

DESIGN CRITERIA

The pile splice shown in this drawing is intended to be used for locations with relatively low bending moments. The designer shall verify that the applied ultimate bending moment at the splice section of the pile does not exceed 250 kNm.

The purpose of This Standard Drawing is to provide typical standard details. The fitness for purpose of these details for a specific project shall be designed and RPEQ certified by the project design engineer. The details specific to the project shall be shown on the project specific drawings.

GENERAL NOTES:

- SCOPE: This Standard Drawing provides details for spliced PSC piles, and shall be used in conjunction with Standard Drawing 2021 or 2022 for all other details of PSC piles, as applicable. Refer Drawing 2 for typical reinforcement details for spliced pile segments for 550 octagonal PSC piles Exposure Classification B2. Refer Drawing 3 for typical reinforcement details for spliced pile segments for 550 octagonal PSC piles Exposure Classification C1 and C2. Refer Drawing 4 for Steel Splice Sleeve fabrication and assembly details, Erection Procedure for Spliced Piles, Epoxy Notes and Steel Splice Sleeve Notes.
- REINFORCING STEEL shall be read in conjunction with Standard Drawings 1043 and 1044, in accordance with MRTS71 and AS/NZS 4671, and shall be ACRS certified. Deformed bars Grade D500N. Round bar Grade R250N.
- DIMENSIONS are in millimetres unless shown otherwise.

ASSOCIATED DEPARTMENTAL DOCUMENTS:
Design Criteria for Bridges and Other Structures

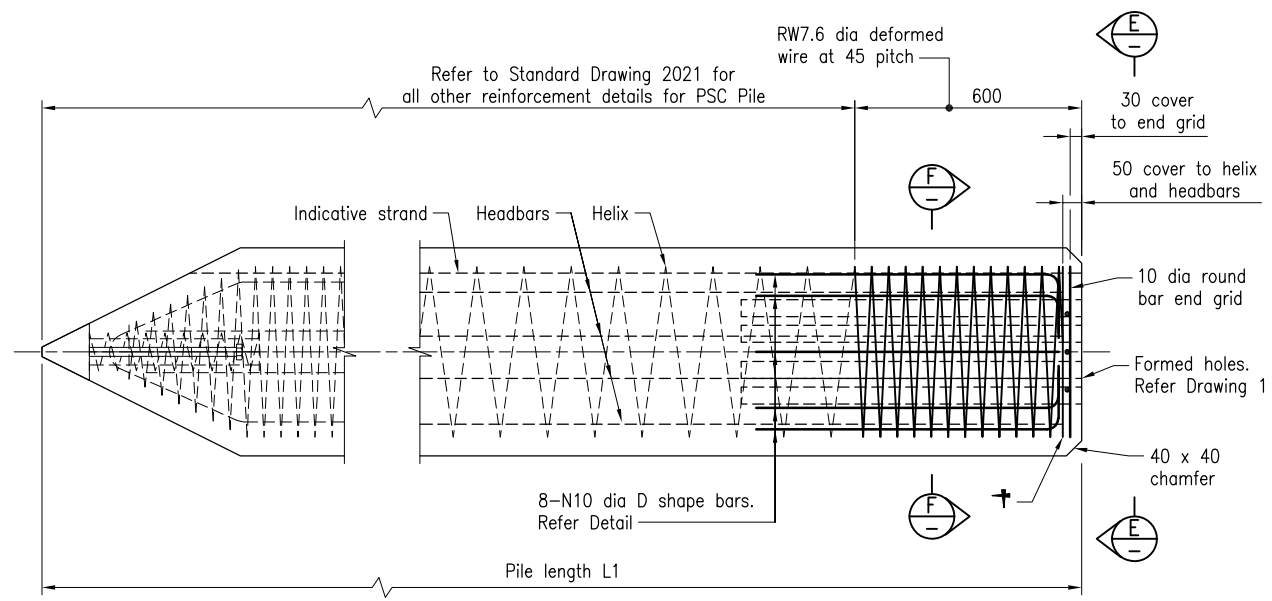
REFERENCED DOCUMENTS:
Departmental Standard Drawings:
2021 550 Octagonal PSC Piles - Earthquake Classification BEDC-1 - Exposure Classification B2
2022 550 Octagonal PSC Piles - Earthquake Classification BEDC-1 - Exposure Classification C1 and C2

Departmental Specifications:
MRTS65 Precast Prestressed Concrete Piles
MRTS70 Concrete
MRTS78 Fabrication of Structural Steelwork

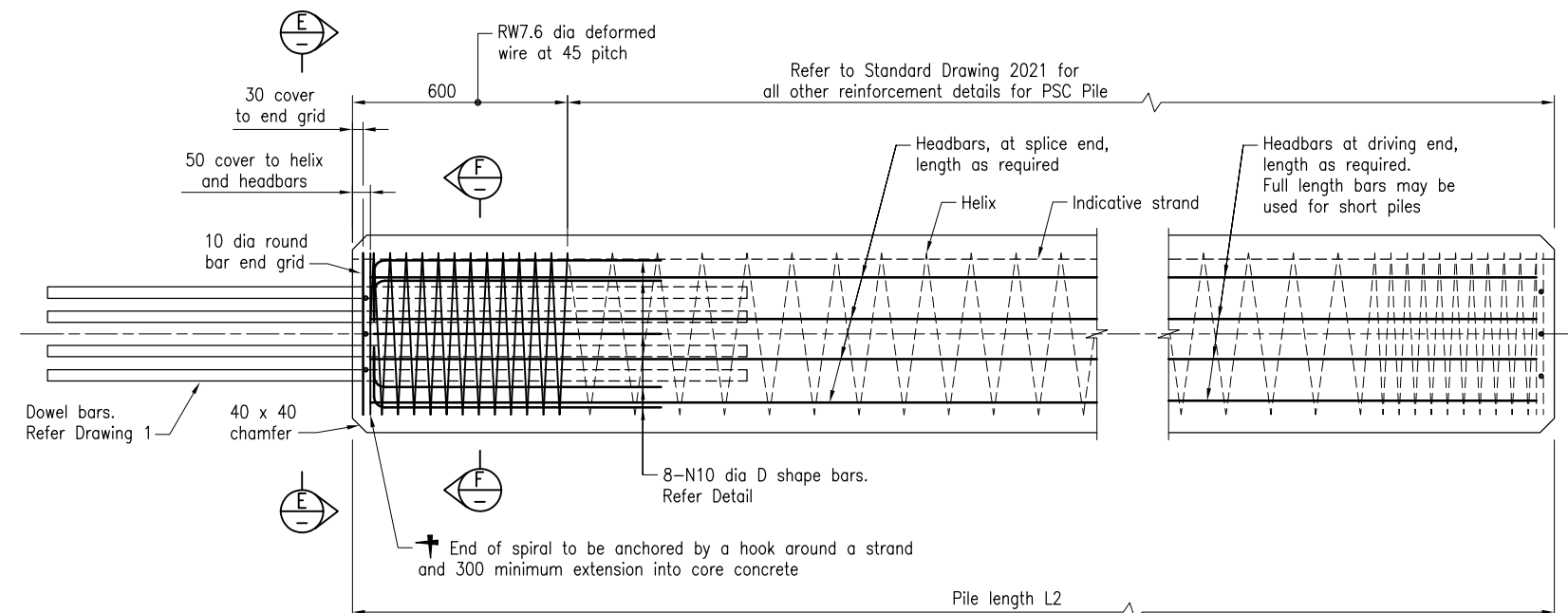
PILE SCHEDULE

PILE LOCATION	SEGMENT	LENGTH m	HEADBARS TYPE 1			HEADBARS TYPE 2			MASS OF 1 PILE (tonnes)	No OF PILES	TOTAL MASS OF PILES (tonnes)
			No	Diameter	Length	No	Diameter	Length			
eg ABUTMENT A	LOWER SEGMENT	L1 =									
	UPPER SEGMENT	L2 =									
eg PIER 1	LOWER SEGMENT										
	UPPER SEGMENT										

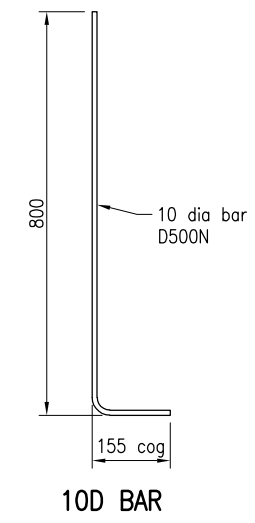
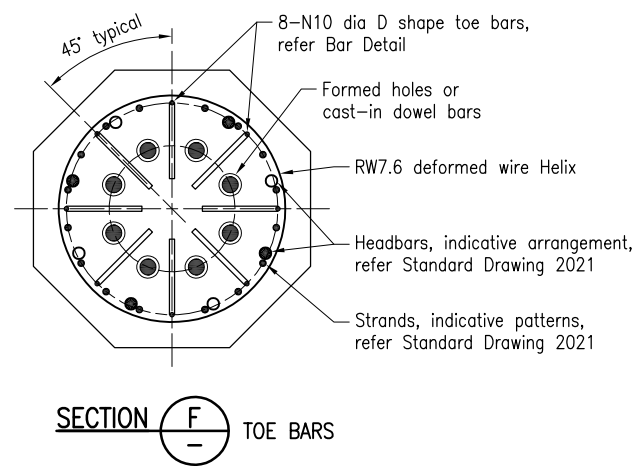
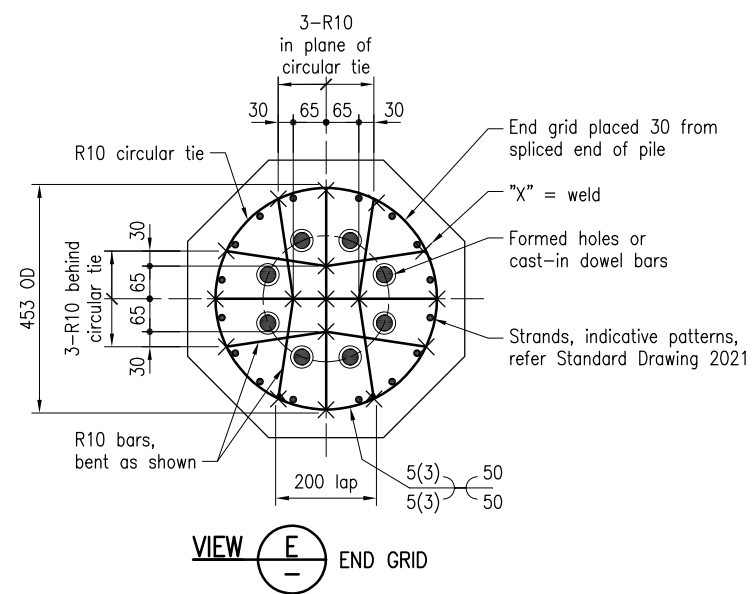
Department of Transport and Main Roads			
550 OCTAGONAL PSC PILES			
SPLICED PILE DETAILS DRAWING 1 OF 4		A3	Standard Drawing No
GENERAL ARRANGEMENT AND NOTES		Not to Scale	2023 Date 3/2020



PART ELEVATION
TYPICAL REINFORCEMENT DETAILS FOR LOWER SEGMENT
EXPOSURE CLASSIFICATION B2

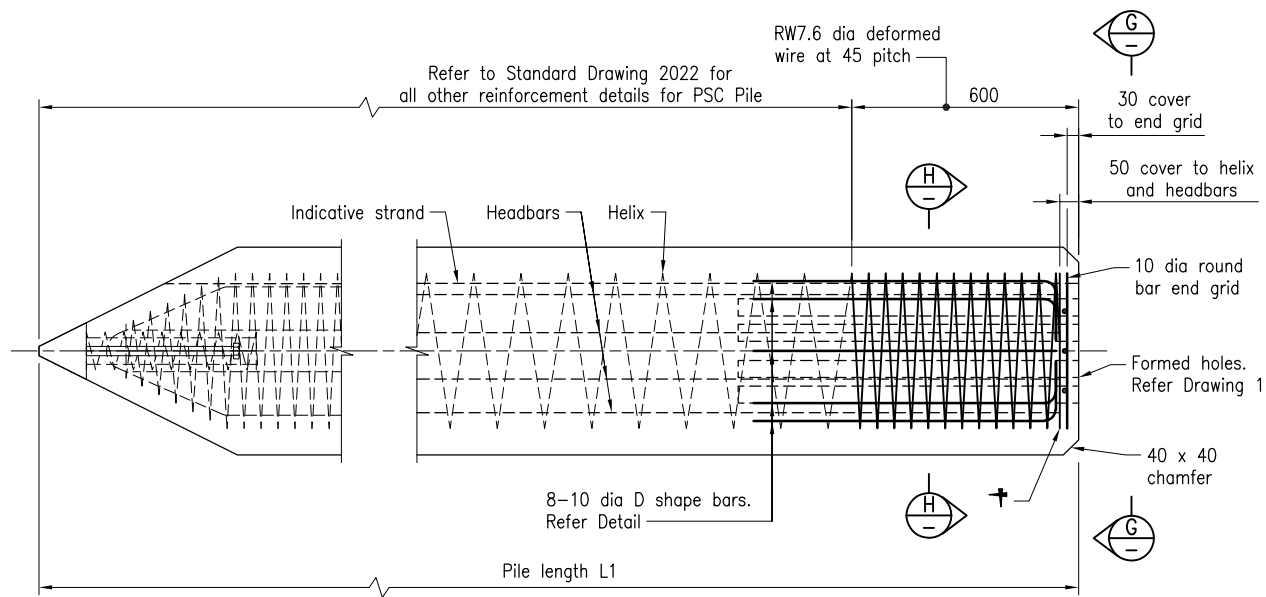


PART ELEVATION
TYPICAL REINFORCEMENT DETAILS FOR UPPER SEGMENT
EXPOSURE CLASSIFICATION B2

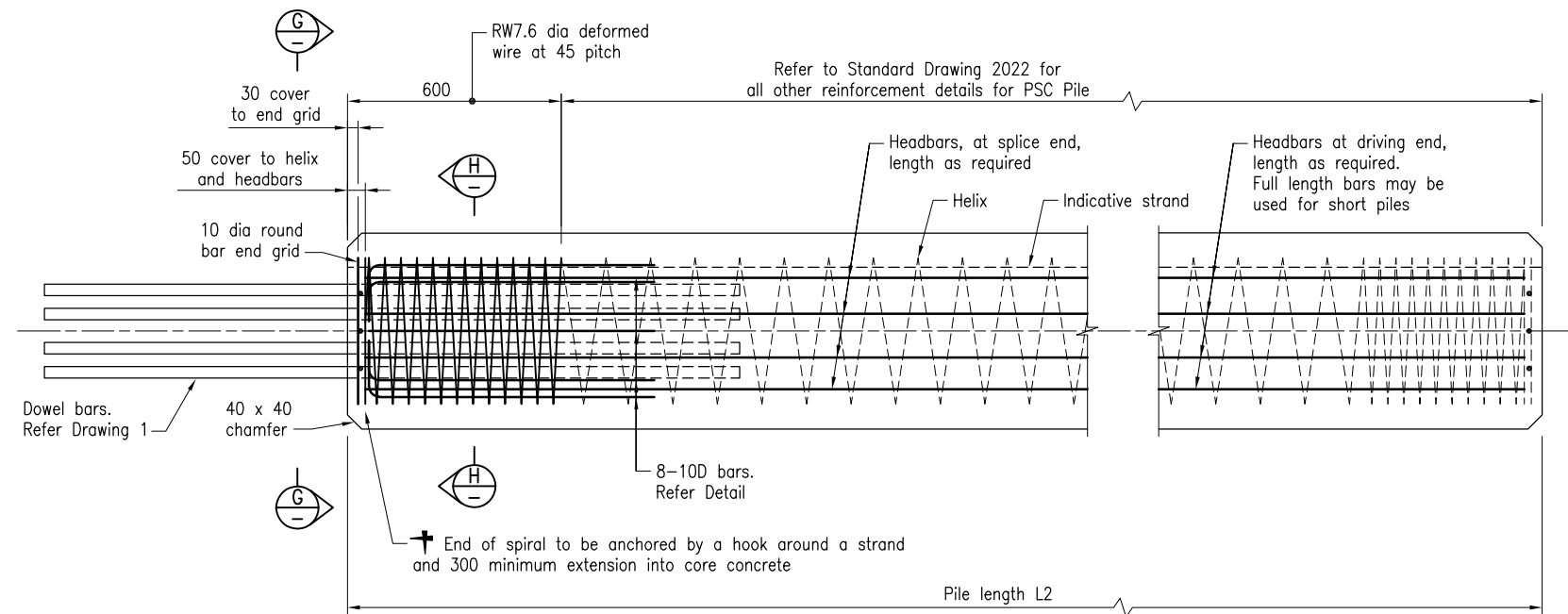


NOTES:
1. Refer Drawing 1 for Design Criteria, profile details and General Notes.

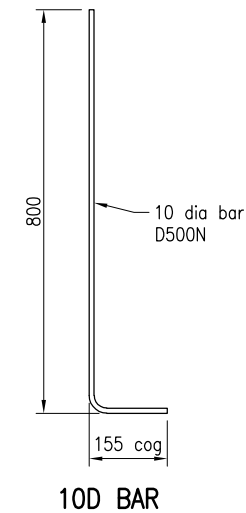
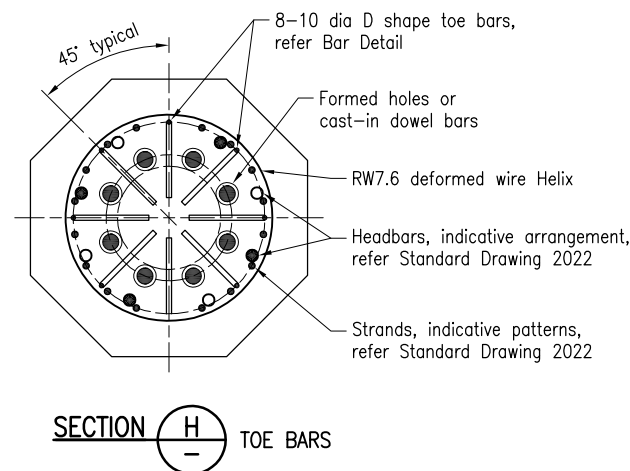
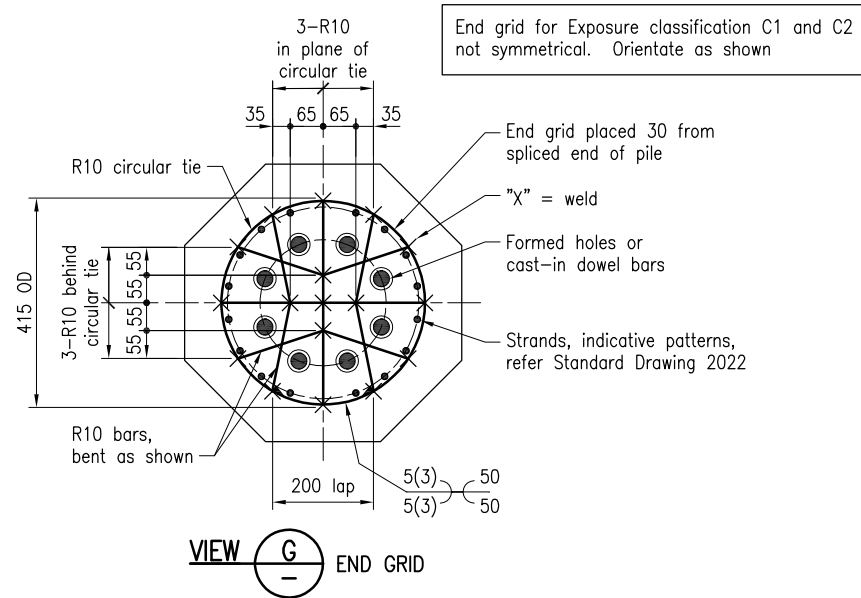
Department of Transport and Main Roads				© The State of Queensland (Department of Transport and Main Roads) 2020 http://creativecommons.org/licenses/by/4.0/au	
550 OCTAGONAL PSC PILES				A3	Standard Drawing No
SPLICED PILE DETAILS DRAWING 2 OF 4		Not to Scale	2023		
EARTHQUAKE CLASSIFICATION BEDC-1 FOR EXPOSURE CLASSIFICATION B2		A	Date 3/2020		



PART ELEVATION
TYPICAL REINFORCEMENT DETAILS FOR LOWER SEGMENT
 EXPOSURE CLASSIFICATIONS C1 AND C2



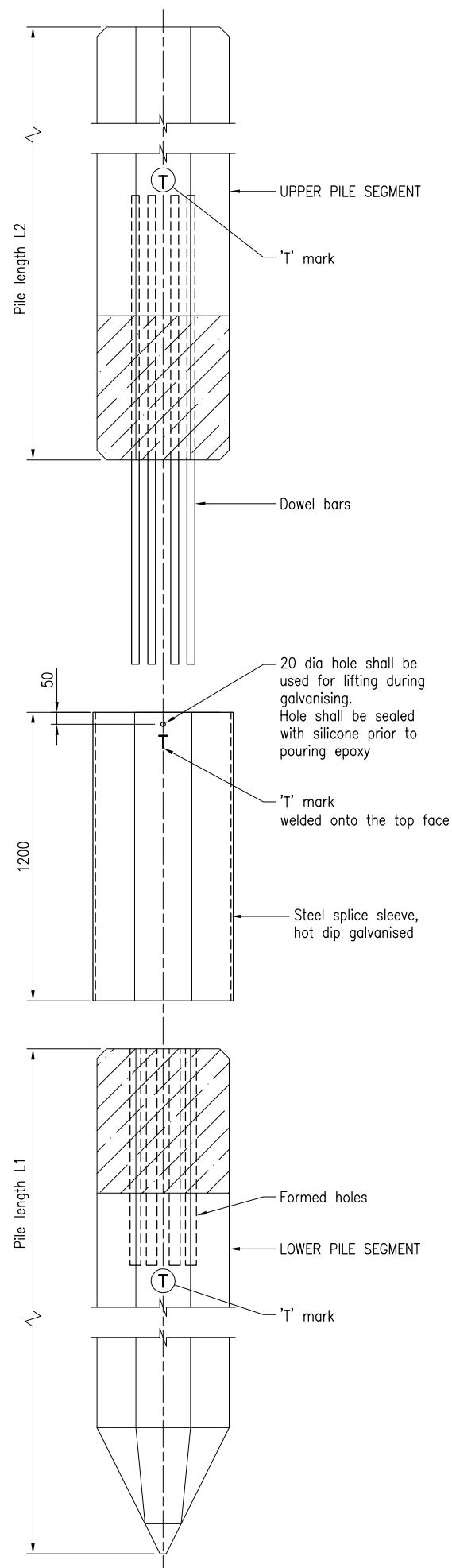
PART ELEVATION
TYPICAL REINFORCEMENT DETAILS FOR UPPER SEGMENT
 EXPOSURE CLASSIFICATIONS C1 AND C2



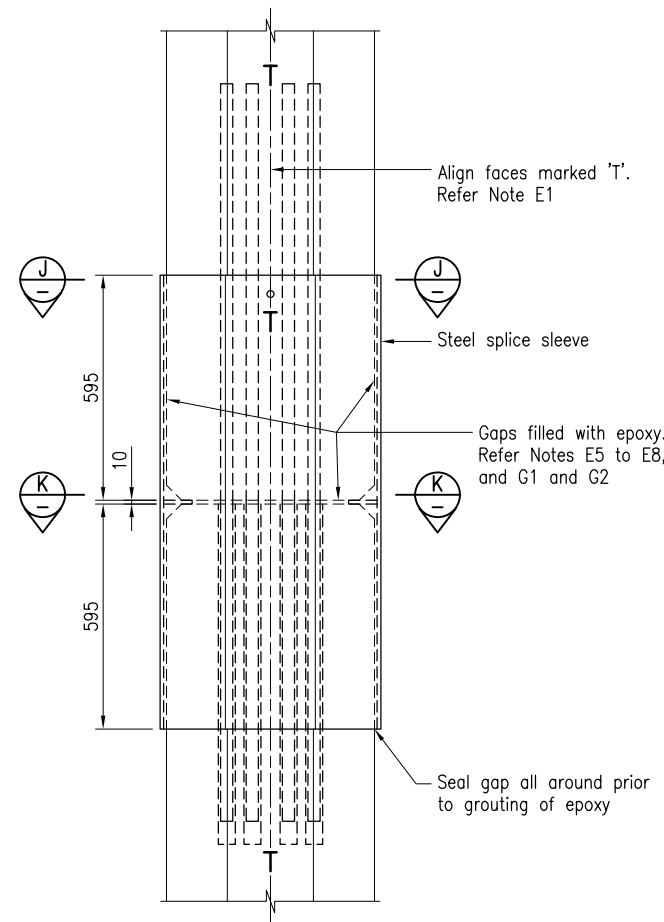
NOTES:

1. Refer Drawing 1 for Design Criteria, profile details and General Notes.

Department of Transport and Main Roads			
550 OCTAGONAL PSC PILES			
SPLICED PILE DETAILS DRAWING 3 OF 4		A3	Standard Drawing No
EARTHQUAKE CLASSIFICATION BEDC-1 FOR EXPOSURE CLASSIFICATIONS C1 AND C2		Not to Scale	2023 Date 3/2020



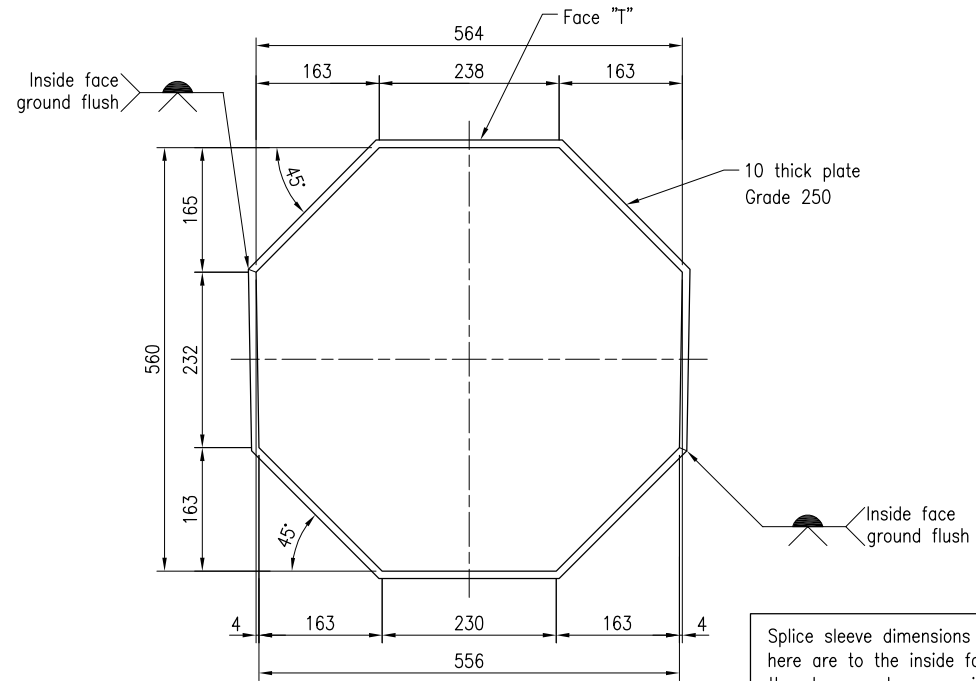
TYPICAL ASSEMBLY DETAILS
SPICED PILE



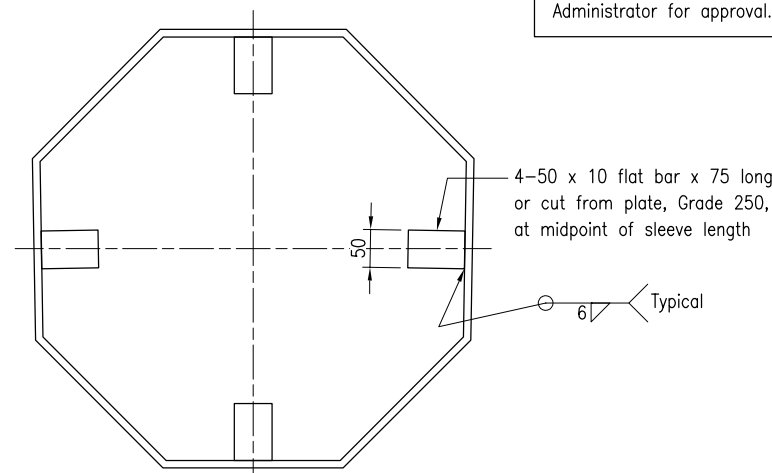
PART ELEVATION - CONNECTION DETAILS
ASSEMBLED SPICED PILE

ERECTION PROCEDURE FOR SPICED PILES

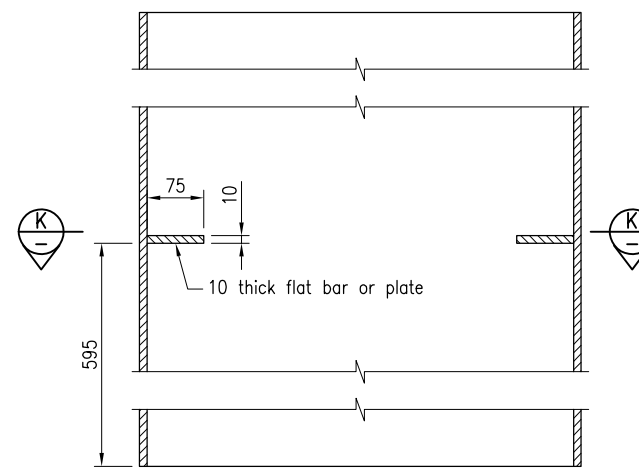
- E1. Place Steel Splice Sleeve on Lower Pile Segment. Align faces marked "T".
- E2. Temporarily insert Upper Pile Segment to ensure full penetration to full depth of Splice Sleeve and true alignment with the Lower Pile Segment. Remove Upper Pile Segment.
- E3. Seal lower section of Splice Sleeve against Lower Pile Segment.
- E4. Check that Splice Sleeve, pile end regions, formed holes and dowel bars are clean and dry.
Remove any contamination including oil, grease and glue. After use of any cleaning solvents, rinse surfaces with clean water and blow dry with oil free compressed air.
- E5. Epoxy shall be mixed in accordance with the Manufacturer's instructions.
- E6. Fill formed holes with epoxy resin so that when Upper Pile Segment is inserted, excess epoxy flows over the top face of the pile.
- E7. Epoxy must be cured. While curing, hold Upper Pile Segment rigidly in position in true alignment with the Lower Pile Segment.
- E8. Spliced piles shall not be driven until tests on the epoxy samples confirm that the epoxy has reached a minimum strength of 60MPa.
Testing of epoxy samples as per MRTS65.



SECTION J



SECTION K



SECTIONAL ELEVATION
STEEL SPlice SLEEVE

STEEL SPICE SLEEVE NOTES:

- S1. Steel splice sleeves detailed on this drawing shall be used for Exposure Classification B2, C1 and C2.
- S2. STEELWORK shall be fabricated to the requirements of MRTS78.
Steel plate shall be Grade 250 to AS/NZS 3678.
Flat bar shall be Grade 250 to AS/NZS 3679.1.
All steelwork shall be hot dip galvanized to AS/NZS 4680.
Prior to galvanizing all weld splatter and welding slag shall be removed.
- S3. WELDING symbols conform to AS 1101.3.
All welding to AS/NZS 1554.1.
All welds except location tack welds shall be SP category.
Welding consumables to be controlled hydrogen type: G493 to AS/NZS ISO 14341-B or T493 to AS/NZS ISO 17632-B.
Steel plate shall have full penetration butt welds where necessary.
Butt welds shall be ground flush on inside face of sleeve.

Splice sleeve dimensions shown here are to the inside face of the sleeve and are nominal only. Actual dimensions shall be verified on site and in accordance with details from the precaster, and sent to the Administrator for approval.

EPOXY NOTES:

- G1. EPOXY shall be an approved rapid set liquid binder suitable for civil engineering applications where high impact loads are experienced.
Ultimate compressive strength (cured) shall be minimum 120MPa.
Ultimate flexural strength (cured) shall be minimum 55MPa.
- G2. Epoxy shall not be used until the Administrator has confirmed in writing that the product complies with the required properties.

NOTES:

1. Refer Drawing 1 for for Design Criteria, profile details and General Notes.

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550 OCTAGONAL PSC PILES				
SPICED PILE DETAILS DRAWING 4 OF 4		A3	Standard Drawing No	
FABRICATION AND ERECTION		Not to Scale	2023	
		A	Date 3/2020	