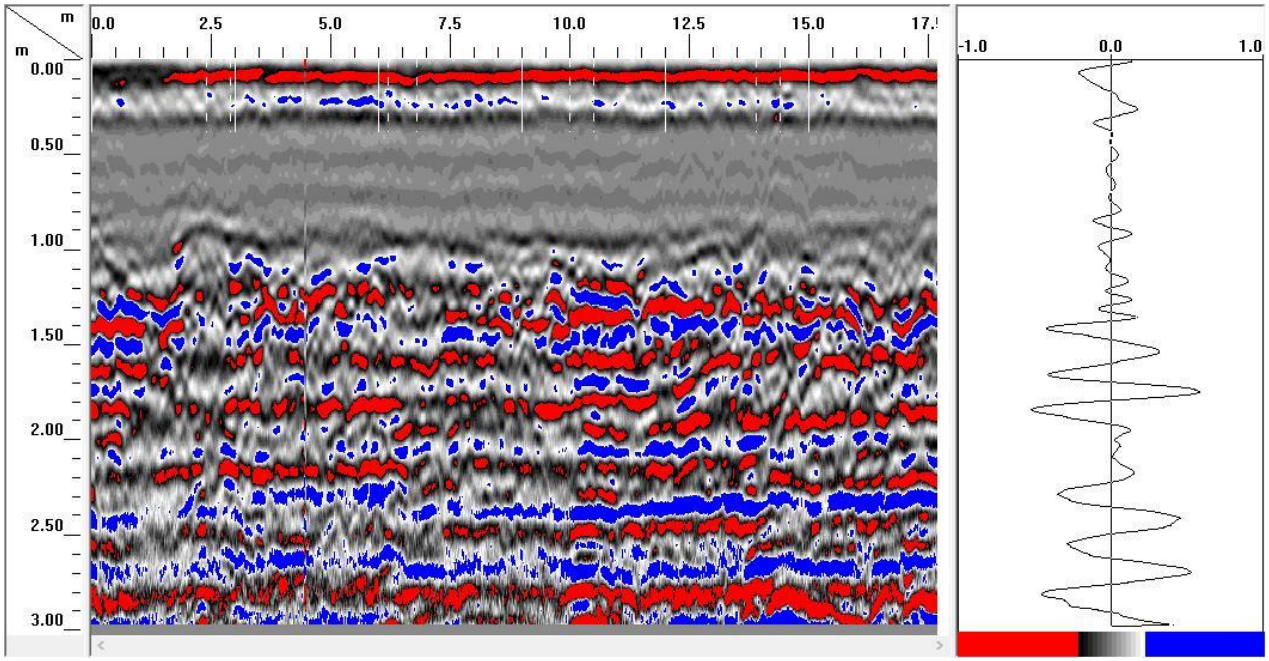
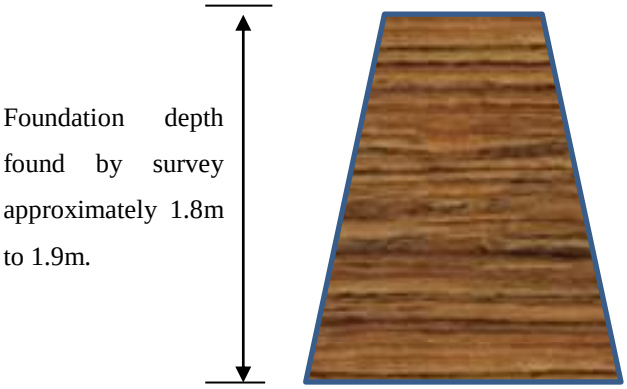
RECREATION HALL:



RAW DATA

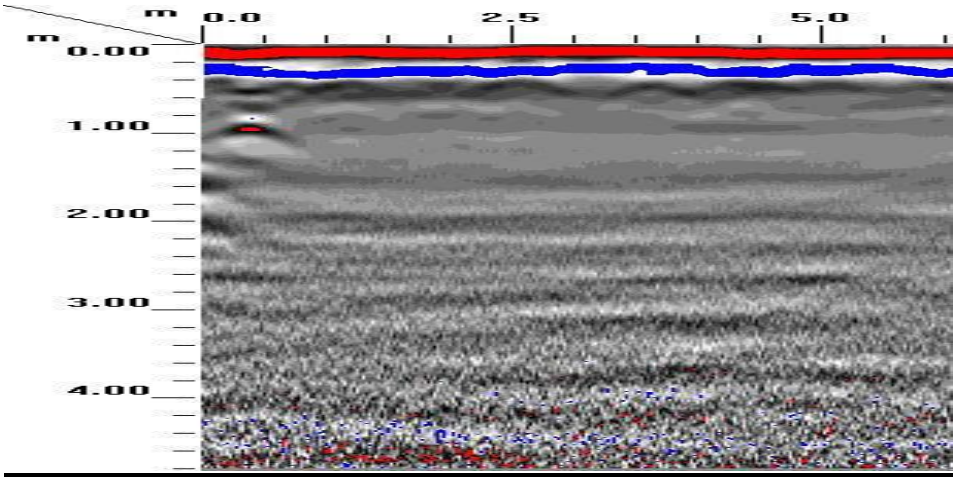


Remarks:

i. We found the foundation depth within 1.8 to 1.9 from GPR survey data. The approximate dimension was found approximately 1.9m X 1.2m

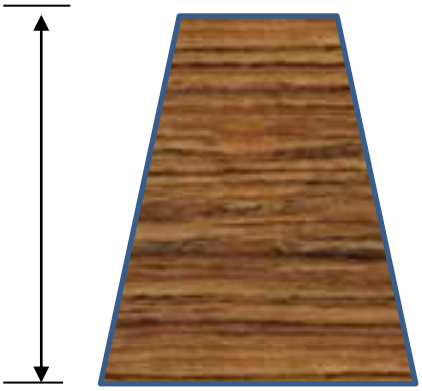
ii. No utility found at this location.

CLUB AUDITORIUM:



RAW DATA

Foundation depth found by survey approximately 1.6 to 2.18m

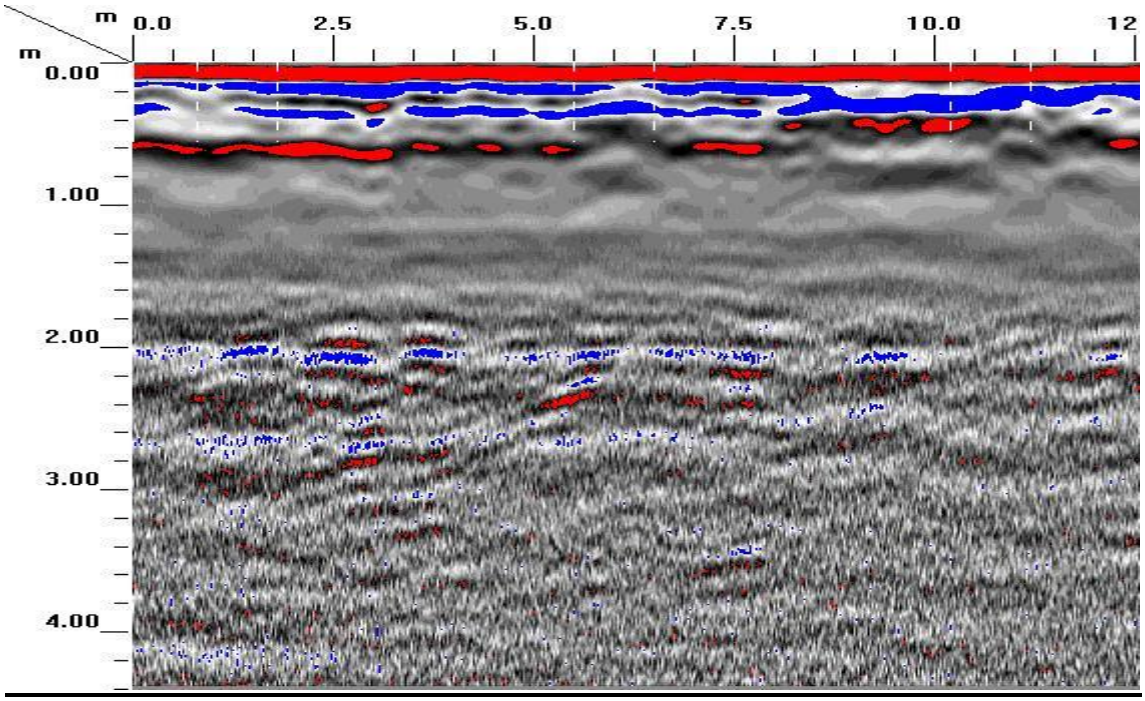


Remarks:

i. We found the foundation depth within 1.6 to 2.18 from GPR survey data. The approximate dimension was found approximately 2.1m X 1.5m

ii. Metallic utility found at 0.4m distance from starting point with 0.84 m depth

CLUB DINNING HALL:



RAW DATA

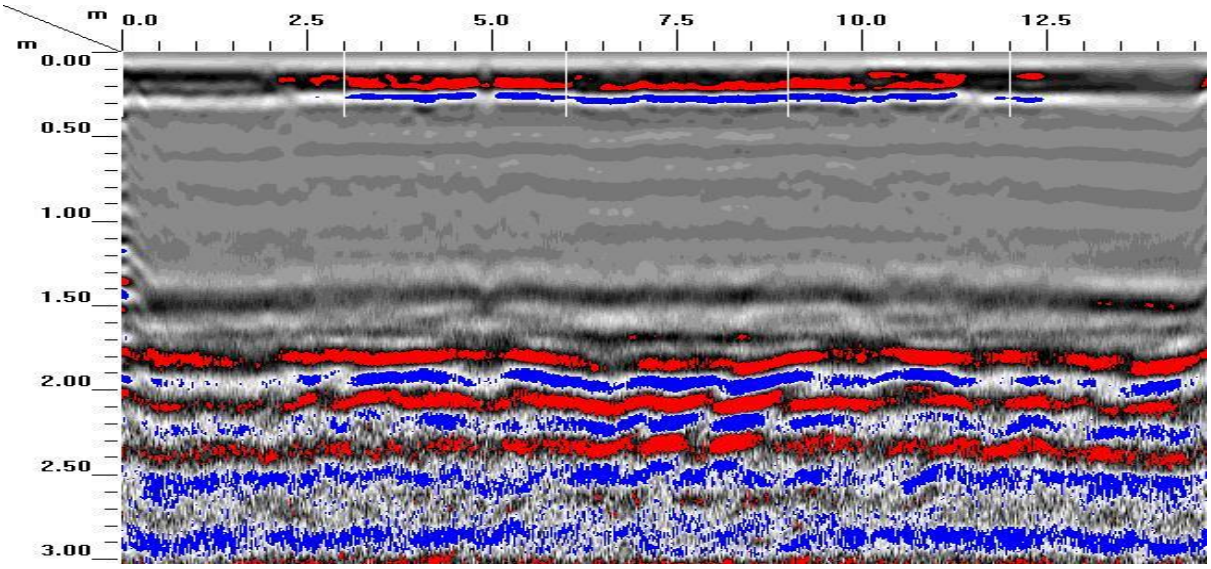
Foundation depth found by survey approximately 2.2 to 2.25m

Remarks:

i. We found the foundation depth within 2.2 to 2.25 from GPR survey data. The approximate dimension was found approximately 2.25m X 1.8m

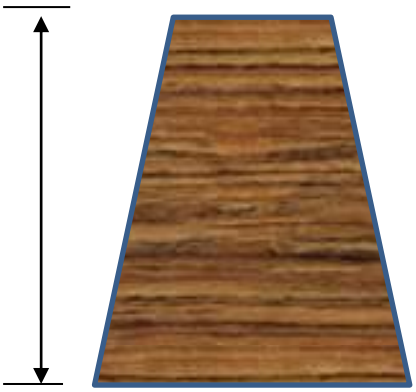
ii. No utility found at this location.

KALYANI MANDAP:



RAW DATA

Foundation depth found by survey approximately 2.35 to 2.4m



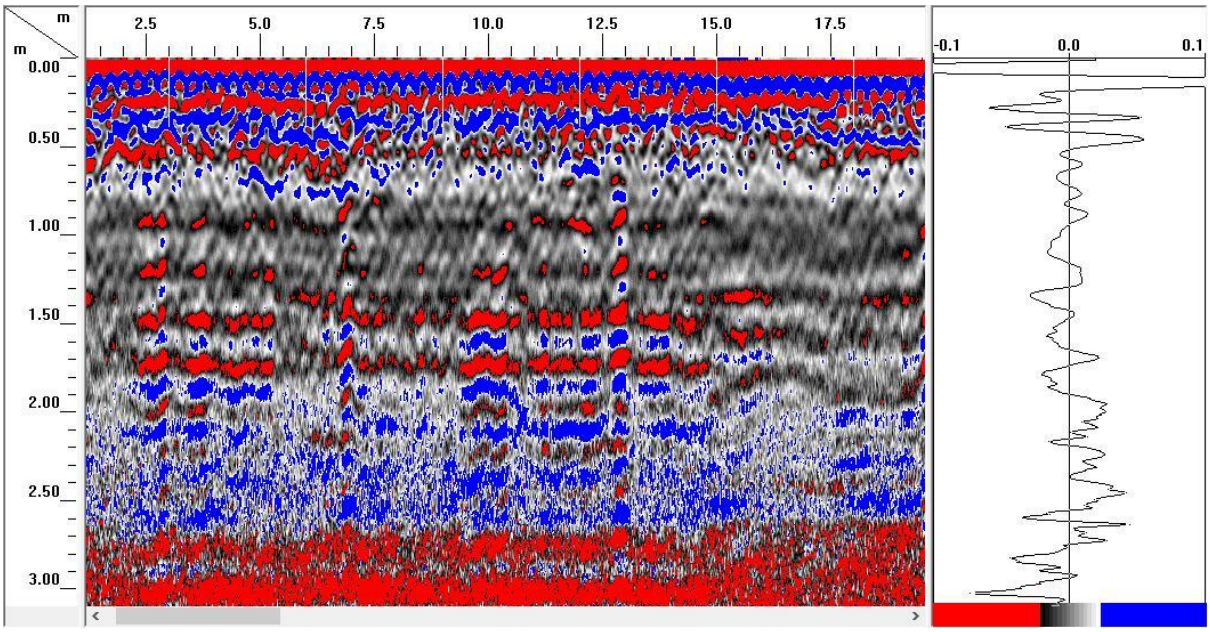
Remarks:

i. We found the foundation depth within 2.35 to 2.4 from GPR survey data. The approximate dimension was found approximately 2.4m X 1.8m

ii. No utility found at this location.

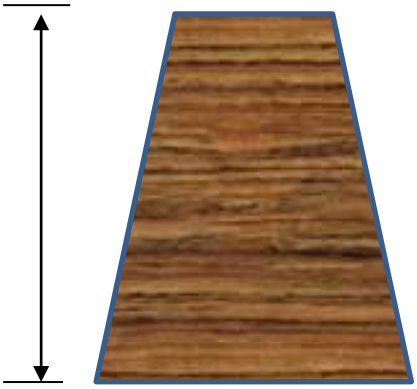
AIMIL LTD KOLKATA

CONVEYOR 16:



RAW DATA

Foundation depth found by survey approximately 1.84 to 1.9m



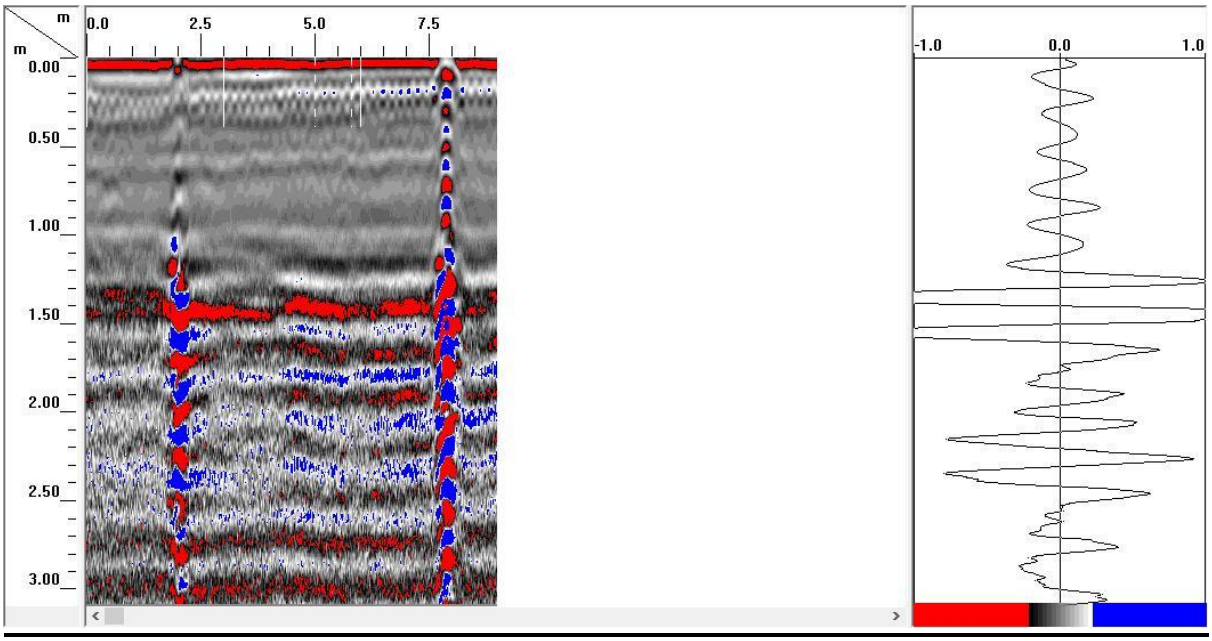
Remarks:

i. We found the foundation depth within 1.84 to 1.9 from GPR survey data. The approximate dimension was found approximately 1.9X 1.3m

ii. No utility found at this location.

AIMIL LTD KOLKATA

CRUSHER HOUSE:



RAW DATA

Foundation depth found by survey approximately 1.9 to 2.0m

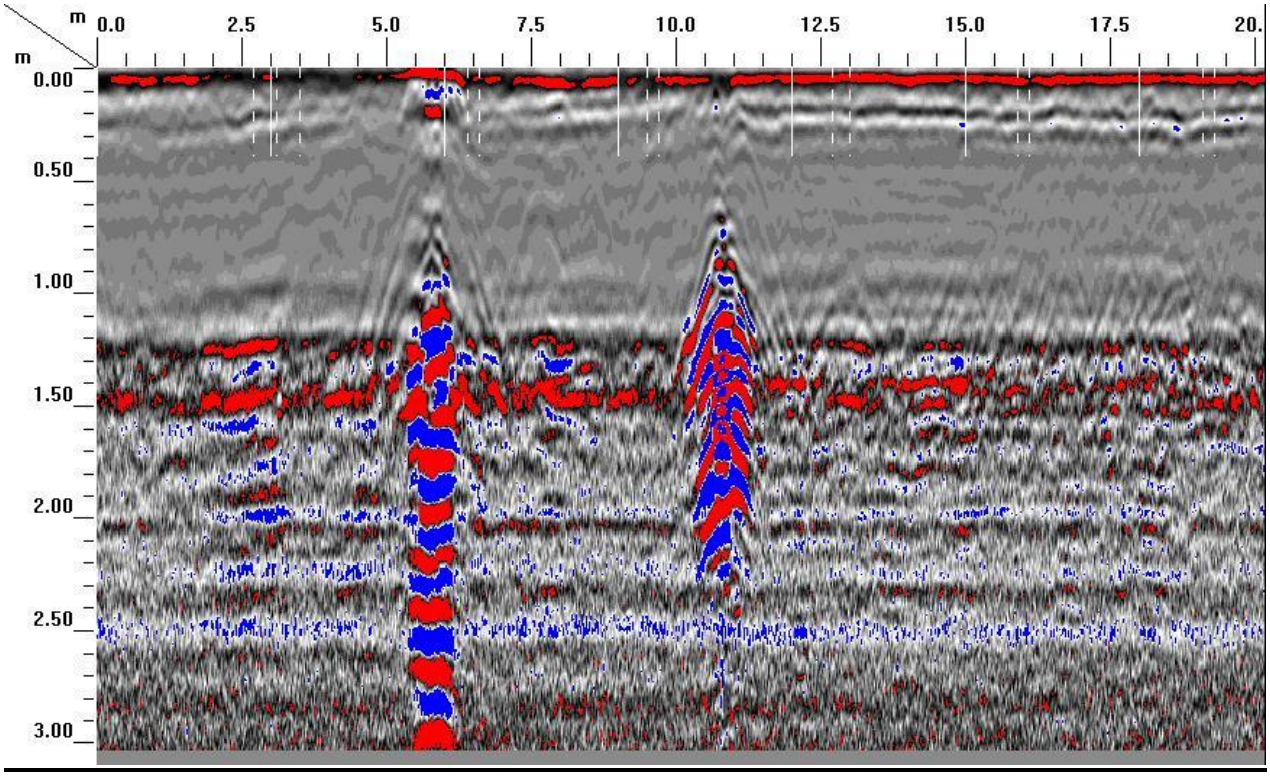
Remarks:

i. We found the foundation depth within 1.9 to 2.0 from GPR survey data. The approximate dimension was found approximately 2.0 X 1.5m

ii. No utility found at this location.

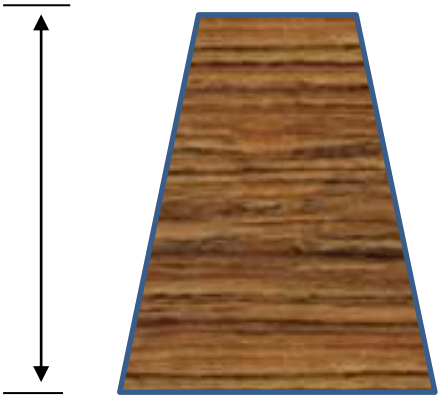
AIMIL LTD KOLKATA

CYCLE STAND:



RAW DATA

Foundation depth found by survey approximately 2.3 to 2.4m



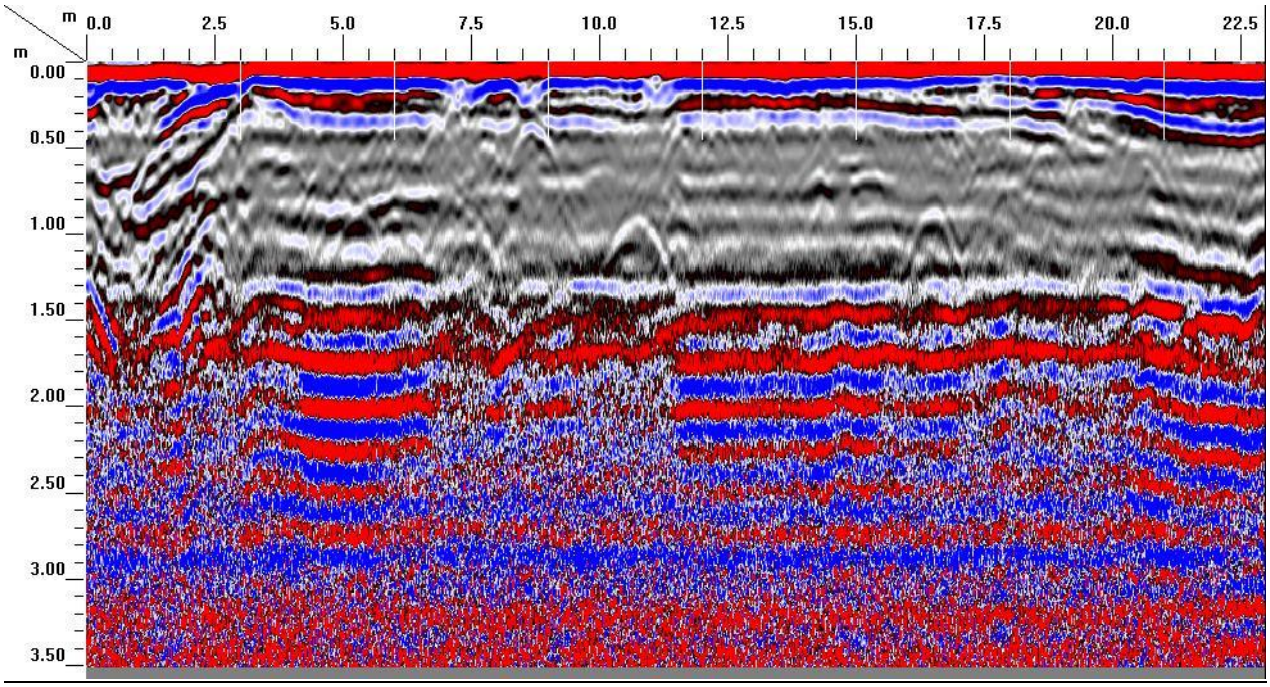
Remarks:

i. We found the foundation depth within 2.3 to 2.4 from GPR survey data. The approximate dimension was found approximately 2.4 X 2.2m

ii. No utility found at this location.

AIMIL LTD KOLKATA

DIESEL DISPENCING UNIT:



RAW DATA

Foundation depth found by survey approximately 1.72 to 1.85m

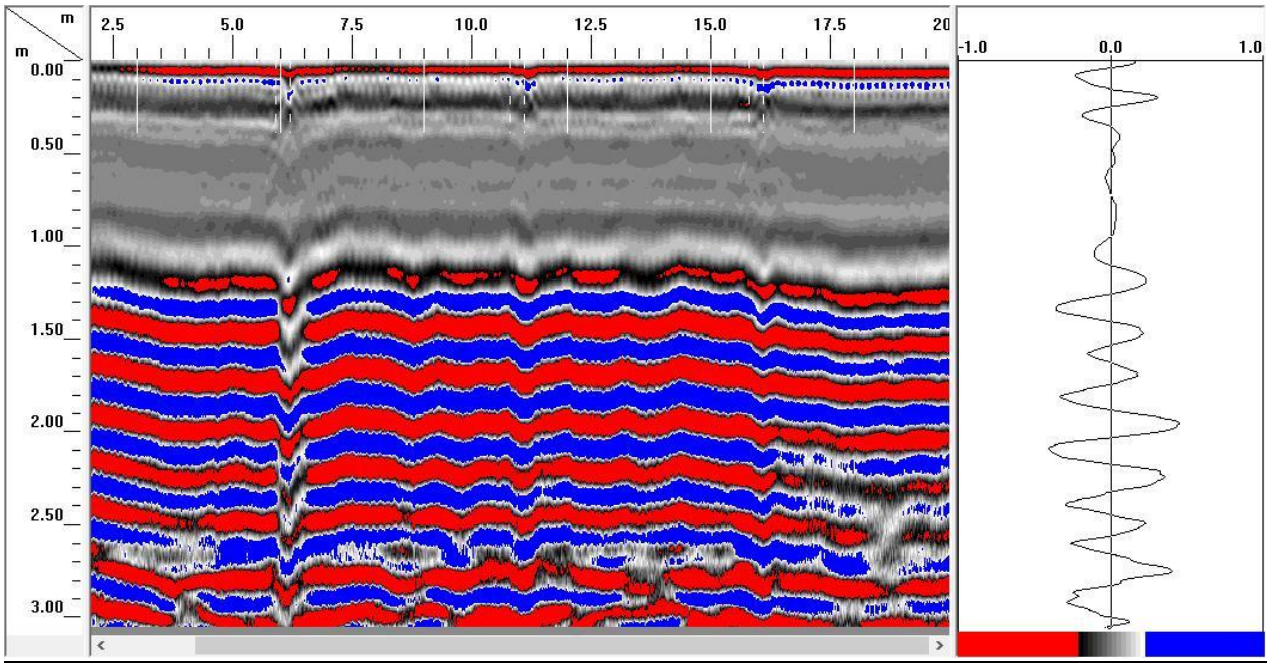
Remarks:

i. We found the foundation depth within 1.72 to 1.85 from GPR survey data. The approximate dimension was found approximately 1.8 X 1.5m

ii. Metallic utility found at 8.7m, 10.725m, 16.525m distance from starting point with 0.38m, 0.91m, 0.86m depth respectively.

AIMIL LTD KOLKATA

DOZER SHED:



RAW DATA

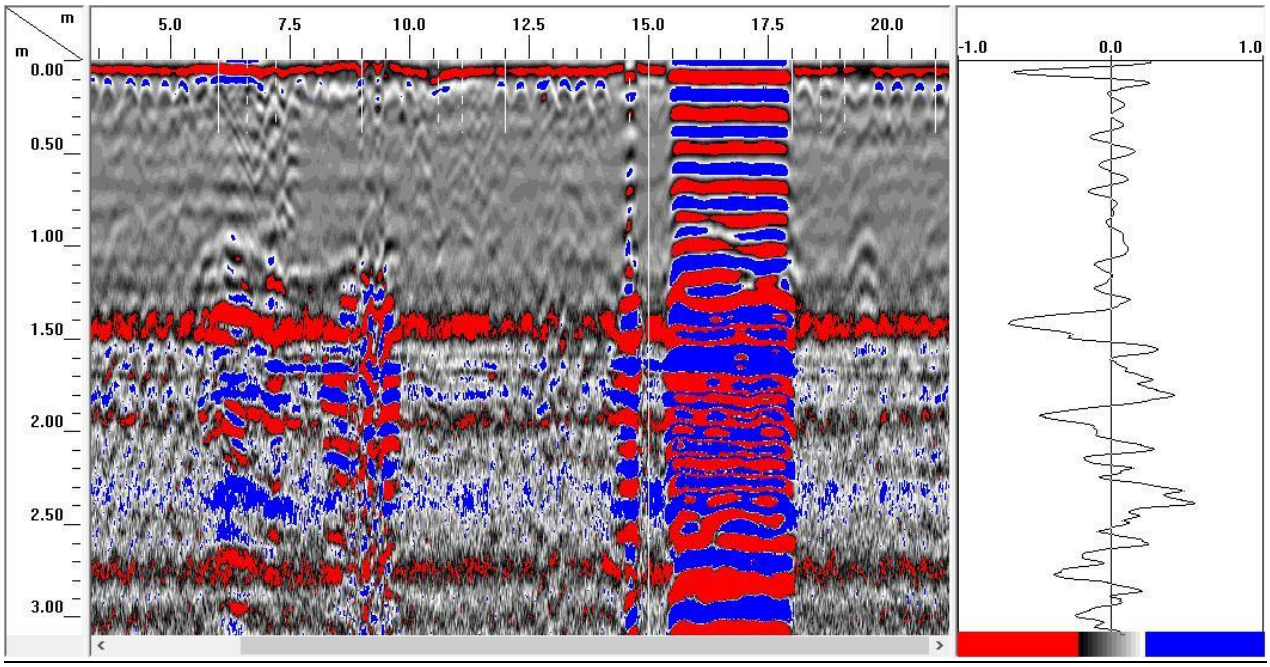
Foundation depth found by survey approximately 1.5 to 1.73m

Remarks:

i. We found the foundation depth within 1.5 to 1.73 from GPR survey data. The approximate dimension was found approximately 1.7 X 1.3m

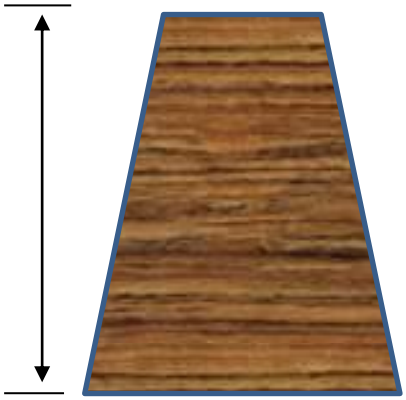
ii. No utility found at this location.

HEAVY MACHINERY:



RAW DATA

Foundation depth found by survey approximately 1.85 to 1.95m



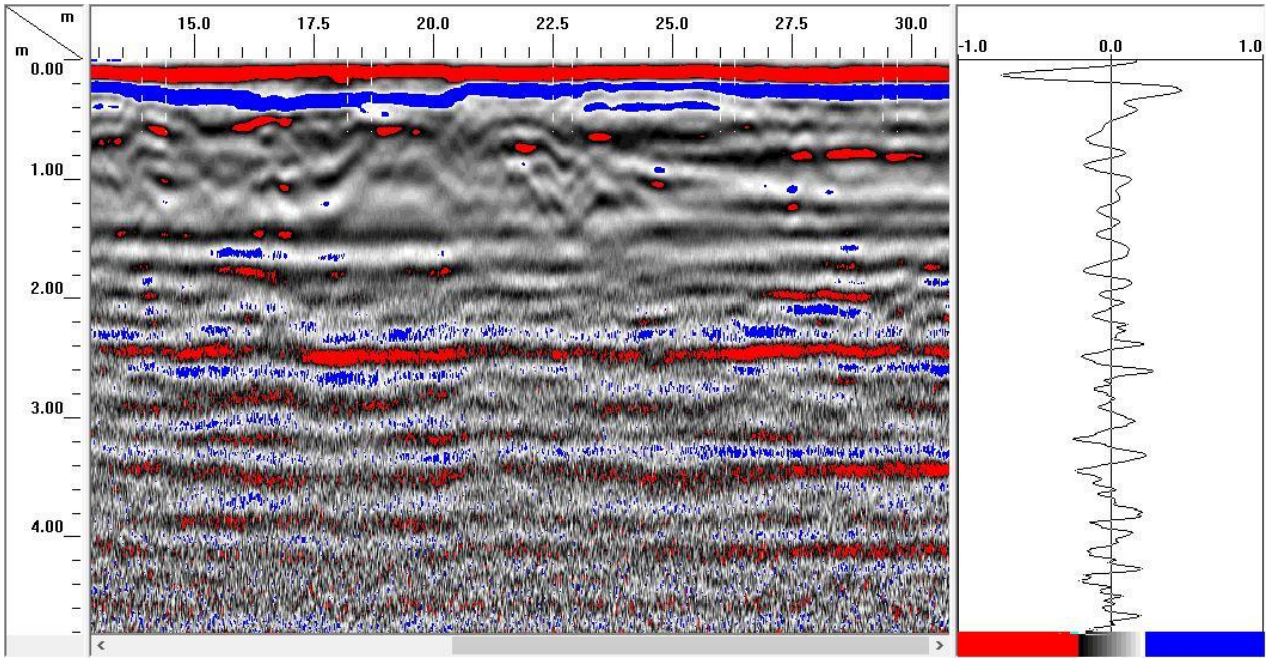
Remarks:

i. We found the foundation depth within 1.85 to 1.95 from GPR survey data. The approximate dimension was found approximately 1.9 X 1.4m

ii. No utility found at this location.

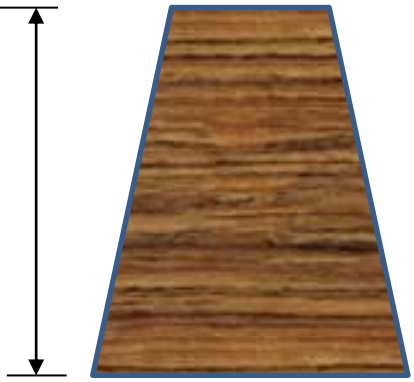
AIMIL LTD KOLKATA

MARKET COMPLEX:



RAW DATA

Foundation depth found by survey approximately 2.4 to 2.5m



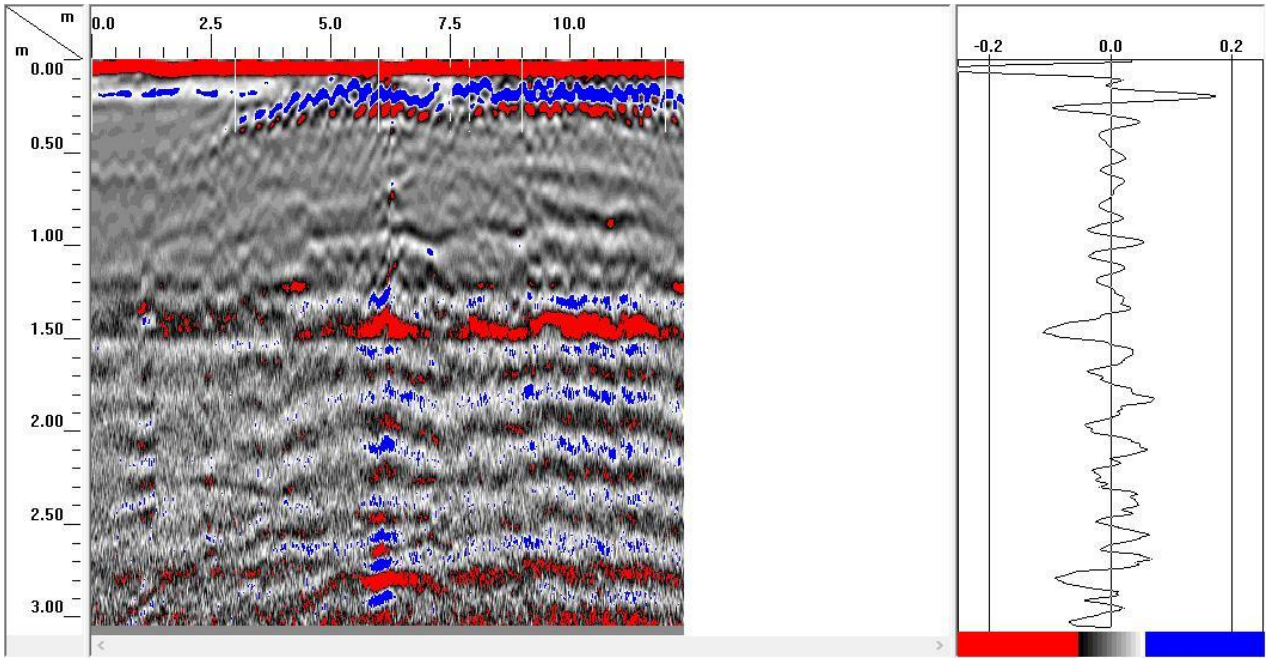
Remarks:

i. We found the foundation depth within 2.4 to 2.5 from GPR survey data. The approximate dimension was found approximately 2.5 X 2.2m

ii. No utility found at this location.

MINE END AREA:

SHED 1



RAW DATA

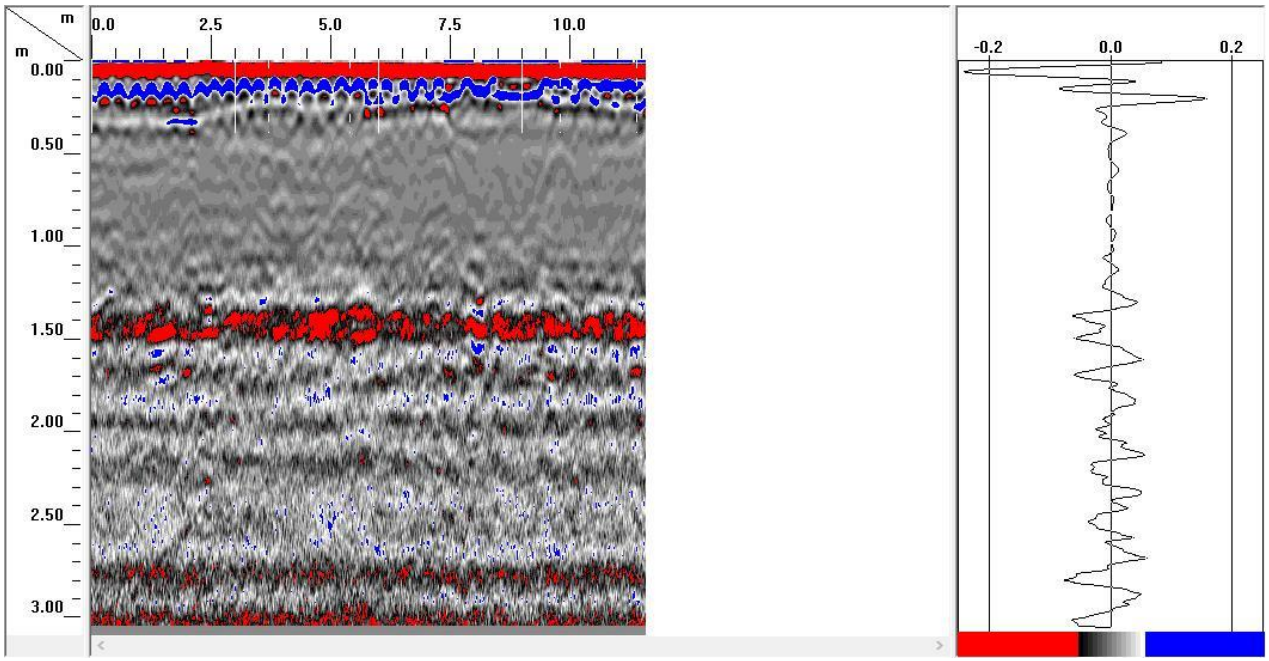
Foundation depth found by survey approximately 1.65 to 1.75m

Remarks:

i. We found the foundation depth within 1.65 to 1.75 from GPR survey data. The approximate dimension was found approximately 1.8m X 1.65m

ii. No utility found at this location.

SHED 2



RAW DATA

Foundation depth found by survey approximately 1.6m to 1.7m

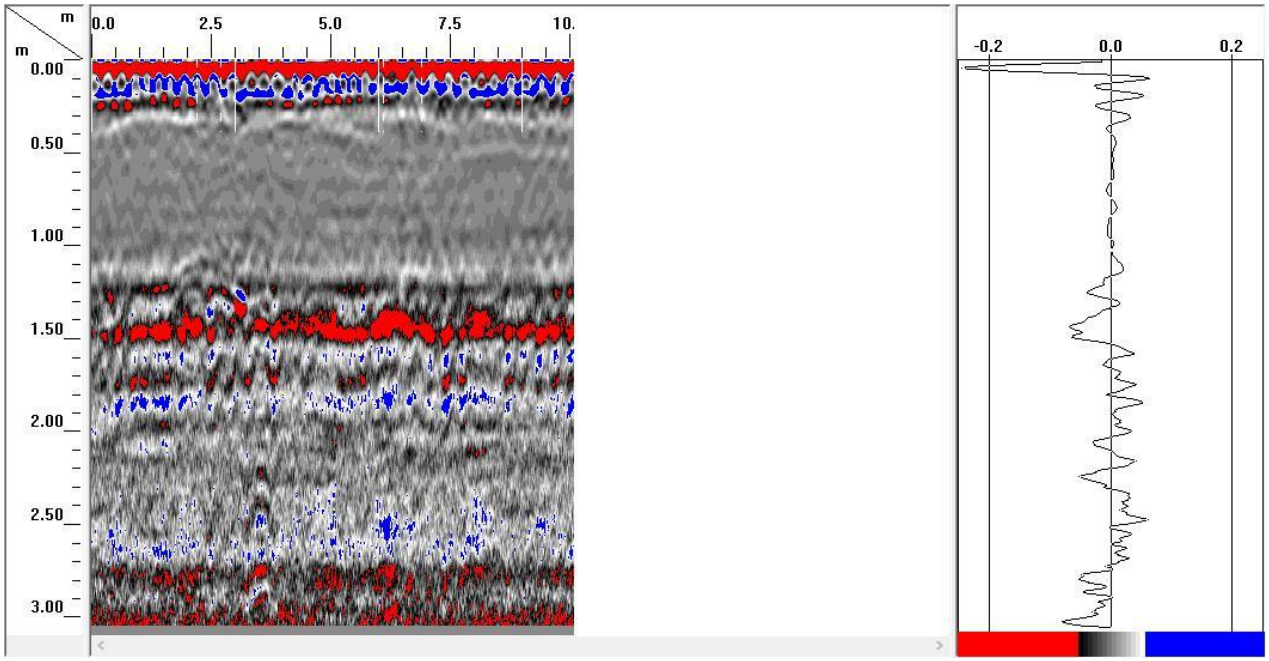
Remarks:

i. We found the foundation depth within 1.6m to 1.7m from GPR survey data. The approximate dimension was found approximately 1.8m X 1.65m

ii. No utility found at this location.

AIMIL LTD KOLKATA

SHED 3



RAW DATA

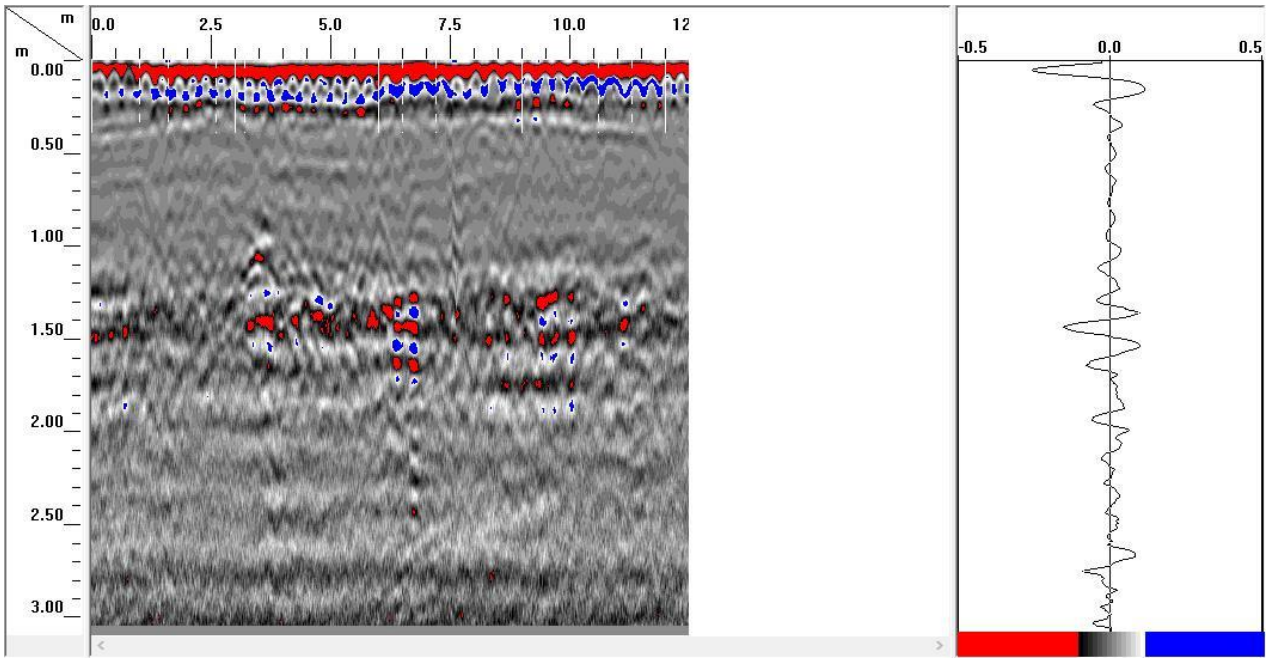
Foundation depth found by survey approximately 1.55m to 1.65m

Remarks:

i. We found the foundation depth within 1.55m to 1.65m from GPR survey data. The approximate dimension was found approximately 1.75m X 1.65m

ii. No utility found at this location.

SHED 4



RAW DATA

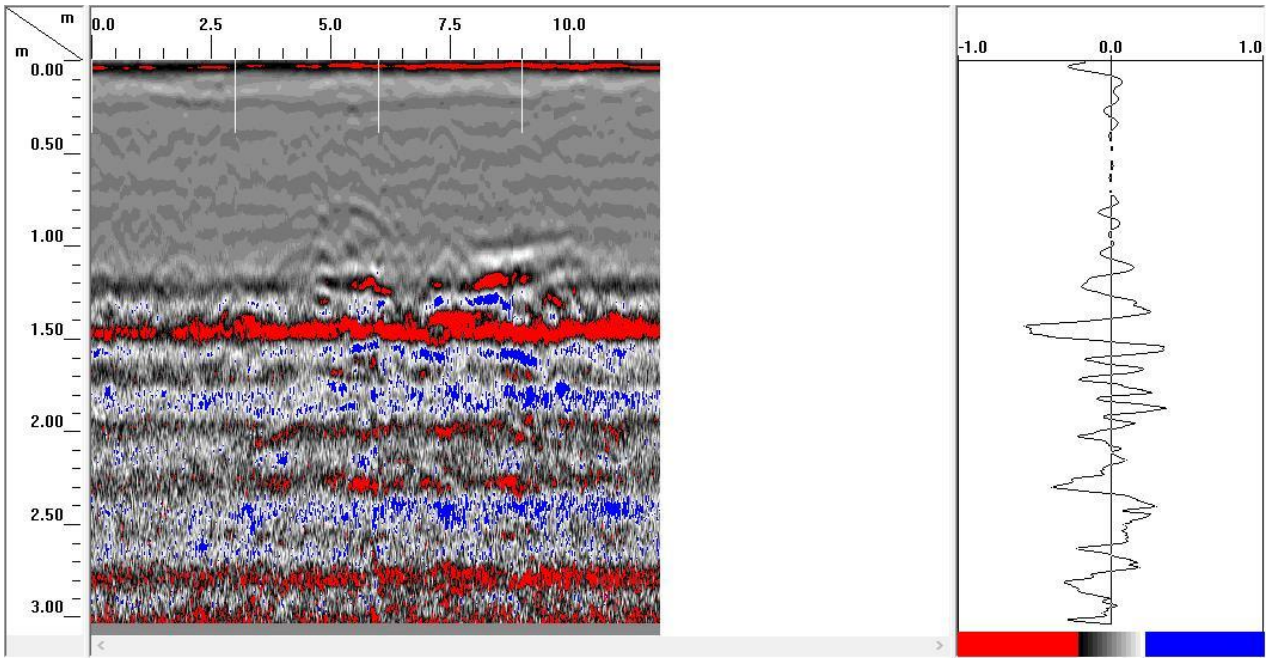
Foundation depth found by survey approximately 1.55m to 1.65m

Remarks:

i. We found the foundation depth within 1.55m to 1.65m from GPR survey data. The approximate dimension was found approximately 1.75m X 1.65m

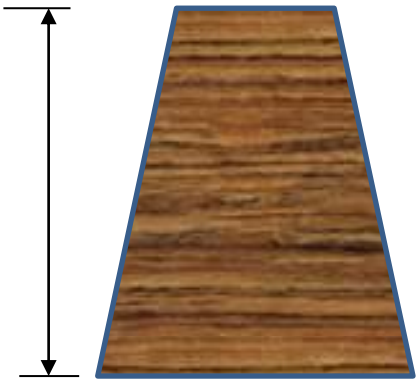
ii. No utility found at this location.

TP 4



RAW DATA

Foundation depth found by survey approximately 1.55m to 1.65m

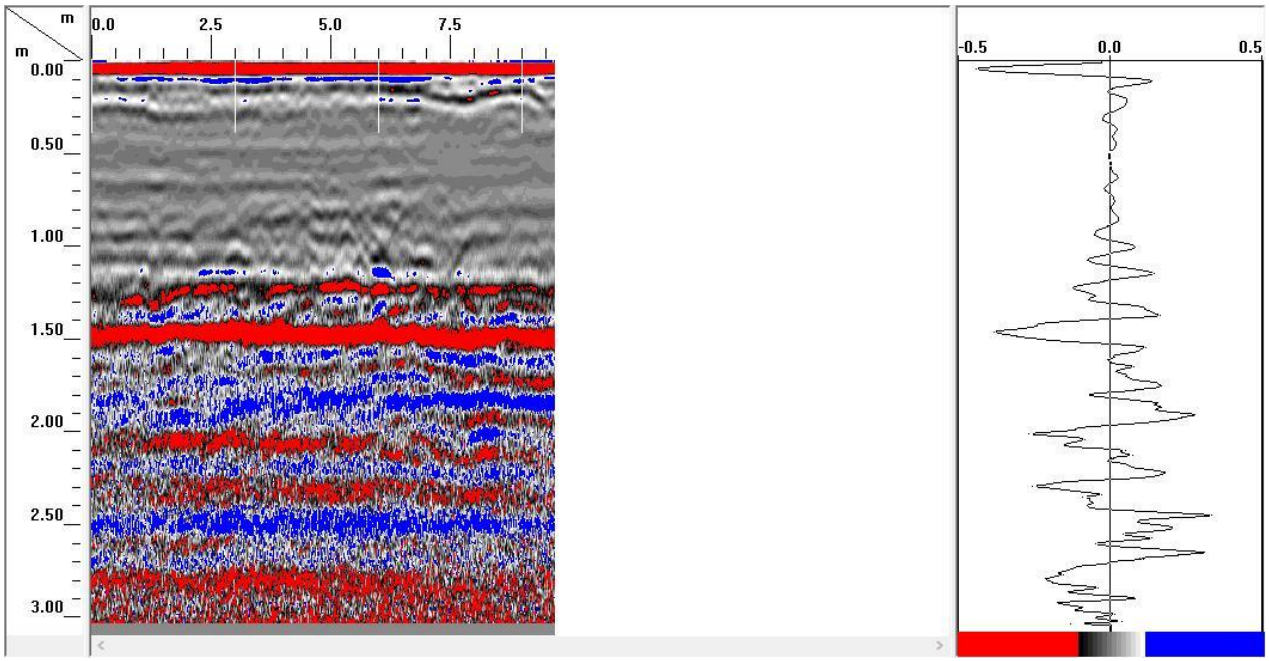


Remarks:

i. We found the foundation depth within 1.55m to 1.65m from GPR survey data. The approximate dimension was found approximately 1.75m X 1.65m

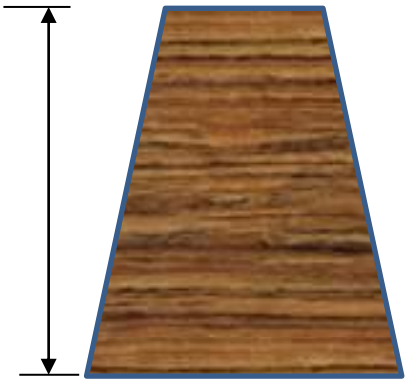
ii. No utility found at this location.

TP 7



RAW DATA

Foundation depth found by survey approximately 1.6m to 1.7m

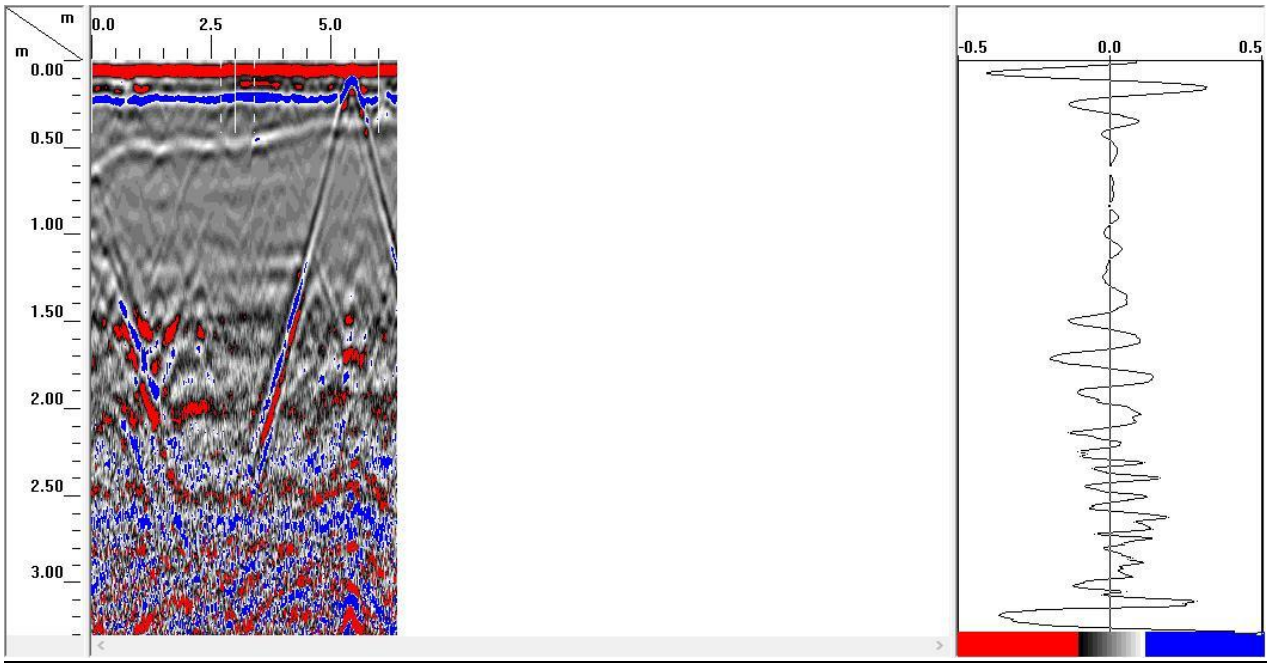


Remarks:

i. We found the foundation depth within 1.6m to 1.7m from GPR survey data. The approximate dimension was found approximately 1.75m X 1.65m

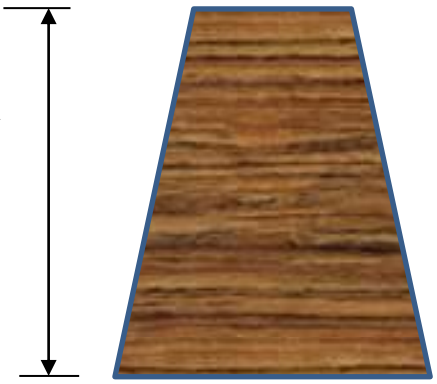
ii. No utility found at this location.

OAT-STAGE:



RAW DATA

Foundation depth found by survey approximately 1.85m to 1.9m

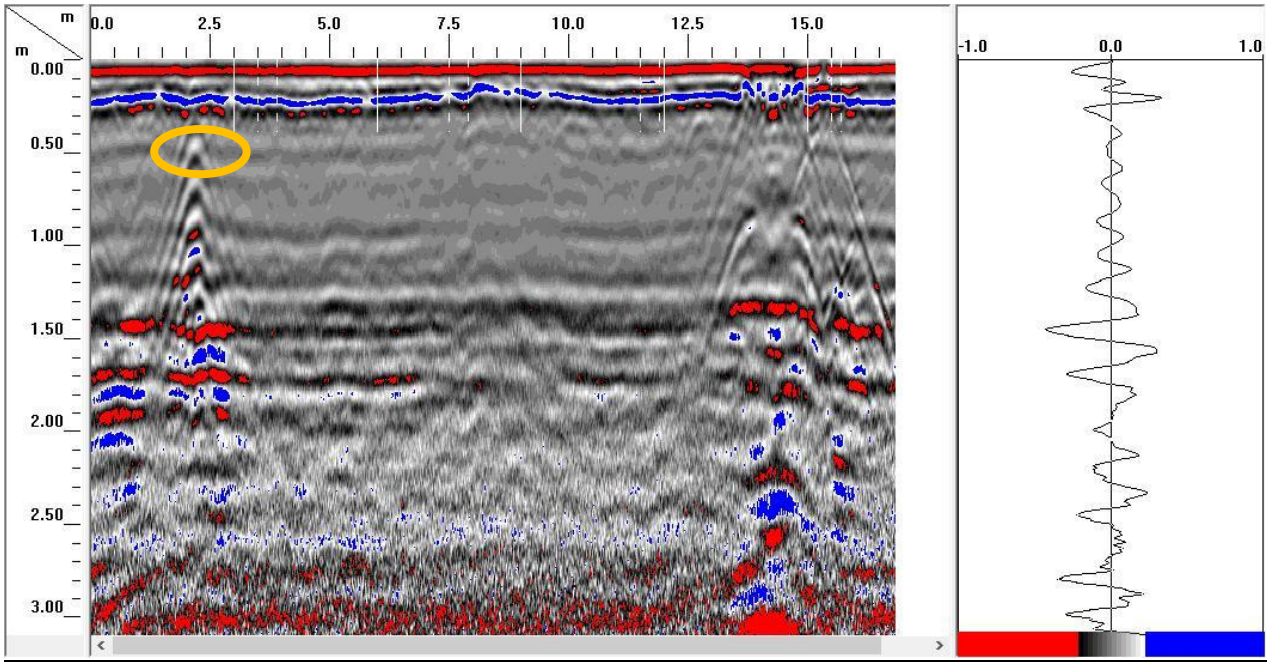


Remarks:

i. We found the foundation depth within 1.85m to 1.9m from GPR survey data. The approximate dimension was found approximately 2.0m X 1.85m

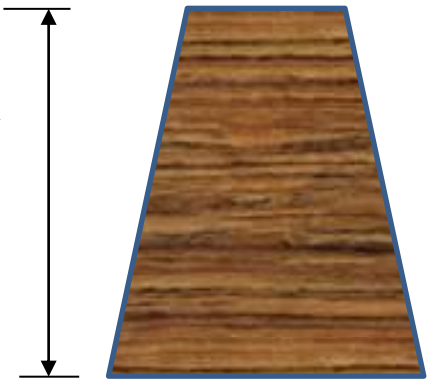
ii. No utility found at this location.

OLD FINANCE BUILDING:



RAW DATA

Foundation depth found by survey approximately 1.7m to 1.8m

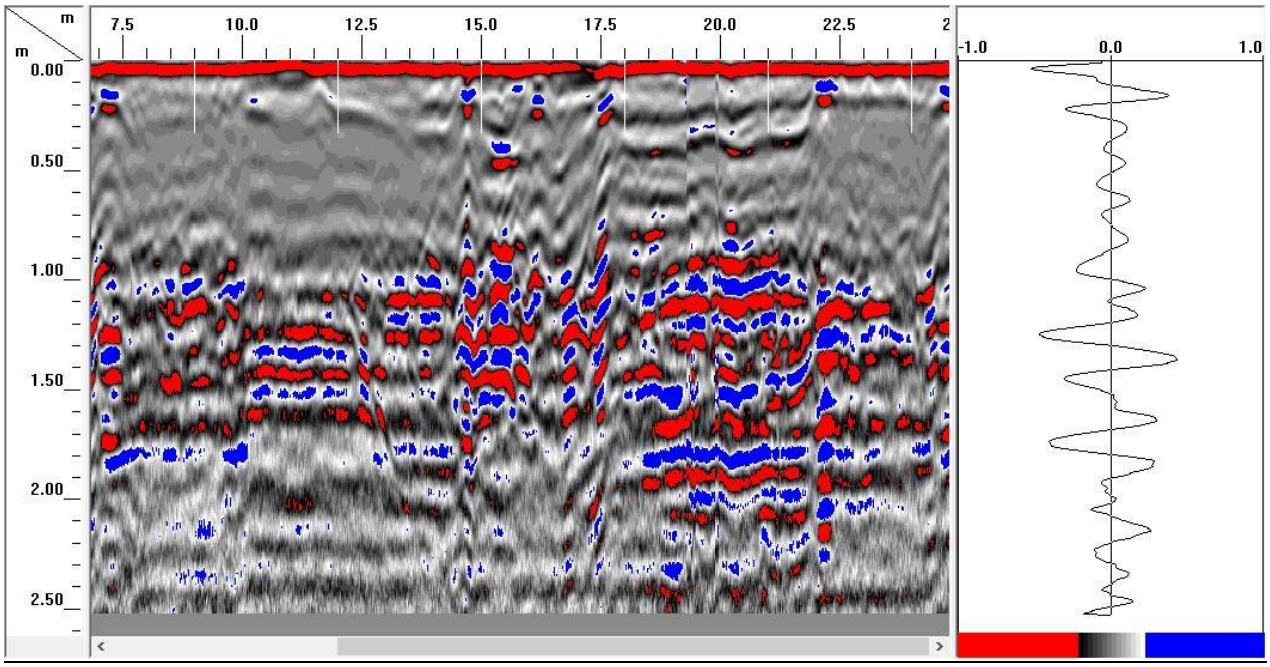


Remarks:

i. We found the foundation depth within 1.7m to 1.8m from GPR survey data. The approximate dimension was found approximately 2.0m X 1.85m.

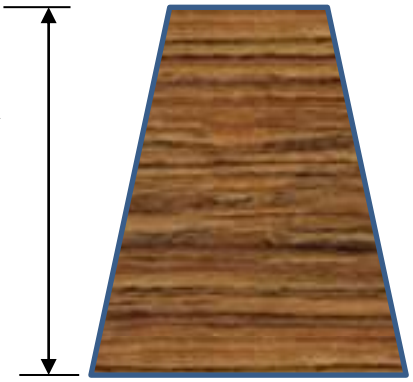
ii. Metallic utility, probable water line found at 2.25m distance from starting point with 0.47m depth.

QUARTER(DEMOLISHED AREA):



RAW DATA

Foundation depth found by survey approximately 1.5m to 1.6m

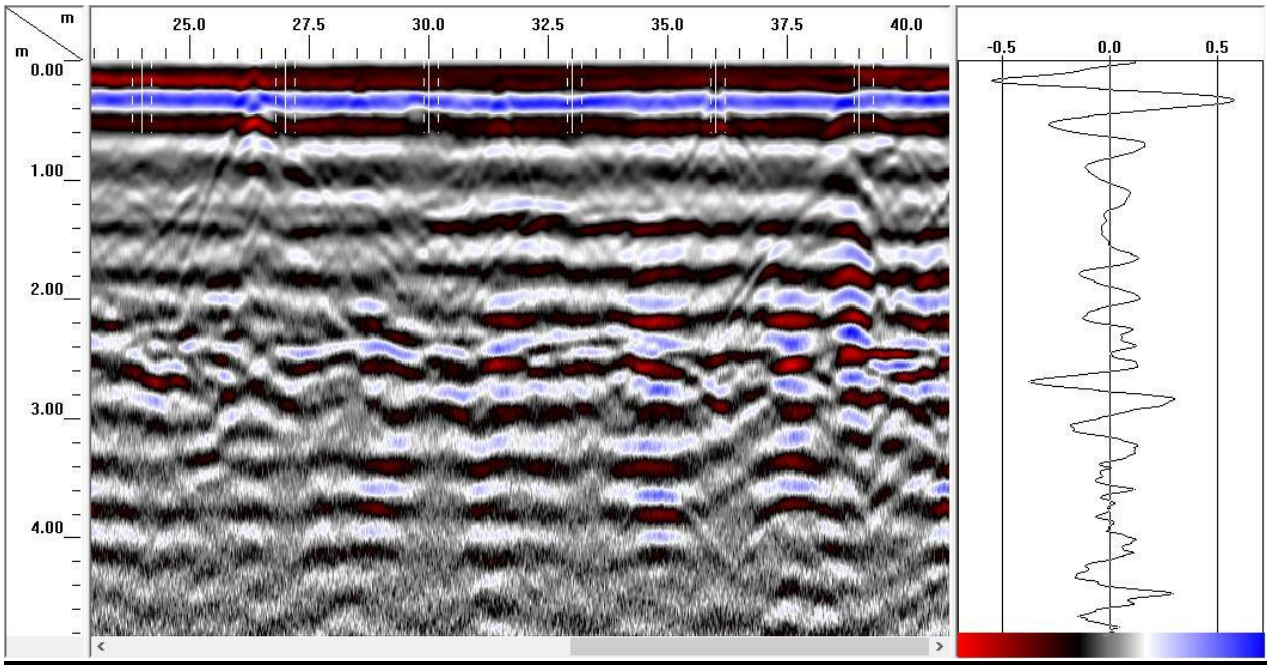


Remarks:

i. We found the foundation depth within 1.5m to 1.6m from GPR survey data. The approximate dimension was found approximately 1.6m X 1.3m

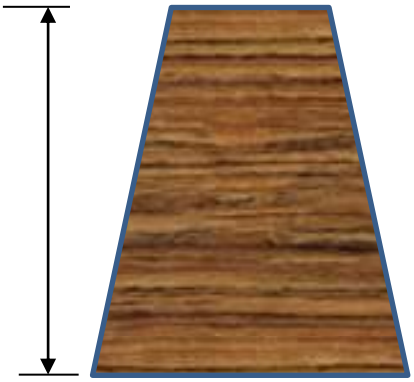
ii. No utility found at this location.

RC BUILDING:



RAW DATA

Foundation depth found by survey approximately 2.7m to 2.8m

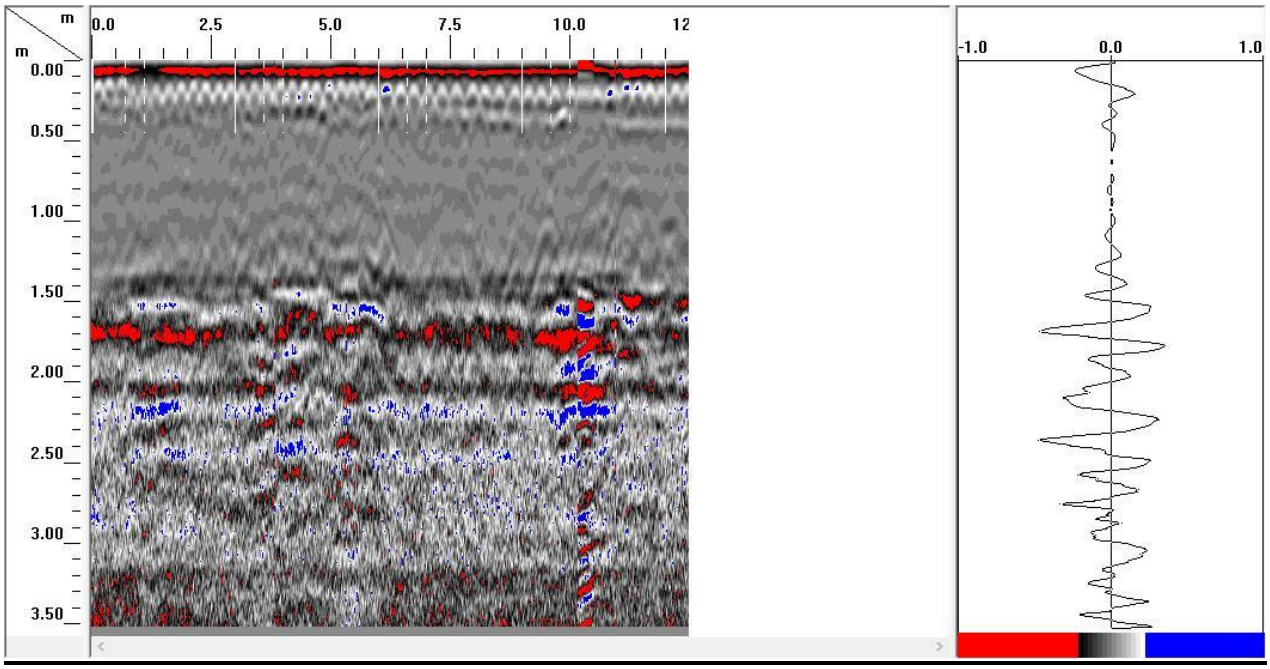


Remarks:

i. We found the foundation depth within 2.7m to 2.8m from GPR survey data. The approximate dimension was found approximately 2.8m X 2.2m

ii. Non-metallic utility, probable water line found at 16.075m distance from starting point with 1.13m depth.

REJECTED SHED:



RAW DATA

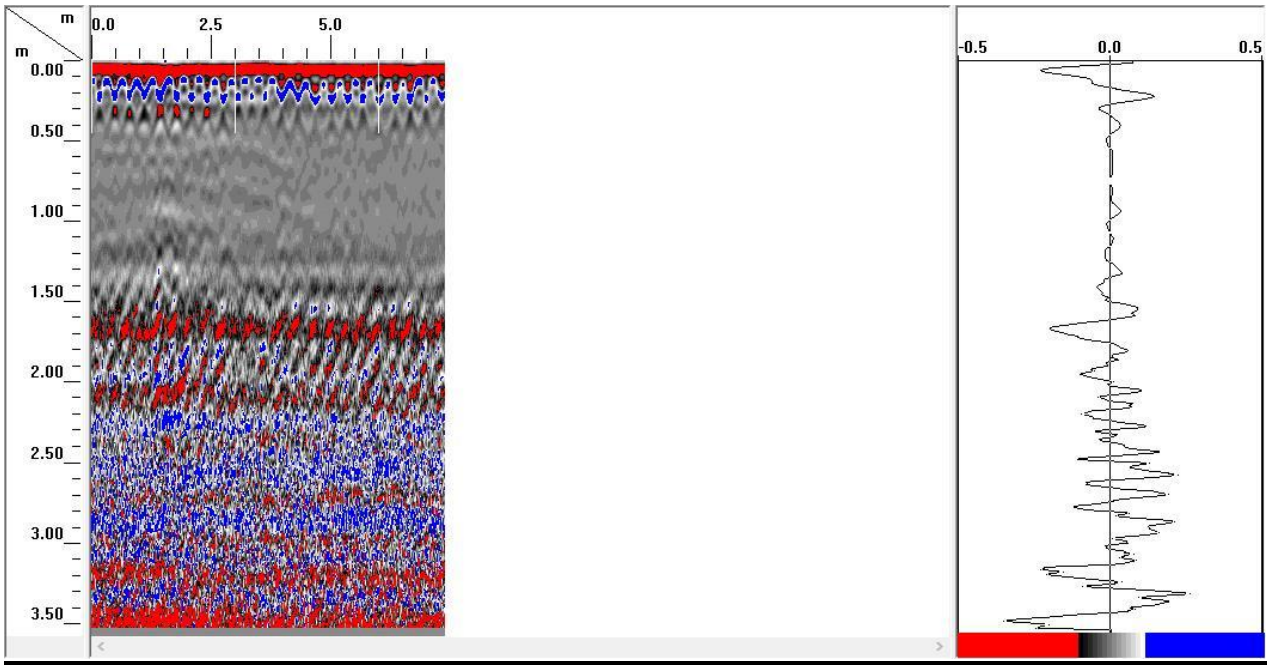
Foundation depth found by survey approximately 1.80m to 1.85m

Remarks:

i. We found the foundation depth within 1.80m to 1.85m from GPR survey data. The approximate dimension was found approximately 1.8m X 1.4m

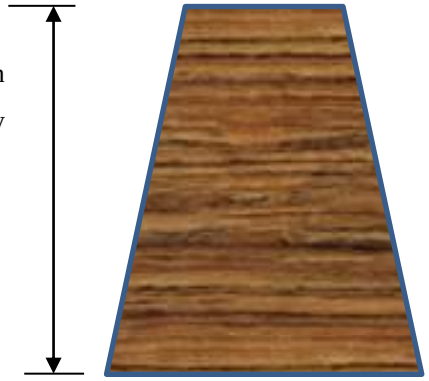
ii. No utility found at this location.

TOWER (WT8):



RAW DATA

Foundation depth found by survey approximately 1.60m to 1.65m

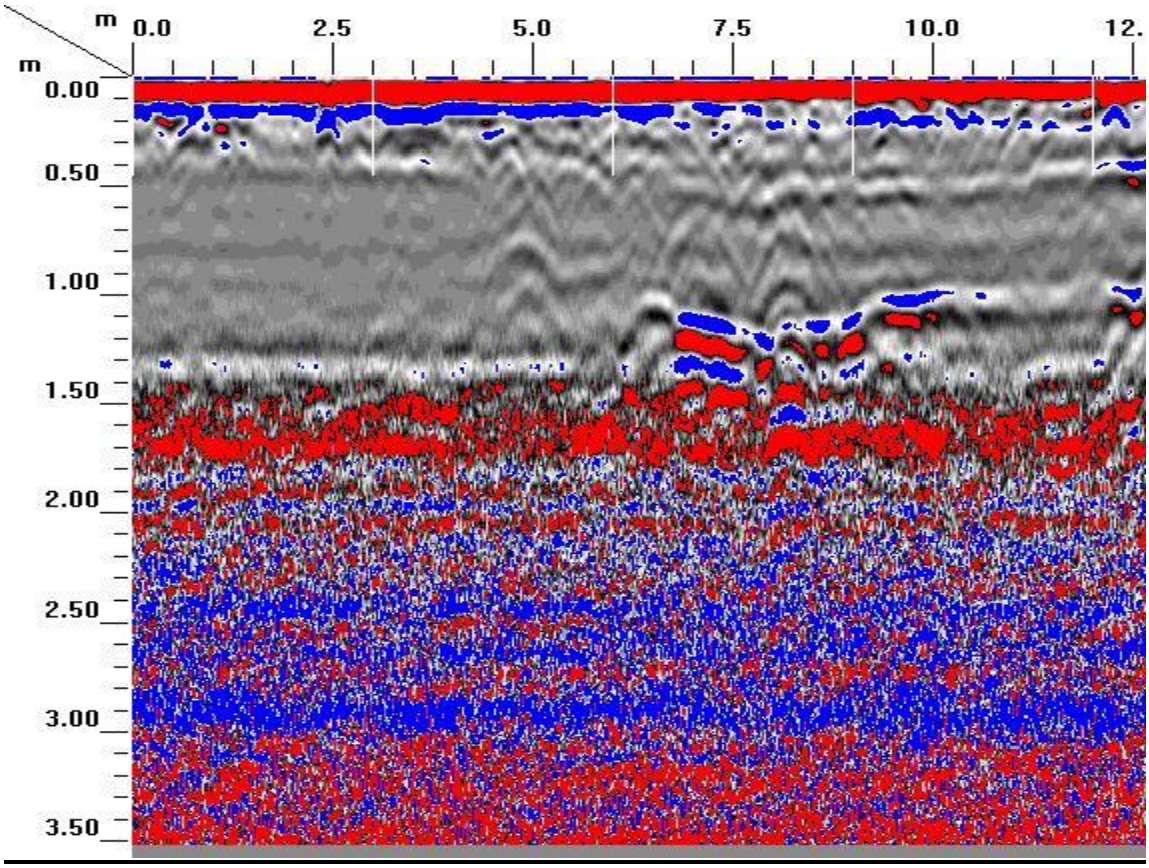


Remarks:

i. We found the foundation depth within 1.80m to 1.85m from GPR survey data. The approximate dimension was found approximately 1.65m X 1.4m

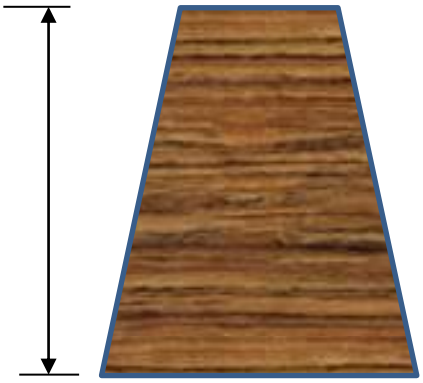
ii. No utility found at this location.

CAR SHED 2:



RAW DATA

Foundation depth found by survey approximately 2.05m to 2.15m



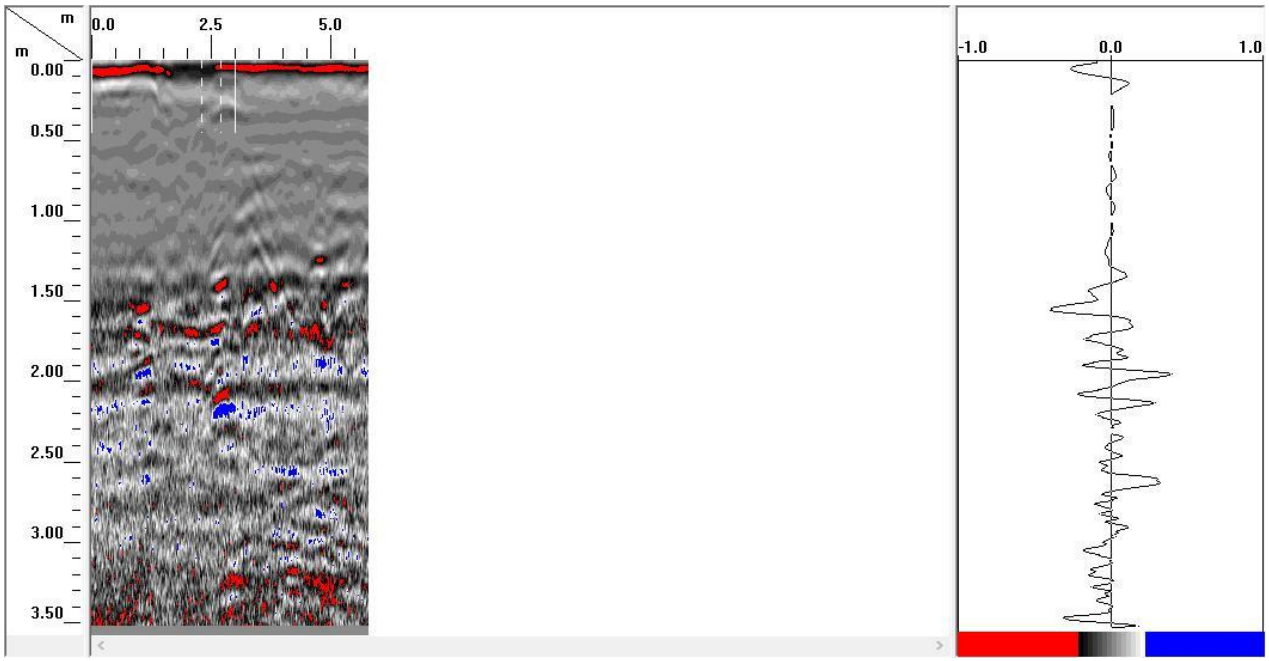
Remarks:

i. We found the foundation depth within 2.05m to 2.15m from GPR survey data. The approximate dimension was found approximately 2.15m X 1.8m

ii. Live cable found at 8.25m distance from starting point with 1.42m depth.

STORE:

SHED 4



RAW DATA

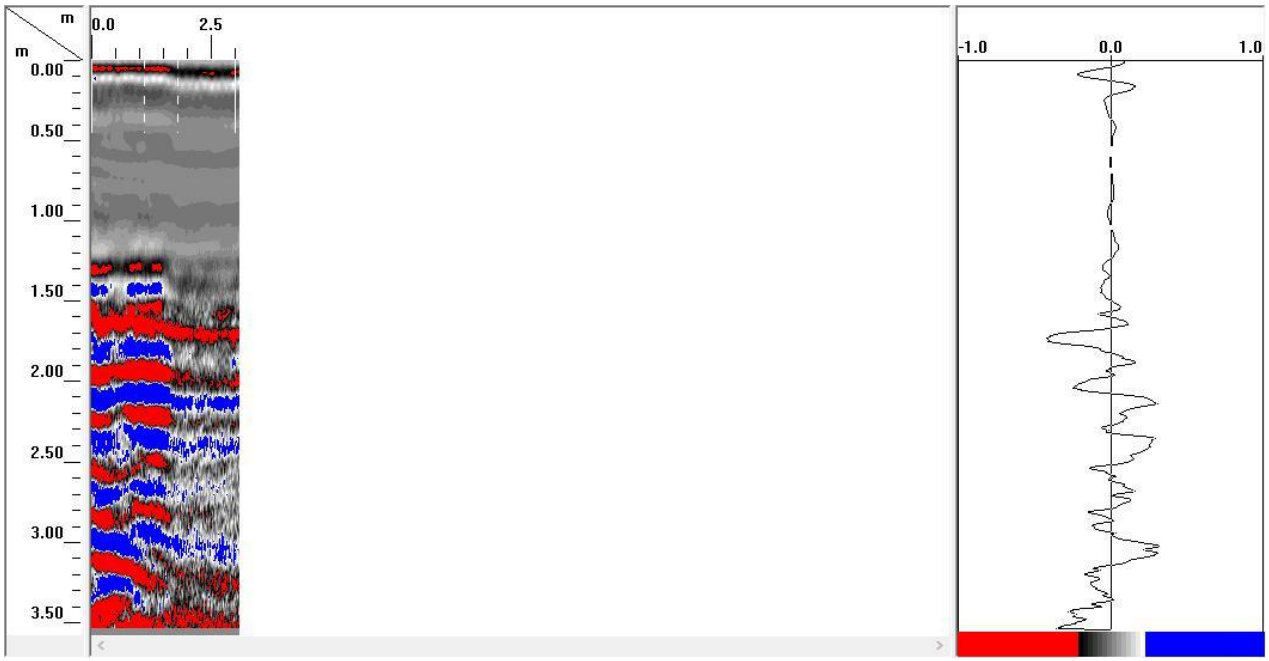
Foundation depth found by survey approximately 1.5m to 1.6m

Remarks:

i. We found the foundation depth within 1.5m to 1.6m from GPR survey data. The approximate dimension was found approximately 1.6m X 1.2m

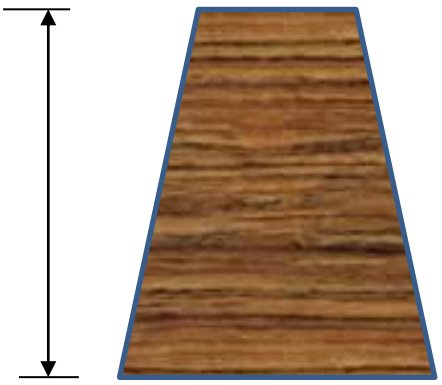
ii. No utility found at this location.

SHED 7



RAW DATA

Foundation depth found by survey approximately 1.7m to 1.75m

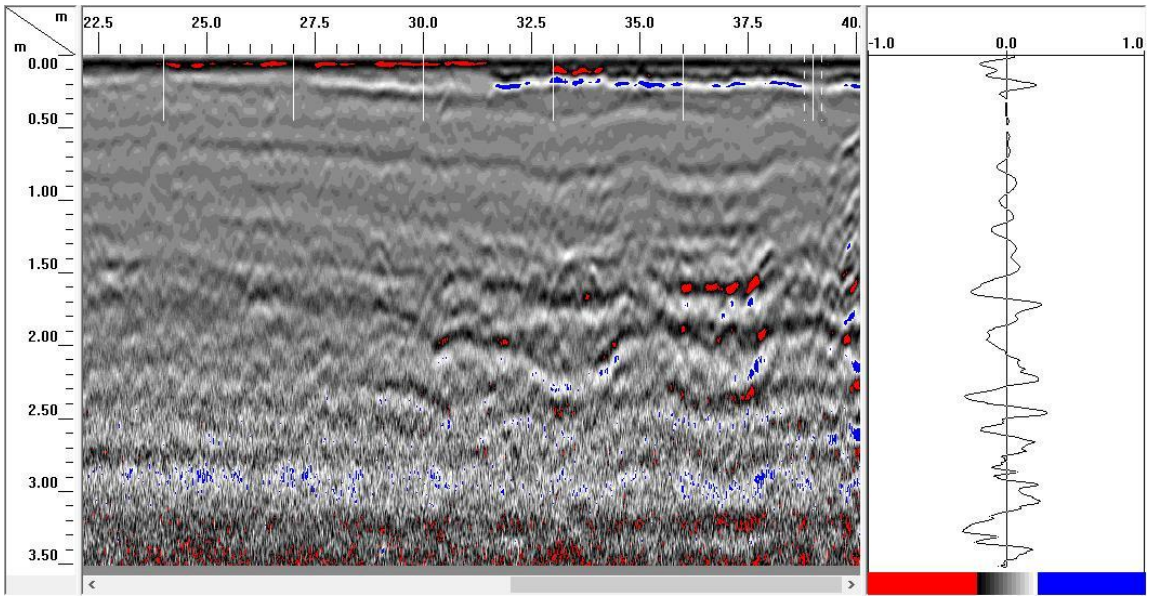


Remarks:

i. We found the foundation depth within 1.7m to 1.75m from GPR survey data. The approximate dimension was found approximately 1.75m X 1.50m

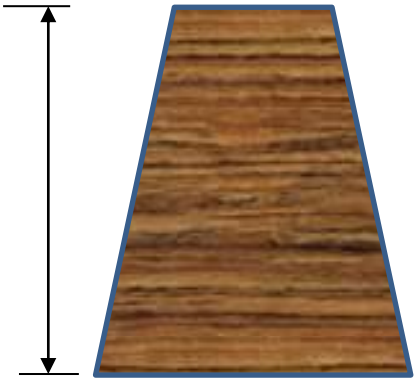
ii. No utility found at this location.

SHED 8



RAW DATA

Foundation depth found by survey approximately 1.6m to 1.7m

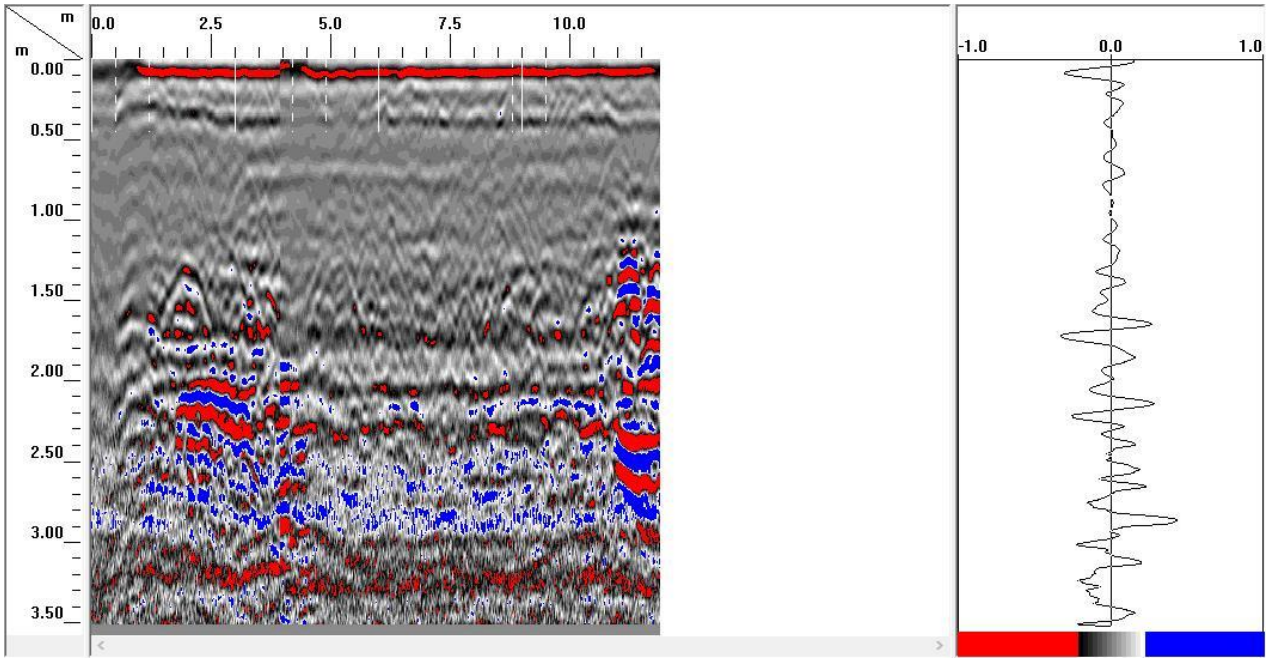


Remarks:

i. We found the foundation depth within 1.6m to 1.7m from GPR survey data. The approximate dimension was found approximately 1.7m X 1.4m

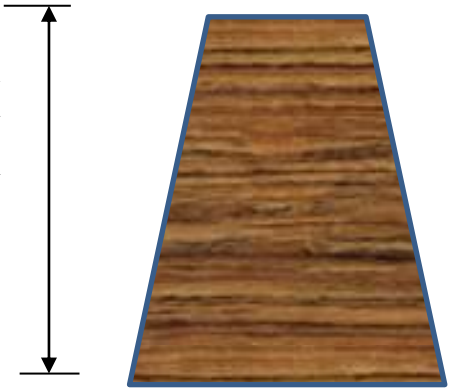
ii. No utility found at this location.

SHED 9



RAW DATA

Foundation depth found by survey approximately 1.7m to 1.75m

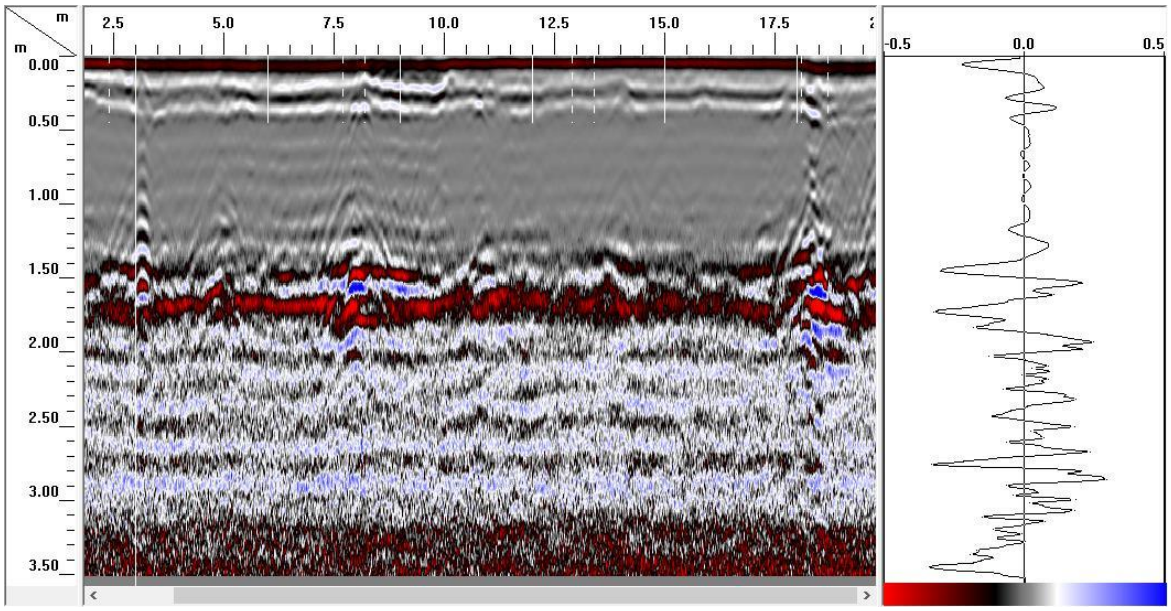


Remarks:

i. We found the foundation depth within 1.7m to 1.75m from GPR survey data. The approximate dimension was found approximately 1.75m X 1.4m

ii. Non-metallic utility, probable water line found at 11.225m distance from starting point with 1.33m depth.

SHED 10



RAW DATA

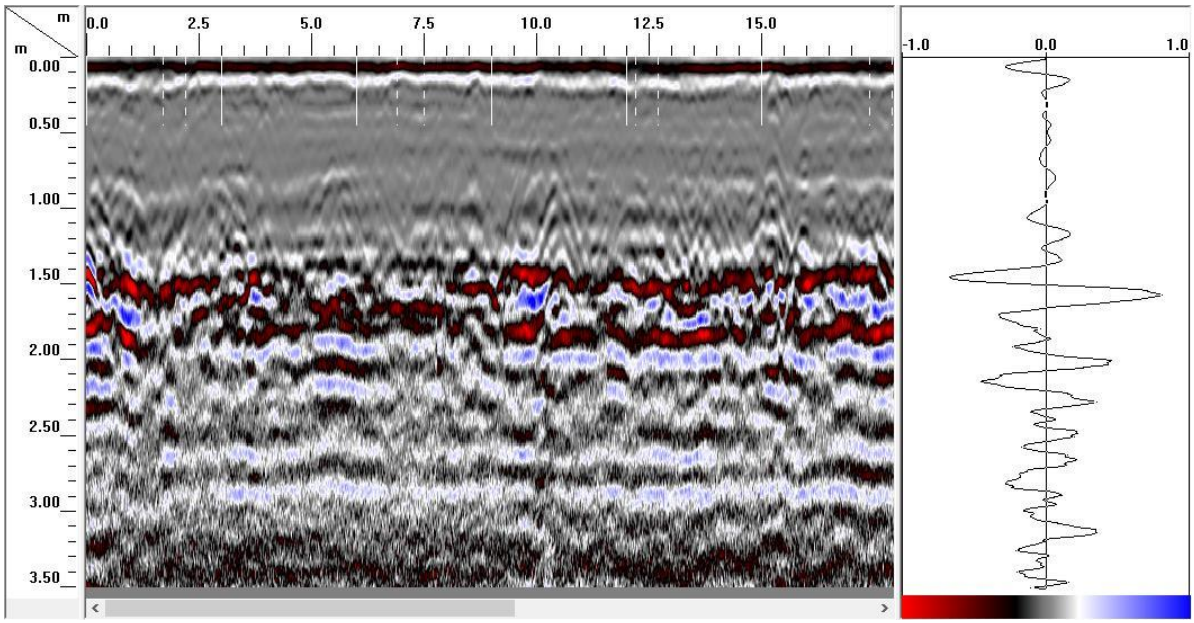
Foundation depth found by survey approximately 1.5m to 1.55m

Remarks:

i. We found the foundation depth within 1.5m to 1.55m from GPR survey data. The approximate dimension was found approximately 1.55m X 1.25m

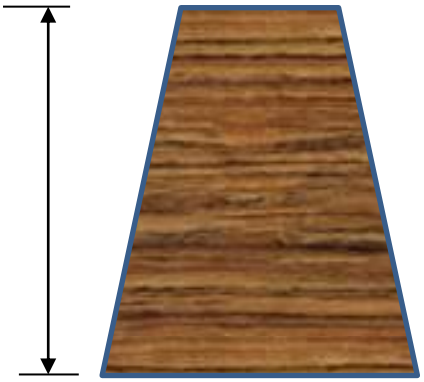
ii. No utility found at this location.

SHED 11



RAW DATA

Foundation depth found by survey approximately 1.6m to 1.65m

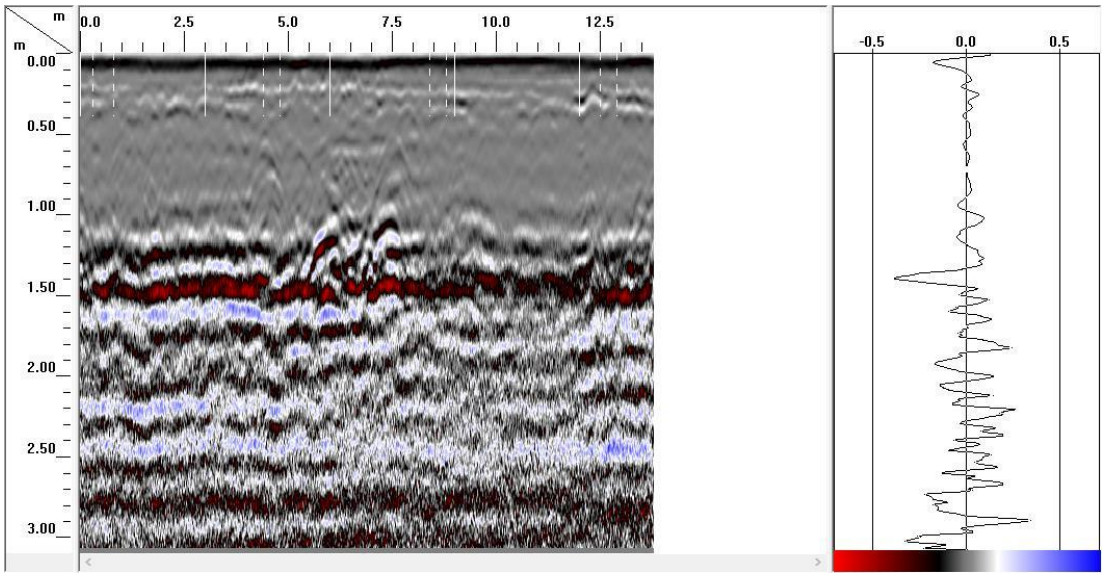


Remarks:

i. We found the foundation depth within 1.6m to 1.65m from GPR survey data. The approximate dimension was found approximately 1.65m X 1.35m

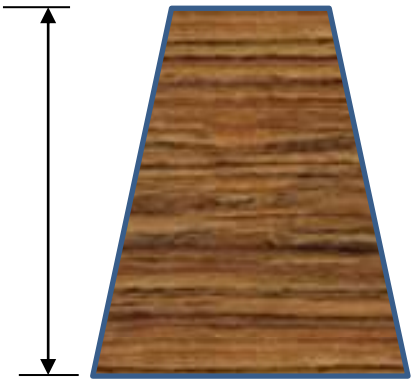
ii. No utility found at this location.

SHED 16



RAW DATA

Foundation depth found by survey approximately 1.45m to 1.5m

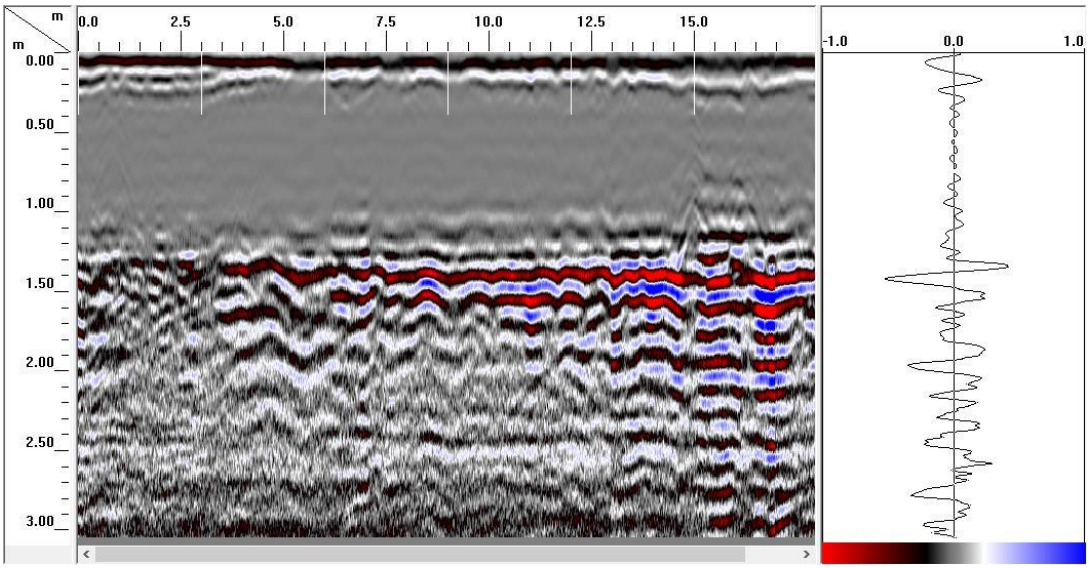


Remarks:

i. We found the foundation depth within 1.45m to 1.5m from GPR survey data. The approximate dimension was found approximately 1.5m X 1.2m

ii. No utility found at this location.

SHED 17



RAW DATA

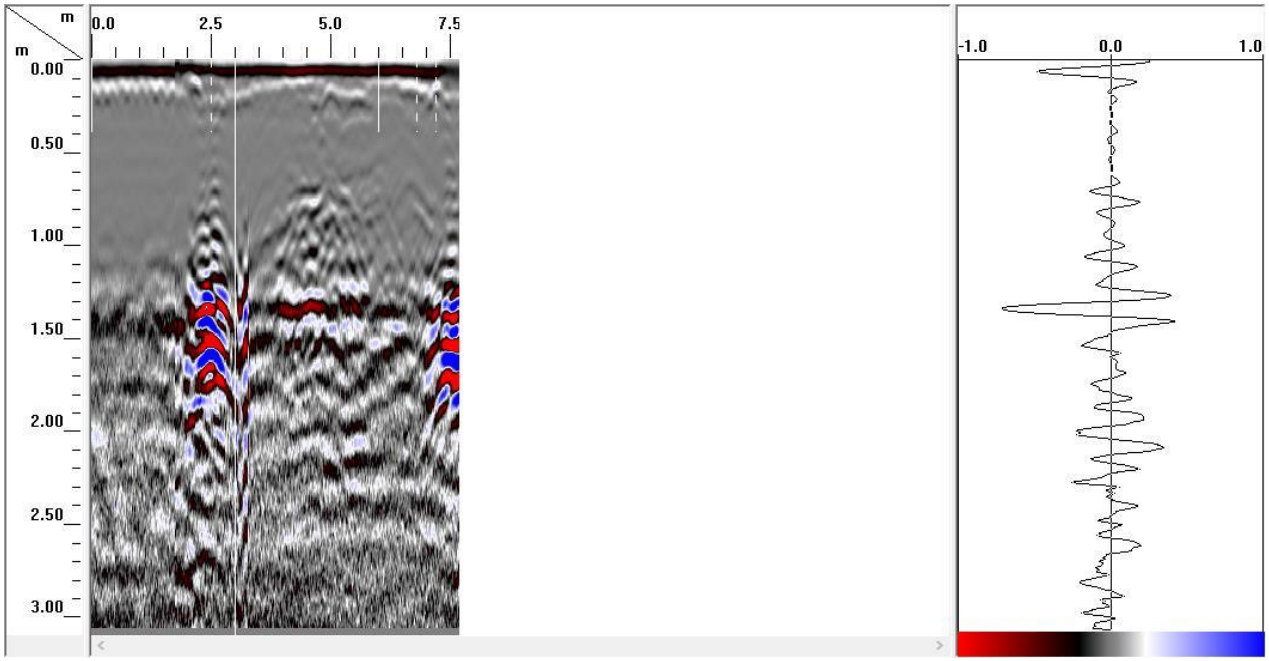
Foundation depth found by survey approximately 1.45m to 1.5m

Remarks:

i. We found the foundation depth within 1.45m to 1.5m from GPR survey data. The approximate dimension was found approximately 1.5m X 1.2m

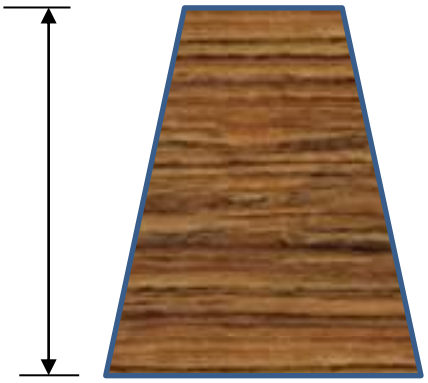
ii. No utility found at this location.

SHED 18



RAW DATA

Foundation depth found by survey approximately 1.5m to 1.55m

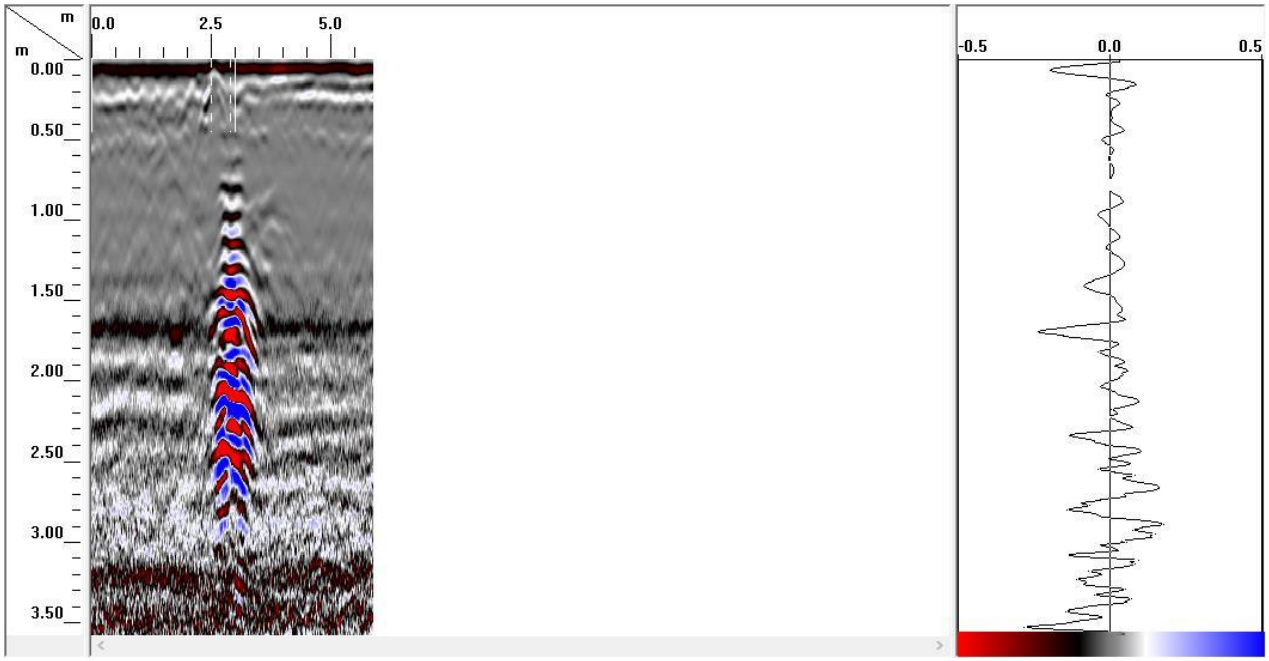


Remarks:

i. We found the foundation depth within 1.5m to 1.55m from GPR survey data. The approximate dimension was found approximately 1.55m X 1.25m

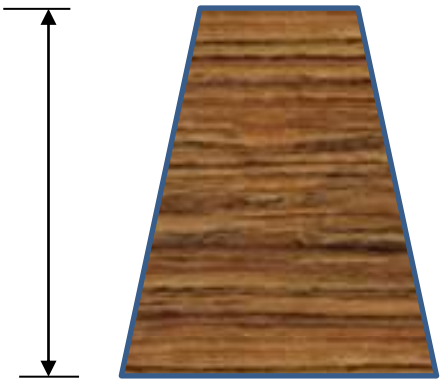
ii. Unidentified structure found below 1.2 m depth

SHED 20



RAW DATA

Foundation depth found by survey approximately 1.7m to 1.75m

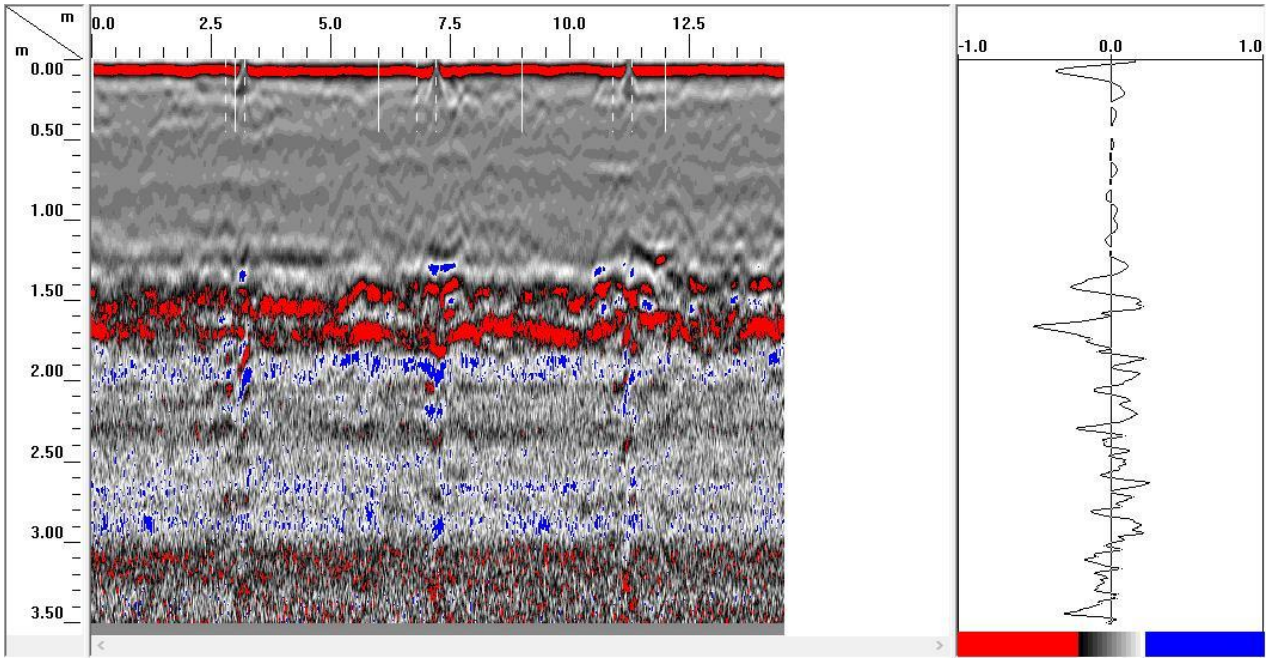


Remarks:

i. We found the foundation depth within 1.7m to 1.75m from GPR survey data. The approximate dimension was found approximately 1.75m X 1.45m

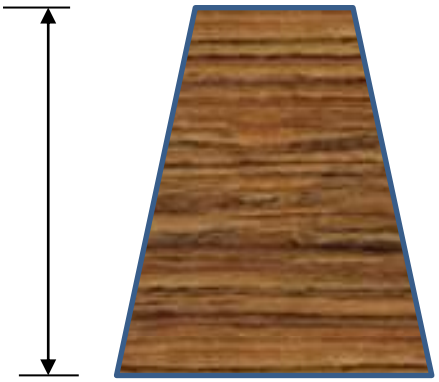
ii. Unidentified structure found at 3.75 distance from the starting point of survey with 1.5 m depth

SHED 21



RAW DATA

Foundation depth found by survey approximately 1.65m to 1.7m

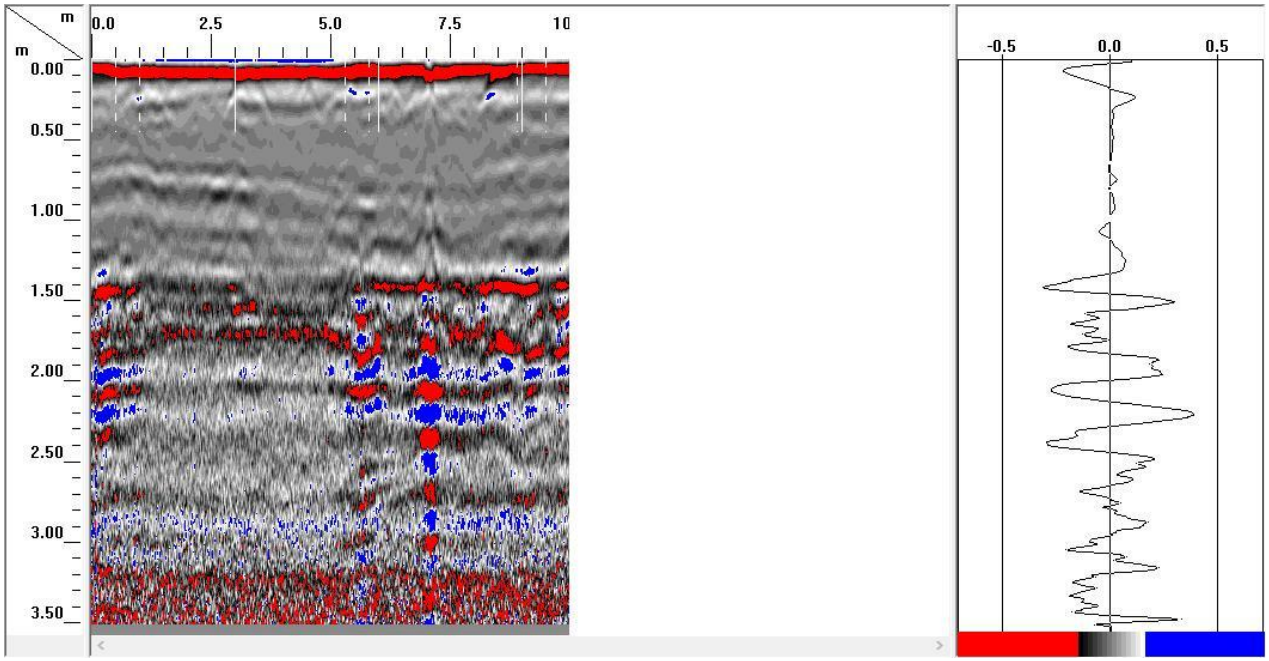


Remarks:

i. We found the foundation depth within 1.65m to 1.7m from GPR survey data. The approximate dimension was found approximately 1.7m X 1.4m

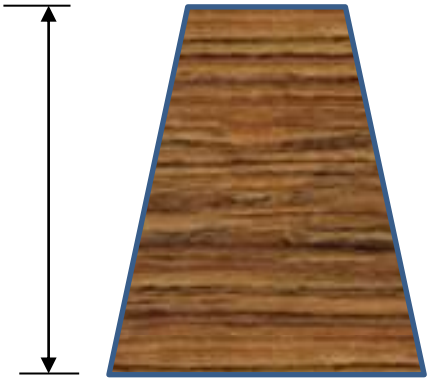
ii. No utility found at this location.

SHED 22



RAW DATA

Foundation depth found by survey approximately 1.45m to 1.5m

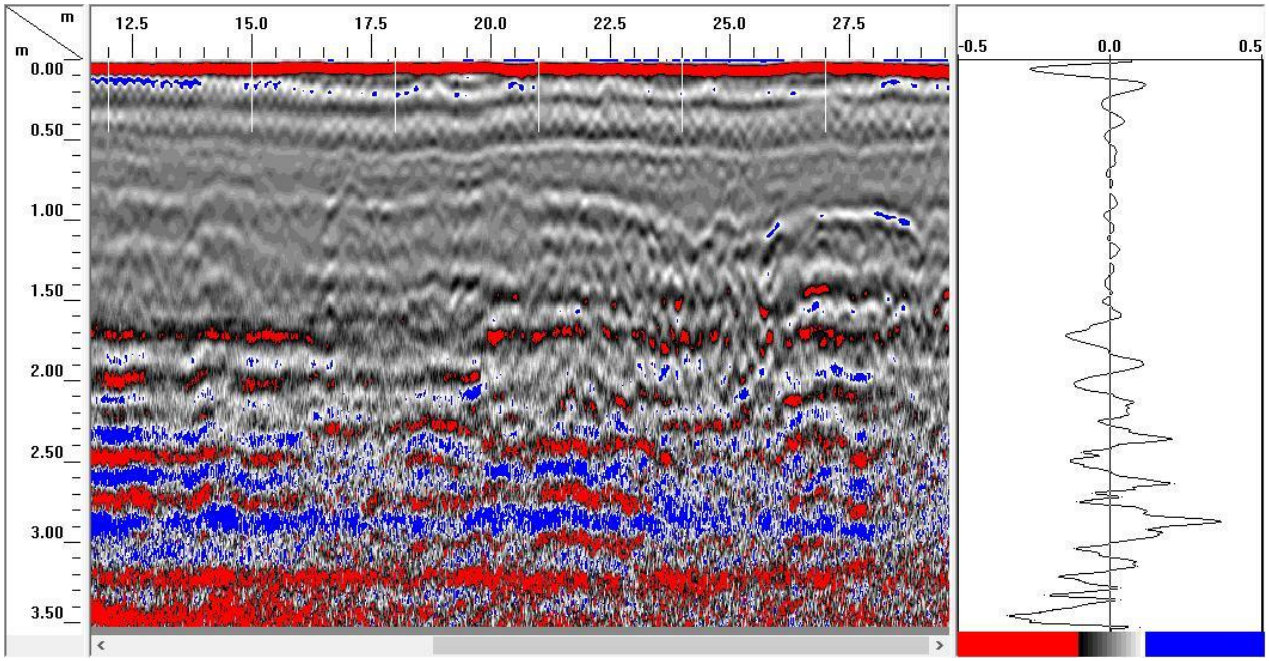


Remarks:

i. We found the foundation depth within 1.45m to 1.5m from GPR survey data. The approximate dimension was found approximately 1.5m X 1.2m

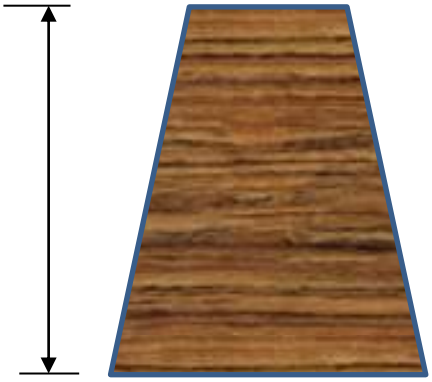
ii. No utility found at this location.

SHED 23



RAW DATA

Foundation depth found by survey approximately 1.7m to 1.75m

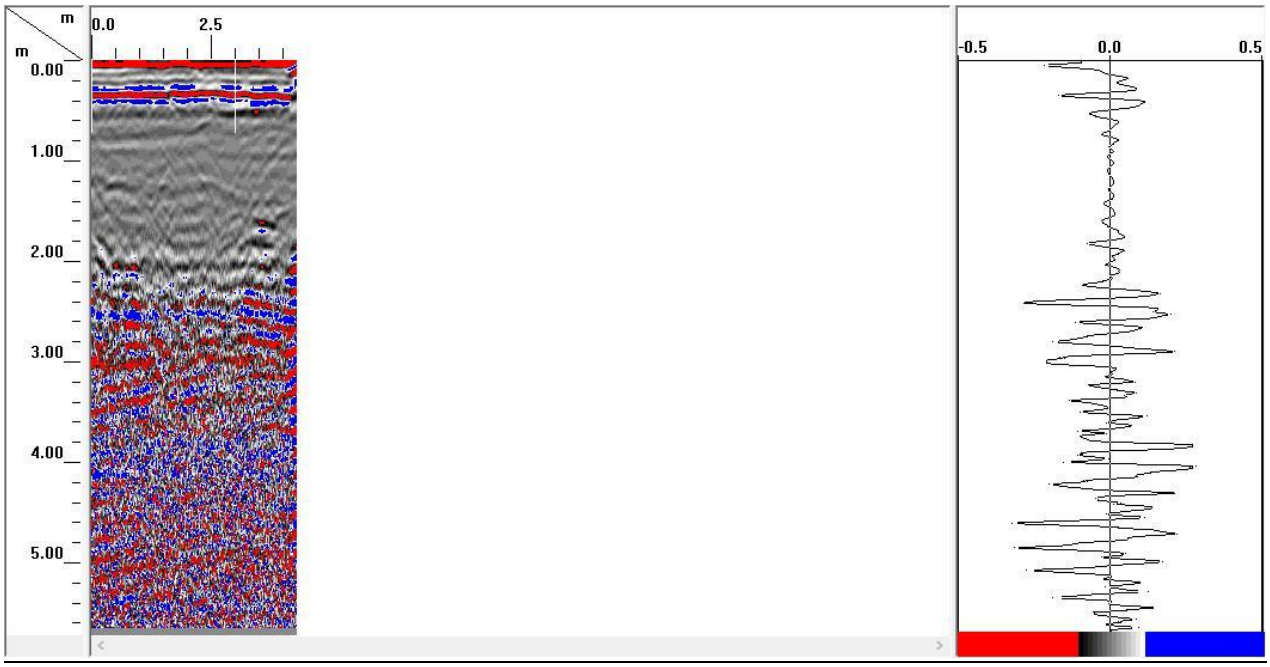


Remarks:

i. We found the foundation depth within 1.7m to 1.75m from GPR survey data. The approximate dimension was found approximately 1.75m X 1.45m

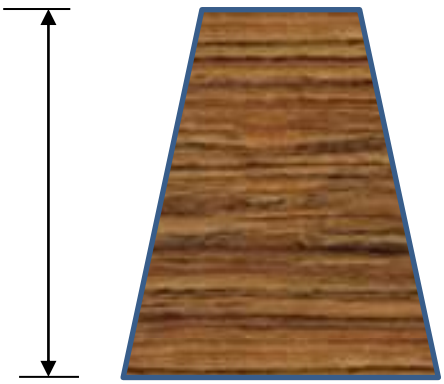
ii. No utility found at this location.

SLUDGE PIT:



RAW DATA

Foundation depth found by survey approximately 2.55m to 2.65m

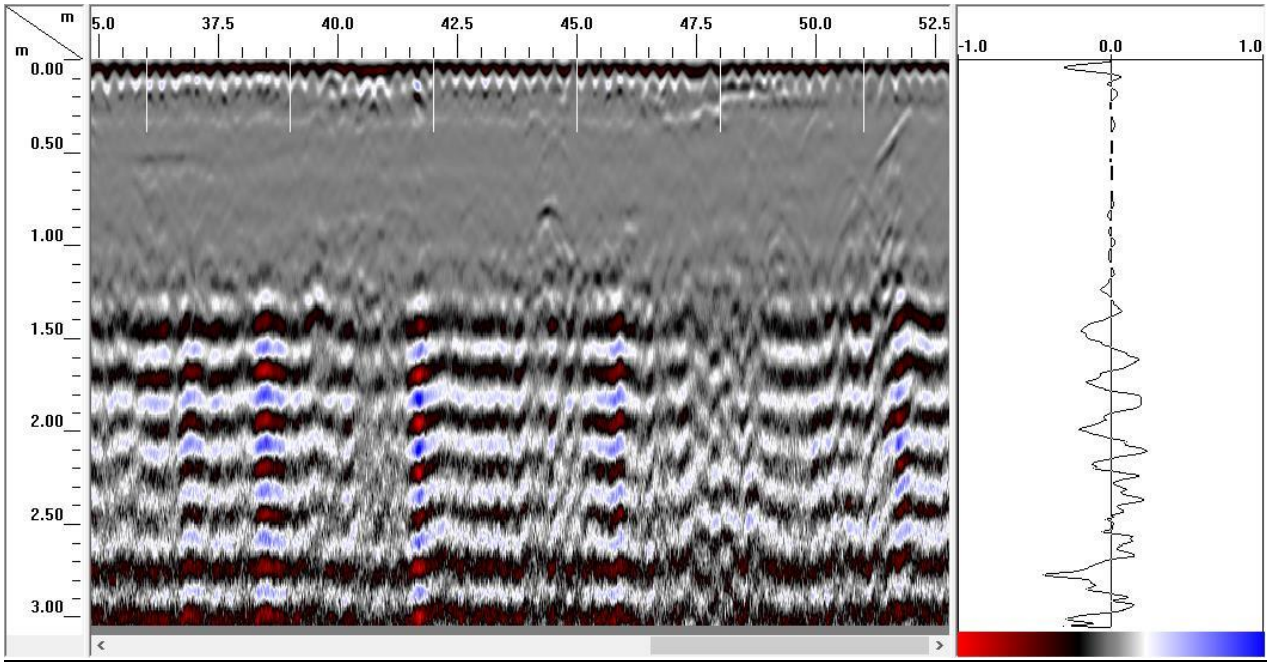


Remarks:

i. We found the foundation depth within 2.55m to 2.65m from GPR survey data. The approximate dimension was found approximately 2.65m X 2.35m

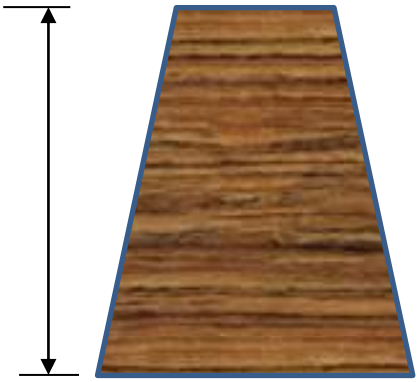
ii. No utility found at this location.

STAGE II- PT PLANT CLARIFIER 1:



RAW DATA

Foundation depth found by survey approximately 2.75m to 2.8m

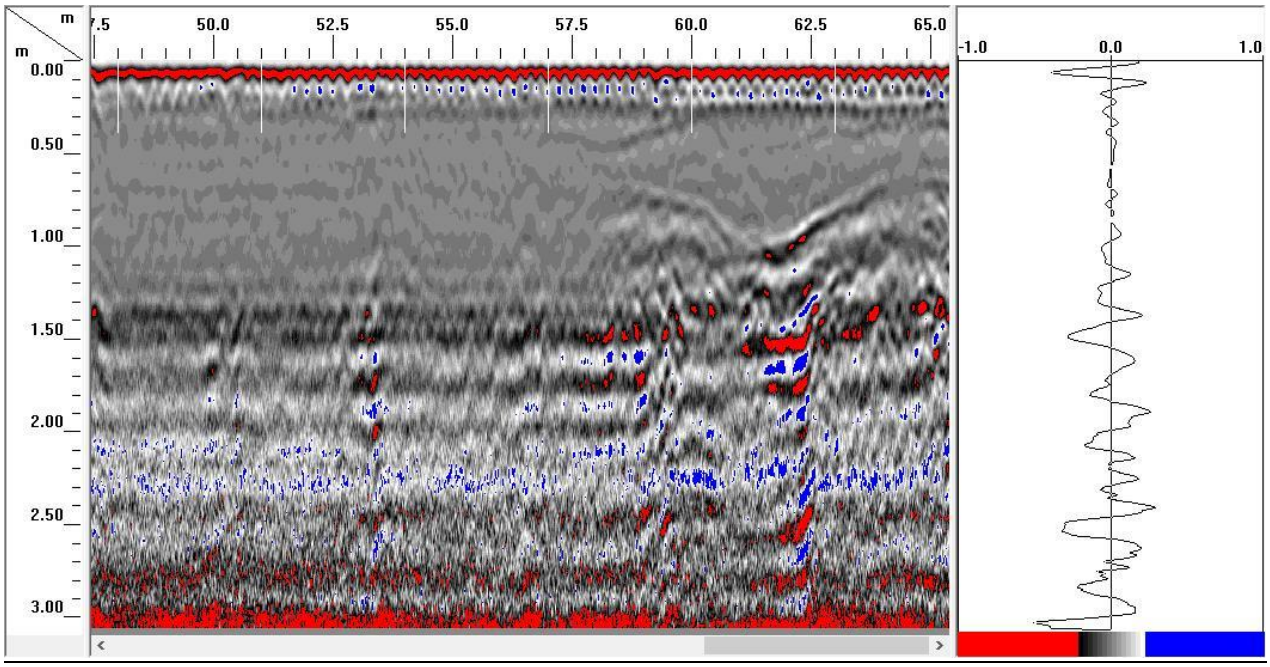


Remarks:

i. We found the foundation depth within 2.75m to 2.8m from GPR survey data. The approximate dimension was found approximately 2.8m X 2.4m

ii. No utility found at this location.

STAGE II- PT PLANT CLARIFIER 2:



RAW DATA

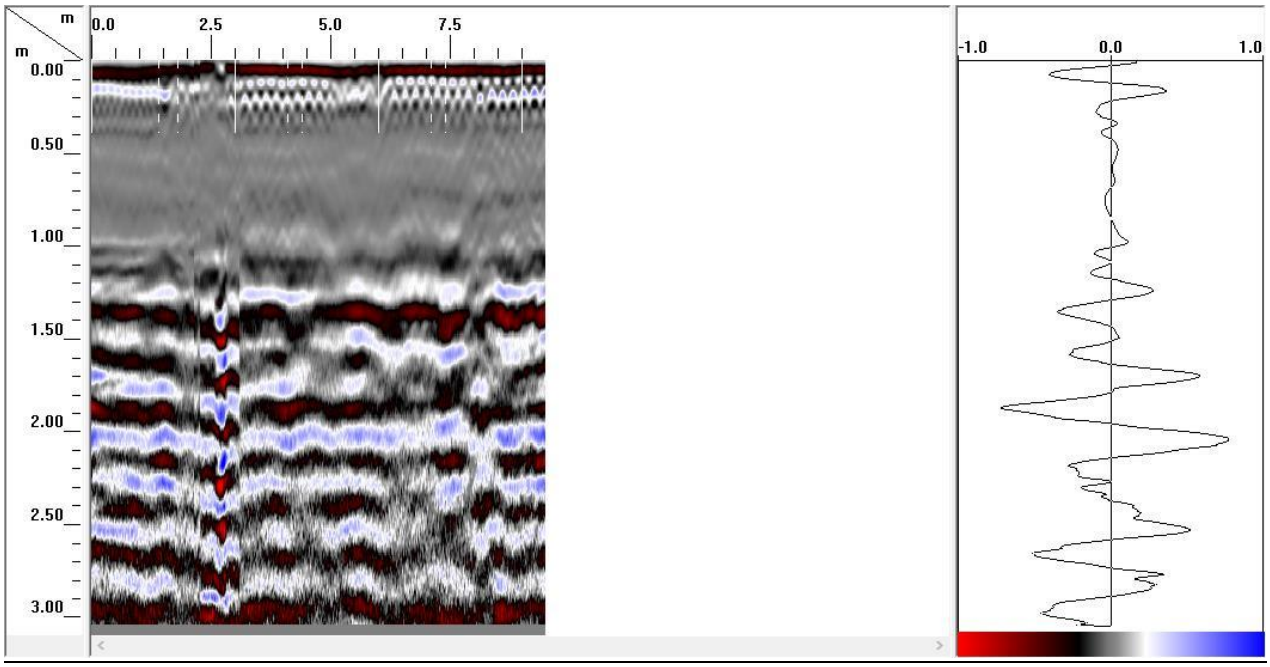
Foundation depth found by survey approximately 2.5m to 2.55m

Remarks:

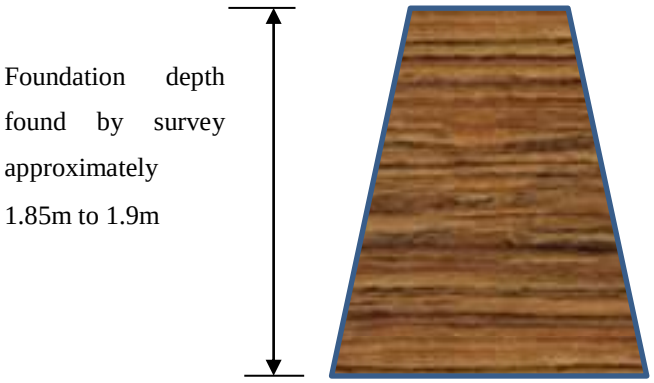
i. We found the foundation depth within 2.5m to 2.55m from GPR survey data. The approximate dimension was found approximately 2.5m X 2.2m

ii. No utility found at this location.

STAGE II- PT PLANT -SLUDGE SUMP & PUMP HOUSE :



RAW DATA

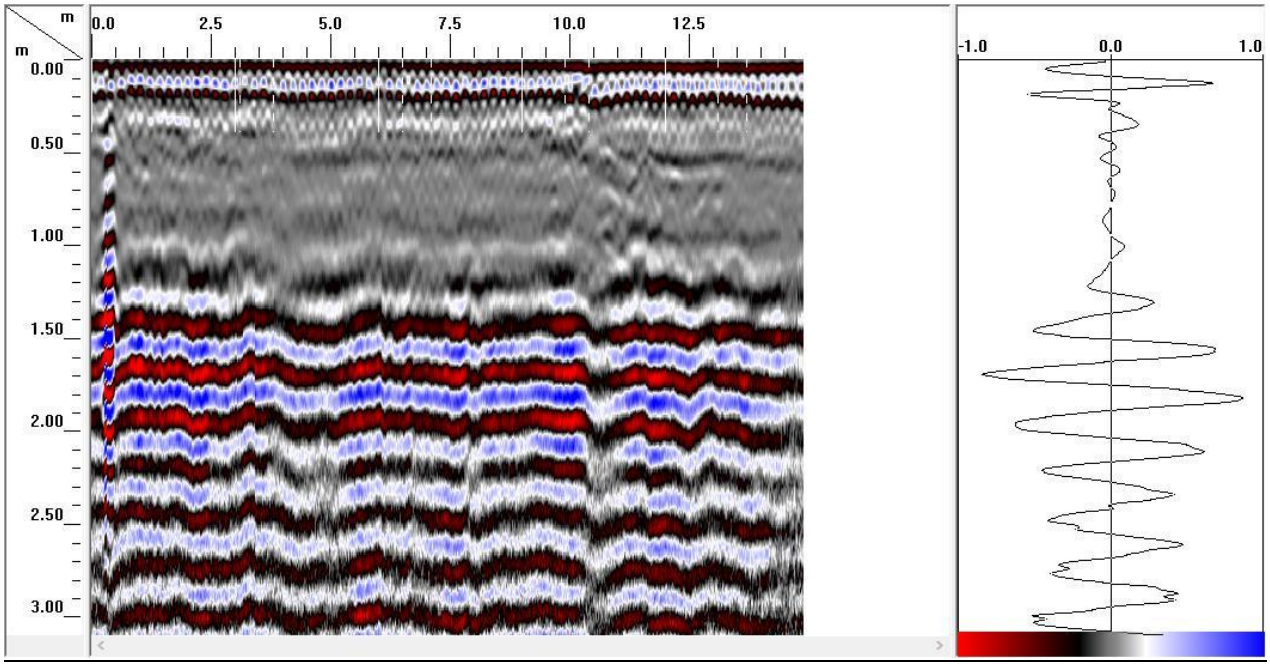


Remarks:

i. We found the foundation depth within 1.85m to 1.9m from GPR survey data. The approximate dimension was found approximately 1.9m X 1.3m

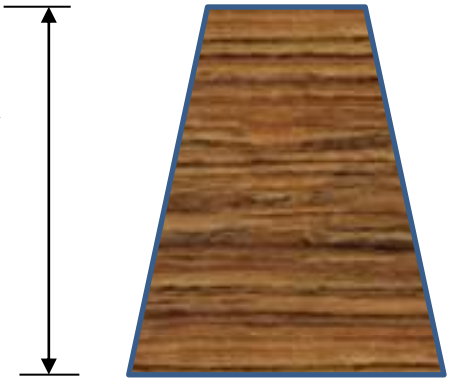
ii. No utility found at this location.

WASTE STORAGE SHED :



RAW DATA

Foundation depth found by survey approximately 1.65m to 1.7m

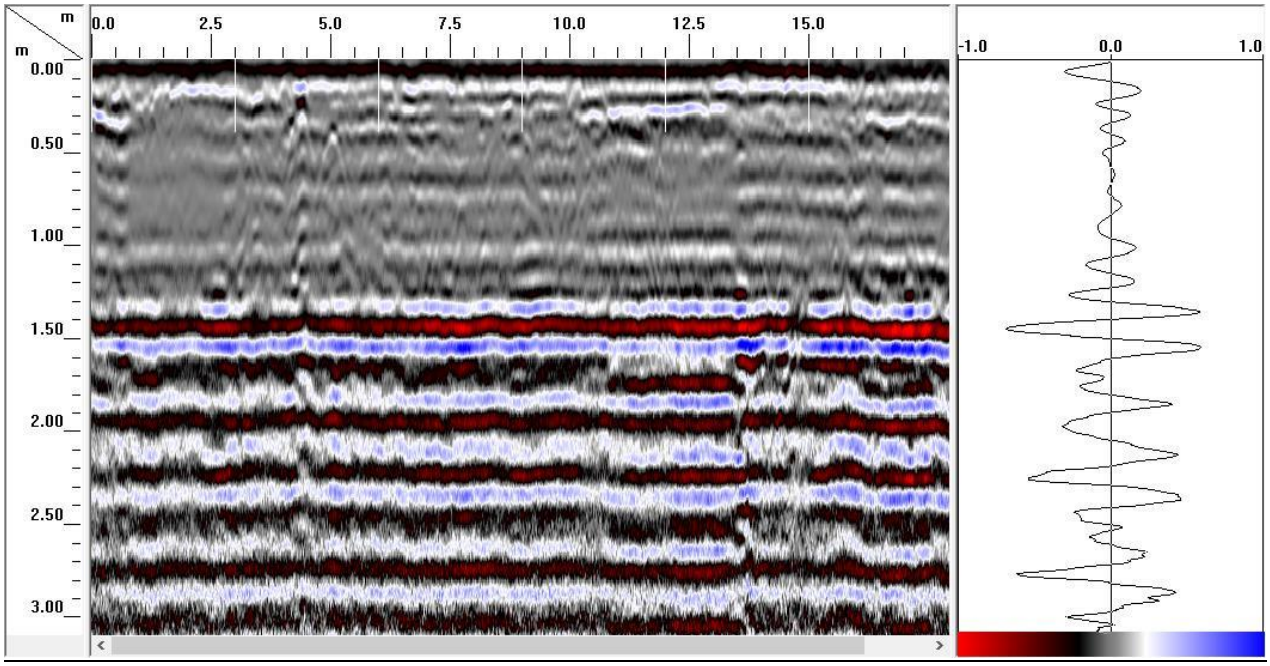


Remarks:

i. We found the foundation depth within 1.65m to 1.7m from GPR survey data. The approximate dimension was found approximately 1.7m X 1.3m

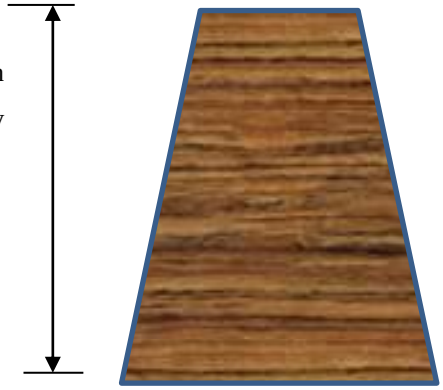
ii. No utility found at this location.

WASTE WATER SUMP & PUMP HOUSE :



RAW DATA

Foundation depth found by survey approximately 1.45m to 1.5m

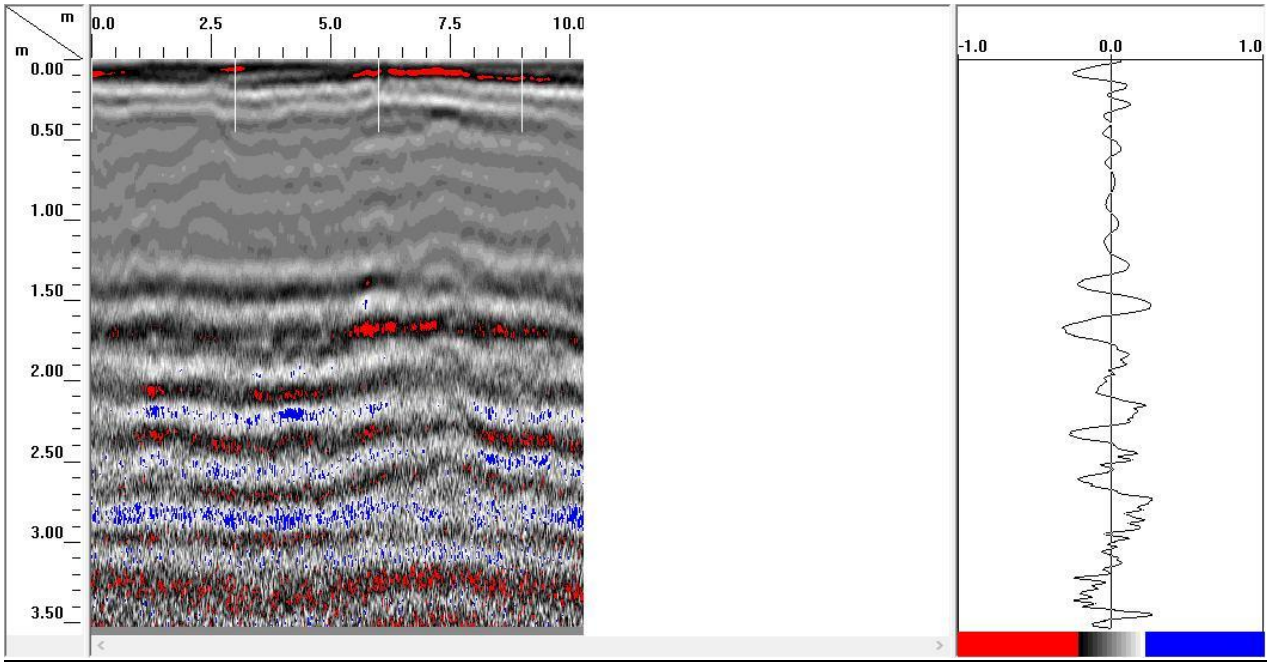


Remarks:

i. We found the foundation depth within 1.45m to 1.5m from GPR survey data. The approximate dimension was found approximately 1.5m X 1.2m

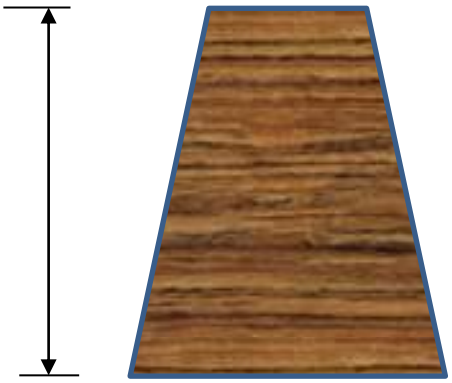
ii. No utility found at this location.

WEIGHT BRIDGE:



RAW DATA

Foundation depth found by survey approximately 1.65m to 1.7m

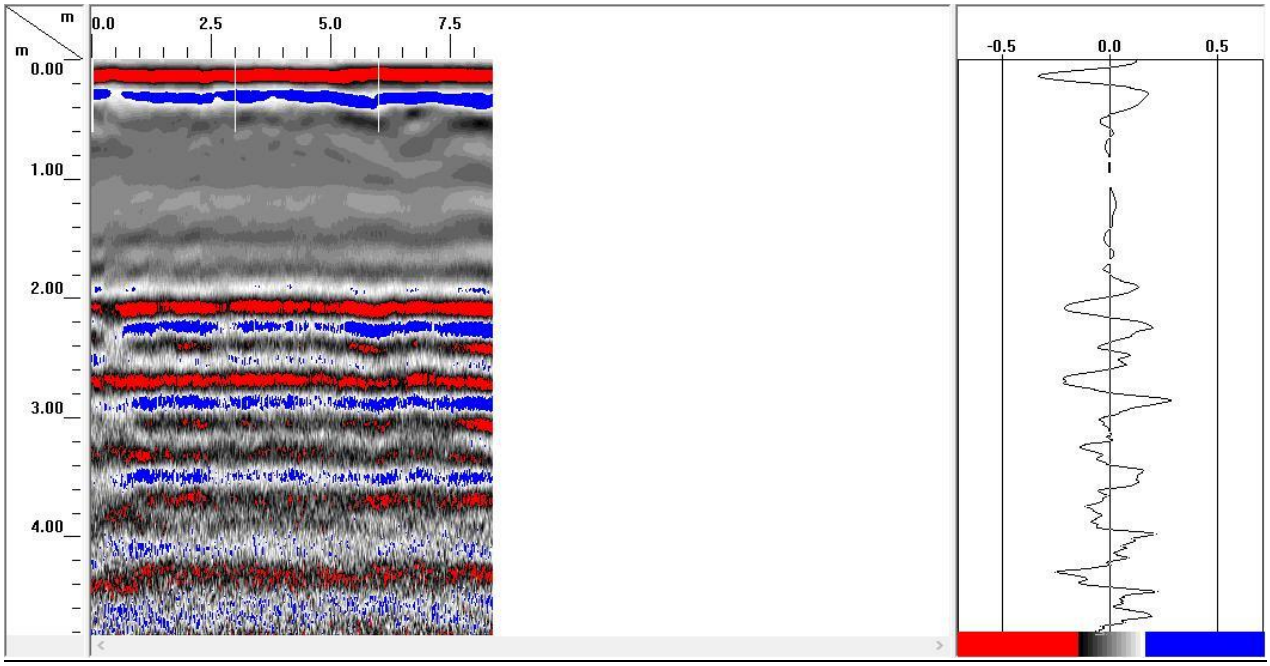


Remarks:

i. We found the foundation depth within 1.65m to 1.7m from GPR survey data. The approximate dimension was found approximately 1.7m X 1.3m

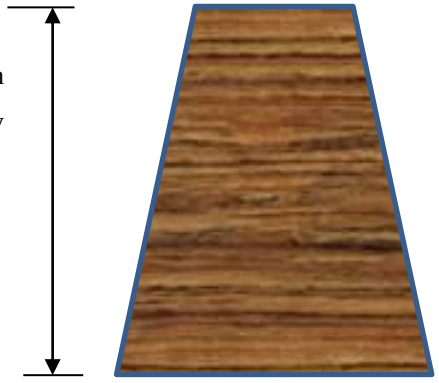
ii. No utility found at this location.

WATER TANK & PUMP HOUSE:



RAW DATA

Foundation depth found by survey approximately 2.75m to 2.8m



Remarks:

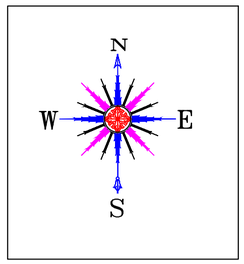
i. We found the foundation depth within 2.75m to 2.8m from GPR survey data. The approximate dimension was found approximately 2.8m X 2.2m.

ii. No utility found at this location.

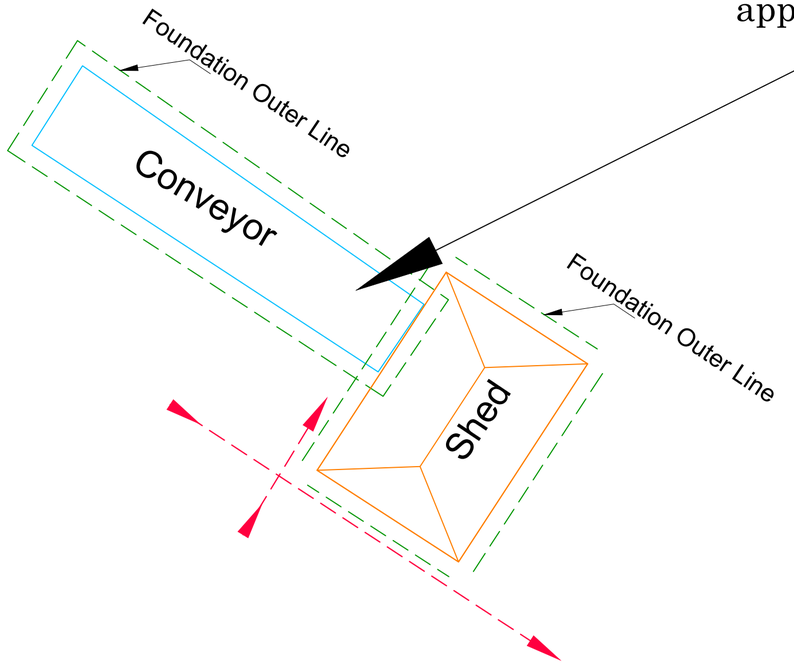
LOCATION WISE UTILITY LIST:

Location	Utility Type	Position
Carshed-1/Bike Stand	Metal Pipe Line	13.5 m from Survey Starting Point with approximate 0.86m depth.
	Power Line	25.6m distance with 0.75m depth.
Carshed-2	Metal Pipe	6.5 m from Survey Starting Point with approximate 1.01m depth.
Club Auditorium	Metal Pipe	0.4m distance from survey starting point with 0.84m depth.
Diesel Dispending Unit	Metal Pipe	8.7m distance from survey starting point with 0.38m depth
		10.725m distance from survey starting point with approximate 0.91m depth.
		16.525m distance from survey starting point with approximate 0.86m depth.
Old Finance Building	Water Line	2.25m distance from survey starting point with 0.47m depth.
RC Building	Non-Metal Pipe	16.075m distance from survey starting point with approximate 1.13m depth.
Carshed-2	Power Cable	8.250m distance from survey starting location with 1.42m depth.
Shed-9	Non Metal Pipe	Approximate 11.225m distance with approx 1.33m depth.
Shed-18	Unidentified Structure	Approximate 1.2m depth
Shed-20	Unidentified Structure	Approximate 3.75m distance with approximate 1.5m depth.

TP 4



Foundation depth found by survey approximately 1.55m to 1.65m & dimension was found approximately 1.75m X 1.65m.



N0TE: ALL DIMENSIONS ARE IN METER.

LEGEND

SL NO.	DESCRIPTION	SYMBOL
1.	GPR SRUVEY LINE	
2.	CONVEYOR	
3.	ROOM	
4.	BOUNDARY WALL	
5.	SHED	
6.	FOUNDATION OUTER LINE	

CLIENT.– NTPC TALCHER

PROJECT.– GPR SURVEY DWG AT TALCHER

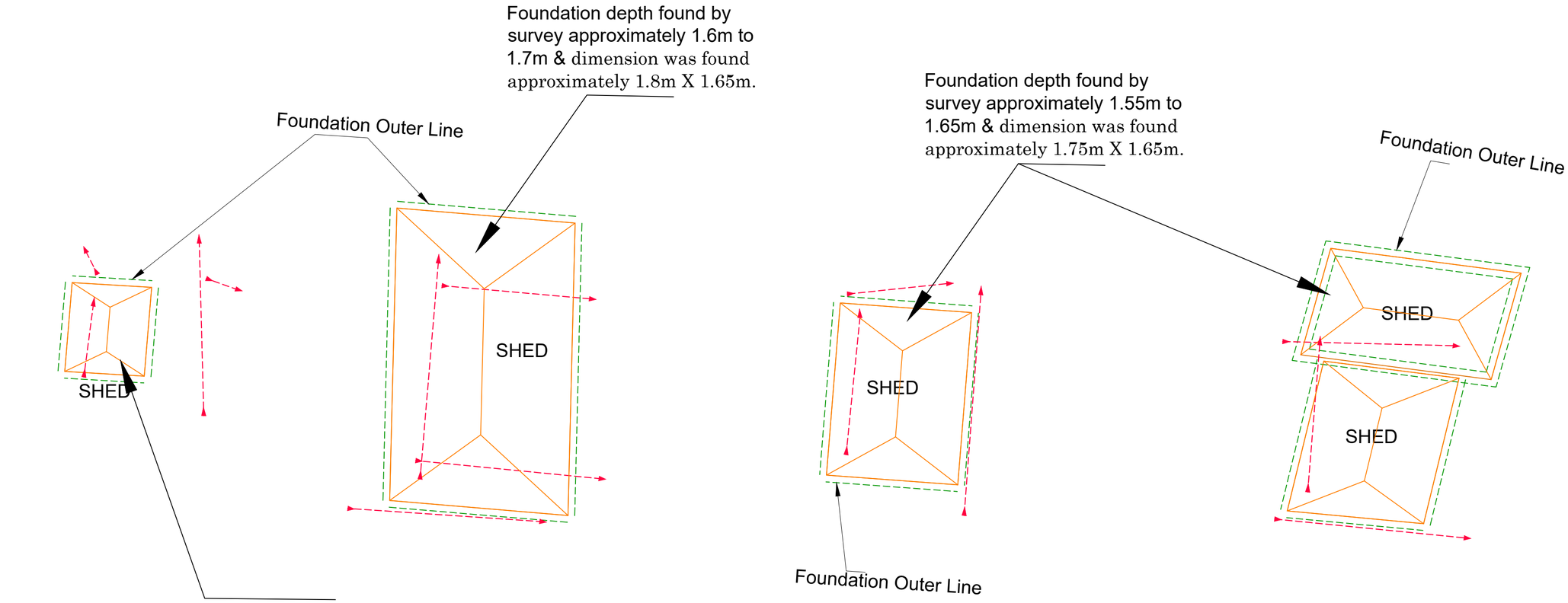
SURVEYED BY.– **AIMIL LTD**
SHRACHI TOWER, 6TH FLOOR
C & D BLOCKI, 686 ANANDAPUR,
KOLKATA – 700 107.

Rev: 0

DRAWING NO.: AMIL/KOL/NTPC/TALCHER

SHEET NO–1 OF 1

MINE AREA SHED



N0TE: ALL DIMENSIONS ARE IN METER.

LEGEND

SL NO.	DESCRIPTION	SYMBOL
1.	GPR SRUVEY LINE	
2.	CONVEYOR	
3.	ROOM	
4.	BOUNDARY WALL	
5.	SHED	
6.	FOUNDATION OUTER LINE	

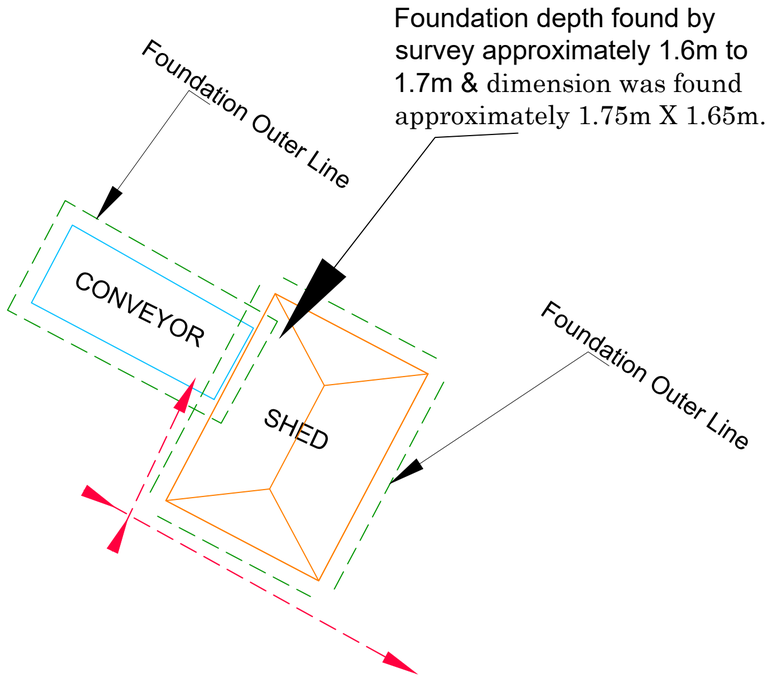
CLIENT.– NTPC TALCHER

PROJECT.– GPR SURVEY DWG AT TALCHER

SURVEYED BY.– **AIMIL LTD**
SHRACHI TOWER, 6TH FLOOR
C & D BLOCK I, 686 ANANDAPUR,
KOLKATA – 700 107.

Rev: 0 | DRAWING NO.: AMIL/KOL/NTPC/TALCHER | SHEET NO–1 OF 1

TP 7



N0TE: ALL DIMENSIONS ARE IN METER.

LEGEND

SL NO.	DESCRIPTION	SYMBOL
1.	GPR SRUVEY LINE	
2.	CONVEYOR	
3.	ROOM	
4.	BOUNDARY WALL	
5.	SHED	
6.	FOUNDATION OUTER LINE	

CLIENT.– NTPC TALCHER

PROJECT.– GPR SURVEY DWG AT TALCHER

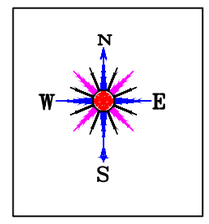
SURVEYED BY.– **AIMIL LTD**
SHRACHI TOWER, 6TH FLOOR
C & D BLOCKI, 686 ANANDAPUR,
KOLKATA – 700 107.

Rev: 0

DRAWING NO.: AMIL/KOL/NTPC/TALCHER

SHEET NO–1 OF 1

TANK & CONVEYOR AREA



Foundation Outer Line

Foundation depth found by survey approximately 2.55m to 2.65 m. & dimension was found approximately 2.65m X 2.35m.

Sludge Pit

Tank

Foundation depth found by survey approximately 2.8m to 2.9 m.

Building

To□er

Tank

Building

Foundation depth found by survey approximately 2.0m to 2.1 m. & dimension was found approximately 2.2m X 1.8m.

Foundation Outer Line

Shed

Conveyor

Foundation depth found by survey approximately 1.84m to 1.9 m. & dimension was found approximately 1.9m X 1.3m.

Foundation Outer Line

NOTE: ALL DIMENSIONS ARE IN METER.

LEGEND

SL NO.	DESCRIPTION	SYMBOL
1.	GPR SRUVEY LINE	
2.	BUILDING	
3.	ROOM	
4.	BOUNDARY WALL	
5.	SHED	
6.	COLUMN	
7.	FOUNDATION OUTER LINE	

CLIENT.– NTPC TALCHER

PROJECT.– GPR SURVEY DWG AT TALCHER

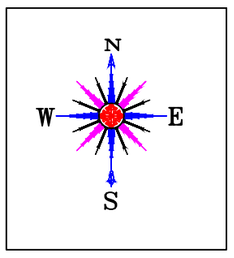
SURVEYED BY.– **AIMIL LTD**
SHRACHI TOWER, 6TH FLOOR
C & D BLOCK, 686 ANANDAPUR,
KOLKATA – 700 107.

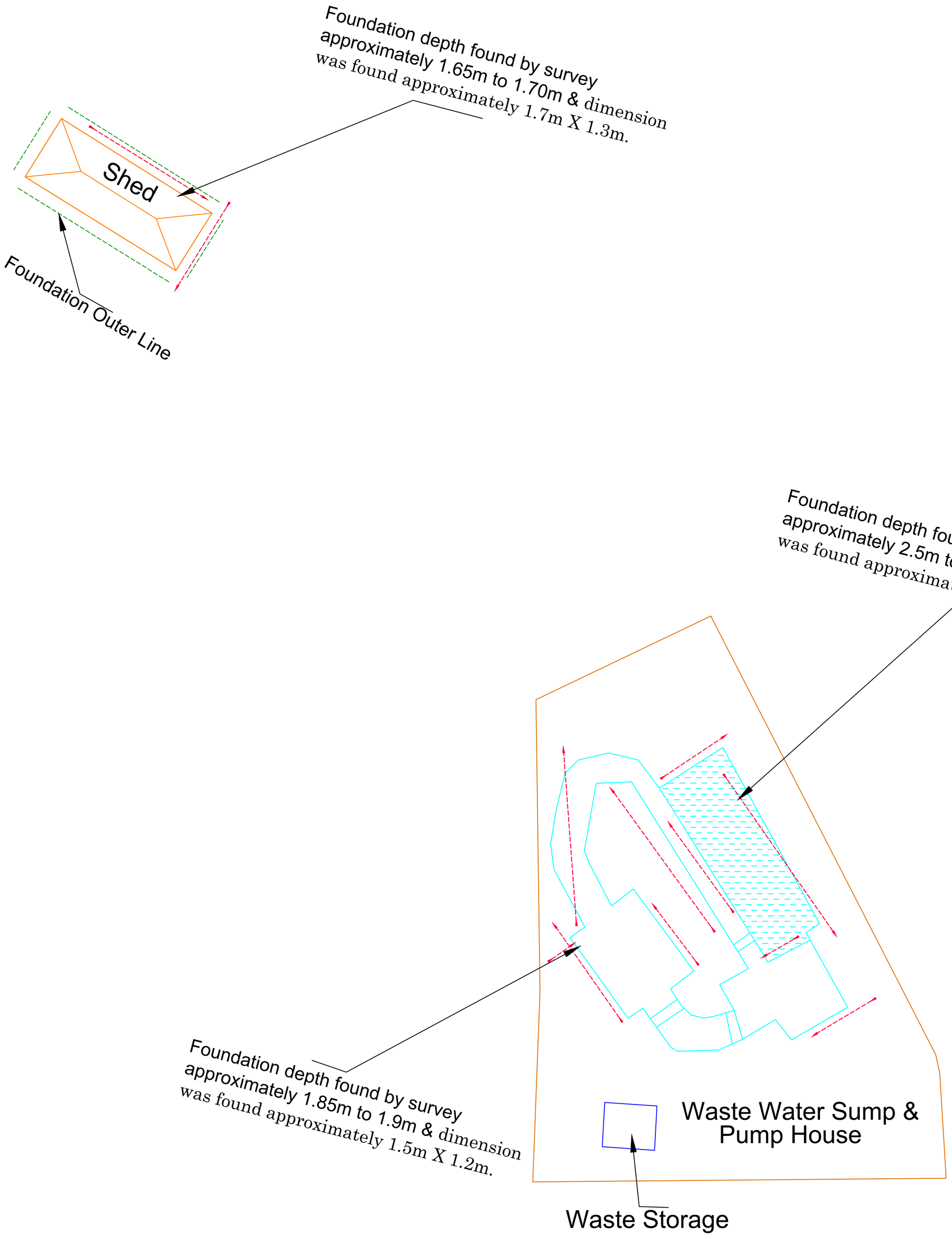
Rev: 0

DRAWING NO.: AMIL/KOL/NTPC/TALCHER

SHEET NO–1 OF 1

WASTE WATER SUMP & PUMP HOIUSE





N0TE: ALL DIMENSIONS ARE IN METER.

LEGEND

SL NO.	DESCRIPTION	SYMBOL
1.	GPR SRUVEY LINE	
2.	CONVEYOR	
3.	ROOM	
4.	BOUNDARY WALL	
5.	SHED	
6.	FOUNDATION OUTER LINE	

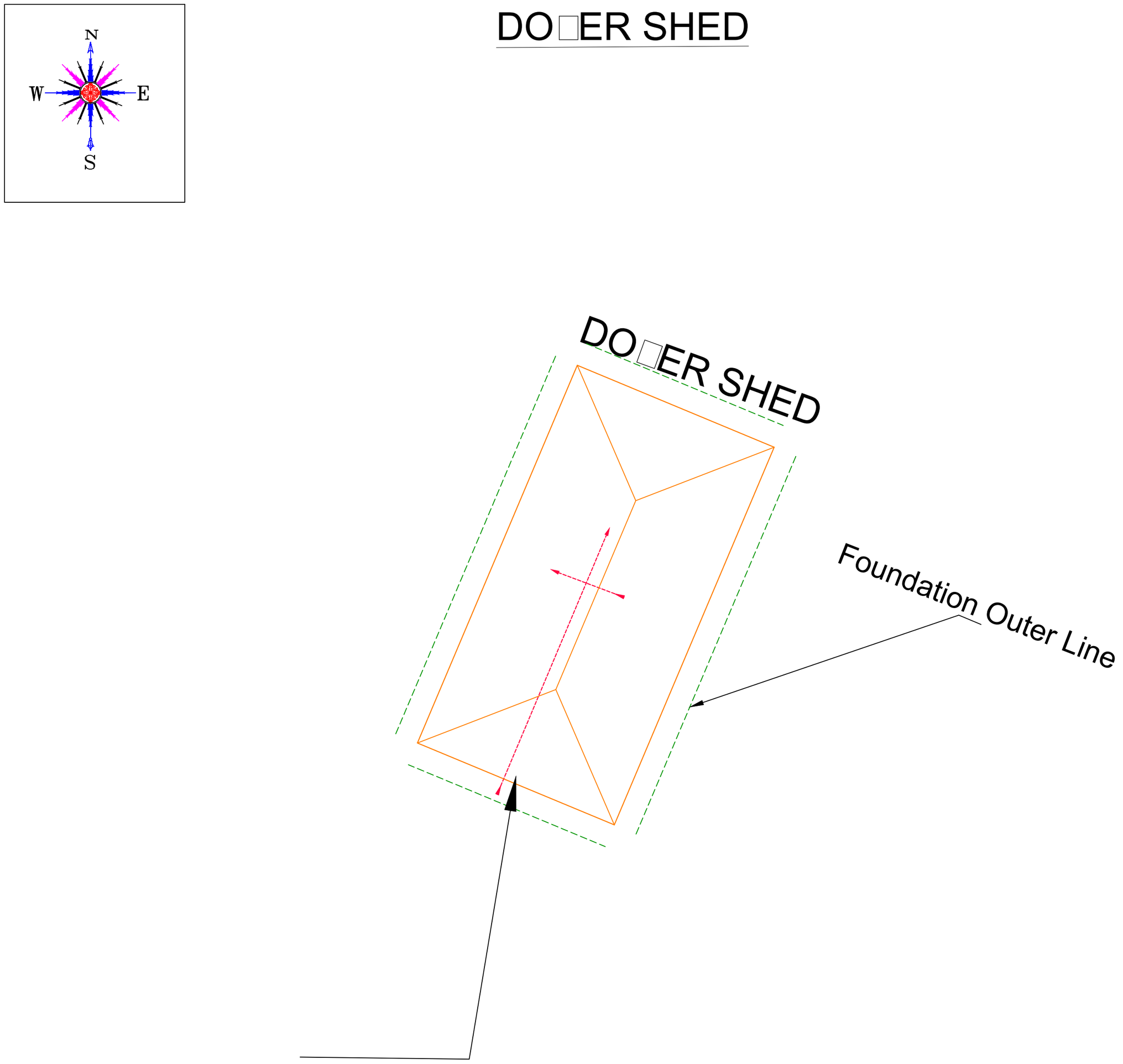
CLIENT.– NTPC TALCHER

PROJECT.– GPR SURVEY DWG AT TALCHER

SURVEYED BY.– **AIMIL LTD**
SHRACHI TOWER, 6TH FLOOR
C & D BLOCKI, 686 ANANDAPUR,
KOLKATA – 700 107.

Rev: 0 | DRAWING NO.: AMIL/KOL/NTPC/TALCHER | SHEET NO–1 OF 1

DO□ER SHED



N0TE: ALL DIMENSIONS ARE IN METER.

LEGEND

SL NO.	DESCRIPTION	SYMBOL
1.	GPR SRUVEY LINE	
2.	BUILDING	
3.	ROOM	
4.	BOUNDARY WALL	
5.	SHED	
6.	COLUMN	
7.	FOUNDATION OUTER LINE	

CLIENT.– NTPC TALCHER

PROJECT.– GPR SURVEY DWG AT TALCHER

SURVEYED BY.– **AIMIL LTD**
SHRACHI TOWER, 6TH FLOOR
C & D BLOCK I, 686 ANANDAPUR,
KOLKATA – 700 107.

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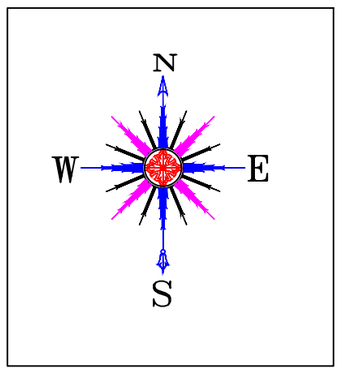
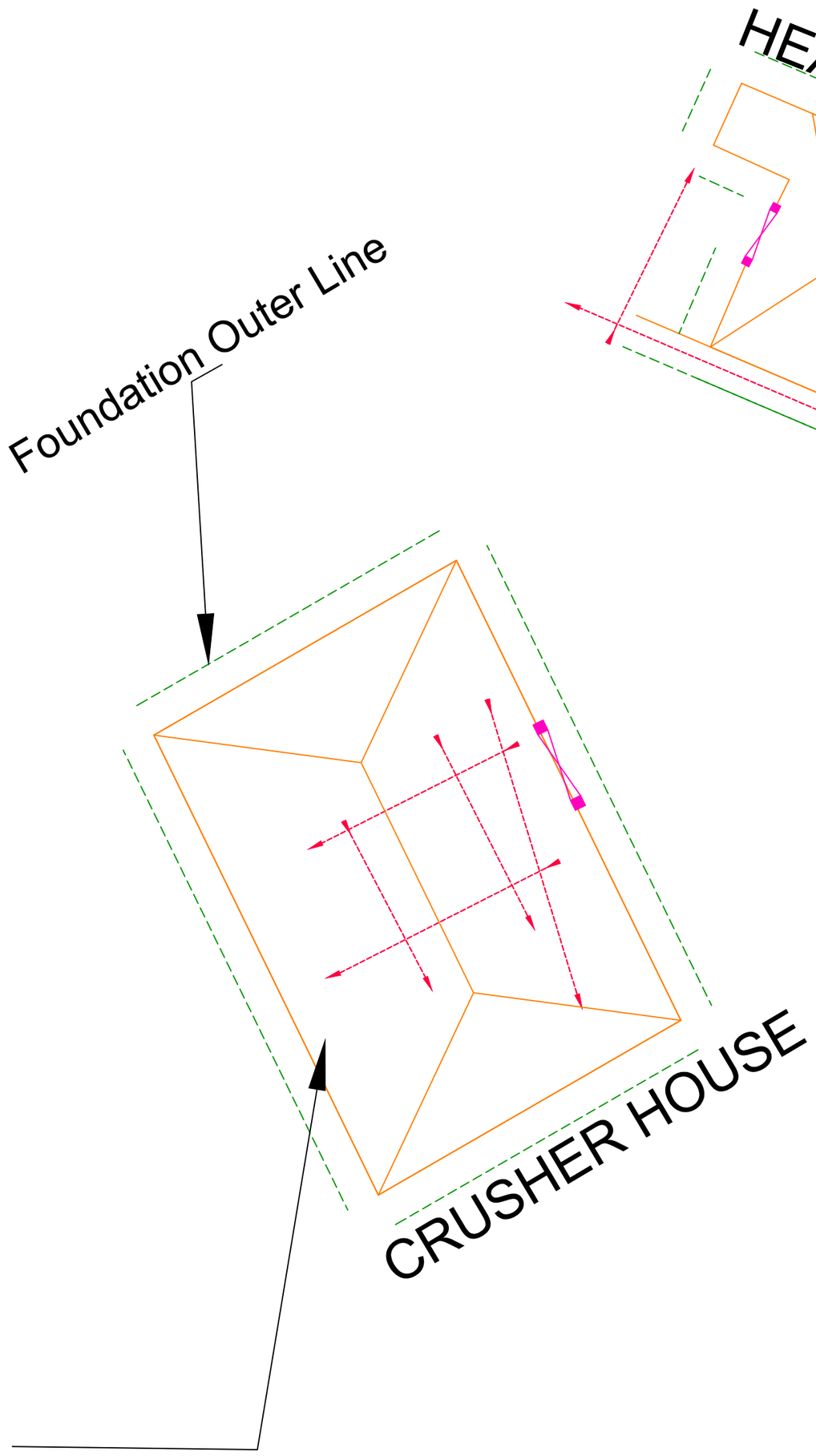
HEAVY MACHINARY & CRUSHER HOUSE





N0TE: ALL DIMENSIONS ARE IN METER.

LEGEND

SL NO.	DESCRIPTION	SYMBOL
1.	GPR SRUVEY LINE	
2.	BUILDING	
3.	ROOM	
4.	BOUNDARY WALL	
5.	SHED	
6.	COLUMN	
7.	FOUNDATION OUTER LINE	

CLIENT.– NTPC TALCHER

PROJECT.– GPR SURVEY DWG AT TALCHER

SURVEYED BY.– **AIMIL LTD**
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C & D BLOCKI, 686 ANANDAPUR,
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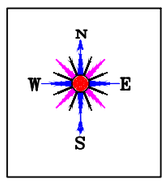
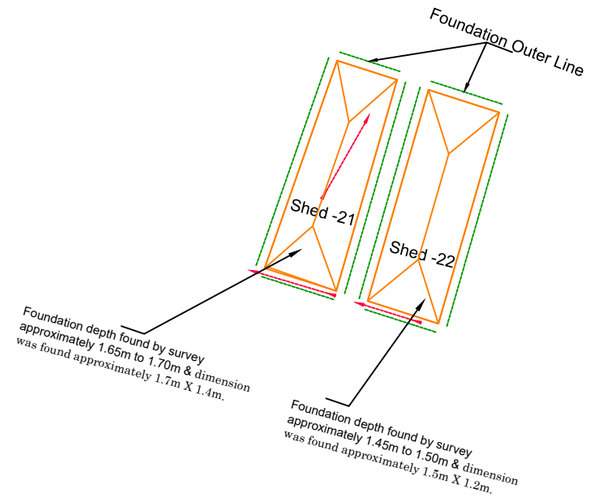
DRAWING NO.: AMIL/KOL/NTPC/TALCHER

SHEET NO–1 OF 1

ADMISTRATION BUILDING & SHED AREA





NOTE: ALL DIMENSIONS ARE IN METER.

LEGEND

SL NO	DESCRIPTION	SYMBOL
1.	GPR SRUVEY LINE	
2.	BUILDING	
3.	ROOM	
4.	BOUNDARY WALL	
5.	SHED	
6.	COLUMN	
7.	FOUNDATION OUTER LINE	

CLIENT.– NTPC TALCHER

PROJECT.– GPR SURVEY DWG AT TALCHER

SURVEYED BY.– **AIMIL LTD**
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Rev: 0

DRAWING NO.: AMIL/KOL/NTPC/TALCHER

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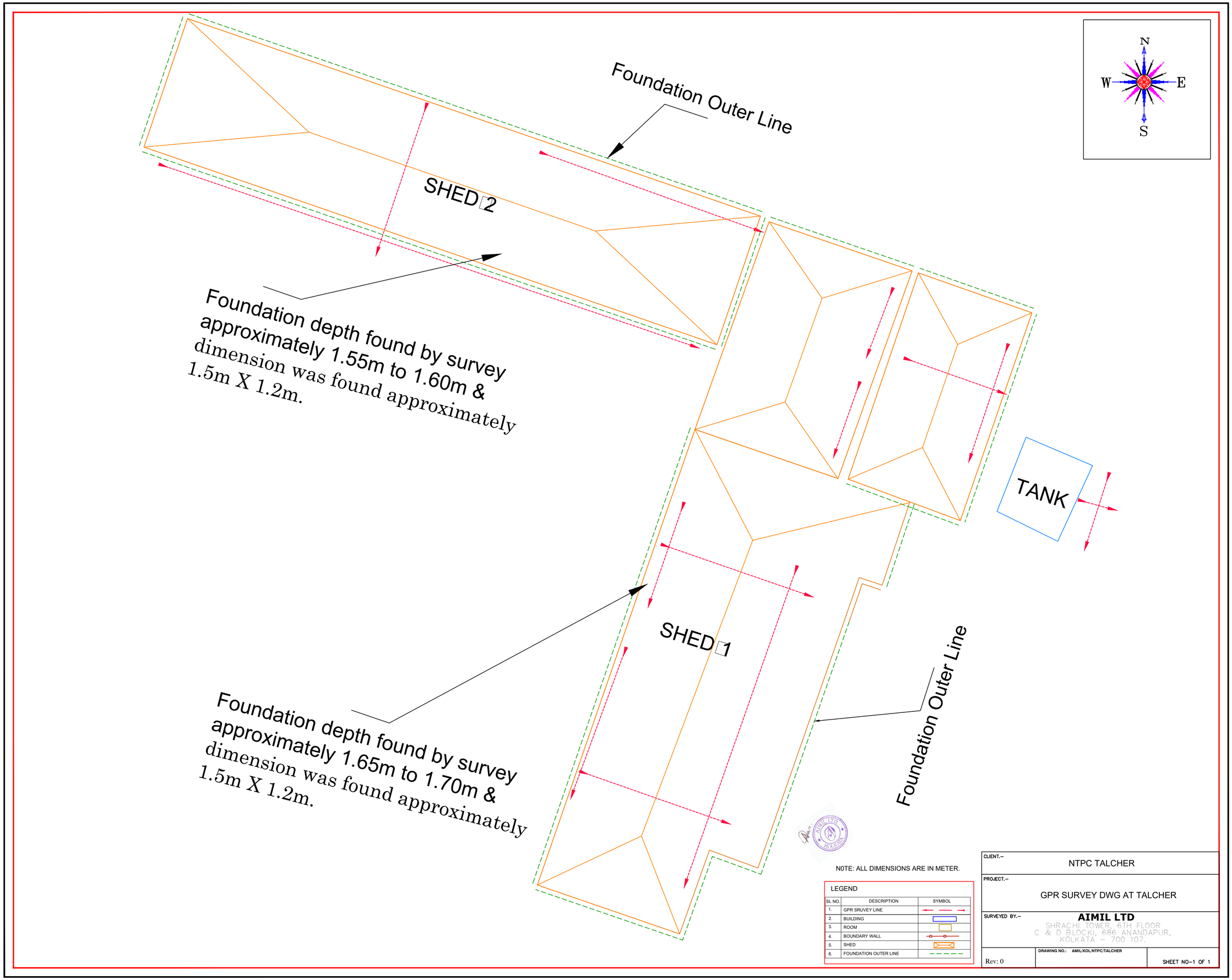


NOTE: ALL DIMENSIONS ARE IN METER.

LEGEND

SL NO.	DESCRIPTION	SYMBOL
1.	GPR SRUVEY LINE	
2.	BUILDING	
3.	ROOM	
4.	BOUNDARY WALL	
5.	SHED	
6.	FOUNDATION OUTER LINE	

CLIENT.– NTPC TALCHER

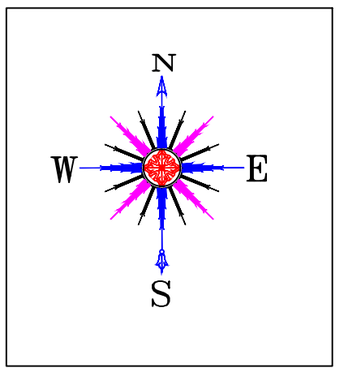
PROJECT.– GPR SURVEY DWG AT TALCHER

SURVEYED BY.– **AIMIL LTD**
SHRACHI TOWER, 6TH FLOOR
C & D BLOCK, 686 ANANDAPUR,
KOLKATA – 700 107.

Rev: 0

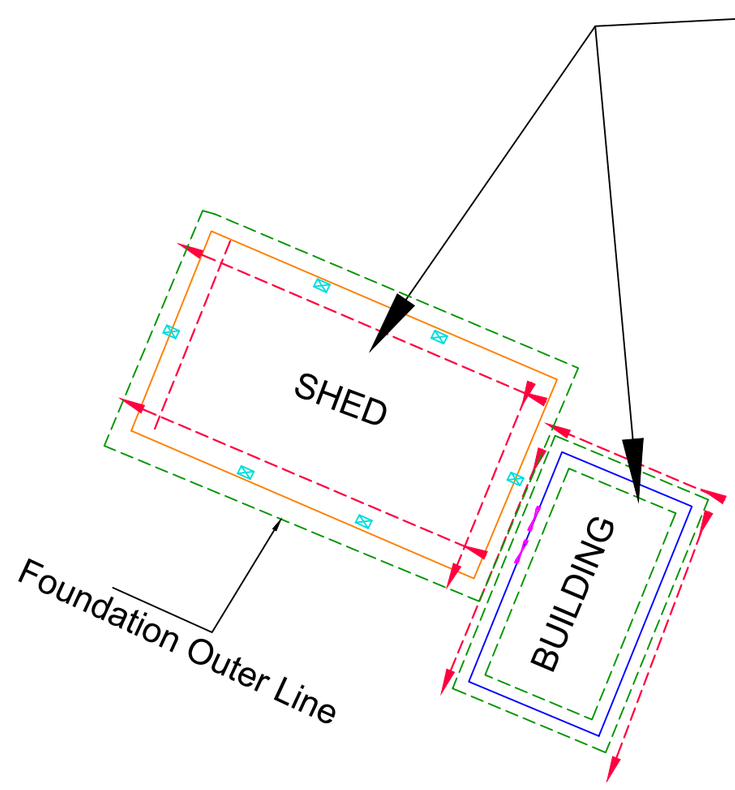
DRAWING NO.: AMIL/KOL/NTPC/TALCHER

SHEET NO–1 OF 1



KALYANI AREA

Foundation depth found by survey approximately 2.35m to 2.4m & dimension was found approximately 2.4m X 1.5m.



NOTE: ALL DIMENSIONS ARE IN METER.

LEGEND

SL NO.	DESCRIPTION	SYMBOL
1.	GPR SRUVEY LINE	
2.	BUILDING	
3.	ROOM	
4.	BOUNDARY WALL	
5.	SHED	
6.	COLUMN	
7.	FOUNDATION OUTER LINE	

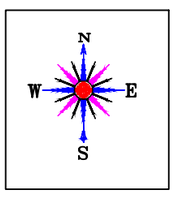
CLIENT.– NTPC TALCHER

PROJECT.– GPR SURVEY DWG AT TALCHER

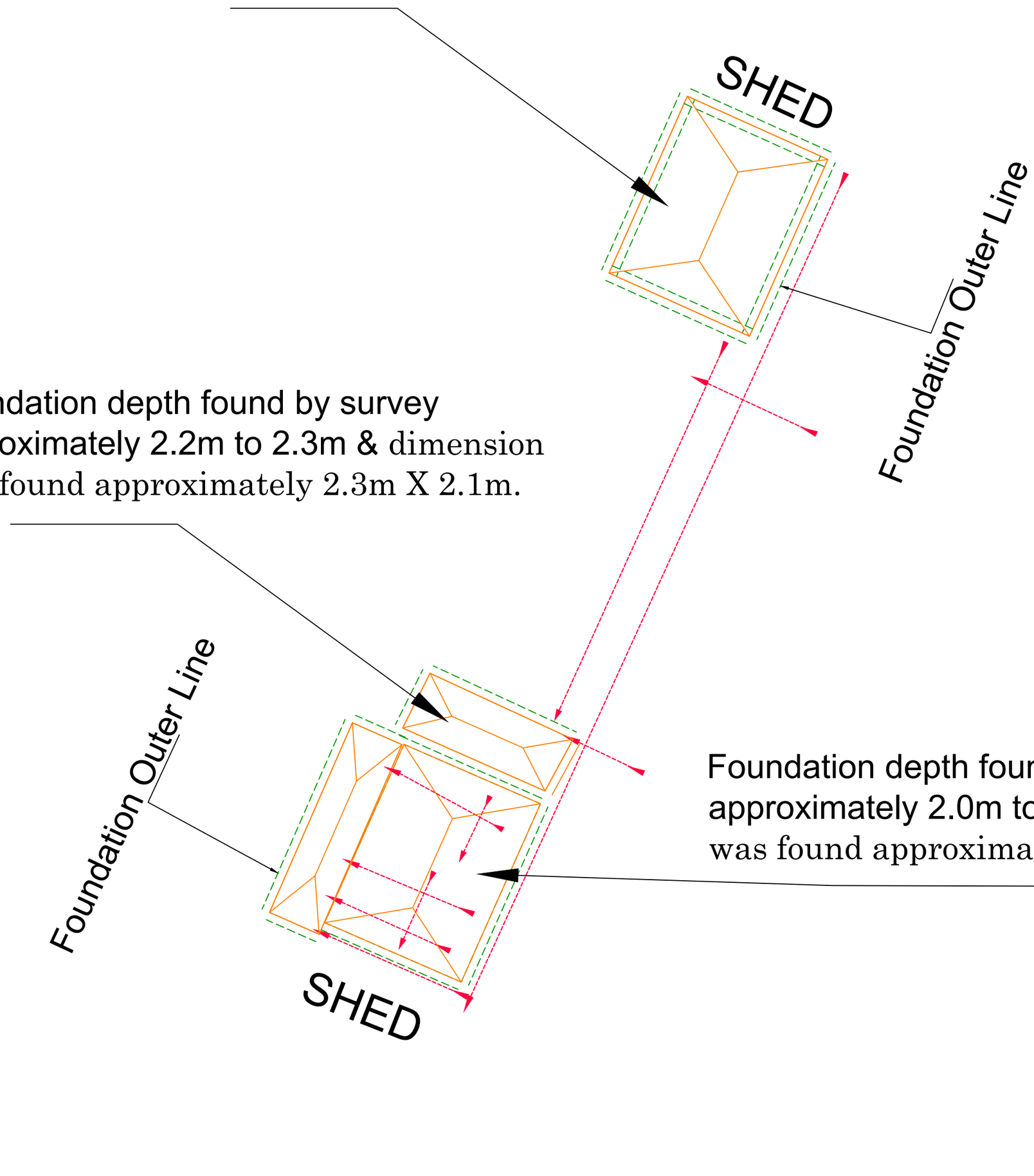
SURVEYED BY.– **AIMIL LTD**
SHRACHI TOWER, 6TH FLOOR
C & D BLOCK1, 686 ANANDAPUR,
KOLKATA – 700 107.

Rev: 0 | DRAWING NO.: AMIL/KOL/NTPC/TALCHER | SHEET NO–1 OF 1

CISF SHED



Foundation depth found by survey approximately 2.26m to 2.5m & dimension was found approximately 2.5m X 2.1m.



Foundation depth found by survey approximately 2.2m to 2.3m & dimension was found approximately 2.3m X 2.1m.

Foundation depth found by survey approximately 2.0m to 2.05m & dimension was found approximately 2.0m X 1.5m.

N0TE: ALL DIMENSIONS ARE IN METER.

LEGEND

SL NO.	DESCRIPTION	SYMBOL
1.	GPR SRUVEY LINE	
2.	BUILDING	
3.	ROOM	
4.	BOUNDARY WALL	
5.	SHED	
6.	COLUMN	
7	FOUNDATION OUTER LINE	

CLIENT.– NTPC TALCHER

PROJECT.– GPR SURVEY DWG AT TALCHER

SURVEYED BY.–

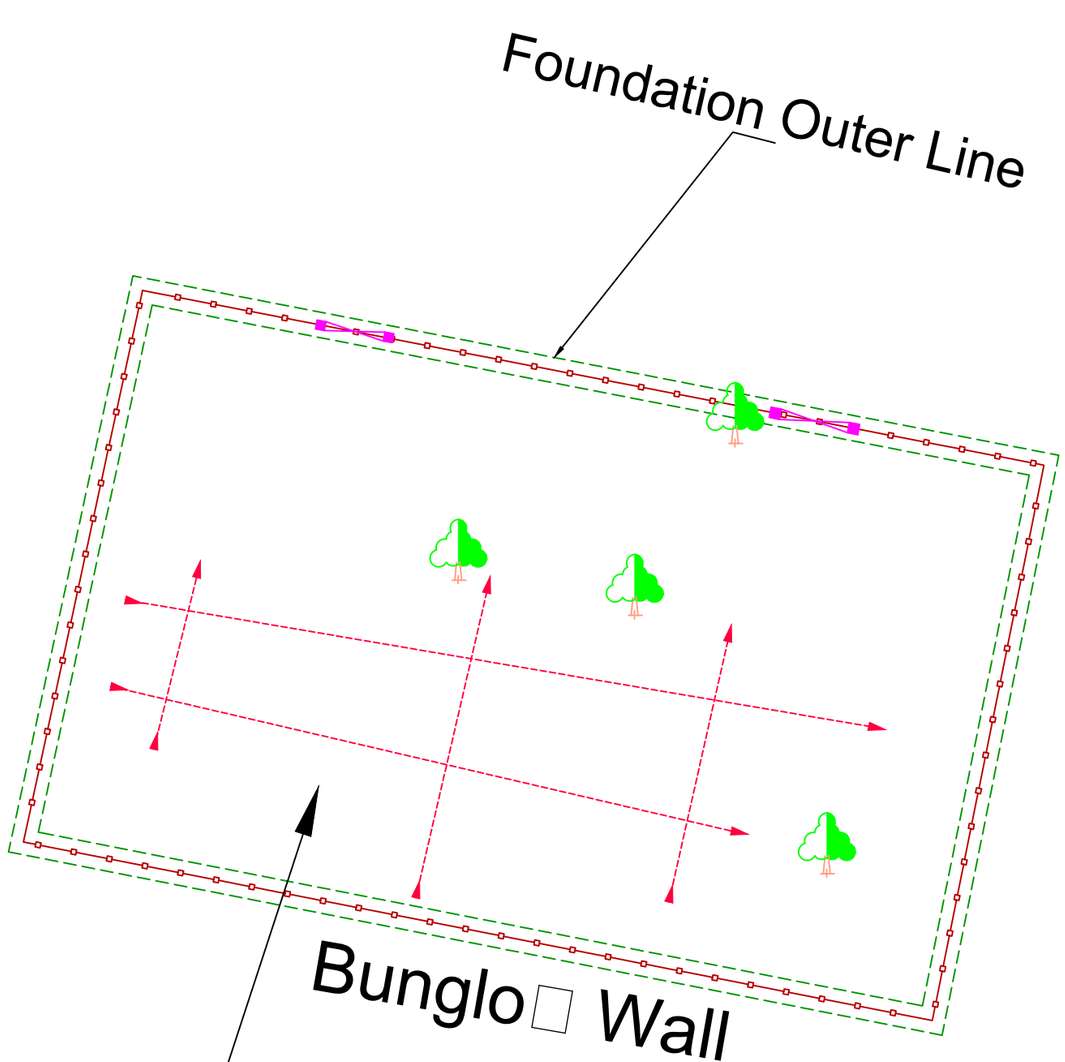
AIMIL LTD
SHRACHI TOWER, 6TH FLOOR
C & D BLOCKI, 686 ANANDAPUR,
KOLKATA – 700 107.

Rev: 0

DRAWING NO.: AMIL/KOL/NTPC/TALCHER

SHEET NO–1 OF 1

BUNGLOW



N0TE: ALL DIMENSIONS ARE IN METER.

LEGEND

SL NO.	DESCRIPTION	SYMBOL
1.	GPR SRUVEY LINE	
2.	BUILDING	
3.	ROOM	
4.	BOUNDARY WALL	
5.	SHED	
6.	FOUNDATION OUTER LINE	

CLIENT.– NTPC TALCHER

PROJECT.– GPR SURVEY DWG AT TALCHER

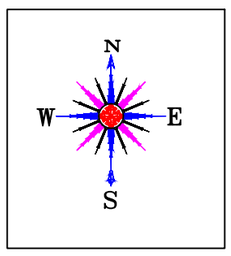
SURVEYED BY.– **AIMIL LTD**
SHRACHI TOWER, 6TH FLOOR
C & D BLOCKI, 686 ANANDAPUR,
KOLKATA – 700 107.

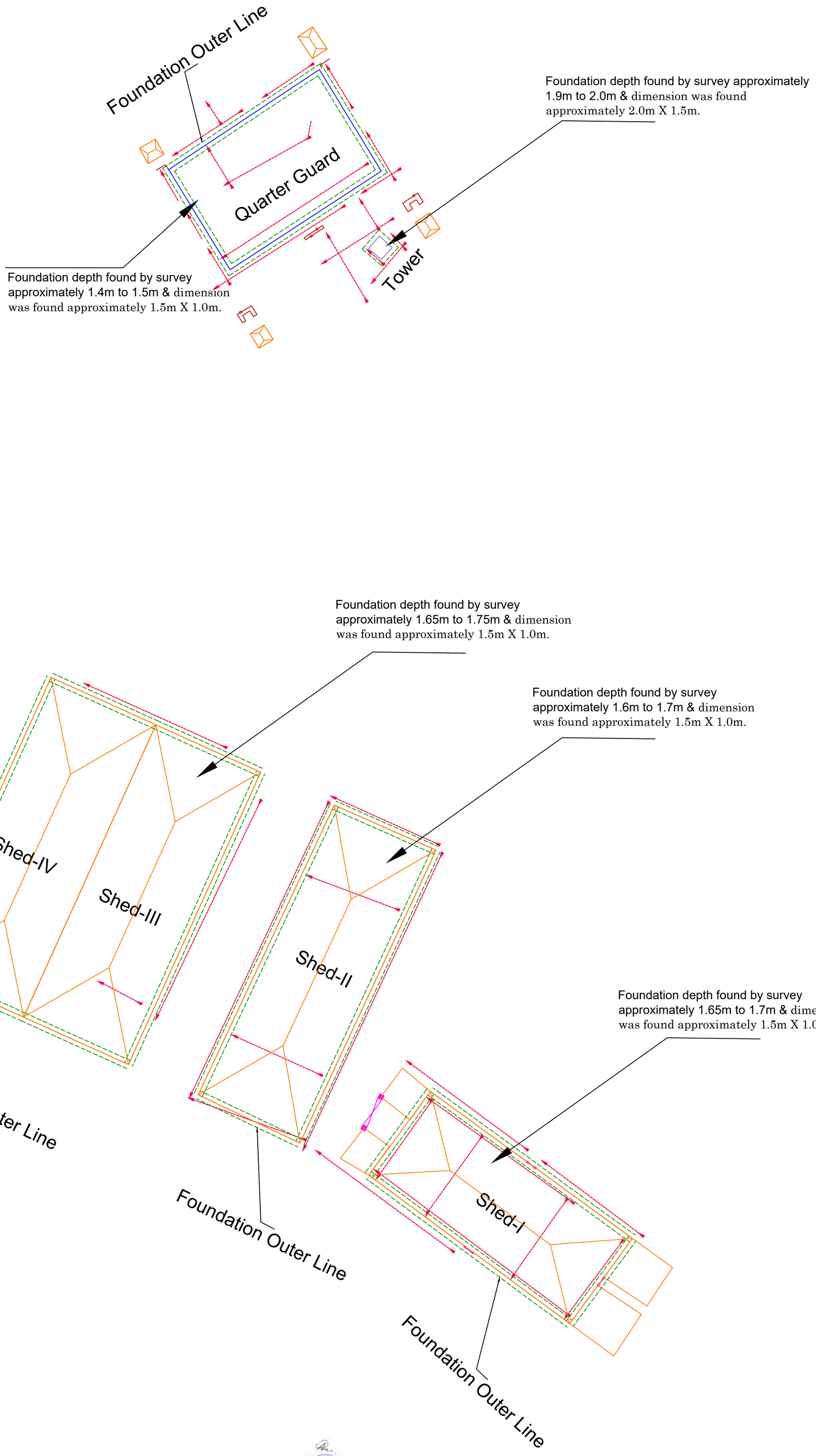
Rev: 0

DRAWING NO.: AMIL/KOL/NTPC/TALCHER

SHEET NO–1 OF 1

□uater Guard & Shed





N0TE: ALL DIMENSIONS ARE IN METER.

LEGEND

SL NO.	DESCRIPTION	SYMBOL
1.	GPR SRUVEY LINE	
2.	BUILDING	
3.	ROOM	
4.	BOUNDARY WALL	
5.	SHED	
6.	COLUMN	
7.	FOUNDATION OUTER LINE	

CLIENT.– NTPC TALCHER

PROJECT.– GPR SURVEY DWG AT TALCHER

SURVEYED BY.–

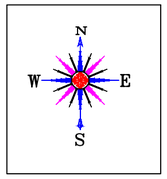
AIMIL LTD
SHRACHI TOWER, 6TH FLOOR
C & D BLOCKI, 686 ANANDAPUR,
KOLKATA – 700 107.

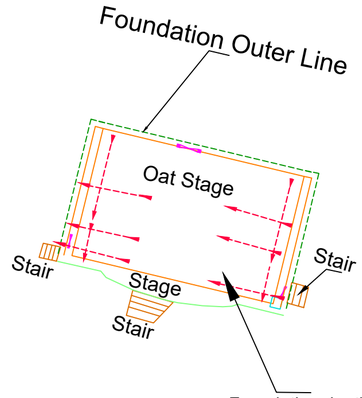
Rev: 0

DRAWING NO.: AMIL/KOL/NTPC/TALCHER

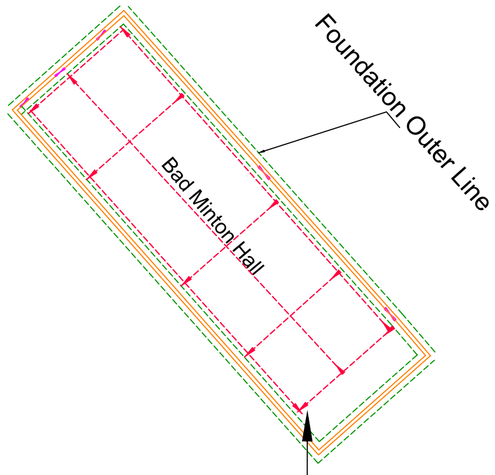
SHEET NO–1 OF 1

SPECTRUM CLUB & OAT STAGE

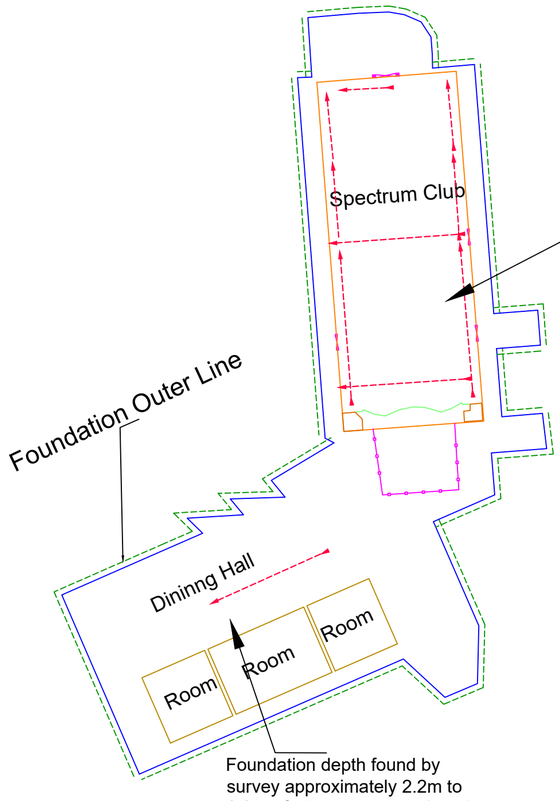




Foundation depth found by survey approximately 1.85m to 1.9m & dimension was found approximately 2.0m X 1.85m.



Foundation depth found by survey approximately 2.0m to 2.1m & dimension was found approximately 2.1m X 1.5m.



Foundation depth found by survey approximately 1.6m to 2.18m & dimension was found approximately 2.1m X 1.5m.

Foundation depth found by survey approximately 2.2m to 2.25m & dimension was found approximately 2.25m X 1.8m.

NOTE: ALL DIMENSIONS ARE IN METER.

LEGEND

SL NO.	DESCRIPTION	SYMBOL
1.	GPR SRUVEY LINE	
2.	BUILDING	
3.	ROOM	
4.	BOUNDARY WALL	
5.	SHED	
6.	COLUMN	
7.	FOUNDATION OUTER LINE	

CLIENT.– NTPC TALCHER

PROJECT.– GPR SURVEY DWG AT TALCHER

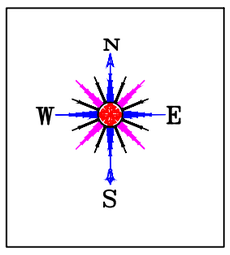
SURVEYED BY.–
AIMIL LTD
SHRACHI TOWER, 6TH FLOOR
C & D BLOCKI, 686 ANANDAPUR,
KOLKATA – 700 107.

Rev: 0

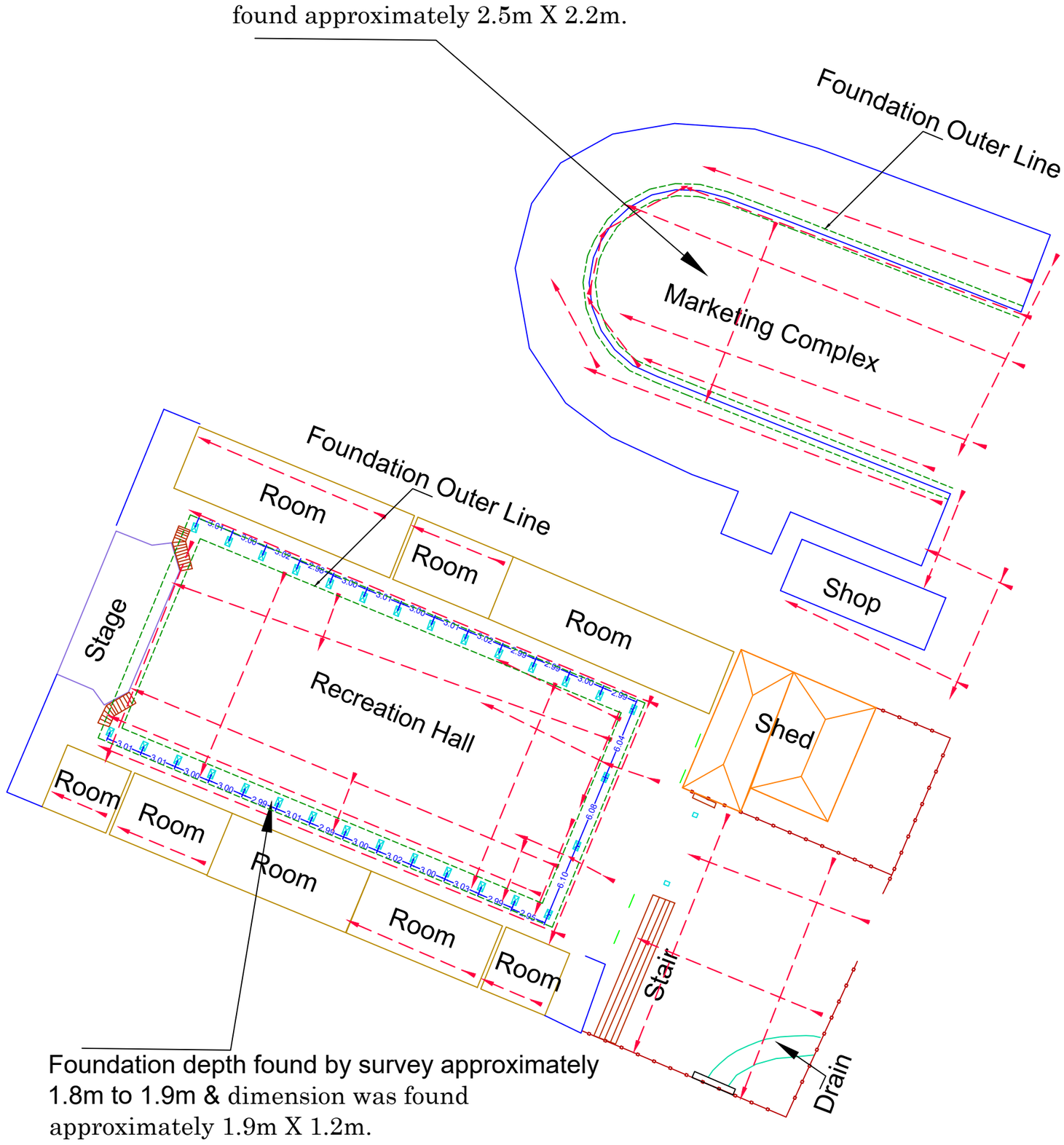
DRAWING NO.: AMIL/KOL/NTPC/TALCHER

SHEET NO–1 OF 1

RECREATION HALL & MARKETING COMPLEX



Foundation depth found by survey approximately 2.4m to 2.5m & dimension was found approximately 2.5m X 2.2m.



Foundation depth found by survey approximately 1.8m to 1.9m & dimension was found approximately 1.9m X 1.2m.

N0TE: ALL DIMENSIONS ARE IN METER.

LEGEND

SL NO.	DESCRIPTION	SYMBOL
1.	GPR SRUVEY LINE	
2.	BUILDING	
3.	ROOM	
4.	BOUNDARY WALL	
5.	SHED	
6.	COLUMN	
7.	FOUNDATION OUTER LINE	

CLIENT.– NTPC TALCHER

PROJECT.– GPR SURVEY DWG AT TALCHER

SURVEYED BY.–

AIMIL LTD
SHRACHI TOWER, 6TH FLOOR
C & D BLOCKI, 686 ANANDAPUR,
KOLKATA – 700 107.

Rev: 0

DRAWING NO.: AMIL/KOL/NTPC/TALCHER

SHEET NO–1 OF 1

Details of facilities to be dismantled - Annexure-P(R2)

Sl. No.	Name of facility	Total No. of Units	Plinth Area per Unit {Sq.m.}	Total Plinth Area {Sq.m.}	Type of Super-structure	Type of Sub-structure	Storey Configuration	Scope of Dismantling	Facilities envisaged under TTPS Stage-III	Type & Present Location of facility
1	E-type & F-type Qrts in BHEL sector	39	150	5850	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Triple storey	Sub-structure	PT Plant	Residential facilities in Township area
2	4R3/4 - Temp Sector	1	620	620	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Sub-structure	Inplant Railway siding	
3	3R21/22 - Sector 2	1	350	350	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Sub-structure	Main Plant - Transformer Yard	
4	2R 121 -136 - Sector 2	4	150	600	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Sub-structure	Switchyard CR & Canteen	
5	2R 49-68 - Sector 2	5	190	950	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Sub-structure	Main Plant - TG Bay	
6	2R 69-108 - Sector 2	10	150	1500	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Sub-structure	Main Plant - tranformer Yard & FO Handling area	
7	2RA 109-139- Sector 2	10	150	1500	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Sub-structure	Switchyard	
8	F type - Sector 1	7	170	1190	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Sub-structure	Inplant Railway siding	
9	1R type - Sector 2	16	220	3520	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Sub-structure	FO handling area, Aux. Boiler, CT & Switchyard	
10	2RB type - Setor 3	4	140	560	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Sub-structure	Admin Building area	
11	C 3/4 - Sector 1	1	220	220	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Double Storey	Sub-structure	Inplant Railway siding	
12	C9-12 - Sector 3	2	220	440	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Double Storey	Sub-structure	Admin Building area	
13	D type 9-13/21-32 - Sector 3	5	300	1500	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Double Storey	Sub-structure	Switchyard	
14	2R 7 2RA - Sector 4	15	200	3000	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Sub-structure	Construction Office & Workshop	
15	3R 1-16 Sector 2	8	350	2800	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Sub-structure	Main Plant - TG Hall & FO handling area	
16	3R 17-21/ 62-65	4	350	1400	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Sub-structure	Inplant Railway siding	
17	NC 1-4 Temp sector	1	400	400	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Double Storey	Sub-structure	Inplant Railway siding	
18	ND 1-8 Temp sector	8	200	1600	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Sub-structure	Inplant Railway siding	
19	E 139-186 Temp sector	8	150	1200	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Triple storey	Sub-structure	Track Hopper + Ash Silo	
20	F 1-56 Sector 4	7	300	2100	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Double Storey	Sub-structure	BOP Batching Plant area	
21	Club Auditorium	1	698	698	RCC structure with Brick in-fill panels + Structural Steel roof	RCC foundation with PCC mudmat	Single Storey	Sub-structure	Main Plant area - ESP	Non-residential facilities in Township area
22	Club dining hall	1	556	556	RCC structure with Brick in-fill panels	RCC foundation with PCC mudmat	Single storey	Sub-structure	Main Plant area - ESP	
23	Stadium gallery	1	1170	1170	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Double Storey	Sub-structure	Main Plant area - Boiler	
24	POLICE OUTPOST	1	128	128	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Main Plant - TG Bay	
25	Outpost front shop	1	49	49	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Main Plant - TG Bay	
26	Medicine store	1	32	32	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Main Plant - TG Bay	
27	ATM (SBI)	1	15	15	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Main Plant - TG Bay	
28	Cable tv room	1	46	46	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Main Plant - Transformer Yard	
29	Mangla mandir	1	75	75	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Main Plant - Transformer Yard	
30	Kalayani Mandap	1	82	82	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Main Plant - Transformer Yard	
31	shopping centre	1	600	600	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Main Plant - Transformer Yard	
32	Sai mandir	1	90	90	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Ash Silo	
33	Durga Mandap	1	575	575	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Main Plant - Transformer Yard	
34	CISF Barrack - quarter guard	1	520	520	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Track Hopper	
35	CISF Barrack Morcha	1	16	16	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Track Hopper	
36	Primery school	1	2348	2348	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	FGD area	
37	DAV TT HIGH SCHOOL	1	1410	1410	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Main Plant area -ID Fan	
38	BHEL Market	1	1500	1500	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	PT Plant	
39	LITTLE ANGEL SCHOOL	1	250	250	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Double storey	Sub-structure	Main Plant area - Boiler	
40	DAV TT HIGH SCHOOL	1	1053	1053	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Main Plant area -ID Fan	
41	BANK BUILDING	1	742	742	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Double storey	Sub-structure	AWRS & Ash classification	
42	T/S Civil Office	1	100	100	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Double storey	Sub-structure	CWPH	
43	T/S Civil Office Store	1	400	400	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Sub-structure	CWPH	
44	BADMINTON HALL	1	406	406	Structurel Steel with sheet cladding	RCC foundation with PCC mudmat	Single Storey	Sub-structure	Main Plant area - Boiler	
45	OAT Stage	1	298	298	Structurel Steel with Brick in-fill panels	RCC foundation with PCC mudmat	Single Storey	Sub-structure	Main Plant area - ESP	
46	OLD EWA Building	1	221	221	Structurel Steel with Brick in-fill panels	RCC foundation with PCC mudmat	Single Storey	Sub-structure	Main Plant - Transformer Yard	
47	OLD UPL Building	1	106	106	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Chmney	
48	WATER TANK & PUMP HOUSE	1	200	200	RCC structure with Brick in-fill panels	RCC foundation with PCC mudmat	Triple storey	Sub-structure	Chimney	
49	T/S ELECTRICAL OFFICE	1	664	664	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Sub-structure	Chimney	
50	CISF BARRACK	1	3328	3328	Structurel Steel with Brick in-fill panels	RCC foundation with PCC mudmat	Single Storey	Sub-structure	Track Hopper	
51	GAS GOWDOWN	1	122	122	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Sub-structure	Track Hopper	
52	SAI MANDIR SHED	1	133	133	Structural Steel shed	RCC foundation with PCC mudmat	Single Storey	Sub-structure	Ash Silo	
53	RC	1	2880	2880	RCC structure with Brick in-fill panels + Structural Steel roof	RCC foundation with PCC mudmat	Single Storey	Sub-structure	Main Plant - Transformer Yard	
54	Security barrack	1	1084	1084	Structural Steel shed	RCC foundation with PCC mudmat	Single Storey	Sub-structure	Main Plant area - ESP	
55	DAV TT H.SCHOOL C.STAND	1	365	365	Structural Steel shed	RCC foundation with PCC mudmat	Single Storey	Sub-structure	Main Plant area -ID Fan	
56	GRIDCO OFFICE	1	347	347	Structural Steel shed	RCC foundation with PCC mudmat	Single Storey	Sub-structure	Chimney	
57	Ash Brick manufacturing Plant	2	750	1500	Structural Steel shed	RCC foundation with PCC mudmat	Single Storey	Sub-structure	Switchyard	
58	Vehicle Parking Sheds	1	400	400	Structural Steel shed	RCC foundation with PCC mudmat	Single Storey	Sub-structure	Main Plant area	
59	Store Sheds	28	640	17920	Structural Steel shed	RCC foundation with PCC mudmat	Single Storey	Sub-structure	Main Plant - Ash handling, TAC,CAC & ESP	
60	Under ground Diesel tank	1	100	100		Under ground RCC sump		Sub-structure	Main Plant - ID fan area	
61	Watch Towers	7	20	140	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Triple storey	Sub-structure	Main Plant & CHP area	
62	Admin Building	1	2998	2998	RCC structure with Brick in-fill panels	RCC foundation with PCC mudmat	Double storey	Sub-structure	Main Plant area -CPU area	
63	C&M office Building	1	378	378	RCC structure with Brick in-fill panels	RCC foundation with PCC mudmat	Double storey	Sub-structure	Main Plant area -TAC	
64	Old Admin BUILDING	1	1622	1622	RCC structure with Brick in-fill panels	RCC foundation with PCC mudmat	Double storey	Sub-structure	Main Plant area - Boiler	
65	Safety building	1	103	103	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Main Plant area -CPU area	
66	Weigh Bridge Room	1	40	40	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Main Plant area -TAC	
67	DG room	1	53	53	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Main Plant area -CPU area	
68	plant tea stall	1	86	86	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Sub-structure	Main Plant area - Boiler	
69	Stage-I Raw water reservoir	1	21000	21000		CC lined under-ground reservoir		Super-structure & Sub-structure	CHP area - CH, coal stock pile & Gypsum area	
70	Heavy Machinery shed	1	320	320	Structural Steel shed	RCC foundation with PCC mudmat	Single Storey	Super-structure & Sub-structure	CHP area - CH	
71	Waste water sump & Pumphouse	1	100	100	Structural Steel shed	Under ground RCC sump	Single Storey	Super-structure & Sub-structure	TP-1 & Inplant Railway siding	
72	Waste storage shed	1	180	180	Structurel Steel shed	RCC foundation with PCC mudmat	Single Storey	Super-structure & Sub-structure	CHP area	
73	Stage-II Raw water reservoir	1	20000	20000		CC lined under-ground reservoir		Super-structure & Sub-structure	CHP area - coal stock pile, truck tippler, TP-9 & Dozer shed	

74	Stage-II Raw Water Pumphouse	1	200	200	RCC structure with Brick in-fill panels	Under ground RCC sump	Double storey	Super-structure & Sub-structure	TP-8	**Facilities in Plant area**
75	Stage-II PT Plant clarifiers	2	1100	2200	RCC Over-ground 30m dia	RCC foundation with PCC mudmat	Single Storey	Super-structure & Sub-structure	Pipe conveyor	
76	Stage-II PT Sludge sump & Pumphouse	1	80	80	Structural Steel shed	Under ground RCC sump	Single Storey	Super-structure & Sub-structure	Pipe conveyor	
77	Stage-II PT Plant Building including clarified/Filtered water Pumphouse, sump, Chemical House etc..	1	700	700	RCC structure with Brick in-fill panels	Under ground RCC sump	Double storey	Super-structure & Sub-structure	Pipe conveyor	
78	AAQMS Room	1	20	20	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single storey	Super-structure & Sub-structure	CSSP	
79	Cylinder Shed	1	70	70	Structurel Steel	RCC foundation with PCC mudmat	Single Storey	Super-structure & Sub-structure	CSSP	
80	Coal Slurry Settling pit	1	1200	1200		brick masonry under-ground pit		Super-structure & Sub-structure	Coal stock Pile	
81	Dozer shed	1	500	500	Structurel Steel shed	RCC foundation with PCC mudmat	Single Storey	Super-structure & Sub-structure	Coal stock Pile	
82	Coal yard shed	1	1000	1000	Structurel Steel shed	RCC foundation with PCC mudmat	Single Storey	Super-structure & Sub-structure	BOP Laydown area	
83	TP-14	1	180	180	Structurel Steel shed with side cladding	RCC foundation with PCC mudmat	Triple storey	Super-structure & Sub-structure	Coal stock Pile	
84	Ground Conveyor 16A/B - 2m wide 600m long	1	1200	1200	Ground conveyor along with stacker-Reclaimer support rails			Super-structure & Sub-structure	Coal stock Pile	
85	Conveyor 17 - overground - 5m wide 275m long	1	1375	1375	Overhead structural steel conveyor gallery	RCC foundation with PCC mudmat		Super-structure & Sub-structure	BOP Laydown area	
86	Conveyor 17 - underground - 5m wide 80m long	1	400	400		Under-ground RCC tunnel		Super-structure & Sub-structure	BOP Laydown area	
87	Site Store sheds	1	1500	1500	Brick masonry load bearing walls	Brick masonry foundation with PCC mudmat	Single Storey	Super-structure & Sub-structure	Coal stock Pile	
88	ETP Building with associated equipments	1	NA	NA	RCC and Brick	RCC	-	Sub-structure and Super Structure	Coal stock Pile	
89	Coal conveyor#16,17,R1,R2,TP#14&10B,stacker cum Reclaimer,stacker,R2 shed	NA	NA	NA	RCC, Steel Structure	RCC	-	Sub-structure and Super Structure		
90	Heavy Machinery Shed	NA	NA	NA	RCC, Steel Structure	RCC	-	Sub-structure and Super Structure		
91	Ash Water Reservoir	NA	NA	NA	RCC, Steel Structure	RCC	-	Sub-structure and Super Structure		
92	Existing Track Hopper Shed	NA	NA	NA	RCC, Steel Structure	RCC	-	Super Structure		
93	Existing Railway siding inside plant Boundary including Pway, OHE, S&T, S&T Building	NA	NA	NA	RCC, Steel Structure	RCC	-	Sub-structure and Super Structure		

D-1-7 **FOUNDATION SYSTEM AND GEOTECHNICAL DATA**

7.00.00 Soil Data

Owner has carried out detailed geotechnical investigation at the project site. Bearing capacity for design of foundations and Bore logs data are given at Annexure - C of this specification. The geotechnical investigation report comprising of Boreholes, Laboratory tests, Chemical analysis, etc. in respect of the sub-strata prevailing at site will be made available for the Bidder's study at the Employer's office, if required. The onus of correct assessment / interpretation and understanding of the existing subsoil condition / data is on the Bidder. The geotechnical investigation report will be made available for the Bidder's study at the Owner's office, if required. **In case, bidder feels that the available data is inadequate, he may carry out his own geotechnical investigation**. **Further, if any change in layout or area not covered as per enclosed borelog data, Contractor shall carry out geotechnical investigation in the area at no cost to owner.** The scheme for geotechnical investigation shall be approved by owner before execution. Geotechnical investigation work may be got executed by the contractor through the suggested agencies as mentioned in Clause No. 7.08.00 or any other agency having adequate experience for carrying out such works and approved by engineering department of the owner. However, no time extension shall be given on account of soil investigation carried out by the Bidder. The geotechnical investigation report shall be prepared with detailed recommendations regarding type of foundation and allowable bearing pressure for various structures/ facilities and other soil parameters. The report shall be submitted for Owner's approval prior to commencement of design of foundation.

Bidder may refer enclosed topographical survey drawing and general layout plan along with borelogs for variation in existing/ natural ground level (NGL) and finished ground level (FGL). As per borelog data, near proposed Admin building, fire station, permanent store, Workshop building and gate complex area, carried out by owner ash/coal deposit is found. Wherever ash/coal deposit/brick-bats etc. is found the same shall be treated as filled up soil. Further, as per available borelog data of the above mentioned area, NGL is varying from RL(+) 64.9 m to RL(+) 67.0m and FGL is RL(+) 69.0 i.e. there may be filled up layer up to 2.0m to 4.1m of ash/coal deposit.
As per borelog data, water table is varying from 0.0m to 4.5m at the time of field investigation and may fluctuate with season.

7.00.01 **The furnished borelog details are specific to the co-ordinates where the boreholes have been carried out and are provided for bidder's information only. Soil profile in the proposed area may vary with respect to the borelogs enclosed for bidder's information. Bidder has to consider all such variations in his estimation, over the extent of the work to be carried out. The Bidder should note that nothing extra whatsoever on account of variation between soil data collected by Owner and that found by the Bidder during geotechnical investigation by him or during execution of works, shall be Payable.**

7.01.00 Tank Foundations

a) The tanks shall rest on flexible tank pad foundation, resting on sand with concrete ring wall to retain sand. Base of the concrete ring wall shall not rest on the expansive soil, if any.

b) Entire loose/ soft soil inside the concrete ring wall shall be removed and shall be filled with sand. Sand for filling shall be clean and well graded conforming to IS 383 with grading Zone I to III.

c) Sand shall be spread in layers not exceeding 30cm compacted thickness over the area. Each layer shall be uniformly compacted by mechanical means like plate vibrators, small vibratory rollers, etc to achieve a relative density of not less than 80%.

d) Other requirements of tank foundations shall be as per IS 803 and as specified elsewhere in the specifications.

7.02.00 Foundation System

The requirements for the foundation system to be adopted are as given in subsequent clauses. Depending upon the depth of competent strata/stratum, type of structures, functional requirement of facility, extent of cutting / filling, suitable open or pile shall be adopted with approval of owner.

7.02.01 General Requirements

a) All structures/equipment shall be supported on suitable open foundations (isolated, combined, raft) or pile foundations depending on type of structures/facilities, sub-strata, topography etc.

b) The roads, ground floor slabs, trenches, pipe pedestals (except thrust blocks), channels/drains and staircase foundation with foundation loading intensity less than 4 T / M2 may be supported on open / shallow foundations resting on virgin / controlled compacted filled up soil.

c) No other foundation (other than as mentioned in (b) above and (g) below) shall rest on the filled up ground / soil.

d) All foundations shall be designed in accordance with relevant parts of the latest revisions of Indian Standards.

e) The water table for design purpose shall be considered at Finished Ground Level.

f) A combination of open and pile foundations shall not be permitted under the same equipment / structure / building.

g) Foundation for equipments on ground floor

For equipments of static weight upto 1.5 T, the equipment may be supported on the ground floor slab by locally thickening the slab. Thickening of the ground floor slab shall be done upto an extent of about 0.6 m beyond the plan area of the equipment on all the sides. Further, the load intensity below the equipment shall be limited to 4T/m2. Other requirements of floor slab and compaction below the floor slab shall be adhered, as specified elsewhere in the specifications.

For equipment's of static weight between 1.5 T and 20 T, the equipment may be supported on compacted sand filling from Natural Ground Level (NGL) or excavation level of nearby footing whichever is deeper with the load intensity below the equipment limited to 4T/m2. The minimum depth of foundation is 1.0m below FFL. Other requirements of sand compaction below the foundation shall be adhered, as specified elsewhere in the specifications.

For equipment of static weight more than 20 T, the equipment foundation shall be taken to the founding level or shall be built up with PCC from the level as mentioned in the Table 1. The pedestal of equipment foundation or the foundation Block shall be isolated from the adjoining floor slab by providing bitumen impregnated fiber board of minimum 50 mm thick, conforming to IS: 1838 all around the equipment pedestal for the full depth of the floor slab.

7.02.02 Open Foundations

In case open foundations are adopted, following shall be adhered to.

a) The minimum width of foundation shall be 1.0 m.

b) Minimum depth of foundation shall be 1.0m below Ground Level.

c) It shall be ensured that all foundations of a particular structure/ buildings/ facility shall rest on one bearing stratum.

d) Wherever the intended bearing sub-strata is virgin soil stratum but the actual stratum encountered during foundation excavation consists of filled up soil at founding level, under such cases either the foundation shall be lowered completely into the virgin stratum or the filled up soil upto the virgin layers shall be removed and built up through PCC (1:4:8) up to designed foundation level.

e) Wherever the intended bearing stratum is weathered rock, but the actual strata encountered during excavation consists of both overburden soil and weathered rock at founding level, under such cases, the overburden upto the weathered rock level including 0.5 m into the weathered rock shall be removed and built up through PCC (1:3:6) upto the designed founding level. Thus, maintaining the same founding level for all the footings of a structure.

f) The last layer of about 300 mm before reaching the founding level shall be excavated carefully by such equipment so that soil / rock at the required level will be left in its natural condition.

g) Wherever the new facilities (excluding roads, ground floor slabs, trenches, pipe pedestals, channels/drains and staircase foundation) are to be constructed after dismantling existing facilities; it is to be ensured that the new foundations shall be taken at least 1m below the existing founding depth of the dismantled structures in case of soil and 0.6m below the existing founding depth of dismantled structures in case of rock.

7.03.00 **PILE FOUNDATIONS – In case piles are adopted, following shall be adhered to:**

i) The pile foundation shall be of RCC, Cast-in-situ bored piles as per IS:2911. Pile boring shall be done using Self erecting Crawler mounted Rotary Hydraulic Rigs. However, conventional tripod rig may be allowed in inaccessible areas subject to site specific conditions. Two stage flushing of pile bore shall be ensured by airlift technique duly approved by the Employer.

If required, temporary or permanent MS liner may be provided for piling.

ii) The minimum diameter of pile shall be 600mm. The allowable load capacity of the pile in different modes (vertical compression, lateral and pullout) shall be least of the two values i.e. as per the values furnished in following table and pile capacity achieved in pile load tests:

Pile	Dia. (mm)	Vertical compression capacity (T)
Bored cast-in-situ pile	600	140
	760	250
	1000	350
	1200	450

Pile shall be socketed into weathered rock. A socketing length of **Five meter** into rock **shall be ensured.**

The uplift and lateral load capacity shall be respectively restricted to 35% and 5% of the allowable load capacity in vertical compression.

However, the pile capacities to be adopted shall be the least of the estimated design values and that obtained from the initial pile load tests.

iii) Only straight shaft piles shall be used. Minimum cast length of pile above cutoff level shall be 1.0 m.

iv) The contractor shall furnish design of piles (in terms of rated capacity, length, diameter, termination criteria to locate the founding level for construction of pile in terms of measurable parameter, reinforcement for job as well as test piles, pile load test arrangement, locations of initial test piles etc.) for Engineer's approval.

v) The piling work shall be carried out in accordance with IS:2911 (Relevant part) and accepted construction methodology. The construction methodology shall be submitted by the Contractor for Engineer's approval.

vi) Number of initial load tests to be performed for each diameter and rated capacity of pile shall be subject to minimum as under.

Vertical

Lateral Minimum of 2 Nos. in each mode.

Uplift

vii) The initial pile load test shall be conducted with test load three times the estimated pile capacity. In case of vertical compression test (initial test) the method of loading shall be cyclic as per IS:2911 (relevant part).

viii) Load test shall be conducted at pile cut of level (COL). If the water table is above the COL the test pit shall be kept dry through out the test period by suitable de-watering methods. Alternatively, the vertical load test may be conducted at a level higher than COL. In such a case, an annular space shall be created to remove the effect of skin friction above COL by providing an outer casing of suitable diameter larger than the pile diameter.

ix) Number of routine pile load tests to be performed for each diameter/allowable capacity of pile shall be as under:

i) Vertical : 0.5% of the total number of piles provided.

ii) Lateral : 0.5% of the total number of piles provided.

x) The routine tests on piles shall be conducted upto test load of one and half times the allowable pile capacity. Piles for routine load tests shall be approved by the Employer.

xi) In case, routine pile load test shows that the pile has not achieved the desired capacity or pile(s) have been rejected due to any other reason, then the Contractor shall install additional pile(s) as required and the pile cap design shall accordingly be reviewed and modified, if required.

xii) Testing of piles and interpretation of pile load test results shall be carried out as per IS:2911 (Part-4). Contractor shall ensure that all the measuring equipment and instruments are properly calibrated at a reputed laboratory / institute prior to their use. Settlement / movement of the pile top shall be made by Linear Variable Differential Transducers (LVDT) having a least count of 0.01mm.

xiii) The test load on initial and routine test piles shall be applied by means of reaction from anchor piles / rock anchors alone or kentledge with concrete blocks alone or combination of anchor piles / rock anchors and kentledge with concrete blocks.

xiv) Low Strain Pile Integrity test shall be conducted on all test piles and job piles. This test shall be used to identify the routine load test and not intended to replace the use of static load test. This test is limited to assess the imperfection of the pile shaft and shall be undertaken by an independent specialist agency to be approved by Engineering department of Owner. The test equipment shall be of TNO or PDI make or equivalent. The process shall confirm to ASTM.

xv) High Strain Dynamic Load Test may be carried out for routine vertical load test of working piles. However, at least three numbers of static routine vertical load tests shall be carried out on pile on which high strain dynamic load test has already been carried out for establishing the correlation between the two tests. In case of discrepancy if any between dynamic and static vertical load tests, then additional static routine vertical load tests shall be conducted as decided by the Engineer and the results of static routine vertical load shall prevail. Number of routine vertical pile load tests as per clause 7.03.00 (ix) shall be total of static routine vertical load test and high strain dynamic load tests.

The procedure to carry out the test shall be submitted to the Engineer. The test and equipment shall conform to ASTM D4945-00. The test shall be conducted by an experienced independent test agency approved by the owner. Field data shall be submitted to the site engineer and shall include force velocity curves, pile capacity, simulated static load test curve, net and total pile displacement, pile integrity. A (Case pile wave analysis) CAPWAP or equivalent software analysis shall be conducted on the field data for correct capacity estimation and to evaluate end bearing and skin friction components of the pile.

xvi) From load considerations, single pile may be used under a column/tower. In that case, pile shall be connected with tie beams at pile cut off level in both directions.

xvii) Contribution of frictional resistance of filled up soil if any, shall not be considered for computation of frictional resistance of piles.

xviii) Reinforcement for job piles shall be designed as following:

(a) Compression + bending piles: For these piles, the allowable safe pile capacities in compression and bending shall be considered.

(b) Tension + bending piles: For these piles, the actual pile forces to be considered. However, maximum 3 types of combinations for varying percentage of tension capacity + bending case may be designed & adopted by contractor for the entire scope of work under this package.

7.04.00 Special Requirements

7.04.01 Details of treatment for foundations / underground structures required to counteract soil / water chemical environment, cement type, grade of concrete, type of reinforcement, cover to

	reinforcement and protective coating to foundations, etc. shall be as mentioned in Annexure-1 of this specification
7.05.00	**Excavation, Filling and Dewatering**
7.05.01	For excavation works, comprehensive dewatering with well point or deep wells arrangement, if required, shall be adopted. Scheme for dewatering and design with all computations and back up data for dewatering shall be submitted for the owner's information. The water table shall be maintained at 0.5m below the founding depth.
7.05.02	Excavation for shallow foundations shall be covered with PCC immediately after reaching the founding level. In case of any local loosening of soil or any loose pockets are encountered at founding level during excavation the same shall be removed and compensated by PCC M7.5. The final layer of about 300 mm thickness above the founding level shall be excavated by suitable means, so as to avoid disturbance to founding stratum.
7.05.03	**Backfilling in Power House & Boiler Area** Backfilling around foundations, trenches, sumps, pits, plinths, etc. shall be carried out with sand in layers not exceeding 300 mm compacted thickness and each layer shall be compacted to minimum 80% of relative density. **Backfilling in other area** Backfilling around foundations, pipes, trenches, sumps, pits, plinths, etc. shall be carried out with approved material in layers not exceeding 300 mm compacted thickness (higher thickness of layers upto 500mm with heavy mechanical compacting equipment) and each layer shall be compacted to 90% of standard proctor density for cohesive soils and to 80% of relative density for non cohesive soils. Rock pieces having size less than 150 mm and interstices filled with soil may be used for backfilling around foundation, plinths etc. and shall be compacted to minimum of 85% of original stack of material after filling the interstices.
7.05.04	Founding level for trenches/channels shall be decided as per functional requirement. The bottom of excavation shall be properly compacted prior to casting of bottom slab of trenches / channels.
7.05.05	CBR tests for pavement/road design shall be carried out by the Contractor after earth filling (if applicable) has been completed upto the formation level.
7.05.06	The contractor shall take all necessary measures during excavation to prevent the hazards of falling or sliding of material or article from any bank or side of such excavation which is more than one and a half meter above the footing by providing adequate piling, shoring, bracing etc. against such bank or sides. Adequate and suitable warning signs shall be put up at conspicuous places at the excavation work to prevent any persons or vehicles falling into the excavation trench. No worker should be allowed to work where he may be stuck or endangered by excavation machinery or collapse of excavations or trenches.
7.06.00	**EXCAVATION IN ROCK** Excavation in rock shall be carried out by mechanical means and if blasting is required for founding of some of the structures under this package, control blasting only shall be carried out.
7.06.01	Controlled blasting shall be done by a specialised agency duly approved by Engineer. All controlled blasting shall be done by using time delay detonators (i.e. excel type).
7.06.02	a) Contractor shall engage an agency expert in blasting such as, NIRM (National Institute of Rock Mechanics), CMPDIL, Central Institute of Mining and Fuel Research Dhanbad, Dept. of Mining of Govt. Institutions etc. to design detailed blasting scheme and get the same approved from Engineer before carrying out the blasting operation. All blasting shall be done as per the approved blasting scheme & initial

blasting operations shall be done under the supervision & guidance of the representative of the blasting expert.

b) All the statutory laws, (Explosives Act etc.) rules, regulations, Indian Standards, etc. pertaining to the acquisition, transport, storage, handling and use of explosives, etc. shall be strictly followed.

c) The Contractor shall obtain Licenses from Competent Authorities for undertaking blasting work as well as for procuring, transporting to site and storing the explosives as per explosives act. The Contractor shall be responsible for the safe transport, use, custody and proper accounting of the explosive Materials.

d) The Contractor shall be responsible and liable for any accident and injury / damage which may occur to any person or property of the project or public on account of any operations connected with the storage, transportation, handling or use of explosive and blasting operations.

7.07.00 **Sheeting & Shoring**

The contractor shall ascertain for himself the nature of materials to be excavated and difficulties, if any, likely to be encountered in excavation while executing the work. Sheet piling, sheeting and shoring, bracing and maintaining suitable slopes, drainage, etc. shall be provided and installed by the Contractor, to the satisfaction of the Engineer.

7.08.00.00 **Geotechnical investigation work may be got executed by the Contractor through the following suggested agencies**

1. C.E.TESTING COMPANY Pvt. Ltd, Kolkata

2. Cengrs Geotechnica Pvt. Ltd, New Delhi

3. KCT Consultancy Services, Ahemdabad

4. M.K. Soil Testing Laboratory, Ahemdabad

or any other agency having adequate experience for carrying out such works and approved by engineering department of the owner.

Annexure-I

SOIL DATA AND FOUNDATION SYSTEM

Employer has carried out geotechnical investigation in the proposed area. Logs of boreholes of proposed area are enclosed with this Annexure.

a) The minimum founding level and the corresponding net allowable bearing pressure shall be as given in Table – 1 below.

Table-1

Founding Depth/ Stratum	Net Allowable Bearing Pressure T/m2

	Isolated and combined footings including raft for 25mm permissible settlement in case of soil and 12mm in case of rocky strata	Isolated and combined footings for 40mm permissible settlement in case of soil and 12mm in case of rocky strata	Rafts (width > 6m) for 75mm permissible settlement in case of soil and 12mm in case of rocky strata
	Width upto 6.0m		
In case of foundation stratum is soil			
1.0m below NGL	-	5	7
2.0m below NGL	-	8	12
3.0m below NGL	10	15	18
4.0m and below NGL	14	20	24
In case of founding stratum is rock			
0.6m embedment into rock	35.0	35.0	35.0
1.0m embedment into rock	40.0	40.0	40.0
2.0m embedment into rock	50.0	50.0	50.0
4.0m embedment into rock	55.0	55.0	55.0
5.0m and more embedment into rock	60.0	60.0	60.0

For FGL refer GLP (General layout plan)
For NGL of the proposed area GLP along with enclosed topographical survey drawing and borelog data may be referred. In case any loose/soft pockets is encountered at founding level, the same shall be removed completely upto the hard strata and filled up with PCC (1:4:8).
For the new facilities to be constructed after dismantling existing facilities; founding level of new facilities shall be taken at least 1.0m below the existing founding depth of the dismantled structures in case of soil and 0.6m below the existing founding depth of the dismantled structures in case of rock.

b) For open foundations, the total permissible settlement shall be governed by IS: 1904 / IS: 13063 and from functional requirements whichever is more stringent. However, total settlement shall be restricted to the following:

Isolated & Raft (Main power house, TG Area Footings, Boiler, Mill, Bunker Footings & Fans) resting on soil	25 mm
Isolated & Strip (other than Main power house, TG Area Footings, Boiler, Mill, Bunker Footings & Fans) resting on soil	40 mm
Raft (other than Main power house, TG Area Footings, Boiler, Mill, Bunker Footings & Fans) resting on soil	75 mm
Foundations in Weathered rock / rock	12 mm

In case the total permissible settlement is to be restricted to less than as above specified from functional requirements, then the net allowable bearing pressure shall be reduced after review in consultation with Engineer.

c) Special Requirements:

i) Chemicals in ground water and subsoil, as observed during investigation are:

Chemical	Sulphates	Chlorides	pH
Ground Water	288-341mg/l	20-95 mg/l	7.2-8.5
Sub-soil	0.09-0.13 %	0.01-0.04 %	7.1-7.8

ii) The sulphate content of the soil is slightly more than the specified limit. Therefore, strata at the site may be treated in Class-II as described in IS: 456.

iii) In view of the above, the following shall be adopted.

Cement Type	As per IS 456 Table 4
Concrete Grade	As specified elsewhere in the specifications
Type of Reinforcement	As specified elsewhere in the specifications
Cover to Reinforcement	As specified elsewhere in the specifications

LEGEND:

1. ROADS (DOUBLE LANE) . . . .
   ROADS (SINGLE LANE) . . . .
2. EXISTING BOUNDARY WALL . . . .
3. EXISTING ENCING . . . .
4. RAILWAY LINE . . . .
5. FACILITIES/ BUILDINGS (STAGE–III) . . . .
6. WATCH TOWER . . . .
7. FORMATION LEVEL . . . . RL(+) 71M/69M
8. NEW BOUNDARY WALL TO BE CONSTRUCTED . .
9. BOUNDARY WALL TO BE DISMANTLED . . . . .
10. NEW CHAIN LINK FENCING TO BE CONSTRUCTED . . .
11. TEMPORARY FENCING LINE (NOT IN EPC PKG)

NOTES:

1. ALL DIMENSIONS AND LEVELS ARE IN METRES.
2. ±0.00 OF MAIN PLANT AREA CORRESPONDS TO RL(+)71.50M
3. ROUTING OF VARIOUS PIPES AS SHOWN ARE TENTATIVE. BIDDER MAY OPTIMISE TO SUIT SITE CONDITIONS AVOIDING FOULING WITH EXISTING FACILITIES(IF DISMANTLING IS PENDING).
4. THE LAYOUT SHOWN IS SUGGESTIVE AND SAME MAY BE FURTHER DEVELOPED BY THE BIDDER AT DETAILED ENGINEERING STAGE. HOWEVER, AREA BETWEEN TEMPORARY FENCING AND EXISTING BW ON WEST AND SOUTH SIDE WILL NOT BE AVAILABLE INITIALLY TILL DISMANTLING OF EXISTING PLANT. AREA OUTSIDE NEW BOUNDARY WALL ON EAST SITE (TOWARDS PROPOSED TOWNSHIP) ALSO WILL NOT BE AVAILABLE FOR EPC PACKAGE. THESE AREAS WILL ONLY BE USED IN CONSULTATION WITH NTPC.
5. FOR DETAIL RAIL LAYOUT REFER FEASIBILITY REPORT OF RAILWAY SYSTEM.
6. EXISTING RAW WATER RESERVOIR II PROPOSED TO BE DISMANTLED AFTER COMPLETION & CHARGING OF NEW RESERVOIR IN BIDDERS SCOPE.
7. FOR BOUNDARY WALL, THIS DRG. MAY BE REFERRED WITH MINOR MODIFICATION AS PER DETAILED LAYOUT. ON WEST AND SOUTH SIDE, EXISTING BOUNDARY WALL TO BE DISMANTED AND NEW BOUNDARY WALL TO BE CONSTRUCTED AT THE SAME LOCATION. CONSTRUCTION TO BE PLAN IN PHASES MAINTAINING THE SAFETY AND SECURITY OF THE PLANT.
8. AREAS IDENTIFIED FOR LAYDOWN & PREASSEMBLY, BATCHING PLANT AND BALANCE AREAS WHICH WILL BE MADE AVAILABLE AFTER DISMATLING OF EXISTING STRUCTURES WILL BE USED FOR DEVELOPMENT OF GREEN BELT.
9. THE EXISTING ETP NEAR COAL STOCK YARD IS TO BE DISMANTLED.
10. FOR STORAGE OF AMMONIA, AREA EARMARKED FOR LAYDOWN FACILITIES MAY BE USED IN FUTURE.

FOR TENDER PURPOSE

0 25 50 75 100 125M

NTPC Limited
(A GOVERNMENT OF INDIA ENTERPRISE)
ENGINEERING DIVISION

PROJECT
TALCHER THERMAL POWER STATION
STAGE–III (2X660 MW)

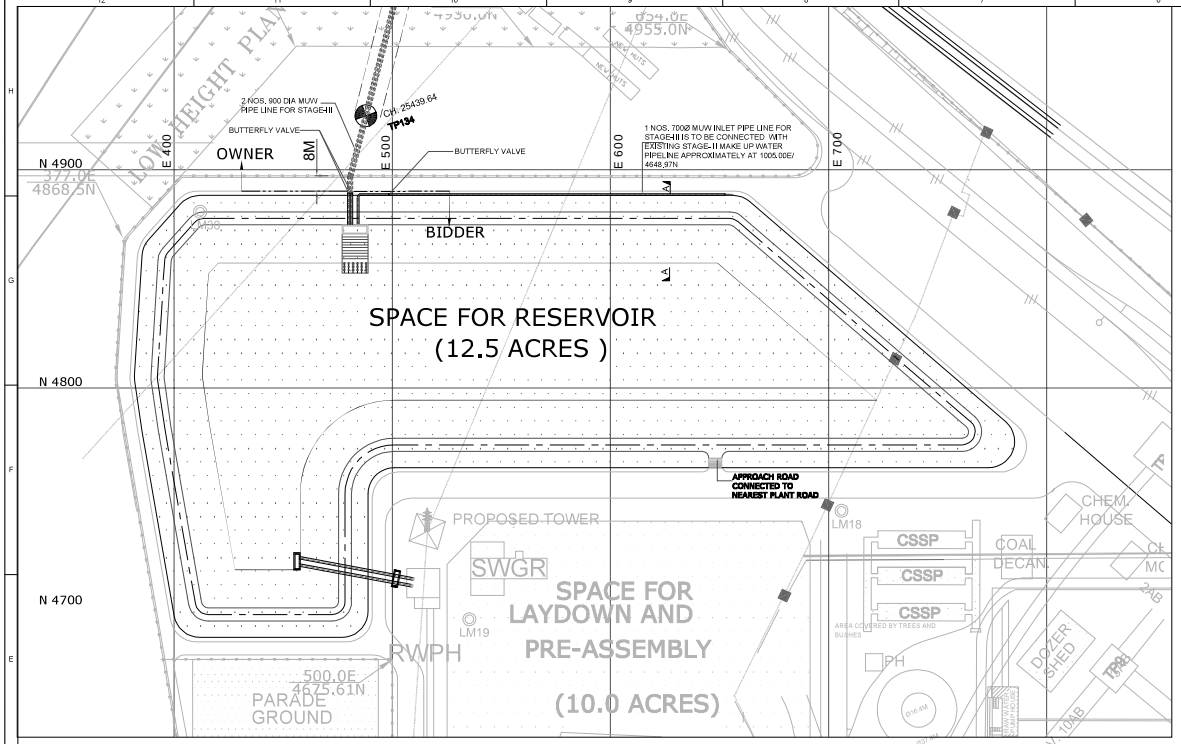
TITLE
GENERAL LAYOUT PLAN

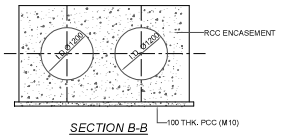
REV.NO.	DESCRIPTION	DRAWN	DESIGN	CHKD.	M	E	C	C&I	ARCH.	APPD	DATE
0	FOR TENDER PURPOSE	MANOJ									07.04.22

CLEARED BY

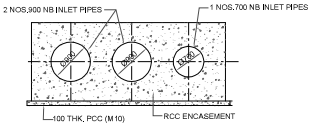
SIZE	SCALE	DRG. NO.	REV. NO.
A0	1:2500	4540–999–POC–F–001	0

CAD FILE NAME : 4540–999–POC–F–001

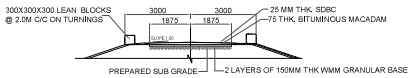




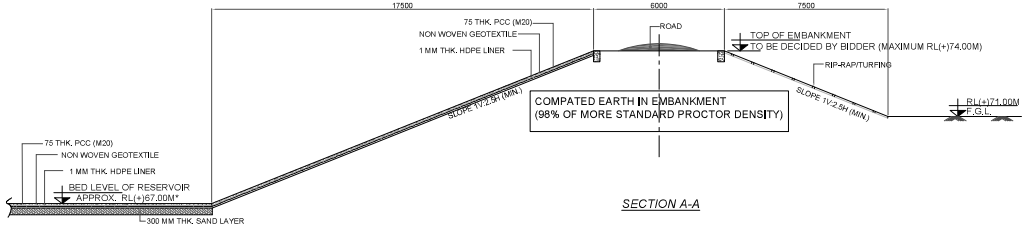
SECTION B-B



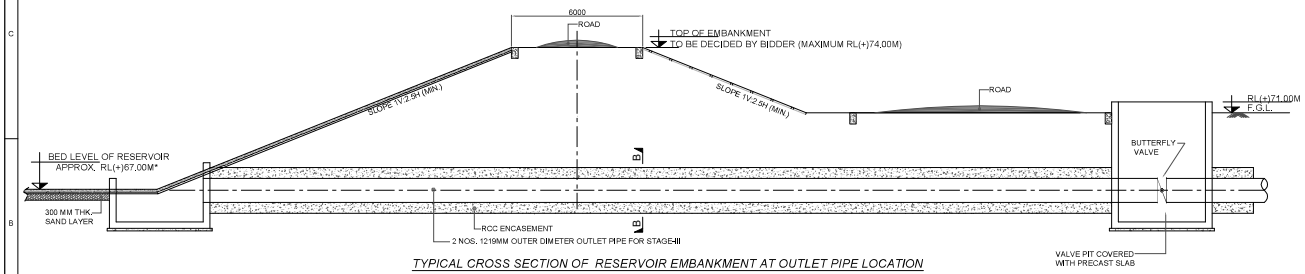
SECTION C-C



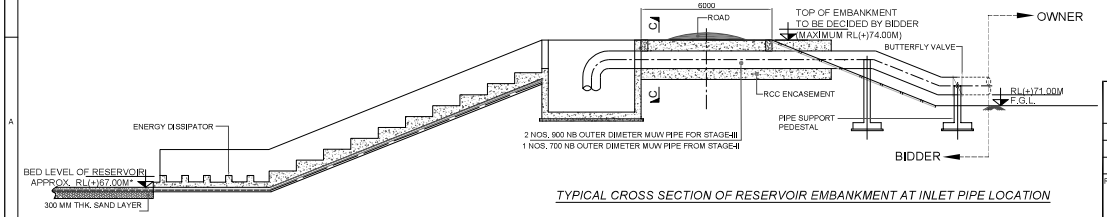
TYPICAL DETAIL OF ROAD ON TOP OF EMBANKMENT(TYP)



SECTION A-A



TYPICAL CROSS SECTION OF RESERVOIR EMBANKMENT AT OUTLET PIPE LOCATION



TYPICAL CROSS SECTION OF RESERVOIR EMBANKMENT AT INLET PIPE LOCATION

FOR TENDER PURPOSE ONLY

SPECIAL NOTES:

(A) *THE INTERCONNECTION OF STAGE -III RAW WATER RESERVOIR INLET MAKE UP WATER PIPE WITH EXISTING MUW PIPE LINE OF STAGE-II SHALL BE UNDER BIDDER'S SCOPE. THE STAGE-III RAW WATER RESEVOIR INLET PIPE IS TO BE CONNECTED WITH THE EXISTING STAGE-I MUW PIPE AT TERMINAL POINT THE* APPROXIMATELY AT 1005.00E/ 4648.97N *IF REQUIRED, BOOSTER PUMPING SYSTEM SHALL BE PROVIDED.*

(B) *THE LAYING OF INLET MAKE UP WATER PIPE LINE FROM THE TERMINAL POINT AT BM INSIDE THE PLANT BOUNDARY TO RAW WATER RESERVOIR INLET STRUCTURE IS UNDER* ***BIDDER'S*** *SCOPE*

NOTES:-

1. ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN METER UNLESS OTHERWISE MENTIONED.
2. THE RAW WATER RESERVOIR SHALL HAVE A GROSS USABLE CAPACITY OF APPROX. 120000 CUBIC-M EXCLUDING DEAD STORAGE.
3. THE LAYOUT & DETAILS OF RAW WATER RESERVOIR AND ASSOCIATED FACILITIES SHOWN IN THE DRAWING ARE INDICATIVE AND THE SAME SHALL BE FURTHER DETAILED BY THE BIDDER DURING DETAILED ENGINEERING STAGE IN LINE WITH THE REQUIREMENTS STIPULATED IN THE BIDDING DOCUMENTS.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATION.
5. BED LEVEL OF RESERVOIR MARKED '*' IS INDICATIVE. THE ACTUAL BED LEVEL SHALL BE WORKED OUT BY THE BIDDER IN LINE WITH THE REQUIREMENTS SPECIFIED IN THE BIDDING DOCUMENTS.

REV.NO.	DESCRIPTION	DRAWN	DESIGN	CHKD.	M	E	C	C&I	ARCH.	APPD	DATE
					CLEARED BY						
C	FOR TENDER PURPOSE ONLY		AA	RG						CS	22.04.22
B	FOR TENDER PURPOSE ONLY		AA	RG						CS	06.04.22
0	FOR TENDER PURPOSE ONLY		AA	RG						CS	

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N T P C LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)
ENGINEERING DIVISION

PROJECT: TALCHER THERMAL POWER PROJEDCT
STAGE-III (2x660 MW)

TITLE: E P C PACKAGE
LAYOUT AND DETAILS OF RAW WATER RESERVOIR

SIZE	SCALE	DRG. NO.	REV. NO.
A1	N.T.S.	4540-001-POC-A-007	C

CAD FILE NAME :

	Specification Reference				Existing	Read As
Sl. No	Sec/Part	Sub Sec	Page No.	Clause No.		
E-QA-04	SECTION - VI /PART – B	E-13 MAKE UP WATER SYSTEM			COMPLETE CHAPTER	TO BE DELETED.

	Specification Reference				Existing	Read As
Sl. No	**Sec/Part**	**Sub Sec**	**Page No.**	**Clause No.**		
G-04	VI/B	G-04/STANDARD PG TEST PROCEDURE	Page 9 of 224	3.4	Condensate flow nozzle (ASME PTC 6) will be installed by vendor Prior to initial operations. Conden-sate flow data will be available in DCS during performance test. All other online process instruments will be used for conducting TG Per-formance test. Average value of test data of the specified test peri-od will be collected from DCS for evaluation purpose. Offline instrument will not be used during performance test. Vendor to ensure calibration validity of all in-struments used for PG Test.	Condensate flow nozzle (ASME PTC 6) will be installed by vendor Prior to initial operations. Conden-sate flow data will be available ~~**in DCS**~~ during performance test. All other online process instruments will be used for conducting TG Per-formance test. Average value of test data of the specified test peri-od will be collected ~~**from DCS**~~ for evaluation purpose. ~~Offline instrument will not be used during performance test.~~ Vendor to ensure calibration validity of all in-struments used for PG Test.....
G-05	VI/B	G-04/STANDARD PG TEST PROCEDURE	Page 15 of 224	4.8	Frequency of Readings a) The most important measure-ment, that is the primary flow, shall be read at interval of as defined in DCS. b) Other important measurements, primary pressures, temperatures and secondary flows shall be read at interval as defined in DCS. c) Storage level changes, second-ary pressures and temperatures, shall be read at interval as defined in DCS. d) The generator output shall be collected from online energy meter	Frequency of Readings a) The most important measure-ment, that is the primary flow, shall be read at interval of as defined in ~~DCS~~ the applicable code. b) Other important measurements, primary pressures, temperatures and secondary flows shall be read at interval as defined in ~~DCS~~ the applicable code. c) Storage level changes, second-ary pressures and temperatures, shall be read at interval as defined in ~~DCS~~ the applicable code. d) The generator output shall be collected from online energy meter
G-06	VI/B	G-04/STANDARD PG TEST PROCEDURE	Page 39 of 224	8	For condenser calculations, one hour data will be considered from minimum test duration of two hour period during steady state condition. Frequency of test data will be as specified in DCS.	For condenser calculations, one hour data will be considered from minimum test duration of two hour period during steady state condition. Frequency of test data will be as specified in ~~DCS~~ the applicable code.
G-07	VI/A	IV	Page 7 of 73	1.01.02(xi)	Guarantee For increase in Station auxiliary power consumption: Limiting Value Not more than 16500 KW	Guarantee For increase in Station auxiliary power consumption: Limiting Value Not more than **14350 KW**

Sl. No	Specification Reference				Existing	Read As
	Sec/Part	Sub Sec	Page No.	Clause No.		
G-08	VI/B	G-07	75 Pages	MDL	-	Drawings/Documents listed herein, for the scope deleted as per Amendment No. 2, are to be considered as Not Applicable.

EPC PACKAGE FOR TALCHER THERMAL POWER PROJECT, STAGE-III (2x660 MW)
Amendment No. 03 to Technical Specifications Section-VI of Bidding Document No.: CS-4540-001A-3

<table>
<tr><th rowspan="2">SL. NO.</th><th colspan="4">SPECIFICATION REFERENCE</th><th rowspan="2">Existing</th><th rowspan="2">Read as</th></tr>
<tr><th>SEC/ PART</th><th>SUB SEC.</th><th>PAGE NO.</th><th>CLAUSE NO.</th></tr>
<tr><td>A-MH-60</td><td>VI/B</td><td>A-01</td><td>89 of 101</td><td>4.01.02 (M) (amendment A-MH-46)</td><td>(i) Pumping distance to be considered for arriving of Ash Slurry Pump head is 12.5 K.M.
(ii) Pumping distance to be considered for arriving of AWRS Pump head is 11.75 K.M.
Static lift to be considered for Pontoon/Barge mounted Pumps- Not applicable
Static lift to be considered for Ash Slurry Pump – Not applicable.</td><td>(i) Pumping distance to be considered for arriving of Ash Slurry Pump head is 12.5 K.M.
(ii) Pumping distance to be considered for arriving of AWRS Pump head - Not applicable
Static lift to be considered for Pontoon/Barge mounted Pumps- Not applicable
Static lift to be considered for Ash Slurry Pump – 65 (meter)</td></tr>
<tr><td>A-MH-61</td><td>VI/B</td><td>A-01</td><td>101 of 101</td><td>4.04.15</td><td>Dust extraction system
Type: Dry type dust extraction system
Location: Truck un-loading points, Junction Towers (limestone/ gypsum discharge & receipt points), limestone crusher house (including belt feeder & vibrating screening feeder) and limestone/gypsum storage Shed/Silo.</td><td>Dust extraction system
Type: Dry type dust extraction system
Location: Truck un-loading points, Junction Towers (limestone), limestone crusher house (including belt feeder & vibrating screening feeder) and limestone storage Shed/Silo.</td></tr>
<tr><td>A-MH-62</td><td>VI/B</td><td>A-01</td><td>91 of 101</td><td>4.02.02</td><td>All conveyors (except boom conveyor of S/R) shall be designed for 110% of rated capacity. The boom conveyor of S/R shall be designed for 125% of rated capacity. Rated capacity (corresponding to CHP capacity) shall be guaranteed capacity for 100% duty equipment. For 50% duty equipment rated capacity shall be guaranteed capacity. For purpose of guaranteed power consumption rated capacity shall be considered in either case.</td><td>All conveyors (except boom conveyor of S/R) shall be designed for 110% of rated capacity. The boom conveyor of S/R shall be designed for 125% of rated capacity. Rated capacity (corresponding to CHP capacity) shall be guaranteed capacity for 100% duty equipment & 75% duty equipment. For 55% duty equipment design capacity shall be guaranteed capacity. For purpose of guaranteed power consumption rated capacity shall be considered in either case.</td></tr>
<tr><td>A-MH-63</td><td>VI/B</td><td>A-01</td><td>98 of 101</td><td>4.04.07</td><td>
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<tr><th>Sl</th><th>Equipment</th><th>Duty requirement</th><th>Design capacity as % of duty requirement</th></tr>
<tr><td>1</td><td>Crushers</td><td>2x100%</td><td>2x110%</td></tr>
<tr><td>2</td><td>Vibrating Feeders, Vibrating screen feeders</td><td>1x100%, 2x100%</td><td>1x110%, 2x110%</td></tr>
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<table>
<tr><th>Sl</th><th>Equipment</th><th>Duty requirement</th><th>Design capacity as % of duty requirement</th></tr>
<tr><td>1</td><td>Crushers</td><td>2x100%</td><td>110%</td></tr>
<tr><td>2</td><td>Vibrating screen feeders</td><td>2x100%</td><td>110%</td></tr>
<tr><td>3</td><td>Vibrating feeders</td><td>1x100%</td><td>110%</td></tr>
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</td></tr>
</table>

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<td>A-MH-64</td>
<td>VI/B</td>
<td>A-01</td>
<td>93 of 101</td>
<td>4.02.06</td>
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<tr><td>2</td><td>Vibrating feeders</td><td>2x50%</td><td>110%</td></tr>
<tr><td>3</td><td>Paddle feeders</td><td>2x50%</td><td>150%</td></tr>
<tr><td>4</td><td>Belt Feeder for Crusher House</td><td>2x50%</td><td>110%</td></tr>
<tr><td>5</td><td>Stacker-reclaimer</td><td>1x100%</td><td>110% for stacking & 125% for reclaiming</td></tr>
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</td>
<td>
<table>
<tr><th>Sl</th><th>Equipment</th><th>Duty requirement</th><th>Design capacity as % of duty requirement</th></tr>
<tr><td>1</td><td>Crushers</td><td>2x55%</td><td>110%</td></tr>
<tr><td>2</td><td>Vibrating feeders</td><td>2x55%</td><td>110%</td></tr>
<tr><td>3</td><td>Paddle feeders</td><td>2x75%</td><td>110%</td></tr>
<tr><td>4</td><td>Belt Feeder for Crusher House</td><td>2x55%</td><td>110%</td></tr>
<tr><td>5</td><td>Stacker-reclaimer</td><td>1x100%</td><td>110% for stacking & 125% for reclaiming</td></tr>
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</tr>
<tr>
<td>A-MH-65</td>
<td>VI/B</td>
<td>IIA-14</td>
<td>4 of 5</td>
<td>2.03.00</td>
<td>Minimum four (4) Nos. sump pumps in gypsum storage shed complete with motors, local control panel, level switches, individual discharge piping with fittings and valves ash disposal slurry sump.</td>
<td>Minimum four (4) Nos. sump pumps in gypsum storage shed complete with motors, local control panel, level switches, individual discharge piping with fittings and valves up to ash disposal slurry sump.</td>
</tr>
<tr>
<td>A-MH-66</td>
<td>VI/B</td>
<td>A-01</td>
<td>95 of 101</td>
<td>4.02.12 (Amendment A-MH-12)</td>
<td>Bidder to maximize the coal stockyard storage capacity by utilizing the available space. However, stockyard capacity in any case shall not be less than 1,50,000 million tonne in the stockpile considering 800 T/cum bulk density for coal.</td>
<td>Bidder to maximize the coal stockyard storage capacity by utilizing the available space. However, stockyard capacity in any case shall not be less than 1,50,000 MT in the stockpile considering 800 T/cum bulk density for coal.</td>
</tr>
<tr>
<td>A-MH-67</td>
<td>VI/A</td>
<td>IIA-14</td>
<td>1 of 5</td>
<td>1.01.01</td>
<td>Limestone will be received to power plant through road by trucks. Limestone received through…….. Limestone by truck tipplers.
Two (2) numbers Box Feeders/ Bulk-material Receiving Unit/ Surface feeder each of 150
TPH Capacity, for unloading…… before Limestone crusher house.
Limestone shall be …….100% for conveying.</td>
<td>Limestone will be received to power plant through road by trucks. Limestone received through…….. Limestone by truck tipplers.
Two (2) numbers Box Feeders/ Bulk-material Receiving Unit/ Surface feeder each of 200
TPH Capacity, for unloading…… before Limestone crusher house.</td>
</tr>
</table>

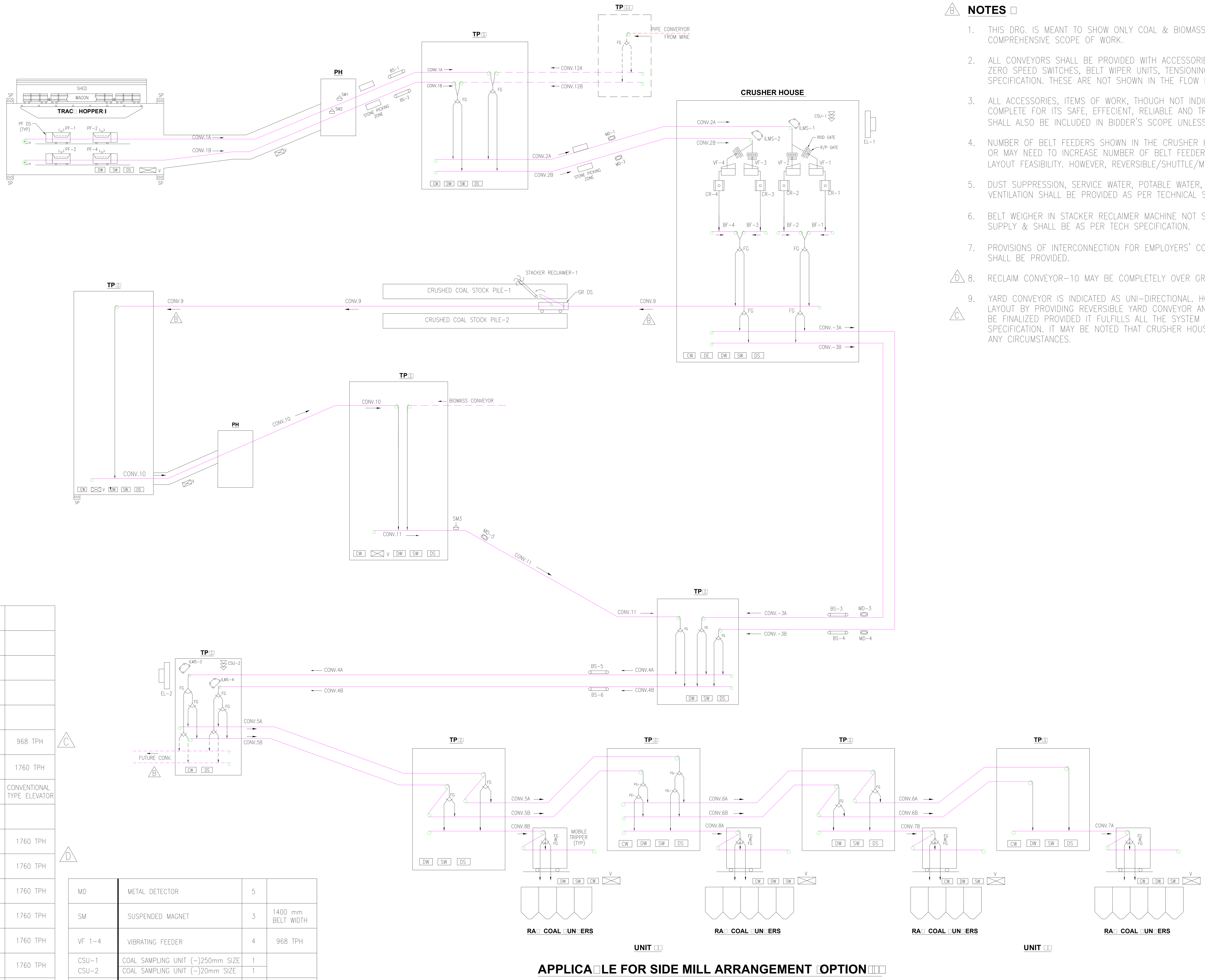
A-MH-68	VI/B	A-20	36 of 101	4.25.00 (c)	Capacity: 60 Ton **Unloading Cycle:3-4 minutes** Max. Tilting angle: 55 Main Structure: Steel IS 2062/IS 1570 Hydraulic cylinder Tubes: Honed/Roller Burnished of seamless with internal surface finish less than 0.4 micron Hydraulic Cylinder piston rod: C45/EN8 Seal & guide ring: PTFE	Capacity: 60 Ton Max. Tilting angle: 55 Main Structure: Steel IS 2062/IS 1570 Hydraulic cylinder Tubes: Honed/Roller Burnished of seamless with internal surface finish less than 0.4 micron Hydraulic Cylinder piston rod: C45/EN8 Seal & guide ring: PTFE
A-MH-69	VI/A	Mandatory Spares	6 of 23	Chapter-04 Coal Handling Plant	H) SAMPLER (Coal **& Lime**) I) CRUSHER (Coal **& Lime**)	H) SAMPLER (Coal) I) CRUSHER (Coal)
A-MH-70	VI/A	Mandatory Spares	15 of 23	Chapter-04 Coal Handling Plant	Y. BUCKET ELEVATOR Z. Surface Feeder/BRU-Bulk Reception Unit ZA. Truck Tippler	Y. BUCKET ELEVATOR (**for LHP**) Z. Surface Feeder/BRU-Bulk Reception Unit (**for LHP**) ZA. Truck Tippler (**for LHP**)
A-MH-71	**VI/A**	Mandatory Spares	14 of 15	Chapter-09-LIMESTONE GYPSUM HANDLING PLANT	BUCKET ELEVATOR 1 Buckets 2 Belt for bucket elevator 3 Linkages	Deleted
A-MH-72	VI/A	Mandatory Spares	2 of 23	Chapter-04 Coal Handling Plant	8. Cable reel drive (i) to (xii)	Not applicable
A-MH-73	VI/A	Mandatory Spares	1 of 23	Chapter-04 Coal Handling Plant	A) Mandatory Spares for Paddle Feeder 3. Gear box (including Paddle wheel, Travel drive, cable reel drive / Drag chain) i) Complete assembly 4 (vi) Hydraulic Motor (for Traverse Drive) 5(vi) Tension roller of paddle feeder trolley	A) Mandatory Spares for Paddle Feeder 3. Gear box (of drives wherever applicable including Paddle wheel, Travel drive, Energy chain) i) Complete assembly 4 (vi) Hydraulic Motor/**Geared Motor** (for Traverse Drive) 5(vi) Tension roller of paddle feeder trolley **(if applicable)**

A-MH-74	VI/A	Mandatory Spares	10 of 23	Chapter-04 Coal Handling Plant	R) Mandatory Spares for STACKER/RECLAIMER 5..1- Hydraulic pump & **hydraulic motor** drive for luffing system 5.2- **Hydraulic pump & hydraulic motor drive for slew mechanism** 11- **Gear Box of bucket wheel** 12- Plummer blocks and bearings of (CRD) 22- **Plummer block with bearing for cable reel drums** 18- Chain & chain sprockets 27- Energy Chain	R) Mandatory Spares for STACKER/RECLAIMER 5..1- Hydraulic pump for luffing system 5.2- Not applicable 11- Not applicable 12- Plummer blocks and bearings of (CRD) 22- Deleted 18- Chain & chain sprockets (**if applicable**) 27- Energy Chain (**if applicable**)
A-MH-75	**VI/A**	**IV/Functional Guarantees**	23 of 73	1.01.07.02(g)	**Coal Handling plant, Limestone handling plant, Gypsum handling plant** Total power consumption for all the equipments including auxiliaries with single stream operation at its guaranteed capacity for: i. Coal flow path IA (Direct stream), as per clause no 1.03.07.03.1 (i) and one no. stacker reclaimer, one no of yard conveyor (maximum of stacking / reclaiming modes) and four (4) nos. paddle feeders. ……	**Coal Handling plant, Limestone handling plant, Gypsum handling plant** Total power consumption for all the equipments including auxiliaries with single stream operation at its guaranteed capacity for: i. Coal flow path IA (Direct stream **excluding Paddle feeders**), as per clause no **1.03.7.02.1** (i) and one no. stacker reclaimer, one no of yard conveyor (maximum of stacking / reclaiming modes) and four (4) nos. paddle feeders. ……
A-MH-76	**VI/A**	**IV/Functional Guarantees**	32 of 73	1.03.7.02.1	**GUARANTEES** The Contractor shall furnish a declaration in the manner prescribed and included in the relevant Attachment of Section-VII for the following guaranteed parameters **which shall attract levy of liquidated damages for shortfall in Performance.** ……	**GUARANTEES** The Contractor shall furnish a declaration in the manner prescribed and included in the relevant Attachment of Section-VII for the following guaranteed parameters. ……
A-MH-77	**VI/ Part E**			Tender Drws.	4540-001-POM-A-040 (option-01), **Rev-C** 4540-001-POM-A-040 (option-02), **Rev-C**	4540-001-POM-A-040 (option-01), **Rev-D** 4540-001-POM-A-040 (option-02), **Rev-D**

A-MH-78	**VI/Part-A**		238/411 to 245/411 259/411 To 271/411 277/411 To 286/411	Attachment 3K	SUB-QUALIFYING REQUIREMENTS FOR THE MILL REJECT HANDLING SYSTEM SUB-QUALIFYING REQUIREMENTS FOR ASH HANDLING SYSTEM SUB-QUALIFYING REQUIREMENTS FOR COAL HANDLING SYSTEM	Annexure for Attachment 3K-MH
A-MH-79	VI, PART-B	SUB SECTION-A-20	2 0f 101	3.01.0. (b)(Amended A-MH-14)	……. "As received" limestone shall be fed on the double stream conveyors from where the same shall be conveyed upto the crushers. The crushed limestone shall be conveyed by conveyors/ Bucket elevators up to the limestone storage shed/Silo. From the limestone storage shed/Silo paddle feeders/vibro-feeders will extract/ reclaim crushed limestone and feed the same onto conveying system up to the limestone day silos.	……. "As received" limestone shall be fed on the **single** stream conveyors from where the same shall be conveyed upto the crushers. The crushed limestone shall be conveyed by conveyors/ Bucket elevators up to the limestone storage shed/Silo. From the limestone storage shed/Silo paddle feeders/vibro-feeders will extract/ reclaim crushed limestone and feed the same onto conveying system up to the limestone day silos.

A-MH-80	VI/A	IIA-14	5 of 5	4.00.01	All electrical actuators used in this package like for Flap gates, Scoop coupling, Pump house, Dust extraction etc. shall be non- intrusive, fieldbus based integral actuators meeting requirements specified in Electrical actuators, Part-B, Section-VI.	All electrical actuators used in this package shall necessarily be of non-intrusive field bus based integral actuators like Flap Gates, RPG, Dampers, Valves meeting requirements specified in Electrical Actuator referred in C&I section Part –B , section-VI of the specification, except for skid mounted / operated through only PLC/ local control panel systems like scoop coupling, tripper, paddle feeder, LSU where it is not possible to have above non-intrusive type actuators, the Contractor shall provide Electrical Actuators as per Standard practice.
A-MH-81	**VI/A**	**III**	18 of 18 Terminal Point & exclusion & owners' input	1.03.00 (Amendment **A-MH-48**)	Terminal Point for Ash slurry disposal piping and AWRS piping shall be 5 m inside plant boundary. Ash slurry piping & AWRS after 5 m from plant boundary towards Mine Void shall be excluded from the Bidders' scope.	Terminal Point for Ash slurry disposal piping and AWRS piping shall be 5 m inside plant boundary. Ash slurry piping & AWRS after 5 m from plant boundary towards Mine Void shall be excluded from the Bidders' scope. **Decanted water shall be pumped from owners' pumping system located at Mine Void end. There shall be two nos. working AWRS Pump of 1200 m^3/hr flow rate each, as envisaged. Hence, maximum recovery water received inside plant shall be 2400 m^3/hr.**

A-MH-82	VI, PART-B	SUB SECTION-A-20	82 0f 101	4.01.00	Overall, operation of the following equipment of Coal, Biomass, Limestone **& Gypsum** Handling Plant shall be controlled from CHP DDCMIS located at main CHP control room. **Conveyors, feeders, flap gates, R & P gates, crushers, hydraulic scoop couplings**. The operation of the Employers' Cross-country conveyor …… shall be finalized during detail engineering. Complete Dust Suppression system, service water system, …… ……. ……	Overall, operation of the following equipment of Coal, Biomass, Limestone ~~**& Gypsum**~~ Handling Plant shall be controlled from CHP DDCMIS located at main CHP control room. The operation of the Employers' Cross-country conveyor …… shall be finalized during detail engineering. **Conveyors, feeders, flap gates, R & P gates, crushers, hydraulic scoop couplings.** Complete Dust Suppression system, service water system, …… ……. ……



NOTES □

1. THIS DRG. IS MEANT TO SHOW ONLY COAL & BIOMASS FLOW PATH AND DOES NOT INDICATE COMPREHENSIVE SCOPE OF WORK.
2. ALL CONVEYORS SHALL BE PROVIDED WITH ACCESSORIES SUCH AS PULL CORD, BELT SWAY AND ZERO SPEED SWITCHES, BELT WIPER UNITS, TENSIONING DEVICES ETC. AS PER TECHNICAL SPECIFICATION. THESE ARE NOT SHOWN IN THE FLOW DIAGRAM FOR CLARITY.
3. ALL ACCESSORIES, ITEMS OF WORK, THOUGH NOT INDICATED BUT REQUIRED TO MAKE THE SYSTEM COMPLETE FOR ITS SAFE, EFFECIENT, RELIABLE AND TROUBLE FREE OPERATION AND MAINTENANCE SHALL ALSO BE INCLUDED IN BIDDER'S SCOPE UNLESS SPECIFICALLY EXCLUDED.
4. NUMBER OF BELT FEEDERS SHOWN IN THE CRUSHER HOUSE ARE TENTATIVE. BIDDER MAY OPTIMIZE OR MAY NEED TO INCREASE NUMBER OF BELT FEEDERS IN THE CRUSHER HOUSE BASED ON THE LAYOUT FEASIBILITY. HOWEVER, REVERSIBLE/SHUTTLE/MOVABLE BELT FEEDER SHALL NOT BE ALLOWED.
5. DUST SUPPRESSION, SERVICE WATER, POTABLE WATER, COOLING WATER, DUST EXTRACTION & VENTILATION SHALL BE PROVIDED AS PER TECHNICAL SPECIFICATION REQUIREMENT.
6. BELT WEIGHER IN STACKER RECLAIMER MACHINE NOT SHOWN FOR CLARITY IS IN BIDDER'S SCOPE OF SUPPLY & SHALL BE AS PER TECH SPECIFICATION.
7. PROVISIONS OF INTERCONNECTION FOR EMPLOYERS' COAL & BIOMASS CONVEYORS AT TP-1 & TP-9 SHALL BE PROVIDED.
8. RECLAIM CONVEYOR-10 MAY BE COMPLETELY OVER GROUND INSTEAD OF PARTIALLY UNDER GROUND.
9. YARD CONVEYOR IS INDICATED AS UNI-DIRECTIONAL. HOWEVER, FURTHER OPTIMIZATION OF THE CHP LAYOUT BY PROVIDING REVERSIBLE YARD CONVEYOR AND REVERSIBLE STACKER CUM RECLAIMER MAY BE FINALIZED PROVIDED IT FULFILLS ALL THE SYSTEM REQUIREMENT AS PER THE TENDER SPECIFICATION. IT MAY BE NOTED THAT CRUSHER HOUSE SHALL NOT BE LOCATED UNDER-GROUND IN ANY CIRCUMSTANCES.

LEGEND

Symbol	Description
	BELT FEEDER
DS	DUST SUPPRESSION SYSTEM
SW	SERVICE WATER SYSTEM
DW	DRINKING WATER SYSTEM
DE	DUST EXTRACTION SYSTEM
SP	SUMP & SUMP DRAINAGE PUMPS
	BELT CONVEYOR
	PIPE CONVEYOR
CA	ON LINE COAL ANALYSER
	FUTURE PROVISION
BS	BELT SCALE
CSU	COAL SAMPLING UNIT
DS	DUST SUPPRESSION-PF/SR
ILMS	MAGNETIC SEPARATOR (IN LINE)
MD	METAL DETECTOR
PF	PADDLE FEEDER
V	VENTILATION
FG	FLAP GATE
	ROD GATE
	RACK & PINION GATE
CR	CRUSHER
VF	VIBRATING SCREENING FEEDER
SM	SUSPENDED MAGNET
EL	CONVENTIONAL TYPE ELEVATOR

E□PT□ DESIGN□	E□UIPMENT	□T□□	RATED CAPACIT□
RPG	RACK AND PINION GATE	4	
RG	ROD GATE	4	
DE	DUST EXTRACTION SYSTEM	LOT	
DS	DUST SUPPRESSION SYSTEM	LOT	
SP	SUMP PUMP	LOT	
BF-1,2,3,4	BELT FEEDER	4	968 TPH
SR	STACKER RECLAIMER	1	1760 TPH
EL	PASSENGER CUM GOODS ELEVATOR	2	CONVENTIONAL TYPE ELEVATOR
PH	PENT HOUSE	2	
CONV. 11	CONVEYOR 1400 mm BELT WIDTH	1	1760 TPH
CONV. 10	CONVEYOR 1400 mm BELT WIDTH	1	1760 TPH
CONV. 9	CONVEYOR 1400 mm BELT WIDTH	1	1760 TPH
8A/8B	CONVEYOR 1400 mm BELT WIDTH	2	1760 TPH
7A/7B	CONVEYOR 1400 mm BELT WIDTH	2	1760 TPH
6A/6B	CONVEYOR 1400 mm BELT WIDTH	2	1760 TPH
5A/5B	CONVEYOR 1400 mm BELT WIDTH	2	1760 TPH
4A/4B	CONVEYOR 1400 mm BELT WIDTH	2	1760 TPH
3A/3B	CONVEYOR 1400 mm BELT WIDTH	2	1760 TPH
2A/2B	CONVEYOR 1400 mm BELT WIDTH	2	1760 TPH
1A/1B	CONVEYOR 1400 mm BELT WIDTH	2	1760 TPH

E□PT□ DESIGN□	E□UIPMENT	□T□□	RATED CAPACIT□
MD	METAL DETECTOR	5	
SM	SUSPENDED MAGNET	3	1400 mm BELT WIDTH
VF 1-4	VIBRATING FEEDER	4	968 TPH
CSU-1	COAL SAMPLING UNIT (-)250mm SIZE	1	
CSU-2	COAL SAMPLING UNIT (-)20mm SIZE	1	
CR	CRUSHER	4	968 TPH
FG	FLAP GATE	LOT	
BS	BELT WEIGH SCALE	6	
ILMS 1-4	IN LINE MAGNETIC SEPARATOR ALONG WITH TRAMP IRON CHUTE	4	FOR 1400 mm BELT WIDTH
PF 1-4	PADDLE FEEDER	4	1320 TPH

FOR TENDER PURPOSE ONLY

REV.	DESCRIPTION	DRAWN	DESIGN	CHKD.	CLEARED BY C	M	E	C&I	APPD	DATE
D	REVISED AS PER BIDDER'S QUERIES									
C	REVISED AS PER BIDDER'S QUERIES									
B	REVISED AS PER BIDDER'S QUERIES									
A	RELEASED FOR TENDER	PRIYANKA	KM	AN					AG	

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NTPC

NTPC Limited
(A GOVT. OF INDIA ENTERPRISE)
ENGINEERING DIVISION

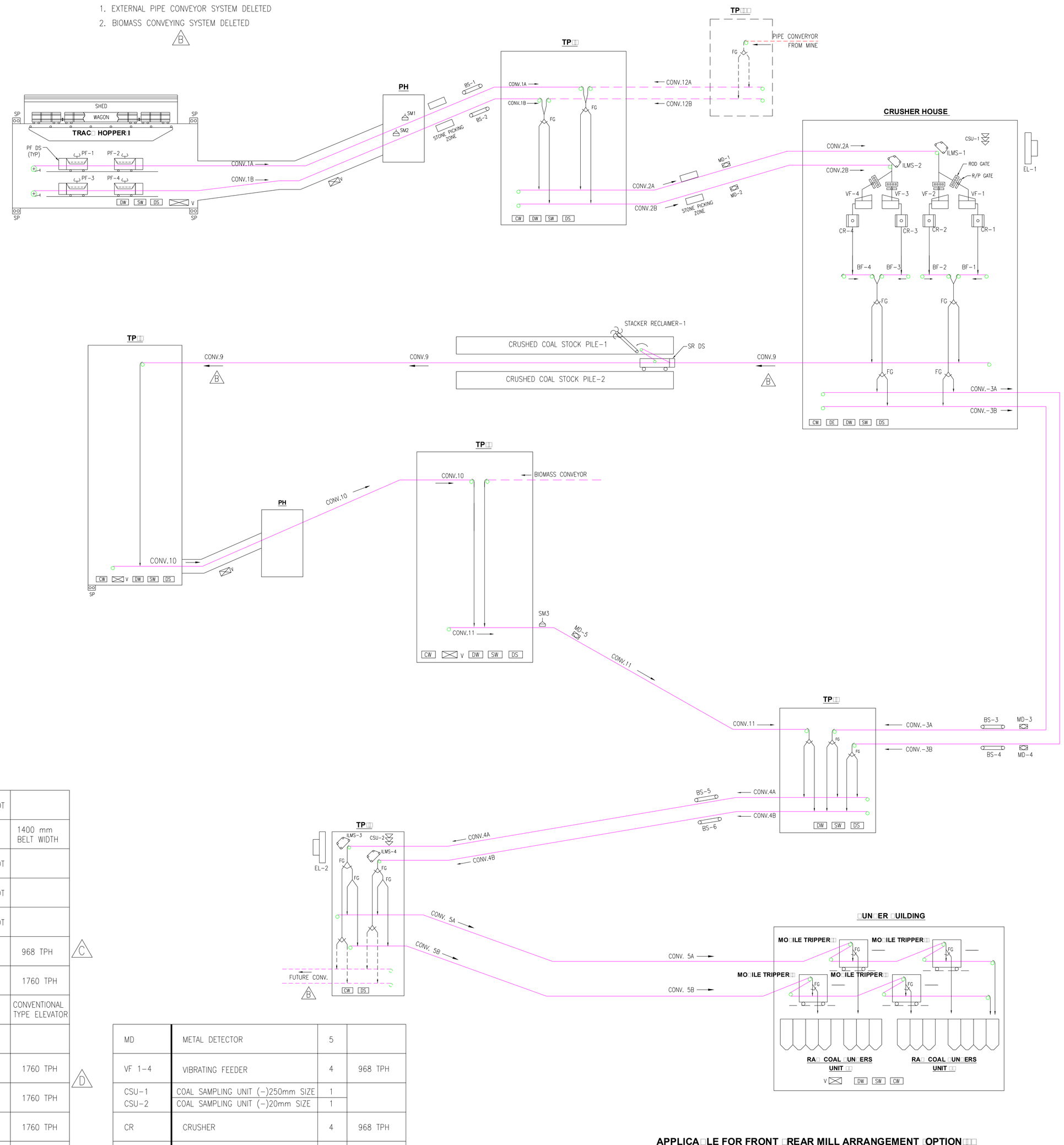
PROJECT: **TALCHAR THERMAL PO□ER PRO□ECT**
STAGE-III (2x660MW)

TITLE: EPC PACKAGE-COAL HANDLING SYSTEM
COAL FLO□ DIAGRAM

SIZE: A1 | SCALE: -- | DRG.NO.: □□□□□□□□POM□A□□□ □OPTION□□□ | REV.: D

CAD FILE NAME : 4540-001-POM-A-040 (OP.-01).dwg

1. EXTERNAL PIPE CONVEYOR SYSTEM DELETED
2. BIOMASS CONVEYING SYSTEM DELETED



NOTES

1. THIS DRG. IS MEANT TO SHOW ONLY COAL & BIOMASS FLOW PATH AND DOES NOT INDICATE COMPREHENSIVE SCOPE OF WORK.
2. ALL CONVEYORS SHALL BE PROVIDED WITH ACCESSORIES SUCH AS PULL CORD, BELT SWAY AND ZERO SPEED SWITCHES, BELT WIPER UNITS, TENSIONING DEVICES ETC. AS PER TECHNICAL SPECIFICATION. THESE ARE NOT SHOWN IN THE FLOW DIAGRAM FOR CLARITY.
3. ALL ACCESSORIES, ITEMS OF WORK, THOUGH NOT INDICATED BUT REQUIRED TO MAKE THE SYSTEM COMPLETE FOR ITS SAFE, EFFECIENT, RELIABLE AND TROUBLE FREE OPERATION AND MAINTENANCE SHALL ALSO BE INCLUDED IN BIDDER'S SCOPE UNLESS SPECIFICALLY EXCLUDED.
4. NUMBER OF BELT FEEDERS SHOWN IN THE CRUSHER HOUSE ARE TENTATIVE. BIDDER MAY OPTIMIZE OR MAY NEED TO INCREASE NUMBER OF BELT FEEDERS IN THE CRUSHER HOUSE BASED ON THE LAYOUT FEASIBILITY. HOWEVER, REVERSIBLE/SHUTTLE/MOVABLE BELT FEEDER SHALL NOT BE ALLOWED.
5. DUST SUPPRESSION, SERVICE WATER, POTABLE WATER, COOLING WATER, DUST EXTRACTION & VENTILATION SHALL BE PROVIDED AS PER TECHNICAL SPECIFICATION REQUIREMENT.
6. BELT WEIGHER IN STACKER RECLAIMER MACHINE NOT SHOWN FOR CLARITY IS IN BIDDER'S SCOPE OF SUPPLY & SHALL BE AS PER TECH SPECIFICATION.
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FG	FLAP GATE	LOT	
SM	SUSPENDED MAGNET	3	1400 mm BELT WIDTH
DE	DUST EXTRACTION SYSTEM	LOT	
DS	DUST SUPPRESSION SYSTEM	LOT	
SP	SUMP PUMP	LOT	
BF-1,2,3,4	BELT FEEDER	4	968 TPH
SR	STACKER RECLAIMER	1	1760 TPH
EL	PASSENGER CUM GOODS ELEVATOR	2	CONVENTIONAL TYPE ELEVATOR
PH	PENT HOUSE	2	
CONV. 11	CONVEYOR 1400 mm BELT WIDTH	1	1760 TPH
CONV. 10	CONVEYOR 1400 mm BELT WIDTH	1	1760 TPH
CONV. 9	CONVEYOR 1400 mm BELT WIDTH	1	1760 TPH
5A/5B	CONVEYOR 1400 mm BELT WIDTH	2	1760 TPH
4A/4B	CONVEYOR 1400 mm BELT WIDTH	2	1760 TPH
3A/3B	CONVEYOR 1400 mm BELT WIDTH	2	1760 TPH
2A/2B	CONVEYOR 1400 mm BELT WIDTH	2	1760 TPH
1A/1B	CONVEYOR 1400 mm BELT WIDTH	2	1760 TPH

DESIGN	EQUIPMENT	QTY	RATED CAPACITY
MD	METAL DETECTOR	5	
VF 1-4	VIBRATING FEEDER	4	968 TPH
CSU-1	COAL SAMPLING UNIT (-)250mm SIZE	1	
CSU-2	COAL SAMPLING UNIT (-)20mm SIZE	1	
CR	CRUSHER	4	968 TPH
BS	BELT WEIGH SCALE	6	
RPG	RACK AND PINION GATE	4	
RG	ROD GATE	4	
ILMS 1-4	IN LINE MAGNETIC SEPARATOR ALONG WITH TRAMP IRON CHUTE	4	FOR 1400 mm BELT WIDTH
PF 1-4	PADDLE FEEDER	4	1320 TPH

APPLICABLE FOR FRONT REAR MILL ARRANGEMENT OPTION

LEGEND

	BELT FEEDER
DS	DUST SUPPRESSION SYSTEM
SW	SERVICE WATER SYSTEM
DW	DRINKING WATER SYSTEM
DE	DUST EXTRACTION SYSTEM
SP	SUMP & SUMP DRAINAGE PUMPS
	BELT CONVEYOR
	PIPE CONVEYOR
CA	ON LINE COAL ANALYSER
	FUTURE PROVISION
BS	BELT SCALE
CSU	COAL SAMPLING UNIT
DS	DUST SUPPRESSION-PF/SR
ILMS	MAGNETIC SEPARATOR (IN LINE)
MD	METAL DETECTOR
PF	PADDLE FEEDER
V	VENTILATION
FG	FLAP GATE
	ROD GATE
	RACK & PINION GATE
CR	CRUSHER
VF	VIBRATING SCREENING FEEDER
SM	SUSPENDED MAGNET
EL	CONVENTIONAL TYPE ELEVATOR

FOR TENDER PURPOSE ONLY

REV.	DESCRIPTION	DRAWN	DESIGN	CHKD.	C	M	E	C&I	APPD	DATE
D	REVISED AS PER BIDDER'S QUERIES									
C	REVISED AS PER BIDDER'S QUERIES									
B	REVISED AS PER BIDDER'S QUERIES									
A	RELEASED FOR TENDER	PRIYANKA	KM	AN					AG	

CLEARED BY

NTPC Limited
(A GOVT. OF INDIA ENTERPRISE)
ENGINEERING DIVISION

PROJECT: TALCHAR THERMAL POWER PROJECT
STAGE-III (2x660MW)

TITLE: EPC PACKAGE-COAL HANDLING SYSTEM
COAL FLOW DIAGRAM

SIZE: A1 | SCALE: -- | DRG.NO.: [illegible]POM[illegible]A[illegible] OPTION[illegible] | REV.: D

CAD FILE NAME : 4540-001-POM-A-040 (OP.-02).dwg

SUB-QUALIFYING REQUIREMENTS FOR THE MILL REJECT HANDLING SYSTEM

We, hereby furnish the data on provenness criteria for manufacturer of Coal Mill reject handling system and have manufactured and supplied coal mill rejects handling system of capacity 1.5 MTPH or higher(applicable for metallic belt conveyor or chain flight conveyor) as per clause no. 4.13 of Sub-section-I, Part-A of Section-VI which have been in successful operation in at least one (1) plant for a period not less than one (1) year. The details of type and minimum equipment rating of such equipment are given below:

S.No.	Item Description	Station-I
(i)	Name of the station and its location	
(ii)	Client name and its address, Fax No. & Tel. No.	
	– e-mail id	
	– website address	
iii)	Name and Designation of the responsible person in client's organisation	
(iv)	Name of manufacturer & address	
(v)	Contract No. & Date	
(vi)	Capacity in MW of each Unit	
(vii)	Starting date of work	
(viii)	Scheduled date of completion	
(ix)	Actual date of completion	
(x)	Date of Commissioning of system/Package	
(xi)	Whether the Mill Reject Handling System has been in successful operation for a period not less than one (1) year.	*Yes/*No

S.No.	Item Description	Station-I
(xii)	Brief Technical Particulars of the system/Package/equipment:	
	- Type of system:	Metallic belt conveyor/chain flight conveyor
	- Whether Mill reject: handling system for coal	*Yes/*No
	- Mill rejects conveying rate (MTPH)	.....

***Strike off whichever is not applicable.**

Date :

Place :

(Signature).....

(Printed Name).....

(Designation).....

(Common seal).....

SUB-QUALIFYING REQUIREMENTS FOR THE ASH HANDLING SYSTEM

For Qualification as per Clause No. 4.19.1 of Sub-Section-IA, Part-A of Section-VI

1.0 We are qualified under clause no. 4.19.1 of Sub-Section-IA, Part-A, Section-VI of Bidding Documents.

2.0 We are a supplier of Ash handling systems having executed ash handling systems involving design, engineering, manufacture, supply, erection and commissioning for the following systems:

We also confirm that the activity of design and engineering for the systems described 2.1(a), 2.1(b) & 2.1(c) and 2.1(d) of this Attachment-3K have been carried out by us & not through external design agency/agencies.

2.1 (a) Bottom Ash Handling System (Strike out whichever is not applicable)

(i) Wet Bottom Ash handling system comprising a jet pump system in conjunction with water impounded Bottom Ash Hopper designed for the conveying capacity of 50 tonnes/hour (dry ash basis) or more per jet pump for pulverised coal fired boilers.

Sl. No.	Name of Plant with location	No. of Units with MW Capacity in which system installed	Design conveying capacity per Jet pump (TPH) referred by client (Documentary evidence attached)	Offered Ash conveying capacity by bidder per Jet Pump (TPH)	Name of Manufacturer (Experience list enclosed)	Date of Commissioning and No. of years in successful operation	Remarks

---

Note : (a) The reference Bottom Ash Handling System is of the same type i.e. jet pump system as is being offered by us for the present plant

(b) Clients certificate enclosed in support of

(i) Details about above
(Yes/No.)

(ii) Successful operation of above plant(s) for at least two (2) years.
(Yes/No.)

OR

2.1 (a) (i) Wet Bottom Ash Handling system comprising a submerged scrapper chain conveyor system designed for the conveying capacity of 20 tonnes/hour (dry ash basis) or more per conveyor, for pulverised coal fired boilers:

Sl. No.	Name of Plant with location	No. of Units with MW Capacity in which system installed	Design conveying capacity per Scrapper conveyor (TPH) referred by client (Documentary evidence attached)	Offered Ash conveying capacity by bidder per Jet Pump (TPH)	Name of Manufacturer (Experience list enclosed)	Date of Commissioning and No. of years in successful operation	Remarks

Note : (a) The reference Bottom Ash Handling System is of the same type i.e. submerged scrapper chain conveyor system as is being offered by us for the present plant.
(b) Clients certificate enclosed in support of
(i) Details about above (Yes/No.)
(ii) Successful operation of above plant(s) for at least two (2) years. (Yes/No.)

OR

2.1 (a) (ii) Dry Bottom Ash Handling system involving Mechanical conveying and crushing designed for atleast 20 tonnes/hour conveying capacity for pulverised coal fired boilers:

Sl. No.	Name of Plant with location	No. of Units with MW Capacity in which system installed	Design conveying capacity per Scrapper conveyor (TPH) referred by client (Documentary evidence attached)	Offered Ash conveying capacity by bidder per Jet Pump (TPH)	Name of Manufacturer (Experience list enclosed)	Date of Commissioning and No. of years in successful operation	Remarks

Note: (a) The reference Bottom Ash Handling System is of the same type i.e. dry bottom ash system as is being offered by us for the present plant.
(b) Clients certificate enclosed in support of

(i) Details about above (Yes/No.)
(ii) Successful operation of above plant(s) for at least two (2). (Yes/No.)

For Qualification as per Clause No. 4.19.1 of Sub-Section-IA, Part-A of Section-VI

We are a supplier of ash handling systems having executed ash handling systems involving design, engineering, manufacture, supply, erection and commissioning for the following systems

2.1(b) Pneumatic Fly Ash Handling System (Strike out whichever is not applicable)

(i) Pneumatic Fly ash handling system for conveying fly ash from ESPs of a single pulverised coal fired boiler unit, by pressure conveying system designed for 30 TPH or more conveying capacity.

Sl. No.	Name of Plant with location	No. of Units with MW Capacity in which system installed	Design conveying capacity (TPH) specified by client (Documentary evidence attached)	Offered Ash conveying capacity by bidder (TPH)	Name of Manufacturer (Experience list enclosed)	Date of Commissioning and No. of years in successful operation	Remarks

---

Note: (a)The reference Pneumatic Fly Ash Handling Systems are of the same type i.e. pressure system as is being offered by us for the present plant.

(b) Clients certificate enclosed in support of

(i) Details about above Yes/No.

(ii) Successful operation of above plants for at least two (2) years. Yes/No.

OR

2.1(b)(ii) Pneumatic Fly ash handling system for conveying fly ash from ESPs of a single pulverised coal fired boiler unit, by vacuum conveying system designed for 30 TPH or more conveying capacity per vacuum extractor.

Sl. No.	Name of Plant with location	No. of Units with MW Capacity in which system installed	Design conveying capacity (TPH) specified by client (Documentary evidence attached)	Offered Ash conveying capacity by bidder (TPH)	Name of Manufacturer (Experience list enclosed)	Date of Commissioning and No. of years in successful operation	Remarks

---

Note : (a) The reference Pneumatic Fly Ash Handling Systems are of the same type i.e. vacuum system as is being offered by us for the present plant.

(b) Clients certificate enclosed in support of

(i) Details about above (Yes/No.)

(ii) Successful operation of above plant(s) for at least two (2) years (Yes/No.)

And

2.1(c) Pneumatic Fly Ash Transportation System for transporting Fly Ash from a pulverized Coal and Boiler unit having capacity of not less than 20 TPH for a conveying distance of not less than 500 mtr. including fly ash storage silo.

Sl. No.	Name of Plant with location	No. of Units with MW Capacity in which system installed	Design conveying capacity (TPH) specified by client (Documentary evidence attached)	Offered Ash conveying capacity by bidder (TPH)	Name of Manufacturer (Experience list enclosed)	Date of Commissioning and No. of years in successful operation	Remarks

---

Note : Clients certificate enclosed in support of

(i) Details about above (Yes/No.)

(ii) Successful operation of above plant(s) for at least two (2) years. (Yes/No.)

2.1 (d) Complete ash slurry disposal system for handling not less than 40 tonnes of ash per hour for pulverized coal fired power stations which includes, among others, ash slurry pumps & piping system with associated controls.

S.No	Name of plant with location	No of units with MW capacity in which system installed	Total quantity of ash handled (TPH)	Scope of work alongwith scheme (enclosed with bid)	Name of manufacturer (Experience list enclosed)	Date of commissioning and No of years in successful operation	remarks

Note : Clients certificate enclosed in support of

(i) Details about above (Yes/No.)

(ii) Successful operation of above plant(s) for at least two (2) years. (Yes/No.)

3.0 For Qualification as per Clause No. 4.19.2 of Sub-Section-IA, Part-A of Section-VI

3.1 We confirm that we/our Sub-vendor are a Supplier of ash handling system and have executed Ash Handling Plants for pulverised coal fired boiler units generating not less than 40 TPH of ash per Boiler which includes bottom ash handling system comprising either a jet pump system in conjunction with water impounded Bottom Ash Hopper or submerged scrapper chain conveyor system or dry bottom ash system involving design and engineering / design and engineering through external agency/agencies, manufacture, supply, erection and commissioning for the following plants (Refer clause no. 4.19.2(a) of Sub-Section-IA, Part-A, Section-VI of bidding documents)

We confirm that we* (or our proposed sub-vendor) have valid collaboration or licensing or Technology transfer agreement agreement for either the total requirement or the balance part under clause 4.19.1 (a), which we/ our sub vendor itself is not able to meet, with M/s ..... The details of type and minimum equipment rating of such equipment are given below :

Sl. No.	Name of Plant with location	No. of Units with MW Capacity in which system installed	Total Ash generation per boiler (TPH)	Total Ash handling capacity (bottom + fly ash) (TPH) per boiler	Type of Bottom ash handling system supplied	Name of design and Engineering agency (Experience list enclosed)	Name of manufacturer (Experience list enclosed	Date of Commissioning and No. of years in successful operation	Remarks

---

Note : Client's certificate enclosed in support of

(i) Details about above (Yes/No.)

(ii) Successful operation of above plant(s) for at least two (2) years. (Yes/No.)

COLLABORATOR'S/LICENSOR/ASSOCIATED EXPERIENCE FOR ASH HANDLING SYSTEM

	1	2	3	4
Name and address of the collaborator/licensor/associate				
System for which collaboration/licensing/association made				

M/s ……..(Our collaborator/licensor/associate) are a supplier of ash handling systems having executed ash handling systems involving design, engineering, manufacture, supply, erection and commissioning for the following systems. We also confirm that the activity of design and engineering for the systems described in this Attachment- 3K have been carried out by the collaborator/licensor/associate of the relevant system, himself and through external design agency/agencies.

3.2 **Pneumatic Fly Ash Handling System (Strike out whichever is not applicable)**

We confirm that we/our Sub-vendor are a Supplier of ash handling system and have executed ash handling plant for pulverised coal fired boiler unit, generating not less than 40 TPH of ash per Boiler which includes fly ash handling system for conveying fly ash from ESPs in dry form (involving pneumatic conveying systems of vacuum or pressure type) or in wet (slurry) form involving design and engineering/design and engineering through external agency/agencies, manufacture, supply, erection, and commissioning for the following plants (Refer clause no. 4.19.2(b) of sub-section-IA, Part-A, Section-VI of bidding documents).

We confirm that we* (or our proposed sub-vendor) have valid collaboration or licensing or Technology transfer agreement agreement for either the total requirement or the balance part under clause 4.19.2 (b), which we/ our sub vendor itself is not able to meet, with M/s ..... The details of type and minimum equipment rating of such equipment are given below :

(a) (i) Pneumatic Fly ash handling system for conveying fly ash from ESPs of a single pulverised coal fired boiler unit, by pressure conveying system designed for 30 TPH or more conveying capacity.

S.No	Name of plant with location	No of units with MW capacity in which system installed	Design conveying capacity (TPH) specified by client (Documentary evidence attached)	Offer ash conveying capacity by bidder (TPH)	Name of manufacture (experience list enclosed)	Date of commissioning and No. of years in successful operation	Name of design and engineering agency (experience list enclosed)	Remarks

Note : (a) The reference Pneumatic Fly Ash Handling Systems are of the same type i.e. pressure system as is being offered by us for the present plant.

(b) Clients certificate enclosed in support of

(i) Details about above Yes/No.

(ii) Successful operation of above plants for at least two (2) years. Yes/No.

OR

(ii) Pneumatic Fly ash handling system for conveying fly ash from ESPs of a single pulverised coal fired boiler unit, by vacuum conveying system designed for 30 TPH or more conveying capacity per vacuum extractor.

S.No	Name of plant with location	No of units with MW capacity in which system installed	Design conveying capacity (TPH) specified by client (Documentary evidence attached)	Offer ash conveying capacity by bidder (TPH)	Name of manufacture (experience list enclosed)	Date of commissioning and No. of years in successful operation	Name of design and engineering agency (experience list enclosed)	remarks

Note : (a) The reference Pneumatic Fly Ash Handling Systems are of the same type i.e. vacuum system as is being offered by us for the present plant.

(b) Clients certificate enclosed in support of

(i) Details about above (Yes/No.)

(ii) Successful operation of above plant(s) for at least two (2) years (Yes/No.)

And

(b) Pneumatic Fly Ash Transportation System for transporting Fly Ash from a pulverized Coal and Boiler unit having capacity of not less than 20 TPH for a conveying distance of not less than 500 mtr. including fly ash storage silo.

S.No	Name of plant with location	No of units with MW capacity in which system installed	Design transportation capacity (TPH) specified by client (Documentary evidence attached)	Offer ash transportation capacity by bidder (TPH)	Name of manufacture (experience list enclosed)	Date of commissioning and No. of years in successful operation	Name of design and engineering agency (experience list enclosed)	remarks

---

Note : Clients certificate enclosed in support of

(i) Details about above (Yes/No.)

(ii) Successful operation of above plant(s) for at least two (2) years. (Yes/No.)

For M/s …….

(Associate*/*Collaborator/*Technology provider/*Licensor/ Qualified equipment manufacturer*)

Name ……
Designation ……
Date:……

Common Seal of the Company

***: Strike off whichever is not applicable.**

For Qualification as per Clause No. 4.19.3 of Sub-Section-IA, Part-A of Section-VI

In conformity with the requirements specified under clause 4.19.4(c) Sub section-IA, Section -VI, Part-A of Horizontal centrifugal pump module, we have offered Ash Slurry pumps manufactured by M/s ..... who have in the past supplied and installed ash slurry pumps for similar duty application and have at least two (2) nos. pumps of the same models that are being offered having capacity not less than 1000 cubic meters per hour at each of two (2) different stations which are in successful operation for at least two (2) years prior to the date of Techno-Commercial bid opening. In support of the above, we furnish below the following details.

i) Name of Ash Slurry pumps manufacturer :

ii) The above pump manufacturer have supplied and installed at least two (2) nos. Ash slurry pumps of parameters as specified in Clause 4.19.4(c), sub section-IA, Section-VI, Part-A : Yes / No

iii) Details of the Power Plants at which Ash Slurry Pumps of the above make as specified in Clause 4.19.4(c), sub section -IA, Section-VI, Part-A

a) Name of the Power Plant :

b) Pump Model :

c) Size of Pumps :

d) Number of pumps :

e) Capacity of the pump (m3 / hr.) :

f) Total dynamic Head of the pump (mwc) :

g) Concentration (by wt.) of the slurry and the

maximum particle size handled :

h) Date of commissioning of ash handling system :

i) Whether the pumps are in successful operation prior to Techno-Commercial bid ` opening(Attach certificate from Client) :