



MORRISON CONSTRUCTION LTD

CAIRNGORM FUNICULAR

CONTRACT NO 4677

HEALTH & SAFETY PLAN

FILE 1

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CAIRNGORM FUNICULAR

HEALTH AND SAFETY PLAN

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*22/7/08 NB MISC. CONSTRUCTION PHASE
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★ CODE 423644



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1. SUB-CONTRACTORS.

The following section lists all the various Sub-contractors employed by the Principal Contractor for the duration of the works.

The list includes the Companies involved in the installation of the two Long Distance Cableways used during the Project in 2000 and 2001. These items of plant have been included, as they were the main means of constructing the Funicular.

All specialised equipment or plant hired in or built by the Principal Contractor has not been included in this Health and Safety Plan.

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2. DEMOLITION INFORMATION

2.1 CONSTRUCTION SEQUENCE

This section contains the basic construction sequences for the buildings and the Funicular structure. It does not include any information relating to the installation of the rails, carriages, drive or control systems of the Funicular.

2.2 CABLEWAY ANCHOR POINTS

The basic layout and cableway anchor points are provided in this section.

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2.1 CONSTRUCTION SEQUENCE

The Base Station was the first part of the Project to be started as the Ski Season was extended and the Implementation Plan had not been agreed. Permission was given to commence the Funicular Structure in areas of man made ground prior to the agreement of the Implementation Plan with work starting site wide on formal issue of the agreed plan. All sections of the Project were carried out simultaneously after the Implementation Plan was in place.

Two long distance cableways were used to supply materials and equipment to all parts of the site with personnel transport being by four-wheel drive vehicles and by foot. It should be noted by any future Contractors that snow fell every month of the year and wind speeds over 90 mph were common and wind chill temperatures got as low as -36 Centigrade.

2.1.1 BASE STATION

During the excavation works for the pad foundations and floor slabs six springs were exposed that required temporary diversions during the construction works. Additional drainage was later added to deal with this constant flow of water.

Bolts were cast into the pad foundations to allow the erection of the structural steel work. As the structural steel work progressed floors and walls were cast in conjunction with the installation of the roof sheeting. Work progressed from the uphill side of the building outwards. The work was accomplished using mobile work platforms, telehandlers and safety netting.

The external and internal drainage systems were an ongoing task. On completion of the external drainage and lightning protection system the external blockwork and masonry work commenced.

Timber cladding was hung and certain windows and doors added before the winter shutdown making the building secure to allow internal works to progress before the end of the Ski Season. All external works and the fit out were complete the following year 2001.

2.1.2 PTARMIGAN STATION

The existing Ptarmigan structure was demolished leaving the top chairlift station intact and operational. On the full issue of the Implementation Plan excavation work commenced. The rock outcropped very near the surface and heavy machine breakers were utilised for all the excavation works. Blasting was not an option so close to the operational chairlift station as its foundations were unknown.

There was a delay in the design of the structural steel for this building so the planned sequence of construction i.e. as the Base Station could not happen. Box outs were left in the floor slabs down to the pad foundation bolts. The concrete retaining walls could not be built as the structural steel was cast into these walls. As an alternative blockwork walls were built to speed up construction but mainly to allow some external drainage to be installed to divert the substantial spring and ground water flows encountered on the site. Twelve strong flowing springs were encountered during excavation that required pumping or diversion.

Only two thirds of the structural steel was erected in the first season, as the chair lift had to remain operational. On its eventual demolition the last third of the structure could be built. It must be noted that the Cairngorm Summit weather and communications station was served from the top chairlift station. The numerous services (Police; Mountain Rescue; Morray Firth Radio; local communication companies; Heriot Watt University; etc) at this station are now served from the new building.

In the second season work did progress as per the Base Station with walls, floors and roofing all being installed simultaneously around the structural steel.

2.1.3 CUT AND COVER TUNNEL

When the Implementation Plan was in place vegetation and soil removal started. A further layer of gritty soil was found under the organic soil. This soil was also set aside for reuse. The presence of this gritty soil is an important point for any future excavation works at this altitude as its extent was not apparent from trial pits.

Rock head was exposed throughout the length of the tunnel and the presplit lines were accurately marked out using GPS (the constant rain wind and mist made the use of optical setting out instruments impossible at times). A trial blast was carried out with the result that all following charges for the blast were reduced. The top meter or so of the granite was expected to be weather from the SI provided. This seemed to be proven from the trial blast. The blasted rock was carefully excavated using machine-mounted breakers for final trimming. For future works it must be noted that the rock was in fact weathered to the full depth of the excavation 6.5m. The interlocking block nature of the weathered granite made it impossible to form clean vertical faces or shelves as per the design but the rock faces formed although loose in appearance were quite stable and safe to work under.

For speed of construction blockwork walls were built with a concrete beam placed on top to provide the seating for the Asset arch. The arch was bolted up from the concrete tunnel portal structure uphill to the top station. The arch has reinforced thrust beams at mid height on both sides for its entire length. There are drainage pipes behind the blockwork walls, at the arch seating and in places just above the thrust beams. It must be noted for future works that the fine fill material over the arch was placed equally on each side loading the arch equally.

Concrete bridges were made over the arch at mid point and at the top station to allow passage of construction vehicles. These bridges were left and buried under the landscaping for any future works.

2.1.4 FUNICULAR STRUCTURE

Lower bases and anchor blocks were accessed from the road where possible. Heavy excavators were used in this instance. Light excavators or walking machines were lifted into position using the cableways. The walking machine was allowed to travel downhill so long as any damage was repaired immediately.

All excavated material, reinforcement, precast and concrete was placed using the cableways.

Steel formwork was lowered into each base excavation doubling as shoring in all cases. Prefabricated reinforcement cages were then positioned allowing the base concrete to be poured. The column reinforcing steel was then fixed allowing the precast column units to be placed. These units act as a permanent shutter for each column. Four top bolts were then positioned at the column head prior to the column concrete being poured. The precast crossheads were then lowered onto these four bolts which were torqued and the grouted into position.

Each crosshead received two bridge type bearings bolted to steel wedges. Each pair of bearings were fixed at different angles by means of these steel angled wedges. These wedges were grouted into sockets in the crossheads.

The precast beams were landed onto these bearing from the anchor blocks up. This could not happen until the concrete casting the first set of beams into the anchor block had cured. The diaphragm pours joining the four ends of beams at each crosshead then commenced. During each diaphragm pour the transit bolts on the bearings were released. Each diaphragm pour especially the last one before the anchor block would have to be monitored taking into account the ambient temperature to allow any adjustment in the bearing for expansion and contraction of the beams.

The steel cross bracing was installed after the diaphragms had been poured. The bracing was stored at the same altitude to its final installation point to equalise the temperature effect. All the fixings were set to the correct torque.

2.2 CABLEWAY ANCHOR POINTS

The cableway system erected comprised of two separate systems with a change over point at the Shieling. This was necessary due to the curved line of the Funicular.

The lower cableway was an all terrain system pulled into an S shape over the centre line of the Funicular. The gradient of the ground here was not steep enough for the cheaper gravity system.

The upper cableway was over steep terrain allowing a gravity system to operate.

The skyline on the lower cableway was anchored at both ends by reinforced concrete deadman anchors as the placing of rock anchors was not possible. The upper cableway skyline was anchored at the lower end by a concrete deadman anchor and by a cluster of rock anchors at the upper end. All these anchors are exactly in line with the funicular structure and are shown on the accompanying sketch.

The main end towers were founded on concrete bases with one in the upper car park, one at the Shieling and one just behind the Ptarmigan. These foundations are still in place as are the skyline concrete anchors but they have been buried and landscaped.

The intermediate towers were anchored by Ischbeck Titan ground anchors. The first curve towers were the only exception with any type of ground anchor being impossible to place in the steep talus slope above the access track. Holes were carefully excavated by hand and then filled with concrete via helicopter. Bars were cast into these concrete and boulder deadman anchors. These bars were cut off at the end of the Contract but the concrete still remains. These anchors are vertically 32m above the first curve i.e. the height of the towers.

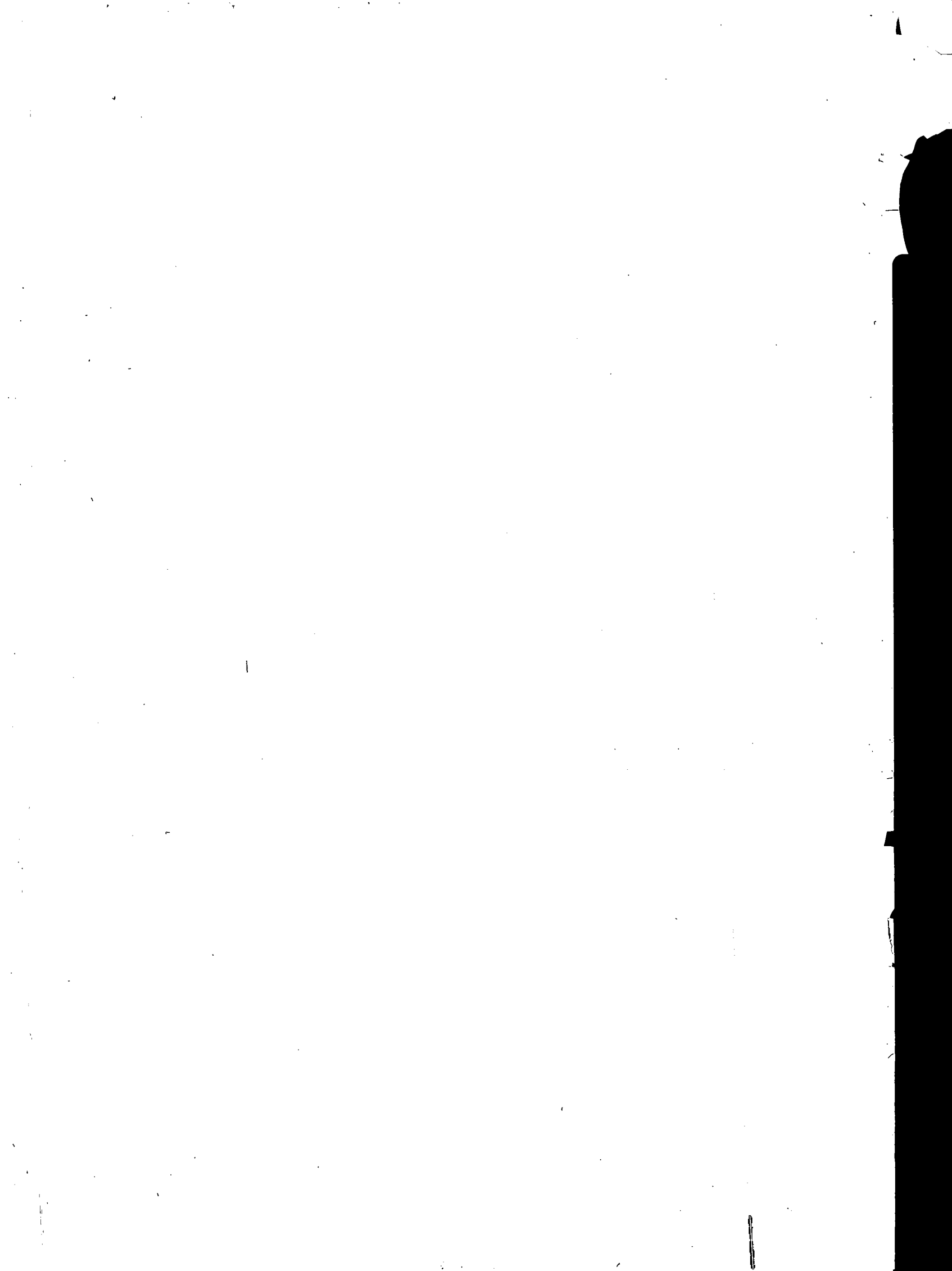
Cairngorm Funicular Railway

Schedule of Subcontractors

Name / Address	Trade	Contact Name	Tel / Fax Numbers
John Lawrie (Demolitions) Ltd Hareness Road Altens Aberdeen AB12 3LE	Demolition	Personal Data Redacted	
Rock Solutions Ltd Qllerset House Brockley Lane Tideswell Derby SK17 8HP	Rock bolts		
Kanè & Maitland Cairnfield Place Bucksburn Aberdeen AB21 9LT	Roof & Wall cladding		
Albion Drilling Services Springkerse Road Stirling FK7 7SN	Rock drilling and blasting		
W.R Simmers Ltd Backmuir Keith AB55 3PE	Structural Steel		
Kone Plc 86 Broad Street Glasgow G40 2PX	Lifts		
NG Bailey & Co Ltd The Parkway Woodside Road Bridge of Don Aberdeen AB23 8EF	Mechanical Electrical Plumbing		
RD Fire Protection Cliftonhall Road Newbridge Industrial Estate Newbridge Midlothian EH28 8NE	Intumescent fire protection		
W.A Mcgarrie & Son Ltd Lower Harbour Perth PH2 8BB	Balustrades		
Richard Lees Steel Decking Moor Farm Road West The Airfield Ashbourne Derbyshire DE6 1HD	Metal Decking		

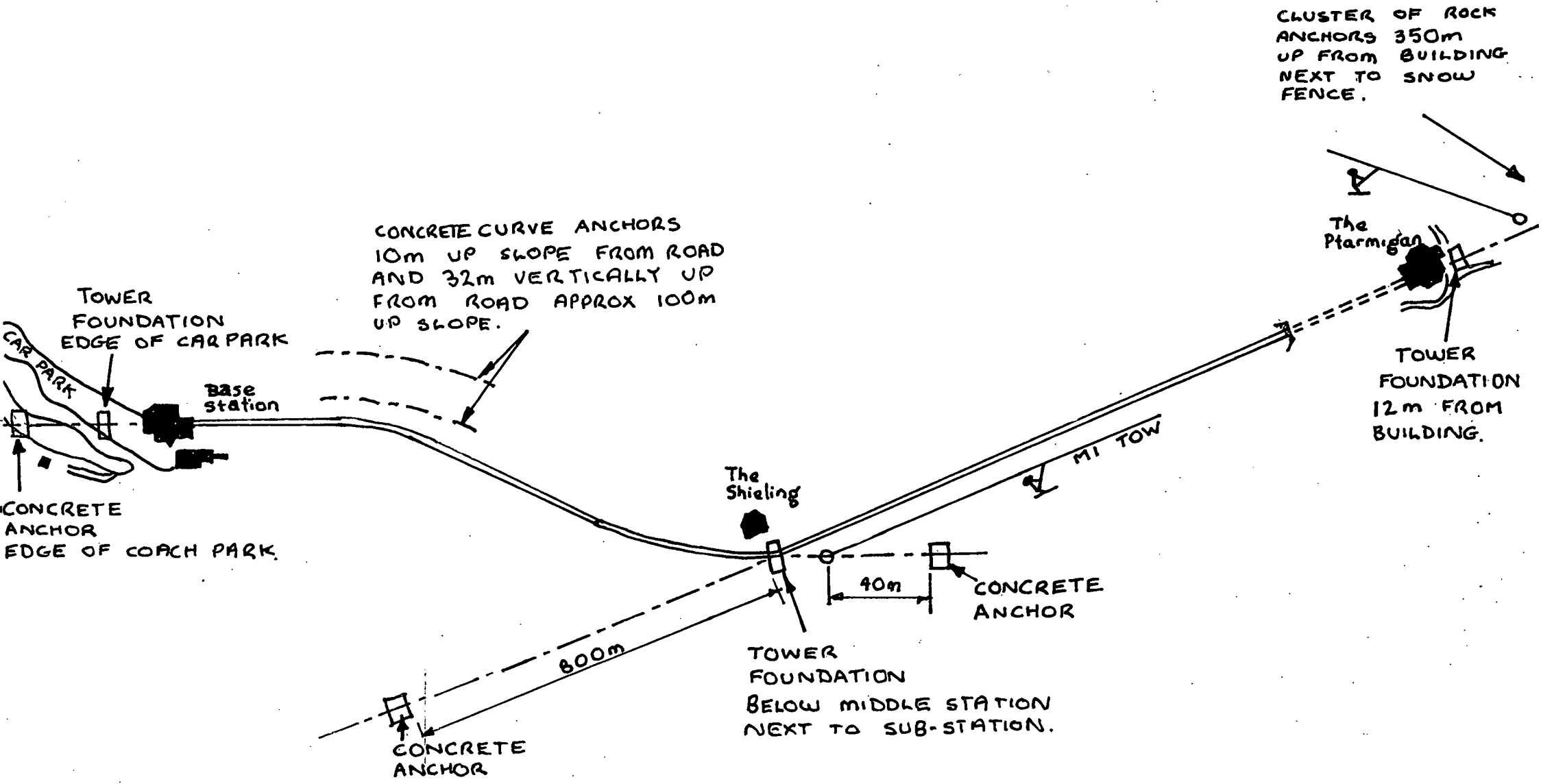
Personal Data Redacted

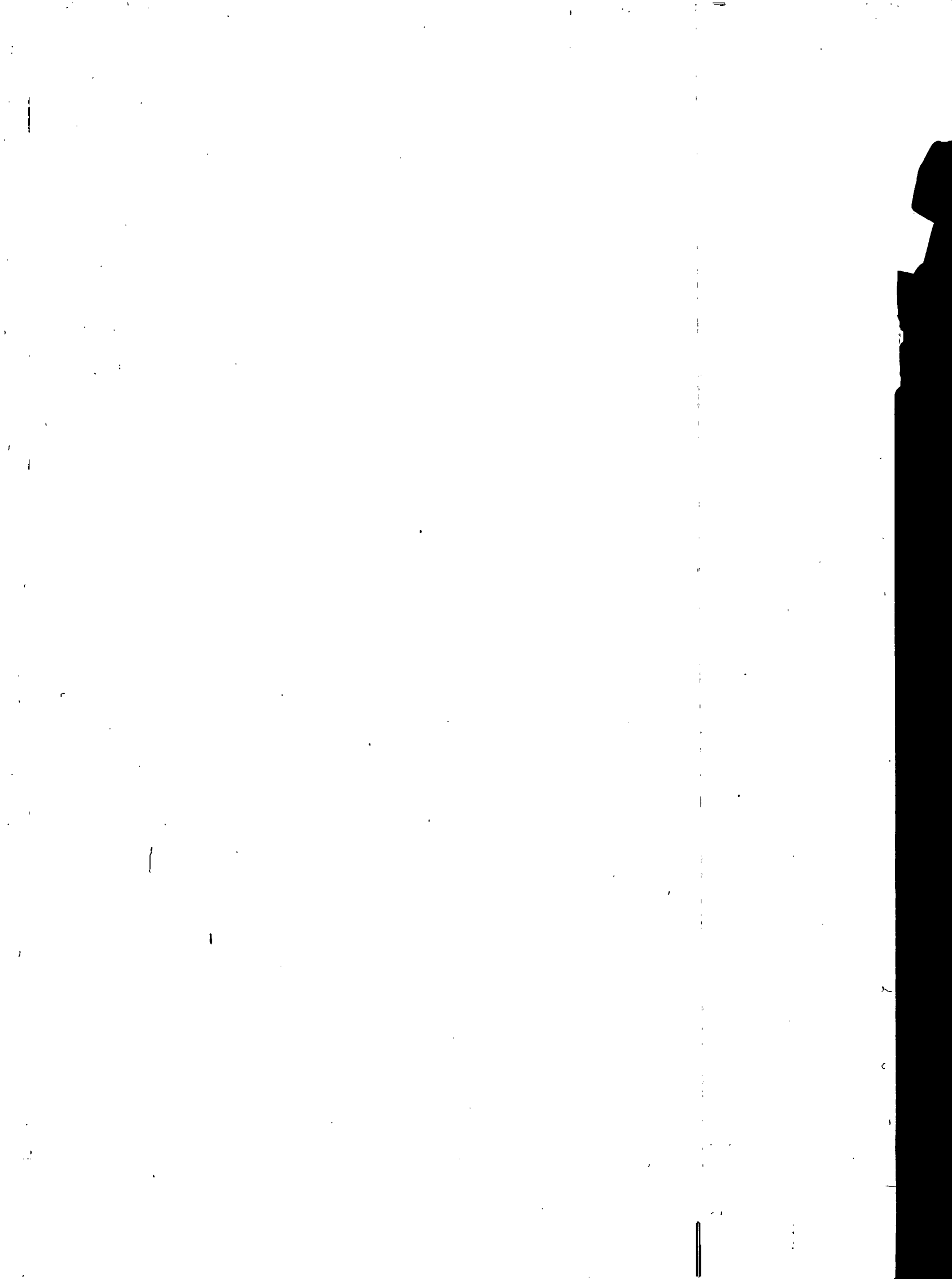
Nassau Industrial Doors Ltd Jubilee House Dewsbury Road Fenton Industrial Estate Stoke on Trent ST4 2TB	Industrial doors
Ross & Co (painters & Decorators) Ltd Caberfeidh Avenue Dingwall IV15 9TD	Painter
Corecut Ltd Bankhead Broxburn West Lothian EH52 6PP	Diamond drilling
Scotweld Employment services Ltd 33 Townsend Street Glasgow G4 0LA	Railway Track welding
Clanco Floors & Ceilings 38 Tomnahurich Street Inverness IV3 5DS	Suspended ceilings
Pirie Ltd 9 Carse Road Inverness IV3 8EX	Bauder Roof Waterproofing
Metalwork Uk Blarliath Industrial Estate Tain Ross - Shire IV19 1EB	Metalwork Open Flooring
Robbins & myers Ltd School Lane Chandlers Ford Industrial Estate Eastleigh Hampshire SO53 8XA	Sewage Grinder
Kishorn Specialist Contractors Achandolich House Ardoch Kishorn Wester Ross IV54 8XA	Masonry Work
Melvyn Rowberry Welding Services Unit 6 Worcester Trading Estate Blackpole Worcester WR3 8HR	Site Welding
Isleburn Structural Services Highland Deephaven Ind Est Evanton Ross - Shire IV16 9XP	Steelwork
Ferrier Pumps Ltd Units 4 & 5 Portlethen Industrial Estate Barclay Place Portlethen Aberdeen AB12 4PE	Pumping Station



SECTION 2.2.

CAIRNGORM FUNICULAR CABLEWAY ANCHOR LOCATION





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3. METHOD STATEMENTS

Section 2. outlines the Construction Sequences for the buildings and the Funicular Structure. This section relates to specific construction methods of individual items of work that may prove beneficial during any future works.

Works carried out by the Railway Contractor or by Cairngorm Mountain Limited are not covered in this section.

All work was constructed to the Design Team drawings and Specifications with the only exceptions being the fabrication drawings for the structural steelwork and decking which are provided later in this document. The Design Team should be consulted before any future maintenance, alterations or demolition work is carried out to highlight any residual risks not covered in this complete document.

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3.1 CABLEWAY ANCHOR INSTALLATION

The intermediate towers for each cableway were anchored using Ishbeck Titan ground anchors. This type of anchor was chosen as rock head was too far beneath existing ground level over most of the site for conventional rock anchors.

To minimise damage to the fragile vegetation a specialist contractor was employed who used a lightweight drilling rig and other plant that were specifically designed for rope access applications on rock faces.

Compressed air was supplied from a compressor located at the top middle a bottom of the access road. The air supply to the rig from the compressor was achieved quite uniquely using MDPE water pipe. The 800m of pipe required was light and could be moved easily over steep terrain without causing any damage to the vegetation.

The nature of the ground enabled the anchors to be drilled dry and not using grout flush as is recommended by the manufacturer of the anchors. Grout was pumped into the anchors once the recommended depth was drilled. This method eliminated any chance of contamination by the anchor grout to the surrounding environment.

All the anchors were tested to three times their maximum working load using a calibrated jack and pressure matting to the head of the anchor. All the anchors were drilled to the line of pull to the tower to prevent strutting and shear.

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3.2 FUNICULAR STRUCTURE

3.2.1. TOWER BASES AND ANCHOR BLOCKS

Each anchor block on the structure was specifically adapted to suit the ground conditions at each location. The largest anchor block is just outside the Base Station. Each anchor block had purpose made shuttering placed into battered holes (none of the excavations required shoring).

Every tower base was formed using steel box shutters that could be lowered into the excavated hole from the cableways. These boxes could be extended to provide a greater degree of protection to the workforce as the boxes acted as formwork and shoring. Prefabricated reinforcement was positioned in each box and then the concrete was poured incorporating a kicker for the column rings.

On curing the sectional steel box formwork was then removed allowing the as dug fill to be placed around the base.

3.2.2. COLMNS AND CROSSHEADS

The column rings that act as permanent formwork were then lowered over the column reinforcement cages that had been spliced onto starter bars protruding from the column kicker in the base. Higher columns were shored before the concrete was poured. Four bolts were cast in the head of each column to accept the precast crosshead units.

After two days the crossheads were lowered onto the bolts and aligned. The column units were designed to solely bear the wait of the crossheads. After one week the bolt voids in the crossheads were grouted allowing the installation of the bearings. The four bolts were fully torqued after the grout and column concrete had fully cured.

3.2.3. BEARINGS AND BEAMS

Each crosshead received two bearings. Sockets had been cast into the crossheads to receive the bearings. Each pair of bearings had to be set at particular angle. To achieve this each bearing was bolted onto a steel wedge that was in turn grouted into the sockets in the crosshead. The bearing and wedge assemblies were packed to the correct level and alignment prior to grouting to the crosshead.

As the bearing installation progressed the precast beams could then be placed. Beam laying began at anchor blocks and continued uphill. The first pair of beams was cast into a concrete upstand on each anchor block. Once the upstand concrete had sufficient curing

time the rest of the beams could be laid up from the first pair. Each beam was landed onto the top plates of the bearings. Each beam was held in place by tiffirs until a steel bar could be welded between the two ends of the beams. The span between pairs of beams was set and maintained by packers and through bolts.

As the beam laying progressed uphill a separate squad followed behind fixing reinforcement, shuttering and pouring the insitu concrete to form the diaphragms that joined two pairs of beams. As the diaphragm pours progressed the ambient air temperature had to be monitored so adjustments could be made allowing for the contraction and expansion of the beams. The position of the last pair of beams up to the next anchor block was critical in relation to the bearing movement and relative position to the upstand on the anchor block.

3.2.4 CROSS BRACING

The steel cross bracing was laid out along the length of the structure this allowed the steel to attain the same temperature as the beams at the corresponding altitude.

The bracing was installed one bay at a time, a bay being the span between two towers. All the bracing fixings were installed hand tight for ease of installation. When a complete section of bracing had been installed (all the bays between anchor blocks) all the bolts were set to the correct torque, this also served as an inspection of the completed installation.

All this work was carried out from specially constructed platforms that hung between the pairs of beams in each bay. The platforms were loaded with the bracing laid along the track before being lifted into position with the cableways.

3.2.5 THE PASSING LOOP

The passing loop construction sequence is as mentioned above but each beam required individual restraint from downward movement until the concrete diaphragms had been cast.

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3.3 CUT AND COVER TUNNEL

All the vegetation and lichen covered boulders were removed as per the Implementation Plan and stored at the agreed locations. A further layer of gritty soil was found below the organic soil that was also set aside for reuse, this should be noted for any future works at this altitude as it was not apparent in the trial pits.

The rock was drilled and blasted using presplit in an effort to form solid vertical walls to the tunnel. From the SI only the top meter of the granite was expected to be weathered. This was not the case as the weathering extended down the full depth of the tunnel. This point should be noted for any future excavation works in this area.

Due to the blocky nature of the granite it was impossible to form the vertical walls and rock seating shelf for the Asset arch. Concrete block walls capped by a reinforced beam were constructed. The beam was doweled into the rock horizontally for added stability.

The base slab and the arch progressed up from the tunnel anchor block and portal structure. At least twelve strong flowing springs were encountered during construction.

Drainage was placed in the tunnel, behind the blockwork walls, and at the arch seating slab. Further runs of drains were also laid at the arch thrust beams. These reinforced thrust beams also incorporate the lightning protection system on one side.

It is important to note that the arch was back filled evenly on both sides to prevent uneven loading of the arch any future excavations must be carried out evenly on both sides of the arch.

Method statement for the erection of the de-icing walkway

1.0 PURPOSE

- 1.1 The purpose of this document is to describe the methods and control measures necessary to erect the de-icing walkway on the funicular structure on sections above 2m.

2.0 GENERAL

- 2.1 Most of the structure is accessible from the ground but some sections are above 2m and some areas are over 6m from the ground. It is feared that during the winter months, some of the running sheaves may be affected by water ice. When this occurs, employees of the company have to gain access to the sheaves in order to clear the ice away before the funicular can operate.
- 2.2 The walkway, comprising steel grating fixed to steel cross sections, is 600mm wide and is delivered in 1.5m lengths.
- 2.3 Before erection can commence, the sections have to be transported from the car park level to as close to the structure as possible.
- 2.4 Two qualified rope access persons have been employed specifically to erect the walkway
- 2.5 There are no anticipated problems regarding access to the structure at the beginning but when commissioning of the funicular commences, communication channels will be set up to ensure no one is near the structure when there is a possibility of the carriages (or rope) moving.

3.0 RESOURCES

3.1 Internal resources

Personal Data Redacted

CML

Rope access employees

CML

3.2 During commissioning

Personal Data Redacted

Doppenmayr

Personal Data Redacted

CML

Rope access employees

CML

4.0 METHOD

- 4.1 All materials, equipment, and personnel will be transported from car park level to site by vehicle to a point as close as possible to the work area
- 4.2 Where-ever possible, work will commence at a low point on the structure and a previously erected section of walk way will be used as a working platform for the erection of the next section.
- 4.3 When working at a height in excess of 2m, harnesses will be worn and used.
- 4.4 Sections of walk way will be hoisted into place on the structure from ground level and affixed using clamp bolts
- 4.5 During commissioning of the funicular, all erection work on the structure will cease if there is planned movement of the carriages.

5.0 CONTROL MEASURES

- 5.1 Risk assessment for this task is attached.

6.0 TEMPORARY AMENDED SYSTEMS

- 6.1 There will be no temporary amended systems

7.0 SPECIFIC CONTROL MEASURES

- 7.1 A Permit to Work system will be in place during the commissioning period
- 7.2 Harnesses, head protection and foot protection will be worn

8.0 EMERGENCY PROCEDURES

- 8.1 A first aid kit will be on site at all times
- 8.2 A two way radio will be provided to summons help if required

9.0 WELFARE ARRANGEMENTS

- 9.1 Shelter, toilet and washing facilities are provided at the Shieling and Day Lodge buildings

10.0 ENVIRONMENTAL ISSUES

- 10.1 Although final access to the site will be on foot, it is not thought likely any environmental damage will occur

11.0 MONITORING OF COMPLIANCE

- 11.1 Personal Data Redacted Cairngorm Mountain safety manager will be responsible for monitoring compliance with this statement

General Risk Assessment

Erecting de-icing
walkway

Assessed By
Personal Data Redacted
S=Severity (1-5)
L=Likelihood (1-5)

Date
15 11 1

Review

Hazard	Risk	Who Could be Harmed	S	L	R	Control Measured	S	L	R
Lifting heavy weights	Sprains strains muscuskelator damage	Persons on job	4	2	8	Most of the materials will be transported by vehicle Object will be lifted between two if necessary Materials to be taken up to beams using mechanical means	4	1	4
Working at height	Falling	Persons on job	5	3	15	Harnesses will be used Work will be done from previously constructed platform Employees are trained at rope access	5	1	5
Weather conditions	Hypnothermia	Persons on job	4	3	12	Personnel have been issued with suitable clothing and foot-wear Work will cease if conditions are too bad	4	1	4
Working on or near a railway	Being struck by moving carriage or entangled with moving cable	Persons on job	5	4	20	No carriage or cable movement will take place at onset of job When commissioning begins, a Permit to Work will be issued Daily toolbox talks will be attended If carriage is scheduled to move, all work will cease and the area will be cleared	5	1	5

Fax Header Sheet



G. F. Job Limited • Unit 3 & 4 Grigorhill Ind Est • Nairn • IV12 5HY • Tel: 01667 451515 Fax: 01667 451919

civil engineering • plant hire • heavy haulage • quarry operator

SEND TO COMPANY NAME	<i>Lairngorm Mountain Ltd.</i>	FROM	Personal Data Redacted
ATTENTION	Personal Data Redacted	DATE	<i>18th Oct 2001.</i>
FAX NUMBER	<i>01479 - 861207</i>		

TOTAL PAGES INCLUDING COVER 3.

COMMENTS

please find attached Method Statement and Risk Assessment for Middle Station Civils work as requested.

Regards

Personal Data Redacted

G.F.JOB LTD**HEALTH & SAFETY METHOD STATEMENT****CONTRACT CAIRNGORM MOUNTAIN RAILWAY - MIDDLE STATION CIVILS****WORK DESCRIPTION EXCAVATING ADJACENT TO EXISTING STRUCTURE, FORMING MASS CONCRETE BASES, GABION BASKETS AND BACKFILLING****METHOD OF WORK**

- 1/ Liaise with Morrison Site Agent for general site induction and procedures to obtain guidance on site access, traffic management and the general public.
- 2/ Carry out condition survey of area to be excavated, paying particular attention to proximity of excavations to the existing structures.
- 3/ Set up appropriate site signage and brief operatives on agreed safe systems.
- 4/ Set out lines for bases and gabion baskets.
- 5/ Excavate in preparation for placement of concrete form work and gabion baskets. Re-usable excavated material to be stored adjacent to excavations.
- 6/ Assess excavation for depth and structure prior to operatives entering.
- 7/ Erect shutters and place concrete to bases adjacent to railway.
- 8/ Strip shutters and backfill to underside of gabion basket level.
- 9/ Place and fill gabion baskets in accordance with the Specification on drawing CA 150/05/02.
- 10/ Backfill to formation level of second line of bases.
- 11/ Erect shutters and place concrete to second line of bases.
- 12/ Strip shutters and complete backfill to finished levels.
- 13/ Clear site and tidy.

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HEALTH & SAFETY RISK ASSESSMENT - GENERAL WORKS AND PROTECTING THE PUBLIC

CONTRACT CAIRNGORM MOUNTAIN RAILWAY - MIDDLE STATION CIVILS
 JOB No 497
 RISK ASSESSMENT PERFORMED BY Personal Data Redacted
 ASSESSMENT REF [REDACTED]

FOR SCORE MULTIPLY LIKELYHOOD WITH SEVERITY1-2 = LOW.....3-4 = MEDIUM.....6-9 = HIGH.....

TASK OR ACTIVITY	RISK	SCORE			CONTROL
		LIKELYHOOD 1-3	SEVERITY 1-3	RISK 1-3	
OPERATORS GAINING ACCESS TO THE SITE	WORKING ON SITE WITHOUT PRIOR KNOWLEDGE OR INSTRUCTION OF GENERAL SITE HAZARDS AND PROCEDURES.	1	2	2	ENSURE ALL G.F. JOB OPERATIVES AND STAFF ARE GIVEN SITE INDUCTION IN ACCORDANCE WITH MORRISON'S SAFE SYSTEMS.
PROTECTING THE GENERAL PUBLIC FROM SITE DANGERS	CONTACT WITH PLANT/MACHINERY	2	2	4	PROVIDE ONLY CITB TRAINED OPERATORS - AWARE OF RISKS POSITION WARNING SIGNS AND FENCE OFF OPEN EXCAVATIONS
EXCAVATING BELOW GROUND LEVEL	MACHINE OR OPERATORS FALLING INTO OPEN EXCAVATION	2	2	4	PROVIDE BANKSMAN IF OPEN EXCAVATION EXCEEDS 1.5M PROVIDE METHOD STATEMENT AND BRIEF OPERATIVES.
CONSTRUCTING FORM WORK	INJURIES SUSTAINED AS A RESULT OF HANDLING WOOD, STEEL AND HAND TOOLS	2	1	2	WORK CARRIED OUT BY EXPERIENCED OPERATIVES WITH SITE SUPERVISION PROVIDED AT ALL TIMES. APPROPRIATE TOOLING PROVIDED.
POURING OF READYMIX CONCRETE	INJURY SUSTAINED AS A RESULT OF BEING SPLASHED WITH CONCRETE	2	1	2	USE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT PROVIDED. INCLUDING IF REQUIRED GLOVES AND EYE PROTECTION.
GENERAL WORK	PROBLEMS BEING GENERATED AS A RESULT OF SEVERE WEATHER CONDITIONS	2	1	2	SITE SUPERVISOR TO CONSULT ON A DAILY BASIS WITH SITE AGENT WITH REFERENCE MADE TO THE EXPECTED WEATHER FORECAST.
EXCAVATING IN AREA ADJACENT TO EXISTING FOUNDATIONS	UNDERMINING FOUNDATION STRUCTURE OF EXISTING SUPPORT PILLARS.	2	2	4	CARRYOUT ON-SITE ASSESSMENT OF EXTENT OF EXCAVATION REQUIRED IN REALTION TO PROXIMITY TO EXISTING PILLARS. ADHERE TO METHOD STATEMENT AND SUPERVISORS INSTRUCTIONS
BACKFILLING EXCAVATION	EXCAVATOR COLLIDING WITH EXISTING STRUCTURES AND WORKING ON UNSTABLE GROUND.	2	2	4	WHERE MACHINE OPERATING NEAR TO EXISTING STRUCTURE, PROVIDE BANKSMAN. ENSURE GROUND AREA IS ADEQUATELY COMPACTED PRIOR TO SETTING UP MACHINE.

FURTHER ASSESSMENT REQUIRED YES..... WHAT..... MONITOR EFFECTIVENESS OF SAFETY SYSTEMS BY DAILY INSPECTION AND SITE AUDIT.

FROM : G.F.JOB LTD. PHONE NO. : 01667451919 18 Oct. 2001 04:08PM P3

METHOD STATEMENT

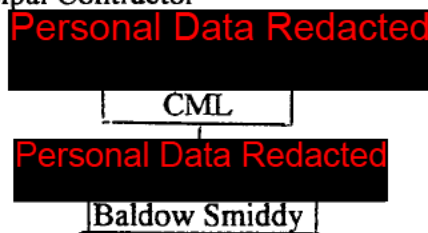
1.0 Transportation and erection of steel beams and mesh flooring to be used in the construction of the middle station platform.

1.1 This method statement describes the activities and control measures associated with the transportation and erection of all materials and tools required to construct the steel platform structure at the middle station.

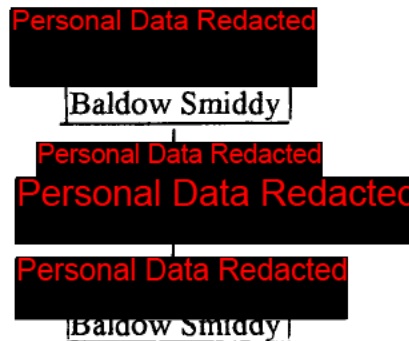
2.0 No CML/BS/001

3.0 Resources.

3.1 Interface with Principal Contractor



3.2 Internal organisation



4.0 Plant, equipment, tools

- 4.1 4x4 Jeep and trailer
- 4.2 Fork Lift truck (possibly belonging to G F Job)
- 4.3 Certified canvass and chain slings
- 4.4 Spanners
- 4.5 Ratchets
- 4.6 Diesel generator
- 4.7 110v drill

5.0 Method

- 5.1 The steel work will be transported in sections in a trailer pulled by the 4x4 Jeep from the car park to site
- 5.2 Most sections are small enough to be off-loaded by hand. The forklift and slings will be used to offload any heavy items.

- 5.3 Holes, corresponding with boltholes on the steel will be drilled into the concrete base using the 110v drill.
- 5.4 The steel will be bolted to the concrete base using spanners and ratchets.
- 5.5 Due to the steel being galvanized, the entire structure has been designed to be bolted together on site using ratchet spanners.
- 5.6 Some of the construction work will be above 2m. Harnesses will be worn.

6.0 Control measures

- 6.1 Risk assessments associated with the task are attached to this method statement.
- 6.2 It is anticipated the task will be completed prior to commissioning of the funicular. Should this not be the case, a permit to work procedure will be adopted with particular attention paid to "working on, or near, the line"

7.0 Emergency procedures

- 7.1 A first aid kit will be on site.
- 7.2 Contact will be maintained with the principal contractor

8.0 Welfare arrangements

- 8.1 The work is being carried out near to the Shieling complex which offers,
 - 8.1.1 Cooking facilities
 - 8.1.2 Washing facilities
 - 8.1.3 Warmth and shelter
 - 8.1.4 Toilets

9.0 Environmental issues

- 9.1 The digging of the base holes will cause some damage to the environment but this will be re-instated on completion of the job.
- 9.2 The diesel generator will not be re-fuelled on site and will be sited within a bund.
- 9.3 Transport to and from the site will be via an established track.

10.0 Monitoring of compliance

- 10.1 The principal contractor, represented by Personal Data Redacted will be responsible for monitoring compliance with this method statement.

General Risk Assessment

Transporting and
Erecting steel beams
Middle station

Assessed By
Personal Data Redacted
S=Severity (1-5)
L=Likelihood (1-5)

Date
23 10 1

Review N/A

Hazard	Risk	Who Could be Harmed	S	L	R	Control Measured	S	L	R
Transporting beams by Jeep and trailer	Loss of load	All in vicinity	4	2	8	Load will be securely tied down Load will be transported by several journeys (trailer not full)	4	1	4
	Collision/impact with people/buildings	All in vicinity	4	2	8	Driver will be trained Pedestrians have right of way Maximum speed limit (5mph)	4	1	4
Lifting beams manually	Manual handling injuries (sprains, strains etc)	Person on job	4	3	12	Beams are in short lengths and are not heavy Fork-lift truck on hand if reqd.	4	1	4
Incorrect construction	Collapse of structure	All on structure	5	2	10	Structure has been erected in work-shop. Very secure All steel used is certified	5	1	5



INDUSTRIAL & MARINE

HYDRAULICS LTD.

2 SNOWDON ROAD,
MIDDLESBROUGH,
CLEVELAND TS2 1LP
UNITED KINGDOM

TEL: +44 (0)1642 802700 (24 hours)
FAX: +44 (0)1642 802701
EMAIL: info@lmh-uk.com
WEBSITE: www.lmh-uk.com

I.M.H.	Industrial and Marine Hydraulics Limited	Date : 15-10-2001 Issue : 01 Ref : 10959 Page : 1 of 5
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Method Statement

Company Name	Bosch Rexroth Limited
Project	Calmgorm Ski Lift
Detail Work Activity / Type of Work	Manufacture of Hydraulic System pipework to circuit diagrams provided. Pipework installation with pulled bends, clamps and jet cleaned.
Contractors / Sub-Contractors to be involved with this project	None



ISO 9002 / BS 5750 Part 2 - Cert. No. 4926

Doc Ref: PROC/METHODSTAT/001

DIRECTORS
P. GRIFFITHS
T. GRIFFITHS
M. JEFFERS

Registered in England No. 1731888
VAT Reg No. 391 8306 37

I.M.H.	Industrial and Marine Hydraulics Limited	Date : 15-10-2001 Issue : 01 Ref : 10959 Page : 2 of 5
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Project:

METHOD STATEMENT

Scope of works	To install pipework with pulled bends, jet cleaned and clamped up to customers circuit diagrams
Person responsible for the project	Personal Data Redacted
Director	
Manager / Supervisor	
Foreman / Charge Hand	
Person responsible for Health & Safety Issues	
Our intended site working hours	To be advised
Our method of reporting accidents	Submission of a Bosch Rexroth approved accident report sheet. Completion of IMH's accident report book.
Our emergency procedures	Immediate report to the nominated site engineer in charge and safety representative. Contacting of Bosch Rexroth security, and informing of the relevant IMH responsible engineer and safety representative.
Telephone Number. Day time	01642 802700
Fax Number	01642 802701
Telephone Number. Nights / Weekends	Personal Data Redacted
Environmental considerations and control	As detailed in IMH risk assessment pertaining to the work to be undertaken.

Compiled by:	Authorised by:	I.M.H.
---------------------	-----------------------	---------------

Personal Data Redacted



Doc Ref: PROC/METHODSTAT/001

DIRECTORS
 P. GRIFFITHS
 T. GRIFFITHS
 M. JEFFERS

Registered in England No. 1179790
 VAT Reg No. 381 8305 37

I.M.H.

Industrial and Marine Hydraulics Limited

Date : 15-10-2001
Issue : 01
Ref : 10959
Page : 3 of 5

Project:

METHOD STATEMENT

Description of Work requiring Method Statement

STATEMENT:

Install pipework using electric hydraulic bending machine

Manufacture clamps and bolt in position using mobile welding machine and hand drills

Jet clean pipes prior to installation

As no pressure testing or flushing will be carried out no oil leaks can be envisaged

Compiled by:

Authorised by:

I.M.H.

Personal Data Redacted



ISO 9002 / BS 0700 Part 2 - Cert. No. 4958

Doc Ref: PROC/METHODSTAT/001

DIRECTORS
P. GRIFFITHS
T. GRIFFITHS
M. JEFFERS
Registered in England No. 1751600
VAT Reg No. 381 8300 37

I.M.H.	Industrial and Marine Hydraulics Limited	Date	: 05 06 2001
		Issue	: 01
		Ref	: 10538
		Page	: 5 of 5
Project: _____			
METHOD STATEMENT			
WE ACKNOWLEDGE OUR LEGAL AND CONTRACTUAL OBLIGATION WITH REGARD TO:			
<ol style="list-style-type: none"> 1. Suitable materials and plant for the works (either temporary or permanent) if not specified. Including methods of handling. 2. Training in its correct use and recording the names of operatives authorised to use that item of equipment or plant. 3. Ensuring equipment or plant has correct in date certificates, statutory or otherwise. 4. Removal of all surplus materials, rubbish or equipment to designated area when required. 5. Our responsibility to ensure reasonable conduct and discipline i.e. the wearing of safety helmets. safe methods and working etc. of our operatives. 6. Our responsibility to provide <u>all</u> necessary protective clothing and equipment to carry out the sub-contract works. 7. Ensuring that our Method Statement is circulated to all involved associated personnel and Understood. 			
WE ALSO ENCLOSE:			
<ol style="list-style-type: none"> 1. Copies of company Health and Safety Policy Previously submitted on <u>N/A</u> 2. Drawings of the project where applicable N/A 			
METHOD STATEMENT AUTHORISED BY:-			
PRINT NAME: Personal Data Redacted			
SIGNED: _____		DATE: 15 October 2001	
Compiled by: Personal Data Redacted		Authorised by: _____	
		I.M.H.	



Doc Ref: PROC/METHODSTAT/001

DIRECTORS
P. GRIFFITHS
T. GRIFFITHS
M. JEFFERS
Registered in England No. 1731698
VAT Reg No. 391 8306 37

METHOD STATEMENT

Method statement for the transportation of materials required for the installation of "spacers" to facilitate the alignment of the rails in preparation for grouting and welding.

No CML/DMR/001

Originator

Approved

This method statement describes the activities and control measures associated with the transportation and erection of materials to facilitate the alignment of the rails in preparation for grouting and welding.

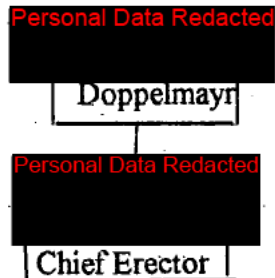
All parts and equipment (wooden planks and 2m spacers) will be transported to site on pallets using a fork-lift vehicle. Once on site, the planks will be manually off-loaded and placed on the cross-members between the rails to form a walkway. Two planks will be placed side by side and lashed together to provide a sufficient width. They will also be tied to the cross-members to create greater stability.

Once the planks are in place, the spacers will be removed individually and placed between the rails to ensure the 2m gauge.

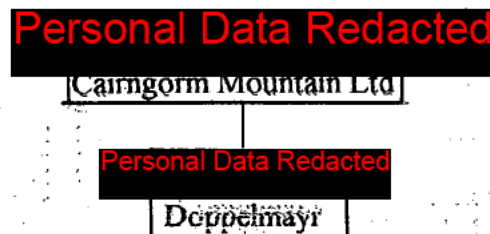
The only equipment which may be used is a mallet which may be used to move the rails to their desired position.

RESOURCES.

Internal organisation



Interface with Principal Contractor



Control Measures

Risk assessments for this task are attached.

Monitoring Compliance

The Principal Contractor, represented by

Personal Data Redacted

is responsible for monitoring compliance.

General Risk Assessment

Task Aligning, grouting
and welding rails

Assessed By Personal Data Redacted

Date 19.09.01

Review ONE OFF.

S=Severity (1-5)

L=Likelihood (1-5)

Hazard	Risk	Who Could be Harmed	S	L	R	Control Measured	S	L	R
Loading planks and spacers onto fork-lift (manual handling)	Sprains, strains	All on job	3	2	6Ea	Each item to be loaded individually to lighten the load Use of correct lifting techniques	3	1	3
Incorrect loading causing load to fall off	Injuries through being struck by falling load	All in vicinity	3	2	6	Load to be securely tied to forks	3	1	3
Working from walkway	slip, trip falls	Person on job	4	2	8	Width of walkway is sufficient All workers are highly experienced. Afall arrest harness and lanyard will be worn and used when working at heights in excess of 2m.	4	1	4

METHOD STATEMENT

Method statement for the grouting of the rail supports and the preparation involved leading up to the work being carried out.

No CML/DMR/002

Originator

Approved

This method statement describes the activities and control measures associated with the grouting of the rail supports and the preparations involved prior to the work being carried out.

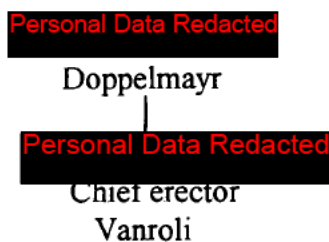
A small compressor will be taken to the site by landrover. Once on site, it will then be placed on the walkway between the rails. When (or if) required, the compressor will be used to dry out any surface water which may be lying at the base of the bolts to be grouted. A fully trained operative will carry out this operation.

Prefabricated small wooden boxes will then be put in position around the bolts to act as shutters.

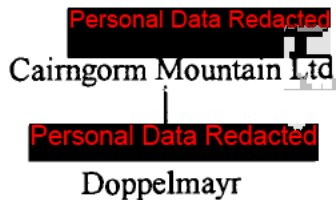
The grout, CONBEXTRA GP manufactured by Fosroc Ltd, Tamworth, will be mixed in the compound before being transferred to site by landrover in suitable containers. Once on site, the grout will be poured into the shutters and left to settle.

RESOURCES

Internal organisation



Interface with Principal Contractor



C control Measures

Risk assessments for this task are attached.

Monitoring Compliance

The Principal Contractor, represented by Personal Data Redacted is responsible for monitoring compliance.

General Risk Assessment

Task Aligning, grouting
and welding rails

Assessed By

Date

Review

S=Severity (1-5)

L=Likelihood (1-5)

Hazard	Risk	Who Could be Harmed	S	L	R	Conrol Measured	S	L	R
Mixing grout	Skin disease/burns	Person on job	3	2	6G	Gauntlet gloves worn	3	1	3
	Ingestion of dust	Person on job	2	1	2	All mixing done outdoors			
	Damage to eyes	Person on job	3	2	6	adequate ventillation	2	1	2
Pouring grout	Environmental damage	N/A	3	3	9	Eye protection will be worn	3	1	3
						Spill protection will be used			
						Minor spills cleared immediately	3	1	3

C control Measures

Risk assessments for this task are attached.

Monitoring Compliance

The Principal Contractor, represented by Personal Data Redacted responsible for monitoring compliance.



Conbextra GP
CI/SIB: Yq4
January 1988

Conbextra GP

General purpose non-shrink cementitious grout

Uses

Conbextra GP is used for general purpose, non-shrink cementitious grouting of gap thicknesses 10 to 75 mm. Recommended applications at flowable consistency include stanchion base plates, bolt pockets and void filling. At trowellable consistency Conbextra GP is recommended for bedding load bearing components.

Advantages

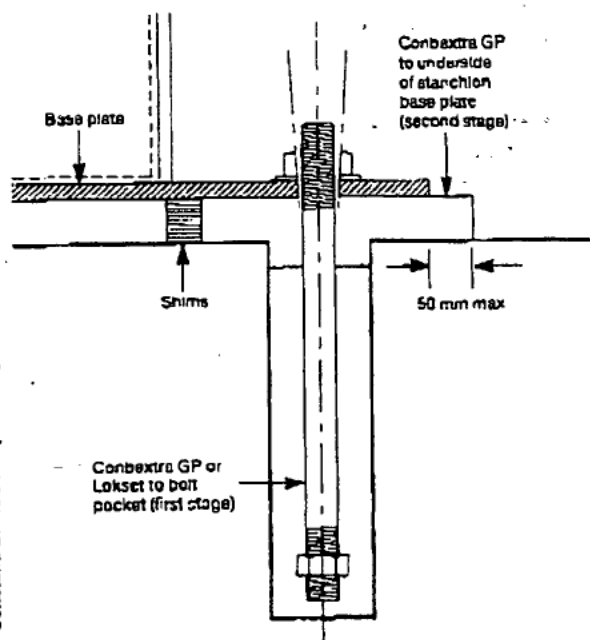
- Non-shrink
- Simply add correct quantity of water
- Can be used at flowable or trowellable consistency
- Chloride free
- Non-staining

Description

Conbextra GP is supplied as a ready to use dry powder. The addition of a controlled amount of clean water produces a flowing non-shrink grout for gap thicknesses 10 to 75 mm.

Conbextra GP is a blend of Portland cements, graded fillers and chemical additives. The low water demand ensures high early strength. The graded filler is designed to assist uniform mixing and produce a consistent grout.

Typical detail of stanchion base plate



Conbextra GP CI/SIB: Yq4 January 1988

Technical support

Fosroc offers a comprehensive range of high quality, high performance construction products. In addition, Fosroc offers a worldwide technical support and on-site service to specifiers, end-users and contractors.

Properties

The following results were obtained at flowable consistency (ie 4.5 litres of water per 25 kg bag) and at a temperature of 20°C.

Test method for	Typical result
Compressive strength (BS 1881, Part 116: 1983):	26 N/mm ² @ 1 day 55 N/mm ² @ 7 days 64 N/mm ² @ 28 days
Flexural strength (BS 4551: 1980):	2.5 N/mm ² @ 1 day 9.0 N/mm ² @ 7 days 10.0 N/mm ² @ 28 days
Time for expansion —	
Start:	15 minutes
Finish:	2 hours
Fresh wet density:	Approximately 2170 kg/m ³ depending on actual consistency used
Young's modulus (ASTM 489-83):	28 kN/mm ²
Expansion characteristics:	An expansion of up to 1% overcomes plastic settlement in the unset material

Specification clauses

Performance specification

All grouting must be carried out with pre-packaged non-shrink cementitious grout manufactured and supplied by a registered firm under the BS 5750 Quality Assurance Scheme.

It shall be mixed with clean water to the required consistency. The grout must not bleed or segregate.

A volumetric expansion of up to 1% shall occur while the grout is plastic by means of a gaseous system.



The compressive strength of the grout must exceed 40 N/mm² at 7 days and 60 N/mm² at 28 days.

The storage, handling and placement of the grout must be in strict accordance with the manufacturer's instructions.

Supplier specification

All non-shrink cementitious grouting must be carried out using Conbextra GP manufactured by Fosroc and used in accordance with the manufacturer's data sheet.

Instructions for use

Preparation

Foundation surface

The substrate surface must be free from oil, grease or any loosely adherent material. If the concrete surface is defective or has laitance, it must be cut back to a sound base. Bolt holes and fixing pockets must be blown clean of any dirt or debris.

Pre-soaking

For a minimum of 2 hours prior to grouting, the area of cleaned foundation should be flooded with fresh water. Immediately before grouting takes place any free water should be removed with particular care being taken to blow out all bolt holes and pockets.

Base plate

It is essential that this is clean and free from oil, grease or scale. Air pressure relief holes should be provided to allow venting of any isolated high spots.

Levelling shims

If these are to be removed after the grout has hardened, they should be treated with a thin layer of grease.

Formwork

The formwork should be constructed to be leakproof. This can be achieved by using foam rubber strip or Silicone Sealant 33 beneath the constructed formwork and between joints.

In some cases it is practical to use a sacrificial semi-dry sand and cement formwork. The formwork should include outlets for pre-soaking.

Unrestrained surface area

This must be kept to a minimum. Generally the gap width between the perimeter formwork and the plate edge should

not exceed 150 mm on the pouring side and 50 mm on the opposite side. It is advisable where practical to have no gap at the flank sides.

Mixing and placing

Mixing

For best results a mechanically powered grout mixer should be used. When quantities up to 50 kg are used, a Bosch (or equivalent) 1150 watt, 280/640 rpm, 110 volt drill fitted with a Conbextra mixing paddle is suitable. Larger quantities will require a high shear vane mixer. Do not use a colloidal impeller mixer.

To enable the grouting operation to be carried out continuously, it is essential that sufficient mixing capacity and labour are available. The use of a grout holding tank with provision to gently agitate the grout may be required.

Consistency of grout mix

The quantity of clean water required to be added to a 25 kg bag to achieve the desired consistency is given below.

Trowellable:	3.4 to 3.6 litres
---------------------	-------------------

Flowable:	4.0 to 4.5 litres
------------------	-------------------

The selected water content should be accurately measured into the mixer. The total contents of the Conbextra GP bag should be slowly added and continuous mixing should take place for 5 minutes. This will ensure that the grout has a smooth even consistency.

Placing

At 20°C place the grout within 20 minutes of mixing to gain the full benefit of the expansion process.

Conbextra GP can be placed in thicknesses up to 75 mm in a single pour when used as an underplate grout. For thicker sections it is necessary to use Conbextra TS (thick section) grout.

Any bolt pockets must be grouted prior to grouting between the substrate and the base plate.

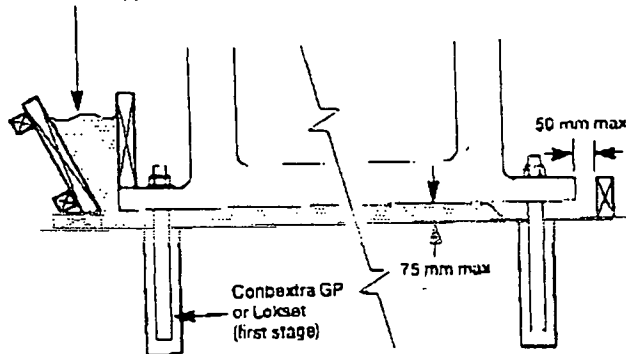
Continuous grout flow is essential. Sufficient grout must be prepared before starting. The time taken to pour a batch must be regulated to the time to prepare the next one.

Conbextra GP
C/SIB: Yq4
January 1998

Typical hopper system

Removable hopper. For larger pours the grout may be hand placed or pumped into a removable hopper (trough)

Conbextra GP poured into removable hopper (second stage)



Pouring should be from one side of the void to prevent any air or pre-soaking water becoming trapped under the base plate. It is advisable to pour the grout across the shortest distance of travel. The grout head must be maintained at all times so that a continuous grout front is achieved.

Curing

On completion of the grouting operation, exposed areas should be thoroughly cured with Concure curing membrane, continuous application of water and/or wet hessian.

Cleaning

Conbextra GP should be removed from tools and equipment with clean water immediately after use. Cured material can be removed mechanically, or with Fosroc Acid Etch.

Limitations

Low temperature working

When the air or contact surface temperatures are 5°C or below on a falling thermometer, warm water (30°C to 40°C) is recommended to accelerate strength development.

For ambient temperatures below 10°C the formwork should be kept in place for at least 36 hours.

Normal precautions for winter working with cementitious materials should then be adopted.

High temperature working

At ambient temperatures above 35°C cool water (below 20°C) should be used for mixing the grout prior to placement.

Estimating

Supply

Conbextra GP is supplied in 25 kg moisture resistant bags.

Yield

Allowance should be made for wastage when estimating quantities required. The approximate yield per 25 kg bag is:

Consistency	Trowellable	Flowable
Yield:	12 litres	13.25 litres

Storage

Conbextra GP has a shelf life of 12 months if kept in a dry store in sealed bags. If stored in high temperature and high humidity locations the shelf life may be reduced.

Precautions

Health and safety

Conbextra GP contains cement powders which, when mixed or become damp, release alkalis which can be harmful to the skin and eyes. During use, avoid inhalation of dust and contact with skin and eyes. Wear suitable protective clothing, gloves, eye protection and respiratory protective equipment. The use of barrier creams provide additional skin protection. In case of contact with skin, rinse with plenty of clean water, then cleanse with soap and water. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately — do not induce vomiting.

Fire

Conbextra GP is non-flammable.



Fosroc Limited

Coleshill Road
Tamworth
Staffordshire
B78 3TL
Tel 01827 262222
Fax 01827 262444
www.FosrocUK.com

Conbextra is the trade mark of Fosroc International Limited

Important note

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard Conditions for the Supply of Goods and Services, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification or information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability other than that indirectly arising from the use of its products, whether or not in accordance with any advice, specification, recommendation or information given by it.



SAFETY DATA SHEET

1: IDENTIFICATION OF THE SUBSTANCE (INCLUDING THE NAME OF THE COMPANY) / UNDERTAKING

Product Name: **CONBEXTRA GP**

Application: Cementitious grout.

Company: **Fosroc Limited**

Address: **Coleshill Road, Tamworth, Staffordshire. B78 3TL**

Phone: **01827 265222**

(Out of Hours) **01827 265279**

Fax: **01827 265444**

2: COMPOSITION AND INFORMATION ON SUBSTITUTES

Composition: portland cements, silica sand, admix

Hazardous ingredient(s)	Symbol	RISK PHRASES	Other Information	%
Cement (OPC)	Xi	R36/37/38	Cas No: 65997-15-1	>60

All constituents of this product are listed in EINECS (European Inventory of Existing Commercial Chemical Substances) or ELINCS (European List of New Chemical Substances) or are exempt.

Refer to Section 8 for Occupational Exposure Limits.

3: HAZARDS IDENTIFICATION

Irritating to eyes, respiratory system and skin



IRRITANT

4: FIRST AID MEASURES

Eyes: Irrigate immediately with copious quantities of water for several minutes. Obtain medical attention urgently.

Skin: Wash immediately with copious quantities of water. Remove contaminated clothing immediately. Obtain medical advice if skin disorders develop.

Inhalation: Remove from exposure. If feeling unwell obtain medical attention.

Ingestion: Wash out mouth with water. Do NOT induce vomiting. Obtain medical attention.

5: FIRE FIGHTING MEASURES

Suitable Extinguishing media: none, not flammable.

Special Exposure Hazards: None.

Special Protective Equipment: None.

6: ACCIDENTAL RELEASE AND PRECAUTIONS

Personal Precautions: Wear rubber boots in addition to the recommended protective clothing.

Environmental Precautions: Prevent entry into drains, sewers and water courses.

Decontamination Procedures: Avoid the creation of dust in atmosphere. Contain into containers. Residues may be flushed to drain with large volumes of water. Prior consent must be obtained from the local Water Company if discharged to sewer.

7: HANDLING AND STORAGE

Handling: Avoid creating dust. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid skin and eye contact.

Storage: Store in cool, dry area.

13: DISPOSAL CONSIDERATIONS

Disposal must be in accordance with local and national legislation.

Unused Product: Dispose of in an approved manner.
 Used/Contaminated Product: As for Unused product
 Packaging: The method of disposal must be acceptable to the local authority.

14: TRANSPORT INFORMATION

This product is NOT classified as dangerous for transport.

15: REGULATORY INFORMATION**Hazard Label Data:-**

Named Ingredients: cement powder
 Symbol(s): Xi
 Risk Phrases: Irritating to eyes, respiratory system and skin.
 Safety Phrases: Do not breathe dust
 Avoid contact with skin and eyes
 Wear suitable gloves and eye/face protection
 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
 After contact with skin, wash immediately with plenty of soap and water.
 EC Directives: Dangerous Substances Directive, 67/548/EEC and adaptations.
 Dangerous Preparations Directive, 88/379/EEC.
 Safety Data Sheets Directive, 91/155/EEC.
 Statutory Instruments: Chemicals (Hazard Information and Packaging for Supply) (Amendment) Regs. 1996 (SI 1092).
 Health & Safety at Work, etc Act 1974
 Control of Substances Hazardous to Health Regs. 1988 (SI 3240).
 Codes of Practice: Waste Management. The Duty of Care.
 Guidance Notes: Occupational skin diseases: health and safety precautions (EH 26).
 Dust in the workplace: general principles of protection. (EH44).
 Occupational exposure limits (EH 40).

The above publications are available from HMSO

16: OTHER INFORMATION

The data and advice given apply to the normal use of the product. The product is not sold as suitable for any other application. Use of the product for applications other than as stated in this sheet may give rise to risks not mentioned in this sheet. The product should not be used where the stated conditions of application are not met without seeking advice from Fosroc Ltd.
 If this product has been purchased for supply to a third party for use at work, it is the purchaser's duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet.
 It is the responsibility and duty of the employer to inform employees and others who may be affected of any hazards described in this sheet and of any precautions which should be taken.

This sheet does not constitute or substitute for the users own assessment of workplace risk, as required by other health and safety legislation.

Further copies of this Safety Data Sheet may be obtained from Fosroc Limited.

Date Printed: 24/03/1999

SDS Reference: 0196/1 GP

REVISION

Supersedes issue no: 02 dated: 24.07.95

Sections updated/ revised - no(s): 1 . 8.

8: EXPOSURE CONTROLS/PERSONAL PROTECTION**Occupational Exposure Limits:-**

Substance	OSHA PEL	NIOSH PEL	Comments/Other Information
silica, amorphous, total inhalable dust	6 mgm ⁻³	-----	TLH 40
respirable dust	2.4 mgm ⁻³	-----	
portland cement: total inhalable dust	10 mgm ⁻³	-----	EH 40
respirable dust	4 mgm ⁻³	-----	

Engineering Control Measures:

Respiratory levels of dust must be maintained within the Occupational Exposure Limit. Where mechanical methods are inadequate or impractical, appropriate personal protective equipment must be used.

Personal Protective Equipment:

Impervious gloves (eg PVC). Goggles. Safety glasses. Approved dust mask. Change contaminated clothing before re-use.

9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Granulated powder.
Colour:	Grey.
Odour:	Odourless.
pH(working dilution):	>12
Boiling Point/Range (°C):	Not applicable.
Flash Point (closed, °C):	None.
Autoflammability (°C):	Not applicable
Oxidising Properties:	Not determined
Relative Density (at 20°C):	1.3 (bulk)
Water Solubility:	Partially soluble.

10: STABILITY AND REACTIVITY

Stability:	Stable.
Conditions to Avoid:	Exposure to air. Contamination with water.
Materials to Avoid:	Strong acids
Hazardous Decomposition Products:	None.

11: TOXICOLOGICAL INFORMATION**Health Effects**

On Eyes:	Irritating and may injure eye tissue if not removed promptly
On Skin:	Irritation. See "chronic" effects.
Respiratory:	Irritation to respiratory system. Inflammation of the nasal mucous membrane by exposure to cement dust.
By Ingestion:	May cause irritation of mouth, throat and digestive tract.
Chronic:	Cement, cementitious grouts and mortars are known to cause both irritant and allergic contact dermatitis. Prolonged skin contact can result in chemical burns.

12: ECOLOGICAL INFORMATION

Environmental Assessment:	Little detailed information is available on the environmental effects of this product, but its overall environmental impact is not regarded as significant.
Mobility:	Partially soluble in water.
Persistence and Degradability:	Not readily biodegradable.
Bioaccumulative Potential:	Not expected to be bioaccumulative.
Ecotoxicity:	Not expected to be ecotoxic to fish/daphnia/algae in cured state.



SAFETY DATA SHEET

1: IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product Name: **CONBEXTRA GP**

Application: Cementitious grout.

Company: **Fosroc Limited**

Address: Coleshill Road, Tamworth, Staffordshire. B78 3TL

Telephone: 01827 262222 (Out of Hours) 01827 265279 Fax: 01827 262444

Personal Data Redacted

HOT WATER
THERMAL BLANKET

Personal Data Redacted

LOWER WATER
CONTENT

2: COMPOSITION/INFORMATION ON INGREDIENTS

Composition: portland cements, silica sands, additives.

Hazardous Ingredient(s)	Symbol	Risk Phrases	Other Information	%
Cement (OPC)	Xi	R36/37/38	Cas No: 65997-15-1	>50

All constituents of this product are listed in EINECS (European Inventory of Existing Commercial Chemical Substances) or ELINCS (European List of New Chemical Substances) or are exempt.

Refer to Section 8 for Occupational Exposure Limits.

3: HAZARDS IDENTIFICATION

Irritating to eyes, respiratory system and skin



IRRITANT

4: FIRST AID MEASURES

Eyes: Irrigate immediately with copious quantities of water for several minutes. Obtain medical attention urgently.

Skin: Wash immediately with copious quantities of water. Remove contaminated clothing immediately. Obtain medical advice if skin disorders develop.

Inhalation: Remove from exposure. If feeling unwell obtain medical attention.

Ingestion: Wash out mouth with water. Do NOT induce vomiting. Obtain medical attention.

5: FIRE FIGHTING MEASURES

Suitable Extinguishing Media: None, not flammable.

Special Exposure Hazards: None.

Special Protective Equipment: None.

6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear rubber boots in addition to the recommended protective clothing.

Environmental Precautions: Prevent entry into drains, sewers and water courses.

Decontamination Procedures: Avoid the creation of dust in atmosphere. Gather into containers. Residues may be flushed to drain with large volumes of water. Prior consent must be obtained from the local Water Company if discharged to sewer.

7: HANDLING AND STORAGE

Handling: Avoid creating dust. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid skin and eye contact.

Storage: Store in cool, dry area.

8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits:-

Substance	8 Hour TWA	STEL	Source/Other Information
silica, amorphous: total inhalable dust	6 mgm ⁻³	-----	EH 40
respirable dust	2.4 mgm ⁻³		
portland cement: total inhalable dust	10 mgm ⁻³	-----	EH 40
respirable dust	4 mgm ⁻³		

Engineering Control Measures: Atmospheric levels of dust must be maintained within the Occupational Exposure Limit. Where mechanical methods are inadequate or impractical, appropriate personal protective equipment must be used.

Personal Protective Equipment: Impervious gloves (eg PVC). Goggles / Safety glasses. Approved dust mask. Change contaminated clothing and clean before re-use.

9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Granulated powder.
Colour:	Grey.
Odour:	Odourless.
pH(working dilution):	>12
Boiling Point/Range (°C):	Not applicable.
Flash Point (closed, °C):	None.
Autoflammability (°C):	Not applicable
Oxidising Properties:	Not determined
Relative Density (at 20°C):	1.3 (bulk)
Water Solubility:	Partially soluble.

10: STABILITY AND REACTIVITY

Stability:	Stable.
Conditions to Avoid:	Exposure to air. Contamination with water.
Materials to Avoid:	Strong acids.
Hazardous Decomposition Products:	None.

11: TOXICOLOGICAL INFORMATION

Health Effects

On Eyes:	Irritating and may injure eye tissue if not removed promptly.
On Skin:	Irritation. See "chronic" effects.
By Inhalation:	Irritating to respiratory system. Inflammation of the nasal mucous membrane by exposure to cement dust.
By Ingestion:	May cause irritation of mouth, throat and digestive tract.
Chronic:	Cement, cementitious grouts and mortars are known to cause both irritant and allergic contact dermatitis. Prolonged skin contact can result in chemical burns.

12: ECOLOGICAL INFORMATION

Environmental Assessment:	Little detailed information is available on the ecological effects of this product, but its overall environmental impact is not regarded as significant
Mobility:	Partially soluble in water.
Persistence and Degradability:	Not readily biodegradable.
Bioaccumulative Potential:	Not expected to be bioaccumulative.

Ecotoxicity: Not expected to be ecotoxic to fish/daphnia/algae in cured state.

13: DISPOSAL CONSIDERATIONS

Disposal must be in accordance with local and national legislation.

Unused Product: Dispose of in an approved manner.

Used/Contaminated Product: As for Unused product.

Packaging: The method of disposal must be acceptable to the local authority.

14: TRANSPORT INFORMATION

This product is NOT classified as dangerous for transport.

15: REGULATORY INFORMATION

Hazard Label Data:-

Named Ingredients: cement powders

Symbol(s): Xi

Risk Phrases: Irritating to eyes, respiratory system and skin.

Safety Phrases: Do not breathe dust
Avoid contact with skin and eyes
Wear suitable gloves and eye/face protection
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
After contact with skin, wash immediately with plenty of soap and water

EC Directives: Dangerous Substances Directive, 67/548/EEC and adaptations.
Dangerous Preparations Directive, 88/379/EEC.
Safety Data Sheets Directive, 91/155/EEC.

Statutory Instruments: Chemicals (Hazard Information and Packaging for Supply) (Amendment) Regs. 1996 (SI 1092).
Health & Safety at Work, etc. Act 1974.
Control of Substances Hazardous to Health Regs. 1994 (SI 3246).

Codes of Practice: Waste Management. The Duty of Care.

Guidance Notes: Occupational skin diseases: health and safety precautions (EH 26).
Dust in the workplace: general principles of protection. (EH44).
Occupational exposure limits (EH 40).

The above publications are available from HMSO

16: OTHER INFORMATION

The data and advice given apply when the product is used for the stated application or applications. The product is not sold as suitable for any other application. Use of the product for applications other than as stated in this sheet may give rise to risks not mentioned in this sheet. The product should not be used other than for the stated application or applications without seeking advice from Fosroc Ltd.

If this product has been purchased for supply to a third party for use at work, it is the purchaser's duty to take all necessary steps to secure that any person handling or using the product is provided with the information in this sheet.

It is the responsibility and duty of the employer to inform employees and others who may be affected of any hazards described in this sheet and of any precautions which should be taken.

This sheet does not constitute or substitute for the users own assessment of workplace risk, as required by other health and safety legislation.

Further copies of this Safety Data Sheet may be obtained from Fosroc Limited.

Date Printed: 05/01/1999

SDS Reference: 0196/1 GP

REVISION

Supersedes issue no: 02 dated: 24.07.96

Sections updated/revised - no(s): 1 . 8.



Report No: 085-70-311/2 / CL449 / C02a/ 1

Page: 1 of: 1

COMPRESSIVE STRENGTH OF MORTAR CUBES CERTIFICATE
BS 1881 Pt 111 & 114, BS 4551 Cl. 15

Scheme: **CUBE TESTING**
Location: **FOSROC: CONBEXTRA GP PREMIX**

Material: **MORTAR CUBES**
Spec.: **MORTAR CUBES**
Source: **SITE PRODUCTION**

Date Sampled: **23/10/2001**

Test Results

Test No.:	1					
Site Reference	CML/VAN/007					
Date Made:	23/10/2001					
Date Tested:	30/10/2001					
Date Received:	25/10/2001					
Age Tested:	7					
Nominal Size(mm):	100					
Dimensions(H*B*D):	100 * 100 * 100					
Mass In Air (Kg):	2.139					
Density (Kg/m ³):	2150					
Load at Failure (kN):	576					
Compressive Strength (N mm ²):	57.5					
Type of Failure:	Normal					
Condition on Receipt:	INTACT					
Condition at Test:	SATURATED					

Volume measured by water displacement clause 7

Was Sampling Certificate Received: **N**

Laboratory curing

Min Curing Temp:

18

Max Curing Temp:

22

Remarks

7 day strength: 55N ...

Client: **CAIRNGORM MOUNTAIN Ltd.**
CAIRNGORM SKI AREA
AVIEMORE

Signed By:

A. Lamont
D.C Wallace
D. Thompson

30/10/2001

Personal Data Redacted

PH22 1RB

4551REP

Form LABTEST 1

TO: The Highland Council
 Roads & Transport
 Materials Testing Laboratory
 Diriebught Road
 Inverness IV2 3QN
 Tel: 0463-703140
 Fax: 0463-703145

Materials Testing Services are required for the following scheme:
 (Please complete IN FULL)

Project Name	CONCRETE TESTING		
Order No	000533		
Contractor	CAIRNGORM MOUNTAIN LTD		
Commencement Date	26/10/01	Duration	
Site Representative	Personal Data Redacted		
Site Office Address	CAIRNGORM SKI AREA, AVIEMORE		
Telephone Number	01479		
Fax Number	01479		
Testing Required/ And Volume Include Schedule if available	CUBE TESTING (STRENGTH & DENSITY)		
Signed By	—	Date	—

For Lab Use Only

Customer Request Review	
Date Received	25/10/01
Are requirements adequately defined and understood	Y
Has Laboratory resources and capability	Y
Are laboratory requesting variation to request	N
If variation requested has approval been given by Customer	NA
Is Any Part of work being subcontracted	N
Subcontract Laboratory to be used	NA

COPY

Acknowledged to site date	26/10/01		
Entered on LMS By	Personal Data Redacted	Date Entered	26/10/01
Copy to Lab		Date Copied	25/10/01
Lab Job Reference No <small>(This No to be Quoted on all reports correspondence, test results)</small>	085-10-311/2		

FORM F:\COMMON\LABTEST1.LET

Data Protection - the information you have supplied will be used for the purpose for which you have provided it and any relevant procedure following from this

This data will be maintained in accordance with the act and will not be passed on or sold to any other organization without your prior approval unless this is a legal requirement

CONCRETE TEST CUBES

CLIENT:- VANOLI (CAIRNGORM)

SITE:- CMR

CONCRETE SUPPLIER:- FOSROC : CONBEXTRA GP PREMIX PACK

SPECIFICATION:- PER MANUF INSTRUCTIONS (SEE ATTACHED)

COMPACTION METHOD	SITYE CURING
Vibration	Time in moist air: 16.00 Hrs 29 HRS
Hand tamping	Time in water
Others	Min/Max temps 5°/9°
Time made 16.00	Weather conditions WET
Cube size 100x100	

Site reference	Date cast	Test age	Lab reference	Cube condition
CML/VAN/005	23/10/01	1 day	---	---
CML/VAN/006	23/10/01	2 days		
CML/VAN/007	23/10/01	7 days		
CML/VAN/008	23/10/01	28 days		

CL447
CL448
CL449
CL450

INTACT
DRY
WT1

METHOD STATEMENT.

1. Title - Welding and grinding of rails

No CML/DMR/003

Revision no. Personal Data Redacted

Authorised [REDACTED]

Location – Unwelded sections of rail between bottom station and entrance to tunnel.

2. Resources

Internal organisation

Personal Data Redacted

Doppelmayr

Personal Data Redacted

Technical Supervisor

Vanoli AG

Personal Data Redacted

Foreman & Welder

Vanoli AG

1 Worker
Weld & grind

1 Worker
Cut off bolts, Torque

Interface with Principal Contractor

Personal Data Redacted

Cairngorm Mountain Ltd

Personal Data Redacted

Doppelmayr

Personal Data Redacted

Vanoli AG

3. Plant, equipment, tools

The plant and equipment comprises,

- 3002 Geko generator
- Iso-tec Genesis 320 welder
- GWS 23-180 Right angle grinder

The only materials used are 5mm welding rods.

4. Details of work activities

Access to the work site will be by foot up the hill road. Access onto the funicular structure at elevated places will be by securely tied ladder. There is a walkway consisting of wooden planks which stretches for approx 50m on the cross sections between the concrete beams. This walkway is constructed by placing two planks side by side, lashing them together and also lashing them to the cross sections to prevent movement. As work progresses up-hill, the lower planks are removed and replaced at the top of the walkway which enables work to continue uninterrupted. A section of wire rope will run parallel to the rails. Once under tension, this wire rope will be used as a life line onto which the workforce will attach their harnesses.

When welding operations commence, the workforce will be split into two squads. The first squad will carry on aligning and grouting (CML/DMR 001 & 002) and the second squad will be welding and grinding. All welding will be done by either

Personal Data Redacted

Personal Data Redacted

both of whom are qualified welders. Each weld will, on completion, be tested and signed off by the welder.

5. Control measures

Risk assessments for this task are attached.

6. Temporary amended systems

Although a portable fire extinguisher will be on hand during welding operations within the tunnel, there are no amended systems.

7. Specific control methods

A permit to work system will be enforced during welding operations. The permit will be raised each day by the Principal Contractor.

Additional Personal Protective Equipment (PPE) in the form of a certified welders mask and goggles will be worn by the welder and grinders.

8. Emergency Procedures

Evacuation and/or rescue from the structure will be via the walkway to the nearest low point or ladder. A first aid kit will be on site at all times.

9. Welfare arrangements

The team have access to the chairlift bottom station for all welfare needs.

10. Environmental issues

There will be no environmental damage caused as a result of the task. Access will be via the hill road and ladders.

Any fuel driven machinery will be refueled by a trained operative and will be stored in a bund when not in use.

Any sparks generated by welding/grinding activities will have burnt up by the time they reach the ground.

11. Supplementary Documentation

Attached to this method statement are,

- Risk assessments
- COSHH assessment

12. Monitoring of compliance

The Principal Contractor will be responsible for monitoring compliance

General COSHH Assessment

Task Aligning, grouting
and welding rails

Assessed By
Personal Data Redacted

Date 21.09.01

Review

S=Severity (1-5)

L=Likelihood (1-5)

Hazard	Risk	Who Could be Harned	S	L	R	Control Measured	S	L	R
Welding fumes	Lung damage through inhalation of fumes	Welder	4	4	16	All welding is done outdoors no risk.	1	1	1

General Risk Assessment

Task Aligning, grouting and welding rails

Assessed By: **Personal Data Redacted**

Date 21.09.01

Review

S=Severity (1-5)

L=Likelihood (1-5)

Hazard	Risk	Who Could be Harned	S	L	R	Control Measured	S	L	R
Welding activities	damage to eyes:	Welder	3	3	9	Proper face mask will be worn	1	1	1
	Burns	Welder	3	3	9	Proper gauntlets will be worn	1	1	1
	Fire:	All in vicinity	4	2	8	There are no combustible materials on site	1	1	1
	Electric shock	Welder	4	2	8	Unit is powered by a generator which has been thoroughly examined All cables are examined prior to use	4	1	4
Use of portable electrical appliances:	Electric shock	Person on job	4	2	8	All appliances have been PAT tested by qualified electrician All items are visually examined prior to use All operators are fully trained.	4	1	4



OERLIKON-SCHWEISTECHNIK AG

Zertifikat

Wir bestätigen, dass

Personal Data Redacted



Work Permits (UK)

serving business needs



**Department for
Education and Employment**

Work Permits (UK)

Moorfoot

Sheffield S1 4PQ

Telephone 0114 259 4425

Fax 0114 259 4073

E-mail bt1.workpermits.dfee.gov.uk

www.workpermits.gov.uk

Personal Data Redacted

19. Sep. 2001

Personal Data Redacted

Personal Data Redacted

14/09/2001

Personal Data Redacted



INVESTOR IN PEOPLE



Work Permits (UK)
serving business needs



**Department for
Education and Employment**

Work Permits (UK)
Moorfoot
Sheffield S1 4PQ
Telephone 0114 259 4425
Fax 0114 259 4073
E-mail bt1.workpermits.dfee.gov.uk
www.workpermits.gov.uk

Personal Data Redacted

Personal Data Redacted

11/09/2001

Personal Data Redacted



INVESTOR IN PEOPLE

To
FROM

Method Statement

1.0 Aligning, welding grinding and grouting the rails within the confines of the tunnel.

1.1 This method statement describes the activities and control measures associated with aligning, welding, grinding and grouting the rails within the confines of the tunnel. This statement should be read in conjunction with CML/DMR/002 & 003.

2.0 No CML/DMR/004

3.0 Resources

3.1 As per previous statements referred to above

4.0 Plant, equipment, tools

- 4.1 Welder
- 4.2 Grinder
- 4.3 Grout mixer
- 4.4 Fire extinguishers
- 4.5 Breathing apparatus
- 4.6 First aid kit

5.0 Method

The method of task will be the same as 002 & 003 but the following precautions will apply.

- 5.1 Only authorised and fully briefed personnel will be permitted to enter the tunnel.
- 5.2 Site staff will carry out a pre-entry check before work commences in the tunnel. This will include checking the function of the emergency lighting, first aid stocks, PPE, etc.
- 5.3 A permit to work will be issued for every task.
- 5.4 A hot works permit will be issued for rail welding with all other works being suspended until completion of the welding operations.
- 5.5 Each person entering the tunnel will use the in and out board located at the top station entrance.
- 5.6 Personnel entering or leaving the tunnel via the tunnel portal must ensure the in and out board located at the top station entrance is used.

- 5.7 All personnel working beyond the first 20 meters in from the tunnel entrance must have easy access to Emergency Breathing Equipment and must be trained in its use.
- 5.8 Personnel working in the tunnel will be trained in the use of fire fighting equipment supplied by the Principal Contractor.
- 5.9 Materials will be transported through the tunnel by hand or using a purpose built trolley winched from the top station.
- 5.10 Methods and materials must be selected to minimise dust and fumes.

6.0 Control Measures

- 6.1 The control measures for the task being under-taken will be the same as 001 & 002.
The attached risk assessment is in addition to the original ones.

General Risk Assessment

Working within
confines of tunnel

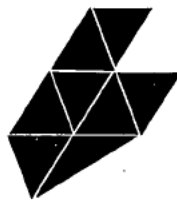
Assessed By
Personal Data Redacted

Date
20 10 1

Review

S=Severity (1-5)
L=Likelihood (1-5)

Hazard	Risk	Who Could be Harmed	S	L	R	Control Measured	S	L	R
Wet, inclined walkway	Slips, trips, falls	All on job	4	4	16	Hand-rail is fixed to tunnel wall Proper footwear will be worn	4	1	4
Welding in a confined space	Welding fumes Fire Burns Electric shock	Welders/All in vicinity	4	4	16	Tunnel door will be open giving adequate ventilation Very few combustable materials but fire extinguishers on hand Proper PPE issued and worn All electrical equipment tested and kept in good order	4	1	4
General works	Fire Asphyxiation	All working in tunnel	4	3	12	Emergency breathing equipment is available Fire extinguishers are available Personnel numbers are limited to necessary workers Permit to work system is in place and rigidly adhered to	4	1	4



Report No: 085-70-311/1 / CL302 / C02a/ 1

Page: 1 of 1

COMPRESSIVE STRENGTH OF MORTAR CUBES CERTIFICATE
BS 1881 Pt 111 & 114, BS 4551 Cl. 15

Scheme : CUBE TESTING

Location : TOWERS 52-55

Material : MORTAR CUBES

Date Sampled : 08/10/2001

Spec. : MORTAR CUBES

Source : FOSROC

Test Results

Test No.:	1					
Site Reference	CML/VAN004					
Date Made:	08/10/2001					
Date Tested:	05/11/2001					
Date Received:	09/10/2001					
Age Tested:	28					
Nominal Size(mm):	100					
Dimensions(H*B*D):	100 * 100 * 100					
Mass In Air (Kg):	2.131					
Density (Kg/m ³):	2150					
Load at Failure (kN):	705					
Compressive Strength (N mm ²):	70.5					
Type of Failure:	Normal					
Condition on Receipt:	INTACT					
Condition at Test:	SATURATED					

Volume measured by water displacement clause 7

Was Sampling Certificate Received Y

Laboratory curing

Min Curing Temp:

18

Max Curing Temp:

22

Remarks

Target strength: 64N @ 28 day . . .

Client : CAIRNGORM MOUNTAIN Ltd.
CAIRNGORM SKI AREA
AVIEMORE

Signed By :

Personal Data Redacted

06/11/2001

PH22 1RB

4551REP

CONCRETE TEST CUBES

Certificate of Sampling manufacture and Site Curing in accordance with BS 1881: parts 101, 108, and 111

CLIENT: VANDLI (CAIRNGORM) SITE: CMR -
 CONCRETE SUPPLIER: Fosroc: CONBEXTRA GP PREMIX PACK
 SPECIFICATION: Per Manuf Instructions

Sampled From <input type="checkbox"/> Jack Discharge <input type="checkbox"/> Scoop <input type="checkbox"/> Others <small>*Circle Appropriate Method</small>	Compaction Method <input type="checkbox"/> Vibration <input type="checkbox"/> Hand Tamping <input checked="" type="checkbox"/> Others <small>*Circle Appropriate Method</small>	Site Curing Time in Moist Air 12 HRS Time in Water Max Min Temps <u>9° 7°</u> weather Conditions MISTY		
			Time Sampled	Time Made 16.00
			Delivery Note No	Cube Size: 100x100x100 COPY
			Sampled By: Signature	Made By: Signature

TEST CUBE DATA

W D 1

REFERENCE	LOCATION	DATE CAST	TEST AGE	LAB REFERENCE	CUBE CONDITION
CM4/VAN001	TOWERS 52-55	08.10.01	1day	CL 299	I, D
CM4/VAN002	" "	08.10.01	2days	CL 300	"
CM4/VAN003	" "	08.10.01	7days	CL 301	"
CM4/VAN004	" "	08.10.01	28days	CL 302	"

METHOD STATEMENT

1.0 Installing exhaust system for auxiliary motor

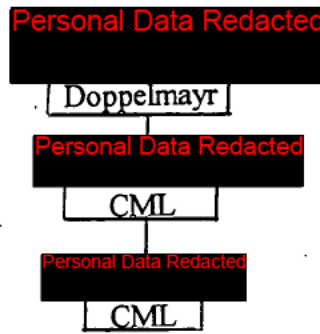
No CML/DMR/004

Authorised

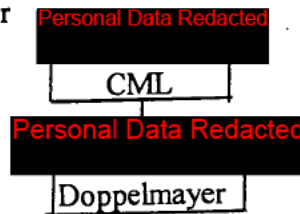
Location – Top station

2.0 Resources

Internal organisation



Interface with Principal Contractor



3.0 Plant, equipment, tools

The plant and equipment comprises,

Landrover and trailer,
110v drilling machine,
Portable (battery) drilling machine
Mig welder

4.0 Details of work activities

- 4.1 All plant equipment and materials will be transported to the top station on a trailer pulled by the landrover on the hill road. The load will be securely tied down.
- 4.2 The 300ml diameter exhaust pipe, once complete, measures some 23m. It will be transported to site in sections measuring between 4m – 2m. The maximum weight of a

section is 60kg and the sections will be transferred by hand from the trailer into the plant room.

- 4.3 Holes will be drilled into the concrete beam and rawlbolts fitted.
- 4.4 The sections of the exhaust will be fixed to the rawlbolts in the correct order.
- 4.5 Once secured, the ends of the sections will be welded together using the Mig weld technique. The welder is qualified to carry out the task (certificate attached).
- 4.6 The end of the pipe reaches the outside wall at a height of 2.2m and it is anticipated that any fumes will disperse quickly and have no effect on the public.
- 4.7 Mesh will be placed over the end of the pipe and any gaps between the outlet and the wall will be sealed using brick and cement.
- 4.8 Any mess (dust from drilling etc) will be cleared up on completion of the task.

5.0 Control measures

- 5.1 Risk assessments and COSHH assessments for this task are attached

6.0 Temporary amended systems

- 6.1 Although a portable fire extinguisher will be on hand during welding operations, there are no amended systems

7.0 Specific control methods

- 7.1 As the building is under the control of another Principal Contractor, a Permit to work system will be enforced. The Permit will be raised each day by the Principal Contractor.
- 7.2 Additional Personal Protection Equipment (PPE) in the form of a certified welders mask and gloves will be worn by the welder.

8.0 Emergency procedures

- 8.1 Evacuation and/or rescue from the building will be via the Kassbohrer garage door. All workers know the route well
- 8.2 A first aid kit will be on site at all times

9.0 Welfare arrangements

- 9.1 The workers will be indoors at all times
- 9.2 An area, suitable for rests and eating is situated within the building
- 9.3 Toilets are available
- 9.4 Hot water is provided

10.0 Environmental issues

10.1 There will be no environmental damage

11.0 Supplementary documentation

11.1 Attached to this method statement are,
Copy of welders certification
Risk assessment
COSHH assessment

12.0 Monitoring of compliance

Personal Data Redacted

(CML) will be responsible for monitoring compliance

General Risk Assessment

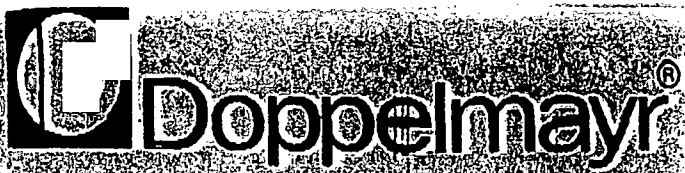
Transporting and installation of
aux. engine exhaust pipe

Assessed By Personal Data Redacted Date 11.10.01

Review ONE OFF.

S=Severity (1-5)
L=Likelihood (1-5)

Hazard	Risk	Who Could be Harmed	S	L	R	Control Measured	S	L	R
Transporting materials to site	Trailer overturning	All in vicinity	3	2	6	All driving is on a road all materials will be securely tied down	3	1	3
	Impact	All in vicinity	4	2	8	All driving is on a road All drivers have undergone training	4	1	4
Lifting heavy/awkward loads (Manual handling)	strains, sprains	Person doing the lifting	4	2	8	No one is expected to lift heavy loads without assistance	4	1	4
Welding activities	Damage to eyes	Welder	3	3	9	Proper face mask will be worn	3	1	3
	Burns	Welder	3	3	9	Proper gauntlets will be worn	3	1	3
	Fire	All in vicinity	4	2	8	Fire extinguisher will be to hand	4	1	4
	Electric shock	Welder	4	2	8	All appliances have been PAT tested by qualified electrician All items are visually inspected prior to use All operators are fully trained	4	1	1



Doppelmayr Tramways Ltd.
Allmendstrasse 86
CH-3802 Thun
Switzerland

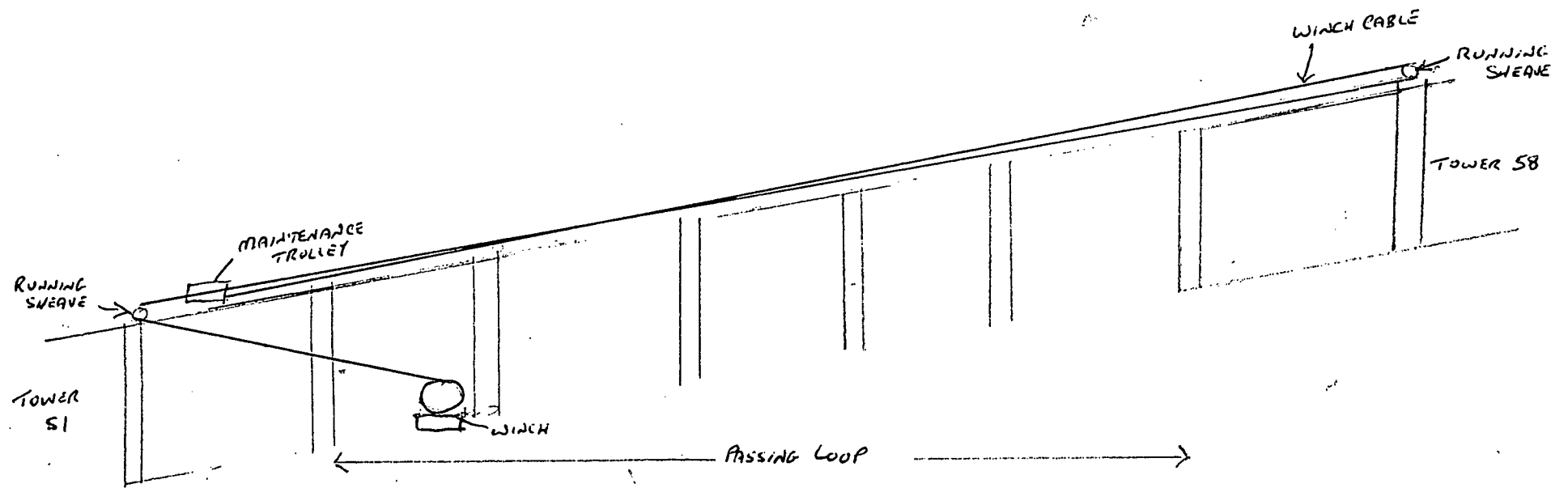
Tel: ++41 (0)33 228 20 30
Fax: ++41 (0)33 228 20 44
E-mail: vrs@doppelmayr.ch
<http://www.doppelmayr.com>

Method statement for installing running sheaves – Passing Loop

1.0 Installing running sheaves – passing loop

No CML/DMR/005

- 2.0 The methods used for installing the sheaves on the passing loop and the use of the maintenance trolley are the same as the methods described in method statement no. CMR/DM/001 and this statement should be read in conjunction.
- 3.0 The difference in the two statements arises because the work involved is either directly below or above the winch which controls the trolley.
 - 3.1 In order that the winch can still be effective, a running sheave will be positioned on tower 58.
 - 3.2 The winch cable will be taken down to tower 51 and fed round a running sheave at the top of the tower.
 - 3.3 The cable will then be man-handled up-hill to tower 58 where it will be fed round a second running sheave.
 - 3.4 The cable will then be taken back down and reattached to the trolley.
- 4.0 Work may now proceed as per method statement CMR/DM/001.
- 5.0 See attached sketch for detail.



1.0 This method statement describes the hazards and control measures associated with the welding involved with the maintenance of the exhaust stacking system on the auxiliary motor. This method statement is a supplement to CML/DMR/004

2.0 No CML/DMR/004

3.0 Plant, equipment tools

3.1 A MIG welder will be used for the task.

4.0 Method

4.1 Proper eye protection and gauntlets will be worn

4.2 A fire-watcher, with a portable fire extinguisher, will be present at all times

4.3 Any special conditions contained in the permit to work form issued by Morrison Construction, will be taken on board

4.4 A Shaw will be the competent person from CML who will take possession of the permit to work

5.0 Control measures

5.1 A risk assessment for this task is attached

6.0 Environmental

6.1 There will be no damage to the environment

7.0 Monitoring compliance

7.1 [Redacted] (MCL) and [Redacted] (CML) will be responsible for monitoring compliance

CAIRNGORM CHAIRLIFT CO LTD

MANAGEMENT OF HEALTH + SAFETY AT WORK REGS 1992

RISK ASSESSMENT

TASK:- WELDING.

HAZARD(S) WELDERS FLASH: FIRE.

CAN THE HAZARD(S) BE ELIMINATED?: YES.

WHO AND HOW MANY MIGHT BE HARMED?: WELDER! PASSING EMPLOYEES

CONTROL MEASURES TO BE IN PLACE - TRAINING RECEIVED:

ALL EMPLOYEES CARRYING OUT WELDING DUTIES SHOULD BE CODED

WHAT TRAINING IS REQUIRED?:

CODING?

EVALUATION OF REMAINING RISK: LOW.

ACTION REQUIRED:

ALL FACE MASKS/GLOVES AND OTHER PROTECTIVE EQUIPMENT TO BE WORN THROUGHOUT OPERATION. AREA TO BE SCREENED OFF TO PREVENT 'FLASH' FIRE EXTINGUISHER MUST BE ON HAND

ASSESSED BY: _____ DATE: _____ REVIEW _____

REVIEWED
18.10.00

Personal Data Redacted

**METHOD STATEMENT FOR PLACING FUNICULAR CARRIAGES ONTO
RAILS**

Ref no. **CFR/DMR/007**

Originator

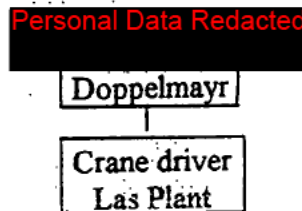
Approved

1. GENERAL

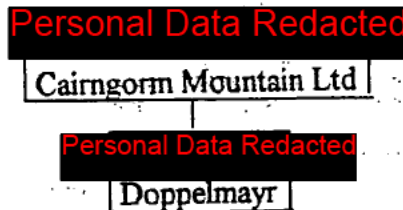
This method statement describes the activities and control measures involved in the transferring of the funicular carriages from low-loaders onto the funicular tracks at Cairngorm Mountain, Scotland.

2. RESOURCES

2.1. Internal organisation



2.2. Interface with principal contractor



2.3. Plant, equipment tools.

Plant to be used on the job consists of a 70 tonne mobile crane on hire from Las Plant, Lotland Street, Inverness and tirlors owned and supplied by Doppelmayr. All plant is certified and adequate for the task.

3. Details of work activities.

The 70 tonne crane will reverse up the road to a point above the prepared flat lifting surface. The driver will then drive onto the lifting area and stop with the cab close to the funicular structure. When in position, the 4 stabilisers will be deployed. When ready, the crane will be at a point mid-way between the road and the structure. The driver of the first low-loader will reverse his vehicle up the road to a point level with the crane. Chains from the crane will be attached to the 4 lifting eyes on the carriage. When the area has been cleared of onlookers, (with the exception of the banksman)

the signal will be given to the crane driver to begin the lift. The carriage will be lowered onto the track and immediately secured using a well anchored tirlfor. Immediately thereafter, as a further safety precaution, the rail brake will be fitted. Once the rail brake is fitted, the carriage will be lowered down the track using the tirlfor. When the final position is reached, the carriage will be secured using tested and certified slings. The process may then be repeated for the second carriage.

4. Hazard and risk.

Risk assessment forms for this task are attached.

5. Temporary amended systems.

During the entire operation, the hill road will be closed. This will be policed by staff from Cairngorm Mountain and Doppelmayr. Tcarriages, before they reach the car park, will be coming up the "down" road. This operation will be dealt with by the local (Aviemore) police.

6. Specific control measures.

The area will be cordoned off and no-one will be allowed to enter the new base station until the operation has been completed. Anyone directly involved in the operation will wear hard hat steel toed shoes and gloves.

7. Emergency procedures.

A first aid kit will be on hand.

8. Welfare arrangements

N/A

9. Environmental issues.

Some ground work will take place to create a sufficiently large area for the crane. This will be re-instated soon after the operation is completed.

10. Monitoring of compliance

Personal Data Redacted will jointly be

General Risk Assessment

TASK

Transferring carriages from low-loader onto track

Assessed By
Personal Data Redacted

Date 29.09.01

Review ONE OFF

S=Severity (1-5)
 L=Likelihood (1-5)

Hazard	Risk	Who Could be Harmed	S	L	R	Control Measured	S	L	R
Manouvering vehicles in tight spaces	Impact with buildings or people	All in area	4	3	12	All drivers are fully trained and have the necessary experience Look-outs and banksmen to hand	4	1	4
Lifting 14.5 ton carriage with crane	Carriage dropping	All in area	4	2	8	Experienced crane driver at controls All lifting equipment tested, certified and adequate for job Area will be kept clear of people	4	1	4
Landing carriage on sloping track - failure of equipment	Loss of control of carriage	All in area	4	2	8	All equipment is tested, certified and adequate for job Rail brake will be immediately fitted Area will be kept clear of people	4	1	4

Method statements – Railroad Construction

1. General

This method statement describes the activities and control measures associated with the railroad construction on the concrete beam substructure of the Cairngorm Funicular Railway

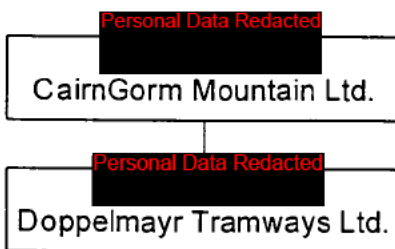
The rails, rail bearings (consisting of base plate, rubber plate, clips and fixing material) and expansion devices are to be installed, lined and levelled, then grouted and welded to form a railroad for the funicular carriages.

2. Safety

Personal safety equipment: Each labourer wears helmet, red jacket with reflective stripes and shoes with steel toes. When working at height (above 2 m), each labourer wears additionally a harness and is secured to a life line. Depending upon the kind of work (e.g. welding), additional equipment such as eye shields are used.

3. Resources

a) Interface with principal contractor



Originator:

Approved:

Page 1 of 4

10/09/2001

Personal Data Redacted

Method statements – Railroad Construction

4. Basic sequence for railroad construction on elevated substructure

NO:	ACTIVITY	DESCRIPTION, EQUIPMENT, TOOLS
1	Access & egress at work place from the road or along the track foundations, elevated places reached by ladders	
2	Installation of <u>life line</u> (if work height above 2 m)	Metal supports and steel cable, attached to track substructure
3	Mounting of <u>auxiliary platforms</u> on cross bracings, between concrete beams	Approximately 60 m of platforms, allowing labourer safe access to each rail bearing and carrying out necessary work
4	Setting up <u>weld trolley</u> on rails (near bottom station, behind auxiliary platforms), securing it by slings to the main structure Moving of trolley by tiffors	Labourer on trolley are only allowed to work on it when trolley is secured to main structure by means of slings Once trolley must be moved uphill, labourer are walking on platforms to the next joint to be welded
5	A <u>generator</u> (to provide electrical power for weld units, light, el. powered tools) will always be placed on the road at the nearest place to work and moved up the road while work is proceeding	Electric cables run from the generator to the track and to the trolley Refuelling of generator: Any special requirements
6	A second <u>small generator</u> will be placed on the auxiliary platforms	
7	The <u>grout</u> (packed in 25 kg bags on pallets) is <u>transported</u> by helicopter The pallets are distributed regularly on the track (between concrete beams) Gravel (if required) is transported the same way	Suitable devices to fix pallets (in incline) to structure
8	<u>Water</u> for preparation of grout is either provided by tanks (placed near road) or by smaller tanks on the auxiliary platforms, manually refilled by workers	For grouting in low temperatures, warm water (30° - 40° C) may be required

Originator:

Approved:

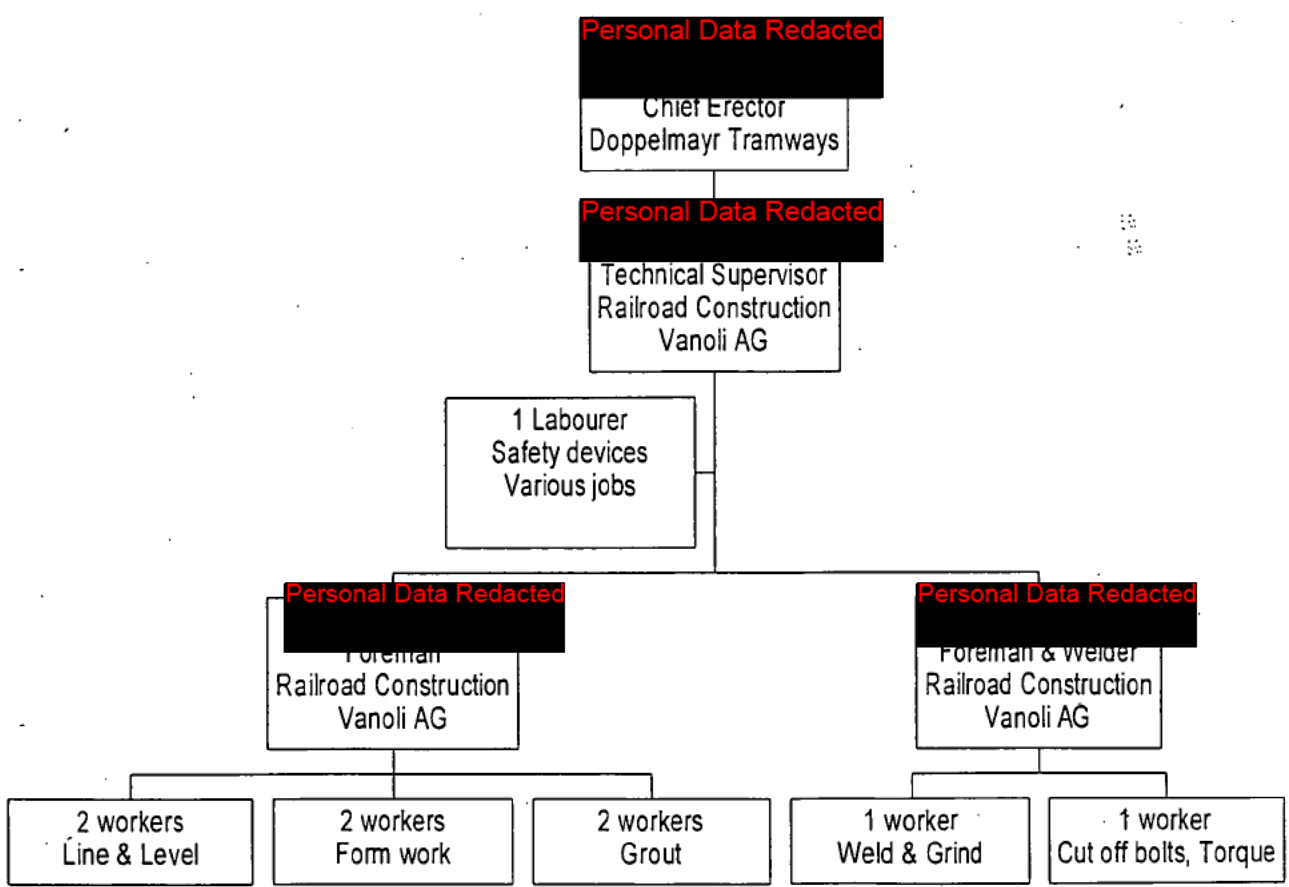
Page 3 of 4

10/09/2001

Personal Data Redacted

Method statements – Railroad Construction

b) Internal organisation



Originator:
 [Redacted]
 10/00/0000

Approved:



MORRISON CAIRNGORM FUNICULAR MS No. 112 TUNNEL WORKING PROCEDURE

All site personnel and visitors will be given an induction prior to entering the tunnel for the first time.

Operatives will be given job specific ToolBox Talks.

Unauthorised personnel will not be permitted to enter the tunnel.

1. Site staff will carry out a pre-entry check before work commences in the tunnel. This will include checking the function of the emergency lighting, first aid stocks, PPE, etc.
2. A permit to work will be issued for each task.
3. A hot works permit will be issued for rail welding with all other works being suspended until completion of the welding operations.
4. Each person entering the tunnel will use an in and out board located at the top station entrance.
5. Personnel entering or leaving the tunnel via the tunnel portal must ensure the in and out board is used located at the top station entrance.
6. All personnel working beyond the first twenty meters in from the tunnel entrances must carry Emergency Breathing Equipment and must be trained in its use.
7. Personnel working in the tunnel will be trained in the use of the fire fighting equipment provided at four locations in the tunnel.
8. Materials will be transported through the tunnel by hand or using a purpose built trolley winched from the top station.
9. Air quality will be checked regularly with airflow being improved if necessary by electric fans installed at the top station.
10. No petrol or diesel power machinery will be allowed inside the tunnel. 110V electrical equipment must be used.
11. Methods and materials must be selected to minimise dust and fumes.
12. In case of emergency two sets of breathing equipment, fire extinguishers, a stretcher, and first aid supplies will be kept in the Ptarmigan offices with a vehicle on standby during all working hours.

METHOD STATEMENT No: 112

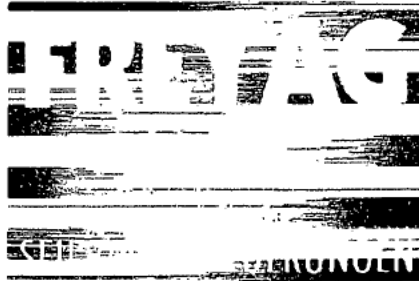
RISK ASSESSMENT: 112

PREPARED BY [Redacted]

DATE: 26/3/01

OPERATION	HAZARDS	THOSE AT RISK	RISK LEVEL	PREVENTATIVE MEASURES	REMAINING RISK LEVEL
CORING HOLES FOR RAIL FIXINGS.	DUST; EXHAUST FUMES CONCRETE SILT ENTERING WATER COURSES.	OPERATIVES WHITE LADY WATER DRAINAGE SYSTEM	M. H	USE WATER WITH DIAMOND CORING RIG. USE 110V ELECTRIC PLANT DAM BELOW CORING RIG AND USE A WET VAC ON COMPLETION OF EACH HOLE.	L L
FLOOR DRAINAGE.	HIT BY TROLLEY TRIPS & SHIPS.	OPERATIVES	H	CARRY OUT DRAINAGE WORKS AFTER THE RAILS HAVE BEEN INSTALLED AND USE PURPOSE BUILT TROLLEY WITH MINIMUM LABOUR REQUIRE. KEEP TUNNEL FLOOR CLEAR AND PROVIDE GOOD LIGHTING.	L
ELECTRICAL DUCTING SMOKE DETECTORS INSTALLATION.	FLYING DEBRIS FROM FIXINGS; FALLING FROM HEIGHT.	OPERATIVES	H.	USE PPE PROVIDED. PROVIDE SAFE ACCESS TO WORK AREAS	L
RAIL FIXING.	GROUT BURNS CUTS TO HANDS ETC	OPERATIVES	M	USE PPE PROVIDED USE LOW HAZARD MATERIALS	L
WELDING RAILS	WELDING FUMES FIRE. HOT METAL BURNS.	OPERATIVES.	H	USE CLOSE WELD SYSTEM. PROVIDE & USE CORRECT PPE. REMOVE ALL COMBUSTABLE MATERIALS FROM TUNNEL. ENSURE ADEQUATE VENTILATION PROVIDE EMERGENCY BREATHING EQUIPMENT. AND EMERGENCY LIGHTING	L
GENERAL WORKS	FIRE AND ASPHYXIATION.	ALL PERSONS IN TUNNEL.	M	ALL PERSONNEL TO HAVE EMERGENCY BREATHING EQUIPMENT. PROVIDE FIRE STATIONS. OPERATE PERMIT TO WORK SYSTEM OPERATE IN/OUT BOARD. LIMIT PERSONNEL IN TUNNEL	L
Further Action Required	USE A PERMIT TO WORK SYSTEM AND HOT WORKS PERMIT.				
COSSH Assessments	YES - GROUT AND ADHESIVE S				
Tool Box Talks	TUNNEL INDUCTION + TASK SPECIFIC.				
Manual Handling Assessments	NOT REQUIRED.				

*L=LOW RISK, M=MEDIUM RISK H=HIGH RISK.



Frey AG Stans, P.O. Box 347,
CH-3571 Stans/Switzerland
Tel. 41/41 620 2161 FAX 41/41 620 0700
E-mail: info@freyag-stans.ch
<http://www.freyag-stans.ch>

Page 4

Date: 9/20/2001

Receiver No.: 0044 1479 861207

To: **Personal Data Redacted**

Attn: **Personal Data Redacted**

From: **Personal Data Redacted**

Re: CV and Method Statement No 1

Hi **Personal Data Redacted**

Attached to this page you will find the CV of our electrician and a first Method Statement.

Some more Method Statements shall follow.

insurance cover and the Health & Safety policy statement shall follow.

I hope our electrician can start and get his work done without much hassles.

If any questions occur please let me know!

Kind regards
FREY AG STANS

Personal Data Redacted

Lebenslauf



Name:

Geburtsdatum:

Geburtsort:

Bürgerort:

Wohnort:

Adresse:

Telefon:

Ausbildung:

Berufstätigkeit:

Mutter:

Vater:

Personal Data Redacted



Frey AG Stans, Postfach 347, CH-6371 Stans
Tel. 41/41-620 2161 FAX 41/41-620 1200
E-Mail: freitag-stans.ch
<http://www.freyag-stans.ch>

Method Statement cabling

Method statement for the installation of electrical cables

Freitag AG 01

CH-6370 Stans, 20.09.2001

Originator

Approved

- 1 This method statement describes the activities and control measures associated with the installation of electrical cables leading from the building to the appropriate destination. All parts and cables will be hand carried to site. The cable will be suspended in the form of a cable tray at a height of approx. 2m. A safety netting system will be used for this task. For this task the following equipment is required:

2. Resources:

Internal organisation

Personal Data Redacted FreyAG

Personal Data Redacted CML Any other from CML

Interface with principal contractor:

Personal Data Redacted Instruction

Personal Data Redacted oppelmayr

Personal Data Redacted

3. Control measures

Risk assessments for this job are attached.

4. Monitoring compliance

Personal Data Redacted (Frey AG) is responsible for monitoring compliance with this Method Statement



Frey AG ED, PO Box 116371 Sins
 tel. +41 41 621 181 fax: 41 41 62 5736
 E-Mail: info@frey.ch
 Internet: www.frey.ch

General Risk Assessment

Title: Installation of the cables in Bottom-, Middle- and Top station		Assessed by: Personal Data Redacted Severity (1-5) Likelihood (1-5)	Date: 20.02.01	Review
Hazard: Manual Handling	Risk: Strains	Who could be harmed: Person on job	S L R 3 2 6	Control Measures: No heavy lifts are allowed
Working with: Electrically conducting cable	Risk: Electric shock	Who could be harmed: Person on job	S L R 2 1 4	Control Measures: Cable are not connected to the thermals of the control cabinets while cabling.

*where
Voltage*

Method Statement connecting cable to devices or sensors

Method statement for the installation of electrical cables.

No. MS-FreyAG 02

CH-6370 Stans, 21.09.2001

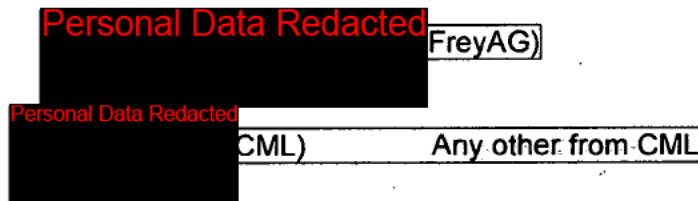
Originator

Approved

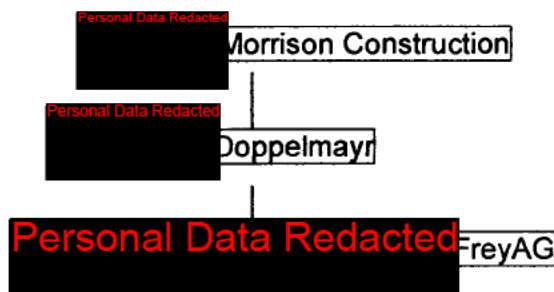
1. This method statement describes the activities and control measures associated with connecting the cable to the appropriate devices or sensors.
All parts and equipment will be hand carried to site.
The foreseen devices or sensors can be mounted in approx. 2m high.
A securely tied stepladder will be used for this task.
For this task there are no electrical appliances necessary.

2. Resources:

Internal organisation



Interface with principal contractor



3. Control measures

Risk assessments for this job are attached.

4. Monitoring compliance

Personal Data Redacted (FreyAG) is responsible for monitoring compliance with this Method statement



Grass Science
SPORTS TURF AND ENVIRONMENTAL CONSULTANTS

Victoria House
Garside Street
Bolton BL1 4AE
Tel: (01204) 366036
Fax: (01204) 385276

Frey AG Stans
 Postfach 347
 CH-6371 Stans
 Tel. ++41/41-620 2161
 FAX ++41/41-620 5736



General Risk Assessment											
Task		Assessed by				Date:		Review			
Connecting the cable to the appropriate devises and sensors in Bottom-, Middle- and Top station		Personal Data Redacted Frey AG, Stans S = Severity (1-5) L = Likelihood (1-5)				20.9.2001					
Hazard	Risk	Who could be harmed	S	L	R	Control Measured			S	L	R
Manual Handling	Strains	Person on job	3	2	6	No heavy lifts are allowed			1	1	1
working with electrically conducting cable	Electric shock	Person on job	2	2	4	Cable are not connected to the thermals of the control cabinets while connecting the cable to the devices or sensors.			2	2	



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Victoria House
Garside Street
Bolton BL1 4AE
Tel: (01204) 366036
Fax: (01204) 385276

Method Statement: Connecting cable to the control cabinets

No. MS-FreyAG 02

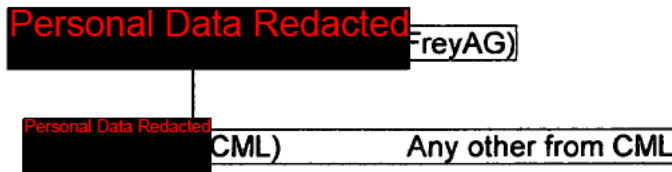
CH-6370 Stans, 21.09.2001

Originator

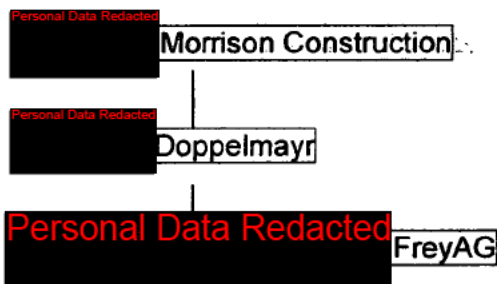
Approved

1. This method statement describes the activities and control measures associated with the connection of the cable to the appropriate control cabinets.
All parts and equipment will be hand carried to site.
2. Resources:

Internal organisation



Interface with principal contractor



3. Control measures

Risk assessments for this job are attached.

4. Monitoring compliance

Personal Data Redacted (FreyAG) is responsible for monitoring compliance with this Method Statement



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SPORTS TURF AND ENVIRONMENTAL CONSULTANTS

Victoria House
Garside Street
Bolton BL1 4AE
Tel: (01204) 366036
Fax: (01204) 385276

Frey AG Stans
 Postfach 347
 CH-6371 Stans
 Tel. ++41/41-620 2161
 FAX ++41/41-620 5736



General Risk Assessment											
Task		Assessed by				Date:		Review			
Connecting the cable to the appropriate control cabinets in Bottom-, Middle- and Top station		Personal Data Redacted Frey AG, Stans S = Severity (1-5) L = Likelihood (1-5)				20.9.2001					
Hazard	Risk	Who could be harmed	S	L	R	Control Measured			S	L	R
working with electrically conducting cable	Electric shock	Person on job	2	2	4	The control cabinets are not energised.			2	2	



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Victoria House
Garside Street
Bolton BL1 4AE
Tel: (01204) 366036
Fax: (01204) 385276

Method Statement cabling

Method statement for the installation of electrical cables.

No. MS-FreyAG 01

CH-6370 Stans, 21.09.2001

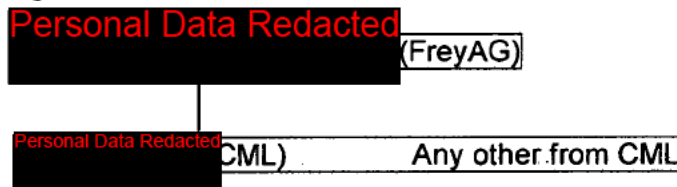
Originator

Approved

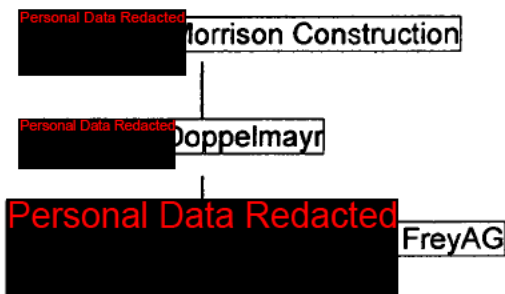
1. This method statement describes the activities and control measures associated with the installation of electrical cables leading from control cabinets to the appropriate destination. All parts and equipment will be hand carried to site. The cable will be attached to the foreseen cable tray at a height of approx. 2m. A securely tied stepladder will be used for this task. For this task there are no electrical appliances necessary.

2. Resources:

Internal organisation



Interface with principal contractor:



3. Control measures

Risk assessments for this job are attached.

4. Monitoring compliance

Personal Data Redacted (FreyAG) is responsible for monitoring compliance with this Method statement



Grass Science
SPORTS TURF AND ENVIRONMENTAL CONSULTANTS

Victoria House
Garside Street
Bolton BL1 4AE
Tel: (01204) 366036
Fax: (01204) 385276

Frey AG Stans
 Postfach 347
 CH-6371 Stans
 Tel. ++41/41-620 2161
 FAX ++41/41-620 5736



General Risk Assessment

Task Installation of the cables in Bottom-, Middle- and Top station		Assessed by Personal Data Redacted Frey AG, Stans S = Severity (1-5) L = Likelihood (1-5)			Date: 20.9.2001	Review			
Hazard	Risk	Who could be harmed	S	L	R	Control Measured	S	L	R
Manual Handling	Strains	Person on job	3	2	6	No heavy lifts are allowed	1	1	1
working with electrically conducting cable	Electric shock	Person on job	2	2	4	Cable are not connected to the thermals of the control cabinets while cabling.	2	2	



Grass Science
SPORTS TURF AND ENVIRONMENTAL CONSULTANTS

Victoria House
Garside Street
Bolton BL1 4AE
Tel: (01204) 366036
Fax: (01204) 385276

MORRISON

CAIRNGORM FUNICULAR

4. MATERIALS; TYPE USED; SUPPLIERS AND DATA SHEETS

4.1 LIST OF SUPPLIERS

This section contains a schedule of the material suppliers for the Project.

4.2 PRODUCT INFORMATION

The supplier's product information including general maintenance is held in this section.

4.3 COSHH ASSESSMENTS

Products not included in the supplier's literature in section 4.2 have relevant COSHH assessments in this section.

MORRISON

CAIRNGORM FUNICULAR

4.1 LIST OF SUPPLIERS

The following schedule of suppliers gives contact addresses and telephone numbers at the time of construction. The main products supplied are included.