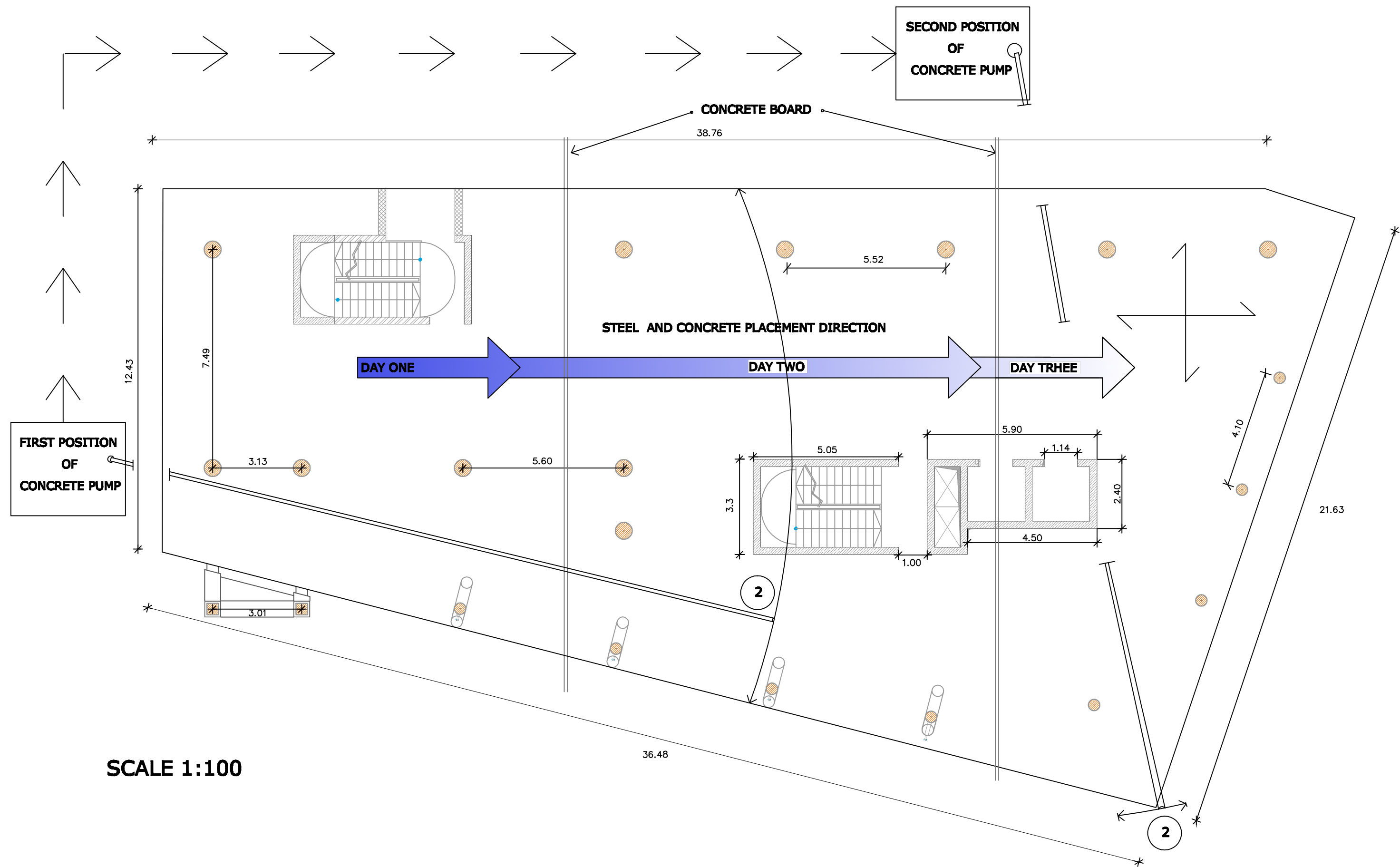


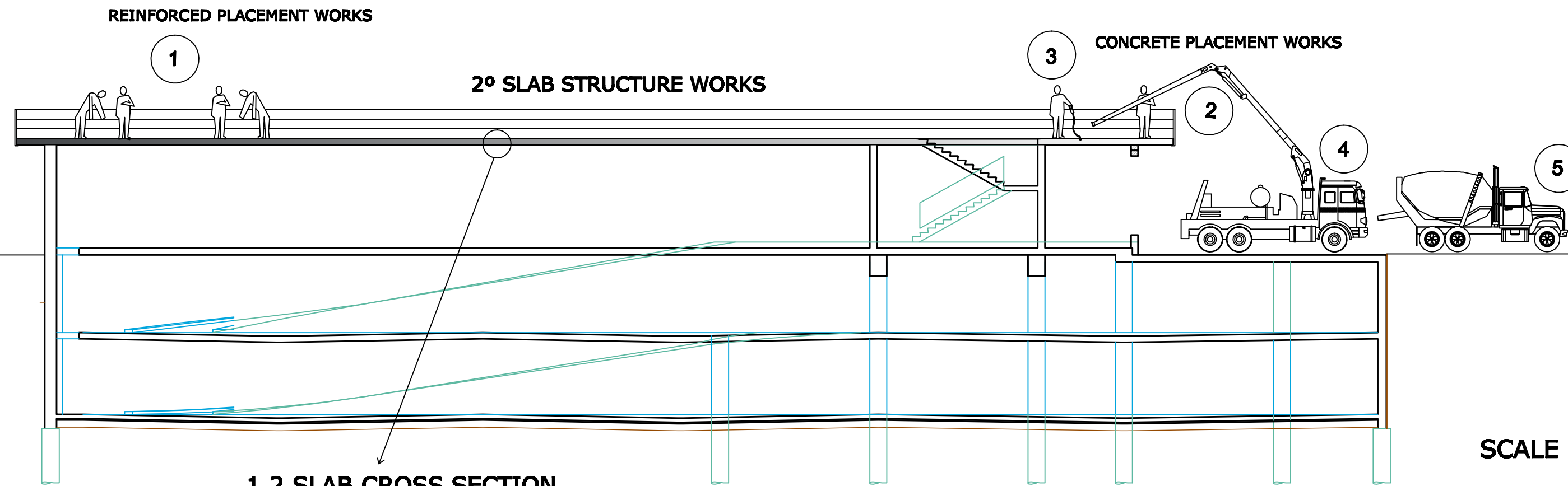
SLAB STRUCTURE INSTALLATION-TECHNOLOGICAL CARD

1.LOCATION OF WORKS



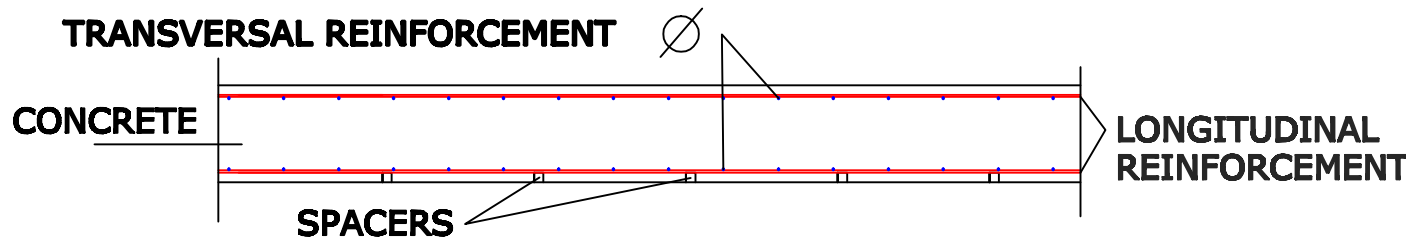
SCALE 1:100

1.1 SLAB WORKS LOCATION



SCALE 1:150

1.2 SLAB CROSS SECTION



2.MECHANICS-MATERIALS AND TOOLS

NUM	NAME	UNITS	QUANTITY
1 MACHINES			
1.1	CHAINSAW WOOD	UNITS	ONE
	CONCRETING PUMP	UNITS	ONE
	VIBRATOR	UNITS	ONE
2 MATERIALS			
2.1	NAILS	UNITS	500
2.2	COLOR SPRAY FOR LAYOUT	UNITS	2
2.3	METAL WIRE	METERS	MANUFACTURER
	SPACERS	UNITS	2112
	WOODEN BOARD	m²	580,8
3 TOOLS			
3.1	LEVEL	UNITS	4
3.2	HAMMER	UNITS	8
3.3	PLIERS	UNITS	4
3.4	TELESCOPIC PLOPS	UNITS	1214,4

3. TECHNICAL - ECONOMIC INDICATORS

1. QUANTITY OF WORKS = 528.12m³
2. INSTALLATION COST = 34053 €/117313.20 LITAS
3. DURATION OF WORKS = 15 DAYS
4. WAGE
 - BUILDING OFFICIAL 47.32h X 22.91 = 1084.80€/ 3737.1 LITAS
 - REGULAR WORKER OF CONSTRUCTION 47.12 X 22.59 = 1064€/ 3666,8 LITA
 - REGULAR ASSISTANT OF CONSTRUCTION 23,76 X 21.9 = 520.35€/ 1789.9
 - STEEL OFFICIAL 9 7,152 X 23.91= 2322,9€/ 8002.4 LITAS
 - REGULAR STEEL WORKER 97.15 X 21.31 = 2070.30€/ 7132.2 LITAS

4.ORGANIZATION OF WORKS

Nombre de tarea	Duración	D-1	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20
1 STRUCTURAL WORKS	14 días																					
2 FORMWORK	3 días																					
3 MOLD FOR THE STRUCTURE EDGE	1 día																					
4 PLASTIC SPACER	1 día																					
5 STEEL PLACEMENT	3 días																					
6 CONCRETE RELEASE	3 días																					
7 CONCRETE VIBRATION	3 días																					
8 CONCRETE CURING	4 días																					
9 REMOVING OF THE FORMWORK	3 días																					

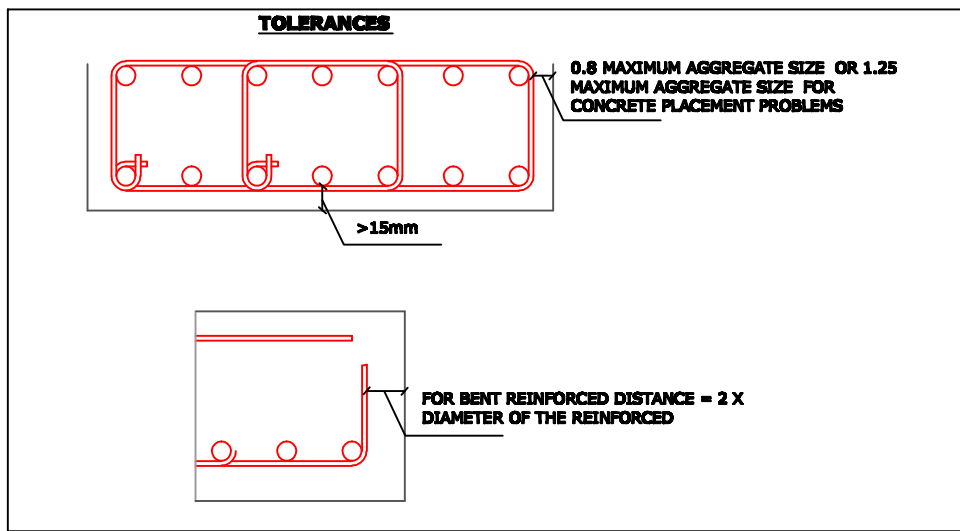
7.QUALITY CONTROL

The testing of concrete is done in their two states to meet their fresh and hardened properties to determine their qualities and strength. The behavior of concrete against the various efforts is variable and complex.

CONTROL TEST:

- 1) Depending on their nature:
 - Destructive: determine the strength by breaking concrete test pieces or parts.
 - Nondestructive: determine the quality without destroying the structure.
- 2) According to its purpose:
 - Previous tests: determine the dosage of the material a agree with the conditions of implementation. Are performed before starting the work.
 - Characteristic tests: check that the strength and dispersion of in situ concrete is located within the project.
 - Control tests: test pieces molded in situ to verify the strength of the concrete is maintained equal to or greater than required.
 - Testing information: claim to know the strength of concrete for a portion of the work and a certain age.

SEPARATION ELEMENT DETAIL



5.GENERAL DESCRIPTION OF WORKS

The reinforced concrete building technique is the use of concrete reinforced with steel bars or meshes, called frames. It is also possible to assemble it with fibers, such as plastic fibers, glass fibers, steel fibers or combinations of steel bars with fibers depending on the requirements to which it is subjected.

WORKS ORDER:

- 1) WOOD FORMWORK PLACEMENT
- 2) REINFORCED PLACEMENT
- 3) CONCRETE PLACEMENT AND COMPACTION
- 4) CONCRETE CURING
- 5) REMOVING OF THE FORMWORK AND FINISHES

1) WOOD FORMWORK PLACEMENT:

The formwork must contain and support the fresh concrete during curing while maintaining the desired shape without deforming. They are usually of wood or metal and are required to be rigid, durable, watertight and clean. In assembly should be secured so that during the subsequent consolidation of the concrete there is no movement.

2) REINFORCEMENT PLACEMENT :

The armor must be clean and secured to the formwork and each other so that the intended position remain motionless on the concrete pouring and compaction. The distances between the various reinforcement bars must maintain a minimum spacing is normalized to enable correct placement of the concrete between the bars so that there are no gaps during compaction of the concrete. Similarly, the clearance between the steel bars and the formwork, called coating must maintain a minimum separation, also standardized, which allows the filling of this space by the concrete

3) CONCRETE PLACEMENT AND COMPACTION:

The fresh concrete poured inside the formwork must be made to occur by preventing segregation of the mixture. This should avoid pouring from a great height, up to two meters. It is placed in layers or tiers of thin horizontal to allow good compaction. To achieve a compact concrete, eliminating the voids and to obtain a complete closing of the mass, there are several systems consolidation. Compaction by vibration is usual concrete resistant and is suitable in dry consistencies. The needle remains vertical in the mass of fresh concrete, introduced in each tier until the tip to penetrate the previous layer, taking care not to touch the armor.

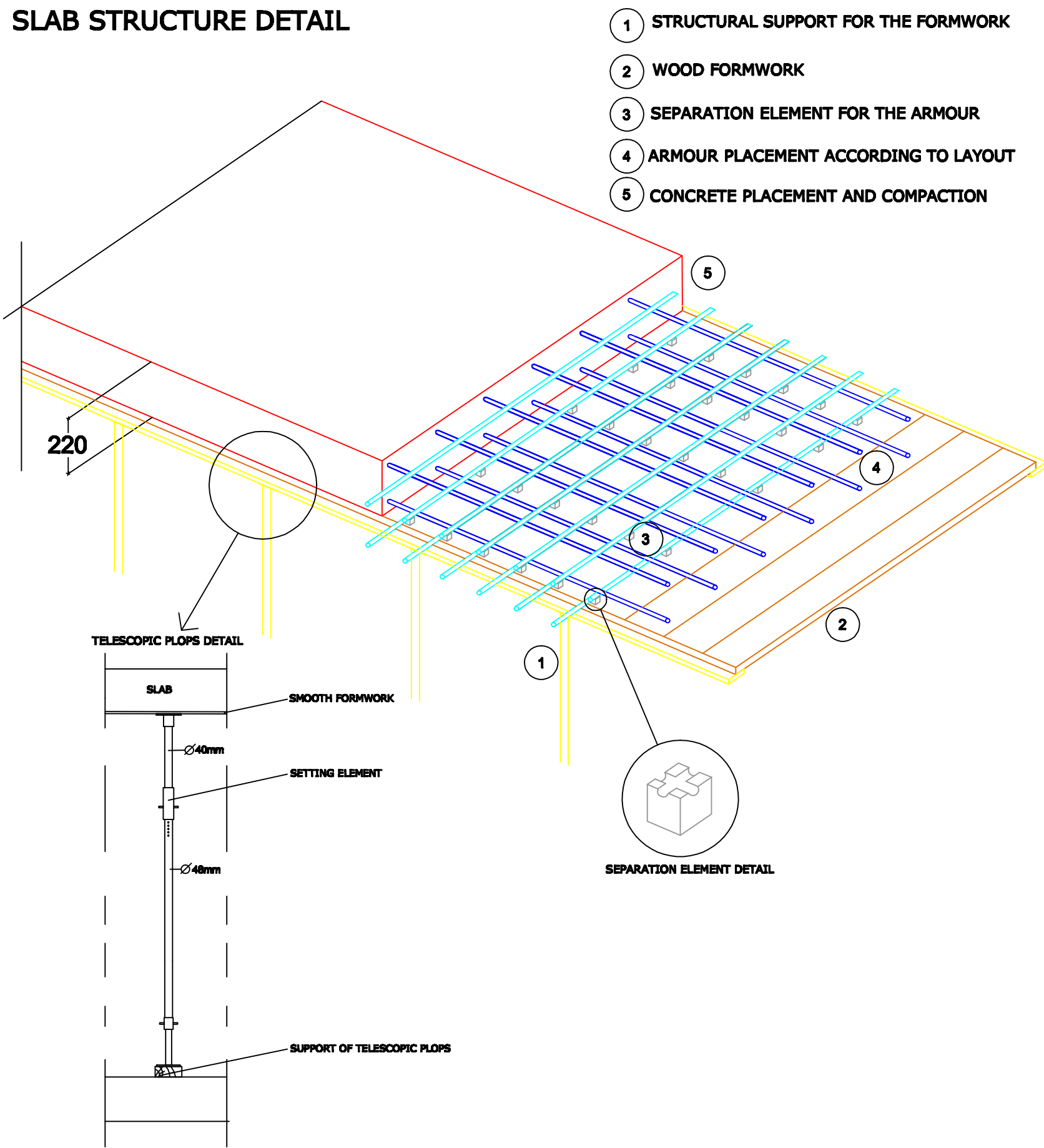
4) CONCRETE CURING:

Curing is one of the most important operations in the process of putting in work for the decisive influence it has on the strength of the final element. During setting and hardening occur first evaporative water loss. We must compensate for these losses by adding curing the concrete to allow large amounts of water to develop new processes for hydrating with increased resistance.

5) REMOVING OF THE FORMWORK AND FINISHES

Removal of the formwork is performed when the concrete has reached a sufficient hardness. In the normal portland usually a period ranging between 3 and 7 days. After stripping needs repair small holes or surface defects usually surface voids. If these defects are large or are in critical areas resistant may need partial or full demolition of the construction.

6. SLAB STRUCTURE DETAIL



CONCRETE PLACEMENT EQUIPMENT



8.HUMAN SAFETY

THE WORKS MUST BE CARRIED OUT IN ACCORDING HEALT AND SAFETY RULES IN CONSTRUCTION REQUEST:

INDIVIDUAL PROTECTION EQUIPMENT

1. THE OPERATORS HANDLING THE CONCRETE HOSE BY ROPE (NOT DIRECTLY TAKE THE HOSE), PROVIDED WITH GLOVES, BOOTS, HELMET AND GOGGLES CONCRETE PROJECTIONS.
2. PROTECTIVE GLOVES.
3. SECURITY BOOTS.
4. WATER SHOES.
5. PROTECTION GLASSES.

COLLECTIVE PROTECTION EQUIPMENT:

1. SAFETY NET IN THE FIRST STRUCTURAL FLOOR.
2. SAFETY HARNESS FOR ALL THE WORKERS.
3. PERIMETER RAILINGS ON EACH FLOOR OF THE WORK.
4. HOLES IN THE FLOOR MUST BE COVERED WITH NET.
5. WALKWAYS AND RAMPS AT THE SAME OR DIFFERENT LEVEL.
6. WORKING PLATFORM: FOR WORKING AT HEIGHT.

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