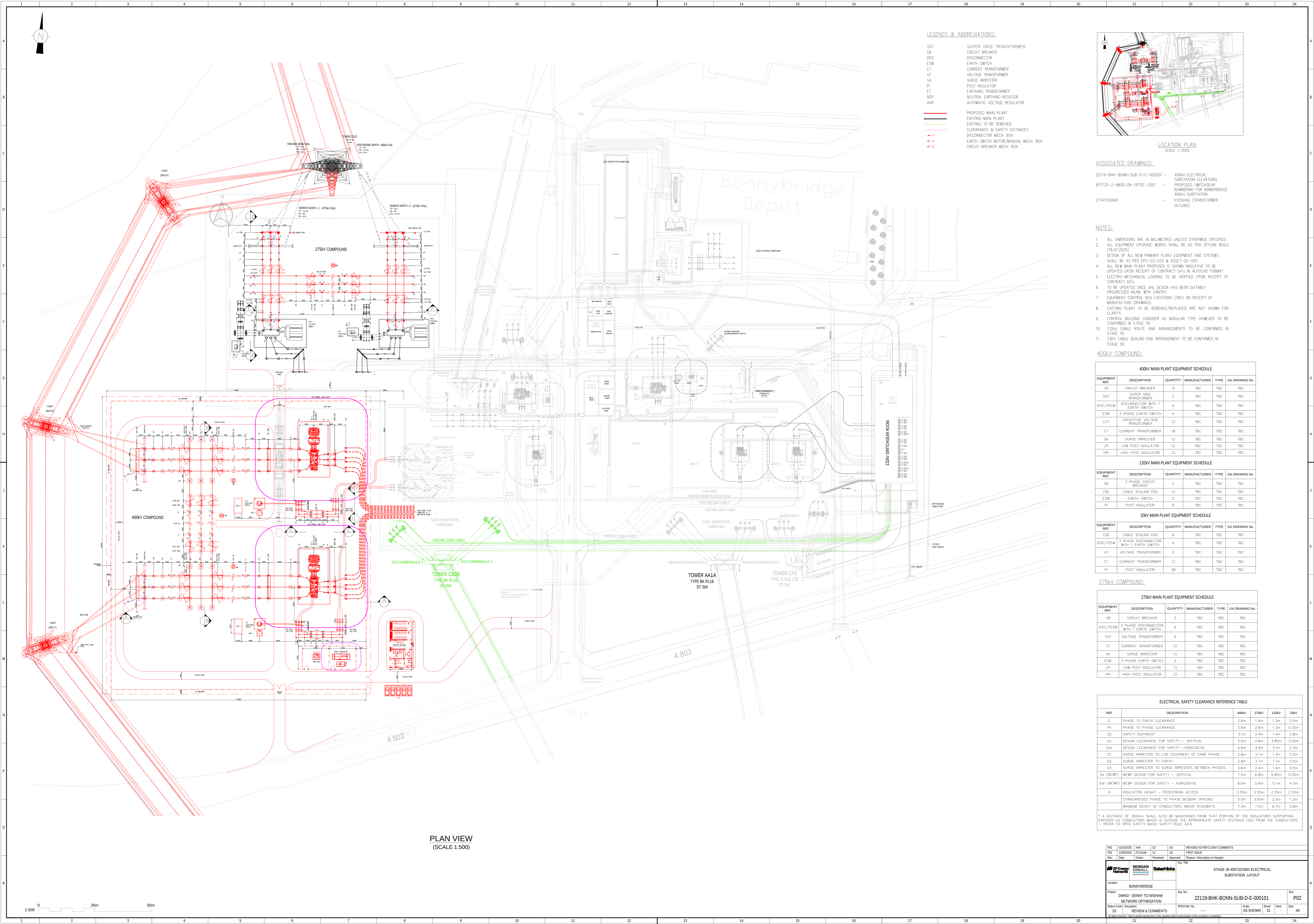
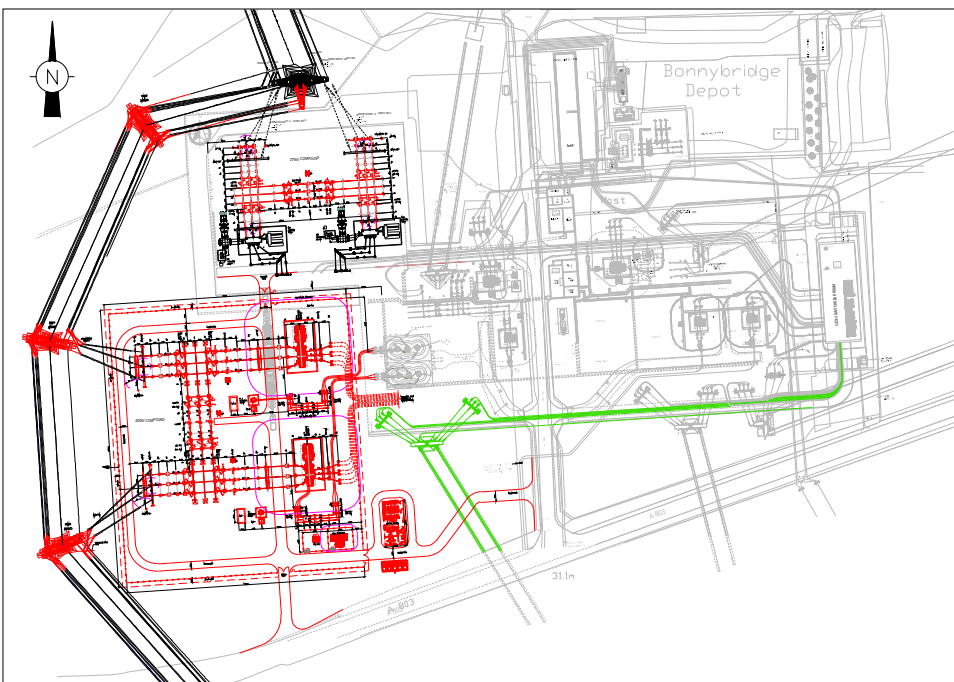




LEGENDS & ABBREVIATIONS:

- SGT SUPER GRID TRANSFORMER
- CB CIRCUIT BREAKER
- DISC DISCONNECTOR
- ESW EARTH SWITCH
- CT CURRENT TRANSFORMER
- VT VOLTAGE TRANSFORMER
- SA SURGE ARRESTER
- PI POST INSULATOR
- ET EARTHING TRANSFORMER
- NER NEUTRAL EARTHING RESISTOR
- AVR AUTOMATIC VOLTAGE REGULATOR
- PROPOSED MAIN PLANT
- EXISTING MAIN PLANT
- EXISTING TO BE REMOVED
- CLEARANCE & SAFETY DISTANCES
- DISCONNECTOR MECH. BOX
- EARTH SWITCH MOTOR/MANUAL MECH. BOX
- CIRCUIT BREAKER MECH. BOX



LOCATION PLAN  
SCALE 1:3500

ASSOCIATED DRAWINGS:

- 22119-BHK-BONN-SUB-D-E-000201 - 400KV ELECTRICAL SUBSTATION ELEVATIONS
- B11733-2-8800-DK-SPIEE-3001 - PROPOSED SWITCHGEAR NUMBERING FOR BONNYBRIDGE 400KV SUBSTATION
- ET1A100940 - HYOSUNG (TRANSFORMER OUTLINE)

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
- ALL EQUIPMENT UPGRADE WORKS SHALL BE AS PER OFFLINE BUILD (18.07.2025)
- DESIGN OF ALL NEW PRIMARY PLANT EQUIPMENT AND SYSTEMS SHALL BE AS PER EPS-03-033 & ASSET-02-005
- ALL NEW MAIN PLANT PROPOSED IS SHOWN INDICATIVE TO BE UPDATED UPON RECEIPT OF CONTRACT GA'S IN AUTOCAD FORMAT.
- ELECTRO-MECHANICAL LOADING TO BE VERIFIED UPON RECEIPT OF CONTRACT GA'S
- TO BE UPDATED ONCE OHL DESIGN HAS BEEN SUITABLY PROCESSED ALINE WITH GANTRY
- EQUIPMENT CONTROL BOX LOCATIONS (TBC) ON RECEIPT OF MANUFACTURE DRAWINGS
- EXISTING PLANT TO BE REMOVED/REPLACED ARE NOT SHOWN FOR CLARITY
- CONTROL BUILDING CONSIDER AS MODULAR TYPE HOWEVER TO BE CONFIRMED IN STAGE 1B
- 132KV CABLE ROUTE AND ARRANGEMENTS TO BE CONFIRMED IN STAGE 1B
- 33KV CABLE SEALING END ARRANGEMENT TO BE CONFIRMED IN STAGE 1B

400KV COMPOUND:

| 400KV MAIN PLANT EQUIPMENT SCHEDULE |                                          |          |              |      |                |
|-------------------------------------|------------------------------------------|----------|--------------|------|----------------|
| EQUIPMENT REF.                      | DESCRIPTION                              | QUANTITY | MANUFACTURER | TYPE | GA DRAWING No. |
| CB                                  | CIRCUIT BREAKER                          | 9        | TBC          | TBC  | TBC            |
| SGT                                 | SUPER GRID TRANSFORMER                   | 2        | TBC          | TBC  | TBC            |
| DISC/ESW                            | DISCONNECTOR WITH 1 EARTH SWITCH         | 6        | TBC          | TBC  | TBC            |
| ESW                                 | 3 PHASE EARTH SWITCH                     | 4        | TBC          | TBC  | TBC            |
| CVT                                 | CAPACITIVE VOLTAGE TRANSFORMER           | 12       | TBC          | TBC  | TBC            |
| CT                                  | CURRENT TRANSFORMER                      | 18       | TBC          | TBC  | TBC            |
| SA                                  | SURGE ARRESTER                           | 12       | TBC          | TBC  | TBC            |
| LPI                                 | LOW POST INSULATOR                       | 12       | TBC          | TBC  | TBC            |
| HPI                                 | HIGH POST INSULATOR                      | 12       | TBC          | TBC  | TBC            |
| 132KV MAIN PLANT EQUIPMENT SCHEDULE |                                          |          |              |      |                |
| EQUIPMENT REF.                      | DESCRIPTION                              | QUANTITY | MANUFACTURER | TYPE | GA DRAWING No. |
| CB                                  | 3 PHASE CIRCUIT BREAKER                  | 2        | TBC          | TBC  | TBC            |
| CSE                                 | CABLE SEALING END                        | 12       | TBC          | TBC  | TBC            |
| ESW                                 | EARTH SWITCH                             | 2        | TBC          | TBC  | TBC            |
| PI                                  | POST INSULATOR                           | 6        | TBC          | TBC  | TBC            |
| 33KV MAIN PLANT EQUIPMENT SCHEDULE  |                                          |          |              |      |                |
| EQUIPMENT REF.                      | DESCRIPTION                              | QUANTITY | MANUFACTURER | TYPE | GA DRAWING No. |
| CSE                                 | CABLE SEALING END                        | 6        | TBC          | TBC  | TBC            |
| DISC/ESW                            | 3 PHASE DISCONNECTOR WITH 1 EARTH SWITCH | 4        | TBC          | TBC  | TBC            |
| VT                                  | VOLTAGE TRANSFORMER                      | 2        | TBC          | TBC  | TBC            |
| CT                                  | CURRENT TRANSFORMER                      | 12       | TBC          | TBC  | TBC            |
| PI                                  | POST INSULATOR                           | 38       | TBC          | TBC  | TBC            |

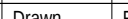
275KV COMPOUND:

| 275KV MAIN PLANT EQUIPMENT SCHEDULE |                                          |          |              |      |                |
|-------------------------------------|------------------------------------------|----------|--------------|------|----------------|
| EQUIPMENT REF.                      | DESCRIPTION                              | QUANTITY | MANUFACTURER | TYPE | GA DRAWING No. |
| CB                                  | CIRCUIT BREAKER                          | 3        | TBC          | TBC  | TBC            |
| DISC/ESW                            | 3 PHASE DISCONNECTOR WITH 1 EARTH SWITCH | 6        | TBC          | TBC  | TBC            |
| CVT                                 | VOLTAGE TRANSFORMER                      | 6        | TBC          | TBC  | TBC            |
| CT                                  | CURRENT TRANSFORMER                      | 12       | TBC          | TBC  | TBC            |
| SA                                  | SURGE ARRESTER                           | 12       | TBC          | TBC  | TBC            |
| ESW                                 | 3 PHASE EARTH SWITCH                     | 2        | TBC          | TBC  | TBC            |
| LPI                                 | LOW POST INSULATOR                       | 12       | TBC          | TBC  | TBC            |
| HPI                                 | HIGH POST INSULATOR                      | 12       | TBC          | TBC  | TBC            |

| ELECTRICAL SAFETY CLEARANCE REFERENCE TABLE |                                                  |       |       |       |       |
|---------------------------------------------|--------------------------------------------------|-------|-------|-------|-------|
| REF                                         | DESCRIPTION                                      | 400KV | 275KV | 132KV | 33KV  |
| E                                           | PHASE TO EARTH CLEARANCE                         | 2.6m  | 1.9m  | 1.3m  | 0.5m  |
| Ph                                          | PHASE TO PHASE CLEARANCE                         | 3.6m  | 2.6m  | 1.3m  | 0.32m |
| SD                                          | SAFETY DISTANCE*                                 | 3.1m  | 2.4m  | 1.4m  | 0.8m  |
| Ds                                          | DESIGN CLEARANCE FOR SAFETY - VERTICAL           | 5.5m  | 4.8m  | 3.85m | 3.05m |
| Dsh                                         | DESIGN CLEARANCE FOR SAFETY - HORIZONTAL         | 4.6m  | 3.9m  | 3.1m  | 2.3m  |
| D1                                          | SURGE ARRESTER TO LIVE EQUIPMENT OF SAME PHASE   | 2.8m  | 2.1m  | 1.3m  | 0.5m  |
| D2                                          | SURGE ARRESTER TO EARTH                          | 2.8m  | 2.1m  | 1.1m  | 0.5m  |
| D3                                          | SURGE ARRESTER TO SURGE ARRESTER, BETWEEN PHASES | 3.6m  | 2.4m  | 1.4m  | 0.5m  |
| Ds (MEWP)                                   | MEWP DESIGN FOR SAFETY - VERTICAL                | 7.5m  | 6.8m  | 5.85m | 5.05m |
| Dsh (MEWP)                                  | MEWP DESIGN FOR SAFETY - HORIZONTAL              | 6.6m  | 5.9m  | 5.1m  | 4.3m  |
| h                                           | INSULATION HEIGHT - PEDESTRIAN ACCESS            | 2.55m | 2.55m | 2.55m | 2.55m |
|                                             | STANDARDISED PHASE TO PHASE BUSBAR SPACING       | 5.0m  | 3.65m | 2.5m  | 1.2m  |
|                                             | MINIMUM HEIGHT OF CONDUCTORS ABOVE ROADWAYS      | 7.3m  | 7.0m  | 6.7m  | 5.8m  |

\* A DISTANCE OF 300mm SHALL ALSO BE MAINTAINED FROM THAT PORTION OF THE INSULATORS SUPPORTING EXPOSED HV CONDUCTORS WHICH IS OUTSIDE THE APPROPRIATE SAFETY DISTANCE (SD) FROM THE CONDUCTORS - REFER TO SPEN SAFETY BASIC SAFETY RULE A2.6

PLAN VIEW  
(SCALE 1:500)

|                                                                                                                                                                                                                                                                                  |          |                                         |          |           |                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------|----------|-----------|----------------------------------|
| P02                                                                                                                                                                                                                                                                              | 00000205 | AWK                                     | SJ       | US        | REVISED AS PER CLIENT COMMENTS   |
| P02                                                                                                                                                                                                                                                                              | 12090020 | P02AWK                                  | SJ       | US        | FIRST ISSUE                      |
| Rev.                                                                                                                                                                                                                                                                             | Date     | Drawn                                   | Reviewed | Approved  | Reason / Description of changes. |
| <div><div><b>MORGAN SINDALL</b><br/>ENGINEERS</div><div><b>Baker Hicks</b><br/>CONSULTANTS</div></div> |          |                                         |          |           |                                  |
| STAGE 1B 400132033KV ELECTRICAL SUBSTATION LAYOUT                                                                                                                                                                                                                                |          |                                         |          |           |                                  |
| Location: BONNYBRIDGE                                                                                                                                                                                                                                                            |          | Dwg. No.: 22119-BHK-BONN-SUB-D-E-000101 |          | Rev: P02  |                                  |
| Project: DMO - DENNY TO WISHAW NETWORK OPTIMISATION                                                                                                                                                                                                                              |          | Scale: AS SHOWN                         |          | Sheet: 01 |                                  |
| Status Code: Description: REVIEW & COMMENTS                                                                                                                                                                                                                                      |          | SPEN Ref. No.: -                        |          | Drawn: SJ |                                  |
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| 21                                                                                                                                                                                                                                                                               |          | 22                                      |          | 23        |                                  |