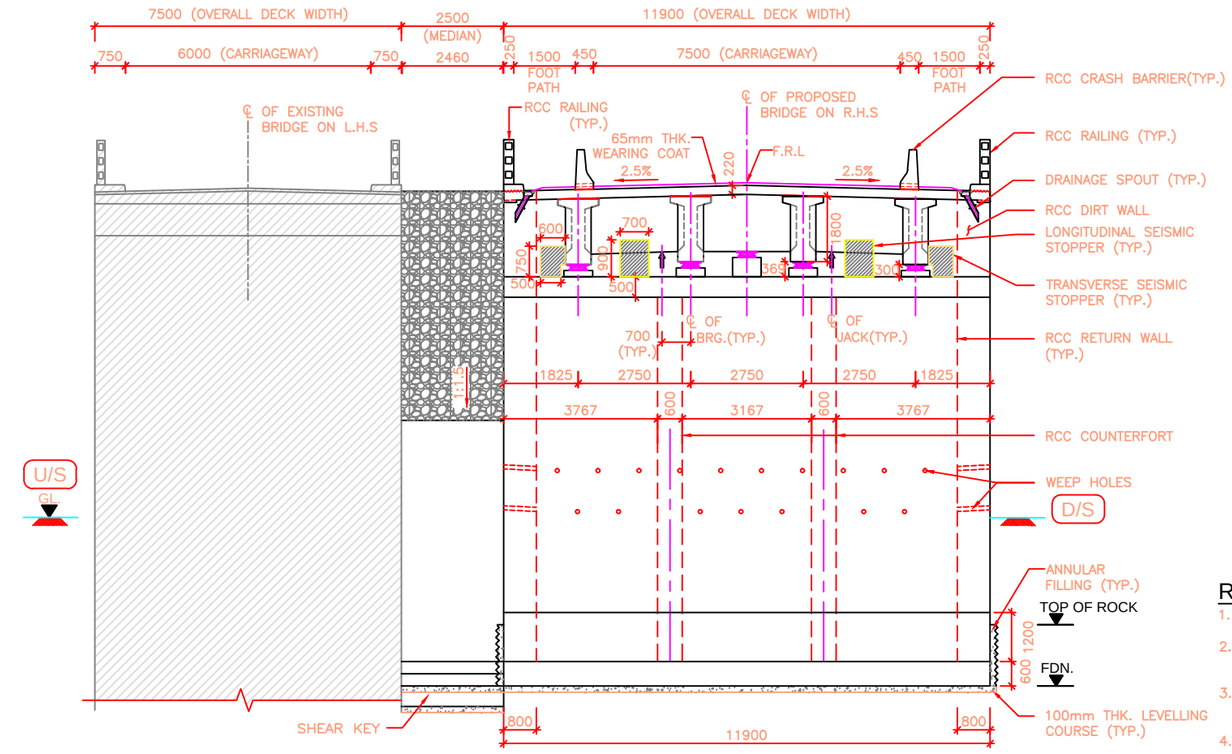
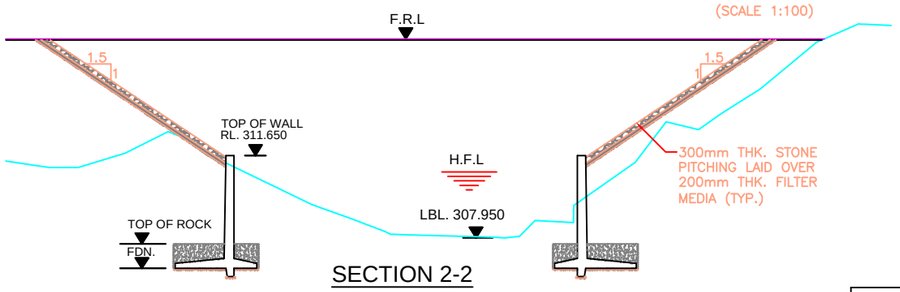
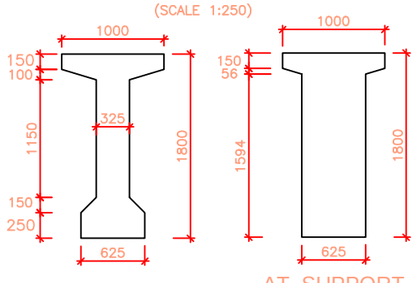


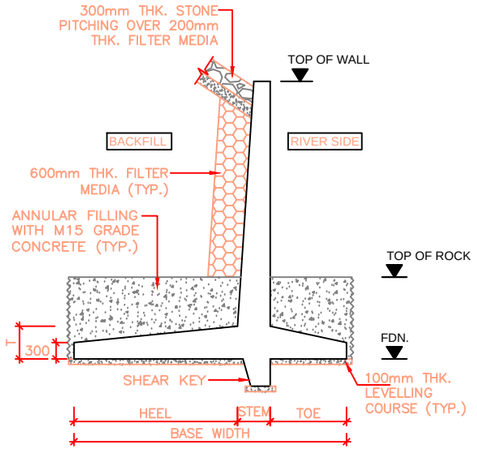
SECTION 1-1
(SCALE 1:100)



SECTION 2-2
(SCALE 1:250)



CROSS SECTION OF PRECAST RCC GIRDER FOR 22m SPAN
(SCALE 1:40)



DETAIL OF TOE WALL
(REFER SEPARATE DRAWING FOR DETAILS)
(SCALE 1:75)

REFERENCE DRAWINGS:-

1. DIMENSIONAL DETAILS OF COUNTERFORT TYPE ABUTMENT & ITS COMPONENTS: –NIRTTP/NAG–MUG/KHATAUDI/SUB–01
2. REINFORCEMENT DETAILS OF COUNTER FORT TYPE ABUTMENT & ITS COMPONENTS, DIRT WALL, RETURN WALL, PEDESTAL AND SEISMIC STOPPER: –NIRTTP/NAG–MUG/KHATAUDI/SUB–02 (SHEET 1 & 2)
3. DIMENSIONAL DETAILS OF PRECAST RCC GIRDER & CAST–IN–SITU SLAB SUPERSTRUCTURE: –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/01
4. REINFORCEMENT DETAILS OF LONGITUDINAL GIRDER: –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/02
5. REINFORCEMENT DETAILS OF END CROSS GIRDER: –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/03
6. REINFORCEMENT DETAILS OF RCC DECK SLAB: –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/04 (SHEET 1 & 2)
7. DETAILS OF LOAD AND FORCES FOR POT/PTFE BEARINGS: –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/05

MISCELLANEOUS DRAWINGS:

1. DETAILS OF APPROACH SLAB: –NIRTTP/NAG–MUG/PACKAGE–IV/MISC.–01
2. DETAILS OF DRAINAGE SPOUT & WEARING COAT: –NIRTTP/NAG–MUG/PACKAGE–IV/MISC.–02
3. DIMENSIONAL & REINF. DETAILS OF R.C.C CRASH BARRIER: –NIRTTP/NAG–MUG/PACKAGE–IV/MISC.–03
4. DIMENSIONAL & REINF. DETAILS OF R.C.C RAILING: –NIRTTP/NAG–MUG/PACKAGE–IV/MISC.–04
5. DIMENSIONAL AND REINFORCEMENT DETAILS OF RCC RETAINING WALL/MEDIAN WALL: –NIRTTP/NAG–MUG/PACKAGE–IV/MISC.–05
6. DIMENSIONAL AND REINFORCEMENT DETAILS OF RCC TOE WALL: –NIRTTP/NAG–MUG/PACKAGE–IV/MISC.–06

LEGEND:

F.R.L	:	FINISHED ROAD LEVEL
H.F.L	:	HIGH FLOOD LEVEL
℄	:	CENTER LINE
LVL.	:	LEVEL
RL.	:	REDUCED LEVEL
TYP.	:	TYPICAL
THK.	:	THICK
D/S	:	DOWNSTREAM
U/S	:	UPSTREAM
G.L	:	GROUND LEVEL
L.B.L	:	LOWEST BED LEVEL
FDN.	:	FOUNDING LEVEL
FX	:	FIX
FR	:	FREE
EXISTING	:	
PROPOSED	:	
BH	:	BORE HOLE

FACE OF OLD ABUTMENT SHALL BE MATCHED WITH PROPOSED BRIDGE ABUTMENT. IN CASE OF BIGGER SPAN IN PROPOSED SPAN, TOE WALL SHALL BE PROVIDED IN FLARED SHAPE TO ALLOW SMOOTH PASSAGE OF RIVER WATER.

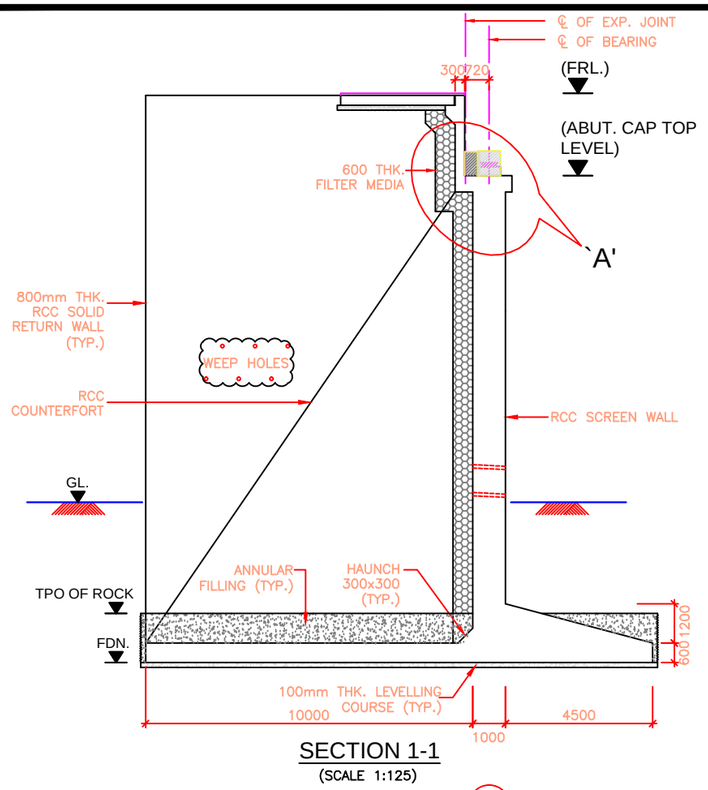
ABUTMENT CAP SHALL BE CAST ONLY AFTER COMPLETING THE BACK FILLING WORK UP TO ABUTMENT SHAFT TOP LEVEL.

NOTES:-

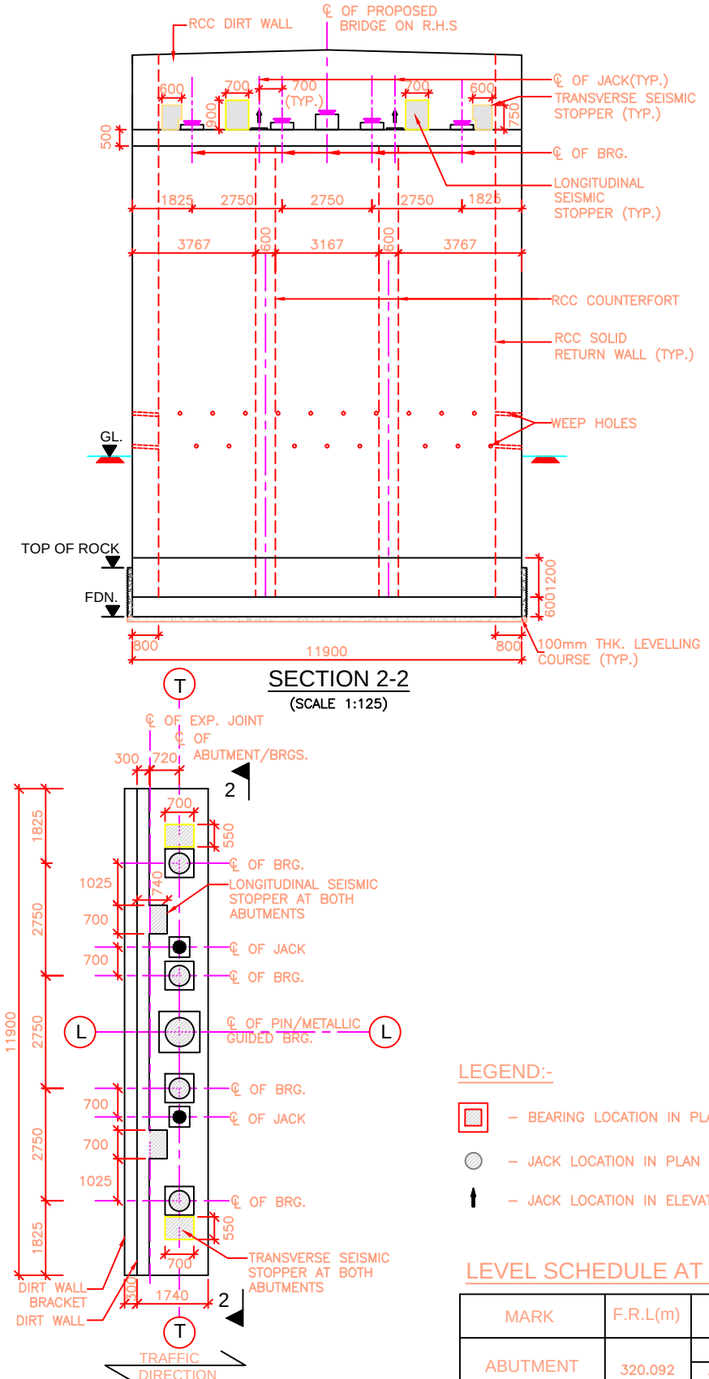
1. ALL DIMENSIONS ARE IN MILLIMETER AND LEVELS ARE IN METER UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE NOT TO BE SCALED ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. THE BRIDGE HAS BEEN DESIGNED FOR MOST SEVERE OF:
   (I) ONE LANE OF IRC CLASS 70R LOADING OR TWO LANES OF IRC CLASS A LOADING WHEN FOOTPATHS ARE IN POSITION.
   (ii) ONE LANE OF IRC CLASS 70R LOADING +ONE LANE OF IRC CLASS A LOADING OR 3 LANES OF IRC CLASS A LOADING WHEN FOOTPATHS ARE REMOVED.
   (iii) ONE LANE OF SV LOADING IN ACCORDANCE WITH CLAUSE 204.5 OF IRC–6:2017.
4. MINIMUM CONCRETE COVER, GRADE OF CONCRETE, MINIMUM CEMENT CONTENT & MAXIMUM W/C RATIO SHALL BE AS PER 'MODERATE' CONDITION OF EXPOSURE.
5. CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150MM CUBE AS FOLLOWS:
   a. LEVELING COURSE (UNDER FOUNDATION) – M10
   b. LEVELING COURSE (UNDER APPROACH SLAB) – M15
   c. FOUNDATION – M30
   d. PEDESTAL – M40
   e. SEISMIC STOPPER – M40
   f. SUBSTRUCTURE – M30
   g. PRECAST RCC GIRDER – M35
   h. RETURN/RETAINING WALL – M30
   i. CRASH BARRIER – M40
   j. APPROACH SLAB – M30
6. UNTENSIONED REINFORCEMENT SHALL BE THERMO MECHANICALLY TREATED (TMT), HYSD BARS OF GRADE DESIGNATION FE–500D CONFORMING TO IS: 1786.
7. POT/PTFE BEARINGS SHALL BE DESIGNED AS PER PROVISION OF IRC : 83 (PART–III 2002).
8. STRIP SEAL TYPE EXPANSION JOINTS SHALL BE PROVIDED AS PER PROVISION OF IRC: SP–69–2011.
9. 65MM THICK WEARING COURSE COMPRISING OF 40MM THICK ASPHALTIC CONCRETE OVERLAID WITH 25MM THICK MASTIC ASPHALT SHALL BE PROVIDED AS PER SECTION 500 OF MORT&H SPECIFICATION.
10. 100MM DIA WEEP HOLES AT 1000MM C/C STAGGERED HORIZONTALLY AND VERTICALLY SHALL BE PROVIDED IN ONE OR TWO LAYERS ABOVE G.L IN VERTICAL WALLS OF ABUTMENT, RETURN/RETAINING WALLS AT A SLOPE OF 1 VERTICAL TO 20 HORIZONTAL TOWARDS THE DRAINING FACE.
11. WATER TO BE USED IN CONCRETING AND CURING SHALL CONFIRM TO CLAUSE 18.4.5 OF IRC:112–2011.
12. LAYING, COMPACTION AND EXTENT OF BACKFILL BEHIND ABUTMENTS AND RETURN/RETAINING WALLS SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX:6 OF IRC:78–2014 HAVING PROPERTIES C=0, ø= 35°, △=22.5° & γD = 20 KN/M³.
13. MINIMUM CLEAR COVER TO OUTER MOST REINFORCEMENT SHALL BE AS UNDER:–
    a. SUPERSTRUCTURE – 40MM
    b. SUBSTRUCTURE (EARTH FACE) – 75MM
    c. SUBSTRUCTURE (NON EARTH FACE) – 50MM
    d. FOUNDATION – 75MM
14. THE BRIDGE IS DESIGNED FOR PROVISION OF SEISMIC ZONE–V AS PER CLAUSE 219 OF IRC:6:2017.
15. SAFE BEARING CAPACITY CONSIDERED IN DESIGN AT PROPOSED FOUNDING LEVEL IS 50 T/M². THIS SHALL BE ASCERTAINED BEFORE EXECUTION AT SITE BY CONFIRMATORY GEOTECHNICAL INVESTIGATIONS.
16. FILTER MEDIA SHALL BE PROVIDED AS PER APPENDIX–6 OF IRC–78:2014.
17. MINIMUM ANCHORAGE OF FOUNDATION IN SOFT ROCK SHALL BE 1.5M AND 0.6M IN HARD ROCK ANY DEVIATION IN ROCK LEVEL FROM DESIGN SHALL BE REPORTED TO ENGINEER FOR REQUIRED CHANGES IN DESIGN NO CHANGES REQUIRED FOR INCREASE HEIGHT UP TO 50 CM.
18. WHERE FOUNDATIONS ARE PLACED ON ROCK, TRENCHES AROUND THE FOOTING SHALL BE FILLED UP WITH CONCRETE OF M15 GRADE UP TO TOP OF ROCK.
19. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY PLAN AND PROFILE DRAWINGS.
20. ALL CHAINAGES, FRL, GL SHALL BE CONFIRMED AT SITE PRIOR TO EXECUTION.
21. FOR APPROACH SLAB, DRAINAGE SPOUTS, CRASH BARRIER, PROTECTION WORK, RETAINING WALL AND MEDIAN WALL DETAILS REFER SEPARATE DRAWINGS.
22. WHEREVER THE COMPONENTS OF EXISTING BRIDGE INTERFERES WITH THE PROPOSED BRIDGE, THAT SHALL BE DISMANTLED UPTO FOUNDATION TOP.
23. MINIMUM LONGITUDINAL GRADIENT OF 0.3% SHALL BE PROVIDED IN PROPOSED BRIDGE TO FACILITATE DRAINAGE OF DECK AS PER CLAUSE 105.3.6 OF IRC–5.
24. SIZE OF EACH INDIVIDUAL STONE PITCHING AND LAUNCHING APRON SHALL NOT BE LESS THAN 30CM IN DIAMETER AND 40KG IN WEIGHT OR AS PER TABLE 5.1 & 5.2 OF IRC:89–1997. WHERE THE REQUIRED SIZE STONES ARE NOT ECONOMICALLY AVAILABLE, STONES IN WIRE CRATES MAY BE USED IN PLACE OF ISOLATED STONES OF EQUIVALENT WEIGHT.

EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal					

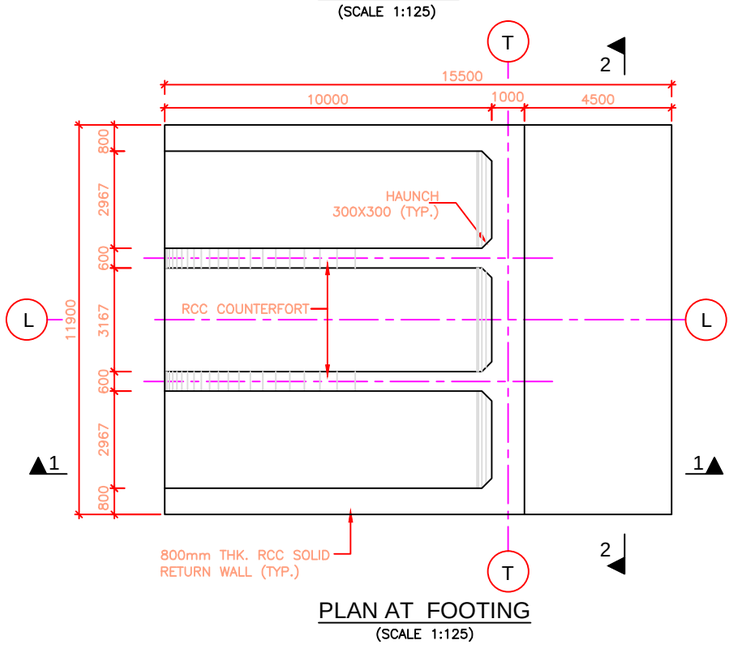
			DRAWING TITLE:	Scale:	Date: Nov. 2017
Prepared By		M.L.GUPTA	GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT CH: 58+430KM OVER KHATAUDI KHOLA (1x22.0m) PACKAGE-IV (BENIGHAT-MUGLING)	As Shown	
Designed By		V.CHAUDHARY			
Checked By		P.K.KHAN			
Approved By		B.N.SINGH	Drawing No.: NIRTTP/NAG-MUG/KHATAUDI/GAD		(SHEET 2 OF 2)



SECTION 1-1
(SCALE 1:125)



SECTION 2-2
(SCALE 1:125)

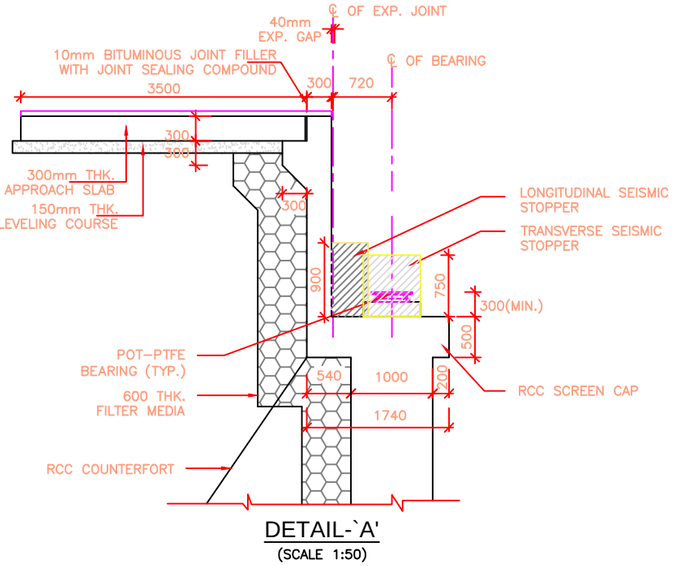


PLAN AT FOOTING
(SCALE 1:125)

PLAN AT ABUTMENT CAP LEVEL
(SCALE 1:100)

NOTES :-

1. ALL DIMENSIONS ARE IN MM, UNLESS OTHERWISE MENTIONED.
2. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED AND NO DIMENSION SHALL BE SCALED.
3. CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150mm CUBE AS FOLLOWS:
   a. LEVELING COURSE (UNDER FOUNDATION) – 10MPa
   b. LEVELING COURSE (UNDER APPROACH SLAB) – 15MPa
   c. FOUNDATION – 30MPa
   d. SUBSTRUCTURE – 30MPa
   e. APPROACH SLAB – 30MPa
   f. PEDESTAL – 40MPa
   g. SEISMIC STOPPER – 30MPa
4. UNTENSIONED REINFORCEMENT SHALL BE THERMO MECHANICALLY TREATED (TMT), HYSD BARS OF GRADE DESIGNATION Fe–500D CONFORMING TO IS: 1786.
5. MINIMUM CLEAR COVER TO OUTER MOST REINFORCEMENT SHALL BE AS UNDER
   a. SUBSTRUCTURE (EARTH FACE) – 75MM
   b. SUBSTRUCTURE (NON EARTH FACE) – 50MM
   c. FOUNDATION – 75MM
6. LL REPRESENTS LONGITUDINAL AXIS OF BRIDGE AND TT REPRESENTS TRANSVERSE AXIS OF ABUTMENT/FOUNDATION.
7. SAFE BEARING CAPACITY AT THE PROPOSED FOUNDING LEVEL HAS BEEN CONSIDERED AS 63 T/M² ON THE BASIS OF SUB SURFACE EXPLORATION RESULTS. THIS SHALL GOT CONFIRMED BEFORE EXECUTION.
8. THE LOCATION OF JACKS FOR LIFTING UP THE SUPERSTRUCTURE SHALL BE DISTINCTLY ETCHED ON SOFFIT OF SUPERSTRUCTURE AND ON TOP OF ABUTMENT CAP.
9. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING DRGS.
   - GENERAL ARRANGEMENT DRAWING REFER:
     –NIRTTP/NAG–MUG/KHATAUDI/GAD
   - REINFORCEMENT DETAILS OF COUNTER FORT TYPE ABUTMENT & ITS COMPONENTS, DIRT WALL, RETURN WALL, PEDESTAL AND SEISMIC STOPPER REFER:
     –NIRTTP/NAG–MUG/KHATAUDI/SUB–02(SHEET 1 TO 3)



DETAIL-`A'
(SCALE 1:50)

LEGEND:-

– BEARING LOCATION IN PLAN

– JACK LOCATION IN PLAN

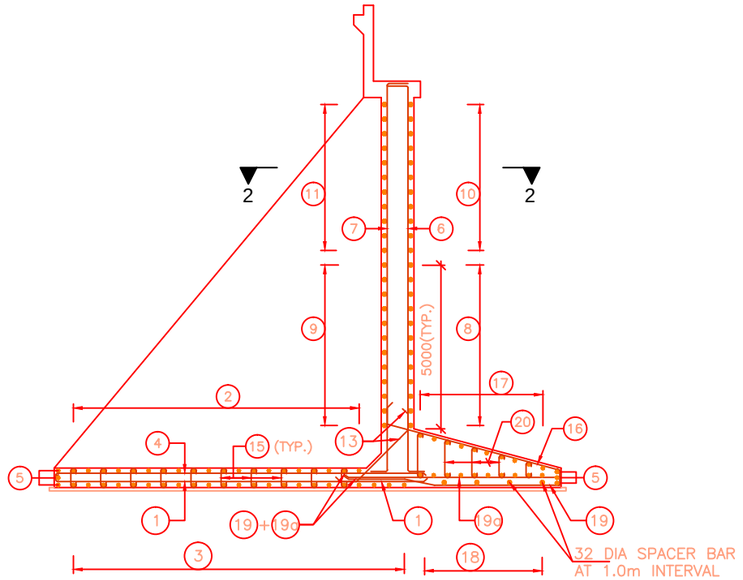
– JACK LOCATION IN ELEVATION

LEVEL SCHEDULE AT ABUTMENT

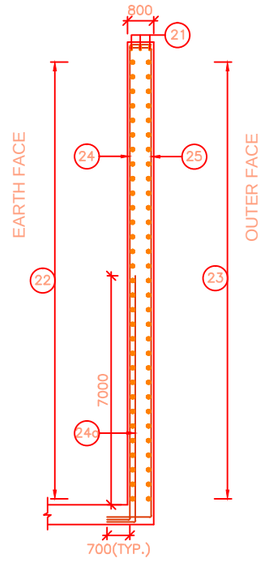
MARK	F.R.L(m)	ABUTMENT CAP TOP LVL. (m)		GR. LEVEL(m)		FDN. LEVEL (m)
		A1	A2	A1	A2	
ABUTMENT	320.092	317.604	317.604	312.927	310.954	304.911

EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal			

			DRAWING TITLE:	Scale:	Date: Nov. 2017
Prepared By		M.L.GUPTA	DIMENSIONAL DETAILS OF COUNTERFORT TYPE ABUTMENT & ITS COMPONENTS, DIRT WALL, RETURN WALL, PEDESTAL ANS SEISMIC ARRESTER MINOR BRIDGE AT CH:- 58+430 OVER KHATAUDI KHOLA (1x22.00m) PACKAGE-IV (BENIGHAT-MUGLING)	As Shown	
Designed By		V.CHAUDHARY			
Checked By		P.K.KHAN			
Approved By		B.N.SINGH	Drawing No.: NIRTTP/NAG-MUG/ KHATAUDI/SUB-01		



SECTION 1-1 OF SCREEN WALL & FOOTING
(SCALE 1:125)



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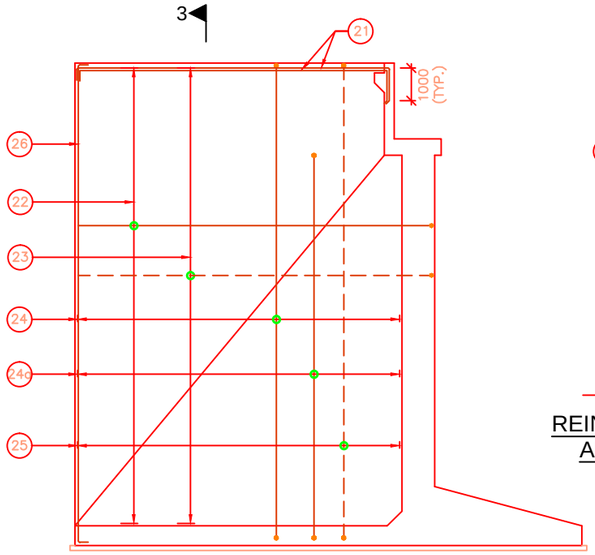
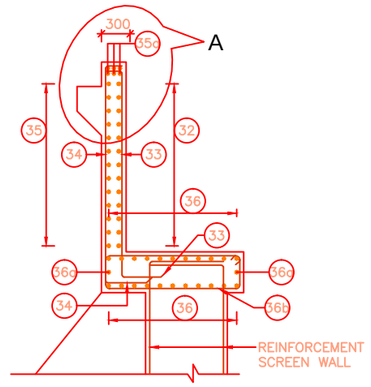
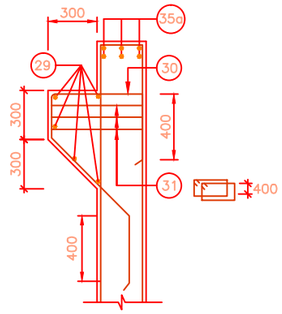


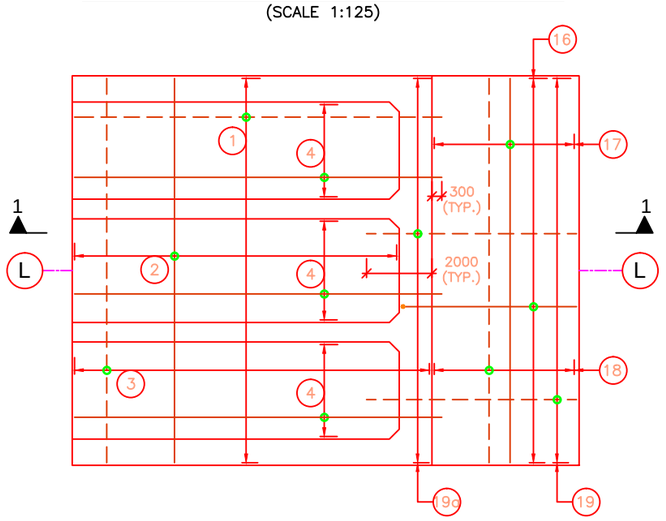
REINFORCEMENT DETAILS OF RETURN WALL
(SCALE 1:125)



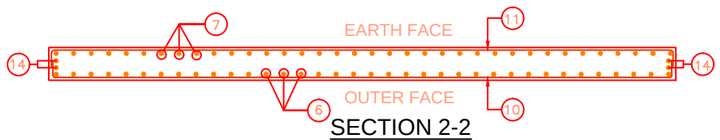
REINF. DETAILS OF DIRT WALL
AND RCC ABUTMENT CAP
(SCALE 1:50)



DETAIL `A'
(SCALE 1:25)



PLAN AT FOUNDATION LEVEL
(SCALE 1:125)



SECTION 2-2
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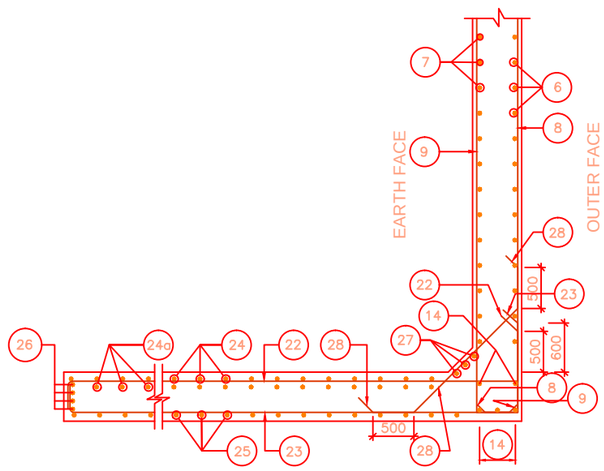
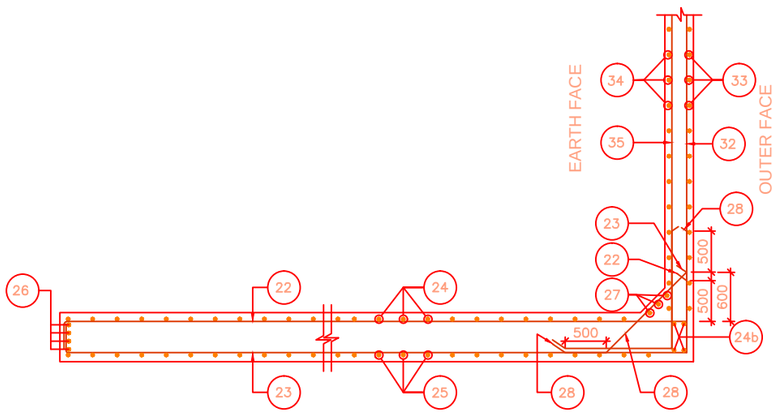
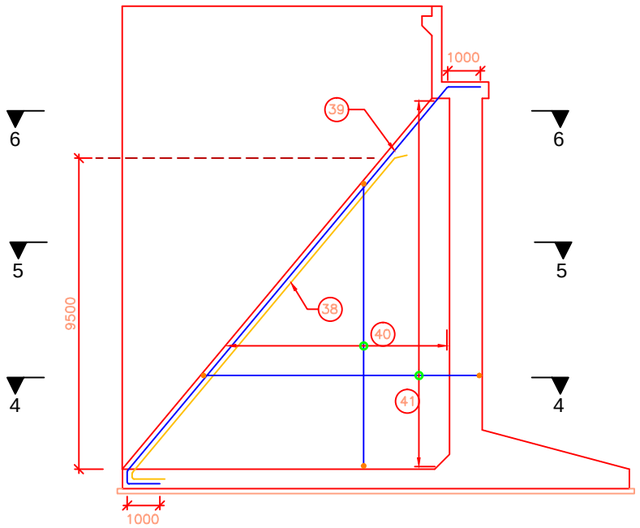


JUNCTION DETAILS OF RCC SCREEN WALL
AND RCC SOLID RETURN WALL
(SCALE: 1:50)



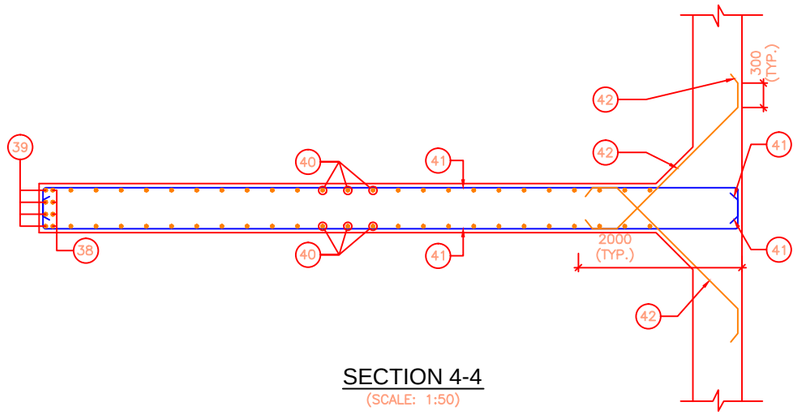
JUNCTION DETAILS OF RCC SOLID RETURN
WALL & DIRT WALL
(SCALE: 1:50)

EMPLOYER	PROJECT	DESIGN CONSULTANT						
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Prepared By		M.L.GUPTA	DRAWING TITLE: REINFORCEMENT DETAILS OF COUNTER FORT TYPE ABUTMENT & ITS COMPONENTS, DIRT WALL, RETURN WALL, PEDESTAL AND SEISMIC STOPPER FOR MINOR BRIDGE AT CH:- 58+430 OVER KHATAUDI KHOLA (1x22.00m) PACKAGE-IV (BENIGHAT-MUGLING)	Scale:	Date: Nov. 2017
				Designed By		V.CHAUDHARY		As Shown	
				Checked By		P.K.KHAN			(SHEET 1 OF 3)
				Approved By		B.N.SINGH	Drawing No.: NIRTTP/NAG-MUG/KHATAUDI/SUB-02		



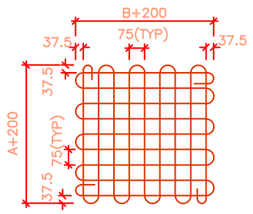
REINFORCEMENT DETAILS OF RCC COUNTERFORT

(SCALE 1:125)



SECTION 4-4

(SCALE: 1:50)



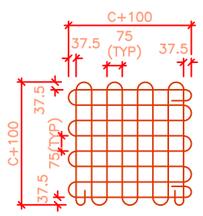
DETAIL OF MESH

TYPE "M1" 8 ϕ

(IN PEDESTAL) (IN TWO LAYERS)

(SCALE 1:20)

(WHERE A & B SIZE OF BEARING)



DETAIL OF MESH

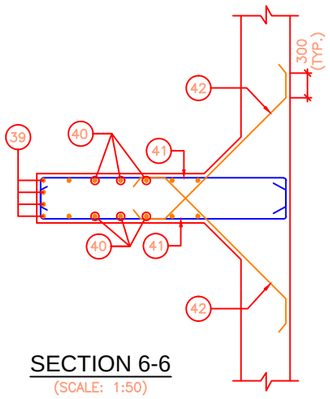
TYPE "M2" 8 ϕ

(UNDER JACK LOCATION)

(IN TWO LAYERS)

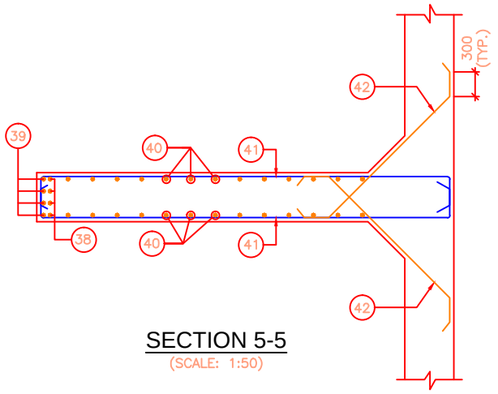
(SCALE 1:20)

(WHERE C= DIA OF JACK)



SECTION 6-6

(SCALE: 1:50)



SECTION 5-5

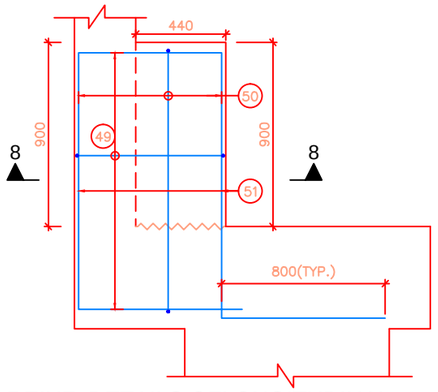
(SCALE: 1:50)

LEGEND

TOP REINFORCEMENT BARS

BOTTOM REINFORCEMENT BARS

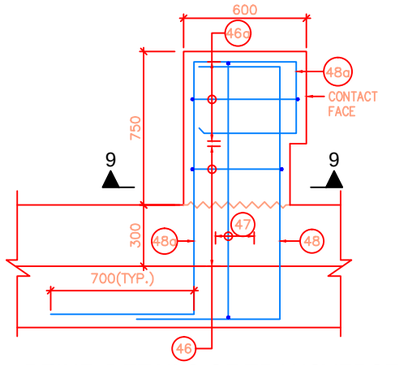
EMPLOYER	PROJECT	DESIGN CONSULTANT						
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Prepared By		M.L.GUPTA	DRAWING TITLE: REINFORCEMENT DETAILS OF COUNTER FORT TYPE ABUTMENT & ITS COMPONENTS, DIRT WALL, RETURN WALL, PEDESTAL AND SEISMIC STOPPER FOR MINOR BRIDGE AT CH:- 58+430 OVER KHATAUDI KHOLA (1x22.00m) PACKAGE-IV (BENIGHAT-MUGLING)	Scale:	Date: Nov. 2017
			Designed By		V.CHAUDHARY			
			Checked By		P.K.KHAN		As Shown	(SHEET 2 OF 3)
			Approved By		B.N.SINGH	Drawing No.: NIRTTP/NAG-MUG/KHATAUDI/SUB-02		



REINF. DETAILS OFLONGITUDINAL SEISMICSTOPPER

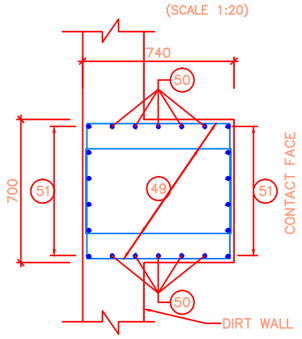
(DIRT WALL REINFORCEMENT NOT SHWON FOR CLARITY)

(SCALE 1:20)



REINF. DETAILS OF TRANSVERSE SEISMIC STOPPER

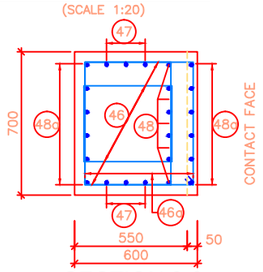
(SCALE 1:20)



SECTION 8-8

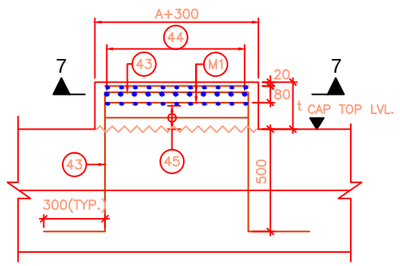
(SCALE 1:20)

WHERE, A/B SIZE OF BEARING



SECTION 9-9

(SCALE 1:20)

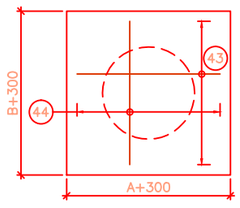


REINF. DETAILS OF PEDESTAL

(SCALE 1:20)

WHERE, A SIZE OF BEARING

AND t IS HEIGHT OF PEDESTAL



SECTION 7-7

(SCALE 1:20)

WHERE, A/B SIZE OF BEARING

BRACKET	29	12 ϕ –5 Nos.		
	30	12 ϕ @150 C/C		
	31	2L–10 ϕ STIRRUPS @ 300 C/C (3 LAYERS)		400
DIRT WALL	32	12 ϕ @150 C/C		
	33	12 ϕ @150 C/C		
	34	12 ϕ @150 C/C		
	35	20 ϕ @150 C/C		
	35a	20 ϕ –3 Nos. (2 LAYERS)		
SCREEN CAP	36	16 ϕ @150 C/C		
	36a	12 ϕ @150 C/C		
	36b	16 ϕ @150 C/C		
COUNTERFORT	37	NOT IN USED		
	38	32 ϕ –4 Nos.		
	39	32 ϕ –4 Nos.		
	40	16 ϕ @150 C/C		
	41	16 ϕ @150 C/C		
	42	16 ϕ @150 C/C		
RCC PEDESTAL	43	12 ϕ @ 75c/c		
	44	12 ϕ @ 75c/c		
	45	2L–12 ϕ @ 150c/c	STRPS.	
TRANSVERSE SEISMIC STOPPER	46	4L–12 ϕ @ 125c/c	STRPS.	
	46a	2L–12 ϕ @ 125c/c	STRPS.	
	47	16 ϕ –3 Nos.	BOTH FACES	
	48	32 ϕ –6 Nos.	BOTH FACES	
	48a	25 ϕ –6 Nos.	BOTH FACES	
LONG. SEISMIC STOPPER	49	4L–12 ϕ @ 150c/c	STRPS.	
	50	16 ϕ –5 Nos.	BOTH FACES	
	51	32 ϕ –6 Nos.	BOTH FACES	

REINFORCEMENT SCHEDULE

MARKS		DESCRIPTION	SHAPE
FOOTING & SCREEN WALL	1	16 ϕ @150 C/C	
	2	16 ϕ @150 C/C	
	3	16 ϕ @150 C/C	
	4	12 ϕ @150 C/C	
	5	12 ϕ @150 C/C	
	6	16 ϕ @150 C/C	
	7	16 ϕ @150 C/C	
	8	16 ϕ @150 C/C	
	9	12 ϕ @150 C/C	
	10	12 ϕ @150 C/C	
	11	12 ϕ @150 C/C	
	12	10 ϕ –2 Nos.	
	13	12 ϕ @150 C/C	
	14	12 ϕ –5 Nos.(ON EACH FACE)	
	15	12 ϕ @150 C/C (LINK BAR)	C
FOOTING (TOE SIDE)	16	16 ϕ @150 C/C	
	17	2L–16 ϕ @150 C/C	
	18	25 ϕ @150 C/C	
	19	32 ϕ @150 C/C	
	19a	32 ϕ @150 C/C	
	20	5L12 ϕ @300 C/C	C
RETURN WALL	21	25 ϕ –3 Nos. (2 LAYERS)	
	22	32 ϕ @150 C/C	
	23	16 ϕ @150 C/C	
	24	32 ϕ @175 C/C	
	24a	32 ϕ @175 C/C	
	24b	12 ϕ –4 Nos.	
	25	16 ϕ @175 C/C	
	26	20 ϕ –4 Nos.	
	27	12 ϕ –3 Nos.	
	28	12 ϕ @150 C/C	

NOTES :-

1. ALL DIMENSIONS ARE IN MM, UNLESS OTHERWISE MENTIONED.
2. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED AND NO DIMENSION SHALL BE SCALED.
3. CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150MM CUBE AS FOLLOWS:
   a. LEVELING COURSE (UNDER FOUNDATION) – 10MPa
   b. LEVELING COURSE (UNDER APPROACH SLAB) – 15MPa
   c. FOUNDATION – 30MPa
   d. SUBSTRUCTURE – 30MPa
   e. APPROACH SLAB – 30MPa
   f. PEDESTAL – 40MPa
   g. SEISMIC STOPPER – 30MPa
4. UNTENSIONED REINFORCEMENT SHALL BE THERMO MECHANICALLY TREATED (TMT), HYSD BARS OF GRADE DESIGNATION Fe–500D CONFORMING TO IS: 1786.
5. MINIMUM CLEAR COVER TO OUTER MOST REINFORCEMENT SHALL BE AS UNDER:–
   a. SUBSTRUCTURE (EARTH FACE) – 75MM
   b. SUBSTRUCTURE (NON EARTH FACE) – 50MM
   c. FOUNDATION – 75MM
6. LL REPRESENTS LONGITUDINAL AXIS OF BRIDGE AND TT REPRESENTS TRANSVERSE AXIS OF ABUTMENT/FOUNDATION.
7. MINIMUM ANCHORAGE LENGTH OF REINFORCEMENT FOR FAVOURABLE CONDITION SHALL BE AS UNDER:
   CONCRETE GRADE – M–30 – 40 x DIA OF BAR
   CONCRETE GRADE – M–40 – 34 x DIA OF BAR
   (WHERE DIA OF BAR < = 32MM.)
   FOR UNFAVOURABLE CONDITION THESE VALUES SHALL BE MULTIPLIED BY 1.43.
8. MINIMUM LAP LENGTH OF REINFORCEMENT FOR FAVOURABLE CONDITION SHALL BE AS UNDER:
   CONCRETE GRADE – M–30 – 56 x DIA OF BAR
   CONCRETE GRADE – M–40 – 48 x DIA OF BAR
9. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING DRGS.
   - GENERAL ARRANGEMENT DRAWING REFER DRG. NO. : NIRTTP/NAG–MUG/KHATAUDI/GAD
   - DIMENSIONAL DETAILS OF COUNTER FORT TYPE ABUTMENT & ITS COMPONENTS REFER DRG. NO. : NIRTTP/NAG–MUG/KHATAUDI/SUB–01

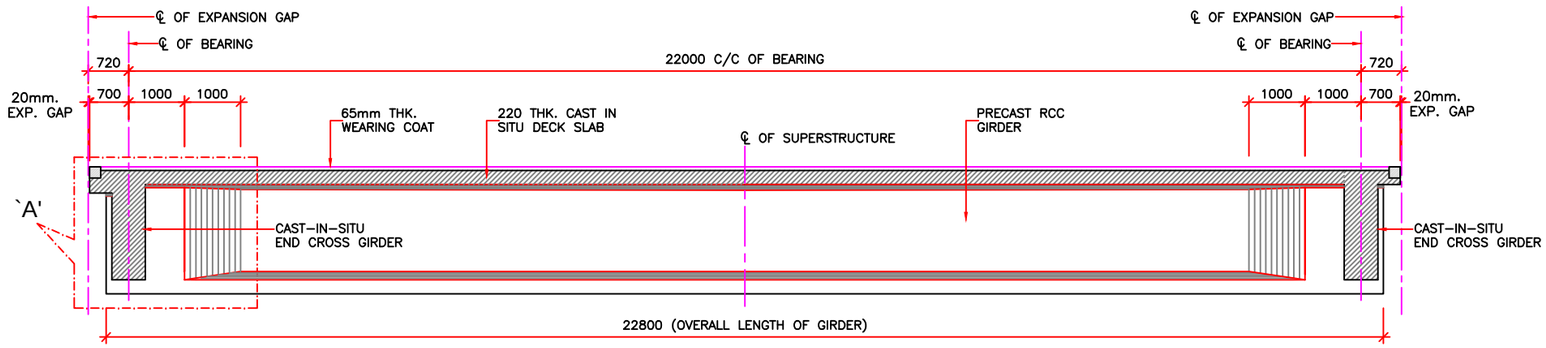
LEGEND

TOP REINFORCEMENT BARS ———

BOTTOM REINFORCEMENT BARS — — — —

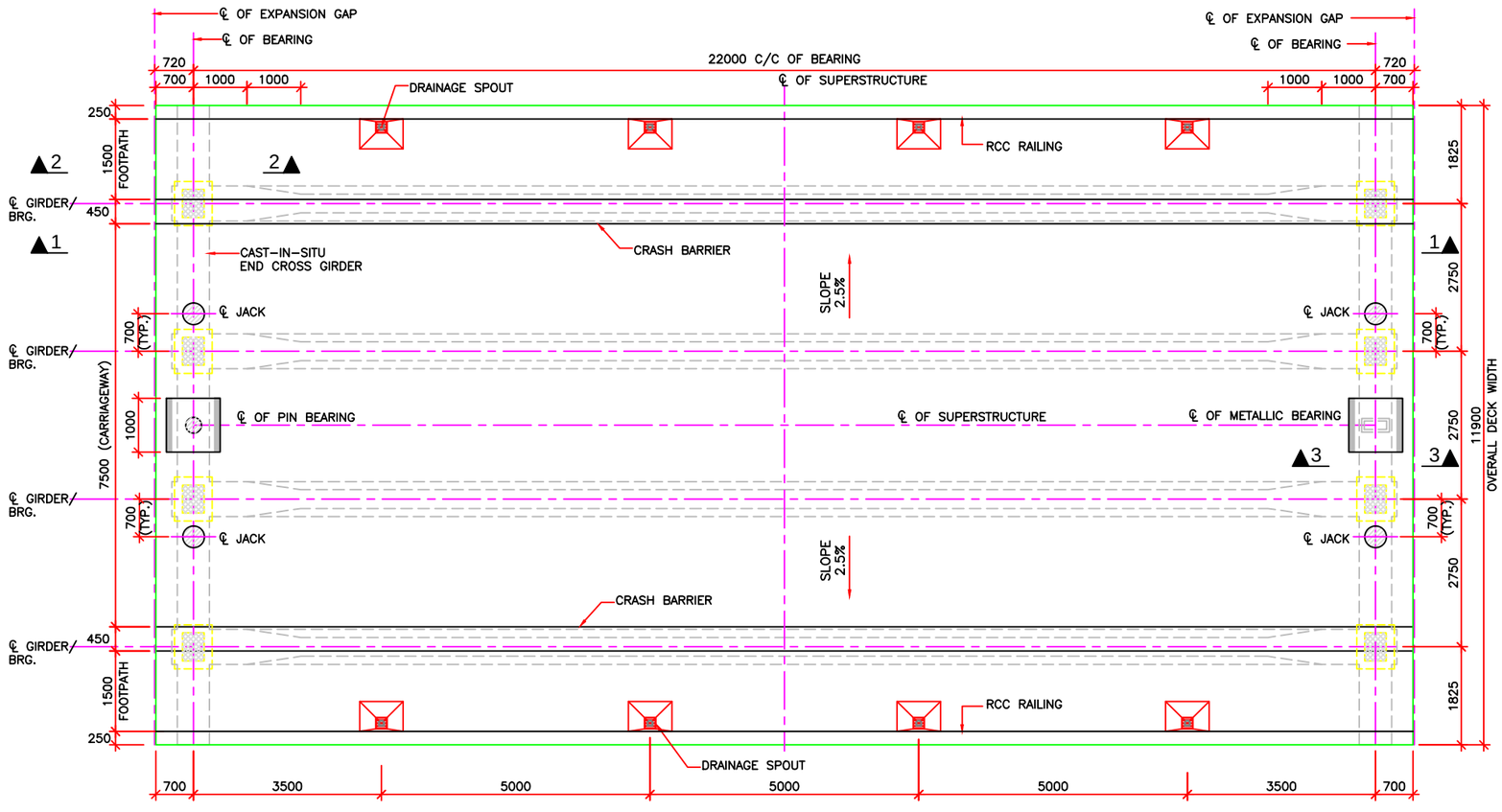
EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal			

			DRAWING TITLE:	Scale:	Date: Nov. 2017
Prepared By		M.L.GUPTA	REINFORCEMENT DETAILS OF COUNTER FORT TYPE ABUTMENT & ITS COMPONENTS, DIRT WALL, RETURN WALL, PEDESTAL AND SEISMIC STOPPER FOR MINOR BRIDGE AT CH:- 58+430 OVER KHATAUDI KHOLA (1x22.00m) PACKAGE-IV (BENIGHAT-MUGLING)	As Shown	(SHEET 3 OF 3)
Designed By		V.CHAUDHARY			
Checked By		P.K.KHAN			
Approved By		B.N.SINGH	Drawing No.: NIRTTP/NAG-MUG/KHATAUDI/SUB-02		



SECTIONAL ELEVATION 1 - 1

(SCALE 1:75)



TOP PLAN OF DECK SLAB

(SCALE 1:75)

LEGEND:-

- – CAST–IN–SITU PORTION
- – JACK LOCATION IN PLAN
- – JACK LOCATION IN ELEVATION

NOTES:-

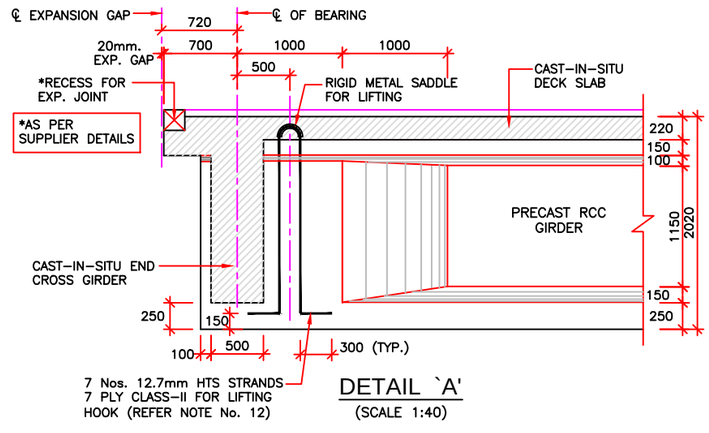
1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
2. THE BRIDGE HAS BEEN DESIGNED FOR TWO LANE TRAFFIC FOR LIVE LOAD COMBINATIONS OF CLASS A AND 70R WITH FOOTPATH LIVE LOAD.
   OR IRC SV VEHICLE WITH FOOTPATH LIVE LOAD.
   OR THREE LANE TRAFFIC FOR LIVE LOAD COMBINATIONS OF CLASS A AND 70R WITHOUT FOOTPATH LIVE LOAD AS PER IRC:6–2017, WHICHEVER GOVERNS.
3. CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150mm CUBES AS FOLLOWS :–
   PRECAST RCC GIRDER + RCC CAST IN SITU DECK SLAB–35 MPa
4. THE REINFORCING BARS SHALL BE OF THERMO MECHANICALLY TREATED / CORROSION RESISTANT STEEL (TMT–CRS) (GRADE DESIGNATION Fe–500D) CONFORMING TO IS:1786 STANDARDS.
5. CLEAR COVER TO OUTER MOST STEEL SHALL BE AS UNDER:–
   FOR SUPER STRUCTURE–40mm.
6. 65mm. THK. WEARING COURSE COMPRISING OF 40mm THK. BITUMINOUS CONCRETE OVER LAID WITH 25mm THK. MASTIC ASPHALT SHALL BE PROVIDED AS PER SECTION 500 OF MORTH SPECIFICATIONS.
7. FOR LIFTING OF THE SUPERSTRUCTURE 2Nos. OF FREYSSINET JACKS OF CAPACITY 135t EACH MAY BE REQUIRED AT EACH END. THE LOCATION OF JACKS FOR LIFTING OF THE SUPERSTRUCTURES TO REPLACE BEARINGS ETC. IS SHOWN ↕ THUS THIS SHALL BE DISTINCTLY ETCHED FOR EASY IDENTIFICATION ON THE ABUTMENT CAPS
8. DURING THE LIFTING OPERATION OF SUPERSTRUCTURE ALL THE JACKS PLACED UNDER THE END DIAPHRAGM IN LINE WITH THE BEARINGS SHALL BE OPERATED SIMULTANEOUSLY USING SINGLE OPERATING CONSOLE, GROUPING THE PUMP AND CONTROL SYSTEM SO AS TO ENSURE THAT THE REACTIONS ON ALL THE JACKS ARE EQUAL AT ALL TIMES.
9. PRECAST GIRDERS SHALL BE CAST IN ONE CONCRETING OPERATION IN CASTING YARD WITHOUT ANY CONSTRUCTION JOINT.
10. EACH PRECAST GIRDER WILL BE LIFTED BY USING LIFTING STRANDS AT EITHER END. DURING LIFTING, GIRDER SHALL BE KEPT PLUMB AND UPRIGHT SELF WEIGHT OF GIRDER IS 545kN.

SEQUENCE OF CONSTRUCTION:-

AGE OF GIRDER (IN DAYS)	ACTIVITY	STRENGTH OF CONC. (IN MPa)
0	CASTING OF LONGITUDINAL GIRDER AT CASTING YARD WITH PORTION OF DIAPHRAGM	–
14 to 28	POSITION OF LONGITUDINAL GIRDER ON TEMPORARY BRGS. AND HOLD THEM IN POSITION BY LATERAL BRACING. REINF. OF DECK SLAB & END DIAPHRAGM WILL BE FIXED IN POSITION	30
28	CASTING OF DECK SLAB ALONG WITH CROSS GIRDER	35
28 to 42	AVERAGE AGE OF GIRDER WHEN COMPOSITE ACTION TAKES PLACE	35
42 to 56	FIXING THE CRASH BARRIER AND LAYING OFWEARING COAT	35
56	AVERAGE AGE OF GIRDER WHEN SILD & CWLL ON IT	35

REFERENCE DRAWINGS:-

1. REINFORCEMENT DETAILS OF LONGITUDINAL GIRDER:
   –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/02
2. REINFORCEMENT DETAILS OF END CROSS GIRDER:
   –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/03
3. REINFORCEMENT DETAILS OF RCC DECK SLAB:
   –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/04(SHEET 1&2)
4. DETAILS OF LOAD AND FORCES FOR POT/PTFE BEARINGS:
   –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/05



DETAIL `A'

(SCALE 1:40)

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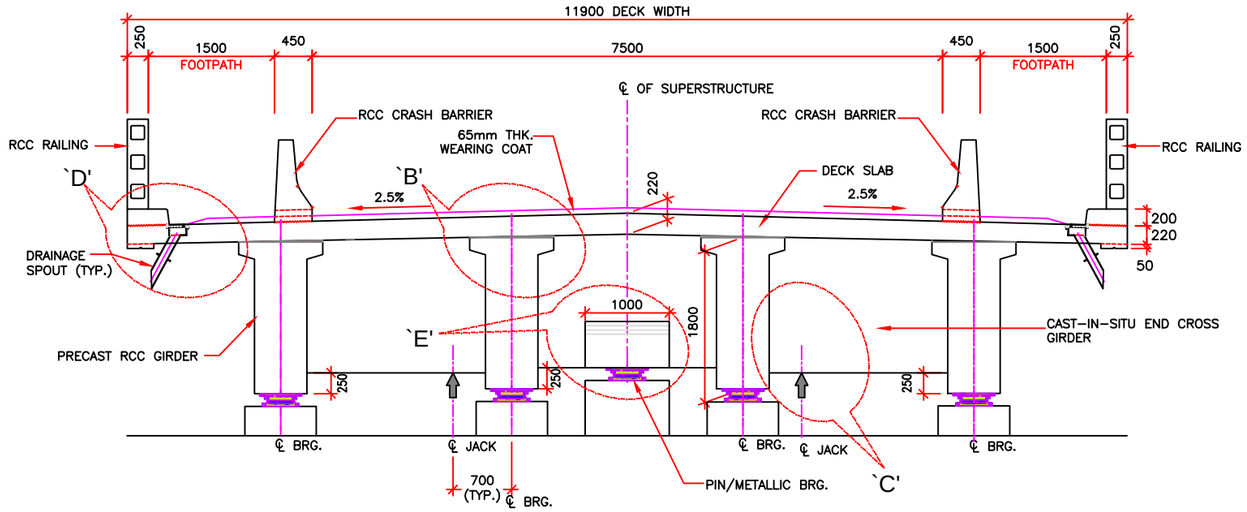
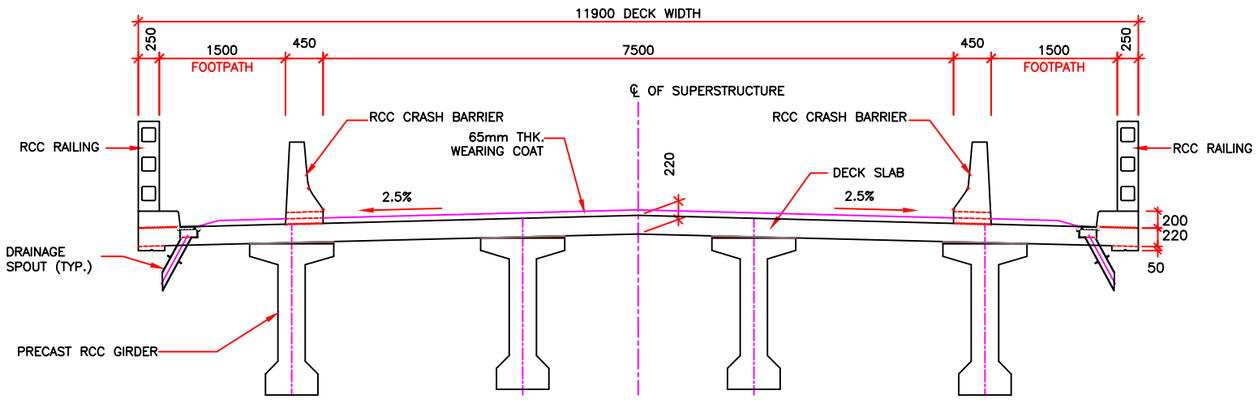
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal				

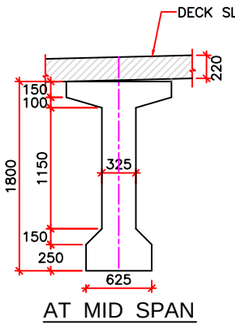
			DRAWING TITLE:	Scale:	Date: Nov. 2017
Prepared By		K.M.JOHRI	DIMENSION DETAILS OF PRECAST RCC GIRDER & CAST-IN-SITU SLAB SUPERSTRUCTURE EFFECTIVE SPAN : 22.00m	As Shown	
Designed By		V.CHAUDHARY			
Checked By		P.K.KHAN			
Approved By		B.N.SINGH	Drawing No.: NIRTTP/NAG-MUG/KHATAUDI/RCC-G/22m/01		(SHEET 1 OF 2)



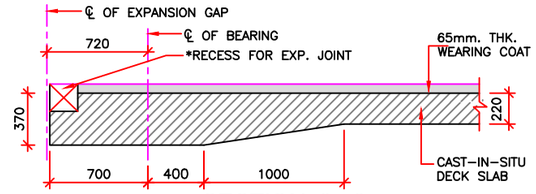
SECTION AT SUPPORT
(SCALE 1:50)



SECTION AT MID
(SCALE 1:50)



AT MID SPAN



SECTION 2 - 2
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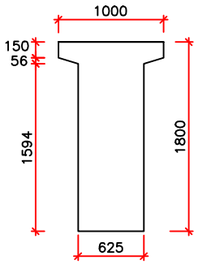

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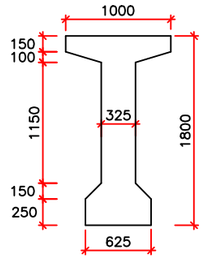
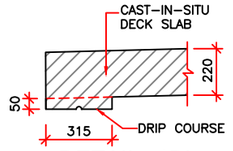
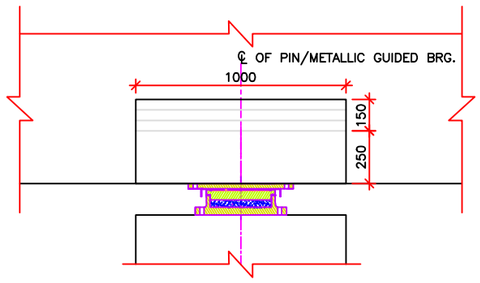


AT MID SPAN

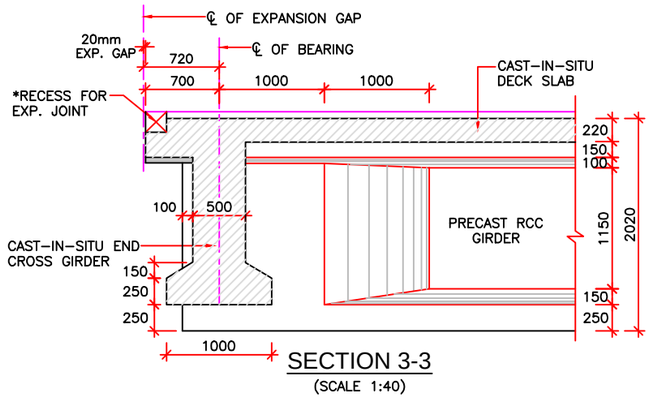
DETAILS OF PRECAST RCC GIRDER
(SCALE 1:40)



DETAIL - `D'
(SCALE 1:20)



DETAIL - E
(SCALE 1:20)



SECTION 3-3
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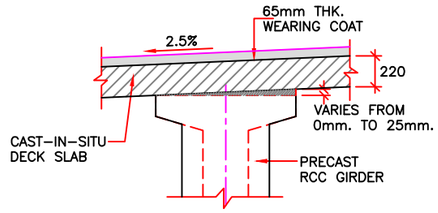
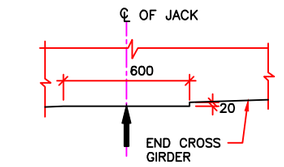


DETAIL -`B'
(SCALE 1:30)



DETAIL - `C'
DETAIL OF CROSS GIRDER AT JACK LOCATION
(SCALE 1:20)

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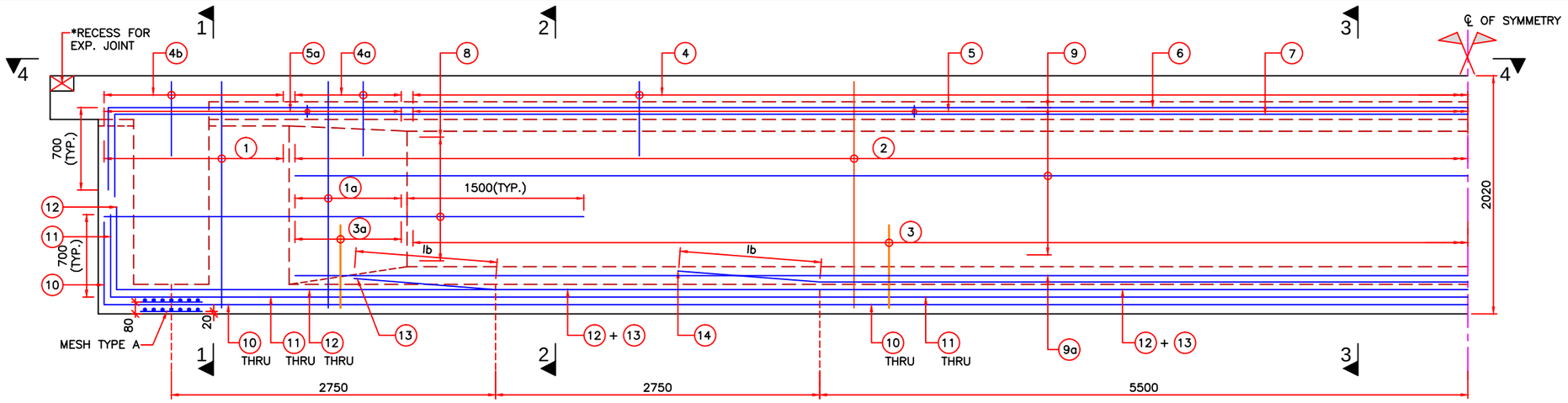
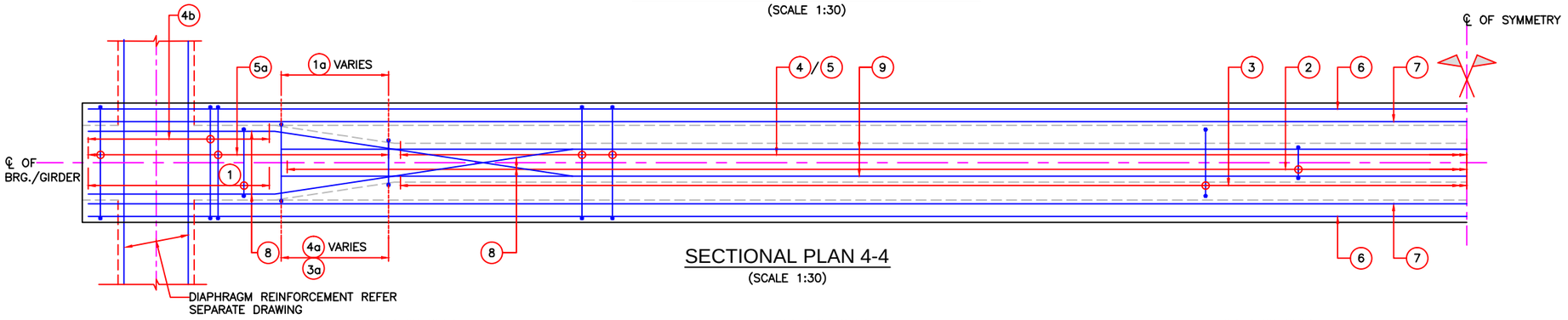
				Designed By		V.CHAUDHARY		
				Checked By		P.K.KHAN		
				Approved By		B.N.SINGH		



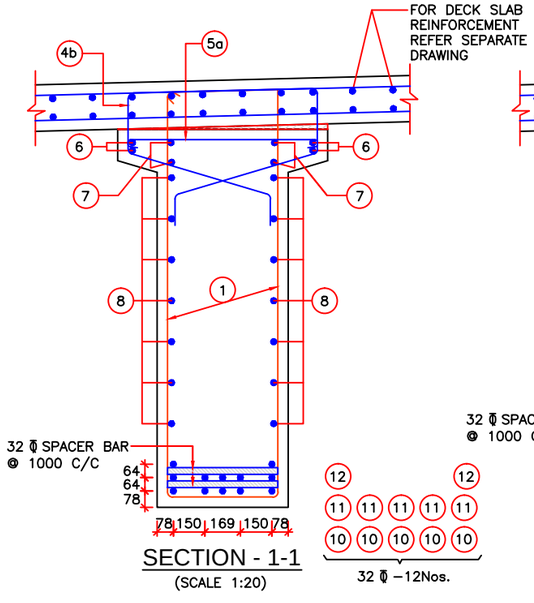
SECTIONAL ELEVATION OF GIRDER

(SCALE 1:30)



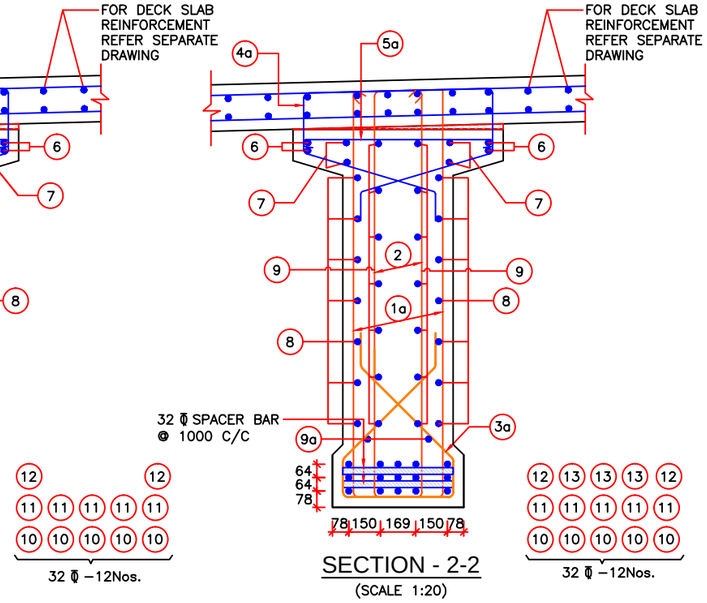
SECTIONAL PLAN 4-4

(SCALE 1:30)



SECTION - 1-1

(SCALE 1:20)



SECTION - 2-2

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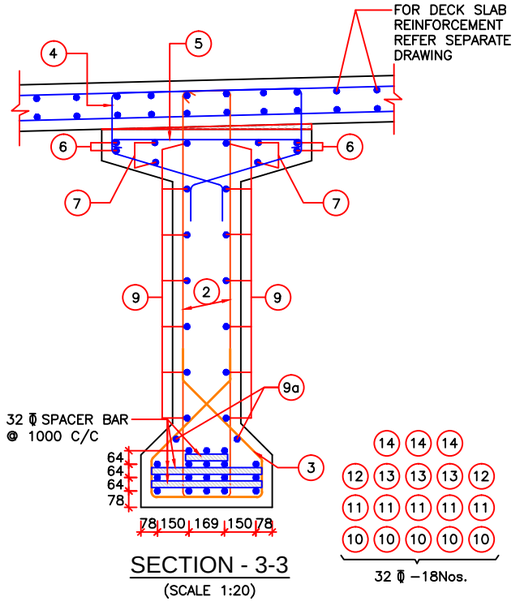

SECTION - 3-3

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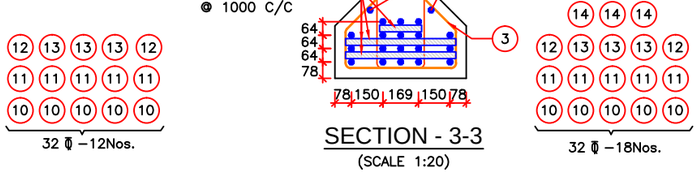
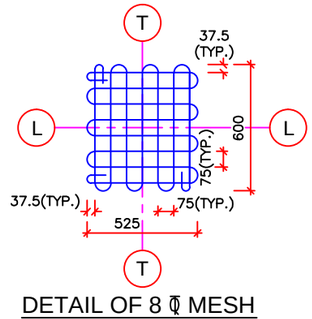




DETAIL OF 8 ϕ MESH TYPE `A'

(IN TWO LAYERS)
(SCALE = 1:20)

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. THE REINFORCEMENT SHALL BE HYSD. BARS (GRADE DESIGNATION Fe–500D) CONFORMING TO IS:1786–2008. HAVING MINIMUM ELONGATION OF 16% AS PER TABLE:18.1 OF IRC:112–2011.
4. CLEAR COVER TO THE OUTERMOST STEEL SHALL BE 40mm UNLESS OTHERWISE SPECIFIED.
5. LAPPING OF REINFORCEMENT SHALL BE AVOIDED AS FAR AS POSSIBLE. IN CASE LAPPING OF BARS BECOMES UNAVOIDABLE, MINIMUM LAP LENGTH OF REINFORCEMENT BARS SHALL BE CALCULATED AS FOLLOW WITH MAXIMUM ALLOWABLE LAPPING (p) OF 50% ONLY. (IRC:112–2011) (CLAUSE:15.2.5.1)
   LAP LENGTH ls = α1.lbnet
   α1 = 1.0 FOR p%≤25%
   α1 = 1.15 FOR 25%≤p%≤33%
   α1 = 1.4 FOR 33%≤p%≤50%
   (IRC:112–2011) (CLAUSE:15.2.3.3)
   DEVELOPMENT LENGTH (lbnet)
   lbnet = α.lb (α = 1.0)
   lb = kϕ
   k = 40 FOR M30 (Fe500D)
   k = 36 FOR M35 (Fe500D)
   k = 34 FOR M40 (Fe500D)
   FOR UNFAVORABLE BOND CONDITION THE lb SHOULD BE MULTIPLIED BY FACTOR OF 1.43. FOR ϕ>32mm lb, SHOULD BE INCREASED BY MULTIPLYING FACTOR $(\frac{100}{132-\phi})$

REFERENCE DRAWINGS:-

1. DIMENSIONAL DETAILS OF PRECAST RCC GIRDER & CAST–IN–SITU SLAB SUPERSTRUCTURE:
   –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/01
2. REINFORCEMENT DETAILS OF END CROSS GIRDER:
   –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/03
3. REINFORCEMENT DETAILS OF RCC DECK SLAB:
   –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/04(SHEET 1&2)
4. DETAILS OF LOAD AND FORCES FOR POT/PTFE BEARINGS:
   –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/05

SCHEDULE OF REINFORCEMENT

BAR MKD.	DESCRIPTION	SHAPE	REMARKS
1	2L–12 ϕ @125 C/C		STIRRUP
1a	2L–12 ϕ @125 C/C		STIRRUP (VARIES)
2	2L–12 ϕ @150 C/C		STIRRUP
3	10 ϕ @150 C/C		
3a	10 ϕ @125 C/C		(VARIES)
4	10 ϕ @150 C/C		
4a	10 ϕ @125 C/C		(VARIES)
4b	10 ϕ @125 C/C		
5	10 ϕ @150 C/C		LINKS
5a	10 ϕ @125 C/C		LINKS
6	12 ϕ –4 Nos.		
7	12 ϕ –4 Nos.		
8	10 ϕ –7 Nos.		ON EACH FACE
9	10 ϕ –7 Nos.		ON EACH FACE
9a	10 ϕ –1 Nos.		ON EACH FACE
10	32 ϕ –5 Nos.		
11	32 ϕ –5 Nos.		
12	32 ϕ –2 Nos.		
13	32 ϕ –3 Nos.		
14	32 ϕ –3 Nos.		

EMPLOYER	PROJECT	DESIGN CONSULTANT
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal

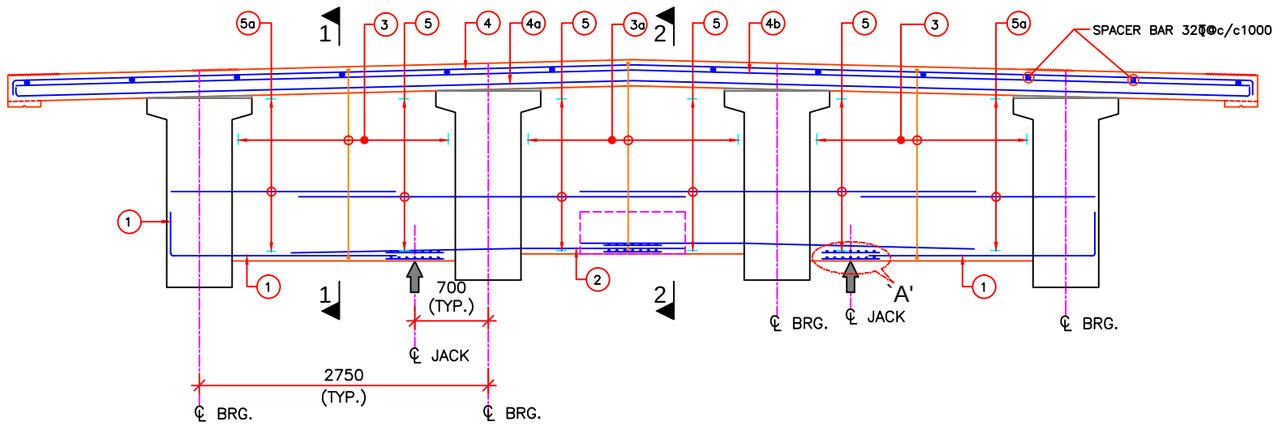
Prepared By		K.M.JOHRI
Designed By		V.CHAUDHARY
Checked By		P.K.KHAN
Approved By		B.N.SINGH

DRAWING TITLE:
REINFORCEMENT DETAILS OF LONGITUDINAL GIRDER
EFFECTIVE SPAN : 22.00m

Drawing No.: NIRTTP/NAG-MUG/KHATAUDI/RCC-G/22m/02

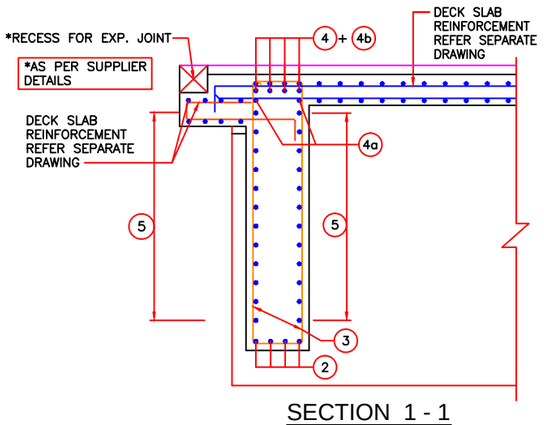
Scale: As Shown

Date: Nov. 2017



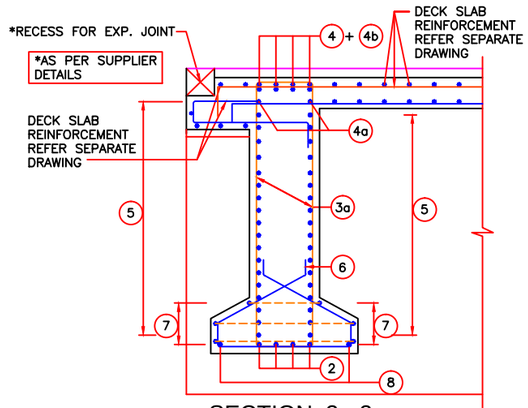
SECTIONAL ELEVATION OF END DIAPHRAGM

(SCALE 1:40)



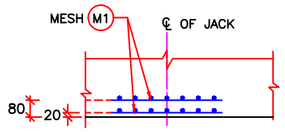
SECTION 1 - 1

(SCALE 1:30)



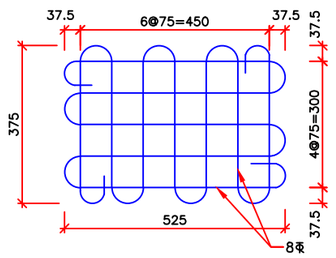
SECTION 2 - 2

(SCALE 1:30)



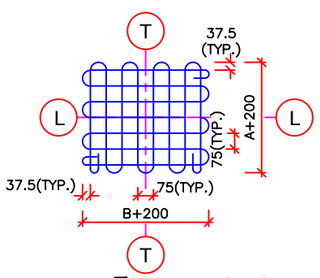
DETAIL - `A'

(SCALE 1:20)



DETAIL OF 8ϕ MESH (M1) REINF. FOR JACK LOCATION

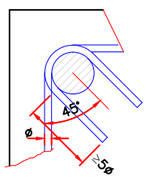
(SCALE 1:10)



DETAIL OF 8ϕ MESH (M2) REINF. FOR PIN / METALLIC GUIDED BEARING

WHERE A & B ARE SIZE OF BEARING

(SCALE 1:20)



TYPICAL DETAIL INDICATING ANCHORAGE OF STIRRUP

(SCALE 1:30)

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. THE REINFORCEMENT SHALL BE HYSD. BARS (GRADE DESIGNATION Fe–500D) CONFORMING TO IS:1786–2008. HAVING MIN. ELONGATION OF 16% AS PER TABLE:18.1 OF IRC:112–2011
4. CLEAR COVER TO THE OUTERMOST STEEL SHALL BE 40mm UNLESS OTHERWISE SPECIFIED.
5. LAPPING OF REINFORCEMENT SHALL BE AVOIDED AS FAR AS POSSIBLE. IN CASE LAPPING OF BARS BECOMES UNAVOIDABLE, MINIMUM LAP LENGTH OF REINFORCEMENT BARS SHALL BE CALCULATED AS FOLLOW WITH MAXIMUM ALLOWABLE LAPPING (p) OF 50% ONLY. (IRC:112–2011) (CLAUSE:15.2.5.1)
   LAP LENGTH ls = α1.lbnet
   α1 = 1.0 FOR p%≤25%
   α1 = 1.15 FOR 25%≤p%≤33%
   α1 = 1.4 FOR 33%≤p%≤50%
   (IRC:112–2011) (CLAUSE:15.2.3.3)
   DEVELOPMENT LENGTH (lbnet)
   lbnet = α.lb (α = 1.0)
   lb = kø
   k = 40 FOR M30 (Fe500D)
   k = 36 FOR M35 (Fe500D)
   k = 34 FOR M40 (Fe500D)

FOR UNFAVORABLE BOND CONDITION THE lb SHOULD BE MULTIPLIED BY FACTOR OF 1.43. FOR ø>32mm lb, SHOULD BE INCREASED BY MULTIPLYING FACTOR $(\frac{100}{132-ø})$

REFERENCE DRAWINGS:-

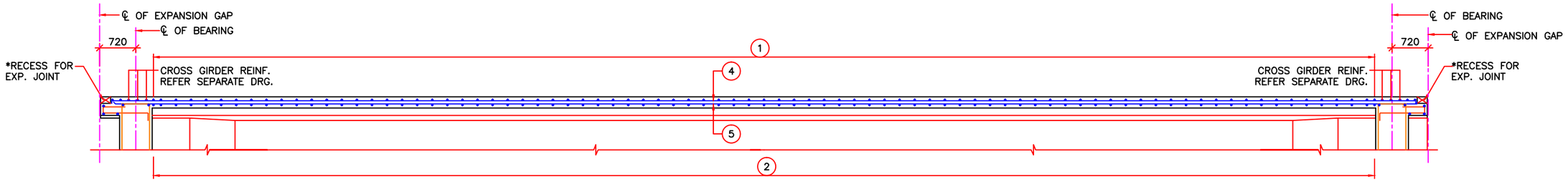
1. DIMENSIONAL DETAILS OF PRECAST RCC GIRDER & CAST–IN–SITU SLAB SUPERSTRUCTURE:
   –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/01
2. REINFORCEMENT DETAILS OF LONGITUDINAL GIRDER:
   –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/02
3. REINFORCEMENT DETAILS OF RCC DECK SLAB:
   –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/04 (SHEET 1 & 2)
4. DETAILS OF LOAD AND FORCES FOR POT/PTFE BEARINGS:
   –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/05

REINFORCEMENT SCHEDULE FOR END DIAPHRAGM

BAR MKD.	DESCRIPTION	SHAPE	REMARKS
1	25ϕ –4 Nos.		
2	25ϕ –4 Nos.		
3	12ϕ –2L @125 c/c		
3a	25ϕ –2L @125 c/c		
4	25ϕ –4 Nos.		
4a	16ϕ –2 Nos.		
4b	25ϕ –4 Nos.		
5	25ϕ –14 Nos.		(ON EACH FACE)
5a	16ϕ –14 Nos.		(ON EACH FACE)
6	12ϕ –7 Nos.		
7	12ϕ –3 Nos.		
8	10ϕ –2 Nos.		

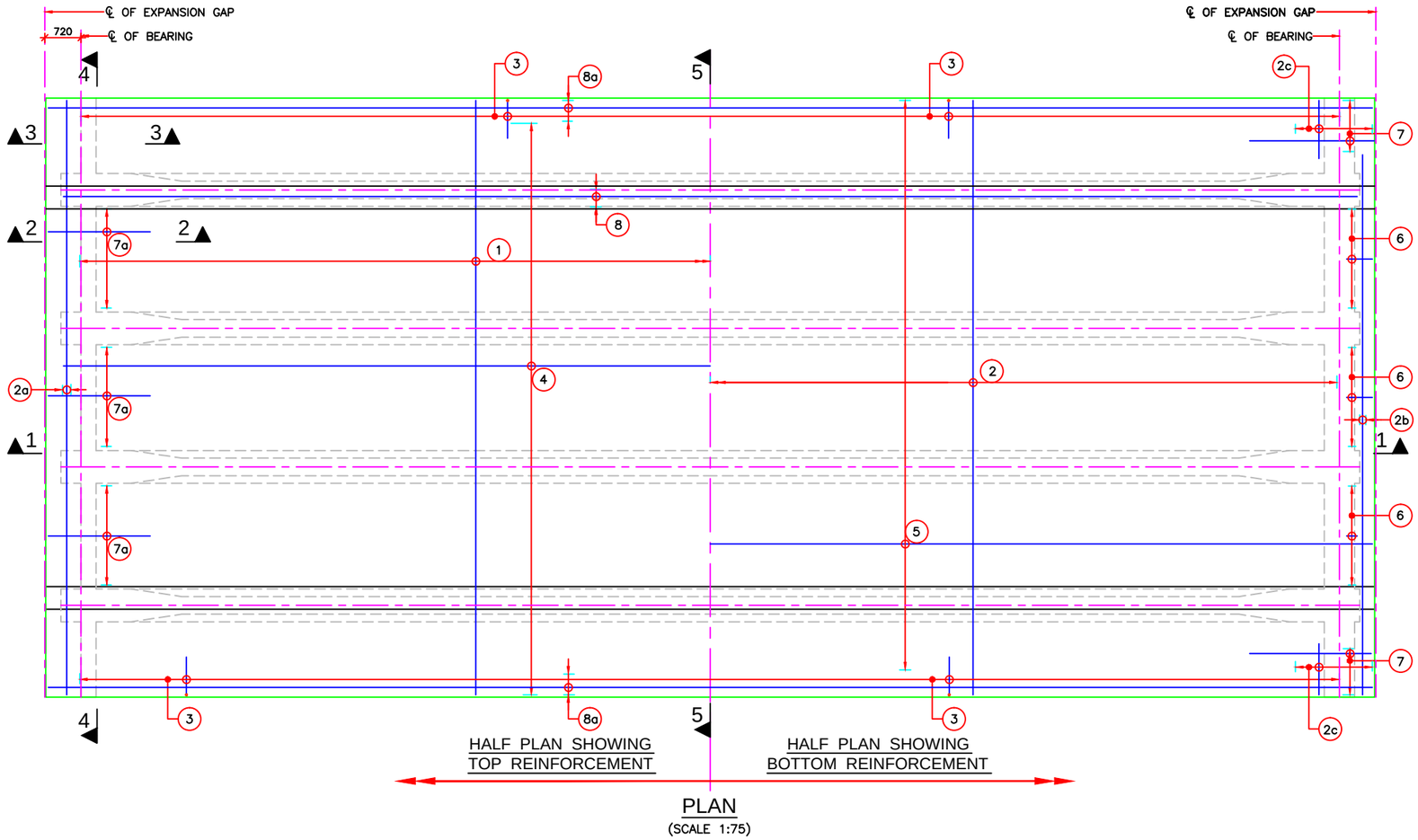
EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal					

			DRAWING TITLE:	Scale:	Date: Nov. 2017
Prepared By		K.M.JOHRI	REINFORCEMENT DETAILS OF END CROSS GIRDER EFFECTIVE SPAN : 22.00m	As Shown	
Designed By		V.CHAUDHARY			
Checked By		P.K.KHAN			
Approved By		B.N.SINGH	Drawing No.: NIRTTP/NAG-MUG/KHATAUDI/RCC-G/22m/03		



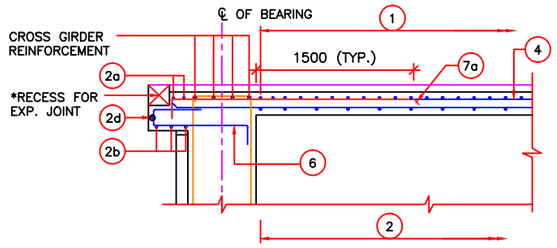
SECTION 1 - 1

(SCALE 1:60)



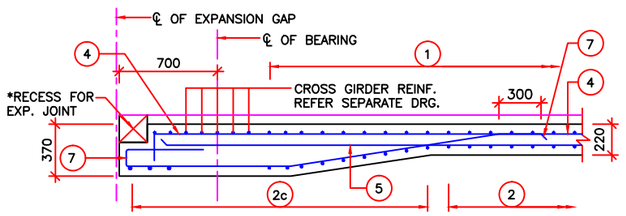
PLAN

(SCALE 1:75)



SECTION 2 - 2

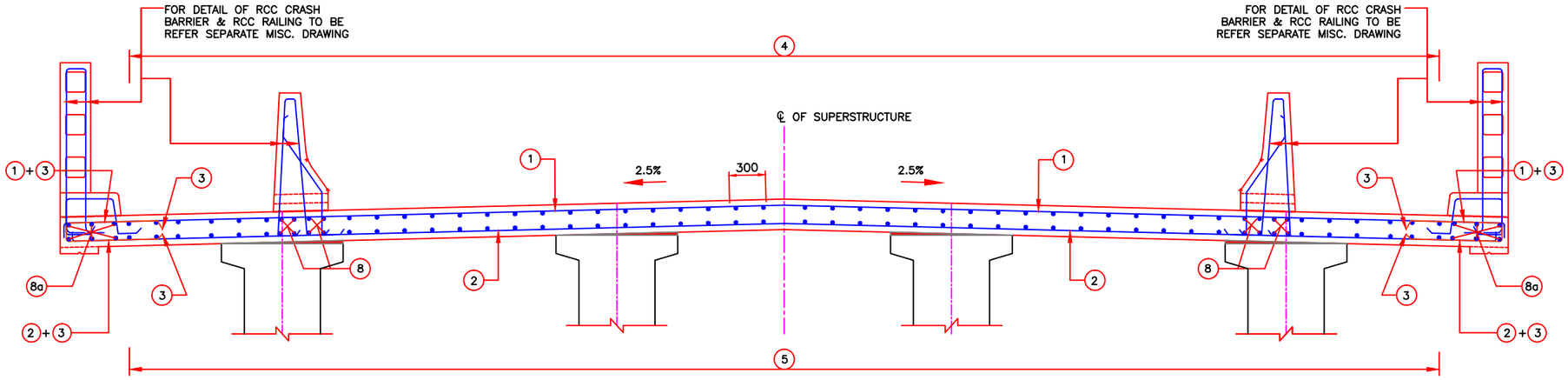
(SCALE 1:40)



SECTION 3 - 3

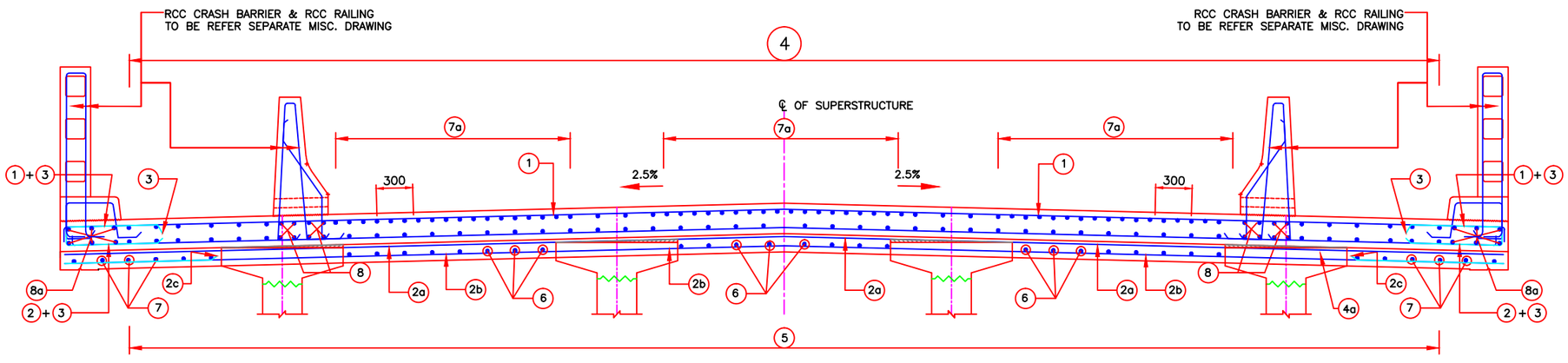
(SCALE 1:30)

EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Prepared By	K.M.JOHRI	DRAWING TITLE: REINFORCEMENT DETAILS OF DECK SLAB EFFECTIVE SPAN : 22.00m Drawing No.: NIRTTP/NAG-MUG/KHATAUDI/RCC-G/22m/04	Scale: As Shown Date: Nov. 2017 (SHEET 1 OF 2)
				Designed By	V.CHAUDHARY		
				Checked By	P.K.KHAN		
				Approved By	B.N.SINGH		



SECTION AT 5 - 5 (MID SPAN)

(SCALE 1:30)



SECTION AT 4 - 4 (NEAR SUPPORT)

(SCALE 1:30)

FOR RCC CRASH BARRIER REINF. REFER MISCELLANEOUS DRG.

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
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3. THE REINFORCEMENT SHALL BE HYSD. BARS (GRADE DESIGNATION Fe–500D) CONFORMING TO IS:1786–2008. HAVING MIN. ELONGATION OF 16% AS PER TABLE:18.1 OF IRC:112–2011
4. CLEAR COVER TO THE OUTERMOST STEEL SHALL BE 40mm UNLESS OTHERWISE SPECIFIED.
5. LAPPING OF REINFORCEMENT SHALL BE AVOIDED AS FAR AS POSSIBLE. IN CASE LAPPING OF BARS BECOMES UNAVOIDABLE, MINIMUM LAP LENGTH OF REINFORCEMENT BARS SHALL BE CALCULATED AS FOLLOW WITH MAXIMUM ALLOWABLE LAPPING (p) OF 50% ONLY. (IRC:112–2011) (CLAUSE:15.2.5.1)
   LAP LENGTH ls = α_1.lbnet
   α_1 = 1.0 FOR p%≤25%
   α_1 = 1.15 FOR 25%≤p%≤33%
   α_1 = 1.4 FOR 33%≤p%≤50%
   (IRC:112–2011) (CLAUSE:15.2.3.3)
   DEVELOPMENT LENGTH (lbnet)
   lbnet = α.lb (α = 1.0)
   lb = kϕ
   k = 40 FOR M30 (Fe500D)
   k = 36 FOR M35 (Fe500D)
   k = 34 FOR M40 (Fe500D)
   FOR UNFAVORABLE BOND CONDITION THE lb SHOULD BE MULTIPLIED BY FACTOR OF 1.43. FOR ϕ>32mm lb, SHOULD BE INCREASED BY MULTIPLYING FACTOR ($\frac{132-\phi}{100}$)
6. RECESS FOR EXPANSION JOINT, AS PER SUPPLIER DETAILS.

REFERENCE DRAWINGS:-

1. DIMENSIONAL DETAILS OF PRECAST RCC GIRDER & CAST–IN–SITU SLAB SUPERSTRUCTURE:
   –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/01
2. REINFORCEMENT DETAILS OF LONGITUDINAL GIRDER:
   –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/02
3. REINFORCEMENT DETAILS OF END CROSS GIRDER:
   –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/03
4. DETAILS OF LOAD AND FORCES FOR POT/PTFE BEARINGS:
   –NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/05

REINFORCEMENT SCHEDULE

BAR MKD.	DESCRIPTION	SHAPE	REMARKS
1	12ϕ @100 C/C		
2	12ϕ @100 C/C		
2a	12ϕ @100 C/C		
2b	12ϕ @100 C/C		
2c	12ϕ @100 C/C		
2d	12ϕ –1 Nos.		
3	12ϕ @100 C/C		
4	10ϕ @200 C/C		
5	10ϕ @200 C/C		
6	12ϕ @200 C/C		
7	12ϕ @200 C/C		
7a	12ϕ @200 C/C		
8	16ϕ –8 Nos.		(ON EACH SIDE)
8a	16ϕ –6 Nos.		(ON EACH SIDE)

EMPLOYER	PROJECT	DESIGN CONSULTANT
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal

Prepared By		K.M.JOHRI
Designed By		V.CHAUDHARY
Checked By		P.K.KHAN
Approved By		B.N.SINGH

DRAWING TITLE:
REINFORCEMENT DETAILS OF DECK SLAB
EFFECTIVE SPAN : 22.00m

Drawing No.: NIRTTP/NAG-MUG/KHATAUDI/RCC-G/22m/04

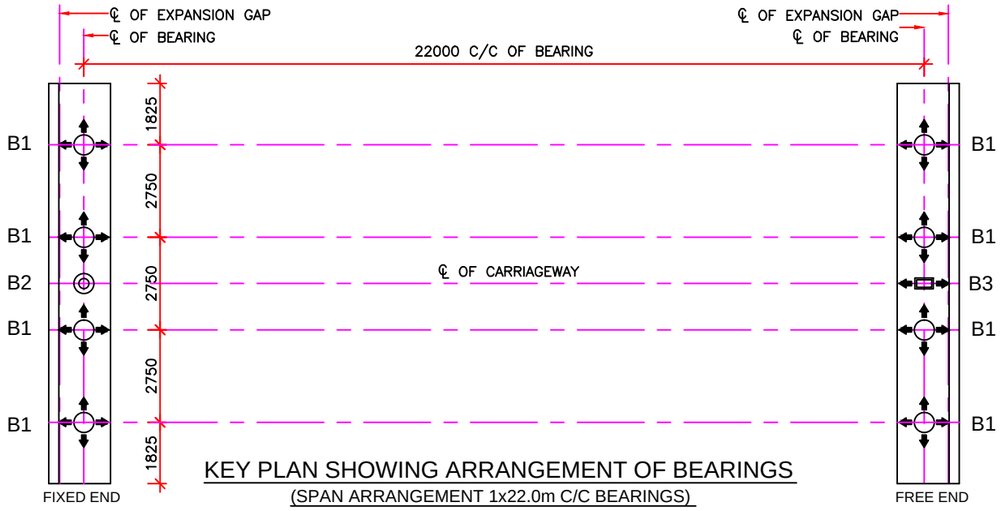
Scale: As Shown

Date: Nov. 2017

(SHEET 2 OF 2)

LEGEND:-

B1		FREE SLIDING POT–CUM–PTFE BEARING
B2		PIN BEARING
B3		METALLIC GUIDED BEARING



KEY PLAN SHOWING ARRANGEMENT OF BEARINGS
(SPAN ARRANGEMENT 1x22.0m C/C BEARINGS)

NOTES:–

1. MATERIAL SPECIFICATIONS, DESIGN OF BEARINGS, ACCEPTANCE CRITERIA AND INSTALLATION MORTH SHALL BE IN ACCORDANCE WITH IRC:83 (PART III)–2002 AND MOSRTH SPECIFICATIONS (FOURTH REVISION).
2. BEARINGS SHALL BE OBTAINED FROM MANUFACTURERS APPROVED BY MORTH.
3. INSTALLATION OF BEARINGS SHALL BE UNDER THE SUPERVISION OF REPRESENTATIVE OF THE MANUFACTURER.
4. FOR DESIGN LOADS AND ROTATIONS REFER TABLE IN THE DRAWING.
5. FOR BEARINGS, DETAILED SHOP DRAWINGS SHALL BE PREPARED BY THE SUPPLIER AND BE DULY APPROVED BEFORE MANUFACTURE AND INSTALLATION.
6. THE GROUT/BEDDING MORTAR SHALL BE HIGH STRENGTH FREE FLOWING NON SHRINK GROUT (80 MPa STRENGTH).
7. ALL BEARING SHALL BE PLACED IN TRULY HORIZONTAL PLANE ONLY.
8. FOR DESIGN OF POT BEARINGS, THE DESIGN HORIZONTAL FORCE SHALL, IN NO CASE BE LESS THAN 10% AND GREATER THAN 25% OF THE DESIGN VERTICAL LOAD.
9. THE CONTRACTOR AND SUPPLIER OF BEARINGS SHALL BE FURNISH A MINIMUM TROUBLE FREE WARRANTY OF 10 YEARS AFTER OPENING OF THE BRIDGE.
10. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH:
    DIMENSIONAL DETAILS OF PRECAST RCC GIRDER & CAST–IN–SITU SLAB SUPERSTRUCTURE
    NIRTTP/NAG–MUG/KHATAUDI/RCC–G/22m/01 (SHEET 1 & 2)

GENERAL DATA:

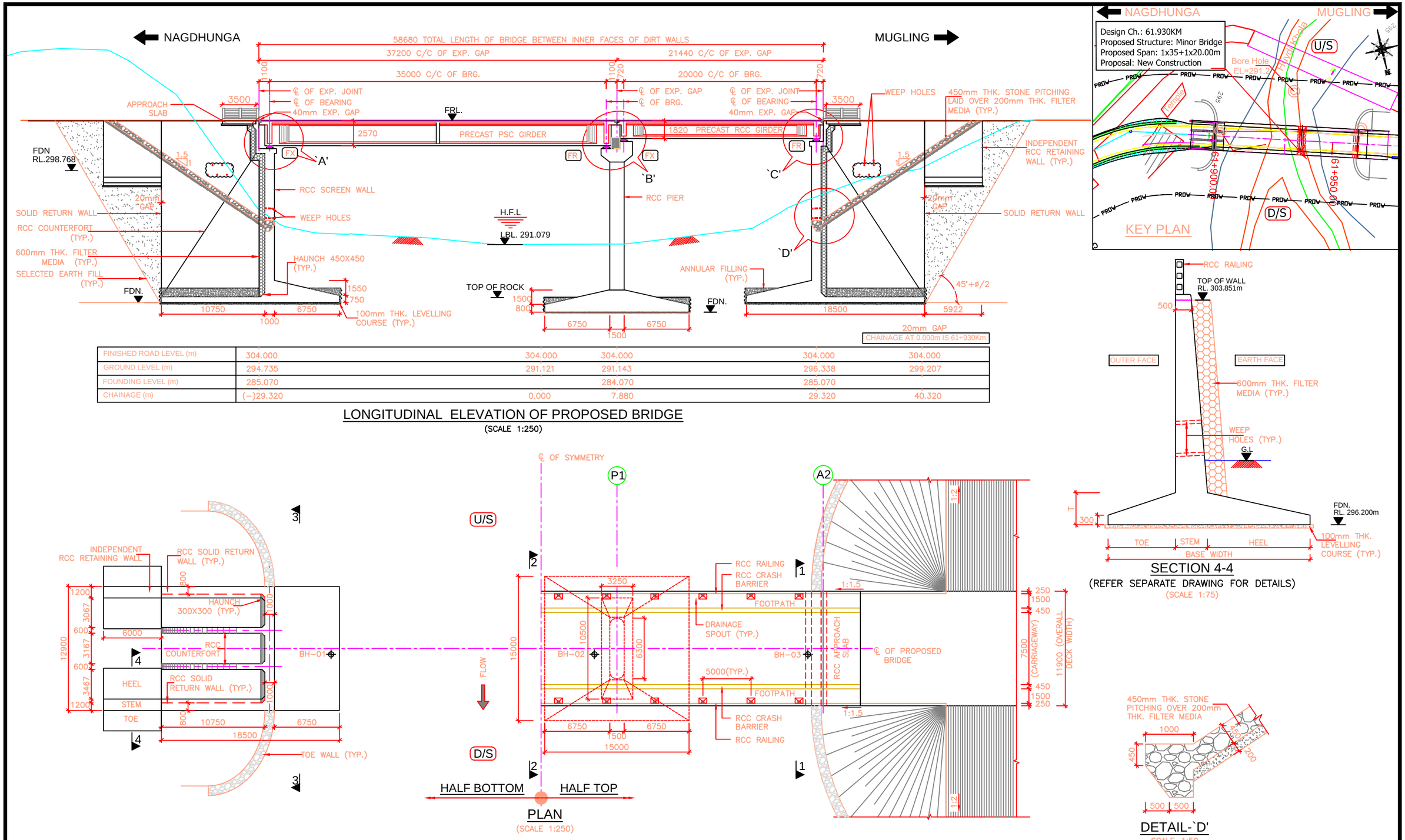
1. STRUCTURE IS LOCATED IN SEISMIC ZONE : V
2. GRADE OF CONCRETE
   ABUTMENT CAP. M–30
   PEDESTAL M–40

TABLE SHOWING DATA FOR DESIGN OF BEARINGS

SL. No.	BEARING TYPE	LOAD CONDITION	LOADS, FORCES, MOVEMENTS AND ROTATION DATA										BEARING (Nos.) PER SPAN
			VERTICAL LOAD (kN)		HORIZONTAL FORCE (kN)				ROTATION (RAD)		MOVEMENT (mm)		
			CASE	MAGNITUDE	LONGITUDINAL		TRANSVERSE		CASE	MAGNITUDE	LONGITUDINAL	TRANSVERSE	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1.	FREE POT –CUM PTFE	NORMAL	MAXIMUM (WITH LIVE LOAD)	1516	COEXISTING	152	COEXISTING	–	COEXISTING	0.002	–16.5/16.2	4.70	8
			MINIMUM (WITH LIVE LOAD)	576	COEXISTING	58	COEXISTING	–	COEXISTING	0.002	–16.5/16.2	4.70	
			MINIMUM (WITHOUT LIVE LOAD)	440	COEXISTING	44	COEXISTING	–	COEXISTING	0.002	–16.5/16.2	4.70	
		SEISMIC (LONGITUDINAL)	MAXIMUM (WITH LIVE LOAD)	884	COEXISTING	–	COEXISTING	–	COEXISTING	0.002	–16.5/16.2	4.70	
			MINIMUM (WITH LIVE LOAD)	522	COEXISTING	–	COEXISTING	–	COEXISTING	0.002	–16.5/16.2	4.70	
			MINIMUM (WITHOUT LIVE LOAD)	487	COEXISTING	–	COEXISTING	–	COEXISTING	0.002	–16.5/16.2	4.70	
		SEISMIC (TRANSVERSE)	MAXIMUM (WITH LIVE LOAD)	884	COEXISTING	–	COEXISTING	–	COEXISTING	0.002	–16.5/16.2	4.70	
			MINIMUM (WITH LIVE LOAD)	522	COEXISTING	–	COEXISTING	–	COEXISTING	0.002	–16.5/16.2	4.70	
			MINIMUM (WITHOUT LIVE LOAD)	487	COEXISTING	–	COEXISTING	–	COEXISTING	0.002	–16.5/16.2	4.70	
2.	PIN BEARING	NORMAL	MAXIMUM (WITH LIVE LOAD)	–	COEXISTING	278	COEXISTING	–	COEXISTING	0.002	–	–	1
			MINIMUM (WITH LIVE LOAD)	–	COEXISTING	203	COEXISTING	–	COEXISTING	0.002	–	–	
			MINIMUM (WITHOUT LIVE LOAD)	–	COEXISTING	203	COEXISTING	–	COEXISTING	0.002	–	–	
		SEISMIC (LONGITUDINAL)	MAXIMUM (WITH LIVE LOAD)	–	COEXISTING	2469	COEXISTING	405	COEXISTING	0.002	–	–	
			MINIMUM (WITH LIVE LOAD)	–	COEXISTING	2469	COEXISTING	365	COEXISTING	0.002	–	–	
			MINIMUM (WITHOUT LIVE LOAD)	–	COEXISTING	2433	COEXISTING	365	COEXISTING	0.002	–	–	
		SEISMIC (TRANSVERSE)	MAXIMUM (WITH LIVE LOAD)	–	COEXISTING	766	COEXISTING	1349	COEXISTING	0.002	–	–	
			MINIMUM (WITH LIVE LOAD)	–	COEXISTING	766	COEXISTING	1216	COEXISTING	0.002	–	–	
			MINIMUM (WITHOUT LIVE LOAD)	–	COEXISTING	766	COEXISTING	811	COEXISTING	0.002	–	–	
3.	METALLIC GUIDE BEARING	NORMAL	MAXIMUM (WITH LIVE LOAD)	–	COEXISTING	–	COEXISTING	–	COEXISTING	0.002	–16.5/16.2	–	1
			MINIMUM (WITH LIVE LOAD)	–	COEXISTING	–	COEXISTING	–	COEXISTING	0.002	–16.5/16.2	–	
			MINIMUM (WITHOUT LIVE LOAD)	–	COEXISTING	–	COEXISTING	–	COEXISTING	0.002	–16.5/16.2	–	
		SEISMIC (LONGITUDINAL)	MAXIMUM (WITH LIVE LOAD)	–	COEXISTING	–	COEXISTING	405	COEXISTING	0.002	–16.5/16.2	–	
			MINIMUM (WITH LIVE LOAD)	–	COEXISTING	–	COEXISTING	365	COEXISTING	0.002	–16.5/16.2	–	
			MINIMUM (WITHOUT LIVE LOAD)	–	COEXISTING	–	COEXISTING	365	COEXISTING	0.002	–16.5/16.2	–	
		SEISMIC (TRANSVERSE)	MAXIMUM (WITH LIVE LOAD)	–	COEXISTING	–	COEXISTING	1349	COEXISTING	0.002	–16.5/16.2	–	
			MINIMUM (WITH LIVE LOAD)	–	COEXISTING	–	COEXISTING	1216	COEXISTING	0.002	–16.5/16.2	–	
			MINIMUM (WITHOUT LIVE LOAD)	–	COEXISTING	–	COEXISTING	811	COEXISTING	0.002	–16.5/16.2	–	

EMPLOYER	PROJECT	DESIGN CONSULTANT			
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal		

Prepared By		K.M.JOHRI	DRAWING TITLE: DETAILS OF LOADS AND FORCES FOR POT/PTFE BEARINGS EFFECTIVE SPAN : 22.00m	Scale: As Shown	Date: Nov. 2017
Designed By		V.CHAUDHARY			
Checked By		P.K.KHAN			
Approved By		B.N.SINGH	Drawing No.: NIRTTP/NAG-MUG/KHATAUDI/RCC-G/22m/05		



FINISHED ROAD LEVEL (m)	304.000	304.000	304.000	304.000	304.000
GROUND LEVEL (m)	294.735	291.121	291.143	296.338	299.207
FOUNDING LEVEL (m)	285.070		284.070	285.070	
CHAINAGE (m)	(--)29.320	0.000	7.880	29.320	40.320

LONGITUDINAL ELEVATION OF PROPOSED BRIDGE

(SCALE 1:250)

SECTION 4-4

(REFER SEPARATE DRAWING FOR DETAILS)

(SCALE 1:75)

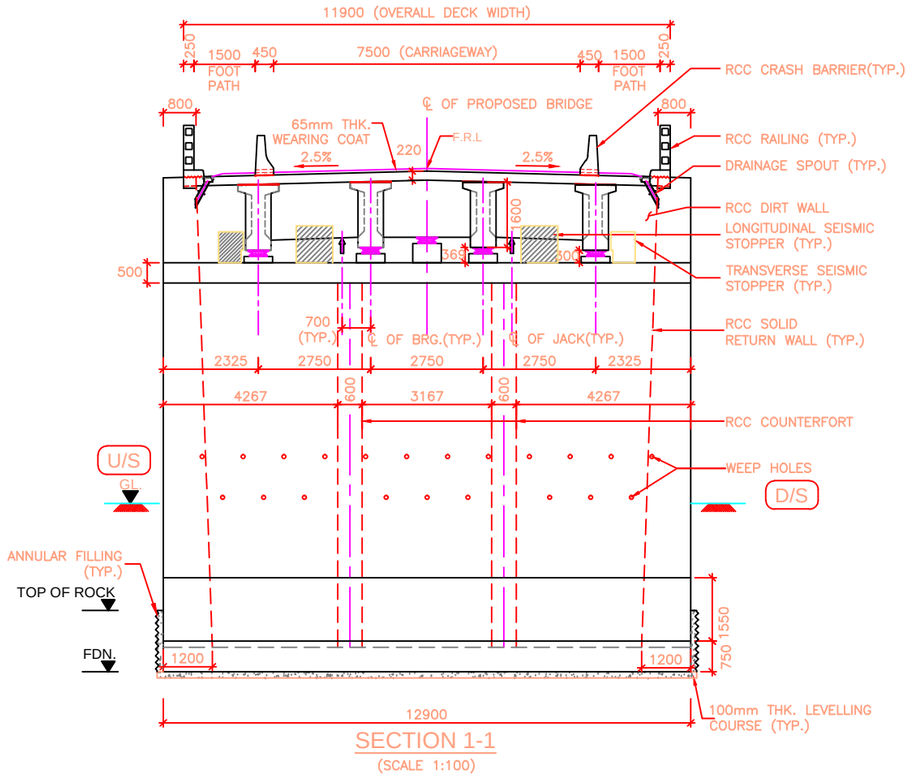
PLAN

(SCALE 1:250)

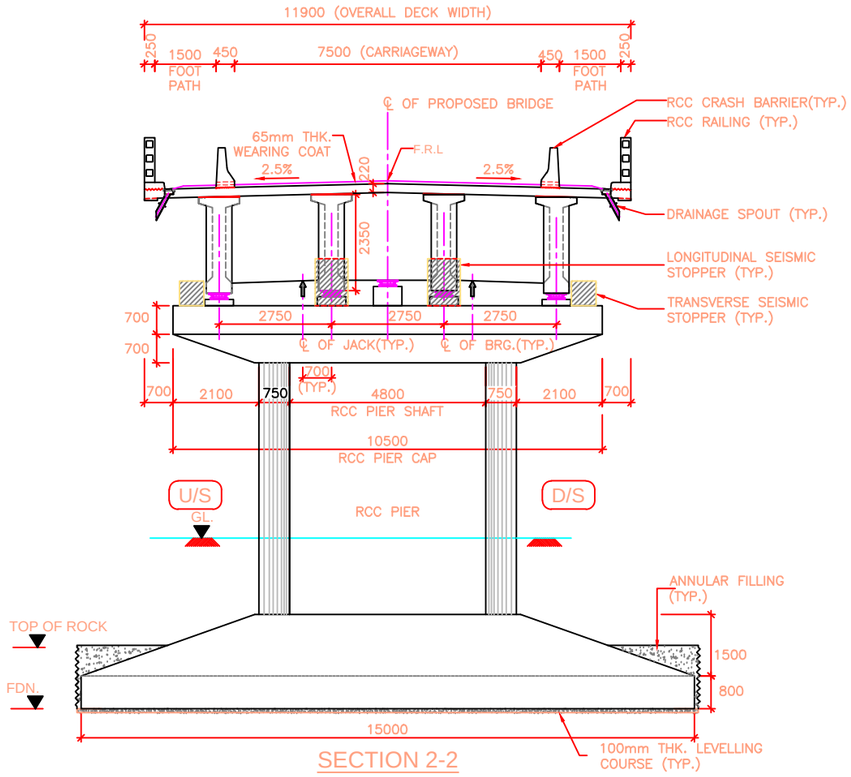
DETAIL-`D'

SCALE-1:50

EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Prepared By		M.L.GUPTA	DRAWING TITLE: GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT CH: 61+930KM OVER HUGDI KHOLA (1x35.0m+1x20.0m) PACKAGE-IV(BENIGHAT-MUGLING)	Scale: As Shown
			Designed By		V.CHAUDHARY		Date: Nov..2017
			Checked By		P.K.KHAN	Drawing No.: NIRTTP/NAG-MUG/HUGDI/GAD	(SHEET 1 OF 3)
			Approved By		B.N.SINGH		



SECTION 1-1
(SCALE 1:100)



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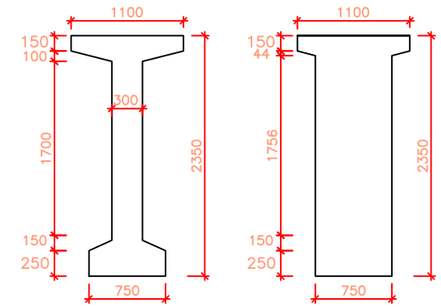
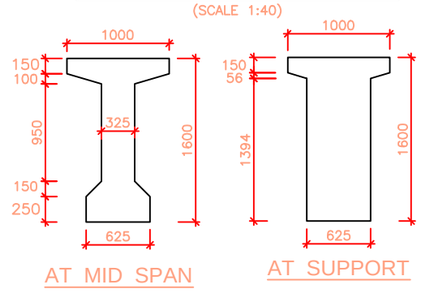
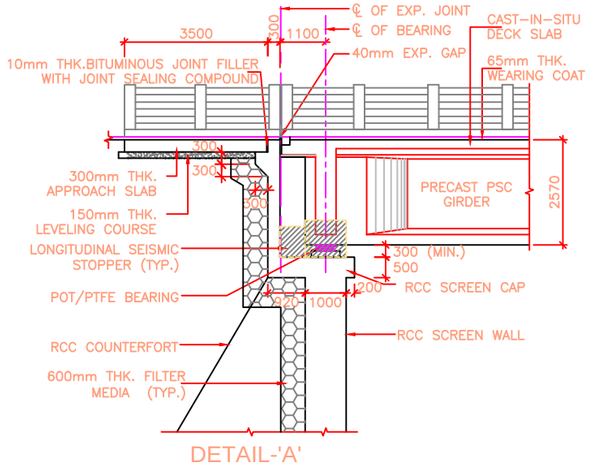


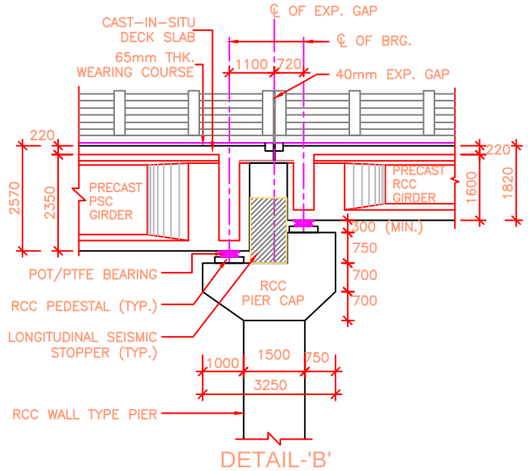
CROSS SECTION OF PRECAST PSC GIRDER FOR 35M SPAN
(SCALE 1:40)



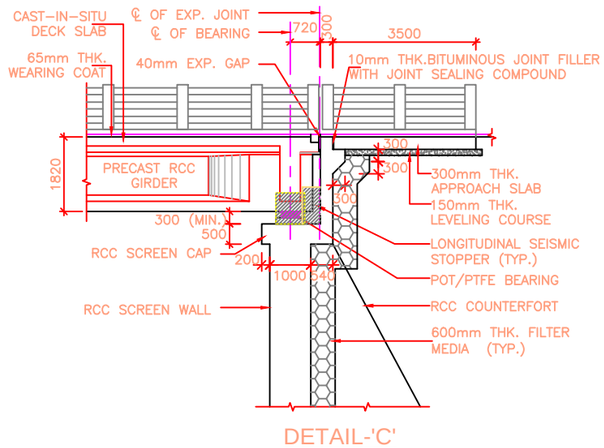
CROSS SECTION OF PRECAST RCC GIRDER FOR 20M SPAN
(SCALE 1:40)



DETAIL-'A'
(SCALE 1:100)

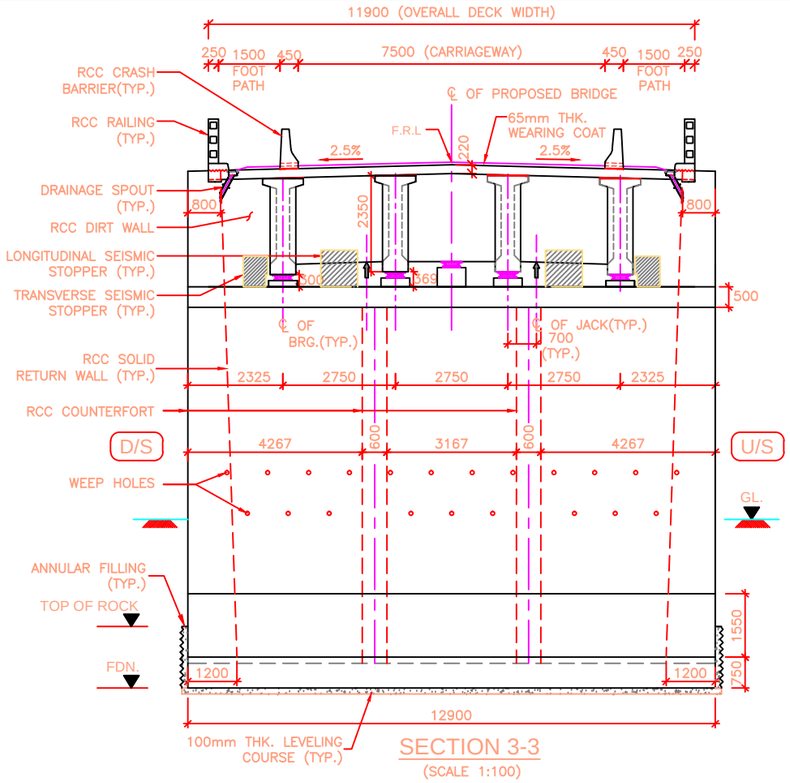


DETAIL-'B'
(SCALE 1:100)

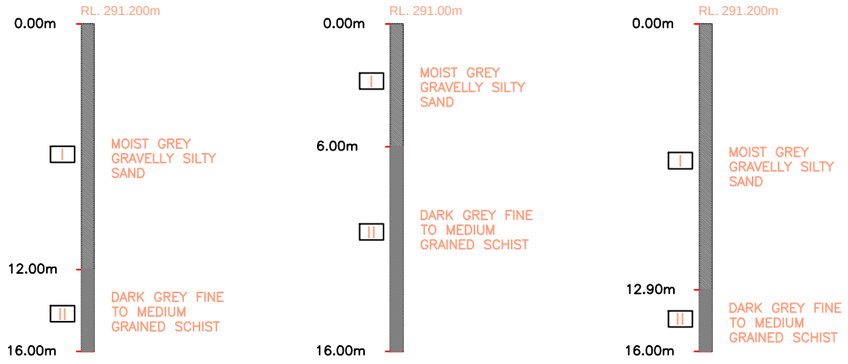


DETAIL-'C'
(SCALE 1:100)

EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Prepared By		M.L.GUPTA	DRAWING TITLE: GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT CH: 61+930KM OVER HUGDI KHOLA (1x35.0m+1x20.0m) PACKAGE-IV(BENIGHAT-MUGLING) Drawing No.: NIRTTP/NAG-MUG/HUGDI/GAD	Scale: As Shown	Date: Nov..2017 (SHEET 2 OF 3)
			Designed By		V.CHAUDHARY		
			Checked By		P.K.KHAN		
			Approved By		B.N.SINGH		



SECTION 3-3
(SCALE 1:100)



BH-01 (SCALE 1:200)

BH-02 (SCALE 1:200)

BH-03 (SCALE 1:200)

REFERENCE DRAWINGS:-

1. DIMENSIONAL DETAILS OF COUNTERFORT ABUTMENT (A1) AND FOUNDATION:
   –NIRTTP/NAG–MUG/HUGDI/SUB–01
2. REINFORCEMENT DETAILS OF COUNTER FORT TYPE ABUTMENT (A1) & ITS COMPONENTS, DIRT WALL, RETURN WALL, PEDESTAL AND SEISMIC STOPPER.
   –NIRTTP/NAG–MUG/HUGDI/SUB–02
3. DIMENSIONAL DETAILS OF COUNTERFORT ABUTMENT (A2) AND FOUNDATION:
   –NIRTTP/NAG–MUG/HUGDI/SUB–03
4. REINFORCEMENT DETAILS OF COUNTER FORT TYPE ABUTMENT (A2) & ITS COMPONENTS, DIRT WALL, RETURN WALL, PEDESTAL AND SEISMIC STOPPER.
   –NIRTTP/NAG–MUG/HUGDI/SUB–04
5. DIMENSIONAL DETAILS OF PIER AND FOUNDATION:
   –NIRTTP/NAG–MUG/HUGDI/SUB–05
6. REINFORCEMENT DETAILS OF PIER SHAFT,PIER CAP, PEDESTAL AND SEISMIC STOPPER.
   –NIRTTP/NAG–MUG/HUGDI/SUB–06 (SHEET–1 & 2)

PRECAST PSC GIRDER 35m

1. DIMENSION DETAILS OF PRECAST PSC GIRDER & CAST–IN–SITU SLAB SUPERSTRUCTURE
   –NIRTTP/NAG–MUG/HUGDI/PSC–G/35M/01 (SHEET–1 & 2)
2. DETAIL OF CABLE PROFILE
   –NIRTTP/NAG–MUG/HUGDI/PSC–G/35M/02 (SHEET–1 & 2)
3. REINFORCEMENT DETAIL OF LONGITUDINAL GIRDER
   –NIRTTP/NAG–MUG/HUGDI/PSC–G/35M/03
4. RCC DETAIL OF END BLOCK & ANCHORAGE
   –NIRTTP/NAG–MUG/HUGDI/PSC–G/35M/04
2. REINFORCEMENT DETAIL OF END CROSS GIRDER
   –NIRTTP/NAG–MUG/HUGDI/PSC–G/35M/05
6. REINFORCEMENT DETAIL OF RCC DECK SLAB
   –NIRTTP/NAG–MUG/HUGDI/PSC–G/35M/06 (SHEET–1 & 2)
7. DETAILS OF LOAD AND FORCES FOR POT/PTFE BEARINGS
   –NIRTTP/NAG–MUG/HUGDI/PSC–G/35M/07

PRECAST RCC GIRDER 20M

1. DIMENSIONAL DETAILS OF PRECAST RCC GIRDER & CAST–IN–SITU SLAB SUPERSTRUCTURE:
   –NIRTTP/NAG–MUG/HUGDI/RCC–G/20M/01
2. REINFORCEMENT DETAILS OF LONGITUDINAL GIRDER:
   –NIRTTP/NAG–MUG/HUGDI/RCC–G/20M/02
3. REINFORCEMENT DETAILS OF END CROSS GIRDER:
   –NIRTTP/NAG–MUG/HUGDI/RCC–G/20M/03
4. REINFORCEMENT DETAILS OF RCC DECK SLAB:
   –NIRTTP/NAG–MUG/HUGDI/RCC–G/20M/04(SHEET 1&2)
5. DETAILS OF LOAD AND FORCES FOR POT/PTFE BEARINGS:
   –NIRTTP/NAG–MUG/HUGDI/RCC–G/20M/05

MISCELLANEOUS DRAWINGS:

1. DETAILS OF APPROACH SLAB:
   –NIRTTP/NAG–MUG/PACKAGE–IV/MISC.–01
2. DETAILS OF DRAINAGE SPOUT & WEARING COAT:
   –NIRTTP/NAG–MUG/PACKAGE–IV/MISC.–02
3. DIMENSIONAL & REINF. DETAILS OF R.C.C CRASH BARRIER:
   –NIRTTP/NAG–MUG/PACKAGE–IV/MISC.–03
4. DIMENSIONAL & REINF. DETAILS OF R.C.C RAILING:
   –NIRTTP/NAG–MUG/PACKAGE–IV/MISC.–04
5. DIMENSIONAL AND REINFORCEMENT DETAILS OF RCC RETAINING WALL/MEDIAN WALL:
   –NIRTTP/NAG–MUG/PACKAGE–IV/MISC.–05

HYDRAULIC DATA:-

DISCHARGE	– 303 cumec
VELOCITY	– 3.09m/s
H.F.L	– 293.939m
M.S.L AT ABUTMENT	– 287.070
M.S.L AT PIER	– 286.070

LEGEND:

F.R.L	: FINISHED ROAD LEVEL
H.F.L	: HIGH FLOOD LEVEL
℄	: CENTER LINE
LVL.	: LEVEL
RL.	: REDUCED LEVEL
TYP.	: TYPICAL
THK.	: THICK
D/S	: DOWNSTREAM
U/S	: UPSTREAM
G.L	: GROUND LEVEL
L.B.L	: LOWEST BED LEVEL
FDN.	: FOUNDING LEVEL
FX	: FIX
FR	: FREE
EXISTING	:
PROPOSED	:
BH	: BORE HOLE

NOTES:-

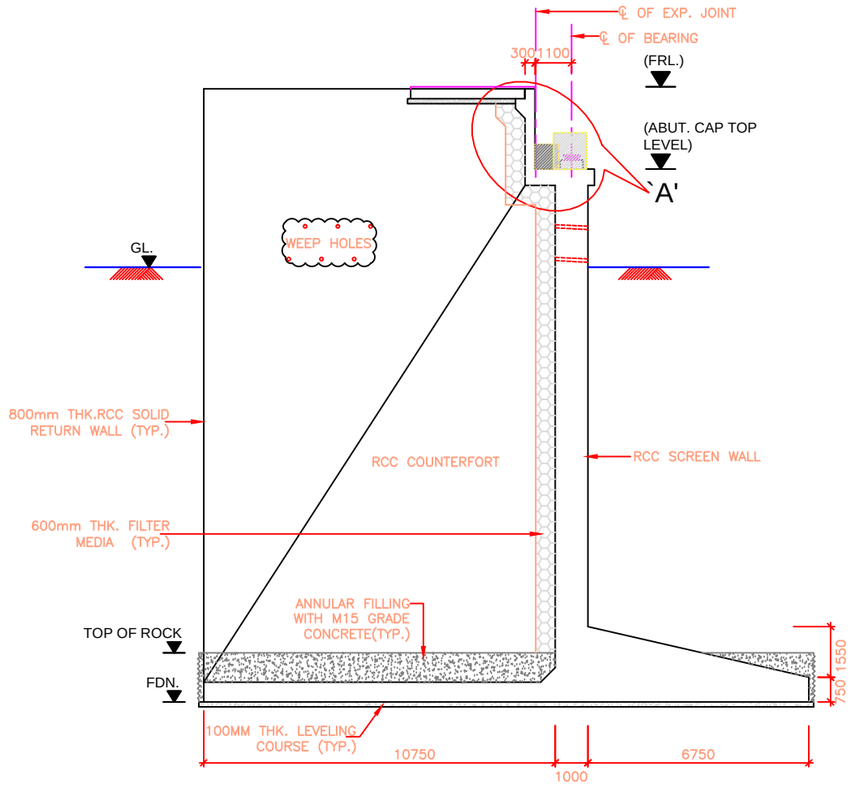
1. ALL DIMENSIONS ARE IN MILLIMETER AND LEVELS ARE IN METER UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE NOT TO BE SCALED ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. THE BRIDGE HAS BEEN DESIGNED FOR MOST SEVERE OF:
   (I) ONE LANE OF IRC CLASS 70R LOADING OR TWO LANES OF IRC CLASS A LOADING WHEN FOOTPATHS ARE IN POSITION.
   (ii) ONE LANE OF IRC CLASS 70R LOADING +ONE LANE OF IRC CLASS A LOADING OR 3 LANES OF IRC CLASS A LOADING WHEN FOOTPATHS ARE REMOVED.
   (iii) ONE LANE OF SV LOADING IN ACCORDANCE WITH CLAUSE 204.5 OF IRC–6:2017.
4. MINIMUM CONCRETE COVER, GRADE OF CONCRETE, MINIMUM CEMENT CONTENT & MAXIMUM W/C RATIO SHALL BE AS PER 'MODERATE' CONDITION OF EXPOSURE.
5. CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150MM CUBE AS FOLLOWS:
   a. LEVELING COURSE (UNDER FOUNDATION) – M10
   b. LEVELING COURSE (UNDER APPROACH SLAB) – M15
   c. FOUNDATION – M30
   d. PEDESTAL – M40
   e. SEISMIC STOPPER – M40
   f. SUBSTRUCTURE – M30
   g. PRECAST RCC GIRDER – M35
   h. PRECAST PSC GIRDER – M50
   i. RETURN/RETAINING WALL – M30
   j. CRASH BARRIER – M40
   k. APPROACH SLAB – M30
6. UNTENSIONED REINFORCEMENT SHALL BE THERMO MECHANICALLY TREATED (TMT), HYSD BARS OF GRADE DESIGNATION FE–500D CONFORMING TO IS: 1786.
7. POT/PTFE BEARINGS SHALL BE DESIGNED AS PER PROVISION OF IRC : 83 (PART–III 2002).
8. STRIP SEAL TYPE EXPANSION JOINTS SHALL BE PROVIDED AS PER PROVISION OF IRC: SP–69–2011.
9. 65MM THICK WEARING COURSE COMPRISING OF 40MM THICK ASPHALTIC CONCRETE OVER LAID WITH 25MM THICK MASTIC ASPHALT SHALL BE PROVIDED AS PER SECTION 500 OF MORT&H.
10. 100MM DIA WEEP HOLES AT 1000MM C/C STAGGERED HORIZONTALLY AND VERTICALLY SHALL BE PROVIDED IN ONE OR TWO LAYERS ABOVE G.L IN VERTICAL WALLS OF ABUTMENT, RETURN/RETAINING WALLS AT A SLOPE OF 1 VERTICAL TO 20 HORIZONTAL TOWARDS THE DRAINING FACE.
11. WATER TO BE USED IN CONCRETING AND CURING SHALL CONFIRM TO CLAUSE 18.4.5 OF IRC:112–2011.
12. LAYING, COMPACTION AND EXTENT OF BACKFILL BEHIND ABUTMENTS AND RETURN/RETAINING WALLS SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX:6 OF IRC:78–2014 HAVING PROPERTIES C=0, ø= 35°, △=22.5° & γD = 20 KN/M³.
13. MINIMUM CLEAR COVER TO OUTER MOST REINFORCEMENT SHALL BE AS UNDER:–
    a. SUPERSTRUCTURE – 40MM
    b. SUBSTRUCTURE (EARTH FACE) – 75MM
    c. SUBSTRUCTURE (NON EARTH FACE) – 50MM
    d. FOUNDATION – 75MM
14. THE BRIDGE IS DESIGNED FOR PROVISION OF SEISMIC ZONE–V AS PER CLAUSE 219 OF IRC:6:2017.
16. SAFE BEARING CAPACITY CONSIDERED IN DESIGN AT PROPOSED FOUNDING LEVEL IS 50 T/M². THIS SHALL BE ASCERTAINED BEFORE EXECUTION AT SITE BY CONFIRMATORY GEOTECHNICAL INVESTIGATIONS.
16. FILTER MEDIA SHALL BE PROVIDED AS PER APPENDIX–6 OF IRC–78:2014.
17. MINIMUM ANCHORAGE OF FOUNDATION IN SOFT ROCK SHALL BE 1.5M AND 0.6M IN HARD ROCK ANY DEVIATION IN ROCK LEVEL FROM DESIGN SHALL BE REPORTED TO ENGINEER FOR REQUIRED CHANGES IN DESIGN NO CHANGES REQUIRED FOR INCREASE HEIGHT UP TO 50 CM.
17. WHERE FOUNDATIONS ARE PLACED ON ROCK, TRENCHES AROUND THE FOOTING SHALL BE FILLED UP WITH CONCRETE OF M15 GRADE UP TO TOP OF ROCK.
18. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY PLAN AND PROFILE DRAWINGS.
19. ALL CHAINAGES, FRL, GL SHALL BE CONFIRMED AT SITE PRIOR TO EXECUTION.
20. FOR APPROACH SLAB, DRAINAGE SPOUTS, CRASH BARRIER, PROTECTION WORK, RETAINING WALL AND MEDIAN WALL DETAILS REFER SEPARATE DRAWINGS.
21. WHEREVER THE COMPONENTS OF EXISTING BRIDGE INTERFERES WITH THE PROPOSED BRIDGE, THAT SHALL BE DISMANTLED UPTO FOUNDATION TOP.
22. MINIMUM LONGITUDINAL GRADIENT OF 0.3% SHALL BE PROVIDED IS PROPOSED BRIDGE TO FACILITATE DRAINAGE OF DECK AS PER CLAUSE 105.3.6 OF IRC–5.
23. SIZE OF EACH INDIVIDUAL STONE PITCHING AND LAUNCHING APRON SHALL NOT BE LESS THAN 30CM IN DIAMETER AND 40KG IN WEIGHT OR AS PER TABLE 5.1 & 5.2 OF IRC:89–1997. WHERE THE REQUIRED SIZE STONES ARE NOT ECONOMICALLY AVAILABLE, STONES IN WIRE CRATES MAY BE USED IN PLACE OF ISOLATED STONES OF EQUIVALENT WEIGHT.

EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Prepared By	M.L.GUPTA	DRAWING TITLE: GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT CH: 61+930KM OVER HUGDI KHOLA (1x35.0m+1x20.0m) PACKAGE-IV(BENIGHAT-MUGLING)
				Designed By	V.CHAUDHARY	
				Checked By	P.K.KHAN	
				Approved By	B.N.SINGH	Drawing No.: NIRTTP/NAG-MUG/HUGDI/GAD

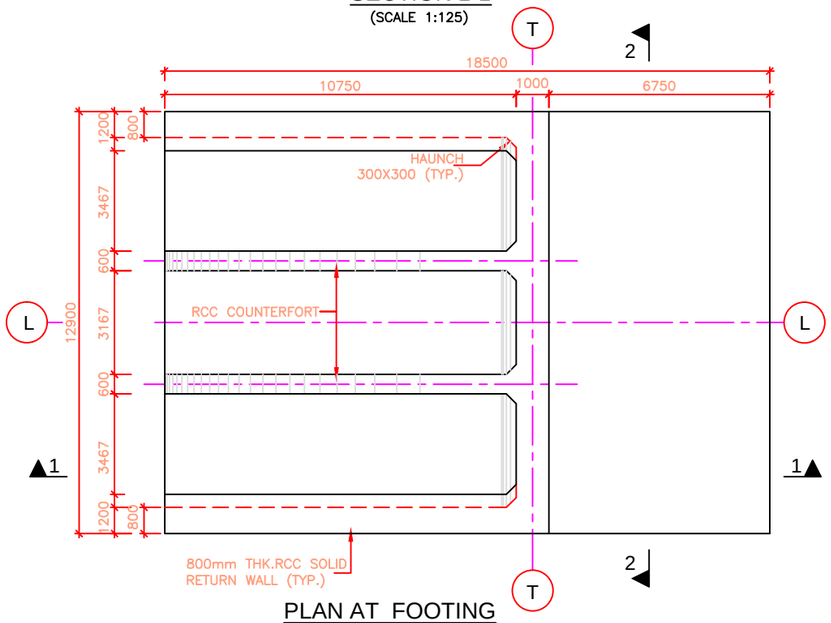
Scale: As Shown

Date: Nov..2017

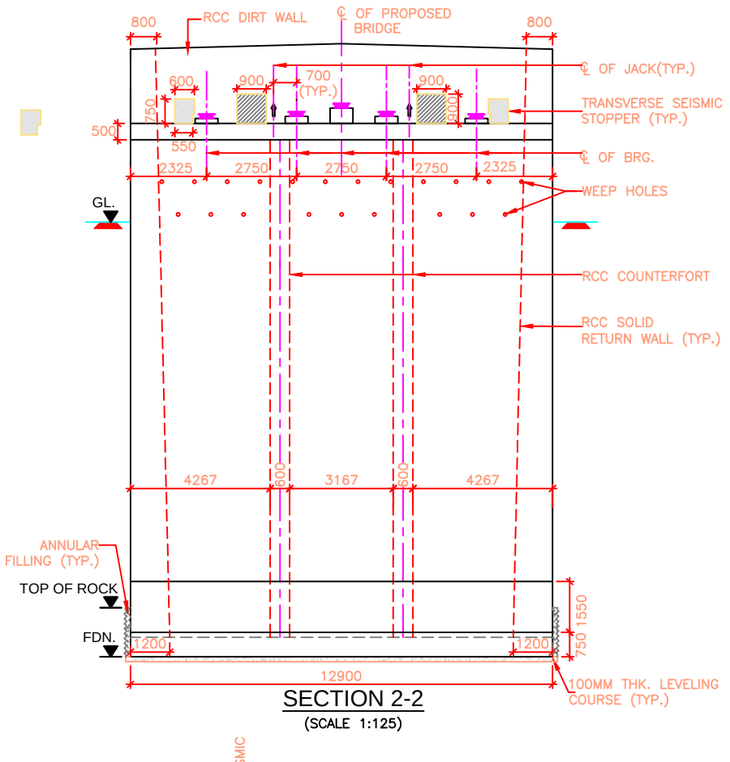
(SHEET 3 OF 3)



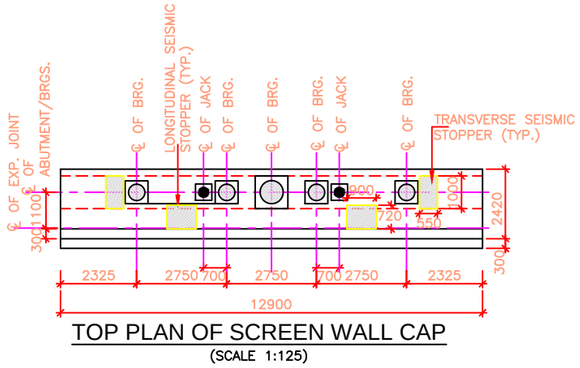
SECTION 1-1
(SCALE 1:125)



PLAN AT FOOTING
(SCALE 1:125)



SECTION 2-2
(SCALE 1:125)



TOP PLAN OF SCREEN WALL CAP
(SCALE 1:125)

NOTES :-

1. ALL DIMENSIONS ARE IN MM, UNLESS OTHERWISE MENTIONED.
2. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED AND NO DIMENSION SHALL BE SCALED.
3. CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150mm CUBE AS FOLLOWS:
   a. LEVELING COURSE (UNDER FOUNDATION) – 10MPa
   b. LEVELING COURSE (UNDER APPROACH SLAB) – 15MPa
   c. FOUNDATION – 30MPa
   d. SUBSTRUCTURE – 30MPa
   e. APPROACH SLAB – 30MPa
   f. PEDESTAL – 40MPa
   g. SEISMIC STOPPER – 40MPa
4. UNTENSIONED REINFORCEMENT SHALL BE THERMO MECHANICALLY TREATED (TMT), HYSD BARS OF GRADE DESIGNATION Fe–500D CONFORMING TO IS: 1786.
5. MINIMUM CLEAR COVER TO OUTER MOST REINFORCEMENT SHALL BE AS UNDER
   a. SUBSTRUCTURE (EARTH FACE) – 75MM
   b. SUBSTRUCTURE (NON EARTH FACE) – 50MM
   c. FOUNDATION – 75MM
6. LL REPRESENTS LONGITUDINAL AXIS OF BRIDGE AND TT REPRESENTS TRANSVERSE AXIS OF ABUTMENT/FOUNDATION.
7. SAFE BEARING CAPACITY AT THE PROPOSED FOUNDING LEVEL HAS BEEN CONSIDERED AS 50 T/M² ON THE BASIS OF SUB SURFACE EXPLORATION RESULTS. THIS SHALL GOT CONFIRMED BEFORE EXECUTION.
8. THE LOCATION OF JACKS FOR LIFTING UP THE SUPERSTRUCTURE SHALL BE DISTINCTLY ETCHED ON SOFFIT OF SUPERSTRUCTURE AND ON TOP OF ABUTMENT CAP.
9. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING DRGS.
   - GENERAL ARRANGEMENT DRAWING REFER:
     –NIRTTP/NAG–MUG/HUGDI/GAD
   - REINFORCEMENT DETAILS OF COUNTER FORT TYPE ABUTMENT (A1) & ITS COMPONENTS, DIRT WALL, RETURN WALL, PEDESTAL AND SEISMIC STOPPER REFER:
     –NIRTTP/NAG–MUG/HUGDI/SUB–02(SHEET 1 & 2)

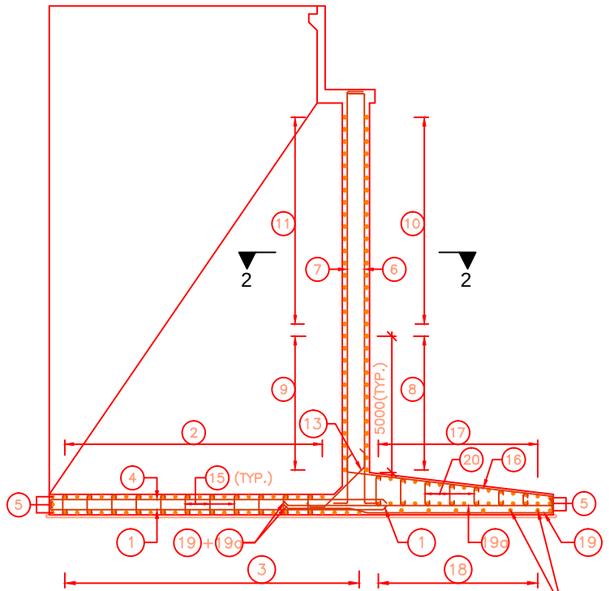
LEVEL SCHEDULE AT ABUTMENT (A1)

MARK	FRL (m)	ABUTMENT CAP TOP LVL. (m)	GR. LEVEL (m)	FDN. LEVEL (m)
ABUTMENT (A1)	304.000	300.960	294.735	285.070

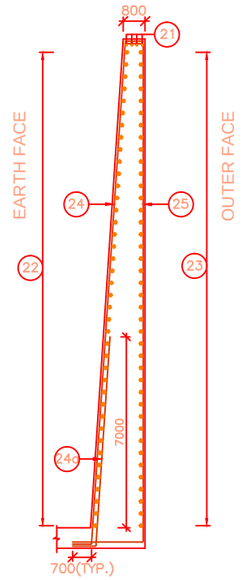
DETAIL-`A'
(SCALE 1:50)

EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal				

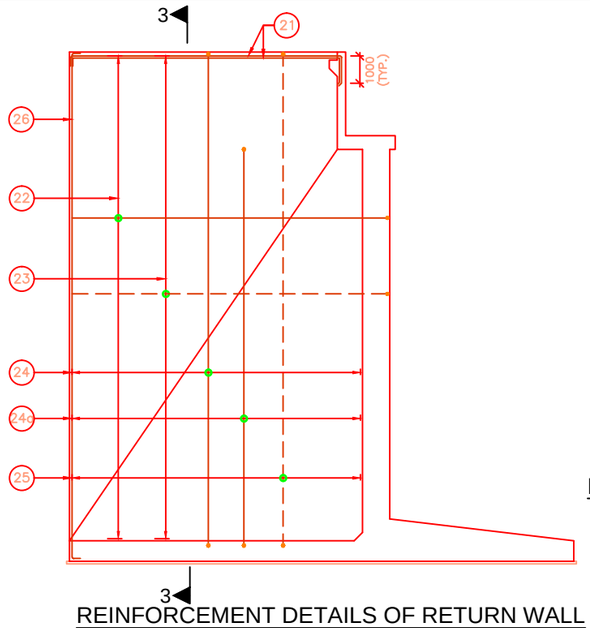
			DRAWING TITLE:	Scale:	Date: Nov..2017
Prepared By		J.CHAUHAN	DIMENSIONAL DETAILS OF COUNTER FORT TYPE ABUTMENT (A1) & ITS COMPONENTS FOR MAJOR BRIDGE CH:- 61+930 OVER HUGDI (1x35.00+1x20.00m) PACKAGE-IV (BENIGHAT-MUGLING)	As Shown	
Designed By		V.CHAUDHARY			
Checked By		P.K.KHAN	Drawing No.: NIRTTP/NAG-MUG/ HUGDI/SUB-01		
Approved By		B.N.SINGH			



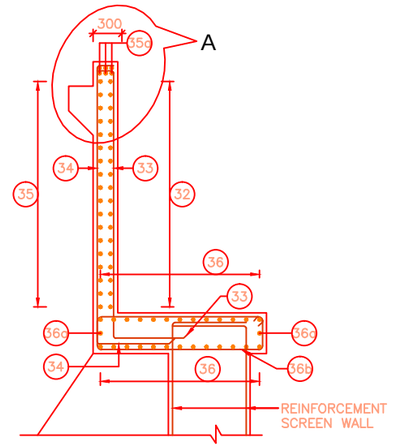
SECTION 1-1 OF SCREEN WALL & FOOTING
(SCALE 1:150)



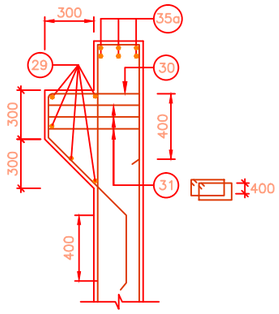
SECTION 3-3
(SCALE 1:150)



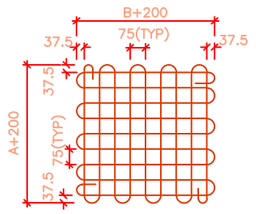
REINFORCEMENT DETAILS OF RETURN WALL
(SCALE 1:150)



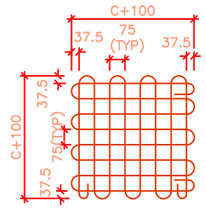
REINF. DETAILS OF DIRT WALL AND RCC ABUTMENT CAP
(SCALE 1:50)



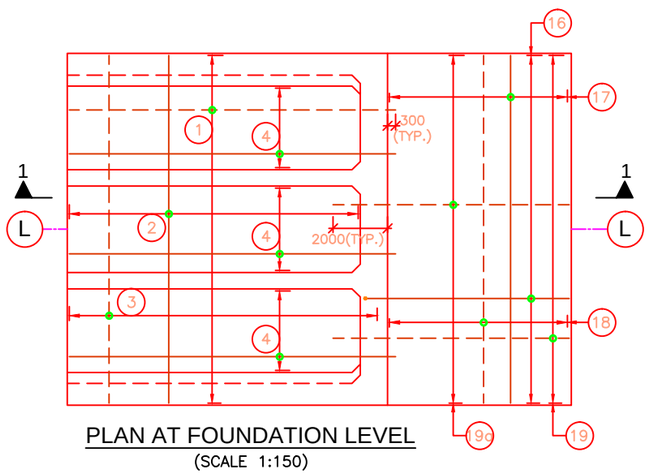
DETAIL `A'
(SCALE 1:25)



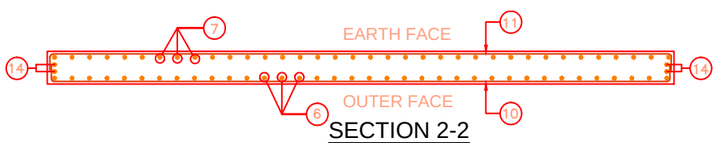
DETAIL OF MESH
TYPE "M1" 8 ϕ
(IN PEDESTAL) (IN TWO LAYERS)
(SCALE 1:20)
(WHERE A & B SIZE OF BEARING)



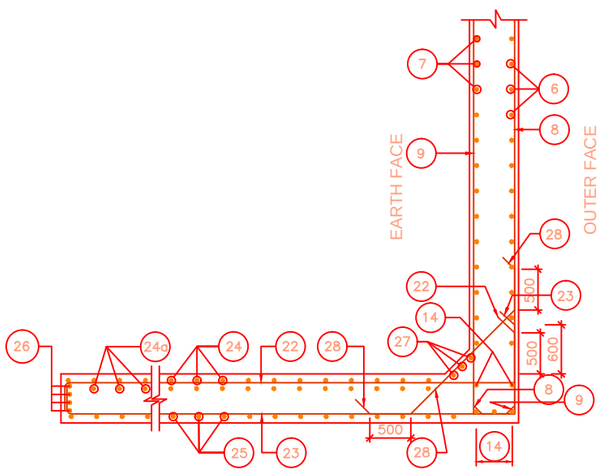
DETAIL OF MESH
TYPE "M2" 8 ϕ
(UNDER JACK LOCATION)
(IN TWO LAYERS)
(SCALE 1:20)
(WHERE C= DIA OF JACK)



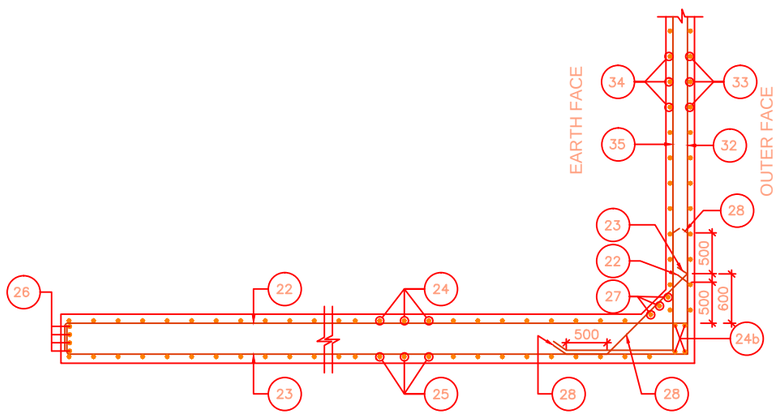
PLAN AT FOUNDATION LEVEL
(SCALE 1:150)



SECTION 2-2
(SCALE 1:75)



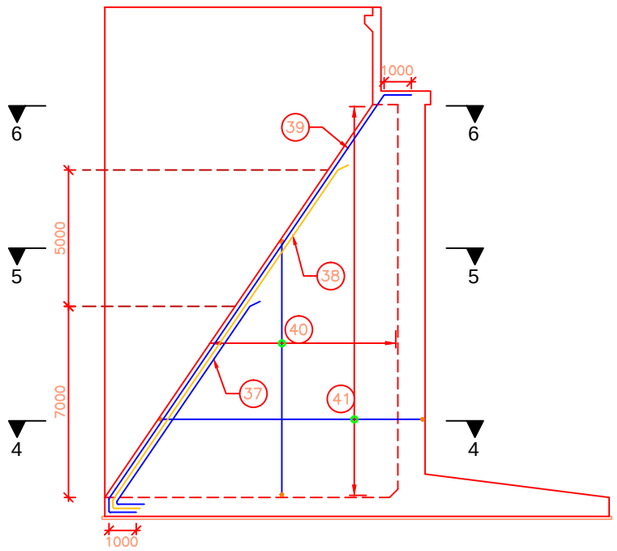
JUNCTION DETAILS OF RCC SCREEN WALL AND RCC SOLID RETURN WALL
(SCALE: 1:50)



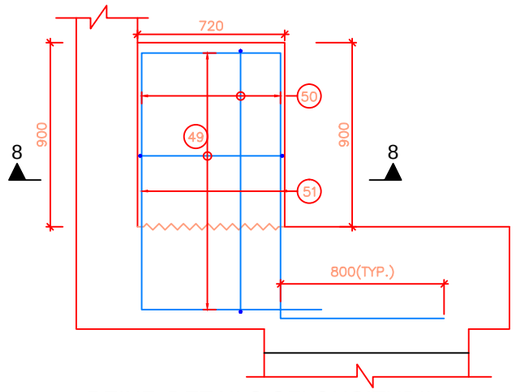
JUNCTION DETAILS OF RCC SOLID RETURN WALL & DIRT WALL
(SCALE: 1:50)

LEGEND
EARTH FACE/TOP FACE
OUTER FACE/BOTTOM FACE

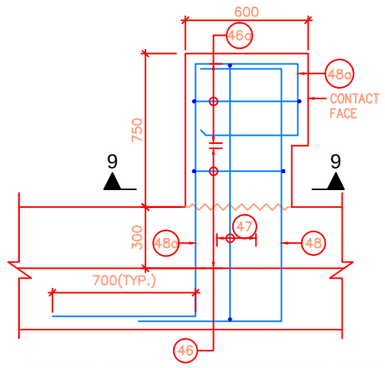
EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Prepared By		J.CHAUHAN	DRAWING TITLE: REINFORCEMENT DETAILS OF COUNTER FORT TYPE ABUTMENT (A1) & ITS COMPONENTS FOR MAJOR BRIDGE CH:- 61+930 OVER HUGDI (1x35.00+1x20.00m) PACKAGE-IV (BENIGHAT-MUGLING)	Scale: As Shown	Date: Nov..2017
				Designed By		V.CHAUDHARY			
				Checked By		P.K.KHAN	Drawing No.: NIRTTP/NAG-MUG/ HUGDI/SUB-02		(SHEET 1 OF 2)
				Approved By		B.N.SINGH			



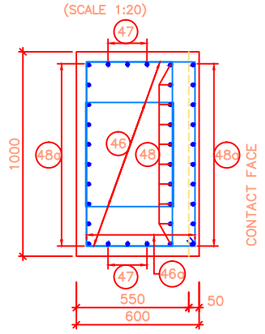
REINFORCEMENT DETAILS OF RCC COUNTERFORT
(SCALE 1:150)



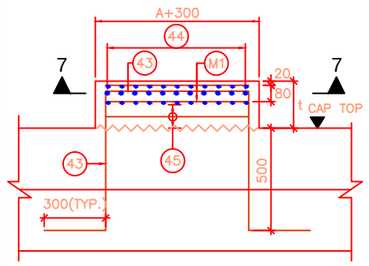
REINF. DETAILS OFLONGITUDINAL SEISMICSTOPPER
(DIRT WALL REINFORCEMENT NOT SHWON FOR CLARITY)
(SCALE 1:20)



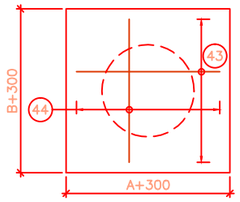
REINF. DETAILS OF TRANSVERSE SEISMIC STOPPER
(SCALE 1:20)



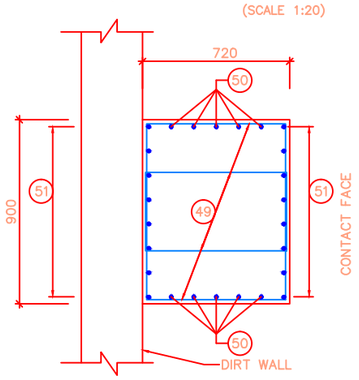
SECTION 9-9
(SCALE 1:20)



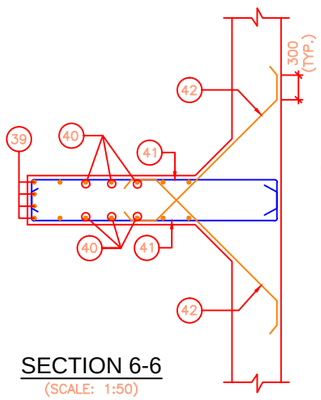
REINF. DETAILS OF PEDESTAL
(SCALE 1:20)
WHERE, A SIZE OF BEARING
AND t IS HEIGHT OF PEDESTAL



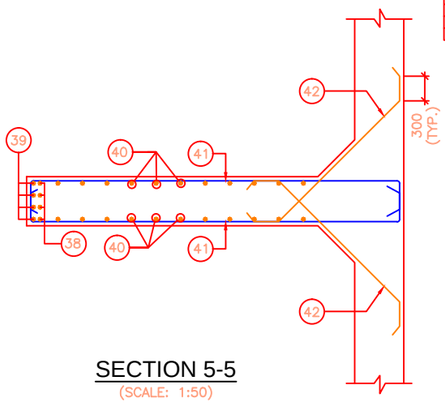
SECTION 7-7
(SCALE 1:20)
WHERE, A/B SIZE OF BEARING



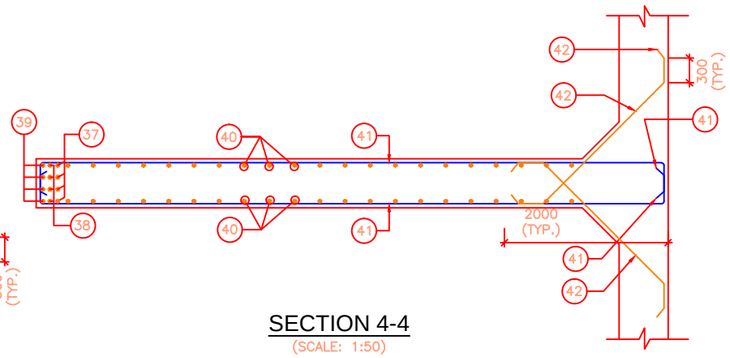
SECTION 8-8
(SCALE 1:20)
WHERE, A/B SIZE OF BEARING



SECTION 6-6
(SCALE: 1:50)



SECTION 5-5
(SCALE: 1:50)



SECTION 4-4
(SCALE: 1:50)

LEGEND
EARTH FACE/TOP FACE
OUTER FACE/BOTTOM FACE

COUNTERFORT	37	32 ϕ −4 Nos.		
	38	32 ϕ −4 Nos.		
	39	32 ϕ −4 Nos.		
	40	16 ϕ @150 C/C		
	41	16 ϕ @150 C/C		
	42	16 ϕ @150 C/C		
RCC PEDESTAL	43	12 ϕ @ 75c/c	BOTH FACES	
	44	12 ϕ @ 75c/c	BOTH FACES	
	45	2L−12ϕ@ 150c/c	STRPS.	
TRANSVERSE SEISMIC STOPPER	46	4L−16ϕ@ 125c/c	STRPS.	
	46c	2L−16ϕ@ 125c/c	STRPS.	
	47	16 ϕ −3 Nos.	BOTH FACES	
	48	32 ϕ −10 Nos.	BOTH FACES	
	48c	25 ϕ −10 Nos.	BOTH FACES	
LONG. SEISMIC STOPPER	49	4L−12ϕ@ 125c/c	STRPS.	
	50	16 ϕ −5 Nos.	BOTH FACES	
	51	32 ϕ −8 Nos.	BOTH FACES	

REINFORCEMENT SCHEDULE

	MARKS	DESCRIPTION	SHAPE
FOOTING & SCREEN WALL	1	16 ϕ @100 C/C	
	2	16 ϕ @100 C/C	
	3	16 ϕ @100 C/C	
	4	12 ϕ @100 C/C	
	5	12 ϕ @150 C/C	
	6	16 ϕ @150 C/C	
	7	16 ϕ @150 C/C	
	8	16 ϕ @150 C/C	
	9	12 ϕ @150 C/C	
	10	12 ϕ @150 C/C	
	11	12 ϕ @150 C/C	
	12	10 ϕ −2 Nos.	
	13	12 ϕ @150 C/C	
	14	12 ϕ −5 Nos.(ON EACH FACE)	
	15	12 ϕ @150 C/C	
FOOTING (TOE SIDE)	16	16 ϕ @150 C/C	
	17	2L−16 ϕ @150 C/C	
	18	25 ϕ @150 C/C	
	19	32 ϕ @100 C/C	
	19a	32 ϕ @100 C/C	
	20	5L12 ϕ @300 C/C	
RETURN WALL	21	20 ϕ −4 Nos. (2 LAYERS)	
	22	32 ϕ @150 C/C	
	23	16 ϕ @150 C/C	
	24	32 ϕ @150 C/C	
	24a	32 ϕ @150 C/C	
	24b	12 ϕ −4 Nos.	
	25	16 ϕ @150 C/C	
	26	20 ϕ −4 Nos.	
	27	12 ϕ −3 Nos.	
	28	12 ϕ @150 C/C	
BRACKET	29	12 ϕ −5 Nos.	
	30	12 ϕ @150 C/C	
	31	2L−10 ϕ STIRRUPS @ 300 C/C (3 LAYERS)	400
DIRT WALL	32	12 ϕ @150 C/C	
	33	12 ϕ @150 C/C	
	34	12 ϕ @150 C/C	
	35	20 ϕ @150 C/C	
	35a	16 ϕ −3 Nos. (2 LAYERS)	
SCREEN CAP	36	16 ϕ @150 C/C	
	36a	12 ϕ @150 C/C	
	36b	20 ϕ @150 C/C	

EMPLOYER	PROJECT	DESIGN CONSULTANT
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal

Prepared By		J.CHAUHAN
Designed By		V.CHAUDHARY
Checked By		P.K.KHAN
Approved By		B.N.SINGH

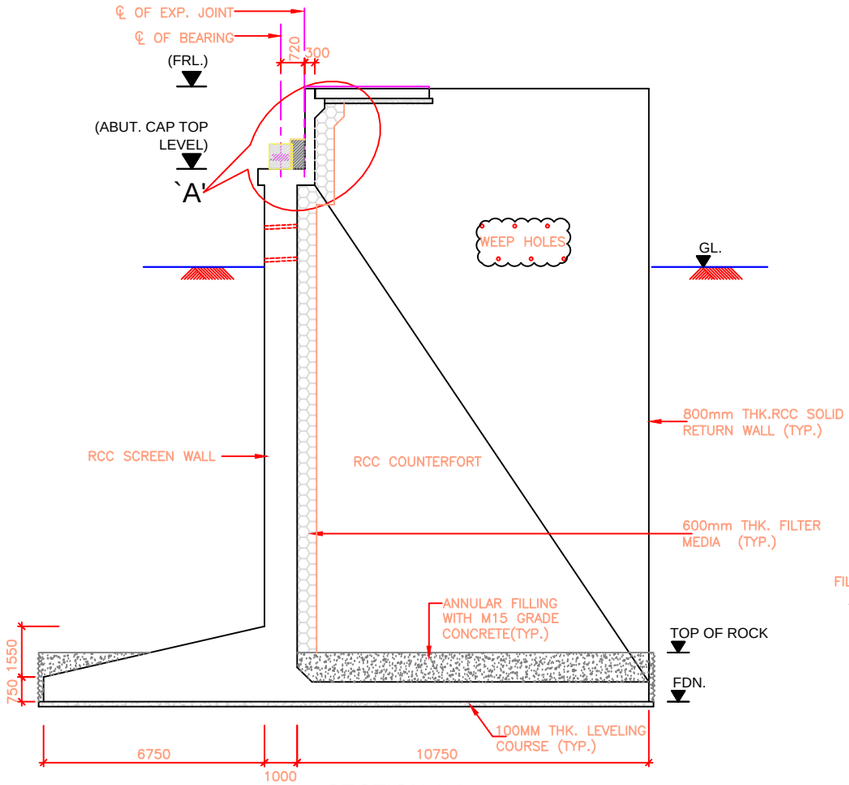
DRAWING TITLE:
REINFORCEMENT DETAILS OF COUNTER FORT TYPE ABUTMENT (A1) & ITS COMPONENTS FOR MAJOR BRIDGE CH:- 61+930 OVER HUGDI (1x35.00+1x20.00m)
PACKAGE-IV (BENIGHAT-MUGLING)

Drawing No.:
NIRTTP/NAG-MUG/ HUGDI/SUB-02

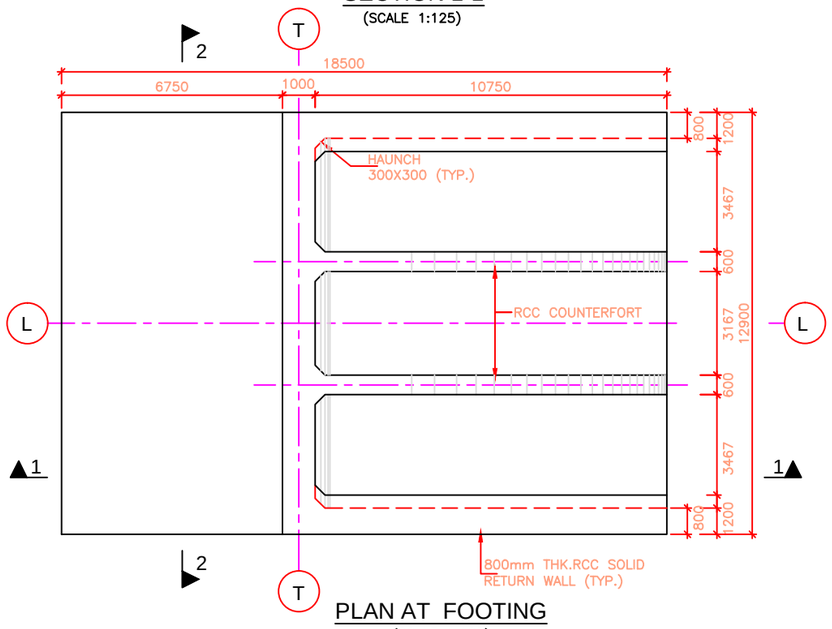
Scale: As Shown

Date: Nov..2017

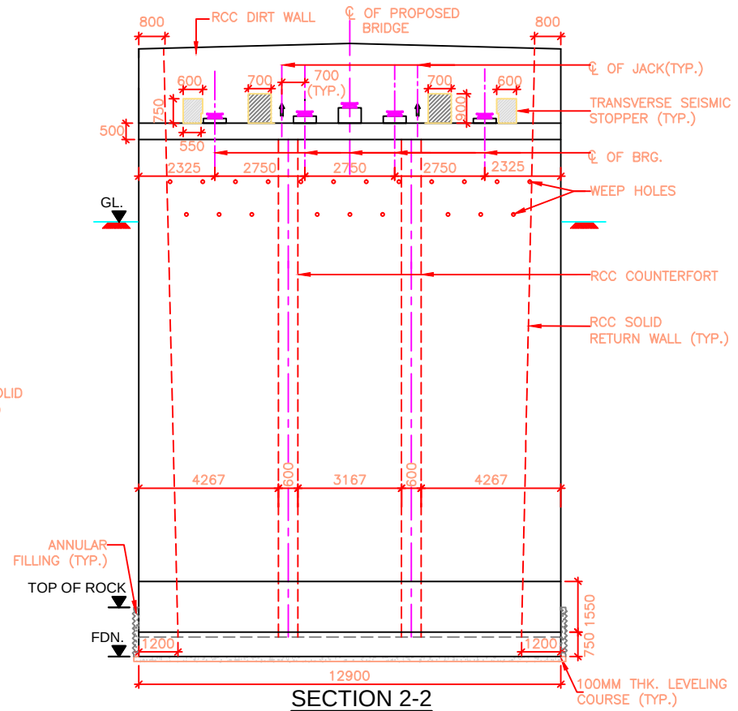
(SHEET 2 OF 2)



SECTION 1-1
(SCALE 1:125)



PLAN AT FOOTING
(SCALE 1:125)



SECTION 2-2
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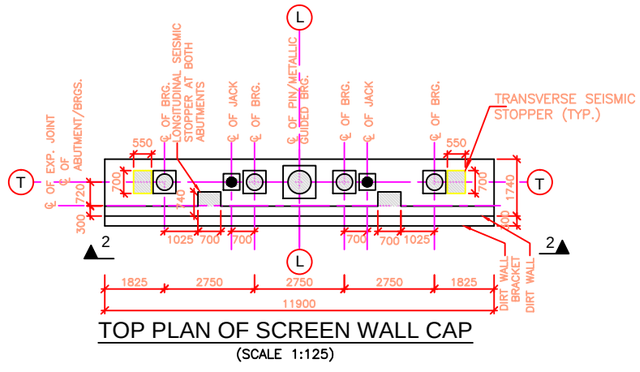


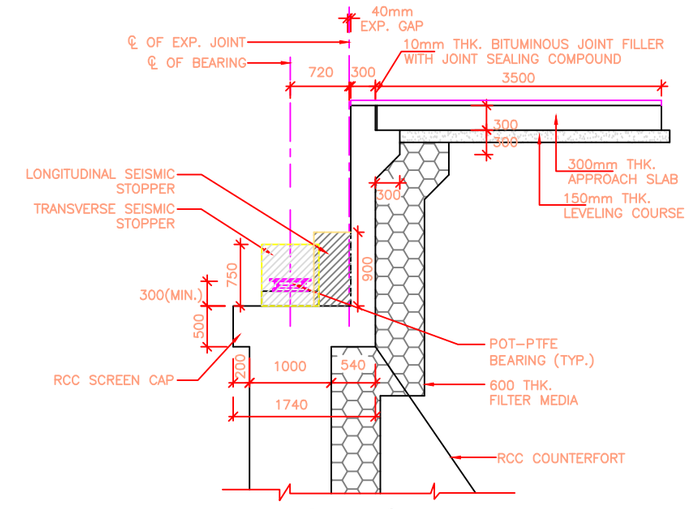
TOP PLAN OF SCREEN WALL CAP
(SCALE 1:125)

NOTES :-

1. ALL DIMENSIONS ARE IN MM, UNLESS OTHERWISE MENTIONED.
2. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED AND NO DIMENSION SHALL BE SCALED.
3. CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150mm CUBE AS FOLLOWS:
   a. LEVELING COURSE (UNDER FOUNDATION) – 10MPa
   b. LEVELING COURSE (UNDER APPROACH SLAB) – 15MPa
   c. FOUNDATION – 30MPa
   d. SUBSTRUCTURE – 30MPa
   e. APPROACH SLAB – 30MPa
   f. PEDESTAL – 40MPa
   g. SEISMIC STOPPER – 30MPa
4. UNTENSIONED REINFORCEMENT SHALL BE THERMO MECHANICALLY TREATED (TMT), HYSD BARS OF GRADE DESIGNATION Fe–500D CONFORMING TO IS: 1786.
5. MINIMUM CLEAR COVER TO OUTER MOST REINFORCEMENT SHALL BE AS UNDER
   a. SUBSTRUCTURE (EARTH FACE) – 75MM
   b. SUBSTRUCTURE (NON EARTH FACE) – 50MM
   c. FOUNDATION – 75MM
6. LL REPRESENTS LONGITUDINAL AXIS OF BRIDGE AND TT REPRESENTS TRANSVERSE AXIS OF ABUTMENT/FOUNDATION.
7. SAFE BEARING CAPACITY AT THE PROPOSED FOUNDING LEVEL HAS BEEN CONSIDERED AS 50 T/M² ON THE BASIS OF SUB SURFACE EXPLORATION RESULTS. THIS SHALL GOT CONFIRMED BEFORE EXECUTION.
8. THE LOCATION OF JACKS FOR LIFTING UP THE SUPERSTRUCTURE SHALL BE DISTINCTLY ETCHED ON SOFFIT OF SUPERSTRUCTURE AND ON TOP OF ABUTMENT CAP.
9. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING DRGS.
   - GENERAL ARRANGEMENT DRAWING REFER:
     –NIRTTP/NAG–MUG/HUGDI/GAD
   - REINFORCEMENT DETAILS OF COUNTER FORT TYPE ABUTMENT (A2) & ITS COMPONENTS, DIRT WALL, RETURN WALL, PEDESTAL AND SEISMIC STOPPER REFER:
     –NIRTTP/NAG–MUG/HUGDI/SUB–04(SHEET 1 & 2)

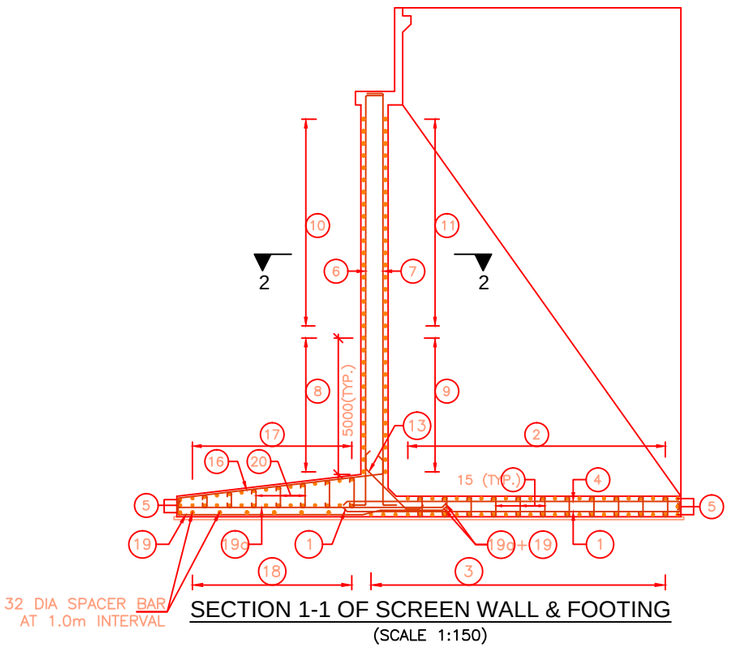
LEVEL SCHEDULE AT ABUTMENT (A2)

MARK	FRL (m)	ABUTMENT CAP TOP LVL. (m)	GR. LEVEL (m)	FDN. LEVEL (m)
ABUTMENT (A2)	304.000	301.709	296.338	285.070

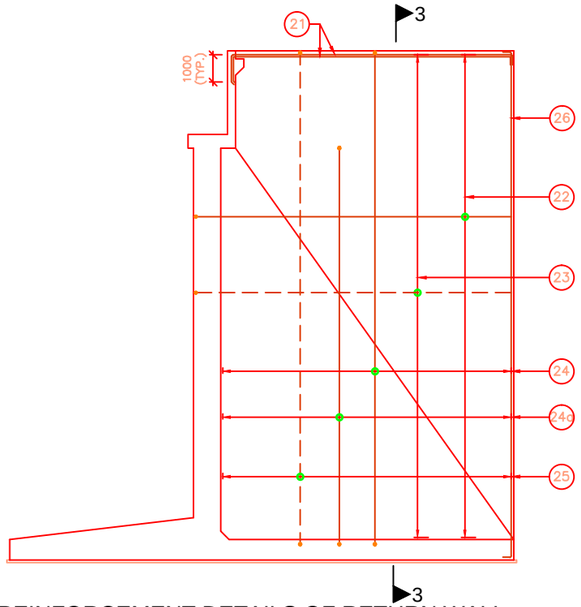


DETAIL-`A'
(SCALE 1:50)

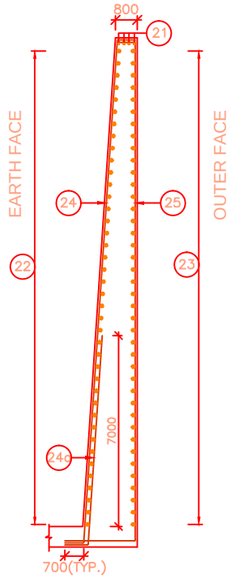
EMPLOYER	PROJECT	DESIGN CONSULTANT			DRAWING TITLE:	Scale:	Date: Nov..2017
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Prepared By	J.CHAUHAN	DIMENSIONAL DETAILS OF COUNTER FORT TYPE ABUTMENT (A2) & ITS COMPONENTS FOR MAJOR BRIDGE CH:- 61+930 OVER HUGDI (1x35.00+1x20.00m) PACKAGE-IV (BENIGHAT-MUGLING)	As Shown	
			Designed By	V.CHAUDHARY			
			Checked By	P.K.KHAN			
			Approved By	B.N.SINGH	Drawing No.: NIRTTP/NAG-MUG/ HUGDI/SUB-03		



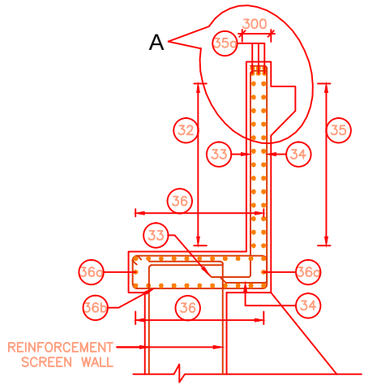
SECTION 1-1 OF SCREEN WALL & FOOTING
(SCALE 1:150)



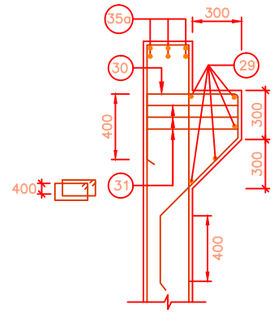
REINFORCEMENT DETAILS OF RETURN WALL
(SCALE 1:150)



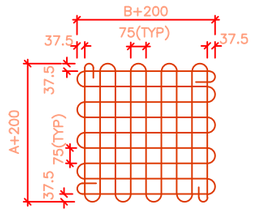
SECTION 3-3
(SCALE 1:150)



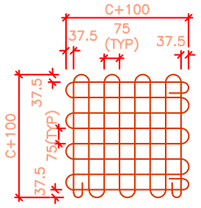
REINF. DETAILS OF DIRT WALL AND RCC ABUTMENT CAP
(SCALE 1:50)



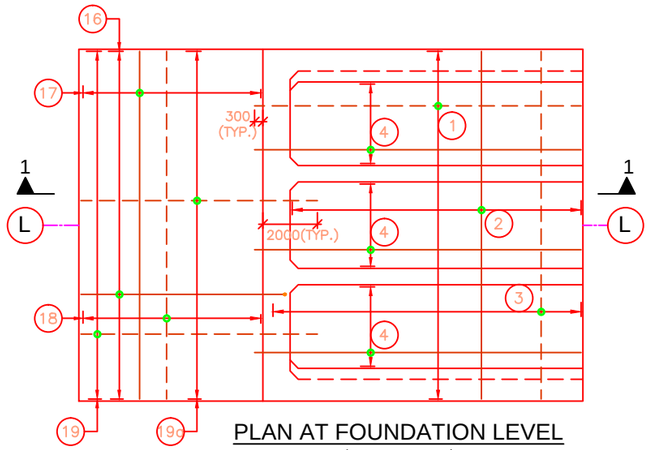
DETAIL `A'
(SCALE 1:25)



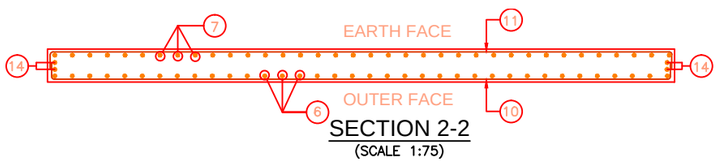
DETAIL OF MESH
TYPE "M1" 8 ₹
(IN PEDESTAL) (IN TWO LAYERS)
(SCALE 1:20)
(WHERE A & B SIZE OF BEARING)



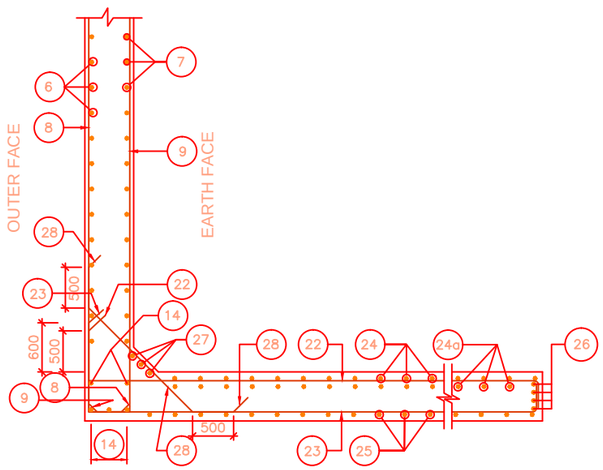
DETAIL OF MESH
TYPE "M2" 8 ₹
(UNDER JACK LOCATION)
(IN TWO LAYERS)
(SCALE 1:20)
(WHERE C= DIA OF JACK)



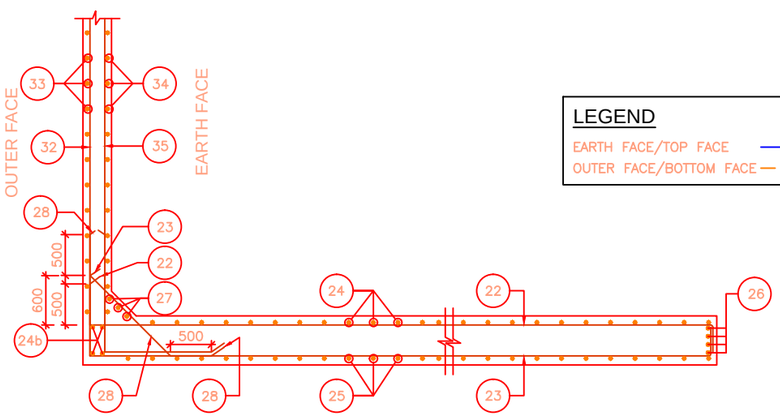
PLAN AT FOUNDATION LEVEL
(SCALE 1:150)



SECTION 2-2
(SCALE 1:75)



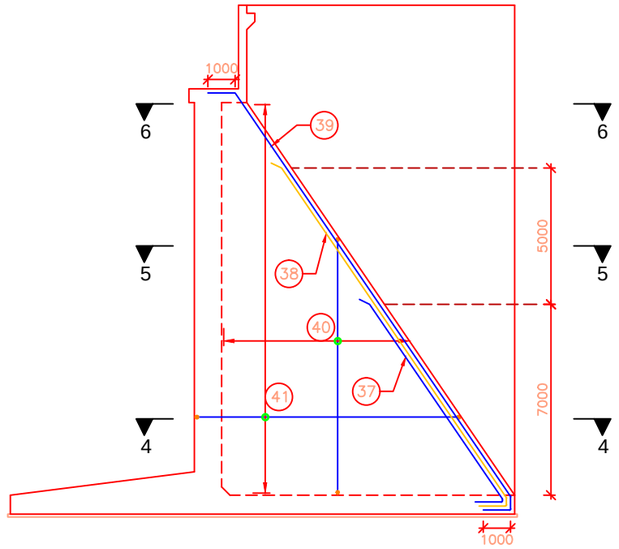
JUNCTION DETAILS OF RCC SCREEN WALL AND RCC SOLID RETURN WALL
(SCALE: 1:50)



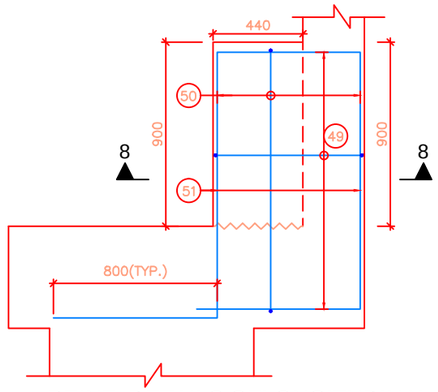
JUNCTION DETAILS OF RCC SOLID RETURN WALL & DIRT WALL
(SCALE: 1:50)

LEGEND
EARTH FACE/TOP FACE
OUTER FACE/BOTTOM FACE

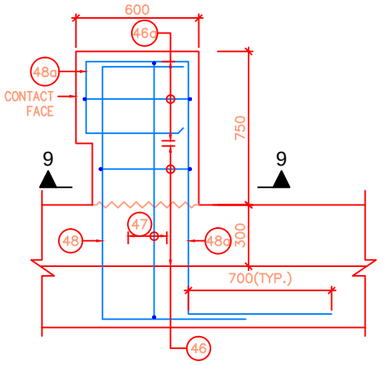
EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Prepared By	J.CHAUHAN	DRAWING TITLE: REINFORCEMENT DETAILS OF COUNTER FORT TYPE ABUTMENT (A2) & ITS COMPONENTS FOR MAJOR BRIDGE CH:- 61+930 OVER HUGDI (1x35.00+1x20.00m) PACKAGE-IV (BENIGHAT-MUGLING) Drawing No.: NIRTTP/NAG-MUG/ HUGDI/SUB-04	Scale: As Shown	Date: Nov..2017 (SHEET 1 OF 2)
			Designed By	V.CHAUDHARY			
			Checked By	P.K.KHAN			
			Approved By	B.N.SINGH			



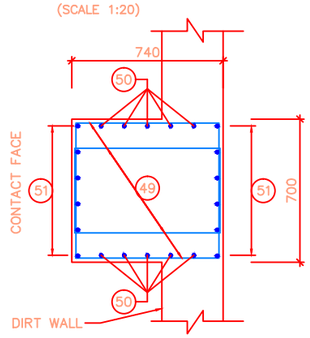
REINFORCEMENT DETAILS OF RCC COUNTERFORT
(SCALE 1:150)



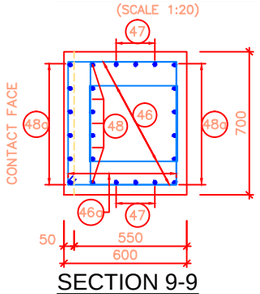
REINF. DETAILS OFLONGITUDINAL SEISMICSTOPPER
(DIRT WALL REINFORCEMENT NOT SHWON FOR CLARITY)
(SCALE 1:20)



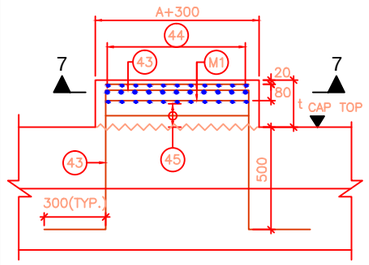
REINF. DETAILS OF TRANSVERSE SEISMIC STOPPER
(SCALE 1:20)



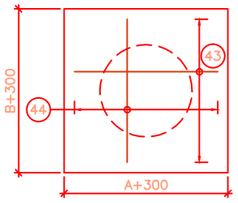
SECTION 8-8
(SCALE 1:20)
WHERE, A/B SIZE OF BEARING



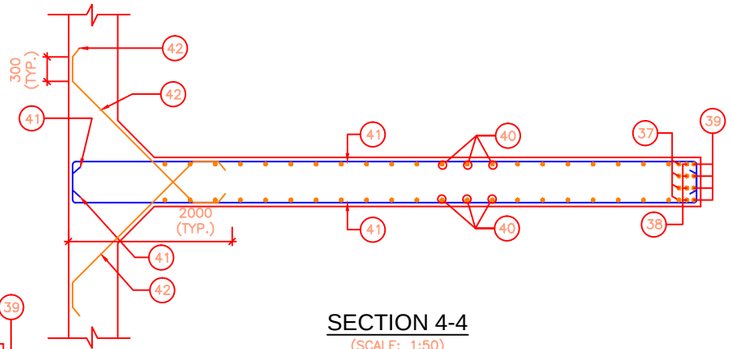
SECTION 9-9
(SCALE 1:20)



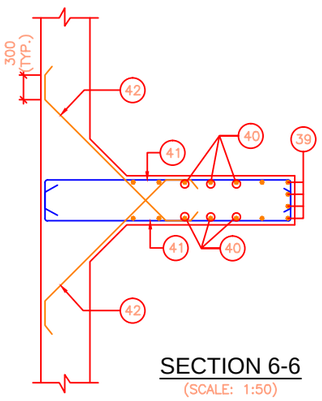
REINF. DETAILS OF PEDESTAL
(SCALE 1:20)
WHERE, A SIZE OF BEARING
AND t IS HEIGHT OF PEDESTAL



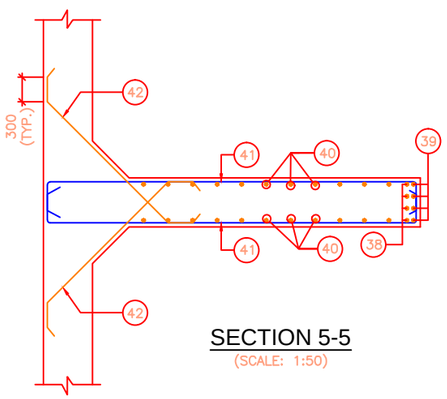
SECTION 7-7
(SCALE 1:20)
WHERE, A/B SIZE OF BEARING



SECTION 4-4
(SCALE: 1:50)



SECTION 6-6
(SCALE: 1:50)



SECTION 5-5
(SCALE: 1:50)

COUNTERFORT	37	32 ϕ −4 Nos.	
	38	32 ϕ −4 Nos.	
	39	32 ϕ −4 Nos.	
	40	16 ϕ @150 C/C	
	41	16 ϕ @150 C/C	
	42	16 ϕ @150 C/C	
RCC PEDESTAL	43	12 ϕ @ 75c/c	BOTH FACES
	44	12 ϕ @ 75c/c	BOTH FACES
	45	2L−12ϕ@ 150c/c	STRPS.
TRANSVERSE SEISMIC STOPPER	46	4L−12ϕ@ 125c/c	STRPS.
	46c	2L−12ϕ@ 125c/c	STRPS.
	47	16 ϕ −3 Nos.	BOTH FACES
	48	32 ϕ −6 Nos.	BOTH FACES
	48c	25 ϕ −6 Nos.	BOTH FACES
LONG. SEISMIC STOPPER	49	4L−12ϕ@ 150c/c	STRPS.
	50	16 ϕ −5 Nos.	BOTH FACES
	51	32 ϕ −6 Nos.	BOTH FACES

LEGEND
EARTH FACE/TOP FACE
OUTER FACE/BOTTOM FACE

REINFORCEMENT SCHEDULE

	MARKS	DESCRIPTION	SHAPE
FOOTING & SCREEN WALL	1	16 ϕ @100 C/C	
	2	16 ϕ @100 C/C	
	3	16 ϕ @100 C/C	
	4	12 ϕ @100 C/C	
	5	12 ϕ @150 C/C	
	6	16 ϕ @150 C/C	
	7	16 ϕ @150 C/C	
	8	16 ϕ @150 C/C	
	9	12 ϕ @150 C/C	
	10	12 ϕ @150 C/C	
	11	12 ϕ @150 C/C	
	12	10 ϕ −2 Nos.	
	13	12 ϕ @150 C/C	
	14	12 ϕ −5 Nos.(ON EACH FACE)	
	15	12 ϕ @150 C/C	
FOOTING (TOE SIDE)	16	16 ϕ @150 C/C	
	17	2L−16 ϕ @150 C/C	
	18	25 ϕ @150 C/C	
	19	32 ϕ @100 C/C	
	19a	32 ϕ @100 C/C	
	20	5L12 ϕ @300 C/C	
RETURN WALL	21	20 ϕ −4 Nos. (2 LAYERS)	
	22	32 ϕ @150 C/C	
	23	16 ϕ @150 C/C	
	24	32 ϕ @150 C/C	
	24a	32 ϕ @150 C/C	
	24b	12 ϕ −4 Nos.	
	25	16 ϕ @150 C/C	
	26	20 ϕ −4 Nos.	
	27	12 ϕ −3 Nos.	
	28	12 ϕ @150 C/C	
BRACKET	29	12 ϕ −5 Nos.	
	30	12 ϕ @150 C/C	
	31	2L−10 ϕ STIRRUPS @ 300 C/C (3 LAYERS)	400
DIRT WALL	32	12 ϕ @150 C/C	
	33	12 ϕ @150 C/C	
	34	12 ϕ @150 C/C	
	35	20 ϕ @150 C/C	
	35a	16 ϕ −3 Nos. (2 LAYERS)	
SCREEN CAP	36	16 ϕ @150 C/C	
	36a	12 ϕ @150 C/C	
	36b	20 ϕ @150 C/C	

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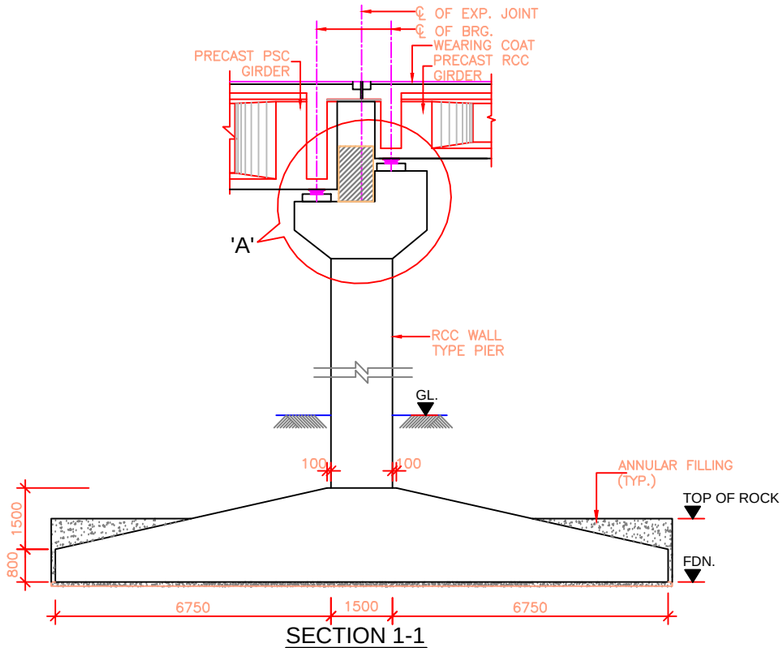
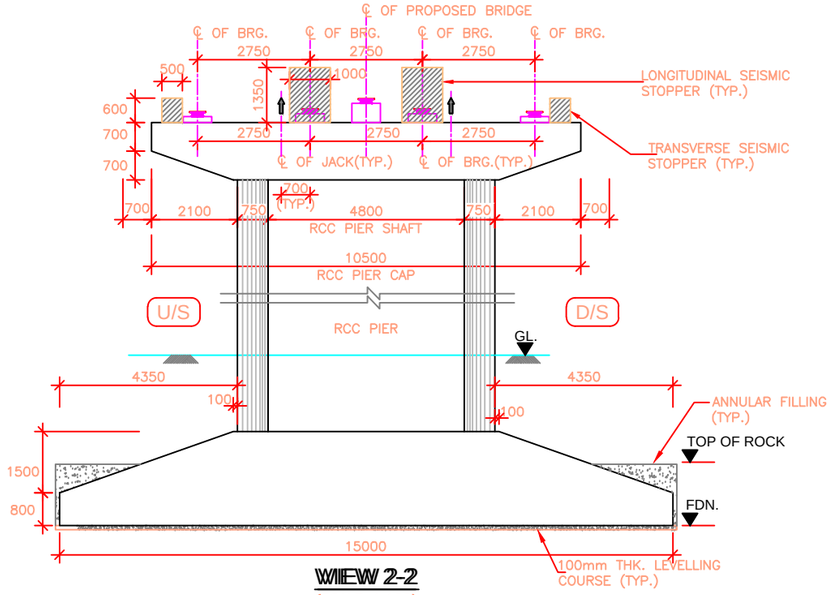
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal				

Prepared By		J.CHAUHAN	DRAWING TITLE: REINFORCEMENT DETAILS OF COUNTER FORT TYPE ABUTMENT (A2) & ITS COMPONENTS FOR MAJOR BRIDGE CH:- 61+930 OVER HUGDI (1x35.00+1x20.00m) PACKAGE-IV (BENIGHAT-MUGLING)	Scale: As Shown	Date: Nov..2017
Designed By		V.CHAUDHARY			
Checked By		P.K.KHAN			(SHEET 2 OF 2)
Approved By		B.N.SINGH	Drawing No.: NIRTTP/NAG-MUG/ HUGDI/SUB-04		



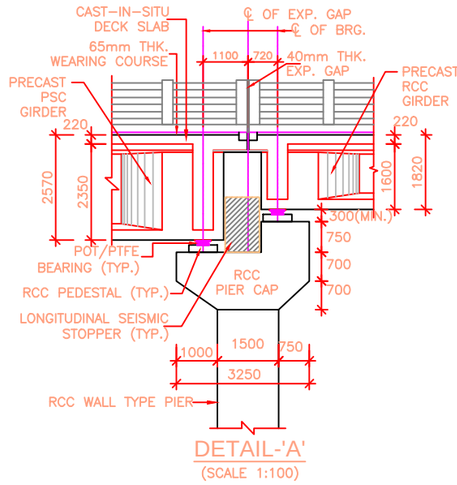
SECTION 1-1
(SCALE 1:100)



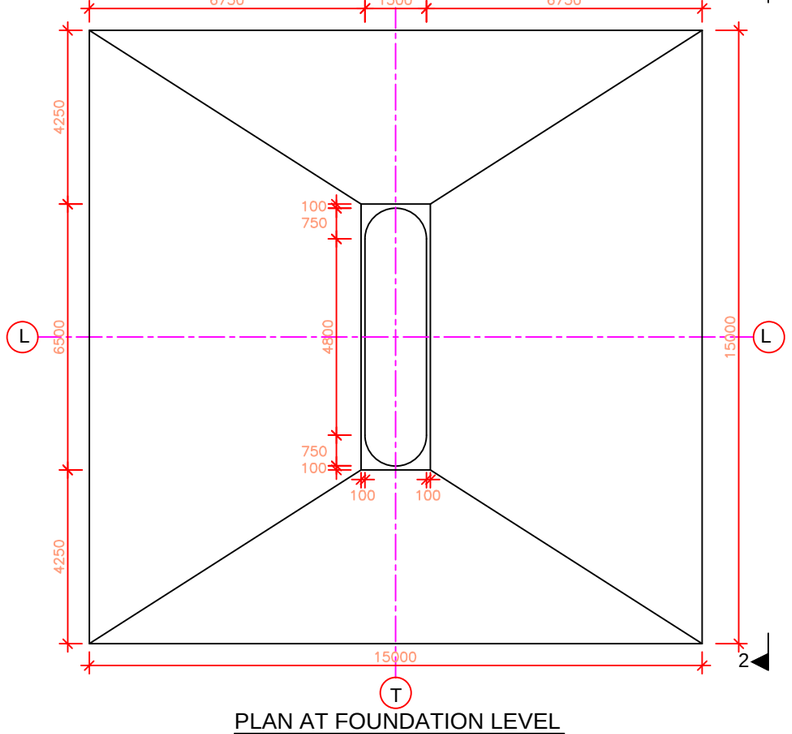
VIEW 2-2
(SCALE 1:100)

NOTES :-

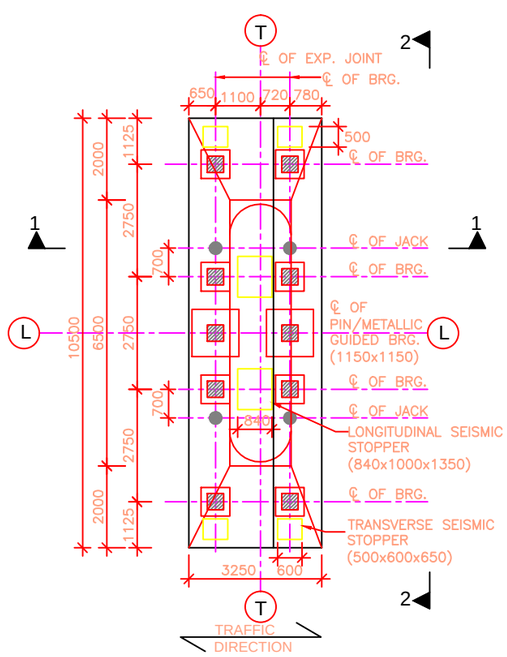
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
2. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED AND NO DIMENSION SHALL BE SCALED.
3. CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150MM CUBE AS FOLLOWS:
   a. LEVELING COURSE (UNDER FOUNDATION) – 10MPa
   b. FOUNDATION – 30MPa
   c. SUBSTRUCTURE – 30MPa
   d. APPROACH SLAB – 30MPa
   e. PEDESTAL – 40MPa
   f. SEISMIC STOPPER – 40MPa
4. UNTENSIONED REINFORCEMENT SHALL BE THERMO MECHANICALLY TREATED (TMT), HYSD BARS OF GRADE DESIGNATION FE–500D CONFORMING TO IS: 1786.
5. MINIMUM CLEAR COVER TO OUTER MOST REINFORCEMENT SHALL BE AS UNDER
   a. SUBSTRUCTURE (EARTH FACE) – 75MM
   b. SUBSTRUCTURE (NON EARTH FACE) – 50MM
   c. FOUNDATION – 75MM
6. LL REPRESENTS LONGITUDINAL AXIS OF BRIDGE AND TT REPRESENTS TRANSVERSE AXIS OF PIER/FOUNDATION.
7. SAFE BEARING CAPACITY AT THE PROPOSED FOUNDING LEVEL HAS BEEN CONSIDERED AS 50 T/M² ON THE BASIS OF SUB SURFACE EXPLORATION RESULTS. THIS SHALL GOT CONFIRMED BEFORE EXECUTION.
8. THE LOCATION OF JACKS FOR LIFTING UP THE SUPERSTRUCTURE SHALL BE DISTINCTLY ETCHED ON SOFFIT OF SUPERSTRUCTURE AND ON TOP OF PIER CAP.
9. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING DRGS.
   - GENERAL ARRANGEMENT DRAWING REFER: –NIRTTP/NAG–MUG/HUGDI/GAD
   - REINFORCEMENT DETAILS OF PIER SHAFT, PIER CAP, PEDESTAL AND SEISMIC STOPPER REFER: –NIRTTP/NAG–MUG/HUGDI/SUB–06(SHEET1&2)



DETAIL-'A'
(SCALE 1:100)



PLAN AT FOUNDATION LEVEL



PLAN AT PIER CAP LEVEL
(SCALE 1:100)

LEVEL SCHEDULE

MARK	FRL (m)	PIER CAP TOP LVL. (m)	GR. LEVEL (m)	FDN. LEVEL (m)
PIER	304.000	300.960	291.143	284.070

LEGEND:-

– BEARING LOCATION IN PLAN

– JACK LOCATION IN PLAN

– JACK LOCATION IN ELEVATION

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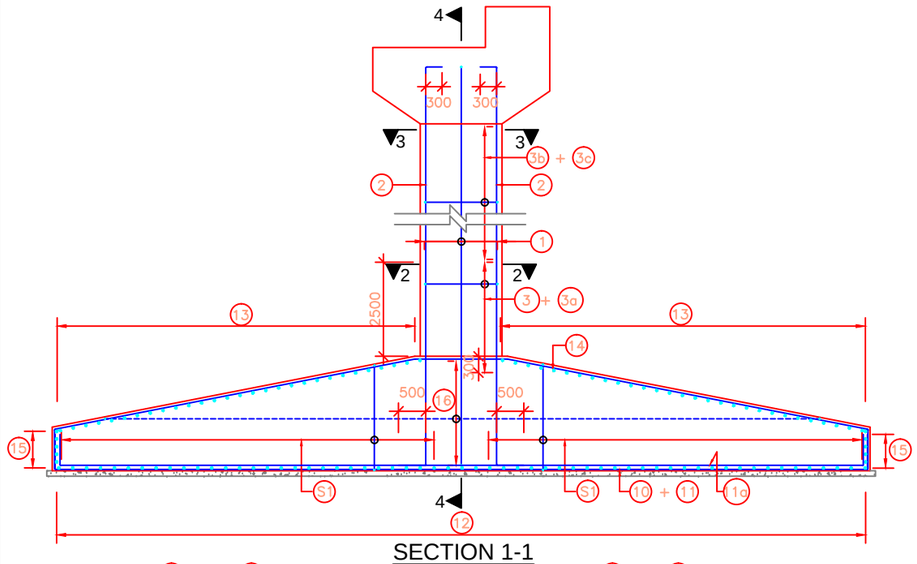
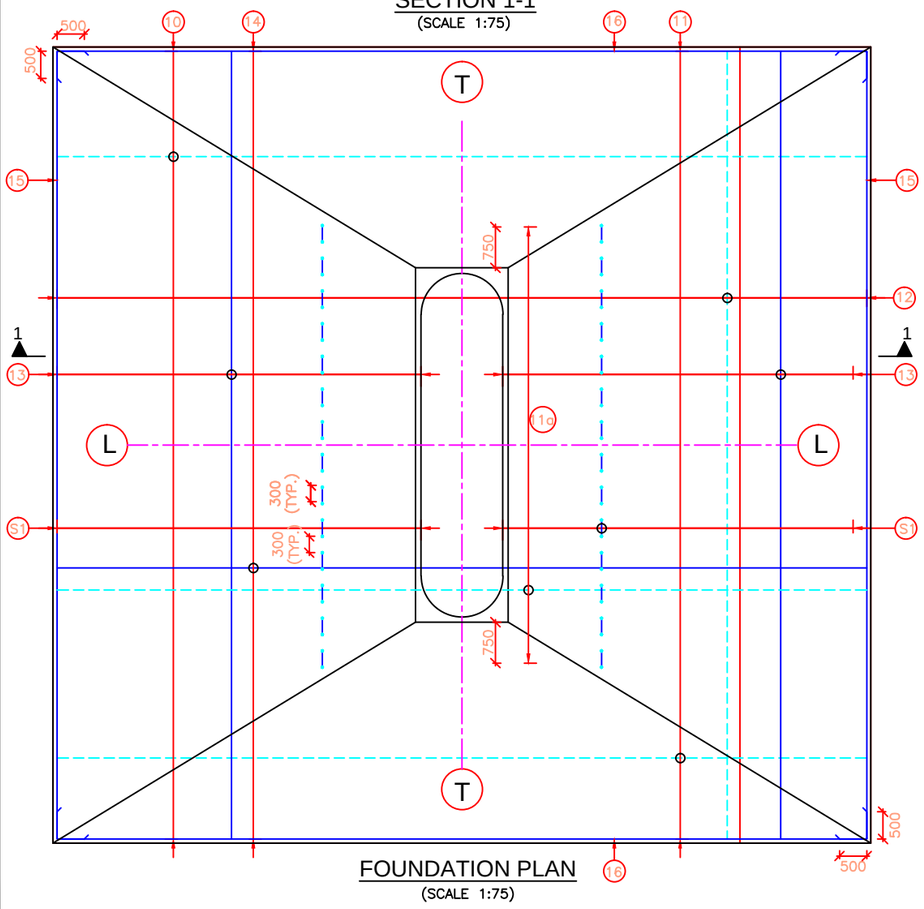
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Prepared By		J.CHAUHAN	DRAWING TITLE: DIMENSIONAL DETAILS OF PIER AND FOUNDATION AT CH. 61+930Km OVER HUGDI KHOLA PACKAGE-IV(BENIGHAT-MUGLING)
				Designed By		V.CHAUDHARY	
				Checked By		P.K.KHAN	Drawing No.: NIRTTP/NAG-MUG/HUGDI/SUB-05
				Approved By		B.N.SINGH	

Scale: As Shown

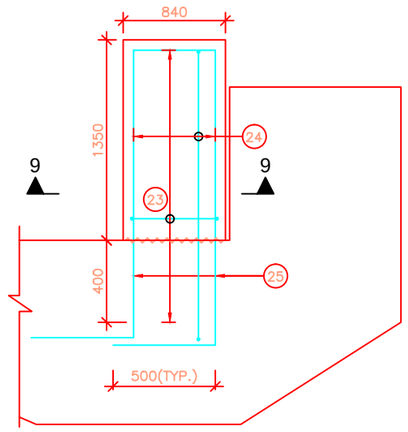
Date: Nov..2017



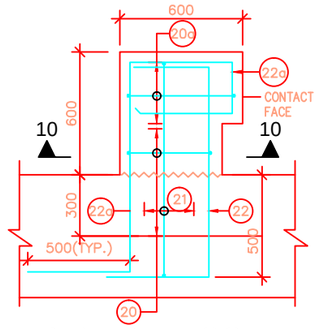
SECTION 1-1
(SCALE 1:75)



FOUNDATION PLAN
(SCALE 1:75)



REINF. DETAILS OF
LONGITUDINAL SEISMIC STOPPER
(SCALE 1:20)

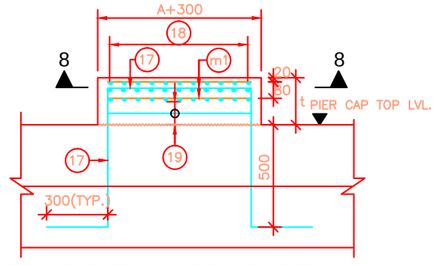


REINF. DETAILS OF
TRANSVERSE SEISMIC STOPPER
(SCALE 1:20)

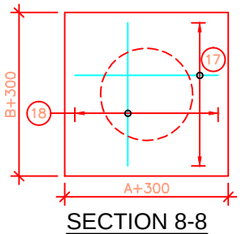
NOTES :–

1. ALL DIMENSIONS ARE IN mm, UNLESS OTHERWISE MENTIONED.
2. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED AND NO DIMENSION SHALL BE SCALED.
3. CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150mm CUBE AS FOLLOWS:
   a. LEVELING COURSE (UNDER FOUNDATION) – 10MPa
   b. FOUNDATION – 30MPa
   c. SUBSTRUCTURE – 30MPa
   d. PEDESTAL – 40MPa
4. THE REINFORCING BARS SHALL BE OF THERMO MECHANICALLY TREATED/CORROSION RESISTANT STEEL (TMT\CRS) (GRADE DESIGNATION Fe–500D) CONFORMING TO IS:1786 STANDARDS.
5. MINIMUM CLEAR COVER TO OUTER MOST REINFORCEMENT SHALL BE AS UNDER:–
   a. SUBSTRUCTURE (EARTH FACE) – 75MM
   b. SUBSTRUCTURE (NON EARTH FACE) – 50MM
   c. FOUNDATION – 75MM
6. LL REPRESENTS LONGITUDINAL AXIS OF BRIDGE AND TT REPRESENTS TRANSVERSE AXIS OF ABUTMENT/FOUNDATION.
7. MINIMUM ANCHORAGE LENGTH OF REINFORCEMENT SHALL BE AS UNDER:
   CONCRETE GRADE – M–30 – 40 x DIA OF BAR
   CONCRETE GRADE – M–35 – 36 x DIA OF BAR
   CONCRETE GRADE – M–40 – 34 x DIA OF BAR
   CONCRETE GRADE – M–45 – 32 x DIA OF BAR
   (WHERE DIA OF BAR < = 32mm.)
8. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING DRGS.
   - GENERAL ARRANGEMENT DRAWING REFER: NIRTTP/NAG–MUG/HUGDI/GAD
   - DIMENSIONAL DETAILS OF PIER AND FOUNDATION REFER: NIRTTP/NAG–MUG/HUGDI/SUB–05

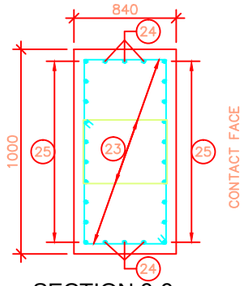
LEGEND
EARTH FACE/BOTTOM FACE
NON EARTH FACE/TOP FACE



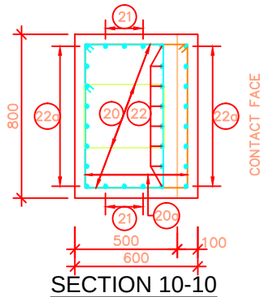
REINF. DETAILS OF PEDESTAL
(SCALE 1:20)
WHERE, A SIZE OF BEARING
AND t IS HEIGHT OF PEDESTAL



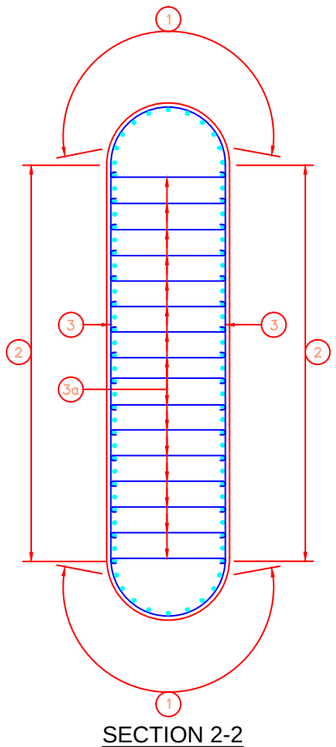
SECTION 8-8
(SCALE 1:20)
WHERE, A/B SIZE OF BEARING



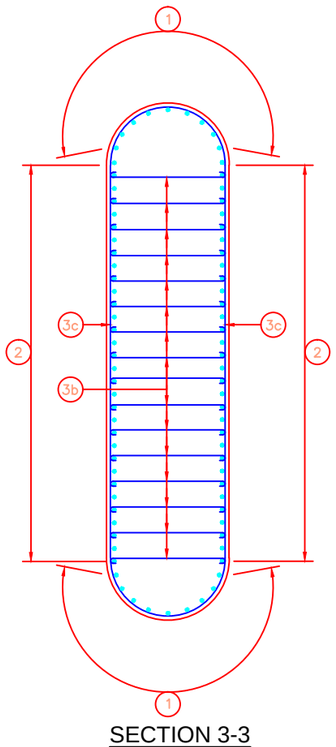
SECTION 9-9
(SCALE 1:20)
WHERE, A/B SIZE OF BEARING



SECTION 10-10
(SCALE 1:20)

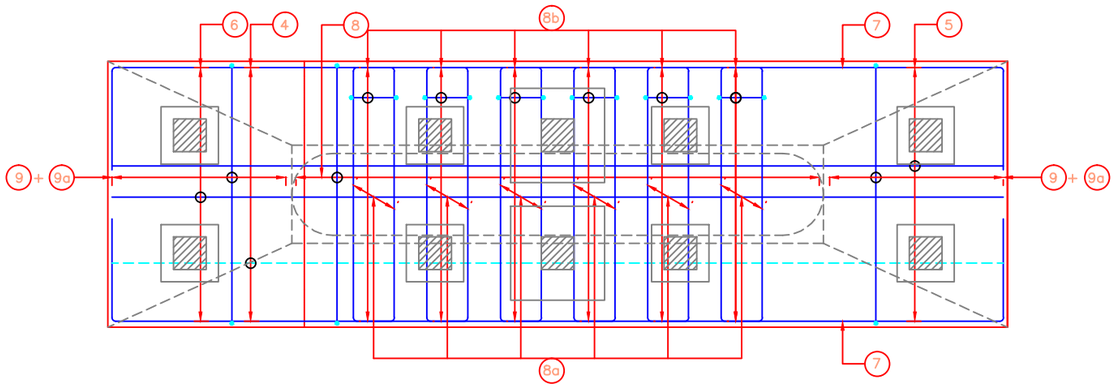


SECTION 2-2
(SCALE 1:50)



SECTION 3-3
(SCALE 1:50)

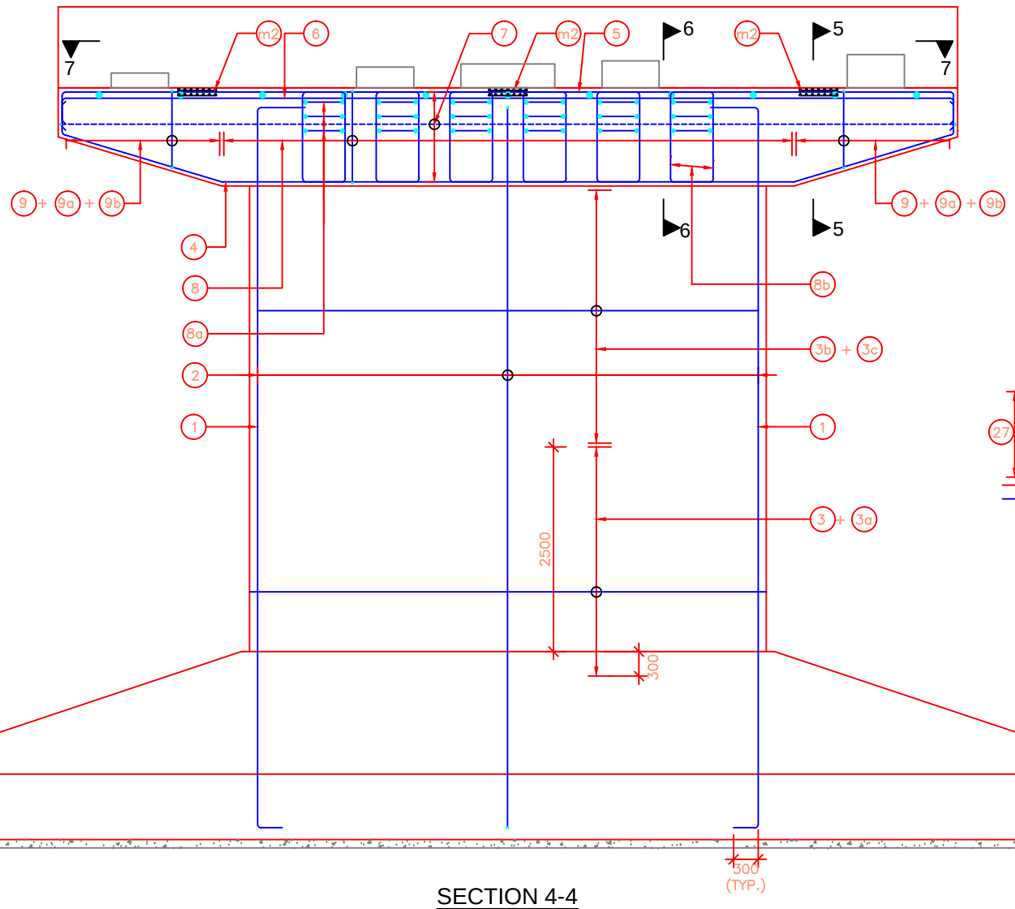
EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Prepared By		J.CHAUHAN	DRAWING TITLE: REINFORCEMENT DETAILS OF PIER SHAFT, PIER CAP, PEDESTAL AND SEISMIC STOPPER OF MINOR BRIDGE AT CH. 61+930Km	Scale: As Shown	Date: Nov..2017
			Designed By		V.CHAUDHARY			
			Checked By		P.K.KHAN	Drawing No.: NIRTTP/NAG-MUG/HUGDI/SUB-06		(SHEET 1 OF 2)
			Approved By		B.N.SINGH			



VIEW - 7-7

(SCALE 1:50)

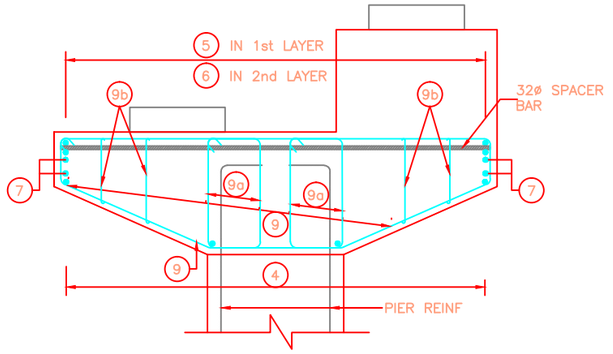
(SHOWING PIER CAP REIN.)



SECTION 4-4

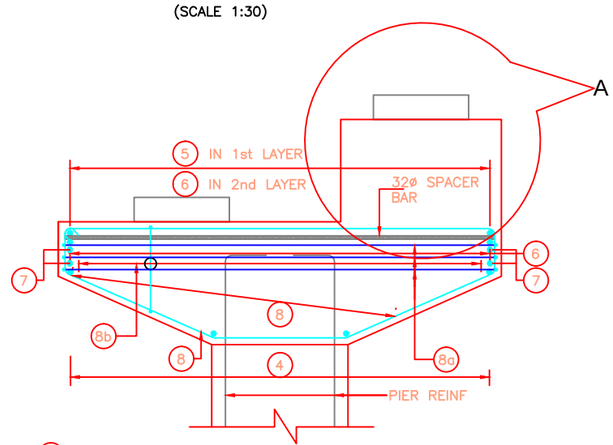
(SCALE 1:50)

(FOUNDATION REINFORCEMENT NOT SHOWN FOR CLARITY)



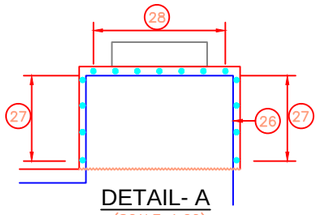
SECTION 5-5

(SCALE 1:30)



SECTION 6-6

(SCALE 1:30)



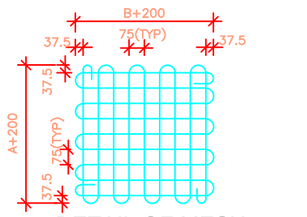
DETAIL- A

(SCALE 1:20)

LEGEND

EARTH FACE/BOTTOM FACE

NON EARTH FACE/TOP FACE



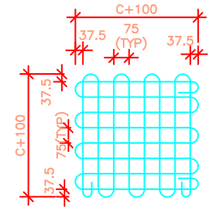
DETAIL OF MESH

TYPE "M1" 8ϕ

(IN PEDESTAL) (IN TWO LAYERS)

(SCALE 1:20)

(WHERE A & B SIZE OF BEARING)



DETAIL OF MESH

TYPE "M2" 8ϕ

(UNDER JACK LOCATION)

(IN TWO LAYERS)

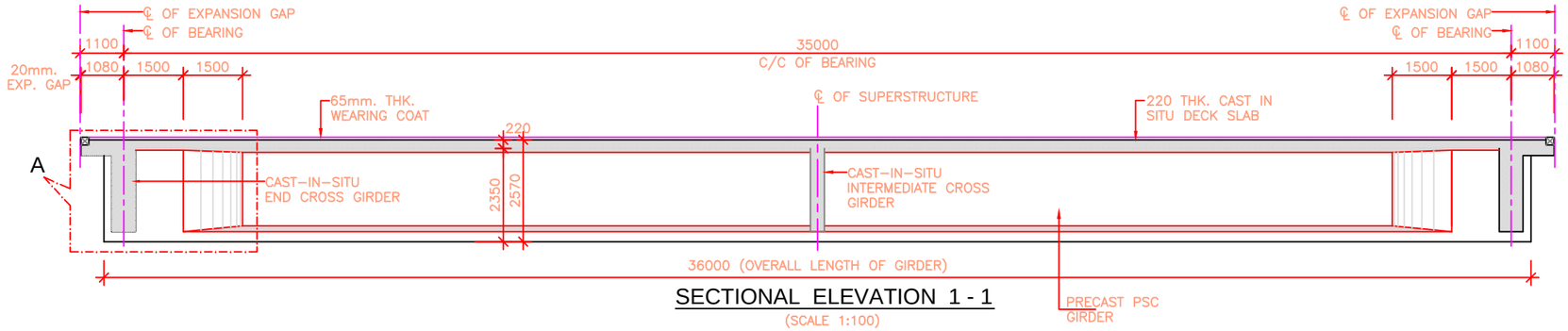
(SCALE 1:20)

(WHERE C= DIA OF JACK)

BAR SHAPE SCHEDULE

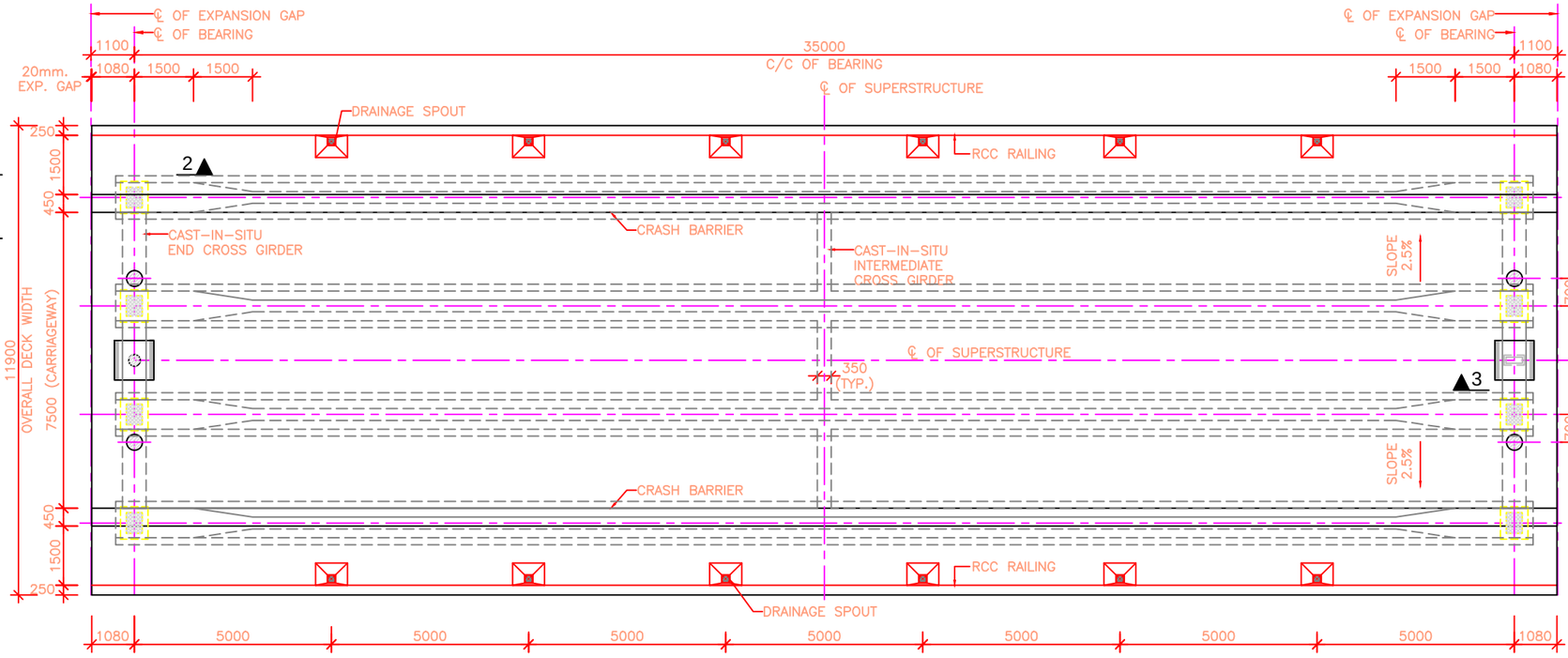
BAR MRKD.	DESCRIPTION	BAR SHAPE	REMARKS	
1	32 ϕ –15 NOS.		EACH FACE	PIER SHAFT
2	32 ϕ –48 NOS.		EACH FACE	
3	16 ϕ @ 125c/c			
3a	24LINK10ϕ@125 c/c			
3b	24LINK10ϕ@200 c/c			
3c	12ϕ @ 200c/c			
4	16 ϕ –21 NOS.	300 300		PIER CAP
5	32 ϕ –21 NOS.	300 300		
6	25 ϕ –21 NOS.	300 300		
7	12 ϕ –3 NOS.		EACH FACE	
8	2L–16ϕ@ 150c/c		STIRRUPS	
8a	12L–12ϕ	IN 3 LAYER	HORIZONTAL STIRRUPS	
8b	12L–10ϕ@ 200c/c		VERTICAL STIRRUPS	
9	2L–16ϕ@ 150c/c	LV. LV.	STIRRUPS	
9a	4L–12ϕ@ 150c/c	LV. LV.	STIRRUPS	
9b	4L–12ϕ@ 150c/c		LINK BAR	
10	32 ϕ @ 100 c/c	150 150		FOOTING
11	32 ϕ @ 100 c/c	150 150		
12	32 ϕ @ 100 c/c	LV. LV.		
13	12 ϕ @ 100 c/c	LV. LV.		
14	12 ϕ @ 100 c/c	150 150		
15	12 ϕ @ 150 c/c	300 300		
16	12 ϕ @ 150 c/c	300 300		
S1	20L–10ϕ@300c/c	LV. 2500 LV.		
17	12 ϕ @ 75c/c			RCC PEDESTAL
18	12 ϕ @ 75c/c			
19	2L–12ϕ@ 150c/c		STRPS.	
20	4L–12ϕ@ 150c/c		STRPS.	TRANSVERSE SEISMIC STOPPER
20a	2L–12ϕ@ 150c/c		STRPS.	
21	16 ϕ –3 Nos.		BOTH FACES	
22	25 ϕ –8 Nos.		BOTH FACES	
22a	16 ϕ –8 Nos.		BOTH FACES	
23	4L–12ϕ@ 150c/c		STRPS.	LONGITUDINAL SEISMICS TOPPER
24	16 ϕ –3 Nos.		BOTH FACES	
25	20 ϕ –20 Nos.		BOTH FACES	
26	16 ϕ @ 150c/c			PADESTAL WALL
27	12 ϕ @ 150c/c		EACH FACES	
28	12 ϕ @ 150c/c			

EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Prepared By		J.CHAUHAN	DRAWING TITLE: REINFORCEMENT DETAILS OF PIER SHAFT, PIER CAP, PEDESTAL AND SEISMIC STOPPER OF MINOR BRIDGE AT CH.55+460Km	Scale: As Shown
			Designed By		V.CHAUDHARY		Date: Nov..2017
			Checked By		P.K.KHAN	Drawing No.: NIRTTP/NAG-MUG/HUGDI/SUB-06	(SHEET 2 OF 2)
			Approved By		B.N.SINGH		



SECTIONAL ELEVATION 1 - 1

(SCALE 1:100)



TOP PLAN OF DECK SLAB

(SCALE 1:100)

LEGEND:-

- – CAST–IN–SITU PORTION
- – JACK LOCATION IN PLAN
- – JACK LOCATION IN ELEVATION

NOTES:-

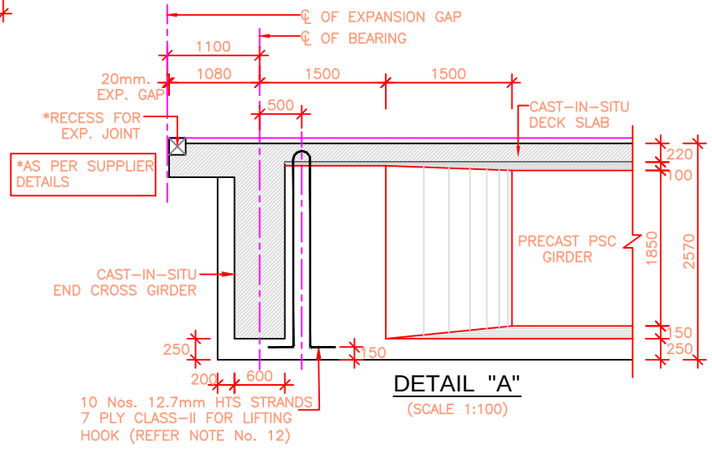
1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
3. THE BRIDGE HAS BEEN DESIGNED FOR TWO LANE TRAFFIC FOR LIVE LOAD COMBINATIONS OF CLASS A AND 70R WITH FOOTPATH LIVE LOAD. OR IRC SV VEHICLE WITH FOOTPATH LIVE LOAD. OR THREE LANE TRAFFIC FOR LIVE LOAD COMBINATIONS OF CLASS A AND 70R WITHOUT FOOTPATH LIVE LOAD AS PER IRC:6–2017, WHICHEVER GOVERNS.
4. CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150mm CUBES AS FOLLOWS :– PRECAST PSC GIRDER –M50 RCC CAST IN SITU DECK SLAB –M35 MPa
5. UNTENSIONED REINFORCEMENT SHALL BE THERMO MECHANICALLY TREATED (TMT), HYSD BARS OF GRADE DESIGNATION Fe–500D CONFORMING TO IS: 1786. CLEAR COVER TO OUTER MOST STEEL SHALL BE AS UNDER:– FOR SUPER STRUCTURE–40mm.
6. 65mm. THK. WEARING COURSE COMPRISING OF 40mm THK. BITUMINOUS CONCRETE OVER LAID WITH 25mm THK. MASTIC ASPHALT SHALL BE PROVIDED AS PER SECTION 500 OF MORTH SPECIFICATIONS.
7. FOR LIFTING OF THE SUPERSTRUCTURE 2Nos. OF FREYSSINET JACKS OF CAPACITY **230t** EACH MAY BE REQUIRED AT EACH END. THE LOCATION OF JACKS FOR LIFTING OF THE SUPERSTRUCTURES TO REPLACE BEARINGS ETC. IS SHOWN THUS THIS SHALL BE DISTINCTLY ETCHED FOR EASY IDENTIFICATION ON THE ABUTMENT CAPS
8. DURING THE LIFTING OPERATION OF SUPERSTRUCTURE ALL THE JACKS PLACED UNDER THE END DIAPHRAGM IN LINE WITH THE BEARINGS SHALL BE OPERATED SIMULTANEOUSLY USING SINGLE OPERATING CONSOLE, GROUPING THE PUMP AND CONTROL SYSTEM SO AS TO ENSURE THAT THE REACTIONS ON ALL THE JACKS ARE EQUAL AT ALL TIMES.
9. PRECAST GIRDERS SHALL BE CAST IN ONE CONCRETING OPERATION IN CASTING YARD WITHOUT ANY CONSTRUCTION JOINT.
10. EACH PRECAST GIRDER WILL BE LIFTED BY USING LIFTING STRANDS AT EITHER END. DURING LIFTING, GIRDER SHALL BE KEPT PLUMB AND UPRIGHT SELF WEIGHT OF GIRDER IS **1050kN.**

SEQUENCE OF CONSTRUCTION:–

AGE OF GIRDER (IN DAYS)	ACTIVITY	STRENGTH OF CONC. (IN MPa)
0	CASTING OF LONGITUDINAL GIRDER AT CASTING YARD WITH PORTION OF DIAPHRAGM	–
14 to 28	POSITION OF LONGITUDINAL GIRDER ON TEMPORARY BRGS. AND HOLD THEM IN POSITION BY LATERAL BRACING. REINF. OF DECK SLAB & END DIAPHRAGM WILL BE FIXED IN POSITION	40
28	CASTING OF DECK SLAB ALONG WITH CROSS GIRDER	50
28 to 42	AVERAGE AGE OF GIRDER WHEN COMPOSITE ACTION TAKES PLACE	50
42 to 56	FIXING THE CRASH BARRIER AND LAYING OFWEARING COAT	50
56	AVERAGE AGE OF GIRDER WHEN SILD & CWLL ON IT	50

REFERENCE DRAWINGS:–

1. DETAIL OF CABLE PROFILE –NIRTTP/NAG–MUG/HUGDI/PSC–G/35m/02 (SHEET–1 & 2)
2. REINFORCEMENT DETAIL OF LONGITUDINAL GIRDER –NIRTTP/NAG–MUG/HUGDI/PSC–G/35m/03
3. RCC DETAIL OF END BLOCK & ANCHORAGE –NIRTTP/NAG–MUG/HUGDI/PSC–G/35m/04
4. REINFORCEMENT DETAIL OF END CROSS GIRDER –NIRTTP/NAG–MUG/HUGDI/PSC–G/35m/05
5. REINFORCEMENT DETAIL OF RCC DECK SLAB –NIRTTP/NAG–MUG/HUGDI/PSC–G/35m/06 (SHEET–1 & 2)
6. DETAILS OF LOAD AND FORCES FOR POT/PTFE BEARINGS –NIRTTP/NAG–MUG/HUGDI/PSC–G/35m/07



DETAIL "A"

(SCALE 1:100)

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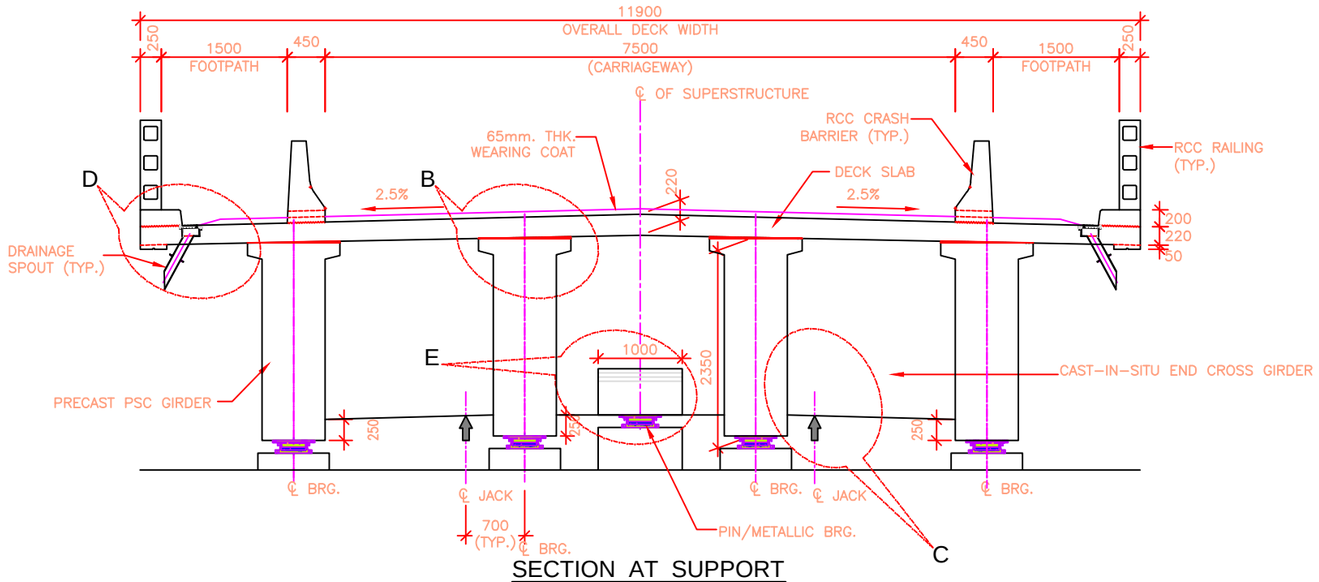
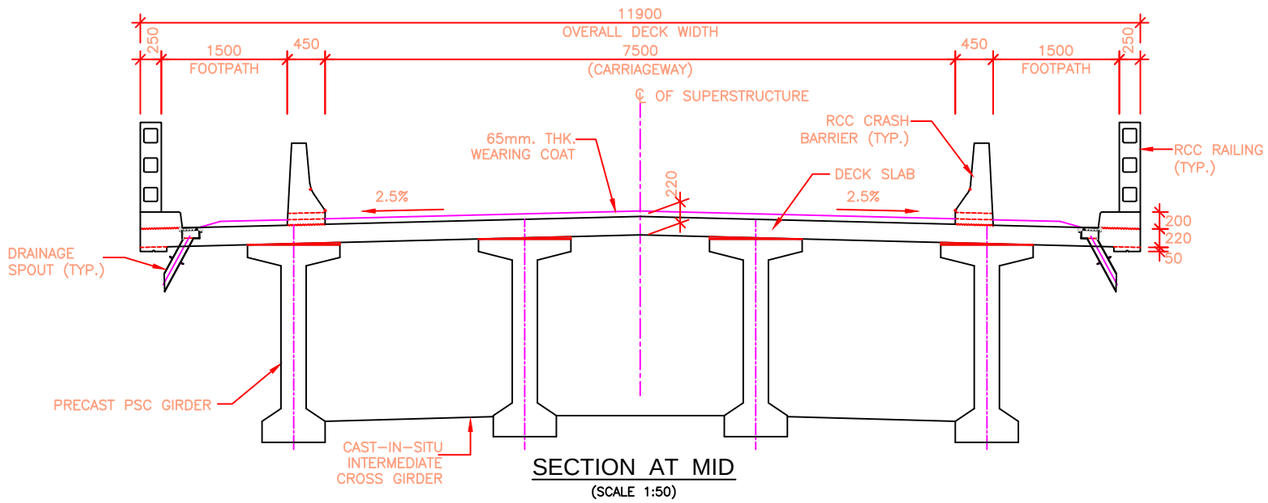
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal				

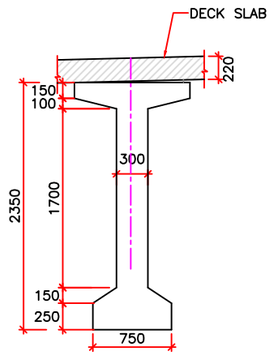
			DRAWING TITLE:	Scale:	Date: Nov.2017
Prepared By		K.M.JOHRI	IMENSIONAL DETAILS OF PRECAST PSC GIRDER & CAST- IN - SITU SLAB SUPERSTRUCTURE (EFFECTIVE SPAN : 35.00m)	As Shown	
Designed By		V.CHAUDHARY			
Checked By		P.K.KHAN			
Approved By		B.N.SINGH	Drawing No.: NIRTTP/NAG-MUG/HUGDI/PSC-G/35m/01		(SHEET 1 OF 2)



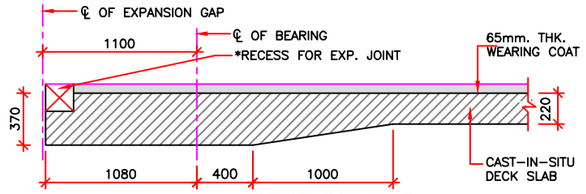
SECTION AT SUPPORT
(SCALE 1:50)



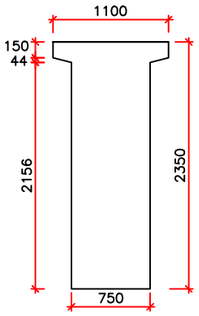
SECTION AT MID
(SCALE 1:50)



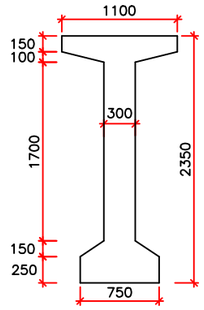
AT MID SPAN



SECTION 2 - 2
(SCALE 1:30)

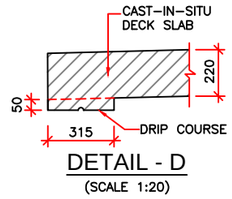


AT SUPPORT

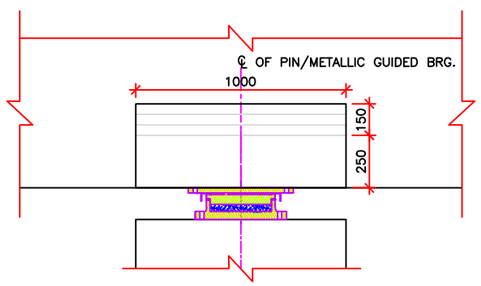


AT MID SPAN

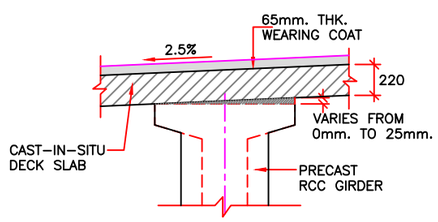
DETAILS OF PRECAST PSC GIRDER
(SCALE 1:40)



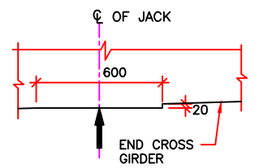
DETAIL - D
(SCALE 1:20)



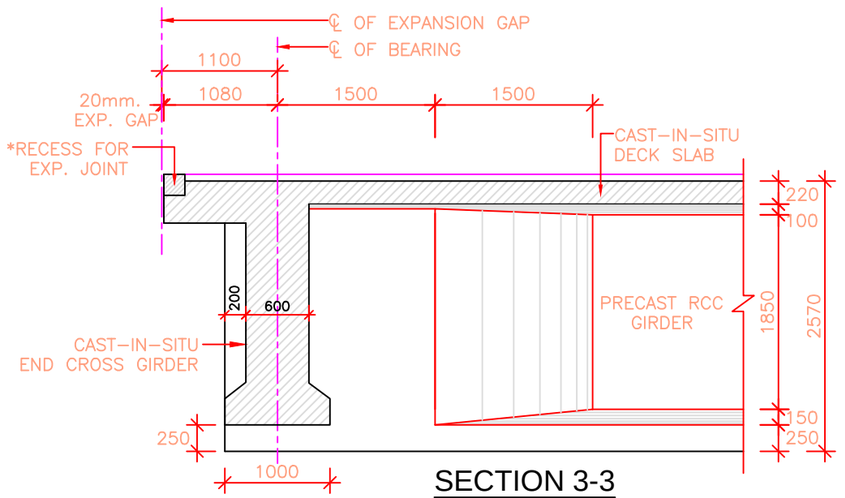
DETAIL - E
(SCALE 1:20)



DETAIL -B
(SCALE 1:30)

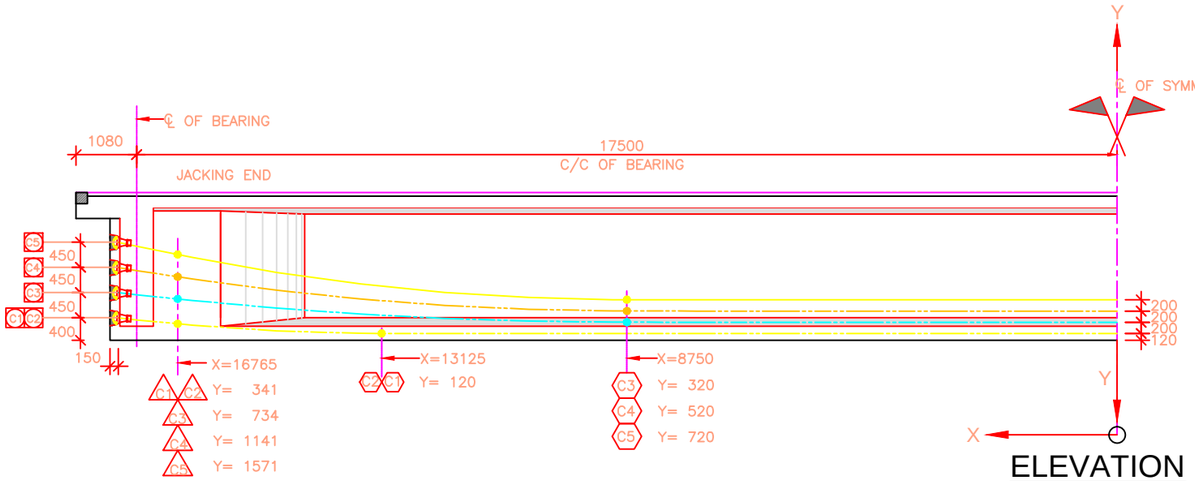


DETAIL - C
DETAIL OF CROSS GIRDERAT JACK LOCATION
(SCALE 1:20)

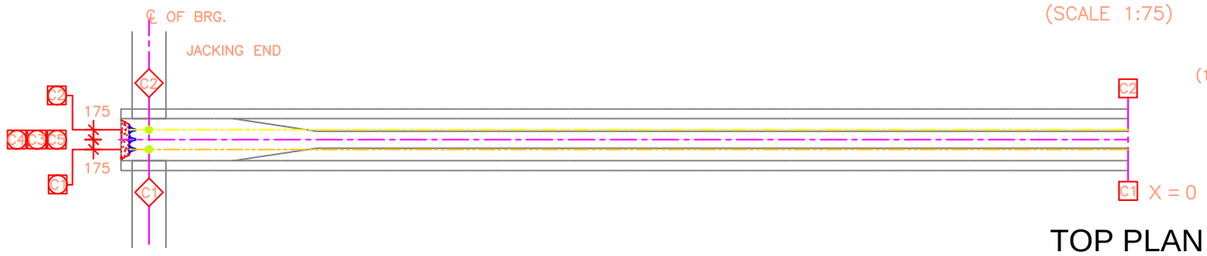


SECTION 3-3
(SCALE 1:100)

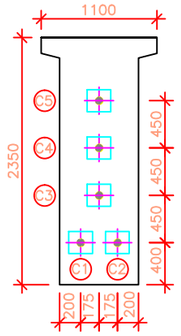
EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Prepared By	K.M.JOHRI	DRAWING TITLE: DIMENSIONAL DETAILS OF PRECAST PSC GIRDER & CAST- IN - SITU SLAB SUPERSTRUCTURE (EFFECTIVE SPAN : 35.00m)	Scale: As Shown
				Designed By	V.CHAUDHARY		Date: Nov.2017
				Checked By	P.K.KHAN	Drawing No.: NIRTTP/NAG-MUG/HUGDI/PSC-G/35m/01	(SHEET 2 OF 2)
				Approved By	B.N.SINGH		



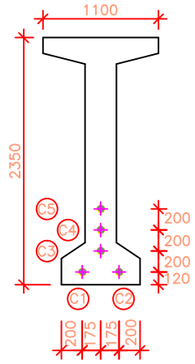
ELEVATION
(SCALE 1:75)



TOP PLAN
(SCALE 1:75)



END VIEW OF BEAM
(150mm INSIDE FROM GIRDER END)
(SCALE 1:40)



SECTION AT MID SPAN
(SCALE 1:40)

NOTES:

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES.
2. THE LENGTH OF CABLES INDICATED ARE MEASURED ALONG PROFILE BETWEEN ANCHORAGES ONLY. ADDITIONAL LENGTH REQUIRED FOR ATTACHING JACK IS TO BE ADDED IN CONSULTATION WITH MANUFACTURER.
3. THE EXTENSIONS INDICATED AT JACKING ENDS ARE FOR PORTION OF CABLES LAYING BETWEEN END FACES OF PRECAST GIRDER ONLY. ADDITIONAL EXTENSION FOR PORTION LYING BETWEEN END FACE & GRIPPING POINT OF JACK IS TO BE ADDED.
4. NUMBER OF STRANDS TO BE STRESSED IN EACH CABLE ARE SHOWN IN THE TABLE. THE SEQUENCE OF STRESSING OF PRESTRESSING CABLES SHALL BE AS FOLLOWS: STAGE 1: CABLE Nos.3 AND 5 (14th DAY AFTER CASTING OF GIRDER AND CONCRETE HAVING A STRENGTH OF 40MPa.) STAGE 2: CABLE Nos.4 AND 5, 1 & 2 (28th DAY OR AFTER CASTING OF GIRDER OR ATTAINING STRENGTH OF 50MPa WHICHEVER IS LATER).
5. ALL CABLES HAVE SMOOTH PROFILE (WITHOUT KINKS) PASSING THROUGH GIVEN ORDINATES AND FIRMLY SUPPORTED AT EVERY 1.0m INTERVAL AS SHOWN.
6. EACH CABLE IS INCLINED AT AN EMERGENCE ANGLE AS SHOWN IN THE TABLE.
7. ALL PRESTRESSING TENDONS SHALL BE STRESSED FROM BOTH END AS SHOWN IN PLAN AND ELEVATION.
8. DUMMY STRAND SHOWN IN TABLE SHALL BE USED FOR EMERGENCY ONLY WHEN REQUIRED TO MAKE UP THE DEFICIENCY IN THE WORKING TENDONS. IF NOT REQUIRED SAME WILL TAKEN OUT.

(*) CABLE (C1) AND (C2) WILL BE STRESSED SIMULTANEOUSLY FROM JACKING END.

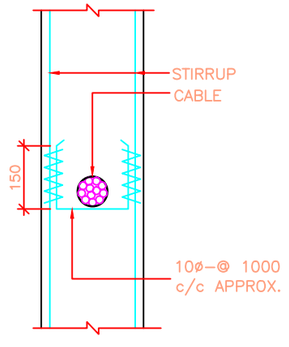
LEGENDS:-

- INDICATES LIVE END
- INDICATES DEAD END
- INDICATES CABLE NUMBER
- INDICATES END OF CABLE
- INDICATES START OF CURVE IN PLAN
- INDICATES END OF CURVE IN PLAN
- INDICATES START OF CURVE IN ELEVATION
- INDICATES END OF CURVE IN ELEVATION

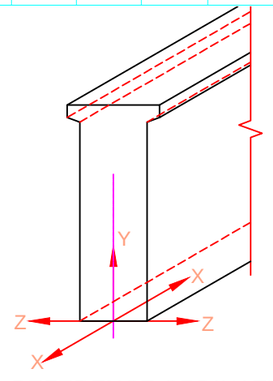
CABLE TYPE	STRAND TO BE STRESSED	DUMMY STRAND	SECTION ALONG "X"	0		1500		3000		4500		6000		7500		9000		10500		12000		13500		15000		16500		17500		17850		LENGTH OF CABLE (FACE TO FACE OF CONE) (mm)	END STRAIGHT LENGTH (mm)	TOTAL LENGTH OF CABLE (mm)	ANGLE AT ANCHORAGE		JACK FORCE	ELONGATION
			CABLE NO.	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z				Radian	Degree	KN	mm
19 T 13	17	2	C1	120	-175	120	-175	120	-175	120	-175	120	-175	120	-175	120	-175	120	-175	120	-175	122	-175	166	-175	269	-175	361	-175	400	-175	35722	750	37222	0.12	6.76	2444	129
19 T 13	17	2	C2	120	175	120	175	120	175	120	175	120	175	120	175	120	175	120	175	120	175	122	175	166	175	269	175	361	175	400	175	35722	750	37222	0.12	6.76	2444	129
19 T 13	17	2	C3	320	0	320	0	320	0	320	0	320	0	320	0	322	0	342	0	388	0	466	0	572	0	709	0	811	0	850	0	35741	750	37241	0.12	6.64	2444	128
19 T 13	19	0	C4	520	0	520	0	520	0	520	0	520	0	520	0	523	0	552	0	621	0	734	0	891	0	1092	0	1242	0	1300	0	35788	750	37288	0.17	9.73	2731	127
19 T 13	19	0	C5	720	0	720	0	720	0	720	0	720	0	720	0	723	0	762	0	853	0	1003	0	1210	0	1475	0	1674	0	1750	0	35853	750	37353	0.22	12.76	2731	126

REFERENCE DRAWINGS:-

1. DIMENSION DETAILS OF PRECAST PSC GIRDER & CAST-IN-SITU SLAB SUPERSTRUCTURE -NIRTTP/NAG-MUG/HUGDI/PSC-G/35m/01 (SHEET-1 & 2)
2. REINFORCEMENT DETAIL OF LONGITUDINAL GIRDER -NIRTTP/NAG-MUG/HUGDI/PSC-G/35m/03
3. RCC DETAIL OF END BLOCK & ANCHORAGE -NIRTTP/NAG-MUG/HUGDI/PSC-G/35m/04
4. REINFORCEMENT DETAIL OF END CROSS GIRDER -NIRTTP/NAG-MUG/HUGDI/PSC-G/35m/05
5. REINFORCEMENT DETAIL OF RCC DECK SLAB -NIRTTP/NAG-MUG/HUGDI/PSC-G/35m/06 (SHEET-1 & 2)
6. DETAILS OF LOAD AND FORCES FOR POT/PTFE BEARINGS -NIRTTP/NAG-MUG/HUGDI/PSC-G/35m/07



TYP. DETAIL OF SUPPORTING ARRANGEMENT FOR CABLES
(SCALE 1:10)



REFERENCE ORDINATE SYSTEM
(SCALE 1:50)

EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport, Department of Roads, Foreign Co-operation Branch	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Feasibility Study of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak, Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Prepared By		K.M.JOHRI	DRAWING TITLE: DETAILS OF CABLE PROFILE PSC FOR PRECAST PSC GIRDER EFFECTIVE SPAN : 35.00m	Scale: As Shown	Date: Nov.2017
				Designed By		V.CHAUDHARY			
				Checked By		P.K.KHAN	Drawing No.: NIRTTP/NAG-MUG/HUGDI/PSC-G/35m/02		
				Approved By		B.N.SINGH			(SHEET 1 OF 2)