

# INSTALLATION & COMMISSIONING TTB

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[www.europeanspallationsource.se](http://www.europeanspallationsource.se)

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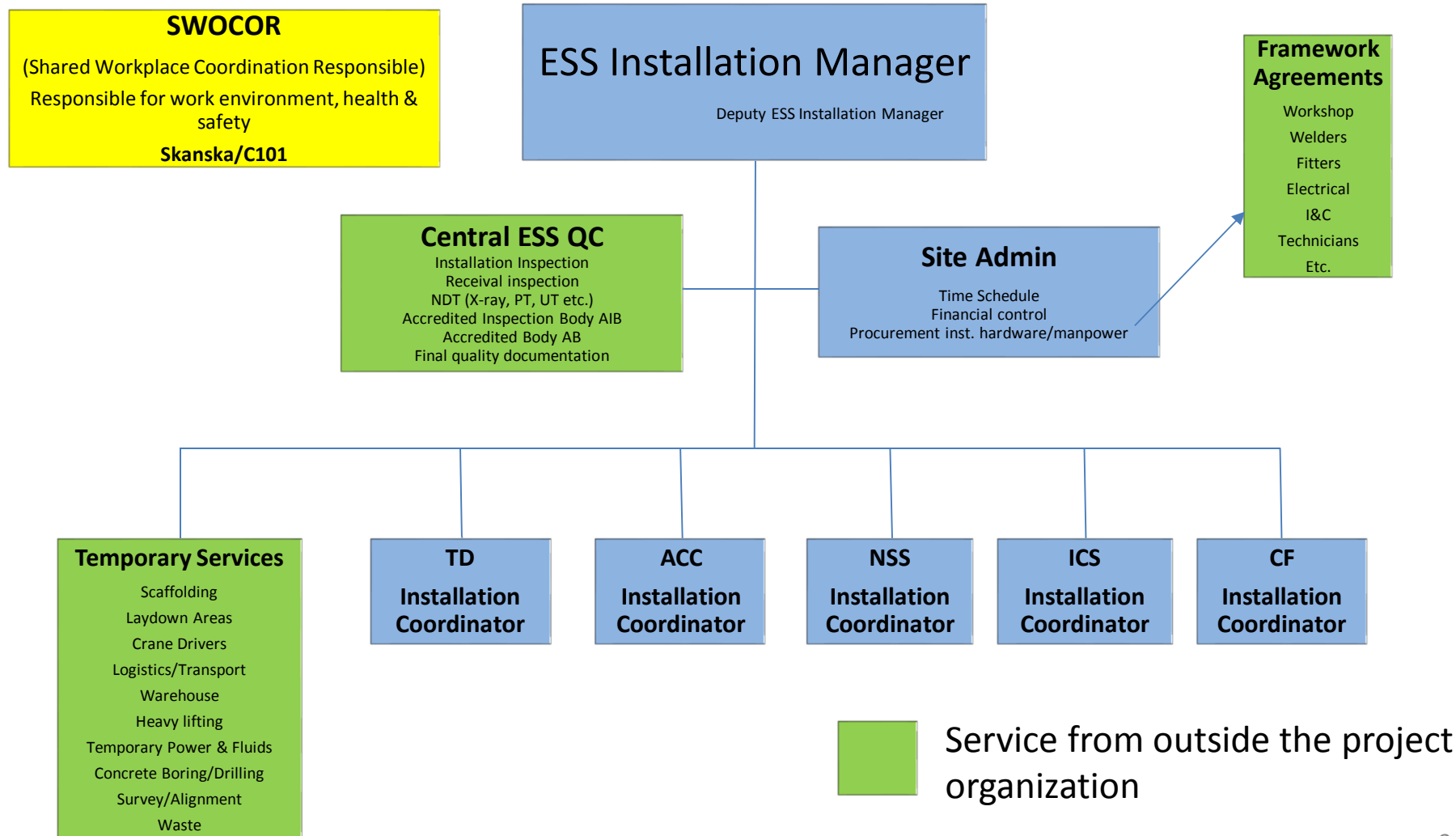
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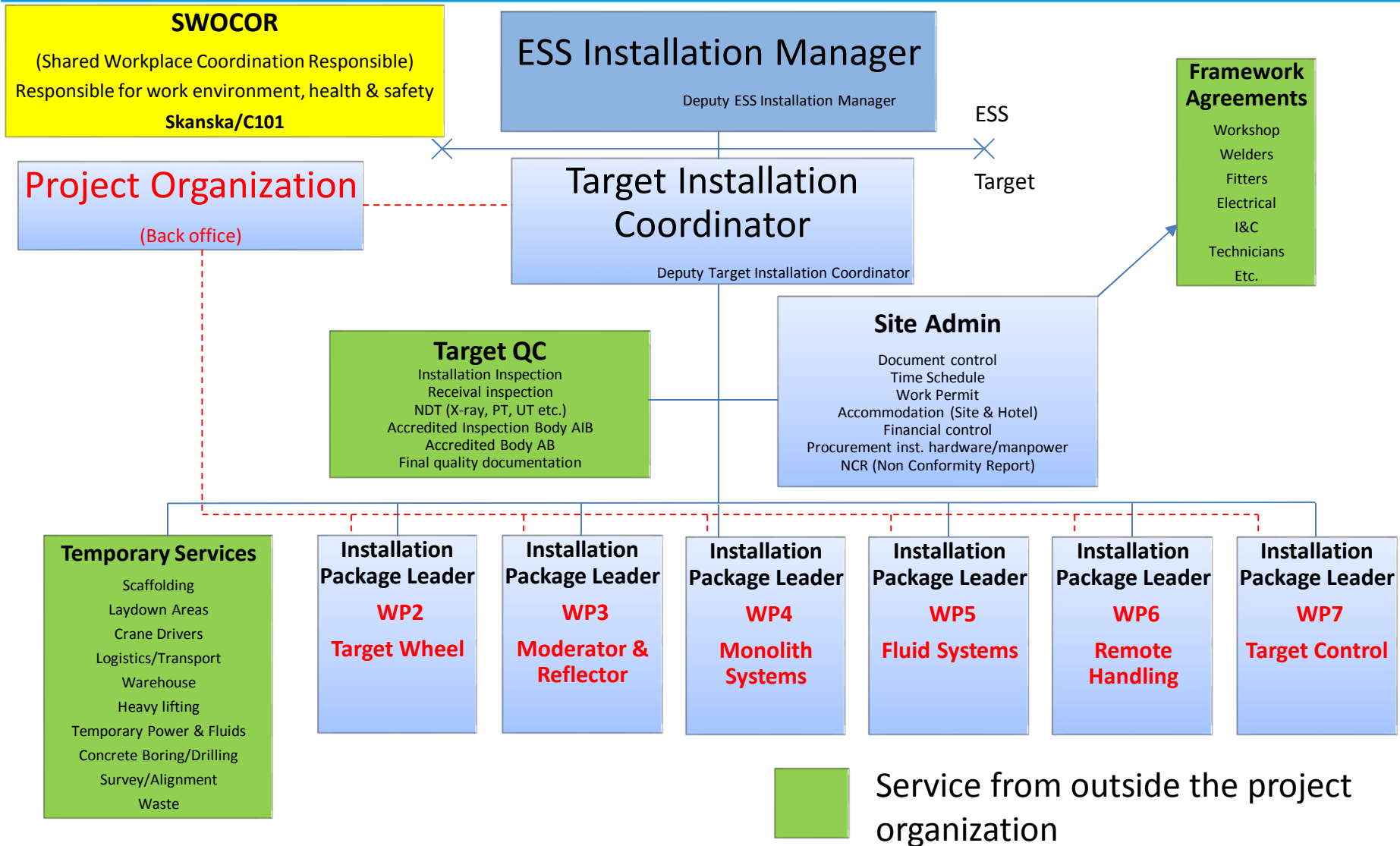
# Organization

## ESS site organization



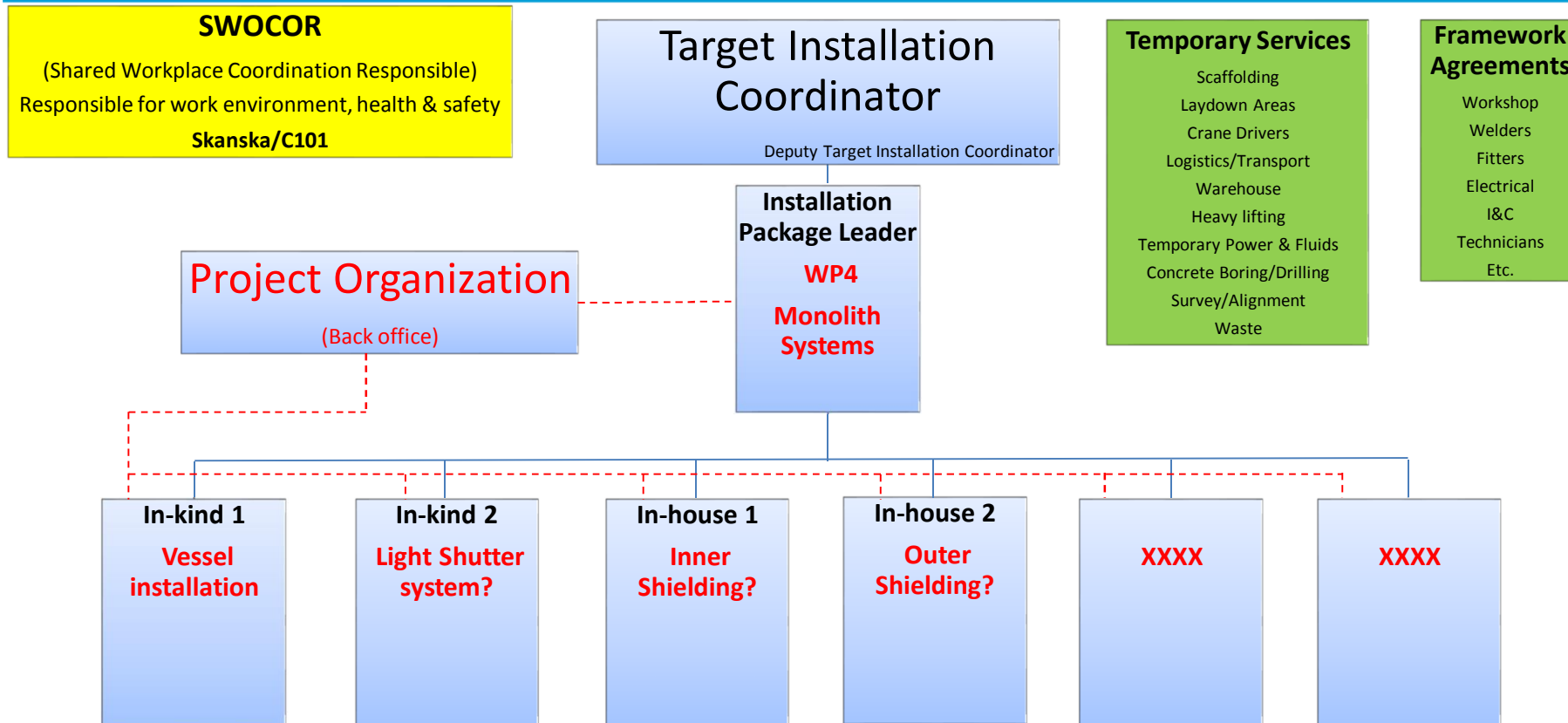
# Organization

## Target project site organization




# Organization

## Target project site organization



**In-kind installations (50% of scope)**  
**In-house installations (50% of scope)**

 Service from outside the project organization

# Installation Binder

- 00 List of Documents (I&E)
- 01 Time Schedule (I)
- 02 Organisation List of Contacts (I)
- 03 P&ID (E)
- 04 Drawings (E)
- 05 List of Components & Material (E)
- 06 Reference Documents (E)
- 07 Inspection Plans (E)
- 08 Pressure Test (E)
- 09 WPS (I)
- 10 Installation Procedures (I)
- 11 Installation Catalogue (I)
- 12 Daily Diary (I)
- 13 NCR Non Conformity Report (I&E)
- 14 Work Permits (I)
- 15 Test & Commissioning (I&E)

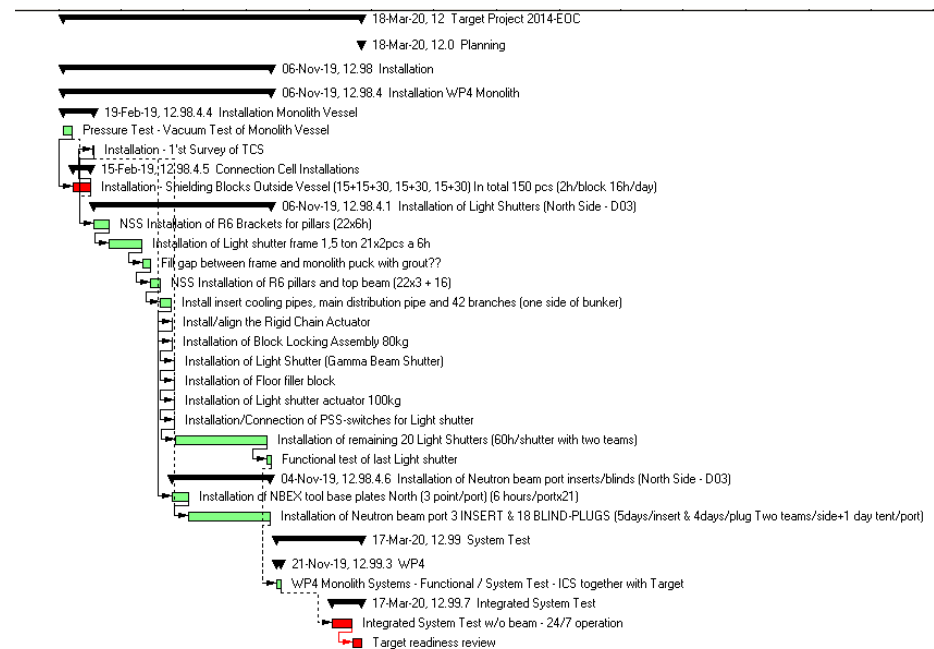
**All WP's should use the same templates for easier communication on site**

# Installation Binder

- 00 List of Documents (I&E)
- 01 [REDACTED]
- 02 Organisation List of Contacts (I)
- 03 P&ID (E)
- 04 Drawings (E)
- 05 List of Components & Material (E)
- 06 Reference Documents (E)
- 07 Inspection Plans (E)
- 08 Pressure Test (E)
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## 1. Time Schedule

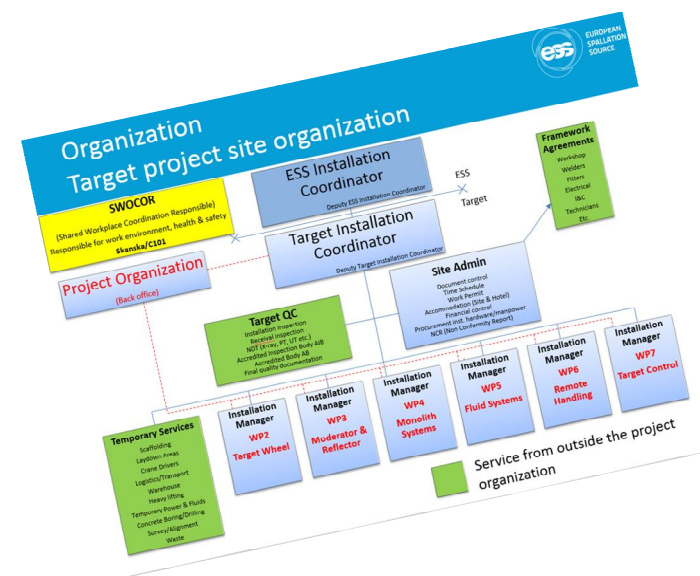
Detailed installation schedule for the part of the installation



# Installation Binder

- 00 List of Documents (I&E)
- 01 Time Schedule (I)
- 02 Organization / List of Contact
- 03 P&ID (E)
- 04 Drawings (E)
- 05 List of Components & Material (E)
- 06 Reference Documents (E)
- 07 Inspection Plans (E)
- 08 Pressure Test (E)
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**02. Organization / List of Contact**  
 ESS Site Organization  
 Target Site Organization  
 In-kind project, Site Organization  
 In-house project, Site Organization  
 Telephone / mail list



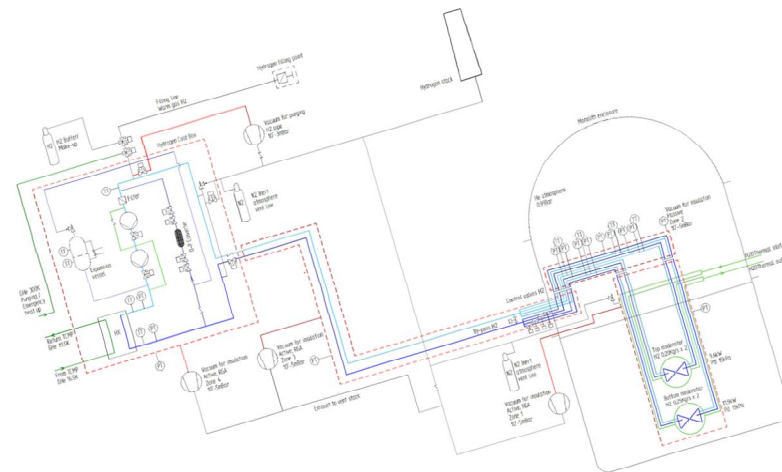


# Installation Binder


- 00 List of Documents (I&E)
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## 03. P&ID

Flow charts if applicable



# Installation Binder

- 00 List of Documents (I&E)
- 01 Time Schedule (I)
- 02 Organisation List of Contacts (I)
- 03 P&ID (E)
- 
- 05 List of Components & Material (E)
- 06 Reference Documents (E)
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- 08 Pressure Test (E)
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## 04. Drawings

Only installation drawings!

Drawings that is used for prefab etc. is placed in folder:

## 06. Reference documents

# Installation Binder

- 00 List of Documents (I&E)
- 01 Time Schedule (I)
- 02 Organisation List of Contacts (I)
- 03 P&ID (E)
- 04 Drawings (E)
- 05 **List of components & Material**
- 06 Reference Documents (E)
- 07 Inspection Plans (E)
- 08 Pressure Test (E)
- 09 WPS (I)
- 10 Installation Procedures (I)
- 11 Installation Catalogue (I)
- 12 Daily Diary (I)
- 13 NCR Non Conformity Report (I&E)
- 14 Work Permits (I)
- 15 Test & Commissioning (I&E)

## 05. List of components & Material

- 01 List of Materials (E)
- 02 List of Objects (E)
- 03 List of Supports (E)
- 04 List of Name Plates (E)

- 00 List of Documents (I&E)
- 01 Time Schedule (I)
- 02 Organisation List of Contacts (I)
- 03 P&ID (E)
- 04 Drawings (E)
- 05 List of Components & Material (E)
- 06 Reference Dokument
- 07 Inspection Plans (E)
- 08 Pressure Test (E)
- 09 WPS (I)
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## 06. Reference Dokument

Detail drawings, Prefabrication drawings etc. that is referred to in the installation drawings in **04. Drawings**.

Could also be sketches, component data-sheets or other helping documents for installation.

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- 01 Time Schedule (I)
- 02 Organisation List of Contacts (I)
- 03 P&ID (E)
- 04 Drawings (E)
- 05 List of Components & Material (E)
- 06 Reference Documents (E)
- 07. Inspection Plans**
- 08 Pressure Test (E)
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## 07. Inspection Plans

Inspection plans & test protocol

- 01 Welding protocol
- 02 X-ray Protocol
- 03 UT protocol
- 04 Pressure test report
- 05 Etc

- 00 List of Documents (I&E)
- 01 Time Schedule (I)
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- 05 List of Components & Material (E)
- 06 Reference Documents (E)
- 07 Inspection Plans (E)
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## 08. Pressure test

Pressure test program incl. P&ID and description of work

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## 09. WPS

**WPQR** - Welding Procedure Qualification Report

**WPS** - Welding procedure specifications

List of all aproved WPS's

- 00 List of Documents (I&E)
- 01 Time Schedule (I)
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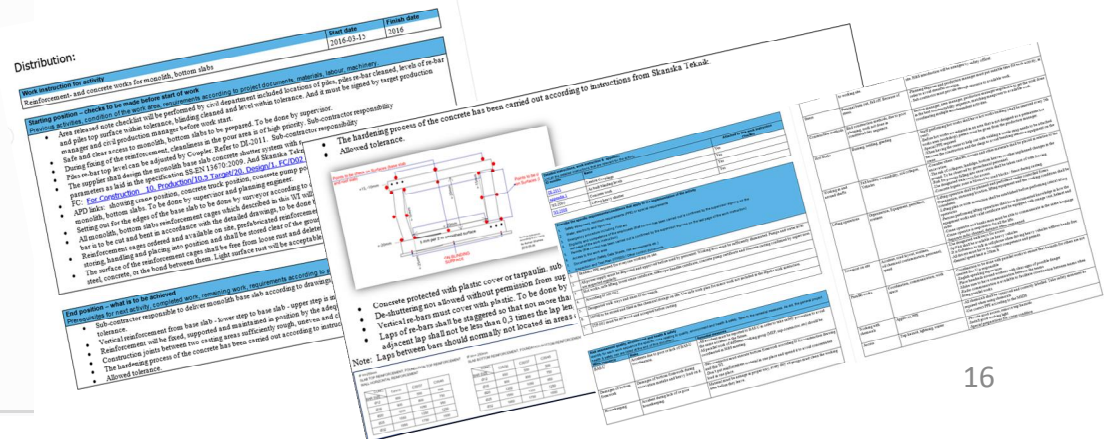
## 10. Installation Procedures

### • Work instructions (WI)

Step by step description of the work including the needs (scaffolding, cranes etc.) for installation. The work instruction is linked to folder **01 Time schedule** and to folder **11 Installation Catalogue**

### • Job Hazard Analysis (JHA)

Perform JHA for all installation operations



**Distribution:**

Start date	Finish date
2016-03-15	2016

**Working position - checks to be made before start of work**

- Area reserved and safe electrical work will be performed by, and all equipment included location of pipes, plus re-bar checked, levels of re-bar messages and civil production messages, handling steps and level work tolerance. And it must be signed by target production
- Area reserved and safe electrical work will be performed by, and all equipment included location of pipes, plus re-bar checked, levels of re-bar messages and civil production messages, handling steps and level work tolerance. And it must be signed by target production
- Safe and clear access to moulds, bottom slabs to be prepared. To be done by supervisor.
- During filling of the reinforcement, obstructions in the pour area are of high priority. Sub-contractor responsibility.
- Pipes in bar top level can be adjusted by Computer. Refer to DR-2011. Sub-contractor responsibility.
- The supplier shall design the moulds with slab concrete above system with 100mm concrete.
- APC shall allow concrete pump, concrete work position, concrete pump parameters as laid in the specification SS 231 1670-2009. And Skanska's safety.
- Setting out for the edges of the base slab to be done by surveyor according to drawings.
- All moulds, bottom slabs reinforcement caps which described in the drawings to be done by the contractor.
- Reinforcement caps ordered and available on site, pre-lubricated and ready to be used.
- The surface of the reinforcement caps shall be free from rust and dirt.
- Reinforcement caps shall be free from rust and dirt.
- The surface of the reinforcement caps shall be free from rust and dirt.
- Light surface will be acceptable steel concrete in the hand between them.

**Final position - what is to be achieved**

- Sub-contractor responsible to determine moulds has been set according to drawings tolerance.
- Reinforcement from base slab - how step to base slab - upper step is in accordance with drawings.
- Reinforcement in the form, supported and anchored in position by the slab.
- Construction joints between two - mixed areas sufficiently rough, vertical and horizontal.
- The hardening process of the concrete has been covered according to specification.
- Approved tolerance.

**Note:**

- Concrete protected with plastic cover or tarpaulin. Sub-contractor not allowed without permission from site.
- Vertical re-bars must cover with plastic. To be done by sub-contractor.
- Laps of re-bars shall be staggered so that not more than 50% of the re-bars shall be in the same lap in any one area.
- Note: Laps between bars should normally not be used in areas of high stress.



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## 11. Installation Catalogue

- Appendix A - Scaffolding\_Laydown Areas
- Appendix C - Power and fluids
- Appendix B - Lifting
- Appendix D - Waste List
- Appendix E - Interferences List
- Appendix F - List of concrete boring\_drilling
- Appendix G - Conventional Waste List
- Appendix H - Tie In List

**Appendix B - LIFTING**

Legend: Lifting means, temporary Chain blocks - Construction cranes - High bay cranes - Etc.

Rev	WP	Schedule Activity	Document reference	Elev.	Location	Capacity	Type of disposition	Sketch	Disposition description	
									IK	TD
1	WP2	A20163265	Sketch 1	79.9	D02	95 ton			Crane needed for lifting Target Wheel	
										X

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## 12. Daily diary

Notes of important / main activities during the day. Is also used for reporting to management and information to other shifts

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## 13. NCR Non Conformity Report

Non conformity reports

Follow up list

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- 15 Test & Commissioning (I&E)

## 14. Work Permits

Hot work permits

Electrical work permits

Fork lift licence

Lifting licence

Site Training

Etc.

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## 15. Test & Commissioning

### Test programs

- 01 Functional Test (I)
- 02 System Test (I)
- 03 Integrated System test (I)