

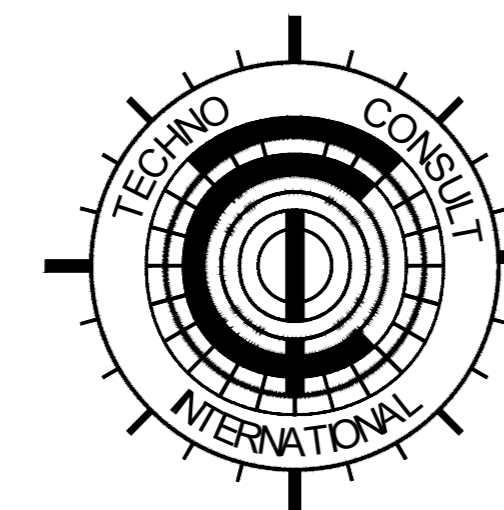


Project Implementation Unit (PIU)  
Khyber Pakhtunkhwa Rural Investment and Institutional Support Project (KP-RIISP)  
Public Health Engineering Department (PHED)  
Government of Khyber Pakhtunkhwa (GOKP)

PROCUREMENT OF SMALL WORKS  
INTEGRATED WATER SUPPLY & SANITATION -REHABILITATION OF EXISTING SCHEMES,  
TEHSIL BARA, DISTRICT KHYBER  
RFB No. KH-CW-R-01

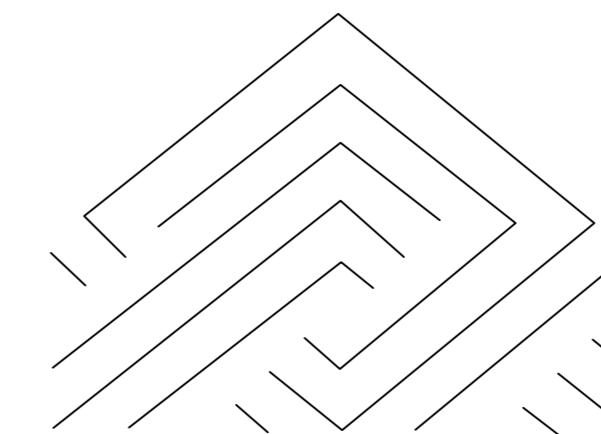
BID DRAWINGS

March 2026



**Techno-Consult  
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JV



**Ultimate  
Engineering  
Consultants**  
New Era of Development

# LIST OF DRAWINGS

## LOCATION PLAN

NO.	DRAWING NO.	TITLE
1	KPR/REH/KH-CW-R-01	LOCATION PLAN

## WATER COMPONENT ( REHABILITATION )

### LAYOUT MAPS

NO.	DRAWING NO.	TITLE
1	KPR/REH/KHD-2021	LAYOUT MAP ( BARA TEHSIL )
2	KPR/REH/KHD-2022	LAYOUT MAP ( FAZLE MALIK KILLI )
3	KPR/REH/KHD-2023	LAYOUT MAP ( GHAZI TUBE WELL NALA )
4	KPR/REH/KHD-2024	LAYOUT MAP ( GHULAM SAKHI ARJALI )
5	KPR/REH/KHD-2025	LAYOUT MAP ( HAJI ABDUL QAYUAM )
6	KPR/REH/KHD-2026	LAYOUT MAP ( HAKIM KHAN KILLI MERI KHE )
7	KPR/REH/KHD-2027	LAYOUT MAP ( HISSARA SHALOBAR BARA )
8	KPR/REH/KHD-2028	LAYOUT MAP ( JANIS/TAWAS KHAN )
9	KPR/REH/KHD-2029	LAYOUT MAP ( MALIK JAN KILLI )
10	KPR/REH/KHD-2030	LAYOUT MAP ( NOWGAZI BABA )
11	KPR/REH/KHD-2031	LAYOUT MAP ( SAM BABA ZONE-A SPIN DAND )
12	KPR/REH/KHD-2032	LAYOUT MAP ( SAM BABA ZONE-B )
13	KPR/REH/KHD-2033	LAYOUT MAP ( MALIK DORAN GUL )

## ARCHITECTURAL & STRUCTURAL DRAWINGS

### O.H.W.T DRAWINGS

NO.	DRAWING NO.	TITLE
1	KPR/REH/KHD-2101	PLAN, ROOF PLAN & SECTION AT A-A
2	KPR/REH/KHD-2102	ELEVATION 1 & 2
3	KPR/REH/KHD-2103	PLINTH & BRACING BEAM PLAN
4	KPR/REH/KHD-2104	FOOTING & STAIR DETAILS
5	KPR/REH/KHD-2105	COLUMN, BEAMS & STAIR DETAILS
6	KPR/REH/KHD-2106	BOTTOM & TOP SLAB DETAILS

### CHAMBER ROOM DRAWINGS

1	KPR/REH/KHD-2108	PLAN & ELEVATION
2	KPR/REH/KHD-2109	CHAMBER ROOM DETAILS
3	KPR/REH/KHD-2110	CHAMBER ROOM DETAILS
4	KPR/REH/KHD-2111	REINFORCEMENT DETAILS

### BOUNDARY WALL

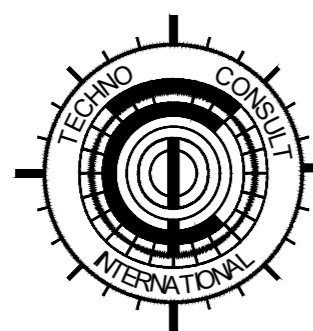
15	KPR/REH/KHD-2112	PLAN, FRONT ELEVATION & SECTION
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CLIENT :

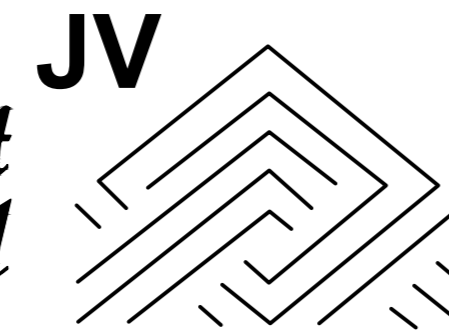


PUBLIC HEALTH  
ENGINEERING DEPARTMENT  
KHYBER PAKHTUNKHWA

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**Engineering**  
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PROJECT:

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PROJECT IN NEWLY MERGED DISTRICTS  
OF KHYBER PAKHTUNKHWA

DRAWING TITLE :

EXISTING REHAB SCHEMES  
DISTRICT KHYBER  
LIST OF DRAWING

Designed By : Dr. ASFAHAN ALI

Date : MAR 2026

Drawn By : NAEEM BAKHSH

Scale : N.T.S

Checked By : RABEEA REHMAN

Drawing No :

Approved By : RABEEA REHMAN

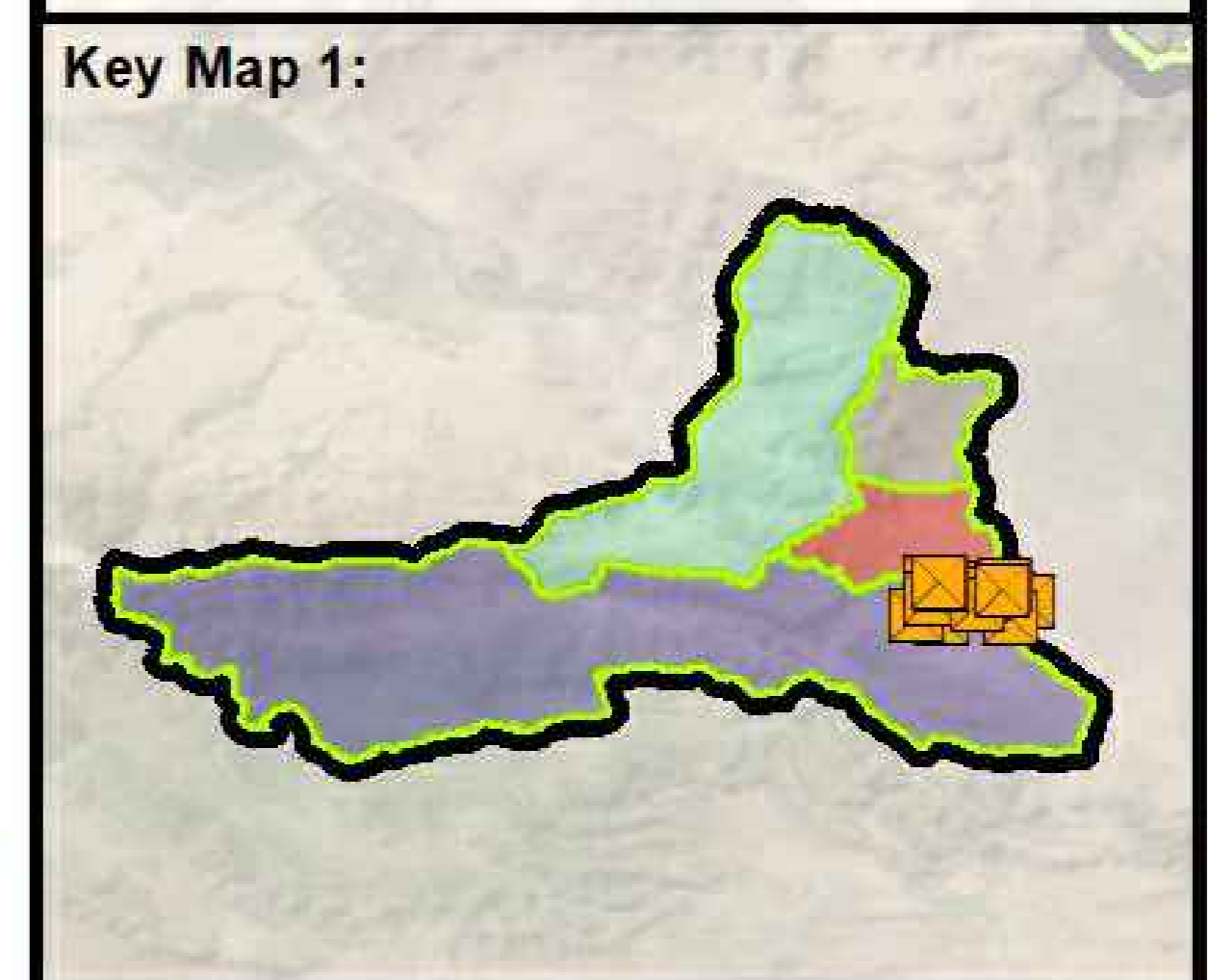
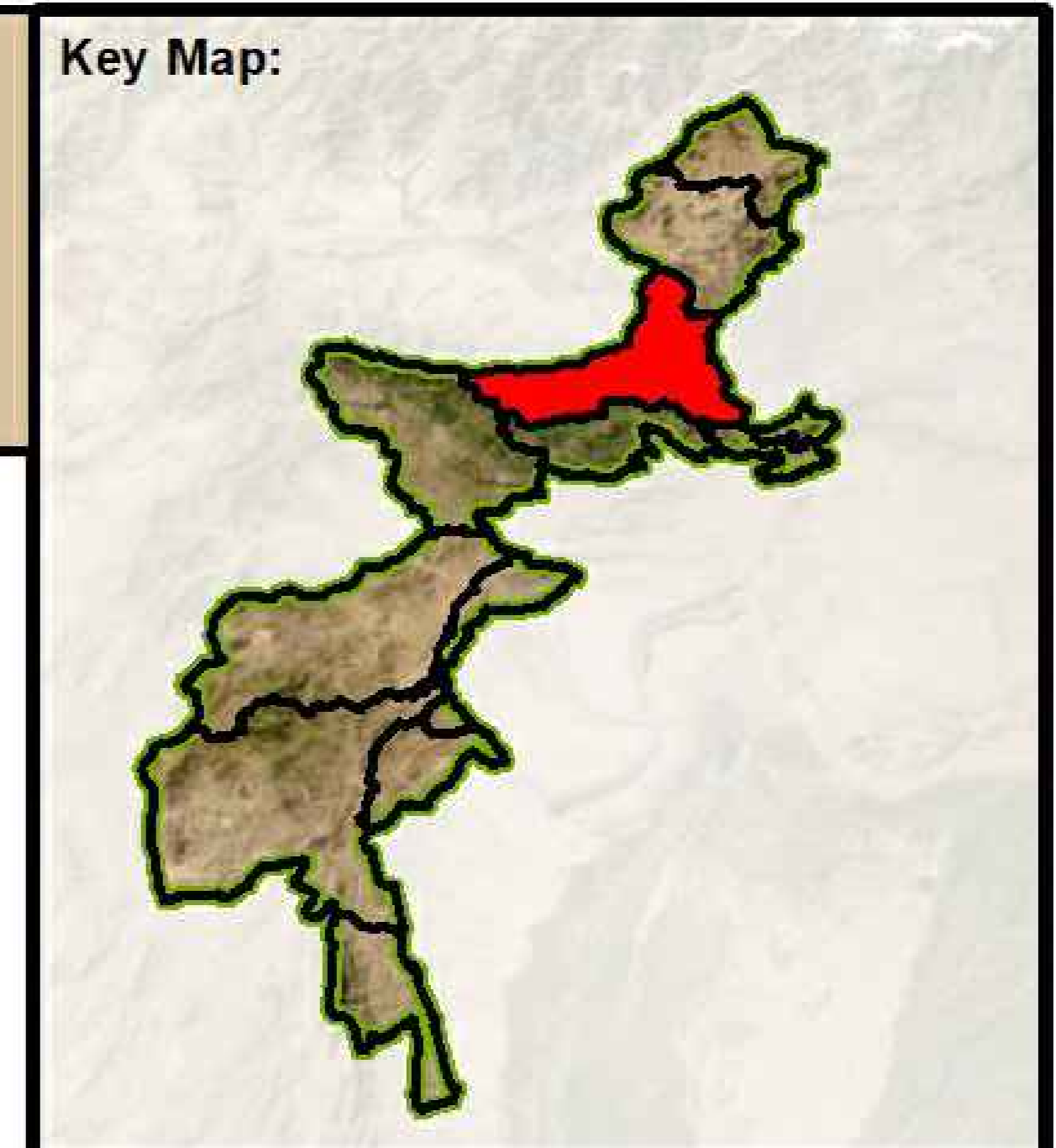
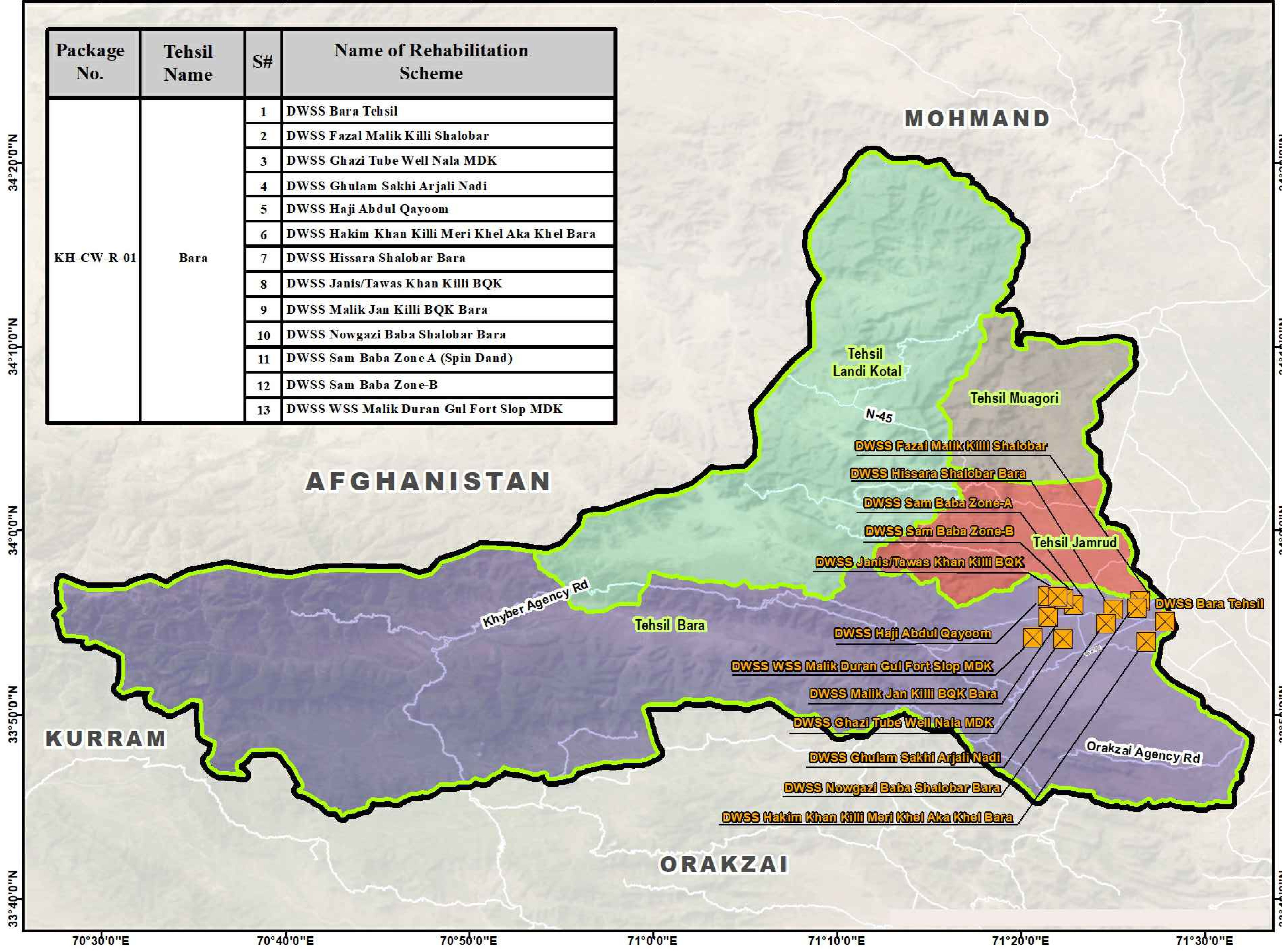
No. Revision

By Date

# GOVERNMENT REHABILITATION DWS SCHEMES CIVIL WORKS PACKAGE NO - KH-CW-R-01, TEHSIL BARA- DISTRICT KHYBER

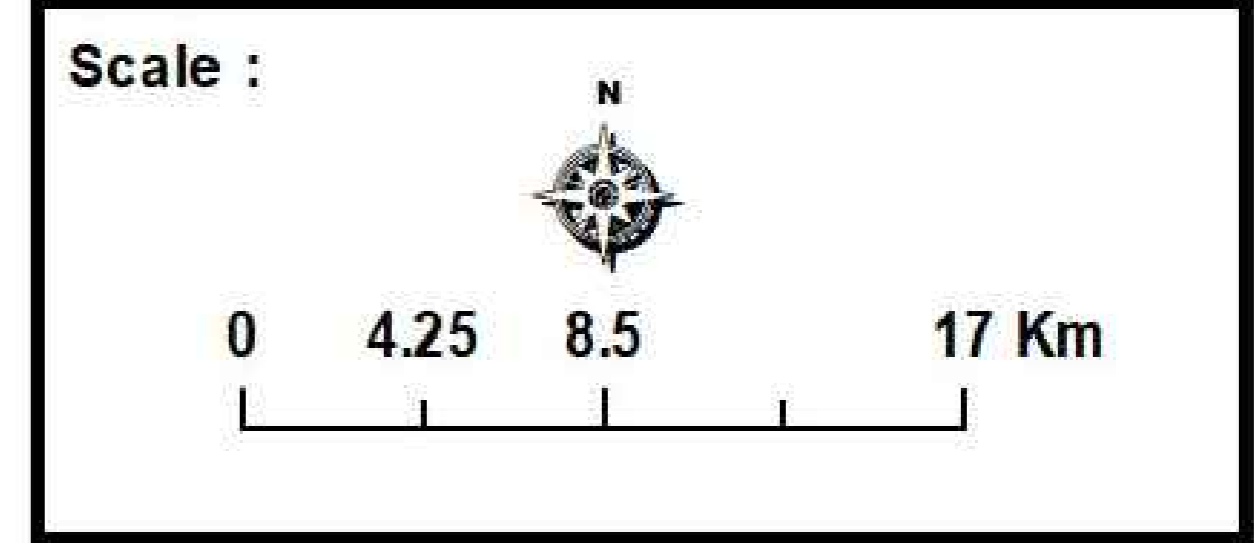
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Package No.	Tehsil Name	S#	Name of Rehabilitation Scheme
KH-CW-R-01	Bara	1	DWSS Bara Tehsil
		2	DWSS Fazal Malik Killi Shalobar
		3	DWSS Ghazi Tube Well Nala MDK
		4	DWSS Ghulam Sakhi Arjali Nadi
		5	DWSS Haji Abdul Qayoom
		6	DWSS Hakim Khan Killi Meri Khel Aka Khel Bara
		7	DWSS Hissara Shalobar Bara
		8	DWSS Janis/Tawas Khan Killi BQK
		9	DWSS Malik Jan Killi BQK Bara
		10	DWSS Nowgazi Baba Shalobar Bara
		11	DWSS Sam Baba Zone A (Spin Dand)
		12	DWSS Sam Baba Zone-B
		13	DWSS WSS Malik Duran Gul Fort Slop MDK



Legend :

- DWSS Schemes
- District Boundary
- Tehsil Boundary
- Road Network



Consultants :

CLIENT :

PUBLIC HEALTH  
ENGINEERING DEPARTMENT  
KHYBER PAKHTUNKHWA

CONSULTANT:

**JV**  
Techno-Consult  
International  
Ultimate  
Engineering  
Consultants  
New Era of Development

PROJECT:  
KPRIISP - DESIGN REVIEW AND  
CONSTRUCTION SUPERVISION FOR  
WATER SUPPLY, SEWERAGE, DRAINAGE  
AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS  
OF KHYBER PAKHTUNKHWA

DRAWING TITLE :  
  
LOCATION MAP

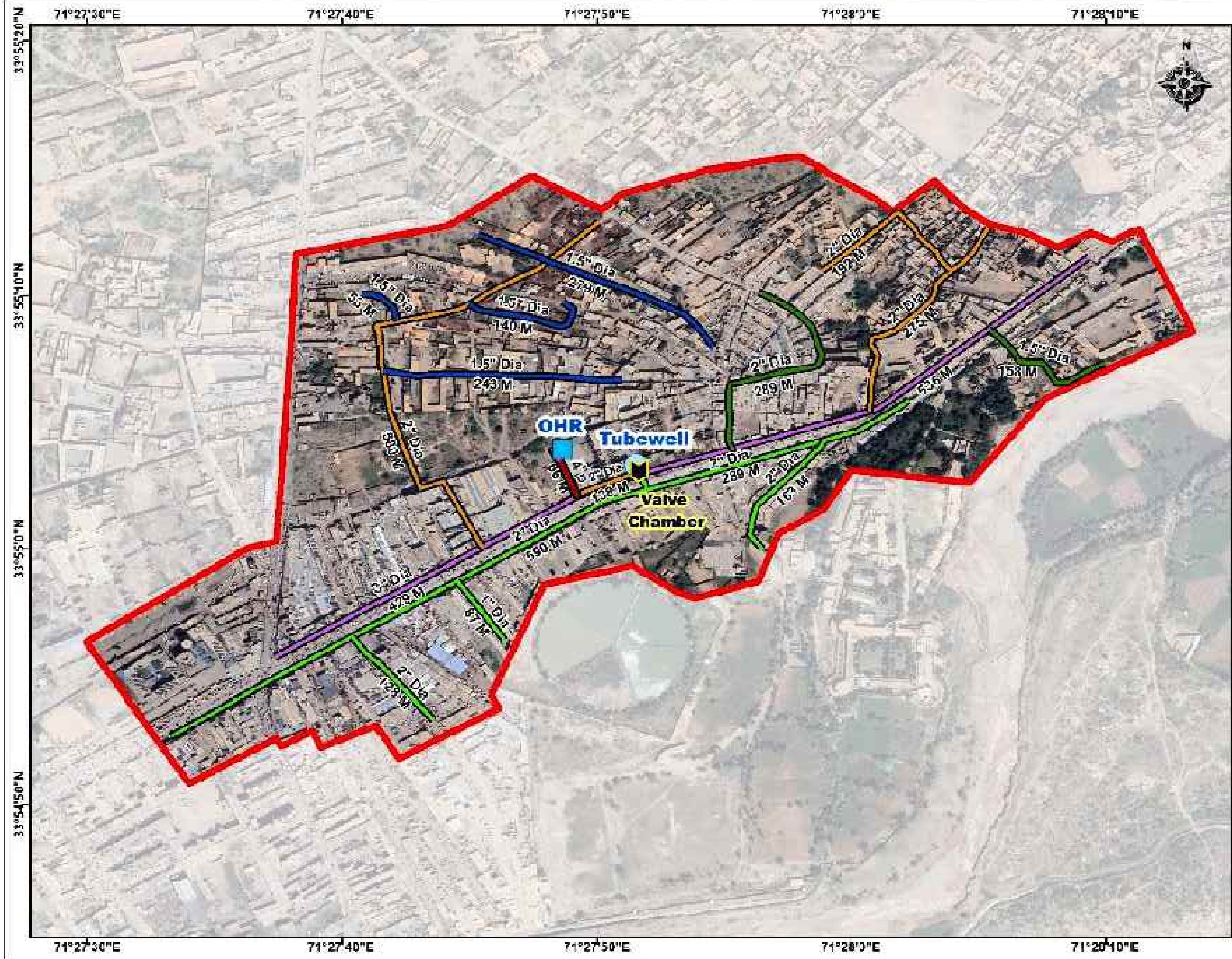
Designed By : Dr. ASFAHAN ALI  
Drawn By : NAEEM BAKHSH  
Checked By : RABEEA REHMAN  
Approved By : RABEEA REHMAN

Date : MAR 2026  
Scale : N.T.S  
Drawing No :  
KPR/REH/KH-CW-R-01

No.	Revision	By	Date

# Distribution Network Layout

## DWSS Bara Tehsil Rehabilitation Scheme- District Khyber



**Legend :**

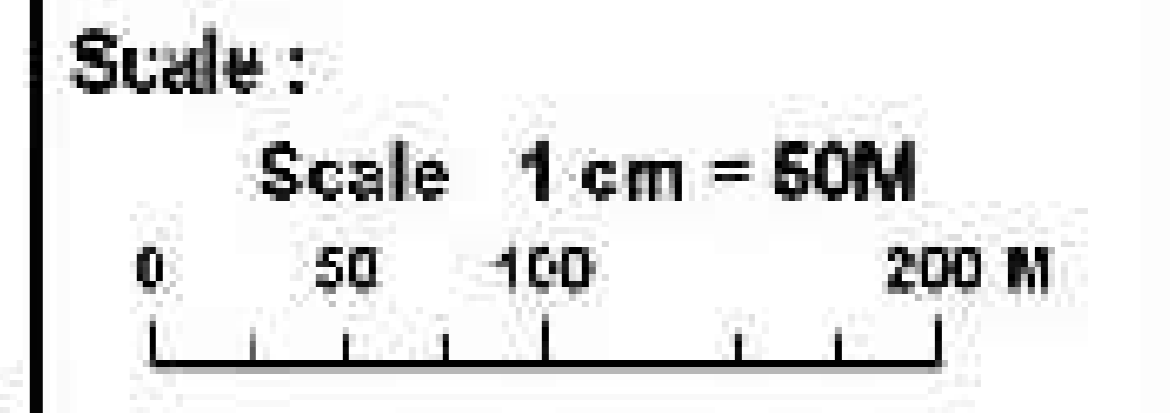
- Tubewell
- Valve Chamber
- Over Head Reservoir (OHR)

**Existing Pipeline**

- 1", 2" Dia GI
- 1.5", 2" Dia HDPE

**Replacement Pipeline**

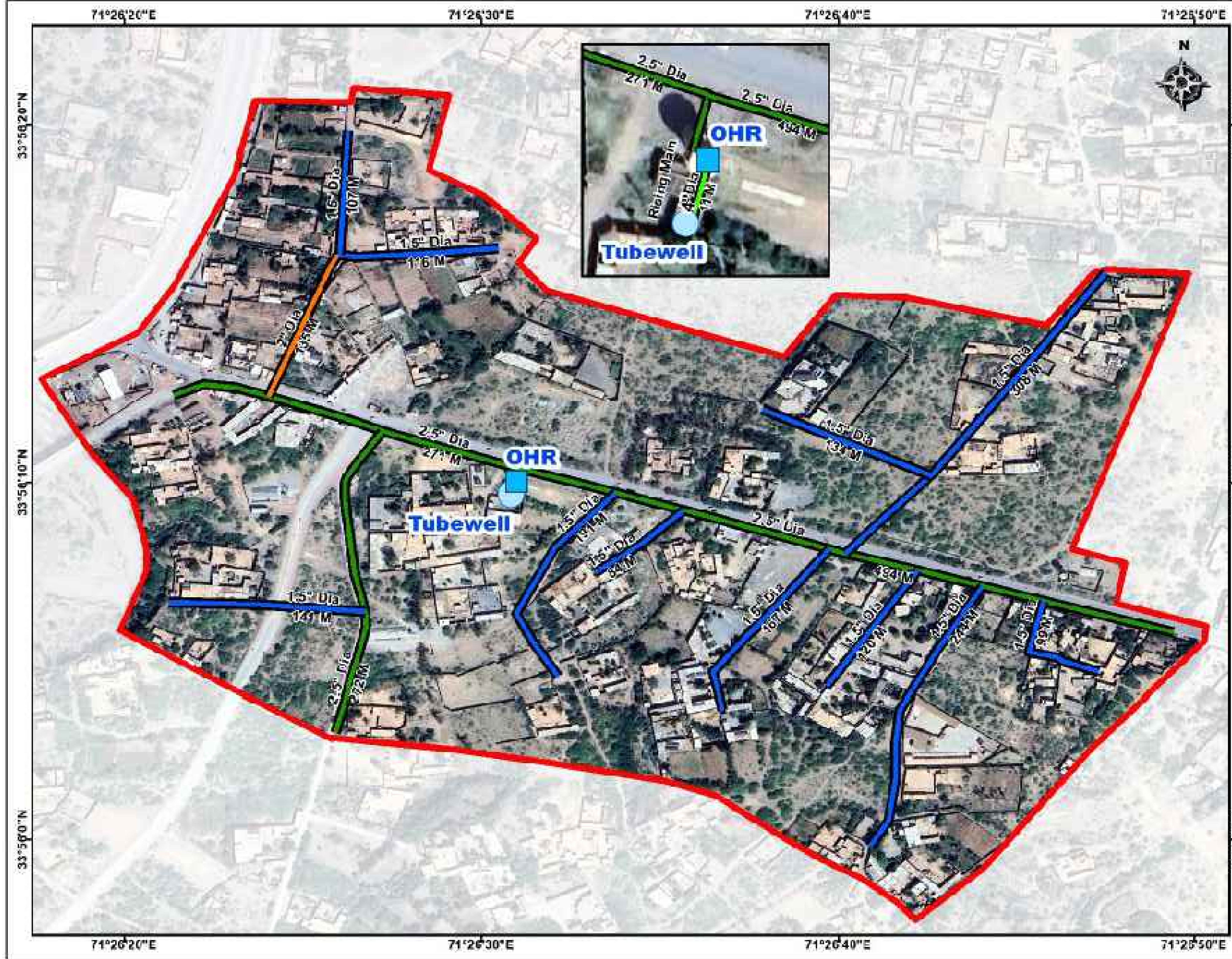
- 1.5" Dia HDPE
- 2" Dia HDPE
- 3" Dia GI
- 4" Dia Rising Main GI
- Bara Tehsil Boundary



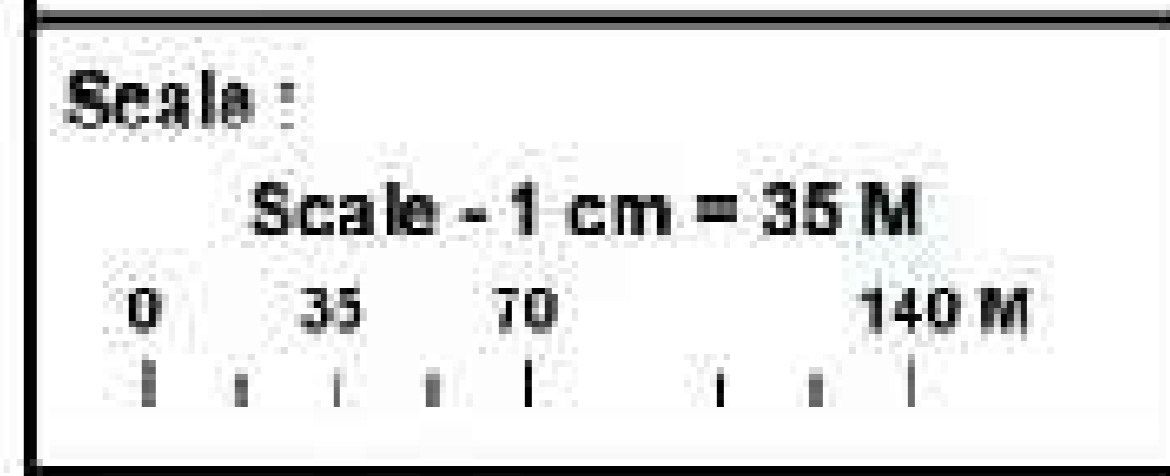
<p>CLIENT :</p> <p style="text-align: center;">PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA</p>	<p>CONSULTANT:</p> <p style="text-align: center;"><b>JV</b> Techno-Consult International Ultimate Engineering Consultants <small>New Era of Development</small></p>	<p>PROJECT:</p> <p>KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA</p>	<p>DRAWING TITLE :</p> <p style="text-align: center;">WATER COMP. LAYOUT MAP BARA TEHSIL</p>	Designed By : Dr. ASFAHAN ALI	Date : MAR 2026				
				Drawn By : NAEEM BAKHSH	Scale : N.T.S				
				Approved By : RABEEA REHMAN	KPR/REH/KHD/-2021				

# Distribution Network Layout

## DWSS Fazal Malik Killi Shalobar Rehabilitation Scheme - Tehsil Bara - District Khyber



- Legend :**
- Tubewell
  - Over Head Reservoir (OHR)
  - Existing Pipeline**
    - 4" Dia GI Rising Main
    - 2.5" Dia HDPE
  - Replacement Pipeline**
    - 1.5" Dia HDPE
    - 2" Dia HDPE
  - Boundary




**Consultants :**



<p>CLIENT :</p> <p>PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA</p>	<p>CONSULTANT:</p> <p>Techno-Consult International JV Ultimate Engineering Consultants New Era of Development</p>	<p>PROJECT:</p> <p>KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA</p>	<p>DRAWING TITLE :</p> <p>WATER COMP. LAYOUT MAP</p> <p>FAZIL MALIK KILLI SHALOBAR</p>	Designed By : Dr. ASFAHAN ALI	Date : MAR 2026																				
				Drawn By : NAEEM BAKHSH	Scale : N.T.S																				
				Checked By : RABEEA REHMAN	Drawing No :																				
				Approved By : RABEEA REHMAN	KPR/REH/KHD/-2022																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>Revision</th> <th>By</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>										No.	Revision	By	Date												
No.	Revision	By	Date																						

# Distribution Network Layout

## DWSS Ghazi Tube Well Nala MDK Rehabilitation Scheme- District Khyber



CLIENT :  

**PUBLIC HEALTH  
 ENGINEERING DEPARTMENT  
 KHYBER PAKHTUNKHWA**

CONSULTANT:  

**Techno-Consult  
 International**  

**Ultimate  
 Engineering  
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New Era of Development

PROJECT:  
 KPRIISP - DESIGN REVIEW AND  
 CONSTRUCTION SUPERVISION FOR  
 WATER SUPPLY, SEWERAGE, DRAINAGE  
 AND WASTE WATER TREATMENT  
 PROJECT IN NEWLY MERGED DISTRICTS  
 OF KHYBER PAKHTUNKHWA

DRAWING TITLE :  
**WATER COMP.  
 LAYOUT MAP**  
**GHAZI TUBEWELL**

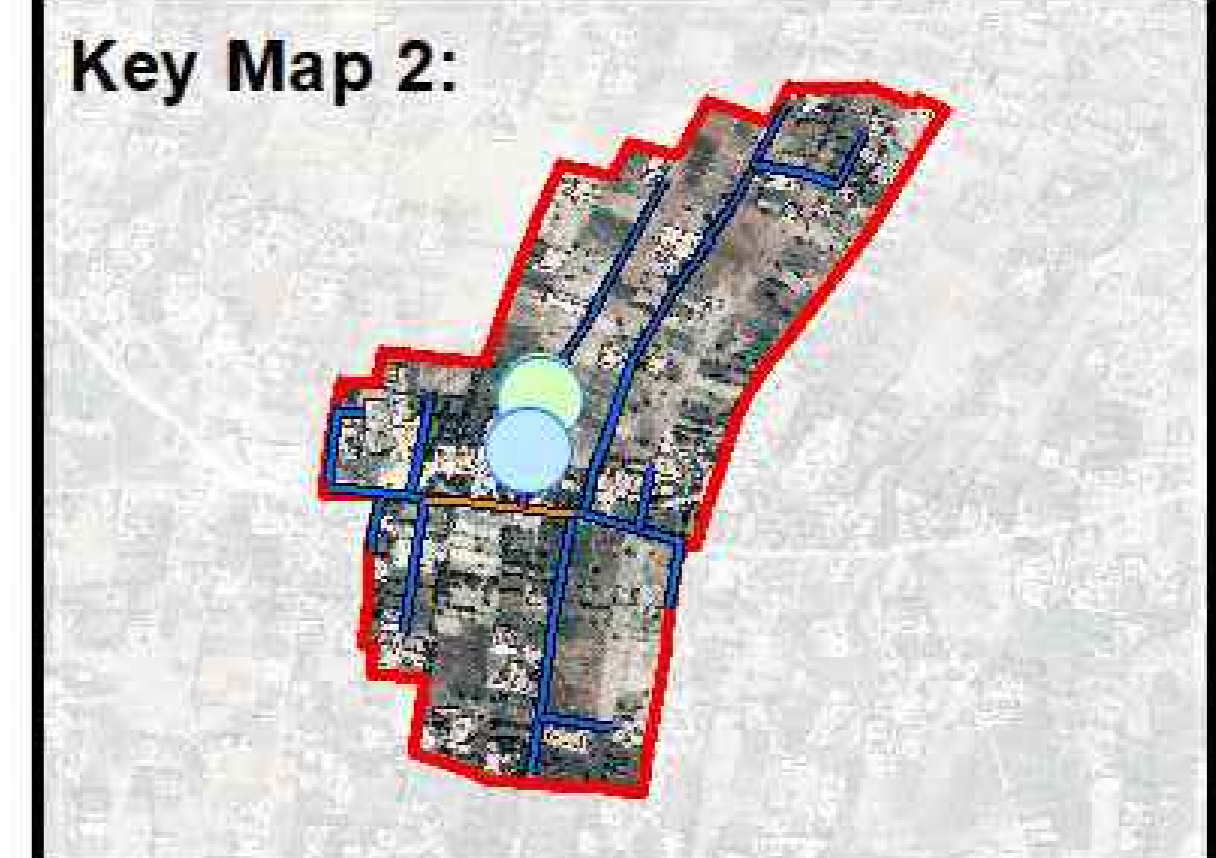
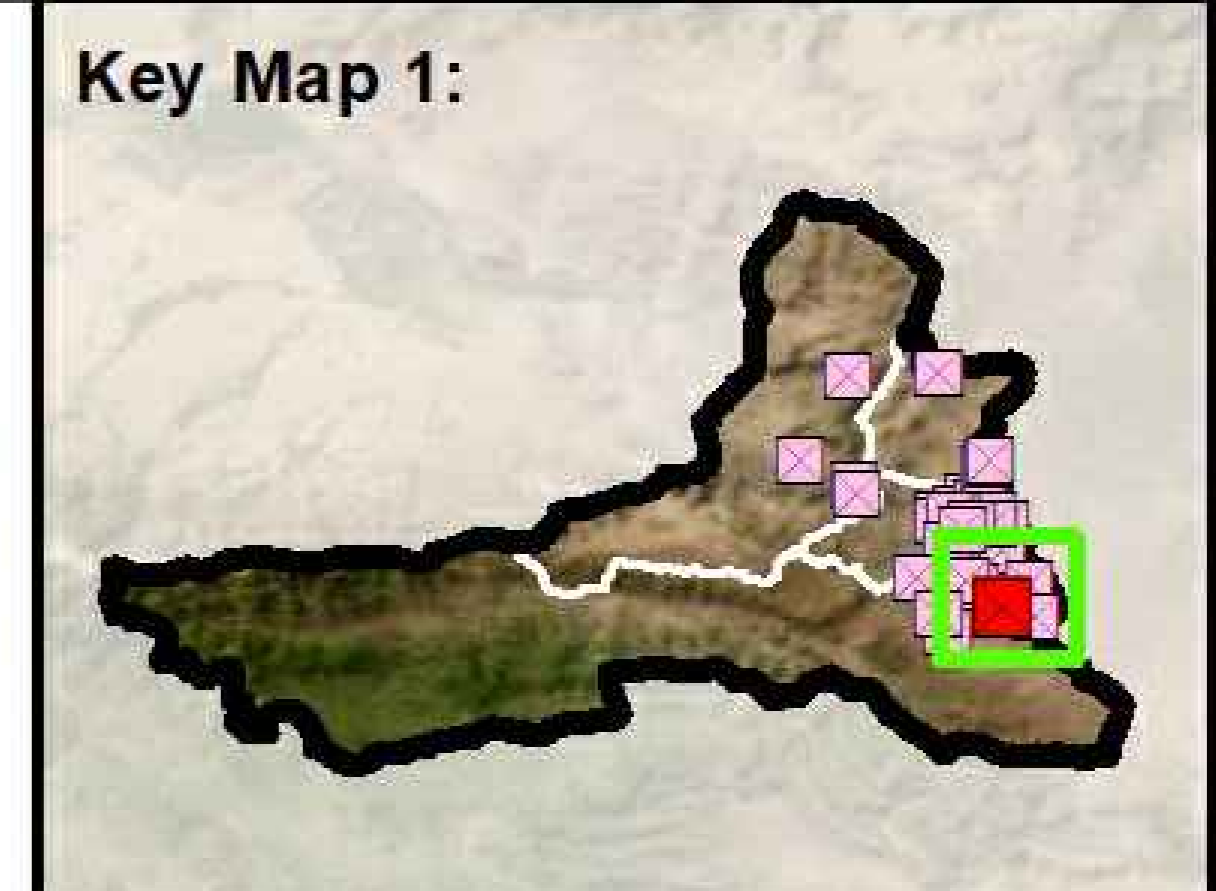
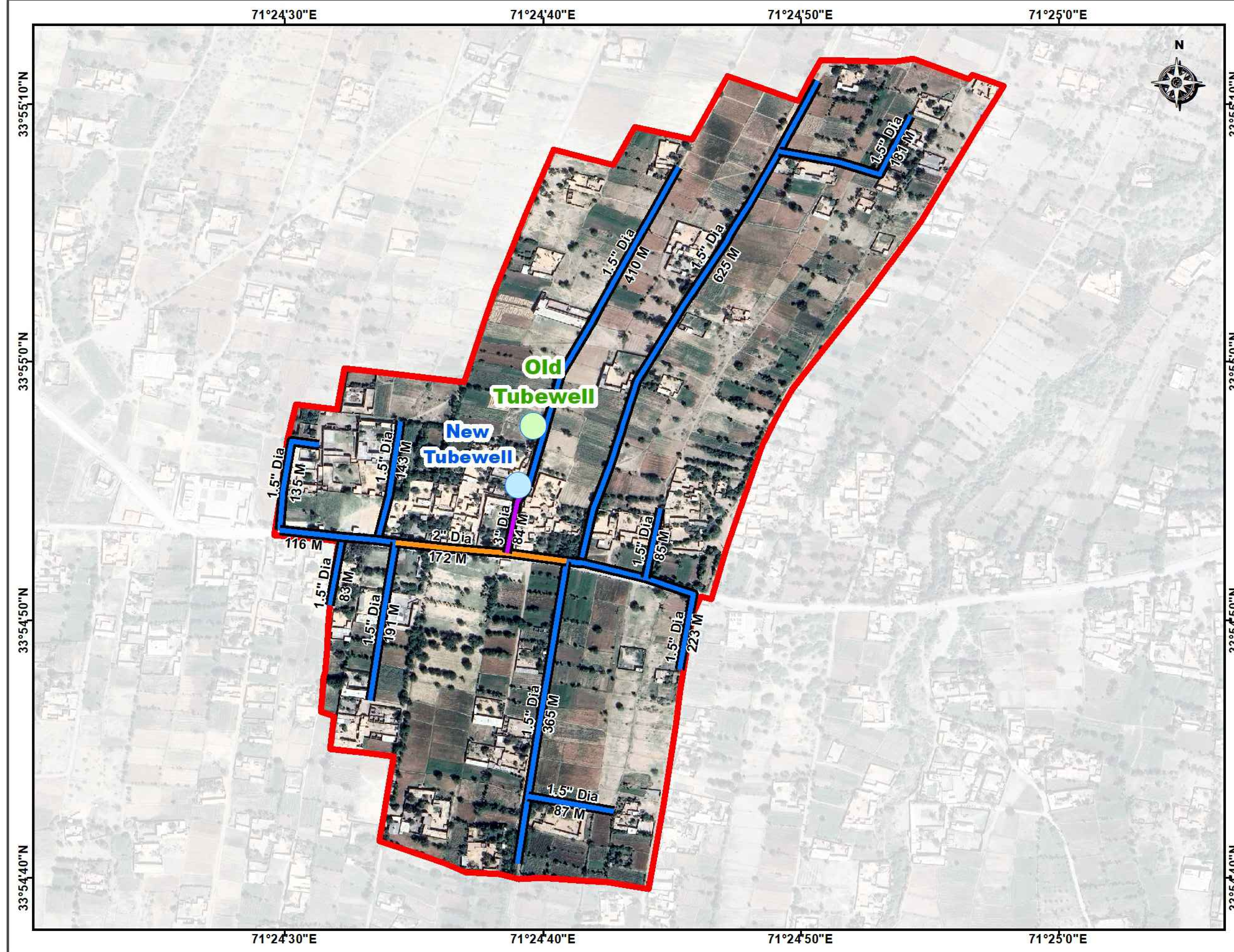
Designed By : Dr. ASFAHAN ALI  
 Drawn By : NAEEM BAKHSH  
 Checked By : RABEEA REHMAN  
 Approved By : RABEEA REHMAN

Date : MAR 2026  
 Scale : N.T.S  
 Drawing No :  
**KPR/REH/KHD/-2023**

No.	Revision	By	Date

# Distribution Network Layout

## DWSS Ghulam Sakhi Arjali Nadi Rehabilitation Scheme - Tehsil Bara - District Khyber

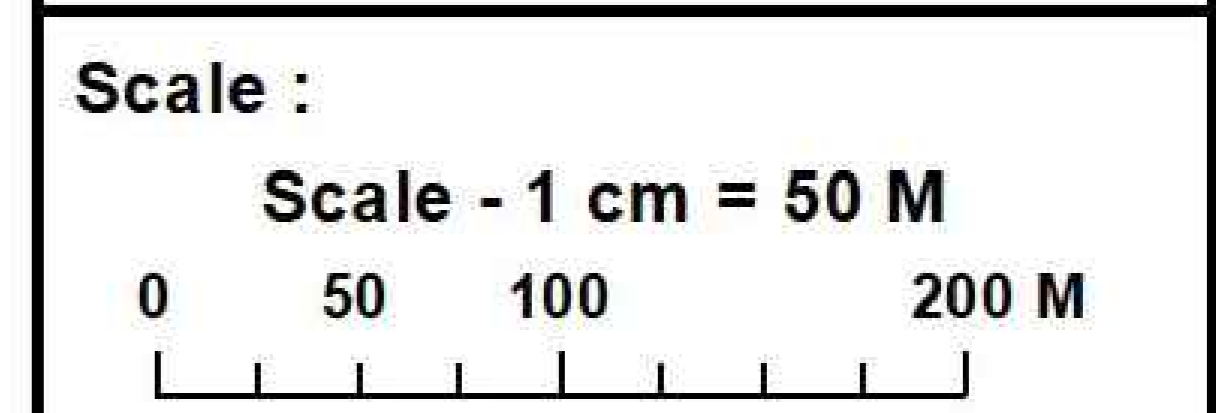


**Legend :**

- New Tubewell
- Old Tubewell

**Replacement Pipeline**

- 1.5" Dia HDPE
- 2" Dia HDPE
- 3" Dia HDPE
- Boundary



**Consultants :**

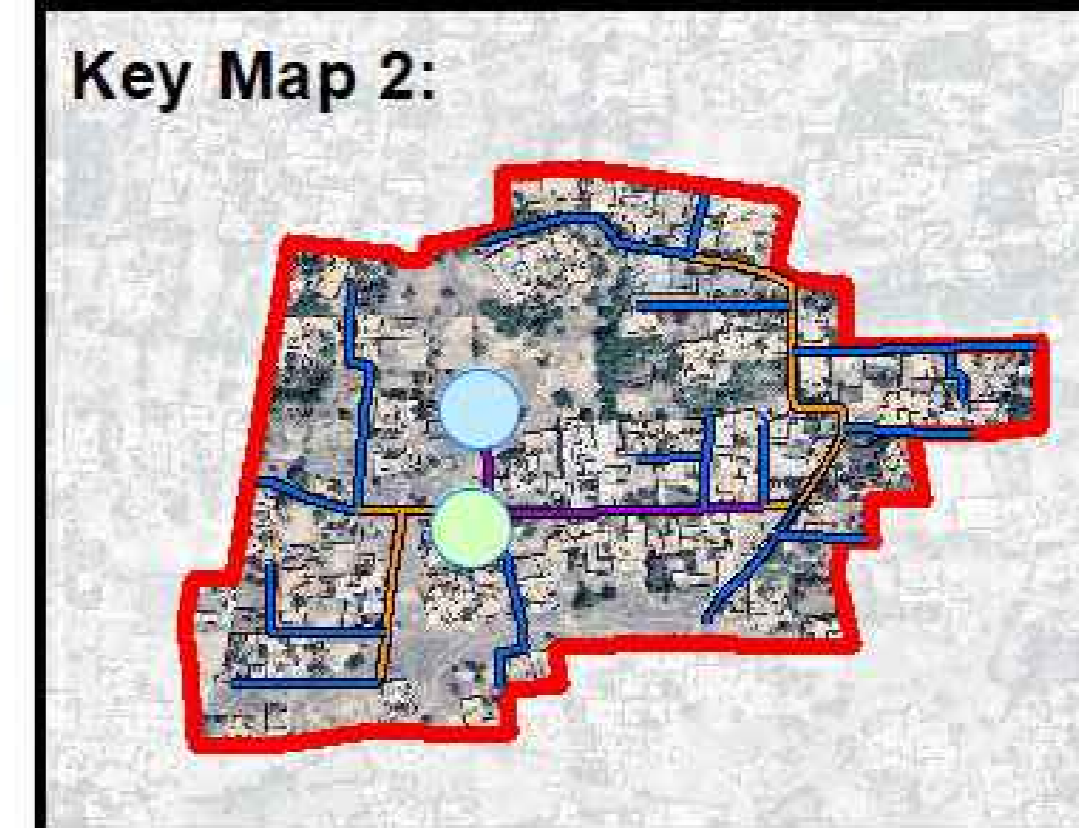
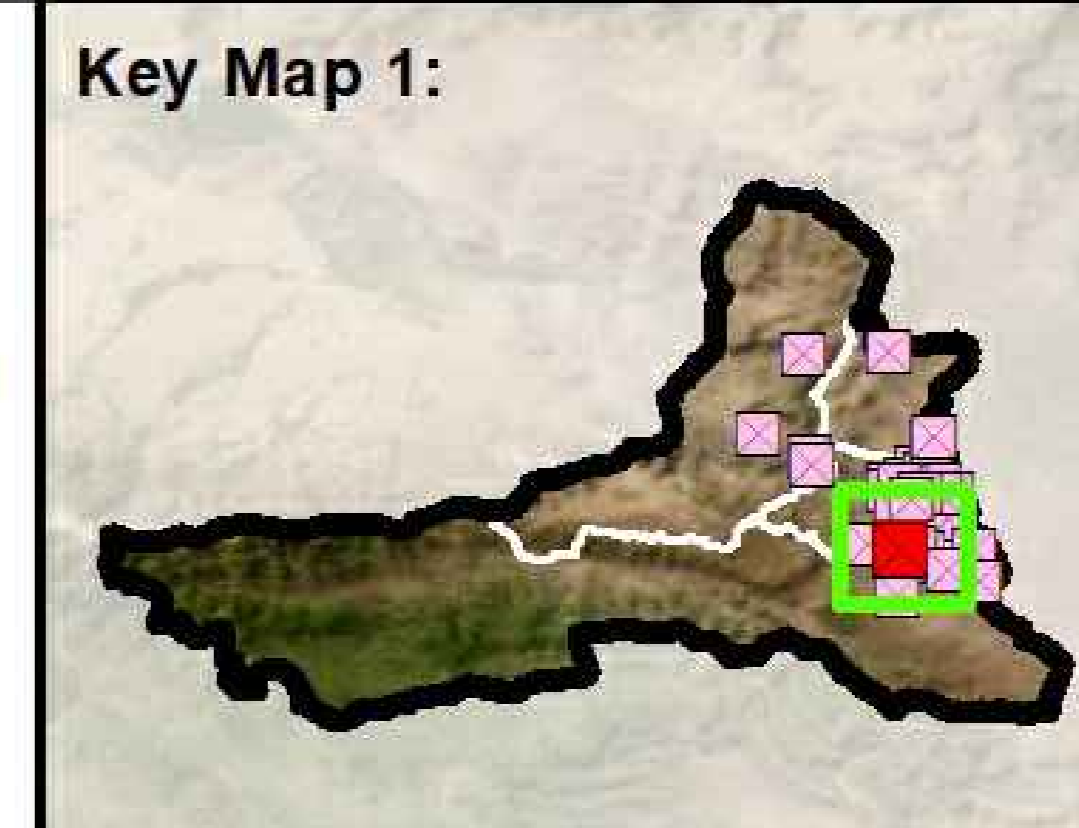
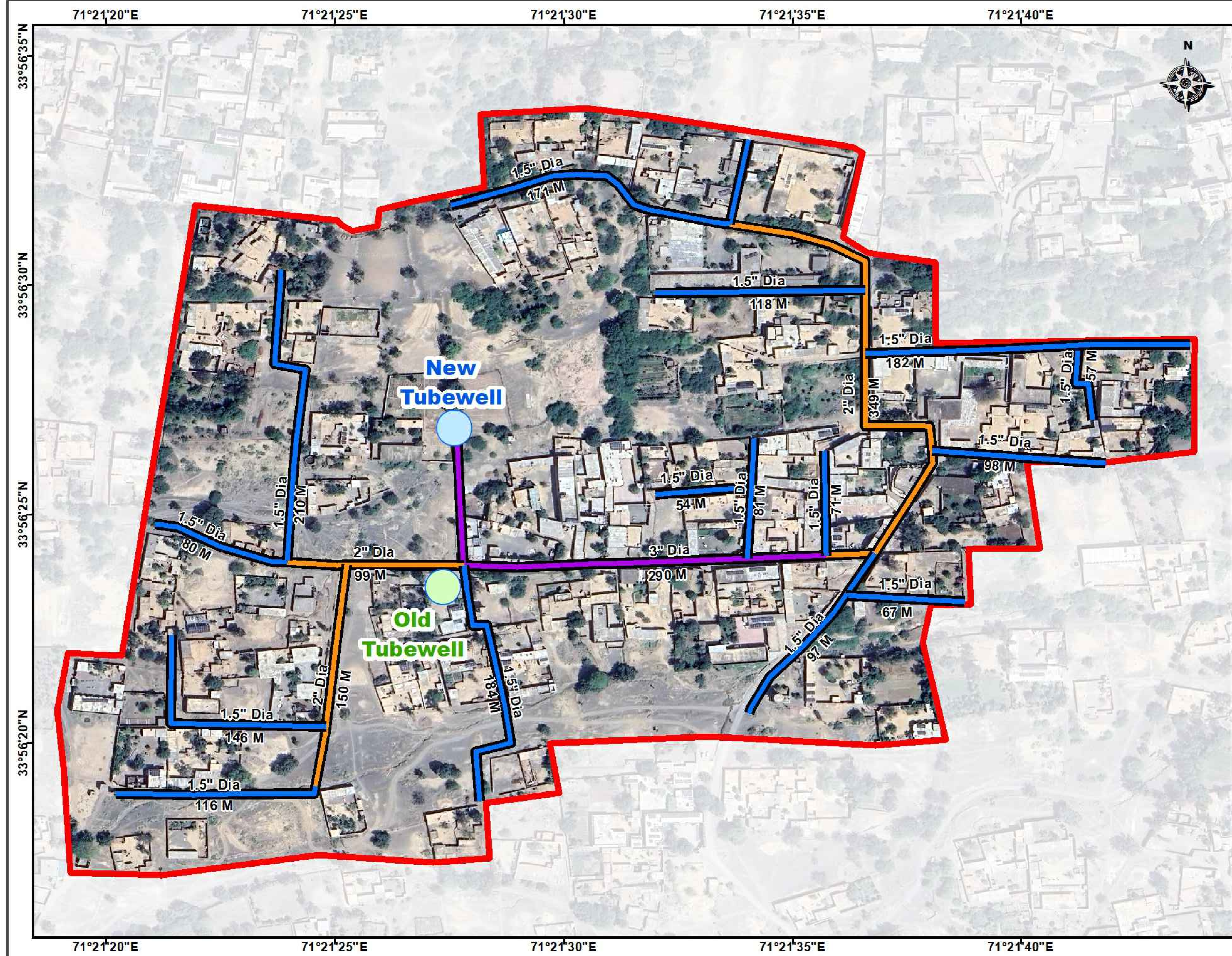
Techno-Consult  
International

Ultimate  
Engineering  
Consultants  
New Era of Development

<p>CLIENT :</p> <p style="text-align: center;">PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA</p>	<p>CONSULTANT:</p> <div style="display: flex; align-items: center; justify-content: center;"> </div>	<p>PROJECT:</p> <p>KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA</p>	<p>DRAWING TITLE :</p> <p style="text-align: center;">WATER COMP. LAYOUT MAP</p> <p style="text-align: center;">GHULAM SAKHI ARJALI NADI</p>	<p>Designed By : Dr. ASFAHAN ALI</p> <p>Drawn By : NAEEM BAKHSH</p> <p>Checked By : RABEEA REHMAN</p> <p>Approved By : RABEEA REHMAN</p>	<p>Date : MAR 2026</p> <p>Scale : N.T.S</p> <p>Drawing No : KPR/REH/KHD/-2024</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>Revision</th> <th>By</th> <th>Date</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	No.	Revision	By	Date												
No.	Revision	By	Date																			

# Distribution Network Layout

## DWSS Haji Abdul Qayum Tooth Dand BQK Rehabilitation Scheme - Tehsil Bara - District Khyber

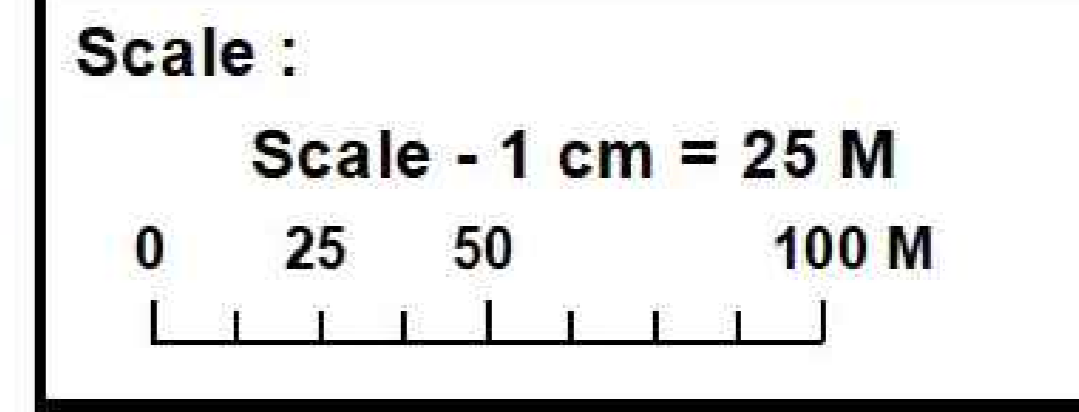


Legend :

- New Tubewell
- Old Tubewell

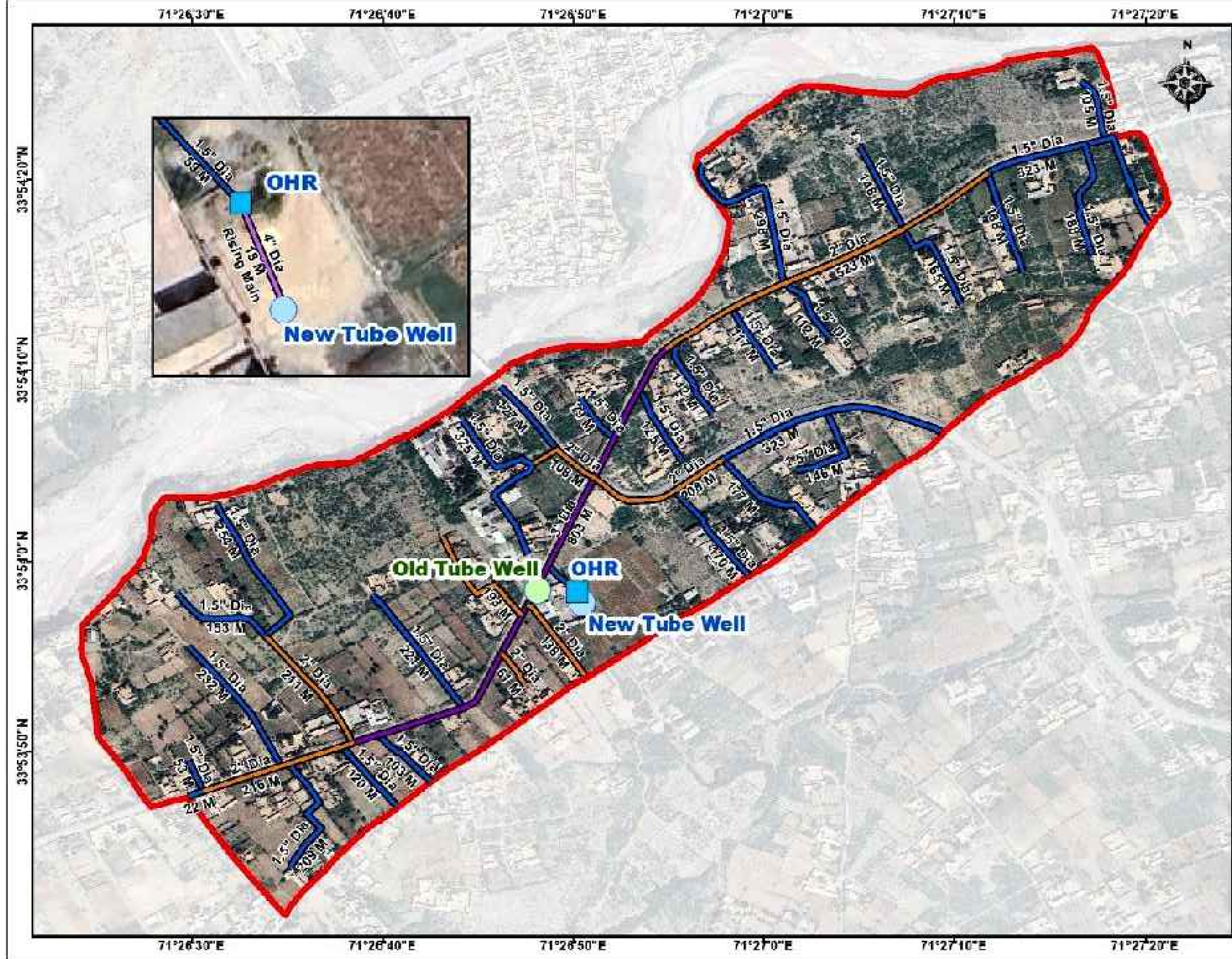
**Replacement Pipeline**

- 1.5" Dia HDPE
- 2" Dia HDPE
- 3" Dia HDPE
- Boundary



<p>CLIENT :</p> <p style="text-align: center;">PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA</p>	<p>CONSULTANT:</p> <p style="text-align: center;"><b>JV</b> Techno-Consult International Ultimate Engineering Consultants <small>New Era of Development</small></p>	<p>PROJECT:</p> <p>KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA</p>	<p>DRAWING TITLE :</p> <p style="text-align: center;">WATER COMP. LAYOUT MAP</p> <p style="text-align: center;">HAJI ABDUL QAYAM TOOT DAND BQK</p>	<p>Designed By : Dr. ASFAHAN ALI</p> <p>Drawn By : NAEEM BAKHSH</p> <p>Checked By : RABEEA REHMAN</p> <p>Approved By : RABEEA REHMAN</p>	<p>Date : MAR 2026</p> <p>Scale : N.T.S</p> <p>Drawing No : KPR/REH/KHD/-2025</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>Revision</th> <th>By</th> <th>Date</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	No.	Revision	By	Date												
No.	Revision	By	Date																			

# Distribution Network Layout DWSS Haji Hakim Khan Killi Meri Khel Aka Khel Bara Rehabilitation Scheme - Tehsil Bara - District Khyber



**Legend :**

- New Tubewell
- Old Tubewell (Blocked)
- Over Head Reservoir ( OHR )

**Replacement Pipeline**

- 1.5\"/>

Boundary

**Scale :**

Scale - 1 cm = 55 M

**Consultants :**

CLIENT :

PUBLIC HEALTH  
ENGINEERING DEPARTMENT  
KHYBER PAKHTUNKHWA

CONSULTANT:

**Techno-Consult International**  
**Ultimate Engineering Consultants**  
New Era of Development

PROJECT:

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DRAWING TITLE :

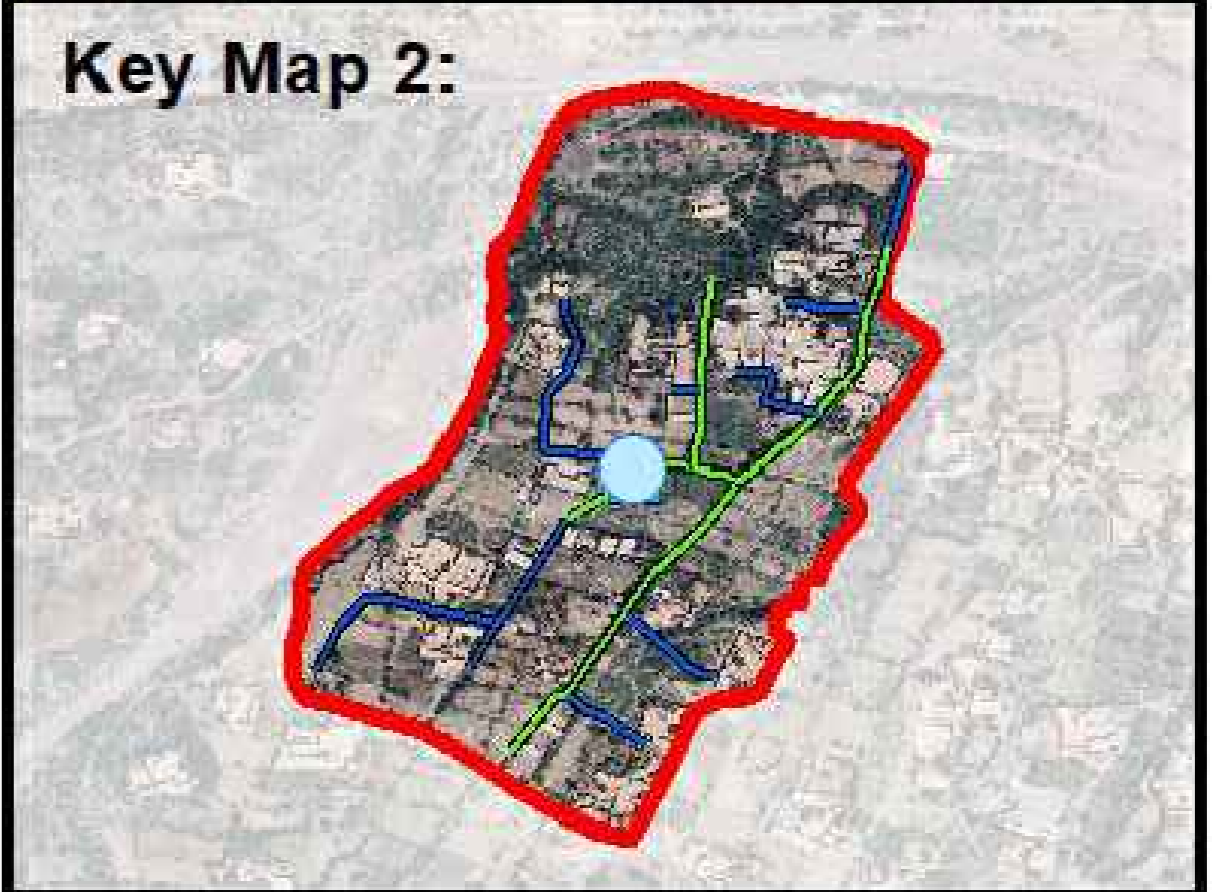
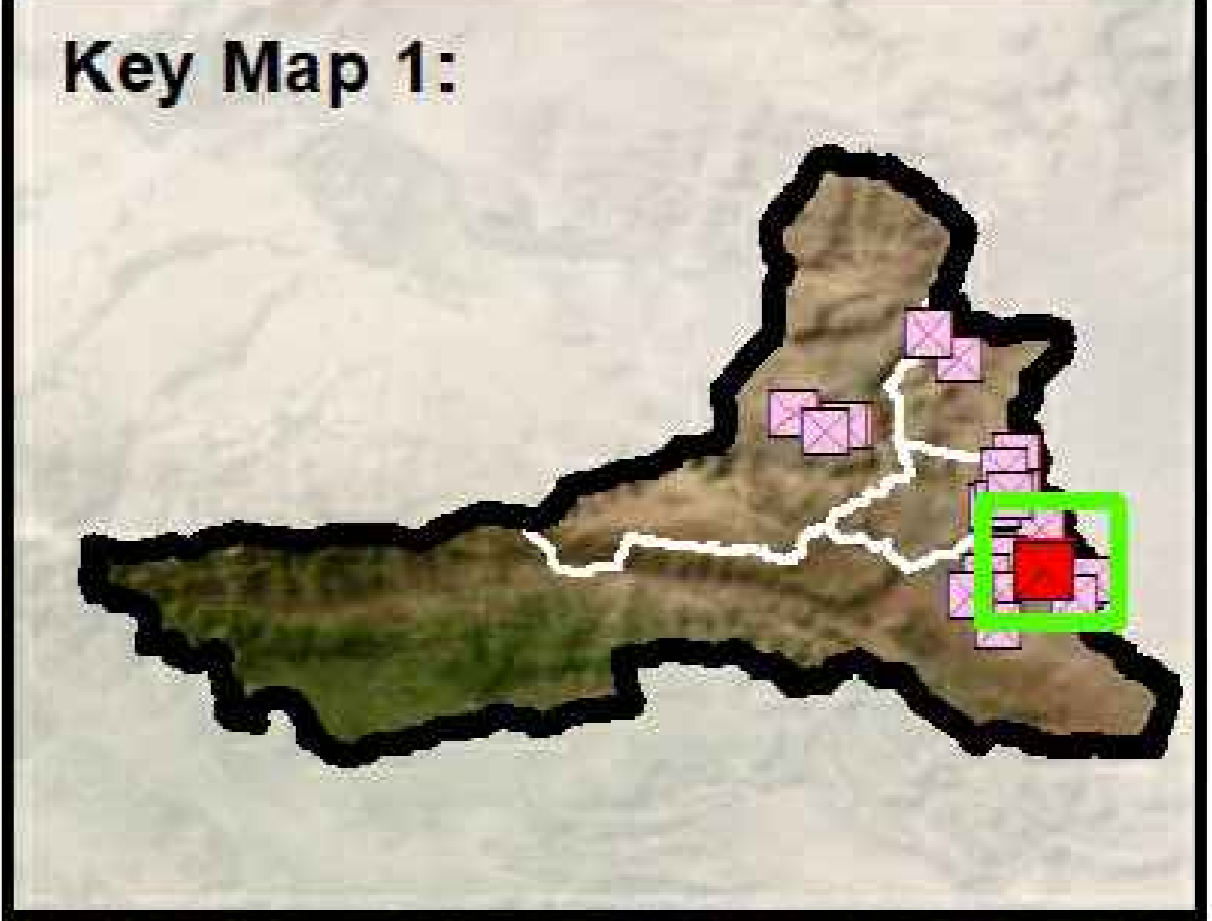
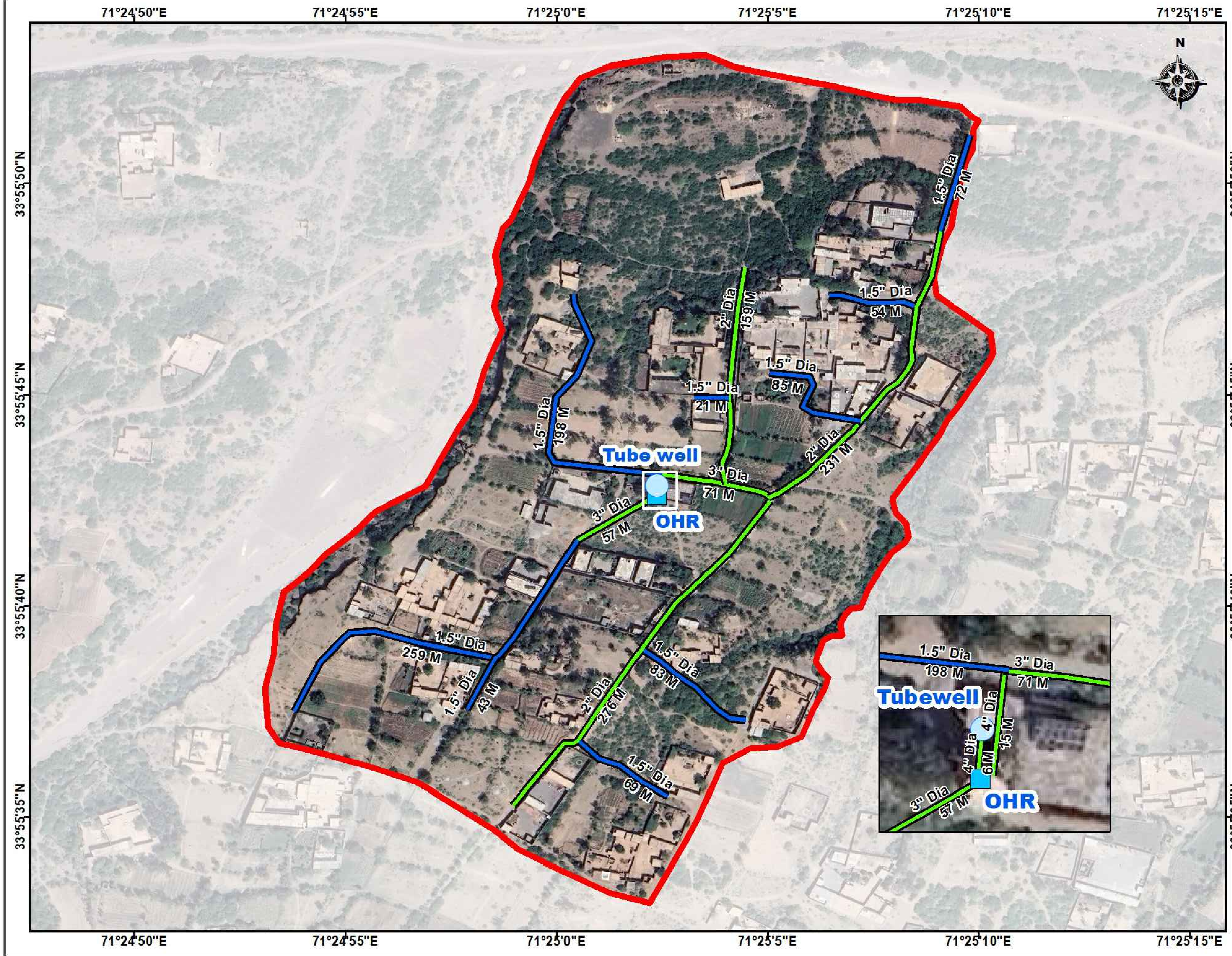
WATER COMP.  
LAYOUT MAP  
HAKIM KHAN KILLI

Designed By : Dr. ASFAHAN ALI	Date : MAR 2026
Drawn By : NAEEM BAKHSH	Scale : N.T.S
Checked By : RABEEA REHMAN	Drawing No :
Approved By : RABEEA REHMAN	KPR/REH/KHD/-2026

No.	Revision	By	Date

# Distribution Network Layout

## DWSS Hissara Shalobar Bara Rehabilitation Scheme- District Khyber



**Legend :**

- Tubewell
- Over Head Reservoir (OHR)

**Existing Pipeline**

- 2", 3" Dia GI
- 4" Dia Rising Main

**Replacement Pipeline**

- 1.5" Dia HDPE

Hissara Shalobar Boundary

**Scale :**

Scale - 1 cm = 27M

0    30    60    120 M

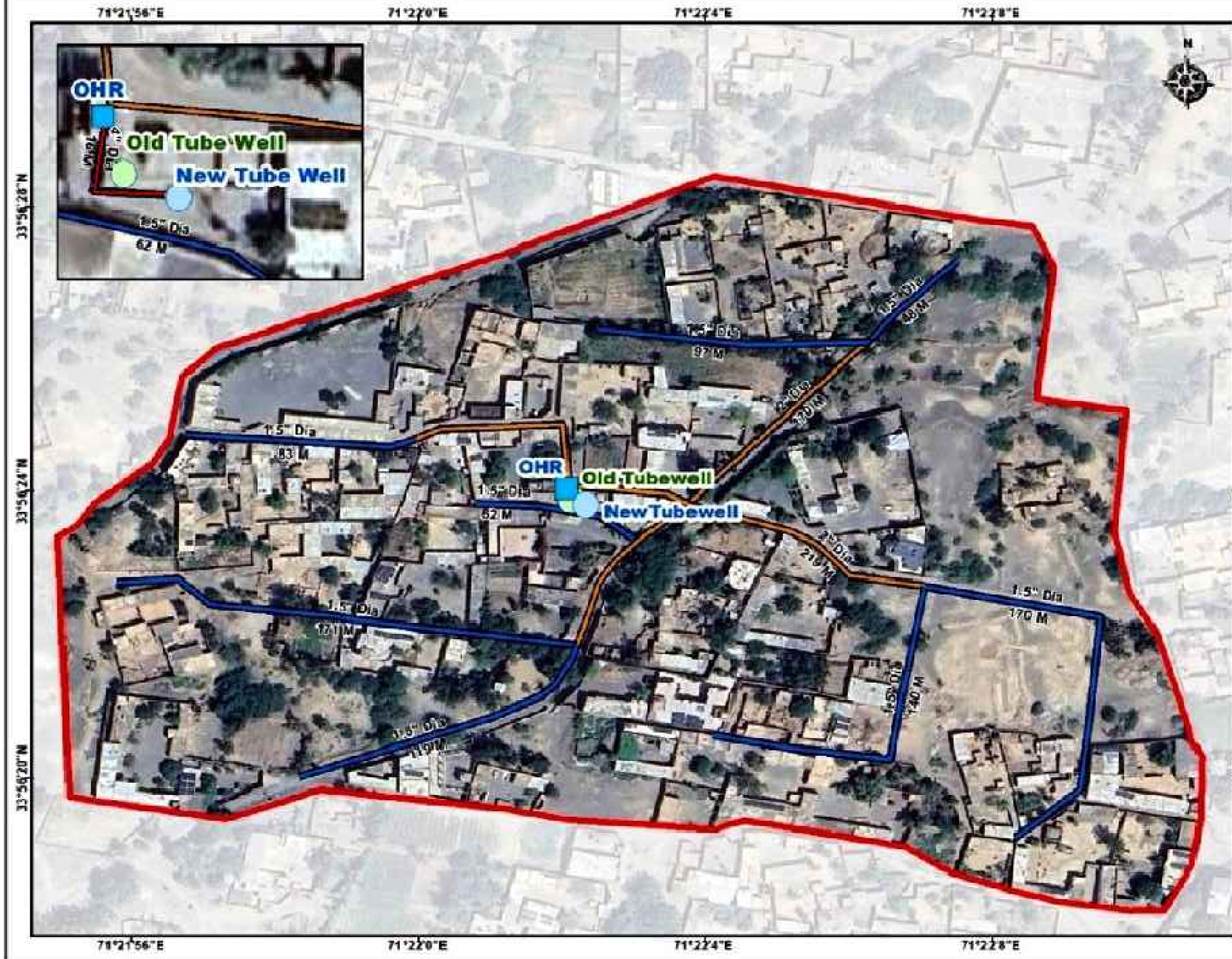
**Consultants :**

**Techno-Consult International**

**Ultimate Engineering Consultants**  
New Era of Development

<p>CLIENT :</p> <p style="text-align: center;">PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA</p>	<p>CONSULTANT:</p> <p style="text-align: center;"><b>JV</b> <b>Techno-Consult International</b> <b>Ultimate Engineering Consultants</b> New Era of Development</p>	<p>PROJECT:</p> <p>KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA</p>	<p>DRAWING TITLE :</p> <p style="text-align: center;">WATER COMP. LAYOUT MAP</p> <p style="text-align: center;">HISSARA SHALOBAR BARA</p>	<p>Designed By : Dr. ASFAHAN ALI</p> <p>Drawn By : NAEEM BAKHSH</p> <p>Checked By : RABEEA REHMAN</p> <p>Approved By : RABEEA REHMAN</p>	<p>Date : MAR 2026</p> <p>Scale : N.T.S</p> <p>Drawing No : KPR/REH/KHD/-2027</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>Revision</th> <th>By</th> <th>Date</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	No.	Revision	By	Date												
No.	Revision	By	Date																			

# Distribution Network Layout DWSS Janis / Tawas Khan Killi BQK Rehabilitation Scheme Bara Tehsil - District Khyber

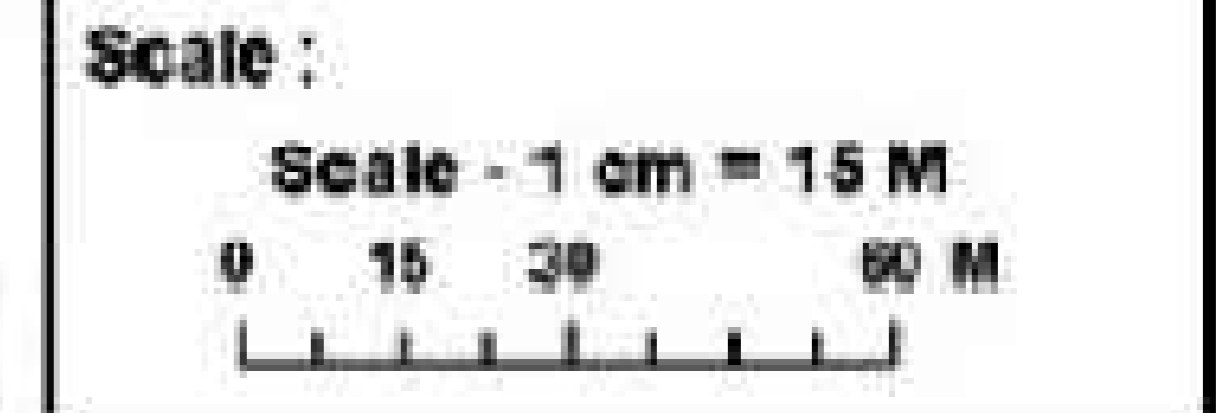


**Legend :**

- New Tubewell
- Old Tubewell
- Over Head Reservoir (OHR)

**Replacement Pipeline**

- 1.5" Dia HDPE
- 2" Dia HDPE
- 4" Dia GI Rising Main
- Boundary



**Consultants :**

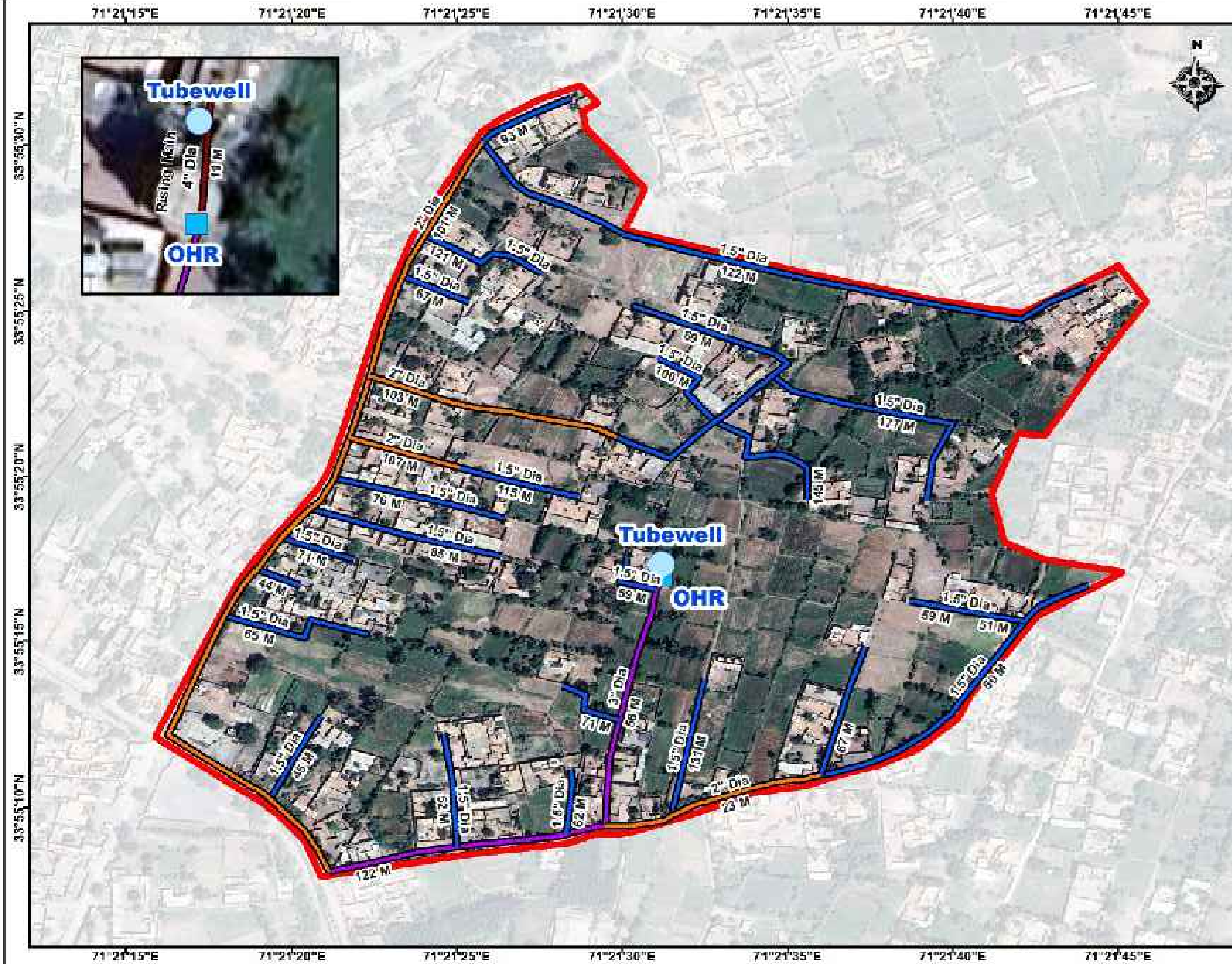
**Techno-Consult International**

**Ultimate Engineering Consultants**

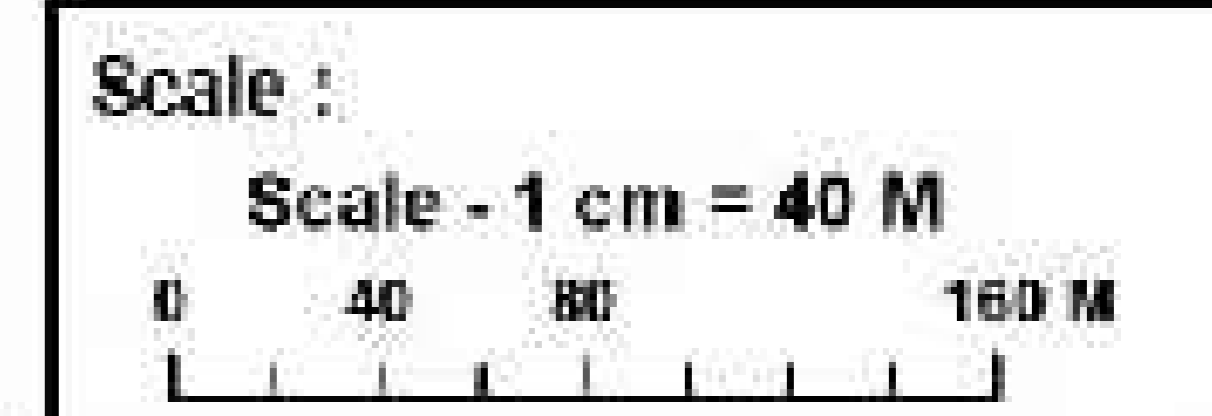
<p>CLIENT :</p> <p style="text-align: center;"> <b>PUBLIC HEALTH ENGINEERING DEPARTMENT</b> KHYBER PAKHTUNKHWA</p>	<p>CONSULTANT:</p> <p style="text-align: center;"> <b>Techno-Consult International</b>  <b>Ultimate Engineering Consultants</b> New Era of Development</p>	<p>PROJECT:</p> <p>KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA</p>	<p>DRAWING TITLE :</p> <p style="text-align: center;">WATER COMP. LAYOUT MAP</p> <p style="text-align: center;">JANIS/TAWAS KHAN KILLI BQK</p>	<p>Designed By : Dr. ASFAHAN ALI</p> <p>Drawn By : NAEEM BAKHSH</p> <p>Checked By : RABEEA REHMAN</p> <p>Approved By : RABEEA REHMAN</p>	<p>Date : MAR 2026</p> <p>Scale : N.T.S</p> <p>Drawing No : KPR/REH/KHD/-2028</p>					

# Distribution Network Layout

## DWSS Malik Jan Killi BQK Bara (Fresh Kallay) Rehabilitation Scheme - Tehsil Bara - District Khyber



- Legend :**
- Tubewell
  - Over Head Reservoir (OHR)
- Replacement Pipeline**
- 1.5" Dia HDPE
  - 2" Dia HDPE
  - 3" Dia HDPE
  - 4" Dia GI Rising Main
  - Boundary

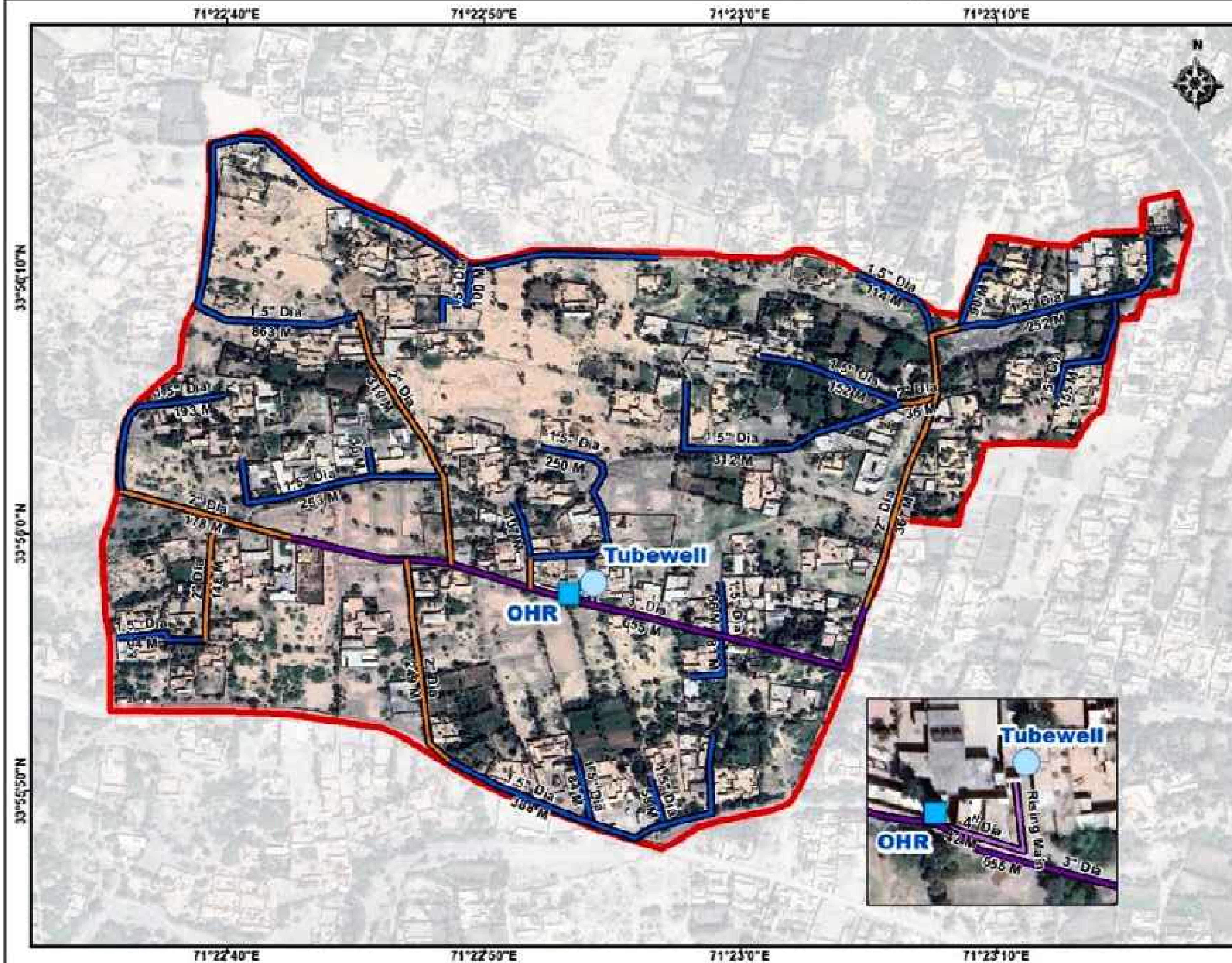


**Consultants :**

<p>CLIENT :</p> <p>PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA</p>	<p>CONSULTANT:</p> <p>Techno-Consult International</p> <p>JV Ultimate Engineering Consultants <small>New Era of Development</small></p>	<p>PROJECT:</p> <p>KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA</p>	<p>DRAWING TITLE :</p> <p>WATER COMP. LAYOUT MAP</p>	<p>Designed By : Dr. ASFAHAN ALI</p> <p>Drawn By : NAEEM BAKHSH</p> <p>Checked By : RABEEA REHMAN</p> <p>Approved By : RABEEA REHMAN</p>	<p>Date : MAR 2026</p> <p>Scale : N.T.S</p> <p>Drawing No : KPR/REH/KHD/-2029</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>Revision</th> <th>By</th> <th>Date</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	No.	Revision	By	Date																
No.	Revision	By	Date																							



# Distribution Network Layout DWSS Sam Baba Zone (A) (Spin Dand) Rehabilitation Scheme Bara Tehsil District Khyber



Key Map 1:



Key Map 2:



Legend :

- Tubewell
- Over Head Reservoir (OHR)
- Replacement Pipeline**
- 1.5" Dia HDPE
- 2" Dia HDPE
- 3" Dia HDPE
- 4" Dia GI Rising Main
- Boundary

Scale :



Consultants :



CLIENT :  
PUBLIC HEALTH  
ENGINEERING DEPARTMENT  
KHYBER PAKHTUNKHWA

CONSULTANT:  
 **Techno-Consult International**  
 **Ultimate Engineering Consultants**  
New Era of Development

PROJECT:  
KPRIISP - DESIGN REVIEW AND  
CONSTRUCTION SUPERVISION FOR  
WATER SUPPLY, SEWERAGE, DRAINAGE  
AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS  
OF KHYBER PAKHTUNKHWA

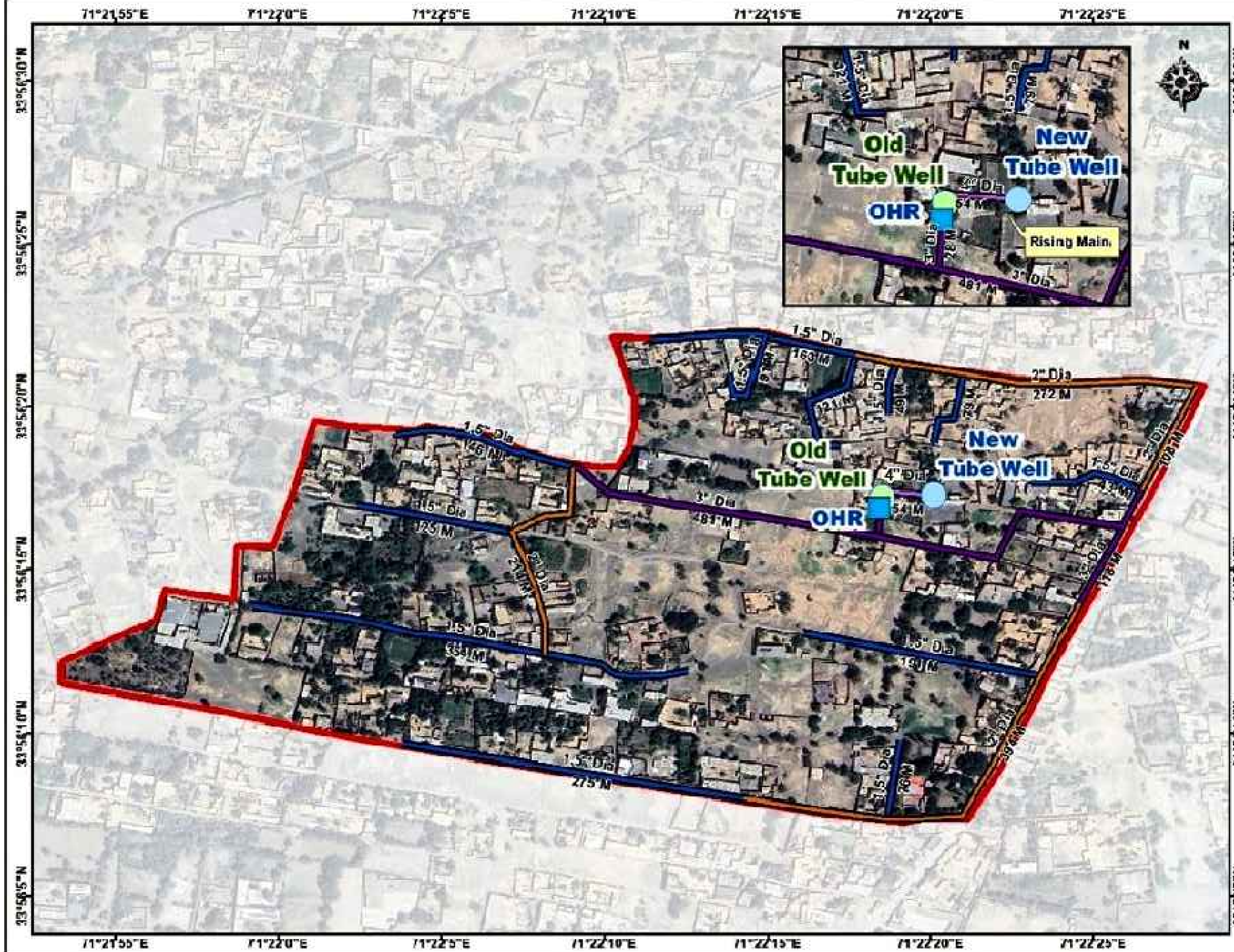
DRAWING TITLE :  
WATER COMP.  
LAYOUT MAP  
SAM BABA ZONE-A  
(SPIN DAND)

Designed By : Dr. ASFAHAN ALI  
Drawn By : NAEEM BAKHSH  
Checked By : RABEEA REHMAN  
Approved By : RABEEA REHMAN

Date : MAR 2026  
Scale : N.T.S  
Drawing No :  
KPR/REH/KHD/-2031

No.	Revision	By	Date

# Distribution Network Layout DWSS Sam Baba Zone B Rehabilitation Scheme Bara Tehsil - District Khyber



**Legend :**

- New Tube Well
- Old Tube Well
- Over Head Reservoir (OHR)

**Replacement Pipeline**

- 1.5" Dia HDPE
- 2" Dia HDPE
- 3" Dia HDPE
- 4" Dia GI Rising Main
- Boundary



**Consultants :**

CLIENT :

**PUBLIC HEALTH  
ENGINEERING DEPARTMENT  
KHYBER PAKHTUNKHWA**

CONSULTANT:

**Techno-Consult  
International**

**JV**

**Ultimate  
Engineering  
Consultants**

*New Era of Development*

PROJECT:

KPRIISP - DESIGN REVIEW AND  
CONSTRUCTION SUPERVISION FOR  
WATER SUPPLY, SEWERAGE, DRAINAGE  
AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS  
OF KHYBER PAKHTUNKHWA

DRAWING TITLE :

WATER COMP.  
LAYOUT MAP

SAM BABA ZONE-B

Designed By : Dr. ASFAHAN ALI

Drawn By : NAEEM BAKHSH

Checked By : RABEEA REHMAN

Approved By : RABEEA REHMAN

Date : MAR 2026

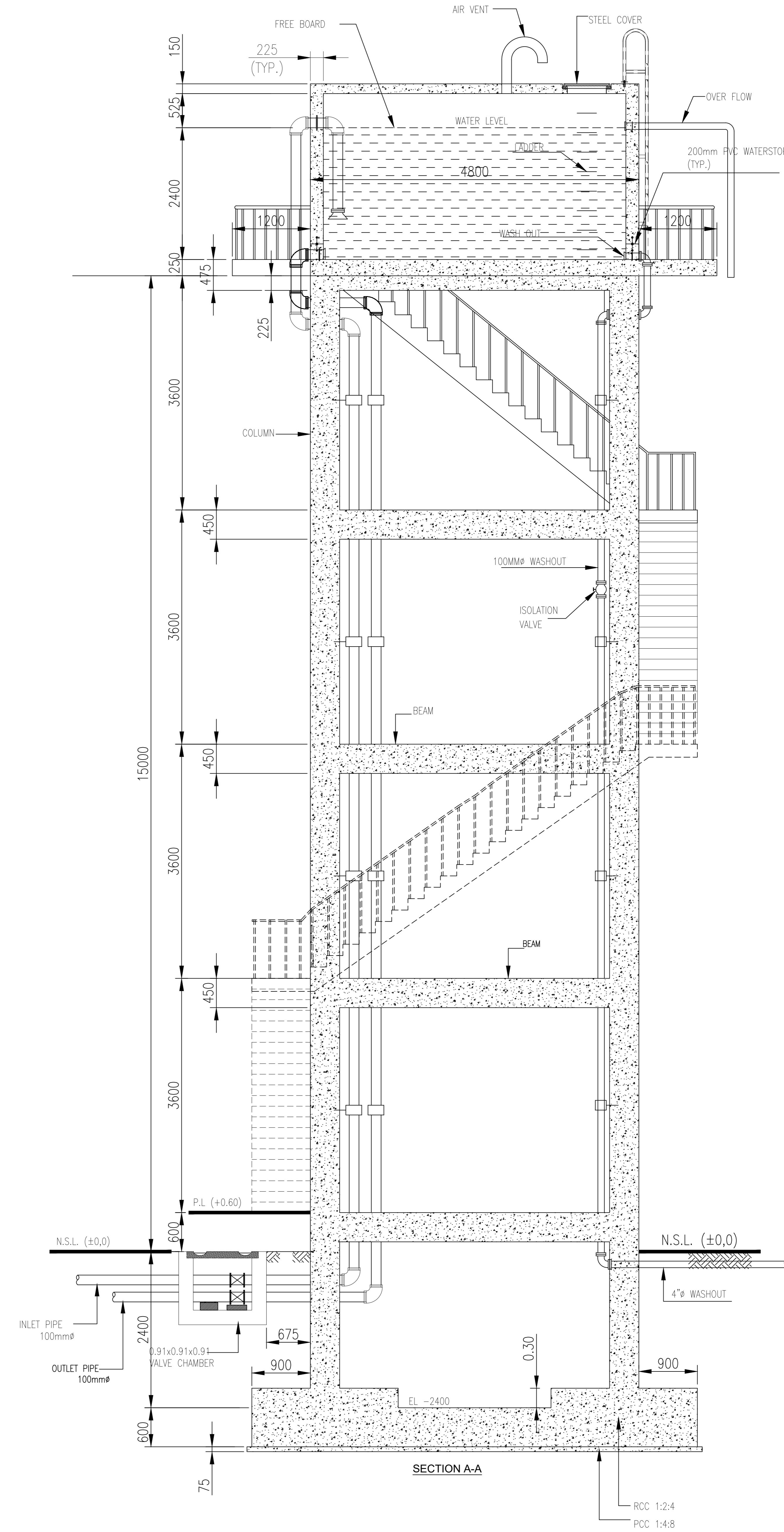
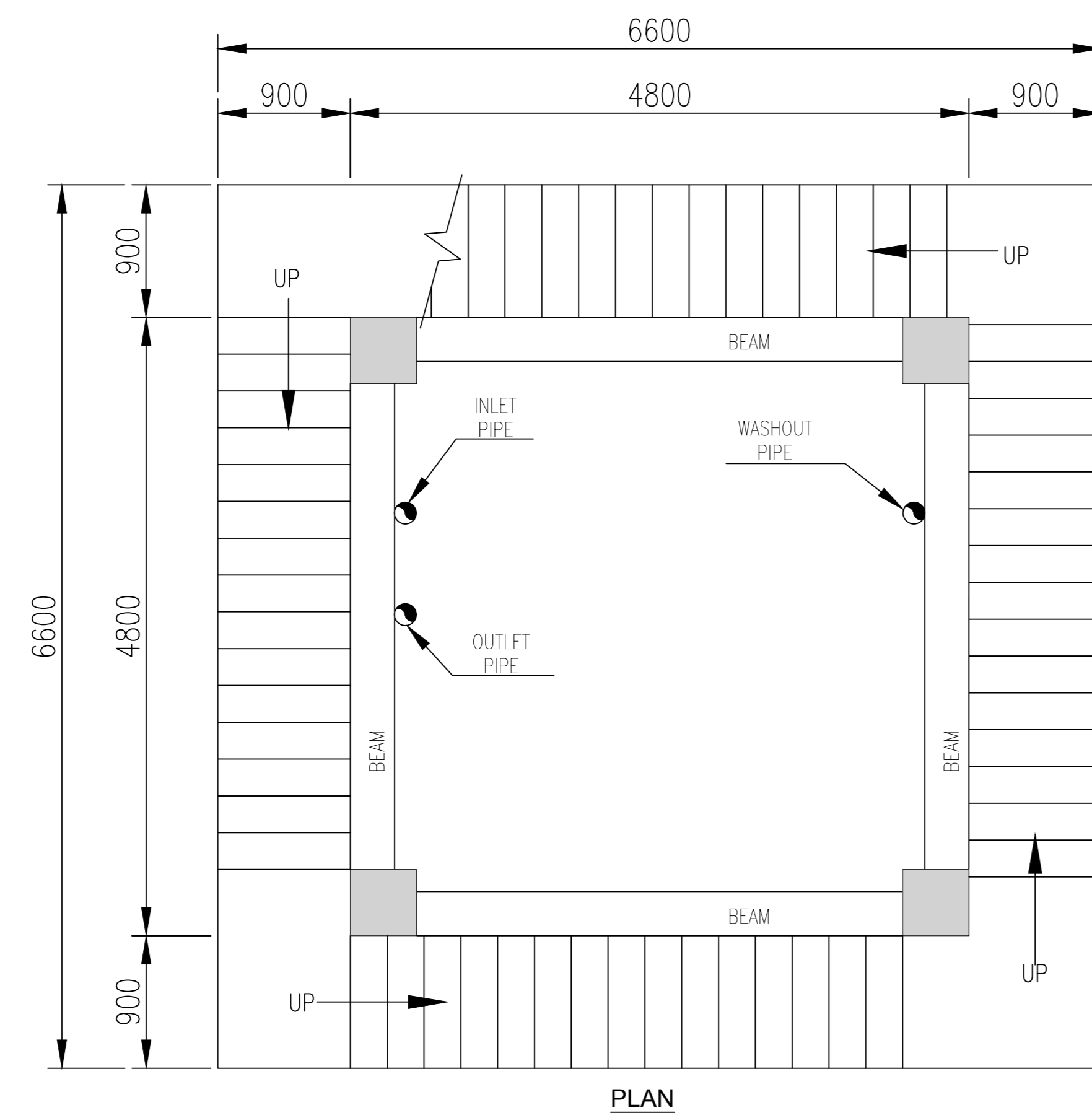
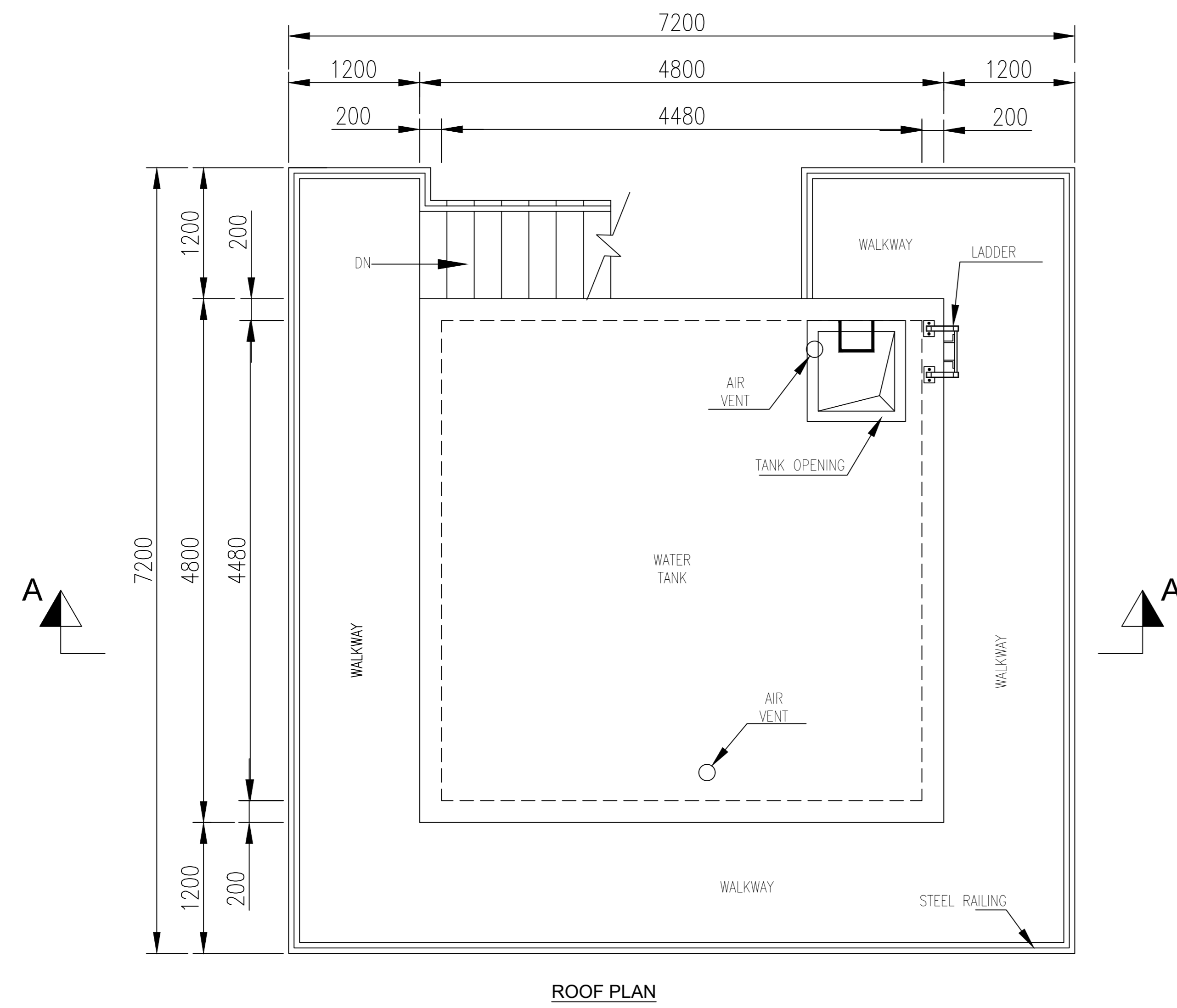
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Drawing No :  
KPR/REH/KHD/-2032


No.	Revision	By	Date





**WATER COMPONENT ( REHABILITATION )  
PROPOSED TUBEWELL & 10,000imp Gal. OHR  
B.2 ARCHITECTURAL & STRUCTURAL DRAWINGS**



**NOTES:-**  
 ALL WATER INLET & OUTLET PIPES SHALL BE M.S. PIPES. FOR VENT, OVER FLOW & WASHOUT PIPES, UPVC CLASS B PIPE SHALL BE USED.  
 FOR PIPING ARRANGEMENT & MECHANICAL ITEMS, CONTRACTOR SHALL SUBMIT THE SHOP DRAWINGS CONSIDERING MANUFACTURER'S REQUIREMENT FOR THE ENGINEER'S APPROVAL BEFORE EXECUTION.

CLIENT :  

 PUBLIC HEALTH ENGINEERING  
 DEPARTMENT KHYBER  
 PAKHTUNKHWA

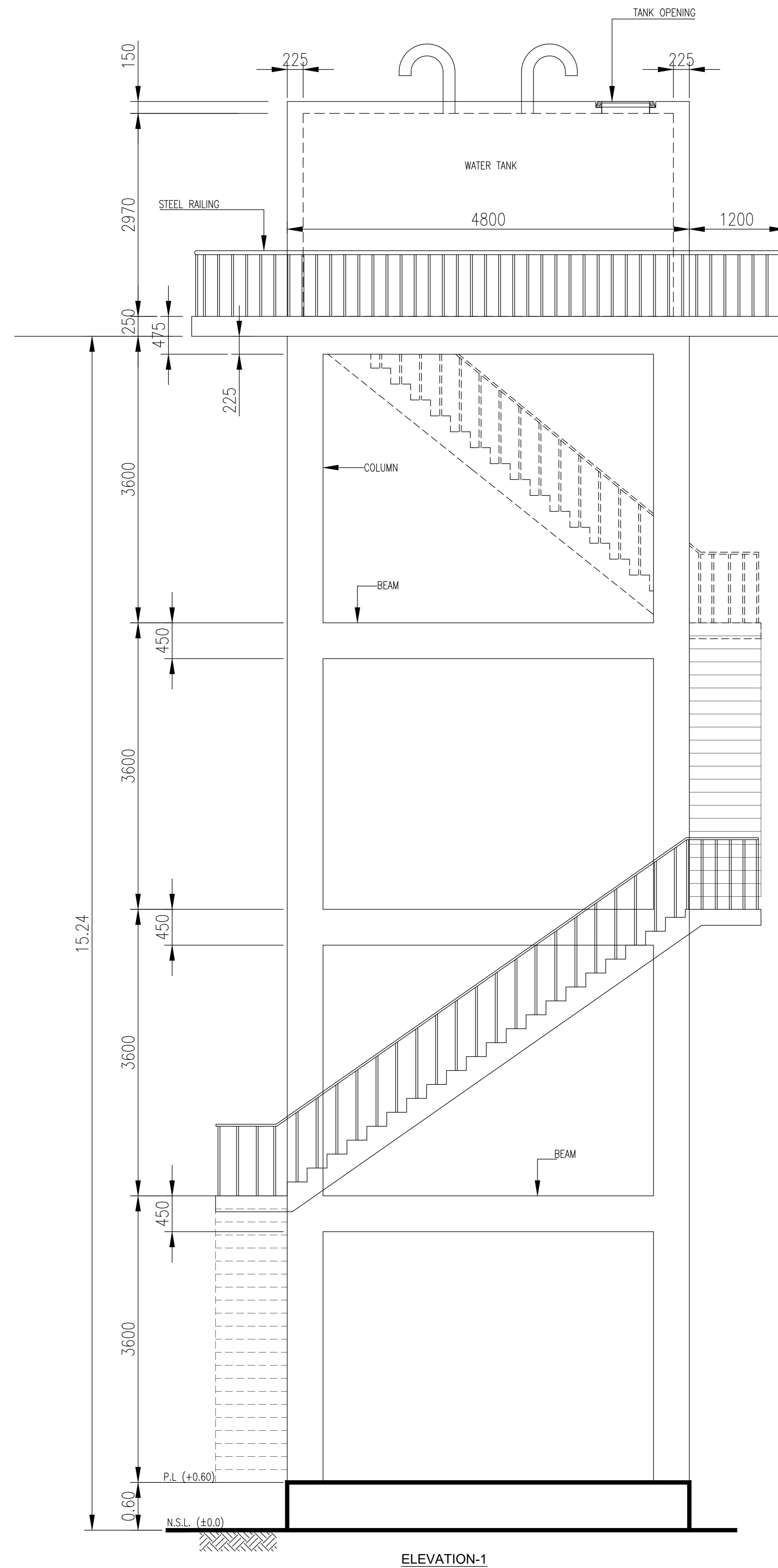
CONSULTANT:  

**Techno-Consult  
 International** JV  

**Ultimate  
 Engineering  
 Consultants**  
 New Era of Development

PROJECT:  
 KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA

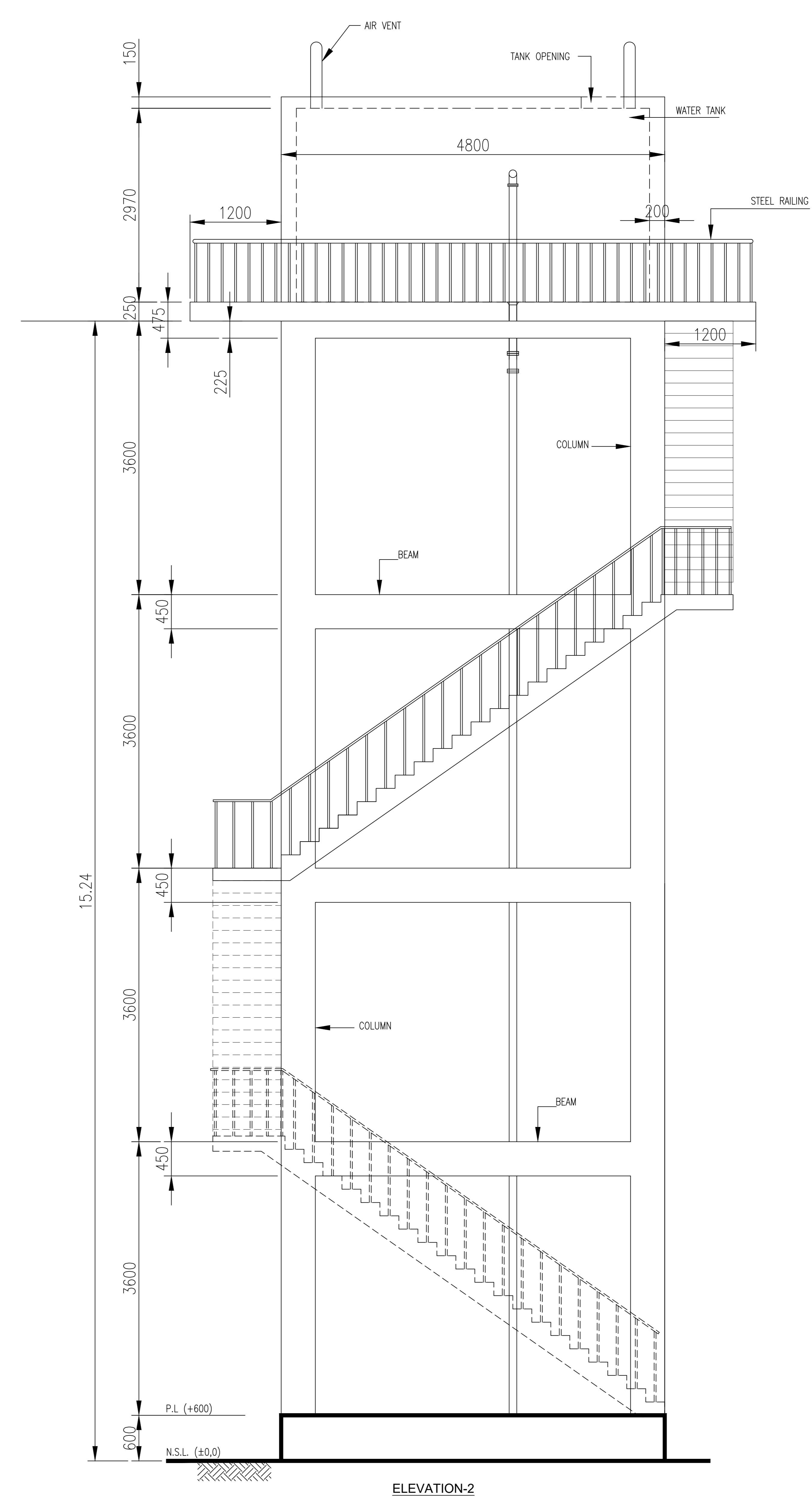
DRAWING TITLE :  
 EXISTING REHAB SCHEMES  
 DISTRICT KHYBER  
 PROPOSED TUBEWELL &  
 10,000imp Gal. OHR  
 PLAN ,ROOF PLAN &  
 SECTION AT A-A

Designed By :	Dr. ASFAHAN ALI	Date :	MAR 2026
Drawn By :	NAEEM BAKHSH	Scale :	N.T.S
Checked By :	RABEEA REHMAN	Drawing No :	
Approved By :	RABEEA REHMAN		KPR/REH/KHD/-2101

No.	Revision	By	Date





ELEVATION-1



ELEVATION-2

CLIENT :  

**PUBLIC HEALTH ENGINEERING  
 DEPARTMENT KHYBER  
 PAKHTUNKHWA**

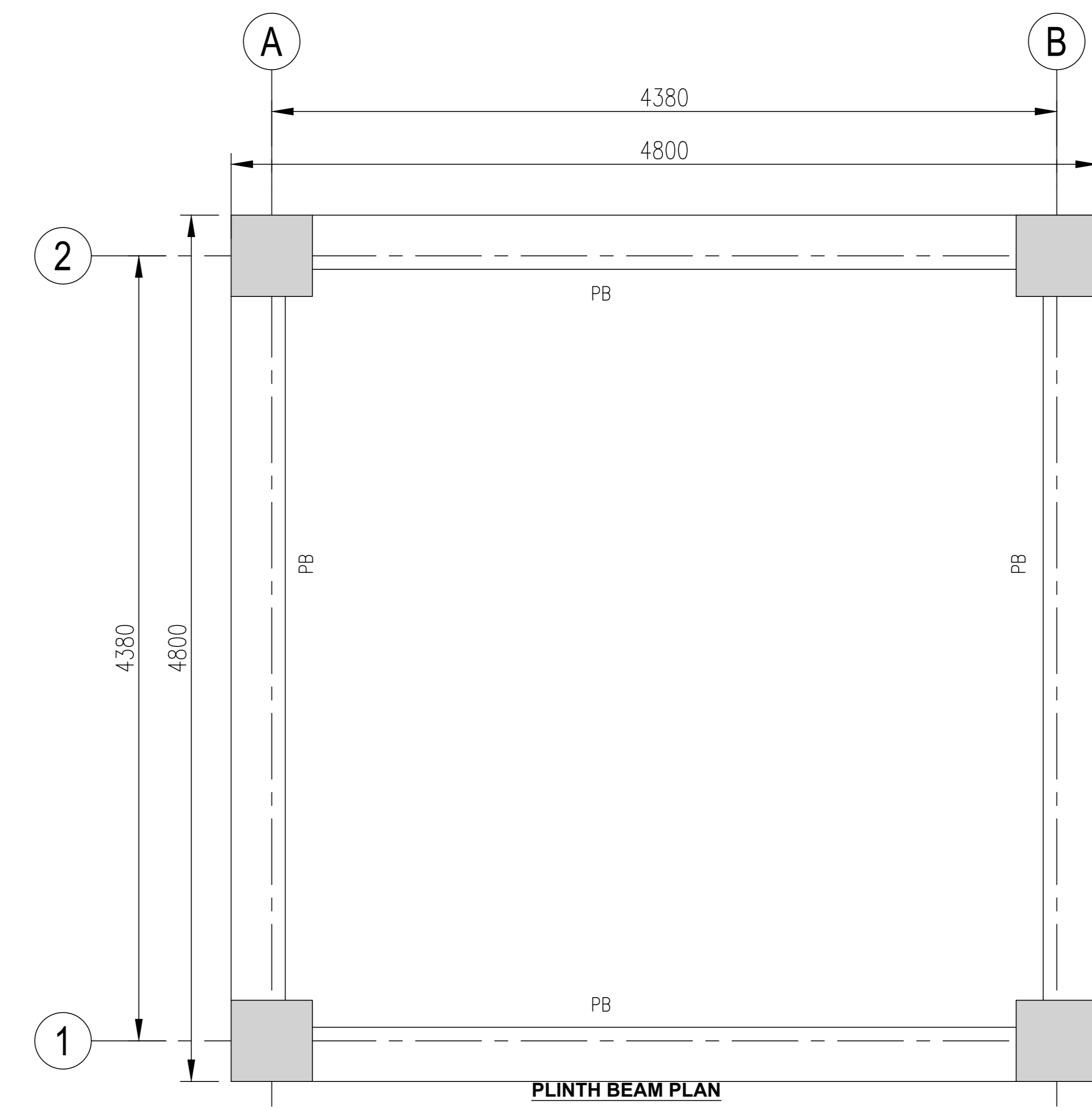
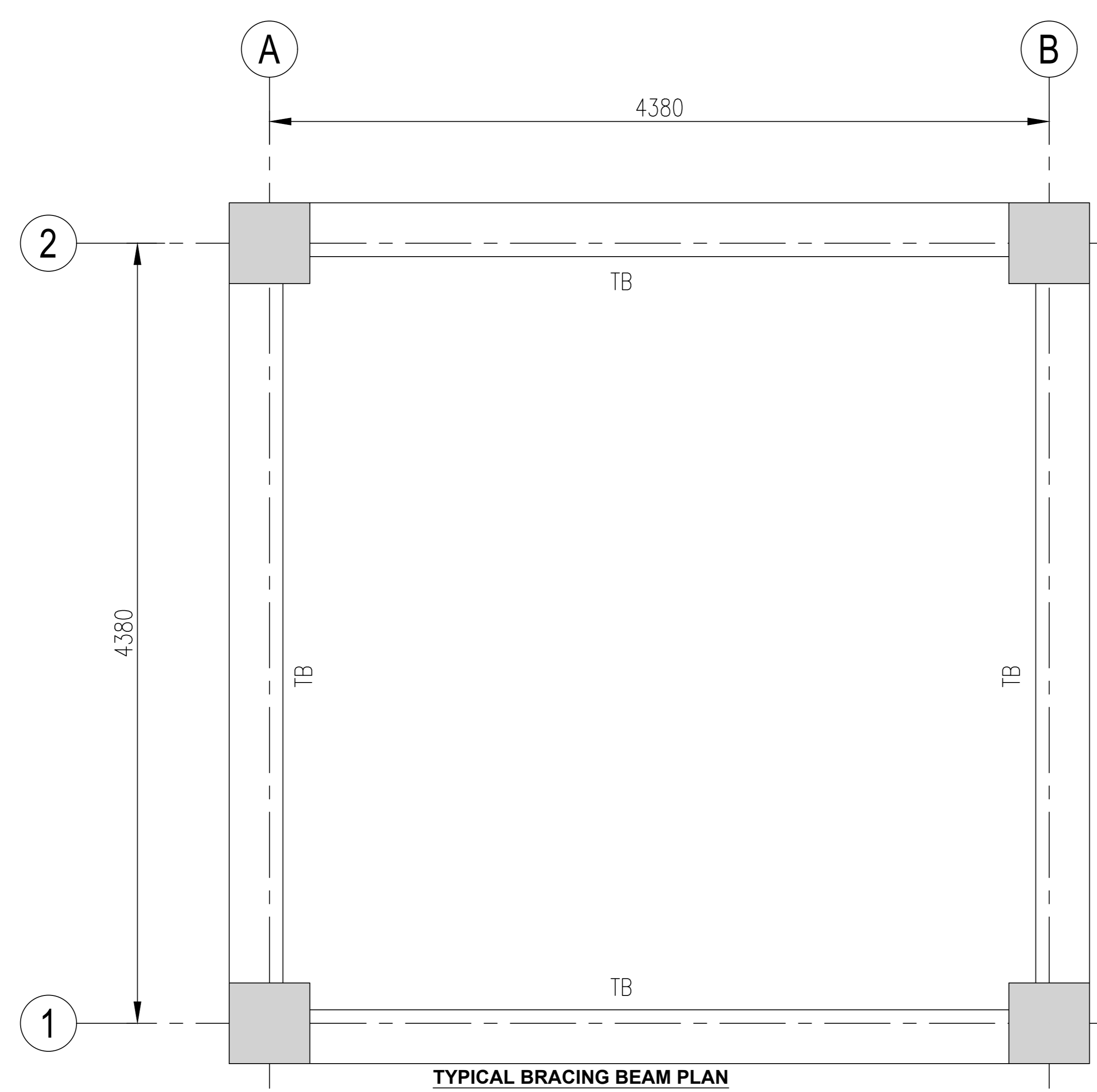
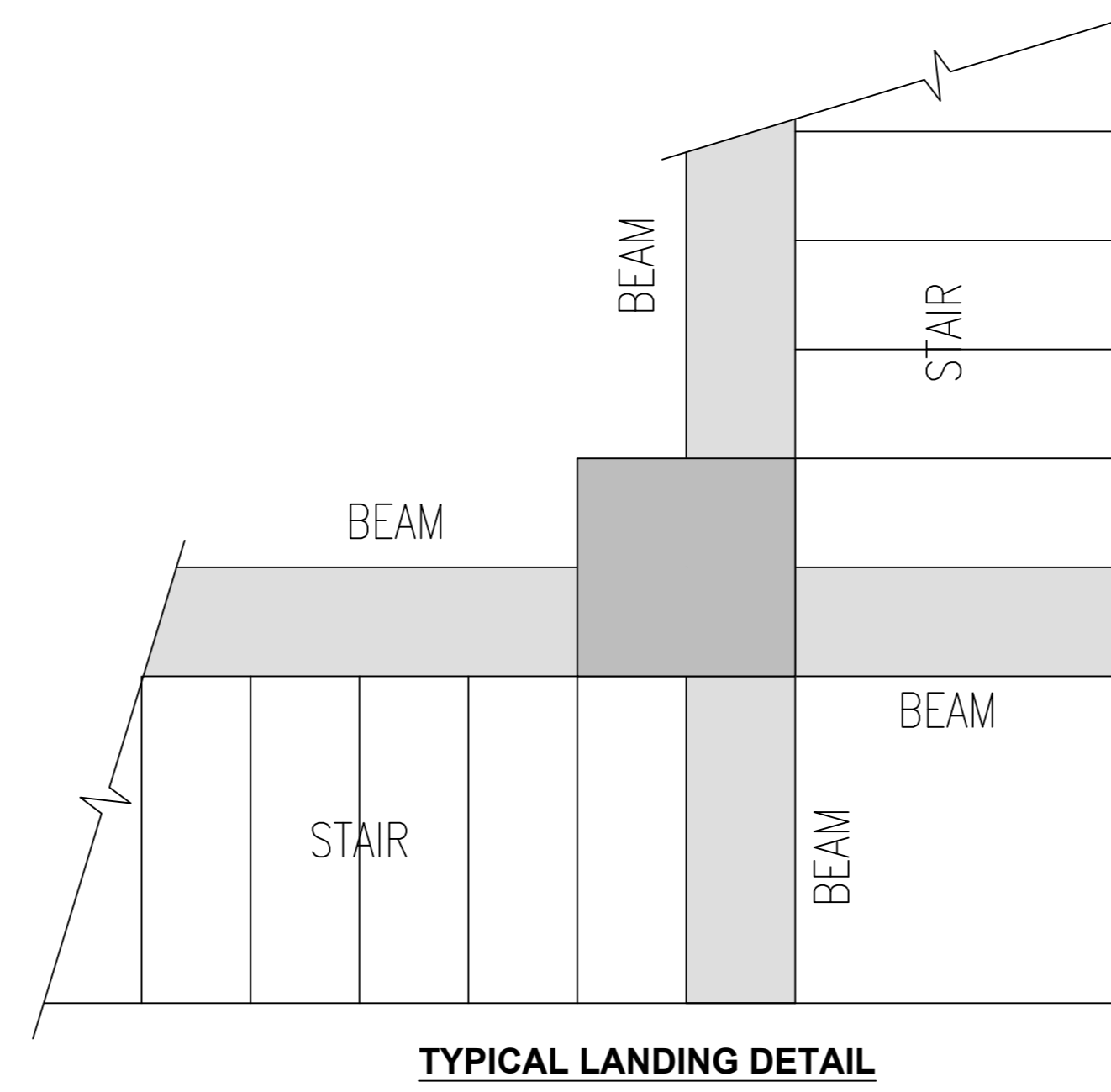
CONSULTANT:  

**Techno-Consult  
 International** **JV**  

**Ultimate  
 Engineering  
 Consultants**  
 New Era of Development


PROJECT:  
 KPRIISP - DESIGN REVIEW AND CONSTRUCTION  
 SUPERVISION FOR WATER SUPPLY, SEWERAGE,  
 DRAINAGE AND WASTE WATER TREATMENT  
 PROJECT IN NEWLY MERGED DISTRICTS OF  
 KHYBER PAKHTUNKHWA



DRAWING TITLE :  
 EXISTING REHAB SCHEMES  
 DISTRICT KHYBER  
 PROPOSED TUBEWELL &  
 10,000imp Gal. OHR  
 ELEVATION-1 & 2

Designed By : Dr. ASFAHAN ALI	Date : MAR 2026
Drawn By : NAEEM BAKHSH	Scale : N.T.S
Checked By : RABEEA REHMAN	Drawing No :
Approved By : RABEEA REHMAN	KPR/REH/KHD/-2102

No.	Revision	By	Date



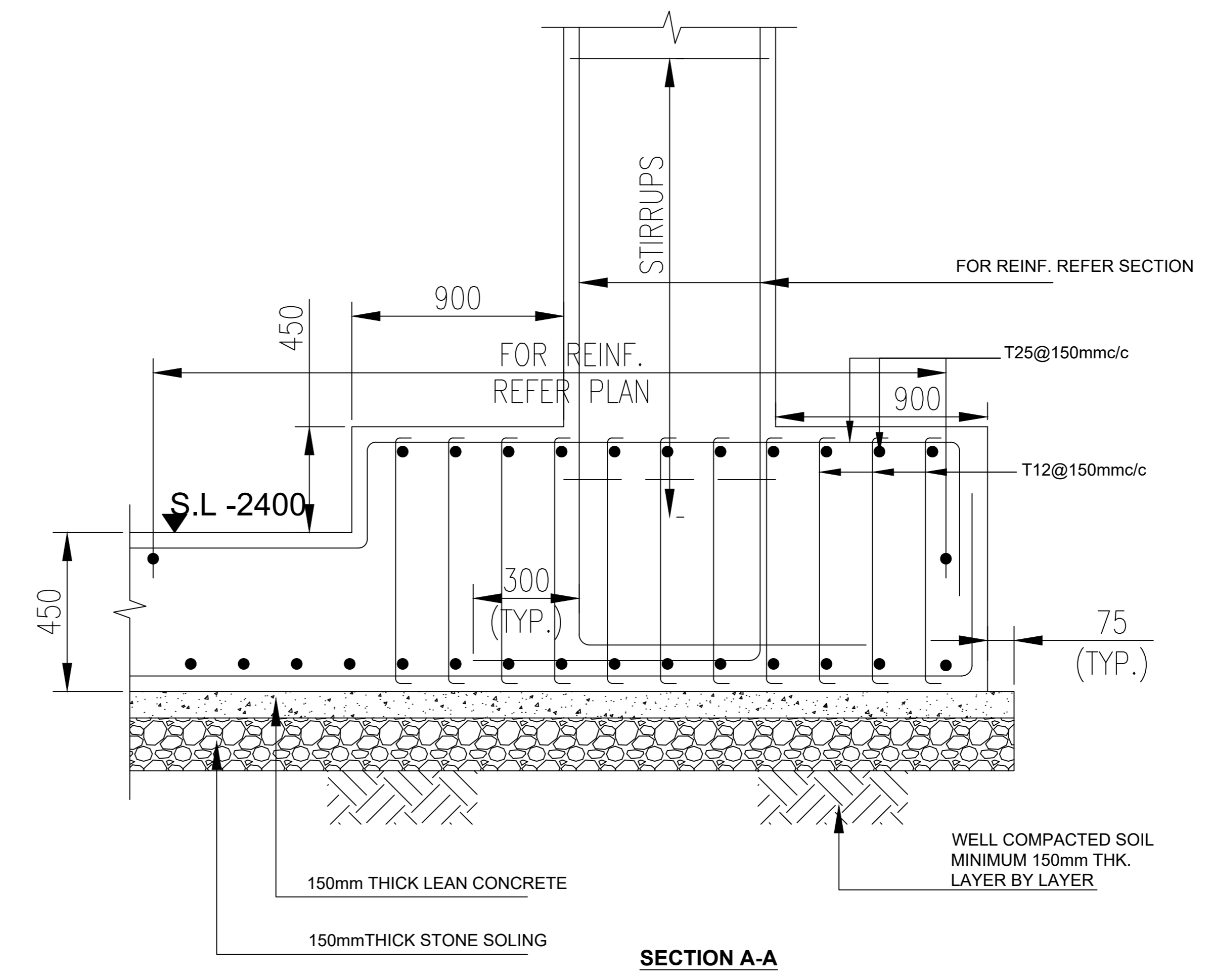
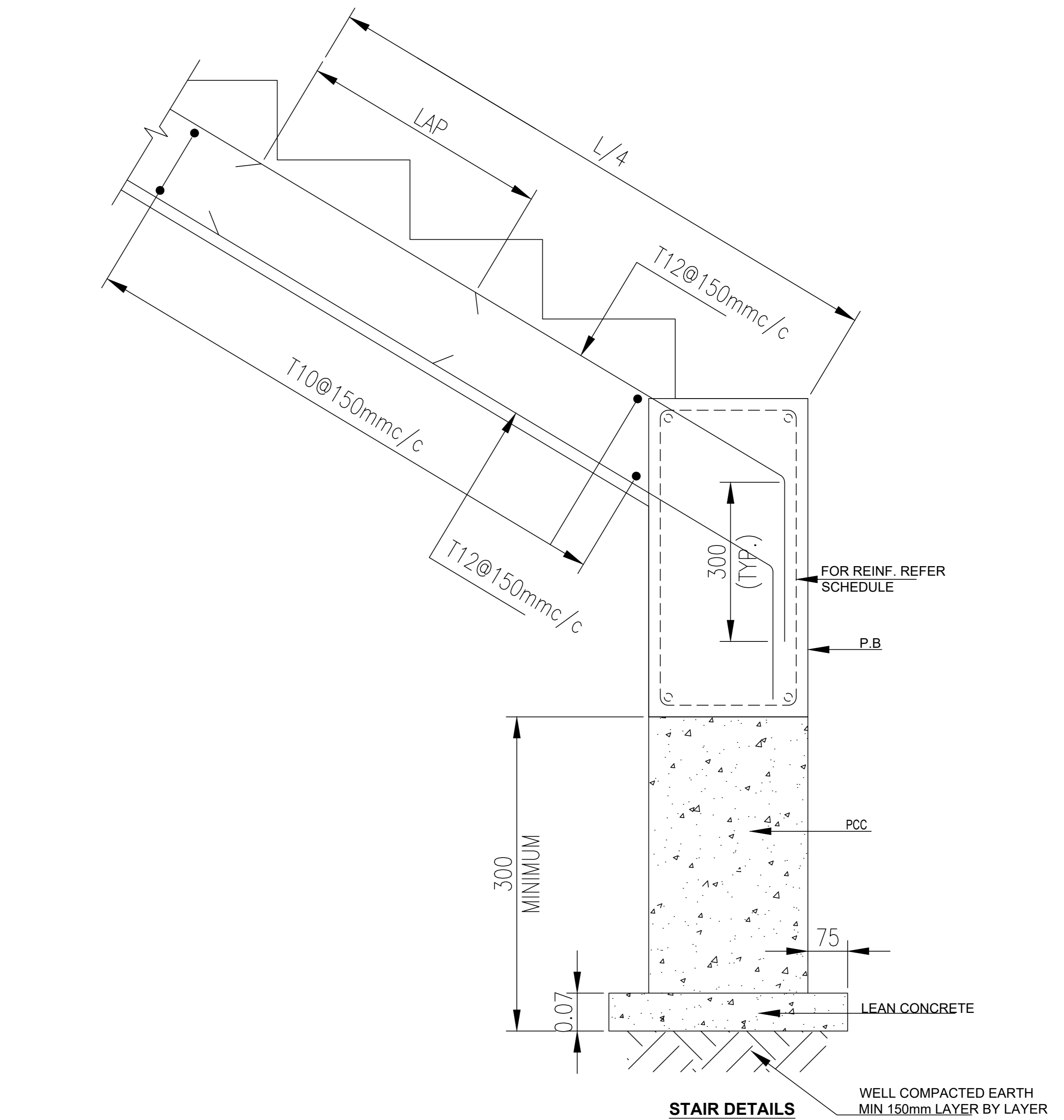
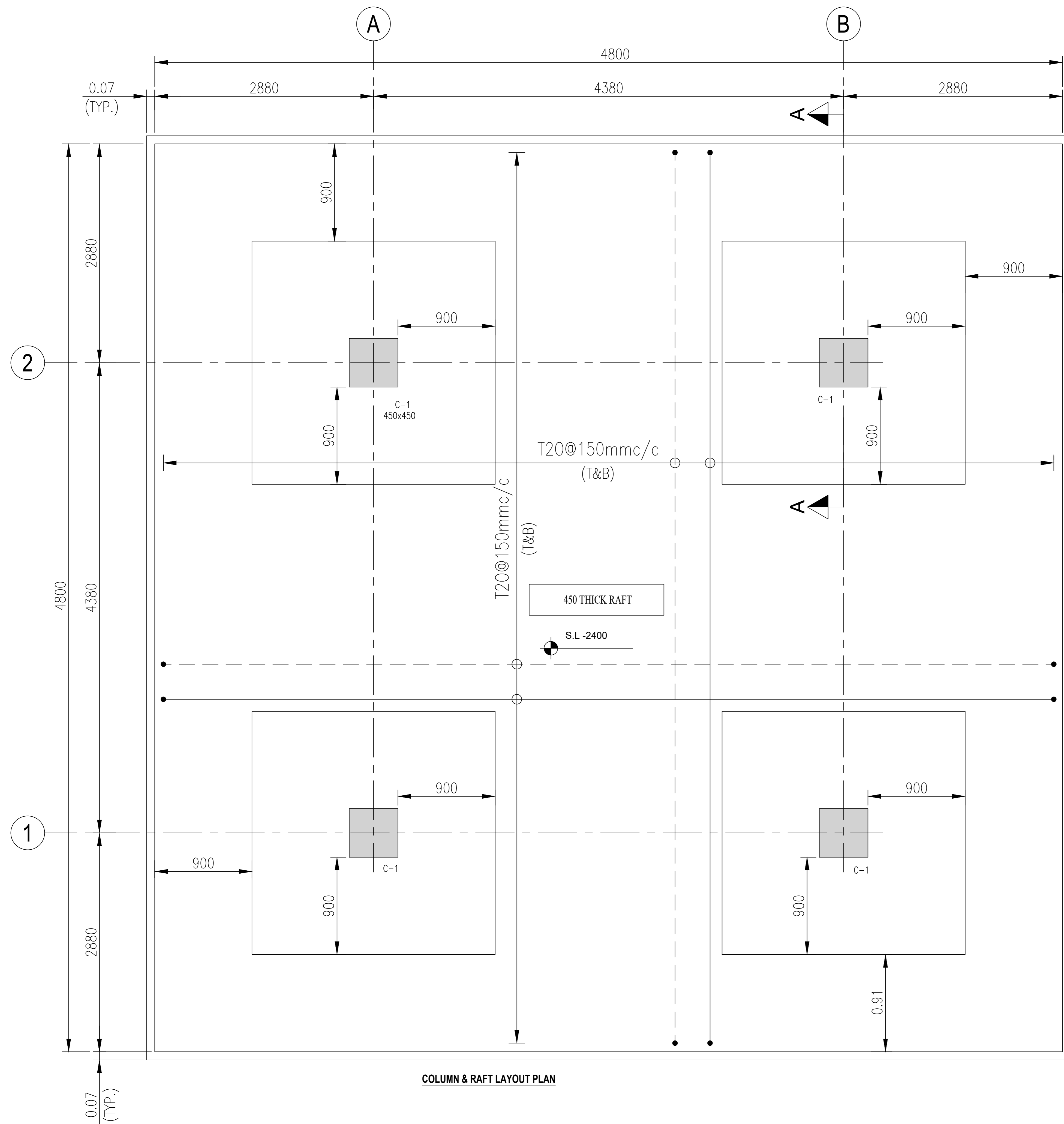
CLIENT :  

**PUBLIC HEALTH ENGINEERING  
 DEPARTMENT KHYBER  
 PAKHTUNKHWA**


CONSULTANT:  

**Techno-Consult  
 International** **JV**  

**Ultimate  
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PROJECT:  
 KPRIISP - DESIGN REVIEW AND CONSTRUCTION  
 SUPERVISION FOR WATER SUPPLY, SEWERAGE,  
 DRAINAGE AND WASTE WATER TREATMENT  
 PROJECT IN NEWLY MERGED DISTRICTS OF  
 KHYBER PAKHTUNKHWA

DRAWING TITLE :  
 EXISTING REHAB SCHEMES  
 DISTRICT KHYBER  
 PROPOSED TUBEWELL &  
 10,000imp Gal. OHR  
 PLINTH & BRACING BEAM PLANS

Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.	Revision	By	Date
Drawn By : NAEEM BAKHSH	Scale : N.T.S				
Checked By : RABEEA REHMAN	Drawing No :				
Approved By : RABEEA REHMAN	KPR/REH/KHD/-2103				



CLIENT :  

**PUBLIC HEALTH ENGINEERING  
 DEPARTMENT KHYBER  
 PAKHTUNKHWA**

CONSULTANT:  

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 International** **JV**  

**Ultimate  
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 New Era of Development

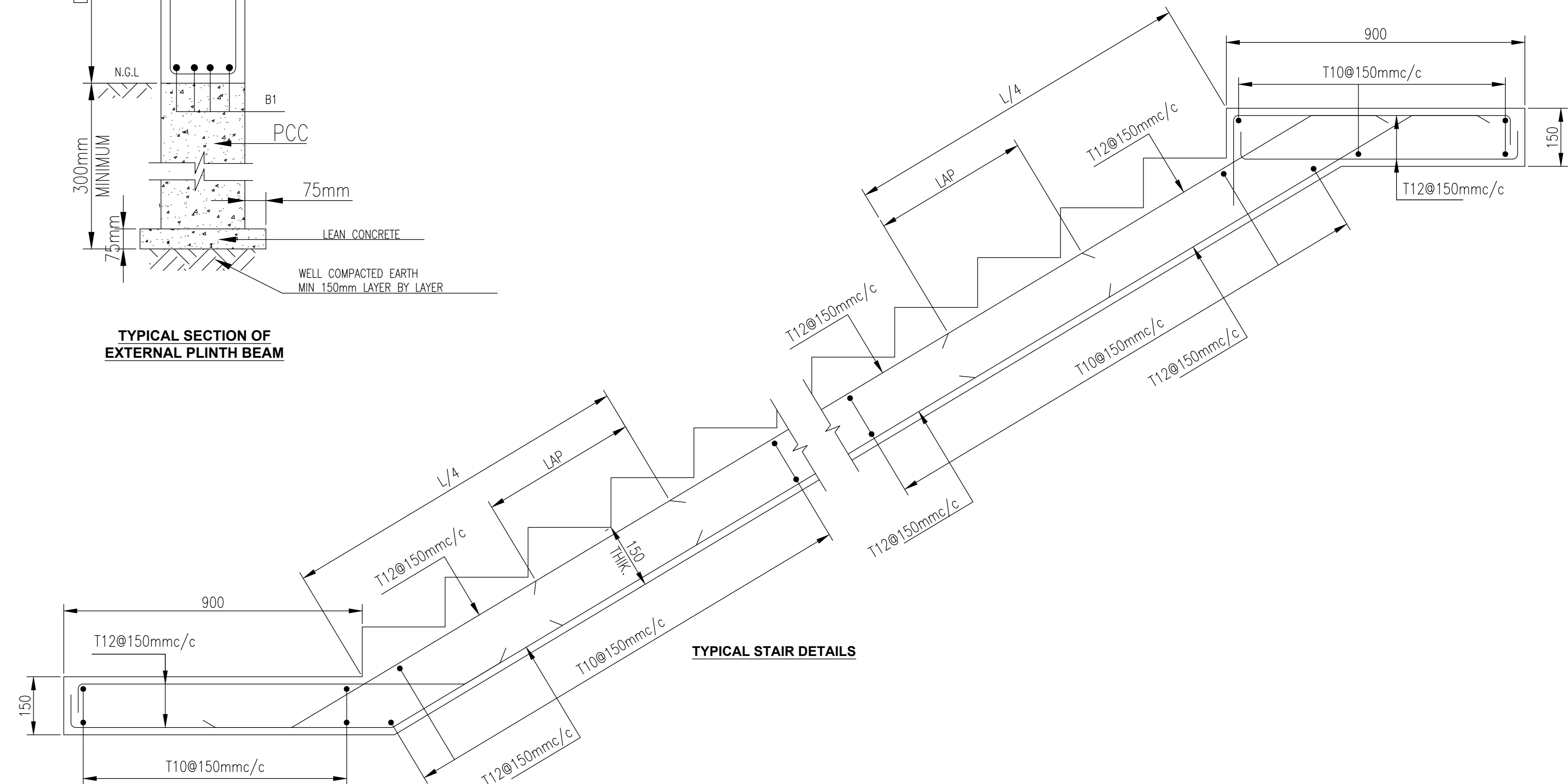
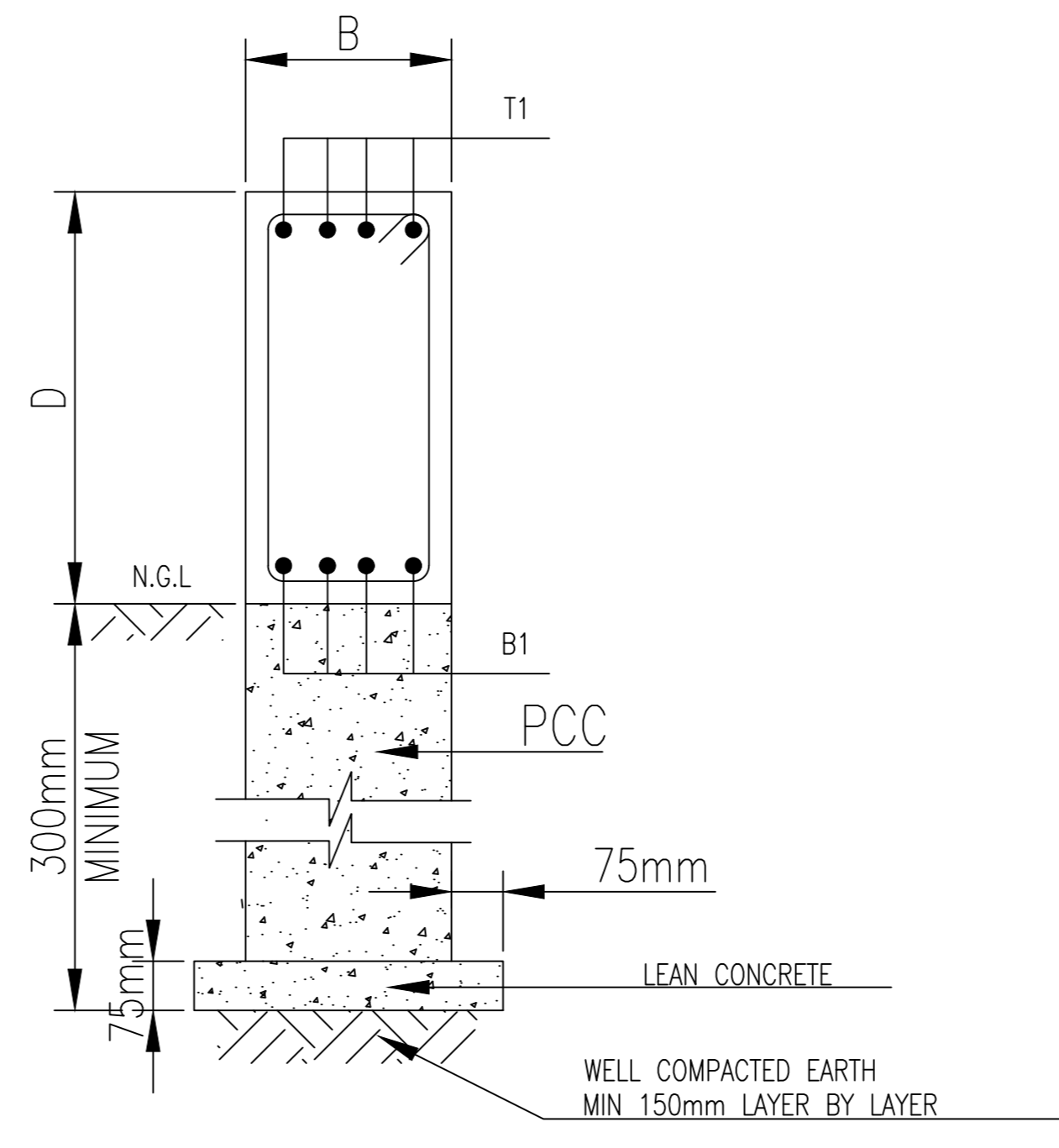
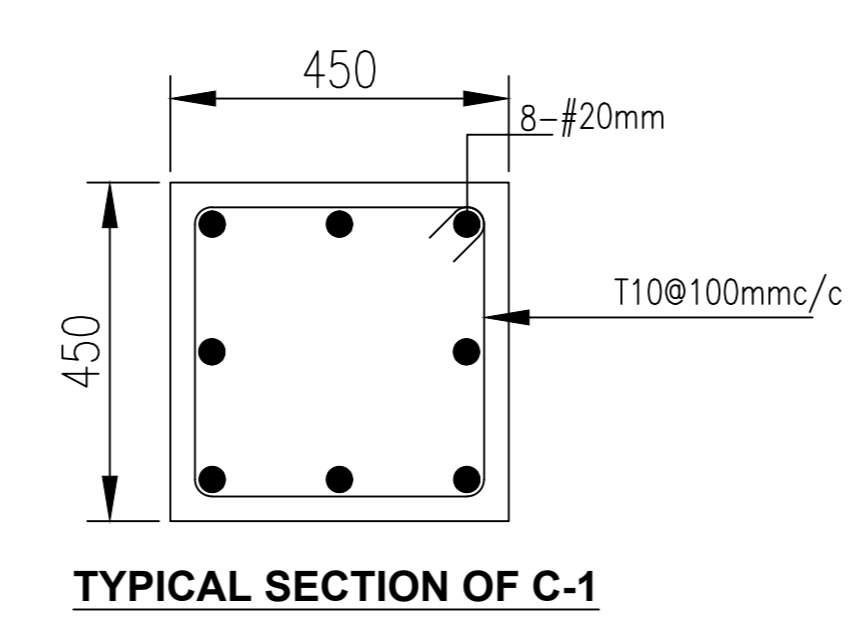
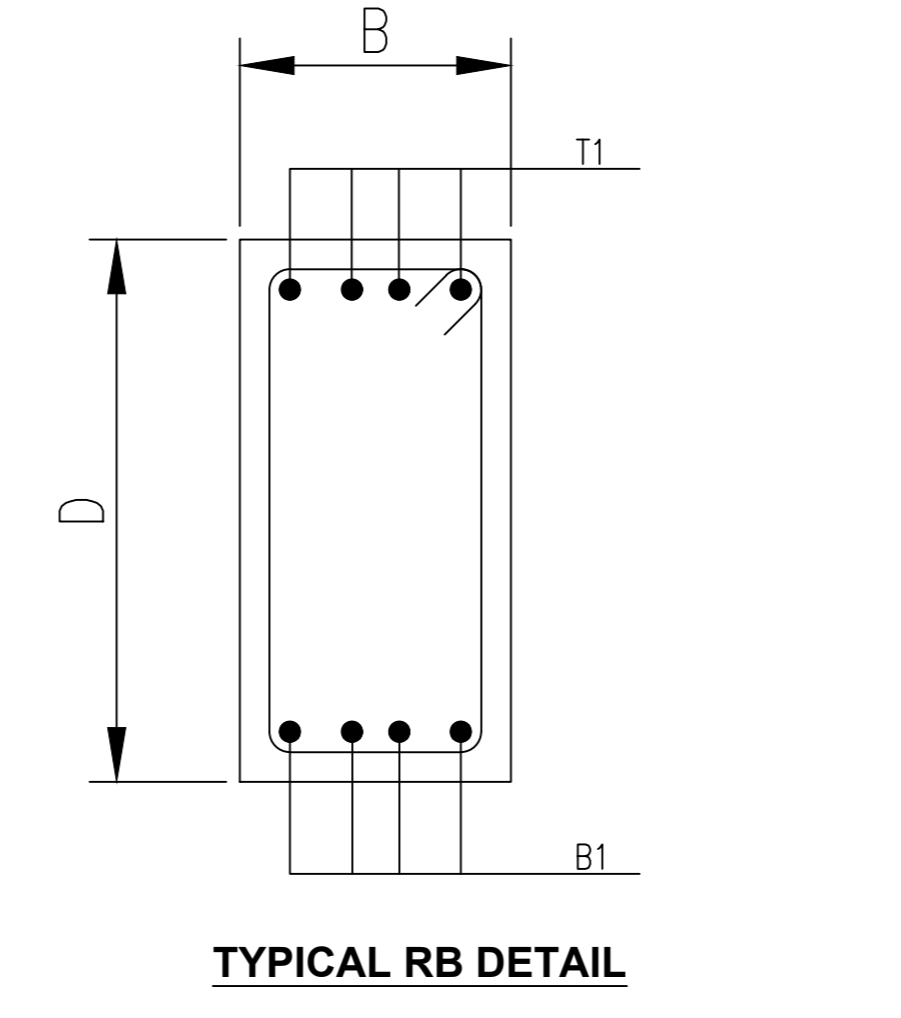
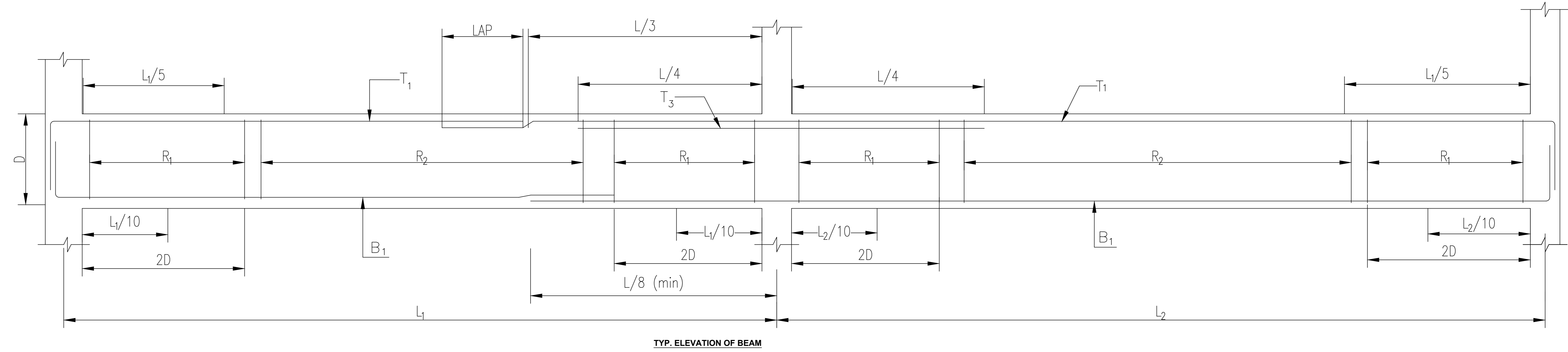
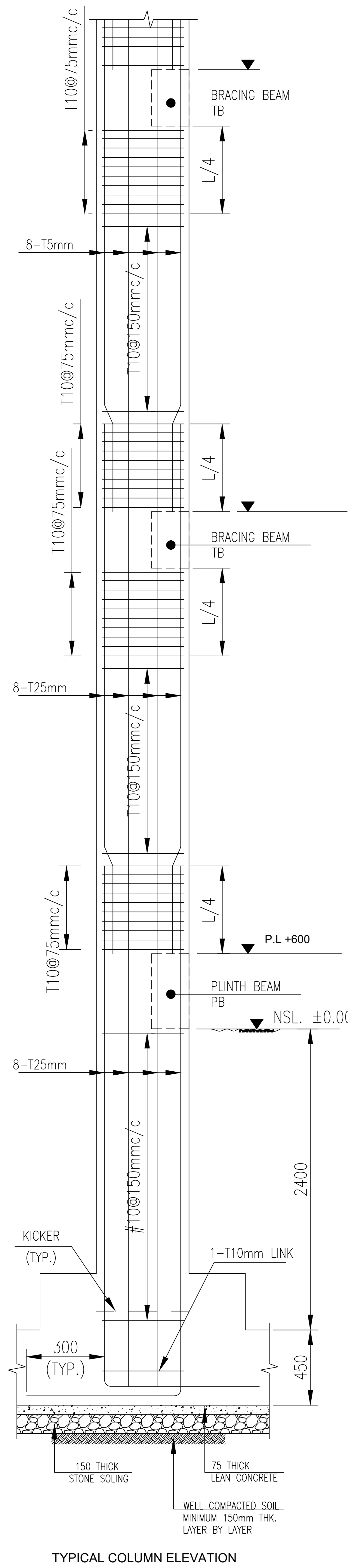
PROJECT:  
 KPRIISP - DESIGN REVIEW AND CONSTRUCTION  
 SUPERVISION FOR WATER SUPPLY, SEWERAGE,  
 DRAINAGE AND WASTE WATER TREATMENT  
 PROJECT IN NEWLY MERGED DISTRICTS OF  
 KHYBER PAKHTUNKHWA


DRAWING TITLE :  
 EXISTING REHAB SCHEMES  
 DISTRICT KHYBER  
 PROPOSED TUBEWELL &  
 10,000imp Gal. OHR  
 FOOTING & STAIR DETAILS


Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.	Revision	By	Date
Drawn By : NAEEM BAKHSH	Scale : N.T.S				
Checked By : RABEEA REHMAN	Drawing No :				
Approved By : RABEEA REHMAN	KPR/REH/KHD/-2104				

**SCHEDULE OF BEAMS**

BEAM NO.	BEAM SIZE		BOTTOM REINFORCEMENT		TOP REINFORCEMENT			STIRRUPS		REMARKS
	B	D	B1	B2	T1	T2	T3	R1	R2	
PB	350	450	4-T20mm	-	4-T20mm	-	-	T10@100mmc/c	T10@200mm c/c	
TB	350	450	4-T20mm	-	4-T20mm	-	-	T10@100mmc/c	T10@200mm c/c	
RB	600	450	4-T20mm	-	4-T20mm	-	-	T10@100mmc/c	T10@200mm c/c	



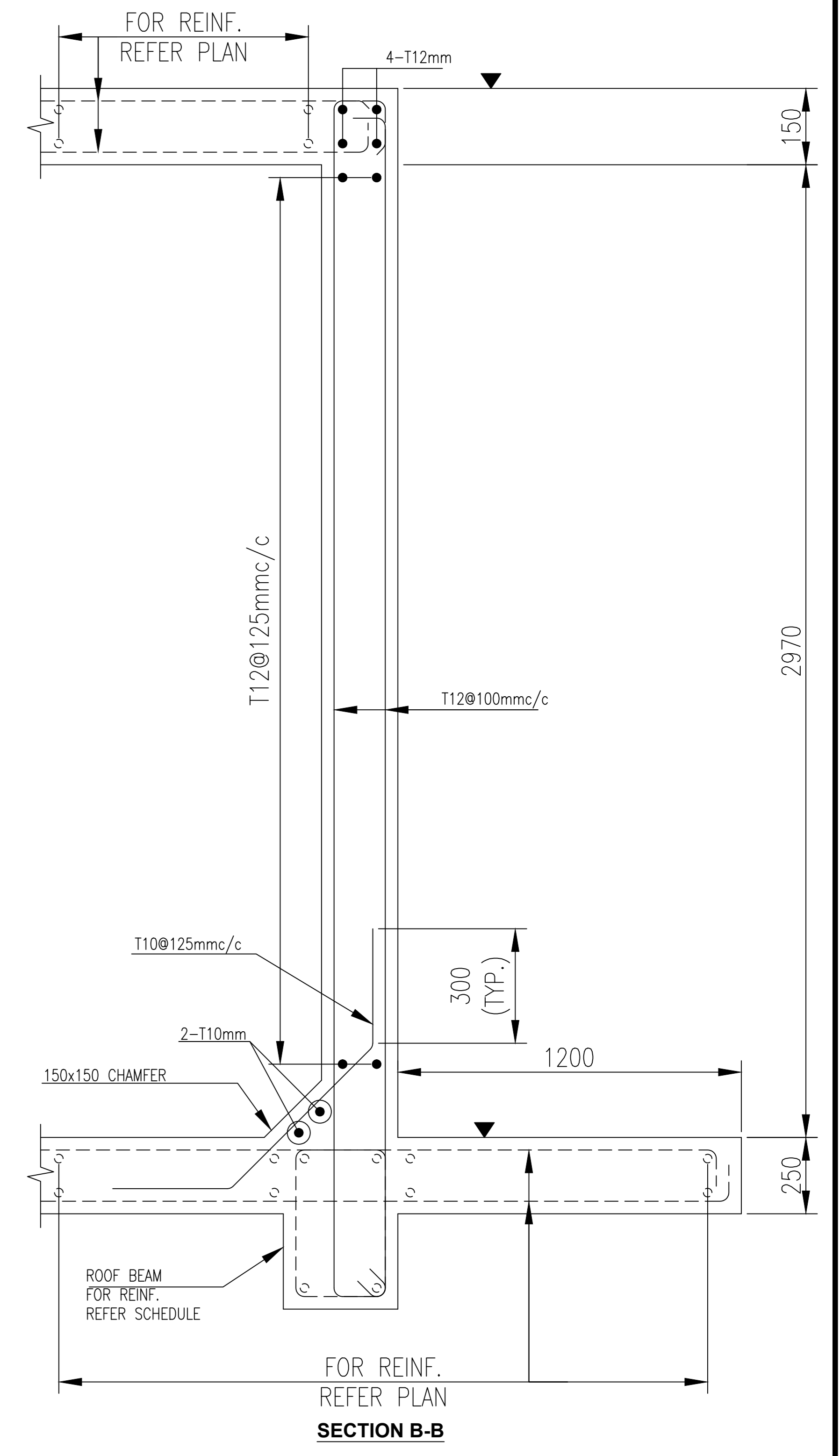
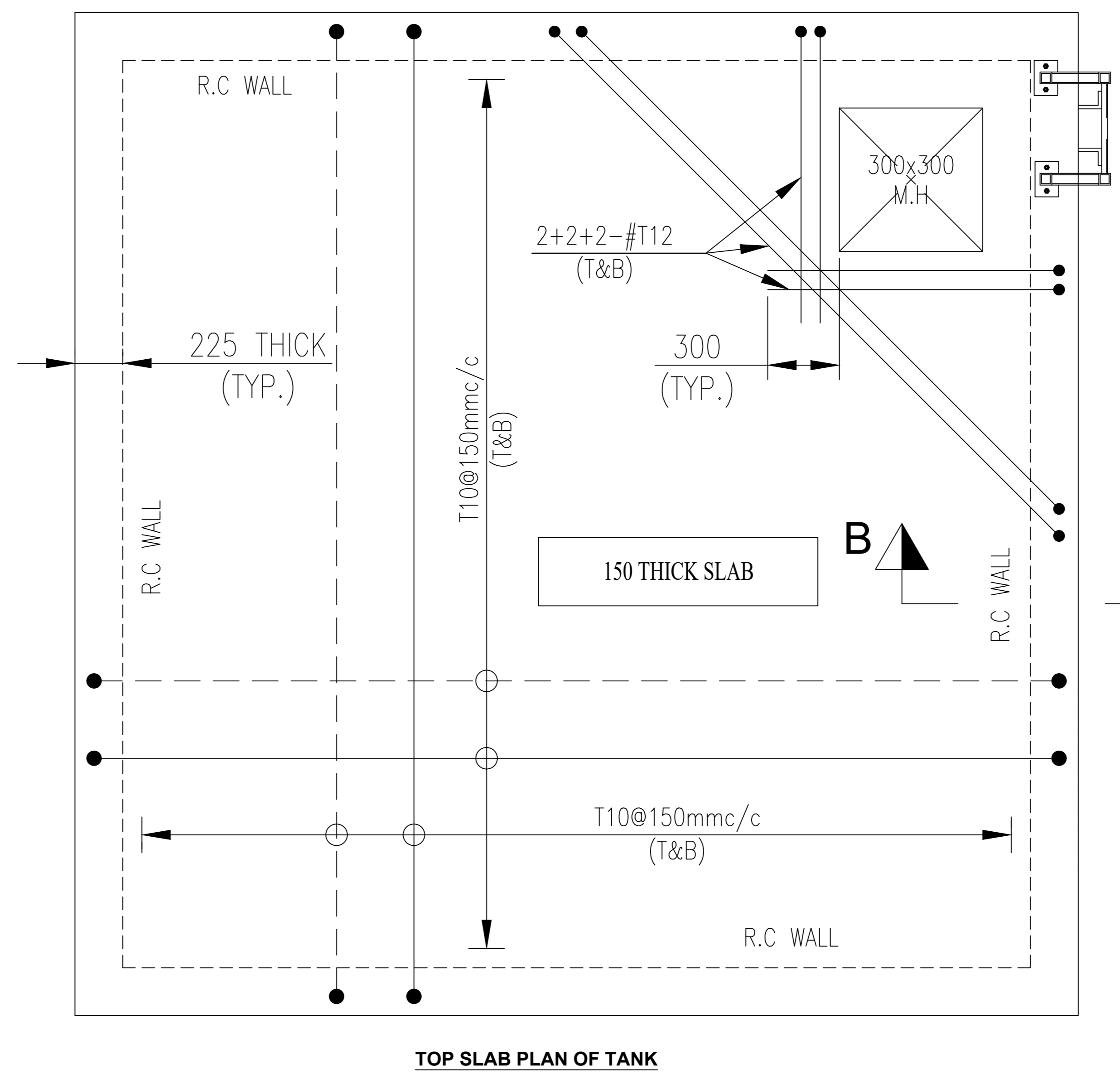
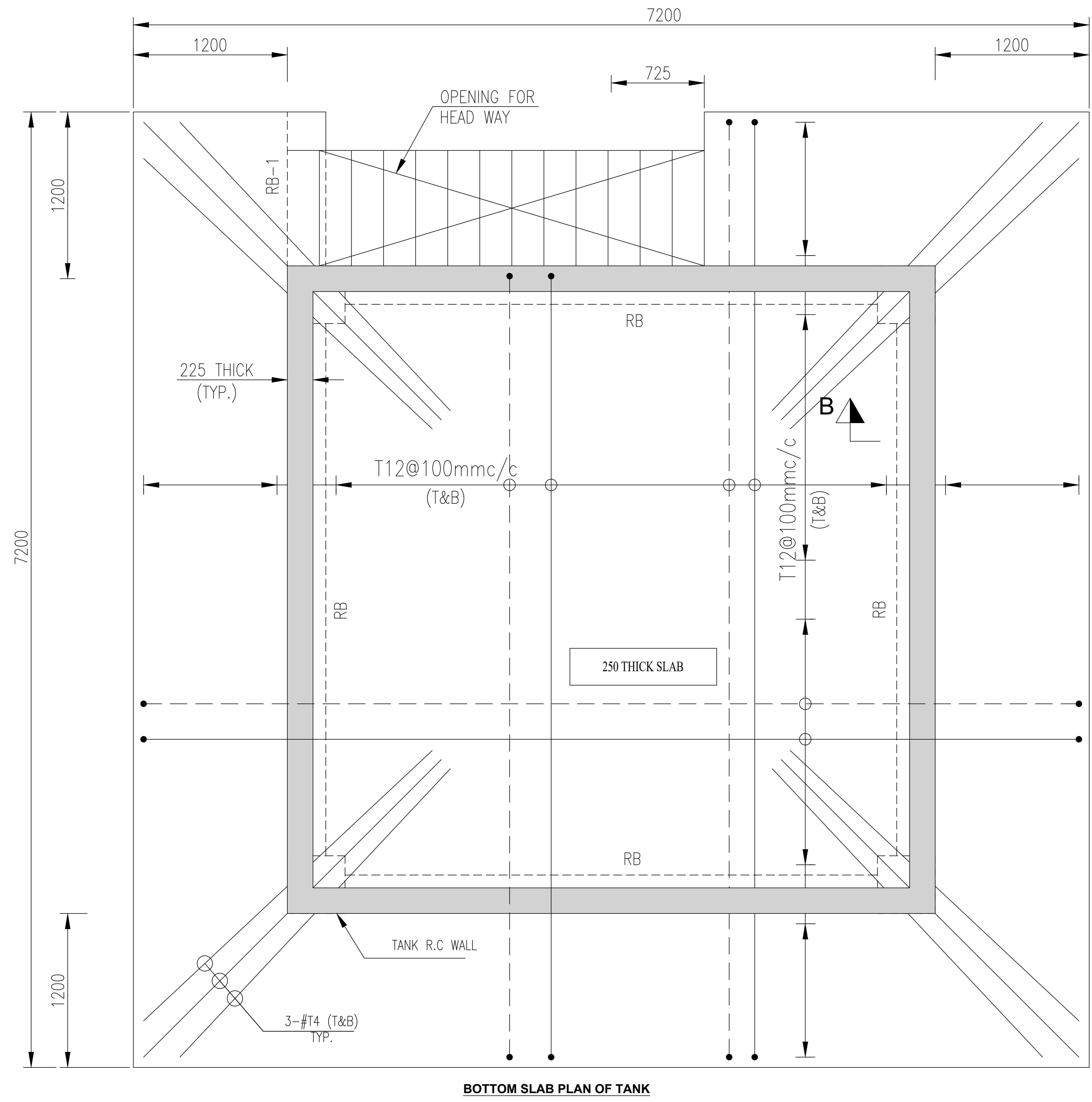
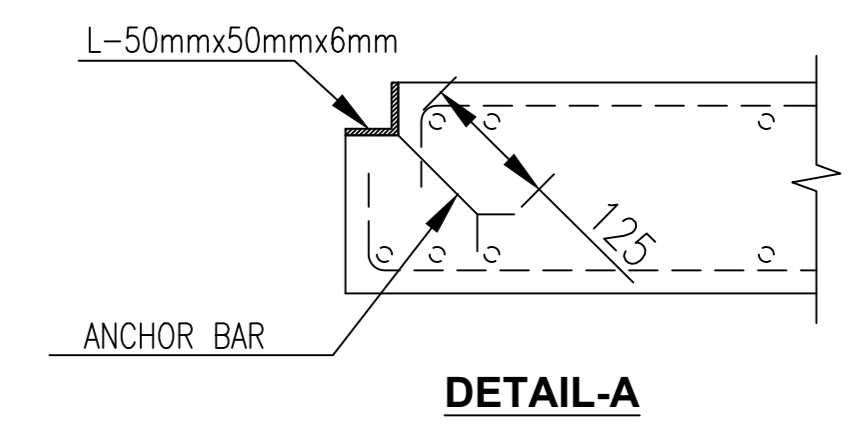
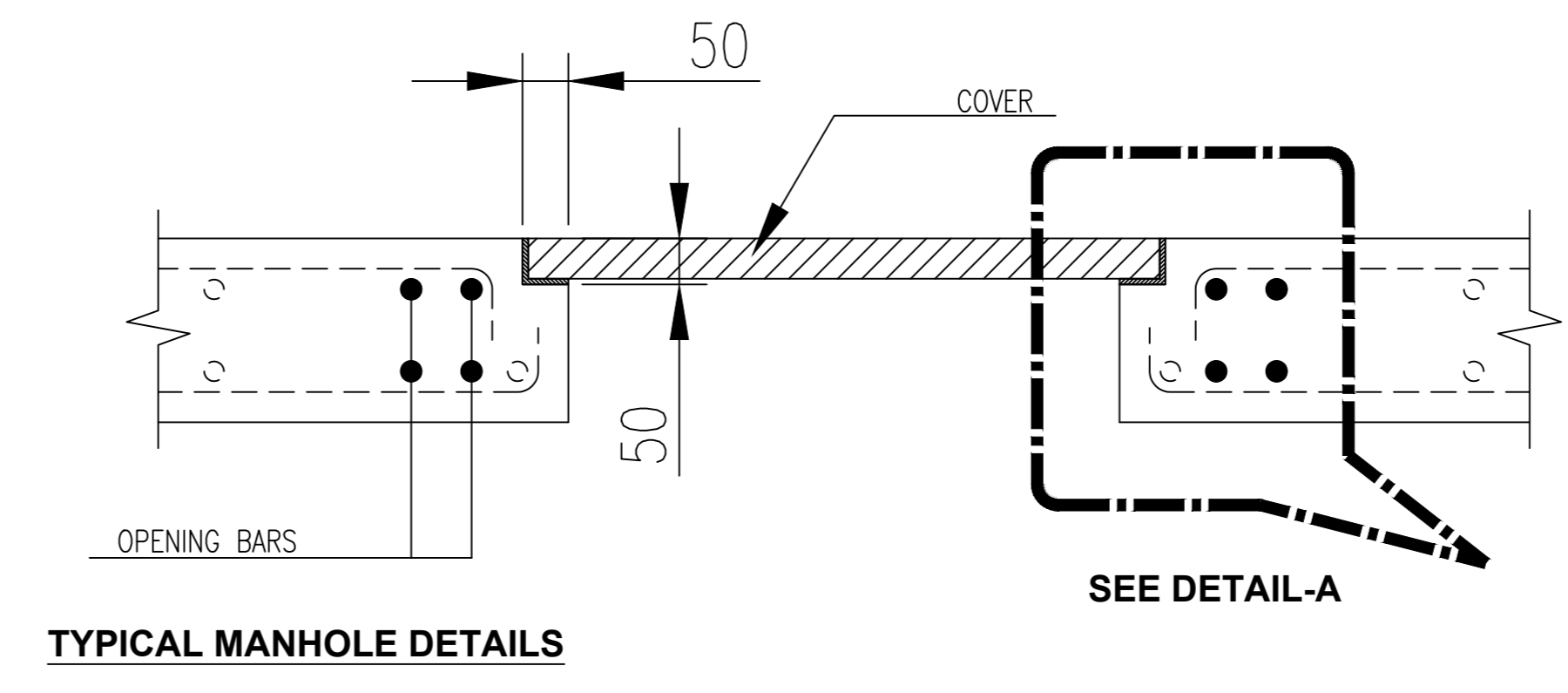
CLIENT :  

**PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA**

CONSULTANT:  

**Techno-Consult International JV**  
**Ultimate Engineering Consultants**  
 New Era of Development

PROJECT:  
 KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA

DRAWING TITLE :  
 EXISTING REHAB SCHEMES DISTRICT KHYBER PROPOSED TUBEWELL & 10,000imp Gal. OHR COLUMNS, BEAMS & STAIR DETAILS

Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.	Revision	By	Date
Drawn By : NAEEM BAKHSH	Scale : N.T.S				
Checked By : RABEEA REHMAN	Drawing No :				
Approved By : RABEEA REHMAN	KPR/REH/KHD/-2105				



CLIENT :  
PUBLIC HEALTH ENGINEERING  
DEPARTMENT KHYBER  
PAKHTUNKHWA

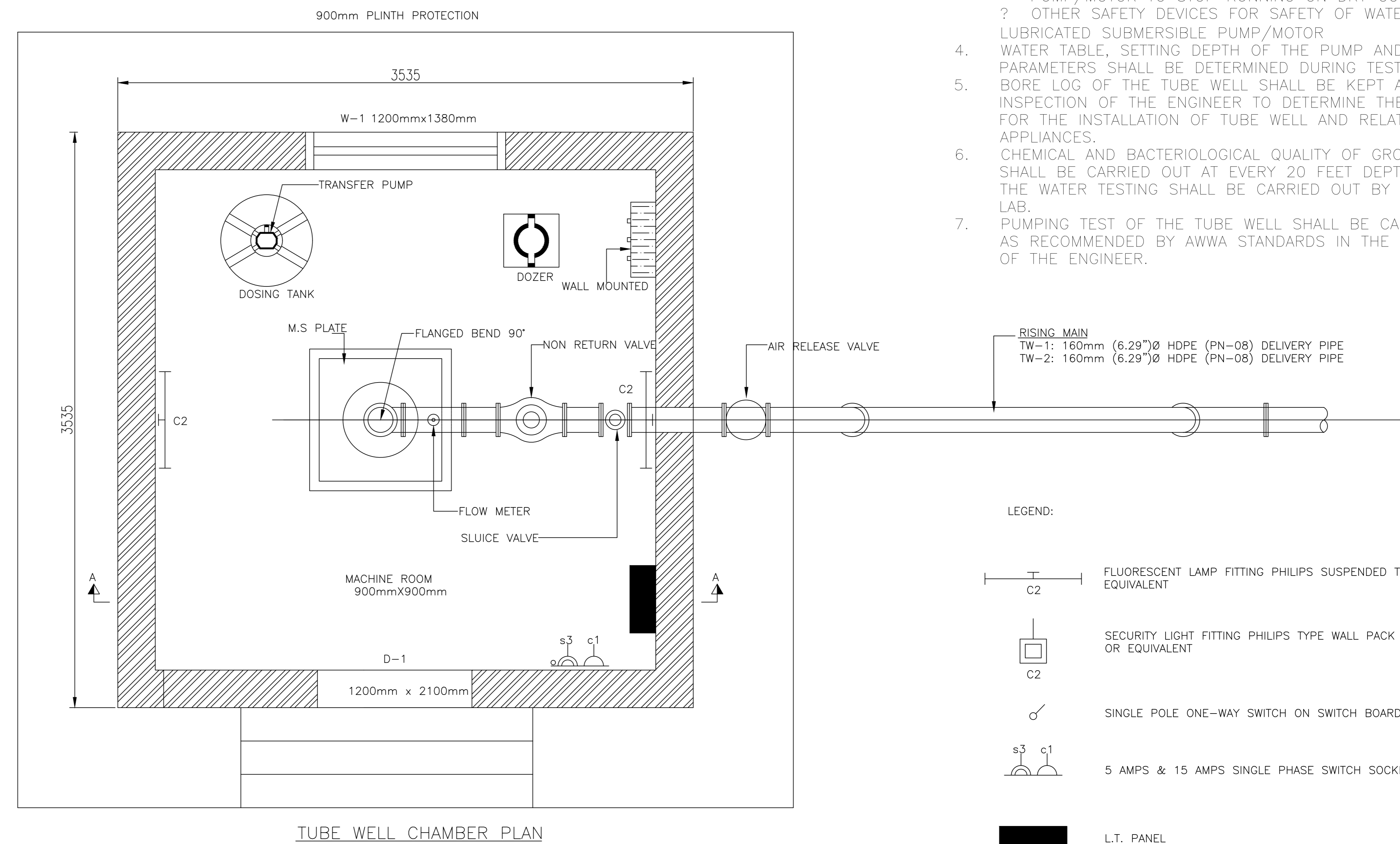
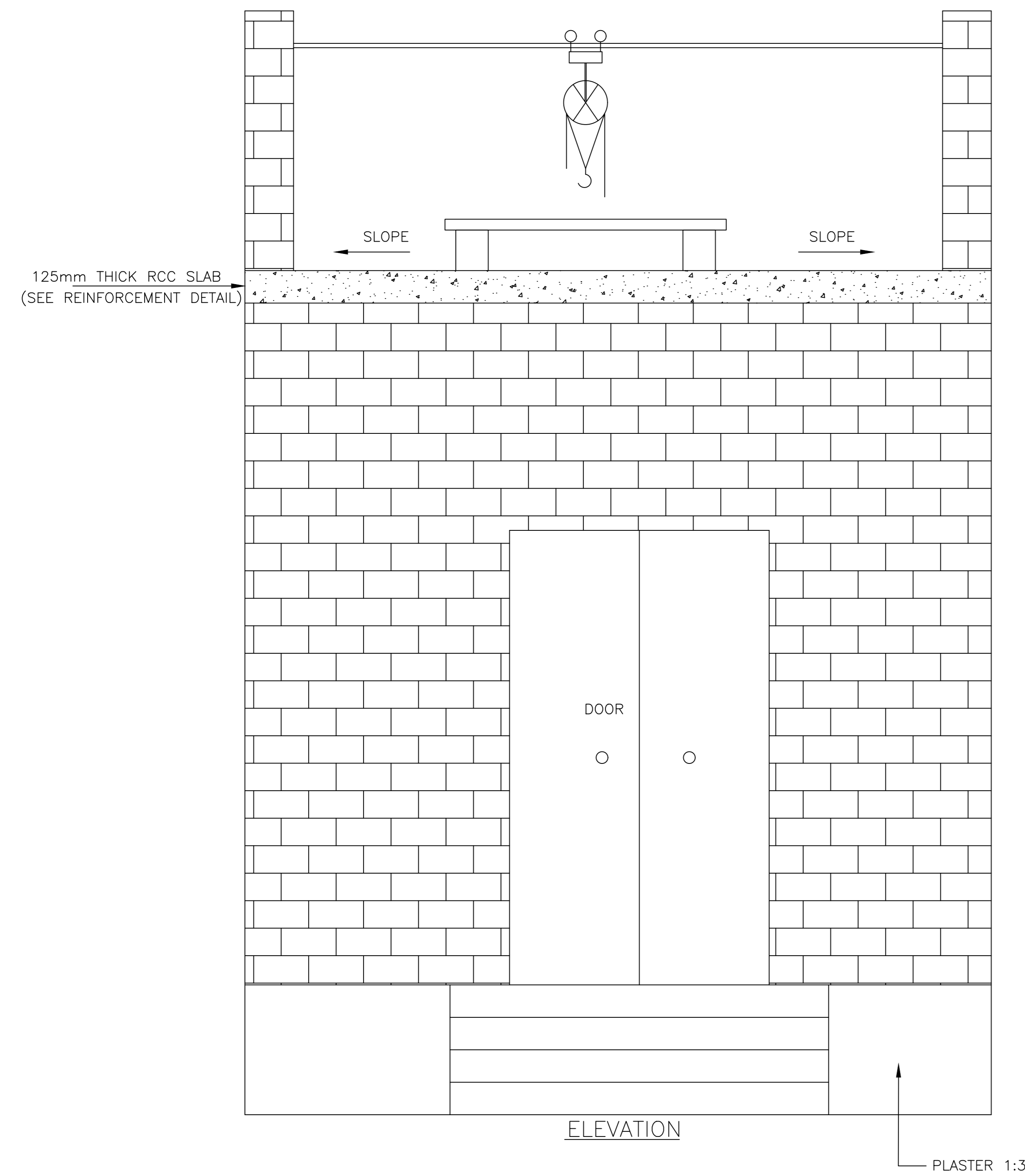
CONSULTANT:  
**Techno-Consult International**  
JV  
**Ultimate Engineering Consultants**  
New Era of Development

PROJECT:  
KPRIISP - DESIGN REVIEW AND CONSTRUCTION  
SUPERVISION FOR WATER SUPPLY, SEWERAGE,  
DRAINAGE AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS OF  
KHYBER PAKHTUNKHWA

DRAWING TITLE :  
EXISTING REHAB SCHEMES  
DISTRICT KHYBER  
PROPOSED TUBEWELL &  
10,000imp Gal. OHR  
BOTTOM & TOP SLAB DETAILS

Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.	Revision	By	Date
Drawn By : NAEEM BAKHSH	Scale : N.T.S				
Checked By : RABEEA REHMAN	Drawing No :				
Approved By : RABEEA REHMAN	KPR/REH/KHD/-2106				

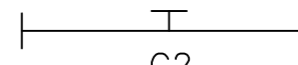


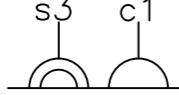

**CHAMBER ROOM**





**NOTES:**

1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE NOTED.
2. ALL TUBE WELL EQUIPMENT SHALL BE APPROVED BY THE ENGINEER PRIOR TO PROCUREMENT AND COMMENCEMENT OF WORKS.
3. WATER LUBRICATED SUBMERSIBLE PUMP/MOTOR SHALL BE EQUIPPED WITH THE FOLLOWING SAFETY DEVICES.  
? ANTI SINGLE PHASE DEVICE  
? NO VOLT RELEASE  
? SHUT DOWN DEVICES OF WATER LUBRICATED PUMP/MOTOR TO STOP RUNNING ON DRY CONDITIONS.  
? OTHER SAFETY DEVICES FOR SAFETY OF WATER LUBRICATED SUBMERSIBLE PUMP/MOTOR
4. WATER TABLE, SETTING DEPTH OF THE PUMP AND RELATED PARAMETERS SHALL BE DETERMINED DURING TEST BORE.
5. BORE LOG OF THE TUBE WELL SHALL BE KEPT AT SITE FOR INSPECTION OF THE ENGINEER TO DETERMINE THE LOCATION FOR THE INSTALLATION OF TUBE WELL AND RELATED APPLIANCES.
6. CHEMICAL AND BACTERIOLOGICAL QUALITY OF GROUND WATER SHALL BE CARRIED OUT AT EVERY 20 FEET DEPTH INTERVAL. THE WATER TESTING SHALL BE CARRIED OUT BY AUTHORIZED LAB.
7. PUMPING TEST OF THE TUBE WELL SHALL BE CARRIED OUT AS RECOMMENDED BY AWWA STANDARDS IN THE PRESENCE OF THE ENGINEER.

**LEGEND:**

-  C2 FLUORESCENT LAMP FITTING PHILIPS SUSPENDED TYPE GKD-140 OR EQUIVALENT
-  C2 SECURITY LIGHT FITTING PHILIPS TYPE WALL PACK / SON-70W CLASSIFICATION IP-55 OR EQUIVALENT
-  SINGLE POLE ONE-WAY SWITCH ON SWITCH BOARD
-  s3 c1 5 AMPS & 15 AMPS SINGLE PHASE SWITCH SOCKET SIDE BY SIDE AT 250 mm FROM FFL
-  L.T. PANEL
- s3 (s) STAND FOR SWITCH (3) FOR NO OF SWITCHES

CLIENT :  
PUBLIC HEALTH ENGINEERING  
DEPARTMENT KHYBER  
PAKHTUNKHWA

CONSULTANT:  
 **Techno-Consult  
International** **JV**  
 **Ultimate  
Engineering  
Consultants**  
New Era of Development

PROJECT:  
KPRIISP - DESIGN REVIEW AND CONSTRUCTION  
SUPERVISION FOR WATER SUPPLY, SEWERAGE,  
DRAINAGE AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS OF  
KHYBER PAKHTUNKHWA

DRAWING TITLE :  
EXISTING REHAB SCHEMES  
DISTRICT KHYBER  
CHAMBER ROOM PLAN &  
ELEVATION

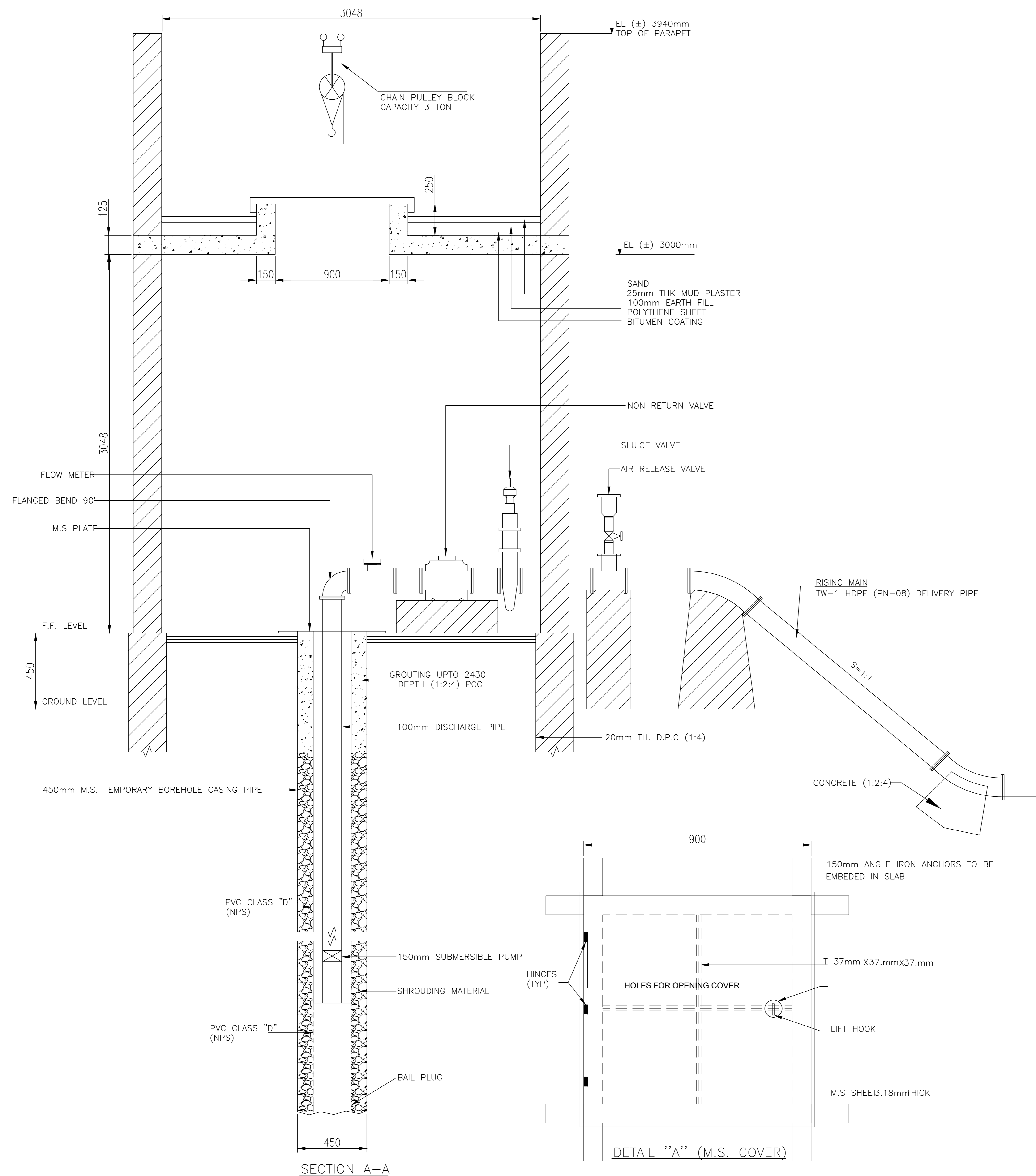
Designed By : Dr. ASFAHAN ALI  
Drawn By : NAEEM BAKHSH  
Checked By : RABEEA REHMAN  
Approved By : RABEEA REHMAN

Date : MAR 2026  
Scale : N.T.S  
Drawing No :  
KPR/REH/KHD/-2108

No.	Revision	By	Date

## NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE NOTED.
2. ALL TUBE WELL EQUIPMENT SHALL BE APPROVED BY THE ENGINEER PRIOR TO PROCUREMENT AND COMMENCEMENT OF WORKS.
3. WATER LUBRICATED SUBMERSIBLE PUMP/MOTOR SHALL BE EQUIPPED WITH THE FOLLOWING SAFETY DEVICES.
  - ANTI SINGLE PHASE DEVICE
  - NO VOLT RELEASE
  - SHUT DOWN DEVICES OF WATER LUBRICATED PUMP/MOTOR TO STOP RUNNING ON DRY CONDITIONS.
  - OTHER SAFETY DEVICES FOR SAFETY OF WATER LUBRICATED SUBMERSIBLE PUMP/MOTOR
4. WATER TABLE, SETTING DEPTH OF THE PUMP AND RELATED PARAMETERS SHALL BE DETERMINED DURING TEST BORE.
5. BORE LOG OF THE TUBE WELL SHALL BE KEPT AT SITE FOR INSPECTION OF THE ENGINEER TO DETERMINE THE LOCATION FOR THE INSTALLATION OF TUBE WELL AND RELATED APPLIANCES.
6. CHEMICAL AND BACTERIOLOGICAL QUALITY OF GROUND WATER SHALL BE CARRIED OUT AT EVERY 20 FEET DEPTH INTERVAL, THE WATER TESTING SHALL BE CARRIED OUT BY AUTHORIZED LAB.
7. PUMPING TEST OF THE TUBE WELL SHALL BE CARRIED OUT AS RECOMMENDED BY AWWA STANDARDS IN THE PRESENCE OF THE ENGINEER.



CLIENT :



PUBLIC HEALTH ENGINEERING  
DEPARTMENT KHYBER  
PAKHTUNKHWA

CONSULTANT:



**Techno-Consult**  
*International*



**Ultimate**  
**Engineering**  
**Consultants**  
New Era of Development

PROJECT:

KPRIISP - DESIGN REVIEW AND CONSTRUCTION  
SUPERVISION FOR WATER SUPPLY, SEWERAGE,  
DRAINAGE AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS OF  
KHYBER PAKHTUNKHWA

DRAWING TITLE :

EXISTING REHAB SCHEMES  
DISTRICT KHYBER  
CHAMBER ROOM DETAILS

Designed By : Dr. ASFAHAN ALI

Date : MAR 2026

No.

Revision

By

Date

Drawn By : NAEEM BAKHSH

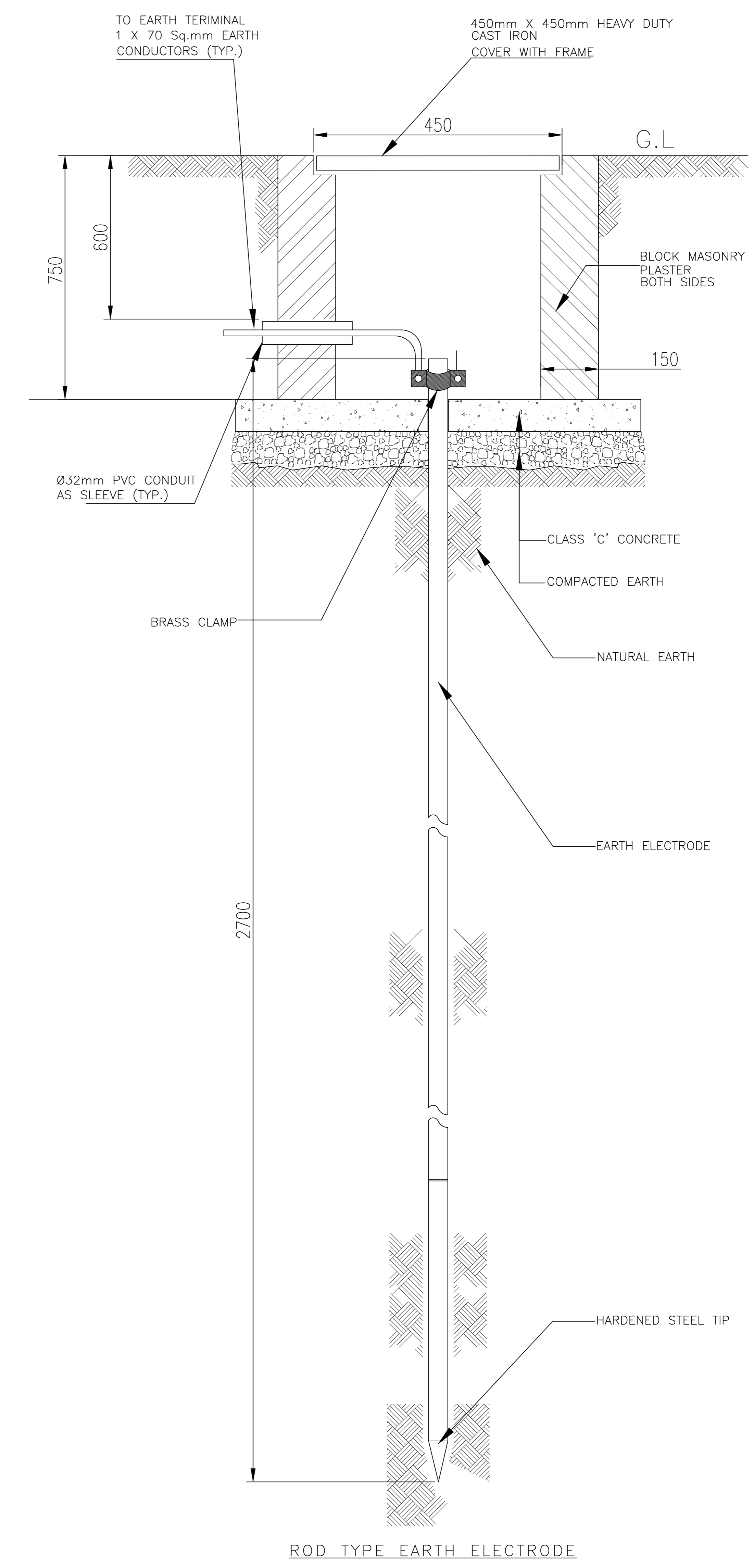
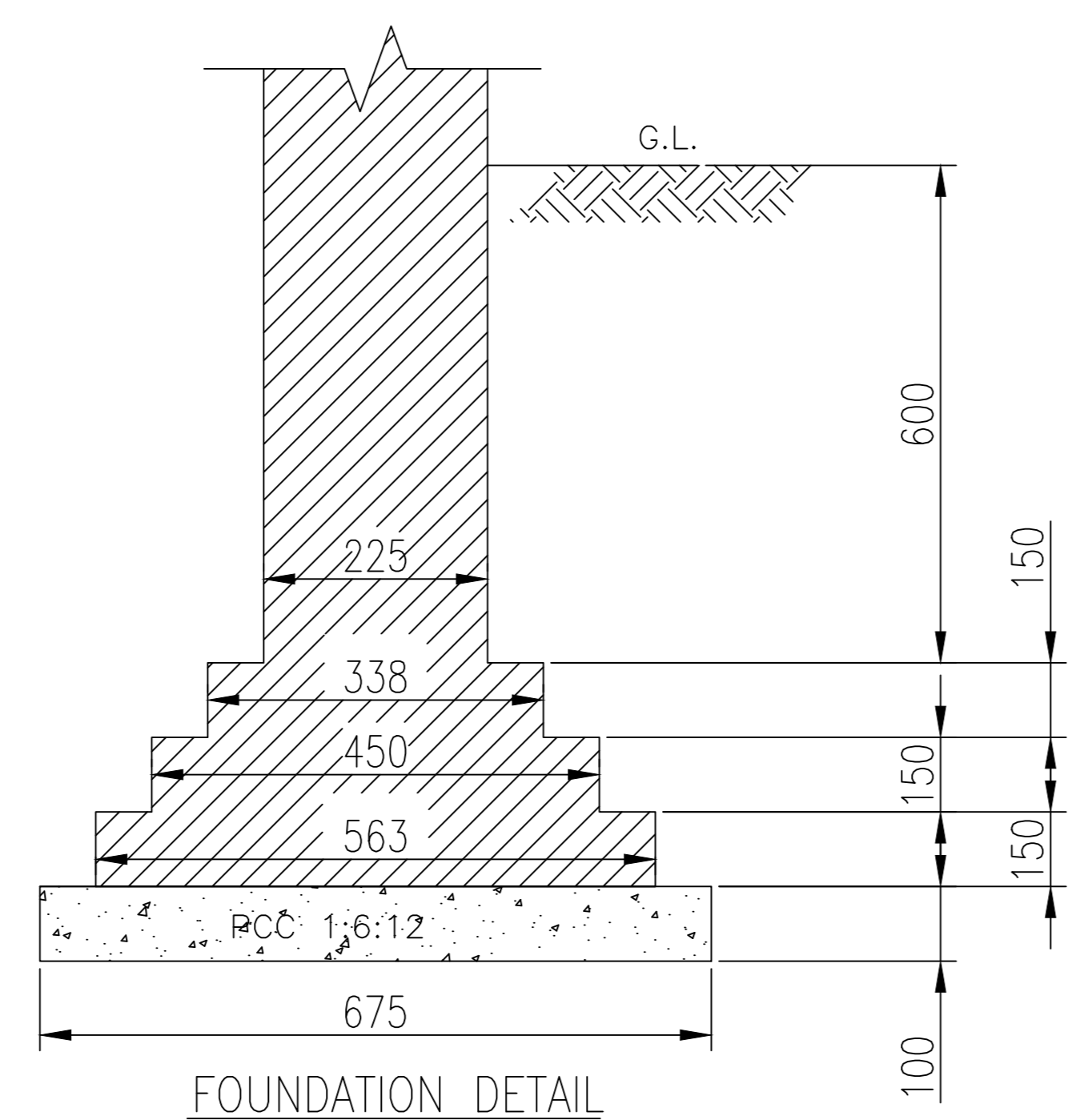
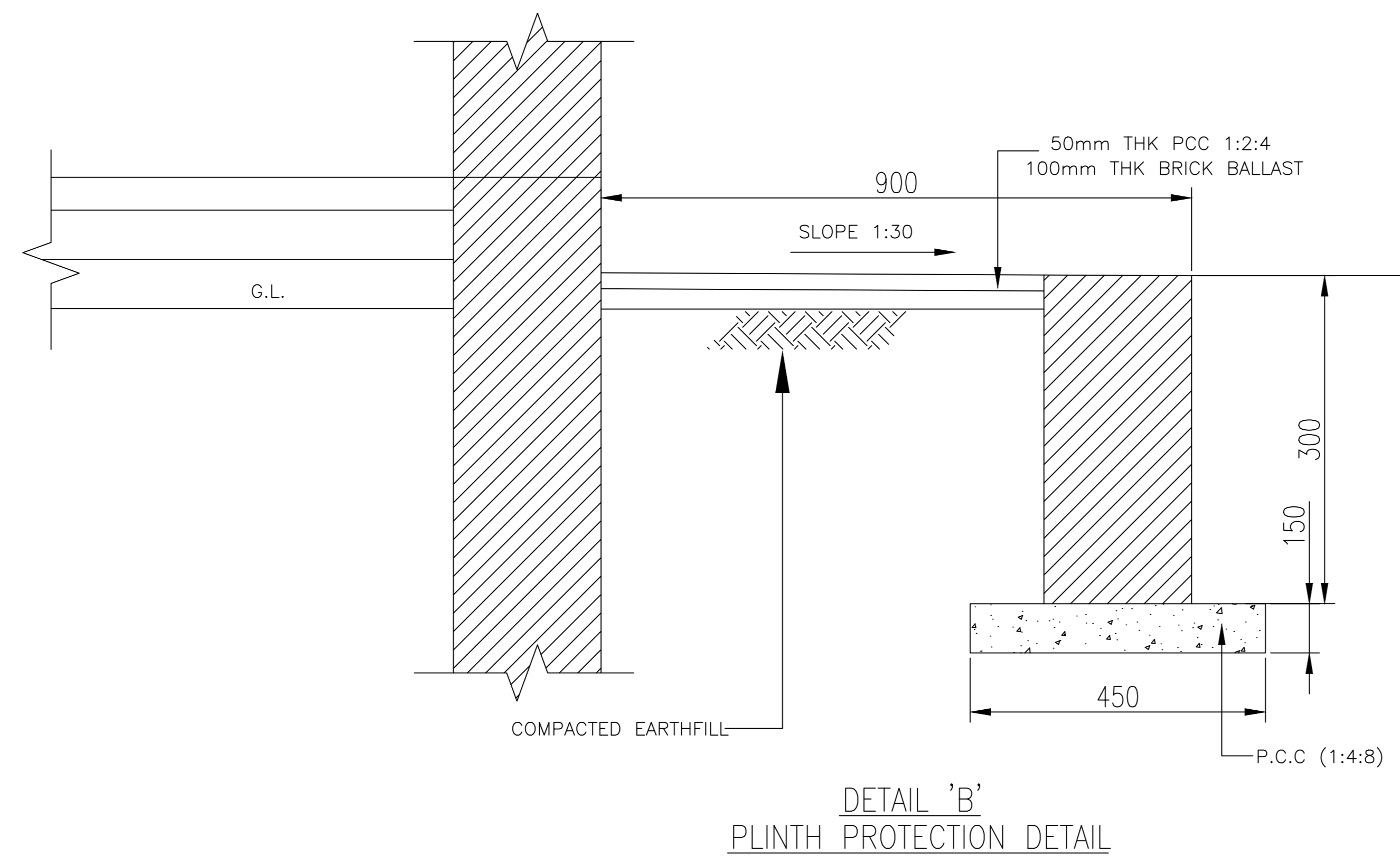
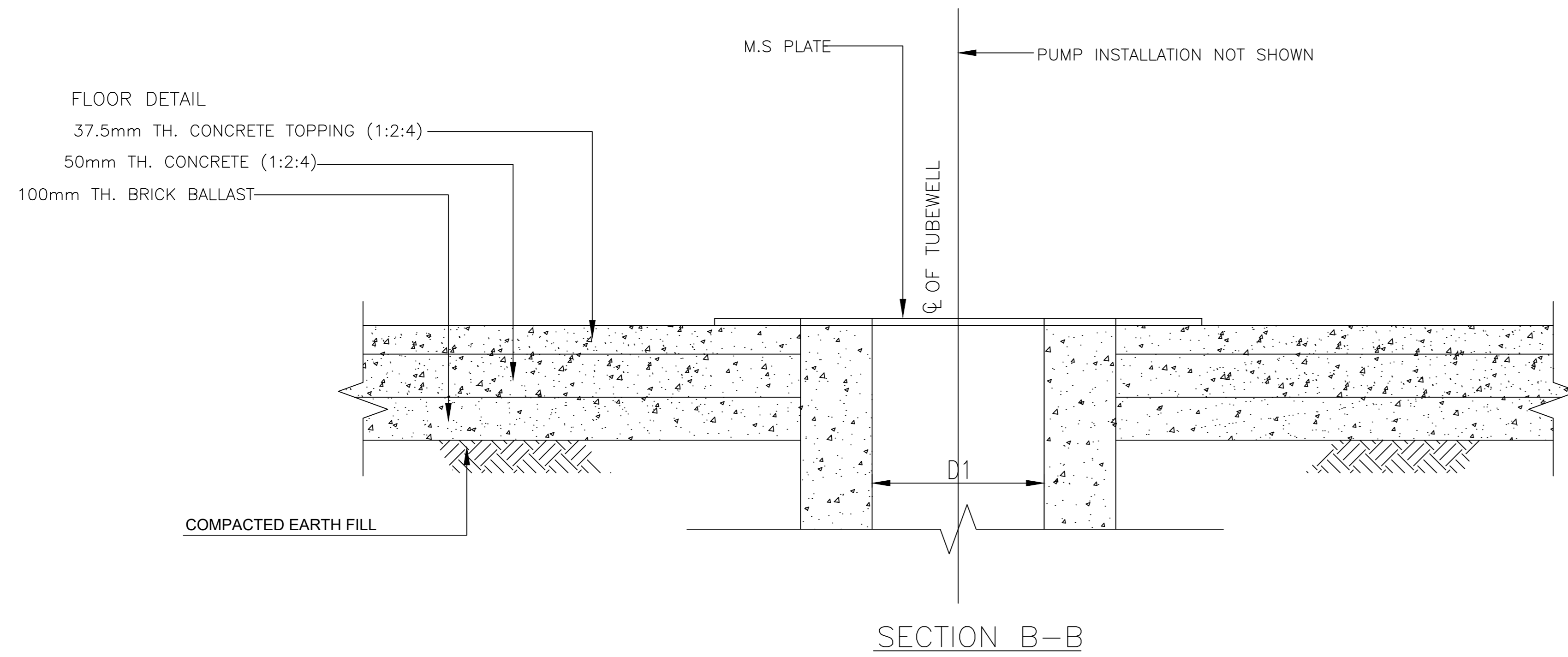
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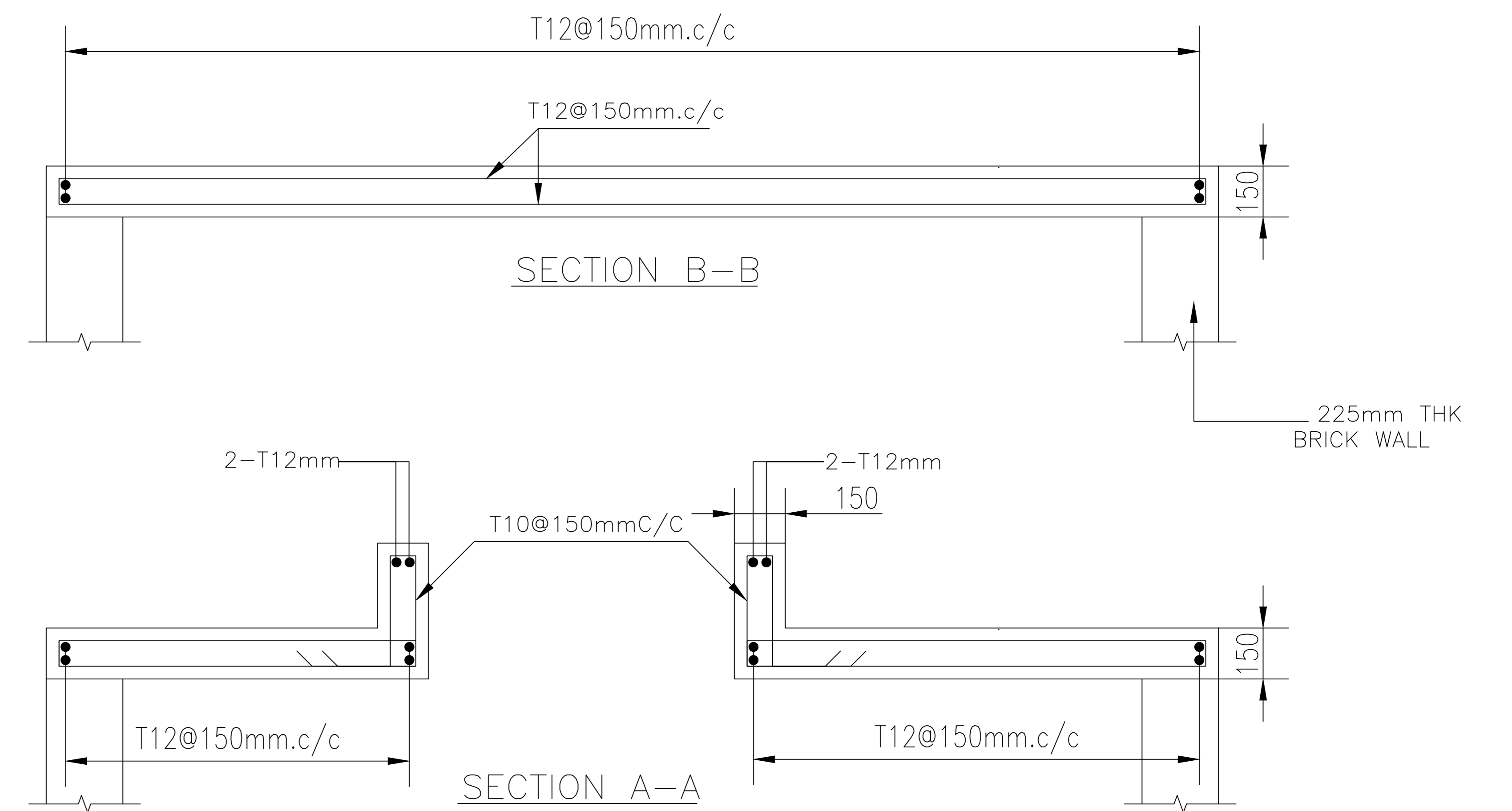
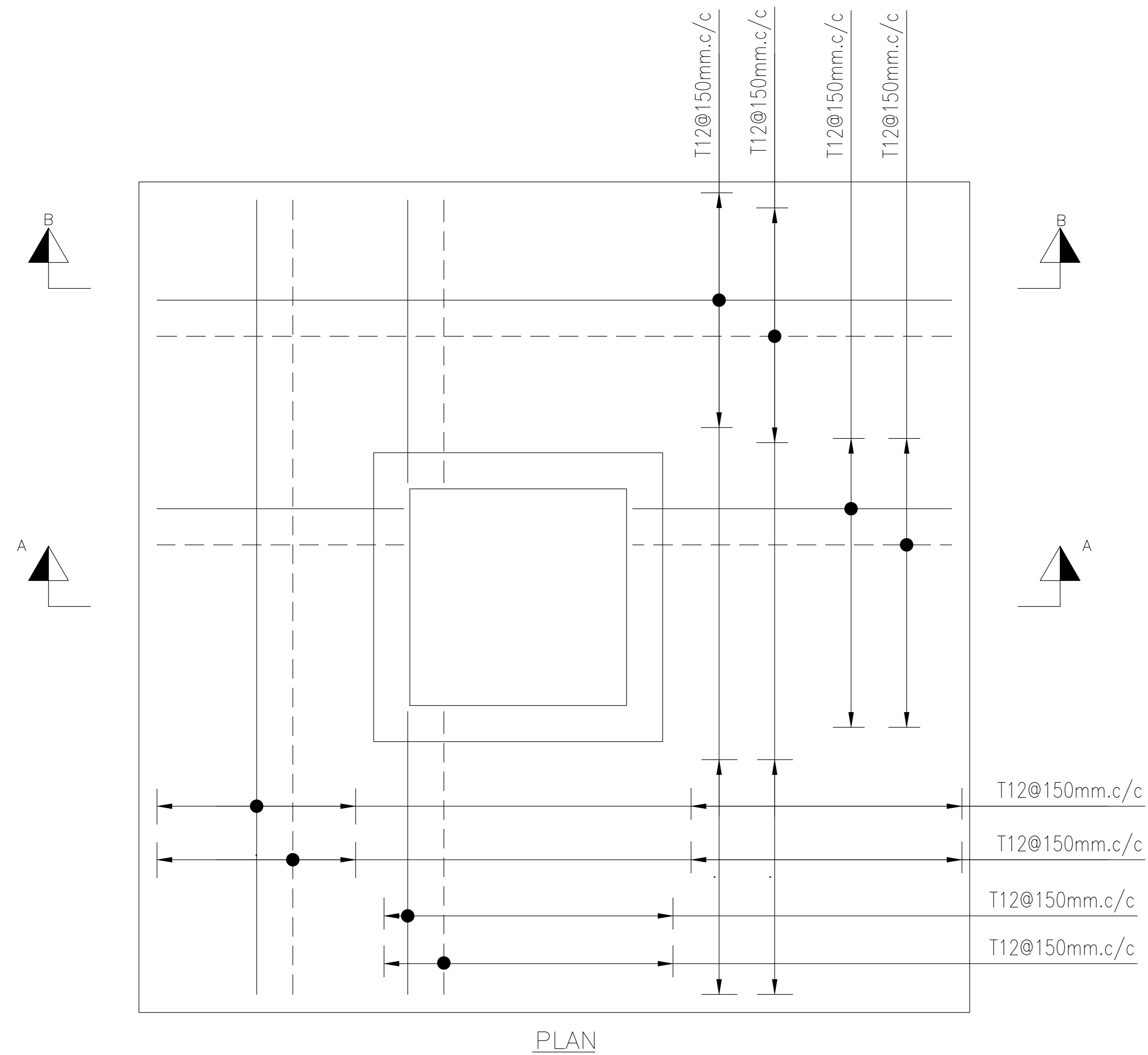
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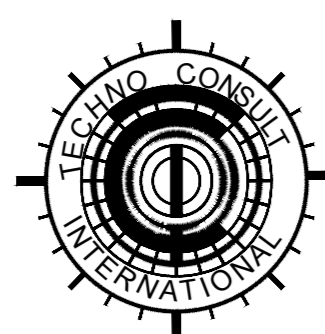

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 CLIENT : PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA	 CONSULTANT: <b>Techno-Consult International JV</b> Ultimate Engineering Consultants New Era of Development	PROJECT: KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA	DRAWING TITLE : EXISTING REHAB SCHEMES DISTRICT KHYBER CHAMBER ROOM DETAILS	Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.	Revision	By	Date
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				Approved By : RABEEA REHMAN	KPR/REH/KHD/-2110				



CLIENT :  

**PUBLIC HEALTH ENGINEERING  
 DEPARTMENT KHYBER  
 PAKHTUNKHWA**

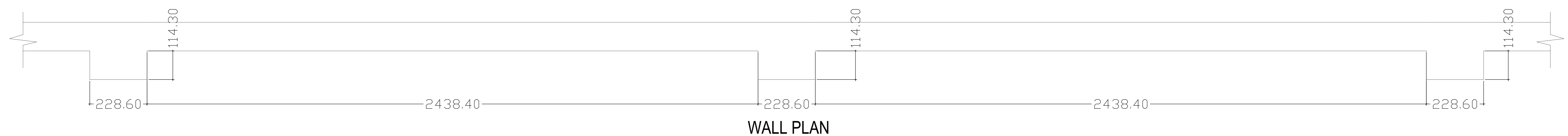
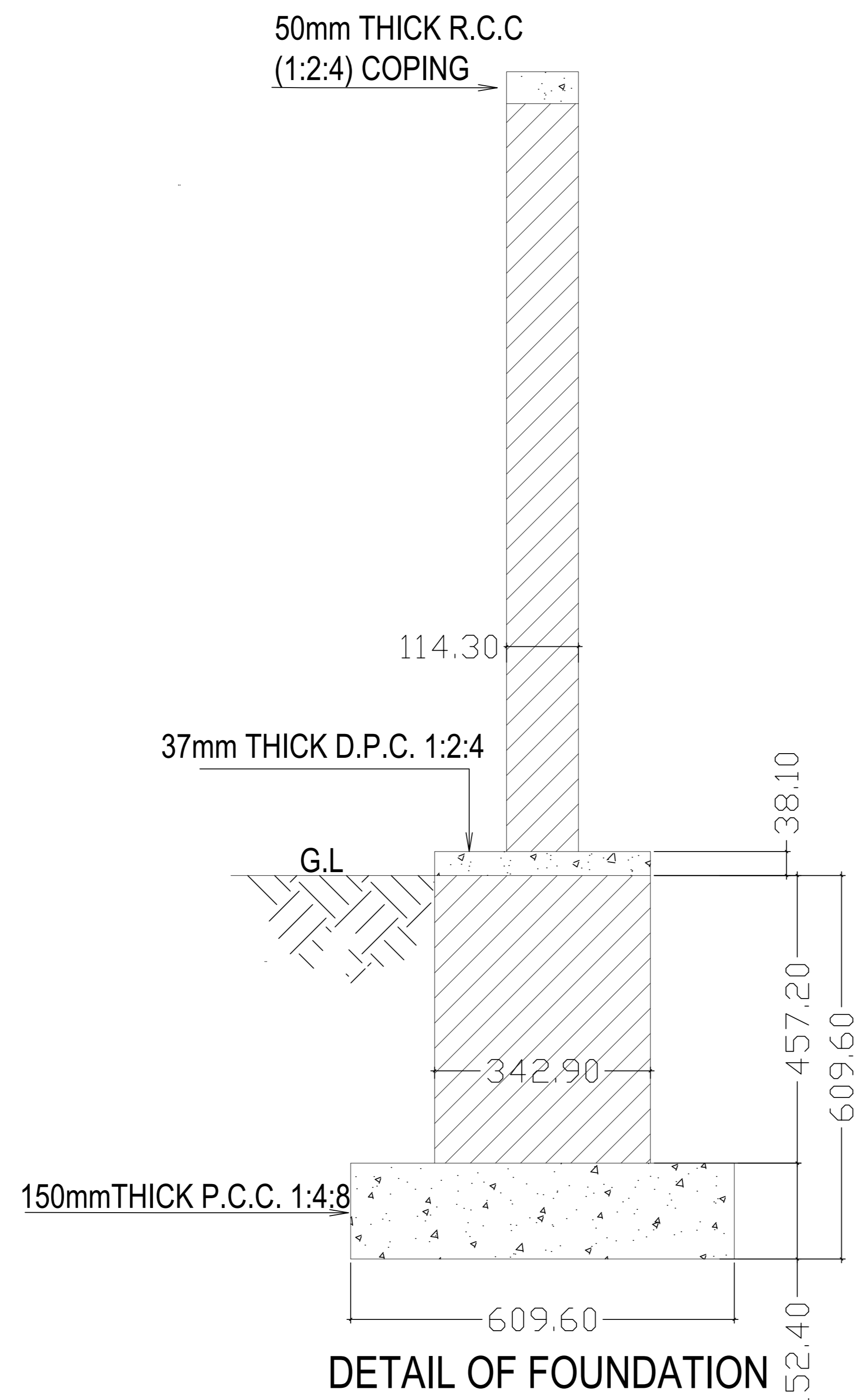
CONSULTANT:  

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 International** **JV**  

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PROJECT:  
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DRAWING TITLE :  
 EXISTING REHAB SCHEMES  
 DISTRICT KHYBER  
 CHAMBER ROOM  
 REINFORCEMENT DETAILS

Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.	Revision	By	Date
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Approved By : RABEEA REHMAN	KPR/REH/KHD/-2111				

**BOUNDARY WALL**



 <p>CLIENT : PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA</p>	 <p>CONSULTANT: <b>Techno-Consult International</b> JV</p>	 <p>Ultimate Engineering Consultants <small>New Era of Development</small></p>	<p>PROJECT: KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA</p>	<p>DRAWING TITLE : EXISTING REHAB SCHEMES DISTRICT KHYBER BOUNDARY WALL PLAN ,FRONT ELEVATION &amp; SECTION AT A-A</p>	Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.	Revision	By	Date
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# **SANITATION COMPONENT ( REHABILITATION )**

**SANITATION COMPONENT ( REHABILITATION )  
LAYOUT MAPS**

# LIST OF DRAWINGS

## SANITATION COMPONENT ( REHABILITATION )

NO.	DRAWING NO.	TITLE
1	KPR/REH/KHD-2001	GENERAL NOTES (SHEET 1 OF 4)
2	KPR/REH/KHD-2002	GENERAL NOTES (SHEET 2 OF 4)
3	KPR/REH/KHD-2003	GENERAL NOTES (SHEET 3 OF 4)
4	KPR/REH/KHD-2004	GENERAL NOTES (SHEET 4 OF 4)
5	KPR/REH/KHD-2005	PROJECT LOCATION MAP

### LAYOUT MAPS

NO.	DRAWING NO.	TITLE
1	KPR/REH/KH-CW-R-01	LOCATION MAP
2	KPR/REH/KHD-2301	LAYOUT MAP ( MALIK DORAN GUL )
3	KPR/REH/KHD-2302	LAYOUT MAP ( HISSARA SHALOBAR BARA )
4	KPR/REH/KHD-2303	LAYOUT MAP ( GHAZI NALA )
5	KPR/REH/KHD-2304	LAYOUT MAP ( HAKIM KHAN KILLI )
6	KPR/REH/KHD-2305	LAYOUT MAP ( GHULAM SAKHI )

### SOAKAGE PIT DRAWINGS

NO.	DRAWING NO.	TITLE
1	KPR/REH/KHD-2419	PLAN & SECTION (TYPE-I)
2	KPR/REH/KHD-2420	PLAN & SECTION (TYPE-II)
3	KPR/REH/KHD-2421	PLAN & SECTION (TYPE-III)
4	KPR/REH/KHD-2422	PLAN & SECTION (TYPE-IV)
5	KPR/REH/KHD-2423	PLAN & SECTION (TYPE-V)
6	KPR/REH/KHD-2424	PLAN & SECTION (TYPE-VI)
7	KPR/REH/KHD-2425	PLAN & SECTION (TYPE-VII)
8	KPR/REH/KHD-2426	PLAN & SECTION (TYPE-VIII)
9	KPR/REH/KHD-2427	PLAN & SECTION (TYPE-IX)
10	KPR/REH/KHD-2428	TYPICAL HOUSE CONNECTION WITH MAIN SEWER DETAILS

## ARCHITECTURAL & STRUCTURAL DRAWINGS

### SEPTIC TANK DRAWINGS

NO.	DRAWING NO.	TITLE
1	KPR/REH/KHD-2401	PLAN & SECTION (TYPE-I)
2	KPR/REH/KHD-2402	PLAN & SECTION (TYPE-II)
3	KPR/REH/KHD-2403	PLAN & SECTION (TYPE-III)
4	KPR/REH/KHD-2404	PLAN & SECTION (TYPE-IV)
5	KPR/REH/KHD-2405	PLAN & SECTION (TYPE-V)
6	KPR/REH/KHD-2406	PLAN & SECTION (TYPE-VI)
7	KPR/REH/KHD-2407	PLAN & SECTION (TYPE-VII)
8	KPR/REH/KHD-2408	PLAN & SECTION (TYPE-VIII)
9	KPR/REH/KHD-2409	PLAN & SECTION (TYPE-IX)
10	KPR/REH/KHD-2410	PLAN & SECTION (TYPE-I) REIN. DETAILS
11	KPR/REH/KHD-2411	PLAN & SECTION (TYPE-II) REIN. DETAILS
12	KPR/REH/KHD-2412	PLAN & SECTION (TYPE-III) REIN. DETAILS
13	KPR/REH/KHD-2413	PLAN & SECTION (TYPE-IV) REIN. DETAILS
14	KPR/REH/KHD-2414	PLAN & SECTION (TYPE-V) REIN. DETAILS
15	KPR/REH/KHD-2415	PLAN & SECTION (TYPE-VI) REIN. DETAILS
16	KPR/REH/KHD-2416	PLAN & SECTION (TYPE-VII) REIN. DETAILS
17	KPR/REH/KHD-2417	PLAN & SECTION (TYPE-VIII) REIN. DETAILS
18	KPR/REH/KHD-2418	PLAN & SECTION (TYPE-IX) REIN. DETAILS

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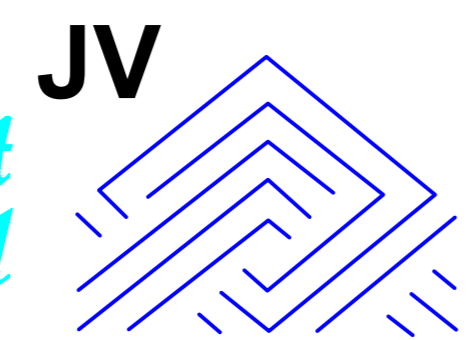


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LIST OF DRAWING

Designed By : Dr. ASFAHAN ALI

Date : MAR 2026

Drawn By : NAEEM BAKHSH

Scale : N.T.S

Checked By : RABEEA REHMAN

Drawing No :

Approved By : RABEEA REHMAN

No.

Revision

By

Date

## 1- GENERAL

1. THESE NOTES ARE APPLICABLE TO ALL DRAWINGS UNLESS NOTED OTHERWISE.
2. ALL STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER DISCIPLINE DRAWINGS, DOCUMENTS, AND SPECIFICATIONS ETC. AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY IN THE CONTRACT DOCUMENTS SHALL BE REFERRED TO THE ENGINEER FOR DECISION BEFORE PROCEEDING.
3. ALL DIMENSIONS ARE IN SI SYSTEM UNLESS NOTED OTHERWISE. LEVELS AND ELEVATIONS ARE IN SI SYSTEM.
4. SETTING-OUT DIMENSIONS AND SIZES OF STRUCTURAL MEMBERS SHALL NOT BE OBTAINED BY SCALING THE DRAWINGS.
5. ANY SETTING-OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE VERIFIED ON SITE AND WITH OTHER SERVICES DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS.
6. ALL DESIGN, WORKMANSHIP AND MATERIAL SHALL BE IN ACCORDANCE WITH THE CURRENT ACI, UBC, ASTM, AASHTO AND AISC STANDARDS AND PROJECT DESIGN CRITERIA UNLESS NOTED OTHERWISE. EQUIVALENT BRITISH OR ANY OTHER INTERNATIONAL STANDARDS MAY BE ACCEPTABLE SUBJECT TO APPROVAL OF THE ENGINEER.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THE SAFETY OF CONSTRUCTION AT ALL TIMES AND SHALL ENSURE THAT NO PART OF INTERMEDIATE COMPLETED CONSTRUCTION IS HAZARDOUS (FOR EXAMPLE; SIDES OF EXCAVATION, STARTER BARS ETC.)
8. THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING AND SHORING AGAINST LATERAL FORCES AND ALL CONSTRUCTION LOADS THROUGHOUT THE CONSTRUCTION PROCESS.
9. BEAMS, SLABS, COLUMNS, WALLS AND FOUNDATION ELEMENTS SHALL NOT BE SLEEVED OR BOXED-OUT OR HAVE THE REINFORCEMENT INTERRUPTED EXCEPT AS INDICATED ON THE STRUCTURAL DRAWINGS.
10. THE CONTRACTOR SHALL PROTECT THE WORKS AGAINST FLOODING AT STREAM LOCATIONS/ NULLAHS.
11. THESE NOTES ARE APPLICABLE TO ALL DRAWINGS UNLESS NOTED OTHERWISE.
12. UNLESS OTHERWISE INDICATED ON DRAWINGS, THE PROPOSED PIPELINES ARE TO BE BUILT AS SHOWN ON DRAWINGS. INVERT LEVELS OF THE PROPOSED PIPELINES UNDER THIS CONTRACT SHALL BE AS PER LAYOUT PLAN AND PROFILE DRAWINGS.
13. TOPOGRAPHIC INFORMATION & FEATURES HAVE BEEN BASED ON PRELIMINARY SURVEY. FEATURES ENCOUNTERED AT SITE BUT NOT MENTIONED IN DRAWINGS SHALL BE DEALT IN THE MANNER GIVEN IN DRAWINGS & SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.
14. THE EXISTING GROUND LEVEL SHOWN ON DRAWINGS ARE BASED ON PRELIMINARY SURVEY CARRIED OUT BY THE ENGINEER. THE CONTRACTOR SHOULD ASCERTAIN, CHECK AND VERIFY THE EXISTING LEVELS AT THE TIME OF EXECUTION JOINTLY WITH THE ENGINEER.  
THE CONTRACTOR SHALL ENGAGE A QUALIFIED SURVEYOR APPROVED BY THE ENGINEER FOR SETTING OUT THE WORKS.
15. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK AND VERIFY LOCATION OF ANY OVER OR UNDERGROUND UTILITY SERVICES WHETHER SHOWN ON THE DRAWINGS OR NOT AND TAKE DUE CARE TO PROTECT THESE AGAINST DAMAGE DURING CONSTRUCTION.
16. THE ENGINEER MAY VARY THE GRADES, SLOPES, FOUNDATIONS, LEVELS AND OTHER FEATURES OF DESIGN, AS NECESSARY, TO CONFORM TO THE VARYING SITE CONDITIONS DURING THE EXECUTION OF WORK. ALL SUCH CHANGES SHALL BE GOVERNED BY THE RELEVANT CONDITIONS OF CONTRACT.
17. ALL FILL AND CUT SLOPES ARE TO BE TRIMMED AND BLENDED TO MEET REQUIRED CONDITIONS AS PER CONTRACT AND AS DIRECTED BY THE ENGINEER. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE GRADED AND FINISHED AS INDICATED ON THE TYPICAL SECTIONS OR AS DIRECTED BY THE ENGINEER.
18. THE ENGINEER SHALL DETERMINE IN THE FIELD THE FINAL LOCATION, AXIS, ORIENTATION (OR DIRECTION OF FLOW) & THE INVERT ELEVATIONS OF ALL STRUCTURES. THE ENGINEER MAY ALSO ADD, DELETE OR ALTER SIZES OR TYPE OF THE STRUCTURES AS SHOWN ON THE DRAWINGS WHERE HE MAY DEEM NECESSARY. ALL SUCH CHANGES SHALL BE GOVERNED BY THE RELEVANT CONDITIONS OF THE CONTRACT.
19. THE LOCATIONS, ELEVATIONS, SKEW ANGLE & GRADES OF ALL STRUCTURES SHALL BE CHECKED DURING STAKE OUT SURVEY BEFORE EXECUTION OF THE WORKS SUFFICIENTLY IN ADVANCE TO THE SATISFACTION OF THE ENGINEER. ADJUSTMENTS IN THE DRAWINGS IF ANY, SHALL BE APPROVED BY THE ENGINEER BEFORE EXECUTION.
20. THE CONTRACTOR MUST SEEK PRIOR APPROVAL FROM THE ENGINEER FOR EXECUTION OF ANY WORK DEVIATING FROM THE SPECIFICATION.
21. THE CONTRACTOR SHALL SUBMIT THE SHOP DRAWINGS OF ALL FITTINGS AS PER STD. AWWA C 208 FOR APPROVAL OF THE ENGINEER BEFORE EXECUTION OF WORK.
22. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LEVELS ON SITE AND RESOLVE ALL DISCREPANCIES WITH THE ENGINEER BEFORE COMMENCEMENT OF WORKS.

23. FOR PURPOSE OF THIS CONTRACT, THE ADDITIONAL PLANS AND DRAWINGS SHALL BE ISSUED TO THE CONTRACTOR DURING THE COURSE OF HIS WORKS AS DEEMED NECESSARY BY THE ENGINEER.
24. THE CONTRACTOR SHALL FULLY ACQUAINT HIMSELF WITH THE TYPICAL SITE CONDITIONS AND MEASURE OF THE WORKS RELATED WITH EXTENSION OF REMEDIAL WORKS SHALL BE CARRIED OUT STRICTLY IN ACCORDANCE WITH THE SPECIFICATION AND UNDER THE DIRECT SUPERVISION OF THE ENGINEER.
25. THE CONTRACTOR SHALL SUBMIT HIS PROPOSED METHODS STATEMENT FOR THE CONSTRUCTION OF ALL STRUCTURES FOUNDATION PRIOR TO THE COMMENCEMENT OF WORK, FOR ENGINEER'S APPROVAL/RECORD.
26. FOR DETAILS OF CUTS, SLOPES, EMBANKMENTS AND RIPRAP ETC. PLEASE REFER GEO-TECHNICAL REPORT AND RELEVANT DRAWINGS.
27. ALL FIXTURES, FITTINGS AND ACCESSORIES SHALL BE INSTALLED IN CO-ORDINATION WITH ARCHITECTURAL DRAWINGS. ARRANGEMENT OF PLUMBING / PIPING EQUIPMENT ON PLUMBING / PIPING DRAWINGS IS TENTATIVE & INDICATIVE. EXACT ARRANGEMENT OF EQUIPMENT SHALL BE MADE IN VIEW OF ITS PHYSICAL DIMENSIONS AND EASE OF MAINTENANCE AND THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TIE-UP DIMENSIONS OF ALL STRUCTURAL SLEEVES IN COORDINATION WITH THE ARCHITECTURAL DRAWINGS.
28. USE DIMENSIONED ARCHITECTURAL AND STRUCTURAL DRAWINGS TO VERIFY THE SPACE NECESSARY FOR LOCATING PIPING.
- 29.

## 2- EXCAVATION AND DE-WATERING

1. ALL EXCAVATION SHALL BE BASED ON ENGINEERING SHOP DRAWINGS PREPARED BY THE CONTRACTOR, INCLUDING PLANS AND SECTIONS OF EXCAVATION SEQUENCES. THE EXCAVATION SEQUENCES SHALL BE CONTROLLED TO MATCH THE REQUIREMENTS OF THE DESIGN OF THE SOIL RETENTION SYSTEM AND SHALL INCLUDE MONITORING OF WALL AND GROUND MOVEMENTS.
2. THE EXCAVATION RETENTION SYSTEM SHALL BE DESIGNED AND INSTALLED BY THE CONTRACTOR, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH THE GEOTECHNICAL DESIGN PARAMETERS AND SOIL PRESSURES AS INDICATED IN THE GEOTECHNICAL INVESTIGATION REPORT.
3. THE CONTRACTOR SHALL PROVIDE POSITIVE PROTECTION (MAT/SHEET COVERING) FOR ALL EXCAVATED SLOPES TO PROTECT SLOPES FROM INSTABILITY AND DETERIORATION DUE TO ENVIRONMENTAL CONDITIONS.
4. ADEQUATE TEMPORARY DRAINAGE SYSTEM INCLUDING DEWATERING SYSTEMS, DRAIN CHANNELS, SUMPS SHALL BE PROVIDED TO ENSURE DRY SITE CONDITIONS AND STABILITY OF THE BASE OF THE EXCAVATION AT ALL TIMES. THE DESIGN OF SUCH DRAINS IN DISCHARGE POINTS SHALL BE APPROVED BY THE ENGINEER.
5. THE DE-WATERING SYSTEM SHALL BE MAINTAINED UNTIL ALL LOWER LEVEL AND GROUND LEVEL SLABS, PERIMETER WALLS AND WATERPROOFING ARE INSTALLED AND THE PERMANENT BUILDING DRAINAGE SYSTEM IS FULLY OPERATIONAL.

## 3- FOUNDATIONS

1. BEFORE EXECUTION OF THE WORK DETAIL GEOTECHNICAL INVESTIGATION IS TO BE SUBMITTED TO THE ENGINEER, TO ESTABLISH SOIL CHARACTERISTICS AND RECORD GROUND WATER LEVELS. RESULTS OF THE TEST MAY EFFECT THE DESIGN AND IT MAY HAS TO BE UPDATED IF REQUIRED BEFORE FURTHER PROCEEDING.
2. LOOSE POCKETS OF SOIL WHICH ARE ENCOUNTERED SHALL BE REMOVED AND REPLACED WITH SUITABLE SOIL COMPACTED TO ACHIEVE THE DESIRED BEARING PRESSURE.
3. ANY ADJACENT FOOTING IN THE VICINITY OF THE WORK SHALL BE PROPERLY PROTECTED BEFORE EXECUTION OF WORK.

## 4- BACK FILLING



1. EXCAVATED MATERIAL MAY BE USED FOR BACKFILLING TO STRUCTURES OR EARTH FILLING IN EMBANKMENTS ONLY AFTER THE APPROVAL OF THE ENGINEER.
2. NO BACKFILL SHALL BE PLACED NEXT TO ANY CAST IN PLACE CONCRETE UNLESS THE CONCRETE ATTAINS ITS FULL 28 DAYS STRENGTH.
3. ALL BACKFILL MATERIAL SHALL BE GRANULAR IN NATURE THAT IS SAND-GRAVEL MIX AND COMPACTED IN MAXIMUM OF 225mm THICK LAYERS.
4. BACK FILL AGAINST BOTH SIDES OF WALLS EQUALLY UNTIL THE LOWER ELEVATION IS ATTAINED.
5. BACKFILLING OF BOUNDARY AND LANDSCAPE WALLS SHALL BE CARRIED OUT SIMULTANEOUSLY ON BOTH SIDES OF THE WALLS.
6. SALT/RICH SOIL SHALL NOT BE USED AS BACKFILL MATERIAL AROUND OR UNDER THE STRUCTURES.

## 5- STONE SOLING

1. STONE SOLING SHALL BE HARD DURABLE ROCK FROM AN APPROVED SOURCE; IT SHALL BE SOUND, CLEAN, UN-WEATHERED, UN-FRACTURED AND FREE FROM IMPURITIES SUCH AS EARTH OR DECOMPOSED ROCK.
2. THE STONES SHALL BE WEIGHT NOT LESS THAN 20KG AND SHALL NOT BE LESS THAN 8" IN LENGTH OR WIDTH. THEY SHALL BE ROUGHLY HAMMERED DRESSED SO THAT THEY FIT CLOSELY TOGETHER ANY VACANT SPACE BETWEEN STONES SHALL BE FILLED WITH STONE OF SMALLER DIMENSION.
3. GROUND UNDERNEATH STONE SOLING SHALL BE COMPACTED UPTO 95% OF MODIFIED AASHTO.

## 6- CONCRETE

1. SAMPLING AND TESTING OF CONCRETE SHALL BE DONE IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS (ASTM STANDARD C39) UNLESS NOTED OTHERWISE ON DRAWINGS.
2. OPC CONFORMING TO ASTM C150 SHALL BE USED EXCEPT FOR FOUNDATION & SHAFT BELOW N.S.L. WHERE SRC CONFORMING TO ASTM C150 SHALL BE USED.
3. CONCRETE SHALL HAVE THE FOLLOWING 28 DAYS COMPRESSIVE CYLINDRICAL STRENGTH.
  - a. BASE SLAB, SHAFT, TANK WALLS AND COLUMN : 28mpa
  - b. LANDING, TOP SLAB AND BEAMS : 21mpa
  - c. WATER TO CEMENT RATIO SHALL BE UP TO 0.4 FOR ALL THE WATER RETAINING STRUCTURES AND IN NO CASE SHALL IT BE MORE THAN 0.5 FOR OTHER STRUCTURES.
  - d. BLINDING CONCRETE : 1500 PSI
  - e. THE MIN. 28 DAYS COMPRESSIVE STRENGTH OF CC BLOCK FOR BLOCK MASONRY WORK SHALL NOT BE LESS THAN 1500 PSI (10 N/MM2).
  - f. MINIMUM CEMENT CONTENT FOR STRUCTURAL CONCRETE SHALL BE 365 kg/m3 OF CONCRETE.
4. EXTERNAL CONCRETE SURFACE IN CONTACT WITH SOIL SHALL BE TREATED WITH MIN. TWO COATS OF BITUMINOUS PAINT, WHETHER SHOWN OR NOT SHOWN IN THE DRAWINGS.
5. ALL OPENINGS FOR PIPING AND CONVEYANCE SHALL BE FORMED IN POSITION BEFORE CASTING CONCRETE.
6. NO PENETRATIONS, RECESSES OR CHASES OTHER THEN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT APPROVAL OF THE ENGINEER.
7. ALL CONCRETE ADMIXTURES USED E.G. WATER REDUCING AGENTS, RETARDER PLASTICIZERS ETC. SHALL BE FROM APPROVED SUPPLIER AND MAKE AND TO BE USED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AFTER APPROVAL FROM THE ENGINEER.
8. ALL CONCRETE SHALL BE CURED IN ACCORDANCE WITH THE SPECIFICATIONS.
9. ALL EXPOSED CONCRETE SURFACES INCLUDING INTERNAL FACES OF TANK WALLS AND SHAFT SHALL HAVE FAIR FACE FINISH AND THOSE BURIED INTO GROUND SHALL HAVE FINISH ACCEPTABLE TO RECEIVE WATER PROOFING.
10. THE FOLLOWING CONCRETE CLEAR COVER TO PRIMARY REINFORCEMENT SHALL BE PROVIDED, UNLESS LARGER COVER IS NOTED ON THE STRUCTURAL DRAWINGS.
  - a. CONCRETE EXPOSED TO EARTH = 75mm
  - b. CONCRETE EXPOSED TO WATER = 50mm
  - c. CONCRETE EXPOSED TO WEATHER = 37mm
  - d. COLUMN/ BEAM = 37mm TO STIRRUPS
 CLEAR COVER SHALL NOT BE LESS THAN 25mm OR BAR DIAMETER WHICHEVER IS GREATER.
11. BEFORE COMMENCING CONCRETING THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR HIS APPROVAL ALL DETAILED PROPOSALS FOR THE SEQUENCES OF PLACING CONCRETE AND THE POSITIONS OF ALL VERTICAL AND HORIZONTAL CONSTRUCTION JOINTS. SUCH PROPOSALS SHALL BE SUBMITTED TO THE ENGINEER AT LEAST TWO WEEKS BEFORE SCHEDULED DATE OF CONCRETING NO CONCRETE SHALL BE PLACED UNTIL THE STEEL REINFORCEMENT AND FORMWORK HAVE BEEN CHECKED AND APPROVED BY THE ENGINEER IN WRITING ALL FRESH CONCRETE SHALL BE PROTECTED BY APPROVED MEANS FROM RAIN, SUN AND DRY WIND TO MAINTAIN SUITABLE TEMPERATURE AND MOISTURE.

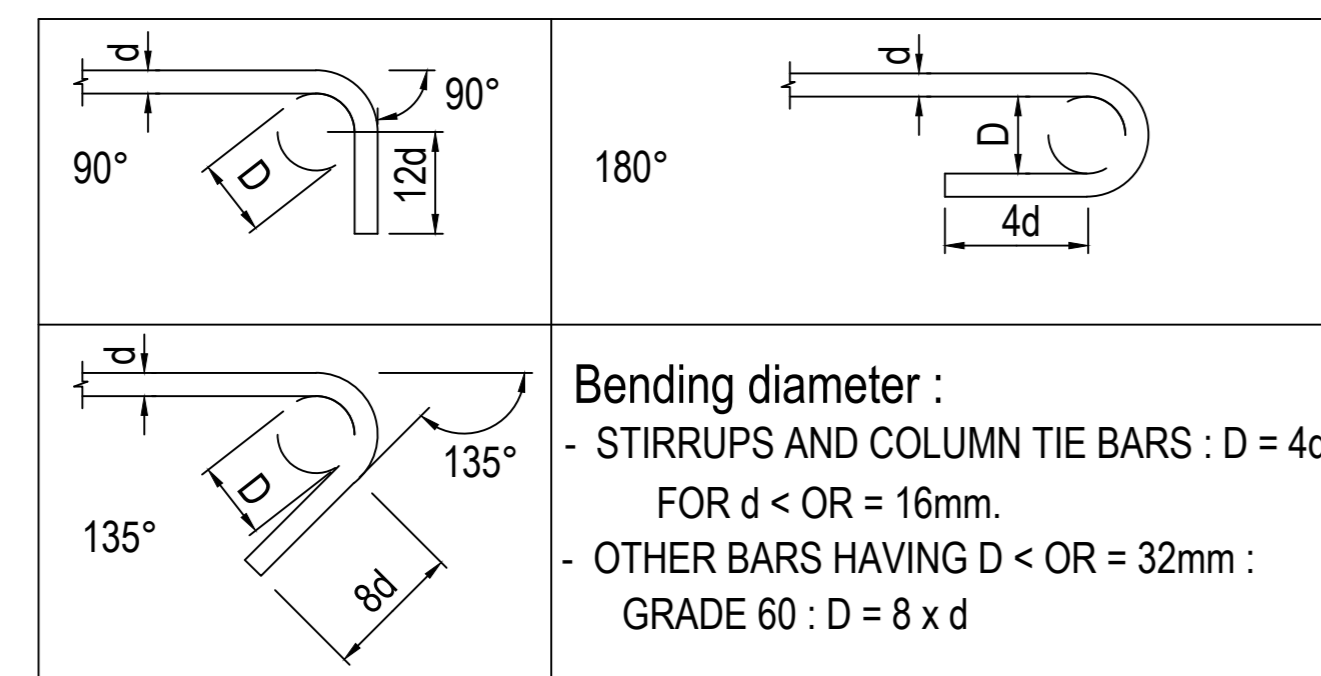
 CLIENT : PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA	 CONSULTANT: Techno-Consult International JV Ultimate Engineering Consultants New Era of Development	PROJECT: KPRIISP – DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA	DRAWING TITLE : EXISTING REHAB SCHEMES DISTRICT KHYBER GENERAL NOTES (SHEET 1 OF 4)	Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.	Revision	By	Date
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				Approved By : RABEEA REHMAN	KPR/REH/KHD/-2001				

# GENERAL NOTES

## 7- REINFORCING STEEL

1. ALL REINFORCING BARS SHALL CONFORM TO ASTM-615, GRADE 60 TYPE 2 DEFORMED HIGH YIELD BARS WITH MINIMUM YIELD STRENGTH OF 60,000 PSI.
2. ALL REINFORCING BARS SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED, SPACED IN FORMS AND SECURED IN PLACE IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OUTLINED IN THE CURRENT ACI 318 AND ACI 315 UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.
3. ALL STARTER BARS SHALL BE SURVEYED AND LOCATION CONFIRMED IN AS-BUILT CONDITION PRIOR TO PLACING WALL/COLUMN REINFORCEMENT AND ANY DISCREPANCIES SHALL BE REPORTED TO THE CONSULTANT FOR INSTRUCTIONS.
4. STARTER BARS PROVIDED TO WALLS AND COLUMNS SHALL BE SIMILAR IN NUMBER AND SIZE AND SPACING TO THE VERTICAL BARS ABOVE UNLESS NOTED OTHERWISE.

### a. STANDARD HOOKS



### b. LAPPED SPLICES AND EMBEDMENT LENGTH

1. ALL LAPPED SPLICES SHALL BE TENSION SPLICES, AS PER TABLE NO.1, CONFORMING TO ACI 318, UNLESS OTHERWISE NOTED. FOR SMALLER HEIGHTS OF WALLS UPTO, 3 METRES, LAPPING OF REBARS IS NOT ALLOWED, UNLESS OTHERWISE NOTED. NOT MORE THAN 50% OF THE BARS SHALL BE SPLICED AT ONE LOCATION, UNLESS OTHERWISE SHOWN ON DRAWINGS. FOR EMBEDMENT LENGTH, REFER TO TABLE NO. 2.

### c. METAL WORK

1. MATERIALS TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
2. ALL WELDED CONSTRUCTION UNLESS OTHERWISE NOTED.
3. ALL STEEL TO BE PAINTED OR GALVANIZED AS DIRECTED BY THE ENGINEER.
4. ALL SHEAR EDGES TO BE GROUND SMOOTH.
5. ALL WELDS SHALL BE 5MM CONTINUOUS FILLET WELD, E70XX ELECTRODE UNLESS OTHERWISE NOTED ON DRAWING.

### d. DETAILED BAR BENDING SCHEDULE

1. DETAILED BAR BENDING SCHEDULE SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED FOR ENGINEER'S APPROVAL.

### e. EMBEDDED ITEMS

1. ALL EMBEDDED ITEMS SHALL BE SECURED IN POSITION ACCORDING TO THE DRAWINGS BEFORE PROCEEDING WITH THE CONCRETING.

**TABLE NO.1**

### (i) SPLICE LENGTH IN TENSION

#### (a) TOP BARS

Bar Size fc' (MPa)	SPLICE LENGTH (mm)									
	#3	#4	#5	#6	#7	#8	#9	#10	#11	
21	710	945	1180	1410	2060	2355	2645	2940	3240	
28	610	820	1020	1225	1780	2040	2995	2550	2805	

#### (b) OTHER BARS

Bar Size fc' (MPa)	SPLICE LENGTH (mm)									
	#3	#4	#5	#6	#7	#8	#9	#10	#11	
21	550	730	905	1085	1590	1815	2035	2265	2490	
28	475	630	790	945	1375	1570	1765	1960	2160	



### (ii) Splice Length in Compression

Bar Size fc' (MPa)	SPLICE LENGTH IN COMPRESSION (mm)									
	#3	#4	#5	#6	#7	#8	#9	#10	#11	
28	300	380	480	575	670	765	860	955	1050	

**Table No.2**

### Embedment Length

Bar Size fc' (MPa)	DEVELOPMENT LENGTH (mm)									
	#3	#4	#5	#6	#7	#8	#9	#10	#11	
28	375	475	600	700	1050	1175	1325	1475	1625	
21	450	550	675	825	1200	1375	1550	1700	1875	

CLIENT :  PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA	CONSULTANT:  Ultimate Engineering Consultants New Era of Development	PROJECT: KPRIISP – DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA	DRAWING TITLE : EXISTING REHAB SCHEMES DISTRICT KHYBER GENERAL NOTES (SHEET 2 OF 4)	Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.	Revision	By	Date
				Drawn By : NAEEM BAKHSH	Scale : N.T.S				
				Checked By : RABEEA REHMAN	Drawing No :				
				Approved By : RABEEA REHMAN	KPR/REH/KHD/-2002				

## 8- WATERPROOFING AND WATERSTOPS

- FOUNDATION AND BASEMENT WALLS SHALL BE WATERPROOFED WITH SPECIFIED TYPE OF WATERPROOFING, WHETHER SHOWN OR NOT ON THE DRAWINGS AS PER SPECIFICATIONS.
- FOR CONCRETE IN CONTACT WITH SOIL ABOVE WATER TABLE LEVEL EXTERNAL FACES OF THE SUBSTRUCTURES INCLUDING TIE BEAMS, COLUMN NECKS AND FOOTING SHALL HAVE APPROVED BITUMEN EMULSION PROTECTIVE COATING. THE COATING AT THE BOTTOM OF THE TIE BEAMS & FOOTING SHALL BE ACHIEVED BY COATING THE TOP OF THE BLINDING UNLESS NOTED OTHERWISE.
- WATERSTOPS SHALL BE PROVIDED AT ALL CONSTRUCTION JOINTS OF WALLS OR SLABS EXPOSED TO THE GROUND, WEATHER OR WATER, SUCH AS RESERVOIR WALL, BASE SLAB, ETC. WHETHER SHOWN ON DRAWINGS OR NOT. WITH THE APPROVAL OF THE ENGINEER.
- UNLESS OTHERWISE SHOWN ON THE DRAWINGS, THE WIDTH OF THE WATERSTOPS SHALL BE AT LEAST EQUAL TO THE THICKNESS OF THE CONCRETE MEMBER TO WHICH IT IS EMBEDDED, UP TO A MAXIMUM WIDTH OF 10".
- THE PVC FOR PVC WATERSTOPS SHALL BE HIGH GRADE VIRGIN POLYVINYL CHLORIDE CONTAINING NO FILLER, RECLAIMED OR SCRAP MATERIAL. IT SHALL COMPLY WITH THE REQUIREMENTS OF ASTM C-923 BUT SHALL HAVE IMPROVED TENSILE QUALITIES. THE MINIMUM TENSILE STRENGTH SHALL BE 13.78 N/MM<sup>2</sup> AND THE MINIMUM ELONGATION AT BREAK SHALL BE 350%.

## 9- CONSTRUCTION JOINT

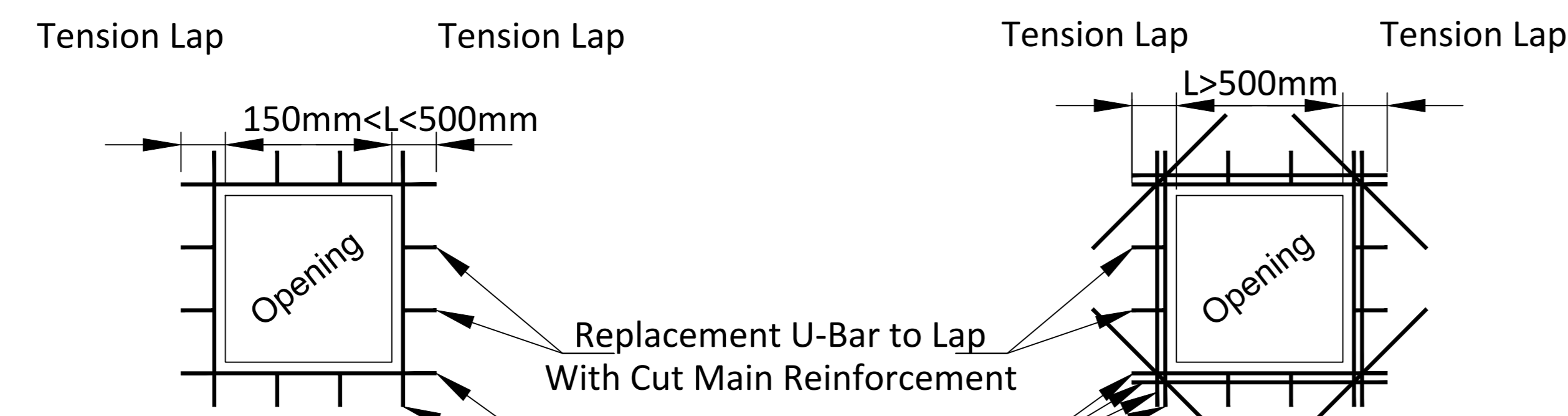
- PRIOR TO CONSTRUCTION OF ANY STRUCTURE, THE CONTRACTOR IS TO SUBMIT A PROPOSAL DEPICTING LOCATION OF CONSTRUCTION JOINTS AND SEQUENCE OF CONSTRUCTION TO SUIT THEIR CONCRETING PROGRAM TO THE ENGINEER FOR APPROVAL.
- CONSTRUCTION JOINTS OR POUR BREAKS (VERTICAL & HORIZONTAL), WHERE NOT SHOWN ON PLANS OR DETAILS, SHALL BE LOCATED AND FORMED TO THE APPROVAL OF THE ENGINEER.

## 10- JOINT FILLER

- THE CONTRACTOR SHALL SUPPLY AND FIX PRE-MOULDED JOINT FILLERS IN ALL EXPANSION JOINTS AND WHERE SHOWN ON THE DRAWINGS. UNLESS OTHERWISE SPECIFIED THE JOINT FILLER SHALL BE OF RESIN OR BITUMEN BONDED CORK OR IMPREGNATED FIBERBOARD.

## 11- STANDARD TRIMMING DETAIL FOR STRUCTURAL OPENINGS.

- ADDITIONAL TRIMMER BARS TO STRUCTURAL OPENINGS SHALL BE PROVIDED AS DETAILED HERE IN. DIAMETER AND GRADE OF TRIMMER BARS REINFORCEMENT SHALL BE THE SAME AS THE MAXIMUM DIAMETER REINFORCING BARS OF THE STRUCTURE THROUGH WHICH THE OPENING IS FORMED.
- NO TRIMMER BARS ARE REQUIRED FOR OPENINGS NOT GREATER THAN 6" BUT NO REINFORCING BARS SHALL BE CUT. REINFORCING BARS SHALL BE ADJUSTED IN POSITION TO AVOID OPENING.
- UNLESS OTHERWISE SHOWN ON THE STRUCTURAL DRAWINGS, TRIMMING BAR DETAILS FOR THE DIFFERENT SIZE OPENINGS ARE AS SHOWN.



### 1. L:MAXIMUM DIMENSION OF OPENING

$150\text{mm} < \text{MAX DIMENSION OF OPENING} < 500\text{MM}$

ADDITIONAL REINFORCEMENT

ONE NO. TRIMMING BAR ON EACH SIDE AND EACH FACE OF THE OPENING. DIAMETER OF TRIMMING BARS SHALL BE GREATEST DIAMETER OF AFFECTED STRUCTURE.

### 2. 500mm < MAX DIMENSION OF OPENING < 1000mm

ADDITIONAL REINFORCEMENT

TWO NO. TRIMMING BAR ON EACH SIDE AND EACH FACE OF THE OPENING. DIAMETER OF TRIMMING BARS SHALL BE GREATEST DIAMETER OF AFFECTED STRUCTURE.

### 3. NOTES ON REPLACEMENT BARS

A. NUMBER OF REPLACEMENT U -BARS SHALL NOT BE LESS THAN NOS OF BARS CUT BY OPENING.

B. SHALL BE EQUAL TO THE GREATEST DIAMETER OF BARS CUT BY THE OPENING.

C. PREPENDICULAR TRIMMING BARS SHALL BE PROVIDED AS SHOWN ABOVE AND ON EACH FACE OF THE

## 12- ABBREVIATIONS USED ARE AS FOLLOWS.

GL.	.....	GROUND LEVEL
NGL	.....	NATURAL GROUND LEVEL
RL.	.....	ROAD LEVEL
LEV.	.....	LEVEL
SL.	.....	STRUCTURAL LEVEL
EL.	.....	ELEVATION
FND.	.....	FOUNDATION
UNO.	.....	UNLESS NOTED OTHERWISE
NSP.	.....	NOT SHOWN IN PLAN
NSE.	.....	NOT SHOWN IN ELEVATION
COL.	.....	COLUMNS
EF.	.....	EACH FACE
S.P.L.	.....	STRUCTURAL PLINTH LEVEL
S.O.G	.....	SLAB ON GRADE
CONT.	.....	CONTINUOUS
DISCONT	.....	DISCONTINUOUS
BF.	.....	BOTH FACE
T.	.....	TOP REINFORCEMENT
B.	.....	BOTTOM REINFORCEMENT
T & B.	.....	TOP & BOTTOM REINFORCEMENT
REINF.	.....	REINFORCEMENT
STG.	.....	STAGGERED
ALT.	.....	ALTERNATELY PLACED
M	.....	METERS
MM	.....	MILLIMETERS
TYP	.....	TYPICAL
THK.	.....	THICKNESS

**13. ELECTRICAL :**




1. FOLLOWING NOTES SHALL IN GENERAL APPLY TO ALL ELECTRICAL DRAWINGS. THE INSTRUCTIONS IN THESE NOTES SHALL BE FOLLOWED UNLESS STATED OTHERWISE.
2. THESE NOTES SHALL BE APPLICABLE TO THE ENTIRE ELECTRICAL WORKS. IF THE SITE CONDITIONS NECESSITATE ANY ALTERATIONS OR DEVIATIONS, THE DIRECTIONS OF THE ENGINEER SHALL BE OBSERVED AS FINAL INSTRUCTIONS.
3. ALL ELECTRICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL DRAWINGS & ALL OTHER RELEVANT DETAILS.
4. DIMENSIONS/MEASUREMENTS GIVEN IN LAYOUT AND DETAILED DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALCULATE THE ACTUAL DIMENSIONS/MEASUREMENTS ACCORDING TO STRUCTURAL AND ARCHITECTURAL DRAWINGS.
5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH ALL RELEVANT DETAILS TO THE ENGINEER FOR APPROVAL ACCORDING TO THE GENERAL CONDITIONS OF CONTRACT WELL IN TIME BEFORE COMMENCEMENT OF THAT WORK.
6. PROPER CO-ORDINATION OF ELECTRICAL WORKS WITH OTHER SERVICES SHALL BE CARRIED OUT AT SITE.
7. ALL NON-CURRENT CARRYING PARTS I.E. OUTER CASINGS OF EQUIPMENT SUCH AS HT & LT PANELS, DISTRIBUTION BOARDS, CABLE TRAYS, AUXILIARY CONSTRUCTIONS FOR EQUIPMENT ETC. SHALL BE CONNECTED TO THE GROUNDING/EARTHING SYSTEM AT REQUIRED NUMBER OF POINTS WITH SPECIFIED SIZES OF CONDUCTORS. WATER PIPES ALONG ELECTRICAL LINE SHALL BE BONDED TO THE EARTHING SYSTEM WITH 10 SQ. MM SINGLE CORE, COPPER CONDUCTOR PVC CABLE.
8. ELECTRICAL POINTS FOR EQUIPMENT SHALL BE INSTALLED IN CO-ORDINATION WITH THE RELEVANT DRAWINGS OF OTHER SERVICES, SUCH AS COMMUNICATION SYSTEMS, PLUMBING ETC. THE LOCATION ON ELECTRICAL DRAWINGS IS ONLY INDICATIVE.
9. ARRANGEMENT OF ELECTRICAL EQUIPMENTS ON ELECTRICAL DRAWINGS ARE TENTATIVE. EXACT ARRANGEMENT OF EQUIPMENTS SHALL BE MADE IN VIEW OF ITS PHYSICAL DIMENSIONS AND EASE OF MAINTENANCE.
10. LOADS ON ALL PHASES SHALL BE BALANCED AT THE TESTING/COMMISSIONING STAGE.
11. CONDUIT/DUCT RUN UNDER FLOOR SHALL HAVE A MINIMUM COVER OF 50MM FROM TOP OF CONDUIT/DUCT TO FINISHED FLOOR LEVEL.
12. RUN GREEN-YELLOW OR GREEN SINGLE CORE PVC INSULATED COPPER CONDUCTOR CABLE OF SPECIFIED SIZES AS PROTECTIVE EARTH CONDUCTOR (ECC) ALL ALONG LIGHT AND POWER WIRING. WHEREVER THE SIZE IS NOT SPECIFIED THE FOLLOWING CRITERIA SHALL BE OBSERVED TO DETERMINE MINIMUM CROSS SECTIONAL AREA OF EARTH CONTINUITY CONDUCTOR (ECC) IN RELATION TO THE AREA OF ITS PHASE CONDUCTORS. RUN SEPARATE ECC FOR EACH CIRCUIT.
  - ECC & PHASE CONDUCTOR OF SAME SIZE FOR UPTO AND INCLUDING 16 SQ. MM CABLES.
  - 16 SQ. MM ECC FOR PHASE CONDUCTOR OF 25 SQ. MM & 35 SQ. MM CABLES.
  - FOR CABLES OF 50 SQ. MM AND ABOVE SIZES, ECC IS HALF SIZE OF PHASE CONDUCTOR.
  - MAXIMUM SIZE OF ECC IS 70 SQ. MM.

13. ALL WIRING TO LIGHT AND SOCKET CIRCUITS AND FOR CONTROLS SHALL BE CARRIED OUT WITH SINGLE CORE PVC INSULATED COPPER CONDUCTOR CABLE OF SPECIFIED VOLTAGE GRADE IN CONCEALED PVC CONDUIT OF SPECIFIED SIZE.
14. CIRCUIT WIRING FROM DB TO LIGHT CIRCUIT SHALL BE CARRIED OUT WITH 2.5 SQ.MM CABLE AND TO 5/10/13/15A SOCKETS WITH 4.0 SQ. MM CABLE. WIRING FROM SWITCH TO LIGHT POINT AND FROM LIGHT POINT TO LIGHT POINT SHALL BE WITH 1.5 SQ. MM CABLE. GROUP CONTROLLED LIGHT SHALL BE WITH 2.5 SQ. MM CABLES.
15. LIGHT CONTROL SWITCH BOARD SHALL BE INSTALLED 50 MM AWAY FROM THE SIDE OF DOOR IN ROOMS.
16. BEFORE DETERMINING THE CUT LENGTHS OF CABLE, THE ACTUAL MEASUREMENT AT SITE SHALL BE MADE WITH PROVISION FOR SLACK AT LT PANELS/DISTRIBUTION BOARDS AND SPARE LENGTH FOR LOOPS AS REQUIRED.
17. ALL UNDERGROUND PIPES AFTER INSTALLATION SHALL BE PLUGGED AND SEALED AT BOTH ENDS AND JOINTS TO AVOID INGRESS OF WATER INTO PIPES.
18. THE NO. OF SINGLE CORE CABLES IN ANY CONDUIT SHALL BE DETERMINED SUCH THAT THE RATIO OF CABLE AREA INCLUDING PROTECTIVE EARTH CONDUCTOR TO CONDUIT AREA IS NOT MORE THAN 0.4:1.0. WHERE DIFFERENT SIZES OF CABLES RUN IN SAME CONDUIT, THE SIZE SHALL BE BASED ON ACTUAL CABLE AREA. WHEREVER CONDUIT SIZE IS NOT SPECIFIED, 20 MM DIA CONDUIT SHALL BE INSTALLED PROVIDED IT MEETS THE ABOVE CRITERIA. THE FOLLOWING TABLE IS GIVEN AS GENERAL GUIDELINE.
19. NORMAL & EMERGENCY CIRCUITS SHALL RUN IN SEPARATE CONDUITS.
20. ALL WIRING FOR CONTROLS SHALL BE CARRIED OUT WITH SINGLE CORE PVC CABLES OF SPECIFIED VOLTAGE GRADE AND SIZES.
21. THE WIRING SHALL BE CONTINUOUS LOOPING-IN TYPE AND NO JOINT IN WIRES SHALL BE ALLOWED.
22. THE WIRING SYSTEM SHALL BE CARRIED OUT ONLY AFTER THE CONDUIT SYSTEM IS COMPLETELY INSTALLED AND ALL OUTLET BOXES ETC. ARE FIXED IN POSITION.
23. MOUNTING HEIGHTS OF ELECTRICAL FITTINGS WHEN MEASURED FROM FINISHED FLOOR LEVEL (F.F.L) TO THE BOTTOM OF FITTINGS SHALL BE AS UNDER, UNLESS OTHERWISE SHOWN OR INSTRUCTED.
 

• DISTRIBUTION BOARD	1450mm
• ON/OFF PUSH BUTTON STATION	1450mm
• LIGHT CONTROL SWITCH (ONE WAY/ TWO WAY)	1450mm
• 5A SOCKET OUTLETS IN GENERAL AREAS	300mm
• 10A SOCKET OUTLETS IN GENERAL AREAS	300mm
• 16A SOCKET OUTLETS FOR EQUIPMENT TO BE CO-ORDINATED AT SITE WITH RESPECTIVE TRADE.	
24. ALL LED LIGHT FIXTURES ARE TO BE P.F CORRECTED.
25. ALL LED LIGHTS SHALL BE OF COLOR TEMPERATURES 5500K-6500K FOR INTERIOR LIGHTING AND 3500K TO 4500K FOR EXTERIOR LIGHTING.
26. ALL EXTERIOR LIGHTING FIXTURES SHOULD BE AT LEAST IP65 RATED.
27. MS STEEL CONDUIT SHALL BE USED FOR SURFACE WIRING & PVC CONDUITS SHALL BE USED FOR CONCEALED WIRING.

**14. MECHANICAL :**

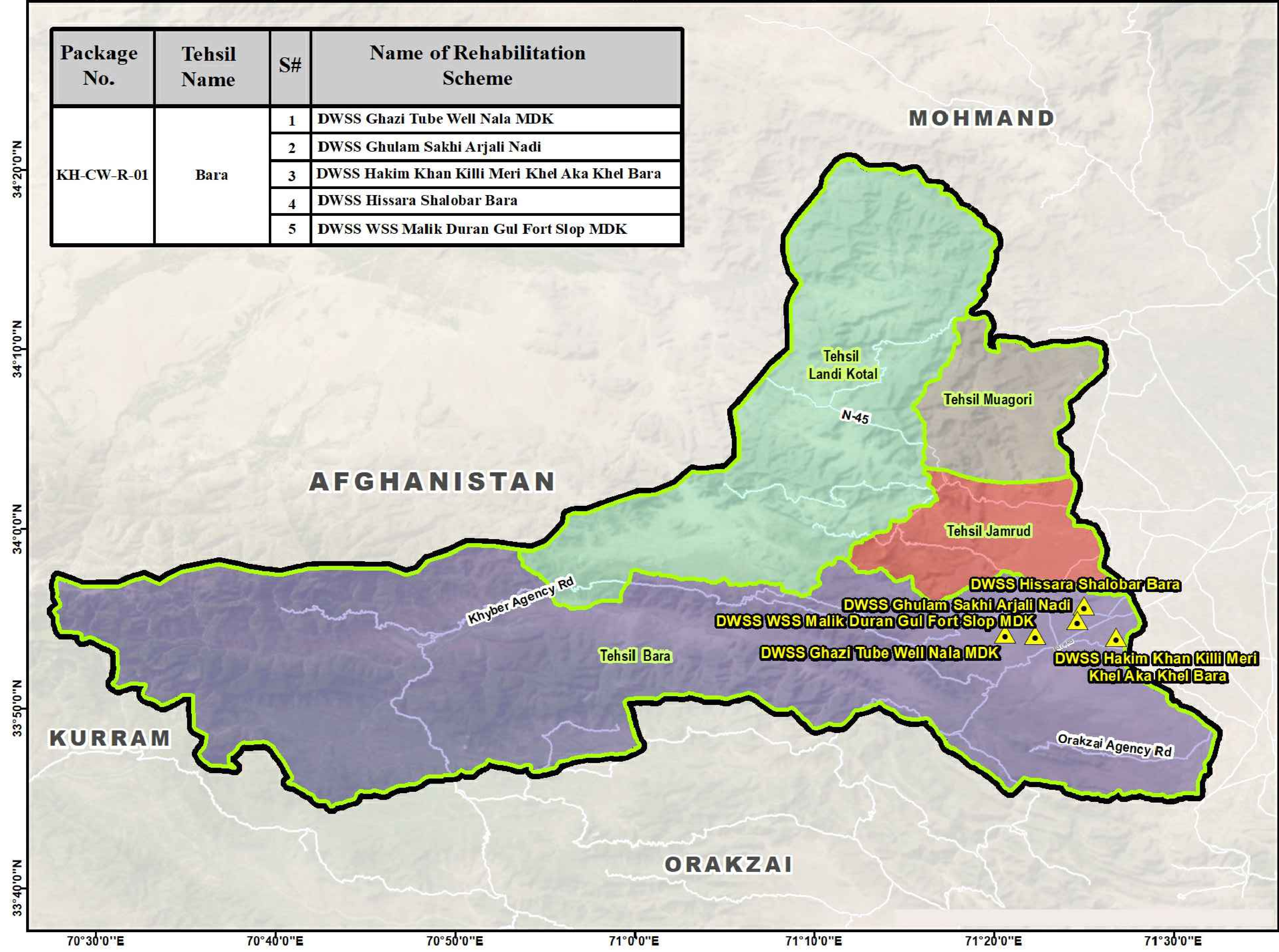
1. FOLLOWING NOTES SHALL IN GENERAL APPLY TO ALL MECHANICAL EQUIPMENTS IN THE DRAWINGS. THE INSTRUCTIONS IN THESE NOTES SHALL BE FOLLOWED UNLESS STATED OTHERWISE.
  2. THESE NOTES SHALL BE APPLICABLE TO THE ENTIRE MECHANICAL WORKS. IF THE SITE CONDITIONS NECESSITATE ANY ALTERATIONS OR DEVIATIONS, THE DIRECTIONS OF THE ENGINEER SHALL BE OBSERVED AS FINAL INSTRUCTIONS.
  3. ALL MECHANICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL, ELECTRICAL DRAWINGS & ALL OTHER RELEVANT DETAILS.
  4. DIMENSIONS/MEASUREMENTS GIVEN IN LAYOUT AND DETAILED DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALCULATE THE ACTUAL DIMENSIONS/MEASUREMENTS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS, STRUCTURAL AND ARCHITECTURAL DRAWINGS.
  5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH ALL RELEVANT DETAILS TO THE ENGINEER FOR APPROVAL ACCORDING TO THE GENERAL CONDITIONS OF CONTRACT WELL IN TIME BEFORE COMMENCEMENT OF THAT WORK.
  6. PROPER CO-ORDINATION OF MECHANICAL WORKS WITH OTHER SERVICES SHALL BE CARRIED OUT AT SITE.
  7. EQUIPMENT SHALL BE INSTALLED IN CO-ORDINATION WITH THE RELEVANT DRAWINGS OF OTHER SERVICES, SUCH AS ELECTRICAL SYSTEM, PLUMBING ETC. THE LOCATION OF MECHANICAL EQUIPMENT ON DRAWINGS IS ONLY INDICATIVE.
  8. ARRANGEMENT OF MECHANICAL EQUIPMENTS ON THE DRAWINGS ARE TENTATIVE. EXACT ARRANGEMENT OF EQUIPMENTS SHALL BE MADE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS, AND, IN VIEW OF ITS PHYSICAL DIMENSIONS AND EASE OF MAINTENANCE.
  9. ANY PIPING, PLUMBING AND OTHER TYPE OF CONFLICTS WOULD BE AVOIDED. FINAL ARRANGEMENTS SHALL BE FREE OF SUCH CONFLICTS, AS PER MANUFACTURER'S RECOMMENDATIONS AND AS PER ENGINEER'S DECISION.
  10. ALL PIPES, APPURTENANCES AND PLUMBING AFTER INSTALLATION SHALL BE HYDROSTATICALLY TESTED AT 1.5 TIMES WORKING PRESSURE, AS PER STANDARDS. ANY LEAKAGE SHALL REQUIRE PROPER DISASSEMBLY AND REPLACEMENT OR REPAIR, AS PER STANDARDS AND AS PER DIRECTIONS OF THE ENGINEER.
  11. LOCATION OF PUMPS AND OTHER EQUIPMENT (DISTANCE FROM THE WALL, CENTER TO CENTER DISTANCE, ETC.) SHALL BE RECHECKED WITH THE PUMP MANUFACTURER'S REQUIREMENT.
  12. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY ANY ISSUES REGARDING DISCREPANCIES IN THE DRAWING AND SHARE SUCH ISSUES WITH THE ENGINEER BEFORE EXECUTION OF WORKS.
- 15. MICS :**
1. THE DISTANCE BETWEEN WATER SUPPLY PIPES & SEWER PIPES SHALL BE AT LEAST 9 FEET HORIZONTALLY AND 1.5 FEET VERTICALLY. IF DUE TO SPACE CONSTRAINT THIS DISTANCE CANNOT BE MAINTAINED, MAXIMUM FEASIBLE DISTANCE WILL BE FINALIZED BY THE ENGINEER.
  2. USE FIELD MEASUREMENTS TO VERIFY DIMENSIONS WHERE AREAS ARE CONGESTED AND EXACT LOCATION IS CRITICAL.
  3. THE LOCATION OF FIXTURES AND PIPES ARE SCHEMATIC. EXACT LOCATION TO BE INDICATED ON SHOP DRAWING DULY CO-ORDINATE WITH OTHER WORKS AND CROSS CHECKED WITH ARCHITECTURAL DRAWING.
  4. PROVIDE AIR RELEASE VALVES AT ALL HIGH POINTS IN THE PIPING SYSTEM.
  5. THE INVERT LEVEL OF ENTIRE MANHOLE TO BE VERIFIED ON SITE.
  6. THE CONTRACTOR SHALL CAREFULLY RECORD ALL CHANGES DURING THE PROGRESS OF WORK AND 3 SETS OF AS-BUILT DRAWINGS (SOFT & HARD COPIES) SHOWING EXACT ROUTES OF ALL PIPES & FIXTURES AND SAME SHALL BE SUBMITTED TO THE CLIENT / CONSULTANT.
  7. CONTRACTOR SHALL BE SUBMITTED THE SHOP DRAWINGS TO ENGINEER FOR APPROVAL BEFORE STARTING WORK AT SITE.
  8. THE CONTRACTOR SHALL RECORD ALL TEST RESULTS AND SUBMITTED THE SAME TO THE CONSULTANT.
  9. PIPES SHALL BE TESTED HYDROLOGICALLY @ 1.5 TIMES OF WORKING PRESSURE; PIPE SHALL BE WATCHED FOR 12 HOURS FOR ANY DROP IN PRESSURE AND ANY VISIBLE LEAKS.
  10. ANY PIPE SHOWING LEAKS OR PRESSURE DROP BEYOND 5 PSI SHALL BE REJECTED.
  11. ALL OPENINGS IN THE DRAINAGE PIPING SYSTEM SHALL BE CLOSED AND WATER SHALL BE RUN INTO THE PIPES AND THE TEST PRESSURE AT THE LOWERED END SHALL BE BUILT UP BY OPERATING FORCE PUMP

CLIENT :  PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA	CONSULTANT:  Techno-Consult International JV  Ultimate Engineering Consultants New Era of Development	PROJECT: KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA	DRAWING TITLE : EXISTING REHAB SCHEMES DISTRICT KHYBER GENERAL NOTES (SHEET 4 OF 4)	Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.	Revision	By	Date
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				Checked By : RABEEA REHMAN	Drawing No :				
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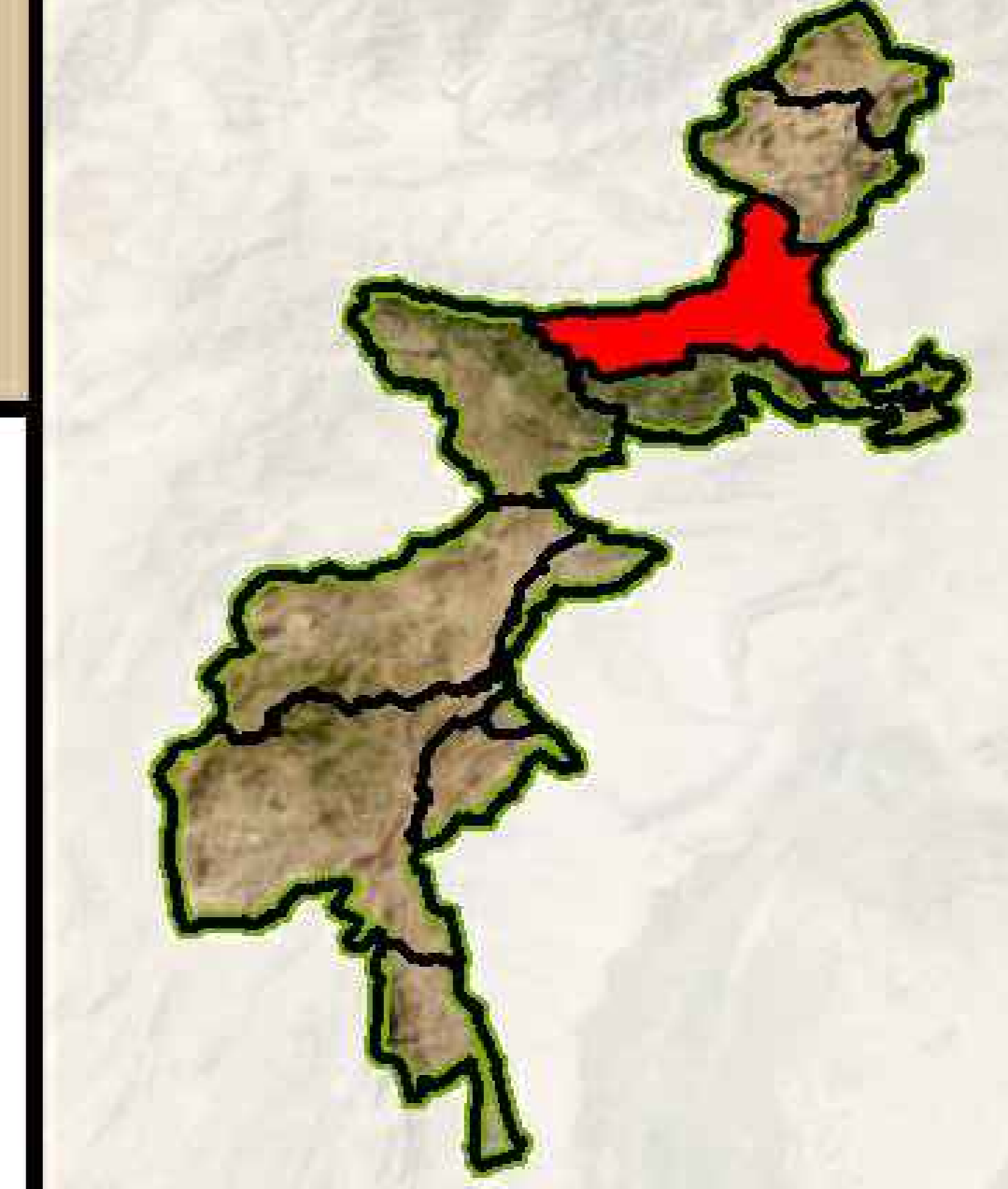
# GOVERNMENT REHABILITATION SANITATION SCHEMES CIVIL WORKS PACKAGE NO - KH-CW-R-01, TEHSIL BARA- DISTRICT KHYBER

70°30'0"E      70°40'0"E      70°50'0"E      71°0'0"E      71°10'0"E      71°20'0"E      71°30'0"E

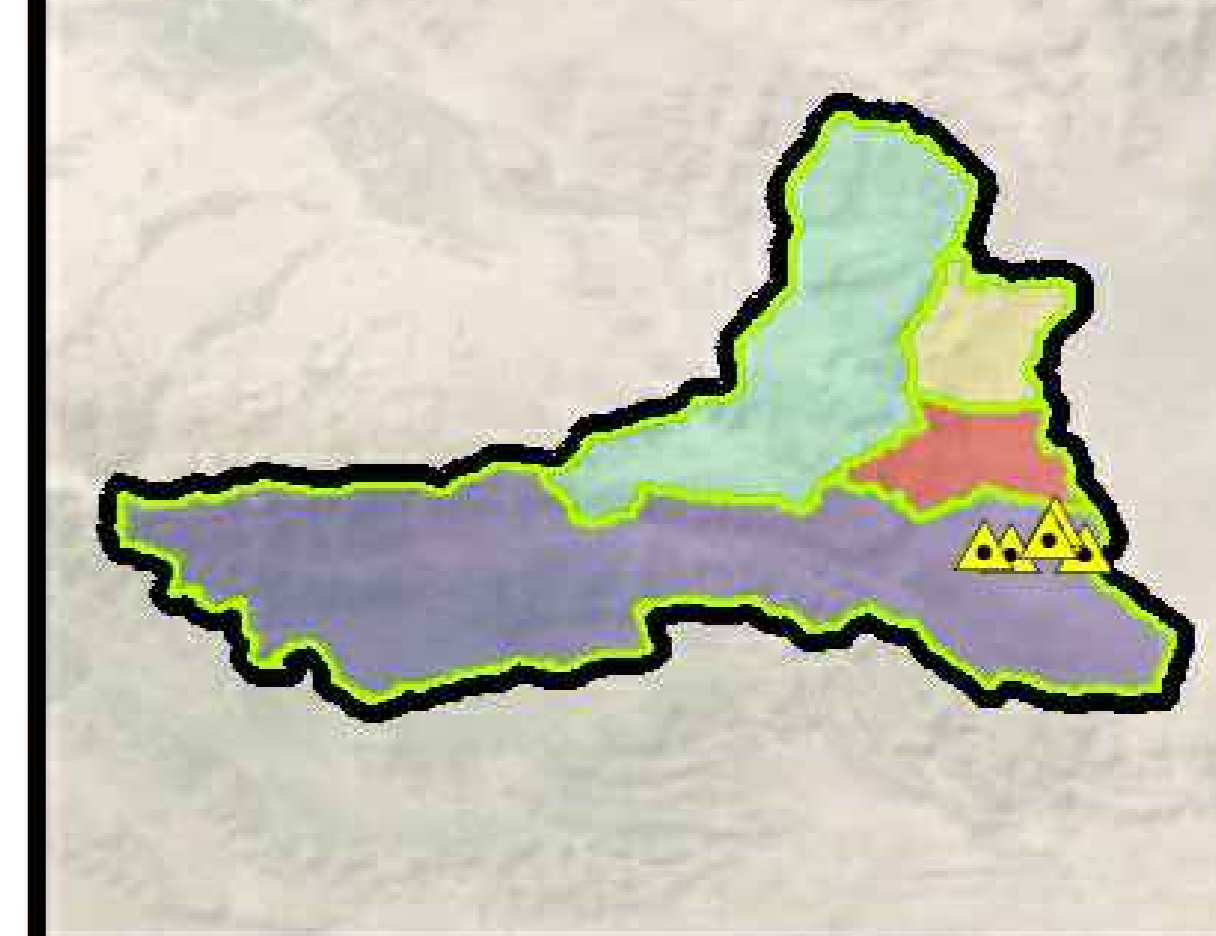
Package No.	Tehsil Name	S#	Name of Rehabilitation Scheme
KH-CW-R-01	Bara	1	DWSS Ghazi Tube Well Nala MDK
		2	DWSS Ghulam Sakhi Arjali Nadi
		3	DWSS Hakim Khan Killi Meri Khel Aka Khel Bara
		4	DWSS Hissara Shalobar Bara
		5	DWSS WSS Malik Duran Gul Fort Slop MDK



Key Map:



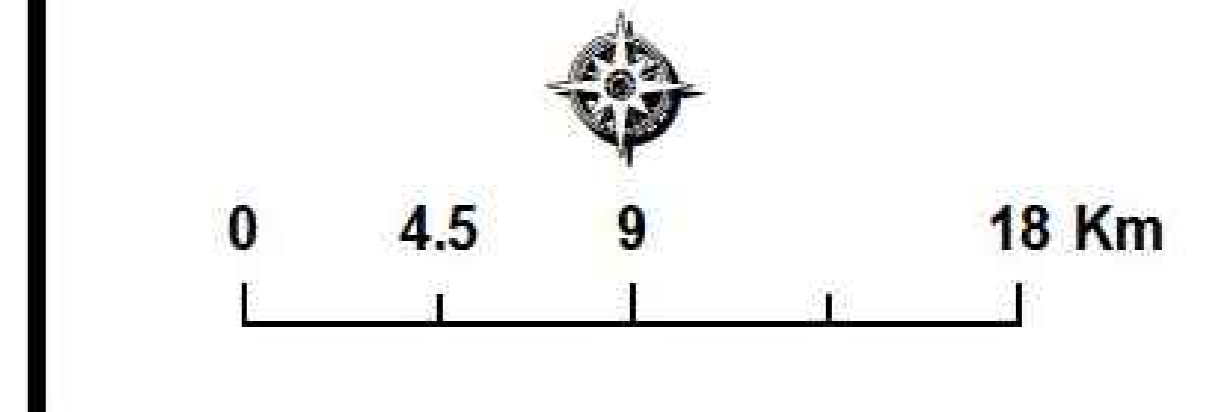
Key Map 1:



Legend :

- ▲ Sanitation Schemes
- District Boundary
- Tehsil Boundary
- Road Network

Scale :



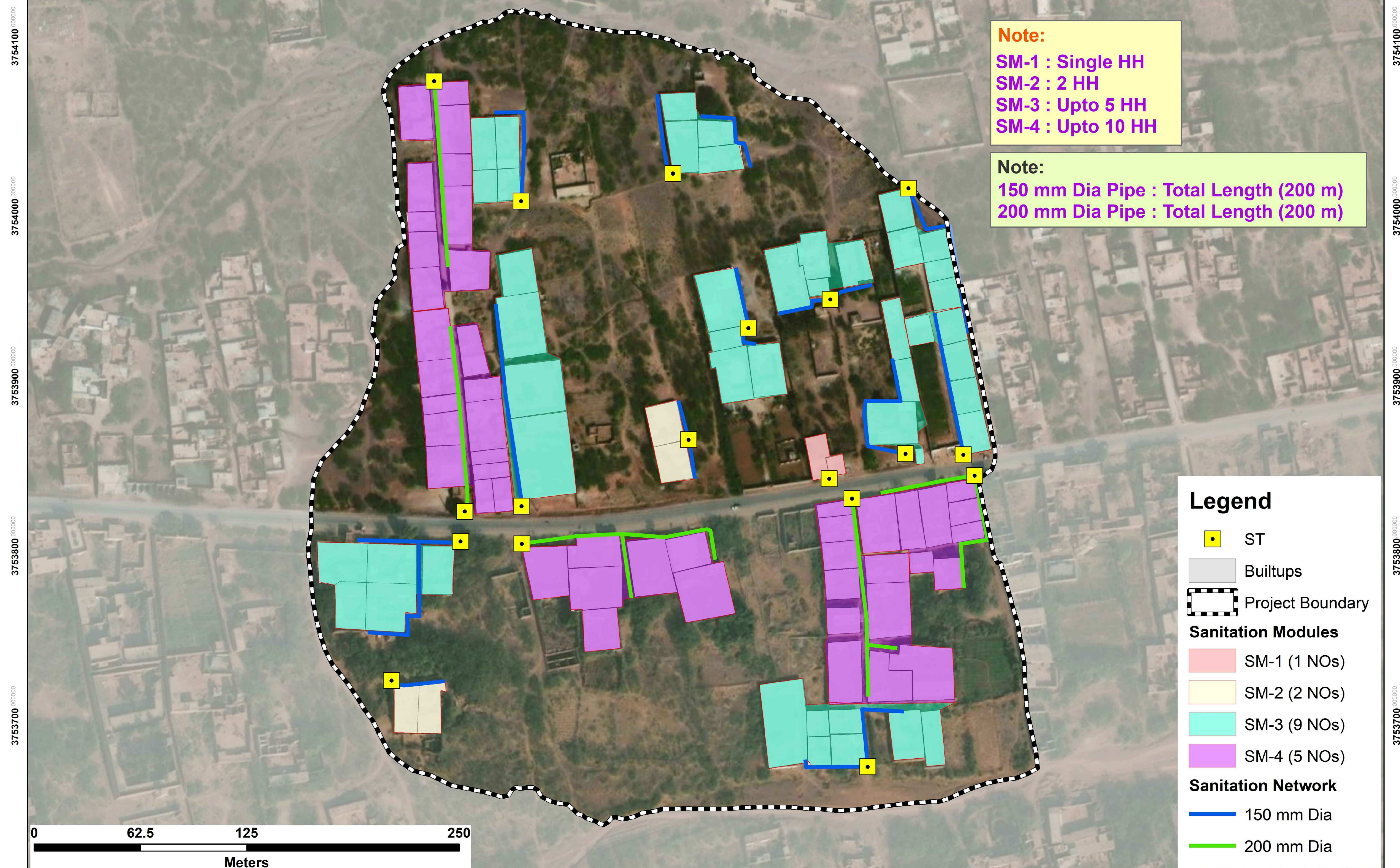
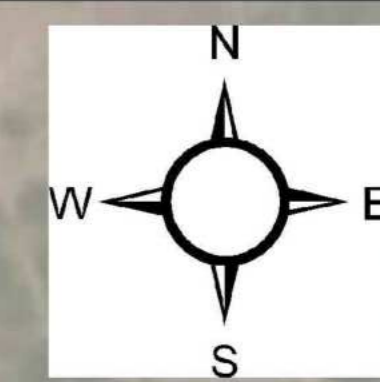
Consultants :

**Techno-Consult  
International**

**Ultimate  
Engineering  
Consultants**  
New Era of Development

<p>CLIENT :</p> <p>PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA</p>	<p>CONSULTANT:</p>	<p>PROJECT:</p> <p>KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA</p>	<p>DRAWING TITLE :</p> <p style="text-align: center;">LOCATION MAP</p>	<p>Designed By : Dr. ASFAHAN ALI</p> <p>Drawn By : NAEEM BAKHSH</p> <p>Checked By : RABEEA REHMAN</p> <p>Approved By : RABEEA REHMAN</p>	<p>Date : MAR 2026</p> <p>Scale : N.T.S</p> <p>Drawing No : KPR/REH/KH-CW-R-01</p>		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>Revision</th> <th>By</th> <th>Date</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	No.	Revision	By	Date												
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# Map Showing Sanitation Modules of Malik Doran Gul Fort Slop MDK, District Khyber

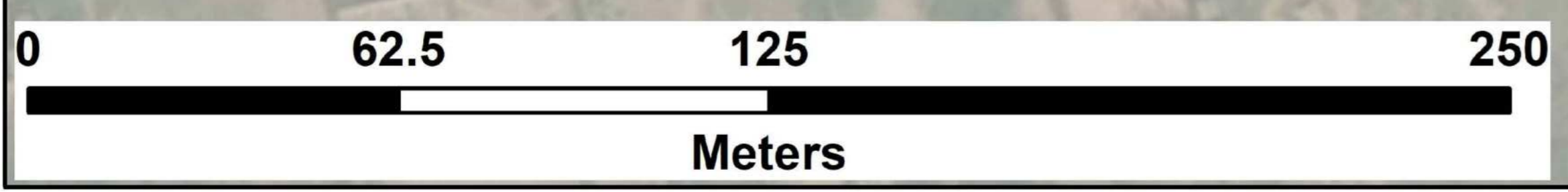


**Note:**  
 SM-1 : Single HH  
 SM-2 : 2 HH  
 SM-3 : Upto 5 HH  
 SM-4 : Upto 10 HH

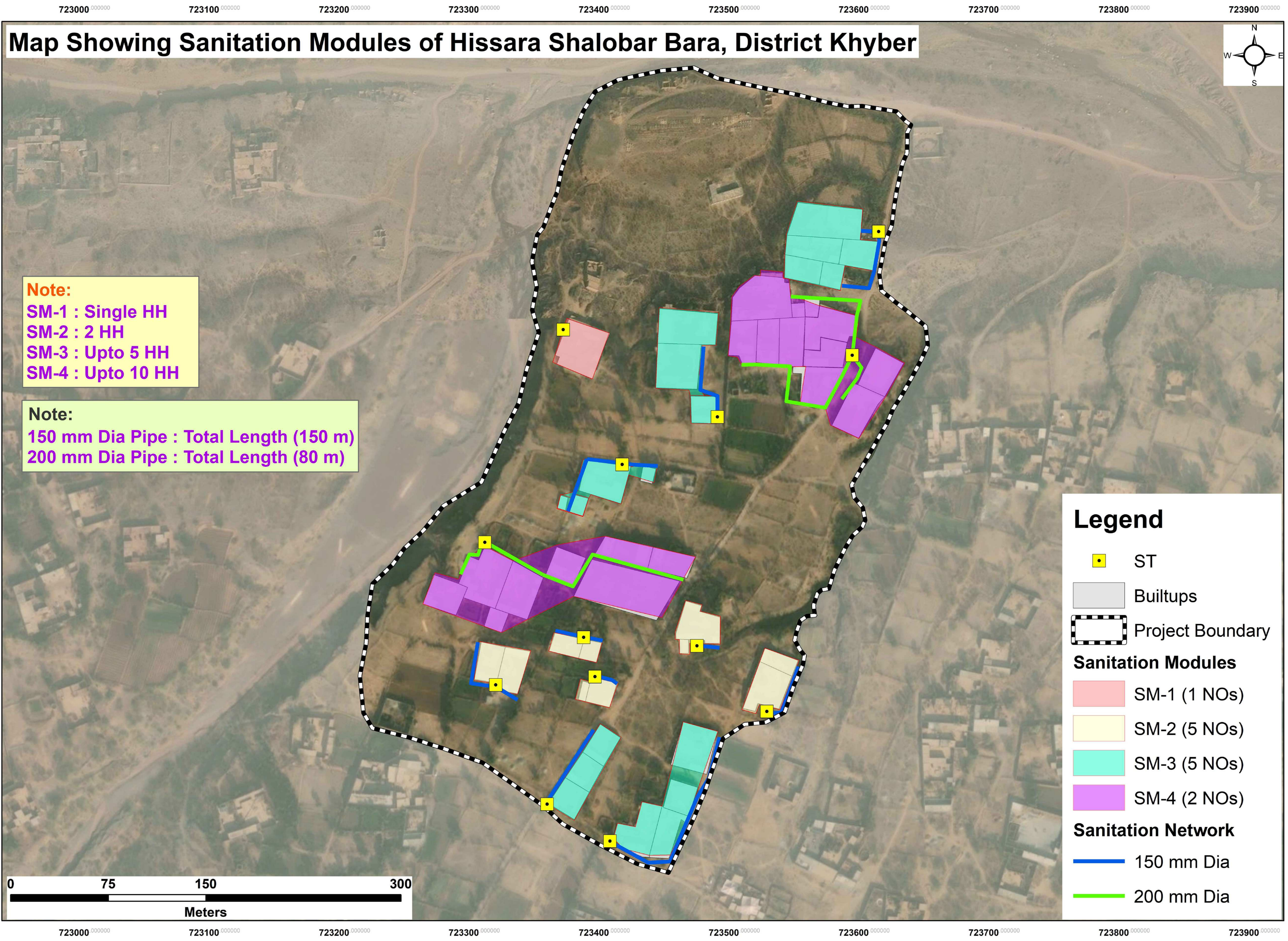
**Note:**  
 150 mm Dia Pipe : Total Length (200 m)  
 200 mm Dia Pipe : Total Length (200 m)

**Legend**

- ST
- Builtups
- Project Boundary
- Sanitation Modules**
- SM-1 (1 NOs)
- SM-2 (2 NOs)
- SM-3 (9 NOs)
- SM-4 (5 NOs)
- Sanitation Network**
- 150 mm Dia
- 200 mm Dia



CLIENT : PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA	CONSULTANT: JV Ultimate Engineering Consultants <small>New Era of Development</small>	PROJECT: KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA	DRAWING TITLE : SANITATION COMP. LAYOUT MAP MALIK DORAN GUL	Designed By : Dr. ASFAHAN ALI Drawn By : NAEEM BAKHSH Checked By : RABEEA REHMAN Approved By : RABEEA REHMAN	Date : MAR 2026 Scale : N.T.S Drawing No : KPR/REH/KHD/-2301	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>Revision</th> <th>By</th> <th>Date</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	No.	Revision	By	Date																
No.	Revision	By	Date																							



**Note:**  
 SM-1 : Single HH  
 SM-2 : 2 HH  
 SM-3 : Upto 5 HH  
 SM-4 : Upto 10 HH

**Note:**  
 150 mm Dia Pipe : Total Length (150 m)  
 200 mm Dia Pipe : Total Length (80 m)

### Legend

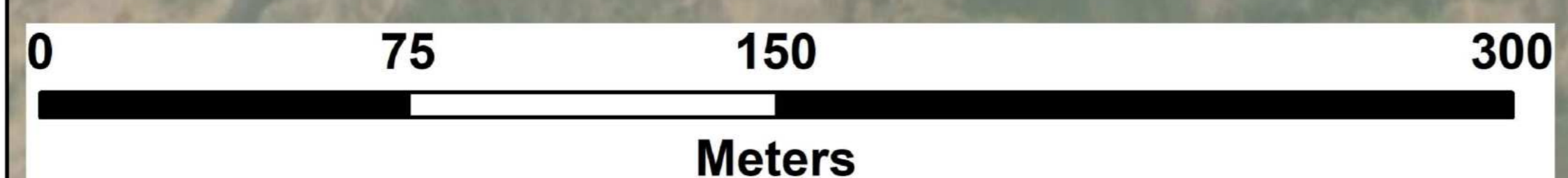
- ST
- Builtups
- Project Boundary

**Sanitation Modules**

- SM-1 (1 NOs)
- SM-2 (5 NOs)
- SM-3 (5 NOs)
- SM-4 (2 NOs)

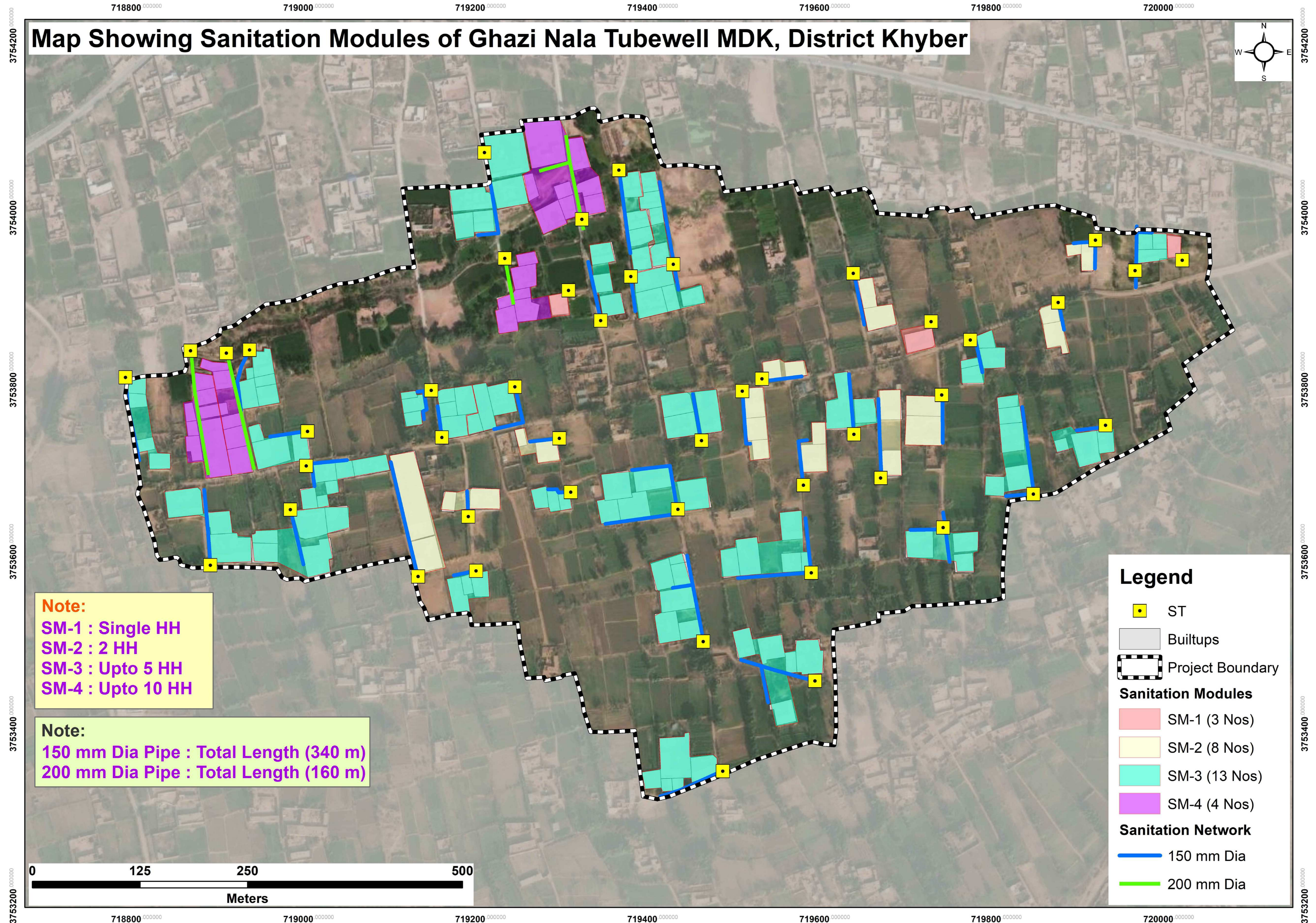
**Sanitation Network**

- 150 mm Dia
- 200 mm Dia



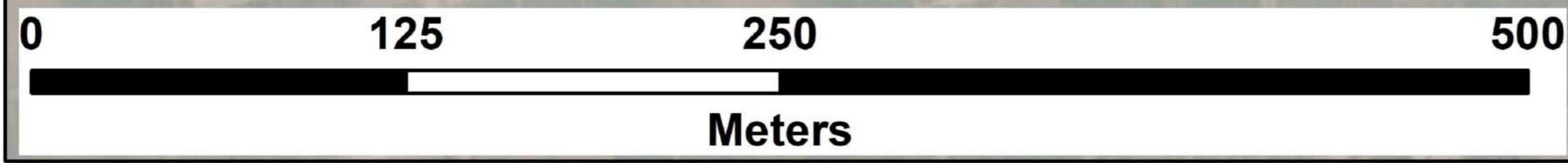
CLIENT :  PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA	CONSULTANT:  Techno-Consult International JV Ultimate Engineering Consultants <small>New Era of Development</small>	PROJECT: KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA	DRAWING TITLE : SANITATION COMP. LAYOUT MAP HISSARA SHALOBAR BARA	Designed By : Dr. ASFAHAN ALI	Date : MAR 2026						
				Drawn By : NAEEM BAKHSH	Scale : N.T.S						
				Checked By : RABEEA REHMAN	Drawing No :						
				Approved By : RABEEA REHMAN	KPR/REH/KHD/-2302						


# Map Showing Sanitation Modules of Ghazi Nala Tubewell MDK, District Khyber





**Note:**  
 SM-1 : Single HH  
 SM-2 : 2 HH  
 SM-3 : Upto 5 HH  
 SM-4 : Upto 10 HH

**Note:**  
 150 mm Dia Pipe : Total Length (340 m)  
 200 mm Dia Pipe : Total Length (160 m)



CLIENT :  
  
 PUBLIC HEALTH  
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 KHYBER PAKHTUNKHWA

CONSULTANT:  
 **Techno-Consult International**  
 **Ultimate Engineering Consultants**  
 JV  
 New Era of Development

PROJECT:  
 KPRIISP - DESIGN REVIEW AND  
 CONSTRUCTION SUPERVISION FOR  
 WATER SUPPLY, SEWERAGE, DRAINAGE  
 AND WASTE WATER TREATMENT  
 PROJECT IN NEWLY MERGED DISTRICTS  
 OF KHYBER PAKHTUNKHWA

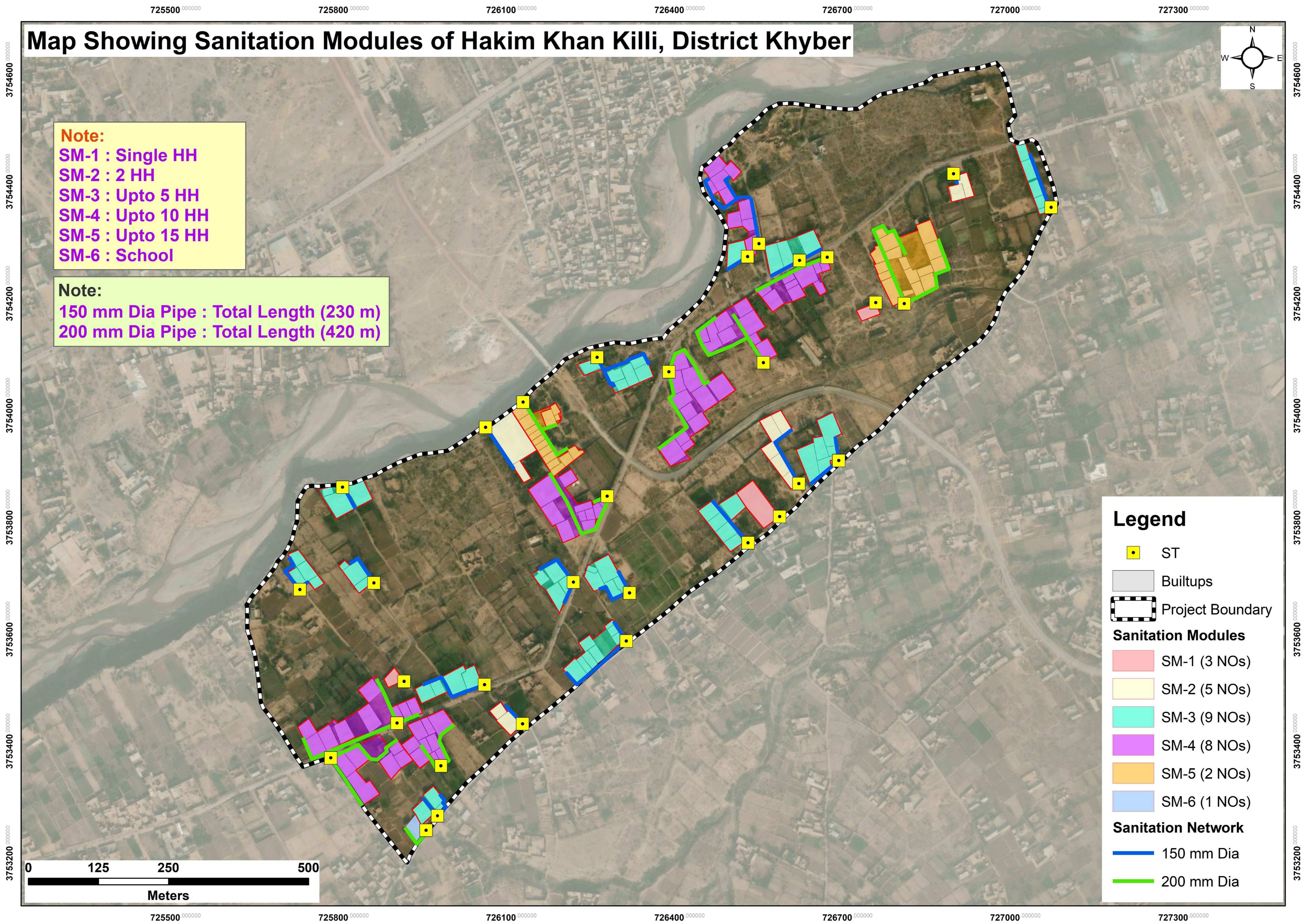
DRAWING TITLE :  
 SANITATION COMP.  
 LAYOUT MAP  
 GHAZI NALA

Designed By : Dr. ASFAHAN ALI  
 Drawn By : NAEEM BAKHSH  
 Checked By : RABEEA REHMAN  
 Approved By : RABEEA REHMAN

Date : MAR 2026  
 Scale : N.T.S  
 Drawing No :  
 KPR/REH/KHD/-2303

No.	Revision	By	Date

# Map Showing Sanitation Modules of Hakim Khan Killi, District Khyber



**Note:**  
 SM-1 : Single HH  
 SM-2 : 2 HH  
 SM-3 : Upto 5 HH  
 SM-4 : Upto 10 HH  
 SM-5 : Upto 15 HH  
 SM-6 : School

**Note:**  
 150 mm Dia Pipe : Total Length (230 m)  
 200 mm Dia Pipe : Total Length (420 m)

**Legend**

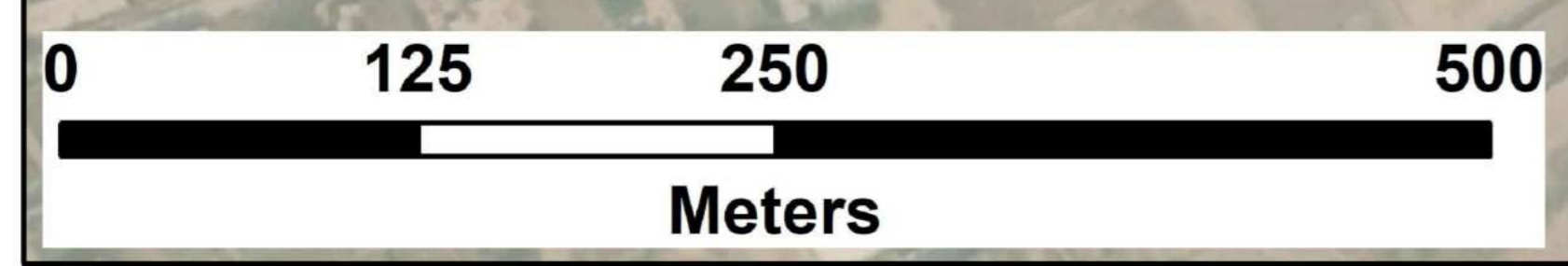
- ST
- Builtups
- Project Boundary

**Sanitation Modules**

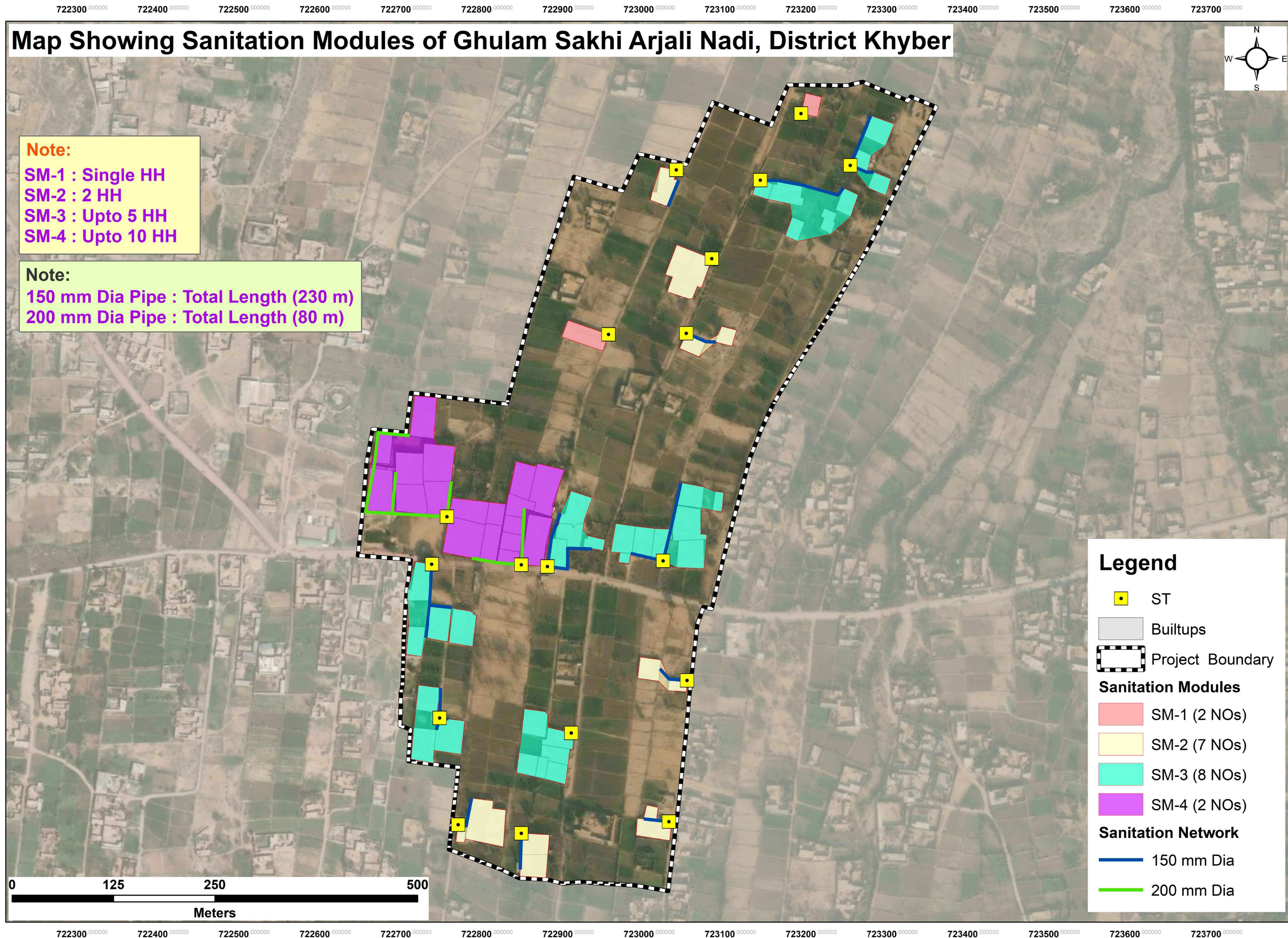
- SM-1 (3 NOs)
- SM-2 (5 NOs)
- SM-3 (9 NOs)
- SM-4 (8 NOs)
- SM-5 (2 NOs)
- SM-6 (1 NOs)


**Sanitation Network**


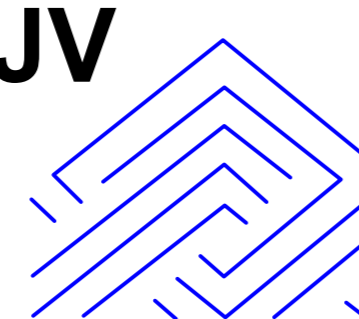
- 150 mm Dia
- 200 mm Dia



CLIENT : PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA	CONSULTANT: JV Ultimate Engineering Consultants <small>New Era of Development</small>	PROJECT: KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA	DRAWING TITLE : SANITATION COMP. LAYOUT MAP HAKIM KHAN KILLI	Designed By : Dr. ASFAHAN ALI Drawn By : NAEEM BAKHSH Checked By : RABEEA REHMAN Approved By : RABEEA REHMAN	Date : MAR 2026 Scale : N.T.S Drawing No : KPR/REH/KHD/-2304					
						No.	Revision	By	Date	



CLIENT :  

 PUBLIC HEALTH  
 ENGINEERING DEPARTMENT  
 KHYBER PAKHTUNKHWA

CONSULTANT:  

**Techno-Consult**  
*International*  

**Ultimate**  
**Engineering**  
**Consultants**  
 New Era of Development

PROJECT:  
 KPRIISP - DESIGN REVIEW AND  
 CONSTRUCTION SUPERVISION FOR  
 WATER SUPPLY, SEWERAGE, DRAINAGE  
 AND WASTE WATER TREATMENT  
 PROJECT IN NEWLY MERGED DISTRICTS  
 OF KHYBER PAKHTUNKHWA

DRAWING TITLE :  
 SANITATION COMP.  
 LAYOUT MAP  
 GHULAM SAKHI

Designed By : Dr. ASFAHAN ALI  
 Drawn By : NAEEM BAKHSH  
 Checked By : RABEEA REHMAN  
 Approved By : RABEEA REHMAN

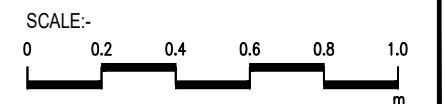
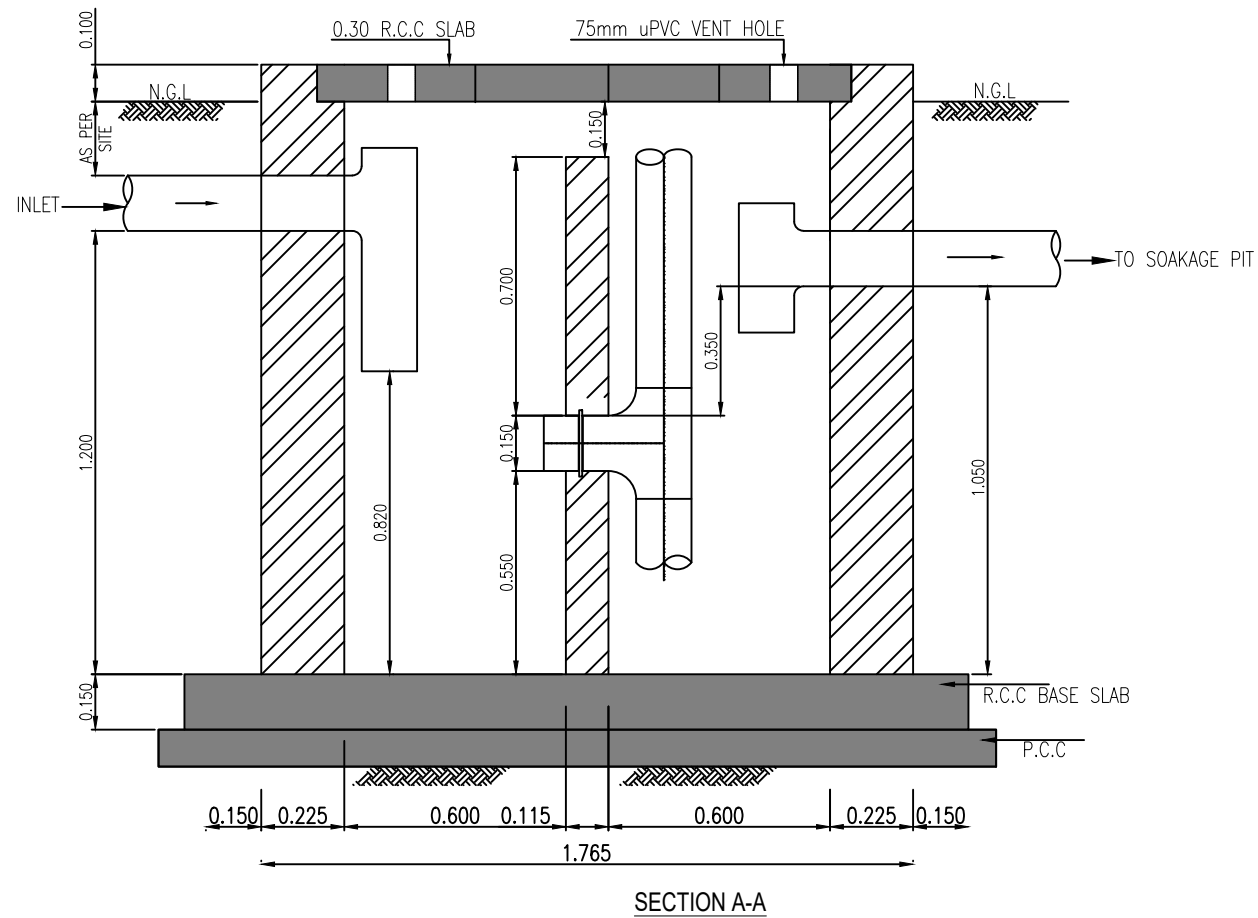
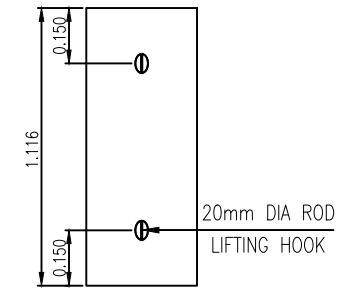
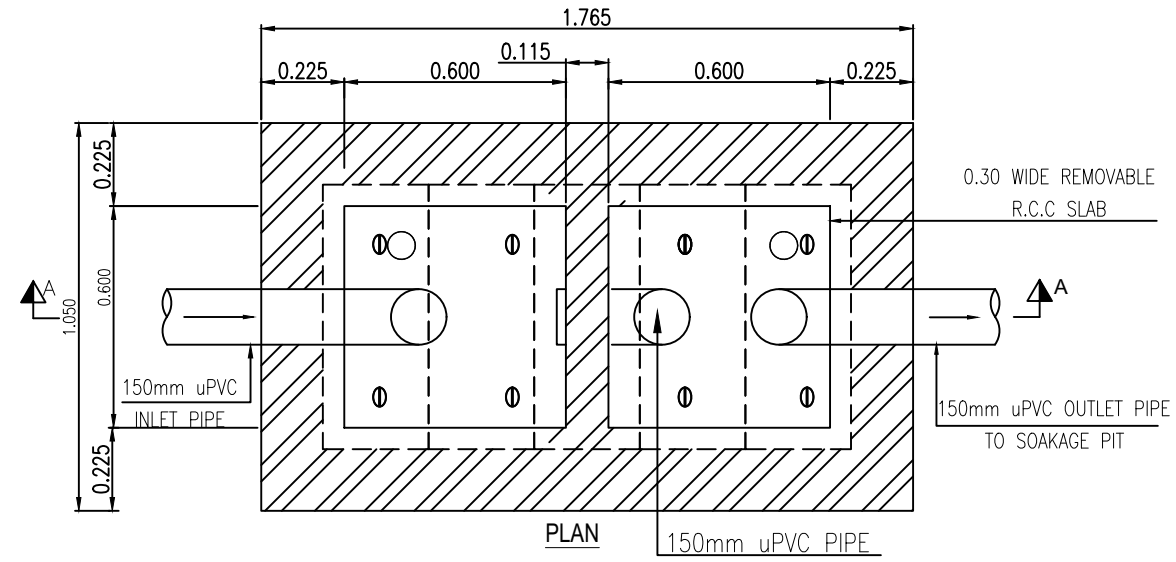
Date : MAR 2026  
 Scale : N.T.S  
 Drawing No :  
 KPR/REH/KHD/-2305

No.	Revision	By	Date

**SANITATION COMPONENT ( REHABILITATION )  
ARCHITECTURAL & STRUCTURAL DRAWINGS**

NOTES:

1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.



CLIENT :  
**PUBLIC HEALTH ENGINEERING DEPARTMENT**  
**KHYBER PAKHTUNKHWA**

CONSULTANT:  
**Techno-Consult International**  
 JV  
 Ultimate Engineering Consultants  
 New Era of Development

PROJECT:  
**KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA**

DRAWING TITLE :  
**EXISTING REHAB SCHEMES DISTRICT KHYBER SEPTIC TANK TYPE-I (01 HOUSE) PLAN AND SECTION**

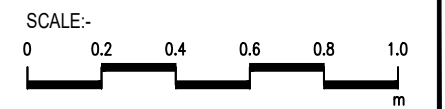
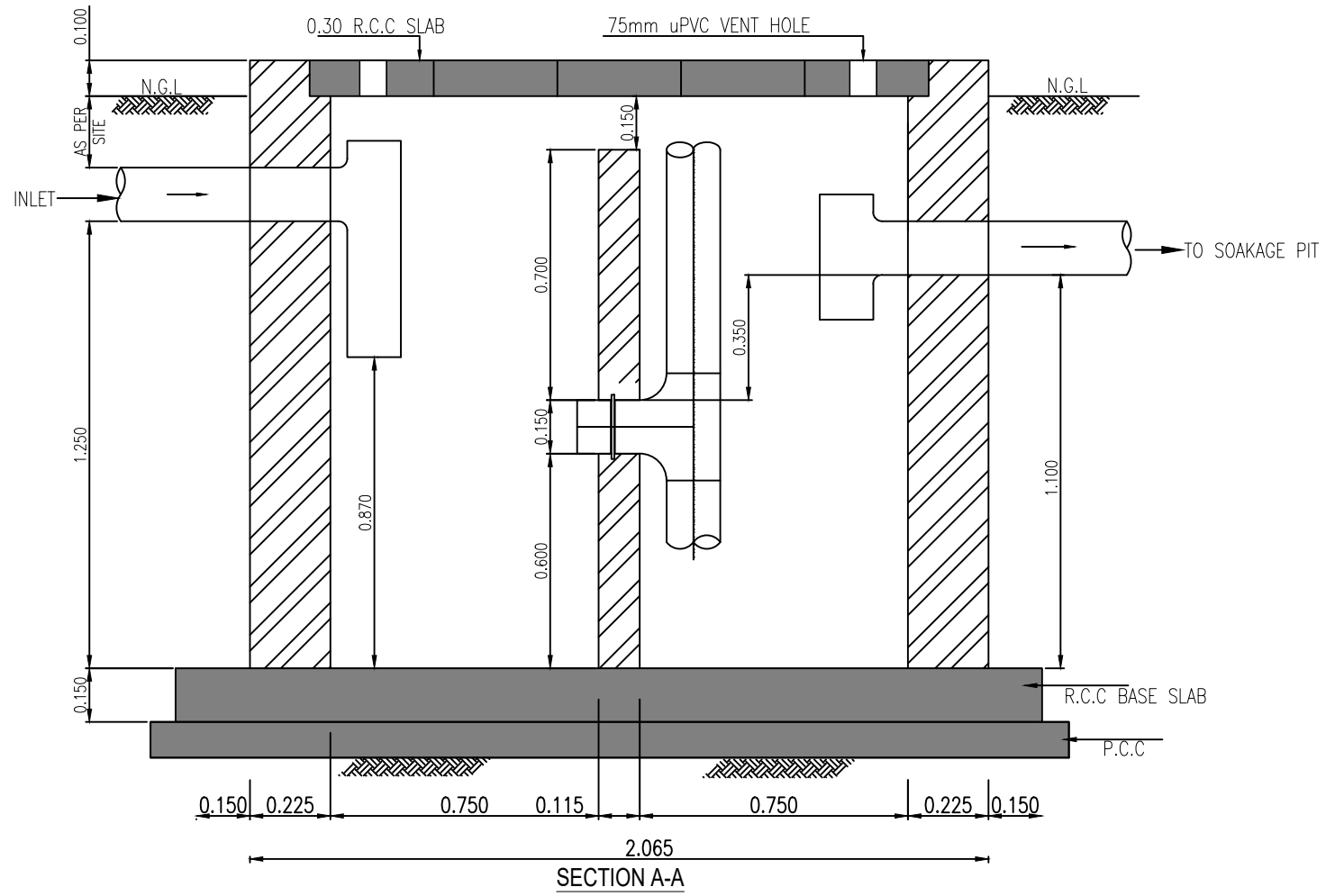
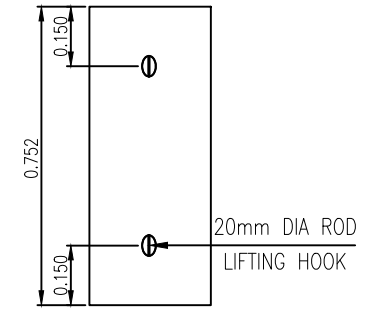
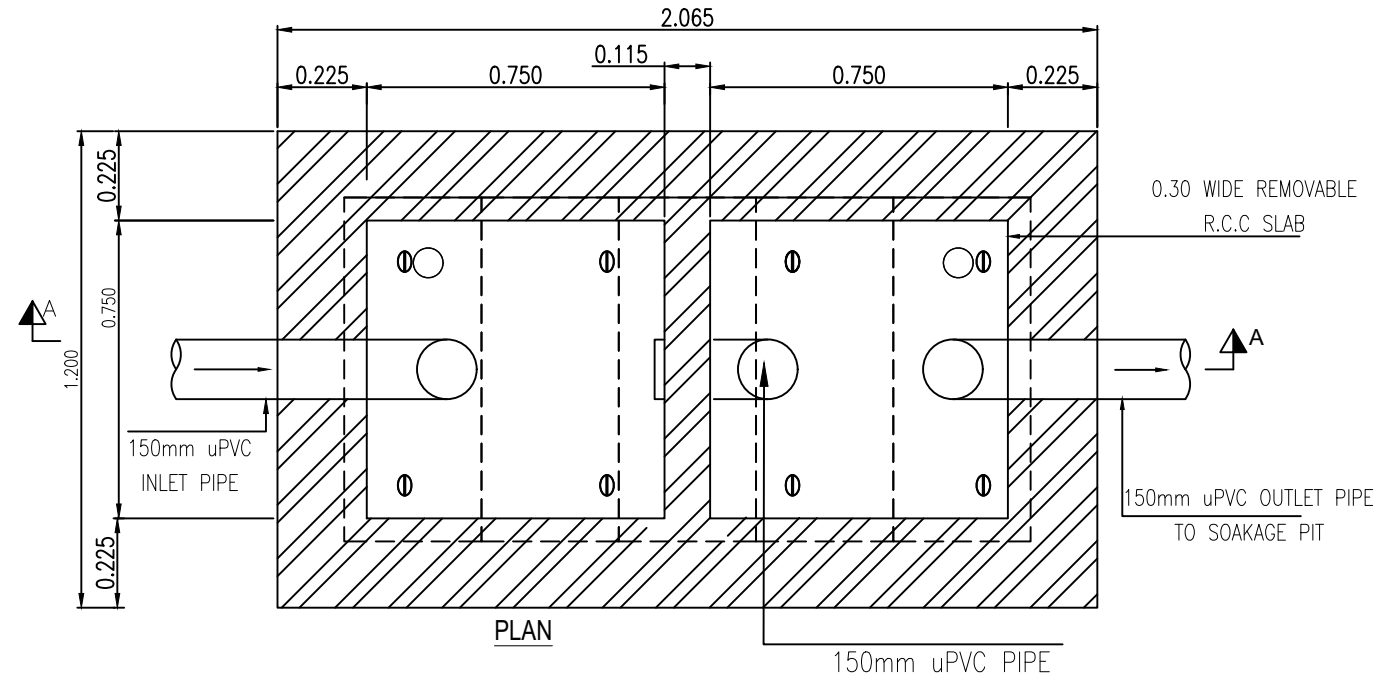
Designed By : Dr. ASFAHAN ALI  
 Drawn By : NAEEM BAKHSH  
 Checked By : RABEEA REHMAN  
 Approved By : RABEEA REHMAN

Date : MAR 2026  
 Scale : AS SHOWN  
 Drawing No :  
 KPR/REH/KHD/-2401

No.	Revision	By	Date

NOTES:

1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.



CLIENT :

**PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA**

CONSULTANT:

**Techno-Consult International JV**

Ultimate Engineering Consultants  
New Era of Development

PROJECT:

**KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA**

DRAWING TITLE :

**EXISTING REHAB SCHEMES DISTRICT KHYBER SEPTIC TANK TYPE-II (02 HOUSES) PLAN AND SECTION**

Designed By : Dr. ASFAHAN ALI

Drawn By : NAEEM BAKHSH

Checked By : RABEEA REHMAN

Approved By : RABEEA REHMAN

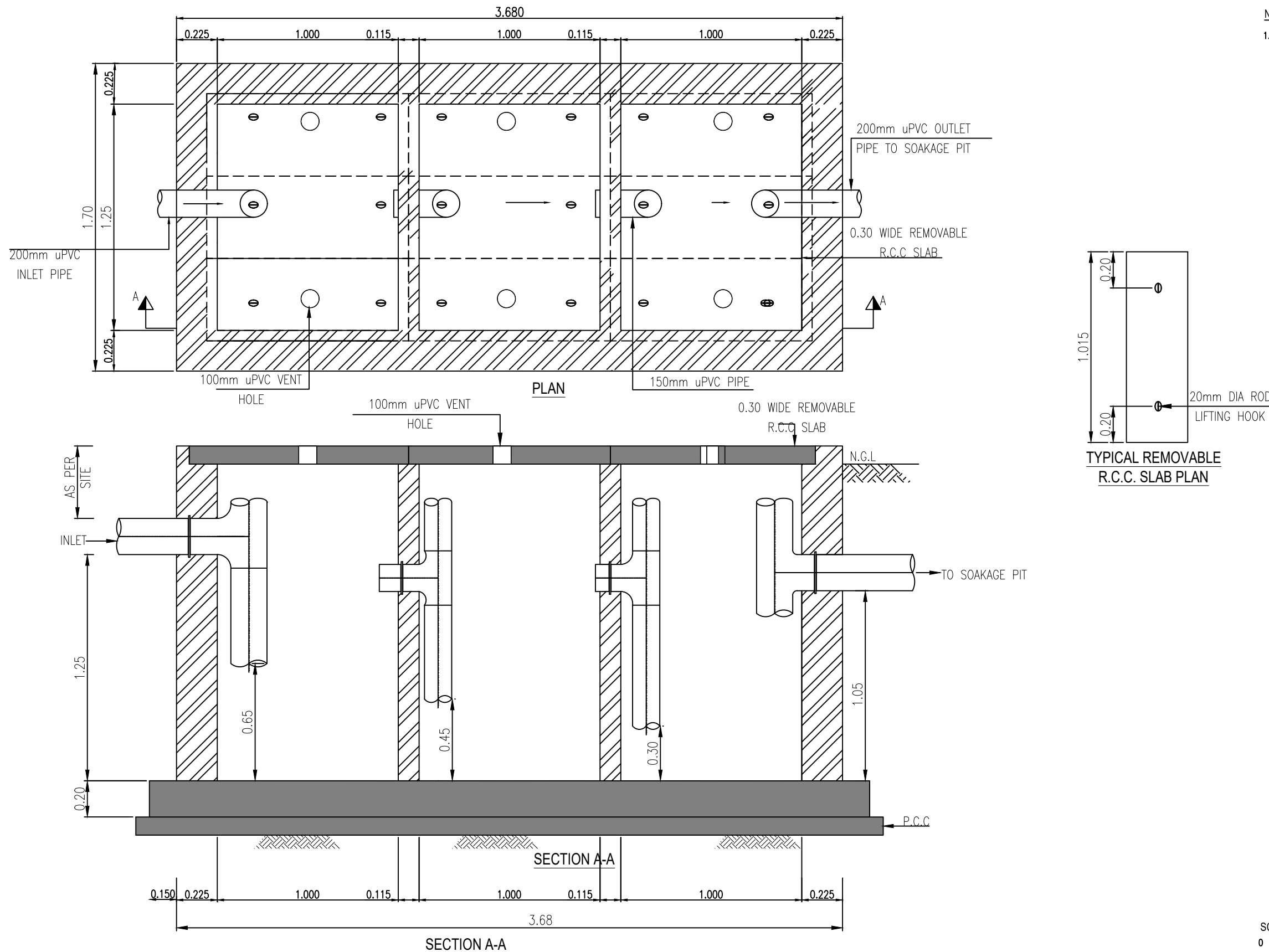
Date : MAR 2026

Scale : AS SHOWN

Drawing No : KPR/REH/KHD/-2402

No.	Revision	By	Date

NOTES:  
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CLIENT :  
**PUBLIC HEALTH  
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 KHYBER PAKHTUNKHWA**

CONSULTANT:  
**Techno-Consult JV**  
 Ultimate Engineering Consultants  
 New Era of Development

PROJECT:  
**KPRIISP - DESIGN REVIEW AND  
 CONSTRUCTION SUPERVISION FOR  
 WATER SUPPLY, SEWERAGE, DRAINAGE  
 AND WASTE WATER TREATMENT  
 PROJECT IN NEWLY MERGED DISTRICTS  
 OF KHYBER PAKHTUNKHWA**

DRAWING TITLE :  
**EXISTING REHAB SCHEMES  
 DISTRICT KHYBER  
 SEPTIC TANK  
 TYPE-III (ABR)  
 (UP TO 05 HOUSES)  
 PLAN AND SECTION**

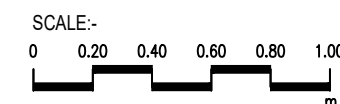
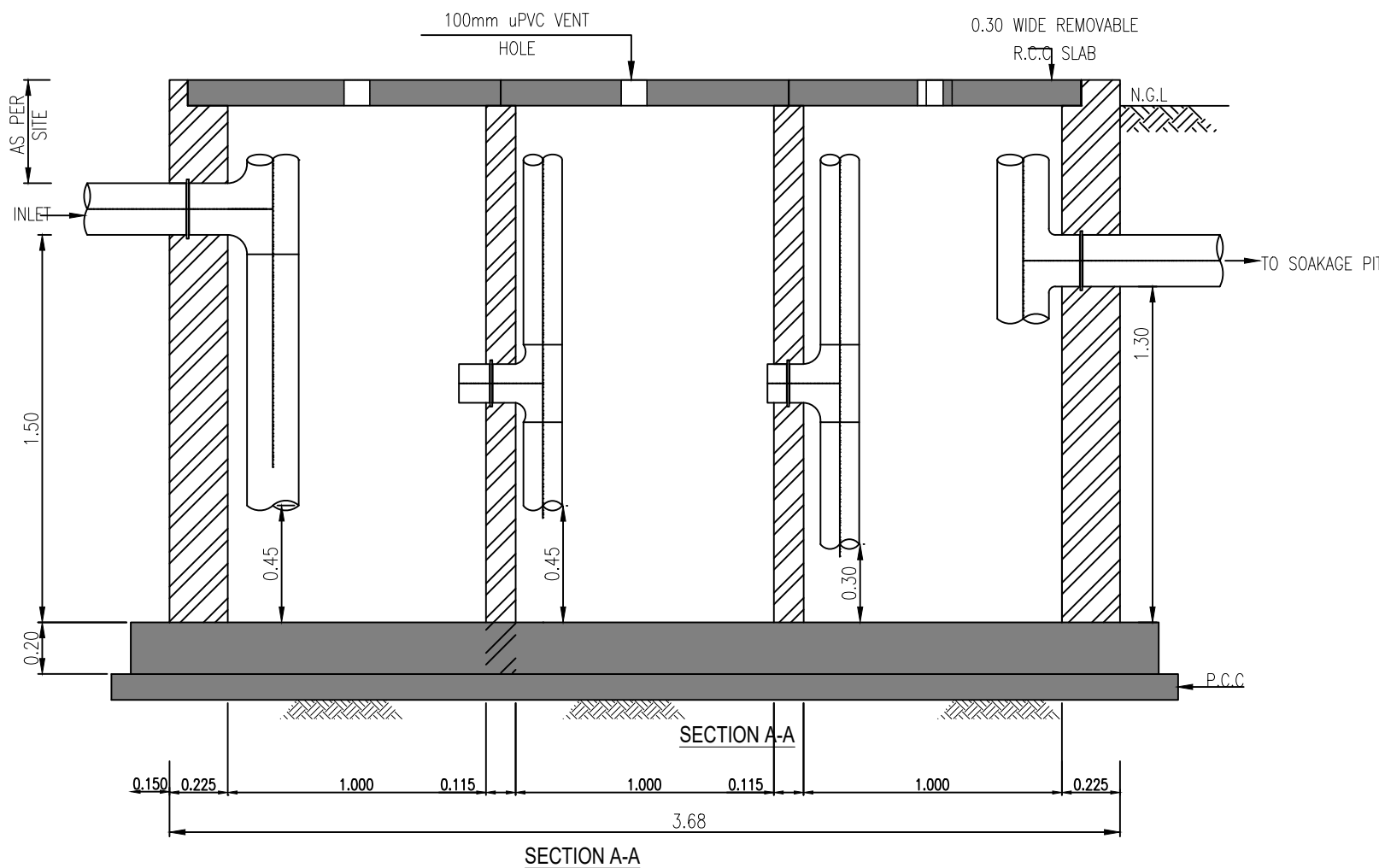
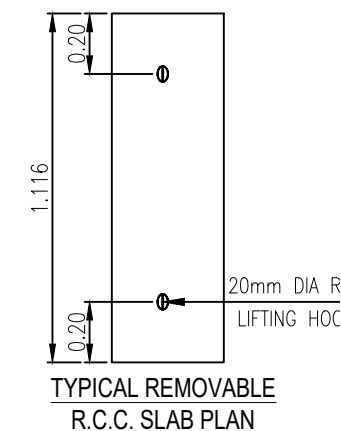
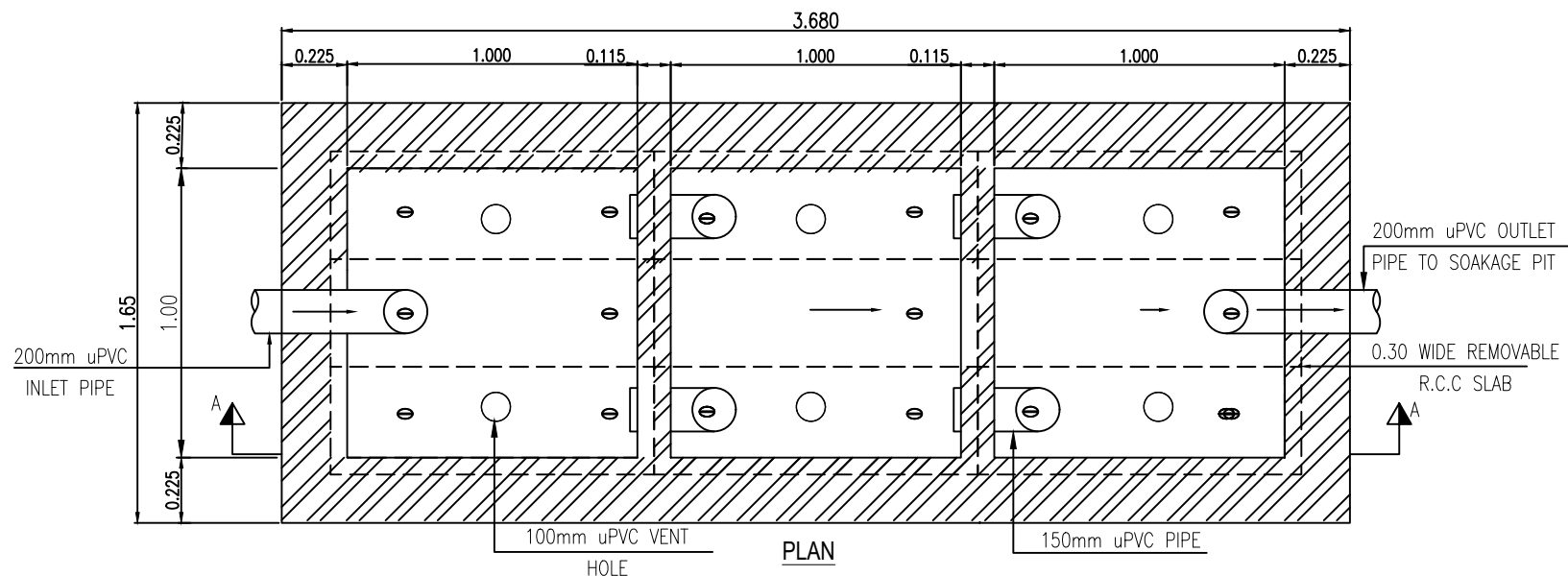
Designed By : Dr. ASFAHAN ALI  
 Drawn By : NAEEM BAKHSH  
 Checked By : RABEEA REHMAN  
 Approved By : RABEEA REHMAN

Date : MAR 2026  
 Scale : AS SHOWN  
 Drawing No :  
 KPR/REH/KHD/-2403

No.	Revision	By	Date

NOTES:

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CLIENT :  
**PUBLIC HEALTH  
 ENGINEERING DEPARTMENT  
 KHYBER PAKHTUNKHWA**

CONSULTANT:  
  
**Techno-Consult  
 International**  
 Ultimate  
 Engineering  
 Consultants  
New Era of Development

PROJECT:  
**KPRIISP - DESIGN REVIEW AND  
 CONSTRUCTION SUPERVISION FOR  
 WATER SUPPLY, SEWERAGE, DRAINAGE  
 AND WASTE WATER TREATMENT  
 PROJECT IN NEWLY MERGED DISTRICTS  
 OF KHYBER PAKHTUNKHWA**

DRAWING TITLE :  
**EXISTING REHAB SCHEMES  
 DISTRICT KHYBER  
 SEPTIC TANK  
 TYPE-IV (ABR)  
 (UP TO 10 HOUSES)  
 PLAN AND SECTION**

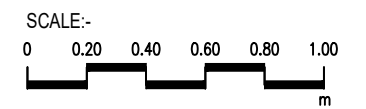
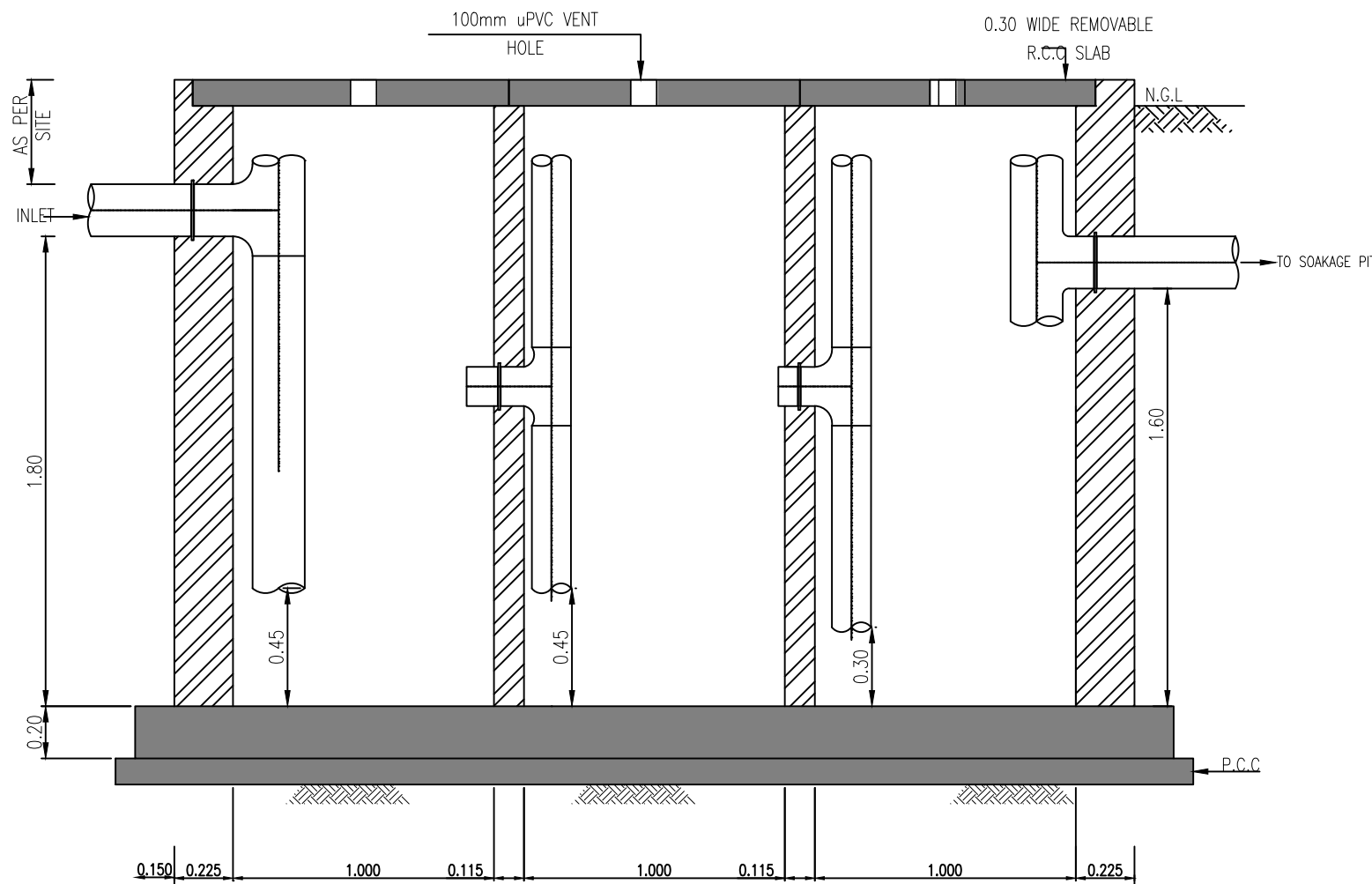
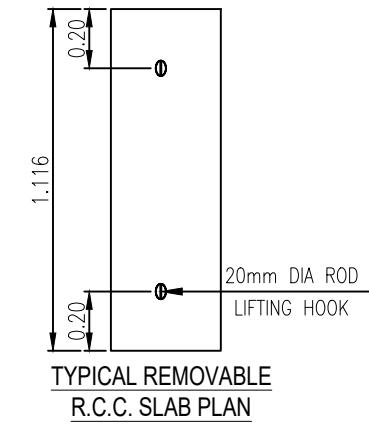
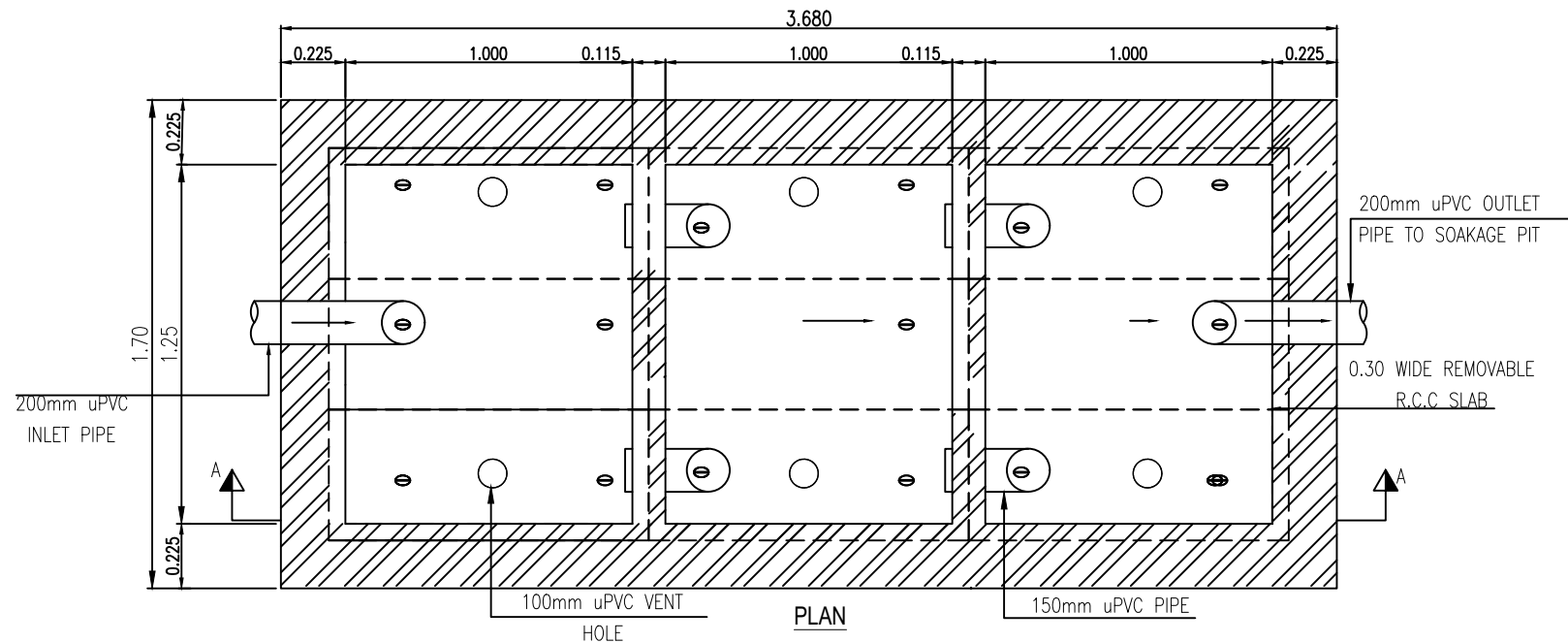
Designed By : Dr. ASFAHAN ALI  
 Drawn By : NAEEM BAKHSH  
 Checked By : RABEEA REHMAN  
 Approved By : RABEEA REHMAN

Date : MAR 2026  
 Scale : AS SHOWN  
 Drawing No :  
 KPR/REH/KHD/-2404

No.	Revision	By	Date

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CLIENT :  
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CONSULTANT:  
  
**Techno-Consult  
 International**  
 Ultimate  
 Engineering  
 Consultants  
 New Era of Development

PROJECT:  
**KPRIISP - DESIGN REVIEW AND  
 CONSTRUCTION SUPERVISION FOR  
 WATER SUPPLY, SEWERAGE, DRAINAGE  
 AND WASTE WATER TREATMENT  
 PROJECT IN NEWLY MERGED DISTRICTS  
 OF KHYBER PAKHTUNKHWA**

DRAWING TITLE:  
**EXISTING REHAB SCHEMES  
 DISTRICT KHYBER  
 SEPTIC TANK  
 TYPE-V (ABR)  
 (UP TO 15 HOUSES)  
 PLAN AND SECTION**

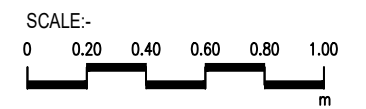
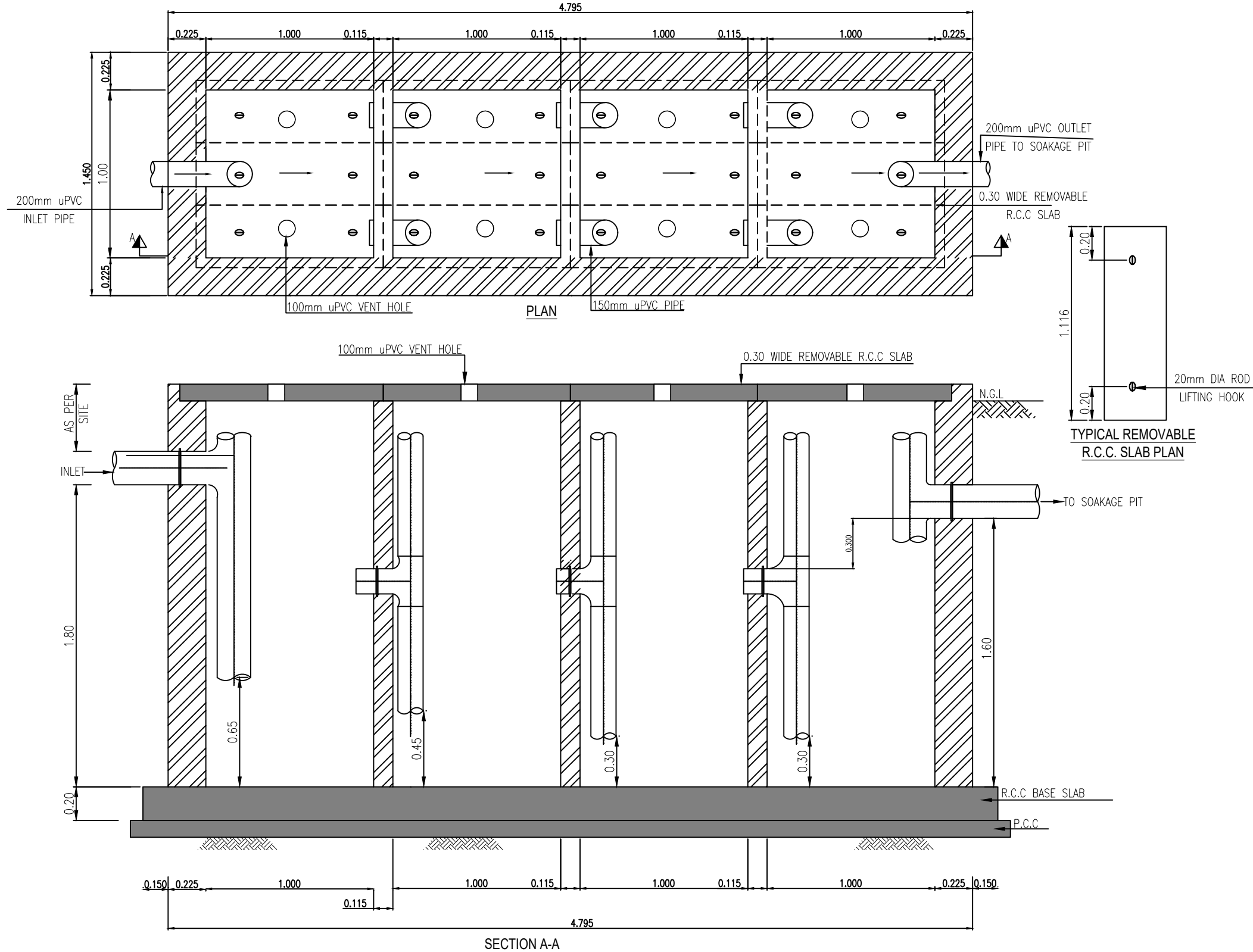
Designed By : Dr. ASFAHAN ALI  
 Drawn By : NAEEM BAKHSH  
 Checked By : RABEEA REHMAN  
 Approved By : RABEEA REHMAN



Date : MAR 2026  
 Scale : AS SHOWN  
 Drawing No :  
 KPR/REH/KHD/-2405

No.	Revision	By	Date

NOTES:

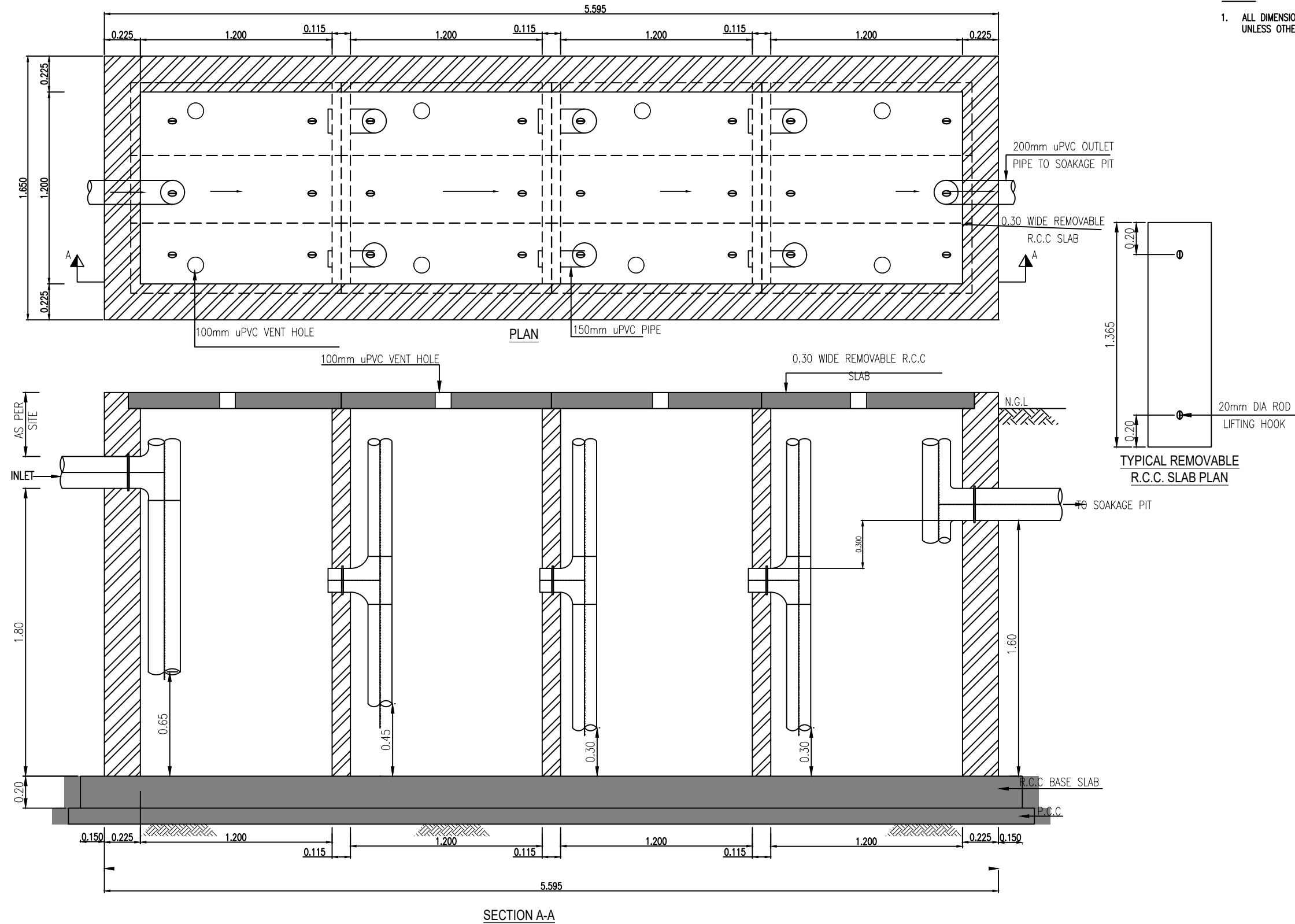
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CLIENT :  PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA	CONSULTANT:  Ultimate Engineering Consultants <small>New Era of Development</small>	PROJECT: KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA	DRAWING TITLE : EXISTING REHAB SCHEMES DISTRICT KHYBER SEPTIC TANK TYPE-V1 (ABR) (UP TO 20 HOUSES) PLAN AND SECTION	Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.      Revision      By      Date
				Drawn By : NAEEM BAKHSH	Scale : AS SHOWN	
				Checked By : RABEEA REHMAN	Drawing No :	
				Approved By : RABEEA REHMAN	KPR/REH/KHD/-2406	

NOTES:

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CLIENT :  
**PUBLIC HEALTH  
 ENGINEERING DEPARTMENT  
 KHYBER PAKHTUNKHWA**

CONSULTANT:  
**Techno-Consult JV  
 International**  
 Ultimate  
 Engineering  
 Consultants  
New Era of Development

PROJECT:  
**KPRIISP - DESIGN REVIEW AND  
 CONSTRUCTION SUPERVISION FOR  
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 AND WASTE WATER TREATMENT  
 PROJECT IN NEWLY MERGED DISTRICTS  
 OF KHYBER PAKHTUNKHWA**

DRAWING TITLE :  
**EXISTING REHAB SCHEMES  
 DISTRICT KHYBER  
 SEPTIC TANK  
 TYPE-VII (ABR)  
 (UP TO 30 HOUSES)  
 PLAN AND SECTION**

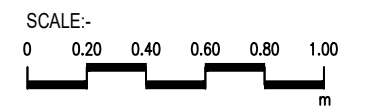
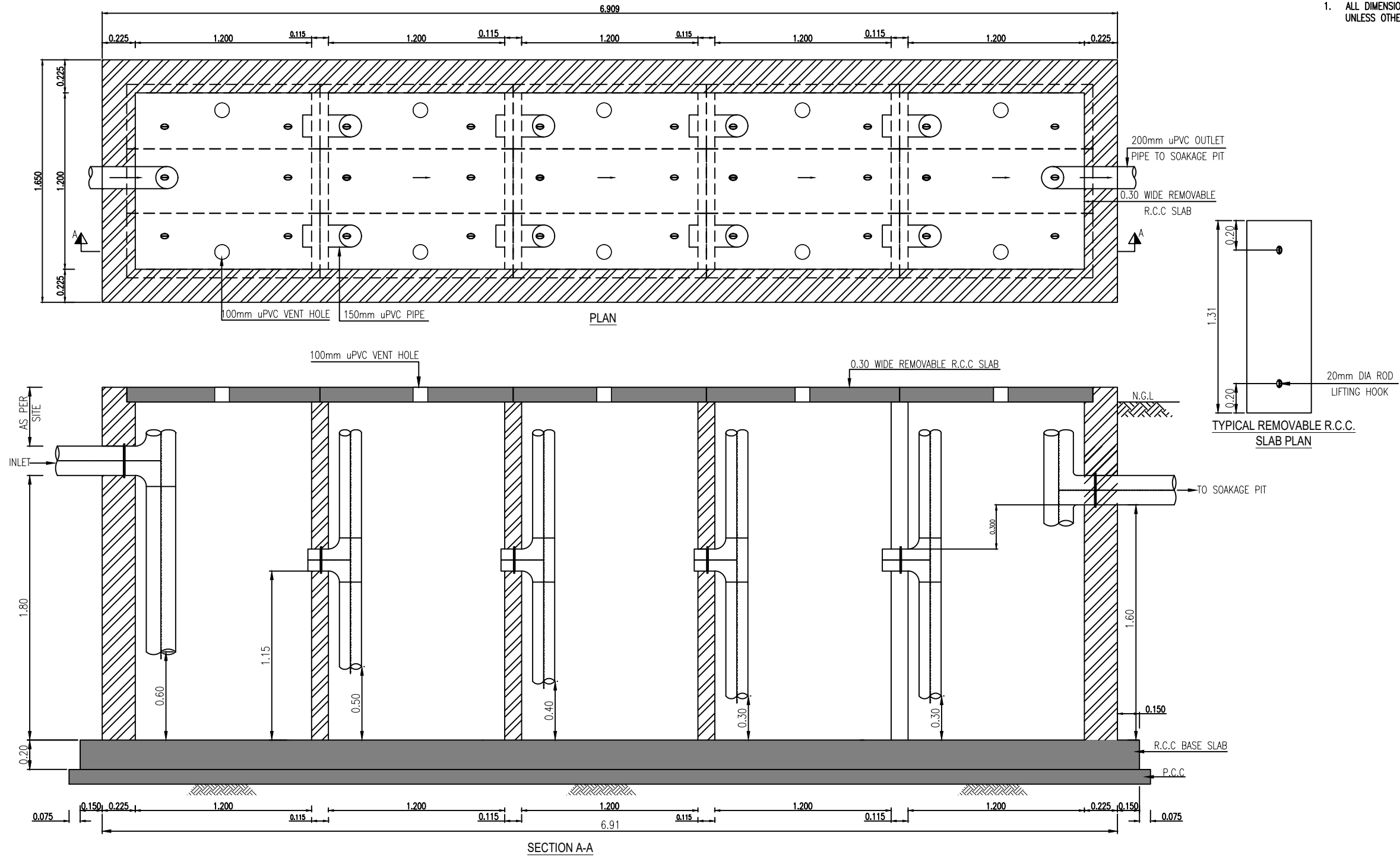
Designed By : Dr. ASFAHAN ALI  
 Drawn By : NAEEM BAKHSH  
 Checked By : RABEEA REHMAN  
 Approved By : RABEEA REHMAN



Date : MAR 2026  
 Scale : AS SHOWN  
 Drawing No :  
 KPR/REH/KHD/-2407

No.	Revision	By	Date

NOTES:

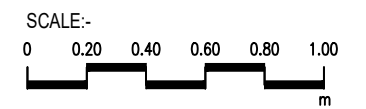
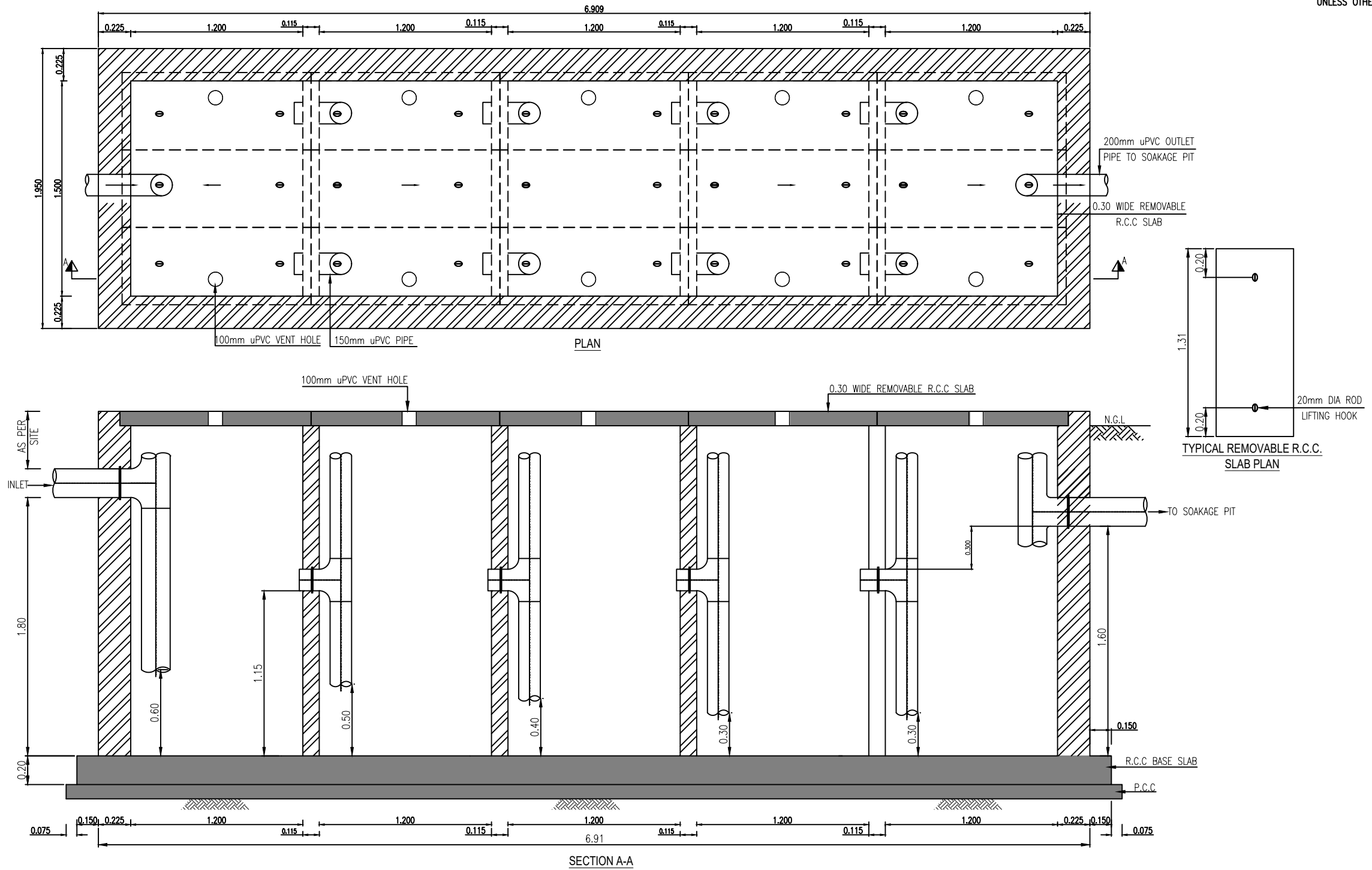
1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.





CLIENT :  PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA	CONSULTANT:  Ultimate Engineering Consultants <small>New Era of Development</small>	PROJECT: KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA	DRAWING TITLE : EXISTING REHAB SCHEMES DISTRICT KHYBER SEPTIC TANK TYPE-VIII (ABR) (UP TO 40 HOUSES) PLAN AND SECTION	Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.      Revision      By      Date
				Drawn By : NAEEM BAKHSH	Scale : AS SHOWN	
				Checked By : RABEEA REHMAN	Drawing No :	
				Approved By : RABEEA REHMAN	KPR/REH/KHD/-2408	

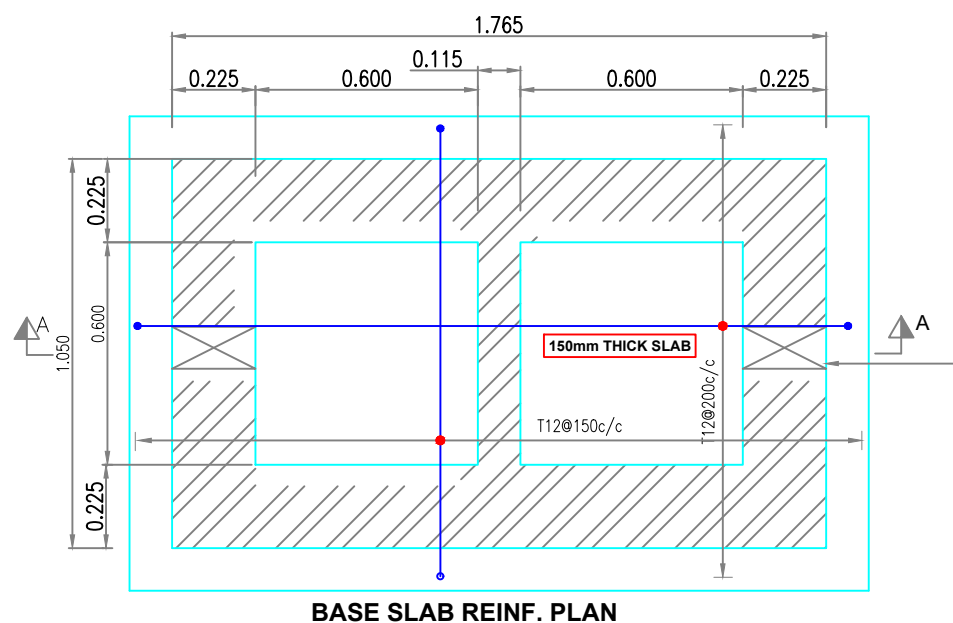
NOTES:

1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.



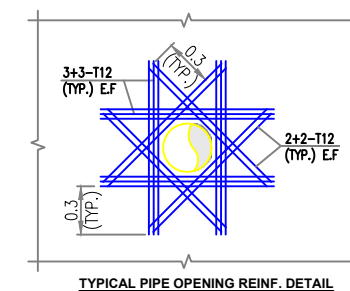
CLIENT :  PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA	CONSULTANT:  Ultimate Engineering Consultants New Era of Development	PROJECT: KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA	DRAWING TITLE : EXISTING REHAB SCHEMES DISTRICT KHYBER SEPTIC TANK TYPE-IX (ABR) (UP TO 50 HOUSES) PLAN AND SECTION	Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.      Revision      By      Date
				Drawn By : NAEEM BAKHSH	Scale : AS SHOWN	
				Checked By : RABEEA REHMAN	Drawing No :	
				Approved By : RABEEA REHMAN	KPR/REH/KHD/-2409	

- NOTES:  
 1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.

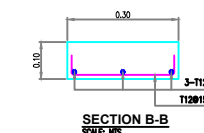


**BASE SLAB REINF. PLAN**

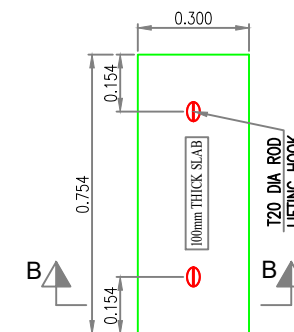
**BASE SLAB REINF. PLAN**



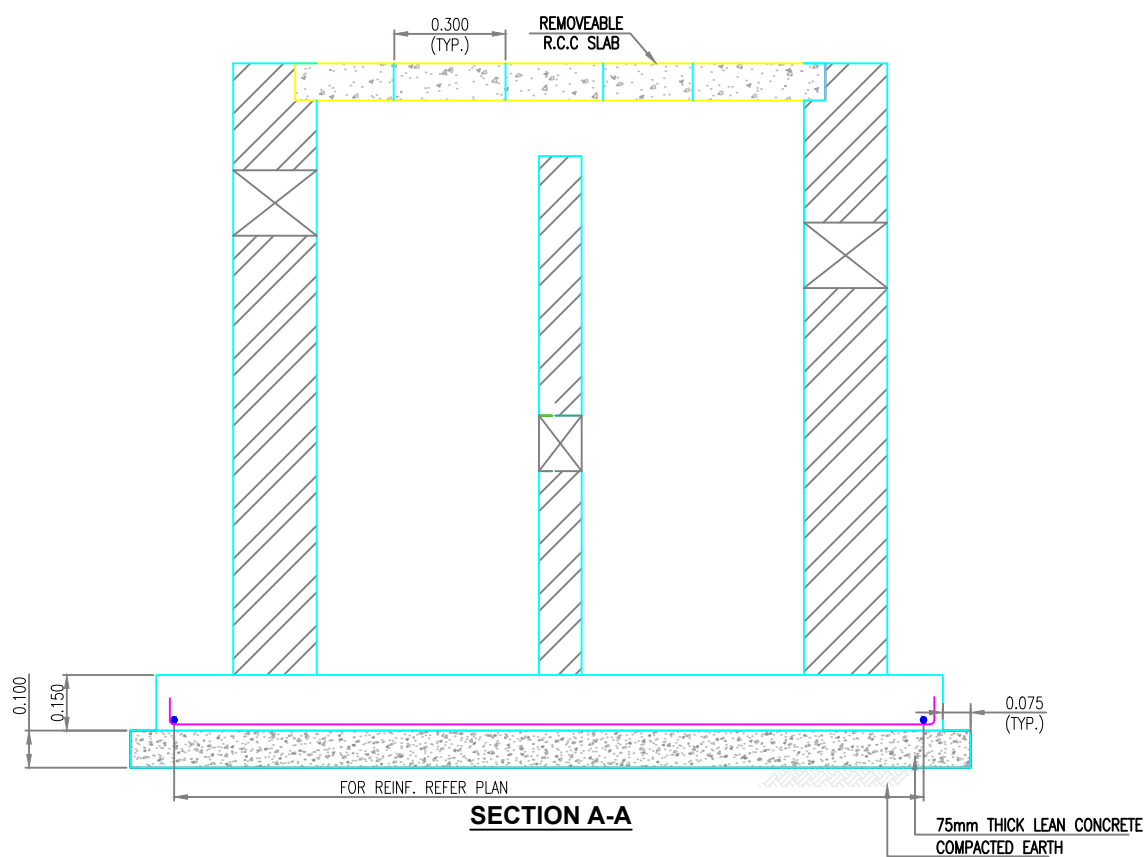
**TYPICAL PIPE OPENING REINF. DETAIL**



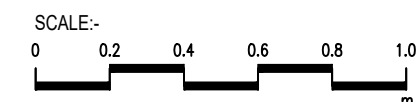
**SECTION B-B**



**TYPICAL REMOVEABLE R.C.C. SLAB PLAN**  
SCALE: NTS



**SECTION A-A**



CLIENT :  
**PUBLIC HEALTH ENGINEERING DEPARTMENT**  
**KHYBER PAKHTUNKHWA**

CONSULTANT:  
**Techno-Consult International**  
 JV  
 Ultimate Engineering Consultants  
 New Era of Development

PROJECT:  
**KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA**

DRAWING TITLE :  
**EXISTING REHAB SCHEMES DISTRICT KHYBER SEPTIC TANK TYPE-I (01 HOUSE) REIN. DETAILS**

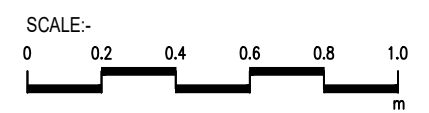
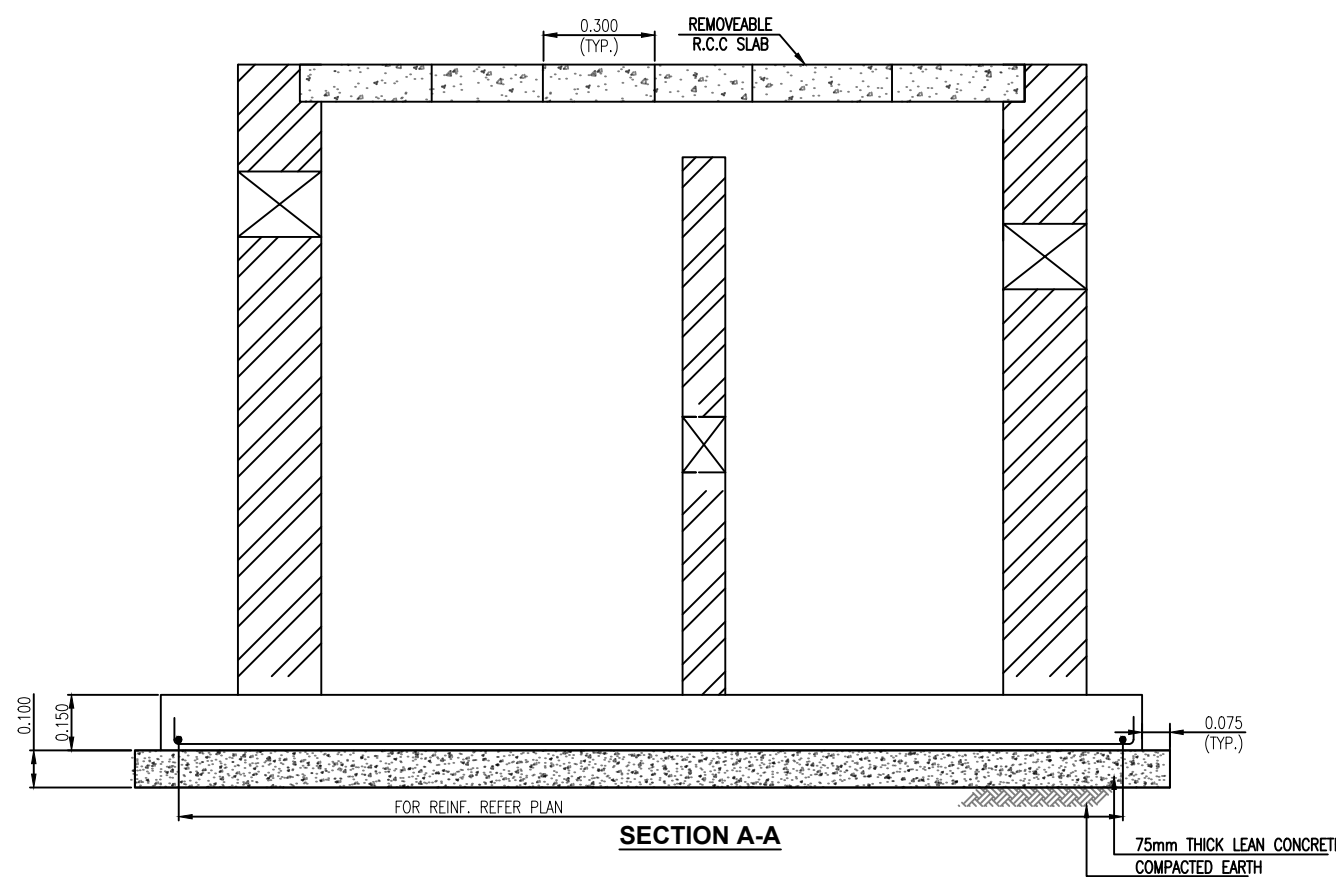
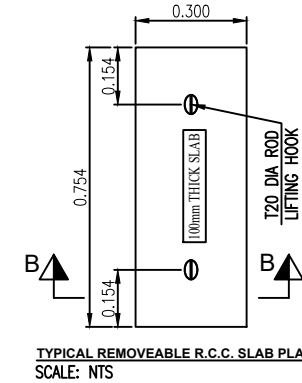
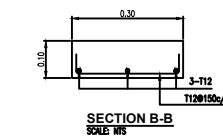
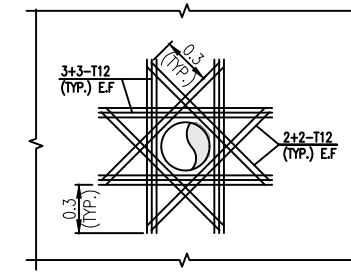
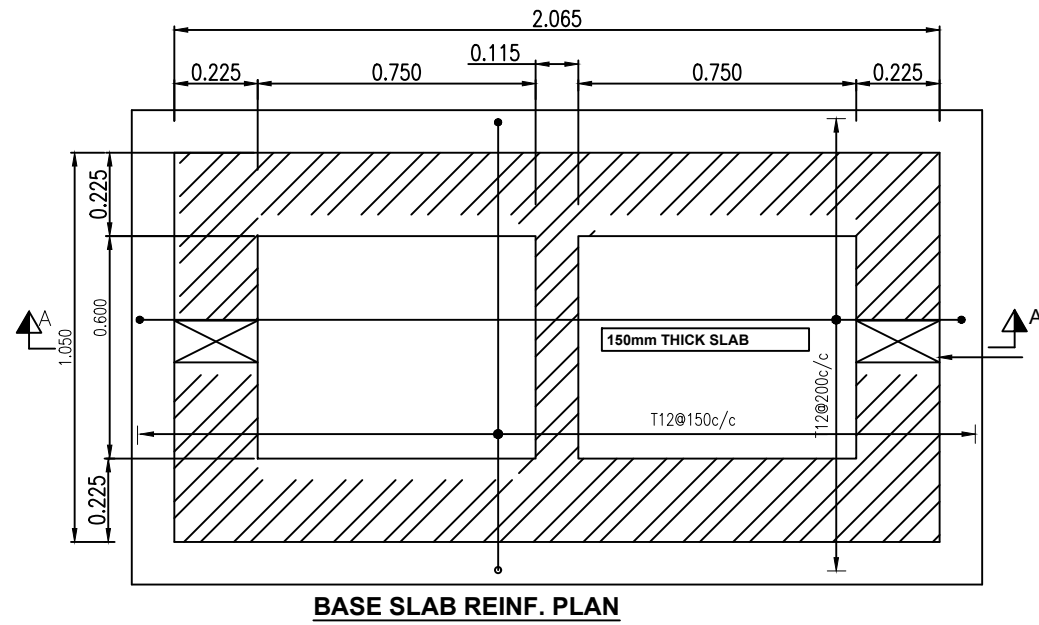
Designed By : Dr. ASFAHAN ALI  
 Drawn By : NAEEM BAKHSH  
 Checked By : RABEEA REHMAN  
 Approved By : RABEEA REHMAN



Date : MAR 2026  
 Scale : AS SHOWN  
 Drawing No :  
 KPR/REH/KHD/-2410

No.	Revision	By	Date

NOTES:

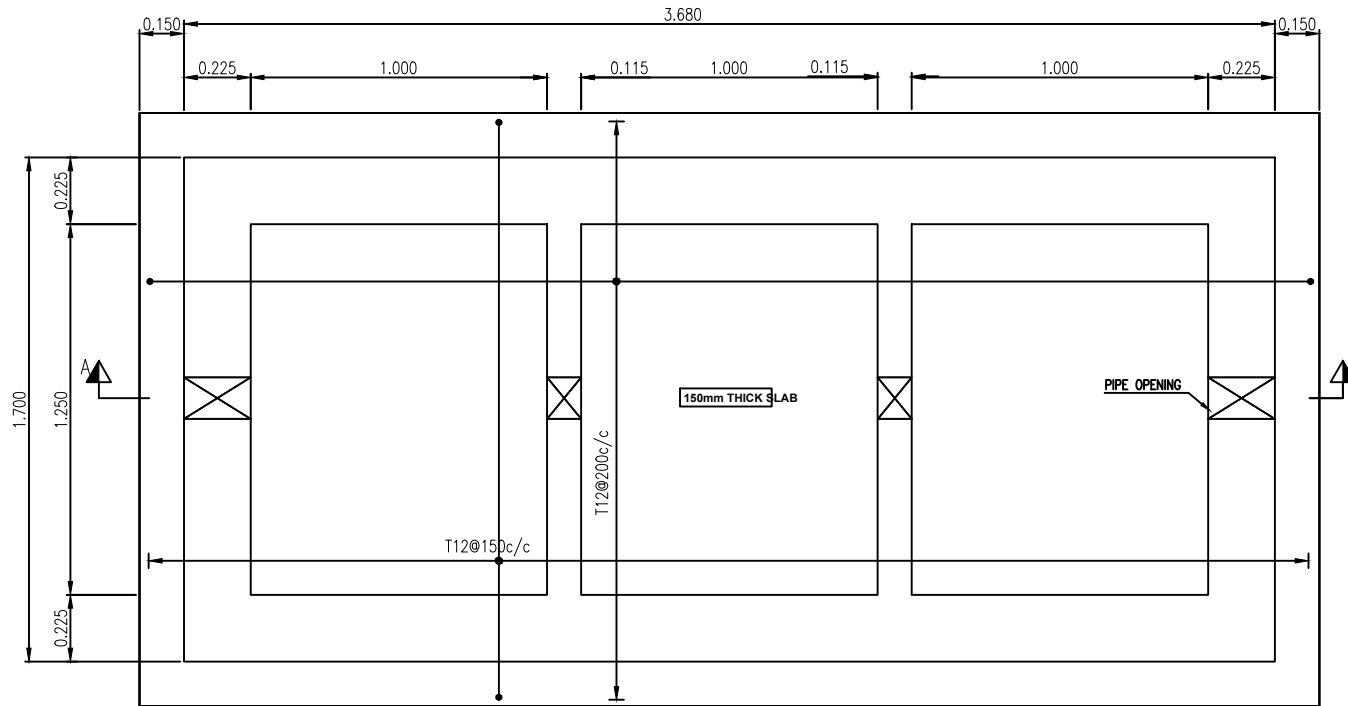
1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.



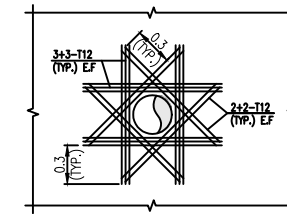
CLIENT :  PUBLIC HEALTH ENGINEERING DEPARTMENT KHYBER PAKHTUNKHWA	CONSULTANT:  Ultimate Engineering Consultants New Era of Development	PROJECT: KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA	DRAWING TITLE : EXISTING REHAB SCHEMES DISTRICT KHYBER SEPTIC TANK TYPE-II (02 HOUSES) REIN. DETAILS	Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.      Revision      By      Date
				Drawn By : NAEEM BAKHSH	Scale : AS SHOWN	
				Checked By : RABEEA REHMAN	Drawing No :	
				Approved By : RABEEA REHMAN	KPR/REH/KHD/-2411	

NOTES:

1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.

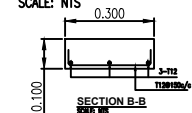


**BASE SLAB REINF. PLAN**

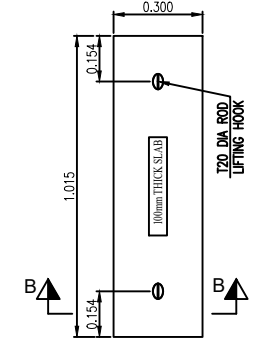


TYPICAL PIPE OPENING REINF. DETAIL

SCALE: NTS

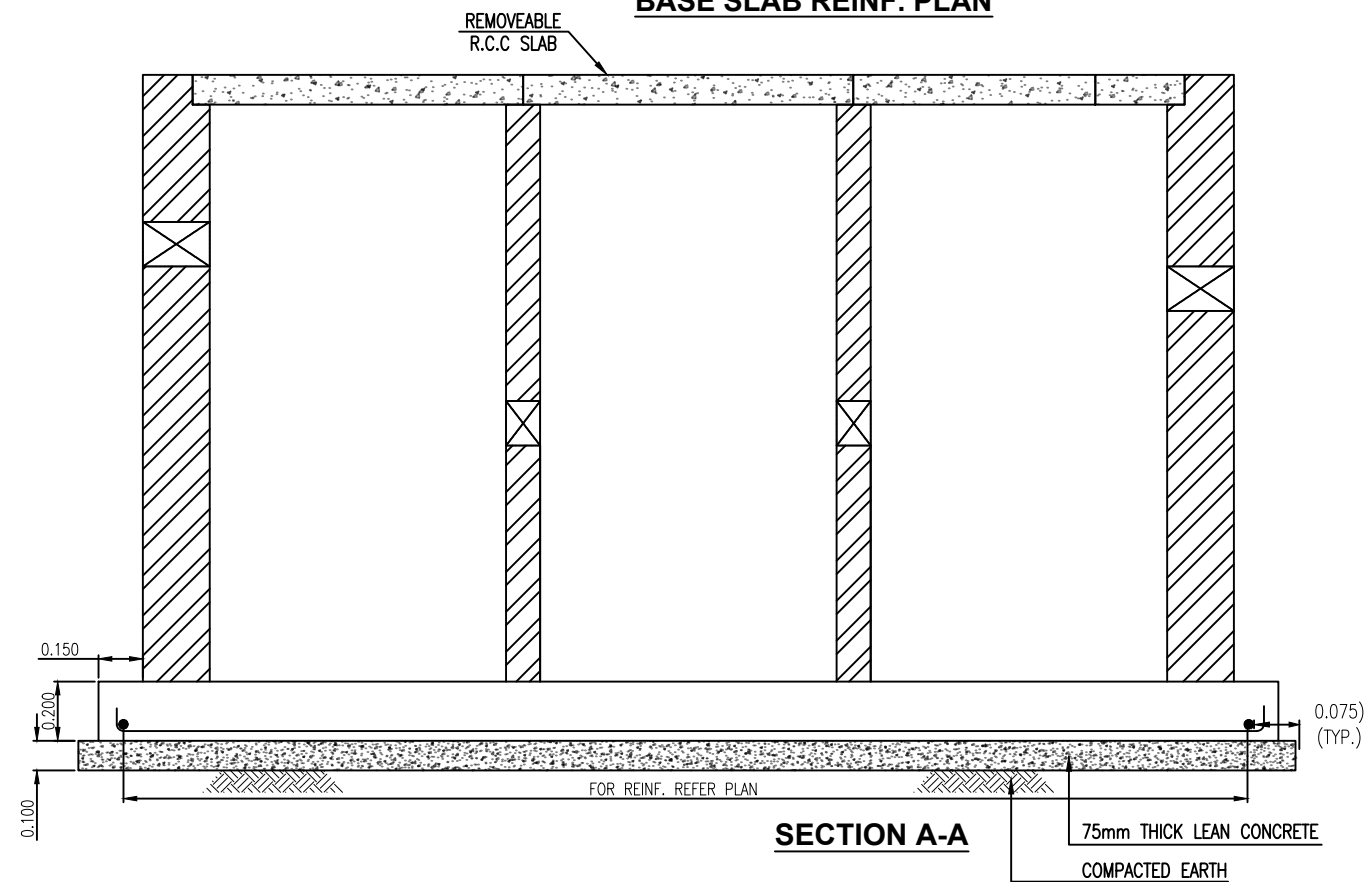


SECTION B-B

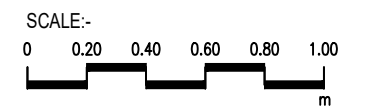


TYPICAL REMOVEABLE R.C.C. SLAB PLAN


SCALE: NTS



**SECTION A-A**



CLIENT :



**PUBLIC HEALTH  
ENGINEERING DEPARTMENT  
KHYBER PAKHTUNKHWA**

CONSULTANT:



**Techno-Consult  
International** JV  
Ultimate  
Engineering  
Consultants  
New Era of Development

PROJECT:  
**KPRIISP - DESIGN REVIEW AND  
CONSTRUCTION SUPERVISION FOR  
WATER SUPPLY, SEWERAGE, DRAINAGE  
AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS  
OF KHYBER PAKHTUNKHWA**

DRAWING TITLE :  
**EXISTING REHAB SCHEMES  
DISTRICT KHYBER  
SEPTIC TANK  
TYPE-III (ABR)  
(UP TO 05 HOUSES)  
REIN. DETAILS**

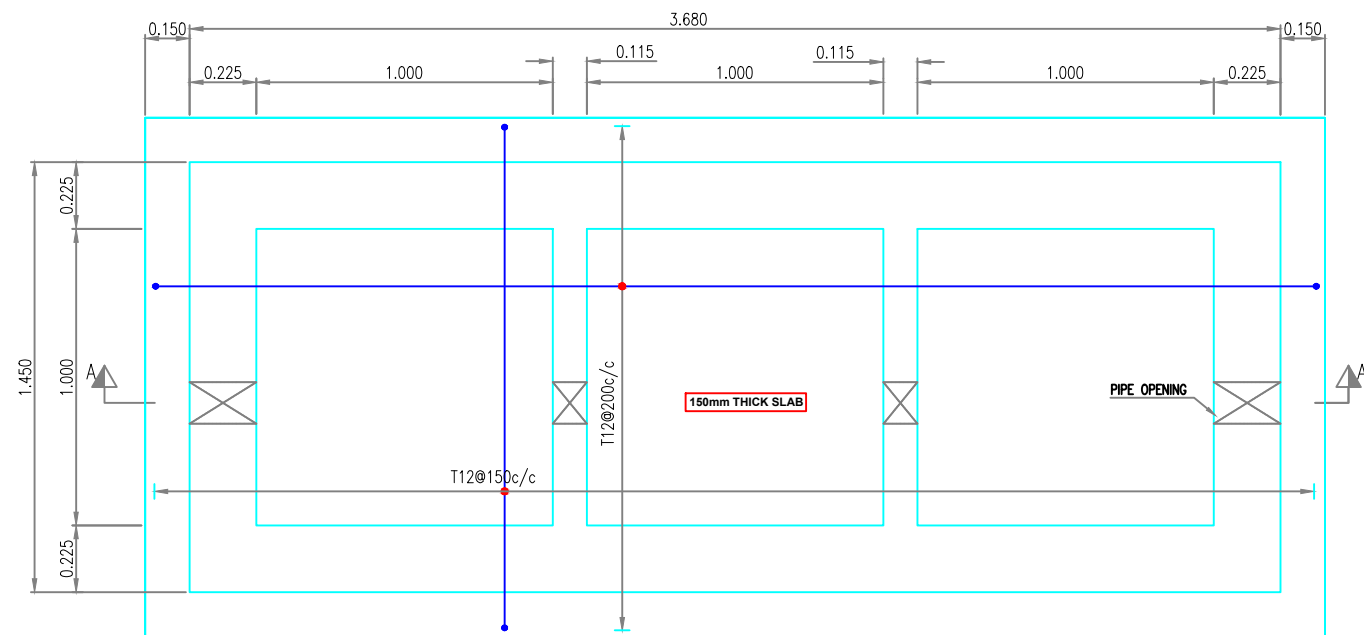
Designed By : Dr. ASFAHAN ALI  
Drawn By : NAEEM BAKHSH  
Checked By : RABEEA REHMAN  
Approved By : RABEEA REHMAN

Date : MAR 2026  
Scale : AS SHOWN  
Drawing No :  
KPR/REH/KHD/-2412

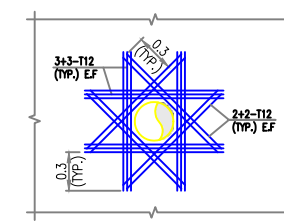
No.	Revision	By	Date

NOTES:

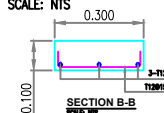
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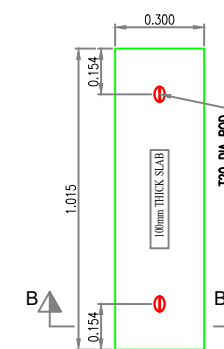
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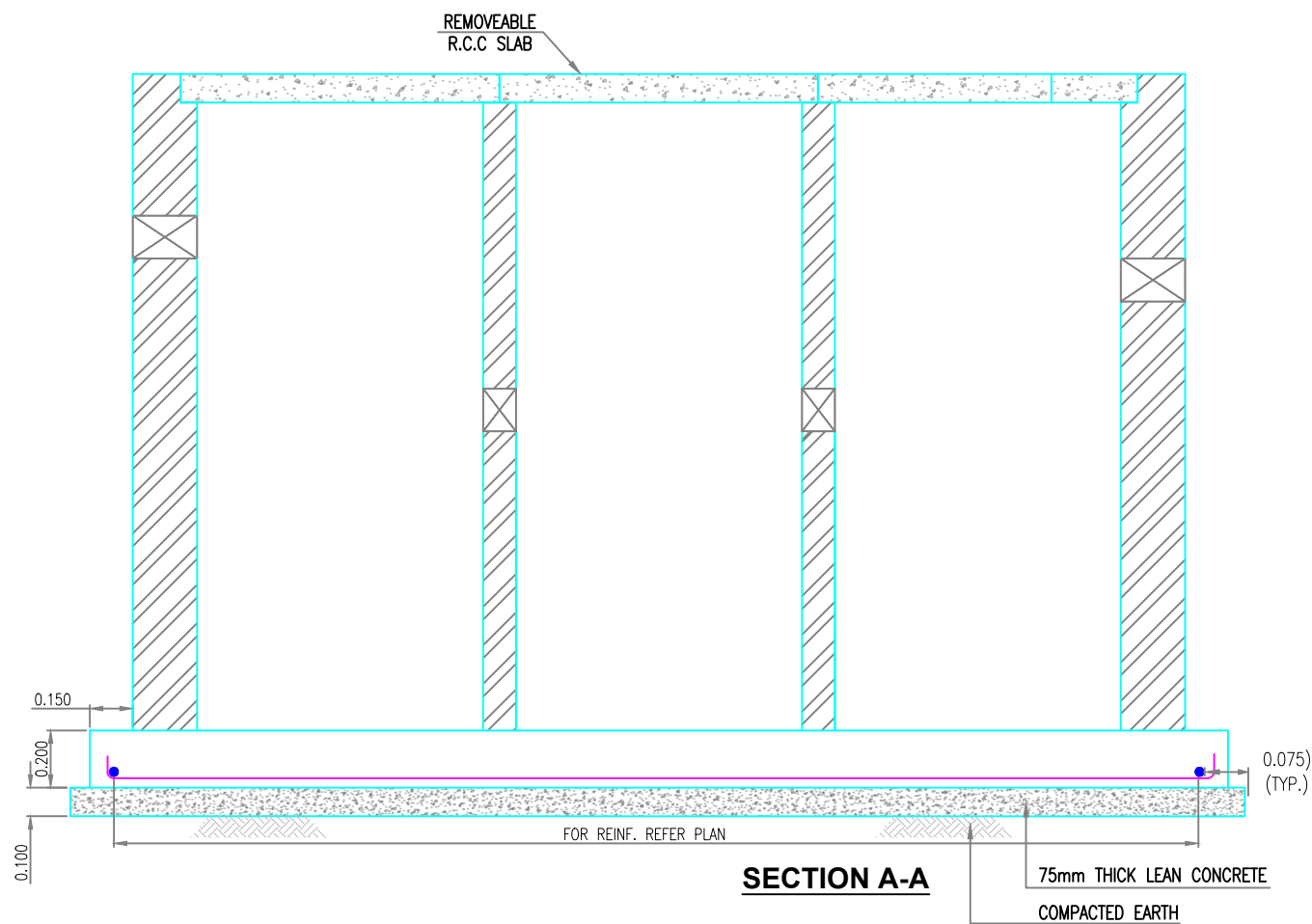
TYPICAL PIPE OPENING REINF. DETAIL  
SCALE: NTS



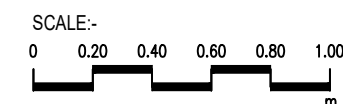
SECTION B-B  
SCALE: NTS




TYPICAL REMOVEABLE R.C.C. SLAB PLAN  
SCALE: NTS



**SECTION A-A**



CLIENT :  

**PUBLIC HEALTH  
 ENGINEERING DEPARTMENT  
 KHYBER PAKHTUNKHWA**

CONSULTANT:  

**Techno-Consult  
 International**  
 JV  
 Ultimate  
 Engineering  
 Consultants  
 New Era of Development

PROJECT:  
**KPRIISP - DESIGN REVIEW AND  
 CONSTRUCTION SUPERVISION FOR  
 WATER SUPPLY, SEWERAGE, DRAINAGE  
 AND WASTE WATER TREATMENT  
 PROJECT IN NEWLY MERGED DISTRICTS  
 OF KHYBER PAKHTUNKHWA**

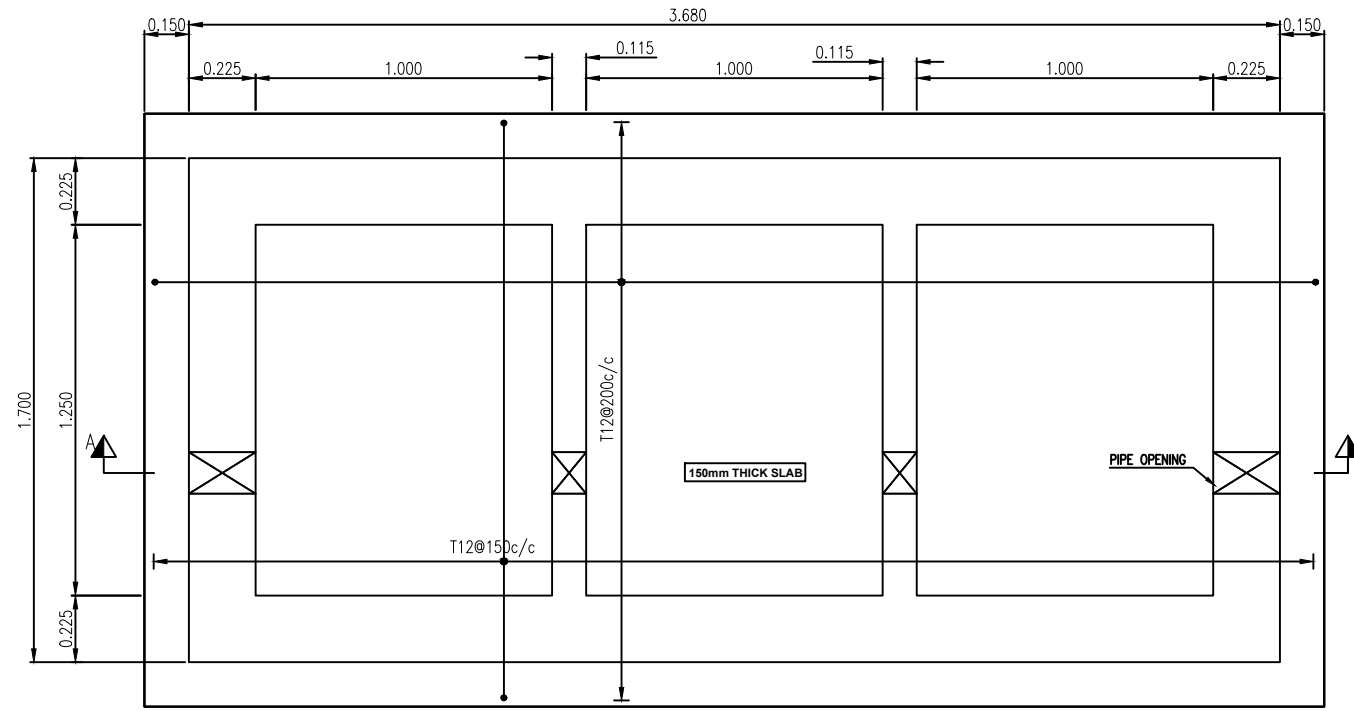
DRAWING TITLE :  
**EXISTING REHAB SCHEMES  
 DISTRICT KHYBER  
 SEPTIC TANK  
 TYPE-IV (ABR)  
 (UP TO 10 HOUSES)  
 REIN. DETAILS**

Designed By : Dr. ASFAHAN ALI  
 Drawn By : NAEEM BAKHSH  
 Checked By : RABEEA REHMAN  
 Approved By : RABEEA REHMAN

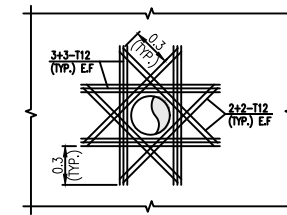
Date : MAR 2026  
 Scale : AS SHOWN  
 Drawing No :  
 KPR/REH/KHD/-2413

No.	Revision	By	Date

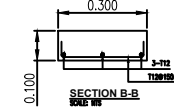
NOTES:  
 1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.



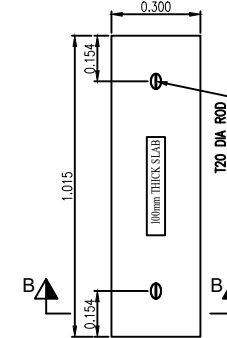
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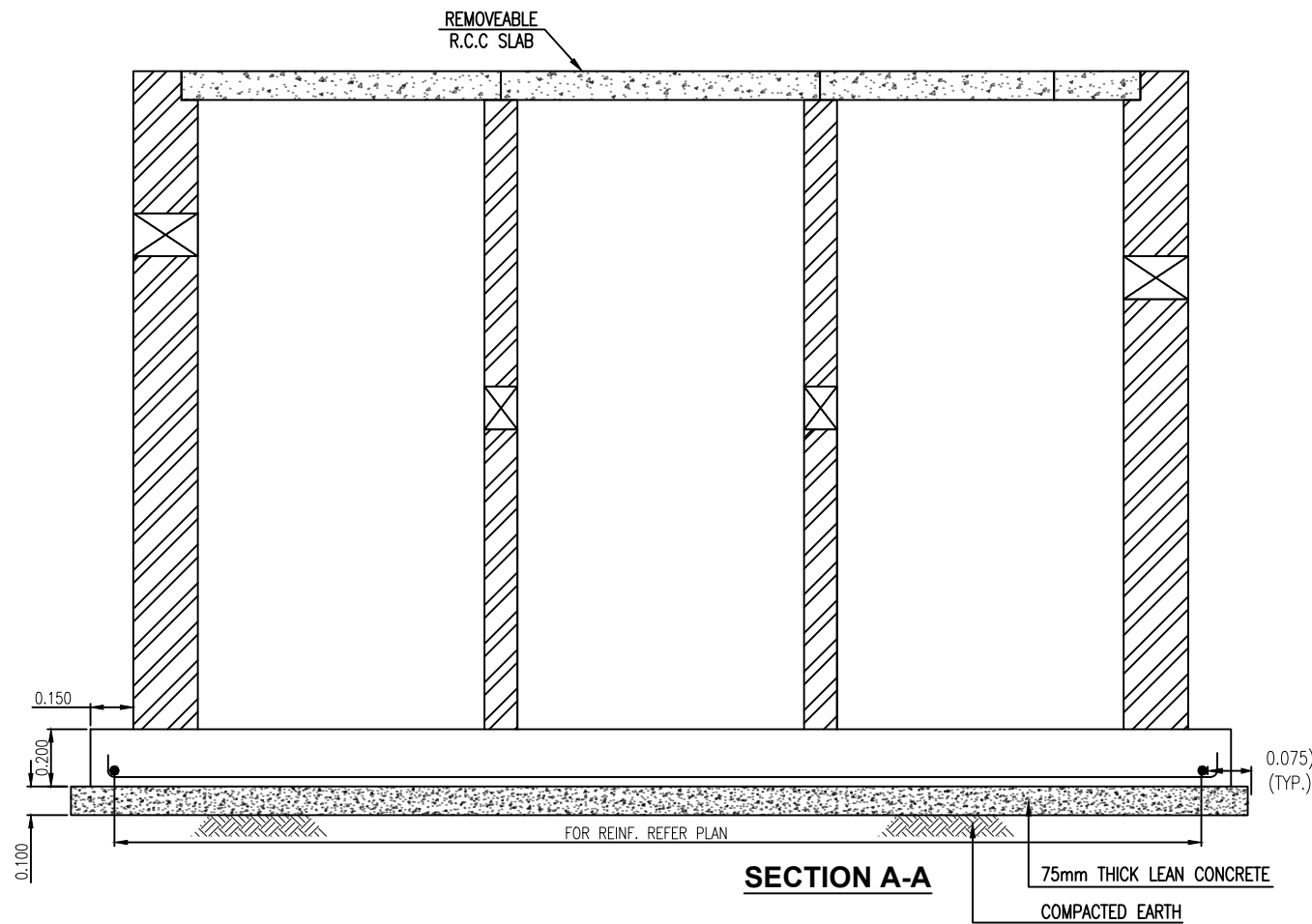
TYPICAL PIPE OPENING REINF. DETAIL  
 SCALE: NTS



SECTION B-B



TYPICAL REMOVEABLE R.C.C. SLAB PLAN  
 SCALE: NTS



**SECTION A-A**



CLIENT :  
**PUBLIC HEALTH  
 ENGINEERING DEPARTMENT  
 KHYBER PAKHTUNKHWA**

CONSULTANT:  
**Techno-Consult International**  
 JV  
 Ultimate Engineering Consultants  
 New Era of Development

PROJECT:  
**KPRIISP - DESIGN REVIEW AND  
 CONSTRUCTION SUPERVISION FOR  
 WATER SUPPLY, SEWERAGE, DRAINAGE  
 AND WASTE WATER TREATMENT  
 PROJECT IN NEWLY MERGED DISTRICTS  
 OF KHYBER PAKHTUNKHWA**

DRAWING TITLE:  
**EXISTING REHAB SCHEMES  
 DISTRICT KHYBER  
 SEPTIC TANK  
 TYPE-V (ABR)  
 (UP TO 15 HOUSES)  
 REIN. DETAILS**

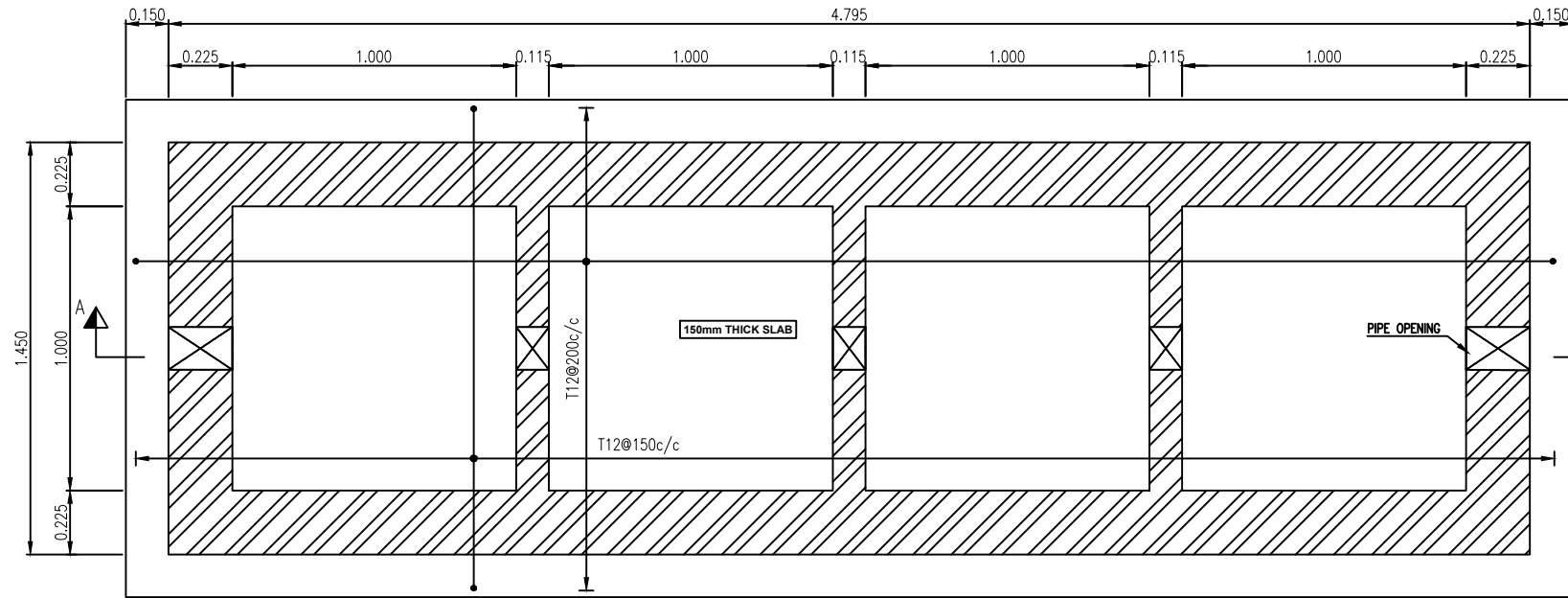
Designed By : Dr. ASFAHAN ALI  
 Drawn By : NAEEM BAKHSH  
 Checked By : RABEEA REHMAN  
 Approved By : RABEEA REHMAN

Date : MAR 2026  
 Scale : AS SHOWN  
 Drawing No :  
 KPR/REH/KHD/-2414

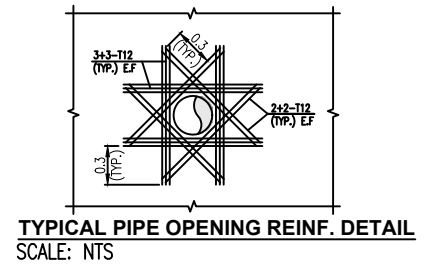
No.	Revision	By	Date

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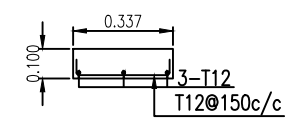
1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.



**BASE SLAB REINF. PLAN**

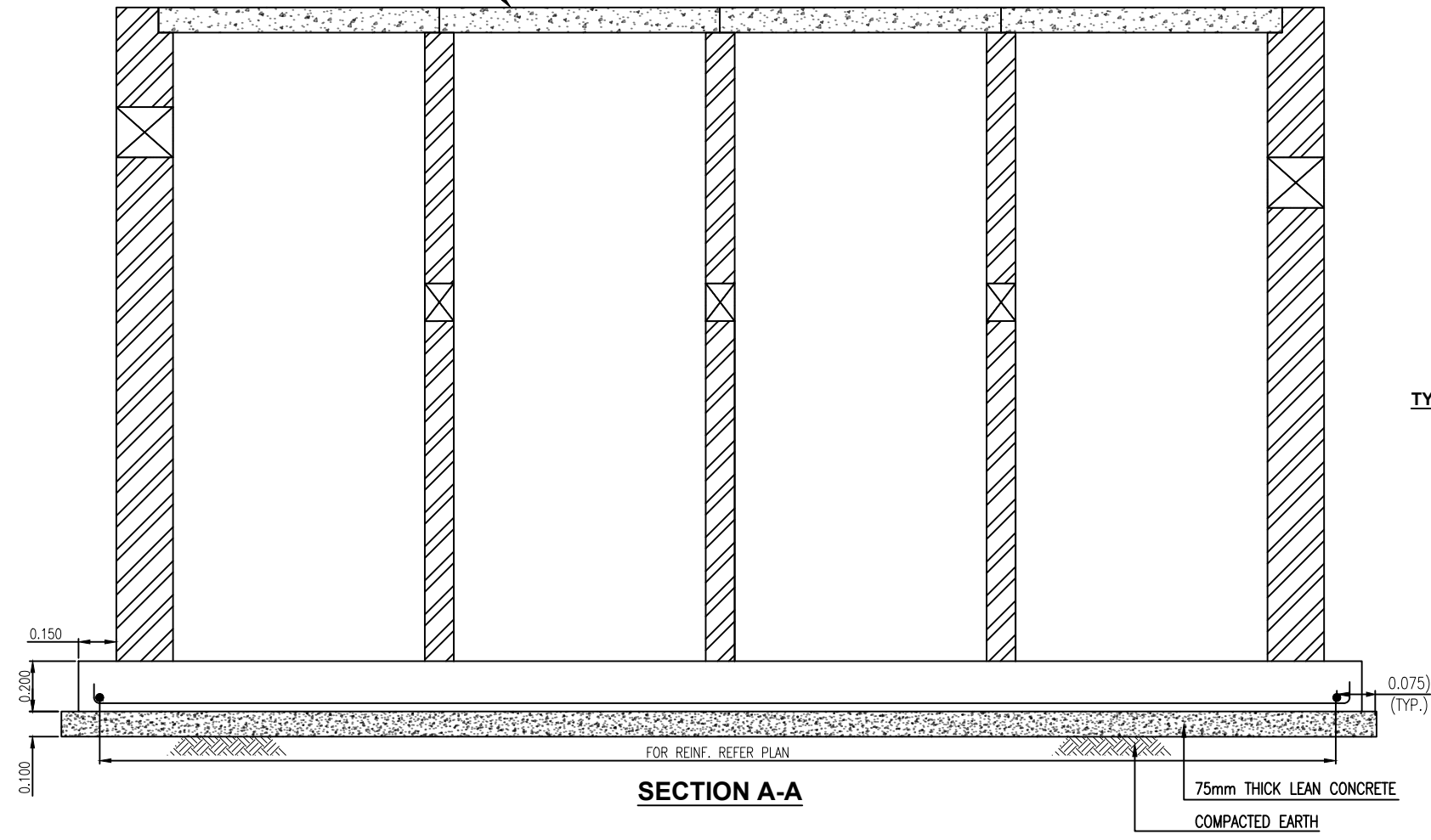


**TYPICAL PIPE OPENING REINF. DETAIL**  
SCALE: NTS

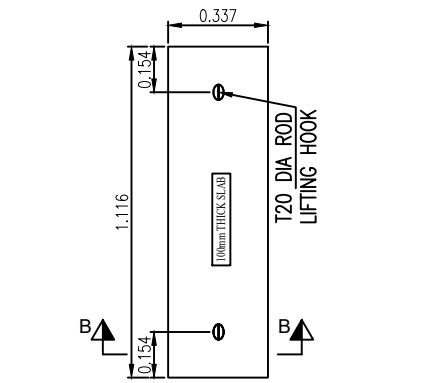


**SECTION B-B**

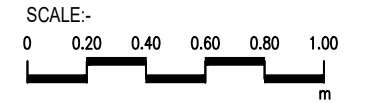
REMOVEABLE R.C.C SLAB




**SECTION A-A**



**TYPICAL REMOVEABLE R.C.C. SLAB PLAN**



CLIENT :



**PUBLIC HEALTH  
ENGINEERING DEPARTMENT  
KHYBER PAKHTUNKHWA**

CONSULTANT:



**Techno-Consult  
International** JV

Ultimate  
Engineering  
Consultants  
New Era of Development

PROJECT:

**KPRIISP - DESIGN REVIEW AND  
CONSTRUCTION SUPERVISION FOR  
WATER SUPPLY, SEWERAGE, DRAINAGE  
AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS  
OF KHYBER PAKHTUNKHWA**

DRAWING TITLE :

**EXISTING REHAB SCHEMES  
DISTRICT KHYBER  
SEPTIC TANK  
TYPE-VI  
(UP TO 20 HOUSES)  
REIN. DETAILS**

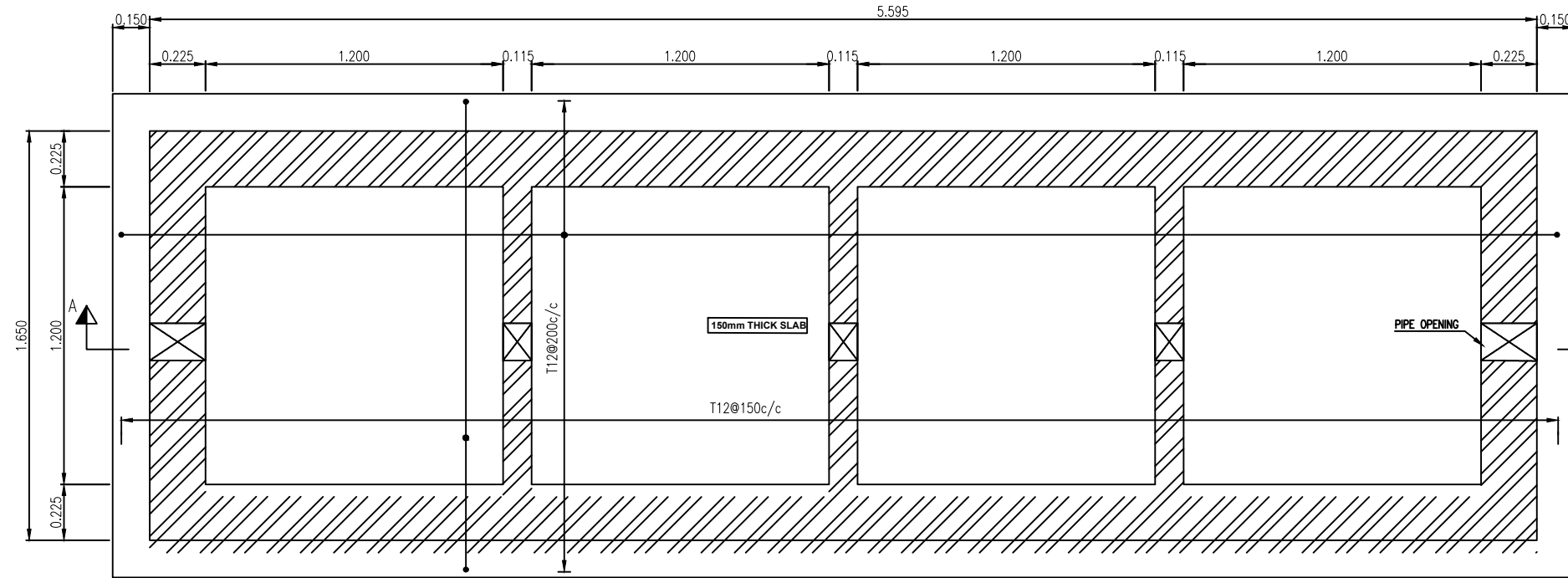
Designed By : Dr. ASFAHAN ALI  
Drawn By : NAEEM BAKHSH  
Checked By : RABEEA REHMAN  
Approved By : RABEEA REHMAN

Date : MAR 2026  
Scale : AS SHOWN  
Drawing No :  
KPR/REH/KHD/-2415

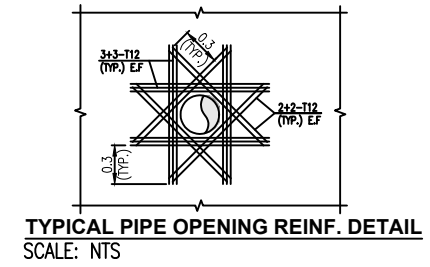
No.	Revision	By	Date

NOTES:

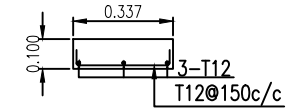
1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.



**BASE SLAB REINF. PLAN**

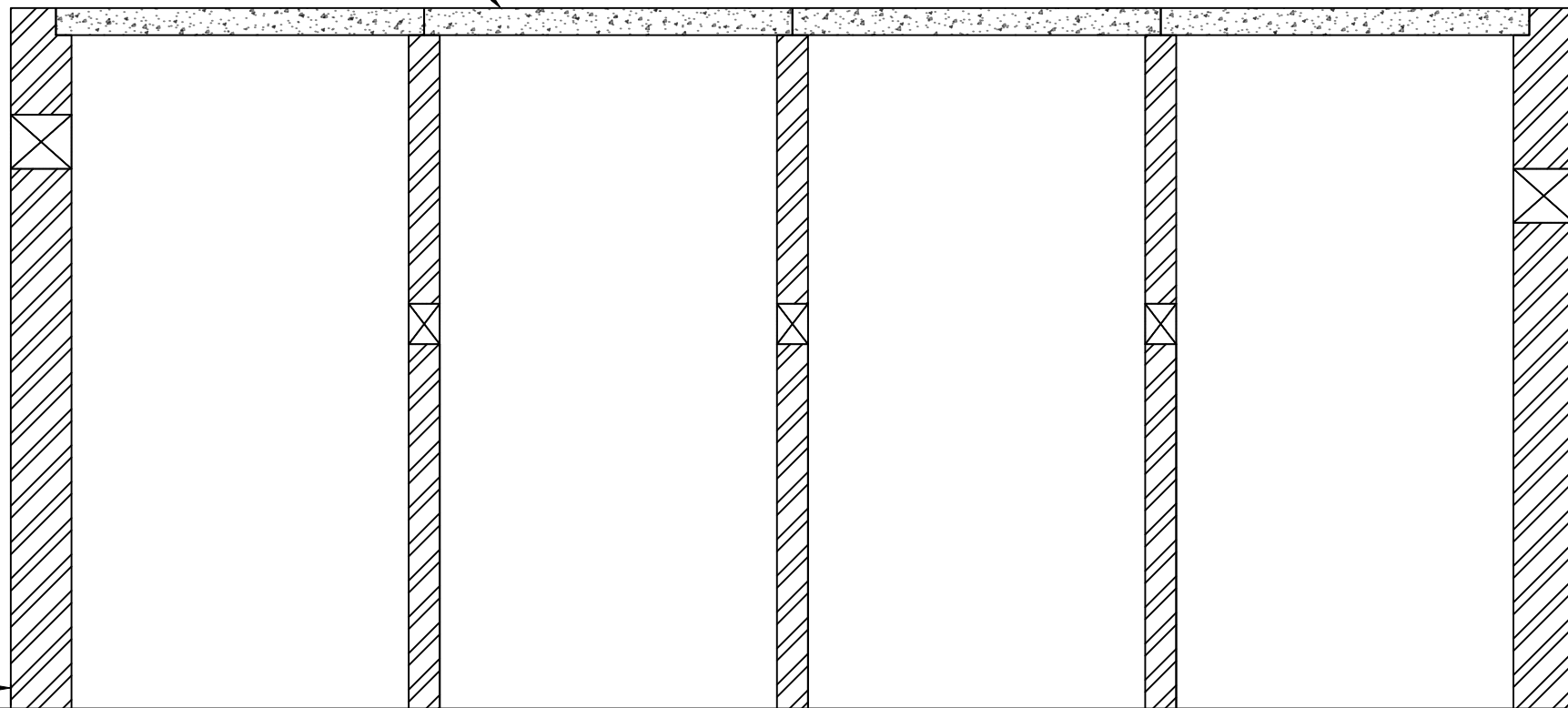


**TYPICAL PIPE OPENING REINF. DETAIL**  
SCALE: NTS

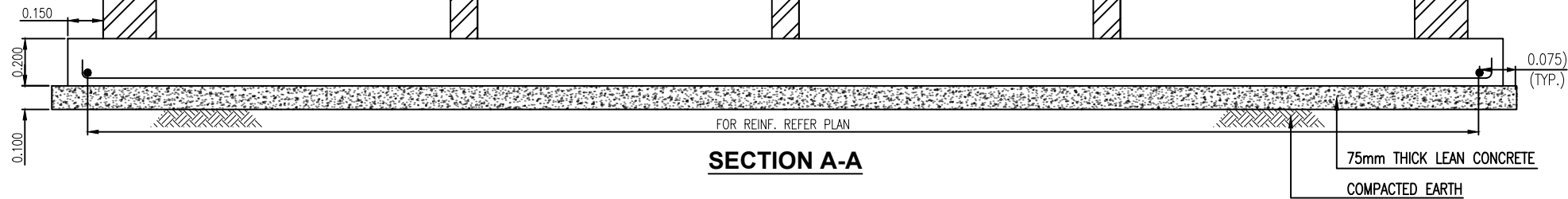


**SECTION B-B**

REMOVEABLE  
R.C.C SLAB



**TYPICAL REMOVEABLE R.C.C. SLAB PLAN**



**SECTION A-A**



CLIENT :  
**PUBLIC HEALTH  
ENGINEERING DEPARTMENT  
KHYBER PAKHTUNKHWA**

CONSULTANT:  
**Techno-Consult  
International**  
JV  
Ultimate  
Engineering  
Consultants  
New Era of Development

PROJECT:  
KPRIISP - DESIGN REVIEW AND  
CONSTRUCTION SUPERVISION FOR  
WATER SUPPLY, SEWERAGE, DRAINAGE  
AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS  
OF KHYBER PAKHTUNKHWA

DRAWING TITLE :  
**EXISTING REHAB SCHEMES  
DISTRICT KHYBER  
SEPTIC TANK  
TYPE-VII (ABR)  
(UP TO 30 HOUSES)  
REIN. DETAILS**

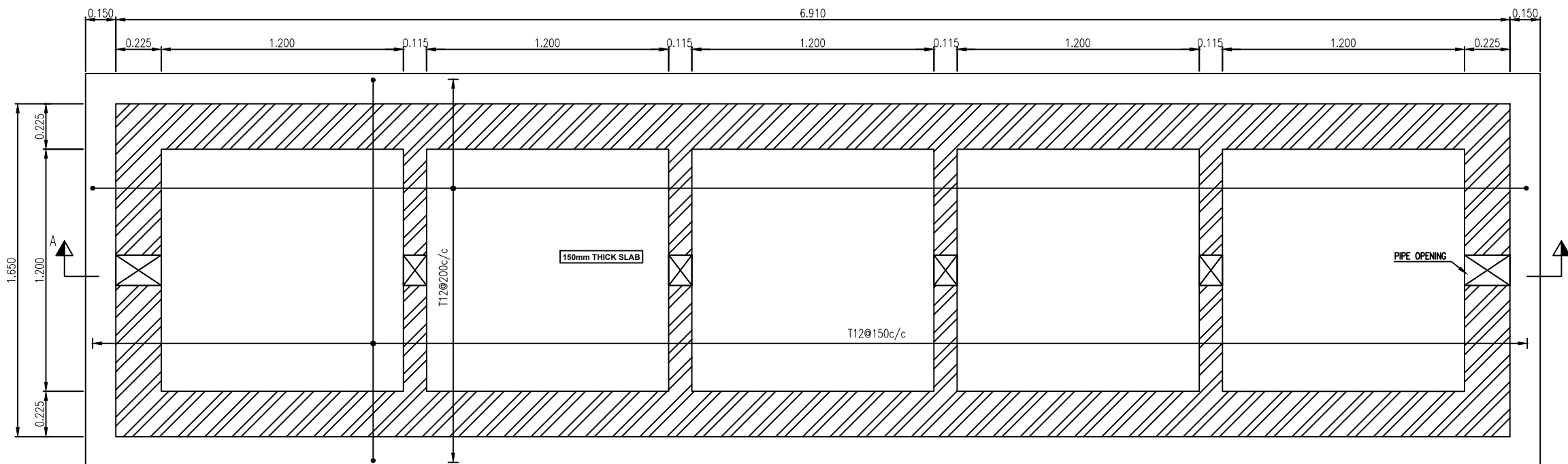
Designed By : Dr. ASFAHAN ALI  
Drawn By : NAEEM BAKHSH  
Checked By : RABEEA REHMAN  
Approved By : RABEEA REHMAN

Date : MAR 2026  
Scale : AS SHOWN  
Drawing No :  
KPR/REH/KHD/-2416

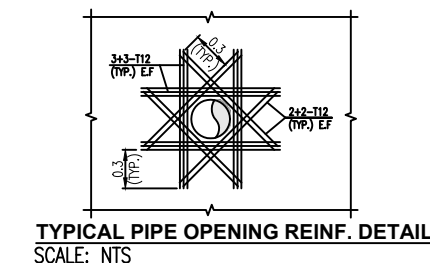
No.	Revision	By	Date

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1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.

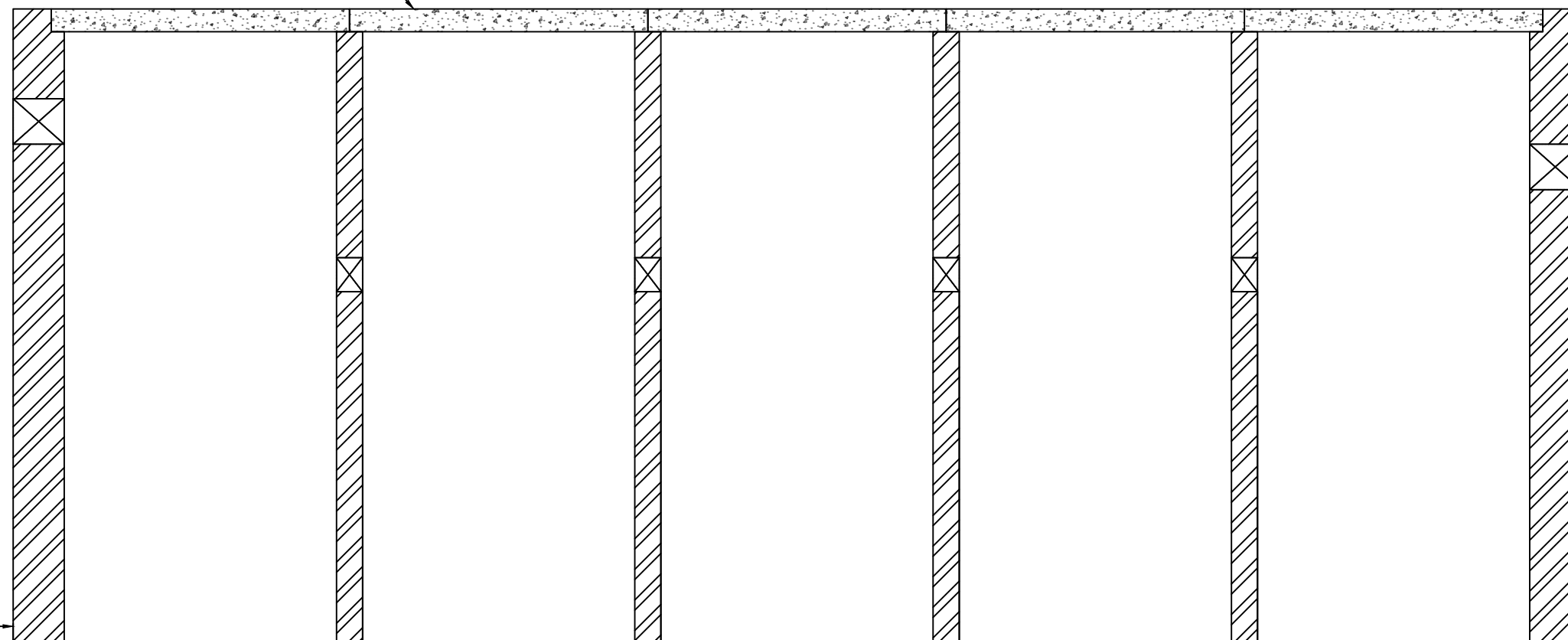


BASE SLAB REINF. PLAN

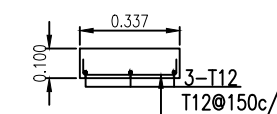


TYPICAL PIPE OPENING REINF. DETAIL  
SCALE: NTS

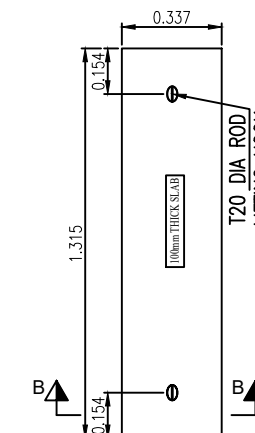
REMOVEABLE  
R.C.C SLAB



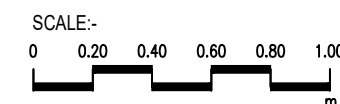
SECTION A-A



SECTION B-B



TYPICAL REMOVEABLE R.C.C. SLAB PLAN



CLIENT :  
PUBLIC HEALTH  
ENGINEERING DEPARTMENT  
KHYBER PAKHTUNKHWA

CONSULTANT:  
Techno-Consult  
International  
JV  
Ultimate  
Engineering  
Consultants  
New Era of Development

PROJECT:  
KPRIISP - DESIGN REVIEW AND  
CONSTRUCTION SUPERVISION FOR  
WATER SUPPLY, SEWERAGE, DRAINAGE  
AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS  
OF KHYBER PAKHTUNKHWA

DRAWING TITLE :  
EXISTING REHAB SCHEMES  
DISTRICT KHYBER  
SEPTIC TANK  
TYPE-VIII  
(UP TO 40 HOUSES)  
REIN. DETAILS

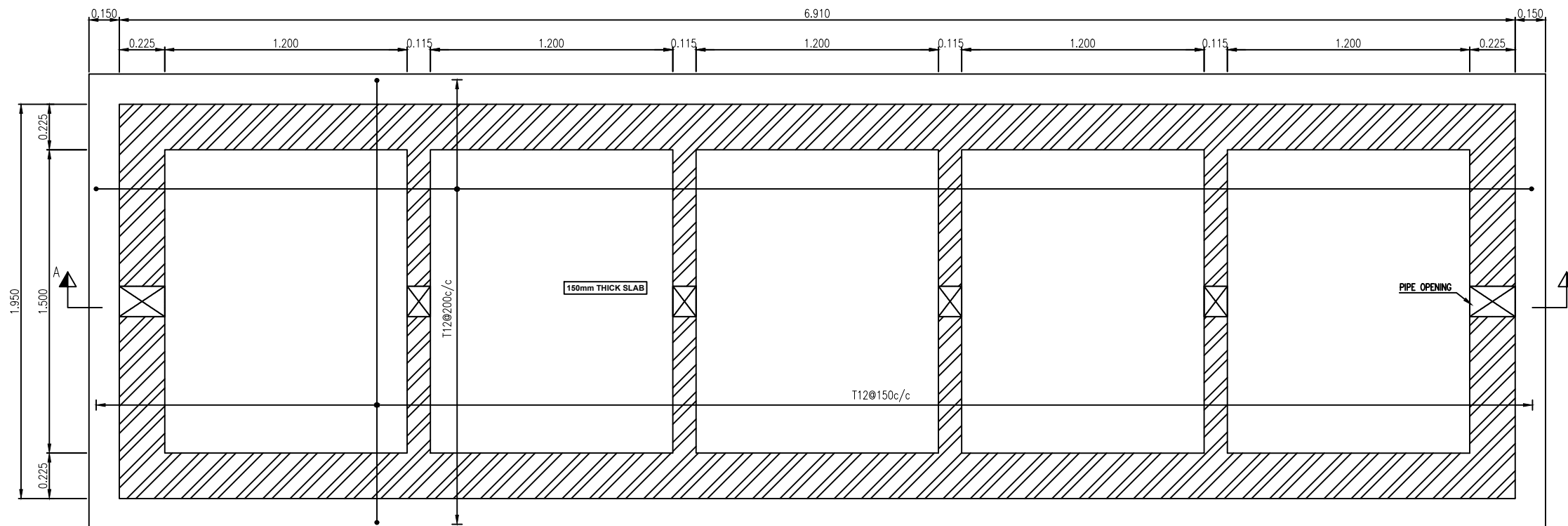
Designed By : Dr. ASFAHAN ALI  
Drawn By : NAEEM BAKHSH  
Checked By : RABEEA REHMAN  
Approved By : RABEEA REHMAN

Date : MAR 2026  
Scale : AS SHOWN  
Drawing No :  
KPR/REH/KHD/-2417

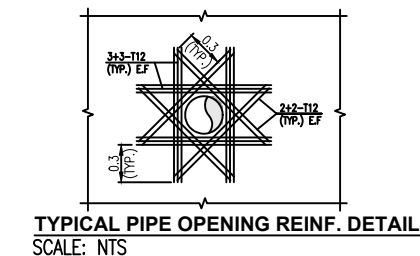
No.	Revision	By	Date

NOTES:

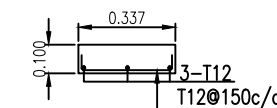
- ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.



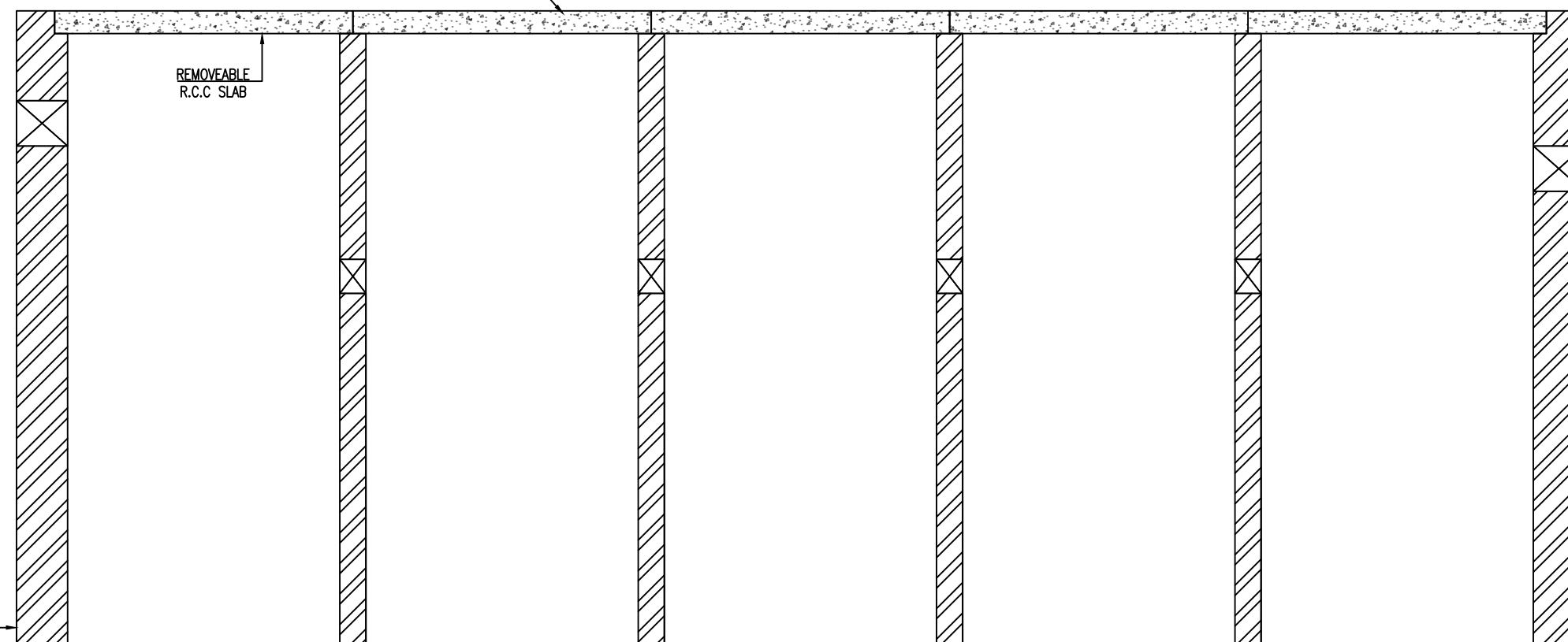
BASE SLAB REINF. PLAN



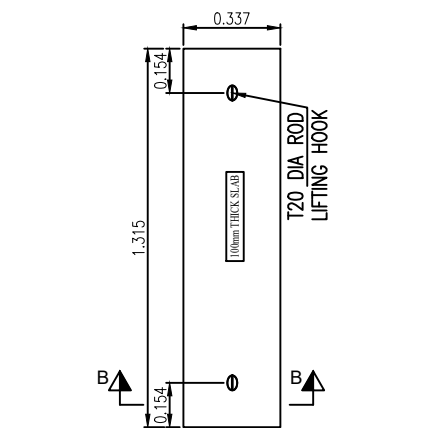
TYPICAL PIPE OPENING REINF. DETAIL  
SCALE: NTS



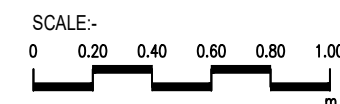
SECTION B-B



SECTION A-A



TYPICAL REMOVEABLE R.C.C. SLAB PLAN



CLIENT :  
PUBLIC HEALTH  
ENGINEERING DEPARTMENT  
KHYBER PAKHTUNKHWA

CONSULTANT:  
**Techno-Consult** JV  
Ultimate  
Engineering  
Consultants  
New Era of Development

PROJECT:  
KPRIISP - DESIGN REVIEW AND  
CONSTRUCTION SUPERVISION FOR  
WATER SUPPLY, SEWERAGE, DRAINAGE  
AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS  
OF KHYBER PAKHTUNKHWA

DRAWING TITLE :  
EXISTING REHAB SCHEMES  
DISTRICT KHYBER  
SEPTIC TANK  
TYPE-IX  
(UP TO 50 HOUSES)  
REIN. DETAILS

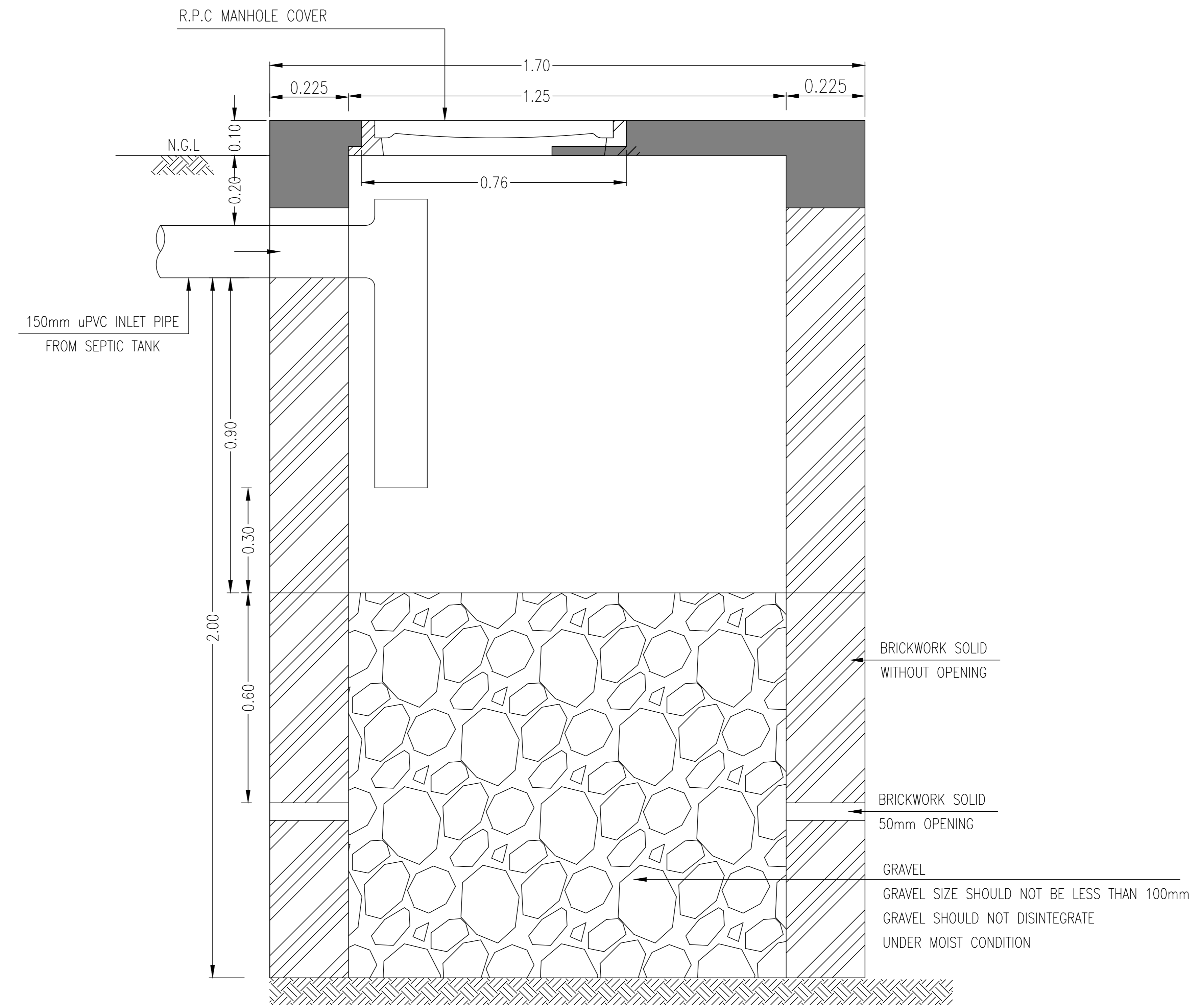
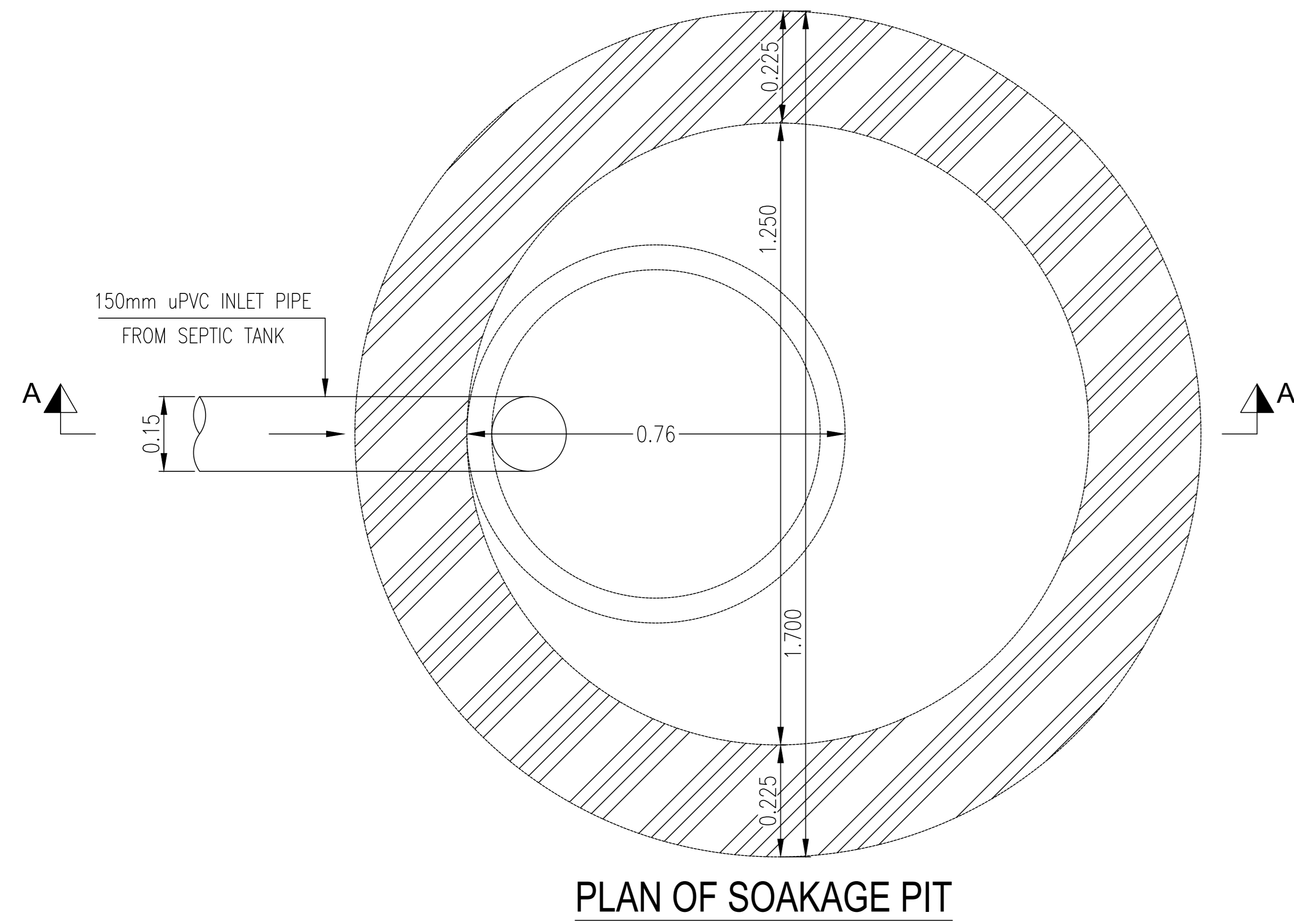
Designed By : Dr. ASFAHAN ALI  
Drawn By : NAEEM BAKHSH  
Checked By : RABEEA REHMAN  
Approved By : RABEEA REHMAN

Date : MAR 2026  
Scale : AS SHOWN  
Drawing No :  
KPR/REH/KHD/-2418

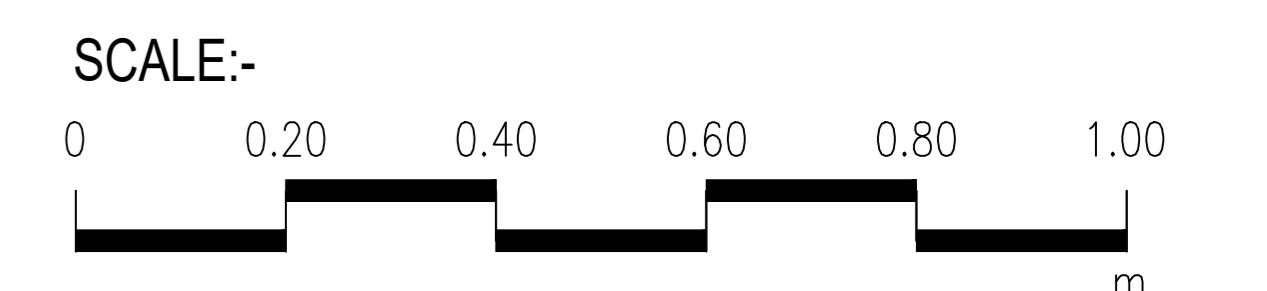
No.	Revision	By	Date

NOTES:

1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.
2. SOAKAGE PIT BOTTOM SHOULD BE AT LEAST 1.5m ABOVE THE WATER TABLE.



SECTION A-A



CLIENT :

PUBLIC HEALTH ENGINEERING DEPARTMENT  
KHYBER PAKHTUNKHWA

CONSULTANT:

**Techno-Consult International** JV  
Ultimate Engineering Consultants  
New Era of Development

PROJECT:

KPRIISP - DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR WATER SUPPLY, SEWERAGE, DRAINAGE AND WASTE WATER TREATMENT PROJECT IN NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA

DRAWING TITLE :

EXISTING REHAB SCHEMES DISTRICT KHYBER SOAKAGE PIT TYPE-I (01 HOUSES) PLAN AND SECTION

Designed By : Dr. ASFAHAN ALI

Drawn By : NAEEM BAKHSH

Checked By : RABEEA REHMAN

Approved By : RABEEA REHMAN

Date : MAR 2026

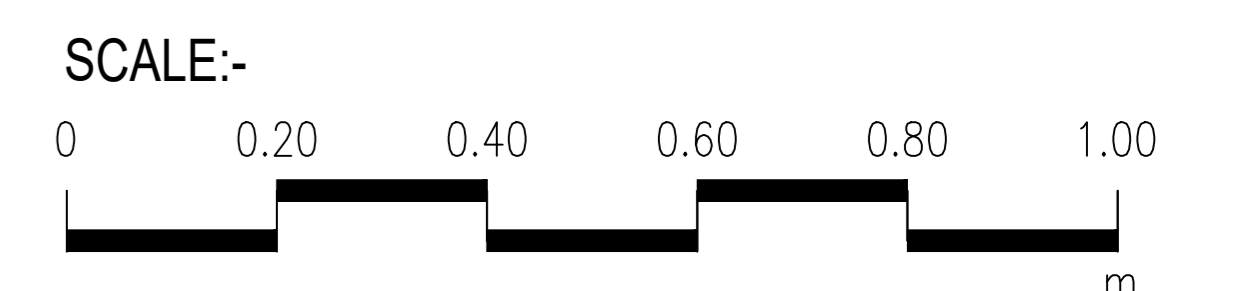
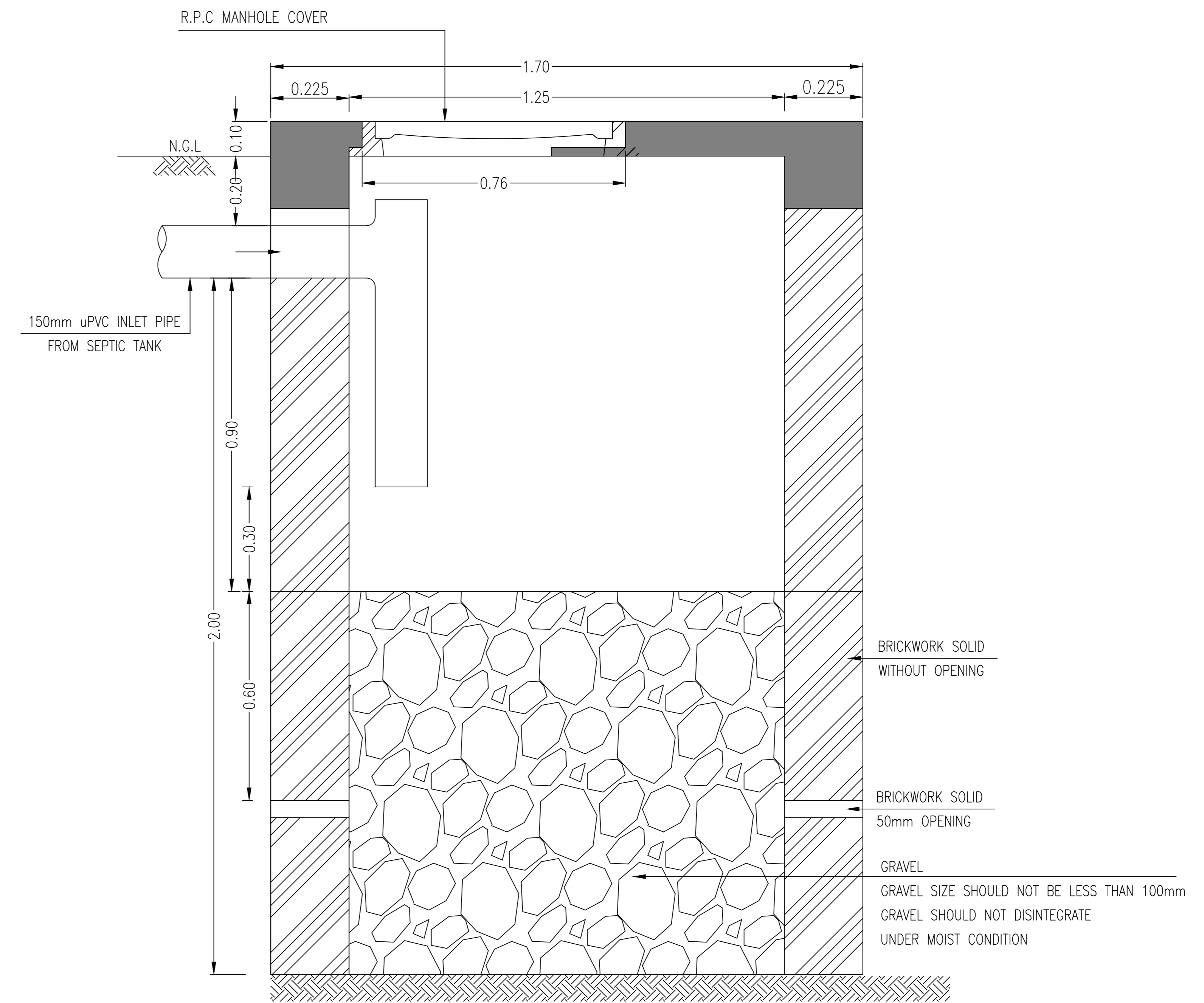
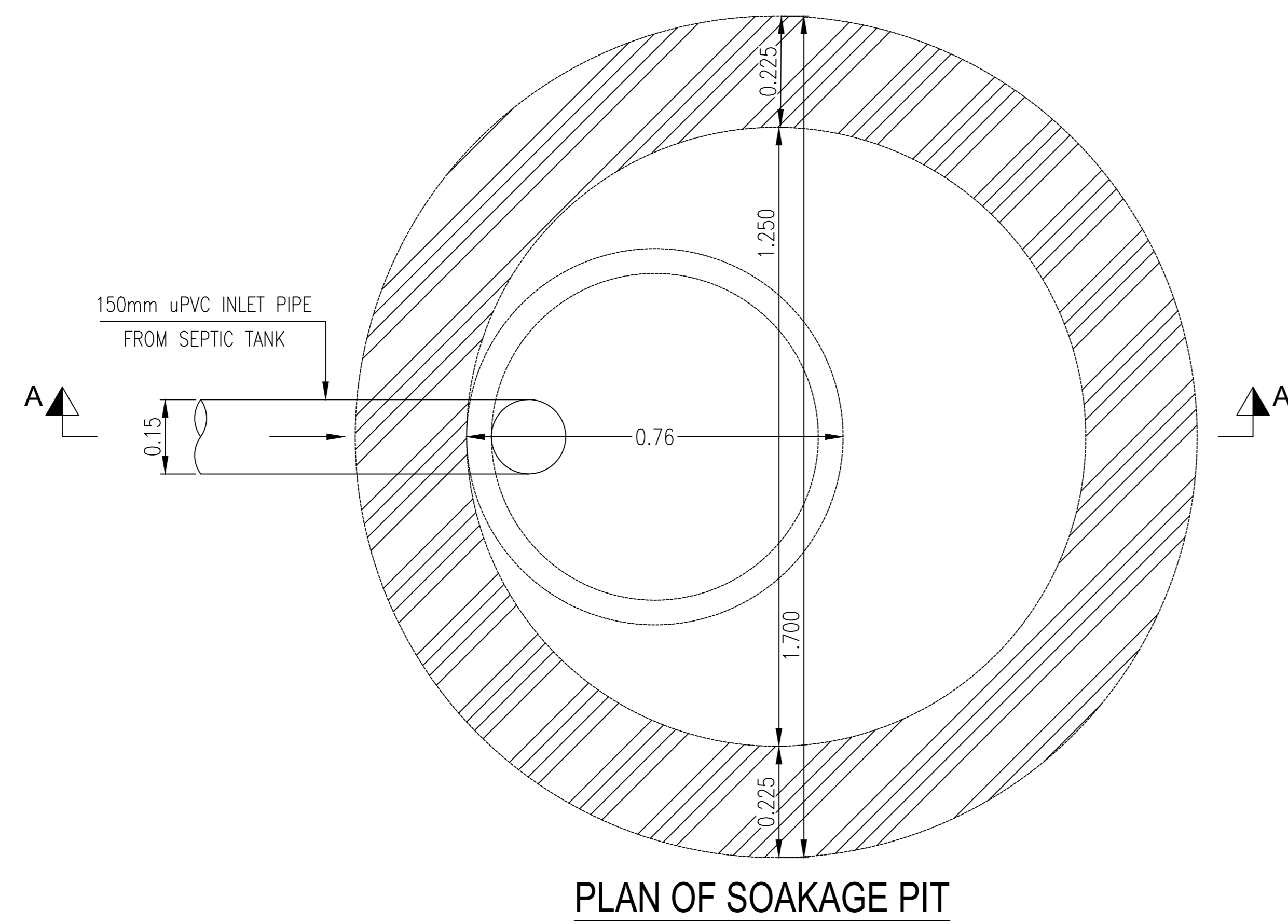
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Drawing No : KPR/SS/KHD/-2419



No.	Revision	By	Date

NOTES:

1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.
2. SOAKAGE PIT BOTTOM SHOULD BE AT LEAST 1.5m ABOVE THE WATER TABLE.



CLIENT :  

**PUBLIC HEALTH  
 ENGINEERING DEPARTMENT  
 KHYBER PAKHTUNKHWA**

CONSULTANT:  

**Techno-Consult  
 International**  
**JV**  

**Ultimate  
 Engineering  
 Consultants**  
New Era of Development

PROJECT:  
 KPRIISP - DESIGN REVIEW AND  
 CONSTRUCTION SUPERVISION FOR  
 WATER SUPPLY, SEWERAGE, DRAINAGE  
 AND WASTE WATER TREATMENT  
 PROJECT IN NEWLY MERGED DISTRICTS  
 OF KHYBER PAKHTUNKHWA

DRAWING TITLE :  
 EXISTING REHAB SCHEMES  
 DISTRICT KHYBER  
 SOAKAGE PIT  
 TYPE-II  
 (02 HOUSES)  
 PLAN AND SECTION

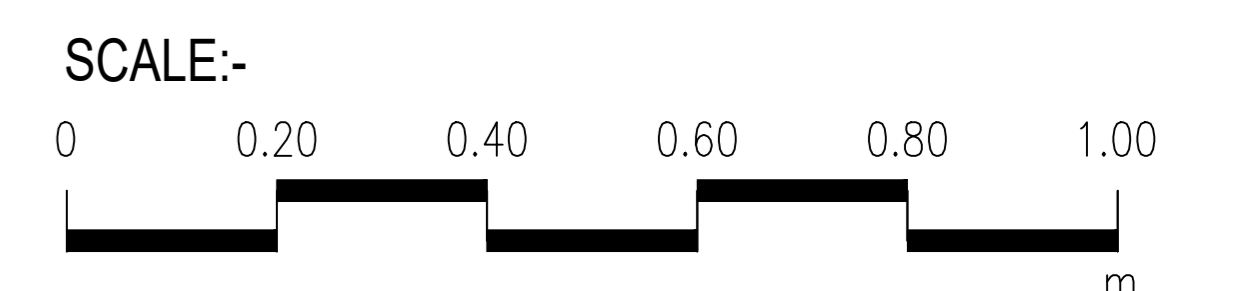
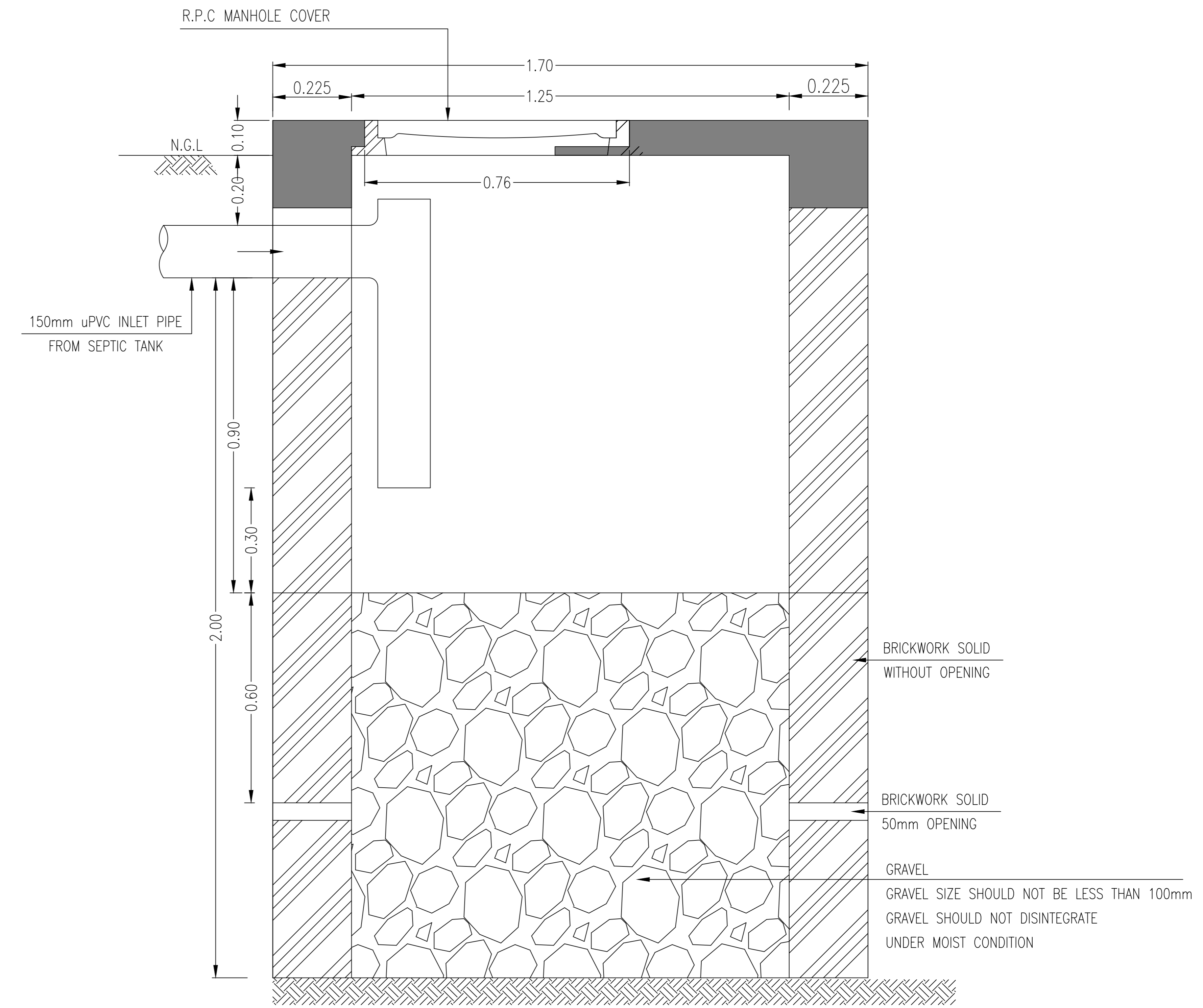
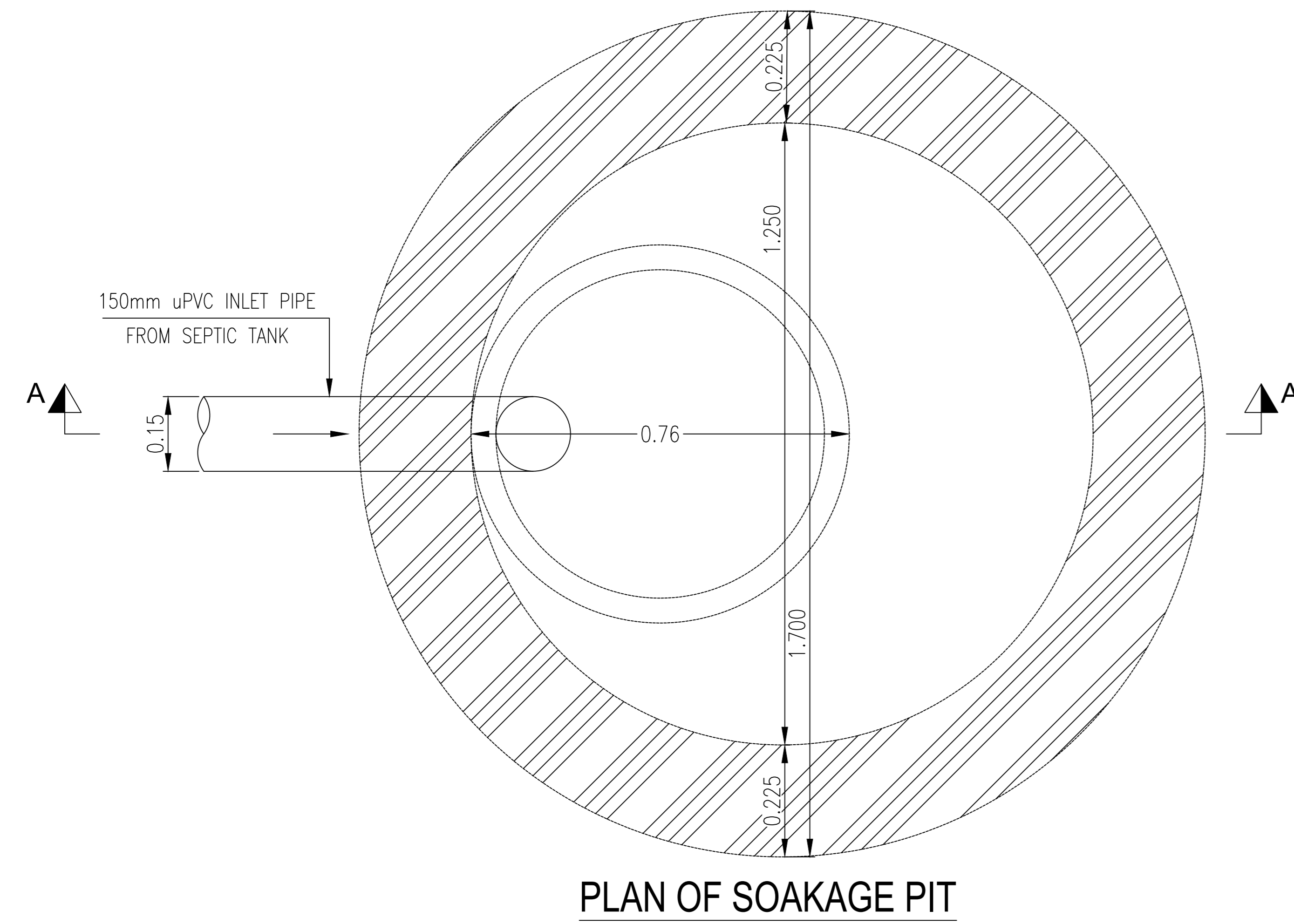
Designed By : Dr. ASFAHAN ALI  
 Drawn By : NAEEM BAKHSH  
 Checked By : RABEEA REHMAN  
 Approved By : RABEEA REHMAN

Date : MAR 2026  
 Scale : AS SHOWN  
 Drawing No :  
 KPR/SS/KHD/-2420

No.	Revision	By	Date

NOTES:

1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.
2. SOAKAGE PIT BOTTOM SHOULD BE AT LEAST 1.5m ABOVE THE WATER TABLE.



CLIENT :  
 PUBLIC HEALTH  
 ENGINEERING DEPARTMENT  
 KHYBER PAKHTUNKHWA

CONSULTANT:  
  
**Techno-Consult International**  
 JV  
 Ultimate Engineering Consultants  
 New Era of Development

PROJECT:  
 KPRIISP - DESIGN REVIEW AND  
 CONSTRUCTION SUPERVISION FOR  
 WATER SUPPLY, SEWERAGE, DRAINAGE  
 AND WASTE WATER TREATMENT  
 PROJECT IN NEWLY MERGED DISTRICTS  
 OF KHYBER PAKHTUNKHWA

DRAWING TITLE :  
 EXISTING REHAB SCHEMES  
 DISTRICT KHYBER  
 SOAKAGE PIT  
 TYPE-III  
 (UP TO 05 HOUSES)  
 PLAN AND SECTION

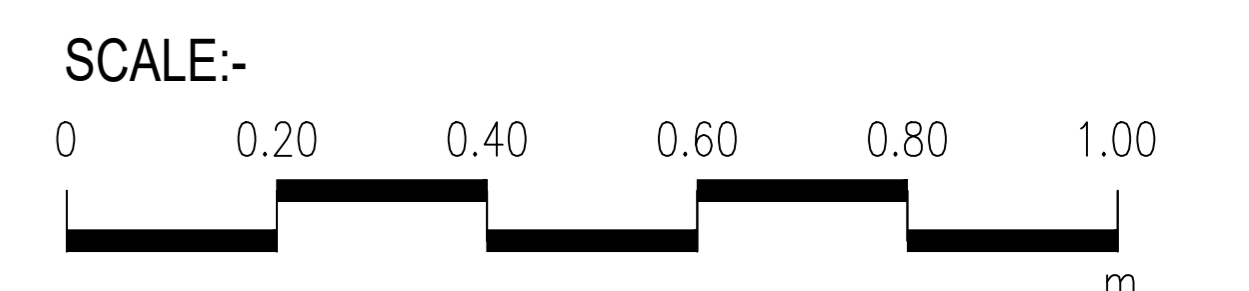
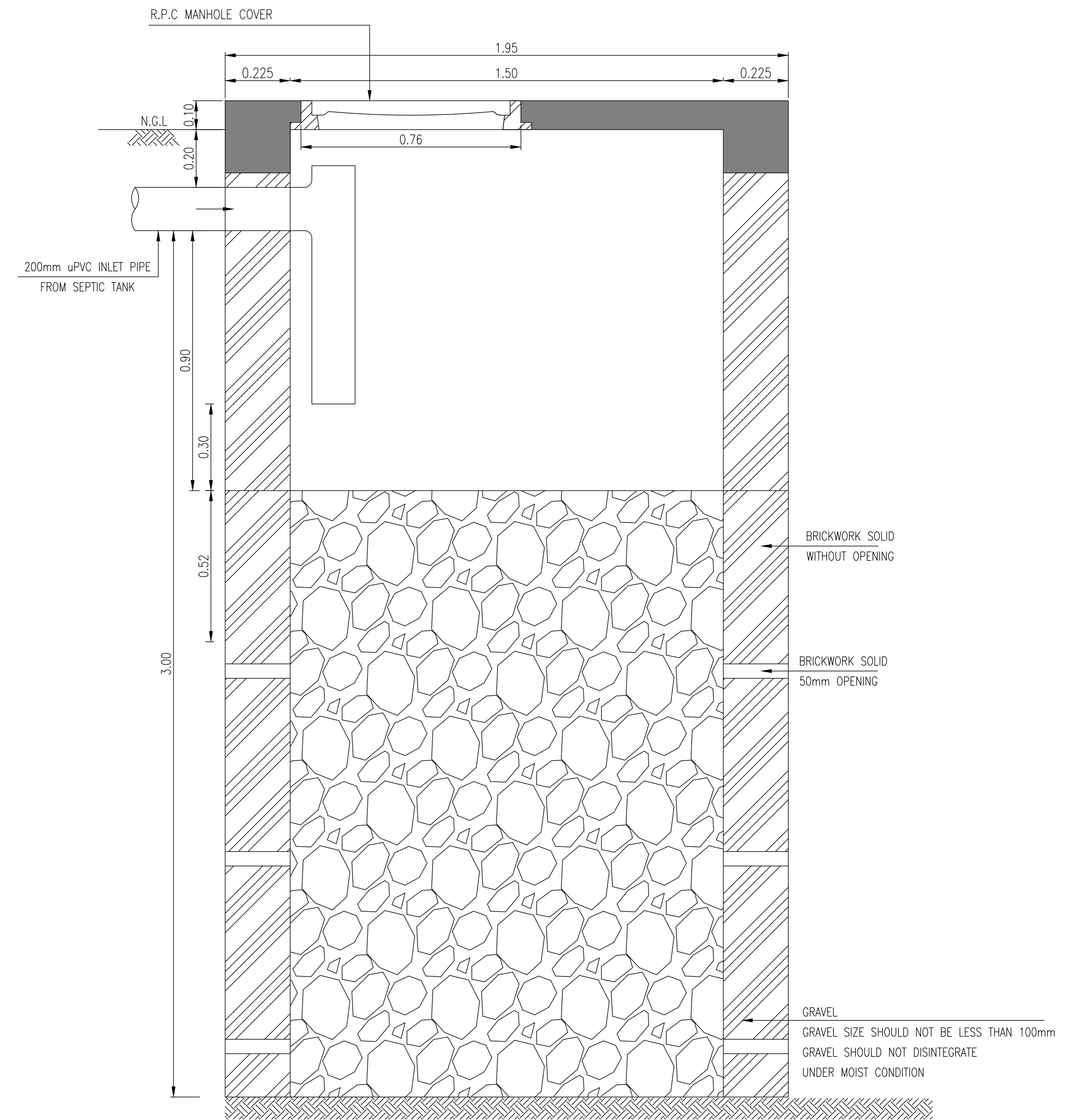
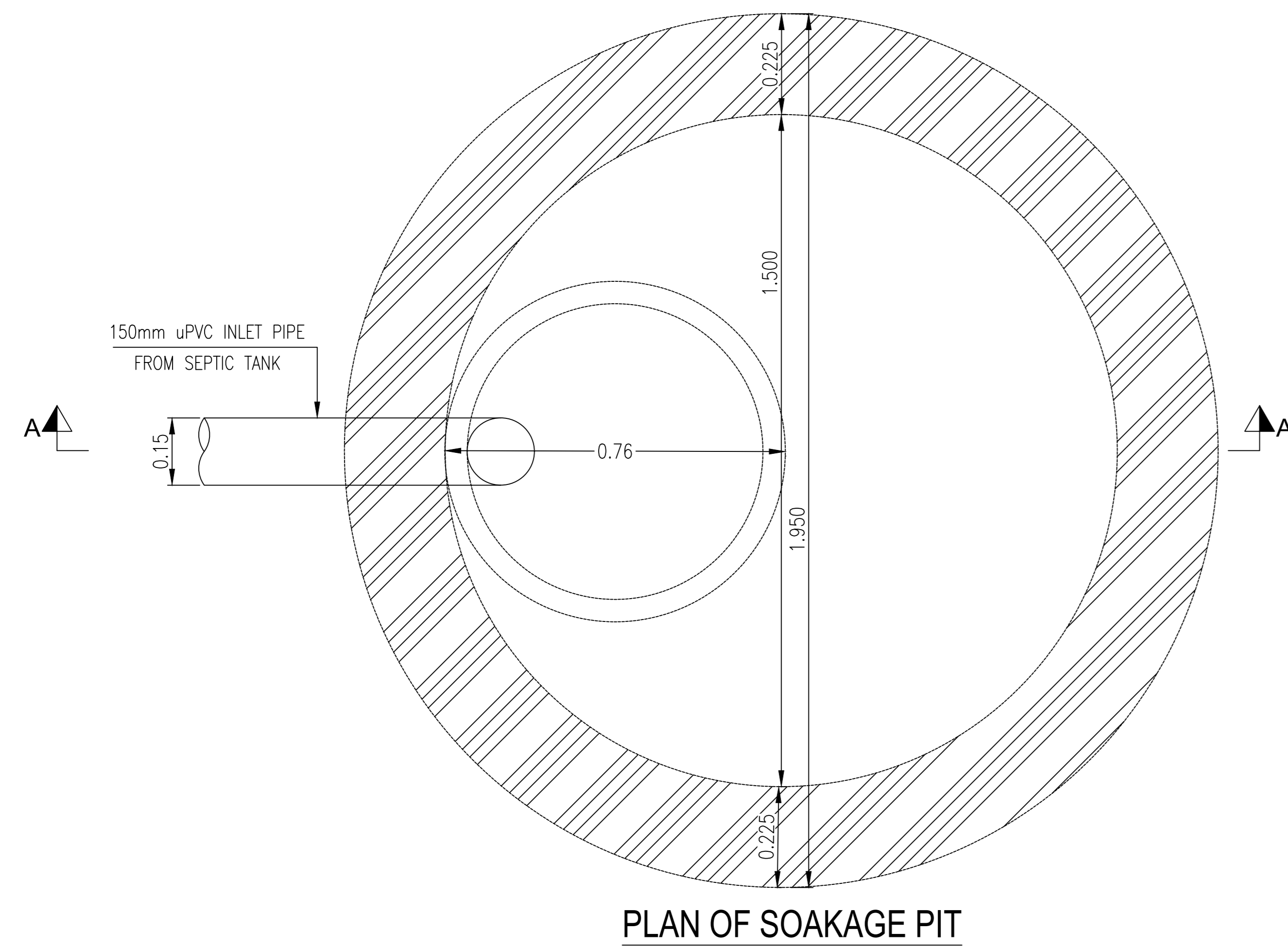
Designed By : Dr. ASFAHAN ALI  
 Drawn By : NAEEM BAKHSH  
 Checked By : RABEEA REHMAN  
 Approved By : RABEEA REHMAN


Date : MAR 2026  
 Scale : AS SHOWN  
 Drawing No :  
 KPR/SS/KHD/-2421



No.	Revision	By	Date

NOTES:

1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.
2. SOAKAGE PIT BOTTOM SHOULD BE AT LEAST 1.5m ABOVE THE WATER TABLE.



CLIENT :  

 PUBLIC HEALTH  
 ENGINEERING DEPARTMENT  
 KHYBER PAKHTUNKHWA

CONSULTANT:  

**Techno-Consult**  
*International*  
 JV  

**Ultimate**  
 Engineering  
 Consultants  
 New Era of Development

PROJECT:  
 KPRIISP - DESIGN REVIEW AND  
 CONSTRUCTION SUPERVISION FOR  
 WATER SUPPLY, SEWERAGE, DRAINAGE  
 AND WASTE WATER TREATMENT  
 PROJECT IN NEWLY MERGED DISTRICTS  
 OF KHYBER PAKHTUNKHWA

DRAWING TITLE :  
 EXISTING REHAB SCHEMES  
 DISTRICT KHYBER  
 SOAKAGE PIT  
 TYPE IV  
 (UP TO 10 HOUSES)  
 PLAN AND SECTION

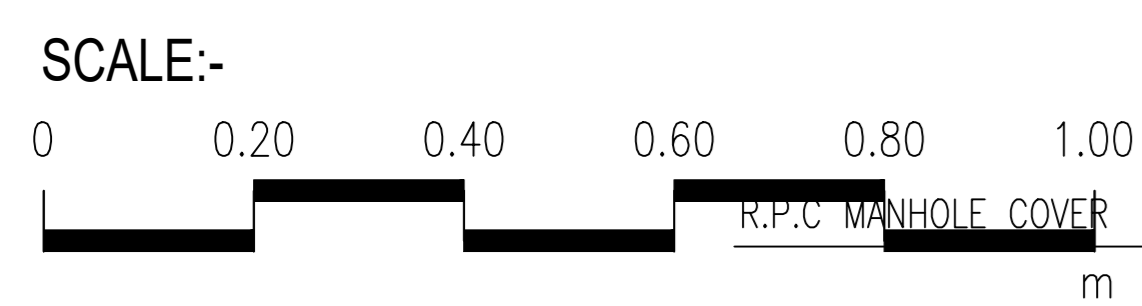
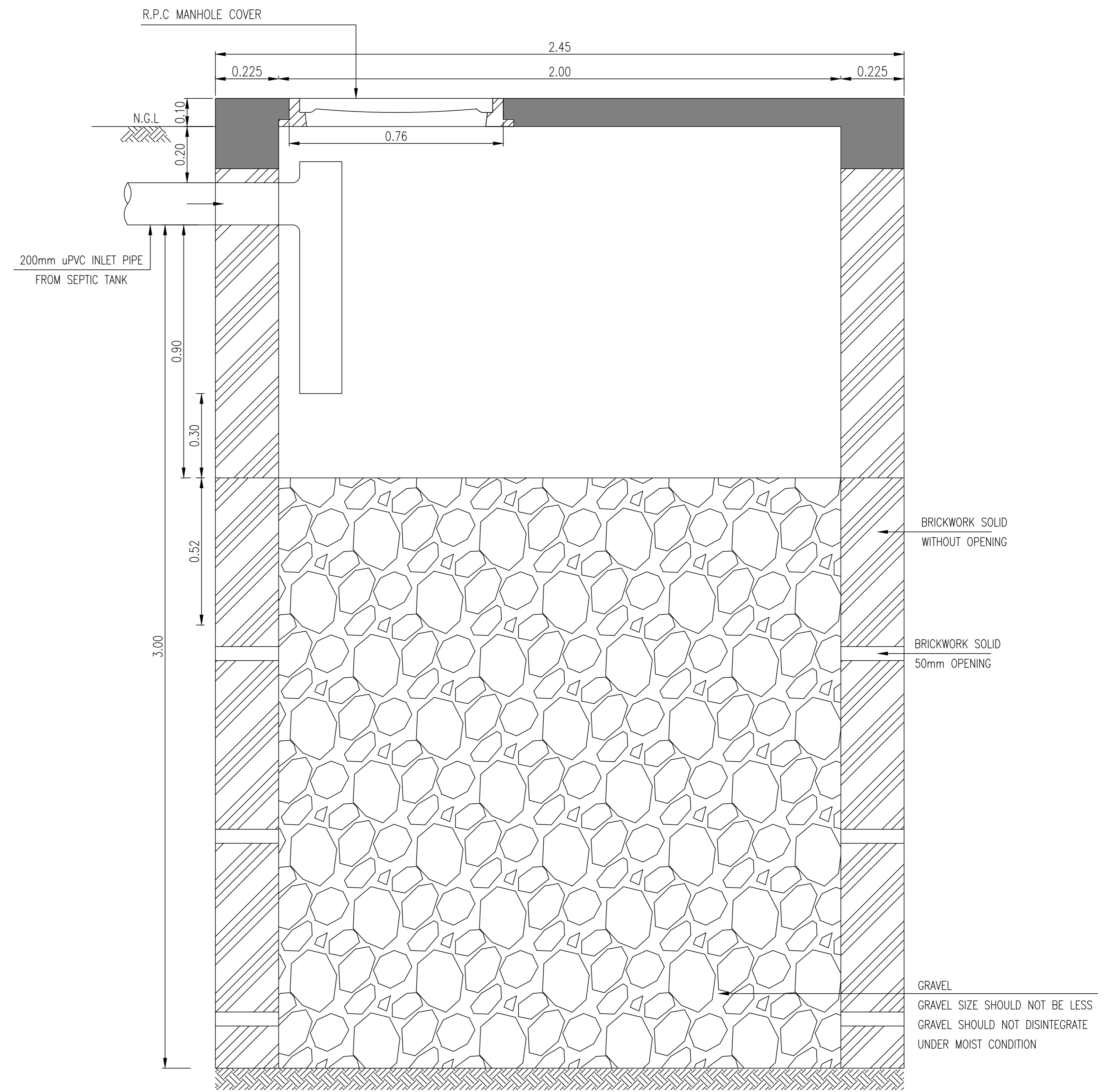
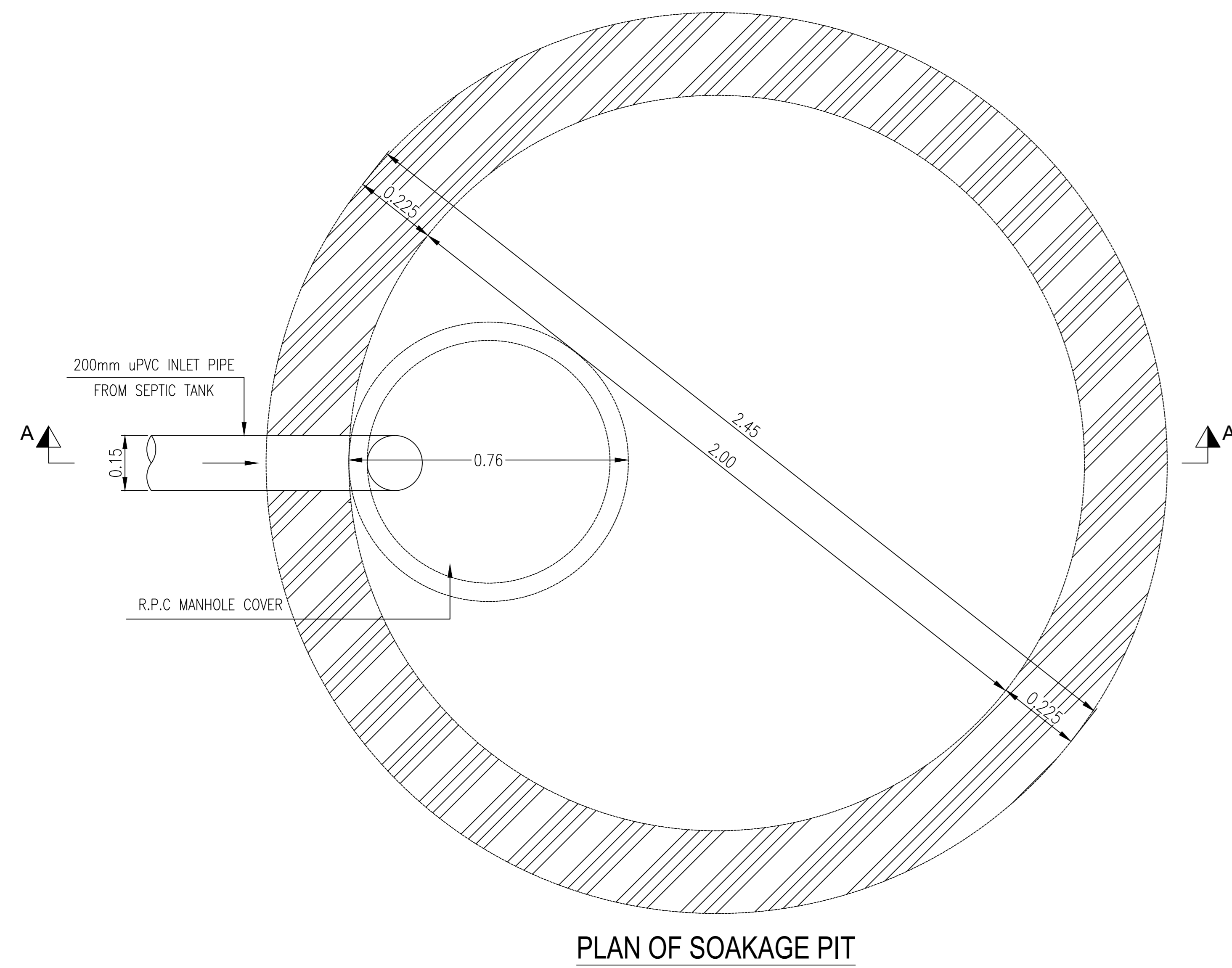
Designed By : Dr. ASFAHAN ALI  
 Drawn By : NAEEM BAKHSH  
 Checked By : RABEEA REHMAN  
 Approved By : RABEEA REHMAN

Date : MAR 2026  
 Scale : AS SHOWN  
 Drawing No :  
 KPR/SS/KHD/-2422

No.	Revision	By	Date

NOTES:

1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.
2. SOAKAGE PIT BOTTOM SHOULD BE AT LEAST 1.5m ABOVE THE WATER TABLE.



2 45

CLIENT :

PUBLIC HEALTH  
ENGINEERING DEPARTMENT  
KHYBER PAKHTUNKHWA

CONSULTANT:

**Techno-Consult  
International** JV  
Ultimate  
Engineering  
Consultants  
New Era of Development

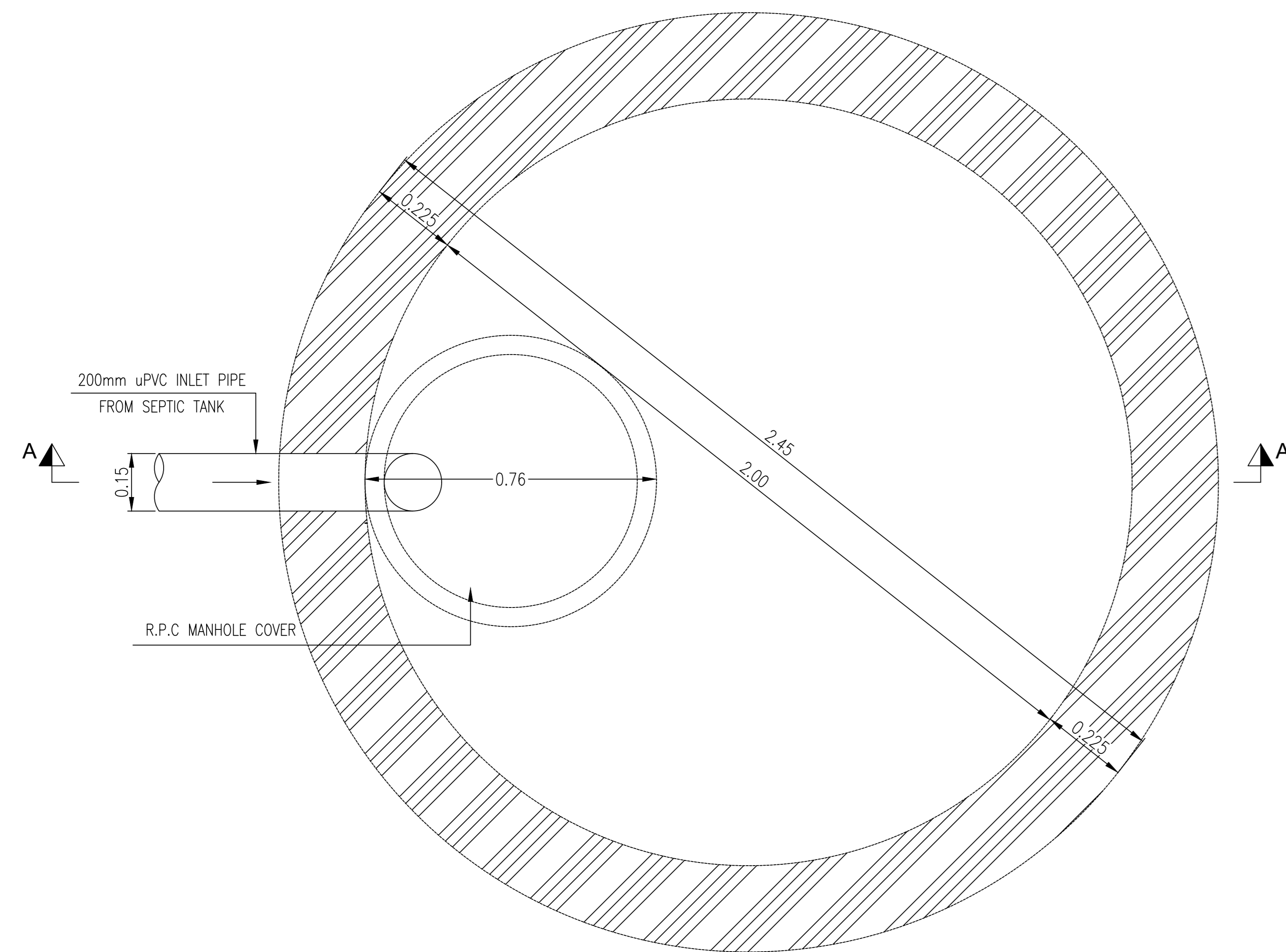
PROJECT:  
KPRIISP - DESIGN REVIEW AND  
CONSTRUCTION SUPERVISION FOR  
WATER SUPPLY, SEWERAGE, DRAINAGE  
AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS  
OF KHYBER PAKHTUNKHWA

DRAWING TITLE :  
EXISTING REHAB SCHEMES  
DISTRICT KHYBER  
SOAKAGE PIT  
TYPE-V  
(UP TO 15 HOUSES)  
PLAN AND SECTION

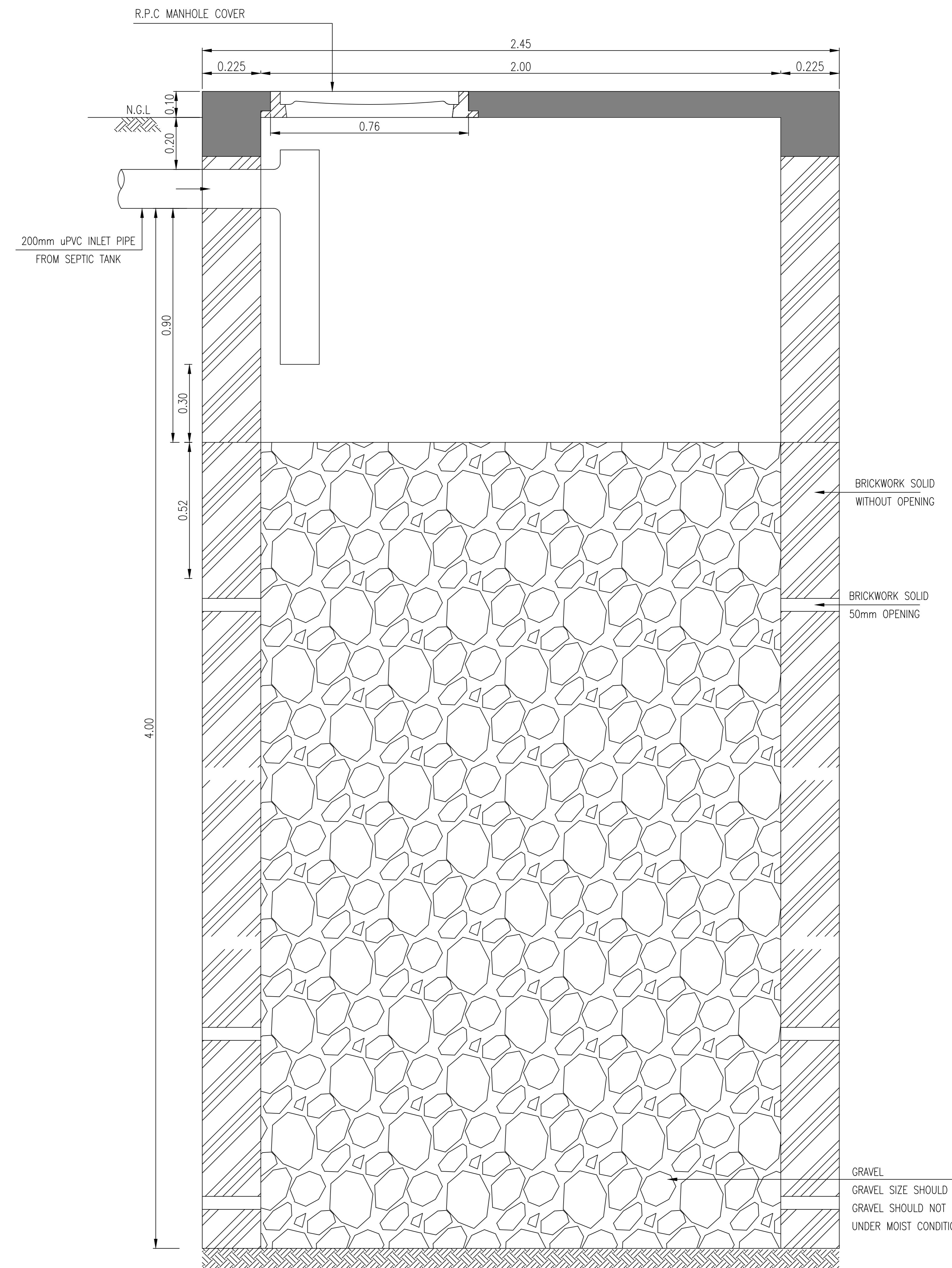
Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.	Revision	By	Date
Drawn By : NAEEM BAKHSH	Scale : AS SHOWN				
Checked By : RABEEA REHMAN	Drawing No :				
Approved By : RABEEA REHMAN	KPR/SS/KHD/-2423				

NOTES:

1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.
2. SOAKAGE PIT BOTTOM SHOULD BE AT LEAST 1.5m ABOVE THE WATER TABLE.

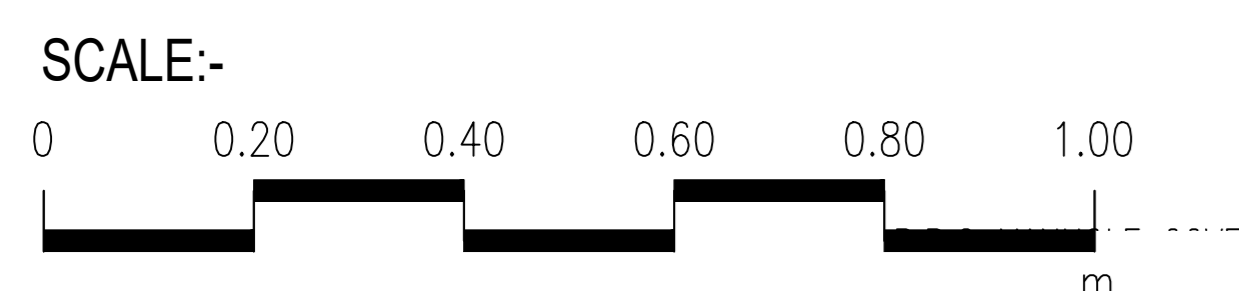


PLAN OF SOAKAGE PIT



SECTION A-A

GRAVEL  
GRAVEL SIZE SHOULD NOT BE LESS THAN 100mm  
GRAVEL SHOULD NOT DISINTEGRATE  
UNDER MOIST CONDITION



CLIENT :

PUBLIC HEALTH  
ENGINEERING DEPARTMENT  
KHYBER PAKHTUNKHWA

CONSULTANT:

**Techno-Consult**  
*International*  
JV  
Ultimate  
Engineering  
Consultants  
New Era of Development

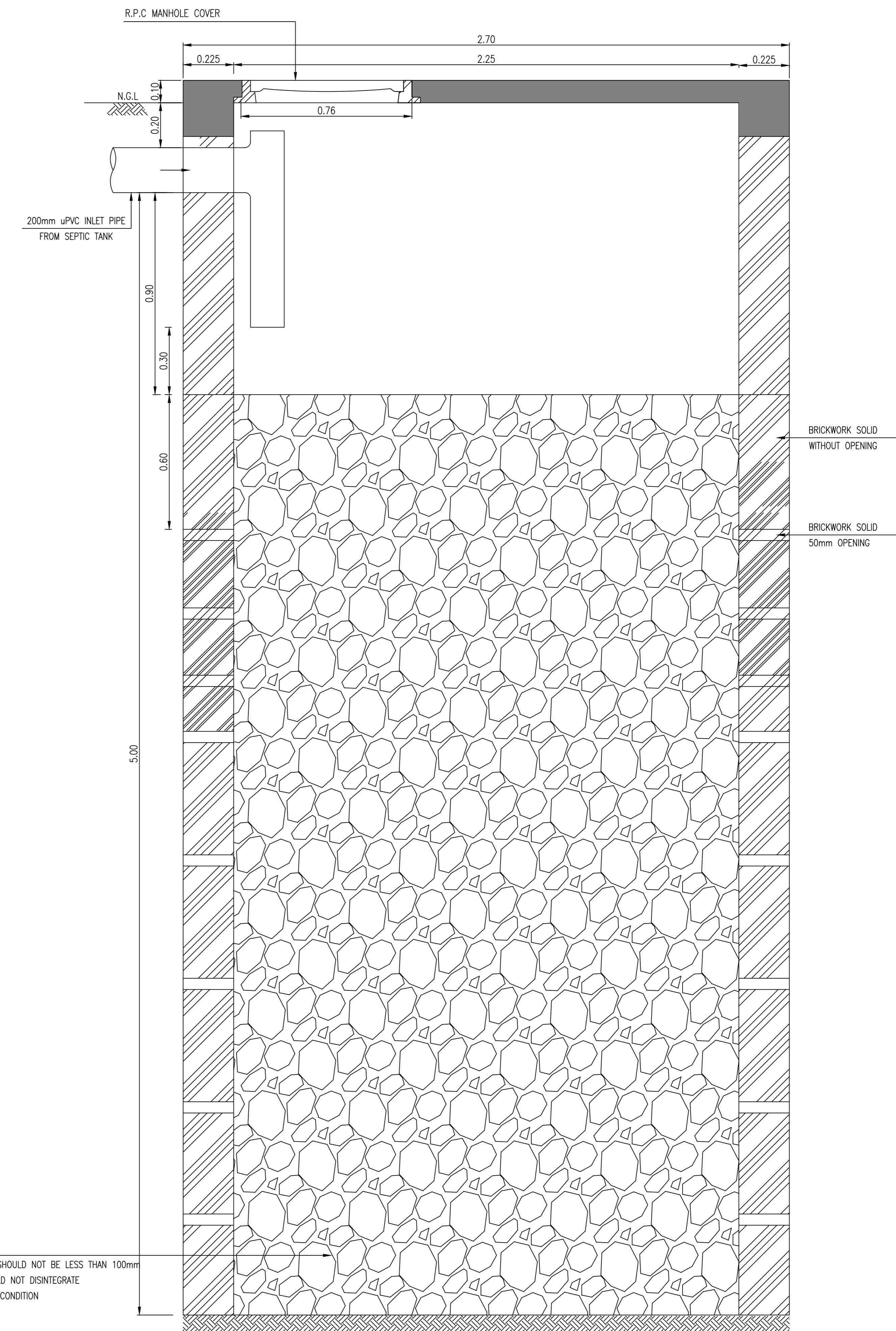
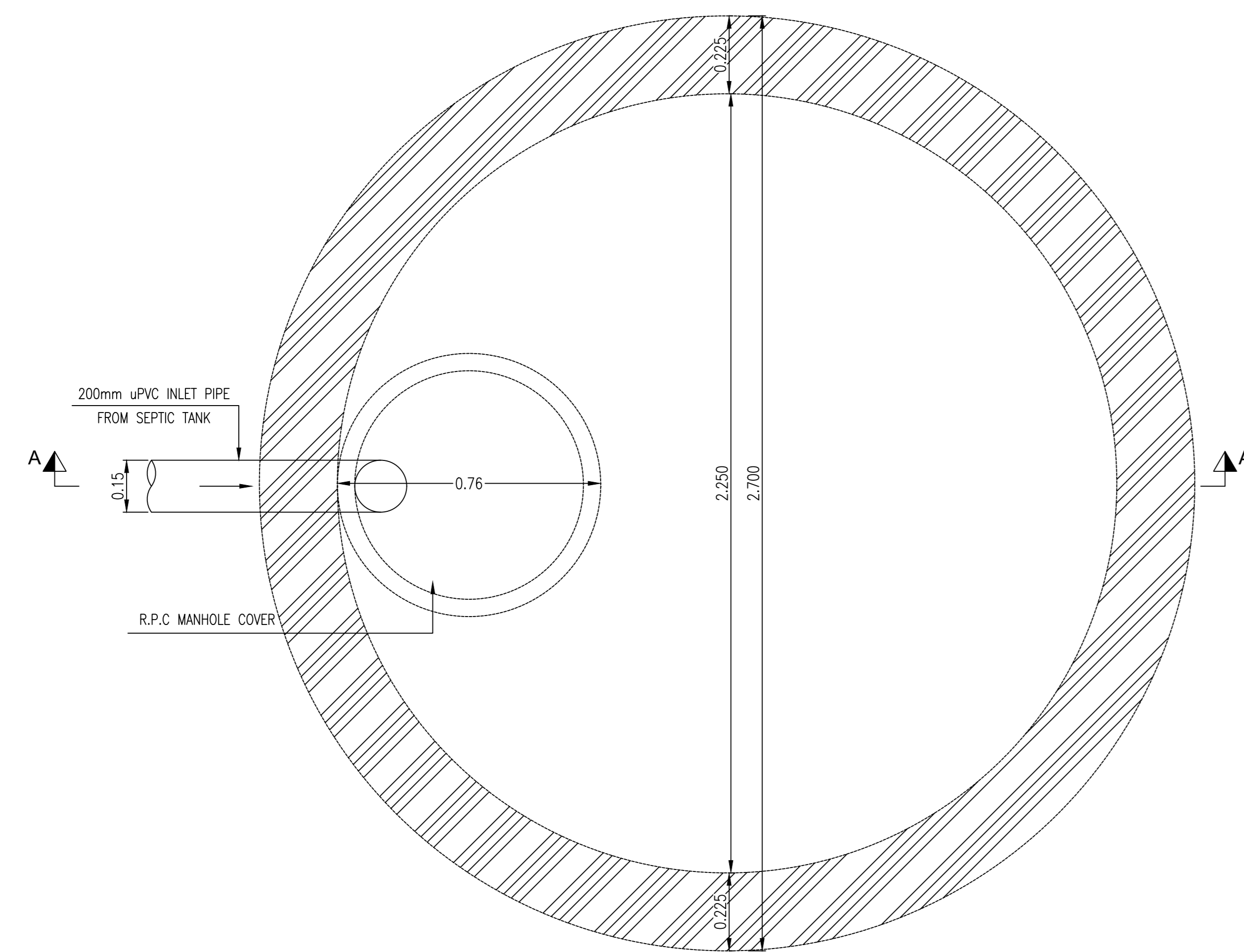
PROJECT:  
KPRIISP - DESIGN REVIEW AND  
CONSTRUCTION SUPERVISION FOR  
WATER SUPPLY, SEWERAGE, DRAINAGE  
AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS  
OF KHYBER PAKHTUNKHWA

DRAWING TITLE :  
EXISTING REHAB SCHEMES  
DISTRICT KHYBER  
SOAKAGE PIT  
TYPE-VI  
(UP TO 20 HOUSES)  
PLAN AND SECTION

Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.	Revision	By	Date
Drawn By : NAEEM BAKHSH	Scale : AS SHOWN				
Checked By : RABEEA REHMAN	Drawing No :				
Approved By : RABEEA REHMAN	KPR/SS/KHD/-2424				

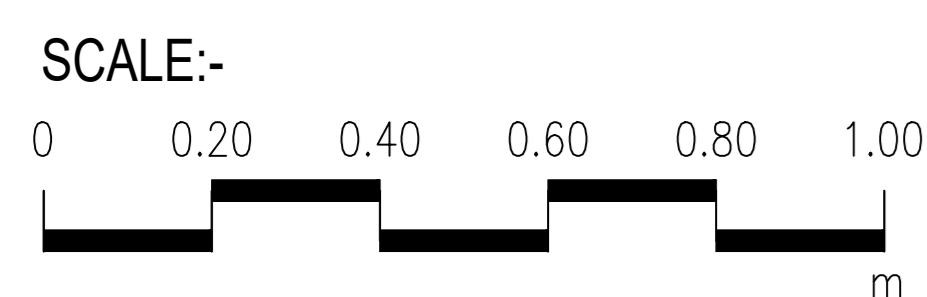
**NOTES:**

1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.
2. SOAKAGE PIT BOTTOM SHOULD BE AT LEAST 1.5m ABOVE THE WATER TABLE.




GRAVEL  
GRAVEL SIZE SHOULD NOT BE LESS THAN 100mm  
GRAVEL SHOULD NOT DISINTEGRATE  
UNDER MOIST CONDITION

SECTION A-A




CLIENT :

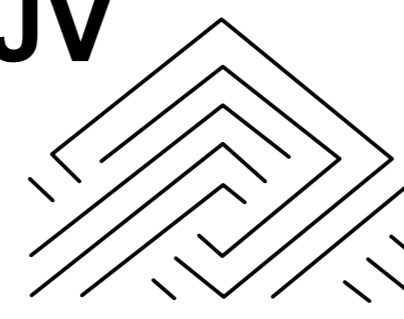


PUBLIC HEALTH  
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KHYBER PAKHTUNKHWA

CONSULTANT:



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PROJECT:  
KPRIISP - DESIGN REVIEW AND  
CONSTRUCTION SUPERVISION FOR  
WATER SUPPLY, SEWERAGE, DRAINAGE  
AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS  
OF KHYBER PAKHTUNKHWA

DRAWING TITLE :  
EXISTING REHAB SCHEMES  
DISTRICT KHYBER  
SOAKAGE PIT  
TYPE-XII  
(UP TO 30 HOUSES)  
PLAN AND SECTION

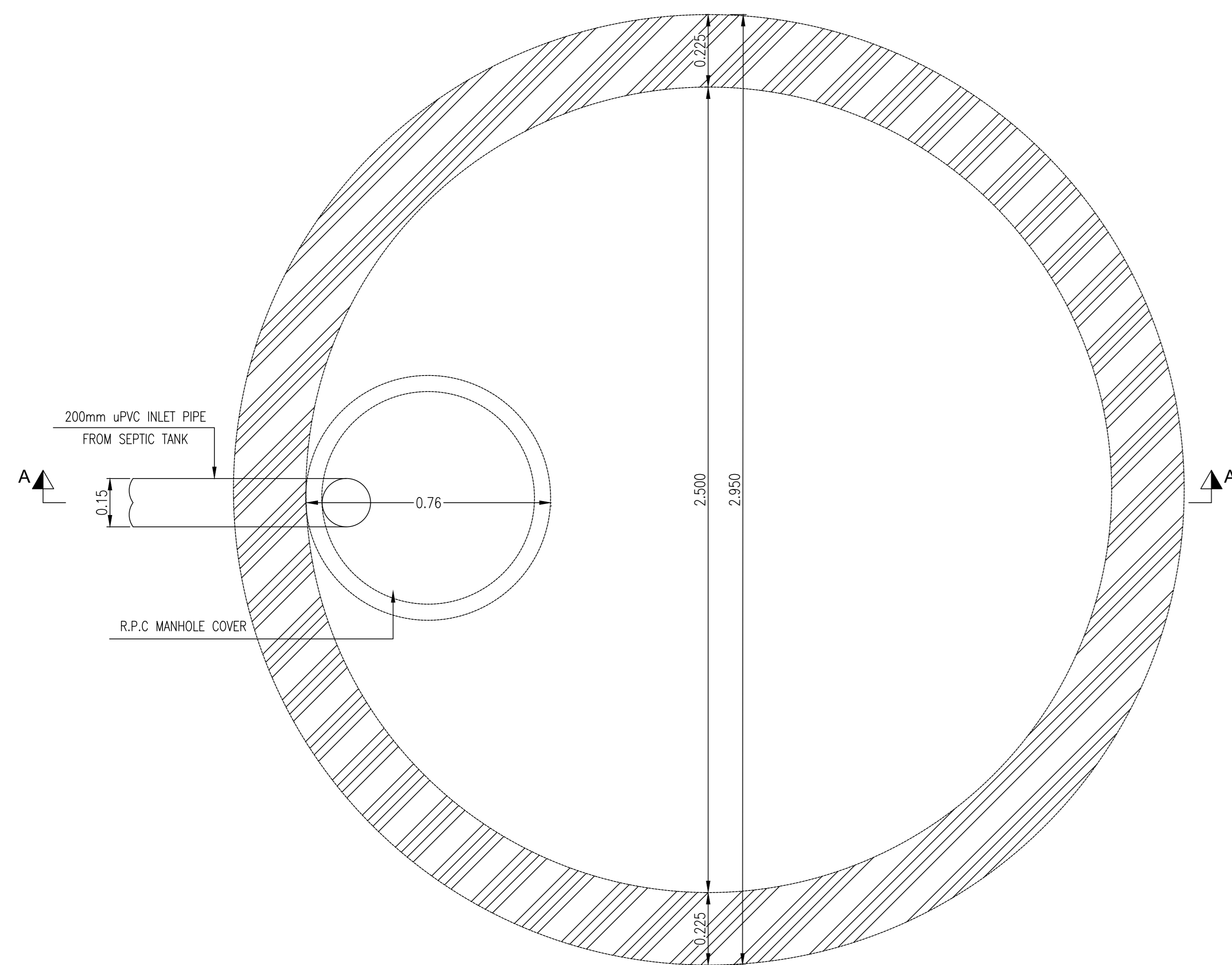
Designed By : Dr. ASFAHAN ALI  
Drawn By : NAEEM BAKHSH  
Checked By : RABEEA REHMAN  
Approved By : RABEEA REHMAN

Date : MAR 2026  
Scale : AS SHOWN  
Drawing No :  
KPR/SS/KHD/-2427

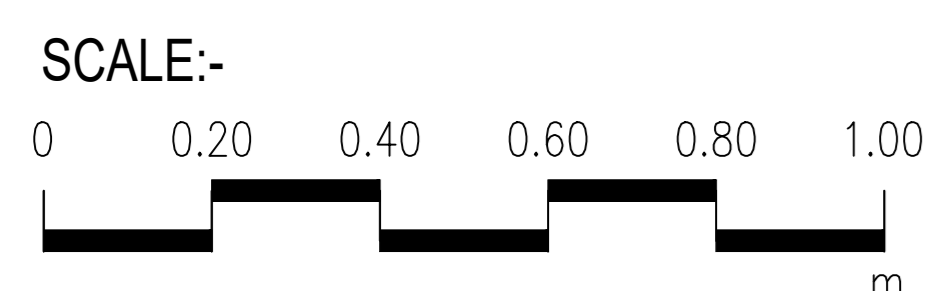
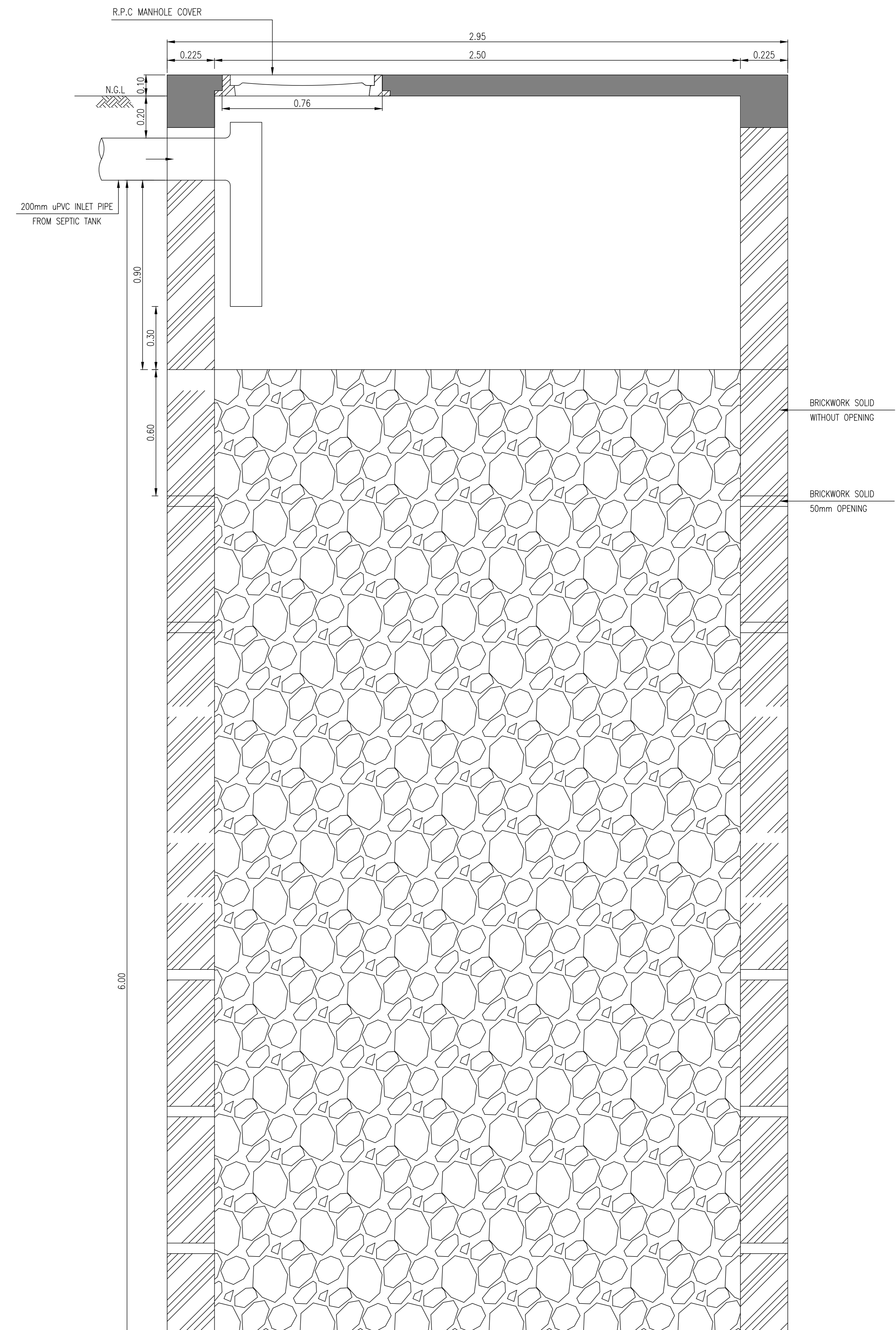
No.	Revision	By	Date

**NOTES:**


1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.
2. SOAKAGE PIT BOTTOM SHOULD BE AT LEAST 1.5m ABOVE THE WATER TABLE.



PLAN OF SOAKAGE PIT




CLIENT :

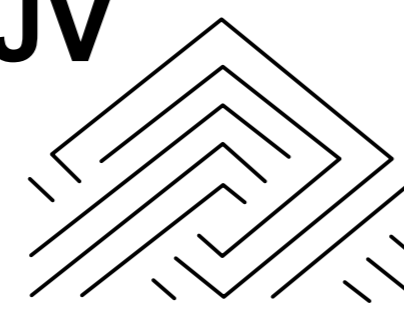


PUBLIC HEALTH  
ENGINEERING DEPARTMENT  
KHYBER PAKHTUNKHWA

CONSULTANT:



**Techno-Consult  
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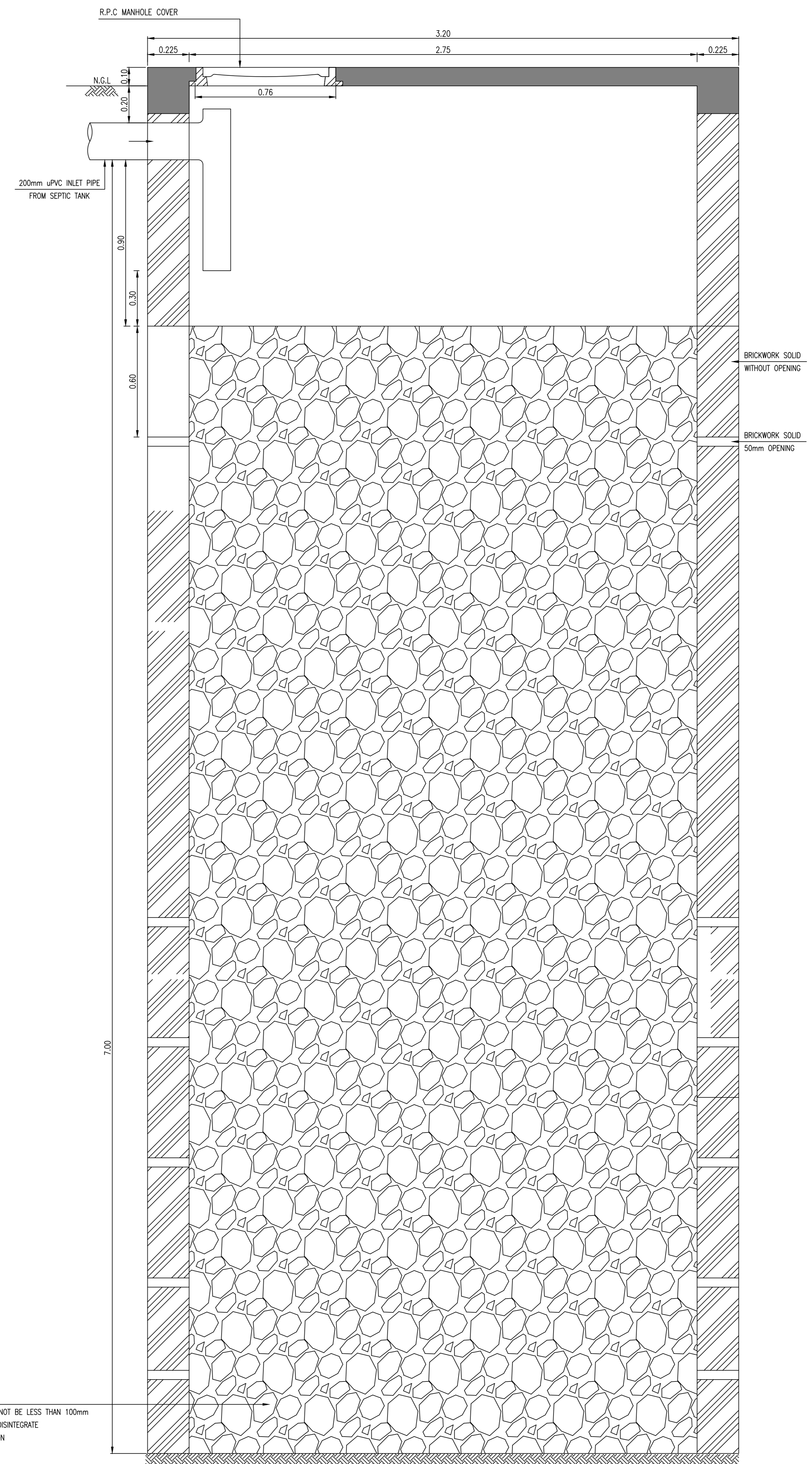
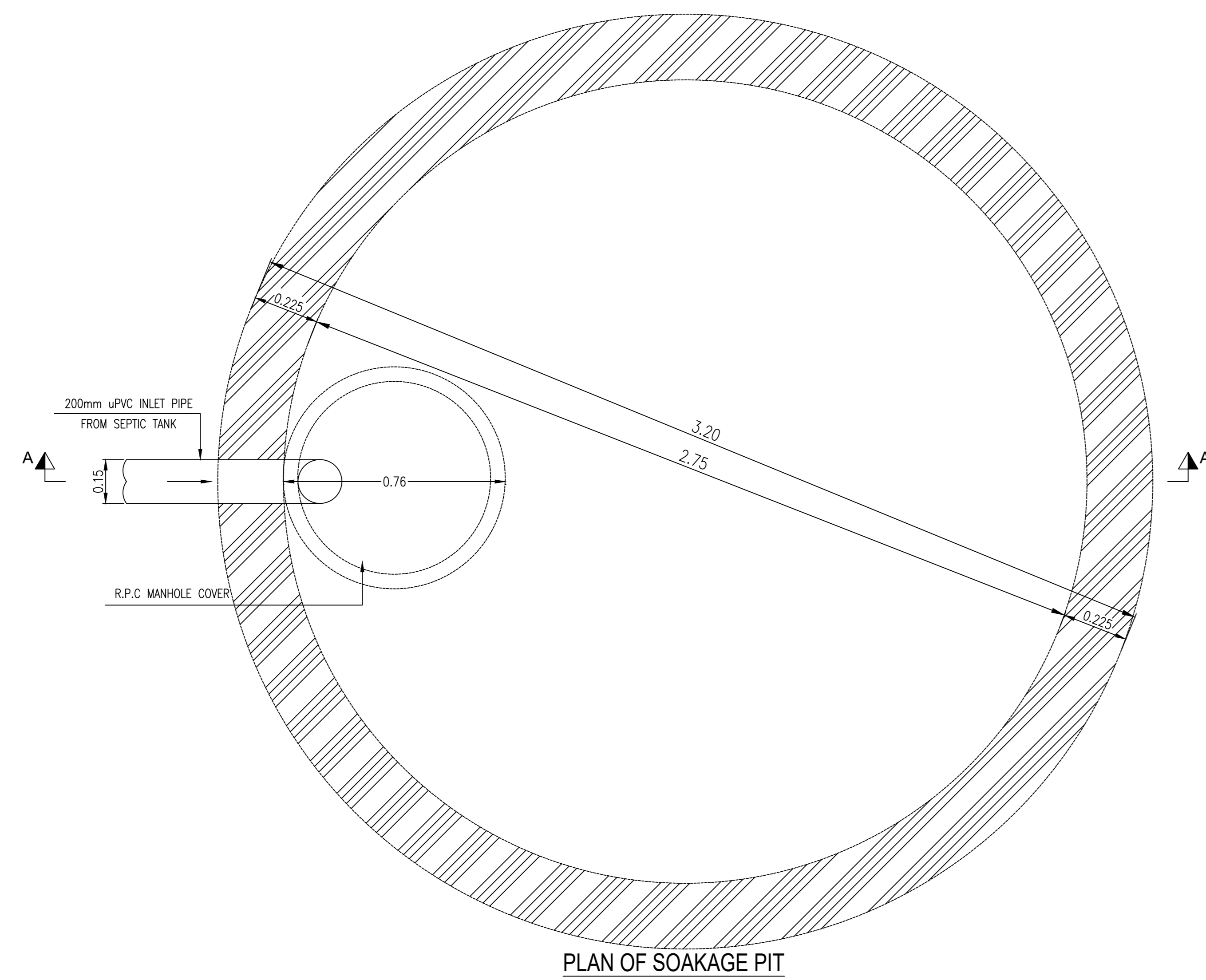
PROJECT:  
KPRIISP - DESIGN REVIEW AND  
CONSTRUCTION SUPERVISION FOR  
WATER SUPPLY, SEWERAGE, DRAINAGE  
AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS  
OF KHYBER PAKHTUNKHWA

DRAWING TITLE :  
EXISTING REHAB SCHEMES  
DISTRICT KHYBER  
SOAKAGE PIT  
TYPE-VIII  
(UP TO 40 HOUSES)  
PLAN AND SECTION

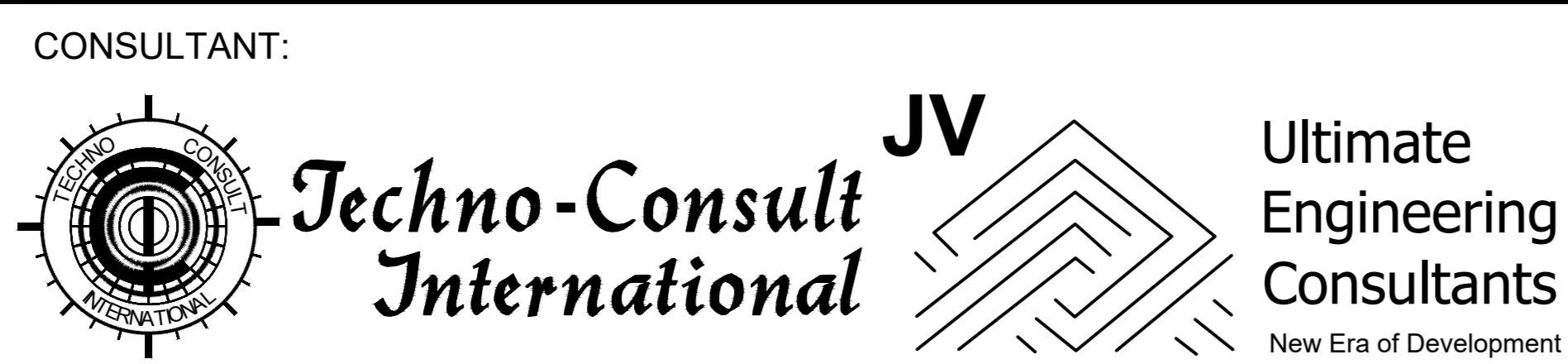
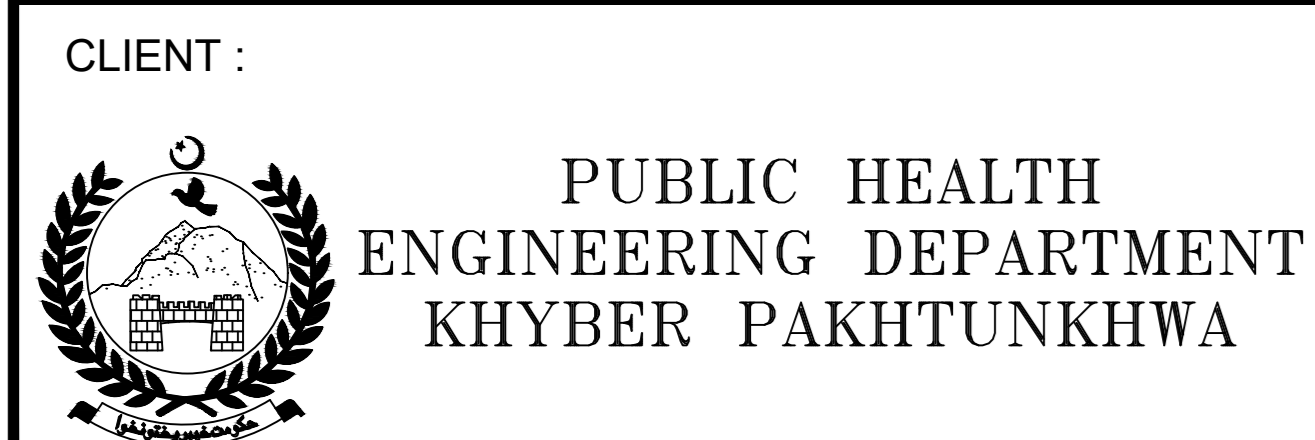
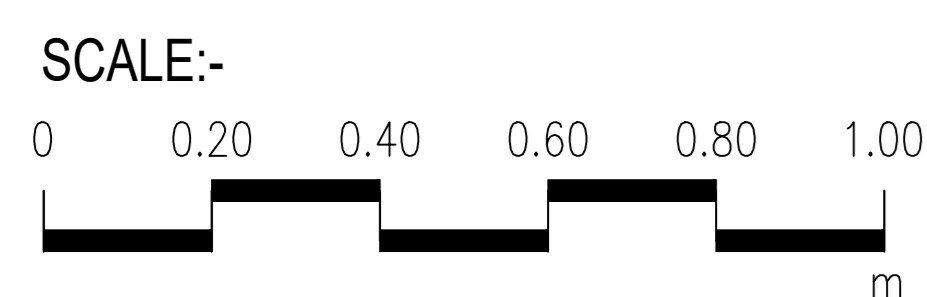
Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.	Revision	By	Date
Drawn By : NAEEM BAKHSH	Scale : AS SHOWN				
Checked By : RABEEA REHMAN	Drawing No :				
Approved By : RABEEA REHMAN	KPR/SS/KHD/-2426				

**NOTES:**

1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.
2. SOAKAGE PIT BOTTOM SHOULD BE AT LEAST 1.5m ABOVE THE WATER TABLE.



GRAVEL  
GRAVEL SIZE SHOULD NOT BE LESS THAN 100mm  
GRAVEL SHOULD NOT DISINTEGRATE  
UNDER MOIST CONDITION



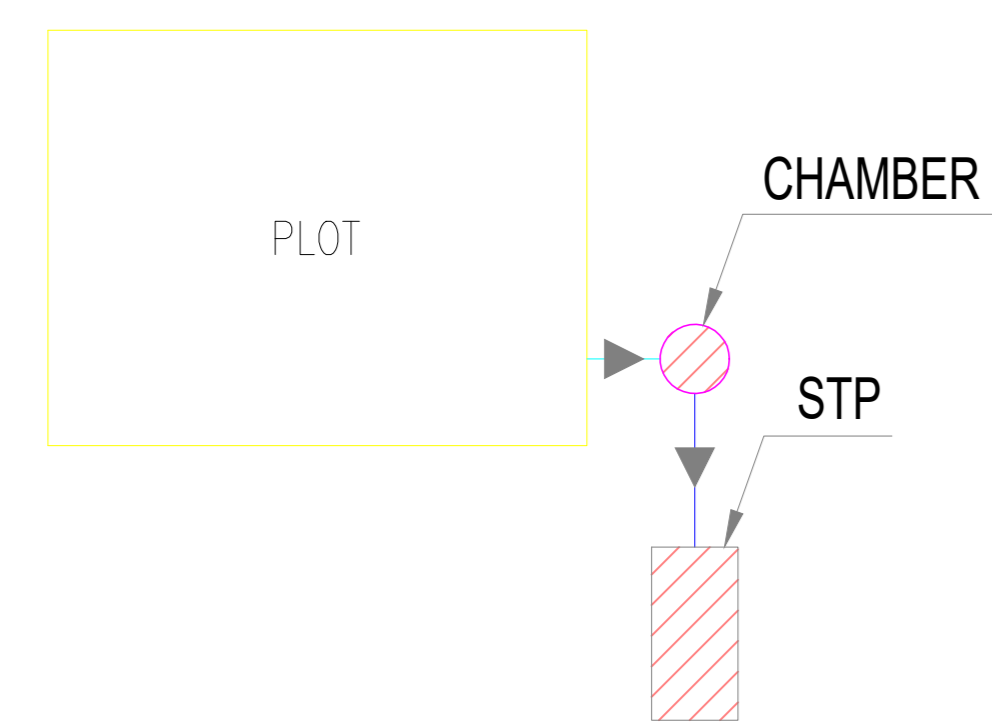
PROJECT:  
KPRIISP - DESIGN REVIEW AND  
CONSTRUCTION SUPERVISION FOR  
WATER SUPPLY, SEWERAGE, DRAINAGE  
AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS  
OF KHYBER PAKHTUNKHWA

DRAWING TITLE :  
EXISTING REHAB SCHEMES  
DISTRICT KHYBER  
SOAKAGE PIT  
TYPE-IX  
(UP TO 50 HOUSES)  
PLAN AND SECTION

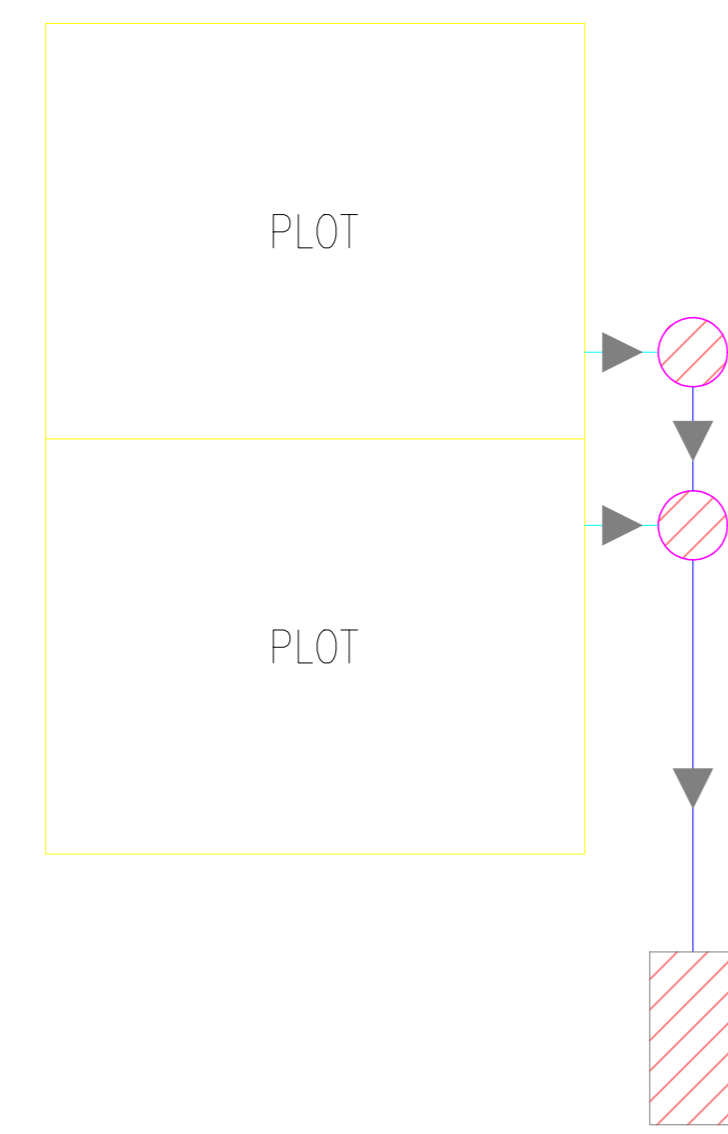
Designed By : Dr. ASFAHAN ALI	Date : MAR 2026	No.	Revision	By	Date
Drawn By : NAEEM BAKHSH	Scale : AS SHOWN				
Checked By : RABEEA REHMAN	Drawing No :				
Approved By : RABEEA REHMAN	KPR/SS/KHD/-2425				

**NOTES:**

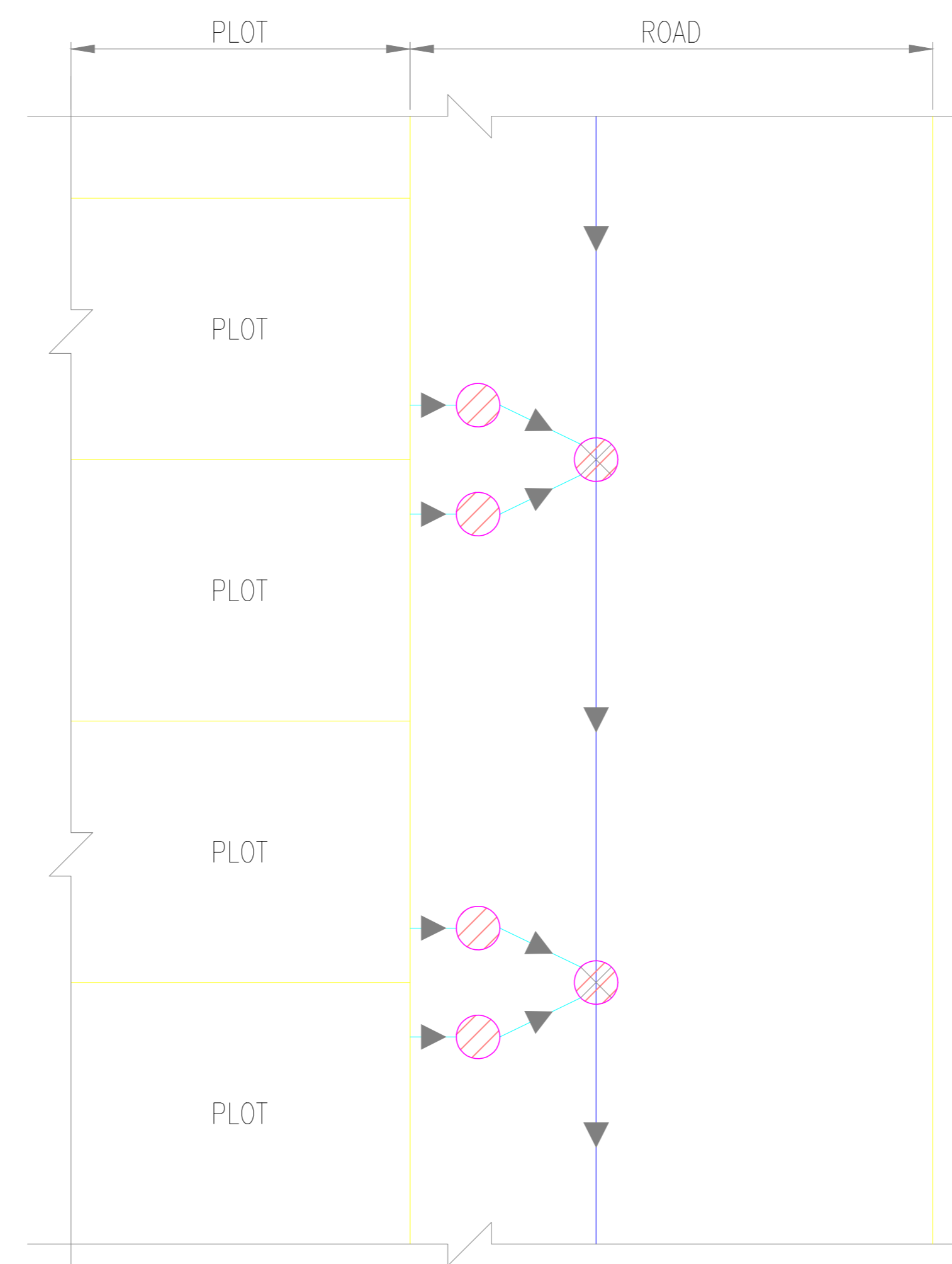
1. ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.
2. HOUSE CONNECTION DETAILS SHALL BE ADJUSTED ACCORDING TO THE CLUSTER LAYOUT AND PREVAILING SITE CONDITIONS, IN LINE WITH THE DETAILS AS SHOWN IN THE DRAWING.



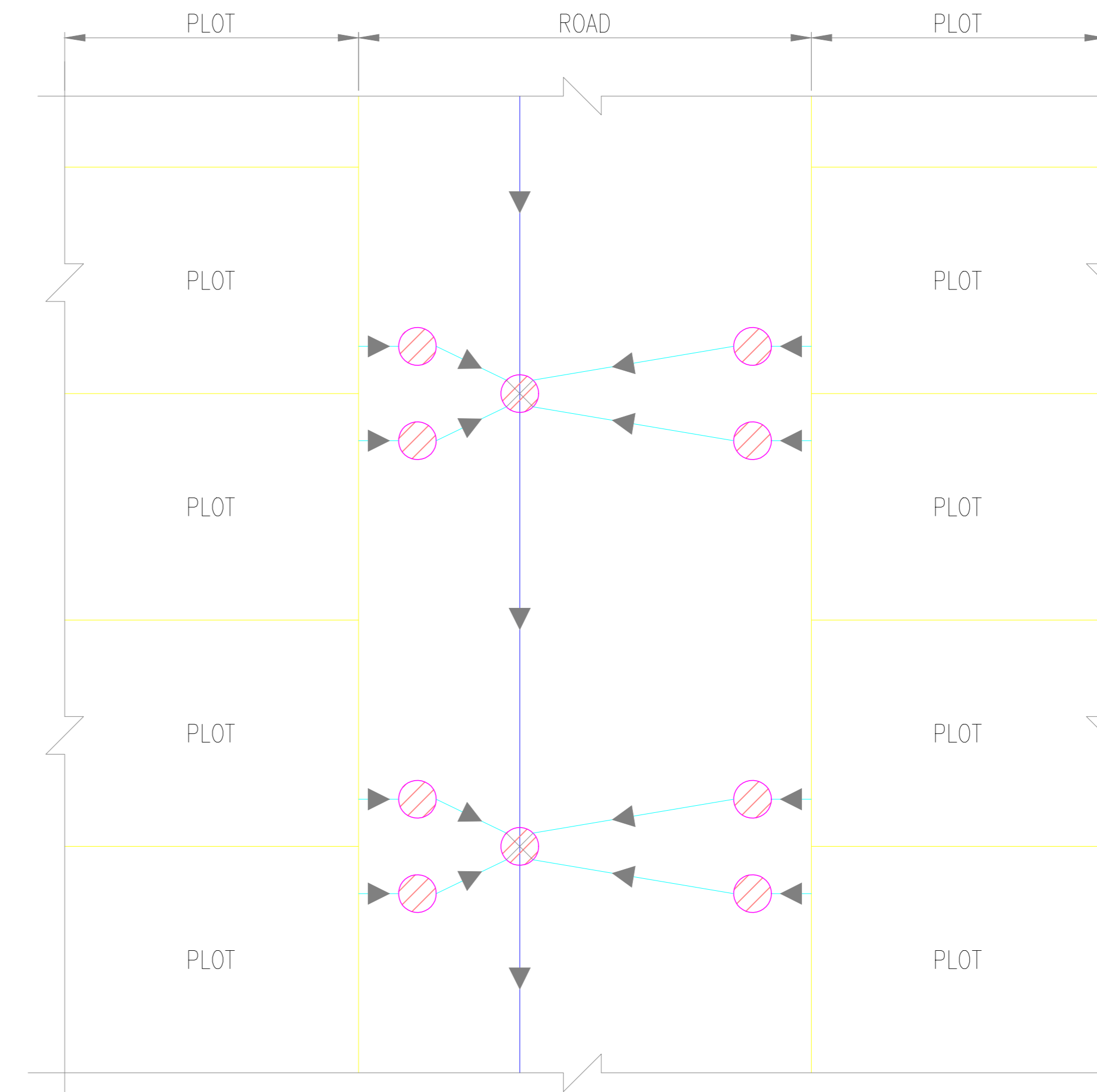
HOUSE CONNECTION TYPICAL PLAN - A



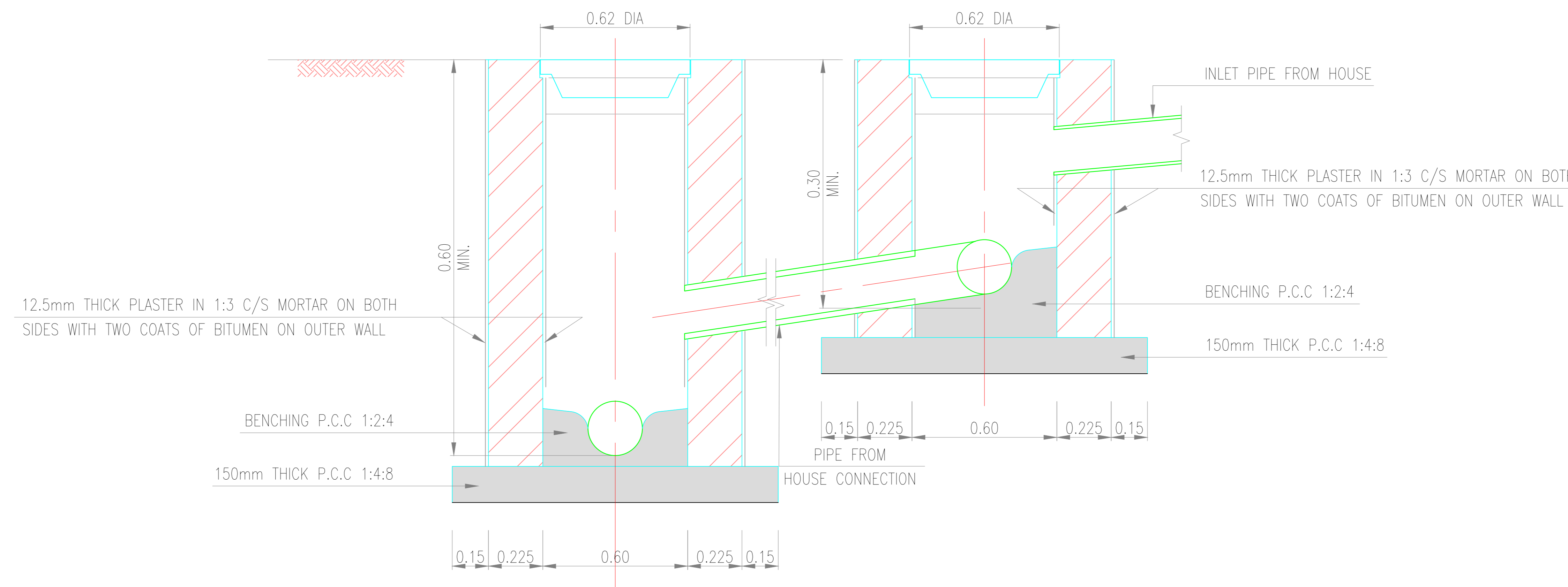
HOUSE CONNECTION TYPICAL PLAN - B



HOUSE CONNECTION TYPICAL PLAN - C




HOUSE CONNECTION TYPICAL PLAN - D



HOUSE CONNECTION TYPICAL SECTION

CLIENT :



PUBLIC HEALTH  
ENGINEERING DEPARTMENT  
KHYBER PAKHTUNKHWA

CONSULTANT:



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International  
JV  
Ultimate  
Engineering  
Consultants  
New Era of Development

PROJECT:  
KPRIISP - DESIGN REVIEW AND  
CONSTRUCTION SUPERVISION FOR  
WATER SUPPLY, SEWERAGE, DRAINAGE  
AND WASTE WATER TREATMENT  
PROJECT IN NEWLY MERGED DISTRICTS  
OF KHYBER PAKHTUNKHWA

DRAWING TITLE :  
EXISTING REHAB SCHEMES  
DISTRICT KHYBER  
TYPICAL HOUSE CONNECTION WITH  
MAIN SEWER DETAILS

Designed By : Dr. ASFAHAN ALI  
Drawn By : NAEEM BAKHSH  
Checked By : RABEEA REHMAN  
Approved By : RABEEA REHMAN

Date : MAR 2026  
Scale : N.T.S  
Drawing No :  
KPR/REH/KHD/-2428

No.	Revision	By	Date