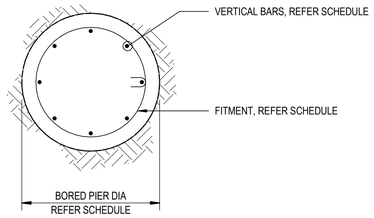
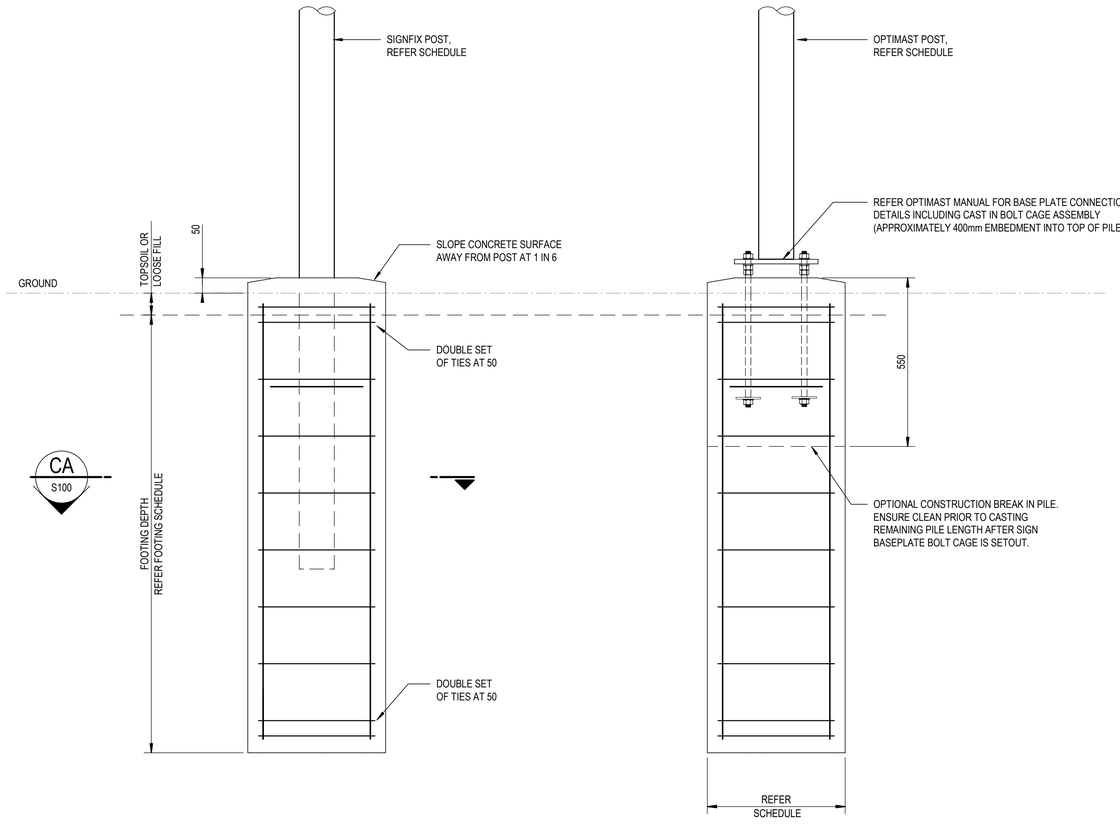
SIGNFIX AND OPTIMAST SIGN FOOTING DETAILS

NEW ZEALAND



SECTION CA S100

SCALE 1 : 10



POST FOOTING DETAILS

SCALE 1 : 10

FOOTING SCHEDULE - COHESIVE SOILS

POST SIZE (O.D. mm)	ULTIMATE BENDING MOMENT CAPACITY (kNm)	FOOTING DIAMETER (mm)	FOOTING DEPTH (mm) AND SOIL CONDITION			
			SOFT TO FIRM	FIRM TO STIFF	STIFF TO VERY STIFF/HARD	VERY STIFF/HARD
SIGNFIX FAMILY OF POSTS						
60	2.2	450	1250	1100	1000	900
76	3.9	450	1450	1200	1050	950
89	6.1	450	1650	1350	1150	1050
102	9.1	450	1850	1500	1250	1100
114	12.3	450	2050	1650	1350	1150
OPTIMAST FAMILY OF POSTS						
127	9.6	450	1900	1550	1300	1100
168	15.3	450	2250	1750	1450	1200
219	27.3	600	2800	2200	1800	1550
244	52.1	750	3600	2800	2300	1950

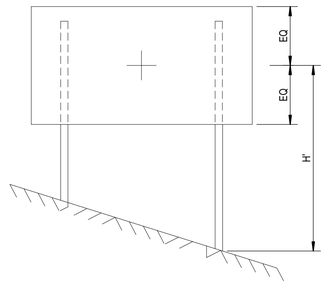
FOOTING SCHEDULE - NON-COHESIVE SOILS

POST SIZE (O.D. mm)	ULTIMATE BENDING MOMENT CAPACITY (kNm)	FOOTING DIAMETER (mm)	FOOTING DEPTH (mm) AND SOIL CONDITION			
			LOOSE TO MEDIUM DENSE	MEDIUM DENSE TO DENSE	DENSE TO VERY DENSE	VERY DENSE
SIGNFIX FAMILY OF POSTS						
60	2.2	450	1050	1000	900	900
76	3.9	450	1300	1250	1150	1100
89	6.1	450	1550	1450	1350	1250
102	9.1	450	1800	1700	1550	1450
114	12.3	450	2000	1900	1750	1650
OPTIMAST FAMILY OF POSTS						
127	9.6	450	1800	1700	1600	1500
168	15.3	450	2200	2050	1900	1800
219	27.3	600	2450	2300	2100	2000
244	52.1	750	2900	2750	2550	2350

BORED PIER REINFORCEMENT SCHEDULE

BORED PIER DIA. (mm)	VERTICAL REINFORCEMENT	HELIX
300	4 N12	R6 FITMENT AT 180 **
450	8 N12	R6 FITMENT AT 180 **
600	8 N16	R6 FITMENT AT 240 **
750	8 N20	R10 FITMENT AT 300 **

** INDIVIDUAL FITMENTS MAY BE SUBSTITUTED FOR HELIX PROVIDED HELIX PITCH MATCHES FITMENT CENTRES AND HELIX TO HAVE 2 TURNS AT TOP AND 2 TURNS AT BOTTOM



TYPICAL ELEVATION

STRUCTURAL DRAWING NOTES

1. STRUCTURAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL CLIENT SPECIFICATIONS AND THE SIGNFIX/OPTIMAST PRODUCT MANUAL.
2. SIGNS TO BE ACCORDANCE WITH NZTA P24:2020 - SPECIFICATION FOR PERMANENT TRAFFIC SIGNS
3. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST VERSIONS OF THE FOLLOWING STANDARDS EXCEPT WHERE VARIED BY THE SPECIFICATION AND / OR DRAWINGS:
   - AS.2159 PILING - DESIGN AND INSTALLATION
   - NZS.3101 CONCRETE STRUCTURES STANDARD
   - NZS.3109 CONCRETE CONSTRUCTION
   - AS/NZS.1664 ALUMINIUM CODE
   - AS/NZS.1866 ALUMINIUM AND ALUMINIUM ALLOYS
4. DIMENSIONS NOT TO BE SCALED. SET OUT DIMENSIONS ARE TO BE VERIFIED WITH CLIENT SPECIFICATIONS.
5. SIGNFIX/OPTIMAST PRODUCTS HAVE BEEN CHECKED FOR WIND LOAD CAPACITY ONLY. REFER MANUFACTURER FOR FRANGIBILITY PERFORMANCE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING STABILITY OF THE STRUCTURE UNTIL COMPLETION OF CONSTRUCTION AND SHALL ENSURE THAT NO PART OF THE STRUCTURE IS OVER STRESSED BY EXCESSIVE CONSTRUCTION LOADING.
7. SIGN POSTS TO BE SIZED IN ACCORDANCE WITH MANUFACTURER DESIGN INFORMATION BASED ON SIGNAGE AREAS, HEIGHTS AND WIND ENVIRONMENT. DRAWING IS TO BE USED TO DETAIL FOUNDATION REQUIREMENTS CORRESPONDING TO NOMINATED POST SIZE.
8. ADDITIONAL ATTACHMENTS ARE NOT PERMITTED ON SIGNFIX MASH SIGN SUPPORT OR ON OPTIMAST MASH SIGN SUPPORT.
   ADDITIONAL ATTACHMENTS INCLUDE BUT NOT LIMITED TO THE FOLLOWING: SOLAR PANEL, CAMERA, BATTERY, ANYTHING OTHER THAN A STATIC SIGN.
9. DRAWING VALID FOR SIGNS WITH H' GREATER THAN 2.1m

FOUNDATIONS

F1. FOUNDATION EXCAVATIONS TO BE MAINTAINED IN A FIRM DRY CONDITION. REMOVE ANY SOFT GROUND AND FILL WITH MASS CONCRETE.

F2 FOOTING SIZES ARE BASED ON GEOTECHNICAL PARAMETERS AS FOLLOWS:

COHESIVE CLAY SOILS				
STRENGTH CATEGORY	SOFT TO FIRM	FIRM TO STIFF	STIFF TO VERY STIFF/HARD	VERY STIFF/HARD
UNDRAINED SHEAR STRENGTH Cu (kPA)	25	50	100	200
FIELD IDENTIFICATION	INDENTED BY STRONG FINGER PRESSURE AND CAN BE INDENTED BY THUMB PRESSURE	CANNOT BE INDENTED BY THUMB PRESSURE	CAN BE INDENTED BY THUMB NAIL	DIFFICULT TO INDENT BY THUMB NAIL
COHESIONLESS SAND SOILS				
STRENGTH CATEGORY	LOOSE TO MEDIUM DENSE	MEDIUM DENSE TO DENSE	DENSE TO VERY DENSE	VERY DENSE
FRICTION ANGLE (DEGREES)	27	30	35	38
FIELD IDENTIFICATION	SOIL TYPE SHOULD BE ASSESSED FROM APPROPRIATE INVESTIGATION			

NOTE:
POOR GROUND WITH A Cu LESS THAN 25kPa IS NOT RECOMMENDED FOUNDATION FOR ROAD SIGNAGE. THESE VALUES ARE A GUIDE ONLY. SOIL CONDITIONS FOR EACH FOOTING ARE TO BE ASSESSED BY SUITABLY QUALIFIED PERSONNEL.

F3. REFER TO SIGNFIX FOR DIRECTIONS IF THE SITE CONDITIONS DO NOT CONFORM TO THE MINIMUM DESIGN REQUIREMENTS.

F4. FOOTING DEPTH IS EMBEDMENT LENGTH INTO SOIL STRENGTH CATEGORY TABULATED. DISREGARD LOOSE TOPSOIL AND FILL WHEN MEASURING FOOTING DEPTHS.

F5. GROUND CONDITIONS TO BE CONFIRMED ON SITE BY A SUITABLY QUALIFIED PROFESSIONAL ENGAGED BY THE MAIN CONTRACTOR.

PILING

P1. ALL PILING WORKS SHALL BE IN ACCORDANCE WITH AS2159 - DESIGN AND INSTALLATION OF PILING.

P2. ALL PILES TO BE LOCATED WITHIN 75mm OF DESIGNATED POSITION U.N.O., THE SUPERINTENDENT SHALL BE NOTIFIED OF ANY OUT OF POSITION PILES.

P3. NO PILE SHOULD BE LOCATED WITHIN 1000mm OF EXISTING STORMWATER LINE, PILES LOCATED 1000mm FROM STORMWATER LINE SHALL BE PRE-BORED AND DRIVEN BELOW INVERT LEVEL.

CONCRETE

C1. CONCRETE SPECIFICATION
   - SLUMP 80mm
   - MAXIMUM AGGREGATE 20mm
   - CEMENT TYPE 'A' PORTLAND

PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH NZS.3101 AND THE SPECIFICATION TEST REPORTS TO BE SUBMITTED TO THE PRINCIPAL FOR APPROVAL.

C2. CONCRETE STRENGTH & CLEAR COVER (INCLUDING FITMENTS) TO BE AS FOLLOWS

ELEMENT	CONCRETE GRADE	COVER		
		BOTTOM	TOP	SIDES
BORED PIERS	N32/20	50	60	65

C3. ALL HOOKS AND BENDS TO BE IN ACCORDANCE WITH NZS.3101.
UNLESS NOTED OTHERWISE ALL LAPS TO BE :

BAR SIZE	STRUCTURAL ELEMENT
	BORED PIERS FOOTINGS
N12	600
N16	900
N20	1200

C4. BASIC DRYING SHRINKAGE STRAIN SHALL NOT EXCEED 800 µm.

C5. ALL CONCRETE TO BE VIBRATED DURING PLACEMENT.

C6. ALL REINFORCEMENT TO BE SECURELY TIED PRIOR TO PLACEMENT OF CONCRETE.

C7. PROPPING AND FORMWORK TO BE IN ACCORDANCE WITH NZS.3109.

C8. NO CONCRETE IS TO BE POURED ON THE SITE WHEN TEMPERATURES EXCEED 35°C OR FALL BELOW 5°C.

BLIGH TANNER

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REV	DATE	DESCRIPTION	DRAWN	DESIGN	APPROVED
C1	28.06.2024	FOR CONSTRUCTION			N. SCOTT

CLIENT: Delnorth

ARCHITECT:

STATUS: FOR CONSTRUCTION

DRAWN BY: MHW
DESIGN BY: TD
CHECKED BY: T.DAY
SIGNED:

NORTH POINT

SCALES AT A1: 1:10 0 100 200 300 400

PROJECT: SIGNFIX AND OPTIMAST SIGN FOOTING DETAILS
NEW ZEALAND

DRAWING TITLE: FOOTING DETAILS

PRINTING REQUIREMENTS

JOB NO: 2018.0585

DRAWING NUMBER: S100

REVISION: C1