CALCULO DE LA VELOCIDAD DE ONDA CORTANTE (Vs) MEDIANTE FORMULA EMPIRICA PARA CLASIFICACION DEL PERFIL DEL SUELO TABLA A.2.4-1 NSR10

PROYECTO DISEÑO Y CONSTRUCCION VIAS CORREGIMIENTO PUERTO VILLAMIZAR MUNICIPIO DE SAN JOSE DE CUCUTA, NORTE DE SANTADER

ANEXO 5

Estrato No	Prof.(m)	Peso Unit.(kN/m3)	Peso Unit.(t/m3)	Densidad (t.s2/m4)	e	IP(%)	PHI (ø)	SINPHI	Ko	U (kN/m3)	σv(kN/m2)	σefect=σ1(kN/m2)	σoctaed(kN/m2)	(σoctaed)½ (kN/m2)	Gmax(kN/m2)	Gmax(t/m3)	Vsi(m/s)	di/Vsi	Vs30
1	1	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	11,7600000	11,7600000	11,7600000	3,4292856	35086,9311037	3580,2990922	170,9944714	0,0058481	
1	2	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	23,5200000	23,5200000	23,5200000	4,8497423	49620,4138289	5063,3075336	203,3478420	0,0049177	
1	3	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	35,2800000	35,2800000	35,2800000	5,9396970	60772,3473533	6201,2599340	225,0413802	0,0044436	
1	4	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	47,0400000	47,0400000	47,0400000	6,8585713	70173,8622074	7160,5981844	241,8227006	0,0041353	
1	5	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	58,8000000	58,8000000	58,8000000	7,6681158	78456,7630698	8005,7921500	255,6963744	0,0039109	
1	6	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	70,5600000	70,5600000	70,5600000	8,4000000	85945,0778443	8769,9059025	267,6208105	0,0037366	
1	7	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	82,3200000	82,3200000	82,3200000	9,0730370	92831,2939689	9472,5810172	278,1355994	0,0035954	
1	8	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	94,0800000	94,0800000	94,0800000	9,6994845	99240,8276579	10126,6150671	287,5772761	0,0034773	
1	9	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	105,8400000	105,8400000	105,8400000	10,2878569	105260,7933112	10740,8972767	296,1711123	0,0033764	
1	10	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	117,6000000	117,6000000	117,6000000	10,8443534	110954,6183932	11321,8998360	304,0759477	0,0032887	
1	11	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	129,3600000	129,3600000	129,3600000	11,3736538	116370,1855161	11874,5087261	311,4083406	0,0032112	
1	12	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	141,1200000	141,1200000	141,1200000	11,8793939	121544,6947066	12402,5198680	318,2565719	0,0031421	
1	13	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	152,8800000	152,8800000	152,8800000	12,3644652	126507,7291931	12908,9519585	324,6892478	0,0030799	
1	14	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	164,6400000	164,6400000	164,6400000	12,8312119	131283,2749435	13396,2525453	330,7608337	0,0030233	
1	15	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	176,4000000	176,4000000	176,4000000	13,2815662	135891,0998342	13866,4387586	336,5153536	0,0029716	
1	16	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	188,1600000	188,1600000	188,1600000	13,7171426	140347,7244149	14321,1963689	341,9889428	0,0029241	
1	17	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	199,9200000	199,9200000	199,9200000	14,1393069	144667,1230194	14761,9513285	347,2116586	0,0028801	
1	18	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	211,6800000	211,6800000	211,6800000	14,5492268	148861,2414868	15189,9226007	352,2087940	0,0028392	
1	19	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	223,4400000	223,4400000	223,4400000	14,9479096	152940,3869201	15606,1619306	357,0018521	0,0028011	
1	20	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	235,2000000	235,2000000	235,2000000	15,3362316	156913,5261396	16011,5843000	361,6092806	0,0027654	
1	21	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	246,9600000	246,9600000	246,9600000	15,7149610	160788,5176865	16406,9916007	366,0470344	0,0027319	
1	22	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	258,7200000	258,7200000	258,7200000	16,0847754	164572,2946127	16793,0912870	370,3290143	0,0027003	
1	23	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	270,4800000	270,4800000	270,4800000	16,4462762	168271,0102435	17170,5112493	374,4674110	0,0026705	
1	24	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	282,2400000	282,2400000	282,2400000	16,8000000	171890,1556886	17539,8118050	378,4729798	0,0026422	
1	25	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	294,0000000	294,0000000	294,0000000	17,1464282	175434,6555186	17901,4954611	382,3552619	0,0026154	
1	26	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	305,7600000	305,7600000	305,7600000	17,4859944	178908,9463700	18256,0149357	386,1227637	0,0025898	
1	27	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	317,5200000	317,5200000	214,2201600	14,6362618	149751,7453908	15280,7903460	353,2606986	0,0028308	
1	28	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	329,2800000	329,2800000	222,1542400	14,9048395	152499,7130456	15561,1952087	356,4871585	0,0028052	
1	29	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	341,0400000	341,0400000	230,0883200	15,1686624	155199,0325691	15836,6359764	359,6283180	0,0027806	
1	30	11,7600000	1,2000000	0,1224490	0,6700000	16,0000000	0,0000000	0,0000000	0,5120000	0,0000000	352,8000000	352,8000000	238,0224000	15,4279746	157852,1996735	16107,3673136	362,6892606	0,0027572	
SUMA																		0,097491896	**307,72**

NOTA: Las ecuaciones utilizadas para el calculo de modulo cortante maximo (Gmax) corresponden a las de Hardin y Drnevich(1972)

Clasificacion de los perfiles del suelo según Tabla A.2.4-1, Titulo A, NSR10. **PERFIL** **D**

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