

# **TENDER DRAWINGS**

# GENERAL NOTES

## A. GENERAL:-

1. THE CONTRACTOR MUST STUDY THE DRAWINGS AND THE BOQ CAREFULLY BEFORE THE START OF THE WORK. ALSO CORRELATE IT TO ANY ADDITIONAL SITE REQUIREMENTS.
2. REPORT TO THE DESIGNER IN CASE THERE IS ANY ANOMALY OBSERVED IN THE DRAWINGS OR IN BOQ ITEMS THAT MAY RESULT INTO ANY VOS. AT THE LATER STAGES. DIFFERENT OPTIONS MUST BE CONSIDERED TO AVOID VOS.
3. ONLY WRITTEN INSTRUCTION WILL BE FOLLOWED.
4. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.
5. THE SPECIFICATIONS GIVEN IN THE DRAWINGS SHALL OVER RULE THE GENERAL NOTES.
6. ALL EXPOSED CONCRETE CORNER, EDGES AND ANGLES SHALL BE CHAMFERED OR FILLETED 20x20mm UNLESS OTHERWISE SPECIFIED.
7. ALL CONCRETE SURFACE IN CONTACT WITH SOIL SHALL BE COATED WITH TWO COAT OF BITUMEN IN ACCORDANCE WITH SPECIFICATIONS AND ALLOWED TO DRY BEFORE COMPACTION OF SOIL.

## B. MATERIAL AND WORKMANSHIP:-

- ALL MATERIAL SHALL CONFORM TO THE AASHTO / ASTM / INHA SPECIFICATIONS AND STANDARDS.
- ### a. STEEL REINFORCEMENT:-
1. ALL REINFORCING STEEL SHALL BE ROLLED FROM PRIME GRADE PAKISTAN STEEL BILLET'S REINFORCEMENT ROLLED FROM SCRAPED STEEL, SHIP PLATE OR RE-ROLLED BILLET'S SHALL NOT BE USED.
  2. ALL REINFORCING BARS SHALL BE HIGH YIELD DEFORMED BARS WITH MINIMUM YIELD STRENGTH OF 410 N/mm<sup>2</sup> (APPROX. 60,000 psi) CONFORMING ASTM 615 HOT ROLLED.
  3. THE CONTRACTOR SHALL PREPARE ALL BAR BINDING SCHEDULE etc. AND SUBMIT THEM FOR APPROVAL OF THE ENGINEER'S REPRESENTATIVE BEFORE EXECUTION.
  4. ALL REINFORCING STEEL SHALL BE ACCURATELY LOCATED IN FORM WORK, FIRMLY IN PLACE BY MEANS OF 16 GAUGE BLACK ANNEALED WIRE AND ADEQUATELY DESIGN SPACERS BEFORE PLACING OF CONCRETE.

## b. CONCRETE:-

1. THE STRENGTH OF CONCRETE SHALL BE MEASURED ON 150x300mm CYLINDERS. THE CYLINDERS SHALL BE PREPARED UNDER THE SUPERVISION OF THE ENGINEER AND SHALL BE TESTED AT A LABORATORY APPROVED BY HIM.
2. THE GRADING OF COARSE AND FINE AGGREGATES SHOULD BE FREQUENTLY CHECKED.
3. ALL EXPOSED CONCRETE SURFACES ABOVE GROUND SHALL HAVE "FAIRFACE" FINISH.

4. TWELVE (12) CONCRETE TEST CYLINDERS WILL BE CASTED, SIX OF THESE WILL BE CURED AND TESTED UNDER LABORATORY CONDITIONS AND OTHER SIX WILL BE CURED UNDER CONDITION PREVAILING ON THE STRUCTURE AND THE DIFFERENCE IN RESULTS WILL BE RECORDED.

## C. CONCRETE COVER & STRENGTH:-

MINIMUM CONCRETE COVER SHALL BE AS FOLLOWS UNLESS OTHERWISE SPECIFIED  
 SPECIFIED CONCRETE STRENGTH WILL BE CONFORMING TO INHA SPECIFICATIONS  
 THE DESIGN MIX MUST HAVE AN AVERAGE LABORATORY COMPRESSIVE STRENGTH EQUAL TO OR GREATER THAN THE "DESIGN 28 DAYS COMPRESSIVE STRENGTH" PLUS 90 Kg/cm<sup>2</sup> (1300 psi) FOR ALL TYPES OF MIX DESIGNS.

STRUCTURAL ELEMENT	CATEGORY	CLEAR CONCRETE COVER (mm)	28 DAYS DESIGN CYLINDER STRENGTH (Kg/Cm <sup>2</sup> )	28 DAYS TRIAL MIX LABORATORY COVER STRENGTH (Kg/Cm <sup>2</sup> )
FOOTING, WALL	EARTH FACE OTHER FACE	75 40	210 (A1)	300

## D. STRUCTURAL STEEL:-

1. ASTM A 36 STRUCTURAL WILL BE USED FOR ALL THE SECTIONS.
2. ROLLED STEEL SECTIONS WILL BE USED FOR CONSTRUCTION.
3. ANY ROLLED SECTION WHICH IS NOT AVAILABLE IN THE MARKET SHALL BE CHANGED WITH THE CONSULTATION OF DESIGNER

## F. CONSTRUCTION DRAWINGS:-

- A. IN ORDER TO FINALIZE CONSTRUCTION DRAWINGS THE CONTRACTOR WILL SUBMIT A SITE PLAN SHOWING FOLLOWING WIDTHS
  - (i) NBC & SBC CARRIAGE WAYS
  - (ii) CENTRAL MEDIAN
  - (iii) MEDIAN/OUTER SHOULDERS
  - (iv) SERVICE ROADS IF ANY
  - (v) ROW AVAILABLE
  - (vi) LOCATION OF ELECTRIC POLES IF ANY
  - (vii) TYPE OF SOIL HARD, FIRM, SOFT
  - (viii) NO CONSTRUCTION WORK WILL START TILL FINALIZATION OF CONSTRUCTION DRAWINGS AND WORKING DRAWINGS

## G. SPECIFIC NOTES:-

### 1. NOTES:-

- a. THESE DRAWINGS ARE GENERAL DRAWINGS MOSTLY SUITABLE FOR TENDERING/COSTING PURPOSES. THE CONTRACTOR WILL SUBMIT WORKING DRAWINGS GIVING DETAILS OF ALL STEEL SECTIONS TO BE USED INCLUDING THEIR WEIGHT PER METER LENGTH AND CONFIGURATION/TYPE OF ALL JOINTS.
- b. EVERY BRIDGE SITE NEEDS TO BE STUDIED AND IN CASE OF ANY DEFICIENCY THE SAME MAY BE REFERRED TO RAMD OFFICE.
- c. THE CLEAR LENGTH OF EITHER SPAN MUST NOT EXCEED 22m.
- d. THE FOUNDATIONS ARE BASED ON 1 TON/ SQ FT. IN CASE OF ANY VARIATION THE SIZE OF FOUNDATION SHOULD BE CHANGED ACCORDINGLY.

- e. ANY ANOMALY OBSERVED IN THE DRAWINGS/ BOQ WILL BE DISCUSSED WITH THE DESIGNER BEFORE THE START OF THE WORK.

- f. THE SHIFTING OF ELECTRIC POLES/ LINES SHOULD BE COMPLETED BEFORE THE START OF WORK.

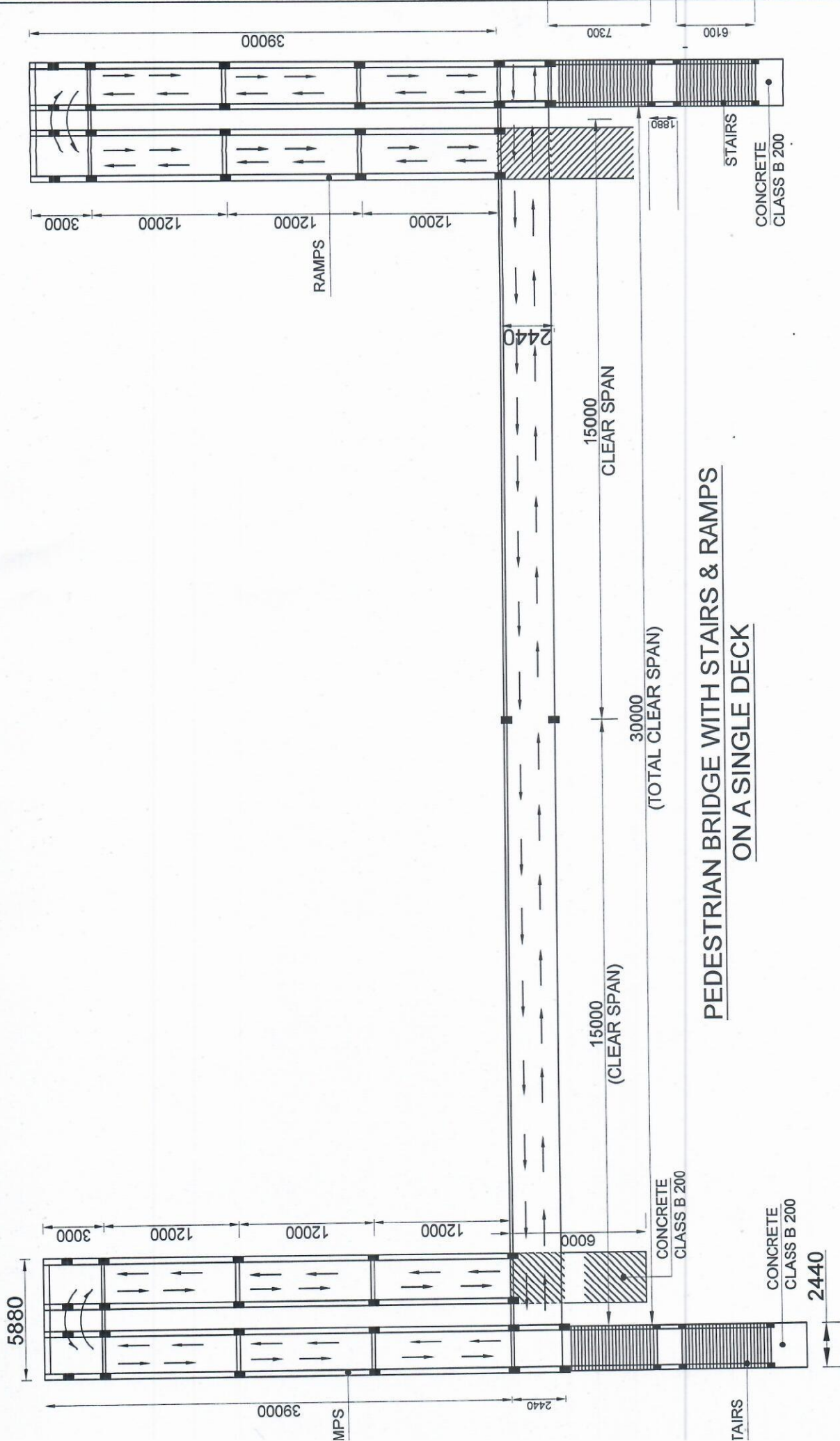
- g. TRAFFIC MANAGEMENT IS THE RESPONSIBILITY OF CONTRACTOR.

- h. CONTRACTOR SHOULD STUDY THE DRAWINGS CAREFULLY BEFORE STARTING WORK. MISTAKES, IF ANY, SHOULD BE IMMEDIATELY NOTIFIED TO THE ENGINEER.

- i. VERTICAL CLEARANCE OF THE BRIDGE FROM THE FINISHED ROAD LEVEL (F.R.L) SHOULD NOT BE LESS THAN 6.1M.

# TENDER DRAWING

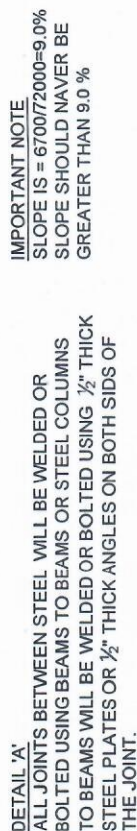




# TENDER DRAWING

NATIONAL HIGHWAY AUTHORITY			PEDESTRIAN BRIDGE WITH MOTORCYCLIST RAMP AT KM: 155-156 ON N-5			PLAN	NTS
01	DESIGNED BY	Dr. M. IQBAL	DATE	NOV, 2020	DWG. NO.	A-002	
	ASSISTED BY	ENGR. HAMZA					
	DRAWN BY	ZAHID ALI					

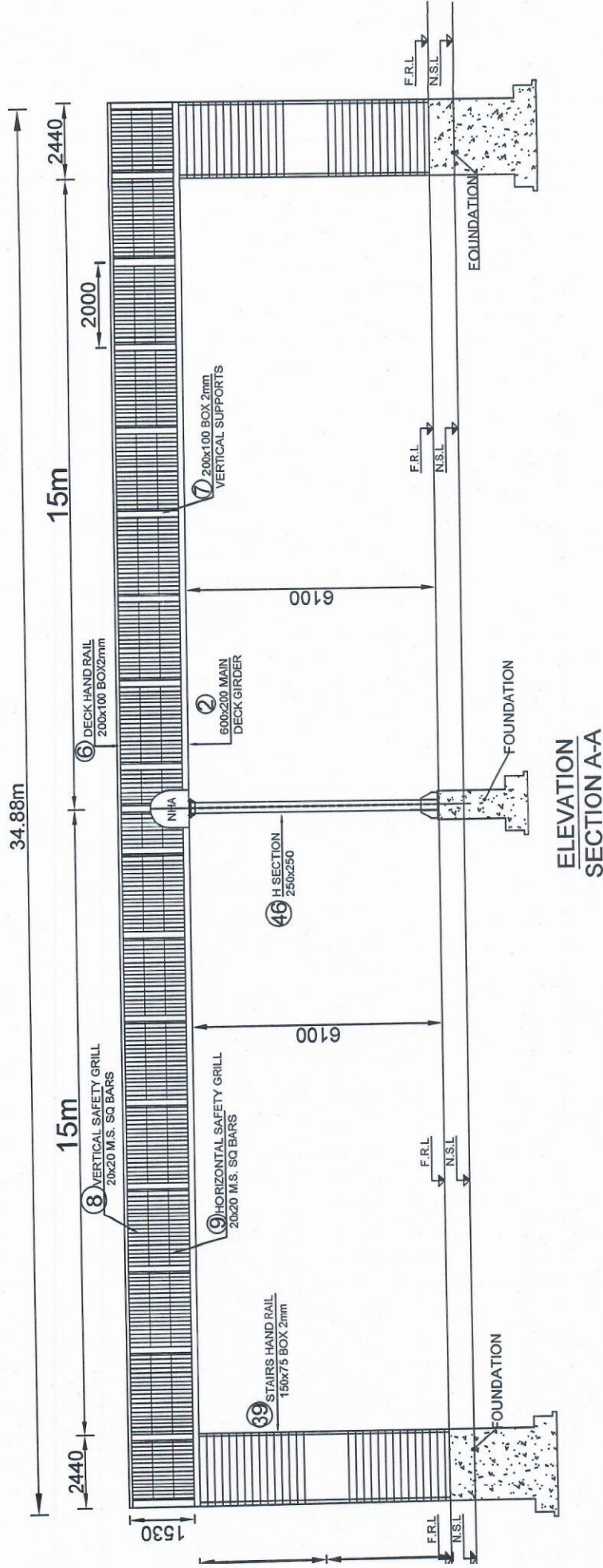
3 Consultants  
 17 Chekiala Scheme 3 Rawalpindi  
 email.com URL: www.cniqjal.com  
 333-5104619



## TENDER DRAWING

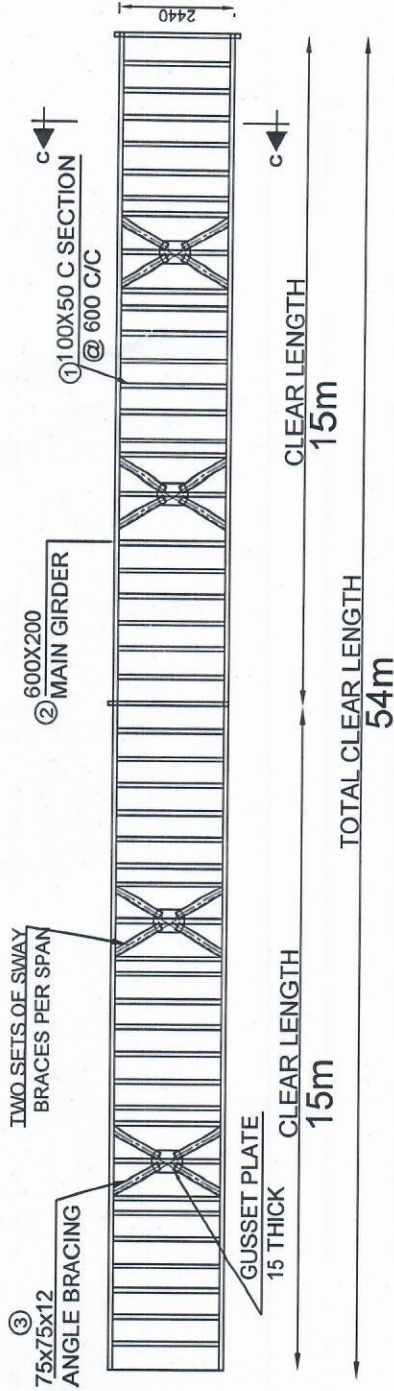
CONSULTANTS Chakrala Scheme 3 Rawalpindi E-mail: <a href="mailto:www.cmrqat.com">www.cmrqat.com</a> 5104919	NATIONAL HIGHWAY AUTHORITY ISLAMABAD			PEDESTRIAN BRIDGE WITH MOTORCYCLIST RAMP AT KM: 155-156 ON N-5	SECTION NBC		NTS
	01	DESIGNED BY	Dr. M. IQBAL		DATE NOV, 2020	DWG. NO. A-003	
	02	ASSISTED BY	ENGR. HAMZA				
	03	DRAWN BY	ZAHID ALI				



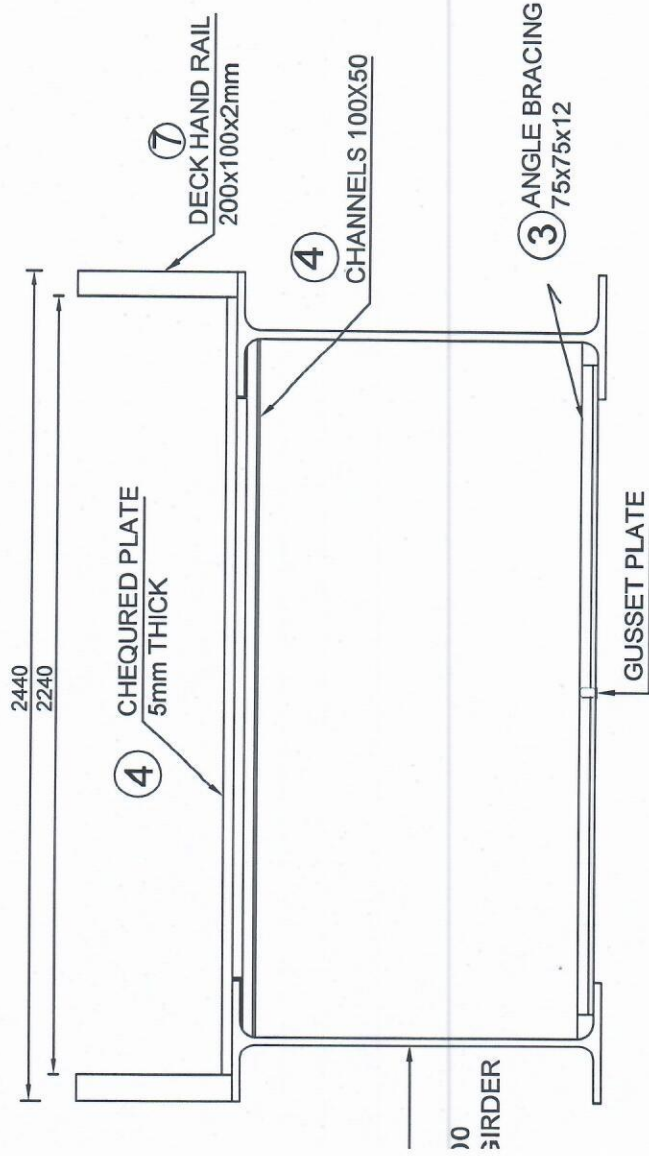


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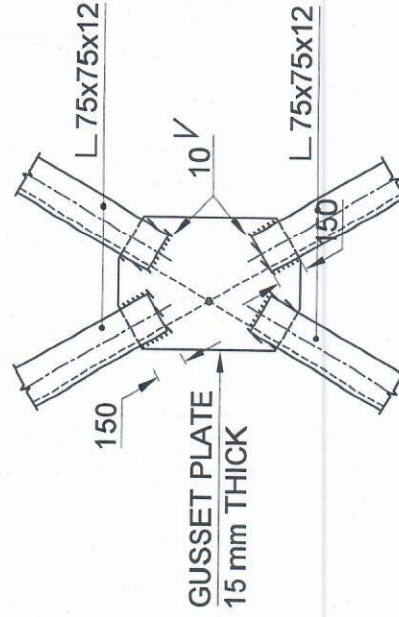
CONSULTANTS Chaklala Scheme 3 Rawalpindi all.com URL www.cmpal.com 3-5104919			TENDER DRAWINGS FOR 4-LANES PEDESTRIAN BRIDGE (WITH STAIRS)			PALN AND ELEVATION DATE NOV, 2020 DWG. NO. A-0024		NTS
NATIONAL HIGHWAY AUTHORITY ISLAMABAD			01	DESIGNED BY	Dr. M. IQBAL			
			02	ASSISTED BY	ENGR. HAMZA			
			03	DRAWN BY	ZAHID ALI			



## PLAN OF MAIN DECK



## SECTION C-C

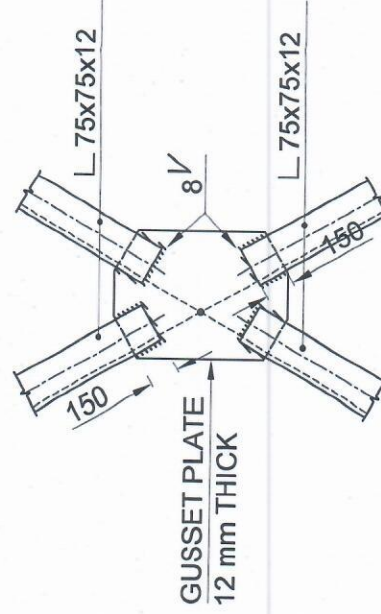
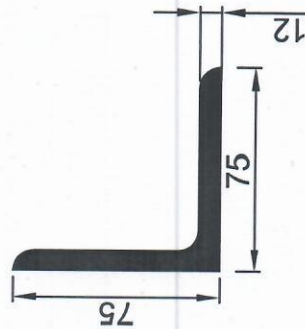
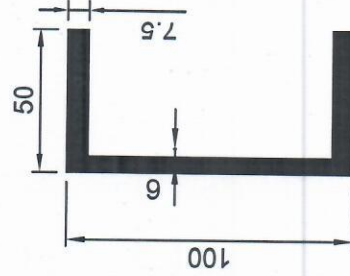
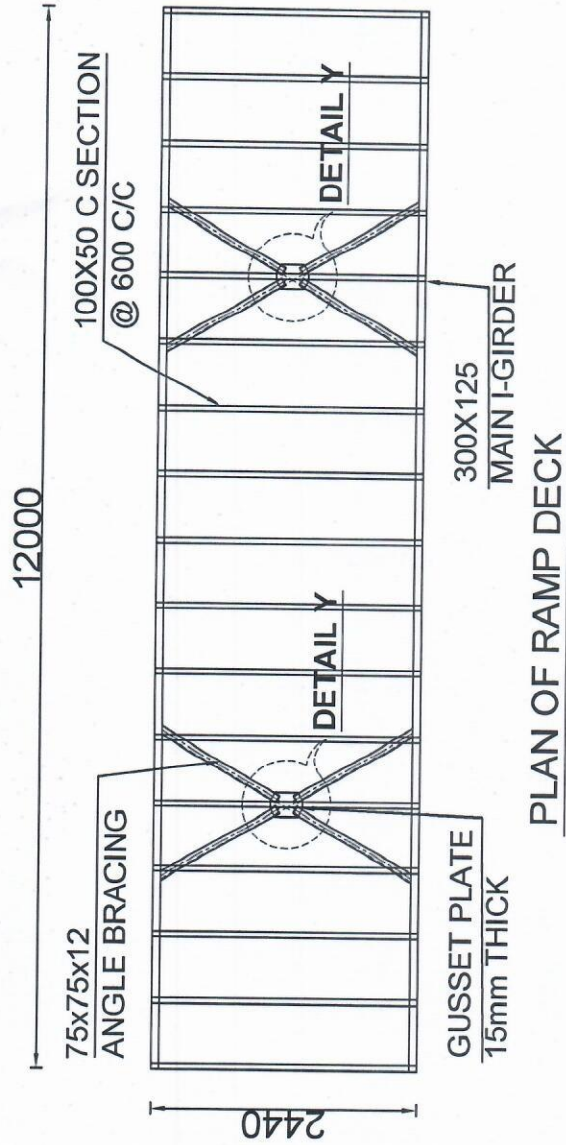


## DETAIL Y

ALL SIDES OF BRACING ANGLES WILL BE WELDED TO THE GUSSET PLATE AT ONE END AND TO THE BOTTOM FLANGE OF THE GIRDERS AT THE OTHER END.

consultants vakile Scheme 3 Rawalpindi 34919 www.cmpgal.com	NATIONAL HIGHWAY AUTHORITY ISLAMABAD			PEDESTRIAN BRIDGE WITH MOTORCYCLIST RAMP AT KM: 155-156 ON N-5		DETAILS OF MAIN DECK	NTS
	01	DESIGNED BY	Dr. M. IQBAL	DATE	NOV, 2020	DWG. NO.	A-005
	02	ASSISTED BY	ENGR. HAMZA				
	03	DRAWN BY	ZAHID ALI				





### DETAIL Y

ALL SIDES OF BRACING ANGLES WILL BE WELDED TO THE GUSSET PLATE AT ONE END AND TO THE BOTTOM FLANGE OF THE GIRDERS AT THE OTHER END.

### TENDER DRAWING

PEDESTRIAN BRIDGE WITH  
MOTORCYCLIST RAMP  
AT KM: 155-156 ON N-5

Dr. M. IQBAL  
ENGR. HAMZA  
ZAHID ALI

NATIONAL HIGHWAY AUTHORITY  
ISLAMABAD

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hakiala Scheme 3 Rawalpindi  
com URL: www.cniqbal.com  
04919

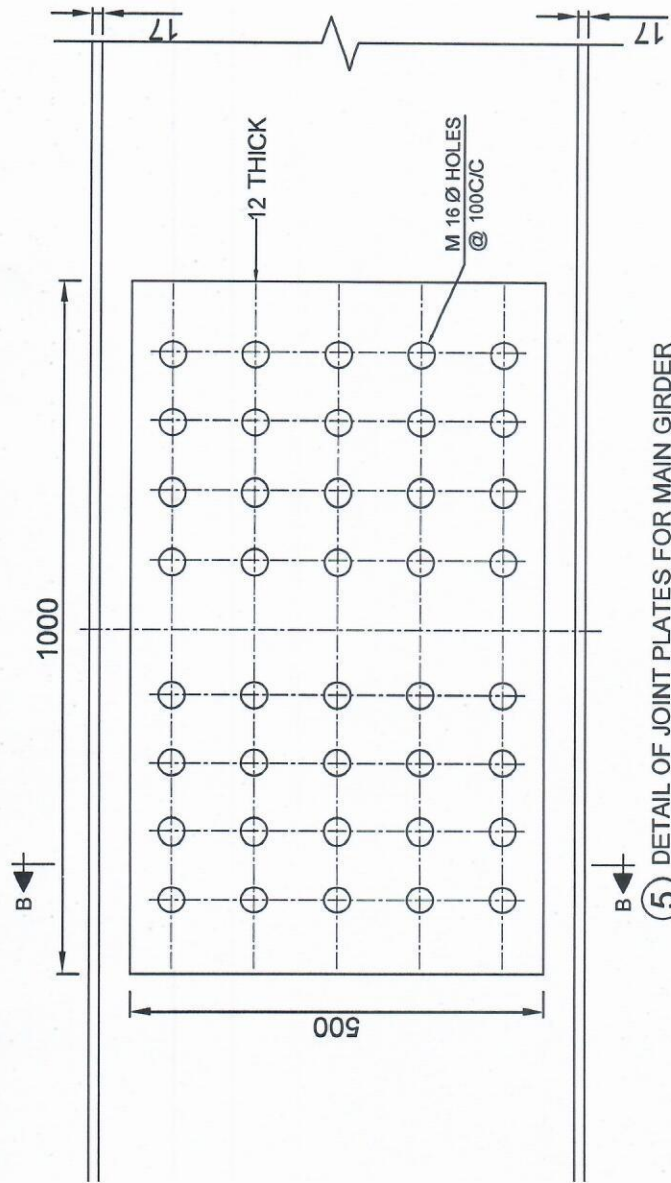
DETAILS OF RAMP DECK

DATE NOV, 2020

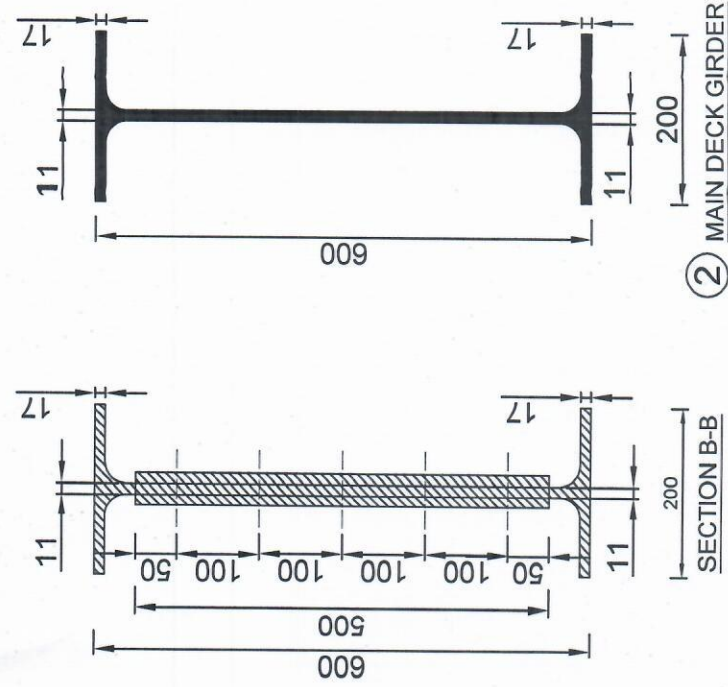
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A-006

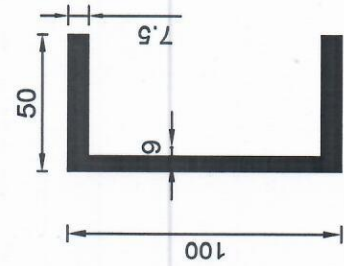
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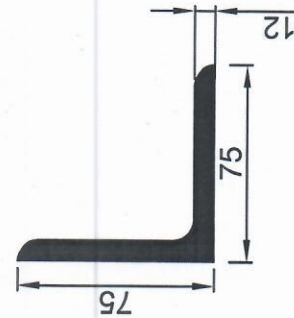
⑤ DETAIL OF JOINT PLATES FOR MAIN GIRDER



② MAIN DECK GIRDER



① CHANNEL 100X50  
(UNDER MAIN DECK)



③ ANGLE 75x75x12  
(UNDER MAIN DECK)

**TENDER DRAWING**

NATIONAL HIGHWAY AUTHORITY			PEDESTRIAN BRIDGE WITH MOTORCYCLIST RAMP AT KM: 155-156 ON N-5			SECTION DETAILS	NTS
01	DESIGNED BY	Dr. M. IQBAL	DATE	NOV, 2020	DWG. NO.	A-007	
02	ASSISTED BY	ENGR. HAMZA					
03	DRAWN BY	ZAHID ALI					















# **IMPORTANT NOTES FOR CONNECTIONS**

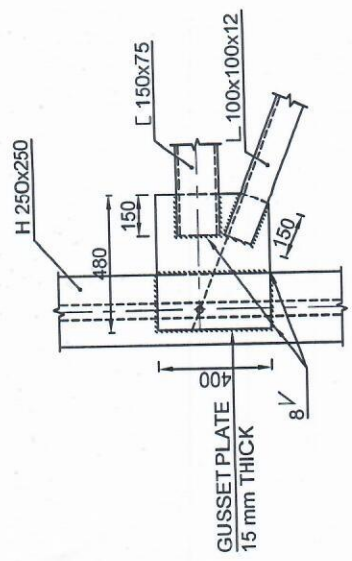
1. ALL WELD ELECTRODES SHALL BE LOW HYDROGEN TYPE CONFORMING TO AWS 7018 (NORMAL DEPOSITION) TYPE OR AWS 7028 (HIGH DEPOSITION) AND SHALL BE USED AS PER THE MANUFACTURERS RECOMMENDATIONS.
2. ALL FILLET WELDS SHALL BE RETURNED CONTINUOUSLY AROUND ALL ENDS OF PLATES INCLUDING AROUND ENDS OF PLATES INSIDE COPEES.
3. ALL GROOVE WELDS SHALL BE AS PER AWS D1.1 AND SECTION J2 OF AISC-LRFD, 1999.
4. ALL FLAME CUT COPEES AND SHEARED COPEES SHALL BE GROUND SMOOTH TO BRIGHT METAL AND INSPECTED PRIOR TO WELDING AS PER SECTION J1.6 OF AISC-LRFD, 1999.
5. WELD ACCESS HOLES, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SECTION J1.6 OF AISC-LRFD, 1999.
6. ALL WELD ELECTRODES SHALL BE E70XX.
7. ALL BOLTS M16 AND LARGER SHALL BE PLAIN, UNCOATED, HIGH STRENGTH CONFORMING TO ASTM A325 M, TYPE 1, WITH HEAVY HEXAGONAL HEAD AND ASTM A563M GRADE C HEAVY HEXAGONAL NUT WITH ONE ASTM F436M CIRCULAR PLAIN HARDENED WASHER PER BOLT UNLESS OTHERWISE NOTED.
8. ALL HOLES SHALL BE 2mm LARGER THAN BOLT DIAMETER UNLESS OTHERWISE NOTED.
9. THREAD LENGTHS IN ALL BOLTS SHALL CONFORM TO AISC.

MEMBERS	WELD		LENGTH (mm)
	a	b	
L 100x100x12	100	150	15
C 150x75x10	100	150	15

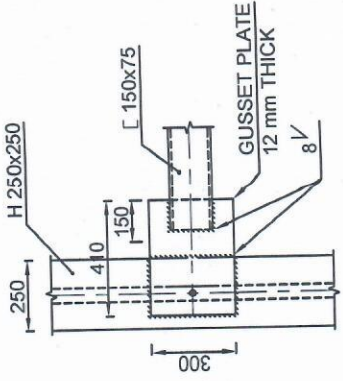
WELD LENGTHS ARE IN ADDITION TO END RETURNS "e".



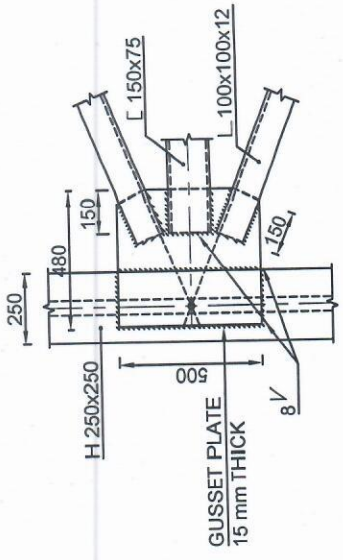
## **TENDER DRAWING**



DETAIL E  
(CONNECTION DETAIL)

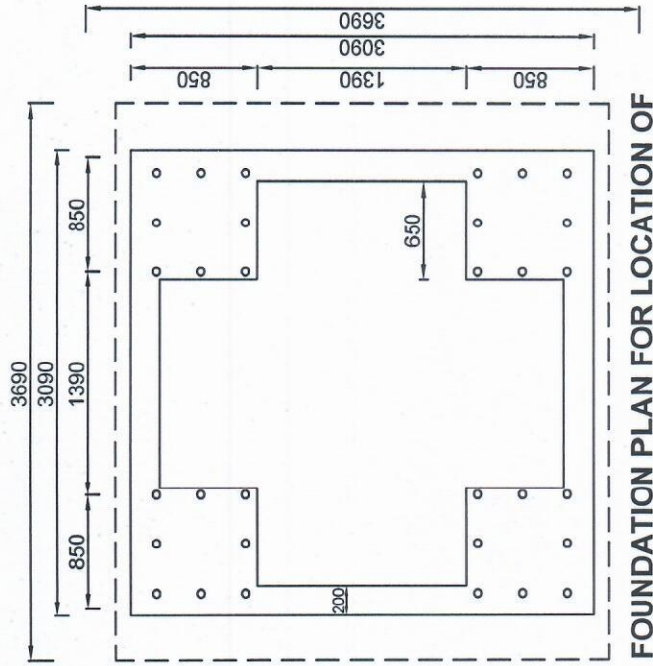


DETAIL D  
(CONNECTION DETAIL)

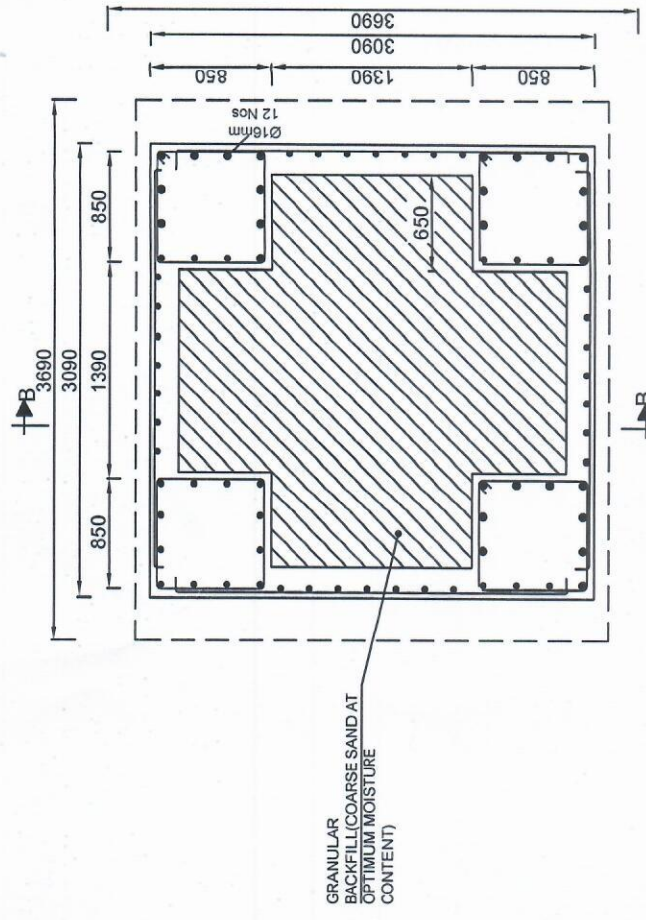


DETAIL C  
(CONNECTION DETAIL)

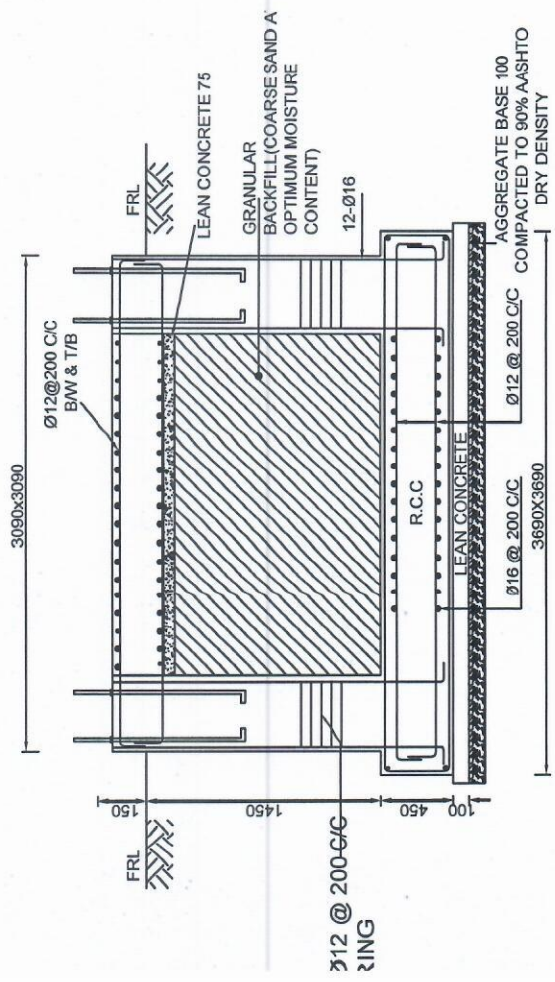
<p>Consultants 17, Chaklala Scheme 3 Rawalpindi mail.com URL: www.cmgil.com 133-5104619</p>	<p>NATIONAL HIGHWAY AUTHORITY ISLAMABAD</p>	<p>DESIGNED BY 01 Dr. M. IQBAL</p>	<p>PEDESTRIAN BRIDGE WITH MOTORCYCLIST RAMP AT KM: 155-156 ON N-5</p>	<p>CONNECTION DETAILS</p>		<p>NTS</p>
		<p>ASSISTED BY 02 ENGR. HAMZA</p>		<p>DATE NOV, 2020</p>	<p>DWG. NO. A-012</p>	<p>A-012</p>
		<p>DRAWN BY 03 ZAHID ALI</p>				



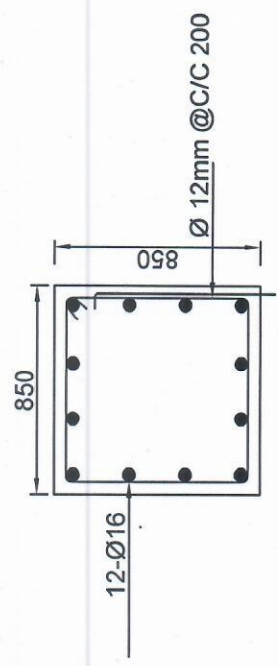
FOUNDATION PLAN FOR LOCATION OF J-BOLTS



FOUNDATION PLAN FOR MAIN COLUMN WITH REINFORCEMENT



SECTION AT B-B FOUNDATION FOR MAIN COLUMN

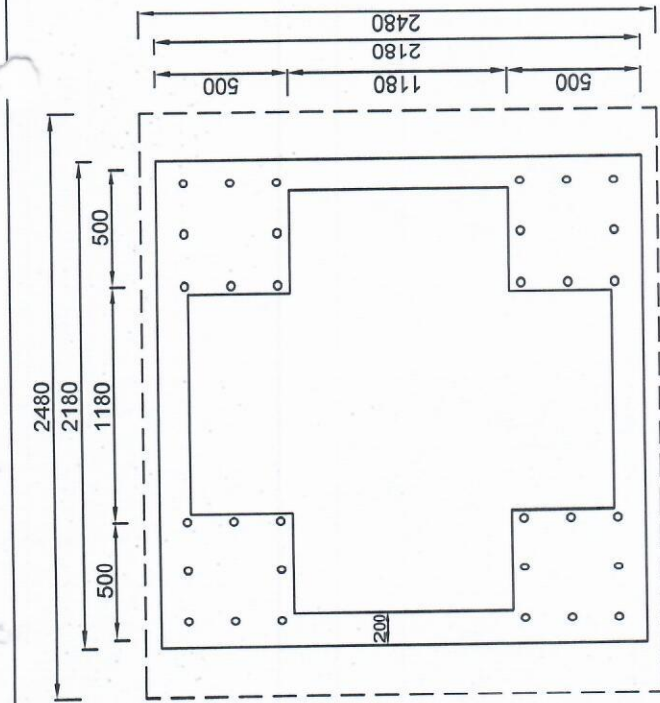


DETAIL OF COLUMN

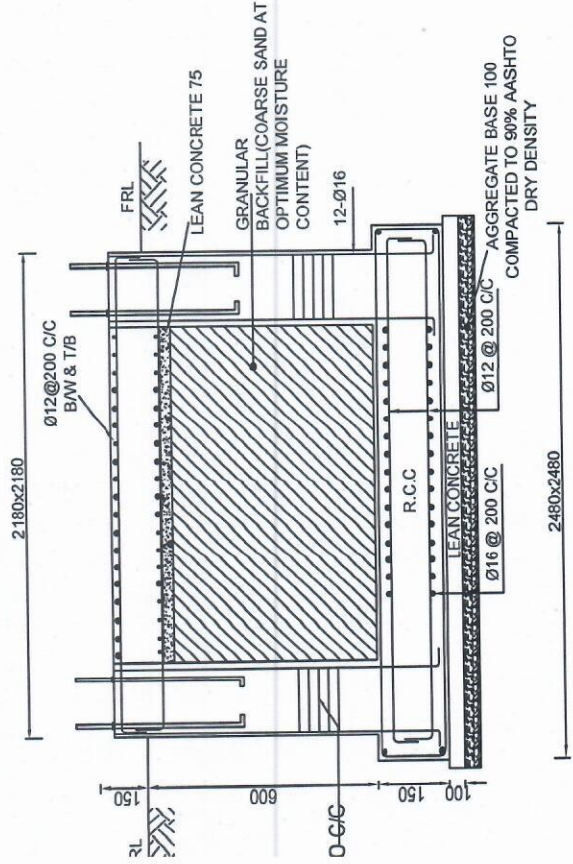
**TENDER DRAWING**

Consultants Chakraborty Scheme 3 Rawalpindi il.com URL: www.cngil.com -5104919	NATIONAL HIGHWAY AUTHORITY ISLAMABAD			PEDESTRIAN STEEL BRIDGE WITH MOTORCYCLIST RAMPS AT KM:155-156 ON N-5		FOUNDATION DETAILS MAIN COLUMN	N T S
	01	DESIGNED BY	Dr. M. IQBAL	DATE	NOV. 2020	DWG. NO.	A-013
	02	ASSISTED BY	ENGR. HAMZA				
	03	DRAWN BY	ZAHID ALI				

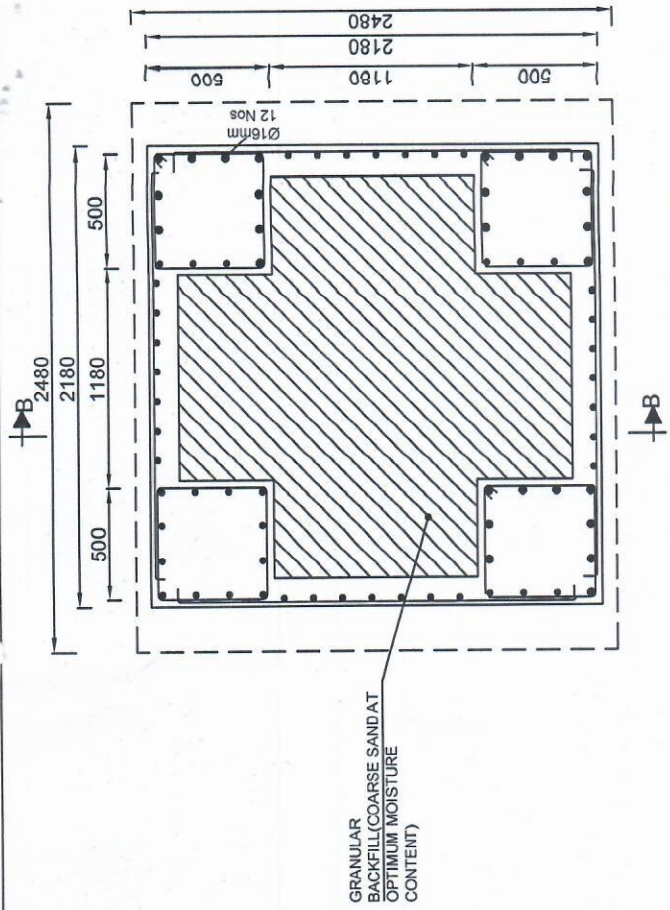




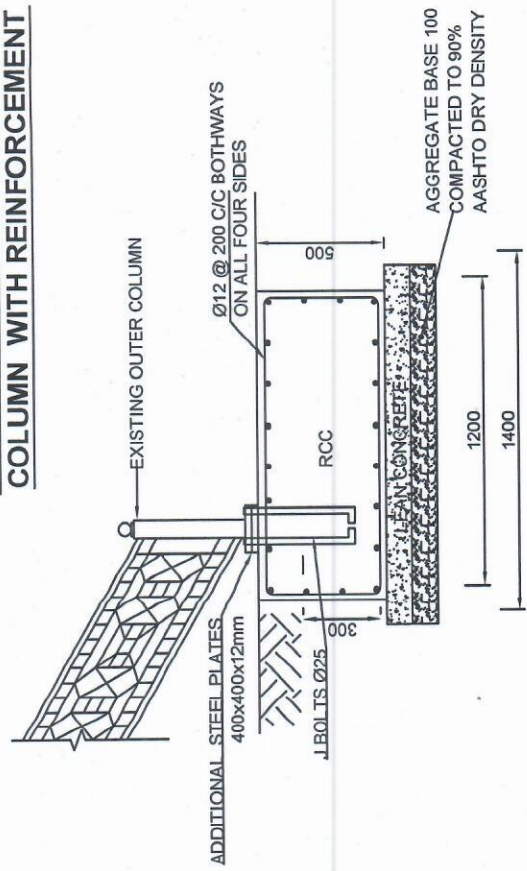
**FOUNDATION PLAN FOR LOCATION OF J-BOLTS**



**SECTION AT B-B FOUNDATION FOR LANDING COLUMN**



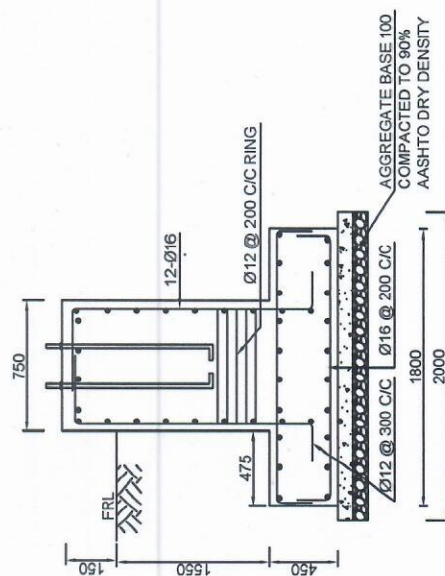
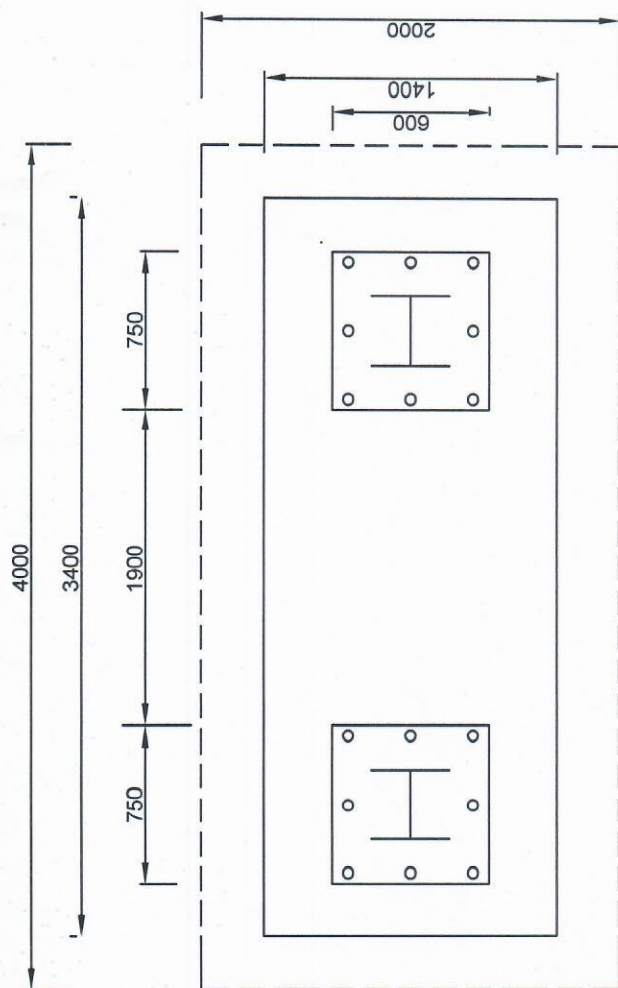
**FOUNDATION PLAN FOR LANDING COLUMN WITH REINFORCEMENT**



**DETAIL OF FOUNDATION OF STAIRS STARTUP**

**TENDER DRAWING**

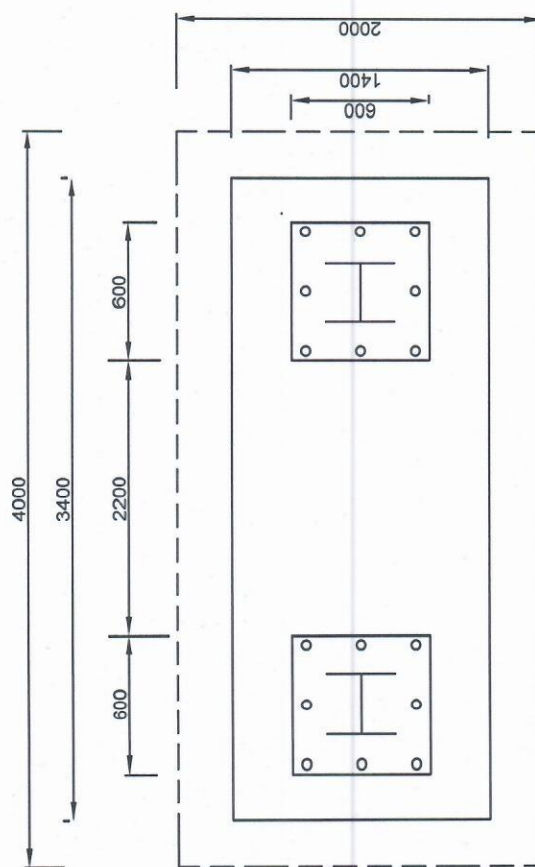
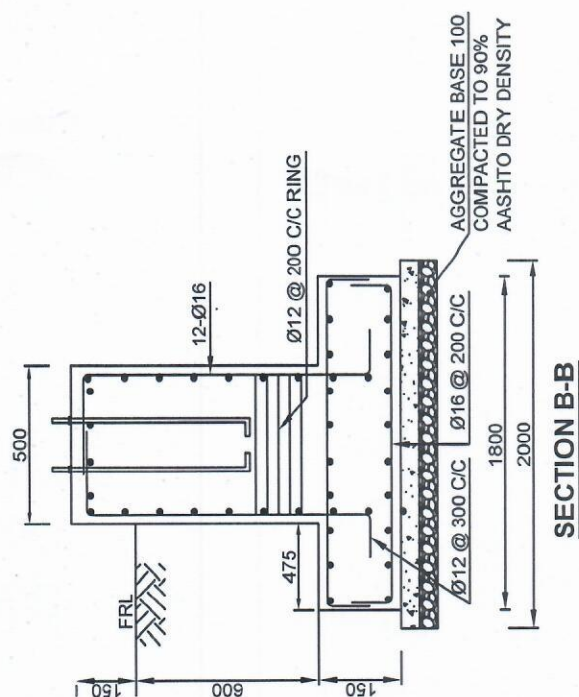
Consultants 7, Chaklata Scheme 3 Rawalpindi mail.com URL www.cmpibal.com 33-510619	NATIONAL HIGHWAY AUTHORITY ISLAMABAD			PEDESTRIAN STEEL BRIDGE WITH MOTORCYCLIST RAMPS AT KM:155-156 ON N-5		FOUNDATION DETAILS LANDING COLUMN		NTS
	01	DESIGNED BY	Dr. M. IQBAL					
	02	ASSISTED BY	ENGR. HAMZA					
	03	DRAWN BY	ZAHAID ALI					
				DATE	NOV. 2020	DWG. NO.	A-014	



## TENDER DRAWING

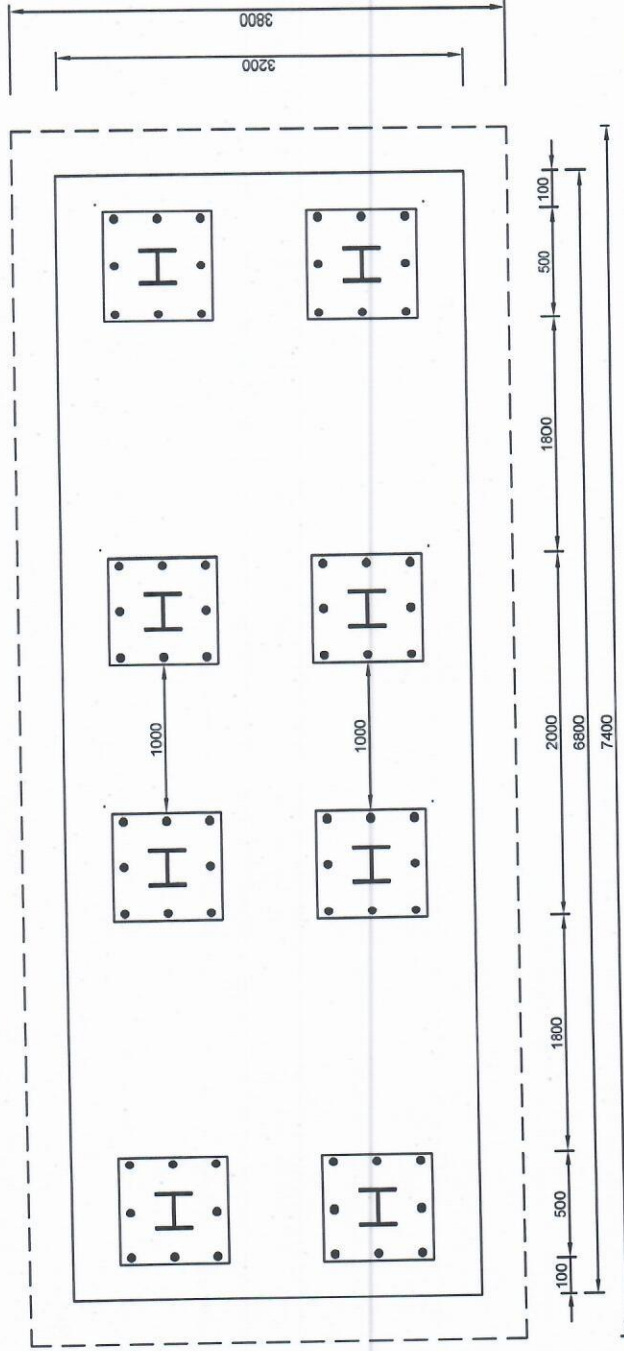
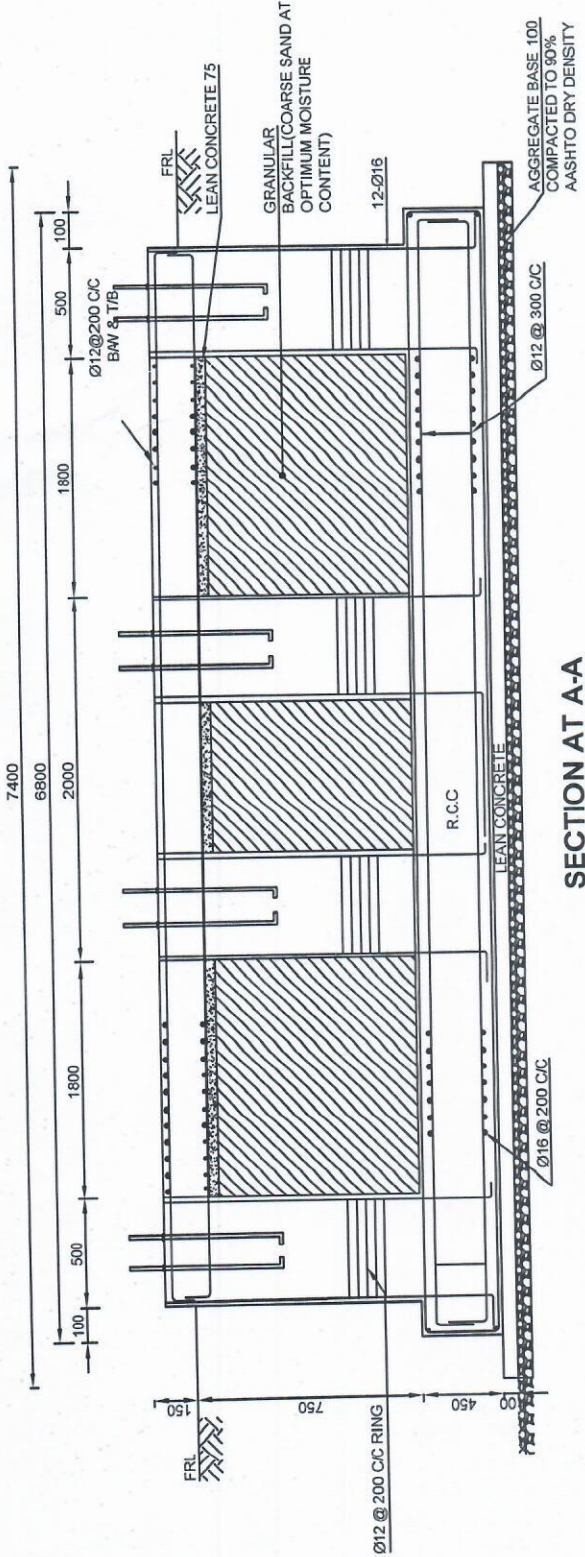
CONSULTANTS Chakiala Scheme 3 Rawalpindi com URL: www.cniqal.com 1449/s	NATIONAL HIGHWAY AUTHORITY ISLAMABAD	01	DESIGNED BY	Dr. M. IQBAL	PEDESTRIAN BRIDGE WITH MOTORCYCLIST RAMP AT KM: 155-156 ON N-5	PLAN OF FOUNDATION CENTER PIERS		N T S	
		02	ASSISTED BY	ENGR. HAMZA		DATE	NOV. 2020		DWG. NO.
		03	DRAWN BY	ZAHD ALI					A-015





### PLAN OF FOUNDATION CENTER PIERS (RAMPS)

CONSULTANTS Haklaia Scheme 3 Rawalpindi com URL: www.cmrpall.com 100919	NATIONAL HIGHWAY AUTHORITY ISLAMABAD	01	DESIGNED BY	Dr. M. IQBAL	PEDESTRIAN BRIDGE WITH MOTORCYCLIST RAMP AT KM: 155-156 ON N-5	PLAN OF FOUNDATION CENTER PIERS OF RAMPS		N T S
		02	ASSISTED BY	ENGR. HAMZA		DATE	DWG. NO.	
		03	DRAWN BY	ZAHAID ALI		NOV, 2020		
								A-016



PLAN OF FOUNDATION  
MID LANDING FOR RAMPS

**TENDER DRAWING**

Consultants 17 Chakiala Scheme 3 Rawalpindi Email: <a href="mailto:www.cniqbal.com">www.cniqbal.com</a> 333-5194919	NATIONAL HIGHWAY AUTHORITY ISLAMABAD	01	DESIGNED BY	Dr. M. IQBAL	PEDESTRIAN BRIDGE WITH MOTORCYCLIST RAMP AT KM: 155-156 ON N-5	MID LANDING FOR RAMPS FOUNDATION DETAILS		N T S
		02	ASSISTED BY	ENGR. HAMZA		DATE	DWG. NO.	
		03	DRAWN BY	ZAHD ALI		NOV, 2020	A-017	