

ROAD SIGNS  
DETERMINATION OF SUPPORTS AND FOUNDATIONS

NOTE:

1. REFERENCE PLANS

THIS PLAN FORMS PART OF AND MUST BE READ IN CONJUNCTION WITH DRAWING TD-R-RS-001

2. DESIGN LOADING

NOMINAL WIND LOAD ACTING ON THE SIGN FACE HAS BEEN ASSUMED AS FOLLOWS:-

AVERAGE SIGN HEIGHT L < 2m : 0,75 kPa

AVERAGE SIGN HEIGHT L > 6m : 1,25 kPa

WIND LOADING IS ASSUMED TO VARY LINEARLY FOR AVERAGE SIGN HEIGHTS FALLING BETWEEN THE ABOVE LIMITS.

3. FOUNDING MATERIAL

FOUNDATIONS FOR FREE STANDING SUPPORTS DEPEND ON SOIL TYPE ENCOUNTERED.

THE GRAPHS FOR "MEDIUM HARD GROUND" ARE APPLICABLE FOR ANY MATERIAL WHICH REQUIRES A PICK FOR EXCAVATION.

FOR SOFTER FOUNDING MATERIAL THE GRAPH FOR "SAND OR SOFT CLAY" MUST BE USED.

FOUNDATIONS FOR SIGNS USING BRACED SUPPORTS ARE INDEPENDENT OF FOUNDING MATERIAL TYPE.

FOUNDATIONS FOR SIGNS LOCATED IN HARD ROCK MAY REQUIRE SPECIAL DESIGNS.

4. DESIGN PROCEDURE

i) FROM TABLE 1 ON PLAN No. C-02-v1 DETERMINE FOR SIGN WIDTH W ,

THE NUMBER OF SUPPORTS N AND DIMENSIONS B AND C

ii) CALCULATE THE EFFECTIVE SIGN AREA  $A = \frac{W \times H}{N}$  (m<sup>2</sup>) AND AVERAGE HEIGHT L (m)

iii) FROM DESIGN CHART 1 (FREE STANDING SUPPORT), DETERMINE THE FOLLOWING:-

a) THE TOP DIAMETER OF THE POLE

b) THE FOUNDATION DIAMETER AND DEPTH FOR THE APPLICABLE FOUNDING MATERIAL. (SEE NOTE 3)

iv) WHERE THE EFFECTIVE SIGN AREA EXCEEDS 6m<sup>2</sup> OR WHERE NECESSARY AS INDICATED ON

DESIGN CHART 1 , CHART 2 FOR BRACED SUPPORTS MUST BE USED.

IN THIS CASE THE POLE TOP DIAMETER AND FOUNDATION SIZES OBTAINED

ARE APPLICABLE TO BOTH THE UPRIGHT AND DIAGONAL BRACE MEMBERS.

v) DETERMINE FROM TABLE 2 THE DIAMETER OF HOLES TO BE DRILLED IN THE

POLES AS SHOWN IN DETAIL "A"

5. EXAMPLE (FREE STANDING SUPPORT)

W = 5m H = 1,8m L = 2,7m

FROM TABLE 1

N = 3m B = 0,830m C = 1,670m

$A = \frac{5 \times 1,8}{3} = 3,0\text{m}^2$

FROM DESIGN CHART 1

FOR A = 3,0m<sup>2</sup> AND L = 2,7m

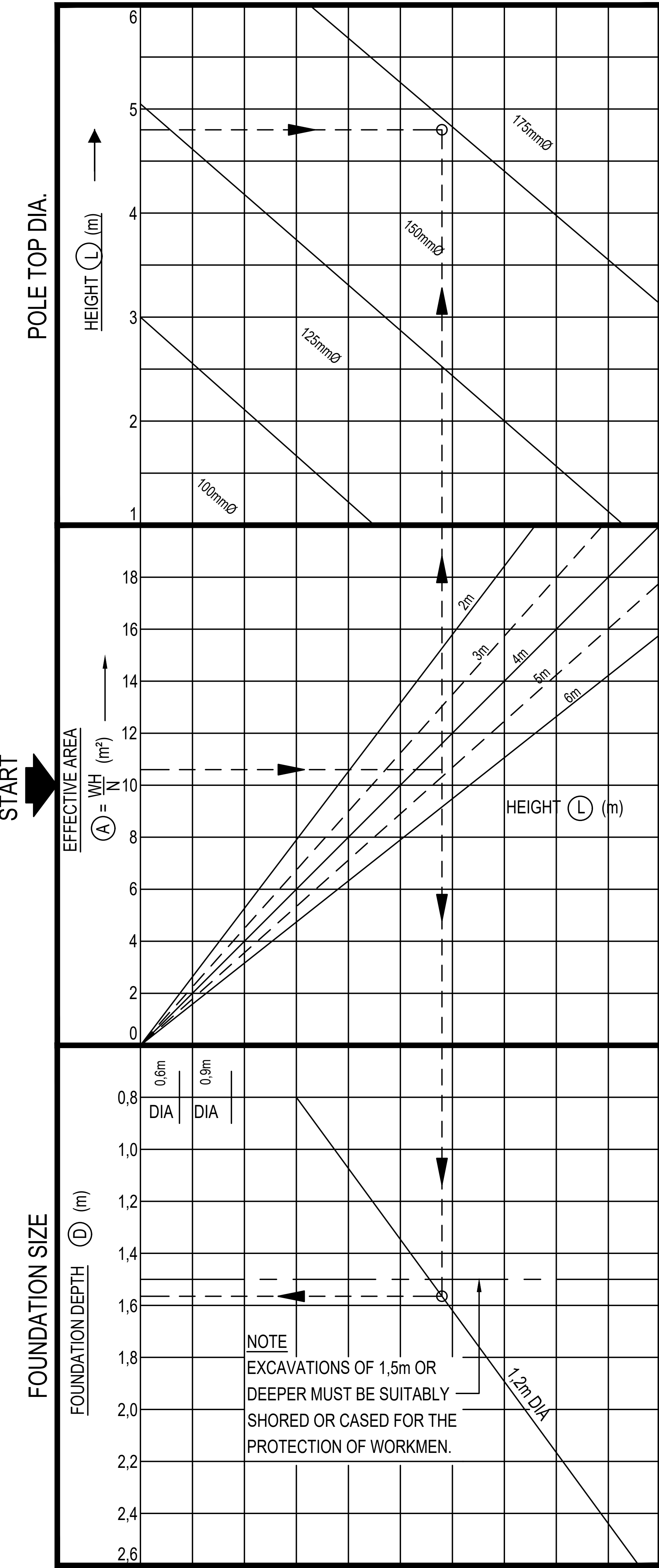
POLE TOP DIA. = 175mm

FOUNDATION SIZE = 1,2m DIA. 0,9m DEEP (MEDIUM HARD GROUND)

OR 1,2m DIA. 1,5m DEEP (SAND OR SOFT CLAY)

FROM TABLE 2

HOLES TO BE DRILLED (DETAIL A = 40mm DIA.)



DESIGN CHART 2  
BRACED SUPPORT

SCALE - N.T.S

DESIGN CHART 1  
FREE STANDING SUPPORT

SCALE - N.T.S

				CONSTRUCTION RECORD (AS-BUILT) WORKS CONTRACT ENGINEER		DESIGNED BY		CONSULTANT APPROVAL		HEAD OFFICE		EASTERN REGION		ACCEPTANCE		PROJECT DESCRIPTION		PROJECT NUMBER		N.002-210-2022/1	
				Name: _____		NAME _____				48 Tamboite Avenue		58 van Eck Place		THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY. AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER, CAUSE OR HOWEVER ARISING		PERIODIC MAINTENANCE ON NATIONAL ROUTE 2 SECTION 21X FROM HARDING (KM 60.1) TO IZINGOLWENI (KM 102.0)		DRAWING LOCATION DATA			
				Prof. Reg. No. _____		Prof. Reg. No. _____				Pretoria 0184		Pietermaritzburg 3201						ROUTE		START	
				Date: _____		CHECKED BY												SECTION		N2	
						NAME _____				PO Box 415		P.O. Box 100410						DRAWING km DISTANCE		21X	
						Prof. Reg. No. _____				Pretoria 0001		Scottsville 3209						BRIDGE/STRUCTURE TYPE		60.1	
						Date: _____				South Africa		for the SA NATIONAL ROADS AGENCY SOC LTD						DRAWING TYPE		N2	
										Tel: (012) 844 8000		Tel: (033) 392 8100						BRIDGE/STRUCTURE No.		21X	
																		CONSULTANT DRAWING No.		102.0	
																		SANRAL DOCUMENT #		D812-2751-T	
No.	DATE	REVISION	CONSULT. ENG.													SCALE : NTS		SHEET: 2 OF 2			