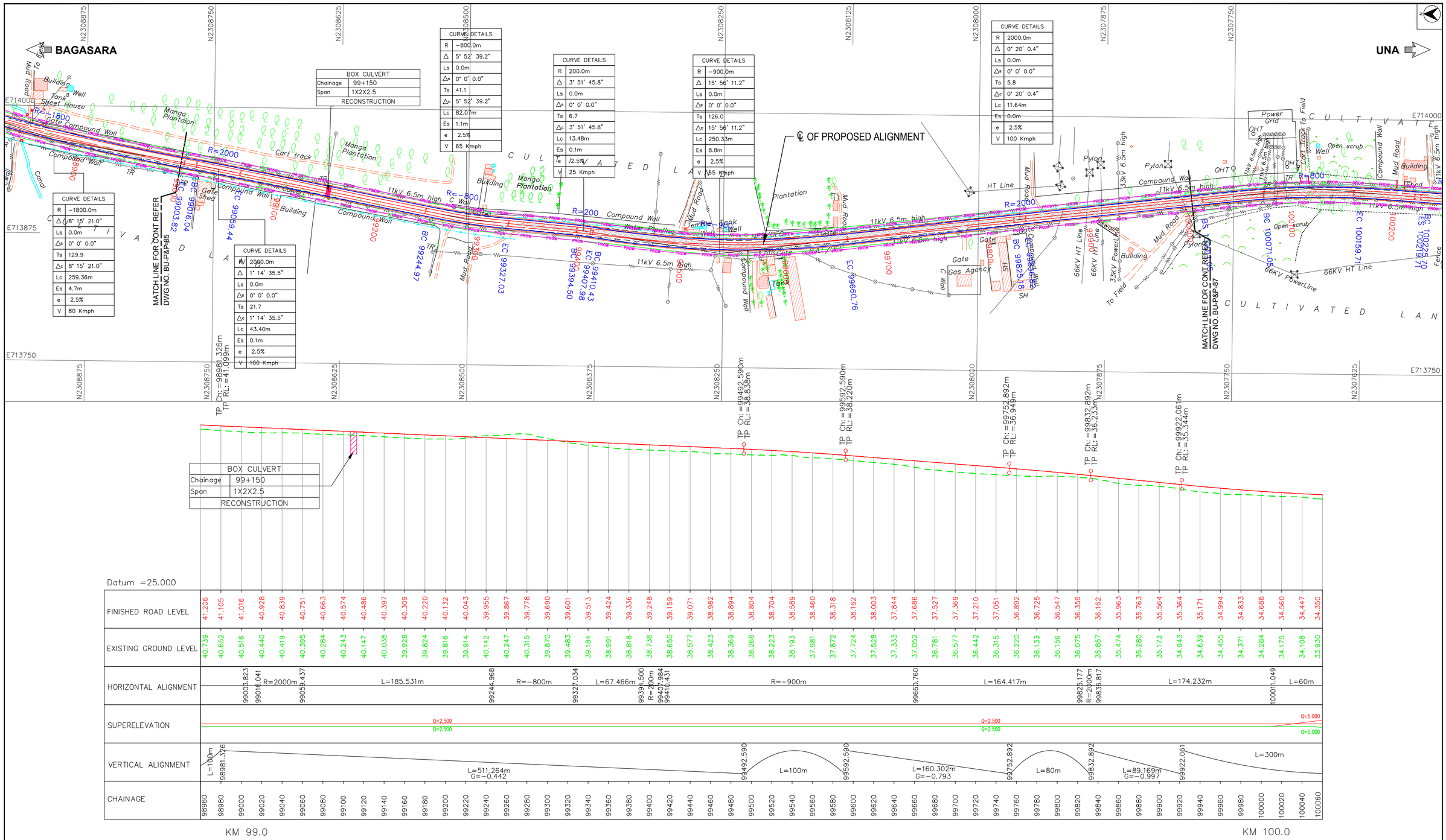


LEGEND

- PROPOSED CENTRELINE
- PROPOSED CARRIAGEWAY
- PROPOSED SERVICE ROAD
- PROPOSED EARTHEN SHOULDER
- PROPOSED DRAIN
- PROPOSED ROW
- EXISTING ROW
- EXISTING CARRIAGEWAY
- ELEVATED HIGHWAY
- MAJOR BRIDGE, FLYOVER
- MINOR BRIDGE
- ROAD OVER BRIDGE
- BOX, PIPE CULVERTS
- VUP,PUP,LVUP,CUP
- VEHICULAR OVER PASS
- PROPOSED CHAINAGE IN METRE 45
- BEGINNING & END OF SPIRAL BS & ES
- BEGINNING & END OF CURVE BC & EC
- RADIUS OF CURVE R=500
- PROPOSED BRIDGE
- EXISTING BRIDGE
- PROPOSED CULVERT
- EXISTING CULVERT
- TOELINES FOR EMBANKMENT
- TOELINES FOR CUT
- R RADIUS
- △ INCLUDED ANGLE
- Ls TRANSITION/SPIRAL LENGTH
- △s DEVIATION ANGLE OF TRANSITION CURVE
- Ts LENGTH OF TANGENT DISTANCE
- △c DEVIATION ANGLE OF CIRCULAR CURVE
- Lc LENGTH OF CURVE
- Es APEX DISTANCE
- e SUPER ELEVATION
- V SPEED

PROFILE LEGEND

- Finished Road Level
- Existing Road Level
- TP: Tangent points
- CH: Chainage
- RL: Reduced Level

Note:
1.Depiction of the structures in drawings is indicative only.
2.All dimensions are in meters.

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	Final Detailed Project Report	JTP	SM	SNV
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Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	HOR :1:2500 VER :1:250
File name	Designed by	Approved by	Sheets
BU-P&P-86 TO 88	SURYA KIRAN	SHIVAPRASAD	86 OF 88

FDPR

CLIENT

NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

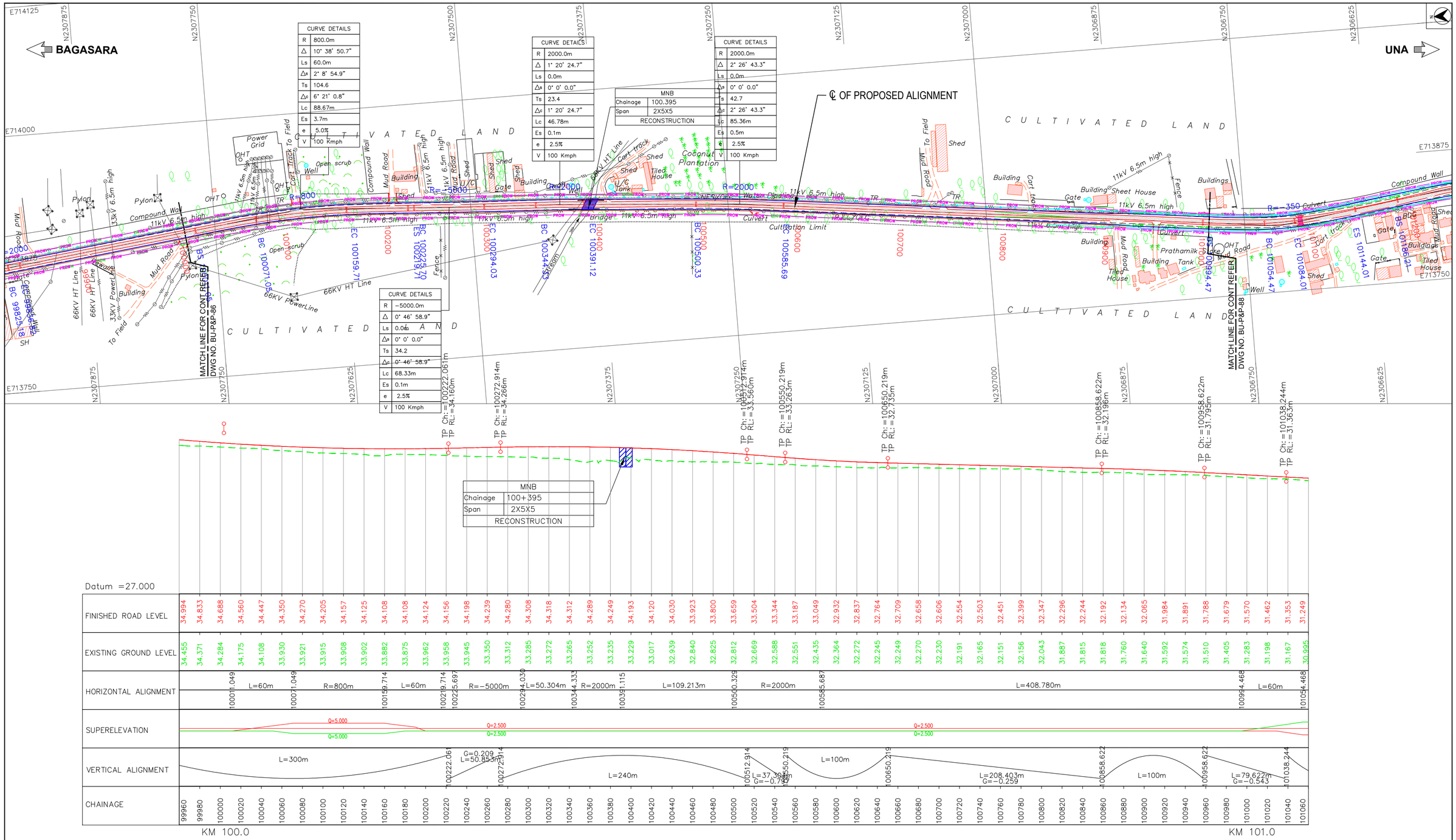
PROJECT

CONSULTANCY SERVICES FOR UP GRADATION OF
UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA
NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

PLAN & PROFILE (NH-351K)
SECTION : BAGASARA TO UNA
CHAINAGE : FROM 99/000 KM TO 100/000 KM

Plot Size : (A2 Size) | DRG.NO : BU−P&P−86



LEGEND

- PROPOSED CENTRELINE
- PROPOSED CARRIAGEWAY
- PROPOSED SERVICE ROAD
- PROPOSED EARTHEN SHOULDER
- PROPOSED DRAIN
- PROPOSED ROW (PROW)
- EXISTING ROW (EROW)
- EXISTING CARRIAGEWAY
- ELEVATED HIGHWAY
- MAJOR BRIDGE, FLYOVER
- MINOR BRIDGE
- ROAD OVER BRIDGE
- BOX, PIPE CULVERTS
- VUP,PUP,LVUP,CUP
- VEHICULAR OVER PASS
- PROPOSED CHAINAGE IN METRE — 45
- BEGINNING & END OF SPIRAL — BS & ES
- BEGINNING & END OF CURVE — BC & EC
- RADIUS OF CURVE — R=500
- PROPOSED BRIDGE
- EXISTING BRIDGE
- PROPOSED CULVERT
- EXISTING CULVERT
- TOELINES FOR EMBANKMENT
- TOELINES FOR CUT

R	RADIUS
Δ	INCLUDED ANGLE
Ls	TRANSITION/SPIRAL LENGTH
Δs	DEVIATION ANGLE OF TRANSITION CURVE
Ts	LENGTH OF TANGENT DISTANCE
Δc	DEVIATION ANGLE OF CIRCULAR CURVE
Lc	LENGTH OF CURVE
Es	APEX DISTANCE
e	SUPER ELEVATION
V	SPEED

PROFILE LEGEND

- Finished Road Level
- Existing Road Level
- TP: Tangent points
- CH: Chainage
- RL: Reduced Level

Note:
1. Depiction of the structures in drawings is indicative only.
2. All dimensions are in meters.

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File name	Designed by	Approved by	Sheets
BU-P&P-86 TO 88	SURYA KIRAN	SHIVAPRASAD	87 OF 88

FDPR

CLIENT

NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

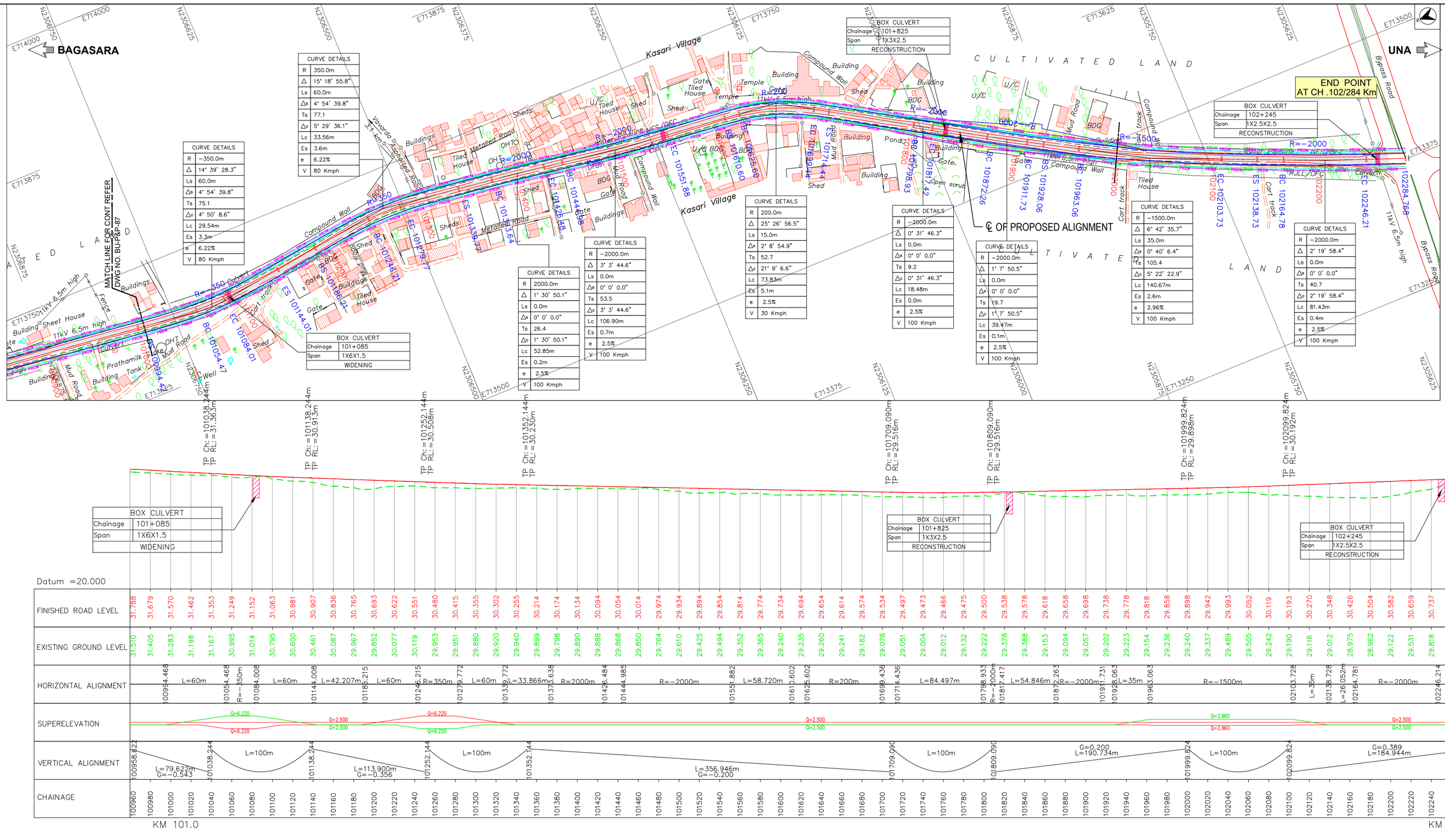
PROJECT

CONSULTANCY SERVICES FOR UP GRADATION OF
UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA
NATIONAL HIGHWAY IN THE STATE OF GUJARAT

PLAN & PROFILE (NH-351K)
SECTION : BAGASARA TO UNA
CHAINAGE : FROM 100/000 KM TO 101/000 KM

SECON

Plot Size : (A2 Size) | DRG.NO : BU-P&P-87



CURVE DETAILS	
R	350.0m
△	15° 18' 55.8"
Ls	60.0m
△s	4° 54' 39.8"
Ts	77.1
△c	5° 29' 36.1"
Lc	33.56m
Es	3.6m
e	6.22%
V	80 Kmph

CURVE DETAILS	
R	−350.0m
△	14° 39' 28.3"
Ls	60.0m
△s	4° 54' 39.8"
Ts	75.1
△c	4° 50' 8.6"
Lc	29.54m
Es	3.3m
e	6.22%
V	80 Kmph

BOX CULVERT	
Chainage	101+085
Span	1X6X1.5
WIDENING	

CURVE DETAILS	
R	2000.0m
△	1° 30' 50.1"
Ls	0.0m
△s	0° 0' 0.0"
Ts	26.4
△c	1° 30' 50.1"
Lc	52.85m
Es	0.2m
e	2.5%
V	100 Kmph

CURVE DETAILS	
R	−2000.0m
△	3° 3' 44.6"
Ls	0.0m
△s	0° 0' 0.0"
Ts	53.5
△c	3° 3' 44.6"
Lc	106.90m
Es	0.7m
e	2.5%
V	100 Kmph

CURVE DETAILS	
R	200.0m
△	25° 26' 56.5"
Ls	15.0m
△s	2° 8' 54.9"
Ts	52.7
△c	21° 9' 6.6"
Lc	73.83m
Es	5.1m
e	2.5%
V	30 Kmph

BOX CULVERT	
Chainage	101+825
Span	1X3X2.5
RECONSTRUCTION	

CURVE DETAILS	
R	−2000.0m
△	0° 31' 46.3"
Ls	0.0m
△s	0° 0' 0.0"
Ts	9.2
△c	0° 31' 46.3"
Lc	18.48m
Es	0.0m
e	2.5%
V	100 Kmph

CURVE DETAILS	
R	−2000.0m
△	1° 7' 50.5"
Ls	0.0m
△s	0° 0' 0.0"
Ts	19.7
△c	1° 7' 50.5"
Lc	39.47m
Es	0.1m
e	2.5%
V	100 Kmph

BOX CULVERT	
Chainage	102+245
Span	1X2.5X2.5
RECONSTRUCTION	

CURVE DETAILS	
R	−1500.0m
△	6° 42' 35.7"
Ls	35.0m
△s	0° 40' 6.4"
Ts	105.4
△c	5° 22' 22.9"
Lc	140.67m
Es	2.6m
e	2.96%
V	100 Kmph

CURVE DETAILS	
R	−2000.0m
△	2° 19' 58.4"
Ls	0.0m
△s	0° 0' 0.0"
Ts	40.7
△c	2° 19' 58.4"
Lc	81.43m
Es	0.4m
e	2.5%
V	100 Kmph

BOX CULVERT	
Chainage	101+085
Span	1X6X1.5
WIDENING	

BOX CULVERT	
Chainage	101+825
Span	1X3X2.5
RECONSTRUCTION	

BOX CULVERT	
Chainage	102+245
Span	1X2.5X2.5
RECONSTRUCTION	

LEGEND

- PROPOSED CENTRELINE
- PROPOSED CARRIAGEWAY
- PROPOSED SERVICE ROAD
- PROPOSED EARTHEN SHOULDER
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- EXISTING CULVERT
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- TOELINES FOR CUT
- R RADIUS
- △ INCLUDED ANGLE
- Ls TRANSITION/SPIRAL LENGTH
- △s DEVIATION ANGLE OF TRANSITION CURVE
- Ts LENGTH OF TANGENT DISTANCE
- △c DEVIATION ANGLE OF CIRCULAR CURVE
- Lc LENGTH OF CURVE
- Es APEX DISTANCE
- e SUPER ELEVATION
- V SPEED

PROFILE LEGEND

- Finished Road Level
- Existing Road Level
- TP: Tangent points
- CH: Chainage
- RL: Reduced Level

Note:
1. Depiction of the structures in drawings is indicative only.
2. All dimensions are in meters.

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21.11.2023	PATRICK	SRIKANTH	HOR :1:2500 VER :1:250
File name	Designed by	Approved by	Sheets
BU-P&P-86 TO 88	SURYA KIRAN	SHIVAPRASAD	88 OF 88

FDPR

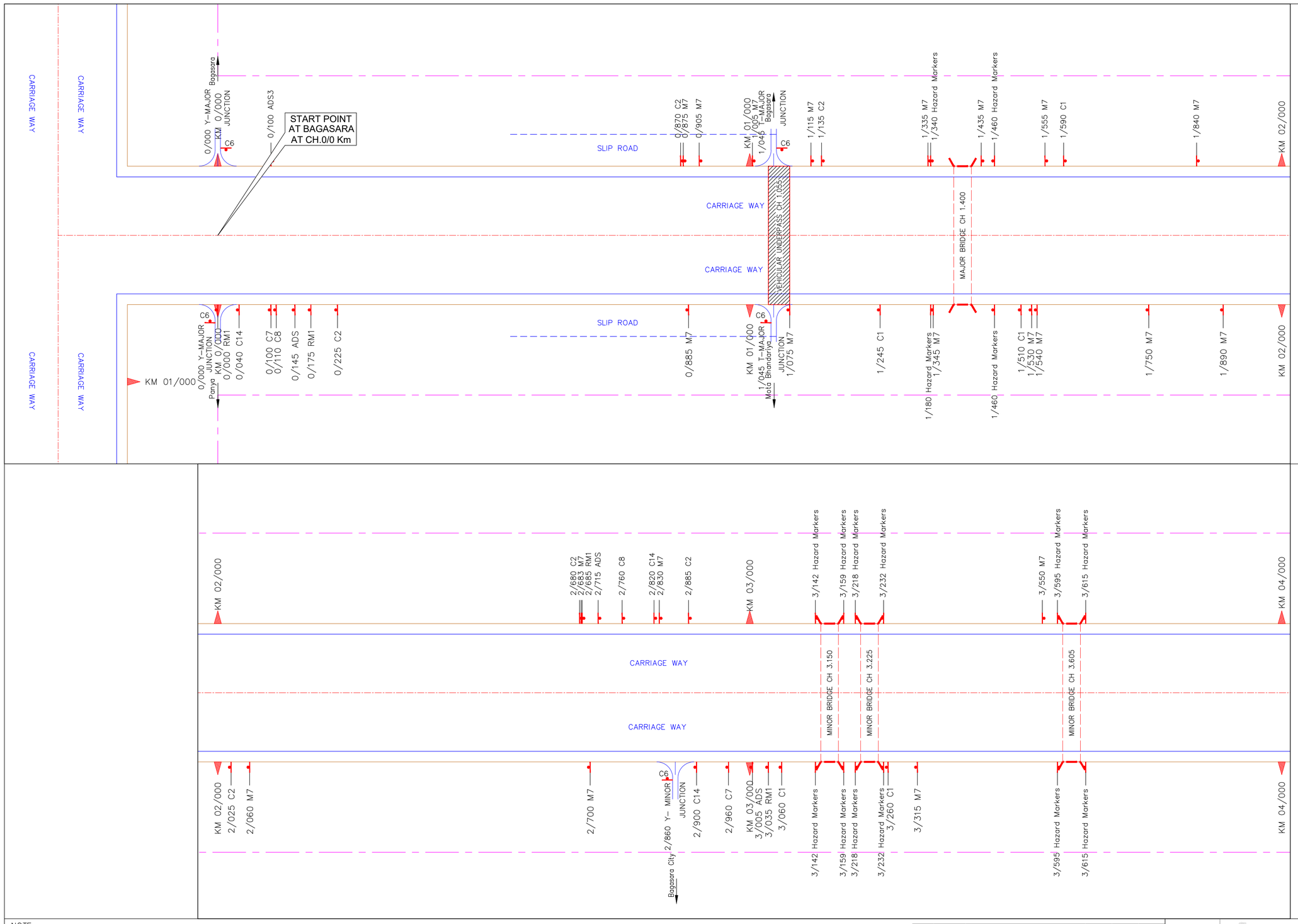
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

PLAN & PROFILE (NH-351K)
SECTION : BAGASARA TO UNA
CHAINAGE : FROM 101/000 KM TO 102/284 KM

SECON

Plot Size : (A2 Size) | DRG.NO : BU-P&P-88



CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
C10B – T – INTERSECTION RIGHT
C11 – STAGGERED INTERSECTION
C12 – STAGGERED INTERSECTION
C13 – SCHOOL
C14 – PEDESTRIAN CROSSING
C16 – SIDE ROAD LEFT
C17 – SIDE ROAD RIGHT
C18 – CROSS ROAD
C19 – GAP IN MEDIAN
C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
M9 – AHEAD ONLY
M10 – TURN LEFT
M11 – TURN RIGHT
M12 – TURN RIGHT AHEAD
INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
M20 – SOUND HORN
IS1 – PETROL BUNK
IS2 – HOSPITAL
IS3 – PUBLIC TELEPHONE
IS4 – RESTING PLACE
IS5 – BUS STOP
IS6 – TRUCK LAYBYE AHEAD
IS7 – TOLL PLAZA
ADVANCE DIRECTION SIGN (ADS–1)
ADVANCE DIRECTION SIGN (ADS–2)
REASSURANCE SIGN (ADS–3)
DIRECTION SIGN FOR VILLAGE
PLACE IDENTIFICATION SIGN
ROUTE MARKER SIGN
RM1–NH ROUTE MARKER
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH STRAIGHT ARROW ON IT
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH SLANTED ARROW TO RIGHT ON IT
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH SLANTED ARROW TO LEFT ON IT

FDPR

NOTE:

1. FOR DETAILS OF ROAD SIGNS REFER DRG. NOS. R–41, R–42, R–43.....
2. FOR DETAILS OF INTERSECTIONS AND MEDIAN OPENINGS REFER DRG. NOS. R–21.....
3. DISTANCE OF THE SIGN BOARDS MAY SUBJECT TO CHANGE AS PER SITE CONDITION.

ABBREVIATIONS:

1. 500 C1 – 500 IS THE METERAGE C1 IS THE SIGN NO.
2. C–20 – CLUSTER OF RED REFLECTORS (OBJECT MARKER SIGN)

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0	05.09.24	DRAFT DETAILED PROJECT REPORT	JTP	SM	SNV

Date: 21.11.2023	Drawn by: PATRICK	Checked by: SRIKANTH	Scale: HOR 1:5000 VER : 1:500
File name: BU–S–01 TO S–23	Designed by: SURYA KIRAN	Approved by: SHIVAPRASAD	Sheets: 01 OF 23

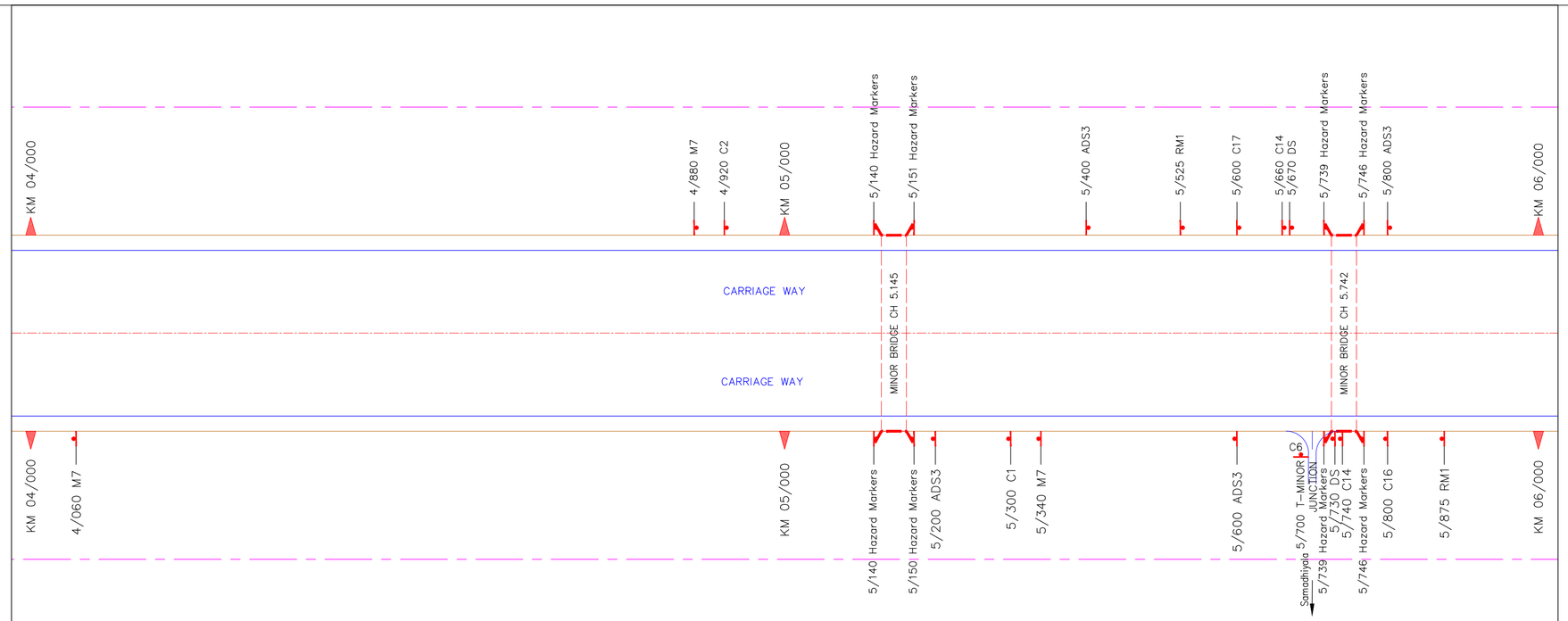
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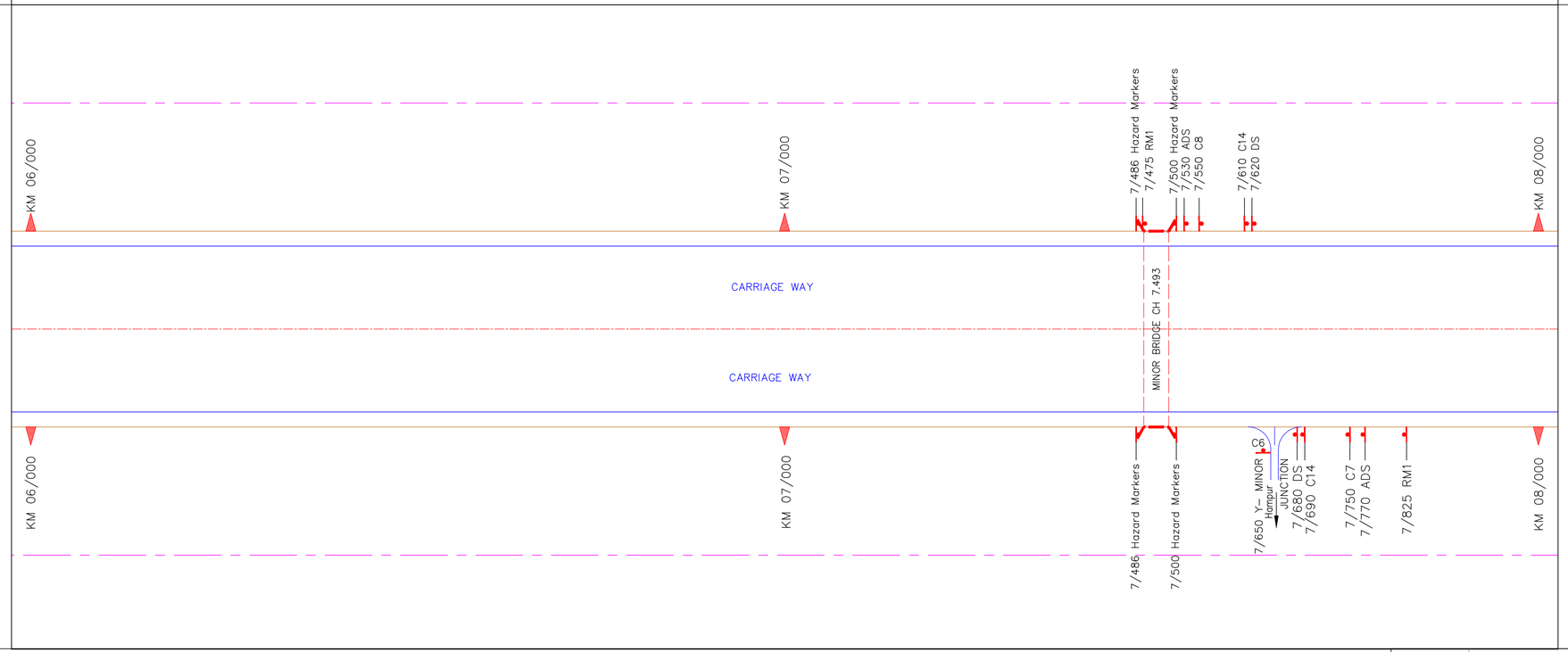
PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 00/000 TO 04/000

Plot Size : (A2 Size) | DRG.NO : BU–S–01





CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
C10B – T – INTERSECTION RIGHT
C11 – STAGGERED INTERSECTION
C12 – STAGGERED INTERSECTION
C13 – SCHOOL
C14 – PEDESTRIAN CROSSING
C16 – SIDE ROAD LEFT
C17 – SIDE ROAD RIGHT
C18 – CROSS ROAD
C19 – GAP IN MEDIAN
C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
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INFORMATORY SIGNS
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FDPR

NOTE:

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ABBREVIATIONS:

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2. C–20 – CLUSTER OF RED REFLECTORS (OBJECT MARKER SIGN)

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File name: BU–S–01 TO S–23	Designed by: SURYA KIRAN	Approved by: SHIVAPRASAD	Sheets: 02 OF 23

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
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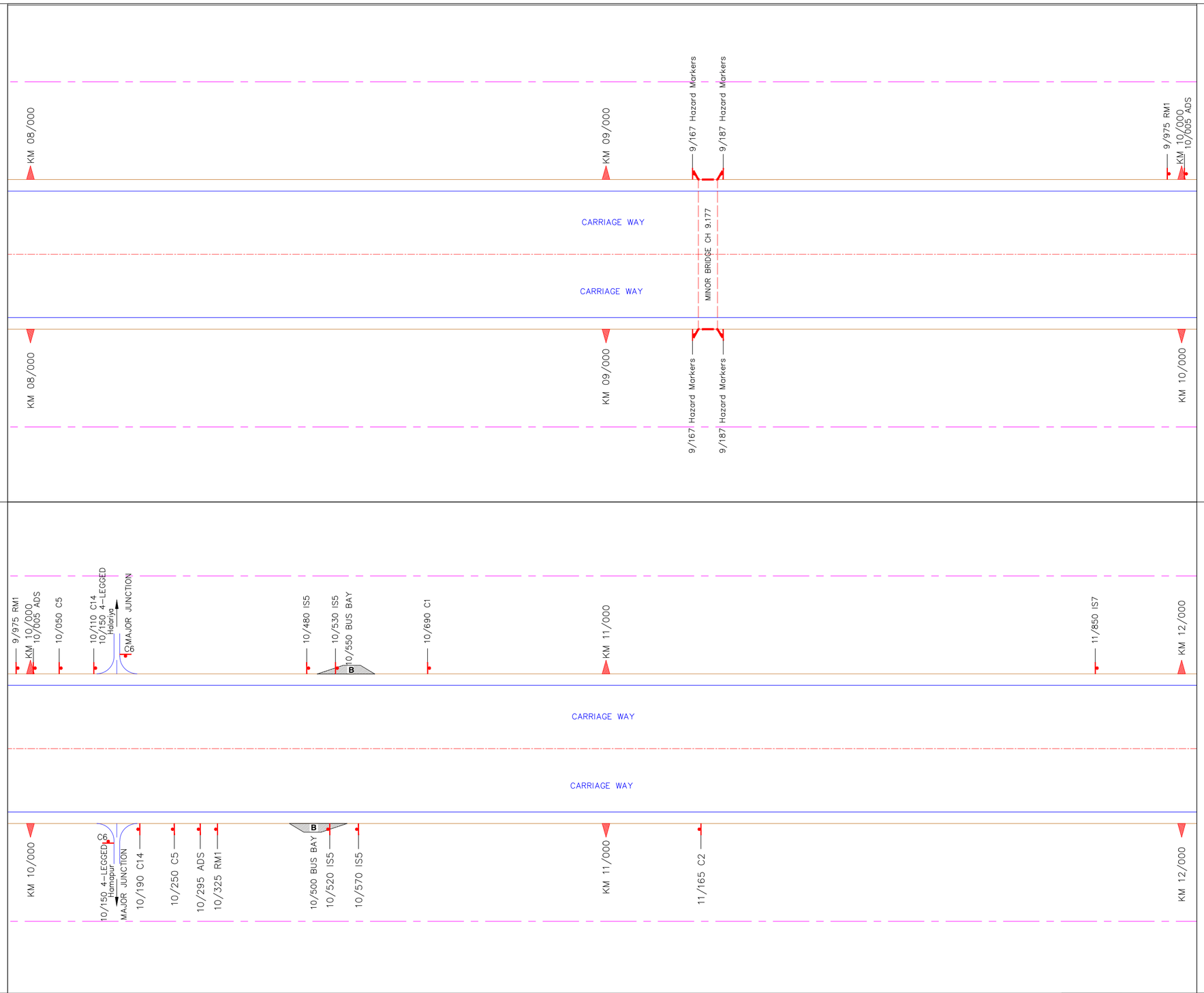
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SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 04/000 TO 08/000

Plot Size : (A2 Size)

DRG.NO : BU–S–02



CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
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FDPR

NOTE:

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CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

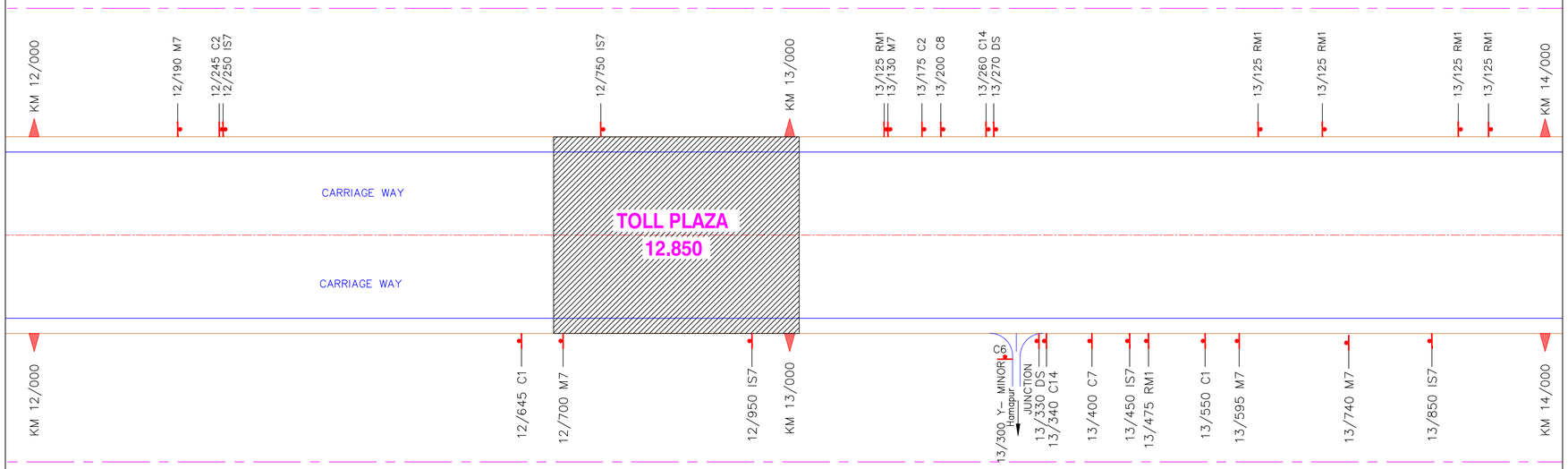
PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

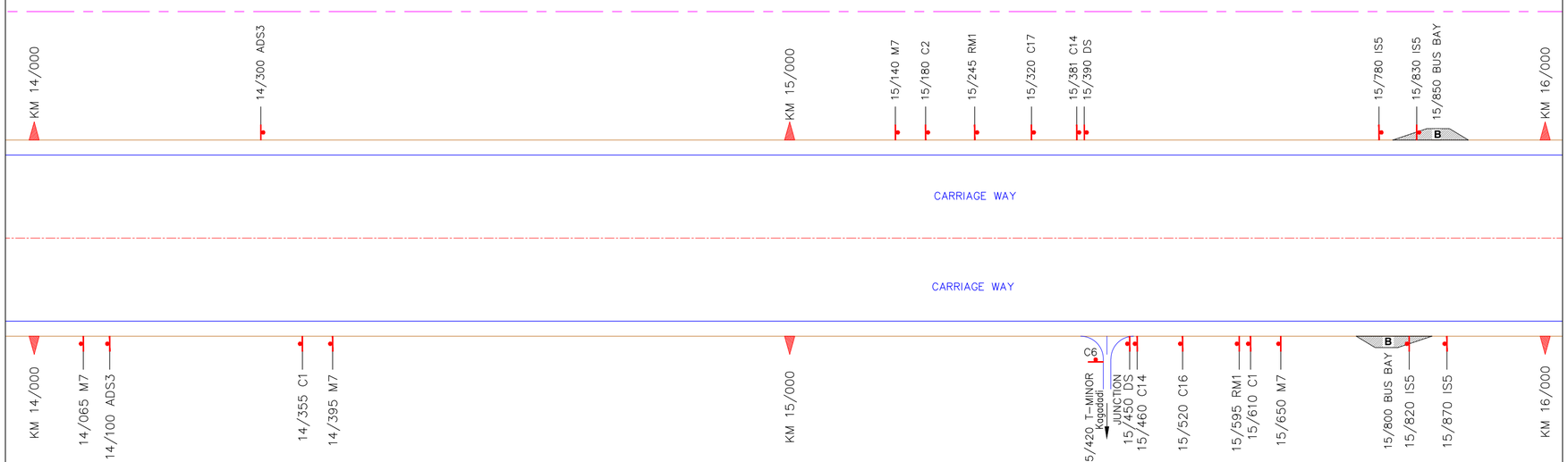
SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 08/000 TO 12/000

Plot Size : (A2 Size)

DRG.NO : BU–S–03





CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
C10B – T – INTERSECTION RIGHT
C11 – STAGGERED INTERSECTION
C12 – STAGGERED INTERSECTION
C13 – SCHOOL
C14 – PEDESTRIAN CROSSING
C16 – SIDE ROAD LEFT
C17 – SIDE ROAD RIGHT
C18 – CROSS ROAD
C19 – GAP IN MEDIAN
C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
M9 – AHEAD ONLY
M10 – TURN LEFT
M11 – TURN RIGHT
M12 – TURN RIGHT AHEAD
INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
M20 – SOUND HORN
IS1 – PETROL BUNK
IS2 – HOSPITAL
IS3 – PUBLIC TELEPHONE
IS4 – RESTING PLACE
IS5 – BUS STOP
IS6 – TRUCK LAYBYE AHEAD
IS7 – TOLL PLAZA
ADVANCE DIRECTION SIGN (ADS–1)
ADVANCE DIRECTION SIGN (ADS–2)
REASSURANCE SIGN (ADS–3)
DIRECTION SIGN FOR VILLAGE
PLACE IDENTIFICATION SIGN
ROUTE MARKER SIGN
RM1–NH ROUTE MARKER
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH STRAIGHT ARROW ON IT
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH SLANTED ARROW TO RIGHT ON IT
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH SLANTED ARROW TO LEFT ON IT

FDPR

NOTE:

1. FOR DETAILS OF ROAD SIGNS REFER DRG. NOS. R–41, R–42, R–43.....
2. FOR DETAILS OF INTERSECTIONS AND MEDIAN OPENINGS REFER DRG. NOS. R–21.....
3. DISTANCE OF THE SIGN BOARDS MAY SUBJECT TO CHANGE AS PER SITE CONDITION.

ABBREVIATIONS:

1. 500 C1 – 500 IS THE METERAGE C1 IS THE SIGN NO.
2. C–20 – CLUSTER OF RED REFLECTORS (OBJECT MARKER SIGN)

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	Final Detailed Project Report	JTP	SM	SNV
2	06.02.25	Revised as per directions issued during meeting with SE, MORTH on 09.01.25 & 13.01.25	JTP	SM	SNV
1	14.11.24	INCORPORATING THE SUGGESTIONS FROM CLIENT	JTP	SM	SNV
0	05.09.24	DRAFT DETAILED PROJECT REPORT	JTP	SM	SNV

Date: 21.11.2023	Drawn by: PATRICK	Checked by: SRIKANTH	Scale: HOR 1:5000, VER : 1:500
File name: BU–S–01 TO S–23	Designed by: SURYA KIRAN	Approved by: SHIVAPRASAD	Sheets: 04 OF 23

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON™

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 12/000 TO 16/000

Plot Size : (A2 Size) | DRG.NO : BU–S–04



CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
C10B – T – INTERSECTION RIGHT
C11 – STAGGERED INTERSECTION
C12 – STAGGERED INTERSECTION
C13 – SCHOOL
C14 – PEDESTRIAN CROSSING
C16 – SIDE ROAD LEFT
C17 – SIDE ROAD RIGHT
C18 – CROSS ROAD
C19 – GAP IN MEDIAN
C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
M9 – AHEAD ONLY
M10 – TURN LEFT
M11 – TURN RIGHT
M12 – TURN RIGHT AHEAD
INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
M20 – SOUND HORN
IS1 – PETROL BUNK
IS2 – HOSPITAL
IS3 – PUBLIC TELEPHONE
IS4 – RESTING PLACE
IS5 – BUS STOP
IS6 – TRUCK LAYBYE AHEAD
IS7 – TOLL PLAZA
ADVANCE DIRECTION SIGN (ADS–1)
ADVANCE DIRECTION SIGN (ADS–2)
REASSURANCE SIGN (ADS–3)
DIRECTION SIGN FOR VILLAGE
PLACE IDENTIFICATION SIGN
ROUTE MARKER SIGN
RM1–NH ROUTE MARKER
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH STRAIGHT ARROW ON IT
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH SLANTED ARROW TO RIGHT ON IT
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH SLANTED ARROW TO LEFT ON IT

NOTE:

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FDPR

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Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	HOR 1:5000 VER : 1:500
File name	Designed by	Approved by	Sheets
BU–S–01 TO S–23	SURYA KIRAN	SHIVAPRASAD	05 OF 23

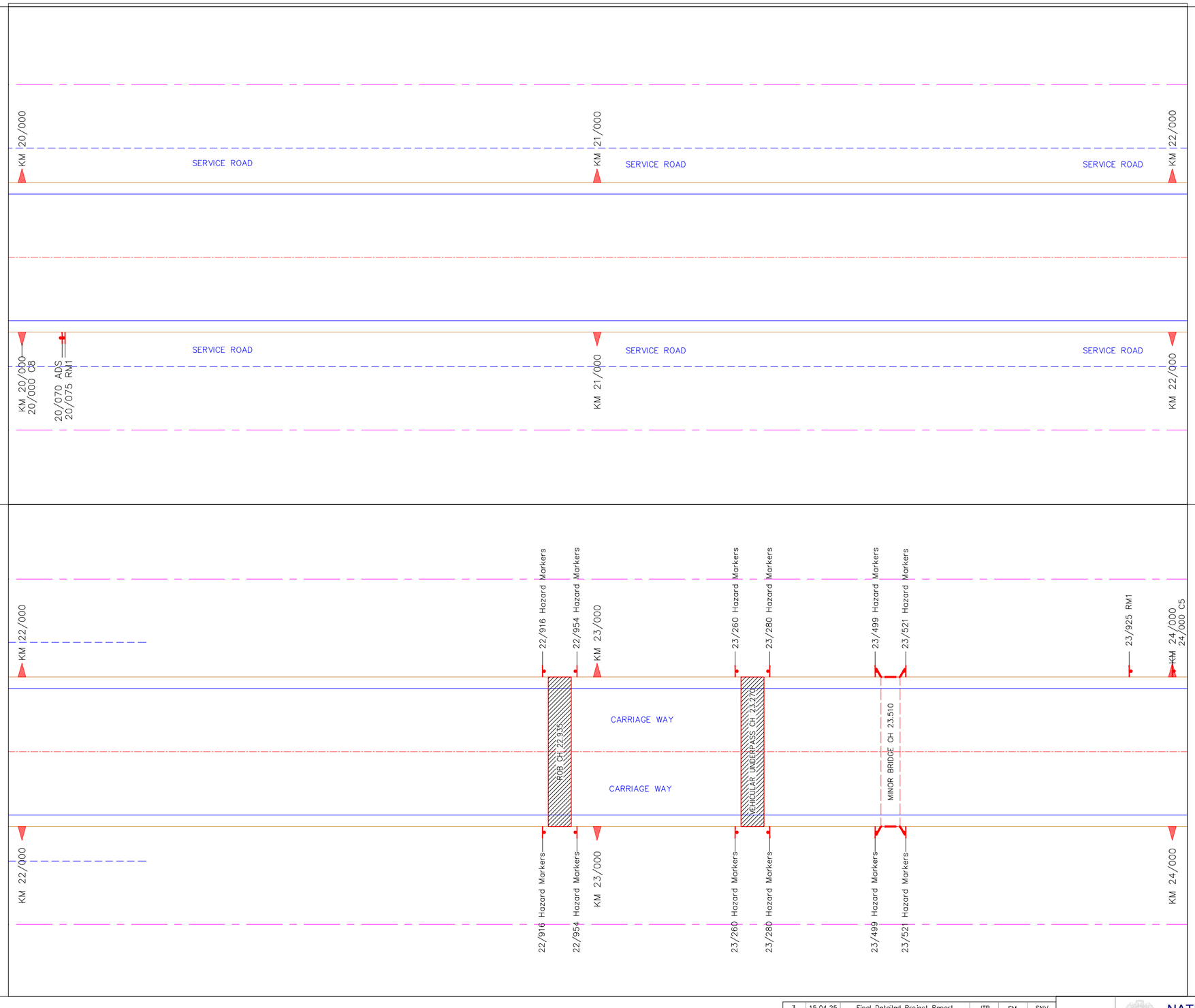
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 16/000 TO 20/000

Plot Size : (A2 Size) | DRG.NO : BU–S–05



CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
C10B – T – INTERSECTION RIGHT
C11 – STAGGERED INTERSECTION
C12 – STAGGERED INTERSECTION
C13 – SCHOOL
C14 – PEDESTRIAN CROSSING
C16 – SIDE ROAD LEFT
C17 – SIDE ROAD RIGHT
C18 – CROSS ROAD
C19 – GAP IN MEDIAN
C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
M9 – AHEAD ONLY
M10 – TURN LEFT
M11 – TURN RIGHT
M12 – TURN RIGHT AHEAD
INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
M20 – SOUND HORN
IS1 – PETROL BUNK
IS2 – HOSPITAL
IS3 – PUBLIC TELEPHONE
IS4 – RESTING PLACE
IS5 – BUS STOP
IS6 – TRUCK LAYBYE AHEAD
IS7 – TOLL PLAZA
ADVANCE DIRECTION SIGN (ADS–1)
ADVANCE DIRECTION SIGN (ADS–2)
REASSURANCE SIGN (ADS–3)
DIRECTION SIGN FOR VILLAGE
PLACE IDENTIFICATION SIGN
ROUTE MARKER SIGN
RM1–NH ROUTE MARKER
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FDPR

NOTE:

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0	05.09.24	DRAFT DETAILED PROJECT REPORT	JTP	SM	SNV

Date: 21.11.2023	Drawn by: PATRICK	Checked by: SRIKANTH	Scale: HOR 1:5000, VER : 1:500
File name: BU–S–01 TO S–23	Designed by: SURYA KIRAN	Approved by: SHIVAPRASAD	Sheets: 06 OF 23

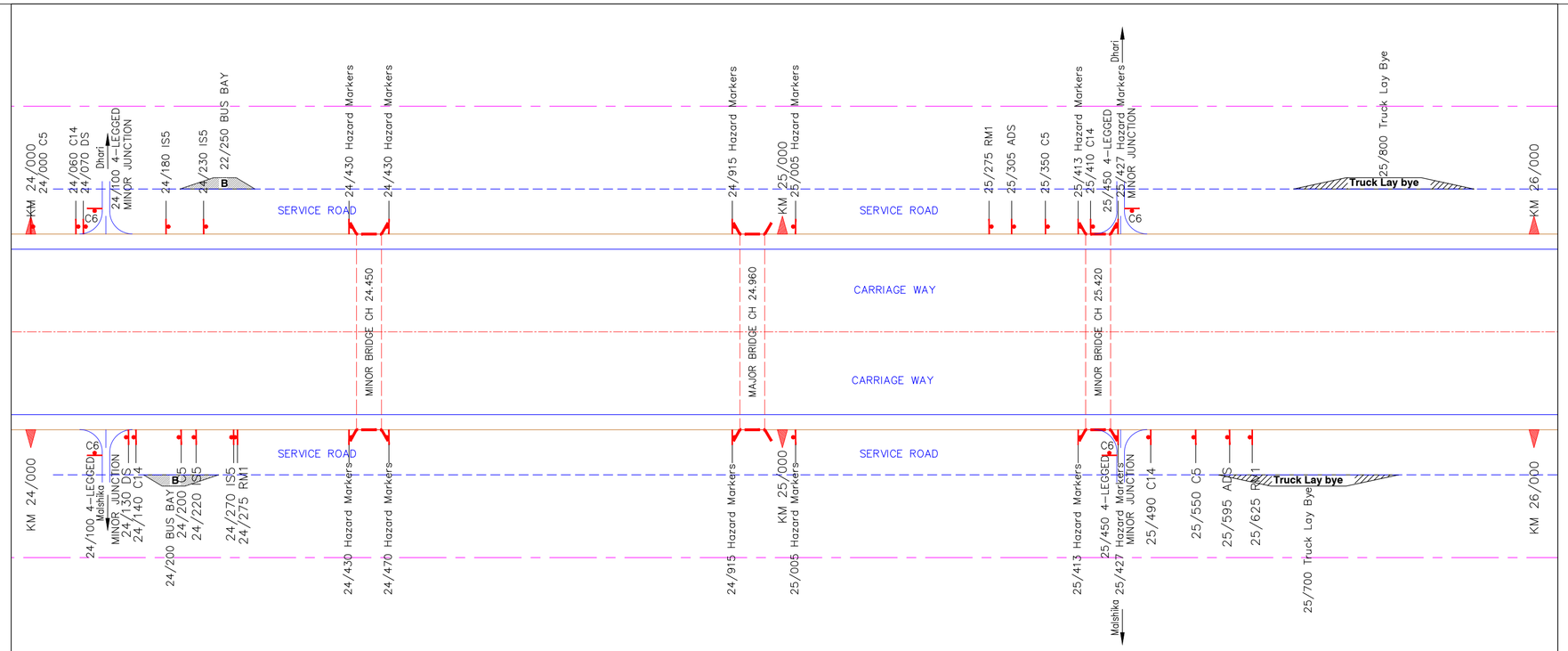
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 20/000 TO 24/000

Plot Size : (A2 Size) | DRG.NO : BU–S–06



CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
C10B – T – INTERSECTION RIGHT
C11 – STAGGERED INTERSECTION
C12 – STAGGERED INTERSECTION
C13 – SCHOOL
C14 – PEDESTRIAN CROSSING
C16 – SIDE ROAD LEFT
C17 – SIDE ROAD RIGHT
C18 – CROSS ROAD
C19 – GAP IN MEDIAN
C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
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INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
M20 – SOUND HORN
IS1 – PETROL BUNK
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FDPR

NOTE:

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Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	HOR 1:5000 VER : 1:500
File name	Designed by	Approved by	Sheets
BU–S–01 TO S–23	SURYA KIRAN	SHIVAPRASAD	07 OF 23

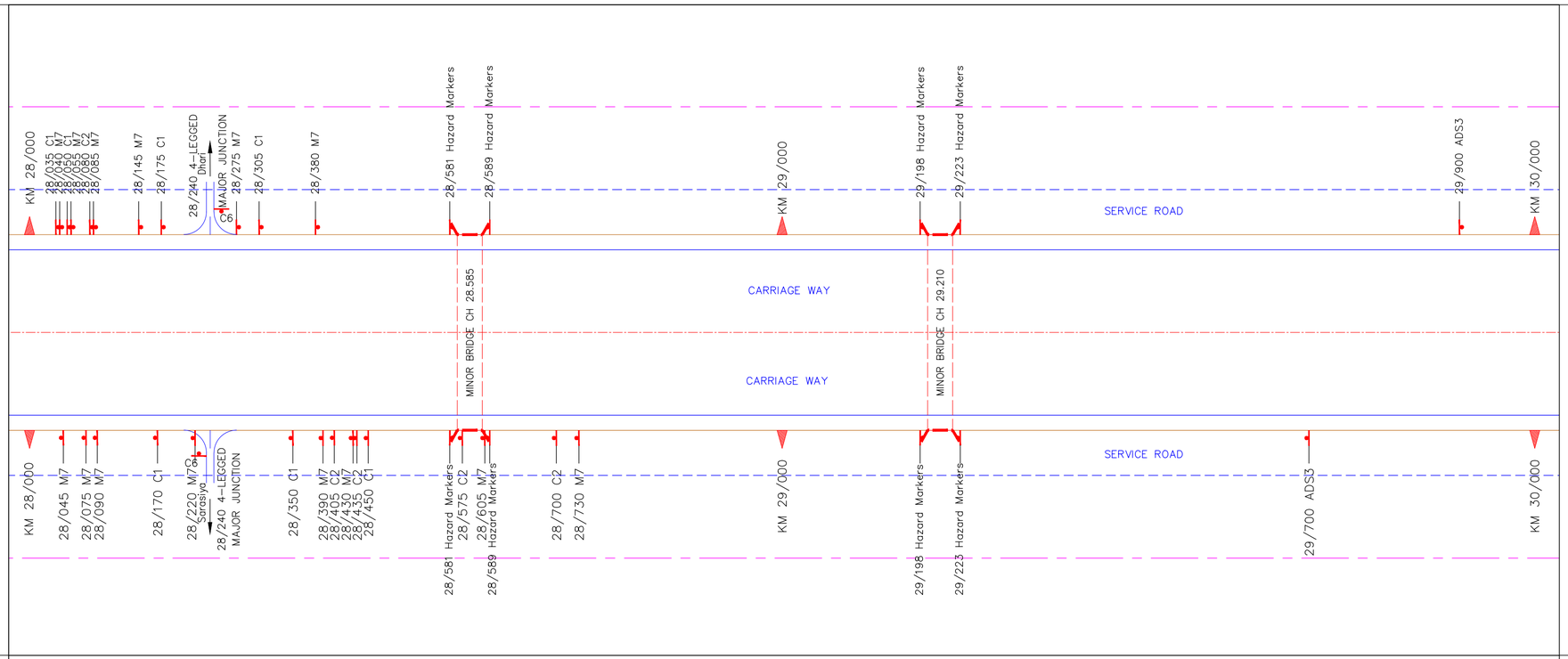
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CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 24/000 TO 28/000

Plot Size : (A2 Size) | DRG.NO : BU–S–07



CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
C10B – T – INTERSECTION RIGHT
C11 – STAGGERED INTERSECTION
C12 – STAGGERED INTERSECTION
C13 – SCHOOL
C14 – PEDESTRIAN CROSSING
C16 – SIDE ROAD LEFT
C17 – SIDE ROAD RIGHT
C18 – CROSS ROAD
C19 – GAP IN MEDIAN
C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
M9 – AHEAD ONLY
M10 – TURN LEFT
M11 – TURN RIGHT
M12 – TURN RIGHT AHEAD
INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
M20 – SOUND HORN
IS1 – PETROL BUNK
IS2 – HOSPITAL
IS3 – PUBLIC TELEPHONE
IS4 – RESTING PLACE
IS5 – BUS STOP
IS6 – TRUCK LAYBYE AHEAD
IS7 – TOLL PLAZA
ADVANCE DIRECTION SIGN (ADS–1)
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PLACE IDENTIFICATION SIGN
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FDPR

NOTE:

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Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	HOR 1:5000 VER : 1:500
File name	Designed by	Approved by	Sheets
BU–S–01 TO S–23	SURYA KIRAN	SHIVAPRASAD	08 OF 23

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 28/000 TO 32/000

Plot Size : (A2 Size) | DRG.NO : BU–S–08



CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
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C16 – SIDE ROAD LEFT
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C18 – CROSS ROAD
C19 – GAP IN MEDIAN
C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
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M10 – TURN LEFT
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INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
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IS1 – PETROL BUNK
IS2 – HOSPITAL
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ADVANCE DIRECTION SIGN (ADS–1)
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REASSURANCE SIGN (ADS–3)
DIRECTION SIGN FOR VILLAGE
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ROUTE MARKER SIGN
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FDPR

NOTE:

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ABBREVIATIONS:

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Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	HOR 1:5000 VER : 1:500
File name	Designed by	Approved by	Sheets
BU–S–01 TO S–23	SURYA KIRAN	SHIVAPRASAD	09 OF 23

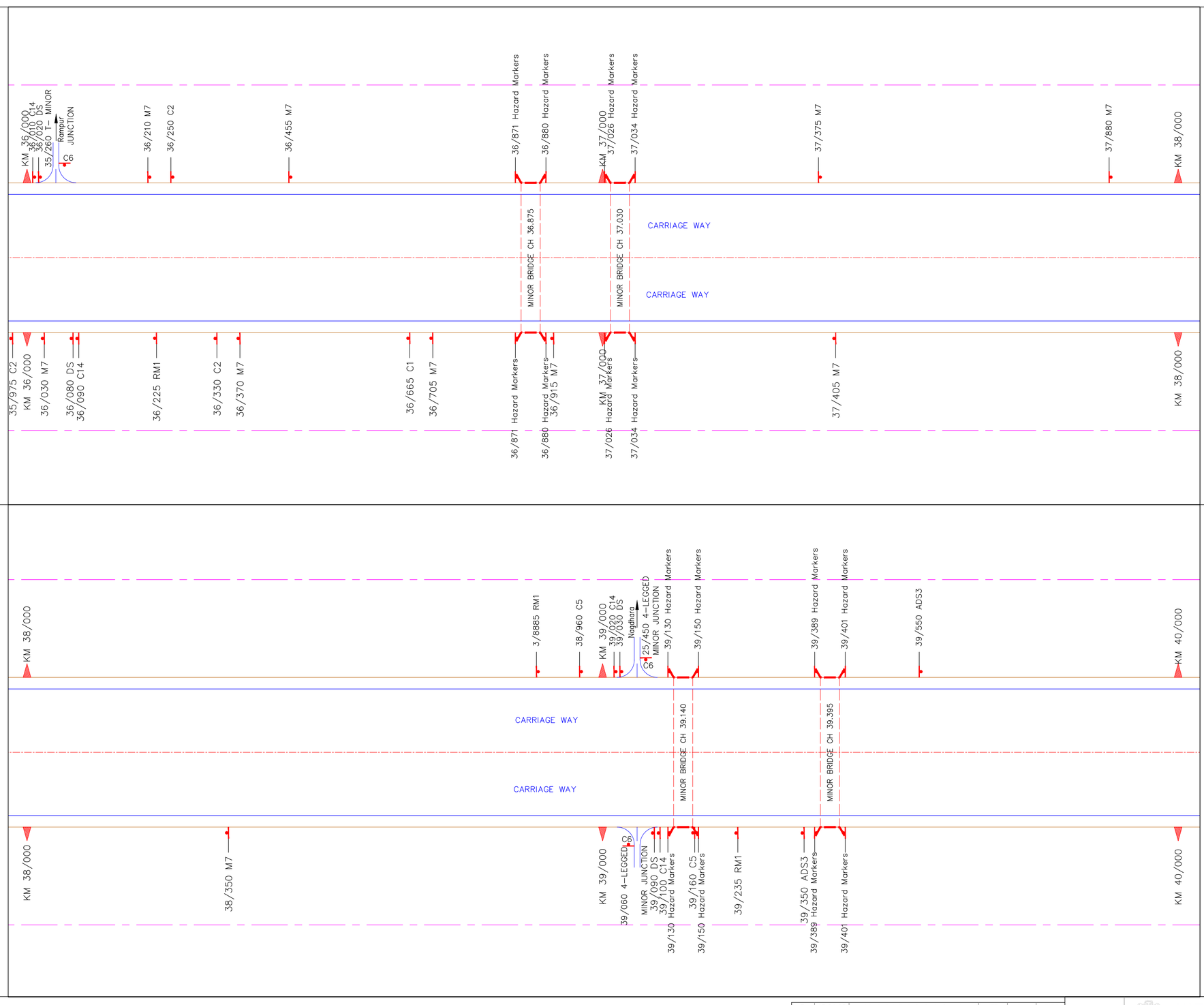
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON™

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 32/000 TO 36/000

Plot Size : (A2 Size) | DRG.NO : BU–S–09



CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
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C11 – STAGGERED INTERSECTION
C12 – STAGGERED INTERSECTION
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C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
M9 – AHEAD ONLY
M10 – TURN LEFT
M11 – TURN RIGHT
M12 – TURN RIGHT AHEAD
INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
M20 – SOUND HORN
IS1 – PETROL BUNK
IS2 – HOSPITAL
IS3 – PUBLIC TELEPHONE
IS4 – RESTING PLACE
IS5 – BUS STOP
IS6 – TRUCK LAYBYE AHEAD
IS7 – TOLL PLAZA
ADVANCE DIRECTION SIGN (ADS–1)
ADVANCE DIRECTION SIGN (ADS–2)
REASSURANCE SIGN (ADS–3)
DIRECTION SIGN FOR VILLAGE
PLACE IDENTIFICATION SIGN
ROUTE MARKER SIGN
RM1–NH ROUTE MARKER
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH STRAIGHT ARROW ON IT
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH SLANTED ARROW TO RIGHT ON IT
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH SLANTED ARROW TO LEFT ON IT

NOTE:

1. FOR DETAILS OF ROAD SIGNS REFER DRG. NOS. R–41, R–42, R–43.....
2. FOR DETAILS OF INTERSECTIONS AND MEDIAN OPENINGS REFER DRG. NOS. R–21.....
3. DISTANCE OF THE SIGN BOARDS MAY SUBJECT TO CHANGE AS PER SITE CONDITION.

ABBREVIATIONS:

1. 500 C1 – 500 IS THE METERAGE C1 IS THE SIGN NO.
2. C–20 – CLUSTER OF RED REFLECTORS (OBJECT MARKER SIGN)

FDPR

No	DATE	REVISIONS	BY	CHKD	APPD
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Date: 21.11.2023	Drawn by: PATRICK	Checked by: SRIKANTH	Scale: HOR 1:5000, VER : 1:500
File name: BU–S–01 TO S–23	Designed by: SURYA KIRAN	Approved by: SHIVAPRASAD	Sheets: 10 OF 23

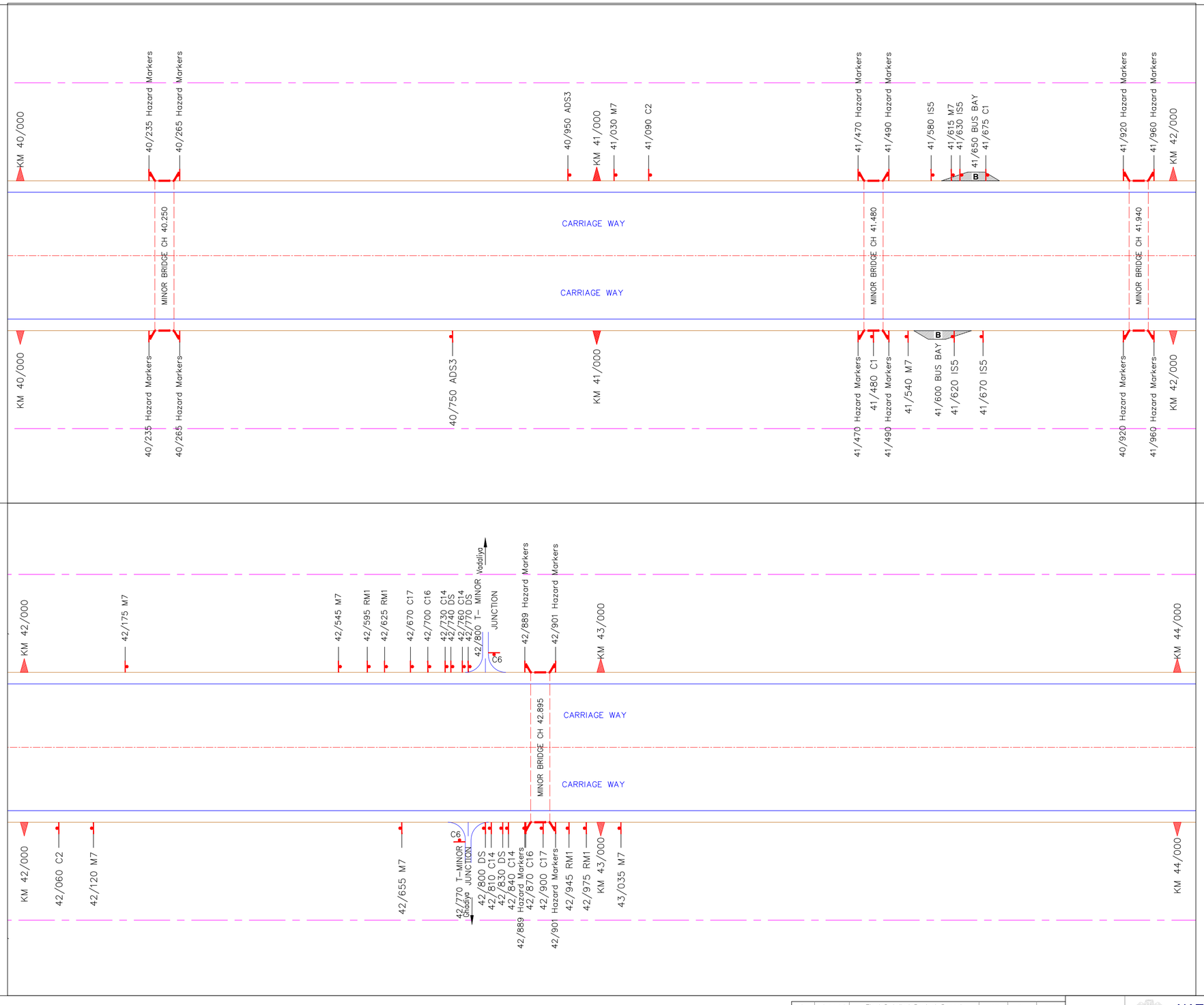
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 36/000 TO 40/000

Plot Size : (A2 Size) | DRG.NO : BU–S–10



CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
C10B – T – INTERSECTION RIGHT
C11 – STAGGERED INTERSECTION
C12 – STAGGERED INTERSECTION
C13 – SCHOOL
C14 – PEDESTRIAN CROSSING
C16 – SIDE ROAD LEFT
C17 – SIDE ROAD RIGHT
C18 – CROSS ROAD
C19 – GAP IN MEDIAN
C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
M9 – AHEAD ONLY
M10 – TURN LEFT
M11 – TURN RIGHT
M12 – TURN RIGHT AHEAD
INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
M20 – SOUND HORN
IS1 – PETROL BUNK
IS2 – HOSPITAL
IS3 – PUBLIC TELEPHONE
IS4 – RESTING PLACE
IS5 – BUS STOP
IS6 – TRUCK LAYBYE AHEAD
IS7 – TOLL PLAZA
ADVANCE DIRECTION SIGN (ADS–1)
ADVANCE DIRECTION SIGN (ADS–2)
REASSURANCE SIGN (ADS–3)
DIRECTION SIGN FOR VILLAGE
PLACE IDENTIFICATION SIGN
ROUTE MARKER SIGN
RM1–NH ROUTE MARKER
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH STRAIGHT ARROW ON IT
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ABBREVIATIONS:

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2. C–20 – CLUSTER OF RED REFLECTORS (OBJECT MARKER SIGN)

FDPR

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Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	HOR 1:5000 VER : 1:500
File name	Designed by	Approved by	Sheets
BU–S–01 TO S–23	SURYA KIRAN	SHIVAPRASAD	11 OF 23

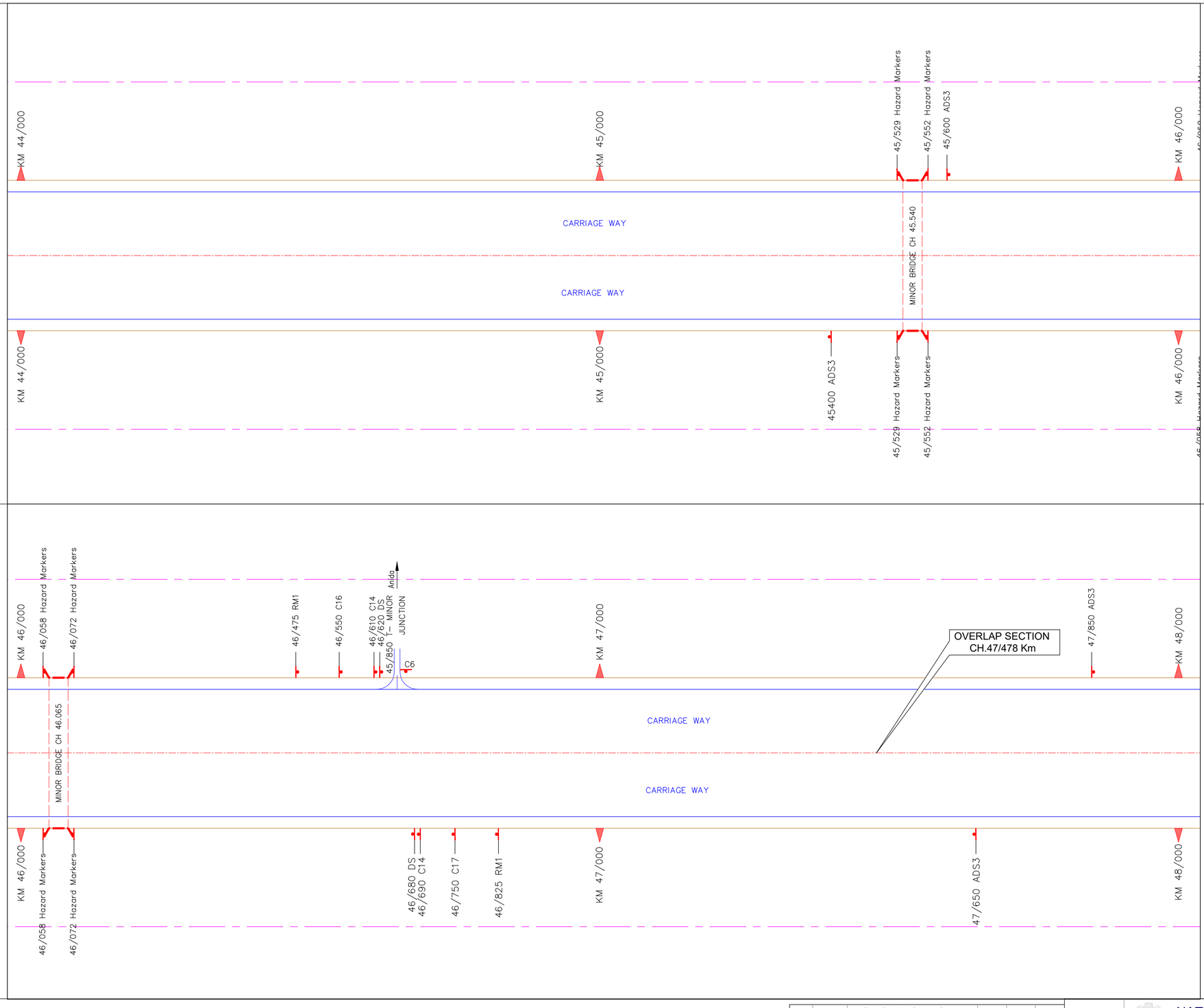
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 40/000 TO 44/000

Plot Size : (A2 Size) | DRG.NO : BU–S–11



CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
C10B – T – INTERSECTION RIGHT
C11 – STAGGERED INTERSECTION
C12 – STAGGERED INTERSECTION
C13 – SCHOOL
C14 – PEDESTRIAN CROSSING
C16 – SIDE ROAD LEFT
C17 – SIDE ROAD RIGHT
C18 – CROSS ROAD
C19 – GAP IN MEDIAN
C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
M9 – AHEAD ONLY
M10 – TURN LEFT
M11 – TURN RIGHT
M12 – TURN RIGHT AHEAD
INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
M20 – SOUND HORN
IS1 – PETROL BUNK
IS2 – HOSPITAL
IS3 – PUBLIC TELEPHONE
IS4 – RESTING PLACE
IS5 – BUS STOP
IS6 – TRUCK LAYBYE AHEAD
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FDPR

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File name: BU–S–01 TO S–23	Designed by: SURYA KIRAN	Approved by: SHIVAPRASAD	Sheets: 12 OF 23

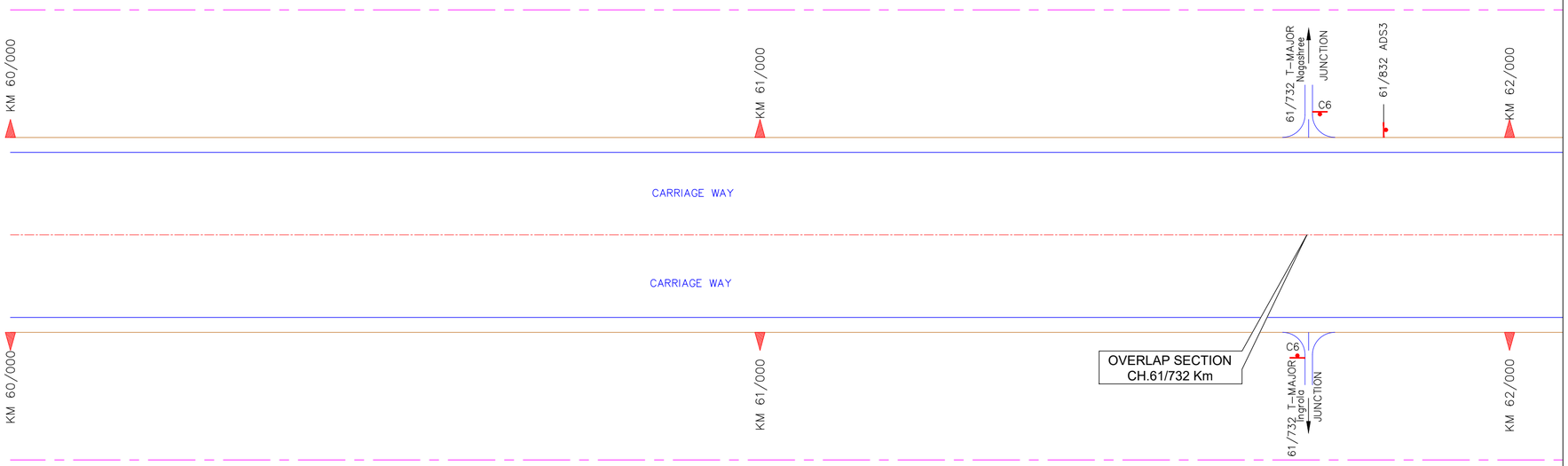
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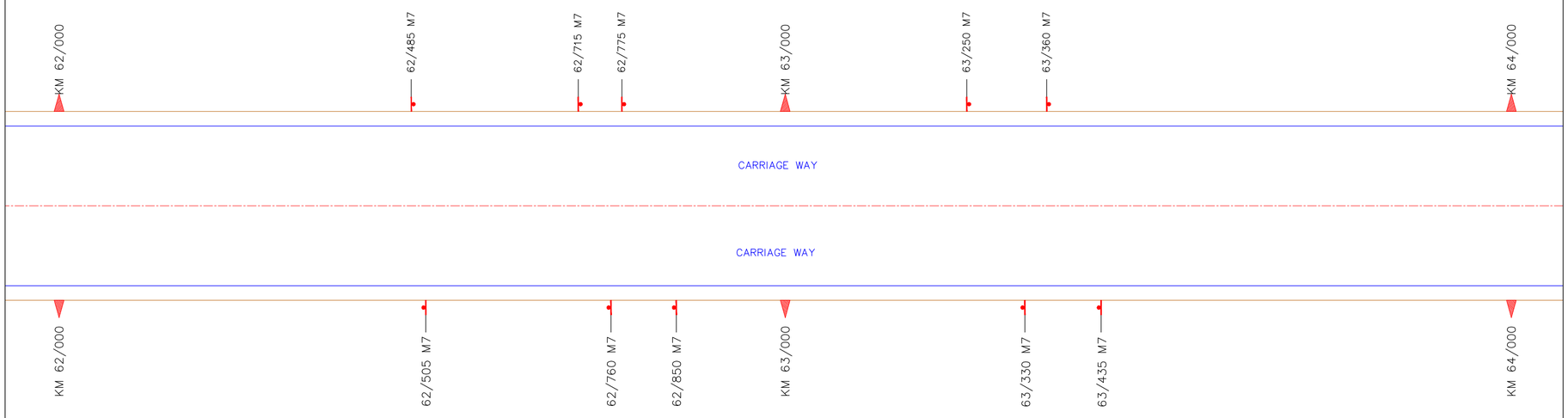
PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 44/000 TO 47/478

Plot Size : (A2 Size) | DRG.NO : BU–S–12





CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
C10B – T – INTERSECTION RIGHT
C11 – STAGGERED INTERSECTION
C12 – STAGGERED INTERSECTION
C13 – SCHOOL
C14 – PEDESTRIAN CROSSING
C16 – SIDE ROAD LEFT
C17 – SIDE ROAD RIGHT
C18 – CROSS ROAD
C19 – GAP IN MEDIAN
C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
M9 – AHEAD ONLY
M10 – TURN LEFT
M11 – TURN RIGHT
M12 – TURN RIGHT AHEAD
INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
M20 – SOUND HORN
IS1 – PETROL BUNK
IS2 – HOSPITAL
IS3 – PUBLIC TELEPHONE
IS4 – RESTING PLACE
IS5 – BUS STOP
IS6 – TRUCK LAYBYE AHEAD
IS7 – TOLL PLAZA
ADVANCE DIRECTION SIGN (ADS–1)
ADVANCE DIRECTION SIGN (ADS–2)
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DIRECTION SIGN FOR VILLAGE
PLACE IDENTIFICATION SIGN
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FDPR

NOTE:

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Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	HOR 1:5000 VER : 1:500
File name	Designed by	Approved by	Sheets
BU-S-01 TO S-23	SURYA KIRAN	SHIVAPRASAD	13 OF 23

CLIENT

NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT

CONSULTANCY SERVICES FOR UP GRADATION OF
UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA
NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 60/784 TO 64/000

Plot Size : (A2 Size) | DRG.NO : BU–S–13



CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
C10B – T – INTERSECTION RIGHT
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C17 – SIDE ROAD RIGHT
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MANDATORY SIGNS
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CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
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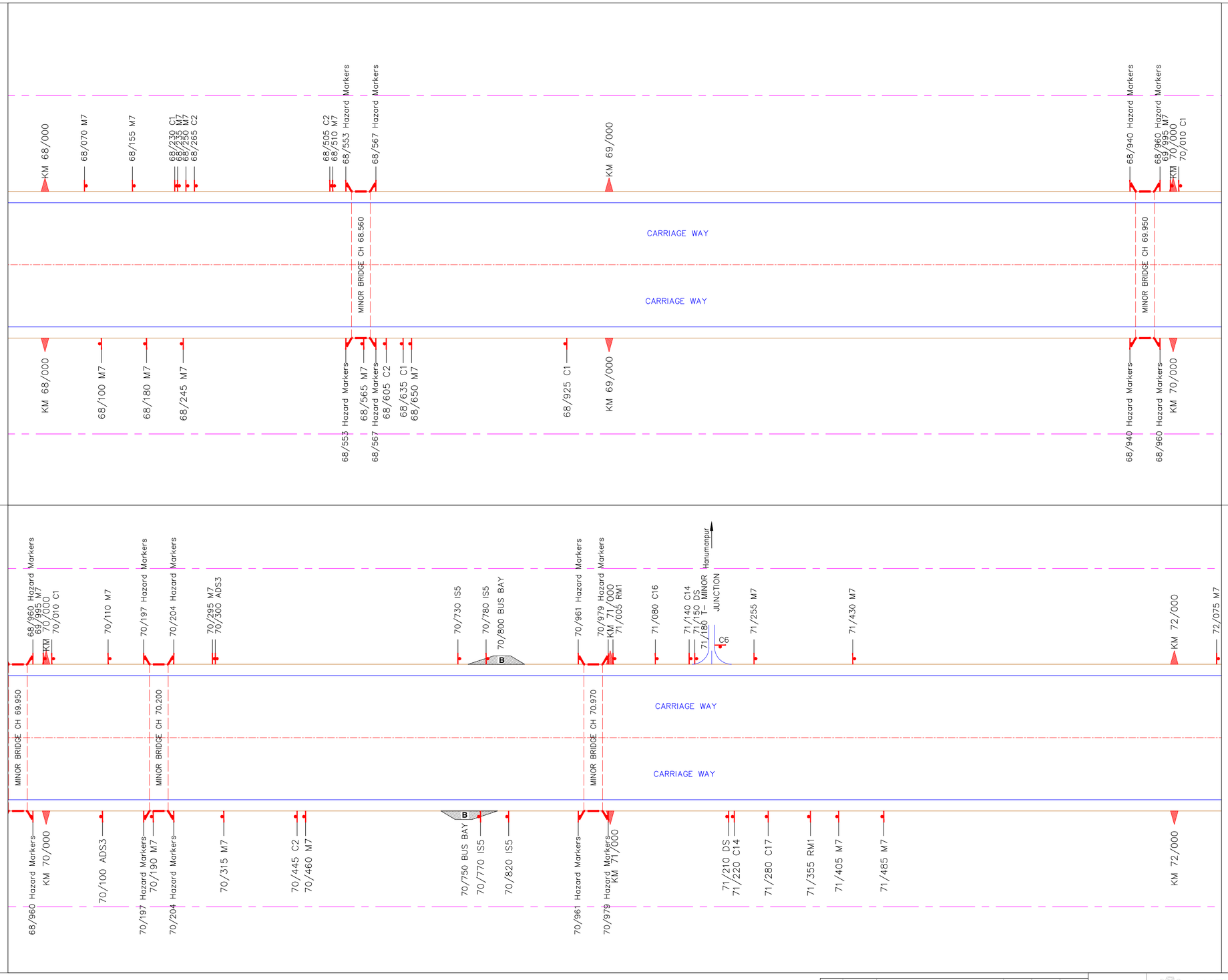
PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 64/000 TO 68/000

Plot Size : (A2 Size)

DRG.NO : BU–S–14



CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
C10B – T – INTERSECTION RIGHT
C11 – STAGGERED INTERSECTION
C12 – STAGGERED INTERSECTION
C13 – SCHOOL
C14 – PEDESTRIAN CROSSING
C16 – SIDE ROAD LEFT
C17 – SIDE ROAD RIGHT
C18 – CROSS ROAD
C19 – GAP IN MEDIAN
C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
M9 – AHEAD ONLY
M10 – TURN LEFT
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INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
M20 – SOUND HORN
IS1 – PETROL BUNK
IS2 – HOSPITAL
IS3 – PUBLIC TELEPHONE
IS4 – RESTING PLACE
IS5 – BUS STOP
IS6 – TRUCK LAYBYE AHEAD
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FDPR

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File name: BU–S–01 TO S–23	Designed by: SURYA KIRAN	Approved by: SHIVAPRASAD	Sheets: 15 OF 23

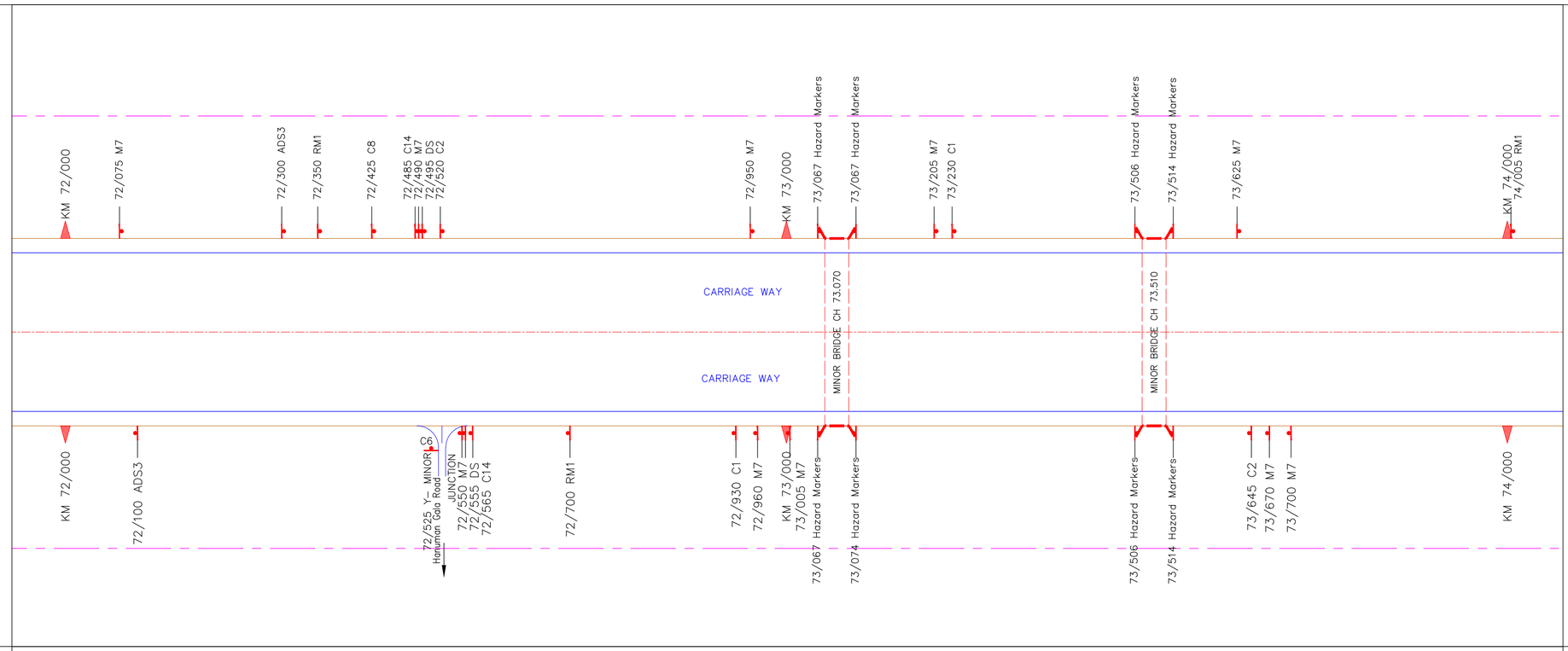
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

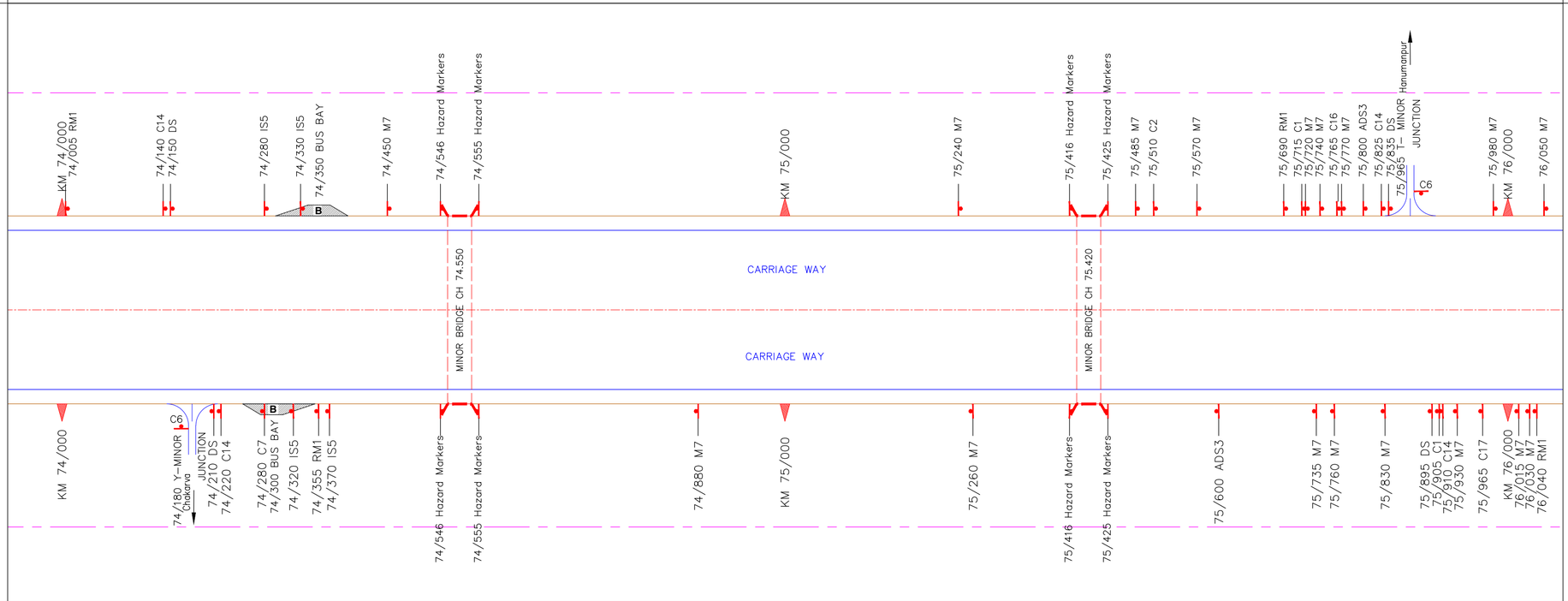
PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 68/000 TO 72/000

Plot Size : (A2 Size) | DRG.NO : BU–S–15





CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
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RM1–NH ROUTE MARKER
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH STRAIGHT ARROW ON IT
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH SLANTED ARROW TO RIGHT ON IT
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH SLANTED ARROW TO LEFT ON IT

FDPR

NOTE:

1. FOR DETAILS OF ROAD SIGNS REFER DRG. NOS. R–41, R–42, R–43.....
2. FOR DETAILS OF INTERSECTIONS AND MEDIAN OPENINGS REFER DRG. NOS. R–21.....
3. DISTANCE OF THE SIGN BOARDS MAY SUBJECT TO CHANGE AS PER SITE CONDITION.

ABBREVIATIONS:

1. 500 C1 – 500 IS THE METERAGE C1 IS THE SIGN NO.
2. C–20 – CLUSTER OF RED REFLECTORS (OBJECT MARKER SIGN)

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0	05.09.24	DRAFT DETAILED PROJECT REPORT	JTP	SM	SNV

Date: 21.11.2023	Drawn by: PATRICK	Checked by: SRIKANTH	Scale: HOR 1:5000, VER : 1:500
File name: BU–S–01 TO S–23	Designed by: SURYA KIRAN	Approved by: SHIVAPRASAD	Sheets: 16 OF 23

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

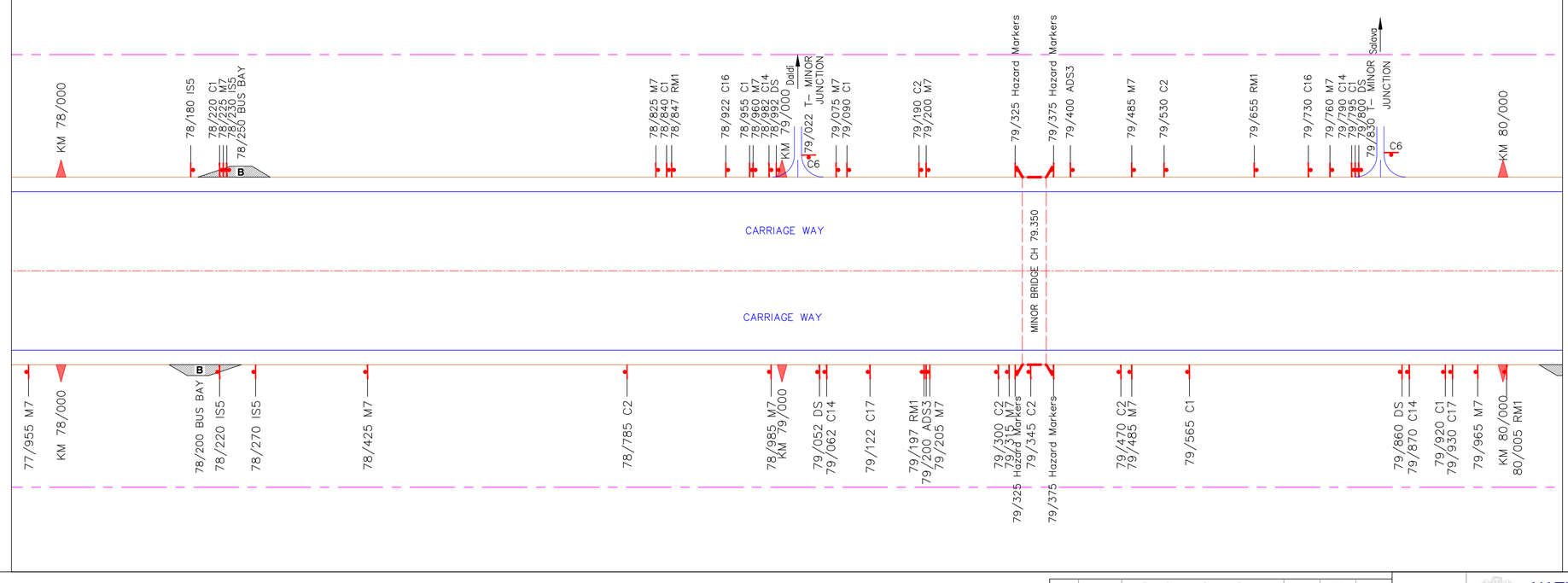
PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 72/000 TO 76/000

Plot Size : (A2 Size) | DRG.NO : BU–S–16





CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
C10B – T – INTERSECTION RIGHT
C11 – STAGGERED INTERSECTION
C12 – STAGGERED INTERSECTION
C13 – SCHOOL
C14 – PEDESTRIAN CROSSING
C16 – SIDE ROAD LEFT
C17 – SIDE ROAD RIGHT
C18 – CROSS ROAD
C19 – GAP IN MEDIAN
C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
M9 – AHEAD ONLY
M10 – TURN LEFT
M11 – TURN RIGHT
M12 – TURN RIGHT AHEAD
INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
M20 – SOUND HORN
IS1 – PETROL BUNK
IS2 – HOSPITAL
IS3 – PUBLIC TELEPHONE
IS4 – RESTING PLACE
IS5 – BUS STOP
IS6 – TRUCK LAYBYE AHEAD
IS7 – TOLL PLAZA
ADVANCE DIRECTION SIGN (ADS–1)
ADVANCE DIRECTION SIGN (ADS–2)
REASSURANCE SIGN (ADS–3)
DIRECTION SIGN FOR VILLAGE
PLACE IDENTIFICATION SIGN
ROUTE MARKER SIGN
RM1–NH ROUTE MARKER
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH STRAIGHT ARROW ON IT
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NOTE:

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ABBREVIATIONS:

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FDPR

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CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

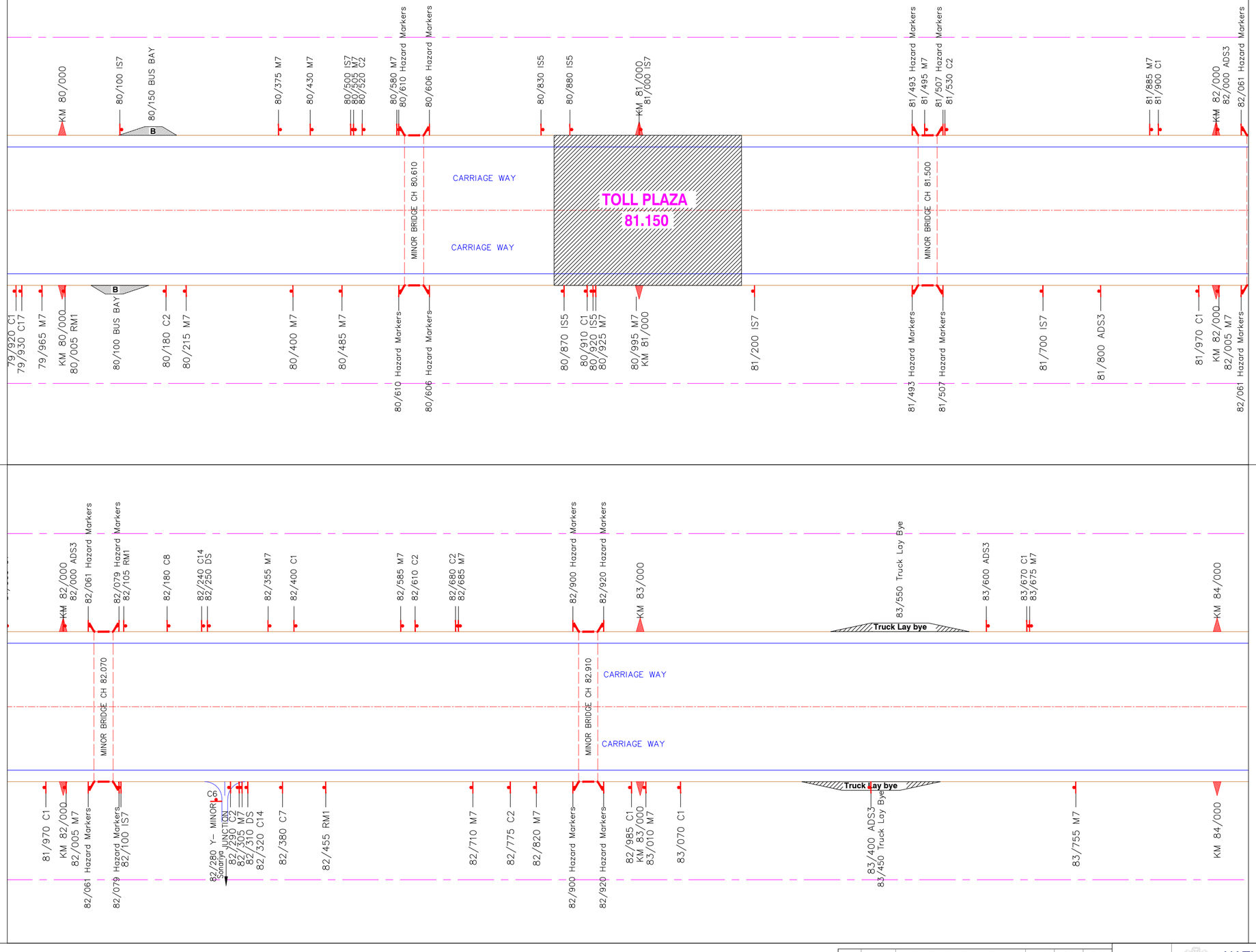
PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 76/000 TO 80/000

Plot Size : (A2 Size)

DRG.NO : BU–S–17



CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
C10B – T – INTERSECTION RIGHT
C11 – STAGGERED INTERSECTION
C12 – STAGGERED INTERSECTION
C13 – SCHOOL
C14 – PEDESTRIAN CROSSING
C16 – SIDE ROAD LEFT
C17 – SIDE ROAD RIGHT
C18 – CROSS ROAD
C19 – GAP IN MEDIAN
C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
M9 – AHEAD ONLY
M10 – TURN LEFT
M11 – TURN RIGHT
M12 – TURN RIGHT AHEAD
INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
M20 – SOUND HORN
IS1 – PETROL BUNK
IS2 – HOSPITAL
IS3 – PUBLIC TELEPHONE
IS4 – RESTING PLACE
IS5 – BUS STOP
IS6 – TRUCK LAYBYE AHEAD
IS7 – TOLL PLAZA
ADVANCE DIRECTION SIGN (ADS–1)
ADVANCE DIRECTION SIGN (ADS–2)
REASSURANCE SIGN (ADS–3)
DIRECTION SIGN FOR VILLAGE
PLACE IDENTIFICATION SIGN
ROUTE MARKER SIGN
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FDPR

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BU–S–01 TO S–23	SURYA KIRAN	SHIVAPRASAD	18 OF 23

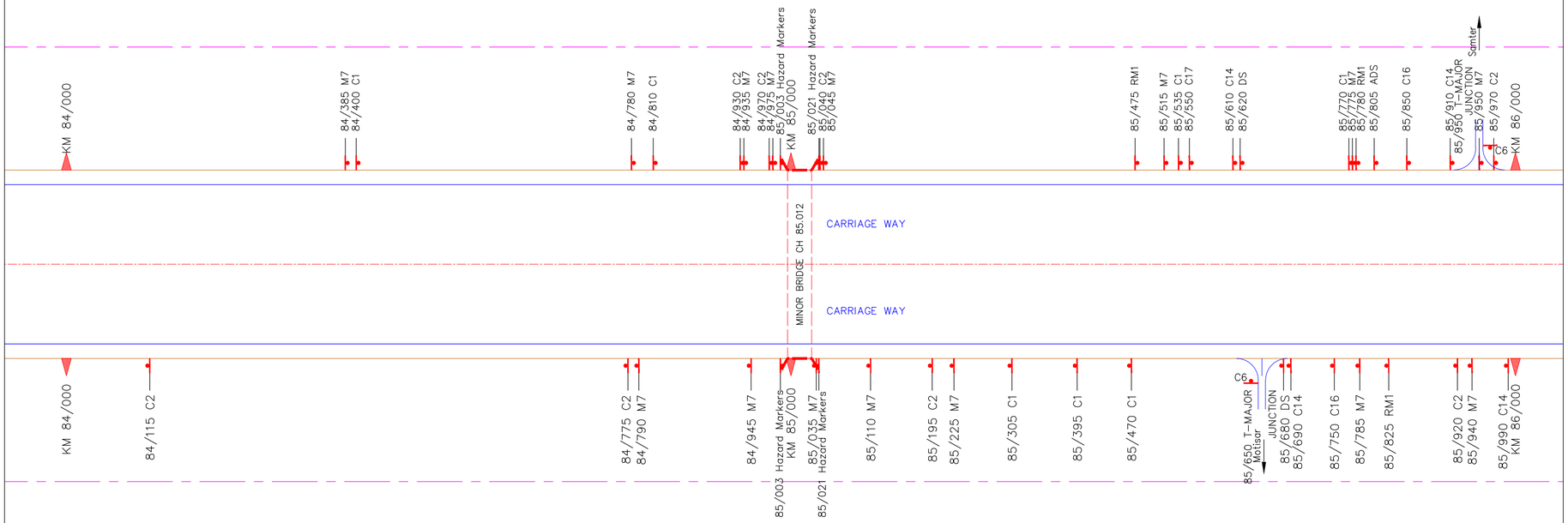
SECON

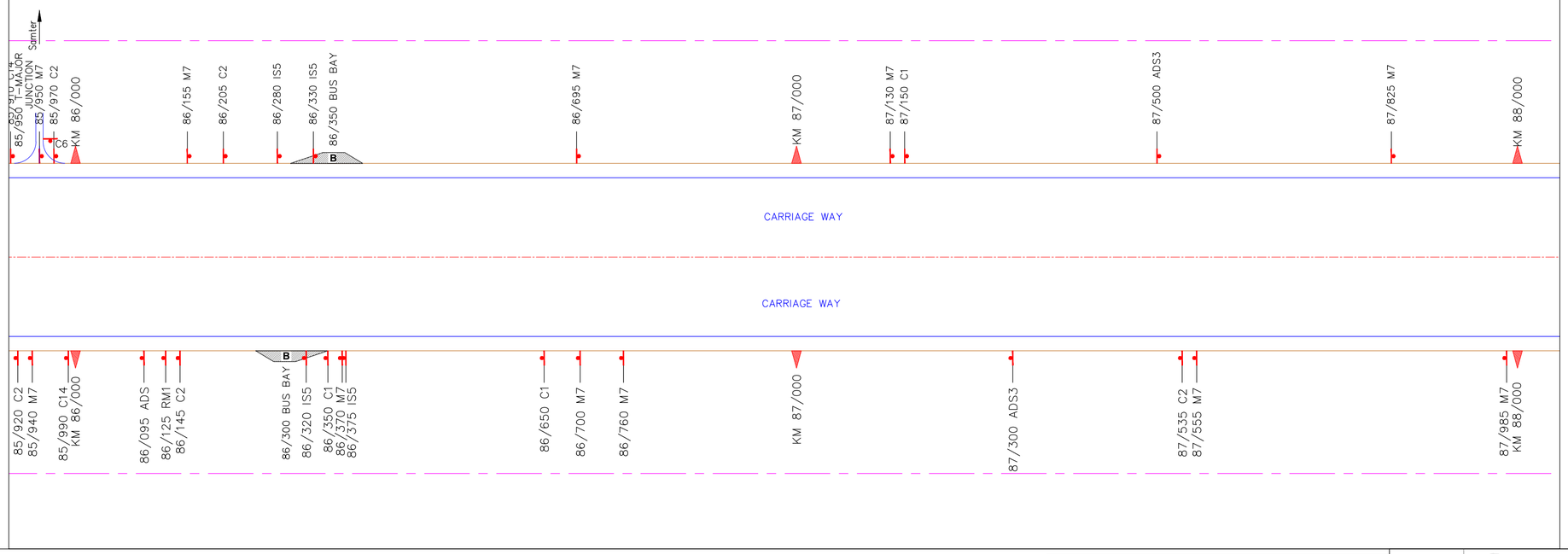
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 80/000 TO 84/000

Plot Size : (A2 Size) | DRG.NO : BU–S–18





CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
C10B – T – INTERSECTION RIGHT
C11 – STAGGERED INTERSECTION
C12 – STAGGERED INTERSECTION
C13 – SCHOOL
C14 – PEDESTRIAN CROSSING
C16 – SIDE ROAD LEFT
C17 – SIDE ROAD RIGHT
C18 – CROSS ROAD
C19 – GAP IN MEDIAN
C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
M9 – AHEAD ONLY
M10 – TURN LEFT
M11 – TURN RIGHT
M12 – TURN RIGHT AHEAD
INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
M20 – SOUND HORN
IS1 – PETROL BUNK
IS2 – HOSPITAL
IS3 – PUBLIC TELEPHONE
IS4 – RESTING PLACE
IS5 – BUS STOP
IS6 – TRUCK LAYBYE AHEAD
IS7 – TOLL PLAZA
ADVANCE DIRECTION SIGN (ADS–1)
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FDPR

NOTE:

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BU–S–01 TO S–23	SURYA KIRAN	SHIVAPRASAD	19 OF 23

CLIENT

NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

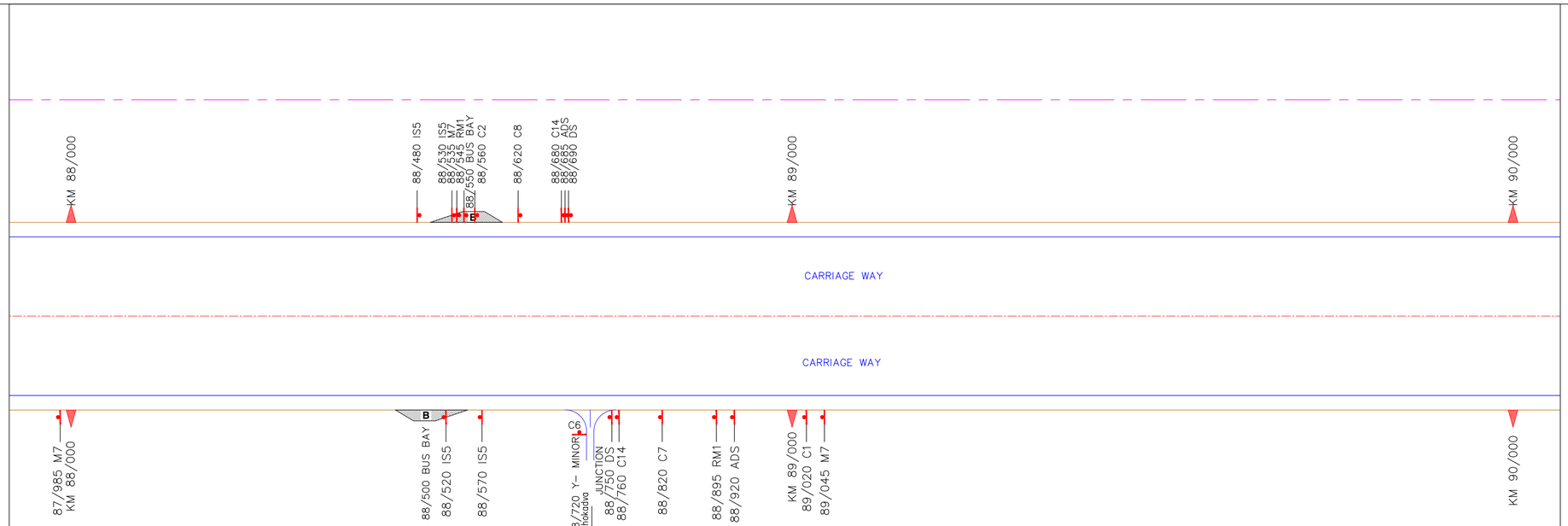
PROJECT

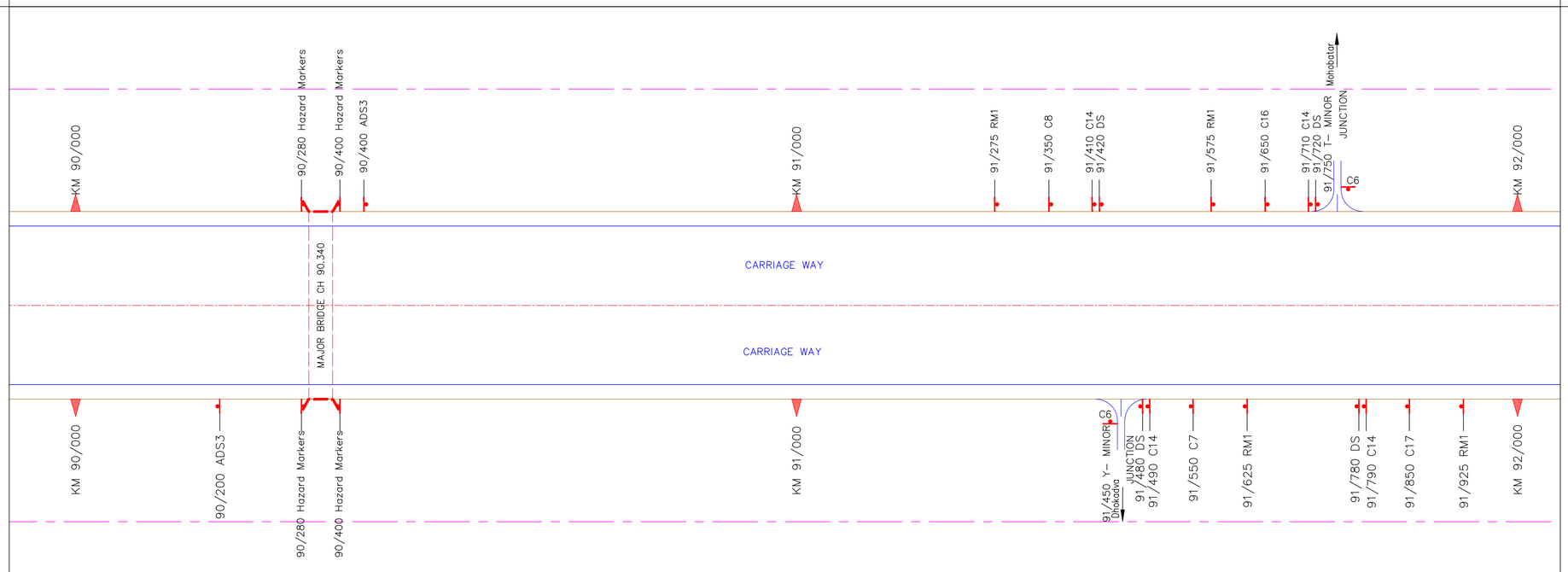
CONSULTANCY SERVICES FOR UP GRADATION OF
UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA
NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 84/000 TO 88/000

Plot Size : (A2 Size) | DRG.NO : BU–S–19





CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
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MANDATORY SIGNS
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M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
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FDPR

NOTE:

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CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
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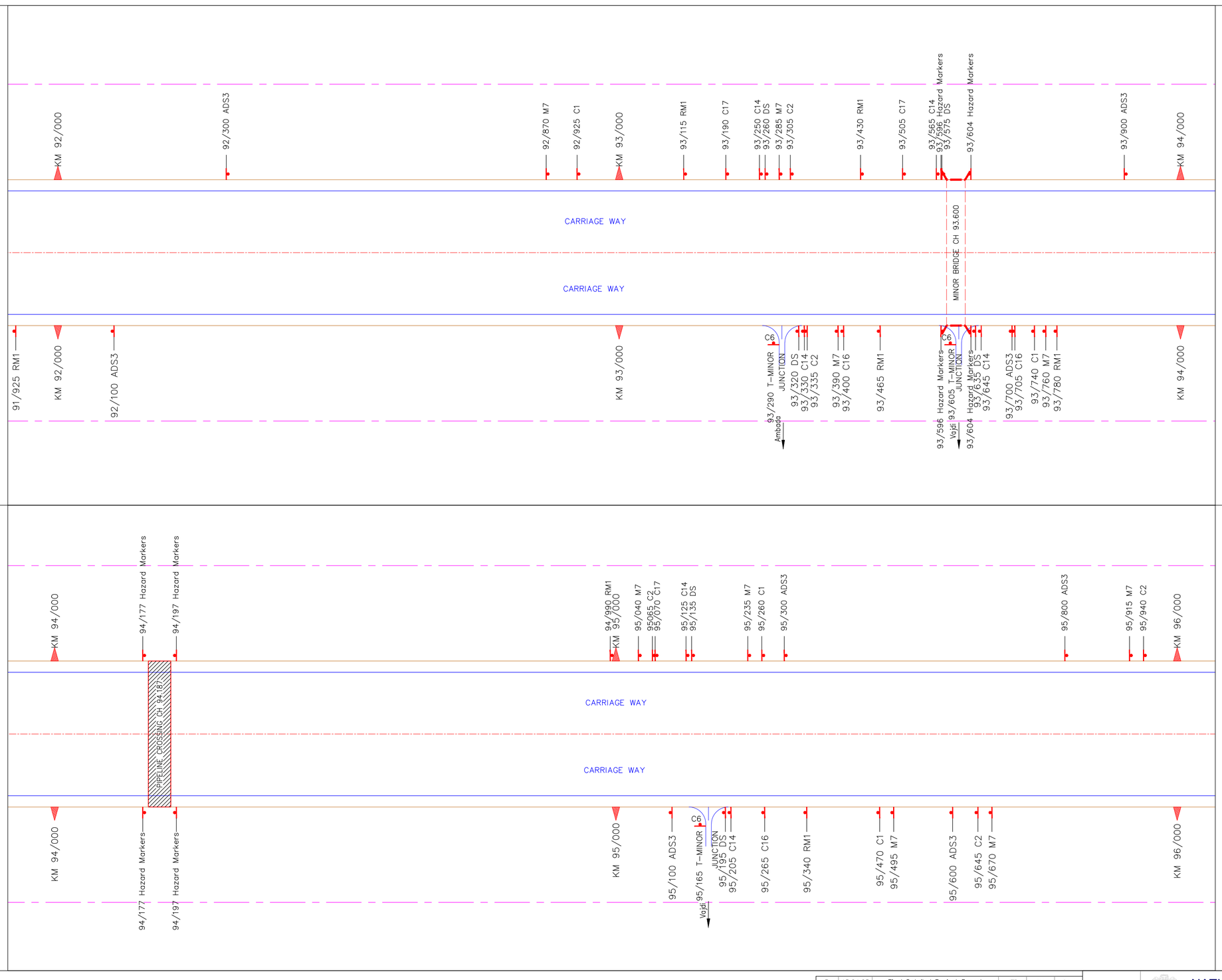
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SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 88/000 TO 92/000

Plot Size : (A2 Size)

DRG.NO : BU–S–20



CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
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MANDATORY SIGNS
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M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
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INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
M20 – SOUND HORN
IS1 – PETROL BUNK
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CLIENT

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DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT

CONSULTANCY SERVICES FOR UP GRADATION OF
UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA
NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 92/000 TO 96/000

Plot Size : (A2 Size) | DRG.NO : BU–S–21



CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
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1. 500 C1 – 500 IS THE METERAGE C1 IS THE SIGN NO.
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No	DATE	REVISIONS	BY	CHKD	APPD
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0	05.09.24	DRAFT DETAILED PROJECT REPORT	JTP	SM	SNV

Date: 21.11.2023	Drawn by: PATRICK	Checked by: SRIKANTH	Scale: HOR 1:5000, VER : 1:500
File name: BU–S–01 TO S–23	Designed by: SURYA KIRAN	Approved by: SHIVAPRASAD	Sheets: 22 OF 23

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

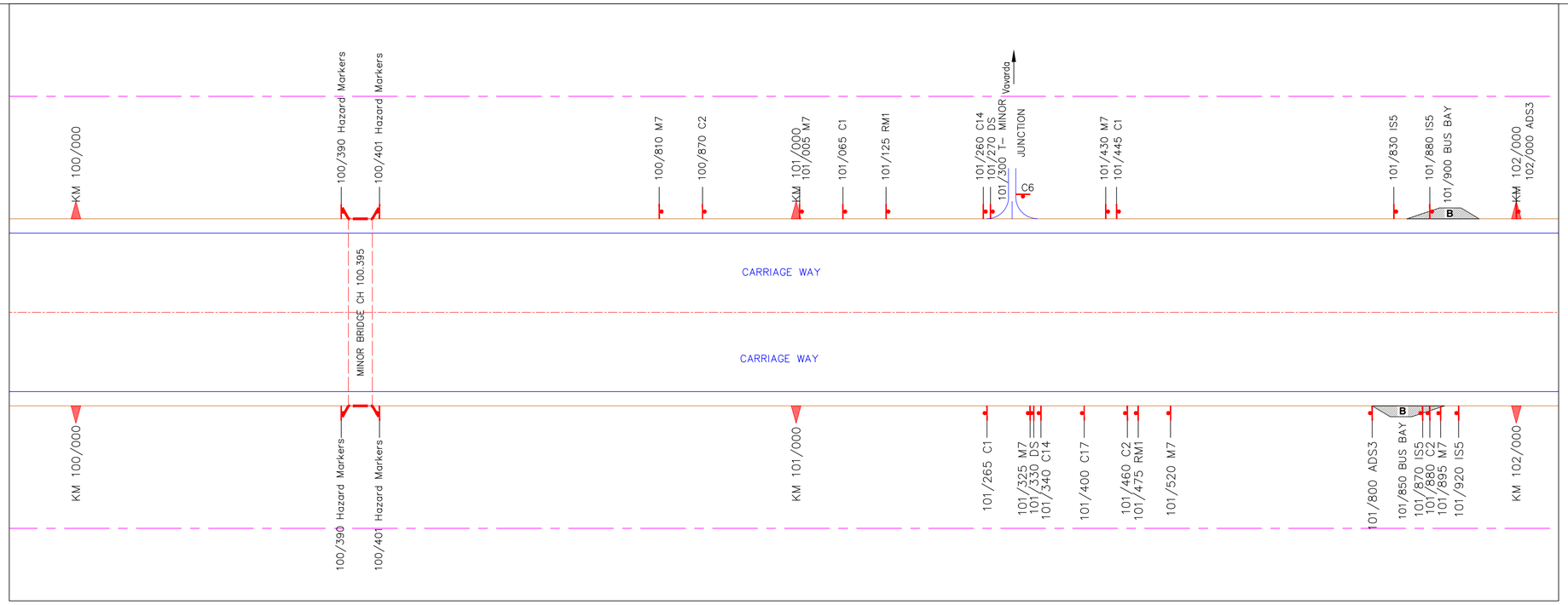
PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

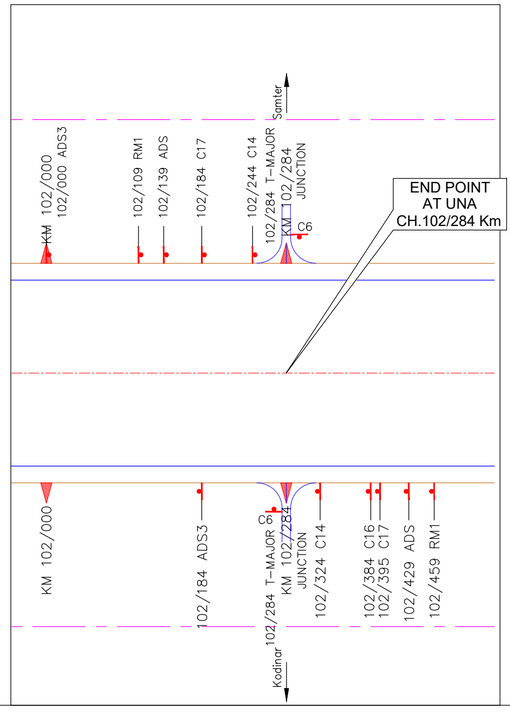
SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 96/000 TO 100/000

Plot Size : (A2 Size)

DRG.NO : BU–S–22





CAUTIONARY SIGNS
C1 – RIGHT HAND CURVE
C2 – LEFT HAND CURVE
C3 – RIGHT REVERSE BEND
C4 – LEFT REVERSE BEND
C5 – MAJOR ROAD AHEAD CROSSING
C6 – MAJOR ROAD AHEAD
C7 – Y – INTERSECTION LEFT
C8 – Y – INTERSECTION RIGHT
C9 – Y – INTERSECTION
C10A – T – INTERSECTION LEFT
C10B – T – INTERSECTION RIGHT
C11 – STAGGERED INTERSECTION
C12 – STAGGERED INTERSECTION
C13 – SCHOOL
C14 – PEDESTRIAN CROSSING
C16 – SIDE ROAD LEFT
C17 – SIDE ROAD RIGHT
C18 – CROSS ROAD
C19 – GAP IN MEDIAN
C20 – CLUSTER OF RED REFLECTORS
MANDATORY SIGNS
M1 – STOP
M2 – GIVE WAY
M3 – ONE WAY SIGNS
M4 – U – TURN PROHIBITED
M5 – NO PARKING
M6 – NO STOPPING OR STANDING
M7 – SPEED LIMIT
M8 – KEEP LEFT
M9 – AHEAD ONLY
M10 – TURN LEFT
M11 – TURN RIGHT
M12 – TURN RIGHT AHEAD
INFORMATORY SIGNS
M19 – AHEAD OR TURN RIGHT
M20 – SOUND HORN
IS1 – PETROL BUNK
IS2 – HOSPITAL
IS3 – PUBLIC TELEPHONE
IS4 – RESTING PLACE
IS5 – BUS STOP
IS6 – TRUCK LAYBYE AHEAD
IS7 – TOLL PLAZA
ADVANCE DIRECTION SIGN (ADS–1)
ADVANCE DIRECTION SIGN (ADS–2)
REASSURANCE SIGN (ADS–3)
DIRECTION SIGN FOR VILLAGE
PLACE IDENTIFICATION SIGN
ROUTE MARKER SIGN
RM1–NH ROUTE MARKER
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH STRAIGHT ARROW ON IT
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH SLANTED ARROW TO RIGHT ON IT
RM2–NH ROUTE MARKER WITH DEFINITION PLATE WITH SLANTED ARROW TO LEFT ON IT

NOTE:

1. FOR DETAILS OF ROAD SIGNS REFER DRG. NOS. R–41, R–42, R–43.....
2. FOR DETAILS OF INTERSECTIONS AND MEDIAN OPENINGS REFER DRG. NOS. R–21.....
3. DISTANCE OF THE SIGN BOARDS MAY SUBJECT TO CHANGE AS PER SITE CONDITION.

ABBREVIATIONS:

1. 500 C1 – 500 IS THE METERAGE C1 IS THE SIGN NO.
2. C–20 – CLUSTER OF RED REFLECTORS (OBJECT MARKER SIGN)

FDPR

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Date: 21.11.2023	Drawn by: PATRICK	Checked by: SRIKANTH	Scale: HOR 1:5000, VER : 1:500
File name: BU–S–01 TO S–23	Designed by: SURYA KIRAN	Approved by: SHIVAPRASAD	Sheets: 23 OF 23

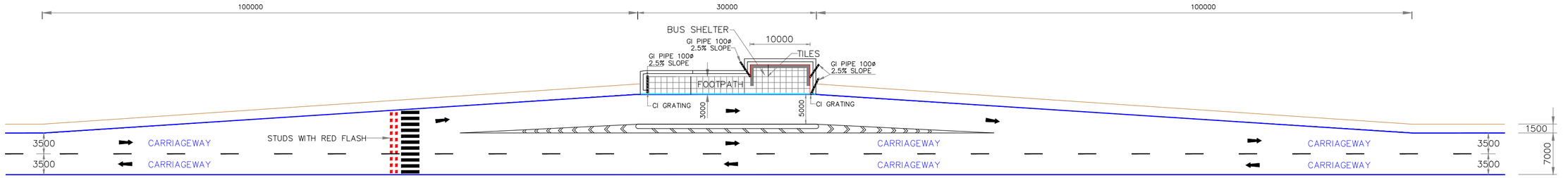
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

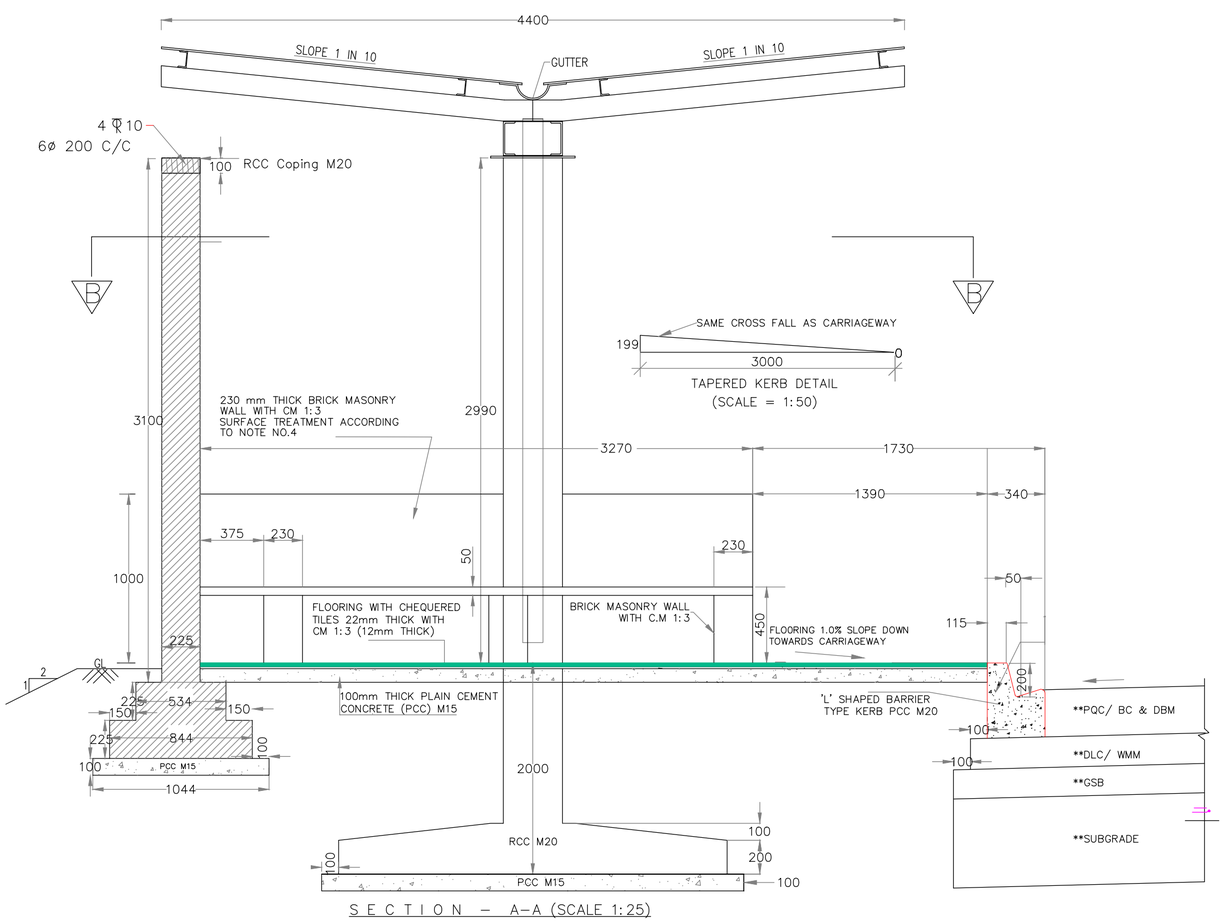
SECON

SCHEMATIC LINEAR PLAN (NH-351K)
SECTION : BAGASARA TO UNA
Ch. 100/000 TO 102/284

Plot Size : (A2 Size) | DRG.NO : BU–S–23

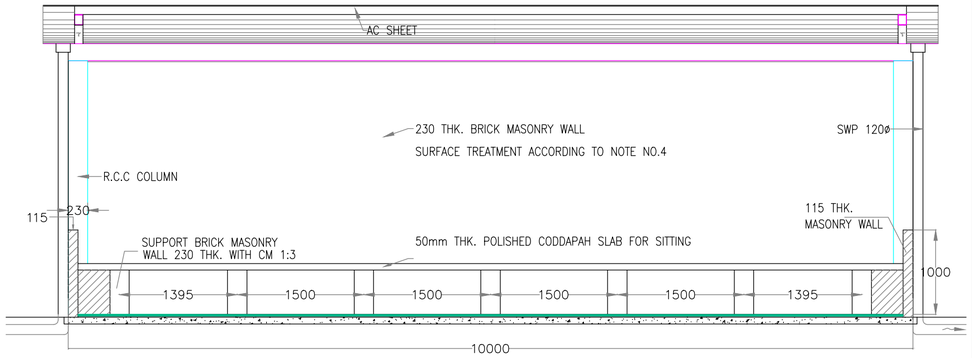


BUS LAY-BYE
(SCALE 1:500)

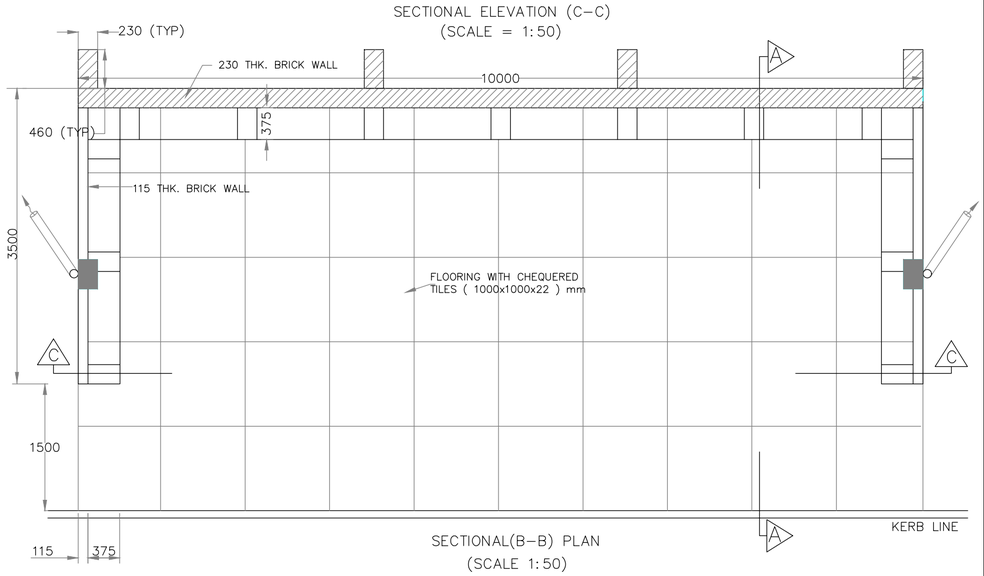


S E C T I O N – A–A (SCALE 1:25)

TAPERED KERB DETAIL
(SCALE = 1:50)



SECTIONAL ELEVATION (C–C)
(SCALE = 1:50)



SECTIONAL(B–B) PLAN
(SCALE 1:50)

NOTE:

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE MENTIONED
2. DIMENSIONS ARE NOT TO BE SCALED AND ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
3. FOR DETAILS REGARDING ROAD SIGNS AND PAVEMENT MARKING SEE SEPARATE DRAWINGS FOR EACH LOCATION.
4. CEMENT PLASTER SHOULD BE PROVIDED WITH CEMENT MORTAR (1:3) AND PAINTED (YELLOW COLOUR) WITH EPOXY PAINT AT INSIDE FACE AND CEMENT BASED PAINT (YELLOW COLOUR) AT OUTSIDE FACE.
5. THE ENDS OF THE KERB (L-SHAPED) SHOULD BE TAPERED OFF TO 0 ON LAST 3m FROM END OF THE KERB.
6. FOR OTHER DETAILS REFER IRC:80-1981

**PAVEMENT THICKNESS FOR THE DRAWING IS AS MENTION BELOW

PAVEMENT DETAILS	
Pavement type	Flexible
Pavement Thickness	
BC	40
DBM	125
WMM	250
GSB	200

FDPR

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Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	AS SHOWN
File name	Designed by	Approved by	Sheets
BU-BS-01	SURYA KIRAN	SHIVAPRASAD	01 OF 02

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

(NH-351G & NH-351K)
SECTION : NAGASHREE TO CHOTILA & BAGASARA TO UNA
TYPICAL DRAWING FOR BUS BAY WITH SHELTER IN 6 LANE SECTIONS

SECON

Plot Size : (A2 Size) | DRG.NO : BU-BS-01

S.NO	LOCATION	DESIGN CHAINAGE	SIDE
BUS BAY & SHELTERS (NH351K)			
1	Hamapur	10.500	RHS
2	Hamapur	10.550	LHS
3	Bhavyavadar	15.800	RHS
4	Bhavyavadar	15.850	LHS
5	Dhari	24.200	RHS
6	Dhari	24.250	LHS
7	Khisa	32.500	RHS
8	Khisa	32.550	LHS
9	Devla	35.600	RHS
10	Devla	35.650	LHS
11	Virpur	41.600	RHS
12	Virpur	41.650	LHS
13	Ingrola	48.500	RHS
14	Ingrola	48.550	LHS
15	Khadadhar	67.600	RHS
16	Khadadhar	67.650	LHS
17	Borala	70.750	RHS
18	Borala	70.800	LHS
19	Dadli	74.300	RHS
20	Dadli	74.350	LHS
21	Chakrava	76.600	RHS
22	Chakrava	76.650	LHS
23	Kantala	78.200	RHS
24	Kantala	78.250	LHS
25	Dhundhvana	80.150	RHS
26	Dhundhvana	80.200	LHS
27	Bediya	86.300	RHS
28	Bediya	86.350	LHS
29	Dhokadva	88.500	RHS
30	Dhokadva	88.550	LHS
31	Bhacha	97.250	RHS
32	Bhacha	97.300	LHS
33	Kansari	101.850	RHS
34	Kansari	101.900	LHS

FDPR

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Date: 21.11.2023	Drawn by: PATRICK	Checked by: SRIKANTH	Scale: AS SHOWN
File name: BU-BS-01A	Designed by: SURYA KIRAN	Approved by: SHIVAPRASAD	Sheets: 01A OF 02

CLIENT

NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT

CONSULTANCY SERVICES FOR UP GRADATION OF
UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA
NATIONAL HIGHWAY IN THE STATE OF GUJARAT

(NH-351G & NH-351K)

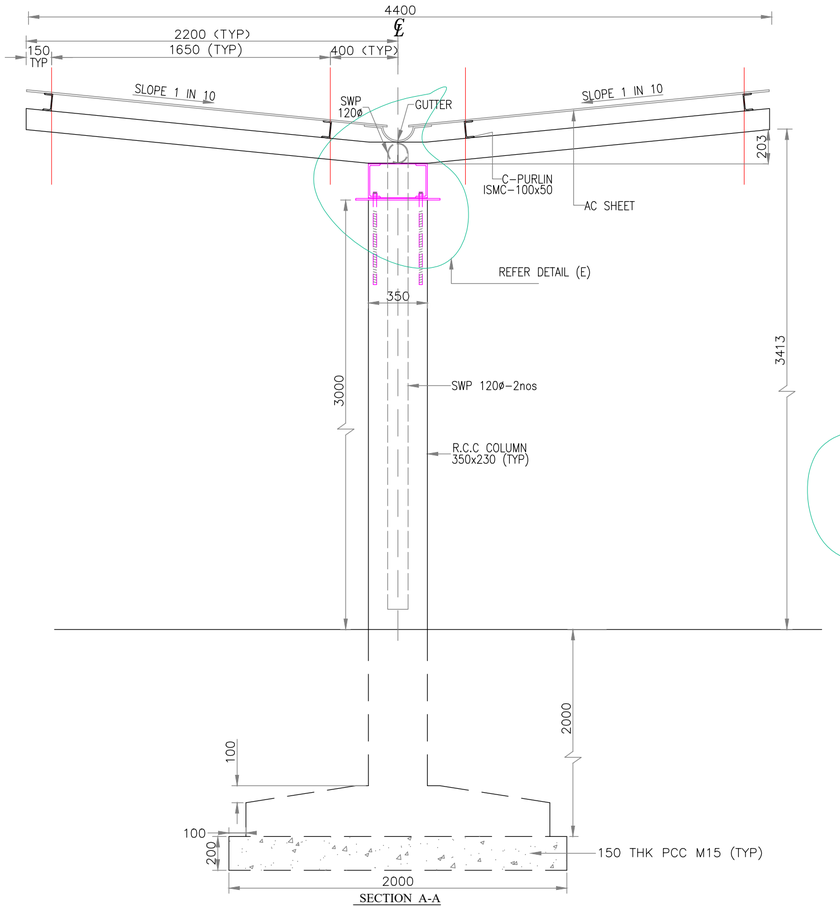
SECTION : NAGASHREE TO CHOTILA & BAGASARA TO UNA

LIST OF BUS BAY & SHELTERS

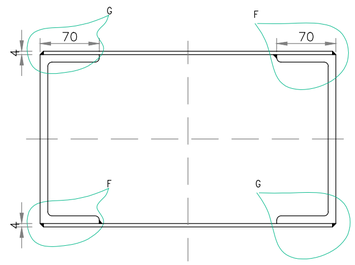
SECON

Plot Size : (A2 Size)

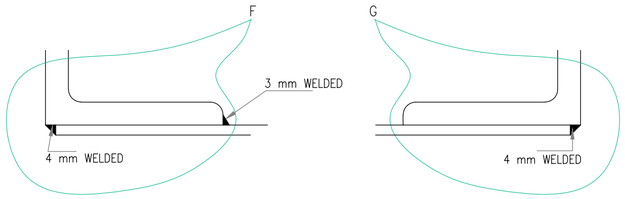
DRG.NO : BU-BS-01A

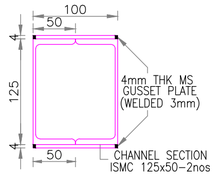


SECTION A-A
(SCALE 1:25)

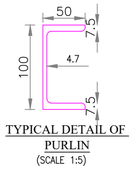


TYPICAL DETAIL OF BEAM SECTION
(SCALE 1:5)

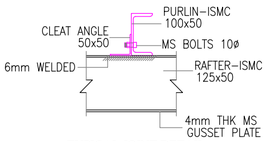




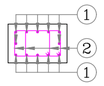
TYPICAL DETAIL OF RAFTER C-SECTION
(SCALE 1:5)

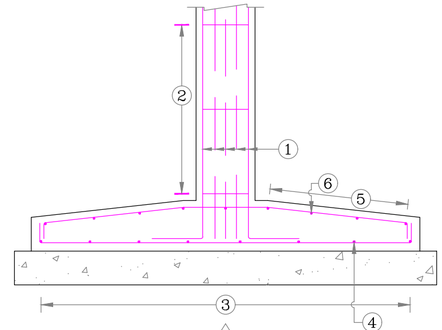


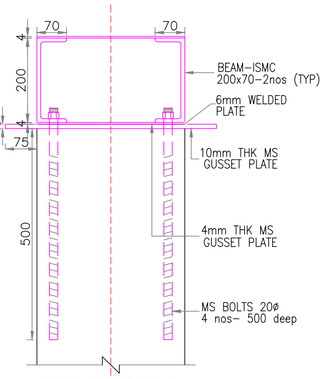
TYPICAL DETAIL OF PURLIN
(SCALE 1:5)



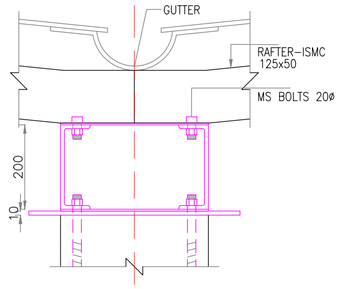
TYPICAL JOINT DETAIL
RAFTER AND PURLIN SECTION
(SCALE 1:10)



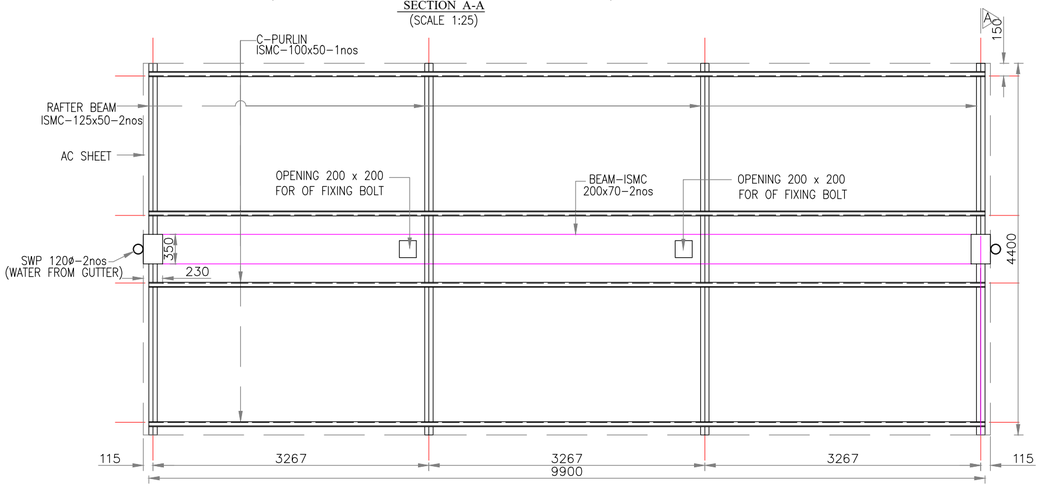




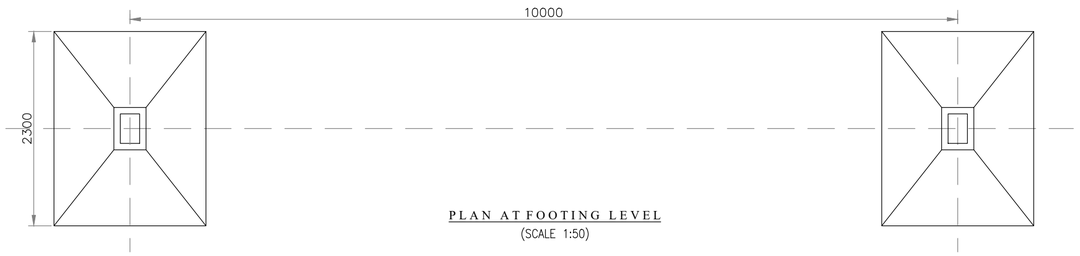
TYPICAL JOINT DETAIL
BEAM AND COLUMN SECTION
(SCALE 1:10)



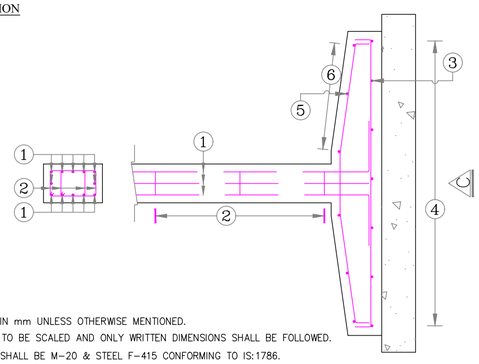
DETAIL AT (E)
TYPICAL JOINT DETAIL
RAFTER AND BEAM SECTION
(SCALE 1:10)

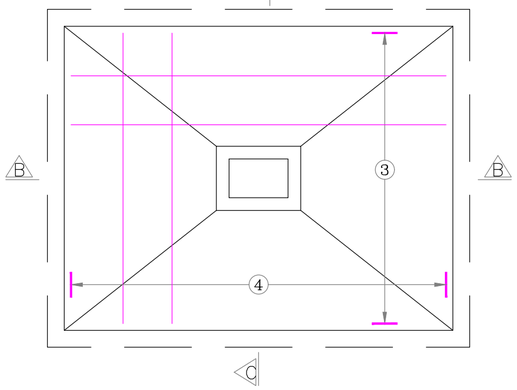


PLAN
(SCALE 1:50)



PLAN AT FOOTING LEVEL
(SCALE 1:50)

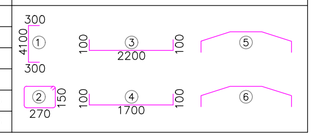




REINFORCEMENT DETAILS
(SHOWING COLUMN FOOTING)
(SCALE 1:25)

REINFORCEMENT DETAIL

MEMBER	TYPE OF BAR	DIA OF BAR(mm)	SPACING OF BAR(mm)	NO. OF BAR	LENGTH OF BAR(mm)	SHAPE OF BARS (NOT TO SCALE)
REINFORCEMENT	1	12	–	12	4700	
TIES	2	8	250	16	1040	
FOUNDATION	3	12	290	6	2400	
	4	12	290	8	1900	
	5	8	290	VARIES	VARIES	
	6	8	290	VARIES	VARIES	



NOTE:

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
2. DIMENSIONS ARE NOT TO BE SCALED AND ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. GRADE OF CONCRETE SHALL BE M-20 & STEEL F-415 CONFORMING TO IS:1786.
4. THE CONNECTION BETWEEN RAFTER AND PURLIN TO BE AS PER STANDARD SPECIFICATION.
5. THE PAINTING FOR STRUCTURAL STEEL SHOULD BE PROVIDED WITH ZINC RICH PRIMER (SINGLE COAT) CONFORMING TO IS2074. AND TWO COATS OF EPOXY PAINT (BROWN COLOUR) SHALL BE DONE ON PRIMER.
6. PAINTING AND PROTECTIVE COATING WORK SHALL BE DONE IN ACCORDANCE WITH IS1477(PART-II).
7. THE SW PIPE CONNECTION AND ARRANGEMENTS TO BE FOLLOWED AS PER STANDARD SPECIFICATION.

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Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	AS SHOWN
File name	Designed by	Approved by	Sheets
BU-BS-02	SURYA KIRAN	SHIVAPRASAD	2 OF 2

FDPR

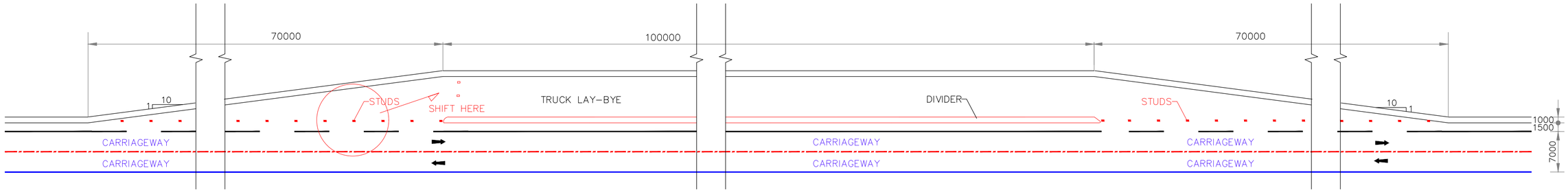
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

(NH-351G & NH-351K)
SECTION : NAGASHREE TO CHOTILA & BAGASARA TO UNA
STRUCTURAL DETAILS FOR BUS SHELTER

SECON

Plot Size : (610 x 450) | DRG.NO : BU-BS-02



TRUCK LAY-BYE
SCALE 1:500

NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE MENTIONED.
2. DIMENSIONS ARE NOT TO BE SCALED AND ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.

TRUCK LAYBY LOCATIONS

SL.NO.	Chainage	Village	Side
1	23.10	Dhari	BHS
2	82.10	Sonariya	BHS

No	DATE	REVISIONS	BY	CHKD	APPD
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Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	AS SHOWN
File name	Designed by	Approved by	Sheets
BU-TLB-01	SURYA KIRAN	SHIVAPRASAD	1 OF 1

FDPR

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

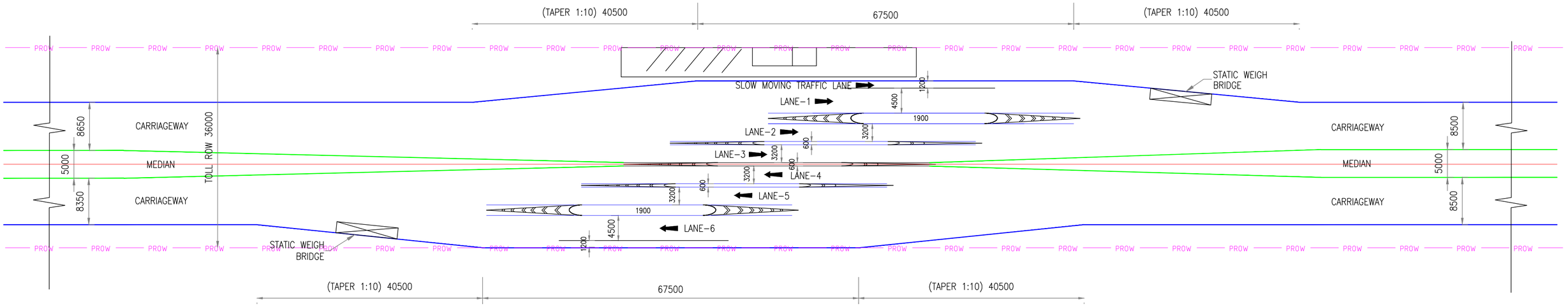
PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF
UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA
NATIONAL HIGHWAY IN THE STATE OF GUJARAT

(NH-351G & NH-351K)
SECTION : BAGASARA TO UNA
GENERAL DETAILS OF TRUCK LAY BYE

SECON

Plot Size : (A2 Size)

DRG.NO : BU-TLB-01

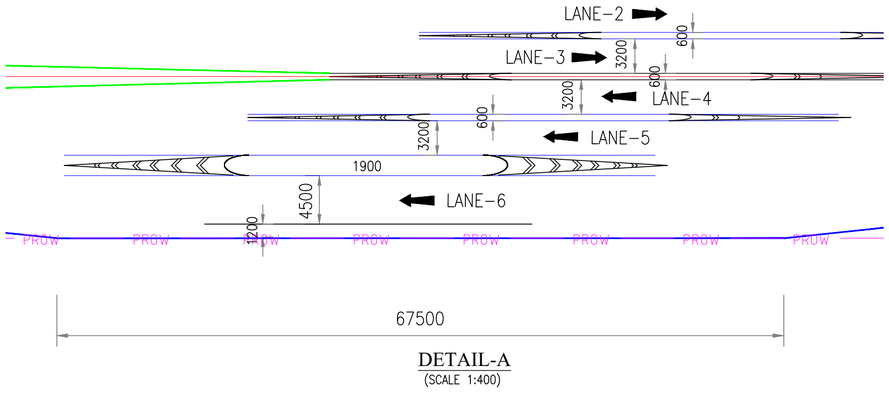


TOLL PLAZA IN 4+4 8 LANE SECTION

PLAN

(SCALE 1:500)

RIGID PAVEMENT



DETAIL-A

(SCALE 1:400)

PAVEMENT DETAILS	
PAVEMENT LAYER	THICKNESS(mm)
PQC	300
DLC	150

TYPICAL DETAILS OF RIGID PAVEMENT

FDPR

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	Final Detailed Project Report	JTP	SM	SNV
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0	05.09.24	DRAFT DETAILED PROJECT REPORT	JTP	SM	SNV

Date: 21.11.2023	Drawn by: PATRICK	Checked by: SRIKANTH	Scale: AS SHOWN
File name: BU-T-01	Designed by: SURYA KIRAN	Approved by: SHIVAPRASAD	Sheets: 01 OF 01

CLIENT

NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT

CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

(NH-351G & NH-351K)

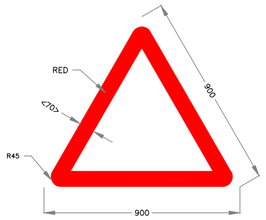
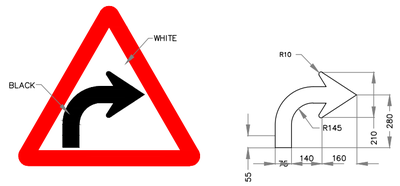
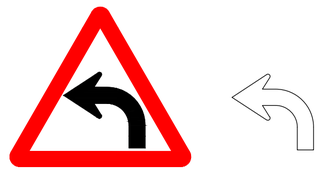
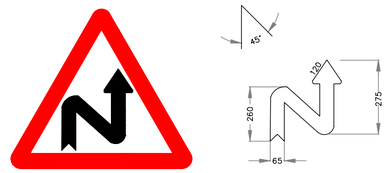
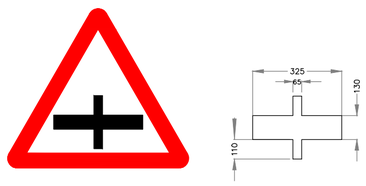
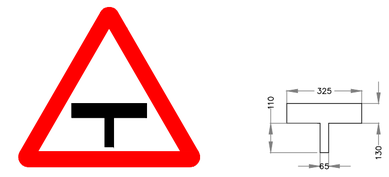
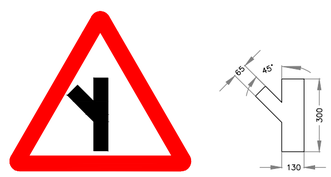
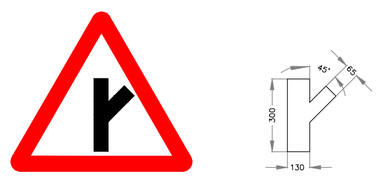
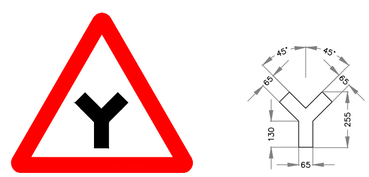
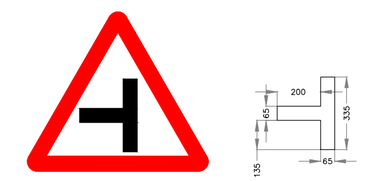
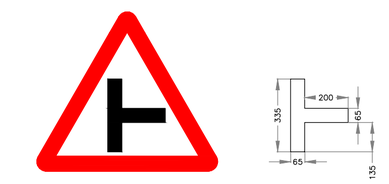
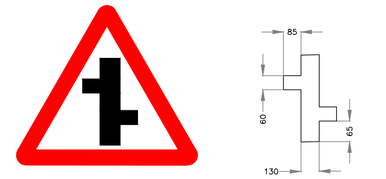
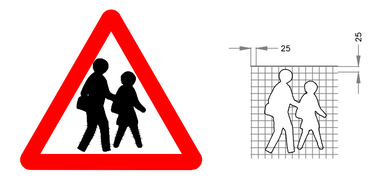
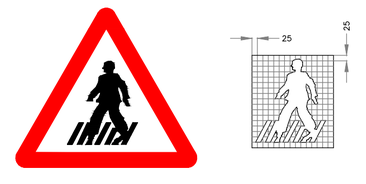
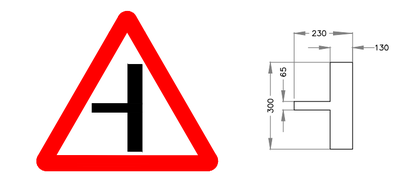
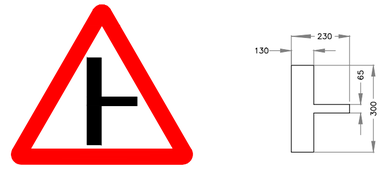
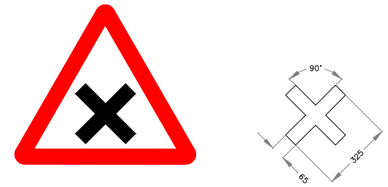
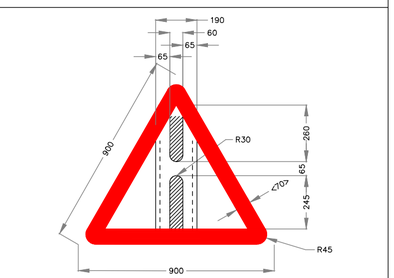
SECTION : NAGASHREE TO CHOTILA & BAGASARA TO UNA

TOLL PLAZA : 3+3 LANES

SECON

Plot Size : (A2 Size)

DRG.NO : BU-T-01

				
	C1 – RIGHT HAND CURVE	C2 – LEFT HAND CURVE	C3 – RIGHT REVERSE BEND	C4 – LEFT REVERSE BEND
				
C5 – MAJOR ROAD AHEAD CROSSING	C6 – MAJOR ROAD AHEAD	C7 – Y – INTERSECTION LEFT	C8 – Y – INTERSECTION RIGHT	C9 – Y – INTERSECTION
				
C10A – T – INTERSECTION LEFT	C10B – T – INTERSECTION RIGHT	C11 – STAGGERED INTERSECTION	C12 – STAGGERED INTERSECTION	C13 – SCHOOL
				
C14 – PEDESTRIAN CROSSING	C16 – SIDE ROAD LEFT	C17 – SIDE ROAD RIGHT	C18 – CROSS ROAD	C19 – GAP IN MEDIAN

NOTES

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Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	1:20
File name	**Designed by**	**Approved by**	**Sheets**
BU–R–41	SURYA KIRAN	SHIVAPRASAD	01 OF 07

FDPR

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

(NH-351K)

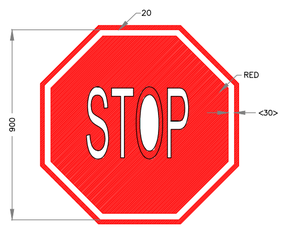
SECTION : NAGASHREE TO CHOTILA & BAGASARA TO UNA

CAUTIONARY SIGNS

SECON

Plot Size : (A2 Size)

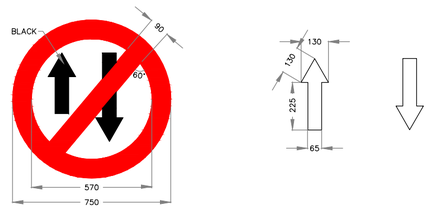
DRG.NO : BU–R–41



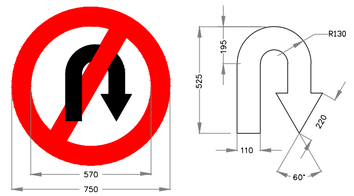
M1 – STOP



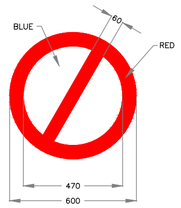
M2 – GIVE WAY



M3 – ONE WAY SIGNS



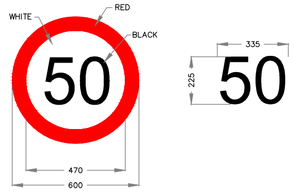
M4 – U – TURN PROHIBITED



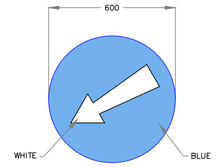
M5 – NO PARKING



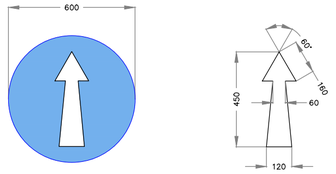
M6 – NO STOPPING OR STANDING



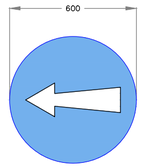
M7 – SPEED LIMIT



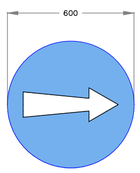
M8 – KEEP LEFT



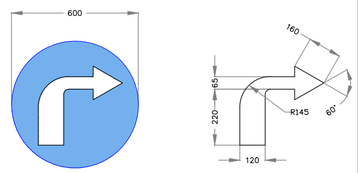
M9 – AHEAD ONLY



M10 – TURN LEFT



M11 – TURN RIGHT



M12 – TURN RIGHT AHEAD

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Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	1:20
File name	Designed by	Approved by	Sheets
BU-R-42	SURYA KIRAN	SHIVAPRASAD	02 OF 07

FDPR

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

(NH-351K)

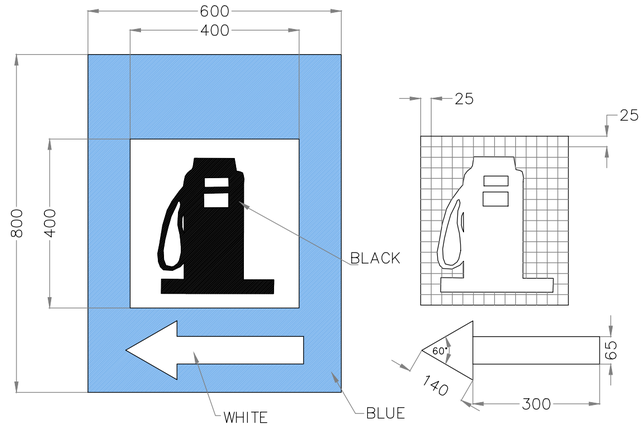
SECTION : NAGASHREE TO CHOTILA & BAGASARA TO UNA

MANDATORY SIGNS

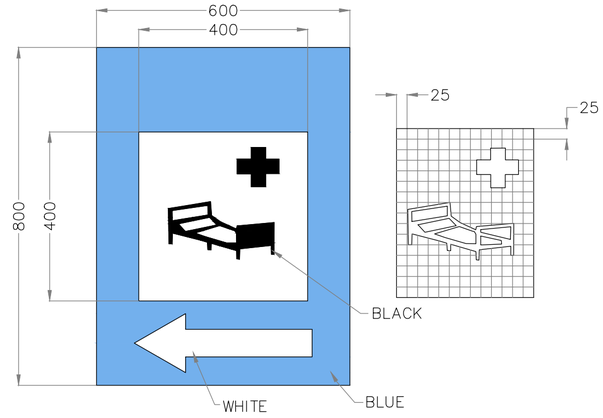
SECON

Plot Size : (A2 Size)

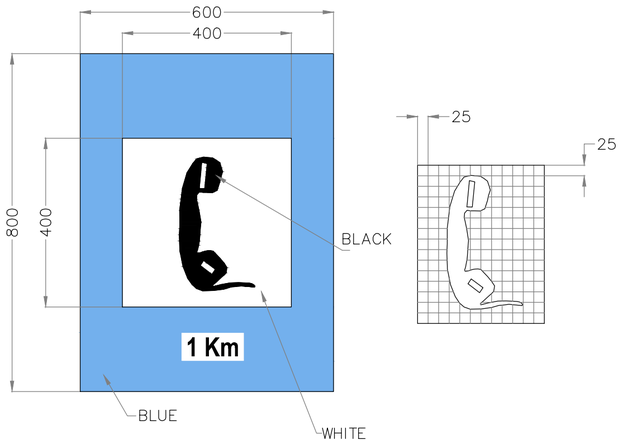
DRG.NO : BU-R-42



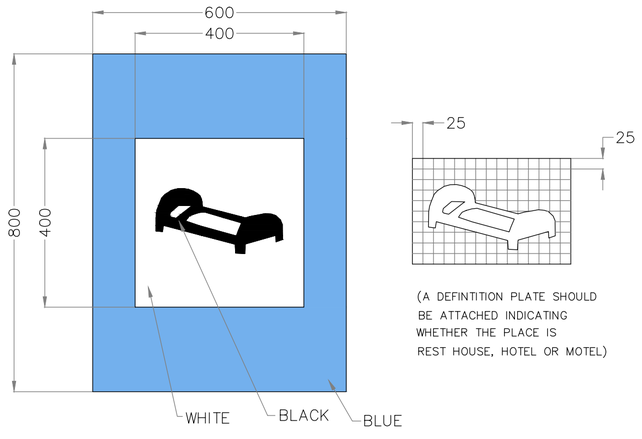
IS1 – PETROL BUNK



IS2 – HOSPITAL

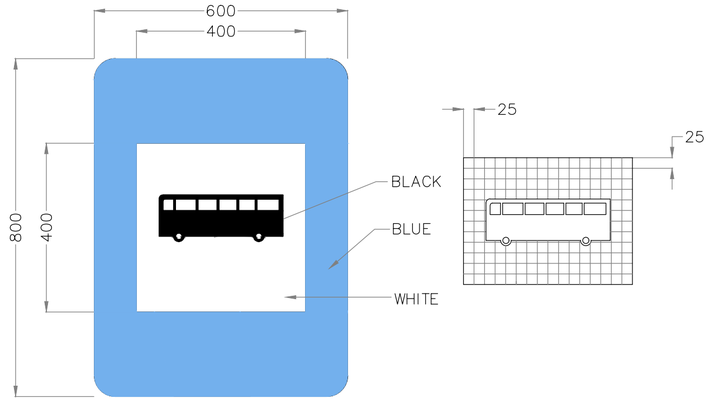


IS3 – PUBLIC TELEPHONE



(A DEFINTITION PLATE SHOULD BE ATTACHED INDICATING WHETHER THE PLACE IS REST HOUSE, HOTEL OR MOTEL)

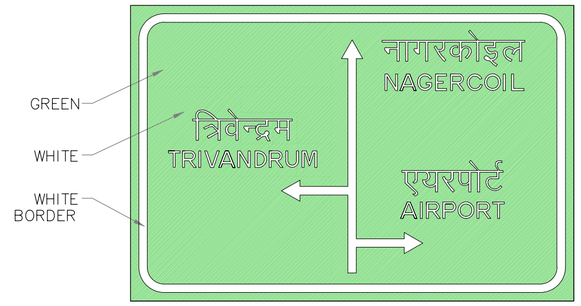
IS4 – RESTING PLACE



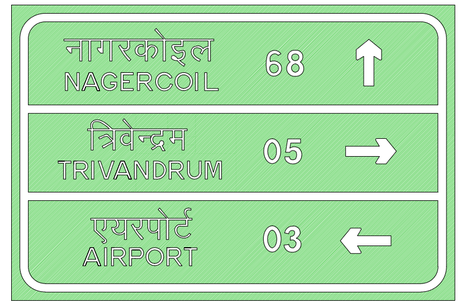
IS5 – BUS STOP

DIRECTION AND PLACE IDENTIFICATION SIGNS

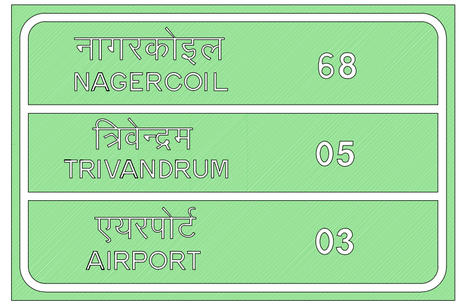
THE SIZE OF THESE SIGNS DEPENDS ON THE MESSAGE AND SIZE OF LETTERS



ADVANCE DIRECTION SIGN (ADS–1)



ADVANCE DIRECTION SIGN/DESTINATION SIGN (ADS–2)



REASSURANCE SIGN (ADS–3)



DIRECTION SIGN FOR TRUCK PARKING



DIRECTION SIGN FOR VILLAGES



PLACE IDENTIFICATION SIGN

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4. ALL DIRECTION / DESTINATION / REASSURANCE SIGN BOARDS SHALL BE OF CANTILEVER TYPE

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Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	1:10
File name	Designed by	Approved by	Sheets
BU–R–43	SURYA KIRAN	SHIVAPRASAD	03 OF 07

FDPR

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
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(NH-351K)

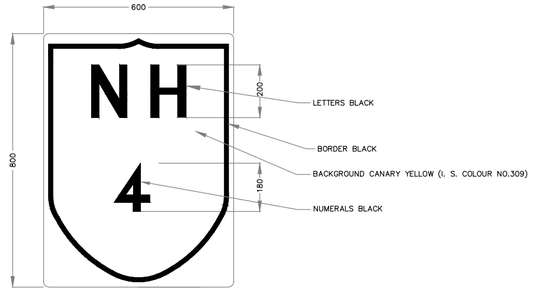
SECTION : NAGASHREE TO CHOTILA & BAGASARA TO UNA

INFORMATORY SIGNS

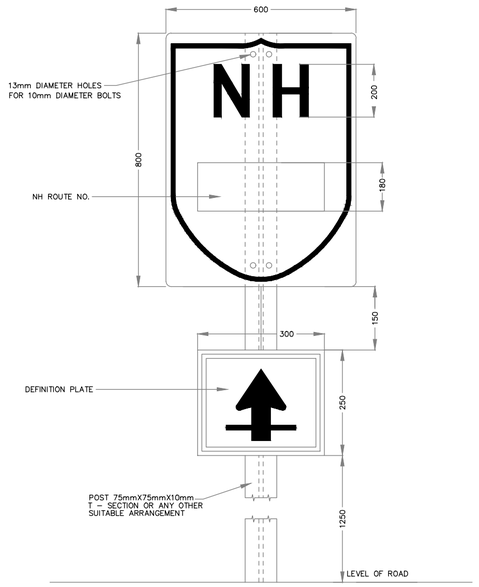
SECON

Plot Size : (A2 Size)

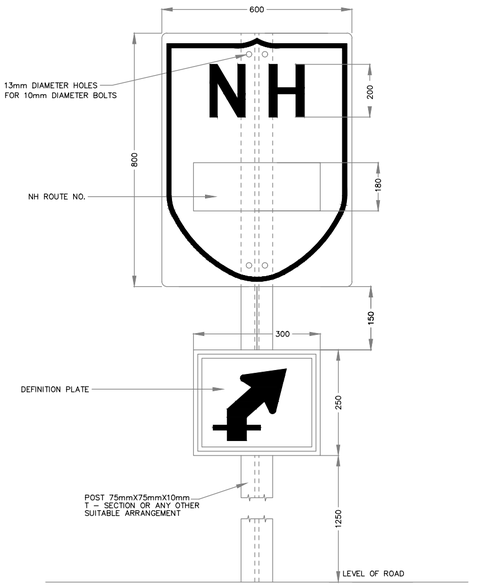
DRG.NO : BU–R–43



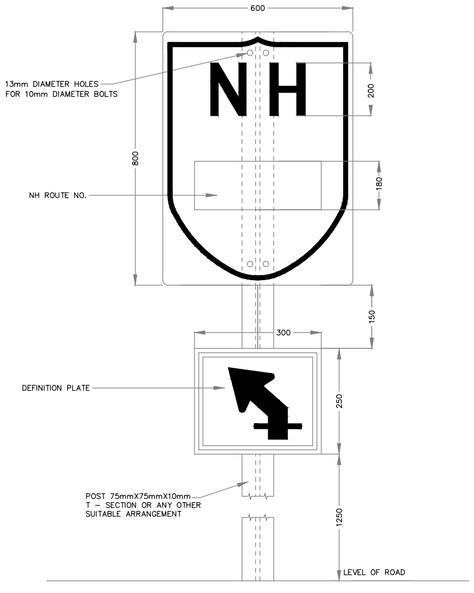
RM1 – NH ROUTE MARKER



RM2 – NH ROUTE MARKER WITH DEFINITION PLATE WITH STRAIGHT ARROW ON IT



RM3 – NH ROUTE MARKER WITH DEFINITION PLATE WITH SLANTED ARROW TO RIGHT ON IT



RM4 – NH ROUTE MARKER WITH DEFINITION PLATE WITH SLANTED ARROW TO LEFT ON IT

NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE MENTIONED.
2. DIMENSIONS ARE NOT TO BE SCALED AND ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
3. ALL ROAD SIGNS SHALL BE ERECTED AS PER IRC 2–2022.

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	Final Detailed Project Report	JTP	SM	SNV
2	06.02.25	Revised as per directions issued during meeting with SE, MORTH on 09.01.25 & 13.01.25	JTP	SM	SNV
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0	10.10.24	DRAFT DETAILED PROJECT REPORT	JTP	SM	SNV

Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	1:20
File name	Designed by	Approved by	Sheets
BU–R–44	SURYA KIRAN	SHIVAPRASAD	04 OF 07

FDPR

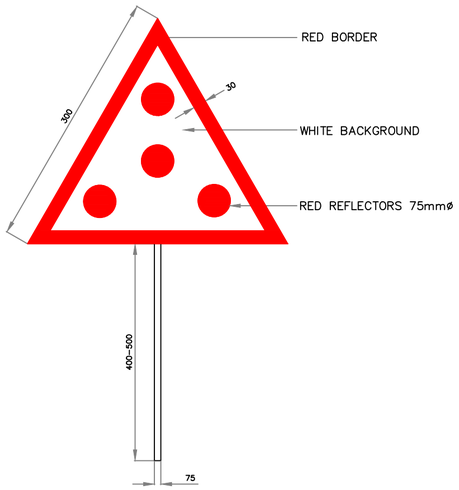
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

(NH-351K)
SECTION : NAGASHREE TO CHOTILA & BAGASARA TO UNA
ROUTE MARKER SIGNS

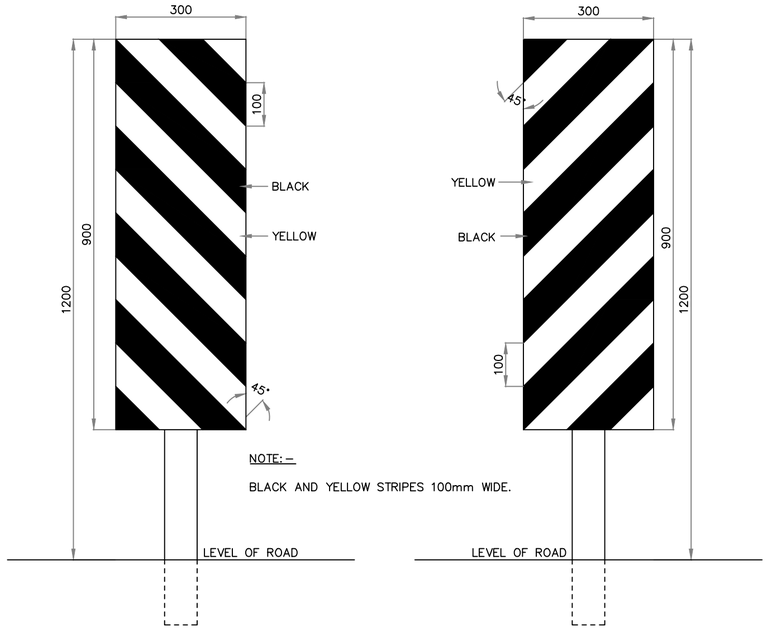
SECON

Plot Size : (A2 Size) | DRG.NO : BU–R–44



C-20 CLUSTER OF RED REFLECTORS
(SCALE 1:10)

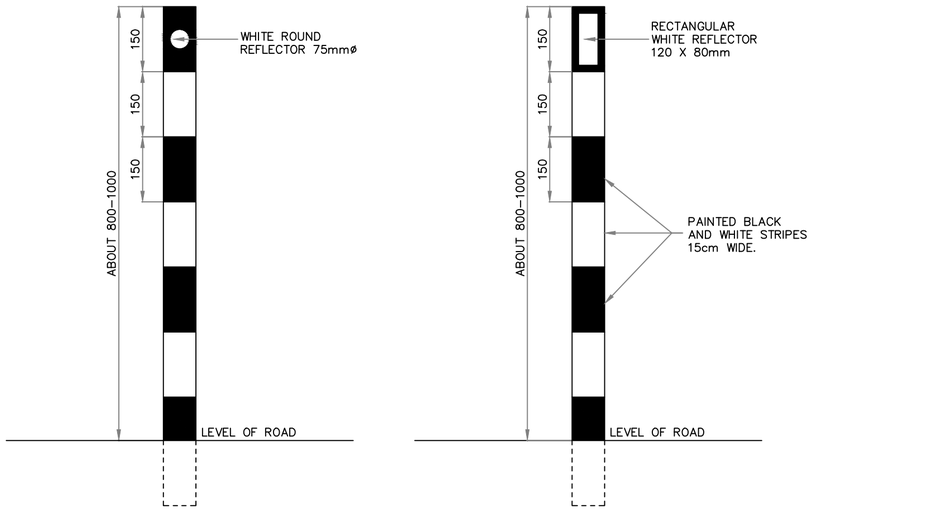
NOTE:- 1. OBJECT MARKERS TO BE ERECTED FACING THE TRAFFIC CLOSE TO THE POINT WHERE THE OBSTRUCTION STARTS WITHIN THE ROAD WAY AT THE NOSE OF MEDIAN OPENING AND CHANNELISING ISLANDS.
2. TO BE FIXED AT A DISTANCE OF 500mm FROM THE FACE OF THE KERB.



NOTE:-

BLACK AND YELLOW STRIPES 100mm WIDE.

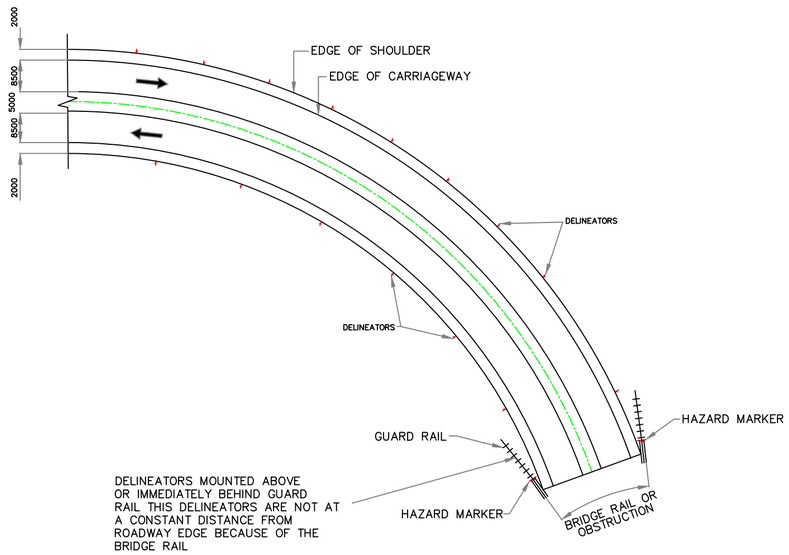
HAZARD MARKERS
(SCALE 1:10)

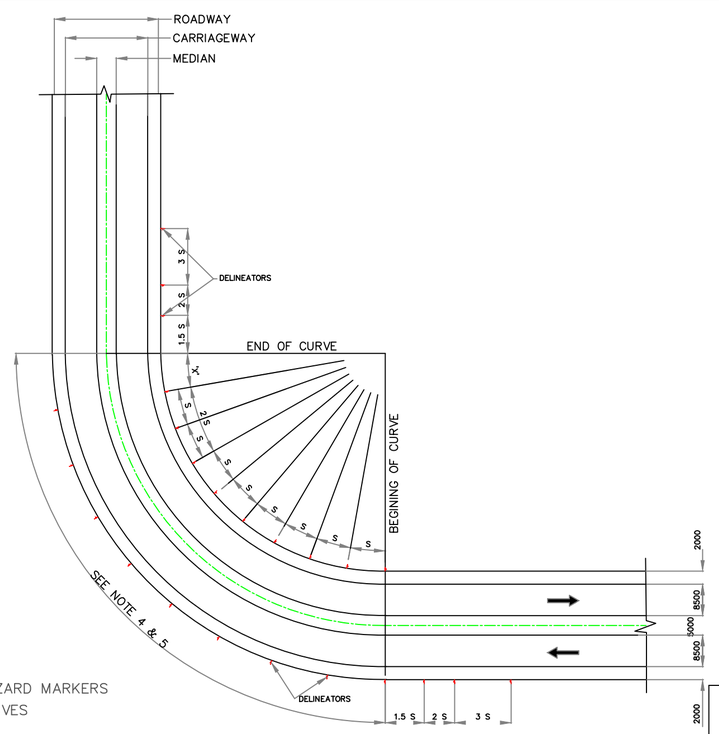


DELINEATOR WITH CIRCULAR OR RECTANGULAR REFLECTOR AT TOP
(SCALE 1:10)

NOTE:-

1. 75mmø ROUND OR 120mmX80mm RECTANGULAR WHITE REFLECTORISED PANELS TO BE FIXED AT THE TOP BLACK STRIPES
2. THE POST MAY BE EITHER CIRCULAR, RECTANGULAR OR TRIANGULAR IN CROSS-SECTION. THE SIDE FACING THE TRAFFIC SHOULD BE 100mm WIDE.
3. THE STRIPES TO BE PAINTED WITH BLACK AND WHITE 150mm WIDE.





TYPICAL DRAWING SHOWING PLACEMENT OF HAZARD MARKERS AND SPACING OF DELINEATORS IN CURVES
(SCALE 1:1000)

NOTE:-

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE MENTIONED
2. DIMENSIONS ARE NOT TO BE SCALED AND ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
3. ADJUST DISTANCE 'X' SUITABLY SO THAT THE LAST ROADWAY DELINEATOR IS AT THE END CURVE.
4. INSTALL ALL DELINEATORS AT EDGE OF THE ROADWAY PERPENDICULAR TO THE ONCOMING TRAFFIC.
5. VALUE OF 'S' i.e. SPACING OF DELINEATORS ON THE CURVE IS 15m

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21.11.2023	PATRICK	SRIKANTH	AS SHOWN
File name	Designed by	Approved by	Sheets
BU-R-45	SURYA KIRAN	SHIVAPRASAD	05 OF 07

FDPR

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

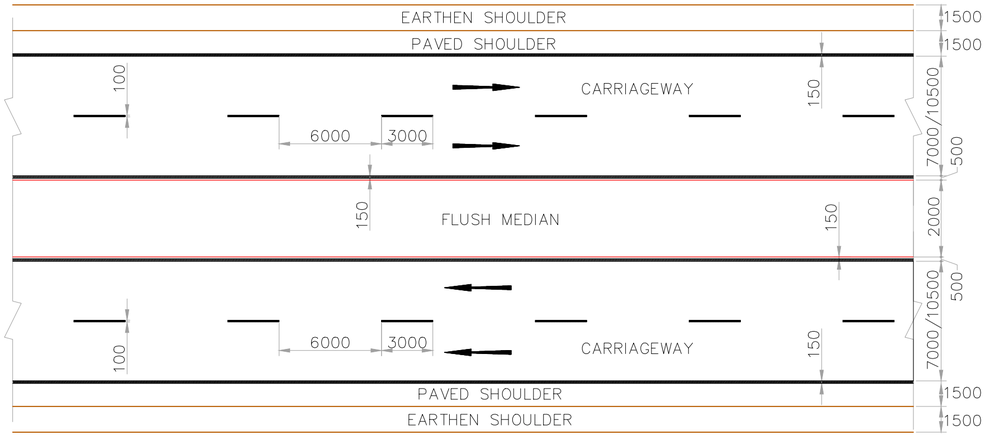
PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

(NH-351K)

SECTION : NAGASHREE TO CHOTILA & BAGASARA TO UNA
OBJECT MARKERS, HAZARD MARKERS AND DELINEATORS

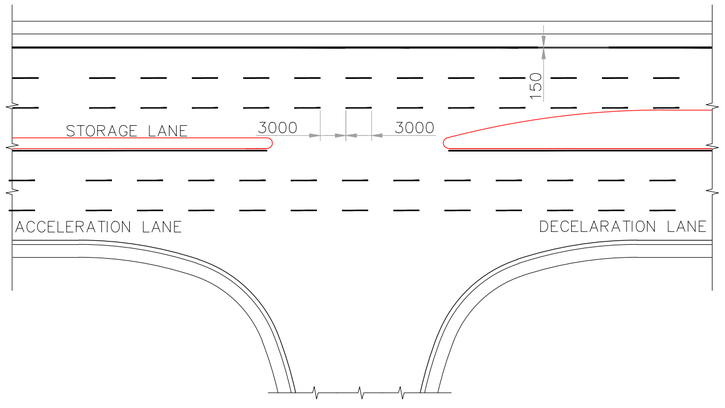
SECON

Plot Size : (A2 Size) | DRG.NO : BU-R-45



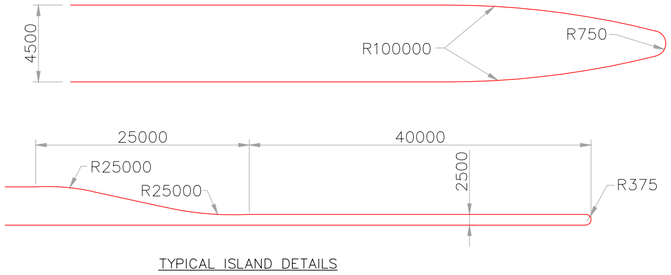
LANE MARKING IN STRAIGHT REACHES IN 4 LANE (RURAL AREAS)

(SCALE = 1:250)



LANE MARKING IN INTERSECTIONS & CURVES (RURAL AREAS)

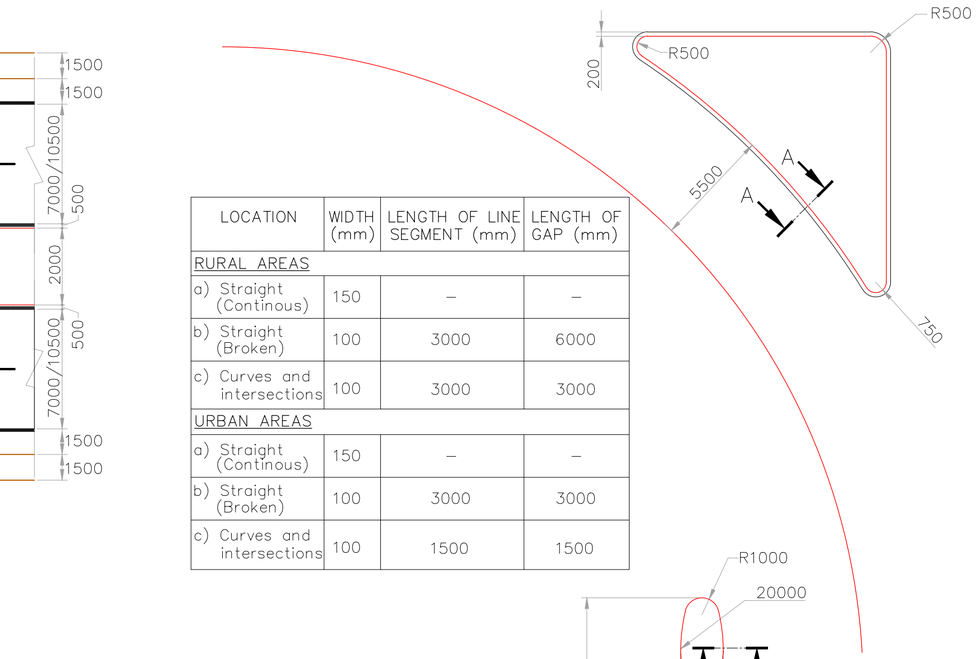
(SCALE = 1:500)



TYPICAL ISLAND DETAILS

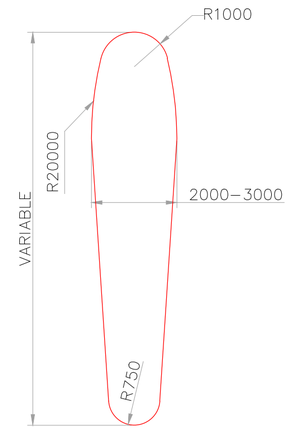
(SCALE = 1:500)

LOCATION	WIDTH (mm)	LENGTH OF LINE SEGMENT (mm)	LENGTH OF GAP (mm)
RURAL AREAS			
a) Straight (Continous)	150	–	–
b) Straight (Broken)	100	3000	6000
c) Curves and intersections	100	3000	3000
URBAN AREAS			
a) Straight (Continous)	150	–	–
b) Straight (Broken)	100	3000	3000
c) Curves and intersections	100	1500	1500



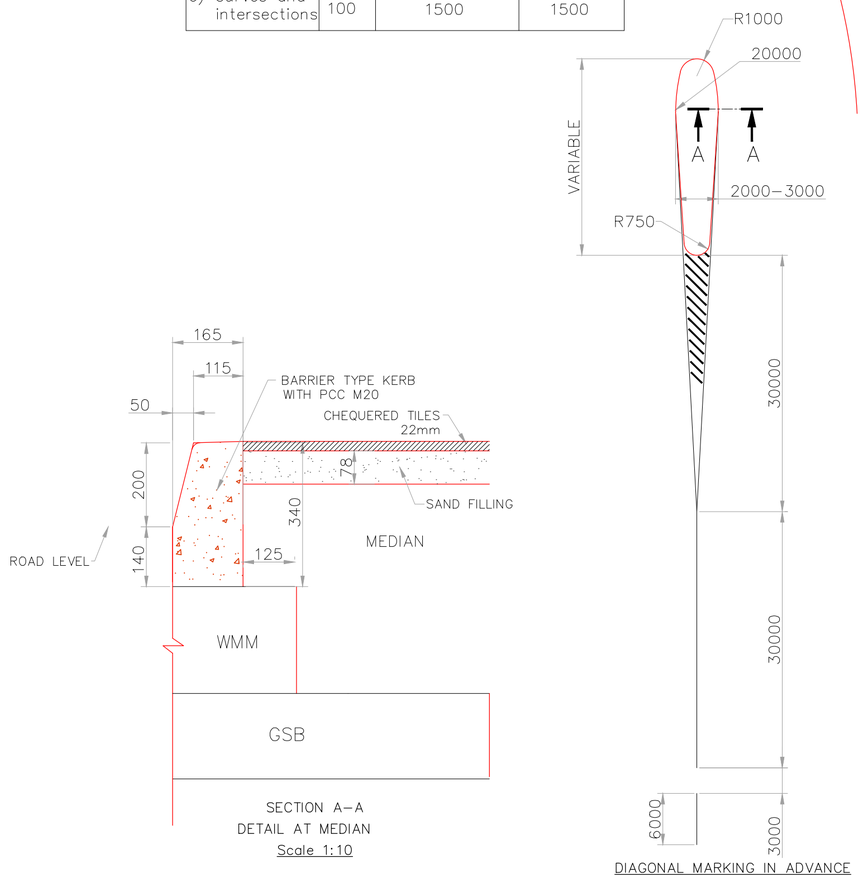
LARGE ISLANDS

(SCALE = 1:200)



TYPICAL ISLAND DETAILS

(SCALE = 1:125)



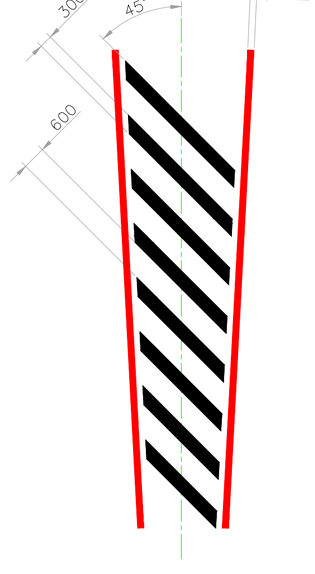
SECTION A–A

DETAIL AT MEDIAN

Scale 1:10

DIAGONAL MARKING IN ADVANCE OF DIRECTIONAL ISLAND

(SCALE = 1:250)



DETAILS OF DIAGONAL MARKING

(SCALE = 1:100)

NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE MENTIONED
2. DIMENSIONS ARE NOT TO BE SCALED AND ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
3. ALL ROAD MARKINGS SHALL BE AS PER IRC 35 – 1997 FIRST BAR OR CHEVRON TO BE SO LOCATED THAT ITS OVERALL AVERAGE TRANSVERSE WIDTH IS AT LEAST EQUAL TO ITS LONGITUDINAL WIDTH
4. WIDTH OF ALL BARS AND CHEVRONS MEASURED AT RIGHT ANGLES TO BAR OR CHEVRON IS 600 mm

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	Final Detailed Project Report	JTP	SM	SNV
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Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	AS SHOWN
File name	Designed by	Approved by	Sheets
BU–R–46	SURYA KIRAN	SHIVAPRASAD	06 OF 07

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CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

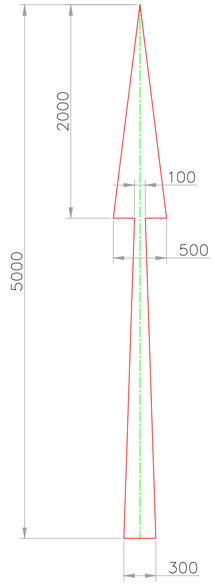
PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

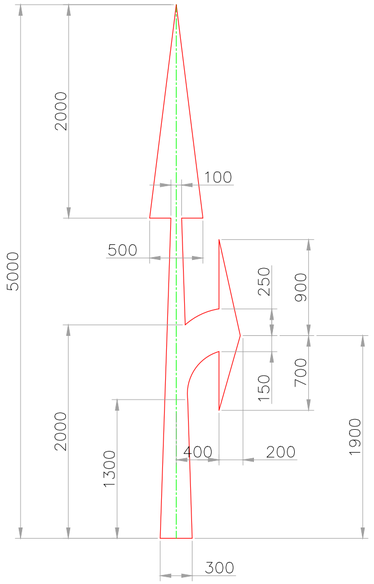
(NH-351K)

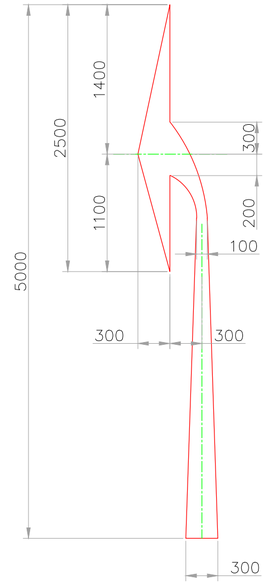
SECTION : NAGASHREE TO CHOTILA & BAGASARA TO UNA
DETAILS OF CHEVRON AND LANE
MARKINGS FOR INTERSECTIONS (4 LANE SECTIONS)

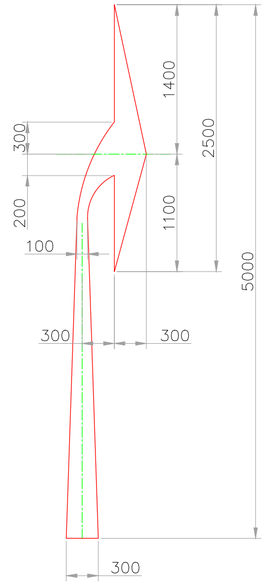
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Plot Size : (A2 Size) | DRG.NO : BU–R–46

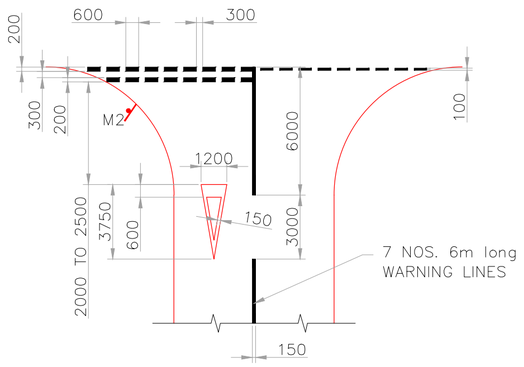




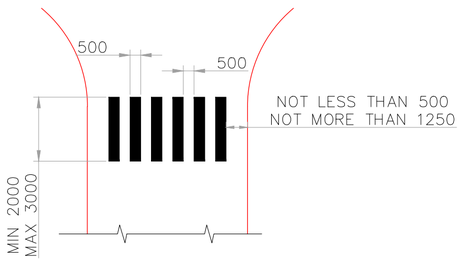




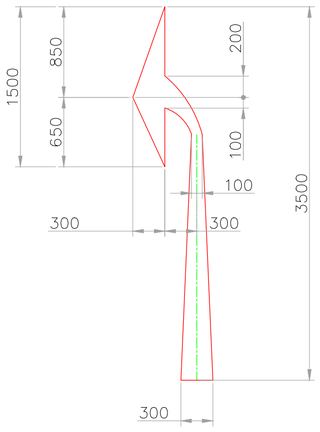
ARROW MARKINGS FOR ROUTE DIRECTION FOR DESIGN SPEED MORE THAN 50KM/HOUR

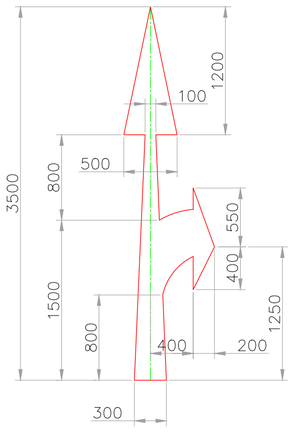


GIVE WAY LINES

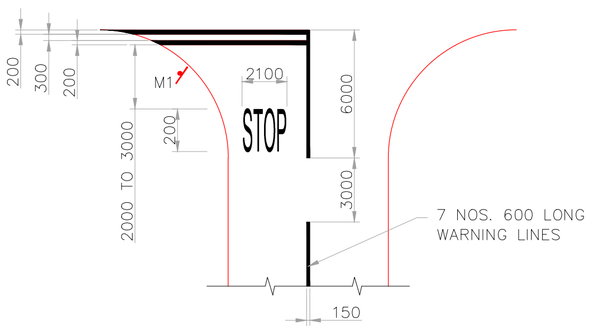


DETAILS OF PEDESTRIAN CROSSING MARKING





ARROW FOR ROUTE DIRECTION FOR DESIGN SPEED UPTO 50KM/HOUR



STOP LINES

NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE MENTIONED
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3. FOR DETAILS OF TRAFFIC SIGNS M1, M2 REFER DRG NO. R-42

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	Final Detailed Project Report	JTP	SM	SNV
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Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	1:40
File name	Designed by	Approved by	Sheets
BU-R-47	SURYA KIRAN	SHIVAPRASAD	07 OF 07

FDPR

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

(NH-351K)

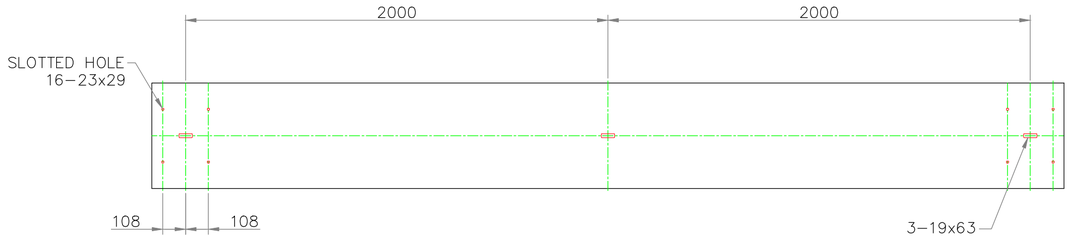
SECTION : NAGASHREE TO CHOTILA & BAGASARA TO UNA

DETAILS OF PAVEMENT AND ARROW MARKINGS FOR INTERSECTIONS

SECON

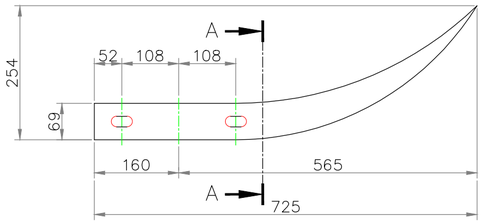
Plot Size : (A2 Size)

DRG.NO : BU-R-47

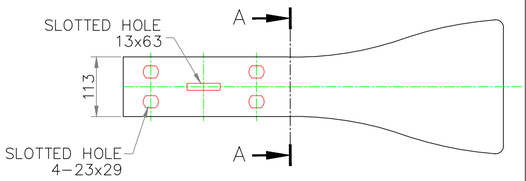


FRONT ELEVATION

(SCALE 1:20)

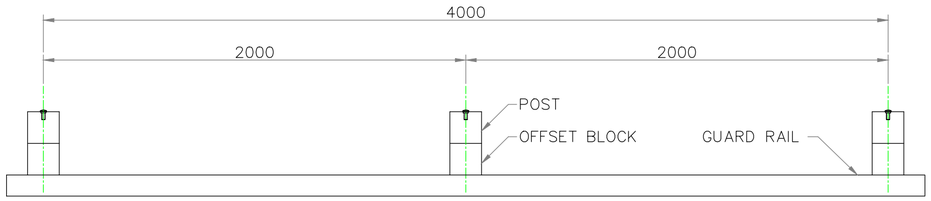


(SCALE 1:8)



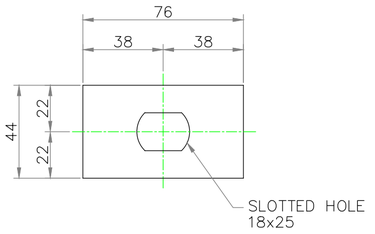
TERMINAL SECTION

(SCALE 1:8)



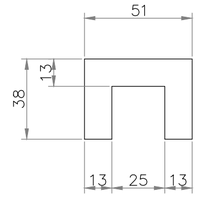
PLAN

(SCALE 1:20)



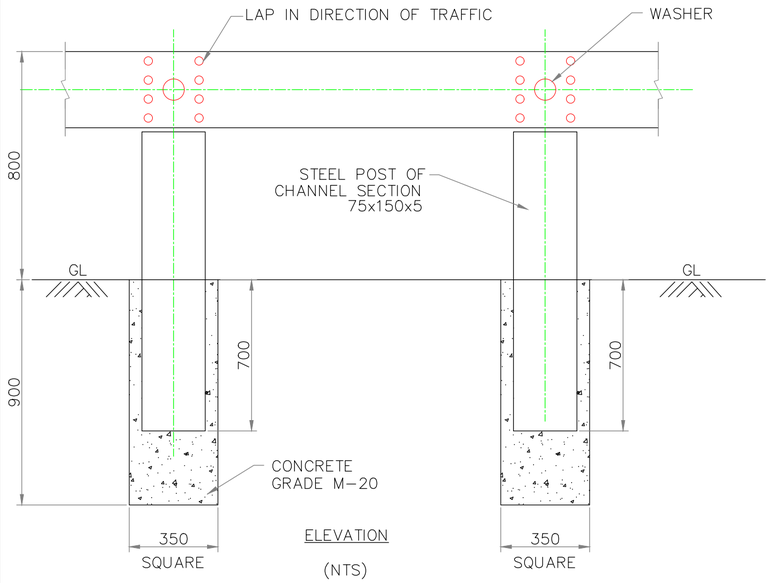
RECTANGULAR WASHER

(SCALE 1:2)



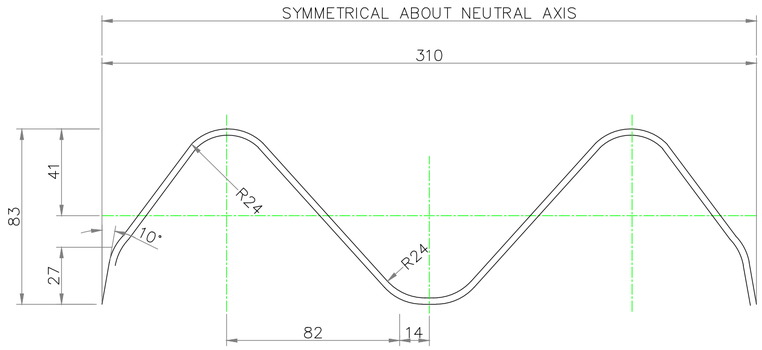
SHIM

(SCALE 1:2)



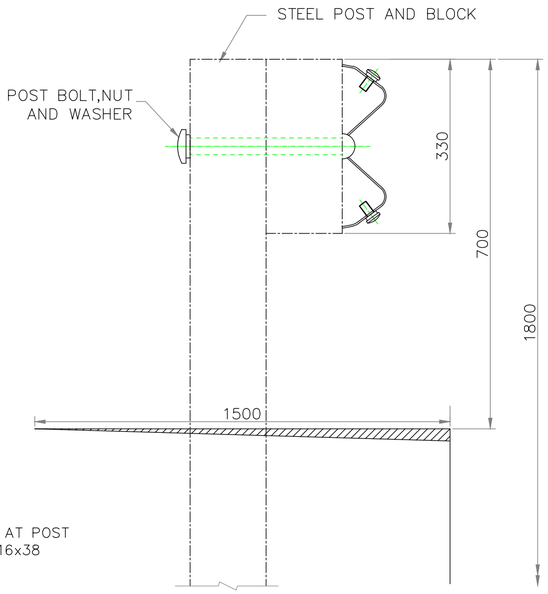
ELEVATION

(NTS)



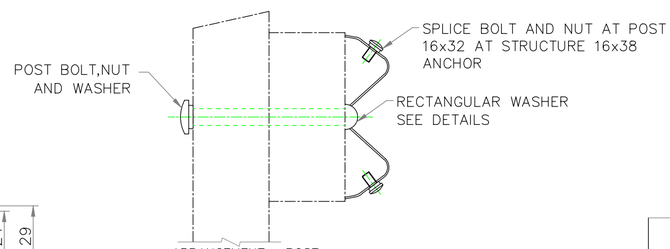
SECTION A–A OF 'W' BEAM RAIL

(SCALE 1:2)



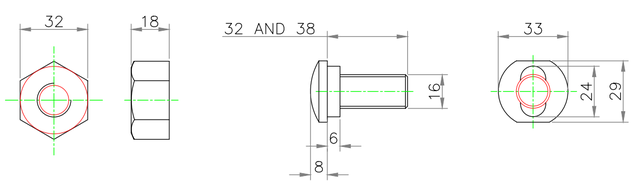
SIDE VIEW

(SCALE 1:8)



ARRANGEMENT : POST

(SCALE 1:8)



SPLICE BOLT AND NUT

(SCALE 1:2)

NOTES

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Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	AS SHOWN
File name	Designed by	Approved by	Sheets
BU–R–51	SURYA KIRAN	SHIVAPRASAD	01 OF 01

FDPR

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

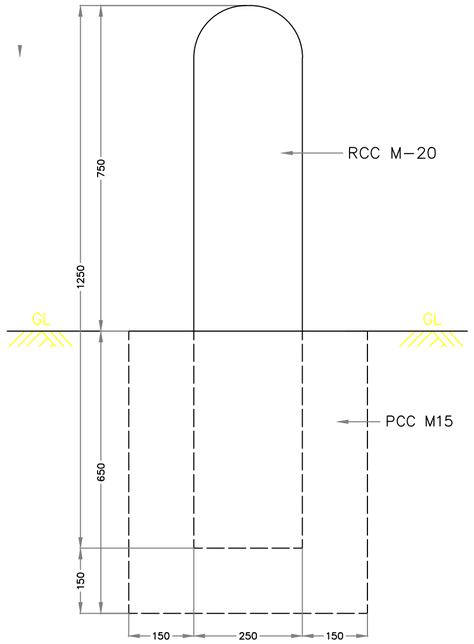
(NH-351K)

SECTION : NAGASHREE TO CHOTILA & BAGASARA TO UNA

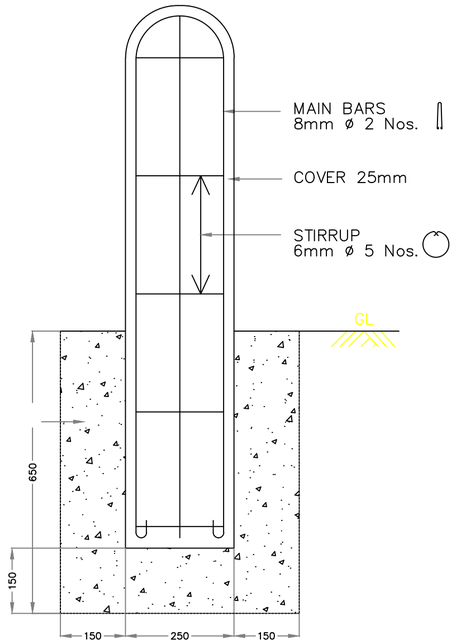
DETAILS OF GUARD RAILS/METALLIC CRASH BARRIER

SECON

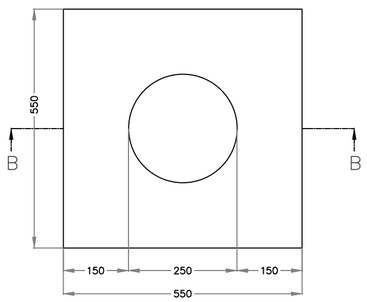
Plot Size : (A2 Size) | DRG.NO : BU–R–51



FRONT ELEVATION



SECTION AT B–B



PLAN

GUARD POST

NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE MENTIONED.
2. DIMENSIONS ARE NOT TO BE SCALED AND ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	Final Detailed Project Report	JTP	SM	SNV
2	06.02.25	Revised as per directions issued during meeting with SE, MORTH on 09.01.25 & 13.01.25	JTP	SM	SNV
1	14.11.24	INCORPORATING THE SUGGESTIONS FROM CLIENT	JTP	SM	SNV
0	10.10.24	FINAL FEASIBILITY REPORT	JTP	SM	SNV

Date: 21.11.2023	Drawn by: PATRICK	Checked by: SRIKANTH	Scale: 1:10
File name: BU–R–52	Designed by: SURYA KIRAN	Approved by: SHIVAPRASAD	Sheets: 01 OF 01

FDPR

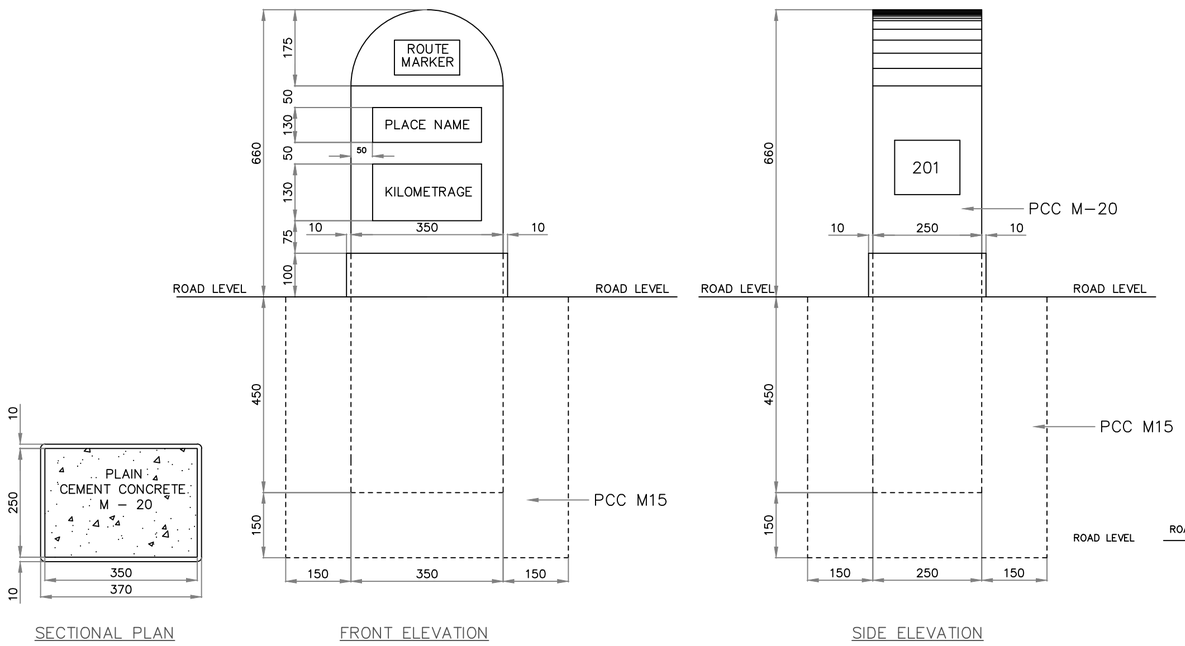
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

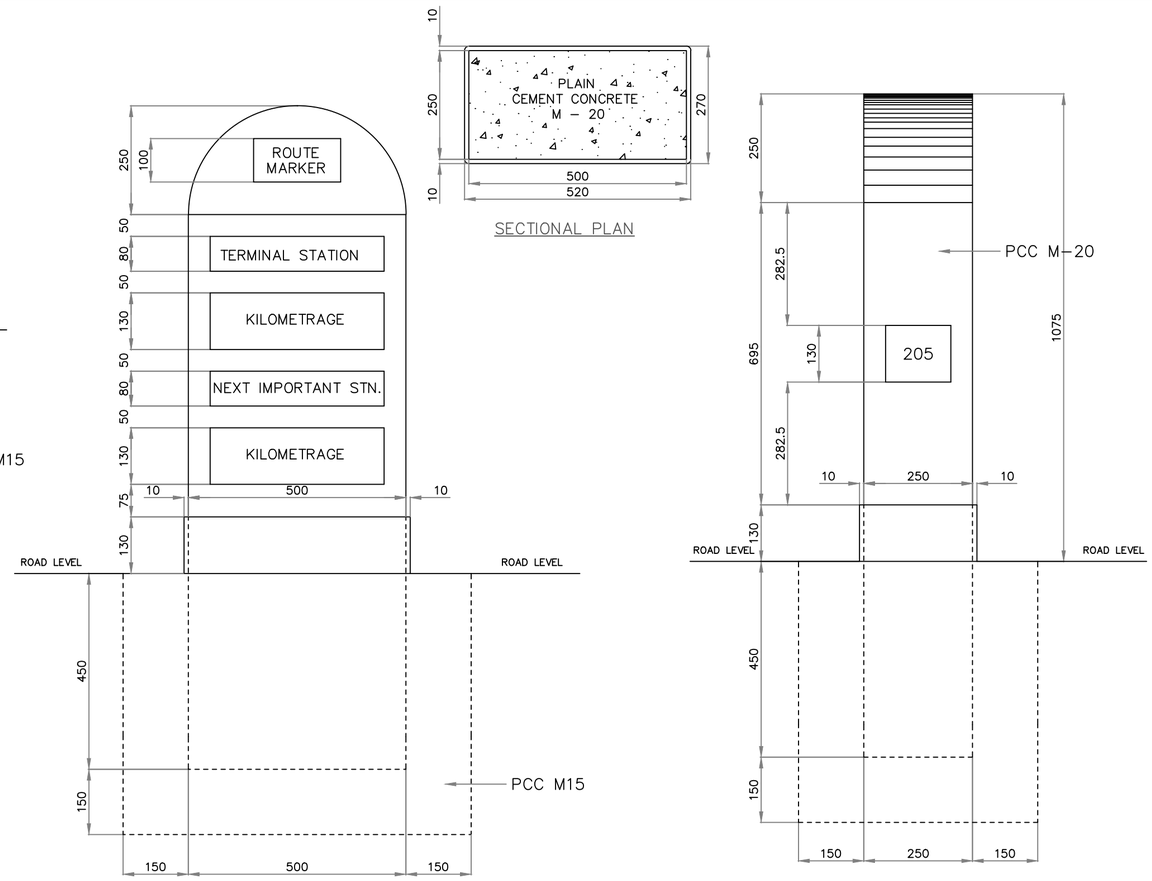
(NH-351K)
SECTION : NAGASHREE TO CHOTILA & BAGASARA TO UNA
DETAILS OF GUARD POST

Plot Size : (A2 Size) | DRG.NO : BU–R–52



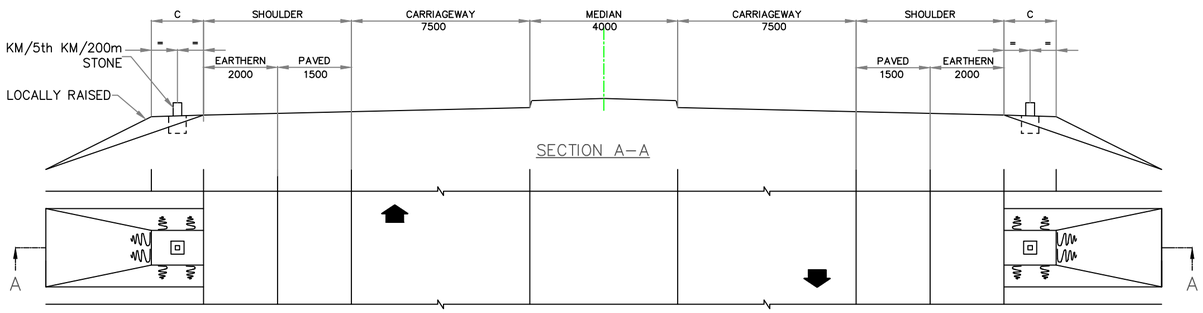
TYPICAL DETAILS OF ORDINARY KILOMETER STONE

(SCALE 1:10)



TYPICAL DETAILS OF FIFTH (5th) KILOMETRE STONE

(SCALE 1:10)



SECTION A–A

LOCATION OF KILOMETRE, 5th KM

(NTS)

NOTES :–

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE MENTIONED.
2. DIMENSIONS ARE NOT TO BE SCALED AND ONLY WRITTEN DIMENSIONS TO BE FOLLOWED
3. DETAILS OF ORDINARY KM STONE AND 5th KM STONE ARE GENERALLY BASED ON IRC: 8–1980
4. DETAILS OF 200m STONE BASED ON IRC: 26–1967
5. VALUE OF 'C' IS 1500mm FOR KM/5th KM STONE AND 1000mm FOR 200m STONE.

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	Final Detailed Project Report	JTP	SM	SNV
2	06.02.25	Revised as per directions issued during meeting with SE, MORTH on 09.01.25 & 13.01.25	JTP	SM	SNV
1	14.11.24	INCORPORATING THE SUGGESTIONS FROM CLIENT	JTP	SM	SNV
0	10.10.24	DRAFT DETAILED PROJECT REPORT	JTP	SM	SNV

Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	AS SHOWN
File name	Designed by	Approved by	Sheets
BU–R–53	SURYA KIRAN	SHIVAPRASAD	01 OF 01

FDPR

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

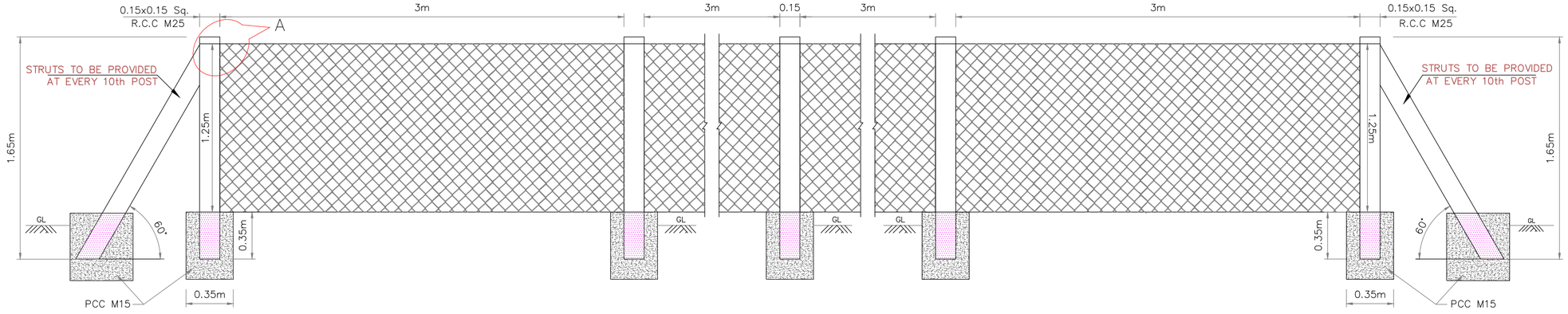
(NH-351K)

SECTION : NAGASHREE TO CHOTILA & BAGASARA TO UNA

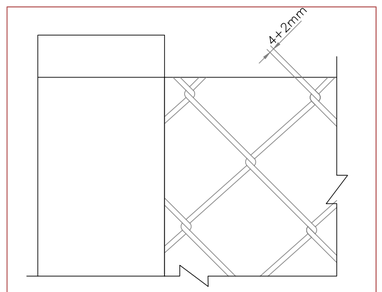
DETAILS OF KM, FIFTH KM

Plot Size : (A2 Size)

DRG.NO : BU–R–53



FRONT ELEVATION



DETAIL–A

SCALE 1:5

NOTES:

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE MENTIONED
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No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	Final Detailed Project Report	JTP	SM	SNV
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1	14.11.24	INCORPORATING THE SUGGESTIONS FROM CLIENT	JTP	SM	SNV
0	10.10.24	DRAFT DETAILED PROJECT REPORT	JTP	SM	SNV

Date: 21.11.2023	Drawn by: PATRICK	Checked by: SRIKANTH	Scale: 1:125
File name: BU–R–54	Designed by: SURYA KIRAN	Approved by: SHIVAPRASAD	Sheets: 01 OF 01

FDPR

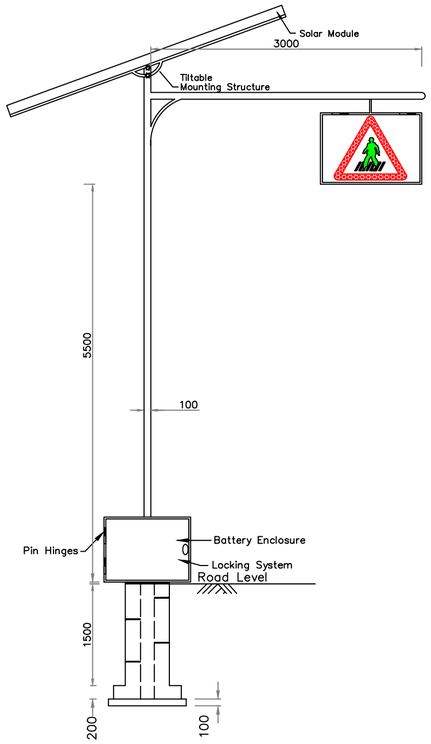
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

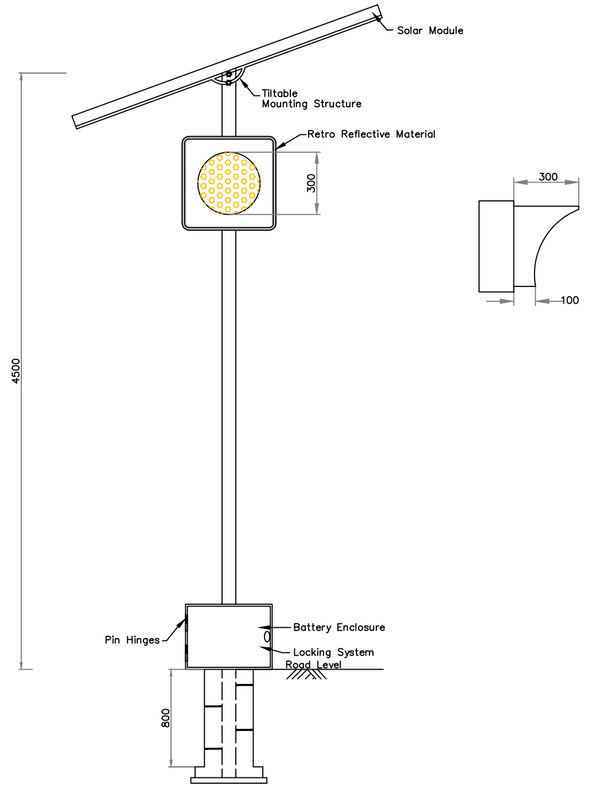
SECON™

(NH-351K)
SECTION : NAGASHREE TO CHOTILA & BAGASARA TO UNA
CHAIN LINK FENCING

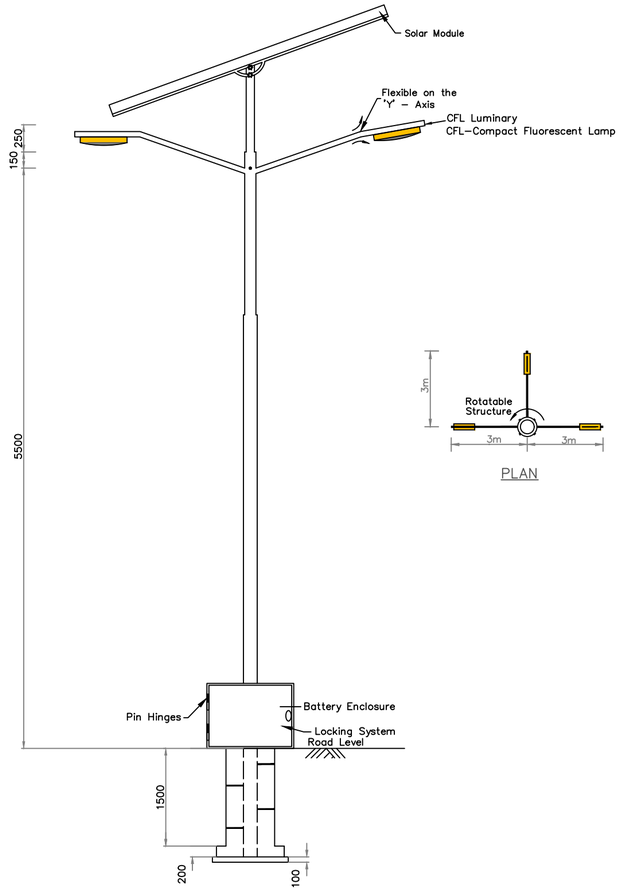
Plot Size : (A2 Size) | DRG.NO : BU–R–54



SOLAR OVERHEAD SIGN

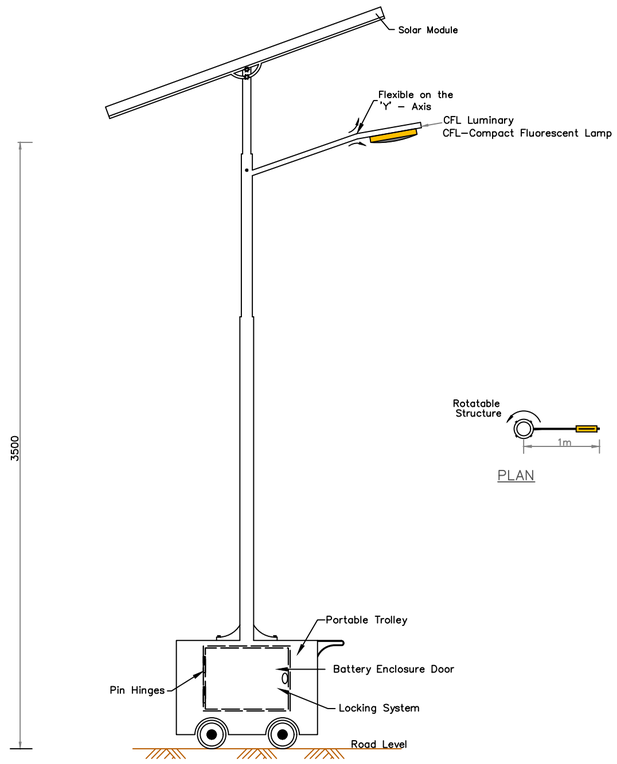


SOLAR BLINKER



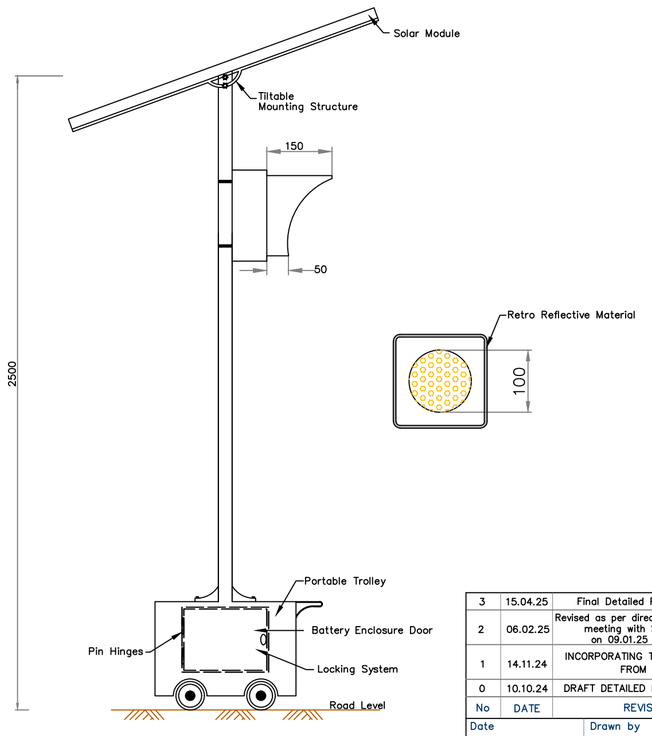
SOLAR LOW MAST LIGHTING

PLAN



PLAN

TROLLEY MOUNTED SOLAR LOW MAST LIGHTING
SINGLE ARM



TROLLEY MOUNTED SOLAR BLINKER

NOTE: –

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0	10.10.24	DRAFT DETAILED PROJECT REPORT	JTP	SM	SNV

Date	Drawn by	Checked by	Scale
21.11.2023	PATRICK	SRIKANTH	NTS
File name	Designed by	Approved by	Sheets
BU-R-55	SURYA KIRAN	SHIVAPRASAD	01 OF 01

FDPR

CLIENT

NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT

CONSULTANCY SERVICES FOR UP GRADATION OF
UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA
NATIONAL HIGHWAY IN THE STATE OF GUJARAT

(NH-351G & NH-351K)
SECTION : NAGASHREE TO CHOTILA & BAGASARA TO UNA
DRAWINGS FOR SOLAR BLINKER/
SOLAR OVERHEAD SIGN & SOLAR LOW MAST LIGHTING

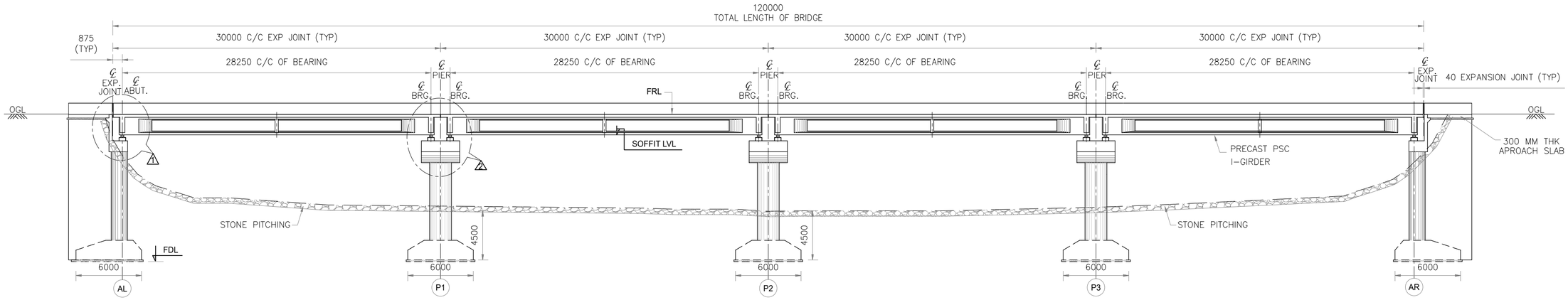
SECON

Plot Size : (A2 Size)

DRG.NO : BU-R-55

UNA - DHARI - BAGASARA (FINAL DETAILED PROJECT REPORT)

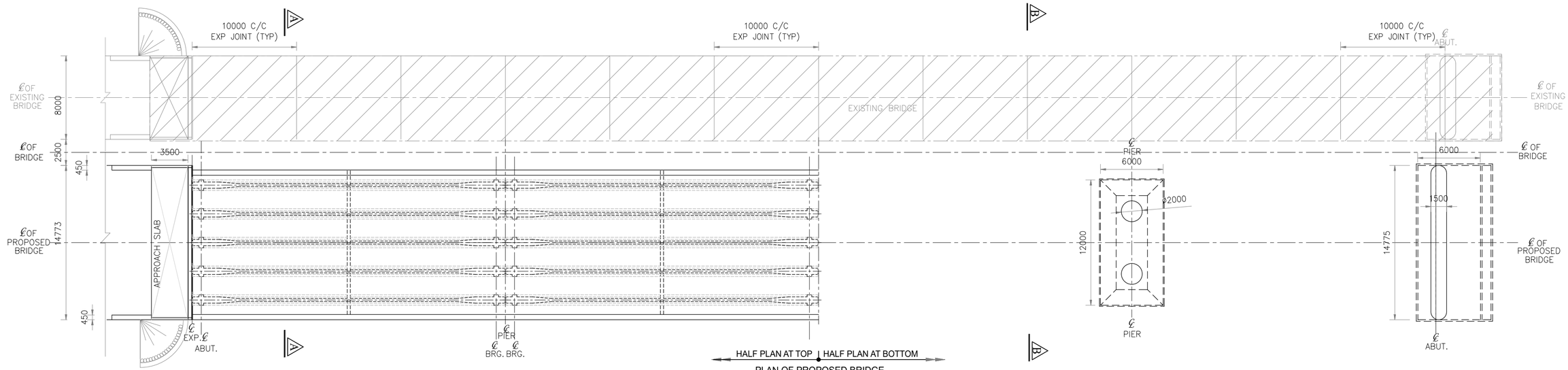
Sl No.	DWG. NO.	DESCRIPTION	Sl No.	DWG. NO.	DESCRIPTION
MAJOR BRIDGE GIRDER TYPE DRAWINGS			**MINOR BRIDGE BOX TYPE DRAWINGS**		
1	G:MJB-01 SHEET 01 OF 02	GAD PROPOSED FOR MAJOR BRIDGE AT CH: 1+400KM	30	G:MNB-DBC-02B SHEET 01 OF 02	GAD FOR PROPOSED DOUBLE CELL MINOR BRIDGE
2	G:MJB-01 SHEET 02 OF 02	GAD PROPOSED FOR MAJOR BRIDGE AT CH: 1+400KM	31	G:MNB-DBC-02B SHEET 02 OF 02	GAD FOR PROPOSED DOUBLE CELL MINOR BRIDGE
3	G:MJB-02 SHEET 01 OF 02	GAD PROPOSED FOR MAJOR BRIDGE AT CH: 24+960KM	32	G:MNB-FOBC-03 SHEET 01 OF 02	GAD FOR PROPOSED FOUE CELL MINOR BRIDGE
4	G:MJB-02 SHEET 02 OF 02	GAD PROPOSED FOR MAJOR BRIDGE AT CH: 24+960KM	33	G:MNB-FOBC-03 SHEET 02 OF 02	GAD FOR PROPOSED FOUE CELL MINOR BRIDGE
5	G:MJB-03 SHEET 01 OF 02	GAD PROPOSED FOR MAJOR BRIDGE AT CH: 90+340KM	**MINOR BRIDGE SLAB TYPE DRAWINGS (WIDENING)**		
6	G:MJB-03 SHEET 02 OF 02	GAD PROPOSED FOR MAJOR BRIDGE AT CH: 90+340KM	34	G:MNB-MNB-01 SHEET 01 OF 02	GAD PROPOSED FOR MINOR BRIDGE (5X10.5) (WIDENING)
MINOR BRIDGE GIRDER TYPE DRAWINGS			35	G:MNB-MNB-01 SHEET 02 OF 02	GAD PROPOSED FOR MINOR BRIDGE (5X10.5) (WIDENING)
7	TYP-G:MNB-01 SHEET 01 OF 02	TYPICAL GAD PROPOSED FOR MINOR BRIDGE (2X25)	**MINOR BRIDGE BOX TYPE DRAWINGS (WIDENING)**		
8	TYP-G:MNB-01 SHEET 02 OF 02	TYPICAL GAD PROPOSED FOR MINOR BRIDGE (2X25)	36	TYP-G:MNB-SBC-01 SHEET 01 OF 02	TYPICAL GAD FOR PROPOSED SINGLE CELL MINOR BRIDGE
9	TYP-G:MNB-01A SHEET 01 OF 02	TYPICAL GAD PROPOSED FOR MINOR BRIDGE (2X25)	37	TYP-G:MNB-SBC-01 SHEET 02 OF 02	TYPICAL GAD FOR PROPOSED SINGLE CELL MINOR BRIDGE
10	TYP-G:MNB-01A SHEET 02 OF 02	TYPICAL GAD PROPOSED FOR MINOR BRIDGE (2X25)	38	TYP-G:MNB-DBC-01 SHEET 01 OF 02	TYPICAL GAD FOR PROPOSED DOUBLE CELL MINOR BRIDGE
11	TYP-G:MNB-02 SHEET 01 OF 02	TYPICAL GAD PROPOSED FOR MINOR BRIDGE (2X20)	39	TYP-G:MNB-DBC-02 SHEET 02 OF 02	TYPICAL GAD FOR PROPOSED DOUBLE CELL MINOR BRIDGE
12	TYP-G:MNB-02 SHEET 02 OF 02	TYPICAL GAD PROPOSED FOR MINOR BRIDGE (2X20)	40	TYP-G:MNB-TBC-03 SHEET 01 OF 02	TYPICAL GAD FOR PROPOSED THREE CELL MINOR BRIDGE
13	TYP-G:MNB-03 SHEET 01 OF 01	TYPICAL GAD PROPOSED FOR MINOR BRIDGE (1X25)	41	TYP-G:MNB-TBC-03 SHEET 02 OF 02	TYPICAL GAD FOR PROPOSED THREE CELL MINOR BRIDGE
14	TYP-G:MNB-04 SHEET 01 OF 02	TYPICAL GAD PROPOSED FOR MINOR BRIDGE (1X20)	**ROAD OVER BRIDGE DRAWING**		
15	TYP-G:MNB-04 SHEET 02 OF 02	TYPICAL GAD PROPOSED FOR MINOR BRIDGE (1X20)	42	G:ROB-01 SHEET 01 OF 01	GAD FOR PROPOSED ROB AT CH : 22+935 Km (NEW CONSTRUCTION)
16	G:MNB-05 SHEET 01 OF 02	TYPICAL GAD PROPOSED FOR MINOR BRIDGE (2X15)	**VEHICULAR UNDER PASS GIRDER TYPE DRAWINGS**		
17	G:MNB-05 SHEET 02 OF 02	TYPICAL GAD PROPOSED FOR MINOR BRIDGE (2X15)	43	G:VUP-01 SHEET 01 OF 01	GAD FOR PROPOSED VEHICULAR UNDER PASS (VUP) AT CH : 1+055 Km (NEW CONSTRUCTION)
18	G:MNB-06 SHEET 01 OF 02	TYPICAL GAD PROPOSED FOR MINOR BRIDGE (2X20)	44	G:VUP-01 SHEET 01 OF 01	GAD FOR PROPOSED VEHICULAR UNDER PASS (VUP) AT CH : 23+270 Km (NEW CONSTRUCTION)
19	G:MNB-06 SHEET 02 OF 02	TYPICAL GAD PROPOSED FOR MINOR BRIDGE (2X20)	**CULVERTS BOX TYPE DRAWINGS**		
MINOR BRIDGE BOX TYPE DRAWINGS			45	TYP-G:SBC-01 SHEET 01 OF 03	TYPICAL GAD FOR SINGLE CELL BOX CULVERT
20	TYP-G:MNB-SBC-01 SHEET 01 OF 02	TYPICAL GAD FOR PROPOSED SINGLE CELL MINOR BRIDGE	46	TYP-G:SBC-01 SHEET 02 OF 03	TYPICAL GAD FOR SINGLE CELL BOX CULVERT
21	TYP-G:MNB-SBC-01 SHEET 02 OF 02	TYPICAL GAD FOR PROPOSED SINGLE CELL MINOR BRIDGE	47	TYP-G:SBC-01 SHEET 03 OF 03	TYPICAL GAD FOR SINGLE CELL BOX CULVERT
22	TYP-G:MNB-SBC-01A SHEET 01 OF 02	TYPICAL GAD FOR PROPOSED SINGLE CELL MINOR BRIDGE	**CULVERTS BOX TYPE DRAWINGS (WIDENING)**		
23	TYP-G:MNB-SBC-01A SHEET 02 OF 02	TYPICAL GAD FOR PROPOSED SINGLE CELL MINOR BRIDGE	48	TYP-G:SBC-01 SHEET 01 OF 01	TYPICAL GAD FOR SINGLE CELL BOX CULVERT
24	G:MNB-SBC-01B SHEET 01 OF 02	GAD FOR PROPOSED SINGLE CELL MINOR BRIDGE	49	TYP-G:SBC-01 SHEET 02 OF 02	TYPICAL GAD FOR SINGLE CELL BOX CULVERT
25	G:MNB-SBC-01B SHEET 02 OF 02	GAD FOR PROPOSED SINGLE CELL MINOR BRIDGE	**PIPE LINE CROSSING**		
26	TYP-G:MNB-DBC-02 SHEET 01 OF 02	TYPICAL GAD FOR PROPOSED DOUBLE CELL MINOR BRIDGE	50	G:PLC-01 SHEET 01 OF 01	GAD PROPOSED FOR PIPE LINE CROSSING AT CH:94+187KM
27	TYP-G:MNB-DBC-02 SHEET 02 OF 02	TYPICAL GAD FOR PROPOSED DOUBLE CELL MINOR BRIDGE	**RETAINING WALL**		
28	TYP-G:MNB-DBC-02A SHEET 01 OF 02	TYPICAL GAD FOR PROPOSED DOUBLE CELL MINOR BRIDGE	51	TYP-G:REW-01	TYPICAL GAD FOR PROPOSED RETAINING WALL
29	TYP-G:MNB-DBC-02A SHEET 02 OF 02	TYPICAL GAD FOR PROPOSED DOUBLE CELL MINOR BRIDGE			



LONGITUDINAL ELEVATION OF PROPOSED BRIDGE

(SCALE 1:275)

ROAD LEVEL (m) AT CARRIAGE WAY	150.000	150.000	150.000	150.000	150.000
OGL/BED LEVEL (m)	143.810	143.010	141.870	142.000	143.280
CHAINAGE (m)	1.340	1.370	1.400	1.430	1.460



HALF PLAN AT TOP | HALF PLAN AT BOTTOM

PLAN OF PROPOSED BRIDGE

(SCALE 1:275)

SPECIFICATIONS:

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. ALL REINFORCING BARS SHALL BE HIGH YIELD STRENGTH DEFORMED BARS WITH GRADE DESIGNATION Fe 500. ONLY THERMO MECHANICALLY TREATED (TMT)BARS CONFORMING TO IS1786 SHALL BE USED.
3. GRADE OF CONCRETE FOR SUBSTRUCTURE AND FOUNDATION SHALL BE M-35.
4. GRADE OF CONCRETE FOR SUPERSTRUCTURE AND CRASH BARRIER SHALL BE M-40.
5. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
6. RIVER TRAINING WORK AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.
7. POT-CUM-PTFE BEARINGS SHALL BE PROVIDED AS PER IRC:83 (PART-III-2002).
8. ELASTOMERIC STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED
9. TEMPORARY LINER FOR CERTAIN LENGTH FROM TOP MAY BE PROVIDED IF NECESSARY TO FACILITATE PROPER CONCRETING. THIS MAY BE RETRIEVED BEFORE CONCRETE SETS.
10. FOR e VALUE REFER CORRESPONDING PLAN & PROFILE

NOTE:

1. ALL DIMENSIONS ARE IN mm.
2. ALL REDUCED LEVELS ARE IN m.
3. L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE AND T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE.
4. NO CONSTRUCTION JOINT SHALL BE ALLOWED IN CONCRETE WORKS WITHOUT WRITTEN APPROVAL OF ENGINEER-IN-CHARGE AS PER PREVAILING SITE CONDITION.
5. COMMON BENCH MARK SHOULD BE ESTABLISHED BY THE FIELD ENGINEER BEFORE START OF WORK EITHER ON APPROACHES OR ON BRIDGE PROPER AT THE TIME OF EXECUTION OF WORK.

IMPORTANT:

6. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT CHAINAGE KM 1.400 NOT APPROVED BY EE, RAJKOT, R&B.
7. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGE AT CHANAGE KM 1.400.
8. CONSIDERING NOTE 6 & 7 ABOVE, SBC AT CHAINAGE KM 0.540 (EARLIER APPROVED REALIGNMENT) CONSIDERED IN THE DESIGN.
9. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC AT CHAINAGE KM 1.400 ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE SHOULD BE RE-DESIGNED, AS PER SBC AT CHAINAGE KM 1.400.

LEGEND:

TYP = TYPICAL
OGL/BED LVL = ORIGINAL GROUND LEVEL/BED LEVEL
FRL LVL = FINALISED/FINAL ROAD LEVEL
FDN LVL = FOUNDATION LEVEL

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	FINAL DETAILED PROJECT REPORT	GS	LP	SK
2	06.02.25	Revised as per directions issued during meeting with SE, MORTH on 09.01.25 & 13.01.25	GS	LP	SK
1	10.12.24	Incorporating the suggestions Based on the meetings held with RO Gandhinagar & EE Rajkot on 25.09.24 & 24.10.24	GS	LP	SK
0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: G:MJB-01	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 01 OF 02

FDPR

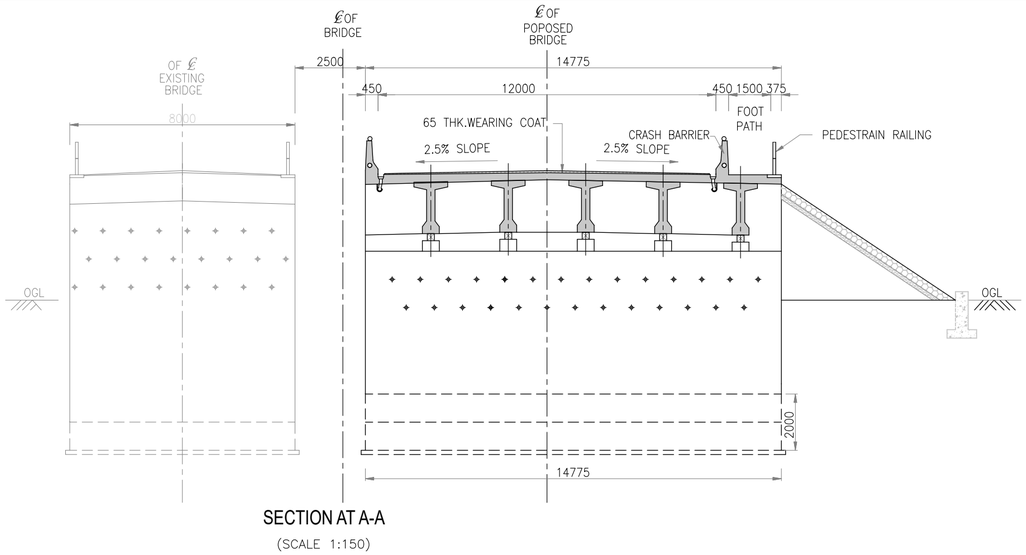
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

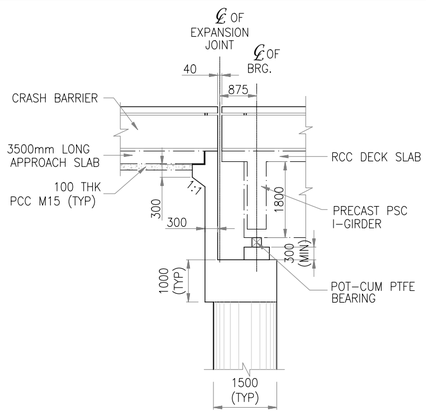
SECON

GAD PROPOSED FOR MAJOR BRIDGE AT CH:1+400KM (4X30)

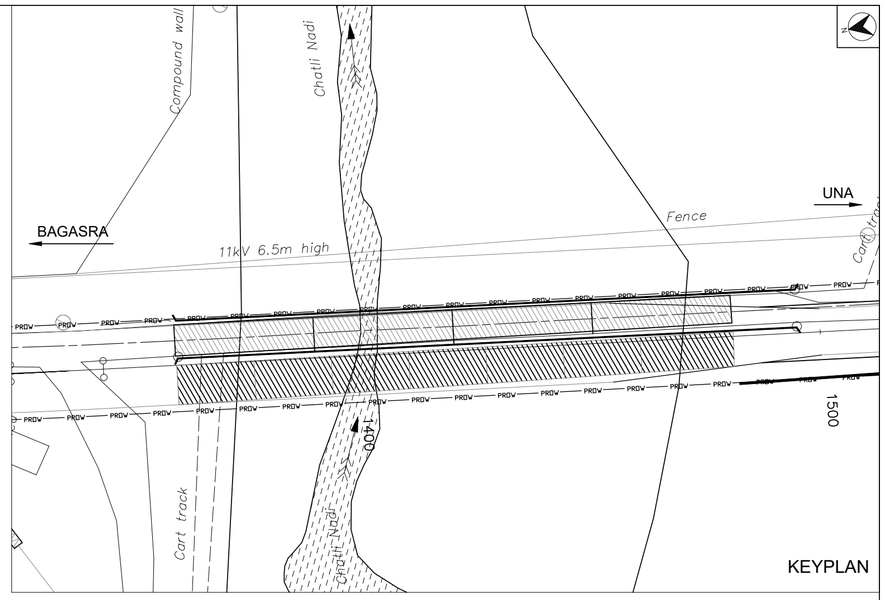
Plot Size : (A2 Size) | DRG.NO : G:MJB-01

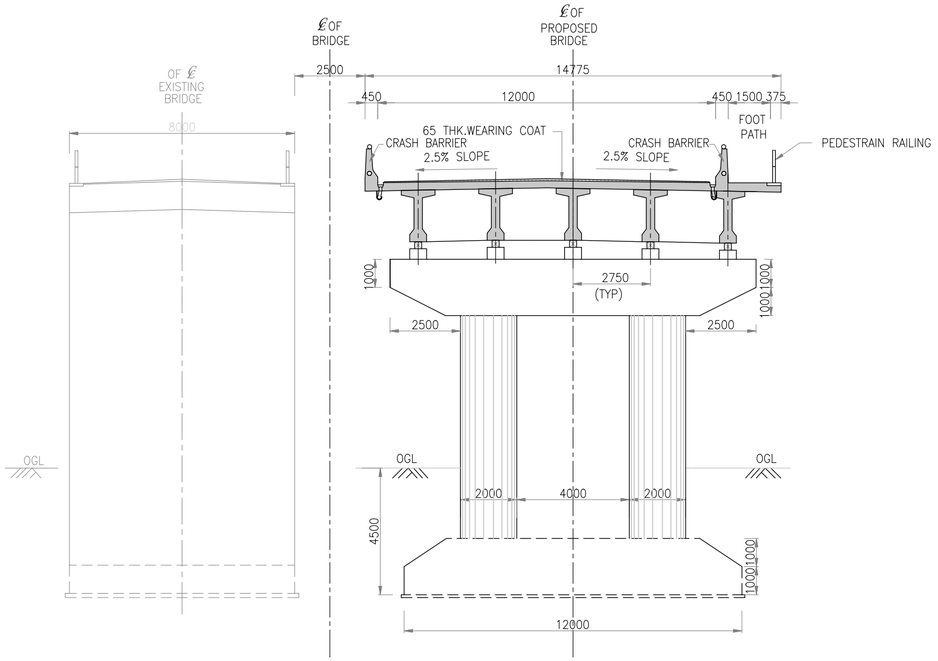


SECTION AT A-A
(SCALE 1:150)

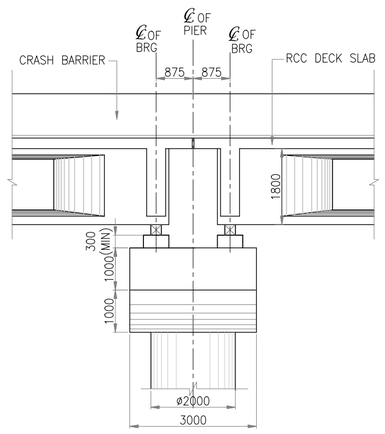


DETAIL -1
(SCALE 1:100)

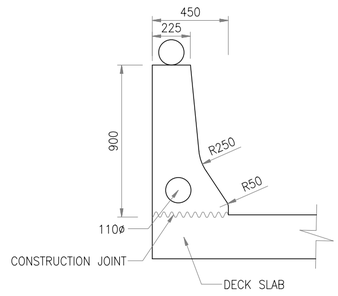




SECTION AT B-B
(SCALE 1:175)

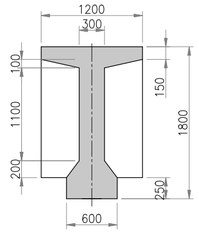


DETAIL-2
(SCALE 1:100)

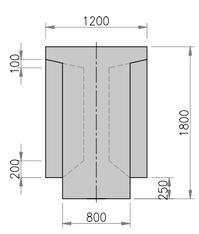


CRASH BARRIER
(SCALE 1:25)

GIRDER DETAILS



SECTION AT MID SPAN
(SCALE 1:50)



SECTION AT SUPPORT
(SCALE 1:50)

SPECIFICATIONS:

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. ALL REINFORCING BARS SHALL BE HIGH YIELD STRENGTH DEFORMED BARS WITH GRADE DESIGNATION Fe 500. ONLY THERMO MECHANICALLY TREATED (TMT)BARS CONFORMING TO IS1786 SHALL BE USED.
3. GRADE OF CONCRETE FOR SUBSTRUCTURE AND FOUNDATION SHALL BE M-35.
4. GRADE OF CONCRETE FOR SUPERSTRUCTURE AND CRASH BARRIER SHALL BE M-40.
5. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
6. RIVER TRAINING WORK AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.
7. POT-CUM-PTFE BEARINGS SHALL BE PROVIDED AS PER IRC:83 (PART-III-2002).
8. ELASTOMERIC STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED
9. TEMPORARY LINER FOR CERTAIN LENGTH FROM TOP MAY BE PROVIDED IF NECESSARY TO FACILITATE PROPER CONCRETING. THIS MAY BE RETRIEVED BEFORE CONCRETE SETS.
10. FOR e VALUE REFER CORRESPONDING PLAN & PROFILE

NOTE:

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2. ALL REDUCED LEVELS ARE IN m.
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4. NO CONSTRUCTION JOINT SHALL BE ALLOWED IN CONCRETE WORKS WITHOUT WRITTEN APPROVAL OF ENGINEER-IN-CHARGE AS PER PREVAILING SITE CONDITION.
5. COMMON BENCH MARK SHOULD BE ESTABLISHED BY THE FIELD ENGINEER BEFORE START OF WORK EITHER ON APPROACHES OR ON BRIDGE PROPER AT THE TIME OF EXECUTION OF WORK.

IMPORTANT:

6. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT CHAINAGE KM 1.400 NOT APPROVED BY EE, RAJKOT, R&B.
7. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGE AT CHANAGE KM 1.400.
8. CONSIDERING NOTE 6 & 7 ABOVE, SBC AT CHAINAGE KM 0.540 (EARLIER APPROVED REALIGNMENT) CONSIDERED IN THE DESIGN.
9. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC AT CHAINAGE KM 1.400 ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE SHOULD BE RE-DESIGNED, AS PER SBC AT CHAINAGE KM 1.400.

LEGEND:

TYP = TYPICAL
OGL/BED LVL = ORIGINAL GROUND LEVEL/BED LEVEL
FRL LVL = FINALISED/FINAL ROAD LEVEL
FDN LVL = FOUNDATION LEVEL

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Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	Designed by	Approved by	Sheets
G:MJB-01	SWAROOP	SHIVAKUMARI	02 OF 02

FDPR

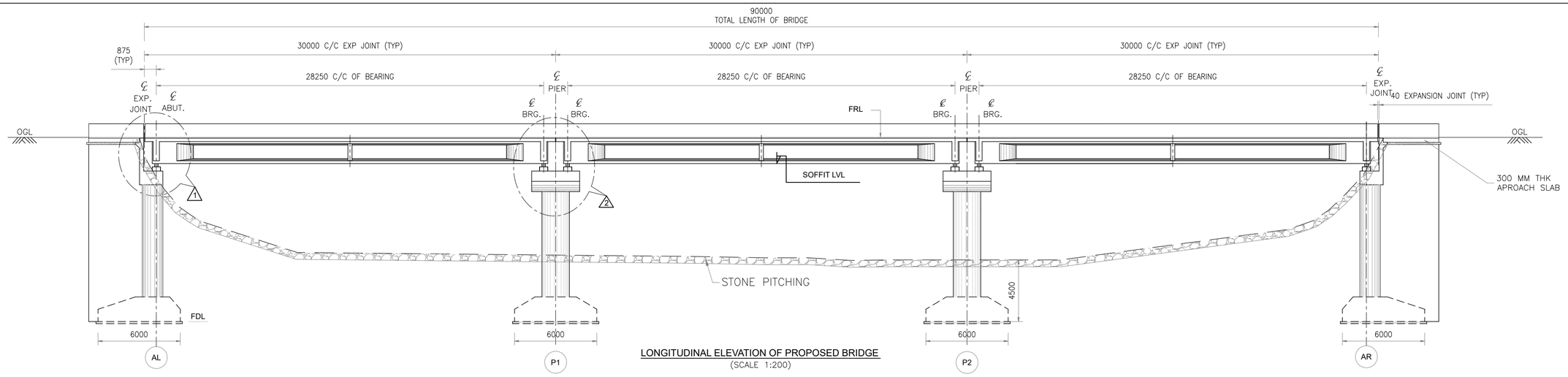
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

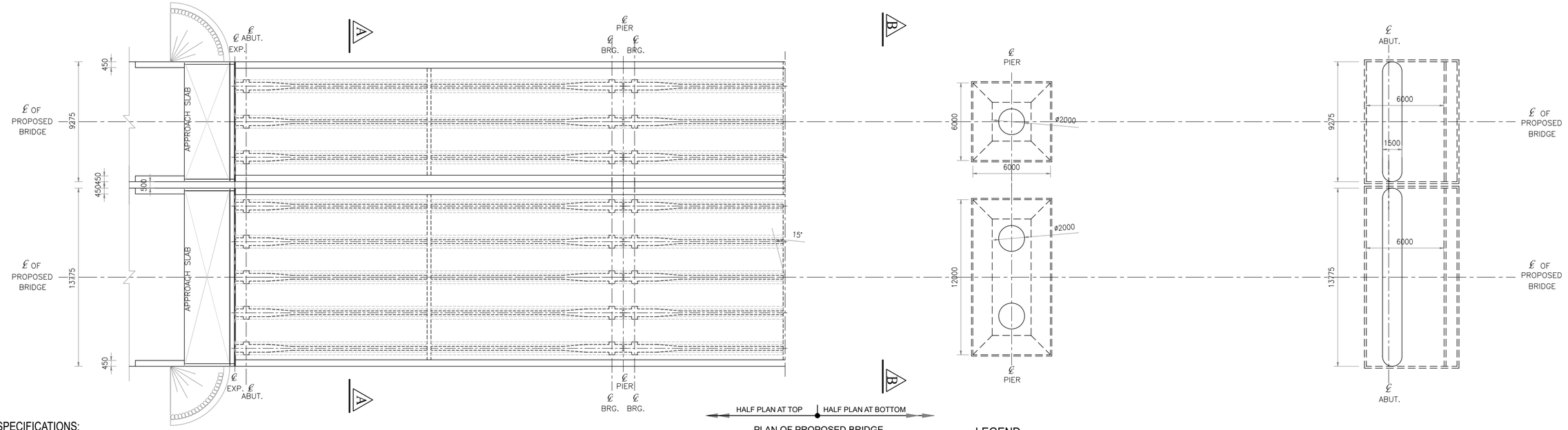
GAD PROPOSED FOR MAJOR BRIDGE AT CH:1+400KM (4X30)

Plot Size : (A2 Size) | DRG.NO : G: MJB-01



LONGITUDINAL ELEVATION OF PROPOSED BRIDGE
(SCALE 1:200)

ROAD LEVEL (m) AT CARRIAGE WAY	216.395	216.395	216.395	216.395
OGL/BED LEVEL (m)	207.950	206.390	205.670	208.940
CHAINAGE (m)	24.915	24.945	24.975	25.005



PLAN OF PROPOSED BRIDGE
(SCALE 1:200)

SPECIFICATIONS:

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3. GRADE OF CONCRETE FOR SUBSTRUCTURE AND FOUNDATION SHALL BE M-35.
4. GRADE OF CONCRETE FOR SUPERSTRUCTURE AND CRASH BARRIER SHALL BE M-40.
5. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
6. RIVER TRAINING WORK AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.
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10. CONFIRMATORY BOREHOLES ARE REQUIRED TO BE CARRIED OUT PRIOR TO EXECUTION.
11. FOR e VALVE REFER CORRESPONDING PLAN & PROFILE

NOTE:

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4. NO CONSTRUCTION JOINT SHALL BE ALLOWED IN CONCRETE WORKS WITHOUT WRITTEN APPROVAL OF ENGINEER-IN-CHARGE AS PER PREVAILING SITE CONDITION.
5. COMMON BENCH MARK SHOULD BE ESTABLISHED BY THE FIELD ENGINEER BEFORE START OF WORK EITHER ON APPROACHES OR ON BRIDGE PROPER AT THE TIME OF EXECUTION OF WORK.
6. THE SBC IS CONSIDERED AS 55t/Sq.m. THE CONFIRMATORY BORE HOLE SHALL BE CARRIED OUT BEFORE THE EXECUTION AT SITE.
7. SAFE BEARING CAPACITY SHOULD BE CONSIDERED AS PER SITE CONDITIONS BEFORE EXECUTION

LEGEND:

TYP = TYPICAL
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Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	**Designed by**	**Approved by**	**Sheets**
G:MJB-02	SWAROOP	SHIVAKUMARI	01 OF 02

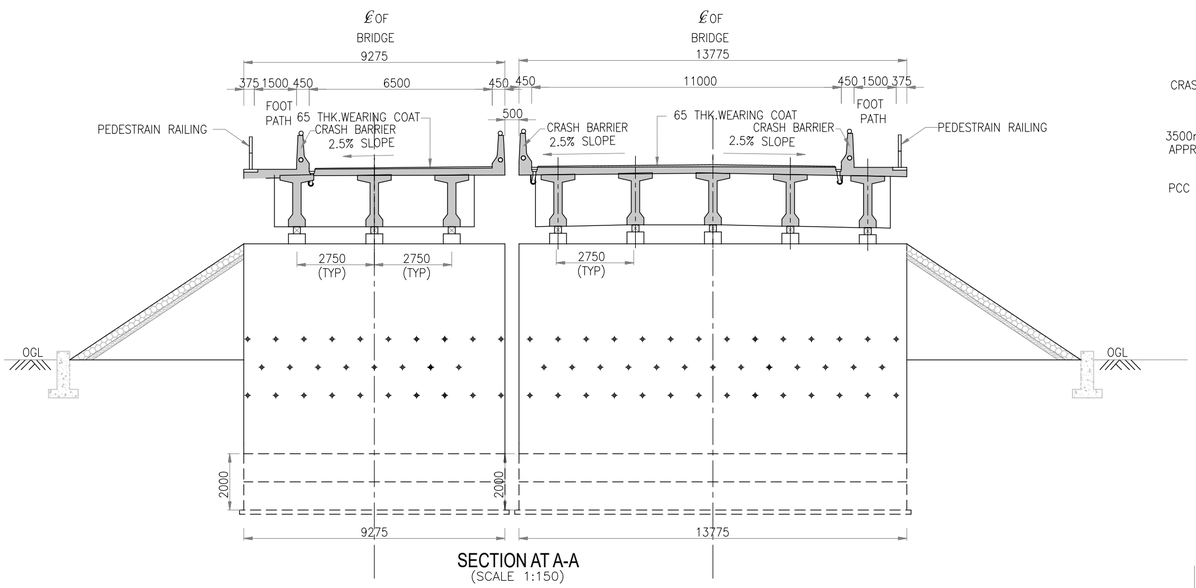
FDPR

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

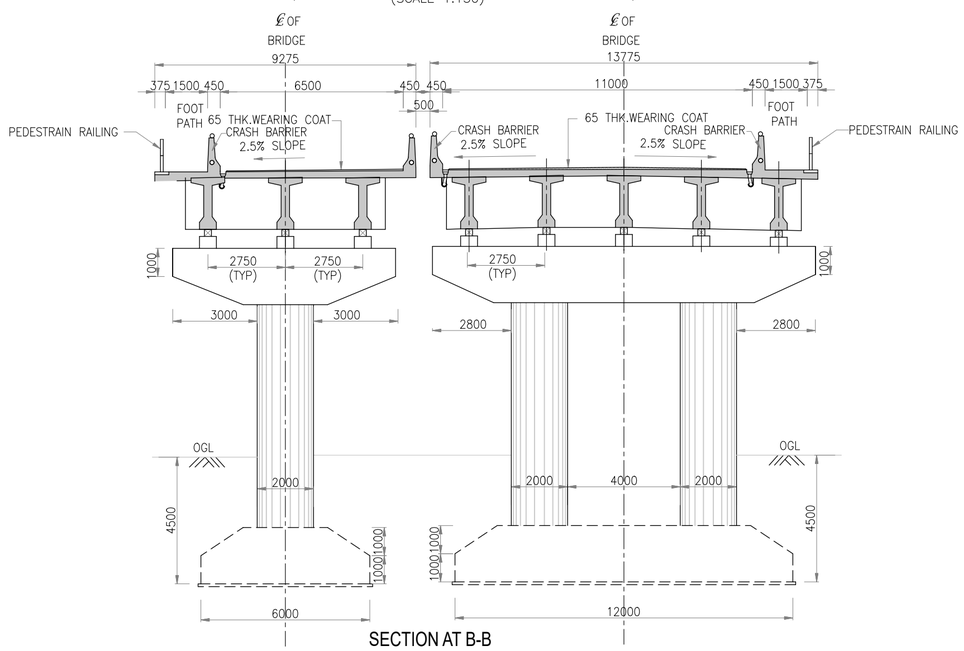
PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

GAD PROPOSED FOR MAJOR BRIDGE AT CH:24+950KM (3X30)

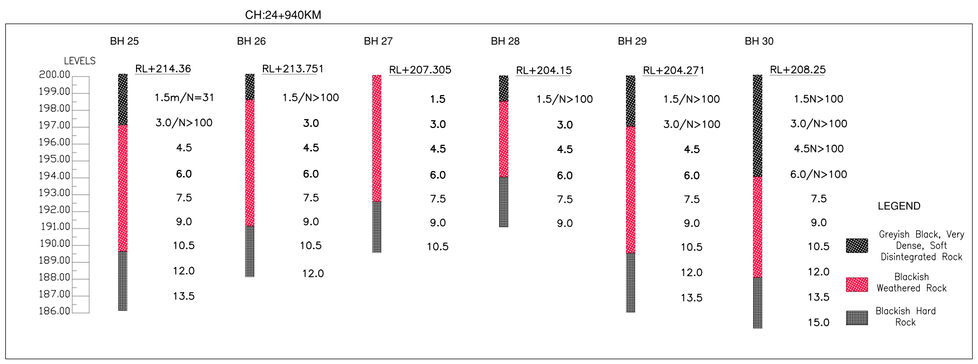
Plot Size : (A2 Size) | DRG.NO : G:MJB-02

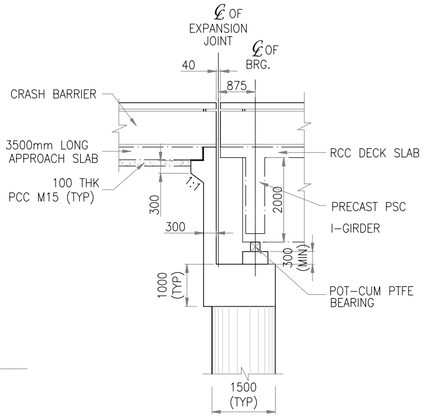


SECTION AT A-A
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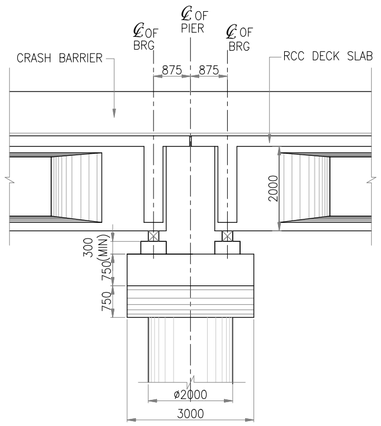


SECTION AT B-B
(SCALE 1:175)

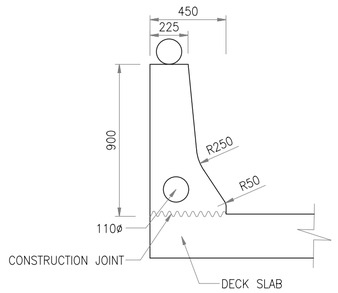




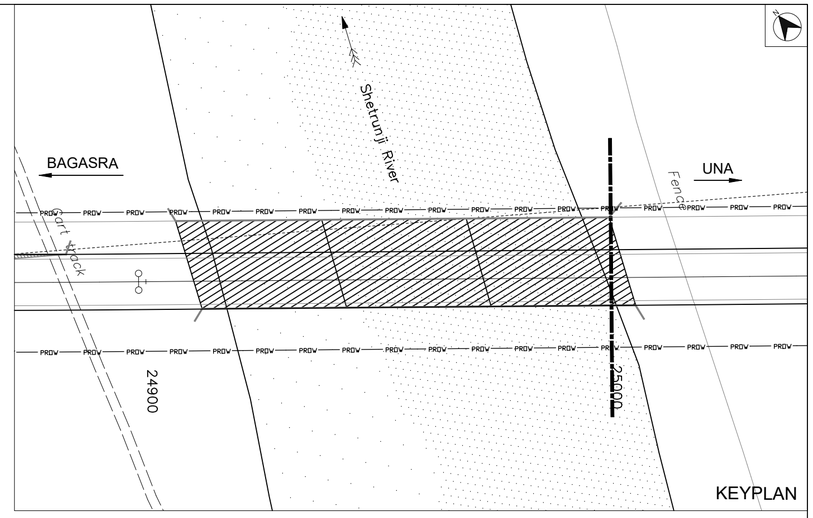
DETAIL -1
(SCALE 1:100)



DETAIL-2
(SCALE 1:100)

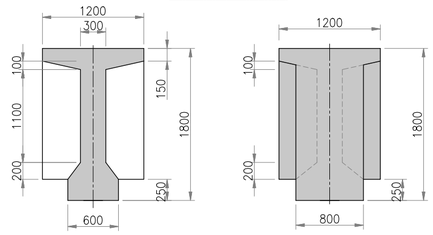


CRASH BARRIER
(SCALE 1:25)



KEYPLAN

GIRDER DETAILS



SECTION AT MID SPAN
(SCALE 1:50)

SECTION AT SUPPORT
(SCALE 1:50)

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NOTE:

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FDPR

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05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	Designed by	Approved by	Sheets
G:MJB-02	SWAROOP	SHIVAKUMARI	02 OF 02

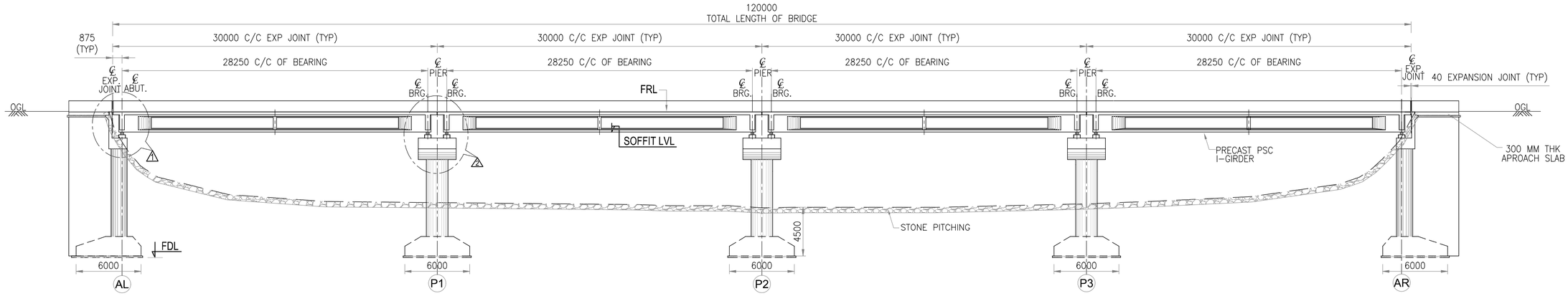
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

GAD PROPOSED FOR MAJOR BRIDGE AT CH:24+950KM (3X30)

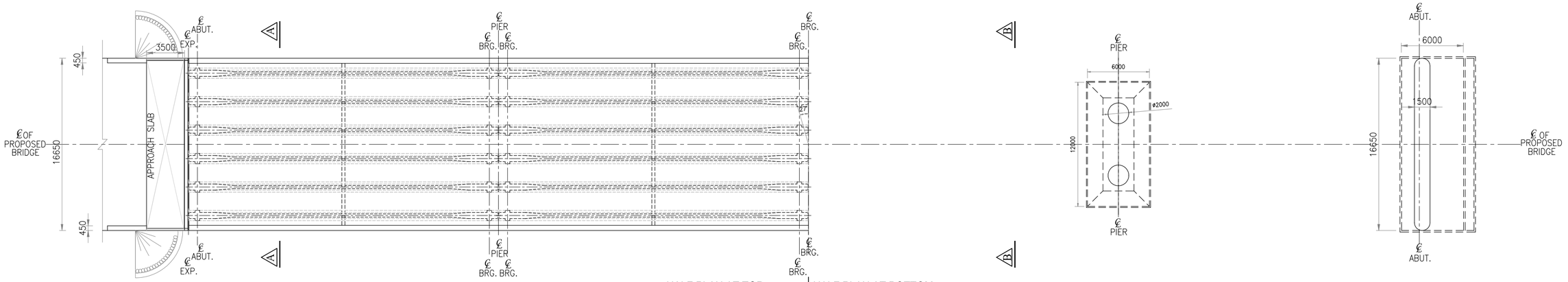
Plot Size : (A2 Size) | DRG.NO : G:MJB-02



LONGITUDINAL ELEVATION OF PROPOSED BRIDGE

(SCALE 1:275)

ROAD LEVEL (m) AT CARRIAGE WAY	76.100	76.100	76.100	76.100	76.100
OGL/BED LEVEL (m)	65.130	64.770	64.470	64.810	65.700
CHAINAGE (m)	90.280	90.310	90.340	90.370	90.400



PLAN OF PROPOSED BRIDGE

(SCALE 1:275)

SPECIFICATIONS:

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0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: G:MJB-03	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 01 OF 02

FDPR

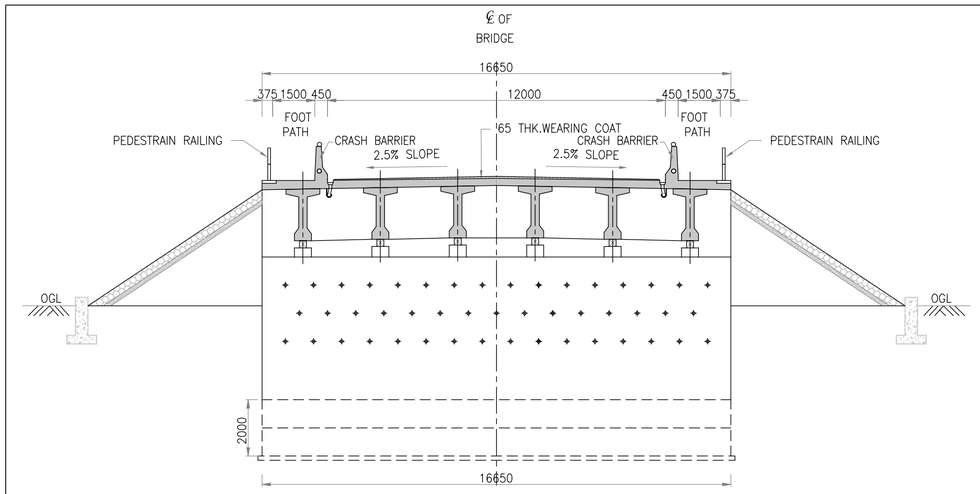
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
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PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

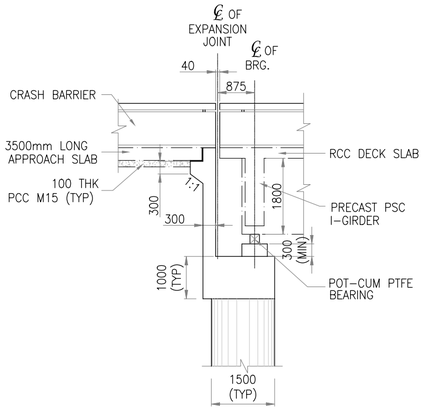
SECON

GAD PROPOSED FOR MAJOR BRIDGE AT CH:90+340KM (4X30)

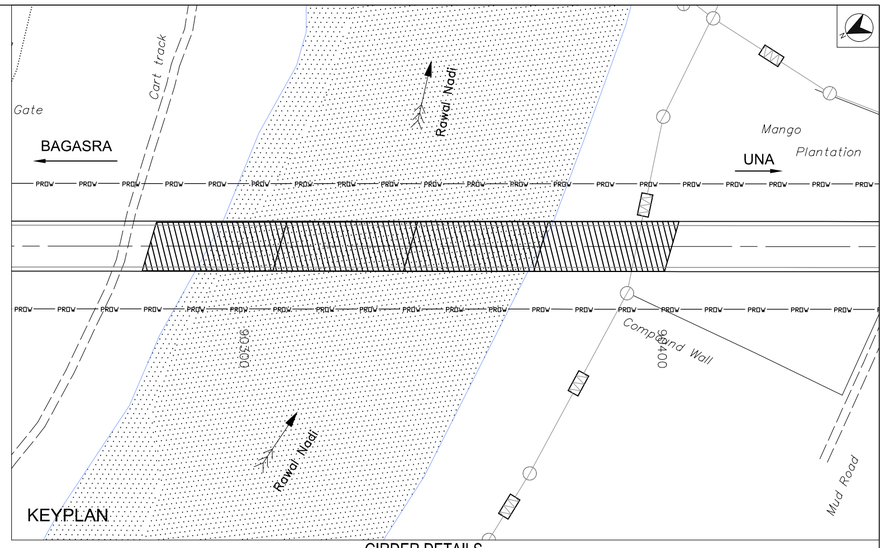
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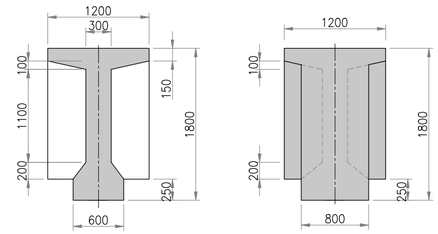
SECTION AT A-A
(SCALE 1:150)



DETAIL -1
(SCALE 1:100)

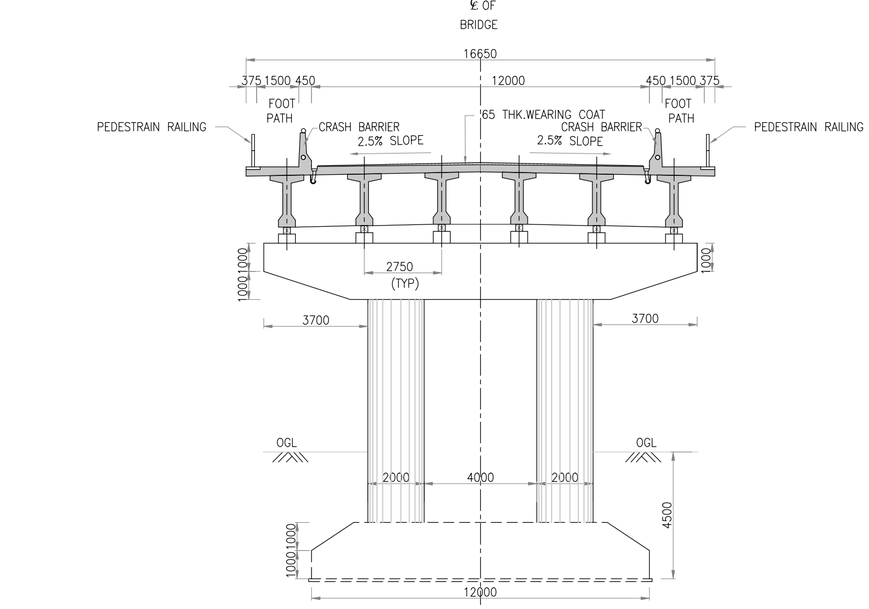


GIRDER DETAILS

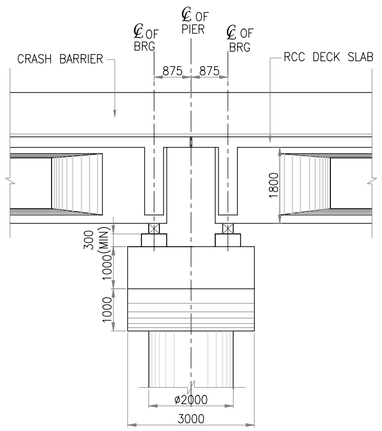


SECTION AT MID SPAN
(SCALE 1:50)

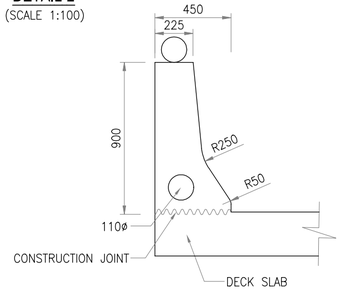
SECTION AT SUPPORT
(SCALE 1:50)



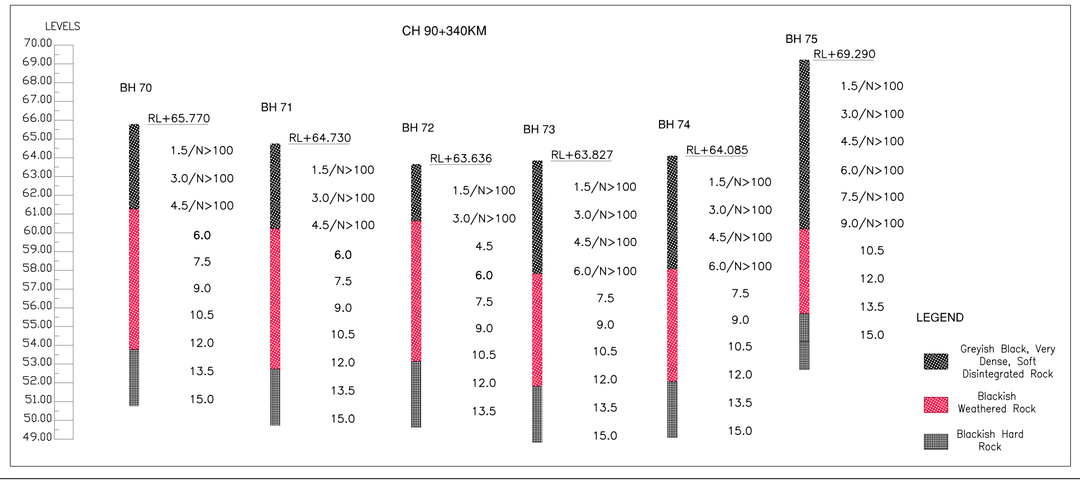
SECTION AT B-B
(SCALE 1:175)



DETAIL-2
(SCALE 1:100)



CRASH BARRIER
(SCALE 1:25)



SPECIFICATIONS:

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. ALL REINFORCING BARS SHALL BE HIGH YIELD STRENGTH DEFORMED BARS WITH GRADE DESIGNATION Fe 500. ONLY THERMO MECHANICALLY TREATED (TMT)BARS CONFORMING TO IS1786 SHALL BE USED.
3. GRADE OF CONCRETE FOR SUBSTRUCTURE AND FOUNDATION SHALL BE M-35.
4. GRADE OF CONCRETE FOR SUPERSTRUCTURE AND CRASH BARRIER SHALL BE M-40.
5. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
6. RIVER TRAINING WORK AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.
7. POT-CUM-PTFE BEARINGS SHALL BE PROVIDED AS PER IRC:83 (PART-III-2002).
8. ELASTOMERIC STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED
9. TEMPORARY LINER FOR CERTAIN LENGTH FROM TOP MAY BE PROVIDED IF NECESSARY TO FACILITATE PROPER CONCRETING. THIS MAY BE RETRIEVED BEFORE CONCRETE SETS.
10. CONFIRMATORY BOREHOLES ARE REQUIRED TO BE CARRIED OUT PRIOR TO EXECUTION.
11. FOR e VALUE REFER CORRESPONDING PLAN & PROFILE

NOTE:

1. ALL DIMENSIONS ARE IN mm.
2. ALL REDUCED LEVELS ARE IN m.
3. L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE AND T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE.
4. NO CONSTRUCTION JOINT SHALL BE ALLOWED IN CONCRETE WORKS WITHOUT WRITTEN APPROVAL OF ENGINEER-IN-CHARGE AS PER PREVAILING SITE CONDITION.
5. COMMON BENCH MARK SHOULD BE ESTABLISHED BY THE FIELD ENGINEER BEFORE START OF WORK EITHER ON APPROACHES OR ON BRIDGE PROPER AT THE TIME OF EXECUTION OF WORK.
6. THE SBC IS CONSIDERED AS 55t/Sq.m. THE CONFIRMATORY BORE HOLE SHALL BE CARRIED OUT BEFORE THE EXECUTION AT SITE.
7. SAFE BEARING CAPACITY SHOULD BE CONSIDERED AS PER SITE CONDITIONS BEFORE EXECUTION

LEGEND:

TYP = TYPICAL
OGL/BED LVL = ORIGINAL GROUND LEVEL/BED LEVEL
FRL LVL = FINALISED/FINAL ROAD LEVEL
FDN LVL = FOUNDATION LEVEL

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	FINAL DETAILED PROJECT REPORT	GS	LP	SK
2	06.02.25	Revised as per directions issued during meeting with SE, MORTH on 09.01.25 & 13.01.25	GS	LP	SK
1	10.12.24	Incorporating the suggestions Based on the meetings held with RO Gandhinagar & EE Rajkot on 25.09.24 & 24.10.24	GS	LP	SK
0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	Designed by	Approved by	Sheets
G:MJB-03	SWAROOP	SHIVAKUMARI	02 OF 02

FDPR

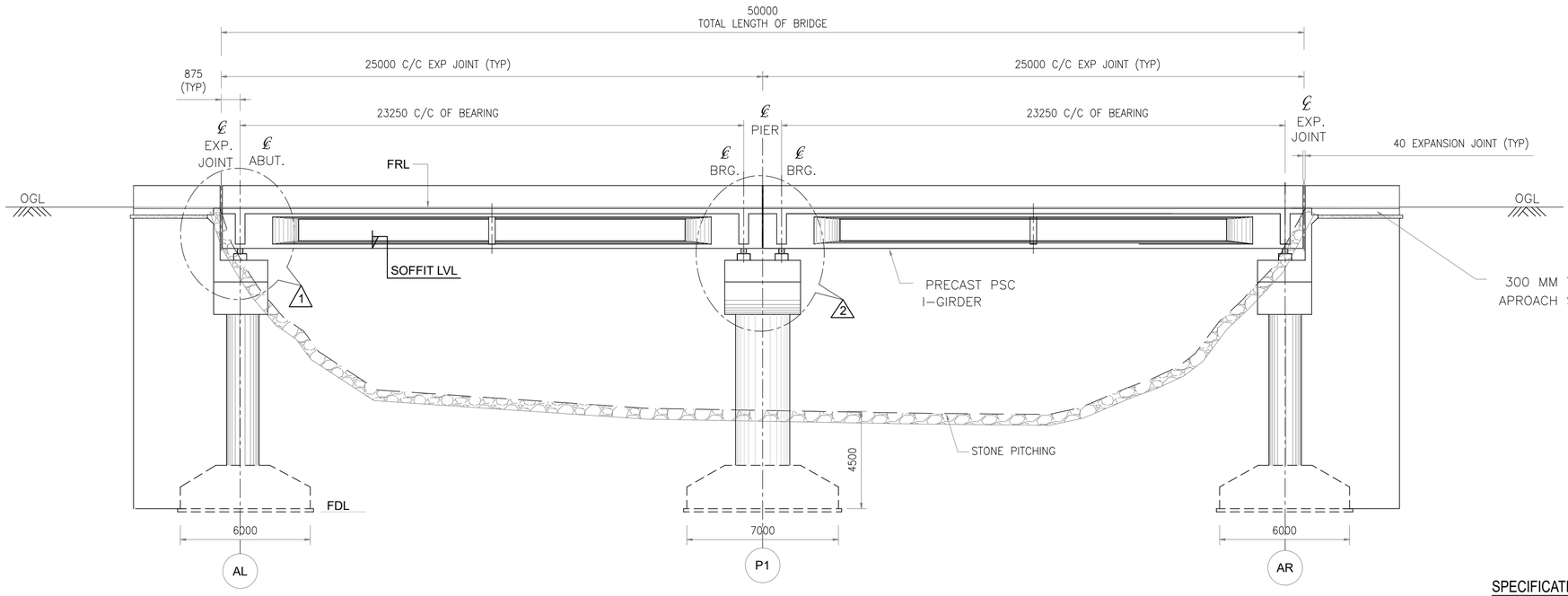
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

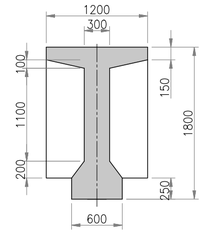
GAD PROPOSED FOR MAJOR BRIDGE AT CH:90+340KM (4X30)

Plot Size : (A2 Size) | DRG.NO : G:MJB-03

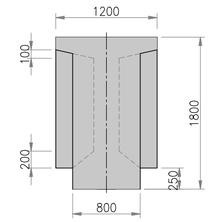


LONGITUDINAL ELEVATION OF PROPOSED BRIDGE
(SCALE 1:200)

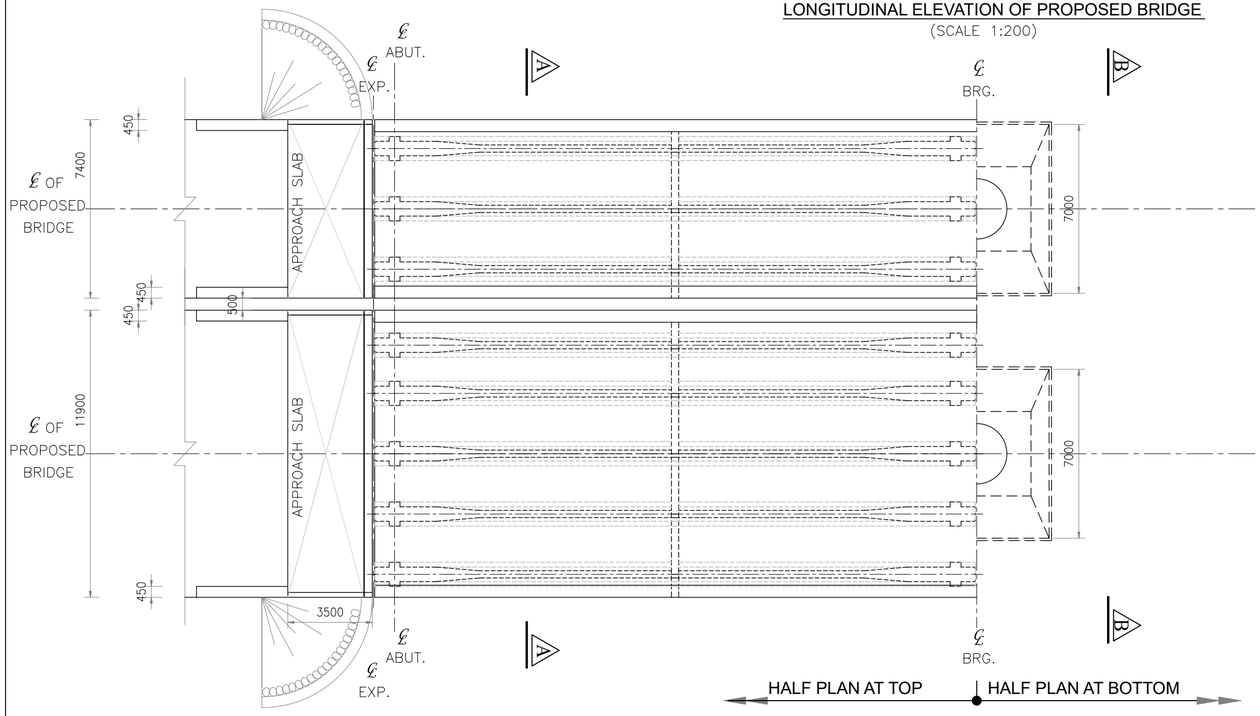
GIRDER DETAILS



SECTION AT MID SPAN
(SCALE 1:50)



SECTION AT SUPPORT
(SCALE 1:50)



HALF PLAN AT TOP | HALF PLAN AT BOTTOM

PLAN OF PROPOSED BRIDGE
(SCALE 1:200)

SPECIFICATIONS:

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. ALL REINFORCING BARS SHALL BE HIGH YIELD STRENGTH DEFORMED BARS WITH GRADE DESIGNATION Fe 500. ONLY THERMO MECHANICALLY TREATED (TMT)BARS CONFORMING TO IS1786 SHALL BE USED.
3. GRADE OF CONCRETE FOR SUBSTRUCTURE AND FOUNDATION SHALL BE M-35.
4. GRADE OF CONCRETE FOR SUPERSTRUCTURE AND CRASH BARRIER SHALL BE M-40.
5. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
6. RIVER TRAINING WORK AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.
7. POT-CUM-PTFE BEARINGS SHALL BE PROVIDED AS PER IRC:83 (PART-III-2002).
8. ELASTOMERIC STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED
9. TEMPORARY LINER FOR CERTAIN LENGTH FROM TOP MAY BE PROVIDED IF NECESSARY TO FACILITATE PROPER CONCRETING. THIS MAY BE RETRIEVED BEFORE CONCRETE SETS.
10. FOR e VALUE REFER CORRESPONDING PLAN & PROFILE

NOTE:

1. ALL DIMENSIONS ARE IN mm.
2. ALL REDUCED LEVELS ARE IN m.
3. L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE AND T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE.
4. NO CONSTRUCTION JOINT SHALL BE ALLOWED IN CONCRETE WORKS WITHOUT WRITTEN APPROVAL OF ENGINEER-IN-CHARGE AS PER PREVAILING SITE CONDITION.
5. COMMON BENCH MARK SHOULD BE ESTABLISHED BY THE FIELD ENGINEER BEFORE START OF WORK EITHER ON APPROACHES OR ON BRIDGE PROPER AT THE TIME OF EXECUTION OF WORK.

IMPORTANT:

6. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT THE LOCATIONS MENTIONED IN TABLE NOT APPROVED BY EE, RAJKOT, R&B.
7. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGES.
8. CONSIDERING NOTE 6 & 7 ABOVE, SBC CONSIDERED FROM NEARBY STRUCTURES AS MENTIONED IN TABLE.
9. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE BRIDGE SHOULD BE RE-DESIGNED, AS PER SBC.

DETAILS OF MINOR BRIDGE

SL NO.	DESIGN CHAINAGE (km)	PROPOSED SPAN ARRANGEMENT	FRL (m)	SOFFIT LVL (m)	ORIGINAL GROUND LEVEL (m)			
					AL	P1	AR	SBC (t/sqm)
1.	27.565	2 X 25	222.800	220.628	218.730	13.850	216.050	55 CONSIDERED FROM NEAREST STRUCTURE KM 26.360 (NOTE: 7 & 8 REFERS)

LEGEND:

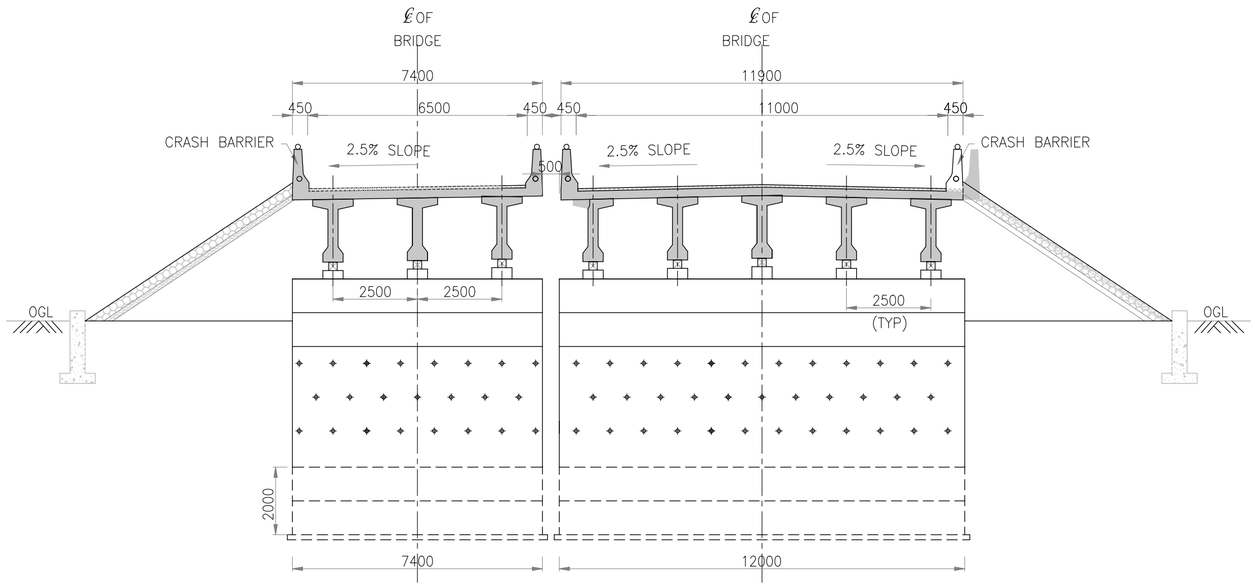
TYP = TYPICAL
OGL/BED LVL = ORIGINAL GROUND LEVEL/BED LEVEL
FRL LVL = FINALISED/FINAL ROAD LEVEL
FDN LVL = FOUNDATION LEVEL

No	DATE	REVISIONS	BY	CHKD	APPD
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0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

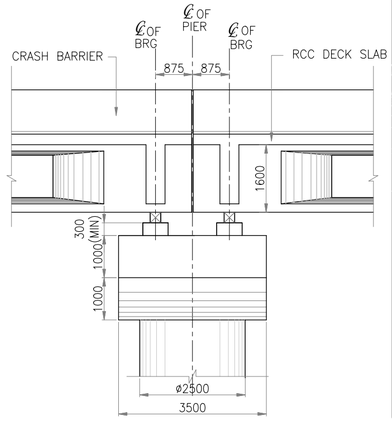
Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	**Designed by**	**Approved by**	**Sheets**
TYP-:MNB-01	SWAROOP	SHIVAKUMARI	01 OF 02

FDPR

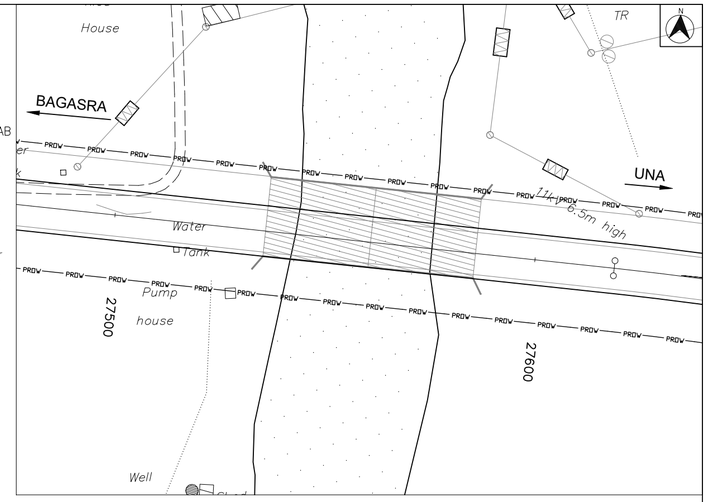
CLIENT	NATIONAL HIGHWAY DIVISION, RAJKOT DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT RAJKOT-360 001, GUJARAT
PROJECT	CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT
SECON™	TYPICAL GAD PROPOSED FOR MINOR BRIDGE (2X25)
Plot Size : (A2 Size)	DRG.NO : TYP-G: MNB-01

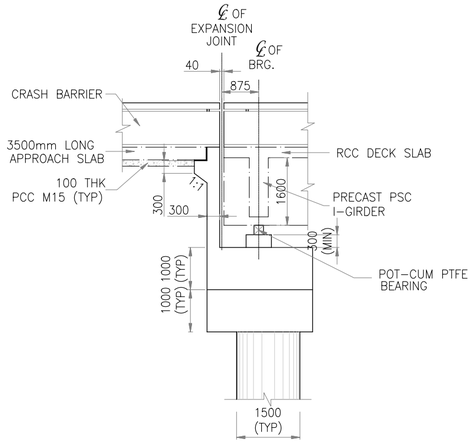


SECTION AT A-A
(SCALE 1:150)

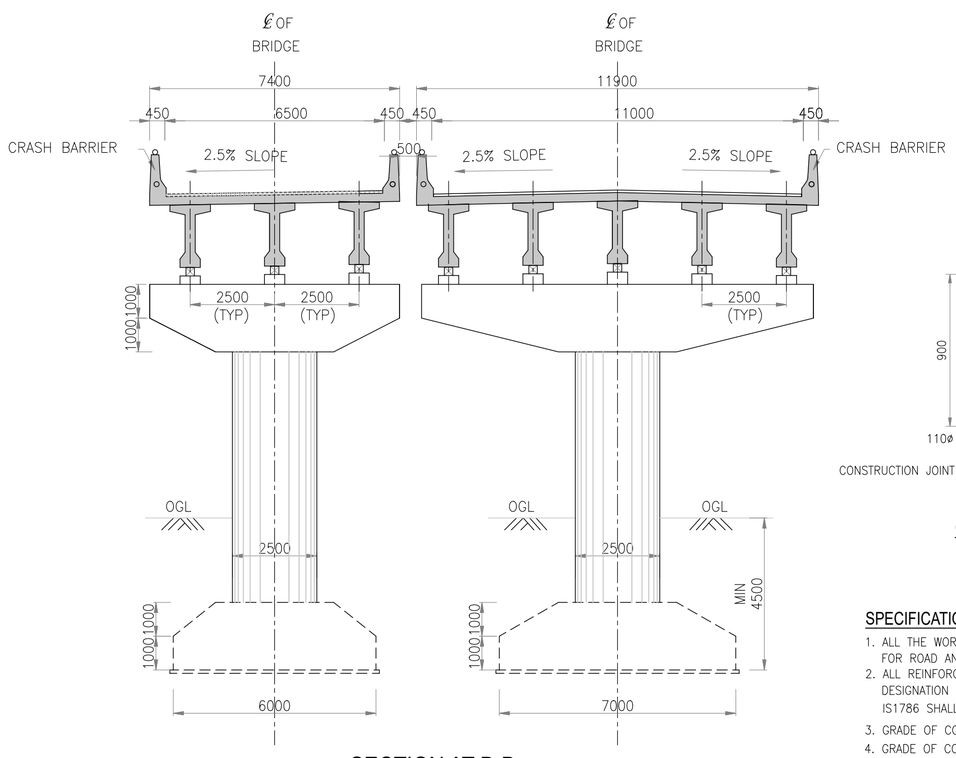


DETAIL-2
(SCALE 1:100)

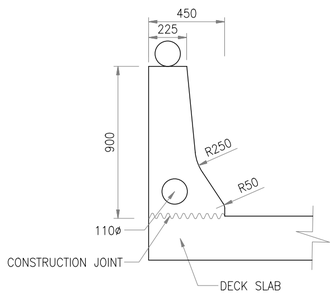




DETAIL -1
(SCALE 1:100)



SECTION AT B-B
(SCALE 1:175)



CRASH BARRIER
(SCALE 1:25)

NOTE:
1. ALL DIMENSIONS ARE IN mm.
2. ALL REDUCED LEVELS ARE IN m.
3. L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE AND T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE.
4. NO CONSTRUCTION JOINT SHALL BE ALLOWED IN CONCRETE WORKS WITHOUT WRITTEN APPROVAL OF ENGINEER-IN-CHARGE AS PER PREVAILING SITE CONDITION.
5. COMMON BENCH MARK SHOULD BE ESTABLISHED BY THE FIELD ENGINEER BEFORE START OF WORK EITHER ON APPROACHES OR ON BRIDGE PROPER AT THE TIME OF EXECUTION OF WORK.

IMPORTANT:
6. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT THE LOCATIONS MENTIONED IN TABLE NOT APPROVED BY EE, RAJKOT, R&B.
7. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGES.
8. CONSIDERING NOTE 6 & 7 ABOVE, SBC CONSIDERED FROM NEARBY STRUCTURES AS MENTIONED IN TABLE.
9. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE BRIDGE SHOULD BE RE-DESIGNED, AS PER SBC.

SPECIFICATIONS:
1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. ALL REINFORCING BARS SHALL BE HIGH YIELD STRENGTH DEFORMED BARS WITH GRADE DESIGNATION Fe 500. ONLY THERMO MECHANICALLY TREATED (TMT)BARS CONFORMING TO IS1786 SHALL BE USED.
3. GRADE OF CONCRETE FOR SUBSTRUCTURE AND FOUNDATION SHALL BE M-35.
4. GRADE OF CONCRETE FOR SUPERSTRUCTURE AND CRASH BARRIER SHALL BE M-40.
5. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
6. RIVER TRAINING WORK AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.
7. POT-CUM-PTFE BEARINGS SHALL BE PROVIDED AS PER IRC:83 (PART-III-2002).
8. ELASTOMERIC STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED
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10. FOR e VALUE REFER CORRESPONDING PLAN & PROFILE

LEGEND:
TYP = TYPICAL
OGL/BED LVL = ORIGINAL GROUND LEVEL/BED LEVEL
FRL LVL = FINALISED/FINAL ROAD LEVEL
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0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: TYP-:MNB-01	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 02 OF 02

FDPR

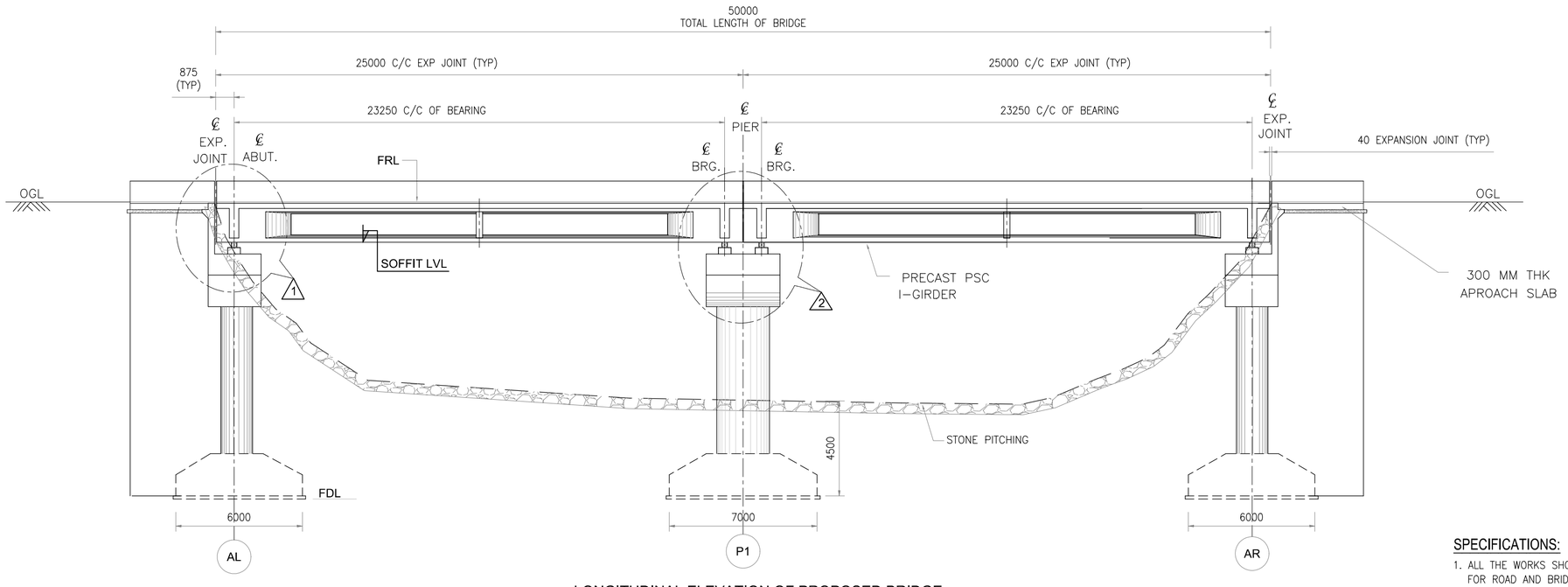
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

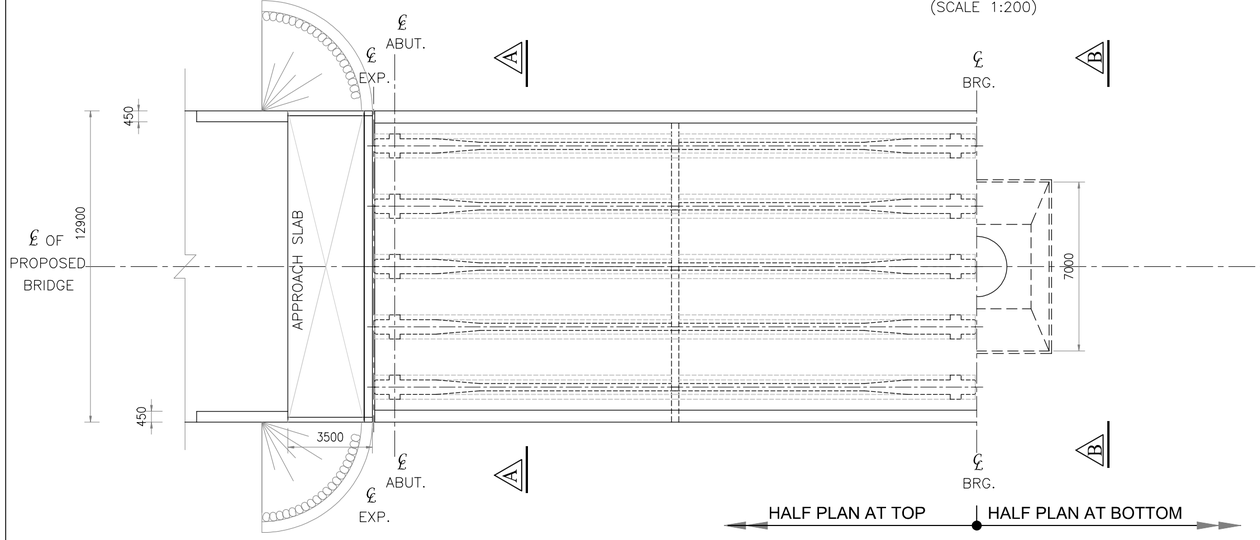
TYPICAL GAD PROPOSED FOR MINOR BRIDGE (2X25)

Plot Size : (A2 Size) | DRG.NO : TYP-G: MNB-01



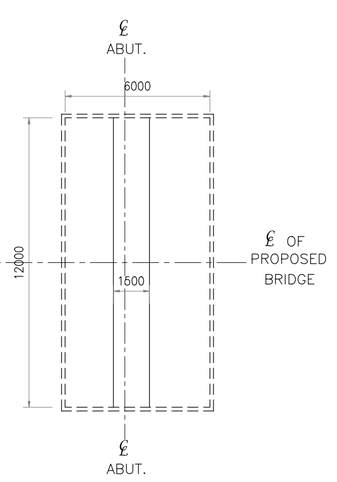
LONGITUDINAL ELEVATION OF PROPOSED BRIDGE

(SCALE 1:200)



PLAN OF PROPOSED BRIDGE

(SCALE 1:200)



DETAILS OF MINOR BRIDGE

SL NO.	DESIGN CHAINAGE (km)	PROPOSED SPAN ARRANGEMENT	FRL (m)	SOFFIT LVL (m)	ORIGINAL GROUND LEVEL (m)			
					AL	P1	AR	SBC (t/sqm)
1.	79.350	2 X 25	111.135	109.220	104.203	104.178	103.979	55 CONSIDERED FROM NEAREST STRUCTURE KM 90.340 (NOTE: 7 & 8 REFERS)

SPECIFICATIONS:

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. ALL REINFORCING BARS SHALL BE HIGH YIELD STRENGTH DEFORMED BARS WITH GRADE DESIGNATION Fe 500. ONLY THERMO MECHANICALLY TREATED (TMT)BARS CONFORMING TO IS1786 SHALL BE USED.
3. GRADE OF CONCRETE FOR SUBSTRUCTURE AND FOUNDATION SHALL BE M-35.
4. GRADE OF CONCRETE FOR SUPERSTRUCTURE AND CRASH BARRIER SHALL BE M-40.
5. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
6. RIVER TRAINING WORK AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.
7. POT-CUM-PTFE BEARINGS SHALL BE PROVIDED AS PER IRC:83 (PART-III-2002).
8. ELASTOMERIC STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED
9. TEMPORARY LINER FOR CERTAIN LENGTH FROM TOP MAY BE PROVIDED IF NECESSARY TO FACILITATE PROPER CONCRETING. THIS MAY BE RETRIEVED BEFORE CONCRETE SETS.
10. FOR e VALUE REFER CORRESPONDING PLAN & PROFILE

NOTE:

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2. ALL REDUCED LEVELS ARE IN m.
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5. COMMON BENCH MARK SHOULD BE ESTABLISHED BY THE FIELD ENGINEER BEFORE START OF WORK EITHER ON APPROACHES OR ON BRIDGE PROPER AT THE TIME OF EXECUTION OF WORK.

IMPORTANT:

6. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT THE LOCATIONS MENTIONED IN TABLE NOT APPROVED BY EE, RAJKOT, R&B.
7. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGES.
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FDPR

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0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: TYP-: MNB-01A	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 01 OF 02

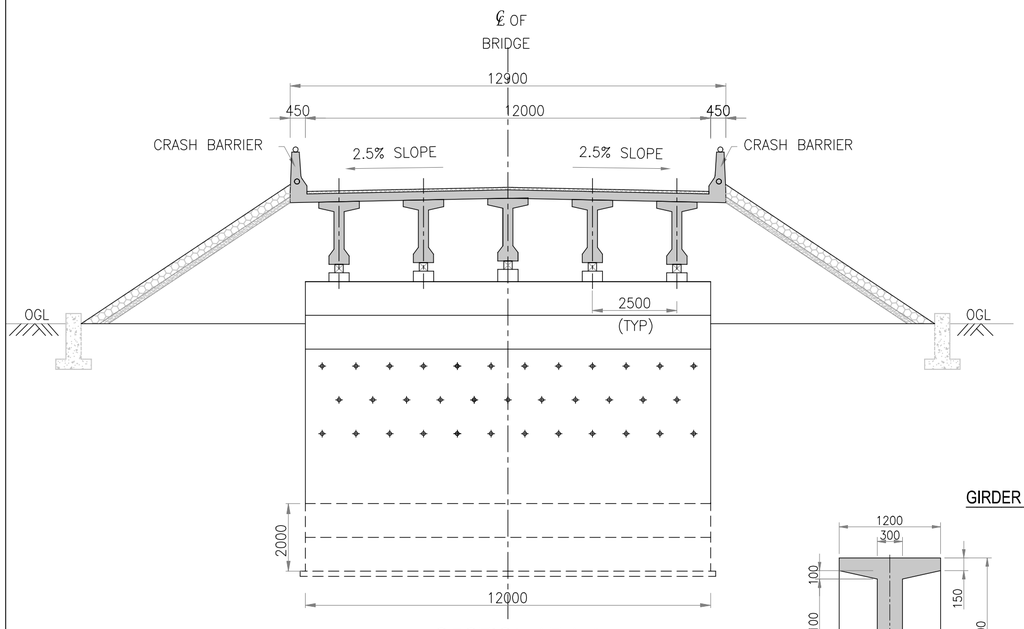
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

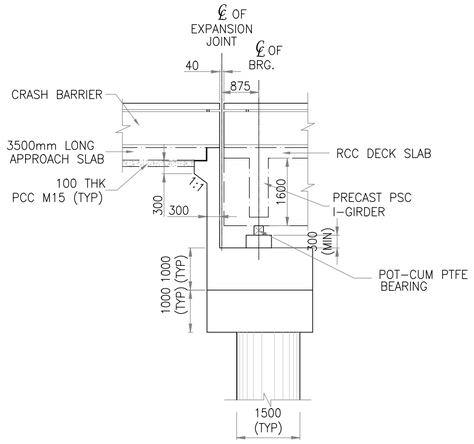
TYPICAL GAD PROPOSED FOR MINOR BRIDGE (2X25)

Plot Size : (A2 Size) | DRG.NO : TYP-G: MNB-01A



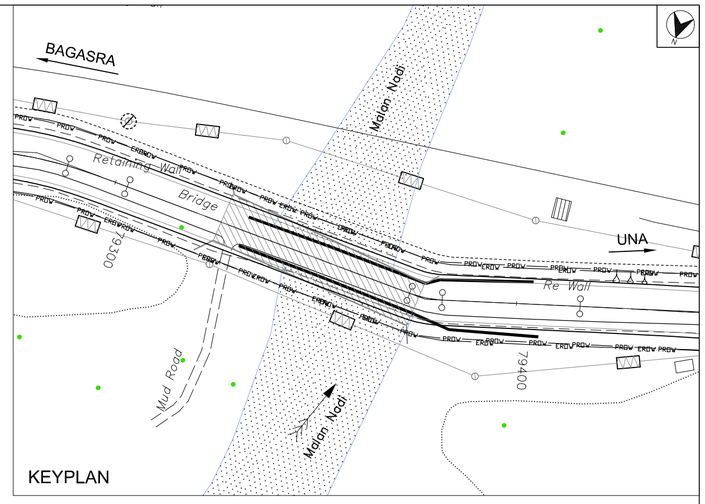
SECTION AT A-A

(SCALE 1:150)

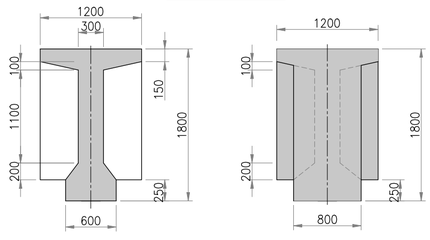


DETAIL -1

(SCALE 1:100)



GIRDER DETAILS

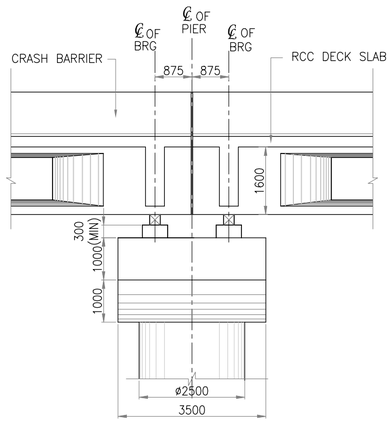


SECTION AT MID SPAN

(SCALE 1:50)

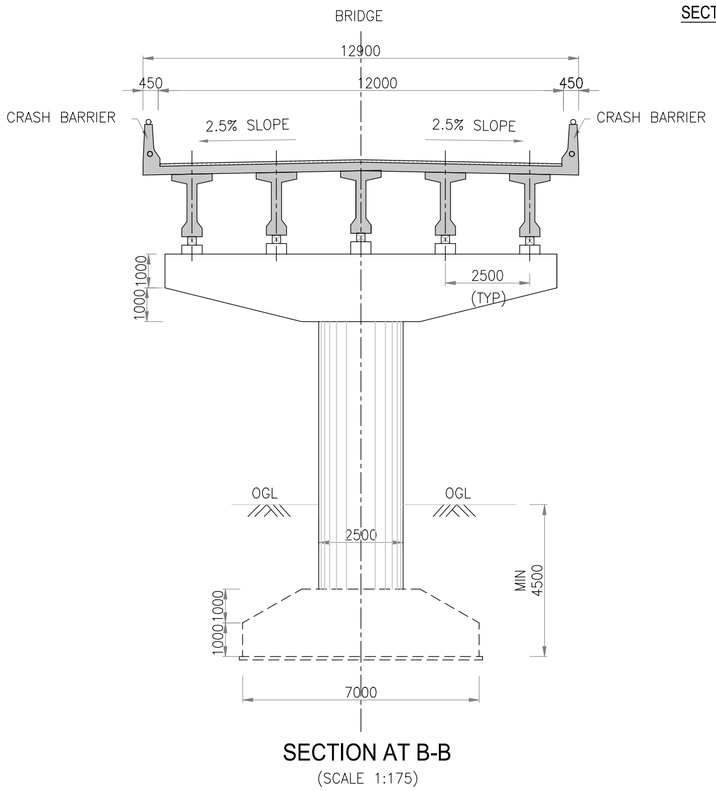
SECTION AT SUPPORT

(SCALE 1:50)



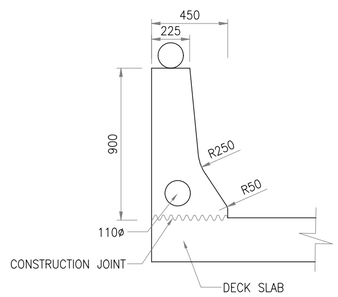
DETAIL-2

(SCALE 1:100)



SECTION AT B-B

(SCALE 1:175)



CRASH BARRIER

(SCALE 1:25)

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3. GRADE OF CONCRETE FOR SUBSTRUCTURE AND FOUNDATION SHALL BE M-35.
4. GRADE OF CONCRETE FOR SUPERSTRUCTURE AND CRASH BARRIER SHALL BE M-40.
5. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
6. RIVER TRAINING WORK AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.
7. POT-CUM-PTFE BEARINGS SHALL BE PROVIDED AS PER IRC:83 (PART-III-2002).
8. ELASTOMERIC STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED
9. TEMPORARY LINER FOR CERTAIN LENGTH FROM TOP MAY BE PROVIDED IF NECESSARY TO FACILITATE PROPER CONCRETING. THIS MAY BE RETRIEVED BEFORE CONCRETE SETS.
10. FOR e VALUE REFER CORRESPONDING PLAN & PROFILE

NOTE:

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5. COMMON BENCH MARK SHOULD BE ESTABLISHED BY THE FIELD ENGINEER BEFORE START OF WORK EITHER ON APPROACHES OR ON BRIDGE PROPER AT THE TIME OF EXECUTION OF WORK.

IMPORTANT:

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No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	FINAL DETAILED PROJECT REPORT	GS	LP	SK
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Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: TYP-: MNB-01A	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 02 OF 02

FDPR

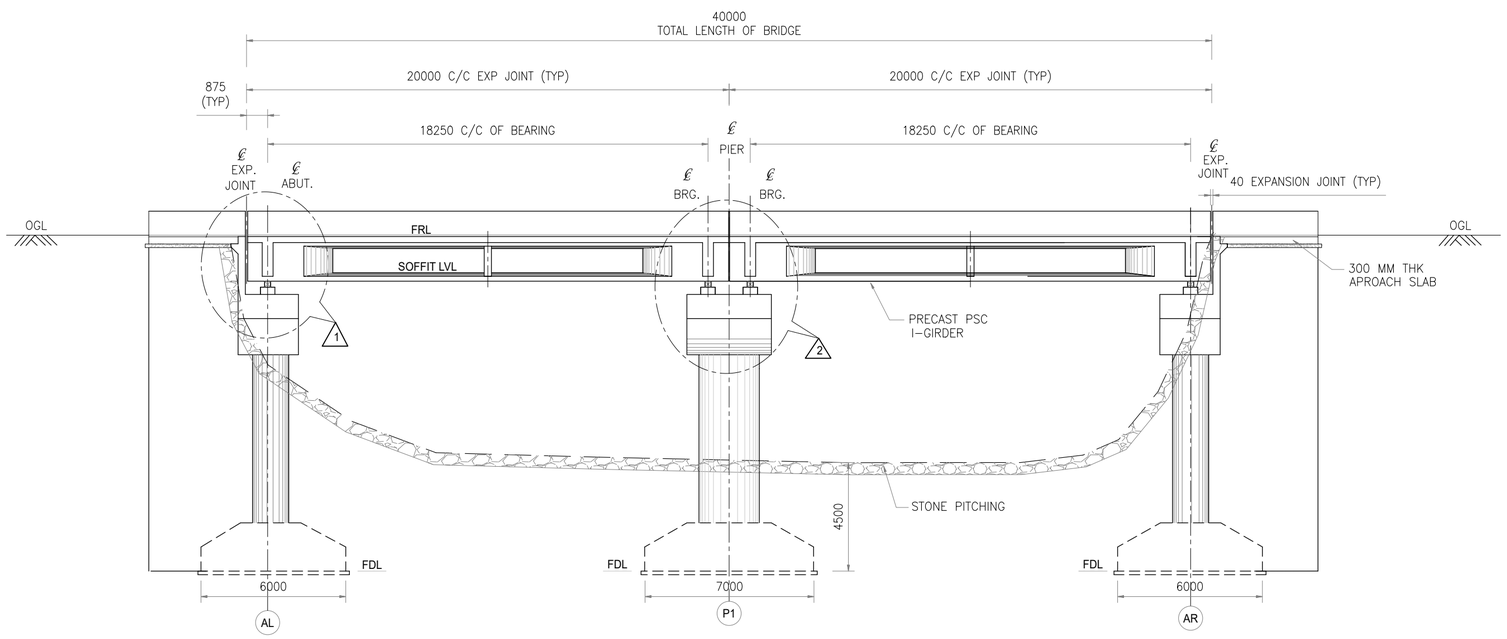
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

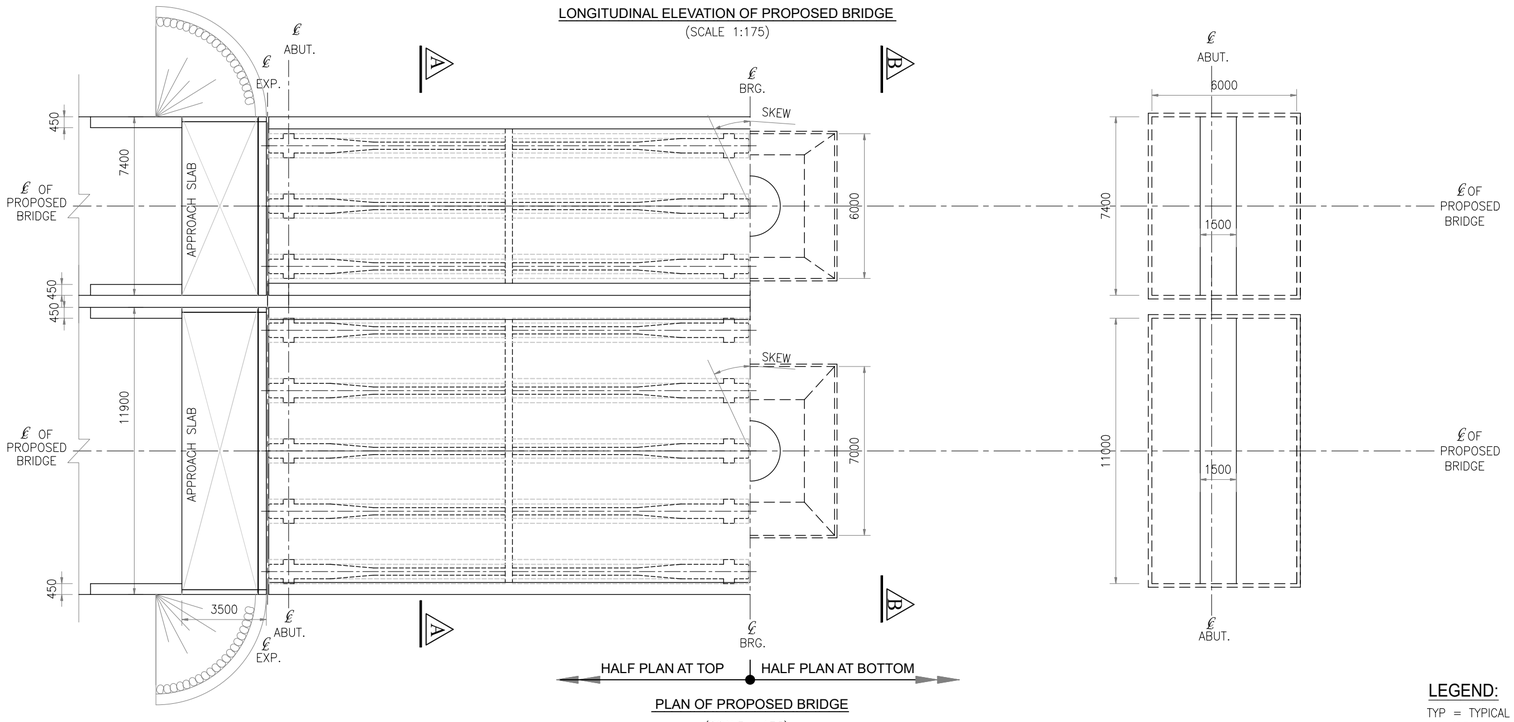
SECON

TYPICAL GAD PROPOSED FOR MINOR BRIDGE (2X25)

Plot Size : (A2 Size) | DRG.NO : TYP-G: MNB-01A



LONGITUDINAL ELEVATION OF PROPOSED BRIDGE
(SCALE 1:175)

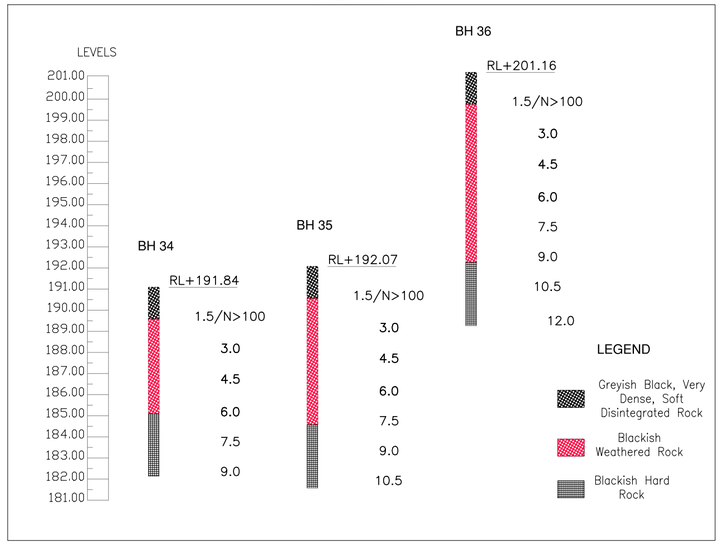


PLAN OF PROPOSED BRIDGE
(SCALE 1:175)

DETAILS OF MINOR BRIDGE

SL NO.	DESIGN CHAINAGE (km)	PROPOSED SPAN ARRANGEMENT	FRL (m)	SOFFIT LVL (m)	ORIGINAL GROUND LEVEL (m)			SKEW	SBC (t/sqm)
					AL	P1	AR		
1.	24.450	2 X 20	214.480	212.965	210.339	207.920	209.402	26°	55 CONSIDERED FROM NEAREST STRUCTURE KM 24.960 (NOTE: 7 & 8 REFERS)
2.	26.360	2 X 20	222.060	220.55	218.028	218.501	217.400	19°	55

CH:26+360 KM



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File name	Designed by	Approved by	Sheets
G:MNB-02	SWAROOP	SHIVAKUMARI	01 OF 02

FDPR

CLIENT

NATIONAL HIGHWAY DIVISION, RAJKOT
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PROJECT

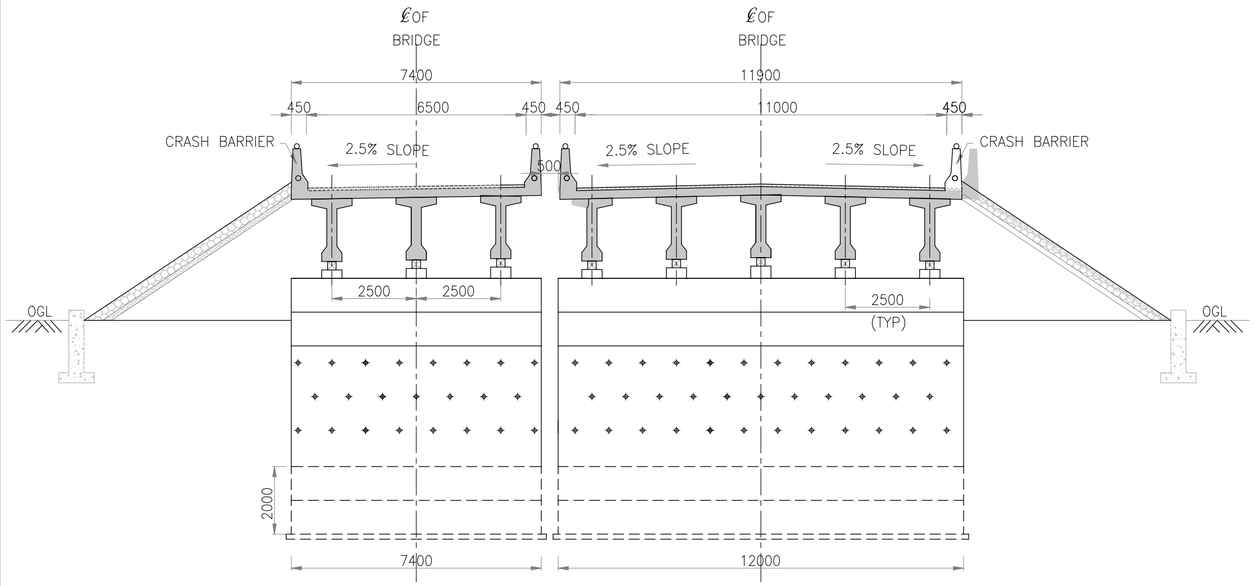
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SECON

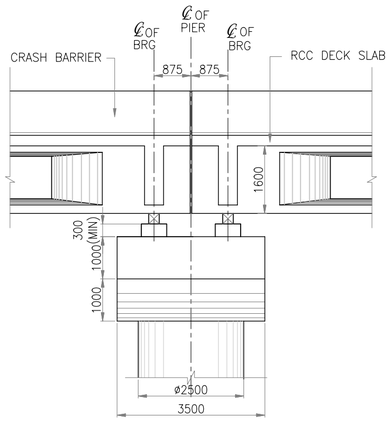
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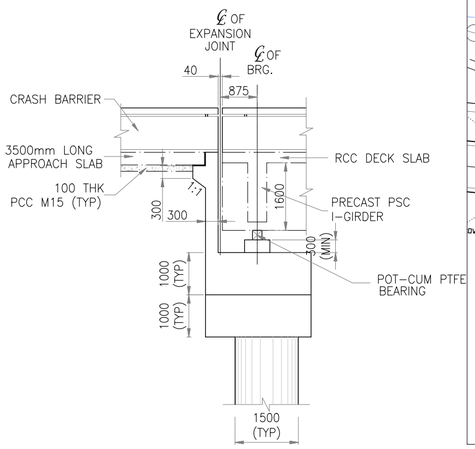
DRG.NO : G:MNB-02



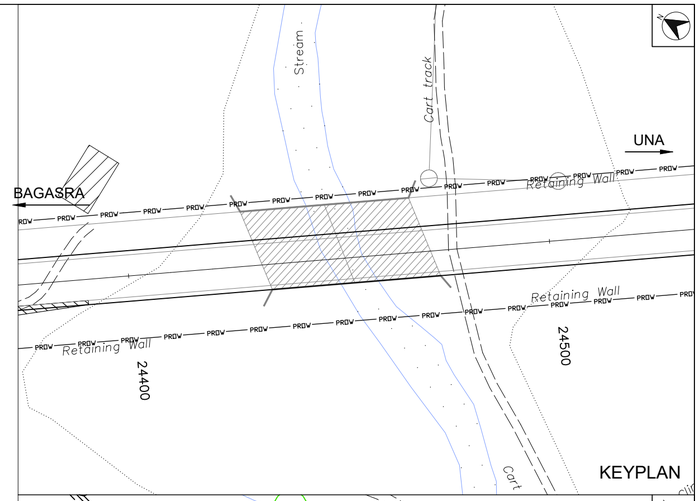
SECTION AT A-A
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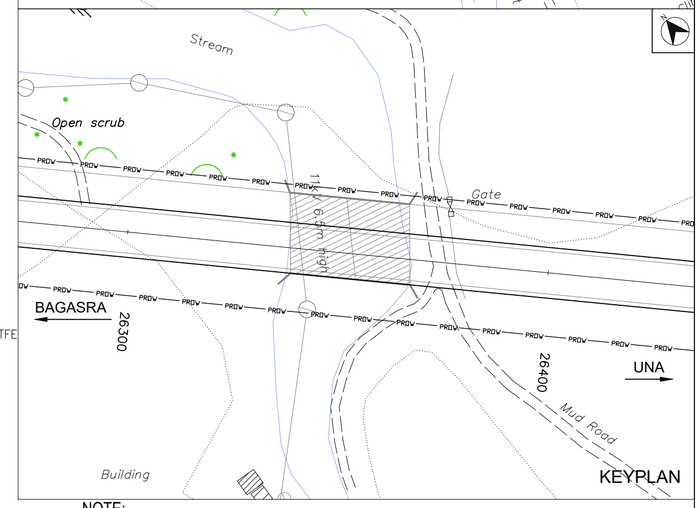


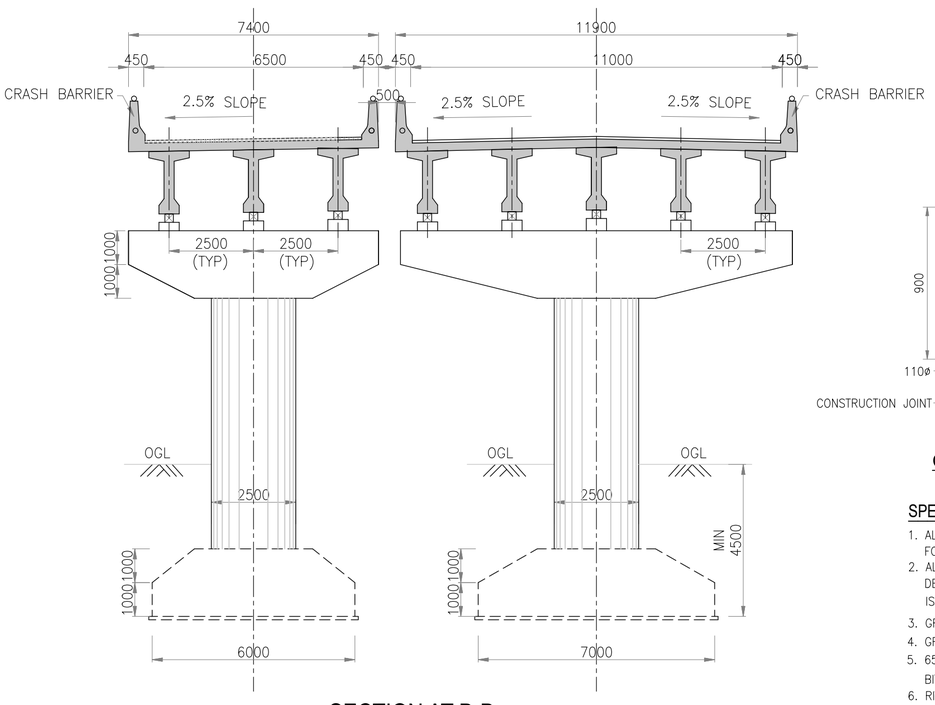
DETAIL-2
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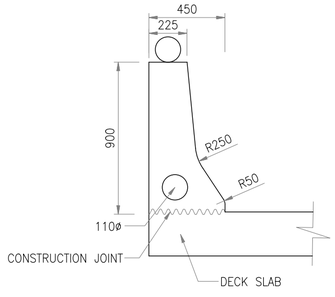
DETAIL -1
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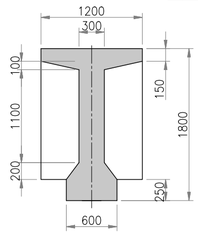


SECTION AT B-B
(SCALE 1:175)

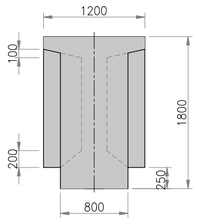


CRASH BARRIER
(SCALE 1:25)

GIRDER DETAILS



SECTION AT MID SPAN
(SCALE 1:50)



SECTION AT SUPPORT
(SCALE 1:50)

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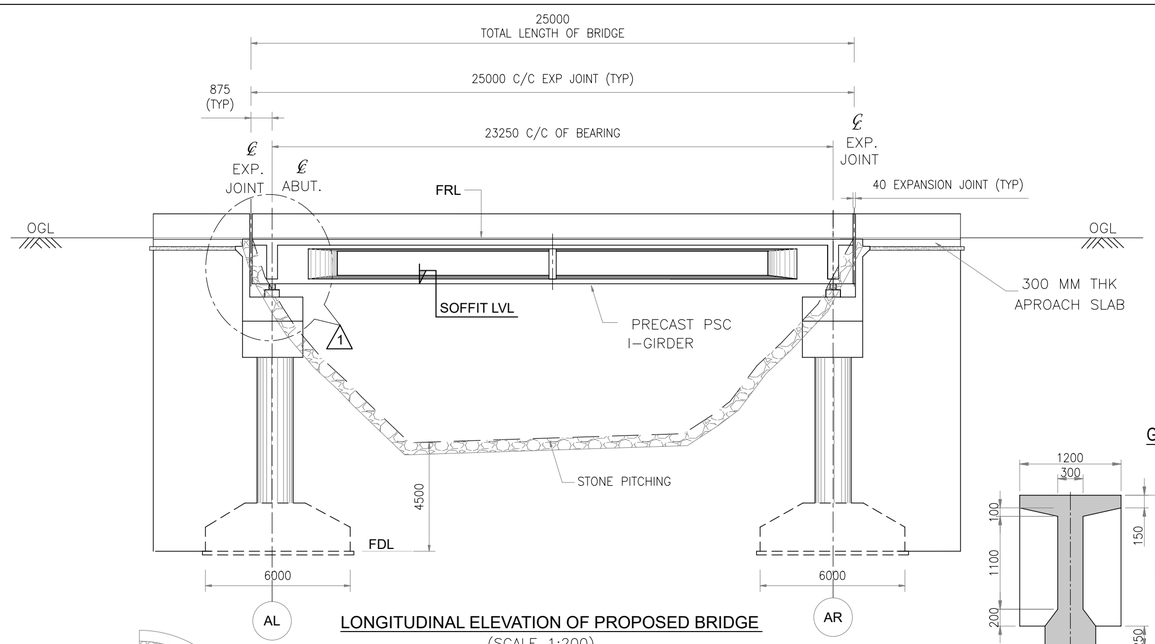
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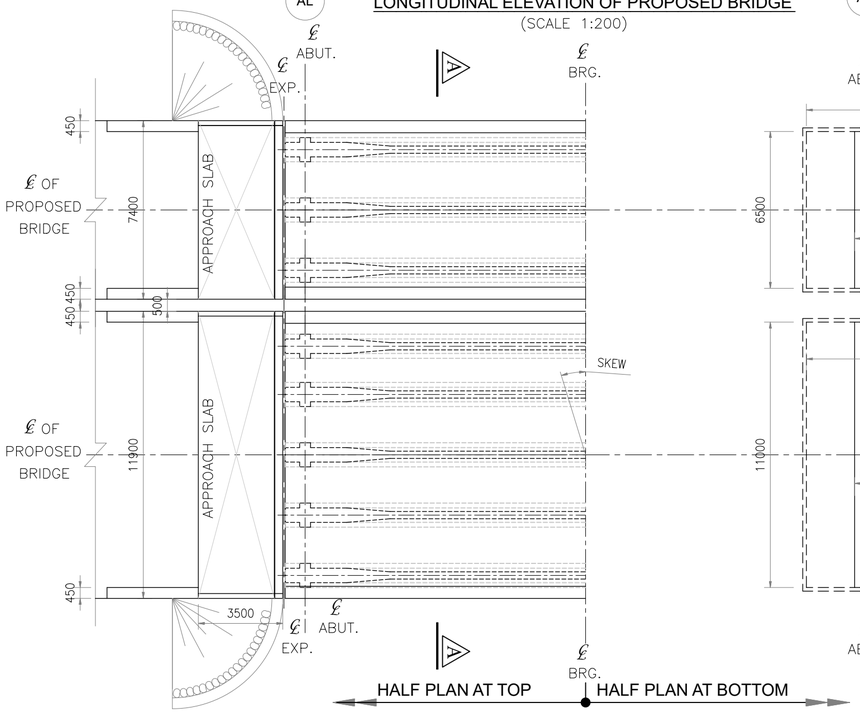
SECON

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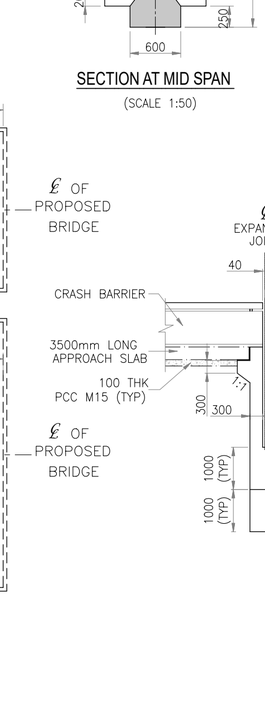
Plot Size : (A2 Size) | DRG.NO : G:MNB–02

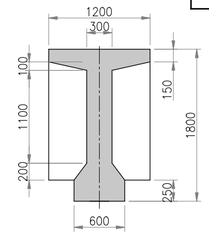


LONGITUDINAL ELEVATION OF PROPOSED BRIDGE
(SCALE 1:200)

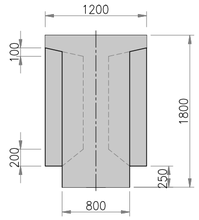


PLAN OF PROPOSED BRIDGE
(SCALE 1:200)

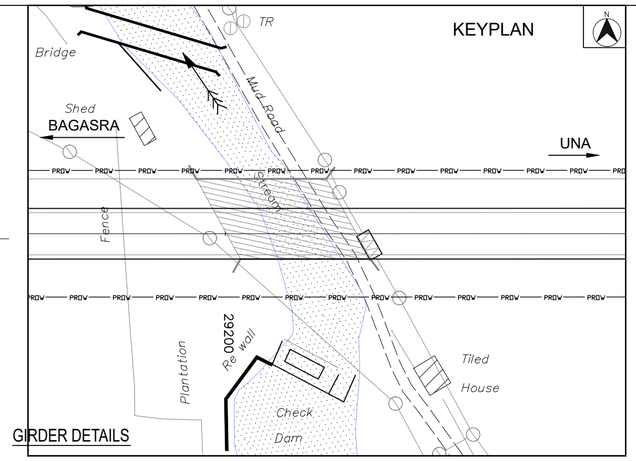




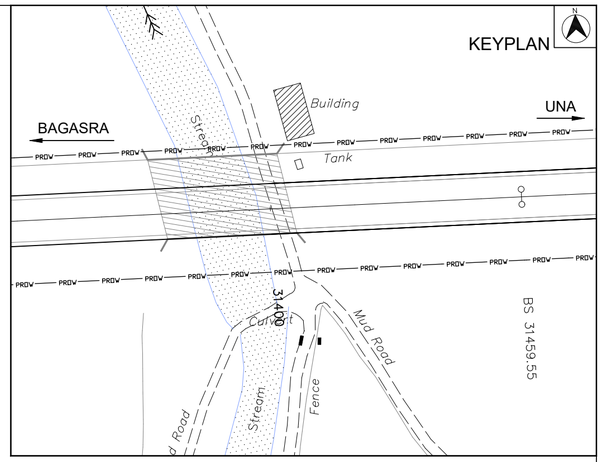
SECTION AT MID SPAN
(SCALE 1:50)

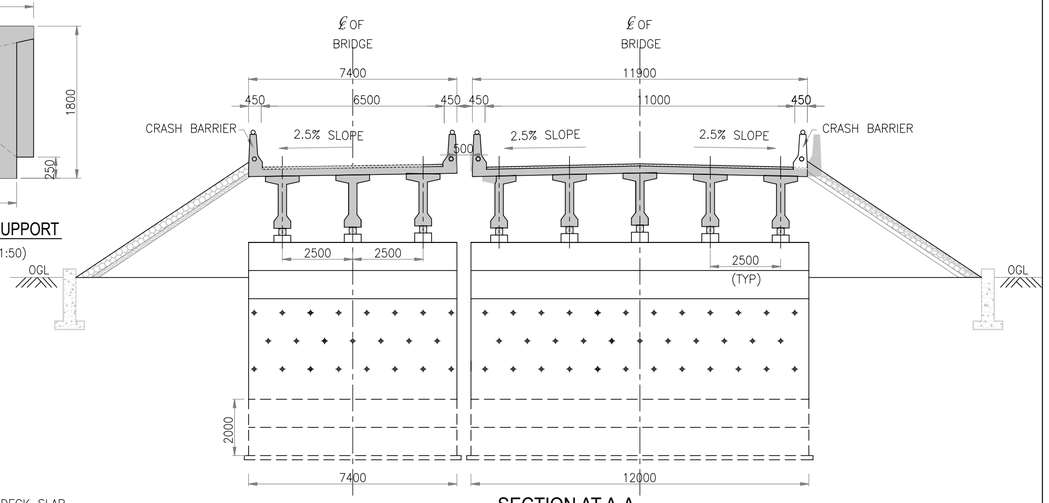


SECTION AT SUPPORT
(SCALE 1:50)

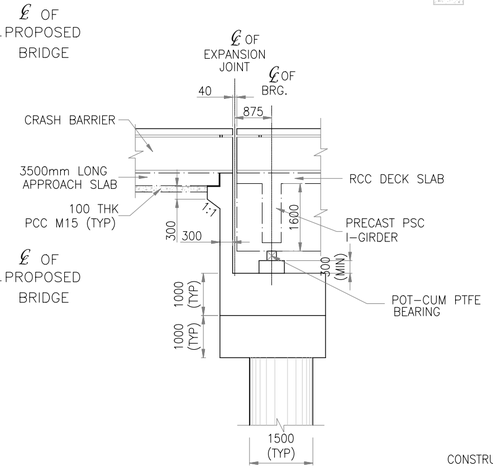


GIRDER DETAILS

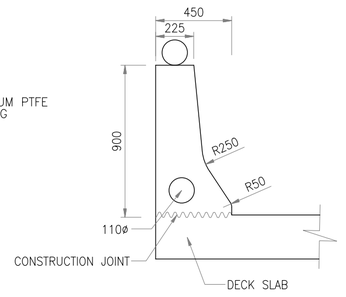




SECTION AT A-A
(SCALE 1:150)



DETAIL -1
(SCALE 1:100)



CRASH BARRIER
(SCALE 1:25)

NOTE:

1. ALL DIMENSIONS ARE IN mm.
2. ALL REDUCED LEVELS ARE IN m.
3. L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE AND T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE.
4. NO CONSTRUCTION JOINT SHALL BE ALLOWED IN CONCRETE WORKS WITHOUT WRITTEN APPROVAL OF ENGINEER-IN-CHARGE AS PER PREVAILING SITE CONDITION.
5. COMMON BENCH MARK SHOULD BE ESTABLISHED BY THE FIELD ENGINEER BEFORE START OF WORK EITHER ON APPROACHES OR ON BRIDGE PROPER AT THE TIME OF EXECUTION OF WORK.

IMPORTANT:

6. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT THE LOCATIONS MENTIONED IN TABLE NOT APPROVED BY EE, RAJKOT, R&B.
7. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGES.
8. CONSIDERING NOTE 6 & 7 ABOVE, SBC CONSIDERED FROM NEARBY STRUCTURES AS MENTIONED IN TABLE.
9. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE BRIDGE SHOULD BE RE-DESIGNED, AS PER SBC.

SPECIFICATIONS:

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. ALL REINFORCING BARS SHALL BE HIGH YIELD STRENGTH DEFORMED BARS WITH GRADE DESIGNATION Fe 500. ONLY THERMO MECHANICALLY TREATED (TMT)BARS CONFORMING TO IS1786 SHALL BE USED.
3. GRADE OF CONCRETE FOR SUBSTRUCTURE AND FOUNDATION SHALL BE M-35.
4. GRADE OF CONCRETE FOR SUPERSTRUCTURE AND CRASH BARRIER SHALL BE M-40.
5. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
6. RIVER TRAINING WORK AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.
7. POT-CUM-PTFE BEARINGS SHALL BE PROVIDED AS PER IRC:83 (PART-III-2002).
8. ELASTOMERIC STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED
9. TEMPORARY LINER FOR CERTAIN LENGTH FROM TOP MAY BE PROVIDED IF NECESSARY TO FACILITATE PROPER CONCRETING. THIS MAY BE RETRIEVED BEFORE CONCRETE SETS.
10. CONFIRMATORY BOREHOLES ARE REQUIRED TO BE CARRIED OUT PRIOR TO EXECUTION.
11. FOR e VALVE REFER CORRESPONDING PLAN & PROFILE

DETAILS OF MINOR BRIDGE

SL NO.	DESIGN CHAINAGE (km)	PROPOSED SPAN ARRANGEMENT	FRL (m)	SOFFIT LVL (m)	ORIGINAL GROUND LEVEL (m)			SBC (t/sqm)
					AL	AR	SKEW	
1.	29.210	1 X 25	227.126	225.210	222.865	222.949	33°	55 CONSIDERED FROM NEAREST STRUCTURE KM 26.360 (NOTE: 7 & 8 REFERS)
2.	31.385	1 X 25	232.910	230.990	227.057	228.358	17°	

LEGEND:

TYP = TYPICAL
OGL/BED LVL = ORIGINAL GROUND LEVEL/BED LEVEL
FRL LVL = FINALISED/FINAL ROAD LEVEL
FDN LVL = FOUNDATION LEVEL

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	FINAL DETAILED PROJECT REPORT	GS	LP	SK
2	06.02.25	Revised as per directions issued during meeting with SE, MORTH on 09.01.25 & 13.01.25	GS	LP	SK
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0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	**Designed by**	**Approved by**	**Sheets**
TYP-G: MNB-03	SWAROOP	SHIVAKUMARI	01 OF 01

FDPR

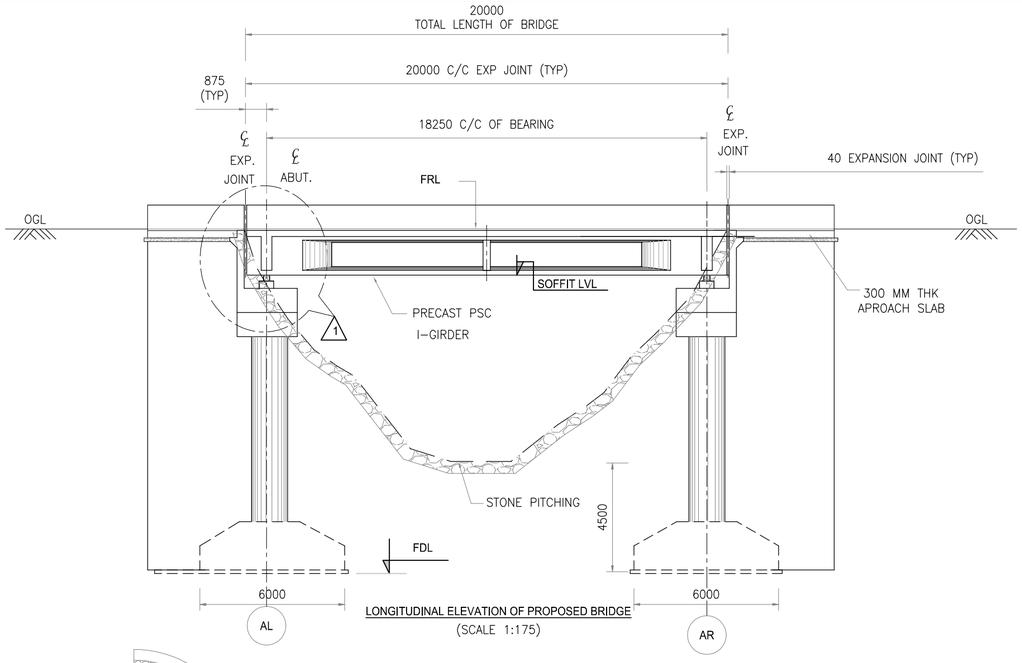
CLIENT — NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT — CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

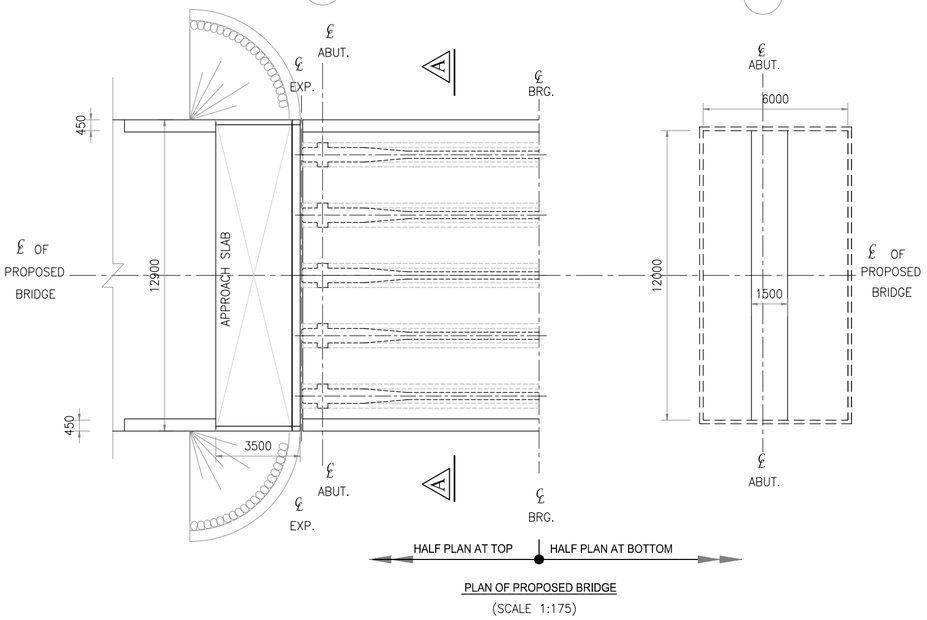
SECON

TYPICAL GAD PROPOSED FOR MINOR BRIDGE (1X25)

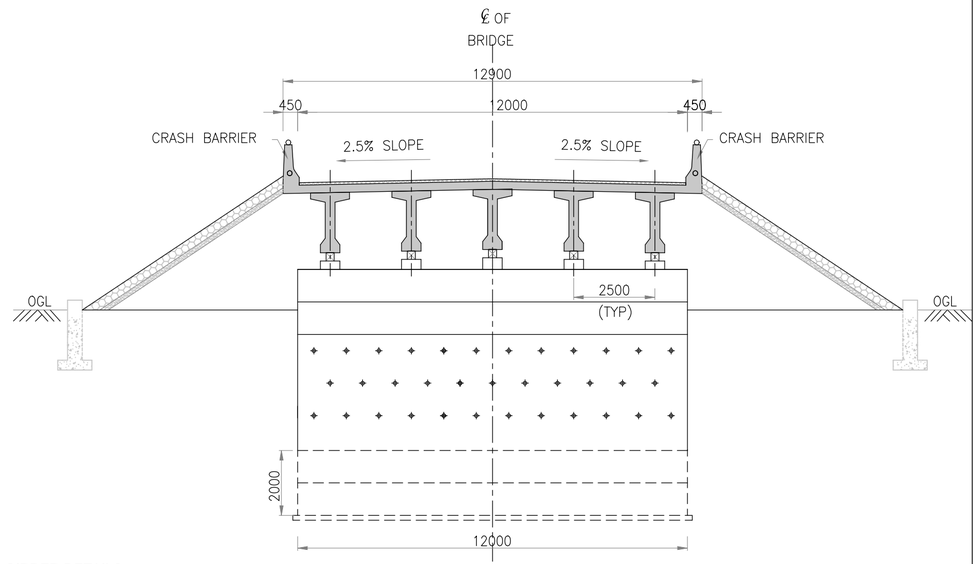
Plot Size : (A2 Size) | DRG.NO : TY-G: MNB-03



LONGITUDINAL ELEVATION OF PROPOSED BRIDGE
(SCALE 1:175)



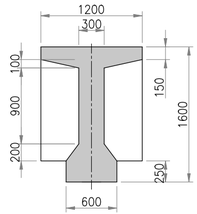
PLAN OF PROPOSED BRIDGE
(SCALE 1:175)



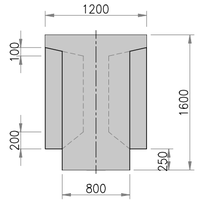
SECTION AT A-A

(SCALE 1:150)

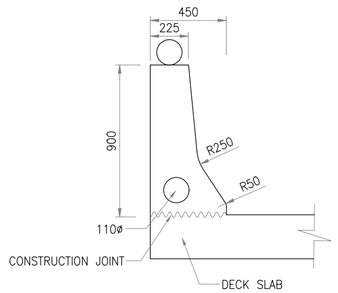
GIRDER DETAILS



SECTION AT MID SPAN
(SCALE 1:50)



SECTION AT SUPPORT
(SCALE 1:50)



CRASH BARRIER
(SCALE 1:25)

SPECIFICATIONS:

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. ALL REINFORCING BARS SHALL BE HIGH YIELD STRENGTH DEFORMED BARS WITH GRADE DESIGNATION Fe 500. ONLY THERMO MECHANICALLY TREATED (TMT)BARS CONFORMING TO IS1786 SHALL BE USED.
3. GRADE OF CONCRETE FOR SUBSTRUCTURE AND FOUNDATION SHALL BE M-35.
4. GRADE OF CONCRETE FOR SUPERSTRUCTURE AND CRASH BARRIER SHALL BE M-40.
5. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
6. RIVER TRAINING WORK AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.
7. POT-CUM-PTFE BEARINGS SHALL BE PROVIDED AS PER IRC:83 (PART-III-2002).
8. ELASTOMERIC STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED
9. TEMPORARY LINER FOR CERTAIN LENGTH FROM TOP MAY BE PROVIDED IF NECESSARY TO FACILITATE PROPER CONCRETING. THIS MAY BE RETRIEVED BEFORE CONCRETE SETS.
10. FOR e VALUE REFER CORRESPONDING PLAN & PROFILE

NOTE:

1. ALL DIMENSIONS ARE IN mm.
2. ALL REDUCED LEVELS ARE IN m.
3. L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE AND T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE.
4. NO CONSTRUCTION JOINT SHALL BE ALLOWED IN CONCRETE WORKS WITHOUT WRITTEN APPROVAL OF ENGINEER-IN-CHARGE AS PER PREVAILING SITE CONDITION.
5. COMMON BENCH MARK SHOULD BE ESTABLISHED BY THE FIELD ENGINEER BEFORE START OF WORK EITHER ON APPROACHES OR ON BRIDGE PROPER AT THE TIME OF EXECUTION OF WORK.

IMPORTANT:

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8. CONSIDERING NOTE 6 & 7 ABOVE, SBC CONSIDERED FROM NEARBY STRUCTURES AS MENTIONED IN TABLE.
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DETAILS OF MINOR BRIDGE

SL NO.	DESIGN CHAINAGE (km)	PROPOSED SPAN ARRANGEMENT	FRL (m)	SOFFIT LVL (m)	ORIGINAL GROUND LEVEL (m)		SBC (t/sqm)
					AL	AR	
1.	9.177	1 X 20	157.400	155.890	151.618	153.864	55 CONSIDERED FROM NEAREST STRUCTURE KM 0.540 (NOTE: 7 & 8 REFERS)
2.	39.140	1 X 20	236.200	234.690	233.300	233.100	55 CONSIDERED FROM NEAREST STRUCTURE KM 26.360 (NOTE: 7 & 8 REFERS)
3.	41.480	1 X 20	237.230	235.220	234.360	232.970	
4.	69.950	1 X 20	183.098	181.590	180.480	180.480	55 CONSIDERED FROM NEAREST STRUCTURE KM 90.340 (NOTE: 7 & 8 REFERS)
5.	82.910	1 X 20	112.290	110.780	110.521	110.521	

LEGEND:

TYP = TYPICAL
OGL/BED LVL = ORIGINAL GROUND LEVEL/BED LEVEL
FRL LVL = FINALISED/FINAL ROAD LEVEL
FDN LVL = FOUNDATION LEVEL

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Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	**Designed by**	**Approved by**	**Sheets**
TYP-G:MNB-04	SWAROOP	SHIVAKUMARI	01 OF 02

FDPR

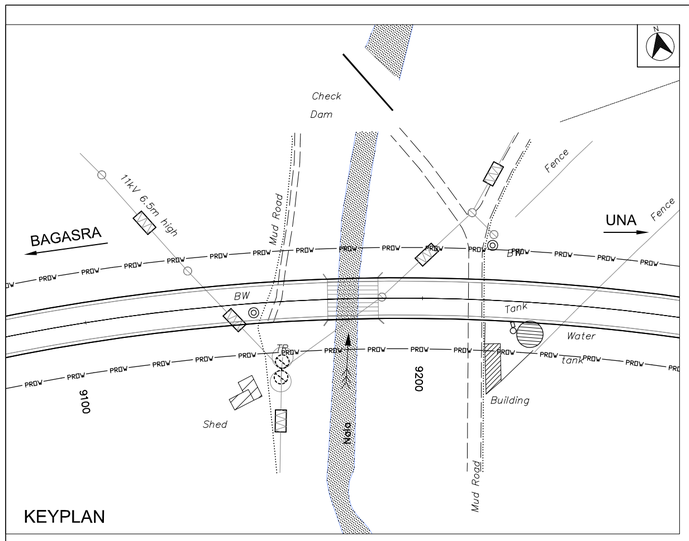
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

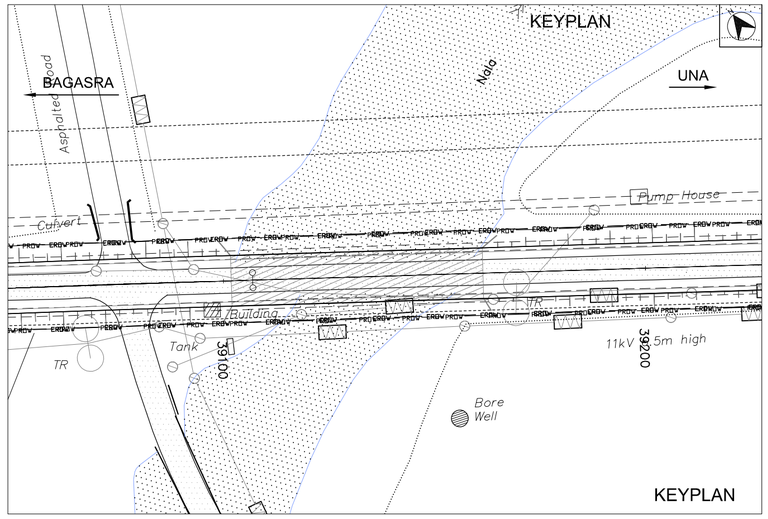
PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

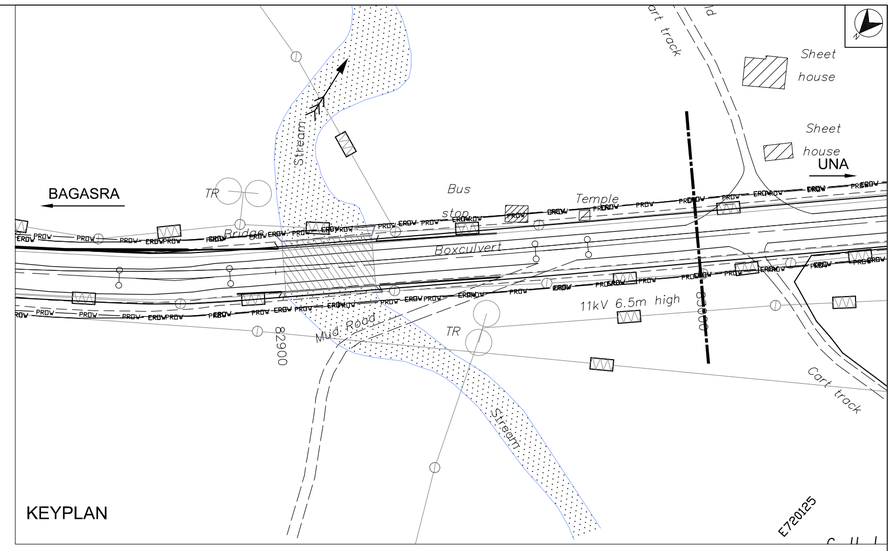
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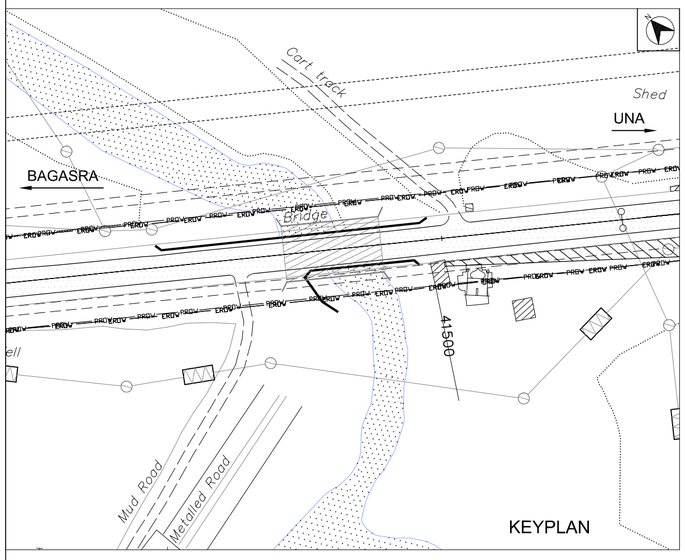
TYPICAL GAD PROPOSED FOR MINOR BRIDGE (1X20)

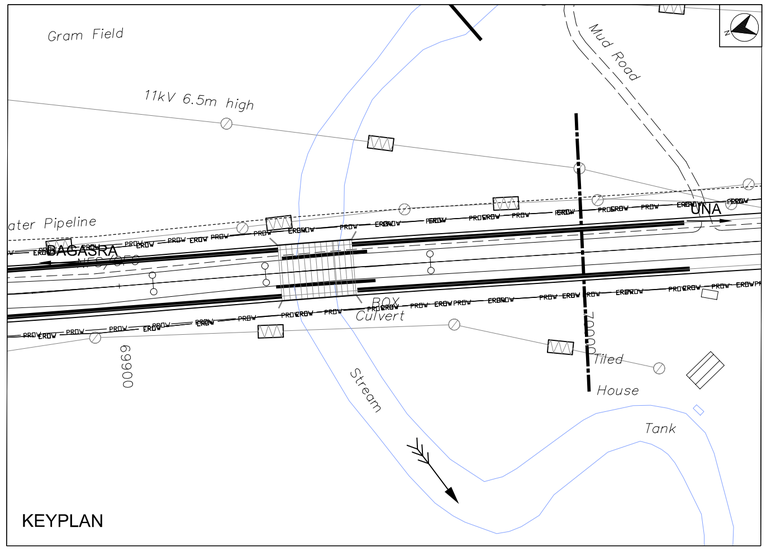
Plot Size : (A2 Size) | DRG.NO : TYP-G:MNB-04

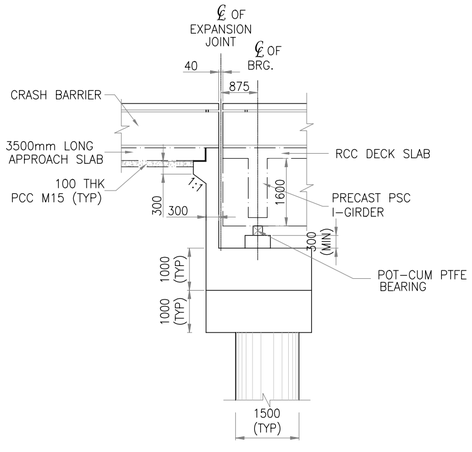












DETAIL -1

(SCALE 1:100)

SPECIFICATIONS:

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
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3. GRADE OF CONCRETE FOR SUBSTRUCTURE AND FOUNDATION SHALL BE M-35.
4. GRADE OF CONCRETE FOR SUPERSTRUCTURE AND CRASH BARRIER SHALL BE M-40.
5. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
6. RIVER TRAINING WORK AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.
7. POT-CUM-PTFE BEARINGS SHALL BE PROVIDED AS PER IRC:83 (PART-III-2002).
8. ELASTOMERIC STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED
9. TEMPORARY LINER FOR CERTAIN LENGTH FROM TOP MAY BE PROVIDED IF NECESSARY TO FACILITATE PROPER CONCRETING. THIS MAY BE RETRIEVED BEFORE CONCRETE SETS.
10. FOR e VALUE REFER CORRESPONDING PLAN & PROFILE

NOTE:

1. ALL DIMENSIONS ARE IN mm.
2. ALL REDUCED LEVELS ARE IN m.
3. L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE AND T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE.
4. NO CONSTRUCTION JOINT SHALL BE ALLOWED IN CONCRETE WORKS WITHOUT WRITTEN APPROVAL OF ENGINEER-IN-CHARGE AS PER PREVAILING SITE CONDITION.
5. COMMON BENCH MARK SHOULD BE ESTABLISHED BY THE FIELD ENGINEER BEFORE START OF WORK EITHER ON APPROACHES OR ON BRIDGE PROPER AT THE TIME OF EXECUTION OF WORK.

IMPORTANT:

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7. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGES.
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9. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE BRIDGE SHOULD BE RE-DESIGNED, AS PER SBC.

LEGEND:

TYP = TYPICAL
OGL/BED LVL = ORIGINAL GROUND LEVEL/BED LEVEL
FRL LVL = FINALISED/FINAL ROAD LEVEL
FDN LVL = FOUNDATION LEVEL

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	FINAL DETAILED PROJECT REPORT	GS	LP	SK
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0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	**Designed by**	**Approved by**	**Sheets**
TYP-G:MNB-04	SWAROOP	SHIVAKUMARI	02 OF 02

FDPR

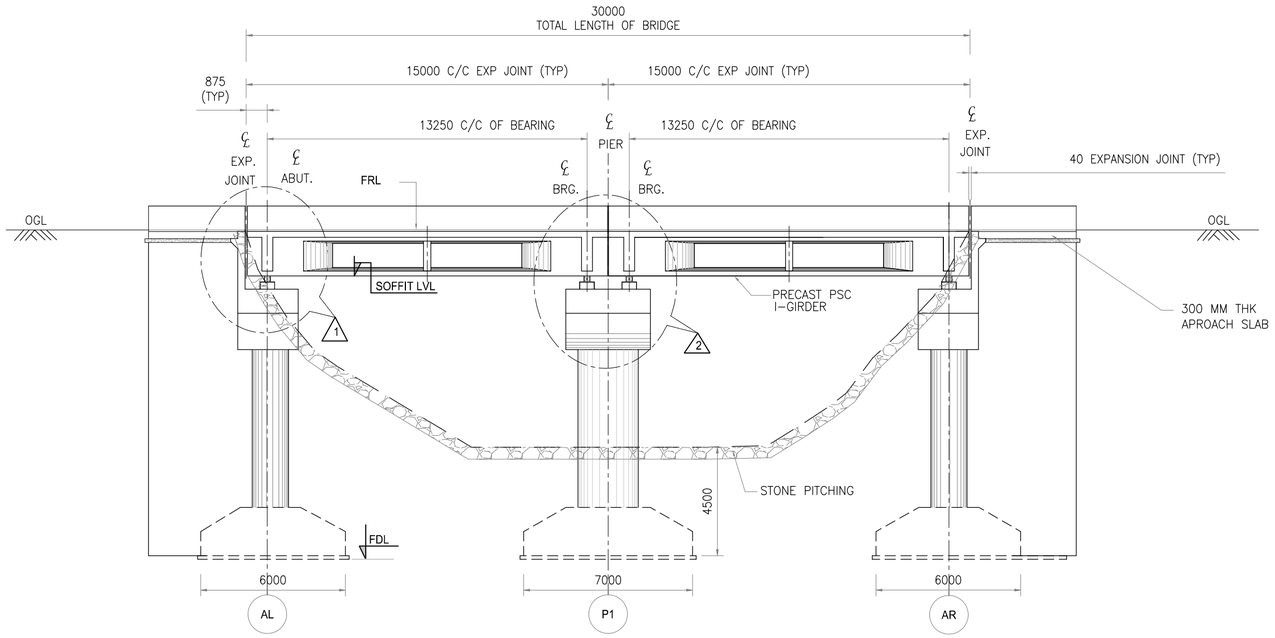
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

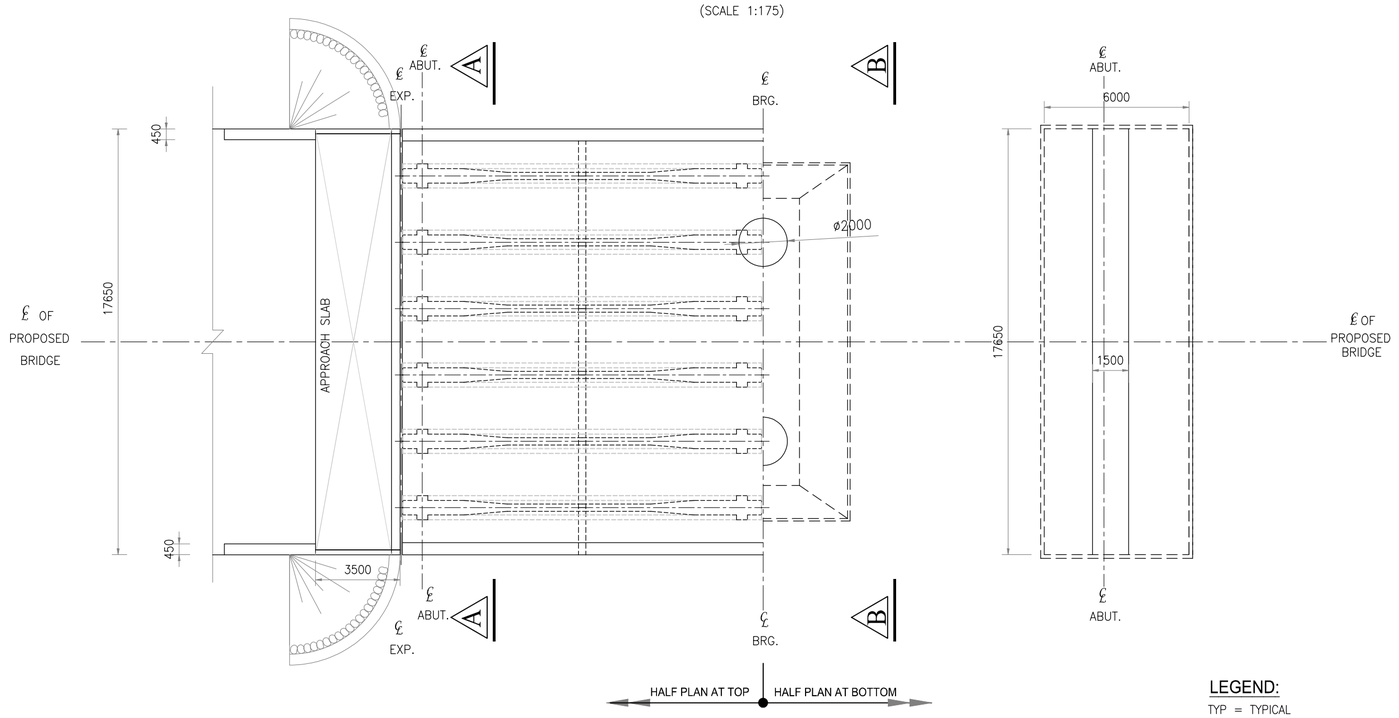
TYPICAL GAD PROPOSED FOR MINOR BRIDGE (1X20)

Plot Size : (A2 Size) | DRG.NO : TYP-G:MNB-04



LONGITUDINAL ELEVATION OF PROPOSED BRIDGE

(SCALE 1:175)



PLAN OF PROPOSED BRIDGE

(SCALE 1:175)

DETAILS OF MINOR BRIDGE

SL NO.	DESIGN CHAINAGE (km)	PROPOSED SPAN ARRANGEMENT	FRL (m)	SOFFIT LVL (m)	ORIGINAL GROUND LEVEL (m)		
					AL	P1	AR
1.	40.250	2 X 15	232.320	231.110	230.400	226.840	231.160

SPECIFICATIONS:

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. ALL REINFORCING BARS SHALL BE HIGH YIELD STRENGTH DEFORMED BARS WITH GRADE DESIGNATION Fe 500. ONLY THERMO MECHANICALLY TREATED (TMT)BARS CONFORMING TO IS1786 SHALL BE USED.
3. GRADE OF CONCRETE FOR SUBSTRUCTURE AND FOUNDATION SHALL BE M-35.
4. GRADE OF CONCRETE FOR SUPERSTRUCTURE AND CRASH BARRIER SHALL BE M-40.
5. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
6. RIVER TRAINING WORK AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.
7. POT-CUM-PTFE BEARINGS SHALL BE PROVIDED AS PER IRC:83 (PART-III-2002).
8. ELASTOMERIC STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED
9. TEMPORARY LINER FOR CERTAIN LENGTH FROM TOP MAY BE PROVIDED IF NECESSARY TO FACILITATE PROPER CONCRETING. THIS MAY BE RETRIEVED BEFORE CONCRETE SETS.
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NOTE:

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3. L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE AND T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE.
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5. COMMON BENCH MARK SHOULD BE ESTABLISHED BY THE FIELD ENGINEER BEFORE START OF WORK EITHER ON APPROACHES OR ON BRIDGE PROPER AT THE TIME OF EXECUTION OF WORK.

IMPORTANT:

6. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT CHAINAGE KM 40.250 NOT APPROVED BY EE, RAJKOT, R&B.
7. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGE AT CHANAGE KM 40.250.
8. CONSIDERING NOTE 6 & 7 ABOVE, SBC AT CHAINAGE KM 26.360 (EARLIER APPROVED REALIGNMENT) CONSIDERED IN THE DESIGN.
9. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC AT CHAINAGE KM 40.250 ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE SHOULD BE RE-DESIGNED, AS PER SBC AT CHAINAGE KM 40.250.

LEGEND:

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OGL/BED LVL = ORIGINAL GROUND LEVEL/BED LEVEL
FRL LVL = FINALISED/FINAL ROAD LEVEL
FDN LVL = FOUNDATION LEVEL

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0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: G:MNB-05	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 01 OF 02

FDPR

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

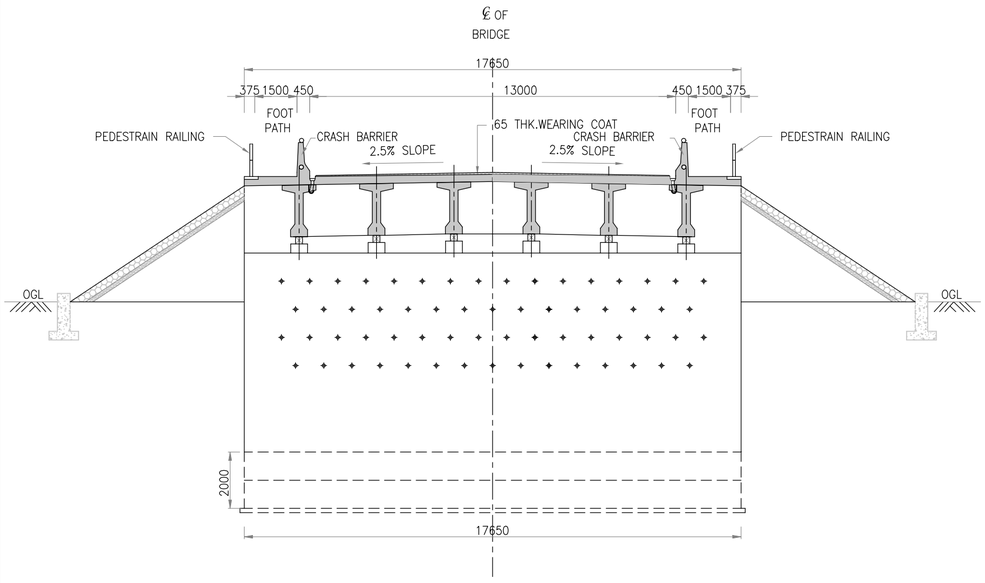
PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

TYPICAL GAD PROPOSED FOR MINOR BRIDGE (2X15)

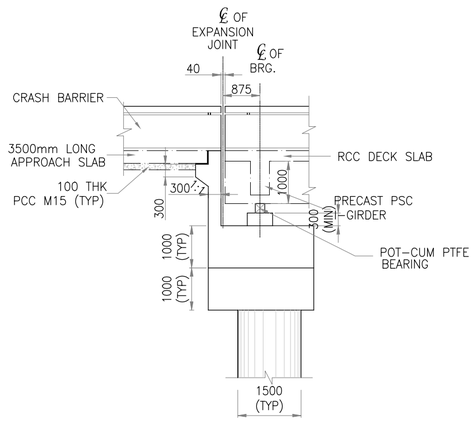
Plot Size : (A2 Size)

DRG.NO : G: MNB-05



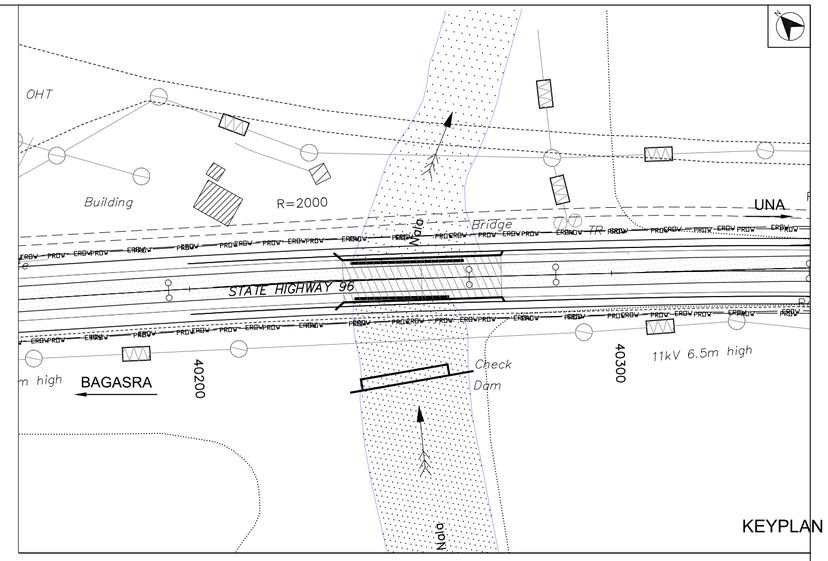
SECTION AT A-A

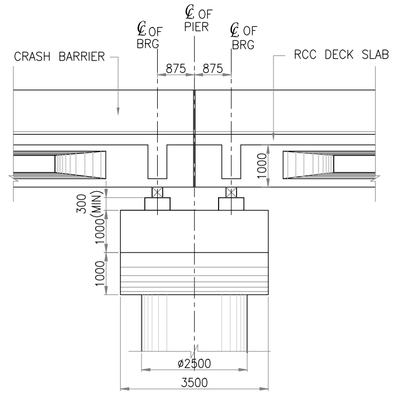
(SCALE 1:150)



DETAIL -1

(SCALE 1:100)



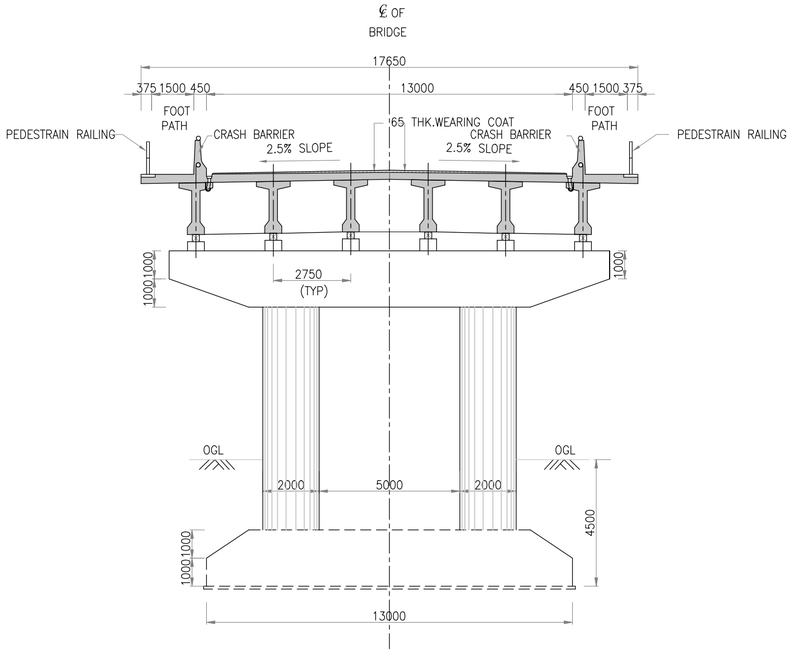


DETAIL-2

(SCALE 1:100)

SPECIFICATIONS:

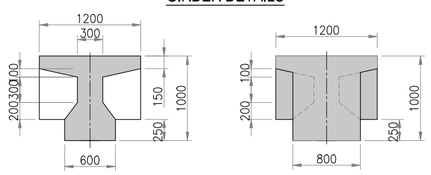
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7. POT-CUM-PTFE BEARINGS SHALL BE PROVIDED AS PER IRC:83 (PART-III-2002).
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SECTION AT B-B

(SCALE 1:175)

GIRDER DETAILS



SECTION AT MID SPAN

(SCALE 1:50)

SECTION AT SUPPORT

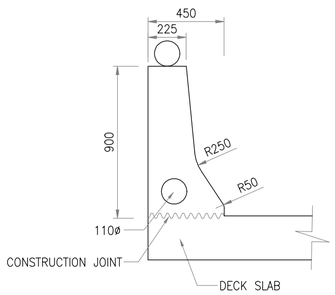
(SCALE 1:50)

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CRASH BARRIER

(SCALE 1:25)

LEGEND:

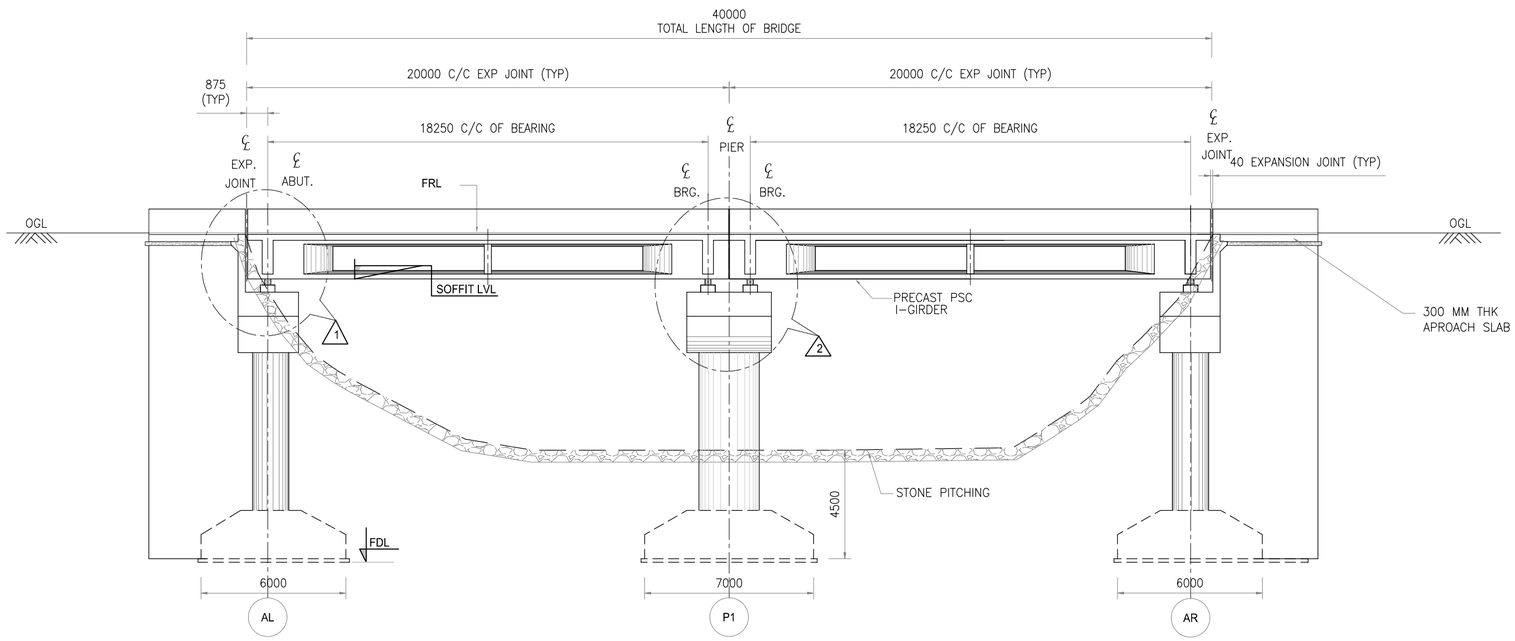
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Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	**Designed by**	**Approved by**	**Sheets**
G:MNB-05	SWAROOP	SHIVAKUMARI	02 OF 02

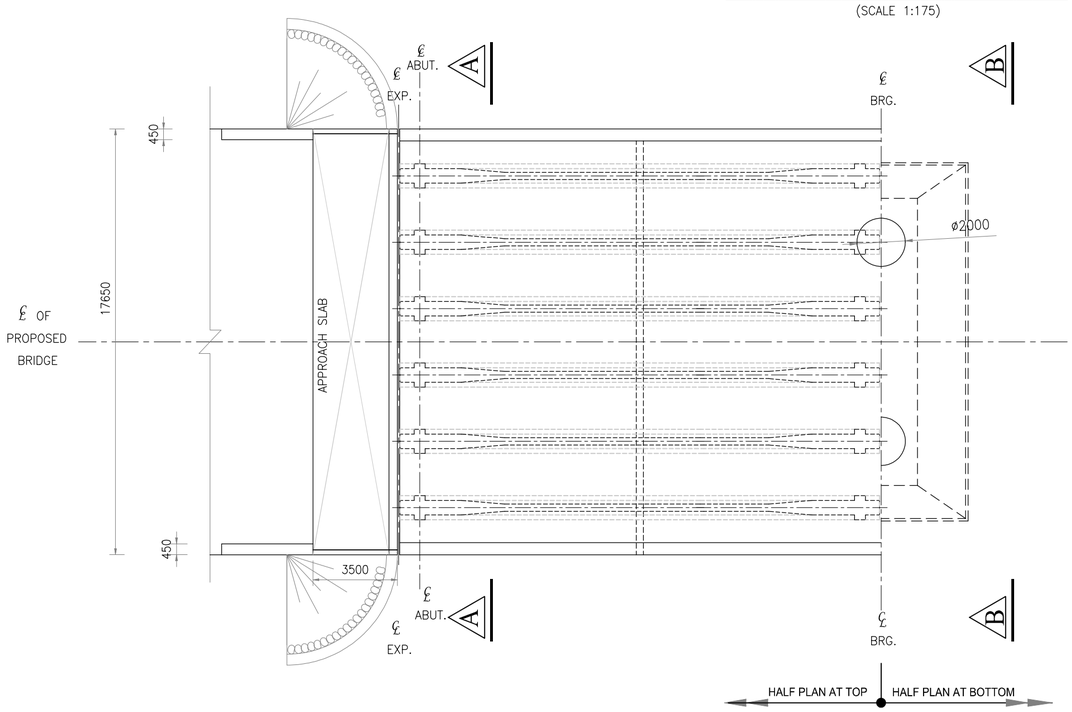
FDPR

CLIENT	NATIONAL HIGHWAY DIVISION, RAJKOT DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT RAJKOT-360 001, GUJARAT
PROJECT	CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT
SECON	TYPICAL GAD PROPOSED FOR MINOR BRIDGE (2X15)
Plot Size : (A2 Size)	DRG.NO : G:MNB-05



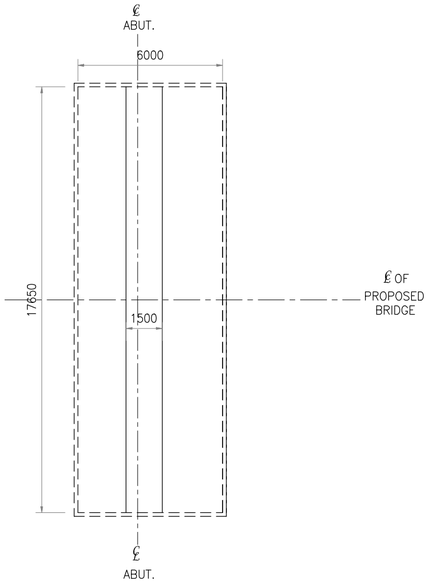
LONGITUDINAL ELEVATION OF PROPOSED BRIDGE

(SCALE 1:175)



PLAN OF PROPOSED BRIDGE

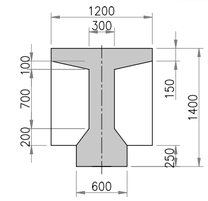
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DETAILS OF MINOR BRIDGE

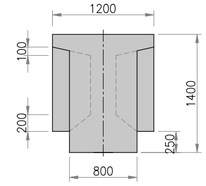
SL NO.	DESIGN CHAINAGE (km)	PROPOSED SPAN ARRANGEMENT	FRL (m)	SOFFIT LVL (m)	ORIGINAL GROUND LEVEL (m)		
					AL	P1	AR
1.	41.940	2 X 20	241.150	239.640	237.300	236.140	237.800

GIRDER DETAILS



SECTION AT MID SPAN

(SCALE 1:50)



SECTION AT SUPPORT

(SCALE 1:50)

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LEGEND:

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Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: G:MNB-06	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 01 OF 02

FDPR

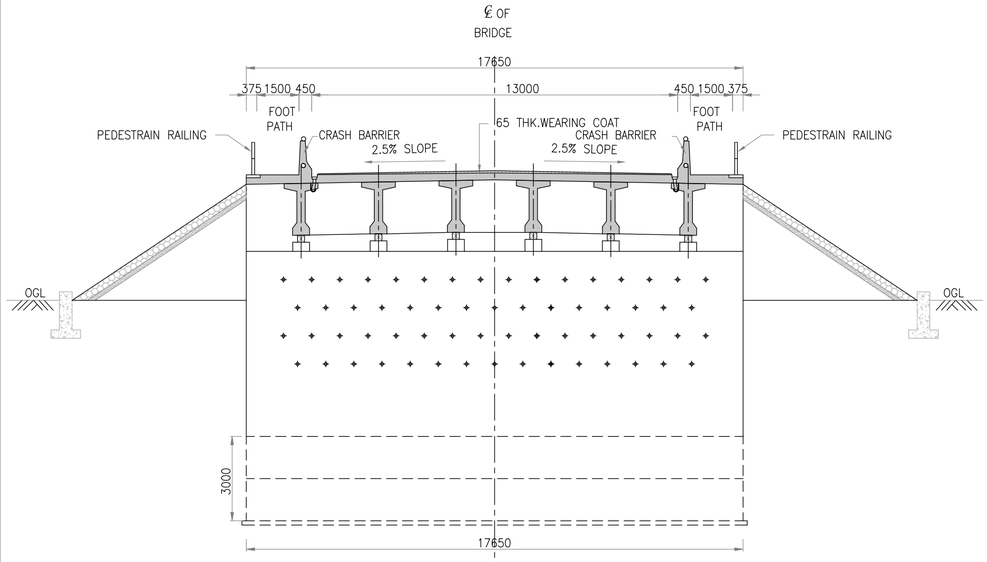
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PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

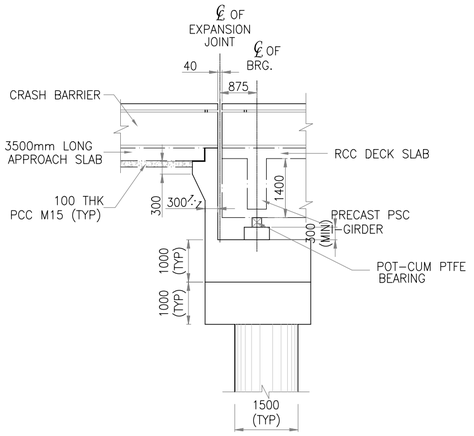
GAD PROPOSED FOR MINOR BRIDGE AT CH:41+940KM

Plot Size : (A2 Size) | DRG.NO : G: MNB-06



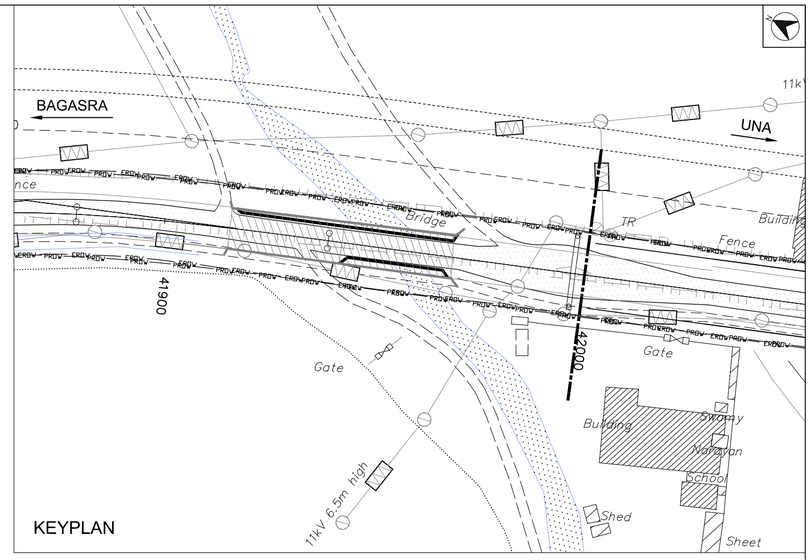
SECTION AT A-A

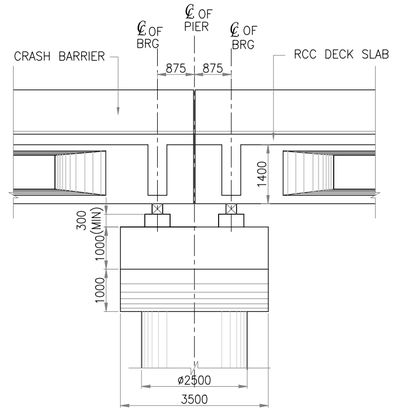
(SCALE 1:150)



DETAIL -1

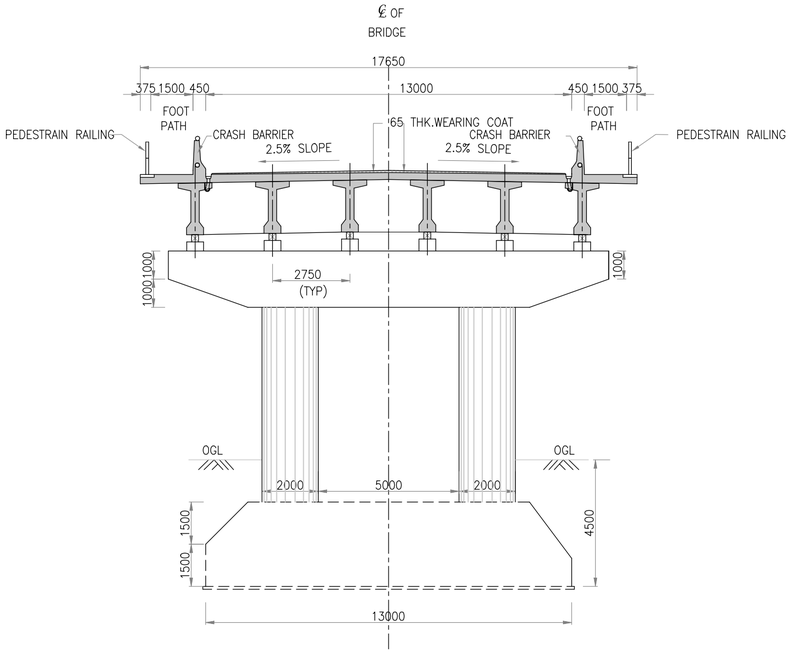
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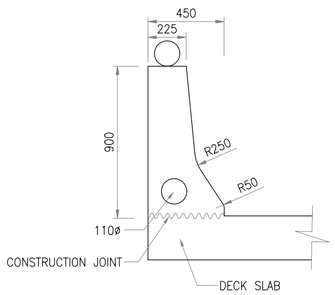
DETAIL-2

(SCALE 1:100)



SECTION AT B-B

(SCALE 1:175)



CRASH BARRIER

(SCALE 1:25)

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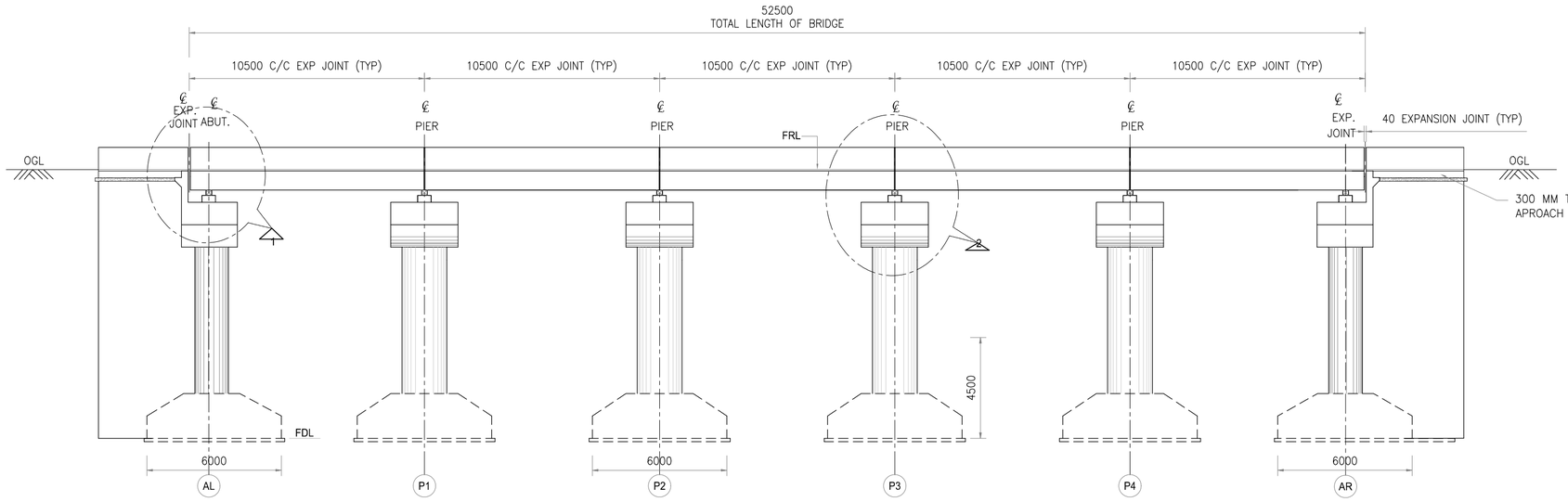
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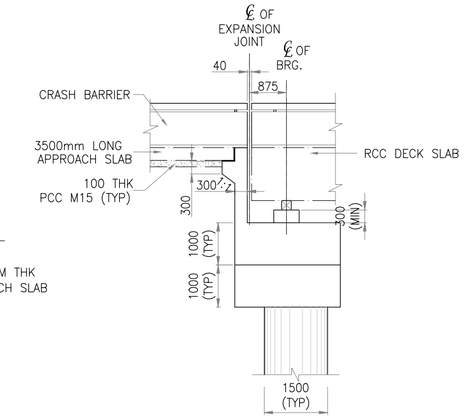
GAD PROPOSED FOR MINOR BRIDGE AT CH:41+940KM

Plot Size : (A2 Size) | DRG.NO : G: MNB-06



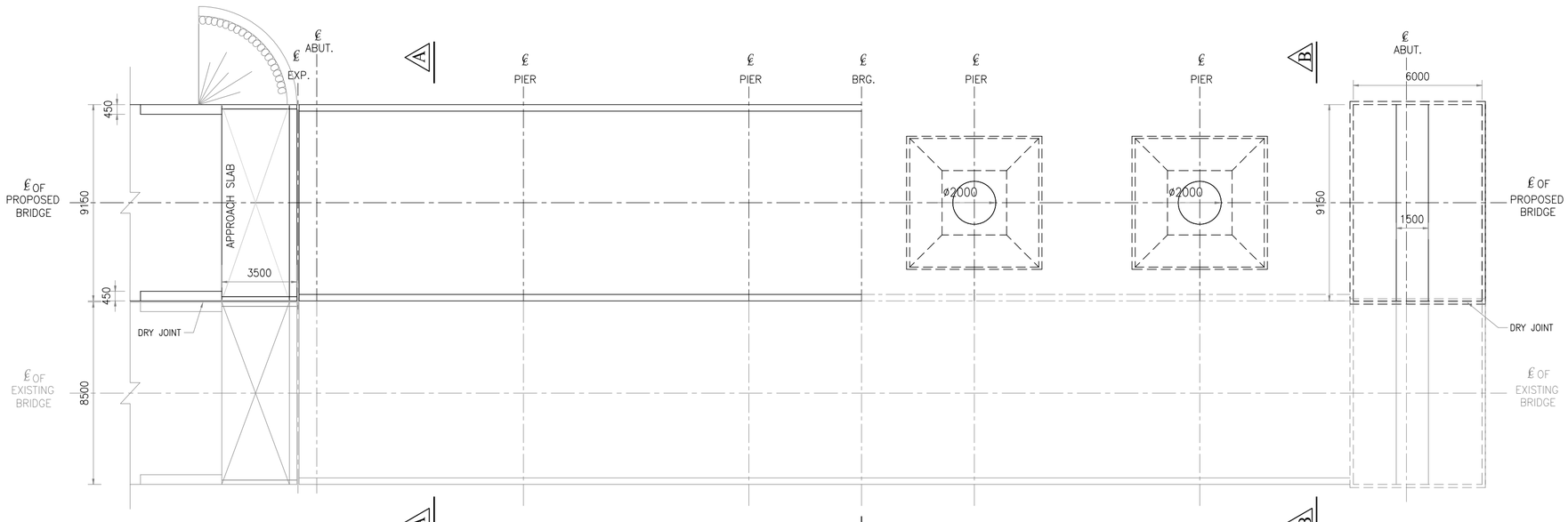
LONGITUDINAL ELEVATION OF PROPOSED BRIDGE

(SCALE 1:175)



DETAIL -1

(SCALE 1:100)



PLAN OF PROPOSED BRIDGE

(SCALE 1:175)

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6. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT CHAINAGE KM 40.250 NOT APPROVED BY EE, RAJKOT, R&B.
7. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGE AT CHANAGE KM 40.250.
8. CONSIDERING NOTE 6 & 7 ABOVE, SBC AT CHAINAGE KM 26.360 (EARLIER APPROVED REALIGNMENT) CONSIDERED IN THE DESIGN.
9. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC AT CHAINAGE KM 40.250 ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE SHOULD BE RE-DESIGNED, AS PER SBC AT CHAINAGE KM 40.250.

FDPR

DETAILS OF MINOR BRIDGE

SL NO.	DESIGN CHAINAGE (km)	EXISTING SPAN ARRANGEMENT	PROPOSED SPAN ARRANGEMENT	FRL (m)	SOFFIT LVL (m)	ORIGINAL GROUND LEVEL (m)				
						AL	P1	P2	P3	AR
1.	96.540	5 X 10.5	5 X 10.5	232.320	231.110	44.700	226.840	226.840	226.840	231.160

LEGEND:

TYP = TYPICAL
OGL/BED LVL = ORIGINAL GROUND LEVEL/BED LEVEL
FRL LVL = FINALISED/FINAL ROAD LEVEL
FDN LVL = FOUNDATION LEVEL

No	DATE	REVISIONS	BY	CHKD	APPD
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0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	**Designed by**	**Approved by**	**Sheets**
G:MNB-01	SWAROOP	SHIVAKUMARI	01 OF 02

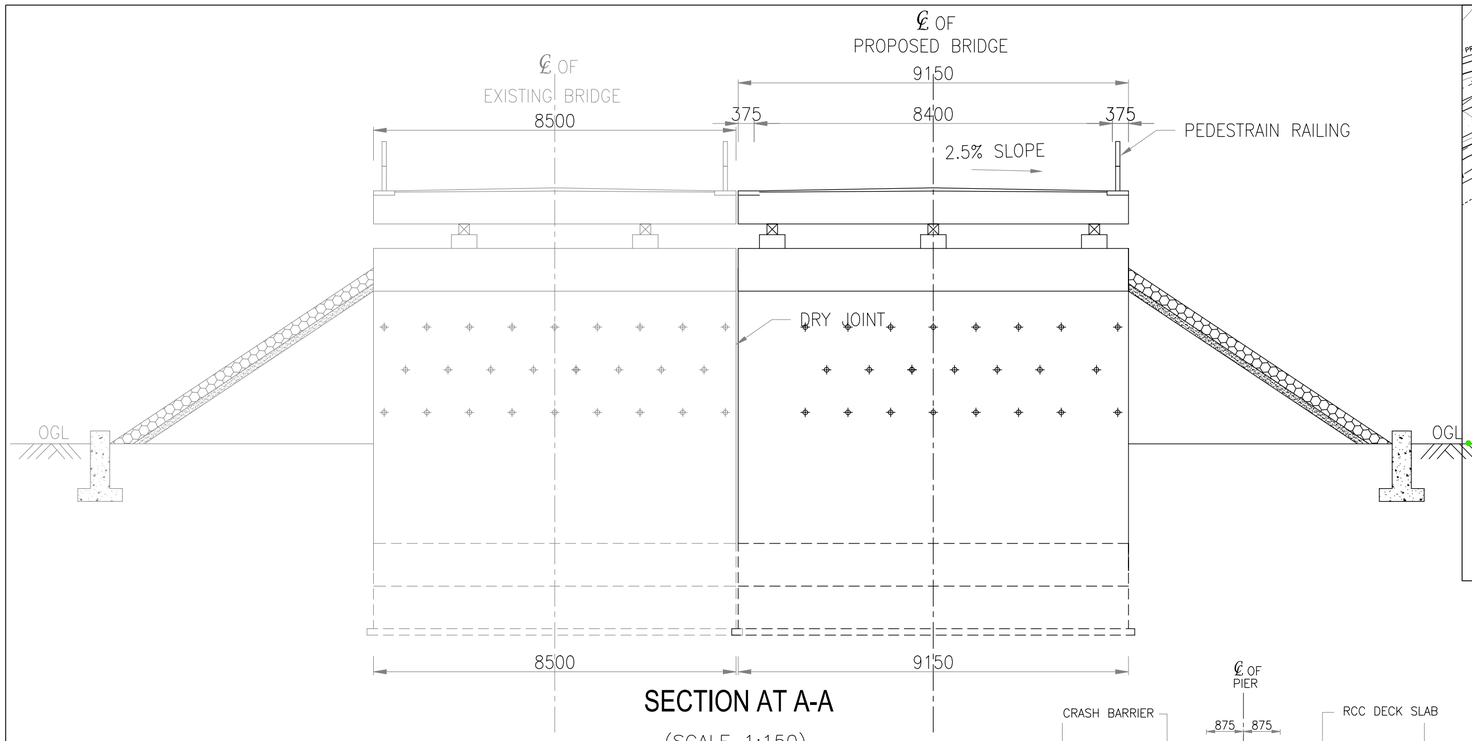
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

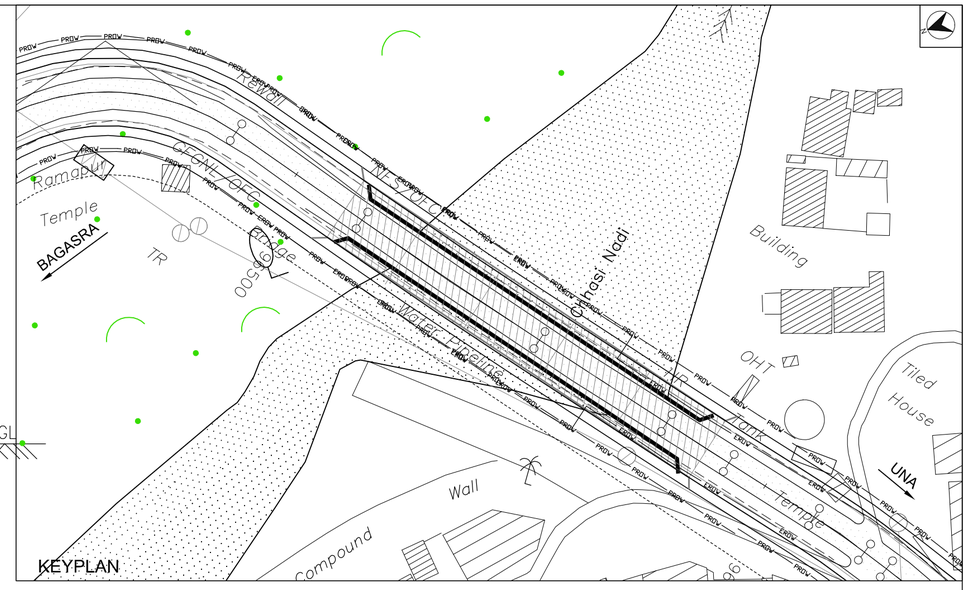
GAD PROPOSED FOR MINOR BRIDGE (5X10.5) (WIDENING)

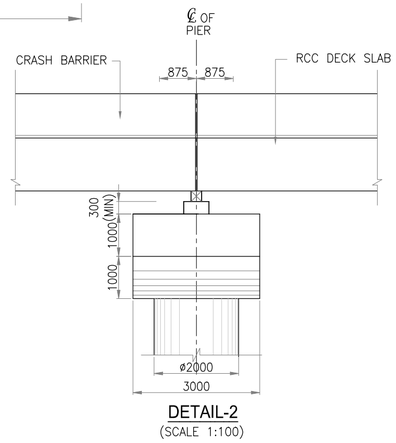
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SECTION AT A-A

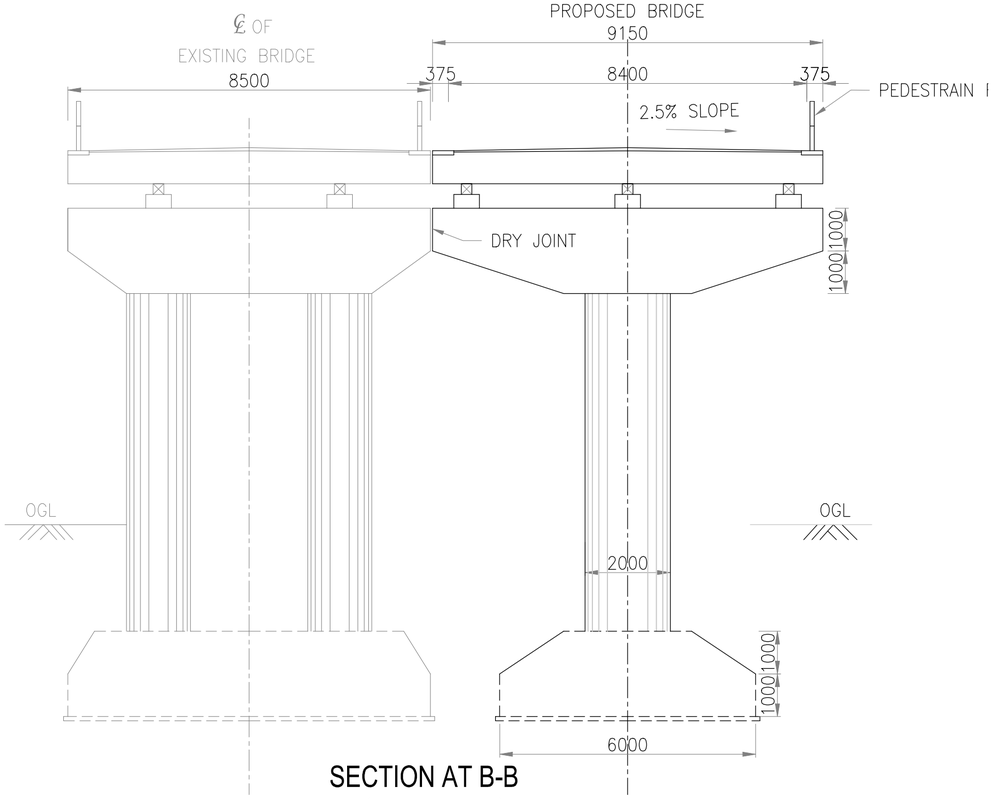
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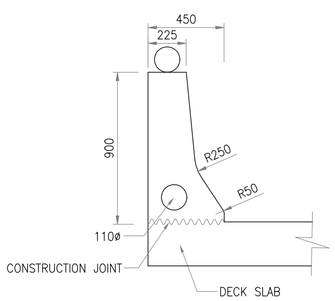
DETAIL-2

(SCALE 1:100)



SECTION AT B-B

(SCALE 1:175)



CRASH BARRIER

(SCALE 1:25)

SPECIFICATIONS:

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. ALL REINFORCING BARS SHALL BE HIGH YIELD STRENGTH DEFORMED BARS WITH GRADE DESIGNATION Fe 500. ONLY THERMO MECHANICALLY TREATED (TMT)BARS CONFORMING TO IS1786 SHALL BE USED.
3. GRADE OF CONCRETE FOR SUBSTRUCTURE AND FOUNDATION SHALL BE M-35.
4. GRADE OF CONCRETE FOR SUPERSTRUCTURE AND CRASH BARRIER SHALL BE M-40.
5. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
6. RIVER TRAINING WORK AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.
7. POT-CUM-PTFE BEARINGS SHALL BE PROVIDED AS PER IRC:83 (PART-III-2002).
8. ELASTOMERIC STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED
9. TEMPORARY LINER FOR CERTAIN LENGTH FROM TOP MAY BE PROVIDED IF NECESSARY TO FACILITATE PROPER CONCRETING. THIS MAY BE RETRIEVED BEFORE CONCRETE SETS.
10. FOR e VALUE REFER CORRESPONDING PLAN & PROFILE

NOTE:

1. ALL DIMENSIONS ARE IN mm.
2. ALL REDUCED LEVELS ARE IN m.
3. L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE AND T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE.
4. NO CONSTRUCTION JOINT SHALL BE ALLOWED IN CONCRETE WORKS WITHOUT WRITTEN APPROVAL OF ENGINEER-IN-CHARGE AS PER PREVAILING SITE CONDITION.
5. COMMON BENCH MARK SHOULD BE ESTABLISHED BY THE FIELD ENGINEER BEFORE START OF WORK EITHER ON APPROACHES OR ON BRIDGE PROPER AT THE TIME OF EXECUTION OF WORK.

IMPORTANT:

6. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT CHAINAGE KM 40.250 NOT APPROVED BY EE, RAJKOT, R&B.
7. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGE AT CHANAGE KM 40.250.
8. CONSIDERING NOTE 6 & 7 ABOVE, SBC AT CHAINAGE KM 26.360 (EARLIER APPROVED REALIGNMENT) CONSIDERED IN THE DESIGN.
9. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC AT CHAINAGE KM 40.250 ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE SHOULD BE RE-DESIGNED, AS PER SBC AT CHAINAGE KM 40.250.

LEGEND:

TYP = TYPICAL
OGL/BED LVL = ORIGINAL GROUND LEVEL/BED LEVEL
FRL LVL = FINALISED/FINAL ROAD LEVEL
FDN LVL = FOUNDATION LEVEL

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Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	**Designed by**	**Approved by**	**Sheets**
G:MNB-01	SWAROOP	SHIVAKUMARI	02 OF 02

FDPR

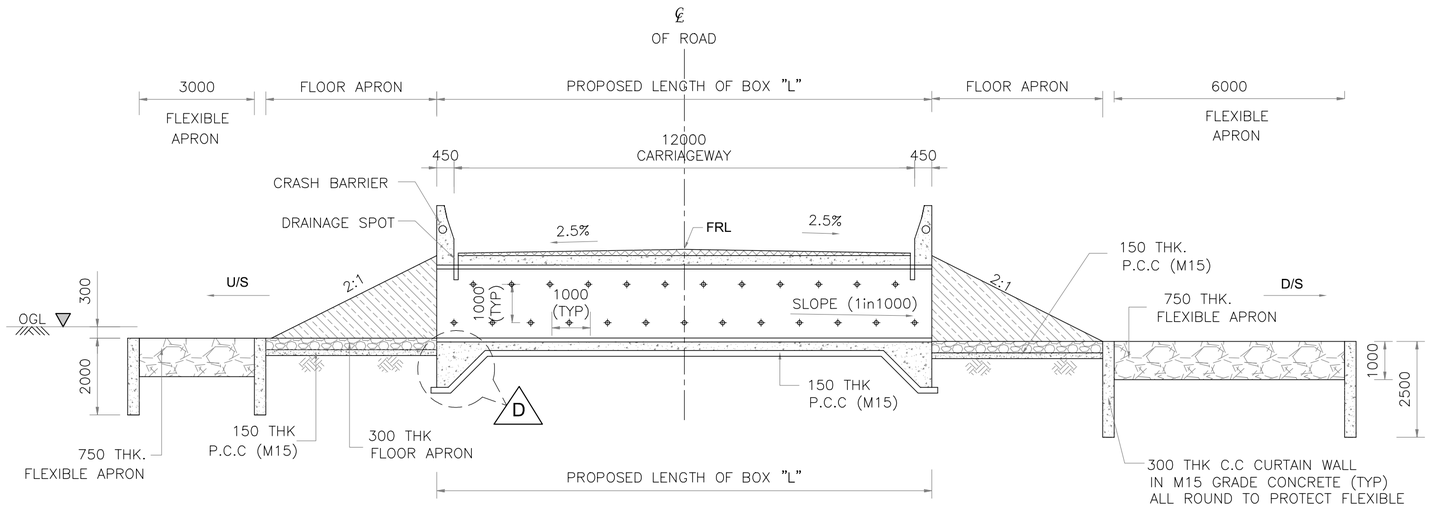
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

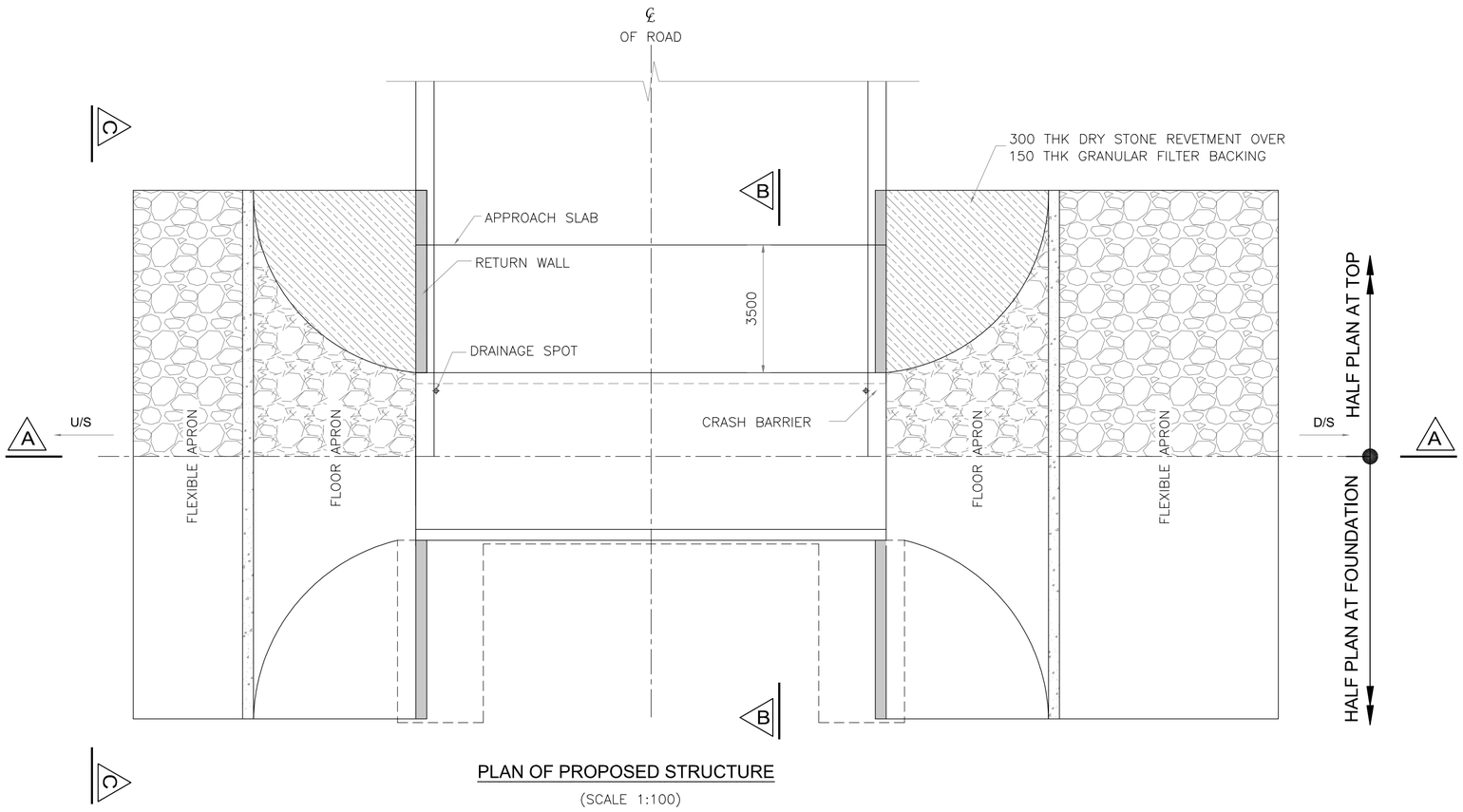
GAD PROPOSED FOR MINOR BRIDGE (5X10.5) (WIDENING)

Plot Size : (A2 Size) | DRG.NO : G: MNB-01



SECTIONAL ELEVATION OF A-A

(SCALE 1:100)



PLAN OF PROPOSED STRUCTURE

(SCALE 1:100)

LEGENDS:

1. U/S : UPSTREAM
2. D/S : DOWN STREAM
3. TYP : TYPICAL
4. O.G.L : ORIGINAL GROUND LEVEL
5. FRL : FINISHED ROAD LEVEL
6. SBC :SAFE BEARING CAPACITY

SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M-30.
3. GRADE OF CONCRETE FOR CRASH BARRIER SHALL BE M-40.
4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN m UNLESS SPECIFIED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY.
3. GRADE OF CONCRETE FOR BOX STRUCTURE M-30, P.C.C SHALL BE M-15 AND CRASH BARRIER AS M-40 UNLESS MENTIONED OTHERWISE.
4. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATION FOR ROADS AND BRIDGE WORKS OF MORTH (5th REVISION).
5. BOX STRUCTURE SHALL BE PLACED OVER A FIRM STRATA TO THE SATISFACTION OF ENGINEER. LOOSE OR SOFT PATCHES SHALL BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL, COMPACTED TO 98% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 200mm COMPACTED THICKNESS. THE SBC OF THE COMPACTED LAYER SHALL NOT BE LESS THAN THE BASE PRESSURE INDICATED.
6. THE PAVEMENT THICKNESS OVER THE BOX SHALL BE THE SAME AS PROVIDED FOR CARRIAGEWAY THIS SHALL BE CONSIDERED IN ALL CASES OF CUSHION.
7. SBC SHOULD BE VERIFIED BEFORE EXECUTION.
8. THE NEW JOINT SHOULD BE DONE AS PER SECTION CLAUSE 2900 (2904) OF MORTH SPECIFICATION AND AS PER THE DIRECTION OF ENGINEER-IN-CHARGE.
9. THE SOIL IMPROVEMENT SHALL BE CARRIEDOUT FOR FOUNDATION IN CONSULTATION WITH ENGINEER INCHARGE.

IMPORTANT:

10. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT THE LOCATIONS MENTIONED IN TABLE NOT APPROVED BY EE, RAJKOT, R&B.
11. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGES.
12. CONSIDERING NOTE 10 & 11 ABOVE, SBC CONSIDERED FROM NEARBY STRUCTURES AS MENTIONED IN TABLE.
13. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE BRIDGE SHOULD BE RE-DESIGNED, AS PER SBC.

FDPR

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File name: TYP-G:MNB-SBC-01	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 01 OF 02

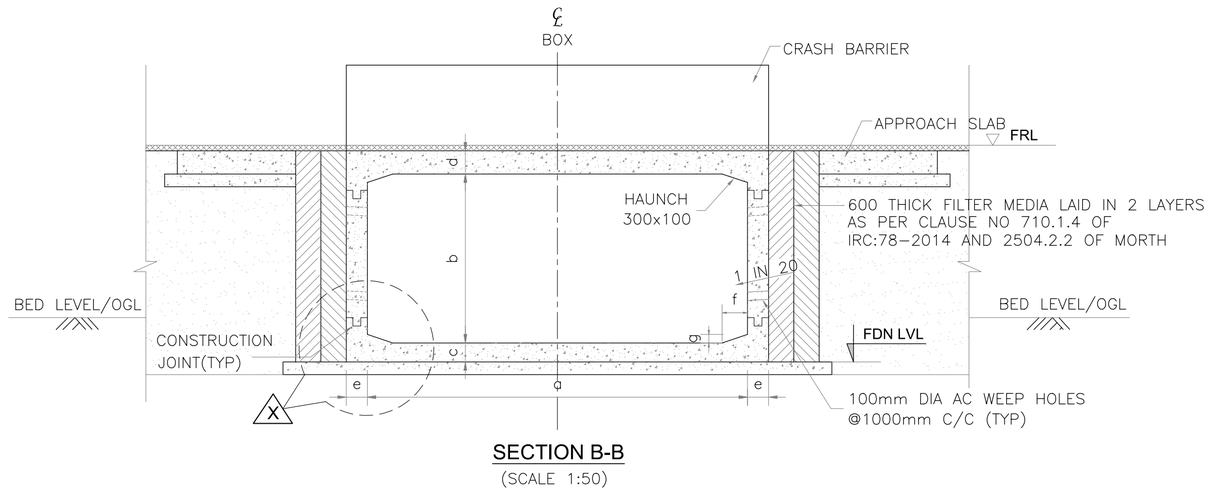
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

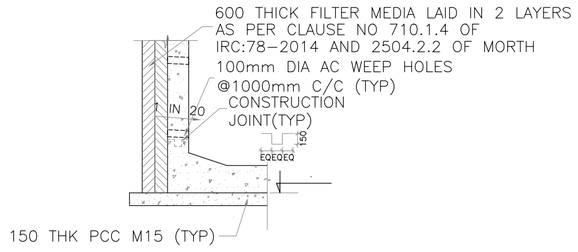
TYPICAL GAD PROPOSED FOR SINGLE CELL MINOR BRIDGE

SECON

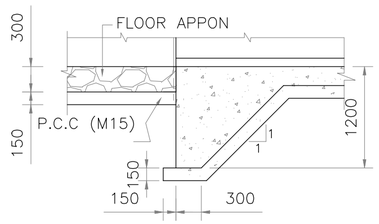
Plot Size : (A2 Size) | DRG.NO : TYP-G:MNB-SBC-01



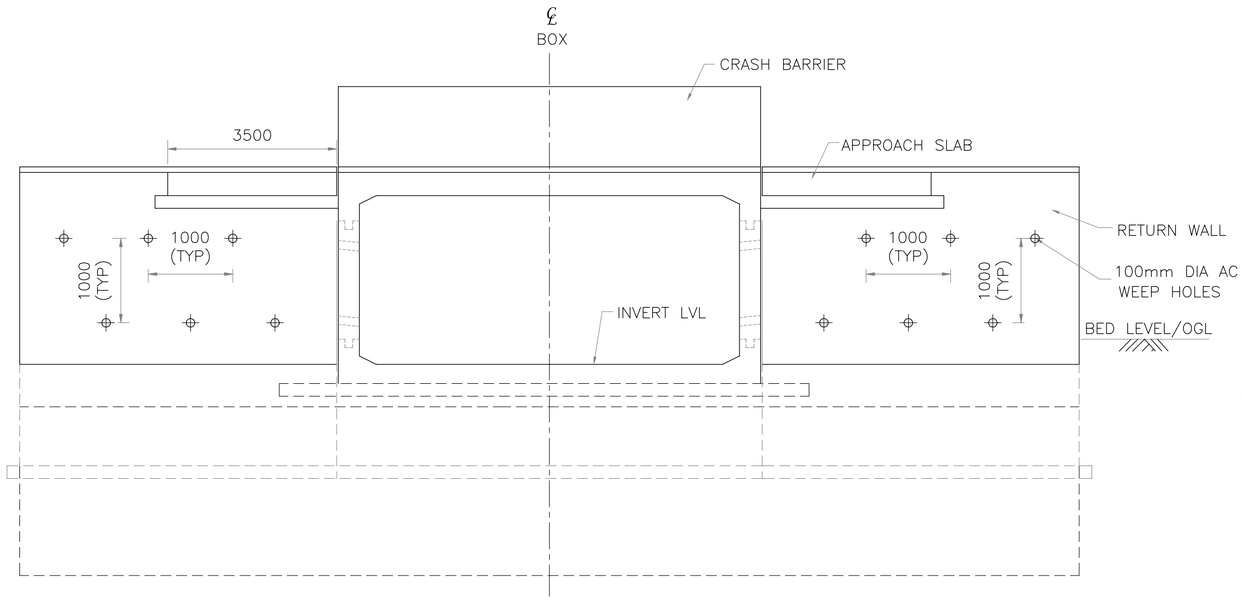
SECTION B-B
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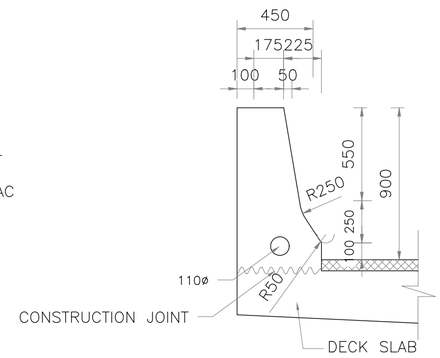
DETAIL - X
(SCALE 1:50)



DETAIL - D
(SCALE 1:50)



SECTION C-C
(SCALE 1:50)



CRASH BARRIER
(SCALE 1:25)

Sl.No	Design Chainage (km)	FRL (m)	OGL (m)	Foundation level (m)	Soffit level (m)	Invert Level (m)	Span Arangement (m)	Wearing coat thickness (m)	a (m)	b (m)	c (m)	d (m)	e (m)	f (m)	g (m)	remarks	SBC (t/sqm)
1	36.875	241.300	238.24	234.59	237.49	234.99	1 x 8 x 2.5	0.065	8.00	2.50	0.75	0.70	0.70	0.30	0.30	Reconstruction	55 CONSIDERED FROM NEAREST STRUCTURE KM 26.360 (NOTE: 11 & 12 REFERS)
2	37.030	241.405	236.84	231.69	236.09	232.09	1 x 7 x 4	0.065	7.00	4.00	0.70	0.65	0.65	0.30	0.15	Reconstruction	
3	70.200	182.058	179.19	175.99	178.89	176.39	1 x 6 x2.5	0.065	6.00	2.50	0.60	0.50	0.50	0.30	0.15	Reconstruction	55 CONSIDERED FROM NEAREST STRUCTURE KM 90.340 (NOTE: 11 & 12 REFERS)
4	73.070	161.800	158.94	155.74	158.64	156.14	1 x 6 x2.5	0.065	6.00	2.50	0.60	0.50	0.50	0.30	0.15	Reconstruction	
5	93.600	61.214	56.65	51.50	55.90	51.90	1 x 7.0 x 4	0.065	7.00	4.00	0.70	0.65	0.65	0.30	0.15	Reconstruction	

SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M-30.
3. GRADE OF CONCRETE FOR CRASH BARRIER SHALL BE M-40.
4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN m UNLESS SPECIFIED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY.
3. GRADE OF CONCRETE FOR BOX STRUCTURE M-30, P.C.C SHALL BE M-15 AND CRASH BARRIER AS M-40 UNLESS MENTIONED OTHERWISE.
4. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATION FOR ROADS AND BRIDGE WORKS OF MORTH (5th REVISION).
5. BOX STRUCTURE SHALL BE PLACED OVER A FIRM STRATA TO THE SATISFACTION OF ENGINEER. LOOSE OR SOFT PATCHES SHALL BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL, COMPACTED TO 98% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 200mm COMPACTED THICKNESS. THE SBC OF THE COMPACTED LAYER SHALL NOT BE LESS THAN THE BASE PRESSURE INDICATED.
6. THE PAVEMENT THICKNESS OVER THE BOX SHALL BE THE SAME AS PROVIDED FOR CARRIAGEWAY THIS SHALL BE CONSIDERED IN ALL CASES OF CUSHION.
7. SBC SHOULD BE VERIFIED BEFORE EXECUTION.
8. THE NEW JOINT SHOULD BE DONE AS PER SECTION CLAUSE 2900 (2904) OF MORTH SPECIFICATION AND AS PER THE DIRECTION OF ENGINEER-IN-CHARGE.
9. THE SOIL IMPROVEMENT SHALL BE CARRIEDOUT FOR FOUNDATION IN CONSULTATION WITH ENGINEER INCHARGE.

IMPORTANT:

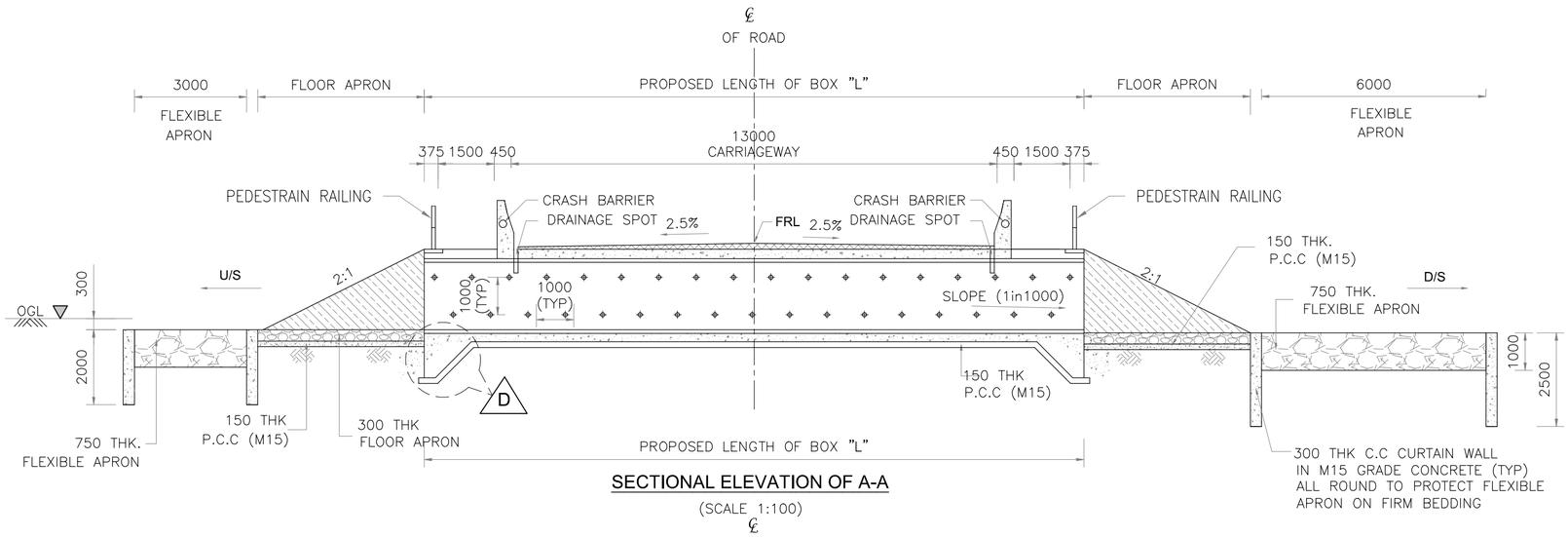
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FDPR

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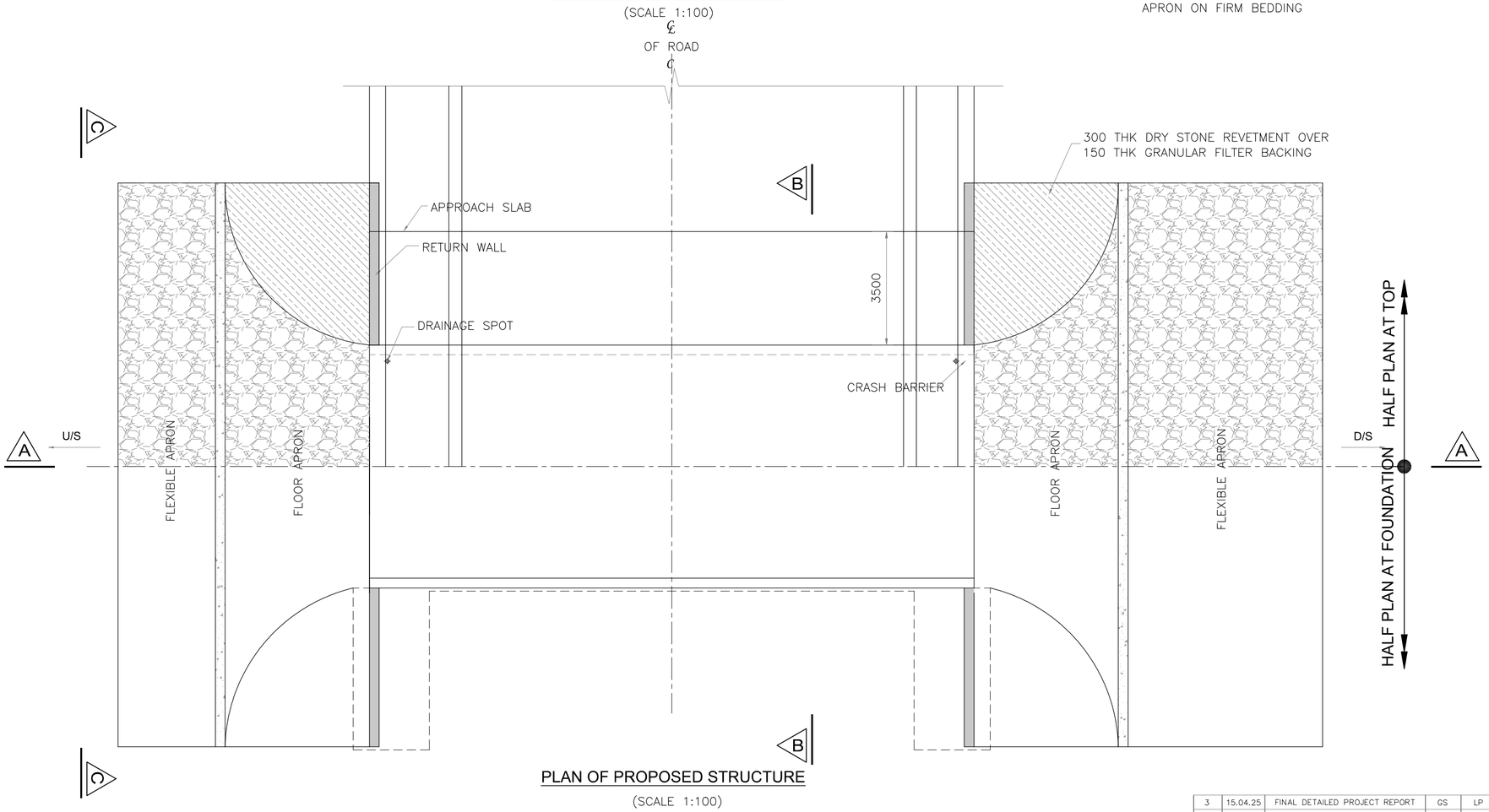
Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: TYP-G:MNB-SBC-01	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 02 OF 02

CLIENT	NATIONAL HIGHWAY DIVISION, RAJKOT DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT RAJKOT-360 001, GUJARAT
PROJECT	CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT
SECON™	TYPICAL GAD PROPOSED FOR SINGLE CELL MINOR BRIDGE
Plot Size : (A2 Size)	DRG.NO : TYP-G:MNB-SBC-01



SECTIONAL ELEVATION OF A-A

(SCALE 1:100)



PLAN OF PROPOSED STRUCTURE

(SCALE 1:100)

LEGENDS:

1. U/S : UPSTREAM
2. D/S : DOWN STREAM
3. TYP : TYPICAL
4. O.G.L : ORIGINAL GROUND LEVEL
5. FRL : FINISHED ROAD LEVEL
6. SBC :SAFE BEARING CAPACITY

SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M-30.
3. GRADE OF CONCRETE FOR CRASH BARRIER SHALL BE M-40.
4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN m UNLESS SPECIFIED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY.
3. GRADE OF CONCRETE FOR BOX STRUCTURE M-30, P.C.C SHALL BE M-15 AND CRASH BARRIER AS M-40 UNLESS MENTIONED OTHERWISE.
4. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATION FOR ROADS AND BRIDGE WORKS OF MORTH (5th REVISION).
5. BOX STRUCTURE SHALL BE PLACED OVER A FIRM STRATA TO THE SATISFACTION OF ENGINEER. LOOSE OR SOFT PATCHES SHALL BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL, COMPACTED TO 98% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 200mm COMPACTED THICKNESS. THE SBC OF THE COMPACTED LAYER SHALL NOT BE LESS THAN THE BASE PRESSURE INDICATED.
6. THE PAVEMENT THICKNESS OVER THE BOX SHALL BE THE SAME AS PROVIDED FOR CARRIAGEWAY THIS SHALL BE CONSIDERED IN ALL CASES OF CUSHION.
7. SBC SHOULD BE VERIFIED BEFORE EXECUTION.
8. THE NEW JOINT SHOULD BE DONE AS PER SECTION CLAUSE 2900 (2904) OF MORTH SPECIFICATION AND AS PER THE DIRECTION OF ENGINEER-IN-CHARGE.
9. THE SOIL IMPROVEMENT SHALL BE CARRIEDOUT FOR FOUNDATION IN CONSULTATION WITH ENGINEER INCHARGE.

IMPORTANT:

10. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT THE LOCATIONS MENTIONED IN TABLE NOT APPROVED BY EE, RAJKOT, R&B.
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12. CONSIDERING NOTE 10 & 11 ABOVE, SBC CONSIDERED FROM NEARBY STRUCTURES AS MENTIONED IN TABLE.
13. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE BRIDGE SHOULD BE RE-DESIGNED, AS PER SBC.

DDPR

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	FINAL DETAILED PROJECT REPORT	GS	LP	SK
2	06.02.25	Revised as per directions issued during meeting with SE, MORTH on 09.01.25 & 13.01.25	GS	LP	SK
1	10.12.24	Incorporating the suggestions Based on the meetings held with RO Gandhinagar & EE Rajkot on 25.09.24 & 24.10.24	GS	LP	SK
0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: TYP-G:MNB-SBC-01A	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 01 OF 02

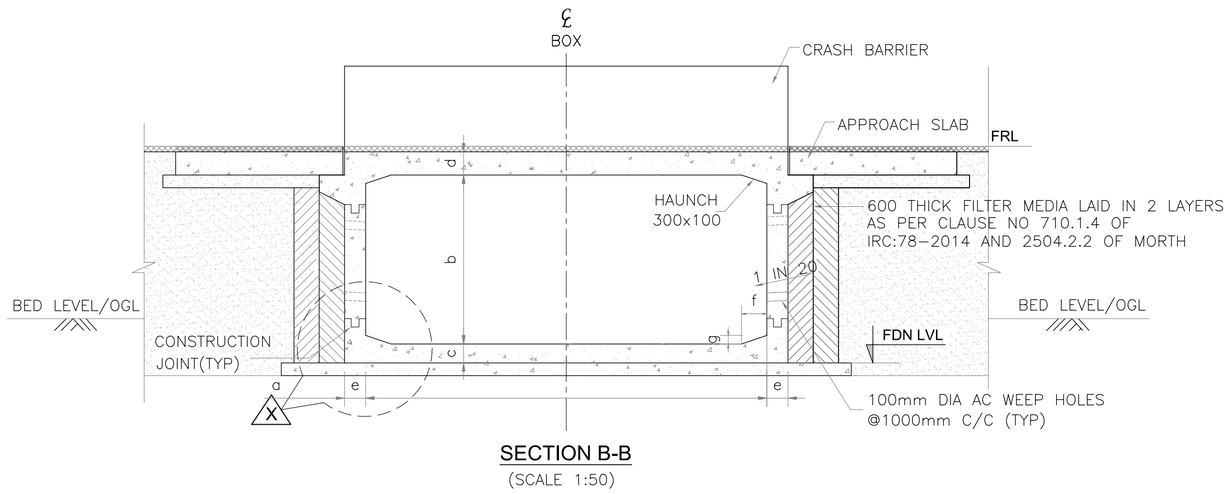
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

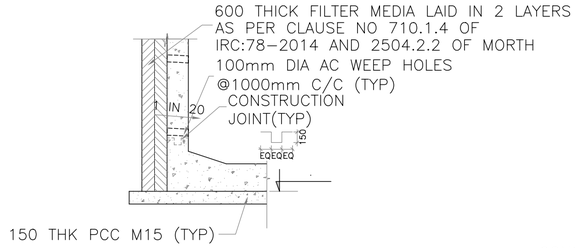
SECON

TYPICAL GAD PROPOSED FOR SINGLE CELL MINOR BRIDGE

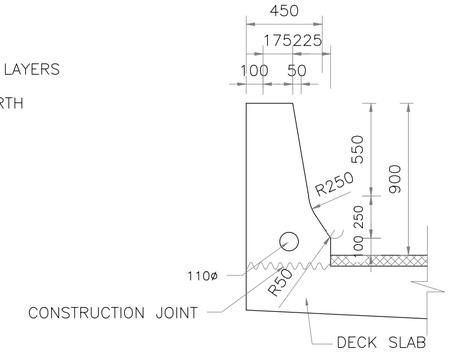
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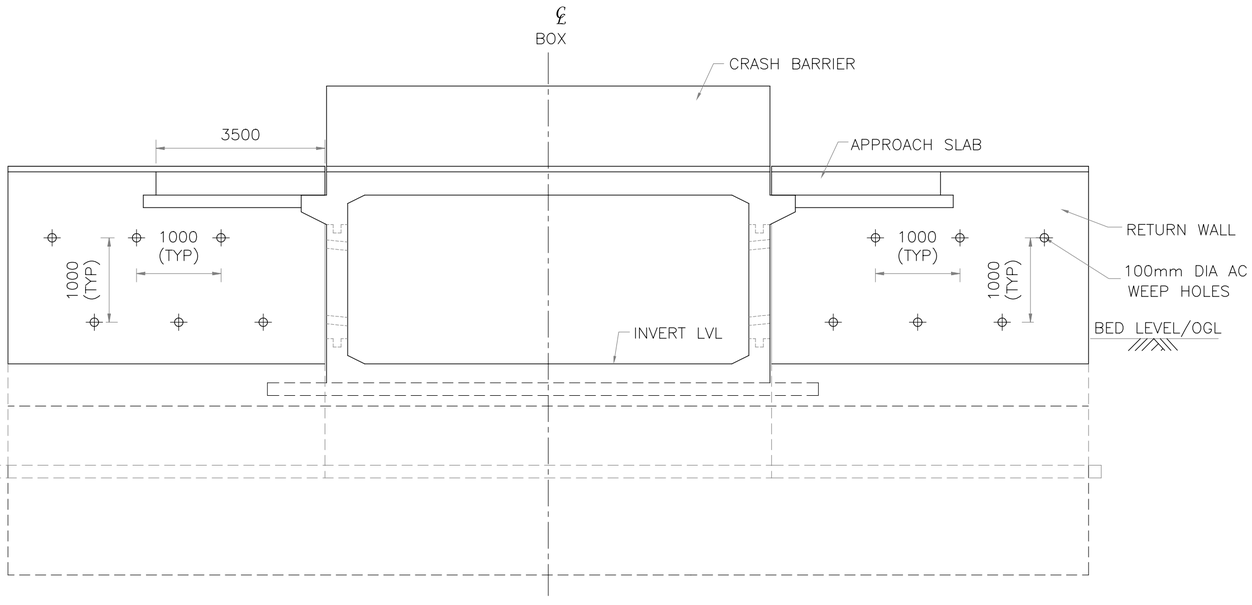
SECTION B-B
(SCALE 1:50)



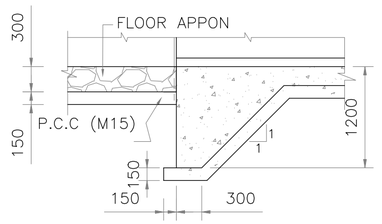
DETAIL - X
(SCALE 1:50)



CRASH BARRIER
(SCALE 1:25)



SECTION C-C
(SCALE 1:50)



DETAIL - D
(SCALE 1:50)

Sl.No	Design Chainage (km)	FRL (m)	OGL (m)	Foundation level (m)	Soffit level (m)	Invert Level (m)	Span Arangement (m)	Wearing coat thickness (m)	a (m)	b (m)	c (m)	d (m)	e (m)	f (m)	g (m)	remarks	SBC (t/sqm)
1	74.550	148.325	144.39	140.74	143.64	141.14	1 x 8 x 2.5	0.065	8.00	2.5	0.75	0.70	0.70	0.30	0.30	Reconstruction	55 CONSIDERED FROM NEAREST STRUCTURE KM 90.340 (NOTE: 11 & 12 REFERS)
2	80.610	111.745	108.18	107.03	109.93	107.43	1 x 8 x 3	0.065	8.00	3.00	0.75	0.70	0.70	0.30	0.15	Reconstruction	

SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M-30.
3. GRADE OF CONCRETE FOR CRASH BARRIER SHALL BE M-40.
4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN m UNLESS SPECIFIED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY.
3. GRADE OF CONCRETE FOR BOX STRUCTURE M-30, P.C.C SHALL BE M-15 AND CRASH BARRIER AS M-40 UNLESS MENTIONED OTHERWISE.
4. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATION FOR ROADS AND BRIDGE WORKS OF MORTH (5th REVISION).
5. BOX STRUCTURE SHALL BE PLACED OVER A FIRM STRATA TO THE SATISFACTION OF ENGINEER. LOOSE OR SOFT PATCHES SHALL BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL, COMPACTED TO 98% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 200mm COMPACTED THICKNESS. THE SBC OF THE COMPACTED LAYER SHALL NOT BE LESS THAN THE BASE PRESSURE INDICATED.
6. THE PAVEMENT THICKNESS OVER THE BOX SHALL BE THE SAME AS PROVIDED FOR CARRIAGEWAY THIS SHALL BE CONSIDERED IN ALL CASES OF CUSHION.
7. SBC SHOULD BE VERIFIED BEFORE EXECUTION.
8. THE NEW JOINT SHOULD BE DONE AS PER SECTION CLAUSE 2900 (2904) OF MORTH SPECIFICATION AND AS PER THE DIRECTION OF ENGINEER-IN-CHARGE.
9. THE SOIL IMPROVEMENT SHALL BE CARRIEDOUT FOR FOUNDATION IN CONSULTATION WITH ENGINEER INCHARGE.

IMPORTANT:

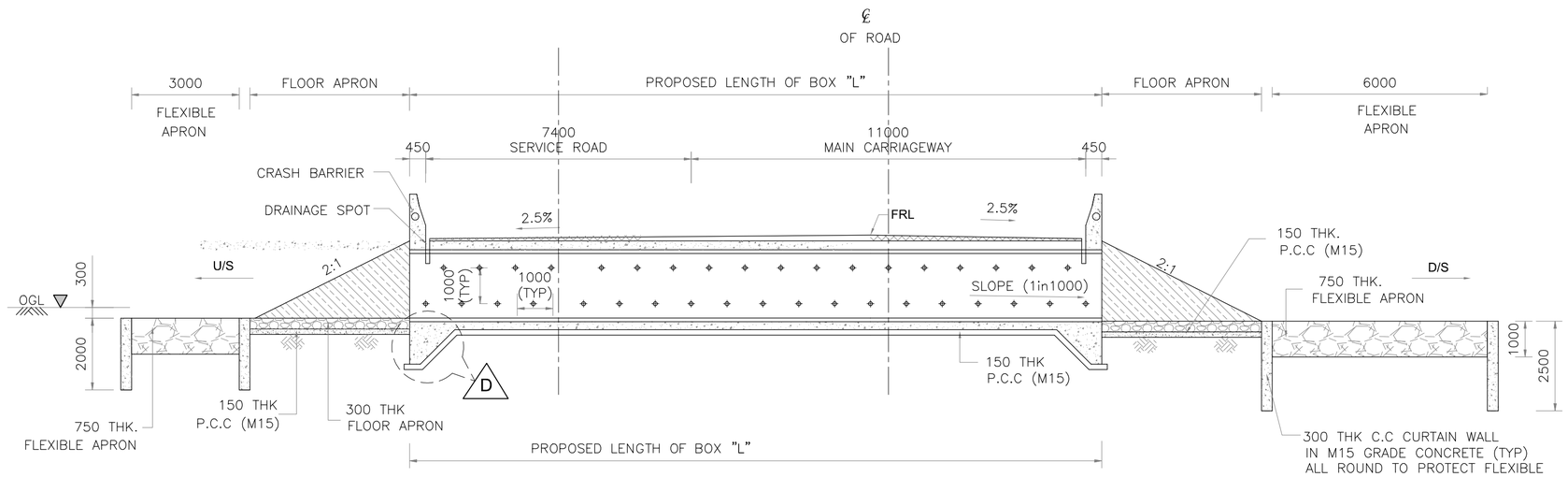
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DDPR

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0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

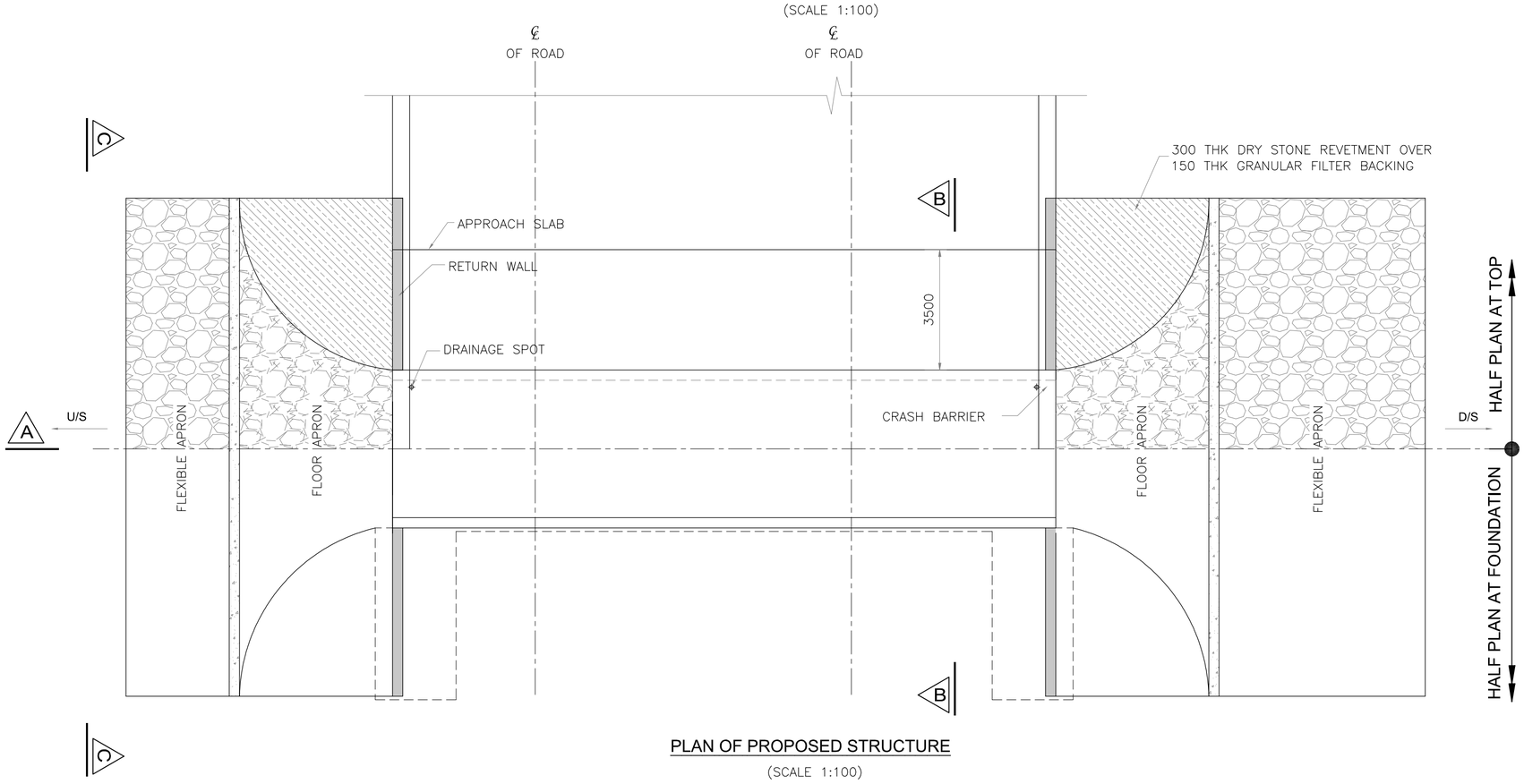
Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: TYP-G: MNB-SBC-01A	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 02 OF 02

CLIENT	NATIONAL HIGHWAY DIVISION, RAJKOT DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT RAJKOT-360 001, GUJARAT
PROJECT	CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT
SECON	TYPICAL GAD PROPOSED FOR SINGLE CELL MINOR BRIDGE
Plot Size : (A2 Size)	DRG.NO : TYP-G: MNB-SBC-01A



SECTIONAL ELEVATION OF A-A

(SCALE 1:100)



PLAN OF PROPOSED STRUCTURE

(SCALE 1:100)

LEGENDS:

1. U/S : UPSTREAM
2. D/S : DOWN STREAM
3. TYP : TYPICAL
4. O.G.L : ORIGINAL GROUND LEVEL
5. FRL : FINISHED ROAD LEVEL
6. SBC :SAFE BEARING CAPACITY

SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M-30.
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4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN m UNLESS SPECIFIED OTHERWISE.
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IMPORTANT:

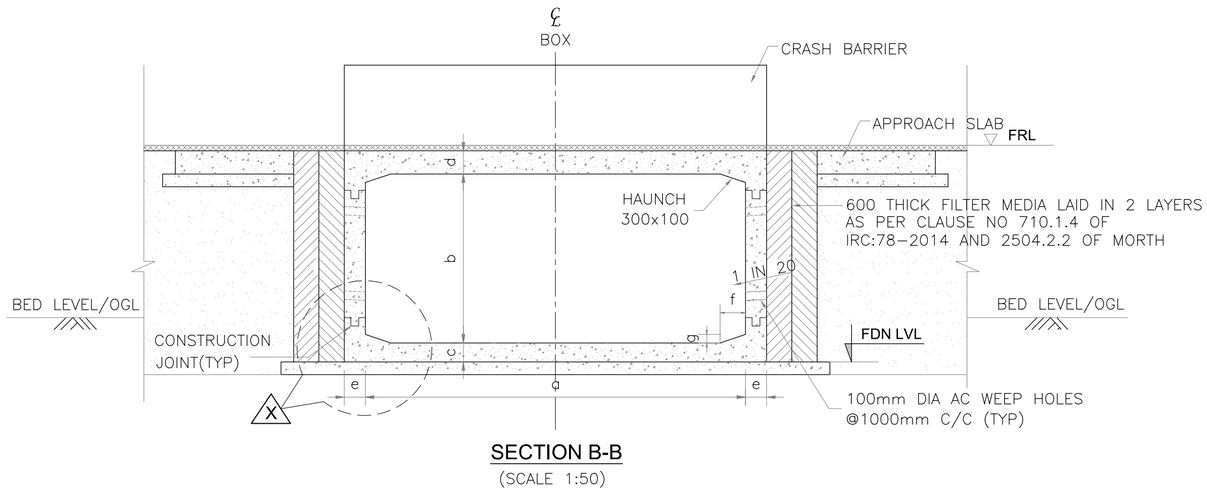
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DDPR

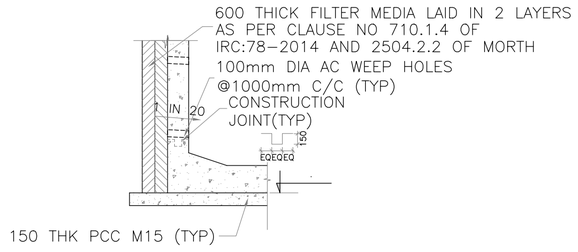
No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	FINAL DETAILED PROJECT REPORT	GS	LP	SK
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0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	**Designed by**	**Approved by**	**Sheets**
TYP-G:MNB-SBC-01B	SWAROOP	SHIVAKUMARI	01 OF 02

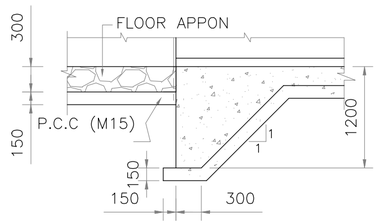
CLIENT	NATIONAL HIGHWAY DIVISION, RAJKOT DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT RAJKOT-360 001, GUJARAT
PROJECT	CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT
SECON	TYPICAL GAD PROPOSED FOR SINGLE CELL MINOR BRIDGE
Plot Size : (A2 Size)	DRG.NO : TYP-G:MNB-SBC-01B



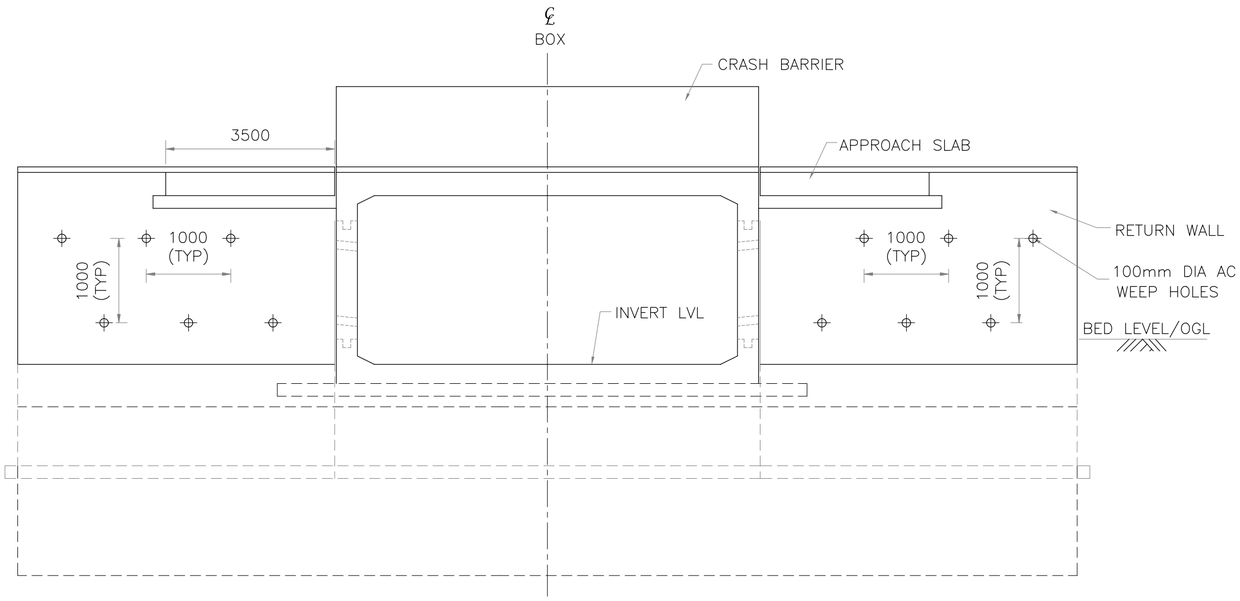
SECTION B-B
(SCALE 1:50)



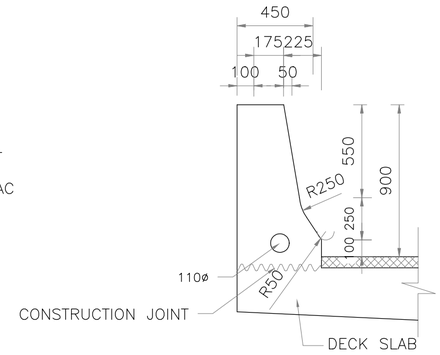
DETAIL - X
(SCALE 1:50)



DETAIL - D
(SCALE 1:50)



SECTION C-C
(SCALE 1:50)



CRASH BARRIER
(SCALE 1:25)

Sl.No	Design Chainage (km)	FRL (m)	OGL (m)	Foundation level (m)	Soffit level (m)	Invert Level (m)	Span Arangement (m)	Wearing coat thickness (m)	a (m)	b (m)	c (m)	d (m)	e (m)	f (m)	g (m)	remarks	SBC (t/sqm)
1	28.585	226.110	222.66	222.06	224.96	222.46	1 x 7 x 2.5	0.065	7.00	2.50	0.70	0.65	0.65	0.30	0.15	Newconstruction	55 CONSIDERED FROM NEAREST STRUCTURE KM 26.360 (NOTE: 11 & 12 REFERS)

SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M-30.
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5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

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Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
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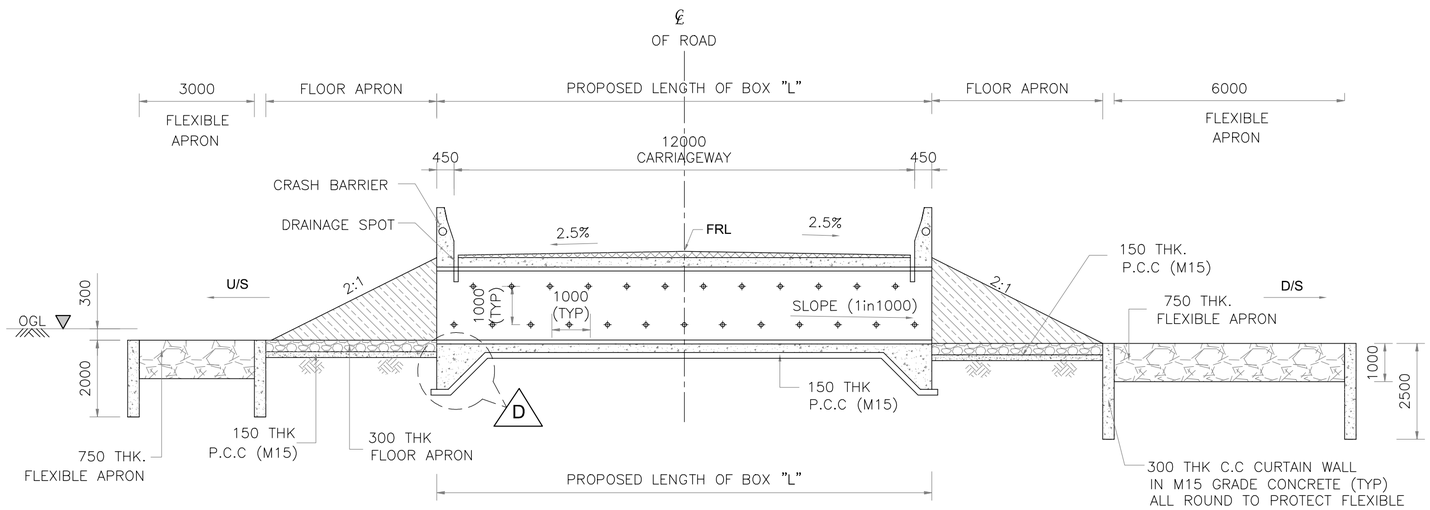
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RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

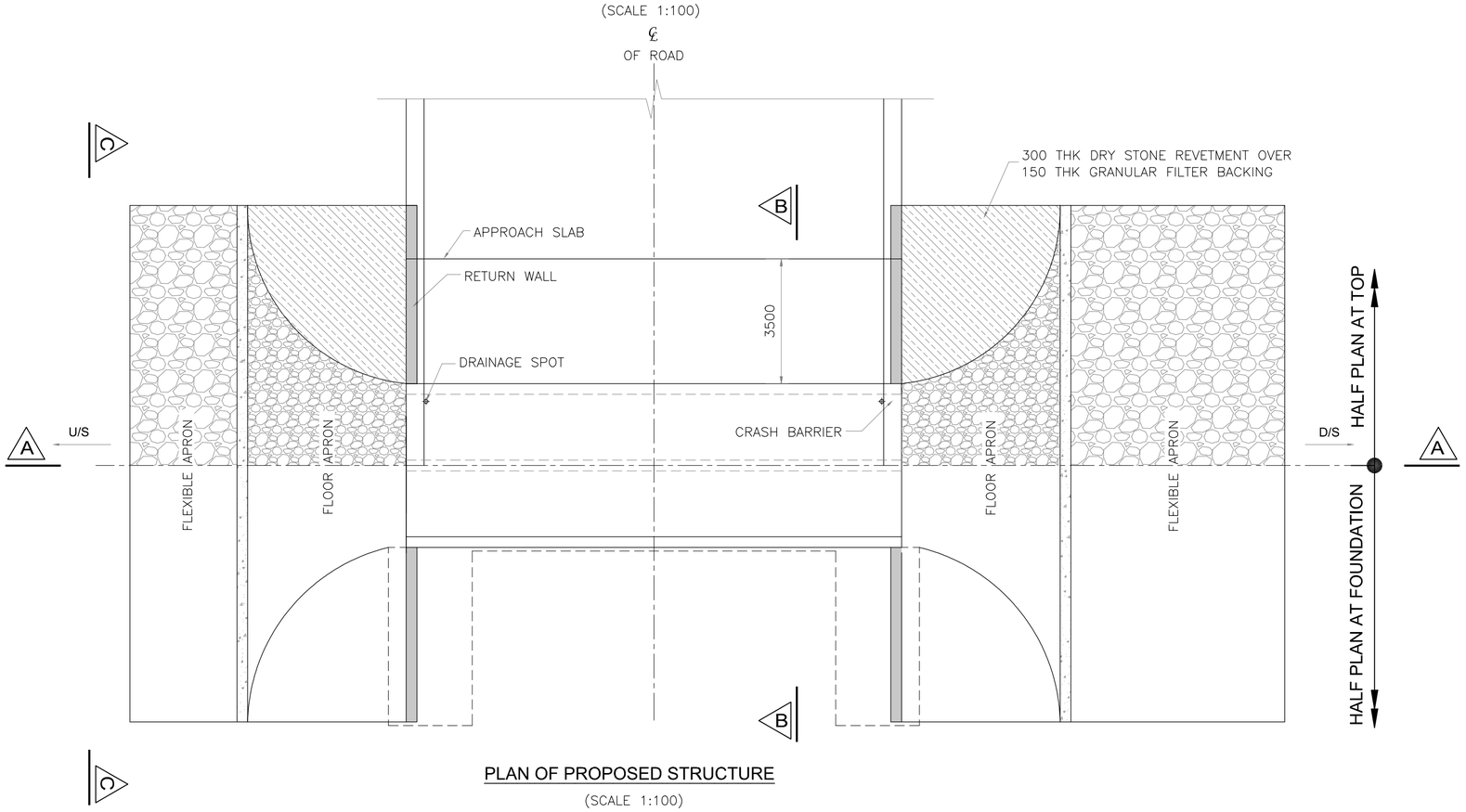
TYPICAL GAD PROPOSED FOR SINGLE CELL MINOR BRIDGE

Plot Size : (A2 Size) | DRG.NO : TYP-G:MNB-SBC-01B



SECTIONAL ELEVATION OF A-A

(SCALE 1:100)



PLAN OF PROPOSED STRUCTURE

(SCALE 1:100)

LEGENDS:

1. U/S : UPSTREAM
2. D/S : DOWN STREAM
3. TYP : TYPICAL
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13. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE BRIDGE SHOULD BE RE–DESIGNED, AS PER SBC.

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	FINAL DETAILED PROJECT REPORT	GS	LP	SK
2	06.02.25	Revised as per directions issued during meeting with SE, MORTH on 09.01.25 & 13.01.25	GS	LP	SK
1	10.12.24	Incorporating the suggestions Based on the meetings held with RO Gandhinagar & EE Rajkot on 25.09.24 & 24.10.24	GS	LP	SK
0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: TYP–G:MNB–DBC–02	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 01 OF 02

FDPR

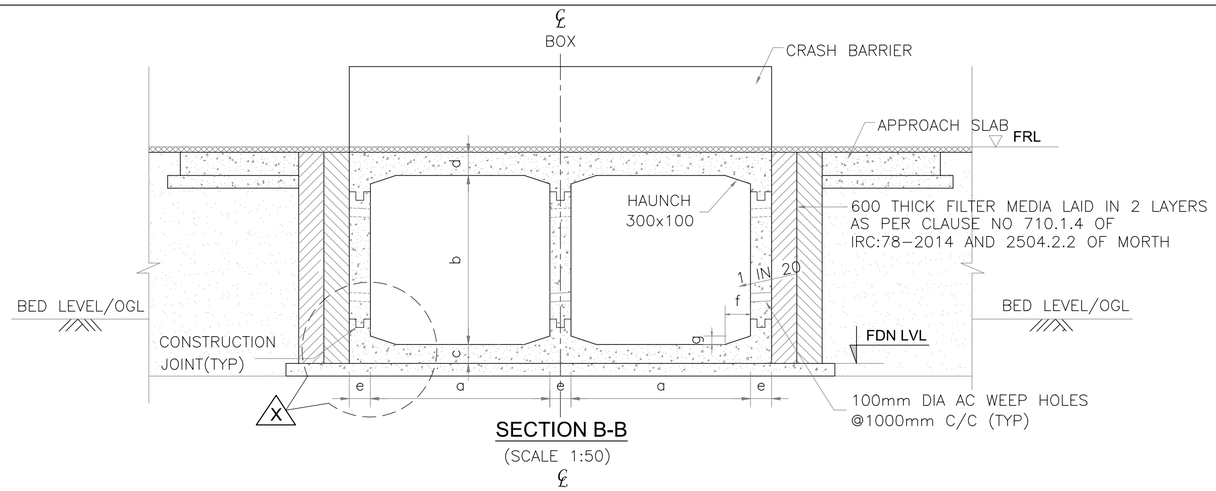
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

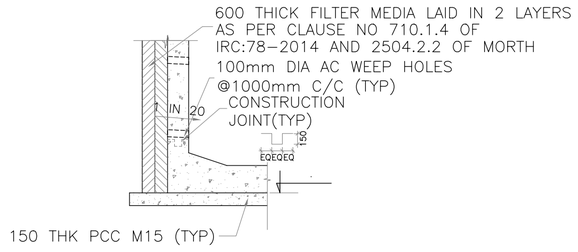
TYPICAL GAD PROPOSED FOR DOUBLE CELL MINOR BRIDGE

Plot Size : (A2 Size) | DRG.NO : TYP–G:MNB–DBC–02



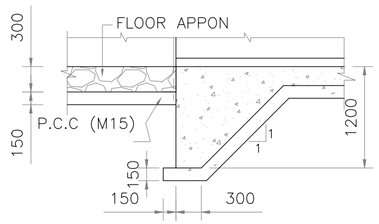
SECTION B-B

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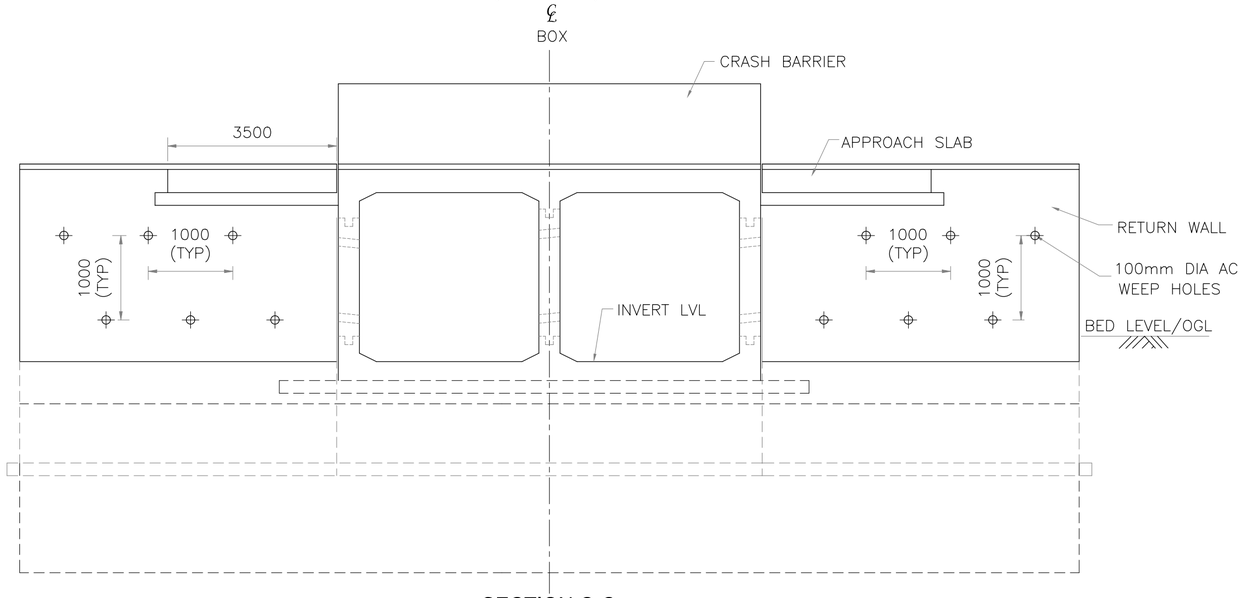
DETAIL - X

(SCALE 1:50)



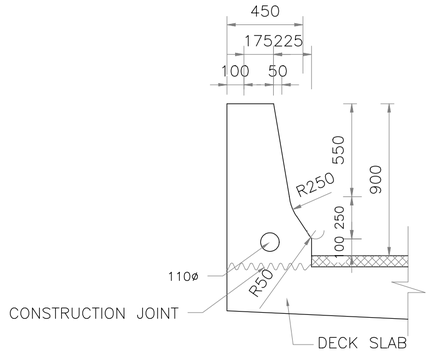
DETAIL - D

(SCALE 1:50)



SECTION C-C

(SCALE 1:50)



CRASH BARRIER

(SCALE 1:25)

Sl.No	Design Chainage (km)	FRL (m)	OGL (m)	Foundation level (m)	Soffit level (m)	Invert Level (m)	Span Arangement (m)	Wearing coat thickness (m)	a (m)	b (m)	c (m)	d (m)	e (m)	f (m)	g (m)	remarks	SBC (t/sqm)
1	39.395	235.200	231.14	226.49	230.39	226.89	2 x 5 x 3.5	0.065	5.00	3.50	0.50	0.45	0.45	0.30	0.15	Reconstruction	55 CONSIDERED FROM NEAREST STRUCTURE KM 26.360 (NOTE: 11 & 12 REFERS)
2	82.070	113.030	108.47	103.82	107.72	104.22	2 x 8 x 3.5	0.065	8.00	3.50	0.75	0.65	0.65	0.30	0.15	Reconstruction	55 CONSIDERED FROM NEAREST STRUCTURE KM 90.340 (NOTE: 11 & 12 REFERS)
3	85.012	105.340	101.28	96.63	100.53	97.03	2 x 8 x 3.5	0.065	8.00	3.50	0.75	0.65	0.65	0.30	0.15	Reconstruction	
4	100.395	34.193	28.63	22.48	27.88	22.88	2 x 5 x 5	0.065	5.00	5.00	0.50	0.45	0.45	0.30	0.15	Reconstruction	55 CONSIDERED FROM NEAREST STRUCTURE KM 96.540 (NOTE: 11 & 12 REFERS)

SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M-30.
3. GRADE OF CONCRETE FOR CRASH BARRIER SHALL BE M-40.
4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN m UNLESS SPECIFIED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY.
3. GRADE OF CONCRETE FOR BOX STRUCTURE M-30, P.C.C SHALL BE M-15 AND CRASH BARRIER AS M-40 UNLESS MENTIONED OTHERWISE.
4. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATION FOR ROADS AND BRIDGE WORKS OF MORTH (5th REVISION).
5. BOX STRUCTURE SHALL BE PLACED OVER A FIRM STRATA TO THE SATISFACTION OF ENGINEER. LOOSE OR SOFT PATCHES SHALL BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL, COMPACTED TO 98% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 200mm COMPACTED THICKNESS. THE SBC OF THE COMPACTED LAYER SHALL NOT BE LESS THAN THE BASE PRESSURE INDICATED.
6. THE PAVEMENT THICKNESS OVER THE BOX SHALL BE THE SAME AS PROVIDED FOR CARRIAGEWAY THIS SHALL BE CONSIDERED IN ALL CASES OF CUSHION.
7. SBC SHOULD BE VERIFIED BEFORE EXECUTION.
8. THE NEW JOINT SHOULD BE DONE AS PER SECTION CLAUSE 2900 (2904) OF MORTH SPECIFICATION AND AS PER THE DIRECTION OF ENGINEER-IN-CHARGE.
9. THE SOIL IMPROVEMENT SHALL BE CARRIEDOUT FOR FOUNDATION IN CONSULTATION WITH ENGINEER INCHARGE.

IMPORTANT:

10. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT THE LOCATIONS MENTIONED IN TABLE NOT APPROVED BY EE, RAJKOT, R&B.
11. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGES.
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FDPR

No	DATE	REVISIONS	BY	CHKD	APPD
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0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: TYP-G:MNB-DBC-02	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 02 OF 02

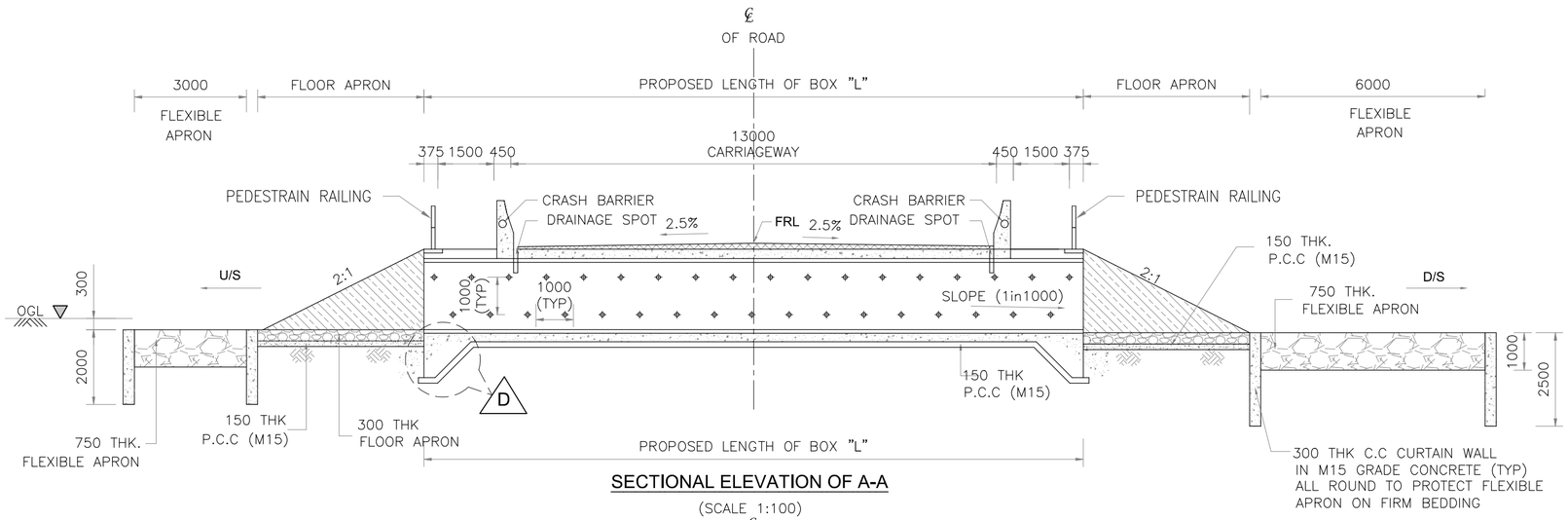
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

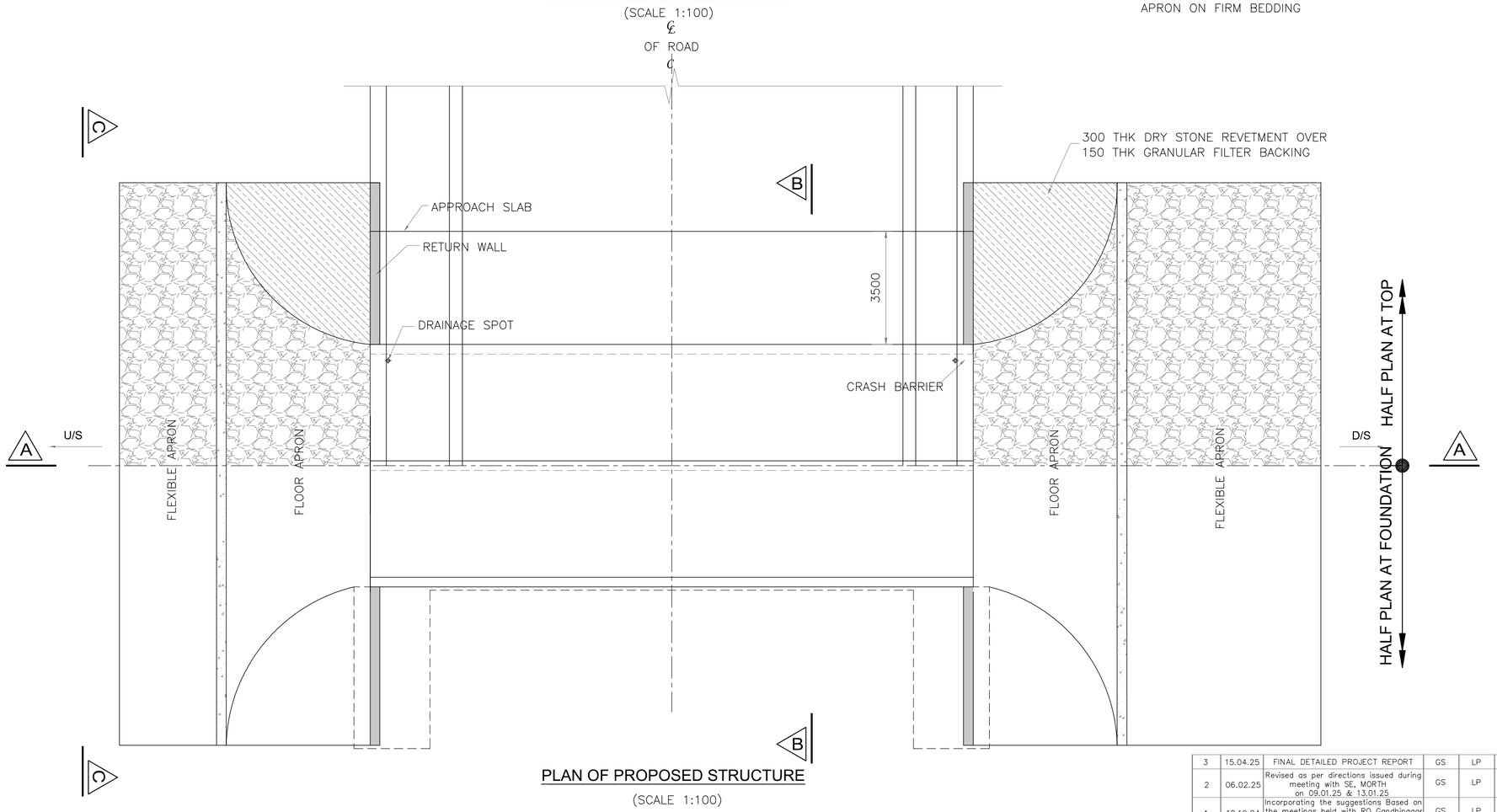
TYPICAL GAD PROPOSED FOR DOUBLE CELL MINOR BRIDGE

Plot Size : (A2 Size) | DRG.NO : TYP-G: MNB-DBC-02



SECTIONAL ELEVATION OF A-A

(SCALE 1:100)



PLAN OF PROPOSED STRUCTURE

(SCALE 1:100)

LEGENDS:

1. U/S : UPSTREAM
2. D/S : DOWN STREAM
3. TYP : TYPICAL
4. O.G.L : ORIGINAL GROUND LEVEL
5. FRL : FINISHED ROAD LEVEL
6. SBC :SAFE BEARING CAPACITY

SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M-30.
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4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

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2. FOLLOW WRITTEN DIMENSIONS ONLY.
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7. SBC SHOULD BE VERIFIED BEFORE EXECUTION.
8. THE NEW JOINT SHOULD BE DONE AS PER SECTION CLAUSE 2900 (2904) OF MORTH SPECIFICATION AND AS PER THE DIRECTION OF ENGINEER-IN-CHARGE.
9. THE SOIL IMPROVEMENT SHALL BE CARRIEDOUT FOR FOUNDATION IN CONSULTATION WITH ENGINEER INCHARGE.

IMPORTANT:

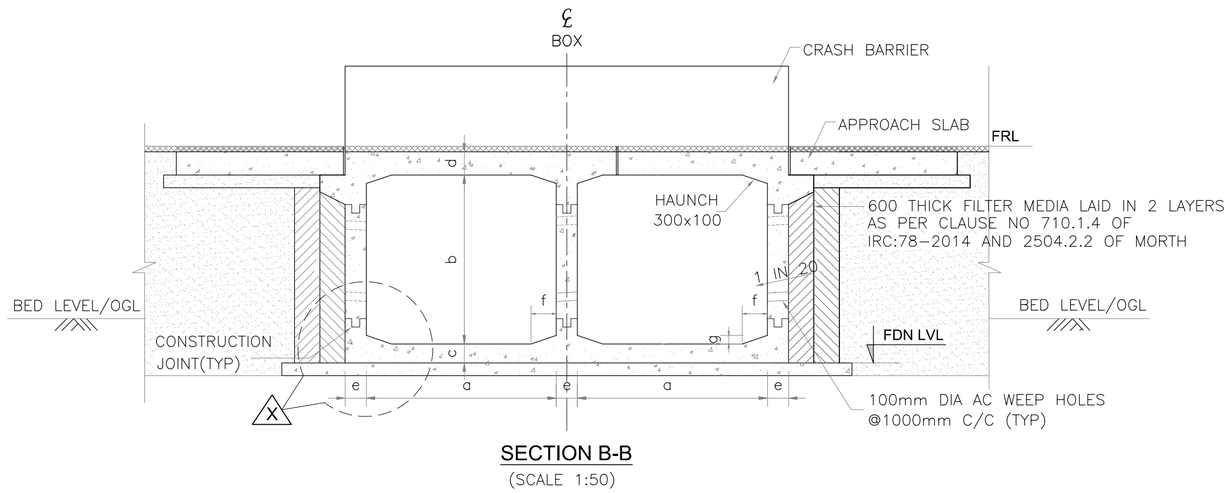
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FDPR

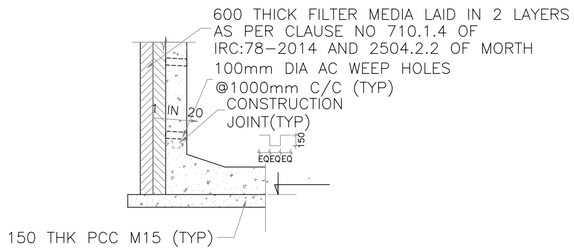
No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	FINAL DETAILED PROJECT REPORT	GS	LP	SK
2	06.02.25	Revised as per directions issued during meeting with SE, MORTH on 09.01.25 & 13.01.25	GS	LP	SK
1	10.12.24	Incorporating the suggestions Based on the meetings held with RO Gandhinagar & EE Rajkot on 25.09.24 & 24.10.24	GS	LP	SK
0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: TYP-G:MNB-DBC-02A	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 01 OF 02

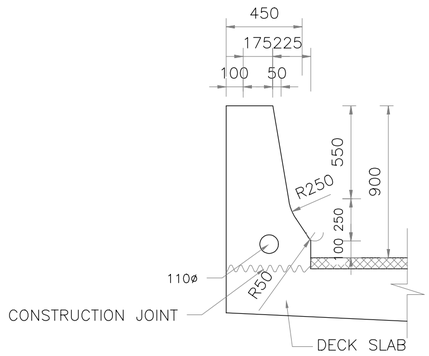
CLIENT	NATIONAL HIGHWAY DIVISION, RAJKOT DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT RAJKOT-360 001, GUJARAT
PROJECT	CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT
SECON	TYPICAL GAD PROPOSED FOR DOUBLE CELL MINOR BRIDGE
Plot Size : (A2 Size)	DRG.NO : TYP-G:MNB-DBC-02A



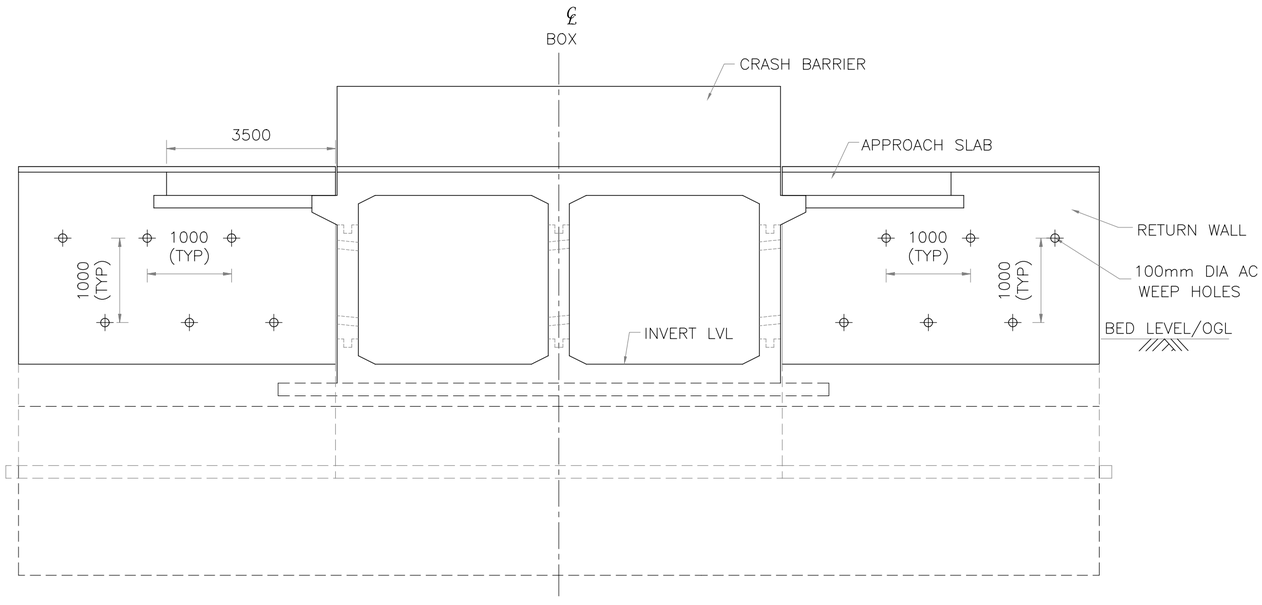
SECTION B-B
(SCALE 1:50)



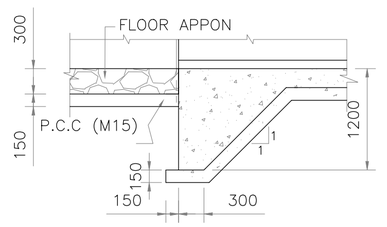
DETAIL - X
(SCALE 1:50)



CRASH BARRIER
(SCALE 1:25)



SECTION C-C
(SCALE 1:50)



DETAIL - D
(SCALE 1:50)

SPECIFICATIONS:-
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4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:
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2. FOLLOW WRITTEN DIMENSIONS ONLY.
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Sl.No	Design Chainage (km)	FRL (m)	OGL (m)	Foundation level (m)	Soffit level (m)	Invert Level (m)	Span Arangement (m)	Wearing coat thickness (m)	a (m)	b (m)	c (m)	d (m)	e (m)	f (m)	g (m)	remarks	SBC (t/sqm)
1	17.860	210.050	206.99	206.89	210.29	207.29	2 x 4 x 3	0.065	4.00	3.00	0.40	0.35	0.35	0.30	0.15	Reconstruction	55 CONSIDERED FROM NEAREST STRUCTURE KM 22.935 (NOTE: 11 & 12 REFERS)
2	70.970	173.390	169.83	165.68	169.08	166.08	2 x 8 x 3	0.065	8.00	3.00	0.75	0.70	0.70	0.30	0.15	Reconstruction	55 CONSIDERED FROM NEAREST STRUCTURE KM 90.340 (NOTE: 11 & 12 REFERS)

No	DATE	REVISIONS	BY	CHKD	APPD
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0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	**Designed by**	**Approved by**	**Sheets**
TYP-G:MNB-DBC-02A	SWAROOP	SHIVAKUMARI	02 OF 02

FDPR

CLIENT

NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT

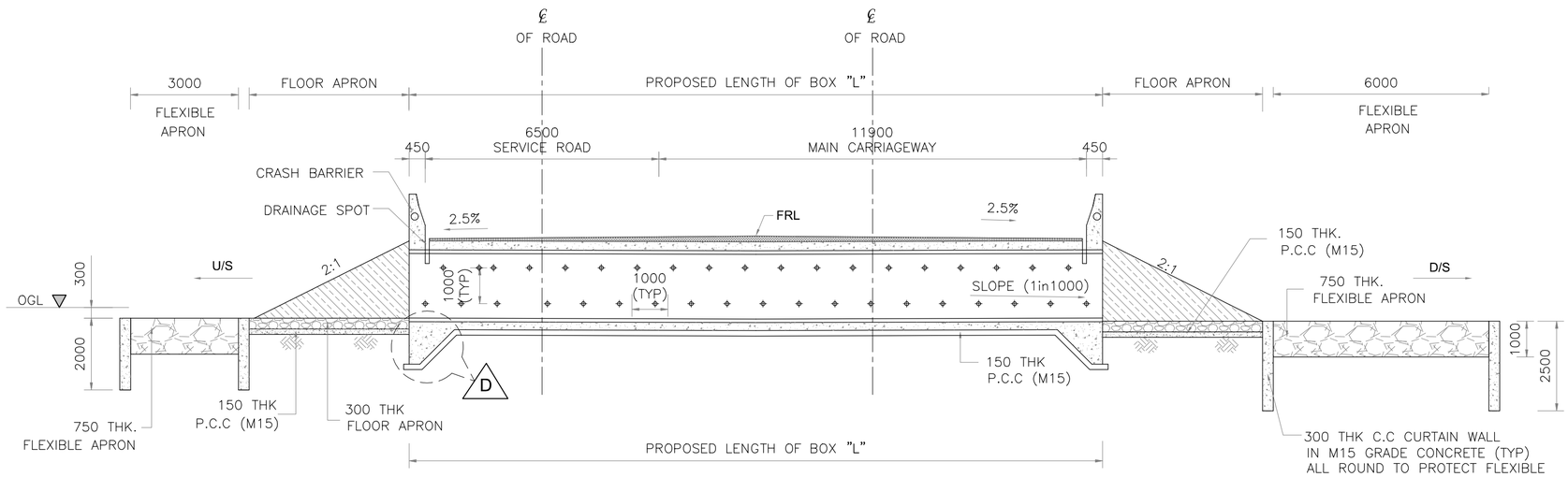
CONSULTANCY SERVICES FOR UP GRADATION OF
UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA
NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

TYPICAL GAD PROPOSED FOR DOUBLE CELL MINOR BRIDGE

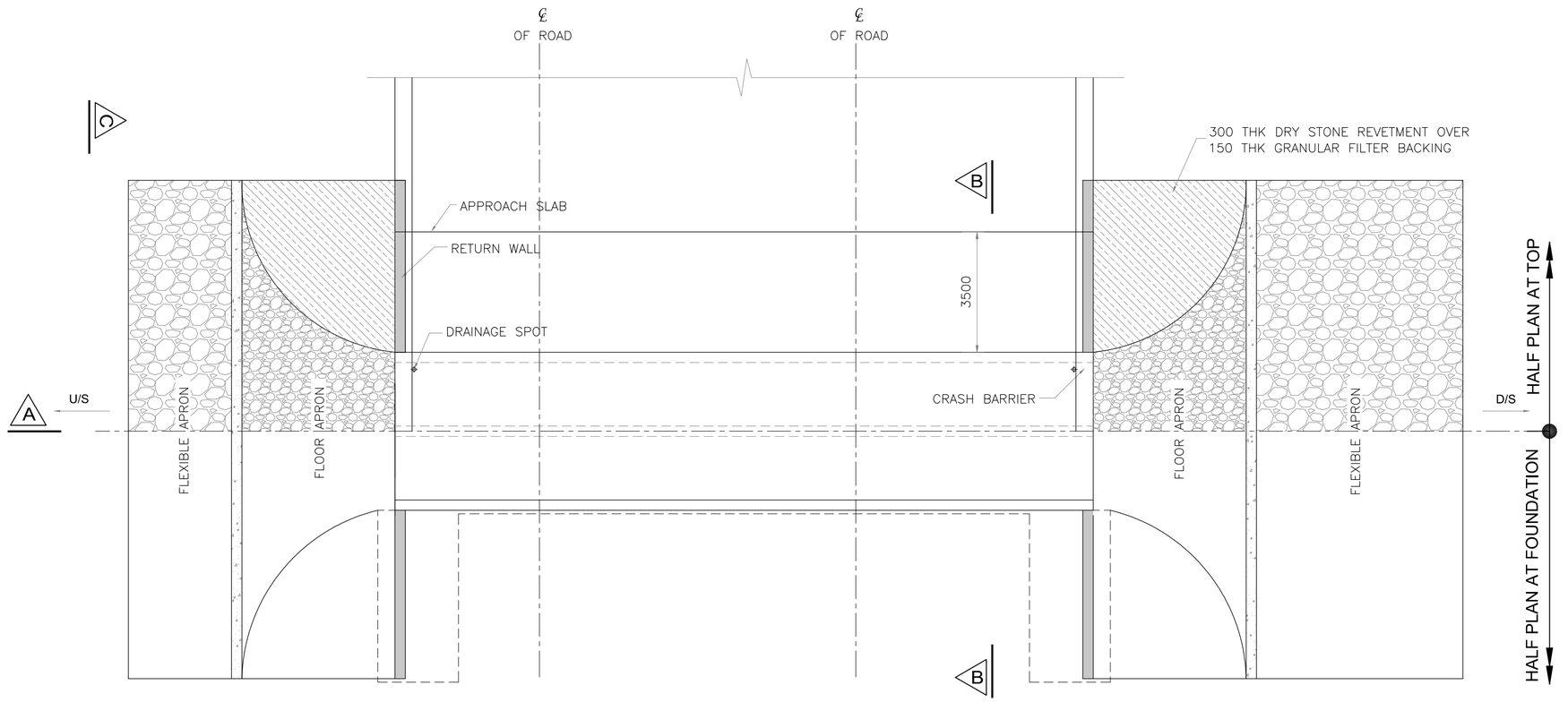
Plot Size : (A2 Size)

DRG.NO : TYP-G:MNB-DBC-02A



SECTIONAL ELEVATION OF A-A

(SCALE 1:100)



PLAN OF PROPOSED STRUCTURE

(SCALE 1:100)

LEGENDS:

1. U/S : UPSTREAM
2. D/S : DOWN STREAM
3. TYP : TYPICAL
4. O.G.L : ORIGINAL GROUND LEVEL
5. FRL : FINISHED ROAD LEVEL
6. SBC :SAFE BEARING CAPACITY

SPECIFICATIONS:-

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NOTES:

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IMPORTANT:

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11. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGES.
12. CONSIDERING NOTE 10 & 11 ABOVE, SBC CONSIDERED FROM NEARBY STRUCTURES AS MENTIONED IN TABLE.
13. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE BRIDGE SHOULD BE RE-DESIGNED, AS PER SBC.

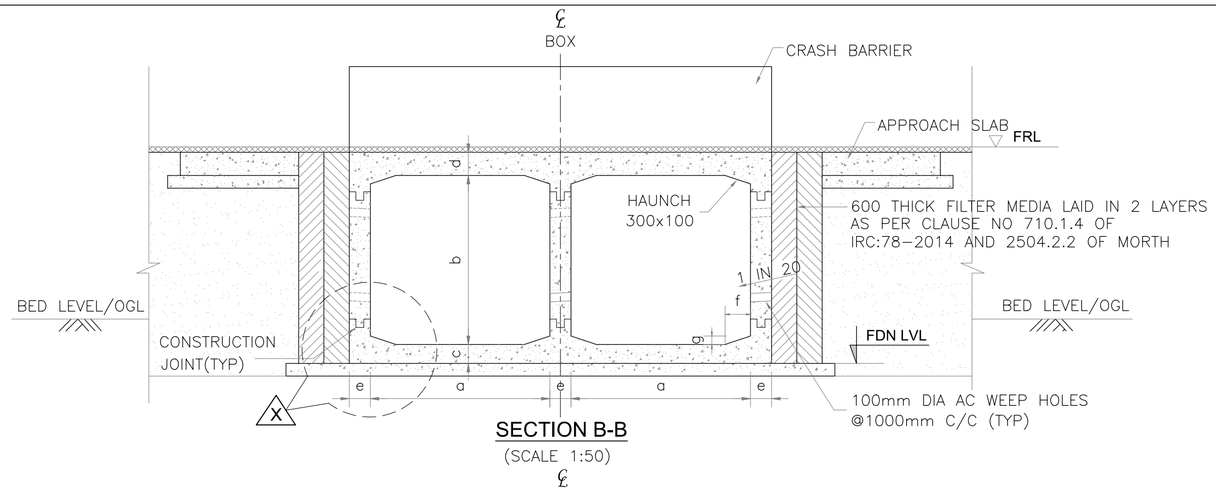
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No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	FINAL DETAILED PROJECT REPORT	GS	LP	SK
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1	10.12.24	Incorporating the suggestions Based on the meetings held with RO Gandhinagar & EE Rajkot on 25.09.24 & 24.10.24	GS	LP	SK
0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

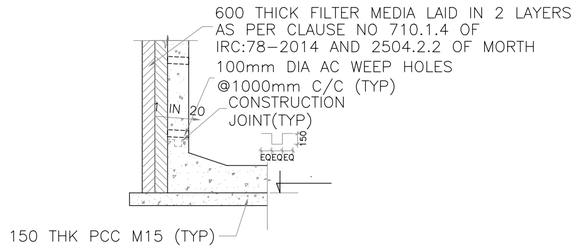
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05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	**Designed by**	**Approved by**	**Sheets**
G:MNB-DBC-02B	SWAROOP	SHIVAKUMARI	01 OF 02

CLIENT	NATIONAL HIGHWAY DIVISION, RAJKOT DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT RAJKOT-360 001, GUJARAT
PROJECT	CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT
	GAD PROPOSED FOR DOUBLE CELL MINOR BRIDGE
Plot Size : (A2 Size)	DRG.NO : G:MNB-DBC-02B

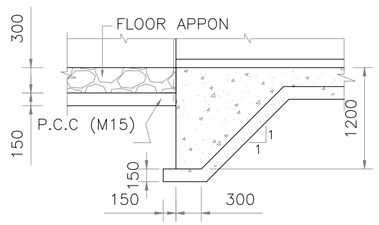
SECON



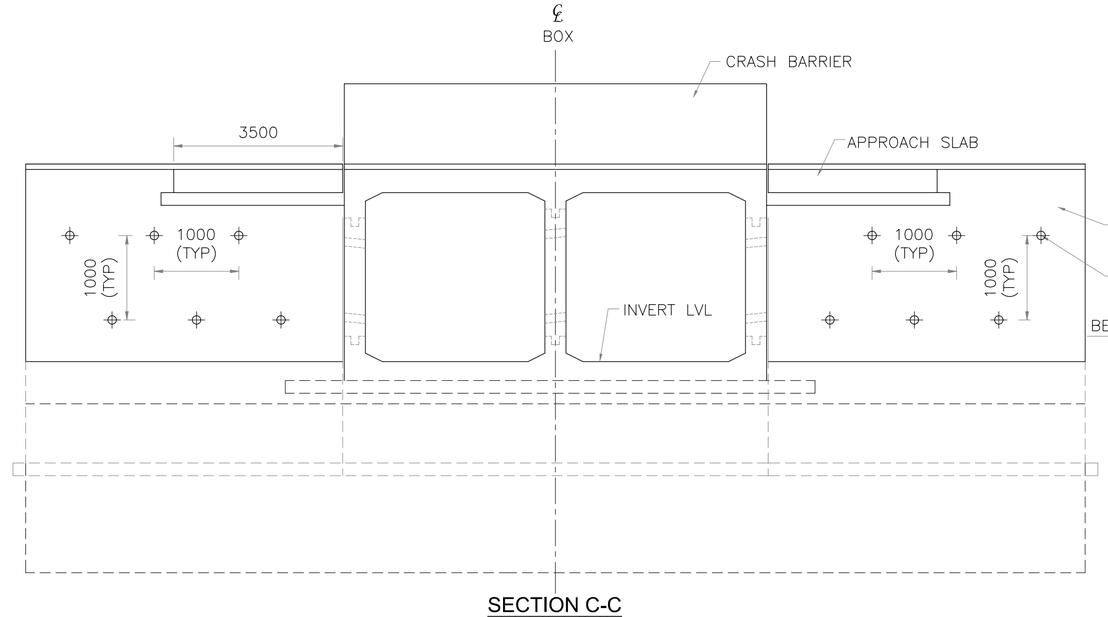
SECTION B-B
(SCALE 1:50)



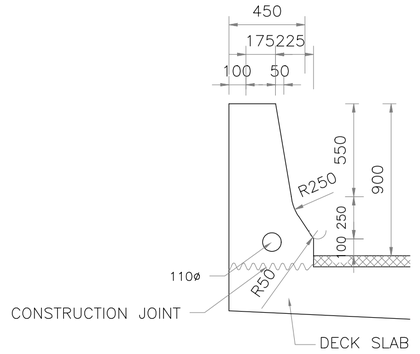
DETAIL - X
(SCALE 1:50)



DETAIL - D
(SCALE 1:50)



SECTION C-C
(SCALE 1:50)



CRASH BARRIER
(SCALE 1:25)

Sl.No	Design Chainage (km)	FRL (m)	OGL (m)	Foundation level (m)	Soffit level (m)	Invert Level (m)	Span Arangement (m)	Wearing coat thickness (m)	a (m)	b (m)	c (m)	d (m)	e (m)	f (m)	g (m)	remarks	SBC (t/sqm)
1	25.420	217.270	211.11	204.96	210.36	205.36	2 x 6 x 5	0.065	6.00	5.00	0.60	0.55	0.55	0.30	0.15	Newconstruction	55 CONSIDERED FROM NEAREST STRUCTURE KM 24.960 (NOTE: 11 & 12 REFERS)

SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M-30.
3. GRADE OF CONCRETE FOR CRASH BARRIER SHALL BE M-40.
4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN m UNLESS SPECIFIED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY.
3. GRADE OF CONCRETE FOR BOX STRUCTURE M-30, P.C.C SHALL BE M-15 AND CRASH BARRIER AS M-40 UNLESS MENTIONED OTHERWISE.
4. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATION FOR ROADS AND BRIDGE WORKS OF MORTH (5th REVISION).
5. BOX STRUCTURE SHALL BE PLACED OVER A FIRM STRATA TO THE SATISFACTION OF ENGINEER. LOOSE OR SOFT PATCHES SHALL BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL, COMPACTED TO 98% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 200mm COMPACTED THICKNESS. THE SBC OF THE COMPACTED LAYER SHALL NOT BE LESS THAN THE BASE PRESSURE INDICATED.
6. THE PAVEMENT THICKNESS OVER THE BOX SHALL BE THE SAME AS PROVIDED FOR CARRIAGEWAY THIS SHALL BE CONSIDERED IN ALL CASES OF CUSHION.
7. SBC SHOULD BE VERIFIED BEFORE EXECUTION.
8. THE NEW JOINT SHOULD BE DONE AS PER SECTION CLAUSE 2900 (2904) OF MORTH SPECIFICATION AND AS PER THE DIRECTION OF ENGINEER-IN-CHARGE.
9. THE SOIL IMPROVEMENT SHALL BE CARRIEDOUT FOR FOUNDATION IN CONSULTATION WITH ENGINEER INCHARGE.

IMPORTANT:

10. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT THE LOCATIONS MENTIONED IN TABLE NOT APPROVED BY EE, RAJKOT, R&B.
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FDPR

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	FINAL DETAILED PROJECT REPORT	GS	LP	SK
2	06.02.25	Revised as per directions issued during meeting with SE, MORTH on 09.01.25 & 13.01.25	GS	LP	SK
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0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: G:MNB-DBC-02B	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 02 OF 02

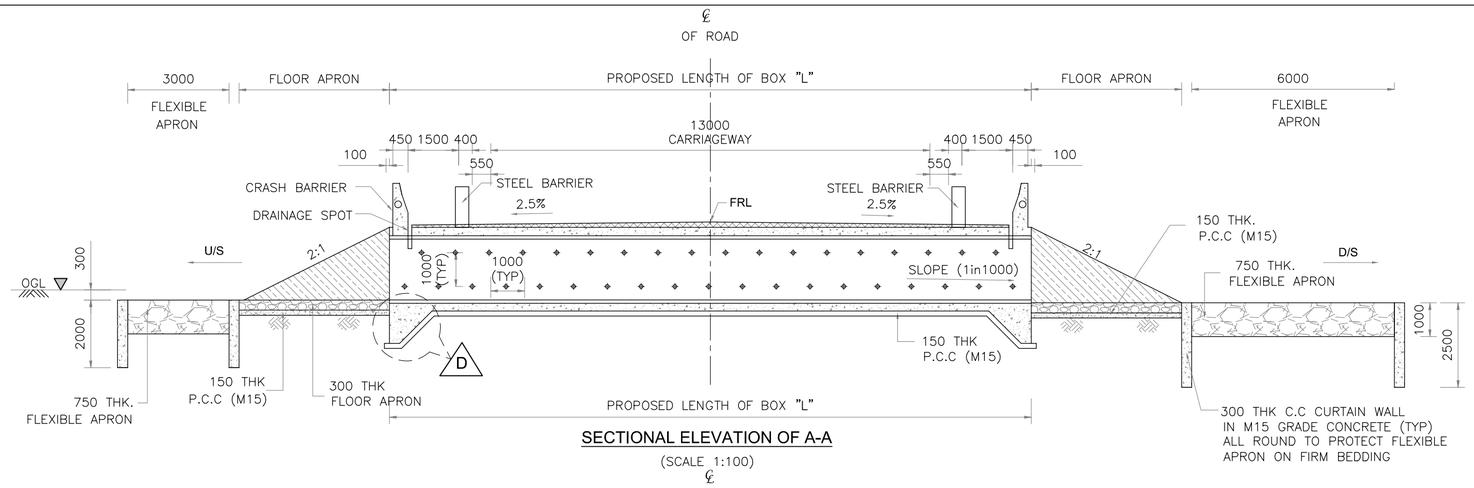
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

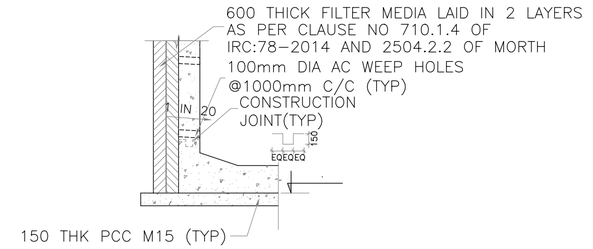
GAD PROPOSED FOR DOUBLE CELL MINOR BRIDGE

Plot Size : (A2 Size) | DRG.NO : G: MNB-DBC-02B



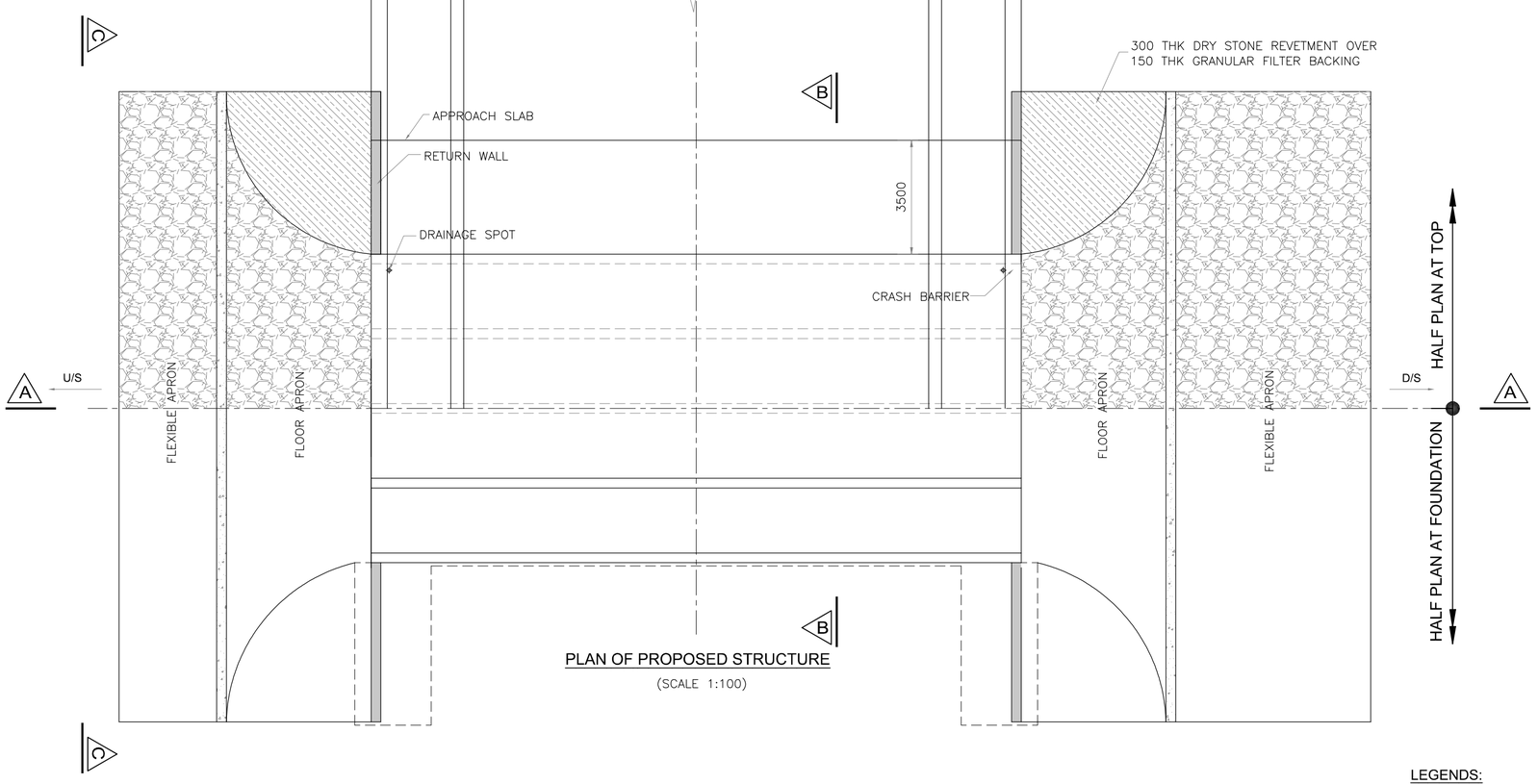
SECTIONAL ELEVATION OF A-A

(SCALE 1:100)



DETAIL - X

(SCALE 1:50)



PLAN OF PROPOSED STRUCTURE

(SCALE 1:100)

SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M-30.
3. GRADE OF CONCRETE FOR CRASH BARRIER SHALL BE M-40.
4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN m UNLESS SPECIFIED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY.
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6. THE PAVEMENT THICKNESS OVER THE BOX SHALL BE THE SAME AS PROVIDED FOR CARRIAGEWAY THIS SHALL BE CONSIDERED IN ALL CASES OF CUSHION.
7. SBC SHOULD BE VERIFIED BEFORE EXECUTION.
8. THE NEW JOINT SHOULD BE DONE AS PER SECTION CLAUSE 2900 (2904) OF MORTH SPECIFICATION AND AS PER THE DIRECTION OF ENGINEER-IN-CHARGE.
9. THE SOIL IMPROVEMENT SHALL BE CARRIEDOUT FOR FOUNDATION IN CONSULTATION WITH ENGINEER INCHARGE.

IMPORTANT:

6. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT CHAINAGE KM 23.510 NOT APPROVED BY EE, RAJKOT, R&B.
7. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGE AT CHANAGE KM 23.510.
8. CONSIDERING NOTE 6 & 7 ABOVE, SBC AT CHAINAGE KM 22.935 (EARLIER APPROVED REALIGNMENT) CONSIDERED IN THE DESIGN.
9. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC AT CHAINAGE KM 23.510. ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE SHOULD BE RE-DESIGNED, AS PER SBC AT CHAINAGE KM 23.510.

LEGENDS:

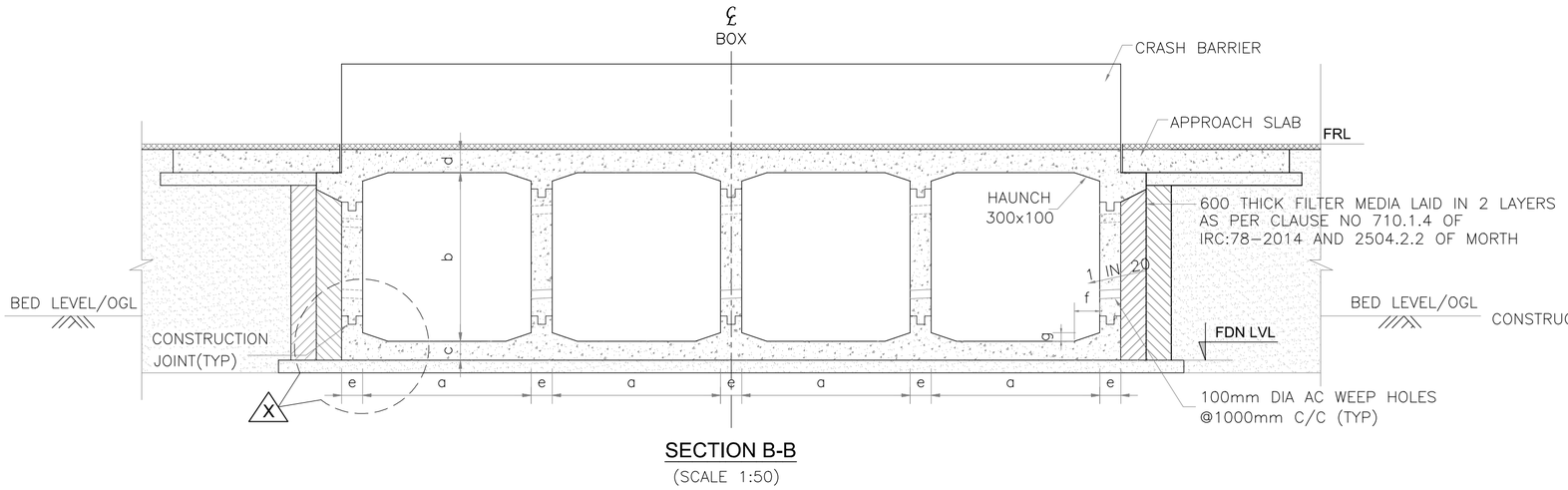
1. U/S : UPSTREAM
2. D/S : DOWN STREAM
3. TYP : TYPICAL
4. O.G.L : ORIGINAL GROUND LEVEL
5. FRL : FINISHED ROAD LEVEL
6. SBC :SAFE BEARING CAPACITY

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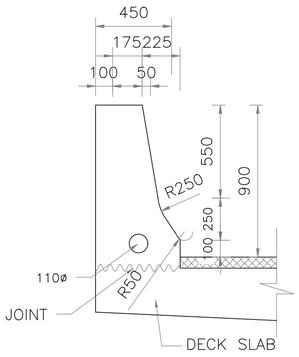
Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: G:MNB-FOBC-03	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 01 OF 02

FDPR

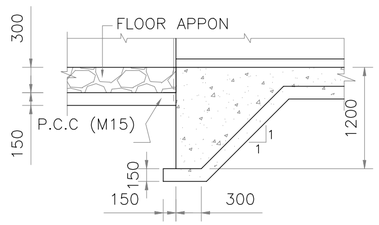
CLIENT	NATIONAL HIGHWAY DIVISION, RAJKOT DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT RAJKOT-360 001, GUJARAT
PROJECT	CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT
SECON	GAD PROPOSED FOR FOUR CELL MINOR BRIDGE
Plot Size : (A2 Size)	DRG.NO : G:MNB-FOBC-03



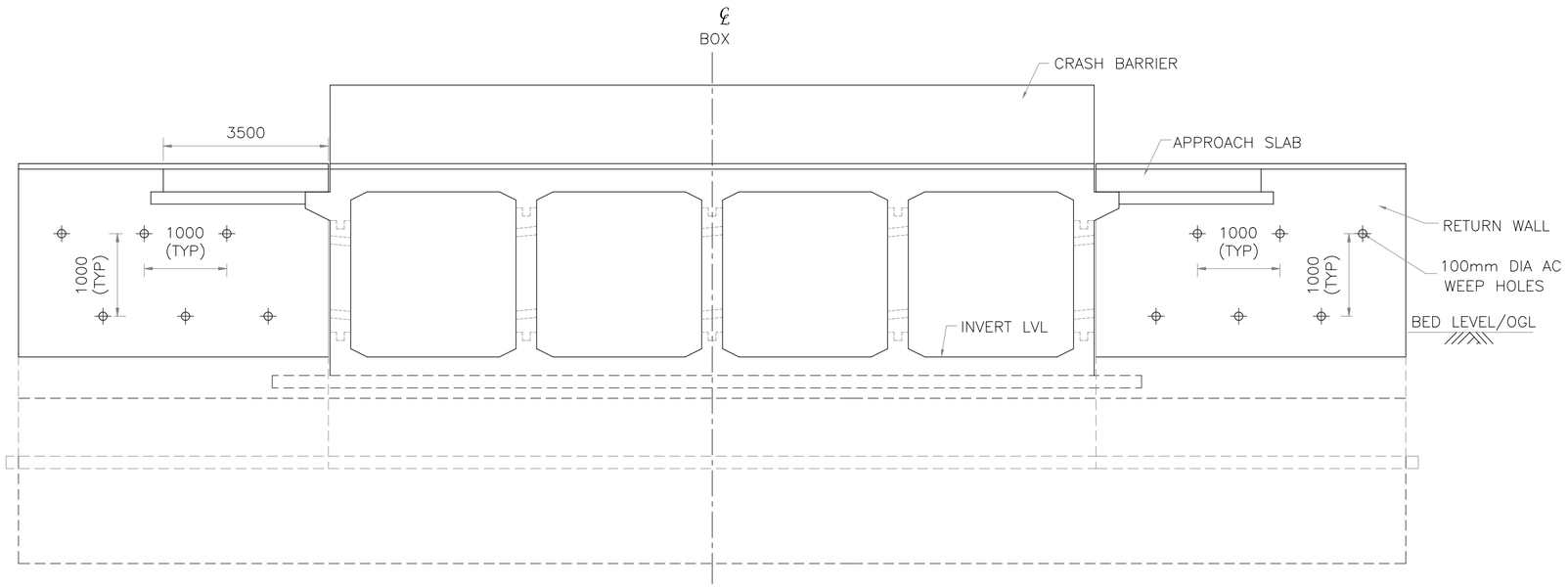
SECTION B-B
(SCALE 1:50)



CRASH BARRIER
(SCALE 1:25)



DETAIL - D
(SCALE 1:50)



SECTION C-C
(SCALE 1:50)

Sl.No	Design Chainage (km)	FRL (m)	OGL (m)	Foundation level (m)	Soffit level (m)	Invert Level (m)	Span Arangement (m)	Wearing coat thickness (m)	a (m)	b (m)	c (m)	d (m)	e (m)	f (m)	g (m)	ht of fill (m)	remarks
1	23.510	229.823	223.63	219.01	223.41	219.41	4 x 5 x 3.5	0.065	5.00	3.500	0.50	0.45	0.45	0.30	0.30	6.20	Newconstruction

SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M–30.
3. GRADE OF CONCRETE FOR CRASH BARRIER SHALL BE M–40.
4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

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2. FOLLOW WRITTEN DIMENSIONS ONLY.
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6. THE PAVEMENT THICKNESS OVER THE BOX SHALL BE THE SAME AS PROVIDED FOR CARRIAGEWAY THIS SHALL BE CONSIDERED IN ALL CASES OF CUSHION.
7. SBC SHOULD BE VERIFIED BEFORE EXECUTION.
8. THE NEW JOINT SHOULD BE DONE AS PER SECTION CLAUSE 2900 (2904) OF MORTH SPECIFICATION AND AS PER THE DIRECTION OF ENGINEER–IN–CHARGE.
9. THE SOIL IMPROVEMENT SHALL BE CARRIEDOUT FOR FOUNDATION IN CONSULTATION WITH ENGINEER INCHARGE.

IMPORTANT:

6. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT CHAINAGE KM 23.510 NOT APPROVED BY EE, RAJKOT, R&B.
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9. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC AT CHAINAGE KM 23.510. ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE SHOULD BE RE–DESIGNED, AS PER SBC AT CHAINAGE KM 23.510.

FDPR

No	DATE	REVISIONS	BY	CHKD	APPD
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Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: G:MNB–FOBC–03	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 02 OF 02

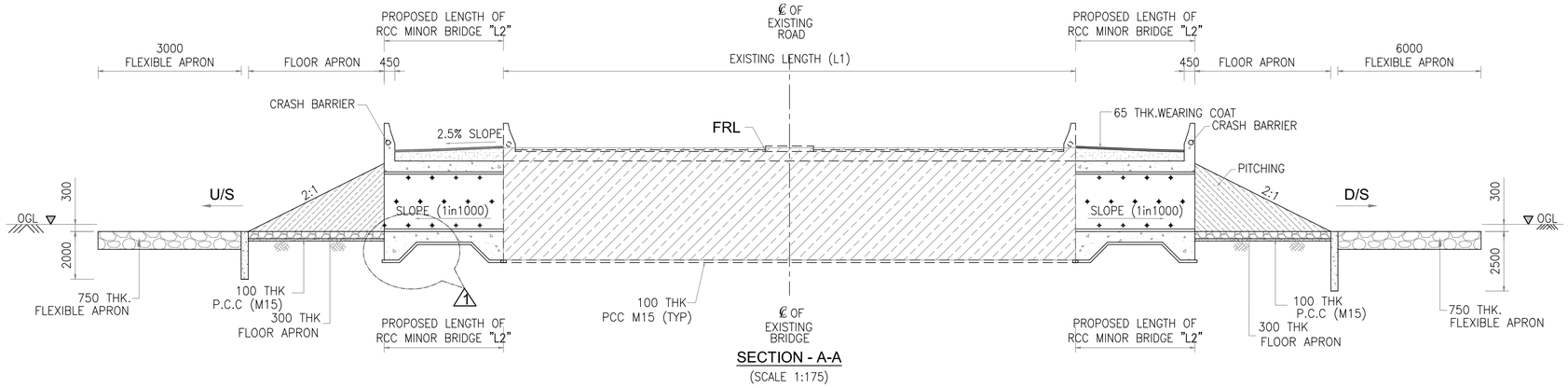
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON™

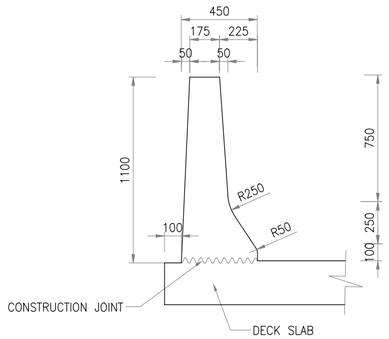
GAD PROPOSED FOR FOUR CELL MINOR BRIDGE

Plot Size : (A2 Size) | DRG.NO : G:MNB–FOBC–03



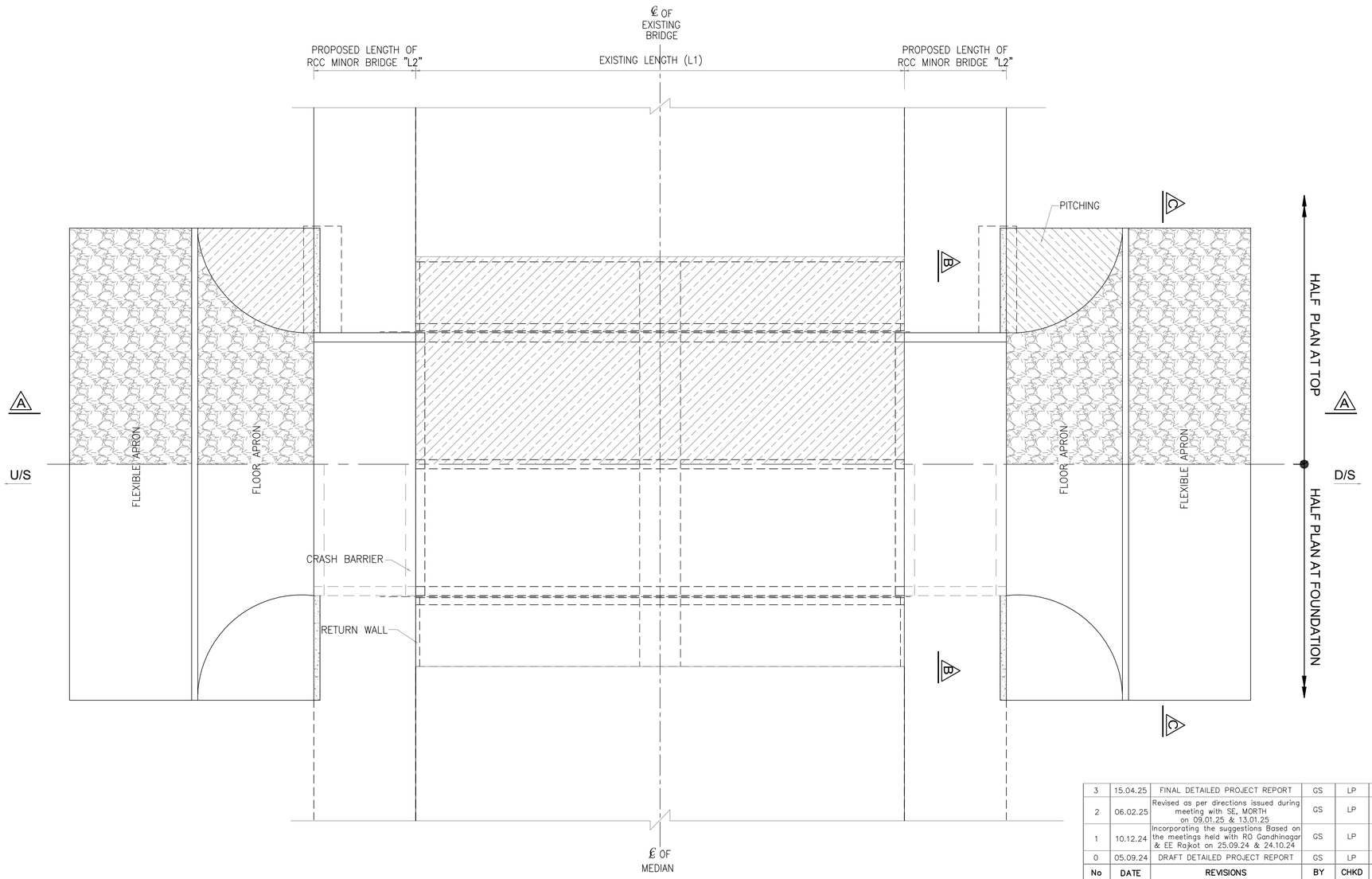
SECTION - A-A

(SCALE 1:175)



CRASH BARRIER

(SCALE 1:25)



PLAN OF EXISTING BRIDGE WITH PROPOSED BOX TYPE MINOR BRIDGE A-A

(SCALE 1:175)

LEGEND:-

1. U/S : UP-STREAM
2. D/S : DOWN-STREAM
3. TYP : TYPICAL
4. OGL : ORIGINAL GROUND LEVEL/BED LEVEL
5. FRL : FINALISED/FINAL ROAD LEVEL
6. FDN : FOUNDATION LEVEL
7. SBC : SAFE BEARING CAPACITY

SPECIFICATIONS:-

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FDPR

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	FINAL DETAILED PROJECT REPORT	GS	LP	SK
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1	10.12.24	Incorporating the suggestions Based on the meetings held with RO Gandhinagar & EE Rajkot on 25.09.24 & 24.10.24	GS	LP	SK
0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: TYP-G:MNB-DBC-02	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 01 OF 02

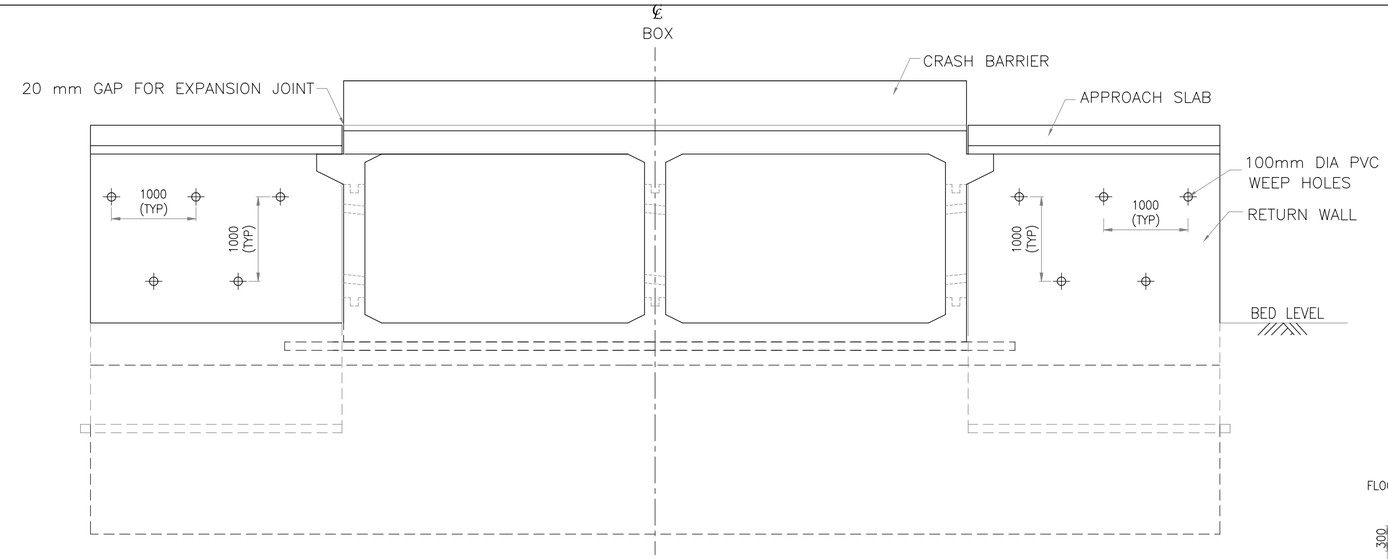
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

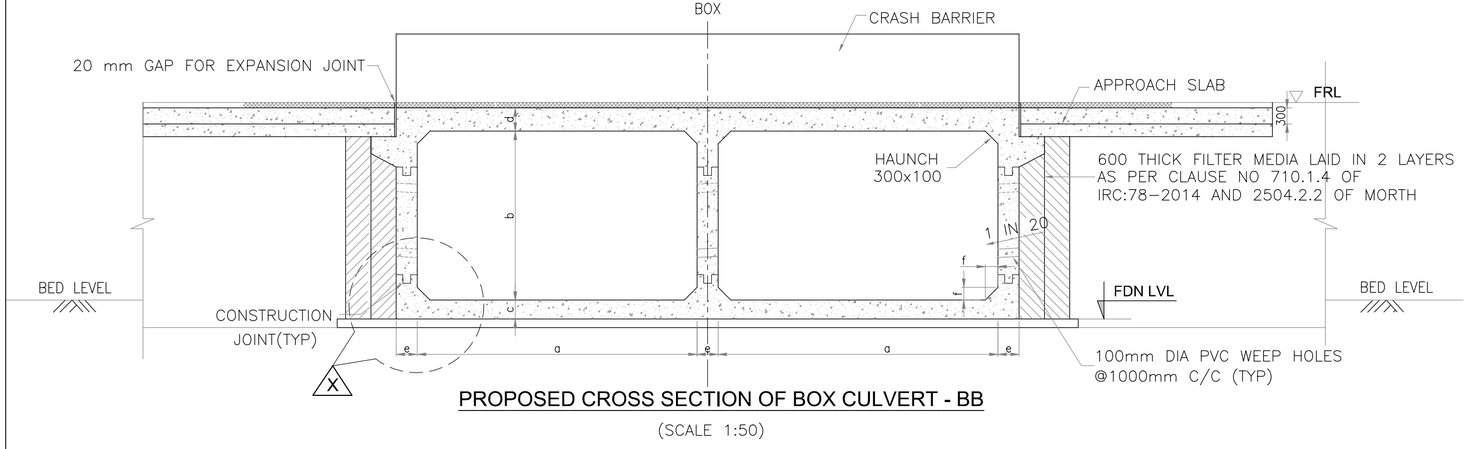
TYPICAL GAD PROPOSED FOR DOUBLE CELL MINOR BRIDGE (WIDENING)

Plot Size : (A2 Size) | DRG.NO : TYP-G:MNB-DBC-02



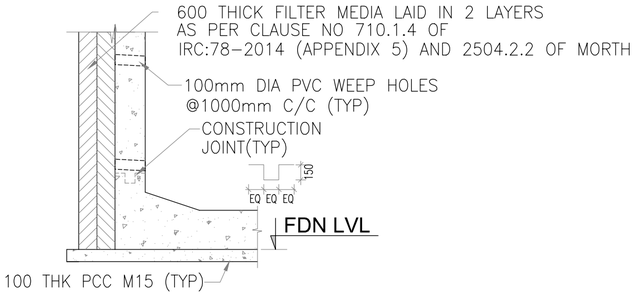
PROPOSED CROSS SECTION OF BOX CULVERT - CC

(SCALE 1:50)



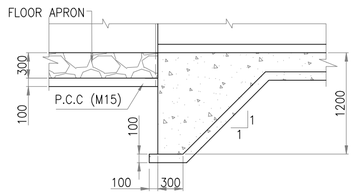
PROPOSED CROSS SECTION OF BOX CULVERT - BB

(SCALE 1:50)



DETAIL - 2

(SCALE 1:50)



DETAIL - 1

(SCALE 1:50)

Sl.No	Design Chainage (km)	FRL (m)	OGL (m)	Foundation level (m)	Soffit level (m)	Invert Level (m)	Span Arangement (m)	Wearing coat thickness (m)	a (m)	b (m)	c (m)	d (m)	e (m)	f (m)	g (m)	remarks	SBC (t/sqm)
1	42.895	246.300	243.54	242.39	244.99	242.79	2 x 5 x 2.2	0.065	5.00	2.20	0.50	0.45	0.45	0.30	0.15	widening	55 CONSIDERED FROM NEAREST STRUCTURE KM 26.360 (NOTE: 11 & 12 REFERS)
2	46.065	256.468	253.70	252.55	255.15	252.95	2 x 6 x 2.2	0.065	6.00	2.20	0.60	0.55	0.55	0.30	0.15	widening	
3	75.420	146.678	143.41	142.26	145.36	142.66	2 x 4 x 2.7	0.065	4.00	2.70	0.40	0.35	0.35	0.30	0.15	widening	55 CONSIDERED FROM NEAREST STRUCTURE KM 90.340 (NOTE: 11 & 12 REFERS)

LEGEND:-

1. U/S : UP-STREAM
2. D/S : DOWN-STREAM
3. TYP : TYPICAL
4. OGL : ORIGINAL GROUND LEVEL/BED LEVEL
5. FRL : FINALISED/FINAL ROAD LEVEL
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SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M-30.
3. GRADE OF CONCRETE FOR CRASH BARRIER SHALL BE M-40.
4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN m UNLESS SPECIFIED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY.
3. GRADE OF CONCRETE FOR BOX STRUCTURE M-30, P.C.C SHALL BE M-15 AND CRASH BARRIER AS M-40 UNLESS MENTIONED OTHERWISE.
4. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATION FOR ROADS AND BRIDGE WORKS OF MORTH (5th REVISION).
5. BOX STRUCTURE SHALL BE PLACED OVER A FIRM STRATA TO THE SATISFACTION OF ENGINEER. LOOSE OR SOFT PATCHES SHALL BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL, COMPACTED TO 98% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 200mm COMPACTED THICKNESS. THE SBC OF THE COMPACTED LAYER SHALL NOT BE LESS THAN THE BASE PRESSURE INDICATED.
6. THE PAVEMENT THICKNESS OVER THE BOX SHALL BE THE SAME AS PROVIDED FOR CARRIAGEWAY THIS SHALL BE CONSIDERED IN ALL CASES OF CUSHION.
7. SBC SHOULD BE VERIFIED BEFORE EXECUTION.
8. THE NEW JOINT SHOULD BE DONE AS PER SECTION CLAUSE 2900 (2904) OF MORTH SPECIFICATION AND AS PER THE DIRECTION OF ENGINEER-IN-CHARGE.
9. THE SOIL IMPROVEMENT SHALL BE CARRIEDOUT FOR FOUNDATION IN CONSULTATION WITH ENGINEER INCHARGE.

IMPORTANT:

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Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	**Designed by**	**Approved by**	**Sheets**
TYP-G:MNB-DBC-02	SWAROOP	SHIVAKUMARI	02 OF 02

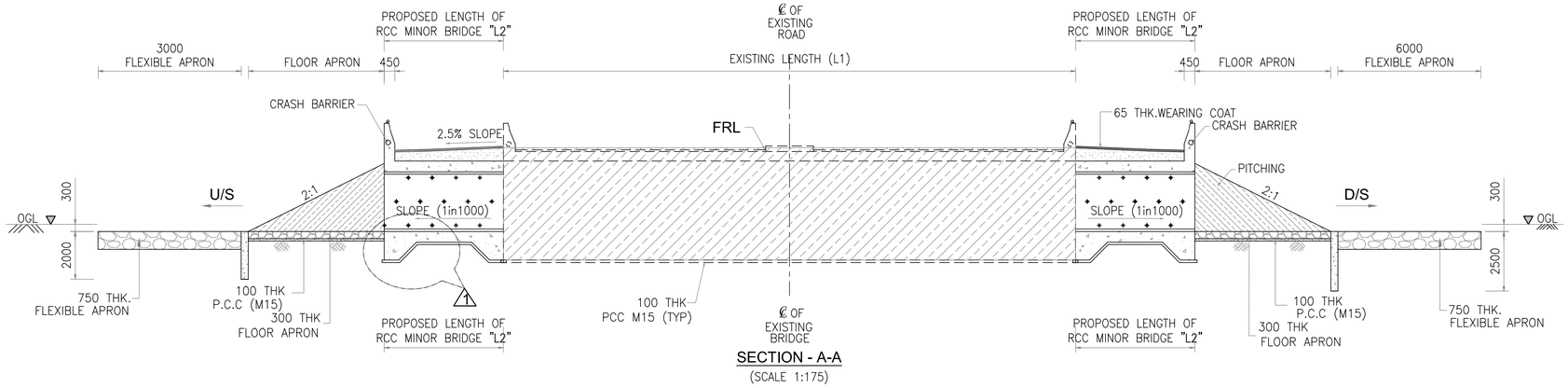
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
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SECON

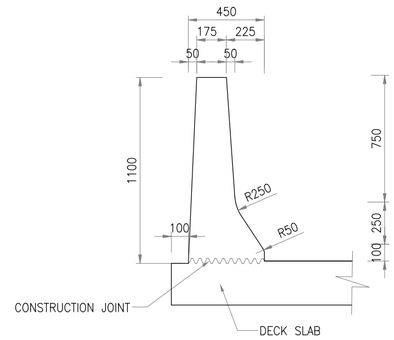
TYPICAL GAD PROPOSED FOR DOUBLE CELL MINOR BRIDGE (WIDENING)

Plot Size : (A2 Size) | DRG.NO : TYP-G:MNB-DBC-02



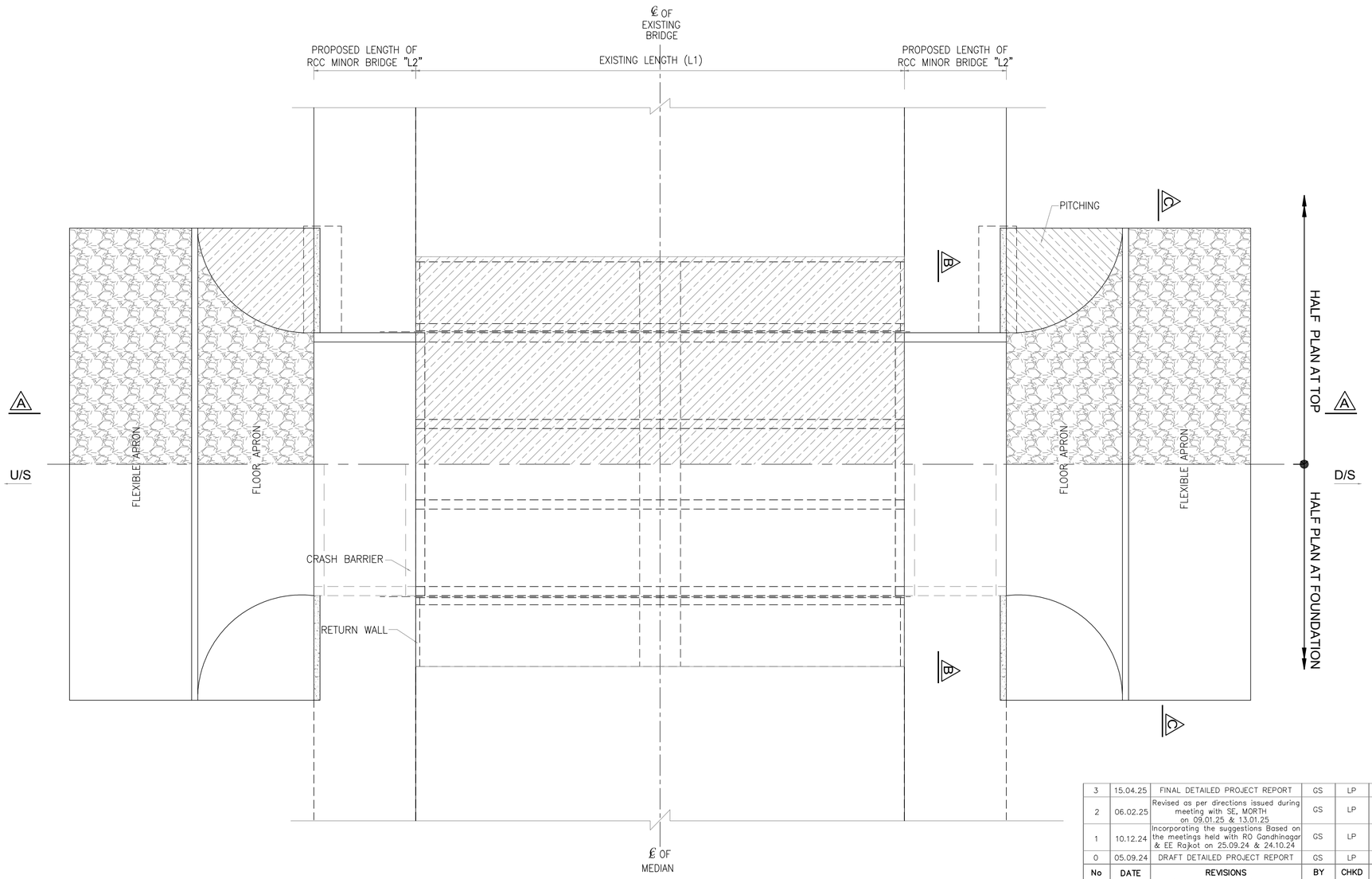
SECTION - A-A

(SCALE 1:175)



CRASH BARRIER

(SCALE 1:25)



PLAN OF EXISTING BRIDGE WITH PROPOSED BOX TYPE MINOR BRIDGE A-A

(SCALE 1:175)

LEGEND:-

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2. D/S : DOWN-STREAM
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NOTES:

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2. FOLLOW WRITTEN DIMENSIONS ONLY.
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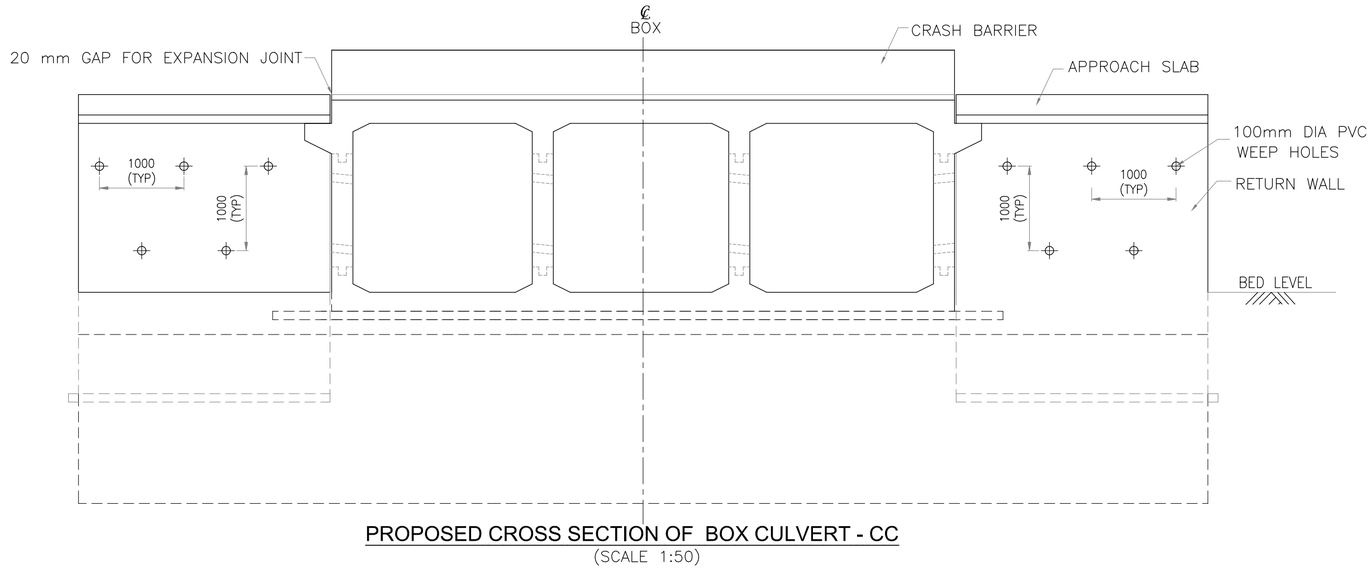
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
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PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

TYPICAL GAD PROPOSED FOR THREE CELL MINOR BRIDGE (WIDENING)

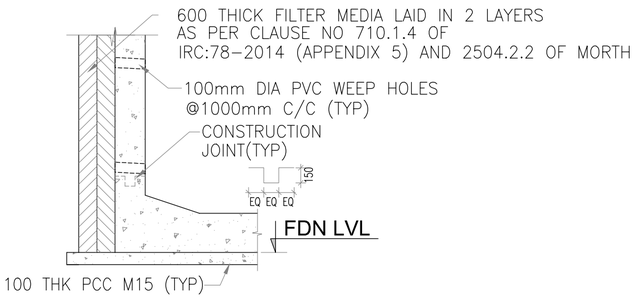
SECON

Plot Size : (A2 Size) | DRG.NO : TYP-G:MNB-TBC-02



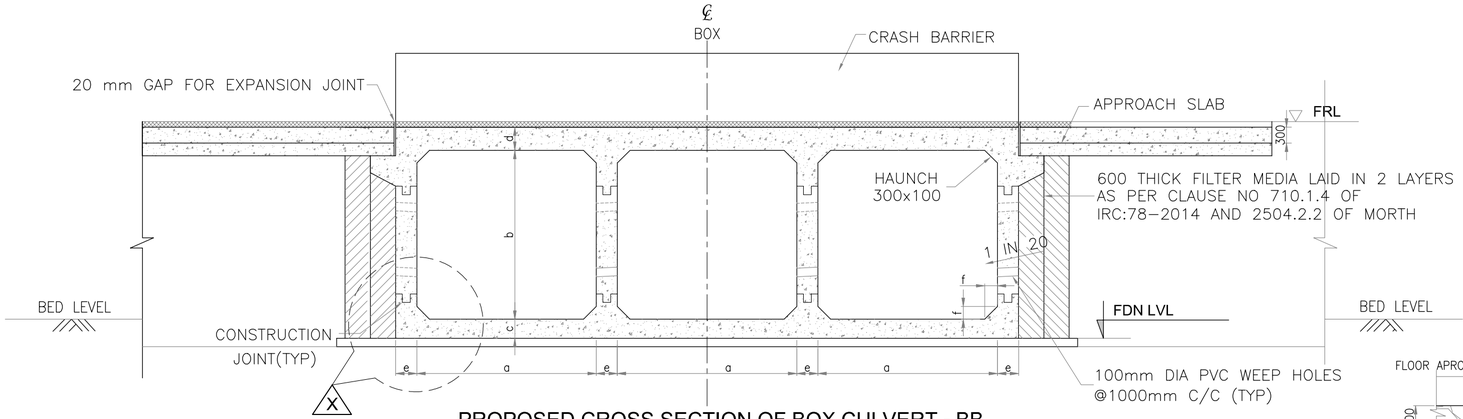
PROPOSED CROSS SECTION OF BOX CULVERT - CC

(SCALE 1:50)



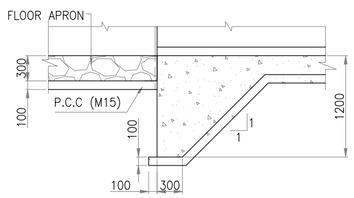
DETAIL - 2

(SCALE 1:50)



PROPOSED CROSS SECTION OF BOX CULVERT - BB

(SCALE 1:50)



DETAIL - 1

(SCALE 1:50)

Sl.No	Design Chainage (km)	FRL (m)	OGL (m)	Foundation level (m)	Soffit level (m)	Invert Level (m)	Span Arangement (m)	Wearing coat thickness (m)	a (m)	b (m)	c (m)	d (m)	e (m)	f (m)	g (m)	remarks	SBC (t/sqm)
1	3.150	151.897	148.33	147.18	150.58	147.58	3 x 5 x 3	0.065	5.00	3.00	0.50	0.45	0.45	0.30	0.15	widening	55 CONSIDERED FROM NEAREST STRUCTURE KM 0.540 (NOTE: 11 & 12 REFERS)
2	45.540	255.534	251.47	250.32	254.22	250.72	3 x 7 x 3.5	0.065	7.00	3.50	0.70	0.65	0.65	0.30	0.15	widening	55 CONSIDERED FROM NEAREST STRUCTURE KM 26.360 (NOTE: 11 & 12 REFERS)
3	81.500	111.000	107.04	105.89	109.69	106.29	3 x 4 x 3.4	0.065	4.00	3.40	0.40	0.35	0.35	0.30	0.15	widening	55 CONSIDERED FROM NEAREST STRUCTURE KM 90.340 (NOTE: 7 & 8 REFERS)

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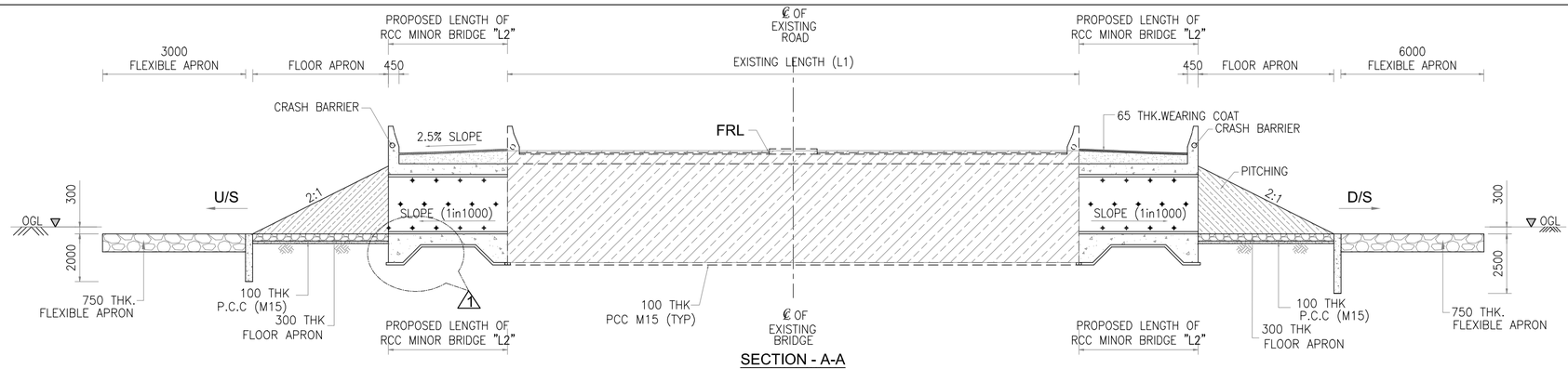
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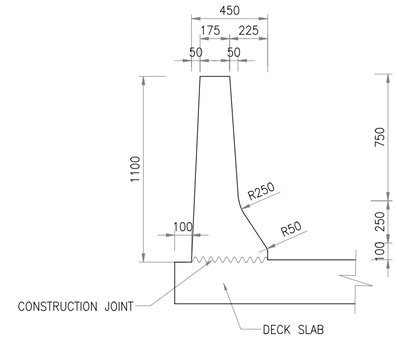
Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	**Designed by**	**Approved by**	**Sheets**
TYP-G:MNB-TBC-02	SWAROOP	SHIVAKUMARI	02 OF 02

CLIENT	NATIONAL HIGHWAY DIVISION, RAJKOT DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT RAJKOT-360 001, GUJARAT
PROJECT	CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT
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Plot Size : (A2 Size)	DRG.NO : TYP-G:MNB-TBC-02



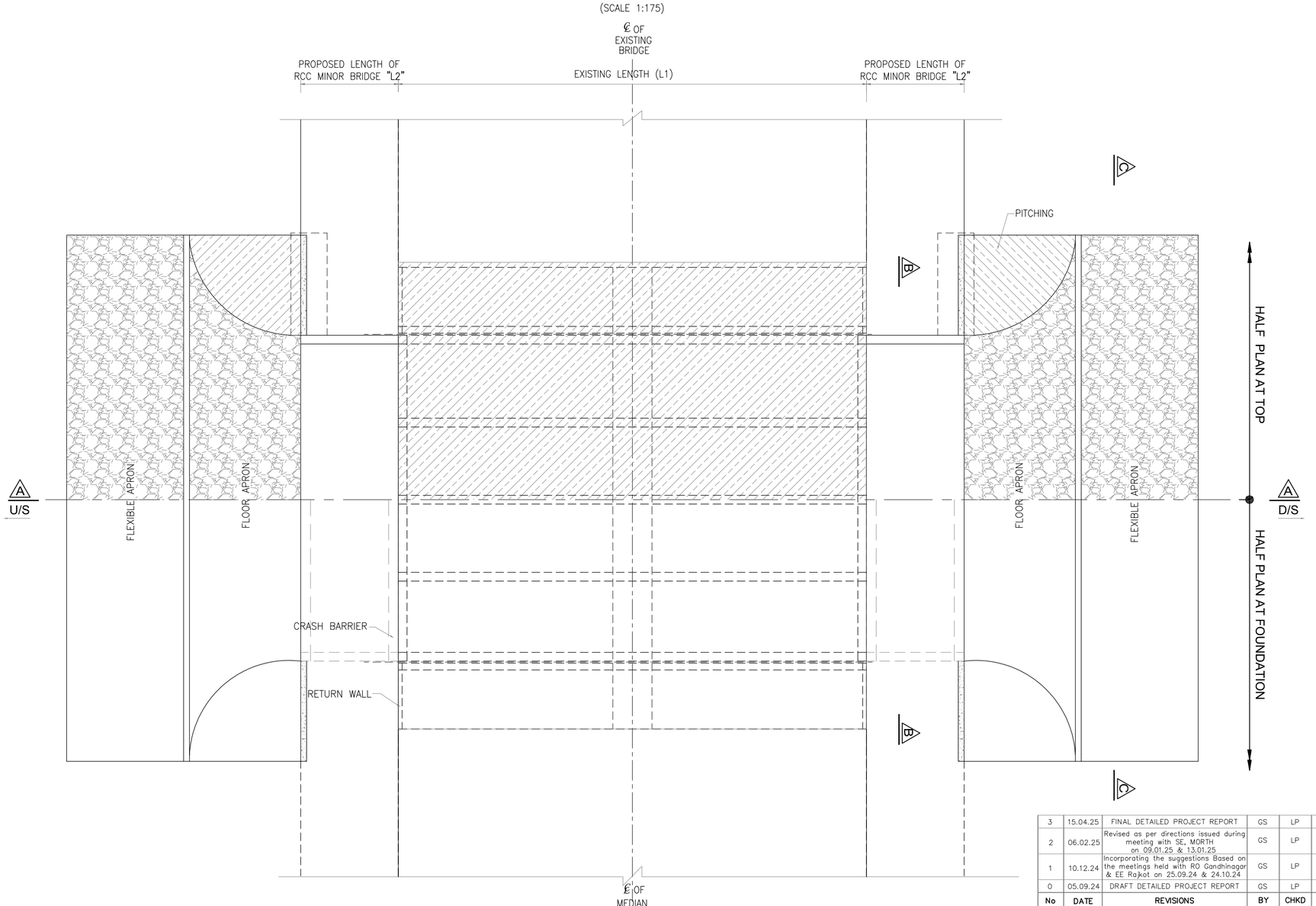
SECTION - A-A

(SCALE 1:175)



CRASH BARRIER

(SCALE 1:25)



PLAN OF EXISTING BRIDGE WITH PROPOSED BOX TYPE MINOR BRIDGE A-A

(SCALE 1:175)

LEGEND:-

1. U/S : UP-STREAM
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5. BOX STRUCTURE SHALL BE PLACED OVER A FIRM STRATA TO THE SATISFACTION OF ENGINEER. LOOSE OR SOFT PATCHES SHALL BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL, COMPACTED TO 98% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 200mm COMPACTED THICKNESS. THE SBC OF THE COMPACTED LAYER SHALL NOT BE LESS THAN THE BASE PRESSURE INDICATED.
6. THE PAVEMENT THICKNESS OVER THE BOX SHALL BE THE SAME AS PROVIDED FOR CARRIAGEWAY THIS SHALL BE CONSIDERED IN ALL CASES OF CUSHION.
7. SBC SHOULD BE VERIFIED BEFORE EXECUTION.
8. THE NEW JOINT SHOULD BE DONE AS PER SECTION CLAUSE 2900 (2904) OF MORTH SPECIFICATION AND AS PER THE DIRECTION OF ENGINEER-IN-CHARGE.
9. THE SOIL IMPROVEMENT SHALL BE CARRIEDOUT FOR FOUNDATION IN CONSULTATION WITH ENGINEER INCHARGE.

IMPORTANT:

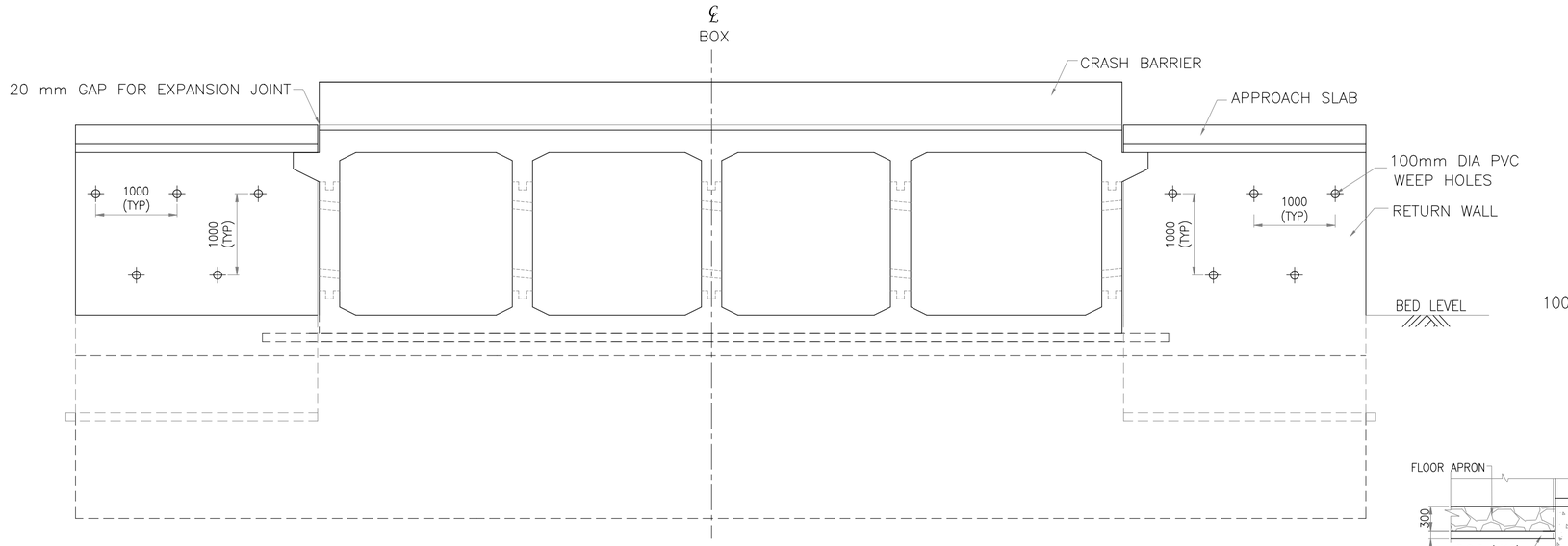
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FDPR

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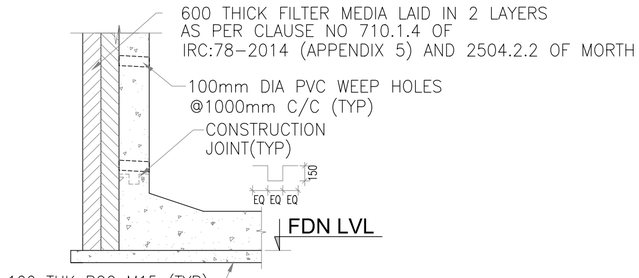
Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	**Designed by**	**Approved by**	**Sheets**
TYP-G:MNB-FOBC-04	SWAROOP	SHIVAKUMARI	01 OF 02

CLIENT	NATIONAL HIGHWAY DIVISION, RAJKOT DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT RAJKOT-360 001, GUJARAT
PROJECT	CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT
SECON	TYPICAL GAD PROPOSED FOR FOUR CELL MINOR BRIDGE (WIDENING)
Plot Size : (A2 Size)	DRG.NO : TYP-G:MNB-FOBC-04



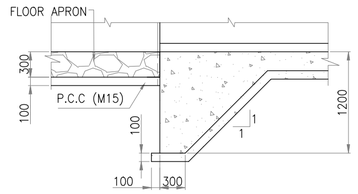
PROPOSED CROSS SECTION OF BOX CULVERT - CC

(SCALE 1:50)



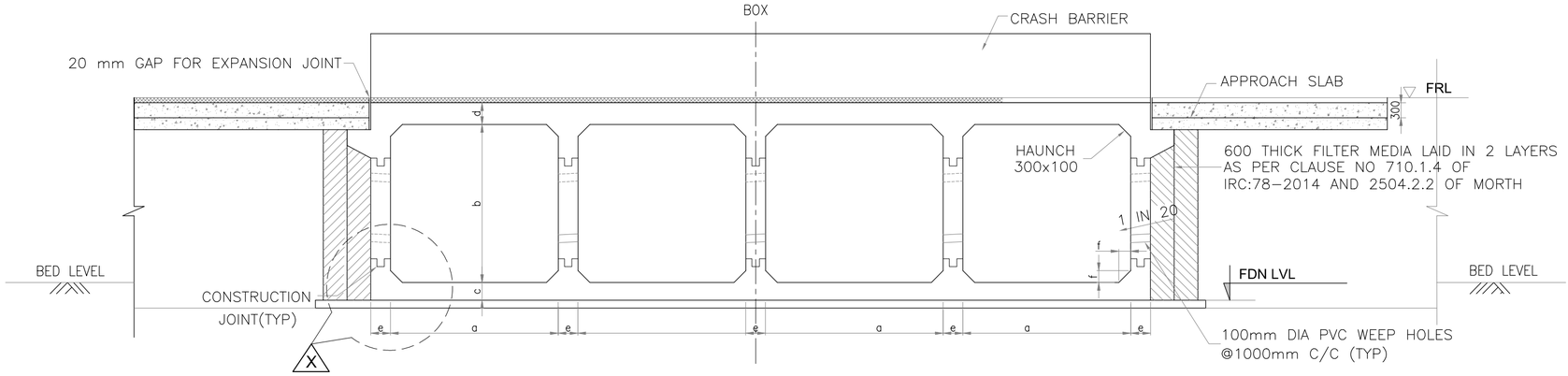
DETAIL - 2

(SCALE 1:50)



DETAIL - 1

(SCALE 1:50)



PROPOSED CROSS SECTION OF BOX CULVERT - BB

(SCALE 1:50)

Sl.No	Design Chainage (km)	FRL (m)	OGL (m)	Foundation level (m)	Soffit level (m)	Invert Level (m)	Span Arangement (m)	Wearing coat thickness (m)	a (m)	b (m)	c (m)	d (m)	e (m)	f (m)	g (m)	remarks	SBC (t/sqm)
1	19.720	211.149	207.08	205.93	209.83	206.33	4 x 3.5 x 3.5	0.065	3.50	3.500	0.40	0.35	0.35	0.30	0.30	widening	55 CONSIDERED FROM NEAREST STRUCTURE KM 22.935 (NOTE: 11 & 12 REFERS)
2	68.560	197.996	194.83	193.68	196.68	194.08	4 x 3 x 2.6	0.065	3.50	3.500	0.30	0.30	0.30	0.30	0.30	widening	55 CONSIDERED FROM NEAREST STRUCTURE KM 90.340 (NOTE: 11 & 12 REFERS)

LEGEND:-

1. U/S : UP-STREAM
2. D/S : DOWN-STREAM
3. TYP : TYPICAL
4. OGL : ORIGINAL GROUND LEVEL/BED LEVEL
5. FRL : FINALISED/FINAL ROAD LEVEL
6. FDN : FOUNDATION LEVEL
7. SBC : SAFE BEARING CAPACITY

SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M-30.
3. GRADE OF CONCRETE FOR CRASH BARRIER SHALL BE M-40.
4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN m UNLESS SPECIFIED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY.
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CLIENT

NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

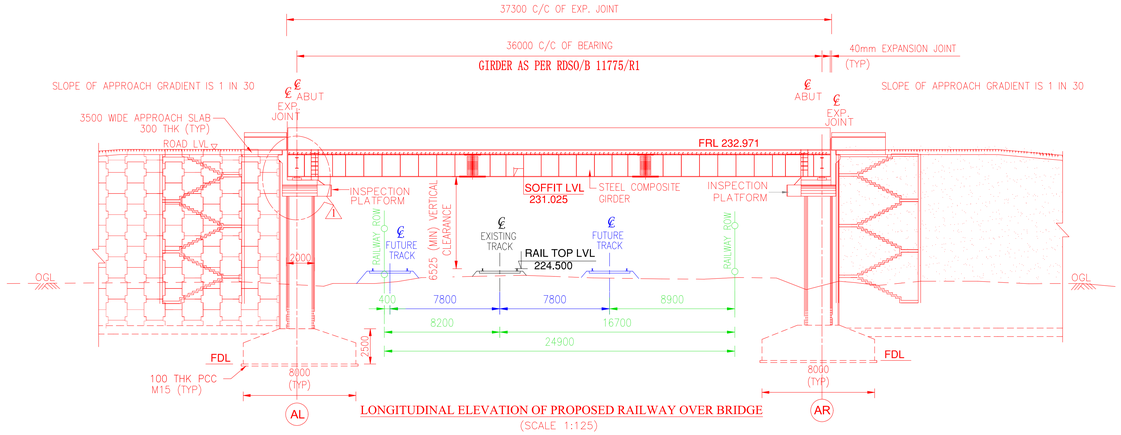
PROJECT

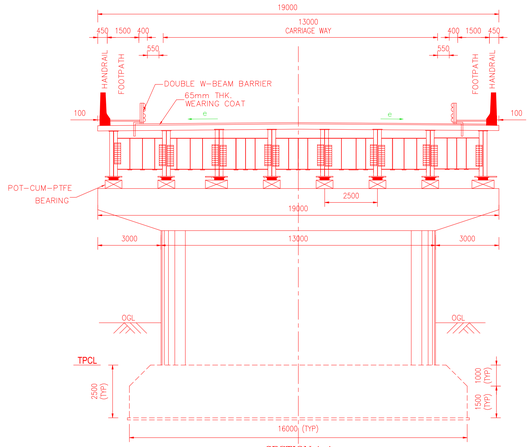
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SECON

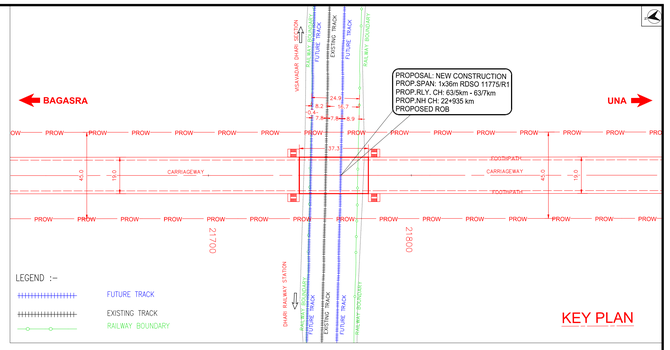
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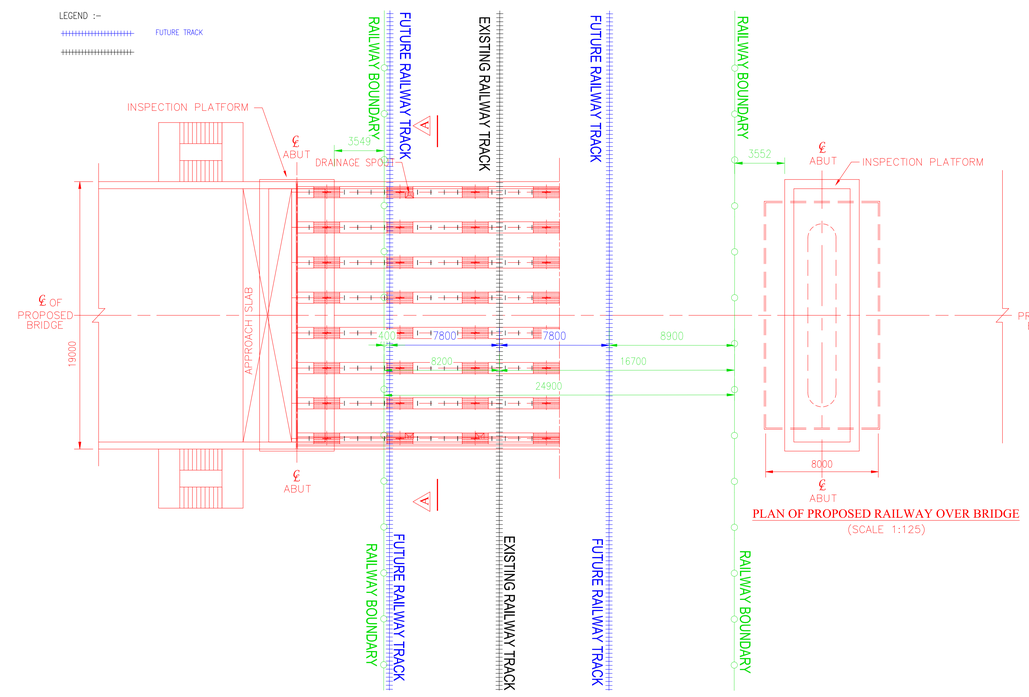
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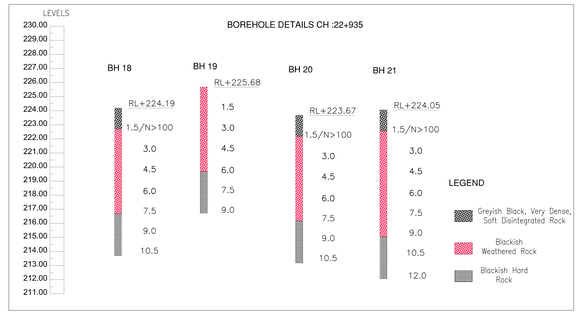


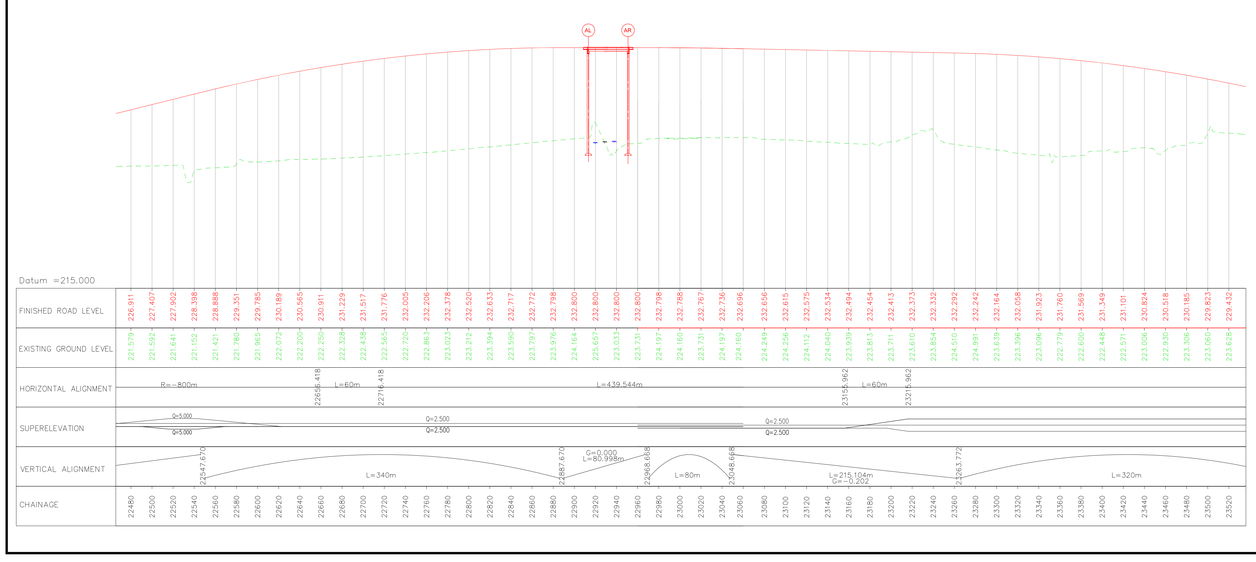


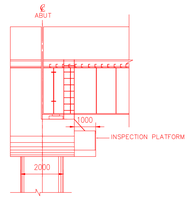
CROSS SECTIONS OF RAILWAY SPAN

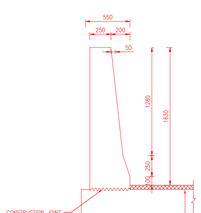












HIGH CONTAINMENT CRASH BARRIER REF.IRC:SP:5-2015,Fig.3
(SCALE 1:25)

DEPTH OF CONSTRUCTION	
DESCRIPTION	37.30m SPAN
WEARING COAT (mm)	65
DECK SLAB (mm)	250
GIRDER (mm)	1631
BEARING+BEARING PEDESTAL (mm)	450

MINIMUM GRADE OF CONCRETE	
i) FOUNDATION	M35
ii) SUB STRUCTURE	M35
iii) PRECAST PSC I GIRDER,DECK SLAB	M40
iv) DECK SLAB (RAILWAY SPAN)	M45
v) CRASH BARRIER	M40
vi) APPROACH SLAB	M30
vii) PCC	M15

TECHNICAL DETAILS

LATITUDE/LONGITUDE	– 21.335767, 70.999834
TRACK ON SINGLE/DOUBLE LINE	– SINGLE
BRIDGE ON UP/LINE/DN LINE	– BOTH
RAIL LEVEL	– RL=224.500MTR
FORMATION LEVEL ON APPROACHES	– RL=232.971MTR
BED LEVEL	– NA
VERTICAL CLEARANCE	– 6.525 MTR
STANDARD OF LOADING	– 2 LANE OF CLASS A LOADING, FOOTPATH LOADING AS PER IRC–6
TYPE OF SUPER STRUCTURE	– COMPOSITE STEEL GIRDER
TYPE OF BEARING	– POT–PTFE
TYPE OF SUB STRUCTURE	– RCC
TYPE OF FOUNDATION	– OPEN FOUNDATION
SEISMIC ZONE	– ZONE–III
WIND ZONE	– CITY AREA BASIC WIND SPEED 39 m/s
TRACK ON STRAIGHT OR CURVE	– STRAIGHT

METHODOLOGY OF WORKING

1. MODUS OPERANDI / METHODOLOGY CONSTRUCTION ACTIVITY, SAFETY PRECAUTION AND MEASURES TO BE OBSERVED DURING CONSTRUCTION OF ROB SHOULD BE IN ACCORDANCE OF IRPWM AND BOARDS LETTER NO. 97/CE / 1/ BRO / 158 / 9 (POLICY) PT. LL DATED 16–07–2009.
2. FABRICATED STEEL GIRDER WILL BE LAUNCHING FIRST THEN RCC DECK SLAB WILL BE CASTED IN SITU AFTER PROVIDING TEMPORARY ARRANGEMENT.
3. CASTING / FABRICATING OF GIRDER AND DECK SLAB WILL BE EXECUTED UNDER SPEED RESTRICTION OF 30 KMPH.
4. WORK UNDER TRAFFIC BLOCK SHALL BE CARRIED OUT UNDER THE PROVISION OF BANNER FLAG AND PROTECTION OF ENGG.FLAG MAN.
5. INSTRUCTION ON " SPECIAL CONDITION OF WORKING OF ROAD CRANE" AS PER RAILWAYS LATEST GUIDELINE IN LETTER NO. 2015/CE–4/RUB –206 DATED 15–02–2016 SHALL BE FOLLOWED.

CODEL REFERENCE

a) IRS CODE
- (i) IRS WELDED BRIDGE CODE
- (ii) IRS–B 1–2000 FOR STEEL FABRICATION
- (iii) BS –110 R–INSPECTION OF STEEL BRIDGE GIRDERS
- (iv) BS–112 GUIDELINES FOR AVOIDING SKEW BRIDGES
- (v) BS–113 GUIDELINES FOR AVOIDING INSPECTION FACILITIES
- (vi) IRS SCHEDULE OF DIMENSIONS
- (vii) IRS SEISMIC CODE
- (viii) REPORT NO.BS–111–GUIDELINES FOR USE OF HSFG BOLT

b) IRC CODE
- (i) IRC:6 LOAD & LOAD COMBINATION FOR ROAD BRIDGES
- (ii) IRC:22 COMPOSITE CONSTRUCTIONS FOR ROAD BRIDGES (LIMIT STATE DESIGN)
- (iii) IRC–24 STEEL ROAD BRIDGES (LIMIT STATE METHOD)
- (iv) IRC:78 FOUNDATION & SUBSTRUCTURE FOR ROAD BRIDGES
- (v) IRC:112 CODE OF PRACTICE FOR CONCRETE ROAD BRIDGES

OPERATION SCHEDULE FOR RAILWAY SPAN :

1. TRACK SHALL BE PROTECTED SUITABLY DURING THE CONSTRUCTION OF BRIDGE/ROB FOR SAFETY OF RUNNING TRAIN.
2. ADEQUATE MEASURES SHALL BE TAKEN AT SITE ENSURE SAFETY FOR WORKING MEMBERS,MATERIALS , EQUIPMENTS , TRAFFIC ETC.
4. FOR LAUNCHING OF GIRDERS OVER RAILWAY TRACK,SUITABLE BLOCK WILL BE TAKEN WITH ADVANCE INTIMATION.
5. DETAILED STRUCTURAL DRAWINGS OF THE ROB SHALL BE APPROVED FROM IIT/NIT.
6. LAUNCHING SCHEME SHALL BE APPROVED BY CBE/E.C. Rly/HJP BEFORE EXECUTION OF WORK.
7. DRAWING APPROVAL SHALL BE SUBJECTED TO APPROVAL OF ALIGNMENT AND LEVELS BY STATE GOVT.
8. CONSTRUCTION SEQUENCE :–
   - (I) CONSTRUCTION OF SUITABLE FOUNDATION FOR PIERS,
   - (II) CONSTRUCTION OF PIERS , ABUTMENT,PIER CAP AND ABUTMENT CAP.
   - (III) CONSTRUCTION OF RCC PEDESTALS.
   - (IV) FABRICATION OF STEEL GRIDERS, CROSS GIRDERS AND DIAPHRAGMS ETC.
   - (V) POSITIONING OF CRANES FOR LIFTING AND PLACEMENT OF GIRDERS WITH RAILWAY TRAFFIC BLOCK, POWER BLOCK OF 3 NOS FOR 3 HR. EACH.
   - (VI) CASTING OF RCC DECK SLAB WITH SHUTTERING SUPPORTED ON GIRDERS.
   - (VII) REMOVAL OF STAGING AND SHUTTERING OF DECK SLAB.
   - (VIII) COMPLETION OF ANCILLARY WORKS LIKE CRASH BARRIER , RAILING , WEARING COURSE ,EXPANSION JOINT ETC.
9. ALL SAFETY RULES SHALL BE FOLLOWED DURING EXECUTION OF WORK.
10. RAILWAY AUTHORITIES SHALL BE INFORMED BEFORE STATING ANY WORK, INSTRUCTIONS GIVEN BY RAILWAY AUTHORITIES TIME TO TIME DURING EXECUTION SHALL BE FOLLOWED.

SAFETY PREAUCTION FOR PROPOSED SITE :

1. TRACK SHALL BE PROTECTED BY SUITABLE ARRANGEMENT DURING THE CONSTRUCTION OF BRIDGE/RUB FOR SAFETY OF RUNNING TRACK.
2. ADEQUATE MEASURE SHALL BE TAKEN AT SITE TO ENSURE SAFETY FOR WORKING MEMBERS,MATERIALS EQUIPMENT AND TRAFFIC ETC.
3. SUITABLE SPEED RESTRICTION IF REQUIRED SHOULD BE IMPOSED BEFORE TAKING UP THE EXECUTION OF WORK WITH THE APPROVAL OF DIVISIONAL ENGINEER IN CHARGE.
4. REPRESENTATIVE OF TELECOM / SIGNALING DEPARTMENT SHOULD BE AVAILABLE AT SITE DURING EXECUTION IN THE VICINITY OF SIGNALING/TELECOM CABLES.
5. CONTRACTOR SHALL APPOINT EXPERIENCED RAILWAY SAFETY ENGINEER AND TAKE ITS APPROVAL.

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METER UNLESS OTHERWISE.
2. NO DIMENTION SHALL BE SCALED FROM THIS DRAWINGS. ONLY WRITTEN DIMENTION SHALL BE FOLLOWED.
3. PROPOSED WORK SHOWN IN RED ., ASSETS BEING DISMANTLED TO BE SHOWN IN GREEN AND FUTURE WORKS/TRACKS TO BE SHOWN IN BLUE IN SITE PLAN ONLY.
4. ACTUAL LOCATION OF ROB SHALL BE DECIDED BY RAILWAY ENGINEER–IN–CHARGE IN CONSULTATION WITH ROAD AUTHORITIES AT THE TIME OF ITS CONSTRUCTION.
5. ACTUAL DEPTH OF FOUNDATION SHALL BE DECIDED BY ENGINEER–IN–CHARGE TO SUIT THE SOIL STRATA MET WITH AT THE SITE. ENGINEER–IN–CHARGE SHOULD ENSURE THAT SBC OF SOIL FOUNDING LEVEL IS MORE THAN BEARING PRESSURE AT THAT LEVEL.
6. VERTICAL CLEARANCE FROM THE HIGHEST RAIL LEVEL TO BOT. OF GIRDER SHALL NOT BE LESS THAN 6.550 m FOR A.C TRACTION AREA, AND 8.705m IN CASE OF DFC/FEEDER/DOUBLE STACK CONTAINER ROUTE.
7. GUARD RAIL SHALL BE PROVIDED AS PER STANDARD DRAWING.
8. SHAPES & SIZE OF GIRDERS, ELASTOMERIC/POT–PTFE BEARING, BEARING PEDESTALS,DIMENSION OF ALL STRUCTURAL MEMBERS, I.E PILE, PILE CAP, PIER, PIER CAP ETC. SHOWN ARE TENTATIVE AND SHALL BE AS PER STRUCTURAL DESIGN & DRAWING. SUBMITTED BY CONSULTANT/PARTY SHALL BE PROOF CHECKED BY IIT/NIT & APPROVED BY RAILWAY HQ.
9. ANTI CRASH BARRIER SHALL BE PROVIDED AS PER MORTH STD.
10. WEARING COAT OF THICKNESS 25mm BITUMASTIC ASPHALT PROVIDED. ROAD SURFACE TO MAINTAINED BY ROAD AUTHORITY.
11. A SEPARATE LAUNCHING SHEME OF SUPER STUCTURE HAS TO BE SUBMITTED WHICH WILL BE APPROVED BY CBE BEFORE COMMENCEMENT OF LAUNCHING. AND CRS SANCTION IS REQUIRED FOR LAUNCHING OF GIRDER.
12. EXCAVATION OF ROB WORK SHALL BE DONE ONLY IN PRESENCE OF AUTHORIZE RAILWAY REPRESENTATIVE TO ENSURE THE SAFETY OF RUNNING TRAINS. PROPER PRECAUTIONS SHALL BE TAKEN DURING EXCAVATION OF OPEN FOUNDATION NEAR THE EXISTING RAILWAY TRACK. IN CASH THE EXCAVATION TO BE DONE NEAR THE TRACK, PROPER SHORING SHALL BE DONE TO PROTECT SLOPE FAILURE OF SOIL.
13. IN ORDER TO OFFER ADEQUATELY RESISTANCE AGAINST CORROSION, THE REINFORCEMENT BARS SHALL BE PROVIDED WITH SUITABLE PROTECTIVE COATING DEPENDING UPON THE ENVIRONMENTAL CONDITION AS PER PARA 7.15 OF CONCRETE BRIDGE CODE CORRECTION SL NO 2 DT.26.04.2000.
14. OFFICE FOR THE RAILWAY ENGINEERS AT BRIDGE SIDE OR AT NEAR BY LOCATION DECIDED BY THE RAILWAY SHALL BE PROVIDED BY SPONSORING ROAD AUTHORITY AND MAINTAINED DURING THE PERIOD OF CONSTRUCTION OF THE PROJECT.
15. LONG DURABILITY ANTI CORROSIVE PROTECTION SHOULD BE APPLIED TO THE STEEL STRUCTURE.
16. INSPECTION LADDER AND PLATFORM FOR INSPECTION OF BEARING SHOULD BE PROVIDED AT EVERY PIER.
17. ALL TECHNICAL RECORD i.e CUBE STRENGTH, PRESTRESSING DETAILS ETC. SHALL BE HANDED OVER TO RAILWAY ENGINEER–IN–CHARGE.
18. BEFORE OPENING OF ROB COMPLETION DRAWING AND COMPLETE COST OF ROB IN HARD COPY AND SOFT COPY DULY APPROVED BY AUTHORITIES SHALL BE HANDED OVER TO RAILWAY ENGINEER–IN–CHARGE.
19. BEFORE OPENING OF ROB (WITHIN RAILWAY PORTION) FOR ROAD TRAFFIC, APPROVAL OF RAILWAY ENGINEER IN CHARGE IS TO BE OBTAINED BY ROAD AUTHORITY.
20. GRADE OF CONCRETE :

	CLEAR COVER		GRADE OF CONCRETE CLEAR COVER
PSC I GIRDER	M:45 –	40MM	SEISMIC RESTRAINER.... M:45 – 40MM
PILE	M:35 –	75MM	PIER & PIER CAP ..... M:35 – 50MM
PILE CAP	M:35 –	75MM	RCC DECK SLAB ..... M:45 – 40MM
KERB STONE	M:35		
PEDESTAL	M:45 –	40MM	40MM –TILE STEEL LINER IN PILE UP TO 6M
CRASH BARRIER	M:40 –	40MM	

P.C.C ..... M:15 AND M20 FOR RAILWAY PORTION

21. PCE SANCTION SHALL BE OBTAINED BEFORE LAUNCHING OF GIRDERS.
22. STOPPER SHOULD BE PROVIDED AT END ON THE TOP OF PIER/ABUTMENT CAP TO REDUCE POSSIBILITIES OF TOPPING OF GIRDER DURING LAUNCHING OF GIRDER.
23. THE BRIDGE SHALL BE DESIGNED FOR 70R (WHEELED) AND A–CLASS LIVE LOADS AS PER IRC 6, AND FOR SPECIAL 38ST VEHICLE GIVEN IN IRC 6
24. AS PER RAILWAY BOARD LETTER NO. 2007/RE/161/5–FTS–774, DATED 12–10–2011. TRACK LEVEL SHOULD BE FROZEN.
25. ESTIMATE IS TO BE TAKEN FROM TRO TO INCLUDE WORK OF TRD.
26. STRUCTURAL STEEL OF COMPOSITE GIRDERS CONFORM TO IS: 2062–2011 E350 BO ONLY.
27. THE QAP BEARING AS PER RDSO FORMAT (CIRCULATED BY RDSO VIDE LETTER NO.CBS/PBEJ/REG. DATED 16.05.2014) SHALL BE ENGURED BY INSPECTING ENGINEER.
28. DURING EXECUTION OF WORK ANY S&T CABLE FOUND THEN SHIFTING OF CABLE WORK TO BE DONE ON PRIORITY.
29. IN CASE OF S&T CABLE CUTTING/DAMAGE,PENALTY SHOULD BE IMPOSED AS PER RAILWAY BOARD'S LETTER NO. 2003/TELE/RCIL/1 PT.IX DATED 24–06–2013.
30. RCC FOUNDATION SHOWN IS TENTATIVE FOR DETAILED REFER SEPARATE APPROVED DRAWING
31. THE DESIGN OF APPROACHES ARE TO BE APPROVED BY ROAD AUTHORITY, THE FINAL DECISION FOR TYPE OF FOUNDATION REST WITH THEM AND IS TO BE DECIDED BY THEM.
32. BEFORE EXECUTION OF WORK CONCERNED SSE/SSI AND ADSTE TO BE INFORMED WELL IN ADVANCE.
33. PROVISION OF CLAMPS IN THE SUPERSTUCTURE FOR A.C. TRACTION WIRE TO BE MADE IN CONSULTATION WITH THE CONCERNED AUTHORITIES.
34. REPRESENTATION OF TELECOM AND SIGNALING DEPT. SHALL BE MADE AVAILABLE BEFORE COMMENCEMENT OF PROPOSED WORK IN THE VICINITY OF SIGNAL AND TELECOM CABLE.
35. SUITABLE SPEED RESTRICTION SHALL BE IMPOSED BY ENGGINEER IN CHARGE DURING THE EXECUTION WORK TEMP. ENGINEERING INDICATORS WILL BE PROVIDED AS PER G. 15.09 (2)&+ S.P. 15.09 (2).
36. PROTECTIVE SCREENS TO BE PROVIDED FOR EACH TRACK DURING EXECUTION OF SUPERSTRUCTURE.
37. a) THE STEEL GIRDER SHALL BE FABRICATED AND INSPECTED BY INSPECTION CELL OF RAILWAY OR THIRD PARTY INSPECTION AGENCY LIKE RITES. WRI OR CEIL AS ADVISED BY RAILWAY BOARD'S LETTER.
   - i) NO. 2017/166/CE–III/BR. GIRDER INSPECTION DATE 24/07/2019
   - ii) NO. 2016/54/CE–III/BR./RDSO MISC. DATED 15/07/2019
   - iii) THE GAD WILL NEED TO BE REVALIDATED FOR MATCH PREVAILING GROUND CONDITIONS. IF THE WORK IS NOT COMMENCED WITHIN YEARS OF COMMENCEMENT.
41. GIRDER SHOULD BE FABRICATED AS PER THE EXTANT RULES AND ONLY AFTER THE REQUIRED INSPECTIONS BY RAILWAY IS DONE.
42. IT SHOULD BE INFORM TO ADEN–VSW & SSE–PWAY–VSW–E, SSE–EL–VSW WELL IN ADVANCE BEFORE STARTING THE WORK (MINIMUM 3 DAY ADVANCE).
43. SAFETY OF THE TRACK SHALL BE ENSURED BY SITE ENGINEER FOR ALL THE TIME
44. COMPOSITE GIRDER TO BE FABRICATED AS PER BS 110 (R), AS PER GUIDE LINE ISSUED BY RDSO.
45. LC AREA SHALL BE CLOSED DURING CONSTRUCTION PHASE AND PERMANENT CLOSED AFTER OPENING OF ROB AND MUNICIPAL CORPORATION IS RESPONSIBLE FOR TRAFFIC DIVERSION AND LAW AND ORDER.
46. DESIGN, DRAWING AND ITS APPROVAL (6 SET DRAWING) FOR REINFORCED EARTH RETAINING WALL ARE IN THE SCOPE OF WORKING CONTRACTOR AND NOTHING SHALL BE PAYABLE FOR THIS WORK.
47. LAND REQUIRED FOR THIS PROJECT SHALL BE ACQUIRED BY THE NATIONAL HIGHWAY DIVISION RAJKOT AND GET NOC FROM CONCERNED DEPARTMENT.
48. DESIGN SPEED 100KM/HR.
49. PROPOSED ROAD OVER BRIDGE IS SITUATED IN SEISMIC ZONE–III.
50. DRAWINGS AND DESIGN OF ROB SHALL BE PROOF CHECKED BY IIT/NIT AND DULY APPROVE RAILWAY HQ.
51. BEFORE OPENING OF ROB COMPLETION DRAWING AND COMPLETE COST OF ROB IN HARD COPY AND SOFT COPY DULY APPROVED BY ROAD AUTHORITIES SHALL BE HANDED OVER TO RAILWAY ENGINEER IN CHARGE.
52. PCE SANCTION SHALL BE OBTAINED BEFORE LAUNCHING OF COMPOSITE GIRDER.
53. LOADING STANDARD OF ROB :
   THE BRIDGE SHALL BE DESIGNED FOR TWO LANES OF IRC CLASS A LOADING OR 1–LANE OF CLASS 70R LOADING + 1 LANE OF CLASS–A & SV LOADING (38S T), ALONG WITH FOOTPATH LOADING WITH WORST COMBINATION, FOOTPATH LOADING SHALL BE CONSIDERED AS PER IRC6–2016.
54. FOR STEEL OF COMPOSITE GIRDERS,/TRUSS CONFIRM TO IS:2062–2011 E 350 W BO OTHERWISE SPECIFIED IN DESIGN.
55. THE GAP BEARING AS PER RDSO FORMAT (CIRCULATED BY RDSO VIDE LETTER NO. CBS/PBEJ/REG. DATED 16–10–2014) SHALL BE ENSURED BY INSPECTING ENGINEER.
56. THE STEEL GIRDERS SHALL BE INSPECTED BY INSPECTION CELL OF RAILWAY OR BY THIRD PARTY INSPECTING AGENCY LIKE RITES, WRI OR CEIL AS ADVISED BY RAILWAY BOARD.
57. FOR FABRICATION SUPPLY AND INSPECTION OF STEEL GIRDERS REFERE RLY. BOARD'S LETTER NOS.
   - (a) No 2016/54/CE–II/BR/RDSO MISC Dt. 15.7.2019
   - (b) No 2017/16/CE–III/BR/GIRDER INSPECTION Dt. 24.7.2019
58. IF S&T CABLES SHIFTING REQUIRES NO WORK WILL START WITHIN RAILWAY BOUNDARY WITHOUT SHIFTING OF S&T CABLE AND THIS WILL BE DONE IN THE PRESENCE OF S&T SUPERVISOR.
59. SPEED RESTRICTION WILL BE REQUIRED DURING CONSTRUCTION PHASE.
60. OPTICAL CABLE FIBER TO TAKEN CARE WHILE EXECUTION OF WORK
61. 4 NOS. TRAFFIC BLOCK AND 2 NOS. POWER BLOCK OF EACH 3 HRS. REQ. FOR GIRDER LAUNCHING.
62. DRAINAGE ARRANGEMENT WITH INTERNAL WATER DRAINAGE SYSTEM AND PROVIDED 2X2M RCC CROSS DRAINAGE.
63. IF S&T CABLES SHIFTING REQUIRES, NO WORK WILL START WITHIN RAILWAY BOUNDARY WITHOUT SHIFTING OF S&T CABLE AND THIS WILL BE DONE IN THE PRESENCE OF S&T SUPERVISOR.
64. IF S&T CABLE REQUIRED TO BE SHIFT, THE TEMPORARY AND PERMANENT SHIFTING OF CABLES CANT BE DONE DEPARTMENTALLY SO THE WHOLE WORK SUCH AS TRANSPORTATION OF CABLE/STAFF, TRENCHING, LAYING,AND JOINT TO BE DONE BY ENGINEERING DEPARTMENT AND IT IS INCLUDED IN TENDER OF ENGINEERING DEPARTMENT.
65. THE SHIFTED S&T CABLE TO BE PROTECTED BY ENGINEERING DEPARTMENT TILL THE CABLE IS NOT REVOKED LOCATION PERMANENTLY.
66. PL CALL S&T SUB ESTIMATE FOR THIS WORK.
67. SIGN PASTE AND ORIGINAL SIGN PLAN IN ATTACHMENT.
68. ROB DRAINAGE AS PER TYPE PLAN NO. TP–BR–92/HQ–2022
69. THE GAD WILL NEED TO BE RE–VALIDATED TO MATCH THE PREVAILING GROUND CONDITIONS,IF THE WORK IS NOT COMMENCED WITH IN 2 YEARS OF APPROVAL.
70. STANDARD CRASH BARRIER UP TO 30M BEYOND RAILWAY LAND BOUNDARY SHALL BE PROVIDED ON BOTH APPROACHES OF ROB AS PER IRC–05–2015.
71. PROTECTIVE SCREEN ON ROB IS TO BE PROVIDED BY ENGINEERING DEPARTMENT EARTHLING OF ROB GIRDER TO 02 LOCATION IS TO BE DONE BY ELECTRICAL DEPARTMENT.

LEGEND :–

1. OGL : ORIGINAL GROUND LEVEL/BED LEVEL
2. TYP : TYPICAL
3. FRL : FINISHED ROAD LEVEL
4. FDN LVL : FOUNDATION LEVEL
5. C/C : CENTER TO CENTER
6. SBC : SAFE BEARING CAPACITY
7. SQ : SQUARE
8. SK : SKEW
9. TPCL : TOP PILE CAP LEVEL
10. BPCL : BOTTOM PILE CAP LEVEL
11. TMT : TERMINATION LEVEL

DRAWING APPROVAL			
( ) DRM		( ) CBE	
( ) ADRM (INFRA)		( ) CE/RSW	
( ) Sr.DEN/CO		( ) Dy.CE/LC & ROB	
( ) Sr.DSTE		( ) Dy.CE/BR/HQ	
( ) Sr.DEE (TRD)		( ) XEN/DESIGN	
( ) Sr.DEN/HQ		( ) SSE/DESIGN	
( ) SSE/DRG.			
DIVN OFFICER'S		HQ. OFFICER'S	
WESTERN RAILWAY			
DIVISION - BHAVNAGAR (BVP)		SECTION: DHARI RAILWAY STATION AND VISAVADAR RAILWAY STATION	
DESIGNATION		SIGN	
EXECUTIVE ENGINEER:			

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT 360 001, GUJARAT

PROPOSED ID :

CONSULTANCY SERVICES FOR UP GRADATION OF
UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA
NATIONAL HIGHWAY IN THE STATE OF GUJARAT

DRAWING TITLE: GENERAL ARRANGEMENT DRAWING
FOR PROPOSED 2 LANE ROAD OVER BRIDGE AT KM KM:63/5 - 63/7 BETWEEN DHARI RAILWAY STATION (DAR) AND VISAVADAR RAILWAY STATION(VSW)
(NH CH: 22.935) (NH-351K)

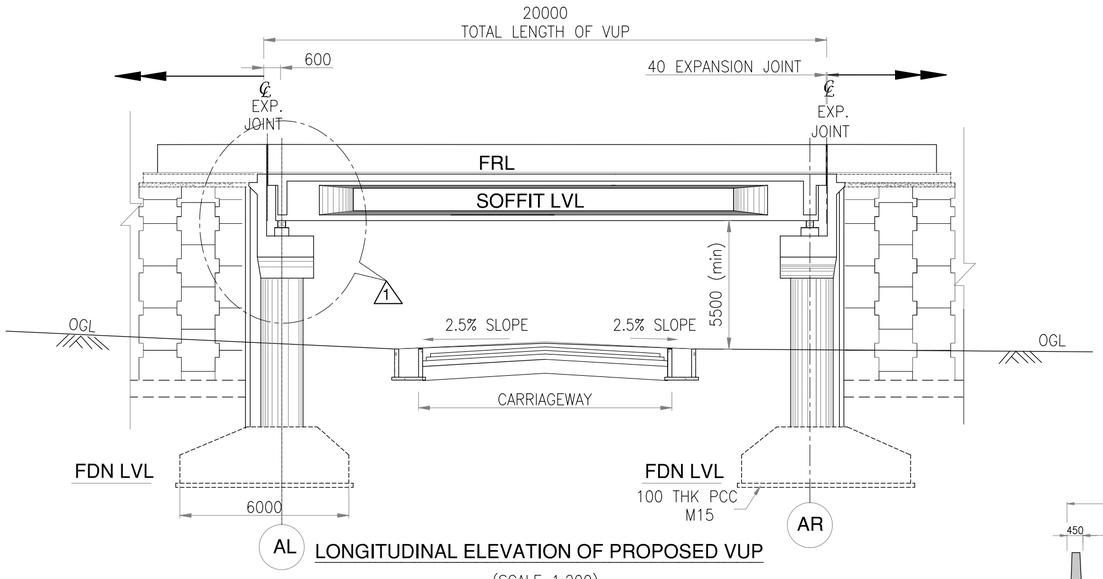
CONSULTANT: SECON PVT LTD.
PLOT NO:147, 7B ROAD,EPIP, WHITEFIELD
BANGALORE–560 066
Website: http://www.secon.in

SCALE:– AS SHOWN

DESIGNATION	BHARATH U	G SIGAMANI	PAWAN KUMAR	K.SHIVAKUMARI
	DESIGNED	DRAWN	CHECKED	APPROVED
SIGN				

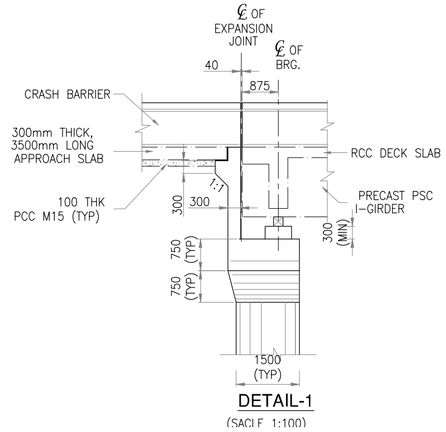
DRG.NO.

DATE: FEBRUARY 2025 PAPER SIZE A0



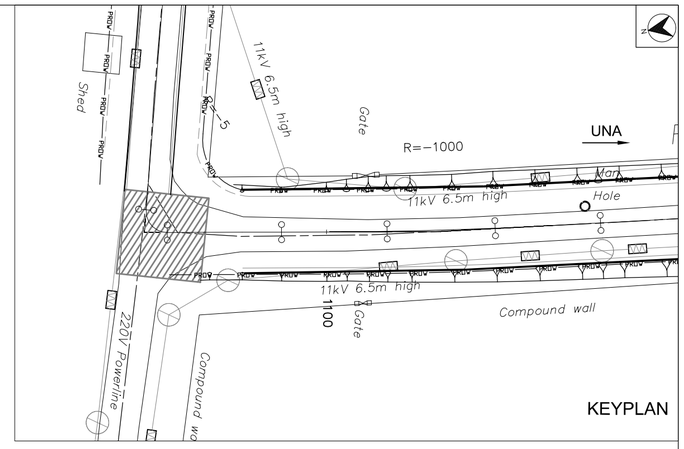
LONGITUDINAL ELEVATION OF PROPOSED VUP

(SCALE 1:200)



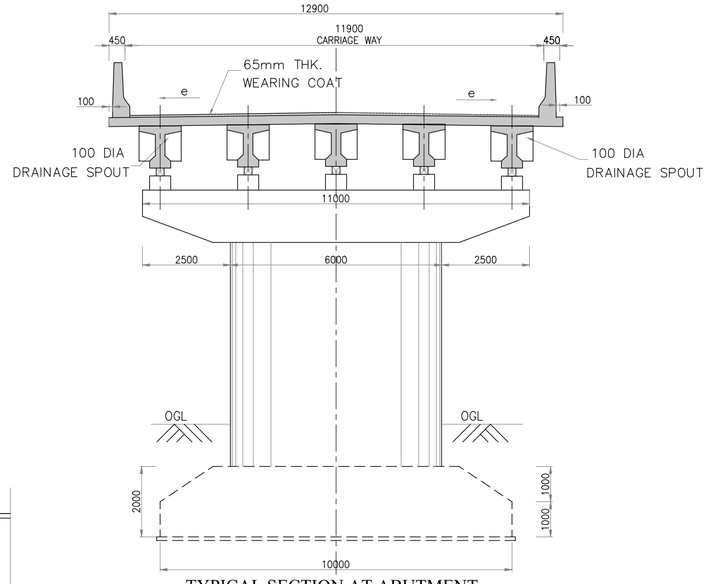
DETAIL-1

(SCALE 1:100)



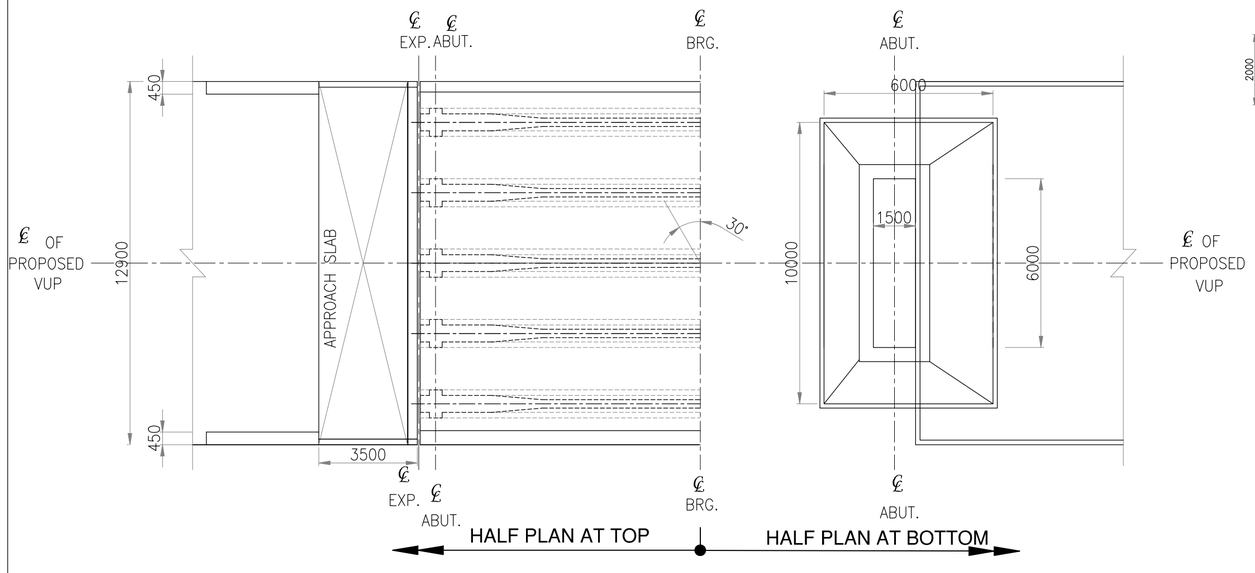
KEYPLAN

ROAD LEVEL (m) AT CARRIAGE WAY	153.830	153.830
OGL/BED LEVEL (m)	146.665	146.801
CHAINAGE (m)	1.045	1.065



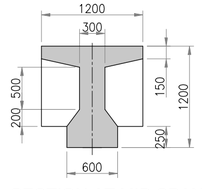
TYPICAL SECTION AT ABUTMENT

(SCALE 1:100)



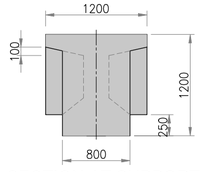
PLAN OF PROPOSED VUP

(SCALE 1:200)



SECTION AT MID SPAN

(SCALE 1:50)



SECTION AT SUPPORT

(SCALE 1:50)

SPECIFICATIONS:

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. ALL REINFORCING BARS SHALL BE HIGH YIELD STRENGTH DEFORMED BARS WITH GRADE DESIGNATION Fe 500. ONLY THERMO MECHANICALLY TREATED (TMT)BARS CONFORMING TO IS1786 SHALL BE USED.
3. GRADE OF CONCRETE FOR SUBSTRUCTURE AND FOUNDATION SHALL BE M-35.
4. GRADE OF CONCRETE FOR SUPERSTRUCTURE AND CRASH BARRIER SHALL BE M-40.
5. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
6. RIVER TRAINING WORK AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.
7. POT-CUM-PTFE BEARINGS SHALL BE PROVIDED AS PER IRC:83 (PART-III-2002).
8. ELASTOMERIC STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED
9. TEMPORARY LINER FOR CERTAIN LENGTH FROM TOP MAY BE PROVIDED IF NECESSARY TO FACILITATE PROPER CONCRETING. THIS MAY BE RETRIEVED BEFORE CONCRETE SETS.
10. FOR e VALUE REFER CORRESPONDING PLAN & PROFILE

NOTE:

1. ALL DIMENSIONS ARE IN mm.
2. ALL REDUCED LEVELS ARE IN m.
3. L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE AND T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE.
4. NO CONSTRUCTION JOINT SHALL BE ALLOWED IN CONCRETE WORKS WITHOUT WRITTEN APPROVAL OF ENGINEER-IN-CHARGE AS PER PREVAILING SITE CONDITION.
5. COMMON BENCH MARK SHOULD BE ESTABLISHED BY THE FIELD ENGINEER BEFORE START OF WORK EITHER ON APPROACHES OR ON BRIDGE PROPER AT THE TIME OF EXECUTION OF WORK.

IMPORTANT:

6. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT CHAINAGE KM 1.055 NOT APPROVED BY EE, RAJKOT, R&B.
7. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGE AT CHANAGE KM 1.055.
8. CONSIDERING NOTE 6 & 7 ABOVE, SBC AT CHAINAGE KM 0.540 (EARLIER APPROVED REALIGNMENT) CONSIDERED IN THE DESIGN.
9. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC AT CHAINAGE KM 1.055 ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE SHOULD BE RE-DESIGNED, AS PER SBC AT CHAINAGE KM 1.055.

LEGEND:

TYP = TYPICAL
OGL/BED LVL = ORIGINAL GROUND LEVEL/BED LEVEL
FRL LVL = FINALISED/FINAL ROAD LEVEL
FDN LVL = FOUNDATION LEVEL
EWL = EXISTING WIDTH LEFT
EWR = EXISTING WIDTH RIGHT

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	FINAL DETAILED PROJECT REPORT	GS	LP	SK
2	06.02.25	Revised as per directions issued during meeting with SE, MORTH on 09.01.25 & 13.01.25	GS	LP	SK
1	10.12.24	Incorporating the suggestions Based on the meetings held with RO Gandhinagar & EE Rajkot on 25.09.24 & 24.10.24	GS	LP	SK
0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name: G: VUP-01	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 01 OF 01

FDPR

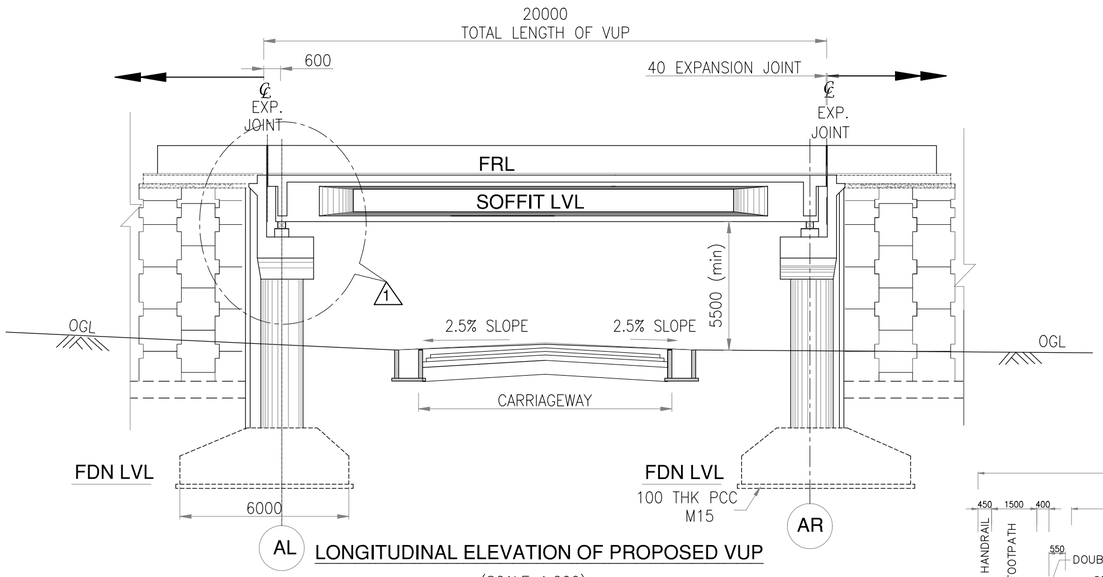
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

GAD PROPOSED FOR VEHICULAR UNDERPASS (VUP) AT CH:1+055KM

SECON

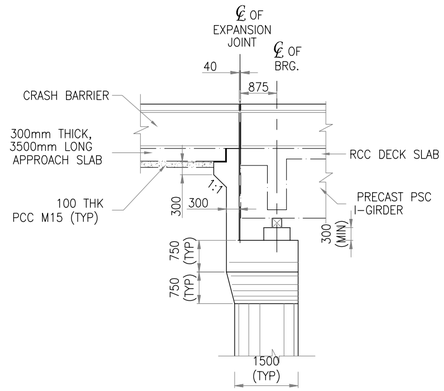
Plot Size : (A2 Size) | DRG.NO : G: VUP-01



LONGITUDINAL ELEVATION OF PROPOSED VUP

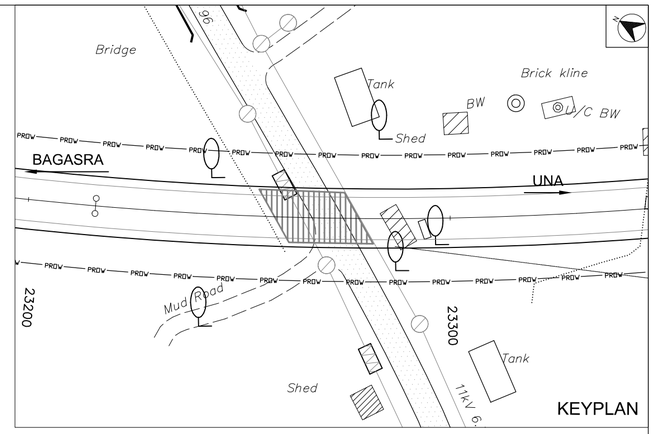
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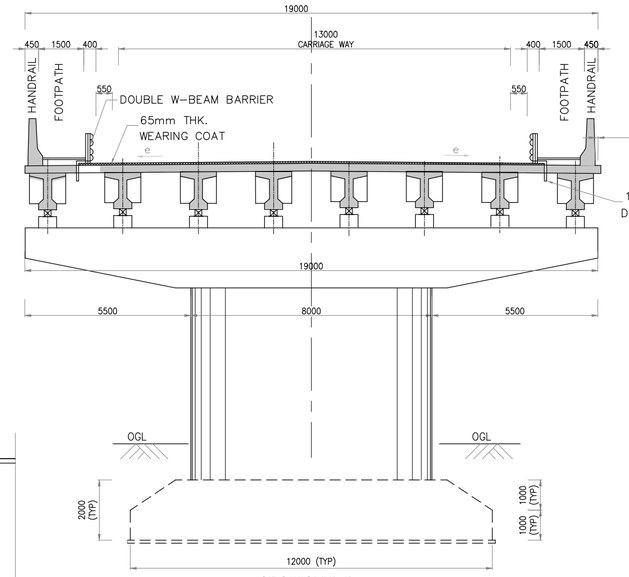
ROAD LEVEL (m) AT CARRIAGE WAY	232.292	232.242
OGL/BED LEVEL (m)	224.510	224.991
CHAINAGE (m)	23.260	23.280



DETAIL-1

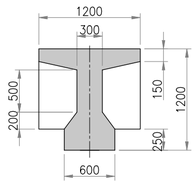
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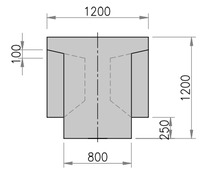
SECTION B-B

(SCALE 1:100)



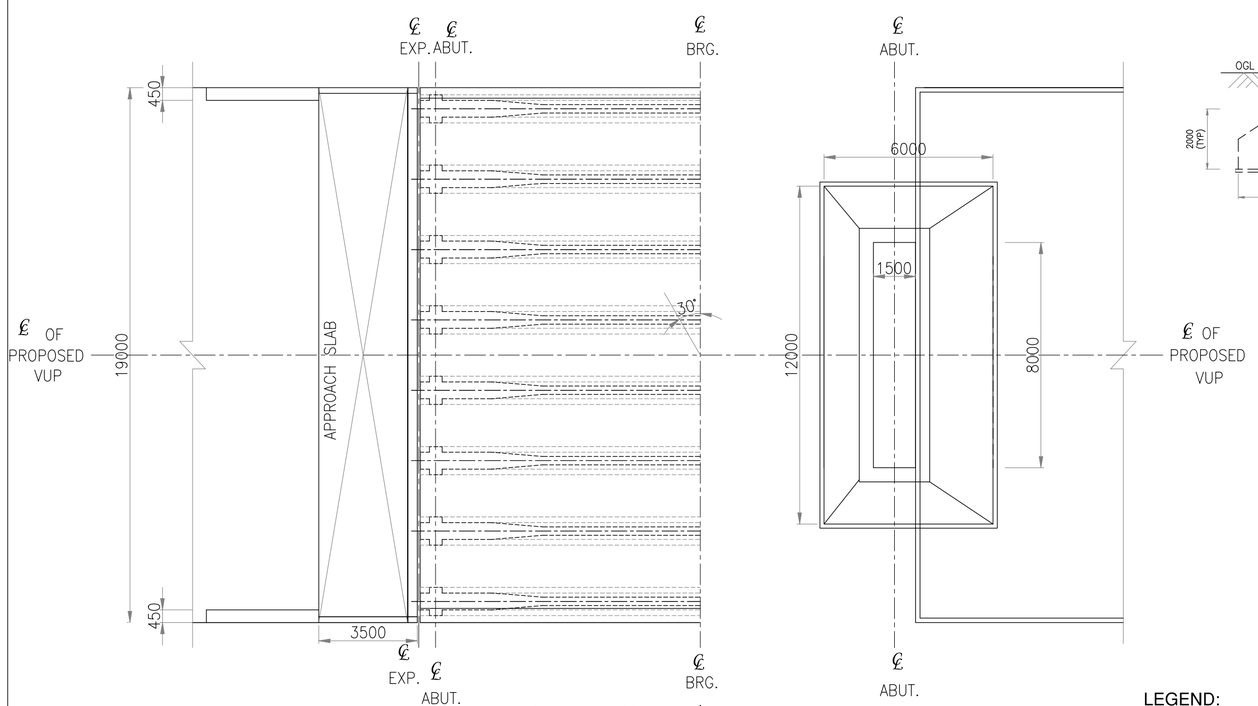
SECTION AT MID SPAN

(SCALE 1:50)



SECTION AT SUPPORT

(SCALE 1:50)



PLAN OF PROPOSED VUP

(SCALE 1:200)

LEGEND:

TYP = TYPICAL
OGL/BED LVL = ORIGINAL GROUND LEVEL/BED LEVEL
FRL LVL = FINALISED/FINAL ROAD LEVEL
FDN LVL = FOUNDATION LEVEL
EWL = EXISTING WIDTH LEFT
EWR = EXISTING WIDTH RIGHT

SPECIFICATIONS:

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. ALL REINFORCING BARS SHALL BE HIGH YIELD STRENGTH DEFORMED BARS WITH GRADE DESIGNATION Fe 500. ONLY THERMO MECHANICALLY TREATED (TMT)BARS CONFORMING TO IS1786 SHALL BE USED.
3. GRADE OF CONCRETE FOR SUBSTRUCTURE AND FOUNDATION SHALL BE M-35.
4. GRADE OF CONCRETE FOR SUPERSTRUCTURE AND CRASH BARRIER SHALL BE M-40.
5. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
6. RIVER TRAINING WORK AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.
7. POT-CUM-PTFE BEARINGS SHALL BE PROVIDED AS PER IRC:83 (PART-III-2002).
8. ELASTOMERIC STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED
9. TEMPORARY LINER FOR CERTAIN LENGTH FROM TOP MAY BE PROVIDED IF NECESSARY TO FACILITATE PROPER CONCRETING. THIS MAY BE RETRIEVED BEFORE CONCRETE SETS.
10. FOR e VALUE REFER CORRESPONDING PLAN & PROFILE

NOTE:

1. ALL DIMENSIONS ARE IN mm.
2. ALL REDUCED LEVELS ARE IN m.
3. L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE AND T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE.
4. NO CONSTRUCTION JOINT SHALL BE ALLOWED IN CONCRETE WORKS WITHOUT WRITTEN APPROVAL OF ENGINEER-IN-CHARGE AS PER PREVAILING SITE CONDITION.
5. COMMON BENCH MARK SHOULD BE ESTABLISHED BY THE FIELD ENGINEER BEFORE START OF WORK EITHER ON APPROACHES OR ON BRIDGE PROPER AT THE TIME OF EXECUTION OF WORK.

IMPORTANT:

6. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT CHAINAGE KM 23.270 NOT APPROVED BY EE, RAJKOT, R&B.
7. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGE AT CHANAGE KM 23.270.
8. CONSIDERING NOTE 6 & 7 ABOVE, SBC AT CHAINAGE KM 22.935 (EARLIER APPROVED REALIGNMENT) CONSIDERED IN THE DESIGN.
9. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC AT CHAINAGE KM 1.055 ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE SHOULD BE RE-DESIGNED, AS PER SBC AT CHAINAGE KM 23.270.

FDPR

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	FINAL DETAILED PROJECT REPORT	GS	LP	SK
2	06.02.25	Revised as per directions issued during meeting with SE, MORTH on 09.01.25 & 13.01.25	GS	LP	SK
1	10.12.24	Incorporating the suggestions Based on the meetings held with RO Gandhinagar & EE Rajkot on 25.09.24 & 24.10.24	GS	LP	SK
0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: G: VUP-02	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 01 OF 01

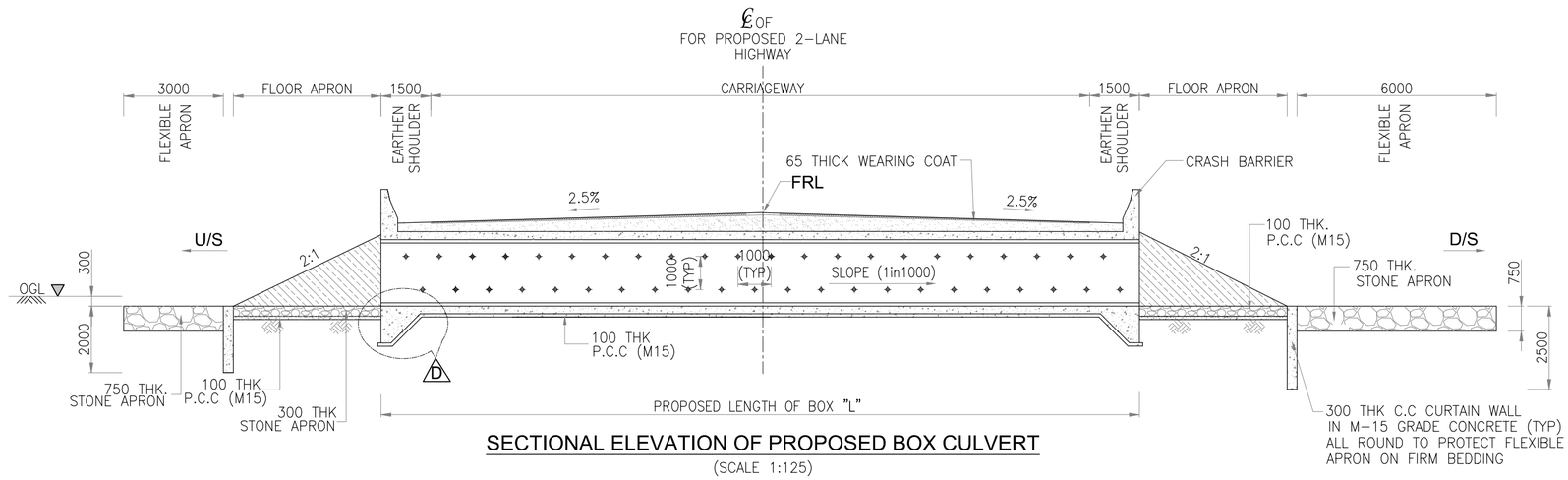
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

GAD PROPOSED FOR VEHICULAR UNDERPASS (VUP) AT CH:23+270KM

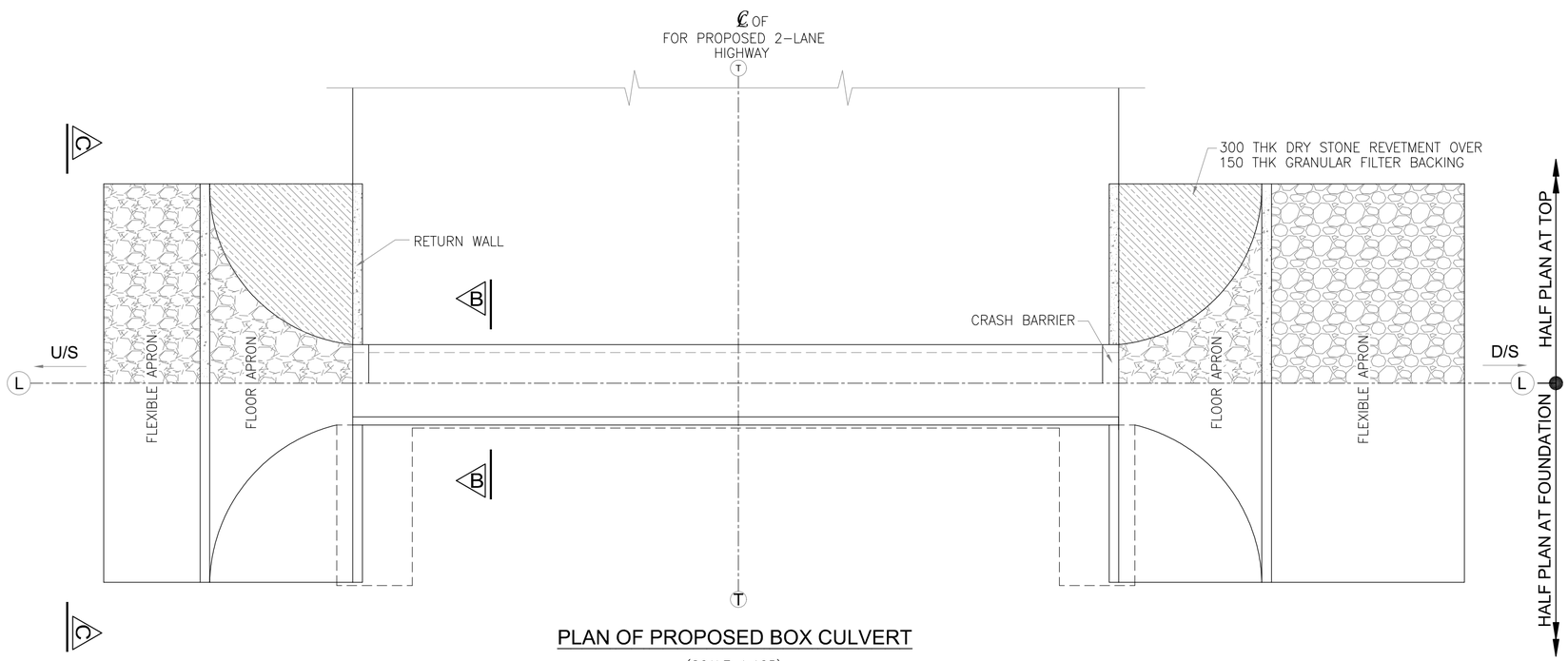
SECON

Plot Size : (A2 Size) | DRG.NO : G: VUP-02



SECTIONAL ELEVATION OF PROPOSED BOX CULVERT

(SCALE 1:125)



PLAN OF PROPOSED BOX CULVERT

(SCALE 1:125)

SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M–30.
3. GRADE OF CONCRETE FOR CRASH BARRIER SHALL BE M–40.
4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN m UNLESS SPECIFIED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY.
3. GRADE OF CONCRETE FOR BOX STRUCTURE M–30, P.C.C SHALL BE M–10 AND CRASH BARRIER AS M–40 UNLESS MENTIONED OTHERWISE.
4. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATION FOR ROADS AND BRIDGE WORKS OF MORTH (5th REVISION).
5. BOX STRUCTURE SHALL BE PLACED OVER A FIRM STRATA TO THE SATISFACTION OF ENGINEER. LOOSE OR SOFT PATCHES SHALL BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL, COMPACTED TO 98% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 200mm COMPACTED THICKNESS. THE SBC OF THE COMPACTED LAYER SHALL NOT BE LESS THAN THE BASE PRESSURE INDICATED.
6. THE PAVEMENT THICKNESS OVER THE BOX SHALL BE THE SAME AS PROVIDED FOR CARRIAGEWAY THIS SHALL BE CONSIDERED IN ALL CASES OF CUSHION.
7. SBC SHOULD BE VERIFIED BEFORE EXECUTION.
8. THE NEW JOINT SHOULD BE DONE AS PER SECTION CLAUSE 2900 (2904) OF MORTH SPECIFICATION AND AS PER THE DIRECTION OF ENGINEER–IN–CHARGE.
9. THE SOIL IMPROVEMENT SHALL BE CARRIEDOUT FOR FOUNDATION IN CONSULTATION WITH ENGINEER INCHARGE.
10. THE SBC IS ASSUMED AS 55t/Sq.m.. THE SAME SHALL BE CONFIRMED DURING THE GEOTECHNICAL INVESTIGATION.

LEGEND:-

1. U/S : UP–STREAM
2. D/S : DOWN–STREAM
3. TYP : TYPICAL
4. OGL : ORIGINAL GROUND LEVEL/BED LEVEL
5. FRL : FINALISED/FINAL ROAD LEVEL
6. FDN : FOUNDATION LEVEL
7. SBC : SAFE BEARING CAPACITY

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	FINAL DETAILED PROJECT REPORT	GS	LP	SK
2	06.02.25	Revised as per directions issued during meeting with SE, MORTH on 09.01.25 & 13.01.25	GS	LP	SK
1	10.12.24	Incorporating the suggestions Based on the meetings held with RO Gandhinagar & EE Rajkot on 25.09.24 & 24.10.24	GS	LP	SK
0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: TYP–G: SBC–01	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 01 OF 03

FDPR

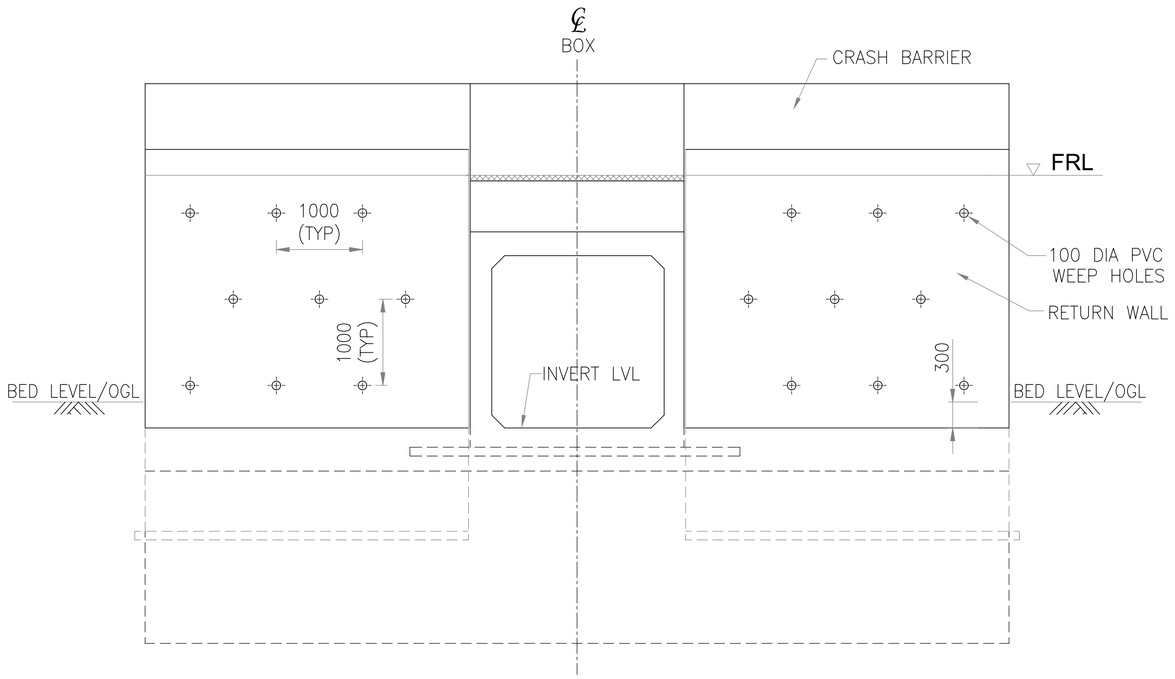
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

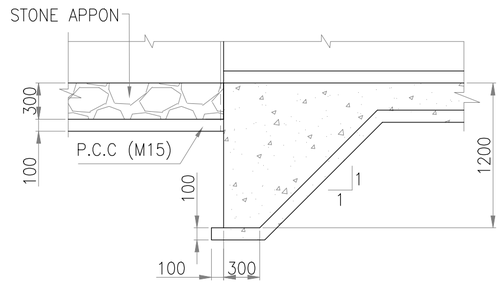
TYPICAL GAD PROPOSED FOR SINGLE CELL BOX CULVERT

Plot Size : (A2 Size) | DRG.NO : TYP–G: SBC–01



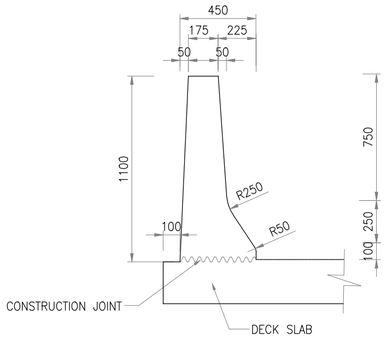
PROPOSED CROSS SECTION OF BOX CULVERT C - C

(SCALE 1:75)



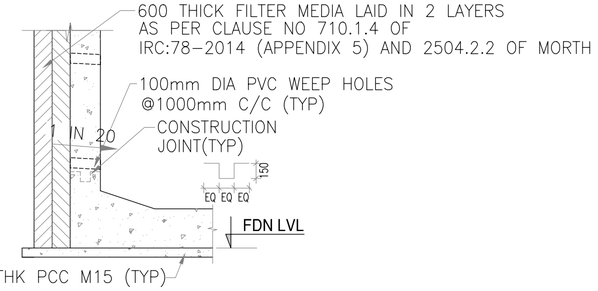
DETAIL - D

(SCALE 1:50)



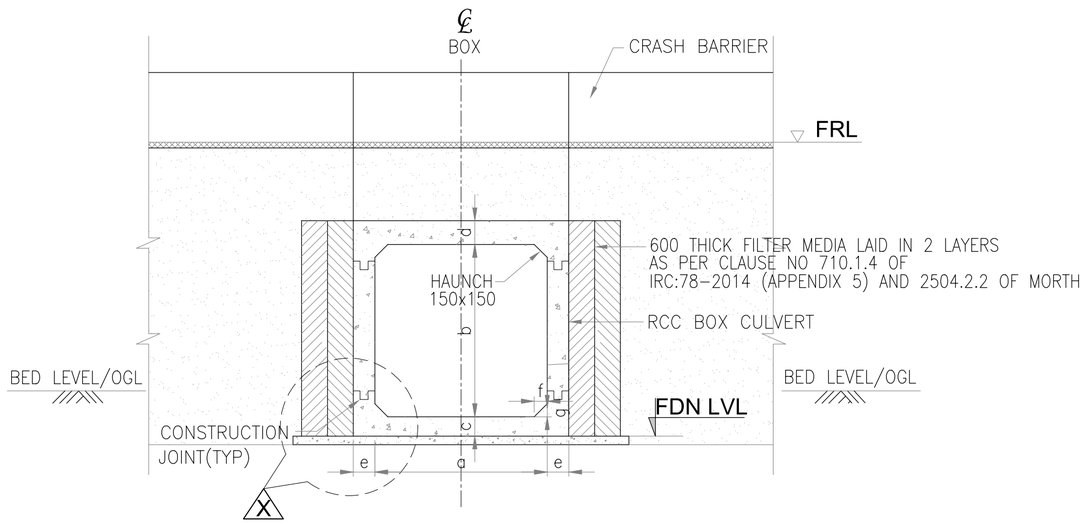
CRASH BARRIER

(SCALE 1:25)



DETAIL - X

(SCALE 1:50)



PROPOSED CROSS SECTION OF BOX CULVERT - BB

(SCALE 1:75)

SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M-30.
3. GRADE OF CONCRETE FOR CRASH BARRIER SHALL BE M-40.
4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

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4. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATION FOR ROADS AND BRIDGE WORKS OF MORTH (5th REVISION).
5. BOX STRUCTURE SHALL BE PLACED OVER A FIRM STRATA TO THE SATISFACTION OF ENGINEER. LOOSE OR SOFT PATCHES SHALL BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL, COMPACTED TO 98% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 200mm COMPACTED THICKNESS. THE SBC OF THE COMPACTED LAYER SHALL NOT BE LESS THAN THE BASE PRESSURE INDICATED.
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Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: TYP-G: SBC-01	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 02 OF 03

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

TYPICAL GAD PROPOSED FOR SINGLE CELL BOX CULVERT

Plot Size : (A2 Size) | DRG.NO : TYP-G: SBC-01

Sl.No	Design Chainage (km)	FRL (m)	OGL (m)	Foundation level (m)	Soffit level (m)	Invert Level (m)	Span Arangement (m)	Wearing coat thickness (m)	a (m)	b (m)	c (m)	d (m)	e (m)	f (m)	g (m)	ht of fill (m)	remarks
1	0.025	144.892	142.077	141.742	144.642	142.142	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
2	2.877	152.109	149.294	148.959	151.859	149.359	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
3	3.468	152.654	149.839	146.689	149.589	147.089	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
4	4.895	156.827	154.012	150.862	153.762	151.262	1 x 3 x 2.5	0.065	3.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
5	5.760	158.215	154.865	154.315	157.215	154.715	1 x 4 x 2.5	0.065	4.00	2.50	0.45	0.40	0.40	0.30	0.15		Newconstruction
6	6.320	159.114	156.299	153.149	156.049	153.549	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
7	7.745	159.551	156.501	156.101	159.001	156.501	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstruction
8	7.883	159.990	156.640	156.090	158.990	156.490	1 x 4 x 2.5	0.065	4.00	2.50	0.45	0.40	0.40	0.30	0.15		Newconstruction
9	8.087	160.080	157.030	156.630	159.530	157.030	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstruction
10	8.448	159.169	156.119	155.719	158.619	156.119	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstruction
11	10.143	157.848	154.798	154.398	157.298	154.798	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstruction
12	10.162	157.810	154.760	154.360	157.260	154.760	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
13	10.472	159.215	156.400	153.250	156.150	153.650	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
14	10.752	160.600	157.785	154.635	157.535	155.035	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
15	11.038	162.300	159.485	156.335	159.235	156.735	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
16	11.282	164.568	161.753	158.603	161.503	159.003	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
17	13.327	185.900	183.085	179.935	182.835	180.335	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
18	13.885	195.800	192.985	189.835	192.735	190.235	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
19	15.190	217.850	214.885	211.435	214.335	211.835	1 x 4 x 2.5	0.065	4.00	2.50	0.45	0.40	0.40	0.30	0.15		Reconstruction
20	15.535	218.865	216.050	212.900	215.800	213.300	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
21	16.670	223.440	220.625	217.475	220.375	217.875	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
22	17.067	220.050	217.235	214.085	216.985	214.485	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
23	17.490	214.550	211.535	205.485	210.885	205.885	1 x 5 x 2.5	0.065	2.50	2.50	0.50	0.45	0.45	0.30	0.15		Reconstruction
24	18.190	213.100	210.285	207.135	210.035	207.535	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
25	19.910	213.084	210.034	209.634	212.534	210.034	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstruction
26	21.060	214.677	211.627	211.227	214.127	211.627	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstruction
27	21.960	228.888	225.838	225.438	228.338	225.838	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstruction
28	22.535	232.800	221.153	217.903	220.803	218.303	1 x 3 x 2.5	0.065	3.00	2.50	0.40	0.35	0.35	0.30	0.15	11.647	Newconstruction
29	24.800	216.098	212.748	212.198	215.098	212.598	1 x 4 x 2.5	0.065	4.00	2.50	0.45	0.40	0.40	0.30	0.15		Newconstruction
30	25.710	218.100	215.050	214.650	217.550	215.050	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstruction
31	25.895	219.198	216.148	215.748	218.648	216.148	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstruction
32	28.232	226.540	223.490	223.090	225.990	223.490	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstruction
33	28.250	226.530	223.480	223.080	225.980	223.480	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstruction
34	28.810	227.356	223.906	223.306	226.206	223.706	1 x 5 x 2.5	0.065	5.00	2.50	0.50	0.45	0.45	0.30	0.15		Newconstruction
35	30.115	232.100	229.050	228.650	231.550	229.050	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstruction
36	30.590	231.899	228.849	228.449	231.349	228.849	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstruction
37	30.890	231.800	228.750	228.350	231.250	228.750	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstruction
38	30.950	232.180	229.130	228.730	231.630	229.130	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstruction
39	32.100	241.242	238.192	237.792	240.692	238.192	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstruction
40	33.160	251.683	248.868	245.718	248.618	246.118	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
41	33.690	255.176	252.361	249.211	252.111	249.611	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
42	37.680	242.939	239.624	235.974	239.374	236.374	1 x 2 x 3	0.065	2.00	3.00	0.30	0.25	0.25	0.30	0.15		Reconstruction
43	38.620	240.255	237.440	234.290	237.190	234.690	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
44	40.710	238.210	235.395	232.245	235.145	232.645	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
45	42.665	246.680	243.865	240.715	243.615	241.115	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
46	43.030	247.310	244.495	241.345	244.245	241.745	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
47	43.410	251.010	248.195	245.045	247.945	245.445	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
48	43.960	257.800	254.985	251.835	254.735	252.235	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
49	44.447	259.770	256.955	253.805	256.705	254.205	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
50	45.067	259.055	256.240	253.090	255.990	253.490	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
51	45.160	259.320	256.505	253.355	256.255	253.755	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
52	46.260	258.428	255.613	252.463	255.363	252.863	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
53	46.650	261.910	259.095	255.945	258.845	256.345	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
54	47.340	262.628	259.813	256.663	259.563	257.063	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
55	62.900	208.075	205.260	202.110	205.010	202.510	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
56	63.185	208.102	205.287	202.137	205.037	202.537	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
57	64.430	224.910	222.095	218.945	221.845	219.345	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
58	64.900	226.932	224.117	220.967	223.867	221.367	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
59	65.340	223.740	220.925	217.775	220.675	218.175	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
60	67.210	212.160	209.345	206.195	209.095	206.595	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
61	67.415	211.761	208.796	205.346	208.246	205.746	1 x 4 x 2.5	0.065	4.00	2.50	0.45	0.40	0.40	0.30	0.15		Reconstruction
62	67.990	207.220	204.405	201.255	204.155	201.655	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
63	70.365	181.400	178.435	174.985	177.885	175.385	1 x 4 x 2.5	0.065	4.00	2.50	0.45	0.40	0.40	0.30	0.15		Reconstruction
64	72.000	166.000	162.985	159.435	162.335	159.835	1 x 5 x 2.5	0.065	5.00	2.50	0.50	0.45	0.45	0.30	0.15		Reconstruction
65	72.510	163.440	160.475	157.025	159.925	157.425	1 x 4 x 2.5	0.065	4.00	2.50	0.45	0.40	0.40	0.30	0.15		Reconstruction
66	80.375	120.098	117.083	113.533	116.433	113.933	1 x 6 x 2.5	0.065	6.00	2.50	0.50	0.45	0.45	0.30	0.15		Reconstruction
67	82.470	111.095	108.280	105.130	108.030	105.530	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
68	83.640	110.589	107.774	104.624	107.524	105.024	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
69	83.910	108.912	105.947	102.497	105.397	102.897	1 x 4 x 2.5	0.065	4.00	2.50	0.45	0.40	0.40	0.30	0.15		Reconstruction
70	85.490	104.190	101.140	100.740	103.640	101.140	1 x 2.5 x 2.5	0.065	2.00	5.00	0.30	0.25	0.25	0.30	0.15		Reconstruction
71	86.275	104.089	101.274	98.124	101.024	98.524	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
72	86.935	93.150	90.335	87.185	90.085	87.585	1 x 2.5 x 2.5	0.065	2.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
73	87.485	87.444	84.629	81.479	84.379	81.879	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
74	87.840	84.030	80.015	75.465	79.365	75.865	1 x 6 x 3.5	0.065	6.00	3.50	0.50	0.45	0.45	0.30	0.15		Reconstruction
75	88.700	81.066	78.101	74.651	77.551	75.051	1 x 4 x 2.5	0.065	4.00	2.50	0.45	0.40	0.40	0.30	0.15		Reconstruction
76	88.842	81.378	78.328	77.928	80.828	78.328	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstructionn
77	91.440	69.631	66.581	66.181	69.081	66.581	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Newconstructionn
78	93.640	61.294	58.329	54.879	57.779	55.279	1 x 4 x 2.5	0.065	4.00	2.50	0.45	0.40	0.40	0.30	0.15		Reconstruction
79	95.465	50.190	47.375	44.225	47.125	44.625	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
80	96.240	50.972	48.157	45.007	47.907	45.407	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
81	97.565	43.434	40.469	37.019	39.919	37.419	1 x 4 x 2.5	0.065	4.00	2.50	0.45	0.40	0.40	0.30	0.15		Reconstruction
82	97.960	44.500	41.685	38.535	41.435	38.935	1 x 3.5 x 2.5	0.065	3.50	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
83	98.850	42.253	39.438	36.288	39.188	36.688	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
84	99.150	40.357	37.542	34.392	37.292	34.792	1 x 2 x 2.5	0.065	2.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
85	101.550	29.840	27.375	23.925	26.825	24.325	1 x 4 x 2.5	0.065	4.00	2.00	0.45	0.40	0.40	0.30	0.15		Reconstruction
86	101.825	29.538	26.723	23.573	26.473	23.973	1 x 3 x 2.5	0.065	3.00	2.50	0.30	0.25	0.25	0.30	0.15		Reconstruction
87	102.245	30.748	24.933	21.783	24.683	22.183	1 x 2.5 x 2.5	0.065	2.50	5.50	0.30	0.25	0.25	0.30	0.15		Reconstruction

DECK WIDTH SHALL BE CONSIDER EMBANKMENT TO EMBANKMENT

LEGEND:-

1. U/S : UP-STREAM
2. D/S : DOWN-STREAM
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7. SBC : SAFE BEARING CAPACITY

SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M-30.
3. GRADE OF CONCRETE FOR CRASH BARRIER SHALL BE M-40.
4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN m UNLESS SPECIFIED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY.
3. GRADE OF CONCRETE FOR BOX STRUCTURE M-30, P.C.C SHALL BE M-10 AND CRASH BARRIER AS M-40 UNLESS MENTIONED OTHERWISE.
4. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATION FOR ROADS AND BRIDGE WORKS OF MORTH (5th REVISION).
5. BOX STRUCTURE SHALL BE PLACED OVER A FIRM STRATA TO THE SATISFACTION OF ENGINEER. LOOSE OR SOFT PATCHES SHALL BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL, COMPACTED TO 98% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 200mm COMPACTED THICKNESS. THE SBC OF THE COMPACTED LAYER SHALL NOT BE LESS THAN THE BASE PRESSURE INDICATED.
6. THE PAVEMENT THICKNESS OVER THE BOX SHALL BE THE SAME AS PROVIDED FOR CARRIAGEWAY THIS SHALL BE CONSIDERED IN ALL CASES OF CUSHION.
7. SBC SHOULD BE VERIFIED BEFORE EXECUTION.
8. THE NEW JOINT SHOULD BE DONE AS PER SECTION CLAUSE 2900 (2904) OF MORTH SPECIFICATION AND AS PER THE DIRECTION OF ENGINEER-IN-CHARGE.
9. THE SOIL IMPROVEMENT SHALL BE CARRIEDOUT FOR FOUNDATION IN CONSULTATION WITH ENGINEER INCHARGE.
10. THE SBC IS ASSUMED AS 55t/Sq.m.. THE SAME SHALL BE CONFIRMED DURING THE GEOTECHNICAL INVESTIGATION.

No	DATE	REVISIONS	BY	CHKD	APPD
3	15.04.25	FINAL DETAILED PROJECT REPORT	GS	LP	SK
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0	05.09.24	DRAFT DETAILED PROJECT REPORT	GS	LP	SK

Date	Drawn by	Checked by	Scale
05.03.2024	SIGAMANI	PAWAN KUMAR	AS SHOWN
File name	**Designed by**	**Approved by**	**Sheets**
TYP-G: SBC-01	SWAROOP	SHIVAKUMARI	03 OF 03

FDPR

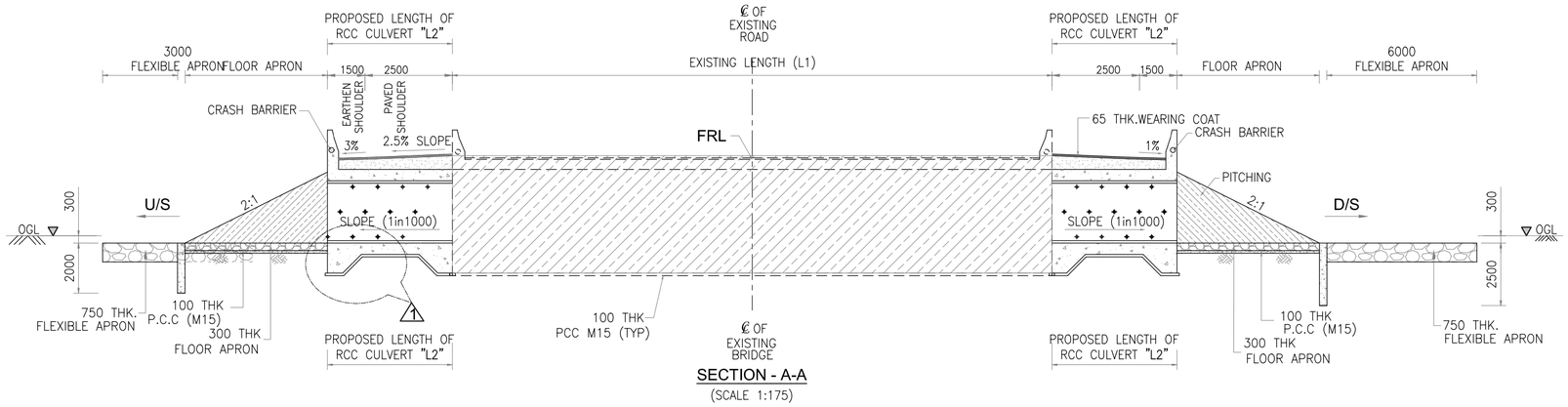
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

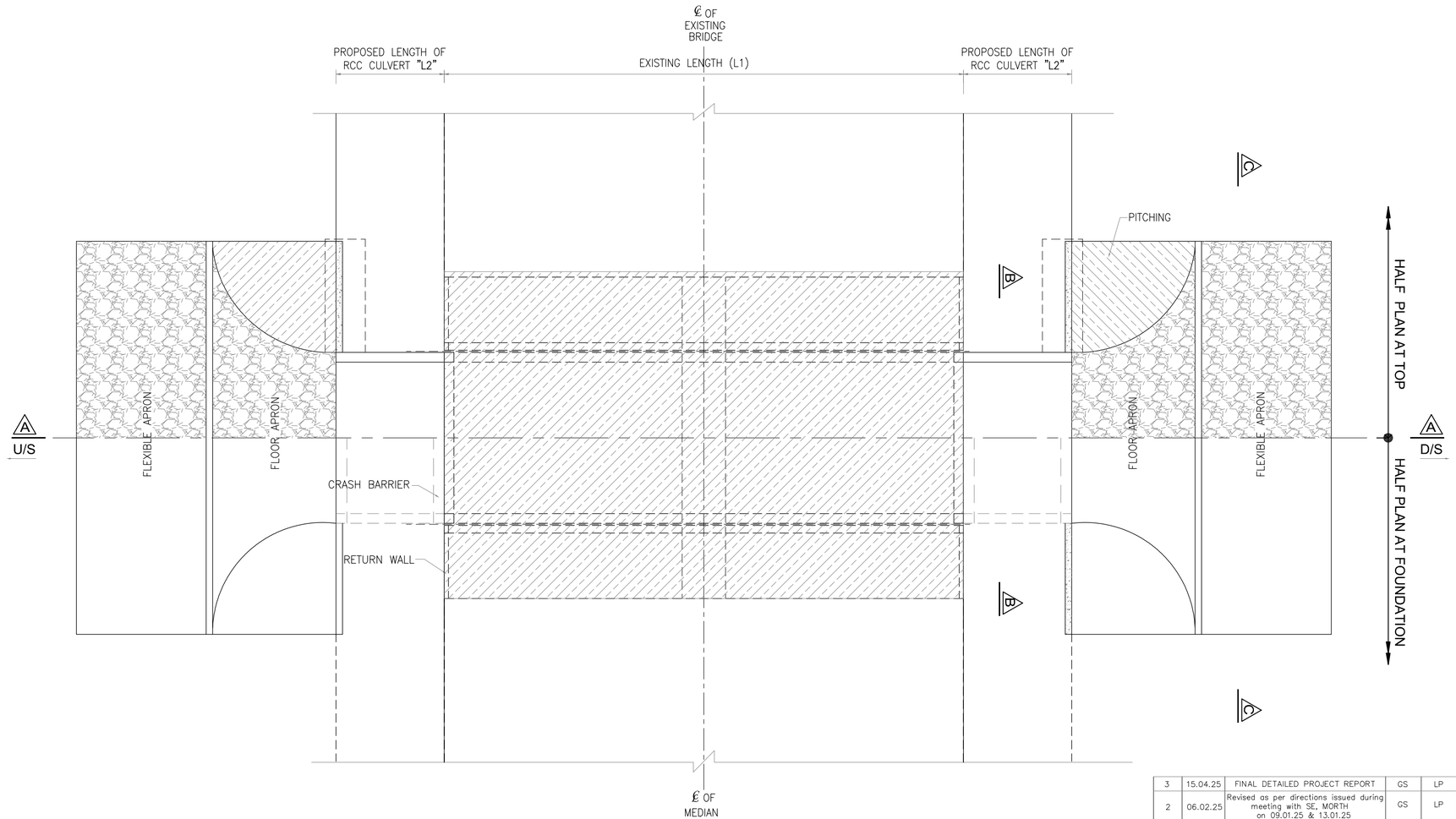
TYPICAL GAD PROPOSED FOR SINGLE CELL BOX CULVERT

Plot Size : (A2 Size) | DRG.NO : TYP-G: SBC-01



SECTION - A-A

(SCALE 1:175)



PLAN OF EXISTING BRIDGE WITH PROPOSED BOX TYPE CULVERT A-A

(SCALE 1:175)

LEGEND:-

1. U/S : UP-STREAM
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7. SBC : SAFE BEARING CAPACITY

SPECIFICATIONS:-

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. GRADE OF CONCRETE FOR BOX STRUCTURE SHALL BE M-30.
3. GRADE OF CONCRETE FOR CRASH BARRIER SHALL BE M-40.
4. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
5. RIVER/STREAM TRAINING AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.

NOTES:

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN m UNLESS SPECIFIED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY.
3. GRADE OF CONCRETE FOR BOX STRUCTURE M-30, P.C.C SHALL BE M-10 AND CRASH BARRIER AS M-40 UNLESS MENTIONED OTHERWISE.
4. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATION FOR ROADS AND BRIDGE WORKS OF MORTH (5th REVISION).
5. BOX STRUCTURE SHALL BE PLACED OVER A FIRM STRATA TO THE SATISFACTION OF ENGINEER. LOOSE OR SOFT PATCHES SHALL BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL, COMPACTED TO 98% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 200mm COMPACTED THICKNESS. THE SBC OF THE COMPACTED LAYER SHALL NOT BE LESS THAN THE BASE PRESSURE INDICATED.
6. THE PAVEMENT THICKNESS OVER THE BOX SHALL BE THE SAME AS PROVIDED FOR CARRIAGEWAY THIS SHALL BE CONSIDERED IN ALL CASES OF CUSHION.
7. SBC SHOULD BE VERIFIED BEFORE EXECUTION.
8. THE NEW JOINT SHOULD BE DONE AS PER SECTION CLAUSE 2900 (2904) OF MORTH SPECIFICATION AND AS PER THE DIRECTION OF ENGINEER-IN-CHARGE.
9. THE SOIL IMPROVEMENT SHALL BE CARRIEDOUT FOR FOUNDATION IN CONSULTATION WITH ENGINEER INCHARGE.
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FDPR

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Date: 05.03.2024	Drawn by: SIGAMANI	Checked by: PAWAN KUMAR	Scale: AS SHOWN
File name: TYP-G: SBC-01	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 01 OF 02

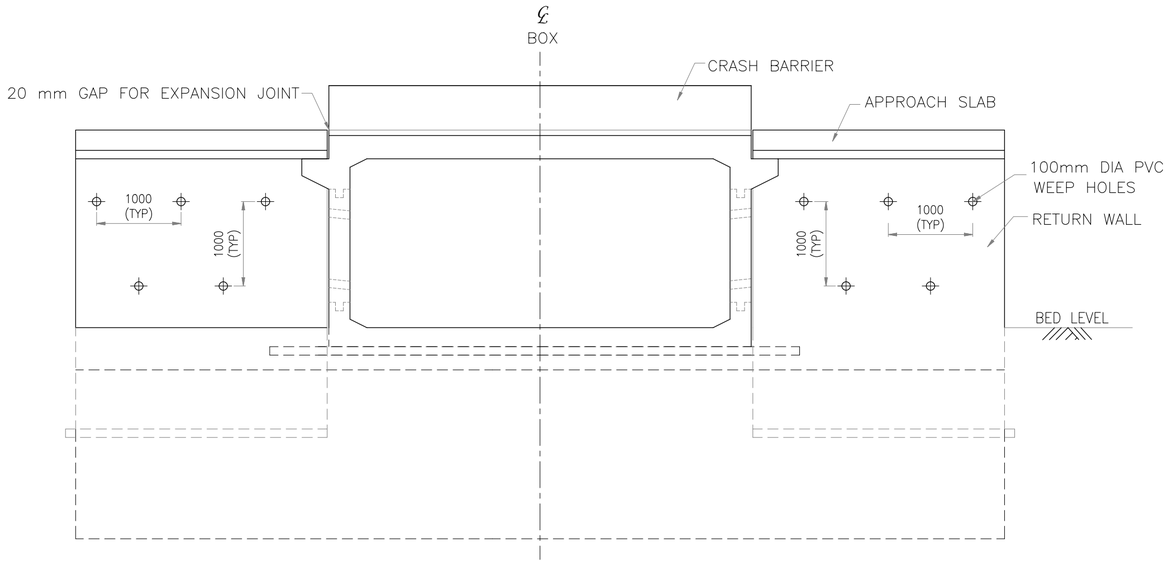
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

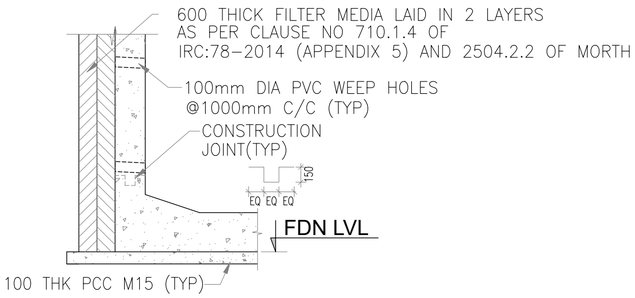
TYPICAL GAD PROPOSED FOR SINGLE CELL BOX CULVERT (WIDENING)

Plot Size : (A2 Size) | DRG.NO : TYP-G: SBC-01



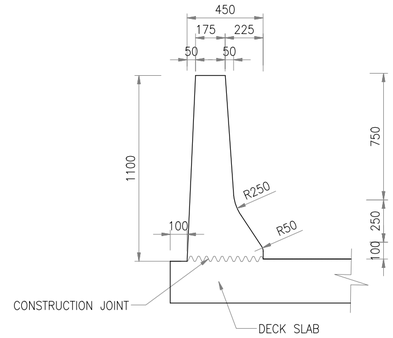
PROPOSED CROSS SECTION OF BOX CULVERT - CC

(SCALE 1:50)



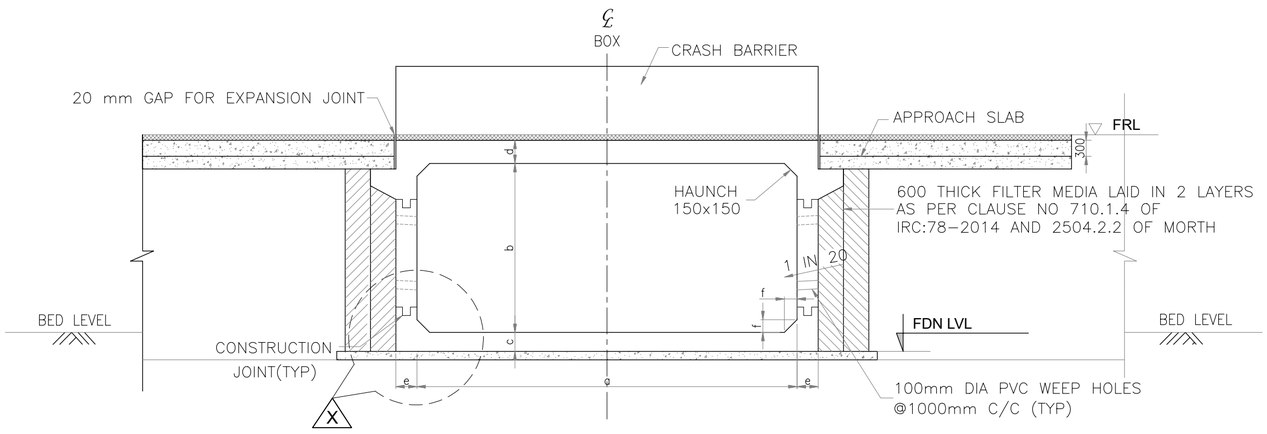
DETAIL - 2

(SCALE 1:50)



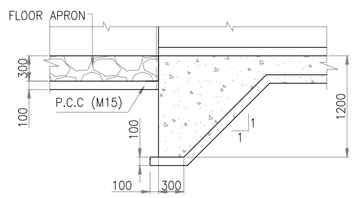
CRASH BARRIER

(SCALE 1:25)



PROPOSED CROSS SECTION OF BOX CULVERT - BB

(SCALE 1:50)



DETAIL - 1

(SCALE 1:50)

Sl.No	Design Chainage (km)	FRL (m)	OGL (m)	Foundation level (m)	Soffit level (m)	Invert Level (m)	Span Arangement (m)	Wearing coat thickness (m)	a (m)	b (m)	c (m)	d (m)	e (m)	f (m)	g (m)	remarks
1	37.310	242.520	240.755	238.505	240.205	238.905	1 x 1 x 1.3	0.065	1.00	1.30	0.45	0.40	0.40	0.30	0.15	Widening
2	101.085	31.140	29.175	26.725	28.625	27.125	1 x 6 x 1.5	0.065	6.00	1.50	0.45	0.40	0.40	0.30	0.15	widening

DECK WIDTH SHALL BE CONSIDER EMBANKMENT TO EMBANKMENT

SPECIFICATIONS:-

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TYP-G: SBC-01	SWAROOP	SHIVAKUMARI	02 OF 02

FDPR

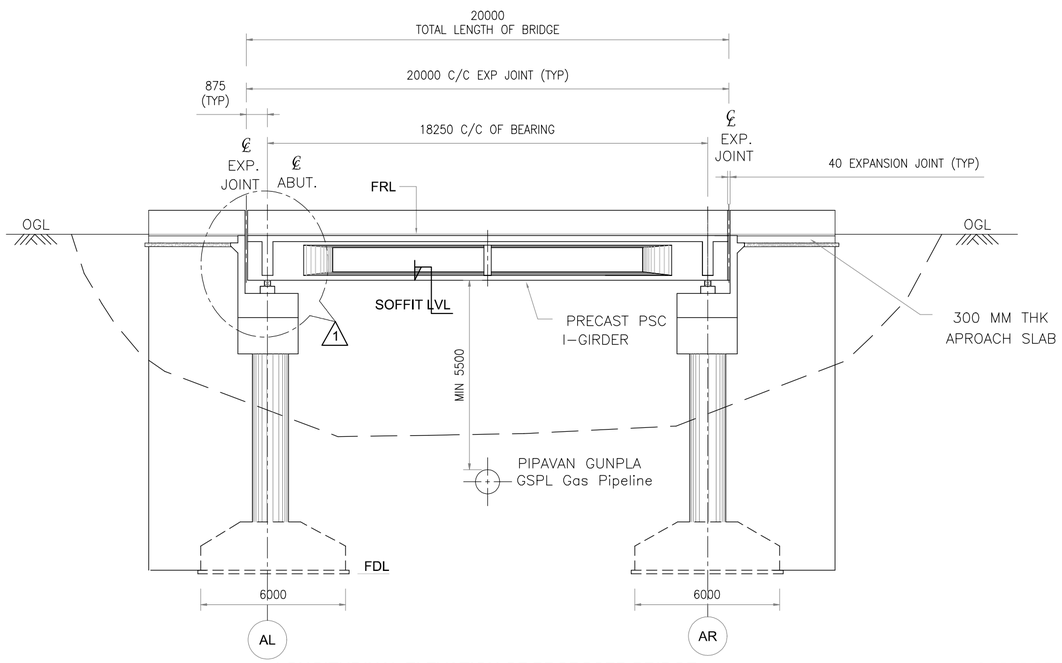
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PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

SECON

TYPICAL GAD PROPOSED FOR SINGLE CELL BOX CULVERT (WIDENING)

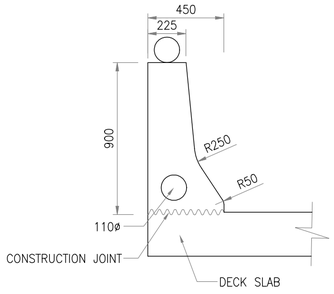
Plot Size : (A2 Size) | DRG.NO : TYP-G: SBC-01



LONGITUDINAL ELEVATION OF PROPOSED BRIDGE

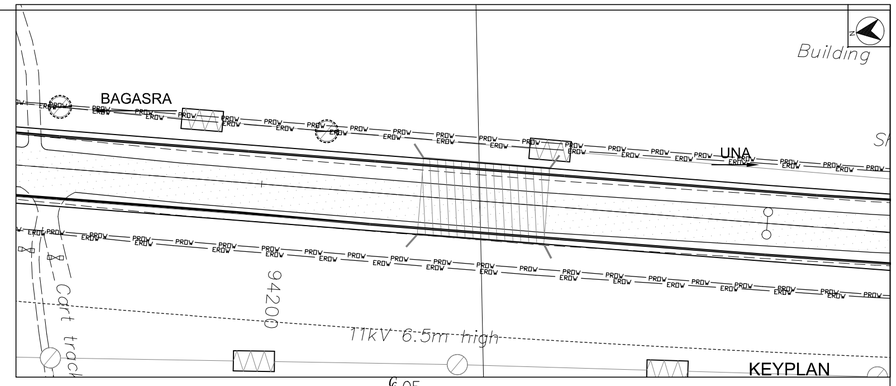
(SCALE 1:200)

ROAD LEVEL (m) AT CARRIAGE WAY	62.307	62.169
OGL/BED LEVEL (m)	57.095	57.060
CHAINAGE (m)	94.177	94.197

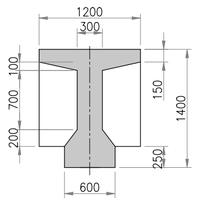


CRASH BARRIER

(SCALE 1:25)

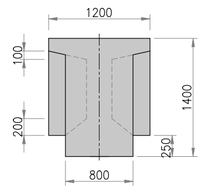


GIRDER DETAILS



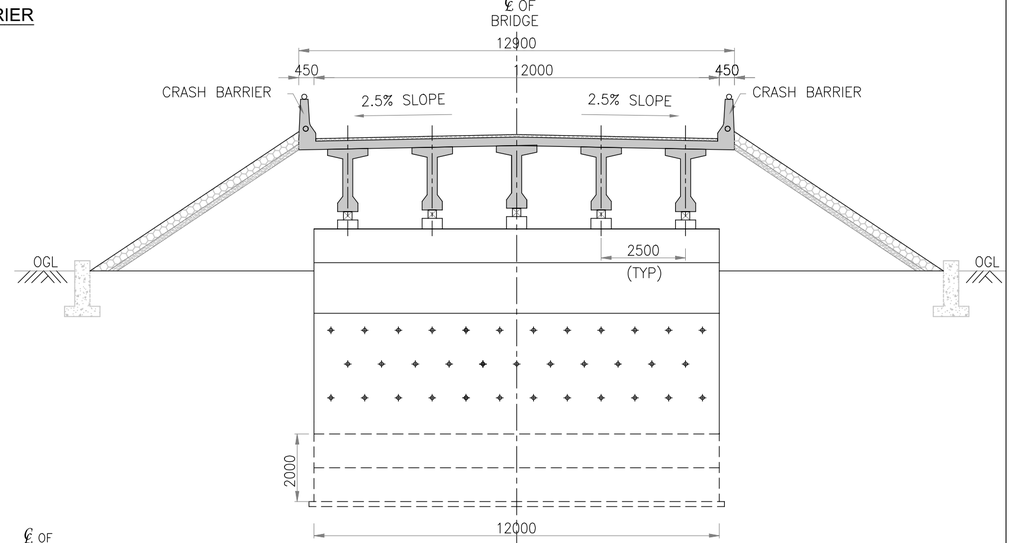
SECTION AT MID SPAN

(SCALE 1:50)



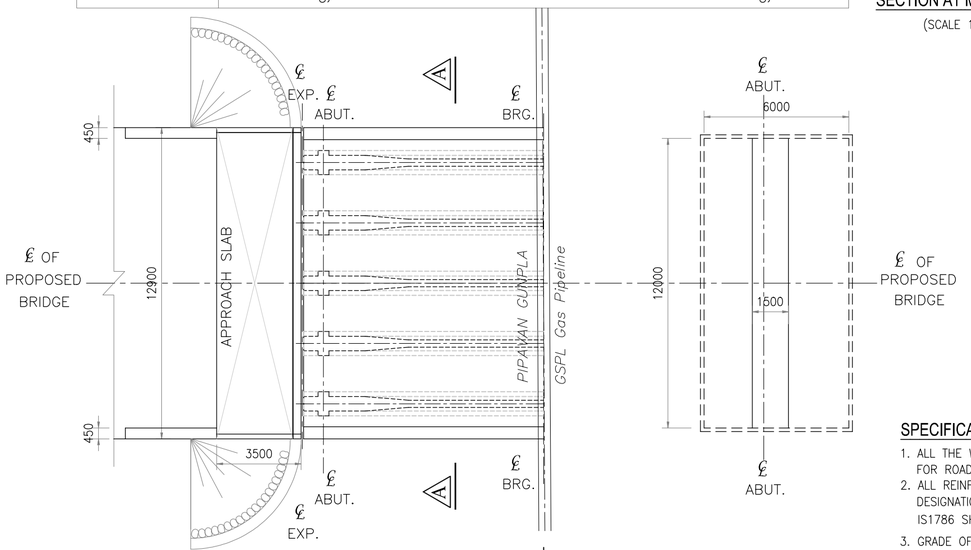
SECTION AT SUPPORT

(SCALE 1:50)



SECTION AT A-A

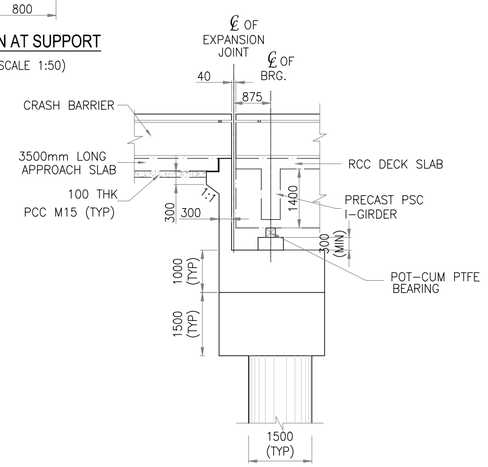
(SCALE 1:150)



HALF PLAN AT TOP | HALF PLAN AT BOTTOM

PLAN OF PROPOSED BRIDGE

(SCALE 1:200)



DETAIL -1

(SCALE 1:100)

NOTE:

1. ALL DIMENSIONS ARE IN mm.
2. ALL REDUCED LEVELS ARE IN m.
3. L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE AND T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE.
4. NO CONSTRUCTION JOINT SHALL BE ALLOWED IN CONCRETE WORKS WITHOUT WRITTEN APPROVAL OF ENGINEER-IN-CHARGE AS PER PREVAILING SITE CONDITION.
5. COMMON BENCH MARK SHOULD BE ESTABLISHED BY THE FIELD ENGINEER BEFORE START OF WORK EITHER ON APPROACHES OR ON BRIDGE PROPER AT THE TIME OF EXECUTION OF WORK.

IMPORTANT:

6. DRILLING QUANTITY AS PER CONTRACT EXHAUSTED. ADDITIONAL DRILLING QUANTITY REQUIRED TO BE EXECUTED AT CHAINAGE KM 94.187 NOT APPROVED BY EE, RAJKOT, R&B.
7. CONSULTANT DIRECTED BY EE, RAJKOT, R&B, TO CONSIDER SBC AT NEARBY LOCATION WHERE DRILLING EXECUTED EARLIER AND UTILIZE THE SAME SBC FOR DESIGN OF BRIDGE AT CHANAGE KM 94.187.
8. CONSIDERING NOTE 6 & 7 ABOVE, SBC AT CHAINAGE KM 96.540 (EARLIER APPROVED REALIGNMENT) CONSIDERED IN THE DESIGN.
9. PRIOR TO EXECUTION/IMPLEMENTATION, DRILLING SHOULD BE CARRIED OUT, SOIL SAMPLES TESTED AND ACTUAL SBC AT CHAINAGE KM 94.187 ASCERTANED. IF VARIATION IS OBSERVED IN THE SBC CONSIDERED IN THE DESIGN, BRIDGE SHOULD BE RE-DESIGNED, AS PER SBC AT CHAINAGE KM 94.187.

SPECIFICATIONS:

1. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS OF MORTH (5th REVISION).
2. ALL REINFORCING BARS SHALL BE HIGH YIELD STRENGTH DEFORMED BARS WITH GRADE DESIGNATION Fe 500. ONLY THERMO MECHANICALLY TREATED (TMT)BARS CONFORMING TO IS1786 SHALL BE USED.
3. GRADE OF CONCRETE FOR SUBSTRUCTURE AND FOUNDATION SHALL BE M-35.
4. GRADE OF CONCRETE FOR SUPERSTRUCTURE AND CRASH BARRIER SHALL BE M-40.
5. 65mm THK. WEARING COAT TO BE PROVIDED CONSISTING OF 40mm THK. BITUMINOUS CONCRETE OVERLAID WITH 25mm THK. MASTIC ASPHALT.
6. RIVER TRAINING WORK AND PROTECTION WORK TO BE STRICTLY FOLLOWED AS PER THE MORTH SPECIFICATION SECTION 2500.
7. POT-CUM-PTFE BEARINGS SHALL BE PROVIDED AS PER IRC:83 (PART-III-2002).
8. ELASTOMERIC STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED
9. TEMPORARY LINER FOR CERTAIN LENGTH FROM TOP MAY BE PROVIDED IF NECESSARY TO FACILITATE PROPER CONCRETING. THIS MAY BE RETRIEVED BEFORE CONCRETE SETS.
10. FOR e VALUE REFER CORRESPONDING PLAN & PROFILE

LEGEND:

TYP = TYPICAL
OGL/BED LVL = ORIGINAL GROUND LEVEL/BED LEVEL
FRL LVL = FINALISED/FINAL ROAD LEVEL
FDN LVL = FOUNDATION LEVEL

No	DATE	REVISIONS	BY	CHKD	APPD
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Date 05.03.2024	Drawn by SIGAMANI	Checked by PAWAN KUMAR	Scale AS SHOWN
File name G:PLC-01	Designed by SWAROOP	Approved by SHIVAKUMARI	Sheets 01 OF 01

FDPR

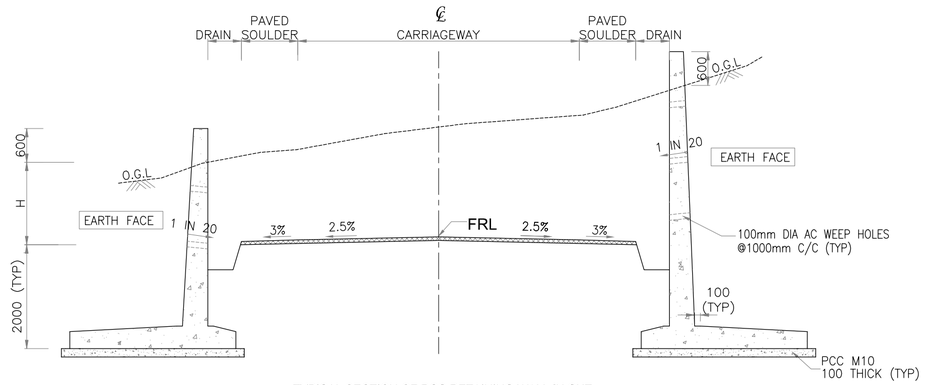
CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
DR. RAJENDRA PRASAD ROAD, KASHIVISHWANATH PLOT
RAJKOT-360 001, GUJARAT

PROJECT: CONSULTANCY SERVICES FOR UP GRADATION OF UNA - DHARI - BAGASARA - AMRELI - BABRA - JASDAN - CHOTILA NATIONAL HIGHWAY IN THE STATE OF GUJARAT

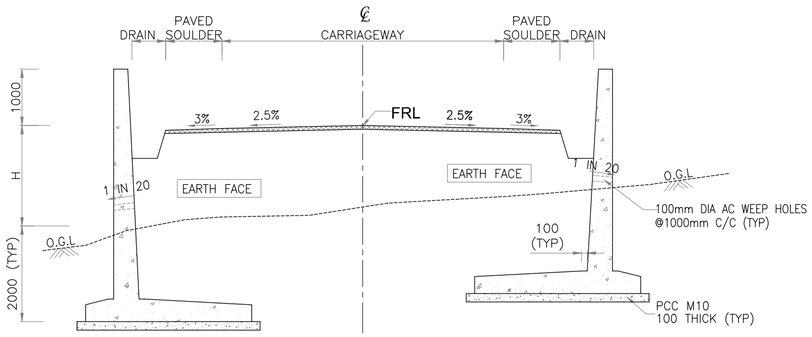
GAD PROPOSED FOR PIPE LINE CROSSING AT CH:94+187KM

SECON

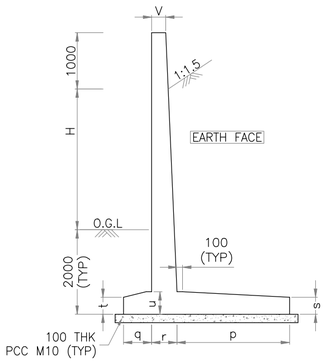
Plot Size : (A2 Size) | DRG.NO : G:PLC-01



TYPICAL SECTION OF RCC RETAINING WALL IN CUT
(SCALE 1:75)



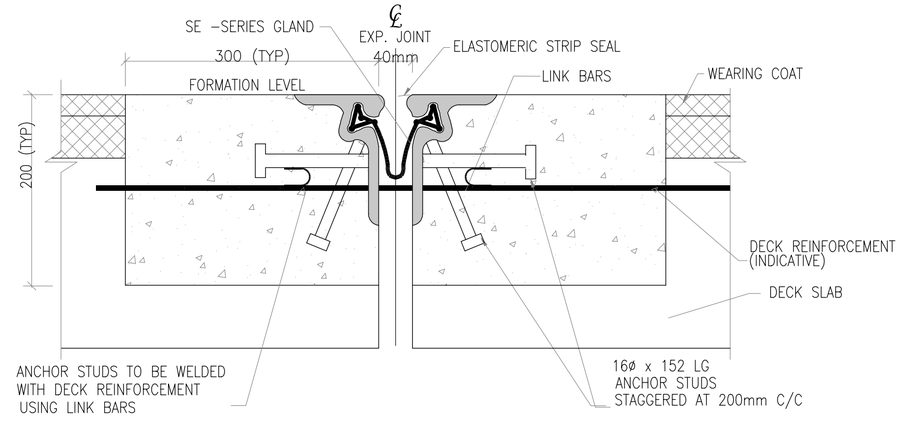
TYPICAL SECTION OF RCC RETAINING WALL IN FILL
(SCALE 1:75)



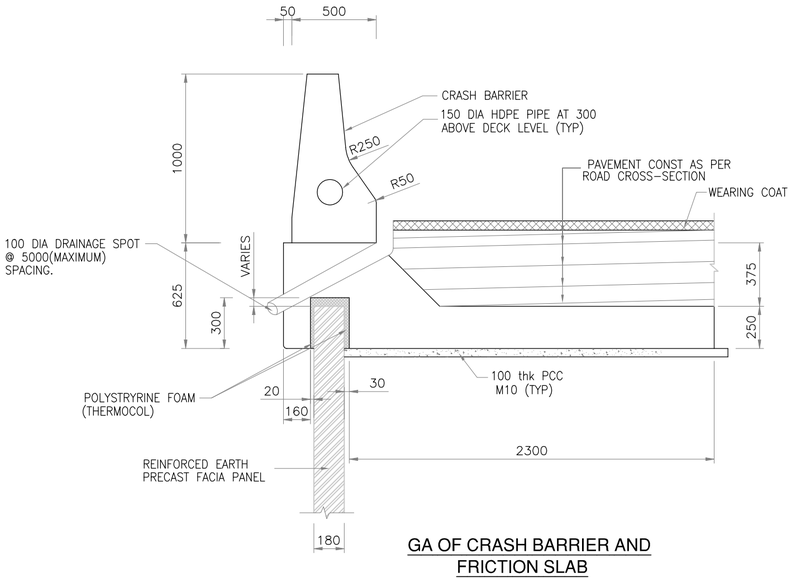
SECTION OF RETAINING WALL
(SCALE 1:75)

DIMENSION DETAILS OF R.C.C RETAINING WALL

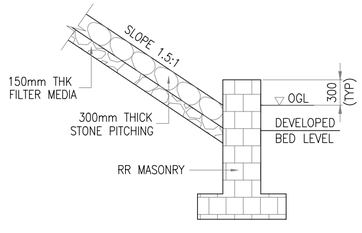
TYPE	HT OF RETAINING WALL ABOVE OGL H (m)	p (m)	q (m)	r (m)	s (m)	t (m)	u (m)	v (m)	w (m)
1	1.5	0.80	0.60	0.40	0.20	0.20	0.30	0.30	1.60
2	2.0	1.10	0.60	0.40	0.25	0.25	0.35	0.30	1.83
3	2.5	1.20	0.70	0.55	0.30	0.30	0.40	0.50	2.05
4	3.0	1.50	0.75	0.60	0.30	0.30	0.40	0.50	2.30
5	3.5	2.00	0.80	0.60	300	0.30	0.45	0.50	2.53
6	4.0	2.40	1.00	0.60	0.30	0.30	0.50	0.50	2.75



TYPICAL CROSS SECTION OF ELASTOMERIC STRIP SEAL
EXPANSION JOINT AFTER CONCRETING



GA OF CRASH BARRIER AND
FRICTION SLAB
(SCALE 1:25)



DETAIL OF TOE WALL
(SCALE 1:50)

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CRL = CROSS ROAD LEVEL

NOTES:

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN m UNLESS SPECIFIED OTHERWISE.
2. CONCRETE GRADE SHALL BE M–30.
3. THE REINFORCEMENT SHALL BE OF HYSD BARS WITH Fe 500 CONFORMING TO IS:1786–2008
4. CLEAR COVER TO THE MAIN REINFORCEMINT IS 50mm.
5. FOOTING SHALL BE PLACED OVER A FIRM STRATA TO THE SATISFACTION OF THE ENGINEER–IN–CHARGE LOOSE OR SOFT PATCHES SHALL BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL, COMPACTED TO 98% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 200mm COMPACTED THICKNESS.
6. CONSTRUCTION JOINTS SHOULD BE PROVIDED AT INTERVALS APPROVED BY ENGINEER–IN–CHARGE
7. STANDARD PENETRATION TEST (SPT) TO BE CONDUCTED RANDOMLY TO THE SATISFACTION OF TO ASCERTAIN SAFE BEARING CAPACITY OF THE COMPACTED LAYER.
8. ALL THE WORKS SHOULD BE CARRIED OUT AS PER THE STANDARD SPECIFICATION FOR ROADS AND BRIDGE WORKS OF MORTH (5th REVISION).
9. HEIGHT OF RETAINING WALL SHOWN IN DRAWING IS FOR GUIDANCE ONLY, AS PER ON –SITE CONDITION AND WORKING CROSS SECTION. THE DIMENSION SHALL BE SUITABLY MODIFIED.
10. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ROAD PLAN AND PROFILE, WORKING CROSS SECTIONS.

FDPR

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File name: TYP–G: REW–01	Designed by: SWAROOP	Approved by: SHIVAKUMARI	Sheets: 01 OF 01

CLIENT: NATIONAL HIGHWAY DIVISION, RAJKOT
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SECON

TYPICAL GAD PROPOSED FOR RETAINING WALL

Plot Size : (A2 Size) | DRG.NO : TYP–G: REW–01