

NOTES :-
1. ALL LEVELS ARE IN METER.

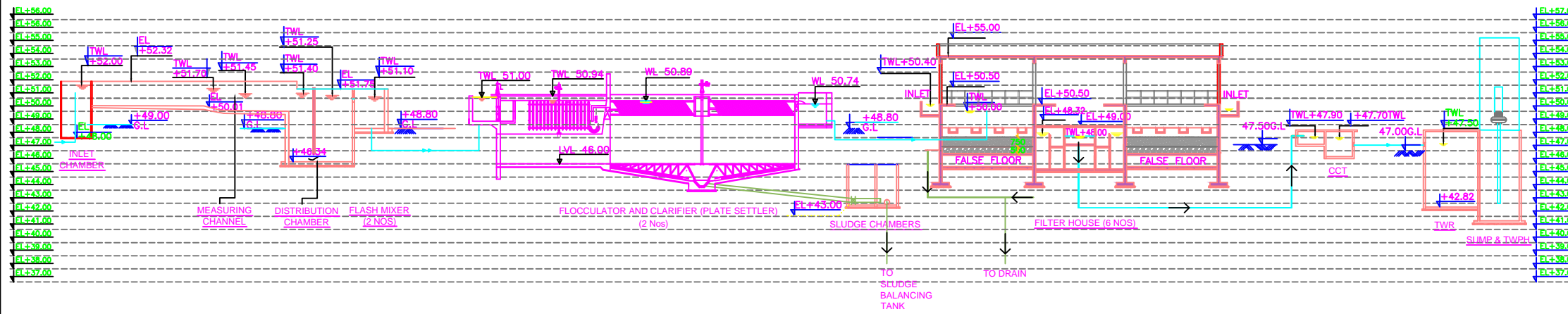
INDICATIVE MAP

CLIENT BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (BUIDCo.)			
PROJECT BHAGALPUR WATER SUPPLY PROJECT		DRAWING NO. BUIP/ENR/PROJ/BHAGALPUR/Phase-1/INT/01	REVISION 01
TITLE GENERAL ARRANGEMENT OF INTAKE WORKS		APPROVED SSS	CHECKED NRP
		DESIGNED GNL	DRAWN VKP
SCALE AS SHOWN		DATE 11.01.2016	STATUS DPR
STC SHAH TECHNICAL CONSULTANTS (P) LTD.			

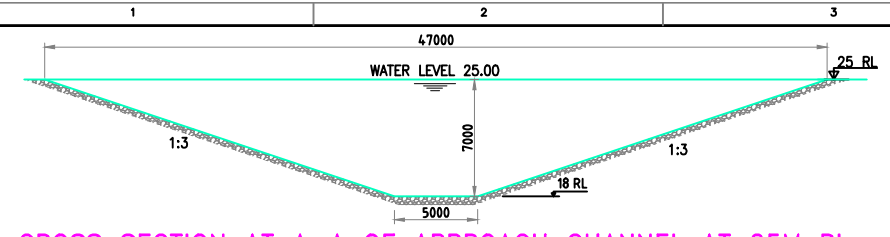
NOTES :-

1. ALL LEVELS ARE IN METERS

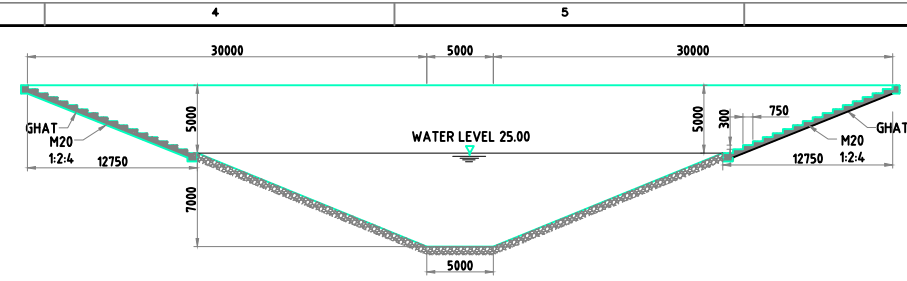
INDICATIVE DRAWING



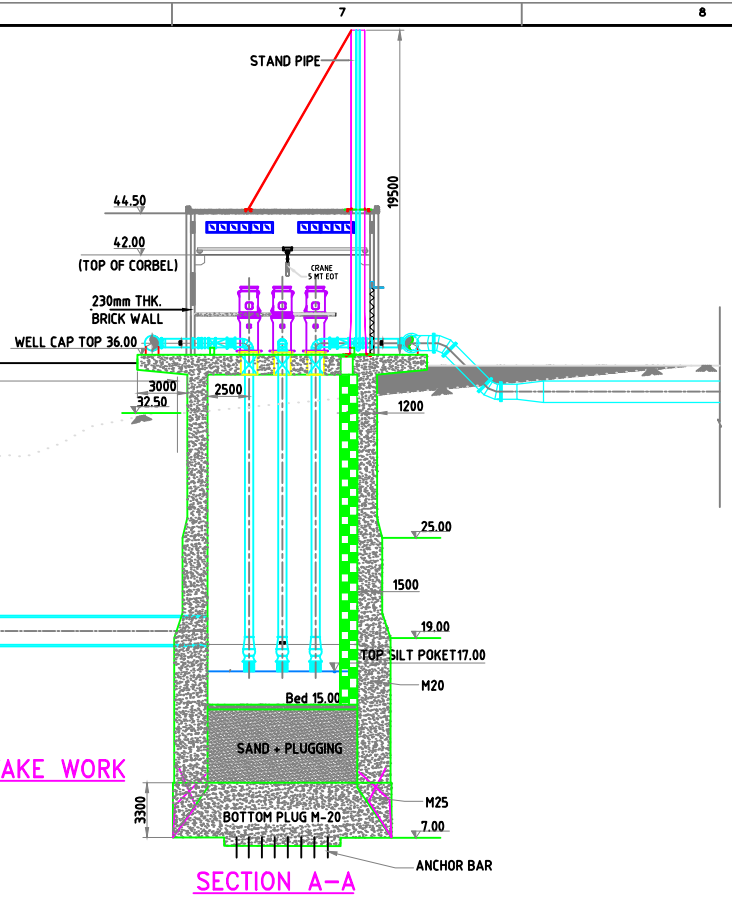
Rev	Date	Drawn	Description	CHK
REVISION				
CLIENT				
BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED				
CONSULTANTS				
SHAH TECHNICAL CONSULTANTS PVT. LTD IPE GLOBAL PVT. LTD. COGENT TRAINING RESEARCH DEVELOPMENT CONSULTANT PVT. LTD.				
PROJECT				
BHAGALPUR WATER SUPPLY PROJECT PHASE-2				
TITLE				
WTP HYDRAULIC FLOW DIAGRAM				
Designed	LT	Approved	SSS	
Dwg.Chk.	-	Drawn	SSN	
Scale	AS SHOWN	Date	11.01.2016	
Drawing No.	BUIP/REVISED PROJECT/BHAGALPUR/RS/Phase-2/WP/14		Revision	01



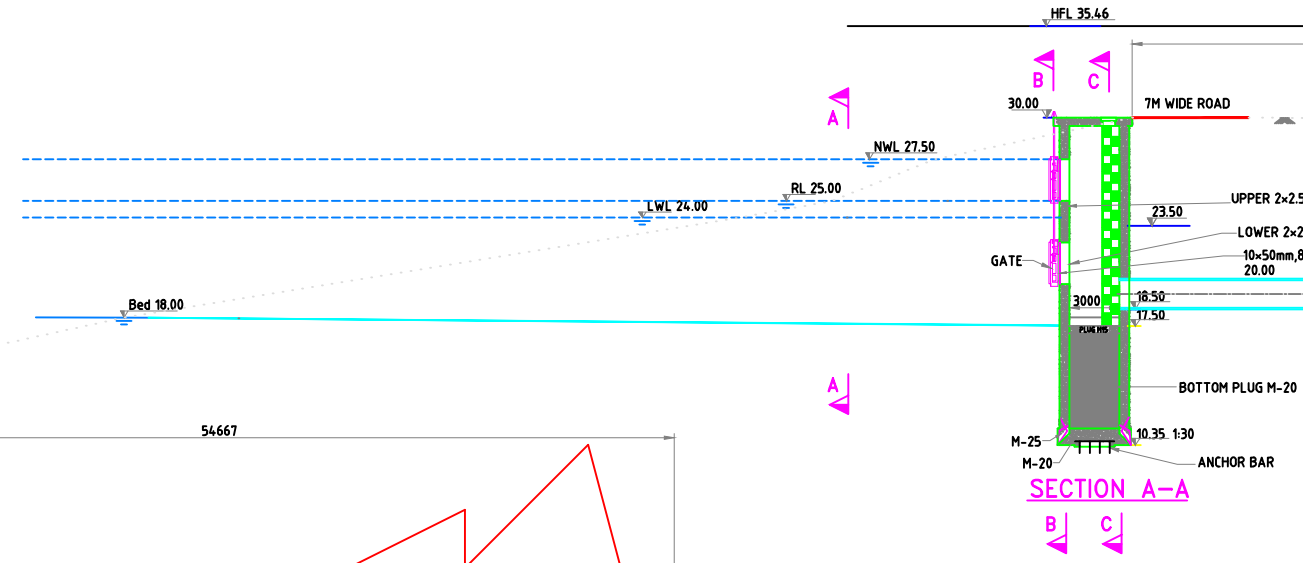
CROSS SECTION AT A-A OF APPROACH CHANNEL AT 25M RL



CROSS SECTION AT B-B @ 30M. RL OF APPROACH CHANNEL

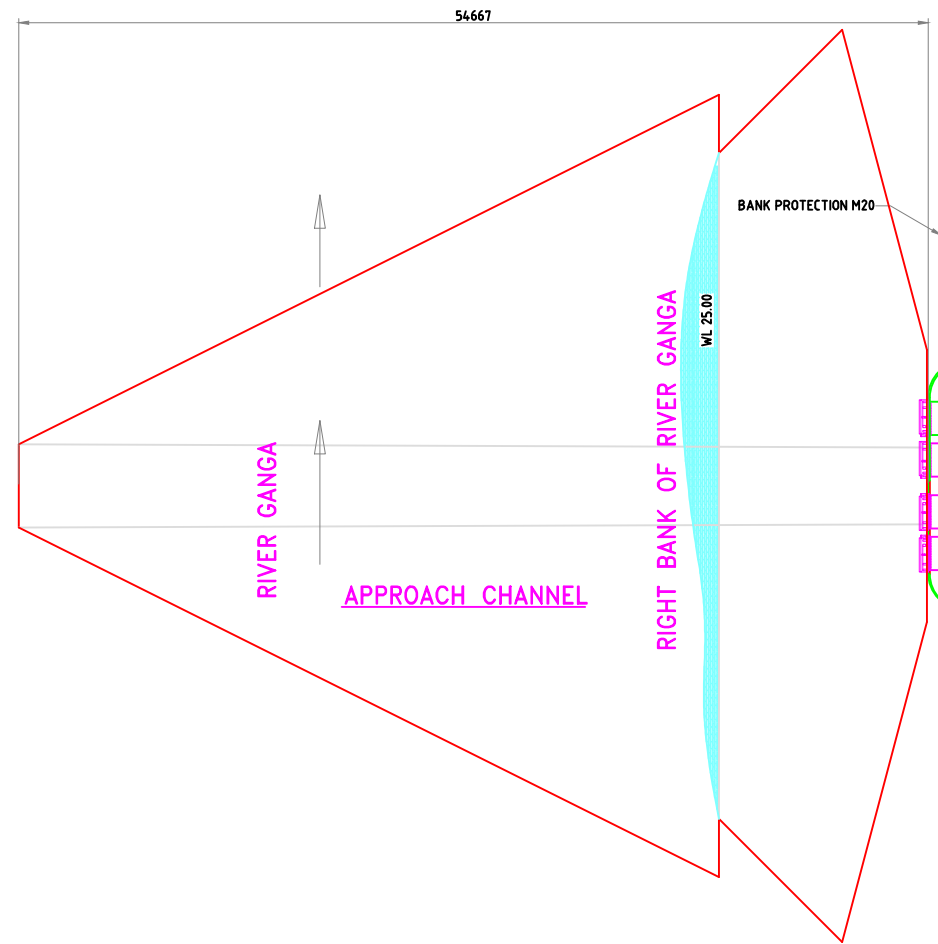


SECTION A-A



L-SECTION OF INTAKE WORK

SECTION A-A



APPROACH CHANNEL

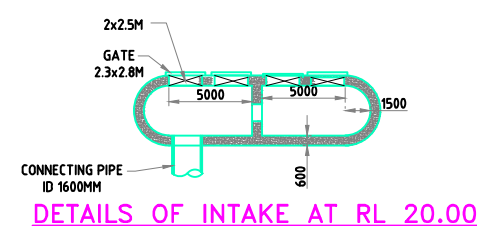
RIGHT BANK OF RIVER GANGA

RIVER GANGA

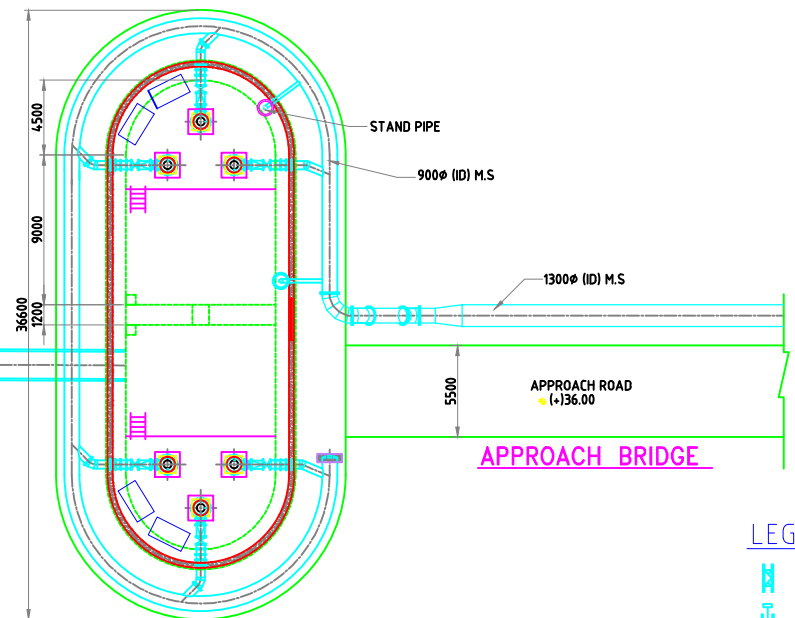
BANK PROTECTION M20

INTAKE WELL TWIN D-TYPE WELL

CONNECTING PIPE 1600Ø MS



DETAILS OF INTAKE AT RL 20.00



TWIN D-TYPE WELL JACKWELL & PUMP HOUSE

APPROACH BRIDGE

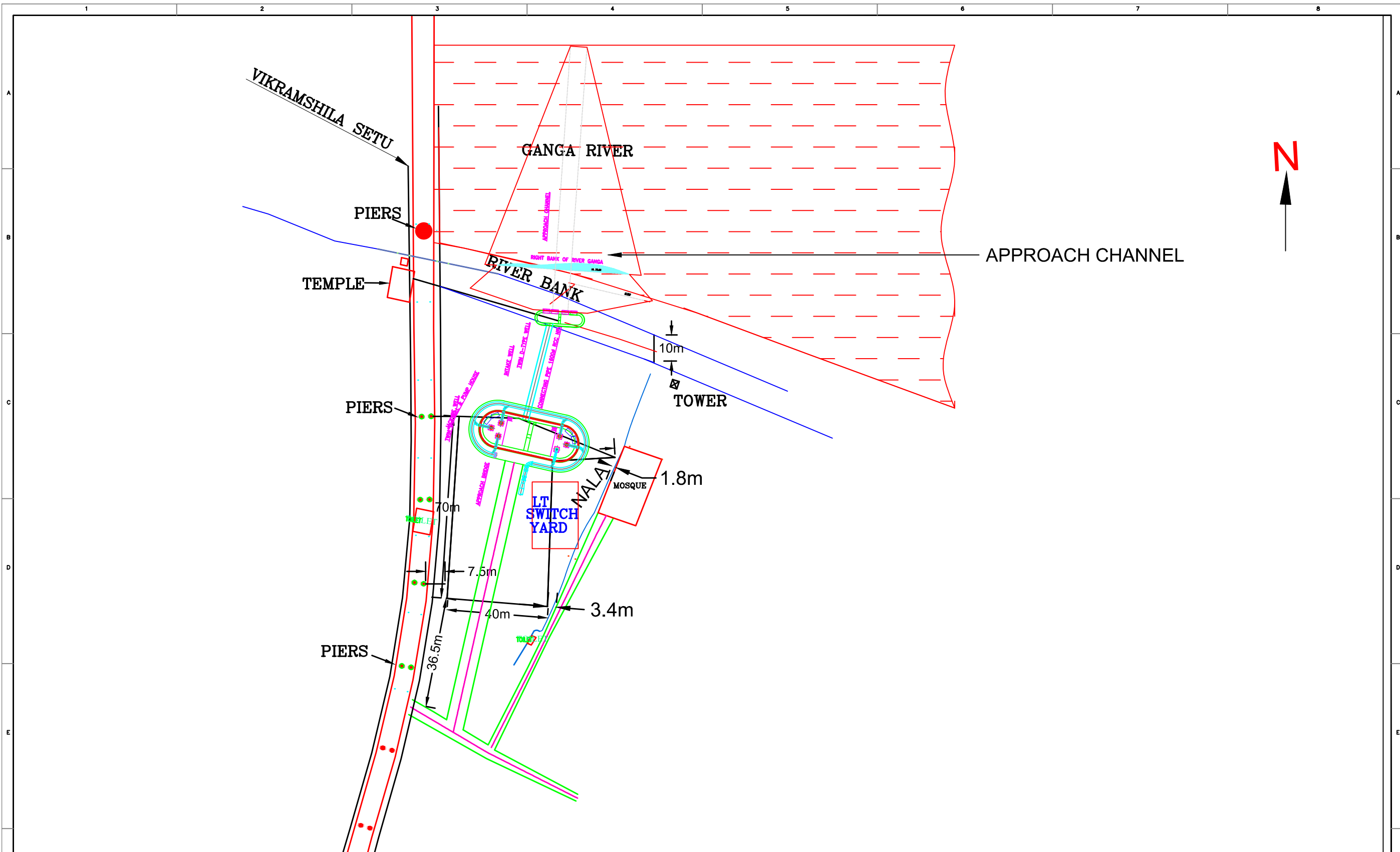
LEGEND

- DUAL PLATE CHECK VALVE
- BUTTERFLY VALVE WITH ACTUATOR
- DISMANTLING JOINT
- SLUICE VALVE

NOTES :-
1. ALL LEVELS ARE IN METER.

INDICATIVE DRAWINGS





CLIENT BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (BUIDCo.)			
PROJECT BHAGALPUR WATER SUPPLY PROJECT	DRAWING NO. BUID/REVISED PROJECT/BHAGALPUR/WSP/Phase-1/INT/01	REVISION 01	
TITLE GENERAL ARRANGEMENT OF INTAKE WORKS	APPROVED SSS	CHECKED NRP	DESIGNED GNL
DRAWN VKP	SCALE AS SHOWN	DATE 11.01.2016	STATUS DPR
SHAH TECHNICAL CONSULTANTS (P) LTD.			




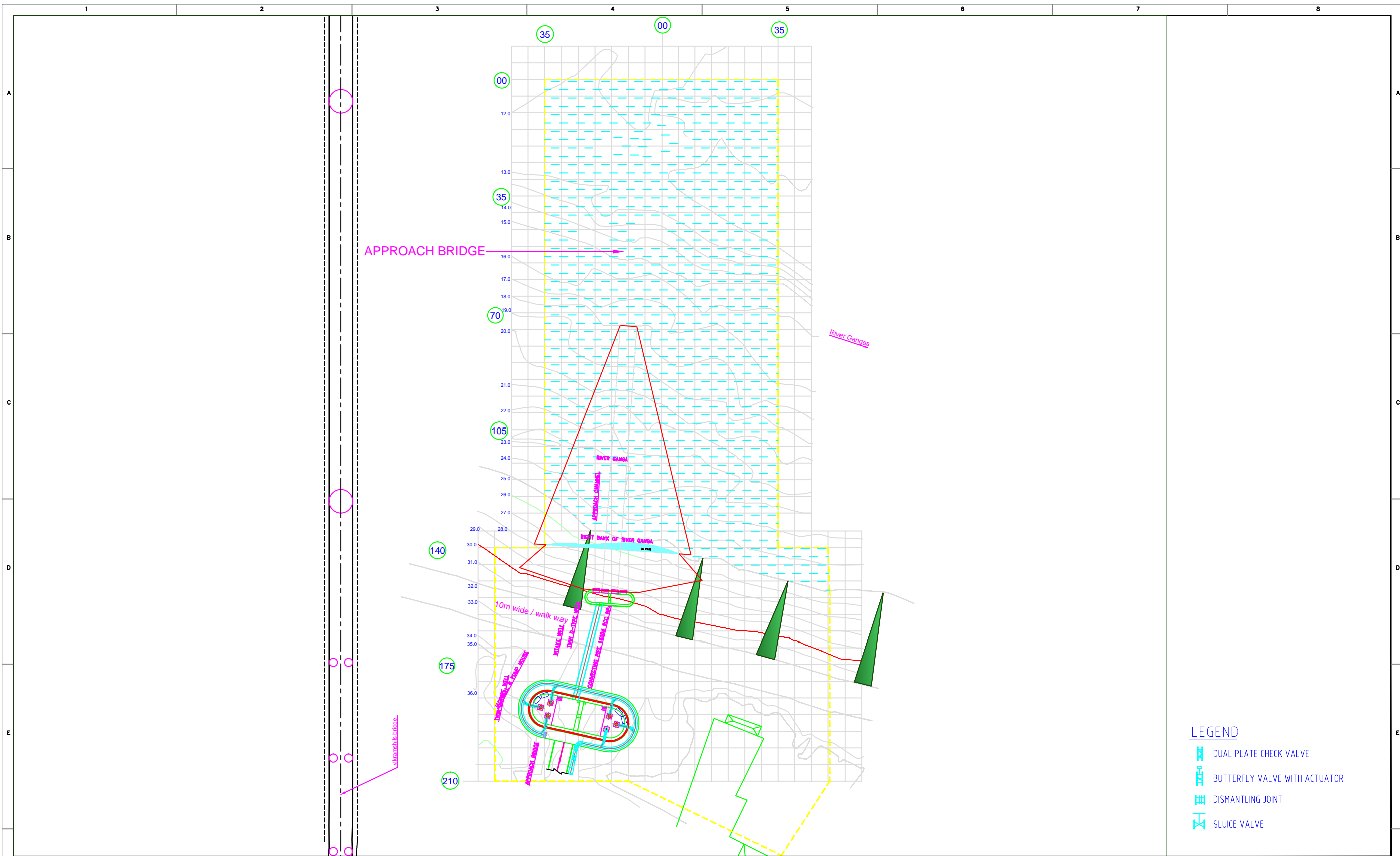
NOTES :-
1. ALL LEVELS ARE IN METER.

INDICATIVE DRAWINGS

LEGEND

-  DUAL PLATE CHECK VALVE
-  BUTTERFLY VALVE WITH ACTUATOR
-  DISMANTLING JOINT
-  SLUICE VALVE

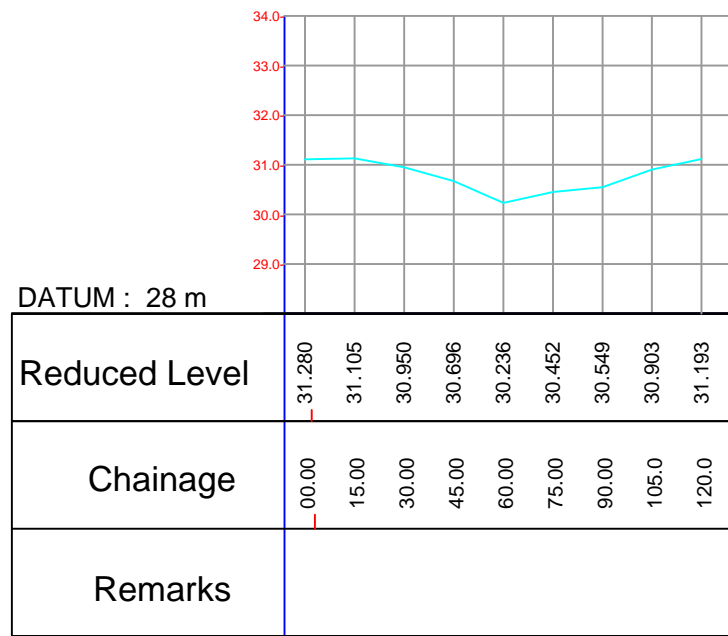
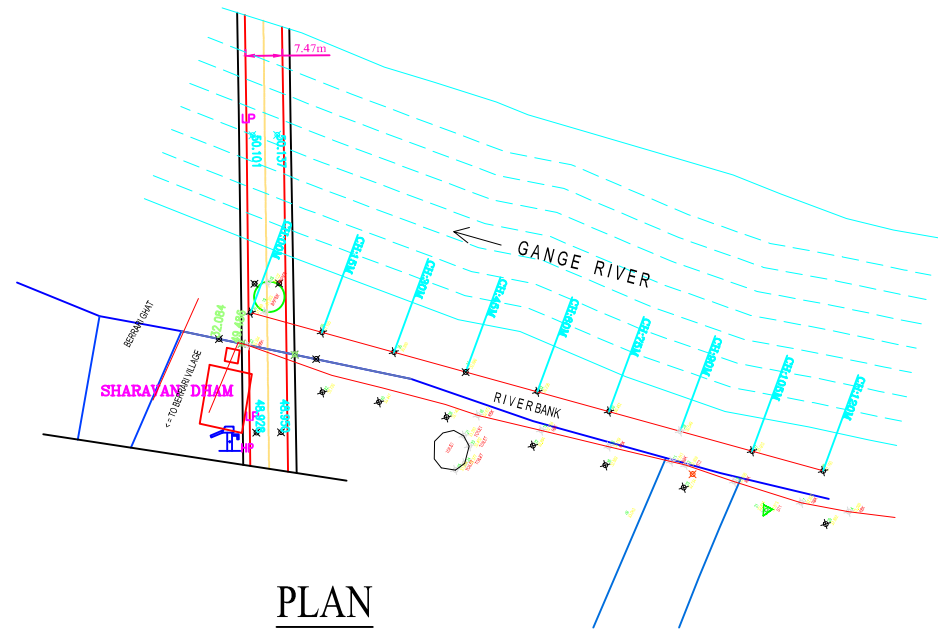
CLIENT BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (BUIDCo.)			
PROJECT BHAGALPUR WATER SUPPLY PROJECT		DRAWING NO. BUIP/REVISED PROJECT/BHAGALPUR/16/Phase-2/INT/03	REVISION 01
TITLE LAYOUT OF APPROACH CHANNEL & INTAKE WORKS	APPROVED SSS	CHECKED NRP	DESIGNED GNL
SCALE AS SHOWN	DATE 11.01.2016	STATUS VKP DPR	
 SHAH TECHNICAL CONSULTANTS (P) LTD.			



NOTES :-
1. ALL LEVELS ARE IN METER.

INDICATIVE DRAWING

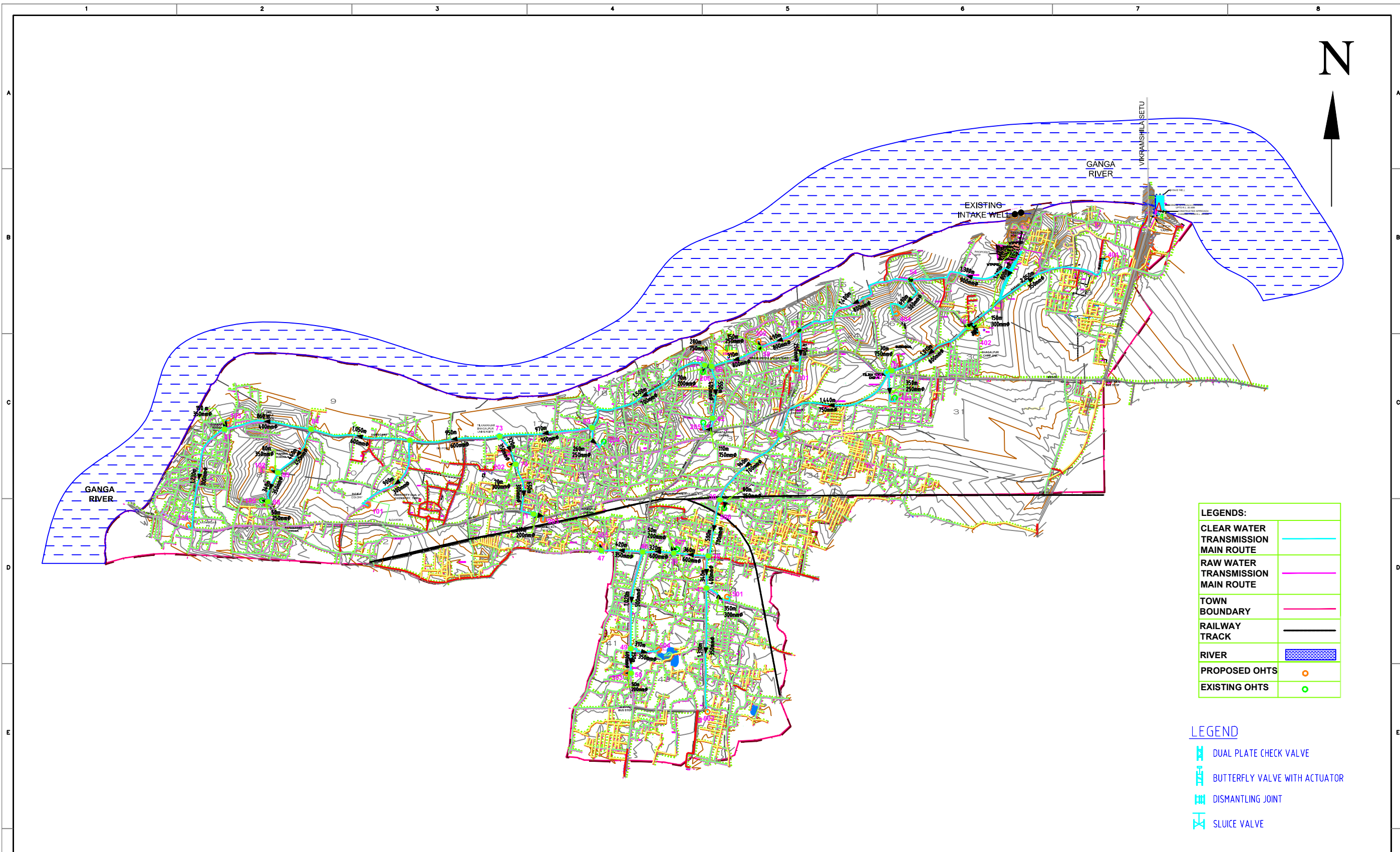
CLIENT BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (BUIDCo.)			
PROJECT BHAGALPUR WATER SUPPLY PROJECT		DRAWING NO. BUIP/REVISED PROJECT/BHAGALPUR/WSP/Phase-4/INT/04	REVISION 01
TITLE PROFILE OF THE INTAKE STRUCTURE	APPROVED SSS	CHECKED NRP	DESIGNED GNL DRAWN VKP
SCALE AS SHOWN	DATE 11.01.2016	STATUS DPR	
STC SHAH TECHNICAL CONSULTANTS (P) LTD.			



NOTES :-
1. ALL LEVELS ARE IN METER.

INDICATIVE DRAWING

CLIENT BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (BUIDCO.)			
PROJECT BHAGALPUR WATER SUPPLY PROJECT		DRAWING NO. BUIP/REVISED PROJECT/BHAGALPUR/WSP/Phase-4/NET/08	REVISION 01
TITLE L-SECTION OF RIVER BANK		APPROVED SSS	CHECKED NRP
		DESIGNED GNL	DRAWN VKP
SCALE AS SHOWN		DATE 11.01.2016	STATUS DPR
STC SHAH TECHNICAL CONSULTANTS (P) LTD.			



LEGENDS:

CLEAR WATER TRANSMISSION MAIN ROUTE	
RAW WATER TRANSMISSION MAIN ROUTE	
TOWN BOUNDARY	
RAILWAY TRACK	
RIVER	
PROPOSED OHTS	
EXISTING OHTS	

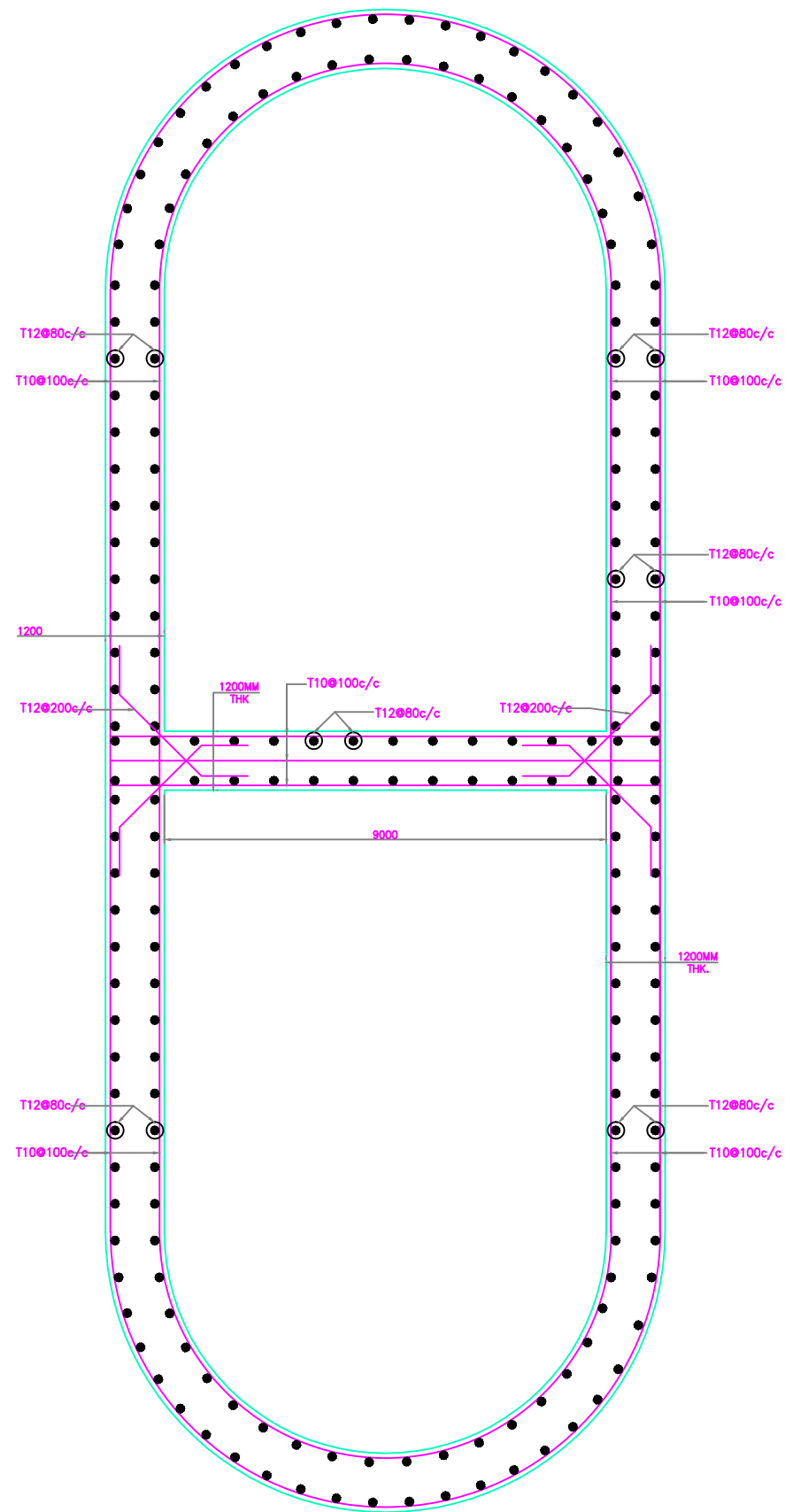
LEGEND

	DUAL PLATE CHECK VALVE
	BUTTERFLY VALVE WITH ACTUATOR
	DISMANTLING JOINT
	SLUICE VALVE

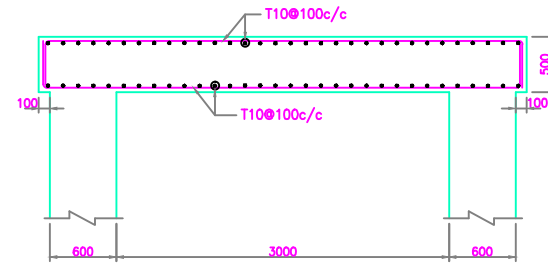
NOTES :-
1. ALL LEVELS ARE IN METER.

INDICATIVE DRAWING

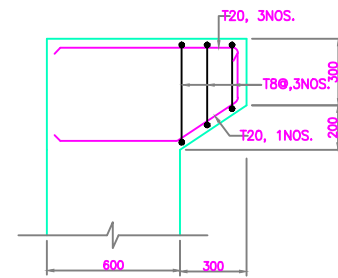
CLIENT BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (BUIDCO.)			
PROJECT BHAGALPUR WATER SUPPLY PROJECT		DRAWING NO. BUIP/REVISED PROJECT/BHAGALPUR/PH/Phase-4/NET/26	REVISION 01
TITLE ROUTE ALIGNMENT PLAN ON TOPOGRAPHIC MAP		APPROVED SSS	CHECKED NRP
		DESIGNED GNL	DRAWN VKP
SCALE AS SHOWN		DATE 11.01.2016	STATUS DPR
STC SHAH TECHNICAL CONSULTANTS (P) LTD.			



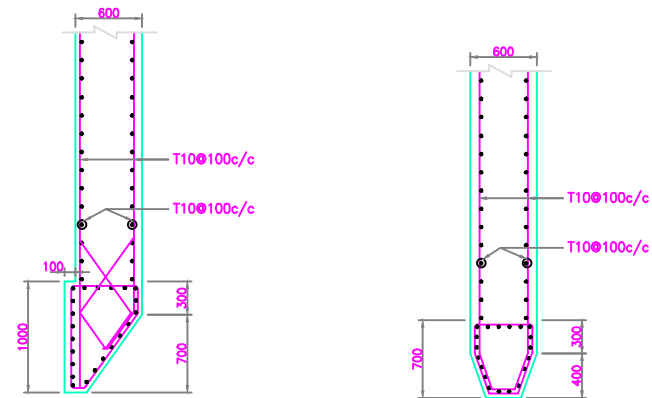
PLAN OF STENING FOR JACK WELL



PLAN OF TOP SLAB OF INTAKE WELL



CORBEL BEAM



SECTION OF CURB & STENING FOR INTAKE WELL

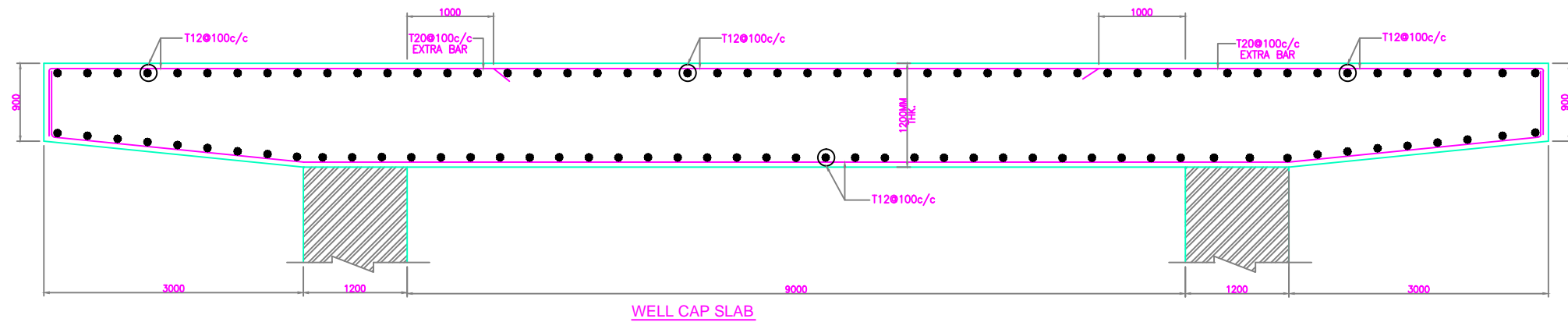
NOTES :-

1. ALL LEVELS ARE IN MM
2. ALL CONCRETE WORK SHALL BE IN GRADE M-25 WITH MINIMUM CEMENT CONTENT OF 350 kg/cum.
3. LEVELING / BLINDING CONCRETE SHALL BE IN PCC 1:2:4 WITH MINIMUM THICKNESS OF 150mm.
4. REINFORCEMENT USED SHALL BE OF HIGH YIELD DEFORMED BARS OF GRADE Fe 415 CONFORMING STRENGTH TO IS-1786.
5. ALL EARTH SURFACE UPON OR AGAINST WHICH CONCRETE IS TO BE PLACED SHALL BE WELL COMPACTED & SHOULD BE FREE FROM STANDING WATER, MUD & DEBRIS.
6. CLEAR COVER TO MAIN REINFORCEMENT SHALL BE AS FOLLOWS:-
ON EARTH SIDE - 50mm
ON OTHER SIDE - 30mm
7. REINFORCEMENT SHALL BE SPLICED AS SHOWN IN THE DRAWING, REINFORCEMENT WHERE SPLICED SHALL HAVE LAP OF 50 TIMES DIAMETER OF SMALLER BAR LAPS SHALL BE STAGGERED.
8. TOP SLAB IS CONTINUOUS LONGITUDINALLY PRE-CAST REINFORCED CEMENT CONCRETE MANHOLE COVERS WITH FRAME CONFORM TO IS 2592 (PART I, II 1991) AT 15m c/c (LOADING FOR 1m) 600mm x 600mm.
9. THE CONCRETE SURFACE SHALL BE FORM FINISHED AS PER SPECIFICATION.

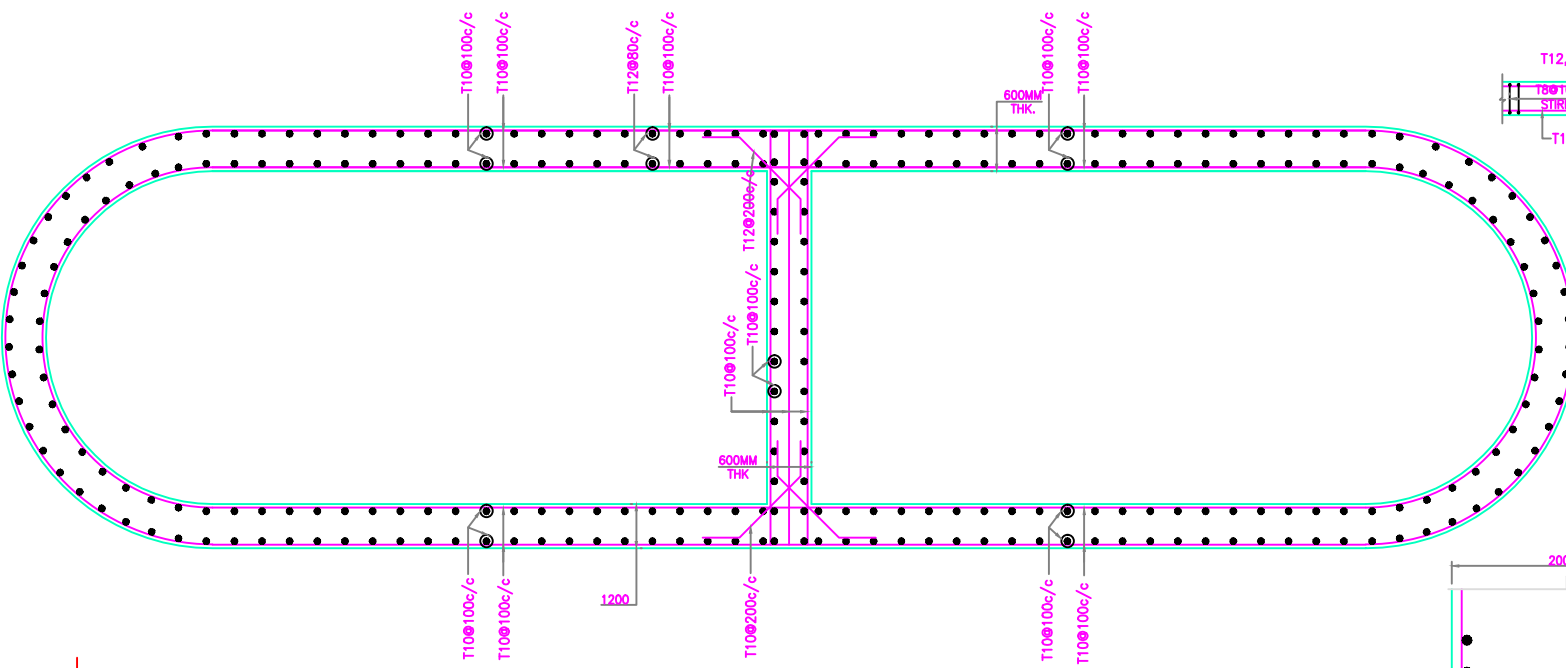


INDICATIVE DRAWING

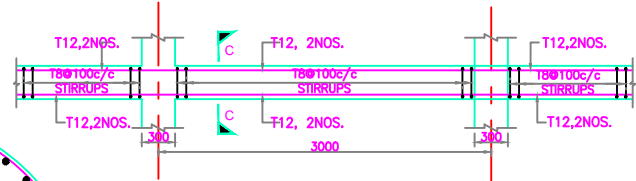
				SSS
Rev	Date	Drawn	Description	CHK
REVISION				
		CLIENT BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED		
		CONSULTANTS SHAH TECHNICAL CONSULTANTS PVT. LTD.		
		IPB GLOBAL PVT. LTD.		
		COGENT TRAINING RESEARCH DEVELOPMENT CONSULTANT PVT. LTD.		
PROJECT BHAGALPUR WATER SUPPLY PROJECT PHASE-2				
TITLE STRUCTURAL DETAILS OF INTAKE WORKS - INTAKE WELL				
Designed	MKT	Approved	SSS	
Dwg.Chk.	-	Drawn	SP	
Scale	AS SHOWN	Date	11.01.2016	
Drawing No.	BUP/REVISED PROJECT/BHAGALPUR/RS/Phase-2/INT/07		Revision	01



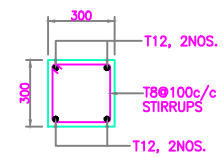
WELL CAP SLAB



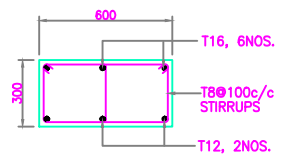
PLAN OF STENING FOR JACK WELL



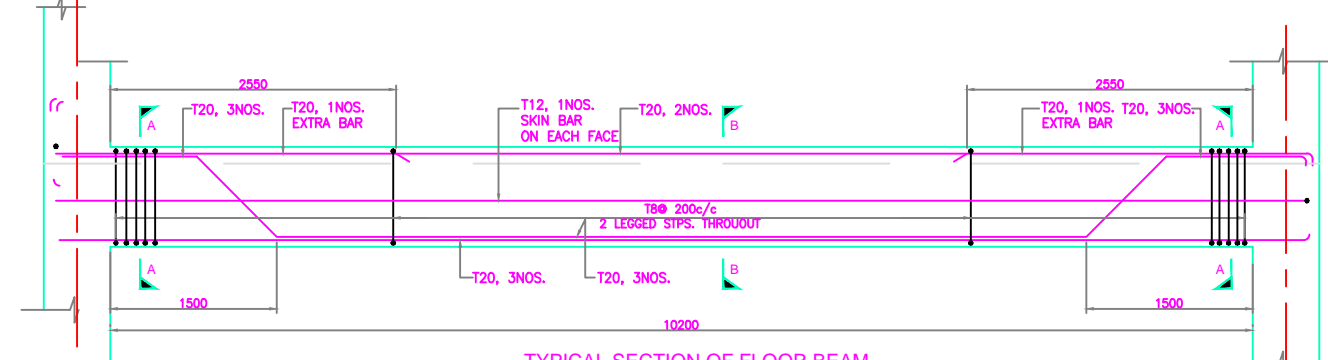
BRACE BEAM



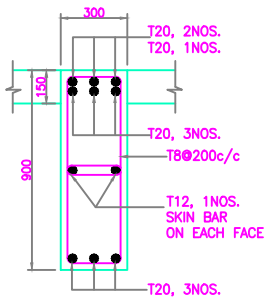
SECTION C-C



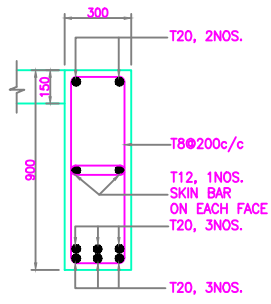
COLUMN



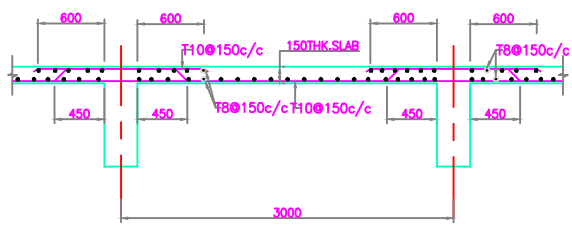
TYPICAL SECTION OF FLOOR BEAM



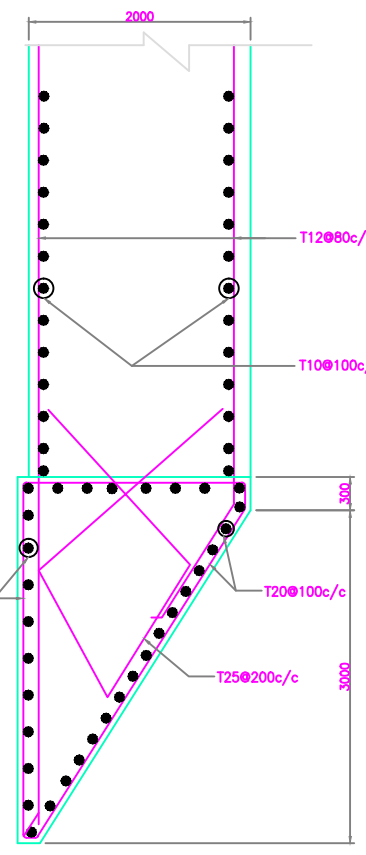
SECTION A-A



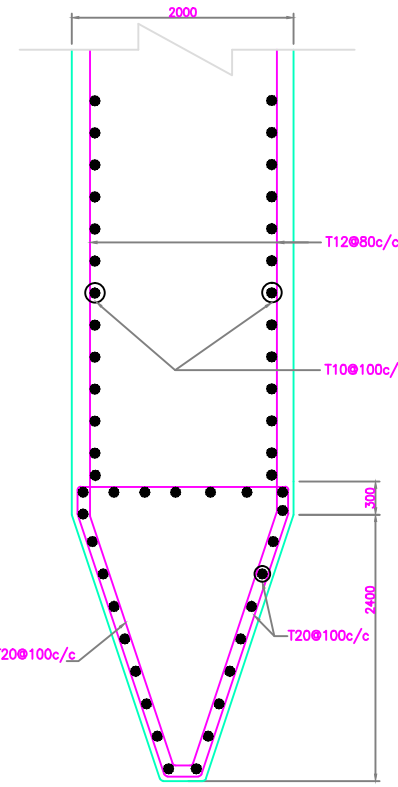
SECTION B-B



TYPICAL SECTION OF ROOF SLAB



WELL CURB & STENING

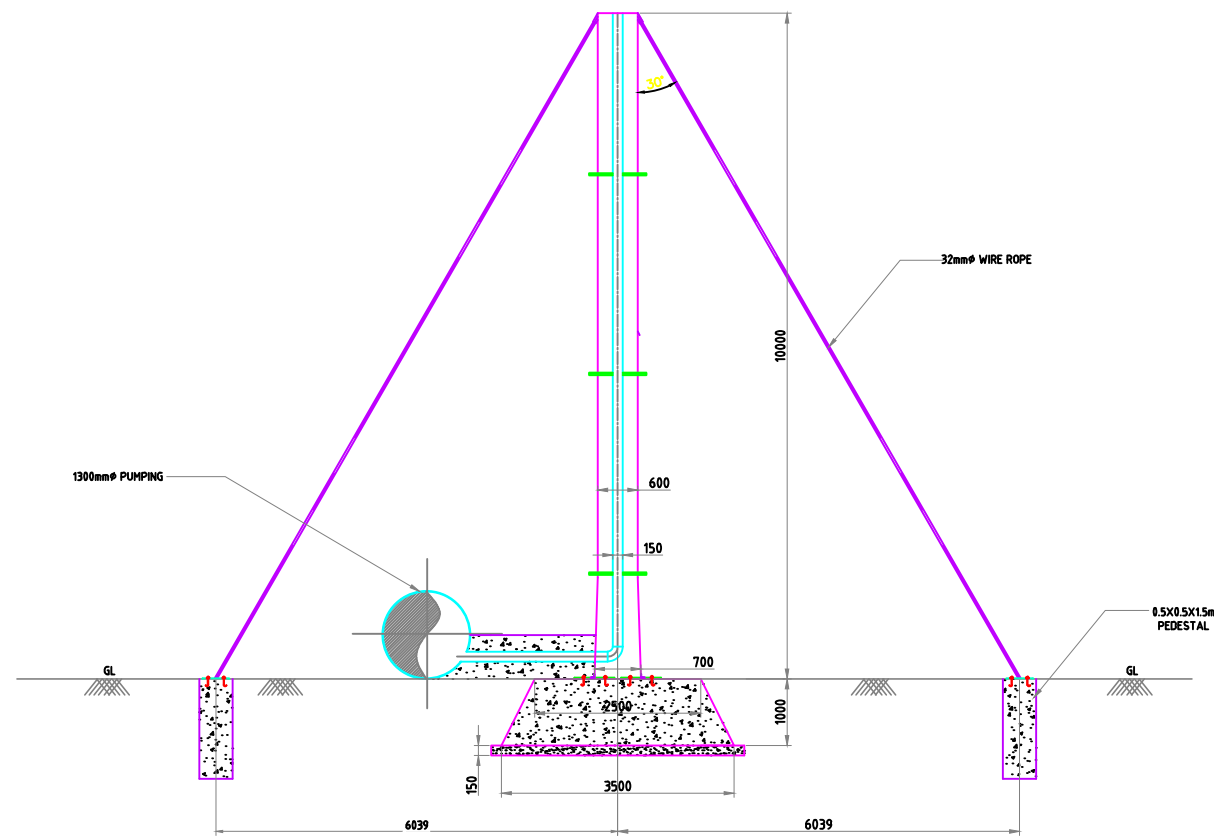


WELL CURB & STENING

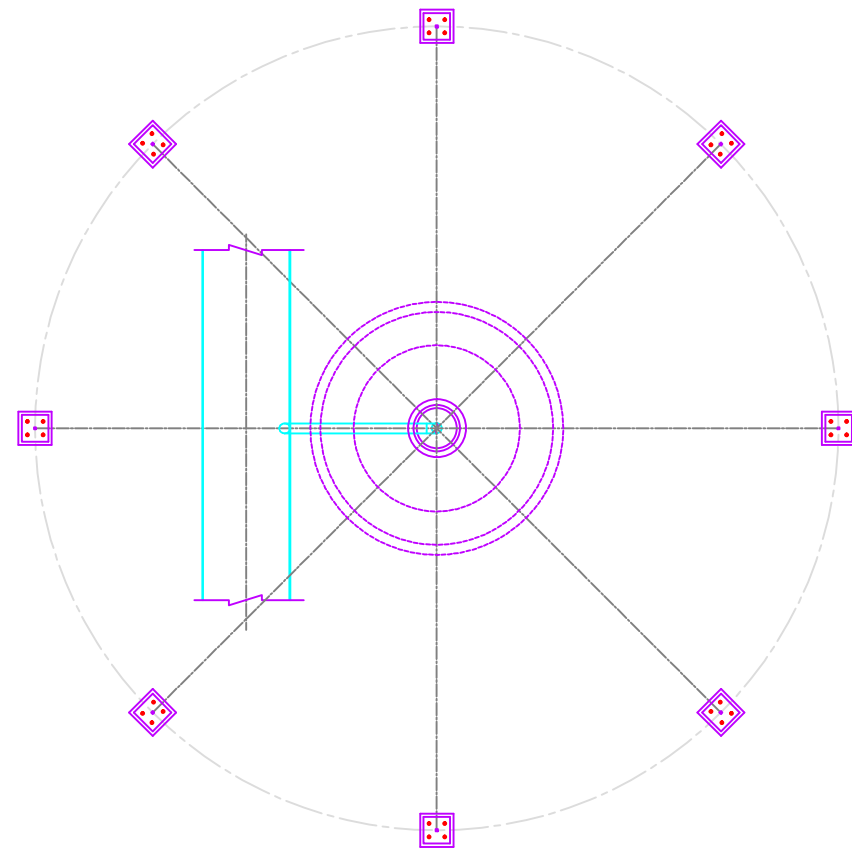
- NOTES :-**
1. ALL LEVELS ARE IN MM
 2. ALL CONCRETE WORK SHALL BE IN GRADE M-25 WITH MINIMUM CEMENT CONTENT OF 350 kg/cum.
 3. LEVELING / BLINDING CONCRETE SHALL BE IN PCC 1:2:4 WITH MINIMUM THICKNESS OF 150mm.
 4. REINFORCEMENT USED SHALL BE OF HIGH YIELD DEFORMED BARS OF GRADE Fe 415 CONFORMING STRENGTH TO IS-1786.
 5. ALL EARTH SURFACE UPON OR AGAINST WHICH CONCRETE IS TO BE PLACED SHALL BE WELL COMPACTED & SHOULD BE FREE FROM STANDING WATER, MUD & DEBRIS.
 6. CLEAR COVER TO MAIN REINFORCEMENT SHALL BE AS FOLLOWS:-
ON EARTH SIDE - 50mm
ON OTHER SIDE - 30mm
 7. REINFORCEMENT SHALL BE SPLICED AS SHOWN IN THE DRAWING, REINFORCEMENT WHERE SPLICED SHALL HAVE LAP OF 50 TIMES DIAMETER OF SMALLER BAR LAPS SHALL BE STAGGERED.
 8. TOP SLAB IS CONTINUOUS LONGITUDINALLY PRE-CAST REINFORCED CEMENT CONCRETE MANHOLE COVERS WITH FRAME CONFORM TO IS 2592 (PART I, II 1991) AT 15m c/c (LOADING FOR 1m) 600mm x 600mm.
 9. THE CONCRETE SURFACE SHALL BE FORM FINISHED AS PER SPECIFICATION.

INDICATIVE DRAWING

Rev	Date	Drawn	Description	CHK	SSS
REVISION					
CLIENT BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED					
CONSULTANTS SHAH TECHNICAL CONSULTANTS PVT. LTD IPB GLOBAL PVT. LTD. COGENT TRAINING RESEARCH DEVELOPMENT CONSULTANT PVT. LTD.					
PROJECT BHAGALPUR WATER SUPPLY PROJECT PHASE-2					
TITLE STRUCTURAL DETAILS OF INTAKE WORKS - JACK WELL & PUMP HOUSE					
Designed	MKT	Approved	SSS		
Dwg.Chk.	-	Drawn	SP		
Scale	AS SHOWN	Date	11.01.2016		
Drawing No.	BLDP/REVISED PROJECT/BHAGALPUR/Phase-2/INT/08	Revision	01		



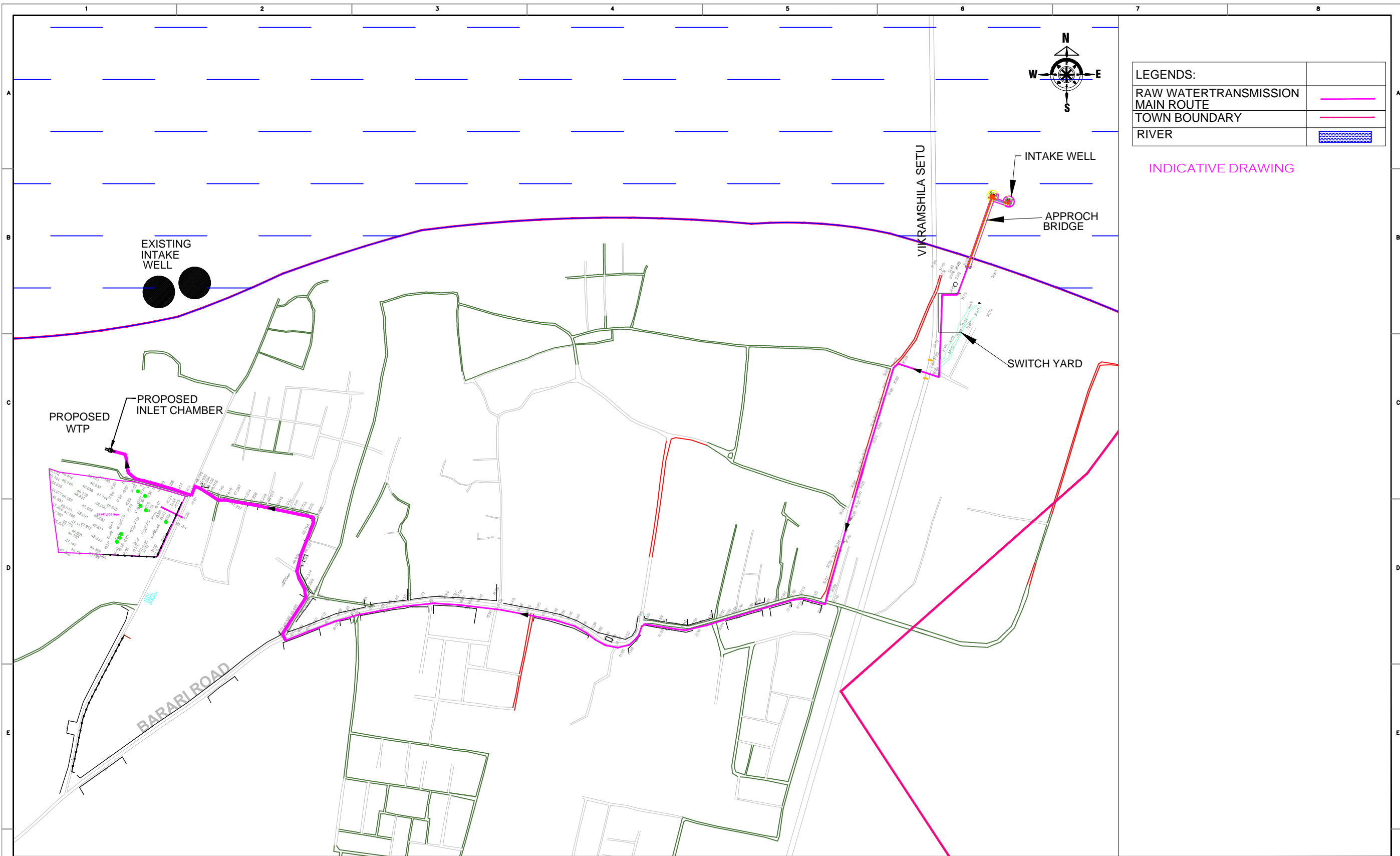
ELEVATION



PLAN

INDICATIVE DRAWING

CLIENT			
BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (BUIDCo.)			
PROJECT		DRAWING NO.	REVISION
BHAGALPUR WATER SUPPLY PROJECT		BLSP/REVISED PROJECT/BHAGALPUR/UB/Phase-4/RAW/SP	01
TITLE	APPROVED	CHECKED	DESIGNED
STAND PIPE AT 1540 CHAINAGE ON RAW WATER MAIN	SSS	NRP	GNL
			DRAWN
			VKP
SCALE	DATE	STATUS	
AS SHOWN	11.01.2016	DPR	
STC SHAH TECHNICAL CONSULTANTS (P) LTD.			

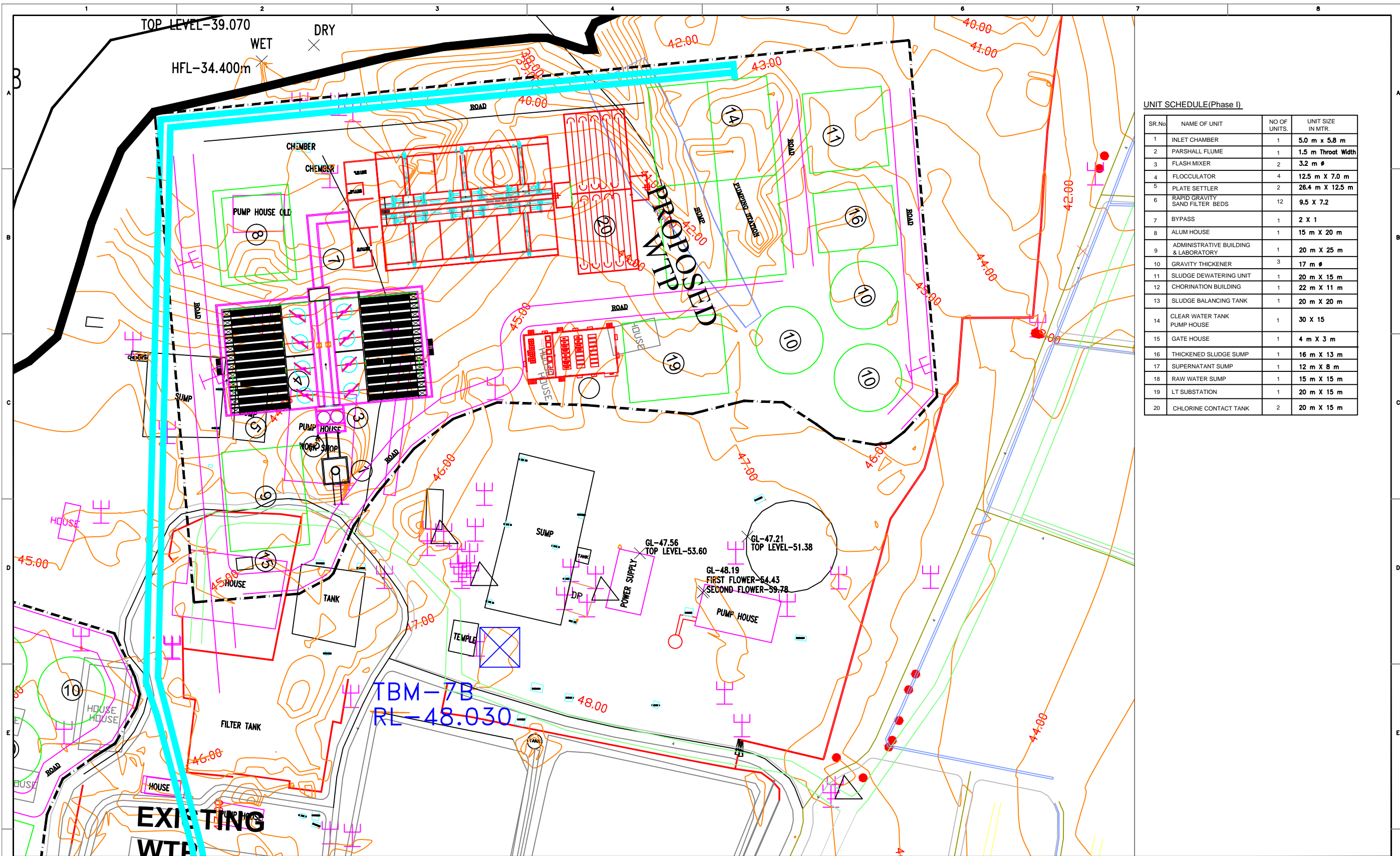


LEGENDS:	
RAW WATER TRANSMISSION MAIN ROUTE	
TOWN BOUNDARY	
RIVER	

INDICATIVE DRAWING

NOTES :-
1. ALL LEVELS ARE IN METER.

CLIENT			
BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (BUIDCO)			
PROJECT		DRAWING NO.	REVISION
BHAGALPUR WATER SUPPLY PROJECT		SSP/REVISED PROJECT/BHAGALPUR/PH-1/RAW/AC	01
TITLE		APPROVED	CHECKED
ALIGNMENT OF RAW WATER PUMPING MAINS		SSS	NRP
		DESIGNED	DRAWN
		GNL	VKP
SCALE		DATE	STATUS
AS SHOWN		11.01.2016	DPR
SHAH TECHNICAL CONSULTANTS (P) LTD.			



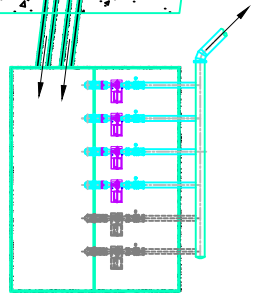
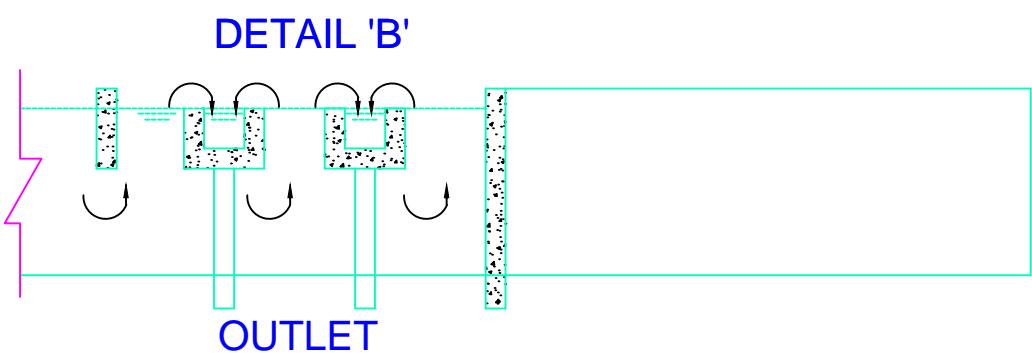
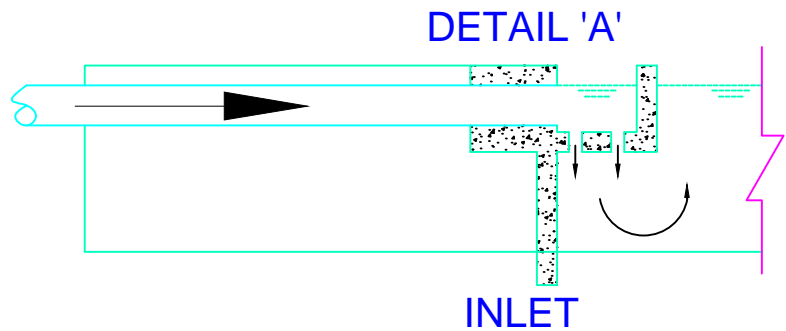
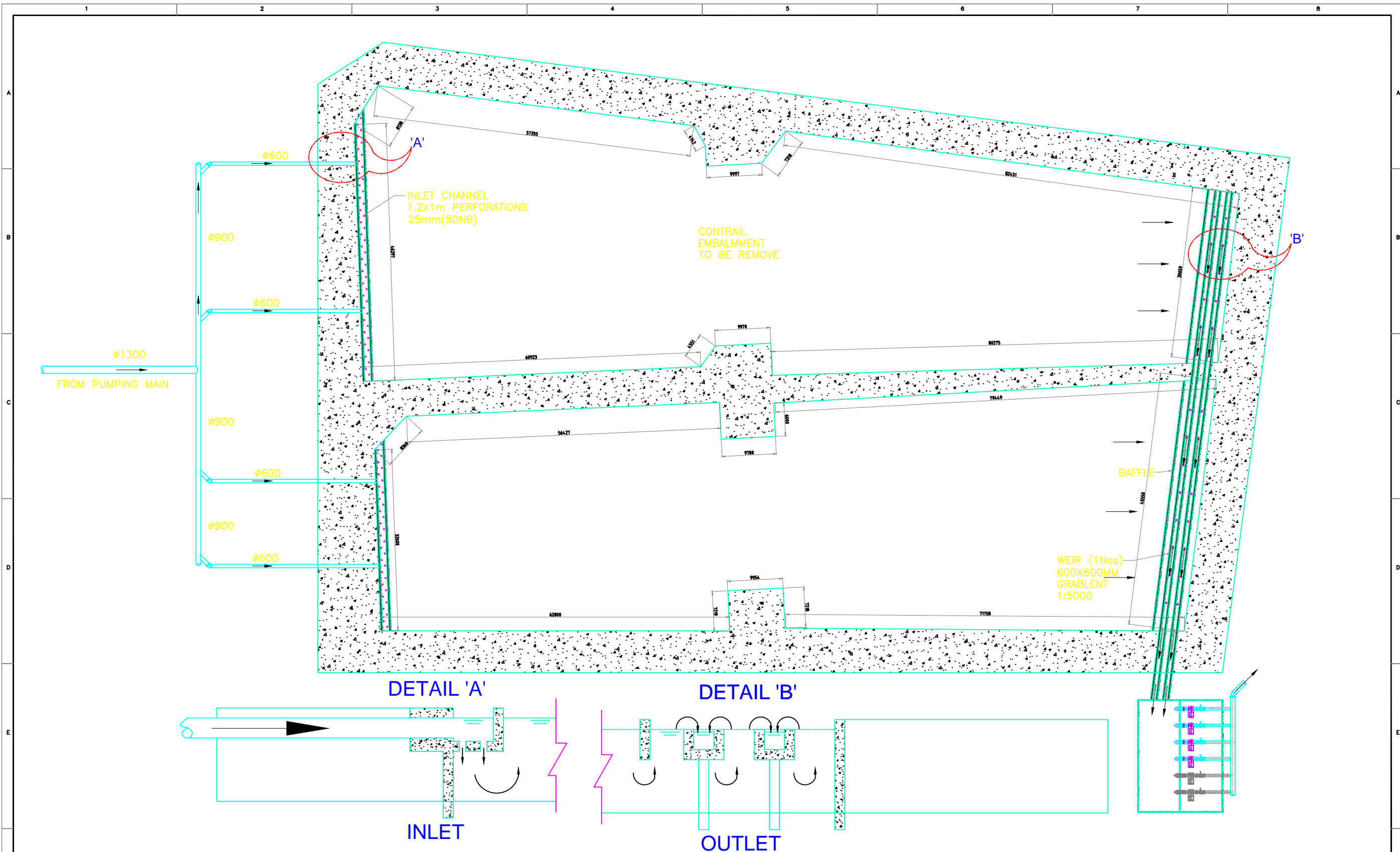
UNIT SCHEDULE (Phase I)

SR.No	NAME OF UNIT	NO OF UNITS	UNIT SIZE IN MTR.
1	INLET CHAMBER	1	5.0 m x 5.8 m
2	PARSHALL FLUME	1	1.5 m Throat Width
3	FLASH MIXER	2	3.2 m Ø
4	FLOCCULATOR	4	12.5 m X 7.0 m
5	PLATE SETTLER	2	26.4 m X 12.5 m
6	RAPID GRAVITY SAND FILTER BEDS	12	9.5 X 7.2
7	BYPASS	1	2 X 1
8	ALUM HOUSE	1	15 m X 20 m
9	ADMINISTRATIVE BUILDING & LABORATORY	1	20 m X 25 m
10	GRAVITY THICKENER	3	17 m Ø
11	SLUDGE DEWATERING UNIT	1	20 m X 15 m
12	CHORINATION BUILDING	1	22 m X 11 m
13	SLUDGE BALANCING TANK	1	20 m X 20 m
14	CLEAR WATER TANK PUMP HOUSE	1	30 X 15
15	GATE HOUSE	1	4 m X 3 m
16	THICKENED SLUDGE SUMP	1	16 m X 13 m
17	SUPERNATANT SUMP	1	12 m X 8 m
18	RAW WATER SUMP	1	15 m X 15 m
19	LT SUBSTATION	1	20 m X 15 m
20	CHLORINE CONTACT TANK	2	20 m X 15 m

NOTES:-
1. ALL LEVELS ARE IN METER.

INDICATIVE DRAWING

CLIENT BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (BUIDCO.)			
PROJECT BHAGALPUR WATER SUPPLY PROJECT		DRAWING NO. BUIDCO/PROJECT/BHAGALPUR/WSP/Phase-I/WTP/1	REVISION 01
TITLE GENERAL ARRANGEMENT OF WTP WORK		APPROVED SSS	CHECKED NRP
		DESIGNED GNL	DRAWN VKP
SCALE AS SHOWN		DATE 11.01.2016	STATUS DPR
STC SHAH TECHNICAL CONSULTANTS (P) LTD.			



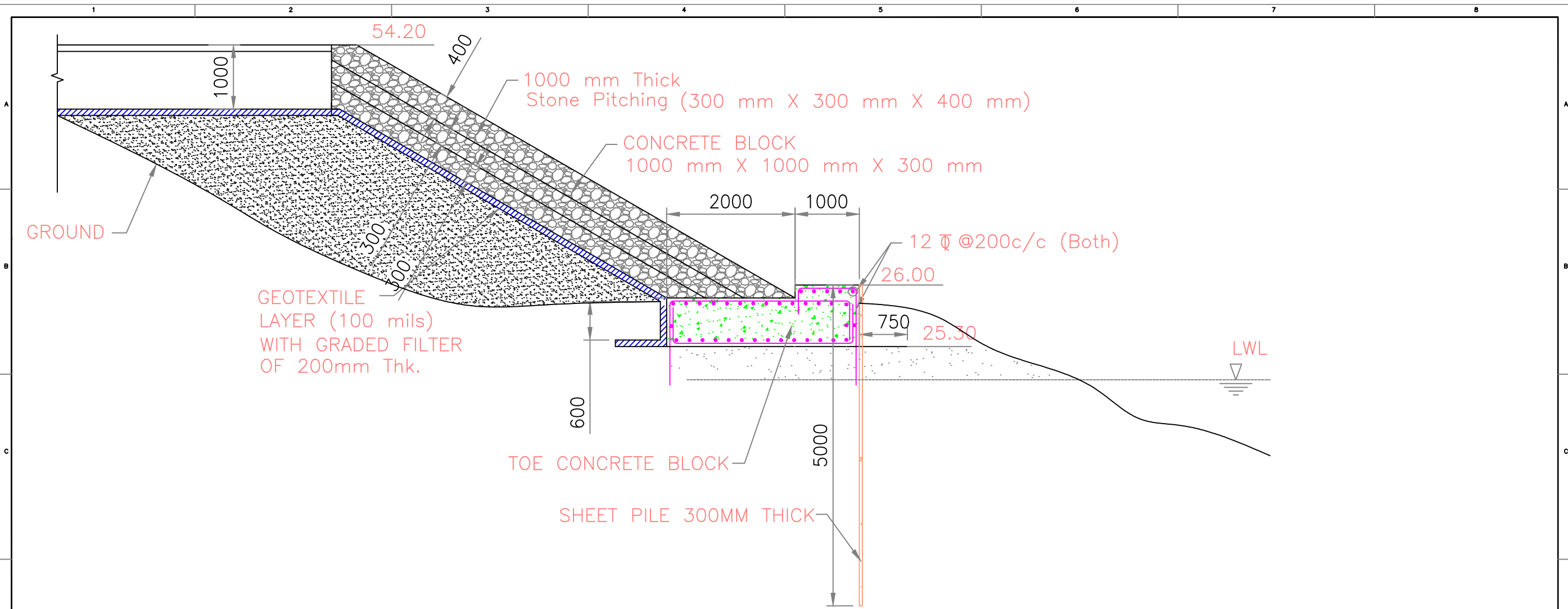
NOTES :-
1. ALL LEVELS ARE IN METER.

INDICATIVE DRAWING

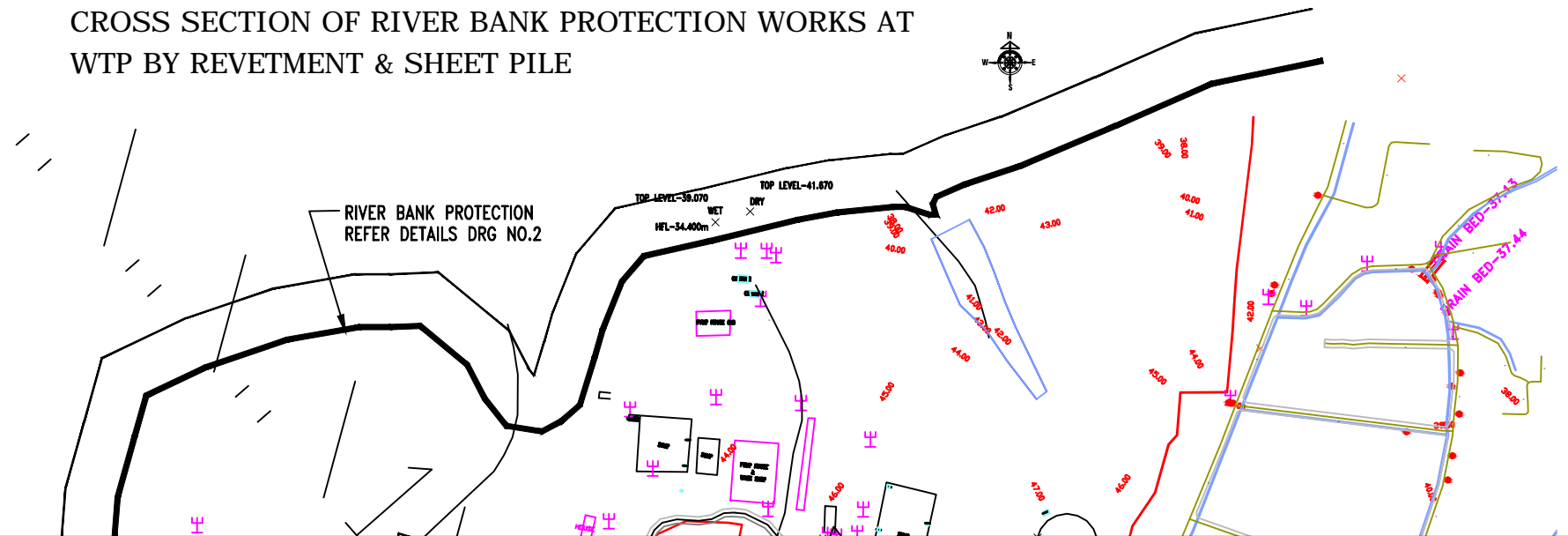
LEGEND

- DUAL PLATE CHECK VALVE
- BUTTERFLY VALVE WITH ACTUATOR
- DISMANTLING JOINT
- SLUICE VALVE

CLIENT BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (BUIDCo.)			
PROJECT BHAGALPUR WATER SUPPLY PROJECT		DRAWING NO. BUIP/REVISED PROJECT/BHAGALPUR/10/Phase-4/NRP/11	REVISION 01
TITLE INLETE OUTLET DETAILS OF SETTLING TANK		APPROVED SSS	CHECKED NRP
		DESIGNED GNL	DRAWN VKP
SCALE AS SHOWN		DATE 11.01.2016	STATUS DPR
SHAH TECHNICAL CONSULTANTS (P) LTD.			



CROSS SECTION OF RIVER BANK PROTECTION WORKS AT WTP BY REVETMENT & SHEET PILE

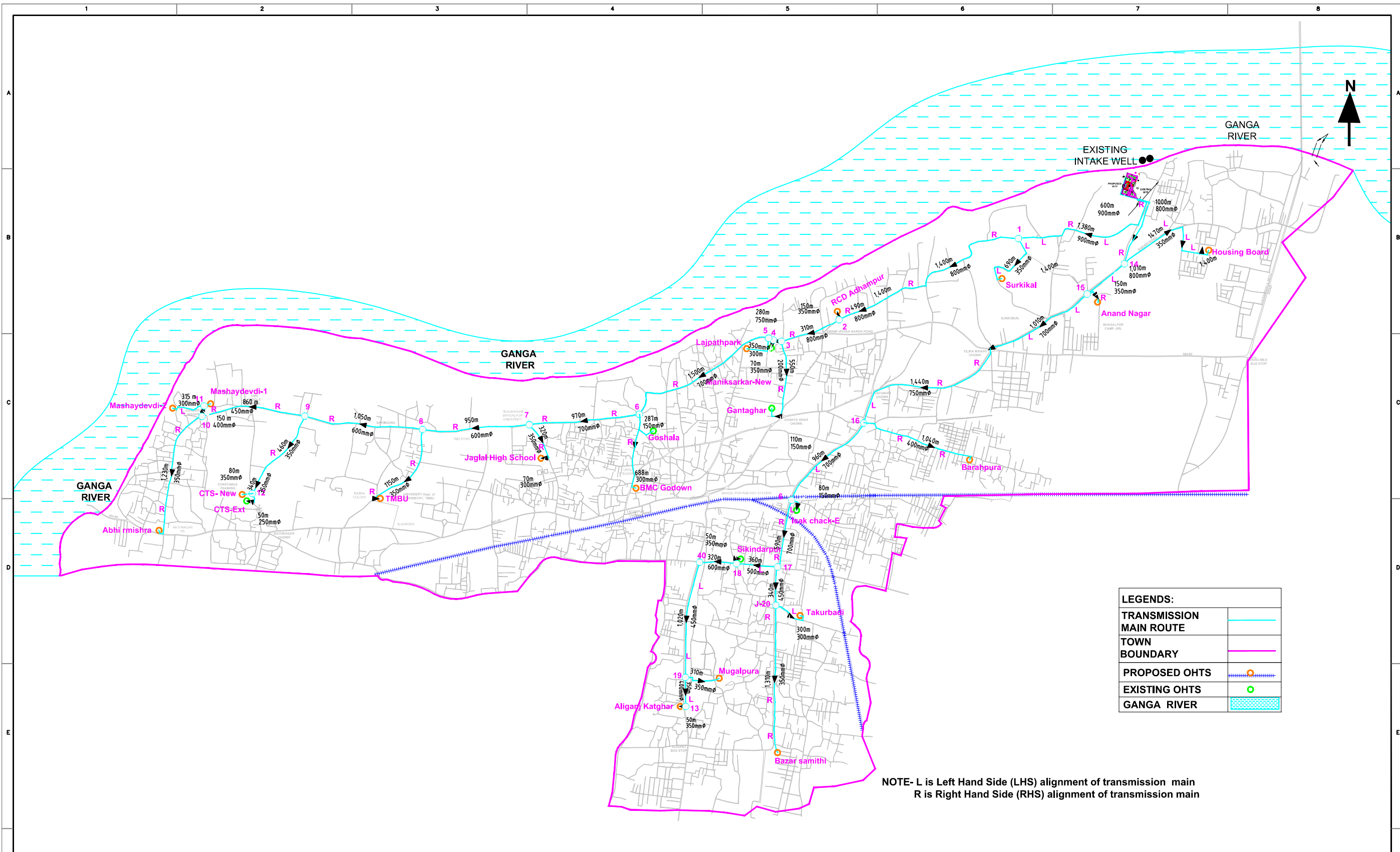


NOTES:-

1. ALL LEVELS ARE IN METER.

INDICATIVE DRAWING

CLIENT			
BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (BUIDCO)			
PROJECT		DRAWING NO.	
BHAGALPUR WATER SUPPLY PROJECT		01	
TITLE		APPROVED	CHECKED
RIVER BANK PROTECTION		SSS	NRP
		DESIGNED	DRAWN
		GNL	VKP
SCALE		DATE	STATUS
AS SHOWN		11.01.2016	DPR
STC SHAH TECHNICAL CONSULTANTS (P) LTD.			



NOTES :-
1. ALL LEVELS ARE IN METER.

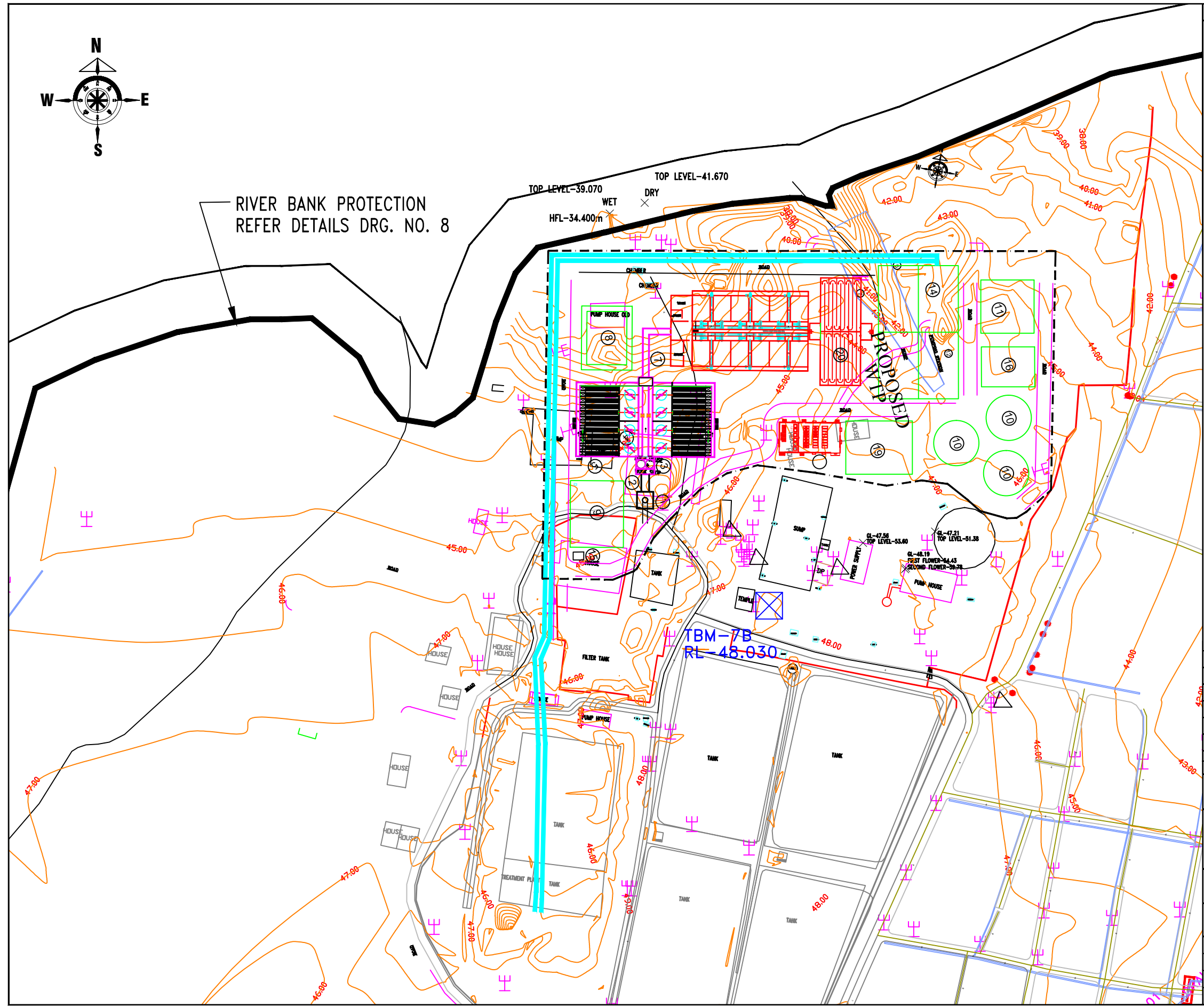
INDICATIVE DRAWING

CLIENT BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (BUIDCo.)			
PROJECT BHAGALPUR WATER SUPPLY PROJECT		DRAWING NO. BUIP/REVISED PROJECT/BHAGALPUR/PHASE-1/CP/1/1	REVISION 01
TITLE ALIGNMENT NETWORK OF CLEAR WATER TRANSMISSION MAIN		APPROVED SSS	CHECKED NRP
		DESIGNED GNL	DRAWN VKP
SCALE AS SHOWN		DATE 11.01.2016	STATUS DPR
STC SHAH TECHNICAL CONSULTANTS (P) LTD.			

NOTES :-

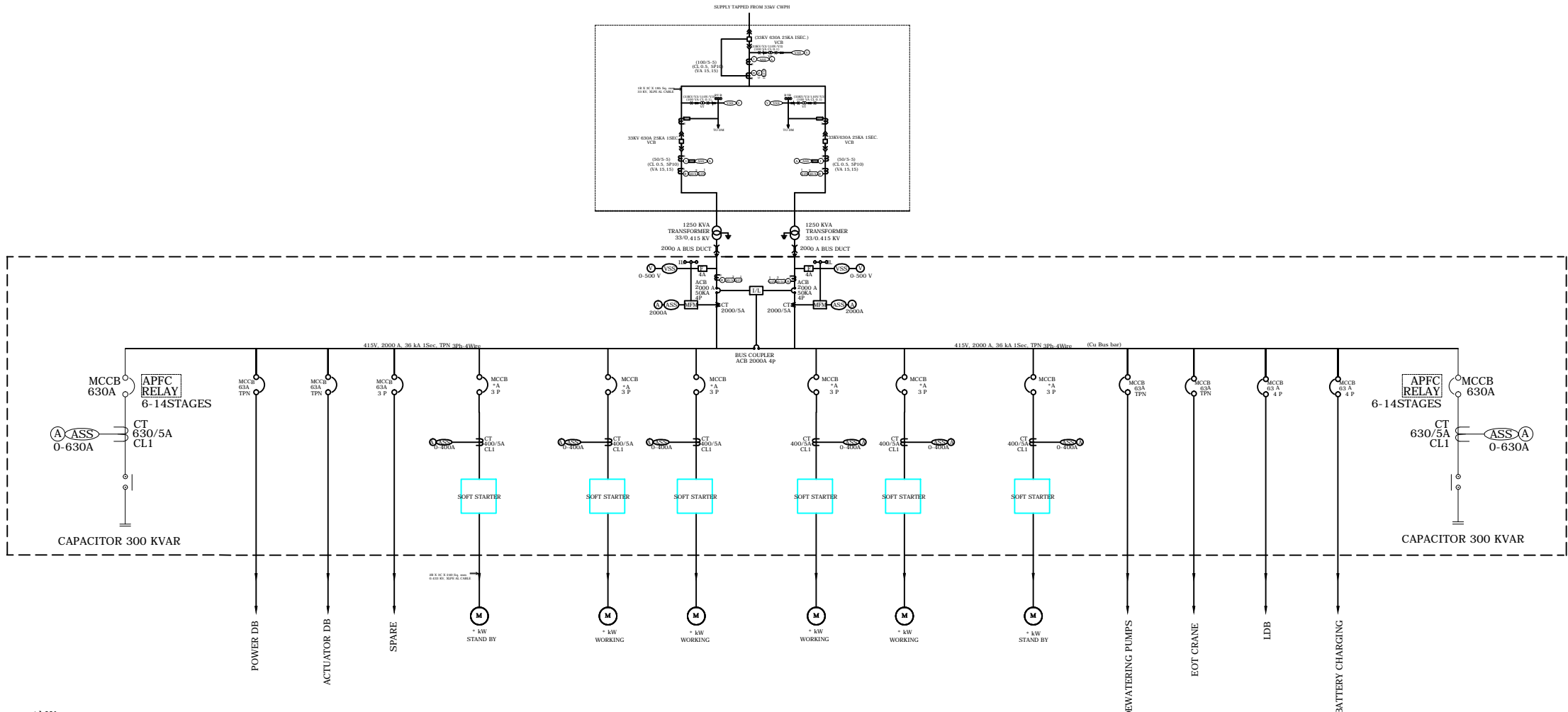
1. ALL LEVELS ARE IN METERS

INDICATIVE DRAWING



Rev	Date	Drawn	Description	CHK
REVISION				
CLIENT BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED				
CONSULTANTS SHAH TECHNICAL CONSULTANTS PVT. LTD IPE GLOBAL PVT. LTD. COGENT TRAINING RESEARCH DEVELOPMENT CONSULTANT PVT. LTD.				
PROJECT BHAGALPUR WATER SUPPLY PROJECT PHASE 2				
TITLE WTP & RIVER PROTECTION WORK SITE PLAN				
Designed	LT	Approved	SSS	
Dwg.Chk.	-	Drawn	SSN	
Scale	AS SHOWN	Date	11.01.2016	
Drawing No.	SUP/DESIGN PROJECT/BHAGALPUR/PH/Phase-1/WP/7B		Revision	01

TENDER PURPOSE ONLY



LEGEND

S. NO.	SYMBOL	NAME
1.		TRANSFORMER
2.		POTENTIAL TRANSFORMER
3.		CURRENT TRANSFORMER
4.		LIGHTING ARRESTOR
5.		MOTOR
6.		FUSE
7.		ACB/MCCB
8.		VFD
9.		VOLT SELECTOR
10.		AMP SELECTOR
11.		AMP METER
12.		VOLT METER
13.		MULTI FUNCTION METER WITH PORT
14.		KW+KWH WITH PORT
15.		OVER LOAD RELAY
16.		CAPACITOR
17.		INDICATING LAMP
18.		SWITCH FUSE UNIT
19.		CONTACTOR
20.		METER
21.		CTPT SET
22.		VCB
23.		ISOLATOR
24.		DROP OUT FUSE

*kW
*A
160kW = 400A MCCB (PRESENT LOAD)
225kW = 630A MCCB (ULTIMATE LOAD)

MINOR CHANGES MAY OCCUR

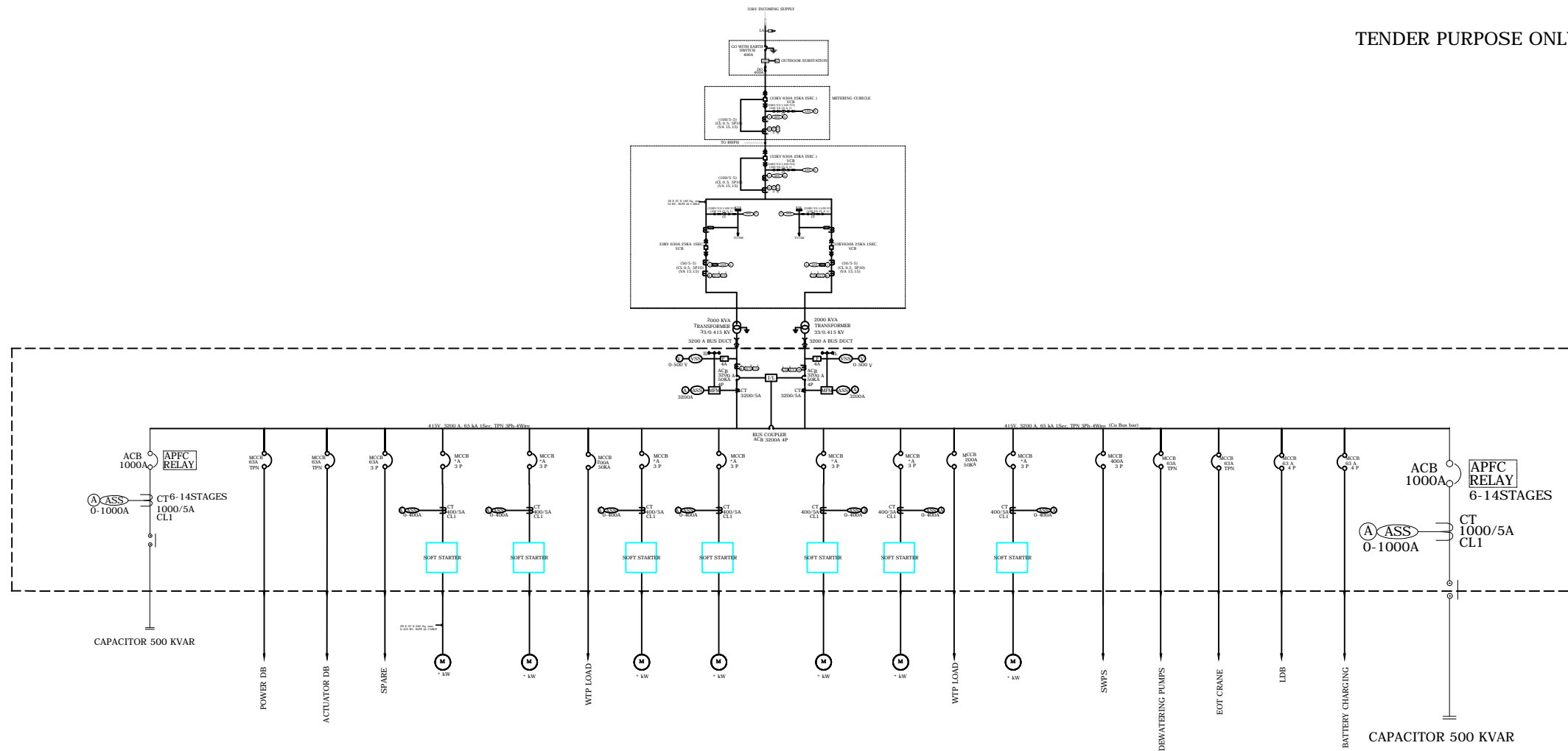
NOTES :-

1. ALL LEVELS ARE IN METER.

INDICATIVE DRAWING

CLIENT BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (BUIDCo.)			
PROJECT BHAGALPUR WATER SUPPLY PROJECT		DRAWING NO. BUP/REVISED PROJECT/BHAGALPUR/16/Phase-4/RL/17	REVISION 01
TITLE SINGLE LINE DIAGRAM RWPH		APPROVED SPK	CHECKED TPJ
		DESIGNED TPJ	DRAWN VKP
SCALE AS SHOWN		DATE 11.01.2016	STATUS DPR
STC SHAH TECHNICAL CONSULTANTS (P) LTD.			

TENDER PURPOSE ONLY



LEGEND

S. NO.	SYMBOL	NAME
1.		TRANSFORMER
2.		POTENTIAL TRANSFORMER
3.		CURRENT TRANSFORMER
4.		LIGHTING ARRESTOR
5.		MOTOR
6.		FUSE
7.		ACB/MCCB
8.		VFD
9.		VOLT SELECTOR
10.		AMP SELECTOR
11.		AMP METER
12.		VOLT METER
13.		MULTI FUNCTION METER WITH PORT
14.		KW+KWH WITH PORT
15.		OVER LOAD RELAY
16.		CAPACITOR
17.		INDICATING LAMP
18.		SWITCH FUSE UNIT
19.		CONTACTOR
20.		METER
21.		CTPT SET
22.		VCB
23.		ISOLATOR
24.		DROP OUT FUSE

*kW
 *A
 160kW = 400A MCCB (PRESENT LOAD)
 225kW = 630A MCCB (ULTIMATE LOAD)

MINOR CHANGES MAY OCCUR

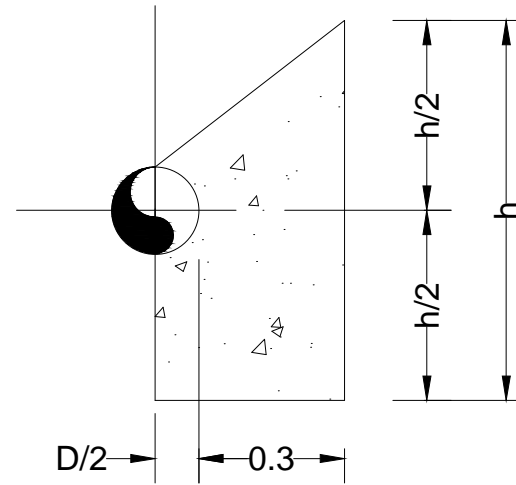
NOTES :-
 1. ALL LEVELS ARE IN METER.

INDICATIVE DRAWING

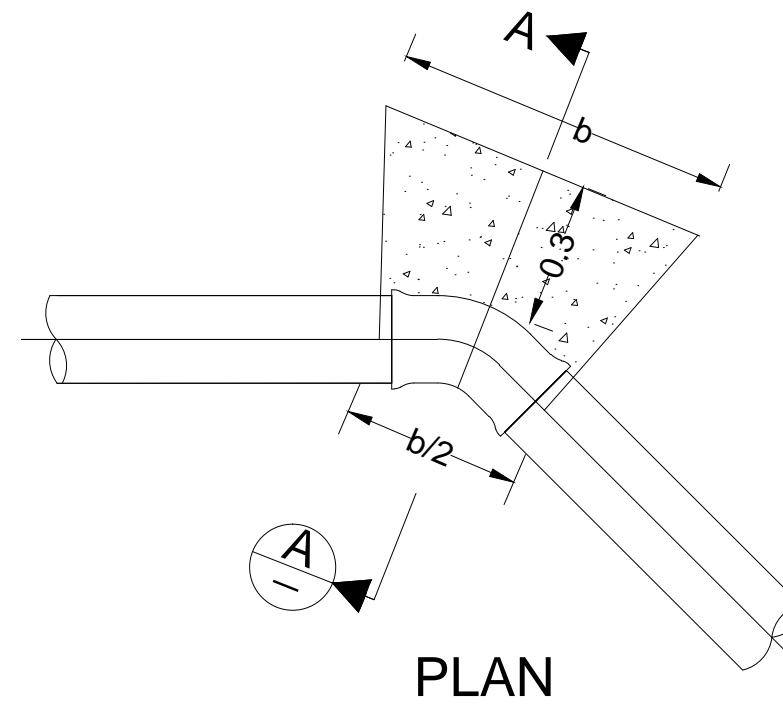
CLIENT BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (BUIDCo.)			
PROJECT BHAGALPUR WATER SUPPLY PROJECT		DRAWING NO. BUDIP/REVISED PROJECT/BHAGALPUR/WS/Phc	REVISION
TITLE SINGLE LINE DIAGRAM CWPS & WTP		APPROVED SPK	CHECKED TPJ
		DESIGNED TPJ	DRAWN VKP
SCALE AS SHOWN		DATE 11.01.2016	STATUS DPR
STC SHAH TECHNICAL CONSULTANTS (P) LTD.			

HORIZONTAL BEND

INDICATIVE DRAWING



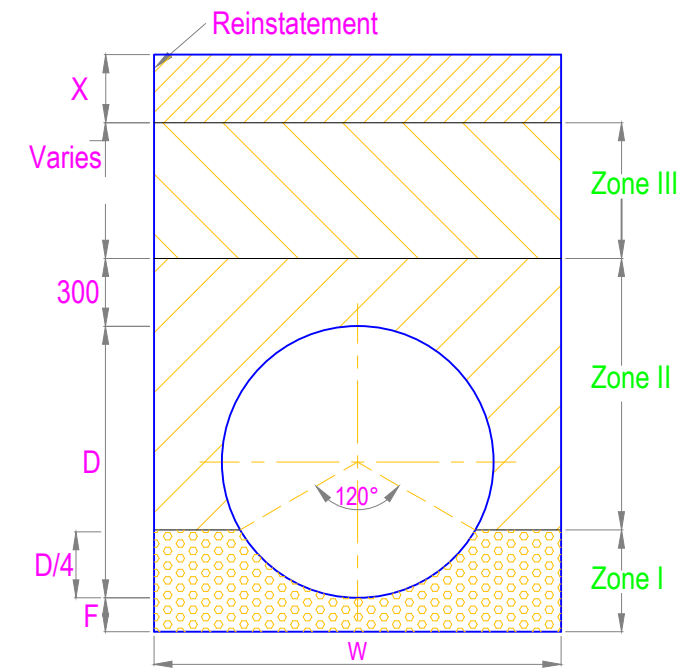
SECTION A



PLAN

Thrust block dimensions for Horizontal bends on DI pipeline								
Degree of bend	11.25		22.5		45		90	
Block dimensions	Width	Height	Width	Height	Width	Height	Width	Height
in m	b	h	b	h	b	h	b	h
Pipe Diameter	600 mm diameter DI							
Pressure- 200 m	1	0.6	1.4	0.8	1.9	1.2	2.7	1.5
180 m	0.9	0.6	0.9	0.6	2	1	2.6	1.4
150 m	0.7	0.6	1.1	0.8	1.7	1	2.4	1.3
120 m	0.6	0.6	1	0.7	1.3	1	2	1.2
500 mm diameter DI								
Pressure- 200 m	0.8	0.5	1.1	0.7	1.6	1	2.3	1.2
180 m	0.7	0.5	1	0.7	1.4	1	2.1	1.2
150 m	0.6	0.5	0.9	0.7	1.2	1	1.8	1.2
120 m	0.5	0.5	0.7	0.7	1	0.9	1.5	1.1
400 mm diameter DI								
Pressure- 200 m	0.7	0.4	0.9	0.6	1.1	0.9	1.6	1.1
180 m	0.6	0.4	0.8	0.6	1.1	0.8	1.6	1
150 m	0.5	0.4	0.7	0.6	1.1	0.7	1.4	1
120 m	0.4	0.4	0.75	0.4	0.9	0.7	1.2	0.9
300 mm diameter DI								
Pressure- 200 m	0.5	0.3	0.6	0.5	0.9	0.6	1.2	0.9
180 m	0.5	0.3	0.5	0.5	0.9	0.6	1.2	0.8
150 m	0.4	0.3	0.5	0.5	0.9	0.5	1.1	0.7
120 m	0.3	0.3	0.6	0.3	0.7	0.5	1	0.6
250 mm diameter DI								
Pressure- 300 m	0.6	0.25	0.7	0.45	1	0.6	1.4	0.8
200 m	0.4	0.25	0.45	0.45	0.8	0.5	1	0.7
180 m	0.4	0.25	0.45	0.45	0.8	0.45	1.1	0.6
150 m	0.3	0.25	0.45	0.45	0.7	0.45	0.9	0.6
120 m	0.25	0.25	0.5	0.25	0.6	0.45	0.9	0.5
200 mm diameter DI								
Pressure- 200 m	0.35	0.2	0.4	0.4	0.6	0.4	0.8	0.6
180 m	0.3	0.2	0.3	0.4	0.55	0.4	0.8	0.5
150 m	0.3	0.2	0.4	0.4	0.5	0.4	0.8	0.5
120 m	0.2	0.2	0.4	0.2	0.4	0.4	0.7	0.4
150 mm diameter DI								
Pressure- 200 m	0.25	0.15	0.35	0.35	0.4	0.35	0.7	0.4
180 m	0.25	0.15	0.35	0.35	0.35	0.35	0.6	0.4
150 m	0.2	0.15	0.35	0.15	0.35	0.35	0.6	0.35
120 m	0.15	0.15	0.3	0.15	0.3	0.35	0.45	0.35
100 mm diameter DI								
Pressure- 200 m	0.2	0.1	0.2	0.2	0.3	0.2	0.4	0.3
180 m	0.2	0.1	0.2	0.2	0.3	0.2	0.4	0.3
150 m	Not required							
120 m	Not required							

CLIENT:-			
 BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED			
CONSULTANTS:-			
SHAH TECHNICAL CONSULTANTS PVT. LTD.			
IPE GLOBAL PVT. LTD.			
COGENT TRAINING RESEARCH DEVELOPMENT CONSULTANT PVT.LTD.			
PROJECT:-			
BHAGALPUR WATER SUPPLY PROJECT PHASE-2			
DRAWING TITLE:-			
DETAILS OF			
DRAWN	ASHRAF ALI	SCALE:-	NTS
CHECKED	VKS	DATE:-	11.01.2016
REVIEWED	ATL		
DRAWING NO:- BUDIP/REVISED PROJECT/BHAGALPUR/WS/Phase-II/CWT/19			



ALL TYPES OF PIPE EXCEPT GRP

TABLE SHOWING WIDTH OF TRENCH (FOR TRANSMISSION MAIN ONLY)

Sl. No.	Pipe material	Nominal diameter D (mm)	Trench width W (mm)	Bedding thickness F (mm)
1.	DI	100	750	150
		150	800	150
		200	850	150
		250	900	150
		300	950	150
		350	1000	150
		400	1050	150
		450	1100	150
		500	1150	150
		600	1250	150
		700	1350	150
		750	1400	150
800	1450	150		
900	1550	150		

DI PIPES			
CLASS OF BEDDING	ZONE	SPECIFICATION OF MATERIAL	COMPACTION % (PROCTOR DENSITY)
Class- A	ZONE I	Granular graded material up to max. size of 10mm or sand consolidated in layers not greater than 120mm	90
Class- B (See Note) *		Mass concrete M15 of portland or sulphate resisting cement max. size of aggregate not greater than 20mm	-
Both Class-A & Class-B	ZONE II	Granular graded material up to 10mm size consolidated in layers not greater than 150mm.	85
Both Class-A & Class-B	ZONE III	Main backfill material or any other material compacted to requirement in layers not greater than 250mm.	95

* Note :- Class B bedding shall be provided in exceptional cases where basic trench foundation is unstable and with approval of the Engineer.

NOTES :- **INDICATIVE DRAWING**

Rev				Date	Drawn	Description	CHK	APPO	CLIENT	BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (BUIDCO.)		
REVISION									PROJECT	BHAGALPUR WATER SUPPLY PROJECT		
									TITLE	TYPICAL DETAILS OF BEDDING & BACKFILLING FOR WATER TRANSPORT PIPE		
									DRAWING NO.	01		
									APPROVED	CHECKED	DESIGNED	DRAWN
									SSS	--	--	SP
									SCALE	DATE	STATUS	
									AS SHOWN	11.01.2016	-	

STC SHAH TECHNICAL CONSULTANTS (P) LTD.