

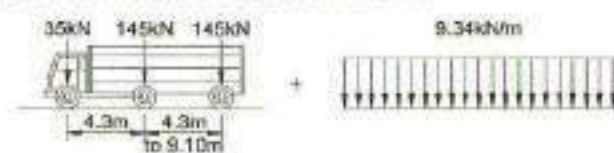
GENERAL NOTES

GENERAL

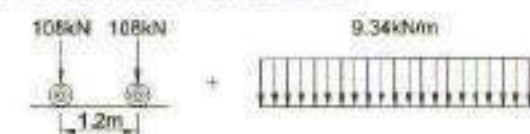
1. IN THE INTERPRETATION OF THESE DRAWINGS INDICATED DIMENSIONS SHALL GOVERN ALL DIMENSIONS, DISTANCES AND SIZES SHALL NOT BE SCALED FOR CONSTRUCTION PURPOSES.
2. UNLESS OTHERWISE INDICATED, ALL DIMENSIONS AND MEMBER SIZES ARE IN MILLIMETERS.
3. STATIONINGS ARE IN KILOMETERS + METERS, ELEVATIONS ARE IN METERS.

DESIGN CRITERIA

1. DESIGN SPECIFICATION
2015 DPWH DESIGN GUIDELINES, CRITERIA AND STANDARDS AND
2013 DPWH BRIDGE SEISMIC DESIGN SPECIFICATION
2. LOADINGS
a. INCLUDES AN ALLOWANCE FOR FUTURE 50mm BITUMINOUS WEARING COURSE OF ROADWAY = 1.10MPa.
b. LIVE LOAD: HL-93
(b-1) DESIGN TRUCK AND DESIGN LANE LOAD:



(b-2) DESIGN TANDDEM AND DESIGN LANE LOAD:



(b-3) PERMIT DESIGN LIVE LOAD: CALTRANS P-7 (SPECIAL PERMIT REQUIRED BEFORE PASSING THE BRIDGE)



c. DYNAMIC LOAD ALLOWANCE (TABLE 10.5-1):

IN ACCORDANCE WITH DGCS, VOLUME 5 - BRIDGE DESIGN

d. PEDESTRIAN LOAD: 3.00 kPa

e. SEISMIC LOAD

SHOULD BE IN ACCORDANCE WITH 2013 DPWH BRIDGE SEISMIC DESIGN SPECIFICATION FOR HIGHWAY BRIDGES.

f. OTHER LOADING IN ACCORDANCE WITH DGCS, VOLUME 5 - BRIDGE DESIGN

MATERIALS

1. CONCRETE

a. CONCRETE STRENGTH BY CLASS:

STRUCTURAL MEMBER	CLASS	28-DAY CYLINDER STRENGTH		MAX SIZE OF COARSE AGGREGATE, mm(in.)
		MPa	PSI	
CAST-IN-PLACE SLABS, PIERS, COLUMNS, DIAPHRAGMS, SIDEWALKS AND BACKWALLS	A	27.59	4000	20
ABUTMENTS	A	27.59	4000	20
BORED PILES	A	27.59	4000	20
THIN REINFORCED SECTIONS RAILINGS AND RAILPOST	C	21.00	3045	12
PRESTRESSED CONCRETE MEMBERS	P	48.30	7,000	20
LEAN CONCRETE	B	16.50	2400	38

b. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL THE PLACING SEQUENCES FOR ALL TYPES OF CONCRETING WORK.

c. DESIGN OF CONCRETE STRENGTH SHALL BE AS SET FORTH UNDER ITEM NO.1 OF MATERIALS.

d. CONCRETE SHALL BE DEPOSITED, VIBRATED AND CURED IN ACCORDANCE WITH THE GENERAL SPECIFICATIONS.

2. REINFORCING STEEL

(a) REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 40, DEFORMED WITH MINIMUM YIELD STRENGTH, $f_y=276$ MPa (40,000 PSI) FOR BARS 12mm ϕ OR SMALLER AND GRADE 60 WITH MINIMUM YIELD STRENGTH, $f_y=414$ MPa (60,000 PSI) FOR 16mm ϕ AND LARGER.

(b) FOR DRIVEN PILES, REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 40, DEFORMED WITH MINIMUM YIELD STRENGTH, $f_y=276$ MPa (40,000 PSI).

(c) REINFORCING STEEL SHALL BE FREE OF MILL SCALES, OIL OR ANY SUBSTANCES WHICH WILL WEAKEN THE BOND WITH CONCRETE.

3. PRESTRESSING STEEL

PRESTRESSING STEEL SHALL BE SEVEN-WIRE UNCOATED STRESS-RELIEVED STRANDS ASTM A416 (AASHTO M203) WITH MINIMUM ULTIMATE STRENGTH OF 1852 MPa (270,000 psi).

4. ELASTOMERIC BEARING PADS

DUROMETER HARDNESS TYPE A ASTM D2240-90.

TENSILE STRENGTH MIN ASTM D412 17.2MPa.

ELONGATION BREAK PT. MIN. 350%.

MATERIAL: NEOPRENE.

ELASTOMERIC PADS SHALL BE VIRGIN CHLOROPRENE (NEOPRENE) PADS. THE SOLE POLYMER IN THE ELASTOMERIC COMPOUND SHALL BE NEOPRENE AND SHALL BE NOT LESS THAN 60% BY VOLUME OF TOTAL COMPOUND. BEARING PADS SHALL BE LAMINATED WITH NON-CORROSIVE METAL SHIMS. ELASTOMERIC BEARING PADS SHALL CONFORM TO THE REQUIREMENTS AS PRESCRIBED IN 2004 DPWH STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES & AIRPORTS, VOL.11 FOR ELASTOMERIC BEARING PAD.

5. END ANCHORAGE DEVICES

ANCHORAGE DEVICES SHALL WITHSTAND A FORCE OF NOT LESS THAN 85% OF THE SPECIFIED MINIMUM ULTIMATE TENSILE STRENGTH OF THE TENDON WITHOUT DAMAGE OR EXCESSIVE DEFORMATION OR DRAW-IN. NO DAMAGED ANCHORAGES SHALL BE USED. ALL STEEL PORTIONS SHALL BE PROTECTED FROM CORROSION AT ALL TIMES. ALL TAPPED HOLES SHALL BE PROTECTED BY SUITABLE PLUGS UNTIL USED. THE ANCHORAGE DEVICES SHALL BE KEPT FROM MORTAR, LOOSE MIST, GREASE, TAR, PAINT OIL, MUD OR ANY OTHER COATING.

6. SHEATHING OR DUCTS

FOR POST TENSIONED TENDONS-SHEATHING OR DUCTS SHALL BE APPROVED BY THE ENGINEER AND SHALL BE STRONG AND TO WITHSTAND THE PLACING AND VIBRATION OF THE CONCRETE WITHOUT SUFFERING ANY DAMAGE OR DEFORMATION. THE WALL OR DUCTS SHALL BE MORTAR TIGHT. SHEATHING OR DUCTS SHALL BE GALVANIZED.

7. LIFTING HOOK DEVICES

LIFTING HOOK DEVICES OF PRESTRESSED MEMBERS OR ANY SUITABLE DEVICE PREPARED BY THE CONTRACTOR SHALL BE SHOWN IN THE PLANS AND APPROVED BY THE ENGINEER.

CONSTRUCTION

1. SETTING OUT

THE SETTING OUT AND THE ELEVATIONS OF THE DIFFERENT COMPONENTS OF THE STRUCTURE SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE START OF ANY CONSTRUCTION WORK.

2. REINFORCED CONCRETE

a. CONCRETE MIX AND PLACING

(1) DESIGN OF CONCRETE MIX SHALL MEET THE DESIGN CONCRETE STRENGTH GIVEN UNDER ITEM 1 OF MATERIALS.

(2) CONCRETE SHALL BE DEPOSITED, VIBRATED AND CURVED IN ACCORDANCE WITH THE SPECIFICATIONS.

(3) FOR CONCRETE DEPOSITED AGAINST THE GROUND, LEAN CONCRETE WITH A MINIMUM THICKNESS OF 50mm SHALL LAID FIRST BEFORE INSTALLING THE REINFORCEMENT. THIS LEAN CONCRETE SHALL NOT BE CONSIDERED IN MEASURING THE STRUCTURAL DEPTH OF CONCRETE SECTION.

(4) THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL PLACING SEQUENCES FOR ALL CONCRETING WORK.

b. BAR BENDING, SPLICING AND PLACING

(1) THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL OF SHOP DRAWINGS INDICATING THE BENDING, CUTTING, SPLICING AND INSTALLATION OF ALL REINFORCING BARS.

(2) BARS SHALL BE BENT COLD, BARS PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT UNLESS PERMITTED BY THE ENGINEER.

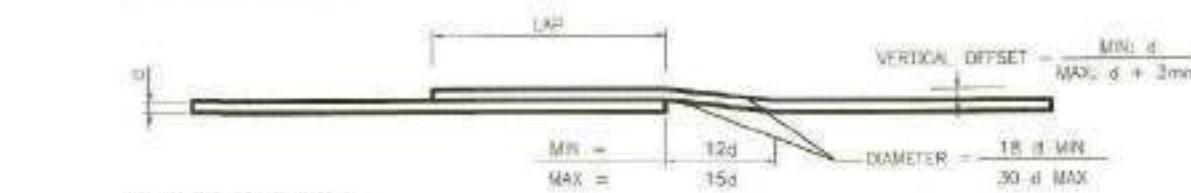
(3) BAR SPLICING NOT INDICATED ON DRAWINGS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

(4) WELDED SPLICES, IF APPROVED BY THE ENGINEER, SHALL DEVELOP IN TENSION AT LEAST 125% OF THE SPECIFIED YIELD STRENGTH OF BARS.

(5) NOT MORE THAN 50% OF THE BARS AT ANY ONE SECTION SHALL BE SPLICED.

(6) UNLESS OTHERWISE SHOWN ON DRAWINGS, THE CLEAR DISTANCE BETWEEN PARALLEL BARS IN A LAYER SHALL NOT BE LESS THAN 1.5 TIMES THE NOMINAL DIAMETER OF THE BAR NOR LESS THAN 1.5 TIMES THE MAXIMUM SIZE OF COARSE AGGREGATE. THE CLEAR DISTANCE BETWEEN LAYERS SHALL NOT BE LESS THAN 26mm NOR ONE BAR DIAMETER. THE BARS IN THE UPPER LAYER SHALL BE PLACED DIRECTLY ABOVE THOSE IN THE BOTTOM LAYER.

(7) CRANKED SPLICES



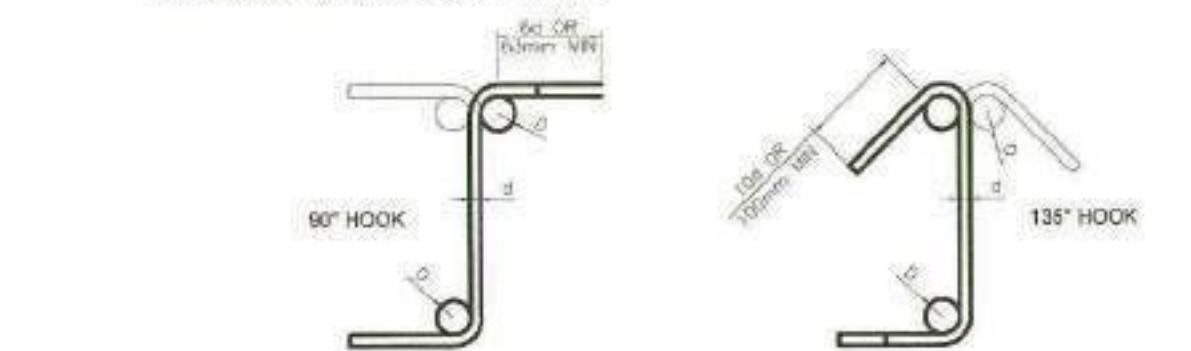
(8) HOOKS AND BENDS

DIMENSIONS OF 90° AND 180° HOOKS:



PIN DIAMETER: D=6d FOR ϕ 10 THRU ϕ 25
D=6d FOR ϕ 28, ϕ 32 AND ϕ 36

DIMENSIONS FOR STIRRUPS AND THE HOOKS:



PIN DIAMETER: D=6d FOR ϕ 10 THRU ϕ 25
D=6d FOR ϕ 28, ϕ 32 AND ϕ 36

c. CONCRETE COVER TO REINFORCEMENT

MINIMUM CONCRETE COVER TO REINFORCEMENT SHALL BE 75mm UNLESS SHOWN OTHERWISE ON DRAWINGS.

d. CONSTRUCTION JOINT

(1) THE POSITION AND FORM OF ANY CONSTRUCTION JOINTS SHALL BE AS SHOWN ON DRAWINGS OR AS AGREED WITH THE ENGINEER.

(2) THE INTERFACE BETWEEN THE FIRST AND SECOND POUR OF CONCRETE SHALL BE ROUGHED WITH AN AMPLITUDE OF 6mm MINIMUM.

e. FALSEWORK

ALL FALSEWORK SHALL BE DESIGNED BY THE CONTRACTOR SUBJECT TO THE APPROVAL BY THE ENGINEER. THE FALSEWORK SHALL BE REMOVED ONLY AS DIRECTED BY THE ENGINEER. FALSEWORK UNDER NEW CONSTRUCTED BRIDGE SHALL BE SUFFICIENT TO SUPPORT 2.50 TON/M².

FORMWORK

FORMWORKS SHALL BE CONSTRUCTED SUCH THAT IT WILL NOT YIELD UNDER THE LOAD AND SHALL BE SUCH AS TO AVOID THE FORMATION OF FINE CRACKS. ALL CORNERS OF CONCRETE MEMBERS SHALL BE CHAMFERED TO 20mm UNLESS NOTED OTHERWISE ON DRAWINGS. STRIPPING OF FORMS AND SHORES SHALL BE AS DESIGNATED BY THE ENGINEER. THE FOLLOWING MAYBE USED AS A GUIDE:

	MIN TIME
SHORING UNDER GIRDER, BEAMS, FRAMES	14 DAYS
DECK SLABS	14 DAYS
ABUTMENTS	7 DAYS
WALLS	7 DAYS
COLUMNS	7 DAYS
SIDES OF BEAMS AND ALL OTHER VERTICAL SURFACES	2 DAYS

9. PROTECTION AND CURING OF CONCRETE

CONCRETE SURFACES SHALL BE PROTECTED FROM HARMFUL EFFECTS OF SUN, WIND AND RUNNING WATERS AND SHALL BE KEPT DAMP FOR AT LEAST 7 DAYS.

3. STRUCTURAL STEEL

THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS FOR ALL STRUCTURAL STEEL WORK. THESE SHOP DRAWINGS SHALL BE APPROVED BY THE ENGINEER BEFORE ANY FABRICATION COMMENCES.

4. PRESTRESSED CONCRETE

CONCRETE SHALL BE CLASS "P", 14 DAYS CYLINDER STRENGTH 48.30 MPa, MAXIMUM SIZE OF AGGREGATE 20mm. THE MINIMUM COMPRESSIVE STRENGTH OF PRESTRESSED CONCRETE AT RELEASE BE $f_r=28.60$ MPa (5,600psi) UPON HANDLING OR TRANSPORTING PRECAST PRESTRESSED MEMBERS, SHALL BE AT MINIMUM $f_{cm}=30$ MPa (7,000psi).

PRIOR TO PRESTRESSING OF GIRDERS, THE CONTRACTOR IS REQUIRED TO SUBMIT TO THE PLANNING AND DESIGN DIVISION - BRIDGE SECTION THE WORKING DRAWINGS WITH DETAILED DESIGN CALCULATION OF THE JACKING STRESS TO BE APPLIED TO THE GIRDERS. FURTHERMORE, THE DESIGN CALCULATION MUST BE DULY SIGNED AND SEALED BY A STRUCTURAL ENGINEER.

AFTER PRESTRESSING OF GIRDERS, THE CONTRACTOR IS REQUIRED TO SUBMIT TO THE PLANNING AND DESIGN DIVISION - BRIDGE SECTION THE RESULTS OF THE JACKING STRESSES, ELONGATION AND ACTUAL CAMBER FOR EACH GIRDER FOR VERIFICATION.

5. EXCAVATION

EXCAVATION FOR STRUCTURES SHALL BE NEAT LINES AS SHOWN ON THE PLANS AND THE GROUND UNDERNEATH STRUCTURE FOUNDATIONS SHALL NOT BE DISTURBED. IF THE REQUIRED BEARING CAPACITY OF SOIL UNDER FOOTING CANNOT BE ATTAINED, THE ENGINEER SHALL BE NOTIFIED FOR THE REDESIGN OF FOOTING.

6. EMBANKMENT CONSTRUCTION SEQUENCE

APPROACH EMBANKMENT SHALL BE CONSTRUCTED PRIOR TO DRIVING OF ABUTMENT PILES.

7. BACKFILLING

BACKFILLING TO STRUCTURE SHALL BE DONE WITH GRANULAR MATERIALS COMPACTED ACCORDING TO SPECIFICATIONS FOR BOX TYPE STRUCTURES. BACKFILLING SHALL BE DONE SIMULTANEOUSLY ON BOTH SIDES AND FOR FILL BENT OR WALL ABUTMENTS, BACKFILLING SHALL BE DONE AFTER ERECTION OF SUPERSTRUCTURE.

8. CONSTRUCTION LIMITS

THE CONTRACTOR SHALL VERIFY AND WORK WITHIN THE CONSTRUCTION LIMITS OR EASEMENTS OF THE BRIDGE STRUCTURE. HE SHALL HOWEVER PROVIDE FOR ALL OTHER AREAS HE MAY REQUIRE FOR HIS OWN USE. IT IS THE INTENT OF THE PLANS TO LEAVE UNDISTURBED EVERYTHING WHICH DOES NOT ADVERSELY AFFECT THE FINISHED WORK. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO ITS ORIGINAL CONDITION AS DIRECTED BY THE ENGINEER.

9. SITE PREPARATION

ALL EXISTING PERMANENT WORKS (SUCH AS PAVEMENT CURBS, GUTTERS, RIPRAP, SLOPE PROTECTION WORKS AND ALL OTHER SIMILAR WORKS) WHICH WILL INTERFERE WITH THE WORK SHALL BE COMPLETELY REMOVED AND DISPOSED OFF SITE BY THE CONTRACTOR. ALL SALVAGEABLE MATERIALS SHALL BE PROPERLY AND CAREFULLY DISMANTLED AND DEPOSITED ON A CONVENIENT SITE AS INSTRUCTED BY THE ENGINEER. HOWEVER, IF SUCH PERMANENT WORKS ARE DESIGNATED TO REMAIN BUT IT WILL DEMOLISHED BY THE CONTRACTOR FOR THE NECESSARY PROSECUTION OF THE WORKS, THESE DEMOLISHED PERMANENT WORKS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION.

10. RECONSTRUCTION

IF EXISTING PERMANENT WORKS OR PORTIONS THEREOF ARE DESIGNATED TO REMAIN, THE CONTRACTOR SHALL TAKE PRECAUTION NOT TO DAMAGE OR INJURE THESE WORKS. DAMAGE OR INJURY TO THESE WORKS CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT HIS OWN EXPENSE.

11. TRAFFIC MANAGEMENT

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING AND MAINTAINING AN EFFECTIVE TRAFFIC CONTROL PLAN IN ACCORDANCE WITH THE SPECIAL PROVISIONS SUBJECT TO THE APPROVAL OF THE ENGINEER AND THE CORRESPONDING LOCAL AUTHORITIES.

12. WASTE DUMPING AREA

THE WASTE MOUNT AT THE DUMPING AREA SHALL BE TRIMMED TO THE SHAPE AS INDICATED IN THE PLANS AND THE EXCAVATED MATERIALS SHALL BE PROPERLY DISPOSED OF AS DIRECTED BY THE ENGINEER.

13. BORED PILE

THE REQUIRED ULTIMATE BEARING PER BORED PILE SHALL BE AS TABULATED BELOW:

LOCATION	DIAMETER	LENGTH	ULTIMATE BEARING CAPACITY, P_u (kN)
ABUT "A"	1,200	30,000	4,700
ABUT "B"	1,200	30,000	4,700

THE BOTTOM OF THE PILES SHALL BE EMBEDDED AT LEAST THREE (3) TIMES DIAMETER (3D) INTO HARD STRATA WITH AN N-VALUE OF AT LEAST 40 CAPABLE OF DEVELOPING THE REQUIRED ULTIMATE BEARING CAPACITY. IF THE ABOVE CONDITION CANNOT BE MET DURING CONSTRUCTION, THE DESIGNER SHALL BE NOTIFIED FOR ADJUSTMENT OF PILE LENGTH IF NECESSARY.

CROSS HOLE SONIC LOGGING TEST SHALL BE CONDUCTED ON 50% OF THE TOTAL NUMBER OF BORED PILES PER STRUCTURE (AT ABUTMENT) TO VERIFY AND CHECK THE CONCRETE INTEGRITY AND HOMOGENEITY AND TO LOCATE/QUANTIFY ANY IRREGULARITY IN THE COMPLETED BORED PILES. THE TEST SHALL BE WITNESSED BY REPRESENTATIVE FROM THE PLANNING AND DESIGN DIVISION AND CONTRACTOR.

HIGH-STRAIN DYNAMIC TEST USING PILE DRIVING ANALYZER (PDA) SHALL BE CONDUCTED ONE (1) AT EACH ABUTMENT TO DETERMINE/CHECK THE ACTUAL BEARING CAPACITY OF THE COMPLETED BORED PILES PRIOR TO CONSTRUCTION OF SIMILAR PILES. THE TESTS SHALL BE WITNESSED BY REPRESENTATIVES FROM THE PLANNING AND DESIGN DIVISION AND CONTRACTOR. THE RESULTS SHALL BE SUBMITTED SUBJECT TO APPROVAL BY THE DESIGNER PRIOR TO CONSTRUCTION OF PILE CAP AND SUPERSTRUCTURE.

HIGH STRAIN DYNAMIC TEST SHALL BE DONE SUCH THAT THE REQUIRED ULTIMATE BEARING CAPACITY IS MOBILIZED AND/OR THE MAXIMUM PERMANENT PILE SET OF 0.100 IS REACHED. HAMMER WEIGHT OF ABOUT 1.5 TO 2.0% OF THE REQUIRED ULTIMATE CAPACITY OF BORED PILES SHALL BE USED AND DROPPED FROM GRADUAL HEIGHT INCREASE. COMPLETE PILE TESTS RESULTS INCLUDING TABULATED RESULT OF ALL BLOWS, CAPWAP ANALYSIS AND RECOMMENDATIONS SHALL BE SUBMITTED BY THE PILE TEST CONTRACTOR.

14. AS STAKED PLAN

BEFORE THE START OF ACTUAL CONSTRUCTION, THE "AS-STAKED" PLAN SHOULD BE SUBMITTED TO THE PROVINCIAL ENGINEERING OFFICE IN ORDER THAT IMMEDIATE STEPS MAY BE TAKEN TO CORRECT OR ADJUST WHATEVER APPRECIABLE DEVIATION THERE MAY FROM THE ORIGINAL PLAN.

AFTER CONSTRUCTION OF THE BORED PILES, THE TEMPORARY CASING SHALL BE TURNED OVER TO THE PLOU.

15.

RPC
NO OBJECTION
SIGNATURE:
ENGR. MARC ADRIAN C. MADRONIO
BUILD Component Head

	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF LAAK	PROJECT NO.:	PRDP-SU-IB-R011-DDO-003-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET CONTENTS:	SHEET NO.
		SUBPROJECT TITLE:	REHABILITATION OF FMR FROM KILAGDING RECENIA - KIBAGIOU ROAD, LAAK WITH BRIDGE COMPONENT	 DOMINADOR R. ALMEDILLA OIC DIVISION HEAD - PDD	 ABRAHAM T. TUNA, JR. STRUCTURAL ENGINEER A. SEAD - 2017 - 0102914 - 353A	 RODERICK M. DIGAMON PROVINCIAL ENGINEER	 ALICIA M. GRACIADAS CO - PPMIU	 DOROTHY P. MONTEJO GONZAGA GOVERNOR	GENERAL NOTES	29 100
		LOCATION:	LAAK, DAVAO DE ORO							

BRIDGE SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
V.	Construction of Bridge		
B.15(1)	DETOUR/ACCESS ROAD	1.00	Lump Sum
103(2)a	BRIDGE EXCAVATION (Common Soil)	311.60	Cubic Meter
104(1)a	EMBANKMENT FROM ROADWAY EXCAVATION	1,786.94	Cubic Meter
311(2)f1	PORTLAND CEMENT CONCRETE PAVEMENT (Reinforced), 300MM THICK	57.50	Square Meter
400(17)e	CONCRETE PILES CAST IN DRILLED HOLES, 1.20mØ	120.00	Meter
400(23)e2	PERMANENT CASING, 1.20mØ, 12mm thk.	24.00	Meter
400(26)a	PILE INTEGRITY TESTING, CROSSHOLE-SONIC	2.00	Each
400(27)	HIGH STRAIN DYNAMIC TEST (P.D.A)	2.00	Each
400(33)	STEEL CASING (TEMPORARY, 1.20 m. dia.)	96.00	Linear Meter
401(2)a	CONCRETE RAILING, STANDARD	57.40	Meter
404(1)a	REINFORCING STEEL, GRADE 40	21,856.00	Kilogram
404(1)b	REINFORCING STEEL, GRADE 60	46,469.00	Kilogram
405(1)b3	STRUCTURAL CONCRETE, 27.58MPa, CLASS A, 28 days	151.68	Cubic Meter
406(1)f8	PRESTRESSED STRUCTURAL CONCRETE MEMBERS, 30.00 m., TYPE	4.00	Each
407(8)	LEAN CONCRETE, CLASS B (16.50 Mpa)	1.46	Cubic Meter
411(2)	PAINT (CONCRETE STRUCTURE)	185.39	Square Meter
412(1)	ELASTOMERIC BEARING PADS (60 mm x 500 mm x 661 mm)	8.00	each
413(3)a	PREMOLDED EXPANSION JOINT FILLER WITH SEALANT, 12mm	0.91	Cubic Meter
505(2)a	GROUTED RIPRAP, CLASS A	504.00	Cubic Meter
507(1)	RUBBLE CONCRETE	137.64	Cubic Meter
517(1)a	DRAIN PIPE, GALVANIZED (150mm Ø)	7.20	Linear Meter
612(1)	REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS (WHITE)	6.00	Square Meter
612(2)	REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS (YELLOW)	4.50	Square Meter
605(2)ag3	REGULATORY SIGNS (R6 - 4)	2.00	Each
SPL-1	SOLAR STREETLIGHTS	2.00	Each



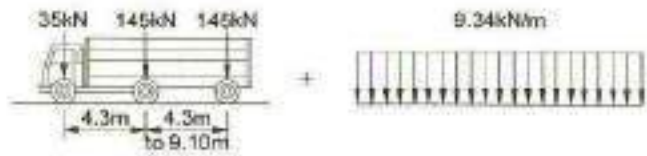
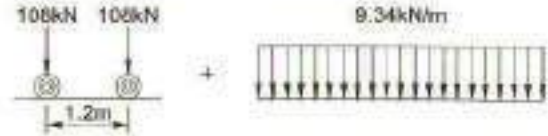
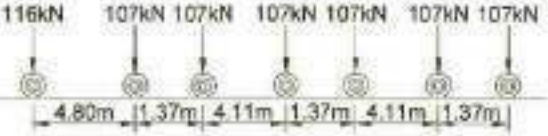
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		LOCATION:	LAAK, DAVAO DE ORO							102

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- PRESTRESSING STEEL SHALL BE SEVEN-WIRE UNCOATED STRESS-RELIEVED STRANDS ASTM A416 (AASHTO M203) WITH MINIMUM ULTIMATE STRENGTH OF 1862 MPa (270,000 psi).

4. ELASTOMERIC BEARING PADS

- DUROMETER HARDNESS TYPE A ASTM D2240/80, TENSILE STRENGTH MIN ASTM D412 17.2MPa, ELONGATION BREAK PT. MIN. 330%, MATERIAL : NEOPRENE. ELASTOMERIC PADS SHALL BE VIRGIN CHLOROPHRENE (NEOPRENE) PADS. THE SOLE POLYMER IN THE ELASTOMERIC COMPOUND SHALL BE NEOPRENE AND SHALL BE NOT LESS THAN 60% BY VOLUME OF TOTAL COMPOUND. BEARING PADS SHALL BE LAMINATED WITH NON-CORROSIVE METAL SHIMS. ELASTOMERIC BEARING PADS SHALL CONFORM TO THE REQUIREMENTS AS PRESCRIBED IN 2004 DPWH STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES & AIRPORTS, VOL.11 FOR ELASTOMERIC BEARING PAD.

5. END ANCHORAGE DEVICES

ANCHORAGE DEVICES SHALL WITHSTAND A FORCE OF NOT LESS THAN 85% OF THE SPECIFIED MINIMUM ULTIMATE TENSILE STRENGTH OF THE TENDON WITHOUT DAMAGE OR EXCESSIVE DEFORMATION OR DRAWING. NO DAMAGED ANCHORAGES SHALL BE USED. ALL STEEL PORTIONS SHALL BE PROTECTED FROM CORROSION AT ALL TIMES. ALL TAPPED HOLES SHALL BE PROTECTED BY SUITABLE PLUGS UNTIL USED. THE ANCHORAGE DEVICES SHALL BE KEPT FROM MORTAR, LOOSE RUST, GREASE, TAR, PAINT OIL, MUD OR ANY OTHER COATING.

6. SHEATHING OR DUCTS

FOR POST TENSIONED TENDONS-SHEATHING OR DUCTS SHALL BE APPROVED BY THE ENGINEER AND SHALL BE STRONG AND TO WITHSTAND THE PLACING AND VIBRATION OF THE CONCRETE WITHOUT SUFFERING ANY DAMAGE OR DEFORMATION. THE WALL OR DUCTS SHALL BE MORTAR TIGHT. SHEATHING OR DUCTS SHALL BE GALVANIZED.

7. LIFTING HOOK DEVICES

LIFTING HOOK DEVICES OF PRESTRESSED MEMBERS OR ANY SUITABLE DEVICE PREPARED BY THE CONTRACTOR SHALL BE SHOWN IN THE PLANS AND APPROVED BY THE ENGINEER.

CONSTRUCTION

1. SETTING OUT

THE SETTING OUT AND THE ELEVATIONS OF THE DIFFERENT COMPONENTS OF THE STRUCTURE SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE START OF ANY CONSTRUCTION WORK.

2. REINFORCED CONCRETE

a. CONCRETE MIX AND PLACING

- DESIGN OF CONCRETE MIX SHALL MEET THE DESIGN CONCRETE STRENGTH GIVEN UNDER ITEM 1 OF MATERIALS.

- CONCRETE SHALL BE DEPOSITED, VIBRATED AND CURED IN ACCORDANCE WITH THE SPECIFICATIONS.

- FOR CONCRETE DEPOSITED AGAINST THE GROUND, LEAN CONCRETE WITH A MINIMUM THICKNESS OF 50mm SHALL LAID FIRST BEFORE INSTALLING THE REINFORCEMENT. THIS LEAN CONCRETE SHALL NOT BE CONSIDERED IN MEASURING THE STRUCTURAL DEPTH OF CONCRETE SECTION.

- THE CONSTRUCTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL PLACING SEQUENCES FOR ALL CONCRETING WORK.

b. BAR BENDING, SPLICING AND PLACING

- THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL OF SHOP DRAWINGS INDICATING THE BENDING, CUTTING, SPLICING AND INSTALLATION OF ALL REINFORCING BARS.

- BARS SHALL BE BENT COLD, BARS PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT UNLESS PERMITTED BY THE ENGINEER.

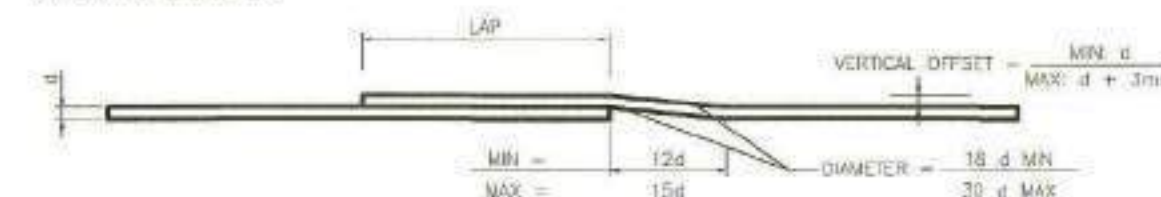
- BAR SPLICING NOT INDICATED ON DRAWINGS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

- WELDED SPLICES, IF APPROVED BY THE ENGINEER, SHALL DEVELOP IN TENSION AT LEAST 125% OF THE SPECIFIED YIELD STRENGTH OF BARS.

- NOT MORE THAN 50% OF THE BARS AT ANY ONE SECTION SHALL BE SPLICED.

- UNLESS OTHERWISE SHOWN ON DRAWINGS, THE CLEAR DISTANCE BETWEEN PARALLEL BARS IN A LAYER SHALL NOT BE LESS THAN 1.5 TIMES THE NOMINAL DIAMETER OF THE BAR NOR LESS THAN 1.5 TIMES THE MAXIMUM SIZE OF COARSE AGGREGATE. THE CLEAR DISTANCE BETWEEN LAYERS SHALL NOT BE LESS THAN 25mm NOR ONE BAR DIAMETER. THE BARS IN THE UPPER LAYER SHALL BE PLACED DIRECTLY ABOVE THOSE IN THE BOTTOM LAYER.

(7) CRANKED SPLICES



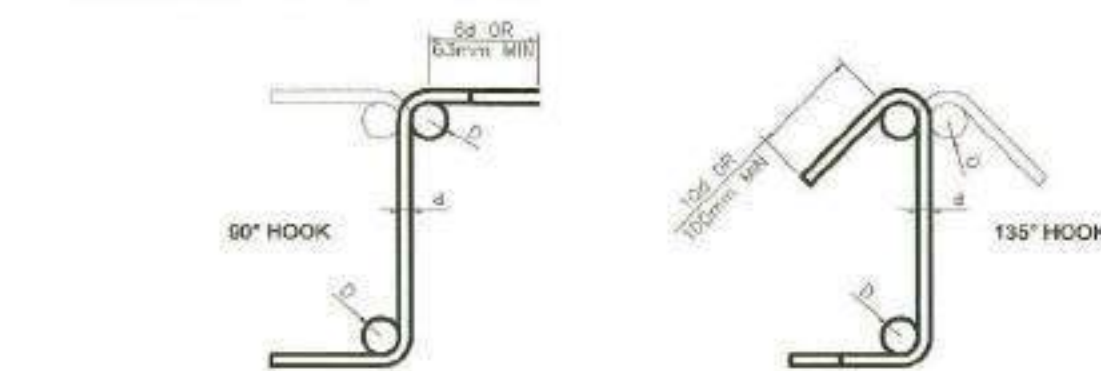
(8) HOOKS AND BENDS

DIMENSIONS OF 90° AND 180° HOOKS



PIN DIAMETER: D=6d FOR $\phi 10$ THRU $\phi 25$
D=8d FOR $\phi 28$, $\phi 32$ AND $\phi 36$

DIMENSIONS FOR STIRRUPS AND TIE HOOKS



PIN DIAMETER: D=6d FOR $\phi 10$ THRU $\phi 25$
D=8d FOR $\phi 28$, $\phi 32$ AND $\phi 36$

c. CONCRETE COVER TO REINFORCEMENT

MINIMUM CONCRETE COVER TO REINFORCEMENT SHALL BE 75mm UNLESS SHOWN OTHERWISE ON DRAWINGS.

d. CONSTRUCTION JOINT

- THE POSITION AND FORM OF ANY CONSTRUCTION JOINTS SHALL BE AS SHOWN ON DRAWINGS OR AS AGREED WITH THE ENGINEER.

- THE INTERFACE BETWEEN THE FIRST AND SECOND POUR OF CONCRETE SHALL BE ROUGHED WITH AN AMPLITUDE OF 6mm MINIMUM.

e. FALSEWORK

ALL FALSEWORK SHALL BE DESIGNED BY THE CONTRACTOR SUBJECT TO THE APPROVAL BY THE ENGINEER. THE FALSEWORK SHALL BE REMOVED ONLY AS DIRECTED BY THE ENGINEER. FALSEWORK UNDER NEW CONSTRUCTION SHALL BE SUFFICIENT TO SUPPORT 2.50 TONS/M². FALSEWORK ARE SUBSIDIARY WORKS TO STRUCTURAL CONCRETE.

1. FORMWORK

FORMWORKS SHALL BE CONSTRUCTED SUCH THAT IT WILL NOT YIELD UNDER THE LOAD AND SHALL BE SUCH AS TO AVOID THE FORMATION OF FINE CRACKS. ALL CORNERS OF CONCRETE MEMBERS SHALL BE CHAMFERED TO 20mm UNLESS NOTED OTHERWISE ON DRAWINGS. STRIPPING OF FORMS AND SHORES SHALL BE AS DESIGNATED BY THE ENGINEER. THE FOLLOWING MAYBE USED AS A GUIDE:

	MIN TIME
SHORING UNDER GIRDER, BEAMS, FRAMES	14 DAYS
DECK SLABS	14 DAYS
ABUTMENTS	7 DAYS
WALLS	7 DAYS
COLUMNS	7 DAYS
SIDES OF BEAMS AND ALL OTHER VERTICAL SURFACES	2 DAYS

2. PROTECTION AND CURING OF CONCRETE

CONCRETE SURFACES SHALL BE PROTECTED FROM HARMFUL EFFECTS OF SUN, WIND AND RUNNING WATERS AND SHALL BE KEPT DAMP FOR AT LEAST 7 DAYS.

3. STRUCTURAL STEEL

THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS FOR ALL STRUCTURAL STEEL WORK. THESE SHOP DRAWINGS SHALL BE APPROVED BY THE ENGINEER BEFORE ANY FABRICATION COMMENCES.

4. PRESTRESSED CONCRETE

CONCRETE SHALL BE CLASS "P". 14 DAYS CYLINDER STRENGTH 48.30 MPa. MAXIMUM SIZE OF AGGREGATE 20mm. THE MINIMUM COMPRESSIVE STRENGTH OF PRESTRESSED CONCRETE AT RELEASE BE $f_{cr}=38.60$ MPa (5,600psi). UPON HANDLING OR TRANSPORTING PRECAST PRESTRESSED MEMBERS, SHALL BE AT MINIMUM $f_{cr}=48.30$ MPa (7,000psi).

PRIOR TO PRESTRESSING OF GIRDERS, THE CONTRACTOR IS REQUIRED TO SUBMIT TO THE PLANNING AND DESIGN DIVISION - BRIDGE SECTION THE WORKING DRAWING WITH DETAILED DESIGN CALCULATION OF THE JACKING STRESS TO BE APPLIED TO THE GIRDERS. FURTHERMORE, THE DESIGN CALCULATION MUST BE DULY SIGNED AND SEALED BY A STRUCTURAL ENGINEER.

AFTER PRESTRESSING OF GIRDERS, THE CONTRACTOR IS REQUIRED TO SUBMIT TO THE PLANNING AND DESIGN DIVISION - BRIDGE SECTION THE RESULTS OF THE JACKING STRESSES, ELONGATION AND ACTUAL CAMBER FOR EACH GIRDER FOR VERIFICATION.

5. EXCAVATION

EXCAVATION FOR STRUCTURES SHALL BE NEAT LINES AS SHOWN ON THE PLANS AND THE GROUND UNDERNEATH STRUCTURE FOUNDATIONS SHALL NOT BE DISTURBED. IF THE REQUIRED BEARING CAPACITY OF SOIL UNDER FOOTING CANNOT BE ATTAINED, THE ENGINEER SHALL BE NOTIFIED FOR THE REDESIGN OF FOOTING.

6. EMBANKMENT CONSTRUCTION SEQUENCE

APPROACH EMBANKMENT SHALL BE CONSTRUCTED PRIOR TO DRIVING OF ABUTMENT PILES.

7. BACKFILLING

BACKFILLING TO STRUCTURE SHALL BE DONE WITH GRANULAR MATERIALS COMPACTED ACCORDING TO SPECIFICATIONS FOR BOX TYPE STRUCTURES. BACKFILLING SHALL BE DONE SIMULTANEOUSLY ON BOTH SIDES AND FOR PILE BENT OR WALL ABUTMENTS, BACKFILLING SHALL BE DONE AFTER ERECTION OF SUPERSTRUCTURE.

8. CONSTRUCTION LIMITS

THE CONTRACTOR SHALL VERIFY AND WORK WITHIN THE CONSTRUCTION LIMITS OR EASEMENTS OF THE BRIDGE STRUCTURE. HE SHALL HOWEVER PROVIDE FOR ALL OTHER AREAS HE MAY REQUIRE FOR HIS OWN USE. IT IS THE INTENT OF THE PLANS TO LEAVE UNDISTURBED EVERYTHING WHICH DOES NOT ADVERSELY AFFECT THE FINISHED WORK. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO ITS ORIGINAL CONDITION AS DIRECTED BY THE ENGINEER.

9. SITE PREPARATION

ALL EXISTING PERMANENT WORKS (SUCH AS PAVEMENT CURBS, GUTTERS, RIPRAP, SLOPE PROTECTION WORKS AND ALL OTHER SIMILAR WORKS) WHICH WILL INTERFERE WITH THE WORK SHALL BE COMPLETELY REMOVED AND DISPOSED OFF SITE BY THE CONTRACTOR. ALL SALVAGEABLE MATERIALS SHALL BE PROPERLY AND CAREFULLY DISMANTLED AND DEPOSITED ON A CONVENIENT SITE AS INSTRUCTED BY THE ENGINEER. HOWEVER, IF SUCH PERMANENT WORKS ARE DESIGNATED TO REMAIN BUT IT WILL DEMOLISHED BY THE CONTRACTOR FOR THE NECESSARY PROSECUTION OF THE WORKS, THESE DEMOLISHED PERMANENT WORKS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION.

10. RECONSTRUCTION

IF EXISTING PERMANENT WORKS OR PORTIONS THEREOF ARE DESIGNATED TO REMAIN, THE CONTRACTOR SHALL TAKE PRECAUTION NOT TO DAMAGE OR INJURE THESE WORKS. DAMAGE OR INJURY TO THESE WORKS CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT HIS OWN EXPENSE.

11. TRAFFIC MANAGEMENT

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING AND MAINTAINING AN EFFECTIVE TRAFFIC CONTROL PLAN IN ACCORDANCE WITH THE SPECIAL PROVISIONS SUBJECT TO THE APPROVAL OF THE ENGINEER AND THE CORRESPONDING LOCAL AUTHORITIES.

12. WASTE DUMPING AREA

THE WASTE MOUNT AT THE DUMPING AREA SHALL BE TRIMMED TO THE SHAPE AS INDICATED IN THE PLANS AND THE EXCAVATED MATERIALS SHALL BE PROPERLY DISPOSED OF AS DIRECTED BY THE ENGINEER.

13. BORED PILE

THE REQUIRED ULTIMATE BEARING PER BORED PILE SHALL BE AS TABULATED BELOW:

LOCATION	DIAMETER	LENGTH	ULTIMATE BEARING CAPACITY, P_u (kN)
ABUT "A"	1,200	30,000	4,700
ABUT "B"	1,200	30,000	4,700

THE BOTTOM OF THE PILES SHALL BE EMBEDDED AT LEAST THREE (3) TIMES DIAMETER (3D) INTO HARD STRATA WITH AN N-VALUE OF AT LEAST 40 CAPABLE OF DEVELOPING THE REQUIRED ULTIMATE BEARING CAPACITY. IF THE ABOVE CONDITION CANNOT BE MET DURING CONSTRUCTION, THE DESIGNER SHALL BE NOTIFIED FOR ADJUSTMENT OF PILE LENGTH IF NECESSARY.

CROSS HOLE SONIC LOGGING TEST SHALL BE CONDUCTED ON 50% OF THE TOTAL NUMBER OF BORED PILES PER STRUCTURE (AT ABUTMENT) TO VERIFY AND CHECK THE CONCRETE INTEGRITY AND HOMOGENEITY AND TO LOCATE/EVALUATE ANY IRREGULARITY IN THE COMPLETED BORED PILES. THE TEST SHALL BE WITNESSED BY REPRESENTATIVE FROM THE PLANNING AND DESIGN DIVISION AND CONTRACTOR.

HIGH-STRAIN DYNAMIC TEST USING PILE DRIVING ANALYZER (PDA) SHALL BE CONDUCTED ONE (1) AT EACH ABUTMENT TO DETERMINE/CHECK THE ACTUAL BEARING CAPACITY OF THE COMPLETED BORED PILES PRIOR TO CONSTRUCTION OF SIMILAR PILES. THE TESTS SHALL BE WITNESSED BY REPRESENTATIVES FROM THE PLANNING AND DESIGN DIVISION AND CONTRACTOR. THE RESULTS SHALL BE SUBMITTED SUBJECT TO APPROVAL BY THE DESIGNER PRIOR TO CONSTRUCTION OF PILE CAP AND SUPERSTRUCTURE.

HIGH STRAIN DYNAMIC TEST SHALL BE DONE SUCH THAT THE REQUIRED ULTIMATE BEARING CAPACITY IS MOBILIZED AND/OR THE MAXIMUM PERMANENT PILE SET OF 10 TO 15 REACHED. HAMMER WEIGHT OF ABOUT 1.5 TO 2.0% OF THE REQUIRED ULTIMATE CAPACITY OF BORED PILES SHALL BE USED AND DROPPED FROM GRADUAL HEIGHT INCREASE. COMPLETE PILE TESTS RESULTS INCLUDING TABULATED RESULT OF ALL BLOWS, CAPWAP ANALYSIS AND RECOMMENDATIONS SHALL BE SUBMITTED BY THE PILE TEST CONTRACTOR.

14. AS STAKED PLAN

BEFORE THE START OF ACTUAL CONSTRUCTION, THE "AS-STAKED" PLAN SHOULD BE SUBMITTED TO THE PROVINCIAL ENGINEERING OFFICE IN ORDER THAT IMMEDIATE STEPS MAY BE TAKEN TO CORRECT OR ADJUST WHATEVER APPRECIABLE DEVIATION THERE MAY BE FROM THE ORIGINAL PLAN.

- THE CONTRACTOR TO COORDINATE THE FINAL LOCATION OF CRANEWAY AND MUST BE APPROVED BY THE ENGINEER IN CONSIDERATION TO IDENTIFIED MAXIMUM DISTANCE FROM THE PROPOSED BRIDGE FOR CRANEWAY EQUIPMENT TO BE USED.

RPCCXI
NO OBJECTION
SIGNATURE:
ENGINEER MARC ALBERTO C. L. D. L. L. L.
I-BUILD Component Head



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF AGRICULTURE
"PHILIPPINE RURAL DEVELOPMENT
PROJECT SCALE UP"
PROVINCE OF DAVAO DE ORO
MUNICIPALITY OF LAAK

PROJECT NO.:

PRDP-SU-IB-R011-DDO-003-000-000-2023-FMB

SUBPROJECT TITLE:

REHABILITATION OF FMR FROM KILAGDING
RECENIA - KIBAGIOU ROAD,
LAAK WITH BRIDGE COMPONENT

LOCATION:

LAAK, DAVAO DE ORO

PREPARED BY:

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DESIGNED BY:

ABRAHAM T. TUNA, JR.
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GOVERNOR

SHEET CONTENTS:

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ABBREVIATIONS

ADJUTMENT AHEAD STATIONING AND AREA ASPHALT-CONCRETE PAVEMENT AT AZIMUTH BACK STATION BARANGAY BEGINNING OF CIRCULAR CURVE BEARING BEGINNING BELOW MEAN SEA LEVEL BENCHMARK BETWEEN BORE HOLE BOTH SIDES BOTH WAYS BOTTOM BRIDGE SUBDIVISION OF DECREASED PROPERTY BY BUREAU OF LANDS SURVEYORS BUREAU OF LANDS LOCATION MONUMENT CENTER CENTERLINE CENTIMETER CONCRETE HOLLOW BLOCK CLEAR COLUMN CONCRETE CONCRETE HOLLOW BLOCK CONCRETE MONUMENT CONSTRUCTION CORNER COVER CROSS PIPE CURIC METER CYLINDRICAL DEGREE OF CURVE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS DETAIL DIAMETER DIAPHRAGM DISTANCE DRAWING EAST ELEVATION END OF CIRCULAR CURVE END OF PAVEMENT ENGINEER EQUATION EXCAVATION EXISTING EXPANSION EXTENSION EXTERIOR EXTERNAL DISTANCE / EASTING FINISHED FINISHED GRADE FINISHED PAVEMENT LEVEL GENERAL GROUND LEVEL HEAD WALL(S) HIGH FLOOD LEVEL HIGH TIDE LEVEL HIGH WATER LEVEL HORIZONTAL INCHES INTERSECTION ANGLE INSIDE DIAMETER INTERIOR KILOGRAM KILOMETER KILOMETER PER HOUR LEFT LENGTH OF CIRCULAR CURVE LENGTH OF VERTICAL CURVE LONGITUDINAL MAXIMUM MAXIMUM FLOOD LEVEL MEAN SEA LEVEL METER MILLIMETER MINIMUM MONUMENT NORTHING NOT APPLICABLE NUMBER ORDINARY WATER LEVEL ORIGINAL GROUND LEVEL OUTSIDE DIAMETER PAVEMENT WIDTH	ABUT AH STA & A ACP @ AZIM. BK STA. BRGY. BCC BRG. BEG. BMSL BM BET. BH BS BW BOT. BR. BSO. BLM CTR. E cm CHB CLR. COL. CONC. CHB CONC. MON. CONST. COR. COV. CP cu. m. / m3 CYL. D DPWH DET. DIA. / Ø DIAP. DIST. DRWS. E ELEV. / EL. ECC ECP ENGR. EQ. EXCA. EXIST. / EXTB. EXP.N EXTN. EXTR. E FIN. FG FPL GEN. GL HW / HWS HFL HTL HWE HCR. IN. I ID INT. KG. km KPH LL LC VC LONGIT. MAX. MFL MSL m mm MIN. MON N NA NO. OVL OGL Ø PW	PAVEMENT WIDTH PERCENT PHILIPPINES PIECES PLUS / MINUS PUBLIC LAND SUBDIVISION POINT OF INTERSECTION POINT OF CURVATURE POINT OF VERTICAL CURVE POINT OF VERTICAL INTERSECTION POINT OF VERTICAL TANGENT POINT OF TANGENT PORTLAND CEMENT CONCRETE PAVEMENT PROJECT PROJECT ROAD PRIVATE SURVEY RADIUS REFERENCE POINT REINFORCED CONCRETE BOX CULVERT REINFORCED CONCRETE PIPE CULVERT RETAINING WALL RIGHT OF WAY ROAD SOUTH SIDEWALK SUBDIVISION OF UNDECREASED PROPERTY SQUARE SQUARE METER STANDARD STATION STRAIGHT STREET STRUCTURE TANGENT DISTANCE TEMPERATURE TEMPORARY BENCH MARK VERTICAL WIDTH WTH	PW % PHIL. PCS. + PLS PI PC PVC PVI PVT POT PCOP PROJ. PROJ. RD P.S. R RP RCBC RCPC RET. WALL ROW RD S SDMK Ced SQ. sq. m. / m2 STD. STA. STR. ST. STRUCT. T TEMP. TBM VERT. W Wt
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DRAWING SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
		ROADWAY CENTERLINE
		NORTH SIGNS
		ELEVATION CALLOUT
		WATER LEVEL
		WATER FLOW
		POINT OF INTERSECTION
		MATCH LINE
		GRID COORDINATES
	AZIM.	AZIMUTH
		PLAN AND PROFILE CALLOUT
		RCPC INVERSE ELEVATION PROFILE CALLOUT
		DIRECTION
		MAIN DRAWING TITLE
		SECONDARY DRAWING TITLE
		CROSS SECTION SYMBOL (COMPLEX)
		CROSS SECTION SYMBOL (COMPLEX)
		DETAIL CALLOUT

DRAWING SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
	BH	BORE HOLE
		CROSS SECTION MONUMENT
	BM	BENCH MARK
	IBM	INTERMEDIATE BENCH MARK
	PBM	PERMANENT BENCH MARK
	TP	TEST PIT
	GPS	GLOBAL POSITIONING SYSTEM
		TRAVERSE POINT
		TRAVERSE STATION AND LINE

LEGENDS AND SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
		MAJOR CONTOUR
		MINOR CONTOUR
		EDGE OF ROAD (EXISTING)
		EDGE OF ROAD (PROPOSED)
		ASPHALT CONCRETE PAVEMENT
	PCCP	PORTLAND CEMENT CONCRETE PAVEMENT
		CHANNEL/ROADWAY/CONCRETE/ EARTH CANAL
		NATIONAL HIGHWAY
		EXISTING CANAL (PLAN)
		EXISTING CANAL (PROFILE)
	BR.	BRIDGE
		CROSS-DRAIN
		LATERAL PIPE
		RCBC
		MANHOLE
		GUARDRAIL
		CHAIN WALL FENCE
		WOOD OR BARBED WIRE FENCE
		CYCLONE FENCE
		CONCRETE SLOPE PROTECTION
		GRADED RIPRAP SLOPE PROTECTION
		RIVER / CREEK

RPCO XI
NO OBJECTION

SIGNATURE:

ENGR. MARC ADRIAN C. BADDONG
I-BUILD Component Head



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF AGRICULTURE
"PHILIPPINE RURAL DEVELOPMENT
PROJECT SCALE UP"
PROVINCE OF DAVAO DE ORO
MUNICIPALITY OF LAAK

PROJECT NO.:
SUBPROJECT TITLE:
LOCATION:

PRDP-SU-IB-R011-DDO-003-000-000-2023-FMB
REHABILITATION OF FMR FROM KILAGDING
RECENIA - KIBAGIOU ROAD,
LAAK WITH BRIDGE COMPONENT
LAAK, DAVAO DE ORO

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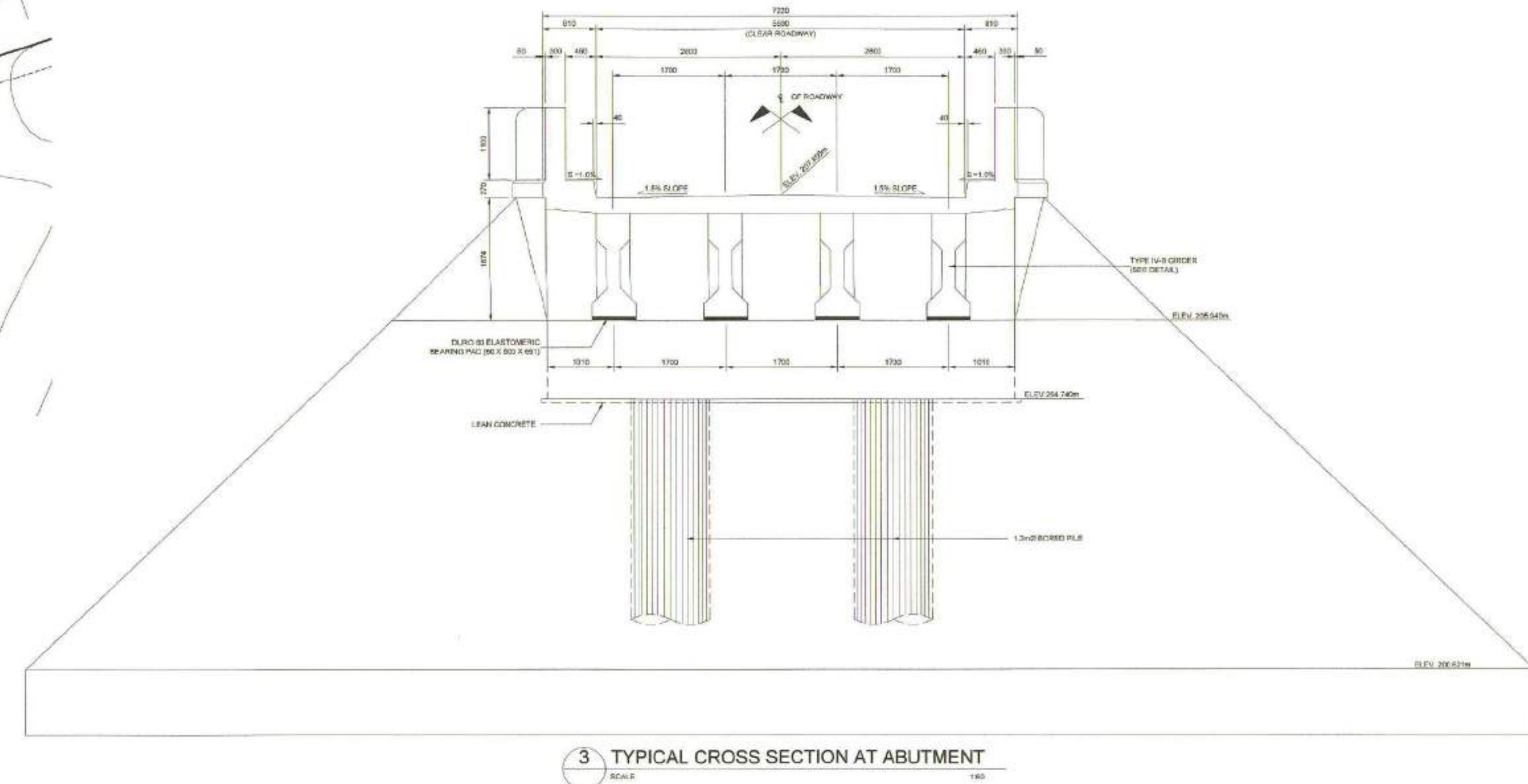
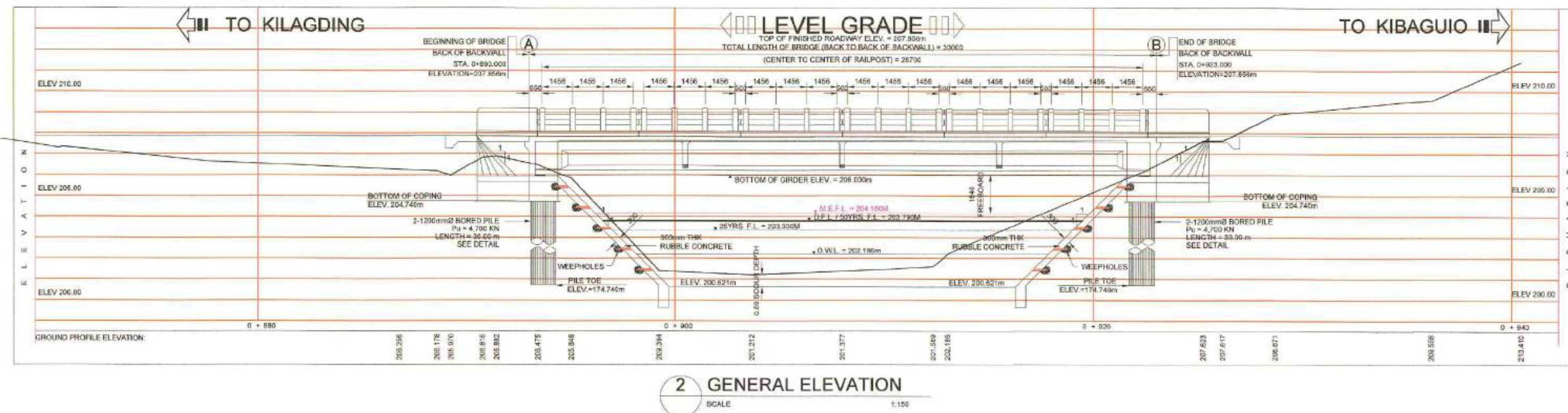
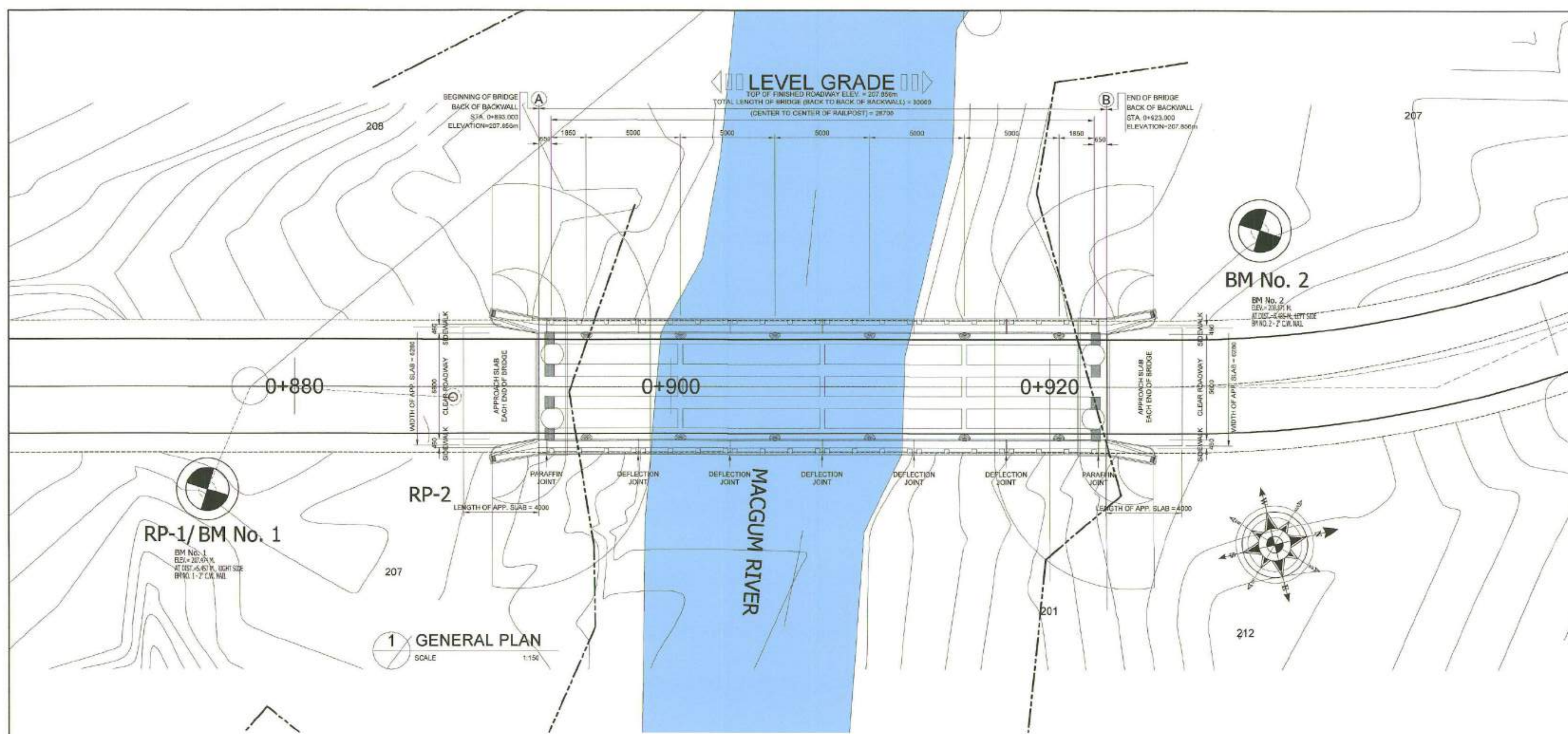
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SHEET CONTENTS:
ABBREVIATIONS LEGENDS
AND SYMBOLS

SHEET NO.
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	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF LAAK</p>	<p>PROJECT NO.: PRDP-SU-IB-R011-DDO-003-000-000-2023-FMB</p> <p>SUBPROJECT TITLE: REHABILITATION OF FMR FROM KILAGDING RECENIA - KIBAGUIO ROAD, LAAK WITH BRIDGE COMPONENT</p> <p>LOCATION: LAAK, DAVAO DE ORO</p>	<p>PREPARED BY: <i>[Signature]</i> DOMINADOR R. ALMEDILLA OIC DIVISION HEAD - PDD</p>	<p>DESIGNED BY: <i>[Signature]</i> ABRAHAM T. TUNA, JR. STRUCTURAL ENGINEER A. SEAD - 2017 - 0102914 - 353A</p>	<p>CHECKED & REVIEWED BY: <i>[Signature]</i> RODERICK M. DIGAMON PROVINCIAL ENGINEER</p>	<p>RECOMMENDING APPROVAL: <i>[Signature]</i> ALICIA M. GRACIADAS CO - PPMU</p>	<p>APPROVED: <i>[Signature]</i> DOROTHY P. MONTEJO-GONZAGA GOVERNOR</p>	<p>SHEET CONTENTS: GENERAL PLAN AND ELEVATION, TYPICAL CROSS SECTION AT ABUTMENT</p>	<p>SHEET NO. 33 102</p>
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RPCOXI
NO OBJECTION
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