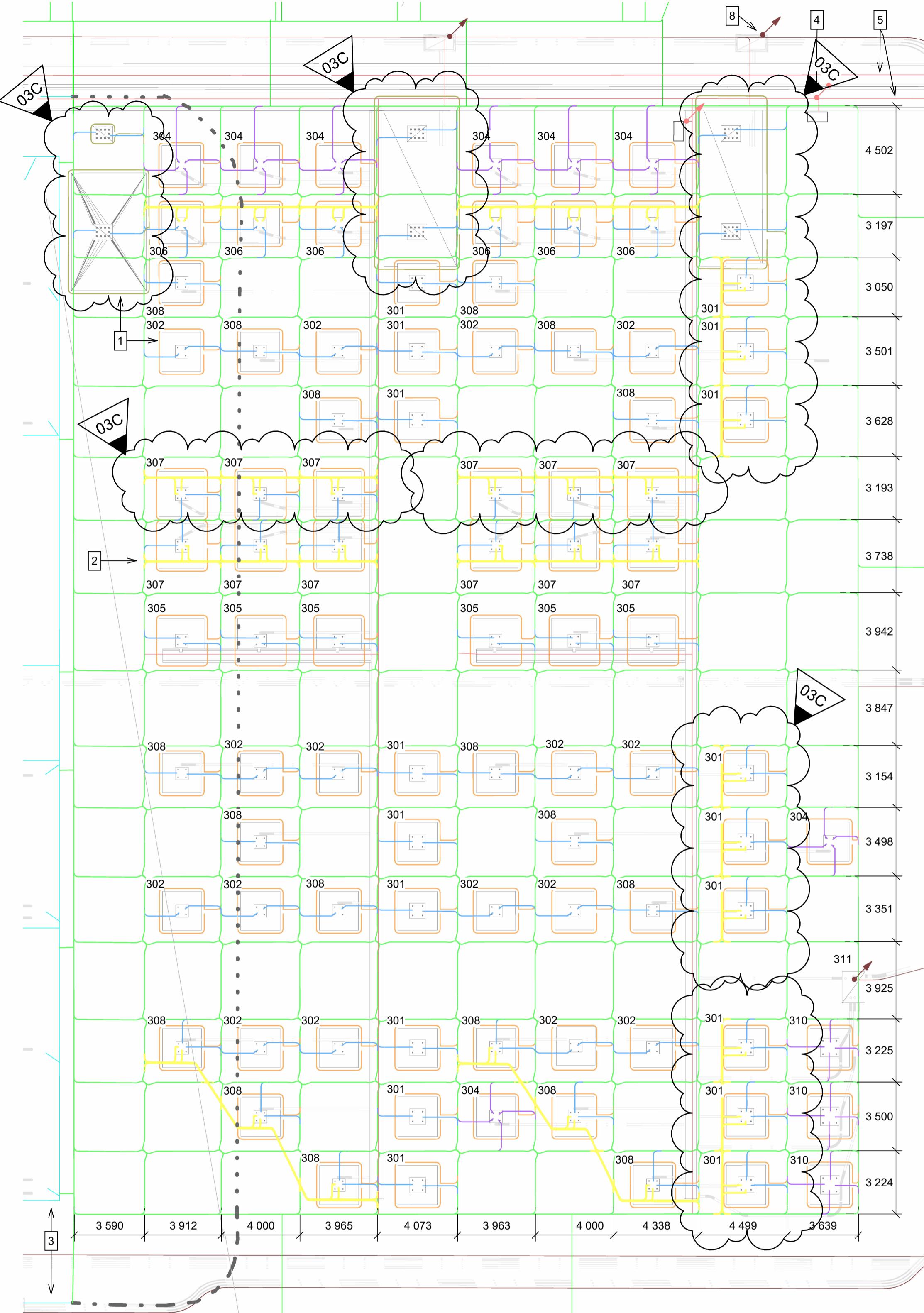
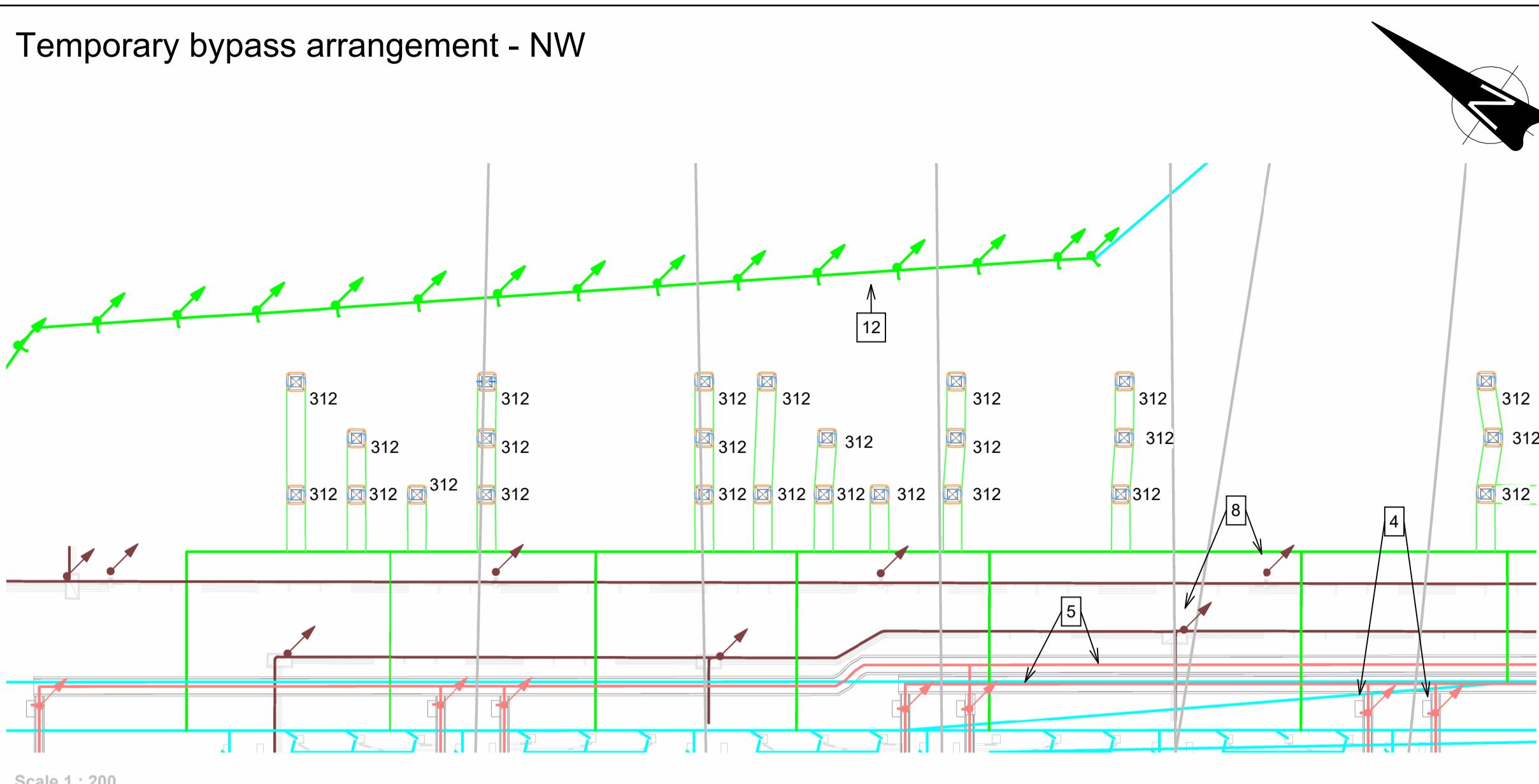


Main Switchyard

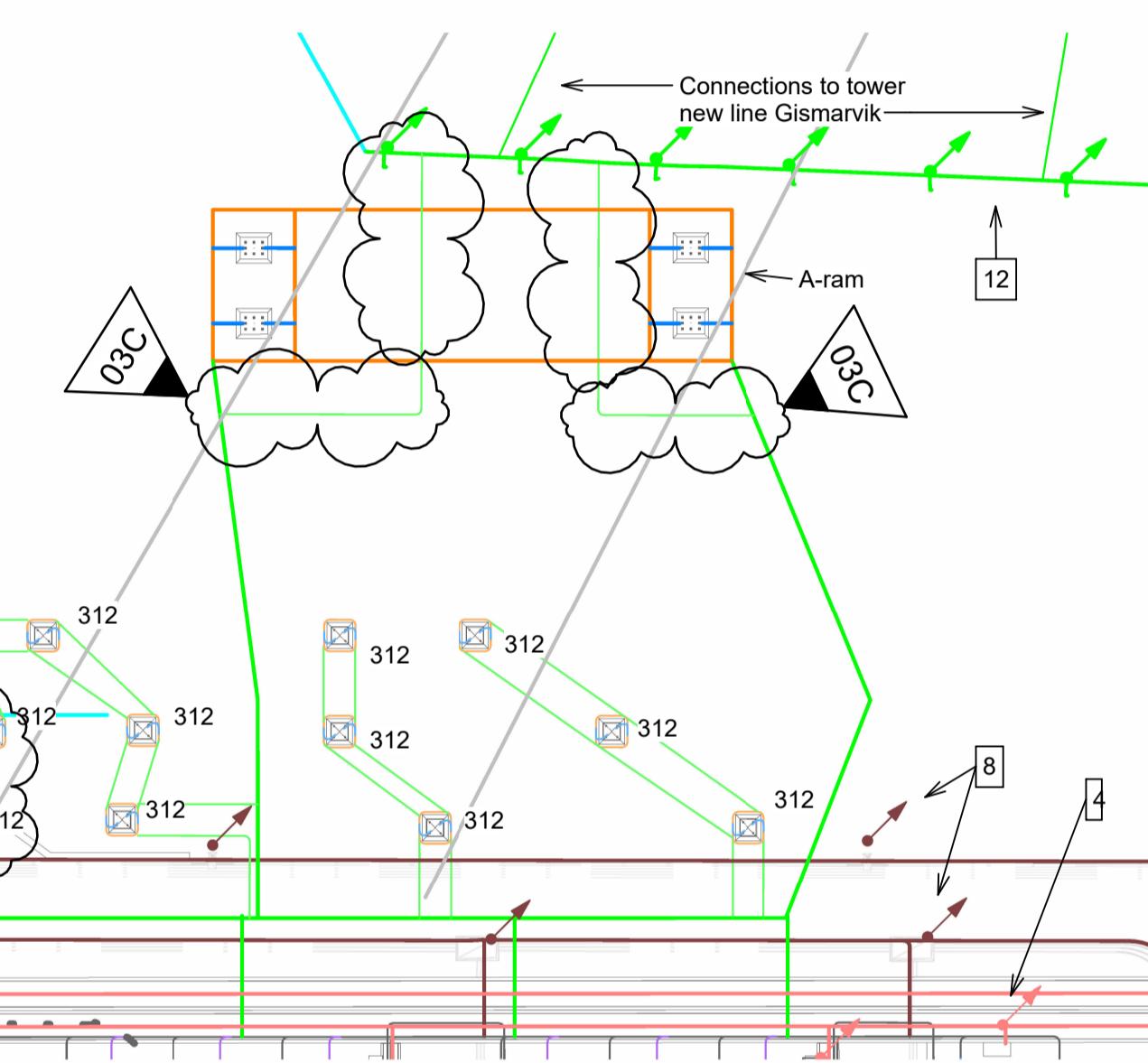


Scale 1 : 160

Temporary bypass arrangement - NW



Temporary bypass arrangement - NE



66 [View](#) [Edit](#)

- V Main Busbar Support Insulator / 300 kV Main Bar Support Insulator & Earth Switch
- V Post Insulator
- V Capacitive Voltage Transformer
- V Circuit Breaker
- V Current Transformer
- V Disconnector with Earth Switch
- V Disconnector without Earth Switch
(ograph)
- V Resistive Capacitive Voltage Transformer
- V Stations Service Voltage Transformer
cker Cabinet for SSVT
- V Bushings (transformer connection)

* Foundation types marked with * has diagonal brace connection points on their metal base, others have centered brace connection points.

Legend

Riser, described by riser symbol or colored line given in legend

Switchyard deep foundation earthing conductor, 1x120 mm² uninsulated CU - With one riser to above mesh/ring.

Switchyard level foundation earthing conductor, 1x120 mm² uninsulated CU - With one riser to the above mesh/ring.

Earthing conductor 1x120 mm² uninsulated CU - Ring-, mesh-, fence-, gate- and interconnecting earthing conductors

Short circuit bridge earthing conductor with two 1x120 mm² uninsulated CU below ground, two risers of 1x120 mm² uninsulated CU from below ground to steel support base, 3x120 mm² insulated Y/G CU risers from support base to earth lance / earth switch.

Switchyard riser earthing conductor, 1x120 mm² uninsulated CU - Two risers connecting mesh grid and steel support base.

Switchyard riser earthing conductor, 1x120 mm² uninsulated CU - Four risers connecting mesh grid and steel support base.

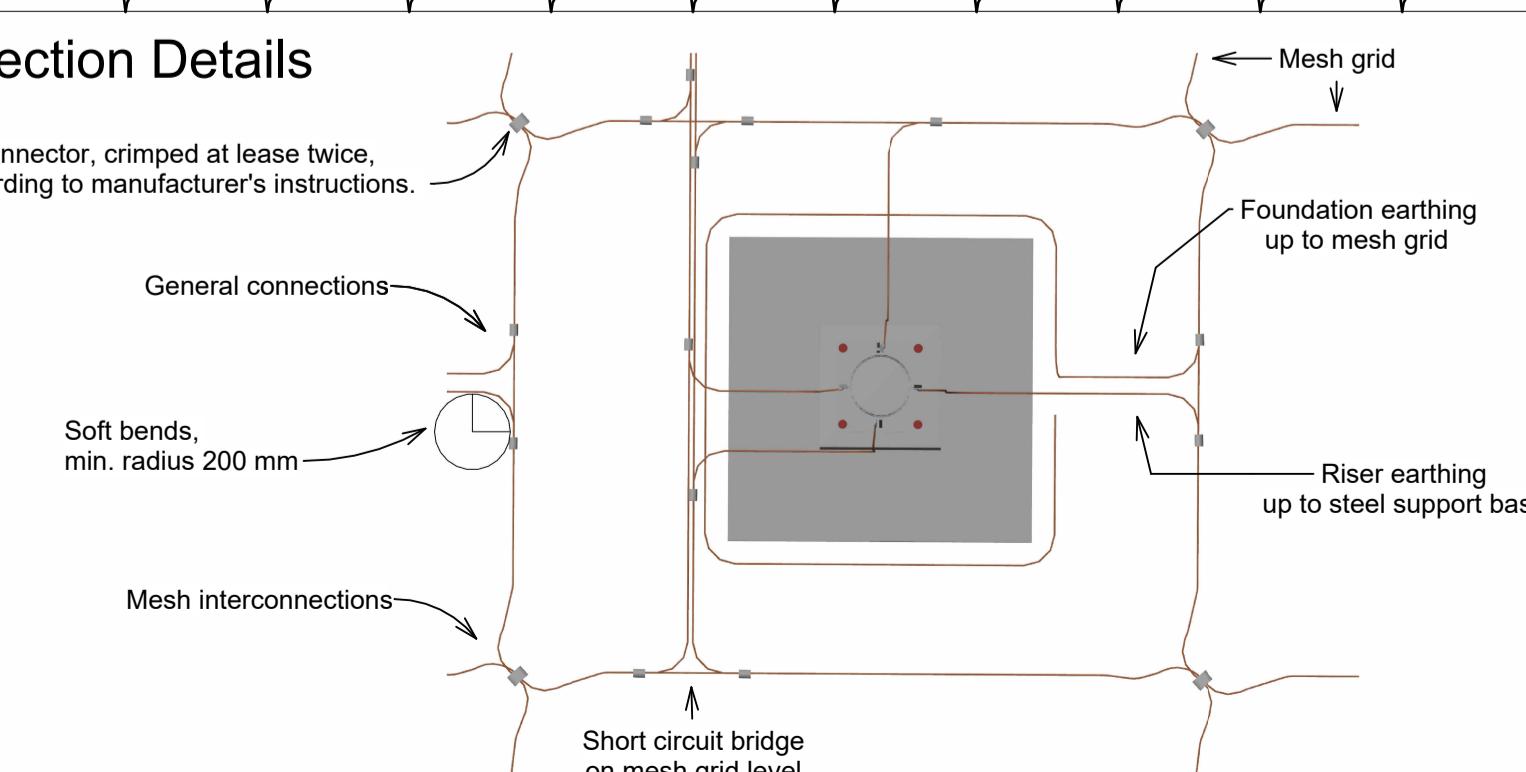
Earthing conductor 1x120 mm² uninsulated CU - At center of concrete cable trench, with end connections to mesh grid, with minimum 1x70 mm² insulated Y/G CU riser to each field cabinet.

Earthing conductor 1x120 mm² uninsulated CU - Following all cable trenches, with minimum 1x25 mm² insulated Y/G CU risers for potential equalization of larger metallic objects > 2 m or > 1 m²

- Existing 70 mm² earthing system to be kept and connected to
- Existing 70 mm² earthing wire to be removed

Connection Details

C-type connector, crimped at lease twice
and according to manufacturer's instruction



NOTES

All larger metal parts with length > 2 m or area > 1 m², shall have potential equalization to nearby earthing wire, with at least 1x25 mm² insulated Y/G CU, even if not specified in this drawing.

All buried earth conductors shall be laid in 0 – 16 mm crushed aggregate, with a minimum of 50 mm below and above. The aggregate must be protected against washout.

Earthing conductors should not be laid with sharp bends. Minimum 200 mm bending radius.

All mesh grid and other interconnections, are to be connected using C-type connectors or appropriate cable lugs. C-type connectors shall be crimped at least twice using supplier-approved tools, or else in accordance with the tool manufacturer's instructions. Cable lugs shall match conductor type and size, and be crimped per supplier's recommendations.

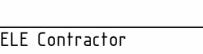
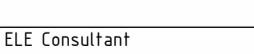
1. Switchyard foundation earth is placed surrounding foundations foot or close below foot, with risers to above mesh grid. Mesh grid earth shall be installed at depth 0.3 - 0.7 m. All lead risers from mesh grid to the above foundation top steel support are fastened with minimum two acid-resistant saddles, with length of riser at least 0.4 m above foundation top.
 2. The short circuit interconnections is to be installed at same level as/and connected to the Earth Grid, with risers connected to designated earth points on foundation top steel support, before new connections are extended to the top equipment earthing switch/lance.
 3. The existing earthing system shall remain unchanged, except for new connections to the switchyard earthing grid and interconnections at the new fences. Any existing earth conductors encountered during excavation shall be repaired.
 4. All Field cabinet shall be earthed with at least 1x70 mm² insulated Y&G CU riser from the below cable duct earthing conductor.
 5. Cable ducts shall have a centered 1x120 mm² uninsulated CU wire. All earthing conductors ends terminations shall be terminated connected to the nearby ring or mesh grid. Cable trenches shall have 1x120 mm² uninsulated CU.
 8. Within the electrical system, all junction boxes metal lids and metal bases of lighting poles shall be connected to the nearby cable trench wire or other earth electrode wire, using minimum 1x25 mm² insulated Y/G CU.
 12. A 1x120 mm² uninsulated CU ring earth conductor shall be laid 0.5– 1 m from the new fence and buried at 0.3 m depth. Where burial is not possible, it shall be clamped to the rock on the fence inner side. Every end pole and every second pole shall be connected to the ring with 1x120 mm² CU risers, fixed as low as possible on the poles inner side. The new conductor must connect to the existing fence earth at fence terminations.

Tegningsnummer	Revisjon
A1137-HMV-XX-BLÅ-DR-E-0006	03C

References

1. SDOK-47-51 - General Technical Specifications for Earthing in Substations
 2. SDOK-47-52 - Special Technical Specifications for Earthing in Substations
10323-SWE-BLÅ-E-SP-0005_BLA - Blåfelli koblingsstasjon
- Technical specification Earthing in substation
 3. SDOK-83-20 - Principle Drawing Cable Routing and Grounding in ControlSystems
 4. SDOK-119-14 - Principle for substation site construction
 5. 10323-SWE-BLÅ-E-XX-0001 03B 300 kV switchgear Plan view
 6. A1137-HMV-XX-BLÅ-RP-E-001 BLÅ 300 kV - Substation Earthing Report

Classified as restricted information under the Norwegian Energy Act § 9-3 and the Emergency Preparedness Regulation (bfe) § 6-2. Exempted from public disclosure according to the Freedom of Information Act (Offentlenglova).

03C	Updated after SN comments and current project situation	OscJac	PSS	OscJac	2025-06-12
02C	New configuration switchyard	OscJac	TAR	OscJac	2025-05-09
01C	Issued for review	OscJac	PSS	OscJac	2025-03-11
Rev.	Reason for issue/Description	Prepeared	Checked (STN)	Approved	Date dd.mm.yyy
Project / Contract no. 10323/CTR007037					
<p>Title BLÅ 300 kV Substation Earthing Plan for Switchyard installations</p>					<p>Scale 1 : 150</p> <p>Coordinate system EUREF89 NTM6</p> <p>System of heights NN2000</p>
Client	Statnett	ELE Contractor 	ELE Consultant 	Discipline responsible Checker Executioner Author	
Classification	<i>Statnett Sensitive (K3)</i>	Project no. supplier A1137-HMV-XX-BLÅ-DR-E-0006	Project no. supplier	Format A1	
Replaces document	Document no.		Sheet		