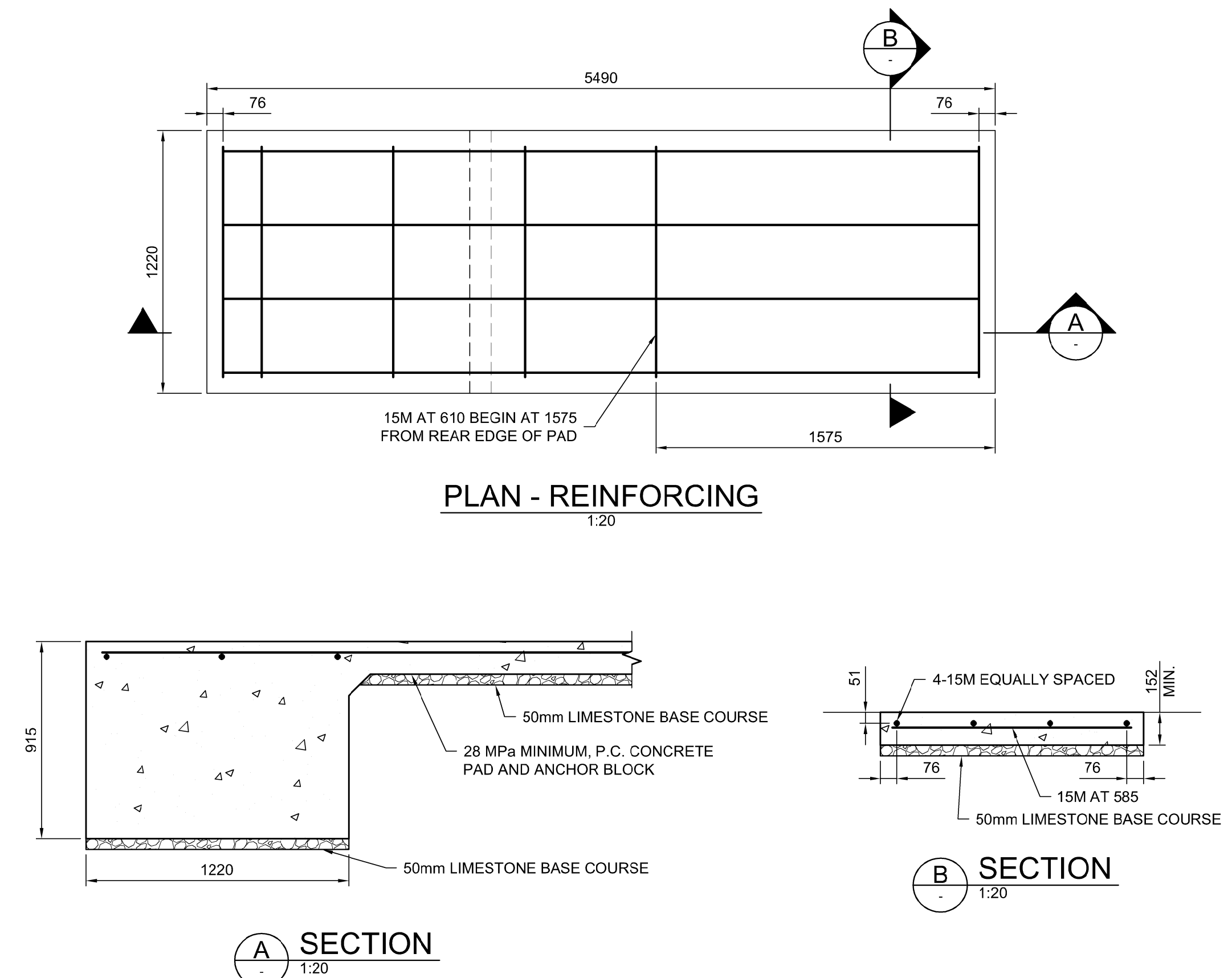


**SITE PLAN - CRASH CUSHION LAYOUT**  
1:40

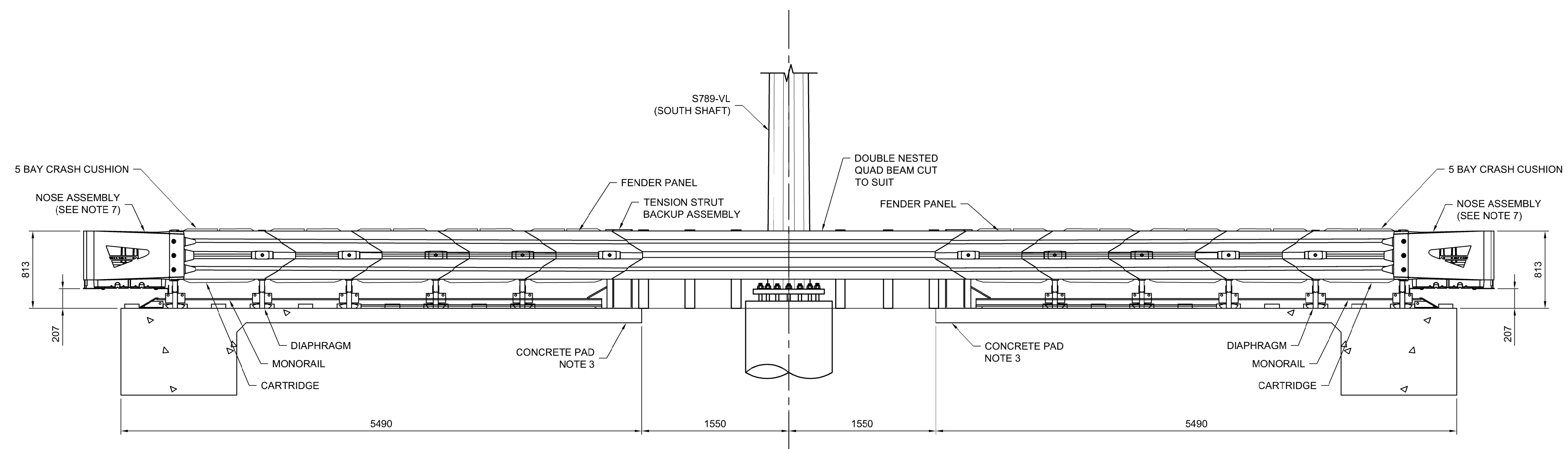


**CONCRETE PAD DETAILS**  
1:40

ALL CRASH CUSHION REINFORCING TO BE STAINLESS STEEL AS PER NOTES ON SHEET CS-001.

**CRASH CUSHION WITH TENSION STRUT BACKUP NOTES:**

1. PROVISION SHALL BE MADE FOR REAR FENDER PANELS TO SLIDE REARWARD UPON IMPACT 762 MIN.
2. WHERE NECESSARY, THE CONTRACTOR SHALL SUPPLY AN ADEQUATE TRANSITION FROM THE QUADGUARD II SYSTEM TO THE OBJECT BEING SHIELDED.
3. ALL UNITS ARE MILLIMETERS UNLESS OTHERWISE NOTED.
4. BACKUP, EXTENSION PANEL, AND NOSE ASSEMBLIES ARE NOT INCLUDED IN MODEL NUMBER, ORDER SEPARATELY.
5. CURB SHALL BE SD-202A LIP CURB (75 HEIGHT) ALONG ENTIRE LENGTH OF QUADGUARD II SYSTEM AND 15.0m IN ADVANCE OF LEADING EDGE IN BOTH WESTBOUND AND EASTBOUND DIRECTIONS.
6. THE QUADGUARD II SYSTEM HAS BEEN TESTED TO NCHRP 350.
7. CRASH CUSHION SHALL BE SUPPLIED TO ACCOMMODATE A DESIGN SPEED OF 80 km/h. THE SYSTEM SHALL MEET THE REQUIREMENTS OF NCHRP REPORT 350 TEST LEVEL 3.



**CRASH CUSHION ELEVATION**  
1:30

NOTE: DETAILS AND NOTES SHOW QUADGUARD II SYSTEM WITH TENSION STRUT BACKUP. EQUIVALENT CRASH CUSHION SYSTEM CAN BE USED PENDING APPROVAL FROM THE CONTRACT ADMINISTRATOR.

ENGINEER'S SEAL FOR SELECTION OF CRASH CUSHION STYLE ONLY. CONCRETE PAD AND REINFORCING DESIGN, AND CRASH CUSHION DESIGN AND INSTALLATION SHALL BE AS PER MANUFACTURER'S DETAILS.

**METRIC**  
WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES

**WARNING**  
IF POWER EQUIPMENT OR EXPLOSIVES ARE TO BE USED FOR EXCAVATION ON THIS PROJECT THE CONTRACTOR MUST:  
1. NOTIFY THE GAS COMPANY OF THE PROPOSED LOCATION OF EXCAVATION.  
2. TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY INSTALLATIONS SEE PROVINCIAL REGULATION 210/72 FOR DETAILS.  
3. OBTAIN EXCAVATION PERMITS PRIOR TO CONSTRUCTION.

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DESIGNED BY	DRA	CHECKED BY	SSR
DRAWN BY	MDG	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  
P-3489-2017-CS-097  
SHEET 097 OF 100  
CONSULTANT DRAWING NUMBER  
CS-097  
S789 - CRASH CUSHION WITH TENSION STRUT BACKUP