KARACHI NEIGHBORHOOD IMPROVEMENT PROJECT (KNIP)

REHABILITATION & UPGRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL & GIZRI SPORTS GROUND

STRUCTURAL TENDER DRAWINGS

AUGUST - 2021

G3 ENGINEERING CONSULTANTS (PVT.) LTD.

Consulting Engineers – Architects – Planners

REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

STRUCTURAL DRAWINGS
PEDESTRIAN BRIDGE

GENERAL NOTES & SPECIFICATIONS

1. General

1.1. All structural drawings should be read in conjunction with Architectural, Civil, Mechanical, Electrical and other relevant drawings.The contractor should coordinate with Architectural and various service drawings for levels, sizes and location of all Structural members, Floors Walls and Pipes etc..

1.2. The contractor shall report all discrepancies, differences and conflicts, as soon as they are observed.

1.3. Safe working practices will be adopted, and no damage to any property or life will be ensured.

1.4. Prior approval of proposed method of work, sequence of jobs, location of block-outs and construction joints in concrete , location of all splices and proposed values of camber is required.

1.5. The structure is not designed against construction loads. The contractor is responsible for ensuring that all elements should remain supported during construction.

1.6. Prior to adopting finished levels of structural elements, proper allowances are to be maintained by the contractor.

2. Design

2.1. The Structural design of all concrete elements is based on Building Code Requirements for Structural Concrete (ACI 318-08) of the American Concrete Institute, USA.

2.2. The Structural design of all masonry elements shall conform to Specification for Masonry Structures (ACI 530.1-05/ ASCE 6-05/ TMS 602-05) reported by the Masonry Standards Joint Committee (MSJC) USA.

3. Construction

3.1. Work on this building shall conform to all requirements of ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan, except as modified by the requirements below.

3.2. The Construction Work of all Masonry elements should confirm to Specification for Masonry Structures (ACI 530.1-05/ ASCE 6-05/ TMS 602-05) reported by the Masonry Standards Joint Committee (MSJC) USA..

4. Materials

4.1. Concrete

4.1.1. Plain Concrete

All Plain concrete shall have a cylinder strength of 1500 psi, at 28 days, unless noted otherwise.

4.1.2. Structural Concrete

a) The structural concrete for all columns and foundations shall have a minimum compressive cylinder strength of 4,000 psi, at 28 days.

b)All concrete work shall conform to Specifications for Structural Concrete for Buildings ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan.

c) Unless Noted Otherwise all other structural concrete shall have a minimum compressive cylinder strength of 3,000 psi, at 28 days.

Note that specified compressive strength shall be achieved through proper mix design and this design shall be sole responsibility of Contractor (or as specified in the contract documents).

4.2. Reinforcing Steel

4.2.1. Except as otherwise specified, all reinforcing steel shall conform to ASTM A615, Grade 60.

4.2.2. Clear Concrete Covers to Reinforcement

	Member	Cover
1)	Foundations	2"
2)	Columns	1½"
3)	Beams (with depth less than 10")	3/4"
4)	Beams (with depth greater than than 10")	1½"
5)	Slab	3/4"
6)	Walls Facing Soil	2"
7)	Walls Other	1"

4.1. In order to ensure the specified covers, bars must be secured in position, with the help of concrete spacer blocks, with embedded binding wire.

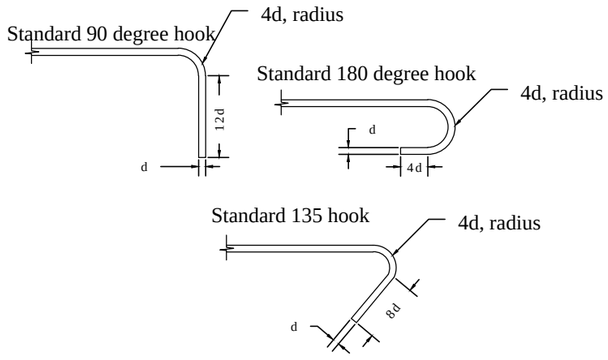
4.2. To support top bars, provide supporting rebars and standard ACI chairs.

5. Bar Development

5.1. Standard Hooks

Unless otherwise shown in the drawings, standard ACI hooks shall shall be provided at the free ends of all bars.

5.2. Unless noted otherwise, the hooks will comply the following dimensions:



5.3. Development and Splice Lengths

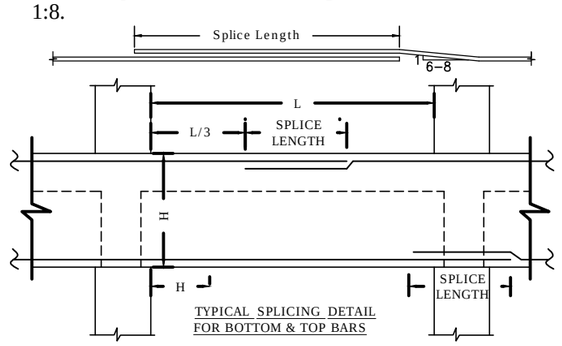
a. Splice length of reinforcing bars shall as follows.

Bar Designation	Splice lengths (in)			
	Concrete with cylinder strength of 3,000 psi at 28 days		Concrete with cylinder strength of 4,000 psi at 28 days	
	Top bars*	Other than top bars	Top bars*	Other than top bars
	Splice Length	Splice Length	Splice Length	Splice Length
#3	30	24	27	21
#4	39	30	33	27
#5	48	36	42	33
#6	57	45	51	39
#8	93	72	81	63

* Top bars are horizontal bars, with at least 12 in of fresh concrete below them.

b. For splicing unequal diameter bars, use smaller diameter for splice length determination.

c. Where required, bar shall have a gradient between 1:6 to 1:8.



8. Construction Joints

a. Construction joints shall be located with the prior approval of the Engineer, if it is not indicated in the drawing.

b. On proposed construction joint surfaces, all fines shall be removed, on initial setting of concrete, but before its hardening. In order to achieve this, sand blasting or wire brushing could be used. Before placing the second-stage concrete, the joint surface shall be cleaned free of all loose material and washed. A bonding agent shall be applied to the surface and concrete placed within the period stipulated by the manufacturer.

9. Adopted Loads

9.1. Dead Loads

All floor finishes = 56 psf

Roof finishes = 63 psf

9.2. Live Loads

Floor = 60 psf

Roof = 30 psf

10. Foundation

a. Foundation Should be executed in accordance with geotechincal investigation report of this project.

b. Procedure for placement of structural fill should be strictly followed as if recommended in geo technical report.

c. All footings should be concentric with the column centre line unless otherwise shown.

d. Irregularity formed from loose strata under the footing shall be replaced with plain cement concrete.

11. Terms & Abbrevations

Following terms and abbreviations are used in all structural drawings.

a) UNO: Unless Noted Otherwise
b) NSL: Natural Surface Level
c) Typ: Typical
d) FFL: Finished Floor Level
e) C.Joint: Construction Joint

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

G3 ENGINEERING CONSULTANTS (PVT)LTD.
House No.57-M Gulberg-III, Lahore, Pakistan

Tel : (92-42) 35441641, 35441642
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URL : www.g3ec.com

PROJECT:

REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

NOTES:

1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
2.

REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

GENERAL NOTES PEDESTRIAN BRIDGE

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/BRADGE/001 ST	REV: 04
SCALE (A3): AS SHOWN	SHEET: 1/1

LIST OF DRAWINGS
STRUCTURAL DRAWINGS

S.NO	DRAWING DETAIL	DRAWING NO.
1.	LIST OF DRAWING	0249/BRADGE-2/000 ST
2.	GENERAL NOTES	0249/BRADGE-2/001 ST
3.	FOUNDATION LAYOUT	0249/BRADGE-2/002 ST
4.	TYPICAL FOUNDATION SECTIONAL DETAILS	0249/BRADGE-2/003 ST
5.	COLUMN & AXIS LAYOUT AND DETAILS	0249/BRADGE-2/004 ST
6.	BEAM FRAMING LAYOUT AND DETAILS	0249/BRADGE-2/005 ST
7.	SECTION A-A, B-B AND DETAIL	0249/BRADGE-2/006 ST

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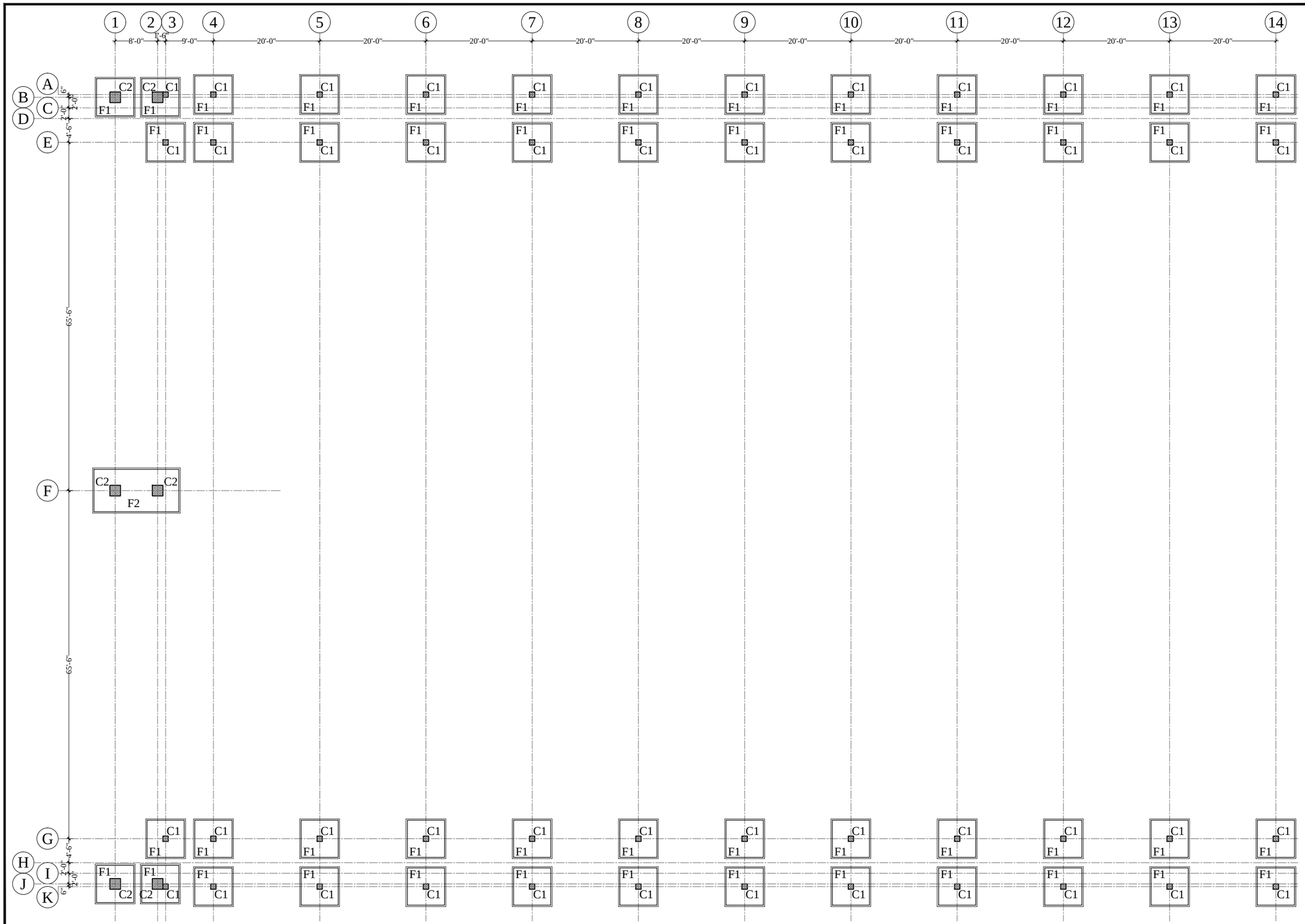
DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

APPROVED BY: SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/BRIDGE/000 ST	04
SCALE (A3): N.T.S	SHEET: 0/0



FOUNDATION LAYOUT

SCALE: 1/16"=1'-0"

CLIENT:

KARACHI NEIGHBORHOOD IMPROVEMENT PROJECT

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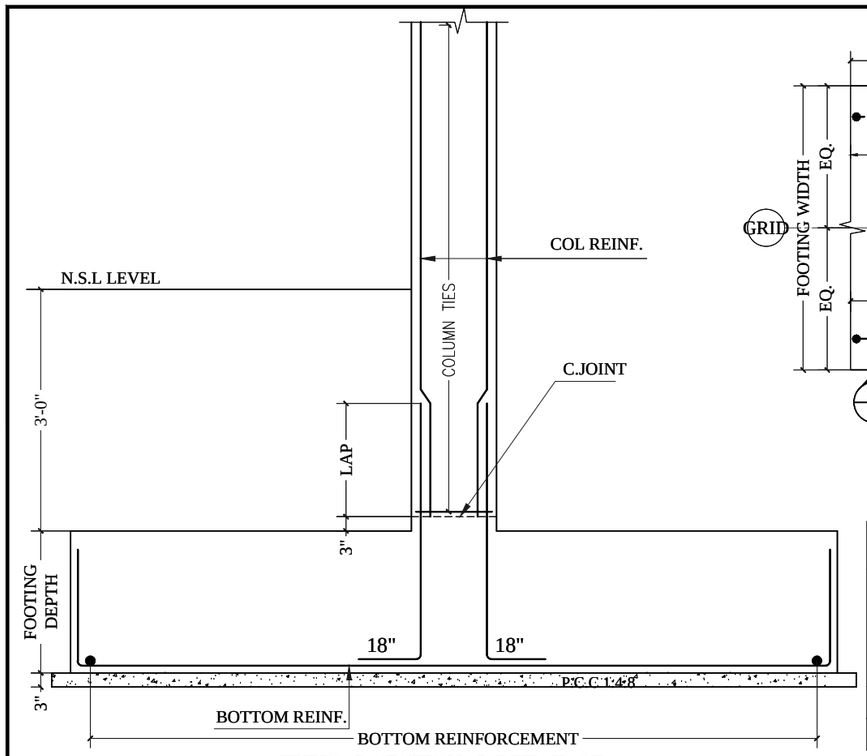
FOUNDATION LAYOUT
PEDESTRIAN BRIDGE

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

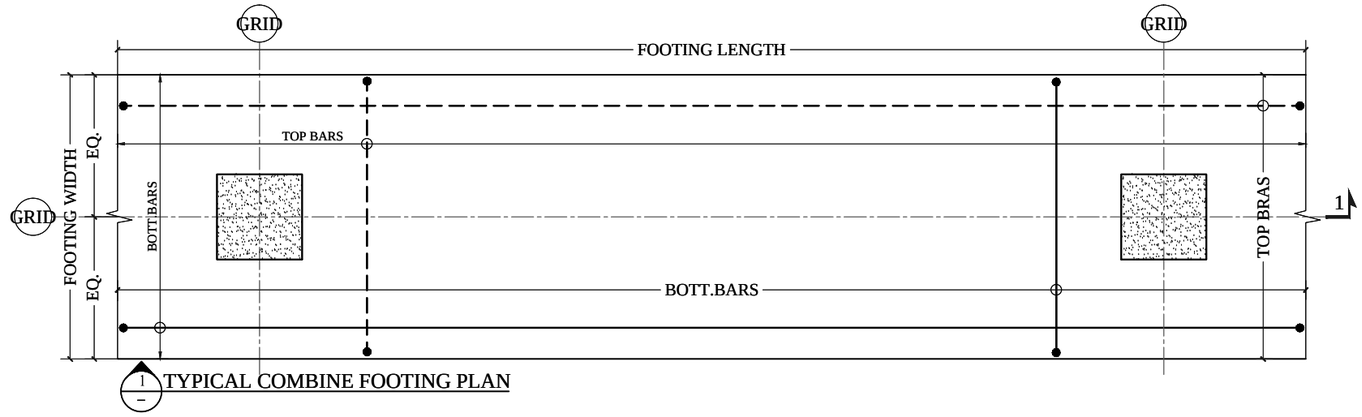
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

APPROVED BY: SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/BRADGE/002 ST	04
SCALE (A3):	SHEET:
1/16" - 1'	1/1



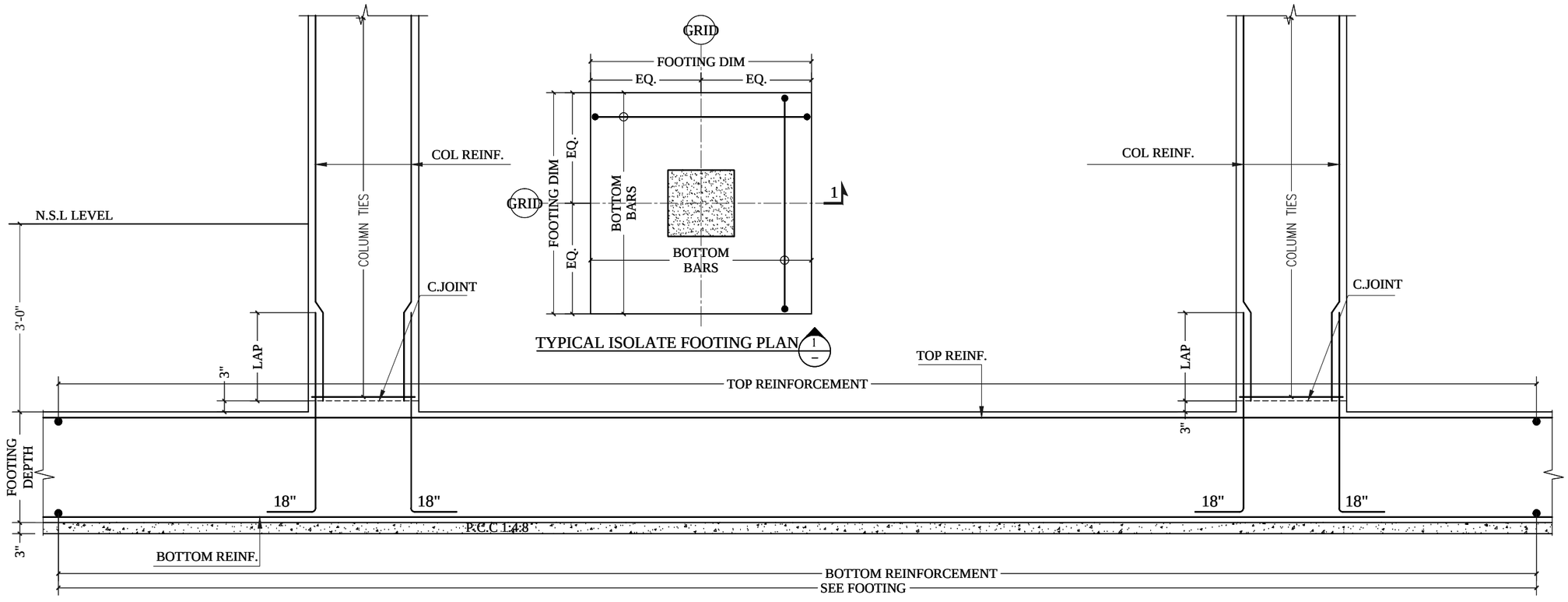
TYPICAL SECTIONAL DETAIL OF ISOLATE FOOTING



TYPICAL COMBINE FOOTING PLAN

SCHEDULE OF FOOTINGS

MARK	FOUNDATION						SHORT DIRECTION LONG REBAR		LONG DIRECTION SHORT REBAR		EXCAVATION LEVEL VERIFY ON SITE & W/SOIL REPORT
	BLINDING			FOOTING							
	WIDTH	LENGTH	DEPTH	WIDTH	LENGTH	DEPTH					
F1	7'-6"	7'-6"	0'-3"	7'-0"	7'-0"	12"	#4@6" C/C	--	#4@6" C/C	--	±0.00
F2	7'-6"	10'-6"	0'-3"	7'-0"	10'-0"	18"	#6@8" C/C	#6@12" C/C	#6@8" C/C	#6@12" C/C	±0.00



TYPICAL ISOLATE FOOTING PLAN

TYPICAL SECTIONAL DETAIL OF COMBINE FOOTING

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

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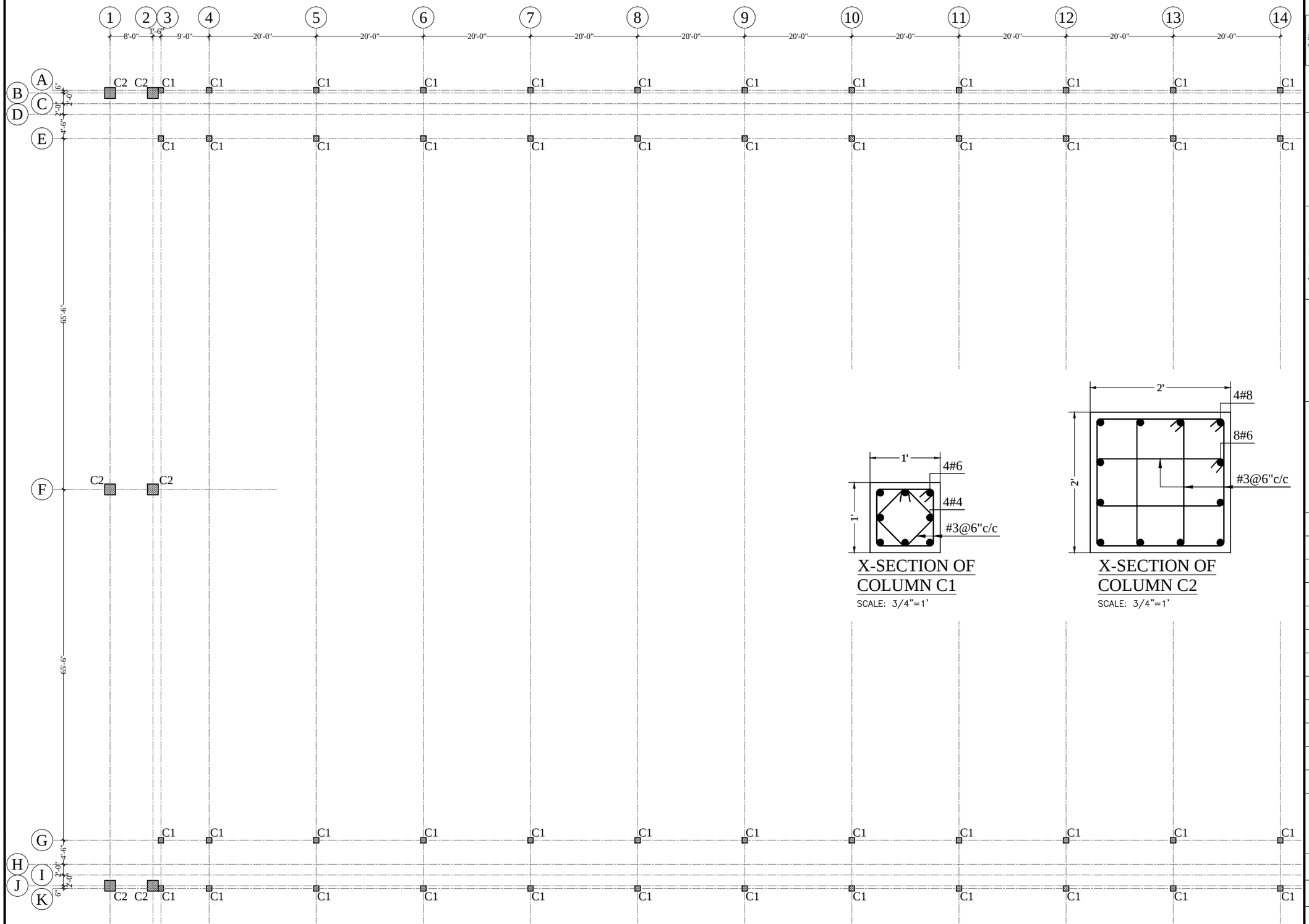
TENDER DRAWINGS

DRAWING TITLE:
TYPICAL FOUNDATION SECTIONAL DETAILS PEDESTRIAN BRIDGE

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/BRADGE/003 ST	REV: 04
SCALE (A3): N.T.S	SHEET: 1/1



X-SECTION OF COLUMN C1

SCALE: 3/4"=1'

X-SECTION OF COLUMN C2

SCALE: 3/4"=1'

COLUMN AND AXIS PLAN

CLIENT:

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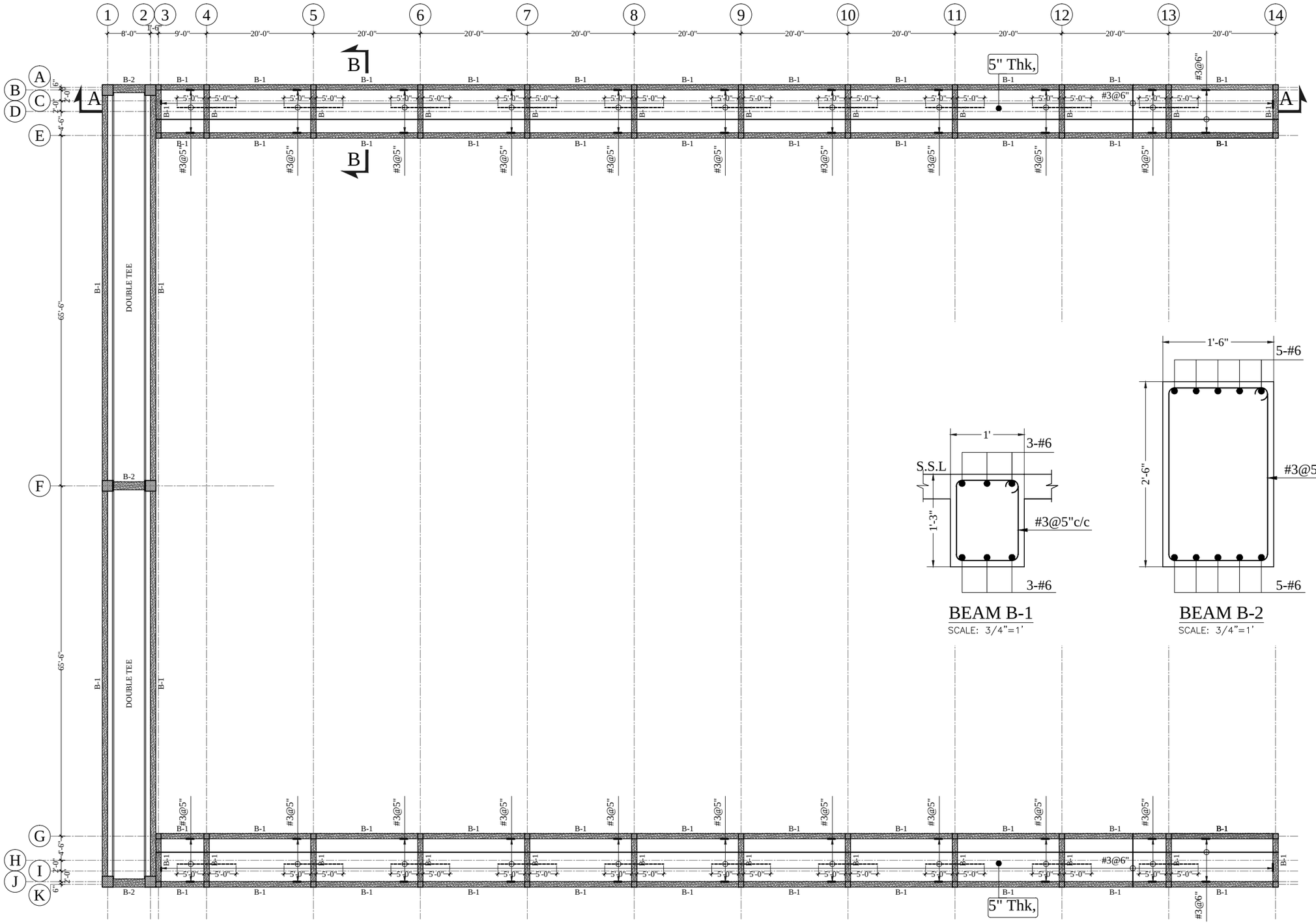
DRAWING TITLE:
COLUMN & AXIS LAYOUT AND DETAILS PEDESTRIAN BRIDGE

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

APPROVED BY: SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/BRADGE/004 ST	04
SCALE (A3): 1/16" - 1'	SHEET: 1/1



FRAMING AND REINFORCEMENT PLAN

SCALE: 1/16"=1'-0"

BEAM B-1

SCALE: 3/4"=1'

BEAM B-2

SCALE: 3/4"=1'

CLIENT:

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DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
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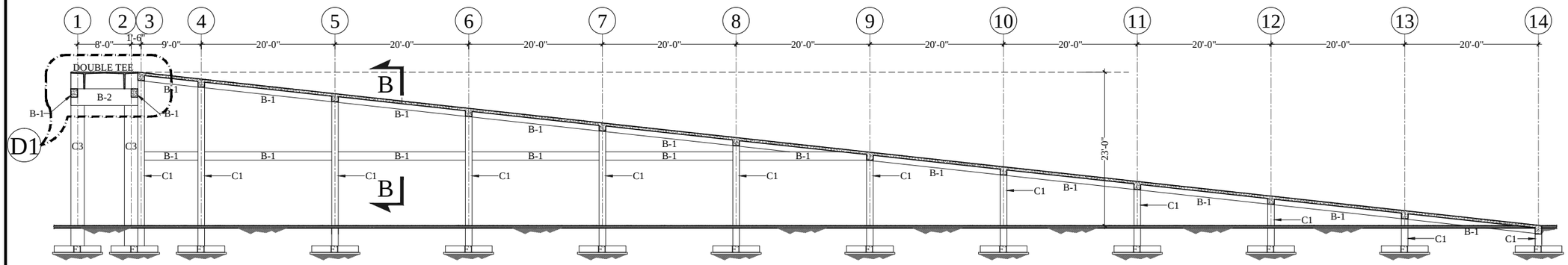
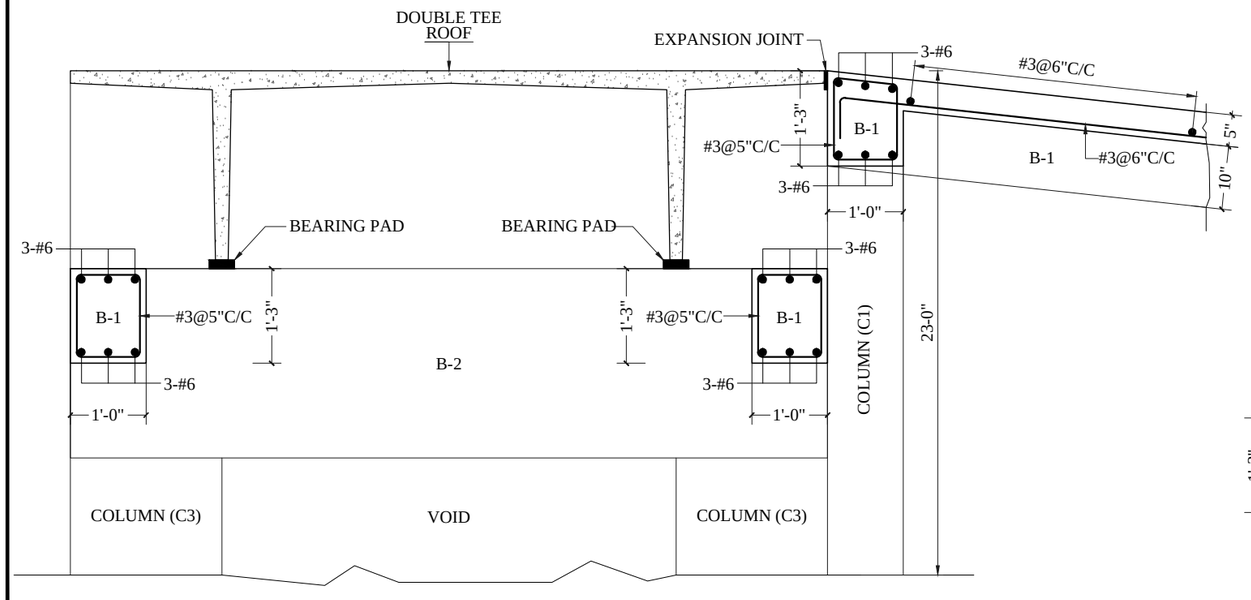


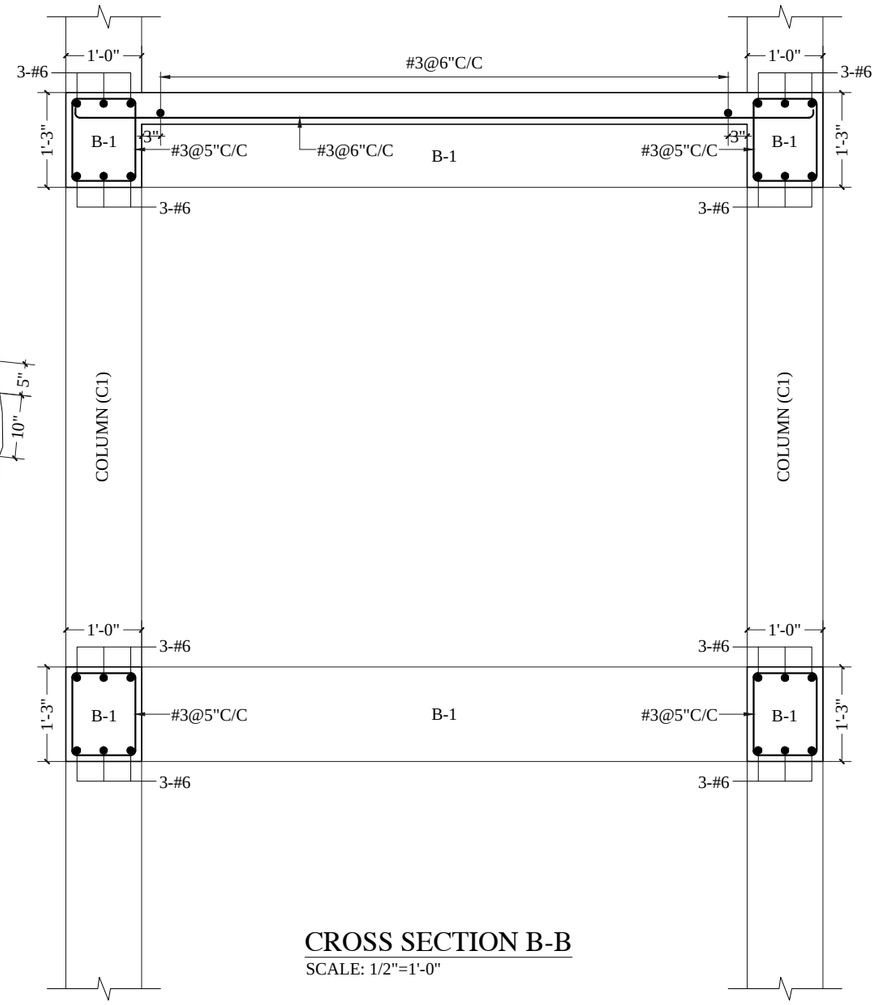
CROSS SECTION A-A

SCALE: 1/16"=1'-0"



DETAIL (D1)

SCALE: 1/2"=1'-0"



CROSS SECTION B-B

SCALE: 1/2"=1'-0"

CLIENT:

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TENDER DRAWINGS

DRAWING TITLE:

SECTION A-A, B-B AND DETAIL BRIDGE # 2

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/BRADGE-2/006 ST	REV: 04
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STRUCTURAL DRAWINGS
LIBRARY

LIST OF DRAWINGS
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4.	ROOF SLAB REINFORCEMENT PLAN AND DETAIL	0249/ST-6/003 ST
5.	X-SECTION OF TYPICAL LINTELS SCHEDULE OF LINTELS	0249/ST-6/004 ST

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STRUCTURE ENGINEER:
ENGR.MUHAMMAD IMRAN

APPROVED BY:
SYED ALI ABBAS GILLANI

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Note that specified compressive strength shall be achieved through proper mix design and this design shall be sole responsibility of Contractor (or as specified in the contract documents).

4.2. Reinforcing Steel

4.2.1. Except as otherwise specified, all reinforcing steel shall conform to ASTM A615, Grade 60.

4.2.2. Clear Concrete Covers to Reinforcement

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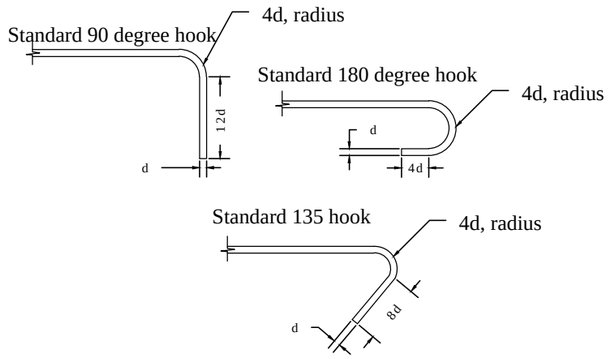

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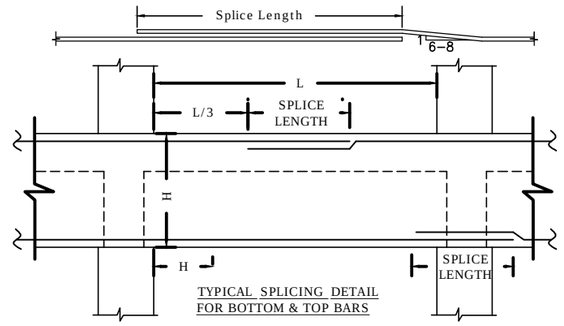
* Top bars are horizontal bars, with at least 12 in of fresh concrete below them.

b. For splicing unequal diameter bars, use smaller diameter for splice length determination.

c. Where required, bar shall have a gradient between 1:6 to 1:8.



TYPICAL SPLICING DETAIL FOR BOTTOM & TOP BARS

8. Construction Joints

a. Construction joints shall be located with the prior approval of the Engineer, if it is not indicated in the drawing.

b. On proposed construction joint surfaces, all fines shall be removed, on initial setting of concrete, but before its hardening. In order to achieve this, sand blasting or wire brushing could be used. Before placing the second-stage concrete, the joint surface shall be cleaned free of all loose material and washed. A bonding agent shall be applied to the surface and concrete placed within the period stipulated by the manufacturer.

9. Adopted Loads

9.1. Dead Loads

All floor finishes = 56 psf

Roof finishes = 63 psf

9.2. Live Loads

Floor = 50 psf

Roof = 30 psf

10. Foundation

a. Foundation Should be executed in accordance with geotechincal investigation report of this project.

b. Procedure for placement of structural fill should be strictly followed as if recommended in geo technical report.

c. All footings should be concentric with the column centre line unless otherwise shown.

d. Irregularity formed from loose strata under the footing shall be replaced with plain cement concrete.

11. Terms & Abbrevations

Following terms and abbreviations are used in all structural drawings.

a) UNO: Unless Noted Otherwise
b) NSL: Natural Surface Level
c) Typ: Typical
d) FFL: Finished Floor Level
e) C.Joint: Construction Joint

12. NOTE:

Allowable bearing capacity of 1 ton/ft² must be achieved at site.

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

G3 ENGINEERING CONSULTANTS (PVT)LTD.
House No.57-M Gulberg-III, Lahore, Pakistan

Tel : (92-42) 35441641, 35441642
Fax : (92-42) 35441645
E-mail : info@g3ec.com
URL : www.g3ec.com

PROJECT:

REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

NOTES:

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REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

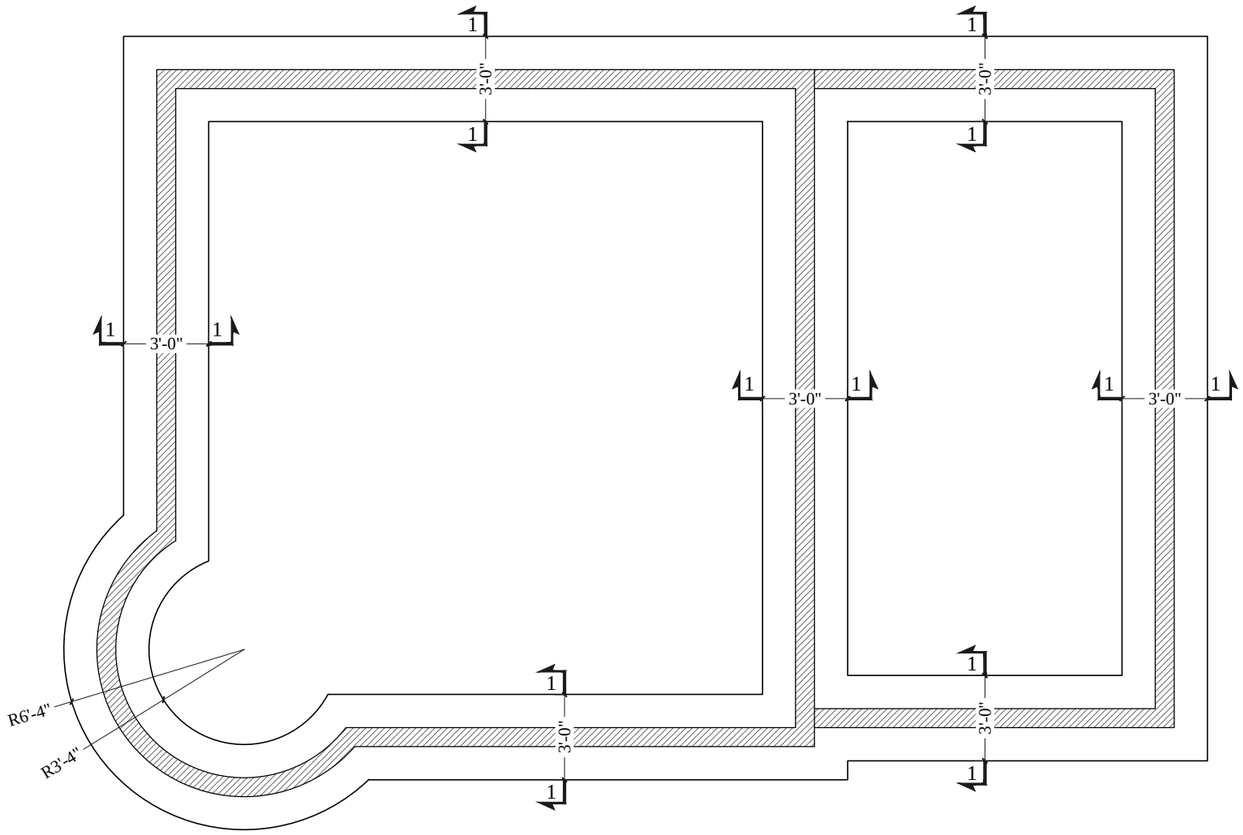
GENERAL NOTES OF LIBRARY

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

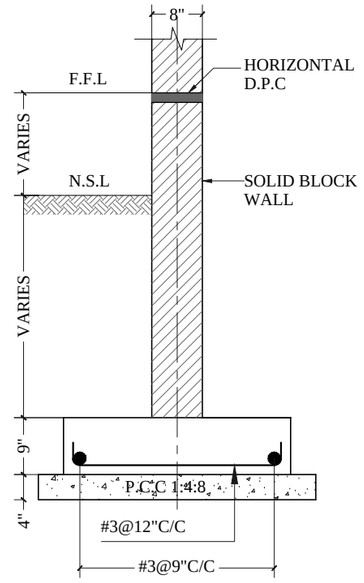
APPROVED BY: SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/ST-6/001 ST	04
SCALE (A3): N.T.S	SHEET: 1/1



FOOTING PLAN

SCALE: 3/16"=1'



SECTIONAL DETAIL OF FOOTING SECTION 1-1

Scale 1/2"=1'

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

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REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

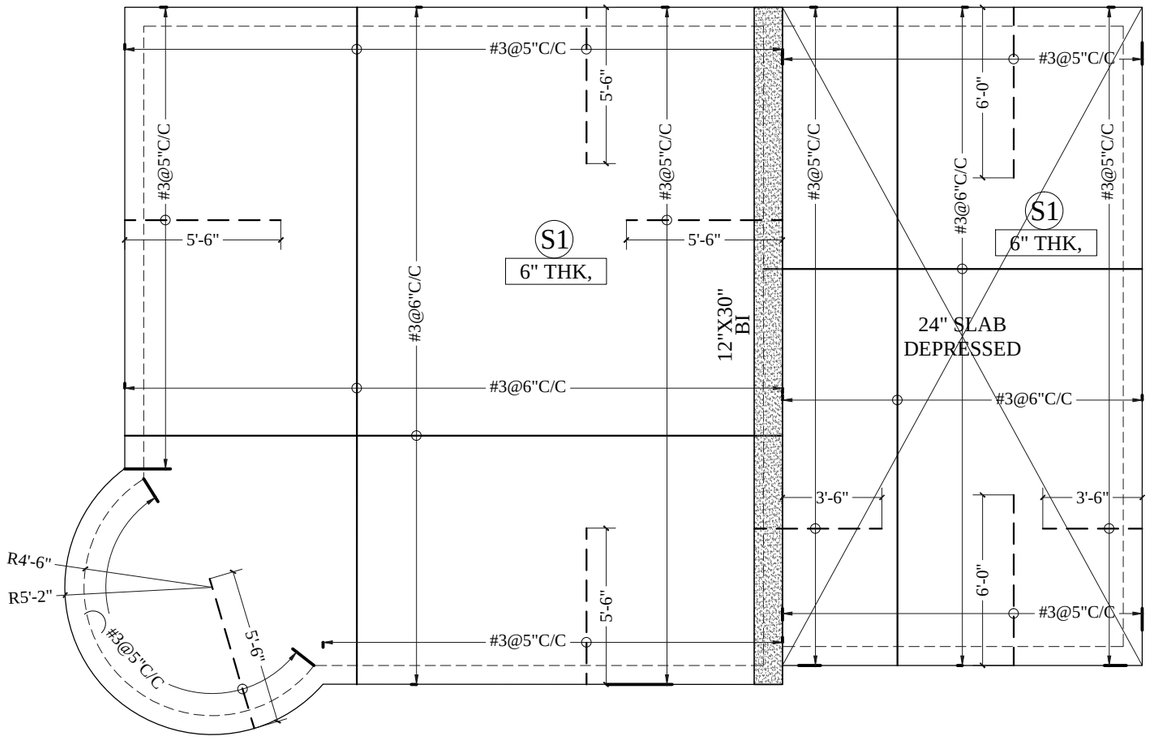
FOUNDATION PLAN AND DETAIL OF LIBRARY

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

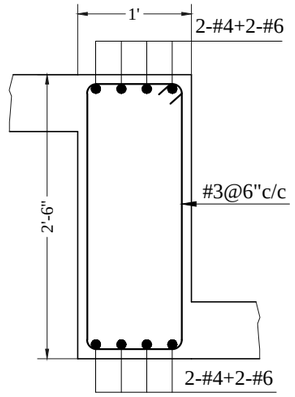
APPROVED BY: SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/ST-6/002 ST	04
SCALE (A3): AS SHOWN	SHEET: 1/1



ROOF FRAMING & SLAB REINFORCEMENT PLAN

SCALE: 3/16"=1'



BEAM B-1

SCALE: 3/4"=1'

CLIENT:

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PROJECT:

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REVISIONS:

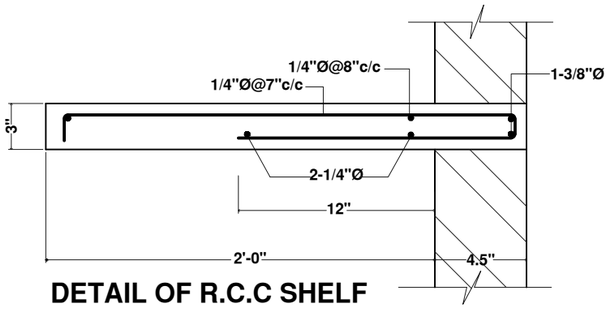
No.	DESCRIPTION	DATE

TENDER DRAWINGS

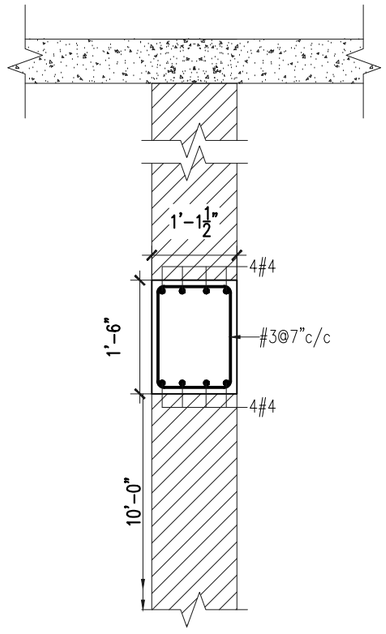
DRAWING TITLE:

ROOF SLAB REINFORCEMENT PLAN AND DETAIL OF LIBRARY

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/ST-6/003 ST	REV: 04
SCALE (A3): 3/16" - 1'	SHEET: 1/1



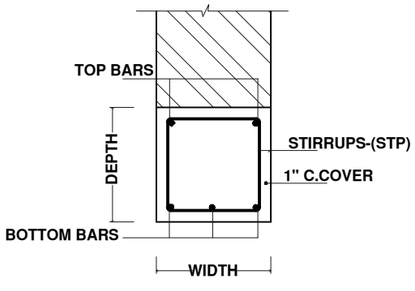
DETAIL OF R.C.C SHELF where required



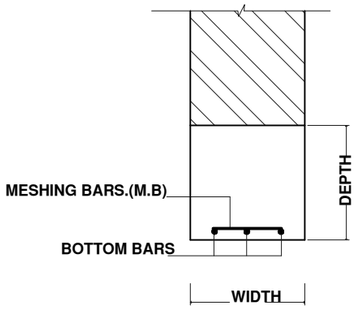
R.C.C DETAIL OF LINTEL (L/30) AT 10'–0" HIGHT

SCHEDULE OF R.C.C LINTELS

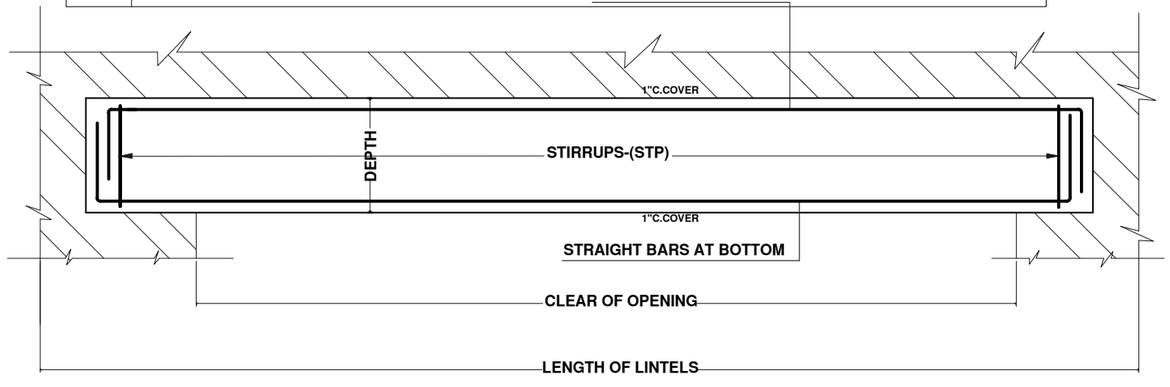
LINTEL NO.	CLEAR OPNING	LENGTH OF LINTEL	SIZE		STRAIGTH BARS AT BOTTOM		STRAIGTH BARS AT TOP		STIRRUPS (STP)
			WIDTH	DEPTH	NO	DIA	NO	DIA	MESHING BARS (M.B)
L / 1	1' - 6"	3' - 0"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	1/4" 0@ 7" C/C (M.B)
L / 2	1' - 9"	3' - 3"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 3	2' - 0"	3' - 6"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 4	2' - 3"	3' - 9"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 5	2' - 6"	4' - 0"	4 1/2", 9" OR 13½"	6"	3	3 / 8"	–	–	〃
L / 6	2' - 9"	4' - 3"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 7	3' - 0"	4' - 6"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 7a	3' - 3"	4' - 9"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 8	3' - 6"	5' - 0"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 9	3' - 9"	5' - 3"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 10	4' - 0"	5' - 6"	4 1/2" OR 9"	9"	3	1 / 2"	–	–	〃
L / 11	4' - 3"	5' - 9"	4 1/2" OR 9"	9"	3	1 / 2"	2	3 / 8"	1/4" 0 @ 7" C/C (STP)
L / 12	4' - 6"	6' - 0"	4 1/2" OR 9"	9"	3	1 / 2"	2	3 / 8"	〃
L / 13	4' - 9"	6' - 3"	4 1/2" OR 9"	9"	3	1 / 2"	2	3 / 8"	〃
L / 14	5' - 0"	6' - 6"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	3/8"Ø @ 7" C/C (STP)
L / 15	5' - 3"	6' - 9"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	〃
L / 16	5' - 6"	7' - 0"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	〃
L / 17	5' - 9"	7' - 3"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	〃
L / 18	6' - 0"	7' - 6"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 19	6' - 6"	8' - 0"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 20	6' - 9"	8' - 3"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 21	7' - 0"	8' - 6"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 22	7' - 6"	9' - 0"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 23	7' - 9"	9' - 3"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 24	8' - 0"	11 - 0"	9" OR 13½"	9"	5	1 / 2"	3	3 / 8"	〃
L / 25	8' - 6"	11 - 6"	9" OR 13½"	9"	5	1 / 2"	3	3 / 8"	〃
L / 26	9' - 0"	12'- 0"	9" OR 13½"	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 27	9' - 6"	12 - 6"	9" OR 13½"	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 28	11' - 6"	14'- 6"	9" OR 13½"	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 29	12' - 0"	15' - 0"	9" OR 13½"	18"	3 / 1	3/4" / 1"	3	1 / 2"	〃
	STRAIGHT BARS AT TOP								



TYPICAL-X-SECTION OF R.C.C LINTELS



TYPICAL-X-SECTION OF R.C.C LINTELS



TYPICAL-L-SECTION OF R.C.C LINTELS

CLIENT:

KARACHI NEIGHBORHOOD IMPROVEMENT PROJECT

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

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Tel : (92-42) 35441641, 35441642
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PROJECT:

REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

NOTES:

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2.

REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

X-SECTION OF TYPICAL LINTELS
SCHEDULE OF LINTELS
OF LIBRARY

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/ST-6/004 ST	REV: 04
SCALE (A3): N.T.S	SHEET: 1/1

STRUCTURAL DRAWINGS
OPEN AIR THEATER

LIST OF DRAWINGS
STRUCTURAL DRAWINGS

S.NO	DRAWING DETAIL	DRAWING NO.
1.	LIST OF DRAWING	0249/ST-6/000 ST
2.	GENERAL NOTES	0249/ST-6/001 ST
3.	SITE LAYOUT	0249/ST-6/002 ST
4.	SECTIONAL DETAILS A-A, B-B & D1 DETAIL	0249/ST-6/003 ST

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TENDER DRAWINGS

DRAWING TITLE:
LIST OF DRAWINGS OF OPEN AIR THEATER

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER:
ENGR.MUHAMMAD IMRAN

APPROVED BY:
SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/ST-6/000 ST	04
SCALE (A3): N.T.S	SHEET: 1/1

GENERAL NOTES & SPECIFICATIONS

1. General

1.1. All structural drawings should be read in conjunction with Architectural, Civil, Mechanical, Electrical and other relevant drawings.The contractor should coordinate with Architectural and various service drawings for levels, sizes and location of all Structural members, Floors Walls and Pipes etc..

1.2. The contractor shall report all discrepancies, differences and conflicts, as soon as they are observed.

1.3. Safe working practices will be adopted, and no damage to any property or life will be ensured.

1.4. Prior approval of proposed method of work, sequence of jobs, location of block-outs and construction joints in concrete , location of all splices and proposed values of camber is required.

1.5. The structure is not designed against construction loads. The contractor is responsible for ensuring that all elements should remain supported during construction.

1.6. Prior to adopting finished levels of structural elements, proper allowances are to be maintained by the contractor.

2. Design

2.1. The Structural design of all concrete elements is based on Building Code Requirements for Structural Concrete (ACI 318-08) of the American Concrete Institute, USA.

2.2. The Structural design of all masonry elements shall conform to Specification for Masonry Structures (ACI 530.1-05/ ASCE 6-05/ TMS 602-05) reported by the Masonry Standards Joint Committee (MSJC) USA.

3. Construction

3.1. Work on this building shall conform to all requirements of ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan, except as modified by the requirements below.

3.2. The Construction Work of all Masonry elements should confirm to Specification for Masonry Structures (ACI 530.1-05/ ASCE 6-05/ TMS 602-05) reported by the Masonry Standards Joint Committee (MSJC) USA..

4. Materials

4.1. Concrete

4.1.1. Plain Concrete

All Plain concrete shall have a cylinder strength of 1500 psi, at 28 days, unless noted otherwise.

4.1.2. Structural Concrete

a) The structural concrete for all columns and foundations shall have a minimum compressive cylinder strength of 4,000 psi, at 28 days.

b)All concrete work shall conform to Specifications for Structural Concrete for Buildings ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan.

c) Unless Noted Otherwise all other structural concrete shall have a minimum compressive cylinder strength of 3,000 psi, at 28 days.

Note that specified compressive strength shall be achieved through proper mix design and this design shall be sole responsibility of Contractor (or as specified in the contract documents).

4.2. Reinforcing Steel

4.2.1. Except as otherwise specified, all reinforcing steel shall conform to ASTM A615, Grade 60.

4.2.2. Clear Concrete Covers to Reinforcement

	Member	Cover
1)	Foundations	2"
2)	Columns	1½"
3)	Beams (with depth less than 10")	3/4"
4)	Beams (with depth greater than than 10")	1½"
5)	Slab	3/4"
6)	Walls Facing Soil	2"
7)	Walls Other	1"

4.1. In order to ensure the specified covers, bars must be secured in position, with the help of concrete spacer blocks, with embedded binding wire.

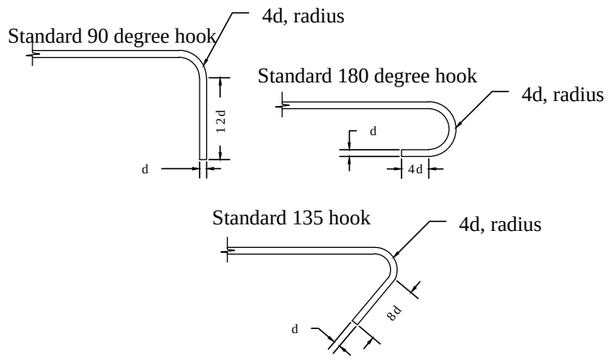
4.2. To support top bars, provide supporting rebars and standard ACI chairs.

5. Bar Development

5.1. Standard Hooks

Unless otherwise shown in the drawings, standard ACI hooks shall shall be provided at the free ends of all bars.

5.2. Unless noted otherwise, the hooks will comply the following dimensions:



5.3. Development and Splice Lengths

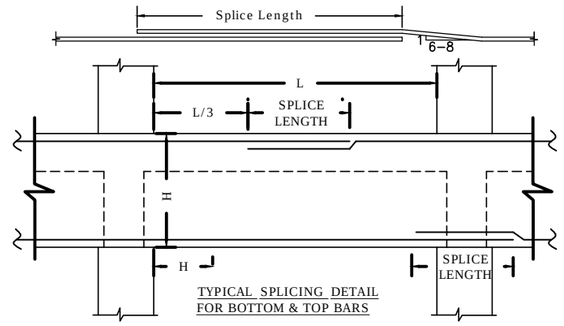
a. Splice length of reinforcing bars shall as follows.

Bar Designation	Splice lengths (in)			
	Concrete with cylinder strength of 3,000 psi at 28 days		Concrete with cylinder strength of 4,000 psi at 28 days	
	Top bars*	Other than top bars	Top bars*	Other than top bars
	Splice Length	Splice Length	Splice Length	Splice Length
#3	30	24	27	21
#4	39	30	33	27
#5	48	36	42	33
#6	57	45	51	39
#8	93	72	81	63

* Top bars are horizontal bars, with at least 12 in of fresh concrete below them.

b. For splicing unequal diameter bars, use smaller diameter for splice length determination.

c. Where required, bar shall have a gradient between 1:6 to 1:8.



TYPICAL SPLICING DETAIL FOR BOTTOM & TOP BARS

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e) C.Joint: Construction Joint

12. NOTE:

Allowable bearing capacity of 1 ton/ft² must be achieved at site.

CLIENT:

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PROJECT:

REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

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REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

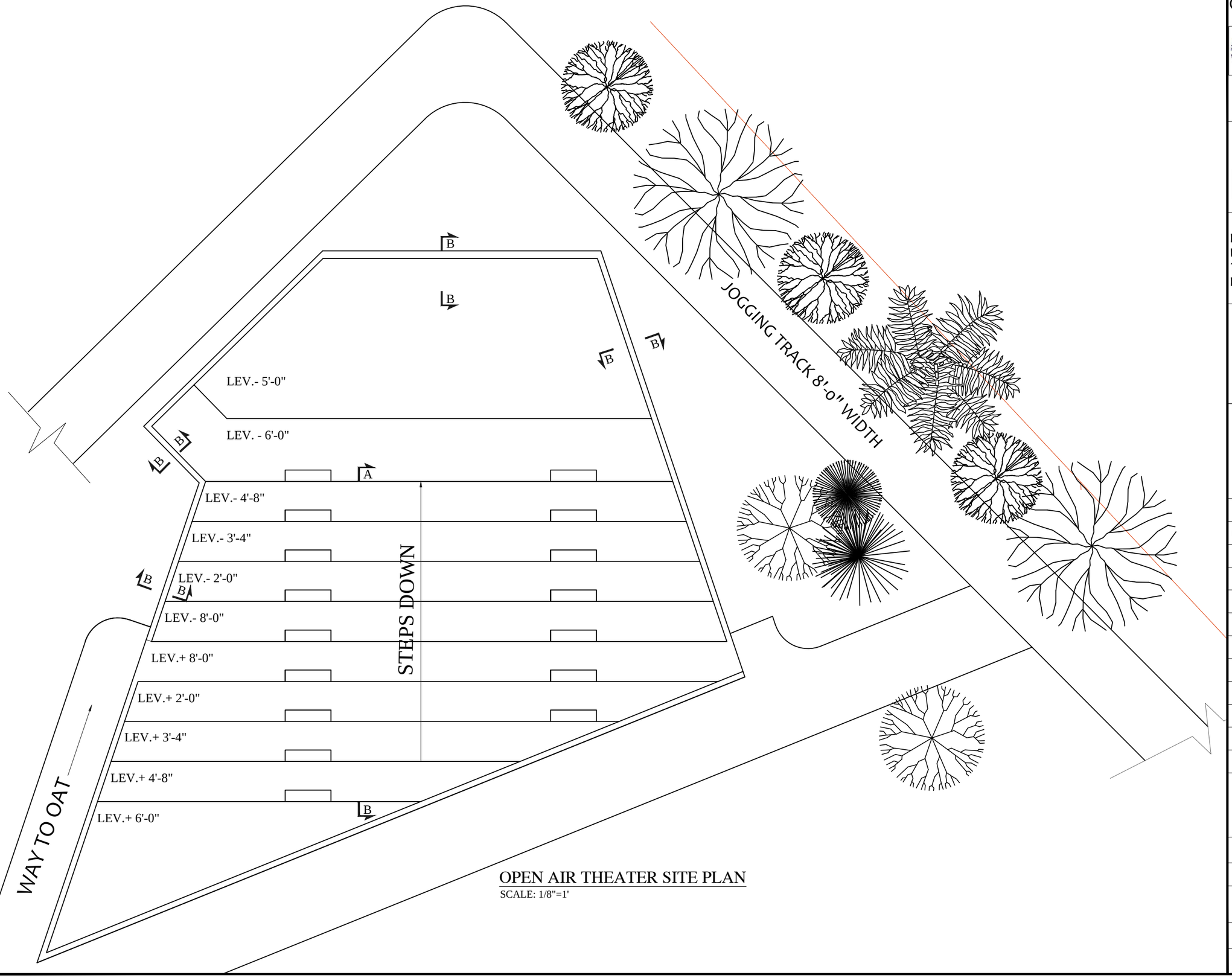
GENERAL NOTES OF OPEN AIR THEATER

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

APPROVED BY: SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/ST-6/001 ST	04
SCALE (A3): N.T.S	SHEET: 1/1



OPEN AIR THEATER SITE PLAN

SCALE: 1/8"=1'

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

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REVISIONS:

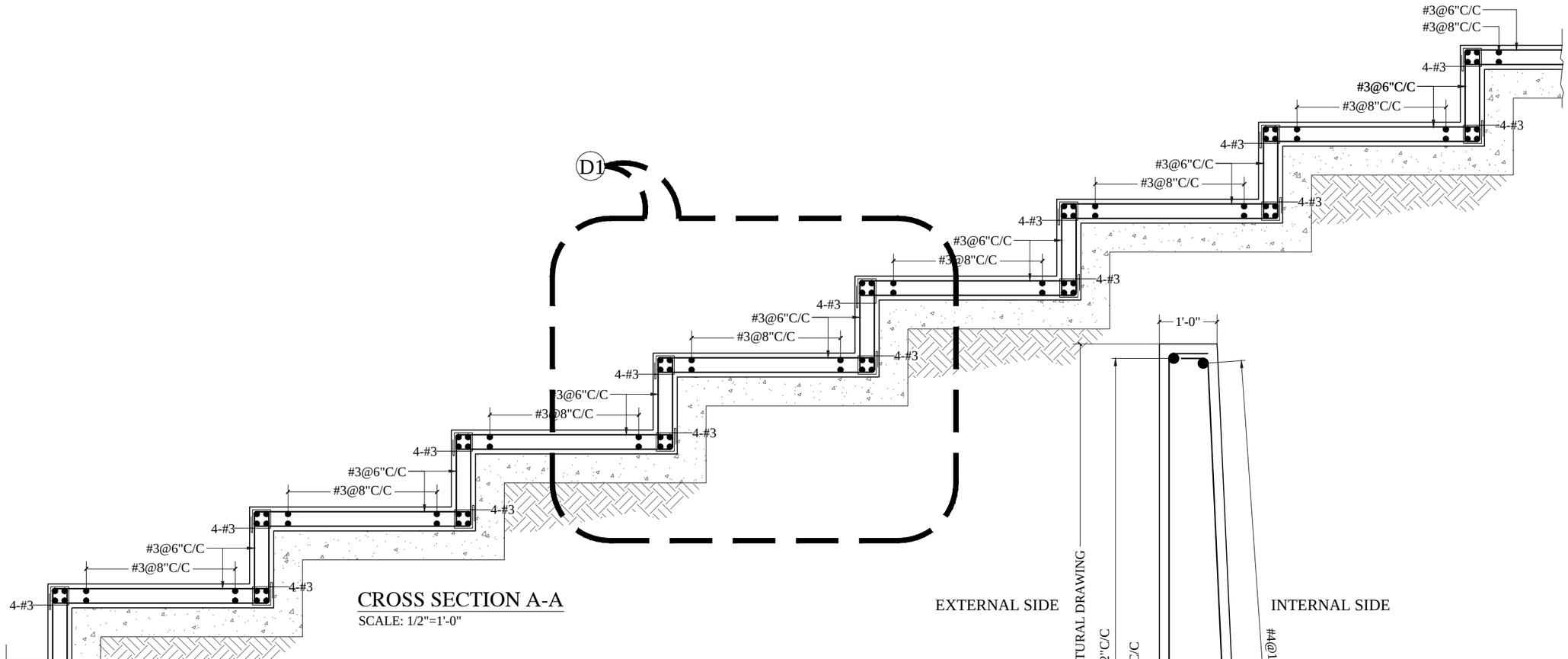
No.	DESCRIPTION	DATE

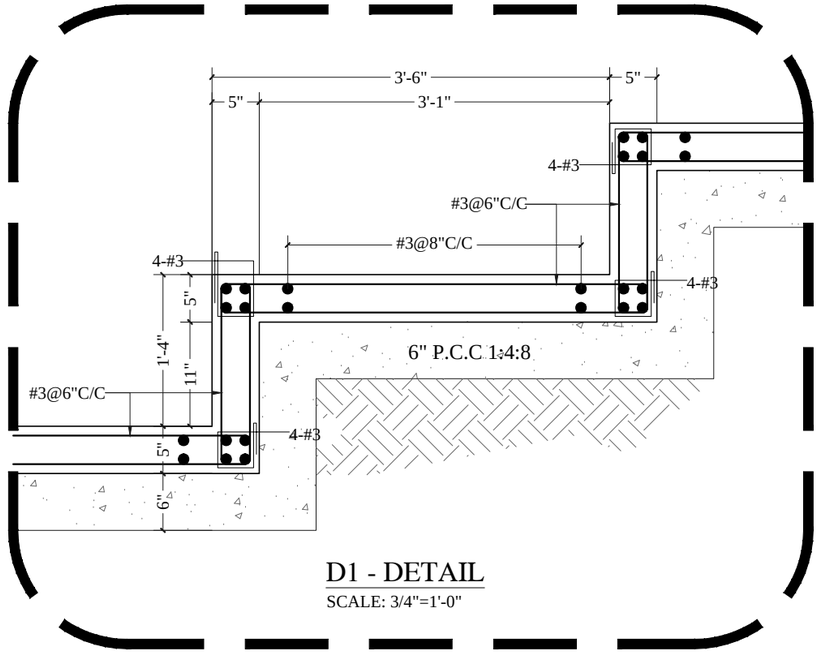
TENDER DRAWINGS

DRAWING TITLE:

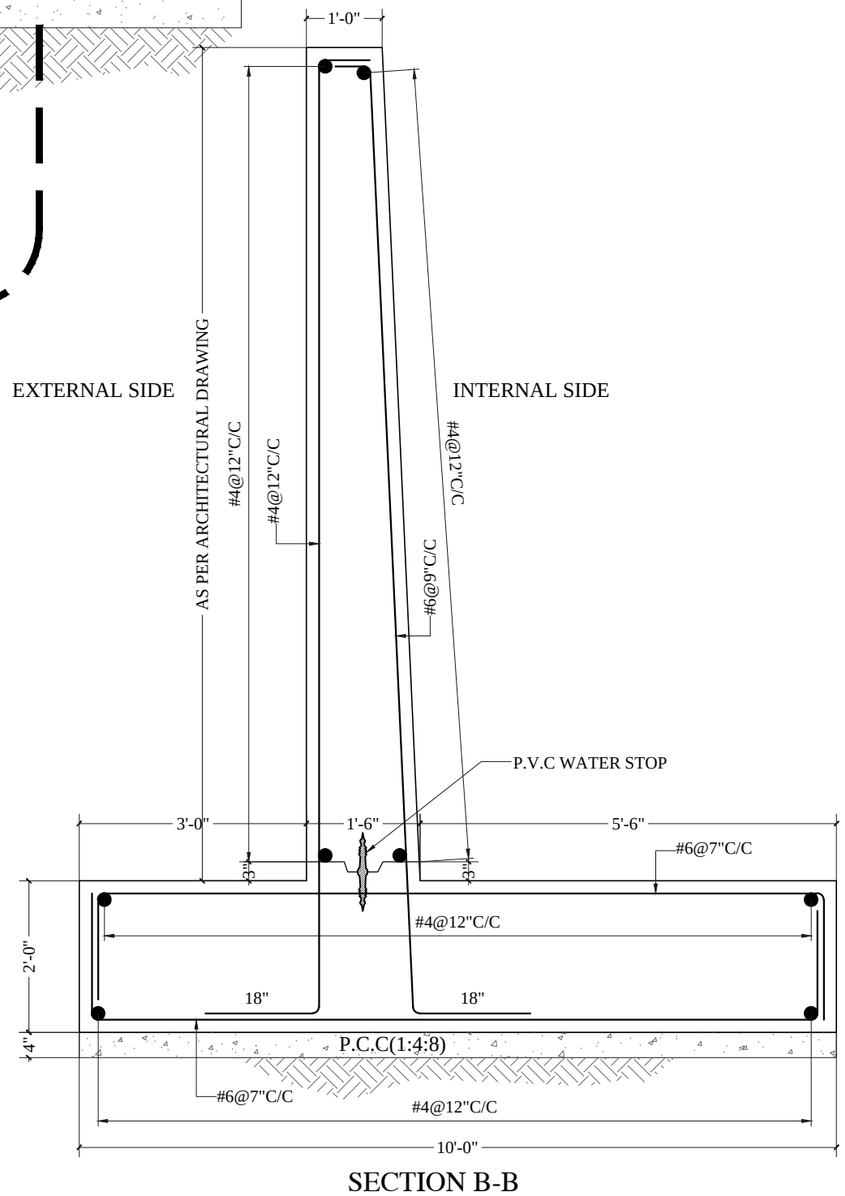
SITE LAYOUT OF OPEN AIR THEATER

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/ST-6/002 ST	REV: 0
SCALE (A3): AS SHOWN	SHEET: 1/1





D1 - DETAIL
SCALE: 3/4"=1'-0"



SECTION B-B
Scale 1/2"=1'

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

G3 ENGINEERING CONSULTANTS (PVT)LTD.
House No.57-M Gulberg-III, Lahore, Pakistan

Tel : (92-42) 35441641, 35441642
Fax : (92-42) 35441645
E-mail : info@g3ec.com
URL : www.g3ec.com

PROJECT:

REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

NOTES:

1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
2. THIS DRAWING IS AN INTELLECTUAL PROPERTY OF G3 ENGINEERING CONSULTANTS (PVT.) LTD. AND CANNOT BE REPRINTED OR REPRODUCED WITHOUT PRIOR APPROVAL OF G3.

REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:
SECTIONAL DETAILS A-A, B-B & D1 DETAIL OF OPEN AIR THEATER

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/ST-6/003 ST	REV: 04
SCALE (A3): AS SHOWN	SHEET: 1/1

STRUCTURAL DRAWINGS
GUARD ROOM & SECURITY ROOM

LIST OF DRAWINGS
STRUCTURAL DRAWINGS

S.NO	DRAWING DETAIL	DRAWING NO.
1.	LIST OF DRAWING	0249/G/S ROOM/000 ST
2.	GENERAL NOTES	0249/G/S ROOM/001 ST
3.	FOUNDATION & ROOF SLAB REINFORCEMENT PLAN AND DETAIL FOR GUARD ROOM & SECURITY	0249/G/S ROOM/002 ST
4.	X-SECTION OF TYPICAL LINTELS SCHEDULE OF LINTELS	0249/G/S ROOM/003 ST

CLIENT:

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TENDER DRAWINGS

DRAWING TITLE:
LIST OF DRAWINGS

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

APPROVED BY: SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/G/S ROOM/000 ST	04
SCALE (A3): N.T.S	SHEET: 1/1

GENERAL NOTES & SPECIFICATIONS

1. General

1.1. All structural drawings should be read in conjunction with Architectural, Civil, Mechanical, Electrical and other relevant drawings.The contractor should coordinate with Architectural and various service drawings for levels, sizes and location of all Structural members, Floors Walls and Pipes etc..

1.2. The contractor shall report all discrepancies, differences and conflicts, as soon as they are observed.

1.3. Safe working practices will be adopted, and no damage to any property or life will be ensured.

1.4. Prior approval of proposed method of work, sequence of jobs, location of block-outs and construction joints in concrete , location of all splices and proposed values of camber is required.

1.5. The structure is not designed against construction loads. The contractor is responsible for ensuring that all elements should remain supported during construction.

1.6. Prior to adopting finished levels of structural elements, proper allowances are to be maintained by the contractor.

2. Design

2.1. The Structural design of all concrete elements is based on Building Code Requirements for Structural Concrete (ACI 318-08) of the American Concrete Institute, USA.

2.2. The Structural design of all masonry elements shall conform to Specification for Masonry Structures (ACI 530.1-05/ ASCE 6-05/ TMS 602-05) reported by the Masonry Standards Joint Committee (MSJC) USA.

3. Construction

3.1. Work on this building shall conform to all requirements of ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan, except as modified by the requirements below.

3.2. The Construction Work of all Masonry elements should confirm to Specification for Masonry Structures (ACI 530.1-05/ ASCE 6-05/ TMS 602-05) reported by the Masonry Standards Joint Committee (MSJC) USA..

4. Materials

4.1. Concrete

4.1.1. Plain Concrete

All Plain concrete shall have a cylinder strength of 1500 psi, at 28 days, unless noted otherwise.

4.1.2. Structural Concrete

a) The structural concrete for all columns and foundations shall have a minimum compressive cylinder strength of 4,000 psi, at 28 days.

b)All concrete work shall conform to Specifications for Structural Concrete for Buildings ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan.

c) Unless Noted Otherwise all other structural concrete shall have a minimum compressive cylinder strength of 3,000 psi, at 28 days.

Note that specified compressive strength shall be achieved through proper mix design and this design shall be sole responsibility of Contractor (or as specified in the contract documents).

4.2. Reinforcing Steel

4.2.1. Except as otherwise specified, all reinforcing steel shall conform to ASTM A615, Grade 60.

4.2.2. Clear Concrete Covers to Reinforcement

	Member	Cover
1)	Foundations	2"
2)	Columns	1½"
3)	Beams (with depth less than 10")	3/4"
4)	Beams (with depth greater than than 10")	1½"
5)	Slab	3/4"
6)	Walls Facing Soil	2"
7)	Walls Other	1"

4.1. In order to ensure the specified covers, bars must be secured in position, with the help of concrete spacer blocks, with embedded binding wire.

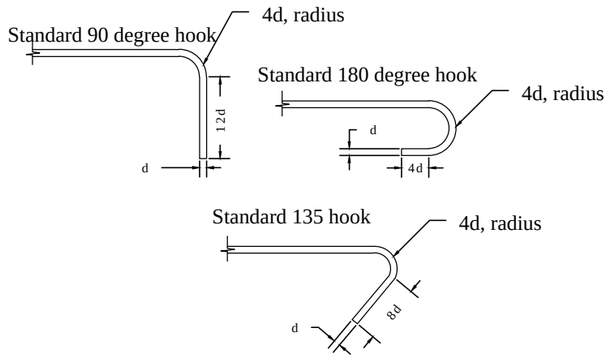
4.2. To support top bars, provide supporting rebars and standard ACI chairs.

5. Bar Development

5.1. Standard Hooks

Unless otherwise shown in the drawings, standard ACI hooks shall shall be provided at the free ends of all bars.

5.2. Unless noted otherwise, the hooks will comply the following dimensions:



5.3. Development and Splice Lengths

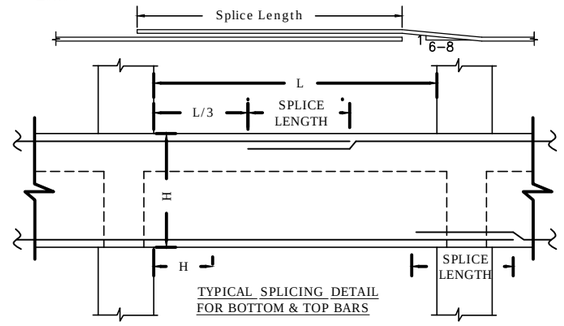
a. Splice length of reinforcing bars shall as follows.

Bar Designation	Splice lengths (in)			
	Concrete with cylinder strength of 3,000 psi at 28 days		Concrete with cylinder strength of 4,000 psi at 28 days	
	Top bars*	Other than top bars	Top bars*	Other than top bars
	Splice Length	Splice Length	Splice Length	Splice Length
#3	30	24	27	21
#4	39	30	33	27
#5	48	36	42	33
#6	57	45	51	39
#8	93	72	81	63

* Top bars are horizontal bars, with at least 12 in of fresh concrete below them.

b. For splicing unequal diameter bars, use smaller diameter for splice length determination.

c. Where required, bar shall have a gradient between 1:6 to 1:8.



TYPICAL SPLICING DETAIL FOR BOTTOM & TOP BARS

8. Construction Joints

a. Construction joints shall be located with the prior approval of the Engineer, if it is not indicated in the drawing.

b. On proposed construction joint surfaces, all fines shall be removed, on initial setting of concrete, but before its hardening. In order to achieve this, sand blasting or wire brushing could be used. Before placing the second-stage concrete, the joint surface shall be cleaned free of all loose material and washed. A bonding agent shall be applied to the surface and concrete placed within the period stipulated by the manufacturer.

9. Adopted Loads

9.1. Dead Loads

All floor finishes = 56 psf

Roof finishes = 63 psf

9.2. Live Loads

Floor = 50 psf

Roof = 30 psf

10. Foundation

a. Foundation Should be executed in accordance with geotechincal investigation report of this project.

b. Procedure for placement of structural fill should be strictly followed as if recommended in geo technical report.

c. All footings should be concentric with the column centre line unless otherwise shown.

d. Irregularity formed from loose strata under the footing shall be replaced with plain cement concrete.

11. Terms & Abbrevations

Following terms and abbreviations are used in all structural drawings.

a) UNO: Unless Noted Otherwise
b) NSL: Natural Surface Level
c) Typ: Typical
d) FFL: Finished Floor Level
e) C.Joint: Construction Joint

12. NOTE:

Allowable bearing capacity of 1 ton/ft² must be achieved at site.

CLIENT:

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PROJECT:

REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

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REVISIONS:

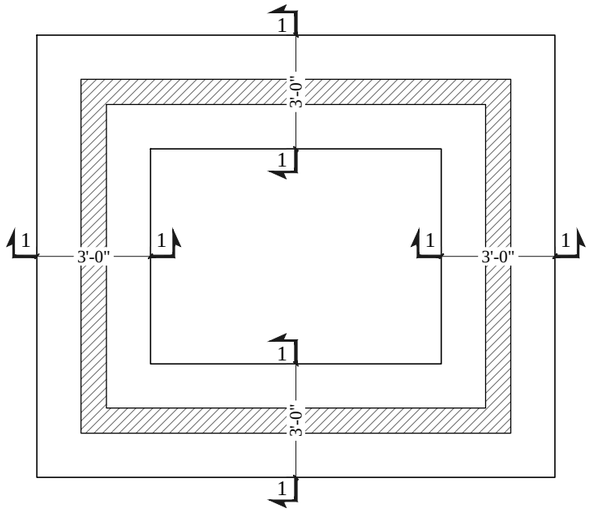
No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

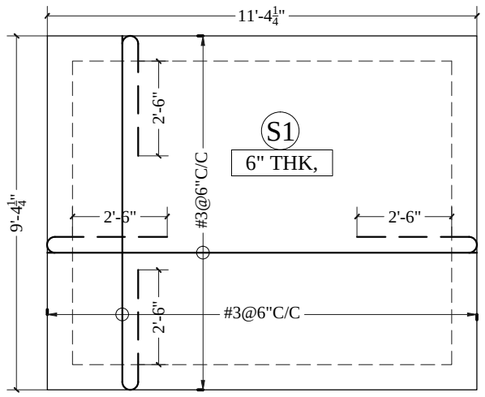
GENERAL NOTES FOR GUARD ROOM & SECURITY

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/G/S ROOM/001 ST	REV: 04
SCALE (A3): N.T.S	SHEET: 1/1



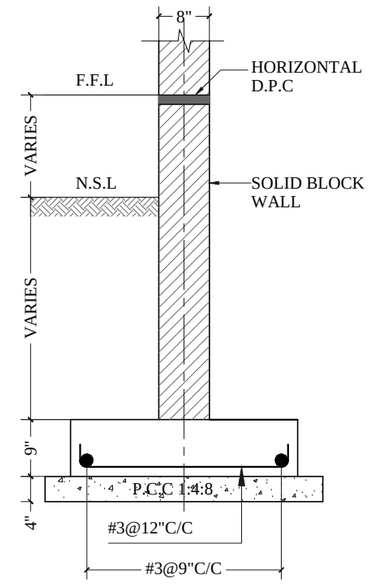
FOOTING PLAN

SCALE: 1/4"=1'



ROOF SLAB REINFORCEMENT PLAN

SCALE: 1/4"=1'



SECTIONAL DETAIL OF FOOTING SECTION 1-1

Scale 1/2"=1'

CLIENT:

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REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

NOTES:

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REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

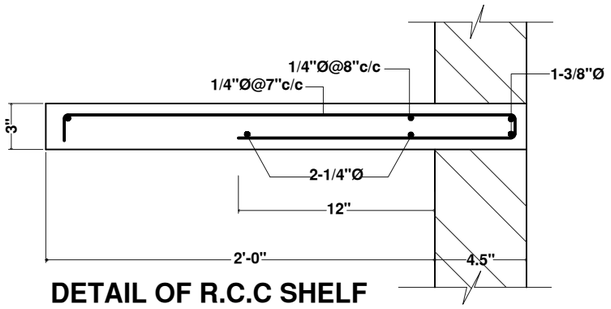
DRAWING TITLE:
FOUNDATION & ROOF SLAB REINFORCEMENT PLAN AND DETAIL FOR GUARD ROOM & SECURITY ROOM

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

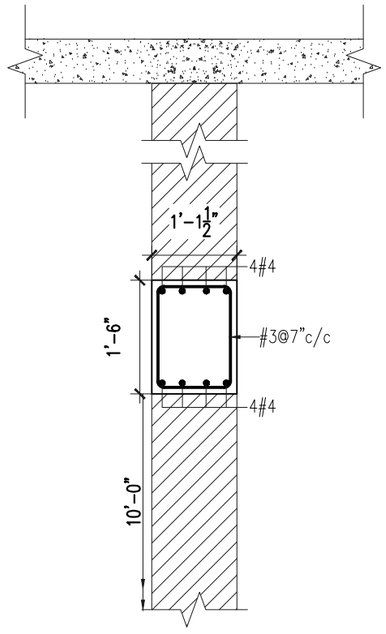
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

APPROVED BY: SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/G/S ROOM/002 ST	04
SCALE (A3): AS SHOWN	SHEET: 1/1



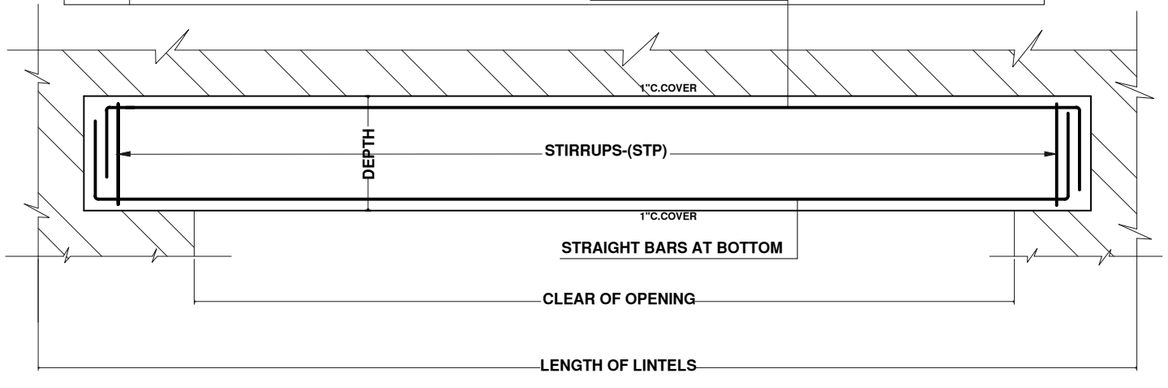
DETAIL OF R.C.C SHELF where required



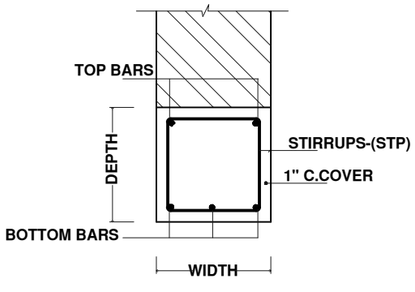
R.C.C DETAIL OF LINTEL
(L/30)
AT 10'–0" HIGHT

SCHEDULE OF R.C.C LINTELS

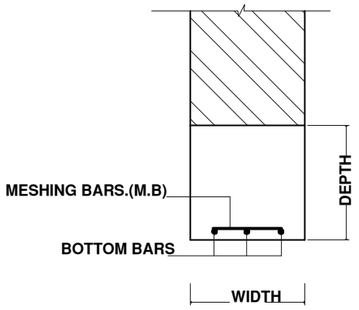
LINTEL NO.	CLEAR OPNING	LENGTH OF LINTEL	SIZE		STRAIGTH BARS AT BOTTOM		STRAIGTH BARS AT TOP		STIRRUPS (STP)
			WIDTH	DEPTH	NO	DIA	NO	DIA	MESHING BARS (M.B)
L / 1	1' - 6"	3' - 0"	4 1/2" 9" OR	6"	3	3 / 8"	–	–	1/4" 0/@ 7" C/C (M.B)
L / 2	1' - 9"	3' - 3"	4 1/2" 9" OR	6"	3	3 / 8"	–	–	〃
L / 3	2' - 0"	3' - 6"	4 1/2" 9" OR	6"	3	3 / 8"	–	–	〃
L / 4	2' - 3"	3' - 9"	4 1/2" 9" OR	6"	3	3 / 8"	–	–	〃
L / 5	2' - 6"	4' - 0"	4 1/2", 9" OR 13½"	6"	3	3 / 8"	–	–	〃
L / 6	2' - 9"	4' - 3"	4 1/2" 9" OR	6"	3	3 / 8"	–	–	〃
L / 7	3' - 0"	4' - 6"	4 1/2" 9" OR	6"	3	3 / 8"	–	–	〃
L / 7a	3' - 3"	4' - 9"	4 1/2" 9" OR	6"	3	3 / 8"	–	–	〃
L / 8	3' - 6"	5' - 0"	4 1/2" 9" OR	6"	3	3 / 8"	–	–	〃
L / 9	3' - 9"	5' - 3"	4 1/2" 9" OR	6"	3	3 / 8"	–	–	〃
L / 10	4' - 0"	5' - 6"	4 1/2" 9" OR	9"	3	1 / 2"	–	–	〃
L / 11	4' - 3"	5' - 9"	4 1/2" 9" OR	9"	3	1 / 2"	2	3 / 8"	1/4" 0 @ 7" C/C (STP)
L / 12	4' - 6"	6' - 0"	4 1/2" 9" OR	9"	3	1 / 2"	2	3 / 8"	〃
L / 13	4' - 9"	6' - 3"	4 1/2" 9" OR	9"	3	1 / 2"	2	3 / 8"	〃
L / 14	5' - 0"	6' - 6"	9" 13½" OR	9"	3	1 / 2"	2	3 / 8"	3/8"Ø @ 7" C/C (STP)
L / 15	5' - 3"	6' - 9"	9" 13½" OR	9"	3	1 / 2"	2	3 / 8"	〃
L / 16	5' - 6"	7' - 0"	9" 13½" OR	9"	3	1 / 2"	2	3 / 8"	〃
L / 17	5' - 9"	7' - 3"	9" 13½" OR	9"	3	1 / 2"	2	3 / 8"	〃
L / 18	6' - 0"	7' - 6"	9" 13½" OR	9"	4	1 / 2"	3	3 / 8"	〃
L / 19	6' - 6"	8' - 0"	9" 13½" OR	9"	4	1 / 2"	3	3 / 8"	〃
L / 20	6' - 9"	8' - 3"	9" 13½" OR	9"	4	1 / 2"	3	3 / 8"	〃
L / 21	7' - 0"	8' - 6"	9" 13½" OR	9"	4	1 / 2"	3	3 / 8"	〃
L / 22	7' - 6"	9' - 0"	9" 13½" OR	9"	4	1 / 2"	3	3 / 8"	〃
L / 23	7' - 9"	9' - 3"	9" 13½" OR	9"	4	1 / 2"	3	3 / 8"	〃
L / 24	8' - 0"	11 - 0"	9" 13½" OR	9"	5	1 / 2"	3	3 / 8"	〃
L / 25	8' - 6"	11 - 6"	9" 13½" OR	9"	5	1 / 2"	3	3 / 8"	〃
L / 26	9' - 0"	12'- 0"	9" 13½" OR	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 27	9' - 6"	12 - 6"	9" 13½" OR	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 28	11' - 6"	14'- 6"	9" 13½" OR	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 29	12' - 0"	15' - 0"	9" 13½" OR	18"	3 / 1	3/4" / 1"	3	1 / 2"	〃
	STRAIGHT BARS AT TOP								



TYPICAL-L-SECTION OF R.C.C LINTELS



TYPICAL-X-SECTION OF R.C.C LINTELS



TYPICAL-X-SECTION OF R.C.C LINTELS

CLIENT:

KARACHI NEIGHBOURHOOD IMPROVEMENT PROJECT

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

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REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

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REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:
X-SECTION OF TYPICAL LINTELS SCHEDULE OF LINTELS FOR GUARD ROOM & SECURITY

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

APPROVED BY: SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/G/S ROOM/003 ST	04
SCALE (A3): N.T.S	SHEET: 1/1

STRUCTURAL DRAWINGS
TOILET FOR FOOD STREET

LIST OF DRAWINGS
STRUCTURAL DRAWINGS

S.NO	DRAWING DETAIL	DRAWING NO.
1.	LIST OF DRAWING	0249/FS-TB/000 ST
2.	GENERAL NOTES	0249/FS-TB/001 ST
3.	FOOTING PLAN AND DETAILS	0249/FS-TB/002 ST
4.	ROOF SLAB REINFORCEMENT PLAN	0249/FS-TB/003 ST
5.	X-SECTION OF TYPICAL LINTELS SCHEDULE OF LINTELS	0249/FS-TB/004 ST

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TENDER DRAWINGS

DRAWING TITLE:
LIST OF DRAWINGS
TOILET FOR FOOD STREET

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER:
ENGR.MUHAMMAD IMRAN

APPROVED BY:
SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/FS-TB/000 ST	04
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a) The structural concrete for all columns and foundations shall have a minimum compressive cylinder strength of 4,000 psi, at 28 days.

b)All concrete work shall conform to Specifications for Structural Concrete for Buildings ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan.

c) Unless Noted Otherwise all other structural concrete shall have a minimum compressive cylinder strength of 3,000 psi, at 28 days.

Note that specified compressive strength shall be achieved through proper mix design and this design shall be sole responsibility of Contractor (or as specified in the contract documents).

4.2. Reinforcing Steel

4.2.1. Except as otherwise specified, all reinforcing steel shall conform to ASTM A615, Grade 60.

4.2.2. Clear Concrete Covers to Reinforcement

	Member	Cover
1)	Foundations	2"
2)	Columns	1½"
3)	Beams (with depth less than 10")	3/4"
4)	Beams (with depth greater than than 10")	1½"
5)	Slab	3/4"
6)	Walls Facing Soil	2"
7)	Walls Other	1"

4.1. In order to ensure the specified covers, bars must be secured in position, with the help of concrete spacer blocks, with embedded binding wire.

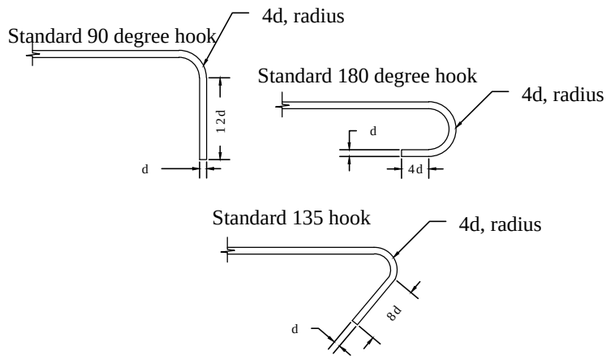
4.2. To support top bars, provide supporting rebars and standard ACI chairs.

5. Bar Development

5.1. Standard Hooks

Unless otherwise shown in the drawings, standard ACI hooks shall shall be provided at the free ends of all bars.

5.2. Unless noted otherwise, the hooks will comply the following dimensions:



5.3. Development and Splice Lengths

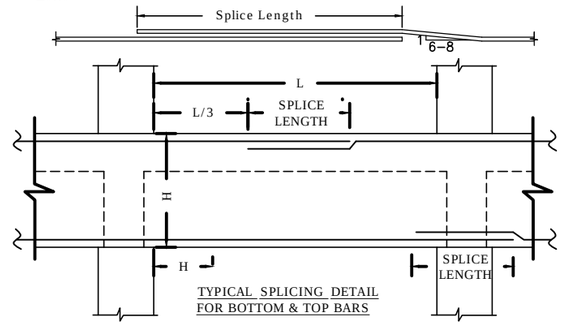
a. Splice length of reinforcing bars shall as follows.

Bar Designation	Splice lengths (in)			
	Concrete with cylinder strength of 3,000 psi at 28 days		Concrete with cylinder strength of 4,000 psi at 28 days	
	Top bars*	Other than top bars	Top bars*	Other than top bars
	Splice Length	Splice Length	Splice Length	Splice Length
#3	30	24	27	21
#4	39	30	33	27
#5	48	36	42	33
#6	57	45	51	39
#8	93	72	81	63

* Top bars are horizontal bars, with at least 12 in of fresh concrete below them.

b. For splicing unequal diameter bars, use smaller diameter for splice length determination.

c. Where required, bar shall have a gradient between 1:6 to 1:8.



TYPICAL SPLICING DETAIL FOR BOTTOM & TOP BARS

8. Construction Joints

a. Construction joints shall be located with the prior approval of the Engineer, if it is not indicated in the drawing.

b. On proposed construction joint surfaces, all fines shall be removed, on initial setting of concrete, but before its hardening. In order to achieve this, sand blasting or wire brushing could be used. Before placing the second-stage concrete, the joint surface shall be cleaned free of all loose material and washed. A bonding agent shall be applied to the surface and concrete placed within the period stipulated by the manufacturer.

9. Adopted Loads

9.1. Dead Loads

All floor finishes = 56 psf

Roof finishes = 63 psf

9.2. Live Loads

Floor = 50 psf

Roof = 30 psf

10. Foundation

a. Foundation Should be executed in accordance with geotechincal investigation report of this project.

b. Procedure for placement of structural fill should be strictly followed as if recommended in geo technical report.

c. All footings should be concentric with the column centre line unless otherwise shown.

d. Irregularity formed from loose strata under the footing shall be replaced with plain cement concrete.

11. Terms & Abbrevations

Following terms and abbreviations are used in all structural drawings.

a) UNO: Unless Noted Otherwise
b) NSL: Natural Surface Level
c) Typ: Typical
d) FFL: Finished Floor Level
e) C.Joint: Construction Joint

12. NOTE:

Allowable bearing capacity of 1 ton/ft² must be achieved at site.

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

G3 ENGINEERING CONSULTANTS (PVT)LTD.
House No.57-M Gulberg-III, Lahore, Pakistan

Tel : (92-42) 35441641, 35441642
Fax : (92-42) 35441645
E-mail : info@g3ec.com
URL : www.g3ec.com

PROJECT:

REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

NOTES:

1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
2.

REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

GENERAL NOTES
TOILET FOR FOOD STREET

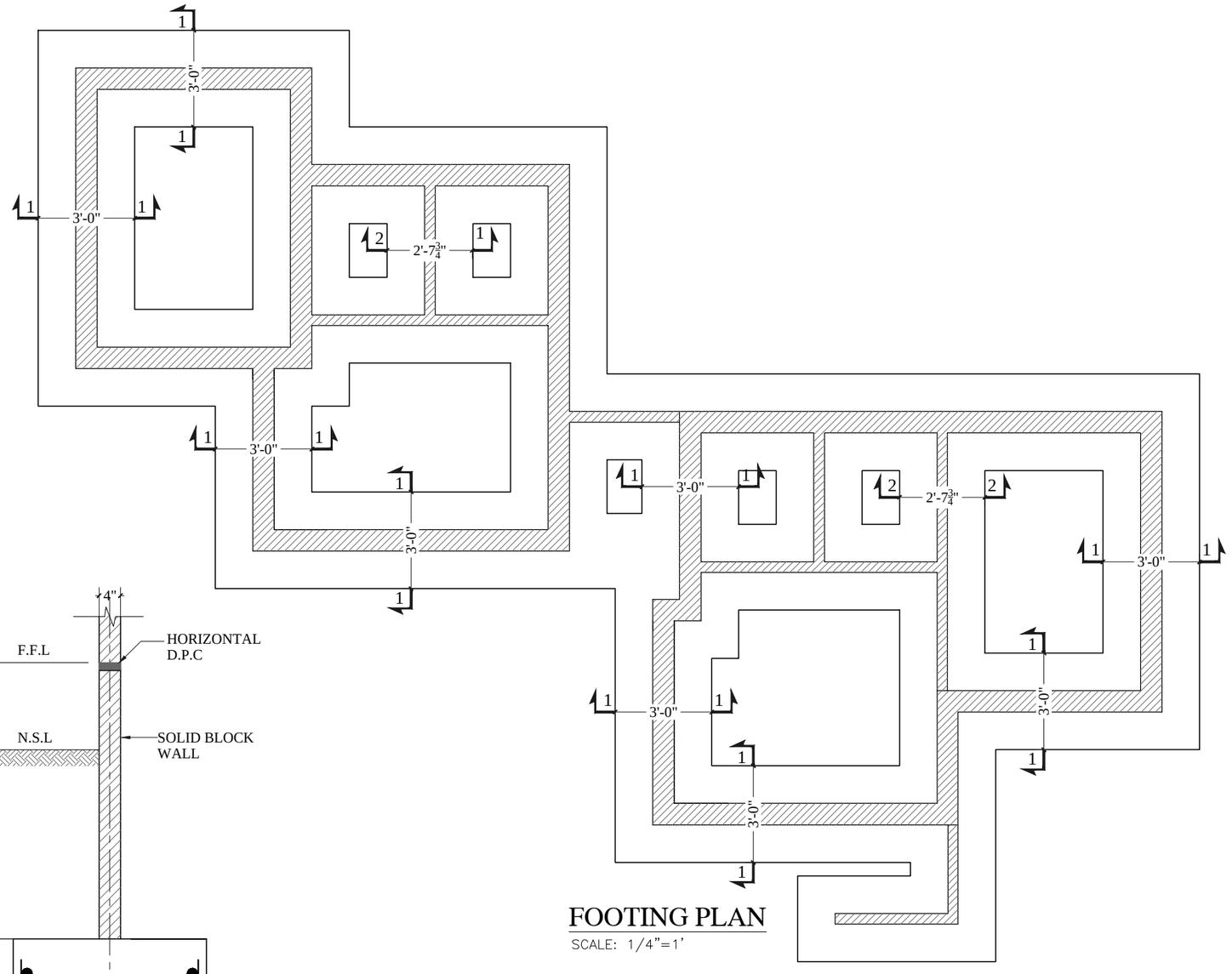
DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

APPROVED BY: SYED ALI ABBAS GILLANI

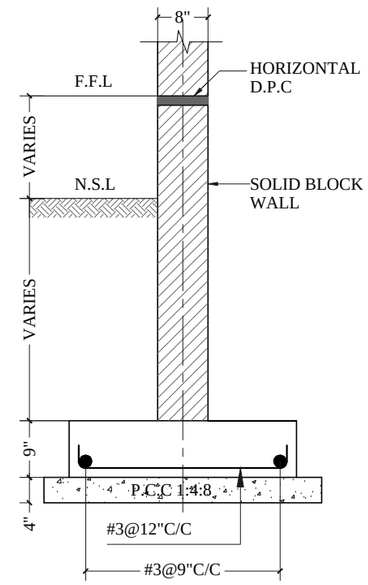
DRAWING NO:	REV:
0249/FS-TB/001 ST	04

SCALE (A3):	SHEET:
N.T.S	1/1



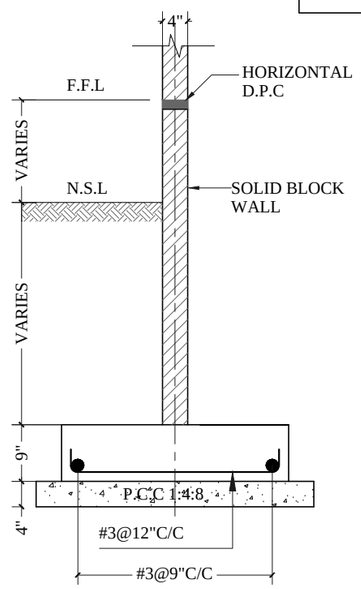
FOOTING PLAN

SCALE: 1/4"=1'



SECTIONAL DETAIL OF FOOTING SECTION 1-1

Scale 1/2"=1'



SECTIONAL DETAIL OF FOOTING SECTION 2-2

Scale 1/2"=1'

CLIENT:

KARACHI NEIGHBORHOOD IMPROVEMENT PROJECT

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

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PROJECT:

REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

NOTES:

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2.

REVISIONS:

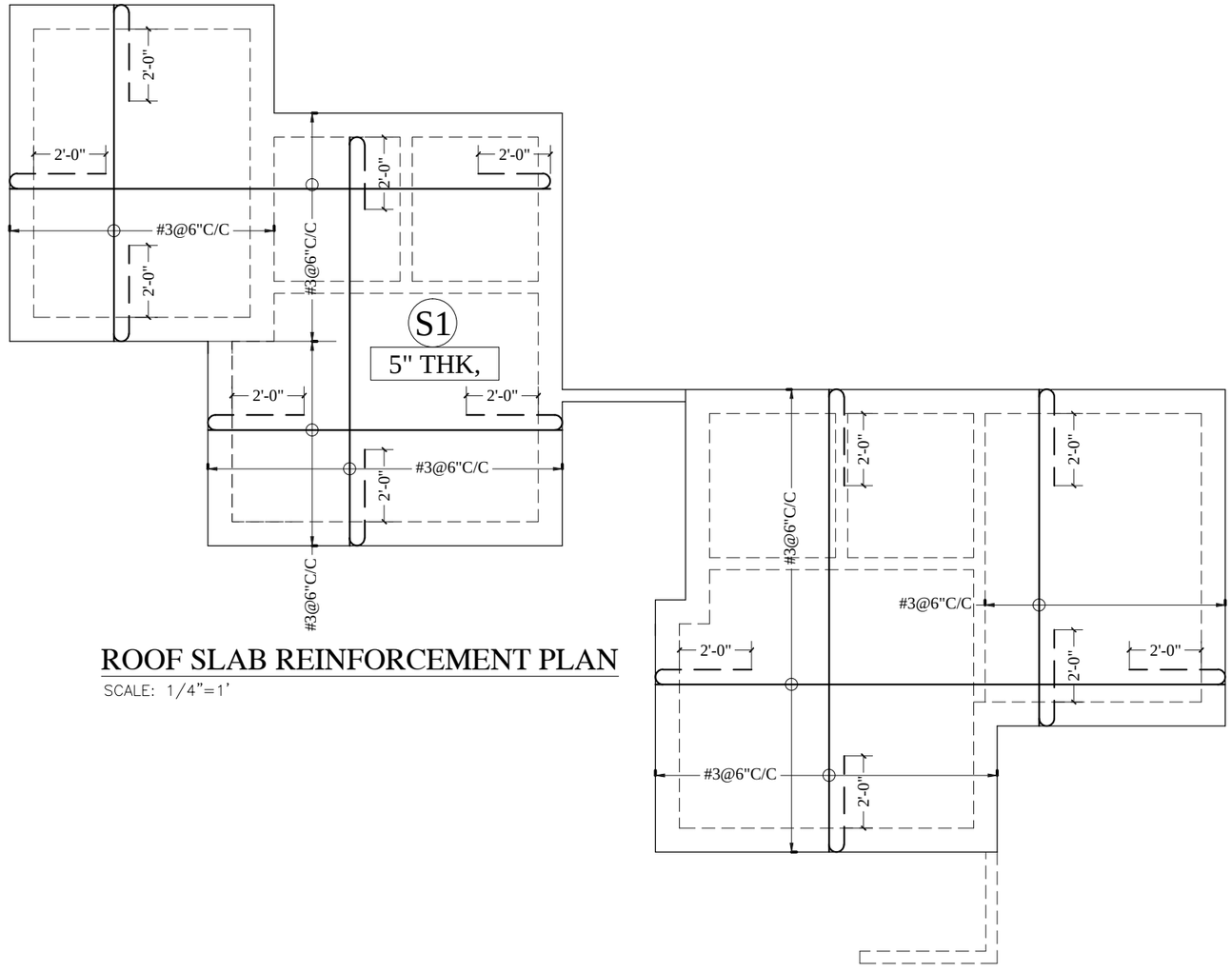
No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

FOUNDATION PLAN AND DETAIL TOILET FOR FOOD STREET

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/FS-TB/002 ST	REV: 04
SCALE (A3): AS SHOWN	SHEET: 0/0



ROOF SLAB REINFORCEMENT PLAN

SCALE: 1/4"=1'

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

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PROJECT:

REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

NOTES:

1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
2.

REVISIONS:

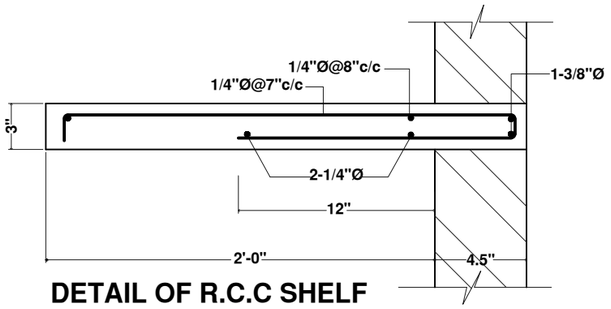
No.	DESCRIPTION	DATE

TENDER DRAWINGS

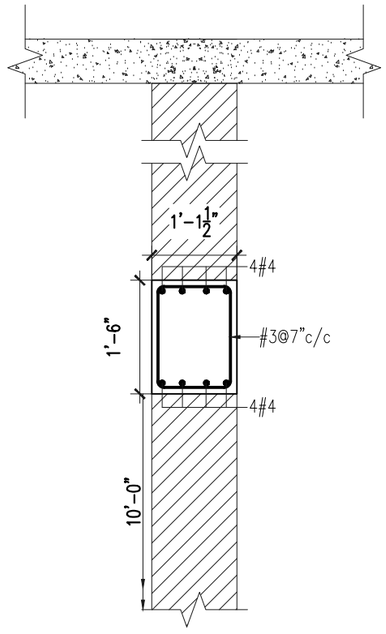
DRAWING TITLE:

ROOF SLAB REINFORCEMENT PLAN TOILET FOR FOOD STREET

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/FS-TB/003 ST	REV: 04
SCALE (A3): 1/4" - 1'	SHEET: 1/1



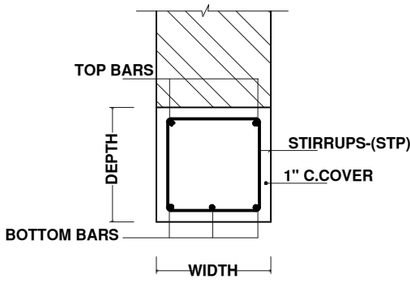
DETAIL OF R.C.C SHELF where required



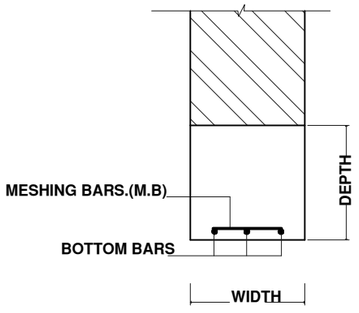
R.C.C DETAIL OF LINTEL
(L/30)
AT 10'–0" HIGHT

SCHEDULE OF R.C.C LINTELS

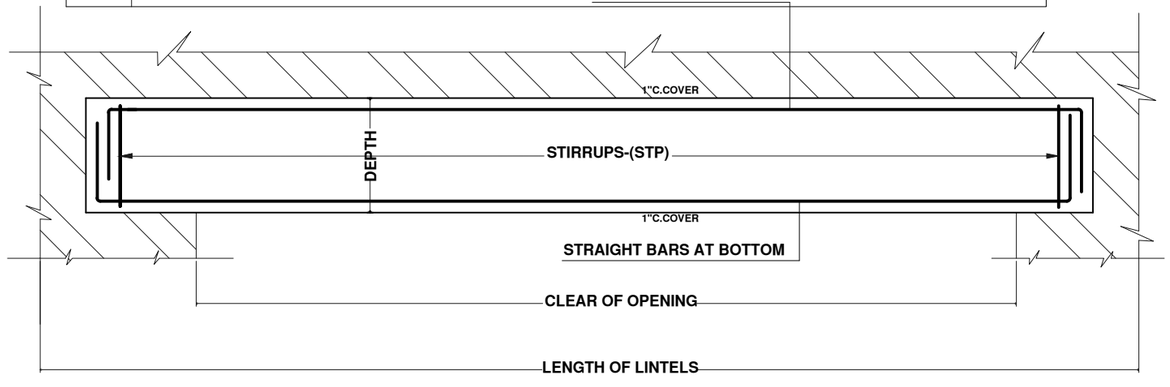
LINTEL NO.	CLEAR OPNING	LENGTH OF LINTEL	SIZE		STRAIGTH BARS AT BOTTOM		STRAIGTH BARS AT TOP		STIRRUPS (STP)
			WIDTH	DEPTH	NO	DIA	NO	DIA	MESHING BARS (M.B)
L / 1	1' - 6"	3' - 0"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	1/4" 0@ 7" C/C (M.B)
L / 2	1' - 9"	3' - 3"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 3	2' - 0"	3' - 6"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 4	2' - 3"	3' - 9"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 5	2' - 6"	4' - 0"	4 1/2", 9" OR 13½"	6"	3	3 / 8"	–	–	〃
L / 6	2' - 9"	4' - 3"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 7	3' - 0"	4' - 6"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 7a	3' - 3"	4' - 9"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 8	3' - 6"	5' - 0"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 9	3' - 9"	5' - 3"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 10	4' - 0"	5' - 6"	4 1/2" OR 9"	9"	3	1 / 2"	–	–	〃
L / 11	4' - 3"	5' - 9"	4 1/2" OR 9"	9"	3	1 / 2"	2	3 / 8"	1/4" 0 @ 7" C/C (STP)
L / 12	4' - 6"	6' - 0"	4 1/2" OR 9"	9"	3	1 / 2"	2	3 / 8"	〃
L / 13	4' - 9"	6' - 3"	4 1/2" OR 9"	9"	3	1 / 2"	2	3 / 8"	〃
L / 14	5' - 0"	6' - 6"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	3/8"Ø @ 7" C/C (STP)
L / 15	5' - 3"	6' - 9"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	〃
L / 16	5' - 6"	7' - 0"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	〃
L / 17	5' - 9"	7' - 3"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	〃
L / 18	6' - 0"	7' - 6"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 19	6' - 6"	8' - 0"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 20	6' - 9"	8' - 3"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 21	7' - 0"	8' - 6"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 22	7' - 6"	9' - 0"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 23	7' - 9"	9' - 3"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 24	8' - 0"	11 - 0"	9" OR 13½"	9"	5	1 / 2"	3	3 / 8"	〃
L / 25	8' - 6"	11 - 6"	9" OR 13½"	9"	5	1 / 2"	3	3 / 8"	〃
L / 26	9' - 0"	12'- 0"	9" OR 13½"	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 27	9' - 6"	12 - 6"	9" OR 13½"	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 28	11' - 6"	14'- 6"	9" OR 13½"	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 29	12' - 0"	15' - 0"	9" OR 13½"	18"	3 / 1	3/4" / 1"	3	1 / 2"	〃



TYPICAL-X-SECTION OF R.C.C LINTELS



TYPICAL-X-SECTION OF R.C.C LINTELS



TYPICAL-L-SECTION OF R.C.C LINTELS

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

G3 ENGINEERING CONSULTANTS (PVT)LTD.
House No.57-M Gulberg-III, Lahore, Pakistan

Tel : (92-42) 35441641, 35441642
Fax : (92-42) 35441645
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PROJECT:

REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

NOTES:

1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
2. THIS DRAWING IS AN INTELLECTUAL PROPERTY OF G3 ENGINEERING CONSULTANTS (PVT.) LTD. AND CANNOT BE REPRINTED OR REPRODUCED WITHOUT PRIOR APPROVAL OF G3.

REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

X-SECTION OF TYPICAL LINTELS
SCHEDULE OF LINTELS
TOILET FOR FOOD STREET

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

APPROVED BY: SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/FS-TB/004 ST	04
SCALE (A3):	SHEET:
N.T.S	1/1

STRUCTURAL DRAWINGS
TOILET FOR PARKS

LIST OF DRAWINGS
STRUCTURAL DRAWINGS

S.NO	DRAWING DETAIL	DRAWING NO.
1.	LIST OF DRAWING	0249/PARKS-TB/000 ST
2.	GENERAL NOTES	0249/PARKS-TB/001 ST
3.	FOUNDATION PLAN AND DETAIL	0249/PARKS-TB/002 ST
4.	BEAM FRAMING AND SLAB REINFORCEMENT PLAN & DETAILS	0249/PARKS-TB/003 ST
5.	X-SECTION OF TYPICAL LINTELS SCHEDULE OF LINTELS	0249/PARKS-TB/004 ST

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

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House No.57-M Gulberg-III, Lahore, Pakistan

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PROJECT:
REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

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REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:
LIST OF DRAWINGS
TOILET FOR PARKS

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER:
ENGR.MUHAMMAD IMRAN

APPROVED BY:
SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/PARKS-TB/000 ST	04
SCALE (A3): N.T.S	SHEET: 1/1

GENERAL NOTES & SPECIFICATIONS

1. General

1.1. All structural drawings should be read in conjunction with Architectural, Civil, Mechanical, Electrical and other relevant drawings.The contractor should coordinate with Architectural and various service drawings for levels, sizes and location of all Structural members, Floors Walls and Pipes etc..

1.2. The contractor shall report all discrepancies, differences and conflicts, as soon as they are observed.

1.3. Safe working practices will be adopted, and no damage to any property or life will be ensured.

1.4. Prior approval of proposed method of work, sequence of jobs, location of block-outs and construction joints in concrete , location of all splices and proposed values of camber is required.

1.5. The structure is not designed against construction loads. The contractor is responsible for ensuring that all elements should remain supported during construction.

1.6. Prior to adopting finished levels of structural elements, proper allowances are to be maintained by the contractor.

2. Design

2.1. The Structural design of all concrete elements is based on Building Code Requirements for Structural Concrete (ACI 318-08) of the American Concrete Institute, USA.

2.2. The Structural design of all masonry elements shall conform to Specification for Masonry Structures (ACI 530.1-05/ ASCE 6-05/ TMS 602-05) reported by the Masonry Standards Joint Committee (MSJC) USA.

3. Construction

3.1. Work on this building shall conform to all requirements of ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan, except as modified by the requirements below.

3.2. The Construction Work of all Masonry elements should confirm to Specification for Masonry Structures (ACI 530.1-05/ ASCE 6-05/ TMS 602-05) reported by the Masonry Standards Joint Committee (MSJC) USA..

4. Materials

4.1. Concrete

4.1.1. Plain Concrete

All Plain concrete shall have a cylinder strength of 1500 psi, at 28 days, unless noted otherwise.

4.1.2. Structural Concrete

a) The structural concrete for all columns and foundations shall have a minimum compressive cylinder strength of 4,000 psi, at 28 days.

b)All concrete work shall conform to Specifications for Structural Concrete for Buildings ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan.

c) Unless Noted Otherwise all other structural concrete shall have a minimum compressive cylinder strength of 3,000 psi, at 28 days.

Note that specified compressive strength shall be achieved through proper mix design and this design shall be sole responsibility of Contractor (or as specified in the contract documents).

4.2. Reinforcing Steel

4.2.1. Except as otherwise specified, all reinforcing steel shall conform to ASTM A615, Grade 60.

4.2.2. Clear Concrete Covers to Reinforcement

	Member	Cover
1)	Foundations	2"
2)	Columns	1½"
3)	Beams (with depth less than 10")	3/4"
4)	Beams (with depth greater than than 10")	1½"
5)	Slab	3/4"
6)	Walls Facing Soil	2"
7)	Walls Other	1"

4.1. In order to ensure the specified covers, bars must be secured in position, with the help of concrete spacer blocks, with embedded binding wire.

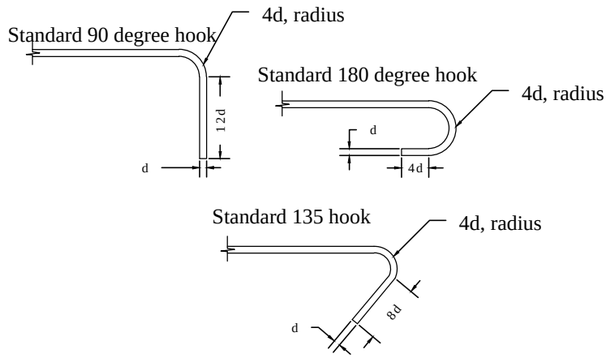
4.2. To support top bars, provide supporting rebars and standard ACI chairs.

5. Bar Development

5.1. Standard Hooks

Unless otherwise shown in the drawings, standard ACI hooks shall shall be provided at the free ends of all bars.

5.2. Unless noted otherwise, the hooks will comply the following dimensions:



5.3. Development and Splice Lengths

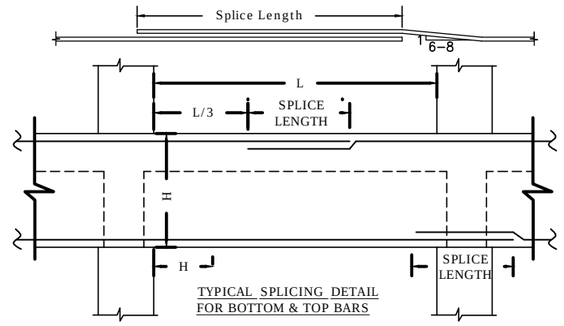
a. Splice length of reinforcing bars shall as follows.

Bar Designation	Splice lengths (in)			
	Concrete with cylinder strength of 3,000 psi at 28 days		Concrete with cylinder strength of 4,000 psi at 28 days	
	Top bars*	Other than top bars	Top bars*	Other than top bars
	Splice Length	Splice Length	Splice Length	Splice Length
#3	30	24	27	21
#4	39	30	33	27
#5	48	36	42	33
#6	57	45	51	39
#8	93	72	81	63

* Top bars are horizontal bars, with at least 12 in of fresh concrete below them.

b. For splicing unequal diameter bars, use smaller diameter for splice length determination.

c. Where required, bar shall have a gradient between 1:6 to 1:8.



TYPICAL SPLICING DETAIL FOR BOTTOM & TOP BARS

8. Construction Joints

a. Construction joints shall be located with the prior approval of the Engineer, if it is not indicated in the drawing.

b. On proposed construction joint surfaces, all fines shall be removed, on initial setting of concrete, but before its hardening. In order to achieve this, sand blasting or wire brushing could be used. Before placing the second-stage concrete, the joint surface shall be cleaned free of all loose material and washed. A bonding agent shall be applied to the surface and concrete placed within the period stipulated by the manufacturer.

9. Adopted Loads

9.1. Dead Loads

All floor finishes = 56 psf
Roof finishes = 63 psf

9.2. Live Loads

Floor = 50 psf
Roof = 30 psf

10. Foundation

a. Foundation Should be executed in accordance with geotechincal investigation report of this project.

b. Procedure for placement of structural fill should be strictly followed as if recommended in geo technical report.

c. All footings should be concentric with the column centre line unless otherwise shown.

d. Irregularity formed from loose strata under the footing shall be replaced with plain cement concrete.

11. Terms & Abbrevations

Following terms and abbreviations are used in all structural drawings.

a) UNO: Unless Noted Otherwise
b) NSL: Natural Surface Level
c) Typ: Typical
d) FFL: Finished Floor Level
e) C.Joint: Construction Joint

12. NOTE:

Allowable bearing capacity of 1 ton/ft² must be achieved at site.

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

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House No.57-M Gulberg-III, Lahore, Pakistan

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PROJECT:

REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

NOTES:

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REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

GENERAL NOTES TOILET FOR PARKS

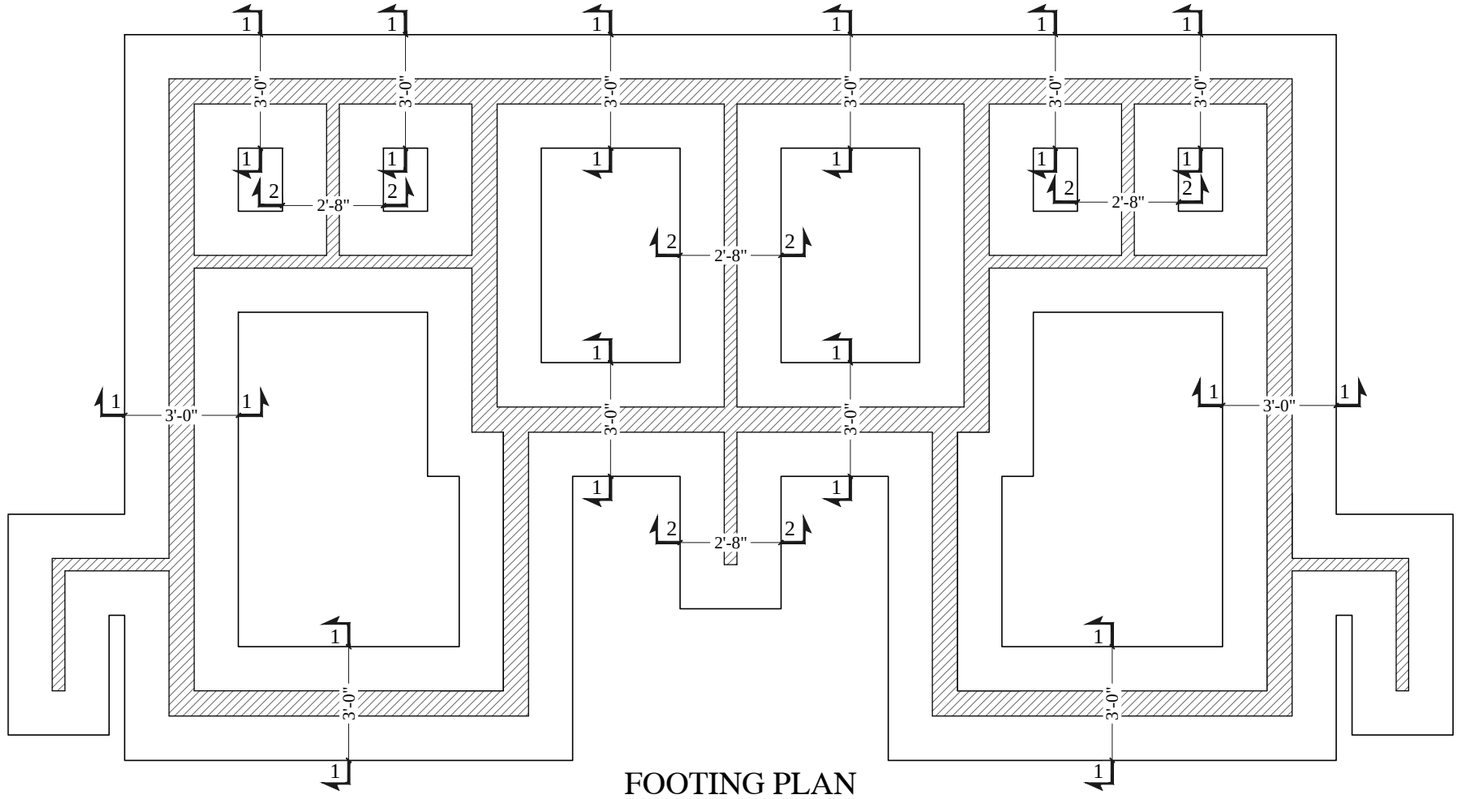
DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

APPROVED BY: SYED ALI ABBAS GILLANI

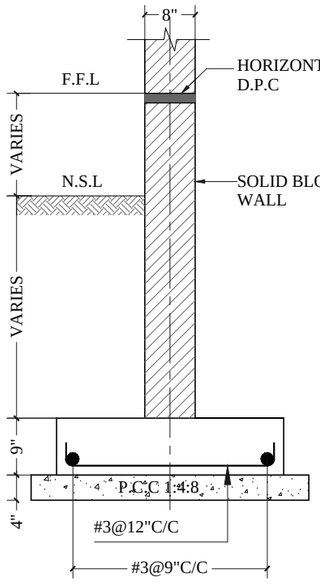
DRAWING NO:	REV:
0249/PARKS-TB/001 ST	04

SCALE (A3):	SHEET:
N.T.S	1/1



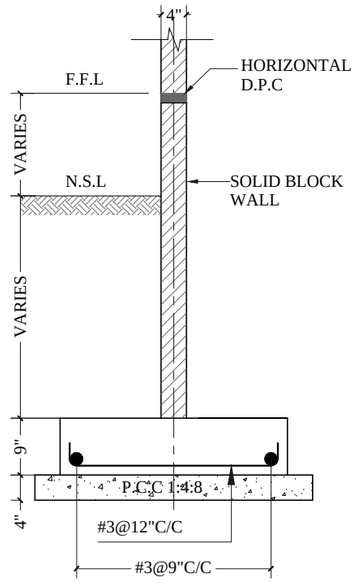
FOOTING PLAN

SCALE: 1/4"=1'



SECTIONAL DETAIL OF FOOTING SECTION 1-1

Scale 1/2"=1'



SECTIONAL DETAIL OF FOOTING SECTION 2-2

Scale 1/2"=1'

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

G3 ENGINEERING CONSULTANTS (PVT)LTD.
House No.57-M Gulberg-III, Lahore, Pakistan

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Fax : (92-42) 35441645
E-mail : info@g3ec.com
URL : www.g3ec.com

PROJECT:

REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

NOTES:

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REVISIONS:

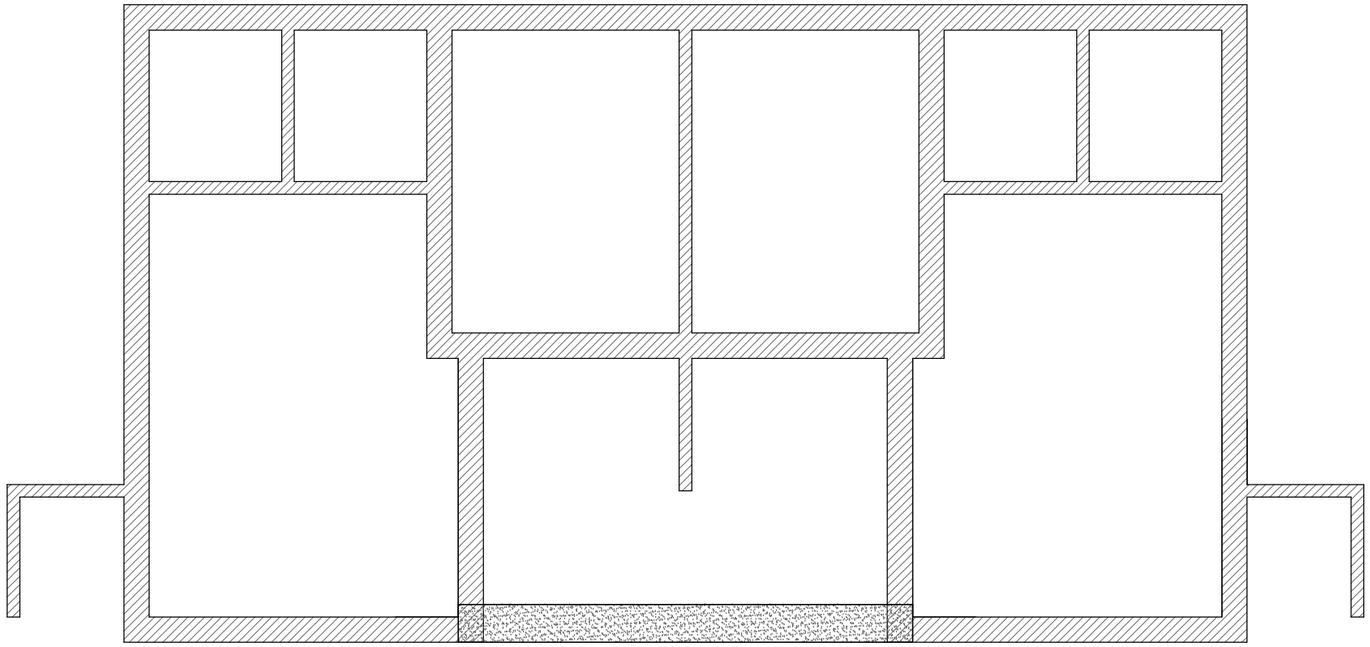
No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

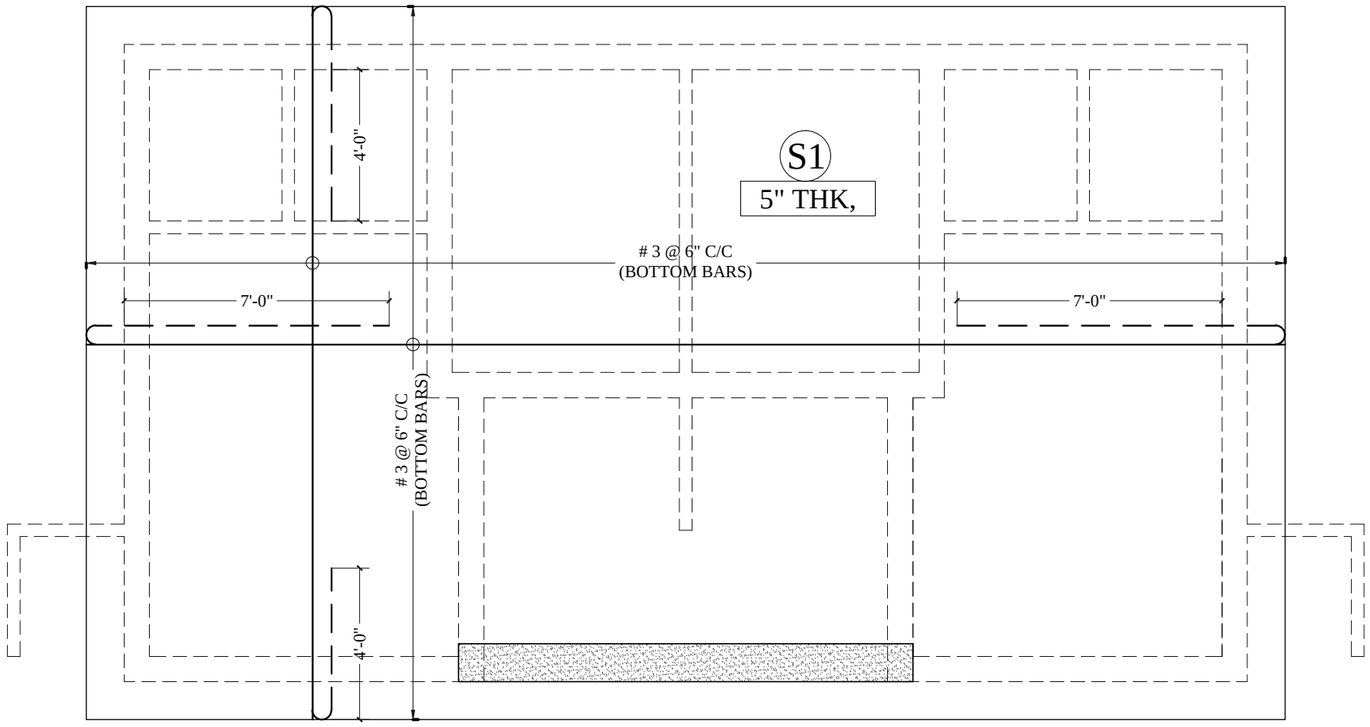
FOUNDATION PLAN AND DETAIL TOILET FOR PARKS

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/PARKS-TB/002 ST	REV: 04
SCALE (A3): AS SHOWN	SHEET: 1/1



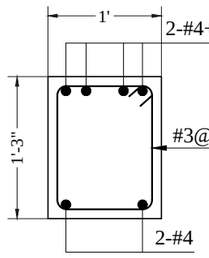
BEAM FRAMING PLAN

SCALE: 1/4"=1'

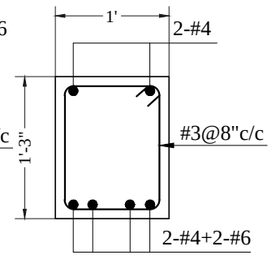


SLAB REINFORCEMENT PLAN

SCALE: 1/4"=1'



BEAM B-1
AT SUPPORT
SCALE: 3/4"=1'



BEAM B-1
AT MID SPAN
SCALE: 3/4"=1'

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

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PROJECT:

REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

NOTES:

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REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

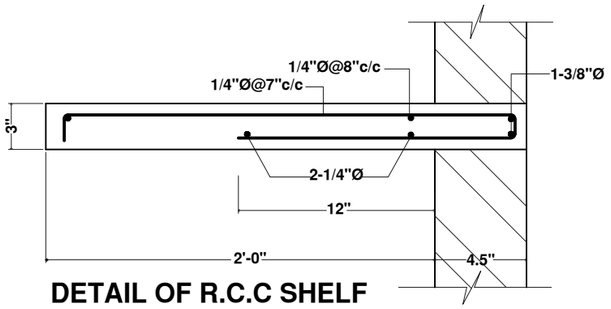
DRAWING TITLE:
BEAM FRAMING AND SLAB REINFORCEMENT PLAN & DETAILS TOILET FOR PARKS

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

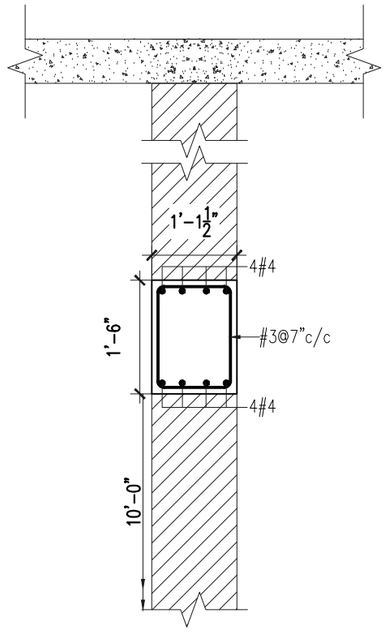
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

APPROVED BY: SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/PARKS-TB/003 ST	04
SCALE (A3): AS SHOWN	SHEET: 1/1



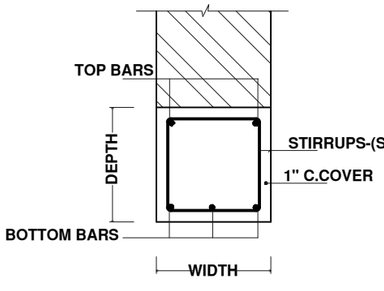
DETAIL OF R.C.C SHELF where required



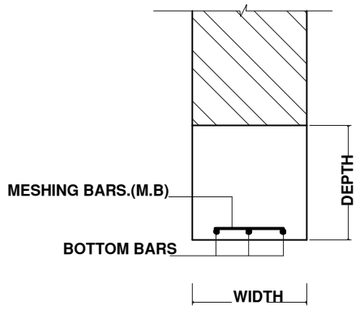
R.C.C DETAIL OF LINTEL
(L/30)
AT 10'–0" HIGHT

SCHEDULE OF R.C.C LINTELS

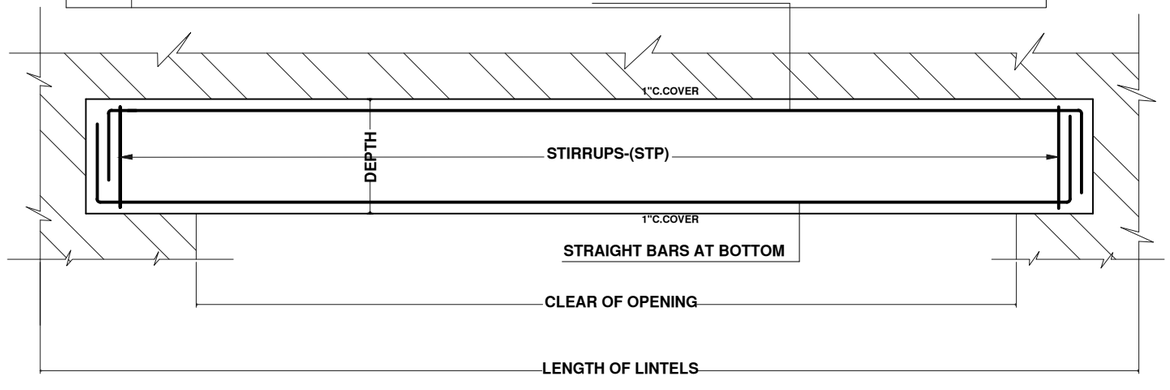
LINTEL NO.	CLEAR OPNING	LENGTH OF LINTEL	SIZE		STRAIGTH BARS AT BOTTOM		STRAIGTH BARS AT TOP		STIRRUPS (STP)
			WIDTH	DEPTH	NO	DIA	NO	DIA	MESHING BARS (M.B)
L / 1	1' - 6"	3' - 0"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	1/4" 0/@ 7" C/C (M.B)
L / 2	1' - 9"	3' - 3"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 3	2' - 0"	3' - 6"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 4	2' - 3"	3' - 9"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 5	2' - 6"	4' - 0"	4 1/2", 9" OR 13½"	6"	3	3 / 8"	–	–	〃
L / 6	2' - 9"	4' - 3"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 7	3' - 0"	4' - 6"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 7a	3' - 3"	4' - 9"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 8	3' - 6"	5' - 0"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 9	3' - 9"	5' - 3"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 10	4' - 0"	5' - 6"	4 1/2" OR 9"	9"	3	1 / 2"	–	–	〃
L / 11	4' - 3"	5' - 9"	4 1/2" OR 9"	9"	3	1 / 2"	2	3 / 8"	1/4" 0 @ 7" C/C (STP)
L / 12	4' - 6"	6' - 0"	4 1/2" OR 9"	9"	3	1 / 2"	2	3 / 8"	〃
L / 13	4' - 9"	6' - 3"	4 1/2" OR 9"	9"	3	1 / 2"	2	3 / 8"	〃
L / 14	5' - 0"	6' - 6"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	3/8"Ø @ 7" C/C (STP)
L / 15	5' - 3"	6' - 9"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	〃
L / 16	5' - 6"	7' - 0"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	〃
L / 17	5' - 9"	7' - 3"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	〃
L / 18	6' - 0"	7' - 6"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 19	6' - 6"	8' - 0"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 20	6' - 9"	8' - 3"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 21	7' - 0"	8' - 6"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 22	7' - 6"	9' - 0"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 23	7' - 9"	9' - 3"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 24	8' - 0"	11 - 0"	9" OR 13½"	9"	5	1 / 2"	3	3 / 8"	〃
L / 25	8' - 6"	11 - 6"	9" OR 13½"	9"	5	1 / 2"	3	3 / 8"	〃
L / 26	9' - 0"	12'- 0"	9" OR 13½"	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 27	9' - 6"	12 - 6"	9" OR 13½"	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 28	11' - 6"	14'- 6"	9" OR 13½"	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 29	12' - 0"	15' - 0"	9" OR 13½"	18"	3 / 1	3/4" / 1"	3	1 / 2"	〃
	STRAIGHT BARS AT TOP								



TYPICAL-X-SECTION OF R.C.C LINTELS



TYPICAL-X-SECTION OF R.C.C LINTELS



TYPICAL-L-SECTION OF R.C.C LINTELS

CLIENT:

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PROJECT:

REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

NOTES:

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2.

REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

X-SECTION OF TYPICAL LINTELS
SCHEDULE OF LINTELS
TOILET FOR PARKS

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

APPROVED BY: SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/PARKS-TB/004 ST	04
SCALE (A3): N.T.S	SHEET: 1/1

STRUCTURAL DRAWINGS
FEATURE WALL

LIST OF DRAWINGS
STRUCTURAL DRAWINGS

S.NO	DRAWING DETAIL	DRAWING NO.
1.	LIST OF DRAWING	0249/FW/000 ST
2.	GENERAL NOTES	0249/FW/001 ST
3.	R.C.C FOOTING, STEEL PIPE P.C.C FOOTING, TIE BEAM AND REINFORCEMENT DETAILS OF FEATURE WALL	0249/FW/002 ST

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PROJECT:
REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

NOTES:
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2.

REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

LIST OF DRAWINGS
FEATURE WALL

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

APPROVED BY: SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/FW/000 ST	04
SCALE (A3): N.T.S	SHEET: 1/1

GENERAL NOTES & SPECIFICATIONS

1. General

1.1. All structural drawings should be read in conjunction with Architectural, Civil, Mechanical, Electrical and other relevant drawings.The contractor should coordinate with Architectural and various service drawings for levels, sizes and location of all Structural members, Floors Walls and Pipes etc..

1.2. The contractor shall report all discrepancies, differences and conflicts, as soon as they are observed.

1.3. Safe working practices will be adopted, and no damage to any property or life will be ensured.

1.4. Prior approval of proposed method of work, sequence of jobs, location of block-outs and construction joints in concrete , location of all splices and proposed values of camber is required.

1.5. The structure is not designed against construction loads. The contractor is responsible for ensuring that all elements should remain supported during construction.

1.6. Prior to adopting finished levels of structural elements, proper allowances are to be maintained by the contractor.

2. Design

2.1. The Structural design of all concrete elements is based on Building Code Requirements for Structural Concrete (ACI 318-08) of the American Concrete Institute, USA.

2.2. The Structural design of all masonry elements shall conform to Specification for Masonry Structures (ACI 530.1-05/ ASCE 6-05/ TMS 602-05) reported by the Masonry Standards Joint Committee (MSJC) USA.

3. Construction

3.1. Work on this building shall conform to all requirements of ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan, except as modified by the requirements below.

3.2. The Construction Work of all Masonry elements should confirm to Specification for Masonry Structures (ACI 530.1-05/ ASCE 6-05/ TMS 602-05) reported by the Masonry Standards Joint Committee (MSJC) USA..

4. Materials

4.1. Concrete

4.1.1. Plain Concrete

All Plain concrete shall have a cylinder strength of 1500 psi, at 28 days, unless noted otherwise.

4.1.2. Structural Concrete

a) The structural concrete for all columns and foundations shall have a minimum compressive cylinder strength of 4,000 psi, at 28 days.

b)All concrete work shall conform to Specifications for Structural Concrete for Buildings ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan.

c) Unless Noted Otherwise all other structural concrete shall have a minimum compressive cylinder strength of 3,000 psi, at 28 days.

Note that specified compressive strength shall be achieved through proper mix design and this design shall be sole responsibility of Contractor (or as specified in the contract documents).

4.2. Reinforcing Steel

4.2.1. Except as otherwise specified, all reinforcing steel shall conform to ASTM A615, Grade 60.

4.2.2. Clear Concrete Covers to Reinforcement

	Member	Cover
1)	Foundations	2"
2)	Columns	1½"
3)	Beams (with depth less than 10")	3/4"
4)	Beams (with depth greater than than 10")	1½"
5)	Slab	3/4"
6)	Walls Facing Soil	2"
7)	Walls Other	1"

4.1. In order to ensure the specified covers, bars must be secured in position, with the help of concrete spacer blocks, with embedded binding wire.

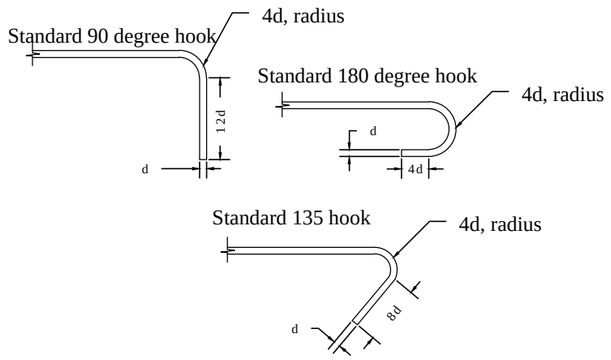
4.2. To support top bars, provide supporting rebars and standard ACI chairs.

5. Bar Development

5.1. Standard Hooks

Unless otherwise shown in the drawings, standard ACI hooks shall shall be provided at the free ends of all bars.

5.2. Unless noted otherwise, the hooks will comply the following dimensions:



5.3. Development and Splice Lengths

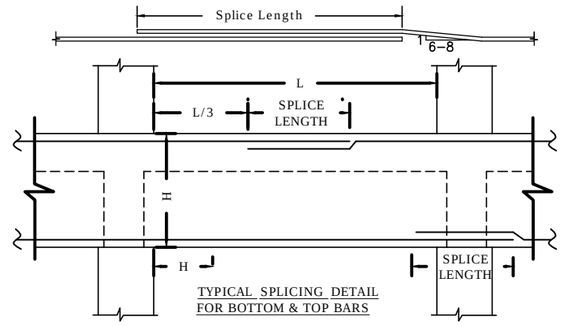
a. Splice length of reinforcing bars shall as follows.

Bar Designation	Splice lengths (in)			
	Concrete with cylinder strength of 3,000 psi at 28 days		Concrete with cylinder strength of 4,000 psi at 28 days	
	Top bars*	Other than top bars	Top bars*	Other than top bars
	Splice Length	Splice Length	Splice Length	Splice Length
#3	30	24	27	21
#4	39	30	33	27
#5	48	36	42	33
#6	57	45	51	39
#8	93	72	81	63

* Top bars are horizontal bars, with at least 12 in of fresh concrete below them.

b. For splicing unequal diameter bars, use smaller diameter for splice length determination.

c. Where required, bar shall have a gradient between 1:6 to 1:8.



TYPICAL SPLICING DETAIL FOR BOTTOM & TOP BARS

8. Construction Joints

a. Construction joints shall be located with the prior approval of the Engineer, if it is not indicated in the drawing.

b. On proposed construction joint surfaces, all fines shall be removed, on initial setting of concrete, but before its hardening. In order to achieve this, sand blasting or wire brushing could be used. Before placing the second-stage concrete, the joint surface shall be cleaned free of all loose material and washed. A bonding agent shall be applied to the surface and concrete placed within the period stipulated by the manufacturer.

9. Adopted Loads

9.1. Dead Loads

All floor finishes = 56 psf
Roof finishes = 63 psf

9.2. Live Loads

Floor = 50 psf
Roof = 30 psf

10. Foundation

a. Foundation Should be executed in accordance with geotechincal investigation report of this project.

b. Procedure for placement of structural fill should be strictly followed as if recommended in geo technical report.

c. All footings should be concentric with the column centre line unless otherwise shown.

d. Irregularity formed from loose strata under the footing shall be replaced with plain cement concrete.

11. Terms & Abbrevations

Following terms and abbreviations are used in all structural drawings.

a) UNO: Unless Noted Otherwise
b) NSL: Natural Surface Level
c) Typ: Typical
d) FFL: Finished Floor Level
e) C.Joint: Construction Joint

12. NOTE:

Allowable bearing capacity of 1 ton/ft² must be achieved at site.

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REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

NOTES:

1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
2.

REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

GENERAL NOTES
FEATURE WALL

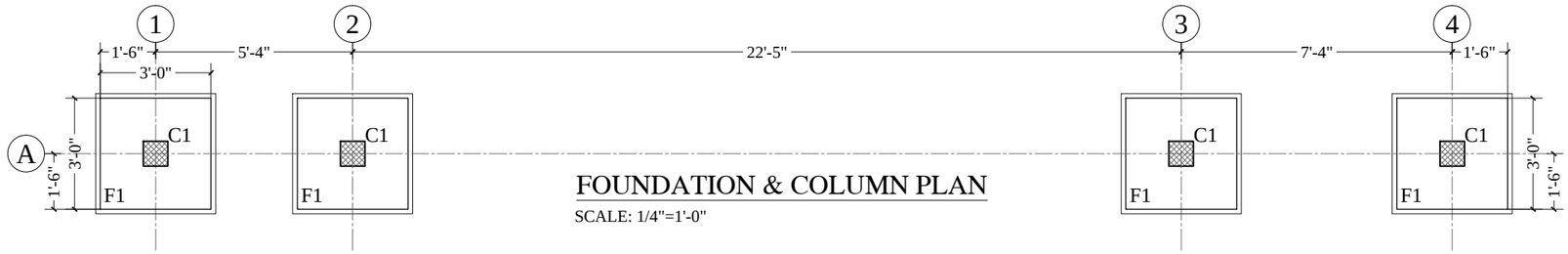
DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

APPROVED BY: SYED ALI ABBAS GILLANI

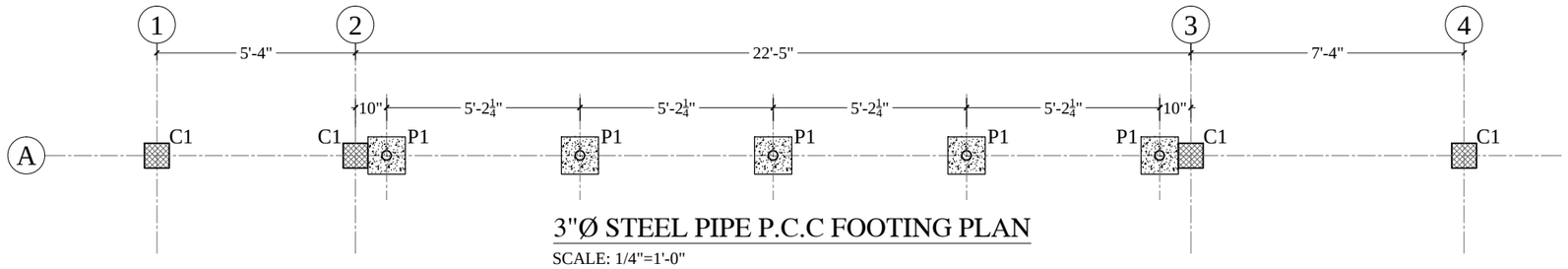
DRAWING NO:	REV:
0249/FW/001 ST	04

SCALE (A3):	SHEET:
N.T.S	1/1



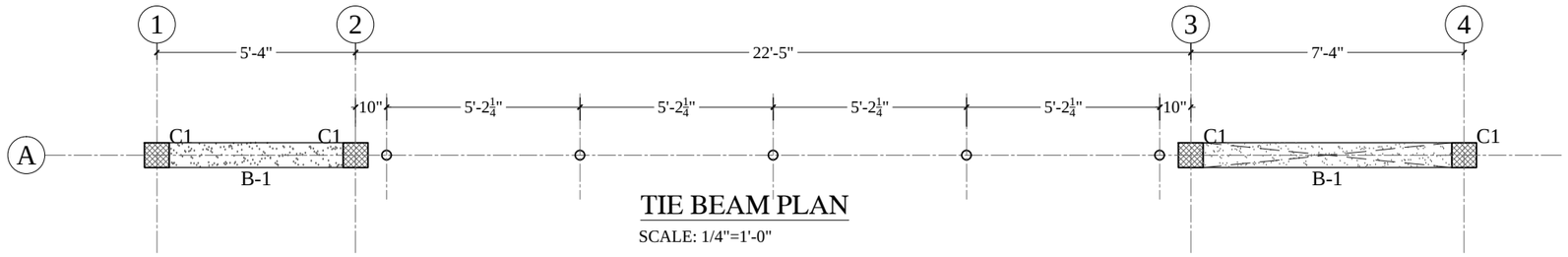
FOUNDATION & COLUMN PLAN

SCALE: 1/4"=1'-0"



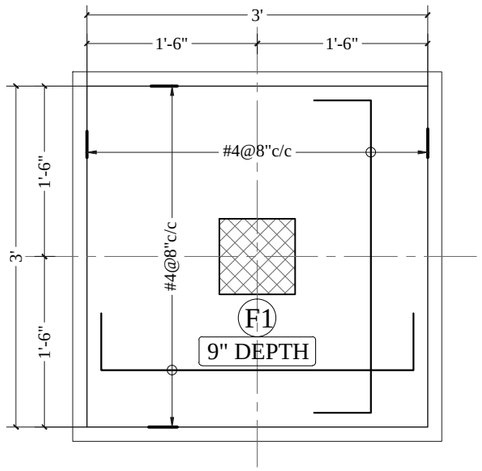
3"Ø STEEL PIPE P.C.C FOOTING PLAN

SCALE: 1/4"=1'-0"



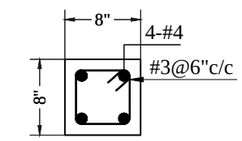
TIE BEAM PLAN

SCALE: 1/4"=1'-0"



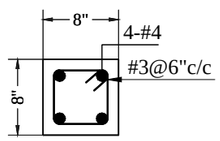
TYPICAL FOOTING DETAIL

SCALE: 3/4"=1'



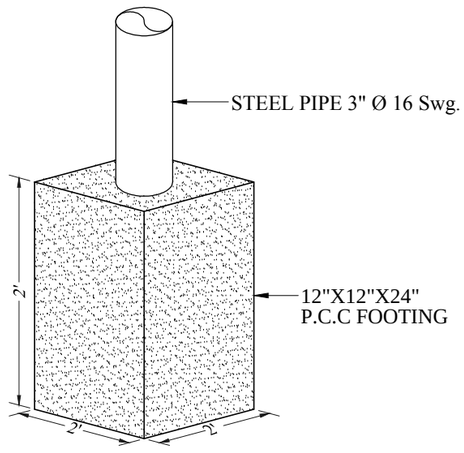
X-SECTION OF COLUMN C1

SCALE: 3/4"=1'



BEAM B-1

SCALE: 3/4"=1'



P.C.C P-1

SCALE: 3/4"=1'

NOTE:

TOTAL LENGTH OF FEATURE WALL = 3315' 35'

TYPICAL DESIGN PATCH REST OF THE 3280' WILL BE THE EXTENSION OF SAME DESIGN

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

G3 ENGINEERING CONSULTANTS (PVT)LTD.
House No.57-M Gulberg-III, Lahore, Pakistan

Tel : (92-42) 35441641, 35441642
Fax : (92-42) 35441645
E-mail : info@g3ec.com
URL : www.g3ec.com

PROJECT:

REHABILITATION & UP-GRADATION OF BOAT BASIN TO SCHON CHOWRANGI WITH PEDESTRIAN TRAIL

NOTES:

1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
2. THIS DRAWING IS AN INTELLECTUAL PROPERTY OF G3 ENGINEERING CONSULTANTS (PVT.) LTD. AND CANNOT BE REPRINTED OR REPRODUCED WITHOUT PRIOR APPROVAL OF G3.

REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:
R.C.C FOOTING, STEEL PIPE P.C.C FOOTING, TIE BEAM AND REINFORCEMENT DETAILS OF FEATURE WALL

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN

APPROVED BY: SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/FW/002 ST	04
SCALE (A3): AS SHOWN	SHEET: 1/1

REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

STRUCTURAL DRAWINGS
BOUNDARY WALL

LIST OF DRAWINGS
STRUCTURAL DRAWINGS

S.NO	DRAWING DETAIL	DRAWING NO.
1.	LIST OF DRAWING	0249/B-W/000 ST
2.	GENERAL NOTES	0249/B-W/001 ST
3.	FOUNDATION, COLUMN PLAN AND REINFORCEMENT DETAILS	0249/B-W/002 ST

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

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PROJECT:
REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

NOTES:
1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
2.

REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

LIST OF DRAWINGS
BOUNDARY WALL

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER : ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/B-W/000 ST	REV: 04
SCALE (A3): N.T.S	SHEET: 1/1

GENERAL NOTES & SPECIFICATIONS

1. General

1.1. All structural drawings should be read in conjunction with Architectural, Civil, Mechanical, Electrical and other relevant drawings.The contractor should coordinate with Architectural and various service drawings for levels, sizes and location of all Structural members, Floors Walls and Pipes etc..

1.2. The contractor shall report all discrepancies, differences and conflicts, as soon as they are observed.

1.3. Safe working practices will be adopted, and no damage to any property or life will be ensured.

1.4. Prior approval of proposed method of work, sequence of jobs, location of block-outs and construction joints in concrete , location of all splices and proposed values of camber is required.

1.5. The structure is not designed against construction loads. The contractor is responsible for ensuring that all elements should remain supported during construction.

1.6. Prior to adopting finished levels of structural elements, proper allowances are to be maintained by the contractor.

2. Design

2.1. The Structural design of all concrete elements is based on Building Code Requirements for Structural Concrete (ACI 318-08) of the American Concrete Institute, USA.

2.2. The Structural design of all masonry elements shall conform to Specification for Masonry Structures (ACI 530.1-05/ ASCE 6-05/ TMS 602-05) reported by the Masonry Standards Joint Committee (MSJC) USA.

3. Construction

3.1. Work on this building shall conform to all requirements of ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan, except as modified by the requirements below.

3.2. The Construction Work of all Masonry elements should confirm to Specification for Masonry Structures (ACI 530.1-05/ ASCE 6-05/ TMS 602-05) reported by the Masonry Standards Joint Committee (MSJC) USA..

4. Materials

4.1. Concrete

4.1.1. Plain Concrete

All Plain concrete shall have a cylinder strength of 1500 psi, at 28 days, unless noted otherwise.

4.1.2. Structural Concrete

a) The structural concrete for all columns and foundations shall have a minimum compressive cylinder strength of 4,000 psi, at 28 days.

b)All concrete work shall conform to Specifications for Structural Concrete for Buildings ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan.

c) Unless Noted Otherwise all other structural concrete shall have a minimum compressive cylinder strength of 3,000 psi, at 28 days.

Note that specified compressive strength shall be achieved through proper mix design and this design shall be sole responsibility of Contractor (or as specified in the contract documents).

4.2. Reinforcing Steel

4.2.1. Except as otherwise specified, all reinforcing steel shall conform to ASTM A615, Grade 60.

4.2.2. Clear Concrete Covers to Reinforcement

	Member	Cover
1)	Foundations	2"
2)	Columns	1½"
3)	Beams (with depth less than 10")	3/4"
4)	Beams (with depth greater than than 10")	1½"
5)	Slab	3/4"
6)	Walls Facing Soil	2"
7)	Walls Other	1"

4.1. In order to ensure the specified covers, bars must be secured in position, with the help of concrete spacer blocks, with embedded binding wire.

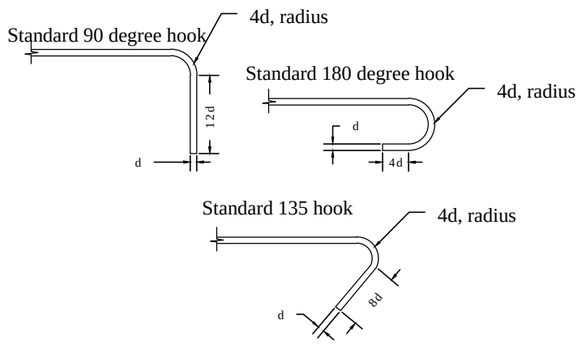
4.2. To support top bars, provide supporting rebars and standard ACI chairs.

5. Bar Development

5.1. Standard Hooks

Unless otherwise shown in the drawings, standard ACI hooks shall shall be provided at the free ends of all bars.

5.2. Unless noted otherwise, the hooks will comply the following dimensions:



5.3. Development and Splice Lengths

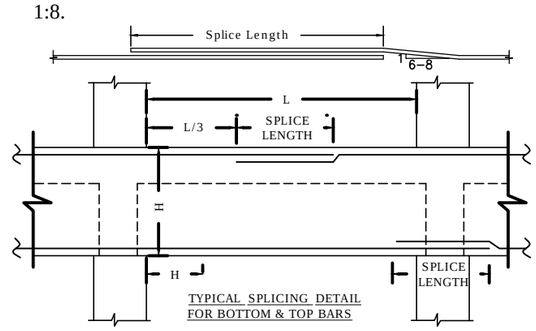
a. Splice length of reinforcing bars shall as follows.

Bar Designation	Splice lengths (in)			
	Concrete with cylinder strength of 3,000 psi at 28 days		Concrete with cylinder strength of 4,000 psi at 28 days	
	Top bars* Splice Length	Other than top bars Splice Length	Top bars* Splice Length	Other than top bars Splice Length
#3	30	24	27	21
#4	39	30	33	27
#5	48	36	42	33
#6	57	45	51	39
#8	93	72	81	63

* Top bars are horizontal bars, with at least 12 in of fresh concrete below them.

b. For splicing unequal diameter bars, use smaller diameter for splice length determination.

c. Where required, bar shall have a gradient between 1:6 to 1:8.



8. Construction Joints

a. Construction joints shall be located with the prior approval of the Engineer, if it is not indicated in the drawing.

b. On proposed construction joint surfaces, all fines shall be removed, on initial setting of concrete, but before its hardening. In order to achieve this, sand blasting or wire brushing could be used. Before placing the second-stage concrete, the joint surface shall be cleaned free of all loose material and washed. A bonding agent shall be applied to the surface and concrete placed within the period stipulated by the manufacturer.

9. Adopted Loads

9.1. Dead Loads

All floor finishes = 56 psf
Roof finishes = 63 psf

9.2. Live Loads

Floor = 60 psf
Roof = 30 psf

10. Foundation

a. Foundation Should be executed in accordance with geotechincal investigation report of this project.

b. Procedure for placement of structural fill should be strictly followed as if recommended in geo technical report.

c. All footings should be concentric with the column centre line unless otherwise shown.

d. Irregularity formed from loose strata under the footing shall be replaced with plain cement concrete.

11. Terms & Abbrevations

Following terms and abbreviations are used in all structural drawings.

a) UNO: Unless Noted Otherwise
b) NSL: Natural Surface Level
c) Typ: Typical
d) FFL: Finished Floor Level
e) C.Joint: Construction Joint

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

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House No.57-M Gulberg-III, Lahore, Pakistan

Tel : (92-42) 35441641, 35441642
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URL : www.g3ec.com

PROJECT:

REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

NOTES:

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REVISIONS:

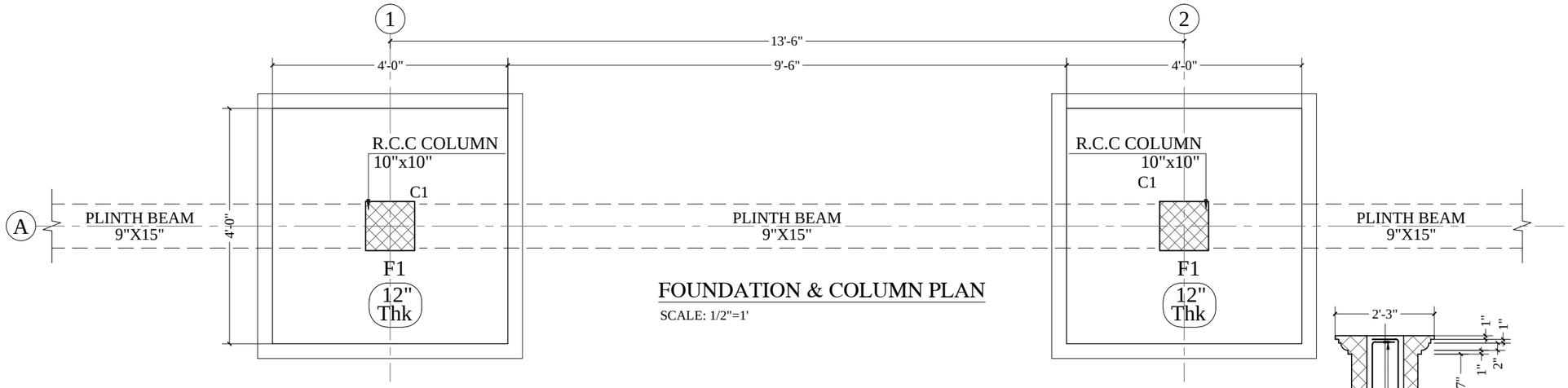
No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

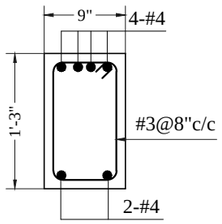
GENERAL NOTES OF BOUNDARY WALL

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER : ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/B-W/001 ST	REV: 04
SCALE (A3): N.T.S	SHEET: 1/1



FOUNDATION & COLUMN PLAN

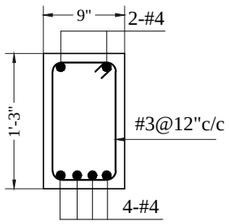
SCALE: 1/2"=1'



BEAM PB-1

AT SUPPORT

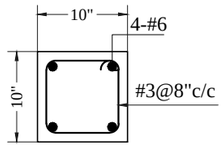
SCALE: 3/4"=1'



BEAM PB-1

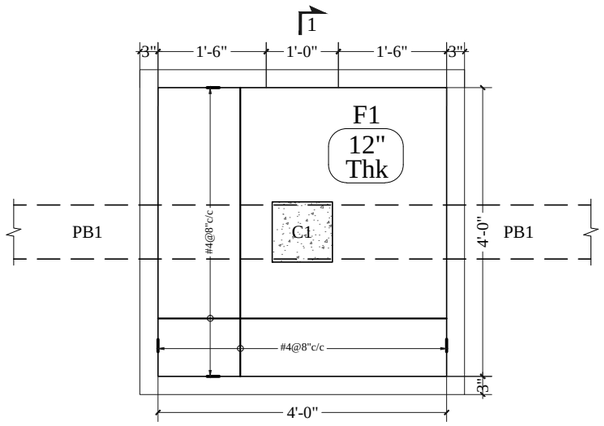
AT MID SPAN

SCALE: 3/4"=1'



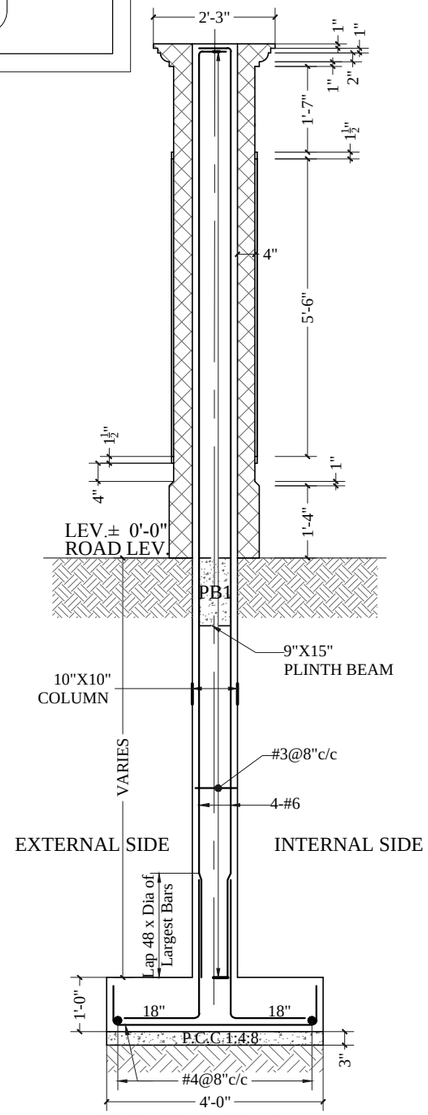
X-SECTION OF COLUMN C-1

SCALE: 3/4"=1'



PLAN DETAIL OF F1 FOOTING

SCALE: 1/2"=1'



TYP. FRONT WALL SECTION 1-1

Scale 3/8"=1'

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

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E-mail : info@g3ec.com
URL : www.g3ec.com

PROJECT:

REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

NOTES:

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REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:
FOUNDATION, COLUMN PLAN AND REINFORCEMENT DETAILS OF BOUNDARY WALL

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/B-W/002 ST	REV: 04
SCALE (A3): AS SHOWN	SHEET: 1/1

STRUCTURAL DRAWINGS
ENTRANCE GATE

LIST OF DRAWINGS
STRUCTURAL DRAWINGS

S.NO	DRAWING DETAIL	DRAWING NO.
1.	LIST OF DRAWING	0249/E-G/000 ST
2.	GENERAL NOTES	0249/E-G/001 ST
3.	FOUNDATION AND SLAB REINFORCEMENT PLAN	0249/E-G/002 ST
4.	X-SECTION OF TYPICAL LINTELS SCHEDULE OF LINTELS	0249/E-G/003 ST

CLIENT:

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PROJECT:
REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

NOTES:
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2.

REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

LIST OF DRAWINGS
ENTRANCE GATE

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER :
ENGR.MUHAMMAD IMRAN

APPROVED BY:
SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/E-G/000 ST	04
SCALE (A3): N.T.S	SHEET: 1/1

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2)	Columns	1½"
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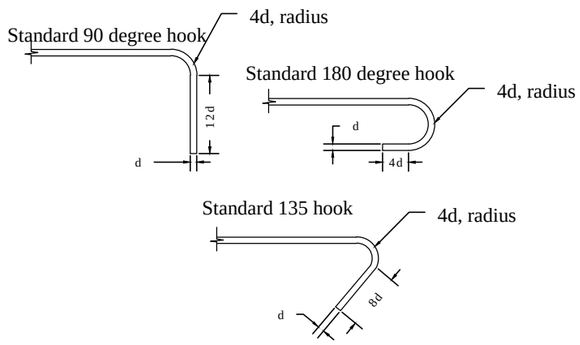

5.3. Development and Splice Lengths

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* Top bars are horizontal bars, with at least 12 in of fresh concrete below them.

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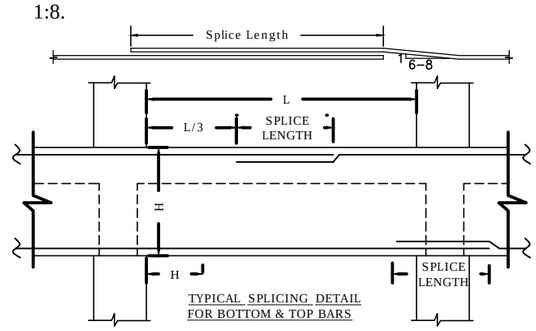
c. Where required, bar shall have a gradient between 1:6 to 1:8.



TYPICAL SPLICING DETAIL FOR BOTTOM & TOP BARS

8. Construction Joints

a. Construction joints shall be located with the prior approval of the Engineer, if it is not indicated in the drawing.

b. On proposed construction joint surfaces, all fines shall be removed, on initial setting of concrete, but before its hardening. In order to achieve this, sand blasting or wire brushing could be used. Before placing the second-stage concrete, the joint surface shall be cleaned free of all loose material and washed. A bonding agent shall be applied to the surface and concrete placed within the period stipulated by the manufacturer.

9. Adopted Loads

9.1. Dead Loads

All floor finishes = 56 psf

Roof finishes = 63 psf

9.2. Live Loads

Floor = 60 psf

Roof = 30 psf

10. Foundation

a. Foundation Should be executed in accordance with geotechincal investigation report of this project.

b. Procedure for placement of structural fill should be strictly followed as if recommended in geo technical report.

c. All footings should be concentric with the column centre line unless otherwise shown.

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11. Terms & Abbrevations

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e) C.Joint: Construction Joint

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

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PROJECT:

REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

NOTES:

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REVISIONS:

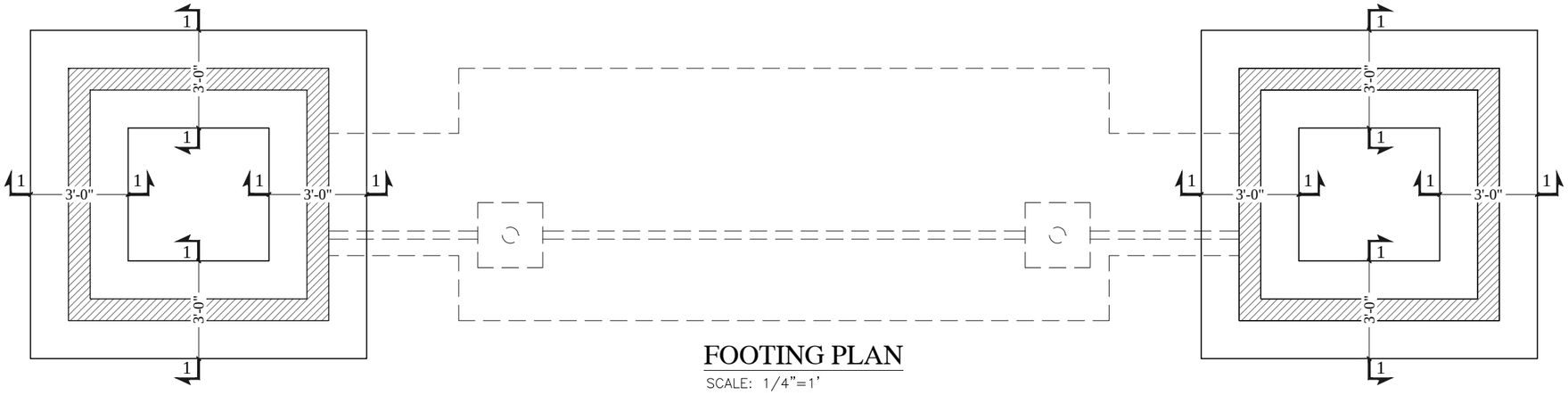
No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

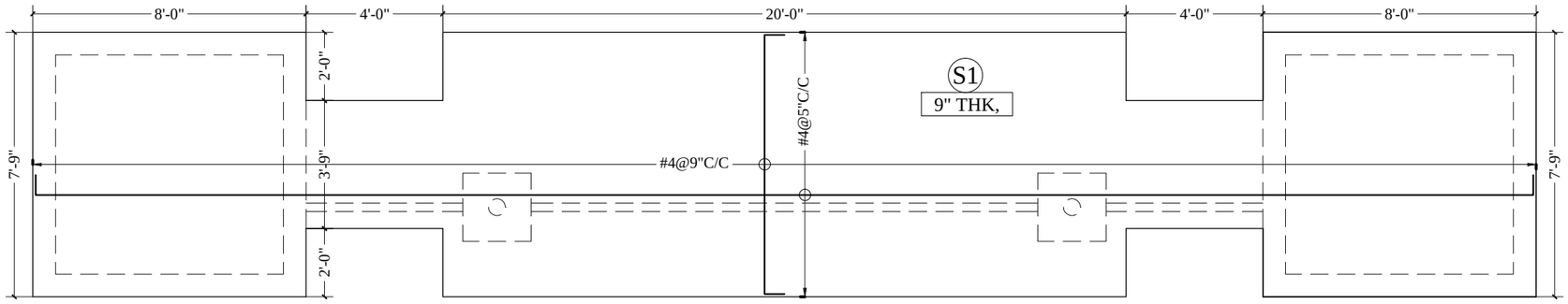
GENERAL NOTES OF ENTRANCE GATE

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER : ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/E-G/001 ST	REV: 04
SCALE (A3): N.T.S	SHEET: 1/1



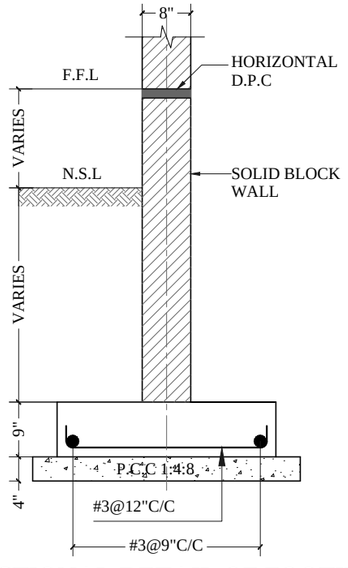
FOOTING PLAN

SCALE: 1/4"=1'



SLAB REINFORCEMENT PLAN

SCALE: 1/4"=1'



SECTIONAL DETAIL OF FOOTING
SECTION 1-1

Scale 1/2"=1'

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

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PROJECT:

REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

NOTES:

1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
2.

REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:
FOUNDATION & SLAB REINFORCEMENT PLAN OF ENTRANCE GATE

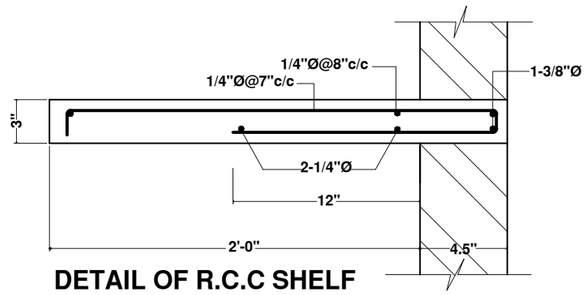
DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER :
ENGR.MUHAMMAD IMRAN

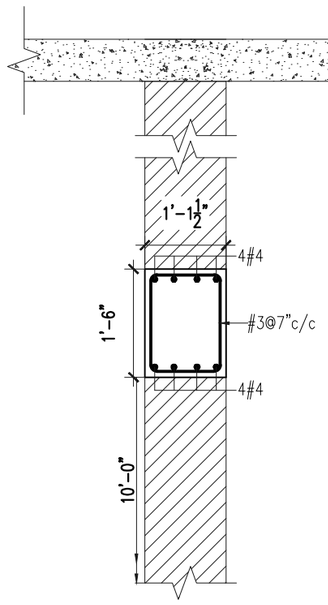
APPROVED BY:
SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/E-G/002 ST	04

SCALE (A3):	SHEET:
AS SHOWN	1/1



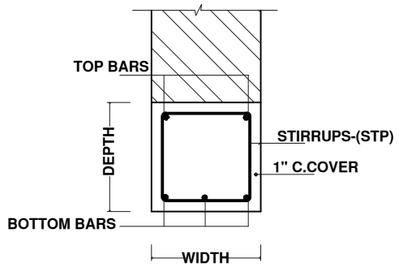
DETAIL OF R.C.C SHELF
where required



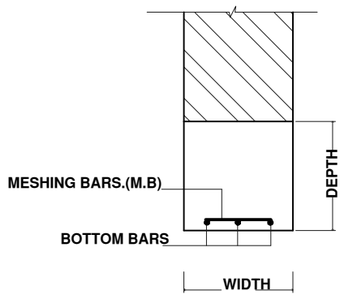
R.C.C DETAIL OF LINTEL
(L/30)
AT 10'–0" HIGHT

SCHEDULE OF R.C.C LINTELS

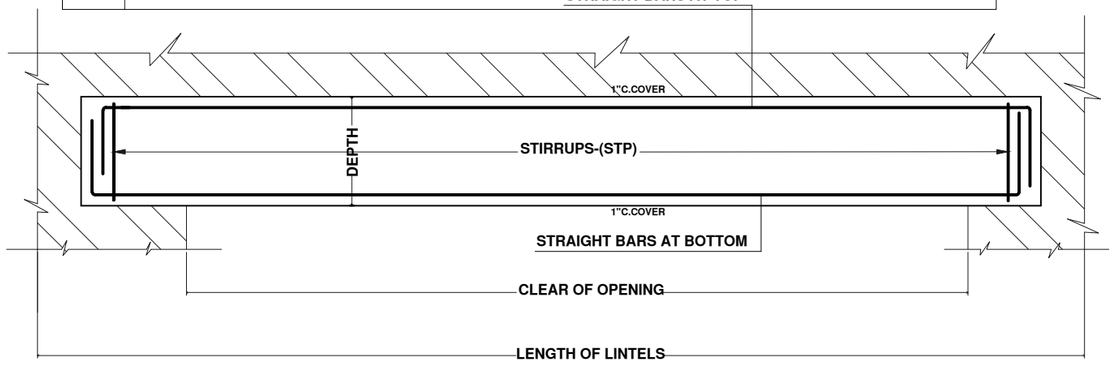
LINTEL NO.	CLEAR OPNING	LENGTH OF LINTEL	SIZE		STRAIGTH BARS AT BOTTOM		STRAIGTH BARS AT TOP		STIRRUPS (STP)
			WIDTH	DEPTH	NO	DIA	NO	DIA	MESHING BARS (M.B)
L / 1	1' - 6"	3' - 0"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	1/4" 0 @ 7" C/C (M.B)
L / 2	1' - 9"	3' - 3"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 3	2' - 0"	3' - 6"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 4	2' - 3"	3' - 9"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 5	2' - 6"	4' - 0"	4 1/2", 9" OR 13½"	6"	3	3 / 8"	–	–	〃
L / 6	2' - 9"	4' - 3"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 7	3' - 0"	4' - 6"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 7a	3' - 3"	4' - 9"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 8	3' - 6"	5' - 0"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 9	3' - 9"	5' - 3"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 10	4' - 0"	5' - 6"	4 1/2" OR 9"	9"	3	1 / 2"	–	–	〃
L / 11	4' - 3"	5' - 9"	4 1/2" OR 9"	9"	3	1 / 2"	2	3 / 8"	1/4" 0 @ 7" C/C (STP)
L / 12	4' - 6"	6' - 0"	4 1/2" OR 9"	9"	3	1 / 2"	2	3 / 8"	〃
L / 13	4' - 9"	6' - 3"	4 1/2" OR 9"	9"	3	1 / 2"	2	3 / 8"	〃
L / 14	5' - 0"	6' - 6"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	3/8"Ø @ 7" C/C (STP)
L / 15	5' - 3"	6' - 9"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	〃
L / 16	5' - 6"	7' - 0"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	〃
L / 17	5' - 9"	7' - 3"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	〃
L / 18	6' - 0"	7' - 6"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 19	6' - 6"	8' - 0"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 20	6' - 9"	8' - 3"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 21	7' - 0"	8' - 6"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 22	7' - 6"	9' - 0"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 23	7' - 9"	9' - 3"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 24	8' - 0"	11 - 0"	9" OR 13½"	9"	5	1 / 2"	3	3 / 8"	〃
L / 25	8' - 6"	11 - 6"	9" OR 13½"	9"	5	1 / 2"	3	3 / 8"	〃
L / 26	9' - 0"	12'- 0"	9" OR 13½"	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 27	9' - 6"	12 - 6"	9" OR 13½"	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 28	11' - 6"	14'- 6"	9" OR 13½"	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 29	12' - 0"	15' - 0"	9" OR 13½"	18"	3 / 1	3/4" / 1"	3	1 / 2"	〃



TYPICAL-X-SECTION OF R.C.C LINTELS



TYPICAL-X-SECTION OF R.C.C LINTELS



TYPICAL-L-SECTION OF R.C.C LINTELS

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

G3 ENGINEERING CONSULTANTS (PVT)LTD.
House No.57-M Gulberg-III, Lahore, Pakistan

Tel : (92-42) 35441641, 35441642
Fax : (92-42) 35441645
E-mail : info@g3ec.com
URL : www.g3ec.com

PROJECT:
REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

NOTES:

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REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:
X-SECTION OF TYPICAL LINTELS SCHEDULE OF LINTELS FOR ENTRANCE GATE

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER :
ENGR.MUHAMMAD IMRAN

APPROVED BY:
SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/E-G/003 ST	04

SCALE (A3):	SHEET:
N.T.S	1/1

STRUCTURAL DRAWINGS
PIAZZA

LIST OF DRAWINGS
STRUCTURAL DRAWINGS

S.NO	DRAWING DETAIL	DRAWING NO.
1.	LIST OF DRAWING	0249/E-P/000 ST
2.	GENERAL NOTES	0249/E-P/001 ST
3.	FOUNDATION AND COLUMN & AXIS PLAN	0249/E-P/002 ST
4.	BEAM FRAMING PLAN AND REINFORCEMENT DETAILS	0249/E-P/003 ST

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LIST OF DRAWINGS
ENTRANCE PIAZZA

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER :
ENGR.MUHAMMAD IMRAN

APPROVED BY:
SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/E-P/000 ST	04
SCALE (A3): N.T.S	SHEET: 1/1

GENERAL NOTES & SPECIFICATIONS

1. General

1.1. All structural drawings should be read in conjunction with Architectural, Civil, Mechanical, Electrical and other relevant drawings.The contractor should coordinate with Architectural and various service drawings for levels, sizes and location of all Structural members, Floors Walls and Pipes etc..

1.2. The contractor shall report all discrepancies, differences and conflicts, as soon as they are observed.

1.3. Safe working practices will be adopted, and no damage to any property or life will be ensured.

1.4. Prior approval of proposed method of work, sequence of jobs, location of block-outs and construction joints in concrete , location of all splices and proposed values of camber is required.

1.5. The structure is not designed against construction loads. The contractor is responsible for ensuring that all elements should remain supported during construction.

1.6. Prior to adopting finished levels of structural elements, proper allowances are to be maintained by the contractor.

2. Design

2.1. The Structural design of all concrete elements is based on Building Code Requirements for Structural Concrete (ACI 318-08) of the American Concrete Institute, USA.

2.2. The Structural design of all masonry elements shall conform to Specification for Masonry Structures (ACI 530.1-05/ ASCE 6-05/ TMS 602-05) reported by the Masonry Standards Joint Committee (MSJC) USA.

3. Construction

3.1. Work on this building shall conform to all requirements of ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan, except as modified by the requirements below.

3.2. The Construction Work of all Masonry elements should confirm to Specification for Masonry Structures (ACI 530.1-05/ ASCE 6-05/ TMS 602-05) reported by the Masonry Standards Joint Committee (MSJC) USA..

4. Materials

4.1. Concrete

4.1.1. Plain Concrete

All Plain concrete shall have a cylinder strength of 1500 psi, at 28 days, unless noted otherwise.

4.1.2. Structural Concrete

a) The structural concrete for all columns and foundations shall have a minimum compressive cylinder strength of 4,000 psi, at 28 days.

b)All concrete work shall conform to Specifications for Structural Concrete for Buildings ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan.

c) Unless Noted Otherwise all other structural concrete shall have a minimum compressive cylinder strength of 3,000 psi, at 28 days.

Note that specified compressive strength shall be achieved through proper mix design and this design shall be sole responsibility of Contractor (or as specified in the contract documents).

4.2. Reinforcing Steel

4.2.1. Except as otherwise specified, all reinforcing steel shall conform to ASTM A615, Grade 60.

4.2.2. Clear Concrete Covers to Reinforcement

	Member	Cover
1)	Foundations	2"
2)	Columns	1½"
3)	Beams (with depth less than 10")	3/4"
4)	Beams (with depth greater than than 10")	1½"
5)	Slab	3/4"
6)	Walls Facing Soil	2"
7)	Walls Other	1"

4.1. In order to ensure the specified covers, bars must be secured in position, with the help of concrete spacer blocks, with embedded binding wire.

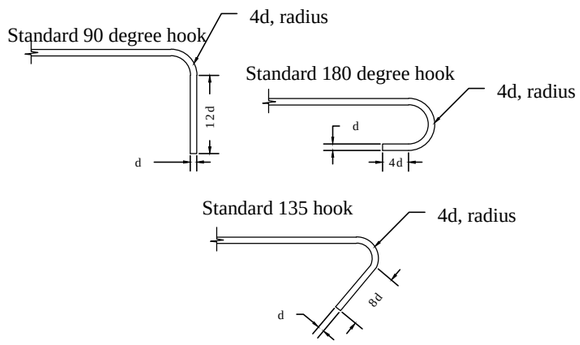
4.2. To support top bars, provide supporting rebars and standard ACI chairs.

5. Bar Development

5.1. Standard Hooks

Unless otherwise shown in the drawings, standard ACI hooks shall shall be provided at the free ends of all bars.

5.2. Unless noted otherwise, the hooks will comply the following dimensions:



5.3. Development and Splice Lengths

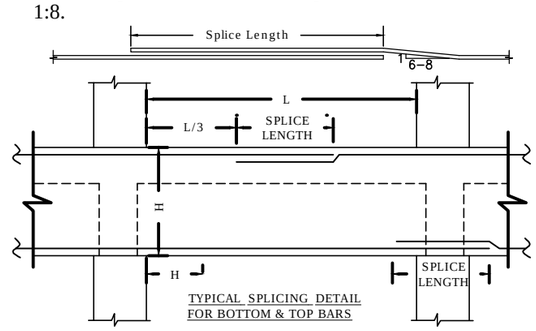
a. Splice length of reinforcing bars shall as follows.

Bar Designation	Splice lengths (in)			
	Concrete with cylinder strength of 3,000 psi at 28 days		Concrete with cylinder strength of 4,000 psi at 28 days	
	Top bars* Splice Length	Other than top bars Splice Length	Top bars* Splice Length	Other than top bars Splice Length
#3	30	24	27	21
#4	39	30	33	27
#5	48	36	42	33
#6	57	45	51	39
#8	93	72	81	63

* Top bars are horizontal bars, with at least 12 in of fresh concrete below them.

b. For splicing unequal diameter bars, use smaller diameter for splice length determination.

c. Where required, bar shall have a gradient between 1:6 to 1:8.



TYPICAL SPLICING DETAIL FOR BOTTOM & TOP BARS

8. Construction Joints

a. Construction joints shall be located with the prior approval of the Engineer, if it is not indicated in the drawing.

b. On proposed construction joint surfaces, all fines shall be removed, on initial setting of concrete, but before its hardening. In order to achieve this, sand blasting or wire brushing could be used. Before placing the second-stage concrete, the joint surface shall be cleaned free of all loose material and washed. A bonding agent shall be applied to the surface and concrete placed within the period stipulated by the manufacturer.

9. Adopted Loads

9.1. Dead Loads

All floor finishes = 56 psf
Roof finishes = 63 psf

9.2. Live Loads

Floor = 60 psf
Roof = 30 psf

10. Foundation

a. Foundation Should be executed in accordance with geotechincal investigation report of this project.

b. Procedure for placement of structural fill should be strictly followed as if recommended in geo technical report.

c. All footings should be concentric with the column centre line unless otherwise shown.

d. Irregularity formed from loose strata under the footing shall be replaced with plain cement concrete.

11. Terms & Abbrevations

Following terms and abbreviations are used in all structural drawings.

a) UNO: Unless Noted Otherwise
b) NSL: Natural Surface Level
c) Typ: Typical
d) FFL: Finished Floor Level
e) C.Joint: Construction Joint

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

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PROJECT:

REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

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REVISIONS:

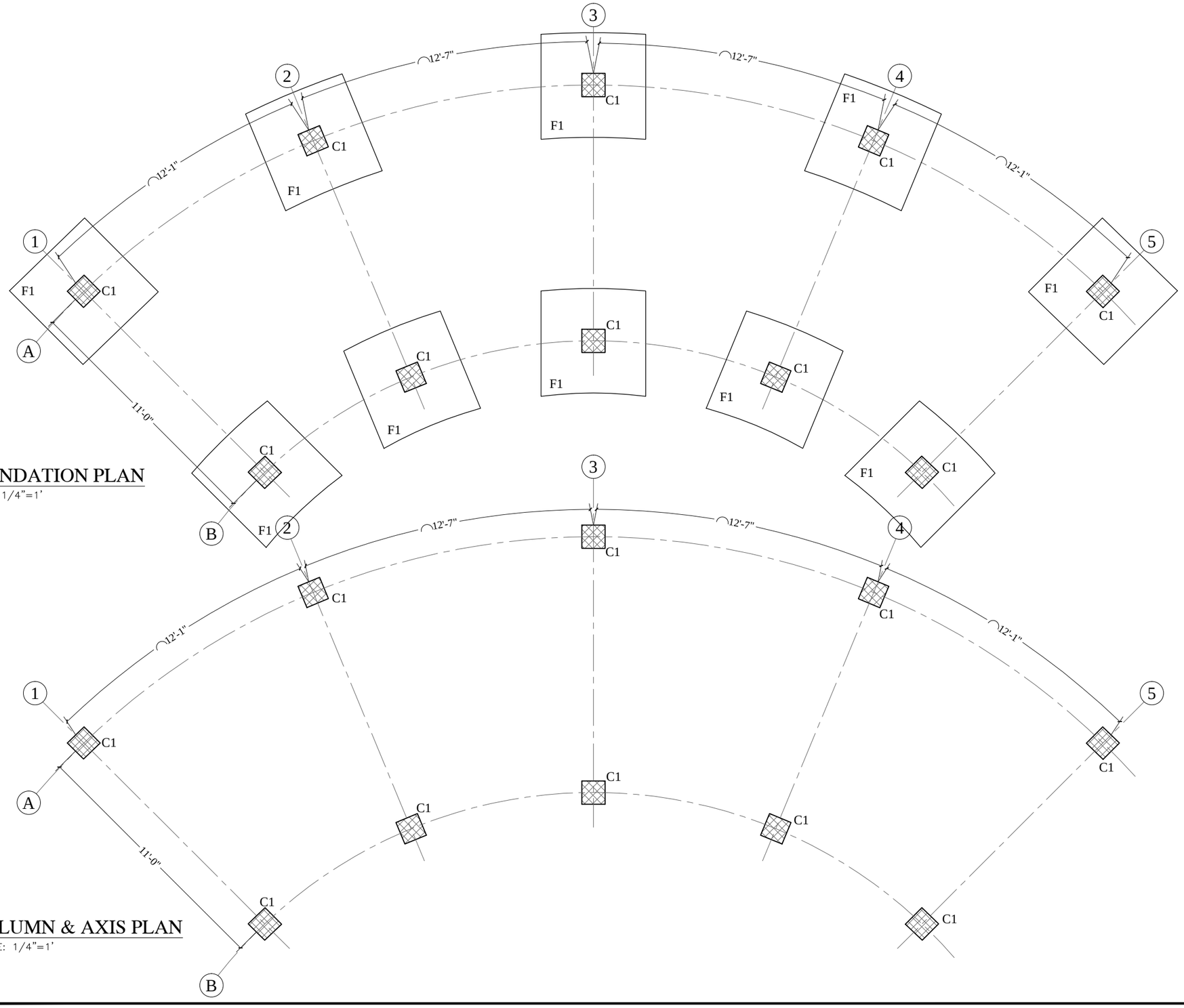
No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

GENERAL NOTES OF ENTRANCE PIAZZA

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER : ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/E-P/001 ST	REV: 04
SCALE (A3): N.T.S	SHEET: 1/1



FOUNDATION PLAN

SCALE: 1/4"=1'

COLUMN & AXIS PLAN

SCALE: 1/4"=1'

CLIENT:

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PROJECT:

REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

NOTES:

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2.

REVISIONS:

No.	DESCRIPTION	DATE

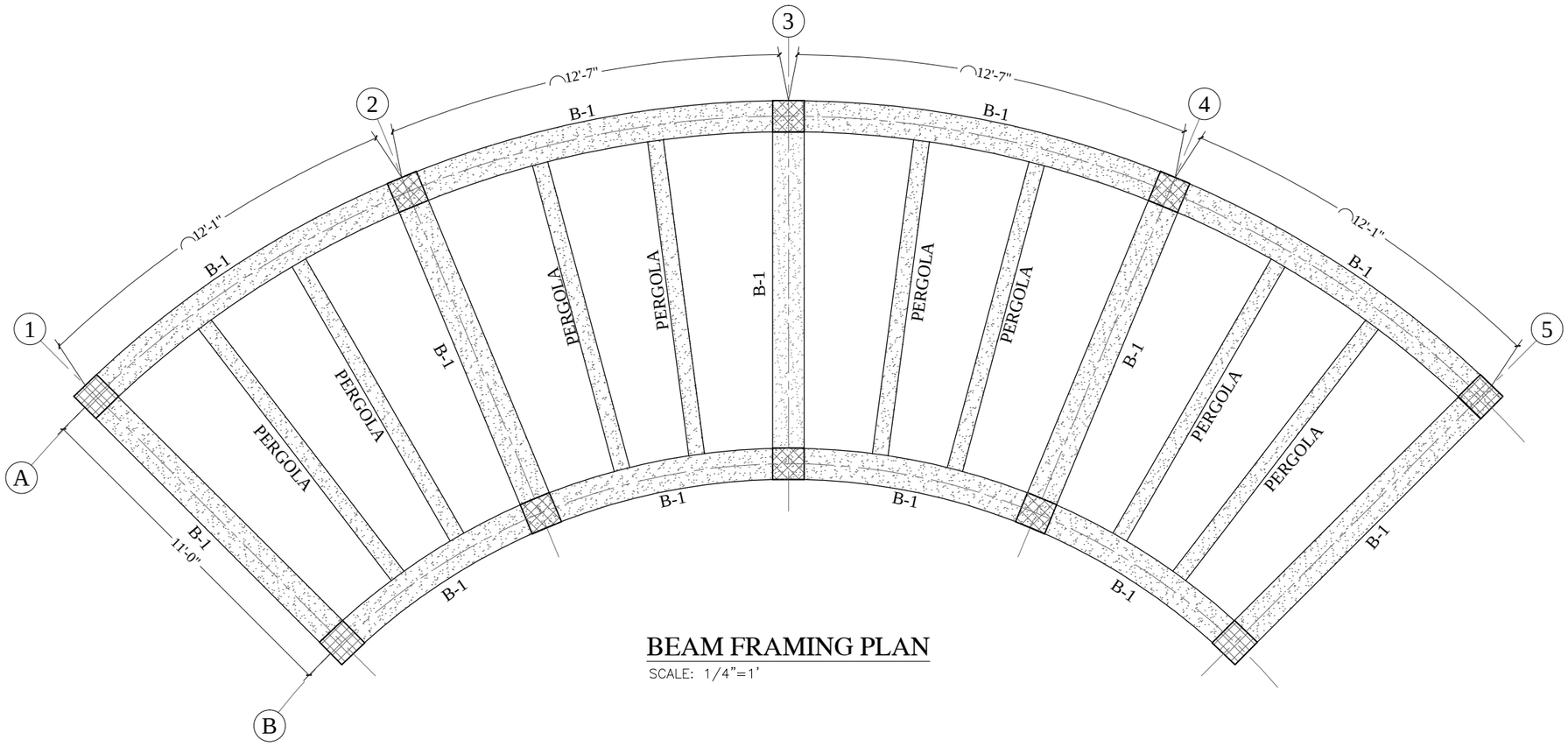
TENDER DRAWINGS

DRAWING TITLE:

FOUNDATION AND COLUMN & AXIS PLAN OF ENTRANCE PIAZZA

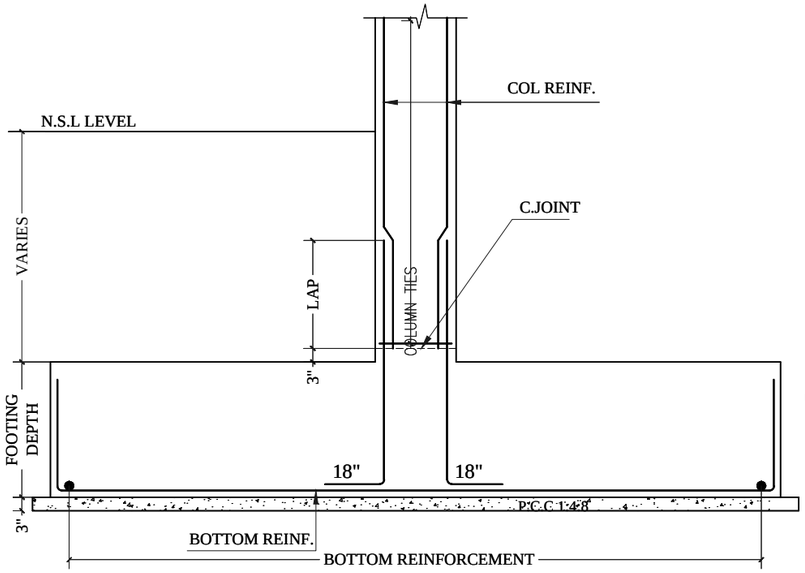
DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER: ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/E-P/002 ST	REV: 04
SCALE (A3): AS SHOWN	SHEET: 1/1

1/16" - 1'



BEAM FRAMING PLAN

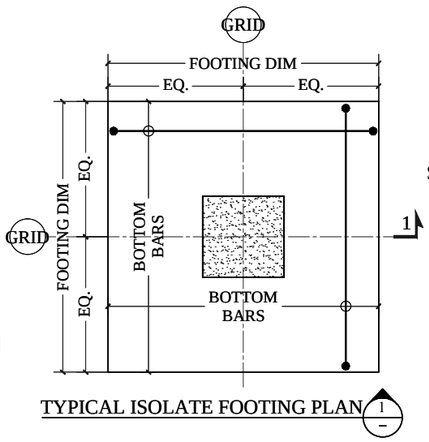
SCALE: 1/4"=1'



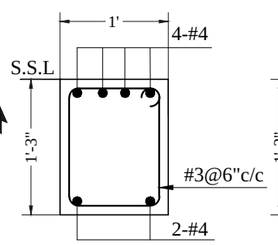
TYPICAL SECTIONAL DETAIL OF ISOLATE FOOTING

SCHEDULE OF FOOTINGS

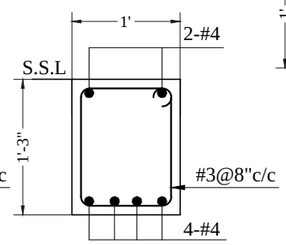
MARK	FOUNDATION						SHORT DIRECTION LONG REBAR		LONG DIRECTION SHORT REBAR		EXCAVATION LEVEL VERIFY ON SITE & W/SOIL REPORT
	BLINDING			FOOTING							
	WIDTH	LENGTH	DEPTH	WIDTH	LENGTH	DEPTH					
F1	5'-0"	5'-0"	0'-3"	4'-6"	4'-6"	12"	#4@5" C/C	--	#4@5" C/C	--	±0.00



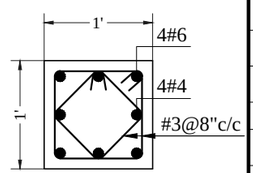
TYPICAL ISOLATE FOOTING PLAN 1/-



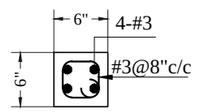
BEAM B-1
AT SUPPORT
SCALE: 3/4"=1'



BEAM B-1
AT MID SPAN
SCALE: 3/4"=1'



X-SECTION OF COLUMN C1
SCALE: 3/4"=1'



PERGOLA
SCALE: 3/4"=1'

CLIENT:

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PROJECT:

REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

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REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:
BEAM FRAMING PLAN & REINFORCEMENT DETAILS OF ENTRANCE PIAZZA

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER : ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/E-P/003 ST	REV: 04
SCALE (A3): AS SHOWN	SHEET: 1/1

STRUCTURAL DRAWINGS
PAVILION

LIST OF DRAWINGS
STRUCTURAL DRAWINGS

S.NO	DRAWING DETAIL	DRAWING NO.
1.	LIST OF DRAWING	0249/PAVILION/000 ST
2.	GENERAL NOTES	0249/PAVILION/001 ST
3.	FOUNDATION, COLUMN & BEAM FRAMING LAYOUT	0249/PAVILION/002 ST
4.	TYPICAL FOUNDATION SECTIONAL DETAILS	0249/PAVILION/003 ST
5.	STEEL FRAMING LAYOUT	0249/PAVILION/004 ST
6.	TYPICAL SECTIONAL DETAILS	0249/PAVILION/005 ST
7.	TYPICAL STAIR DETAIL	0249/PAVILION/006 ST
8.	X-SECTION OF TYPICAL LINTELS SCHEDULE OF LINTELS	0249/PAVILION/007 ST

CLIENT:

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TENDER DRAWINGS

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LIST OF DRAWINGS OF PAVILION

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER :
ENGR.MUHAMMAD IMRAN

APPROVED BY:
SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/PAVILION/000 ST	04
SCALE (A3):	SHEET:
N.T.S	1/1

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1.2. The contractor shall report all discrepancies, differences and conflicts, as soon as they are observed.

1.3. Safe working practices will be adopted, and no damage to any property or life will be ensured.

1.4. Prior approval of proposed method of work, sequence of jobs, location of block-outs and construction joints in concrete , location of all splices and proposed values of camber is required.

1.5. The structure is not designed against construction loads. The contractor is responsible for ensuring that all elements should remain supported during construction.

1.6. Prior to adopting finished levels of structural elements, proper allowances are to be maintained by the contractor.

2. Design

2.1. The Structural design of all concrete elements is based on Building Code Requirements for Structural Concrete (ACI 318-08) of the American Concrete Institute, USA.

2.2. The Structural design of all masonry elements shall conform to Specification for Masonry Structures (ACI 530.1-05/ ASCE 6-05/ TMS 602-05) reported by the Masonry Standards Joint Committee (MSJC) USA.

3. Construction

3.1. Work on this building shall conform to all requirements of ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan, except as modified by the requirements below.

3.2. The Construction Work of all Masonry elements should confirm to Specification for Masonry Structures (ACI 530.1-05/ ASCE 6-05/ TMS 602-05) reported by the Masonry Standards Joint Committee (MSJC) USA..

4. Materials

4.1. Concrete

4.1.1. Plain Concrete

All Plain concrete shall have a cylinder strength of 1500 psi, at 28 days, unless noted otherwise.

4.1.2. Structural Concrete

a) The structural concrete for all columns and foundations shall have a minimum compressive cylinder strength of 4,000 psi, at 28 days.

b)All concrete work shall conform to Specifications for Structural Concrete for Buildings ACI 301-05 published by the American Concrete Institute, Farmington Hills, Michigan.

c) Unless Noted Otherwise all other structural concrete shall have a minimum compressive cylinder strength of 3,000 psi, at 28 days.

Note that specified compressive strength shall be achieved through proper mix design and this design shall be sole responsibility of Contractor (or as specified in the contract documents).

4.2. Reinforcing Steel

4.2.1. Except as otherwise specified, all reinforcing steel shall conform to ASTM A615, Grade 60.

4.2.2. Clear Concrete Covers to Reinforcement

	Member	Cover
1)	Foundations	2"
2)	Columns	1½"
3)	Beams (with depth less than 10")	3/4"
4)	Beams (with depth greater than than 10")	1½"
5)	Slab	3/4"
6)	Walls Facing Soil	2"
7)	Walls Other	1"

4.1. In order to ensure the specified covers, bars must be secured in position, with the help of concrete spacer blocks, with embedded binding wire.

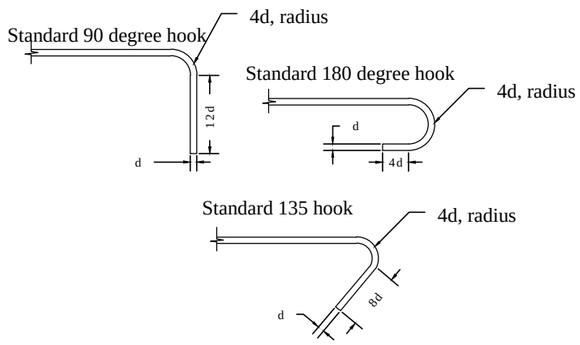
4.2. To support top bars, provide supporting rebars and standard ACI chairs.

5. Bar Development

5.1. Standard Hooks

Unless otherwise shown in the drawings, standard ACI hooks shall shall be provided at the free ends of all bars.

5.2. Unless noted otherwise, the hooks will comply the following dimensions:



5.3. Development and Splice Lengths

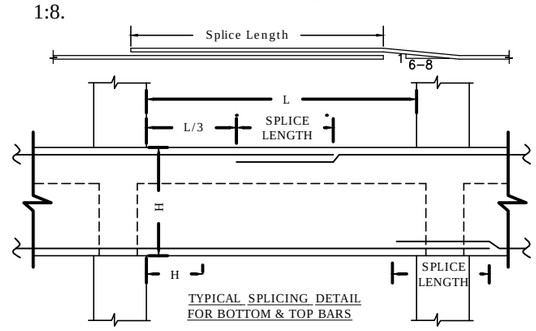
a. Splice length of reinforcing bars shall as follows.

Bar Designation	Splice lengths (in)			
	Concrete with cylinder strength of 3,000 psi at 28 days		Concrete with cylinder strength of 4,000 psi at 28 days	
	Top bars* Splice Length	Other than top bars Splice Length	Top bars* Splice Length	Other than top bars Splice Length
#3	30	24	27	21
#4	39	30	33	27
#5	48	36	42	33
#6	57	45	51	39
#8	93	72	81	63

* Top bars are horizontal bars, with at least 12 in of fresh concrete below them.

b. For splicing unequal diameter bars, use smaller diameter for splice length determination.

c. Where required, bar shall have a gradient between 1:6 to 1:8.



8. Construction Joints

a. Construction joints shall be located with the prior approval of the Engineer, if it is not indicated in the drawing.

b. On proposed construction joint surfaces, all fines shall be removed, on initial setting of concrete, but before its hardening. In order to achieve this, sand blasting or wire brushing could be used. Before placing the second-stage concrete, the joint surface shall be cleaned free of all loose material and washed. A bonding agent shall be applied to the surface and concrete placed within the period stipulated by the manufacturer.

9. Adopted Loads

9.1. Dead Loads

All floor finishes	= 56 psf
Roof finishes	= 63 psf

9.2. Live Loads

Floor	= 60 psf
Roof	= 30 psf

10. Foundation

a. Foundation Should be executed in accordance with geotechincal investigation report of this project.

b. Procedure for placement of structural fill should be strictly followed as if recommended in geo technical report.

c. All footings should be concentric with the column centre line unless otherwise shown.

d. Irregularity formed from loose strata under the footing shall be replaced with plain cement concrete.

11. Terms & Abbrevations

Following terms and abbreviations are used in all structural drawings.

a) UNO: Unless Noted Otherwise
b) NSL: Natural Surface Level
c) Typ: Typical
d) FFL: Finished Floor Level
e) C.Joint: Construction Joint

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

G3 ENGINEERING CONSULTANTS (PVT)LTD.
House No.57-M Gulberg-III, Lahore, Pakistan

Tel : (92-42) 35441641, 35441642
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URL : www.g3ec.com

PROJECT:

REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

NOTES:

1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
2.

REVISIONS:

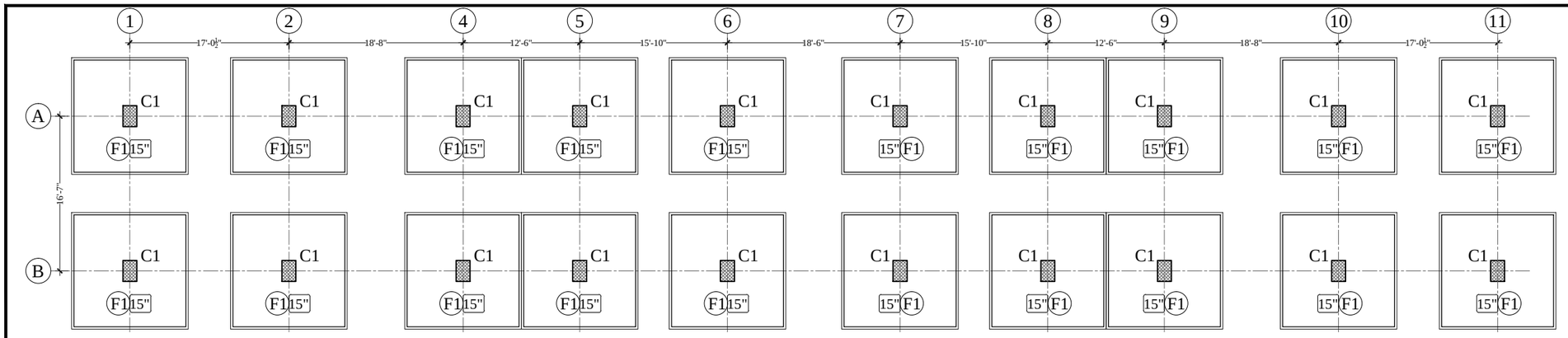
No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

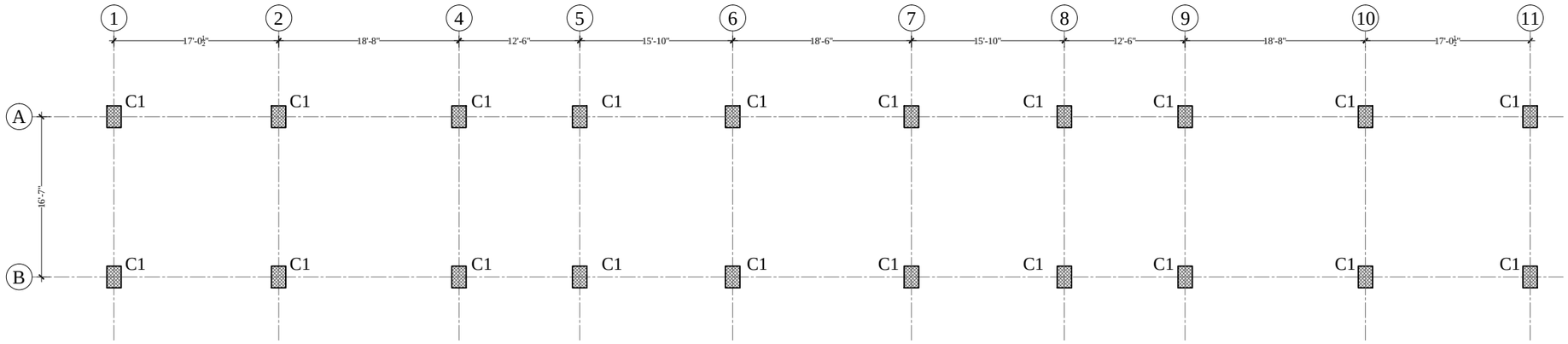
GENERAL NOTES OF PAVILION

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER : ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/PAVILION/000 ST	REV: 04
SCALE (A3): N.T.S	SHEET: 1/1



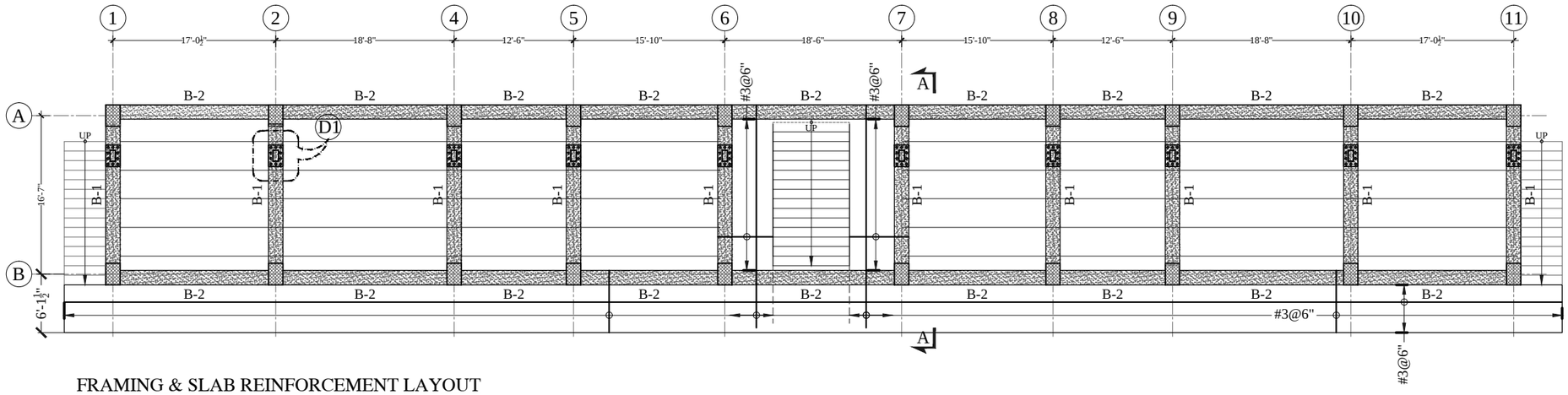
FOUNDATION LAYOUT

SCALE: 3/32"=1'-0"



COLUMN & AXIS LAYOUT

SCALE: 3/32"=1'-0"



FRAMING & SLAB REINFORCEMENT LAYOUT

SCALE: 3/32"=1'-0"

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

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PROJECT:

REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

NOTES:

1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
2.

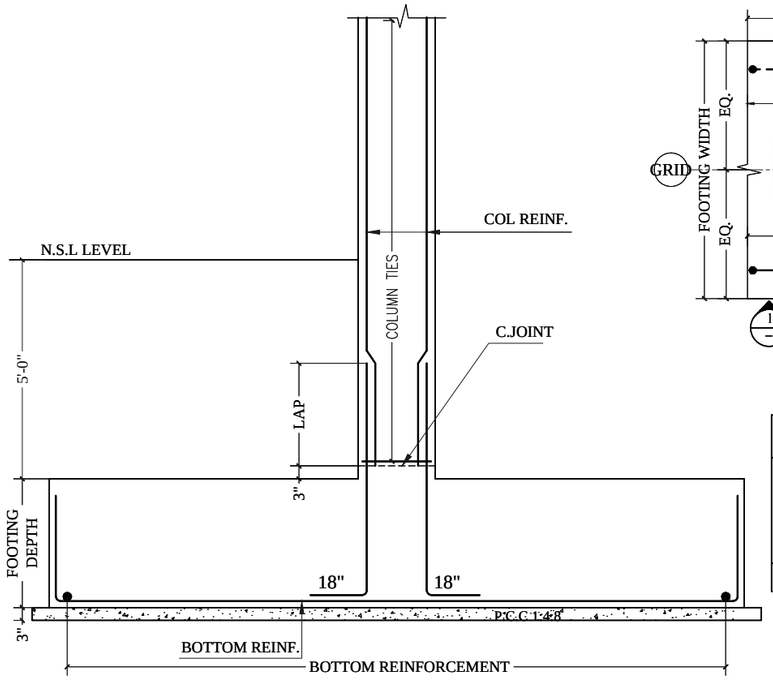
REVISIONS:

No.	DESCRIPTION	DATE

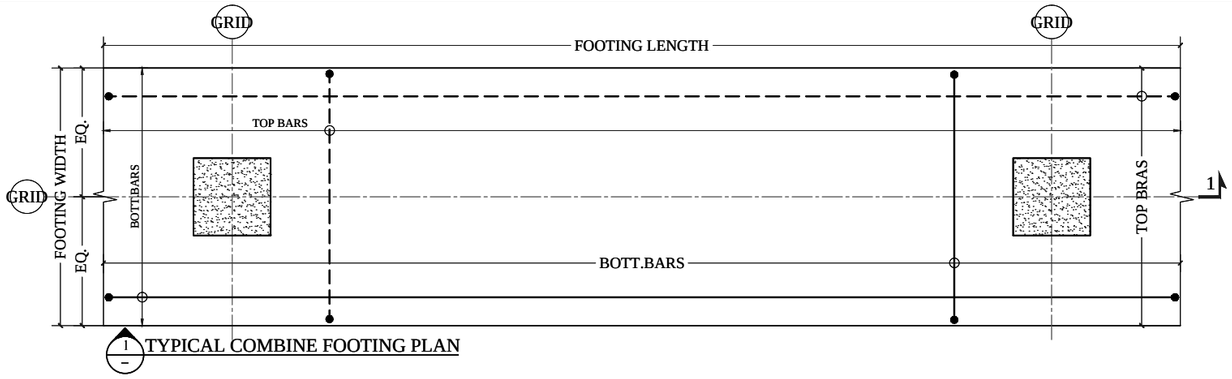
TENDER DRAWINGS

DRAWING TITLE:
FOUNDATION,COLUMN & FRAMING LAYOUT OF PAVILION

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER : ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/PAVILION/002 ST	REV: 04
SCALE (A3): 3/32" - 1'	SHEET: 1/1



TYPICAL SECTIONAL DETAIL OF ISOLATE FOOTING

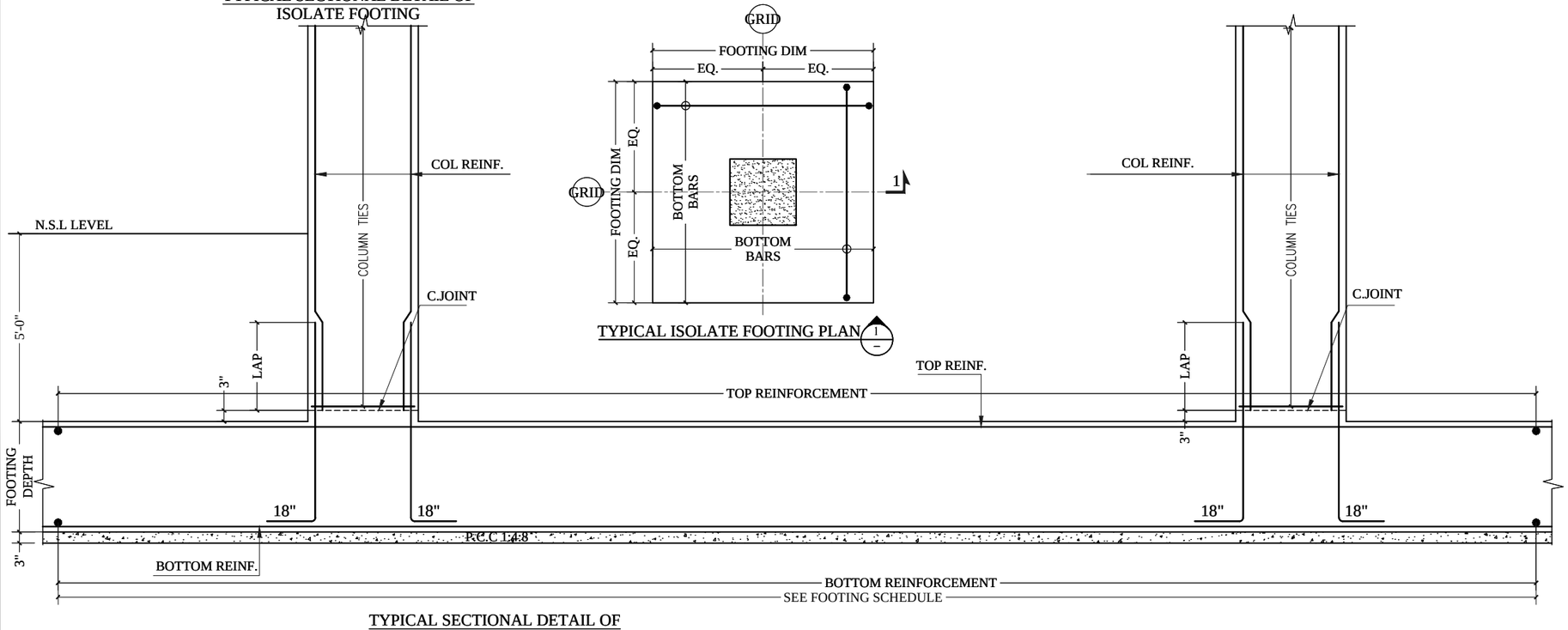


1 TYPICAL COMBINE FOOTING PLAN

SCHEDULE OF FOOTINGS

MARK	FOUNDATION						SHORT DIRECTION LONG REBAR		LONG DIRECTION SHORT REBAR		EXCAVATION LEVEL VERIFY ON SITE & W/SOIL REPORT
	BLINDING			FOOTING							
	WIDTH	LENGTH	DEPTH	WIDTH	LENGTH	DEPTH					
F1	12'-6"	12'-6"	0'-3"	12'-0"	12'-0"	15"	#6@6" C/C	--	#6@6" C/C	--	±0.00

TYPICAL ISOLATE FOOTING PLAN 1



TYPICAL SECTIONAL DETAIL OF COMBINE FOOTING

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:
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PROJECT:
REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

NOTES:
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REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:
TYPICAL FOUNDATION SECTIONAL DETAILS OF PAVILION

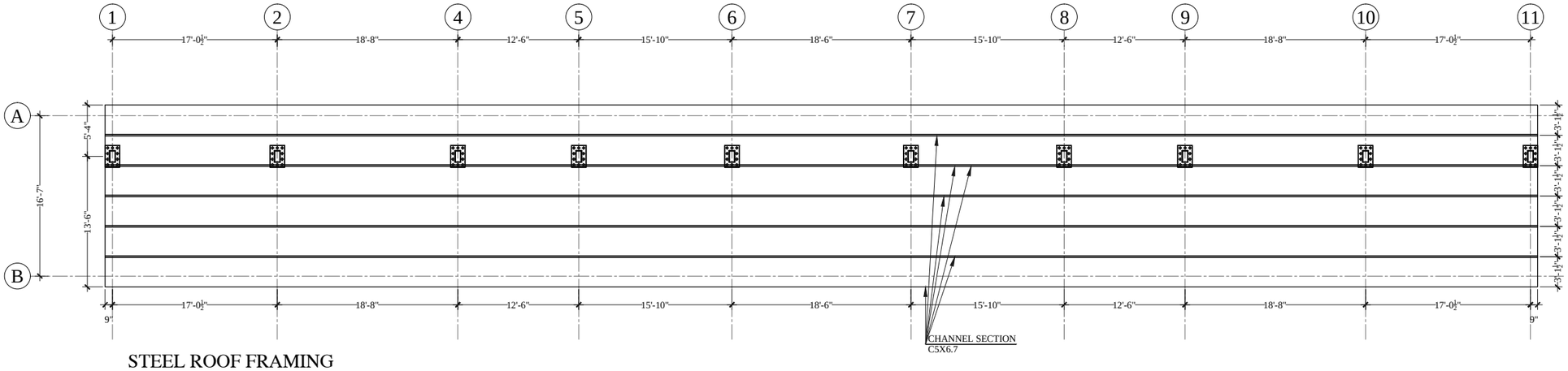
DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER :
ENGR.MUHAMMAD IMRAN

APPROVED BY:
SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/PAVILION/003 ST	04
SCALE (A3):	SHEET:
N.T.S	1/1

3/32" - 1'



STEEL ROOF FRAMING

ALL STRUCTURAL STEEL IS GRADE A-36

SCALE: 3/32"=1'-0"

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

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NOTES:

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2.

REVISIONS:

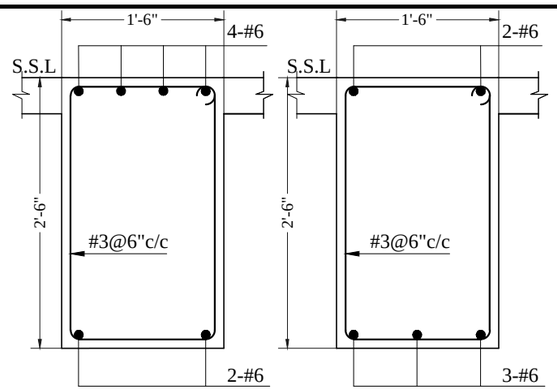
No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

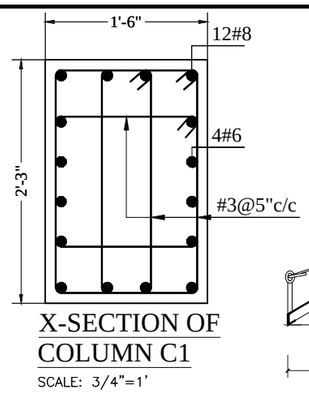
STEEL FRAMING LAYOUT OF PAVILION

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER : ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/PAVILION/004 ST	REV: 04
SCALE (A3): 3/32" - 1'	SHEET: 1/1

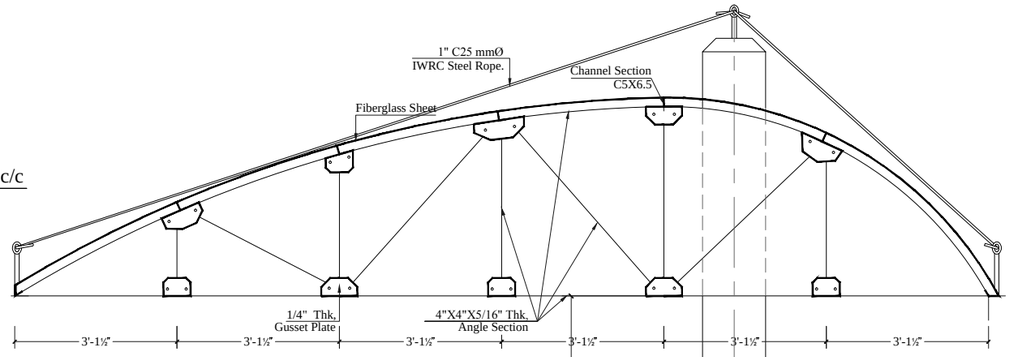


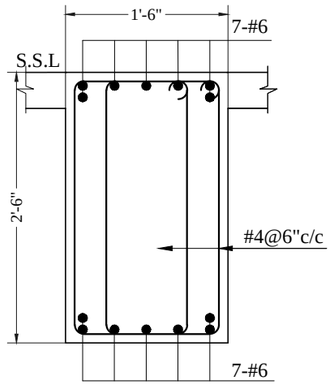
BEAM B-2
AT SUPPORT
SCALE: 3/4"=1'

BEAM B-2
AT MID SPAN
SCALE: 3/4"=1'

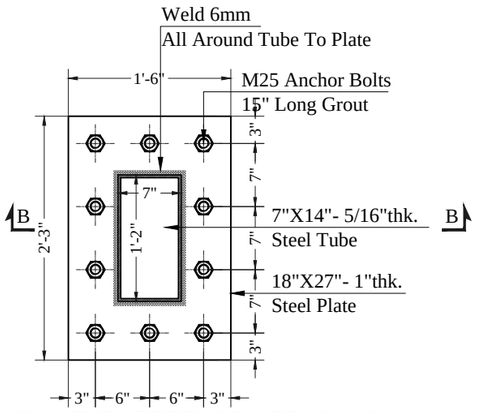


X-SECTION OF
COLUMN C1
SCALE: 3/4"=1'

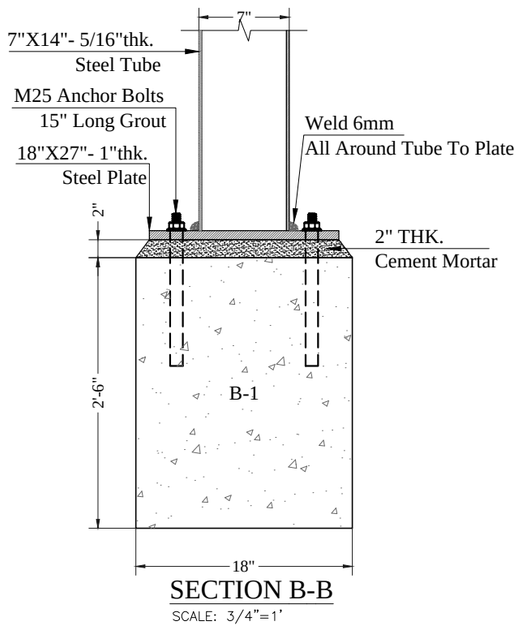




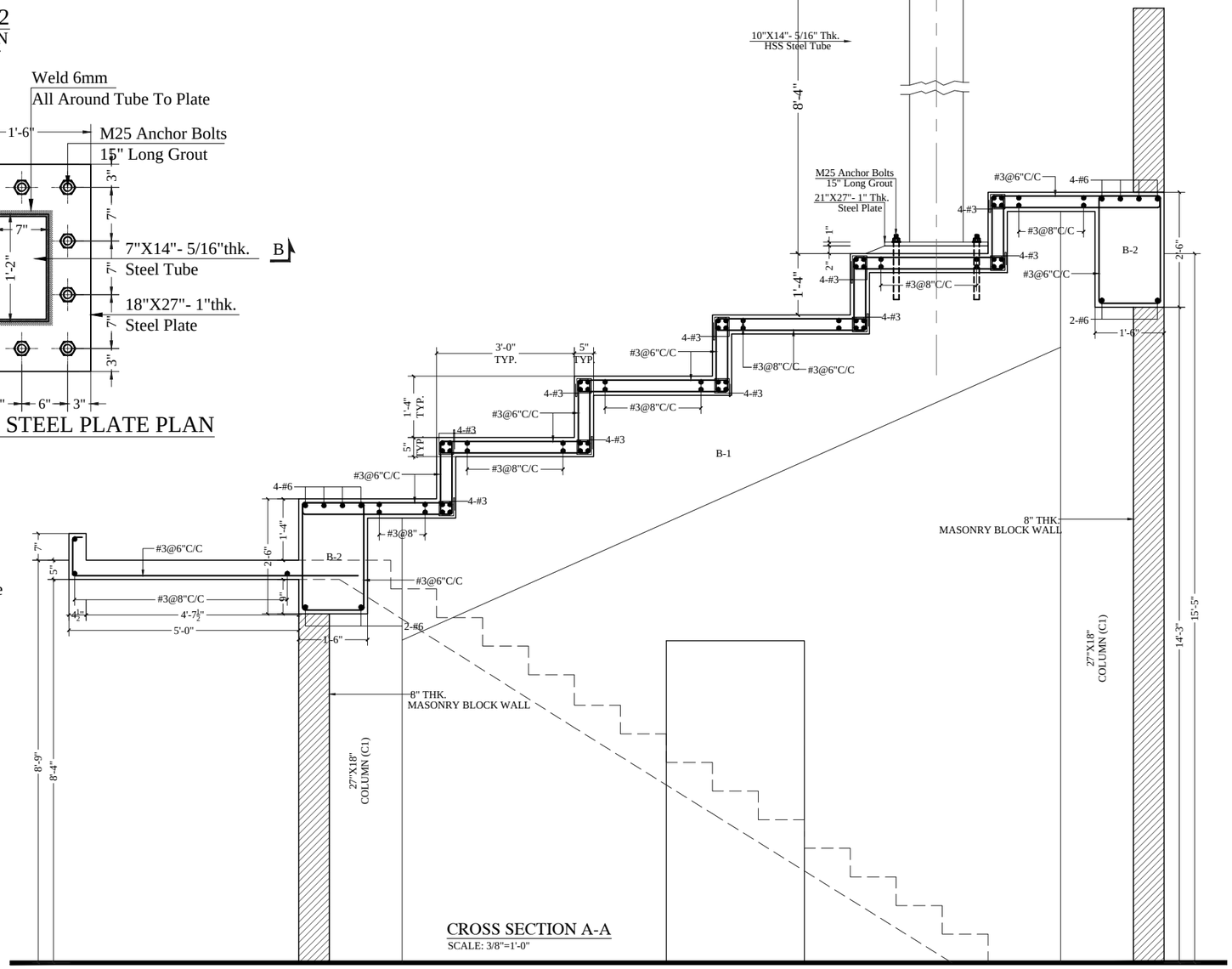
BEAM B-1
AT SUPPORT & AT MID
SCALE: 3/4"=1'



(D1) TYP. STEEL PLATE PLAN
SCALE: 3/4"=1'



SECTION B-B
SCALE: 3/4"=1'



CROSS SECTION A-A
SCALE: 3/8"=1'-0"

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

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URL : www.g3ec.com

PROJECT:
REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

NOTES:

1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
2.

REVISIONS:

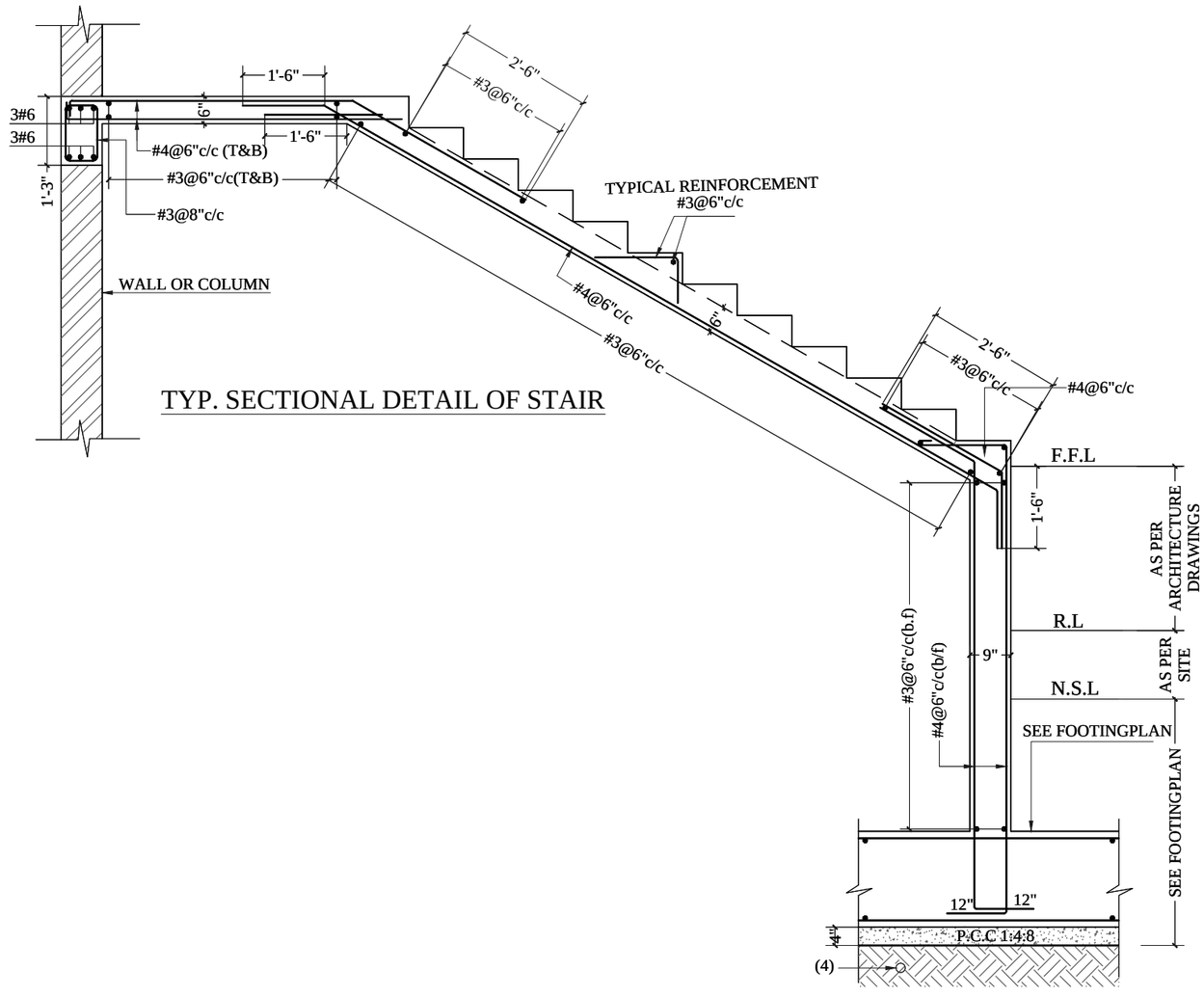
No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:

TYPICAL SECTIONAL DETAILS OF PAVILION

DRAWN BY: Sh.Najam	DATE: AUG. 2021
STRUCTURE ENGINEER : ENGR.MUHAMMAD IMRAN	
APPROVED BY: SYED ALI ABBAS GILLANI	
DRAWING NO: 0249/PAVILION/005 ST	REV: 04
SCALE (A3): AS SHOWN	SHEET: 1/1



TYP. SECTIONAL DETAIL OF STAIR

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

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PROJECT:

REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

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REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

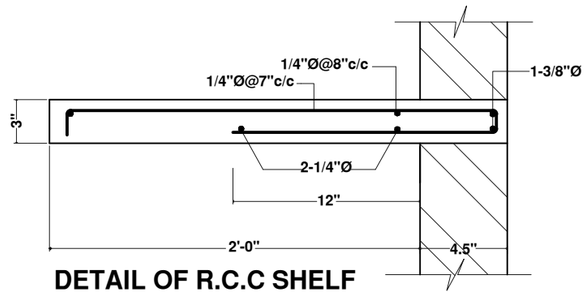
DRAWING TITLE:
TYPICAL STAIR REINFORCEMENT DETAIL OF PAVILION

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

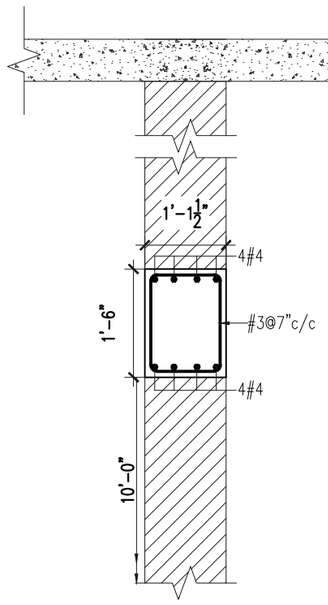
STRUCTURE ENGINEER :
ENGR.MUHAMMAD IMRAN

APPROVED BY:
SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/PAVILION/006 ST	04
SCALE (A3): N.T.S	SHEET: 1/1



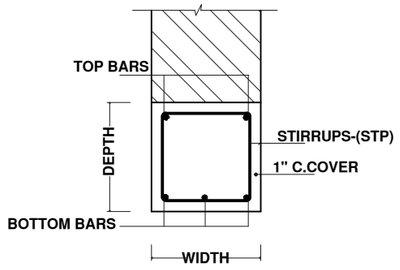
DETAIL OF R.C.C SHELF where required



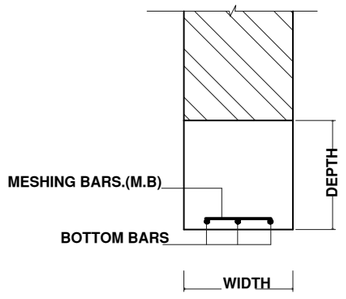
R.C.C DETAIL OF LINTEL
(L/30)
AT 10'–0" HIGHT

SCHEDULE OF R.C.C LINTELS

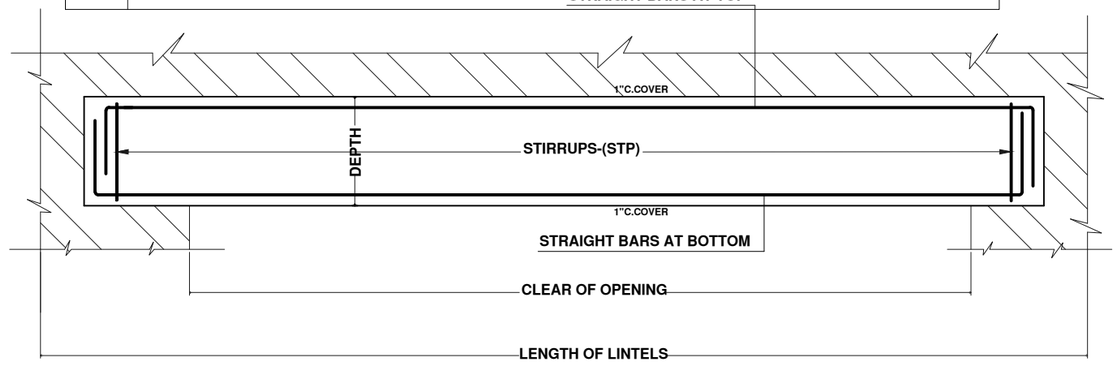
LINTEL NO.	CLEAR OPNING	LENGTH OF LINTEL	SIZE		STRAIGTH BARS AT BOTTOM		STRAIGTH BARS AT TOP		STIRRUPS (STP)
			WIDTH	DEPTH	NO	DIA	NO	DIA	MESHING BARS (M.B)
L / 1	1' - 6"	3' - 0"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	1/4" 0 @ 7" C/C (M.B)
L / 2	1' - 9"	3' - 3"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 3	2' - 0"	3' - 6"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 4	2' - 3"	3' - 9"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 5	2' - 6"	4' - 0"	4 1/2", 9" OR 13½"	6"	3	3 / 8"	–	–	〃
L / 6	2' - 9"	4' - 3"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 7	3' - 0"	4' - 6"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 7a	3' - 3"	4' - 9"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 8	3' - 6"	5' - 0"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 9	3' - 9"	5' - 3"	4 1/2" OR 9"	6"	3	3 / 8"	–	–	〃
L / 10	4' - 0"	5' - 6"	4 1/2" OR 9"	9"	3	1 / 2"	–	–	〃
L / 11	4' - 3"	5' - 9"	4 1/2" OR 9"	9"	3	1 / 2"	2	3 / 8"	1/4" 0 @ 7" C/C (STP)
L / 12	4' - 6"	6' - 0"	4 1/2" OR 9"	9"	3	1 / 2"	2	3 / 8"	〃
L / 13	4' - 9"	6' - 3"	4 1/2" OR 9"	9"	3	1 / 2"	2	3 / 8"	〃
L / 14	5' - 0"	6' - 6"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	3/8"Ø @ 7" C/C (STP)
L / 15	5' - 3"	6' - 9"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	〃
L / 16	5' - 6"	7' - 0"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	〃
L / 17	5' - 9"	7' - 3"	9" OR 13½"	9"	3	1 / 2"	2	3 / 8"	〃
L / 18	6' - 0"	7' - 6"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 19	6' - 6"	8' - 0"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 20	6' - 9"	8' - 3"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 21	7' - 0"	8' - 6"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 22	7' - 6"	9' - 0"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 23	7' - 9"	9' - 3"	9" OR 13½"	9"	4	1 / 2"	3	3 / 8"	〃
L / 24	8' - 0"	11 - 0"	9" OR 13½"	9"	5	1 / 2"	3	3 / 8"	〃
L / 25	8' - 6"	11 - 6"	9" OR 13½"	9"	5	1 / 2"	3	3 / 8"	〃
L / 26	9' - 0"	12'- 0"	9" OR 13½"	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 27	9' - 6"	12 - 6"	9" OR 13½"	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 28	11' - 6"	14'- 6"	9" OR 13½"	18"	2 / 1	3/4" / 1"	3	1 / 2"	〃
L / 29	12' - 0"	15' - 0"	9" OR 13½"	18"	3 / 1	3/4" / 1"	3	1 / 2"	〃



TYPICAL-X-SECTION OF R.C.C LINTELS



TYPICAL-X-SECTION OF R.C.C LINTELS



TYPICAL-L-SECTION OF R.C.C LINTELS

CLIENT:

PROJECT IMPLEMENTATION UNIT (PIU) KNIP

CONSULTANTS:

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PROJECT:

REHABILITATION & UP-GRADATION OF GIZRI SPORTS GROUND

NOTES:

1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
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REVISIONS:

No.	DESCRIPTION	DATE

TENDER DRAWINGS

DRAWING TITLE:
X-SECTION OF TYPICAL LINTELS
SCHEDULE OF LINTELS
FOR PAVILION

DRAWN BY:	DATE:
Sh.Najam	AUG. 2021

STRUCTURE ENGINEER :
ENGR.MUHAMMAD IMRAN

APPROVED BY:
SYED ALI ABBAS GILLANI

DRAWING NO:	REV:
0249/PAVILION/007 ST	04

SCALE (A3):	SHEET:
N.T.S	1/1