MINISTRY OF TRANSPORTATION OF ONTARIO STRUCTURAL ANS D FRAME 2020-05

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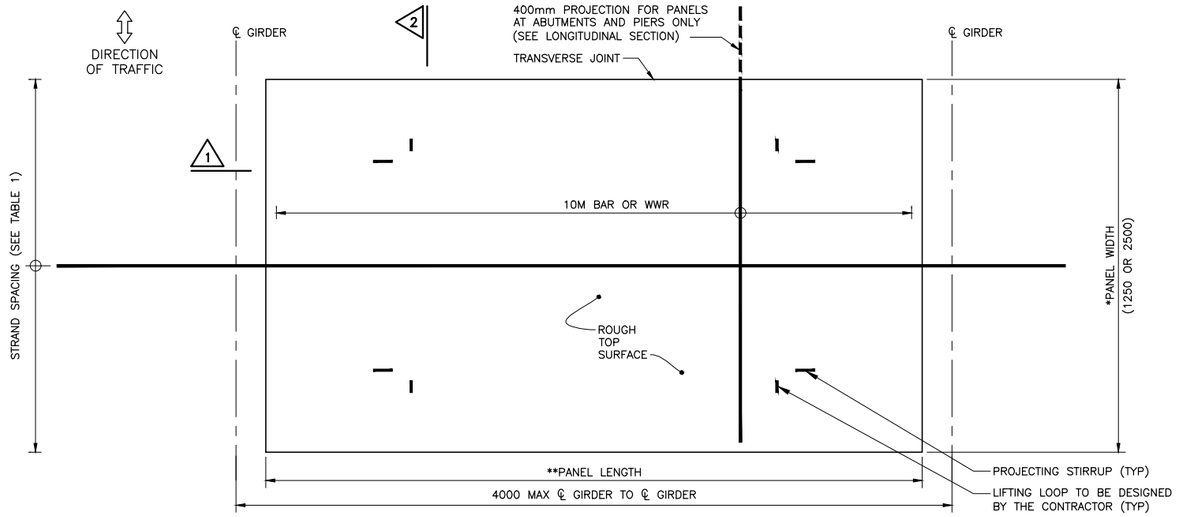
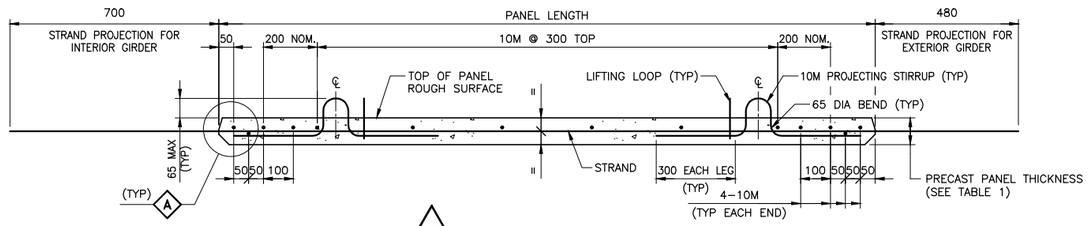
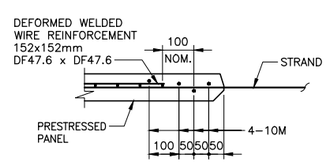


TYPICAL PRESTRSSED DECK PANEL PLAN
(ALL PANEL LENGTHS)

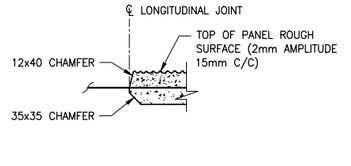
* PANEL DIM. PARALLEL TO LONG DIRECTION OF BRIDGE
** PANEL DIM. PARALLEL TO TRANSVERSE DIRECTION OF THE BRIDGE



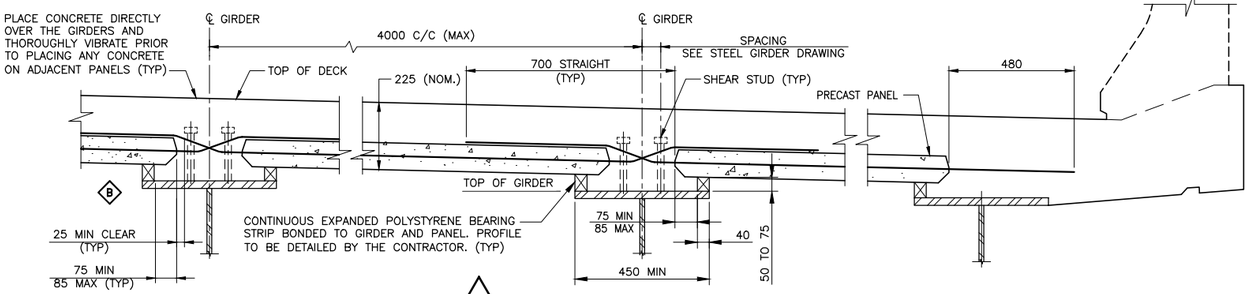
1 TYPICAL PRESTRESSED DECK PANEL SECTION



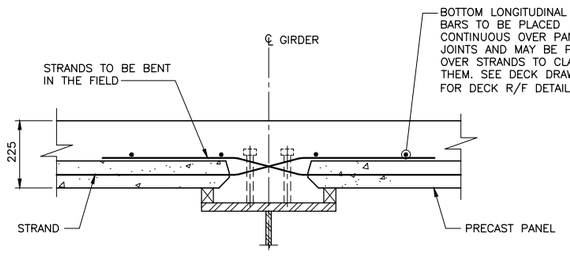
1 OPTIONAL DETAIL WITH WWR



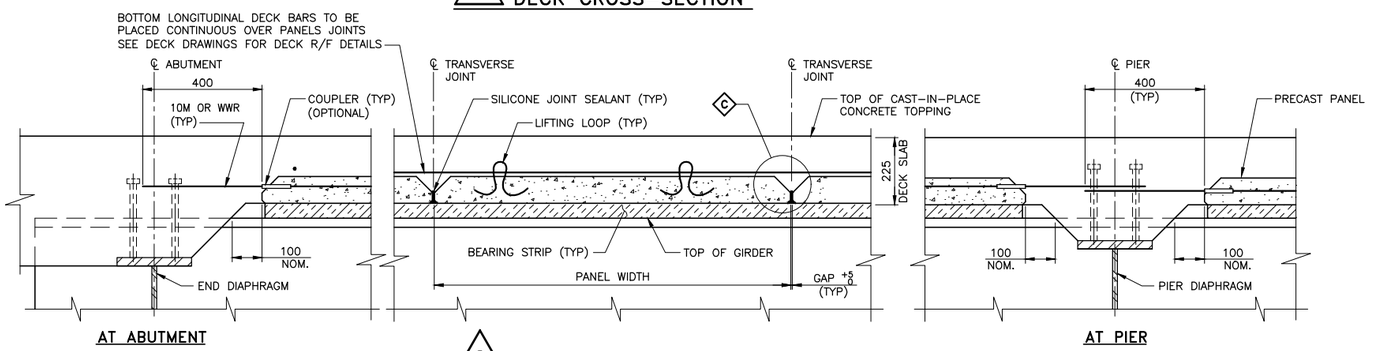
A CHAMFER DETAIL
(TYP)



1 DECK CROSS-SECTION

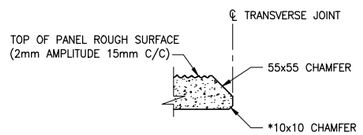


B REINFORCEMENT



AT ABUTMENT — AT PIER

2 LONGITUDINAL SECTION



C CHAMFER DETAIL
(TYP)

*TERMINATE THE BOTTOM CHAMFER 150mm FROM THE ENDS OF PANEL.

METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

TABLE 1

TABLE OF PRESTRESSED DATA

PANEL LENGTH (m)	≤1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8
STRAND SPACING (mm)	300	275	250	225	175	150	125	100	100	75	75
JACKING FORCE (kN)	77										
BREAKING STRENGTH (kN)	102										
PANEL THICKNESS (mm)	90								100	110	

NOTES TO DESIGNER:

1. THIS STANDARD IS ONLY APPLICABLE FOR DECK PANELS SPANNING TRANSVERSELY BETWEEN LONGITUDINAL GIRDERS, WITH A MINIMUM TOP FLANGE WIDTH OF 450mm OR GREATER.
2. THE TOP FLANGE WIDTH IS PREFERRED TO BE UNIFORM THROUGHOUT THE LENGTH OF GIRDER IN ORDER TO HAVE A STANDARD LENGTH OF PRECAST PANEL.
3. IF THE CONCRETE STRENGTH OF THE CORRESPONDING CAST-IN-PLACE CONCRETE TOPPING IS GREATER THAN 40 MPa, THEN THE STRENGTH OF THE PRECAST PANEL SHALL BE INCREASED TO MATCH.
4. THE TOTAL COMPOSITE DECK SLAB SHALL BE 225mm FOR 90mm THICK PANELS, FOR 100mm AND 110mm THICK PANELS COMPOSITE DECK THICKNESS SHALL BE 250mm.
5. WHEN THE REQUIRED PANEL LENGTH FALLS BETWEEN THOSE VALUES LISTED IN TABLE 1 THEN USE THE STRAND SPACING FOR THE NEXT LARGER LISTED PANEL LENGTH.
6. HEIGHT AND LOCATION OF SHEAR CONNECTORS TO BE DESIGNED TO ACCOMMODATE THE DECK PANEL DETAIL OVER THE TOP FLANGE.
7. THE "NOTES TO DESIGNER" SHALL BE DELETED FROM THIS DRAWING PRIOR TO ISSUING.

NOTES:

1. THESE DRAWINGS SHOW DETAILS FOR PARTIAL DEPTH PRECAST DECK PANELS FOR USE WITH STEEL GIRDERS.
2. SHOP DRAWINGS SHOWING PANEL LAYOUT AND ASSOCIATED CONSTRUCTION DETAILS SHALL BE PRODUCED BY THE CONTRACTOR.
3. THE DECK PANELS ARE DESIGNED AS NON COMPOSITE TO SUPPORT THE DEAD LOAD OF THE PANEL, CAST-IN-PLACE CONCRETE TOPPING, AND 2.4 kPa OF CONSTRUCTION LOADING.
4. LIFTING LOOPS SHALL BE MADE VISUALLY DIFFERENT FROM STIRRUP PROJECTIONS, SUCH AS: ORIENTED IN A DIFFERENT DIRECTION OR USING OTHER SUITABLE METHODS.
5. FOR DECK SLAB WITH STAINLESS STEEL OR GFRP REINFORCING, THE LIFTING LOOPS SHALL BE STAINLESS STEEL OR SHALL BE CUT OFF AFTER INSTALLATION.
6. PROJECTED STIRRUPS ARE NOT REQUIRED FOR STRUCTURAL DESIGN OF THE PANELS AND ARE PROVIDED TO TIE THE CAST-IN-PLACE CONCRETE TOPPING REINFORCEMENT FOR EASE IN CONSTRUCTION. USE STAINLESS STEEL STIRRUPS FOR DECK REINFORCED WITH STAINLESS STEEL OR GFRP REBAR.
7. THE BEARING STRIPS THAT ARE USED TO SUPPORT THE PANELS PRIOR TO POURING THE CAST-IN-PLACE TOPPING SHALL BE DETAILED BY THE PRECASTER AND SHALL REMAIN IN PLACE. BEARING STRIP SHALL BE BONDED TO GIRDER AND PANEL BY INDUSTRIAL GRADE ADHESIVE AND ANY GAPS SHALL BE SEALED WITH CAULKING. AT GIRDER FIELD SPLICE, CUT THE BEARING STRIP TO SUIT TOP FLANGE SPLICE PLATE.
8. CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE PANELS AND THE BEARING STRIPS DURING CONSTRUCTION.
9. BOTTOM LONGITUDINAL DECK BARS TO BE PLACED CONTINUOUS ON PRECAST DECK PANELS AND SHALL NOT HAVE LAP SPLICES OVER THE TRANSVERSE JOINTS OF PANELS.
10. CONTRACTOR IS REMINDED TO PAY ATTENTION TO THE QUALITY OF VIBRATION OF THE WET CONCRETE PLACED OVER GIRDER FLANGES SO THAT IT FLOWS AND PROPERLY FILLS UNDER THE EDGES OF THE PRECAST DECK PANELS.
11. CONTRACTOR TO SUBMIT SUPPORTING DOCUMENTS FOR APPROVAL PRIOR TO FABRICATION IF RESISTANCE WELDING IS PLANNED TO BE USED TO FABRICATE THE REINFORCEMENT CAGE.
12. FABRICATOR MAY ADJUST THE STRAND/REBAR SPACING TO CREATE SEVERAL 100x100mm STEEL FREE AREAS TO ACCOMMODATE CORES FOR QUALITY ASSURANCE TESTING. THE LOCATIONS FROM WHERE CORES MAY BE TAKEN SHALL BE CLEARLY MARKED ON DECK PANEL WORKING DRAWINGS. CORE SIZE SHALL BE AS SPECIFIED ELSEWHERE IN THE CONTRACT.
13. CONTRACTOR SHALL FIELD MEASURE OR TAKE SURVEY ELEVATIONS OF THE ACTUAL CAMBER ON THE GIRDER BEFORE DETAILING THE BEARING STRIP HEIGHTS.
14. FABRICATION TOLERANCES SHALL BE ACCORDING TO MTOD 3960.100.

MATERIALS:

1. **CONCRETE STRENGTHS**
   30 MPa AT TRANSFER AND 40 MPa AT 28 DAYS.
2. **PRESTRESSING STEEL**
   PRESTRESSING STEEL SHALL BE LOW RELAXATION SEVEN WIRE STRAND, SIZE DESIGNATION 9mm DIA. GRADE 1860 MPa.
3. **REINFORCING STEEL**
   REINFORCING STEEL SHALL BE GRADE 500W.
4. **WELDED WIRE REINFORCEMENT**
   WELDED WIRE REINFORCEMENT SHALL BE DEFORMED AND GRADE 500 MPa IN ACCORDANCE WITH ASTM A1064.
5. **BEARING STRIP**
   THE BEARING STRIP SHALL BE HIGH DENSITY EXPANDED POLYSTYRENE WITH A MINIMUM COMPRESSIVE STRENGTH OF 0.38 MPa (55 PSI).

REFER TO THE STRUCTURAL MANUAL FOR PROFESSIONAL ENGINEER STAMPING REQUIREMENTS.

Ontario Ministry of Transportation

CONT
WP

DRAFT

SHEET

PARTIAL DEPTH PRECAST DECK PANELS FOR STEEL GIRDERS DETAILS

STANDARD DRAWING
MARCH 24, 2023

SS109-42

PARTIAL DEPTH PRECAST DECK PANELS FOR STEEL GIRDERS – DETAILS

REVISIONS	DATE	BY	DESCRIPTION

DESIGN	CHK	CODE CSA S6-19	LOAD CL 625-ONT	DATE	
DRAWN	CHK	SITE		DWG	