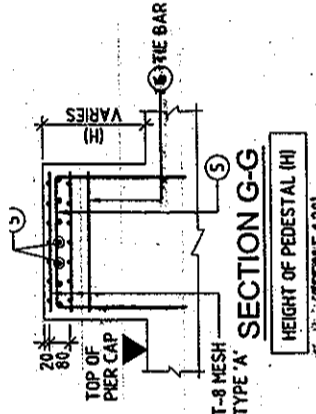
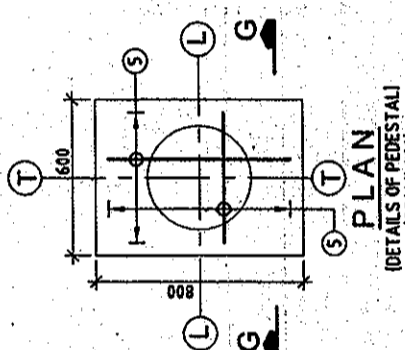


**ELEVATION ALONG L-L AXIS**  
(SHOWING PIER DIMENSIONS)  
(SCALE 1:75)



**T-8 MESH REINF.**  
**TYPE - 'A'**  
(UNDER BEARING)  
(SCALE 1:20)



**T-8 MESH REINF.**  
**TYPE - 'B'**  
(UNDER JACK)  
(SCALE 1:20)

- NOTES:-**
- ALL DIMENSIONS ARE IN MM AND LEVELS IN METRES, UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DIMENSION IS TO BE SCALED.
  - CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH 150mm CUBES AS FOLLOWS:-  
PIER -----M35  
PIER CAP -----M35
  - CLEAR COVER TO OUTER MOST STEEL SHALL BE AS FOLLOWS.  
(I) FOR SUBSTRUCTURE ----- 50mm  
(II) FOR FOUNDATION ----- 75mm
  - TMT HIGH YIELD STRENGTH DEFORMED BARS SHALL BE OF GRADE DESIGNATION Fe-415 CONFORMING TO IS:1786 SHALL ONLY BE USED.
  - MINIMUM BOND LENGTH SHALL BE 42 x DIA OF BAR.
  - MINIMUM LAP LENGTH FOR REINFORCEMENT BAR SHALL BE 72 x DIA OF BAR. LAPS SHALL BE STAGGERED AND NOT MORE THAN 50% OF BARS SHALL BE LAPPED AT ANY ONE SECTION.
  - IN PIER SHAFT T-40 OPEN LINKS (OR S LOOPS) WITH HOOK PLACED AROUND THE VERTICAL BARS ARE PLACED AT THE RATE OF 4 LINKS IN ONE SQUARE METER.
  - LL REPRESENTS LONGITUDINAL AXIS OF BRIDGE AND TT REPRESENTS TRANSVERSE AXIS OF BRIDGE.
  - A IS THE DIMENSIONS OF THE BEARINGS WHICH IS TO BE FURNISHED BY THE MANUFACTURER.
  - D = DIA OF JACK.

**REFERENCE DRAWINGS:-**

- 1213/SHEC/LUDHIANA/21+800/G-01 (SHEET 1 OF 7 TO 7 OF 7)
- 1213/SHEC/LUDHIANA/21+800/E-05 (SHEET 1 OF 2)

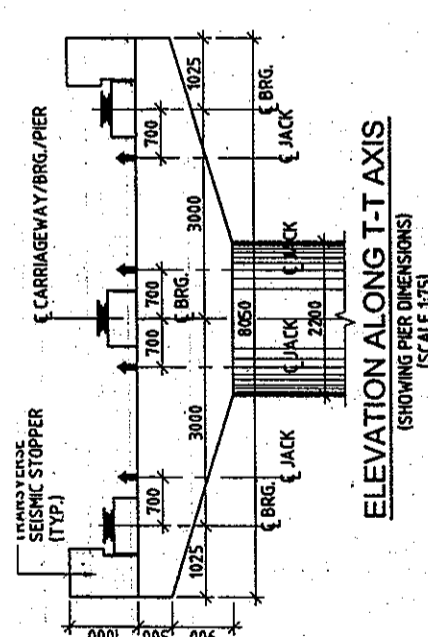
**REINFORCEMENT DETAIL:-**

BAR MKD.	DIA (mm)	SPACING/Nos.	SHAPE
1	32	17 Nos.	[Diagram]
1a	32	17 Nos.	[Diagram]
2	16	27 Nos.	[Diagram]
3	16	150	[Diagram]
3a	16	150	[Diagram]
4	12	2 Nos.	[Diagram]
4a	12	4 Nos.	[Diagram]
5	12	75	[Diagram]
6	12	150	[Diagram]
7	32	11a Nos. (2x57)	[Diagram]
8	12	125	[Diagram]

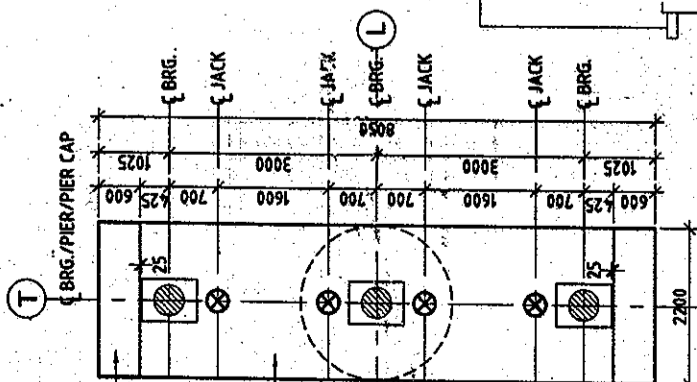
**LEGENDS:**  
 ——— BAR ON TOP FACE  
 - - - - - BAR ON BOTTOM FACE

**LEVEL CHART FOR PIER**

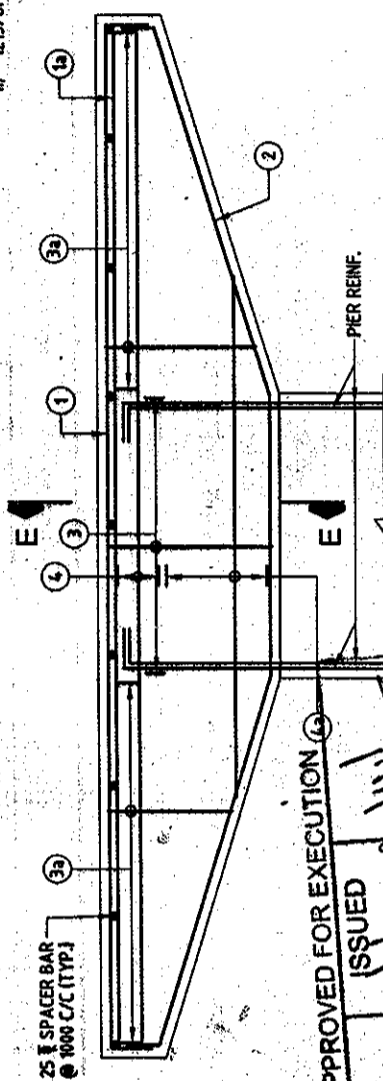
PIER DESIGNATION	FORMATION LEVEL	PIER CAP TOP LEVEL	BED LEVEL
P5	254.750	252.335	246.795



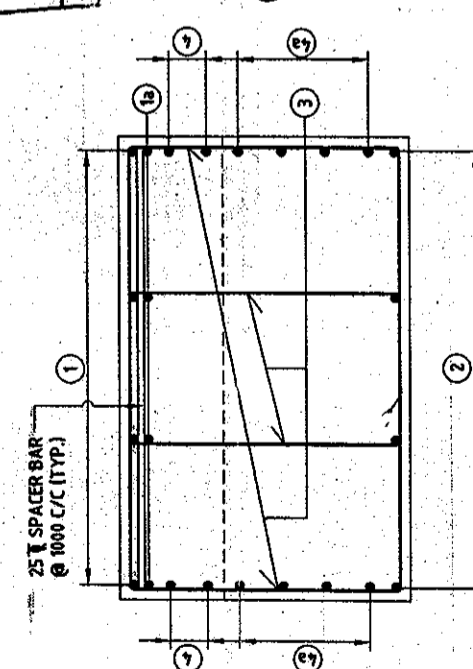
**ELEVATION ALONG T-T AXIS**  
(SHOWING PIER DIMENSIONS)  
(SCALE 1:75)



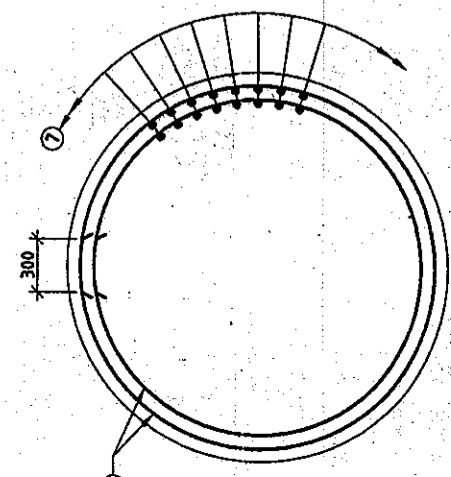
**PLAN AT PIER CAP TOP**  
(SHOWING DIMENSIONS)  
(SCALE 1:75)



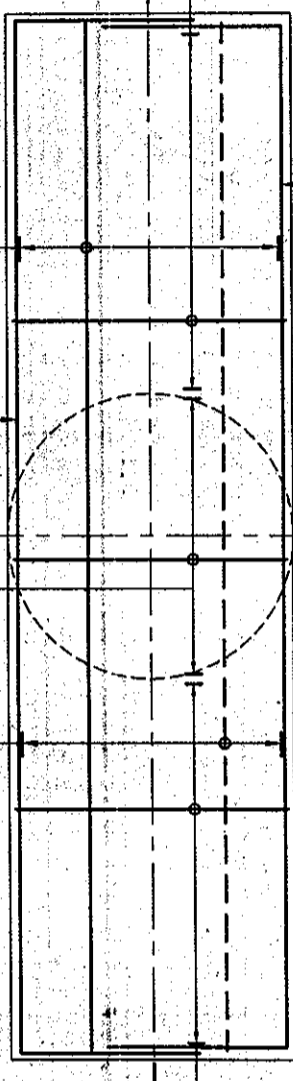
**ELEVATION ALONG L-L AXIS**  
(SHOWING PIER REINFORCEMENT)  
(SCALE 1:50)



**SECTION E-E**  
(SCALE 1:25)



**SECTION F-F**  
(SCALE 1:30)



**PLAN SHOWING REINFORCEMENT IN PIER CAP**  
(SCALE 1:40)

**APPROVED FOR EXECUTION**  
 ISSUED  
 27/08/2009  
 26/05/2009  
 Executive Engineer Design (IP)  
 Chief Engineer Design (IP)  
 PUNJAB P.W.D. (B & R)

**PREPARATION OF DETAILED PROJECT REPORT FOR UPGRADATION OF SOUTHERN B-YE-PASS LUDHIANA**

**CONSULTANT:** SMEC (INDIA) PVT. LTD.  
 04E BRIDGE WORKS DIVISION FLOOR, OPERATIONAL HOUSE, 102/103, HARYANA, INDIA - 122102  
 TEL: 9124-282002, 287100

**CLIENT:** PIDB  
 PUNJAB INFRASTRUCTURE DEVELOPMENT BOARD  
 HAS Infrastructure Development Drawings B2 (Feb 01) S-46a Ch. 21+800 B08.0121+800 E-46.dwg

**PROJECT TITLE:** PREPARATION OF DETAILED PROJECT REPORT FOR UPGRADATION OF SOUTHERN B-YE-PASS LUDHIANA

**REVISIONS:**

REV.	DATE	DESIGN	CHECKED	APPROVED	DETAILS OF REVISION
R1	27/08/2009	MKS	VNM	VNM	REVISED AS PER P&I PWD COMMENTS
R0	26/05/2009	MKS	VNM	VNM	FIRST ISSUE

**SCALE:** AS SHOWN

**SHEET SIZE:** A2

**DRW:** DPB

**DETAILED PROJECT REPORT DIMENSIONAL & REINF. DETAILS OF PILE, PIER CAP, PIER & PIER CAP** (SHEET 2 OF 2)

1213/SMEC/LUDHIANA/21+800/E-05 R1

**NOTES:-**

- ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES, UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DIMENSION IS TO BE SCALED.
- CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF 35Mpa FOR BORED CAST-IN-SITU PILE AND PILE CAP.
- CLEAR COVER TO SHALL BE AS FOLLOWS.  
(i) FOR PILE ---75mm  
(ii) FOR PILE CAP ---75mm
- THT HIGH YIELD STRENGTH DEFORMED BARS SHALL BE OF GRADE DESIGNATION Fe-415 CONFORMING TO IS:1786 SHALL ONLY BE USED.
- MINIMUM BOND LENGTH SHALL BE 42 x DIA OF BAR.
- MINIMUM LAP LENGTH FOR REINFORCEMENT BAR SHALL BE 72 x DIA OF BARRLAPS SHALL BE STAGGERED AND NOT MORE THAN 50% OF BARS SHALL BE LAPPED AT ANY ONE SECTION.
- LL REPRESENTS LONGITUDINAL AXIS OF BRIDGE AND TT REPRESENTS TRANSVERSE AXIS OF BRIDGE.
- ACTUAL LOAD TEST SHALL BE CARRIED OUT ON A TEST PILE AS PER STANDARD SPECIFICATIONS TO DETERMINE VERTICAL AND LATERAL CAPACITY OF PILE. IT SHALL HOWEVER BE ENSURED THAT IT IS NOT LESS THAN DESIGN VALUES.

**REFERENCE DRAWINGS:-**

- 12/3/SMEC/LUDHIANA/21+100/G-01 (SHEET 1 OF 7 TO 7 OF 7)
- 12/3/SMEC/LUDHIANA/21+100/E-06 (SHEET 2 OF 2)

**REINFORCEMENT DETAIL:-**

BAR MKD.	DIA (mm)	SPACING/Nos.	SHAPE
1	25	63 Nos.	[U]
2	16	150	[U]
3	16	150	[U]
4	25	58 Nos.	[U]
5	16	8 Nos.	[U]
7	25	20 Nos.	[U]
8	10	200	[O]
8a	10	100	[O]
9	16	150	[L] 6 LEGGED
10	16	150	[L] 6 LEGGED

**LEGENDS:**

**APPROVED FOR EXECUTION**

ISSUED ON: \_\_\_\_\_

FOR: \_\_\_\_\_

Assistant Engineer Design (IP)

Executive Engineer Design (IP)

Chief Engineer Design (IP)

PUNJAB P.W.D. (B & R)

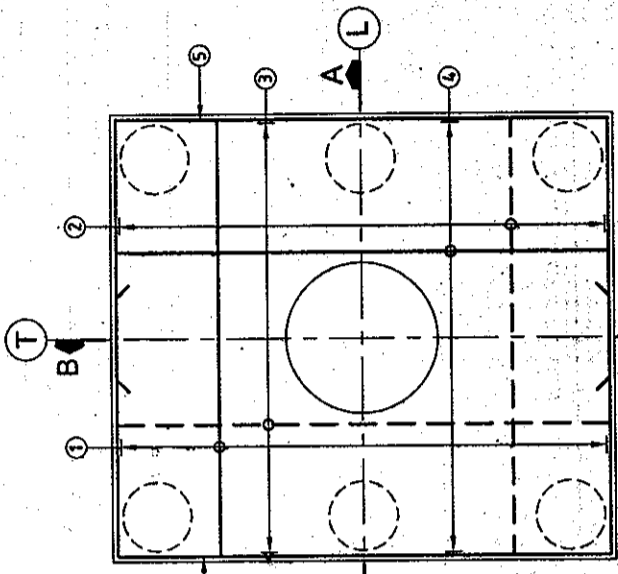
**DETAILED PROJECT REPORT**

**DIMENSIONAL & REINF. DETAILS OF PILE, PILE CAP, PIER & PIER CAP**

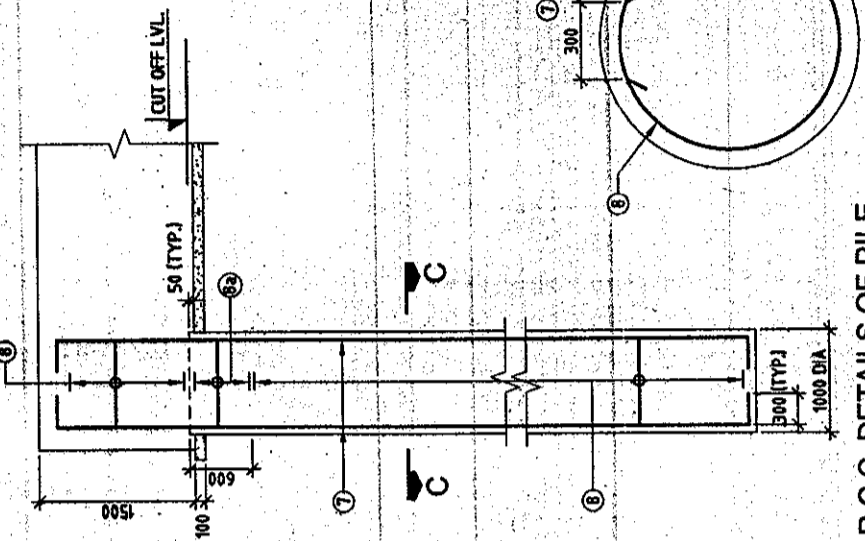
(SHEET 1 OF 2)

12/3/SMEC/LUDHIANA/21+100/E-06

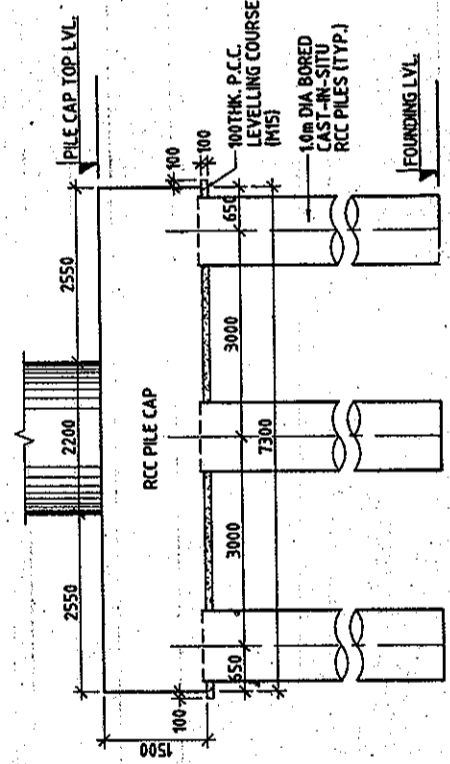
R1



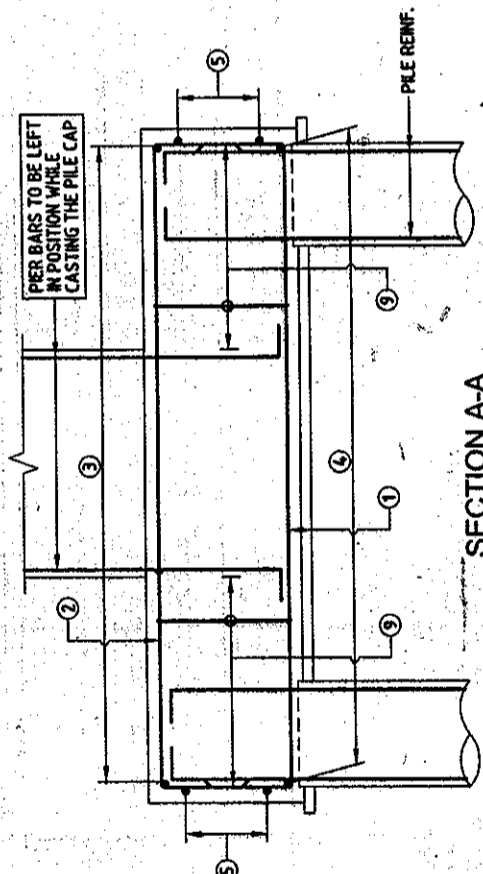
**PLAN**  
(SHOWING PILE CAP REINFORCEMENT)  
(SCALE 1/75)



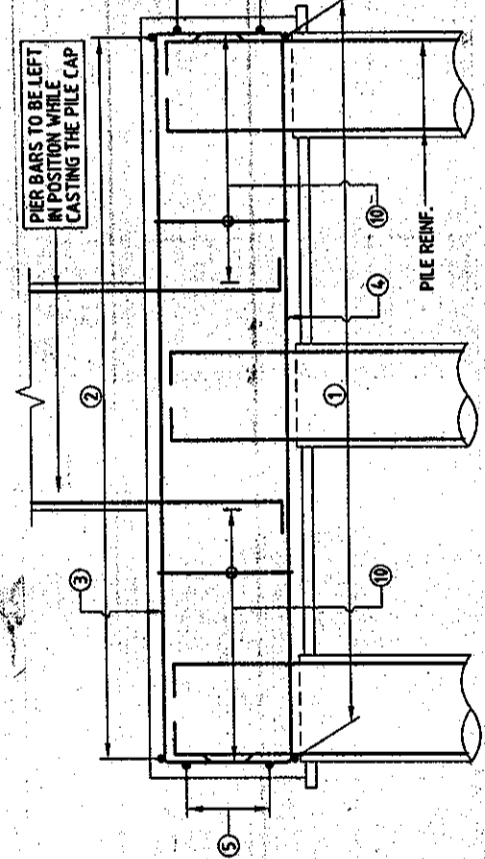
**SECTION C-C**  
(SCALE 1/20)



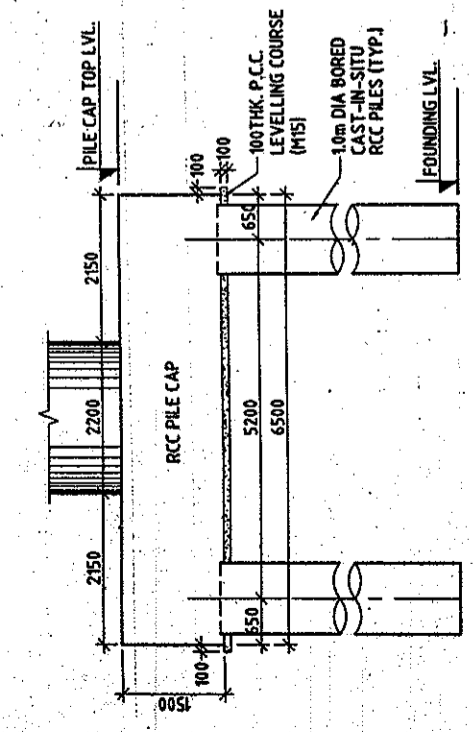
**ELEVATION ALONG T-T AXIS**  
(SCALE 1/75)



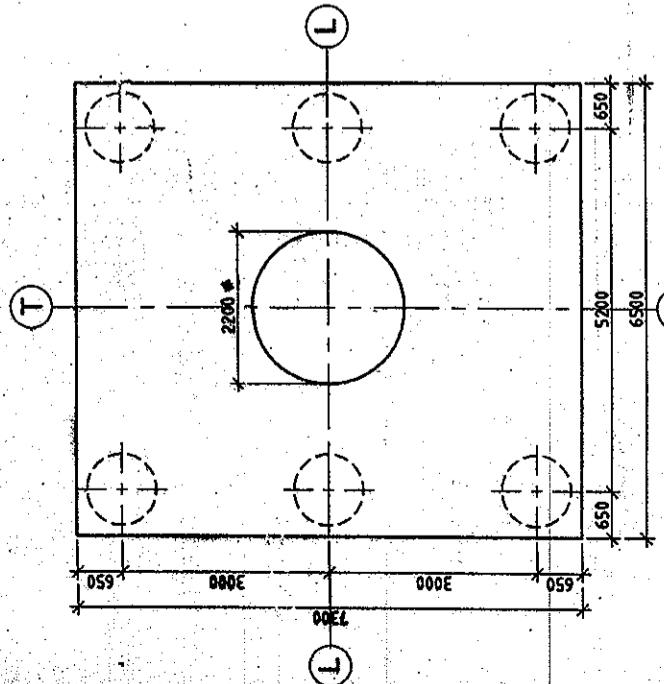
**SECTION A-A**  
(SCALE 1/50)



**SECTION B-B**  
(SCALE 1/50)



**ELEVATION ALONG L-L AXIS**  
(SCALE 1/75)



**PLAN AT TOP OF PILE CAP**  
(SHOWING DIMENSIONS)  
(SCALE 1/75)

**LEVEL CHART FOR PILE CAP LAYOUT.**

PIER DESIGNATION	BED LEVEL	TOP OF PILE CAP LEVEL	CUT OFF LEVEL	FOUNDING LEVEL
P3	246.858	246.358	244.908	230.908

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**PREPARATION OF DETAILED PROJECT REPORT FOR UPGRADATION OF SOUTHERN BYE-PASS LUDHIANA**

**CONSULTANT:** SMCE  
SMEC (INDIA) PVT. LTD.  
D/F PUNJAB P.W.D. COMPOUND,  
CHANDIGARH, INDIA - 160002  
Tel: 0172-430042, 457100

**CLIENT:** PIDB  
PUNJAB INFRASTRUCTURE DEVELOPMENT BOARD  
H-1 Structure, 12/3, Final DPR Revised Drawings R2 (P) 40/18-18/08 CH-21+100 E-06.dwg