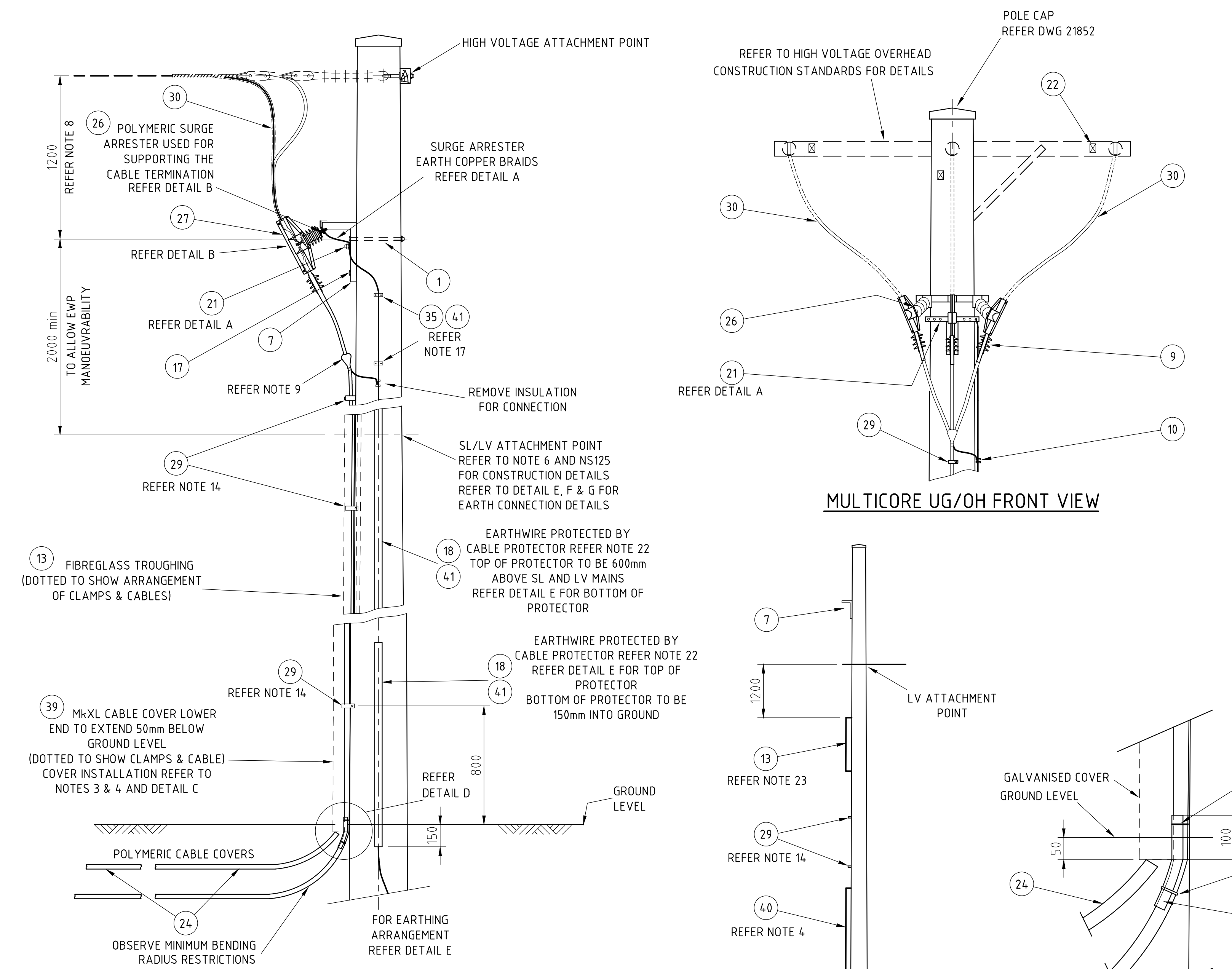
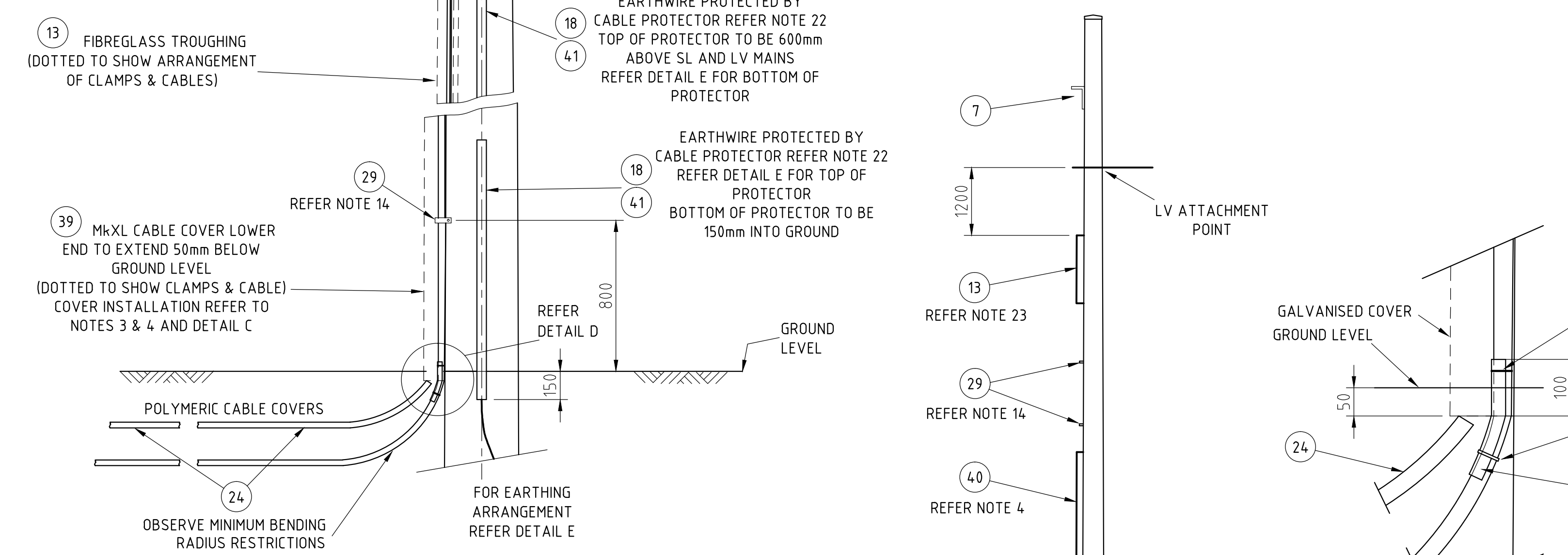


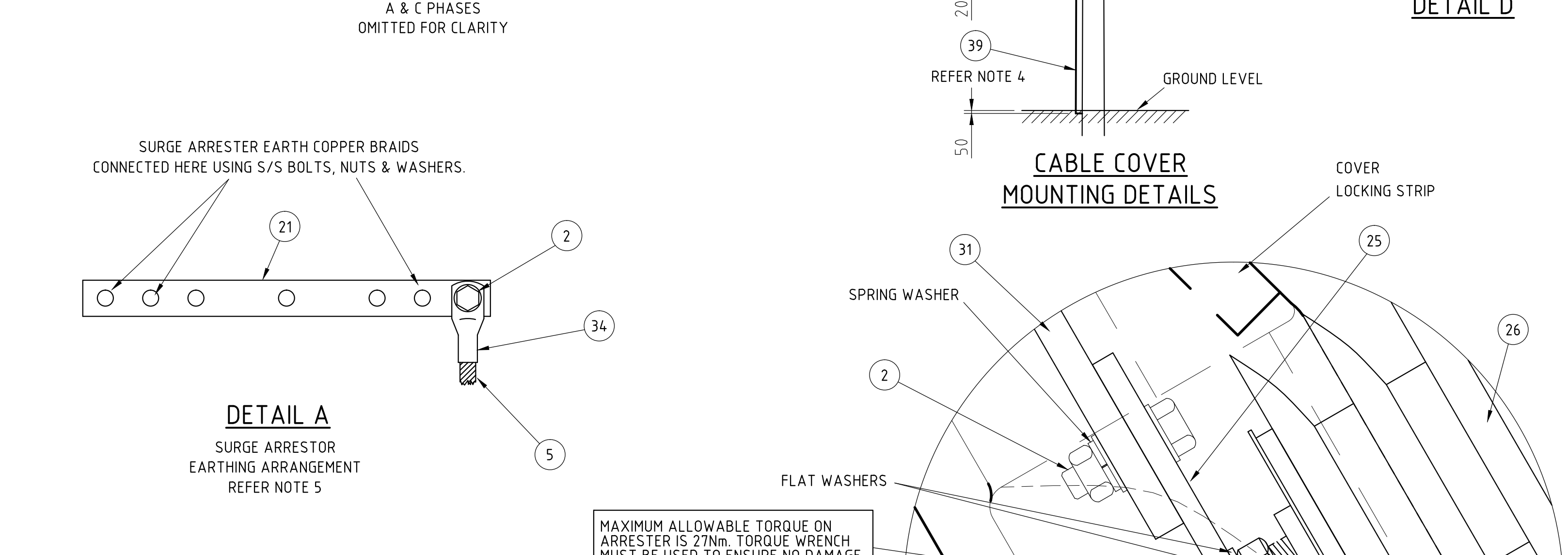
ALTERNATIVE HV OVERHEAD ARRANGEMENT
REFER TO OVERHEAD CONSTRUCTION STANDARD FOR DETAILS



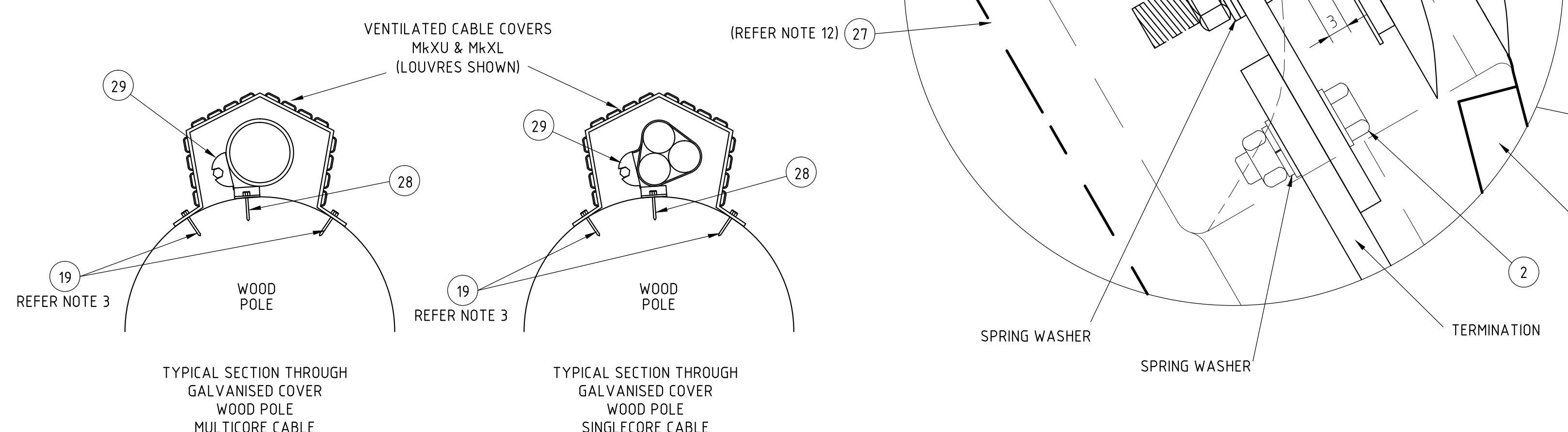
MULTICORE UG/OH FRONT VIEW



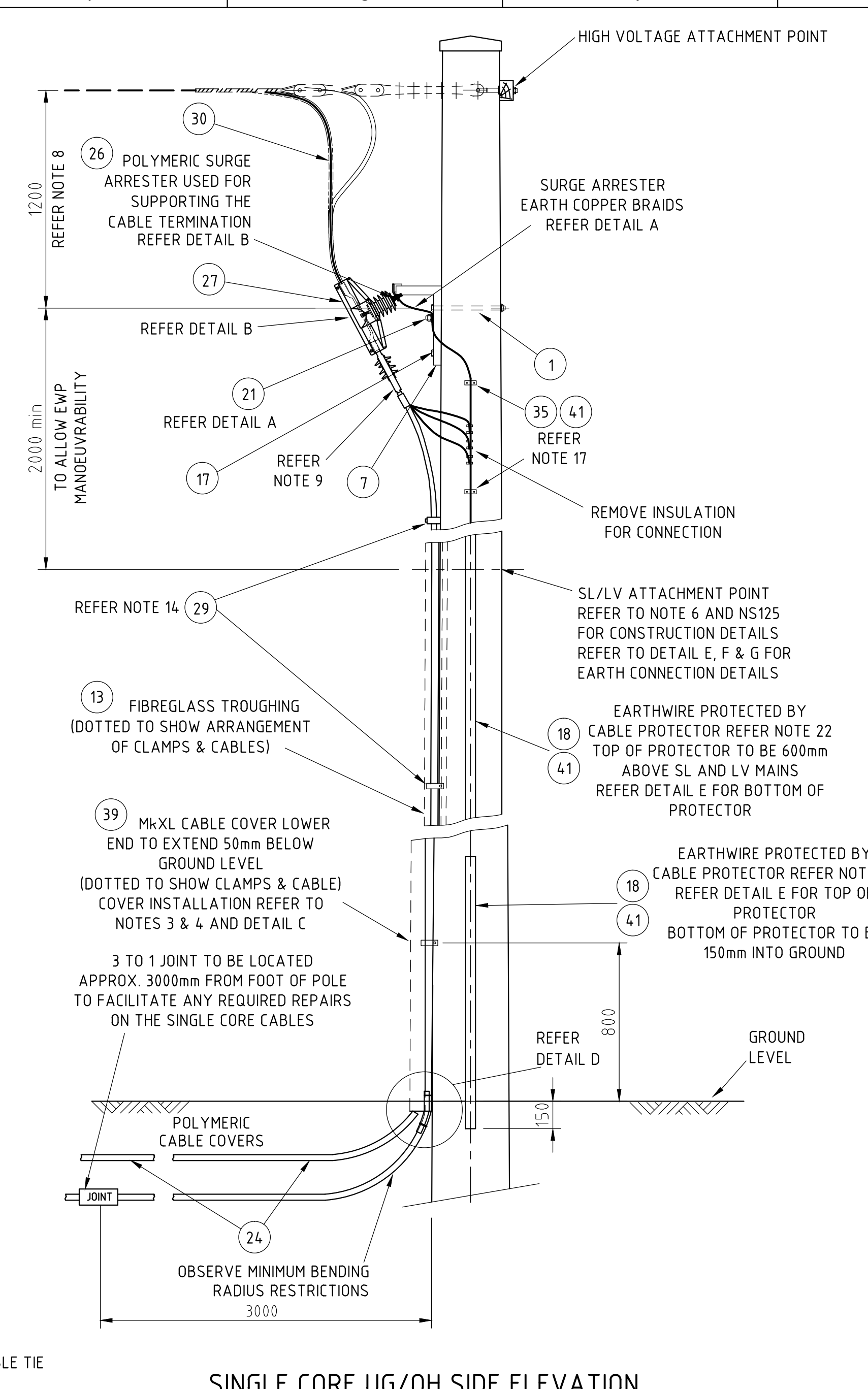
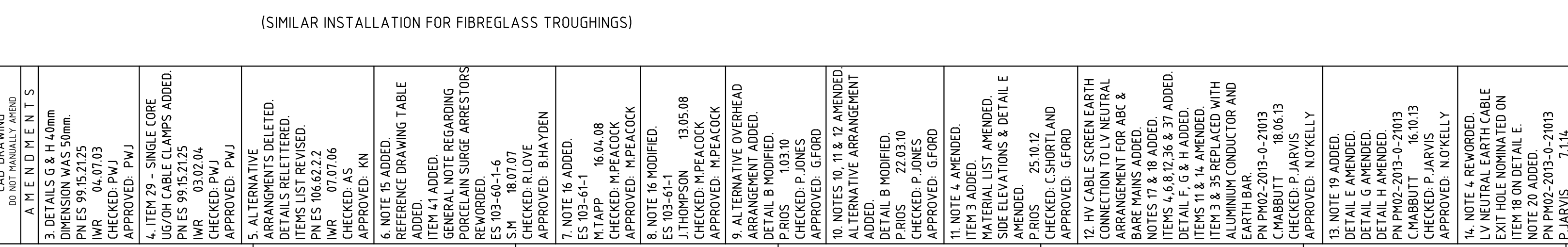
MULTICORE UG/OH SIDE ELEVATION



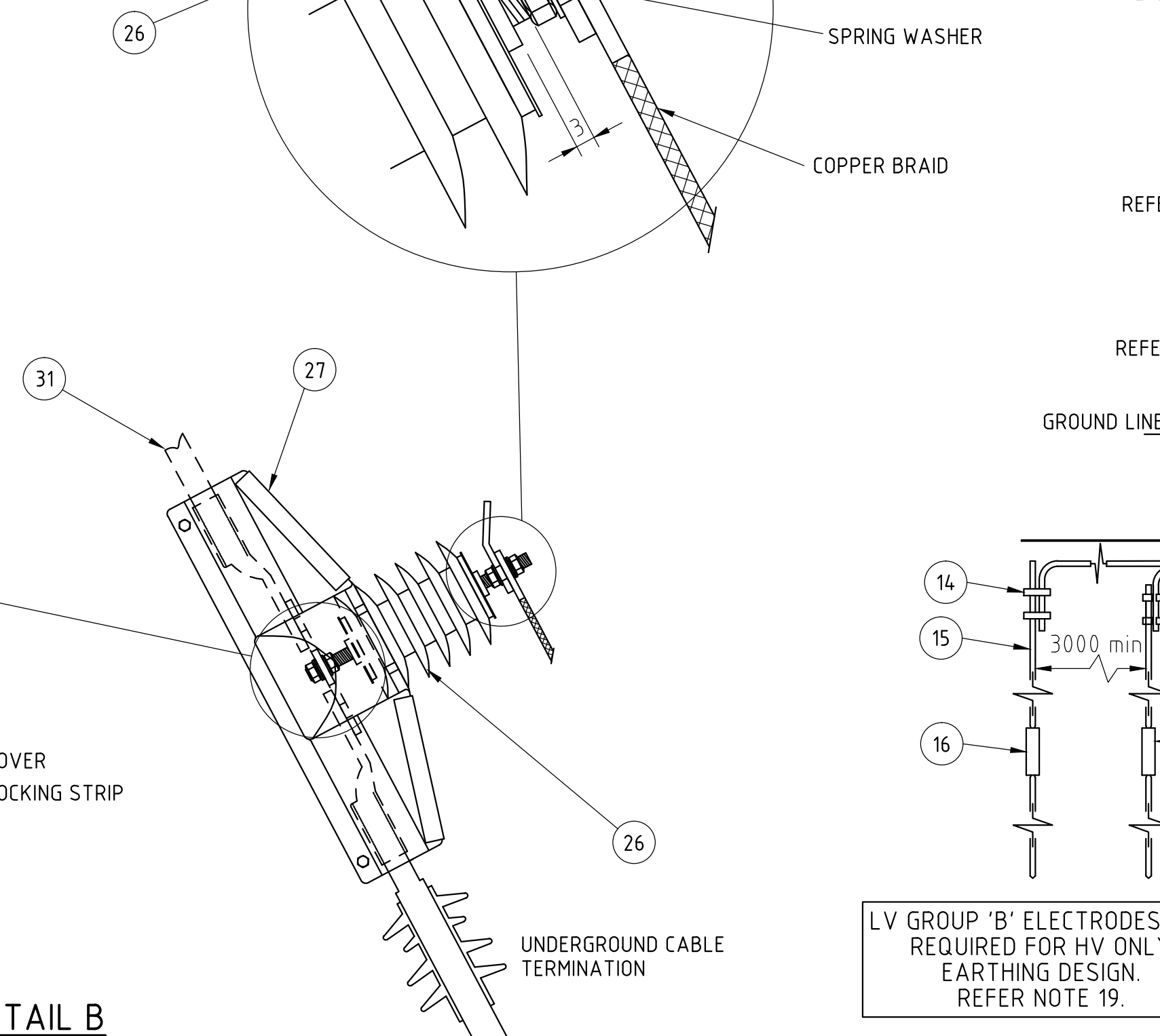
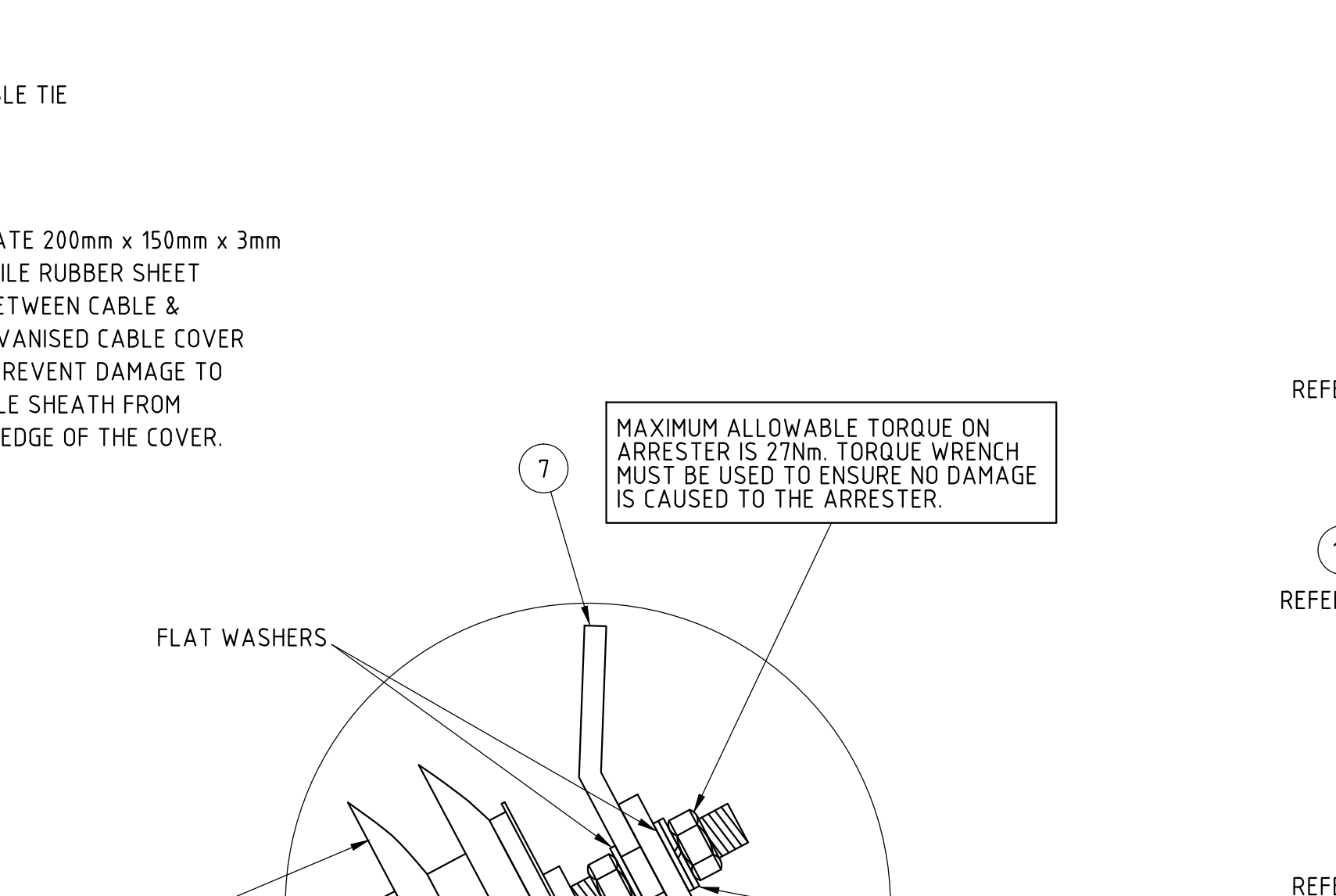
CABLE COVER MOUNTING DETAILS



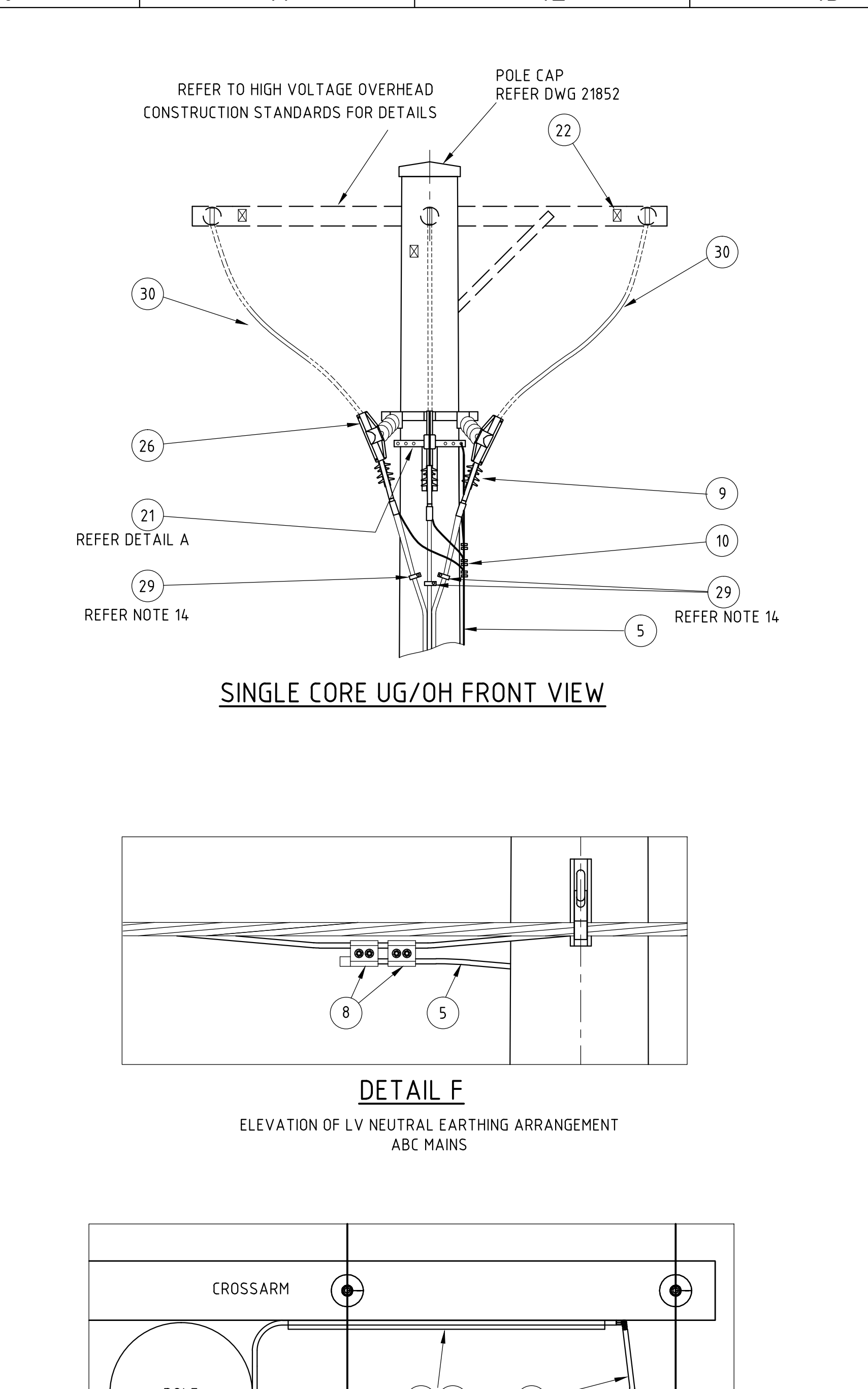
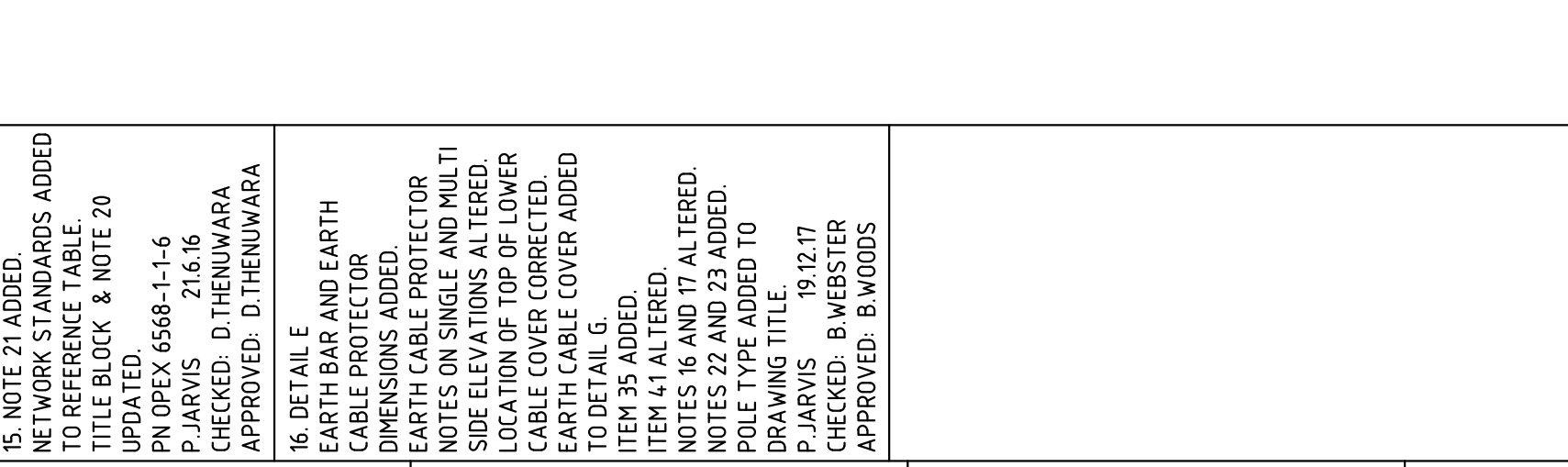
DETAIL B
(REFER NOTE 10, 11 & 12)



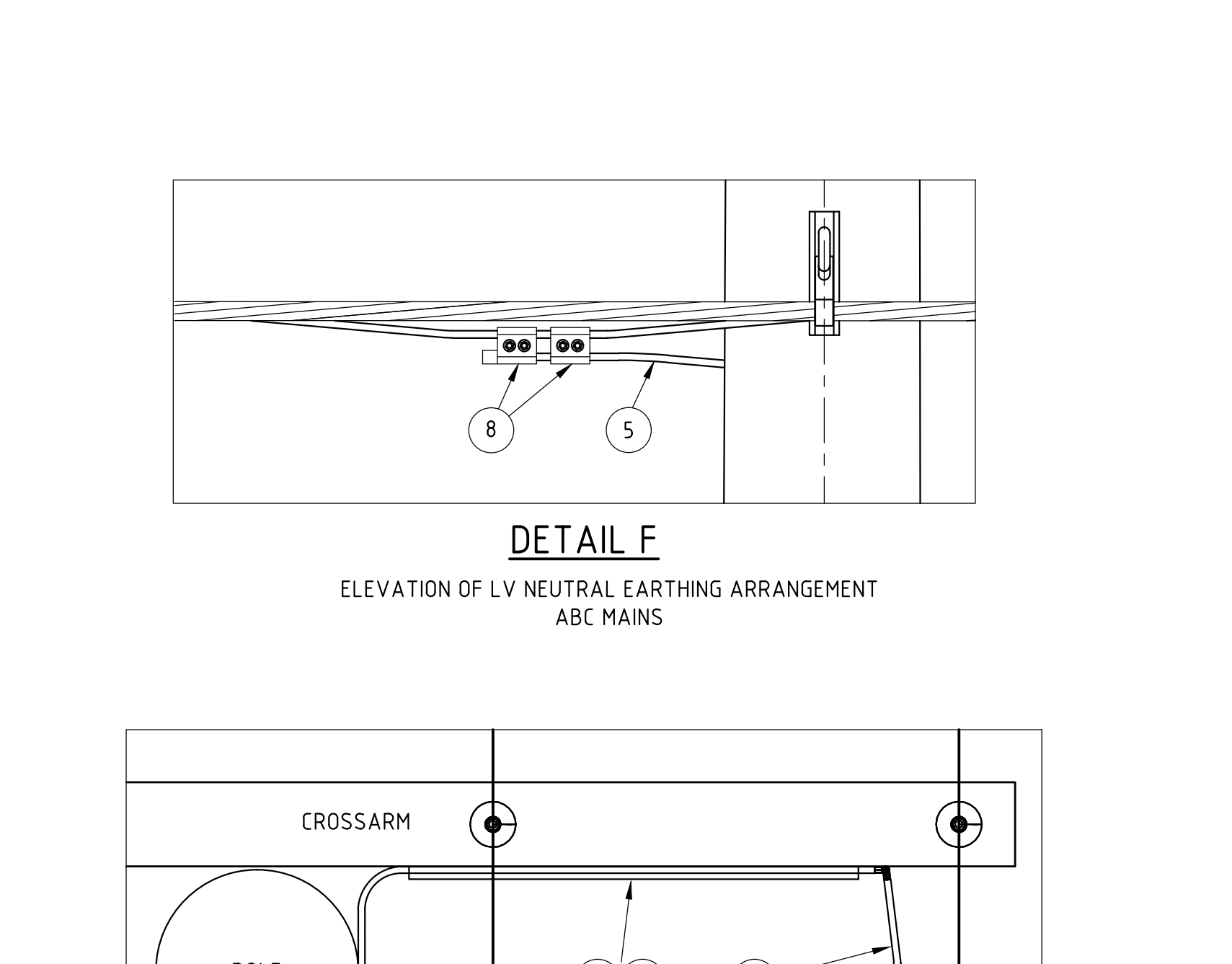
SINGLE CORE UG/OH SIDE ELEVATION



DETAIL A
SURGE ARRESTER EARTHING ARRANGEMENT
REFER NOTE 5



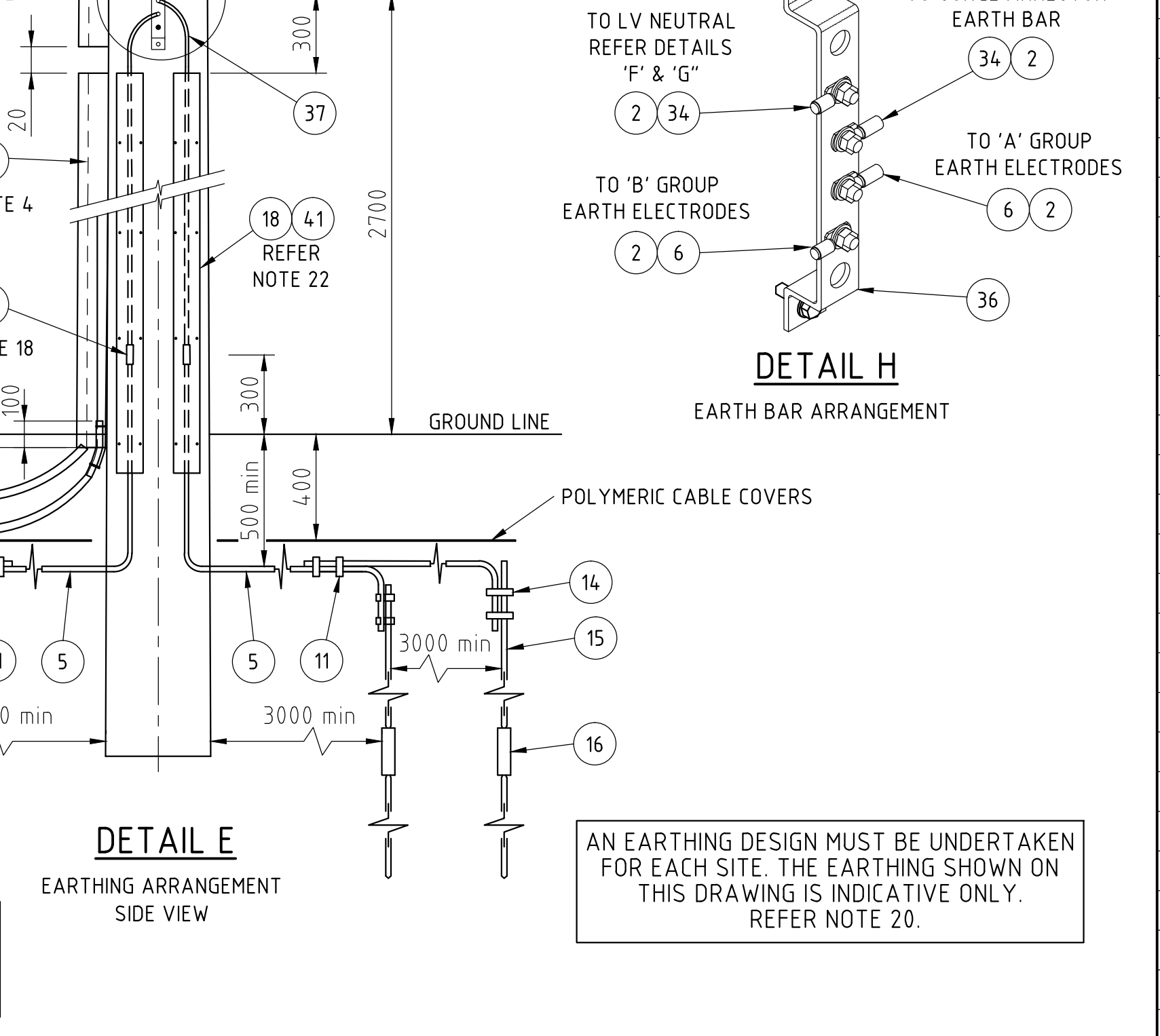
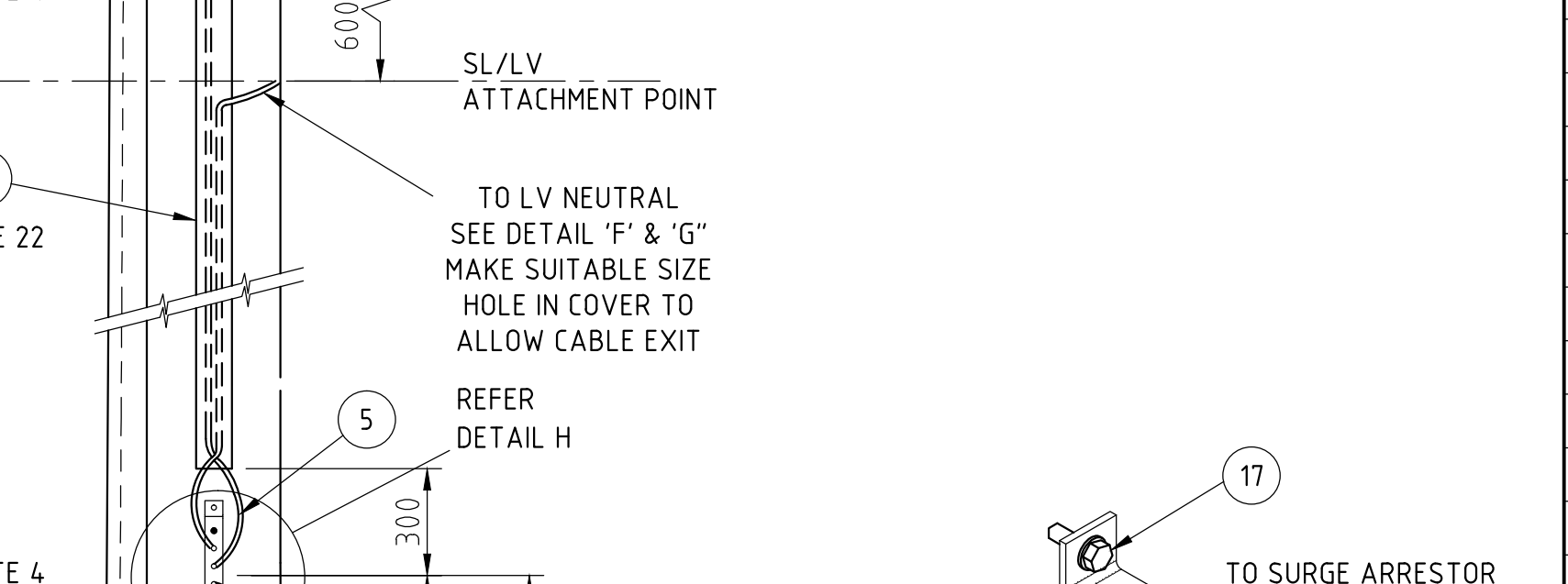
SINGLE CORE UG/OH FRONT VIEW



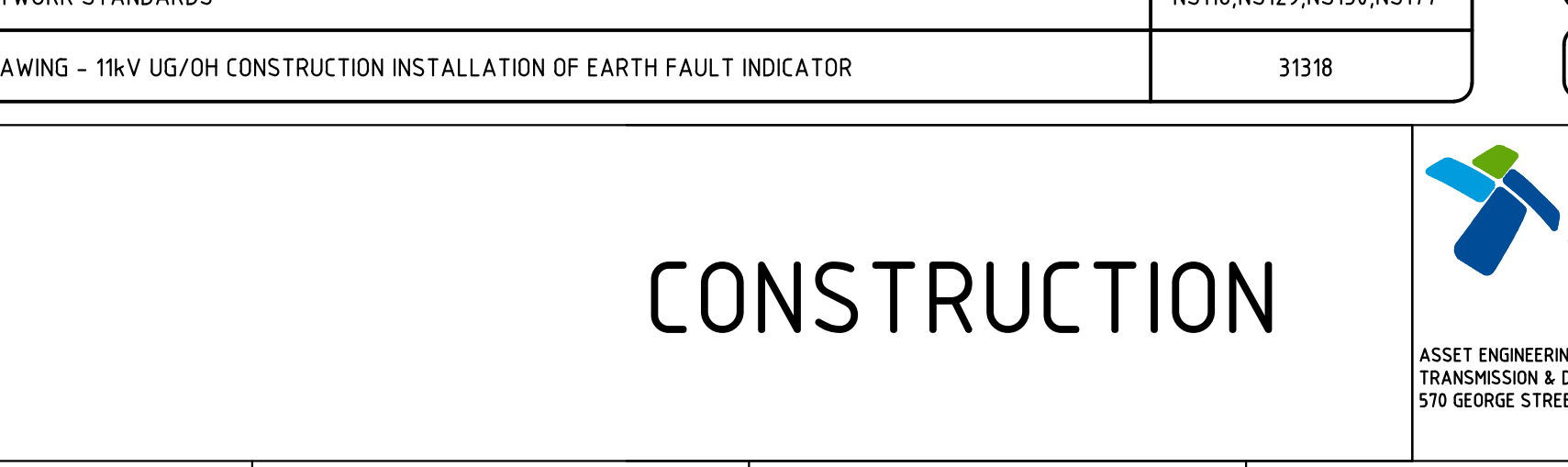
DETAIL F
ELEVATION OF LV NEUTRAL EARTHING ARRANGEMENT
ABC MAINS



DETAIL G
PLAN OF LV NEUTRAL EARTHING ARRANGEMENT
BARE MAINS



DETAIL E
EARTHING ARRANGEMENT SIDE VIEW



REFERENCES

NETWORK STANDARDS	NS16, NS129, NS130, NS177
DRAWING - 11kV UG/OH CONSTRUCTION INSTALLATION OF EARTH FAULT INDICATOR	31318

- NOTES**
- FOR STRAIGHT THROUGH POLES, TERMINATE THE OVERHEAD DROPPER CABLE ONTO THE MAIN OVERHEAD CONDUCTOR AS PER NS0126 FOR TEE-OFF CONSTRUCTION.
 - FEEDER IDENTIFICATION PLATE TO BE ATTACHED TO THE POLE 3000mm ABOVE GROUND LEVEL.
 - THE GALVANISED COVERS MUST BE INSTALLED USING SIX (6) 50mm LONG M10 COACH SCREWS WITH THE SECURING HOLES PROVIDED ON THE FLANGES OF THE COVER.
 - IMPORTANT - SINCE THE 11kV CABLE HAS AN EARTH SCREEN, BOTH THE UPPER AND LOWER GALVANISED STEEL CABLE COVERS (ITEMS 39 & 40) MUST NOT BE EARTHED. THE UPPER GALVANISED STEEL CABLE COVER AND THE LOWER GALVANISED STEEL CABLE COVER MUST BE SEPARATED BY THE 20mm AIR GAP AS SHOWN.
 - THE SURGE ARRESTER EARTHING BAR, BRAIDS, STAINLESS STEEL BOLTS, NUTS AND WASHERS ARE PROVIDED AS A SINGLE KIT (STOCK CODE NO 74443).
 - FOR BARE LOW VOLTAGE OVERHEAD MAINS, CROSSARM IS TO BE INSTALLED ON THE SIDE OF THE POLE OPPOSITE TO THAT OF THE CABLES.
 - THE SPECIFIED CLEARANCE BETWEEN THE CABLE TERMINATION AND THE BARE OR CCT 11kV MAINS IS REQUIRED TO WORK ON THE CABLE TERMINATION WHILE THE BARE OR 11kV MAINS ARE ENERGISED. THIS CLEARANCE MEETS THE REQUIREMENTS OF ELECTRICAL SAFETY RULES FOR MINIMUM SAFE WORKING DISTANCE (FOR NORMAL WORK) FROM EXPOSED LIVE 11kV MAINS.
 - THE SPECIFIED CLEARANCE MAY BE REDUCED TO 700mm IF THE PROVISION FOR WORKING NEAR 11kV ENERGISED MAINS IS NOT CONSIDERED ESSENTIAL, OR POLE HEIGHT PREVENTS WORK WITH MAINS ALIVE.
 - IF THE POLE IS A SHACKLE THROUGH-POLE FOR HV MAINS, THE PHASE BONDS SHOULD BE ROUTED OVER THE HV CROSSARM TO MAINTAIN ADEQUATE CLEARANCES FROM THE CABLE TERMINATION.
 - REFER TO THE TERMINATION KIT INSTALLATION INSTRUCTION FOR DETAILS.
 - THE SURGE ARRESTERS WHEN INSTALLED ON THE UG/OH MUST ALLOW WATER TO DRAIN AWAY FROM THE SKIRT AND NOT ALLOW WATER TO ACCUMULATE. THEREFORE IDENTIFY THE CORRECT STUD OF THE SURGE ARRESTER THAT GOES INTO THE MOUNTING BRACKET (SEE DETAIL B). REMOVE ALL NUTS AND WASHERS FROM THE STUD. INSERT THE STUD INTO THE FIXING HOLE ON THE MOUNTING BRACKET AND THEN INTO THE HOLE OF THE FLEXIBLE EARTHING BRAID. PASS A FLAT WASHER AND THEN A SPRING WASHER ONTO THE STUD. THREAD IN THE NUT ONTO THE STUD. TIGHTEN THE NUT USING A TORQUE WRENCH TO A MAXIMUM OF 27Nm.
 - A TORQUE WRENCH MUST BE USED TO ENSURE NO DAMAGE IS CAUSED TO THE ARRESTER. REPEAT FOR REMAINING PHASES.
 - REMOVE ALL NUTS AND WASHERS FROM THE REMAINING STUD OF THE SURGE ARRESTER. INSERT THE STUD INTO THE OBLONG HOLE OF THE TERMINATION PLATE. PASS A FLAT WASHER AND THEN A SPRING WASHER ONTO THE STUD. THREAD IN THE NUT ONTO THE STUD. LOCATE THE TERMINAL PLATE ON THE STUD SO THAT THERE IS NO STRAIN ON THE TERMINATION OR THE SURGE ARRESTER. TIGHTEN THE NUT USING A TORQUE WRENCH TO A MAXIMUM OF 27Nm.
 - A TORQUE WRENCH MUST BE USED TO ENSURE NO DAMAGE IS CAUSED TO THE ARRESTER. REPEAT FOR REMAINING PHASES.
 - THE TERMINATION PLATE COVER MUST BE INSTALLED ON THE SURGE ARRESTER.
 - ENSURE THAT CABLES ARE NOT BENT TO LESS THAN SPECIFIED MINIMUM BENDING RADIUS.
 - ENSURE THAT NO CABLE CLAMP IS USED DIRECTLY ON THE CABLE WITHOUT THE RUBBER LINING. THE RUBBER LINER SUPPLIED WITH EACH CLAMP IS OF THE CORRECT WIDTH. THE LENGTH OF THE LINER MAY BE REDUCED TO SUIT THE CABLE SO THAT ONE (1) LAYER OF LINER WRAPS AROUND THE CABLE BEFORE PLACING THE STEEL BAND OF THE CLAMP CENTRALLY OVER THE LINER. DO NOT OVERTIGHTEN THE CLAMPS. MINIMUM CLAMP SPACING 1000mm WITH THE LOWEST CLAMP 800mm ABOVE GROUND LEVEL. TOPMOST CLAMP MUST BE A MINIMUM OF 1200mm BELOW THE LOWEST POINT OF UG/OH CONNECTION SUPPORT BRACKET (ITEM 7).
 - REFER TO DRAWING 31318 FOR DETAILS ON INSTALLING AN EARTH FAULT INDICATOR.
 - THIS DESIGN IS FOR EWP ACCESS. FOR SITES WHERE EWP ACCESS IS NOT POSSIBLE POLE STEPS CAN BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF NS128.
 - THE EARTH CABLE IS TO BE SECURED TO POLE AS REQUIRED USING DOUBLE SIDED GALVANISED STEEL SADDLES. SADDLES MUST BE NO LESS THAN 100mm FROM EDGES OF REMOVED INSULATION.
 - 95mm² ALUMINIUM EARTH CONDUCTORS SHALL BE USED FROM EARTH BAR TO 300mm ABOVE GROUND WHERE 70mm² COPPER EARTH CONDUCTORS WILL BE EXTENDED VIA BIMETALLIC LINKS TO THE EARTH ELECTRODES. BLACK 95mm² ALUMINIUM EARTH CONDUCTOR MAY BE A SINGLE CORE AL, PVC INSULATED OR XLPE INSULATED CABLE.
 - WHERE A HV ONLY EARTHING DESIGN IS SPECIFIED, THE FOLLOWING IS NOT REQUIRED -
-LV CONNECTIONS SHOWN IN DETAIL 'F' AND 'G'.
-LV GROUP 'B' ELECTRODES AND CABLE TO EARTH BAR.
 - THE EARTHING ARRANGEMENT SHOWN REPRESENTS THE MORE COMMONLY USED COMBINED SYSTEM BUT IS INDICATIVE ONLY. SITE SPECIFIC REQUIREMENTS MUST BE TAKEN FROM THE EARTHING DESIGN FOR THE INDIVIDUAL SITE. IF THE SITE REQUIRES A SEGREGATED EARTHING SYSTEM, CONTACT T&D SE ON 43910205 FOR FURTHER DETAILS.
 - UG/OH CABLES WHICH ARE TERMINATED ON THE TERMINATION PLATES (ITEM 25) BUT ARE NOT TO BE IMMEDIATELY CONNECTED TO THE OVERHEAD MAINS MUST BE SHORT (CIRCUITED AND EARTHED). INSULATED BLACK CABLE OF NOT LESS THAN 25mm² Cu, LUGGED WITH M12 STUD HOLE LUGS, IS TO BE USED. CONNECTIONS ARE TO BE MADE BETWEEN THE TOP OF THE TERMINATION PLATES AND THE SURGE ARRESTER EARTH BAR (ITEM 21).
 - THE EARTH CABLE IS TO BE SECURED TO POLE AS REQUIRED USING DOUBLE SIDED GALVANISED STEEL SADDLES. SADDLES MUST BE NO LESS THAN 100mm FROM EDGES OF REMOVED INSULATION.
 - WHERE A HV ONLY EARTHING DESIGN IS SPECIFIED, THE FOLLOWING IS NOT REQUIRED -
-LV CONNECTIONS SHOWN IN DETAIL 'F' AND 'G'.
-LV GROUP 'B' ELECTRODES AND CABLE TO EARTH BAR.
 - THE EARTHING ARRANGEMENT SHOWN REPRESENTS THE MORE COMMONLY USED COMBINED SYSTEM BUT IS INDICATIVE ONLY. SITE SPECIFIC REQUIREMENTS MUST BE TAKEN FROM THE EARTHING DESIGN FOR THE INDIVIDUAL SITE. IF THE SITE REQUIRES A SEGREGATED EARTHING SYSTEM, CONTACT T&D SE ON 43910205 FOR FURTHER DETAILS.
 - UG/OH CABLES WHICH ARE TERMINATED ON THE TERMINATION PLATES (ITEM 25) BUT ARE NOT TO BE IMMEDIATELY CONNECTED TO THE OVERHEAD MAINS MUST BE SHORT (CIRCUITED AND EARTHED). INSULATED BLACK CABLE OF NOT LESS THAN 25mm² Cu, LUGGED WITH M12 STUD HOLE LUGS, IS TO BE USED. CONNECTIONS ARE TO BE MADE BETWEEN THE TOP OF THE TERMINATION PLATES AND THE SURGE ARRESTER EARTH BAR (ITEM 21).
 - THE EARTH CABLE IS TO BE SECURED TO POLE AS REQUIRED USING DOUBLE SIDED GALVANISED STEEL SADDLES. SADDLES MUST BE NO LESS THAN 100mm FROM EDGES OF REMOVED INSULATION.

TABLE 1

ITEM NUMBER	ITEM DESCRIPTION	OVERHEAD CABLE TYPE				
		Al 7/4.5	Al 19/3.25	Al CCT180	Al CCT120	Al CCT180
31	OVERHEAD CONDUCTOR TAIL LUG	H16975	H16953	58321	H16969	H17990
30	CONDUCTOR COVER	H16943	H16944	---	---	H16943

ITEM	DESCRIPTION	REMARKS	STOCK CODE
41	SELF DRILLING TIMBER SCREW TYPE 17 100 x 25mm		184996
40	VENTILATED UPPER CABLE COVER MxXu	REFER NOTE 4	177882
39	VENTILATED LOWER CABLE COVER MxXL	REFER NOTE 4	177711
38	NITRILE RUBBER SHEET 200mm x 150mm x 3mm THICK	---	127225
37	CONDUCTOR - SINGLE CORE AL 95mm ²	REFER NOTE 18	AS REQUIRED
36	EARTH BAR - FLAT, TINNED COPPER, 50.8mm x 6.3mm	DRAWING 222406	182110
35	DOUBLE SIDED GALVANISED STEEL CABLE SADDLE	REFER NOTE 17	176494
34	LUG COMPRESSION M12 TO SUIT 70mm ² Cu CABLE	---	74831
33	---	---	---
32	---	---	---
31	OVERHEAD CONDUCTOR TAIL LUG	REFER TABLE 1	REFER TABLE 1
30	CONDUCTOR COVER	---	---
29	CABLE CLAMP WITH NITRILE RUBBER LINING	---	176551
28	M12 x 50mm COACH SCREW, GALVANISED	---	50476
27	TERMINATION PLATE COVER	---	176721
26	11kV POLYMERIC SURGE ARRESTER	---	111948
25	TERMINATION PLATE	DRAWING 116989 (ITEM 3)	91132
24	POLYMERIC CABLE COVER	300mm x 1.2m	151076
23	---	---	---
22	75mm ALUMINIUM PHASE LETTERS A, B & C	---	108977
21	SURGE ARRESTER EARTHING ARRANGEMENT	REFER NOTE 5 & DRAWING 117782	74443
20	WOOD POLE	---	---
19	M10 x 50mm COACH SCREW, GALVANISED (FOR WOOD POLES)	REFER NOTE 3	50559
18	CABLE PROTECTOR 3000mm BLACK EARTH GUARD	---	157552
17	M12 x 80 COACHSCREW	---	50468
16	COUPLER, 15mm DIA. EARTH ROD	---	H31649
15	COPPER CLAD EARTHING ROD 1800 x 15mm DIA	---	H31631
14	'P' CRIMP CONNECTOR - Cu, 70mm ² TO Ø15 ELECTRODE	---	H31699
13	FIBREGLASS TROUGHING	SELECT TROUGHING TO SUIT CABLE	59360 or 177641
12	BI-METALLIC CRIMP LINK FOR 95mm ² TO 70mm ² CABLE	REFER NOTE 18	H107797
11	'C' CRIMP CONNECTOR - COPPER, COMPRESSION, 70mm ² TO 70mm ²	---	177942
10	LINE CLAMPS (2 PER CONNECTION)	DRAWING 18908	---
9	11kV CABLE TERMINATION	PAPER POLYMERIC NS129	---
8	IPC LV ABC 95-150mm ² 50-150mm ² Cu	---	148387
7	UG/OH CONNECTION SUPPORT BRACKET	DRAWING 62011	66365
6	BI-METALLIC CRIMP LUG FOR 95mm ² CABLE (10 PACK)	---	58743
5	CABLE, COPPER 70mm sq K PVC HD COPPER	---	60111
4	PARALLEL GROOVE CLAMP 25-150mm ² Al / 10-95mm ² Cu	---	H88013
3	---	---	---
2	M12 x 30mm S/S BOLT, NUT AND WASHERS	---	175911
1	M20 KINGBOLT, NUT & WASHERS	LENGTH TO SUIT POLE	H3928, H36855, H39427

ITEM	DESCRIPTION	REMARKS	STOCK CODE
1	11kV UNDERGROUND TO OVERHEAD (UG/OH) ON TIMBER POLE CONSTRUCTION DETAILS		