BAM Nuttall management system

Management form MF01: Activity plan

Project ref:	BAM.1760		
Project name:	Hampstead Heath Ponds Project		
Activity plan ref:	BAM.1760-M-00-AP-009	**Revision**	A
Activity plan title:	**Installation of sheet piles for temporary cofferdam at Viaduct Pond**		

Scope:

In order to install the new inlet headwall a temporary must be constructed using sheet piles. This activity plan outlines how this cofferdam will be installed.

The cofferdam will be constructed of 4.0m long AZ-12 sheet piles, as detailed in BAM.1700-0006 Rev B.

The proposed construction date is 13/05/2015 and the piles will be removed upon completion of the new overflow on 09/07/2015.

Authorisation:		
Prepared by (author):	H Jones	**Signature:** Helen Jones
Position:	Sub Agent	**Date:** 30/04/15
Approved for BAM Nuttall by:	I. Grant	**Signature:**
Position:	Agent	**Date:** 30/04/15
Approved for Client by:		**Signature:**
Position:		**Date:**
Date Initial review required by:		
Carried out by (Name) :		**Signature:**
Position:		**Date:**
Subsequent review frequency:		
Carried out by (Name) :		**Signature:**
Position:		**Date:**
Carried out by (Name) :		**Signature:**
Position:		**Date:**
Carried out by (Name) :		**Signature:**
Position:		**Date:**
Carried out by (Name) :		**Signature:**
Position:		**Date:**

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Record of amendments to this document		
Date	**Amendments**	**Signature:**

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1. Activity plan briefing (recorded on SF204)

Contents of briefing – sections 3b, 4, 5, 6, 7 and 8

The following critical items must be emphasised:

- Site access points must be secure at all times to prevent members of the public and their dogs entering the work area.
- Permit to dig must be issued prior to starting work
- The existing overflow pipe must remain in place and not be damaged
- Take care when handling and driving piles so as not to trap fingers or limbs

The following checklist items must be recognised:

- Issue of Environmental and Permit to Dig
- Issue of Temporary Works Loading Certificate
- Regular inspection of the cofferdam prior to entry on a daily basis

The following verification questions are to be used:

- How will the piles be lifted and positioned for driving?
- To what depth must the piles be driven?
- How far from the water's edge must plant and machinery be?

2. Information/consultation

Reference documents: (including drawings/lift plans/COSHH assessments/risk assessments/emergency procedures/temporary works certification)

Title	rev
Risk Assessment 009 – Installation of sheet piles	A
BAM.1760-R-00-SK0110 – Viaduct Pond Cofferdam Location	A
BAM.1700-0006	B

People consulted during preparation of this activity plan:

Name	Position	Company
Ian Grant	Agent	BAM Nuttall
Neil Goulding	Site Environment Manager	BAM Nuttall
Eddie Gildea	Machine Operator	BAM Nuttall
Jason Wassal	Foreman	BAM Nuttall

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3a. Mandatory responsibilities

Role	Responsibility
Agent	▪ Ensures BAM Nuttall procedure NP24:*Activity plans* is applied ▪ ensures that those involved in the production of this activity plan are competent ▪ takes remedial action where performance is unsatisfactory ▪ carries out compliance checks as indicated in section 9 of this activity plan
Activity Plan author (and deputy if appointed)	▪ Refers to the risk assessment undertaken in accordance with procedure NP23:*Health, safety and environmental risk assessment* and ensures control measures are in the adopted method ▪ ensures this activity plan is briefed to the appropriate personnel by a competent person ▪ ensures that activity plan monitoring and review is carried out at the agreed frequency ▪ inspects the work to ensure that direct supervision is being carried out ▪ carries out compliance checks as indicated in section 9 of this activity plan
Briefer	▪ Briefs this activity plan to the appropriate personnel
Supervisor	▪ Allocates sufficient resource to carry out the activity ▪ ensures those carrying out the work are competent and briefed on this activity plan ▪ ensures various permits and consents are in place for the activity ▪ monitors standards of workmanship ▪ supervises the activity to ensure compliance with the activity plan ▪ stops the activity if adopted methodology cannot be complied with or revision is necessary ▪ reassesses activity at identified hold points before recommencing work ▪ carries out compliance checks as indicated in section 9 of this activity plan
Operative	▪ Undertakes the work in accordance with the activity plan ▪ does not undertake any work unless they have been briefed on the activity plan ▪ does not undertake any works unless they have been appropriately trained ▪ reports faults and problems with the methodology

3b. Responsibilities specific to the activity (including nominated author deputies)

Role	Name (if required)	Responsibility

4. Resources

Materials:
4.0m long AZ12 sheet piles Polythene sheeting Sand bags
Plant & equipment:
13T excavator Excavator Mounted Vibrohammer Muller MS-1 HFB 5T excavator Dumper Telehandler & slings/shackles A-frame 2" and 4" pumps Settlement tank
Personnel
General Foreman Machine Operator Machine Driver General Operative Banksman Slinger/signaller Engineer

5. Permits (These are always a hold point in the method)

Environmental Permit
SF902 Permit to Dig
TEF07 – Temporary Works Loading Certificate
TEF09 – Temporary Works Dismantling Certificate

6. Method

Pre-construction conditions

- The work site and welfare facilities will be set up in accordance with the site specific Activity Plan.
- Site working hours are 0800 – 1800 hours. Works will not take place outside these hours.
- Prior to setting up the site and commencing construction works an Environmental Permit must be issued by the site Environment Manager

Hold point description	Issue Environment Permit	**Action to allow activity to continue**	Environment Permit issued
Hold point requirements have been met and activity can continue	**Signed:**		**Date:**

Identification of services

- Prior to driving piles an SF902 Permit to Dig must be issued.
- Construction and service drawings will first be consulted to identify any existing services in the work area. With the exception of the existing overflow pipe, which will be maintained, there are no services expected in the area.
- Landside work areas will be CAT scanned by the Engineer to verify the location of services.
- If required then trial holes will be carried out in accordance with BAM.1760-M-00-AP-008: Setting Out and Surveying
- With reference to Planning Condition Thames Water Informative (8) and the annotated construction drawings it should be noted that the installation of the cofferdams will not be carried out in the proximity of any local underground sewerage utility infrastructure.

Hold point description	Issue of Permit to Dig	**Action to allow activity to continue**	SF902 Permit to Dig issued

Hold point requirements have been met and activity can continue	**Signed:**		**Date:**	

Installation of sheet piles

- An exclusion zone will be set up around the work area to ensure that members of the public and staff/operatives not directly involved in the works are segregated from plant movements. A Banksman will be present at all times.
- Sheet piles will be brought to the work area using the telehandler. The load will be slung by a competent slinger using the current approved lifting accessories. An escort vehicle and a banksman will escort the telehandler to the worksite.
- Using a quick release pitching shackle the sheet piles will be lifted from the horizontal into the vertical position. The vertical pile will be placed and clamped to a bespoke A frame to allow the excavator to switch from the pitching shackle to the vibrohammer.
- The excavator will then lift the pile in the vertical position with the machine mounted vibrohammer.
- The first trench sheet will be positioned 200mm to the west of the existing overflow inlet brickwork and driven to design depth using the vibrating hammer. Subsequent sheets will be held in place by means of the previous pile's clutch.
- Piles will be driven to the minimum pile embedment as specified on the design drawings using the vibrating hammer. This embedment depth will be highlighted on the area specific Activity Plan. If this embedment cannot be reached BAM Nuttall's Temporary Works Department must be contacted for guidance.
- Before the driving operations a noise assessment will be carried out by the Site Environmental Manager to ensure that the noise levels at the perimeter of the worksite do not exceed 80db. Such an occurrence would be unlikely, but should noise levels above this limit be reached then the exclusion perimeter for persons without ear protection (members of the public) will be increased to a point where the limit is satisfied.
- When noise levels within the perimeter exceed 80db then site operatives will be required to wear ear defenders. Signage will be placed at the entrance to the worksite to inform those entering of this mandatory requirement.
- During the driving operations the pile will be frequently checked for verticality by the Engineer.
- The above sequence will be repeated for subsequent piles until the cofferdam fully encloses the inlet area
- Polythene sheeting will be placed around the external perimeter of the cofferdam to prevent water ingress. Sandbags placed at the intersection of the cofferdam and the existing timber posts will secure the polythene and further seal the cofferdam.
- When the cofferdam has been sealed excavation to formation level within the cofferdam will commence.
- A 5T excavator will be used to reduce the ground level within the cofferdam to bed level. Initially silt and loose material will be removed and placed back into the pond with the machine bucket. This silt will be

removed during the de-silting works later in the programme.

- The water will then be pumped from the cofferdam so that the pond bed is visible. Water will be over pumped back into the pond using a 2"110 pump. A 4" pump will also be available should the water level need to be reduced at a higher rate to aid the sealing of the cofferdam.
- Water will be pumped into a settlement tank, before clean water is discharged into the existing overflow. Water quality will be sampled on a daily basis by the Site Environment Manager.
- Excavation will then continue until the formation reaches a level specified within the construction drawings. This level varies at each pond and will be highlighted in the area specific Activity Plan.
- This excavated material will also be loaded into a dumper and stockpiled away from the dam structure so as not to provide an additional overburden on the structure. The exact position of this stockpile will be noted in the site specific Activity Plan.
- A sump will be formed in the formation in the corner of the cofferdam. A 2" pump will be placed in the sump to maintain a dry working area.
- On completion of the cofferdam, and prior to any other person entering the structure it will be inspected by the Temporary Works Coordinator (TWC) and a Temporary Works Loading Certificate TEF07 issued.
- Inspections will then take place:
  - Before any person carried out work at the start of every shift
  - After any event likely to have affected the strength or stability of the cofferdam
- Inspections will be recorded on form SF501 on a daily basis and reported back to the Agent weekly.

Hold point description	Cofferdam safe for access	**Action to allow activity to continue**	Issue of TEF07 by TWC

Hold point requirements have been met and activity can continue	**Signed:**		**Date:**	

Inlet/outlet construction works

- The construction of the new inlet/outlet can now take place as outlined in the site specific Activity plan.
- The cofferdam will remain in place until the new overflow pipe has been completed and is ready to receive flow from the pond

Hold point description		**Action to allow activity to continue**	

Hold point requirements have been met and activity can continue	**Signed:**		**Date:**	

Removal of sheet piles

- Upon completion of the overflow construction the TWC will assess whether the temporary works can be safely dismantled and will complete a temporary works dismantling/unloading certificate TEF09.
- The sheet piles can then be extracted and moved from the worksite.

Hold point description	Permission to remove sheet piles	**Action to allow activity to continue**	Issue of TEF09 by TWC

Hold point requirements have been met and activity can continue	**Signed:**		**Date:**	

- To extract the sheet piles a hydraulic vibrating hammer attached to the tracked 360' excavator will again be utilised.
- The hammer will be lowered over the sheet to be extracted. The chain and clamp will be inserted through the pre-cut hole in the pile, ensuring the clamp is fully locked. The jaws of the hammer will then be clamped onto the pile, ensuring that the chain/clamp is not damaged by the hammer jaws.

- Sheets will be vibrated out of the ground using the force of excavator arm to assist.
- Once fully removed the sheet will be placed against the bespoke A frame and clamped. It will then be released from the hammer jaws, the hammer swapped for the lifting shackle, and the sheet lifted into the designated storage area.
- Sheets will be stacked flat/horizontally on timber bites to assist in the safe removal of the chain clamp.
- Sheets will be removed from the work area with the forklift.
- The above sequence will be completed for subsequent sheet piles until full perimeter of the cofferdam wall is removed

7. Activity specific health and safety requirements (in addition to BAM Nuttall mandatory requirements)

The following additional PPE is required
Ear defenders
The following additional training is required (including toolbox talks)
Working on water and recue procedures
The following other additional items are required
N/A

8. Activity specific environmental requirements (in addition to BAM Nuttall mandatory requirements)

The following additional training is required (including toolbox talks)
N/A
The following environmental monitoring is required
Noise monitoring
The following other additional items are required
N/A

9. Inspection & test records

The following inspection & test checklists, when completed for each section of this activity, demonstrate that this work meets specified requirements
N/A for temporary works

10. Compliance monitoring

The following monitoring regime will be adopted		
Type	Frequency	By

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Compliance check – record				
Date and time	**Type of compliance check:** ▪ Routine monitoring ▪ Inspection ▪ Safety tour ▪ Audit ▪ Other (specify)	**Carried out by**		**Compliant? Y/N (If non compliance is identified the activity plan author or deputy must be informed immediately)**
		Name	**Signature**	

This copy of the activity plan must be returned to the site filing system on completion

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Safety form

SF103 Risk assessment

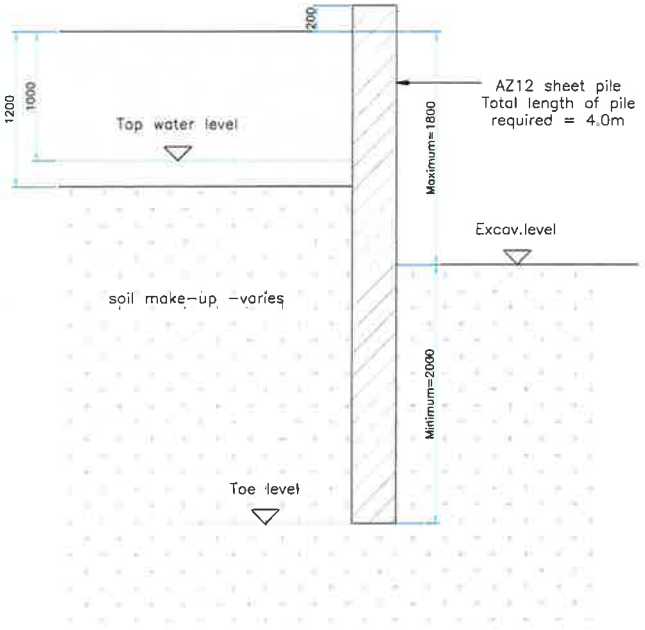
Contract number and title	RA number	Element of work	Risk assessment author	Date
BAM.1760 Hampstead Heath Ponds Project	009	Installation of sheet piled cofferdam	H. Jones **Approved by** I. Grant	30/04/2015

Hazard / Consequence	Persons in danger	Risk rating			Control measures	Final risk rating
		Severity	Likelihood	Rating		
Buried Services	Operatives carrying out excavations/driving piles	H	M	H	A permit to dig procedure will be implemented prior to any excavation or pile driving works commencing. Cable location tools CAT and Genny to be used. Excavations to be rescanned every 500mm. Permit to dig to be issued in line with BAM procedure Ref: NP13 – **NO PERMIT- NO DIG** Excavation to be supervised by National Gas Grid representative. Service drawings to be consulted before work commences **Use insulated tools and wear flame retardant overalls for trial holes.**	Low
Possible contraction of diseases – Leptospirosis from rat's urine	Site staff and operatives	H	L	M	Gloves to be worn and good personal hygiene to be maintained. Before eating, drinking or smoking, all staff must wash hands thoroughly with clean water or hand wipes.	Low
Member of the public breaching work site.	Operatives & members of the public, dogs	L	M	M	The worksite perimeter will be fenced off using Netlon fencing due to uneven ground and undergrowth. The main access pathways will be securely fenced with Herras panels which will remain closed. No access signs and details of footpath diversions will be displayed. However if any unauthorised personal enters the work area work is to be stopped immediately. Ask the member of the public to leave, if the person refuses call local constabulary to remove individuals. Workers to be briefed on how to handle public encounters in induction.	Low

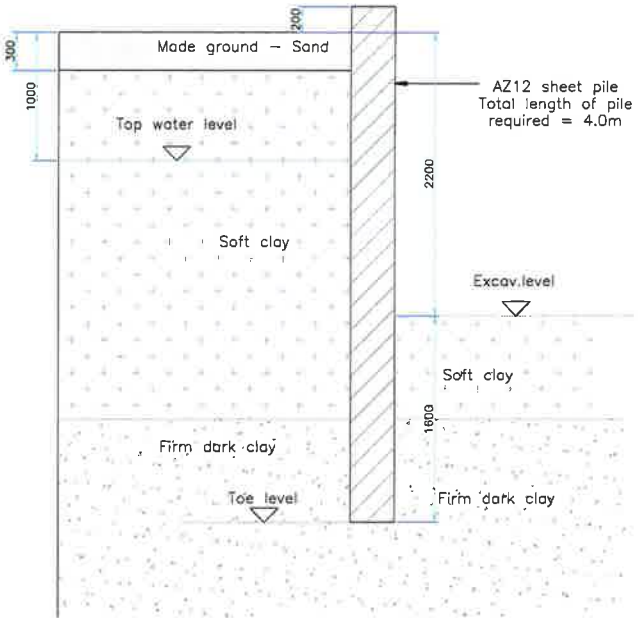
Hazard / Consequence	Persons in danger	Risk rating			Control measures	Final risk rating
Accessing site- The access to the work area is a pedestrian walk way.	Member of the public, Dogs, Operatives, Heath Staff, Engineers	H	M	H	Care should be taken when driving through site and the site speed limit of 5mph should be adhered to. Deliveries will be accompanied by an escort buggy. An amber flashing beacon should be used when driving on site. Pedestrians and dogs walking should be given the right of way, do not use horn to signal pedestrians to move wait behind them.	Low
Weather- Risk of sunburn, heat exhaustion and dehydration.	Site operatives, Plant operators	M	M	M	Ensure regular water breaks are taken, If it is hot. In sunny conditions operative to keep skin covered in light clothing and sun cream to be used on exposed skin If it is cold, ensure participants are wearing suitable clothing to keep warm.	Low
Fuel spills / oil leaks	Habitat, dogs, members of the public, operatives	M	M	M	Plant to be refuelled by nominated persons only away from watercourses, drains and pond edges. All mobile items of plant to have a spill kit with them. Plant nappies to be used for small items of plant. During piling works booms will be deployed in the water to enclose the works in case of a hydraulic fluid leak.	Low
Risk of injury/strain during manual handling	Site operatives	M	M	M	Assess weight of the load Use Mechanical means whenever possible Split load if possible Share loads Lift with care ensuring straight back, bent knees and good grip	Low
Struck by plant	Site operatives, Plant operators	M	M	M	All operatives are to be briefed on the plant movements around the working area, Banksman will supervise all plant movements No person to enter an exclusion zone without the 'thumbs up' from the driver	Low
Work near water	Site operatives, Plant operators	H	M	H	Works on or near the water to be carried out in accordance with SG16 No persons to work on or in the water without being equipped with a manually inflated 150N life jacket Any person required to wear a harness or life jacket will be trained to do so. Site staff and operatives will be briefed on the 'Man in Water Emergency Procedure'	Low
Plant overturning into the water	Plant operators, Site operatives, Habitat	H	M	H	Plant must keep a sufficient minimum distance from the waters edge. This is considered to be a horizontal distance greater than or equal to the depth from the top of the crest to the bed level. Site speed limit of 5mph must be adhered to.	Low
Slipping, Stumbling & Falling, uneven ground, open catch pits, construction debris, cables, snow, mud, poorly fitting footwear.	Site operatives, Plant operators, members of the public	M	M	M	Working area to be kept tidy and materials to be stacked neatly Ensure footwear is in reasonable condition with a good sole and tread, steel toes and shanks. Use identified walking routes. Keep identified walking routes clean and in serviceable condition. Awareness of ground conditions to be encountered.	Low

Hazard / Consequence	Persons in danger	Risk rating			Control measures	Final risk rating
Pinching of fingers, trapped limbs	Site operatives, Plant operators	M	M	M	Do not place fingers between the jaws of the quick release shackle or the vibrating hammer at any time. Avoid placing hands between two items Timber bites to be used between piles stored horizontally. Do not place fingers in clutches of sheet piles when positioning. Use tag line(s) where possible. Stand clear of sheet when releasing shackle and at all times when driving. Ensure gloves are worn at all times.	Low
Lifting operations – loss of load	Site operatives, Plant operators, members of the public	H	M	H	Ensure that pin is fully engaged through the hole in the trench sheet prior to lifting Ensure chain/clamp fully though hole in trench sheet and secure prior to extraction. Be cautious to not damage chain/clamp with jaws of hammer when engaging. For QR shackle secure the release rope when the pile is in the vertical position to prevent accidental release by snagging or catching Stand clear when lifting sheet and ensure all personnel are made aware of all lifting operations. Do not use release line (on QR shackle) as a tag line to guide the piles.	Low
Lifting operations	Site operatives, Plant operators, members of the public	H	M	H	Lift plan to be produced and followed for all mechanical lifting Slinger/Signaller to be present for all lifting activities. All lifting equipment to be certified/tagged and visually inspected prior to use No lifting outside of lift plan No persons under suspended loads. – Exclusion zones to be adhered to. Tag lines to be used where possible Test lift to confirm slinging arrangement.	Low

Initial review required by:		Subsequent review dates:			



SECTION THROUGH SHEET PILE WALL FOR MIXED BATHING POND, VIADUCT POND, VALE OF HEALTH POND AND STOCK POND



SECTION THROUGH SHEET PILE WALL FOR LADIES BATHING POND

NOTES

Rev.	Description	Dr'n	Chk	Date
B	FOR CONSTRUCTION	EO	PNH	27/03/2015
B	FOR CHECKING	EO	-	23/03/2015
A	FOR CHECKING	EO	-	16/03/2015

DRAWING STATUS
FOR CONSTRUCTION

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Contract
HAMPSTEAD HEATH PONDS PROJECT

Title
COFFERDAM FOR CULVERTS CONSTRUCTION AT STOCK , LADIES BATHING, MIXED BATHING, VALE OF HEALTH AND VIADUCT PONDS

Scales	AS SHOWN	Sheet Size	A1
Drawn	EO	Checked	-
Date	11 03:15		
Drg No.	BAM 1700-0006	Revision	B