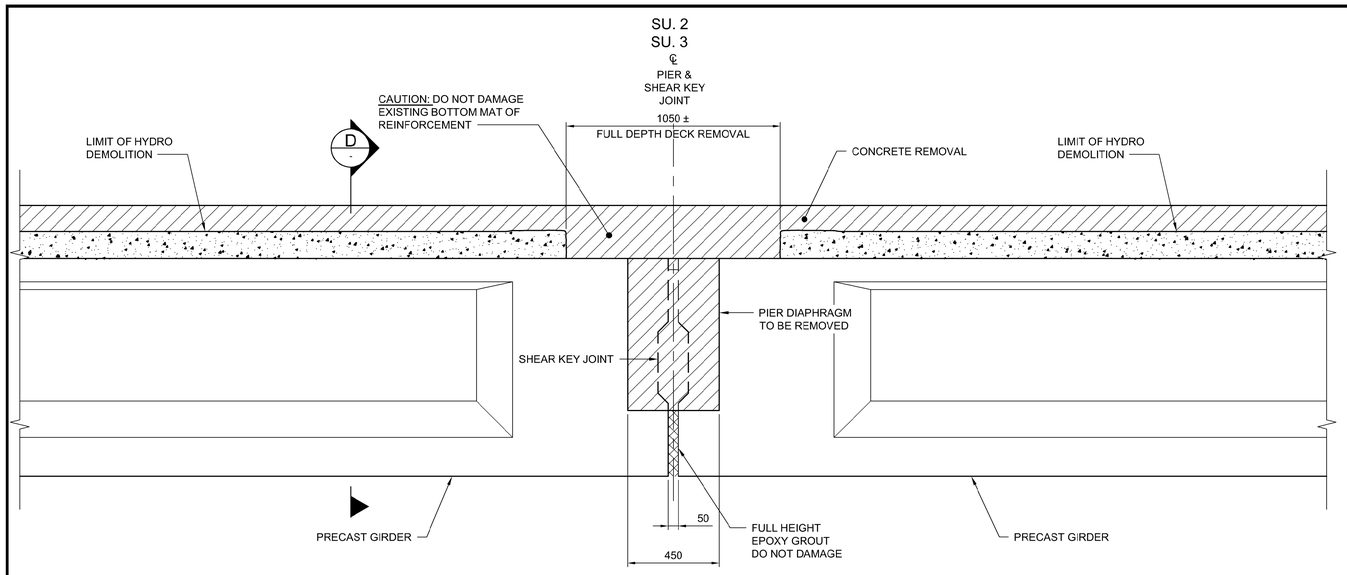
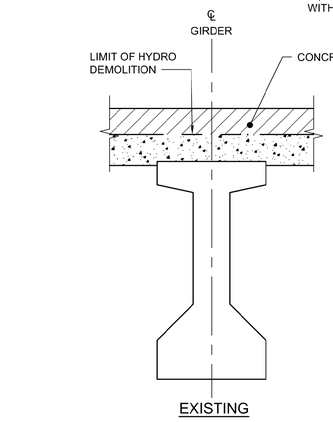


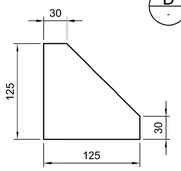
ELEVATION / SECTION

B 030 GIRDER END AT PIER LOCATIONS
1:15 (SHOWING EXISTING CONCRETE REMOVAL)

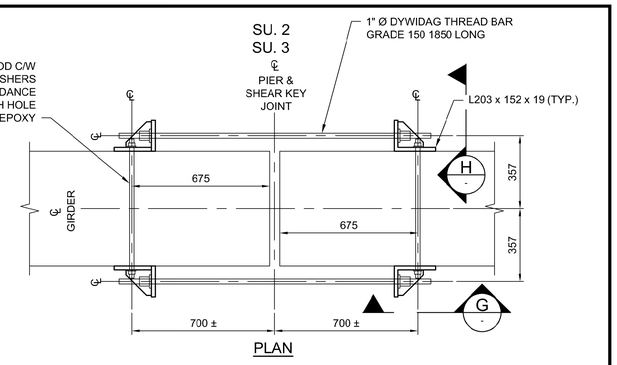


EXISTING

D SECTION
1:15

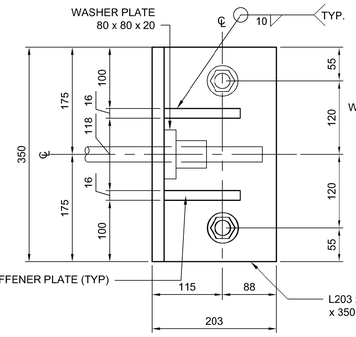


STIFFENER PLATE DETAIL
1:4

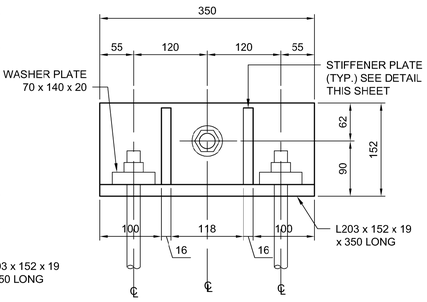


PLAN

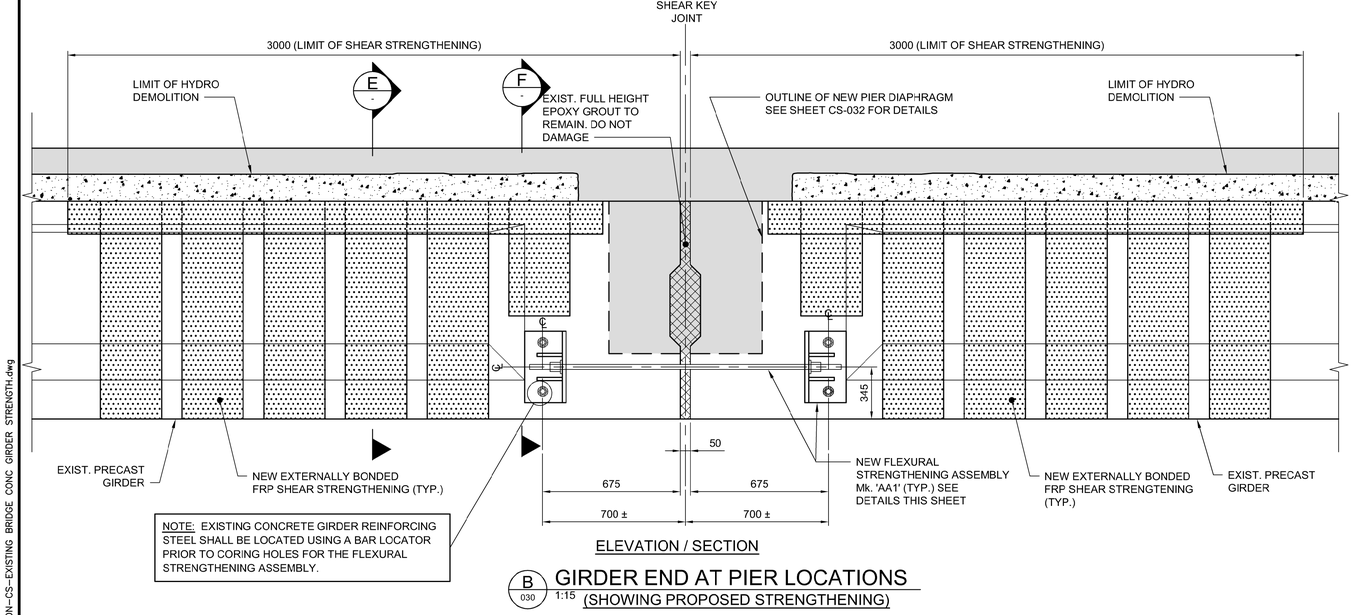
NEW FLEXURAL STRENGTHENING ASSEMBLY Mk. 'AA1'
1:15



G SECTION
1:5



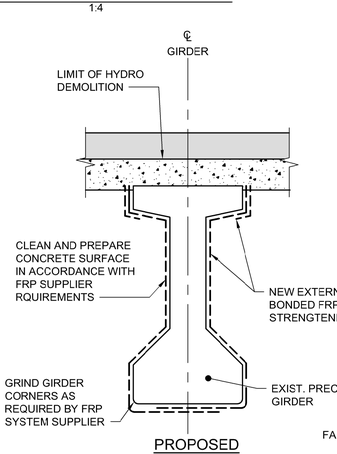
H SECTION
1:5



NOTE: EXISTING CONCRETE GIRDER REINFORCING STEEL SHALL BE LOCATED USING A BAR LOCATOR PRIOR TO CORING HOLES FOR THE FLEXURAL STRENGTHENING ASSEMBLY.

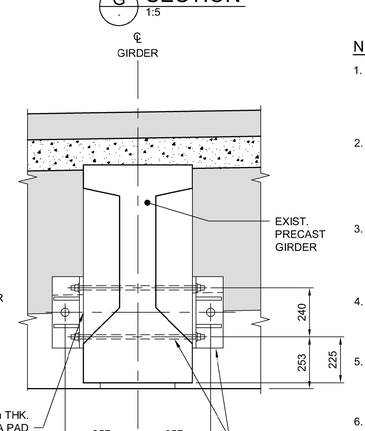
ELEVATION / SECTION

B 030 GIRDER END AT PIER LOCATIONS
1:15 (SHOWING PROPOSED STRENGTHENING)



PROPOSED

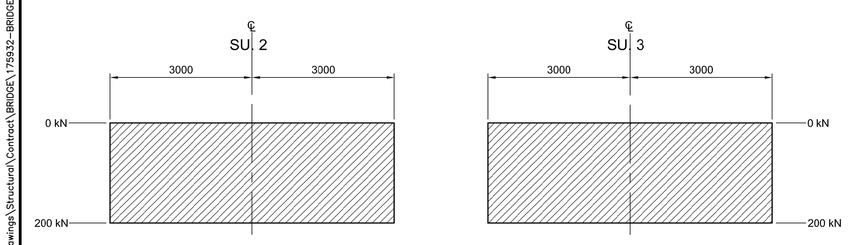
E SECTION
1:15



F SECTION
1:15

NOTES:

1. EXTERNALLY BONDED FRP SHEAR STRENGTHENING SYSTEM TO BE DESIGNED BY THE SYSTEM SUPPLIER IN ACCORDANCE WITH THE LATEST EDITION OF CAN/CSA-S6 CANADIAN HIGHWAY BRIDGE DESIGN CODE. SEE CONTRACT DOCUMENTS FOR SUBMITTAL REQUIREMENTS.
2. EXTERNALLY BONDED FRP SHEAR STRENGTHENING SYSTEM SHALL PROVIDE THE SPECIFIED SHEAR CAPACITY INCREASE WITHIN THE LIMITS SHOWN ON THE DRAWING. THE EXTENTS OF THE STRENGTHENING SYSTEM MAY NEED TO BE INCREASED TO FULLY DEVELOP THE REQUIRED CAPACITY INCREASE WITHIN THE LIMITS SHOWN.
3. THE DESIGN OF THE SYSTEM SHALL INCLUDE THE APPLICATION OF A UV-RESISTANT TOP COAT COMPATIBLE WITH THE PROPOSED STRENGTHENING SYSTEM TO MATCH AS CLOSELY AS POSSIBLE (IN TEXTURE/COLOR) THE CONCRETE FINISH OF THE REMAINDER OF THE GIRDER.
4. THE FRP SHEAR STRENGTHENING AND FLEXURAL STRENGTHENING ASSEMBLIES SHALL BE INSTALLED AFTER THE CONCRETE DECK AND DIAPHRAGM REPAIRS HAVE BEEN COMPLETED.
5. ENSURE THAT THE FRP SHEAR STRENGTHENING AND FLEXURAL STRENGTHENING ASSEMBLIES ARE ADEQUATELY PROTECTED AGAINST DAMAGE IF THEY ARE INSTALLED PRIOR TO OR DURING ABRASIVE BLASTING OF THE STEEL GIRDERS.
6. PRETENSION LOAD ON 1" Ø DYWIDAG THREAD BAR IN NEW FLEXURAL STRENGTHENING ASSEMBLY 'Mk. AA1' SHALL BE 5 KN.



STRENGTHENING REQUIREMENTS
REQUIRED INCREASE IN SHEAR CAPACITY

BILL OF MISCELLANEOUS METAL
FOR GIRDER STRENGTHENING

MARK	No.	DESCRIPTION	COMPONENT MASS	TOTAL MASS
'AA1'	12	FLEXURAL STRENGTHENING ASSEMBLY (AS DETAILED)	122.00	1464.00
		EACH ASSEMBLY TO BE FABRICATED FROM:		
		4-L203 x 152 x 19 x 350 LONG	70.20	
		4-25 Ø mm x 1850 LONG C/W 2 NUTS & 2 WASHERS	38.70	
		2-1" Ø x 800 LONG DYWIDAG THREAD BAR C/W 2 NUTS & 2 WASHERS	13.10	
NOTE: ALL GALVANIZED			TOTAL MASS (kg) = 1464.00	

APEGM
Certificate of Authorization
Dillon Consulting Limited (MB)
No. 1789 Date: 2018/02/09

NO.	REVISIONS	DATE	BY
0	ISSUED FOR TENDER	18/02/09	DRA

DILLON CONSULTING

DESIGNED BY	DRA / MS	CHECKED BY	SSR
DRAWN BY	NBG	APPROVED BY	MBL
HOR. SCALE	AS SHOWN	RELEASED FOR CONSTRUCTION	
VERTICAL	AS SHOWN		
DATE	2018/02/09	DATE	

ENGINEER'S SEAL
PROVINCE OF MANITOBA
D.R.C. AMORIM
Member 33215
REGISTERED PROFESSIONAL ENGINEER

CONSULTANT PROJECT NUMBER
17-5932

Winnipeg
THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT

FERMOR AVENUE BRIDGE OVER SEINE RIVER
BRIDGE REHABILITATION, PEDESTRIAN-CYCLIST UNDERPASS STRUCTURE AND ROADWORKS FROM ST. ANNE'S ROAD TO ARCHIBALD STREET

EXISTING CONRETE GIRDER
STRENGTHENING DETAILS

CITY DRAWING NUMBER
B-118-2017-CS-031

SHEET 031 OF 100

CONSULTANT DRAWING NUMBER
CS - 031

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