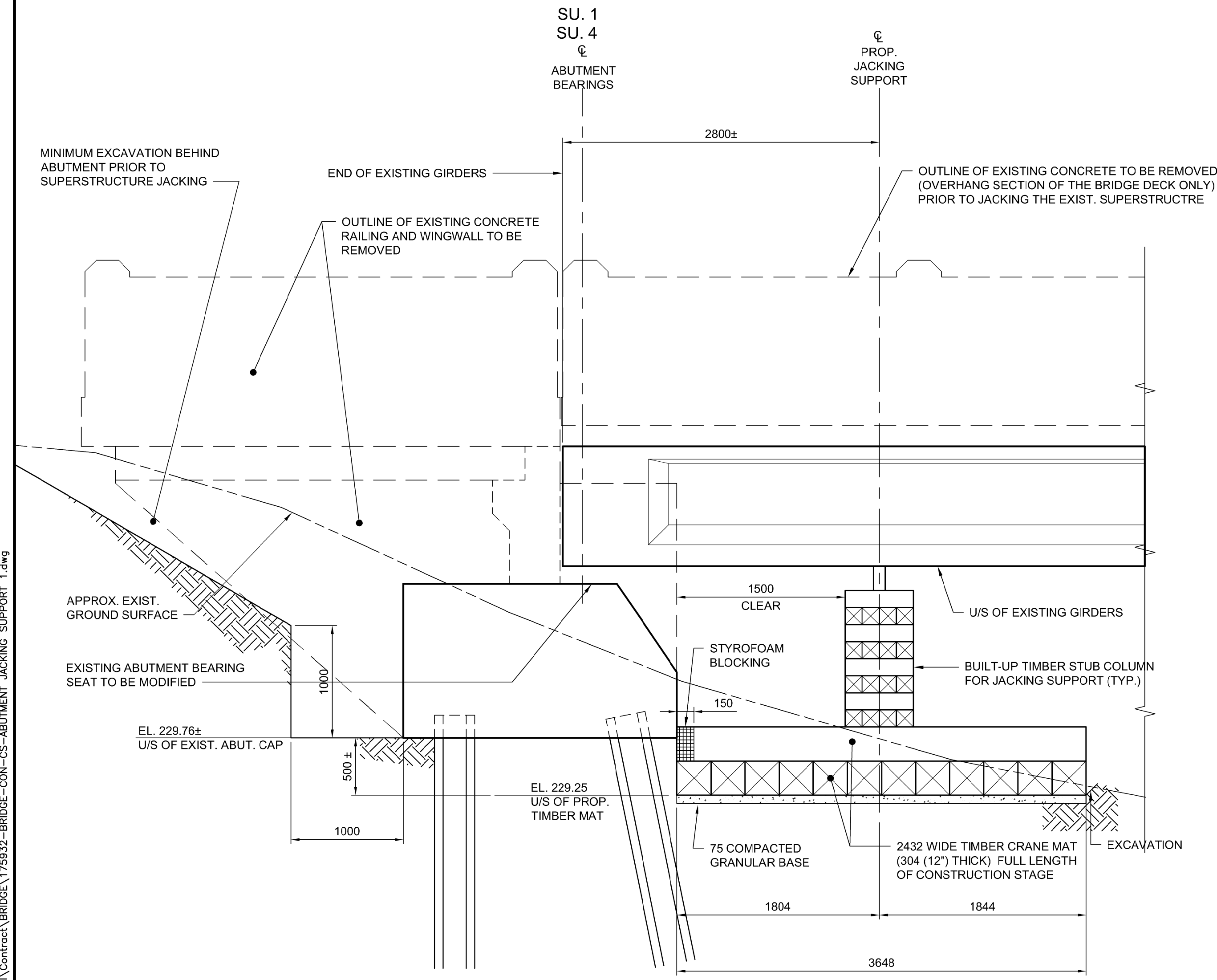


ABUTMENT FRONT ELEVATION

1:50
EAST ABUTMENT FRONT ELEVATION SHOWN
WEST ABUTMENT FRONT ELEVATION SIMILAR



ABUTMENT SIDE ELEVATION

1:30

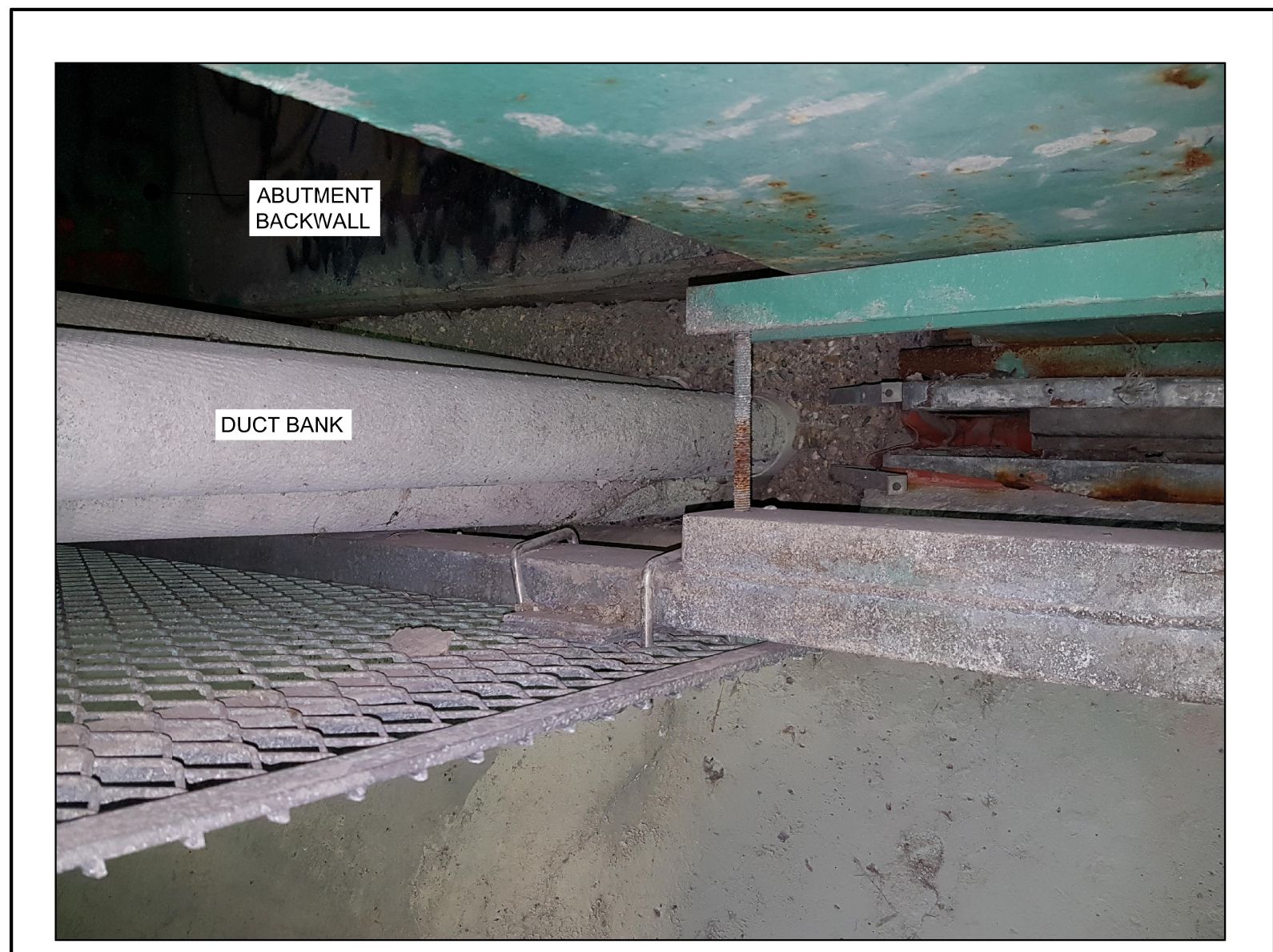
- NOTES:**
- GENERAL**
- THIS DRAWING PROVIDES AN ACCEPTABLE CONCEPT FOR THE JACKING AND SHORING SYSTEM REQUIRED TO RAISE THE BRIDGE SUPERSTRUCTURE AT EACH ABUTMENT. THE JACKING AND SHORING CONCEPT MAY BE MODIFIED TO SUIT THE CONTRACTOR'S DESIGN AND OPERATIONS.
 - THE USE OF FEWER THAN SEVEN (7) JACKING POINTS PER ABUTMENT DURING STAGE 1 WORKS AND SIX (6) JACKING POINTS PER ABUTMENT DURING STAGE 2 WORKS WILL REQUIRE THE USE OF A SPREADER BEAM OF SUFFICIENT STIFFNESS TO UNIFORMLY RAISE AND SUPPORT THE SUPERSTRUCTURE AS APPROVED BY THE CONTRACT ADMINISTRATOR.
 - THE CONTRACTOR WILL BE RESPONSIBLE FOR:
 - THE FINAL CHOICE AND DESIGN OF THE JACKING AND SHORING SYSTEM ACCEPTABLE TO THE CONTRACT ADMINISTRATOR.
 - PREPARATION OF DETAILED DESIGN NOTES AND SHOP DRAWINGS FOR THE JACKING AND SHORING SYSTEM THAT ARE SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF MANITOBA.
 - SUBMITTING JACKING AND SHORING DESIGN CALCULATIONS AND SHOP DRAWINGS TO THE CONTRACT ADMINISTRATOR FOR REVIEW A MINIMUM OF TWO (2) WEEKS PRIOR TO COMMENCING JACKING WORKS. THE SHORING DESIGN CALCULATIONS SHALL CONFIRM THE STRUCTURAL ADEQUACY OF THE CONTRACTOR'S PROPOSED SHORING SYSTEM AS WELL AS PROVIDE THE RESULTANT BEARING PRESSURES UNDER THE CONCRETE AND STEEL GIRDERS.
 - THE JACKING AND SHORING SYSTEM SHALL INCLUDE THE PROVISION OF LATERAL RESTRAINT BETWEEN THE JACKS AND UNDERSIDE OF THE GIRDERS (LIFTING POINTS).
 - MONITORING OF JACKING SYSTEM TO ENSURE THE REQUIRED LIFT IS MAINTAINED DURING THE ABUTMENT WORKS. ANY REDUCTION IN OVERALL LIFT, DUE TO SETTLEMENT OR OTHER REASONS, SHALL BE IMMEDIATELY CORRECTED BY REJACKING
 - CAUTION:** A BELLMTS DUCT BANK IS SUSPENDED BETWEEN G4 AND G5 AND EXTENDS THROUGHOUT THE ABUTMENT BACKWALLS. THE CONTRACTOR SHALL PROTECT THE BELLMTS DUCT BANK THROUGHOUT THE DURATION OF THE WORKS TO THE SATISFACTION AND APPROVAL OF BELLMTS.

- SEQUENCE OF WORK:**
- BRIDGE DECK OVERHANGS AND ABUTMENT BACKWALLS SHALL BE REMOVED PRIOR TO COMMENCING JACKING WORKS (REMOVAL LIMITS SHOWN ON SHEET CS-015 & CS-016).
 - STRUCTURAL EXCAVATION BEHIND ABUTMENTS SHALL BE COMPLETED PRIOR TO COMMENCING JACKING WORKS (EXCAVATION LIMITS SHOWN ON SHEET CS-015).
 - COMMENCEMENT OF ANY BRIDGE DECK REPAIR WORKS (INCLUDING ROTOMILLING/HYDRO-DEMOLITION) IS NOT PERMITTED UNTIL COMPLETION OF THE JACKING WORKS (I.E. THE BRIDGE SUPERSTRUCTURE SHALL BE LOWERED BACK INTO ITS FINAL POSITION PRIOR TO BEGINNING DECK REPAIR WORKS).
 - SEQUENCE
 - EXCAVATE AND PREPARE HEAD SLOPE
 - PREPARE TIMBER JACKING SUPPORTS
 - JACK-UP EXISTING SUPERSTRUCTURE AT ABUTMENTS
 - COMPLETE ABUTMENT REPAIRS AND INSTALL NEW ABUTMENT BEARINGS
 - LOWER BRIDGE ONTO NEW ABUTMENT BEARINGS

- JACKING AND SHORING REQUIREMENTS:**
- THE CONTRACTOR'S JACKING SYSTEM SHALL BE CAPABLE OF LIFTING THE SUPERSTRUCTURE UNIFORMLY AT EACH JACKING POINT. THE DIFFERENTIAL IN LIFT BETWEEN JACKS SHALL NOT EXCEED 2 mm.
 - THE SUPERSTRUCTURE LIFT SHALL NOT EXCEED 25 mm FROM ITS EXISTING CONDITION. THE LIFTS SHALL BE MINIMIZED TO THAT REQUIRED TO PRACTICABLY COMPLETE THE WORK.
 - THE MINIMUM UNFACTORED JACKING FORCES FOR THE JACKING CONCEPT SHOWN ARE ESTIMATED AS FOLLOWS:

MINIMUM UNFACTORED JACKING FORCE (kN) AT EACH GIRDER							
STAGE 1	G1	G2	G3	G4	G5	G6	G7
	175	215	245	135	170	170	150
STAGE 2	G8	G9	G10	G11	G12	G13	
	170	170	135	245	215	175	

- THE JACKING CAPACITY AT EACH JACKING LOCATION SHALL BE AT LEAST 150% OF THE ESTIMATED JACKING FORCES PROVIDED. ALL JACKING EQUIPMENT SHALL BE TESTED AND FOUND TO BE IN GOOD WORKING CONDITION AND WITHOUT ANY LEAKING OR LOSS OF PRESSURE PRIOR TO USE ON THIS PROJECT.
- THE SHORING SYSTEM SHALL BE DESIGNED TO BE SUFFICIENTLY RIGID TO DISTRIBUTE THE JACKING LOADS EVENLY TO THE SOIL. TO MAINTAIN STABILITY OF THE HEADSLOPES, THE BEARING PRESSURE SHALL NOT EXCEED 75 kPa UNDER THE CONCRETE GIRDERS AND 55 kPa UNDER THE STEEL GIRDERS. (UNFACTORED)
- THE SHORING SHALL BE SOLIDLY BLOCKED TO THE SUPERSTRUCTURE AT ALL TIMES EXCEPT DURING JACKING OPERATIONS.
- THE SYSTEM SHALL ACCOMMODATE THE REPLACEMENT OF THE BEARINGS AND ASSOCIATED REPAIR WORK TO AND IN THE VICINITY OF THE ABUTMENTS.



BELL MTS DUCT BANK CAST THROUGH EXISTING ABUTMENT BACKWALL

- NOTES:**
- THE CONTRACTOR SHALL PREPARE A PROTECTION PLAN FOR THE BELL MTS DUCT BANK PRIOR TO COMMENCING ANY REMOVAL WORKS. THE PLAN SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR FOR REVIEW AND APPROVAL. DUCT BANK SHALL BE PROTECTED TO THE SATISFACTION OF BELL MTS.

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

DESIGNED BY	DRA	CHECKED BY	SSR
DRAWN BY	NBG	APPROVED BY	MBL
HOR. SCALE	AS SHOWN	RELEASED FOR CONSTRUCTION	
VERTICAL	AS SHOWN		
ISSUED FOR TENDER	18/02/09	DRA	
NO. REVISIONS	DATE	BY	DATE
			2018/02/09

ENGINEER'S SEAL
PROVINCE OF MANITOBA
D.R.C. AMORIM
Member 33215
REGISTERED PROFESSIONAL ENGINEER
CONSULTANT PROJECT NUMBER
17-5932

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT
Winnipeg

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

CITY DRAWING NUMBER
B-118-2017-CS-014
SHEET 014 OF 100
CONSULTANT DRAWING NUMBER
CS-014

SUPERSTRUCTURE JACKING SUPPORT FOR ABUTMENT WORKS