouse→Port	
7/25	France	Outbound Customs	Declaration process guidance	Customs detail, customs declaration
8/1	Taiwan	Transportation back to Taiwan		



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ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by MS

Checked by DN

Scale -

Unit -

DWG. Title

TRUCKS SHIPMENT 1

DWG. No. SO-001

PAGE

235

Project:



Institution:



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ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by SC

Checked by DN

Scale -

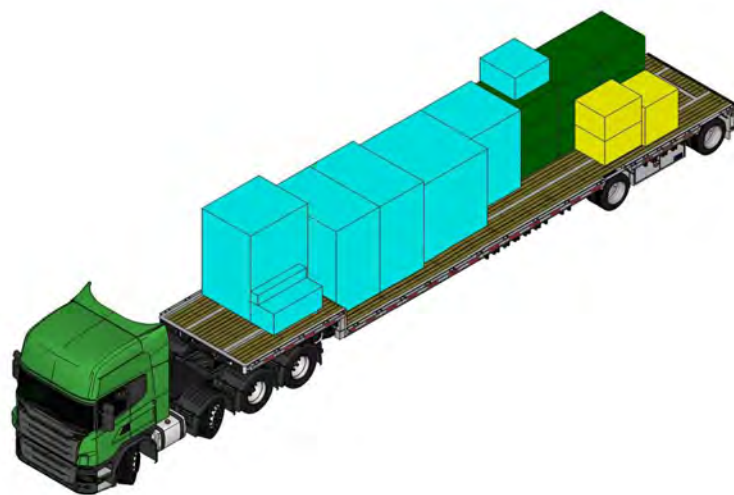
Unit -

DWG. Title

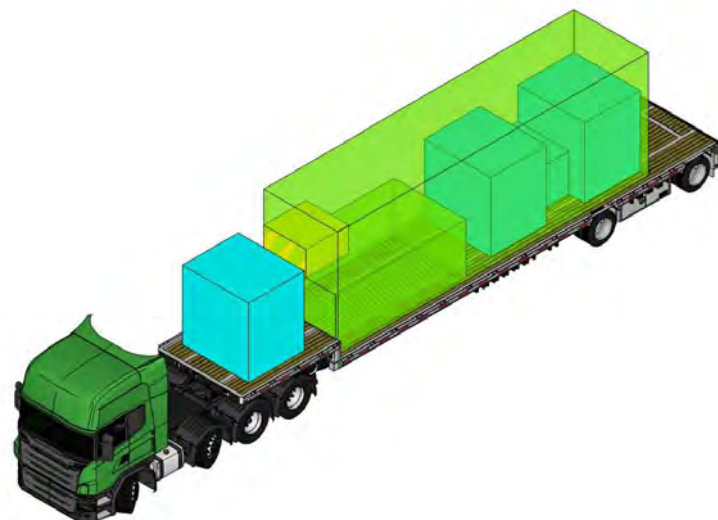
ASSEMBLY TRUCKS  
SHIPMENT 1

DWG. No. PAGE

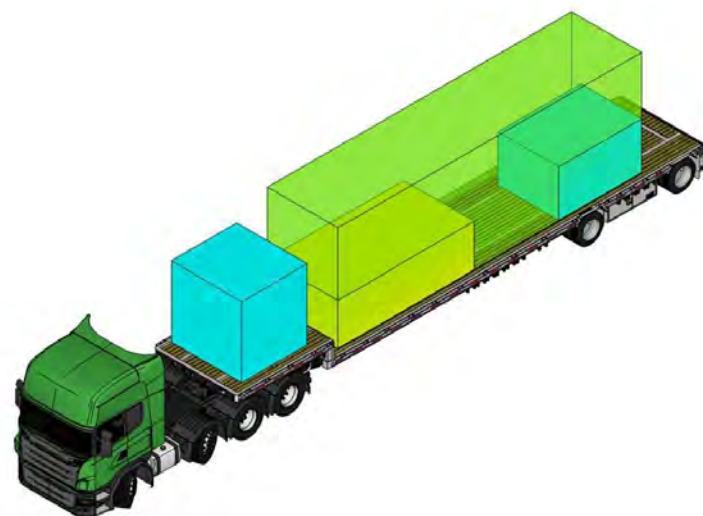
SO-011 236



TRUCK-1 FLATBED  
6/16 08:00

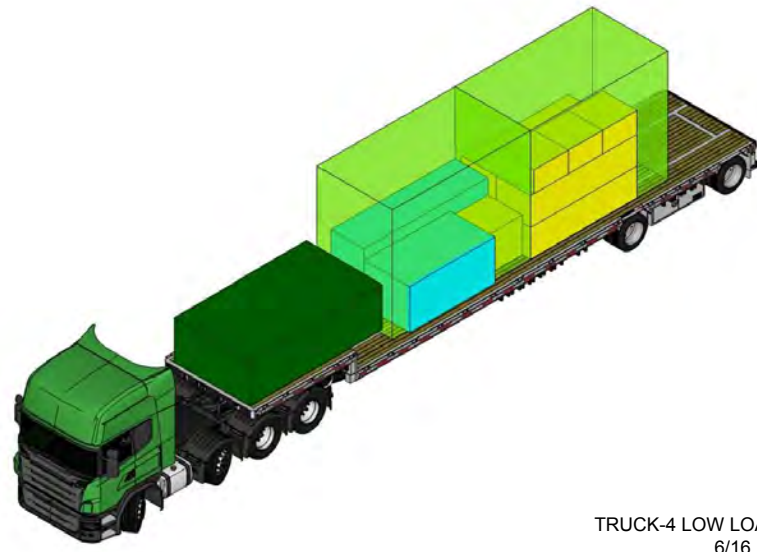


TRUCK-2 LOW LOADER  
6/16 12:00

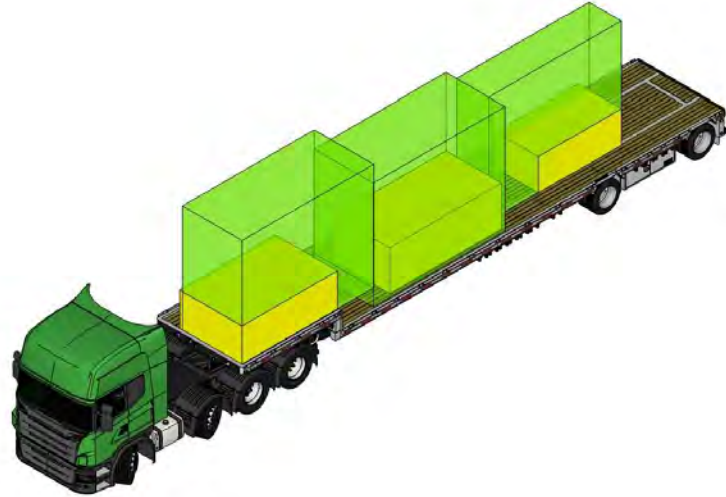


TRUCK-3 LOW LAODER  
6/16 14:00

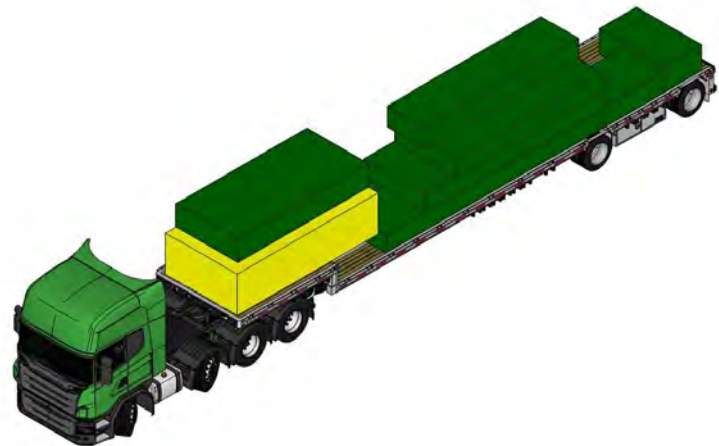
Truck No.(A)	Type	Designation	Package No.	Assembly No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
1	Flat	Tool	N30	1	1	150	1500	1500	1500	6/16 08:00
1	Flat	Tool	N32	1	1	10	1500	900	800	6/16 08:00
1	Flat	Tool	N33	1	1	50	1500	500	500	6/16 08:00
1	Flat	Tool	N25	3	1	150	1000	1000	1000	6/16 08:00
1	Flat	Wooden Sandbox	P27	4	1	150	2100	1300	1090	6/16 08:00
1	Flat	Wooden Sandbox	P28	4	1	150	2100	1300	1090	6/16 08:00
1	Flat	Wooden Sandbox	P31	4	1	150	1700	1450	1210	6/16 08:00
1	Flat	Steel Structure Footing	P14	6	1	440	1300	1300	620	6/16 08:00
1	Flat	Steel Structure Footing	P15	6	1	440	1300	1300	620	6/16 08:00
1	Flat	Steel Structure Footing	P16	6	1	440	1300	1300	620	6/16 08:00
1	Flat	Steel Structure Footing	P17	6	1	440	1300	1300	620	6/16 08:00
1	Flat	Steel Structure Footing	P18	6	1	440	1300	1300	620	6/16 08:00
1	Flat	Plastic Bucket	W1	11	1	890	1100	900	630	6/16 08:00
1	Flat	Plastic Bucket	W2	11	1	120	1100	900	630	6/16 08:00
1	Flat	Tool with Fire Extinguishers	P48-w	11	1	680	1500	1500	2000	6/16 08:00
1	Flat	Steel Structure Footing	P19	326	1	440	1300	1300	620	6/16 08:00
1	Flat	Steel Structure Footing	P20	326	1	440	1300	1300	620	6/16 08:00
1	Flat	Steel Structure Footing	P21	326	1	440	1300	1300	620	6/16 08:00
1	Flat	Steel Structure Footing	P22	326	1	440	1300	1300	620	6/16 08:00
1	Flat	Sand Bag	N34	1	1	6000	2000	2000	2000	6/16 08:00
total					20	12460				
Truck No.(A)	Type	Designation	Package No.	Assembly No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
2	Low	Steel Structure UNIT 12	P09	11	1	2640	9500	2275	3450	6/16 12:00
2	Low	Steel Structure UNIT 10	P07	51	1	550	4000	2200	1545	6/16 12:00
2	Low	GL Lower Wooden Box	P50	98	1	80	1865	1150	1140	6/16 12:00
2	Low	GL Lower Wooden Box	P52	98	1	180	1865	1150	1140	6/16 12:00
2	Low	Steel Structure Connection	P13-w	121	1	350	1300	1300	755	6/16 12:00
2	Low	ML Lower Wooden Box	P58	1	1	2500	2030	1710	1210	6/16 12:00
2	Low	ML Lower Wooden Box	P59	1	1	2500	2030	1710	1210	6/16 12:00
total					7	8800				
Truck No.(A)	Type	Designation	Package No.	Assembly No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
3	Low	Steel Structure UNIT 11	P08	15	1	2345	9500	2200	3450	6/16 14:00
3	Low	Aluminum Window Frame	W3	57	1	260	4450	2200	1300	6/16 14:00
3	Low	ML Upper Wooden Box	P60	122	1	420	2000	2000	2000	6/16 14:00
3	Low	Ceiling Structure	P46	178	1	70	1622	960	420	6/16 14:00
total					4	3095				



TRUCK-4 LOW LOADER  
6/16 15:00



TRUCK-5 LOW LOADER  
6/16 16:00



TRUCK-6 FLATBAD  
6/16 23:00

Truck No.(A)	Type	Designation	Package No.	Assembly No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
4	Low	Steel Structure UNIT 05	P05	20	1	1150	4000	2200	3450	6/16 15:00
4	Low	Eform	N31	24	1	150	4000	2000	2000	6/16 15:00
4	Low	Steel Structure UNIT 04	P04	27	1	1025	4000	2200	3450	6/16 15:00
4	Low	Electrical Pipe	W22	32	1	80	3100	1000	800	6/16 15:00
4	Low	Water Pipe	W23	32	1	110	3100	1000	800	6/16 15:00
4	Low	Steel Structure UNIT 06	P06	54	1	1500	3850	2200	1130	6/16 15:00
4	Low	Vacuum Insulation Panel	P76	122	1	120	2480	1303	1200	6/16 15:00
4	Low	UIS Tool	N24	147	1	70	1000	1000	600	6/16 15:00
4	Low	UIS Tool	N21	147	1	70	1000	1000	600	6/16 15:00
4	Low	UIS Tool	N22	147	1	70	1000	1000	600	6/16 15:00
4	Low	UIS Tool	N23	147	1	70	1000	1000	1000	6/16 15:00
4	Low	Air Pipe	W24	153	1	50	3100	1000	800	6/16 15:00
4	Low	Exhaust Fan Air Pipe	W25	198	1	250	3100	1000	800	6/16 15:00
4	Low	PV Cable Tray	w25	244	1	250	3100	1000	800	6/16 15:00
total					14	4965				
Truck No.(A)	Type	Designation	Package No.	Assembly No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
5	Low	Tool	N12	3	1	835	2900	1890	1000	6/16 16:00
5	Low	Tool	N11	3	1	800	3400	1690	1200	6/16 16:00
5	Low	Steel Structure UNIT 03	P03	34	1	950	4000	1810	3450	6/16 16:00
5	Low	Steel Structure UNIT 02	P02	41	1	1000	4000	1790	3450	6/16 16:00
5	Low	Steel Structure UNIT 01	P01	46	1	900	4000	975	3450	6/16 16:00
5	Low	Wooden Sheet	W31	178	1	150	2600	1300	800	6/16 16:00
total					6	4635				
Truck No.(A)	Type	Designation	Package No.	Assembly No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
6	Flat	Steel Structure Beam	P37	83	1	1660	4030	1900	630	6/16 23:00
6	Flat	Steel Structure Stair	P39	92	1	350	4730	1150	565	6/16 23:00
6	Flat	Steel Structure Stair	P40	92	1	200	1890	1305	540	6/16 23:00
6	Flat	Steel Structure Stair	P38	92	1	400	2010	1150	690	6/16 23:00
6	Flat	Steel Structure Beam	P34	102	1	1540	4507.6	1900	480	6/16 23:00
6	Flat	Steel Structure Beam	P36	102	1	920	5451.5	1900	480	6/16 23:00
6	Flat	GL Upper Wooden Box	W26	122	1	760	4350	2200	1100	6/16 23:00
6	Flat	Steel Structure Column	P33	188	1	1700	6674.3	1900	480	6/16 23:00
total					8	7530				



Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by	MS
Checked by	DN
Scale	-
Unit	-

DWG. Title	
ASSEMBLY TRUCKS SHIPMENT 2	
DWG. No.	PAGE
SO-012	237

Project:



Institution:



**NCTU Architecture**  
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ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by MS

Checked by DN

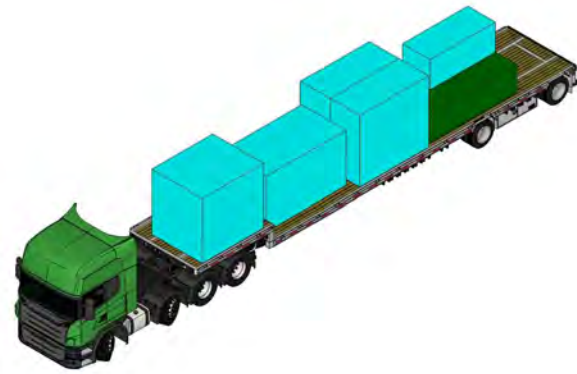
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Unit -

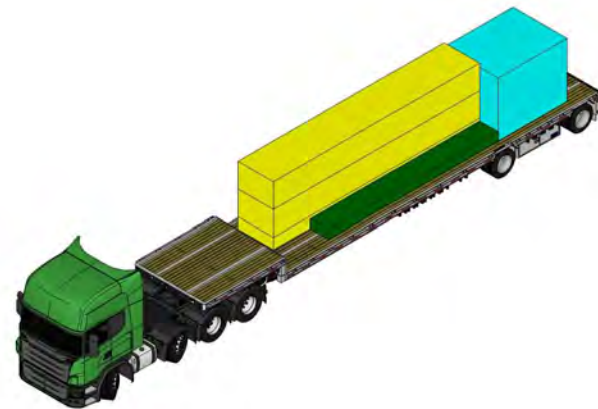
DWG. Title

ASSEMBLY TRUCKS  
SHIPMENT 3

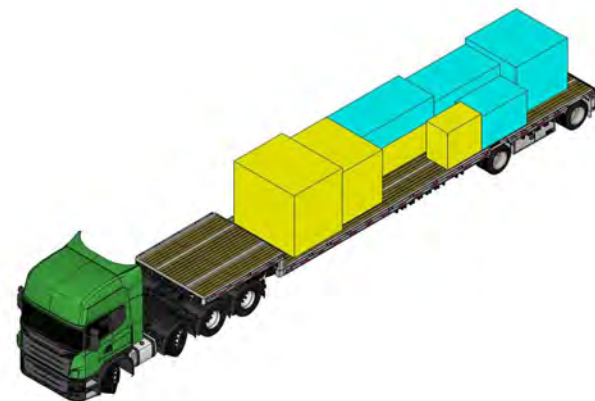
DWG. No. SO-013 PAGE 238



TRUCK-7 FLATBED  
6/17 02:00

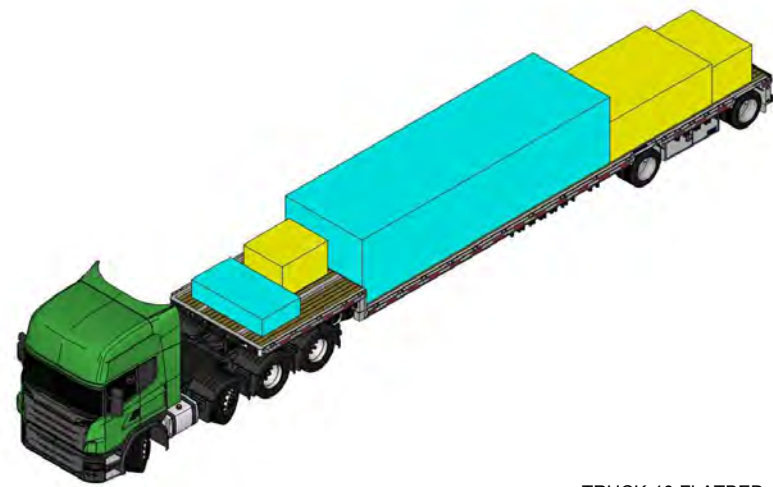


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6/17 08:00

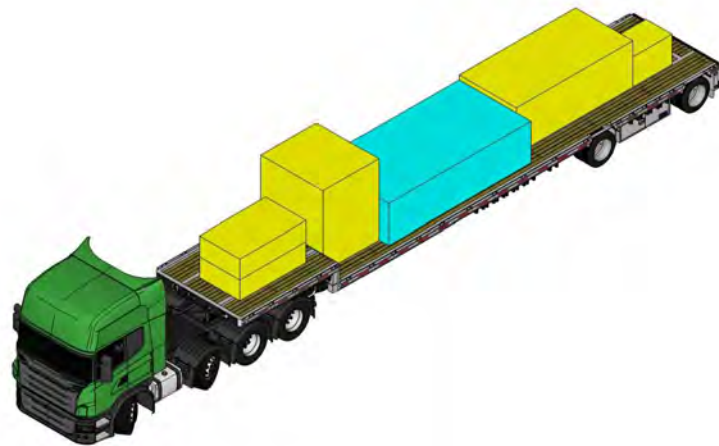


TRUCK-9 FLATBED  
6/18 06:00

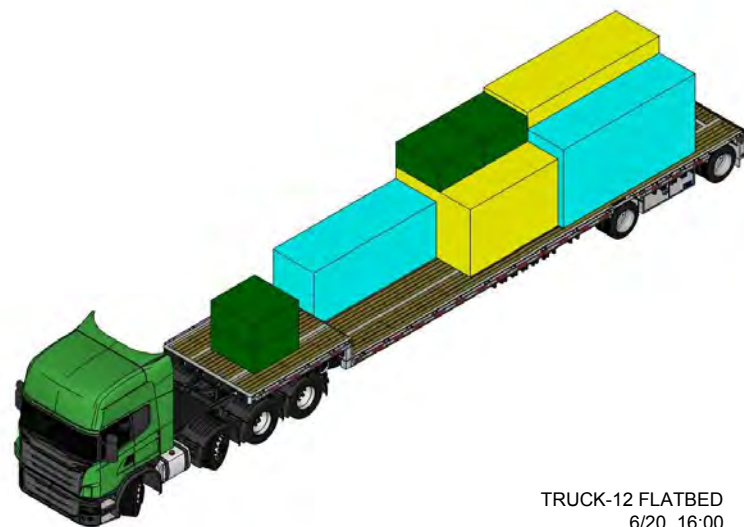
Truck No.(A)	Type	Designation	Package No.	Assembly No.	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
7	Flat	Bedroom Cabinet	P64	130	1	200	2515	1065	1000	6/17 02:00
7	Flat	Steel Structure Small Beam (South)	P35	102	1	800	3530	1900	930	6/17 02:00
7	Flat	Wooden Box (Wall)	P61	125	1	2000	2650	1140	1236	6/17 02:00
7	Flat	Wooden Box (Wall)	P62	125	1	2000	2650	1140	1236	6/17 02:00
7	Flat	Kitchen Finish	P73	129	1	300	3050	1700	1830	6/17 02:00
7	Flat	Bedroom Cabinet	P74	130	1	220	2350	1950	2130	6/17 02:00
total					6	5520				
Truck No.(A)	Type	Designation	Package No.	Assembly No.	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
8	Flat	Steel Structure Canopy	P82	140	1	300	6250	700	300	6/17 08:00
8	Flat	Wooden Box	P77	146	1	360	2540	2000	2020	6/17 08:00
8	Flat	Stainless Steel Pool	W9	161	1	190	7600	1310	390	6/17 08:00
8	Flat	FRP Clean Water Tank	W35	162	1	110	7600	1310	880	6/17 08:00
8	Flat	FRP Gray Water Tank	W36	162	1	110	7600	1310	880	6/17 08:00
total					5	1070				
Truck No.(A)	Type	Designation	Package No.	Assembly No.	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
9	Flat	Small Wooden Box	P65	125	1	350	2500	1300	1440	6/18 06:00
9	Flat	Ceramic Panel	P75	146	1	860	2700	1320	720	6/18 06:00
9	Flat	Toilet equipment	W13	179	1	300	2100	1650	1680	6/18 06:00
9	Flat	Washing Machine	W11	207	1	150	800	1260	1180	6/18 06:00
9	Flat	Panasonic CO2 Heat Pump Tank	W12	207	1	270	1800	2250	1980	6/18 06:00
9	Flat	Hot Water Tank	P72	207	1	150	1700	1000	1080	6/18 06:00
9	Flat	Polli-Brick with Water and Sealed	P45	225	1	160	1900	1900	1730	6/18 06:00
9	Flat	Thermal Wall Outside Structure	W30	226	1	500	2500	1300	950	6/18 06:00
total					8	2740				



TRUCK-10 FLATBED  
6/19 02:00



TRUCK-11 FLATBED  
6/19 14:00



TRUCK-12 FLATBED  
6/20 16:00

Truck No.(A)	Type	Designation	Package No.	Assembly No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
10	Flat	PV Module	N26	242	1	160	1500	800	600	6/19 02:00
10	Flat	PV Module	N13	242	1	720	2900	1890	1000	6/19 02:00
10	Flat	Smart Skin UNIT	N14	243	1	275	1730	1150	900	6/19 02:00
10	Flat	Electrical equipment	W14	248	1	150	1100	1300	820	6/19 02:00
10		Bayer PC Hollow Sheet	P78	281	1	900	7100	2200	1630	6/19 02:00
total					5	2205				
Truck No.(A)	Type	Designation	Package No.	Assembly No	QTY	Weight(kg)	Dimensions(mm)			Arrival
11	Flat	Glass Louver	W5	258	1	950	712	1200	740	6/19 14:00
11	Flat	kitchen&living equipment	W10	268	1	460	1900	1700	2130	6/19 14:00
11	Flat	Exhaust Fan	W15	270	1	200	1230	2020	550	6/19 14:00
11	Flat	Exhaust Fan	W16	270	1	200	1230	2020	550	6/19 14:00
11	Flat	Aluminum Louver Frame	W4	307	1	2000	3560	1750	1230	6/19 14:00
11	Flat	Plastic Wood Unit	P67	378	1	4200	4350	2200	1100	6/19 14:00
total					6	8010				
Truck No.(A)	Type	Designation	Package No.	Assembly No	QTY	Weight(kg)	Dimensions(mm)			Arrival
12	Flat	Aluminum Windows	W32	258	1	140	2600	2200	2200	6/20 16:00
12	Flat	Steel Column Green Core	N6	276	1	2200	3900	1290	1215	6/20 16:00
12	Flat	Steel Column Green Core	N7	276	1	2200	3900	1290	1215	6/20 16:00
12	Flat	Steel Structure Footing	P23	326	1	440	1300	1300	620	6/20 16:00
12	Flat	Steel Structure Footing	P24	326	1	440	1300	1300	620	6/20 16:00
12	Flat	Steel Structure Footing	P25	326	1	440	1300	1300	620	6/20 16:00
12	Flat	Steel Structure Footing	P26	326	1	440	1300	1300	620	6/20 16:00
12	Flat	Plastic Wood Small Piece	N20	378	1	2000	3600	1200	1400	6/20 16:00
12	Flat	Sand Bag	N36	400	1	6000	2000	2000	2000	6/20 16:00
total					9	14300				

Project:



Institution:



**NCTU Architecture**  
國立交通大學建築研究所

Team Name: NCTU/UNICODE  
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Taiwan  
Contact: www.sde.tw



Consultants:

Note:

Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by	MS
Checked by	DN
Scale	-
Unit	-

DWG. Title	
ASSEMBLY TRUCKS SHIPMENT 4	
DWG. No.	PAGE
SO-014	239

Project:



Institution:



**NCTU Architecture**  
國立交通大學建築研究所

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ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

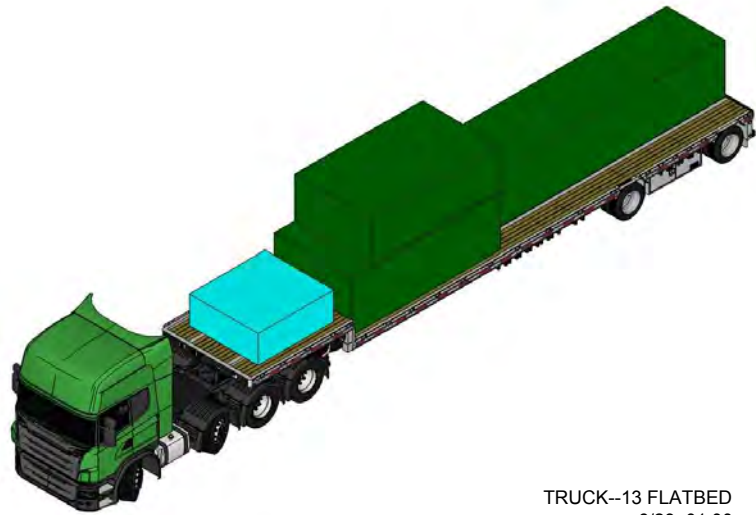
Drawn by	MS
Checked by	DN
Scale	-
Unit	-

DWG. Title

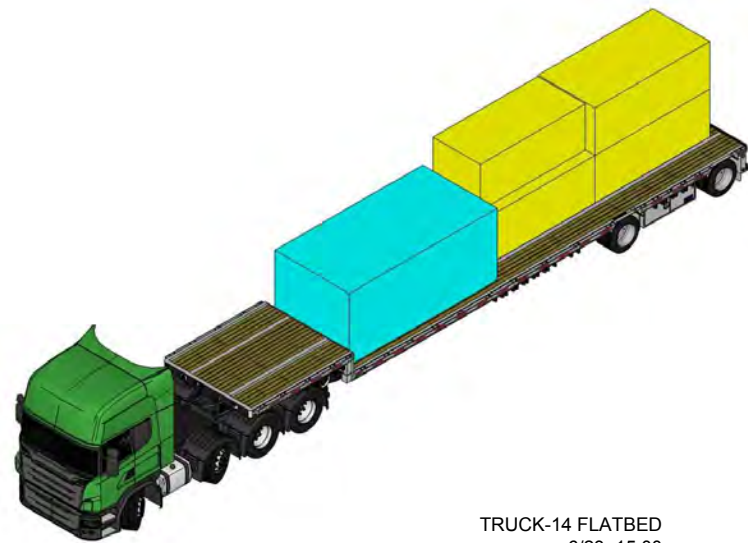
ASSEMBLY TRUCKS  
SHIPMENT 5

DWG. No. PAGE

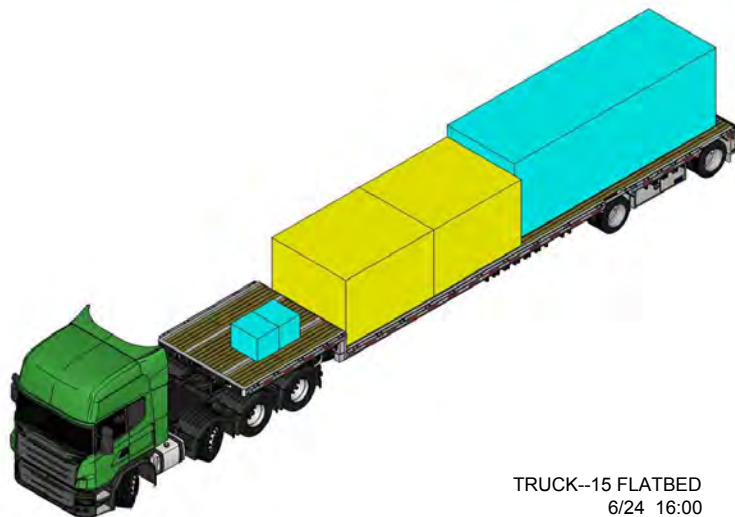
SO-015 240



TRUCK-13 FLATBED  
6/23 01:00



TRUCK-14 FLATBED  
6/23 15:00



TRUCK-15 FLATBED  
6/24 16:00

Truck No.(A)	Type	Designation	Package No.	Assembly No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
13	Flat	Solar Water Heater Frame	P44	328	1	220	2200	2000	800	6/23 01:00
13	Flat	Steel Structure UNIT 13	P10	334	1	1950	4300	2275	1430	6/23 01:00
13	Flat	Steel Structure UNIT 23	P11	334	1	3800	7000	1700	1430	6/23 01:00
13	Flat	Steel Structure UNIT 22	P12	334	1	1450	3700	2225	1180	6/23 01:00
total					4	7420				
Truck No.(A)	Type	Designation	Package No.	Assembly No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
14	Flat	FRP Rain Water Tank	W37	162	1	150	3100	1400	1180	6/23 15:00
14	Flat	Plastic Wood Unit	P68	378	1	4440	4350	2200	1830	6/23 15:00
14	Flat	Steel Outdoor Handrail	N1	396	1	800	3400	1685	1215	6/23 15:00
14	Flat	Steel Outdoor Handrail	N3	396	1	800	3400	1685	1215	6/23 15:00
14	Flat	Steel Outdoor Handrail	N2	396	1	800	3400	1685	1215	6/23 15:00
total					5	6990				
Truck No.(A)	Type	Designation	Package No.	Assembly No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
15	Flat	Home accessories	N27	410	1	80	800	400	400	6/24 16:00
15	Flat	Furniture	W33	410	1	260	2600	2200	2200	6/24 16:00
15	Flat	Furniture	W34	410	1	650	2600	2200	2200	6/24 16:00
15	Flat	Planting	N35	400	1	3000	7000	2000	2000	6/24 16:00
total					4	3990				





Mark	Date	Description
DN	2013/04/01	SD Submission
DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by SC

Checked by DN

Scale -

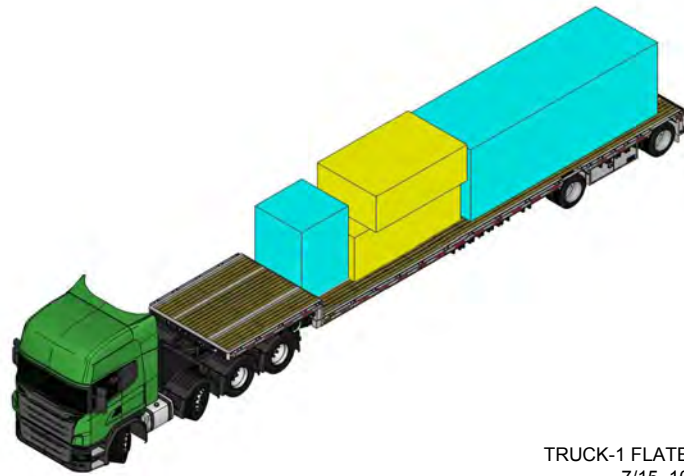
Unit -

DWG. Title

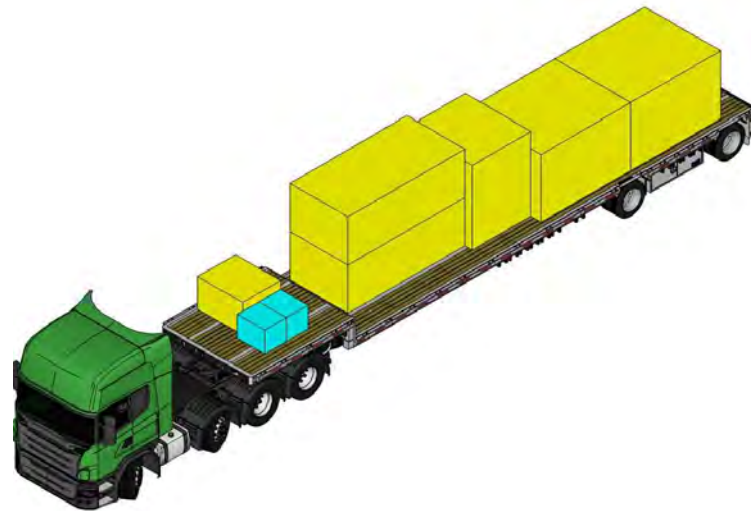
DISASSEMBLY TRUCKS  
SHIPMENT 1

DWG. No. PAGE

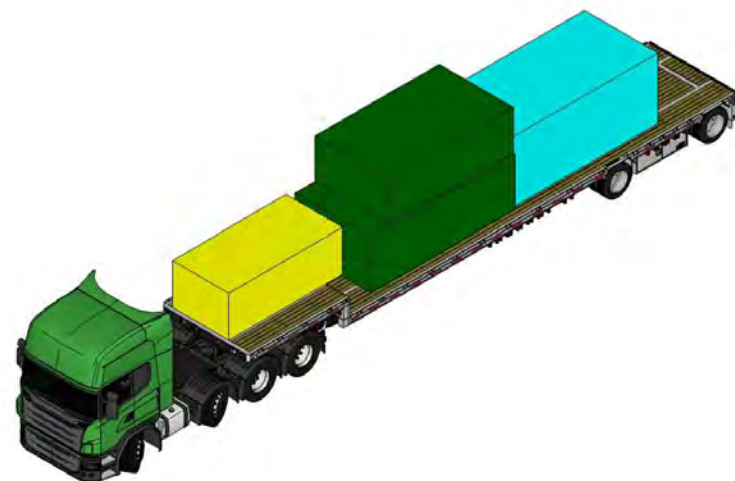
SO-021 241



TRUCK-1 FLATBED  
7/15 10:00

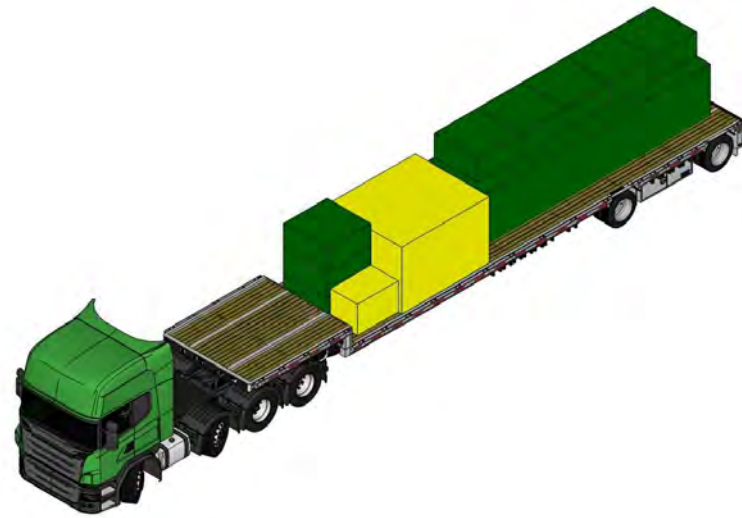


TRUCK-2 LOW LOADER  
7/15 15:00

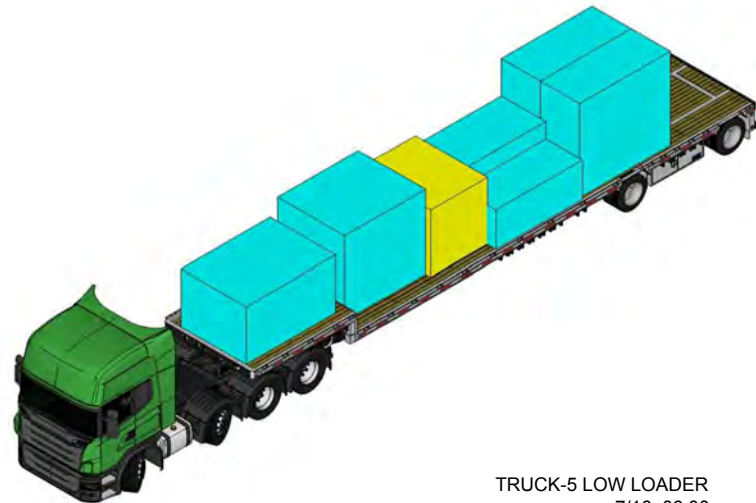


TRUCK-3 LOW LAODER  
7/15 20:00

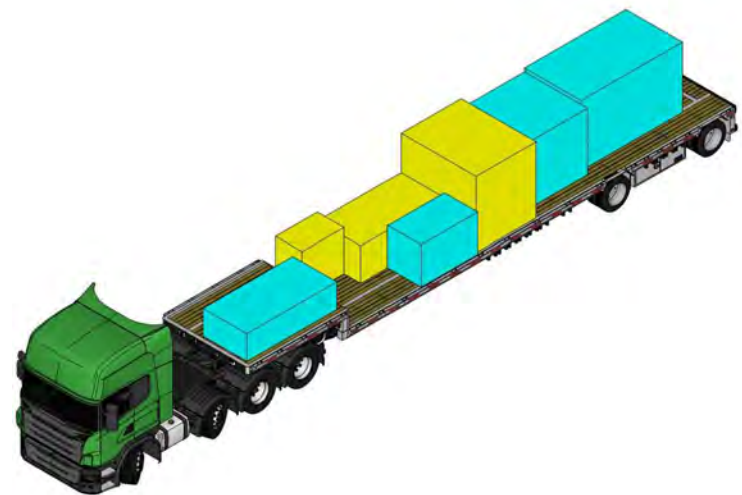
Truck No.(B)	Type	Designation	Package No.	Dismantling No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
1	Flat	Tool	N30	0	1	150	3400	1800	1100	7/15 10:00
1	Flat	Tool	N32	0	1	10	2900	1700	1100	7/15 10:00
1	Flat	Tool	N33	0	1	50	2000	2000	2000	7/15 10:00
1	Flat	Planting	N35	150	1	3000	7000	2000	2000	7/15 10:00
total					4	3210				
Truck No.(B)	Type	Designation	Package No.	Dismantling No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
2	Flat	Electrical equipment	W14	4	1	150	1100	1300	820	7/15 15:00
2	Flat	kitchen&living equipment	W10	3	1	460	1900	1700	2130	7/15 15:00
2	Flat	Steel Outdoor Handrail	N1	6	1	800	3400	1685	1215	7/15 15:00
2	Flat	Steel Outdoor Handrail	N2	6	1	800	3400	1685	1215	7/15 15:00
2	Flat	Home accessories	N27	1	1	80	800	400	400	7/15 15:00
2	Flat	Furniture	W33	2	1	260	2600	2200	2200	7/15 15:00
2	Flat	Furniture	W34	2	1	650	2600	2200	2200	7/15 15:00
total					7	3200				
Truck No.(B)	Type	Designation	Package No.	Dismantling No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
3	Flat	Steel Structure UNIT 13	P10	8	1	1950	4300	2275	1430	7/15 20:00
3	Flat	Steel Structure UNIT 22	P12	8	1	1450	3700	2225	1180	7/15 20:00
3	Flat	Plastic Wood Unit	P68	7	1	4440	4350	2200	1830	7/15 20:00
3	Flat	Steel Outdoor Handrail	N3	6	1	800	3400	1685	1215	7/15 20:00
total					4	8640				



TRUCK-4 LOW LOADER  
7/16 01:00



TRUCK-5 LOW LOADER  
7/16 06:00



TRUCK-6 FLATBAD  
7/16 12:00

Truck No.(B)	Type	Designation	Package No.	Dismantling No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
4	Flat	Glass Louver	W5	12	1	950	712	1200	740	7/16 01:00
4	Flat	Aluminum Windows	W32	15	1	140	2600	2200	2200	7/16 01:00
4	Flat	Steel Structure Footing	P19	9	1	440	1300	1300	620	7/16 01:00
4	Flat	Steel Structure Footing	P20	9	1	440	1300	1300	620	7/16 01:00
4	Flat	Steel Structure Footing	P21	9	1	440	1300	1300	620	7/16 01:00
4	Flat	Steel Structure Footing	P22	9	1	440	1300	1300	620	7/16 01:00
4	Flat	Steel Structure Footing	P23	9	1	440	1300	1300	620	7/16 01:00
4	Flat	Steel Structure Footing	P24	9	1	440	1300	1300	620	7/16 01:00
4	Flat	Steel Structure Footing	P25	9	1	440	1300	1300	620	7/16 01:00
4	Flat	Steel Structure Footing	P26	9	1	440	1300	1300	620	7/16 01:00
4	Flat	Steel Structure UNIT 23	P11	8	1	3800	7000	1700	1430	7/16 01:00
total					11	8410				
Truck No.(B)	Type	Designation	Package No.	Dismantling No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
5	Flat	Bedroom Cabinet	P64	25	1	200	2515	1065	1000	7/16 06:00
5	Flat	Wooden Box (Wall)	P61	21	1	2000	2650	1140	1236	7/16 06:00
5	Flat	Wooden Box (Wall)	P62	21	1	2000	2650	1140	1236	7/16 06:00
5	Flat	Small Wooden Box	P65	21	1	350	2500	1300	1440	7/16 06:00
5	Flat	Bedroom Cabinet	P74	25	1	220	2350	1950	2130	7/16 06:00
5	Flat	Ceiling Structure	P46	20	1	70	1622	960	420	7/16 06:00
5	Flat	Toilet equipment	W13	22	1	300	2100	1650	1680	7/16 06:00
total					7	5140				
Truck No.(B)	Type	Designation	Package No.	Dismantling No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
6	Flat	Kitchen Finish	P73	23	1	300	3050	1700	1830	7/16 12:00
6	Flat	Ceramic Panel	P75	31	1	860	2700	1320	720	7/16 12:00
6	Flat	Washing Machine	W11	28	1	150	800	1260	1180	7/16 12:00
6	Flat	Panasonic CO2 Heat Pump Tank	W12	28	1	270	1800	2250	1980	7/16 12:00
6	Flat	Hot Water Tank	P72	28	1	150	1700	1000	1080	7/16 12:00
6	Flat	Polli-Brick	P45	26	1	160	1900	1900	1730	7/16 12:00
6	Flat	Thermal Wall Outside Structure	W30	26	1	500	2500	1300	950	7/16 12:00
total					7	2390				



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ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Drawn by MS

Checked by DN

Scale -

Unit -

DWG. Title  
DISASSEMBLY TRUCKS  
SHIPMENT 2

DWG. No. SO-022 PAGE 242

Project:



Institution:



**NCTU Architecture**  
國立交通大學建築研究所

Team Name: NCTU/UNICODE

Address: 1001 Ta-Hsueh Road  
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ST	2014/11/03	AB Submission

Drawn by SC

Checked by DN

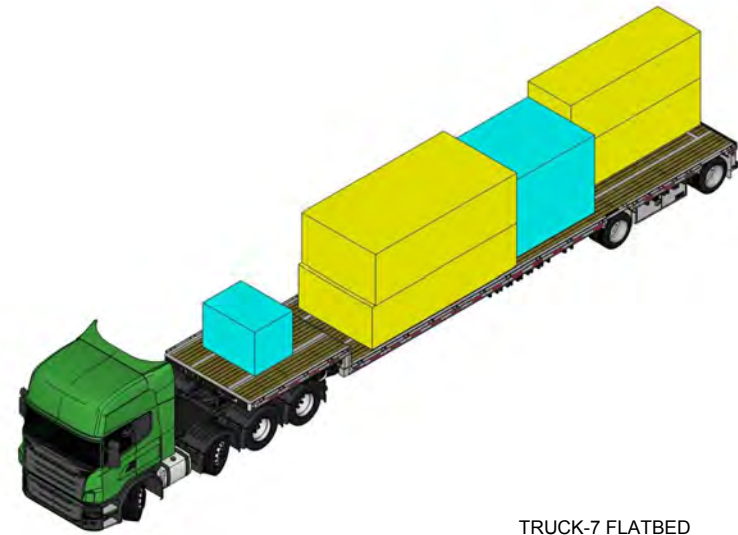
Scale -

Unit -

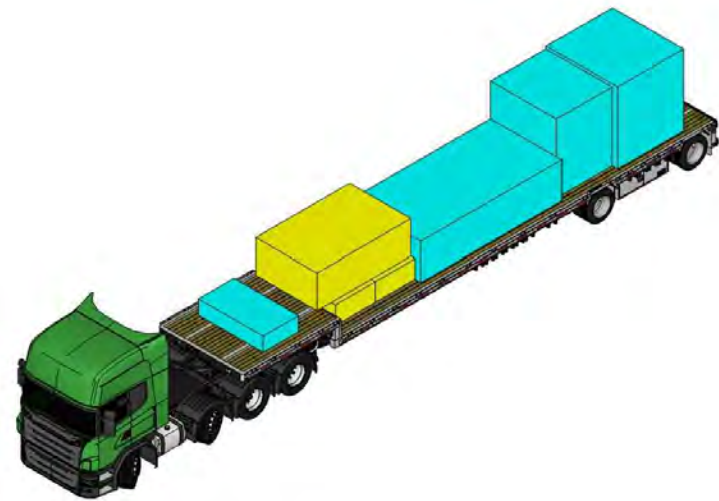
DWG. Title

DISASSEMBLY TRUCKS  
SHIPMENT 3

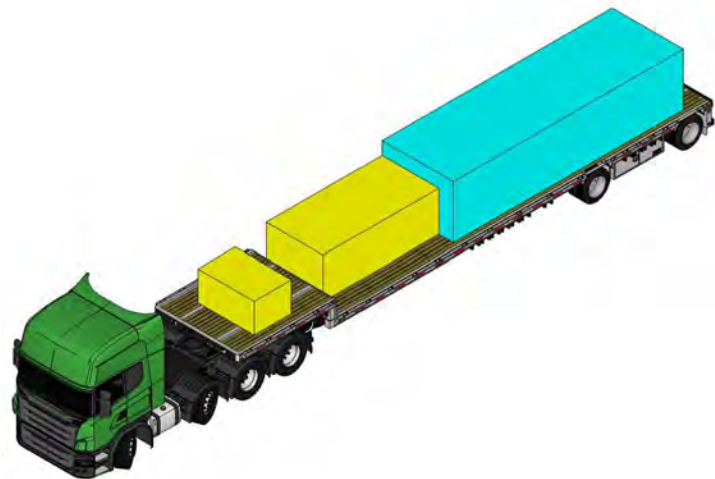
DWG. No. SO-023 PAGE 243



TRUCK-7 FLATBED  
7/16 23:00

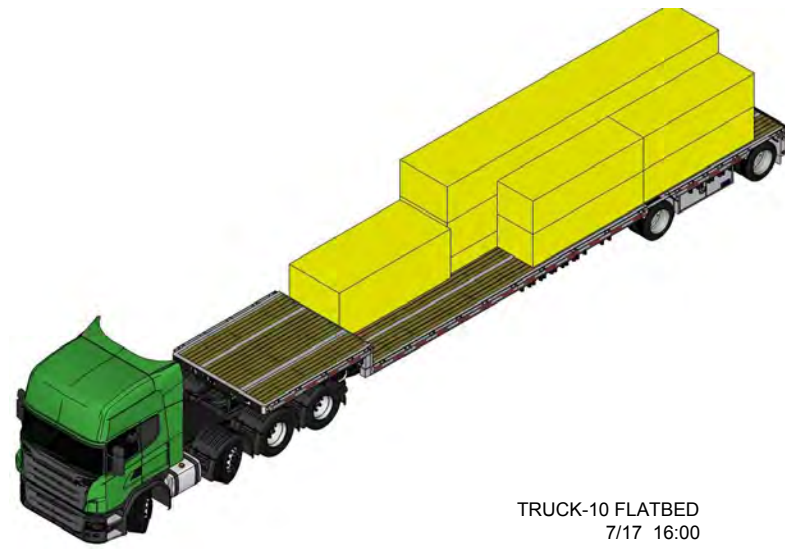


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7/17 09:00

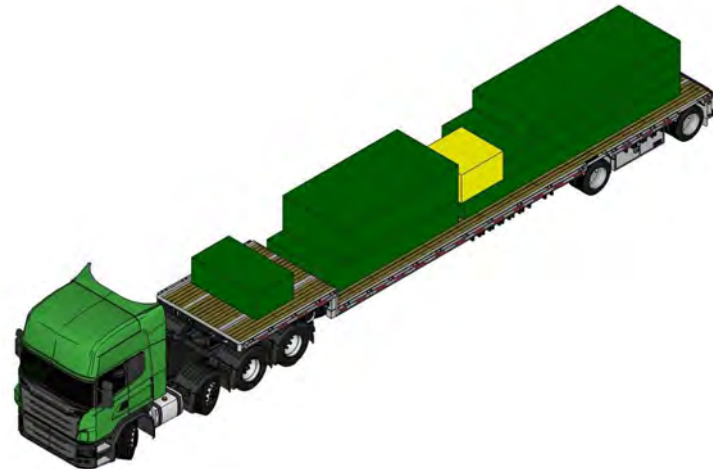


TRUCK-9 FLATBED  
7/17 15:00

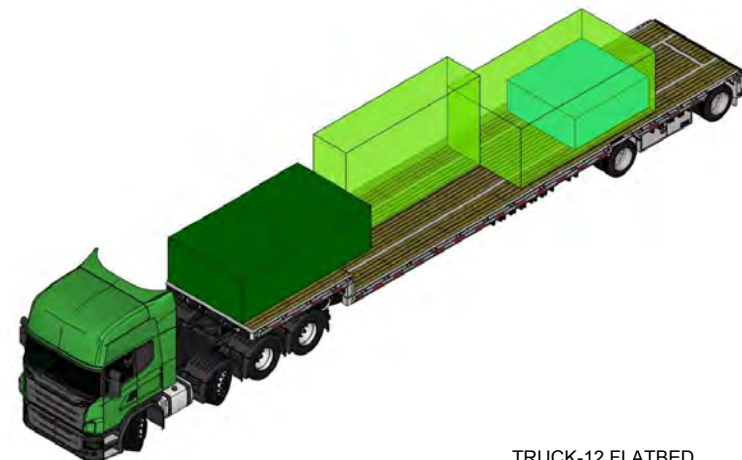
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							L	W	H	
7	Flat	Aluminum Window Frame	W3	38	1	260	4450	2200	1300	7/16 23:00
7	Flat	GL Lower Wooden Box	P50	39	1	80	1865	1150	1140	7/16 23:00
7	Flat	GL Upper Wooden Box	W26	36	1	760	4350	2200	1100	7/16 23:00
7	Flat	Wooden Box	P77	31	1	360	2540	2000	2020	7/16 23:00
7	Flat	Steel Column Green Core	N6	35	1	2200	3900	1290	1215	7/16 23:00
7	Flat	Steel Column Green Core	N7	35	1	2200	3900	1290	1215	7/16 23:00
total					6	5860				
Truck No.(B)	Type	Designation	Package No.	Dismantling No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
8	Flat	GL Lower Wooden Box	P52	39	1	180	1865	1150	1140	7/17 09:00
8	Flat	ML Upper Wooden Box	P60	37	1	420	2000	2000	2000	7/17 09:00
8	Flat	PV Module	N26	0	1	160	1500	800	600	7/17 09:00
8	Flat	PV Module	N13	50	1	720	2900	1890	1000	7/17 09:00
8	Flat	Exhaust Fan	W15	45	1	200	1230	2020	550	7/17 09:00
8	Flat	Exhaust Fan	W16	45	1	200	1230	2020	550	7/17 09:00
8	Flat	Plastic Wood Unit	P67	40	1	4200	4350	2200	1100	7/17 09:00
total					7	6080				
Truck No.(B)	Type	Designation	Package No.	Dismantling No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
9	Flat	Smart Skin UNIT	N14	51	1	275	1730	1150	900	7/17 15:00
9	Flat	Bayer PC Hollow Sheet	P78	55	1	900	7100	2200	1630	7/17 15:00
9	Flat	Aluminum Louver Frame	W4	53	1	2000	3560	1750	1230	7/17 15:00
total					3	3175				



TRUCK-10 FLATBED  
7/17 16:00



TRUCK-11 FLATBED  
7/18 23:00



TRUCK-12 FLATBED  
7/19 02:00

Truck No.(B)	Type	Designation	Package No.	Dismantling No.	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
10	Flat	Electrical Pipe	W22	56	1	80	3100	1000	800	7/17 16:00
10	Flat	Water Pipe	W23	56	1	110	3100	1000	800	7/17 16:00
10	Flat	Air Pipe	W24	30	1	50	3100	1000	800	7/17 16:00
10	Flat	Stainless Steel Pool	W9	29	1	190	7600	1310	390	7/17 16:00
10	Flat	FRP Clean Water Tank	W35	57	1	110	7600	1310	880	7/17 16:00
10	Flat	FRP Gray Water Tank	W36	57	1	110	7600	1310	880	7/17 16:00
10	Flat	FRP Rain Water Tank	W37	57	1	150	3100	1400	1180	7/17 16:00
10	Flat	Exhaust Fan Air Pipe	W25	56	1	250	3100	1000	800	7/17 16:00
10	Flat	PV Cable Tray	w25	56	1	250	3100	1000	800	7/17 16:00
total					9	1300				
Truck No.(B)	Type	Designation	Package No.	Dismantling No.	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
11	Flat	Steel Structure Beam	P37	133	1	1660	4030	1900	630	7/18 23:00
11	Flat	Steel Structure Stair	P38	133	1	400	2010	1150	690	7/18 23:00
11	Flat	Steel Structure Small Beam	P35	122	1	800	3530	1900	930	7/18 23:00
11	Flat	Steel Structure Beam	P34	122	1	1540	4507.6	1900	480	7/18 23:00
11	Flat	Steel Structure Beam	P36	122	1	920	5451.5	1900	480	7/18 23:00
11	Flat	Steel Structure Connection	P13-w	124	1	350	1300	1300	755	7/18 23:00
11	Flat	Steel Structure Column	P33	105	1	1700	6674.3	1900	480	7/18 23:00
total					7	7370				
Truck No.(B)	Type	Designation	Package No.	Dismantling No.	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
12	Low	Steel Structure UNIT 01	P01	141	1	900	4000	975	3450	7/19 02:00
12	Low	Steel Structure UNIT 10	P07	138	1	550	4000	2200	1545	7/19 02:00
12	Low	Steel Structure UNIT 06	P06	134	1	1500	3850	2200	1130	7/19 02:00
12	Low	Solar Water Heater Frame	P44	54	1	220	2200	2000	800	7/19 02:00
total					4	3170				



Mark	Date	Description
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ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

Project:



Institution:



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ST	2014/11/03	AB Submission

Drawn by MS

Checked by DN

Scale -

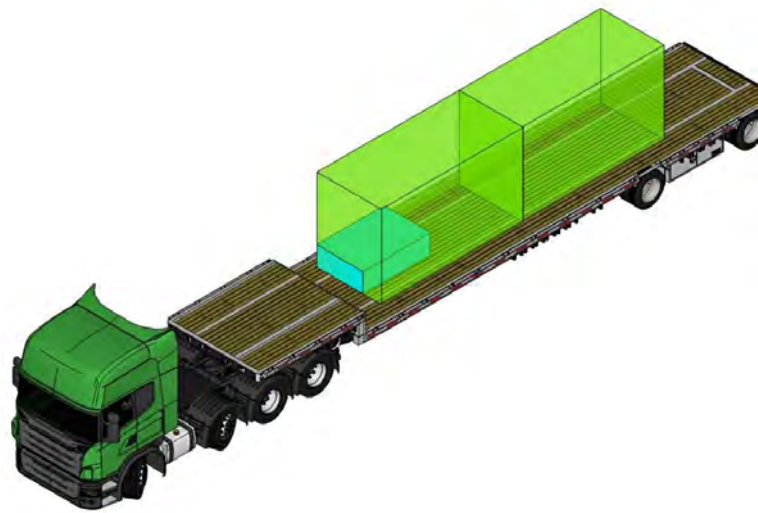
Unit -

DWG. Title

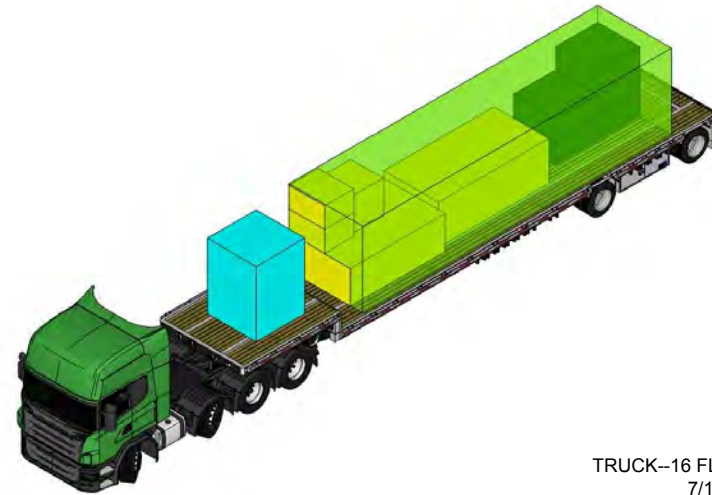
DISASSEMBLY TRUCKS  
SHIPMENT 5

DWG. No. PAGE

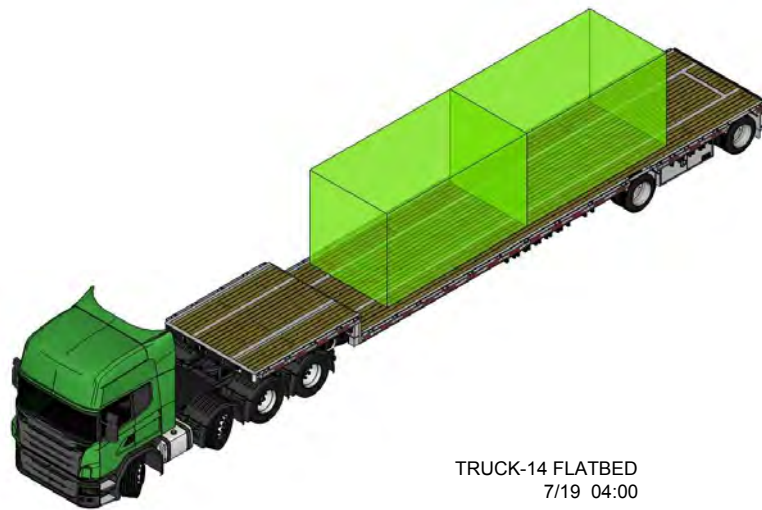
SO-025 245



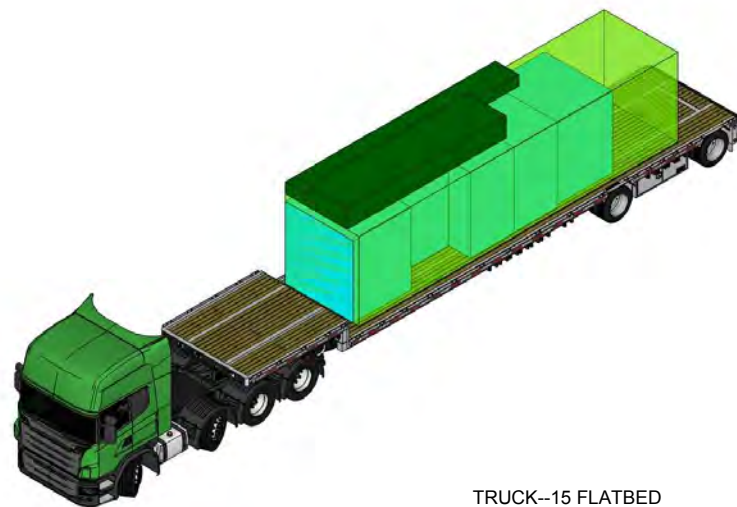
TRUCK--13 FLATBED  
7/19 03:00



TRUCK--16 FLATBED  
7/19 12:00



TRUCK-14 FLATBED  
7/19 04:00



TRUCK--15 FLATBED  
7/19 05:00

Truck No.(B)	Type	Designation	Package No.	Dismantling No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
13	Low	Steel Structure UNIT 03	P03	143	1	950	4000	1810	3450	7/19 03:00
13	Low	Steel Structure UNIT 02	P02	142	1	1000	4000	1790	3450	7/19 03:00
13	Low	Steel Structure Stair	P40	132	1	200	1890	1305	540	7/19 03:00
total					3	2150				
Truck No.(B)	Type	Designation	Package No.	Dismantling No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
14	Low	Steel Structure UNIT 05	P05	145	1	1150	4000	2200	3450	7/19 04:00
14	Low	Steel Structure UNIT 04	P04	144	1	1025	4000	2200	3450	7/19 04:00
total					2	2175				
Truck No.(B)	Type	Designation	Package No.	Dismantling No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
15	Low	Wooden Sandbox	P27	149	1	150	2100	1300	1090	7/19 05:00
15	Low	Wooden Sandbox	P28	149	1	150	2100	1300	1090	7/19 05:00
15	Low	Wooden Sandbox	P31	149	1	150	1700	1450	1210	7/19 05:00
15	Low	Steel Structure UNIT 11	P08	147	1	2345	9500	2200	3450	7/19 05:00
15	Low	Steel Structure Stair	P39	132	1	350	4730	1150	565	7/19 05:00
15	Low	Steel Structure Canopy	P82	131	1	300	6250	700	300	7/19 05:00
15	Low	ML Lower Wooden Box	P58	150	1	2500	2030	1710	1210	7/19 05:00
15	Low	ML Lower Wooden Box	P59	150	1	2500	2030	1710	1210	7/19 05:00
total					8	8445				
Truck No.(B)	Type	Designation	Package No.	Dismantling No	QTY	Weight(kg)	Dimensions(mm)			Arrival
							L	W	H	
16	Low	Tool	N12	150	1	835	2900	1890	1000	7/19 12:00
16	Low	Tool	N25	150	1	150	1000	1000	1000	7/19 12:00
16	Low	Tool	N11	150	1	800	3400	1690	1200	7/19 12:00
16	Low	Steel Structure Footing	P14	149	1	440	1300	1300	620	7/19 12:00
16	Low	Steel Structure Footing	P15	149	1	440	1300	1300	620	7/19 12:00
16	Low	Steel Structure Footing	P16	149	1	440	1300	1300	620	7/19 12:00
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16	Low	Steel Structure Footing	P18	149	1	440	1300	1300	620	7/19 12:00
16	Low	Steel Structure UNIT 12	P09	148	1	2640	9500	2275	3450	7/19 12:00
16	Low	Plastic Bucket	W1	150	1	890	1100	900	630	7/19 12:00
16	Low	Plastic Bucket	W2	150	1	120	1100	900	630	7/19 12:00
16	Low	Tool	P48-w	150	1	680	1500	1500	2000	7/19 12:00
16	Low	Sand Bag	N34	150	1	6000	2000	2000	2000	7/19 12:00
16	Low	Sand Bag	N36	150	1	6000	2000	2000	2000	7/19 12:00
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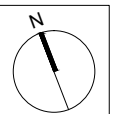
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www.sde.tw



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DWG. No.	PAGE
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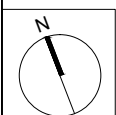
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Hsinchu City 30010  
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Note:



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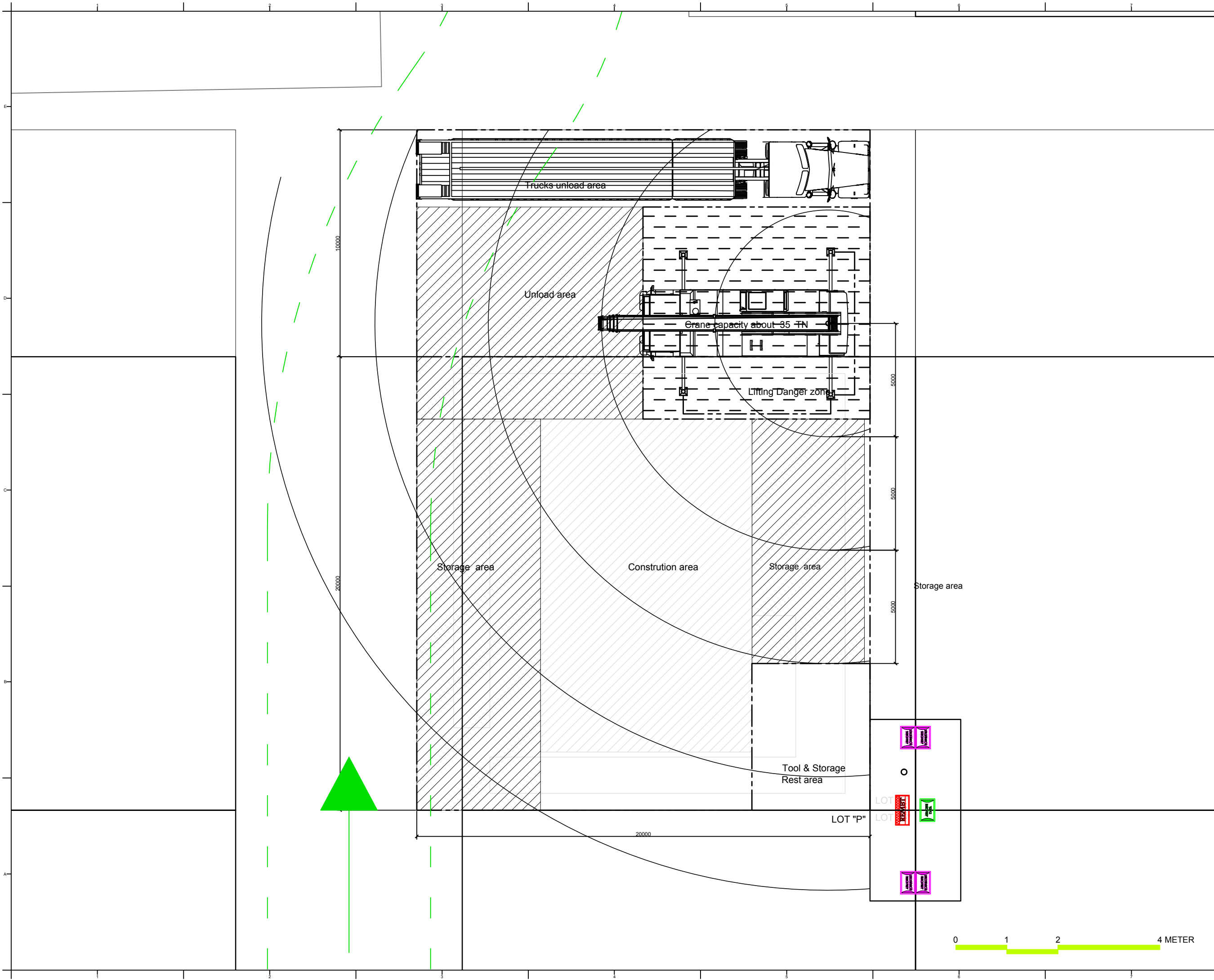
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LOT PLAN

DWG. No. PAGE

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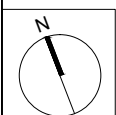
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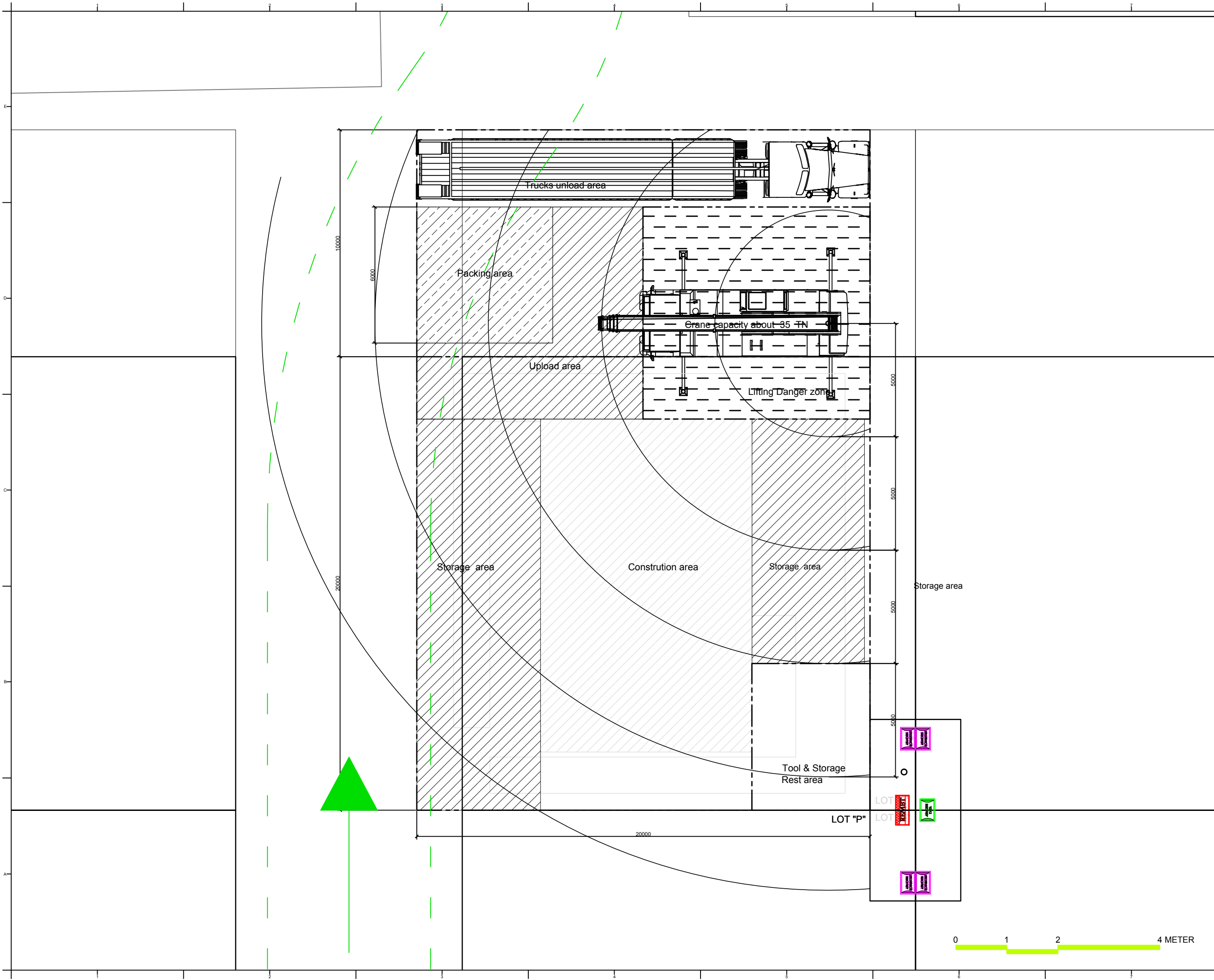
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DISASSEMBLY LOT PLAN

DWG. No. PAGE

SO-103 248

















































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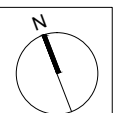
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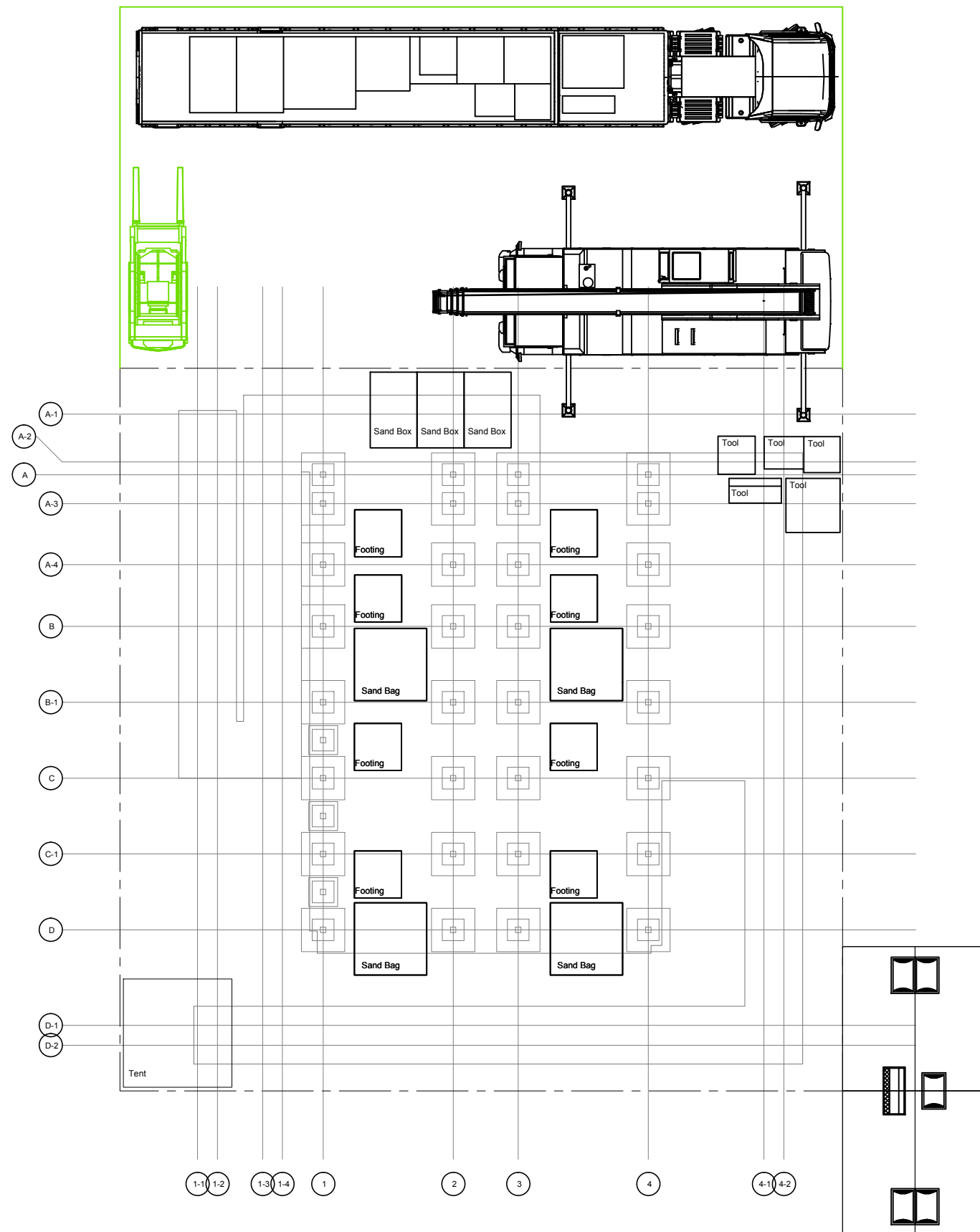
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DWG. No. PAGE

SO-401 269



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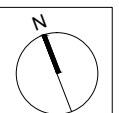
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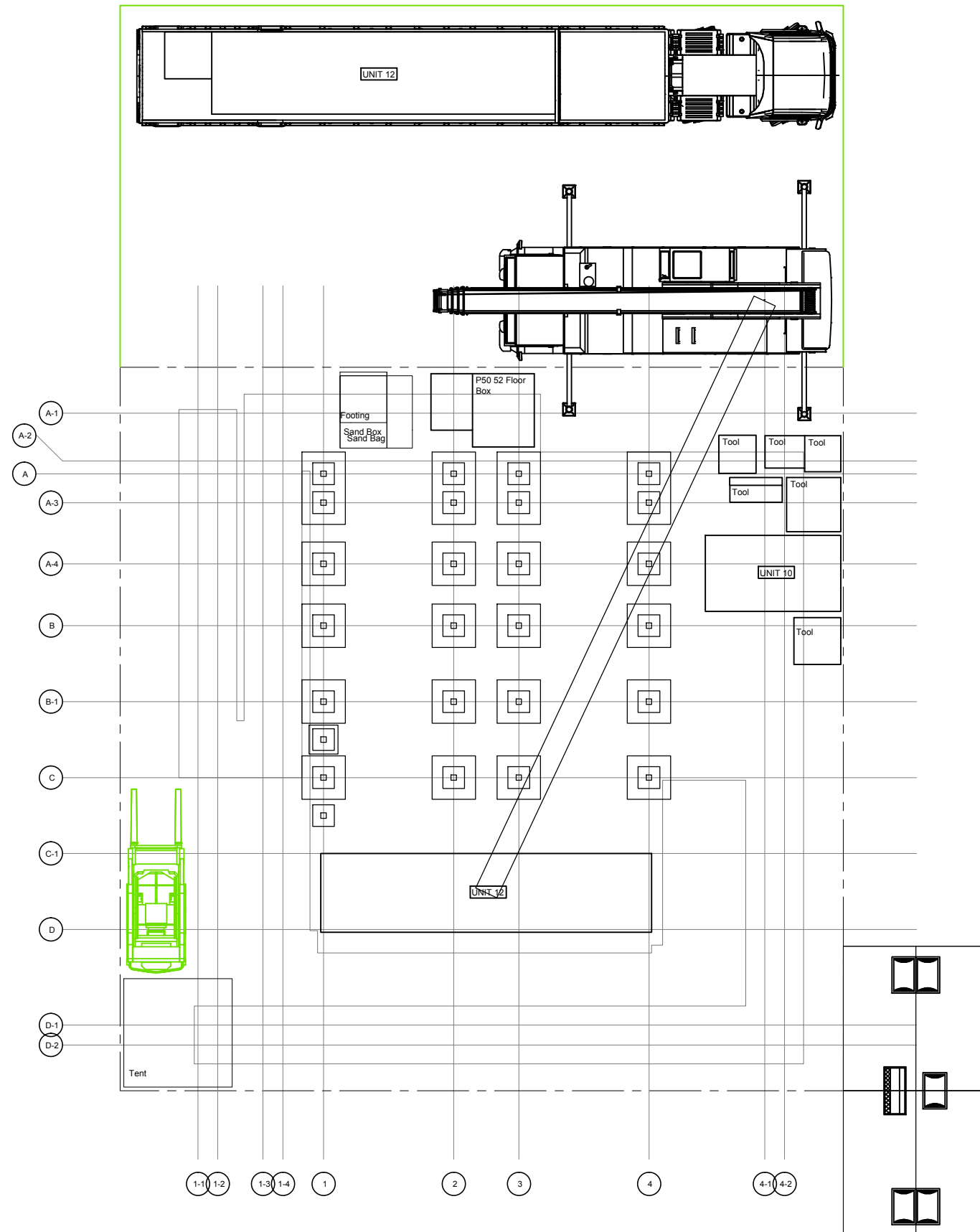
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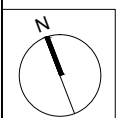
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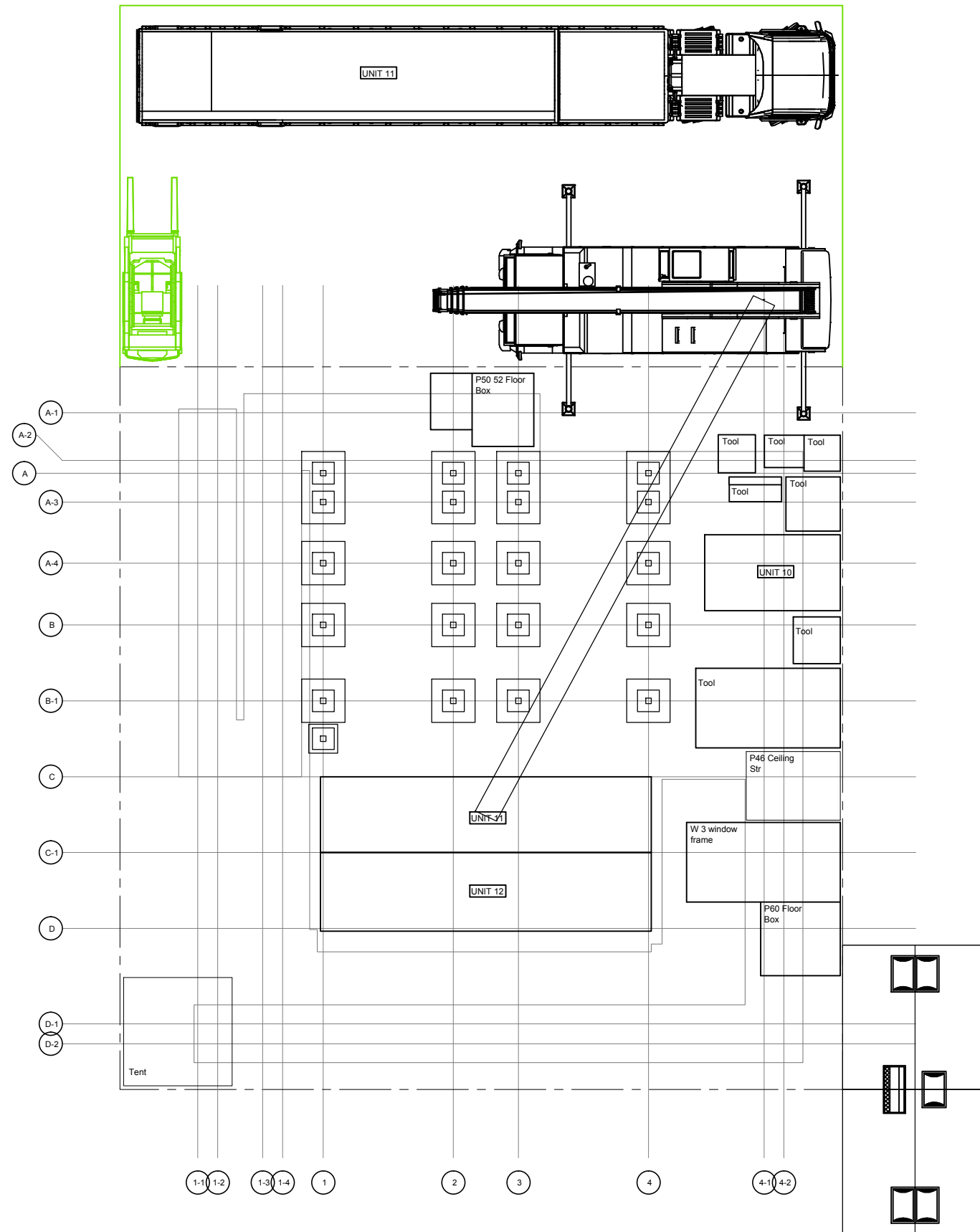
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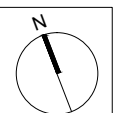
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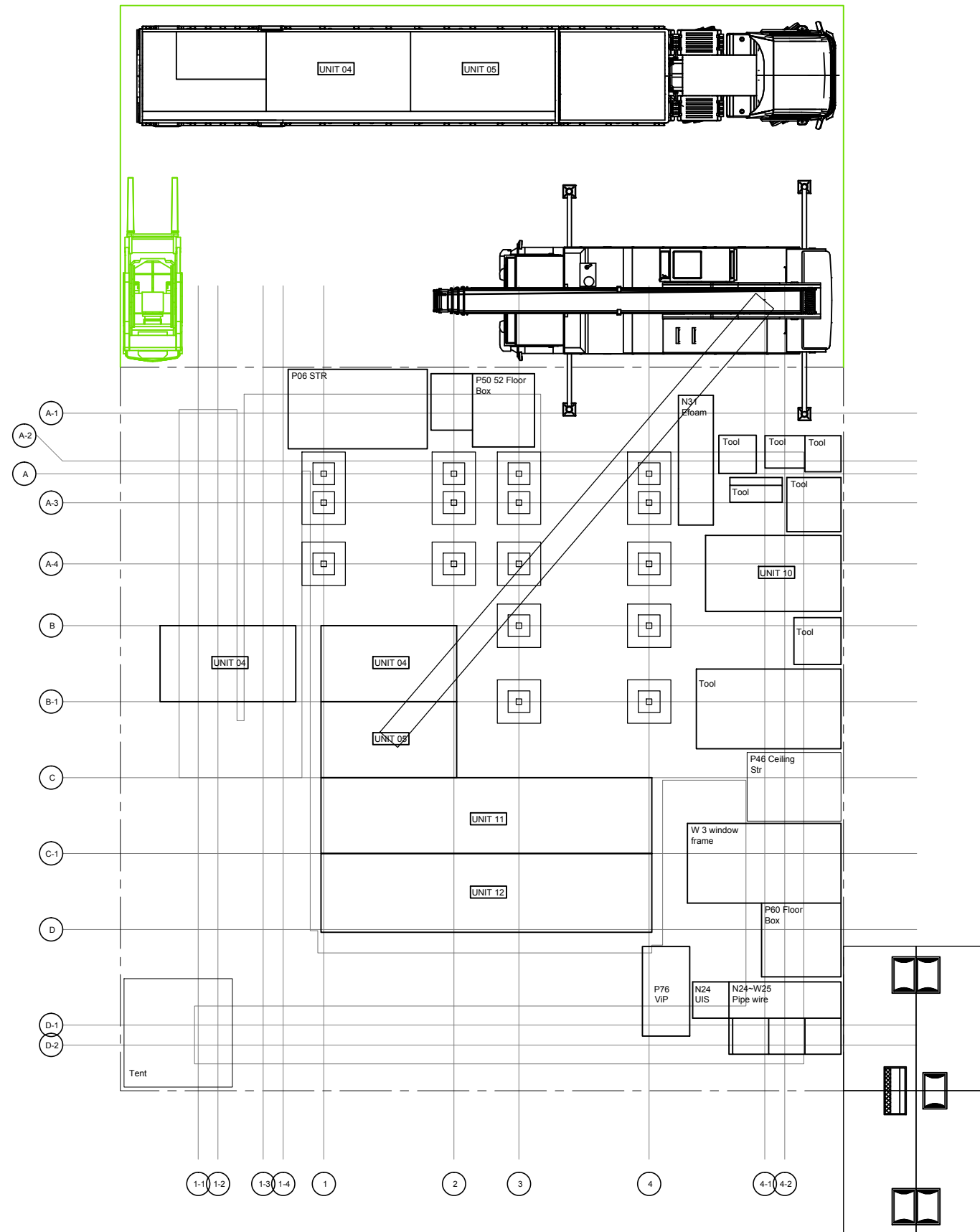
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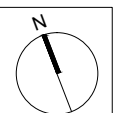
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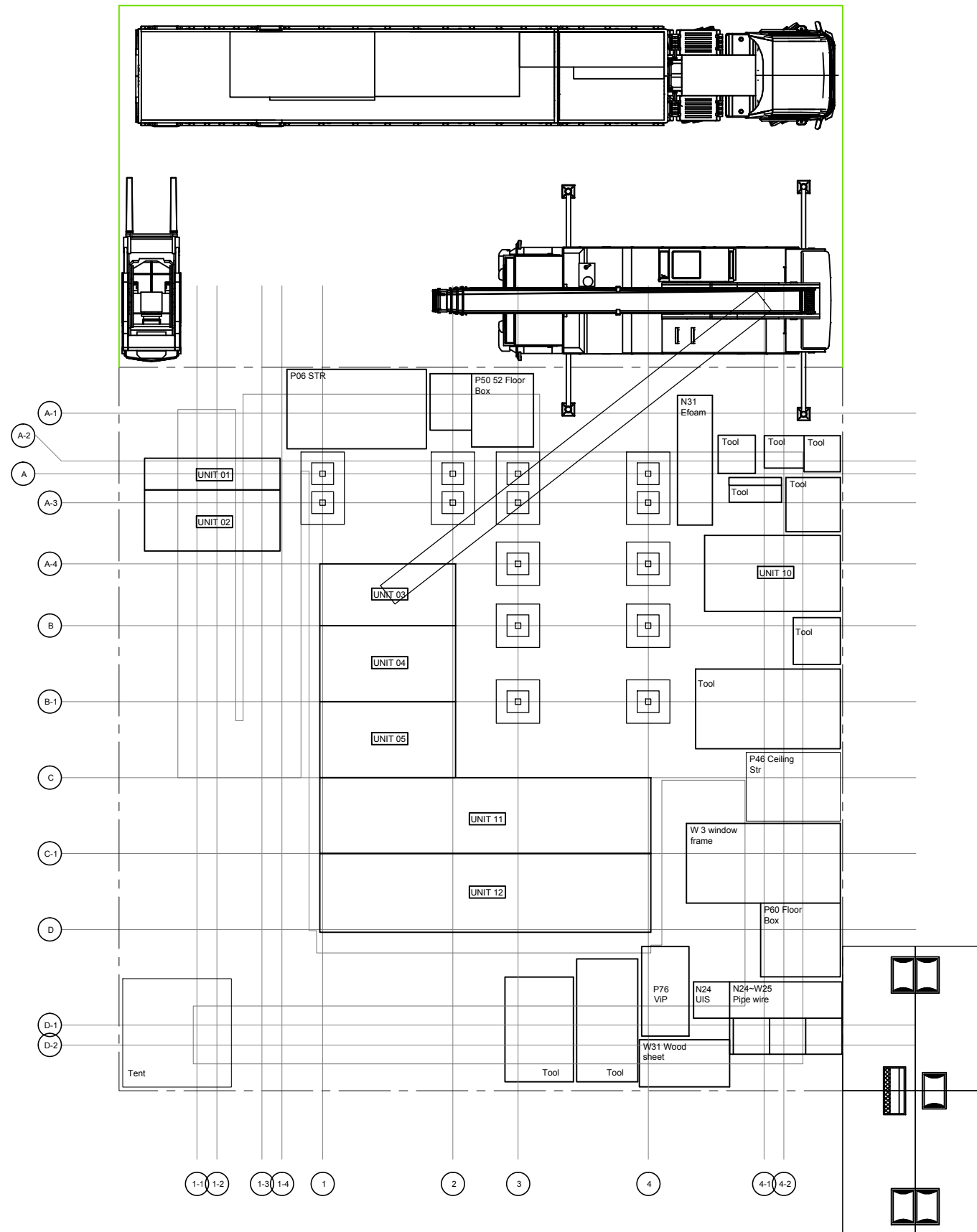
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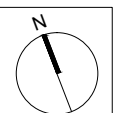
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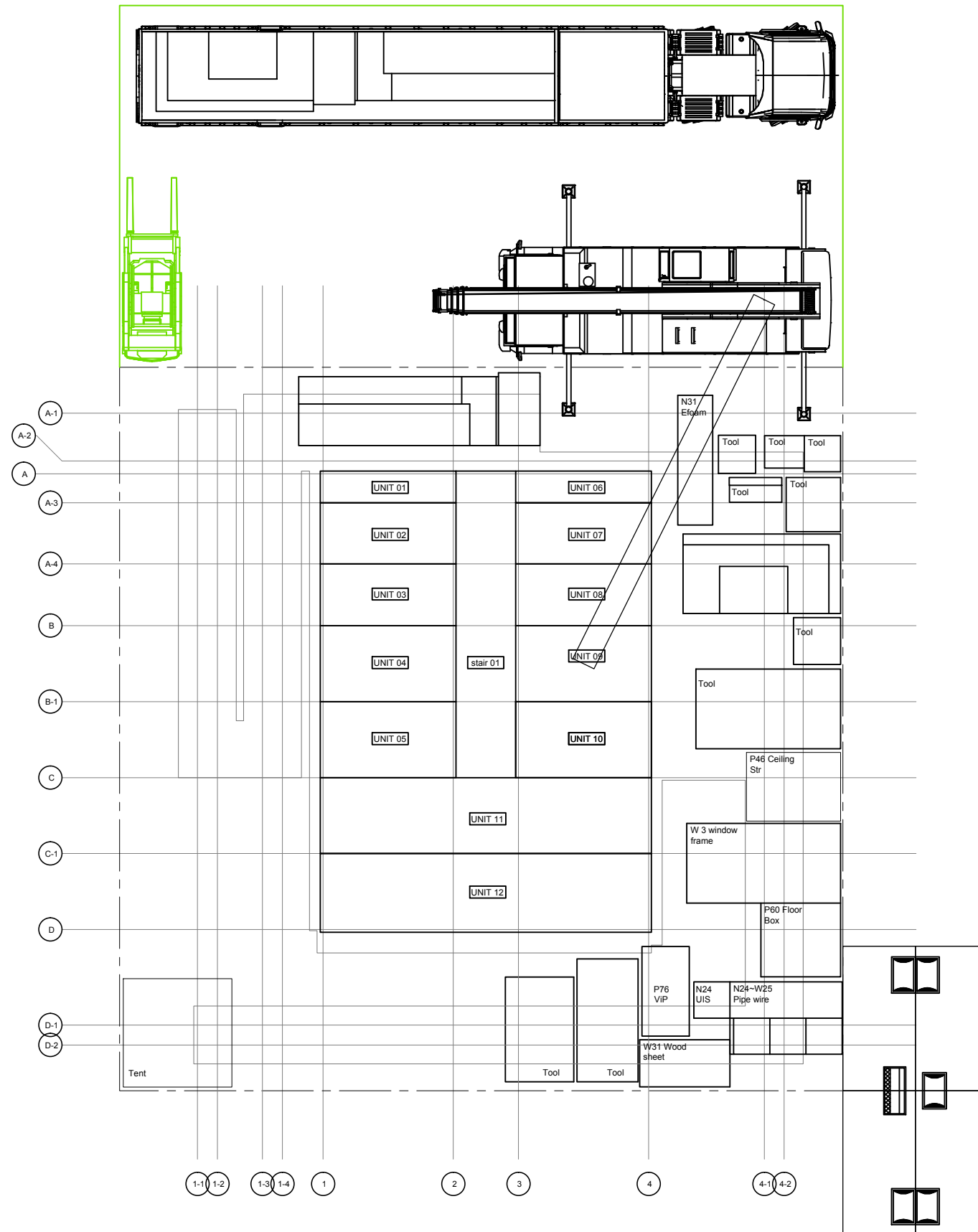
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TRUCK 06

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SO-406

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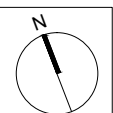
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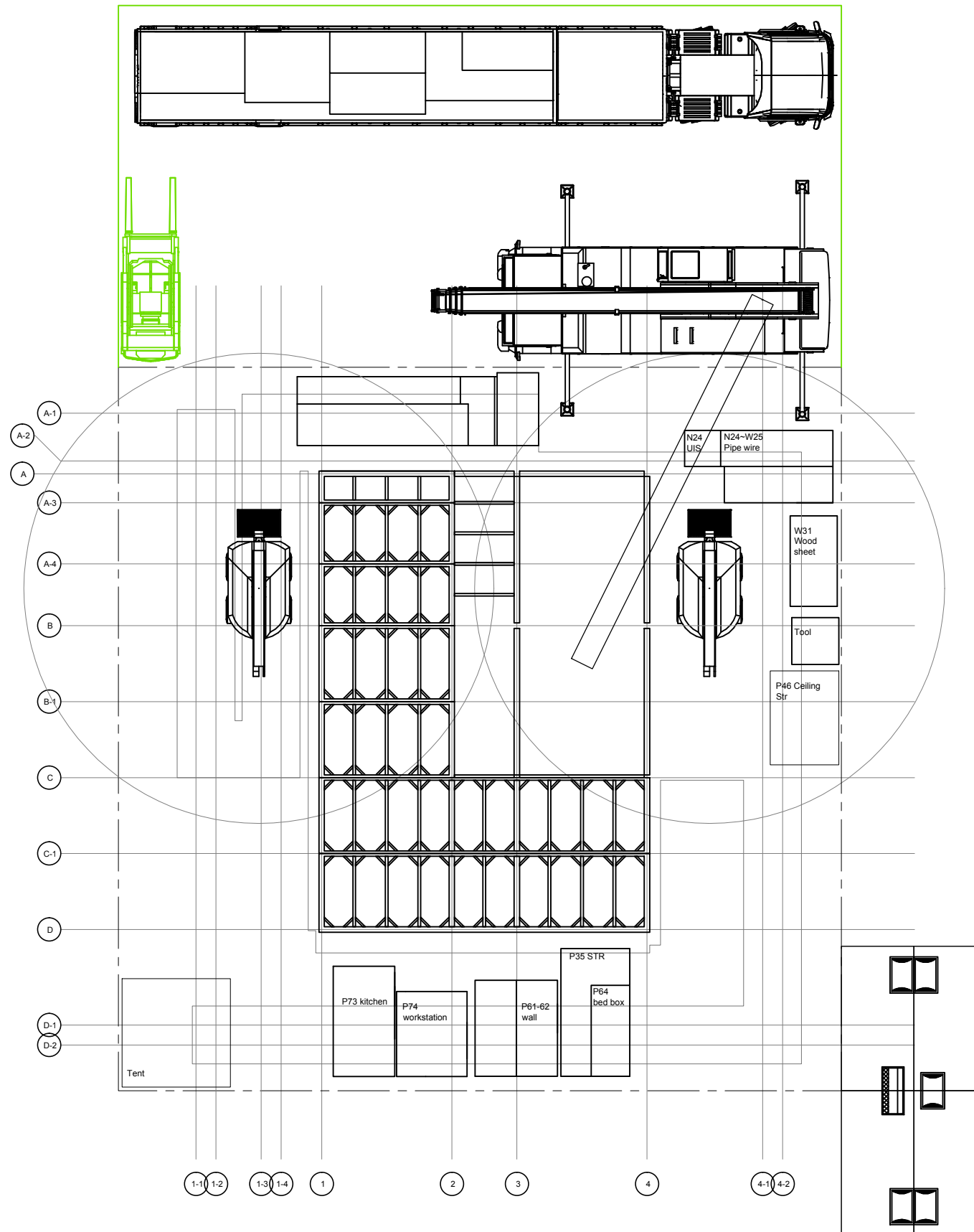
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ASSEMBLY LOT PLAN  
TRUCK 07

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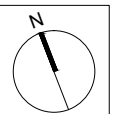
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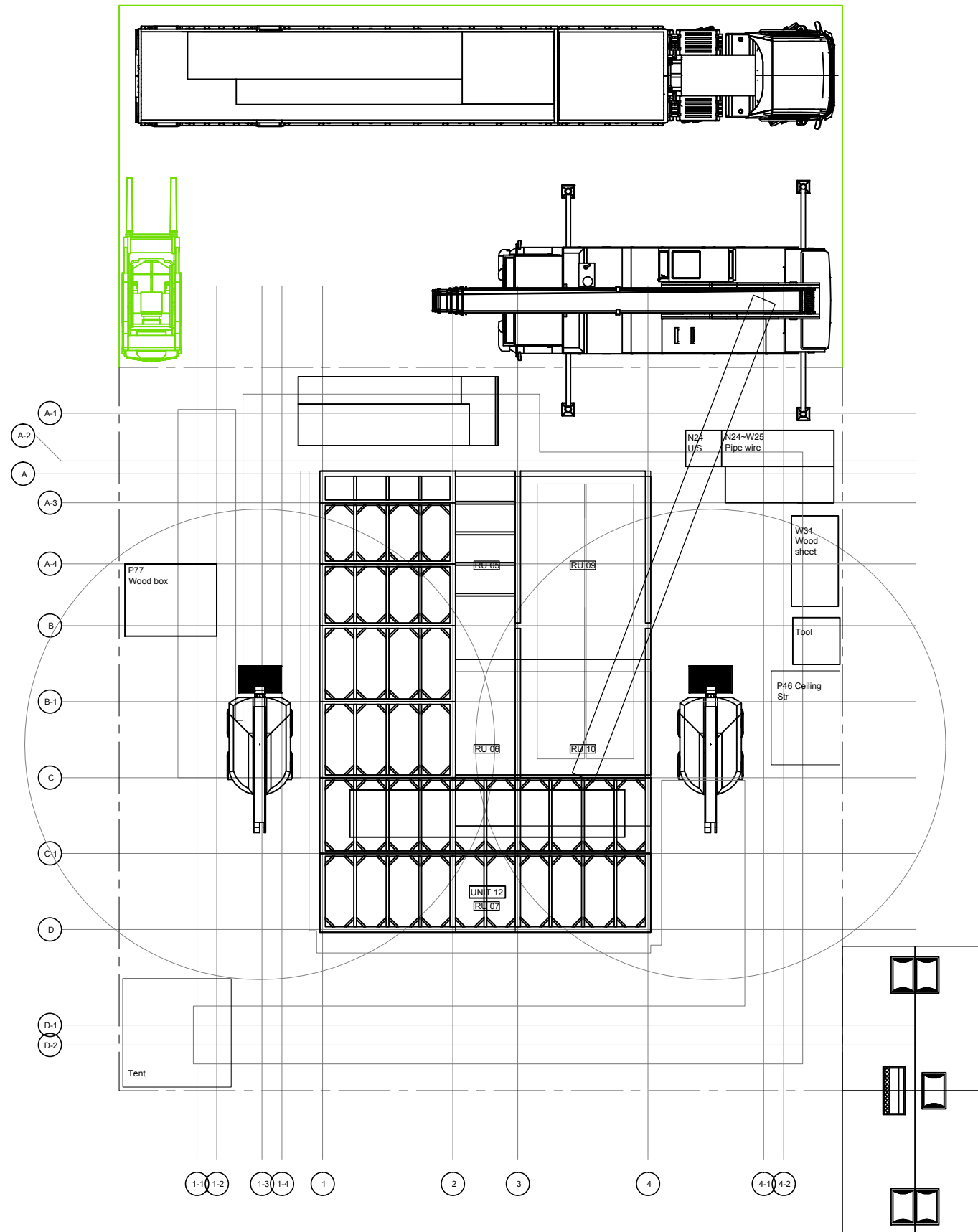
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SO-408

PAGE

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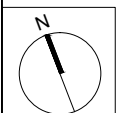
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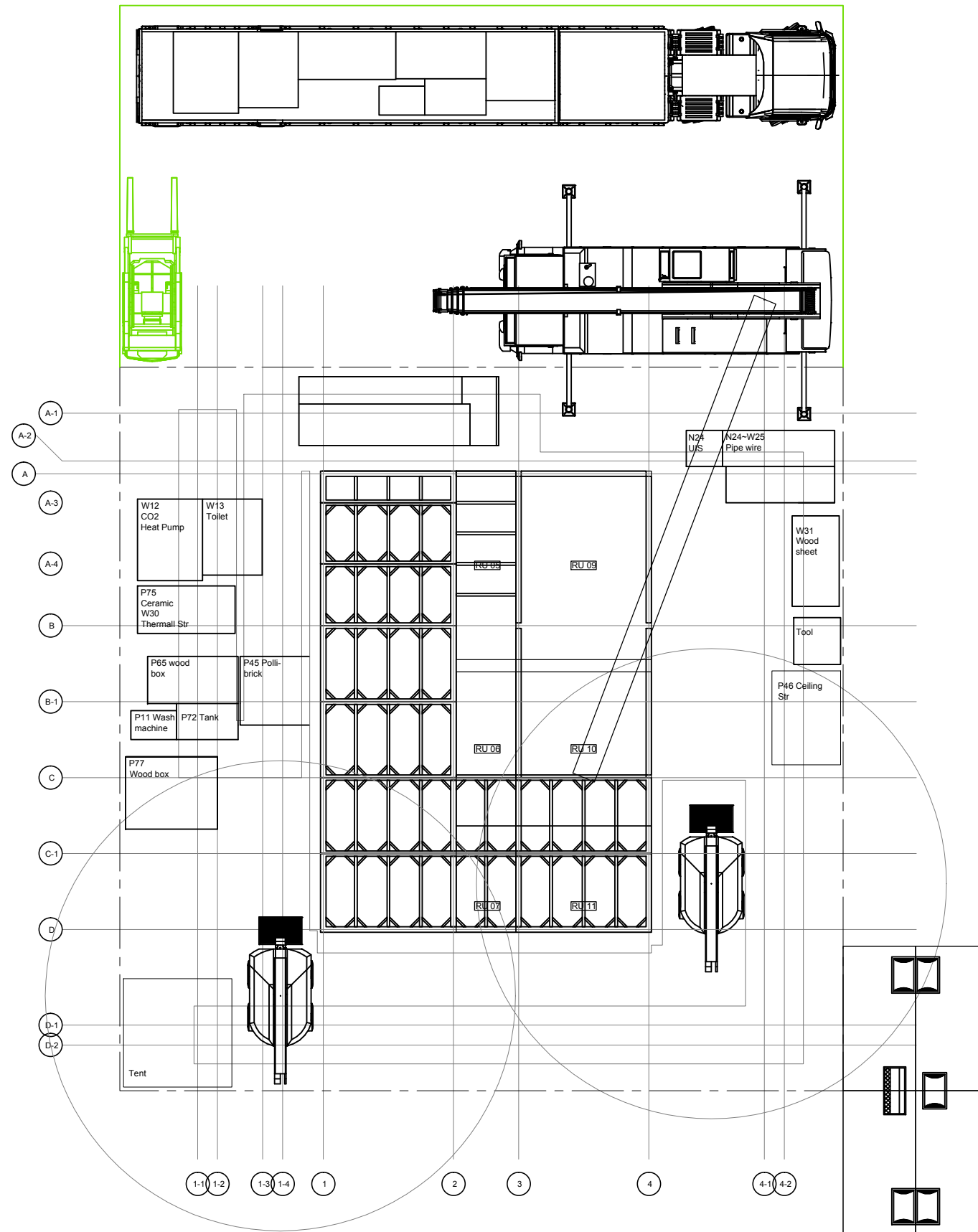


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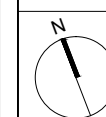
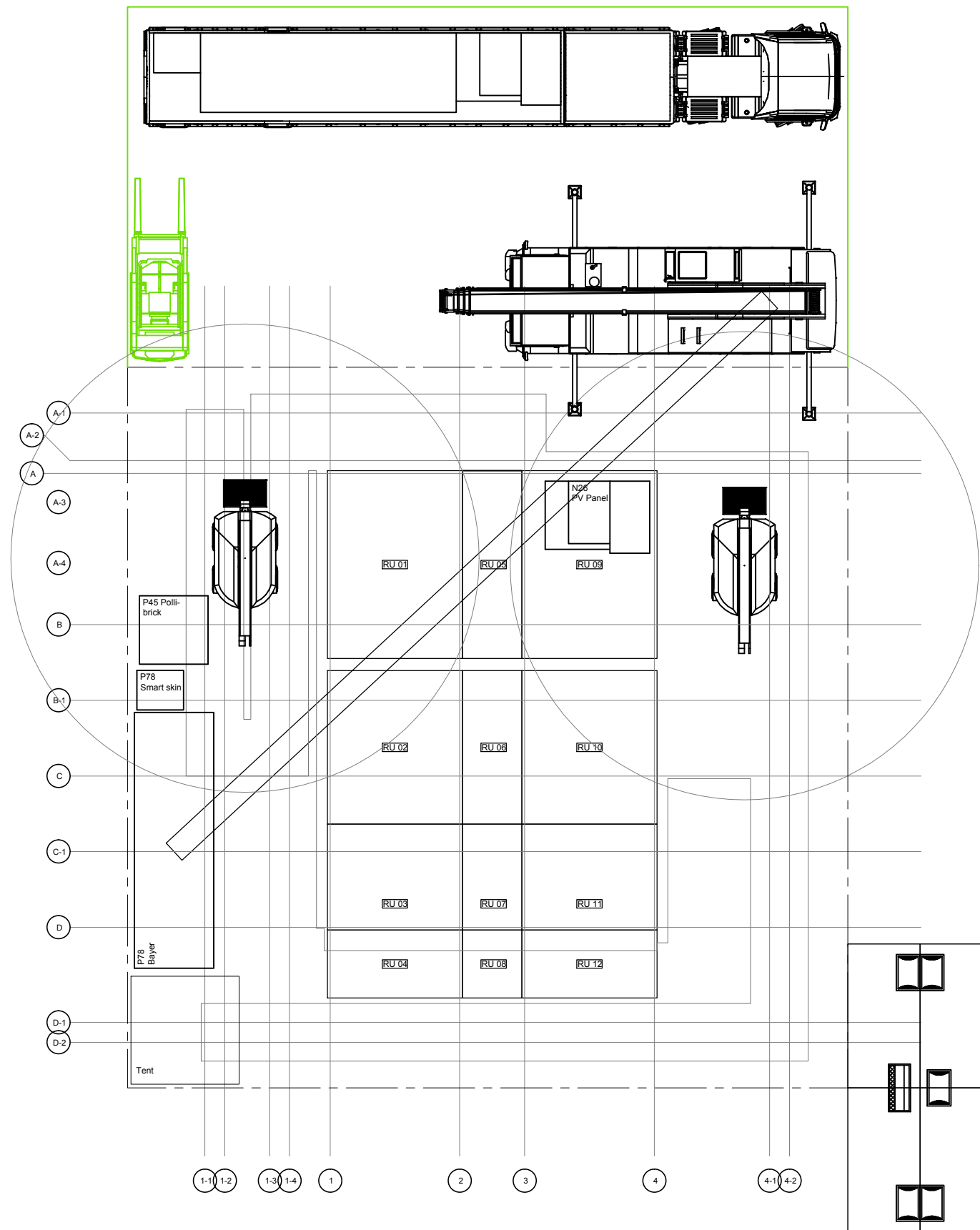
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DWG. Title

ASSEMBLY LOT PLAN  
TRUCK 10

DWG. No. PAGE

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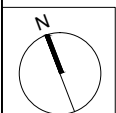
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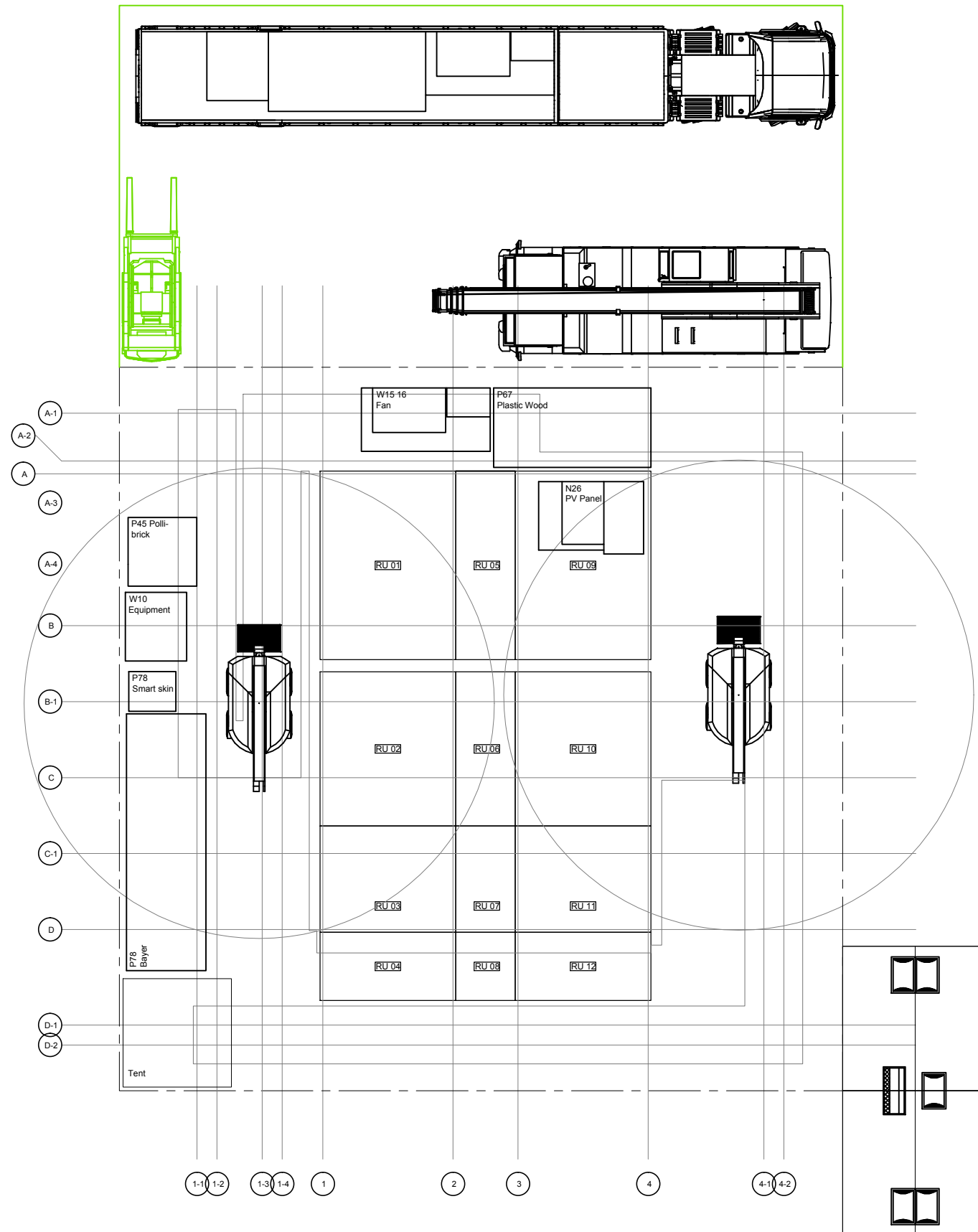
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ASSEMBLY LOT PLAN  
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DWG. No. SO-411 PAGE 279



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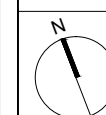
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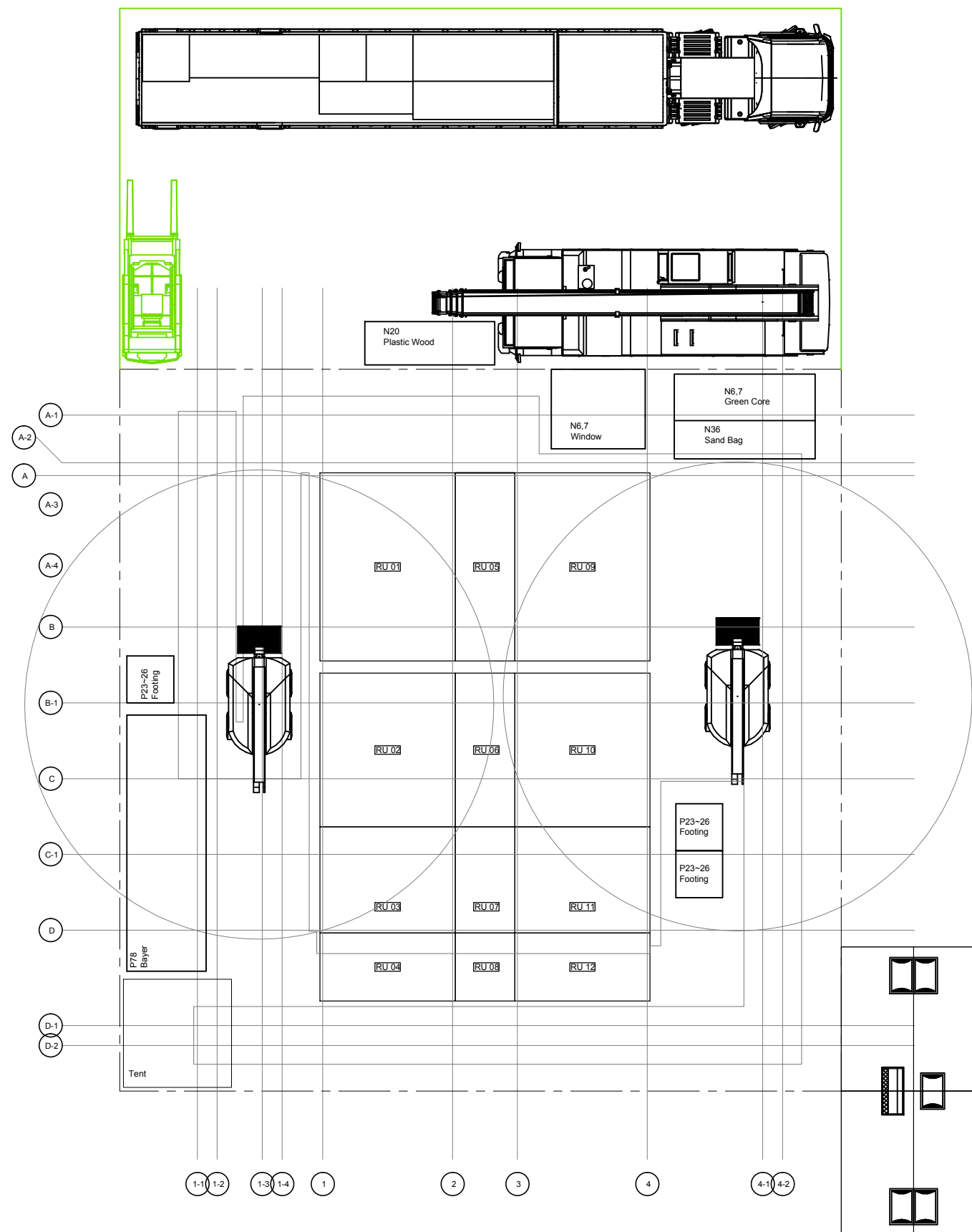
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ASSEMBLY LOT PLAN  
TRUCK 12

DWG. No. SO-412 PAGE 280





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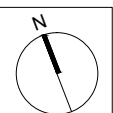
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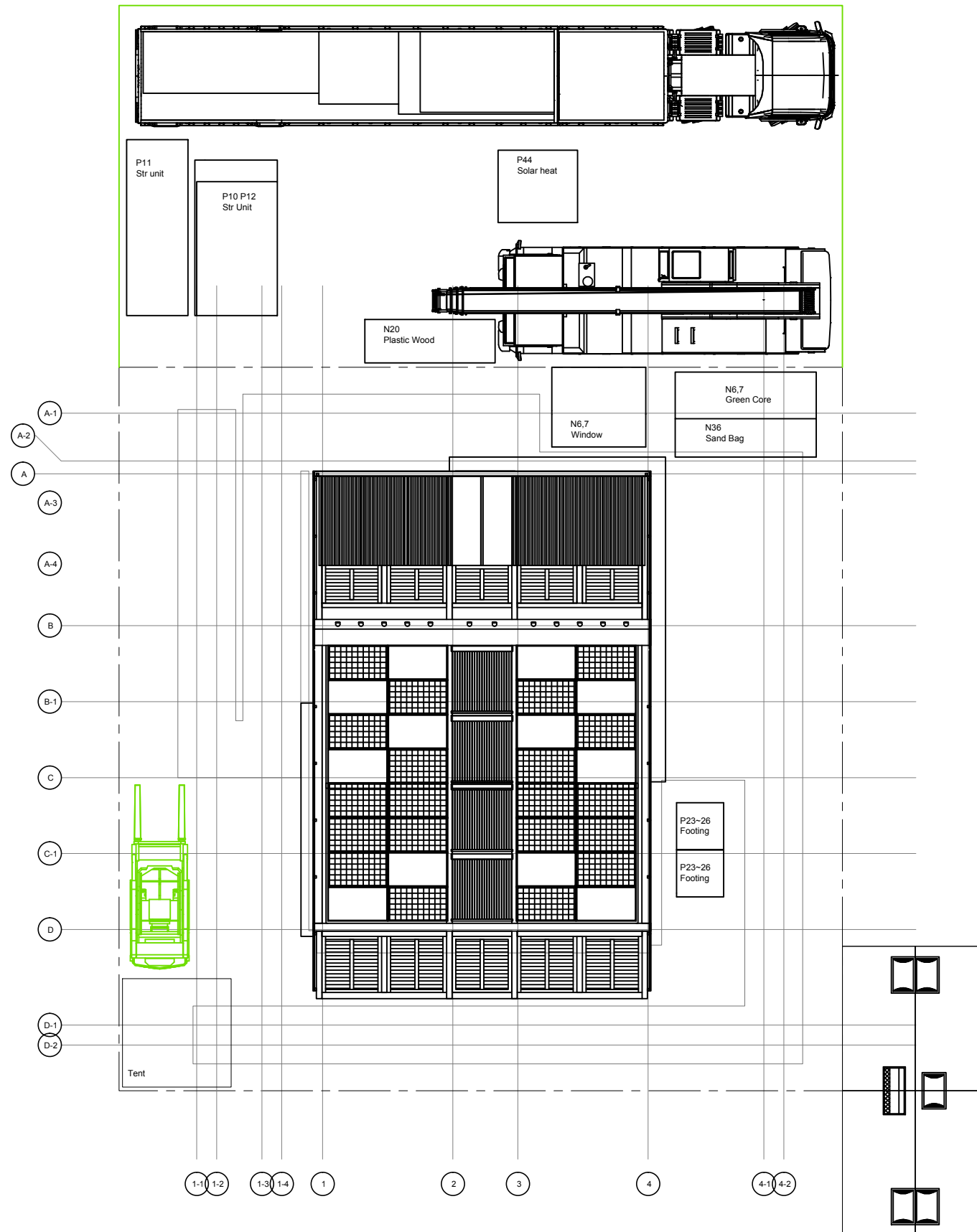
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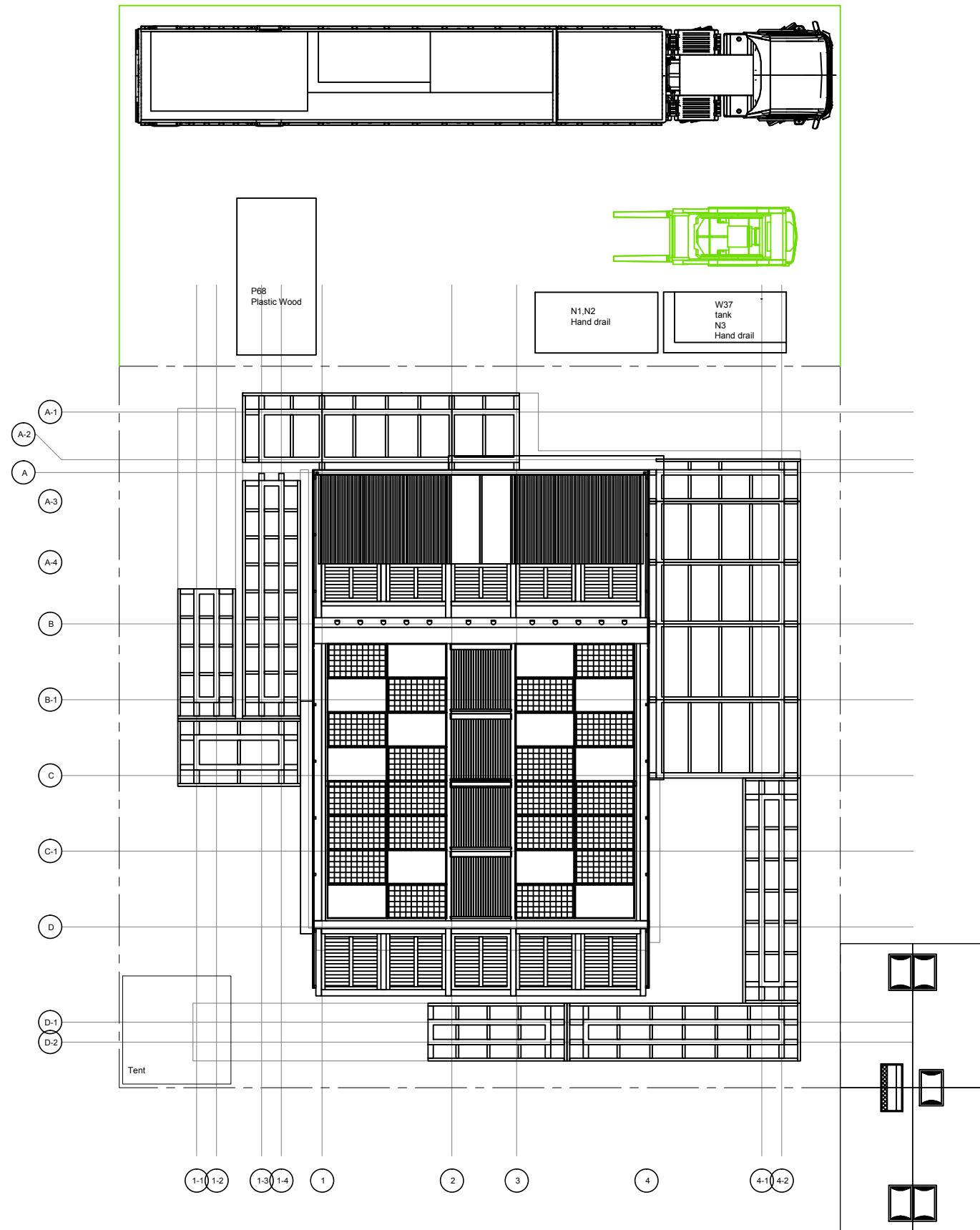
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ASSEMBLY LOT PLAN  
TRUCK 13

DWG. No. SO-413 PAGE 281



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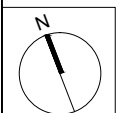
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DWG. Title

ASSEMBLY LOT PLAN  
TRUCK 14

DWG. No. SO-414 PAGE 282

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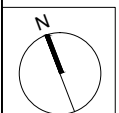
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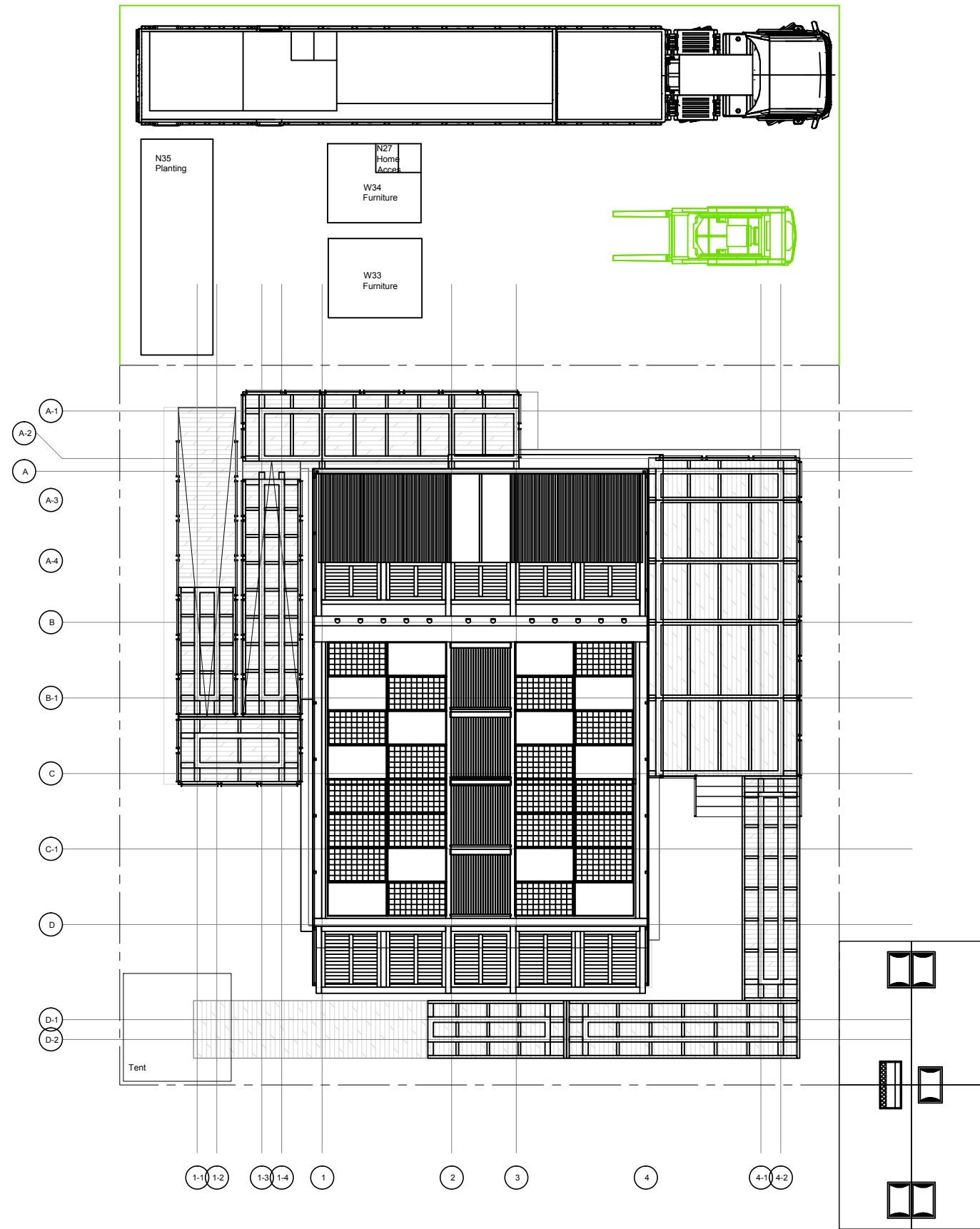


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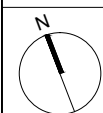
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Team Name: NCTU/UNICODE  
Address: 1001 Ta-Hsueh Road  
Hsinchu City 30010  
Taiwan  
Contact: www.sde.tw



Consultants:

Note:

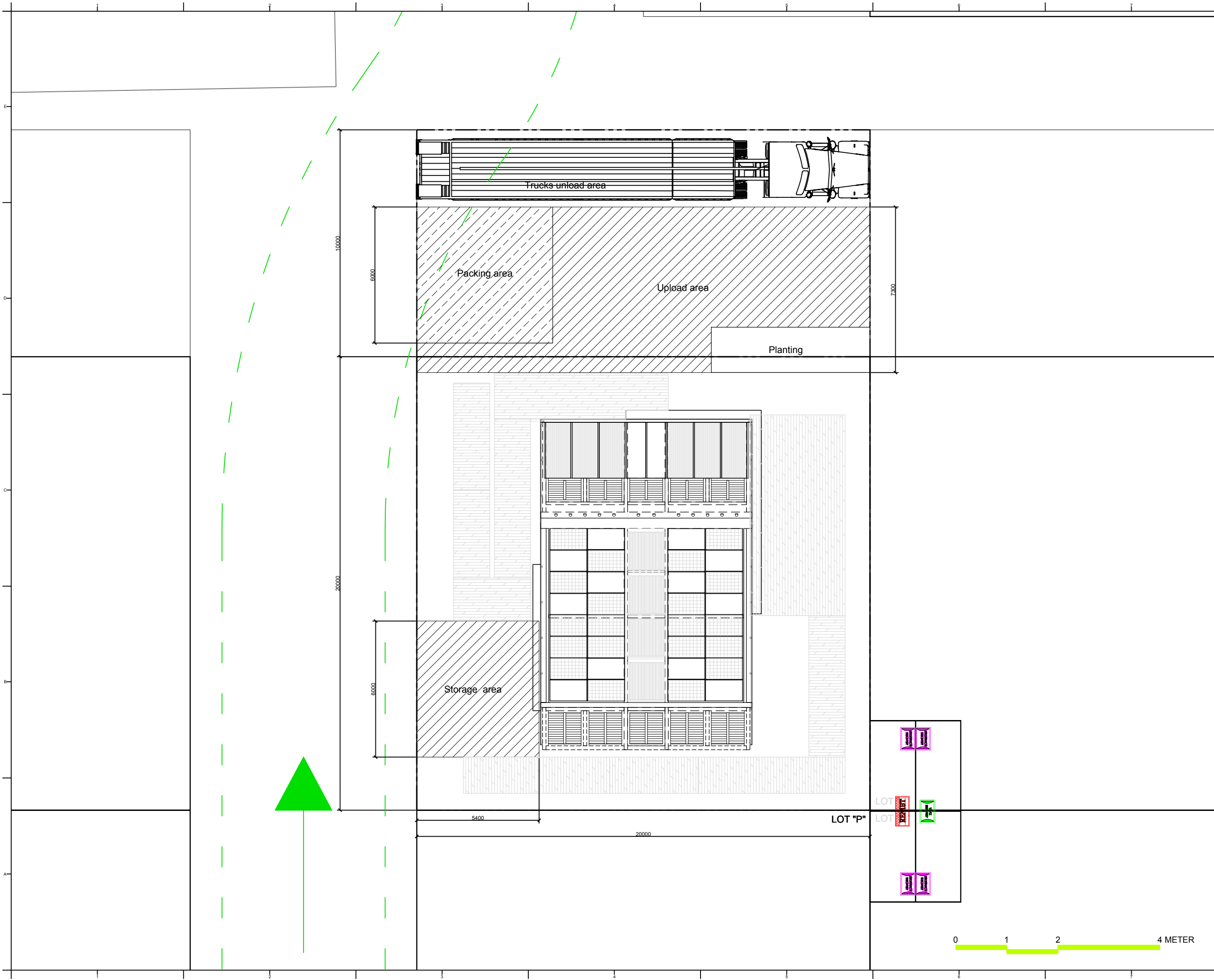


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DN	2013/07/01	DDc Submission
ST	2013/11/01	DD Submission
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ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

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DWG. Title  
DISASSEMBLY LOTS PLAN  
TRUCK 01

DWG. No. **SO-501**      PAGE **284**



Project:



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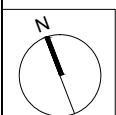
Address: 1001 Ta-Hsueh Road  
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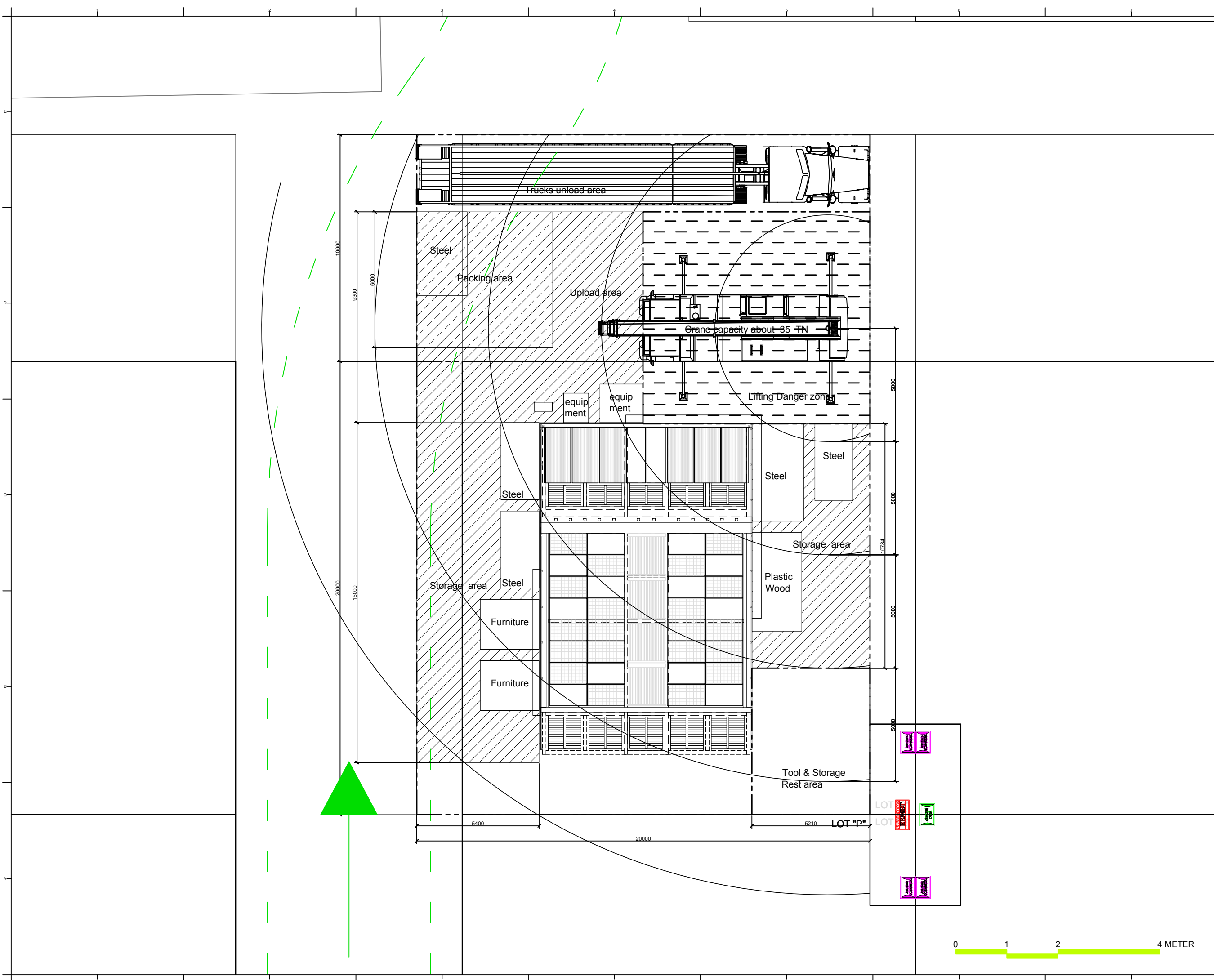
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DWG. Title

DISASSEMBLY LOTS PLAN  
TRUCK 02 & 03

DWG. No. PAGE

SO-502 285



Project:



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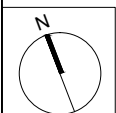
Address: 1001 Ta-Hsueh Road  
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Note:



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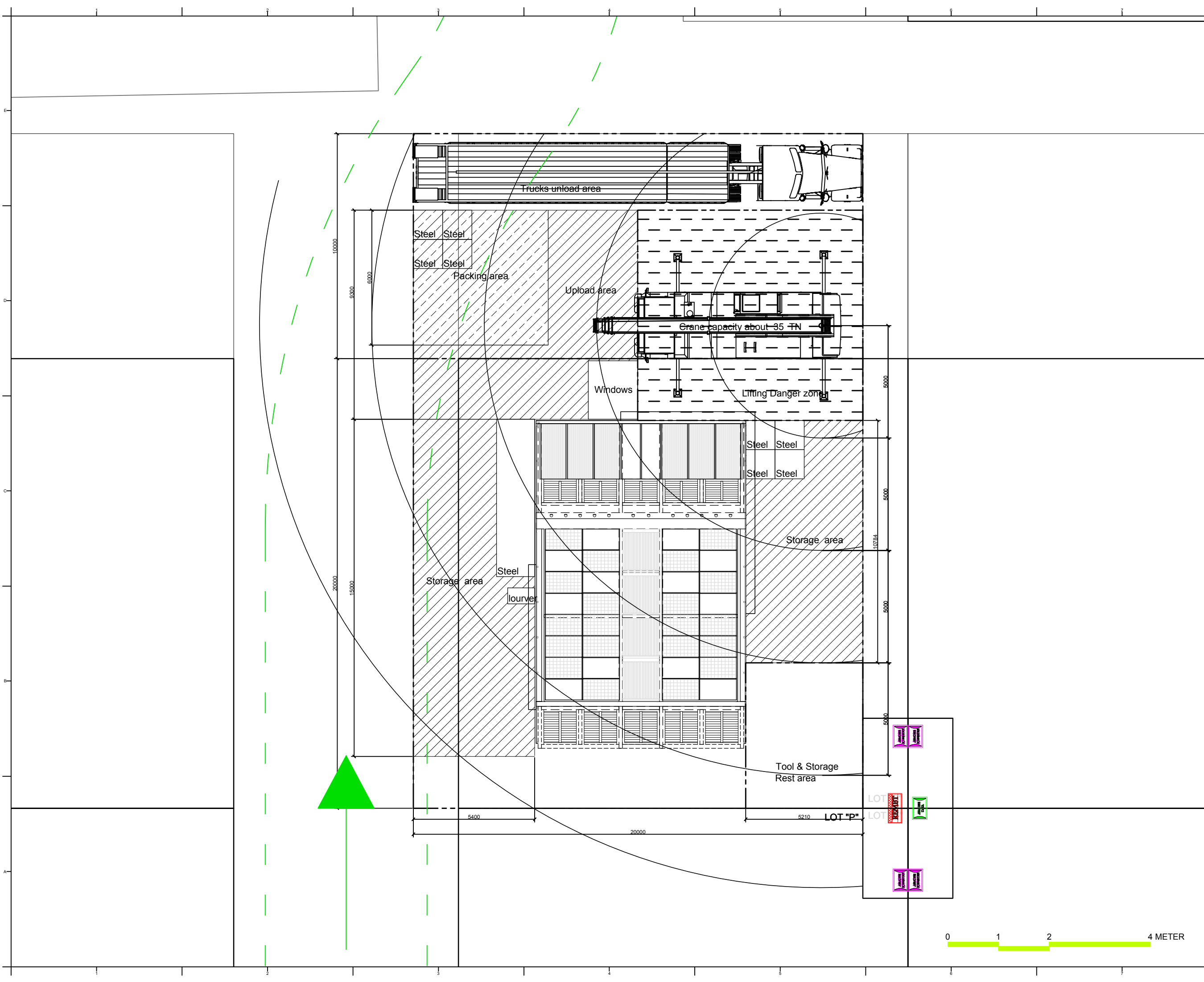
Unit mm

DWG. Title

DISASSEMBLY LOTS PLAN  
TRUCK 04

DWG. No. PAGE

SO-503 286



Project:



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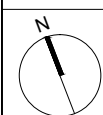
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Note:



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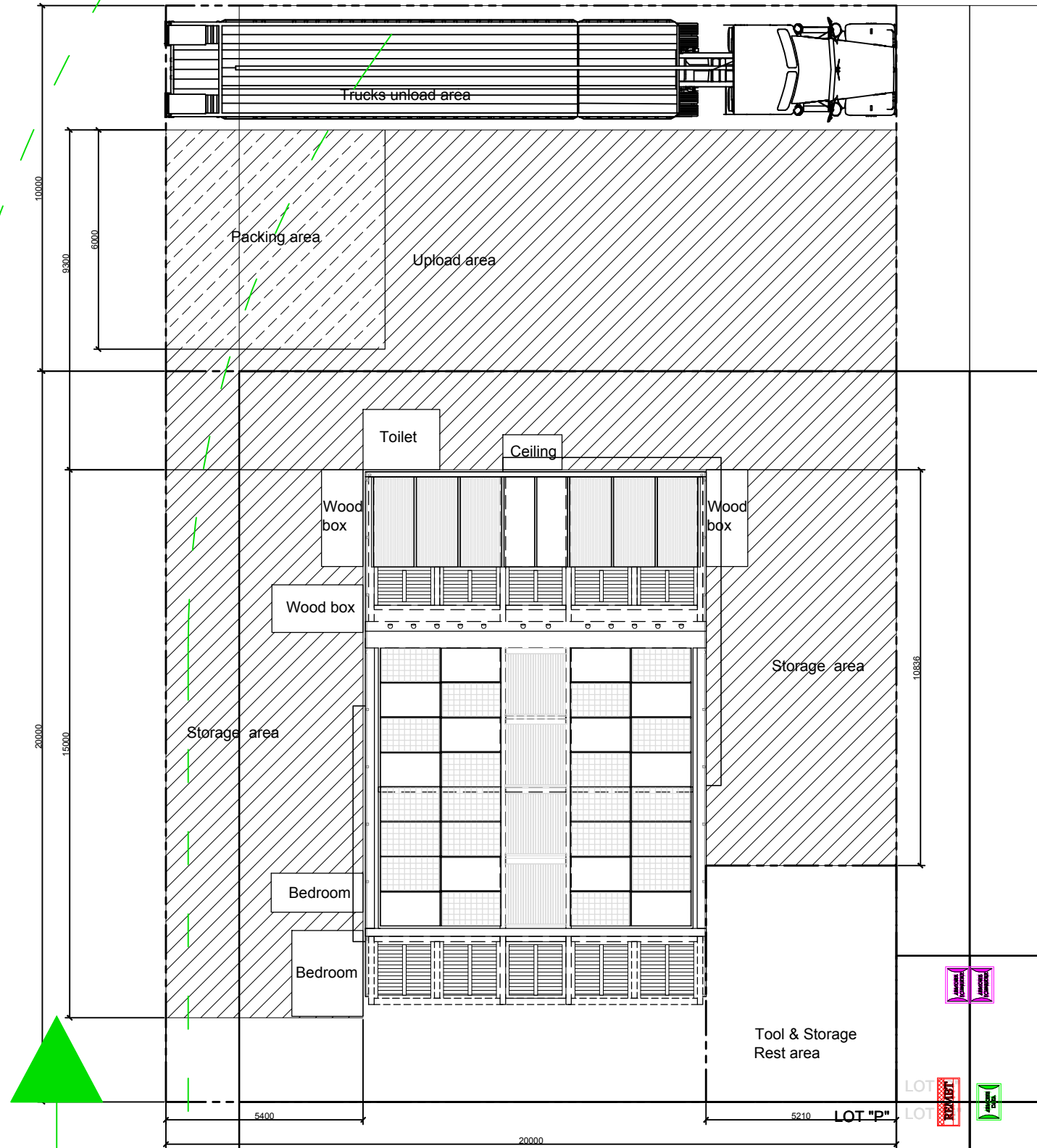
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DWG. Title

DISASSEMBLY LOTS PLAN  
TRUCK 05

DWG. No. PAGE

SO-504 287



Project:



Institution:



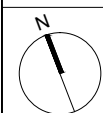
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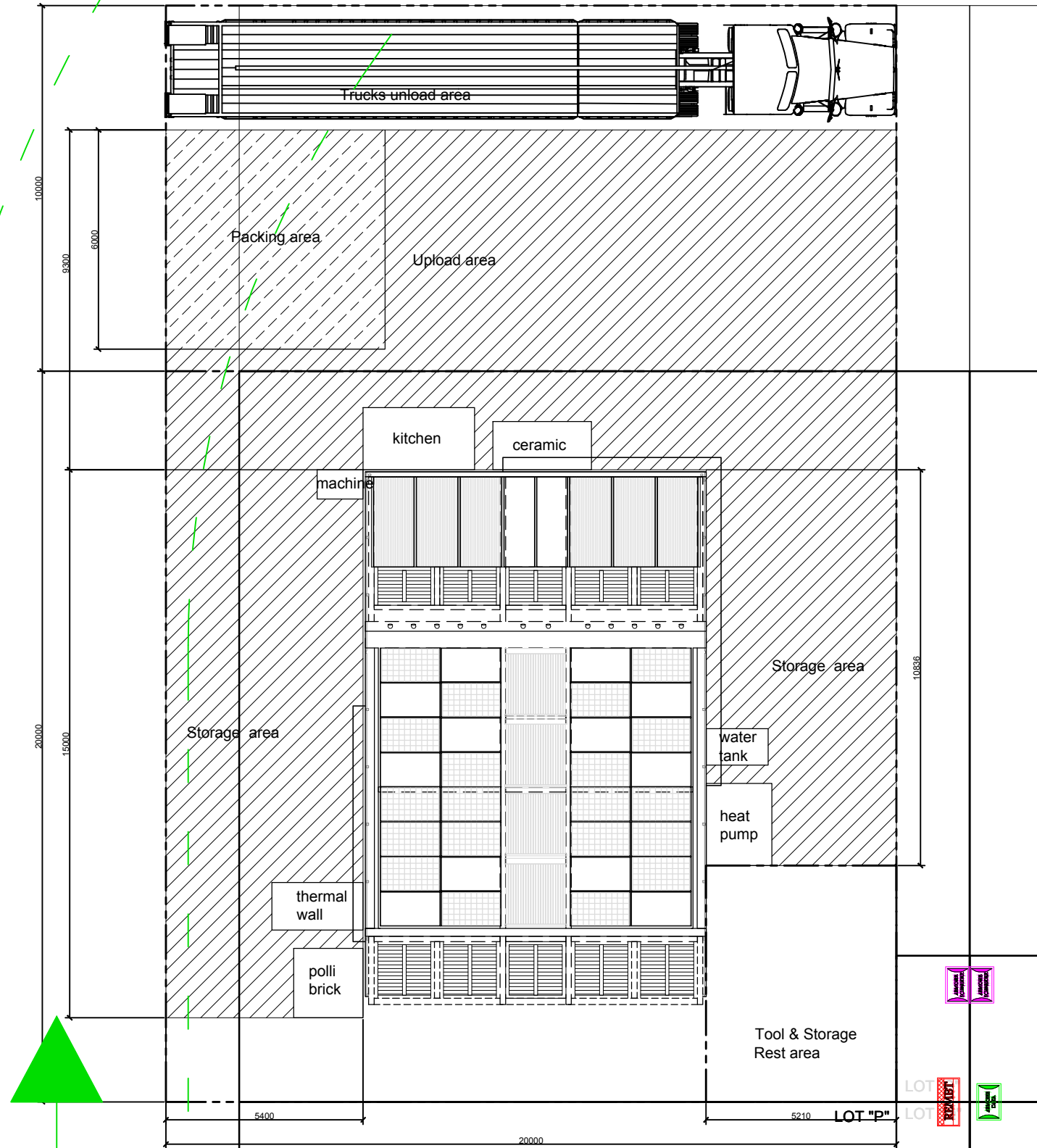


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DWG. Title  
**DISASSEMBLY LOTS PLAN  
TRUCK 06**

DWG. No. **SO-505**      PAGE **288**





Project:



Institution:



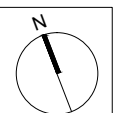
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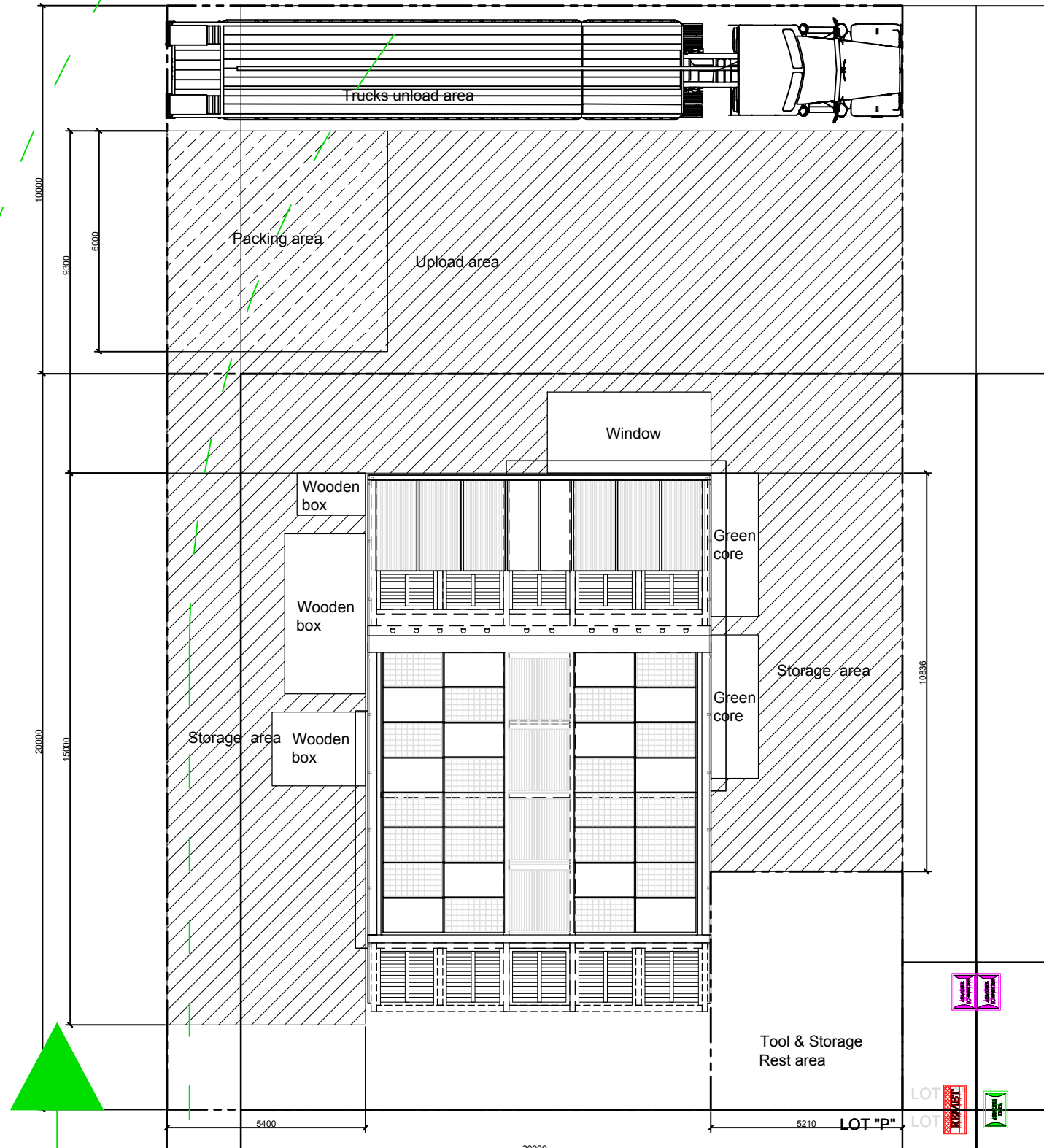


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DWG. Title  
**DISASSEMBLY LOTS PLAN  
TRUCK 07**

DWG. No. **SO-506**      PAGE **289**



Project:



Institution:



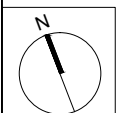
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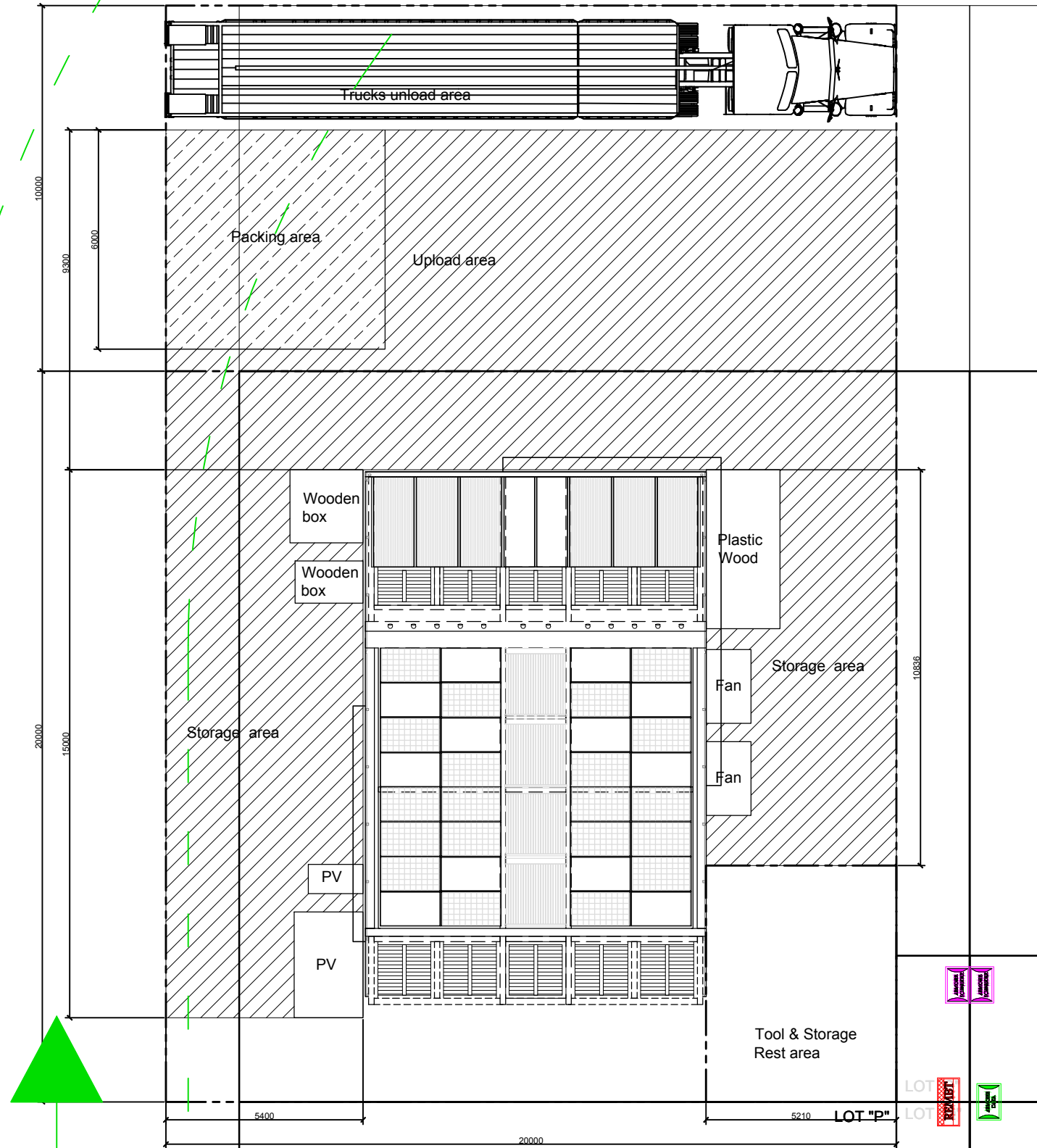


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ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

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DWG. Title  
**DISASSEMBLY LOTS PLAN  
TRUCK 08**

DWG. No. **SO-507**      PAGE **290**



Project:



Institution:



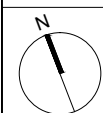
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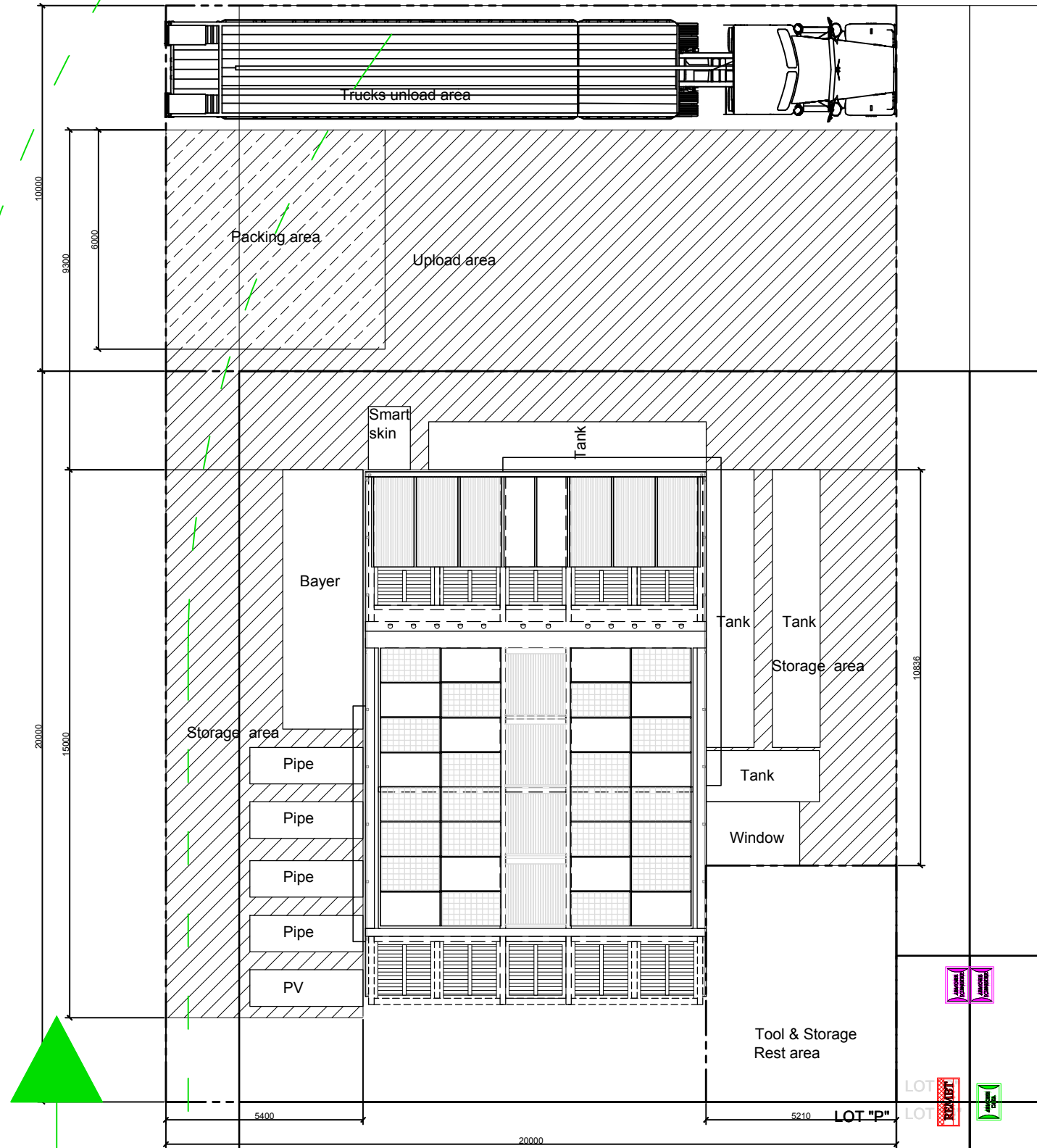


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DWG. Title  
**DISASSEMBLY LOTS PLAN  
TRUCK 09 &10**

DWG. No. **SO-508**      PAGE **291**



Project:



Institution:



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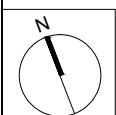
Address: 1001 Ta-Hsueh Road  
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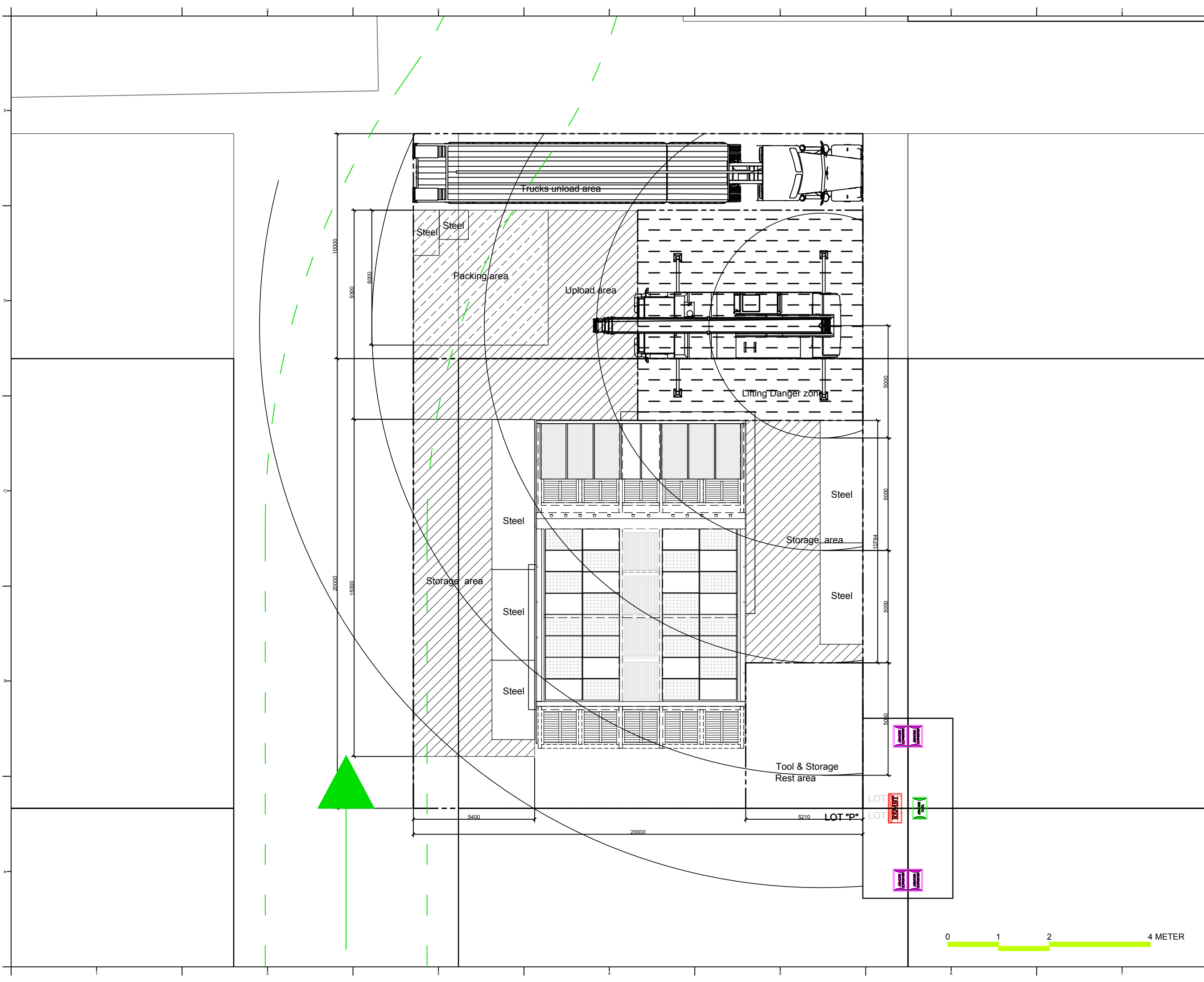
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DWG. Title

DISASSEMBLY LOTS PLAN  
TRUCK 11

DWG. No. PAGE

SO-509 292



Project:



Institution:



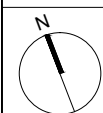
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Address: 1001 Ta-Hsueh Road  
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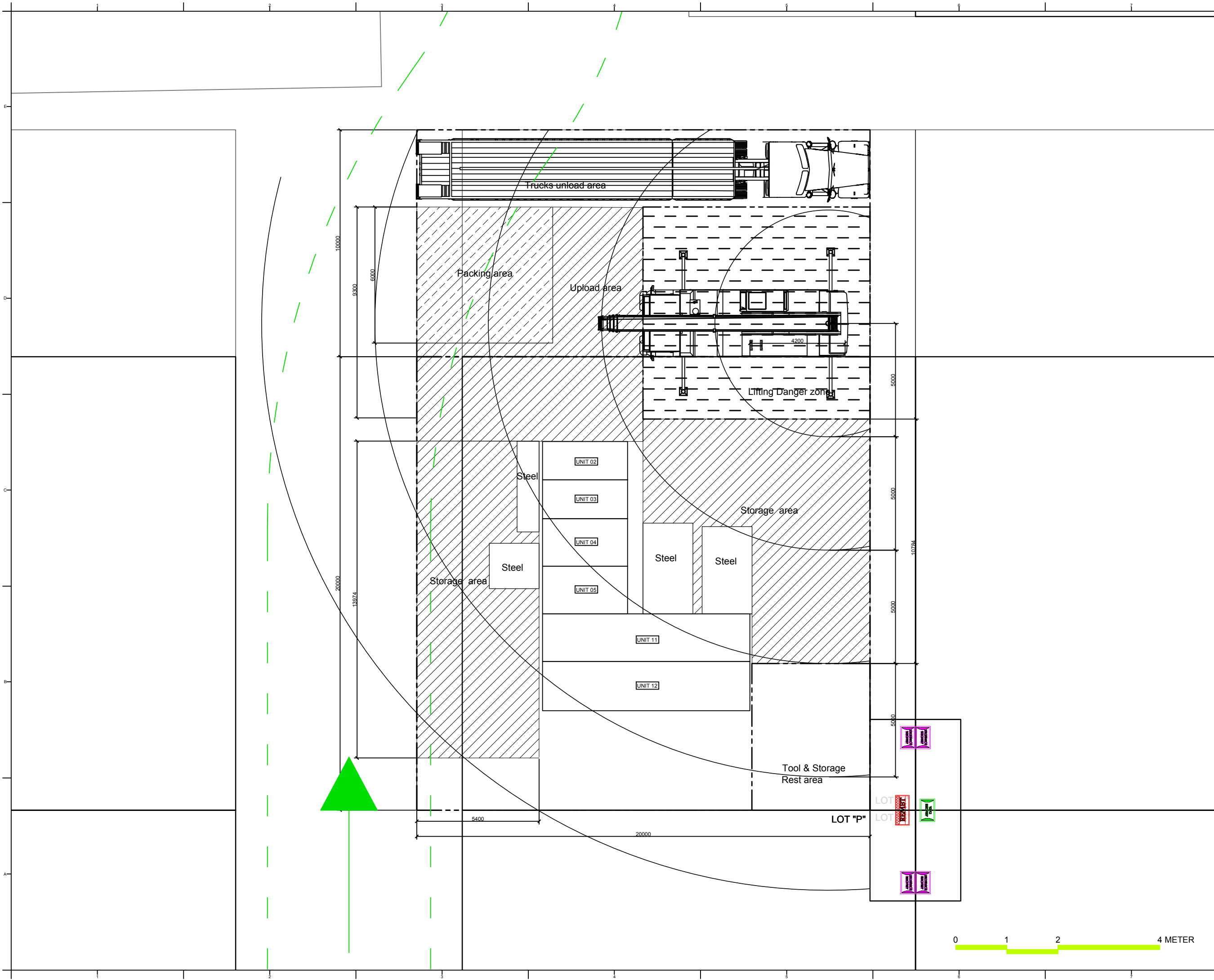


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DWG. Title  
**DISASSEMBLY LOTS PLAN  
TRUCK 12**

DWG. No. **SO-510**      PAGE **293**



Project:



Institution:



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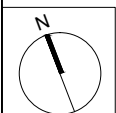
Address: 1001 Ta-Hsueh Road  
Hsinchu City 30010  
Taiwan

Contact: www.sde.tw



Consultants:

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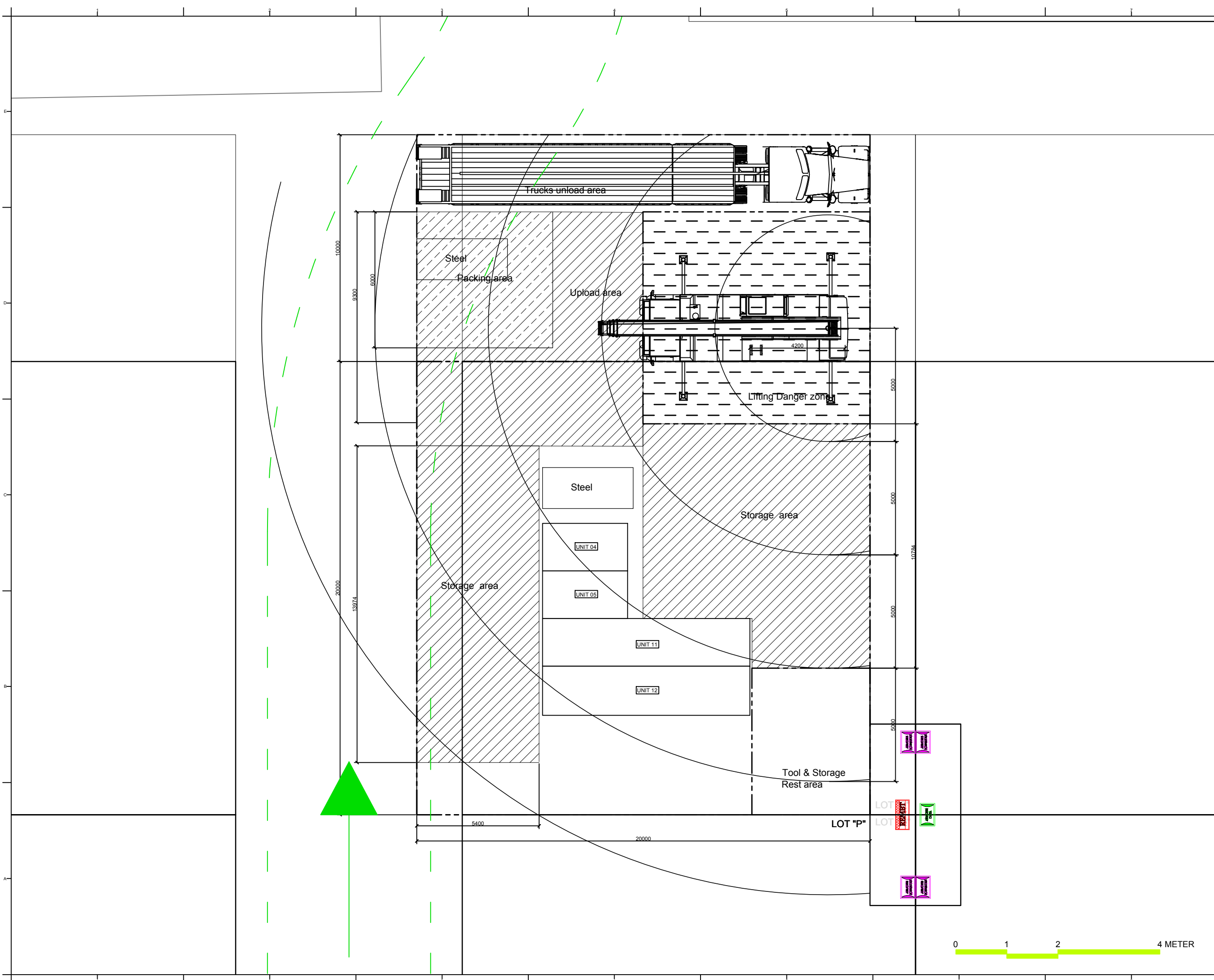
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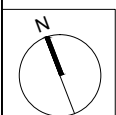
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DISASSEMBLY LOTS PLAN  
TRUCK 13

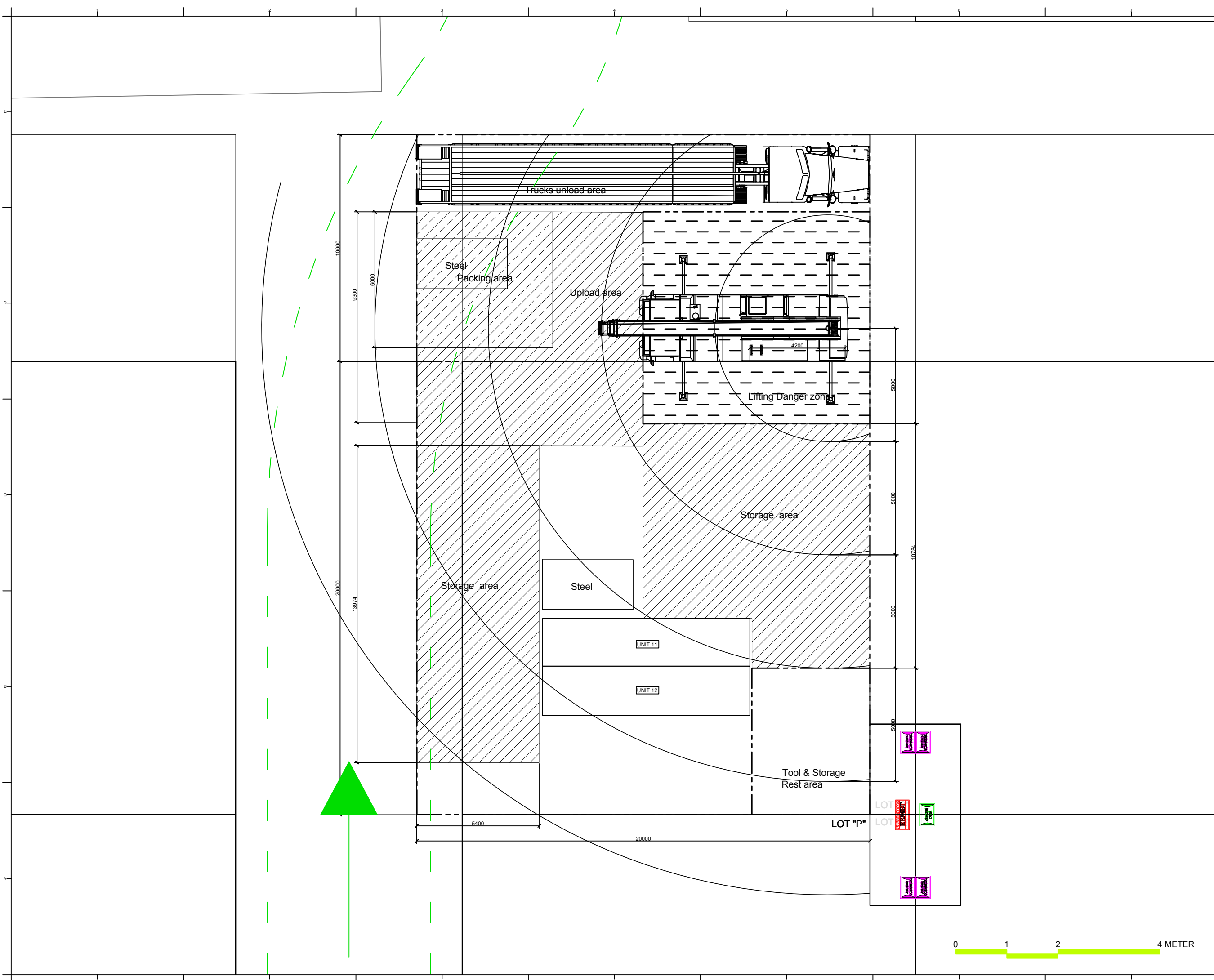
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SO-511 294





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Institution:



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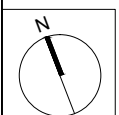
Address: 1001 Ta-Hsueh Road  
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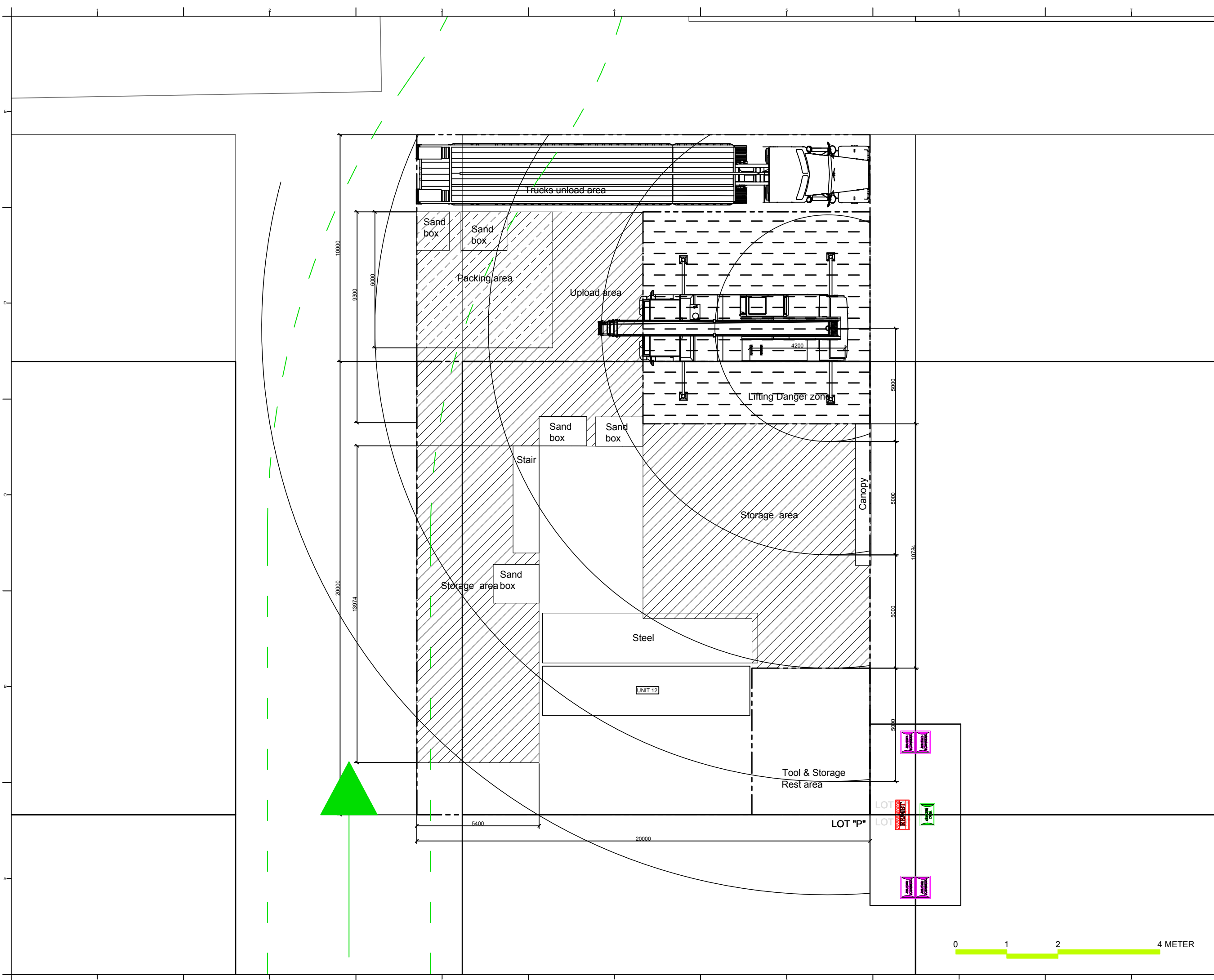
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DWG. Title

DISASSEMBLY LOTS PLAN  
TRUCK 15 & 16

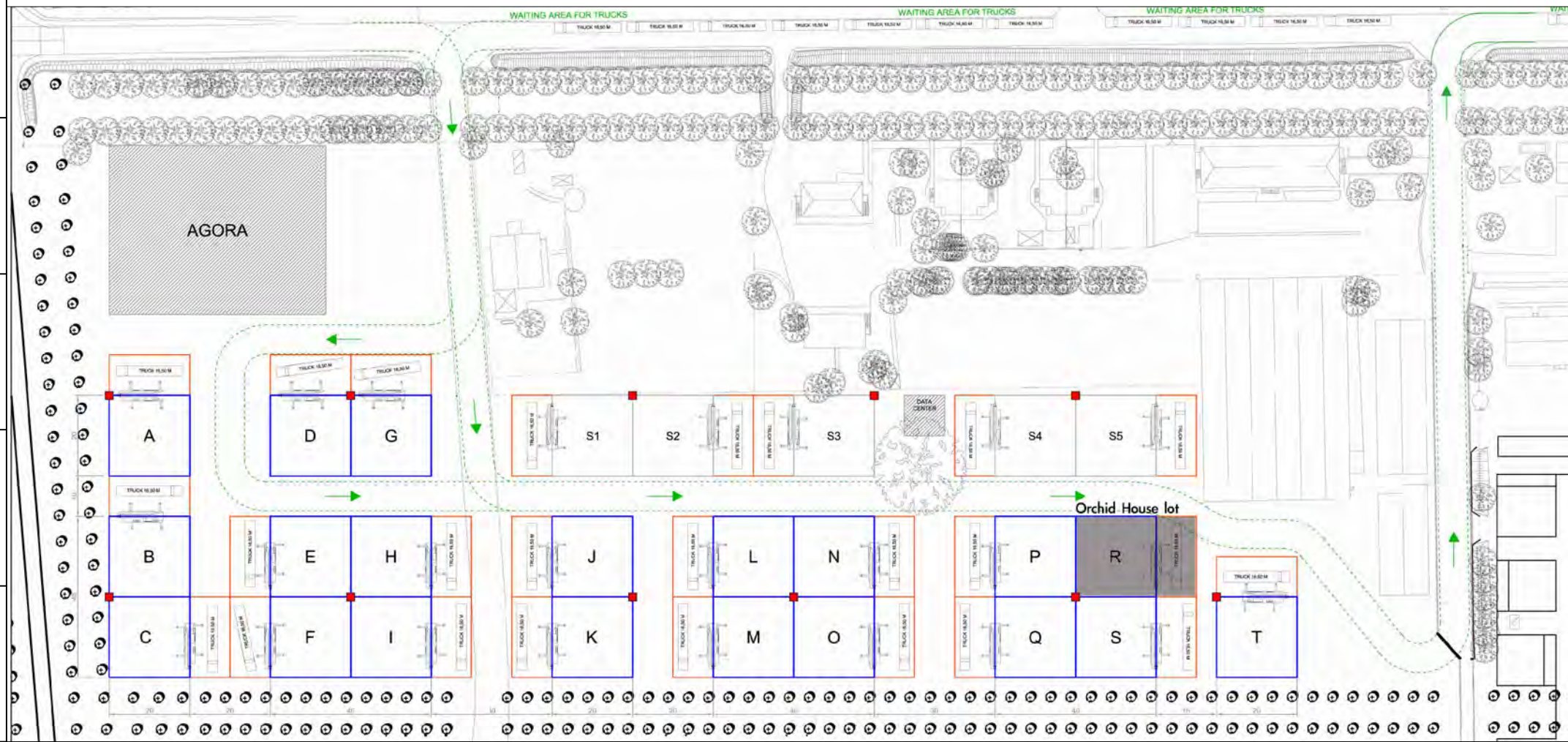
DWG. No. PAGE

SO-513 296





# VEHICLE ACCESS TO LOT



# SITE DESCRIPTION

Lot number: R  
 Lot size: 20 x 20 m (400m<sup>2</sup>)  
 Elements around the lot:  
 -Our lot situated near the main path export  
 -The track route overwraps with our loading/unloading area



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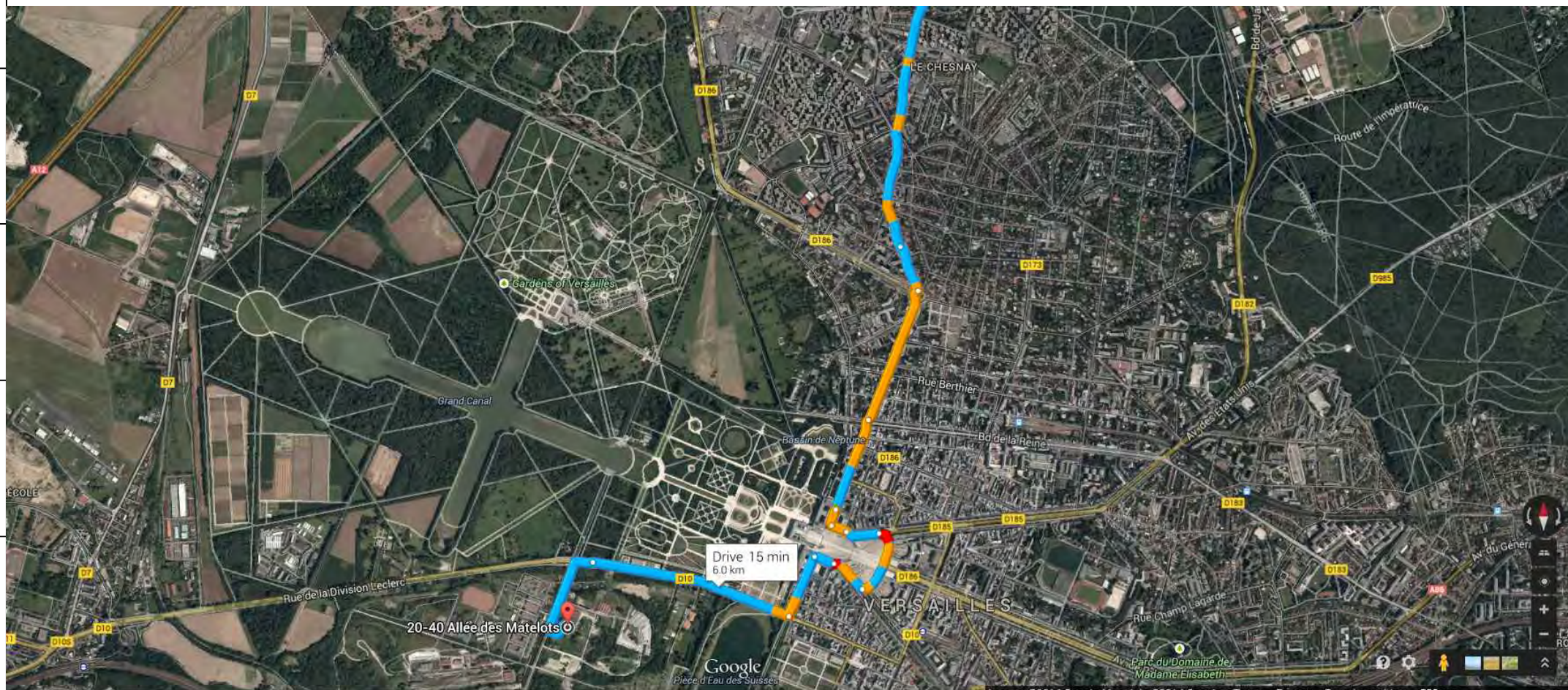
Team Name: NCTU/UNICODE  
 Address: 1001 Ta-Hsueh Road  
 Hsinchu City 30010  
 Taiwan  
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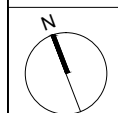
# ROUTE TO THE NEAREST HOSPITAL



# A: La Cite du Soleil

- Head south on "Allée des Matelots"
- Turn right to stay on "Allée des Matelots"
- Turn right onto "D10"
- Turn left onto "Rue de l'Indépendance Américaine"
- Continue onto "Rue Saint-Julien"
- Turn left onto "Rue des Récollets"
- Turn right onto "Av. Neveu Sud"
- Slight left onto "Av. Rockefeller"
- Continue onto "Rue Hoche/D186"
- Continue onto "Rue Carnot"
- Keep right to stay on "Rue Carnot"
- Slight right onto "Rue des Réservoirs"
- At the roundabout, take the 2nd exit onto "Bd du Roi/D186"
- At the roundabout, take the 4th exit onto "Rue de Versailles"
- Keep left to stay on "Rue de Versailles"
- At the roundabout, take the 4th exit

Distance: 6 km, 15 mins



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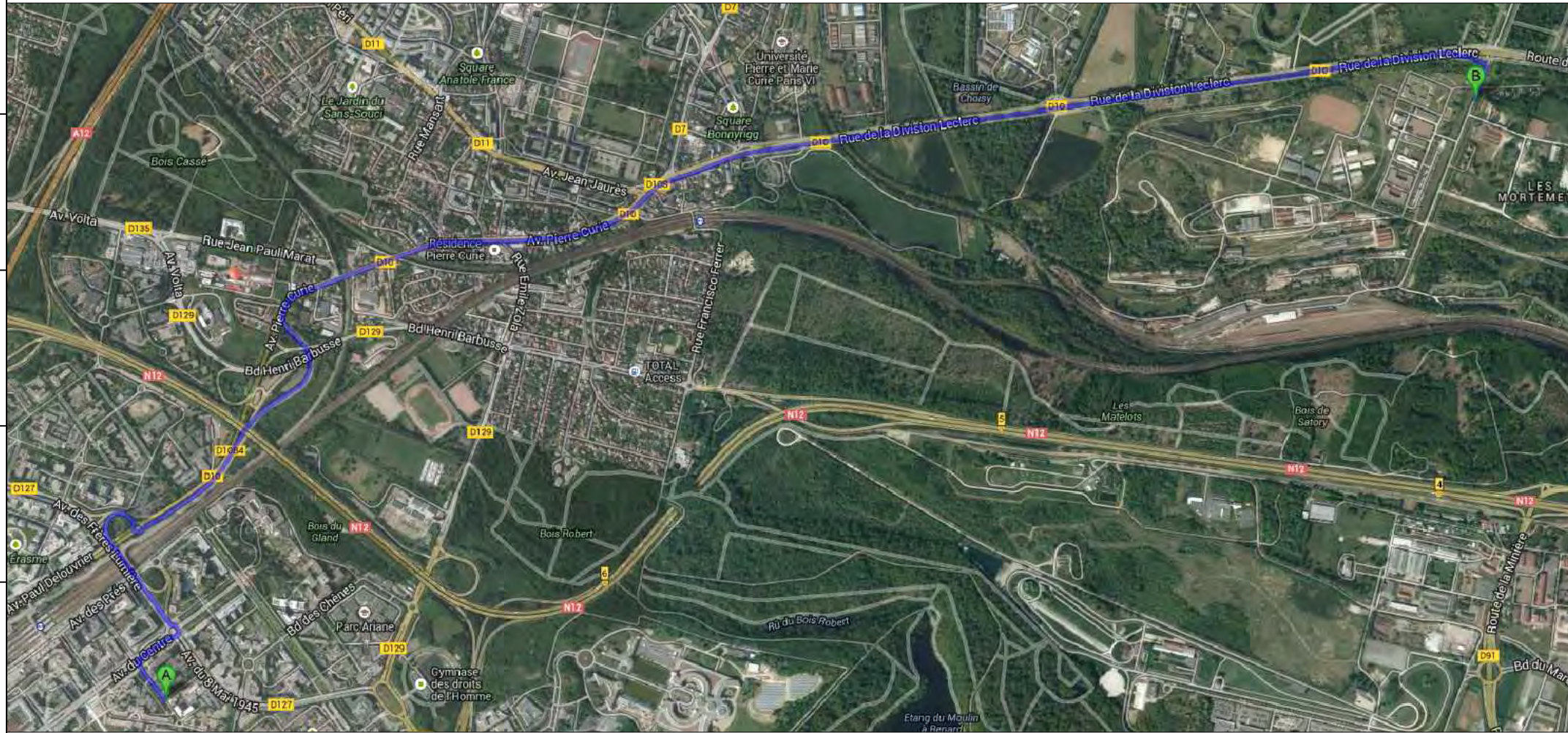
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Unit	-

DWG. Title  
**HEALTH AND SAFETY IN THE LOT AND SURROUNDINGS 1**

DWG. No.	PAGE
<b>HS-001</b>	<b>297</b>

B: 177 Rue de Versailles  
 Address: 177 Rue de Versailles,  
 78150 Le Chesnay, France  
 Tel.: 01.39.63.91.33

## ROUTE TO THE NEAREST POLICE OFFICE



### A: La Cite du Soleil

- Head northeast on Allée des Matelotstoward D10
- Turn left onto D10
- Slight right onto Av. de la Division Leclerc/D10
- At the roundabout, take the 1st exit onto the Av. des Frères Lumière/D127 ramp
- Keep left at the fork, follow signs for D127/Guyancourt/Quartier saint quentin
- Turn left onto Av. des Frères Lumière/D127
- Turn right onto Rue de la Division Leclerc

Distance: 5.8km . 9 mins

### B: Commissariat de Police

Address: 1 Rue de la Division Leclerc  
8280 Guyancourt, France



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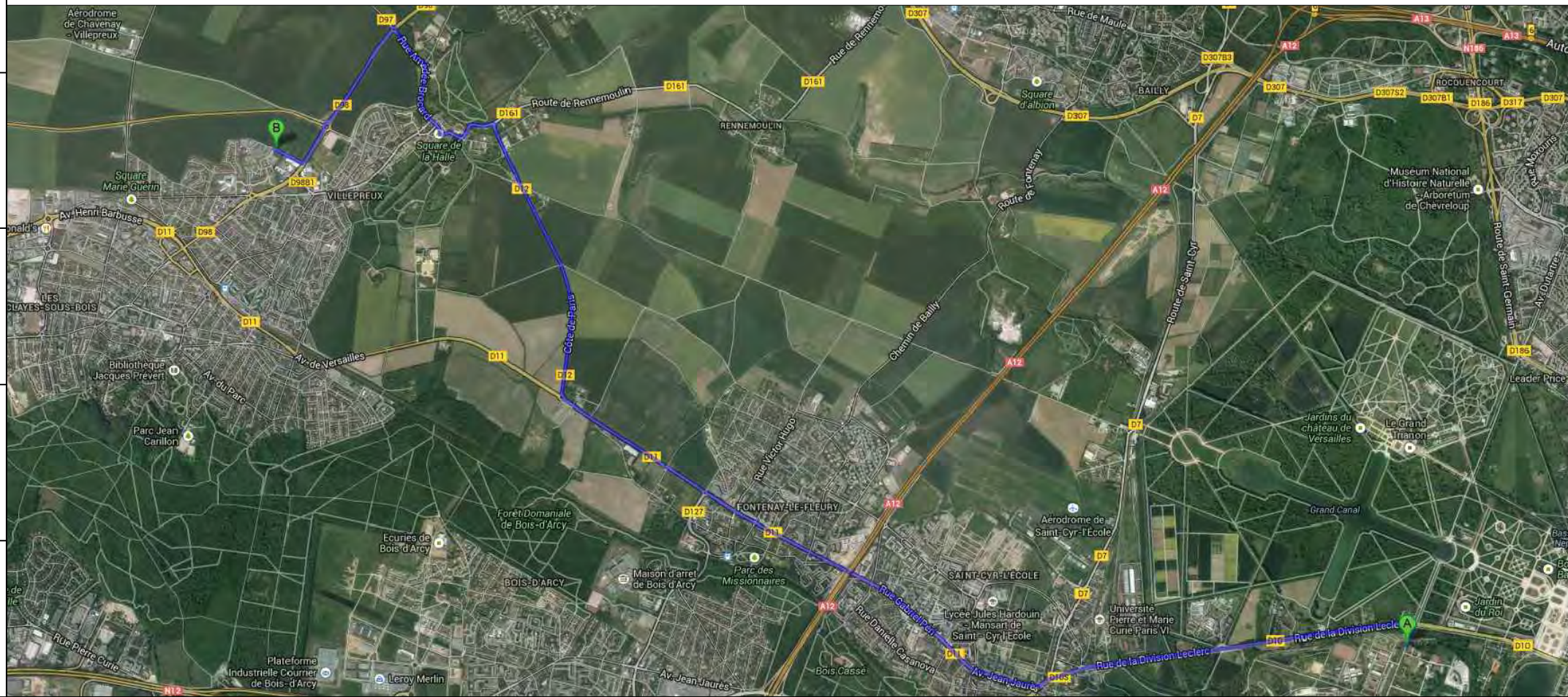
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## ROUTE TO THE FIRE STATION



### A: La Cite du Soleil

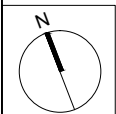
- Head northeast on Allée des Matelotstoward D10
- Turn left onto D10
- Slight right onto Av. de la Division Leclerc/D10
- Turn right onto Av. Jean Jaurès/D11  
Continue to follow D11
- At the roundabout, take the 2nd exit onto Rue Jules Massenet/D98
- Turn left onto D98

Distance: 11.3km . 18 mins

### B: Sapeurs Pompiers des Yvelines

Address: Avenue de Pépinière  
78450 Villepreux, France

Note:



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ST	2014/11/03	AB Submission

Drawn by LC

Checked by DN

Scale

Unit

DWG. Title  
**HEALTH AND SAFETY IN THE LOT AND SURROUNDINGS 2**

DWG. No. PAGE

**HS-002 298**

# TRUCKS ROUTE FROM "Le Havre" TO "La Cite du Soleil"



## A: LE HAVRE

- Head west on Av. du Général Leclerc toward Pl. de l'Hôtel de ville
- Take the 1st left onto Pl. de l'Hôtel de ville
- Turn right onto Bd de Strasbourg
- Continue onto Cours Lafayette
- Continue onto Quai Colbert
- Slight left onto D6015
- Keep left to stay on D6015
- Continue onto N282
- Continue onto A131
- At the roundabout, take the 3rd exit onto N182
- Slight left onto E5
- Continue onto A131/E5
- Merge onto A13/E5
- Take the exit onto A12 toward Saint-Quentin-en-Yvelines
- Take the exit toward Évry/Lyon/Dreux/Saint-Quentin-en-Yvelines/Bois-D'Arcy/Versailles-Satory

- Keep right at the fork, follow signs for Saint-Cyr-l'École
- Turn left onto D129
- Slight right onto Av. Volta/D129  
Continue to follow D129
- At the roundabout, take the 3rd exit onto Rue Emile Zola
- Turn right onto Av. Pierre Curie/D10
- Slight right to stay on Av. Pierre Curie/D10
- Turn right onto Allée des Matelots

Distance: 191 km, 1 hour 56mins

## B: La Cite du Soleil



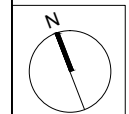
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ST	2014/11/03	AB Submission

**Drawn by** LC

**Checked by** DN

**Scale**

**Unit**

**DWG. Title**  
HEALTH AND SAFETY  
DURING THE OUTSIDE  
LOGISTIC

**DWG. No.** **PAGE**

**HS-101 299**

PROBLEM	RISKS	ADOPTED MEASURES
Dangers caused by weather	Heavy rain due to slippery floors	Drive slowly
Traffic problem during shipping	Traffic jam due to spent more time	To do another preparation during waiting for trucks
Road construction	Road blocked	Plan B (other route)
Complex traffic system	Get lost	Arrange the route clearly before departure

**SITE VIEW**



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**Consultants:**

**Note:**

PROBLEM	RISKS	ADOPTED MEASURES
Dangers caused by weather	Ground subsidence Getting stuck of heavy equipment Getting stuck of heavy components	Provision of lifting devices Support plates for heavy vehicles' legs
Dangers due to the great number of people on shipping to the site	Unclear arrangement danger of injury increases	No access for unauthorized persons Access only in coordination with construction/shift supervisor High visibility vest in compliance with the color scheme required by site operations for every person entering construction site
Too many access possibilities to the lot	Unclear arrangement danger of unauthorized access	Security officers for control Site fence Clearly marked pedestrian access to construction site
Too small distances from lot and trees/ plants	Obstruction of vehicle' movements Obstructions due to small distances between construction grounds Obstruction of vehicle' movements	No changes possible - steady crane - site fence - unloading/loading materials in the storage area inside the lot - unauthorized and external persons who invade the lot
Ground limitations	Obstruction / limitations through on-site security installations	Securing existing escape routes No dangerous works close to this area

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ST	2014/03/03	CD Submission
ST	2014/04/30	CD Submission
ST	2014/06/02	CD Submission
ST	2014/11/03	AB Submission

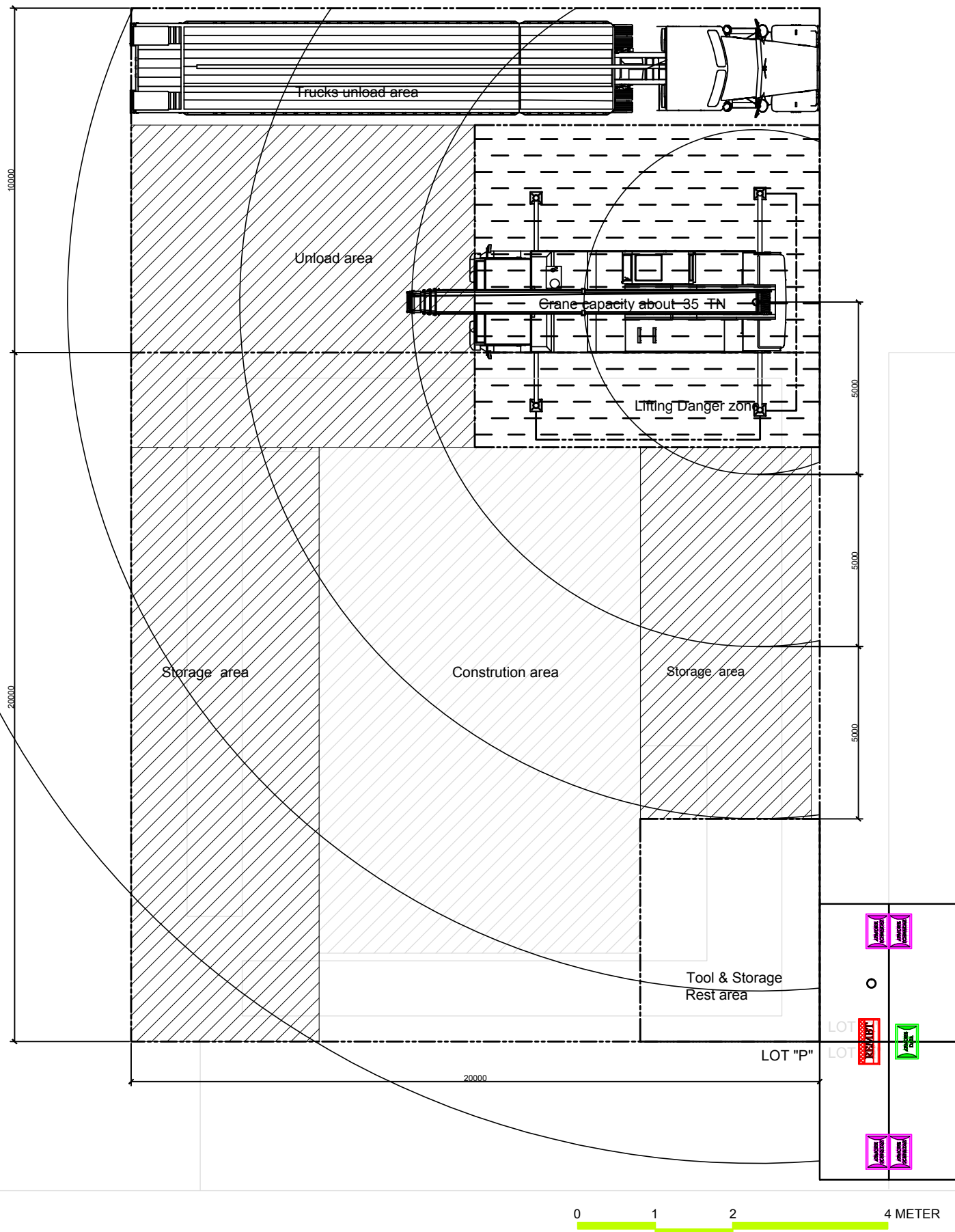
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**Checked by** DN  
**Scale**  
**Unit**

**DWG. Title**  
**HEALTH AND SAFETY  
DURING THE INSIDE  
LOGISTIC**

**DWG. No.** HS-201 **PAGE** 300

# THE SAFETY PLAN AND COORDINATION PHASE

## Plan of site



PROBLEM	RISKS	ADOPTED MEASURES
Too small property lines	Collision with other people Collision with parts stored Discomfort to the maneuverers	Marking dangerous parts stored High visibility vests Guiding gear during maneuvers with two pedestrians Designing a delivery zone
Dangers due to the great number of people in the site	Increased dangers of injury muddle	High visibility vest Denial of access to other people
Trucks passway	Pass by operation area	Arrange signpostings
Heavy rain or rain of long-term	Degradation of the land Electric shock due to humidity	Use anti-slide mats on slipping surfaces Regularly remove water from the floor with scrapers Replacement of defective cables Waterproof plugs Protective clothes
Ground limitations	Obstruction / limitations through on-site security installations	Securing existing escape routes No dangerous works close to this area
Traffic and parking of the crane or a truck	Shock, collisions with pedestrians, existing equipment or vehicle Falling objects transported	Respect the rules of the road Parking places reserved for this purpose Lash with appropriate means and in sufficient number



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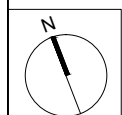
Contact:

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Note:



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ST	2014/11/03	AB Submission

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Checked by DN

Scale 1:150

Unit mm

DWG. Title

HEALTH AND SAFETY  
DURING LOAD / UNLOAD

DWG. No.

HS-301

PAGE

301

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Unit -

DWG. Title  
**HEALTH AND SAFETY SIGNPOSTING**

DWG. No. PAGE

**HS-302**

**275**



Fall because of barriers



Fall of objects



Forklift way



Warning



Loading area



Don't stand under forklift



Authorized personnel only



Don't made fire



Don't run on worksite



Don't pass under load



First aid kit



Point of ressemblment



Fire extinguisher

**!**  
**PPE MUST  
BE WORN  
ON THIS SITE**



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DWG. Title  
**HEALTH AND SAFETY  
PPE**

DWG. No.	PAGE
<b>HS-303</b>	<b>276</b>

























**Where the worker are:**

On the ground      On the mezzanine floor  
 On the Floor      On the roof

**ALL SAFETY RULES MUST BE FOLLOWED**



SEE AR-211

SEE AR-212

SEE AR-213

(C-1)

(C)

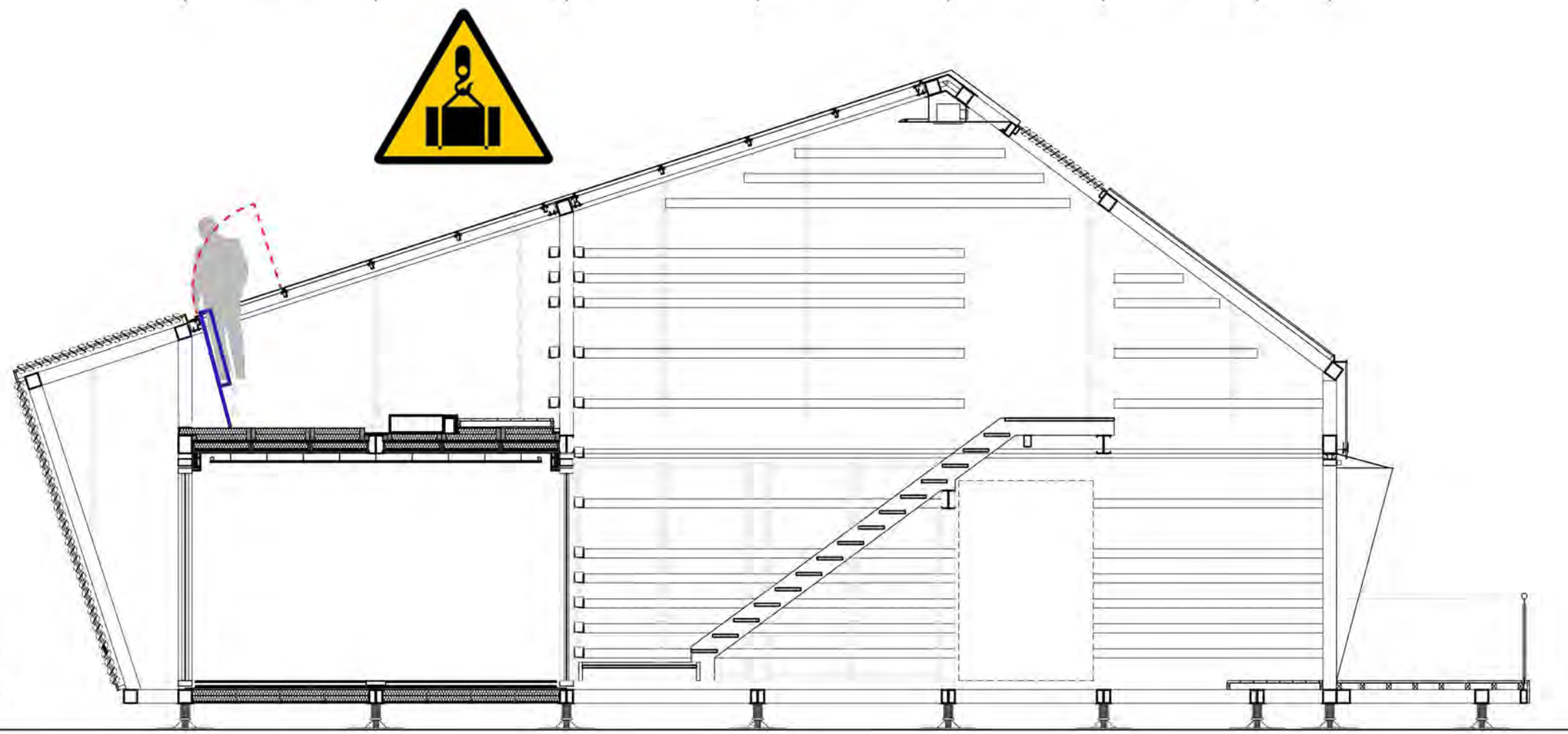
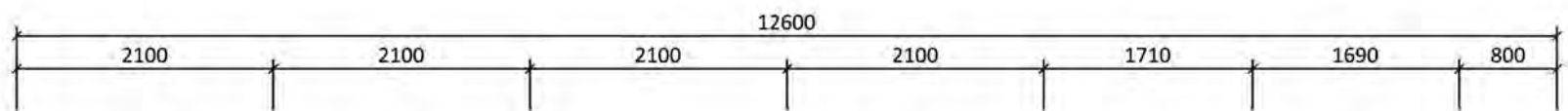
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(B)

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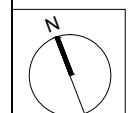
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(A)



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Scale	1:60
Unit	mm

DWG. Title  
**HEALTH AND SAFETY  
 DURING MAINTENANCE**

DWG. No.	PAGE
<b>HS-501</b>	<b>314</b>























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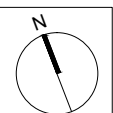
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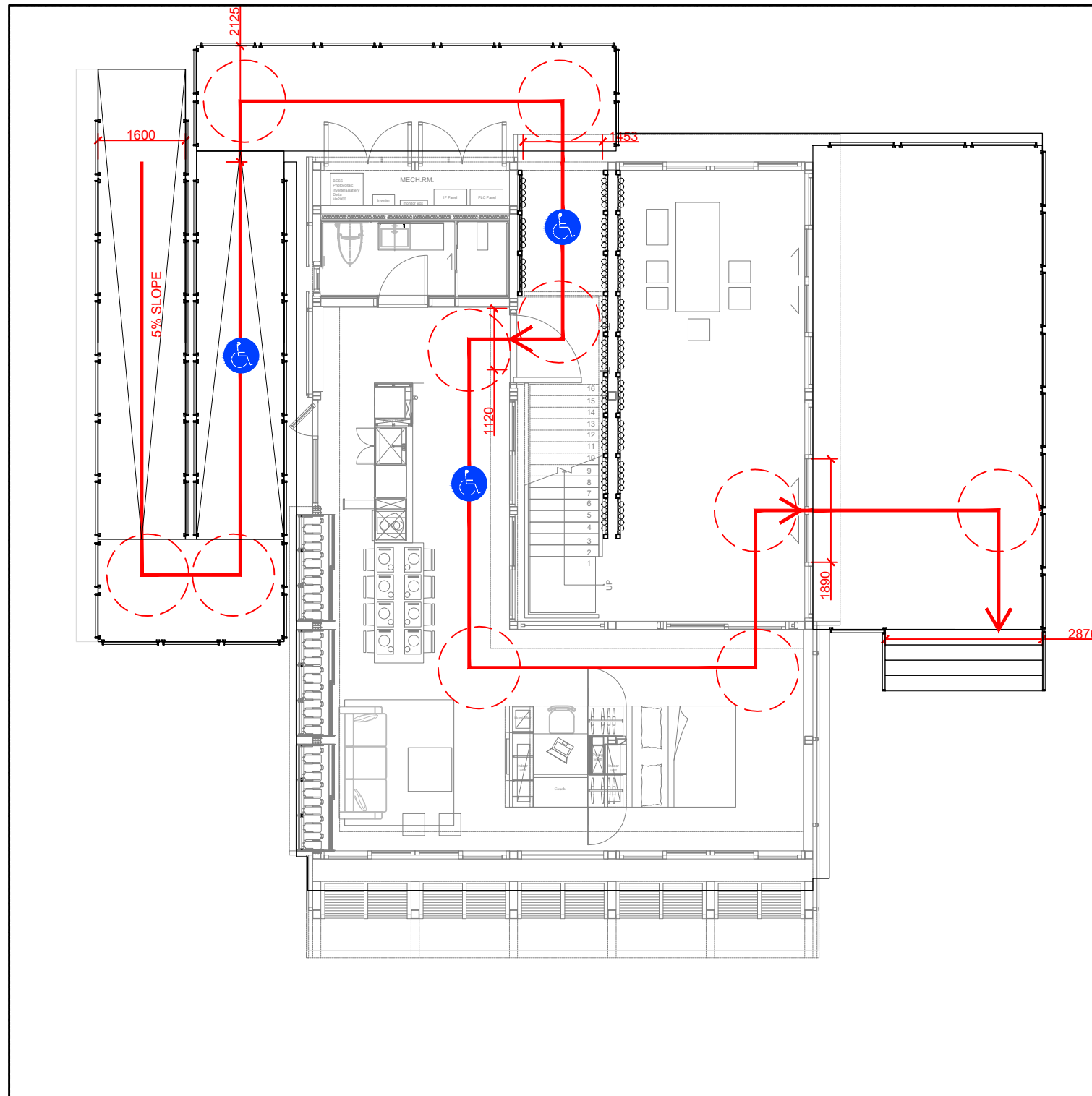
Unit mm

DWG. Title

**SITE ACCESSIBILITY PLAN**

DWG. No. PAGE

**PT-001 325**



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Unit: mm

DWG. Title

**SITE ACCESSIBILITY  
ELEVATION**

DWG. No. PAGE

**PT-002 326**

RF Beam  
EL +7370

Mezzanine  
EL +3600

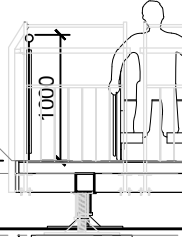
2F Beam  
EL +3410

1F  
EL +710

1F Beam  
EL +610

Sand Box  
EL +120

GL  
EL ±0



2125  
ENTRANCE

6600  
5% RAMP

1875  
LANDING



FIRST IMPRESSION (Depends on the visitors in queue)

At the beginning of the west ramp

1. We will offer a tour brochure to each visitors.
2. We will ask visitors connect to our tour website from mobile devices

PHOTOSHOT (1 MIN)

Experience the northwest side of Orchid house.

1. 10 visitors will assigned a guide from Unicode Team.
2. Guide will explain the concept, design and background knowledge of Orchid house and the city issue in Taipei. Friendly guide will start the tour from this spot, introducing the concept of Orchid House.

BATHROOM & KITCHEN (2 MINS)

Taiwanese people are hospitable and kind. The kitchen serves a multifunctional task - the center piece is an island that can be converted into a dining table for formal occasions.

LIVING ROOM & THERMAL MASS (3 MINS)

1. The Living Room features abundant natural light and can be filtered and adjusted by louvers.
2. Taiwan is a recycle kingdom. Thermal mass is made by recycled bottles.
3. Explain how the thermal wall conserves energy and maintains comfortable temperatures both day and night.

FEEDBACK & GET THE VOTE CARD (30 SECS)

Get more Q&A before finishing the tour and get a vote card.

MECHANICAL ROOM (1 MIN)

Guide will explain the mechanical system including.

ENTRANCE & GREEN CORE (5 MINS)

Guide will introduce the concept of "The Green Core of Orchid House", "The Green Core of City- Orchid House" and Taiwanese orchid.

TEA TERRACE & PHOTOSHOT (5 MINS)

The space offers visitors shading comfort while they play chess and appreciating the conceptual model from the winter camp made by the senior high schoolers.

PHOTOSHOT 2 (5 MINS)

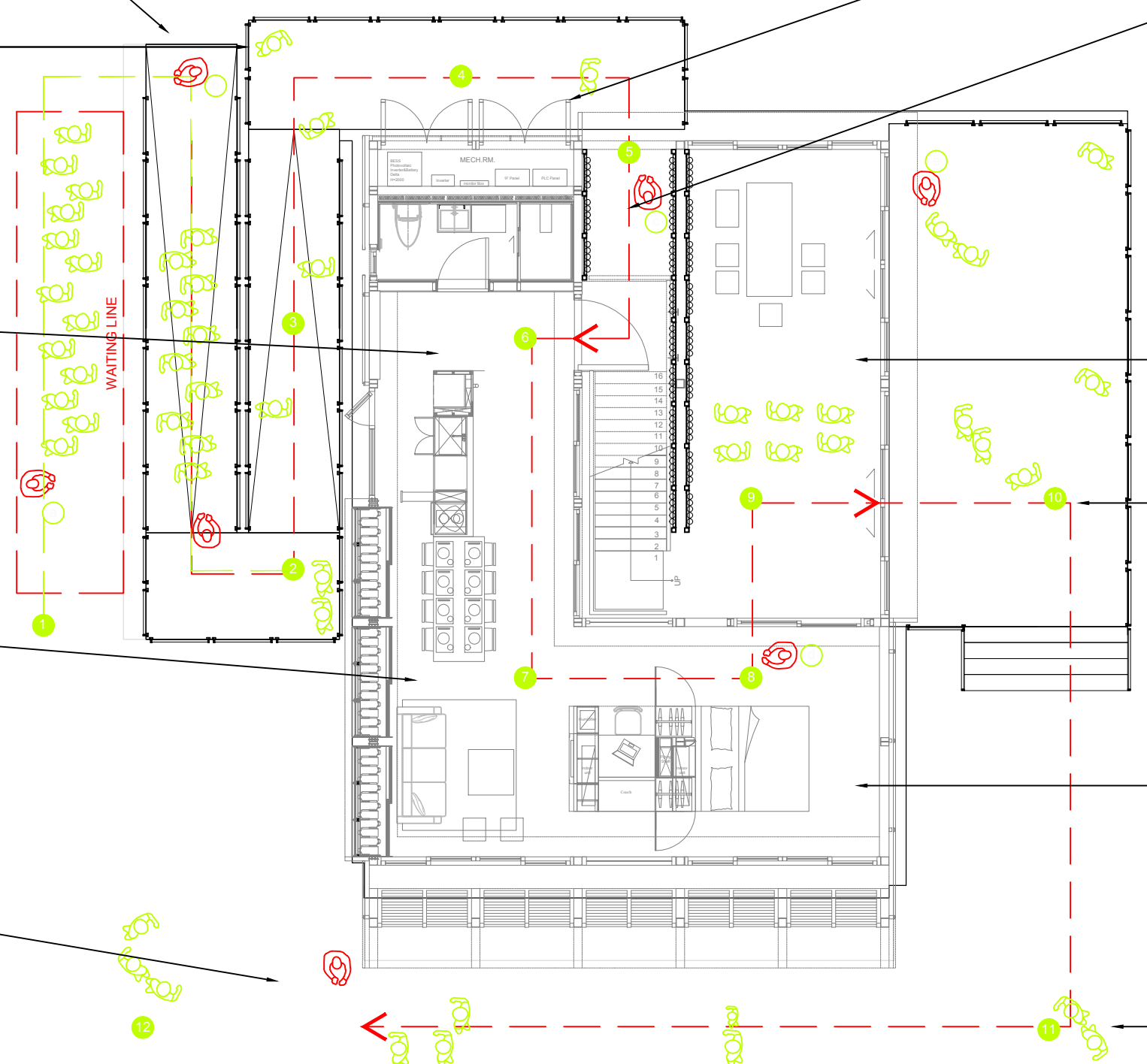
After experiencing the tea terrace, guide will make a conclusion for visitors. Also give them our three keywords: "Green Core", "Blue Sky" and "Power House".

BEDROOM & WORKSTATION (1 MIN)

Guide will explain how we conceived the L-shape house and how it serves as a prototypical solution to Taipei rooftop. Some general description of city issues will be provided.

PHOTOSHOT 3(2 mins)

Experience the southeast side of the house, seeing the well-designed garden. .



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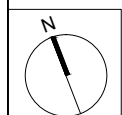
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Scale	1:100
Unit	mm

DWG. Title	
HOUSE TOUR PLAN	
DWG. No.	PAGE
PT-101	327



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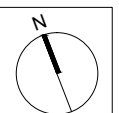
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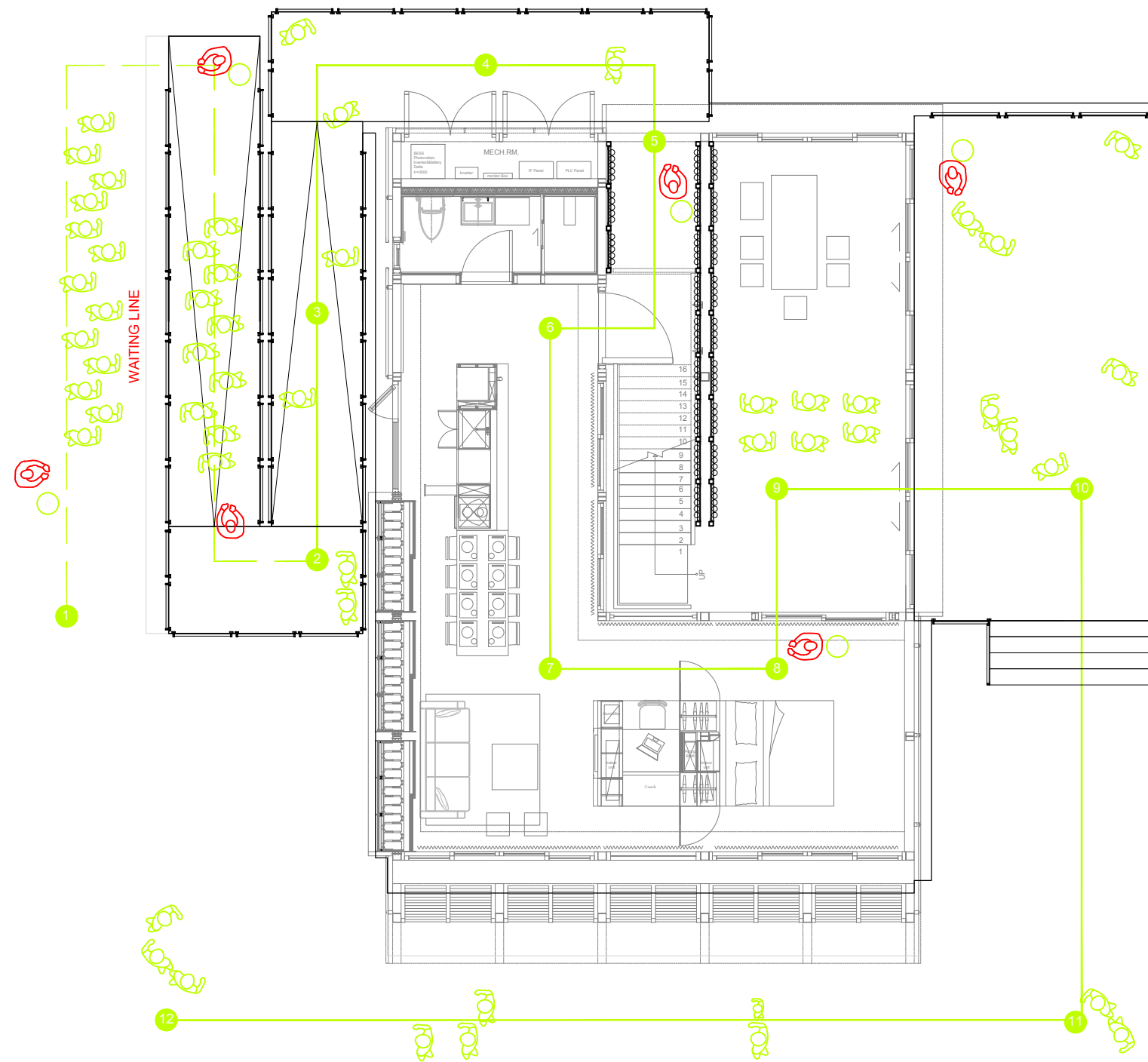
Unit MM

DWG. Title

HOUSE TOUR GENERAL INFORMATION

DWG. No. PAGE

PT-201 328



- VISITOR
- TEAM UNICODE MEMBER
- TEAM UNICODE MEMBER( keep order the line )
- TEAM UNICODE MEMBER( distribute the brochure )
- TEAM UNICODE MEMBER( introduce green core )
- TEAM UNICODE MEMBER( introduce living room )
- TEAM UNICODE MEMBER( stand outside the terrace )

- 1** FIRST IMPRESSION (depends on the visitors in queue)
- 2** FIRST GLIMPSE (10 secs)
- 3** PHOTOSHOT 1 (1 min)
- 4** MECHANICAL ROOM (1 min)
- 5** ENTRANCE & GREEN CORE (5 mins)
- 6** BATHROOM & KITCHEN (2 mins)
- 7** LIVING ROOM & THERMAL MASS (3mins)
- 8** BEDROOM & WORKSTATION (1 min)
- 9** TEA TERRACE (5 mins)
- 10** PHOTOSHOT 2 (5 mins)
- 11** PHOTOSHOT 3 (2 mins)
- 12** FEEDBACK & GET THE VOTE CARD (30 secs)

