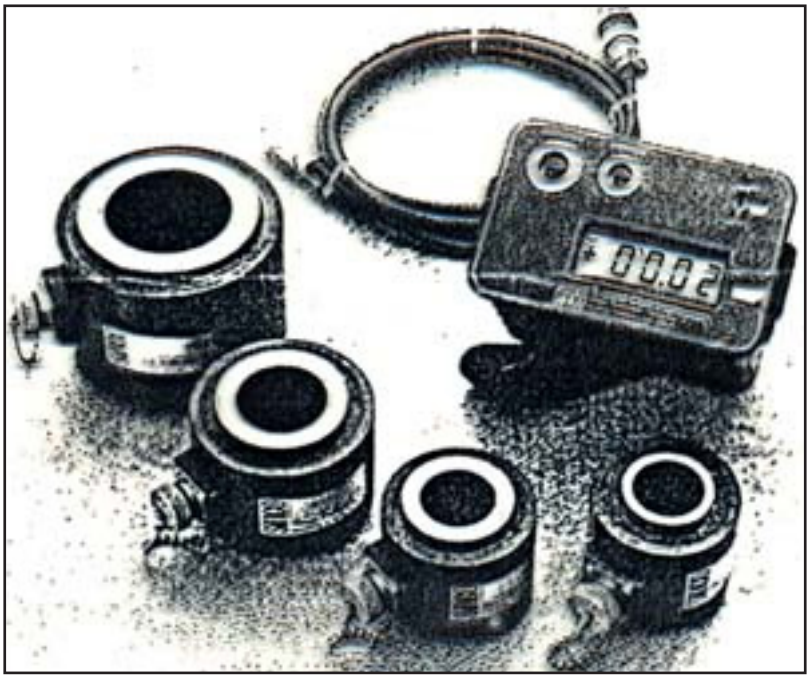
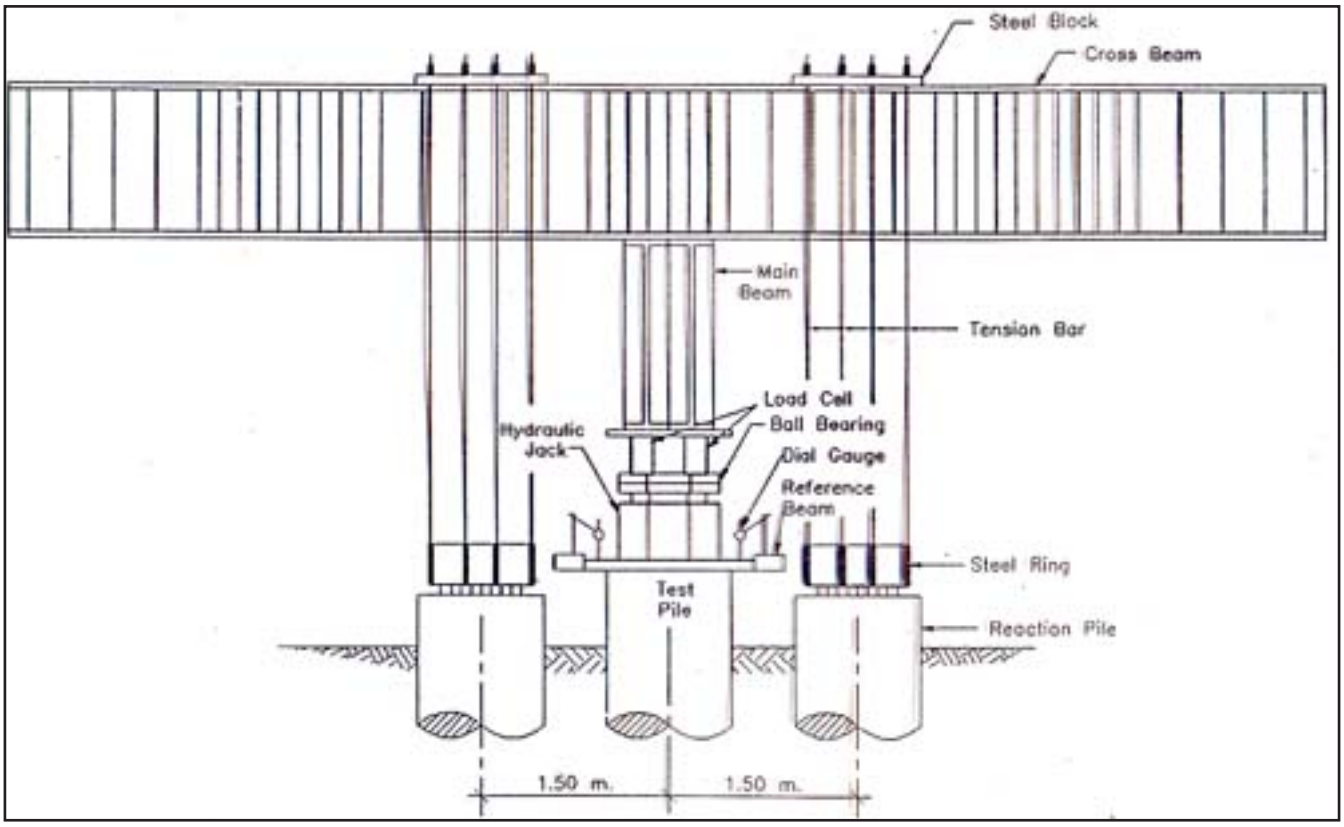
- ***Pile instrumentation***
    - To obtain load developed at each level of pile.
    - To determine load transfer curve in pile shaft.
    - To evaluate unit skin friction and end bearing of soil.
    - To check and control eccentric of loading system during pile load test.
- ***Type of bored pile instrument***
    - ***Load cell***
        - To obtain direct reading of load from each hydraulic jack.
        - To check and control eccentric of load system during apply load.
    - ***Strain gauge***
        - To measure stress / strain / force in pile shaft.
        - Electrical system.
        - Many localtions are possible.
    - ***Extensometer***
        - To measure stress / strain / force in pile pile shaft.
        - Mechanical system.
        - Many localtion may not be possible.
    - ***Center hole load ceels***

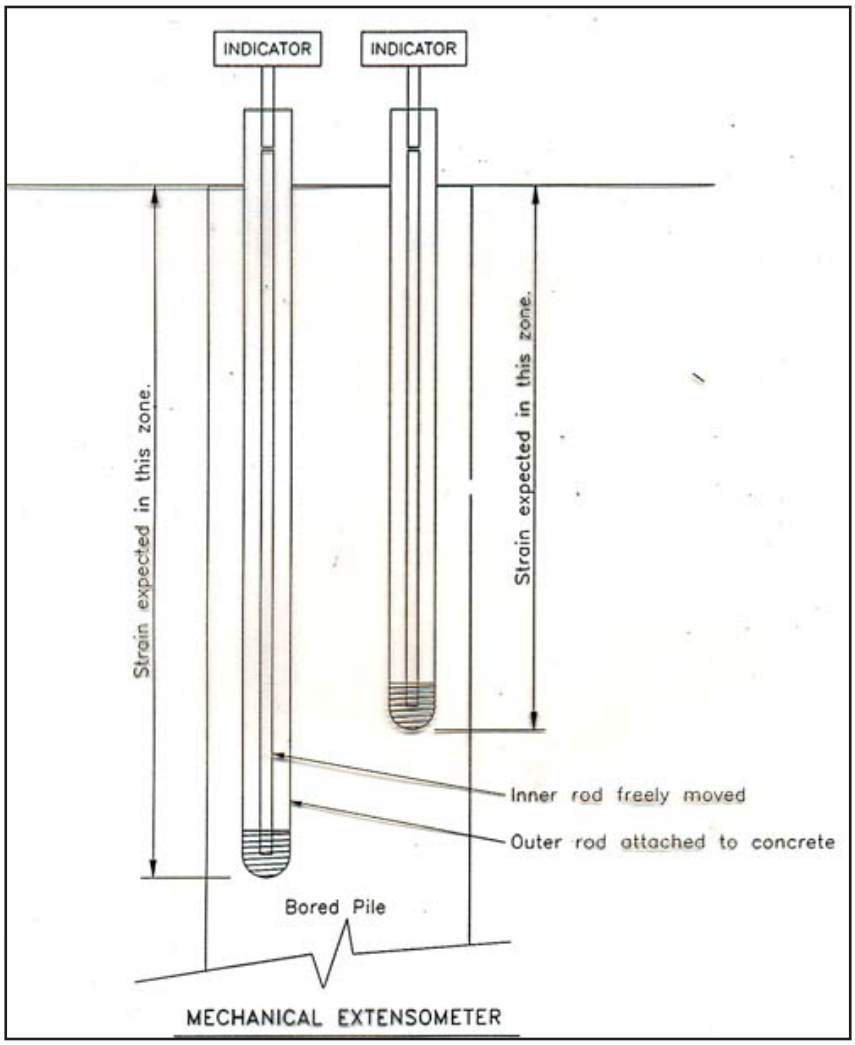


Load cell

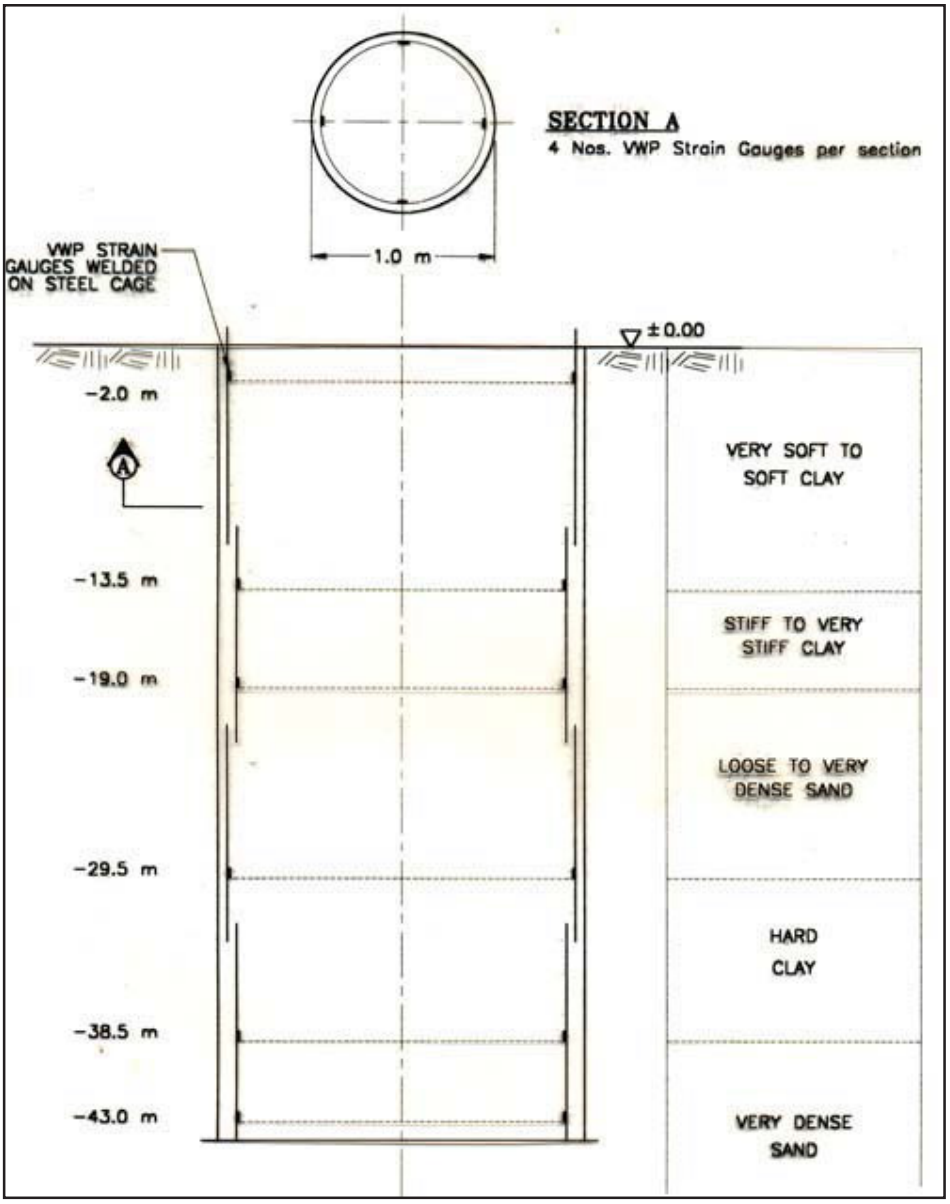


Load cell in pile load test.

- ***Mechanical extensometer***

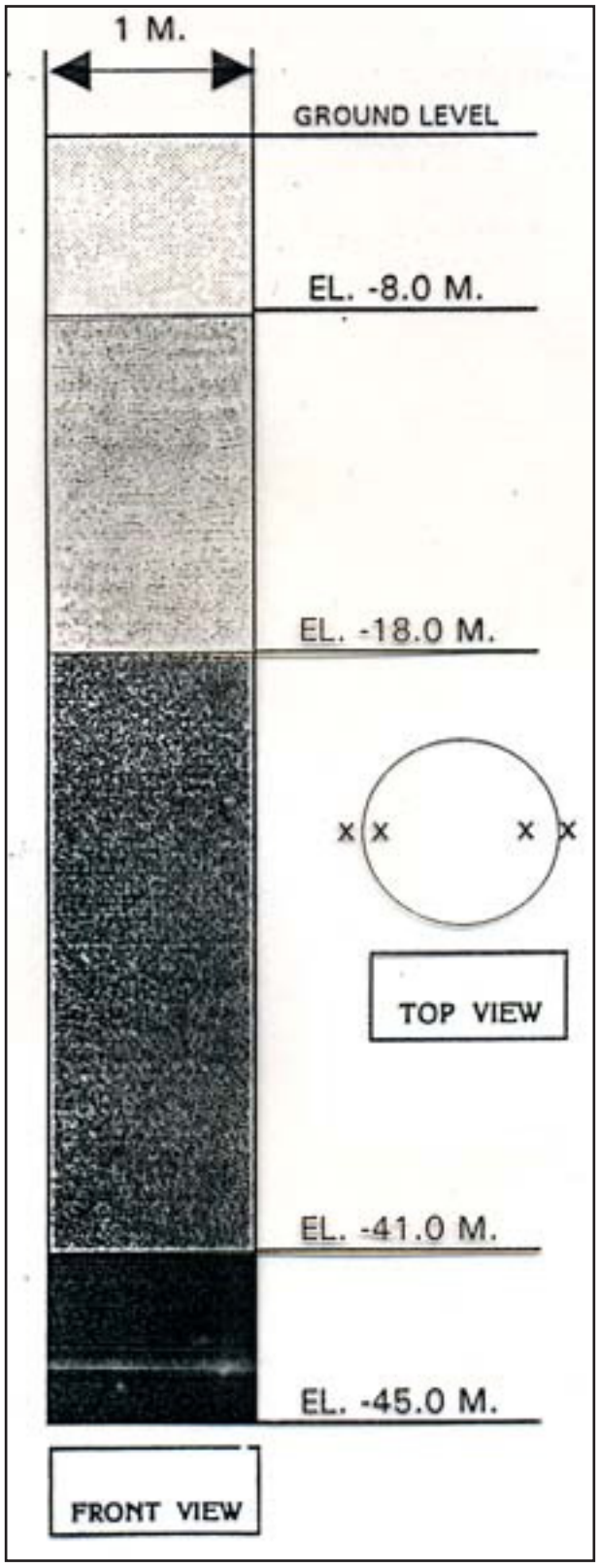


- *Strain gauge*



Arrangement of Strain Gauges in Test Pile.

- *U.S. Embassy project strain gauge position of installation.*



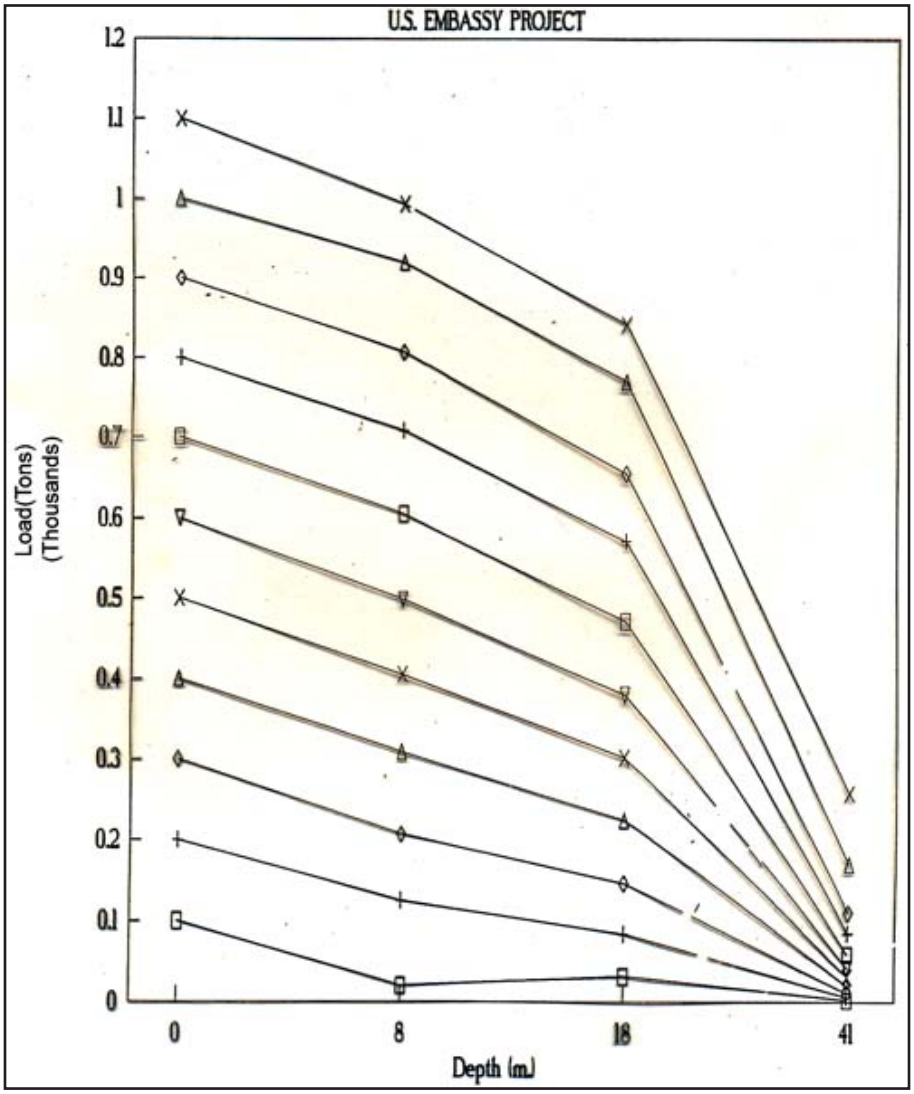
- *U.S. Embassy project strain gauge monitoring calculation bored pile dia.1.00x45.00 m.*

DATE: 7/2/93 TIME: 08.50 JACKS LOAD(TONS) : 1050 LOAD CYCLE: 2
RECORDED BY : VEERAPON LOAD CELL (TONS) : 1043.69

CHANNEL	GAUGE #	DEPTH (M.)	INITIAL READING Micro Strian	CURRENT READING Micro Strian	CHANGE Micro Strian	LOAD AT EACH LEVEL (TONS)	AVG. LOAD AT EACH LEVEL (TONS)	SKIN FRICTION (TONS)	UNIT SKIN FRICTION (T/M ^ 2)	NOTE
1A	A11	8.00	478	85	391	952	1,000	50	1.98	1. VALUES OF Ec ARE ONLY ASSUMPTION
2A	A12		227	−203	430	1,047				
3A	A21		178	−233	411	1,001				
4A	A22		414	*						
5A	B11	18.00	357	−65	422	796	603	197	8.27	
6A	B12		*	−400						
7A	B21		*	*						
8A	B22		−68	−498	430	811				
9A	C11	41.00	271	156	115	199	202	602	8.32	
10A	C12		95	−23	119	206				
11A	C21		−254	−368	114	197				
12A	C22		146	27	119	206				

REMARKS: 1: READING " * " MEANS GAUGE IS OUT OF ORDER
2: (Ec = W ^ 1.5*4270*Fc' ^ 0.5 FROM THAI ENGINEERING INSTITUTE)

- *Load test curve cycle 1 : U.S. Embassy project.*



- *Bangkok mass transit system project.*