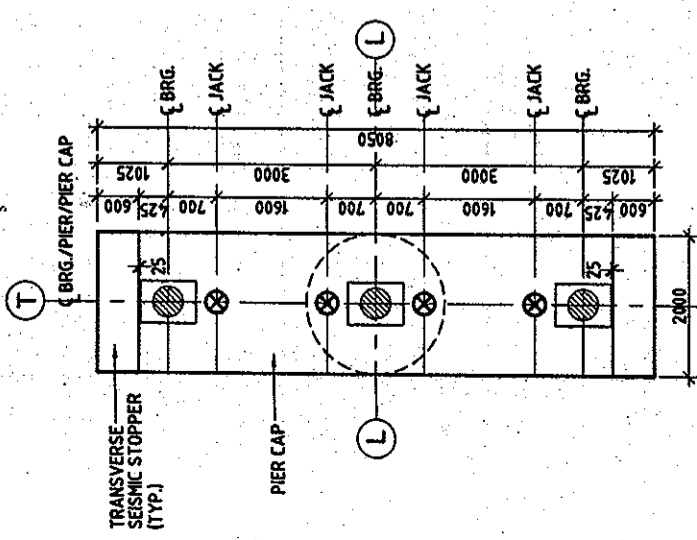
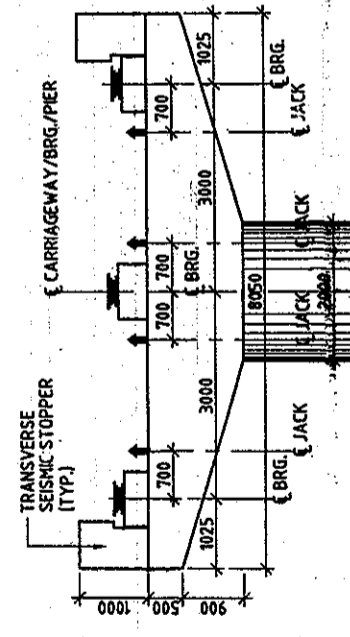


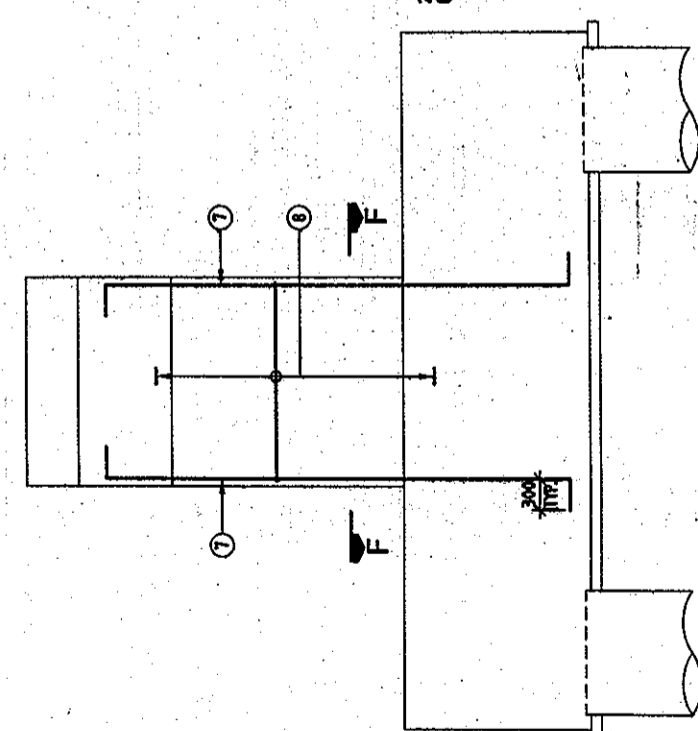
**ELEVATION ALONG L-L AXIS**  
(SHOWING PIER DIMENSIONS)  
(SCALE 1:75)



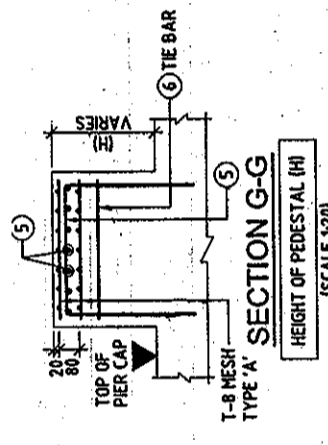
**PLAN AT PIER CAP TOP**  
(SHOWING DIMENSIONS)  
(SCALE 1:75)



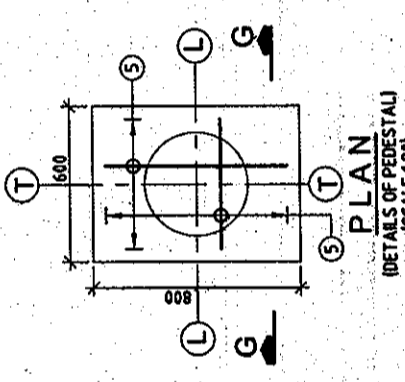
**ELEVATION ALONG T-T AXIS**  
(SHOWING PIER DIMENSIONS)  
(SCALE 1:75)



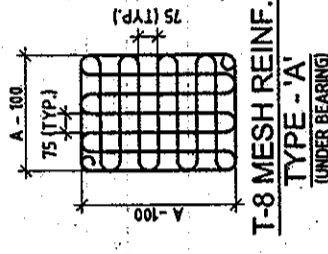
**ELEVATION ALONG L-L AXIS**  
(SHOWING PIER REINFORCEMENT)  
(SCALE 1:50)



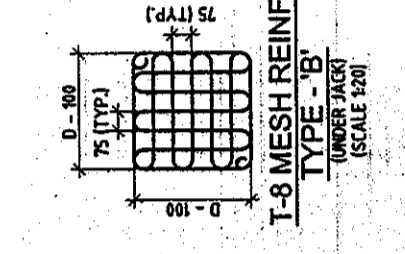
**SECTION G-G**  
(SCALE 1:20)



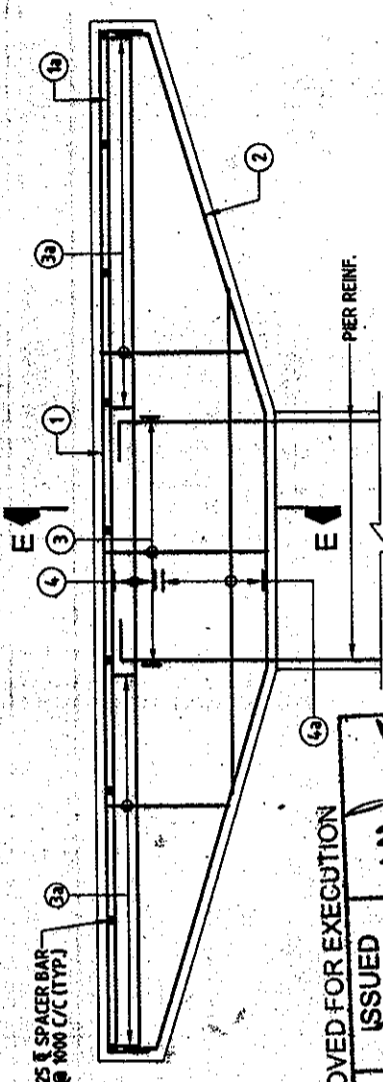
**PLAN**  
(DETAILS OF PEDESTAL)  
(SCALE 1:20)



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



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



**APPROVED FOR EXECUTION**

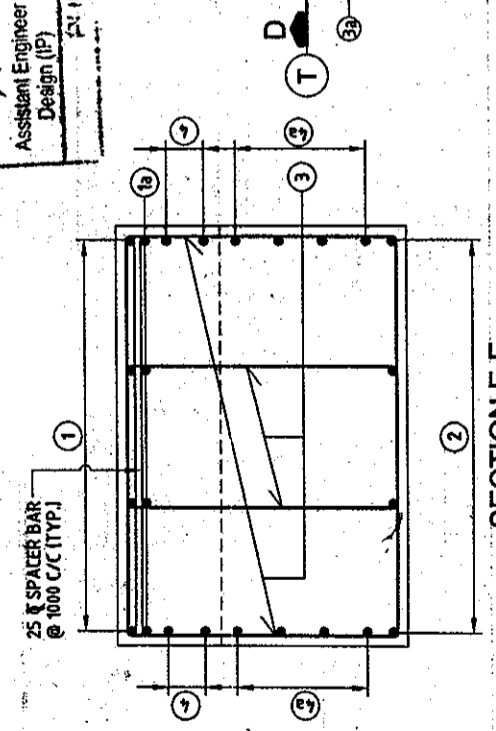
ISSUED

Chief Engineer (IP)

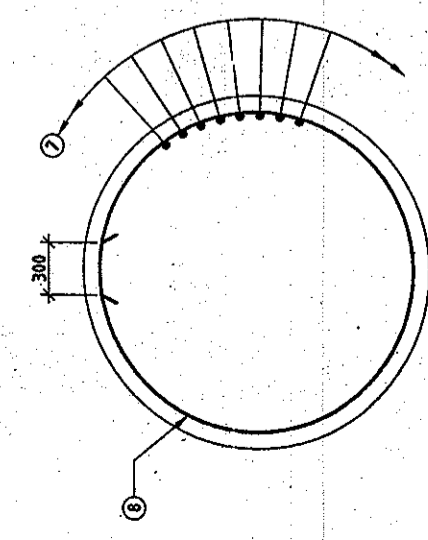
Executive Engineer Design (IP)

Assistant Engineer Design (IP)

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



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



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

**REINFORCEMENT DETAIL:**

BAR MKD.	DIA (mm)	SPACING/Nos.	SHAPE
1	32	17 Nos.	[Symbol]
2	32	17 Nos.	[Symbol]
3	16	27 Nos.	[Symbol]
3a	16	150	[Symbol]
4	12	2 Nos.	[Symbol]
4a	12	4 Nos.	[Symbol]
5	12	75	[Symbol]
6	12	150	[Symbol]
7	32	66 Nos.	[Symbol]
8	12	125	[Symbol]

**LEGENDS:**

— BAR ON TOP FACE

- - - BAR ON BOTTOM FACE

**LEVEL CHART FOR PIER**

PIER DESIGNATION	FORMATION LEVEL	PIER CAP TOP LEVEL	BED LEVEL
P18	252.10	249.695	246.592

- 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
  - THE 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-10 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/SMEC/LUDHIANA/21:100/G-01 (SHEET 1 OF 7 TO 7 OF 7)
  - 1213/SMEC/LUDHIANA/21:100/E-09 (SHEET 1 OF 2)

**CLIENT:** PUNJAB INFRASTRUCTURE DEVELOPMENT BOARD

**CONSULTANT:** SMEC

**PROJECT TITLE:** PREPARATION OF DETAILED PROJECT REPORT FOR UPGRADEATION OF SOUTHERN BYE-PASS LUDHIANA

**SCALE:** AS SHOWN

**SHEET SIZE:** A2

**REVISED AS PER P.B. PWD COMMENTS**

REV	DATE	DRAWN	CHECKED	APPROVED	DETAILS OF REVISION
RT	27/08/2009	MKS	VNM	S L V H R I	REVISED AS PER P.B. PWD COMMENTS
RD	27/05/2009	MKS	VNM	S L V H R I	FIRST ISSUE

**DETAILED PROJECT REPORT**

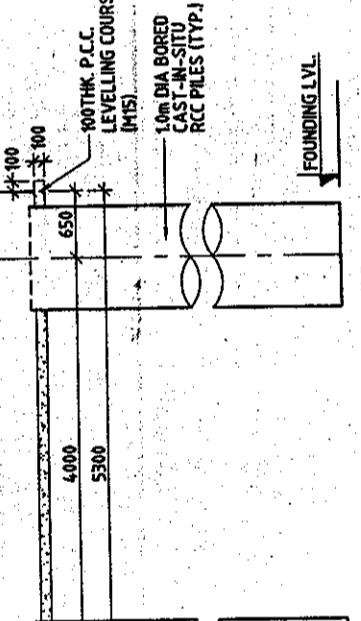
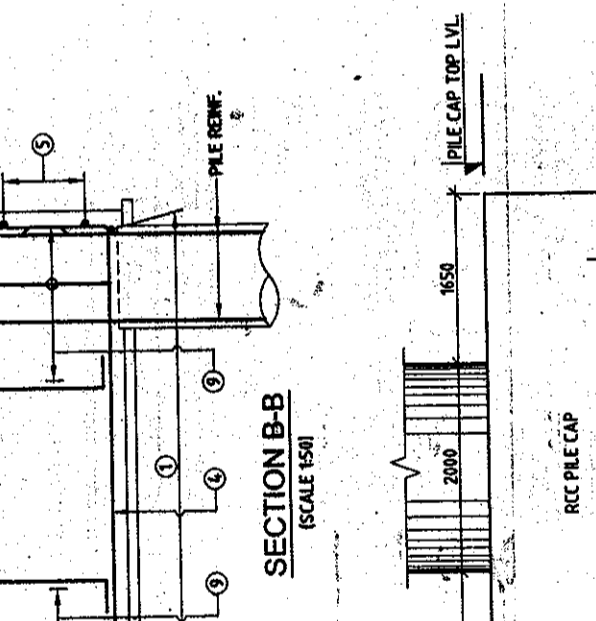
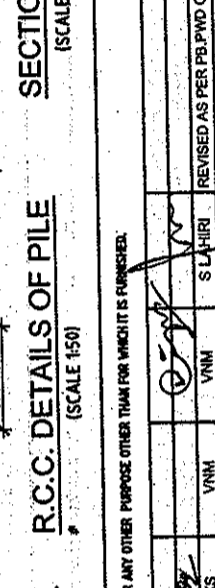
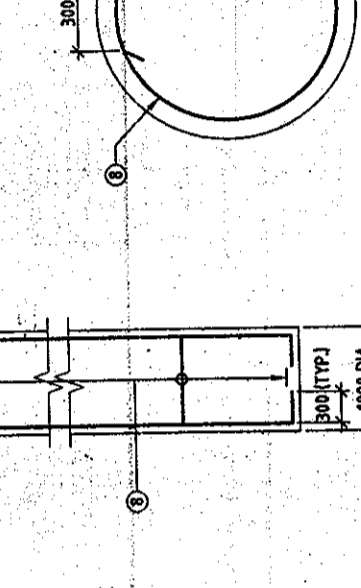
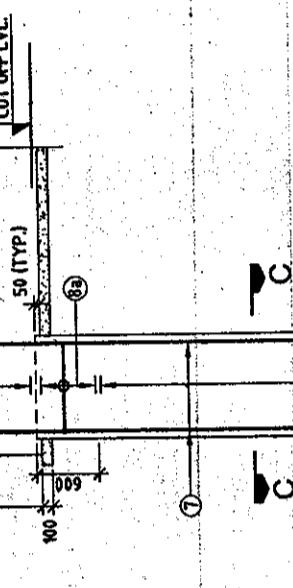
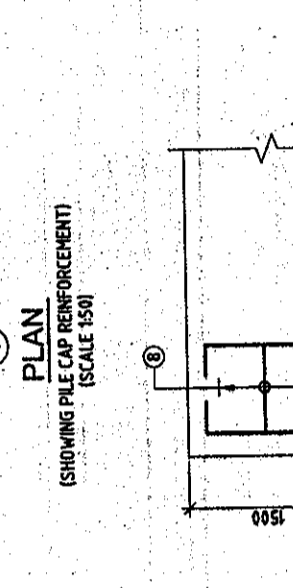
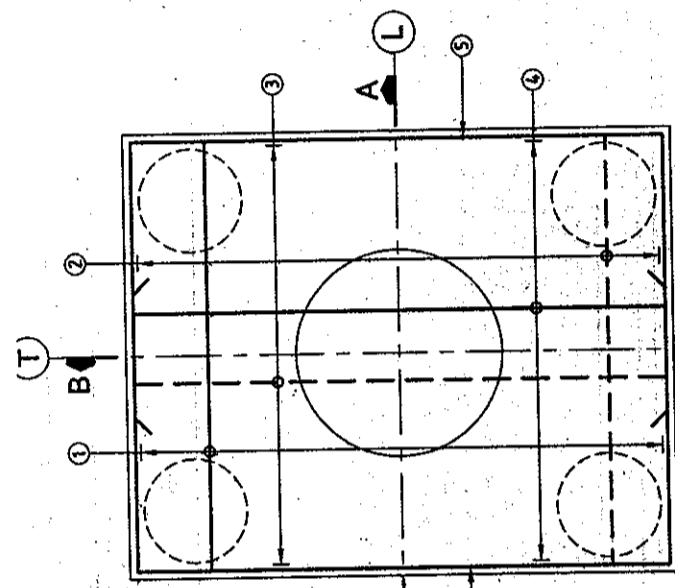
**DIMENSIONAL & REINF. DETAILS OF PILE, PIER CAP, PIER & PIER CAP**

(SHEET 2 OF 2)

1213/SMEC/LUDHIANA/21:100/E-09

DRW

89



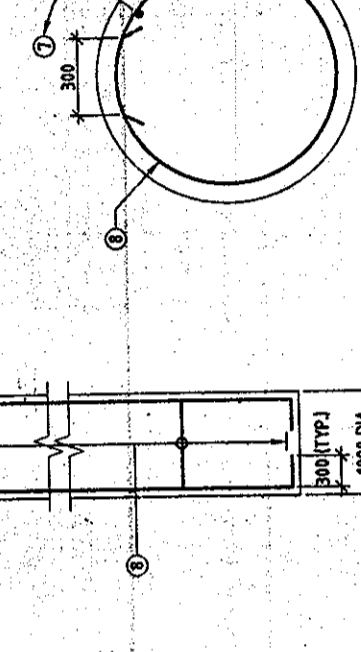
- NOTES:-**
- ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES, UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DIMENSION IS TO BE SCALED.
  - CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF 35Mpa FOR BORED CAST-IN-SITU PILE AND PILE CAP.
  - CLEAR COVER TO SHALL BE AS FOLLOWS.
    - (i) FOR PILE --- 75mm
    - (ii) FOR PILE CAP --- 75mm
  - 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 BARLAPS 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:-**

- 1213/SMEC/LUDHIANA/21-100/G-01 (SHEET 1 OF 7 TO 7 OF 7)
- 1213/SMEC/LUDHIANA/21-100/E-10 (SHEET 2 OF 2)

**REINFORCEMENT DETAIL:**

BAR MKD.	DIA (mm)	SPACING/Nos.	SHAPE
1	25	19 Nos.	U
2	16	150	U
3	16	150	U
4	25	38 Nos.	U
5	16	8 Nos.	U
7	25	20 Nos.	U
8	10	200	O
8a	10	100	O
9	16	150	U 4 LEGGED



**REVISIONS**

REV.	DATE	DESIGN	CHECKED	APPROVED	REVISION
R1	27/08/2009	MKS	VNM	S L AHRI	REVISED AS PER P.D. COMMENTS
R0	26/05/2009	MKS	VNM	S L AHRI	FIRST ISSUE

**PREPARATION OF DETAILED PROJECT REPORT FOR UPGRADATION OF SOUTHERN BYPASS LUDHIANA**

**CLIENT:** PIDB  
**CONSULTANT:** SMEC  
 SMEC INDIA PVT. LTD.  
 D/F BUILDING NO. 1 & 2 TOWER 2N BLOCK  
 CYBER CITY, PHASE 4 GURGAON,  
 HARYANA, INDIA - 122002  
 Tel: 0124-430042, 430100

**PROJECT TITLE:** PREPARATION OF DETAILED PROJECT REPORT FOR UPGRADATION OF SOUTHERN BYPASS LUDHIANA

**SCALE:** AS SHOWN  
**SHEET SIZE:** A2  
**DRW:** DPB  
**DATE:** 27/08/2009

**DETAILED PROJECT REPORT DIMENSIONAL & REINFT. DETAILS OF PILE, PILE CAP, PIER & PIER CAP**  
 (SHEET 1 OF 2)  
 1213/SMEC/LUDHIANA/21-100/E-10  
 R1