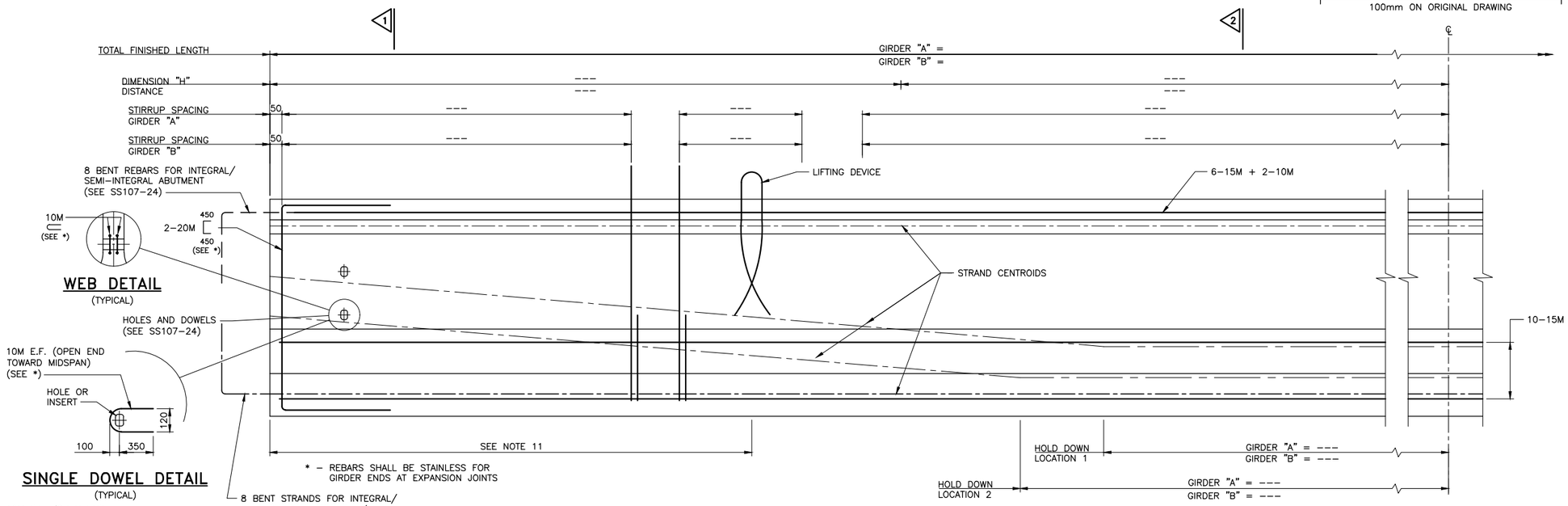
Ontario Ministry of Transportation

CONT WP **DRAFT**

SHEET

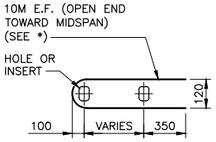
PRESTRESSED NU GIRDERS AND BEARINGS – NU 900



WEB DETAIL
(TYPICAL)

SINGLE DOWEL DETAIL
(TYPICAL)

HALF ELEVATION



DOUBLE DOWEL DETAIL
(TYPICAL)

NOTES:

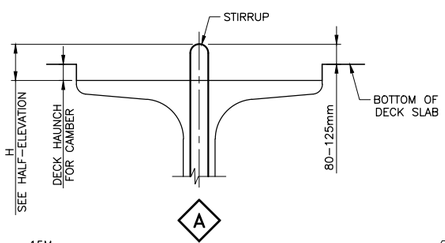
1. PRESTRESSING STEEL SHALL BE LOW–RELAXATION SEVEN WIRE STRANDS, SIZE DESIGNATION 15, GRADE 1860.
2. MINIMUM BREAKING STRENGTH OF STRAND 261kN.
3. PRESTRESSING FORCE PER STRAND IMMEDIATELY PRIOR TO TRANSFER 192.7 kN.
4. FORCE PER STRAND AFTER ALL LOSSES _____kN.
5. THE ELAPSED TIME INTERVAL BETWEEN JACKING OF STRANDS AND TRANSFER SHALL NOT BE LESS THAN 15 HOURS.
6. PRESTRESSING STRANDS SHALL BE SPACED VERTICALLY AT A MINIMUM OF 150mm IN THE VICINITY OF RECTANGULAR HOLES OR INSERTS FOR 20M DOWELS.
7. CLASS OF CONCRETE FOR PRECAST GIRDER 60 MPa.
8. MIN. CONCRETE STRENGTH AT TRANSFER ___ MPa.
9. REINFORCING STEEL SHALL BE GRADE 500W. STAINLESS STEEL SHALL BE TYPE 316 LN OR DUPLEX 2205 WITH A MINIMUM YIELD STRENGTH OF 500 MPa.
10. CLEAR COVER TO REINFORCING STEEL UNLESS SHOWN OTHERWISE:

    –SOFFIT OF BEAM (EXCEPT UNDERCUT)
    48+15mm/–5mm
    –UNDERCUT OF BEAM AND ELSEWHERE
    30+15mm/–5mm

11. ALL TRANSVERSE REINFORCEMENT IN BOTTOM FLANGE, INCLUDING STIRRUPS. LOCATED WITHIN 2000mm FROM THE GIRDER ENDS AT EXPANSION JOINTS SHALL BE STAINLESS.
12. FOR BRIDGES ON GRADES EXCEEDING 3%, THE ENDS OF GIRDERS SHALL BE CAST SO THAT THEY ARE VERTICAL WHEN ERECTED.
13. DRAWING TO BE READ IN CONJUNCTION WITH SS107–24.
14. NO WELDING SHALL BE PERMITTED UNLESS APPROVED BY THE OWNER.

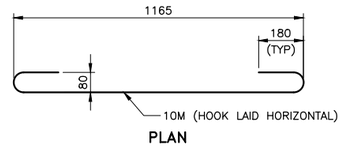
NOTES TO DESIGNER:

1. FOR INTEGRAL ABUTMENT TYPE BRIDGES, THIS STANDARD DRAWING WILL NEED TO BE MODIFIED AS REQUIRED.
2. ROTATION IN BEARING DATA TABLE CORRESPONDS TO TOTAL LOAD.
3. THE CONCRETE STRENGTH AT TRANSFER SHOULD NOT BE GREATER THAN 40 MPa IN ORDER TO ALLOW A DAILY PRODUCTION CYCLE.
4. WHEN PARTIAL DEPTH DECK PANELS ARE USED FOR DECK CONSTRUCTION, THE EFFECTIVE TOP FLANGE DESIGN WIDTH FOR GIRDER INTERFACE SHEAR DESIGN SHALL BE THE CLEAR HORIZONTAL DISTANCE BETWEEN THE EDGES OF BEARING STRIPS OF THE PARTIAL DEPTH DECK PANELS.
5. THE "NOTES TO DESIGNER" SHALL BE DELETED FROM THIS DRAWING PRIOR TO ISSUING.



BEARING DATA:

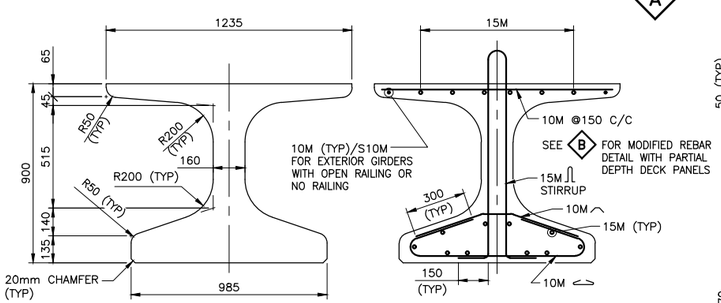
LOCATION		ABUTMENTS	PIERS
TYPE		---	---
SIZE (mm)		---x---x---	---x---x---
NUMBER REQUIRED		---	---
SERVICEABILITY LIMIT STATES	DEAD LOAD (kN)	---	---
	TOTAL LOAD (kN)	---	---
	MOVEMANT (mm)	±---	±---
	ROTATION (radian)	---	---
	SHEAR RATE AT 20°C (kN/mm)	---	---



PLAN

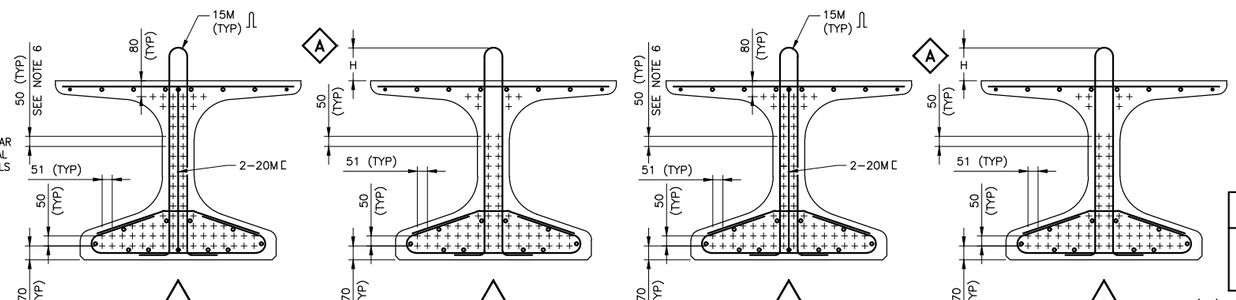
B TOP FLANGE TRANSVERSE REBAR DETAIL WITH PARTIAL DEPTH DECK PANELS

NU 900



TYPICAL SECTION

REINFORCING



GIRDER A
--- DEFLECTED STRANDS
--- STRAIGHT STRANDS

GIRDER B
--- DEFLECTED STRANDS
--- STRAIGHT STRANDS

REFER TO THE STRUCTURAL MANUAL FOR PROFESSIONAL ENGINEER STAMPING REQUIREMENTS.

STANDARD DRAWING JULY 25, 2023	SS107–16
PRESTRESSED NU GIRDERS AND BEARINGS NU 900	

REVISIONS			
	DATE	BY	DESCRIPTION

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

MINISTRY OF TRANSPORTATION OF ONTARIO STRUCTURAL ANS D FRAME 2020–05
FILE NAME: C:\USERS\WEZAKV\ONEDRIVE – GOVERNMENT OF ONTARIO\DESKTOP\S107– SERAJ 03 2021\S107–16 JULY 25 2023 DRAFT.DWG
MODIFIED: 2023–07–28 10:38

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

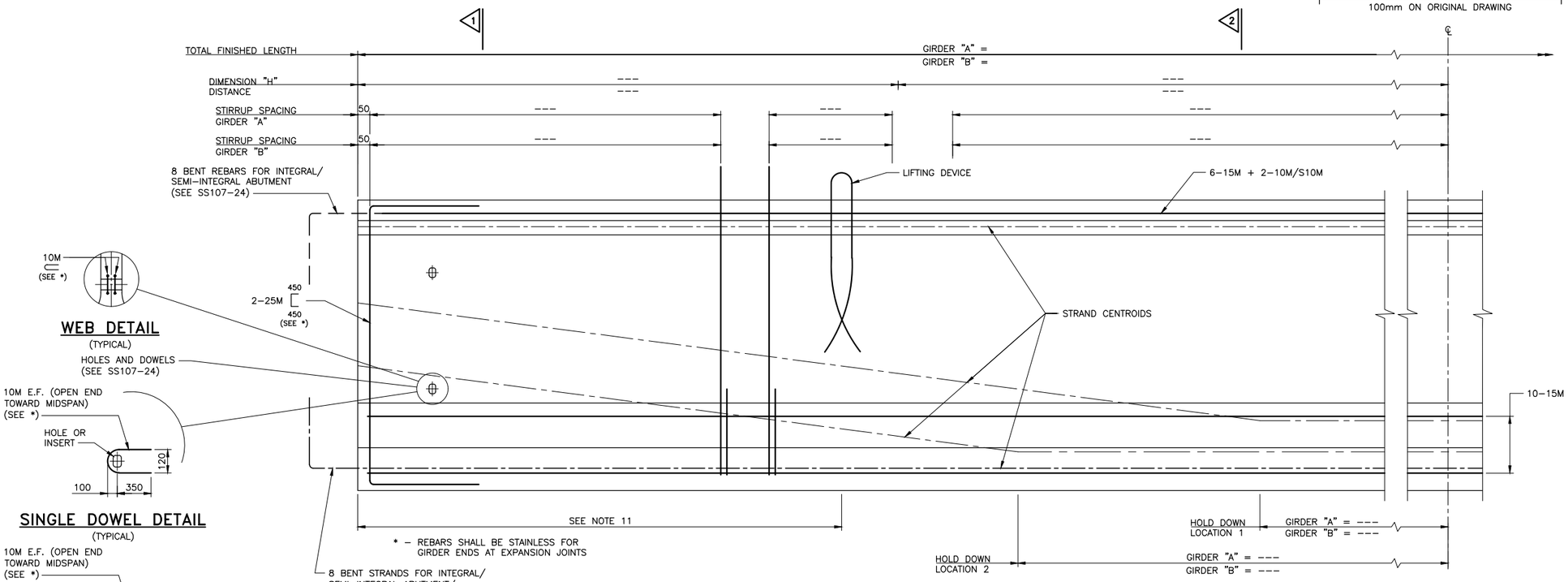
Ontario Ministry of Transportation

CONT
WP

DRAFT

SHEET

PRESTRESSED NU GIRDERS AND BEARINGS – NU 1200

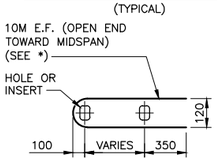


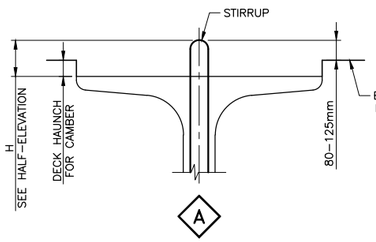
HALF ELEVATION

WEB DETAIL
(TYPICAL)

SINGLE DOWEL DETAIL
(TYPICAL)

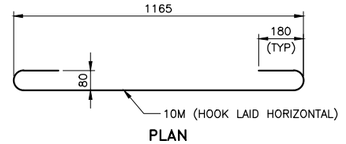
DOUBLE DOWEL DETAIL
(TYPICAL)





BEARING DATA:

LOCATION		ABUTMENTS	PIERS
TYPE		---	---
SIZE (mm)		---x---x---	---x---x---
NUMBER REQUIRED		---	---
SERVICEABILITY LIMIT STATES	DEAD LOAD (kN)	---	---
	TOTAL LOAD (kN)	---	---
	MOVEMANT (mm)	±---	±---
	ROTATION (radian)	---	---
	SHEAR RATE AT 20°C (kN/mm)	---	---



PLAN

B TOP FLANGE TRANSVERSE REBAR DETAIL WITH PARTIAL DEPTH DECK PANELS

NOTES:

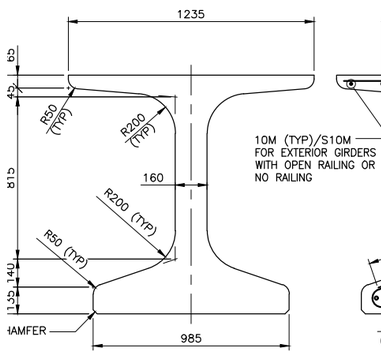
1. PRESTRESSING STEEL SHALL BE LOW-RELAXATION SEVEN WIRE STRANDS, SIZE DESIGNATION 15, GRADE 1860.
2. MINIMUM BREAKING STRENGTH OF STRAND 261kN.
3. PRESTRESSING FORCE PER STRAND IMMEDIATELY PRIOR TO TRANSFER 192.7 kN.
4. FORCE PER STRAND AFTER ALL LOSSES _____kN.
5. THE ELAPSED TIME INTERVAL BETWEEN JACKING OF STRANDS AND TRANSFER SHALL NOT BE LESS THAN 15 HOURS.
6. PRESTRESSING STRANDS SHALL BE SPACED VERTICALLY AT A MINIMUM OF 150mm IN THE VICINITY OF RECTANGULAR HOLES OR INSERTS FOR 20M DOWELS.
7. CLASS OF CONCRETE FOR PRECAST GIRDER 60 MPa.
8. MIN. CONCRETE STRENGTH AT TRANSFER ___ MPa.
9. REINFORCING STEEL SHALL BE GRADE 500W. STAINLESS STEEL SHALL BE TYPE 316 LN OR DUPLEX 2205 WITH A MINIMUM YIELD STRENGTH OF 500 MPa.
10. CLEAR COVER TO REINFORCING STEEL UNLESS SHOWN OTHERWISE:

    -SOFFIT OF BEAM (EXCEPT UNDERCUT)
    48+15mm/-5mm
    -UNDERCUT OF BEAM AND ELSEWHERE
    30+15mm/-5mm

11. ALL TRANSVERSE REINFORCEMENT IN BOTTOM FLANGE, INCLUDING STIRRUPS. LOCATED WITHIN 2000mm FROM THE GIRDER ENDS AT EXPANSION JOINTS SHALL BE STAINLESS.
12. FOR BRIDGES ON GRADES EXCEEDING 3%, THE ENDS OF GIRDERS SHALL BE CAST SO THAT THEY ARE VERTICAL WHEN ERECTED.
13. DRAWING TO BE READ IN CONJUNCTION WITH SS107-24.
14. NO WELDING SHALL BE PERMITTED UNLESS APPROVED BY THE OWNER.

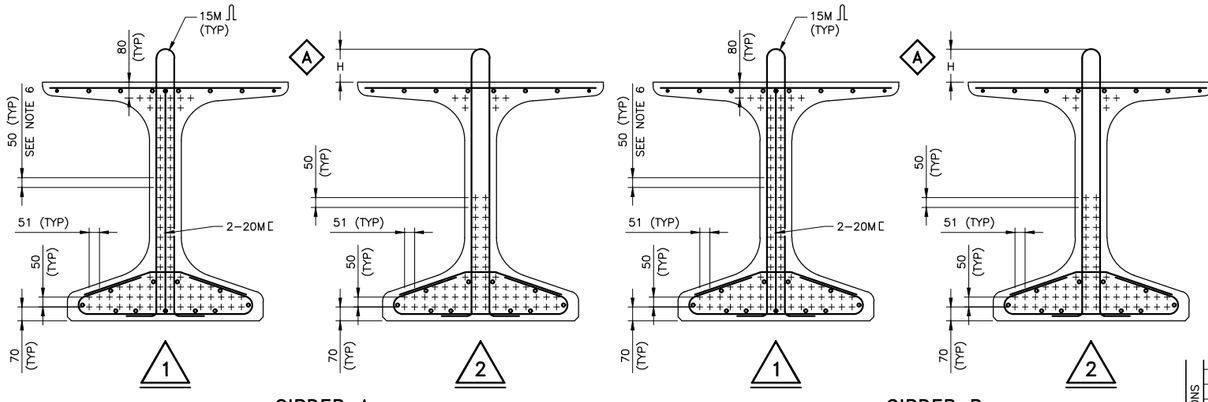
NOTES TO DESIGNER:

1. FOR INTEGRAL ABUTMENT TYPE BRIDGES, THIS STANDARD DRAWING WILL NEED TO BE MODIFIED AS REQUIRED.
2. ROTATION IN BEARING DATA TABLE CORRESPONDS TO TOTAL LOAD.
3. THE CONCRETE STRENGTH AT TRANSFER SHOULD NOT BE GREATER THAN 40 MPa IN ORDER TO ALLOW A DAILY PRODUCTION CYCLE.
4. WHEN PARTIAL DEPTH DECK PANELS ARE USED FOR DECK CONSTRUCTION, THE EFFECTIVE TOP FLANGE DESIGN WIDTH FOR GIRDER INTERFACE SHEAR DESIGN SHALL BE THE CLEAR HORIZONTAL DISTANCE BETWEEN THE EDGES OF BEARING STRIPS OF THE PARTIAL DEPTH DECK PANELS.
5. THE "NOTES TO DESIGNER" SHALL BE DELETED FROM THIS DRAWING PRIOR TO ISSUING.



TYPICAL SECTION

REINFORCING



GIRDER A
--- DEFLECTED STRANDS
--- STRAIGHT STRANDS

GIRDER B
--- DEFLECTED STRANDS
--- STRAIGHT STRANDS

NU 1200

REFER TO THE STRUCTURAL MANUAL FOR PROFESSIONAL ENGINEER STAMPING REQUIREMENTS.

STANDARD DRAWING
JULY 25, 2023

SS107-17

PRESTRESSED NU GIRDERS AND BEARINGS
NU 1200

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

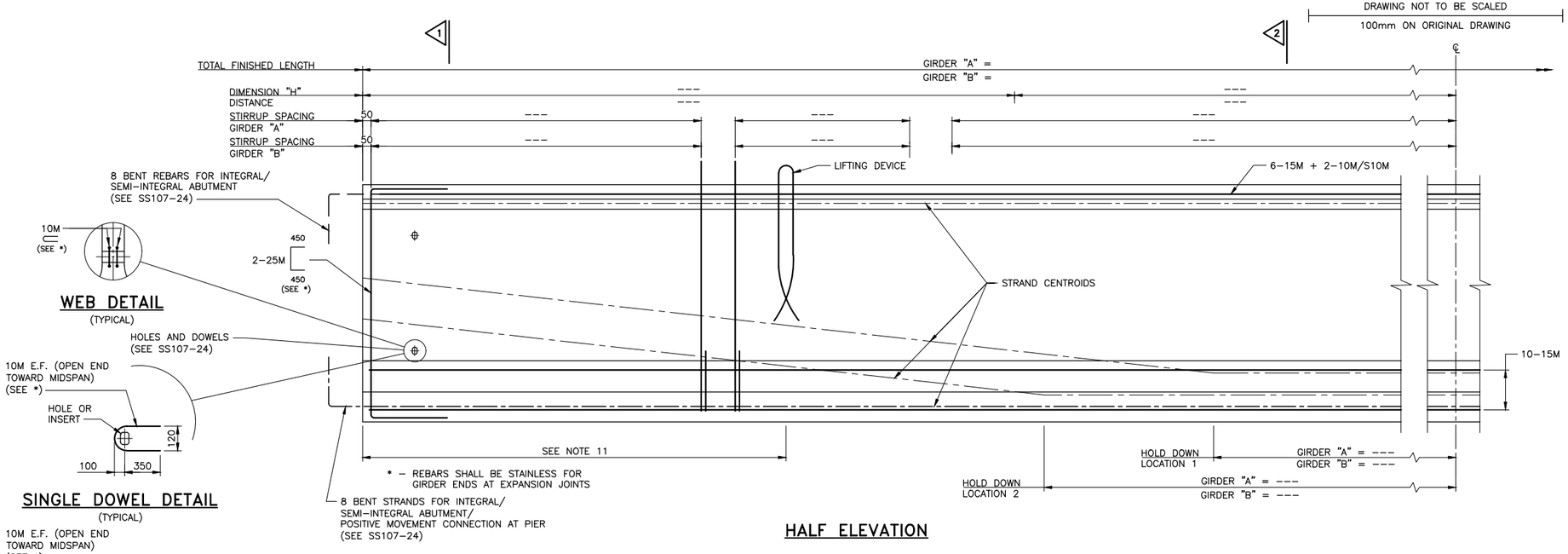
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

Ontario Ministry of Transportation

CONT WP **DRAFT**

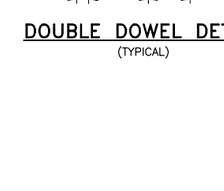
SHEET

PRESTRESSED NU GIRDERS AND BEARINGS – NU 1400



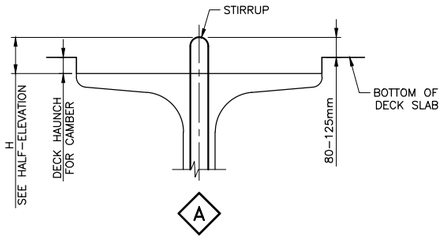
WEB DETAIL
(TYPICAL)

SINGLE DOWEL DETAIL
(TYPICAL)



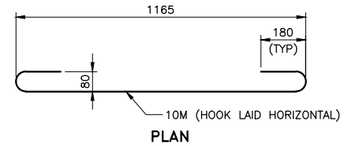
DOUBLE DOWEL DETAIL
(TYPICAL)

HALF ELEVATION



BEARING DATA:

LOCATION		ABUTMENTS	PIERS
TYPE		---	---
SIZE (mm)		---x---x---	---x---x---
NUMBER REQUIRED		---	---
SERVICEABILITY LIMIT STATES	DEAD LOAD (kN)	---	---
	TOTAL LOAD (kN)	---	---
	MOVEMANT (mm)	±---	±---
	ROTATION (radian)	---	---
	SHEAR RATE AT 20°C (kN/mm)	---	---



PLAN

B TOP FLANGE TRANSVERSE REBAR DETAIL WITH PARTIAL DEPTH DECK PANELS

NOTES:

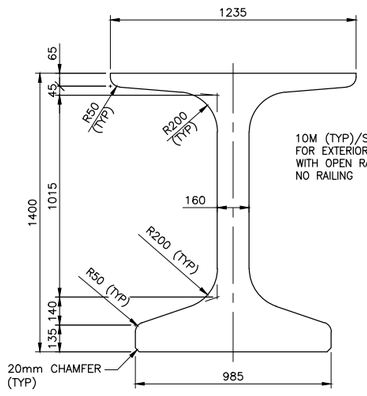
1. PRESTRESSING STEEL SHALL BE LOW-RELAXATION SEVEN WIRE STRANDS, SIZE DESIGNATION 15, GRADE 1860.
2. MINIMUM BREAKING STRENGTH OF STRAND 261kN.
3. PRESTRESSING FORCE PER STRAND IMMEDIATELY PRIOR TO TRANSFER 192.7 kN.
4. FORCE PER STRAND AFTER ALL LOSSES _____kN.
5. THE ELAPSED TIME INTERVAL BETWEEN JACKING OF STRANDS AND TRANSFER SHALL NOT BE LESS THAN 15 HOURS.
6. PRESTRESSING STRANDS SHALL BE SPACED VERTICALLY AT A MINIMUM OF 150mm IN THE VICINITY OF RECTANGULAR HOLES OR INSERTS FOR 20M DOWELS.
7. CLASS OF CONCRETE FOR PRECAST GIRDER 60 MPa.
8. MIN. CONCRETE STRENGTH AT TRANSFER ___ MPa.
9. REINFORCING STEEL SHALL BE GRADE 500W. STAINLESS STEEL SHALL BE TYPE 316 LN OR DUPLEX 2205 WITH A MINIMUM YIELD STRENGTH OF 500 MPa.
10. CLEAR COVER TO REINFORCING STEEL UNLESS SHOWN OTHERWISE:

    -SOFFIT OF BEAM (EXCEPT UNDERCUT)
    48+15mm/-5mm
    -UNDERCUT OF BEAM AND ELSEWHERE
    30+15mm/-5mm

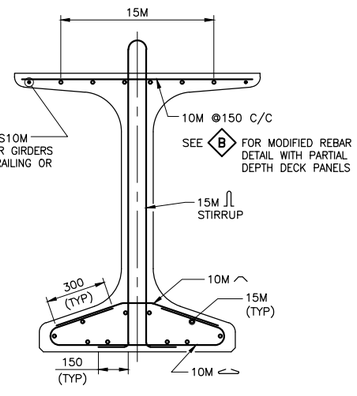
11. ALL TRANSVERSE REINFORCEMENT IN BOTTOM FLANGE, INCLUDING STIRRUPS. LOCATED WITHIN 2000mm FROM THE GIRDER ENDS AT EXPANSION JOINTS SHALL BE STAINLESS.
12. FOR BRIDGES ON GRADES EXCEEDING 3%, THE ENDS OF GIRDERS SHALL BE CAST SO THAT THEY ARE VERTICAL WHEN ERECTED.
13. DRAWING TO BE READ IN CONJUNCTION WITH SS107-24.
14. NO WELDING SHALL BE PERMITTED UNLESS APPROVED BY THE OWNER.

NOTES TO DESIGNER:

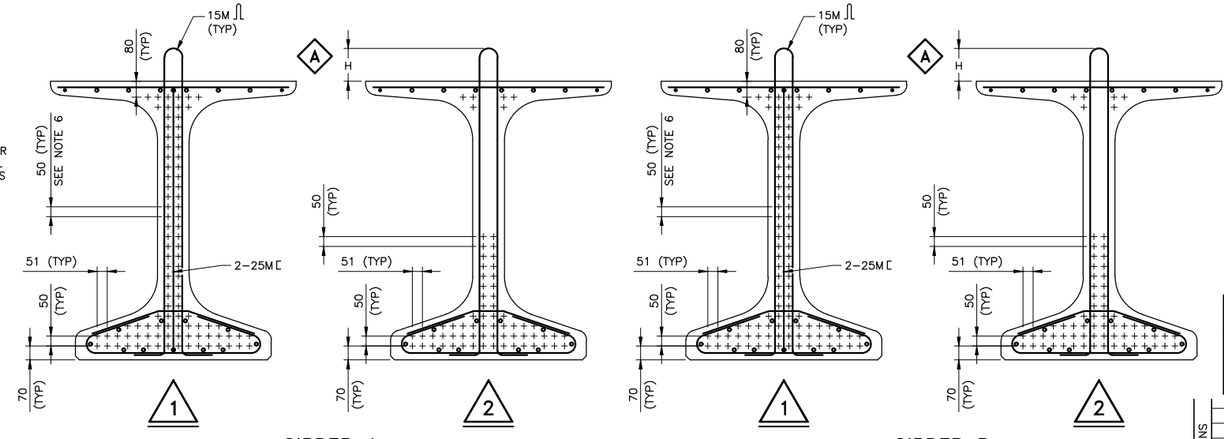
1. FOR INTEGRAL ABUTMENT TYPE BRIDGES, THIS STANDARD DRAWING WILL NEED TO BE MODIFIED AS REQUIRED.
2. ROTATION IN BEARING DATA TABLE CORRESPONDS TO TOTAL LOAD.
3. THE CONCRETE STRENGTH AT TRANSFER SHOULD NOT BE GREATER THAN 40 MPa IN ORDER TO ALLOW A DAILY PRODUCTION CYCLE.
4. WHEN PARTIAL DEPTH DECK PANELS ARE USED FOR DECK CONSTRUCTION, THE EFFECTIVE TOP FLANGE DESIGN WIDTH FOR GIRDER INTERFACE SHEAR DESIGN SHALL BE THE CLEAR HORIZONTAL DISTANCE BETWEEN THE EDGES OF BEARING STRIPS OF THE PARTIAL DEPTH DECK PANELS.
5. THE "NOTES TO DESIGNER" SHALL BE DELETED FROM THIS DRAWING PRIOR TO ISSUING.



TYPICAL SECTION



REINFORCING



GIRDER A
--- DEFLECTED STRANDS
--- STRAIGHT STRANDS

GIRDER B
--- DEFLECTED STRANDS
--- STRAIGHT STRANDS

NU 1400

REFER TO THE STRUCTURAL MANUAL FOR PROFESSIONAL ENGINEER STAMPING REQUIREMENTS.

STANDARD DRAWING JULY 25, 2023	SS107-18

PRESTRESSED NU GIRDERS AND BEARINGS
NU 1400

REVISIONS			
DATE	BY	DESCRIPTION	

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

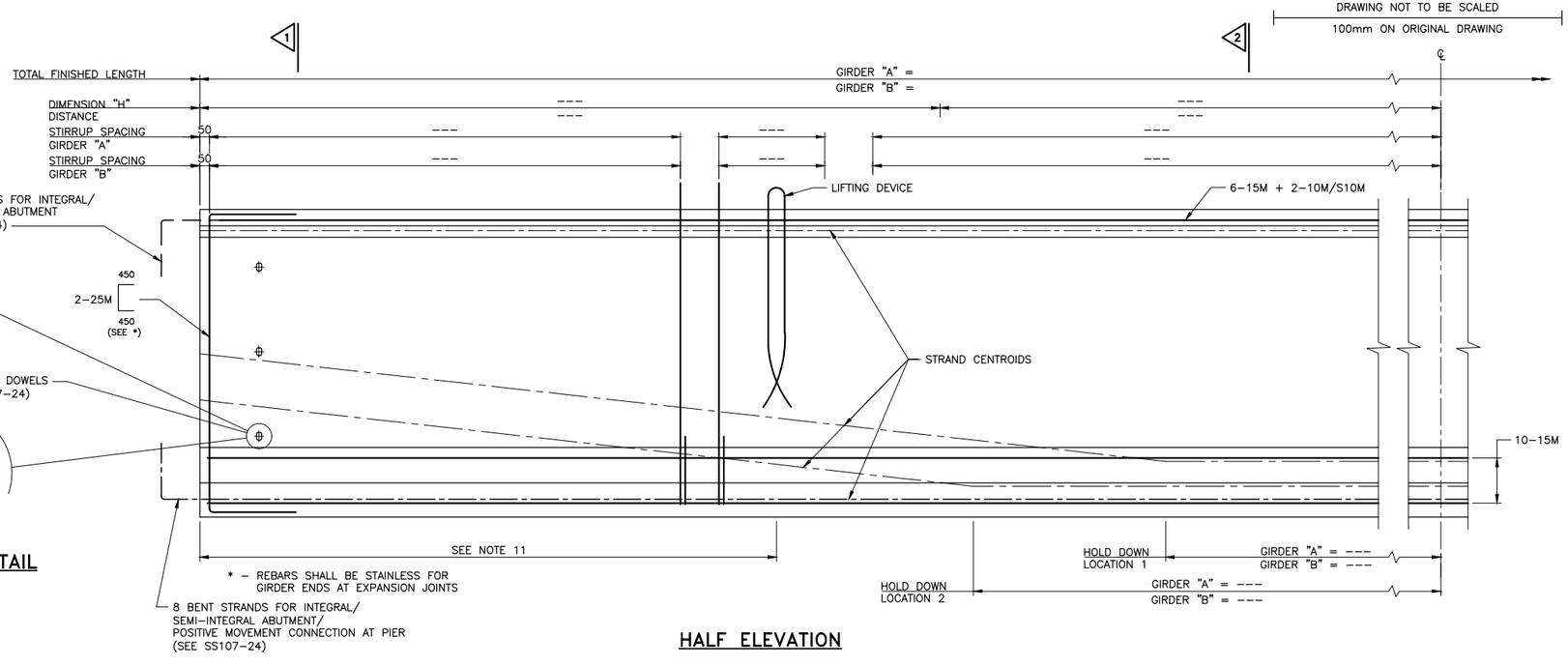
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

Ontario Ministry of Transportation

CONT WP **DRAFT**

SHEET

PRESTRESSED NU GIRDERS AND BEARINGS – NU 1600

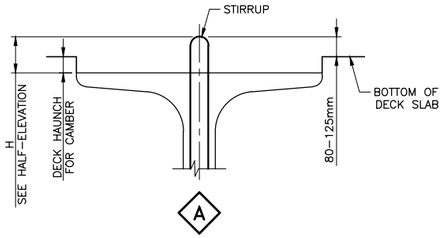


WEB DETAIL
(TYPICAL)

SINGLE DOWEL DETAIL
(TYPICAL)

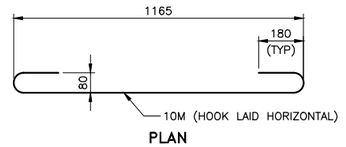
DOUBLE DOWEL DETAIL
(TYPICAL)

HALF ELEVATION



BEARING DATA:

LOCATION		ABUTMENTS	PIERS
TYPE		---	---
SIZE (mm)		---x---x---	---x---x---
NUMBER REQUIRED		---	---
SERVICEABILITY LIMIT STATES	DEAD LOAD (kN)	---	---
	TOTAL LOAD (kN)	---	---
	MOVEMANT (mm)	±---	±---
	ROTATION (radian)	---	---
	SHEAR RATE AT 20°C (kN/mm)	---	---



PLAN

B TOP FLANGE TRANSVERSE REBAR DETAIL WITH PARTIAL DEPTH DECK PANELS

NOTES:

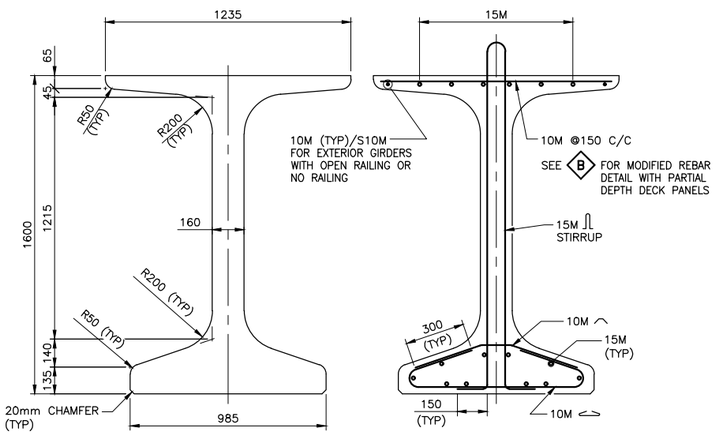
1. PRESTRESSING STEEL SHALL BE LOW-RELAXATION SEVEN WIRE STRANDS, SIZE DESIGNATION 15, GRADE 1860.
2. MINIMUM BREAKING STRENGTH OF STRAND 261kN.
3. PRESTRESSING FORCE PER STRAND IMMEDIATELY PRIOR TO TRANSFER 192.7 kN.
4. FORCE PER STRAND AFTER ALL LOSSES _____kN.
5. THE ELAPSED TIME INTERVAL BETWEEN JACKING OF STRANDS AND TRANSFER SHALL NOT BE LESS THAN 15 HOURS.
6. PRESTRESSING STRANDS SHALL BE SPACED VERTICALLY AT A MINIMUM OF 150mm IN THE VICINITY OF RECTANGULAR HOLES OR INSERTS FOR 20M DOWELS.
7. CLASS OF CONCRETE FOR PRECAST GIRDER 60 MPa.
8. MIN. CONCRETE STRENGTH AT TRANSFER ___ MPa.
9. REINFORCING STEEL SHALL BE GRADE 500W. STAINLESS STEEL SHALL BE TYPE 316 LN OR DUPLEX 2205 WITH A MINIMUM YIELD STRENGTH OF 500 MPa.
10. CLEAR COVER TO REINFORCING STEEL UNLESS SHOWN OTHERWISE:

    –SOFFIT OF BEAM (EXCEPT UNDERCUT)
    48+15mm/–5mm
    –UNDERCUT OF BEAM AND ELSEWHERE
    30+15mm/–5mm

11. ALL TRANSVERSE REINFORCEMENT IN BOTTOM FLANGE, INCLUDING STIRRUPS. LOCATED WITHIN 2000mm FROM THE GIRDER ENDS AT EXPANSION JOINTS SHALL BE STAINLESS.
12. FOR BRIDGES ON GRADES EXCEEDING 3%, THE ENDS OF GIRDERS SHALL BE CAST SO THAT THEY ARE VERTICAL WHEN ERECTED.
13. DRAWING TO BE READ IN CONJUNCTION WITH SS107-24.
14. NO WELDING SHALL BE PERMITTED UNLESS APPROVED BY THE OWNER.

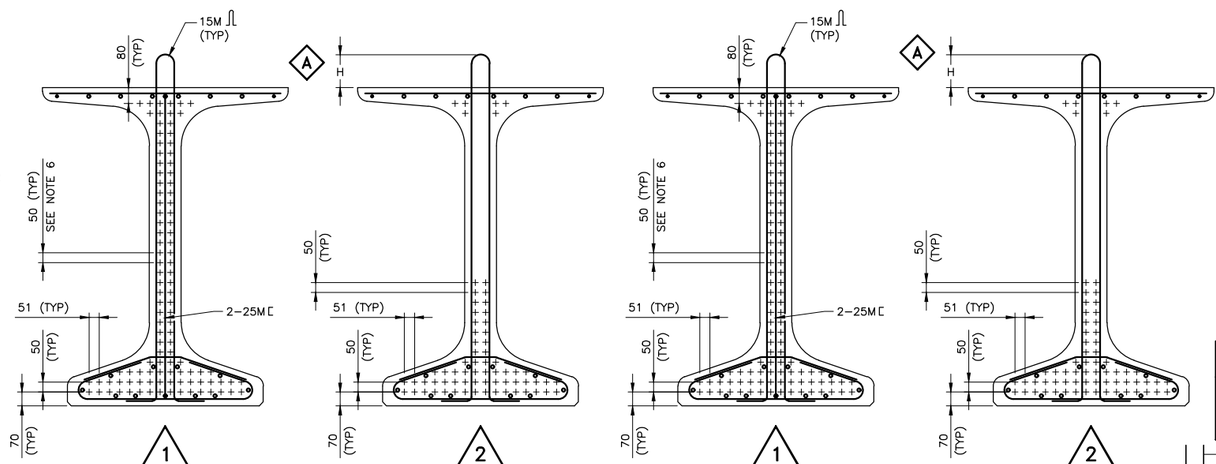
NOTES TO DESIGNER:

1. FOR INTEGRAL ABUTMENT TYPE BRIDGES, THIS STANDARD DRAWING WILL NEED TO BE MODIFIED AS REQUIRED.
2. ROTATION IN BEARING DATA TABLE CORRESPONDS TO TOTAL LOAD.
3. THE CONCRETE STRENGTH AT TRANSFER SHOULD NOT BE GREATER THAN 40 MPa IN ORDER TO ALLOW A DAILY PRODUCTION CYCLE.
4. WHEN PARTIAL DEPTH DECK PANELS ARE USED FOR DECK CONSTRUCTION, THE EFFECTIVE TOP FLANGE DESIGN WIDTH FOR GIRDER INTERFACE SHEAR DESIGN SHALL BE THE CLEAR HORIZONTAL DISTANCE BETWEEN THE EDGES OF BEARING STRIPS OF THE PARTIAL DEPTH DECK PANELS.
5. THE 'NOTES TO DESIGNER' SHALL BE DELETED FROM THIS DRAWING PRIOR TO ISSUING.



TYPICAL SECTION

REINFORCING



GIRDER A
--- DEFLECTED STRANDS
--- STRAIGHT STRANDS

GIRDER B
--- DEFLECTED STRANDS
--- STRAIGHT STRANDS

NU 1600

REFER TO THE STRUCTURAL MANUAL FOR PROFESSIONAL ENGINEER STAMPING REQUIREMENTS.

STANDARD DRAWING JULY 25, 2023	SS107-19

PRESTRESSED NU GIRDERS AND BEARINGS NU 1600

REVISIONS			
	DATE	BY	DESCRIPTION

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

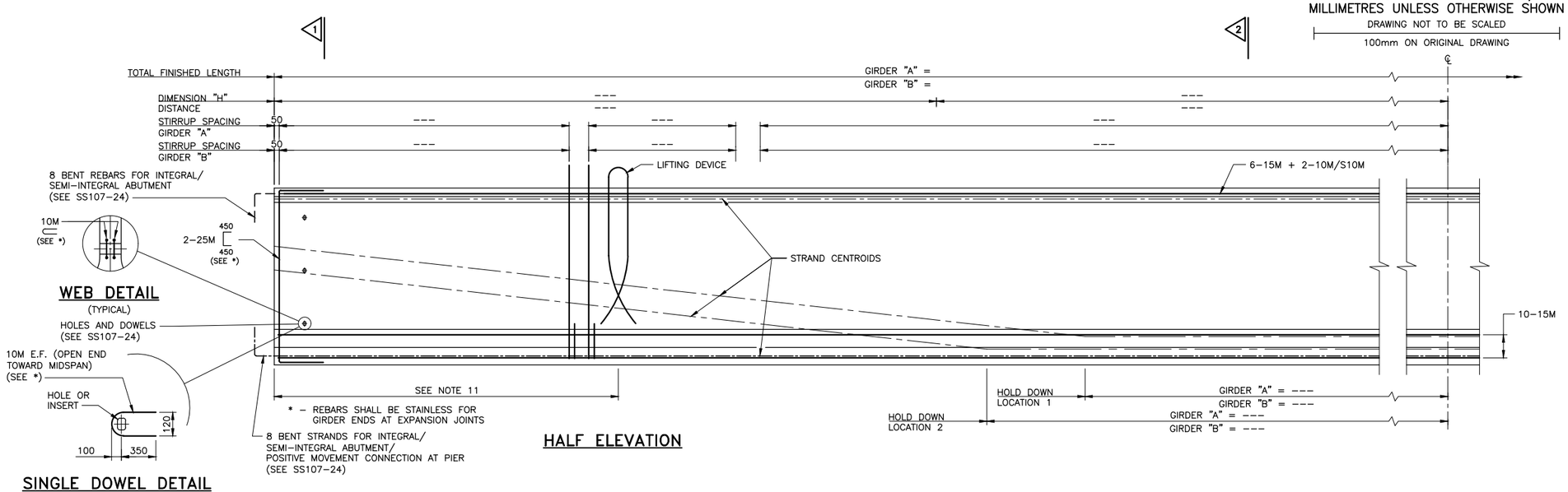
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

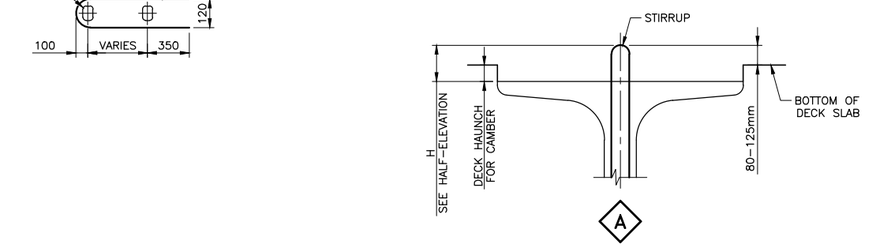
Ontario Ministry of Transportation

CONT WP **DRAFT**

SHEET

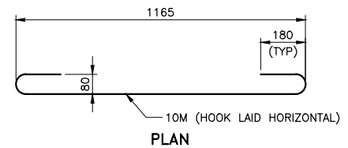
PRESTRESSED NU GIRDERS AND BEARINGS – NU 1800





BEARING DATA:

LOCATION		ABUTMENTS	PIERS
TYPE		---	---
SIZE (mm)		---x---x---	---x---x---
NUMBER REQUIRED		---	---
SERVICEABILITY LIMIT STATES	DEAD LOAD (kN)	---	---
	TOTAL LOAD (kN)	---	---
	MOVEMANT (mm)	±---	±---
	ROTATION (radian)	---	---
	SHEAR RATE AT 20°C (kN/mm)	---	---



PLAN

B TOP FLANGE TRANSVERSE REBAR DETAIL WITH PARTIAL DEPTH DECK PANELS

NOTES:

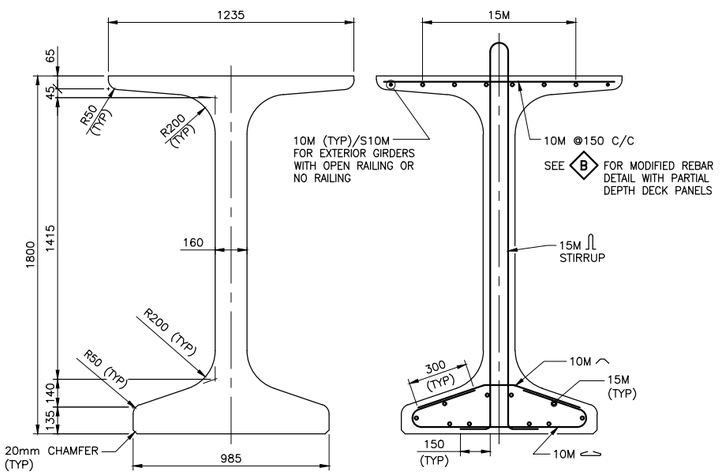
1. PRESTRESSING STEEL SHALL BE LOW-RELAXATION SEVEN WIRE STRANDS, SIZE DESIGNATION 15, GRADE 1860.
2. MINIMUM BREAKING STRENGTH OF STRAND 261kN.
3. PRESTRESSING FORCE PER STRAND IMMEDIATELY PRIOR TO TRANSFER 192.7 kN.
4. FORCE PER STRAND AFTER ALL LOSSES _____kN.
5. THE ELAPSED TIME INTERVAL BETWEEN JACKING OF STRANDS AND TRANSFER SHALL NOT BE LESS THAN 15 HOURS.
6. PRESTRESSING STRANDS SHALL BE SPACED VERTICALLY AT A MINIMUM OF 150mm IN THE VICINITY OF RECTANGULAR HOLES OR INSERTS FOR 20M DOWELS.
7. CLASS OF CONCRETE FOR PRECAST GIRDER 60 MPa.
8. MIN. CONCRETE STRENGTH AT TRANSFER ___ MPa.
9. REINFORCING STEEL SHALL BE GRADE 500W. STAINLESS STEEL SHALL BE TYPE 316 LN OR DUPLEX 2205 WITH A MINIMUM YIELD STRENGTH OF 500 MPa.
10. CLEAR COVER TO REINFORCING STEEL UNLESS SHOWN OTHERWISE:

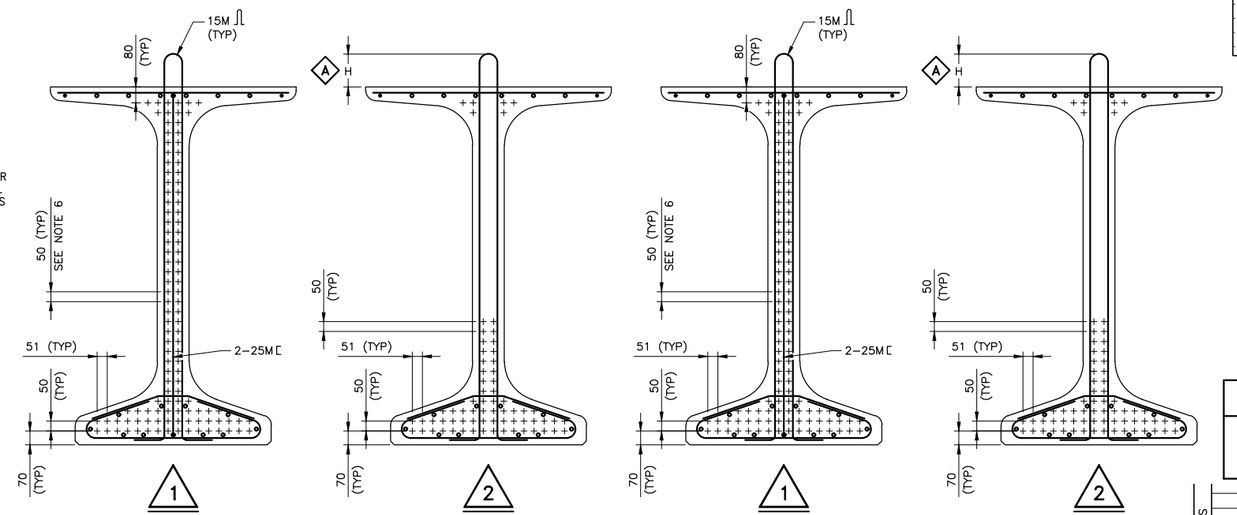
    -SOFFIT OF BEAM (EXCEPT UNDERCUT)
    48+15mm/-5mm
    -UNDERCUT OF BEAM AND ELSEWHERE
    30+15mm/-5mm

11. ALL TRANSVERSE REINFORCEMENT IN BOTTOM FLANGE, INCLUDING STIRRUPS. LOCATED WITHIN 2000mm FROM THE GIRDER ENDS AT EXPANSION JOINTS SHALL BE STAINLESS.
12. FOR BRIDGES ON GRADES EXCEEDING 3%, THE ENDS OF GIRDERS SHALL BE CAST SO THAT THEY ARE VERTICAL WHEN ERECTED.
13. DRAWING TO BE READ IN CONJUNCTION WITH SS107-24.
14. NO WELDING SHALL BE PERMITTED UNLESS APPROVED BY THE OWNER.

NOTES TO DESIGNER:

1. FOR INTEGRAL ABUTMENT TYPE BRIDGES, THIS STANDARD DRAWING WILL NEED TO BE MODIFIED AS REQUIRED.
2. ROTATION IN BEARING DATA TABLE CORRESPONDS TO TOTAL LOAD.
3. THE CONCRETE STRENGTH AT TRANSFER SHOULD NOT BE GREATER THAN 40 MPa IN ORDER TO ALLOW A DAILY PRODUCTION CYCLE.
4. WHEN PARTIAL DEPTH DECK PANELS ARE USED FOR DECK CONSTRUCTION, THE EFFECTIVE TOP FLANGE DESIGN WIDTH FOR GIRDER INTERFACE SHEAR DESIGN SHALL BE THE CLEAR HORIZONTAL DISTANCE BETWEEN THE EDGES OF BEARING STRIPS OF THE PARTIAL DEPTH DECK PANELS.
5. THE "NOTES TO DESIGNER" SHALL BE DELETED FROM THIS DRAWING PRIOR TO ISSUING.





NU 1800

REFER TO THE STRUCTURAL MANUAL FOR PROFESSIONAL ENGINEER STAMPING REQUIREMENTS.

STANDARD DRAWING JULY 25, 2023	SS107-20

PRESTRESSED NU GIRDERS AND BEARINGS NU 1800

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

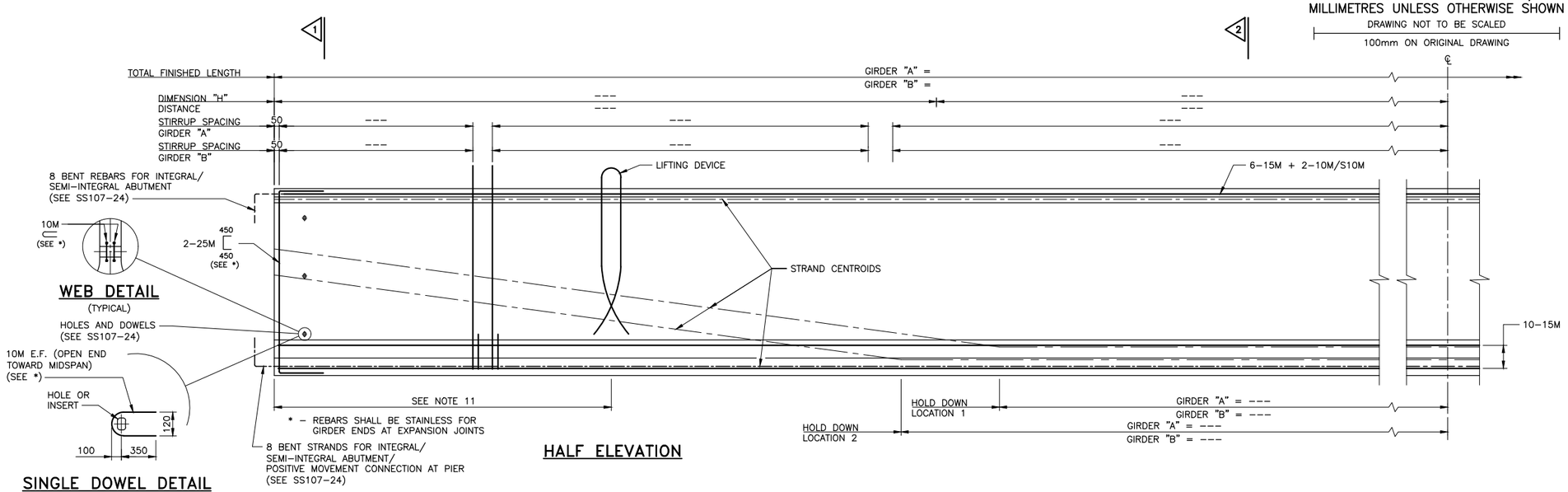
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

Ontario Ministry of Transportation

CONT
WP
DRAFT

SHEET

PRESTRESSED NU GIRDERS AND BEARINGS – NU 1900

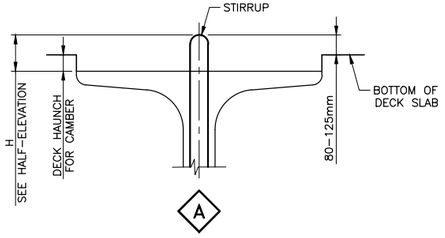


WEB DETAIL
(TYPICAL)

HALF ELEVATION

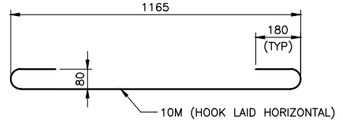
SINGLE DOWEL DETAIL
(TYPICAL)

DOUBLE DOWEL DETAIL
(TYPICAL)



BEARING DATA:

LOCATION		ABUTMENTS	PIERS
TYPE		---	---
SIZE (mm)		---x---x---	---x---x---
NUMBER REQUIRED		---	---
SERVICEABILITY LIMIT STATES	DEAD LOAD (kN)	---	---
	TOTAL LOAD (kN)	---	---
	MOVEMANT (mm)	±---	±---
	ROTATION (radian)	---	---
	SHEAR RATE AT 20°C (kN/mm)	---	---



PLAN

B TOP FLANGE TRANSVERSE REBAR DETAIL WITH PARTIAL DEPTH DECK PANELS

NOTES:

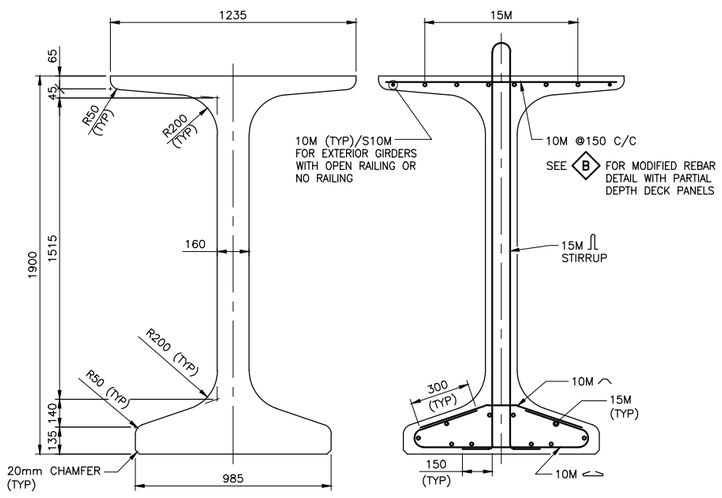
1. PRESTRESSING STEEL SHALL BE LOW-RELAXATION SEVEN WIRE STRANDS, SIZE DESIGNATION 15, GRADE 1860.
2. MINIMUM BREAKING STRENGTH OF STRAND 261kN.
3. PRESTRESSING FORCE PER STRAND IMMEDIATELY PRIOR TO TRANSFER 192.7 kN.
4. FORCE PER STRAND AFTER ALL LOSSES _____kN.
5. THE ELAPSED TIME INTERVAL BETWEEN JACKING OF STRANDS AND TRANSFER SHALL NOT BE LESS THAN 15 HOURS.
6. PRESTRESSING STRANDS SHALL BE SPACED VERTICALLY AT A MINIMUM OF 150mm IN THE VICINITY OF RECTANGULAR HOLES OR INSERTS FOR 20M DOWELS.
7. CLASS OF CONCRETE FOR PRECAST GIRDER 60 MPa.
8. MIN. CONCRETE STRENGTH AT TRANSFER ___ MPa.
9. REINFORCING STEEL SHALL BE GRADE 500W. STAINLESS STEEL SHALL BE TYPE 316 LN OR DUPLEX 2205 WITH A MINIMUM YIELD STRENGTH OF 500 MPa.
10. CLEAR COVER TO REINFORCING STEEL UNLESS SHOWN OTHERWISE:

    -SOFFIT OF BEAM (EXCEPT UNDERCUT)
    48+15mm/-5mm
    -UNDERCUT OF BEAM AND ELSEWHERE
    30+15mm/-5mm

11. ALL TRANSVERSE REINFORCEMENT IN BOTTOM FLANGE, INCLUDING STIRRUPS. LOCATED WITHIN 2000mm FROM THE GIRDER ENDS AT EXPANSION JOINTS SHALL BE STAINLESS.
12. FOR BRIDGES ON GRADES EXCEEDING 3%, THE ENDS OF GIRDERS SHALL BE CAST SO THAT THEY ARE VERTICAL WHEN ERECTED.
13. DRAWING TO BE READ IN CONJUNCTION WITH SS107-24.
14. NO WELDING SHALL BE PERMITTED UNLESS APPROVED BY THE OWNER.

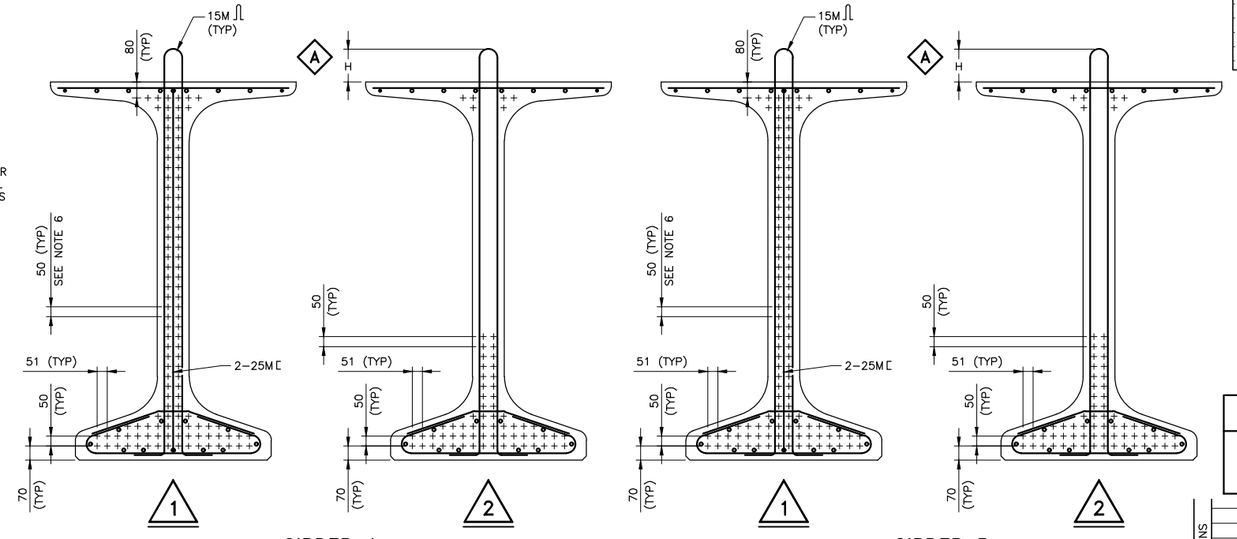
NOTES TO DESIGNER:

1. FOR INTEGRAL ABUTMENT TYPE BRIDGES, THIS STANDARD DRAWING WILL NEED TO BE MODIFIED AS REQUIRED.
2. ROTATION IN BEARING DATA TABLE CORRESPONDS TO TOTAL LOAD.
3. THE CONCRETE STRENGTH AT TRANSFER SHOULD NOT BE GREATER THAN 40 MPa IN ORDER TO ALLOW A DAILY PRODUCTION CYCLE.
4. WHEN PARTIAL DEPTH DECK PANELS ARE USED FOR DECK CONSTRUCTION, THE EFFECTIVE TOP FLANGE DESIGN WIDTH FOR GIRDER INTERFACE SHEAR DESIGN SHALL BE THE CLEAR HORIZONTAL DISTANCE BETWEEN THE EDGES OF BEARING STRIPS OF THE PARTIAL DEPTH DECK PANELS.
5. THE "NOTES TO DESIGNER" SHALL BE DELETED FROM THIS DRAWING PRIOR TO ISSUING.



TYPICAL SECTION

REINFORCING



NU 1900

REFER TO THE STRUCTURAL MANUAL FOR PROFESSIONAL ENGINEER STAMPING REQUIREMENTS.

STANDARD DRAWING JULY 25, 2023	SS107-21
PRESTRESSED NU GIRDERS AND BEARINGS NU 1900	

REVISIONS

DATE	BY	DESCRIPTION

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

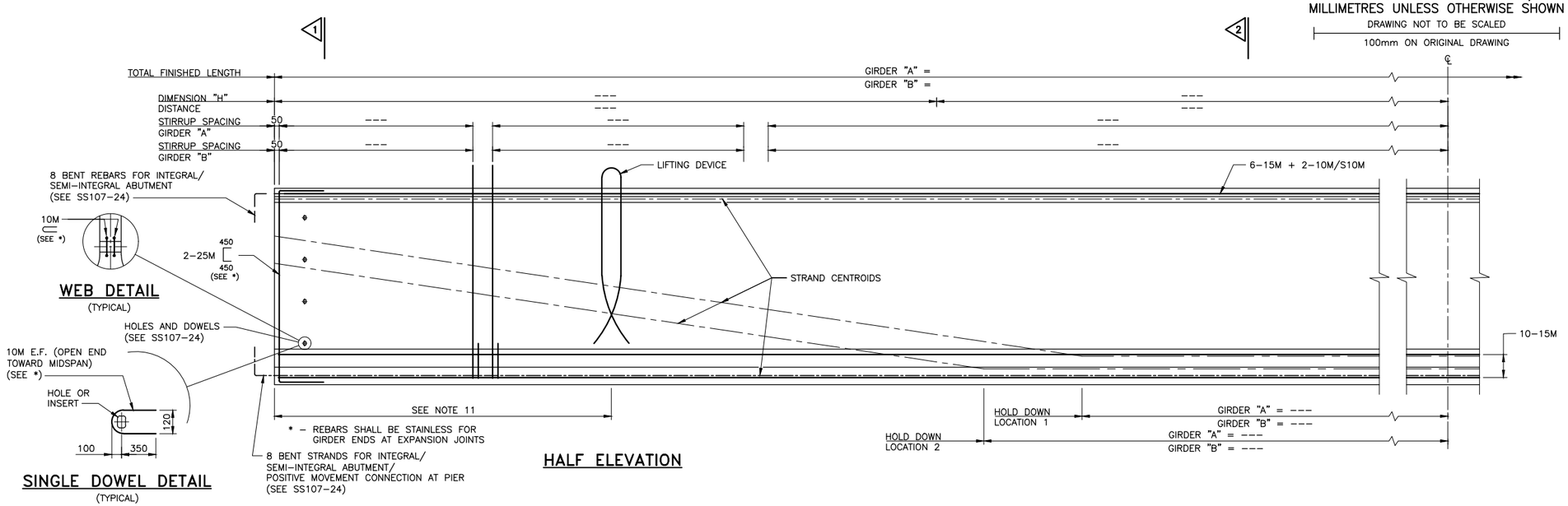
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

Ontario Ministry of Transportation

CONT
WP
DRAFT

SHEET

PRESTRESSED NU GIRDERS AND BEARINGS – NU 2000

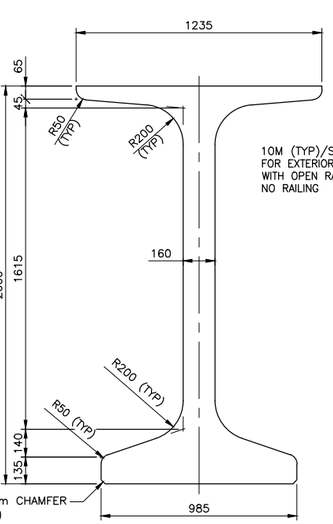


HALF ELEVATION

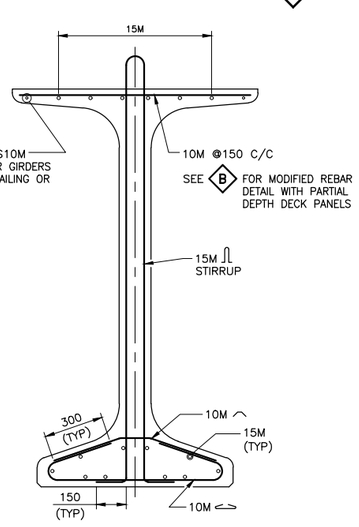
WEB DETAIL
(TYPICAL)

SINGLE DOWEL DETAIL
(TYPICAL)

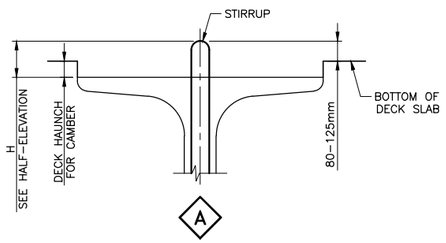
DOUBLE DOWEL DETAIL
(TYPICAL)



TYPICAL SECTION

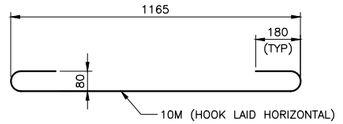


REINFORCING



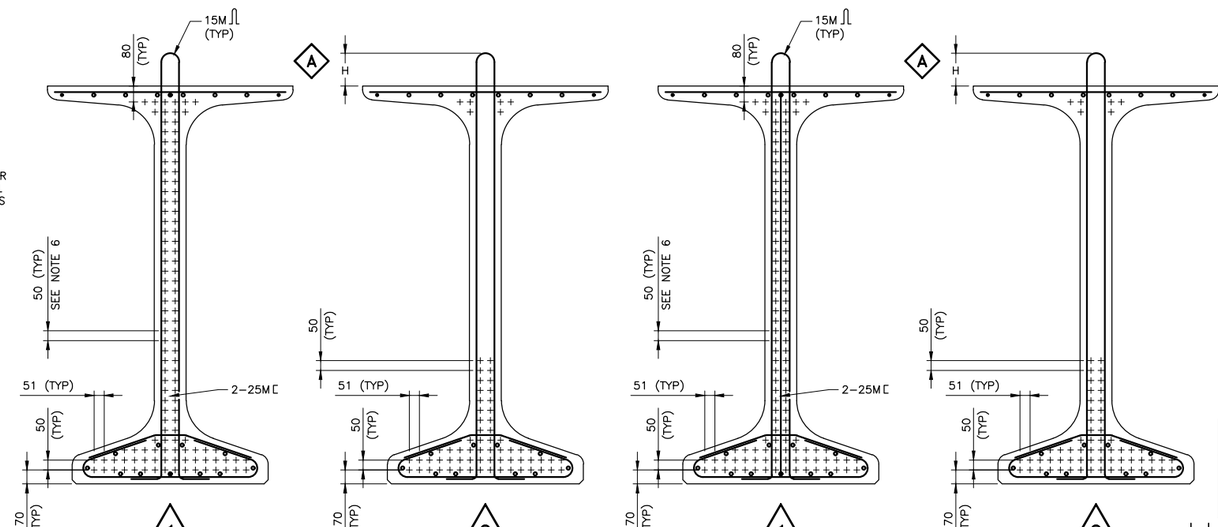
BEARING DATA:

LOCATION		ABUTMENTS	PIERS
TYPE		---	---
SIZE (mm)		---x---x---	---x---x---
NUMBER REQUIRED		---	---
SERVICEABILITY LIMIT STATES	DEAD LOAD (kN)	---	---
	TOTAL LOAD (kN)	---	---
	MOVEMANT (mm)	±---	±---
	ROTATION (radian)	---	---
	SHEAR RATE AT 20°C (kN/mm)	---	---



PLAN

B TOP FLANGE TRANSVERSE REBAR DETAIL WITH PARTIAL DEPTH DECK PANELS



GIRDER A
--- DEFLECTED STRANDS
--- STRAIGHT STRANDS

GIRDER B
--- DEFLECTED STRANDS
--- STRAIGHT STRANDS

NOTES:

1. PRESTRESSING STEEL SHALL BE LOW-RELAXATION SEVEN WIRE STRANDS, SIZE DESIGNATION 15, GRADE 1860.
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3. PRESTRESSING FORCE PER STRAND IMMEDIATELY PRIOR TO TRANSFER 192.7 kN.
4. FORCE PER STRAND AFTER ALL LOSSES _____kN.
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    48+15mm/-5mm
    -UNDERCUT OF BEAM AND ELSEWHERE
    30+15mm/-5mm

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NOTES TO DESIGNER:

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NU 2000

REFER TO THE STRUCTURAL MANUAL FOR PROFESSIONAL ENGINEER STAMPING REQUIREMENTS.

STANDARD DRAWING JULY 25, 2023	SS107-22
PRESTRESSED NU GIRDERS AND BEARINGS NU 2000	

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

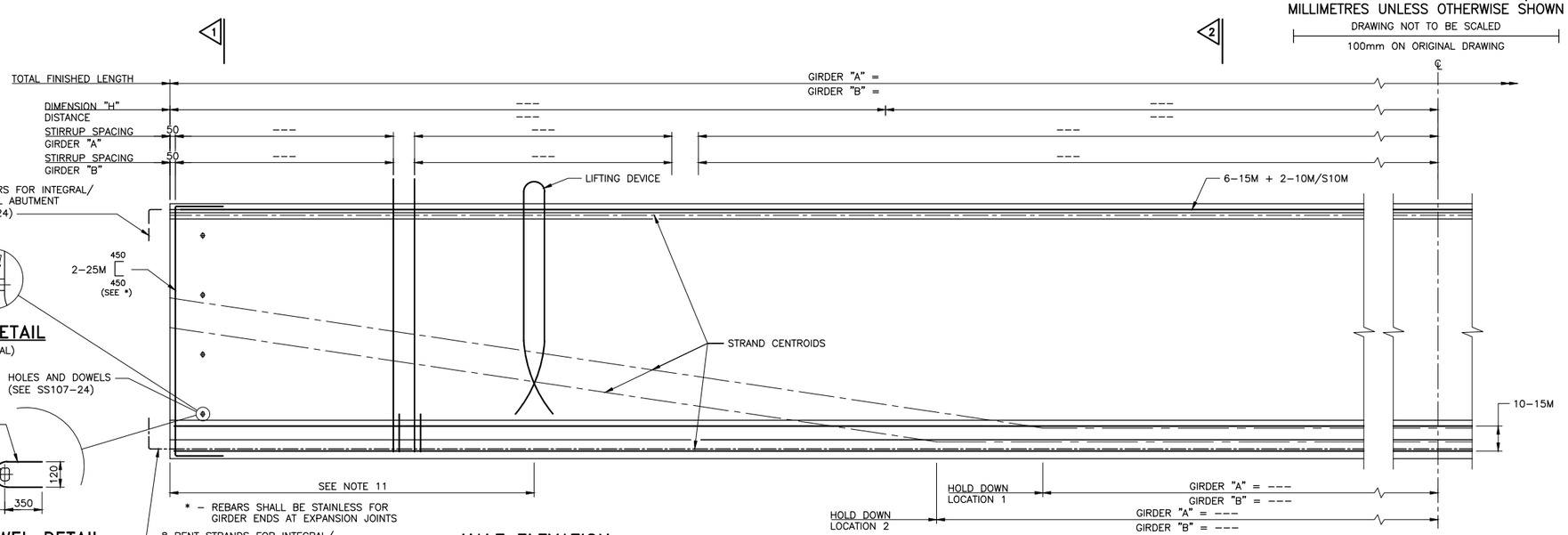
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

Ontario Ministry of Transportation

CONT WP **DRAFT**

SHEET

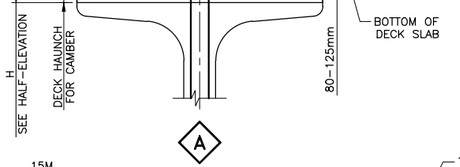
PRESTRESSED NU GIRDERS AND BEARINGS – NU 2400



WEB DETAIL
(TYPICAL)

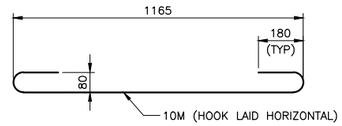
SINGLE DOWEL DETAIL
(TYPICAL)

HALF ELEVATION



BEARING DATA:

LOCATION		ABUTMENTS	PIERS
TYPE		---	---
SIZE (mm)		---x---x---	---x---x---
NUMBER REQUIRED		---	---
SERVICEABILITY LIMIT STATES	DEAD LOAD (kN)	---	---
	TOTAL LOAD (kN)	---	---
	MOVEMANT (mm)	±---	±---
	ROTATION (radian)	---	---
	SHEAR RATE AT 20°C (kN/mm)	---	---



PLAN

B TOP FLANGE TRANSVERSE REBAR DETAIL WITH PARTIAL DEPTH DECK PANELS

NOTES:

1. PRESTRESSING STEEL SHALL BE LOW-RELAXATION SEVEN WIRE STRANDS, SIZE DESIGNATION 15, GRADE 1860.
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    -UNDERCUT OF BEAM AND ELSEWHERE
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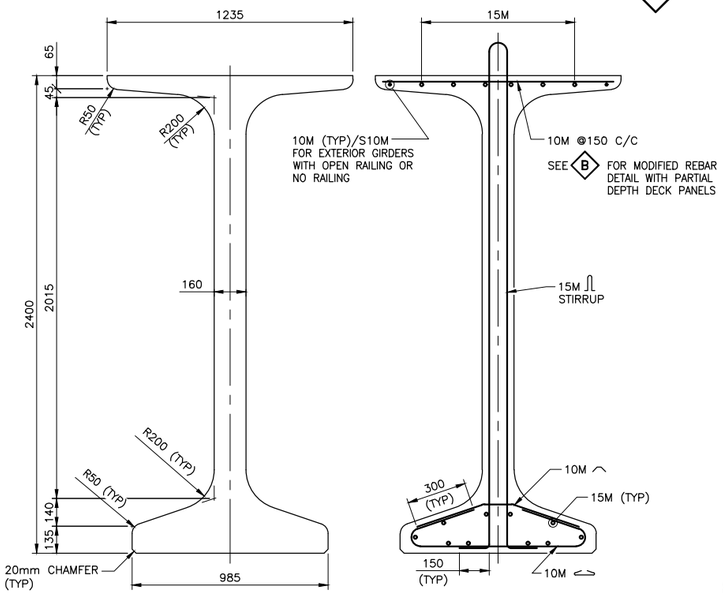
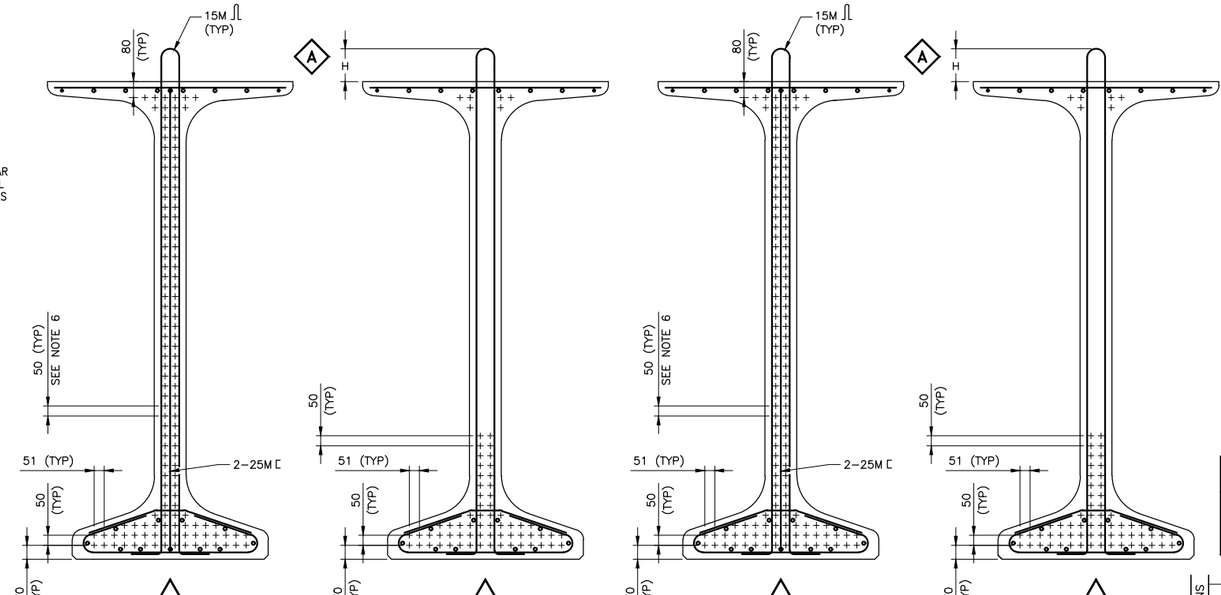
5. THE "NOTES TO DESIGNER" SHALL BE DELETED FROM THIS DRAWING PRIOR TO ISSUING.

DOUBLE DOWEL DETAIL
(TYPICAL)



TYPICAL SECTION

REINFORCING



GIRDER A
--- DEFLECTED STRANDS
--- STRAIGHT STRANDS

GIRDER B
--- DEFLECTED STRANDS
--- STRAIGHT STRANDS

NU 2400

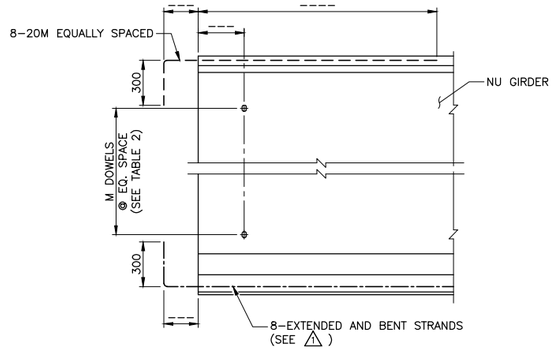
REFER TO THE STRUCTURAL MANUAL FOR PROFESSIONAL ENGINEER STAMPING REQUIREMENTS.

STANDARD DRAWING JULY 25, 2023	SS107-23

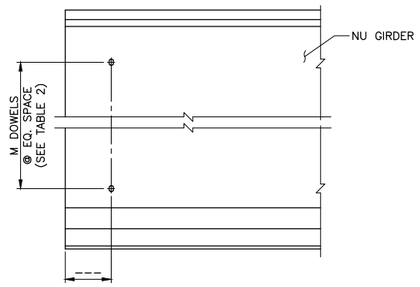
PRESTRESSED NU GIRDERS AND BEARINGS
NU 2400

REVISIONS		
DATE	BY	DESCRIPTION

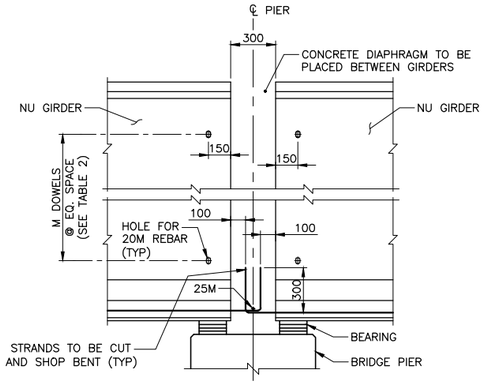
DESIGN	CHK	CODE CSA S6-19	LOAD CL 625-ONT	DATE
DRAWN	CHK	SITE		DWG



BEAM TO INTEGRAL/SEMI-INTEGRAL ABUTMENT



BEAM END AT ABUTMENT WITH EXPANSION JOINT



POSITIVE MOMENT CONNECTION AT PIER

(WITHOUT POST-TENSIONING)

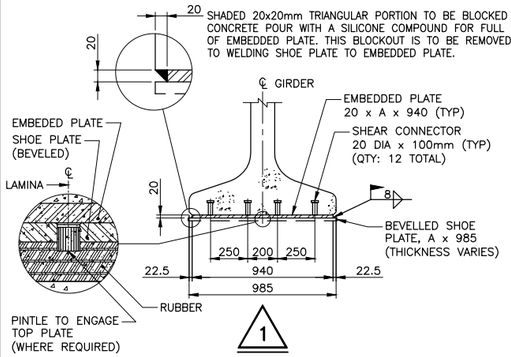
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

Ontario Ministry of Transportation

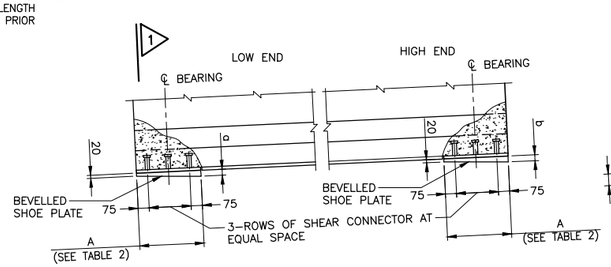
CONT WP **DRAFT**

SHEET

PRESTRESSED NU GIRDERS DETAILS

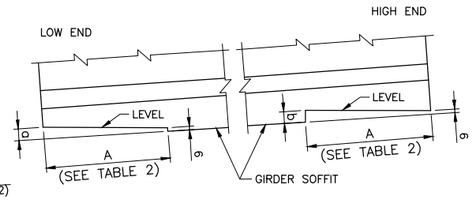


EMBEDDED BEARING PLATE DETAIL



BEVELLED SHOE PLATE

(SEE TABLE 2)



UNDERCUT

GIRDER SOFFIT DETAIL AT BEARINGS

TABLE 1
UNDERCUT AND BEVEL PLATE DIMENSIONS

LOW END		HIGH END	
TYPE	a	TYPE	b
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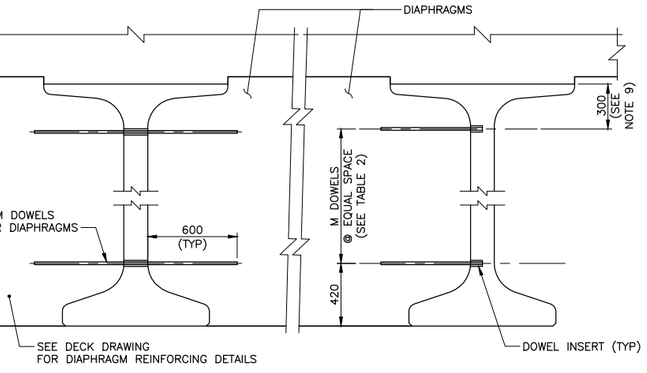
TYPE = 'SHOE', 'SHOE + PINTEL', 'UNDERCUT', 'N/A' WHERE UNDERCUT (b AND c TO BE 9, 12, 15 OR 18mm)

NOTES:

1. THIS DRAWING SHOWS TYPICAL DETAILS FOR PRESTRESSED NU GIRDERS AND IS TO BE READ IN CONJUNCTION WITH DRAWING SS107-___.
2. DOWEL INSERTS SHALL BE ZINC PLATED OR HOT-DIP GALVANIZED.
3. DOWEL INSERTS SHALL BE CAPABLE OF DEVELOPING A FORCE IN TENSION OF 20KN AT SERICEABILITY LIMIT STATE LOADING.
4. FOR THE DIAPHRAGM, THE PRECASTER WIL SUPPLY THE THREADED INSERTS AND THE MATCHING DIAPHRAGM DOWELS FOR THE EXTERIOR GIRDERS ONLY.
5. 20M DEFORMED BAR DOWELS FOR EXTERIOR GIRDERS SHALL BE THREADED AT ONE END TO MATCH INSERTS.
6. AT ENDS OF GIRDERS WHICH ARE NOT TO BE ENCASED IN CONCRETE, STRAND ENDS SHALL BE RECESSED AND GROUTED, AND GIRDER END FACE SHALL BE PAINTED WITH TWO COATS OF ASPHALTIC PAINT.
7. IF ANCHORED EMBEDDED STEEL BEARING PLATES ARE REQUIRED AT GIRDERS ENDS, THEY SHALL HAVE A THICKNESS OF 20mm. THEY SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION. ALL DAMAGED GALVANIZED SURFACES SHALL BE COATED WITH TWO COATS OF ZINC-RICH PAINT.
8. IF ANCHORED EMBEDED STEEL BEARING PLATES ARE REQUIRED THE REINFORCING MAY BE ADJUSTED SLIGHTLY TO ACCOMMODATE THE SHEAR CONNECTORS.
9. CDIMENSION MAY BE ADJUSTED TO ENSURE NO INTERFERENCE WITH DEFLECTED STRANDS.

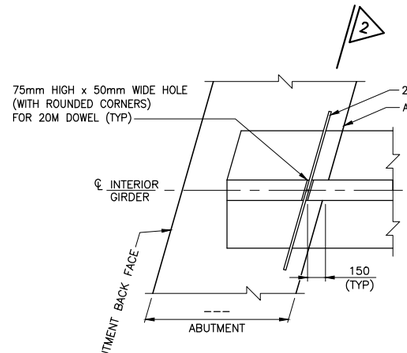


INTEGRAL GIRDER — EXTERIOR GIRDER

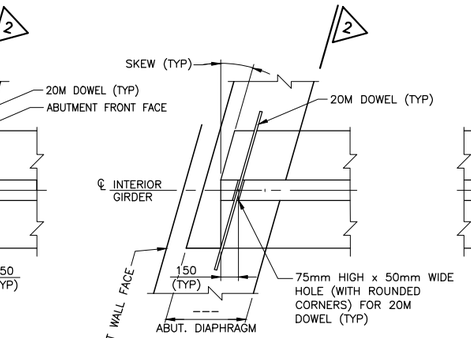
2

TABLE 2

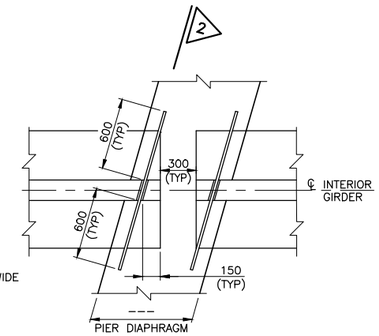
GIRDER DEPTH	NO. OF DOWELS (M)	LENGTH OF UNDERCUT/EMBEDDED PLATE/ BEVELLED PLATE AT GIRDER END (A)
900	2	500
1200	2	
1400	2	
1600	3	550
1800	3	
1900	3	600
2000	4	
2400	4	



AT INTEGRAL ABUTMENT



AT ABUTMENT WITH EXP. JOINT



AT PIER

PLAN

DOWEL DETAILS AT END OF GIRDER

NOTES TO DESIGNER:

1. FOR INTEGRAL ABUTMENT TYPE BRIDGES, THIS STANDARD DRAWING WILL NEED TO BE MODIFIED AS REQUIRED.
2. ANCHORED EMBEDDED STEEL BEARING PLATES WITH PINTLED THE TOP FLANGE BEVEL PLATES SHALL BE USED ONLY IF THE CALCULATED REQUIRED GIRDER SOFFIT UNDERCUT DIMENSION EXCEEDS 18mm.
3. THE BEVELLED SHOE PLATE USED WITH ELASTOMERIC BEARING MAY HAVE PINTLES. THE DESIGNER SHALL DETAIL THIS REQUIREMENT.
4. DOWEL SIZE IN DIAPHRAGM SHALL BE INCREASE AND DETAIL SHOULD BE ADJUSTED IF REQUIRED BY DESIGN.
5. MINIMUM 165mm EXTENSION OF STRANDS AND REBARS ARE REQUIRED FROM THE ENDS OF THE GIRDERS TO FACILITATE BENDING OPERATION.
6. THE 'NOTES TO DESIGNER' SHALL BE DELETED FROM THIS DRAWING PRIOR TO ISSUING.

REFER TO THE STRUCTURAL MANUAL FOR PROFESSIONAL ENGINEER STAMPING REQUIREMENTS.

STANDARD DRAWING AUGUST 1, 2023	SS107-24
PRESTRESSED NU GIRDERS - DETAILS	

REVISIONS

DATE	BY	DESCRIPTION

DESIGN	CHK	CODE CSA S6-14	LOAD	- DATE
DRAWN	CHK	SITE		DWG