

G E N E R A L N O T E S

A. GENERAL

- A.1 UNLESS INDICATED OTHERWISE, ALL DIMENSIONS, DISTANCES AND SIZES (MEMBERS AND REINFORCING STEEL) ARE IN MILLIMETRES EXCEPT STATIONING WHICH ARE IN KILOMETRES + METRES AND ELEVATIONS WHICH ARE IN METERS.
- A.2 INDICATED DIMENSIONS SHALL GOVERN OVER SCALED DIMENSIONS. SCALED DIMENSIONS SHALL NOT BE USED FOR CONSTRUCTION PURPOSES.
- A.3 UNLESS OTHERWISE SHOWN ON THE PLANS, ALL EXPOSED EDGES SHALL BE CHAMFERED 20mm EXCEPT RAILING.
- A.4 ALL ELEVATIONS, STATIONINGS, AND DIMENSIONS SHALL BE VERIFIED PRIOR TO ACTUAL CONSTRUCTION.

B. DESIGN CRITERIA

B.1 SPECIFICATIONS

- B.1.1 DPWH DESIGN GUIDELINES, CRITERIA AND STANDARDS, VOLUME V, BRIDGES, 2015
 B.1.2 DPWH BRIDGE SEISMIC DESIGN SPECIFICATIONS, 2013
 B.1.3 AASHTO LRFD CODE, 2012 EDITION

B.2 LOADS AND WEIGHTS

- B.2.1 TRAFFIC LIVE LOAD HL - 93
 B.2.2 PERMIT LIVE LOAD CALTRANS P-7

B.2.3 WEIGHTS

- B.2.3.1 CONCRETE, PLAIN OR REINFORCED 24.0 kN / m³
 B.2.3.2 STEEL OR CAST STEEL 77.0 kN / m³
 B.2.3.3 COMPACTED SAND, EARTH 18.9 kN / m³
 B.2.3.4 UTILITIES 10% OF DEAD LOADS (FOR DESIGN OF GIRDERS ONLY)

C. MATERIALS

C.1 CONCRETE

- a) UNLESS OTHERWISE INDICATED ON THE PLANS, THE MINIMUM CYLINDER STRENGTH OF CONCRETE AT 28 - DAY SHALL BE.

DESCRIPTION	CLASS	f'c		
		MPa	IN	MM
a. ALL SUPERSTRUCTURES (DECK SLAB, PEDESTAL)	A	28	3/4	20
b. ALL SUBSTRUCTURES (PIERS, ABUTMENT)	A	28	1	20
c. BORED PILE	A	28	1	25
d. PRESTRESSED CONCRETE (INITIAL STRENGTH f'c=35MPa)	P	41	1	20
e. BRIDGE RAILING AND SIDEWALKS	C	21	1	25
f. LEAN CONCRETE	D	14	1	50

THE MINIMUM COMPRESSIVE STRENGTH OF PRESTRESSED CONCRETE AT STRESSING STAGE AS INDICATED ON THE PLAN.

b) CONCRETE COVER OF REINFORCEMENT

UNLESS OTHERWISE SPECIFIED, CLEAR CONCRETE COVER TO REINFORCING STEEL SHALL BE AS FOLLOWS:

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	75
CONCRETE EXPOSED TO EARTH OR WEATHER	
PRIMARY REINFORCEMENT	50
STIRRUPS, TIES AND SPIRALS	40
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND	
PRIMARY REINFORCEMENT	40
STIRRUPS, TIES AND SPIRALS	25
CONCRETE PILES CAST AGAINST AND/OR PERMANENTLY EXPOSED TO EARTH	
CONCRETE PILES	75

C.2 REINFORCING STEEL

- a) REINFORCING STEEL NON WELDABLE STEEL BARS SHALL CONFORM TO ASTM A615 / A615M AND FOR WELDABLE STEEL BARS SHALL CONFORM ASTM A706 / A706M.

MINIMUM YIELD STRENGTH AS LISTED BELOW UNLESS OTHERWISE SPECIFIED IN THE DRAWING.

- Fy = 414 MPa (Gr. 60) FOR 16mmØ AND LARGER
 Fy = 276 MPa (Gr. 40) FOR 12mmØ AND SMALLER

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

C.3 ELASTOMERIC BEARING PADS

ELASTOMERIC BEARING PADS SHALL BE 100 % VIRGIN CHLOROPRENE (NEOPRENE) PADS WITH DUROMETER HARDNESS 60 UNLESS OTHERWISE SPECIFIED ON THE PLANS. BEARING PADS SHALL BE LAMINATED TYPE BEARING PADS CONSISTING OF LAYER OF ELASTOMER . RESTRAINED AT THEIR INTERFACES BY BONDED LAMINATIONS AS REQ'D ON THE PLANS, LAMINATED PLATE SHALL BE NON-CORROSIVE MILD STEEL SHEET. ALL BEARING PADS SHALL CONFORM TO THE REQUIREMENT SPECIFIED IN THE AASHTO SPECIFICATIONS AND DPWH D.O. NO. 25 SERIES OF 1997.

C.4 HANDLING HOOK DEVICES

HANDLING HOOK DEVICES OF PRESTRESSED MEMBERS SHALL BE AS SHOWN ON THE PLANS OR ANY SUITABLE DEVICES PREPARED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

C.5 WATER STOPPER

WATER STOPPER SHALL BE MADE OF RUBBER TO BE SPECIFIED ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

C.6 JOINT FILLER

JOINT FILLER, HOT POURED ELASTIC TYPE, USED FOR EXPANSION JOINT SHALL CONFORM TO AASHTO M 213

C.7 BOND BREAKER

BOND BREAKER SHALL BE WOVEN BURLAP FABRIC SATURATED WITH BUTYNOUS SUBSTANCES AS USED IN WATERPROOFING.

D. CONSTRUCTION

D.1 CONSTRUCTION SPECIFICATIONS

ALL CONSTRUCTION SHALL CONFORM TO:

- D.1.1 CONDITIONS OF CONTRACT
 D.1.2 THE SPECIAL PROVISIONS
 D.1.3 THE DPWH STANDARD SPECIFICATIONS FOR HIGHWAY, BRIDGES, AND AIRPORTS, VOLUME II 2004 EDITION, AS MODIFIED ON THE DRAWINGS.

D.2 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.

D.3 CONSTRUCTION LIMITS

THE CONTRACTOR SHALL VERIFY AND WORK WITHIN THE CONSTRUCTION LIMITS OR EASEMENTS OF THE BRIDGE STRUCTURE. HE SHALL HOWEVER PROVIDE FOR AREAS HE MAY REQUIRE FOR HIS OWN USE. IT IS THE INTENT OF THE PLANS TO LEAVE UNDISTURBED ANYTHING 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.

D.4 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 THE 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 WILL BE 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.

D.5 PUBLIC UTILITIES/FACILITIES

REFER TO SPECIAL PROVISIONS

D.6 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.

D.7 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.

D.8 MATERIAL SOURCES

WHERE COMMON BORROW IS REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING HIS OWN SOURCES OF COMMON BORROW AS OUTLINED IN THE SPECIFICATIONS.

D.9 EXCAVATION

EXCAVATION FOR STRUCTURES SHALL BE NEAT LINES AS SHOWN ON THE PLANS AND THE SOIL UNDERNEATH STRUCTURE FOUNDATIONS SHALL NOT BE DISTURBED.

D.10 BACKFILLING

BACKFILLING FOR STRUCTURES SHALL BE DONE WITH GRANULAR MATERIALS COMPACTED ACCORDING TO SPECIFICATIONS.

D.11 REINFORCED CONCRETE

D.11.1 CONCRETE MIX AND PLACING

- D.11.1.1 DESIGN OF CONCRETE MIX SHALL MEET THE DESIGN CONCRETE STRENGTH GIVEN UNDER ITEM 1 OF MATERIALS.
 D.11.1.2 CONCRETE SHALL BE DEPOSITED, VIBRATED AND CURED IN ACCORDANCE WITH THE SPECIFICATIONS.
 D.11.1.3 FOR CONCRETE DEPOSITED AGAINST THE GROUND, LEAN CONCRETE WITH A MINIMUM THICKNESS OF 100mm SHALL BE LAID FIRST BEFORE INSTALLING THE REINFORCEMENT. THE LEAN CONCRETE SHALL NOT BE CONSIDERED IN MEASURING THE STRUCTURAL DEPTH OF CONCRETE SECTION.
 D.11.1.4 THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL PLACING SEQUENCES FOR ALL CONCRETING WORK.

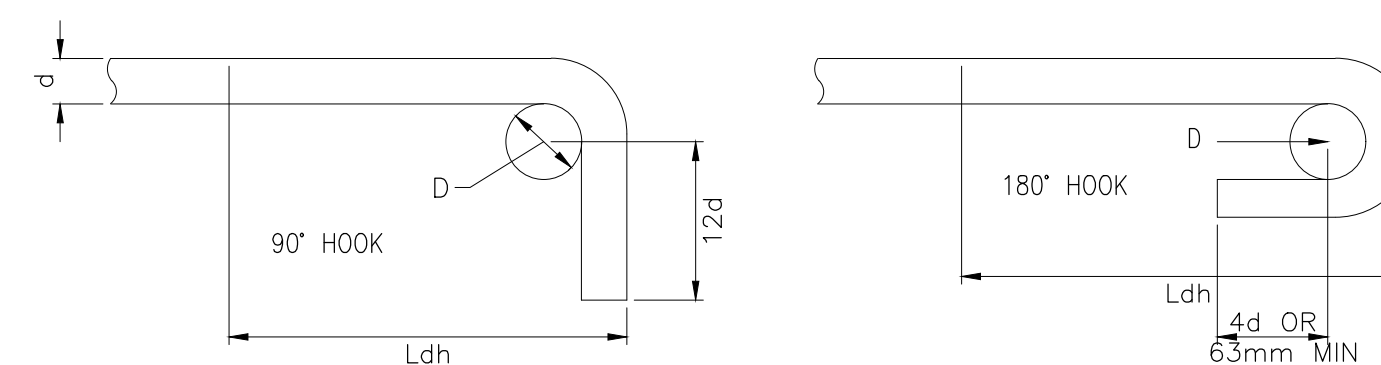
D.11.2 BAR BENDING, SPlicing AND PLACING

- D.11.2.1 PRIOR TO FABRICATION, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, SHOP DRAWINGS INDICATING THE BENDING, CUTTING, SPlicing AND INSTALLATION OF ALL REINFORCING BARS.
 D.11.2.2 BARS SHALL BE BENT COLD. BARS PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT UNLESS PERMITTED BY THE ENGINEER.
 D.11.2.3 BAR SPlicing NOT INDICATED ON DRAWINGS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
 D.11.2.4 WELDED SPlices, IF APPROVED BY THE ENGINEER, SHALL DEVELOP IN TENSION AT LEAST 125% OF THE SPECIFIED YIELD STRENGTH OF THE BARS.
 D.11.2.5 NOT MORE THAN 50% OF THE BARS AT ANY ONE SECTION SHALL BE SPliced, UNLESS SPECIFICALLY INDICATED.
 D.11.2.6 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 25mm. THE BARS IN THE UPPER LAYER SHALL BE PLACED DIRECTLY ABOVE THOSE IN THE BOTTOM LAYER.

D.11.2.7 HOOKS AND BENDS

DIMENSIONS OF 90-DEGREE AND 180-DEGREE HOOKS

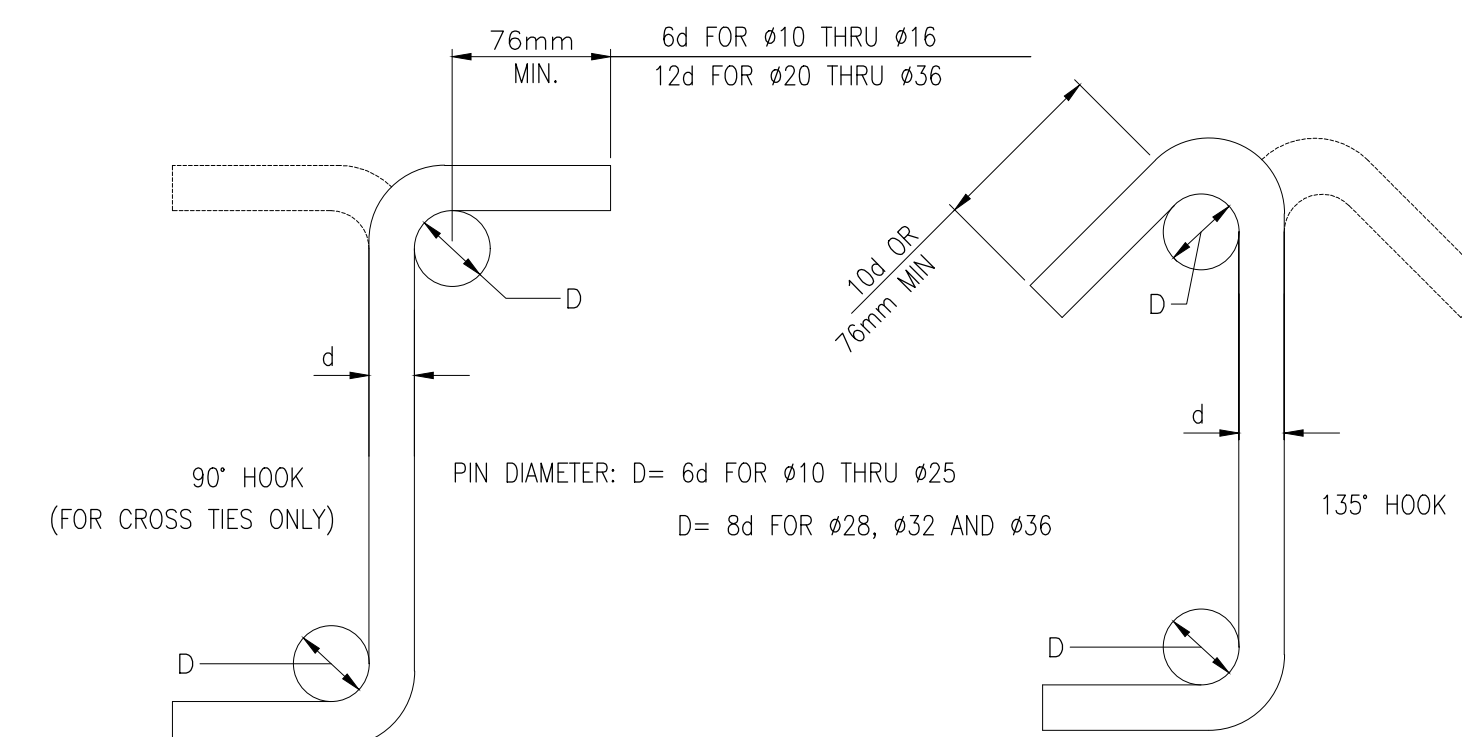


PIN DIAMETER: D= 6d FOR Ø10 THRU Ø25
 D= 8d FOR Ø28, Ø32 AND Ø36

D.11.2.8 LAP SPICES LENGTHS (mm):

SIZE	DEVELOPED LENGTH
10	270
12	320
16	420
20	530
25	810
28	1020
32	1330
36	1680

D.11.2.8 DIMENSIONS FOR STIRRUPS AND CROSS TIE HOOKS



PIN DIAMETER: D= 6d FOR Ø10 THRU Ø25
 D= 8d FOR Ø28, Ø32 AND Ø36

NOTE:
 PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
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 ENGR. ALBERTO C. CAÑETE
 TEAM LEADER

CONSULTANTS	SUBMITTED BY	DESIGNED BY	REVISIONS	DATE	PROJECT TITLE	SCALE	DRAWING STATUS
UIC CORPORATE BLDG., 8 LANES STREET, WISLA, DILMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI	ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI	A		DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500 - KM.16+000) - BRIDGE 2	AS SHOWN	DRAFT DRAWING
			B			PROJECT CODE	DRAWING NO. SIZE
			C				P3GN-01 A1
			D				
			E				
			F				
GENERAL NOTES						DATE APPROVED	DATE REVISED
						-	-

G E N E R A L N O T E S

D.11.3 CONSTRUCTION JOINT
 D.11.3.1 THE POSITION AND FORM OF ANY CONSTRUCTION JOINT SHALL BE AS SHOWN ON DRAWINGS OR AS AGREED WITH THE ENGINEER.
 D.11.3.2 THE INTERFACE BETWEEN THE FIRST-AND SECOND-POUR CONCRETES SHALL BE ROUGHENED WITH WITH AN AMPLITUDE OF 6mm MINIMUM.

D.11.4 FORMWORK
 FORMWORKS SHALL BE CONSTRUCTED SUCH THAT IT WILL NOT YIELD UNDER CONSTRUCTION LOAD AND SHALL BE SUCH AS TO AVOID THE FORMATION OF FINS. ALL CORNERS OF CONCRETE MEMBERS SHALL BE CHAMFERED TO 20mm UNLESS NOTED OTHERWISE ON DRAWINGS. STRIPPING OF FORMS AND SHORES SHALL BE AS DESIGNATED AND APPROVED BY THE ENGINEER. THE FOLLOWING MAY BE USED AS A GUIDE:

	MINIMUM TIME
SHORING UNDER GIRDERS, BEAMS, FRAMES	14 DAYS
DECK SLABS	14 DAYS
WALLS	7 DAYS
COLUMNS	7 DAYS
SIDES OF BEAMS	2 DAYS

D.11.5 PROTECTION AND CURING OF CONCRETE
 CONCRETE SURFACES SHALL BE PROTECTED FROM HARMFUL EFFECTS OF SUN, WIND AND RUNNING WATER, AND SHALL BE KEPT DAMP FOR AT LEAST 7 DAYS, AND AS REQUIRED BY THE ENGINEER.

D.12 PRESTRESSED CONCRETE

D.12.1 GIRDER DESIGN GUIDE

D.12.1.1 POST-TENSIONING STEEL : THE PROPOSED TYPE OF TENDONS WHICH WILL BE USED IN THE POST-TENSIONED DESIGNS, ALL NECESSARY ADDITIONAL DETAILS INCLUDING THOSE FOR END ANCHORAGES, METHODS TO BE EMPLOYED AND PROCEDURES TO BE FOLLOWED, SHALL BE AS APPROVED BY THE ENGINEERS. A PORTION OF THE TENDONS SHALL BE DRAPED LONGITUDINAL IN PARABOLIC POSITIONS, ALL TENDONS SHALL BE PLACED SO THAT THEIR CENTER OF GRAVITY WILL BE AT THE POSITION SHOWN ON PLANS. THE TOTAL POST-TENSION FORCE AFTER LOSSES REQUIRED AT MIDSPAN SHALL BE PROVIDED AS CALLED FOR IN THE VARIOUS DESIGNS. THE REQUIRED FORCES AFTER LOSSES SHALL BE OBTAINED BY APPLYING INITIAL TENSILE FORCES OF SUFFICIENT MAGNITUDE TO ALLOW FOR ALL SUBSEQUENT LOSSES, INCLUDING THOSE FOR ELASTIC SHORTENING, SHRINKAGE, CREEP, RELAXATION, FRICTION, AND EFFICIENCY OF END ANCHORAGES. AFTER SECURING THE END ANCHORAGES ALL TENDONS SHALL BE PRESSURE GROUTED IN THEIR CONDUITS IN ACCORDANCE WITH "SPECIFICATIONS".

D.12.1.2 CONCRETE FOR GIRDERS SHALL BE A MINIMUM STRENGTH OF 35 N/mm (5000 PSI) AT THE AGE OF 28 DAYS.

D.12.1.3 THE CONTRACTOR MAY PROPOSE ANY ALTERNATIVE TENDON SIZE AND LAYOUT AND SUBJECT SHALL MEET THE APPROVAL OF THE ENGINEER.

D.12.1.4 THE REQUIRED STRENGTH OF CONCRETE AT TIME OF TENSIONING SHALL BE 28 MPa (4,000 PSI). A GRID CONSISTING OF #12 BARS AT 100 CENTERS IN BOTH DIRECTIONS SHALL BE PLACED NEAR EACH ANCHORAGE OF THE POST-TENSIONING SYSTEM. POST-TENSIONING FORCES SHOWN BELOW COMPUTED FOR TENDONS JACKED SIMULTANEOUSLY AT BOTH ENDS, FRICTIONS COEFFICIENTS ARE $K = 0.0066/m$ AND $u = 0.25$ WITH AN ANCHORAGE DEFORMATION OF 6mm.

D.12.1.5 HANDLING PRESTRESSED CONCRETE BEAMS : THE BEAMS SHALL BE MAINTAINED IN AN UPRIGHT POSITION AND SHALL BE LIFTED BY SUITABLE DEVICES PROVIDED AT THE ENDS OF THE BEAMS. ATTENTION IS DIRECTED TO THE INCREASED DIFFICULTY OF LIFTING BEAMS WITHOUT END BLOCKS. THE CONTRACTOR PROPOSED LIFTING DETAILS SHOULD BE GIVEN CAREFULL CONSIDERATION BEFORE BEING SUBMITTED ON SHOP DRAWING FOR APPROVAL. THE USE OF HOLES FOR LIFTING PURPOSES WILL NOT BE PERMITTED.

D.12.1.6 CONTRACTOR SUBMIT FOR APPROVAL BY THE ENGINEER THE CORRESPONDING ELONGATION OF THE PRESTRESSING TENDONS.

D.13 BORED PILES

D.13.1 SUBMITTALS

AT LEAST 15 DAYS BEFORE WORK ON SHAFTS BEGINS, THE CONTRACTOR SHALL SUBMIT THE FOLLOWING TO THE ENGINEER FOR REVIEW AND APPROVAL.

- D.13.1.1 LIST OF PROPOSED EQUIPMENT TO BE USED INCLUDING CRANES, DRILLS, AUGERS, BAILING BUCKETS, FINAL CLEANING EQUIPMENT, DESANDING EQUIPMENT, SLURRY PUMPS, CASING, ETC.
- D.13.1.2 DETAILS OF OVERALL CONSTRUCTION OPERATION SEQUENCE AND THE SEQUENCE OF SHAFT CONSTRUCTION IN BENTS OR GROUPS.
- D.13.1.3 DETAILS OF SHAFT EXCAVATION METHOD.
- D.13.1.4 WHEN SLURRY IS REQUIRED, DETAILS OF THE METHOD PROPOSED FOR MIXING, CIRCULATING AND DESANDING SLURRY.
- D.13.1.5 DETAILS OF METHOD TO CLEAN THE SHAFT EXCAVATION.
- D.13.1.6 DETAILS OF REINFORCEMENT PLACEMENT INCLUDING SPLICES, SUPPORT & CENTRALIZATION METHODS.
- D.13.1.7 DETAILS OF CONCRETE PLACEMENT, CURING AND PROTECTION.
- D.13.1.8 DETAILS OF ANY REQUIRED LOAD TEST, AND;

(REFER TO DO. No. 37, SERIES FO 2016, Re: POLICIES & GUIDELINES ON THE TESTING OF BORED PILES FOR INFRASTRUCTURE PROJECTS)

- A. PILE DYNAMIC TEST (HIGH STRAIN DYNAMIC LOAD TEST) SHALL BE CONDUCTED ON BORED PILES TO DETERMINE / CHECK THE ACTUAL BEARING CAPACITY, SKIN FRICTION OF THE BORED PILE.
- B. PILE INTEGRITY TEST – THE QUALITATIVE EVALUATION OF THE PHYSICAL DIMENSIONS, CONTINUITY OF A PILE, AND CONSISTENCY OF THE PILE MATERIAL.
- C. THE REQUIRED NUMBER OF BORED PILES FOR PILE DYNAMIC TEST AND PILE INTEGRITY TEST SHALL BE DISTRIBUTED AS FOLLOWS : 1 PER ABUTMENT.

D.13.1.9 OTHER INFORMATION SHOWN ON THE PLANS OR REQUESTED BY THE ENGINEER. THE CONTRACTOR SHALL NOT START THE CONSTRUCTION OF DRILLED SHAFTS UNTIL SUCH DRAWINGS HAVE BEEN APPROVED BY THE ENGINEER. SUCH APPROVAL WILL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR RESULTS OBTAINED BY USE OF THESE DRAWINGS OR ANY OF HIS OTHER RESPONSIBILITIES UNDER THE CONTRACT.

D.13.2 CONCRETE
 CONCRETE SHALL BE CLASS "B" UNLESS OTHERWISE SPECIFIED. MINIMUM CEMENT CONTENT SHALL BE NOT LESS THAN 380 kg/cu.m.; MAXIMUM SIZE AGGREGATE-20mm; SPECIFIED COMP. STRENGTH (28 DAYS) 41 MPa.




D.13.3 REINFORCING STEEL
 UNLESS INDICATED OTHERWISE, REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615) GRADE 60, DEFORMED

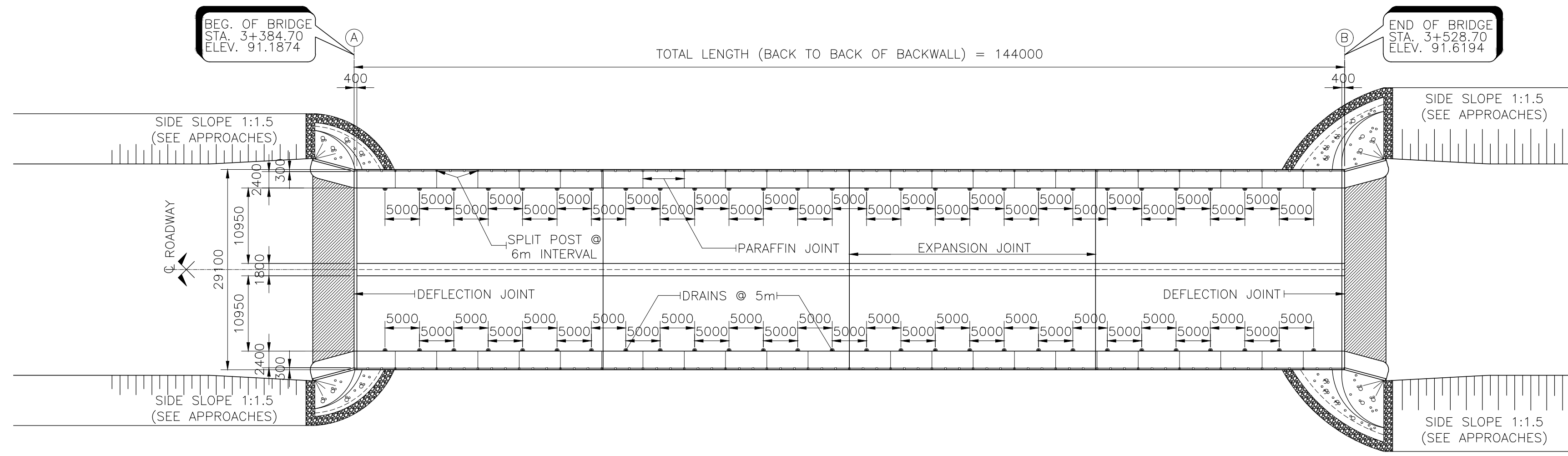
D.13.4 CASINGS
 CASINGS REQUIRED TO BE INCORPORATED AS PART OF THE PERMANENT WORK SHALL BE AASHTO M270 (ASTM A709) GRADE 36, UNLESS OTHERWISE SPECIFIED.

D.13.5 PROTECTION OF EXISTING STRUCTURES
 ALL REASONABLE PRECAUTIONS SHALL BE TAKEN TO PREVENT DAMAGE TO EXISTING STRUCTURES AND UTILITIES. THESE MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, SELECTING CONSTRUCTION METHODS AND PROCEDURES THAT WILL PREVENT EXCESSIVE CAVING OF THE SHAFT EXCAVATION, MONITORING AND CONTROLLING THE VIBRATIONS FROM THE DRIVING OF CASING OR SHEETING, DRILLING OF THE SHAFT OR FROM BLASTING, IF PERMITTED.

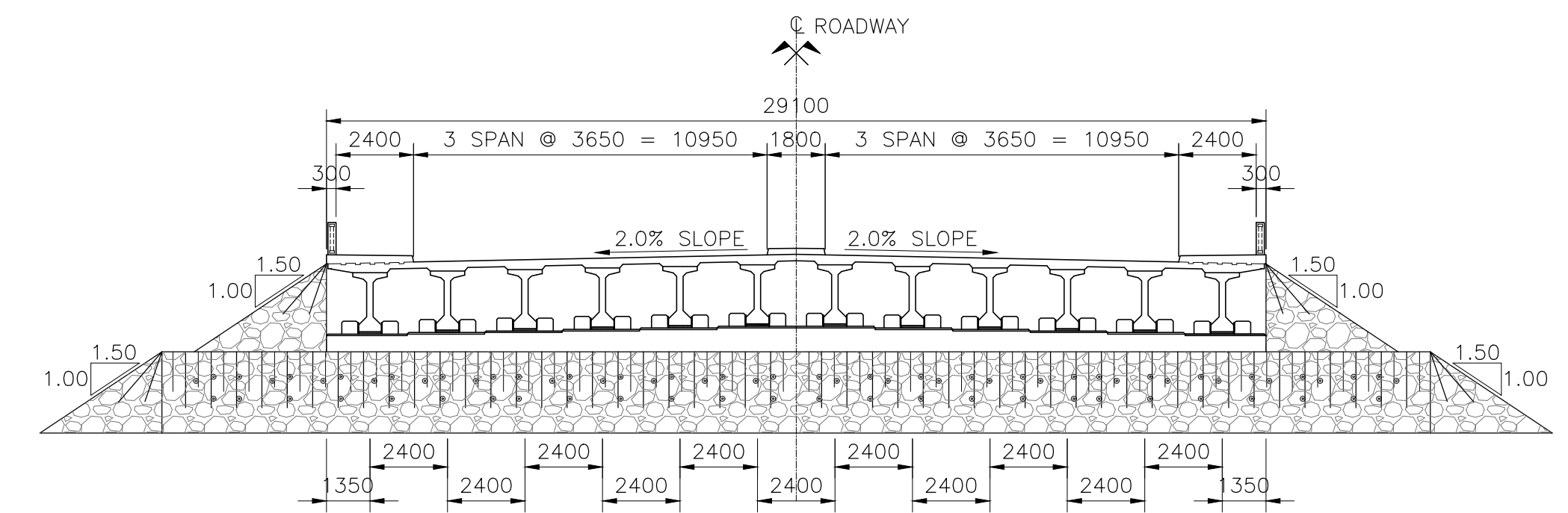
D.13.6 FIELD TEST
 LOW STRAIN INTEGRITY TESTING SHALL BE CONDUCTED FOR ALL BORED PILES OR AS DIRECTED BY THE ENGINEER TO VERIFY/CHECK THE CONCRETE HOMOGENEITY AND TO LOCATE/EVALUATE ANY POSSIBLE IRREGULARITIES IN THE COMPLETED BORED PILE. HIGH STRAIN PILE TESTING SHALL BE CONDUCTED AT LEAST TEN (10) PERCENT OF THE BORED PILES OR AS DIRECTED BY THE ENGINEER TO VERIFY/CHECK THE PILE CAPACITY. THE LOCATION SHALL BE BASED ON THE RESULTS OF THE LOW STRAIN TESTS OR AS DIRECTED BY THE ENGINEER.

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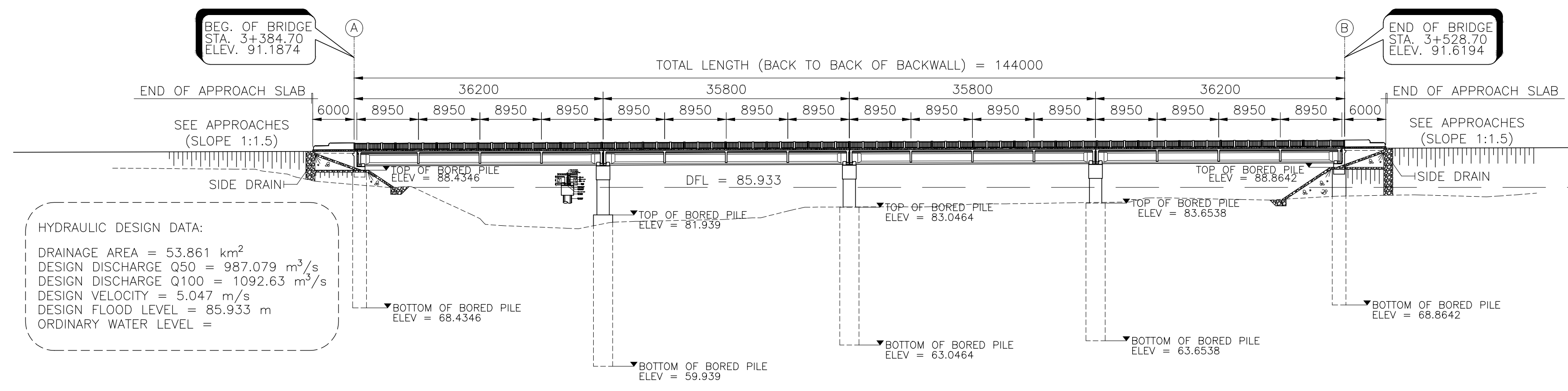
CONSULTANTS	SUBMITTED BY	DESIGNED BY		REVISIONS	DATE	PROJECT TITLE	SCALE	DRAWING STATUS	
 Urban Integrated Consultants, Inc. <small>UICI CORPORATE BLDG., 8 LANES STREET, MISRA, DALAMAN, QUEZON CITY, 1128</small>	EFREN L. DAVID PRESIDENT - UICI	ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI		A		DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING	
	DATE: -	DATE: -	DATE: -	B		SHEET CONTENT AIRPORT TO NCC (KM.1+500 - KM.16+000) - BRIDGE 2	PROJECT CODE	DRAWING NO. SIZE	
				C			GENERAL NOTES	P3GN-02	A1
				D			DATE APPROVED	DATE REVISED	REV.
				E		-	-	-	
				F					



1 GENERAL PLAN
SCALE 1:500

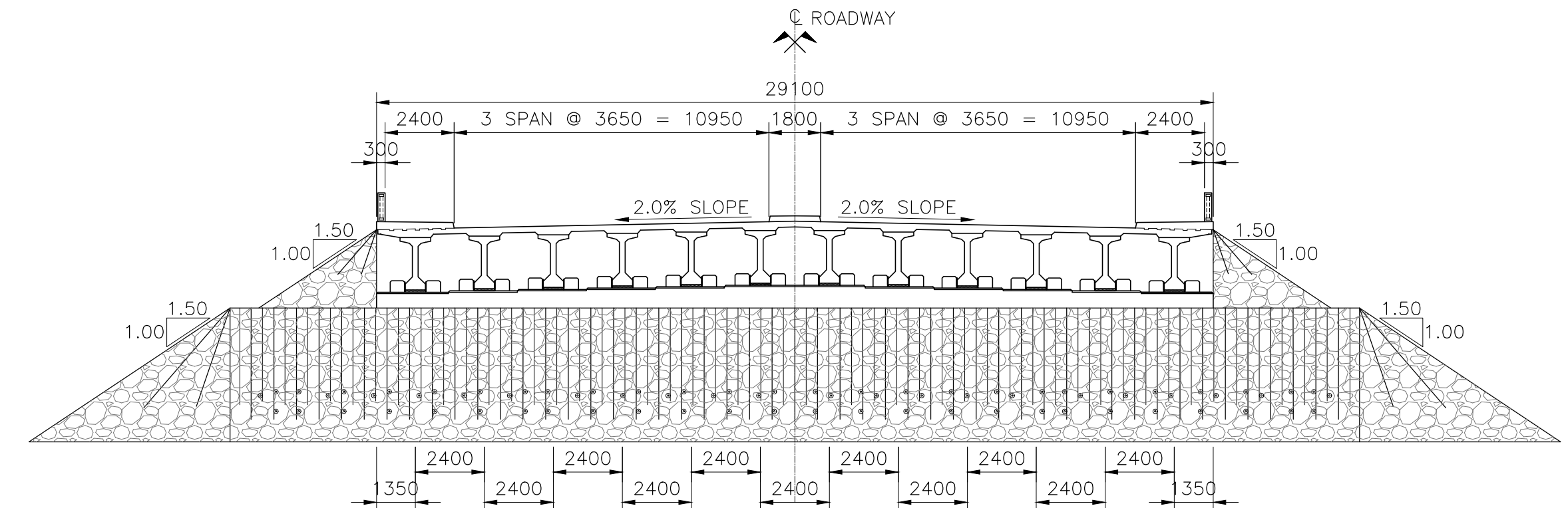


3 SECTION AT ABUTMENT A
SCALE 1:175



HYDRAULIC DESIGN DATA:
 DRAINAGE AREA = 53.861 km²
 DESIGN DISCHARGE Q50 = 987.079 m³/s
 DESIGN DISCHARGE Q100 = 1092.63 m³/s
 DESIGN VELOCITY = 5.047 m/s
 DESIGN FLOOD LEVEL = 85.933 m
 ORDINARY WATER LEVEL =

2 GENERAL ELEVATION
SCALE 1:500



4 SECTION AT ABUTMENT B
SCALE 1:175

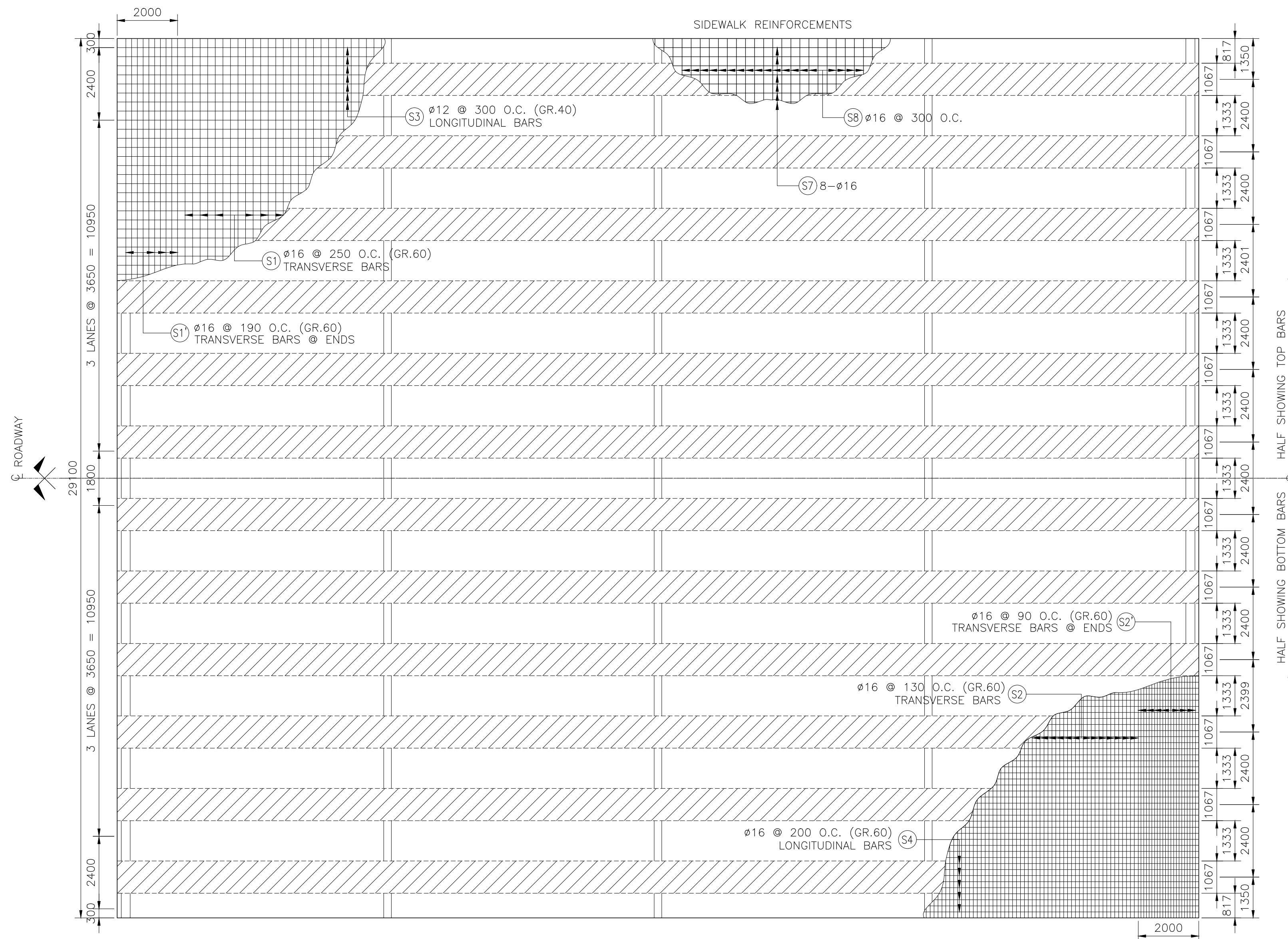
BRIDGE 2 QUANTITY ESTIMATE

ITEM NO.	DESCRIPTION	UNITS	ABUTMENTS		PIERS	SUPERSTRUCTURE	TOTAL
			A	B			
103 (2) a	Bridge Excavation (Common Soil)	cu.m.	81.00	76.00			157.00
104 (1) a	Embankment From Roadway Excavation	cu.m.	1505.00	2955.00			4460.00
202 (1)	Crushed Aggregate Base Course	cu.m.	58.00	58.00			116.00
400 (23) a13	Bored Pile (2.0m Diameter)	l.m.	180.00	180.00			360.00
400 (23) a21	Bored Pile (2.80m Diameter)	l.m.			372.00		372.00
400 (24) m1	Permanent Casing (2.0m dia. x 12mm thk.)	l.m.	54.00	54.00			108.00
400 (24) u1	Permanent Casing (2.80m dia. x 16mm thk.)	l.m.			108.00		108.00
400 (27) a	Load Test (Low Strain Dynamic Method, PIT)	ea.	5.00	5.00	9.00		19.00
400 (28)	Load Test (Pile Dynamic Method, PDA)	ea.	1.00	1.00	3.00		5.00
401 (2) b	Reinforced Concrete Railing (Baluster), Painted	l.m.				288.00	288.00
404 (1) a	Reinforcing Steel Bar (GRADE 40)	kgs.	1344.00	1344.00		36333.00	39021.00
404 (1) b	Reinforcing Steel Bar (GRADE 60)	kgs.	26874.00	26874.00	87313.00	209393.00	350454.00
405 (1) b2	Structural Concrete Class "A" (f'c=27.58 Mpa), 14days	cu.m.	58.00	58.00			116.00
405 (1) b3	Structural Concrete Class "A" (f'c=27.58 Mpa), 28days	cu.m.	147.00	147.00	587.00	1247.00	2128.00
406 (1) h3	Prestressed Structural Concrete Members (Type VI, L=35.00m, I-Girders)	ea.				48.00	48.00
407 (8)	Lean Concrete (Class B, 16.50 Mpa)	cu.m.	26.00	26.00			52.00
412 (1)	Elastomeric Bearing Pad DURO 60	ea.	12.00	12.00	72.00		96.00
507 (1)	Rubble Concrete	cu.m.	294.00	406.00			700.00
508 (1)	Hand Laid Rock Embankment	cu.m.	81.00	76.00			157.00
517 (1) a	Drain Pipe 100mm dia. Galvanized Pipe Including Pipe Fittings	l.m.				224.00	224.00
SPL - 801	Premolded Expansion Joint Filler with Sealant	sq.m.	100.00	100.00	293.00		493.00

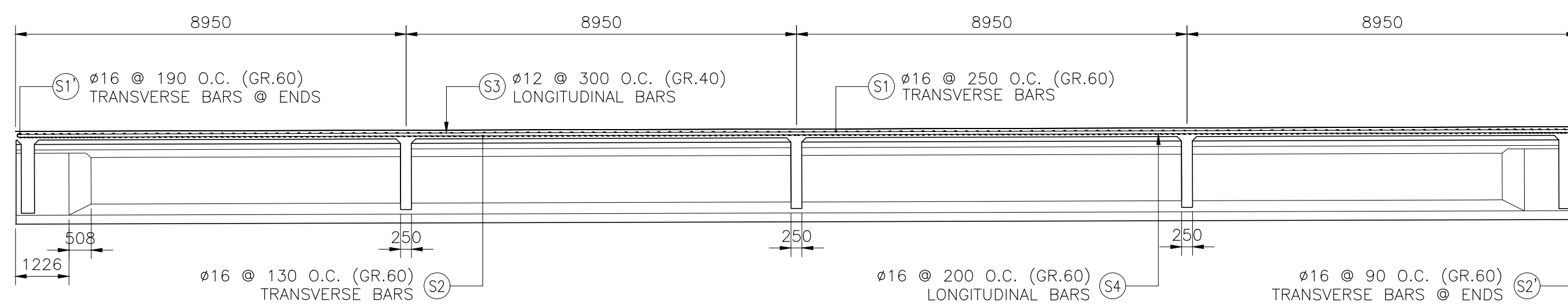
NOTE: REINFORCING BAR QUANTITIES FOR PRESTRESSED GIRDERS ARE NOT INCLUDED.

NOTE:
 PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
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 ENGR. ALBERTO C. CAÑETE
 TEAM LEADER

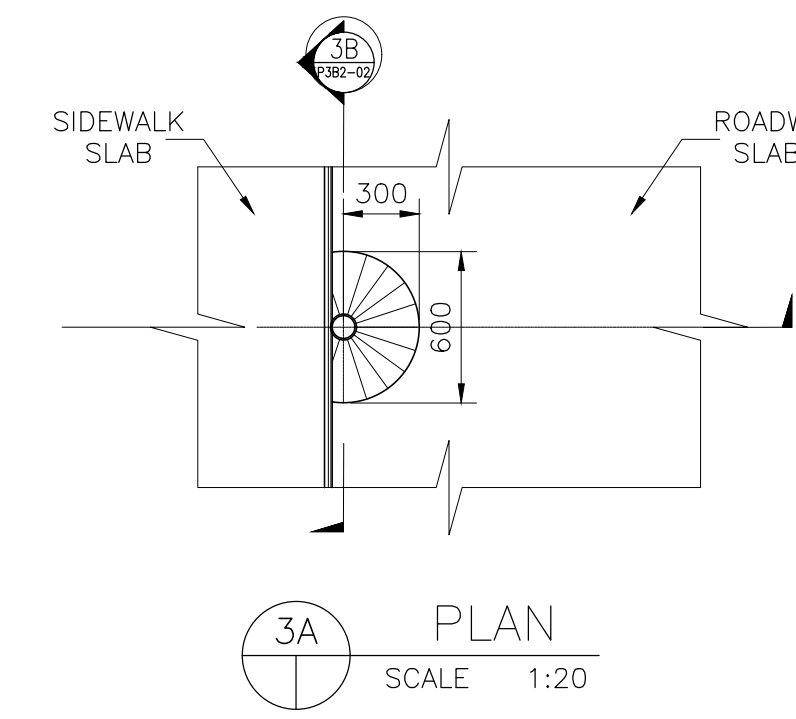
CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, WISRA, DALAMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	 CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITO M. SUNGA OIC - PMD DATE: -	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500 - KM.16+000) - BRIDGE 2 GENERAL ELEVATION GENERAL PLAN GENERAL SECTION	SCALE AS SHOWN PROJECT CODE DATE APPROVED -	DRAWING STATUS DRAFT DRAWING DRAWING NO. P3B2-01 DATE REVISED - REV. A1 -
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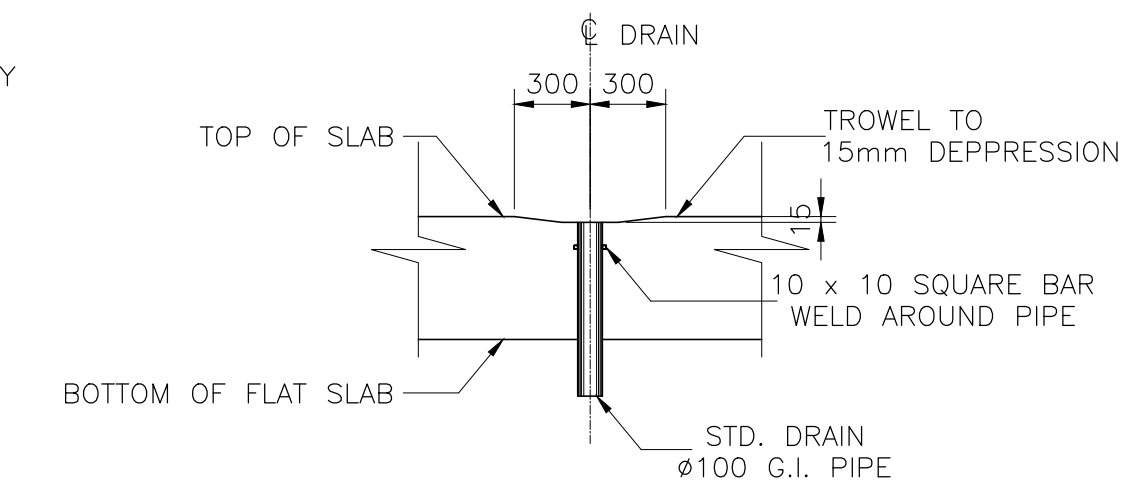
1 TYPICAL ROADWAY DECK PLAN
SCALE 1:100



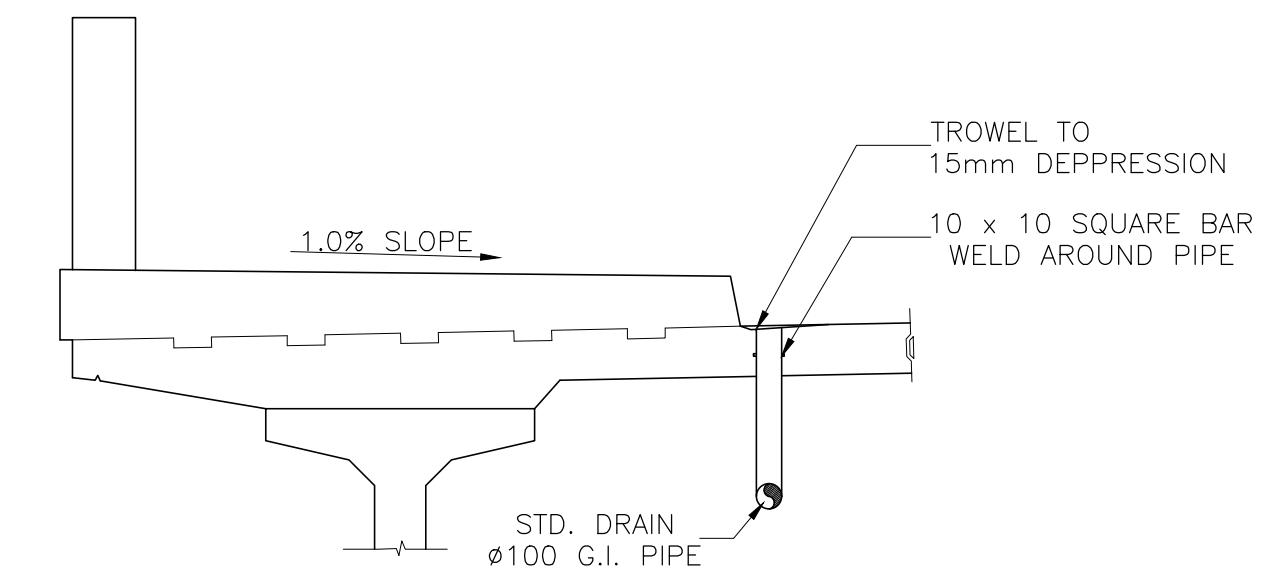
2 TYPICAL ROADWAY DECK ELEVATION
SCALE 1:100



3A PLAN
SCALE 1:20

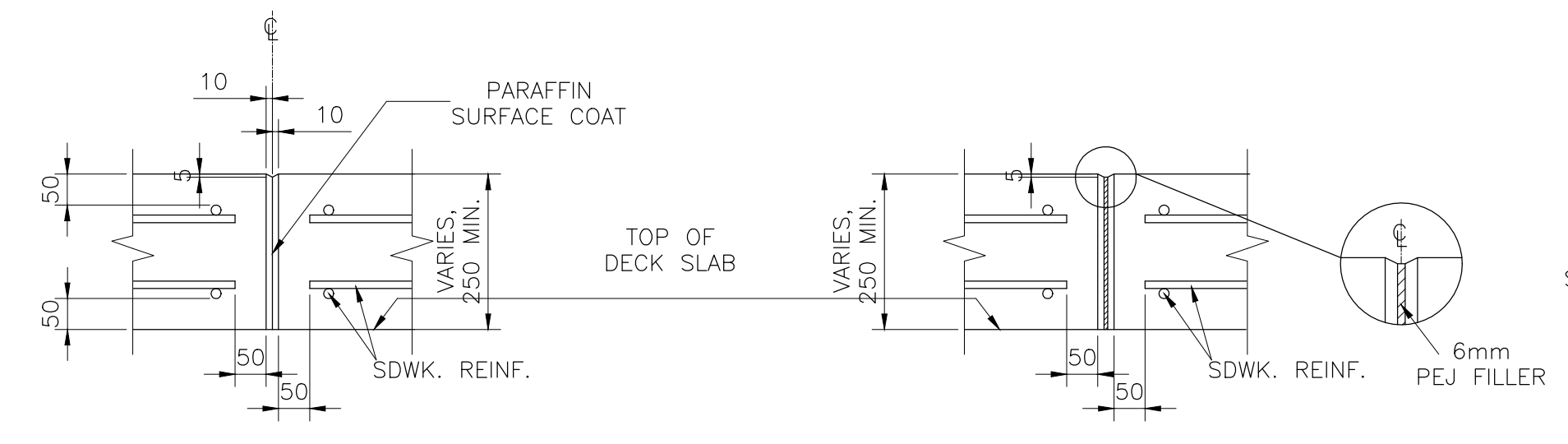


3B ELEVATION
SCALE 1:20



3C SECTION
SCALE 1:30

3 TYPICAL DRAIN DETAILS
SCALE NTS



4A PARAFFIN JOINT
SCALE 1:10

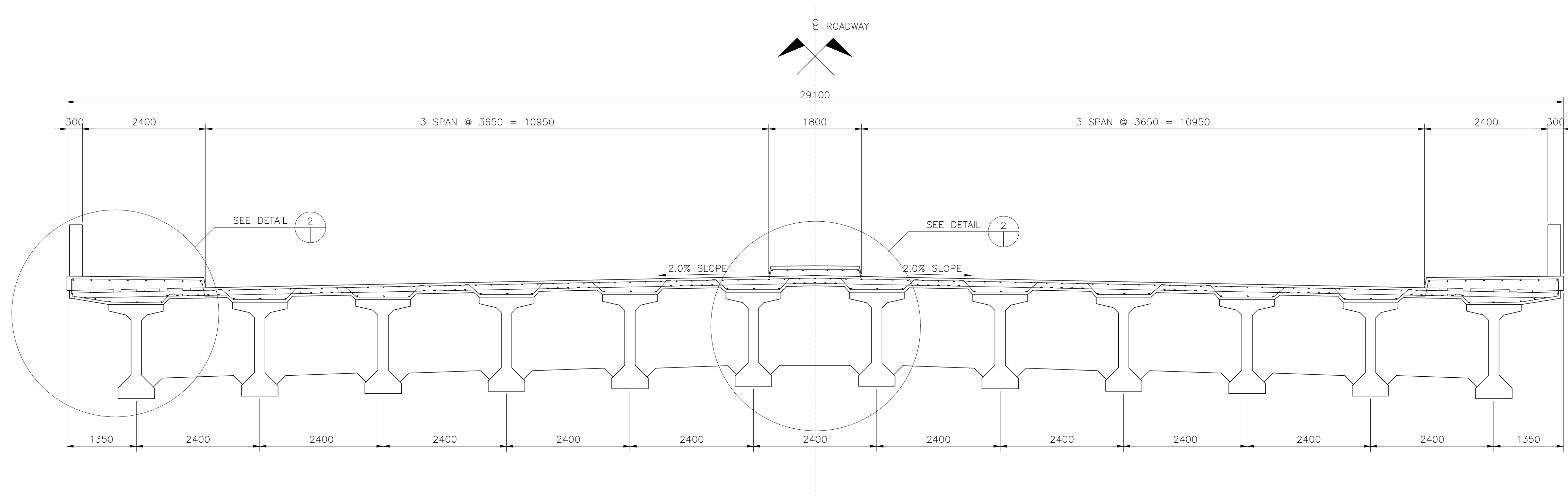
4A DEFLECTION JOINT
SCALE 1:10

4 JOINT DETAILS
SCALE NTS

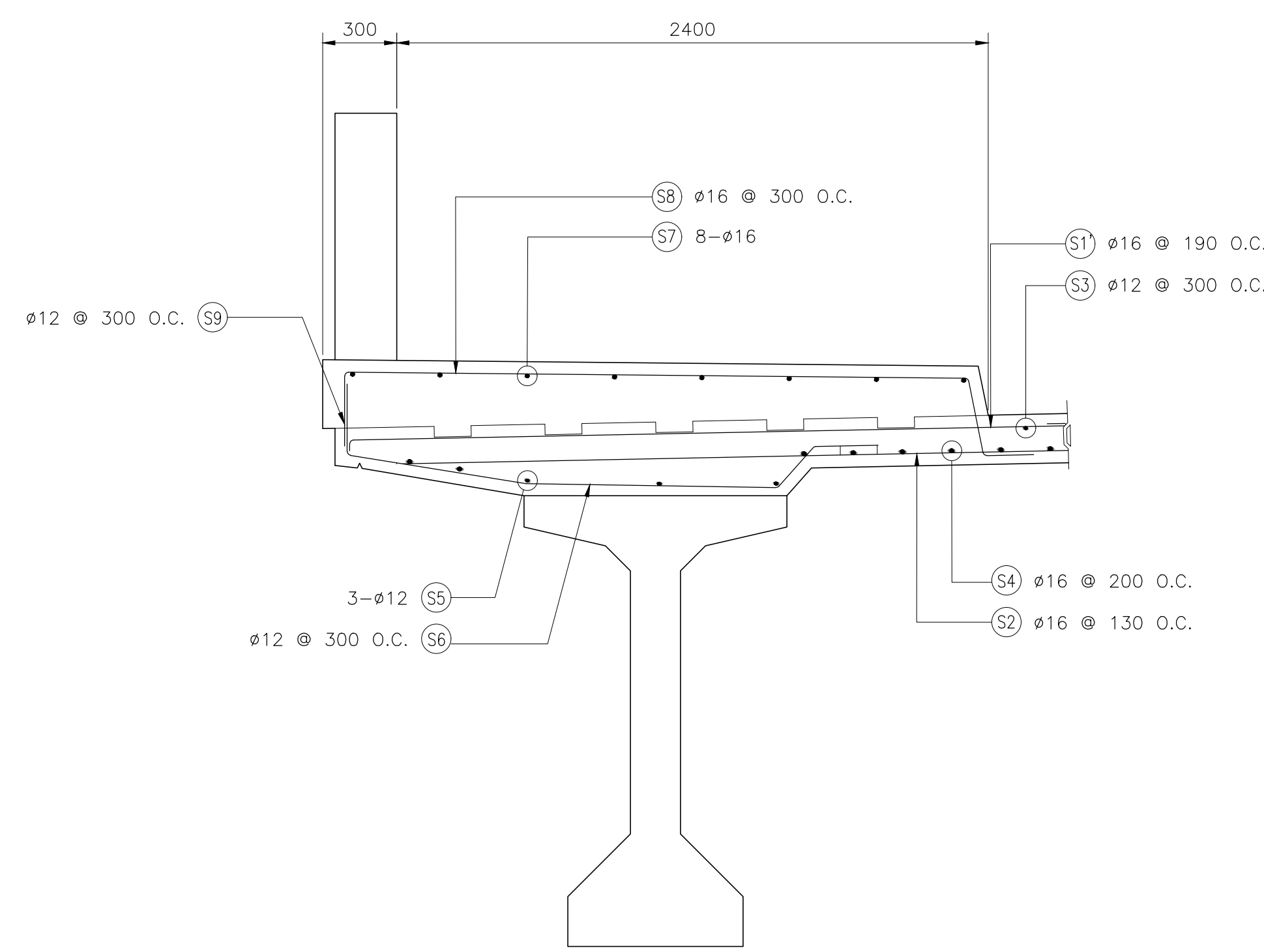
NOTE:
FOR LOCATION OF JOINT,
SEE GEN. PLAN OF BRIDGE.

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184,
APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY
THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE
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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

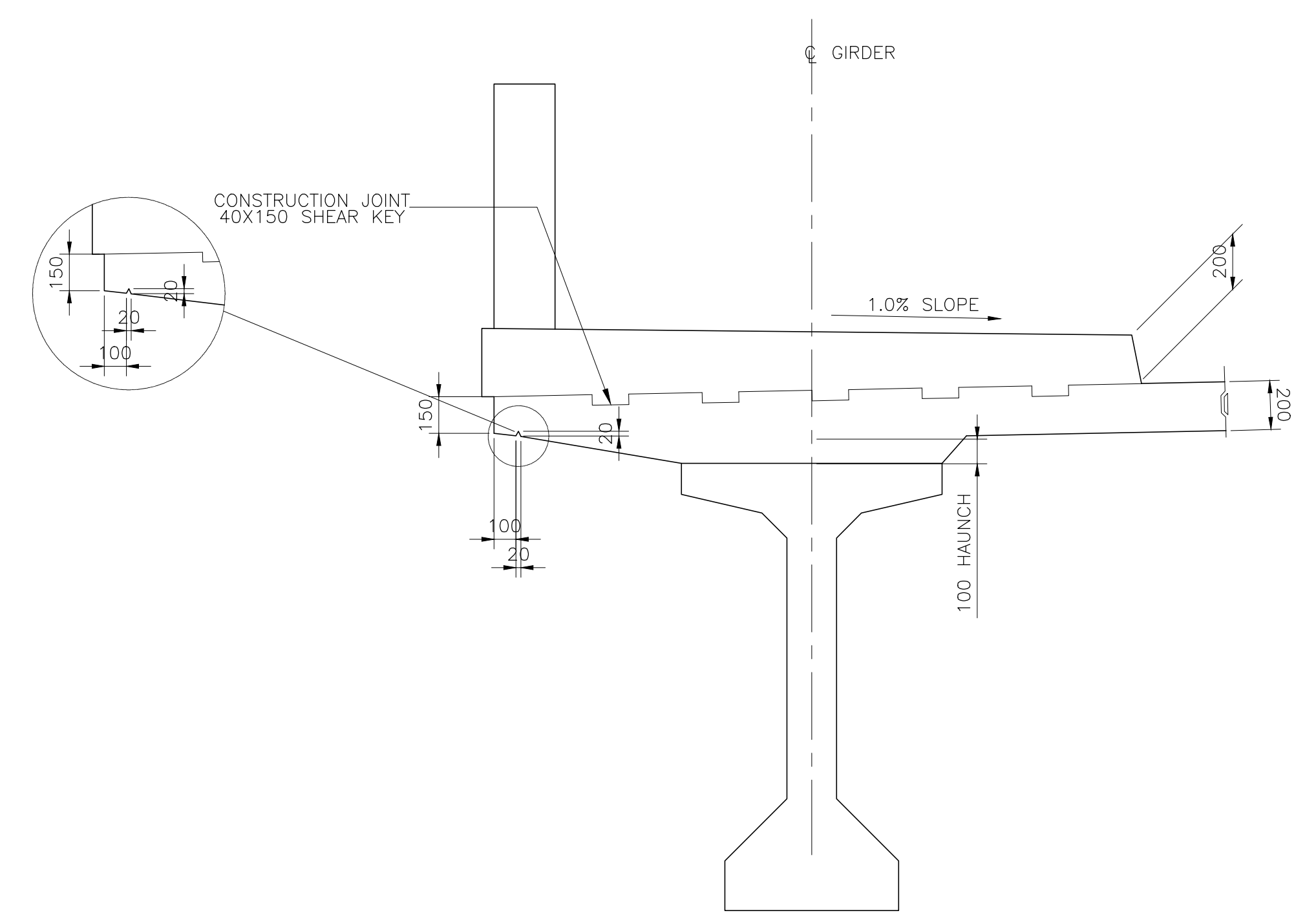
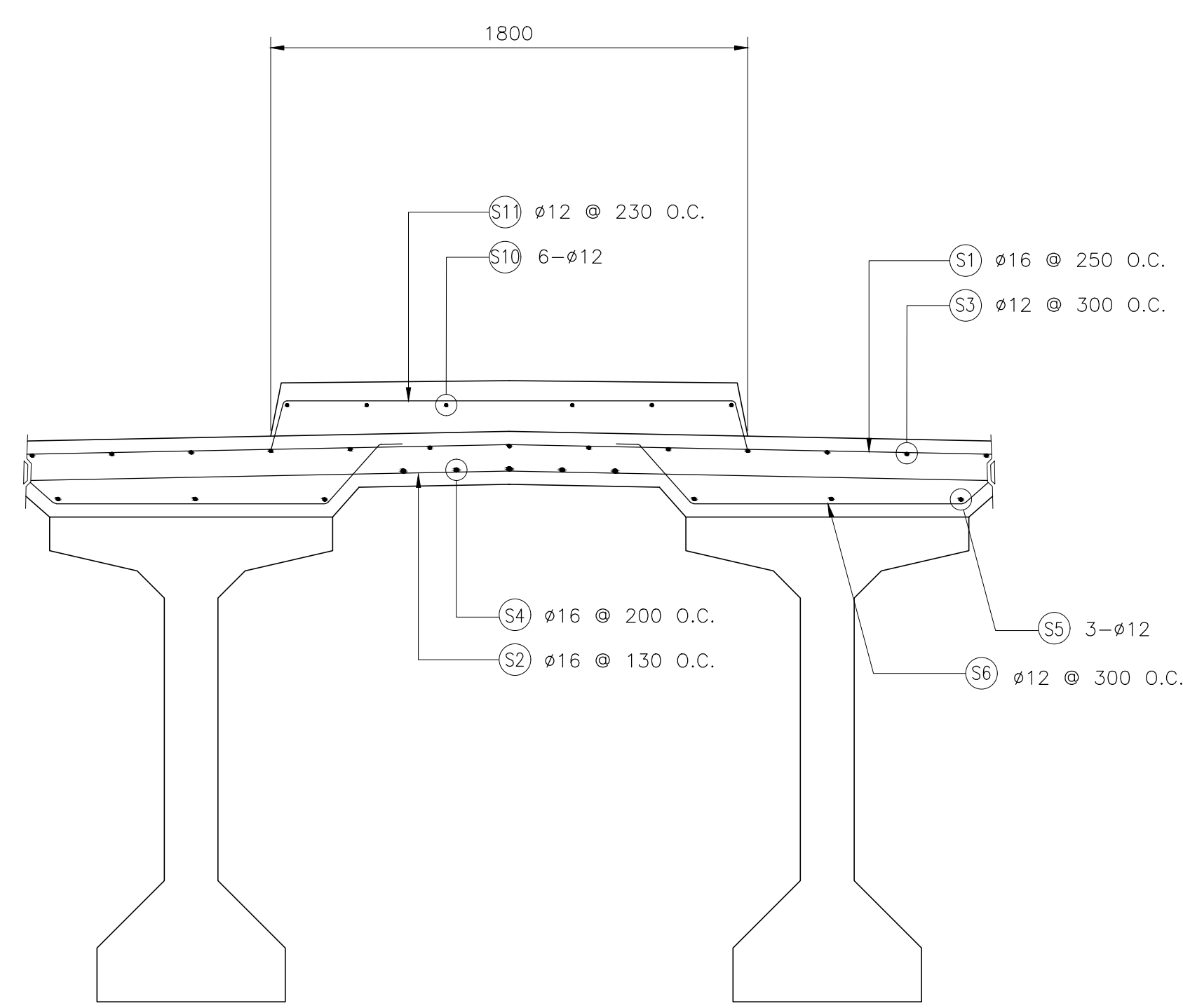
CONSULTANTS UIC CORPORATE BLDG., 8 LANES STREET, VISRA, DALMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITO M. SUNGA OIC - PMD DATE: -	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500 - KM.16+000) - BRIDGE 2 DECK SLAB PLAN LONGITUDINAL SECTION TYPICAL DRAIN AND JOINT DETAILS	SCALE AS SHOWN PROJECT CODE DATE APPROVED -	DRAWING STATUS DRAFT DRAWING DRAWING NO. P3B2-02 DATE REVISED - REV. A1 -
	UIC CORPORATE BLDG., 8 LANES STREET, VISRA, DALMAN, QUEZON CITY, 1128								



1 CROSS SECTION @ MIDSPAN
SCALE 1:50



2 TRANSVERSE SECTION
SCALE 1:20



3 SHEAR KEY & DRIP GROOVE DETAIL
SCALE 1:20

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

CONSULTANTS
Urban Integrated Consultants, Inc.
100 CORPORATE BLDG., 8 LANOS STREET, VASRA, DALMAN, QUEZON CITY, 1128

SUBMITTED BY
EFREN L. DAVID
PRESIDENT - UICI
DATE: -

DESIGNED BY
ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP
PROJECT MANAGER - UICI
DATE: -

CHECKED BY
RYAN PAUL S. GALURA
PROJECT MANAGER
DATE: -

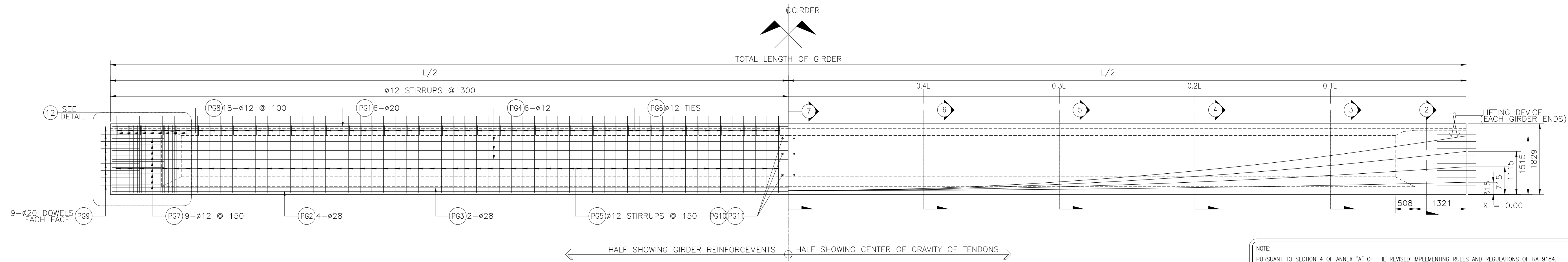
APPROVED BY
JOVITO M. SUNGA
OIC - PMD
DATE: -



REVISIONS	DATE
A	
B	
C	
D	
E	
F	

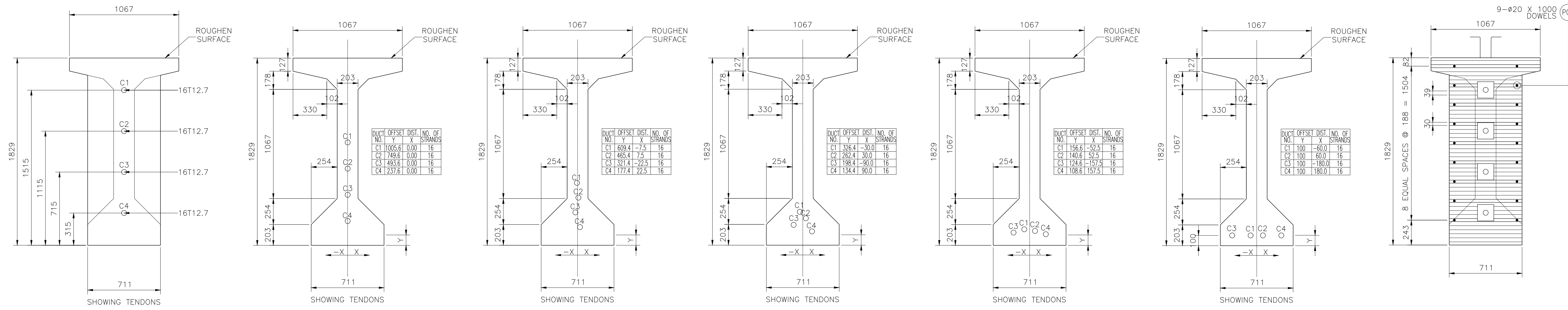
PROJECT TITLE
DETAILED ENGINEERING DESIGN OF THE
PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD,
MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD
SHEET CONTENT AIRPORT TO NCC (KM.1+500 - KM.16+000) - BRIDGE 2
CROSS SECTION
TRANSVERSE SECTION
SHEAR KEY AND DRIP GROOVE DETAIL

SCALE	DRAWING STATUS
AS SHOWN	DRAFT DRAWING
PROJECT CODE	DRAWING NO. SIZE
	P3B2-03 A1
DATE APPROVED	DATE REVISED REV.
-	- -

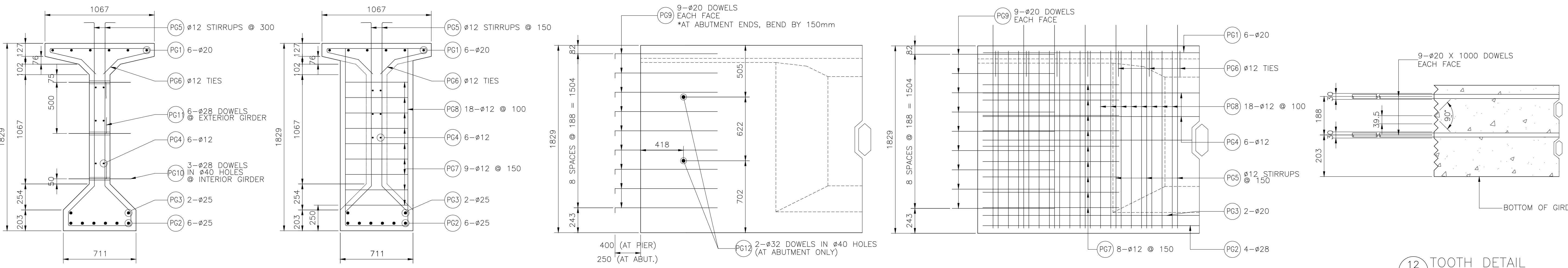


1 PRESTRESSED GIRDER ELEVATION
SCALE 1:55

NOTE:
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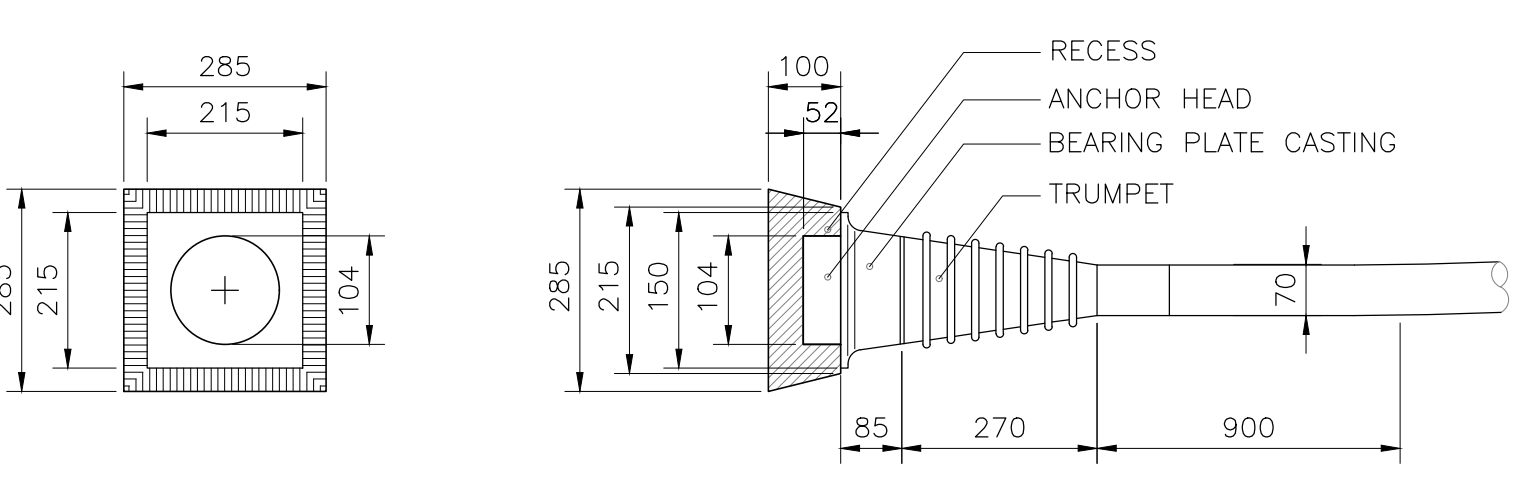
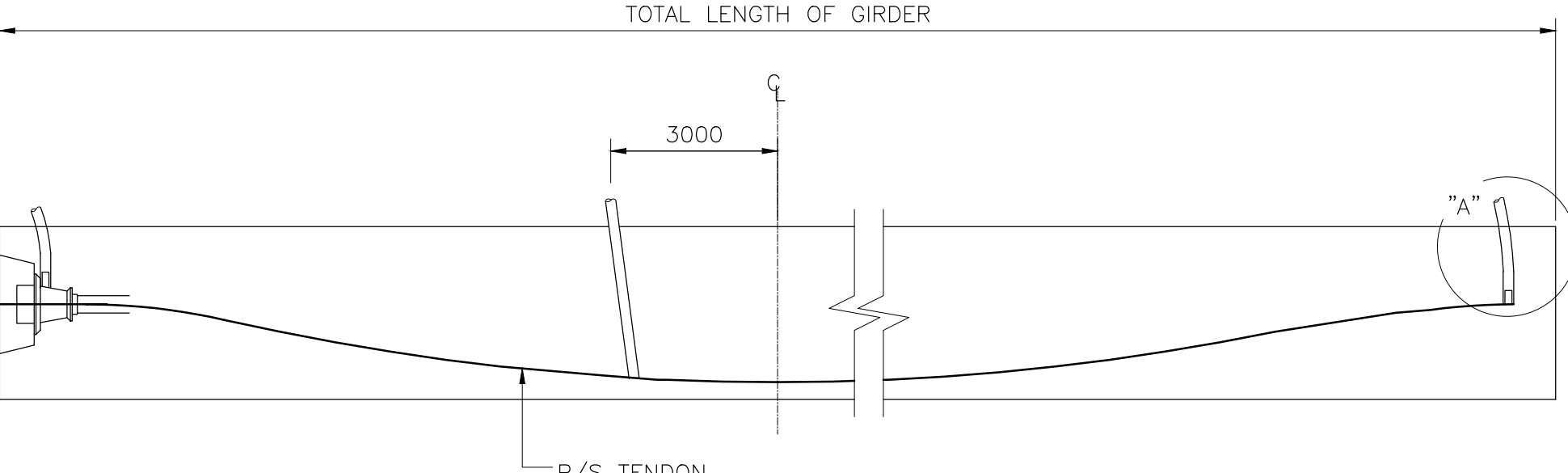
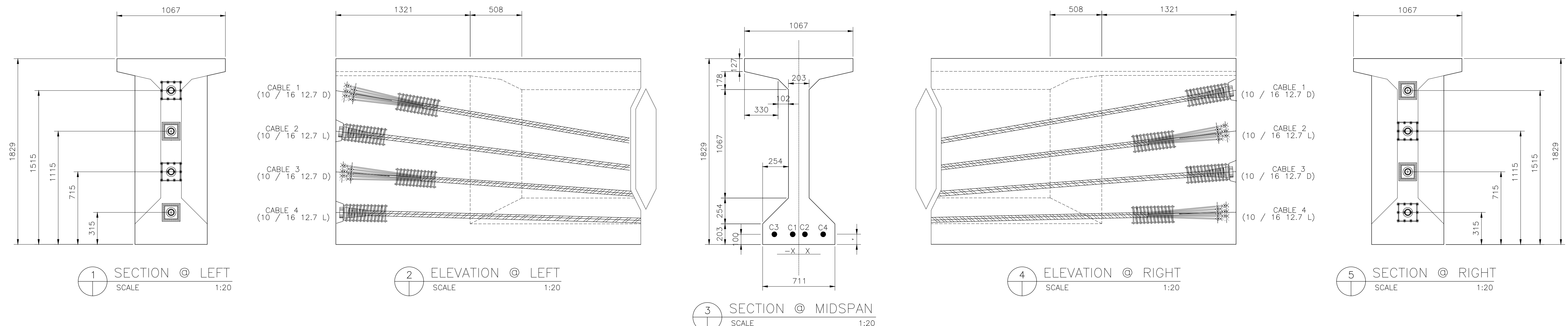


2 SECTION @ ENDS SCALE 1:20
3 SECTION @ 0.1L SCALE 1:20
4 SECTION @ 0.2L SCALE 1:20
5 SECTION @ 0.3L SCALE 1:20
6 SECTION @ 0.4L SCALE 1:20
7 SECTION @ MIDSPAN SCALE 1:20
8 TOOTH AT END VIEW SCALE 1:20

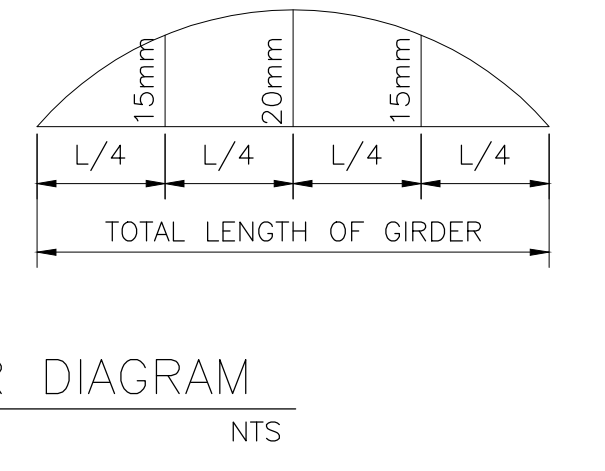


9 REINFORCEMENT DETAILS SCALE 1:20
10 DOWELS AT END BLOCK SCALE 1:20
11 END BLOCK REINF. DETAILS SCALE 1:20
12 TOOTH DETAIL SCALE NTS

CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, MISRA, DALMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI	 BAYAN LEPONONGO DEVELOPMENT AUTHORITY	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500 - KM.16+000) - BRIDGE 2 TYPE VI GIRDER DETAILS	SCALE AS SHOWN PROJECT CODE DATE APPROVED -	DRAWING STATUS DRAFT DRAWING DRAWING NO. P3B2-04 SIZE A1 DATE REVISED - REV. -
	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER	APPROVED BY JOVITO M. SUNGA OIC - PMD	DATE 	DATE 				

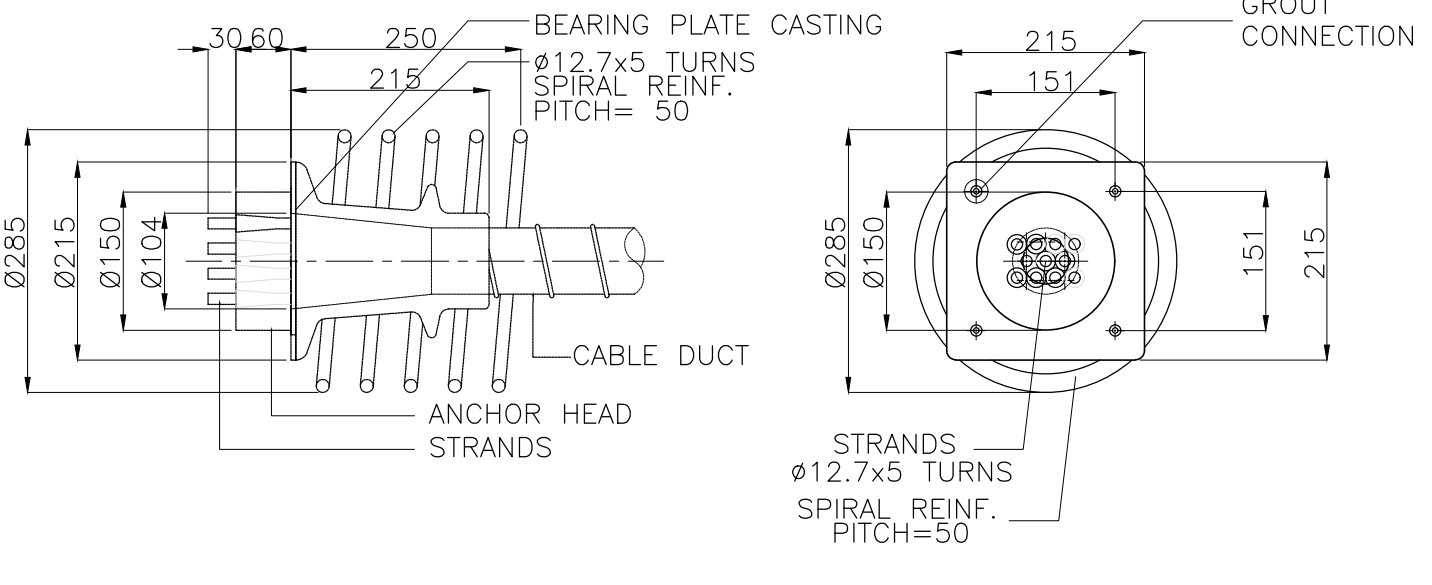
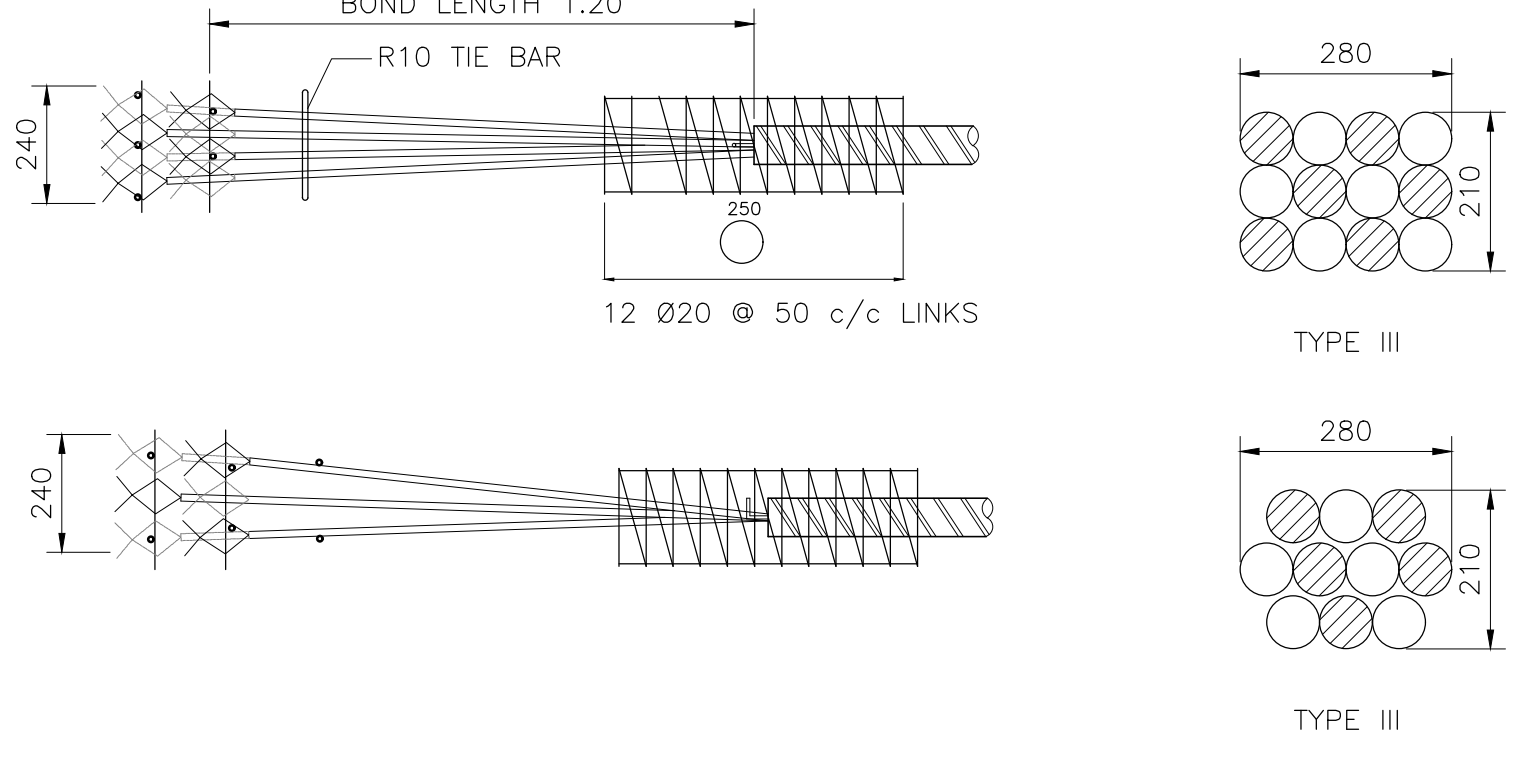
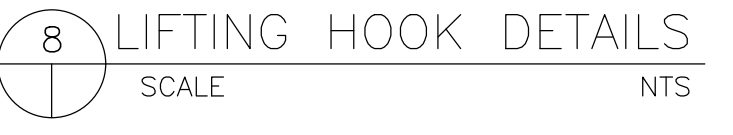
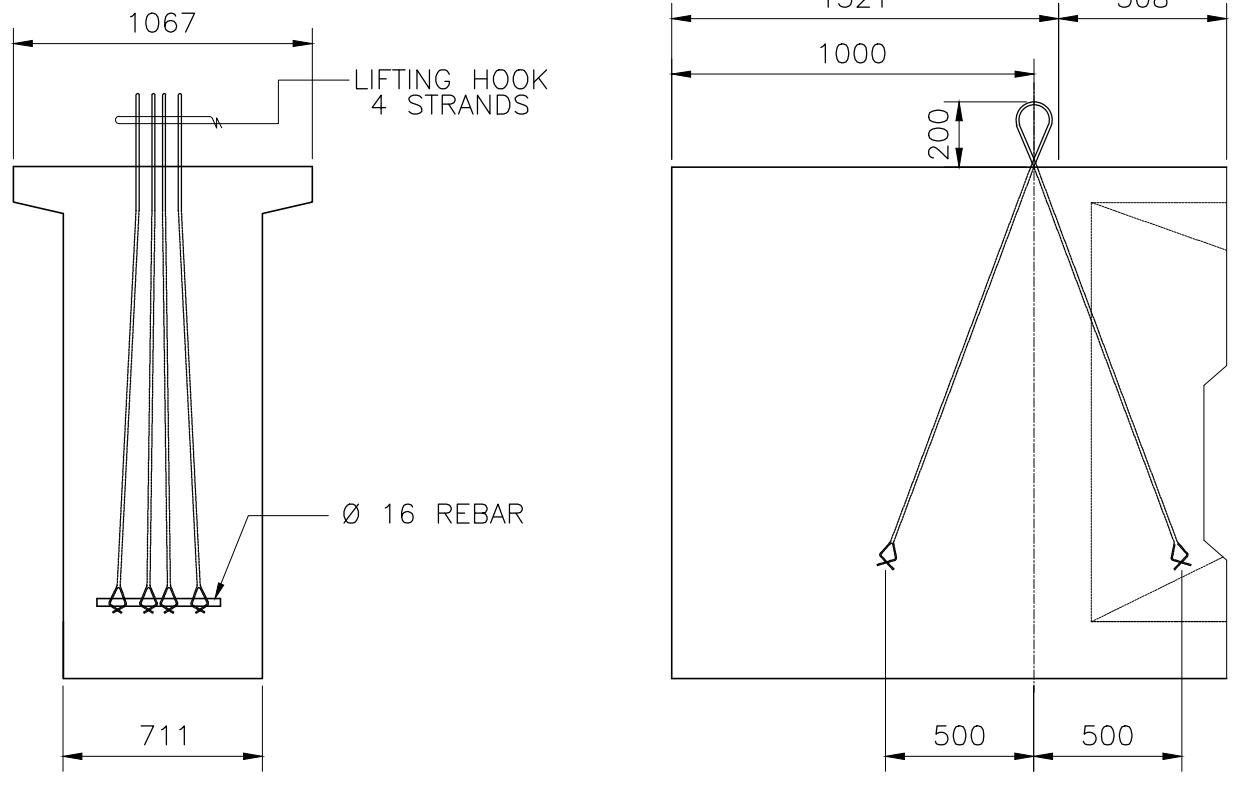
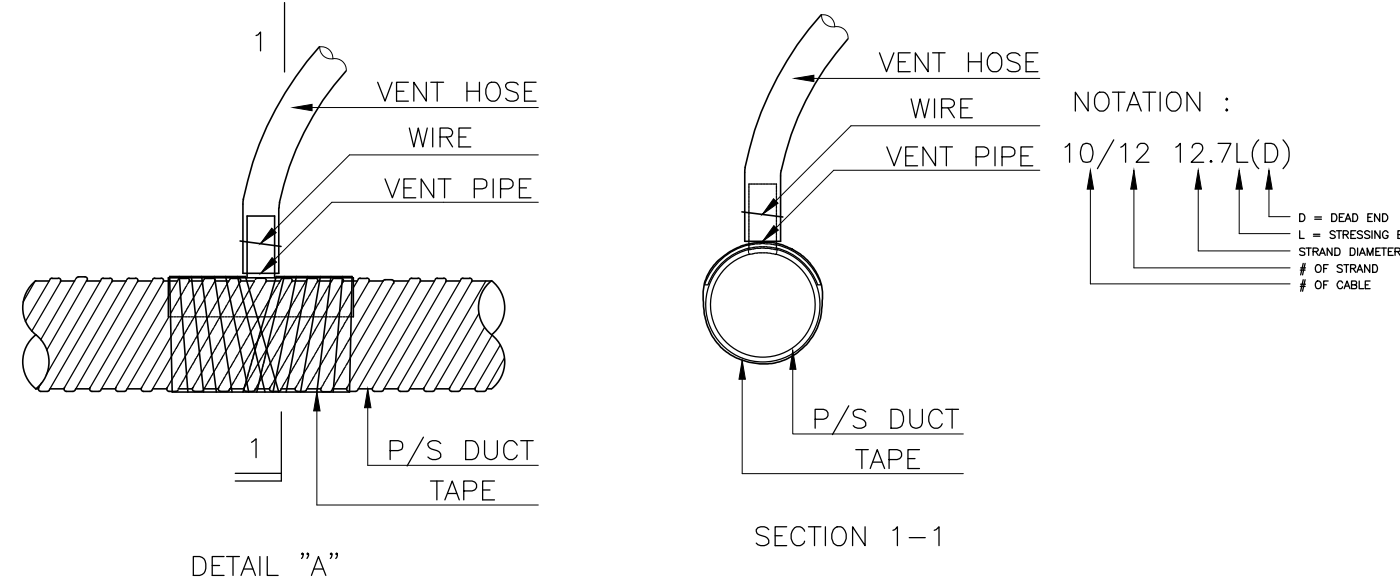


CABLE NO.	NO. OF STRANDS	JFORCE
1	16	2168.00
2	16	2168.00
3	16	2168.00
4	16	2168.00
TOTAL JACKING FORCE =		8672.00kN



GIRDER DESIGN GUIDE:

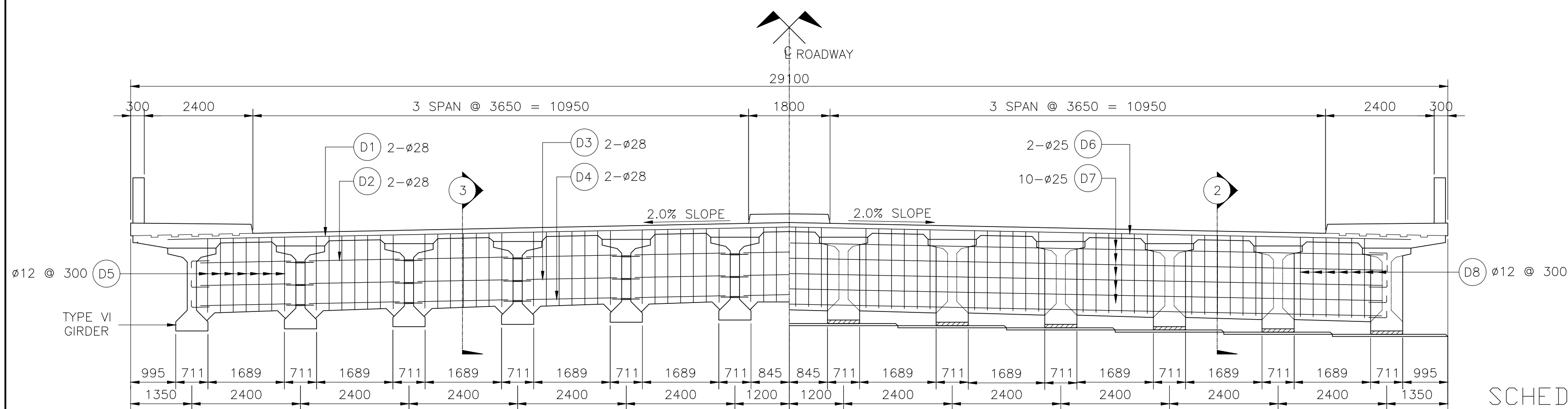
1. POST TENSIONING STEEL: THE PROPOSED TYPE OF TENDONS WHICH WILL BE USED IN THE POST TENSIONED DESIGN, ALL NECESSARY ADDITIONAL DETAILS INCLUDING THOSE FOR END ANCHORAGES, METHODS TO BE EMPLOYED AND PROCEDURES TO BE FOLLOWED SHALL BE AS APPROVED BY THE ENGINEER. A PORTION OF THE TENDONS SHALL BE DRAPPED LONGITUDINAL IN PARABOLIC POSITIONS. ALL TENDONS SHALL BE PLACED SO THAT THEIR CENTER OF GRAVITY WILL BE AT THE POSITION SHOWN ON PLANS. THE TOTAL POST TENSION FORCE AFTER LOSSES REQUIRED AT MID SPAN SHALL BE PROVIDED AS CALLED FOR IN THE VARIOUS DESIGN . THE REQUIRED FORCES AFTER LOSSES SHALL BE OBTAINED BY APPLYING INITIAL TENSILE FORCES OF SUFFICIENT MAGNITUDE TO ALLOW FOR ALL SUBSEQUENT LOSSES, INCLUDING THOSE FOR PLASTIC SHORTENING, SHRINKAGE, CREEP, RELAXATION, FRICTION AND EFFICIENCY OF END ANCHORAGE. ALL TENDONS SHALL BE PRESSURE GROUTED IN THEIR CONDUITS IN ACCORDANCE WITH SPECIFICATIONS.
2. CONCRETE FOR GIRDERS SHALL HAVE AN INITIAL STRENGTH OF 35 N/mm² (5,000 PSI) AND A MINIMUM STRENGTH OF 41 N/mm² (6,000 PSI) AT THE AGE OF 28 DAYS.
3. CONCRETE FOR CAST-IN-PLACE SLAB HAVE A MINIMUM STRENGTH OF 28 N/mm² (4,000 PSI) AT THE AGE OF 28 DAYS.
4. THE CONTRACTOR MAY PROPOSE ANY ALTERNATIVE TENDONS SIZE AND LAYOUT AND SUBJECT SHALL MEET THE APPROVAL OF THE ENGINEER.
5. THE REQUIRED STRENGTH OF CONCRETE AT TIME OF TENSIONING SHALL BE 35 MPa (5,000 PSI). A GRID CONSISTING OF Ø 12 BARS AT 100 CENTERS IN BOTH DIRECTIONS SHALL BE PLACED NEAR EACH ANCHORAGE OF THE POST-TENSIONING SYSTEM. POST-TENSIONING FORCES SHOWN BELOW COMPUTED FOR TENDONS JACKED SIMULTANEOUSLY AT BOTH ENDS, FRICTIONS COEFFICIENTS ARE $k = 0.00066/m$ AND $\mu = 0.25$ WITH AN ANCHORAGE DEFORMATION OF 6mm.
6. HANDLING PRESTRESSED CONCRETE BEAMS : THE BEAMS SHALL BE MAINTAINED IN AN UPRIGHT POSITION AND SHALL BE LIFTED BY SUITABLE DEVICES PROVIDED AT THE ENDS OF THE BEAMS. ATTENTION IS DIRECTED TO THE INCREASED DIFFICULTY OF LIFTING BEAMS WITHOUT END BLOCKS. THE CONTRACTOR'S PROPOSED LIFTING DETAILS SHOULD BE GIVEN CAREFUL CONSIDERATION BEFORE BEING SUBMITTED ON SHOP DRAWING FOR APPROVAL.THE USE OF HOLES FOR LIFTING PURPOSES WILL NOT BE PERMITTED.
7. CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE ENGINEER THE CALCULATED ELONGATION OF THE PRESTRESSING TENDONS CORRESPONDING TO THE REQUIRED JACKING FORCES.
8. ALL REINFORCING BARS SHALL BE GRADE 60.



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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

CONSULTANTS	SUBMITTED BY	DESIGNED BY	CHECKED BY	APPROVED BY	REVISIONS	DATE	PROJECT TITLE	SCALE	DRAWING STATUS	
 UIC CORPORATION BLDG., 8 LANOS STREET, WISRA, DALAMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI	ALBERTO C. CAÑETE, M.Eng., P.P., F. ASEP PROJECT MANAGER - UICI	RYAN PAUL S. GALURA PROJECT MANAGER	JOVITO M. SUNGA OIC - PMD	A		DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500 - KM.16+000) - BRIDGE 2	AS SHOWN	DRAFT DRAWING	
					B			PROJECT CODE	DRAWING NO.	SIZE
					C				P3B2-05	A1
					D					
					E					
F										
TYPE VI GIRDER DETAILS								DATE APPROVED	DATE REVISED	REV.

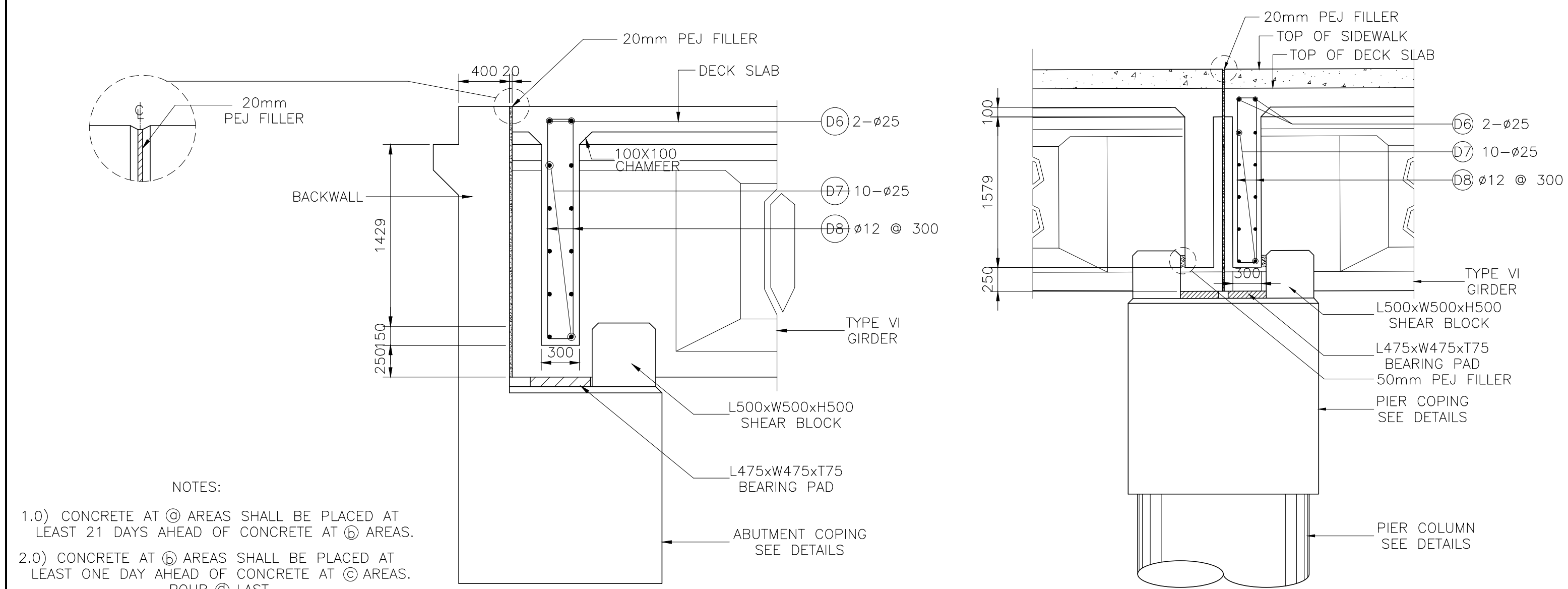


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 ENGR. ALBERTO C. CAÑETE
 TEAM LEADER

SCHEDULE OF REINFORCEMENTS FOR DECK SLAB & DIAPHRAGMS

BAR BENDING DIAGRAM	REINFORCING STEEL BARS			ALL DIMENSIONS ARE OUT TO OUT OF REBARS						TYPE	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	
	MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e							f
DECKSLAB (ONE SLAB ONLY)																
(A) a	S1	16	250	143	0.192	35.86	0.192									
	S1'	16	190	21	0.192	35.86	0.192									
	S2	16	130	275	0.58	34.59	0.58									
(B) a b a	S2'	16	90	44	0.192	35.86	0.192									
	S3	12	300	97	0.144	33.00	0.144									
	S4	16	200	146	0.192	33.00	0.192									
(C) a b a	S5	16	AS SHOWN	36	35.80											
	S6	12	300	1432	1.00	0.30										
	S7	16	AS SHOWN	16	35.80											
	S8	16	300	239	0.30	2.50	0.30	0.20								
	S9	12	300	239	0.144	0.20	0.20									
	S10	12	AS SHOWN	6	35.80											
(D) a b c	S11	12	230	156	0.20	1.70										
DIAPHRAGMS																
(E) a b c d	D1	28	AS SHOWN	6	14.55	14.55										
	D2	28	AS SHOWN	66	2.40											
	D3	28	AS SHOWN	66	2.40											
	D4	28	AS SHOWN	66	2.40											
	D5	12	300	194	0.15	1.63	0.15	1.63	0.12	0.12						
(F) a b	D6	25	AS SHOWN	4	14.55	17.00										
	D7	25	AS SHOWN	20	12.8	12.8										
(G) a b c d	D8	12	300	194	0.20	1.63	0.20	1.63	0.12	0.12						
NOTE: 40db SPLICES ARE NOT INCLUDED																
* 12 mm dia. and below are Grade 40																
* 16 mm dia. and above are Grade 60																
												Grade 60 bar	14279 Kgs			
												Grade 40 bar	3321 Kgs			
												Grade 60 bar	49855 Kgs			
												Grade 40 bar	8651 Kgs			

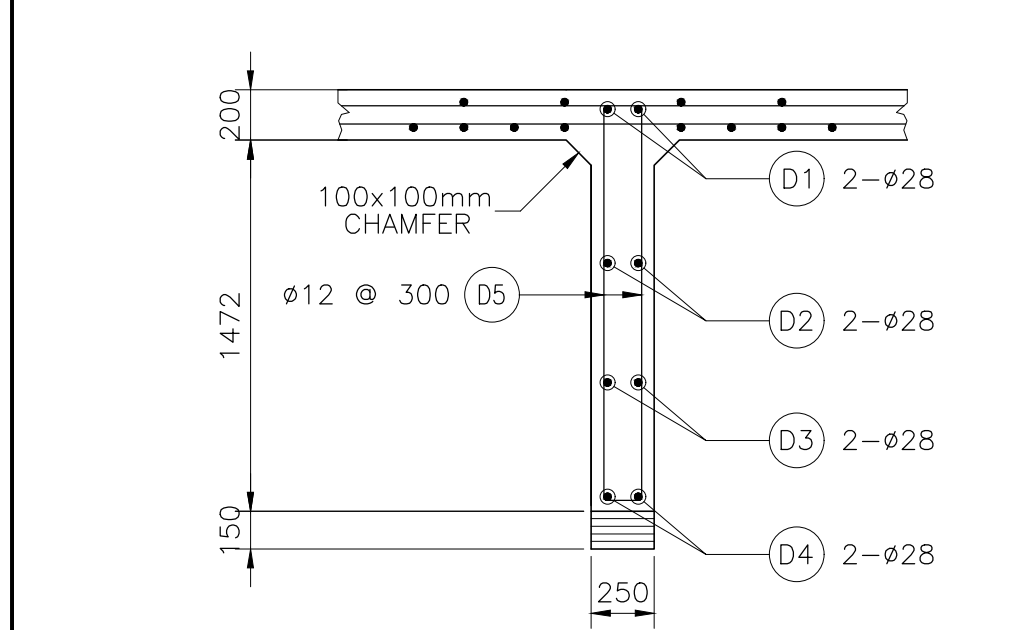
1 DIAPHRAGM ELEVATION SCALE 1:75



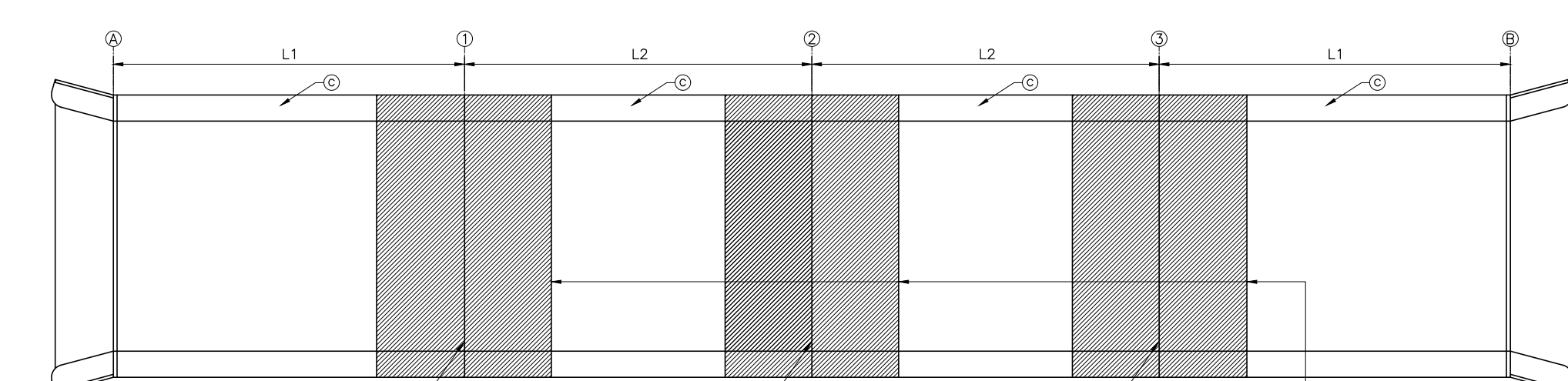
2 DIAPHRAGM @ ABUTMENT SCALE 1:30

3 DIAPHRAGM @ PIERS SCALE 1:40

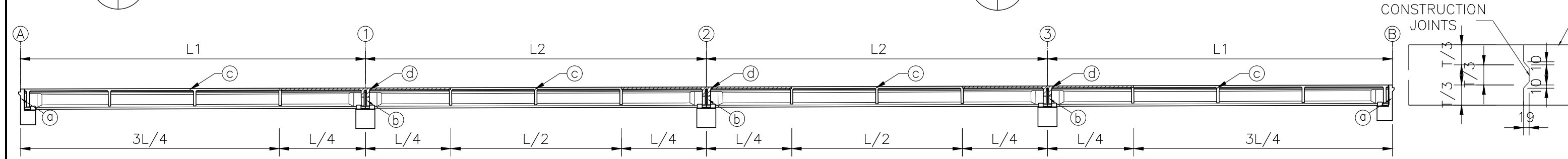
NOTES:
 1.0) CONCRETE AT (A) AREAS SHALL BE PLACED AT LEAST 21 DAYS AHEAD OF CONCRETE AT (B) AREAS.
 2.0) CONCRETE AT (C) AREAS SHALL BE PLACED AT LEAST ONE DAY AHEAD OF CONCRETE AT (A) AREAS. POUR (A) LAST.
 3.0) REINFORCEMENTS SHALL BE CONTINUOUS AT CONSTRUCTION JOINTS.



4 INTERMEDIATE DIAPHRAGM SCALE 1:30



5A PLAN SCALE NTS



5B ELEVATION SCALE NTS

5C ELEVATION SCALE NTS

5 CONCRETE POURING SEQUENCE SCALE NTS

SCHEDULE OF REINFORCEMENTS & SUMMARY OF QUANTITIES FOR ONE (1) PRESTRESSED GIRDER ONLY

BAR BENDING DIAGRAM	GIRDER LENGTH (m)	REINFORCING STEEL BARS			ALL DIMENSIONS ARE OUT TO OUT OF REBARS						TYPE	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)		
		MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e							
(A) a	35.00	PG1	20	AS SHOWN	6	35.80	0.075	0.075				C	35.95	215.70	2.486	534	
(B) a b		PG2	25	AS SHOWN	6	35.80	0.14	0.14				C	36.08	216.48	4.833	840	
(C) a b		PG3	25	AS SHOWN	2	35.80	0.14	0.14				C	36.08	72.16	2.486	283	
(D) a b c		PG4	12	AS SHOWN	6	35.80						A	35.80	214.80	0.888	196	
(E) a b c		PG5	12	300	119	0.45	1.60	0.36	0.16	0.635		G	3.205	382.46	0.888	345	
(F) a b c d		PG6	12	300	119	1.00	0.50	0.32	0.20			F	1.57	187.35	0.888	173	
(G) a b c d e		PG7	12	150	18	0.50	1.33	0.52				D	2.35	42.30	0.888	39	
(H) a b		PG8	12	100	36	1.75	0.60	0.60				C	2.95	106.20	0.888	102	
		PG9	20	AS SHOWN	18	1.00						A	1.00	18.00	2.486	47	
		PG10	28	AS SHOWN	6	0.603						A	0.603	3.618	4.833	24	
		PG11	28	AS SHOWN	6	0.25	0.40					H	0.65	3.90	4.833	24	
		PG12	32	AS SHOWN	2	1.467						A	1.467	2.934	6.313	24	
												TOTAL			GRADE 60	1774 Kgs	
															GRADE 40	856 Kgs	

NOTES:
 1. QUANTITIES ARE FOR 1 GIRDER ONLY. 4. PG12 FOR ABUT. ONLY
 2. PG10 IS FOR INTERIOR GIRDER ONLY. 5. PG13 FOR PIER ONLY
 3. PG11 IS FOR EXTERIOR GIRDER ONLY. 6. VERIFY ACTUAL LENGTH OF THE BRIDGE

CONSULTANTS
Urban Integrated Consultants, Inc.
 UIC CORPORATE BLDG., 8 LAKES STREET, WISLA, DELMAN, QUEZON CITY, 1128

SUBMITTED BY
EFREN L. DAVID
 PRESIDENT - UICI

DESIGNED BY
ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP
 PROJECT MANAGER - UICI

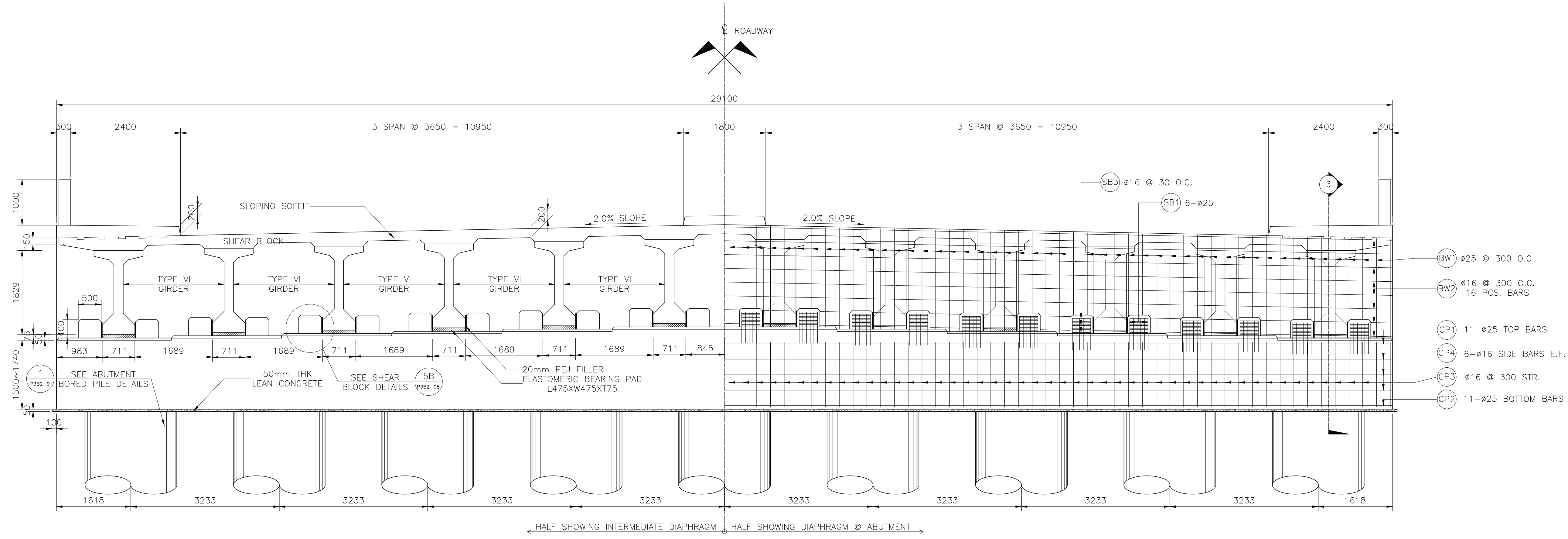
CHECKED BY
RYAN PAUL S. GALURA
 PROJECT MANAGER

APPROVED BY
JOVITO M. SUNGA
 OIC - PMD



REVISIONS	DATE	PROJECT TITLE
A		DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD
B		
C		SHEET CONTENT AIRPORT TO NCC (KM.1+500 - KM.16+000) - BRIDGE 2
D		
E		DIAPHRAGM DETAILS
F		SCHEDULE OF REINFORCEMENTS FOR SLAB, DIAPHRAGM AND GIRDER

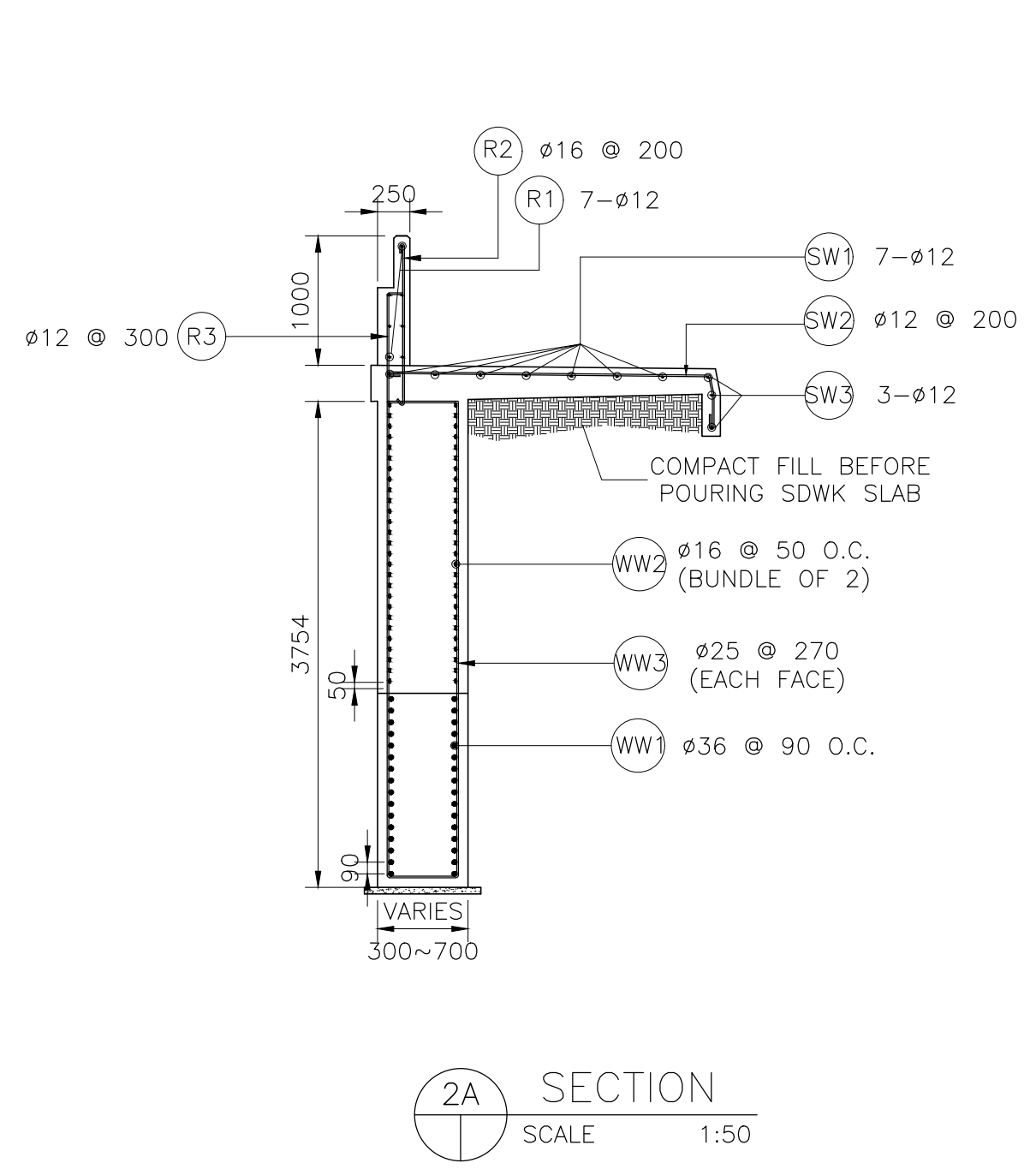
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AS SHOWN	DRAFT DRAWING
PROJECT CODE	DRAWING NO.
	P3B2-06
DATE APPROVED	DATE REVISED
REVISION	REVISION



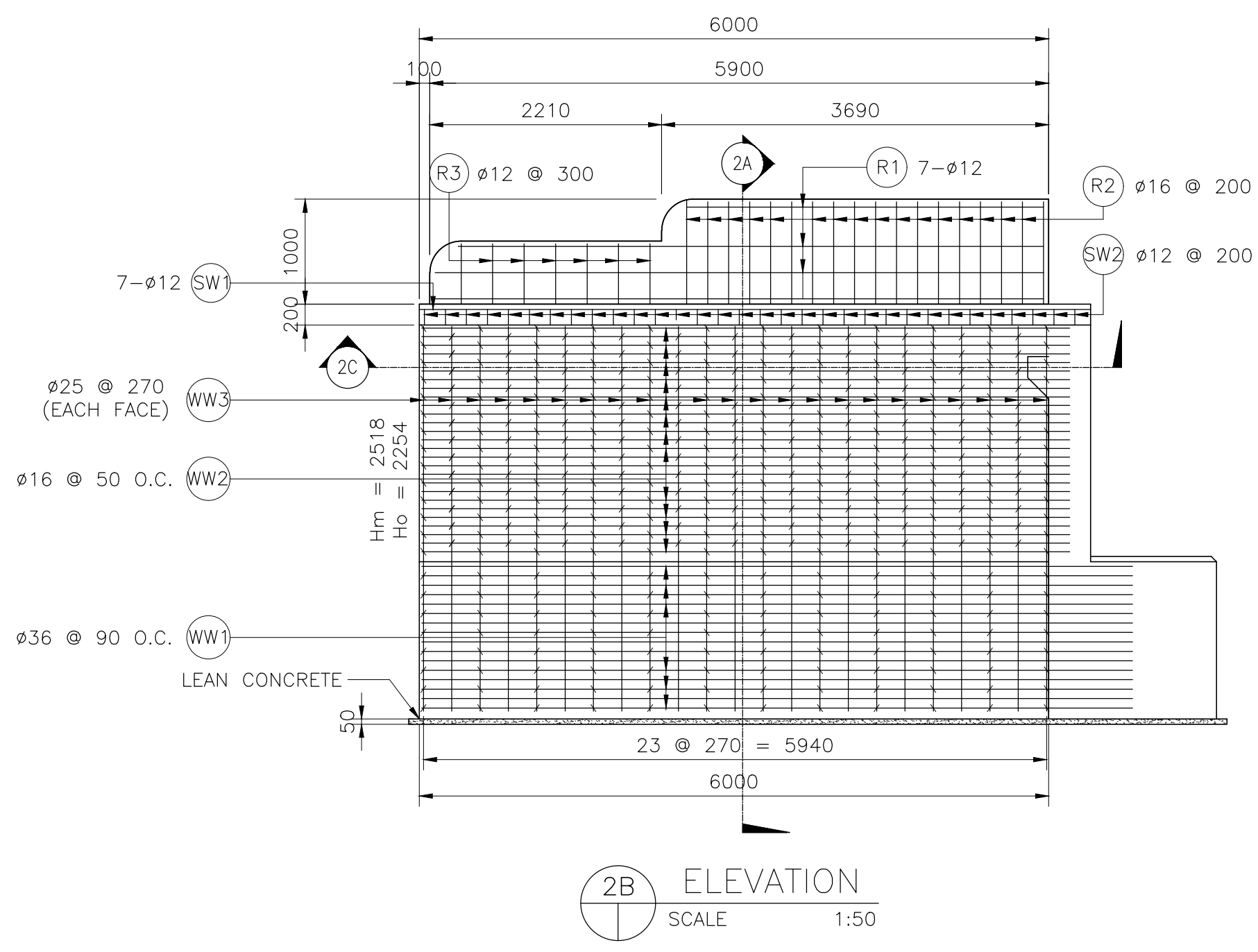
1 ABUTMENT SECTION
SCALE 1:50

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS. THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.

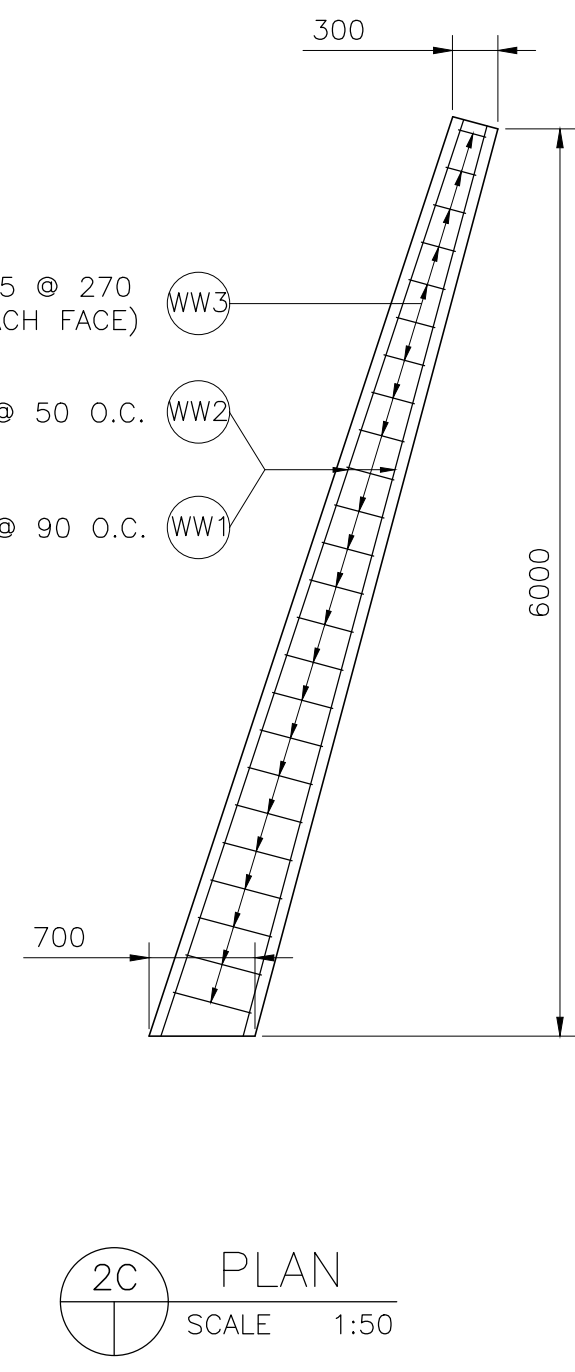
ENGR. ALBERTO C. CAÑETE
TEAM LEADER



2A SECTION
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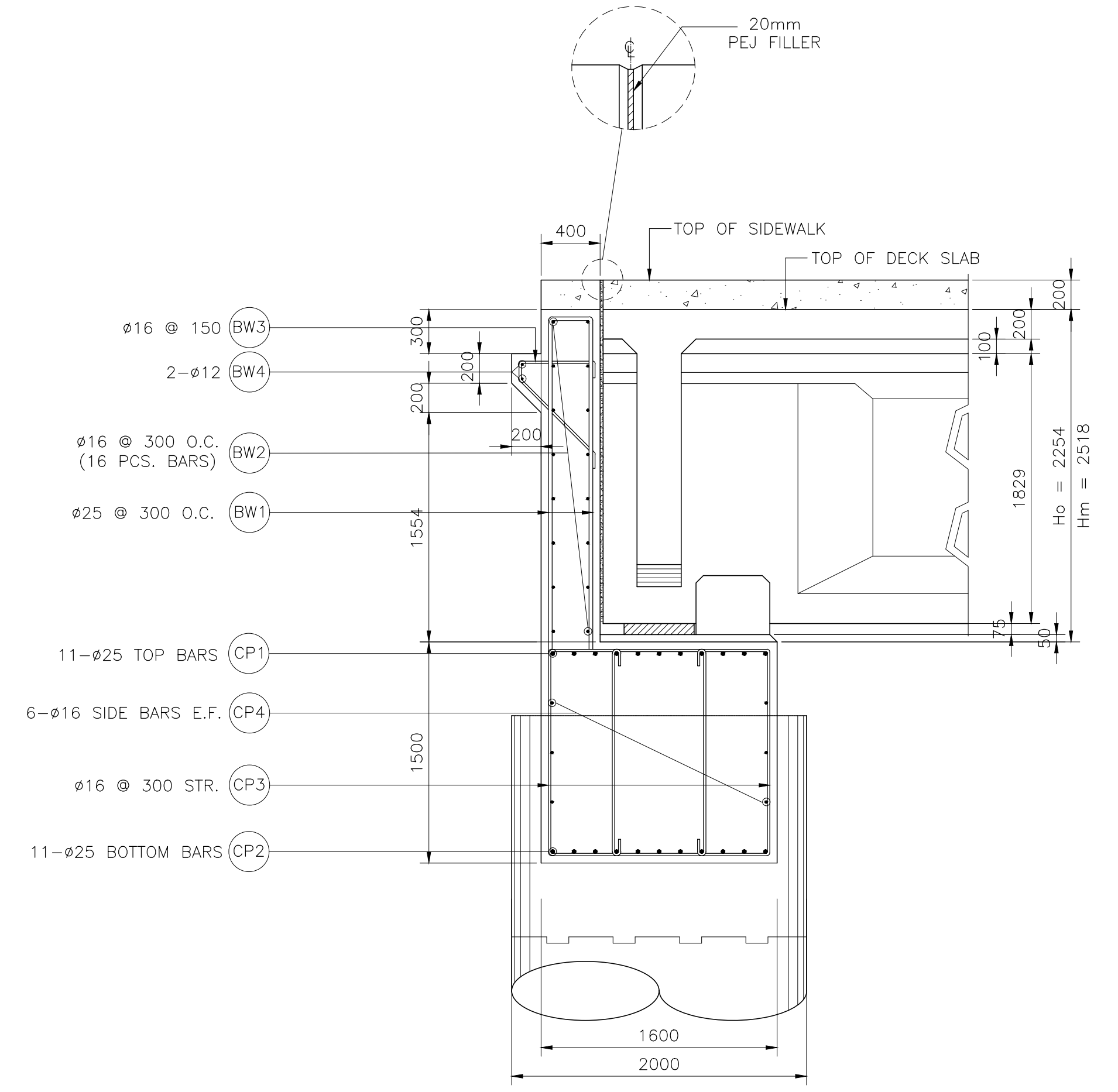


2B ELEVATION
SCALE 1:50



2C PLAN
SCALE 1:50

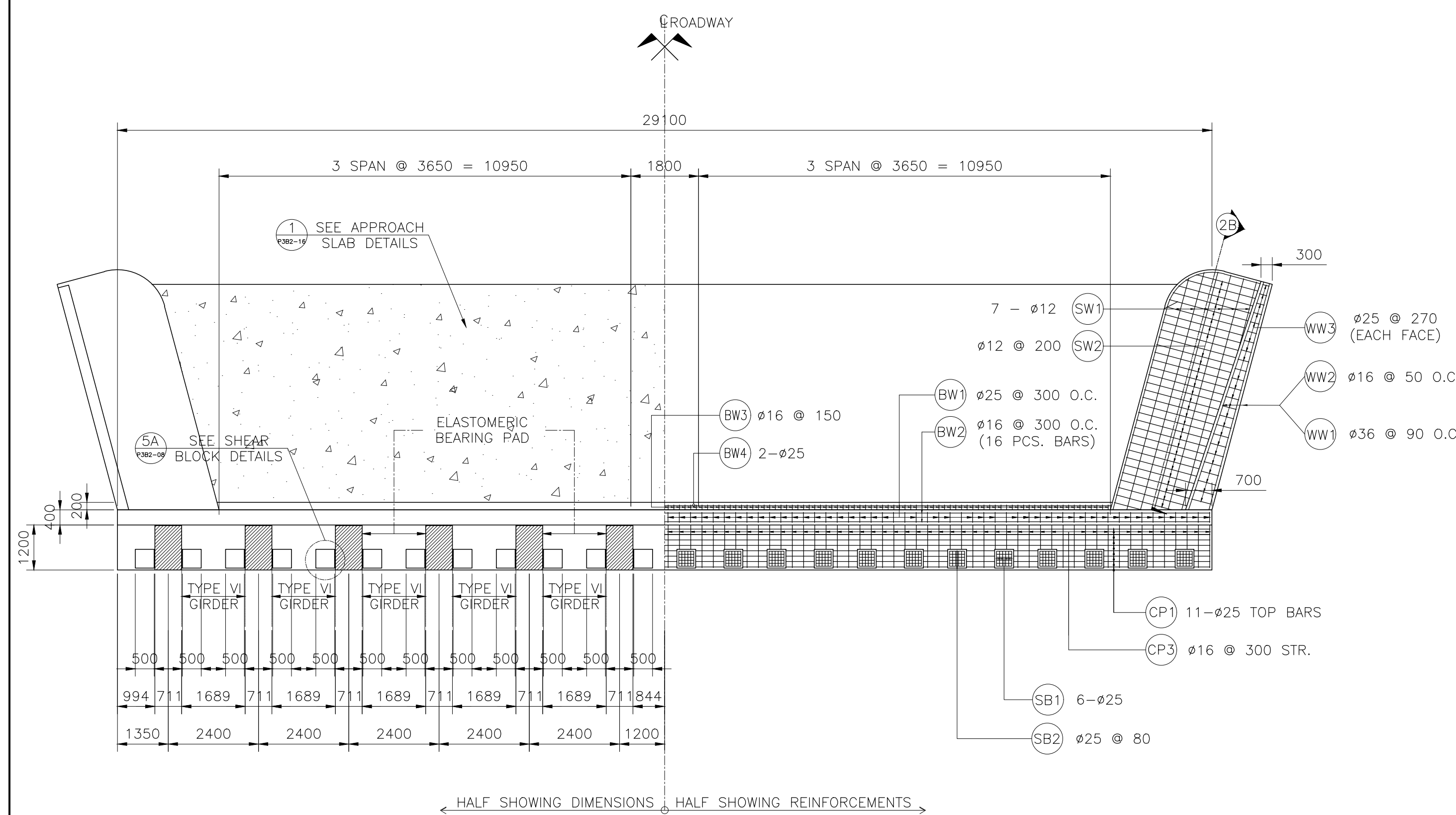
2 WINGWALL DETAILS
SCALE 1:50



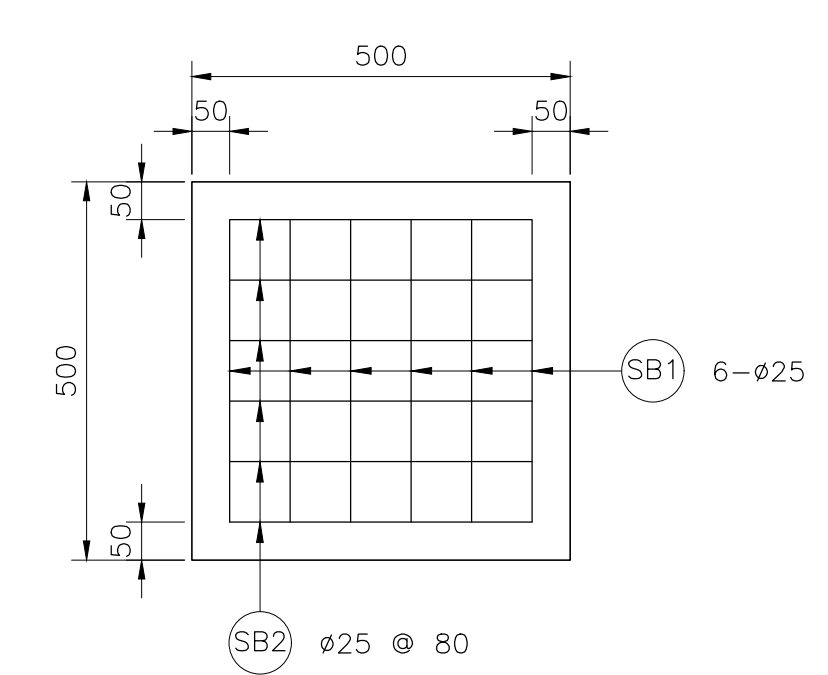
3 BACKWALL AND COPING ELEVATION
SCALE 1:30

CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, VISVA, DUMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER	APPROVED BY JOVITO M. SUNGA OIC - PMD	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500 - KM.16+000) - BRIDGE 2	SCALE AS SHOWN PROJECT CODE P3B2-07	DRAWING STATUS DRAFT DRAWING DRAWING NO. A1
	DATE: -	DATE: -	DATE: -	DATE: -	DATE APPROVED DATE REVISED REV.	DATE APPROVED DATE REVISED REV.	DATE APPROVED DATE REVISED REV.	DATE APPROVED DATE REVISED REV.	DATE APPROVED DATE REVISED REV.

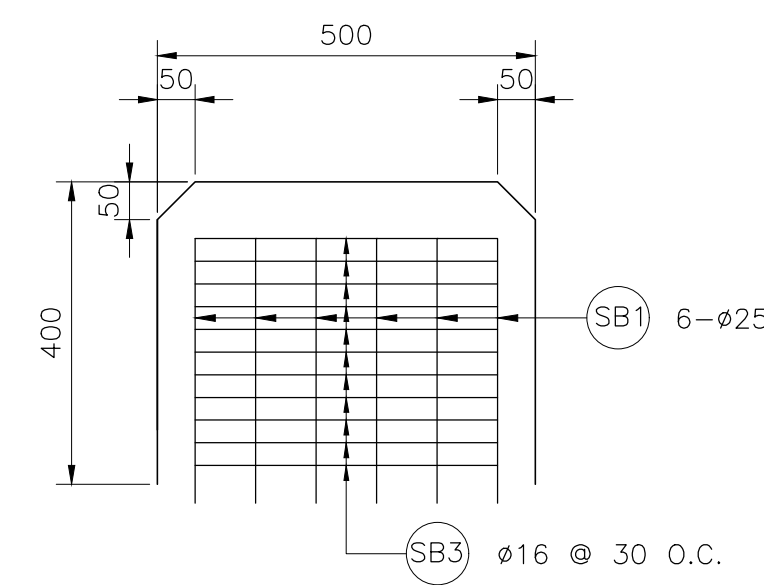
SCHEDULE OF REINFORCEMENTS FOR SUBSTRUCTURE FOR ABUTMENT "A" & "B"



4 ABUTMENT PLAN
SCALE 1:100



5A SHEAR BLOCK PLAN
SCALE 1:10



5B SHEAR BLOCK SECTION
SCALE 1:10

5 SHEAR BLOCK DETAILS
SCALE 1:10

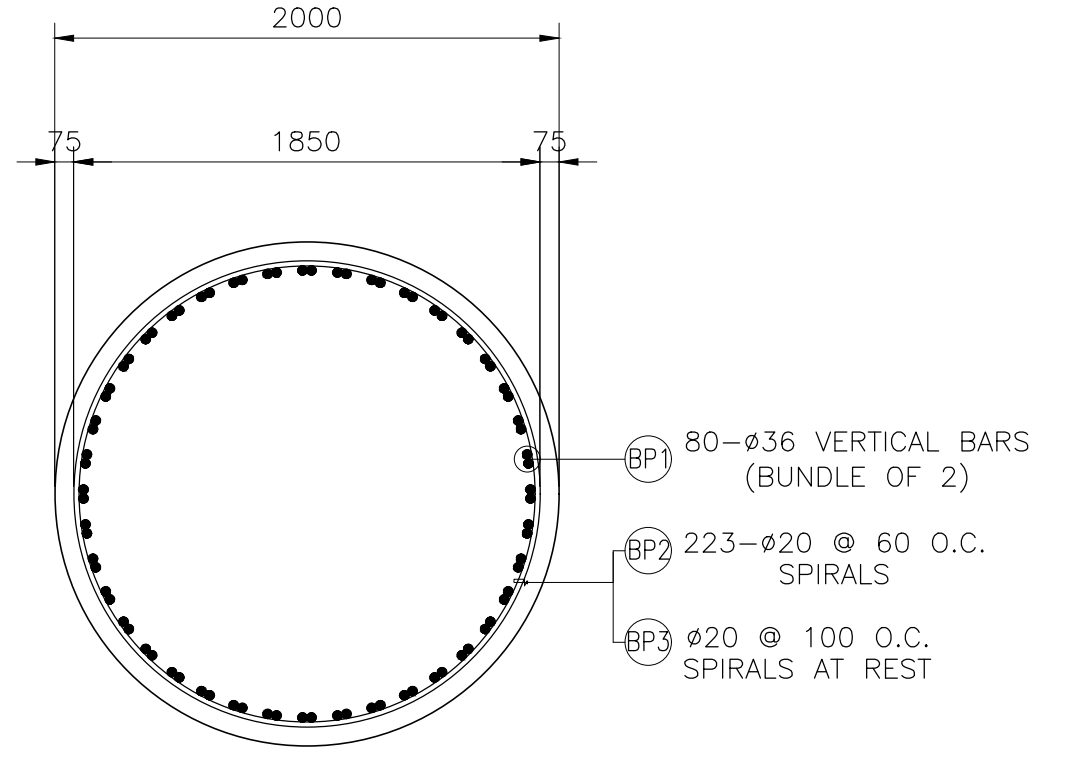
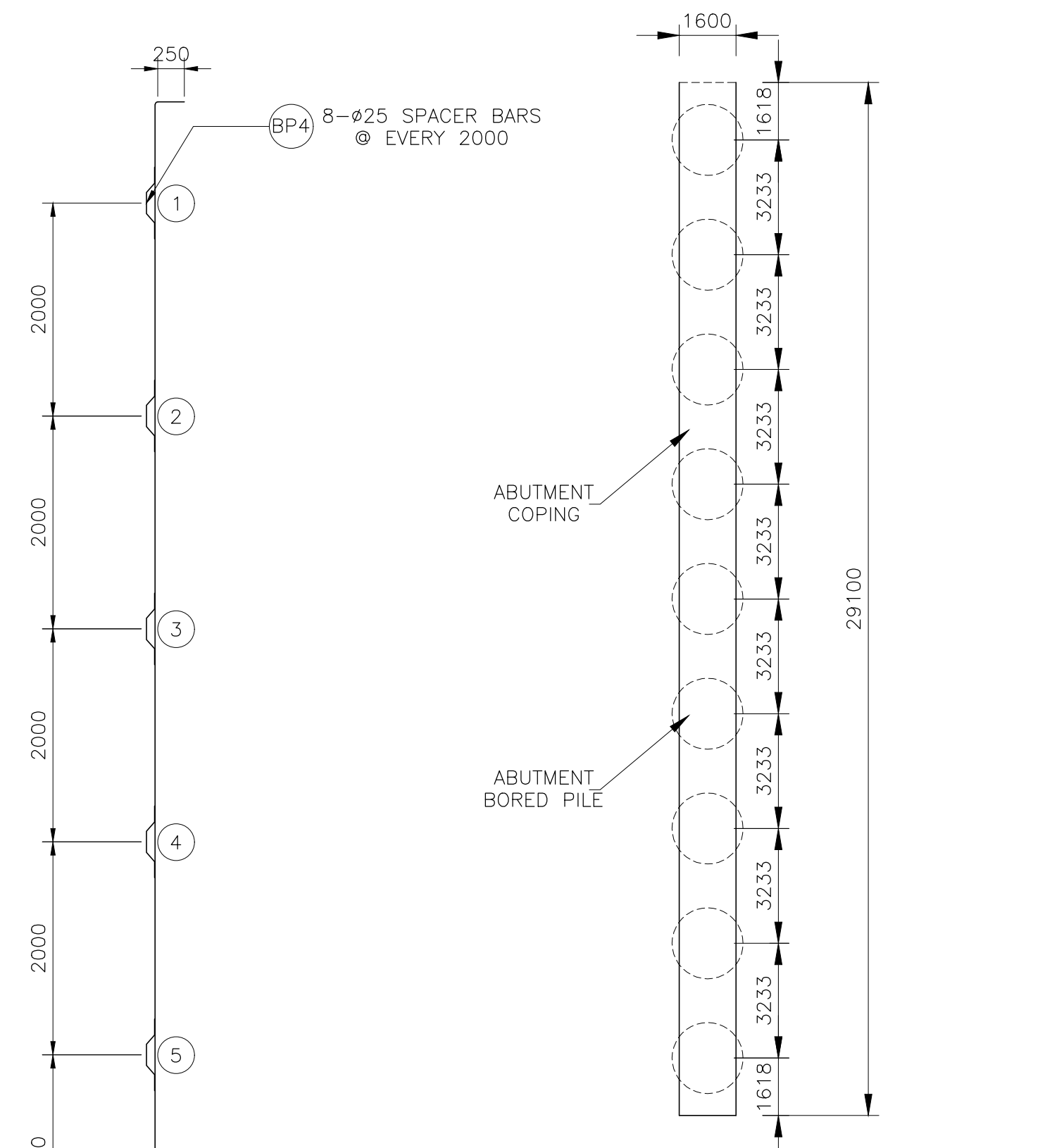
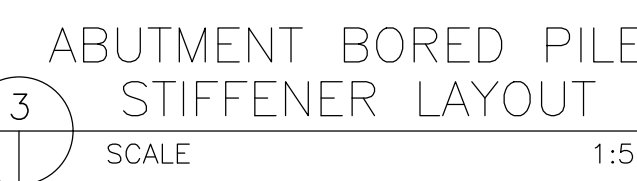
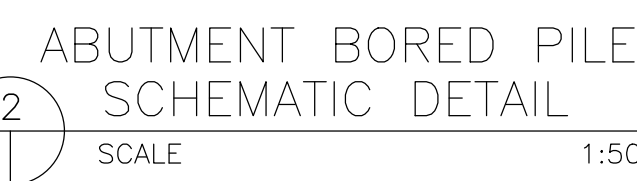
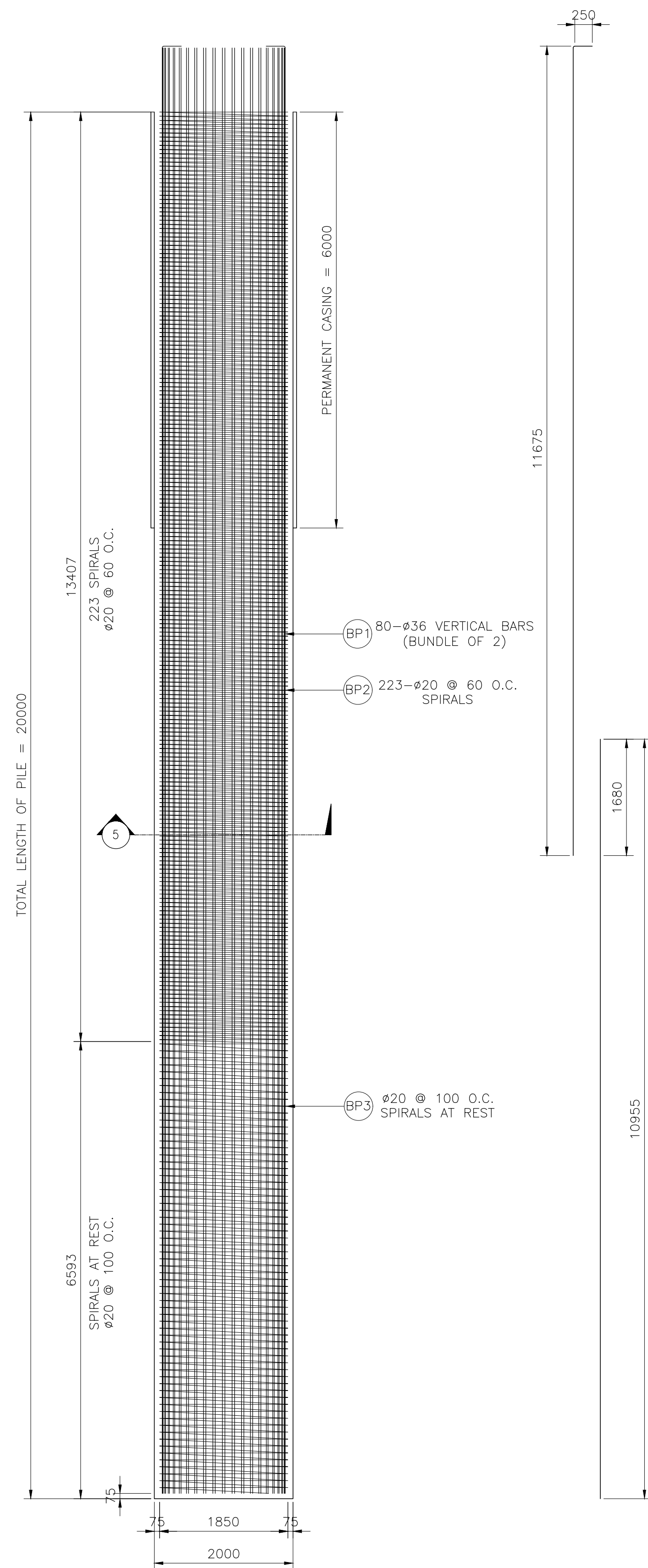
BAR BENDING DIAGRAM	REINFORCING STEEL BARS				ALL DIMENSIONS ARE OUT TO OUT OF REBARS						TYPE	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONCRETE VOLUME (cum)			
	MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e	f										
FOR ABUTMENT A ONLY																				
A	CP1	25	AS SHOWN	11	0.50	29.00	0.50					A	COPING	30.00	330.00	3.854	1272	70		
	CP2	25	AS SHOWN	11	0.50	29.00	0.50				A	30.00		330.00	3.854	1272				
	CP3	16	300	97	1.50	1.40	1.50	1.40	0.10	0.10	B	6.00		582.00	1.579	926				
	CP4	16	AS SHOWN	8	0.50	29.00	0.50				A	30.00		240.00	1.579	385				
B	BW1	25	250	144	2.50	0.30	2.50				C	BACKWALL	5.30	763.20	1.579	2944	29			
	BW2	16	200	14	29.10						STR.		29.10	407.40	1.579	644				
	BW3	12	150	194	0	0.75	0.10	0.95	0.10		D		1.90	368.60	0.888	330				
	BW4	12	AS SHOWN	2	29.10						STR.		29.10	58.20	0.888	55				
C	SB1	25	AS SHOWN	144	0.55	0.40	0.55				C	SHEAR BLOCK	1.50	216.00	3.854	840	3			
	SB2	25	AS SHOWN	144	0.55	0.40	0.55				C		1.50	216.00	3.854	840				
	SB3	16	30	400	0.40	0.40	0.40	0.40	0.10	0.10	B		1.80	720.00	1.579	1139				
D	WW1	36	90	68	6.30						STR.	WINGWALL	6.30	428.40	1.579	3430	29			
	WW2	16	50	204	6.0	1.50					H		7.50	1530.00	7.991	2418				
	WW3	25	270	46	0.50	3.40	0.50	3.40	0.10	0.10	B		8.00	368.00	1.579	1421				
E	TIES	12	AS SHOWN	692	0.20	0.40	0.20				G	APPROACH RAILING	0.80	553.60	0.888	495	3			
	R1	12	AS SHOWN	14	6.00	1.00					E		7.00	98.00	0.888	94				
	R2	16	200	19	0.10	1.25	0.20				G		1.55	29.45	1.579	47				
F	R3	12	300	8	0.75	0.20	0.10	0.10			I	APPROACH SIDEWALK	1.15	9.20	0.888	16	6			
	SW1	12	AS SHOWN	14	6.00						STR.		6.00	84.00	0.888	79				
	SW2	12	200	60	0.10	2.50	0.40	0.10			F		3.10	186.00	1.579	173				
G	SW3	12	AS SHOWN	6	6.00	6.00					STR.	APPROACH SIDEWALK	6.00	36.00	0.888	39	6			
	FOR ABUTMENT B ONLY																			
	CP1	25	AS SHOWN	11	0.50	29.00	0.50						A	COPING	30.00	330.00		3.854	1272	70
CP2	25	AS SHOWN	11	0.50	29.00	0.50					A	30.00	330.00		3.854	1272				
CP3	16	300	97	1.50	1.40	1.50	1.40	0.10	0.10	B	6.00	582.00	1.579		926					
CP4	16	AS SHOWN	8	0.50	29.00	0.50					A	30.00	240.00		1.579	385				
H	BW1	25	250	144	2.50	0.30	2.50				C	BACKWALL	5.30	763.20	1.579	2944	29			
	BW2	16	200	14	29.10						STR.		29.10	407.40	1.579	644				
	BW3	12	150	194	0	0.75	0.10	0.95	0.10		D		1.90	368.60	0.888	330				
	BW4	12	AS SHOWN	2	29.10						STR.		29.10	58.20	0.888	55				
I	SB1	25	AS SHOWN	144	0.55	0.40	0.55				C	SHEAR BLOCK	1.50	216.00	3.854	840	3			
	SB2	25	AS SHOWN	144	0.55	0.40	0.55				C		1.50	216.00	3.854	840				
	SB3	16	30	400	0.40	0.40	0.40	0.40	0.10	0.10	B		1.80	720.00	1.579	1139				
J	WW1	36	90	68	6.30						STR.	WINGWALL	6.30	428.40	1.579	3430	29			
	WW2	16	50	204	6.0	1.50					H		7.50	1530.00	7.991	2418				
	WW3	25	270	46	0.50	3.40	0.50	3.40	0.10	0.10	B		8.00	368.00	1.579	1421				
K	TIES	12	AS SHOWN	692	0.20	0.40	0.20				G	APPROACH RAILING	0.80	553.60	0.888	495	3			
	R1	12	AS SHOWN	14	6.00	1.00					E		7.00	98.00	0.888	94				
	R2	16	200	19	0.10	1.25	0.20				G		1.55	29.45	1.579	47				
L	R3	12	300	8	0.75	0.20	0.10	0.10			I	APPROACH SIDEWALK	1.15	9.20	0.888	16	6			
	SW1	12	AS SHOWN	14	6.00						STR.		6.00	84.00	0.888	79				
	SW2	12	200	60	0.10	2.50	0.40	0.10			F		3.10	186.00	1.579	173				
M	SW3	12	AS SHOWN	6	6.00	6.00					STR.	APPROACH SIDEWALK	6.00	36.00	0.888	39	6			
	GRAND TOTAL																			
													ABUTMENT A		Grade 40 bar	1280 Kgs				
												ABUTMENT B		Grade 60 bar	17577 Kgs					
														Grade 40 bar	1280 Kgs					
														Grade 60 bar	17577 Kgs					

* 12 mm dia. and below are Grade 40
* 16 mm dia. and above are Grade 60

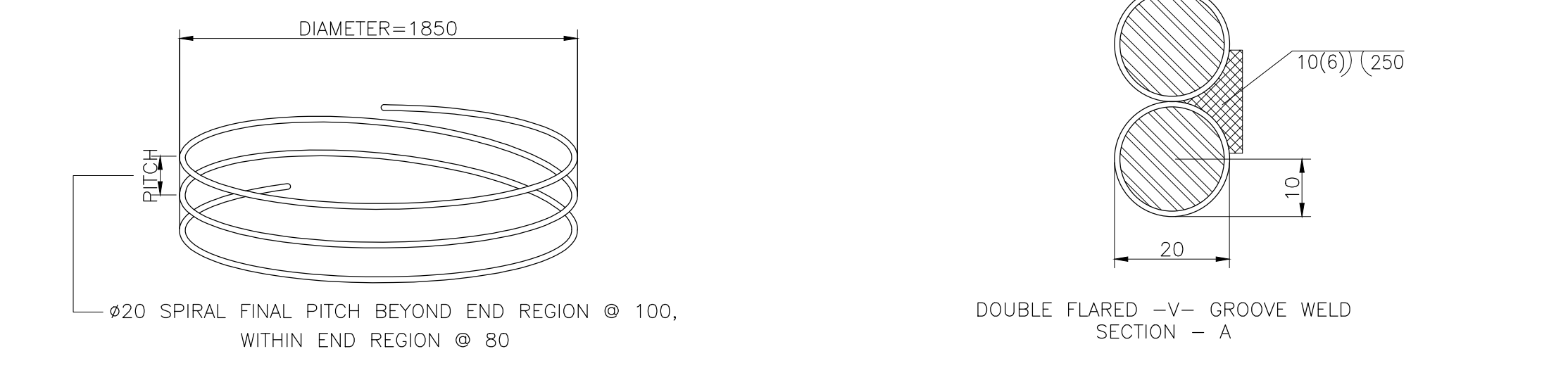
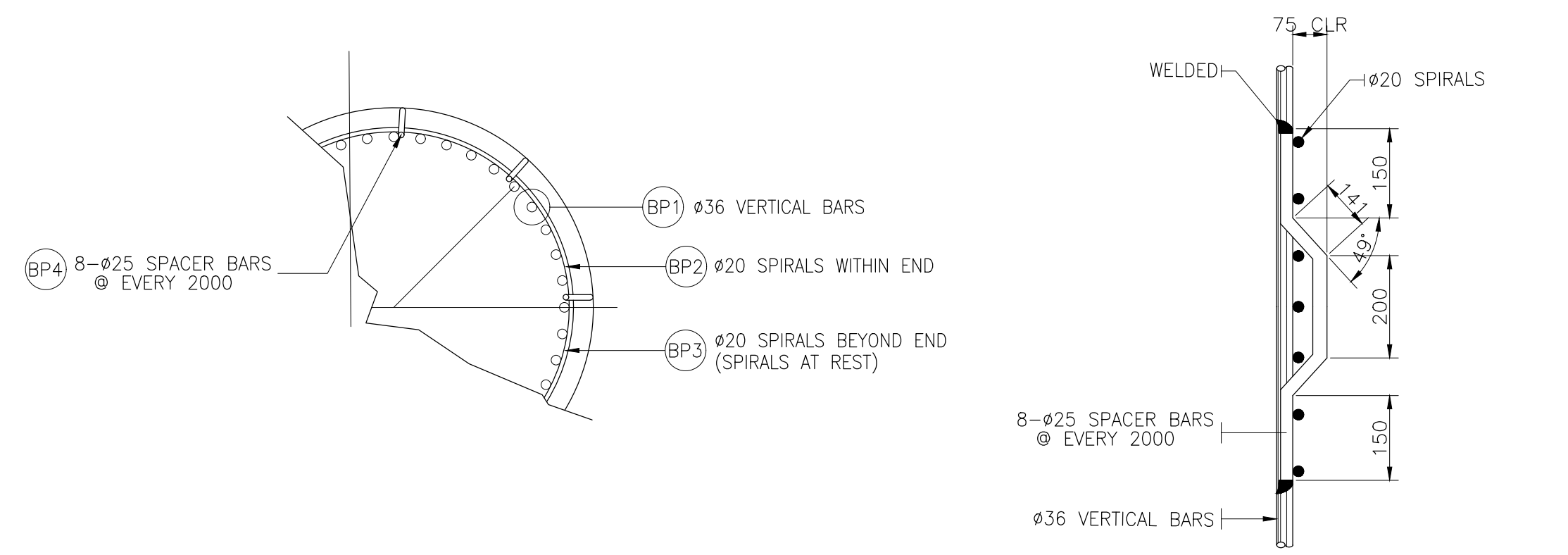
NOTE:
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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

CONSULTANTS	SUBMITTED BY	DESIGNED BY	BCDA	REVISIONS	DATE	PROJECT TITLE	SCALE	DRAWING STATUS
Urban Integrated Consultants, Inc. 100 CORPORATE BLDG., 8 LANOS STREET, VISVA, DALMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI	ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI		A		DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING
				B		SHEET CONTENT AIRPORT TO NCC (KM.1+500 - KM.16+000) - BRIDGE 2	PROJECT CODE	DRAWING NO. SIZE
				C				P3B2-08 A1
				D		ABUTMENT PLAN	DATE APPROVED	DATE REVISED
				E		SCHEDULE OF REINFORCEMENT FOR ABUT.		REV
				F				



- NOTES:
- THE REINFORCEMENT ARE LAP-WELD CONNECTED (FLARED-V-GROOVE TYPE)
 - SPIRAL REINFORCEMENT ARE LAP WELD CONNECTED. WELDING SHALL BE IN ACCORDANCE WITH ANSI/AWS. D1.4-92, STRUCTURAL WELDING CODE REINFORCEMENT STEEL, USE ELECTRODE E90XX-X.
 - CARE SHOULD BE TAKEN NOT TO DAMAGE BORED PILE/COLUMN MAIN BARS DURING WELDING.
 - SPIRAL REINFORCEMENT SHOULD BE BUTT WELDED WHERE SPIRAL PITCH IS 50mm OR LESS. OTHERWISE USE LAP WELD SPLICE.
 - ADDITIONAL STIFFENERS/GUIDE BARS MAY BE PROVIDED TO STABILIZE THE PILE REINFORCEMENT DURING FABRICATION/ERECTION SUBJECT TO THE APPROVAL OF THE ENGINEER.
 - DIRTY CONCRETE (MINIMUM 600mm HEIGHT) SHOULD BE REMOVED PRIOR TO CONSTRUCTION OF BACKWALL AND COPING BEAM.
 - CONCRETE - CONCRETE SHALL CONFORM TO THE REQUIREMENT OF CLASS AA CONCRETE WITH 28MPa. CYLINDER STRENGTH AND 19mm MAXIMUM AGGREGATE SIZE.
 - REINFORCEMENT - ALL REINFORCEMENT STEEL SHALL BE DEFORMED BAR CONFORMING TO AASHTO M31 (ASTM 315) GRADE 60. SPLICES OF ADJACENT LONGITUDINAL STEEL SHALL BE STAGGERED 100 BAR DIAMETER APART, LENGTH OF SPLICES SHALL BE 2200mm.
 - THE STABILIZATION FOR BORED PILE EXCAVATION (SUCH AS USING BENTONITE SLURRY OR TEMPORARY STEEL CASING ETC.) SHALL BE CONSIDERED BY THE CONTRACTOR AND THE COST IS SUBSIDIARY IN PAY ITEM 400(17). THE CONTRACTOR SHALL SUBMIT THE CONSTRUCTION METHOD FOR ENGINEERS APPROVAL BEFORE CONSTRUCTION.



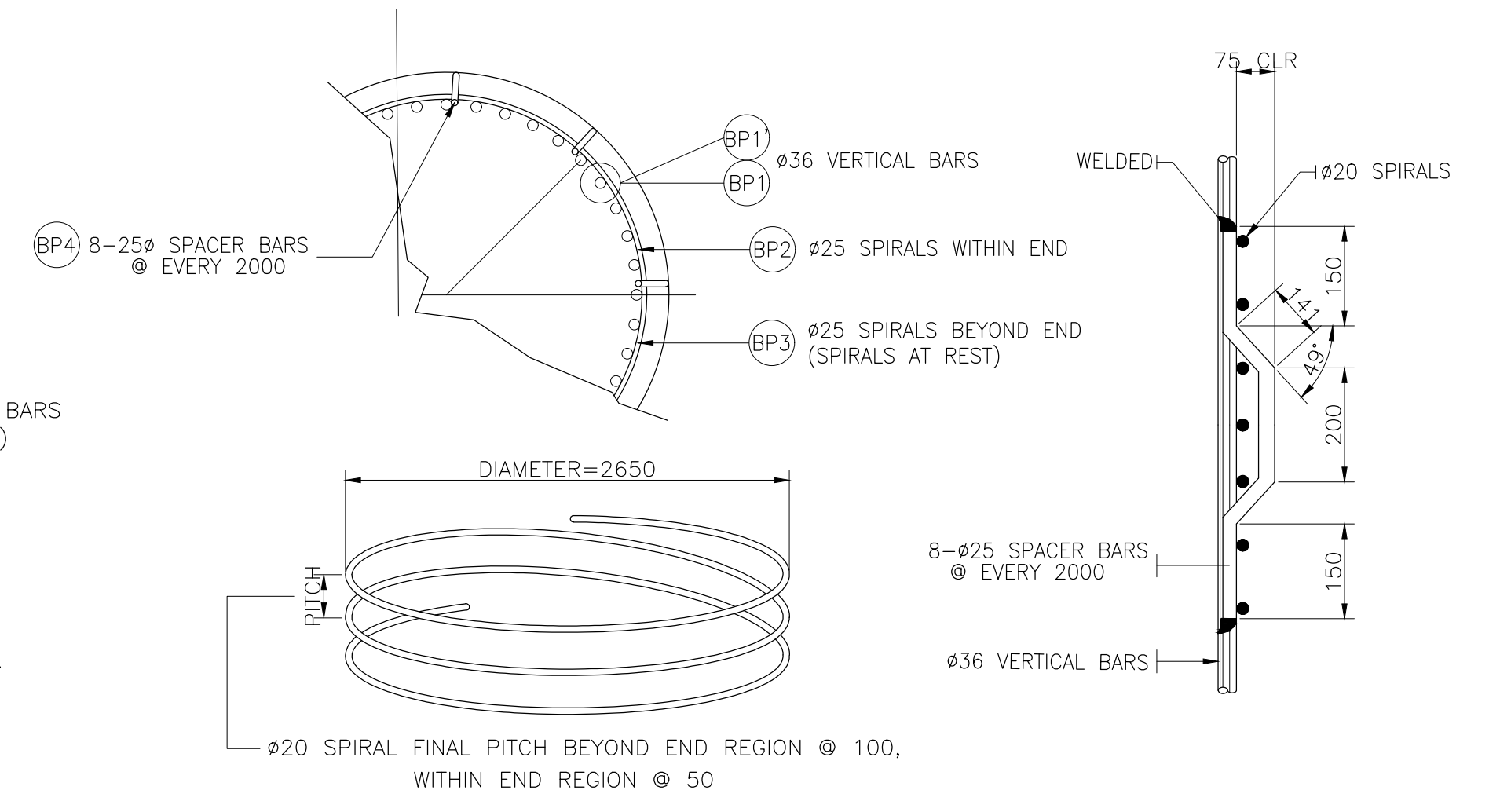
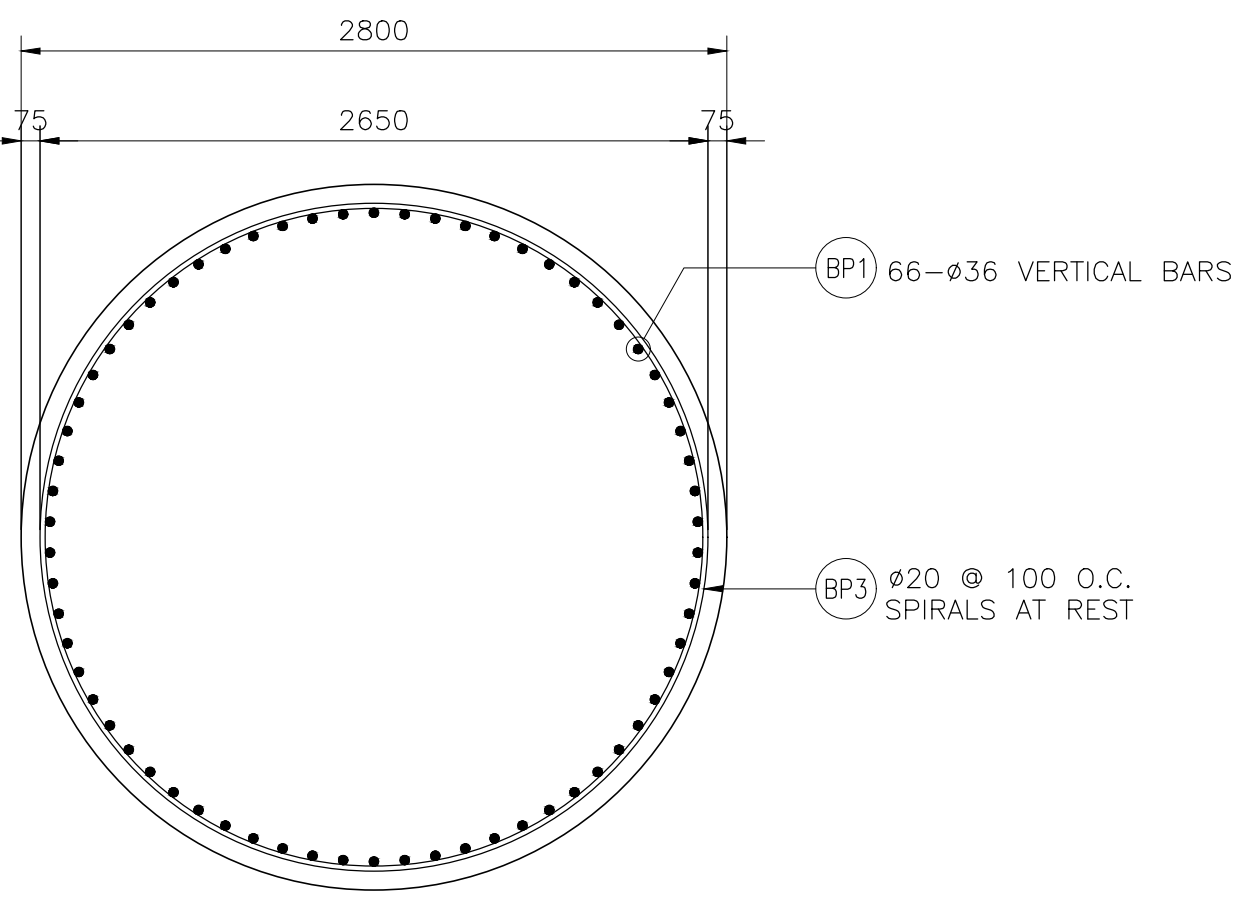
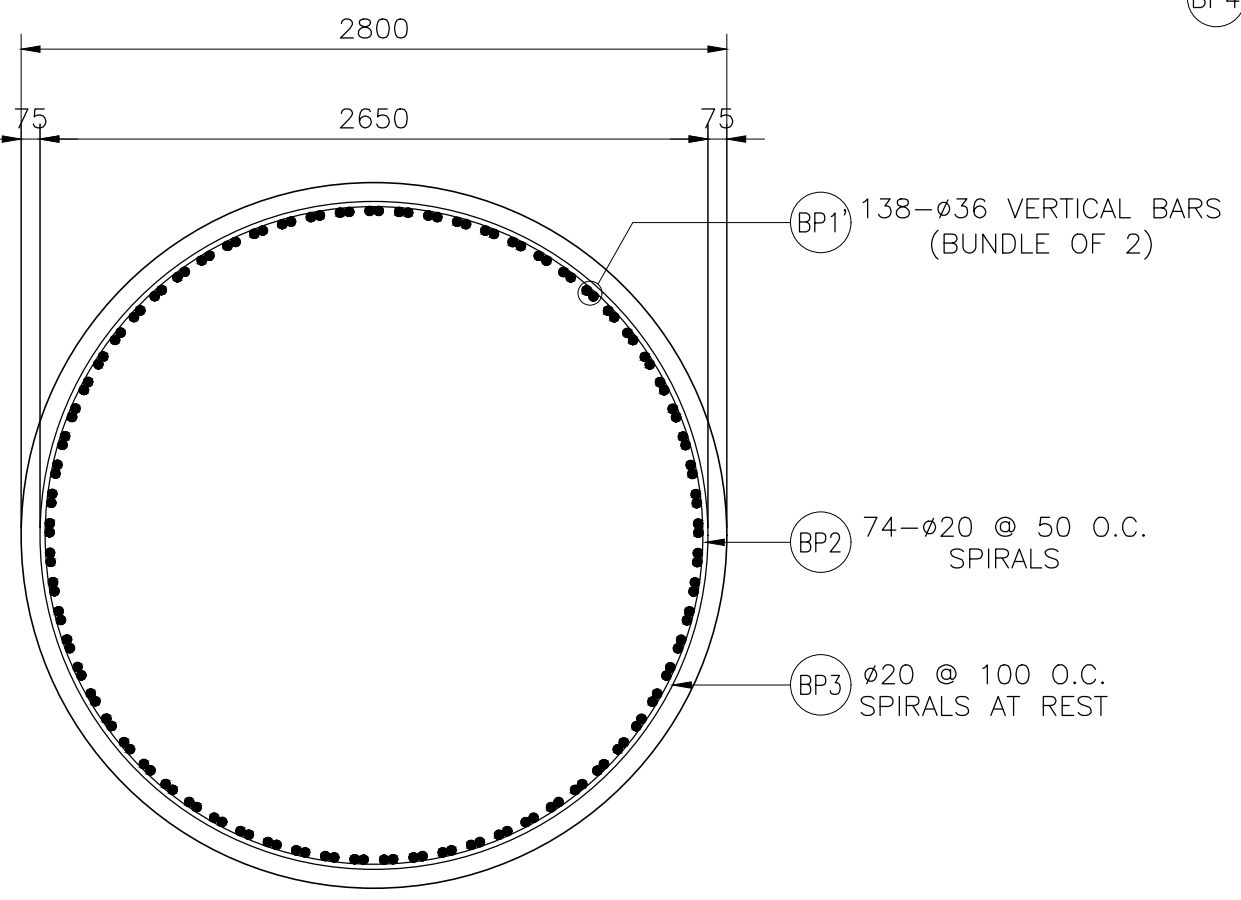
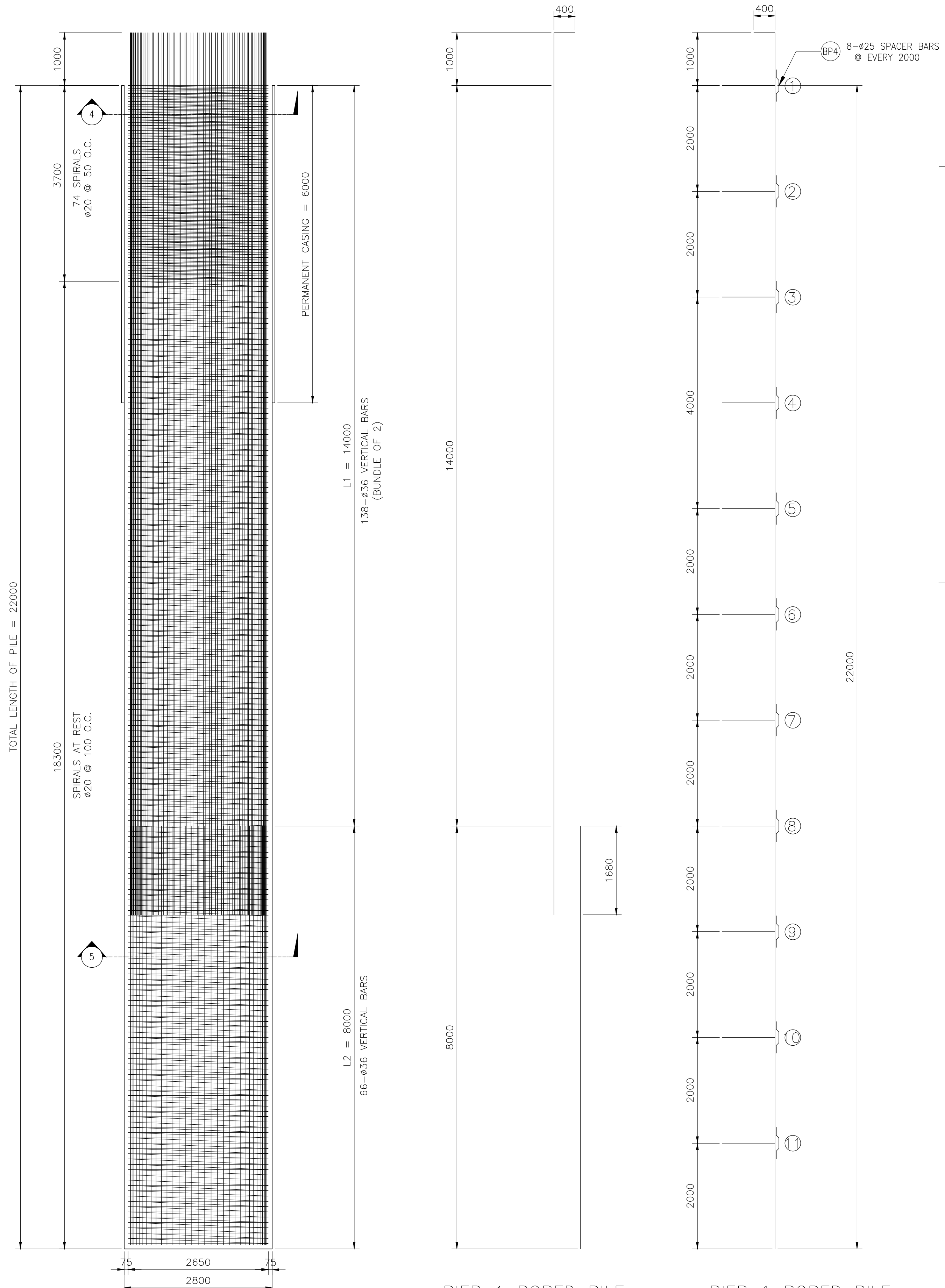
SCHEDULE OF REINFORCEMENT BORED PILE AT ABUTMENT ONLY

BAR BENDING SCHEDULE	BAR MARK	SIZE (mm)	SPACING (mm)	QTY	BAR SHAPE	BAR DIMENSION					LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg./m.)	TOTAL WEIGHT (kg.)	VOLUME CONCRETE (cu.m.)
						a	b	c	d	e						
FOR ONE (1) BORED PILE AT ABUTMENT (L=20m, Ø2000mm)																
	BP1	36	AS SHOWN	80	A	0.25	20	-	-	-	BORED PILE	20.25	1620.0	7.991	12945	63
	BP2	20	60	223	D	0.15	1.85	-	-	-		2.0	446.0	1.579	1107	
	BP3	20	100	66	D	0.15	1.85	-	-	-		2.0	132.0	1.579	330	
	BP4	25	AS SHOWN	80	C	0.15	0.141	0.20	0.141	0.15		0.782	62.56	3.854	243	
												TOTAL			14625 Kgs	63 cu.m

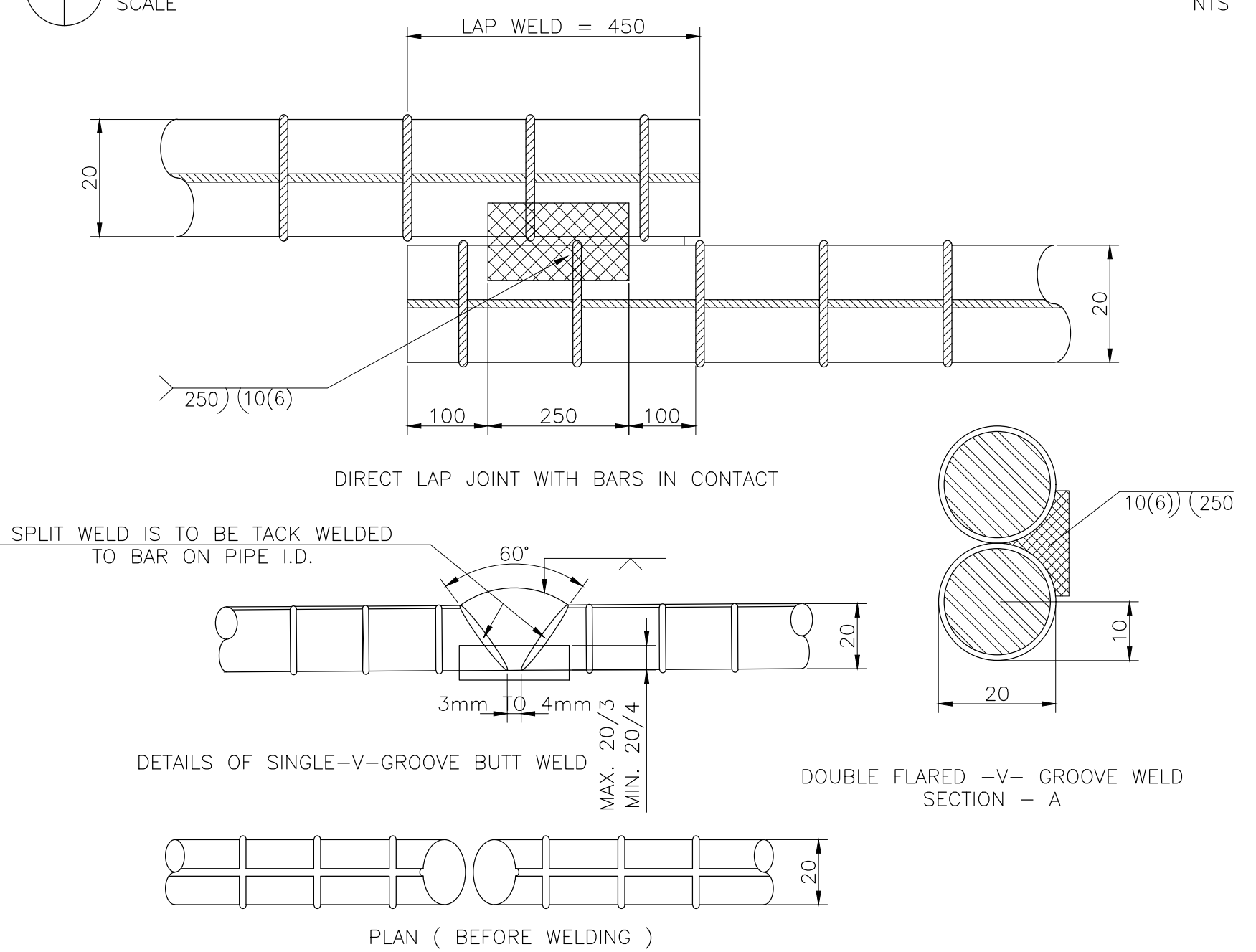
NOTE:
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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

CONSULTANTS	SUBMITTED BY	DESIGNED BY	REVISIONS	DATE	PROJECT TITLE	SCALE	DRAWING STATUS
Urban Integrated Consultants, Inc.	EFREN L. DAVID PRESIDENT - UICI	ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI	A		DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING
	DATE: -	DATE: -	B		SHEET CONTENT AIRPORT TO NCC (KM.1+500 - KM.16+000) - BRIDGE 2	PROJECT CODE	DRAWING NO. SIZE
			C		ABUTMENT BORED PILE	P3B2-09	A1
			D		SCHEDULE OF REINFORCEMENTS AND SUMMARY OF QUANTITIES	DATE APPROVED	DATE REVISED
			E			-	-
			F			-	-



6 PIER 1 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS



7 DETAILS OF TIES REINFORCEMENT LAP-WELD CONNECTION
SCALE NTS

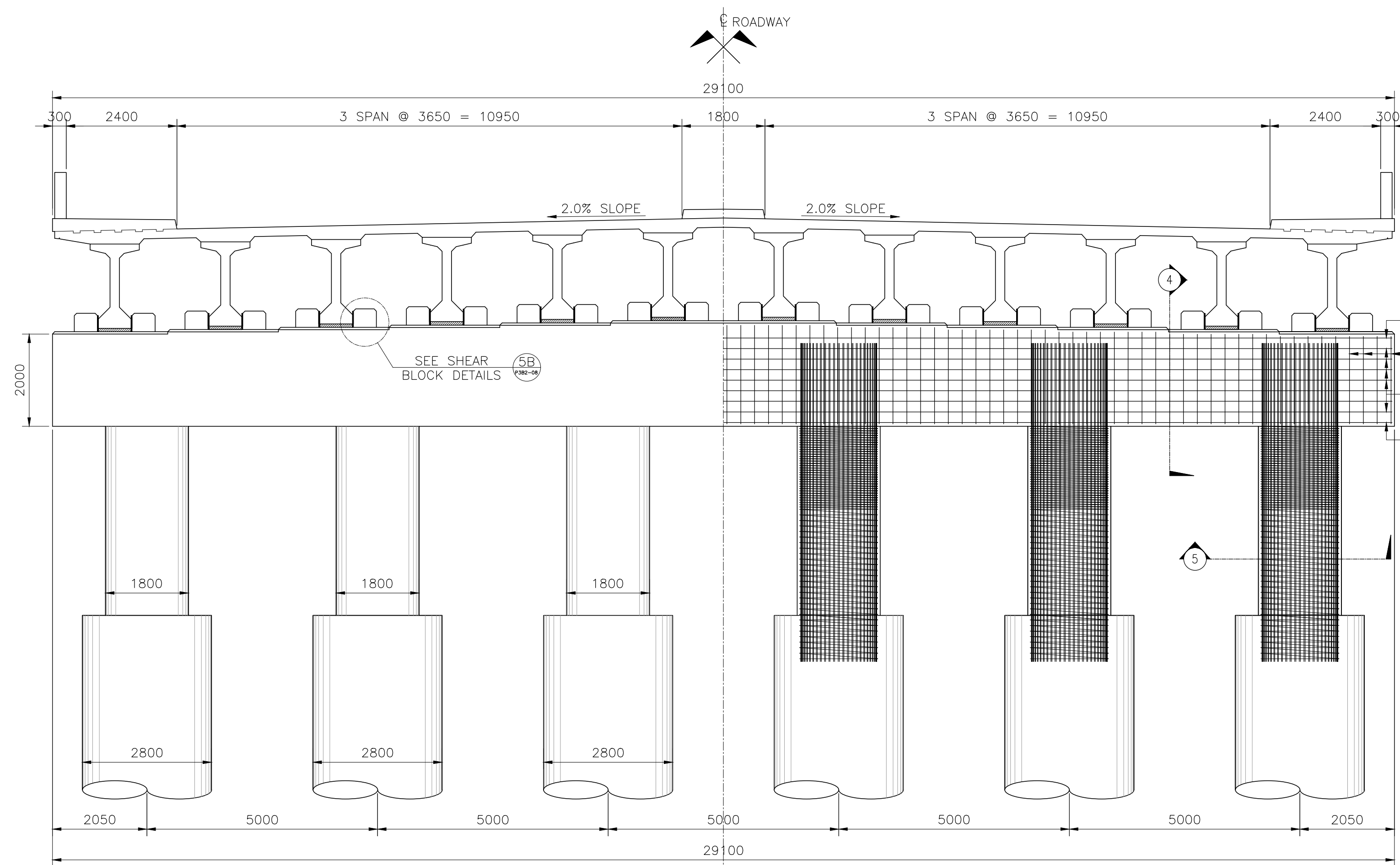
SCHEDULE OF REINFORCEMENT BORED PILE AT PIER 1 ONLY

BAR MARK	SIZE (mm)	SPACING (mm)	QTY	BAR SHAPE	BAR DIMENSION					LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m.)	TOTAL WEIGHT (kg.)	VOLUME CONCRETE (cu.m.)
					a	b	c	d	e						
FOR ONE (1) BORED PILE AT ABUTMENT (L=22m, Ø2800mm)															
BP1'	36	AS SHOWN	138	A	0.40	14	-	-	-	BORED PILE	14.4	1987.2	7.991	15881	124
BP1	36	AS SHOWN	66	B	10	-	-	-	10.0		660.0	7.991	5275		
BP2	20	50	68	D	0.15	2.65	-	-	2.8		190.4	1.579	471		
BP2'	20	100	187	D	0.15	2.65	-	-	2.8		523.6	1.579	1295		
BP3	25	AS SHOWN	80	C	0.15	0.141	0.20	0.141	0.15	0.782	62.56	3.854	243		
TOTAL													23165 Kgs	124 cu.m	

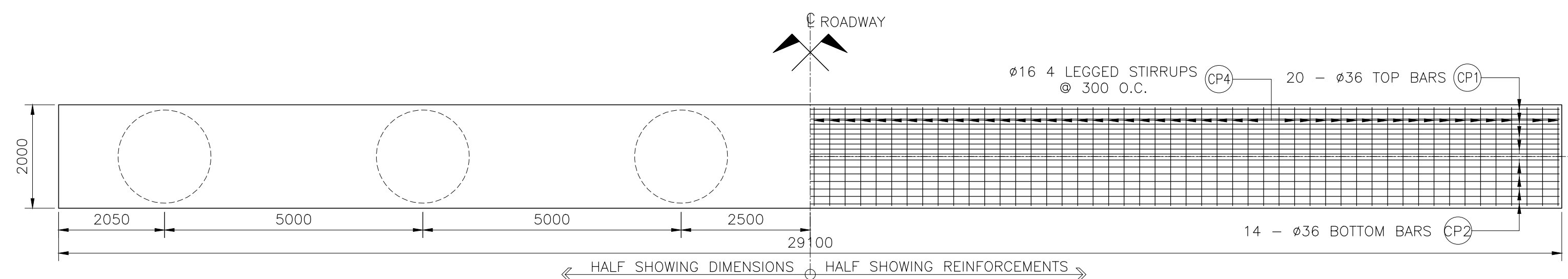
NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

1 PIER 1 BORED PILE VERTICAL SECTION SCALE 1:50
2 PIER 1 BORED PILE SCHEMATIC DETAIL SCALE 1:50
3 PIER 1 BORED PILE STIFFENER LAYOUT SCALE 1:50

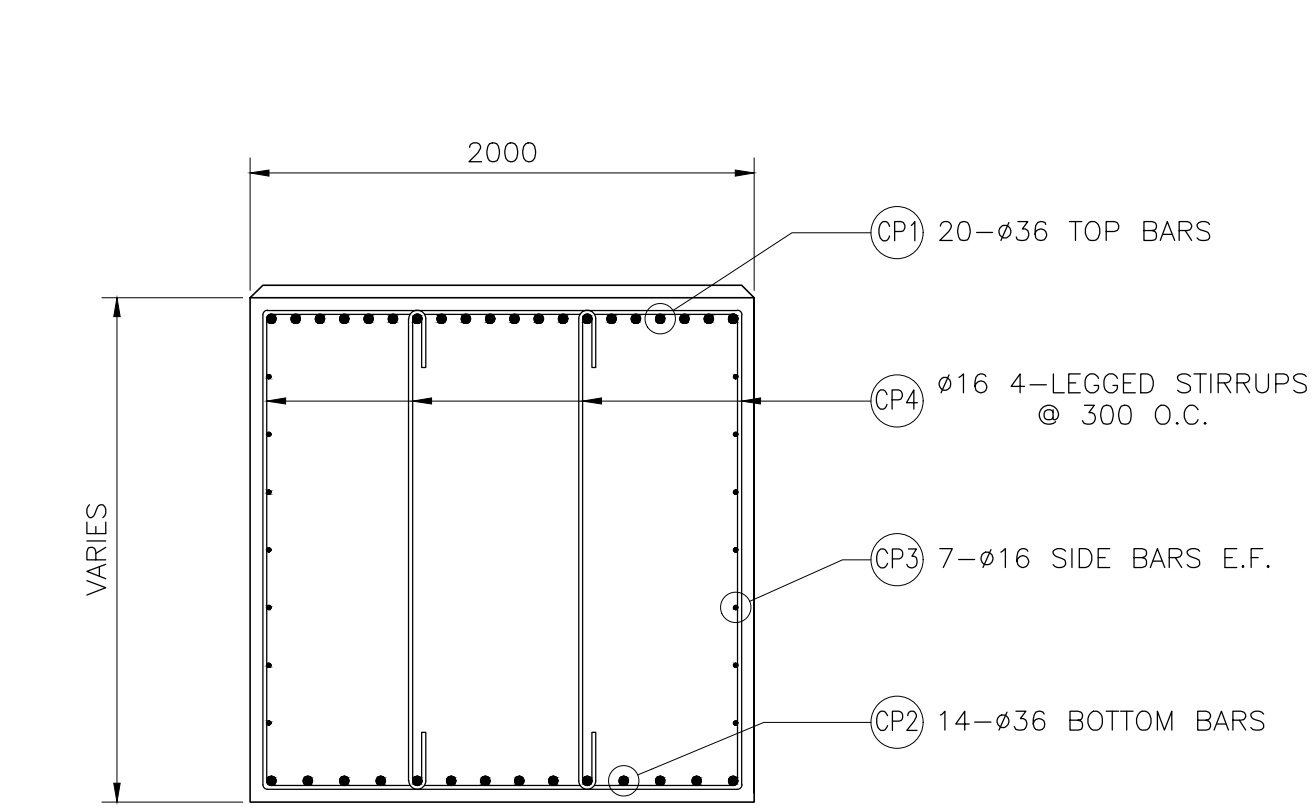
CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, VISRA, DALMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI	 BAYAN LEPAGE Development Authority	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500 - KM.16+000) - BRIDGE 2	SCALE AS SHOWN	DRAWING STATUS DRAFT DRAWING
	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER	APPROVED BY JOVITO M. SUNGA OIC - PMD	PROJECT CODE P3B2-11	DRAWING NO. A1	DATE APPROVED 	DATE REVISED 	REV. 	



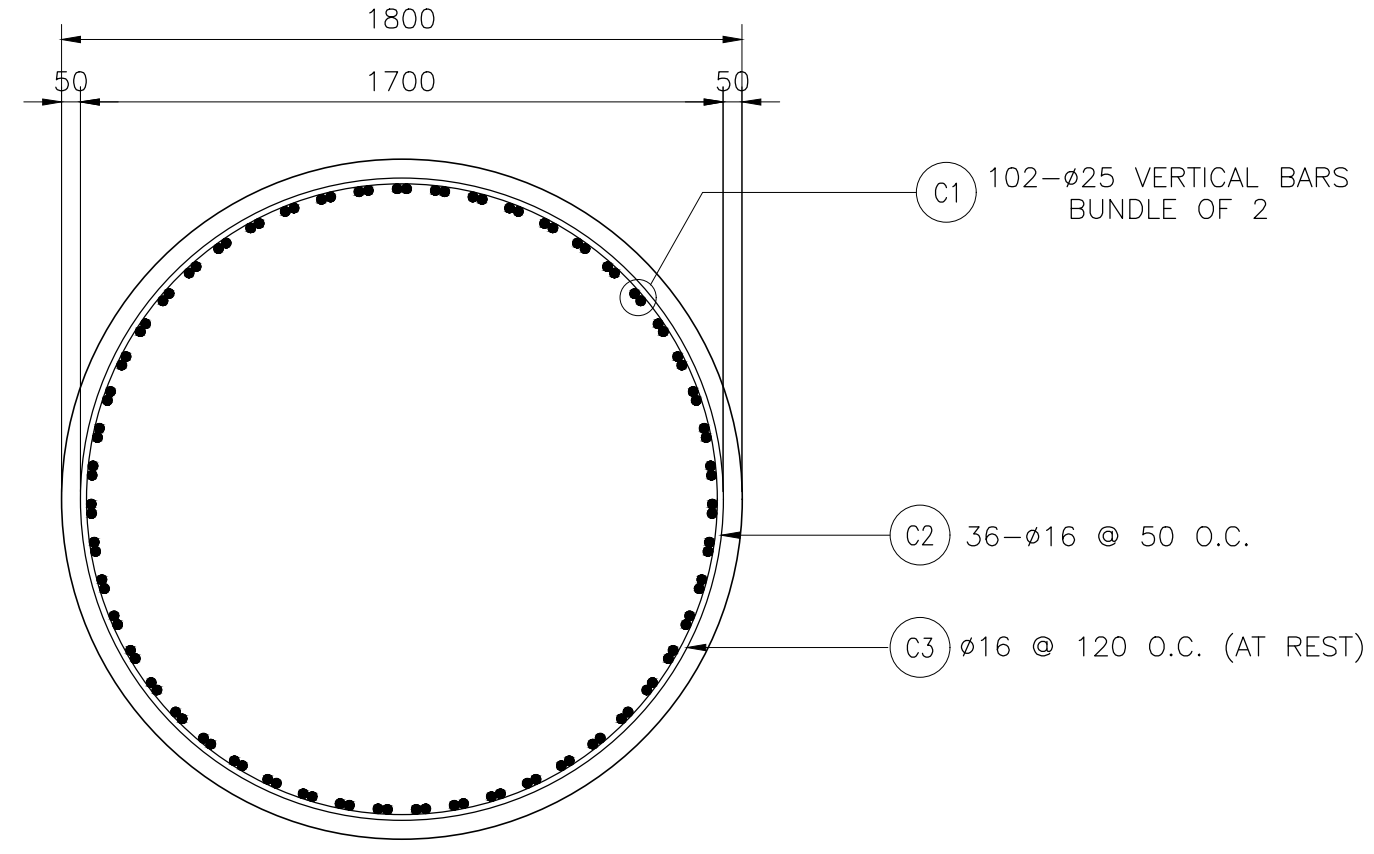
1 PIER 2 COPING ELEVATION
SCALE 1:75



2 PIER 2 COPING PLAN
SCALE 1:75



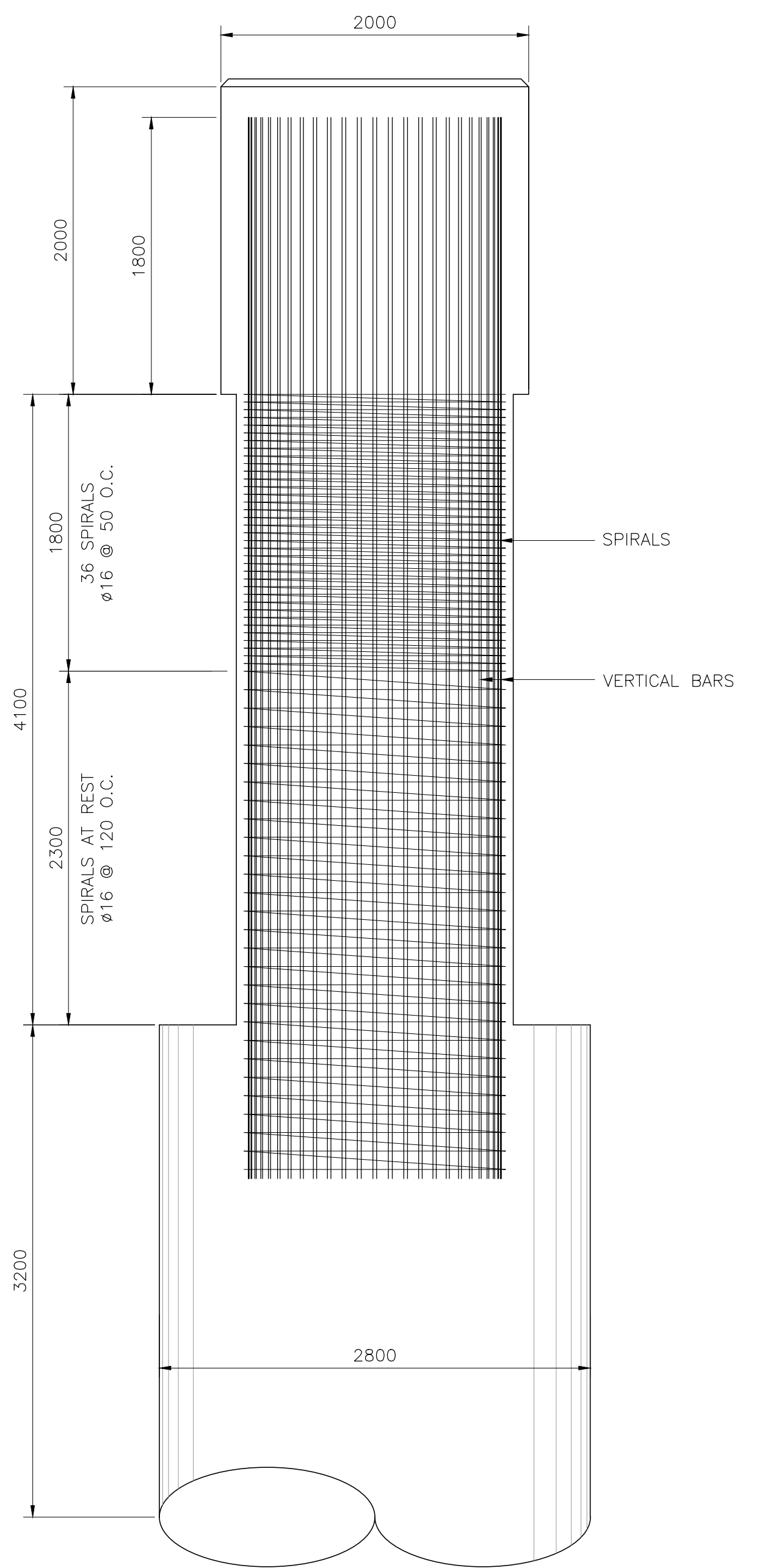
4 PIER 2 COPING SECTION
SCALE 1:30



5 PIER 2 COLUMN DETAIL
SCALE 1:20

- CP1 20-#36 TOP BARS
- CP4 Ø16 4 LEGGED STIRRUPS @ 300 O.C.
- CP3 7-Ø16 SIDE BARS E.F.
- CP2 14-Ø36 BOTTOM BARS

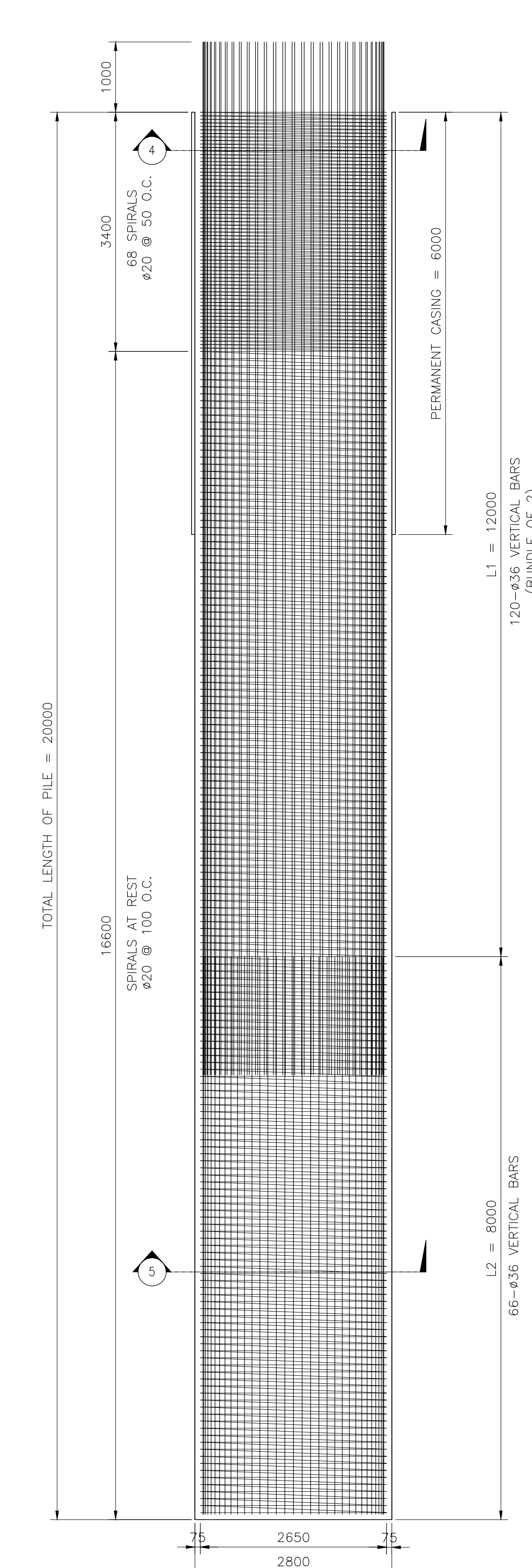
NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
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ENGR. ALBERTO C. CAÑETE
TEAM LEADER



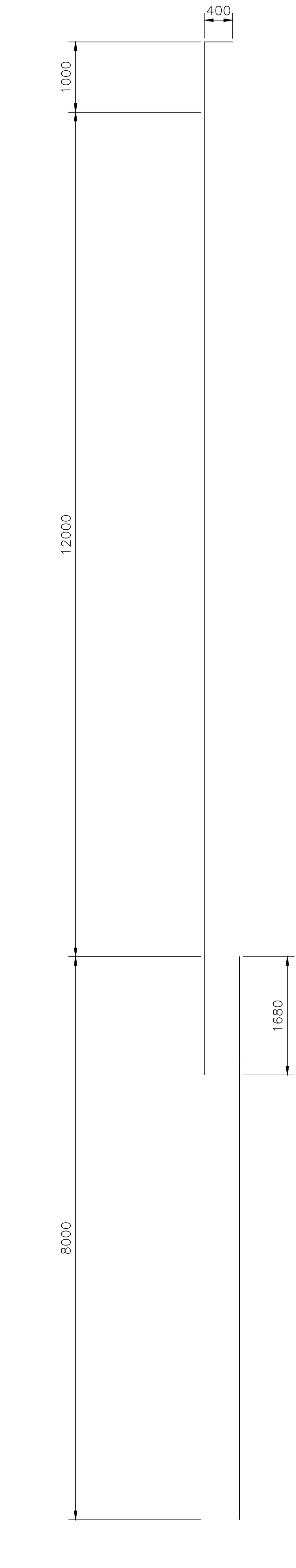
3 PIER 2 TYPICAL SECTION
SCALE 1:30

SCHEDULE OF REINFORCEMENTS FOR PIER 2 COLUMN, COPING AND SHEAR BLOCK																	
BAR BENDING DIAGRAM	REINFORCING STEEL BARS				ALL DIMENSIONS ARE OUT TO OUT OF REBARS						TYPE	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONCRETE VOLUME (cu.m)
	MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e	f							
A	SB1	25	AS SHOWN	288	0.65	0.5					D	SHEAR BLOCK	1.15	302.40	3.853	1170	5
	SB2	25	AS SHOWN	288	0.65	0.5					D		1.15	302.40	3.853	1170	
	SB3	16	30	640	0.45	0.45	0.45	0.45	0.2	0.2	B		2.2	1408.0	1.578	2229	
C	C1	25	AS SHOWN	612	4.0	0.5					A	COLUMN	5.0	3060.0	3.853	11799	63
	C2	16	AS SHOWN	216	1.7						F		1.7	367.20	1.578	581	
	C3	16	120	168	1.7						F		1.7	285.60	1.578	455	
D	CP1	36	AS SHOWN	20	29	0.5					D	COPING	30	600.00	7.991	4796	117
	CP2	36	AS SHOWN	14	29	0.5					D		30	285.60	7.991	3360	
	CP3	16	300	97	1.9	1.9	1.9	1.9	0.1	0.1	B		7.8	285.60	1.578	1201	
E	CP4	16	AS SHOWN	6	0.65						D	30	285.60	1.578	290		
	* 12 mm dia. and below are Grade 40												GRAND TOTAL		Grade 60 bar		27051 Kgs
* 16 mm dia. and above are Grade 60																	

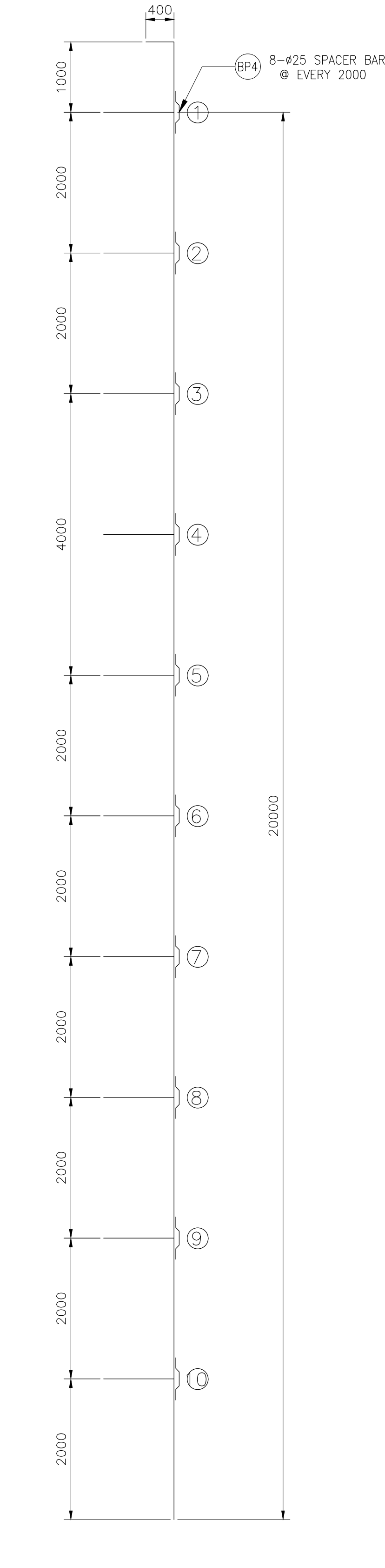
CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, VISVA, DALMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER	APPROVED BY JOVITO M. SUNGA OIC - PMD	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500 - KM.16+000) - BRIDGE 2 PIER 2 COLUMN PLAN AND ELEVATION COLUMN SECTION SCHEDULE OF REINFORCEMENTS AND SUMMARY OF QUANTITIES	SCALE AS SHOWN	DRAWING STATUS DRAFT DRAWING
	DATE: -	DATE: -	DATE: -	DATE: -	DATE: -	PROJECT CODE P3B2-12	DRAWING NO. A1	DATE APPROVED -	DATE REVISED -



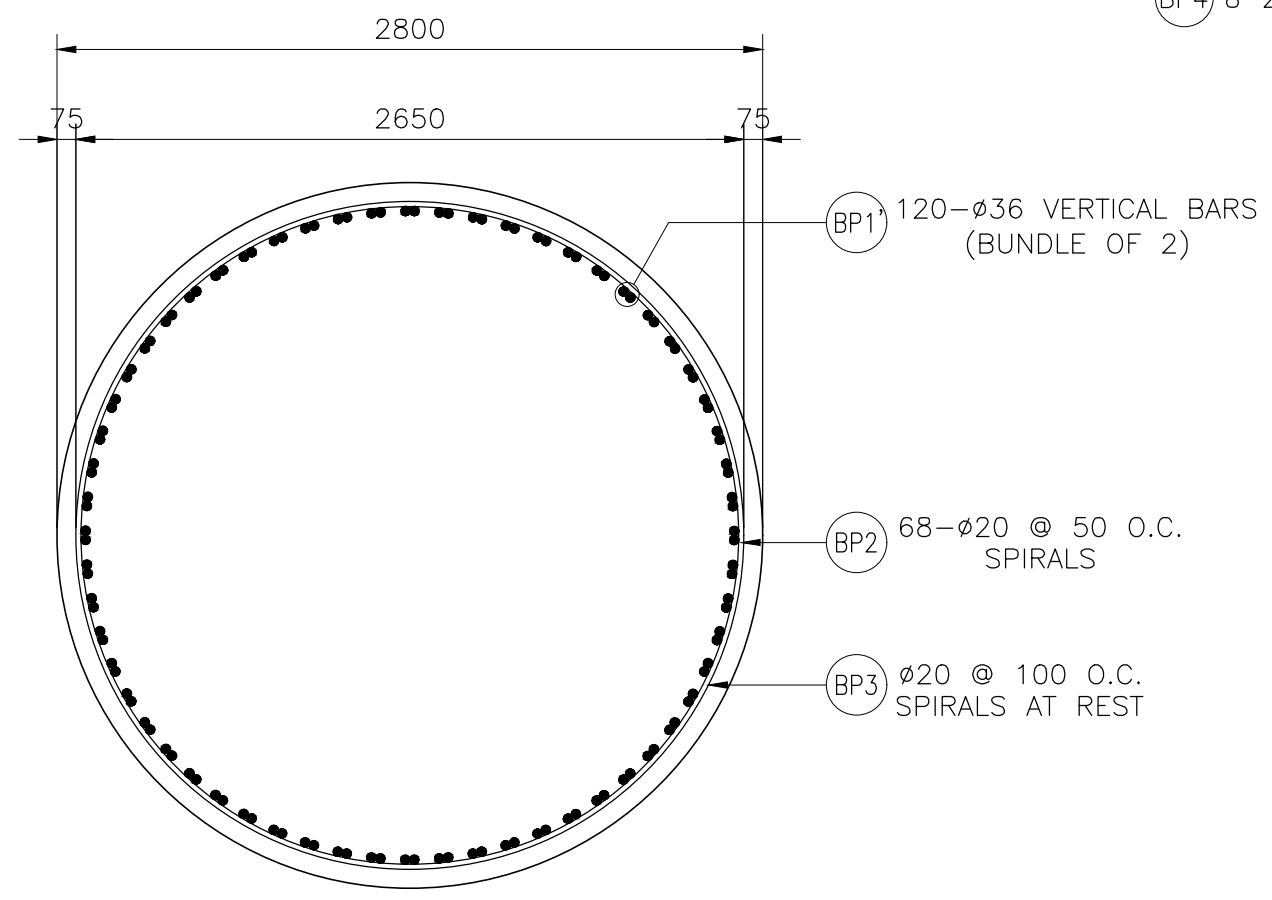
1 PIER 2 BORED PILE VERTICAL SECTION
SCALE 1:50



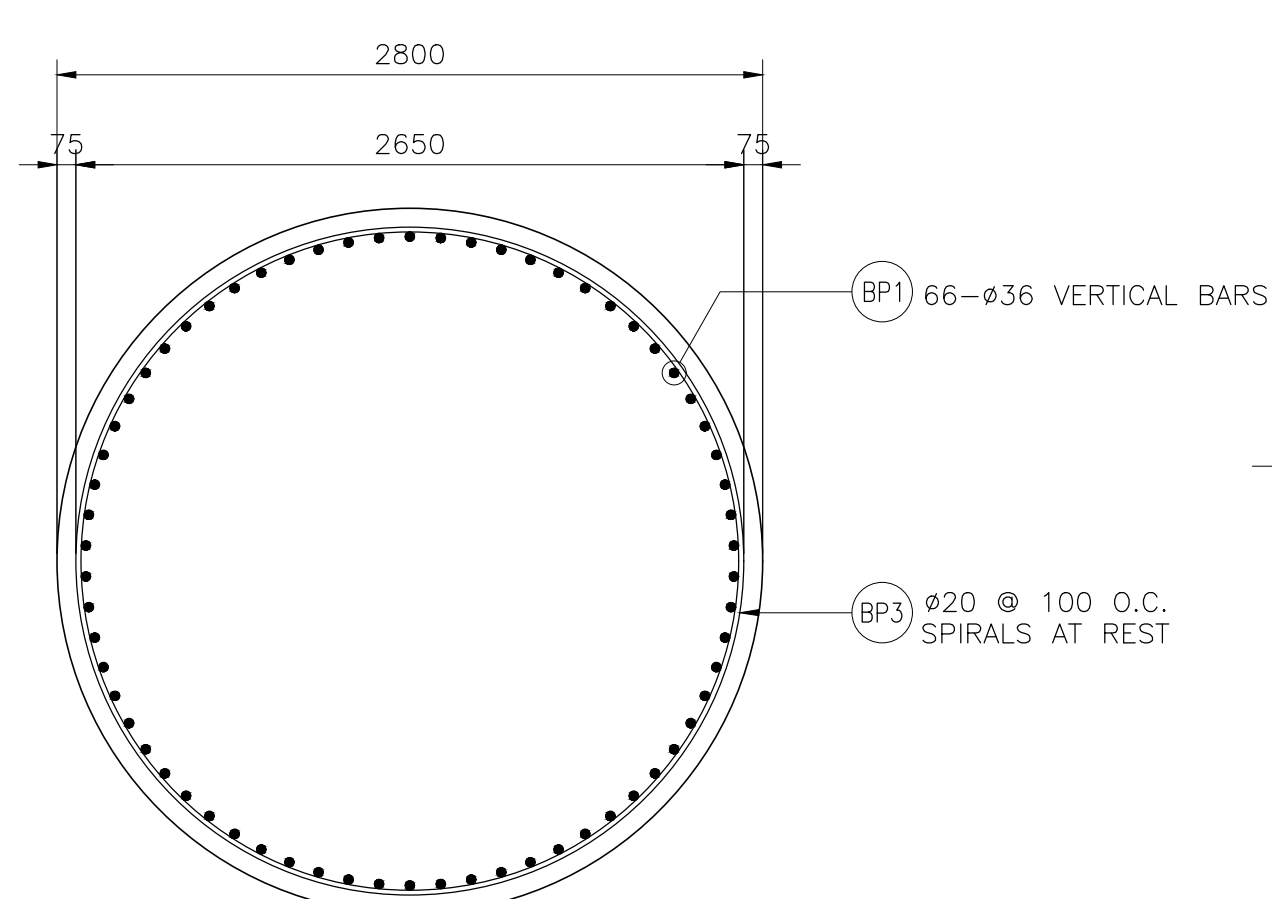
2 PIER 2 BORED PILE SCHEMATIC DETAIL
SCALE 1:50



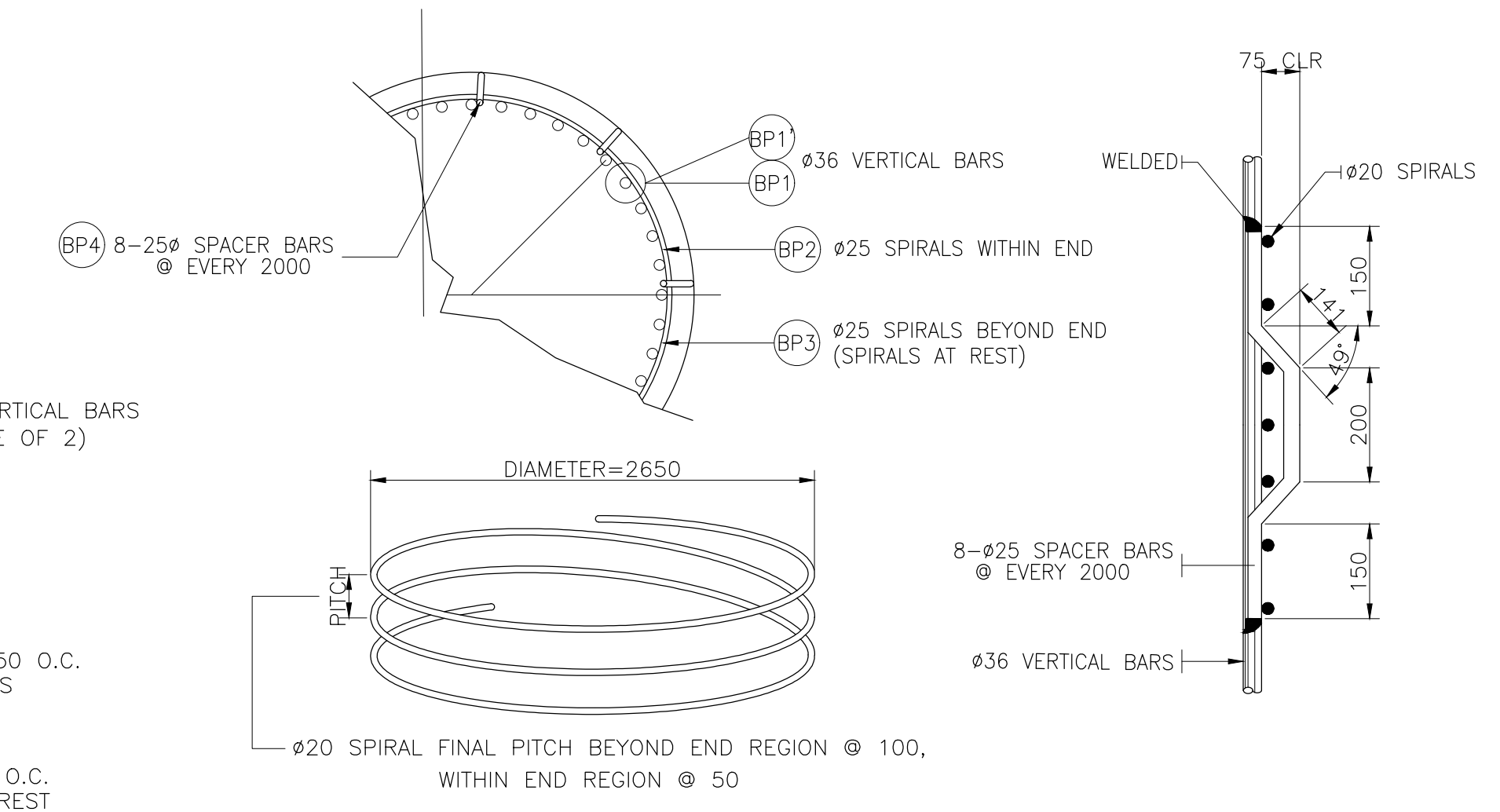
3 PIER 2 BORED PILE STIFFENER LAYOUT
SCALE 1:50



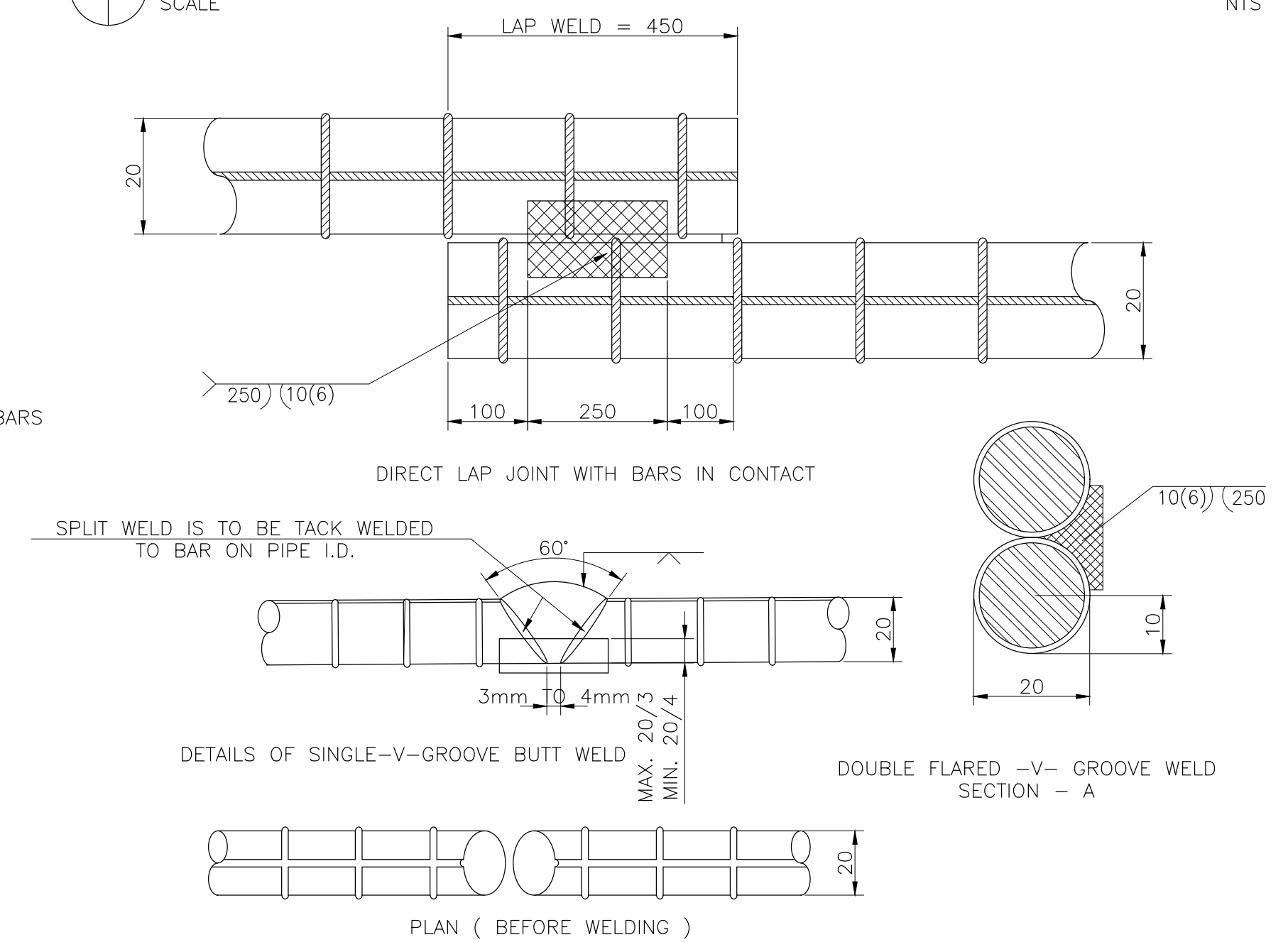
4 PIER 2 BORED PILE SECTION THRU L1
SCALE 1:30



5 PIER 2 BORED PILE SECTION THRU L2
SCALE 1:30



6 PIER 2 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS



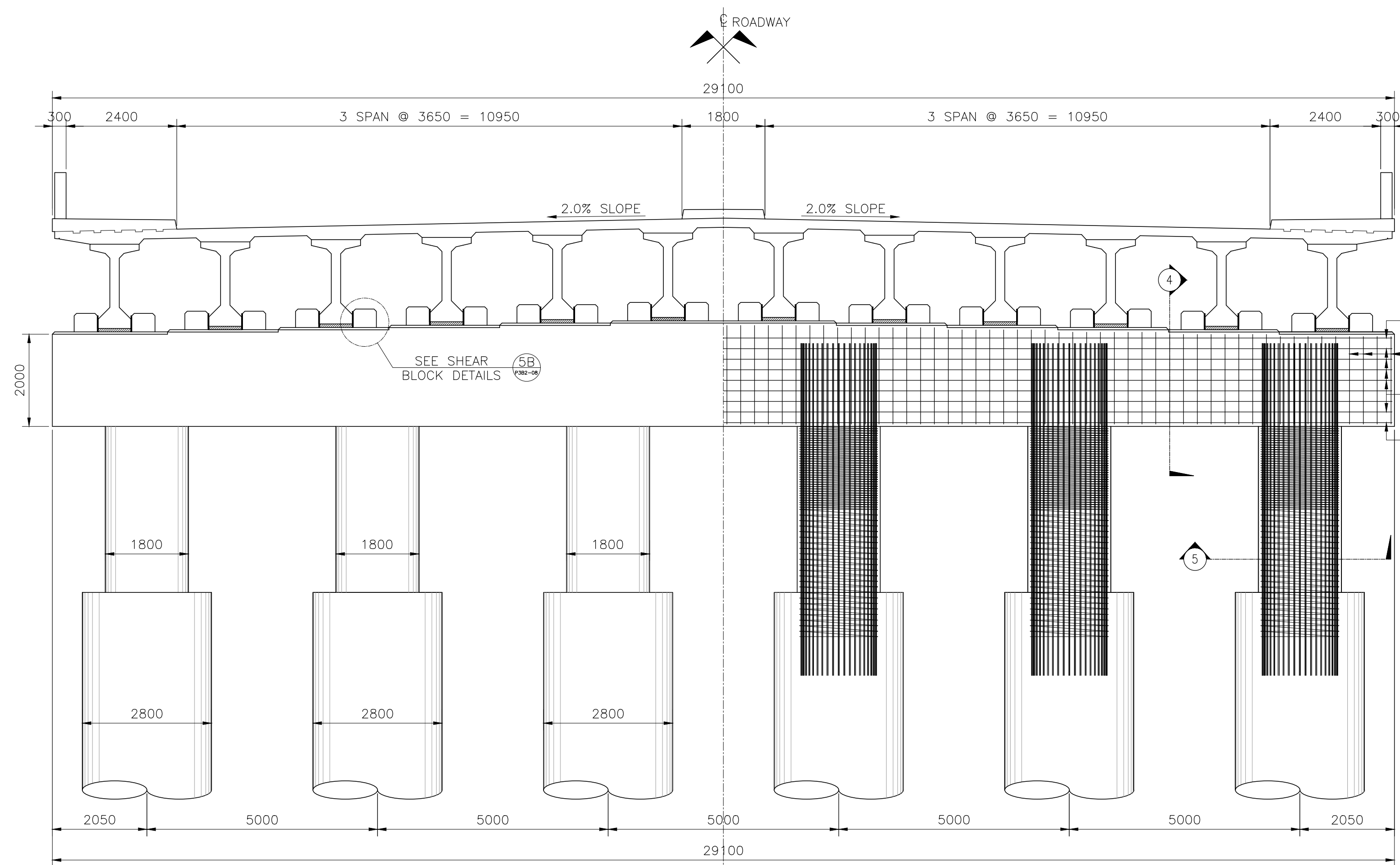
7 DETAILS OF TIES REINFORCEMENT LAP-WELD CONNECTION
SCALE NTS

SCHEDULE OF REINFORCEMENT BORED PILE AT PIER 2 ONLY

BAR MARK	SIZE (mm)	SPACING (mm)	QTY	BAR SHAPE	BAR DIMENSION					LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	VOLUME CONCRETE (cu.m)	
					a	b	c	d	e							
FOR ONE (1) BORED PILE AT ABUTMENT (L=20m, Ø2800mm)																
BP1'	36	AS SHOWN	120	A	0.40	14	-	-	-	BORED PILE	14.4	1728.0	7.991	13808	124	
BP1	36	AS SHOWN	66	B	10	-	-	-	10.0		660.0	7.991	5275			
BP2	20	50	68	D	0.15	2.65	-	-	2.8		190.4	1.579	471			
BP2'	20	100	187	D	0.15	2.65	-	-	2.8		523.6	1.579	1295			
BP3	25	AS SHOWN	80	C	0.15	0.141	0.20	0.141	0.15	0.782	62.56	3.854	243			
												TOTAL	21093 Kgs	124 cu.m		

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

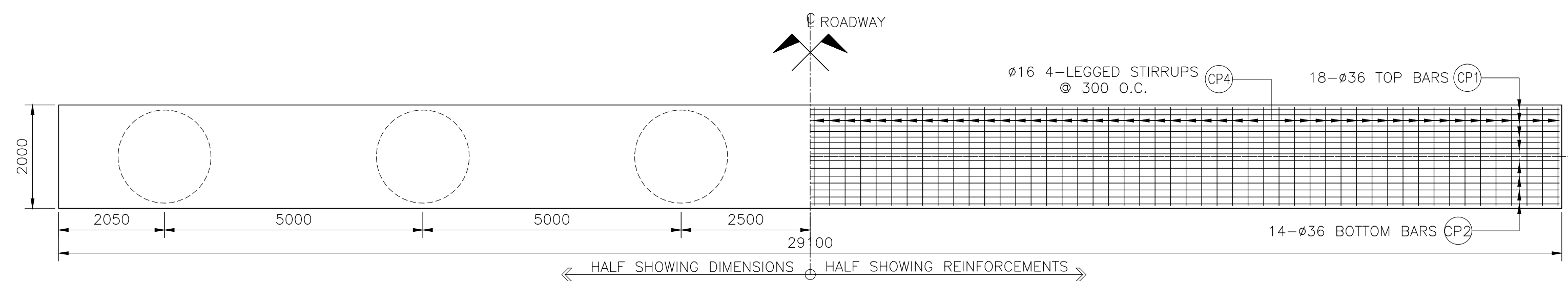
CONSULTANTS UIC CORPORATE BLDG., 8 LANES STREET, VISRA, DALAMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI	 BAYAN LEPAGE DEVELOPMENT AUTHORITY	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500 - KM.16+000) - BRIDGE 2	SCALE AS SHOWN	DRAWING STATUS DRAFT DRAWING
	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER	APPROVED BY JOVITO M. SUNGA OIC - PMD	PROJECT CODE P3B2-13	DRAWING NO. A1	DATE APPROVED 	DATE REVISED 	REV. 	



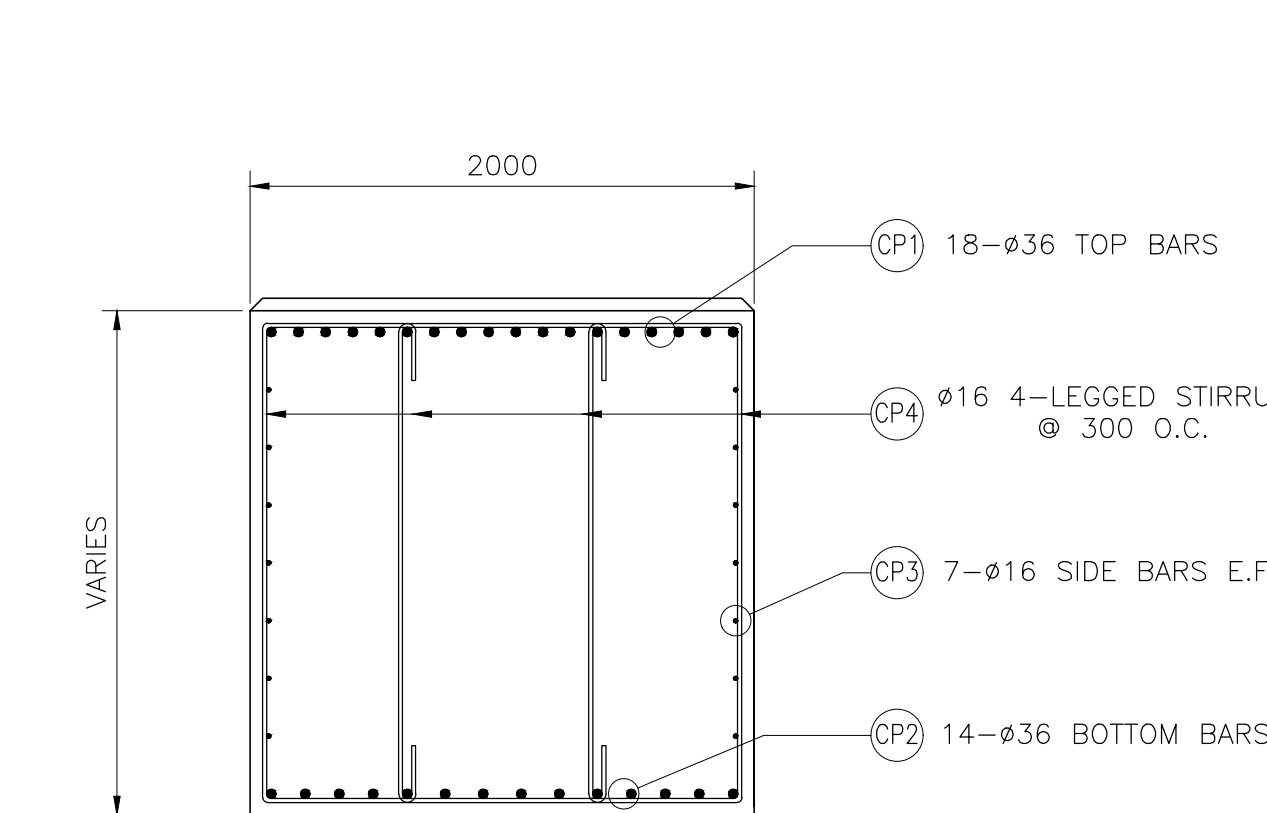
1 PIER 3 COPING ELEVATION
SCALE 1:75

- CP1 18- ϕ 36 TOP BARS
- CP4 ϕ 16 4-LEGGED STIRRUPS @ 300 O.C.
- CP3 7- ϕ 16 SIDE BARS E.F.
- CP2 14- ϕ 36 BOTTOM BARS

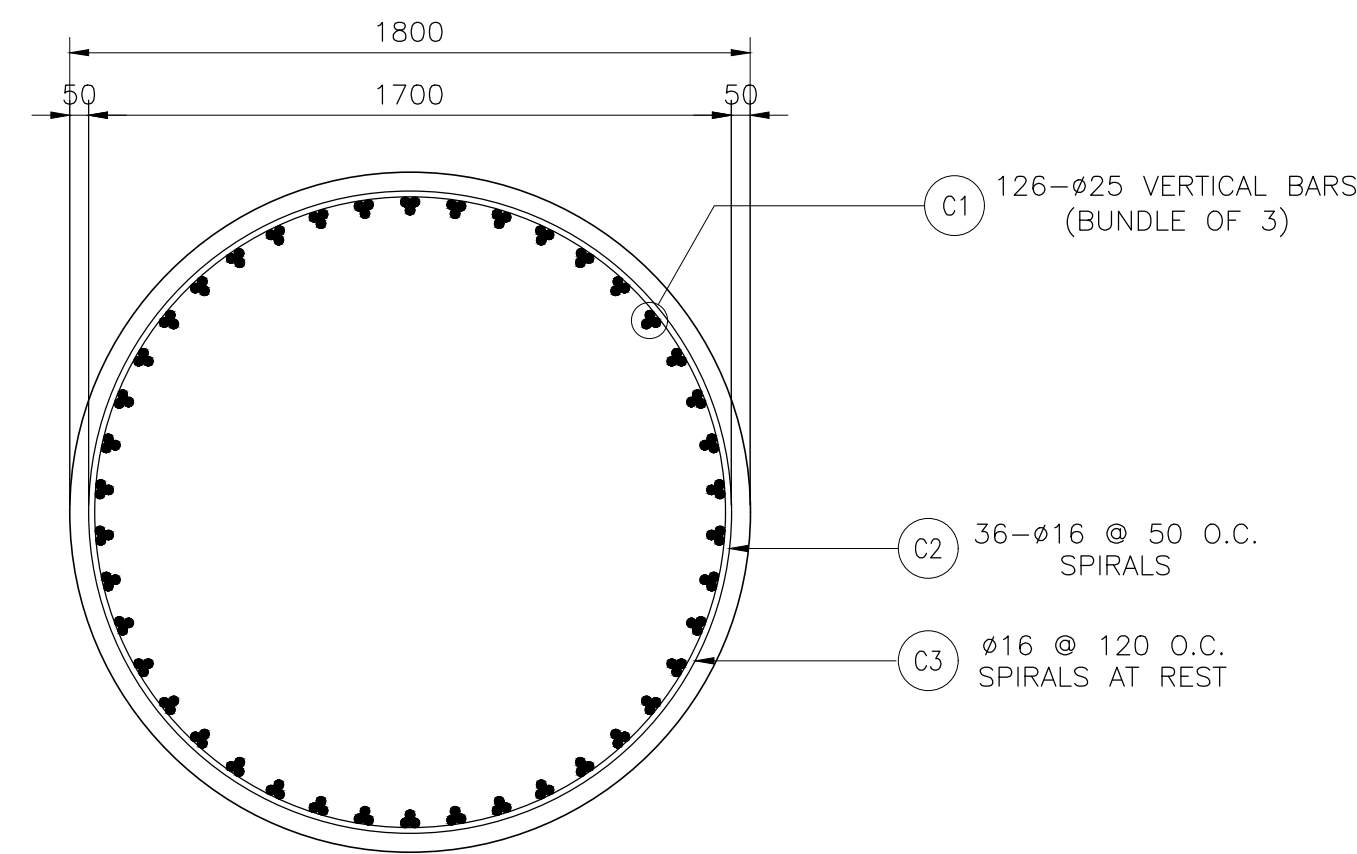
NOTE:
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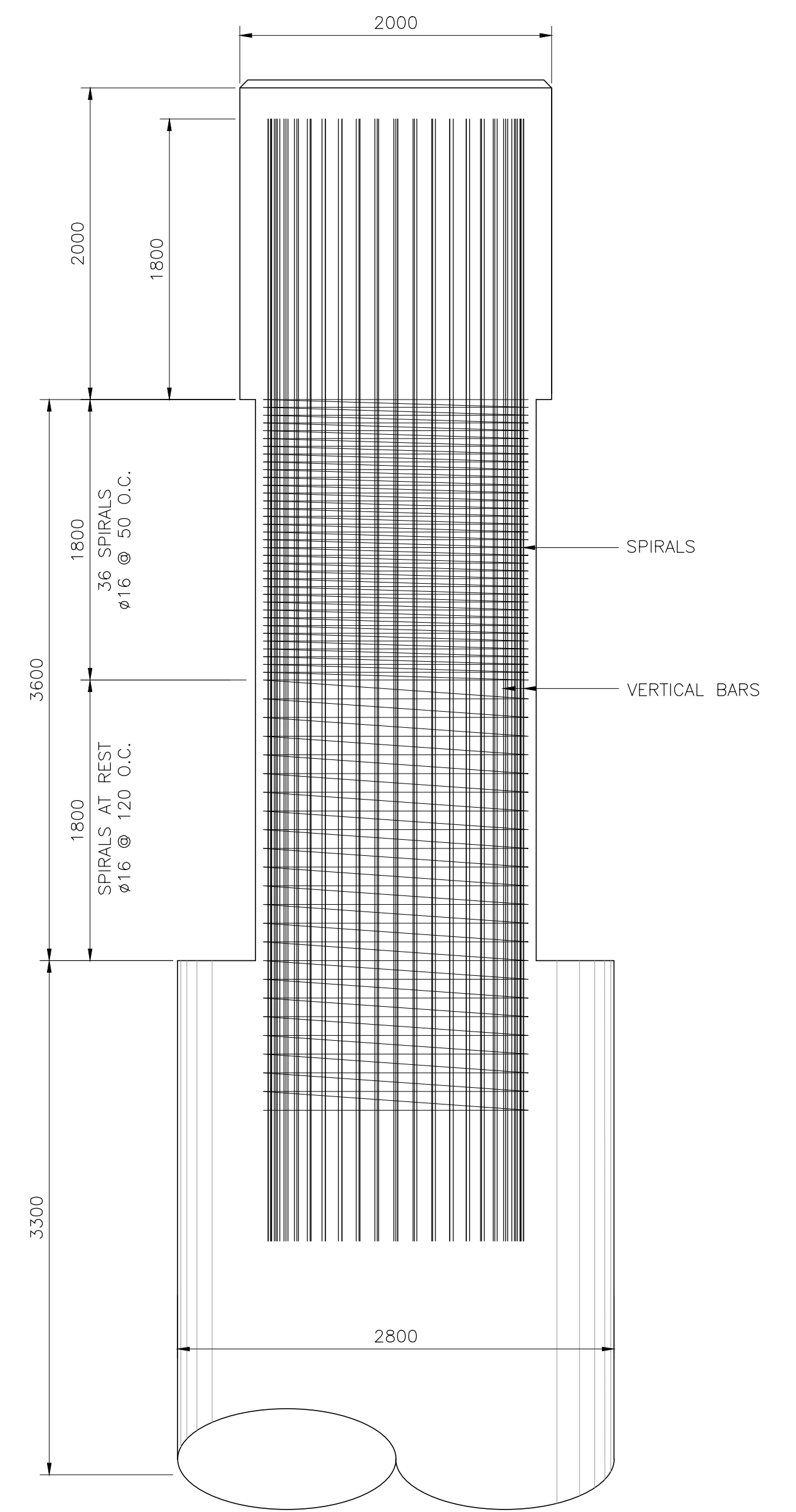
2 PIER 3 COPING PLAN
SCALE 1:75



4 PIER 3 COPING SECTION
SCALE 1:30



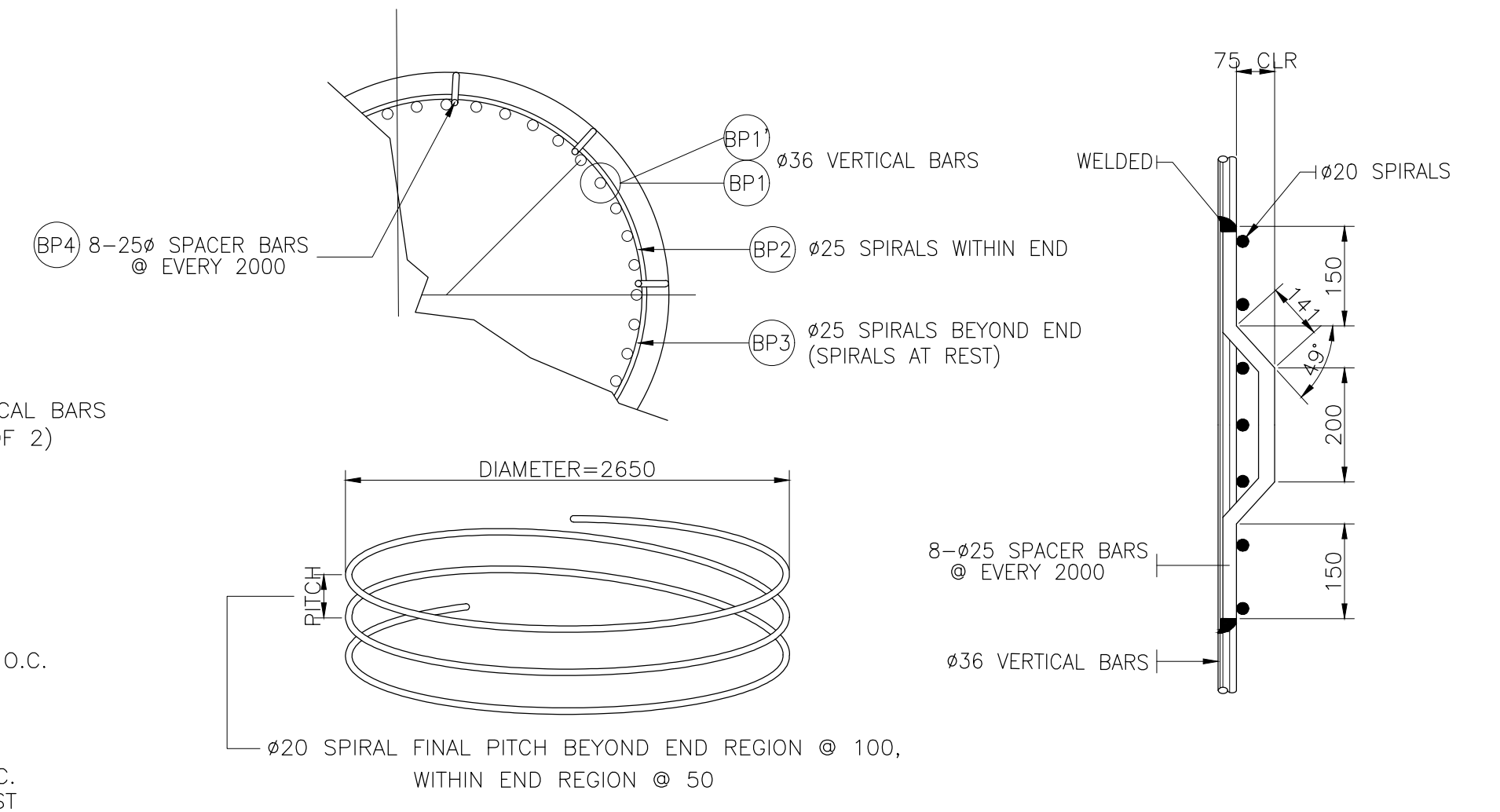
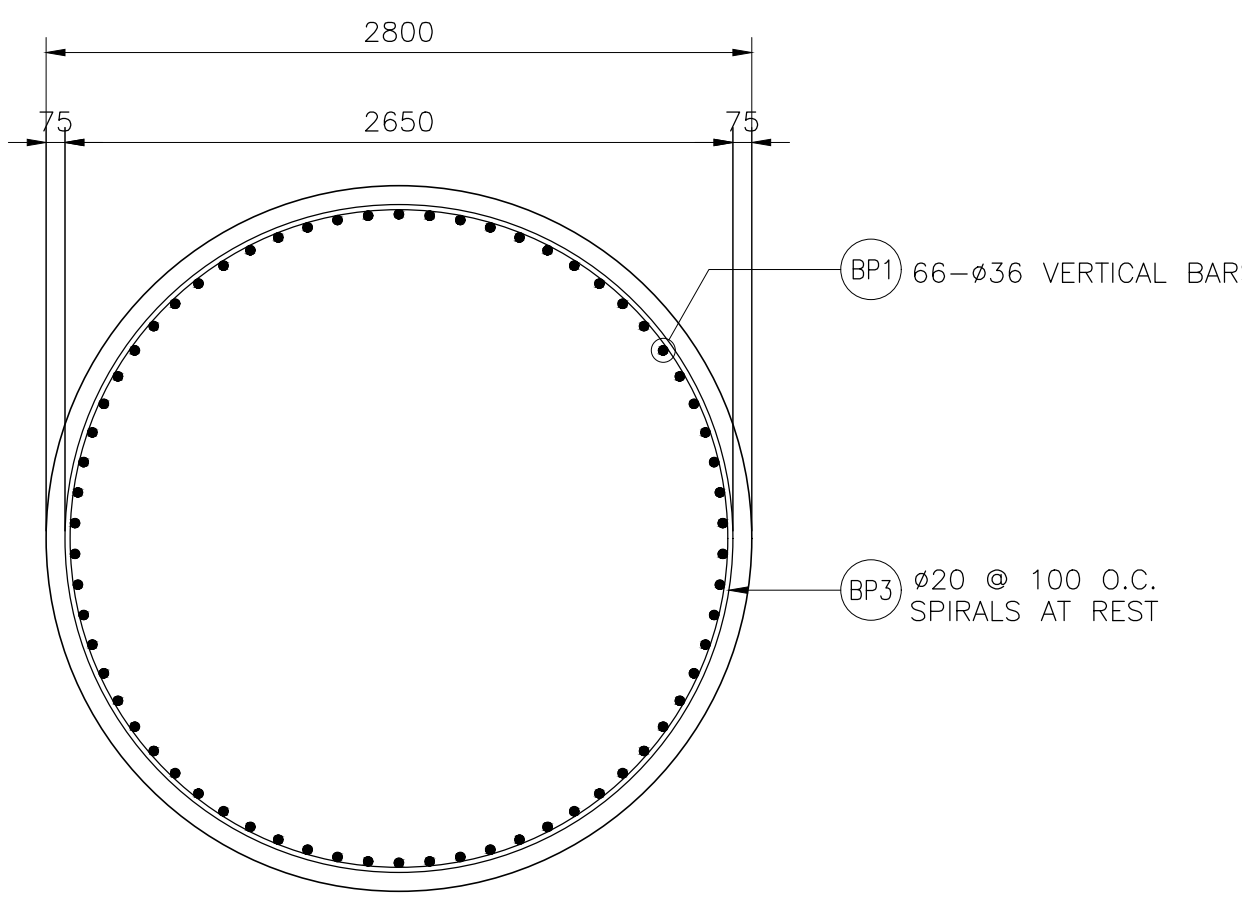
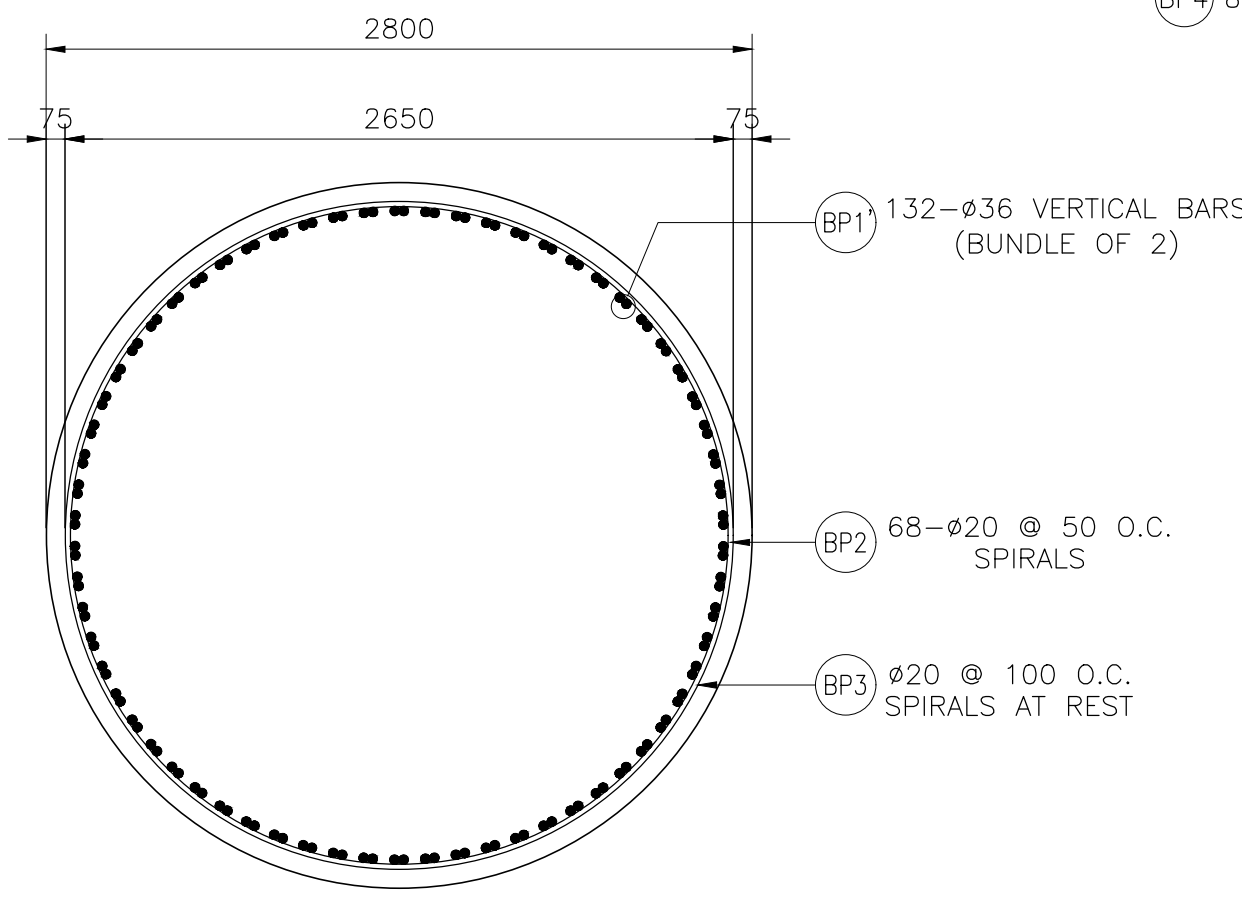
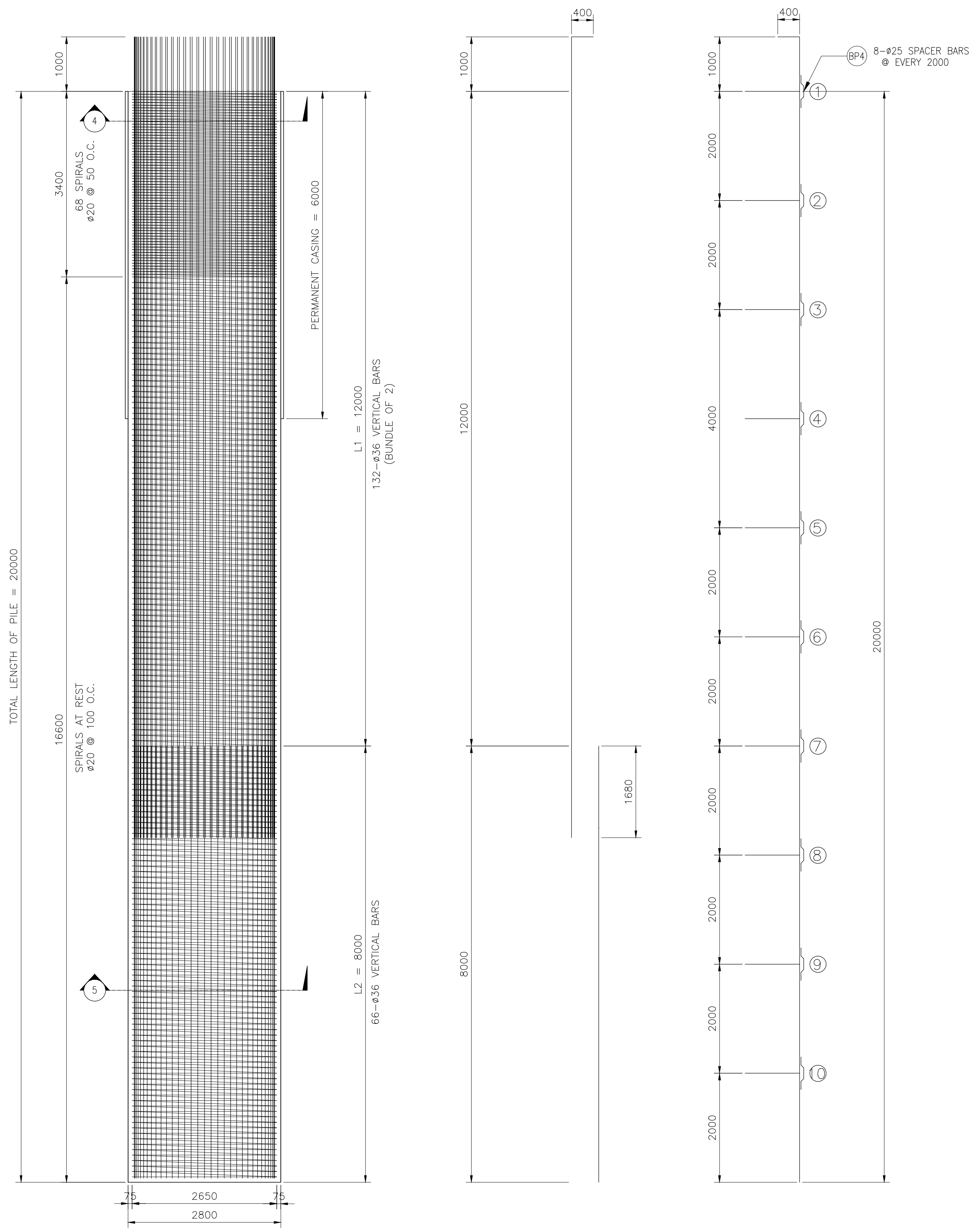
5 PIER 3 COLUMN DETAIL
SCALE 1:20



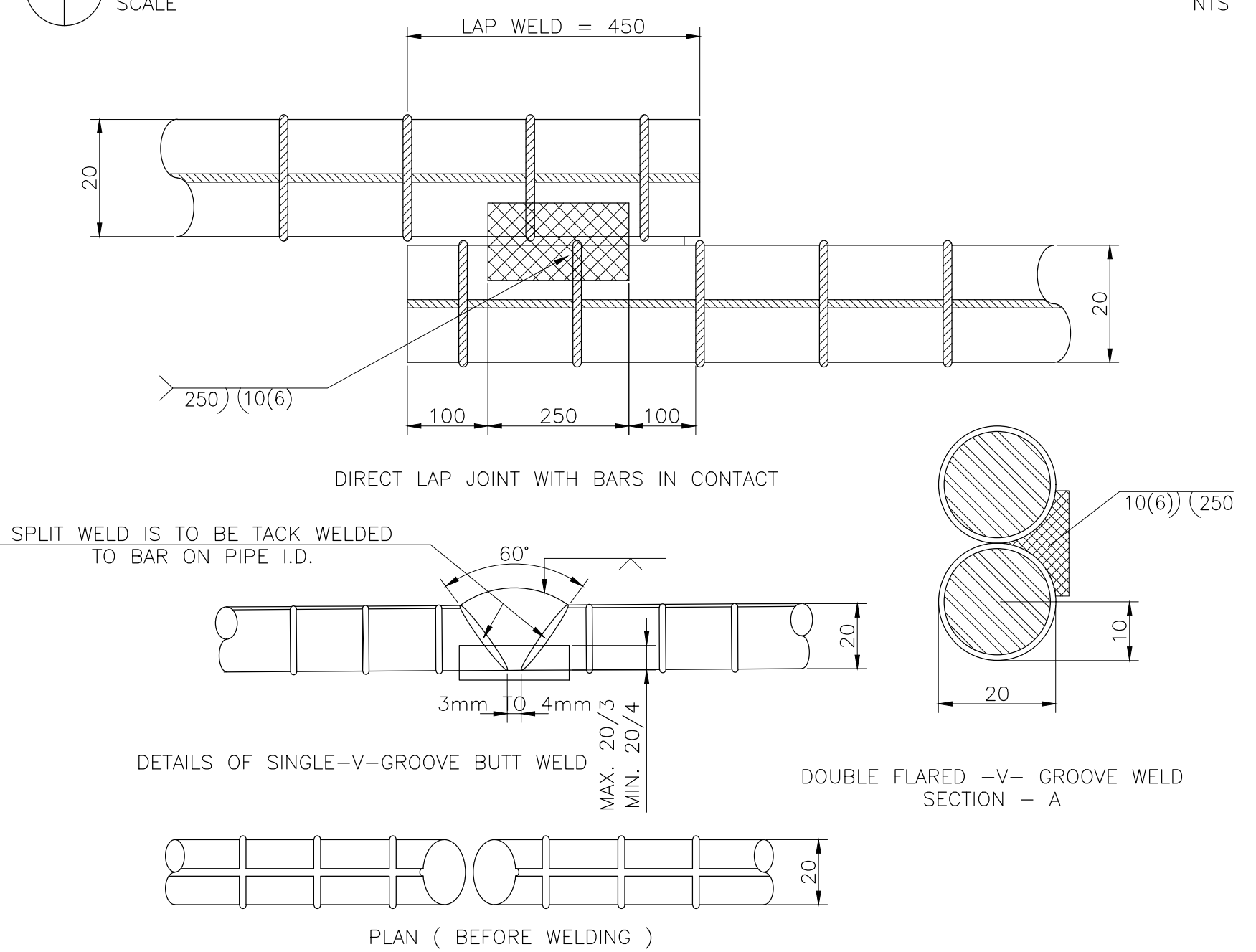
3 PIER 3 TYPICAL SECTION
SCALE 1:30

SCHEDULE OF REINFORCEMENTS FOR PIER 3 COLUMN, COPING AND SHEAR BLOCK

BAR BENDING DIAGRAM	REINFORCING STEEL BARS				ALL DIMENSIONS ARE OUT TO OUT OF REBARS						TYPE	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONCRETE VOLUME (cu.m)	
	MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e	f								
A	SB1	25	AS SHOWN	288	0.65	0.5						D	SHEAR BLOCK	1.15	302.40	3.853	1170	5
	SB2	25	AS SHOWN	288	0.65	0.5						D		1.15	302.40	3.853	1170	
	SB3	16	30	640	0.45	0.45	0.45	0.45	0.2	0.2	B	2.2		1408.0	1.578	2229		
C	C1	25	AS SHOWN	756	3.5	0.5						A	COLUMN	4.5	3402.0	3.853	13110	55
	C2	16	AS SHOWN	216	1.7							F		1.7	367.20	1.578	581	
	C3	16	120	168	1.7							F		1.7	285.60	1.578	455	
D	CP1	36	AS SHOWN	18	29	0.5						D	COPING	30	540.00	7.991	4318	117
	CP2	36	AS SHOWN	14	29	0.5						D		30	285.60	7.991	3360	
	CP3	16	300	97	1.9	1.9	1.9	1.9	0.1	0.1	B	7.8		285.60	1.578	1201		
	CP4	16	AS SHOWN	6	0.65							D		30	285.60	1.578	290	
* 12 mm dia. and below are Grade 40													GRAND TOTAL		Grade 60 bar		27884 Kgs	177 cu.m
* 16 mm dia. and above are Grade 60																		



6 PIER 3 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS



7 DETAILS OF TIES REINFORCEMENT LAP-WELD CONNECTION
SCALE NTS

1 PIER 3 BORED PILE VERTICAL SECTION
SCALE 1:50

2 PIER 3 BORED PILE SCHEMATIC DETAIL
SCALE 1:50

3 PIER 3 BORED PILE STIFFENER LAYOUT
SCALE 1:50

SCHEDULE OF REINFORCEMENT BORED PILE AT PIER 3 ONLY

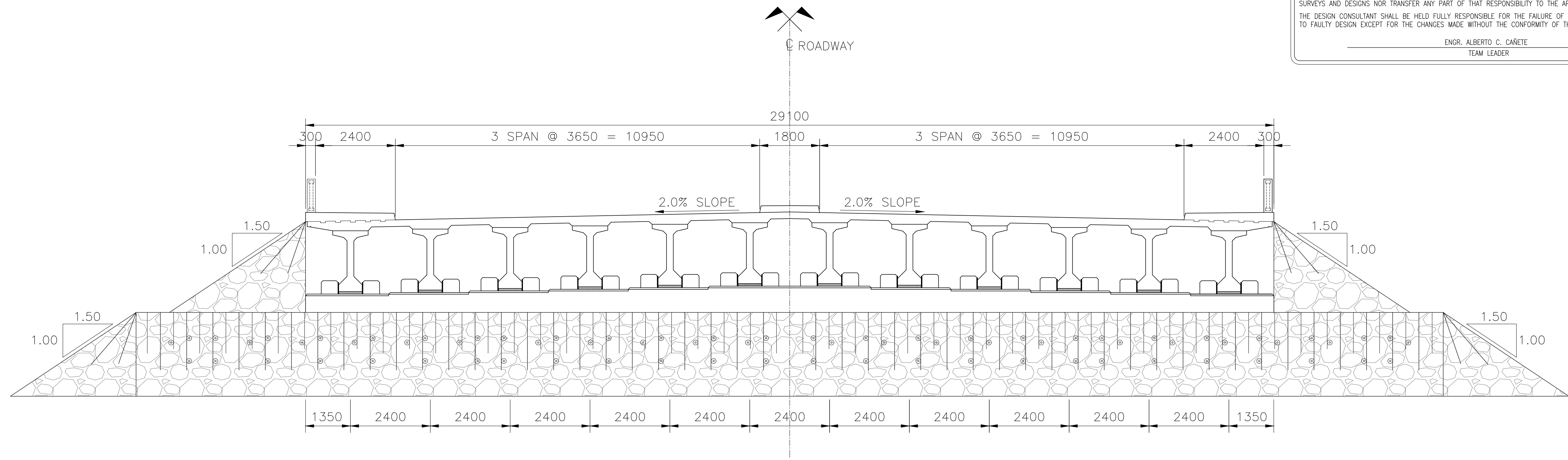
BAR MARK	SIZE (mm)	SPACING (mm)	QTY	BAR SHAPE	BAR DIMENSION					LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m.)	TOTAL WEIGHT (kg.)	VOLUME CONCRETE (cu.m.)
					a	b	c	d	e						
FOR ONE (1) BORED PILE AT ABUTMENT (L=20m, #2800mm)															
BP1'	36	AS SHOWN	132	A	0.40	14	-	-	-	BORED PILE	14.4	1900.8	7.991	15190	124
BP1	36	AS SHOWN	66	B	10	-	-	-	10.0		660.0	7.991	5275		
BP2	20	50	68	D	0.15	2.65	-	-	2.8		190.4	1.579	471		
BP2'	20	100	187	D	0.15	2.65	-	-	2.8		523.6	1.579	1295		
BP3	25	AS SHOWN	80	C	0.15	0.141	0.20	0.141	0.15		0.782	62.56	3.854	243	
TOTAL												22474 Kgs	124 cu.m		

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TEAM LEADER

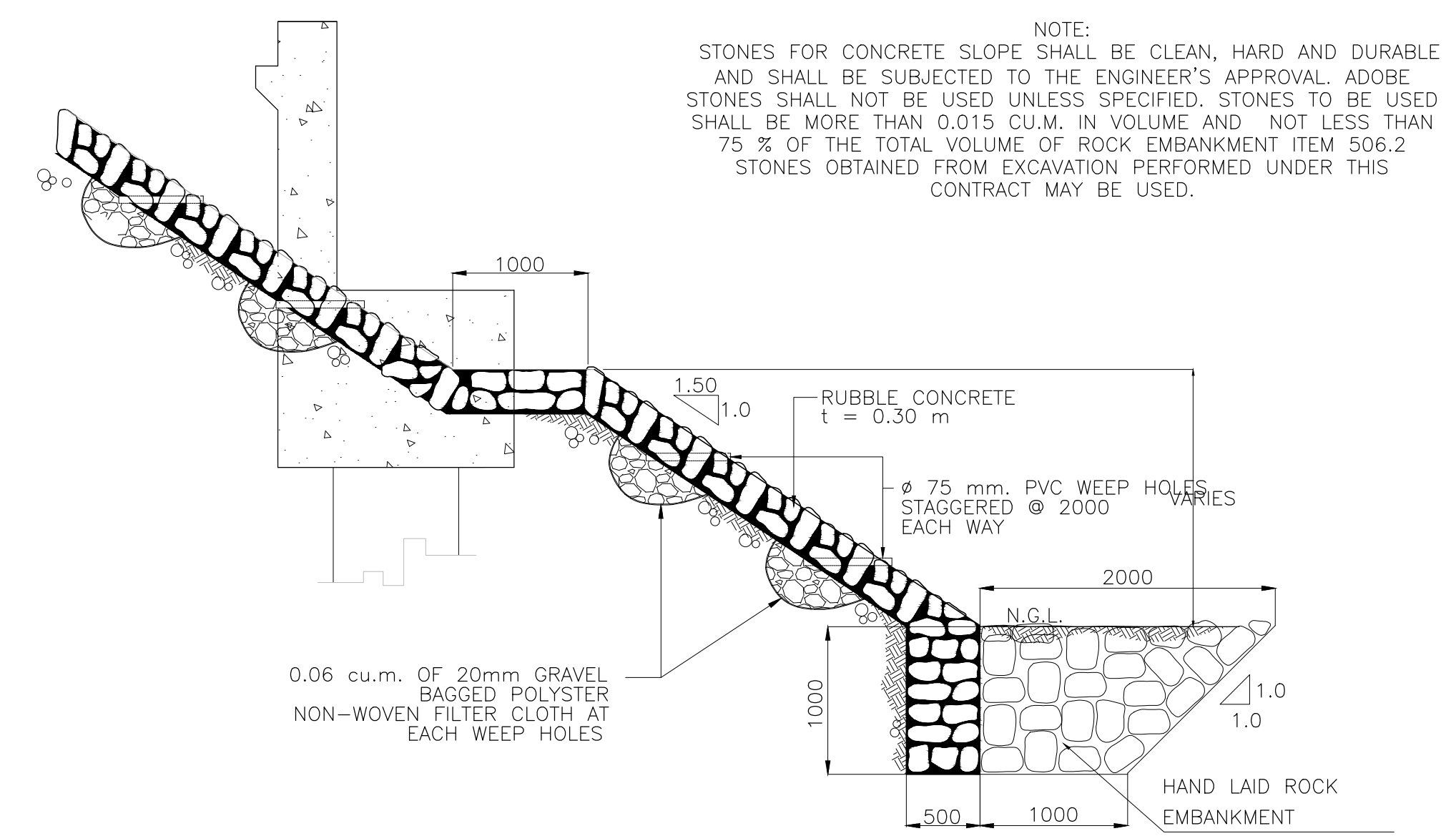
CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, VASRA, DALAMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI	 BAYAN LEPONON DEVELOPMENT AUTHORITY	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500 - KM.16+000) - BRIDGE 2 PIER 3 BORED PILE SCHEDULE OF REINFORCEMENTS AND SUMMARY OF QUANTITIES	SCALE AS SHOWN	DRAWING STATUS DRAFT DRAWING
	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER	APPROVED BY JOVITO M. SUNGA OIC - PMD	PROJECT CODE P3B2-15	DRAWING NO. A1	DATE APPROVED 	DATE REVISED 	REV. 	

NOTE:
 PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
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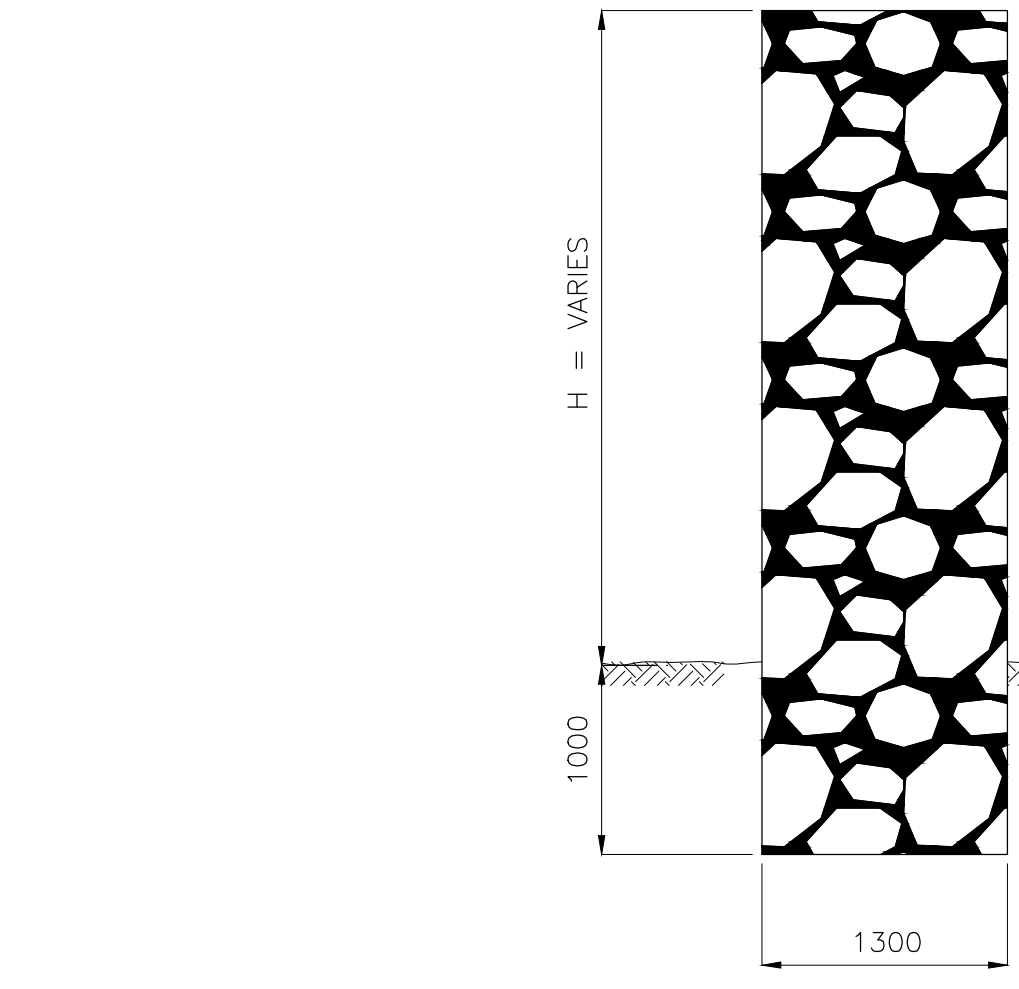
ENGR. ALBERTO C. CAÑETE
 TEAM LEADER



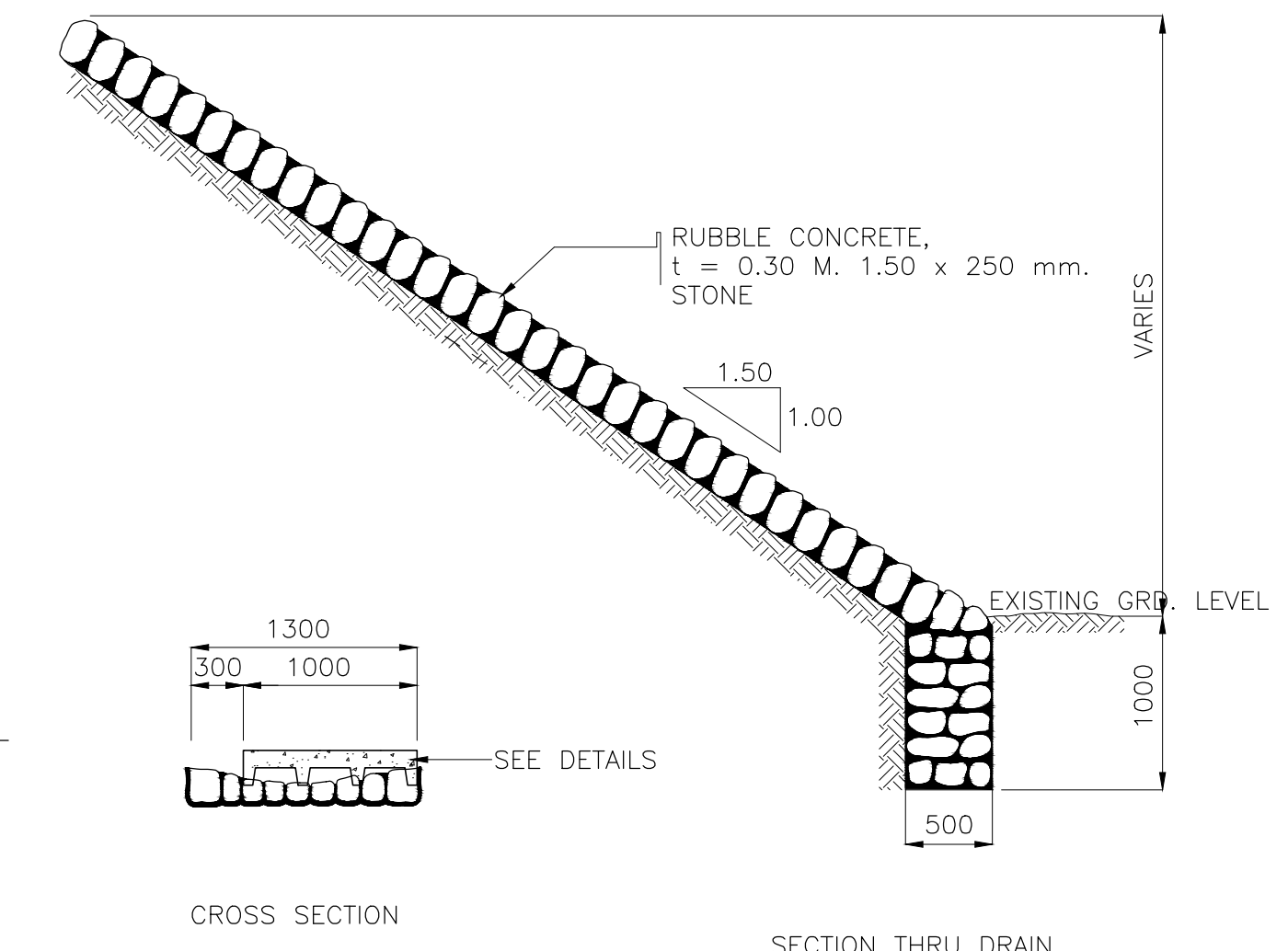
1 TYPICAL SECTION AT ABUTMENT
 SCALE: 1:75



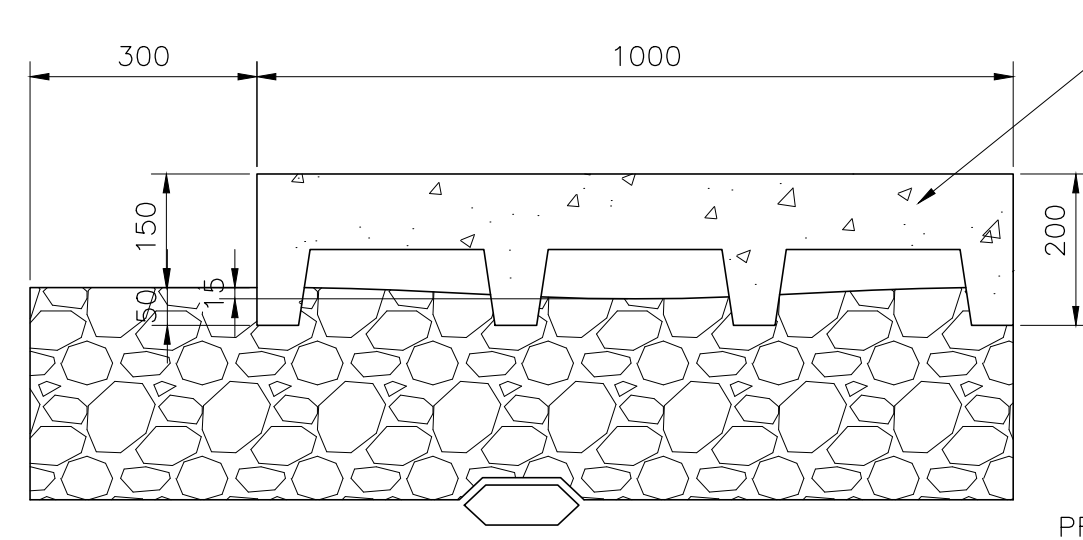
2 DETAILS OF RUBBLE CONCRETE AND MASONRY WALL
 SCALE: 1:40



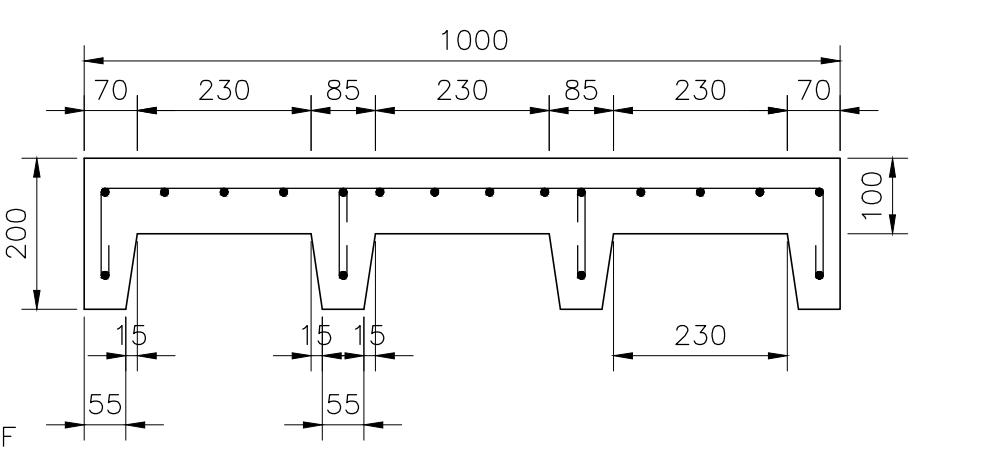
4 DETAILS THRU DRAIN
 SCALE: 1:10



3 DETAILS OF SIDE DRAIN
 SCALE: 1:40



NOTE:
 PRECAST SLAB MUST BE PLACED AFTER CONCRETE POURING OF DRAINS, IN THE MOMENT WHERE THE CONCRETE IS NOT YET TOTALLY HARDENED. CONTRACTOR MUST ENSURE THAT 50mm THICKNESS OF PRECAST SLAB IS IMMERSERD WITHIN THE CONCRETE.



5 DETAILS OF PRECAST SLAB
 SCALE: 1:10

CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, VISRA, DALMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	 BUREAU OF CONSTRUCTION DEVELOPMENT AUTHORITY	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500 - KM.16+000) - BRIDGE 2 TYPICAL SECTION AT ABUTMENT DETAILS OF RUBBLE CONCRETE DETAILS OF SIDE DRAIN	SCALE AS SHOWN PROJECT CODE DATE APPROVED -	DRAWING STATUS DRAFT DRAWING DRAWING NO. P3B2-17 DATE REVISED - REV. A1 -
	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITO M. SUNGA OIC - PMD DATE: -						

GENERAL NOTES

A. GENERAL

- A.1 UNLESS INDICATED OTHERWISE, ALL DIMENSIONS, DISTANCES AND SIZES (MEMBERS AND REINFORCING STEEL) ARE IN MILLIMETRES EXCEPT STATIONING WHICH ARE IN KILOMETRES + METRES AND ELEVATIONS WHICH ARE IN METERS.
- A.2 INDICATED DIMENSIONS SHALL GOVERN OVER SCALED DIMENSIONS. SCALED DIMENSIONS SHALL NOT BE USED FOR CONSTRUCTION PURPOSES.
- A.3 UNLESS OTHERWISE SHOWN ON THE PLANS, ALL EXPOSED EDGES SHALL BE CHAMFERED 20mm EXCEPT RAILING.
- A.4 ALL ELEVATIONS, STATIONINGS, AND DIMENSIONS SHALL BE VERIFIED PRIOR TO ACTUAL CONSTRUCTION.

B. DESIGN CRITERIA

B.1 SPECIFICATIONS

- B.1.1 DPWH DESIGN GUIDELINES, CRITERIA AND STANDARDS, VOLUME V, BRIDGES, 2015
 B.1.2 DPWH BRIDGE SEISMIC DESIGN SPECIFICATIONS, 2013
 B.1.3 AASHTO LRFD CODE, 2012 EDITION

B.2 LOADS AND WEIGHTS

- B.2.1 TRAFFIC LIVE LOAD HL - 93
 B.2.2 PERMIT LIVE LOAD CALTRANS P-7

B.2.3 WEIGHTS

- B.2.3.1 CONCRETE, PLAIN OR REINFORCED 24.0 kN / m³
 B.2.3.2 STEEL OR CAST STEEL 77.0 kN / m³
 B.2.3.3 COMPACTED SAND, EARTH 18.9 kN / m³
 B.2.3.4 UTILITIES 10% OF DEAD LOADS (FOR DESIGN OF GIRDERS ONLY)

C. MATERIALS

C.1 CONCRETE

- a) UNLESS OTHERWISE INDICATED ON THE PLANS, THE MINIMUM CYLINDER STRENGTH OF CONCRETE AT 28 - DAY SHALL BE.

DESCRIPTION	CLASS	f'c		
		MPa	IN	MM
a. ALL SUPERSTRUCTURES (DECK SLAB, PEDESTAL)	A	28	3/4	20
b. ALL SUBSTRUCTURES (PIERS, ABUTMENT)	A	28	1	25
c. BORED PILE	A	28	1	25
d. PRESTRESSED CONCRETE (INITIAL STRENGTH f'ci=35MPa)	P	41	1	25
e. BRIDGE RAILING AND SIDEWALKS	C	21	1	25
f. LEAN CONCRETE	D	14	1	25

THE MINIMUM COMPRESSIVE STRENGTH OF PRESTRESSED CONCRETE AT STRESSING STAGE AS INDICATED ON THE PLAN.

b) CONCRETE COVER OF REINFORCEMENT

UNLESS OTHERWISE SPECIFIED, CLEAR CONCRETE COVER TO REINFORCING STEEL SHALL BE AS FOLLOWS:

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	75
CONCRETE EXPOSED TO EARTH OR WEATHER	
PRIMARY REINFORCEMENT	50
STIRRUPS, TIES AND SPIRALS	40
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND	
PRIMARY REINFORCEMENT	40
STIRRUPS, TIES AND SPIRALS	25
CONCRETE PILES CAST AGAINST AND/OR PERMANENTLY EXPOSED TO EARTH	
CONCRETE PILES	75

C.2 REINFORCING STEEL

- a) REINFORCING STEEL NON WELDABLE STEEL BARS SHALL CONFORM TO ASTM A615 / A615M AND FOR WELDABLE STEEL BARS SHALL CONFORM ASTM A706 / A706M.

MINIMUM YIELD STRENGTH AS LISTED BELOW UNLESS OTHERWISE SPECIFIED IN THE DRAWING.

- Fy = 414 MPa (Gr. 60) FOR 16mmØ AND LARGER
 Fy = 276 MPa (Gr. 40) FOR 12mmØ AND SMALLER

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

C.3 ELASTOMERIC BEARING PADS

ELASTOMERIC BEARING PADS SHALL BE 100 % VIRGIN CHLOROPRENE (NEOPRENE) PADS WITH DUROMETER HARDNESS 60 UNLESS OTHERWISE SPECIFIED ON THE PLANS. BEARING PADS SHALL BE LAMINATED TYPE BEARING PADS CONSISTING OF LAYER OF ELASTOMER . RESTRAINED AT THEIR INTERFACES BY BONDED LAMINATIONS AS REQ'D ON THE PLANS, LAMINATED PLATE SHALL BE NON-CORROSIVE MILD STEEL SHEET. ALL BEARING PADS SHALL CONFORM TO THE REQUIREMENT SPECIFIED IN THE AASHTO SPECIFICATIONS AND DPWH D.O. NO. 25 SERIES OF 1997.

C.4 HANDLING HOOK DEVICES

HANDLING HOOK DEVICES OF PRESTRESSED MEMBERS SHALL BE AS SHOWN ON THE PLANS OR ANY SUITABLE DEVICES PREPARED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

C.5 WATER STOPPER

WATER STOPPER SHALL BE MADE OF RUBBER TO BE SPECIFIED ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

C.6 JOINT FILLER

JOINT FILLER, HOT POURED ELASTIC TYPE, USED FOR EXPANSION JOINT SHALL CONFORM TO AASHTO M 213

C.7 BOND BREAKER

BOND BREAKER SHALL BE WOVEN BURLAP FABRIC SATURATED WITH BUTYMINOUS SUBSTANCES AS USED IN WATERPROOFING.

D. CONSTRUCTION

D.1 CONSTRUCTION SPECIFICATIONS

ALL CONSTRUCTION SHALL CONFORM TO:

- D.1.1 CONDITIONS OF CONTRACT
 D.1.2 THE SPECIAL PROVISIONS
 D.1.3 THE DPWH STANDARD SPECIFICATIONS FOR HIGHWAY, BRIDGES, AND AIRPORTS, VOLUME II 2004 EDITION, AS MODIFIED ON THE DRAWINGS.

D.2 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.

D.3 CONSTRUCTION LIMITS

THE CONTRACTOR SHALL VERIFY AND WORK WITHIN THE CONSTRUCTION LIMITS OR EASEMENTS OF THE BRIDGE STRUCTURE. HE SHALL HOWEVER PROVIDE FOR AREAS HE MAY REQUIRE FOR HIS OWN USE. IT IS THE INTENT OF THE PLANS TO LEAVE UNDISTURBED ANYTHING 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.

D.4 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 THE 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 WILL BE 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.

D.5 PUBLIC UTILITIES/FACILITIES

REFER TO SPECIAL PROVISIONS

D.6 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.

D.7 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.

D.8 MATERIAL SOURCES

WHERE COMMON BORROW IS REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING HIS OWN SOURCES OF COMMON BORROW AS OUTLINED IN THE SPECIFICATIONS.

D.9 EXCAVATION

EXCAVATION FOR STRUCTURES SHALL BE NEAT LINES AS SHOWN ON THE PLANS AND THE SOIL UNDERNEATH STRUCTURE FOUNDATIONS SHALL NOT BE DISTURBED.

D.10 BACKFILLING

BACKFILLING FOR STRUCTURES SHALL BE DONE WITH GRANULAR MATERIALS COMPACTED ACCORDING TO SPECIFICATIONS.

D.11 REINFORCED CONCRETE

D.11.1 CONCRETE MIX AND PLACING

D.11.1.1 DESIGN OF CONCRETE MIX SHALL MEET THE DESIGN CONCRETE STRENGTH GIVEN UNDER ITEM 1 OF MATERIALS.

D.11.1.2 CONCRETE SHALL BE DEPOSITED, VIBRATED AND CURED IN ACCORDANCE WITH THE SPECIFICATIONS.

D.11.1.3 FOR CONCRETE DEPOSITED AGAINST THE GROUND, LEAN CONCRETE WITH A MINIMUM THICKNESS OF 100mm SHALL BE LAID FIRST BEFORE INSTALLING THE REINFORCEMENT. THE LEAN CONCRETE SHALL NOT BE CONSIDERED IN MEASURING THE STRUCTURAL DEPTH OF CONCRETE SECTION.

D.11.1.4 THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL PLACING SEQUENCES FOR ALL CONCRETING WORK.

D.11.2 BAR BENDING, SPlicing AND PLACING

D.11.2.1 PRIOR TO FABRICATION, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, SHOP DRAWINGS INDICATING THE BENDING, CUTTING, SPlicing AND INSTALLATION OF ALL REINFORCING BARS.

D.11.2.2 BARS SHALL BE BENT COLD. BARS PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT UNLESS PERMITTED BY THE ENGINEER.

D.11.2.3 BAR SPlicing NOT INDICATED ON DRAWINGS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

D.11.2.4 WELDED SPlices, IF APPROVED BY THE ENGINEER, SHALL DEVELOP IN TENSION AT LEAST 125% OF THE SPECIFIED YIELD STRENGTH OF THE BARS.

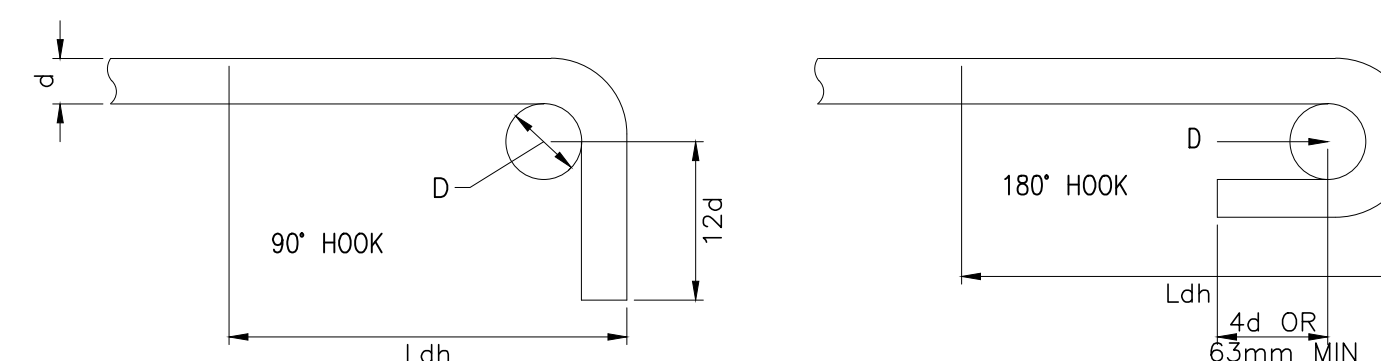
D.11.2.5 NOT MORE THAN 50% OF THE BARS AT ANY ONE SECTION SHALL BE SPliced, UNLESS SPECIFICALLY INDICATED.

D.11.2.6 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 25mm. THE BARS IN THE UPPER LAYER SHALL BE PLACED DIRECTLY ABOVE THOSE IN THE BOTTOM LAYER.

D.11.2.7 HOOKS AND BENDS

DIMENSIONS OF 90-DEGREE AND 180-DEGREE HOOKS

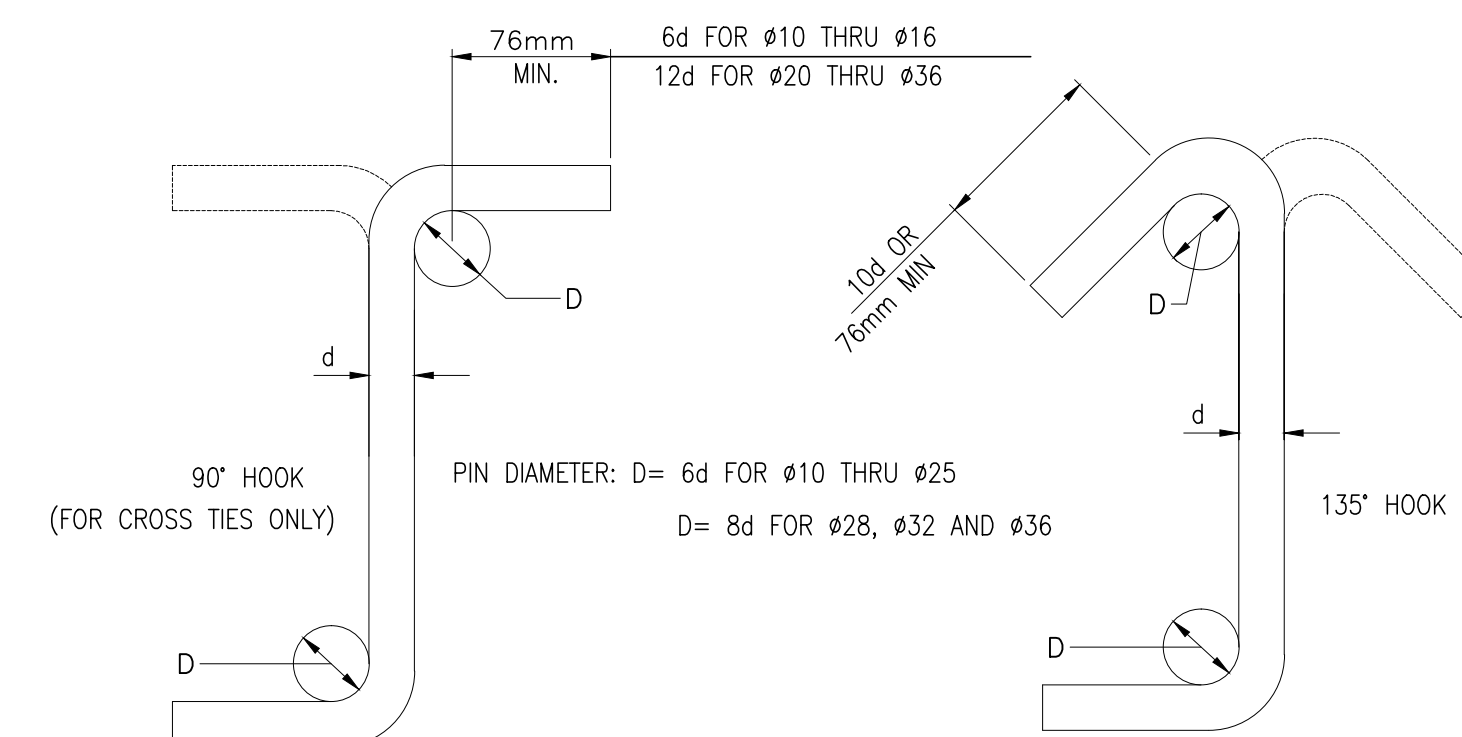


PIN DIAMETER: D= 6d FOR Ø10 THRU Ø25
 D= 8d FOR Ø28, Ø32 AND Ø36

D.11.2.8 LAP SPICES LENGTHS (mm):

SIZE	DEVELOPED LENGTH (f'c=28MPa)	DEVELOPED LENGTH (f'c=41MPa)
10	270	270
12	320	320
16	420	420
20	530	530
25	810	670
28	1020	840
32	1330	1100
36	1680	1390

D.11.2.8 DIMENSIONS FOR STIRRUPS AND CROSS TIE HOOKS



NOTE:
 PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS. THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.
 ENGR. ALBERTO C. CAÑETE
 TEAM LEADER

CONSULTANTS	SUBMITTED BY	DESIGNED BY	REVISIONS	DATE	PROJECT TITLE	SCALE	DRAWING STATUS
 UIC CORPORATE BLDG., 8 LANES STREET, WISRA, DILMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI	ALBERTO C. CAÑETE., M.Eng., P.P., F. ASEP PROJECT MANAGER - UICI	A		DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000.00) - OVERPASS	AS SHOWN	DRAFT DRAWING
			B			PROJECT CODE	DRAWING NO. SIZE
			C				P301GN-01 A1
			D				
			E				
			F				
GENERAL NOTES						DATE APPROVED	DATE REVISED REV.

GENERAL NOTES

D.11.3 CONSTRUCTION JOINT
 D.11.3.1 THE POSITION AND FORM OF ANY CONSTRUCTION JOINT SHALL BE AS SHOWN ON DRAWINGS OR AS AGREED WITH THE ENGINEER.
 D.11.3.2 THE INTERFACE BETWEEN THE FIRST-AND SECOND-POUR CONCRETES SHALL BE ROUGHENED WITH WITH AN AMPLITUDE OF 6mm MINIMUM.

D.11.4 FORMWORK
 FORMWORKS SHALL BE CONSTRUCTED SUCH THAT IT WILL NOT YIELD UNDER CONSTRUCTION LOAD AND SHALL BE SUCH AS TO AVOID THE FORMATION OF FINS. ALL CORNERS OF CONCRETE MEMBERS SHALL BE CHAMFERED TO 20mm UNLESS NOTED OTHERWISE ON DRAWINGS. STRIPPING OF FORMS AND SHORES SHALL BE AS DESIGNATED AND APPROVED BY THE ENGINEER. THE FOLLOWING MAY BE USED AS A GUIDE:

	MINIMUM TIME
SHORING UNDER GIRDERS, BEAMS, FRAMES	14 DAYS
DECK SLABS	14 DAYS
WALLS	7 DAYS
COLUMNS	7 DAYS
SIDES OF BEAMS	2 DAYS

D.11.5 PROTECTION AND CURING OF CONCRETE
 CONCRETE SURFACES SHALL BE PROTECTED FROM HARMFUL EFFECTS OF SUN, WIND AND RUNNING WATER, AND SHALL BE KEPT DAMP FOR AT LEAST 7 DAYS, AND AS REQUIRED BY THE ENGINEER.

D.12 PRESTRESSED CONCRETE

D.12.1 GIRDER DESIGN GUIDE

D.12.1.1 POST-TENSIONING STEEL : THE PROPOSED TYPE OF TENDONS WHICH WILL BE USED IN THE POST-TENSIONED DESIGNS, ALL NECESSARY ADDITIONAL DETAILS INCLUDING THOSE FOR END ANCHORAGES, METHODS TO BE EMPLOYED AND PROCEDURES TO BE FOLLOWED, SHALL BE AS APPROVED BY THE ENGINEERS. A PORTION OF THE TENDONS SHALL BE DRAPED LONGITUDINAL IN PARABOLIC POSITIONS, ALL TENDONS SHALL BE PLACED SO THAT THEIR CENTER OF GRAVITY WILL BE AT THE POSITION SHOWN ON PLANS. THE TOTAL POST-TENSION FORCE AFTER LOSSES REQUIRED AT MIDSPAN SHALL BE PROVIDED AS CALLED FOR IN THE VARIOUS DESIGNS. THE REQUIRED FORCES AFTER LOSSES SHALL BE OBTAINED BY APPLYING INITIAL TENSILE FORCES OF SUFFICIENT MAGNITUDE TO ALLOW FOR ALL SUBSEQUENT LOSSES, INCLUDING THOSE FOR ELASTIC SHORTENING, SHRINKAGE, CREEP, RELAXATION, FRICTION, AND EFFICIENCY OF END ANCHORAGES. AFTER SECURING THE END ANCHORAGES ALL TENDONS SHALL BE PRESSURE GROUTED IN THEIR CONDUITS IN ACCORDANCE WITH "SPECIFICATIONS".

D.12.1.2 CONCRETE FOR GIRDERS SHALL BE A MINIMUM STRENGTH OF 41 MPa (6000 PSI) AT THE AGE OF 28 DAYS.

D.12.1.3 THE CONTRACTOR MAY PROPOSE ANY ALTERNATIVE TENDON SIZE AND LAYOUT AND SUBJECT SHALL MEET THE APPROVAL OF THE ENGINEER.

D.12.1.4 THE REQUIRED STRENGTH OF CONCRETE AT TIME OF TENSIONING SHALL BE 35 MPa (5,000 PSI). A GRID CONSISTING OF #12 BARS AT 100 CENTERS IN BOTH DIRECTIONS SHALL BE PLACED NEAR EACH ANCHORAGE OF THE POST-TENSIONING SYSTEM. POST-TENSIONING FORCES SHOWN BELOW COMPUTED FOR TENDONS JACKED SIMULTANEOUSLY AT BOTH ENDS, FRICTIONS COEFFICIENTS ARE $K = 0.0066/m$ AND $u = 0.25$ WITH AN ANCHORAGE DEFORMATION OF 6mm.

D.12.1.5 HANDLING PRESTRESSED CONCRETE BEAMS : THE BEAMS SHALL BE MAINTAINED IN AN UPRIGHT POSITION AND SHALL BE LIFTED BY SUITABLE DEVICES PROVIDED AT THE ENDS OF THE BEAMS. ATTENTION IS DIRECTED TO THE INCREASED DIFFICULTY OF LIFTING BEAMS WITHOUT END BLOCKS. THE CONTRACTOR PROPOSED LIFTING DETAILS SHOULD BE GIVEN CAREFULL CONSIDERATION BEFORE BEING SUBMITTED ON SHOP DRAWING FOR APPROVAL. THE USE OF HOLES FOR LIFTING PURPOSES WILL NOT BE PERMITTED.

D.12.1.6 CONTRACTOR SUBMIT FOR APPROVAL BY THE ENGINEER THE CORRESPONDING ELONGATION OF THE PRESTRESSING TENDONS.

D.13 BORED PILES

D.13.1 SUBMITTALS

AT LEAST 15 DAYS BEFORE WORK ON SHAFTS BEGINS, THE CONTRACTOR SHALL SUBMIT THE FOLLOWING TO THE ENGINEER FOR REVIEW AND APPROVAL.

- D.13.1.1 LIST OF PROPOSED EQUIPMENT TO BE USED INCLUDING CRANES, DRILLS, AUGERS, BAILING BUCKETS, FINAL CLEANING EQUIPMENT, DESANDING EQUIPMENT, SLURRY PUMPS, CASING, ETC.
- D.13.1.2 DETAILS OF OVERALL CONSTRUCTION OPERATION SEQUENCE AND THE SEQUENCE OF SHAFT CONSTRUCTION IN BENTS OR GROUPS.
- D.13.1.3 DETAILS OF SHAFT EXCAVATION METHOD.
- D.13.1.4 WHEN SLURRY IS REQUIRED, DETAILS OF THE METHOD PROPOSED FOR MIXING, CIRCULATING AND DESANDING SLURRY.
- D.13.1.5 DETAILS OF METHOD TO CLEAN THE SHAFT EXCAVATION.
- D.13.1.6 DETAILS OF REINFORCEMENT PLACEMENT INCLUDING SPLICES, SUPPORT & CENTRALIZATION METHODS.
- D.13.1.7 DETAILS OF CONCRETE PLACEMENT, CURING AND PROTECTION.
- D.13.1.8 DETAILS OF ANY REQUIRED LOAD TEST, AND;

(REFER TO DO. No. 37, SERIES FO 2016, Re: POLICIES & GUIDELINES ON THE TESTING OF BORED PILES FOR INFRASTRUCTURE PROJECTS)

- A. PILE DYNAMIC TEST (HIGH STRAIN DYNAMIC LOAD TEST) SHALL BE CONDUCTED ON BORED PILES TO DETERMINE / CHECK THE ACTUAL BEARING CAPACITY, SKIN FRICTION OF THE BORED PILE.
- B. PILE INTEGRITY TEST – THE QUALITATIVE EVALUATION OF THE PHYSICAL DIMENSIONS, CONTINUITY OF A PILE, AND CONSISTENCY OF THE PILE MATERIAL.

D.13.1.9 OTHER INFORMATION SHOWN ON THE PLANS OR REQUESTED BY THE ENGINEER. THE CONTRACTOR SHALL NOT START THE CONSTRUCTION OF DRILLED SHAFTS UNTIL SUCH DRAWINGS HAVE BEEN APPROVED BY THE ENGINEER. SUCH APPROVAL WILL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR RESULTS OBTAINED BY USE OF THESE DRAWINGS OR ANY OF HIS OTHER RESPONSIBILITIES UNDER THE CONTRACT.

D.13.2 CONCRETE
 CONCRETE SHALL BE CLASS "B" UNLESS OTHERWISE SPECIFIED. MINIMUM CEMENT CONTENT SHALL BE NOT LESS THAN 380 kg/cu.m.; MAXIMUM SIZE AGGREGATE=20mm; SPECIFIED COMP. STRENGTH (28 DAYS) 41 MPa.



D.13.3 REINFORCING STEEL
 UNLESS INDICATED OTHERWISE, REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615) GRADE 60, DEFORMED

D.13.4 CASINGS
 CASINGS REQUIRED TO BE INCORPORATED AS PART OF THE PERMANENT WORK SHALL BE AASHTO M270 (ASTM A709) GRADE 36, UNLESS OTHERWISE SPECIFIED.

D.13.5 PROTECTION OF EXISTING STRUCTURES
 ALL REASONABLE PRECAUTIONS SHALL BE TAKEN TO PREVENT DAMAGE TO EXISTING STRUCTURES AND UTILITIES. THESE MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, SELECTING CONSTRUCTION METHODS AND PROCEDURES THAT WILL PREVENT EXCESSIVE CAVING OF THE SHAFT EXCAVATION, MONITORING AND CONTROLLING THE VIBRATIONS FROM THE DRIVING OF CASING OR SHEETING, DRILLING OF THE SHAFT OR FROM BLASTING, IF PERMITTED.

D.13.6 FIELD TEST
 LOW STRAIN INTEGRITY TESTING SHALL BE CONDUCTED FOR ALL BORED PILES OR AS DIRECTED BY THE ENGINEER TO VERIFY/CHECK THE CONCRETE HOMOGENEITY AND TO LOCATE/EVALUATE ANY POSSIBLE IRREGULARITIES IN THE COMPLETED BORED PILE. HIGH STRAIN PILE TESTING SHALL BE CONDUCTED AT LEAST TEN (10) PERCENT OF THE BORED PILES OR AS DIRECTED BY THE ENGINEER TO VERIFY/CHECK THE PILE CAPACITY. THE LOCATION SHALL BE BASED ON THE RESULTS OF THE LOW STRAIN TESTS OR AS DIRECTED BY THE ENGINEER.

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 Urban Integrated Consultants, Inc. <small>UIC CORPORATE BLDG., 8 LANOS STREET, VASRA, DALMAN, QUEZON CITY, 1128</small>	EFREN L. DAVID PRESIDENT - UICI	ALBERTO C. CAÑETE., M.Eng., P.P., F. ASEP PROJECT MANAGER - UICI	RYAN PAUL S. GALURA PROJECT MANAGER	JOVITO M. SUNGA OIC - PMD		DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING	
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					A			P301GN-02	A1
					B			DATE APPROVED	DATE REVISED
					C		GENERAL NOTES	-	-
					D			-	-
				E				-	
				F				-	

GENERAL NOTES

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

C.3 ELASTOMERIC BEARING PADS

ELASTOMERIC BEARING PADS SHALL BE 100 % VIRGIN CHLOROPRENE (NEOPRENE) PADS WITH DUROMETER HARDNESS 60 UNLESS OTHERWISE SPECIFIED ON THE PLANS. BEARING PADS SHALL BE LAMINATED TYPE BEARING PADS CONSISTING OF LAYER OF ELASTOMER . RESTRAINED AT THEIR INTERFACES BY BONDED LAMINATIONS AS REQ'D ON THE PLANS, LAMINATED PLATE SHALL BE NON-CORROSIVE MILD STEEL SHEET. ALL BEARING PADS SHALL CONFORM TO THE REQUIREMENT SPECIFIED IN THE AASHTO SPECIFICATIONS AND DPWH D.O. NO. 25 SERIES OF 1997.

C.4 HANDLING HOOK DEVICES

HANDLING HOOK DEVICES OF PRESTRESSED MEMBERS SHALL BE AS SHOWN ON THE PLANS OR ANY SUITABLE DEVICES PREPARED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

C.5 WATER STOPPER

WATER STOPPER SHALL BE MADE OF RUBBER TO BE SPECIFIED ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

C.6 JOINT FILLER

JOINT FILLER, HOT POURED ELASTIC TYPE, USED FOR EXPANSION JOINT SHALL CONFORM TO AASHTO M 213

C.7 BOND BREAKER

BOND BREAKER SHALL BE WOVEN BURLAP FABRIC SATURATED WITH BUTYNOUS SUBSTANCES AS USED IN WATERPROOFING.

D. CONSTRUCTION

D.1 CONSTRUCTION SPECIFICATIONS

ALL CONSTRUCTION SHALL CONFORM TO:

- D.1.1 CONDITIONS OF CONTRACT
 D.1.2 THE SPECIAL PROVISIONS
 D.1.3 THE DPWH STANDARD SPECIFICATIONS FOR HIGHWAY, BRIDGES, AND AIRPORTS, VOLUME II 2004 EDITION, AS MODIFIED ON THE DRAWINGS.

D.2 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.

D.3 CONSTRUCTION LIMITS

THE CONTRACTOR SHALL VERIFY AND WORK WITHIN THE CONSTRUCTION LIMITS OR EASEMENTS OF THE BRIDGE STRUCTURE. HE SHALL HOWEVER PROVIDE FOR AREAS HE MAY REQUIRE FOR HIS OWN USE. IT IS THE INTENT OF THE PLANS TO LEAVE UNDISTURBED ANYTHING 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.

D.4 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 THE 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 WILL BE 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.

D.5 PUBLIC UTILITIES/FACILITIES

REFER TO SPECIAL PROVISIONS

D.6 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.

D.7 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.

D.8 MATERIAL SOURCES

WHERE COMMON BORROW IS REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING HIS OWN SOURCES OF COMMON BORROW AS OUTLINED IN THE SPECIFICATIONS.

D.9 EXCAVATION

EXCAVATION FOR STRUCTURES SHALL BE NEAT LINES AS SHOWN ON THE PLANS AND THE SOIL UNDERNEATH STRUCTURE FOUNDATIONS SHALL NOT BE DISTURBED.

D.10 BACKFILLING

BACKFILLING FOR STRUCTURES SHALL BE DONE WITH GRANULAR MATERIALS COMPACTED ACCORDING TO SPECIFICATIONS.

D.11 REINFORCED CONCRETE

D.11.1 CONCRETE MIX AND PLACING

D.11.1.1 DESIGN OF CONCRETE MIX SHALL MEET THE DESIGN CONCRETE STRENGTH GIVEN UNDER ITEM 1 OF MATERIALS.

D.11.1.2 CONCRETE SHALL BE DEPOSITED, VIBRATED AND CURED IN ACCORDANCE WITH THE SPECIFICATIONS.

D.11.1.3 FOR CONCRETE DEPOSITED AGAINST THE GROUND, LEAN CONCRETE WITH A MINIMUM THICKNESS OF 100mm SHALL BE LAID FIRST BEFORE INSTALLING THE REINFORCEMENT. THE LEAN CONCRETE SHALL NOT BE CONSIDERED IN MEASURING THE STRUCTURAL DEPTH OF CONCRETE SECTION.

D.11.1.4 THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL PLACING SEQUENCES FOR ALL CONCRETING WORK.

D.11.2 BAR BENDING, SPlicing AND PLACING

D.11.2.1 PRIOR TO FABRICATION, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, SHOP DRAWINGS INDICATING THE BENDING, CUTTING, SPlicing AND INSTALLATION OF ALL REINFORCING BARS.

D.11.2.2 BARS SHALL BE BENT COLD. BARS PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT UNLESS PERMITTED BY THE ENGINEER.

D.11.2.3 BAR SPlicing NOT INDICATED ON DRAWINGS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

D.11.2.4 WELDED SPlicing, IF APPROVED BY THE ENGINEER, SHALL DEVELOP IN TENSION AT LEAST 125% OF THE SPECIFIED YIELD STRENGTH OF THE BARS.

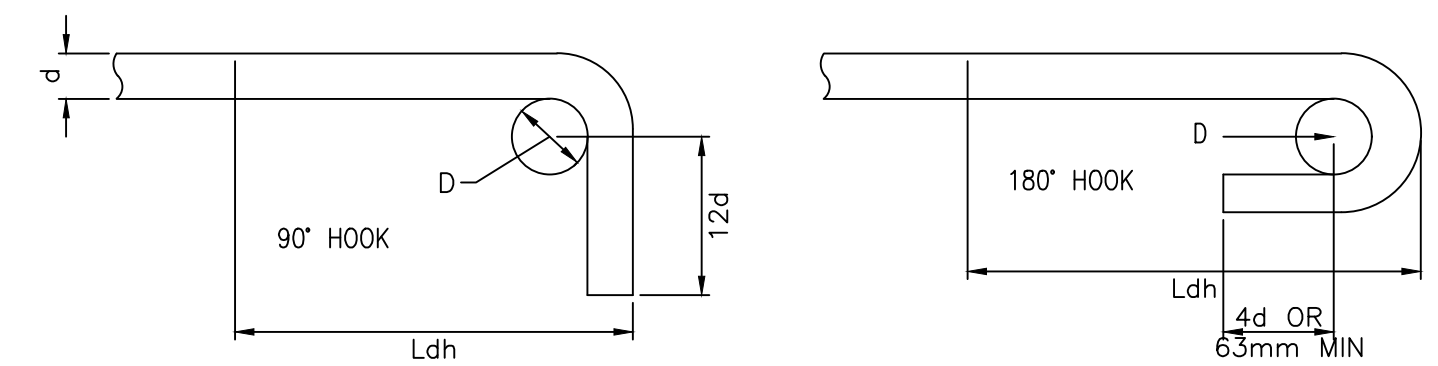
D.11.2.5 NOT MORE THAN 50% OF THE BARS AT ANY ONE SECTION SHALL BE SPliced, UNLESS SPECIFICALLY INDICATED.

D.11.2.6 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 25mm. THE BARS IN THE UPPER LAYER SHALL BE PLACED DIRECTLY ABOVE THOSE IN THE BOTTOM LAYER.

D.11.2.7 HOOKS AND BENDS

DIMENSIONS OF 90-DEGREE AND 180-DEGREE HOOKS

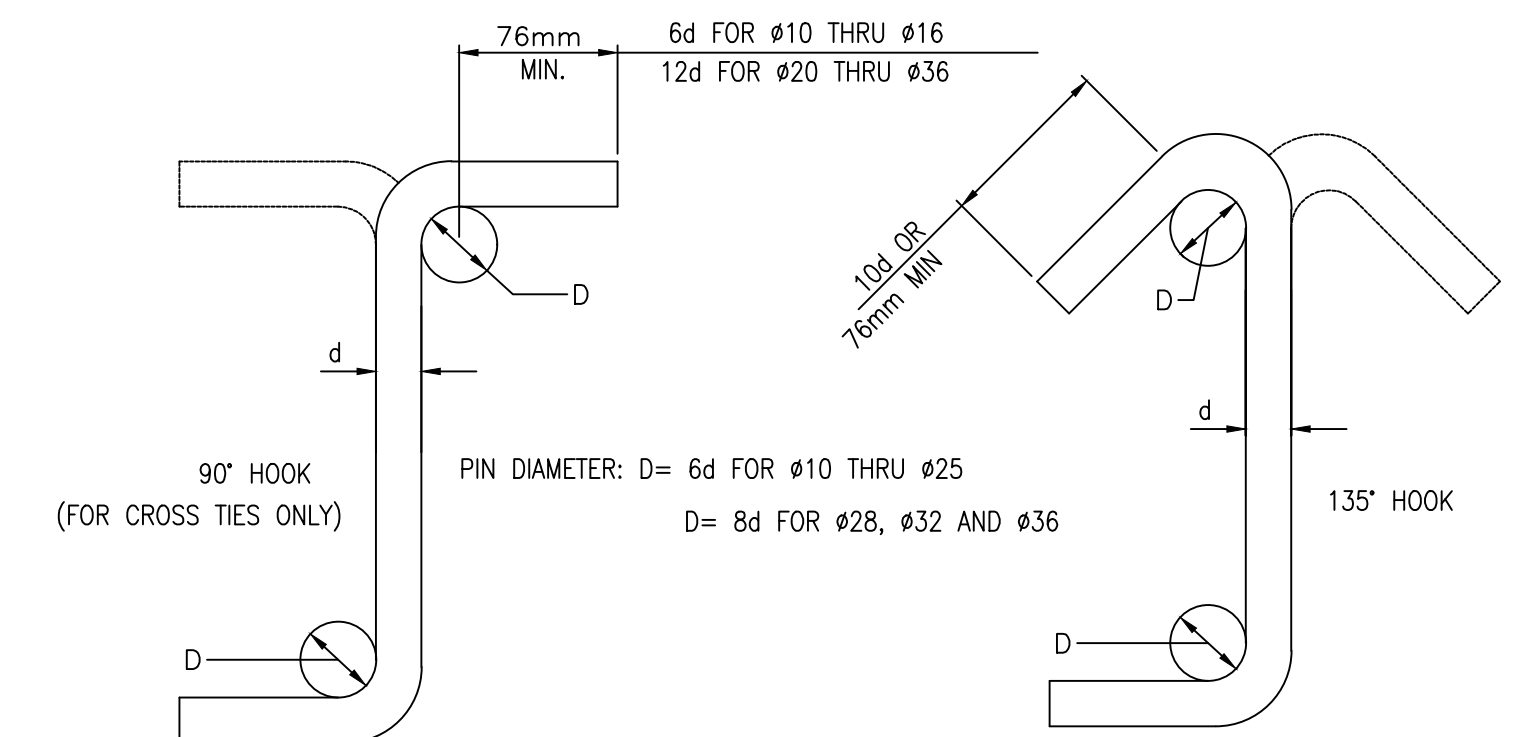


PIN DIAMETER: D= 6d FOR Ø10 THRU Ø25
 D= 8d FOR Ø28, Ø32 AND Ø36

D.11.2.8 LAP SPICES LENGTHS (mm):

SIZE	DEVELOPED LENGTH
10	270
12	320
16	420
20	530
25	810
28	1020
32	1330
36	1680

D.11.2.8 DIMENSIONS FOR STIRRUPS AND CROSS TIE HOOKS



NOTE:
 PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS. THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.

ENGR. ALBERTO C. CAÑETE
 TEAM LEADER

CONSULTANTS	SUBMITTED BY	CHECKED BY	REVISIONS	DATE	PROJECT TITLE	SCALE	DRAWING STATUS
UIC CORPORATE BLDG., 8 LANES STREET, WISRA, DAVAO, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI	ALBERTO C. CAÑETE M.Eng P.P., F.ASEP PROJECT MANAGER - UICI	A		DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (STA.1+500-STA.16+000) - OVERPASS 2	AS SHOWN	DRAFT DRAWING
			B			PROJECT CODE	DRAWING NO.
			C			P5GN-01	A1
			D			DATE APPROVED	DATE REVISED
			E				
			F				

G E N E R A L N O T E S

D.11.3 CONSTRUCTION JOINT
 D.11.3.1 THE POSITION AND FORM OF ANY CONSTRUCTION JOINT SHALL BE AS SHOWN ON DRAWINGS OR AS AGREED WITH THE ENGINEER.
 D.11.3.2 THE INTERFACE BETWEEN THE FIRST-AND SECOND-POUR CONCRETES SHALL BE ROUGHENED WITH WITH AN AMPLITUDE OF 6mm MINIMUM.

D.11.4 FORMWORK
 FORMWORKS SHALL BE CONSTRUCTED SUCH THAT IT WILL NOT YIELD UNDER CONSTRUCTION LOAD AND SHALL BE SUCH AS TO AVOID THE FORMATION OF FINS. ALL CORNERS OF CONCRETE MEMBERS SHALL BE CHAMFERED TO 20mm UNLESS NOTED OTHERWISE ON DRAWINGS. STRIPPING OF FORMS AND SHORES SHALL BE AS DESIGNATED AND APPROVED BY THE ENGINEER. THE FOLLOWING MAY BE USED AS A GUIDE:

	MINIMUM TIME
SHORING UNDER GIRDERS, BEAMS, FRAMES	14 DAYS
DECK SLABS	14 DAYS
WALLS	7 DAYS
COLUMNS	7 DAYS
SIDES OF BEAMS	2 DAYS

D.11.5 PROTECTION AND CURING OF CONCRETE
 CONCRETE SURFACES SHALL BE PROTECTED FROM HARMFUL EFFECTS OF SUN, WIND AND RUNNING WATER, AND SHALL BE KEPT DAMP FOR AT LEAST 7 DAYS, AND AS REQUIRED BY THE ENGINEER.

D.12 PRESTRESSED CONCRETE

D.12.1 GIRDER DESIGN GUIDE

D.12.1.1 POST-TENSIONING STEEL : THE PROPOSED TYPE OF TENDONS WHICH WILL BE USED IN THE POST-TENSIONED DESIGNS, ALL NECESSARY ADDITIONAL DETAILS INCLUDING THOSE FOR END ANCHORAGES, METHODS TO BE EMPLOYED AND PROCEDURES TO BE FOLLOWED, SHALL BE AS APPROVED BY THE ENGINEERS. A PORTION OF THE TENDONS SHALL BE DRAPED LONGITUDINAL IN PARABOLIC POSITIONS, ALL TENDONS SHALL BE PLACED SO THAT THEIR CENTER OF GRAVITY WILL BE AT THE POSITION SHOWN ON PLANS. THE TOTAL POST-TENSION FORCE AFTER LOSSES REQUIRED AT MIDSPAN SHALL BE PROVIDED AS CALLED FOR IN THE VARIOUS DESIGNS. THE REQUIRED FORCES AFTER LOSSES SHALL BE OBTAINED BY APPLYING INITIAL TENSILE FORCES OF SUFFICIENT MAGNITUDE TO ALLOW FOR ALL SUBSEQUENT LOSSES, INCLUDING THOSE FOR ELASTIC SHORTENING, SHRINKAGE, CREEP, RELAXATION, FRICTION, AND EFFICIENCY OF END ANCHORAGES. AFTER SECURING THE END ANCHORAGES ALL TENDONS SHALL BE PRESSURE GROUTED IN THEIR CONDUITS IN ACCORDANCE WITH "SPECIFICATIONS".

D.12.1.2 CONCRETE FOR GIRDERS SHALL BE A MINIMUM STRENGTH OF 35 N/mm (5000 PSI) AT THE AGE OF 28 DAYS.

D.12.1.3 THE CONTRACTOR MAY PROPOSE ANY ALTERNATIVE TENDON SIZE AND LAYOUT AND SUBJECT SHALL MEET THE APPROVAL OF THE ENGINEER.

D.12.1.4 THE REQUIRED STRENGTH OF CONCRETE AT TIME OF TENSIONING SHALL BE 28 MPa (4,000 PSI). A GRID CONSISTING OF #12 BARS AT 100 CENTERS IN BOTH DIRECTIONS SHALL BE PLACED NEAR EACH ANCHORAGE OF THE POST-TENSIONING SYSTEM. POST-TENSIONING FORCES SHOWN BELOW COMPUTED FOR TENDONS JACKED SIMULTANEOUSLY AT BOTH ENDS, FRICTIONS COEFFICIENTS ARE $K = 0.0066/m$ AND $u = 0.25$ WITH AN ANCHORAGE DEFORMATION OF 6mm.

D.12.1.5 HANDLING PRESTRESSED CONCRETE BEAMS : THE BEAMS SHALL BE MAINTAINED IN AN UPRIGHT POSITION AND SHALL BE LIFTED BY SUITABLE DEVICES PROVIDED AT THE ENDS OF THE BEAMS. ATTENTION IS DIRECTED TO THE INCREASED DIFFICULTY OF LIFTING BEAMS WITHOUT END BLOCKS. THE CONTRACTOR PROPOSED LIFTING DETAILS SHOULD BE GIVEN CAREFULL CONSIDERATION BEFORE BEING SUBMITTED ON SHOP DRAWING FOR APPROVAL. THE USE OF HOLES FOR LIFTING PURPOSES WILL NOT BE PERMITTED.

D.12.1.6 CONTRACTOR SUBMIT FOR APPROVAL BY THE ENGINEER THE CORRESPONDING ELONGATION OF THE PRESTRESSING TENDONS.

D.13 BORED PILES

D.13.1 SUBMITTALS

AT LEAST 15 DAYS BEFORE WORK ON SHAFTS BEGINS, THE CONTRACTOR SHALL SUBMIT THE FOLLOWING TO THE ENGINEER FOR REVIEW AND APPROVAL.

- D.13.1.1 LIST OF PROPOSED EQUIPMENT TO BE USED INCLUDING CRANES, DRILLS, AUGERS, BAILING BUCKETS, FINAL CLEANING EQUIPMENT, DESANDING EQUIPMENT, SLURRY PUMPS, CASING, ETC.
- D.13.1.2 DETAILS OF OVERALL CONSTRUCTION OPERATION SEQUENCE AND THE SEQUENCE OF SHAFT CONSTRUCTION IN BENTS OR GROUPS.
- D.13.1.3 DETAILS OF SHAFT EXCAVATION METHOD.
- D.13.1.4 WHEN SLURRY IS REQUIRED, DETAILS OF THE METHOD PROPOSED FOR MIXING, CIRCULATING AND DESANDING SLURRY.
- D.13.1.5 DETAILS OF METHOD TO CLEAN THE SHAFT EXCAVATION.
- D.13.1.6 DETAILS OF REINFORCEMENT PLACEMENT INCLUDING SPLICES, SUPPORT & CENTRALIZATION METHODS.
- D.13.1.7 DETAILS OF CONCRETE PLACEMENT, CURING AND PROTECTION.
- D.13.1.8 DETAILS OF ANY REQUIRED LOAD TEST, AND;

(REFER TO DO. No. 37, SERIES FO 2016, Re: POLICIES & GUIDELINES ON THE TESTING OF BORED PILES FOR INFRASTRUCTURE PROJECTS)

- A. PILE DYNAMIC TEST (HIGH STRAIN DYNAMIC LOAD TEST) SHALL BE CONDUCTED ON BORED PILES TO DETERMINE / CHECK THE ACTUAL BEARING CAPACITY, SKIN FRICTION OF THE BORED PILE.
- B. PILE INTEGRITY TEST – THE QUALITATIVE EVALUATION OF THE PHYSICAL DIMENSIONS, CONTINUITY OF A PILE, AND CONSISTENCY OF THE PILE MATERIAL.
- C. THE REQUIRED NUMBER OF BORED PILES FOR PILE DYNAMIC TEST AND PILE INTEGRITY TEST SHALL BE DISTRIBUTED AS FOLLOWS : 1 PER ABUTMENT.

D.13.1.9 OTHER INFORMATION SHOWN ON THE PLANS OR REQUESTED BY THE ENGINEER. THE CONTRACTOR SHALL NOT START THE CONSTRUCTION OF DRILLED SHAFTS UNTIL SUCH DRAWINGS HAVE BEEN APPROVED BY THE ENGINEER. SUCH APPROVAL WILL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR RESULTS OBTAINED BY USE OF THESE DRAWINGS OR ANY OF HIS OTHER RESPONSIBILITIES UNDER THE CONTRACT.

D.13.2 CONCRETE
 CONCRETE SHALL BE CLASS "B" UNLESS OTHERWISE SPECIFIED. MINIMUM CEMENT CONTENT SHALL BE NOT LESS THAN 380 kg/cu.m.; MAXIMUM SIZE AGGREGATE-20mm; SPECIFIED COMP. STRENGTH (28 DAYS) 41 MPa.

D.13.3 REINFORCING STEEL
 UNLESS INDICATED OTHERWISE, REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615) GRADE 60, DEFORMED

D.13.4 CASINGS
 CASINGS REQUIRED TO BE INCORPORATED AS PART OF THE PERMANENT WORK SHALL BE AASHTO M270 (ASTM A709) GRADE 36, UNLESS OTHERWISE SPECIFIED.

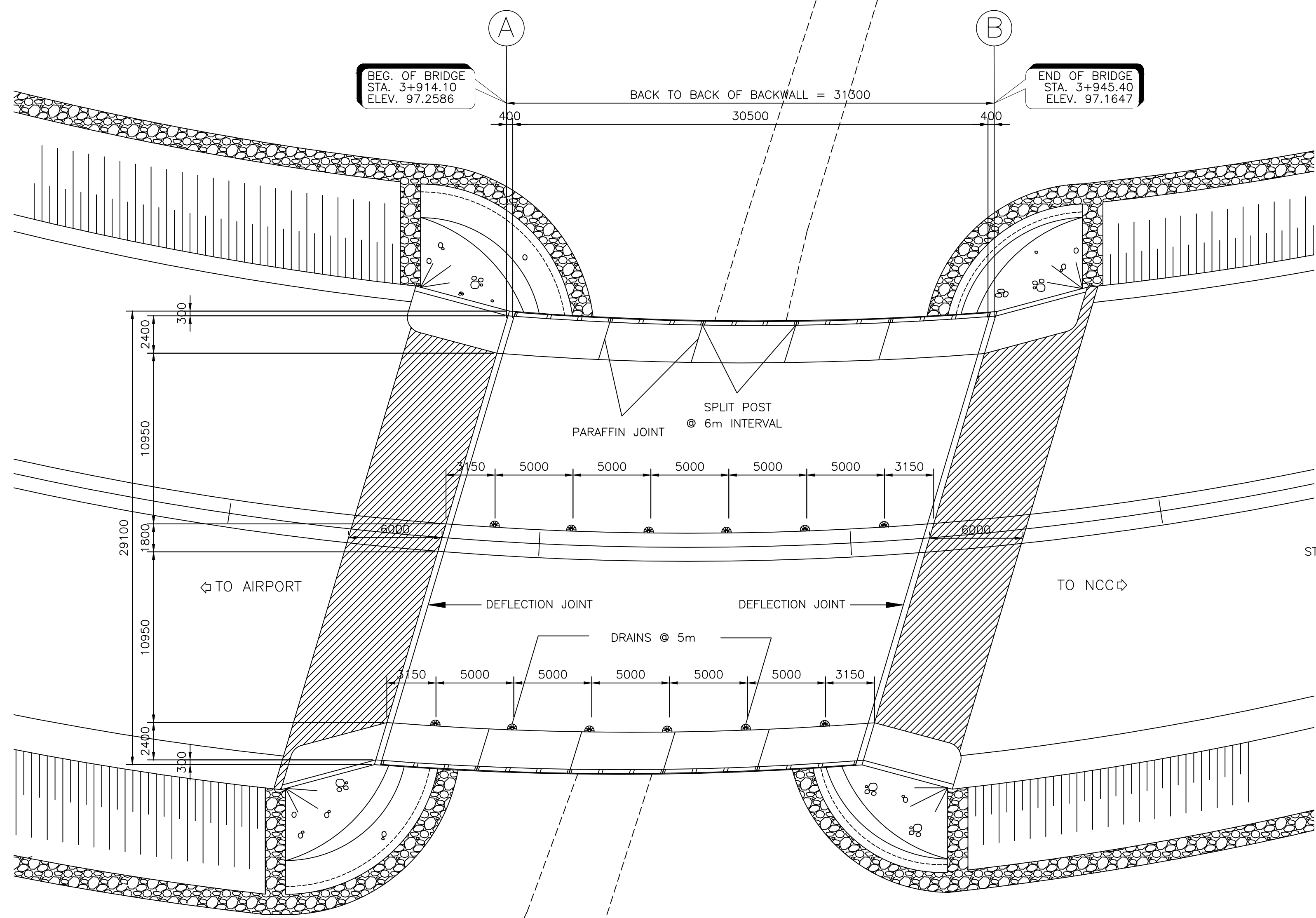
D.13.5 PROTECTION OF EXISTING STRUCTURES
 ALL REASONABLE PRECAUTIONS SHALL BE TAKEN TO PREVENT DAMAGE TO EXISTING STRUCTURES AND UTILITIES. THESE MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, SELECTING CONSTRUCTION METHODS AND PROCEDURES THAT WILL PREVENT EXCESSIVE CAVING OF THE SHAFT EXCAVATION, MONITORING AND CONTROLLING THE VIBRATIONS FROM THE DRIVING OF CASING OR SHEETING, DRILLING OF THE SHAFT OR FROM BLASTING, IF PERMITTED.

D.13.6 FIELD TEST
 LOW STRAIN INTEGRITY TESTING SHALL BE CONDUCTED FOR ALL BORED PILES OR AS DIRECTED BY THE ENGINEER TO VERIFY/CHECK THE CONCRETE HOMOGENEITY AND TO LOCATE/EVALUATE ANY POSSIBLE IRREGULARITIES IN THE COMPLETED BORED PILE. HIGH STRAIN PILE TESTING SHALL BE CONDUCTED AT LEAST TEN (10) PERCENT OF THE BORED PILES OR AS DIRECTED BY THE ENGINEER TO VERIFY/CHECK THE PILE CAPACITY. THE LOCATION SHALL BE BASED ON THE RESULTS OF THE LOW STRAIN TESTS OR AS DIRECTED BY THE ENGINEER.

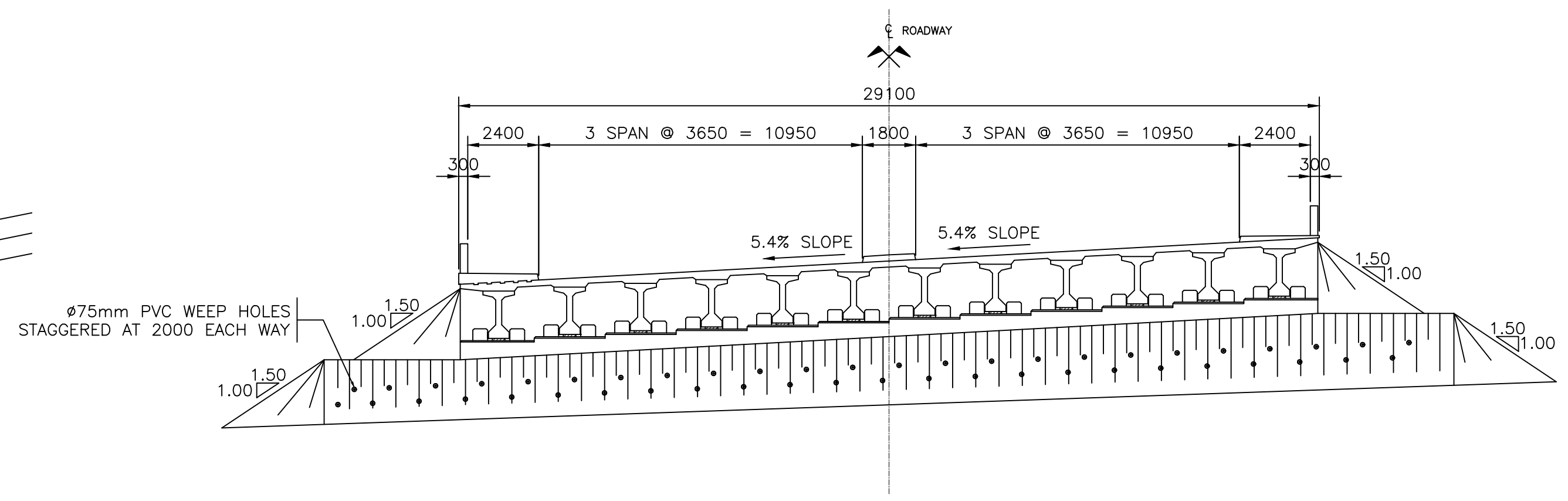
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 TEAM LEADER

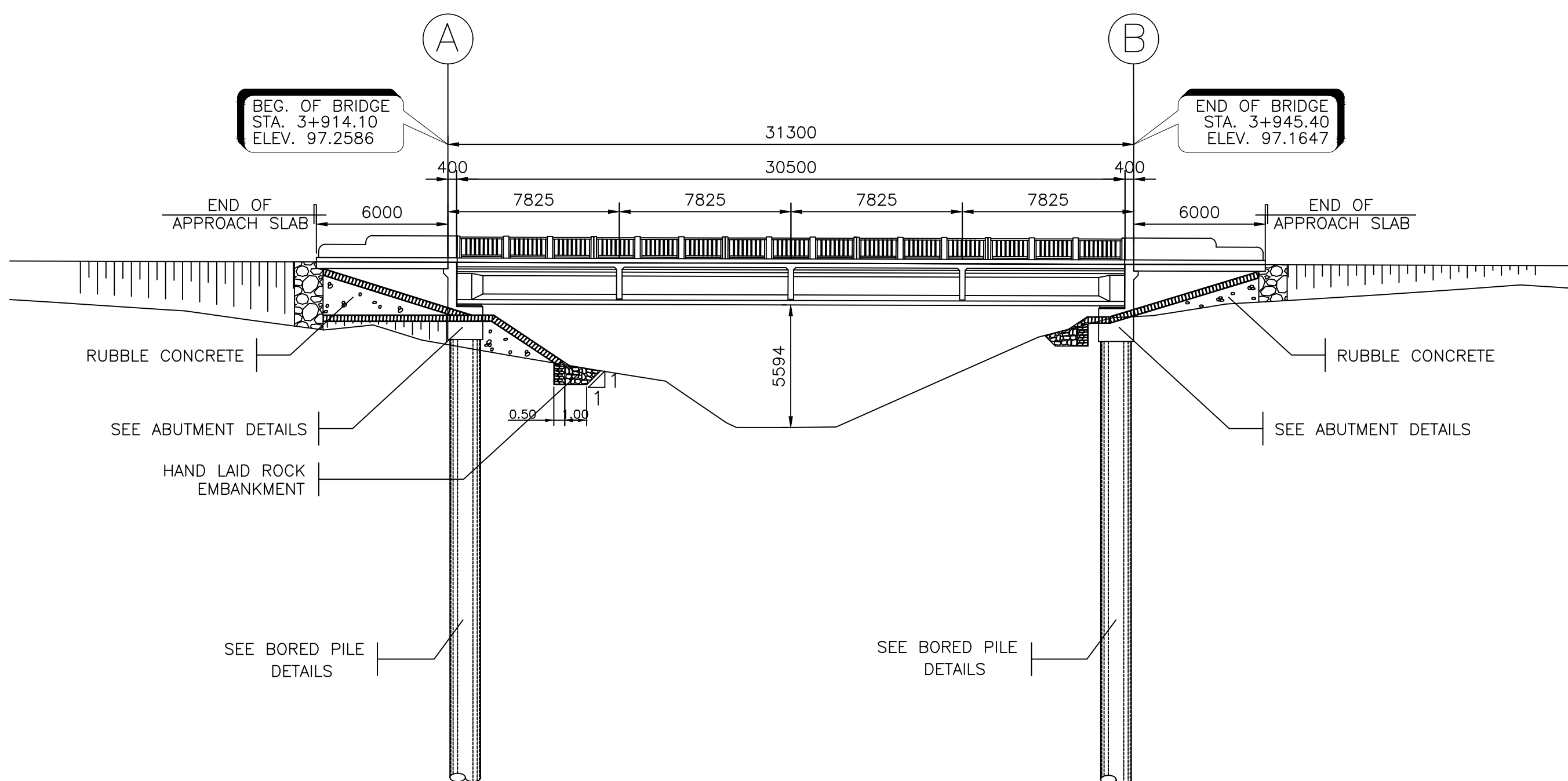
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 Urban Integrated Consultants, Inc. <small>103 CORPORATE BLDG., 8 LANES STREET, NAUSA, DALAMAN, QUEZON CITY, 1128</small>	EFREN L. DAVID PRESIDENT - UICI	ALBERTO C. CAÑETE M.Eng P.P., F.ASEP PROJECT MANAGER - UICI	RYAN PAUL S. GALURA PROJECT MANAGER	JOVITA M. SUNGA OIC - PMD		DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (STA.1+500-STA.16+000) - OVERPASS 2	AS SHOWN	DRAFT DRAWING
	DATE: -	DATE: -	DATE: -	DATE: -		GENERAL NOTES	PROJECT CODE	DRAWING NO. SIZE
							P5GN-02	A1
							DATE APPROVED	DATE REVISED REV.
							-	-



1 GENERAL PLAN
SCALE 1:200



3 SECTION @ ABUTMENT
SCALE 1:150



2 GENERAL ELEVATION
SCALE 1:200

OVERPASS 2 QUANTITY ESTIMATE

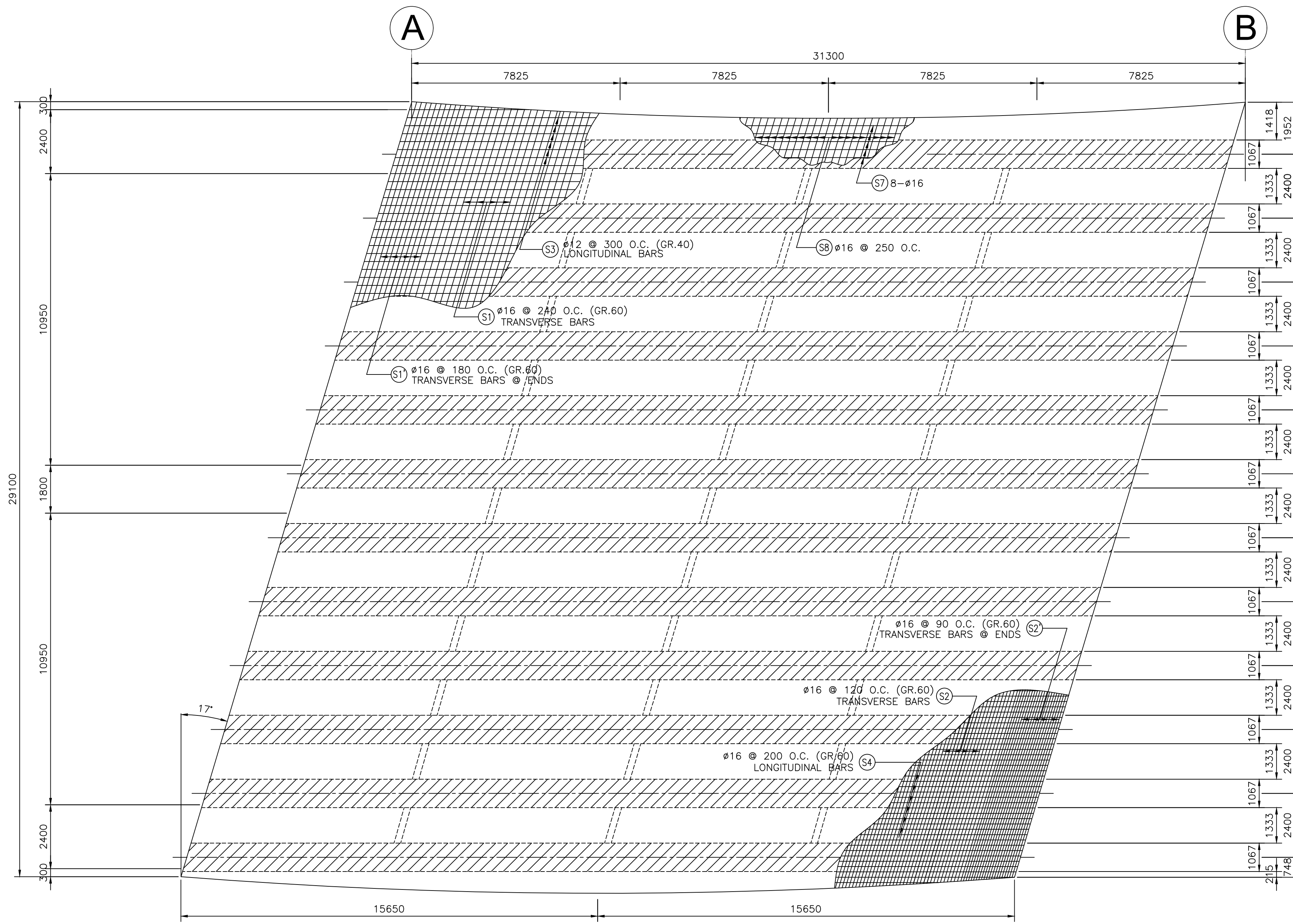
ITEM NO.	DESCRIPTION	UNITS	ABUTMENTS		SUPERSTRUCTURE	TOTAL
			A	B		
103 (2) a	Bridge Excavation (Common Soil)	cu.m.	83	72		155
104 (1) a	Embankment (From Roadway Excavation)	cu.m.	632	179		811
202 (1)	Crushed Aggregate Base Course	cu.m.	51	51		102
400 (23) a7	Bored Pile (1.40m Diameter)	l.m.	180	180		360
400 (24) g1	Permanent Casing (1.40 dia. x 10mm thk)	l.m.	54	54		108
400 (27) a	Load Test (Low Strain Dynamic Method, PIT)	ea.	5	5		10
400 (28)	Load Test (Pile Dynamic Method, PDA)	ea.	1	1		2
401 (2) a	Concrete Railing (Standard)	l.m.			64	64
404 (1) a	Reinforcing Steel Bar (GRADE 40)	kgs.	1019	1019	9844	11882
404 (1) b	Reinforcing Steel Bar (GRADE 60)	kgs.	26865	26865	57831	111561
405 (1) b2	Structural Concrete Class "A" (f'c=27.58 Mpa), 14days	cu.m.	51	51		102
405 (1) b3	Structural Concrete Class "A" (f'c=27.58 Mpa), 28days	cu.m.	180	180	421	781
406 (1) g6	Prestressed Structural Concrete Members (Type V, L=31.30m, I-Girders)	ea.			12	12
407 (8)	Lean Concrete (Class B, 16.50 Mpa)	cu.m.	28	28		56
412 (1)	Elastomeric Bearing Pad DURO 60	ea.	12	12		24
507 (1)	Rubble Concrete	cu.m.	278	133		411
508 (1)	Hand Laid Rock Embankment	cu.m.	83	72		155
517 (1) a	Drain Pipe 100mm dia. Galvanized Pipe Including Pipe Fittings	l.m.			175	175
SPL - 801	Premolded Expansion Joint Filler with Sealant	sq.m.	101	101		202

NOTE: REINFORCING BAR QUANTITIES FOR PRESTRESSED GIRDERS ARE NOT INCLUDED.

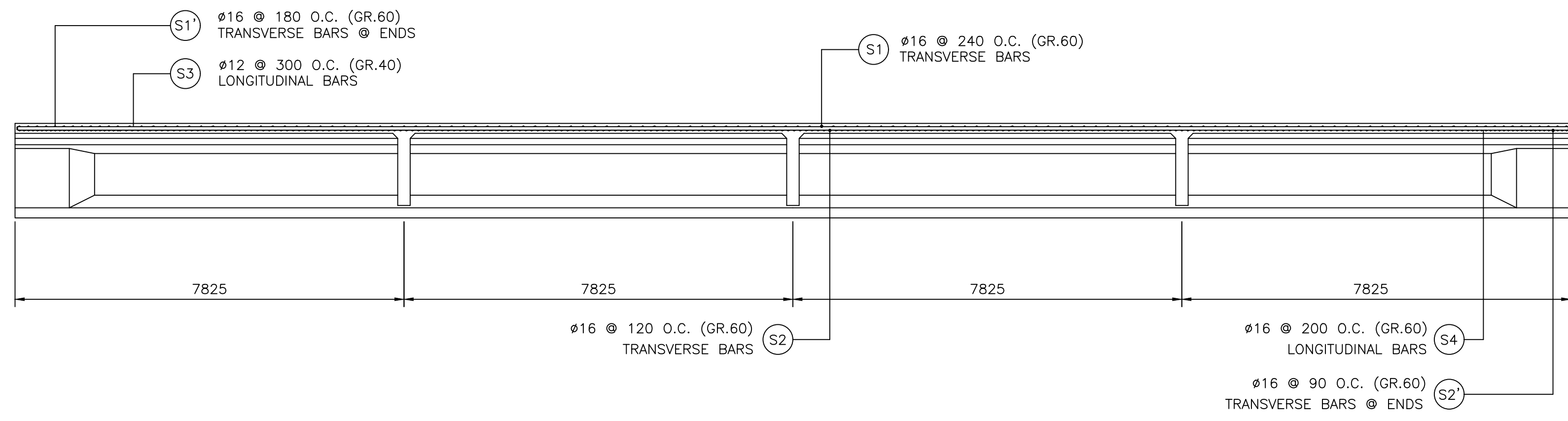
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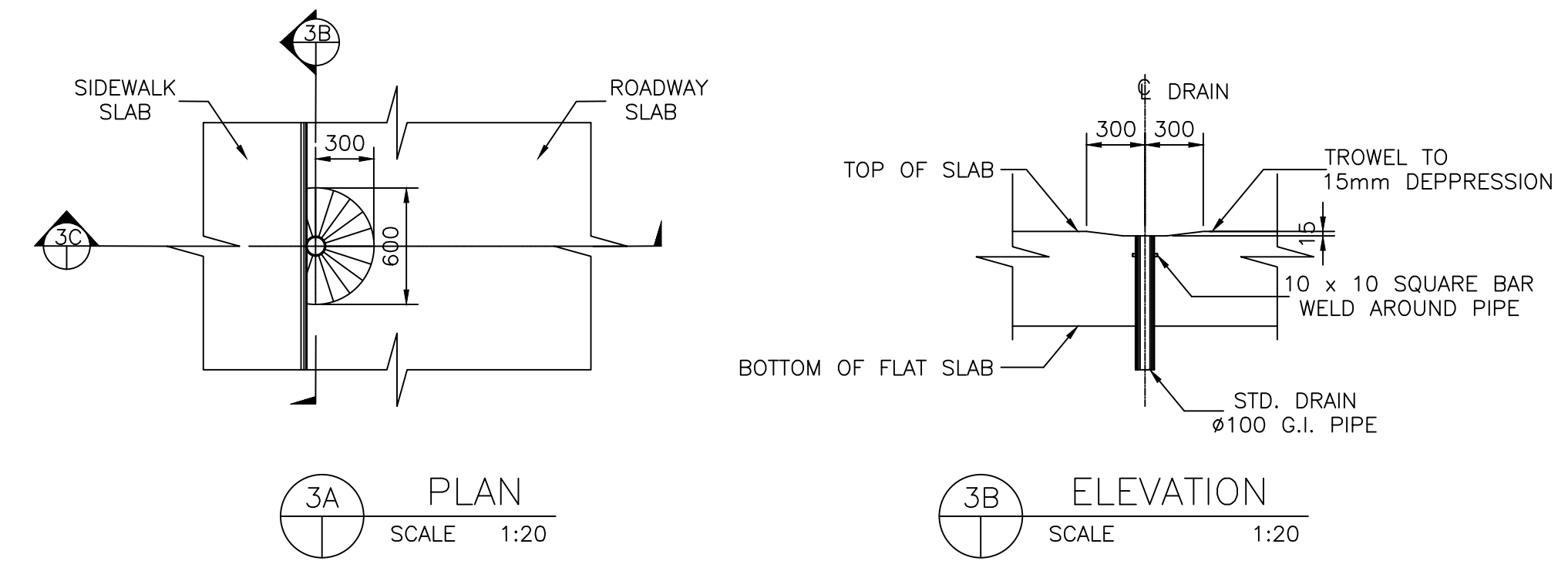
CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, MISRA, DALAMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	CHECKED BY ALBERTO C. CAÑETE M.Eng P.P., F.ASE PROJECT MANAGER - UICI DATE: -	 CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITA M. SUNGA OIC - PMD DATE: -	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (STA.1+500-STA.16+000) - OVERPASS 2 GENERAL ELEVATION GENERAL PLAN GENERAL SECTION	SCALE AS SHOWN PROJECT CODE DATE APPROVED -	DRAWING STATUS DRAFT DRAWING DRAWING NO. P302-01 DATE REVISED - REV. A1 -
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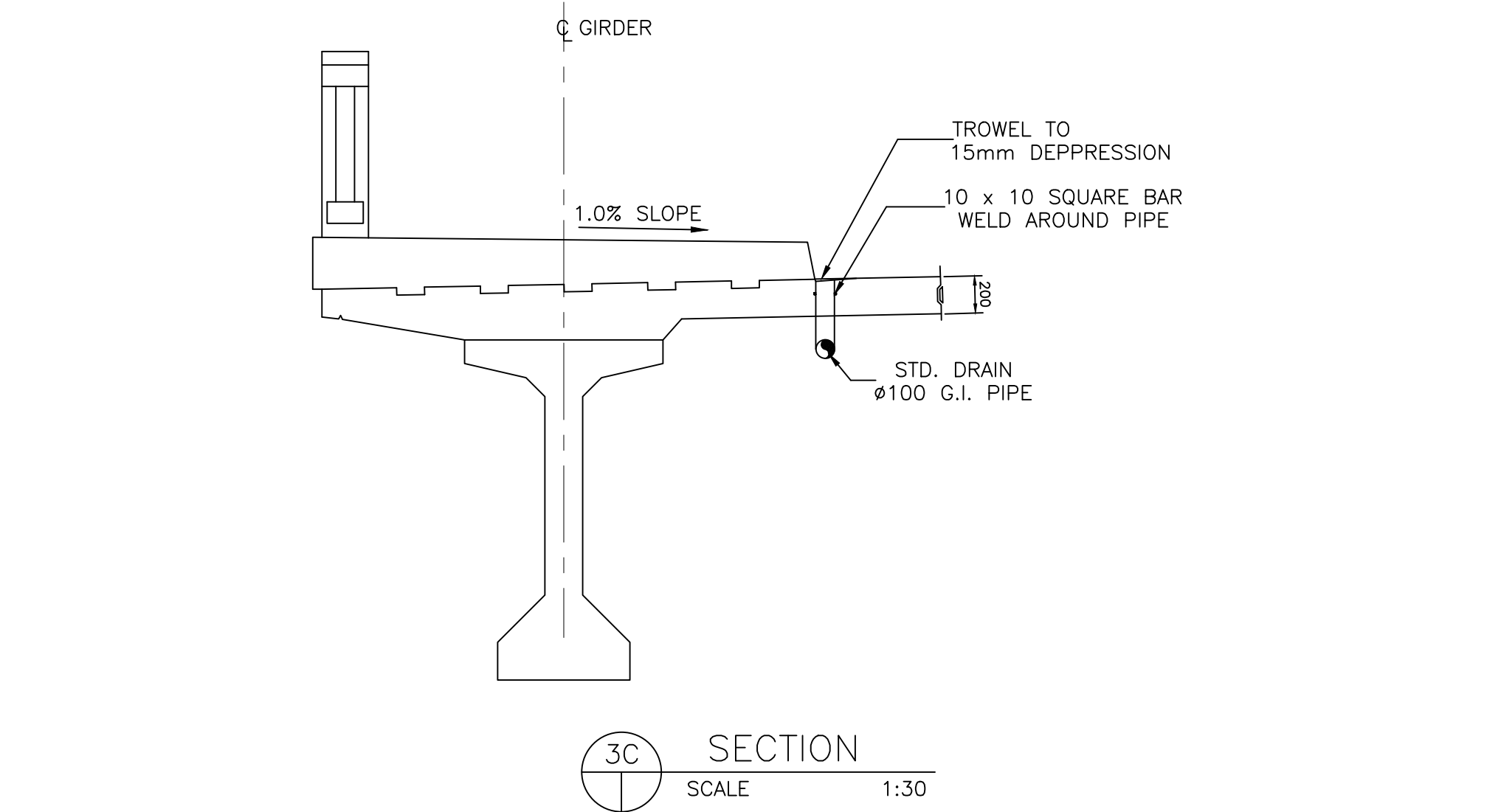
1 DECK SLAB PLAN
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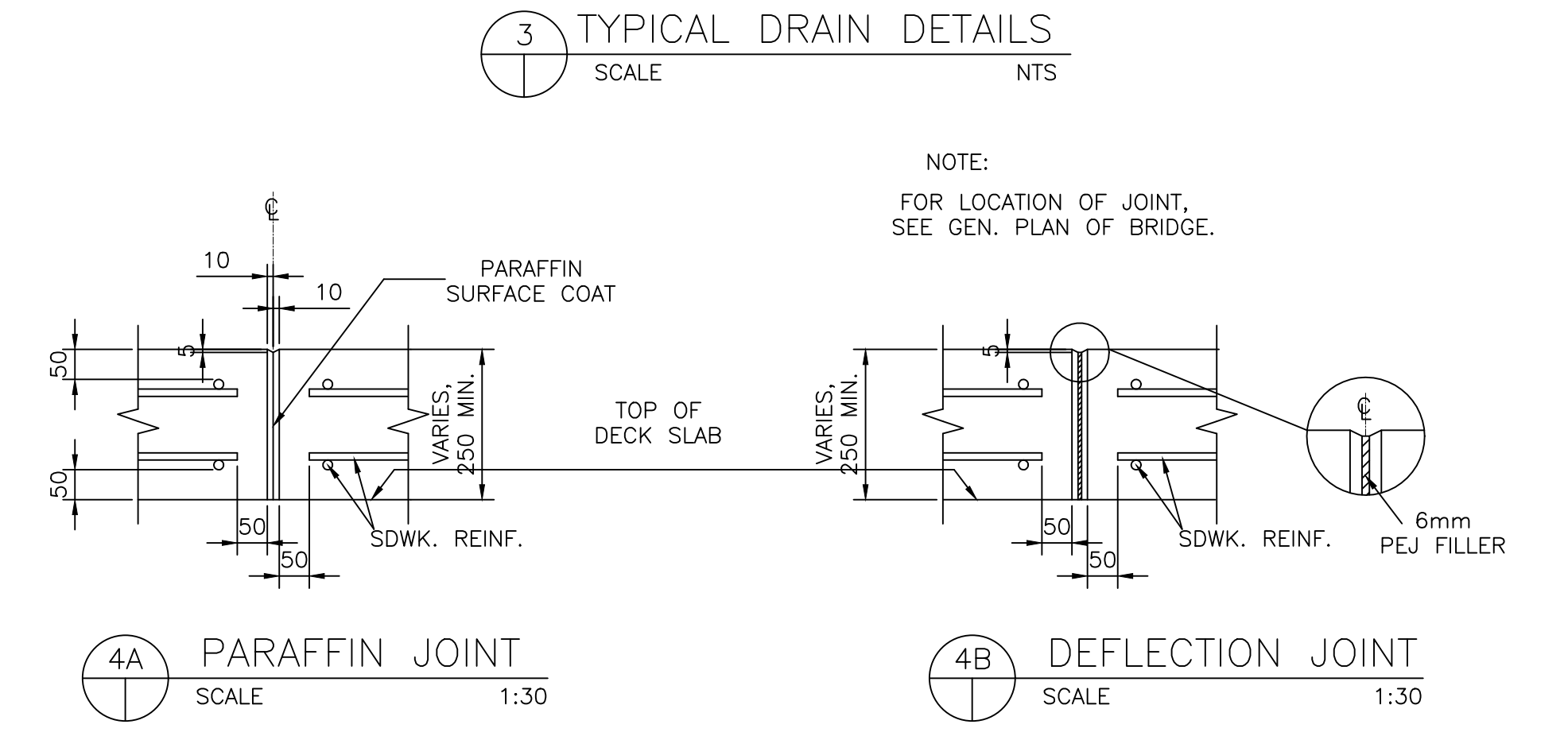
2 LONGITUDINAL SECTION
SCALE 1:75



3A PLAN SCALE 1:20
3B ELEVATION SCALE 1:20



3C SECTION SCALE 1:30



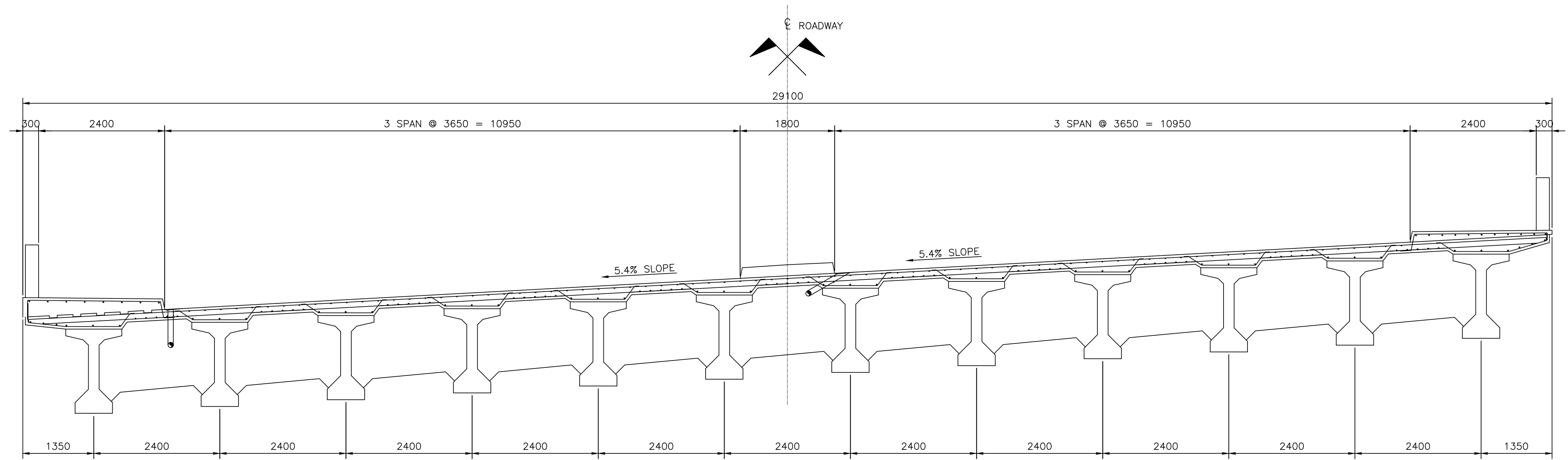
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4B DEFLECTION JOINT SCALE 1:30

4 JOINT DETAILS SCALE 1:30

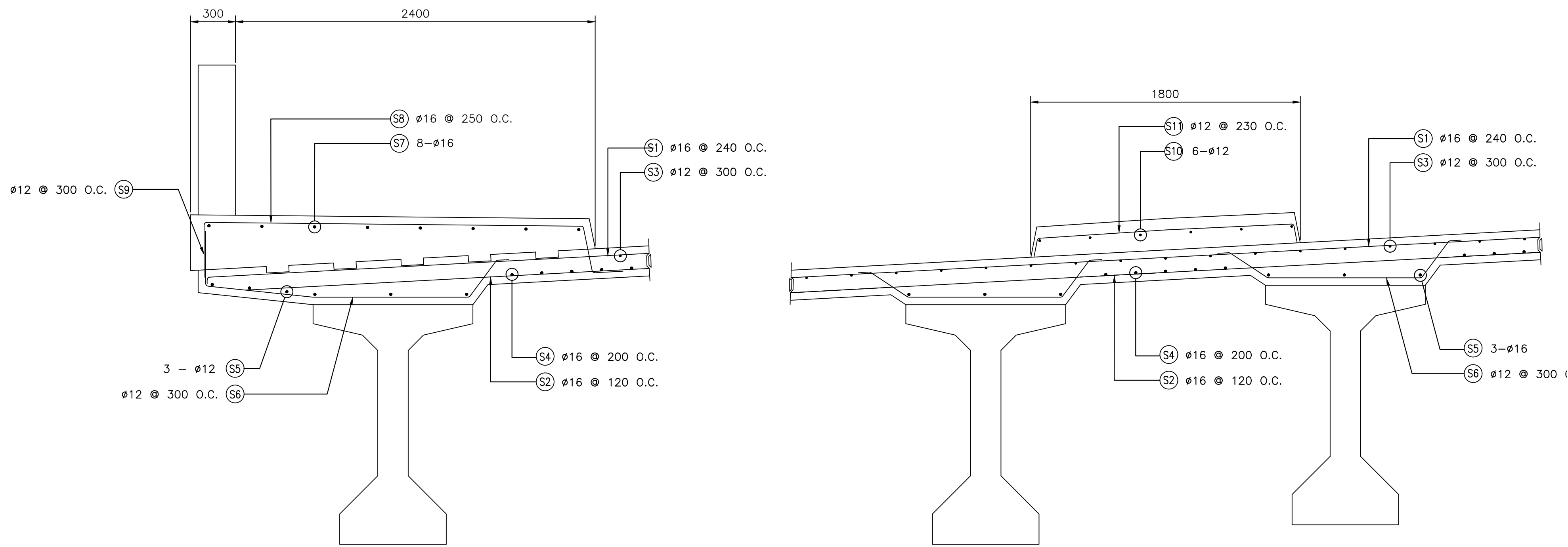
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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

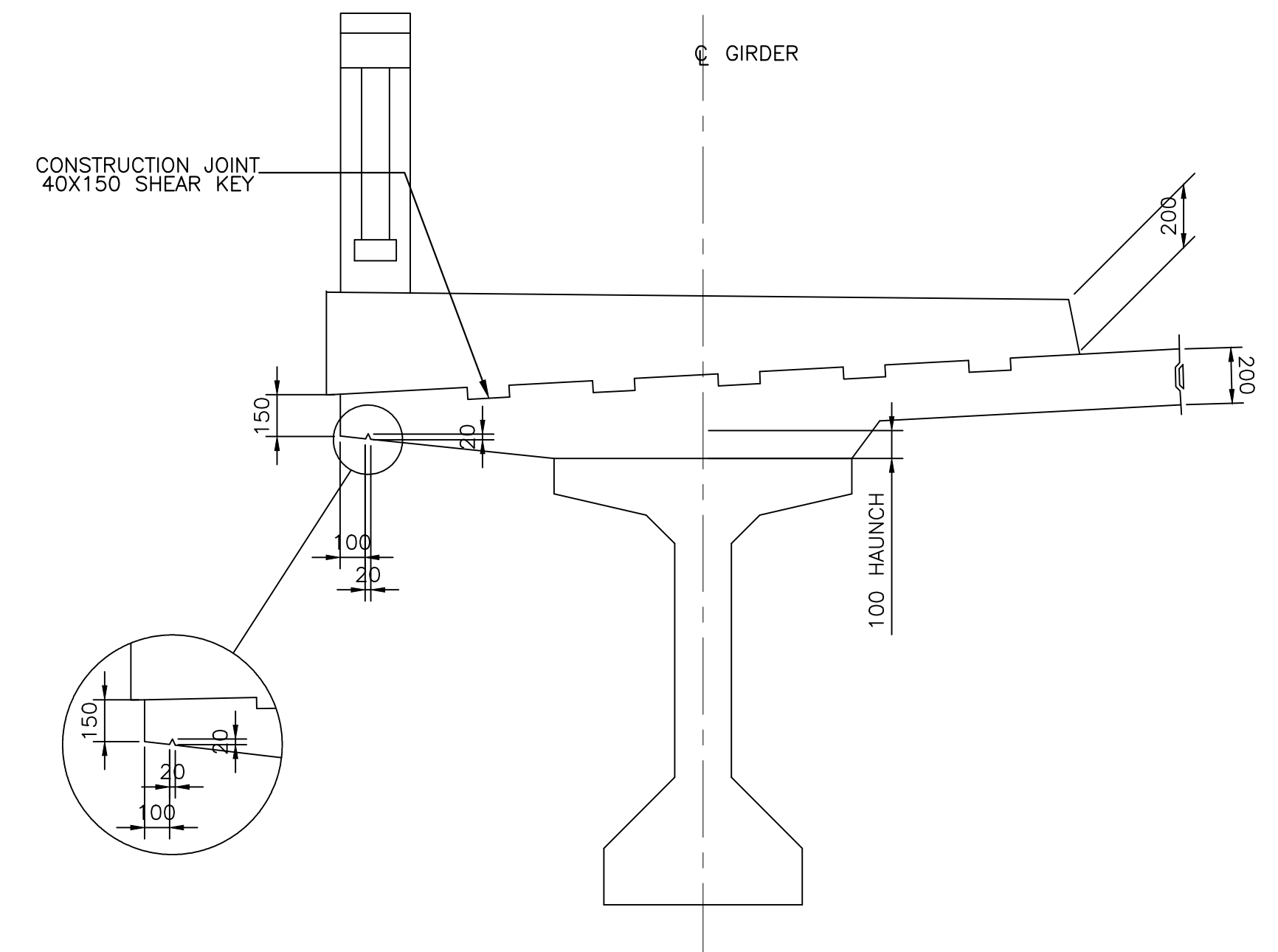
CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, MASA, DALMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	CHECKED BY ALBERTO C. CAÑETE M.Eng P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	 CHECKED BY RYAN PAUL S. GALLURA PROJECT MANAGER DATE: -	APPROVED BY JOVITA M. SUNGA OIC - PMD DATE: -	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (STA.1+500-STA.16+000) - OVERPASS 2 DECK SLAB PLAN LONGITUDINAL SECTION TYPICAL DRAIN AND JOINT DETAILS	SCALE AS SHOWN	DRAWING STATUS DRAFT DRAWING
	PROJECT CODE P302-02	DRAWING NO. P302-02	SIZE A1	DATE APPROVED -	DATE REVISED -	REV. -			



1 CROSS SECTION @ MIDSPAN
SCALE 1:50



2 TRANSVERSE SECTION
SCALE 1:20

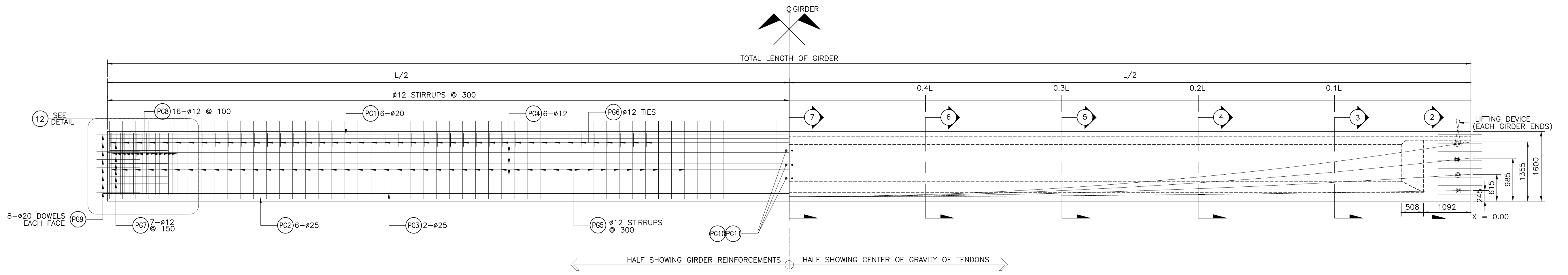


3 SHEAR KEY & DRIP GROOVE DETAIL
SCALE 1:20

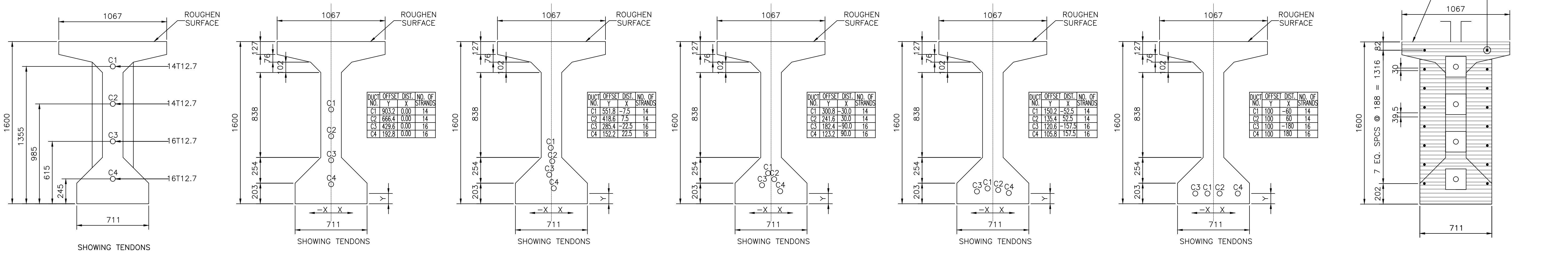
NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184,
APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY
THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE
SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE
TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.

ENGR. ALBERTO C. CAÑETE
TEAM LEADER

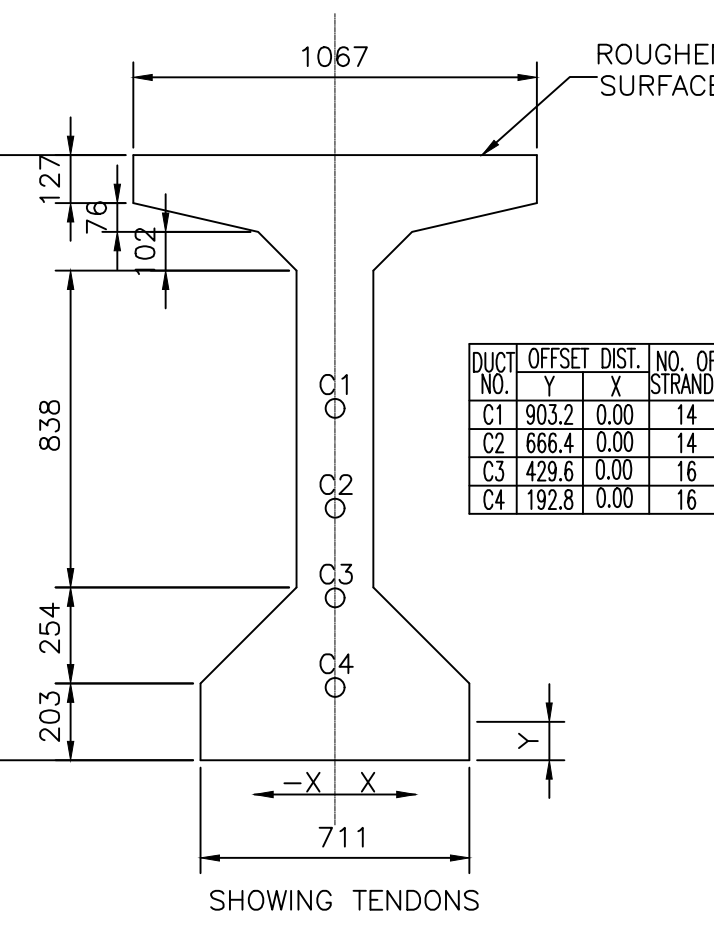
CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, VASRA, DALAMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	CHECKED BY ALBERTO C. CAÑETE M.Eng P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	 BUREAU OF CONSTRUCTION DEVELOPMENT AUTHORITY	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (STA.1+500-STA.16+000) - OVERPASS 2	SCALE AS SHOWN	DRAWING STATUS DRAFT DRAWING
	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITA M. SUNGA OIC - PMD DATE: -	PROJECT CODE P302-03	DRAWING NO. A1	DATE APPROVED -	DATE REVISED -	REV. -	



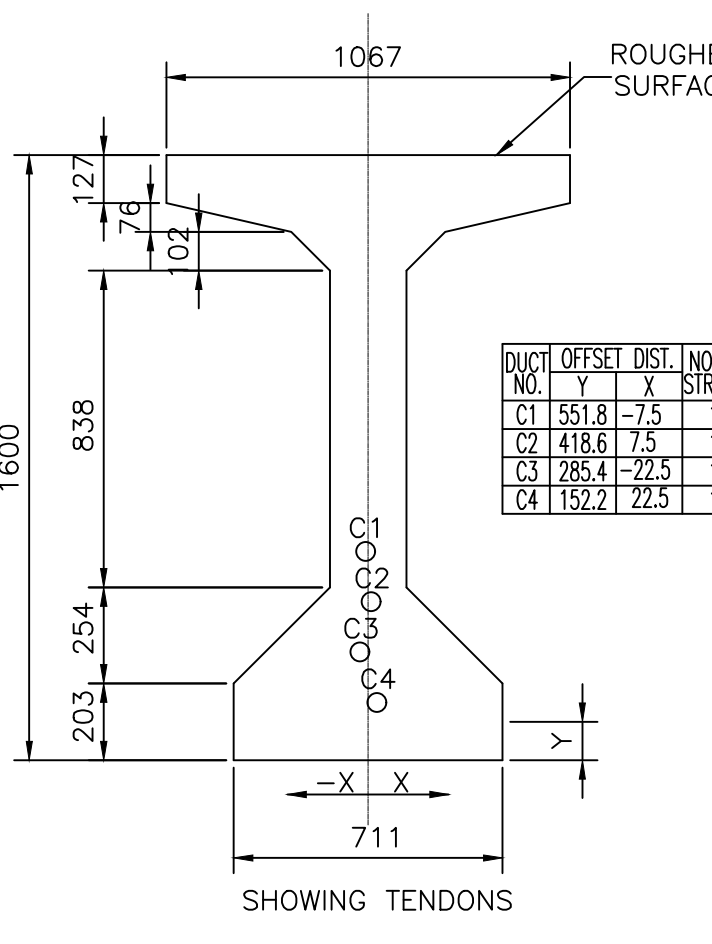
1 PRESTRESSED GIRDER ELEVATION
SCALE 1:50



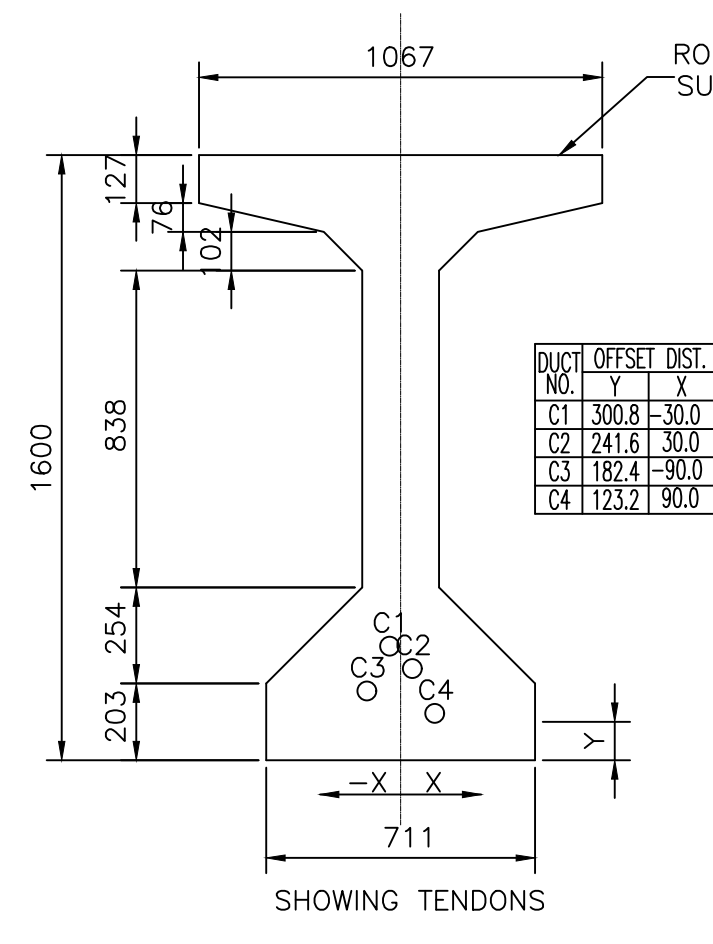
2 SECTION @ ENDS
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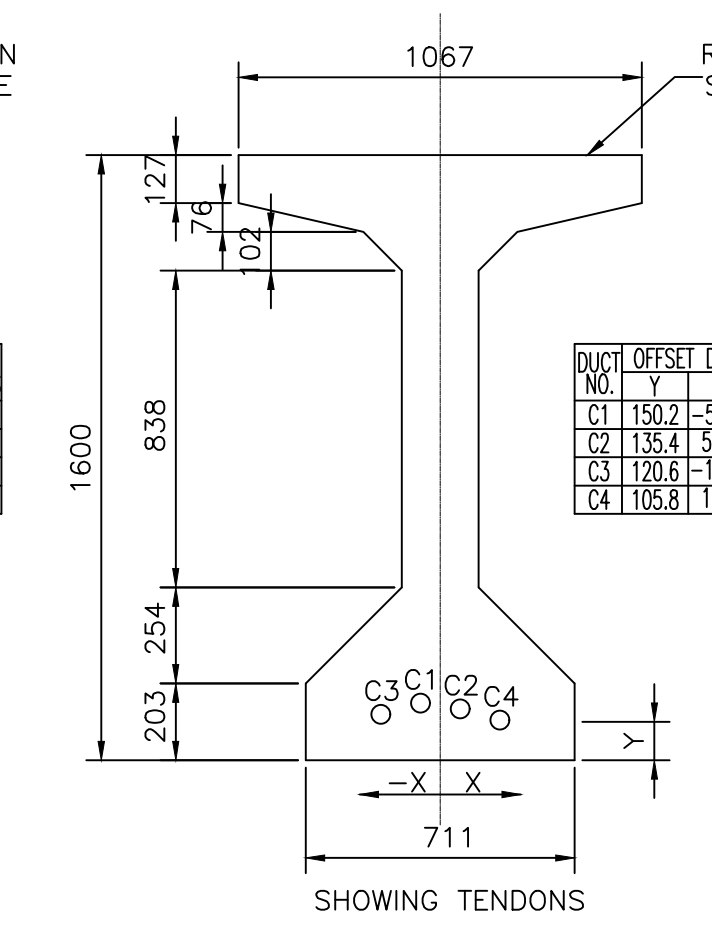
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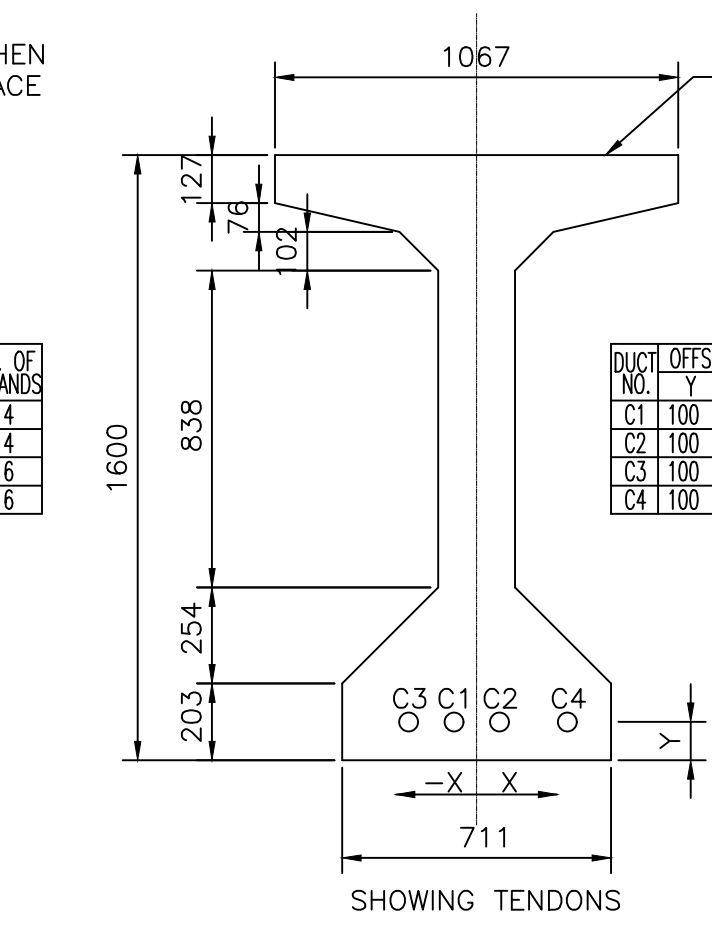
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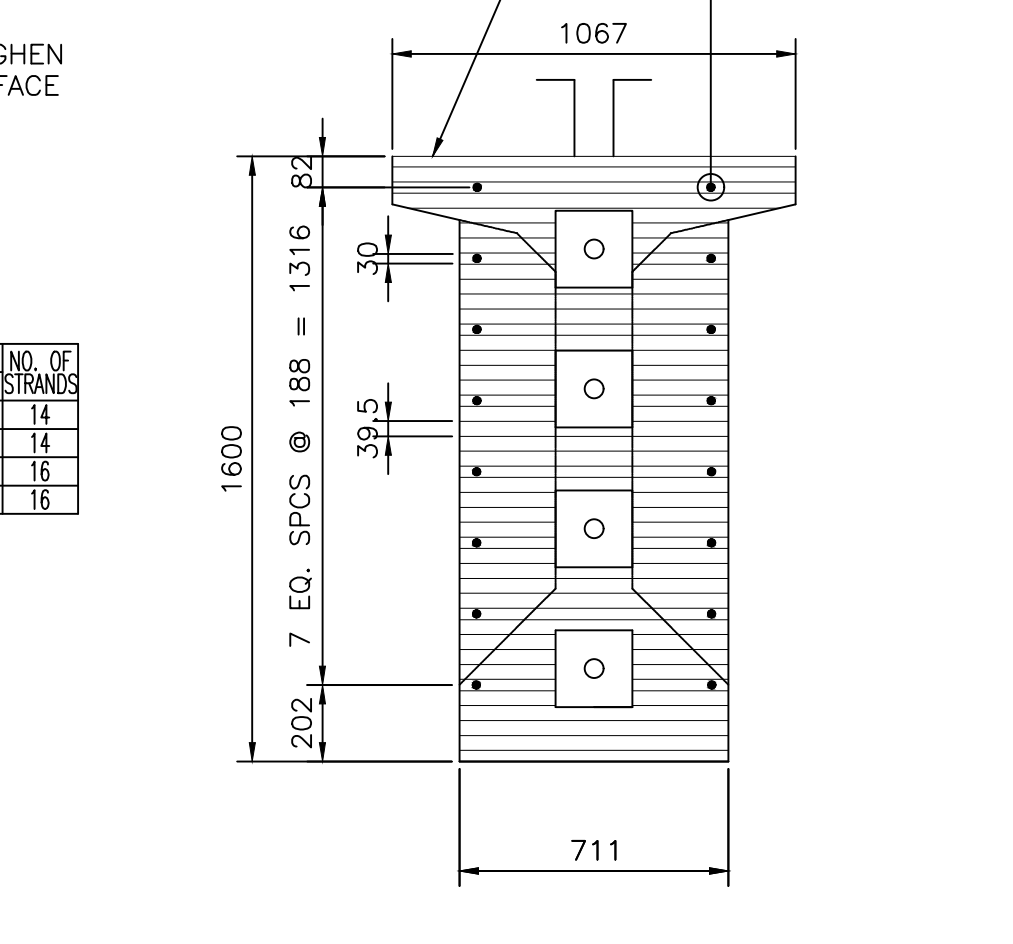
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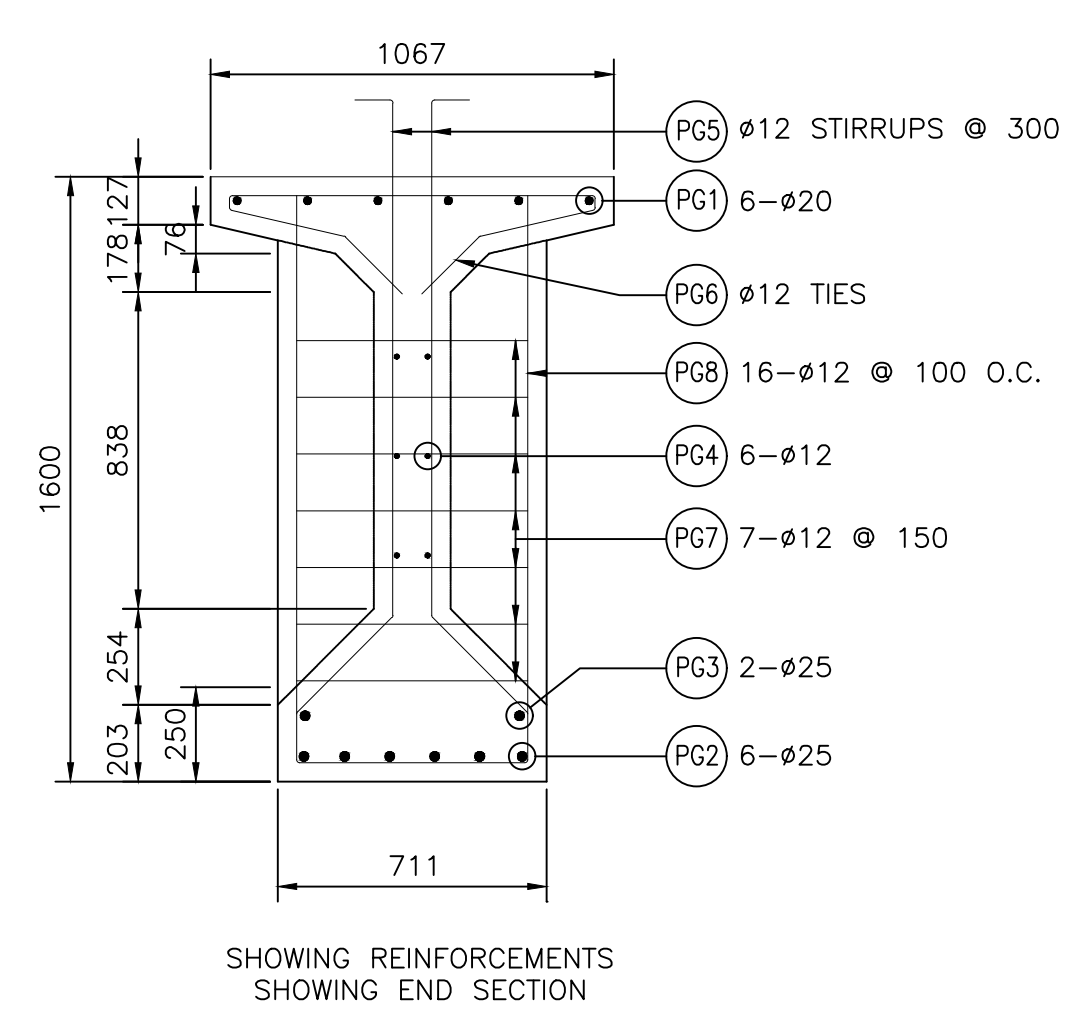
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SCALE 1:20



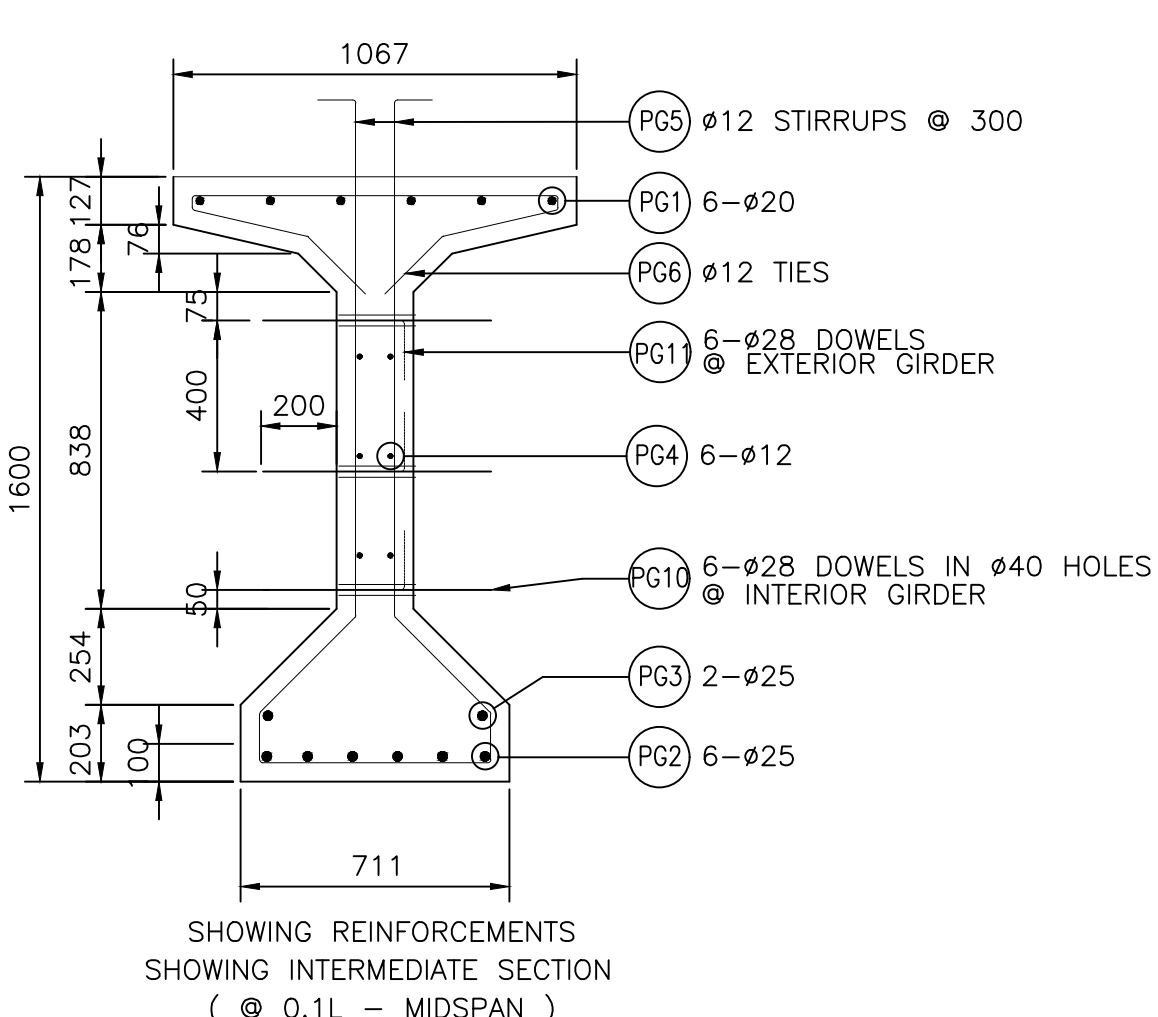
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SCALE 1:20



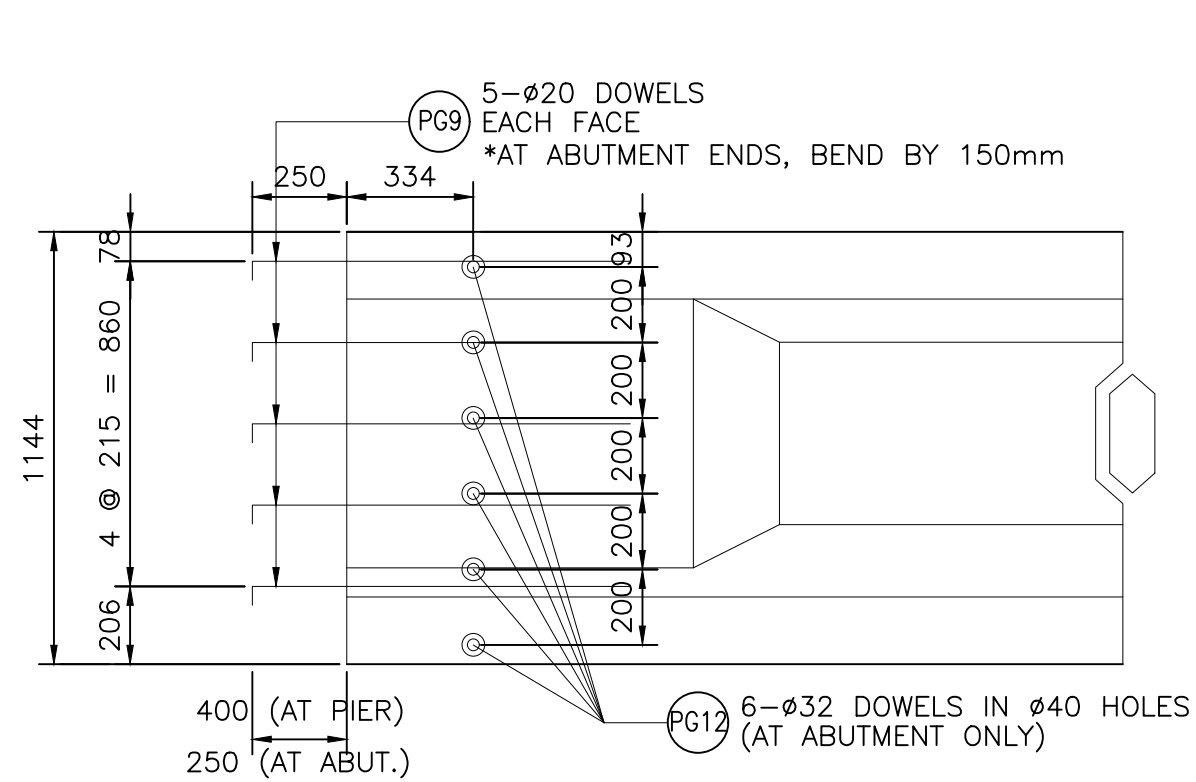
8 TOOTH @ END VIEW
SCALE 1:20



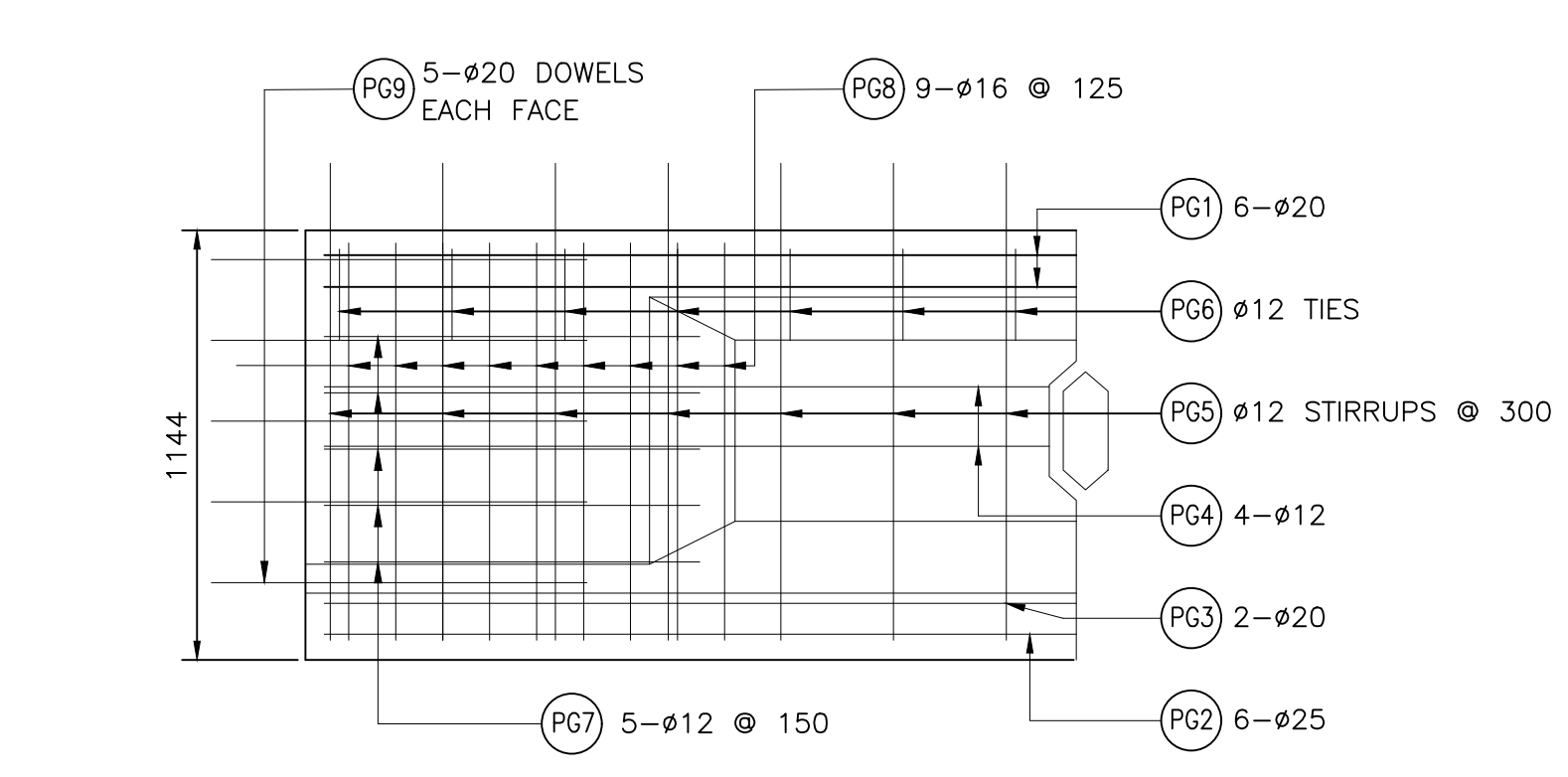
9 REINFORCEMENT DETAILS
SCALE 1:20



10 DOWEL @ END BLOCK
SCALE 1:20



11 REINFORCEMENT DETAILS
SCALE 1:20



12 TOOTH DETAIL
SCALE 1:10

NOTE:
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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

CONSULTANTS
Urban Integrated Consultants, Inc.
100 CORPORATE BLDG., 8 LANES STREET, WISRA, DELMAN, QUEZON CITY, 1128

SUBMITTED BY
EFREN L. DAVID
PRESIDENT - UICI

CHECKED BY
ALBERTO C. CAÑETE M.Eng P.P., F.ASEPP
PROJECT MANAGER - UICI

CHECKED BY
RYAN PAUL S. GALURA
PROJECT MANAGER

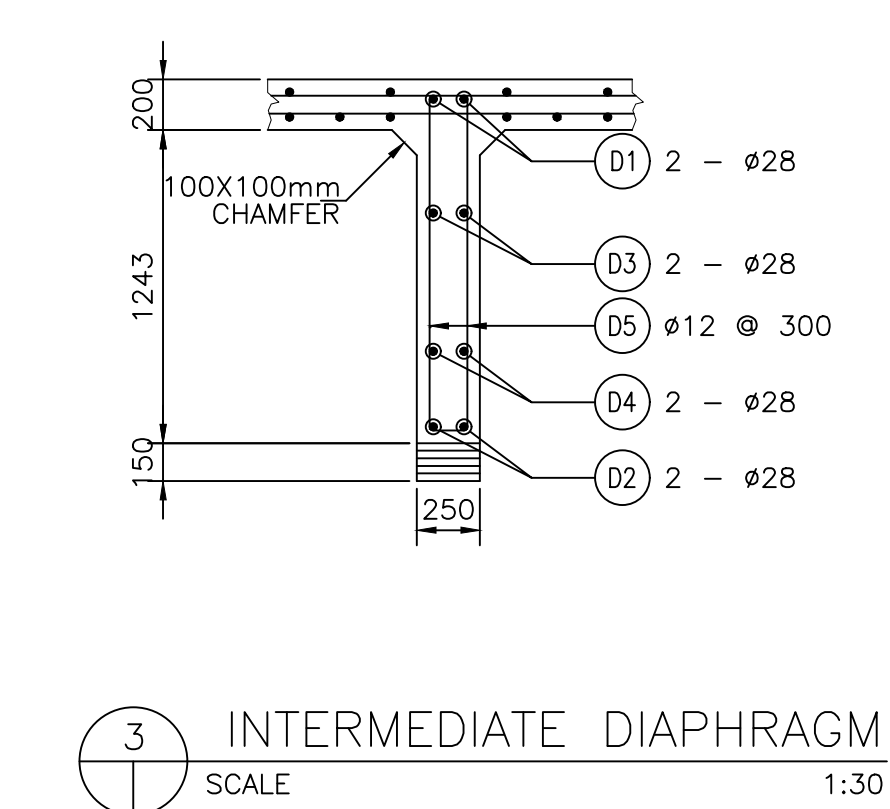
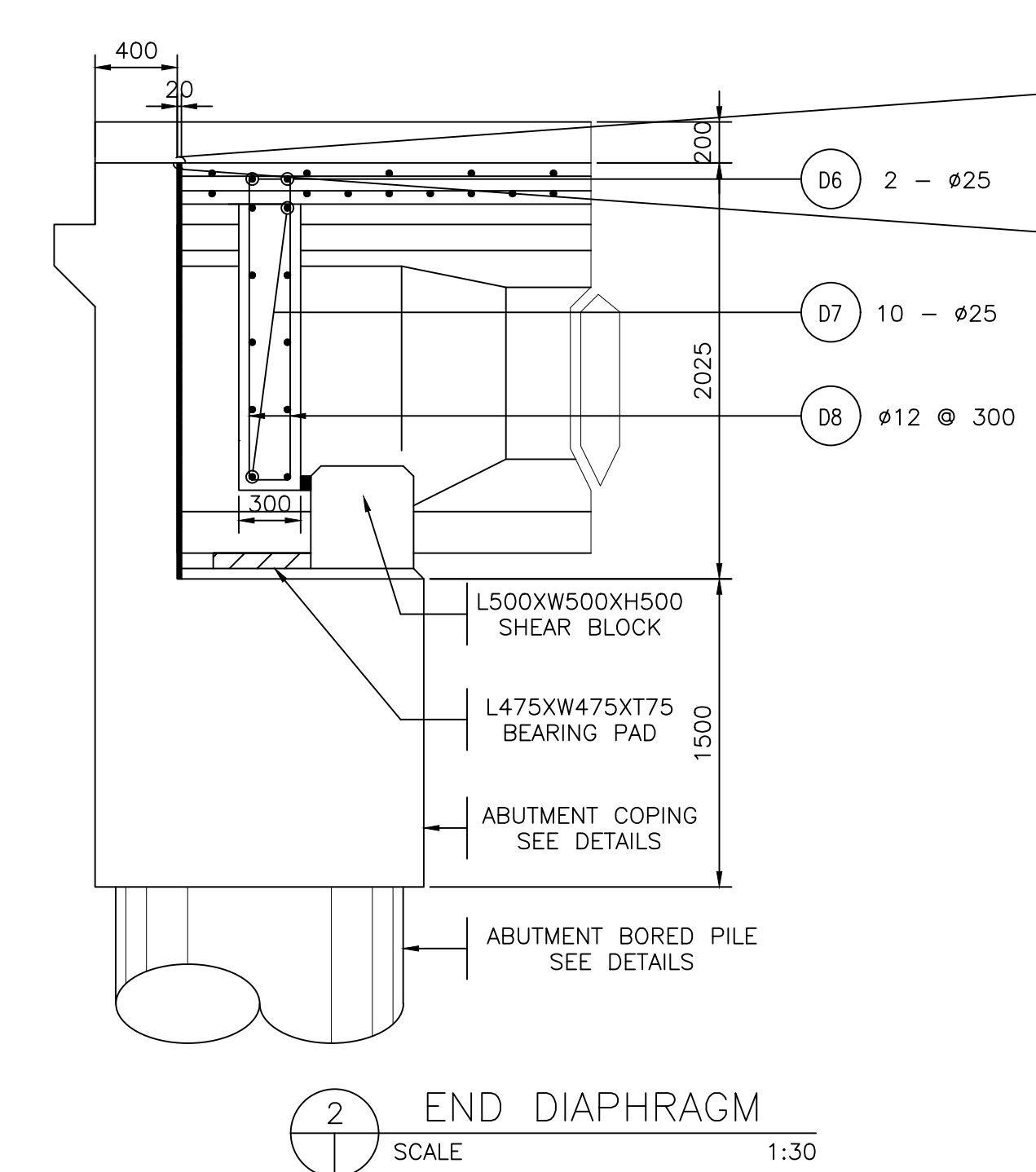
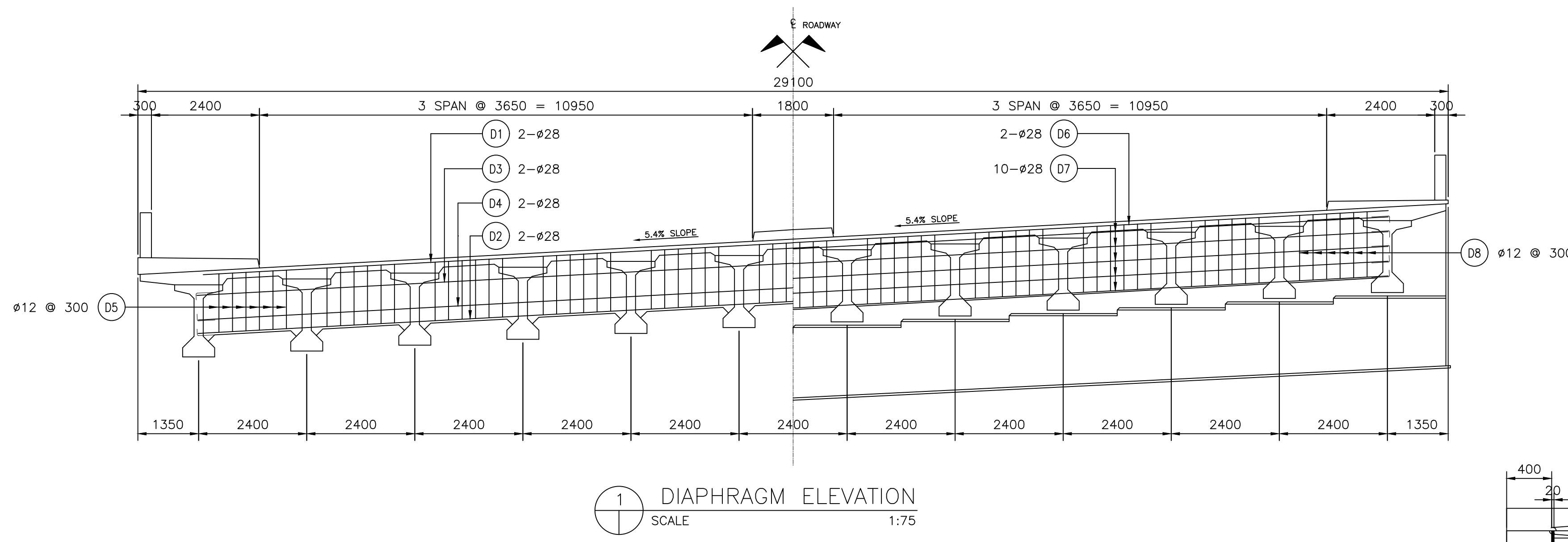
APPROVED BY
JOVITA M. SUNGA
OIC - PMD

REVISIONS	DATE	PROJECT TITLE	SCALE	DRAWING STATUS
A		DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING
B			PROJECT CODE	DRAWING NO. SIZE
C		SHEET CONTENT AIRPORT TO NCC (STA.1+500-STA.16+000) - OVERPASS 2	P302-0	A1
D			DATE APPROVED	DATE REVISED
E				REV.
F				

TYPE V GIRDER ELEVATION AND SECTIONS

NOTE:
 PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS. THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.

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 TEAM LEADER



SCHEDULE OF REINFORCEMENTS FOR DECK SLAB & DIAPHRAGMS

BAR BENDING DIAGRAM	REINFORCING STEEL BARS				ALL DIMENSIONS ARE OUT TO OUT OF REBARS						TYPE	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	
	MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e	f							
DECKSLAB (ONE SLAB ONLY)																	
A	S1	16	240	130	0.10	30.40						C	30.60	3990.75	1.579	6304	
	S1'	16	180	22	0.10	30.40						C	30.60	680.00	1.579	1075	
B	S2	16	120	261	0.10	30.40						C	30.60	7981.50	1.579	12599	
	S2'	16	90	44	0.10	30.40						C	30.60	1360.00	1.579	2151	
C	S3	12	300	101	0.10	31.30						C	31.50	3192.00	0.888	2842	
	S4	16	200	152	0.10	31.30						C	31.50	4788.00	1.579	7560	
D	S5	16	AS SHOWN	38	31.30						A	31.30	1189.40	1.579	1884		
	S6	12	300	1252	1.025	31.30					B	32.575	40783.90	0.888	36212		
E	S7	16	AS SHOWN	16	31.30						A	31.30	500.80	1.579	793		
	S8	16	250	125	0.20	2.60	0.20				B	3.0	375.60	1.579	597		
F	S9	12	300	104	0.20	0.20	0.20				B	0.60	62.60	0.888	63		
	S10	12	AS SHOWN	6	31.30						A	31.30	187.80	0.888	173		
G	S11	12	230	136	0.20	1.70	0.20				B	2.10	285.78	0.888	259		
													Grade 60 bar		32962	Kgs	
													Grade 40 bar		39548	Kgs	
DIAPHRAGMS																	
E	D1	28	AS SHOWN	6	26.52						F	79.56	477.36	4.833	2308		
	D2	28	AS SHOWN	6	26.52						F	79.56	477.36	4.833	2308		
F	D3	28	AS SHOWN	6	26.52						F	79.56	477.36	4.833	2308		
	D4	28	AS SHOWN	6	26.52						F	79.56	477.36	4.833	2308		
G	D5	12	300	345	1.592	0.17	1.592	0.17	0.144	0.144	G	11.436	3945.42	0.888	3509		
	D6	25	AS SHOWN	12	26.52						F	79.56	954.72	3.854	3682		
H	D7	25	AS SHOWN	30	26.52						F	79.56	2386.80	3.854	9200		
	D8	12	300	345	1.592	0.22	1.592	0.22	0.144	0.144	G	11.736	4048.92	0.888	3596		
													Grade 60 bar		22113	Kgs	
													Grade 40 bar		3509	Kgs	
NOTE: 40db SPLICES ARE NOT INCLUDED																	
* 12 mm dia. and below are Grade 40																	
* 16 mm dia. and above are Grade 60																	
GRAND TOTAL													Grade 60 bar		55076	Kgs	
GRAND TOTAL													Grade 40 bar		43057	Kgs	

SCHEDULE OF REINFORCEMENTS & SUMMARY OF QUANTITIES FOR ONE (1) PRESTRESSED GIRDER ONLY

BAR BENDING DIAGRAM	REINFORCING STEEL BARS				ALL DIMENSIONS ARE OUT TO OUT OF REBARS					TYPE	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	REMARKS
	MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e						
A	PG1	20	AS SHOWN	6	31.30	0.075	0.075			C	31.45	188.70	2.486	471	1. QUANTITIES ARE FOR 1 GIRDER ONLY. 2. PG10 IS FOR INTERIOR GIRDER ONLY. 3. PG11 IS FOR EXTERIOR GIRDER ONLY 4. PG12 FOR ABUT. ONLY 5. PG13 FOR PIER ONLY 6. VERIFY ACTUAL LENGTH OF THE BRIDGE
	PG2	25	AS SHOWN	6	31.30	0.14	0.14			C	31.58	189.48	3.853	738	
C	PG3	25	AS SHOWN	2	31.30	0.14	0.14			C	31.58	63.16	3.853	251	
	PG4	12	AS SHOWN	4	31.30					A	31.30	125.2	0.888	118	
D	PG5	12	300	114	0.45	1.35	0.60	0.16	0.635	G	3.195	364.23	0.888	330	
	PG6	12	300	114	1.00	0.50	0.32	0.20		F	2.02	230.28	0.888	212	
E	PG7	12	150	1596	0.50	1.10	0.52			D	2.12	3383.52	0.888	3007	
	PG8	12	100	5472	1.75	0.60	0.60			C	3.26	17838.72	0.888	15841	
F	PG9	20	AS SHOWN	24	1.00					A	1.00	24.00	2.486	63	
	PG10	28	AS SHOWN	4	0.603					A	0.603	2.412	4.833	16	
G	PG11	28	AS SHOWN	4	0.25	0.40				H	0.65	2.60	4.833	16	
	PG12	32	AS SHOWN	2	1.467					A	1.467	2.934	6.313	24	
											TOTAL	GRADE 60	19507	Kgs	
											TOTAL	GRADE 40	1578	Kgs	

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 PRESIDENT - UICI

CHECKED BY: **ALBERTO C. CAÑETE M.Eng P.P., F.ASEIP**
 PROJECT MANAGER - UICI

BCDA
 BUREAU OF CONSTRUCTION DEVELOPMENT AUTHORITY

CHECKED BY: **RYAN PAUL S. GALURA**
 PROJECT MANAGER

APPROVED BY: **JOVITA M. SUNGA**
 OIC - PMD

REVISIONS

A			
B			
C			
D			
E			
F			

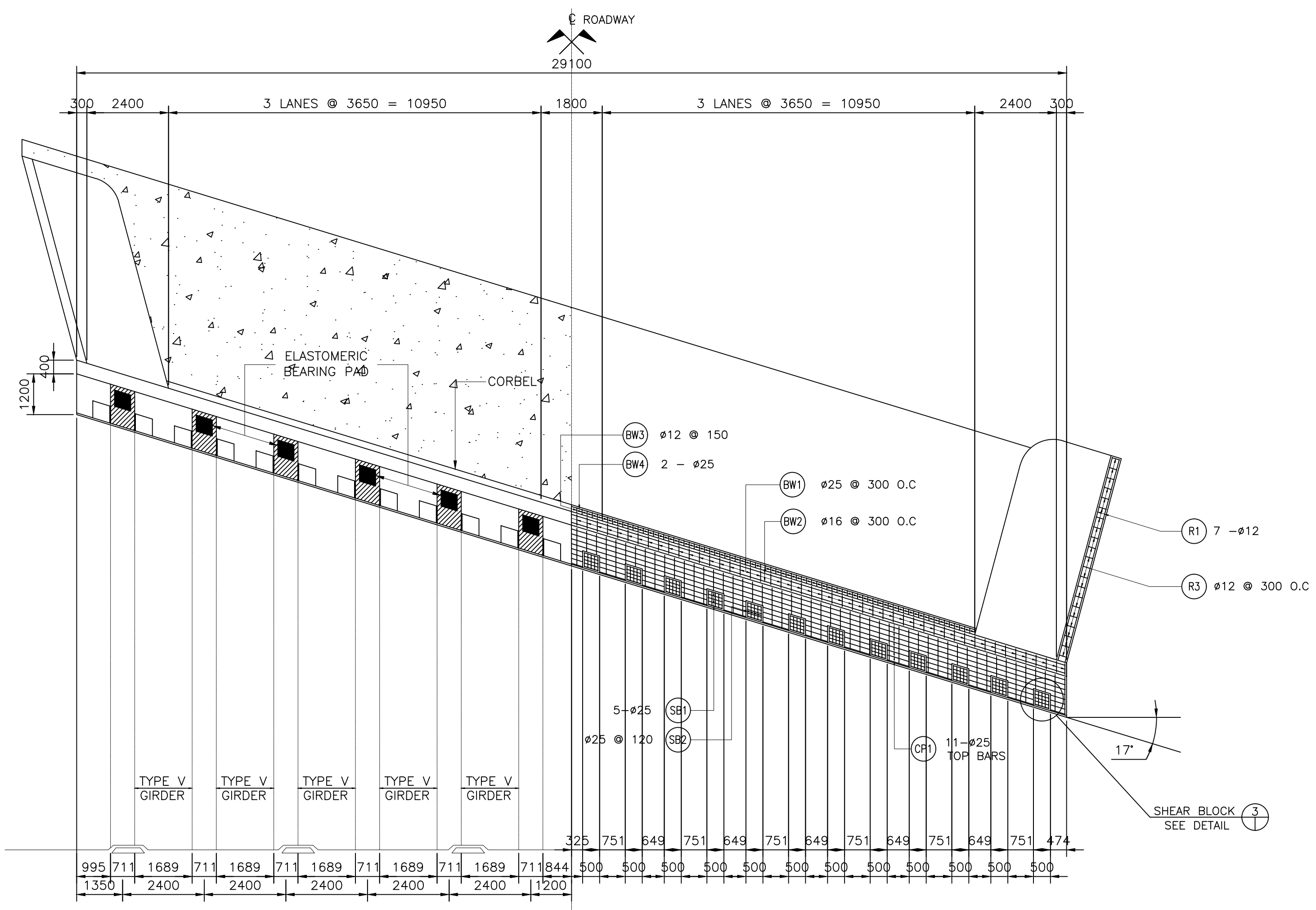
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SHEET CONTENT: **AIRPORT TO NCC (STA.1+500-STA.16+000) - OVERPASS 2**

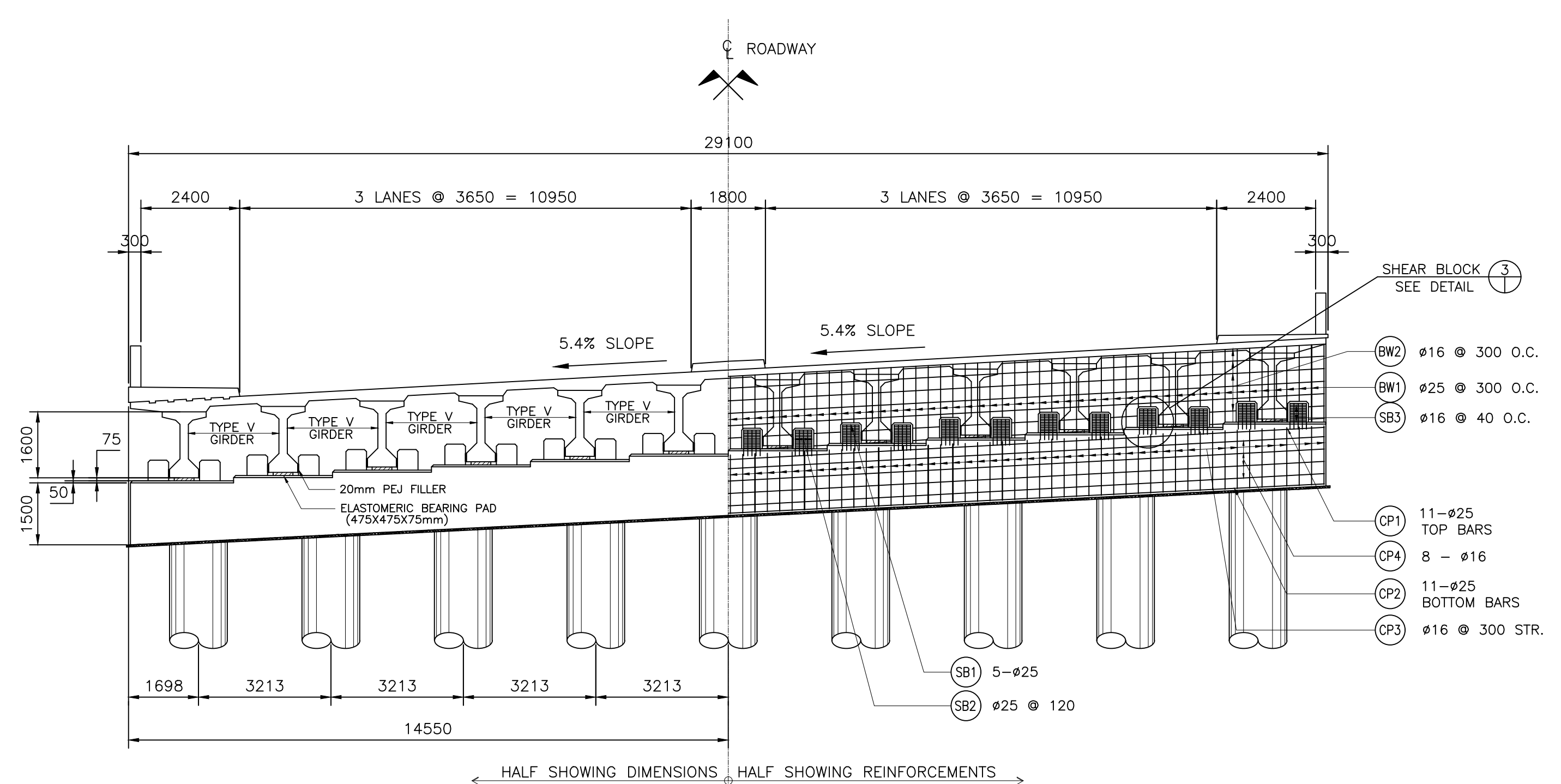
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PROJECT CODE: _____ DRAWING NO.: **P302-06** SIZE: **A1**

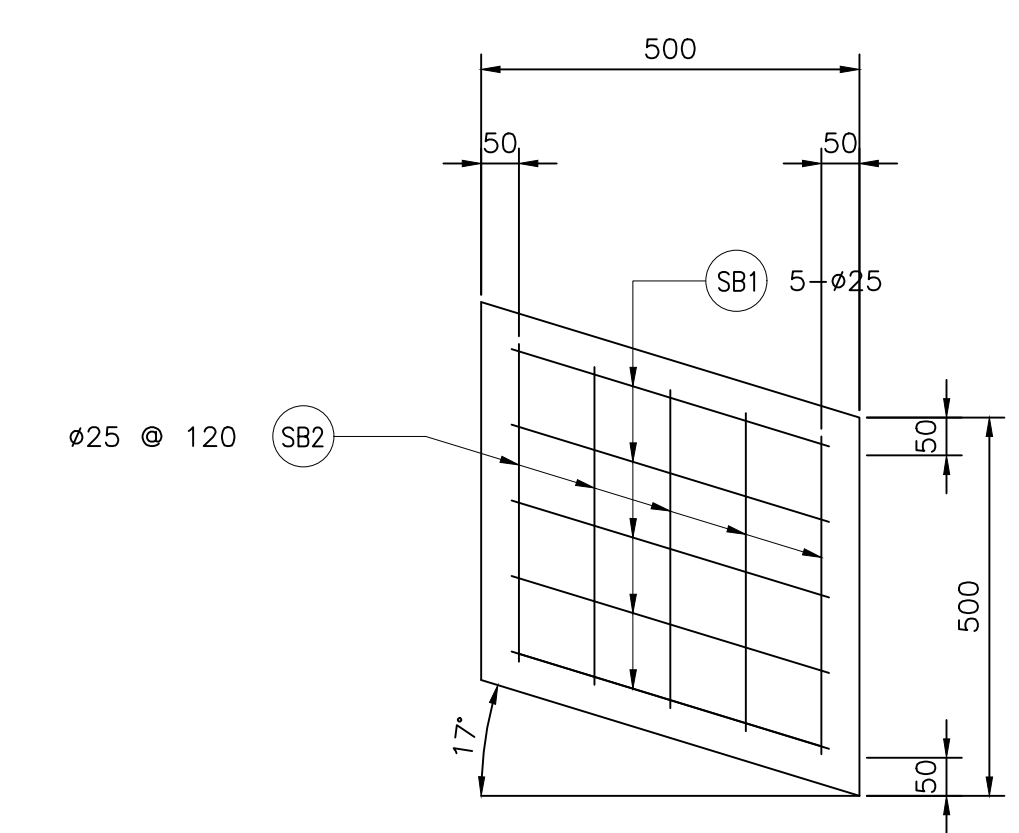
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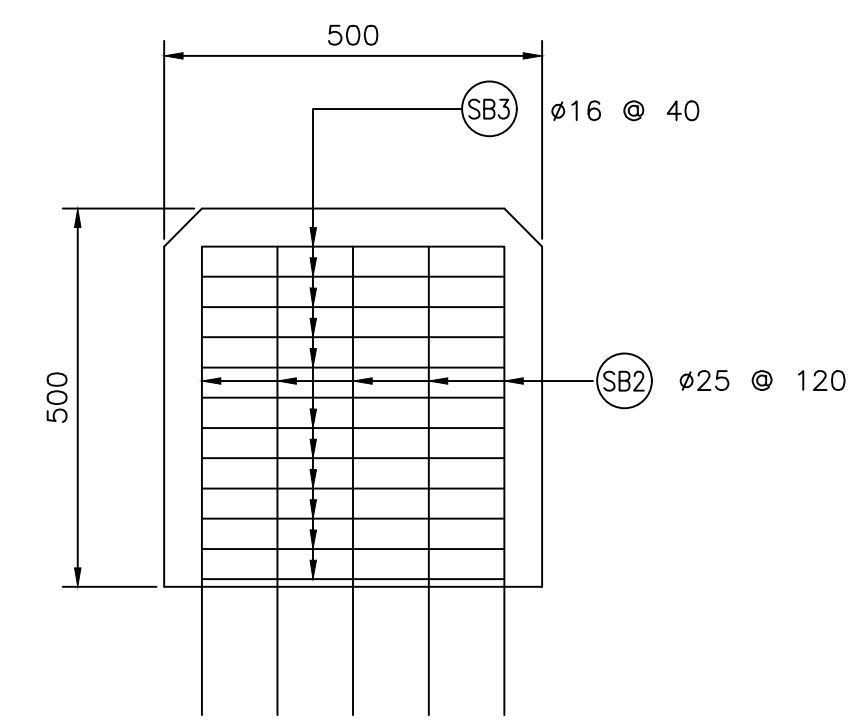
1 PLAN
SCALE 1:100



2 ELEVATION
SCALE 1:100



3A SHEAR BLOCK PLAN
SCALE 1:10



3B SHEAR BLOCK SECTION
SCALE 1:10

3 SHEAR BLOCK DETAILS
SCALE NTS

NOTE:
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PROJECT MANAGER
DATE: -

APPROVED BY
JOVITA M. SUNGA
OIC - PMD
DATE: -

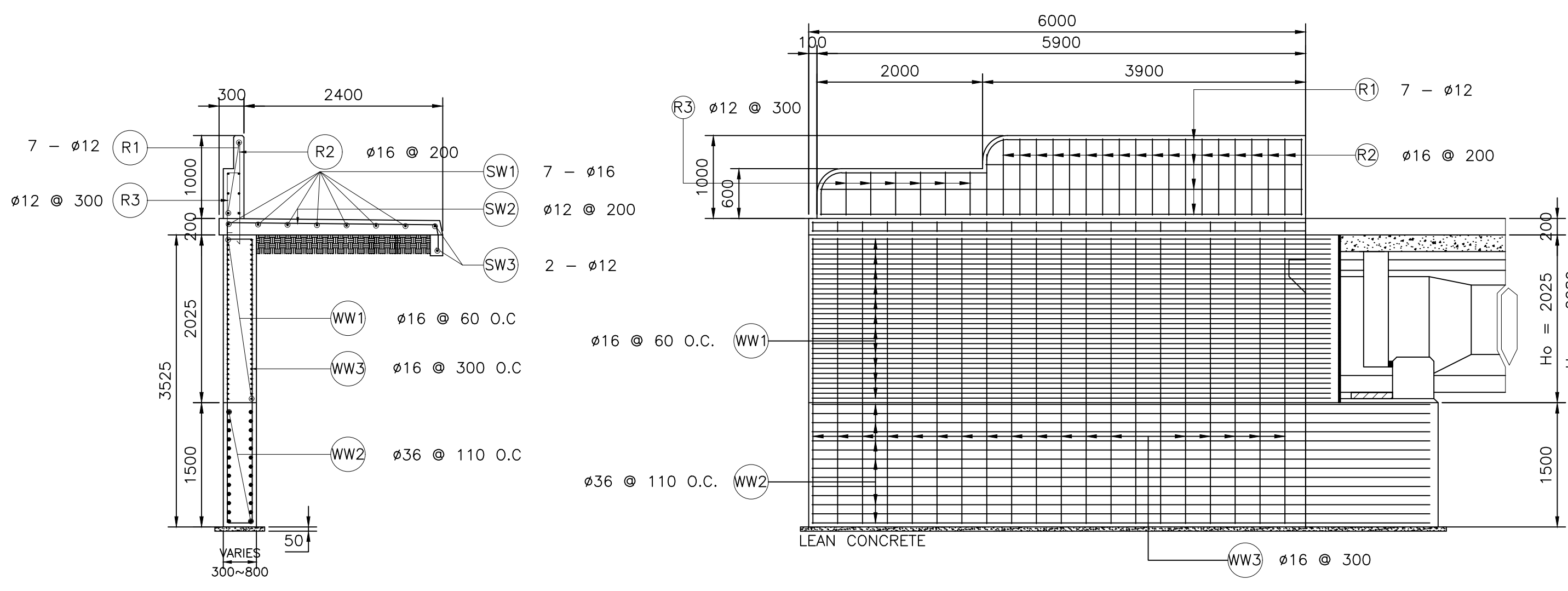
REVISIONS	DATE
A	
B	
C	
D	
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F	

PROJECT TITLE
DETAILED ENGINEERING DESIGN OF THE
PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD,
MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD
SHEET CONTENT AIRPORT TO NCC (STA.1+500-STA.16+000) - OVERPASS 2

SCALE	DRAWING STATUS
AS SHOWN	DRAFT DRAWING
PROJECT CODE	DRAWING NO. SIZE
	P302-01 A1
DATE APPROVED	DATE REVISED REV.
-	- -

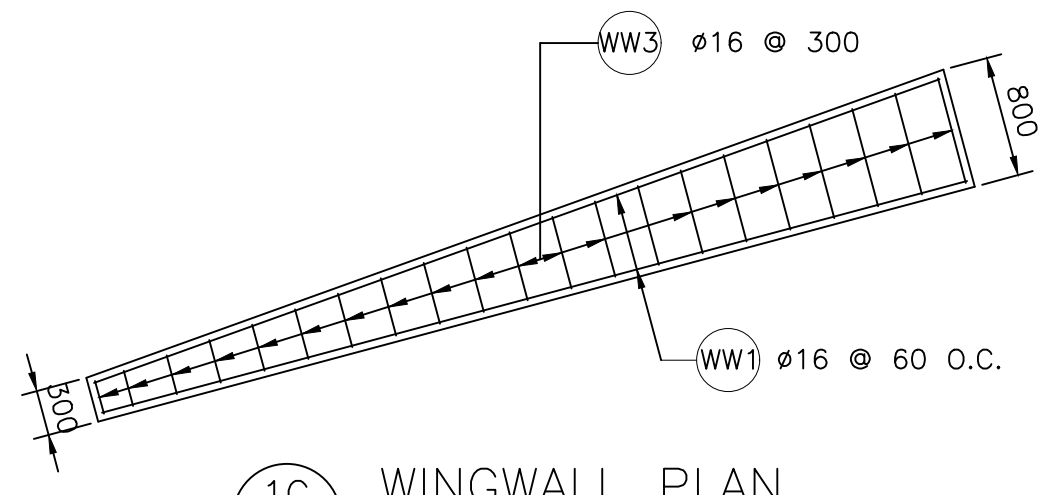
ABUTMENT PLAN AND ELEVATION
SHEAR BLOCK DETAILS

SCHEDULE OF REINFORCEMENTS FOR SUBSTRUCTURE FOR ABUTMENT "A" & "B"



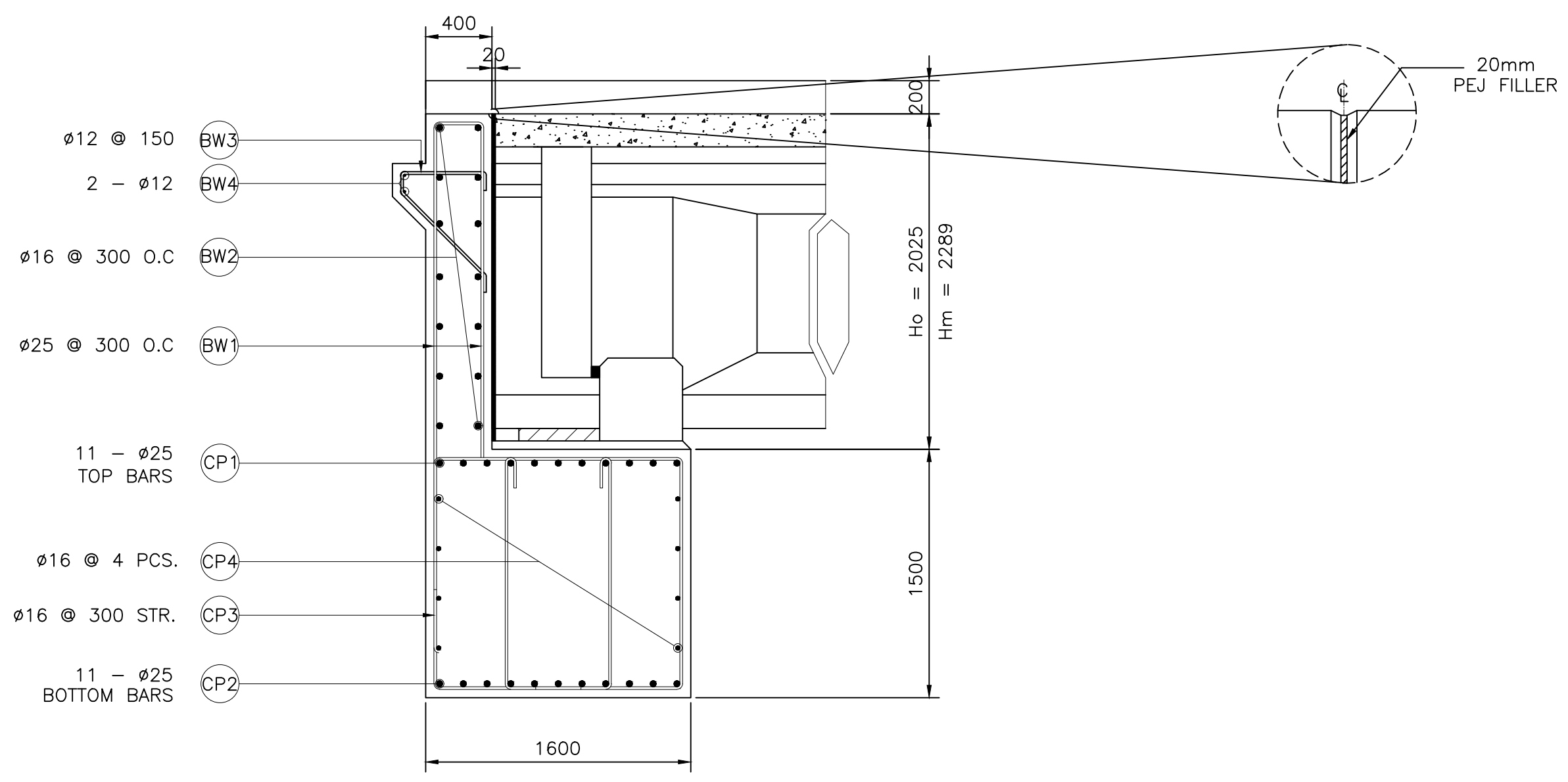
1A SECTION OF WINGWALL
SCALE 1:50

1B ELEVATION OF WINGWALL
SCALE 1:50



1C WINGWALL PLAN
SCALE 1:50

1 WINGWALL DETAILS
SCALE 1:50



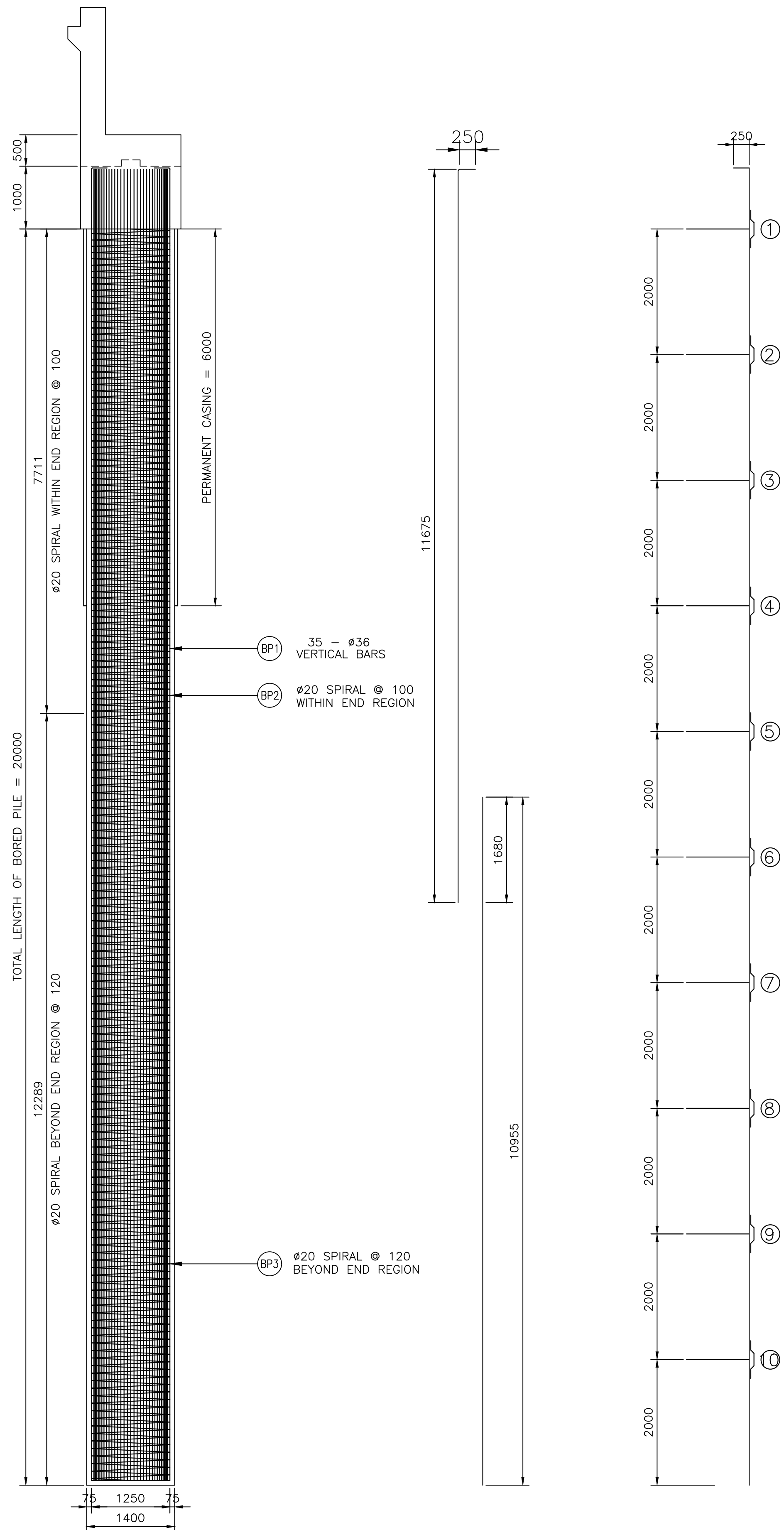
2 BACKWALL AND COPING SECTION
SCALE 1:30

BAR BENDING DIAGRAM	REINFORCING STEEL BARS				ALL DIMENSIONS ARE OUT TO OUT OF REBARS						TYPE	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONCRETE VOLUME (cu.m)		
	MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e	f									
FOR ABUTMENT A ONLY																			
A	CP1	25	AS SHOWN	11	0.50	30.40	0.50					A	COPING	31.40	345.40	3.854	1335	70	
	CP2	25	AS SHOWN	11	0.50	30.40	0.50				A	31.40		345.40	3.854	1335			
	CP3	16	300	102	1.50	1.60	1.50	1.60	0.10	0.10	B	6.40		654.93	1.579	1036			
	CP4	16	AS SHOWN	12	30.40						A	30.40		364.80	1.579	581			
B	BW1	25	300	102	2.30	0.40	2.30				C	BACKWALL	5.00	510.00	3.854	1970	28		
	BW2	16	AS SHOWN	16	30.40						STR.		30.40	486.40	1.579	769			
	BW3	12	150	203	0.50	0.10	0.65	0.10	0.10		D		1.45	294.35	0.888	267			
	BW4	12	AS SHOWN	2	30.40						STR.		30.40	60.80	0.888	55			
C	SB1	25	AS SHOWN	120	0.65	0.50					C	SHEAR BLOCK	1.15	138.00	3.854	534	3		
	SB2	25	200	144	0.65	0.50				C	1.15		165.60	3.854	644				
	SB3	16	40	240	0.45	0.45	0.45	0.45	0.20	0.20	B		2.20	528.00	1.579	840			
D	WW1	16	60	156	6.0						STR.	WINGWALL	6.00	936.00	1.579	1484	24		
	WW2	36	110	56	6.0					H	6.00		336.00	7.991	2693				
	WW3	16	300	80	0.50	3.43	0.50	3.20	0.10	0.10	B		7.825	626.00	1.579	989			
E	TIES	12	AS SHOWN	704	0.20	0.40	0.20				G	APPROACH RAILING	0.80	563.20	0.888	512	3		
	R1	12	AS SHOWN	14	5.90	1.00					E		6.90	96.60	0.888	86			
	R2	16	200	20	0.20	1.00	0.20				G		1.40	28.00	1.579	47			
F	R3	12	300	7	0.60	1.00	0.20				I	APPROACH SIDEWALK	1.80	12.60	0.888	16	6		
	SW1	12	AS SHOWN	14	6.00						STR.		6.00	84.00	0.888	79			
	SW2	12	200	60	0.10	2.50	0.40	0.10			F		3.10	186.00	1.579	173			
G	SW3	12	AS SHOWN	6	6.00	6.00					STR.	APPROACH SIDEWALK	6.00	36.00	0.888	39	6		
	CP1	25	AS SHOWN	11	0.50	30.40	0.50				A		COPING	31.40	345.40	3.854		1335	70
	CP2	25	AS SHOWN	11	0.50	30.40	0.50				A			31.40	345.40	3.854		1335	
CP3	16	300	102	1.50	1.60	1.50	1.60	0.10	0.10	B	6.40	654.93		1.579	1036				
CP4	16	AS SHOWN	12	30.40						A	30.40	364.80		1.579	581				
H	BW1	25	300	102	2.30	0.40	2.30				C	BACKWALL	5.00	510.00	3.854	1970	28		
	BW2	16	AS SHOWN	16	30.40						STR.		30.40	486.40	1.579	769			
	BW3	12	150	203	0.50	0.10	0.65	0.10	0.10		D		1.45	294.35	0.888	267			
	BW4	12	AS SHOWN	2	30.40						STR.		30.40	60.80	0.888	55			
I	SB1	25	AS SHOWN	120	0.65	0.50					C	SHEAR BLOCK	1.15	138.00	3.854	534	3		
	SB2	25	200	144	0.65	0.50				C	1.15		165.60	3.854	644				
	SB3	16	40	240	0.45	0.45	0.45	0.45	0.20	0.20	B		2.20	528.00	1.579	840			
J	WW1	16	60	156	6.0						STR.	WINGWALL	6.00	936.00	1.579	1484	24		
	WW2	36	110	56	6.0					H	6.00		336.00	7.991	2693				
	WW3	16	300	80	0.50	3.43	0.50	3.20	0.10	0.10	B		7.825	626.00	1.579	989			
K	TIES	12	AS SHOWN	704	0.20	0.40	0.20				G	APPROACH RAILING	0.80	563.20	0.888	512	3		
	R1	12	AS SHOWN	14	5.90	1.00					E		6.90	96.60	0.888	86			
	R2	16	200	20	0.20	1.00	0.20				G		1.40	28.00	1.579	47			
L	R3	12	300	7	0.60	1.00	0.20				I	APPROACH SIDEWALK	1.80	12.60	0.888	16	6		
	SW1	12	AS SHOWN	14	6.00						STR.		6.00	84.00	0.888	79			
	SW2	12	200	60	0.10	2.50	0.40	0.10			F		3.10	186.00	1.579	173			
M	SW3	12	AS SHOWN	6	6.00	6.00					STR.	APPROACH SIDEWALK	6.00	36.00	0.888	39	6		
	GRAND TOTAL												Grade 40 bar		1218 Kgs				
	* 12 mm dia. and below are Grade 40												Grade 60 bar		14256 Kgs				
* 16 mm dia. and above are Grade 60												Grade 40 bar		1218 Kgs					
ABUTMENT B												Grade 60 bar		14256 Kgs					

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS. THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.

ENGR. ALBERTO C. CAÑETE
TEAM LEADER

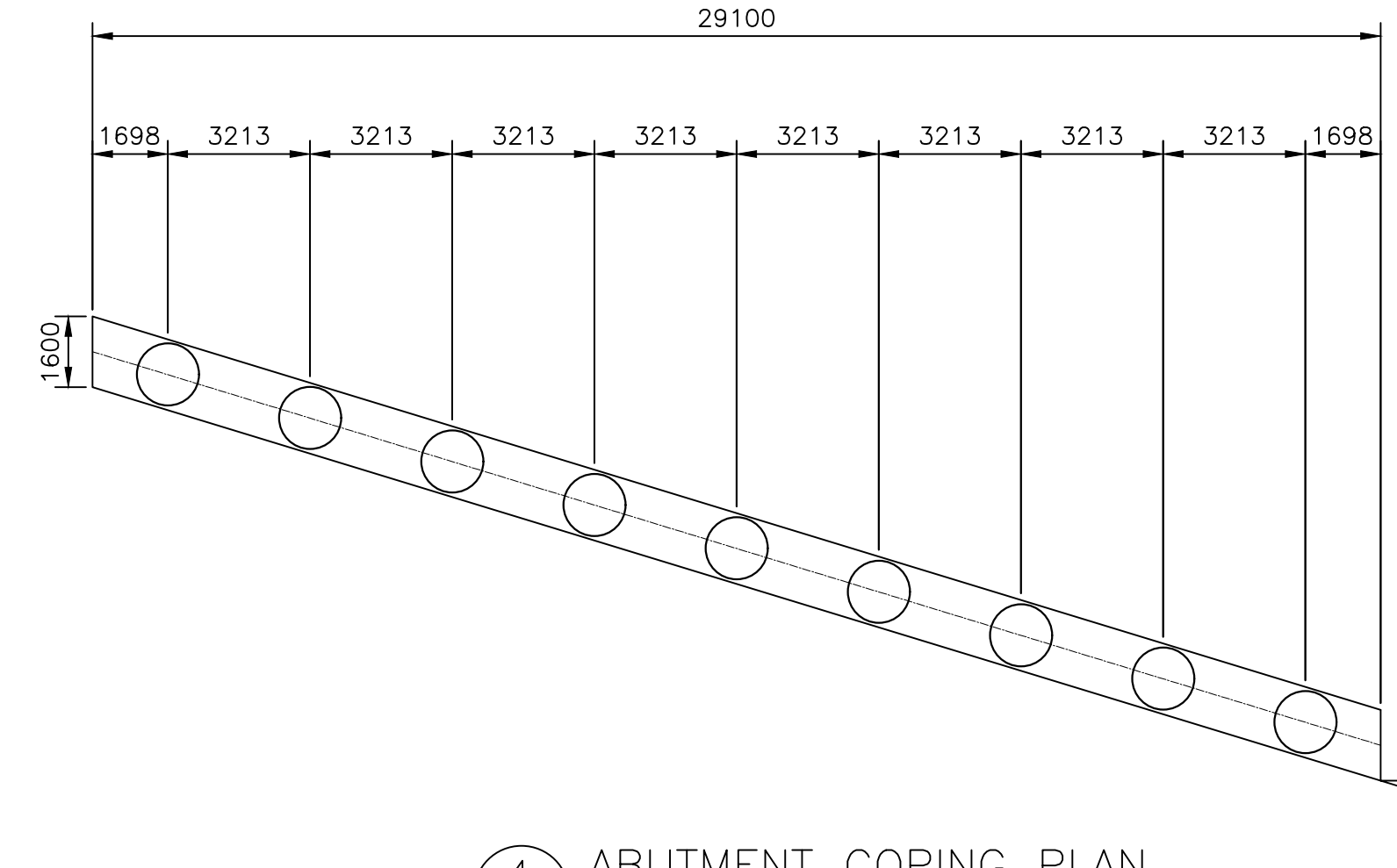
<p>Urban Integrated Consultants, Inc. 100 CORPORATE BLDG., 8 LANES STREET, MASA, DUMAGAN, QUEZON CITY, 1128</p>	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	CHECKED BY ALBERTO C. CAÑETE M.Eng P.P., F.ASE PROJECT MANAGER - UICI DATE: -	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITA M. SUNGA OIC - PMD DATE: -	REVISIONS A B C D E F	DATE PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (STA.1+500-STA.16+000) - OVERPASS 2	SCALE AS SHOWN PROJECT CODE DATE APPROVED DATE REVISD REV.	DRAWING STATUS DRAFT DRAWING DRAWING NO. P302-01 SIZE A1
	BACKWALL, COPING AND WINGWALL DETAILS							



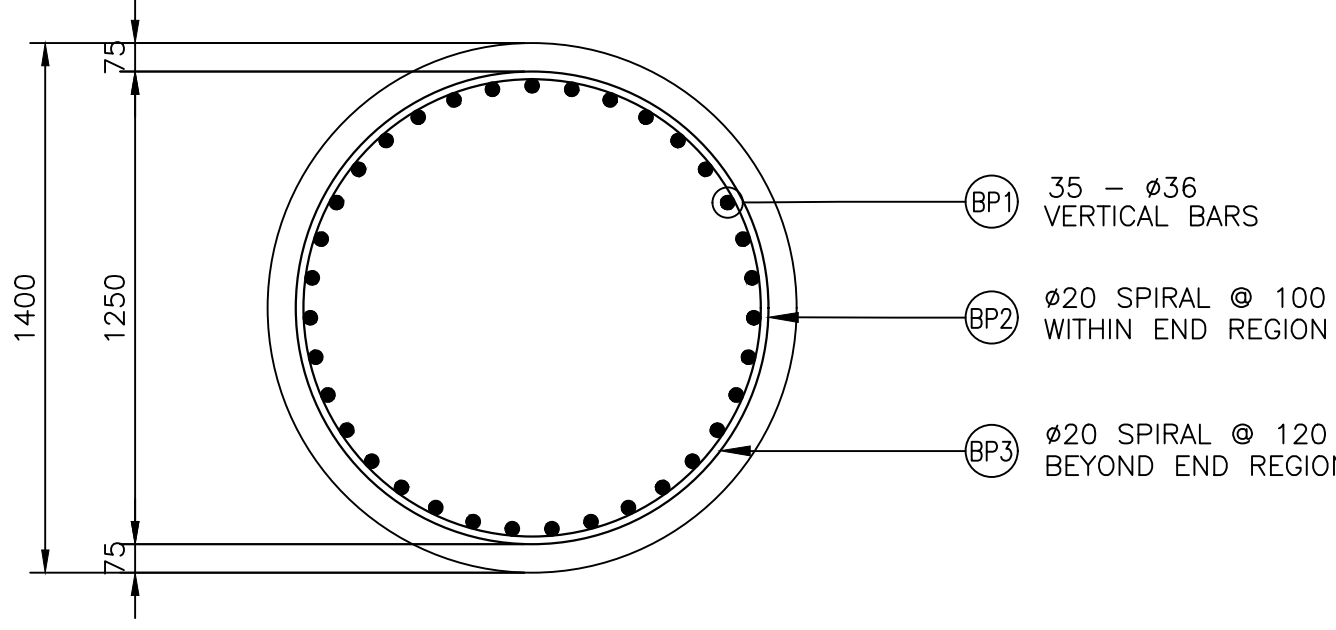
1 VERTICAL SECTION
SCALE 1:50

2 SCHEMATIC DIAGRAM
SCALE 1:50

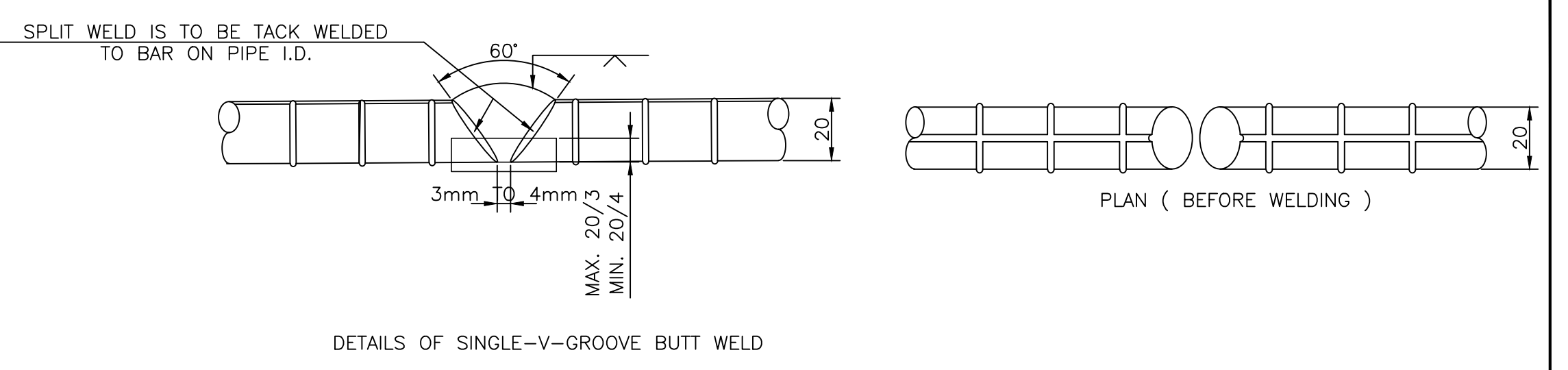
3 STIFFENER LAYOUT
SCALE 1:50



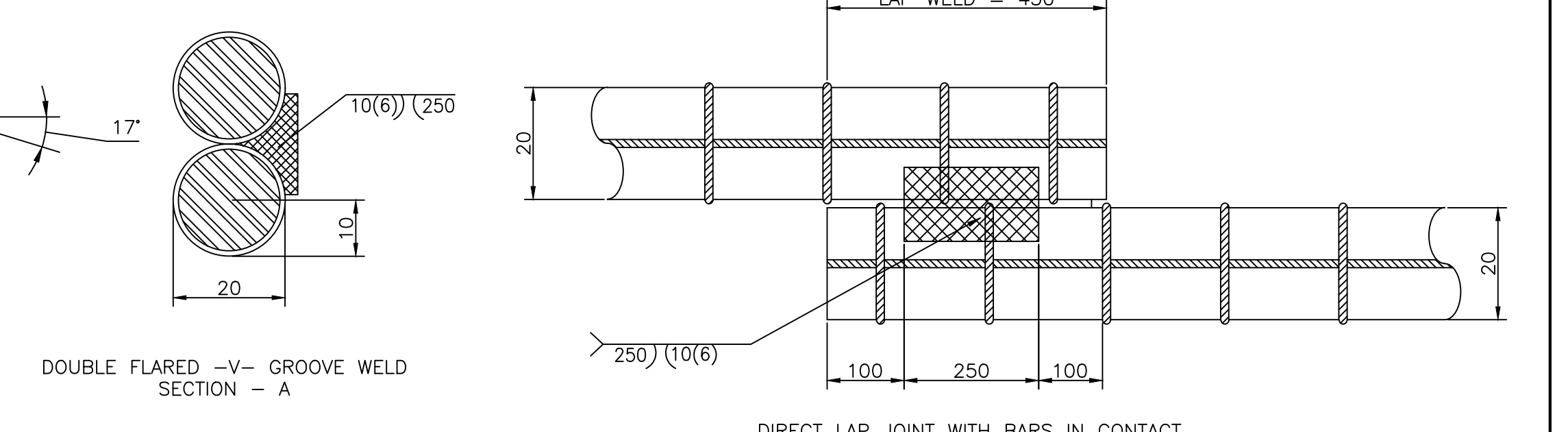
4 ABUTMENT COPING PLAN
SCALE 1:150



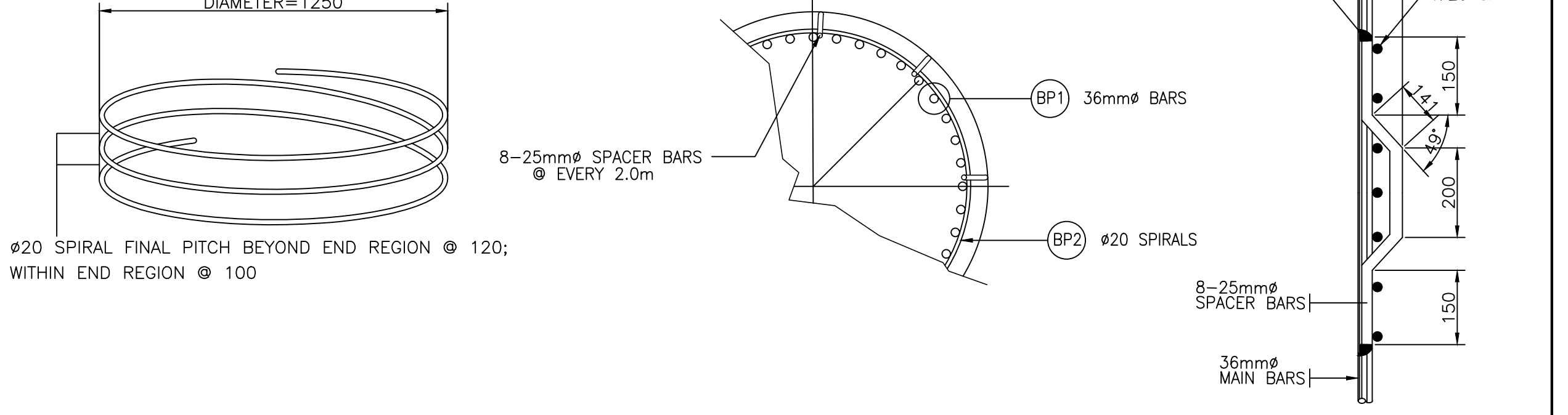
5 ABUTMENT BORED PILE SECTION
SCALE 1:20



DETAILS OF SINGLE-V-GROOVE BUTT WELD



6 DETAILS OF TIES REINFORCEMENT LAP-WELD CONNECTION
SCALE NTS



7 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS

- NOTES:
- THE REINFORCEMENT ARE LAP-WELD CONNECTED (FLARED-V-GROOVE TYPE)
 - SPIRAL REINFORCEMENT ARE LAP WELD CONNECTED.
 - WELDING SHALL BE IN ACCORDANCE WITH ANSI/AWS. D1.4-92. STRUCTURAL WELDING CODE REINFORCEMENT STEEL, USE ELECTRODE E90XX-X.
 - CARE SHOULD BE TAKEN NOT TO DAMAGE BORED PILE/COLUMN MAIN BARS DURING WELDING.
 - SPIRAL REINFORCEMENT SHOULD BE BUTT WELDED WHERE SPIRAL PITCH IS 50mm OR LESS. OTHERWISE USE LAP WELD SPLICE.
 - ADDITIONAL STIFFENERS/GUIDE BARS MAY BE PROVIDED TO STABILIZE THE PILE REINFORCEMENT DURING FABRICATION/ERECTION SUBJECT TO THE APPROVAL OF THE ENGINEER.
 - DIRTY CONCRETE (MINIMUM 600mm HEIGHT) SHOULD BE REMOVED PRIOR TO CONSTRUCTION OF BACKWALL AND COPING BEAM.
 - CONCRETE - CONCRETE SHALL CONFORM TO THE REQUIREMENT OF CLASS AA CONCRETE WITH 28MPa. CYLINDER STRENGTH AND 19mm MAXIMUM AGGREGATE SIZE.
 - REINFORCEMENT - ALL REINFORCEMENT STEEL SHALL BE DEFORMED BAR CONFORMING TO AASHTO M31 (ASTM 315) GRADE 60. SPLICES OF ADJACENT LONGITUDINAL STEEL SHALL BE STAGGERED 100 BAR DIAMETER APART, LENGTH OF SPLICES SHALL BE 2200mm.
 - THE STABILIZATION FOR BORED PILE EXCAVATION (SUCH AS USING BENTONITE SLURRY OR TEMPORARY STEEL CASING ETC.) SHALL BE CONSIDERED BY THE CONTRACTOR AND THE COST IS SUBSIDIARY IN PAY ITEM 400(17). THE CONTRACTOR SHALL SUBMIT THE CONSTRUCTION METHOD FOR ENGINEERS APPROVAL BEFORE CONSTRUCTION.

SCHEDULE OF REINFORCEMENT BORED PILE AT ABUTMENT ONLY

BAR REINFORCING DIAGRAM	BAR MARK	SIZE (□□)	SPACING (□□)	□TY	BAR SHAPE	BAR DIMENSION					LOCATION	BAR LENGTH (□)	TOTAL LENGTH (□)	UNIT WEIGHT (□.□)	TOTAL WEIGHT (□g)	VOLUME CONCRETE (cu.□)
						a	b	c	d	e						
FOR ONE (1) BORED PILE AT ABUTMENT (L=20m, Ø2000mm)																
A	BP1	36	AS SHOWN	35	A	0.40	20	-	-	-	BORED PILE	20.40	714.0	7.991	5707	31
B	BP2	20	AS SHOWN	78	D	0.15	5	-	-	-		5.15	401.70	2.466	1000	
C	BP3	20	120	103	D	0.15	5	-	-	-		5.15	530.45	2.466	1321	
D	BP4	25	AS SHOWN	80	C	0.15	0.141	0.20	0.141	0.15		0.782	62.56	3.854	243	
												TOTAL			8271 Kgs	31 cu.m

NOTE: PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS. THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.

ENGR. ALBERTO C. CAÑETE
TEAM LEADER

CONSULTANTS
Urban Integrated Consultants, Inc.
100 CORPORATE BLDG., 8 LANES STREET, WISRA, DAVAO, QUEZON CITY, 1128

SUBMITTED BY
EFREN L. DAVID
PRESIDENT - UICI

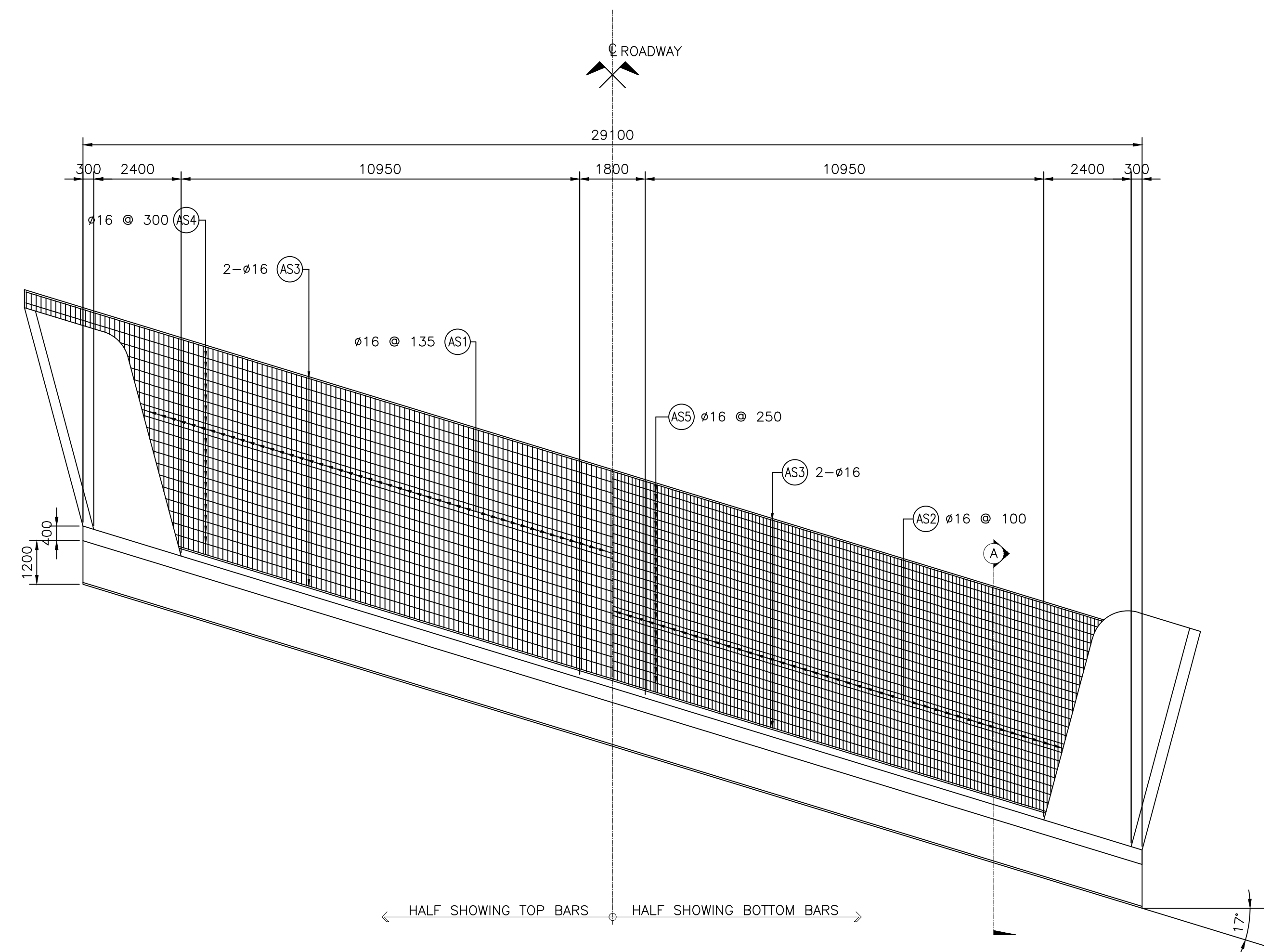
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ALBERTO C. CAÑETE M.Eng P.P., F.ASEP
PROJECT MANAGER - UICI

BCDA
BAYAN LEPUS
Development Authority

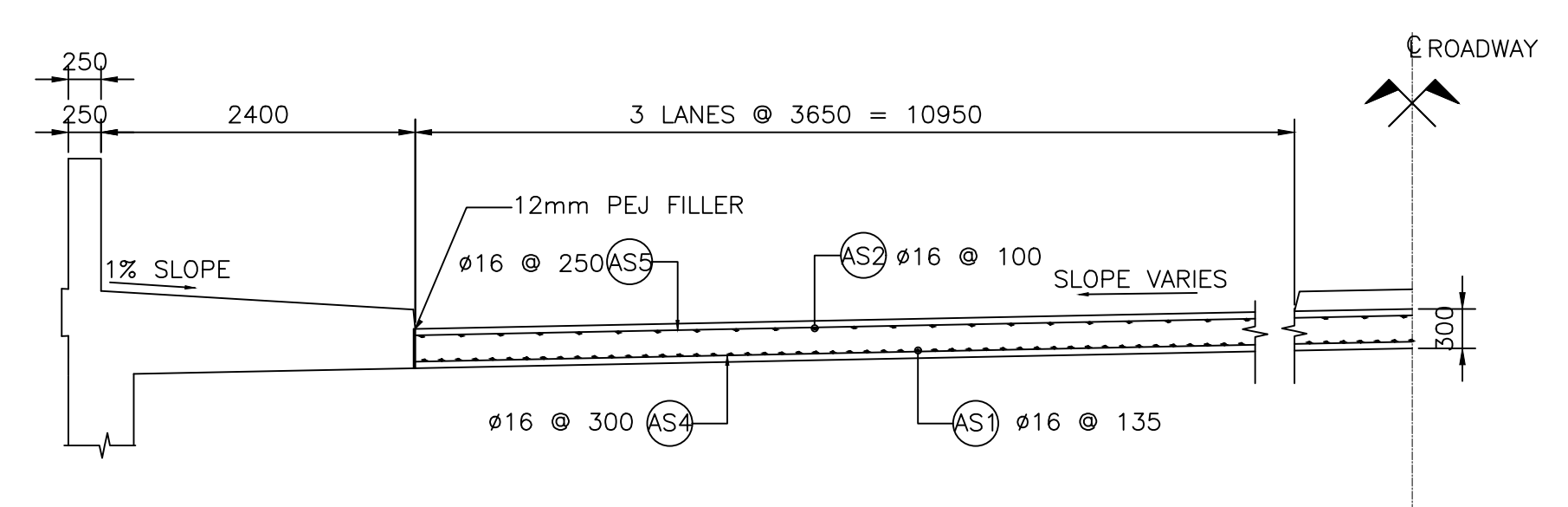
CHECKED BY
RYAN PAUL S. GALURA
PROJECT MANAGER

APPROVED BY
JOVITA M. SUNGA
OIC - PMD

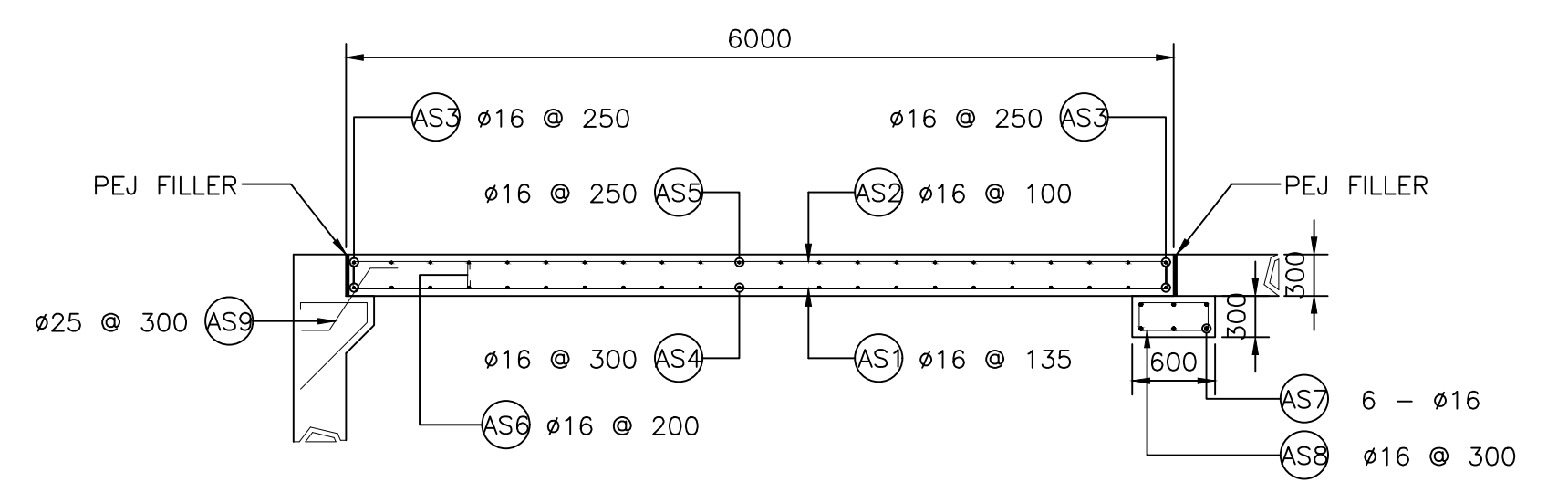
REVISIONS	DATE	PROJECT TITLE	SCALE	DRAWING STATUS
A		DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING
B		SHEET CONTENT	PROJECT CODE	DRAWING NO. SIZE
C		ABUTMENT BORED PILE DETAILS	P302-0□	A1
D		SCHEDULE OF REINFORCEMENTS AND SUMMARY OF QUANTITIES	DATE APPROVED	DATE REVISED
E				
F				



1 PLAN
SCALE 1:100



2 ELEVATION
SCALE 1:75



3 SECTION "A"
SCALE 1:50

SCHEDULE OF REINFORCEMENTS FOR ONE APPROACH SLAB ONLY

BAR BENDING DIAGRAM	BAR MARK	SIZE (mm)	QTY	SPACING (mm)	BAR SHAPE	R E I N F O R C I N G B A R S						BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)
						a	b	c	d	e	f				
a	AS1	16	230	135	A	6.0	0.27	0.27				6.54	1501.78	1.579	2370
b	AS2	16	310	100	A	6.0	0.27	0.27				6.54	2027.40	1.579	3200
c	AS3	16	4	AS SHOWN	A	31.00	0.27	0.27				31.54	126.16	1.579	199
d	AS4	16	20	300	A	31.00	0.27	0.27				31.54	630.80	1.579	996
e	AS5	16	24	250	A	31.00	0.27	0.27				31.54	756.96	1.579	1195
f	AS6	16	152	200	A	0.30	0.27	0.27				0.84	127.68	1.579	202
g	AS7	16	6	AS SHOWN	A	31.00	0.27	0.27				31.54	189.24	1.579	299
h	AS8	16	103	300	B	0.50	0.50	0.10	0.10			1.20	124.00	1.579	196
i	AS9	25	103	300	C	0.13	0.60	0.13				0.86	88.87	3.584	342
												TOTAL GRADE 60	8998 Kgs		

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TEAM LEADER

CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, MISRA, DALMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	CHECKED BY ALBERTO C. CAÑETE M.Eng P.P., F.ASEPP PROJECT MANAGER - UICI DATE: -	 BUREAU OF CONSTRUCTION DEVELOPMENT AUTHORITY	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (STA.1+500-STA.16+000) - OVERPASS 2	SCALE AS SHOWN PROJECT CODE DATE APPROVED -	DRAWING STATUS DRAFT DRAWING DRAWING NO. SIZE P302-10 A1 DATE REVISED -
	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITA M. SUNGA OIC - PMD DATE: -	APPROACH SLAB DETAILS		DATE APPROVED -	DATE REVISED -	REV. -	

GENERAL NOTES

A. GENERAL

- A.1 UNLESS INDICATED OTHERWISE, ALL DIMENSIONS, DISTANCES AND SIZES (MEMBERS AND REINFORCING STEEL) ARE IN MILLIMETRES EXCEPT STATIONING WHICH ARE IN KILOMETRES + METRES AND ELEVATIONS WHICH ARE IN METERS.
- A.2 INDICATED DIMENSIONS SHALL GOVERN OVER SCALED DIMENSIONS. SCALED DIMENSIONS SHALL NOT BE USED FOR CONSTRUCTION PURPOSES.
- A.3 UNLESS OTHERWISE SHOWN ON THE PLANS, ALL EXPOSED EDGES SHALL BE CHAMFERED 20mm EXCEPT RAILING.
- A.4 ALL ELEVATIONS, STATIONINGS, AND DIMENSIONS SHALL BE VERIFIED PRIOR TO ACTUAL CONSTRUCTION.

B. DESIGN CRITERIA

B.1 SPECIFICATIONS

- B.1.1 DPWH DESIGN GUIDELINES, CRITERIA AND STANDARDS, VOLUME V, BRIDGES, 2015
 B.1.2 DPWH BRIDGE SEISMIC DESIGN SPECIFICATIONS, 2013
 B.1.3 AASHTO LRFD CODE, 2012 EDITION

B.2 LOADS AND WEIGHTS

- B.2.1 TRAFFIC LIVE LOAD HL - 93
 B.2.2 PERMIT LIVE LOAD CALTRANS P-7

B.2.3 WEIGHTS

- B.2.3.1 CONCRETE, PLAIN OR REINFORCED 24.0 kN / m³
 B.2.3.2 STEEL OR CAST STEEL 77.0 kN / m³
 B.2.3.3 COMPACTED SAND, EARTH 18.9 kN / m³
 B.2.3.4 UTILITIES 10% OF DEAD LOADS (FOR DESIGN OF GIRDERS ONLY)

C. MATERIALS

C.1 CONCRETE

- a) UNLESS OTHERWISE INDICATED ON THE PLANS, THE MINIMUM CYLINDER STRENGTH OF CONCRETE AT 28 - DAY SHALL BE.

DESCRIPTION	CLASS	f _c		
		MPa	IN	MM
a. ALL SUPERSTRUCTURES (DECK SLAB, PEDESTAL)	A	28	3/4	20
b. ALL SUBSTRUCTURES (PIERS, ABUTMENT)	A	28	1	25
c. BORED PILE	A	28	1	25
d. PRESTRESSED CONCRETE (INITIAL STRENGTH f _{ci} =35MPa)	P	41	1	25
e. BRIDGE RAILING AND SIDEWALKS	C	21	1	25
f. LEAN CONCRETE	D	14	1	25

THE MINIMUM COMPRESSIVE STRENGTH OF PRESTRESSED CONCRETE AT STRESSING STAGE AS INDICATED ON THE PLAN.

b) CONCRETE COVER OF REINFORCEMENT

UNLESS OTHERWISE SPECIFIED, CLEAR CONCRETE COVER TO REINFORCING STEEL SHALL BE AS FOLLOWS:

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	75
CONCRETE EXPOSED TO EARTH OR WEATHER	
PRIMARY REINFORCEMENT	50
STIRRUPS, TIES AND SPIRALS	40
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND	
PRIMARY REINFORCEMENT	40
STIRRUPS, TIES AND SPIRALS	25
CONCRETE PILES CAST AGAINST AND/OR PERMANENTLY EXPOSED TO EARTH	
CONCRETE PILES	75

C.2 REINFORCING STEEL

- a) REINFORCING STEEL NON WELDABLE STEEL BARS SHALL CONFORM TO ASTM A615 / A615M AND FOR WELDABLE STEEL BARS SHALL CONFORM ASTM A706 / A706M.

MINIMUM YIELD STRENGTH AS LISTED BELOW UNLESS OTHERWISE SPECIFIED IN THE DRAWING.

- F_y = 414 MPa (Gr. 60) FOR 16mmØ AND LARGER
 F_y = 276 MPa (Gr. 40) FOR 12mmØ AND SMALLER

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

C.3 ELASTOMERIC BEARING PADS

ELASTOMERIC BEARING PADS SHALL BE 100 % VIRGIN CHLOROPRENE (NEOPRENE) PADS WITH DUROMETER HARDNESS 60 UNLESS OTHERWISE SPECIFIED ON THE PLANS. BEARING PADS SHALL BE LAMINATED TYPE BEARING PADS CONSISTING OF LAYER OF ELASTOMER . RESTRAINED AT THEIR INTERFACES BY BONDED LAMINATIONS AS REQ'D ON THE PLANS, LAMINATED PLATE SHALL BE NON-CORROSIVE MILD STEEL SHEET. ALL BEARING PADS SHALL CONFORM TO THE REQUIREMENT SPECIFIED IN THE AASHTO SPECIFICATIONS AND DPWH D.O. NO. 25 SERIES OF 1997.

C.4 HANDLING HOOK DEVICES

HANDLING HOOK DEVICES OF PRESTRESSED MEMBERS SHALL BE AS SHOWN ON THE PLANS OR ANY SUITABLE DEVICES PREPARED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

C.5 WATER STOPPER

WATER STOPPER SHALL BE MADE OF RUBBER TO BE SPECIFIED ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

C.6 JOINT FILLER

JOINT FILLER, HOT POURED ELASTIC TYPE, USED FOR EXPANSION JOINT SHALL CONFORM TO AASHTO M 213

C.7 BOND BREAKER

BOND BREAKER SHALL BE WOVEN BURLAP FABRIC SATURATED WITH BUTYMINOUS SUBSTANCES AS USED IN WATERPROOFING.

D. CONSTRUCTION

D.1 CONSTRUCTION SPECIFICATIONS

ALL CONSTRUCTION SHALL CONFORM TO:

- D.1.1 CONDITIONS OF CONTRACT
 D.1.2 THE SPECIAL PROVISIONS
 D.1.3 THE DPWH STANDARD SPECIFICATIONS FOR HIGHWAY, BRIDGES, AND AIRPORTS, VOLUME II 2004 EDITION, AS MODIFIED ON THE DRAWINGS.

D.2 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.

D.3 CONSTRUCTION LIMITS

THE CONTRACTOR SHALL VERIFY AND WORK WITHIN THE CONSTRUCTION LIMITS OR EASEMENTS OF THE BRIDGE STRUCTURE. HE SHALL HOWEVER PROVIDE FOR AREAS HE MAY REQUIRE FOR HIS OWN USE. IT IS THE INTENT OF THE PLANS TO LEAVE UNDISTURBED ANYTHING 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.

D.4 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 THE 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 WILL BE 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.

D.5 PUBLIC UTILITIES/FACILITIES

REFER TO SPECIAL PROVISIONS

D.6 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.

D.7 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.

D.8 MATERIAL SOURCES

WHERE COMMON BORROW IS REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING HIS OWN SOURCES OF COMMON BORROW AS OUTLINED IN THE SPECIFICATIONS.

D.9 EXCAVATION

EXCAVATION FOR STRUCTURES SHALL BE NEAT LINES AS SHOWN ON THE PLANS AND THE SOIL UNDERNEATH STRUCTURE FOUNDATIONS SHALL NOT BE DISTURBED.

D.10 BACKFILLING

BACKFILLING FOR STRUCTURES SHALL BE DONE WITH GRANULAR MATERIALS COMPACTED ACCORDING TO SPECIFICATIONS.

D.11 REINFORCED CONCRETE

D.11.1 CONCRETE MIX AND PLACING

D.11.1.1 DESIGN OF CONCRETE MIX SHALL MEET THE DESIGN CONCRETE STRENGTH GIVEN UNDER ITEM 1 OF MATERIALS.

D.11.1.2 CONCRETE SHALL BE DEPOSITED, VIBRATED AND CURED IN ACCORDANCE WITH THE SPECIFICATIONS.

D.11.1.3 FOR CONCRETE DEPOSITED AGAINST THE GROUND, LEAN CONCRETE WITH A MINIMUM THICKNESS OF 100mm SHALL BE LAID FIRST BEFORE INSTALLING THE REINFORCEMENT. THE LEAN CONCRETE SHALL NOT BE CONSIDERED IN MEASURING THE STRUCTURAL DEPTH OF CONCRETE SECTION.

D.11.1.4 THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL PLACING SEQUENCES FOR ALL CONCRETING WORK.

D.11.2 BAR BENDING, SPlicing AND PLACING

D.11.2.1 PRIOR TO FABRICATION, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, SHOP DRAWINGS INDICATING THE BENDING, CUTTING, SPlicing AND INSTALLATION OF ALL REINFORCING BARS.

D.11.2.2 BARS SHALL BE BENT COLD. BARS PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT UNLESS PERMITTED BY THE ENGINEER.

D.11.2.3 BAR SPlicing NOT INDICATED ON DRAWINGS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

D.11.2.4 WELDED SPlices, IF APPROVED BY THE ENGINEER, SHALL DEVELOP IN TENSION AT LEAST 125% OF THE SPECIFIED YIELD STRENGTH OF THE BARS.

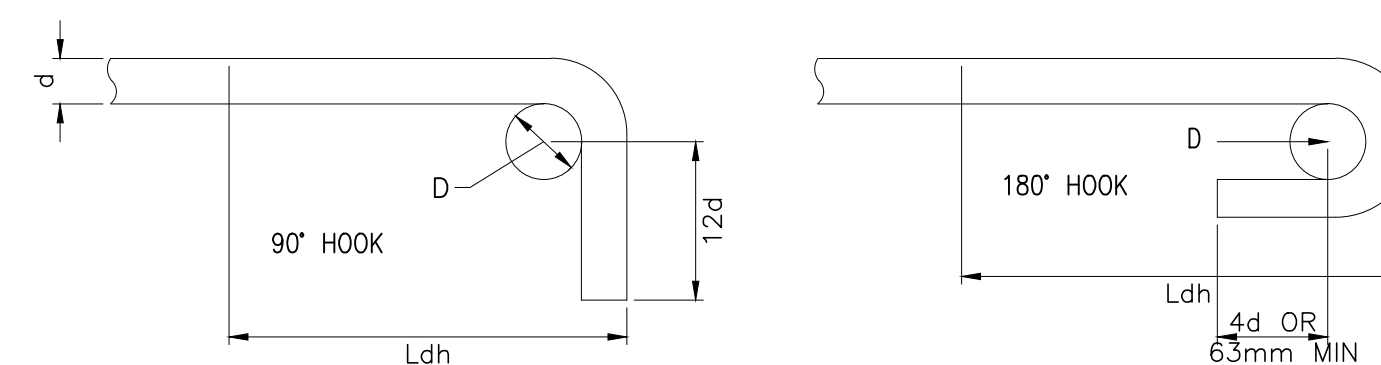
D.11.2.5 NOT MORE THAN 50% OF THE BARS AT ANY ONE SECTION SHALL BE SPliced, UNLESS SPECIFICALLY INDICATED.

D.11.2.6 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 25mm. THE BARS IN THE UPPER LAYER SHALL BE PLACED DIRECTLY ABOVE THOSE IN THE BOTTOM LAYER.

D.11.2.7 HOOKS AND BENDS

DIMENSIONS OF 90-DEGREE AND 180-DEGREE HOOKS

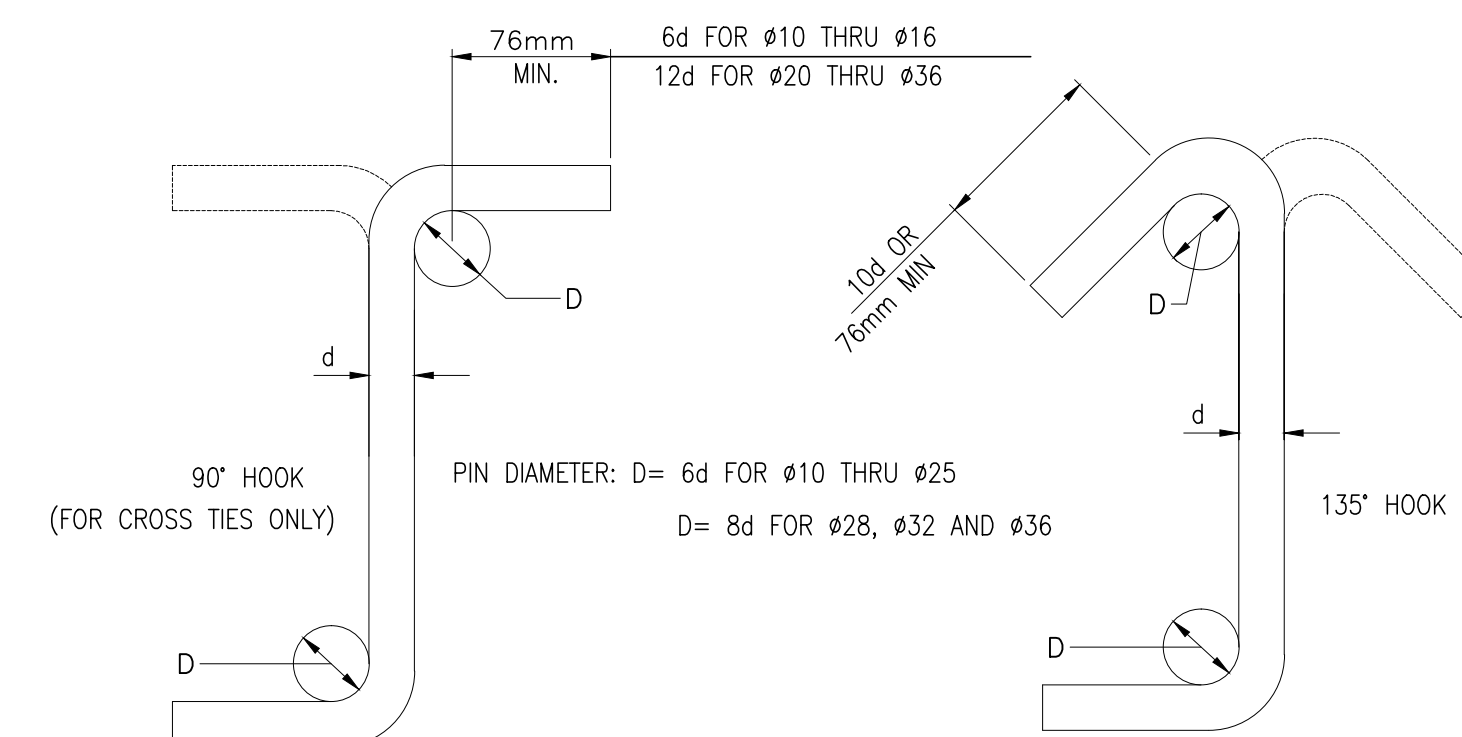


PIN DIAMETER: D= 6d FOR Ø10 THRU Ø25
 D= 8d FOR Ø28, Ø32 AND Ø36

D.11.2.8 LAP SPICES LENGTHS (mm):

SIZE	DEVELOPED LENGTH (f _c '=28MPa)	DEVELOPED LENGTH (f _c '=41MPa)
10	270	270
12	320	320
16	420	420
20	530	530
25	810	670
28	1020	840
32	1330	1100
36	1680	1390

D.11.2.8 DIMENSIONS FOR STIRRUPS AND CROSS TIE HOOKS



NOTE:
 PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS. THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.

ENGR. ALBERTO C. CAÑETE
 TEAM LEADER

CONSULTANTS	SUBMITTED BY	DESIGNED BY	REVISIONS	DATE	PROJECT TITLE	SCALE	DRAWING STATUS		
<p>URBAN INTEGRATED CONSULTANTS, INC. 100 CORPORATE BLDG., 8 LANES STREET, WISRA, DILMAN, QUEZON CITY, 1128</p>	EFREN L. DAVID PRESIDENT - UICI DATE: -	ALBERTO C. CAÑETE., M.Eng., P.P., F. ASEP PROJECT MANAGER - UICI DATE: -	A		DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000.00) - OVERPASS 3	AS SHOWN	DRAFT DRAWING		
			B			PROJECT CODE	DRAWING NO.	SIZE	
			CHECKED BY	APPROVED BY			P303GN-01	A1	
			RYAN PAUL S. GALURA PROJECT MANAGER	JOVITO M. SUNGA OIC - PMD			DATE APPROVED	DATE REVISED	REV.
						GENERAL NOTES	-	-	-

GENERAL NOTES

D.11.3 CONSTRUCTION JOINT
 D.11.3.1 THE POSITION AND FORM OF ANY CONSTRUCTION JOINT SHALL BE AS SHOWN ON DRAWINGS OR AS AGREED WITH THE ENGINEER.
 D.11.3.2 THE INTERFACE BETWEEN THE FIRST-AND SECOND-POUR CONCRETES SHALL BE ROUGHENED WITH WITH AN AMPLITUDE OF 6mm MINIMUM.

D.11.4 FORMWORK
 FORMWORKS SHALL BE CONSTRUCTED SUCH THAT IT WILL NOT YIELD UNDER CONSTRUCTION LOAD AND SHALL BE SUCH AS TO AVOID THE FORMATION OF FINS. ALL CORNERS OF CONCRETE MEMBERS SHALL BE CHAMFERED TO 20mm UNLESS NOTED OTHERWISE ON DRAWINGS. STRIPPING OF FORMS AND SHORES SHALL BE AS DESIGNATED AND APPROVED BY THE ENGINEER. THE FOLLOWING MAY BE USED AS A GUIDE:

	MINIMUM TIME
SHORING UNDER GIRDERS, BEAMS, FRAMES	14 DAYS
DECK SLABS	14 DAYS
WALLS	7 DAYS
COLUMNS	7 DAYS
SIDES OF BEAMS	2 DAYS

D.11.5 PROTECTION AND CURING OF CONCRETE
 CONCRETE SURFACES SHALL BE PROTECTED FROM HARMFUL EFFECTS OF SUN, WIND AND RUNNING WATER, AND SHALL BE KEPT DAMP FOR AT LEAST 7 DAYS, AND AS REQUIRED BY THE ENGINEER.

D.12 PRESTRESSED CONCRETE

D.12.1 GIRDER DESIGN GUIDE

D.12.1.1 POST-TENSIONING STEEL : THE PROPOSED TYPE OF TENDONS WHICH WILL BE USED IN THE POST-TENSIONED DESIGNS, ALL NECESSARY ADDITIONAL DETAILS INCLUDING THOSE FOR END ANCHORAGES, METHODS TO BE EMPLOYED AND PROCEDURES TO BE FOLLOWED, SHALL BE AS APPROVED BY THE ENGINEERS. A PORTION OF THE TENDONS SHALL BE DRAPED LONGITUDINAL IN PARABOLIC POSITIONS, ALL TENDONS SHALL BE PLACED SO THAT THEIR CENTER OF GRAVITY WILL BE AT THE POSITION SHOWN ON PLANS. THE TOTAL POST-TENSION FORCE AFTER LOSSES REQUIRED AT MIDSPAN SHALL BE PROVIDED AS CALLED FOR IN THE VARIOUS DESIGNS. THE REQUIRED FORCES AFTER LOSSES SHALL BE OBTAINED BY APPLYING INITIAL TENSILE FORCES OF SUFFICIENT MAGNITUDE TO ALLOW FOR ALL SUBSEQUENT LOSSES, INCLUDING THOSE FOR ELASTIC SHORTENING, SHRINKAGE, CREEP, RELAXATION, FRICTION, AND EFFICIENCY OF END ANCHORAGES. AFTER SECURING THE END ANCHORAGES ALL TENDONS SHALL BE PRESSURE GROUTED IN THEIR CONDUITS IN ACCORDANCE WITH "SPECIFICATIONS".

D.12.1.2 CONCRETE FOR GIRDERS SHALL BE A MINIMUM STRENGTH OF 41 MPa (6000 PSI) AT THE AGE OF 28 DAYS.

D.12.1.3 THE CONTRACTOR MAY PROPOSE ANY ALTERNATIVE TENDON SIZE AND LAYOUT AND SUBJECT SHALL MEET THE APPROVAL OF THE ENGINEER.

D.12.1.4 THE REQUIRED STRENGTH OF CONCRETE AT TIME OF TENSIONING SHALL BE 35 MPa (5,000 PSI). A GRID CONSISTING OF #12 BARS AT 100 CENTERS IN BOTH DIRECTIONS SHALL BE PLACED NEAR EACH ANCHORAGE OF THE POST-TENSIONING SYSTEM. POST-TENSIONING FORCES SHOWN BELOW COMPUTED FOR TENDONS JACKED SIMULTANEOUSLY AT BOTH ENDS, FRICTIONS COEFFICIENTS ARE $K = 0.0066/m$ AND $u = 0.25$ WITH AN ANCHORAGE DEFORMATION OF 6mm.

D.12.1.5 HANDLING PRESTRESSED CONCRETE BEAMS : THE BEAMS SHALL BE MAINTAINED IN AN UPRIGHT POSITION AND SHALL BE LIFTED BY SUITABLE DEVICES PROVIDED AT THE ENDS OF THE BEAMS. ATTENTION IS DIRECTED TO THE INCREASED DIFFICULTY OF LIFTING BEAMS WITHOUT END BLOCKS. THE CONTRACTOR PROPOSED LIFTING DETAILS SHOULD BE GIVEN CAREFULL CONSIDERATION BEFORE BEING SUBMITTED ON SHOP DRAWING FOR APPROVAL. THE USE OF HOLES FOR LIFTING PURPOSES WILL NOT BE PERMITTED.

D.12.1.6 CONTRACTOR SUBMIT FOR APPROVAL BY THE ENGINEER THE CORRESPONDING ELONGATION OF THE PRESTRESSING TENDONS.

D.13 BORED PILES

D.13.1 SUBMITTALS

AT LEAST 15 DAYS BEFORE WORK ON SHAFTS BEGINS, THE CONTRACTOR SHALL SUBMIT THE FOLLOWING TO THE ENGINEER FOR REVIEW AND APPROVAL.

- D.13.1.1 LIST OF PROPOSED EQUIPMENT TO BE USED INCLUDING CRANES, DRILLS, AUGERS, BAILING BUCKETS, FINAL CLEANING EQUIPMENT, DESANDING EQUIPMENT, SLURRY PUMPS, CASING, ETC.
- D.13.1.2 DETAILS OF OVERALL CONSTRUCTION OPERATION SEQUENCE AND THE SEQUENCE OF SHAFT CONSTRUCTION IN BENTS OR GROUPS.
- D.13.1.3 DETAILS OF SHAFT EXCAVATION METHOD.
- D.13.1.4 WHEN SLURRY IS REQUIRED, DETAILS OF THE METHOD PROPOSED FOR MIXING, CIRCULATING AND DESANDING SLURRY.
- D.13.1.5 DETAILS OF METHOD TO CLEAN THE SHAFT EXCAVATION.
- D.13.1.6 DETAILS OF REINFORCEMENT PLACEMENT INCLUDING SPLICES, SUPPORT & CENTRALIZATION METHODS.
- D.13.1.7 DETAILS OF CONCRETE PLACEMENT, CURING AND PROTECTION.
- D.13.1.8 DETAILS OF ANY REQUIRED LOAD TEST, AND;

(REFER TO DO. No. 37, SERIES FO 2016, Re: POLICIES & GUIDELINES ON THE TESTING OF BORED PILES FOR INFRASTRUCTURE PROJECTS)

- A. PILE DYNAMIC TEST (HIGH STRAIN DYNAMIC LOAD TEST) SHALL BE CONDUCTED ON BORED PILES TO DETERMINE / CHECK THE ACTUAL BEARING CAPACITY, SKIN FRICTION OF THE BORED PILE.
- B. PILE INTEGRITY TEST – THE QUALITATIVE EVALUATION OF THE PHYSICAL DIMENSIONS, CONTINUITY OF A PILE, AND CONSISTENCY OF THE PILE MATERIAL.

D.13.1.9 OTHER INFORMATION SHOWN ON THE PLANS OR REQUESTED BY THE ENGINEER. THE CONTRACTOR SHALL NOT START THE CONSTRUCTION OF DRILLED SHAFTS UNTIL SUCH DRAWINGS HAVE BEEN APPROVED BY THE ENGINEER. SUCH APPROVAL WILL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR RESULTS OBTAINED BY USE OF THESE DRAWINGS OR ANY OF HIS OTHER RESPONSIBILITIES UNDER THE CONTRACT.

D.13.2 CONCRETE
 CONCRETE SHALL BE CLASS "B" UNLESS OTHERWISE SPECIFIED. MINIMUM CEMENT CONTENT SHALL BE NOT LESS THAN 380 kg/cu.m.; MAXIMUM SIZE AGGREGATE=20mm; SPECIFIED COMP. STRENGTH (28 DAYS) 41 MPa.

D.13.3 REINFORCING STEEL
 UNLESS INDICATED OTHERWISE, REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615) GRADE 60, DEFORMED

D.13.4 CASINGS
 CASINGS REQUIRED TO BE INCORPORATED AS PART OF THE PERMANENT WORK SHALL BE AASHTO M270 (ASTM A709) GRADE 36, UNLESS OTHERWISE SPECIFIED.

D.13.5 PROTECTION OF EXISTING STRUCTURES
 ALL REASONABLE PRECAUTIONS SHALL BE TAKEN TO PREVENT DAMAGE TO EXISTING STRUCTURES AND UTILITIES. THESE MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, SELECTING CONSTRUCTION METHODS AND PROCEDURES THAT WILL PREVENT EXCESSIVE CAVING OF THE SHAFT EXCAVATION, MONITORING AND CONTROLLING THE VIBRATIONS FROM THE DRIVING OF CASING OR SHEETING, DRILLING OF THE SHAFT OR FROM BLASTING, IF PERMITTED.

D.13.6 FIELD TEST
 LOW STRAIN INTEGRITY TESTING SHALL BE CONDUCTED FOR ALL BORED PILES OR AS DIRECTED BY THE ENGINEER TO VERIFY/CHECK THE CONCRETE HOMOGENEITY AND TO LOCATE/EVALUATE ANY POSSIBLE IRREGULARITIES IN THE COMPLETED BORED PILE. HIGH STRAIN PILE TESTING SHALL BE CONDUCTED AT LEAST TEN (10) PERCENT OF THE BORED PILES OR AS DIRECTED BY THE ENGINEER TO VERIFY/CHECK THE PILE CAPACITY. THE LOCATION SHALL BE BASED ON THE RESULTS OF THE LOW STRAIN TESTS OR AS DIRECTED BY THE ENGINEER.

NOTE:
 PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS. THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.
 ENGR. ALBERTO C. CAÑETE
 TEAM LEADER

CONSULTANTS	SUBMITTED BY	DESIGNED BY	CHECKED BY	APPROVED BY	REVISIONS	DATE	PROJECT TITLE	SCALE	DRAWING STATUS	
Urban Integrated Consultants, Inc. <small>UIC CORPORATE BLDG., 8 LANOS STREET, VASRA, DALMAN, QUEZON CITY, 1128</small>	EFREN L. DAVID <small>PRESIDENT - UICI</small>	ALBERTO C. CAÑETE., M.Eng., P.P., F. ASEP <small>PROJECT MANAGER - UICI</small>	RYAN PAUL S. GALURA <small>PROJECT MANAGER</small>	JOVITO M. SUNGA <small>OIC - PMD</small>	A		DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000.00) - OVERPASS 3	AS SHOWN	DRAFT DRAWING	
					B			PROJECT CODE	DRAWING NO.	SIZE
					C					
					D					
					E					
					F					
GENERAL NOTES								DATE APPROVED	DATE REVISED	REV.
								-	-	-

DETAILED ENGINEERING DESIGN OF THE
PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD,
MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD

AIRPORT TO NCC ACCESS ROADS

KM. 1+500.00 TO KM. 16+000.00

DETAILED ENGINEERING DESIGN OF THE
 PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD,
 MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD
AIRPORT TO NCC (KM. 1+500.00 - KM. 16+000.00)
BRIDGE NO. 2

APPROACH SLAB	"A"	:	STA. 3+300.00 - STA. 3+300.00	6.00	
BRIDGE		:	STA. 3+300.00 - STA. 3+520.00	100.0	
APPROACH SLAB	"B"	:	STA. 3+520.00 - STA. 3+530.00	6.00	
TOTAL LENGTH				156.0	

DETAILED ENGINEERING DESIGN OF THE
 PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD,
 MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD
AIRPORT TO NCC (KM. 1+500.00 - KM. 16+000.00)
BRIDGE NO. 3

APPROACH SLAB	"A"	:	STA. 10+006.00 - STA. 10+052.00	6.00	
BRIDGE		:	STA. 10+052.00 - STA. 10+006.00	100.0	
APPROACH SLAB	"B"	:	STA. 10+006.00 - STA. 10+002.00	6.00	
TOTAL LENGTH				156.0	

DETAILED ENGINEERING DESIGN OF THE
 PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD,
 MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD
AIRPORT TO NCC (KM. 1+500.00 - KM. 16+000.00)
BRIDGE NO. □

APPROACH SLAB	"A"	:	STA. 13+565.□0 - STA. 13+5□1.□0	□	6.00	□
BRIDGE		:	STA. 13+5□1.□0 - STA. 13+60□.□0	□	36.60	□
APPROACH SLAB	"B"	:	STA. 13+60□.□0 - STA. 13+61□.□0	□	6.00	□
TOTAL LENGTH				□	□□.60	□

DETAILED ENGINEERING DESIGN OF THE
 PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD,
 MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD
AIRPORT TO NCC (KM. 1+500.00 - KM. 16+000.00)
OVERPASS 1

	BRIDGE CROSSING ROAD 1	:	STA. 3+100.00	
APPROACH SLAB	"A"	:	STA. -0+026.00 - STA. -0+032.00	6.00
BRIDGE		:	STA. -0+032.00 - STA. 0+032.00	65.00
APPROACH SLAB	"B"	:	STA. 0+032.00 - STA. 0+038.00	6.00
			TOTAL LENGTH	77.00

DETAILED ENGINEERING DESIGN OF THE
 PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD,
 MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD
AIRPORT TO NCC (KM. 1+500.00 - KM. 16+000.00)
OVERPASS 2

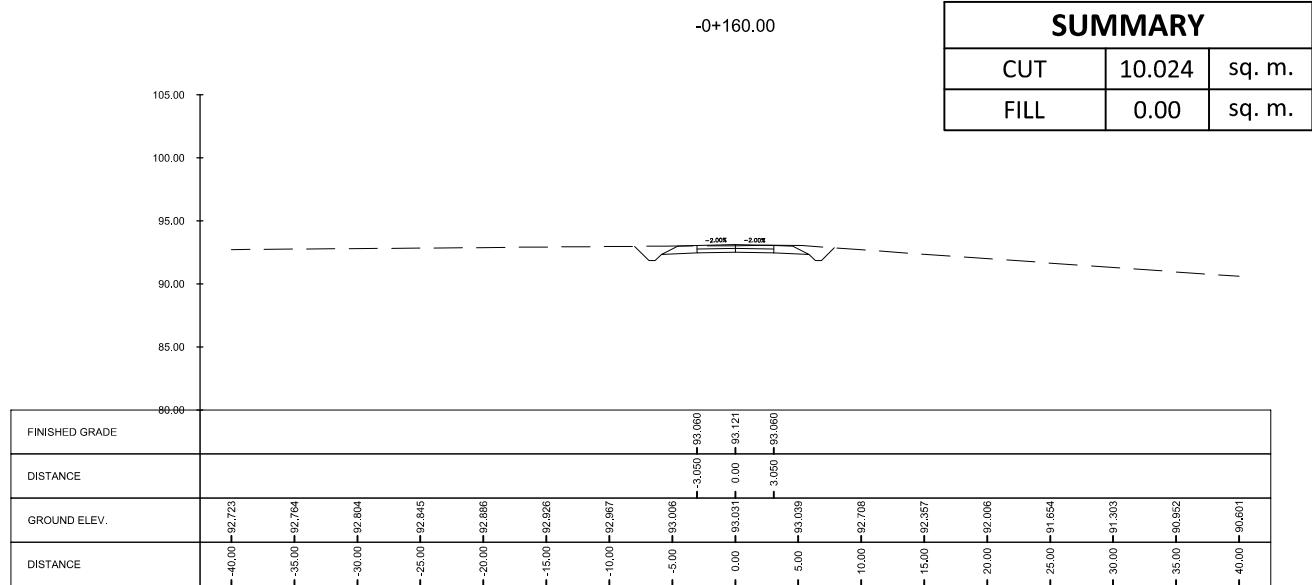
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BRIDGE		:	STA. 3+01.10 - STA. 3+32.40	31.30	
APPROACH SLAB	"B"	:	STA. 3+32.40 - STA. 3+38.40	6.00	
TOTAL LENGTH				33.30	

DETAILED ENGINEERING DESIGN OF THE
 PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD,
 MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD
AIRPORT TO NCC (KM. 1+500.00 - KM. 16+000.00)
OVERPASS 3

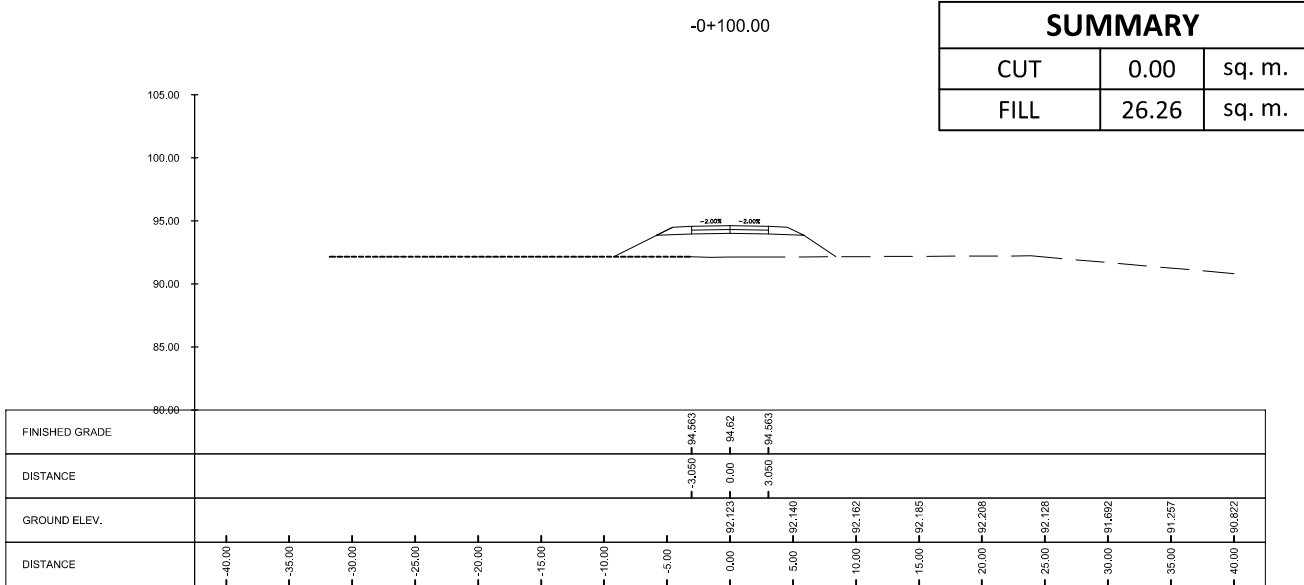
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APPROACH SLAB	"A"	:	STA. -0+026.00 - STA. -0+032.00	6.00
BRIDGE		:	STA. -0+032.00 - STA. 0+032.00	6.00
APPROACH SLAB	"B"	:	STA. 0+032.00 - STA. 0+038.00	6.00
			TOTAL LENGTH	18.00

DETAILED ENGINEERING DESIGN OF THE
 PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD,
 MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD
AIRPORT TO NCC (KM. 1+500.00 - KM. 16+000.00)
OVERPASS □

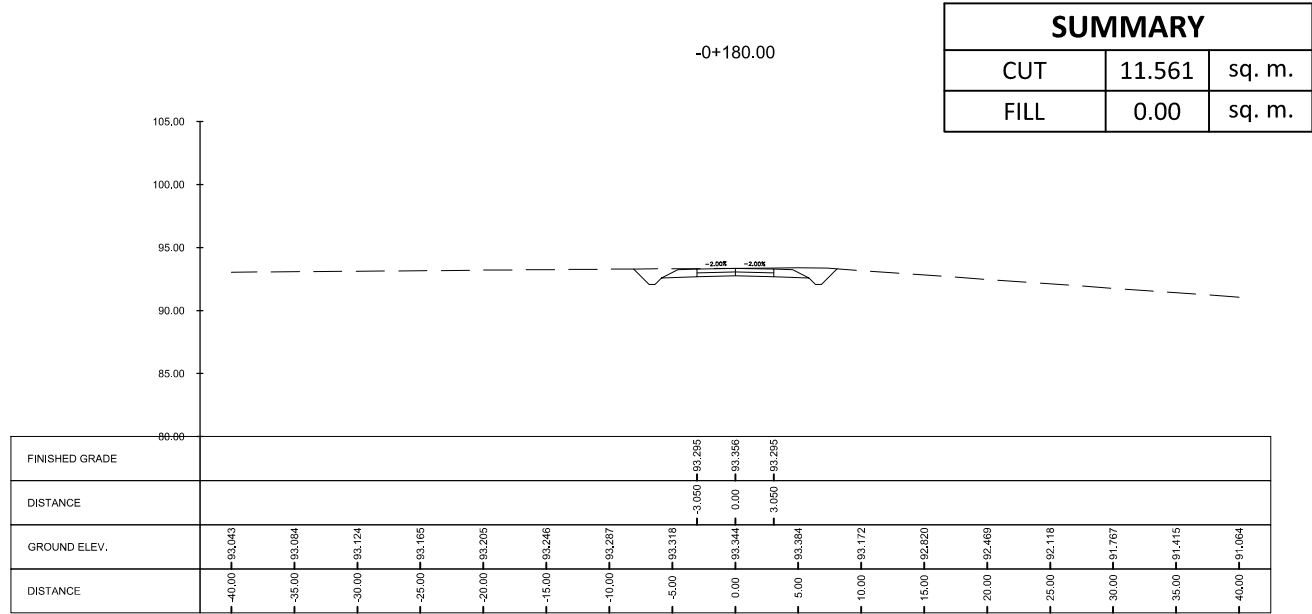
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BRIDGE		:	STA. □+501.□1 - STA. □+535.61	□	3□.20 □
APPROACH SLAB	"B"	:	STA. □+535.61 - STA. □+5□1.61	□	6.00 □
TOTAL LENGTH				□	□6.20 □



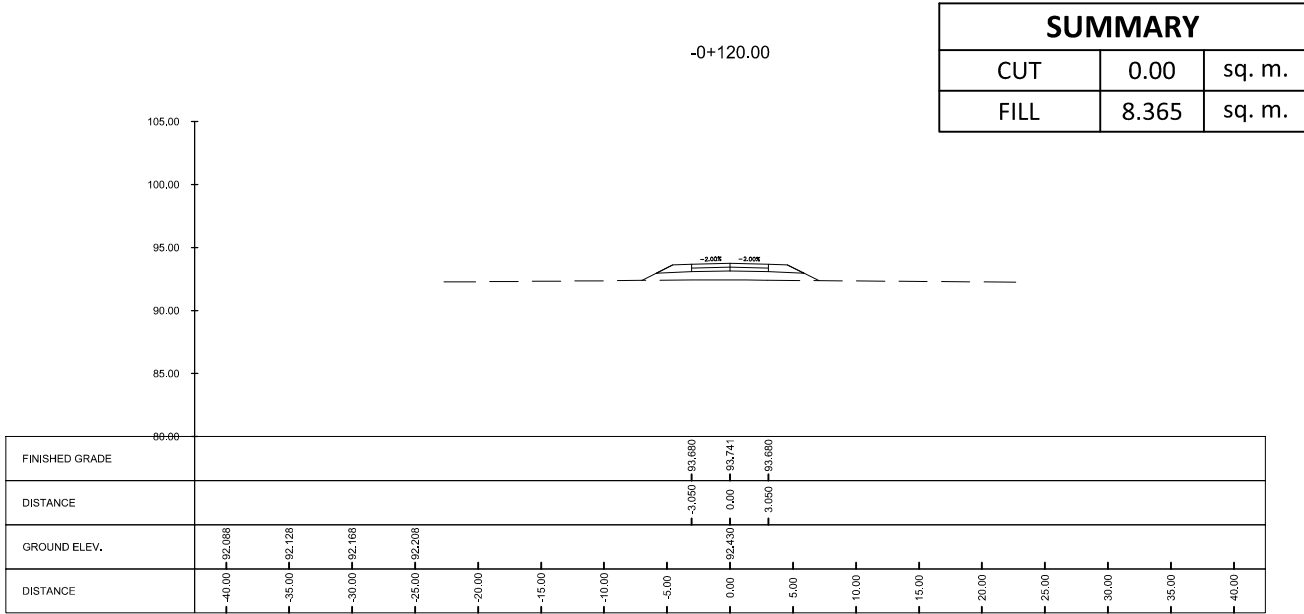
SUMMARY		
CUT	10.024	sq. m.
FILL	0.00	sq. m.



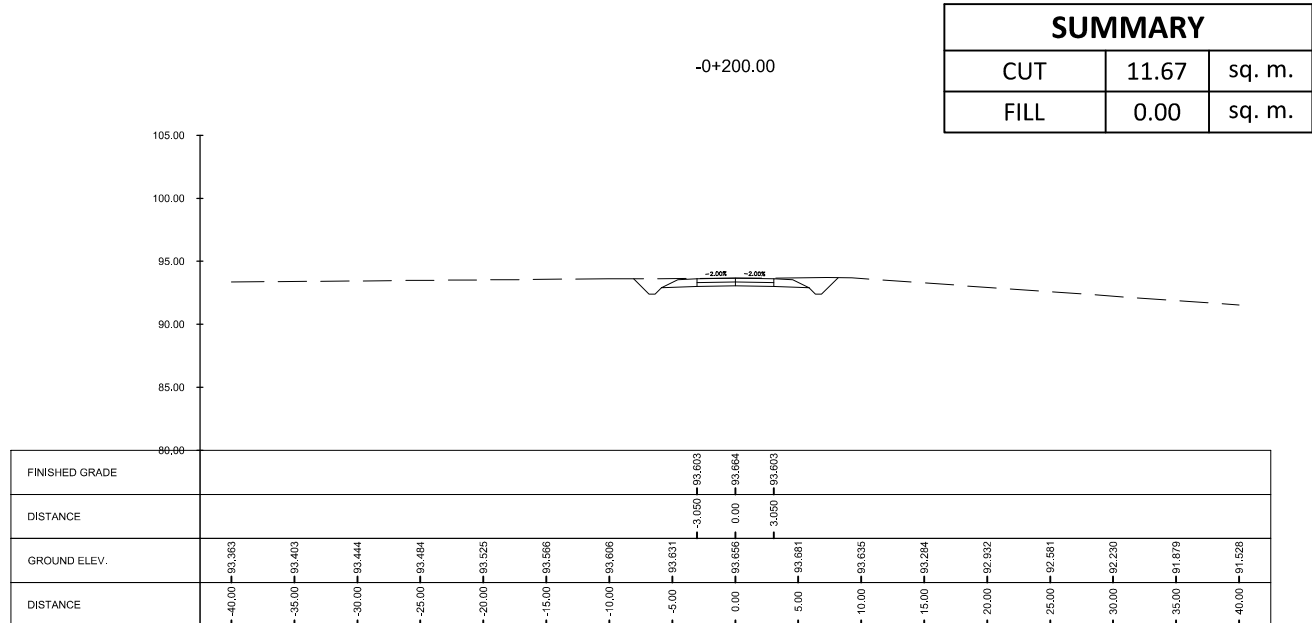
SUMMARY		
CUT	0.00	sq. m.
FILL	26.26	sq. m.



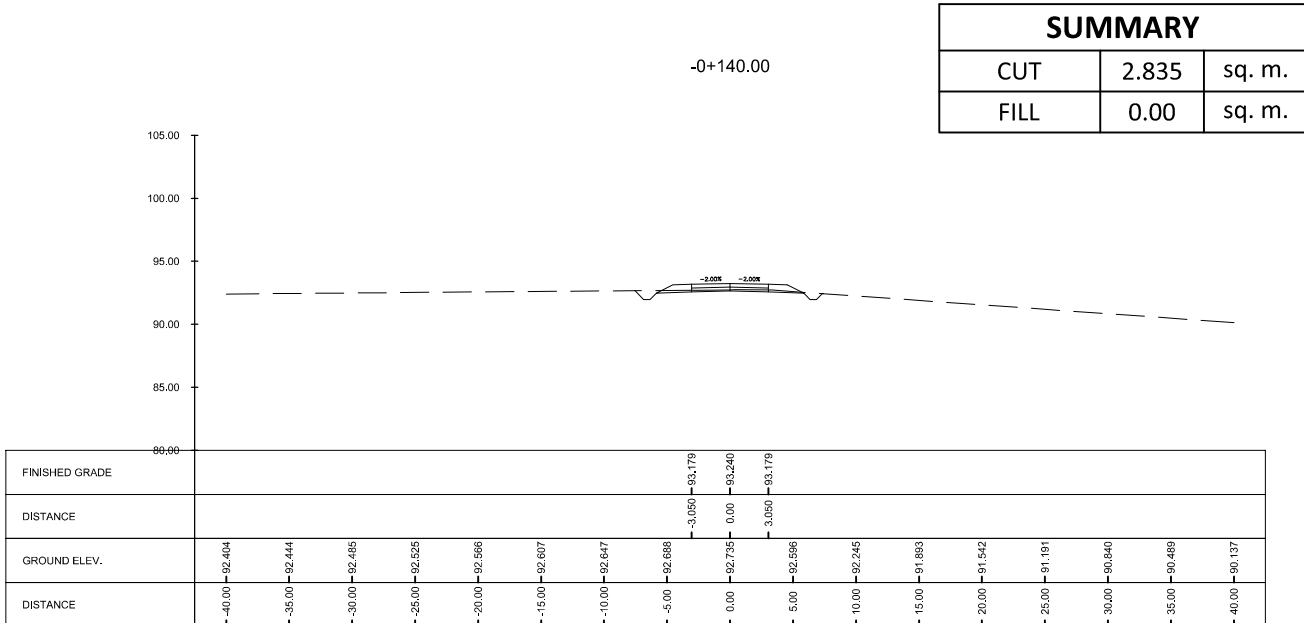
SUMMARY		
CUT	11.561	sq. m.
FILL	0.00	sq. m.



SUMMARY		
CUT	0.00	sq. m.
FILL	8.365	sq. m.



SUMMARY		
CUT	11.67	sq. m.
FILL	0.00	sq. m.



SUMMARY		
CUT	2.835	sq. m.
FILL	0.00	sq. m.

CONSULTANTS

Urban Integrated Consultants, Inc.
402 CORPORATE BLVD., 4 LANEY STREET, WASH. BLVD., QUEEN CITY, 110

SUBMITTED BY

EFREN C. DAVID
PRESIDENT - UICI

ALBERTO C. CANETE
PROJECT MANAGER - UICI

DATE: -

CHECKED BY

RYAN PAUL S. GALURA
PROJECT MANAGER

DATE: -

APPROVED BY

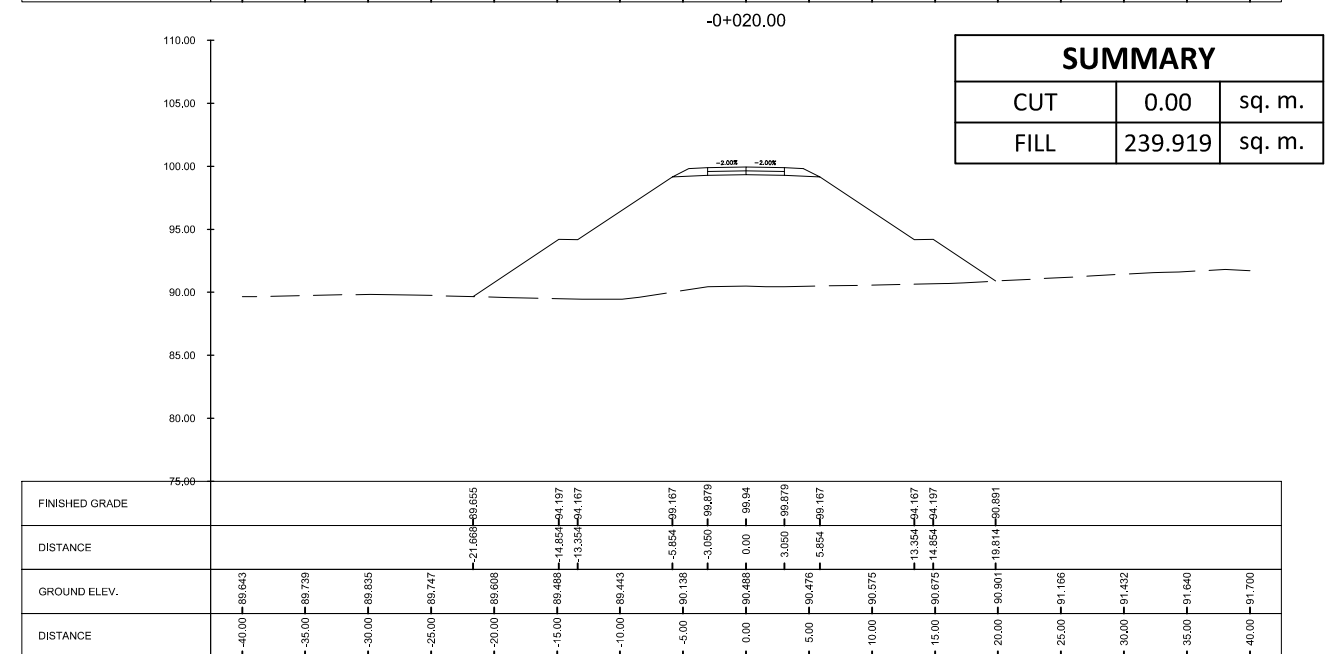
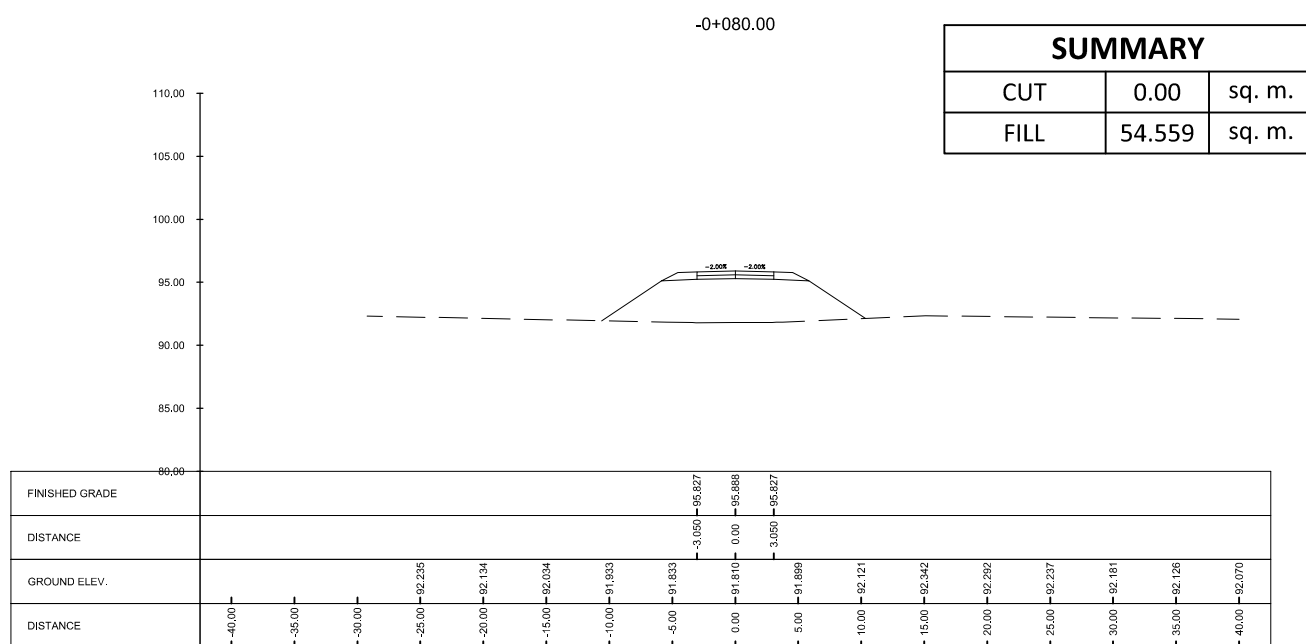
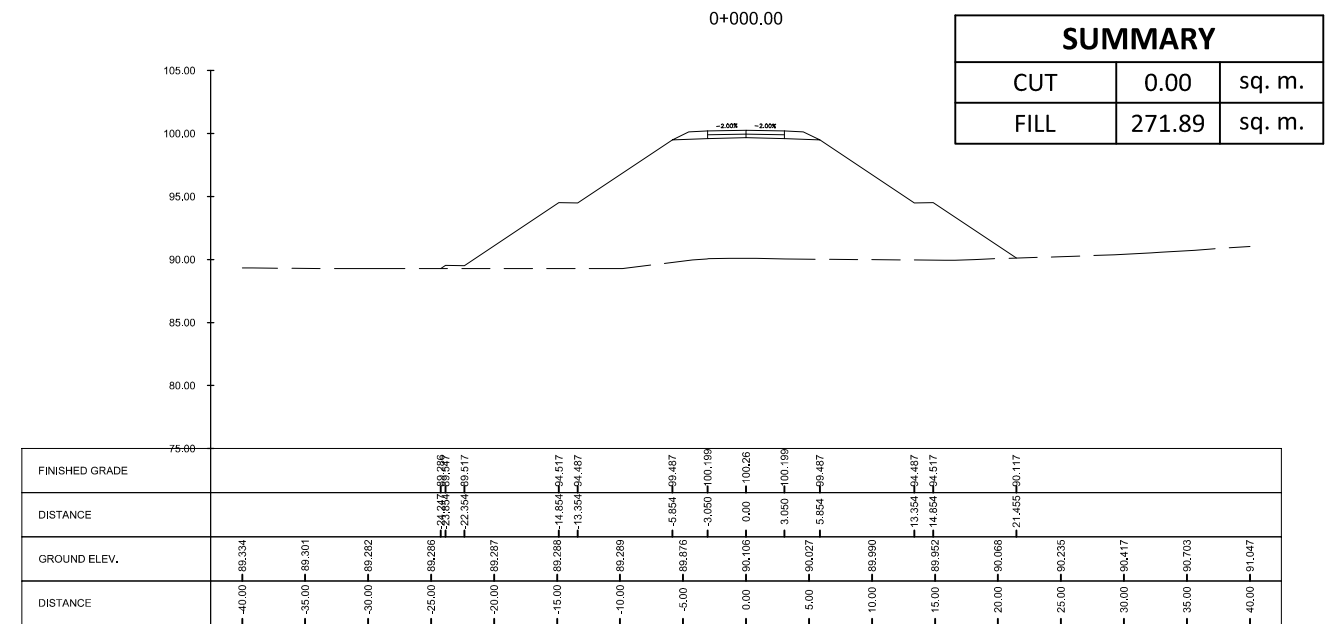
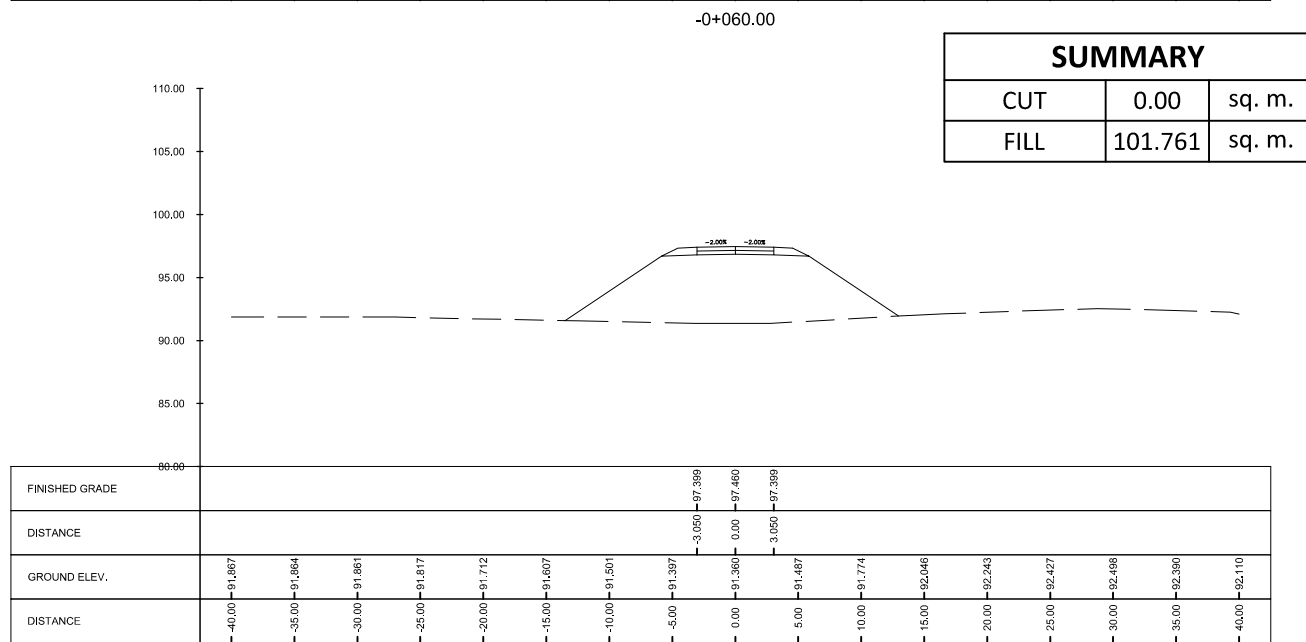
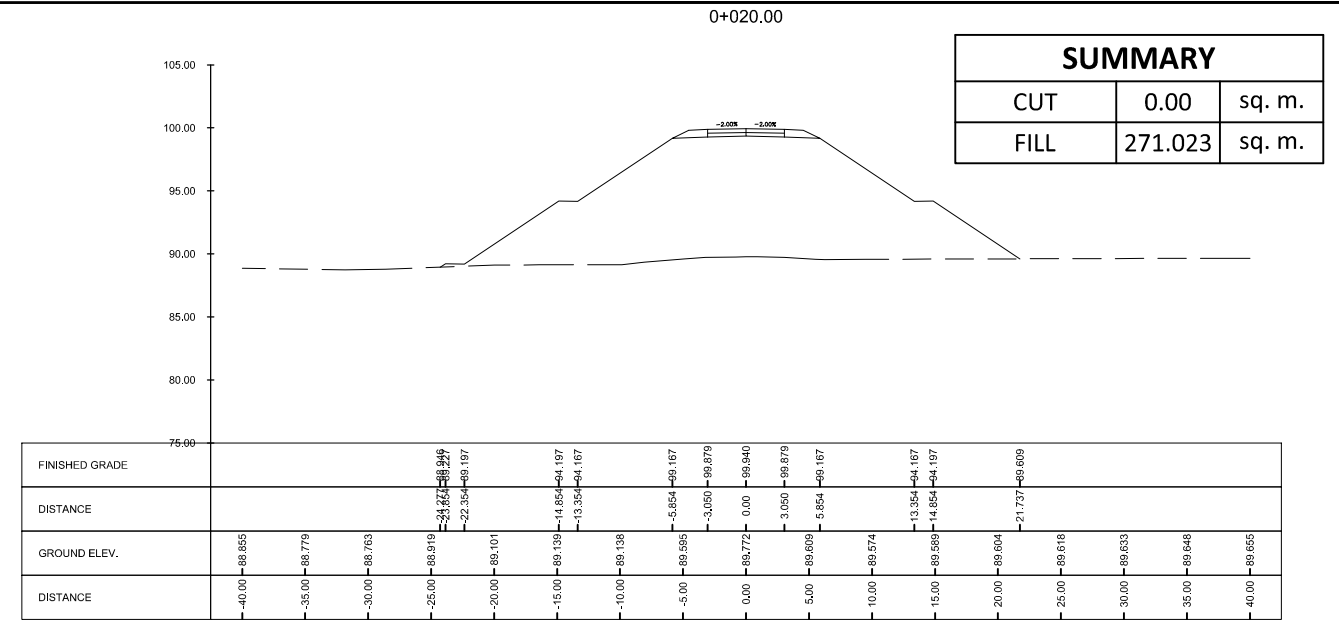
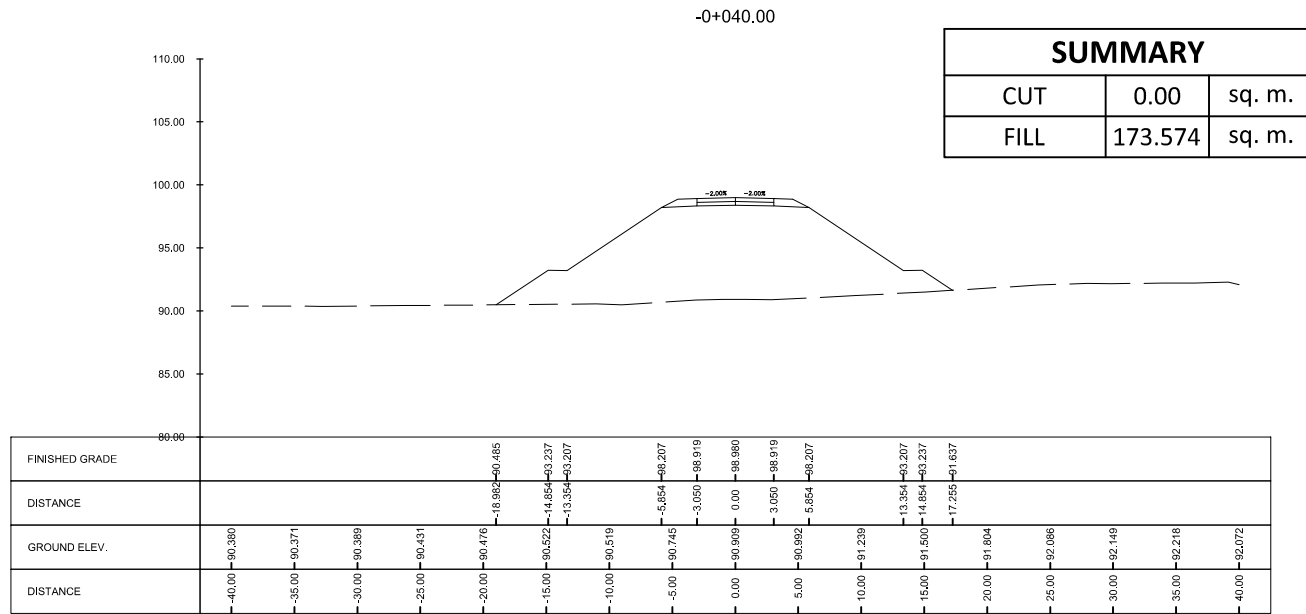
JOVITO M. SUNGA
OIC - PMD

DATE: -

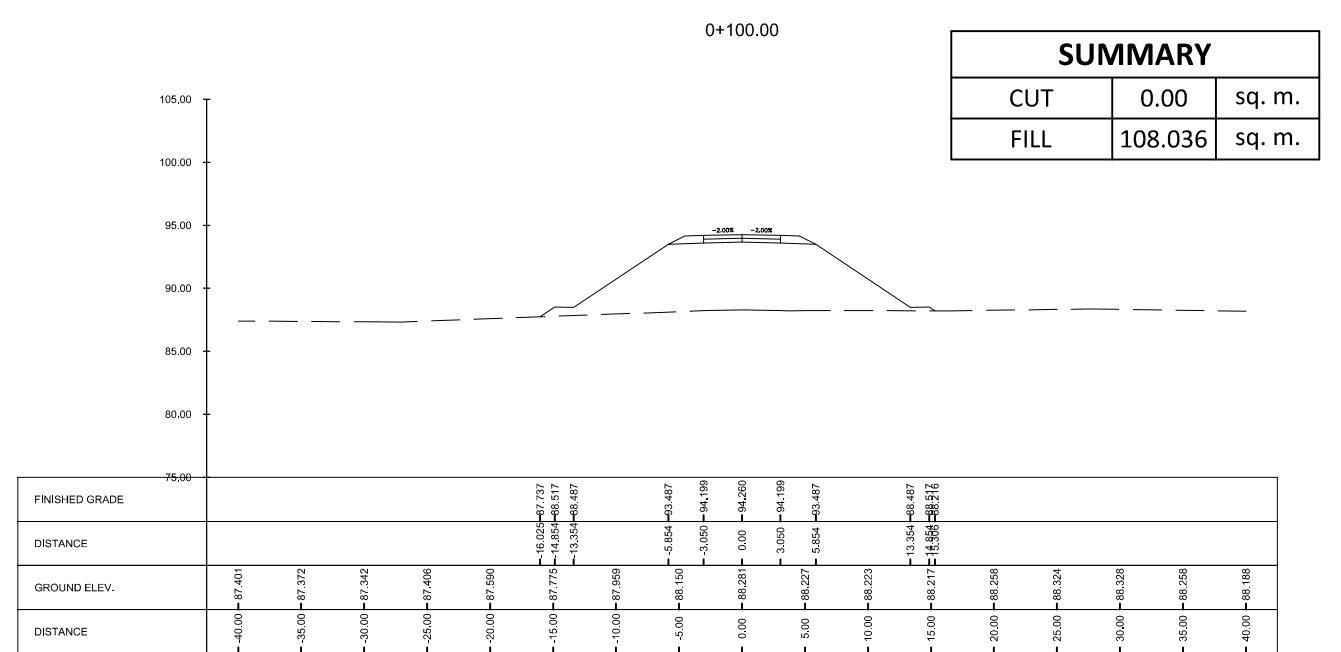
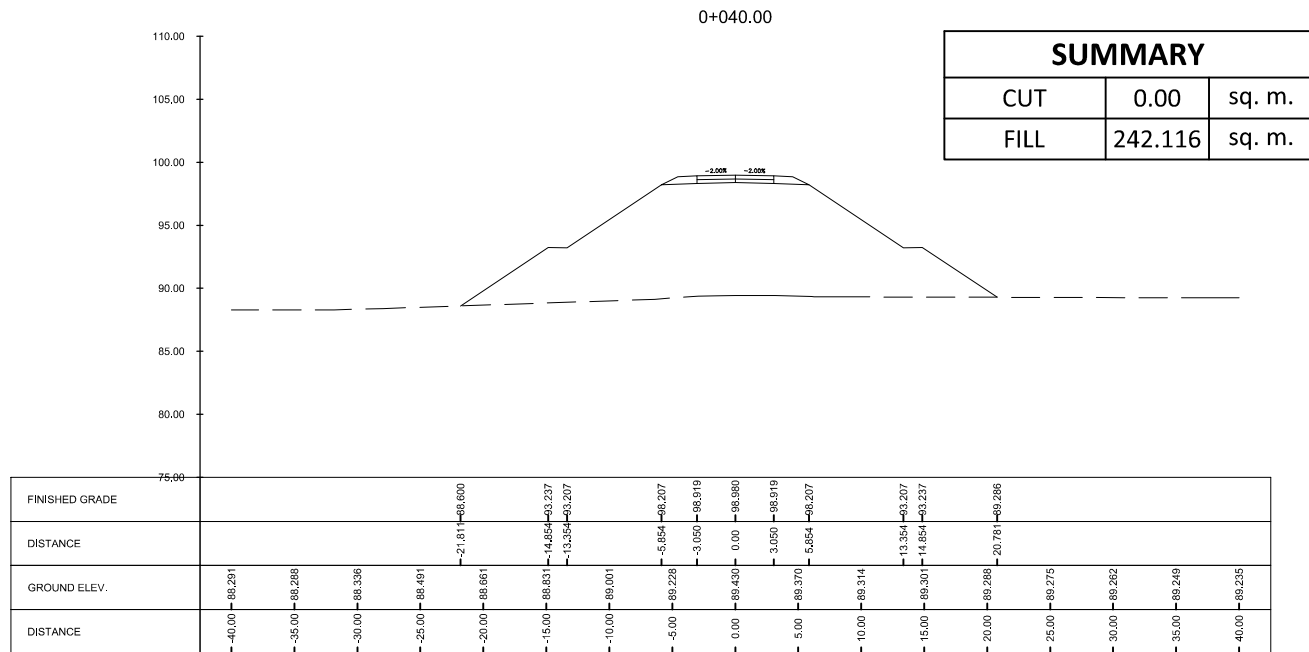
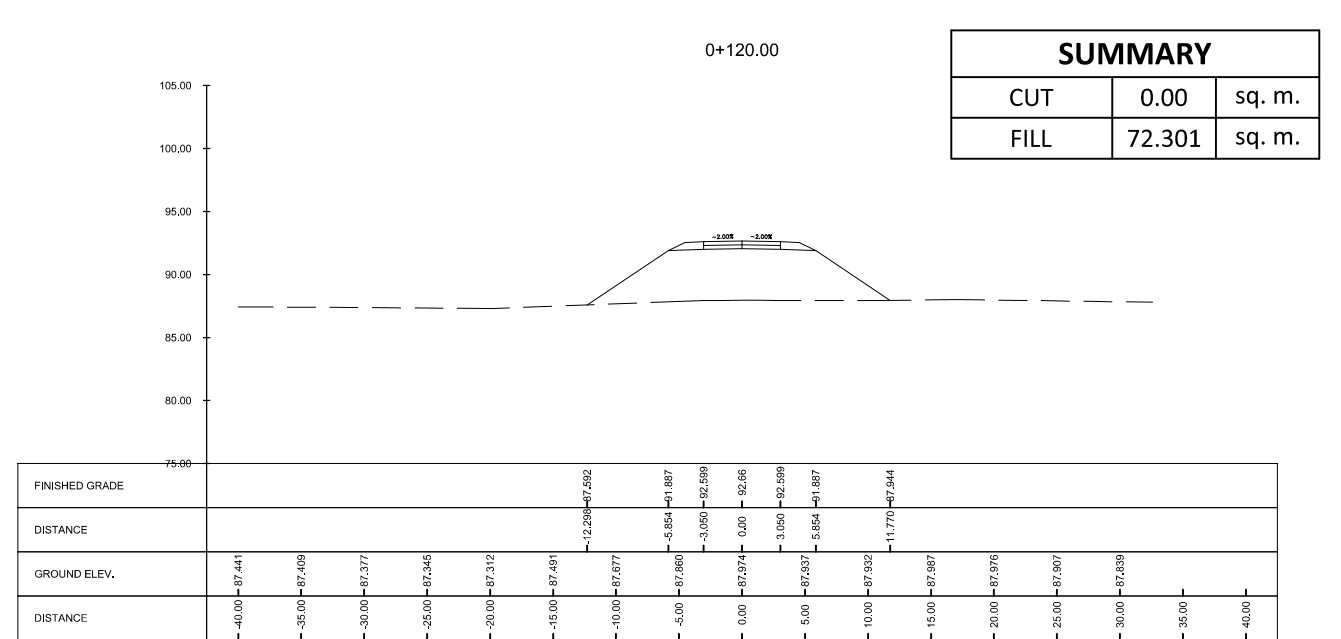
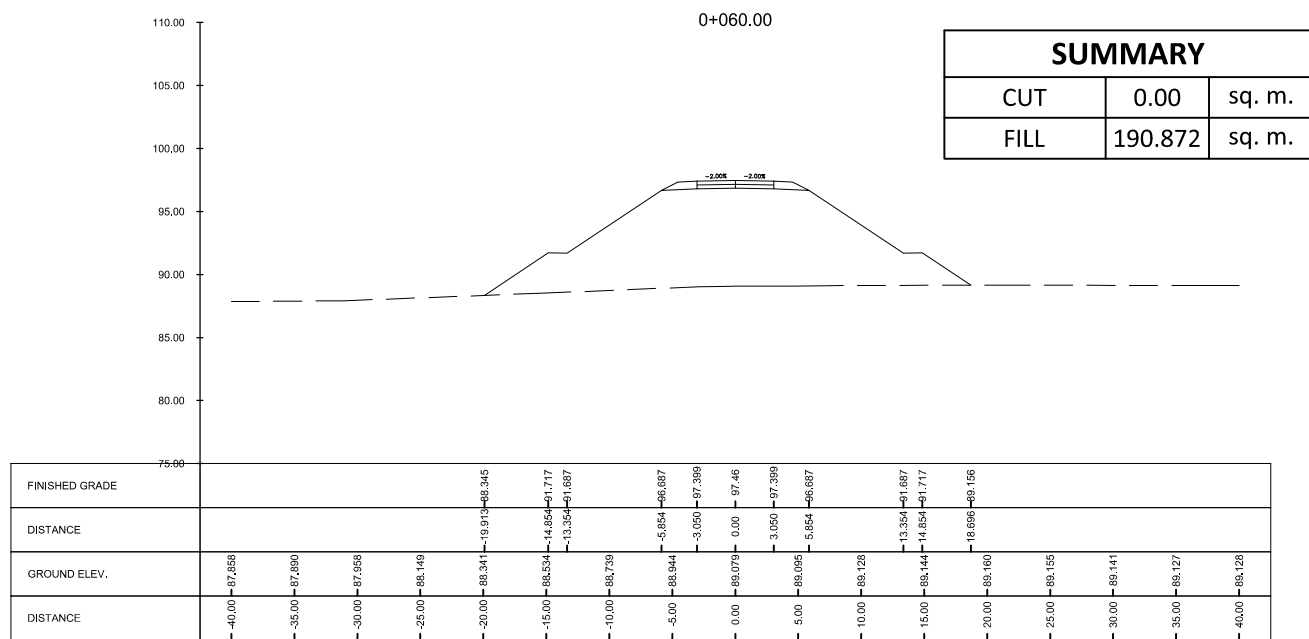
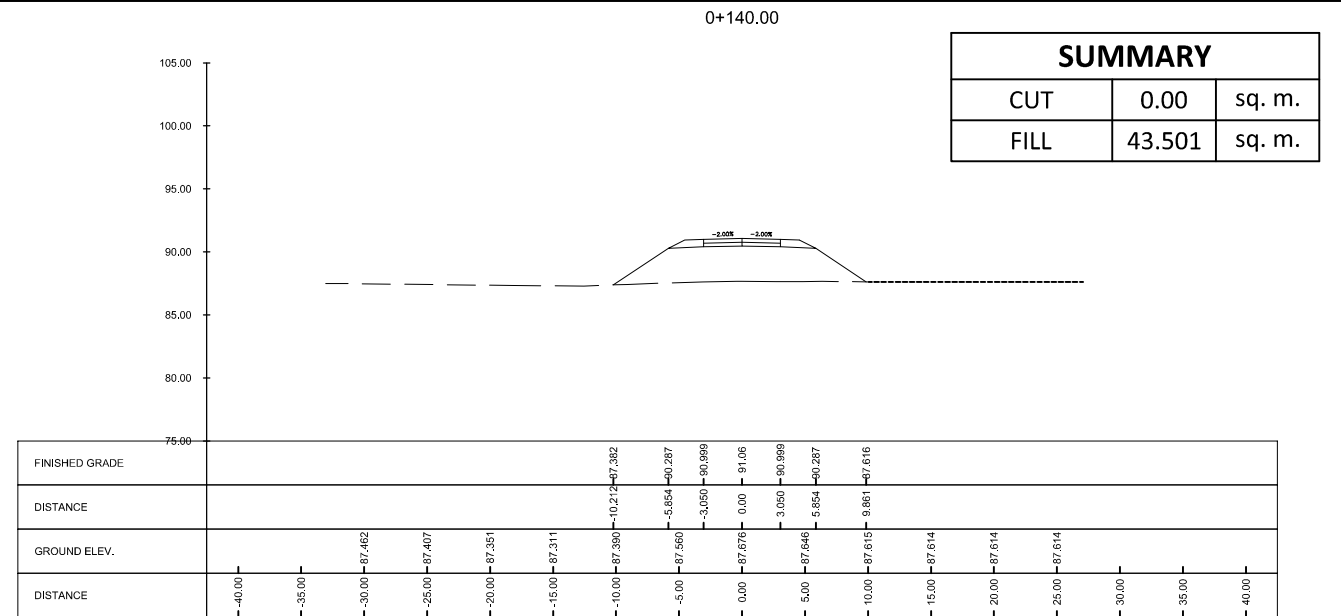
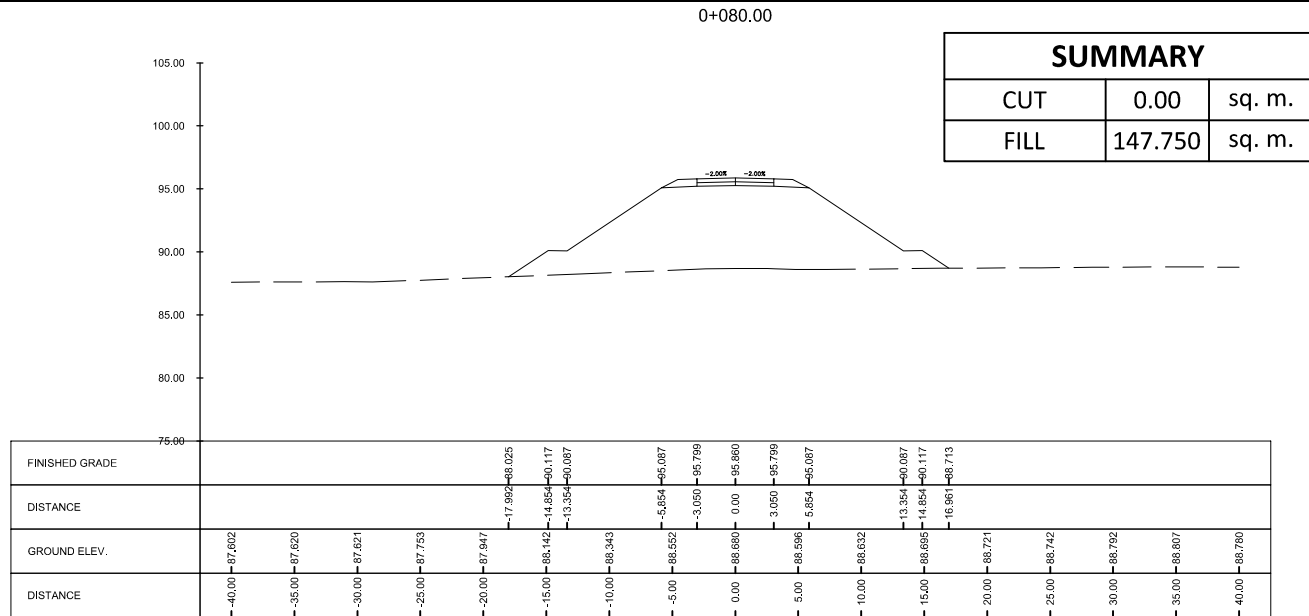
REVISIONS	DATE
A	
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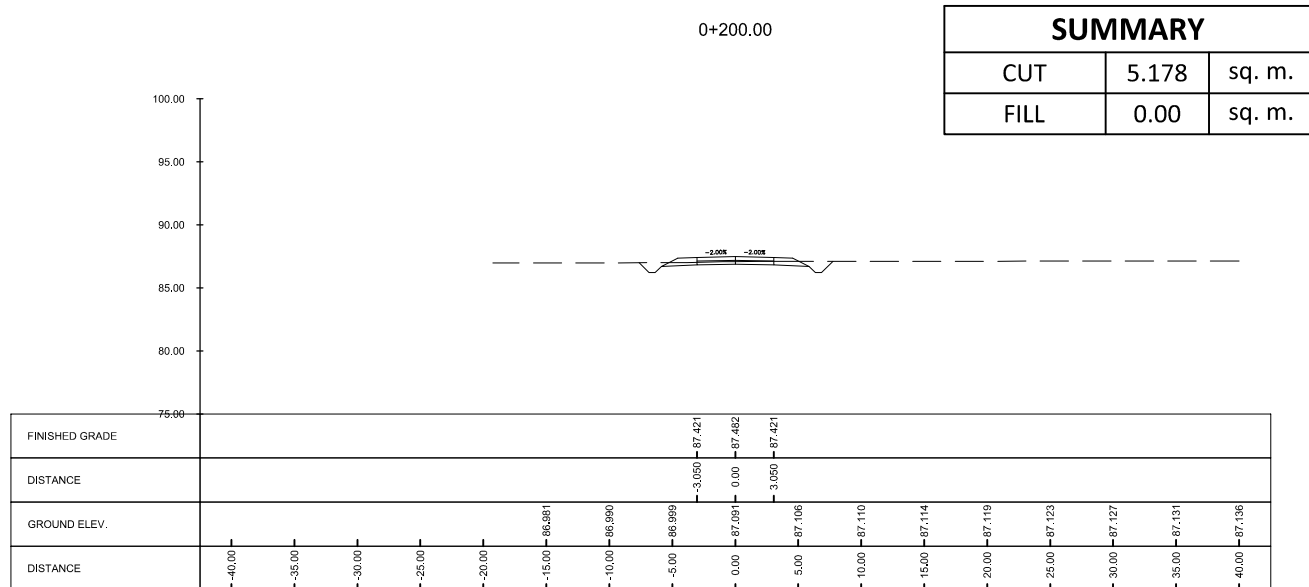
PROJECT TITLE	SCALE	DRAWING STATUS
DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	1:800M	FINAL DRAWING
SHEET CONTENT AIRPORT TO NCC ACCESS ROAD		
CROSS SECTION OVERPASS 1 STA.-0+200.00 TO STA.-0+100.00		

PROJECT CODE	DRAWING NO.	SIZE
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DATE APPROVED	DATE REVISED	REV.
-	-	-

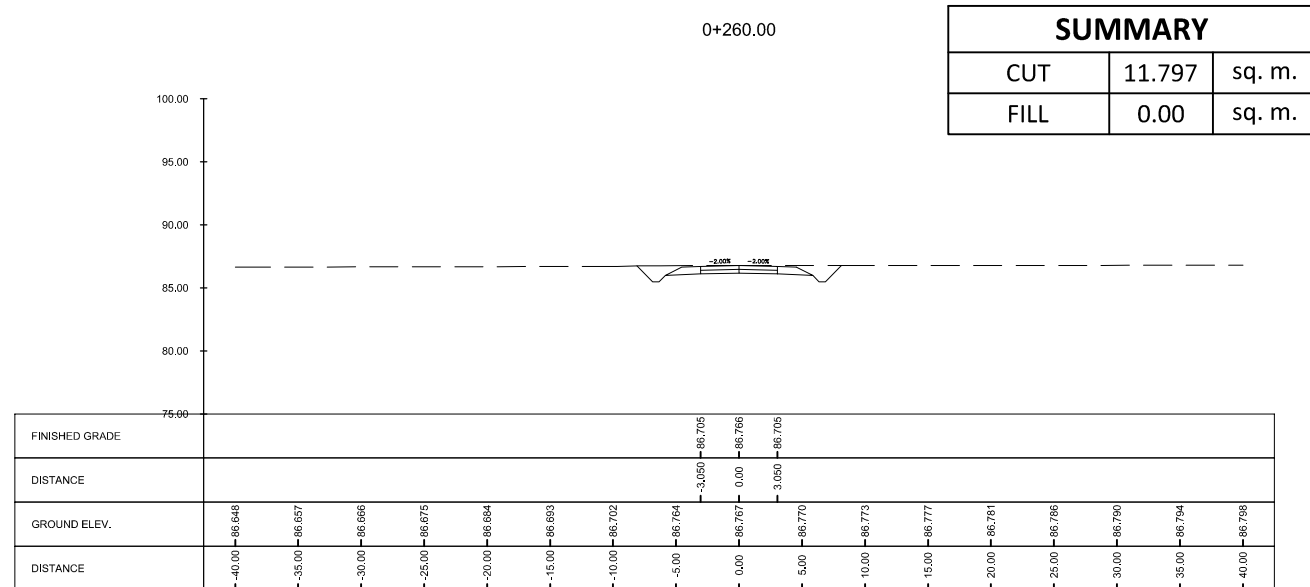


<p>CONSULTANTS</p> <p>Urban Integrated Consultants, Inc. 160 CORPORATE BLVD., 4 LANE DRIVE, WASH. BLVD., QUEEN CITY, 1100</p>	<p>SUBMITTED BY</p> <p>EFREN C. DAVID PRESIDENT - UICI</p> <p>DATE: -</p>	<p>CHECKED BY</p> <p>ALBERTO C. CANETE PROJECT MANAGER - UICI</p> <p>DATE: -</p>	<p>APPROVED BY</p> <p>RYLAN PAUL S. GALURA PROJECT MANAGER</p> <p>DATE: -</p>	<p>APPROVED BY</p> <p>JOVITO M. SUNGA OIC - PMD</p> <p>DATE: -</p>	<p>REVISIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>A</td><td></td></tr> <tr><td>B</td><td></td></tr> <tr><td>C</td><td></td></tr> <tr><td>D</td><td></td></tr> <tr><td>E</td><td></td></tr> <tr><td>F</td><td></td></tr> </table>	A		B		C		D		E		F		<p>DATE</p>	<p>PROJECT TITLE</p> <p>DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD</p> <p>SHEET CONTENT AIRPORT TO NCC ACCESS ROAD</p> <p style="text-align: center;">CROSS SECTION OVERPASS 1 STA.-0+0:0.00 TO STA.0+020.00</p>	<p>SCALE 1:800M</p> <p>DRAWING STATUS FINAL DRAWING</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>PROJECT CODE</td> <td>DRAWING NO.</td> <td>SIZE</td> </tr> <tr> <td>-</td> <td>CS-2</td> <td>A1</td> </tr> <tr> <td>DATE APPROVED</td> <td>DATE REVISED</td> <td>REV.</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> </tr> </table>	PROJECT CODE	DRAWING NO.	SIZE	-	CS-2	A1	DATE APPROVED	DATE REVISED	REV.	-	-	-
A																																	
B																																	
C																																	
D																																	
E																																	
F																																	
PROJECT CODE	DRAWING NO.	SIZE																															
-	CS-2	A1																															
DATE APPROVED	DATE REVISED	REV.																															
-	-	-																															

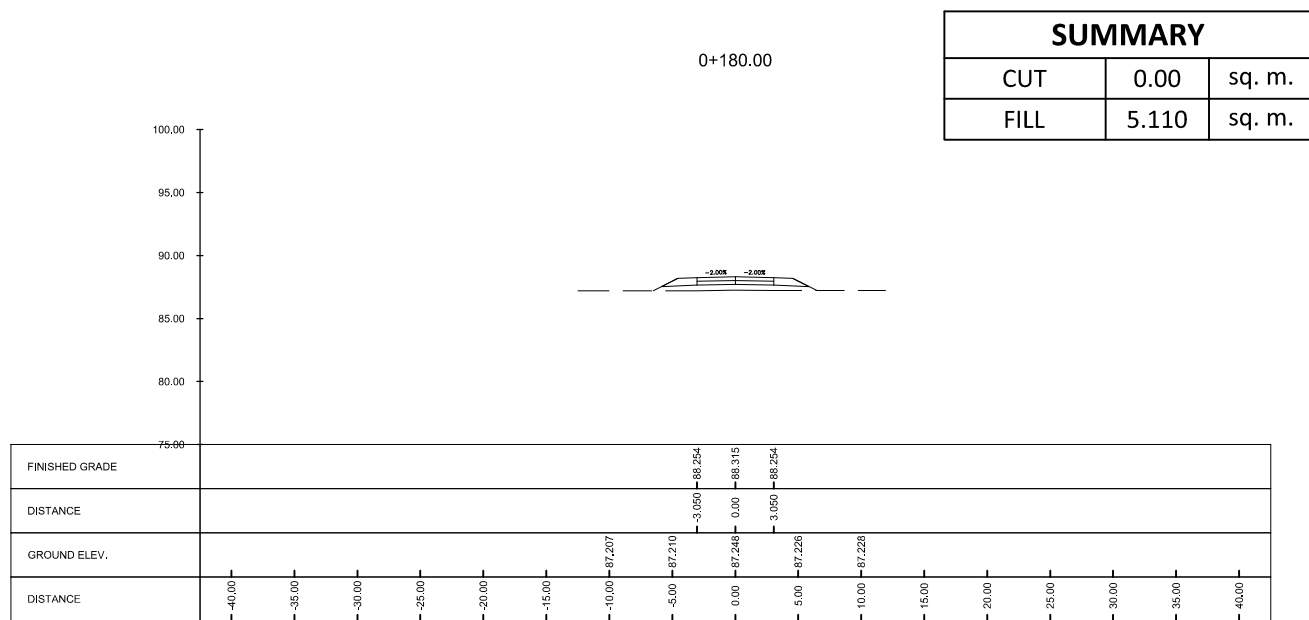




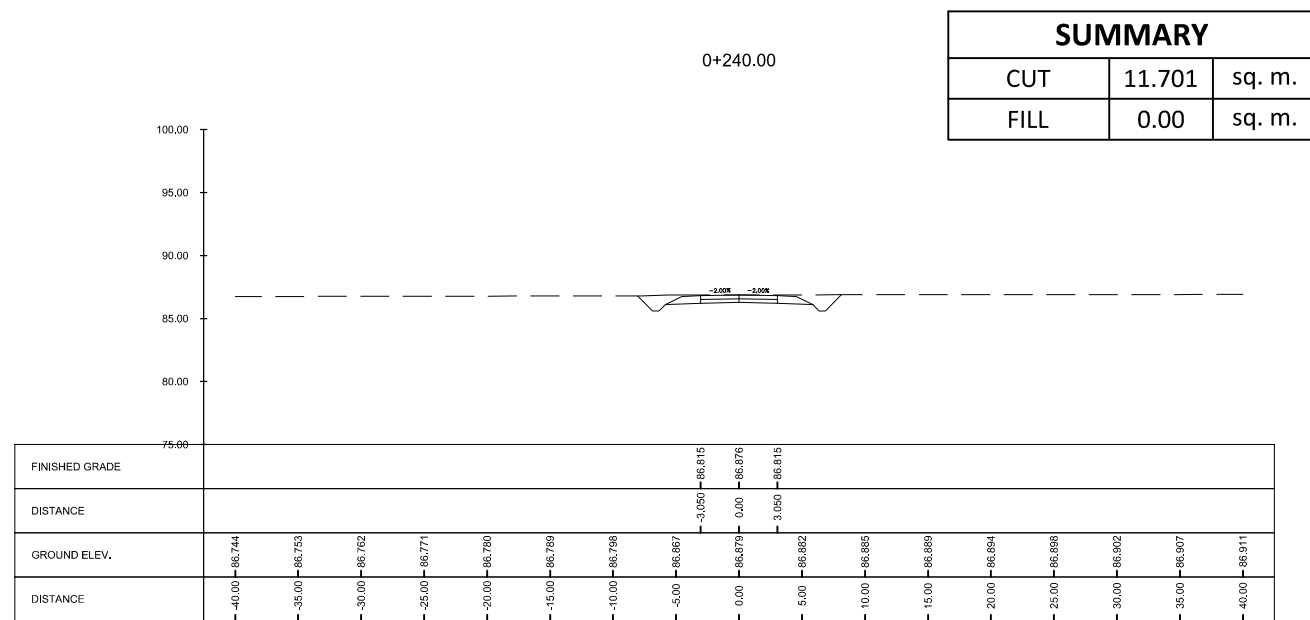
SUMMARY		
CUT	5.178	sq. m.
FILL	0.00	sq. m.



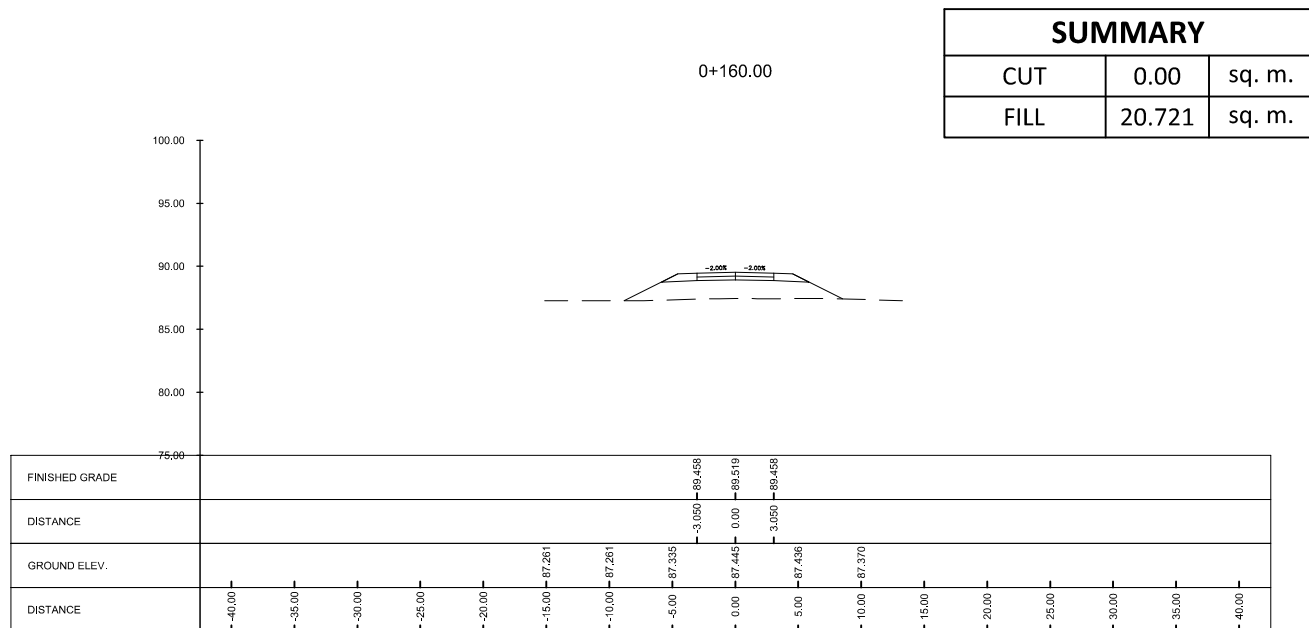
SUMMARY		
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FILL	0.00	sq. m.



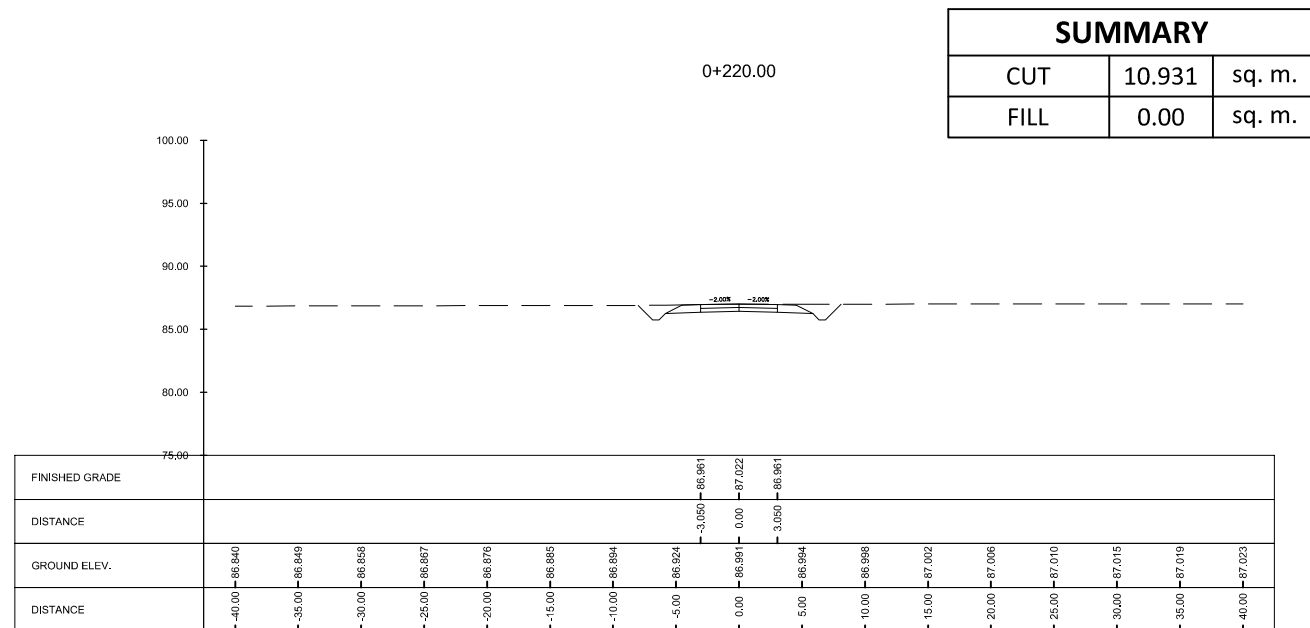
SUMMARY		
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FILL	5.110	sq. m.



SUMMARY		
CUT	11.701	sq. m.
FILL	0.00	sq. m.



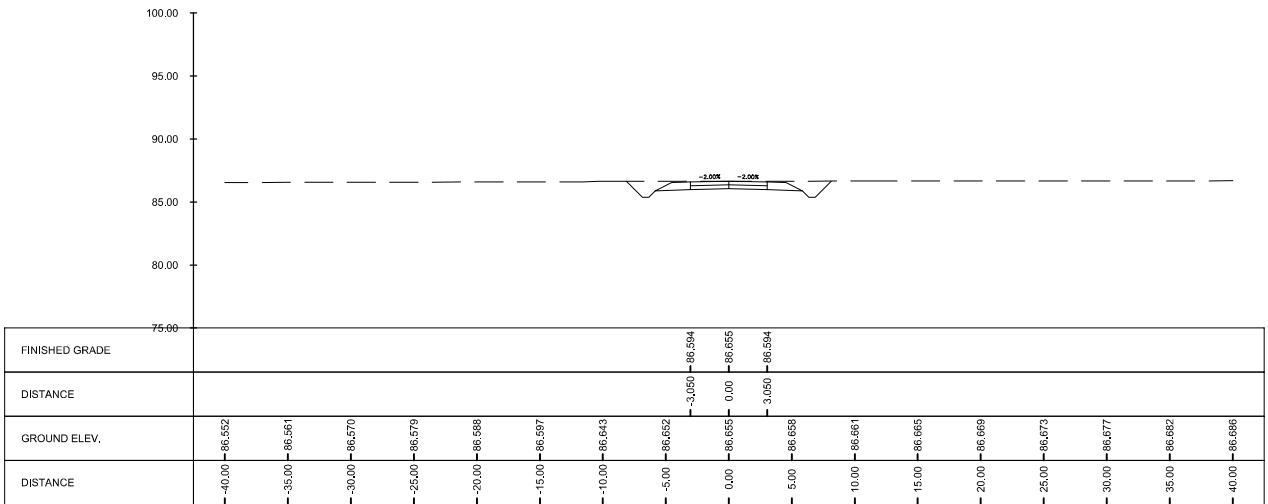
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FILL	20.721	sq. m.



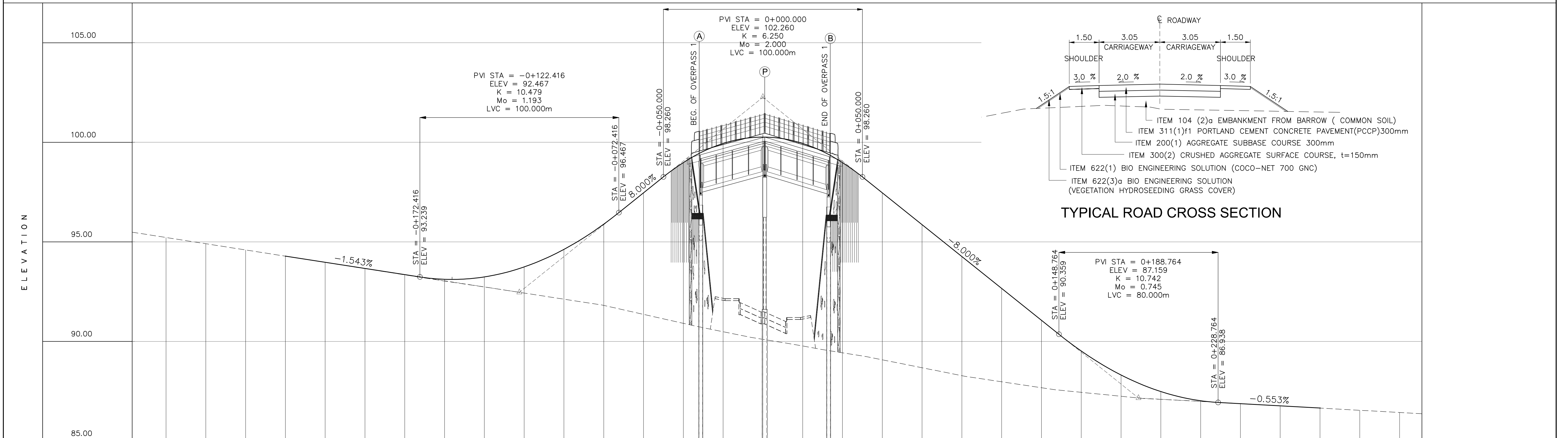
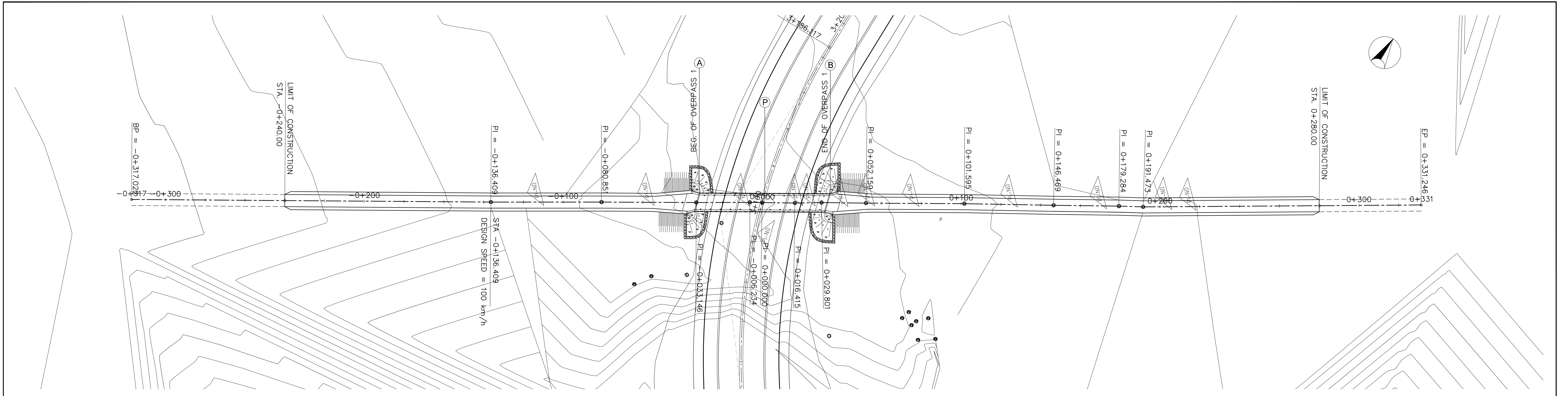
SUMMARY		
CUT	10.931	sq. m.
FILL	0.00	sq. m.

SUMMARY		
CUT	11.785	sq. m.
FILL	0.00	sq. m.

0+280.00

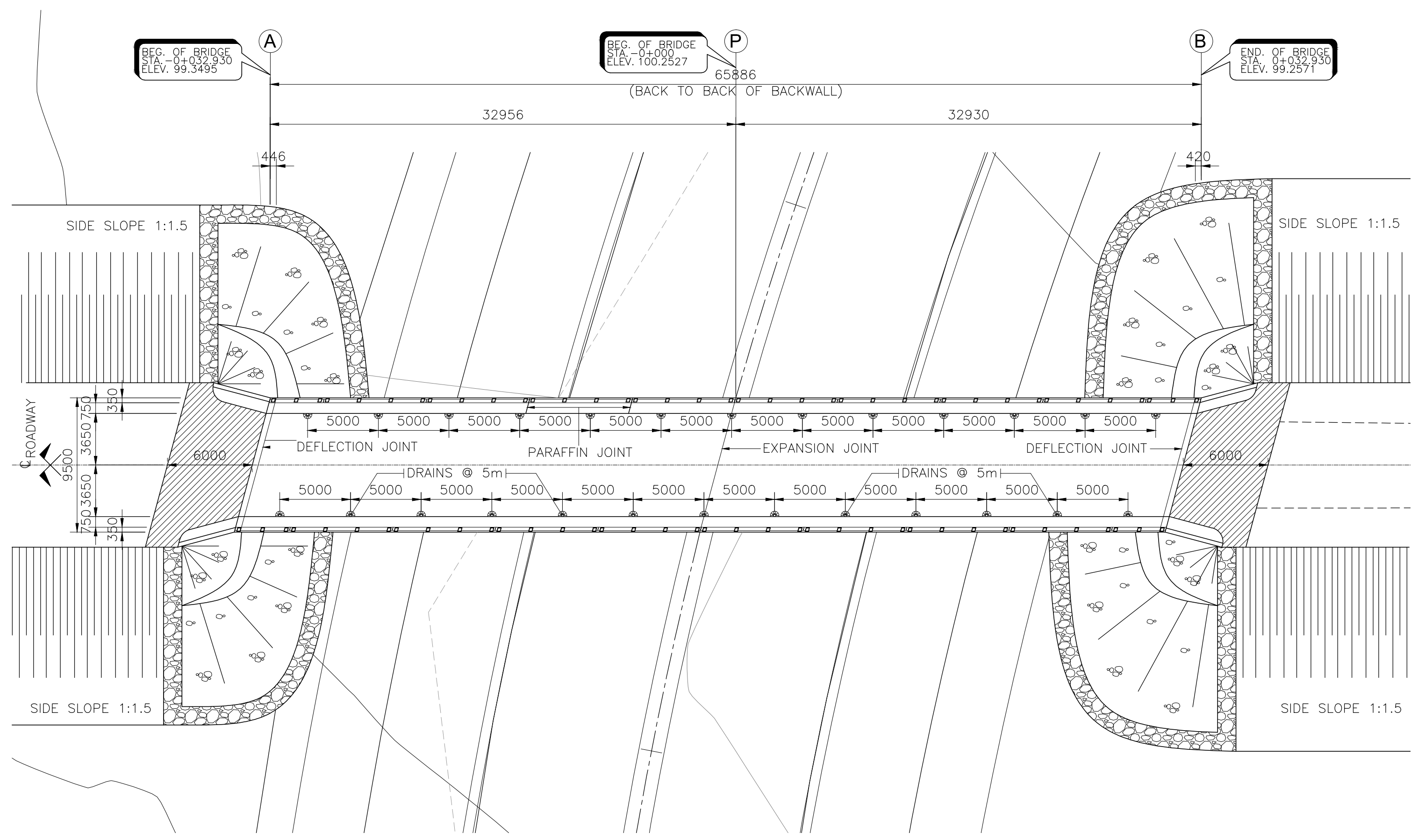


CONSULTANTS Urban Integrated Consultants, Inc. <small>1101 CORPORATE BLVD., 8 LAMAR STREET, WASH. BLVD., QUEEN CITY, 1101</small>	SUBMITTED BY EFREN C. DAVID PRESIDENT - UICI DATE: -	 ALBERTO C. CANETE PROJECT MANAGER - UICI DATE: -	 CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITO M. SUNGA OIC - PMD DATE: -	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC ACCESS ROAD CROSS SECTION OVERPASS 1 STA. 0+280.00	SCALE 1:800M	DRAWING STATUS FINAL DRAWING	PROJECT CODE -	DRAWING NO. CS-5	SIZE A1	DATE APPROVED -	DATE REVISED -	REV. -
	AIRPORT TO NCC ACCESS ROAD														

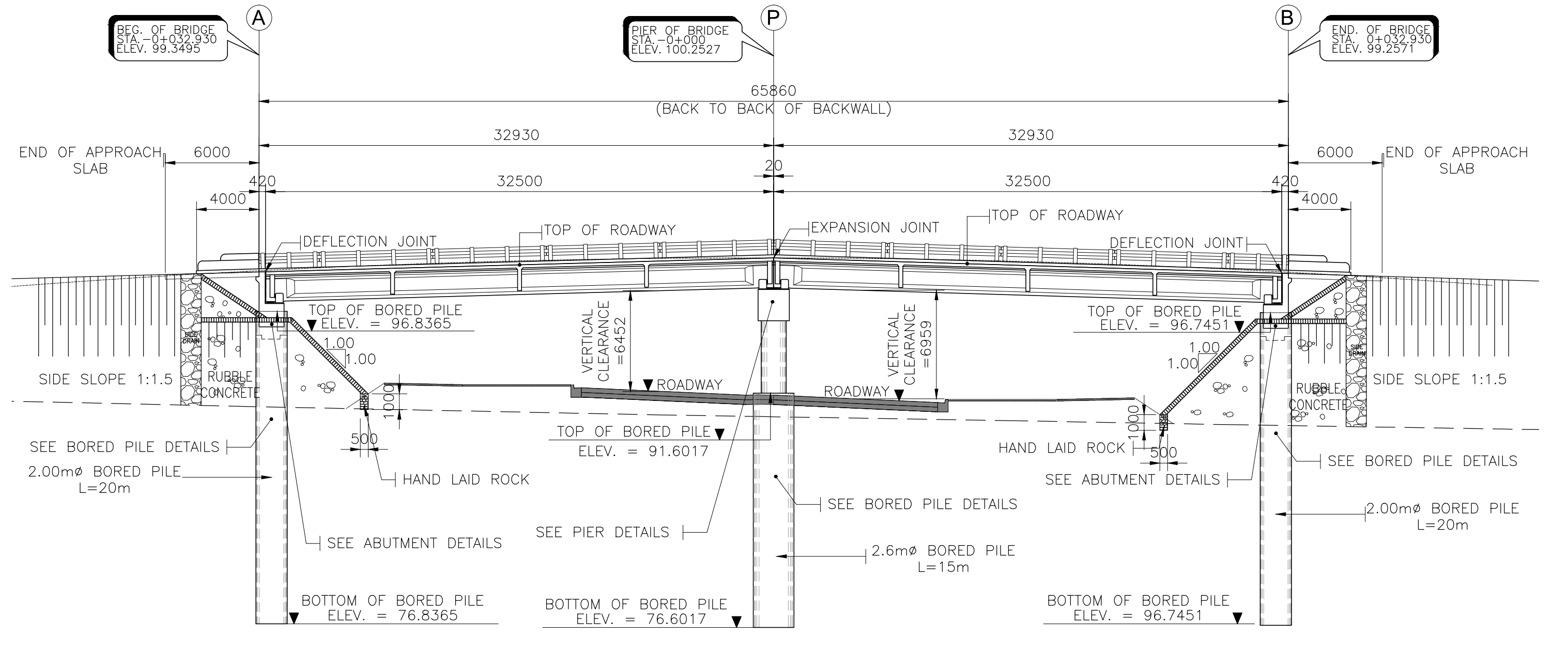


STATION	-0+317.022	-0+300	-0+200	-0+100	0+000	0+100	0+200	0+300	0+331.246
FINISHED GRADE									
GROUND ELEV	95.486	95.220	94.907	94.594	94.282	93.973	93.664	93.356	93.047
HOR. CURVATURE			L=180.613	L=55.558	L=47.705	L=26.912	L=6.234	L=16.415	L=13.386
VER. CURVATURE			L=67.58 g=-1.543%	L=100.00 K=10	L=22.42 g=-8.000%	L=100.00 K=6	L=98.76 g=-8.000%	L=80.00 K=11	L=51.24 g=-0.553%
SUPERELEVATION									

CONSULTANTS UIC CORPORATE BLDG., 8 LANES STREET, VASRA, DUKMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI	SUBMITTED BY ALBERTO C. CAÑETE PROJECT MANAGER - UICI		REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT PACKAGE 3 - AIRPORT - NCC ACCESS ROAD	SCALE AS SHOWN PROJECT CODE DATE APPROVED	DRAWING STATUS FINAL DRAWINGS DRAWING NO. PP-1 DATE REVISION
	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER	APPROVED BY JOVITO M. SUNGA OIC - PMD	DATE 	PLAN AND PROFILE ROAD CROSSING STA. 3+100.00 (ROAD 1) STA. -0+317.022 - STA. 0+331.246	DATE APPROVED 	DATE REVISION 	REV. 	



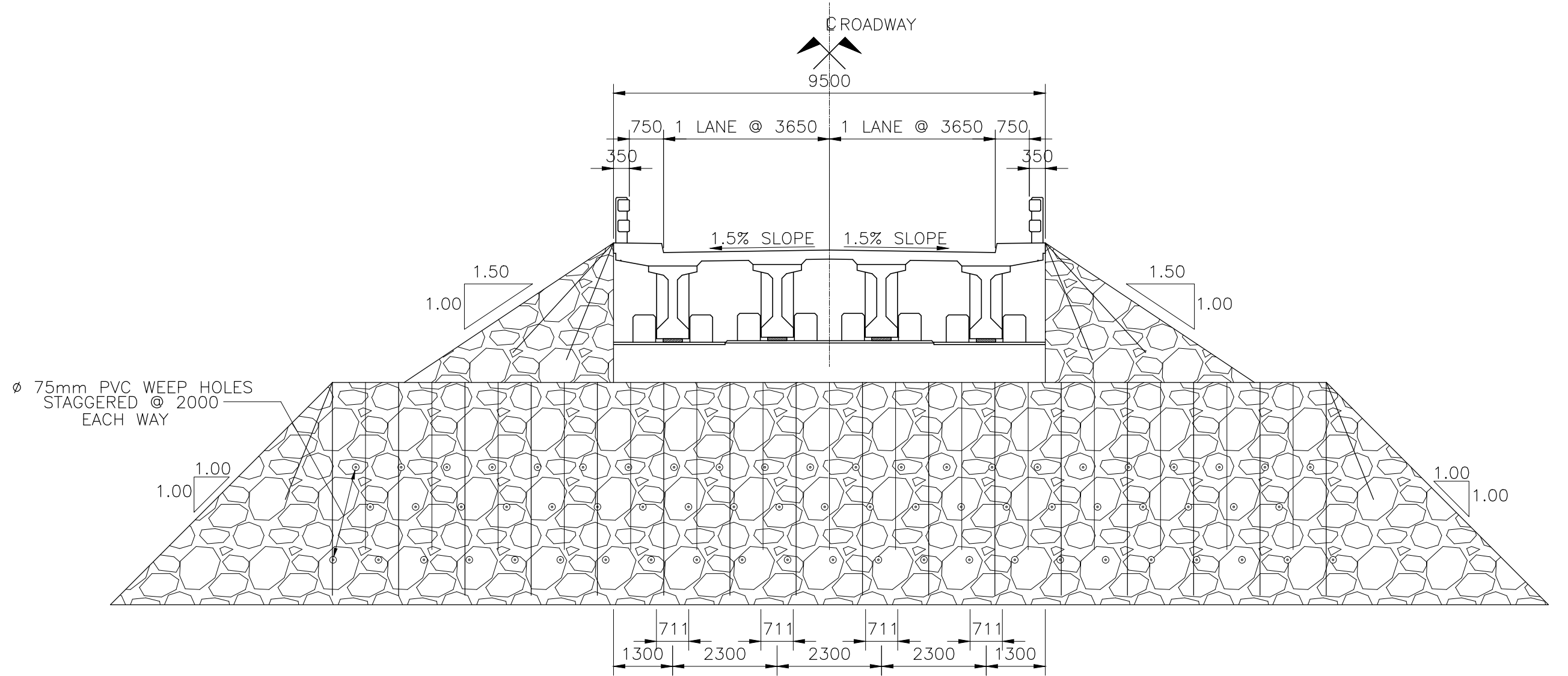
1 GENERAL PLAN
SCALE 1:250



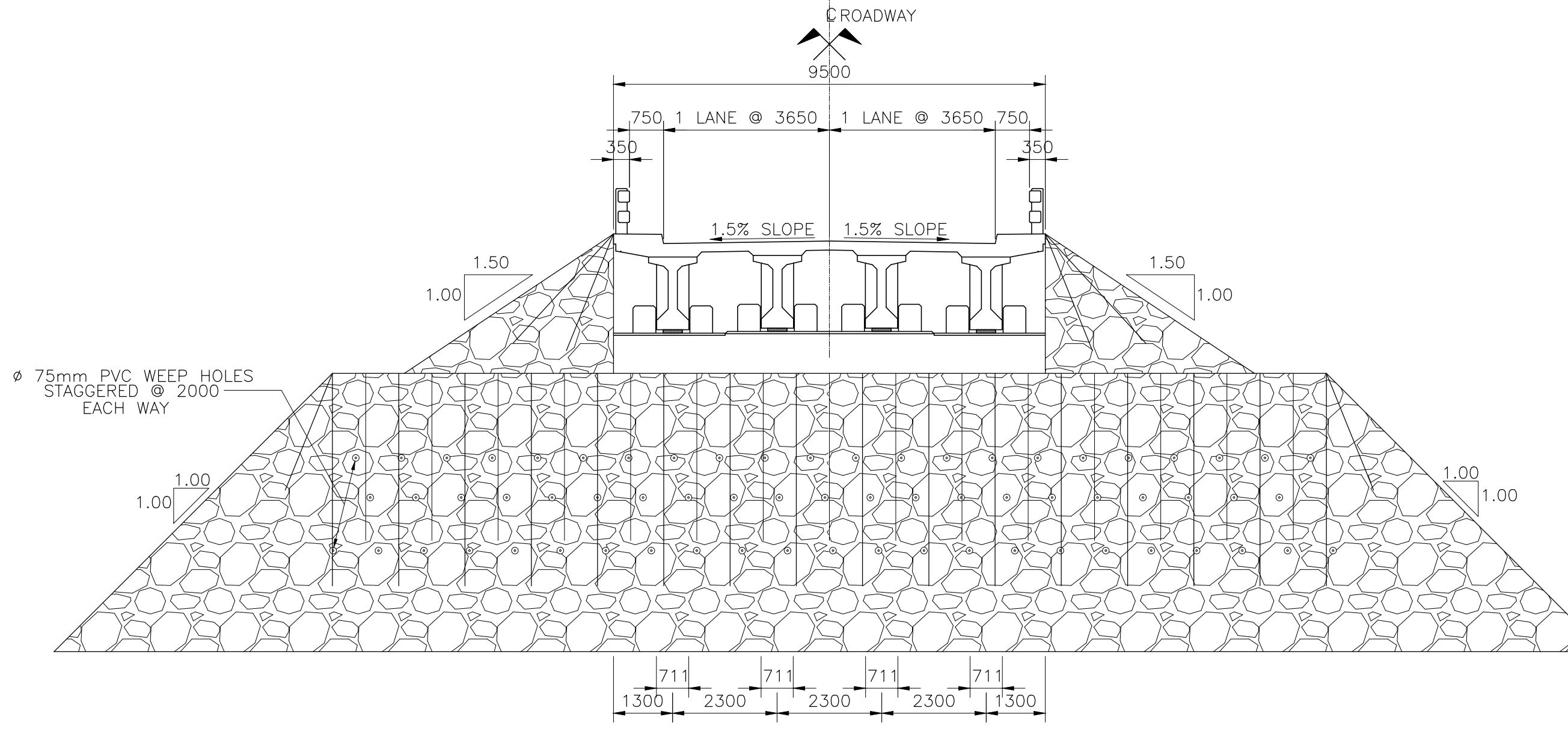
2 GENERAL ELEVATION
SCALE 1:250

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
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ENGR. ALBERTO C. CAÑETE
TEAM LEADER



3A SECTION AT ABUTMENT A
SCALE 1:100



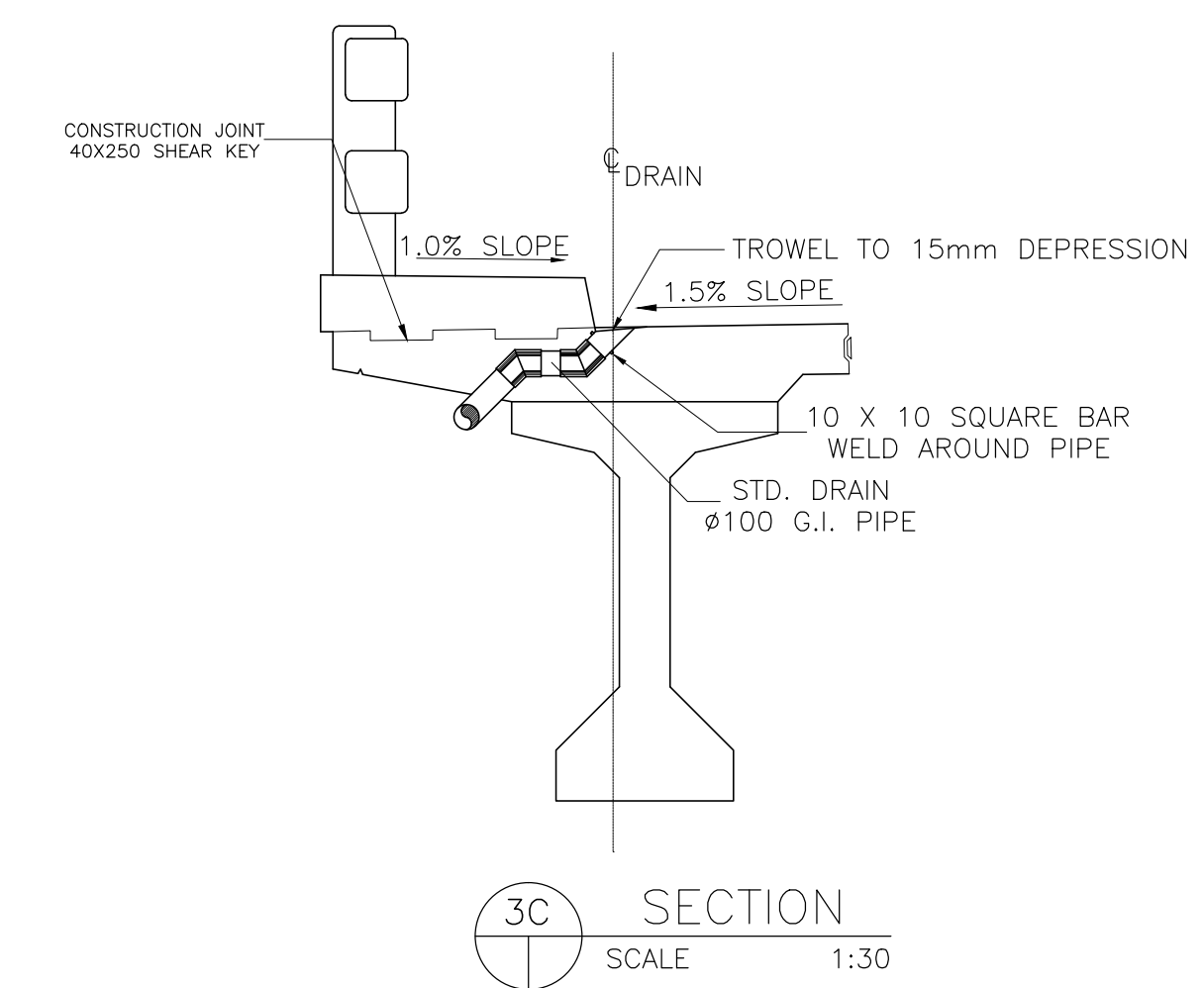
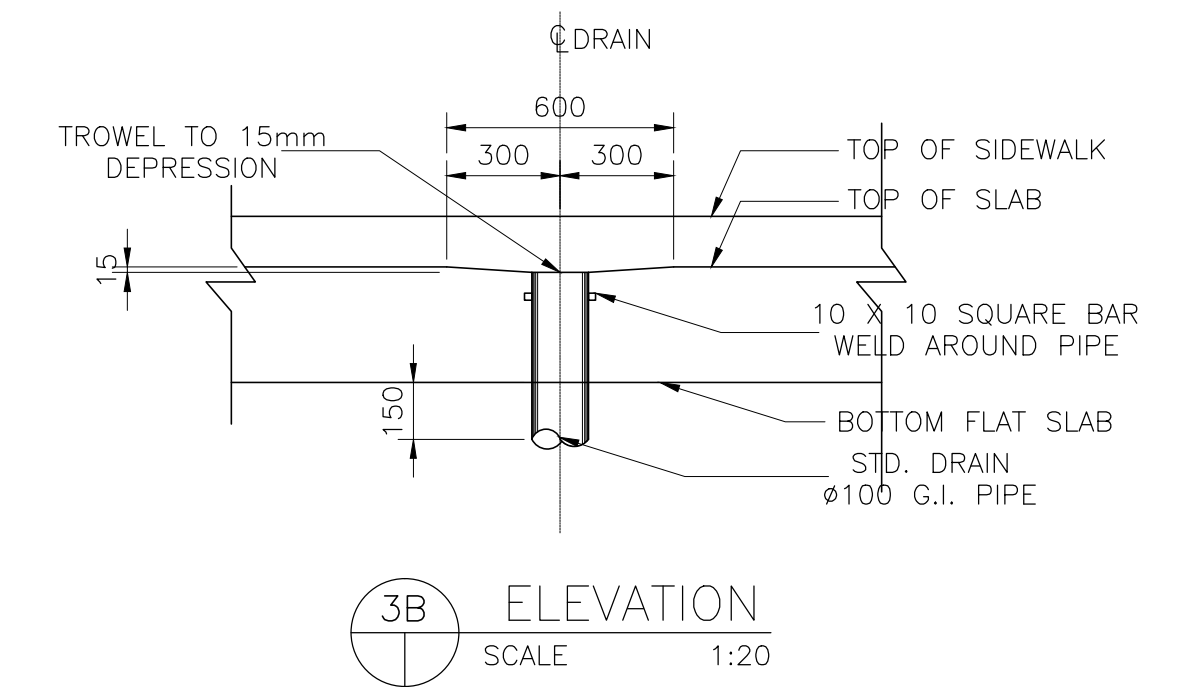
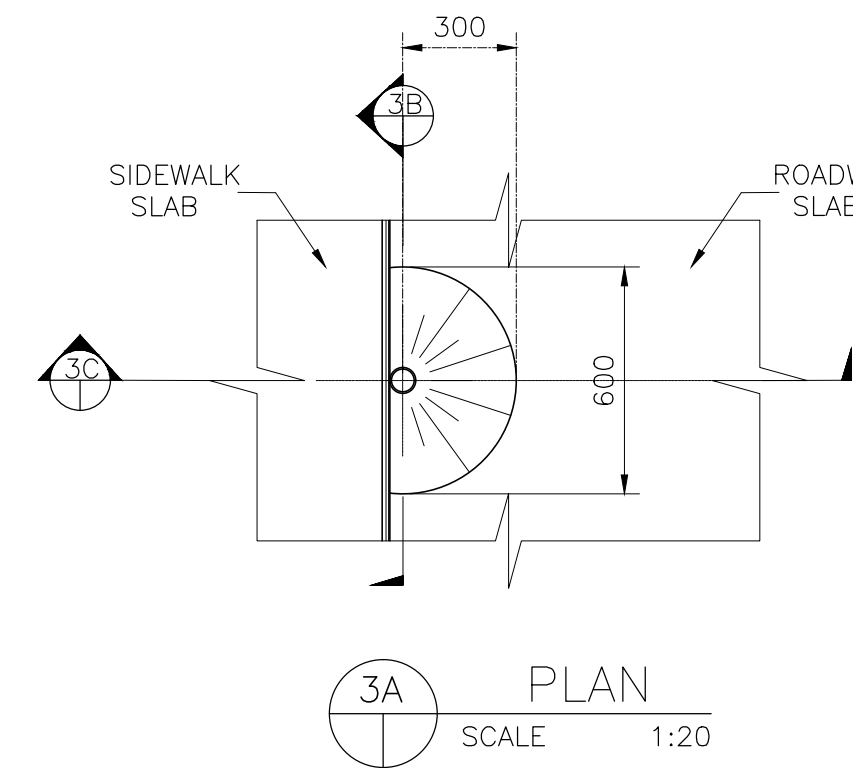
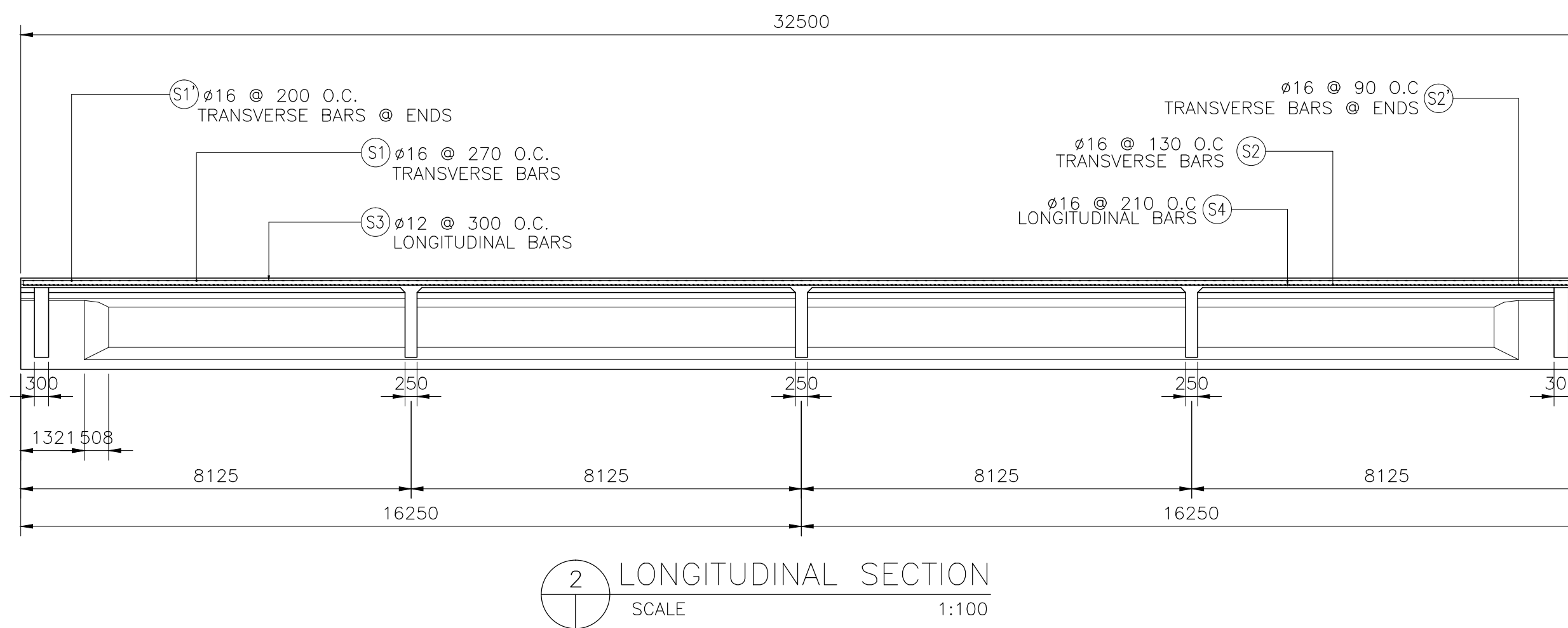
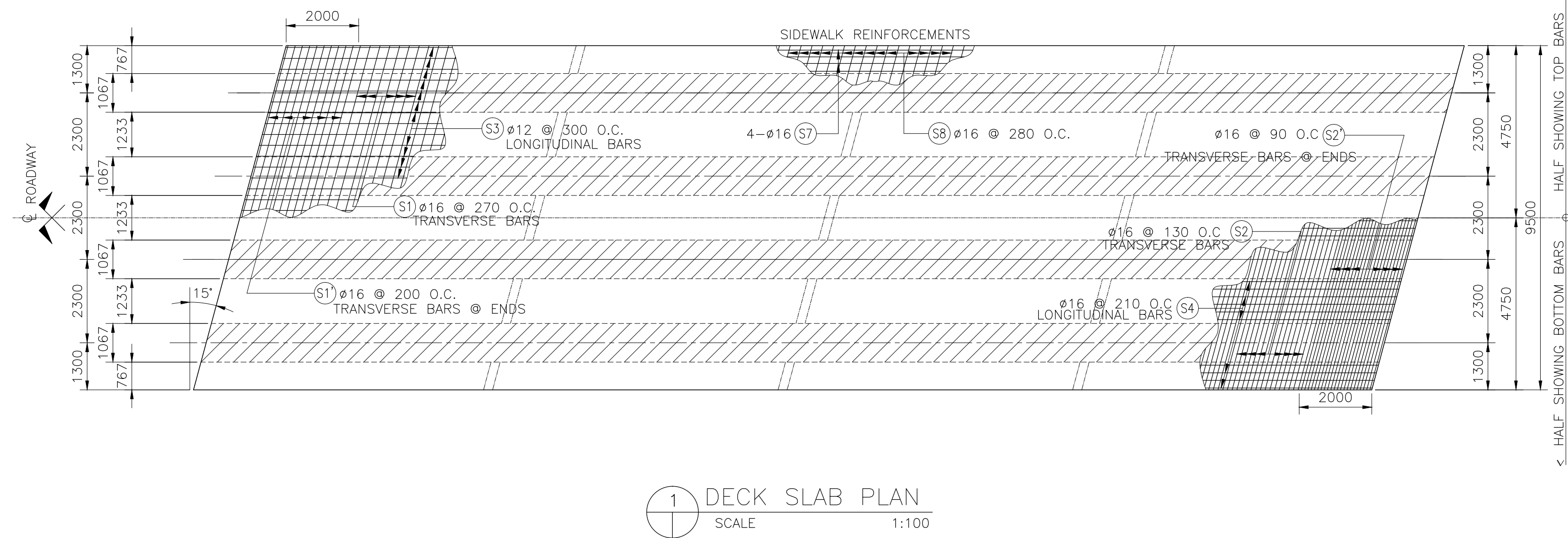
3B SECTION AT ABUTMENT B
SCALE 1:100

OVERPASS 1 STRUCTURES QUANTITY ESTIMATE (2 LANES)

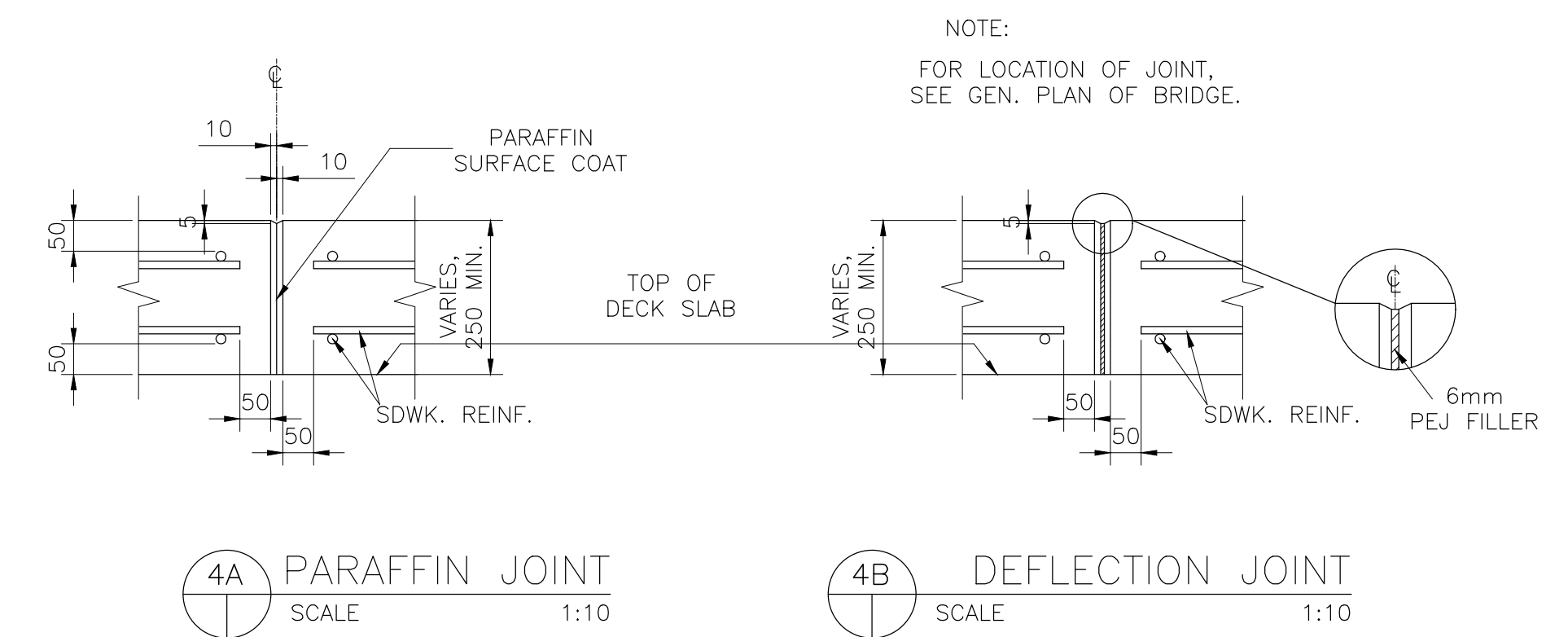
ITEM NO.	DESCRIPTION	UNITS	ABUTMENTS		PIER	SUPERSTRUCTURE	TOTAL
			A	B			
103 (2) a	Bridge Excavation (Common Soil)	cu.m.	120	117			237
104 (2) a	Embankment (From Roadway Excavation)	cu.m.	1134	1541			2675
202 (1)	Crushed Aggregate Base Course	cu.m.	37	37			74
400 (23) a9	Bored Pile (2.00m Diameter)	l.m.	60	60			120
400 (24) i1	Permanent Casing (2.0m dia. X 12mm thk.)	l.m.	18	18			45
400 (23) a19	Bored Piles (2.6m Diameter)	l.m.			45		45
400 (24) s1	Permanent Casing (2.60m dia. X 16mm thk.)	l.m.			18		18
400 (27) a	PIT	ea.	2	2	2		6
400 (28)	PDA	ea.	1	1	1		3
401 (2) a	RAILING	l.m.				132	132
404 (1) a	GRADE 40	kgs.	1010	1010		6497	8517
404 (1) b	GRADE 60	kgs.	7776	7776	19411	20386	55349
405 (1) b2	Structural Concrete 14	cu.m.	37	37			74
405 (1) b3	Structural Concrete 28	cu.m.	54	54	73	250	431
406 (1) g7	Prestressed - Type V (L=32.75)	ea.				8	8
407 (8)	Lean Concrete	cu.m.	7	7			14
412 (1)	Elastomeric Bearing Pad	ea.	4	4	8		16
507 (1)	Rubble Concrete	cu.m.	159	191			350
508 (1)	Hand Laid Rock Embankment	cu.m.	120	117			237
517 (1)a	Drain Pipe 100mm Dia.	l.m.				208	208
SPL-801	Premolded Joint Filler with Sealant	sq.m.	26	26	48		100

NOTE: REINFORCING BAR QUANTITIES FOR PRESTRESSED GIRDERS ARE NOT INCLUDED.

CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, MISRA, DILMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P.F. ASEP PROJECT MANAGER - UICI	 BCDA BAYAN LEPAGE DEVELOPMENT AUTHORITY	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 1	SCALE AS SHOWN	DRAWING STATUS DRAFT DRAWING
				CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER	APPROVED BY JOVITO M. SUNGA OIC - PMD	PROJECT CODE P301-01	DRAWING NO. A1	DATE APPROVED



3 TYPICAL DRAIN DETAILS
SCALE NTS

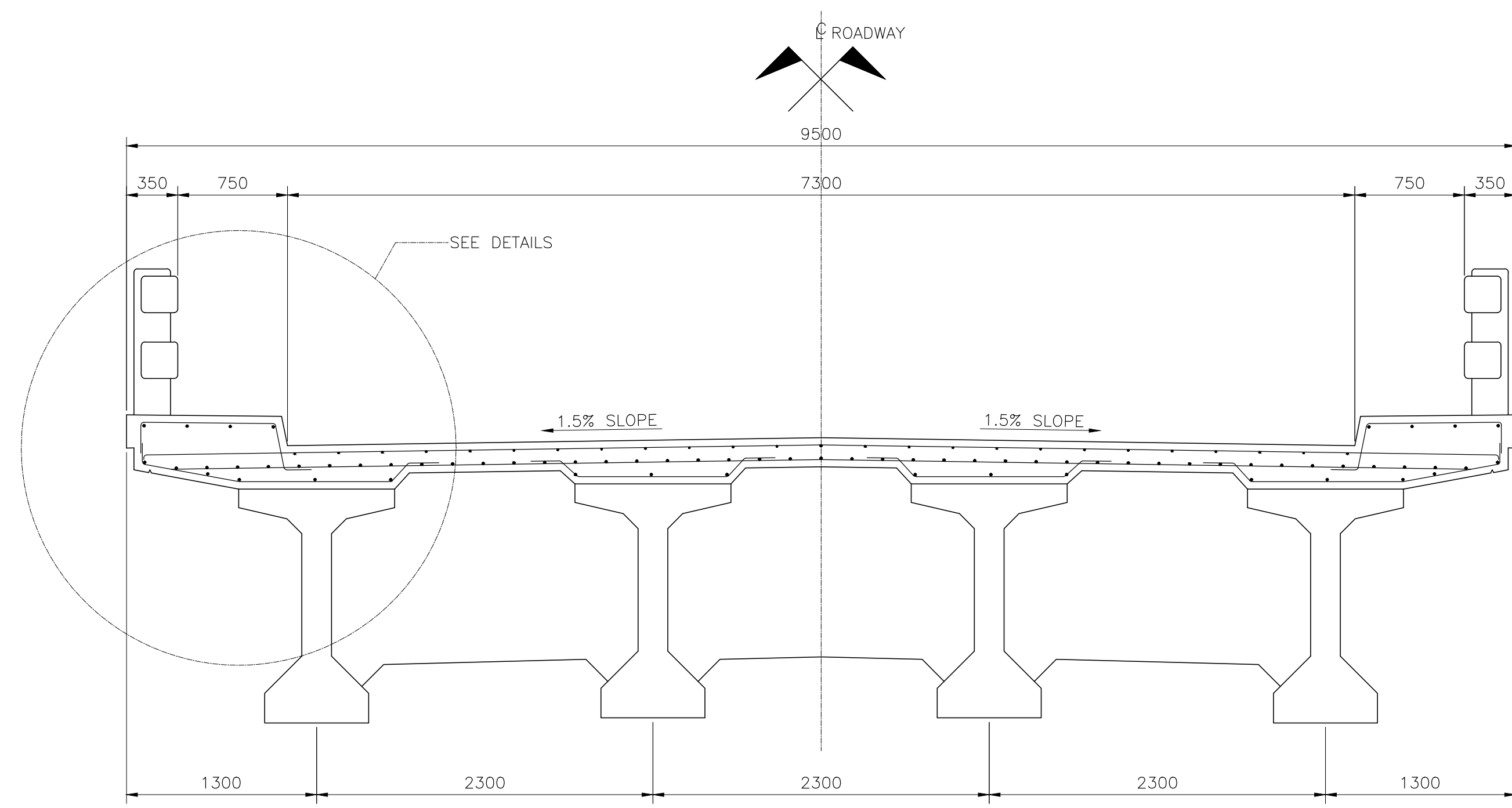


4 JOINT DETAILS
SCALE NTS

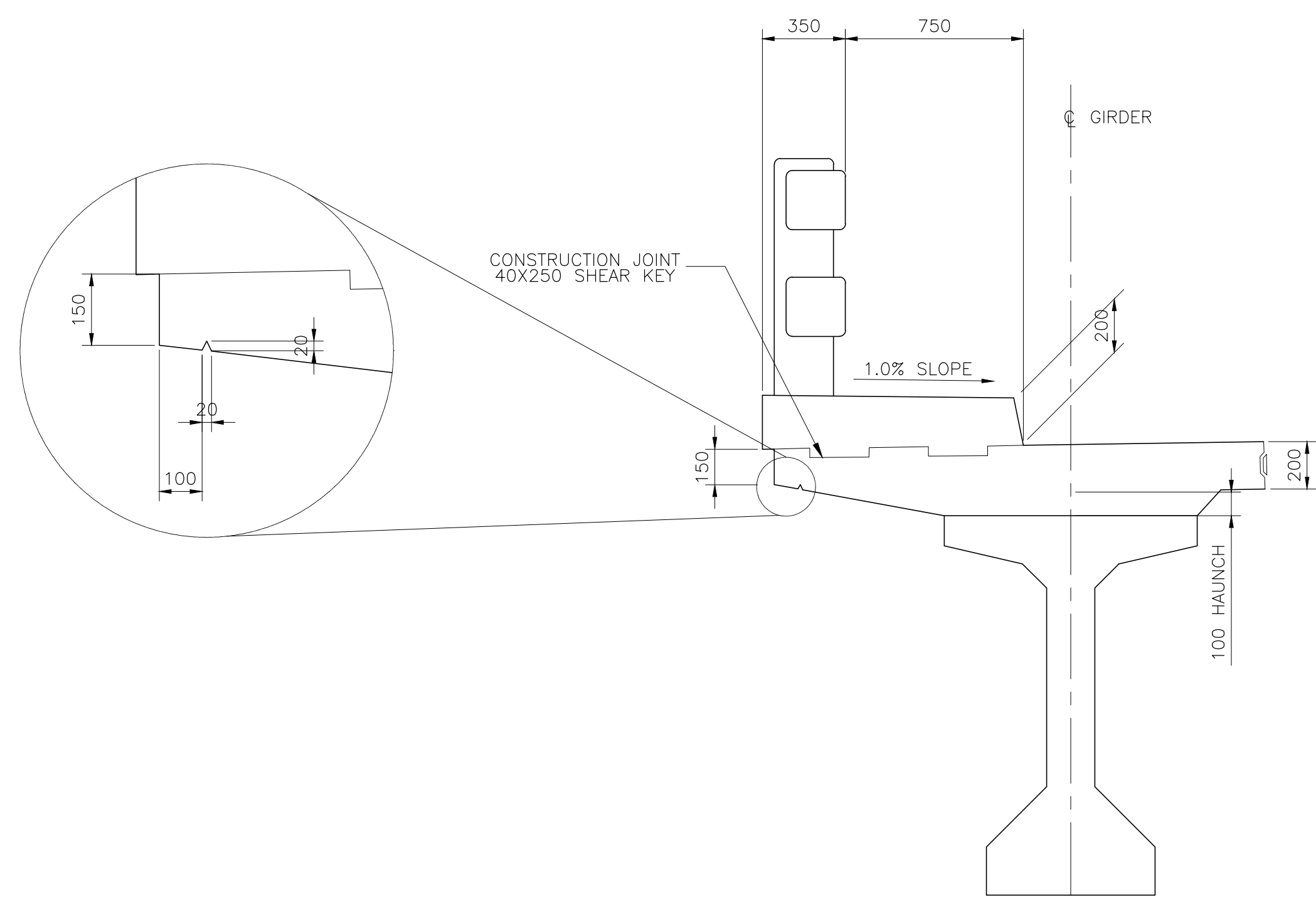
NOTE:
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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

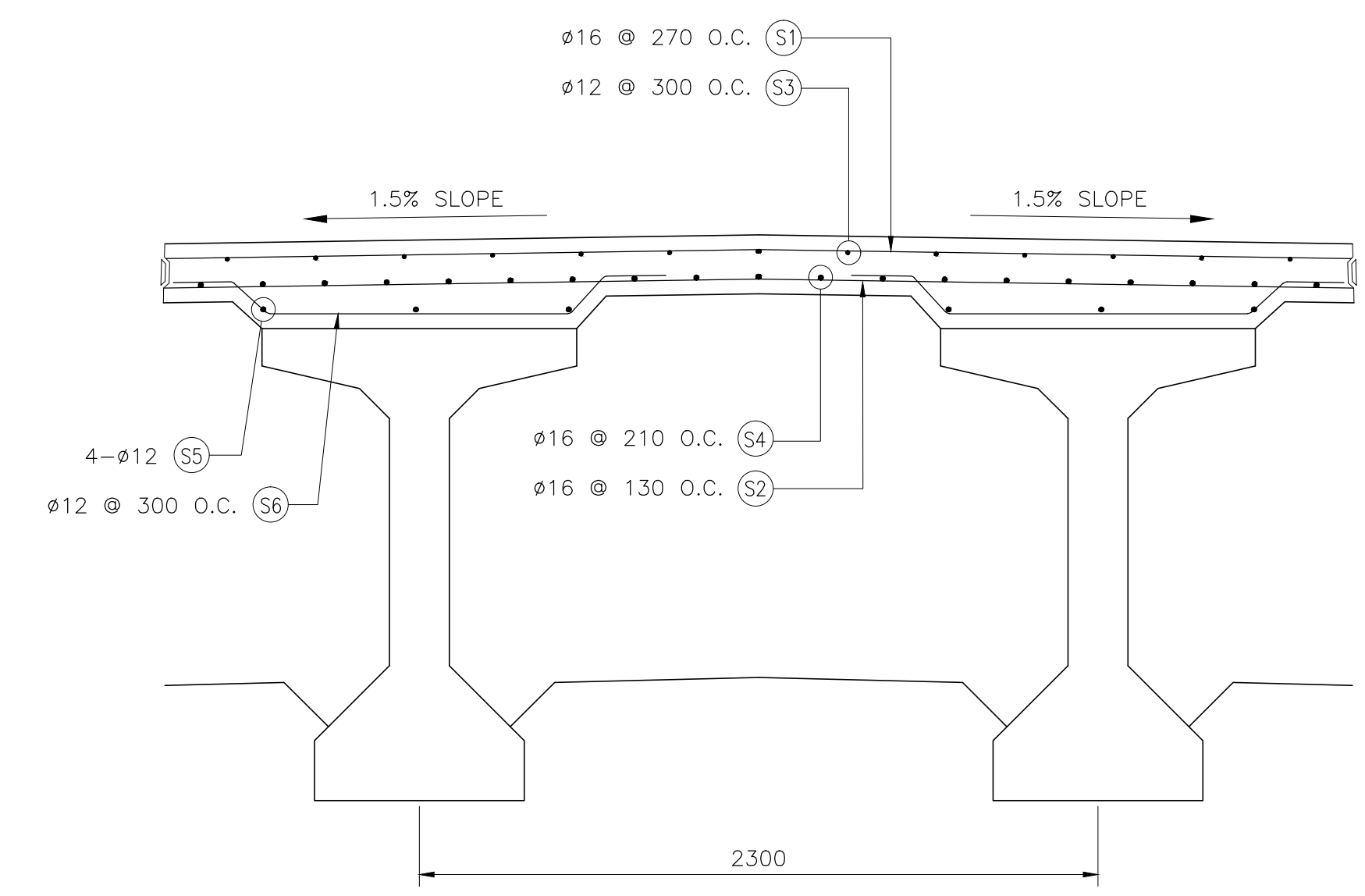
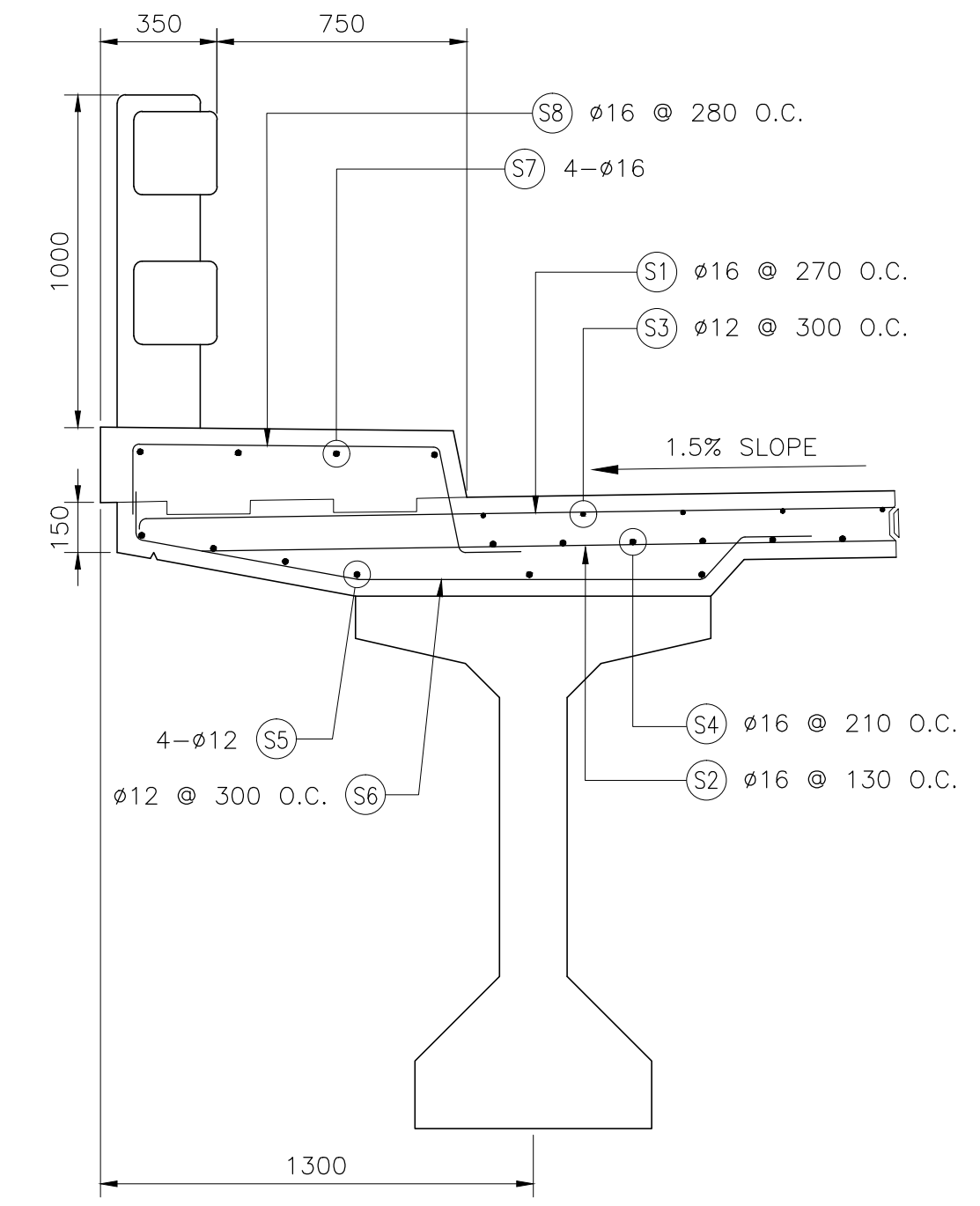
CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, VISRA, DALMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	 CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITO M. SUNGA OIC - PMD DATE: -	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM:1+500.00 - KM:16+000) - OVERPASS 1 DECK SLAB PLAN LONGITUDINAL SECTION TYPICAL DRAINS AND JOINTS	SCALE AS SHOWN PROJECT CODE P301-02 DATE APPROVED -	DRAWING STATUS DRAFT DRAWING DRAWING NO. P301-02 DATE REVISED - REV. A1 -
	CONSULTANTS: Urban Integrated Consultants, Inc.								



1 CROSS SECTION @ MIDSPAN
SCALE 1:30



3 DRIP GROOVE & SHEAR KEY DETAILS
SCALE 1:20

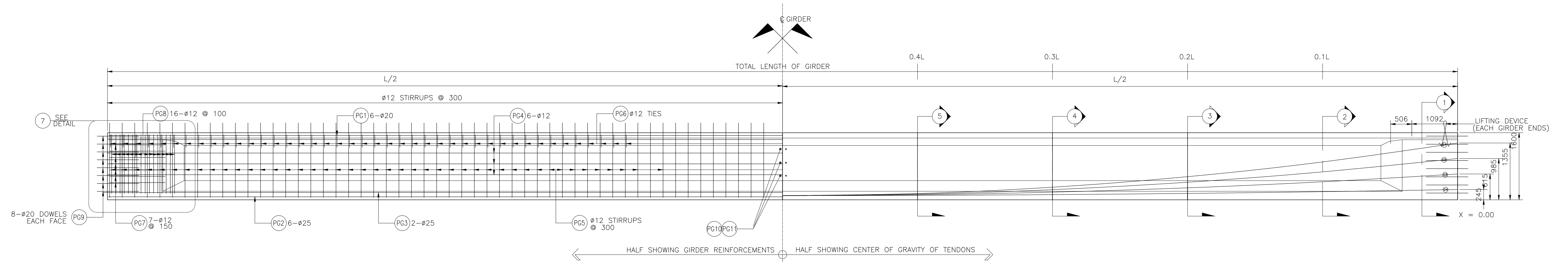


3 TRANSVERSE SECTION
SCALE 1:20

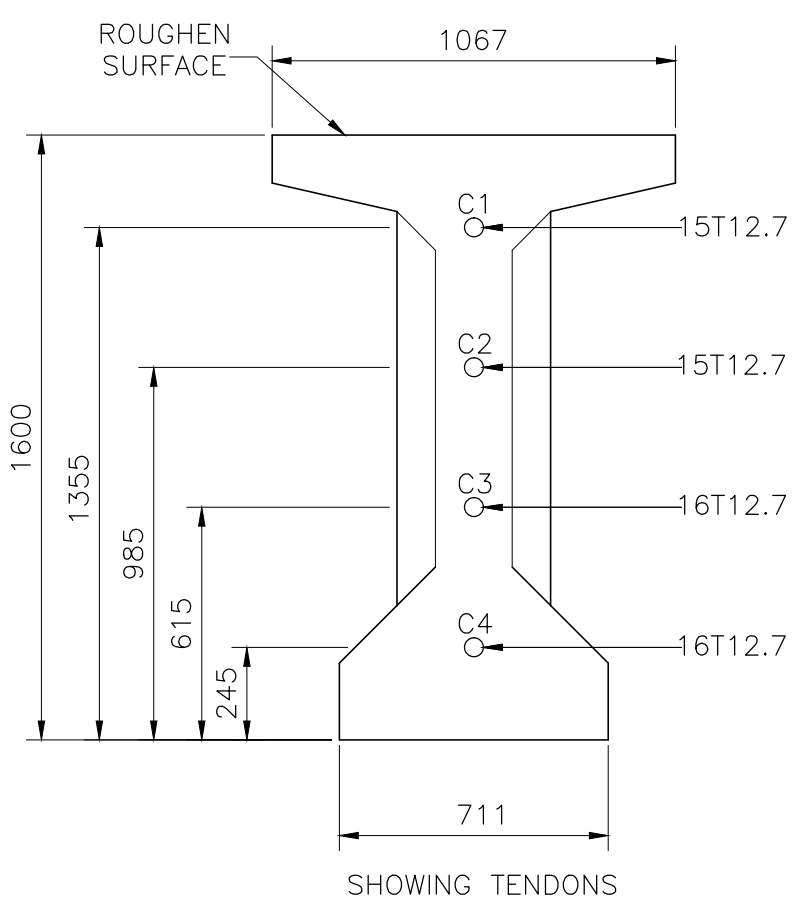
NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

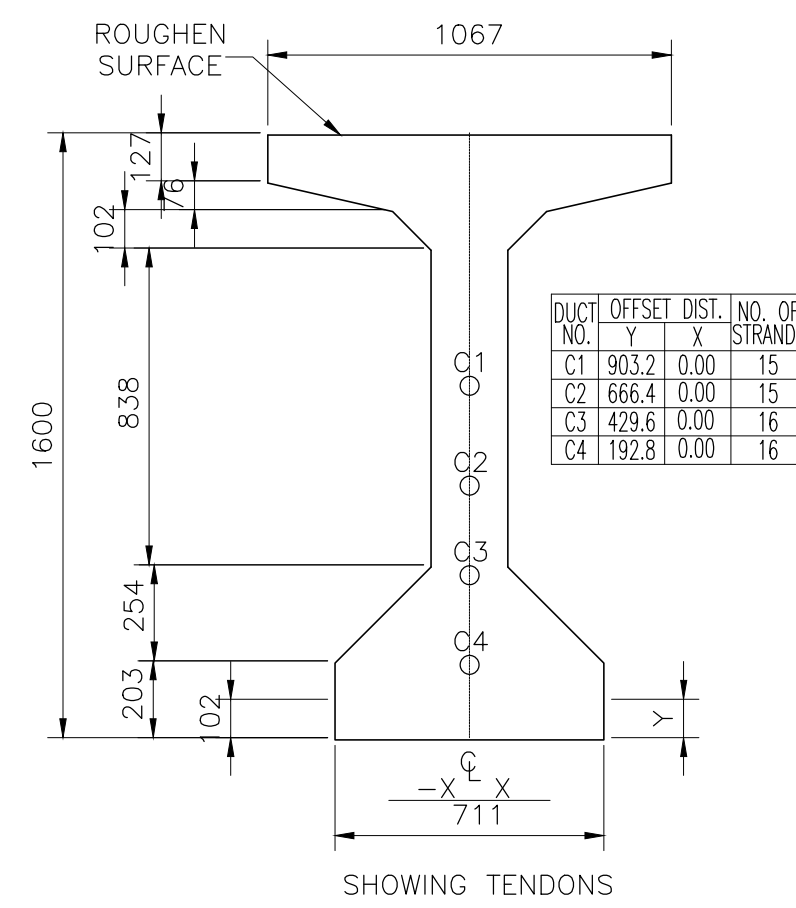
CONSULTANTS Urban Integrated Consultants, Inc. <small>100 CORPORATE BLDG., 8 LANOS STREET, VIGOR, DILMAN, QUEZON CITY, 1128</small>	SUBMITTED BY EFREN L. DAVID <small>PRESIDENT - UICI</small> DATE: -	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F. ASEP <small>PROJECT MANAGER - UICI</small> DATE: -	BUREAU OF CITY DEVELOPMENT AUTHORITY CHECKED BY RYAN PAUL S. GALURA <small>PROJECT MANAGER</small> DATE: -	APPROVED BY JOVITO M. SUNGA <small>OIC - PMD</small> DATE: -	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS-1 CROSS SECTION TRANSVERSE SECTION	SCALE AS SHOWN PROJECT CODE DATE APPROVED -	DRAWING STATUS DRAFT DRAWING DRAWING NO. P301-03 DATE REVISED - REV. A1 -
	<p>Urban Integrated Consultants, Inc. logo and name.</p>								



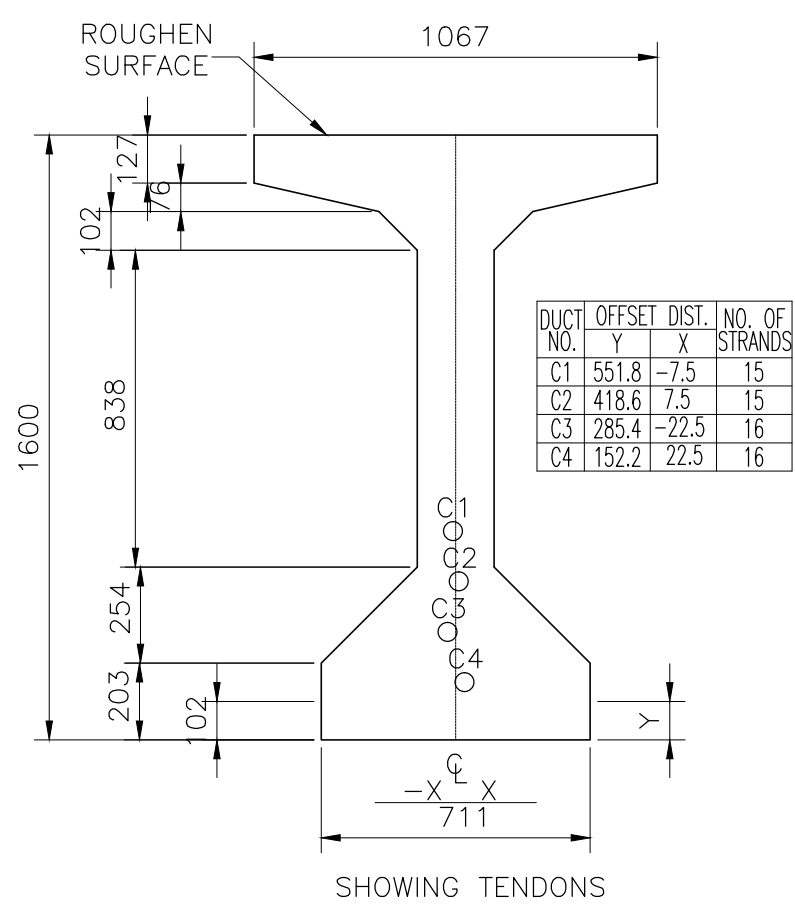
1 PRESTRESSED GIRDER ELEVATION
SCALE 1:50



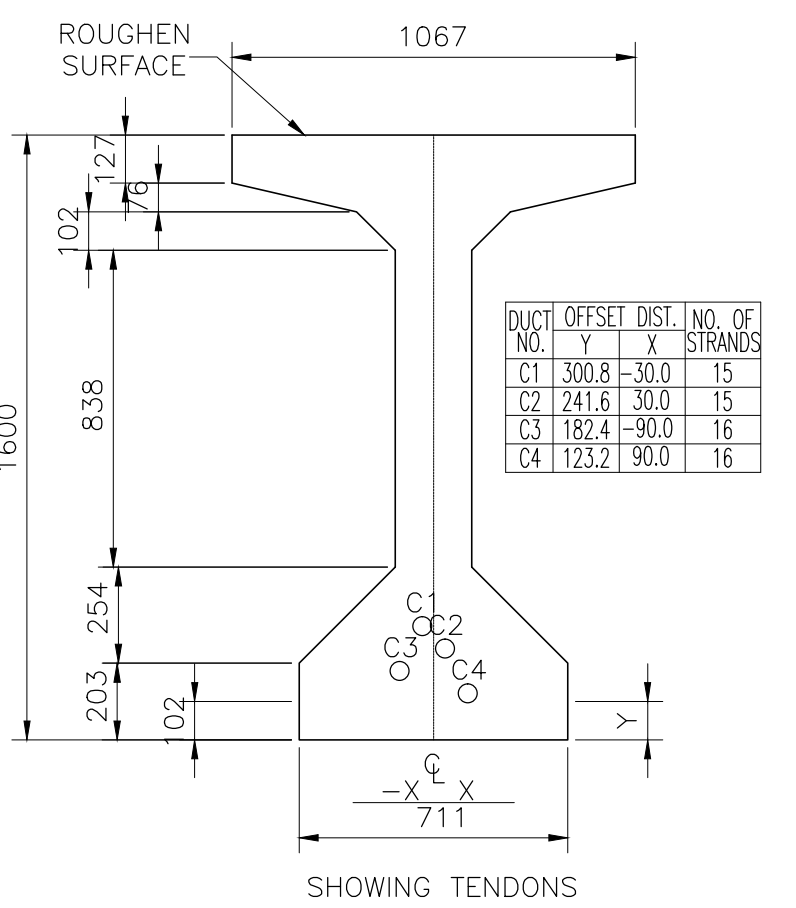
2 SECTION @ ENDS
SCALE 1:20



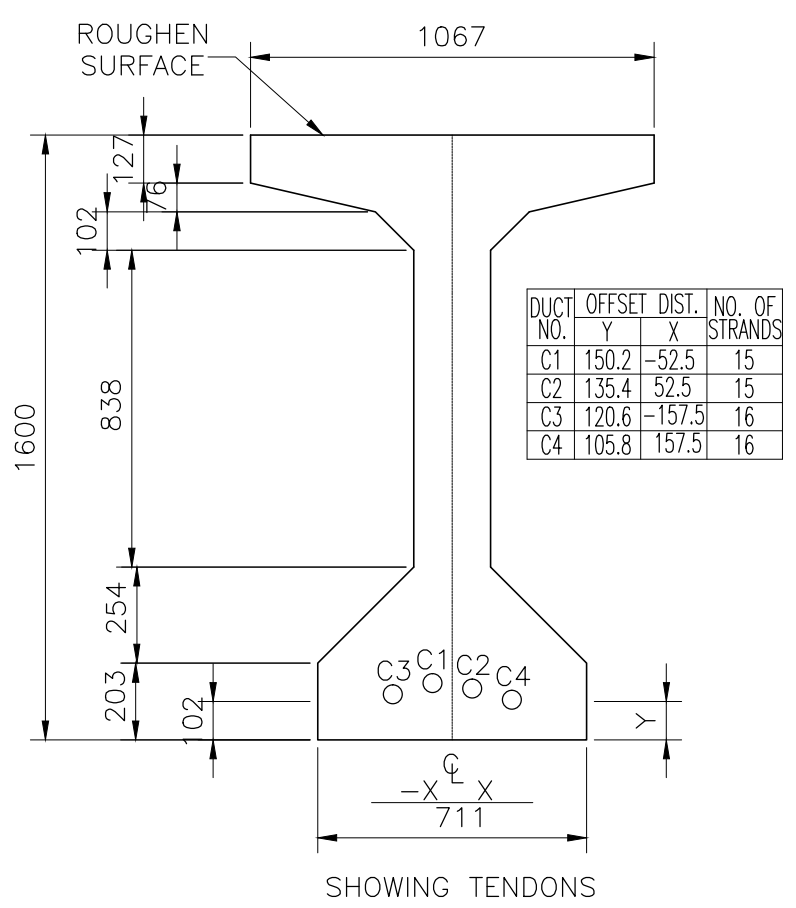
3 SECTION @ 0.1L
SCALE 1:20



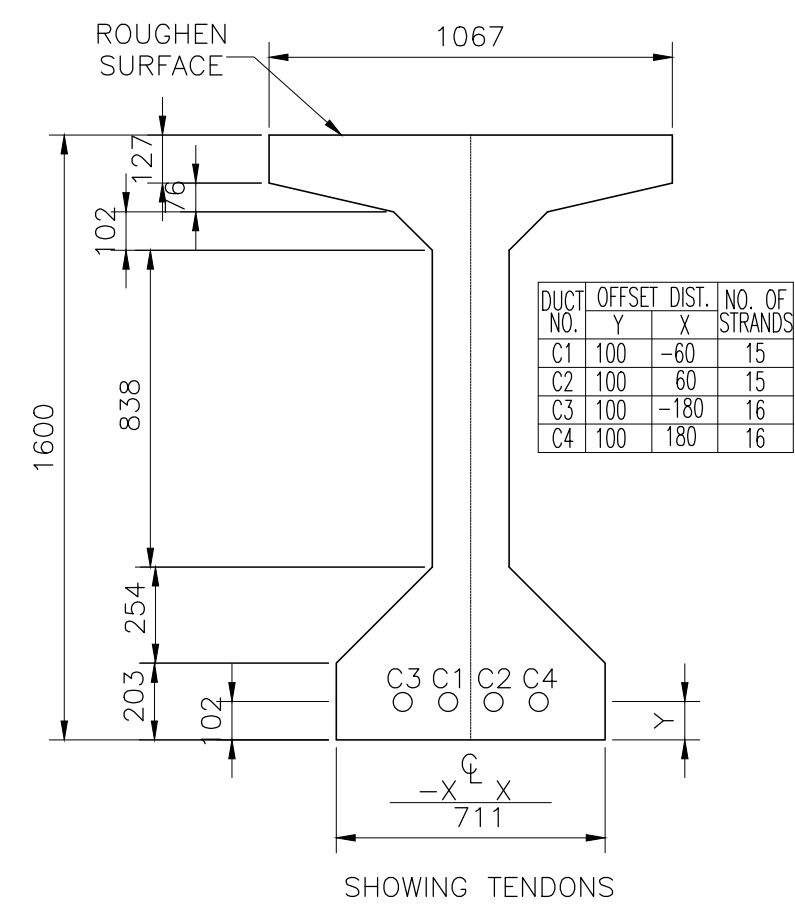
4 SECTION @ 0.2L
SCALE 1:20



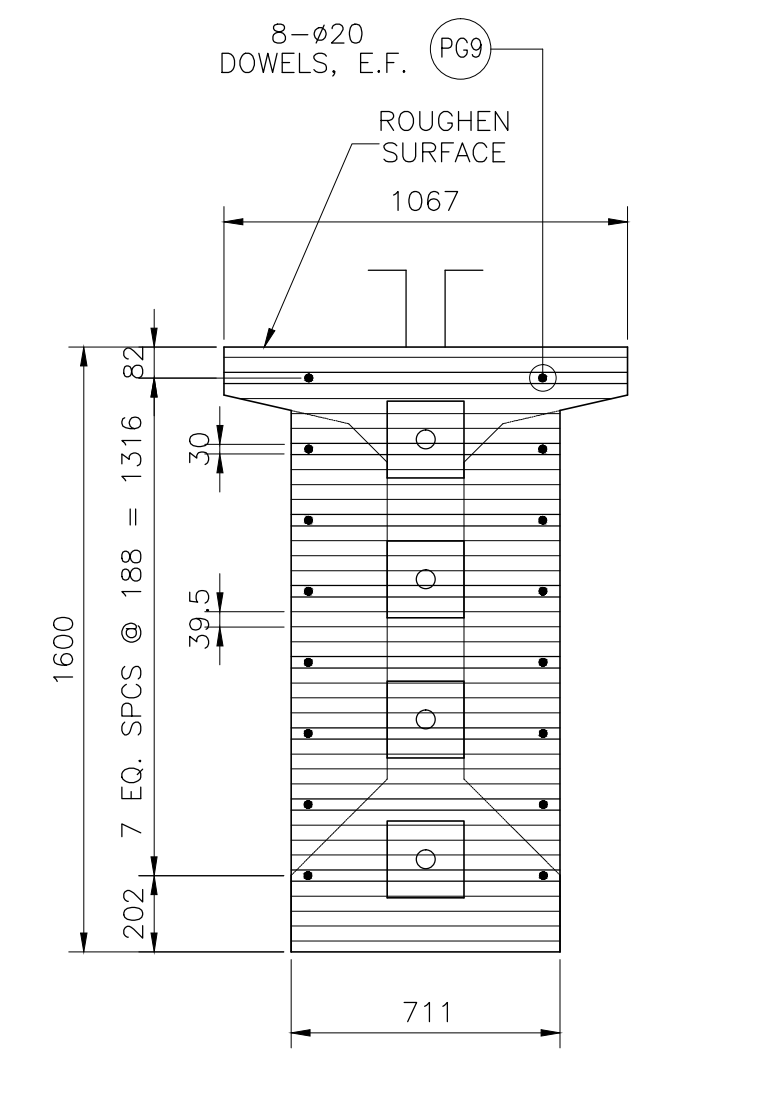
5 SECTION @ 0.3L
SCALE 1:20



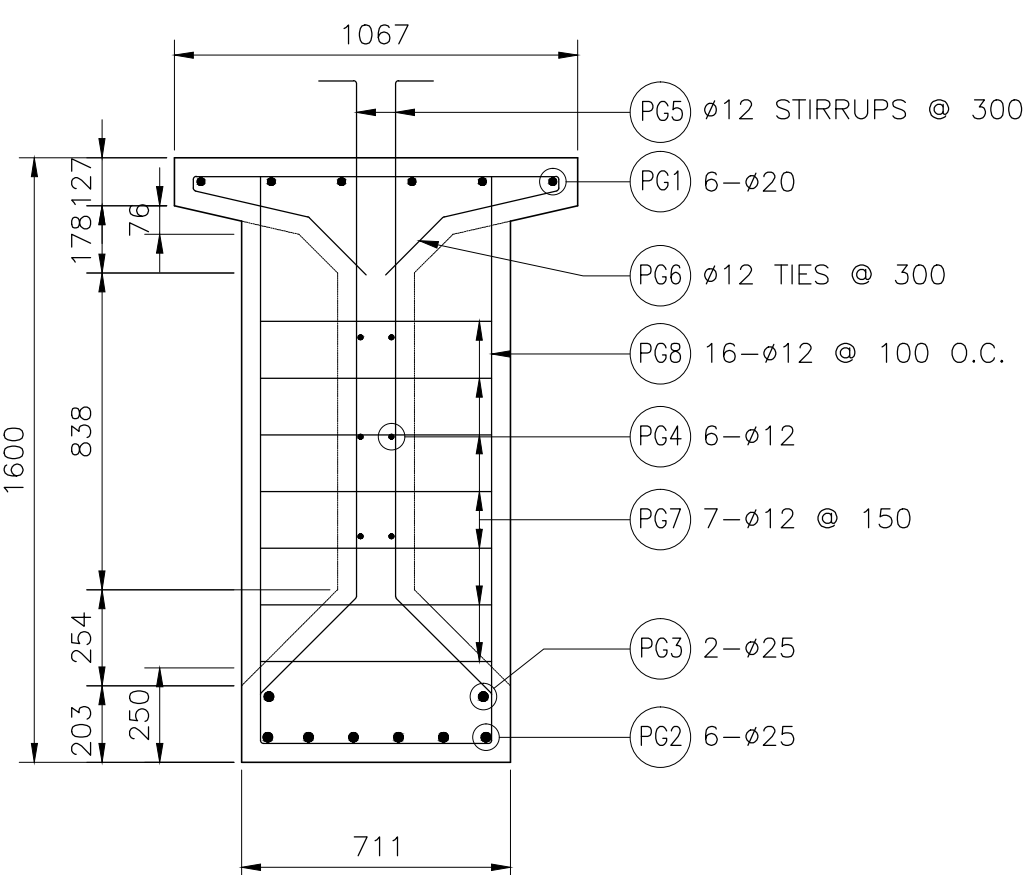
6 SECTION @ 0.4L
SCALE 1:20



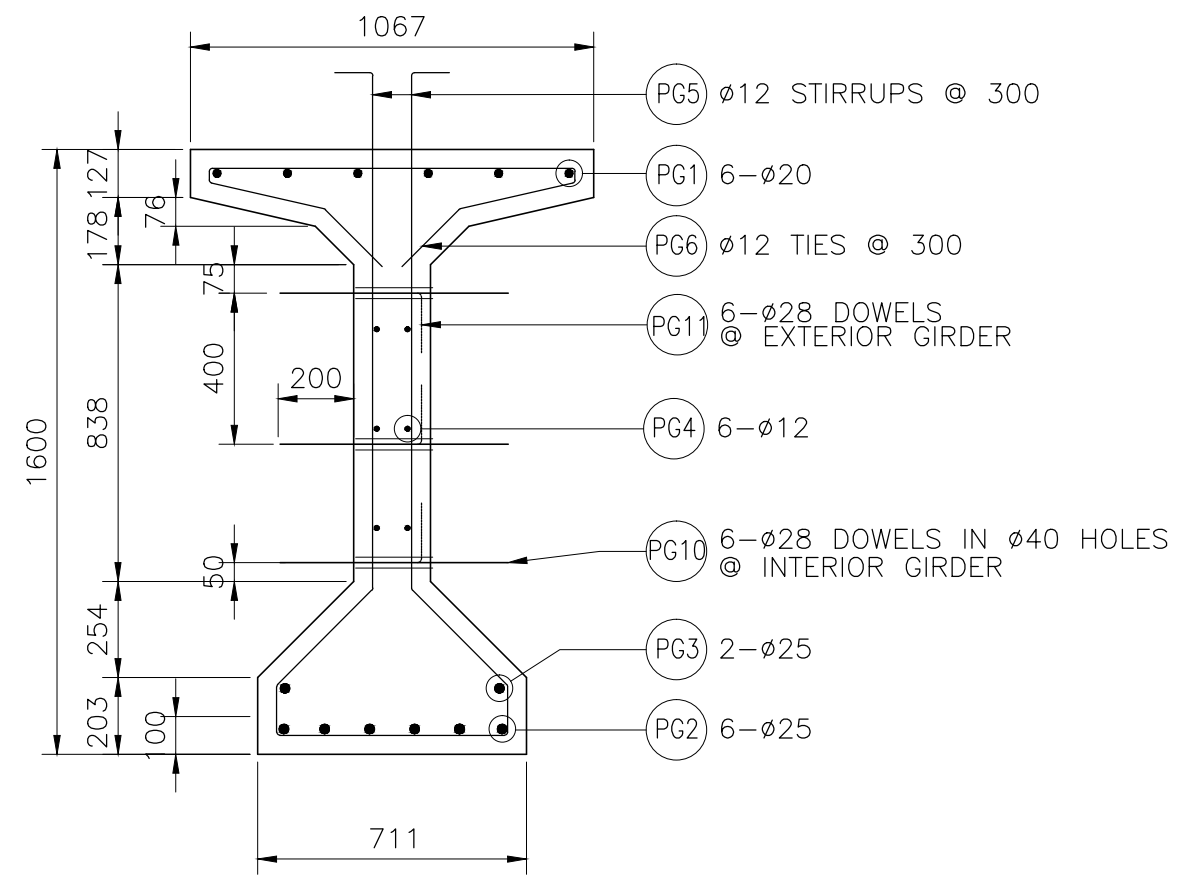
7 SECTION @ MIDSPAN
SCALE 1:20



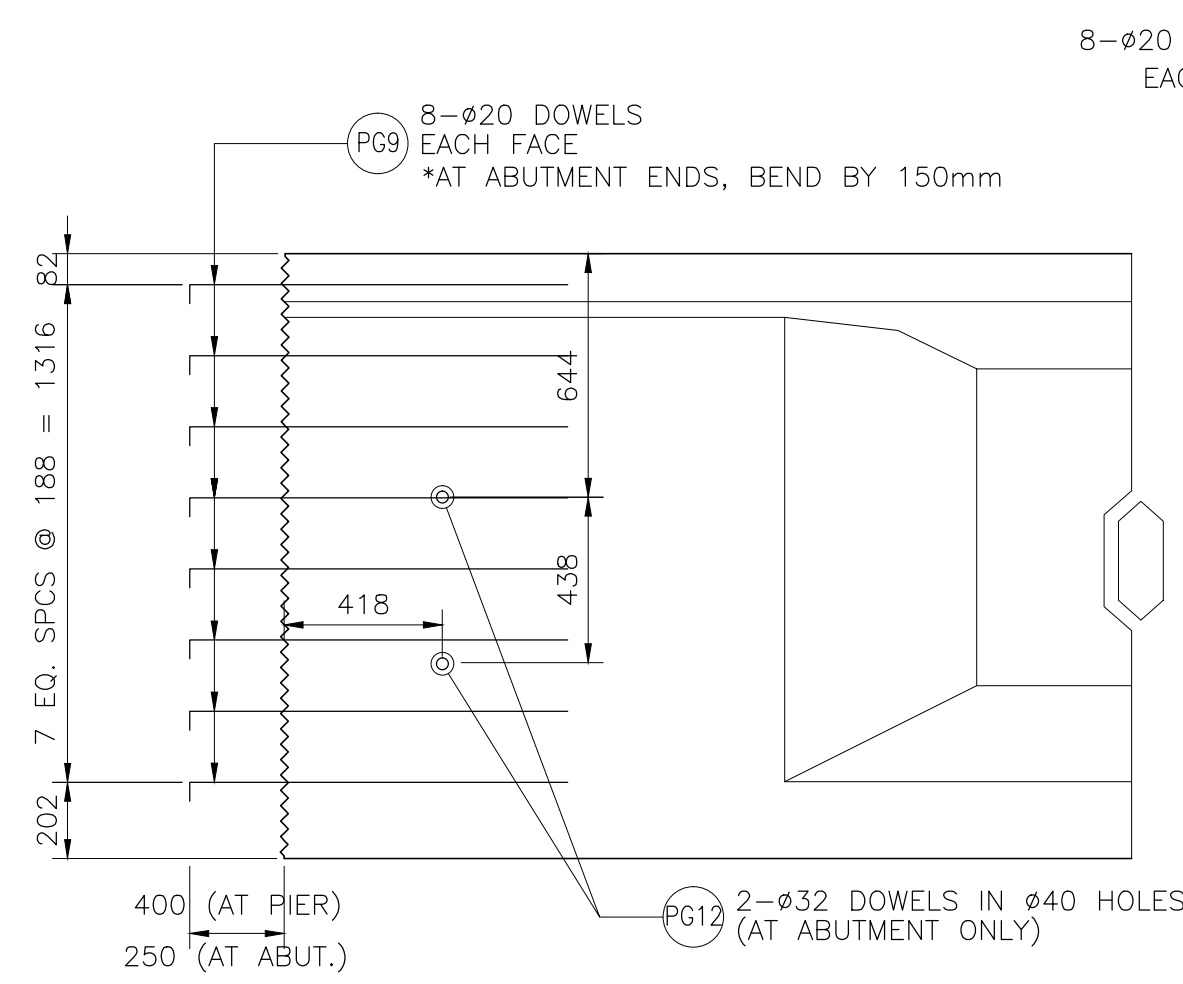
8 TOOTH AT END VIEW
SCALE 1:20



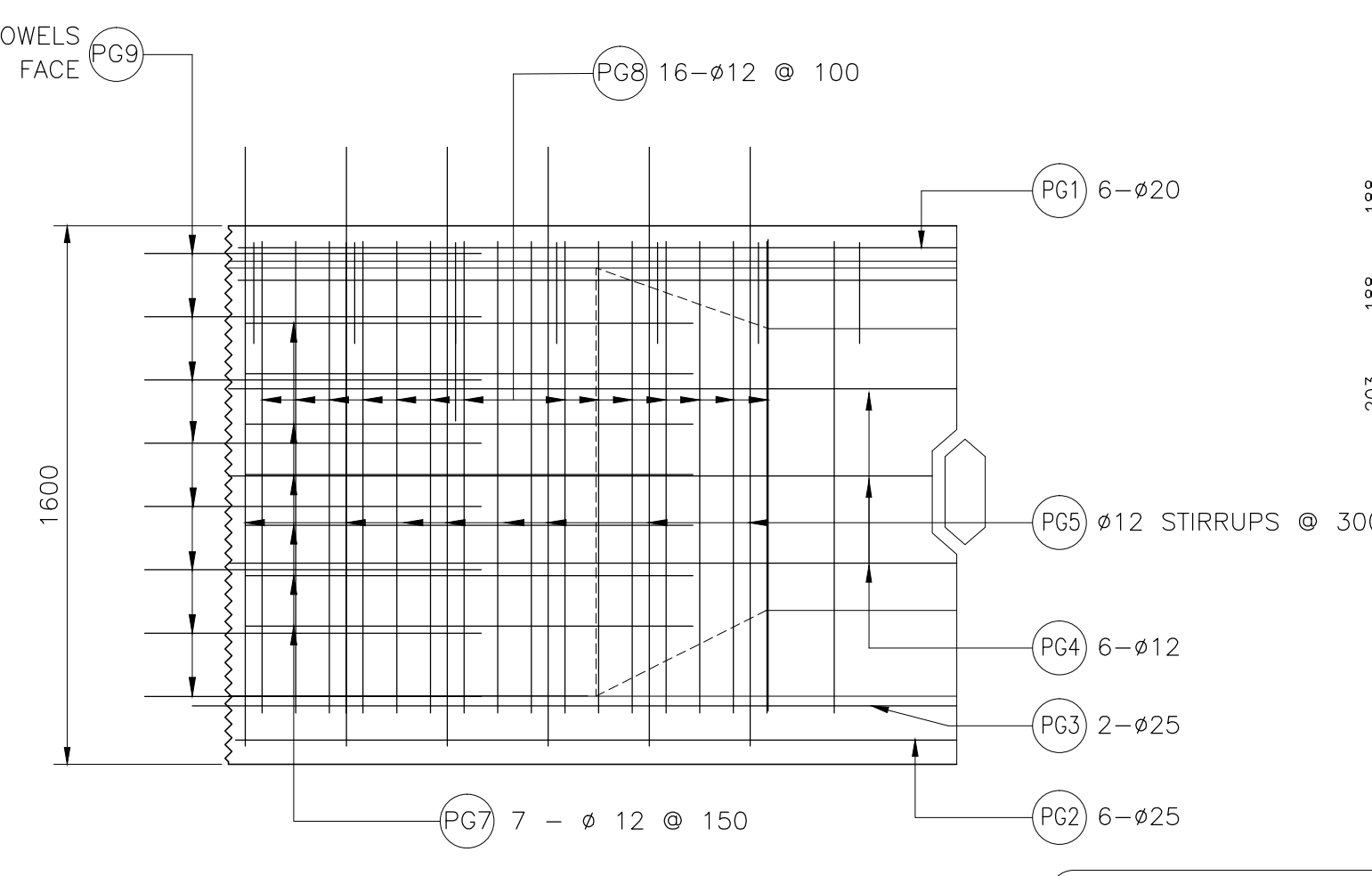
9 REINFORCEMENT DETAILS
SCALE 1:20



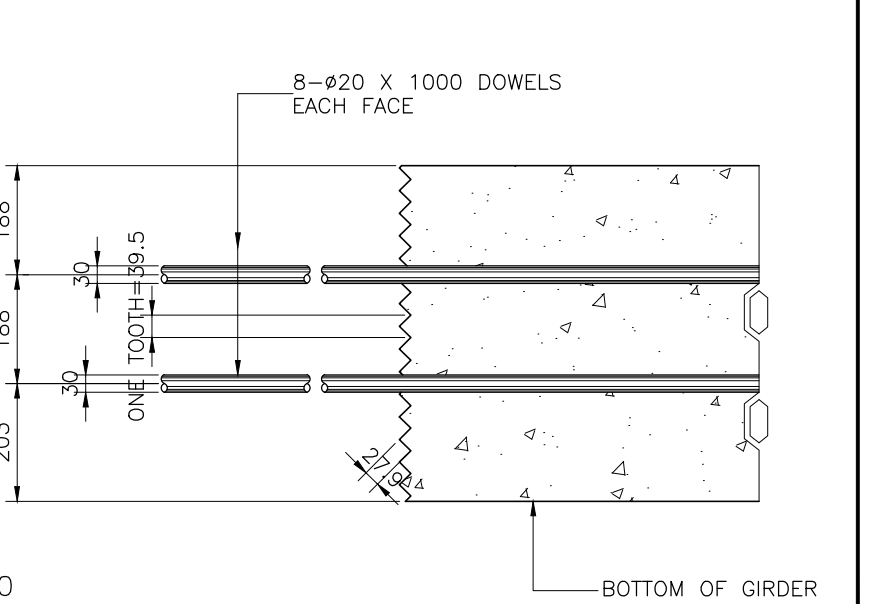
SHOWING REINFORCEMENTS @ INTERMEDIATE SECTION



10 DOWELS AT END BLOCK
SCALE 1:20



11 REINFORCEMENT DETAILS
SCALE 1:20



12 TOOTH DETAIL
SCALE NTS

NOTE:
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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

CONSULTANTS
Urban Integrated Consultants, Inc.
100 CORPORATE BLDG., 8 LANOS STREET, MISRA, DALMAN, QUEZON CITY, 1128

SUBMITTED BY
EFREN L. DAVID
PRESIDENT - UICI

DESIGNED BY
ALBERTO C. CAÑETE, M.Eng., P.P.F.,ASEP
PROJECT MANAGER - UICI

CHECKED BY
RYAN PAUL S. GALURA
PROJECT MANAGER

APPROVED BY
JOVITO M. SUNGA
OIC - PMD

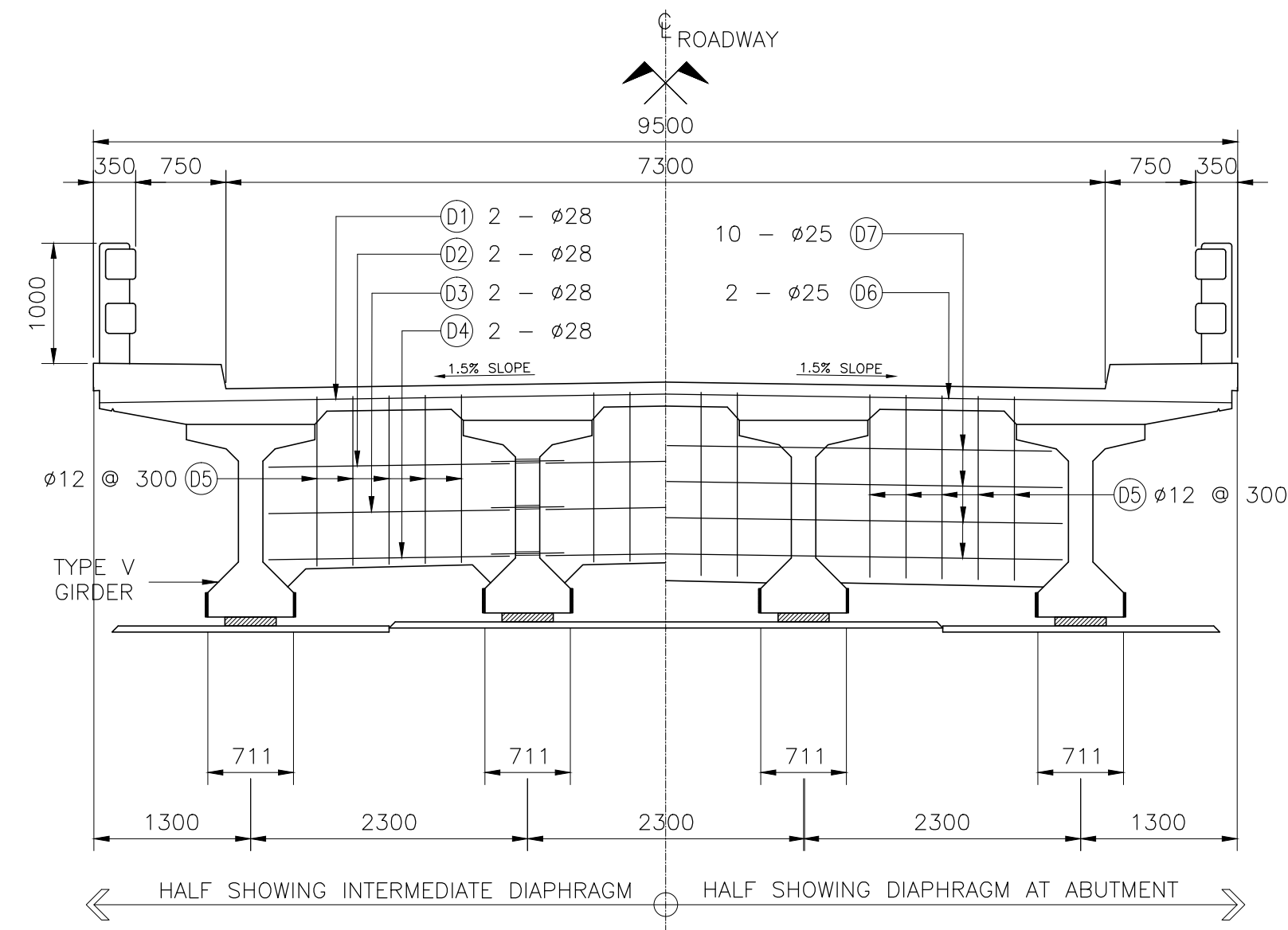


REVISIONS	DATE
A	
B	
C	
D	
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F	

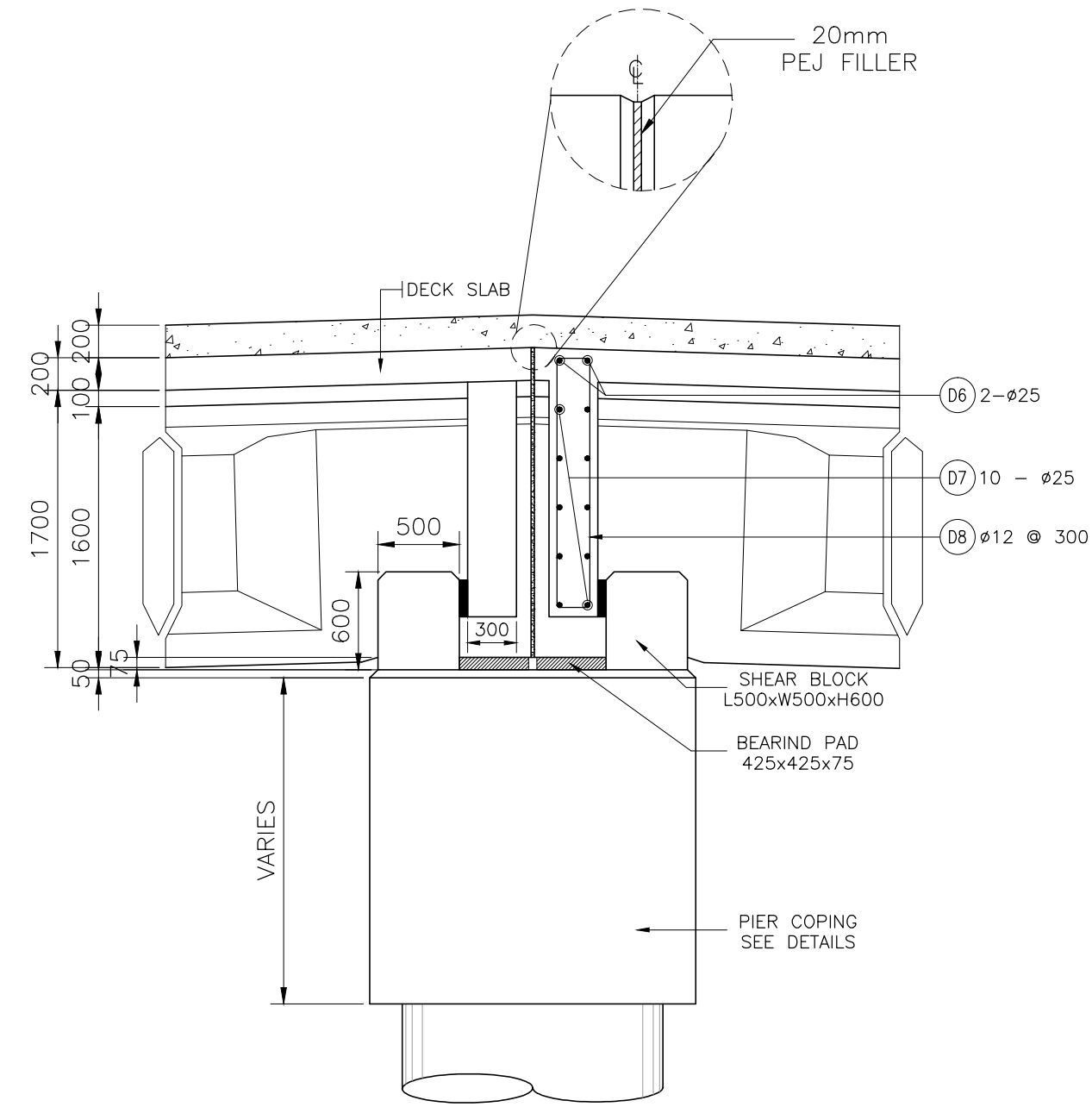
PROJECT TITLE
DETAILED ENGINEERING DESIGN OF THE
PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD,
MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD
SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 1

TYPE V GIRDER ELEVATION AND SECTIONS

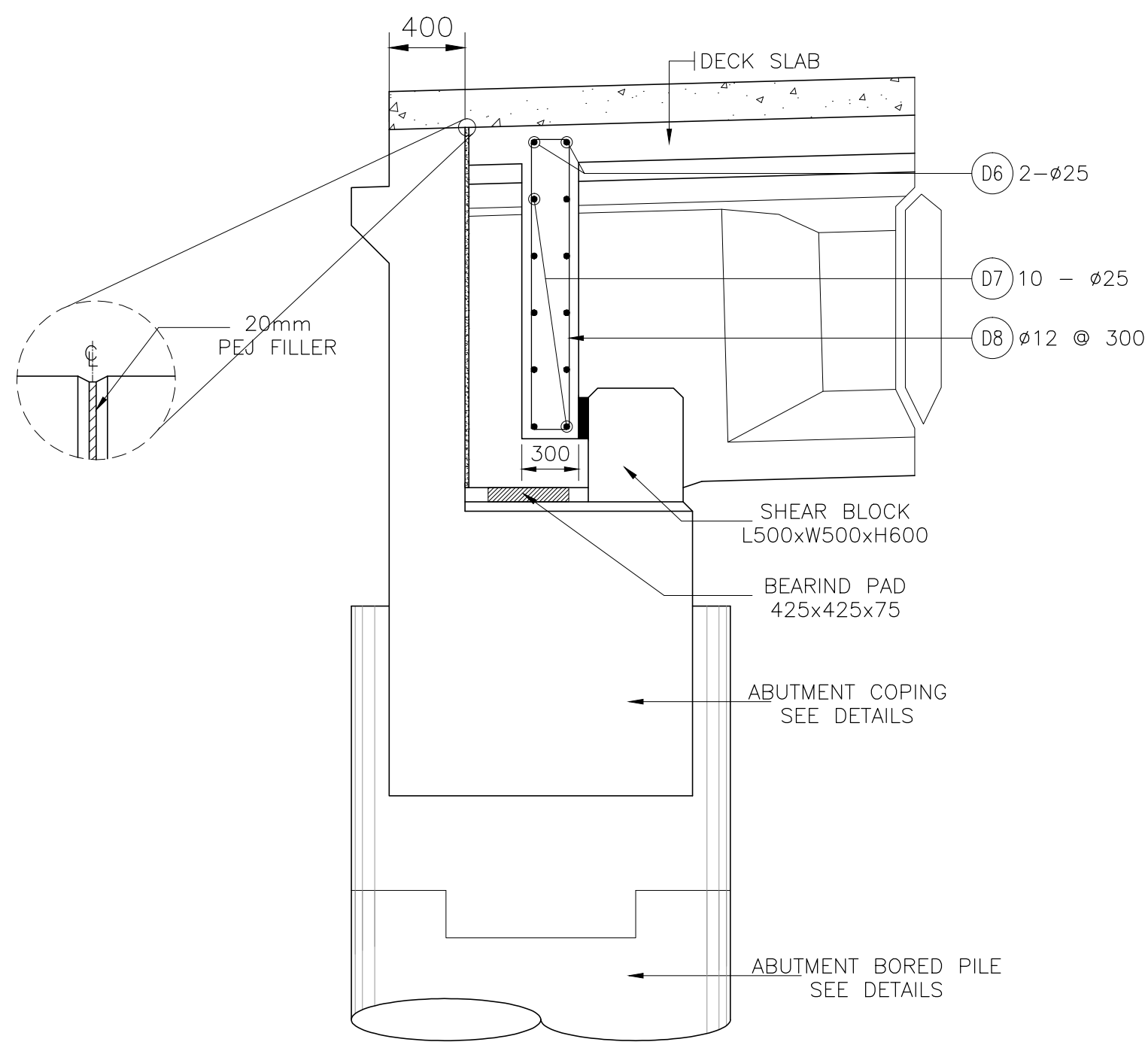
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AS SHOWN	DRAFT DRAWING
PROJECT CODE	DRAWING NO. SIZE
	P301-01 A1
DATE APPROVED	DATE REVISED
	REV.



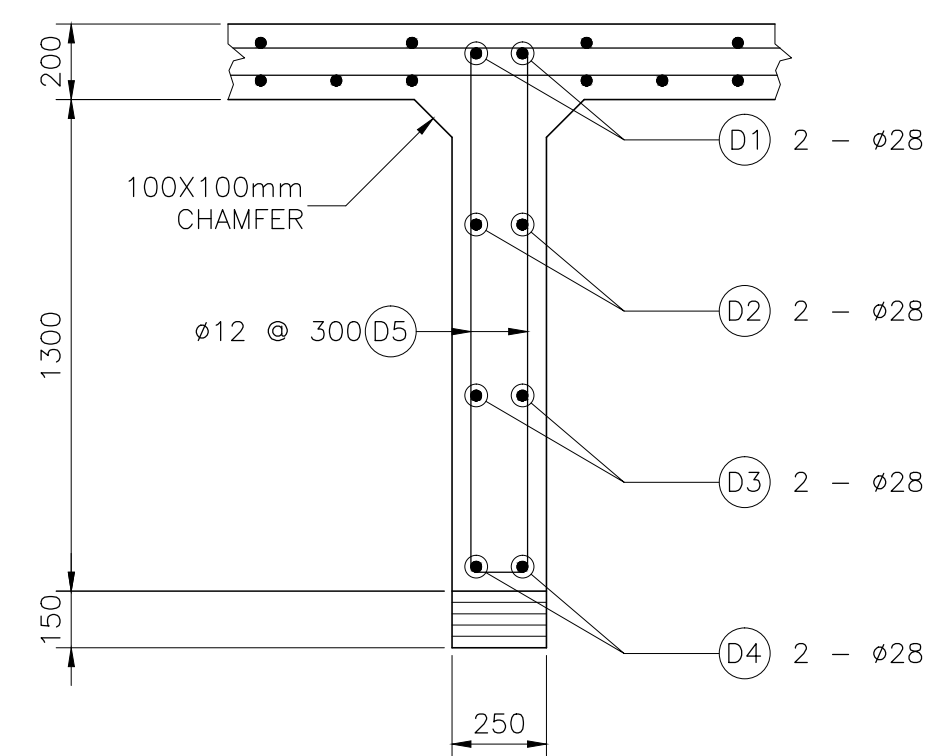
1 DIAPHRAGM ELEVATION
SCALE 1:50



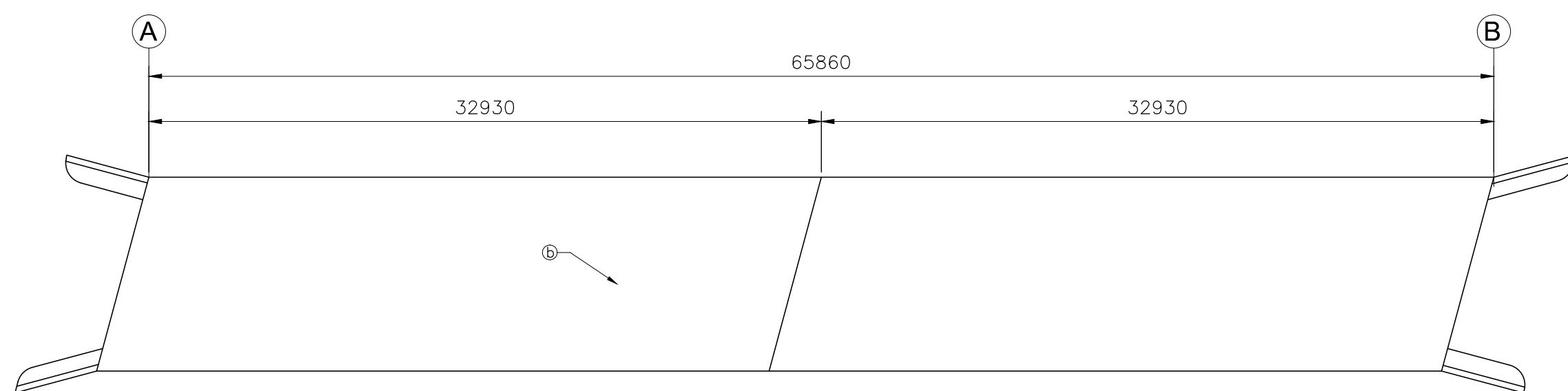
2 DIAPHRAGM @ PIER
SCALE 1:40



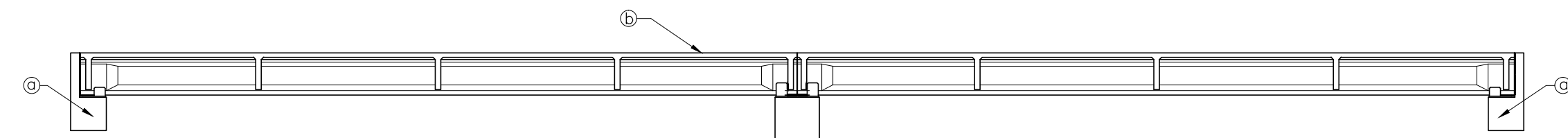
3 DIAPHRAGM @ ABUTMENT
SCALE 1:30



4 INTERMEDIATE DIAPHRAGM
SCALE 1:20



5A PLAN
SCALE NTS



5B ELEVATION
SCALE NTS

- CONCRETE AT @ AREAS SHALL BE PLACED AT LEAST 21 DAYS AHEAD OF CONCRETE AT @ AREAS.
- REINFORCEMENTS SHALL BE CONTINUOUS AT CONSTRUCTION JOINTS.

5 CONCRETE POURING SEQUENCE
SCALE NTS

SCHEDULE OF REINFORCEMENTS FOR DECK SLAB & DIAPHRAGMS

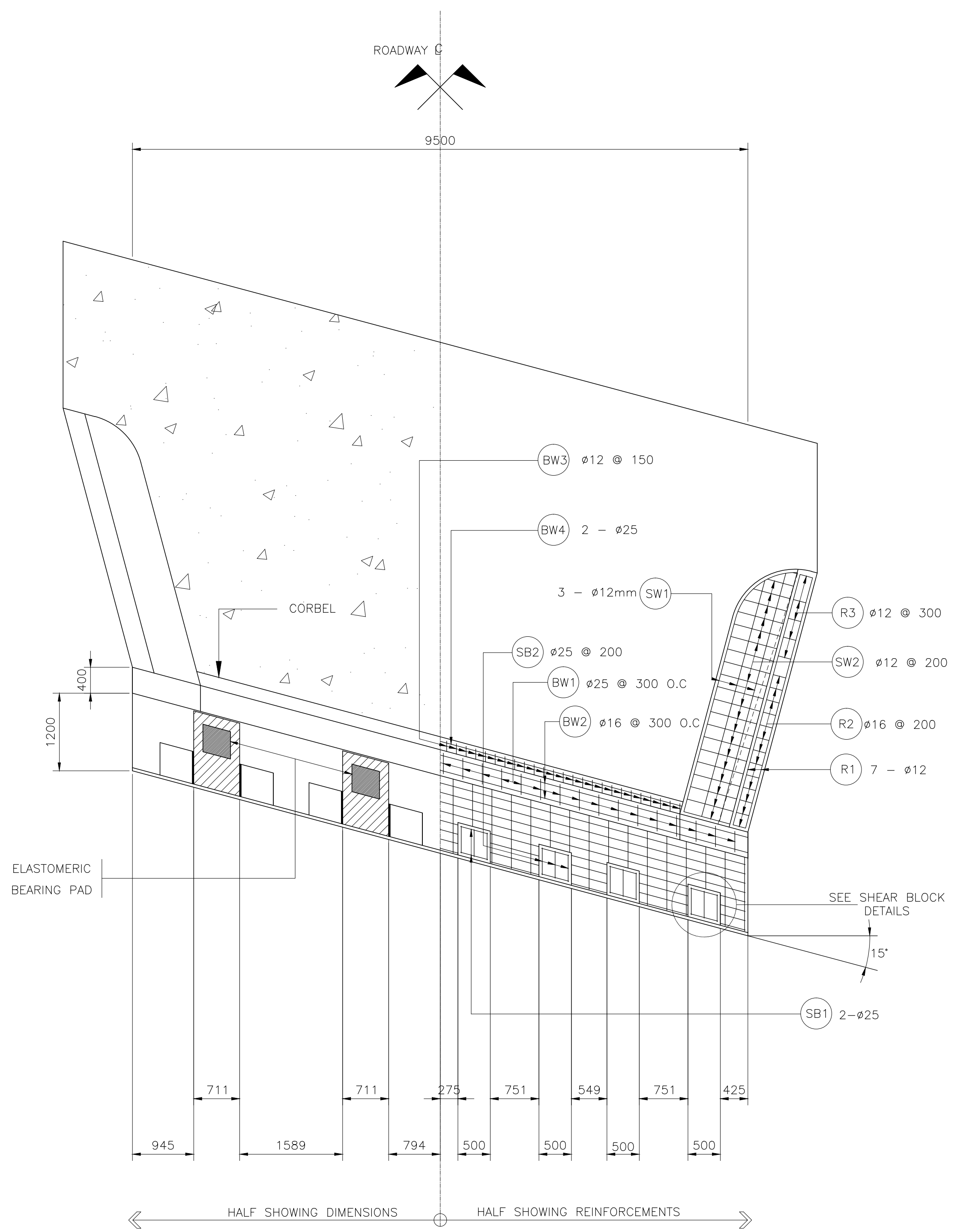
BAR BENDING DIAGRAM	REINFORCING STEEL BARS				ALL DIMENSIONS ARE OUT TO OUT OF REBARS						TYPE	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)			
	MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e	f									
A a	DECKSLAB																		
	S1	16	270	214	0.10	9.84	0.10												
	S1'	16	200	42	0.10	9.84	0.10												
	S2	16	130	442	0.10	9.84	0.10												
	S2'	16	90	92	0.10	9.84	0.10												
	S3	12	300	68	0.10	32.50	0.10												
	S4	16	210	42	0.10	32.50	0.10												
	S5	12	AS SHOWN	32	32.50														
	S6	12	300	876	0.25	2.00	0.25												
B a b a	S7	16	AS SHOWN	16	32.50														
	S8	16	280	438	0.20	1.04	0.20												
	S9	12	300	438	0.30	0.20	0.30												
	Grade 40 bar 5411 Kgs																		
	Grade 60 bar 17321 Kgs																		
	C a b a	DIAPHRAGMS																	
		D1	28	AS SHOWN	12	3.50	3.50												
		D2	28	AS SHOWN	12	3.50	3.50												
		D3	28	AS SHOWN	12	3.50	3.50												
D4		28	AS SHOWN	12	3.50	3.50													
D5		12	300	200	1.42	0.17	1.42	0.17	0.144	0.144									
D6		25	AS SHOWN	8	3.50	3.50													
D7		25	AS SHOWN	40	3.50	3.50													
D8		12	300	132	1.42	0.22	1.42	0.22	0.144	0.144									
Grade 60 bar 3065 Kgs																			
Grade 40 bar 1086 Kgs																			
NOTE: 40db SPLICES ARE NOT INCLUDED																			
* 12 mm dia. and below are Grade 40																			
* 20 mm dia. and above are Grade 60																			
GRAND TOTAL														Grade 60 bar	20386 Kgs				
GRAND TOTAL														Grade 40 bar	6497 Kgs				

SCHEDULE OF REINFORCEMENTS & SUMMARY OF QUANTITIES FOR ONE (1) PRESTRESSED GIRDER ONLY

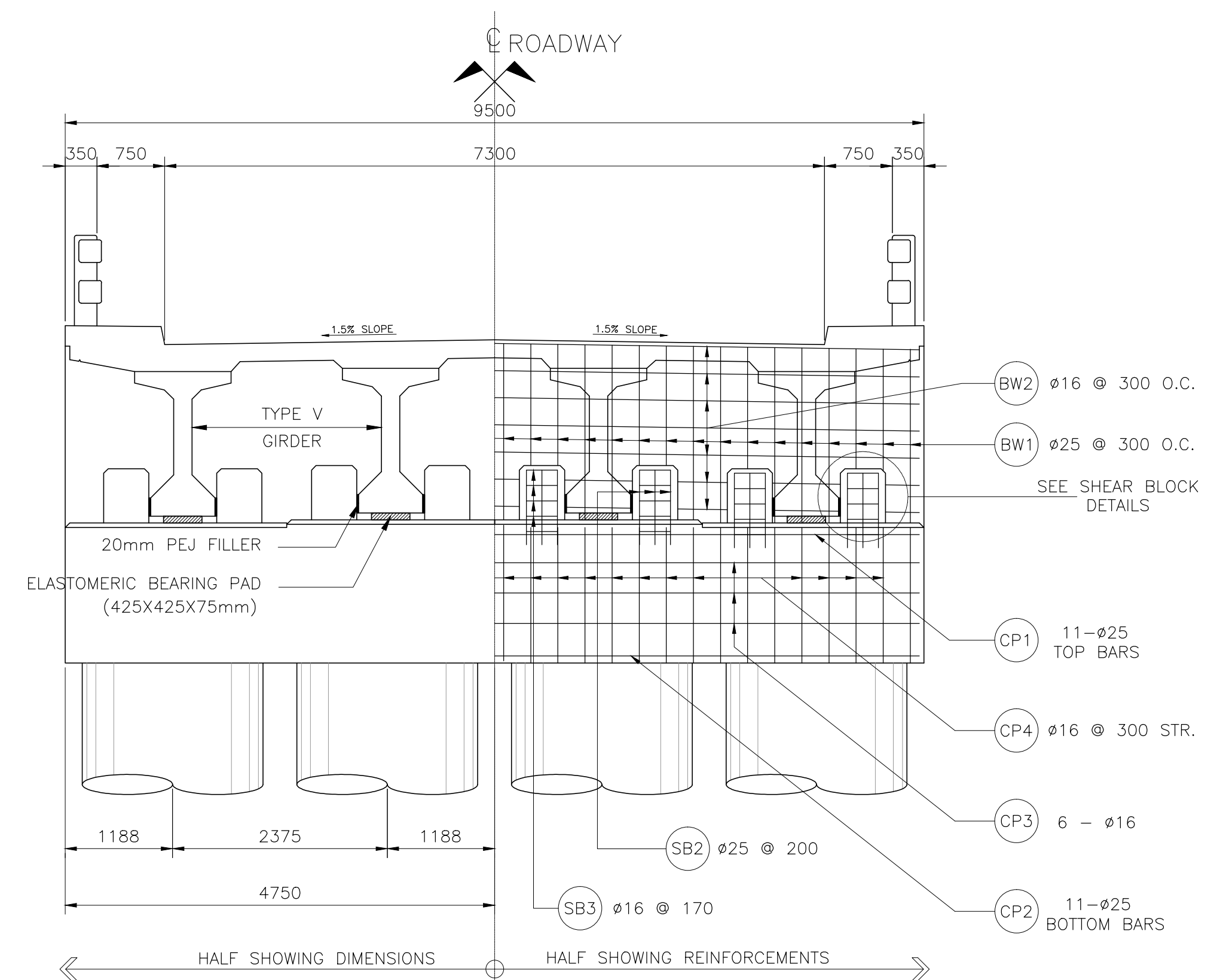
BAR BENDING DIAGRAM	GIRDER LENGTH (m)	REINFORCING STEEL BARS				ALL DIMENSIONS ARE OUT TO OUT OF REBARS					TYPE	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	REMARKS	
		MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e							
A a	29.10	PG1	20	AS SHOWN	6	32.50						C	32.500	195.00	2.466	505	1. QUANTITIES ARE FOR 1 GIRDER ONLY. 2. PG10 IS FOR INTERIOR GIRDER ONLY. 3. PG11 IS FOR EXTERIOR GIRDER ONLY 4. PG12 FOR ABUT. ONLY 5. PG13 FOR PIER ONLY 6. VERIFY ACTUAL LENGTH OF THE BRIDGE
		PG2	25	AS SHOWN	6	32.50						C	32.500	195.00	3.853	789	
PG3		25	AS SHOWN	2	32.50							C	32.500	65.00	3.853	263	
C a b		PG4	12	AS SHOWN	4	32.50						A	32.500	130.00	0.888	121	
		PG5	12	300	218	0.45	1.35	0.60	0.16	0.635		G	3.195	696.51	0.888	649	
E a b c		PG6	12	300	110	1.00	0.50	0.32	0.20			F	2.02	222.20	0.888	207	
		PG7	12	AS SHOWN	7	0.50	1.10	0.52				D	2.12	14.84	0.888	14	
G a b c d e		PG8	12	AS SHOWN	16	1.52	0.60	1.14				C	3.26	52.16	0.888	49	
		PG9	20	AS SHOWN	16	1.00						A	1.00	16.00	2.486	41	
H a b		PG10	28	AS SHOWN	6	0.603						A	0.603	3.62	4.834	18	
		PG11	28	AS SHOWN	6	0.25	0.40					H	0.65	3.90	4.834	20	
TOTAL															GRADE 60	5028 Kgs	
														GRADE 40	3123 Kgs		

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.
ENGR. ALBERTO C. CAÑETE
TEAM LEADER

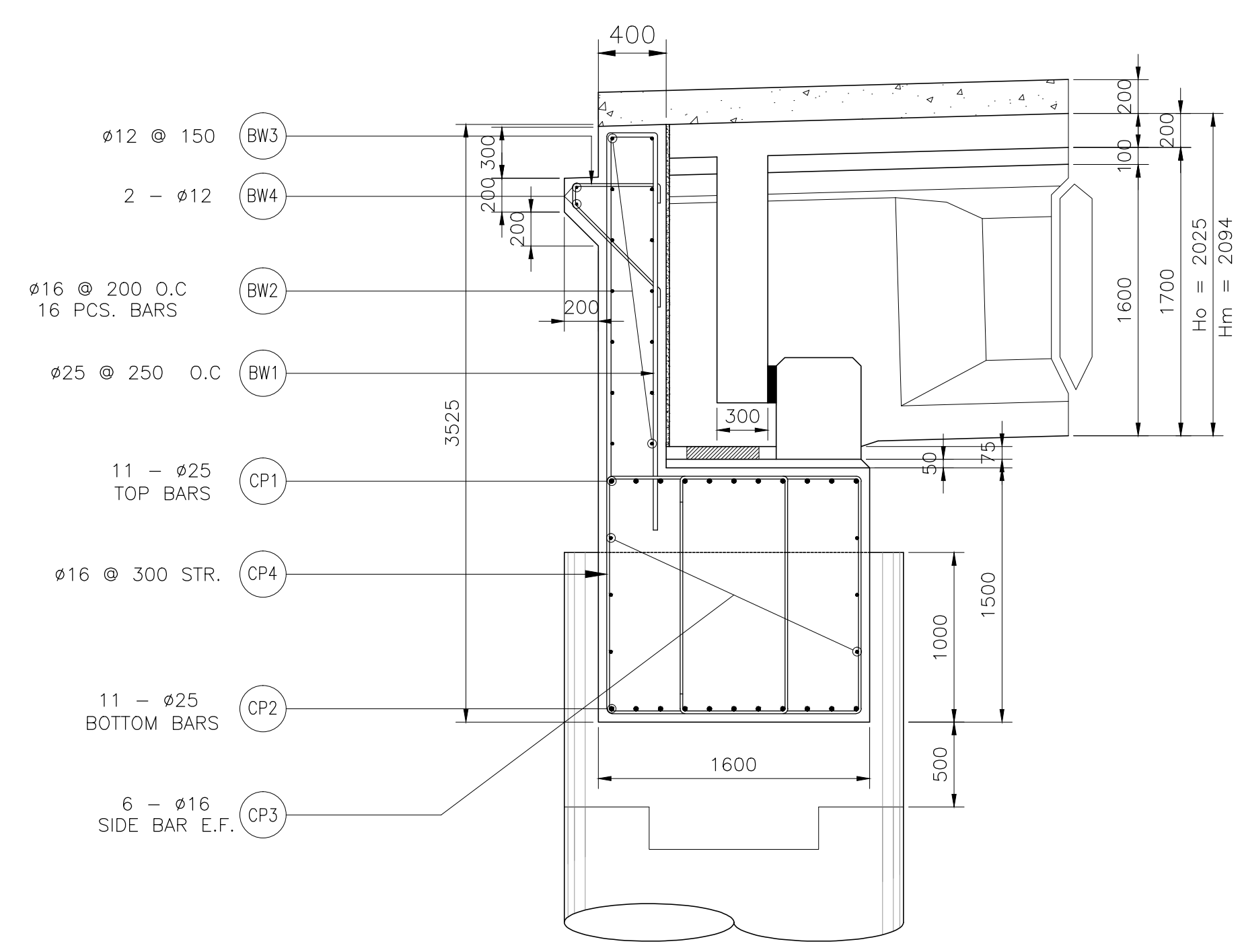
CONSULTANTS	SUBMITTED BY	DESIGNED BY	BCDA	REVISIONS	DATE	PROJECT TITLE	SCALE	DRAWING STATUS
Urban Integrated Consultants, Inc. 100 CORPORATE BLDG., 8 LANES STREET, MISRA, DILMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI	ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI		A		DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING
				B			PROJECT CODE	DRAWING NO. SIZE
				C		SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 1		P301-06 A1
				D		DIAPHRAGM ELEVATION AND DETAILS CONCRETE POURING SEQUENCE SCHEDULE OF REINFORCEMENTS	DATE APPROVED	DATE REVISED REV.
				E				
				F				



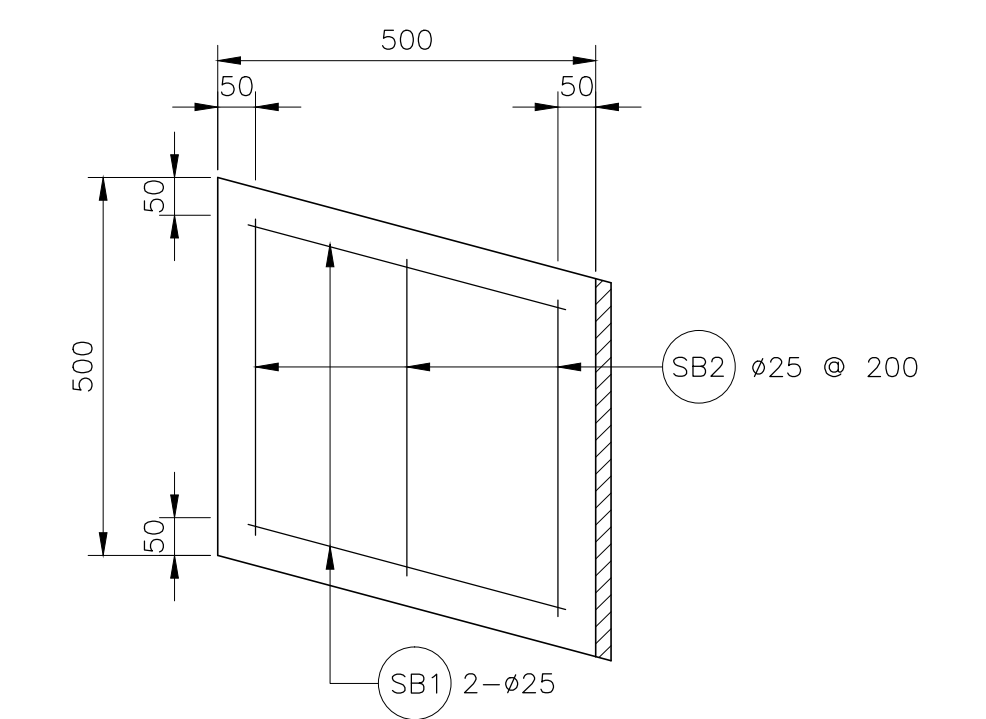
1 PLAN
SCALE 1:50



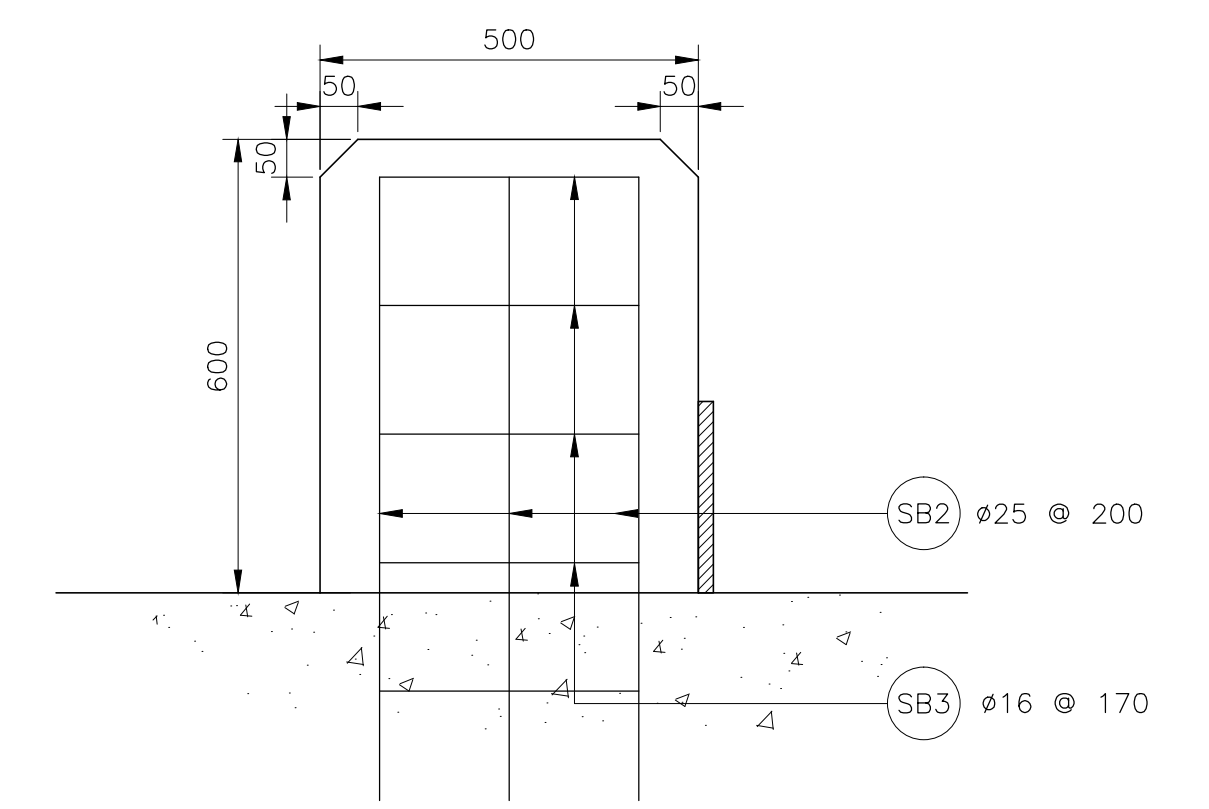
2 ELEVATION
SCALE 1:50



4 BACKWALL AND COPING SECTION
SCALE 1:30



3A PLAN
SCALE 1:10



3B SECTION
SCALE 1:10

3 SHEAR BLOCK DETAILS
SCALE 1:10

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.
ENGR. ALBERTO C. CAÑETE
TEAM LEADER

CONSULTANTS
Urban Integrated Consultants, Inc.
100 CORPORATE BLDG., 8 LANOS STREET, WISRA, DILIMAN, QUEZON CITY, 1128

SUBMITTED BY
EFREN L. DAVID
PRESIDENT - UICI
DATE: -

DESIGNED BY
ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP
PROJECT MANAGER - UICI
DATE: -

CHECKED BY
RYAN PAUL S. GALURA
PROJECT MANAGER
DATE: -

APPROVED BY
JOVITO M. SUNGA
OIC - PMD
DATE: -



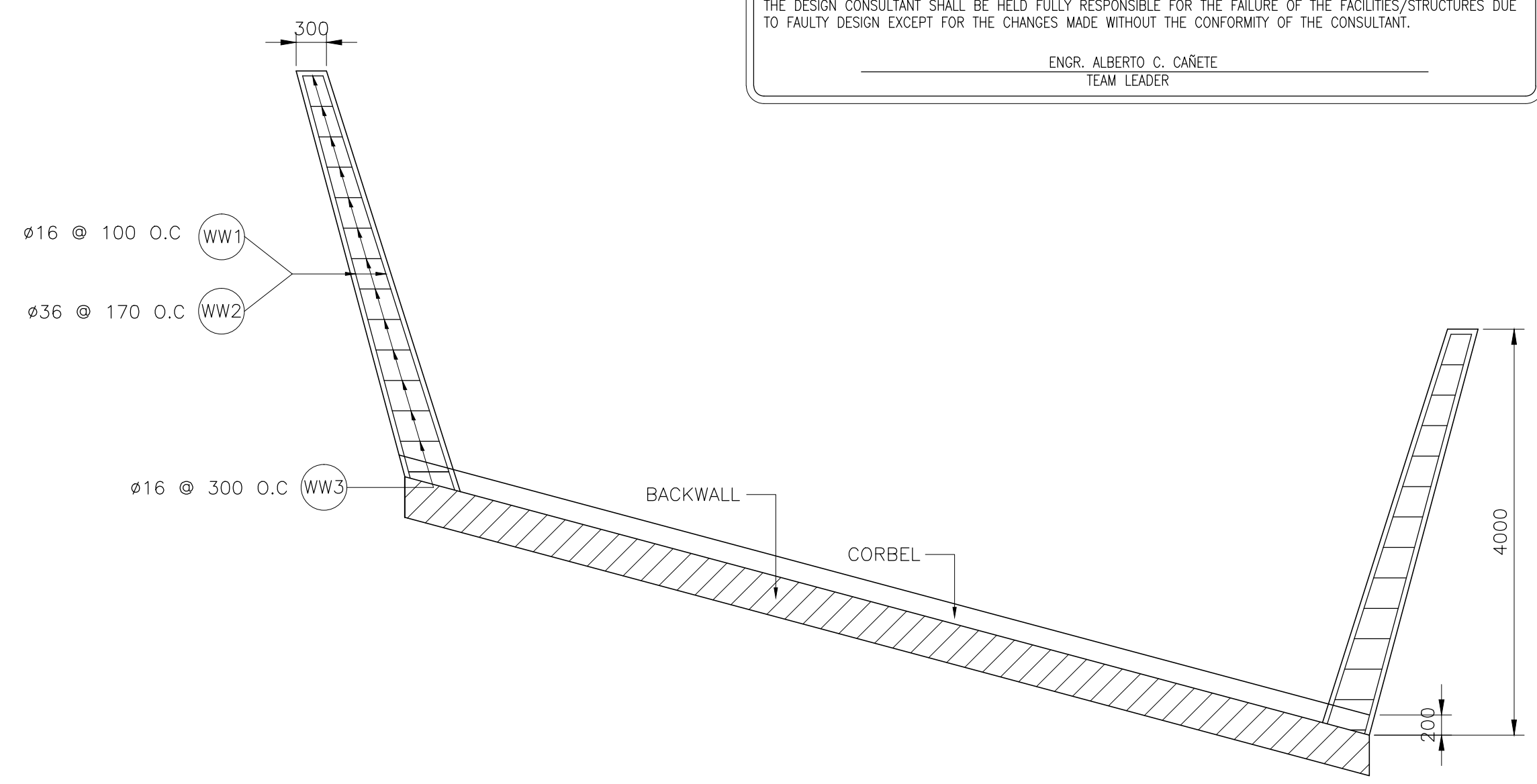
REVISIONS	DATE
A	
B	
C	
D	
E	
F	

PROJECT TITLE
DETAILED ENGINEERING DESIGN OF THE
PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD,
MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD
SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 1
ABUTMENT PLAN AND ELEVATION
SHEAR BLOCK DETAILS
BACKWALL AND COPING DETAILS

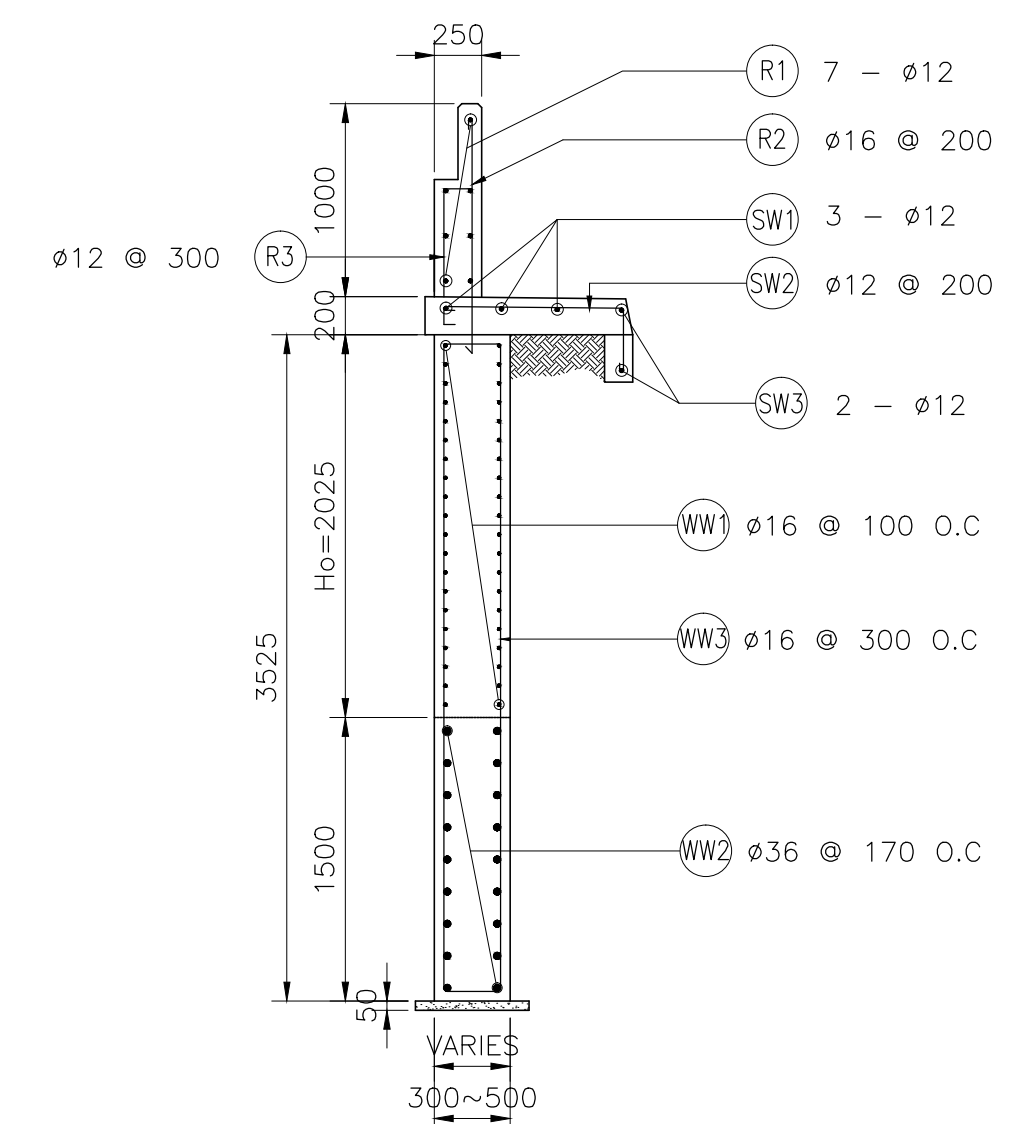
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AS SHOWN	DRAFT DRAWING
PROJECT CODE	DRAWING NO. SIZE
	P301-0 A1
DATE APPROVED	DATE REVISED REV.
-	- -

NOTE:
 PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS. THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.

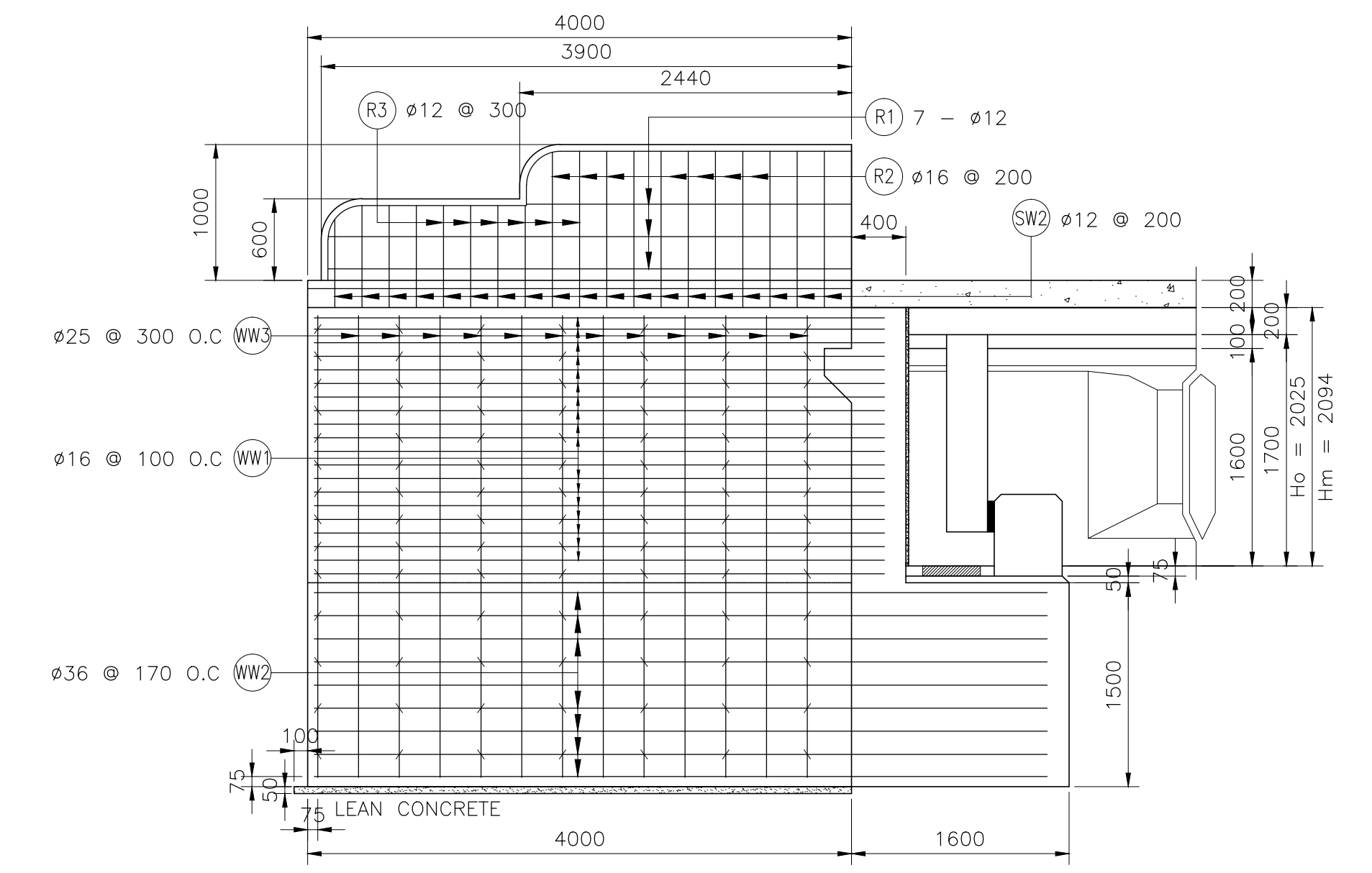
ENR. ALBERTO C. CAÑETE
 TEAM LEADER



1 PLAN OF WINGWALL
 SCALE 1:50



2 SECTION OF WINGWALL
 SCALE 1:40



3 ELEVATION OF WINGWALL
 SCALE 1:40

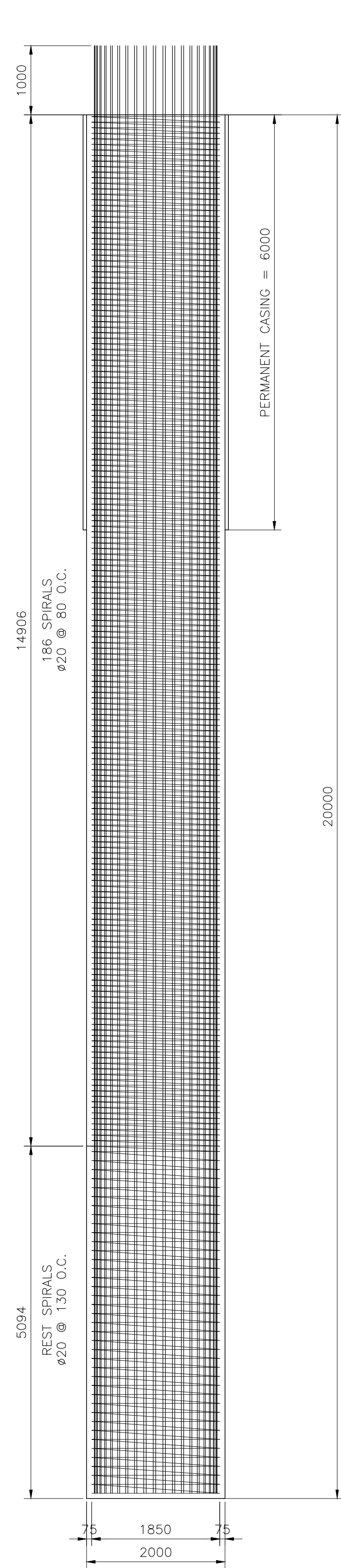
SCHEDULE OF REINFORCEMENTS FOR SUBSTRUCTURE FOR ABUTMENT "A" ONLY

BAR BENDING DIAGRAM	REINFORCING STEEL BARS		ALL DIMENSIONS ARE OUT TO OUT OF REBARS											TYPE	LOCATION	BAR LENGTH (□)	TOTAL LENGTH (□)	UNIT WEIGHT (□)	TOTAL WEIGHT (□)	CONCRETE VOLUME (cu.□)	
	MARK	SIZE (□)	SPACING (□)	QUANTITY	a	b	c	d	e	f	g	h	i								
FOR ABUTMENT A ONLY																					
A	CP1	25	AS SHOWN	11	0.5	9.84	0.5								A	COPING	10.84	119.19	3.853	482	25
B	CP2	25	AS SHOWN	11	0.5	9.84	0.5							A	10.84		119.19	3.853	482		
C	CP3	16	AS SHOWN	6	9.84									B	9.84		59.01	1.578	98		
D	CP4	16	300	34	2.20	3.00	2.20	3.00	0.60	0.60			A	11.60	394.40		1.578	654			
E	BW1	16	250	39	2.5	0.4	2.50							C	BACKWALL	5.40	210.60	1.578	349	9	
	BW2	12	200	26	9.48								STR.	9.84		255.71	0.888	238			
	BW3	12	150	67	0.50	0.10	0.65	0.10	0.10				D	1.45		97.15	0.888	91			
	BW4	12	AS SHOWN	2	9.84								STR.	9.84		19.15	0.888	18			
F	WW1	16	100	40	4.00									STR.	WINGWALL	4.00	160.00	1.578	265	14	
	WW2	25	170	24	4.00	1.50							H	4.00		96.00	3.853	388			
	WW3	16	300	15	0.50	3.15	0.50	3.15	0.1	0.1			B	7.50		112.50	1.578	186			
	TIES	12	AS SHOWN	704	0.20	0.40	0.20						G	0.80		563.20	0.888	525			
G	SB1	25	AS SHOWN	24	0.65	0.50								C	SHEAR BLOCK	1.15	27.60	3.853	112	2	
	SB2	25	200	96	0.65	0.50							C	1.15		110.40	3.853	447			
	SB3	20	170	120	0.45	0.45	0.45	0.45	0.20	0.20			B	2.20		264.00	2.466	684			
H	R1	12	AS SHOWN	14	3.90	1.00								E	APPROACH RAILING	4.90	68.60	0.888	64	2	
	R2	16	200	13	0.20	1.00	0.20						G	1.40		18.20	1.578	30			
	R3	12	300	5	0.60	1.00	0.20						I	1.80		9.00	0.888	16			
I	SW1	12	AS SHOWN	6	4.00									E	APPROACH SIDEWALK	4.00	24.00	0.888	22	2	
	SW2	12	200	16	0.10	1.25	0.4	0.1					G	1.85		29.60	0.888	28			
	SW3	12	AS SHOWN	4	4.00								I	4.00		16.00	0.888	15			
GRAND TOTAL																Grade 40 bar		1010 Kgs.	54 CU.M.		
GRAND TOTAL																Grade 60 bar		4178 Kgs.			
* 12 mm dia. and below are Grade 40																					
* 16 mm dia. and above are Grade 60																					

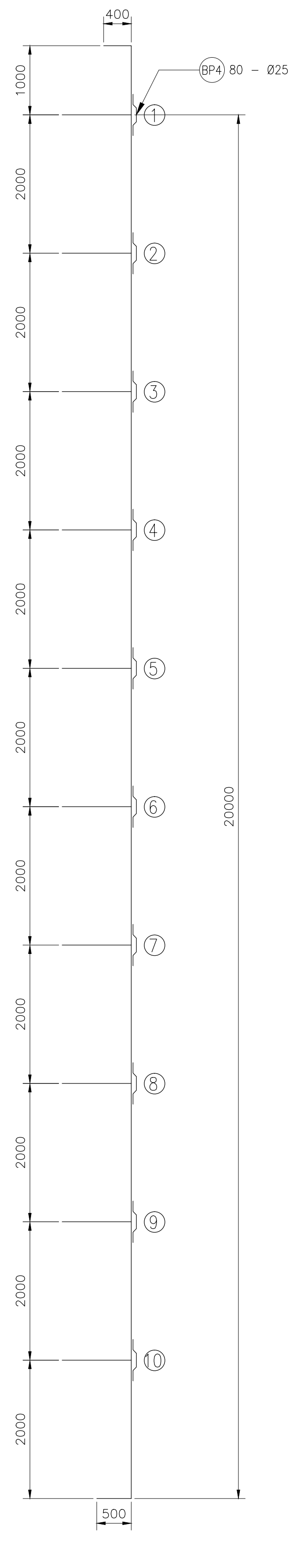
SCHEDULE OF REINFORCEMENTS FOR SUBSTRUCTURE FOR ABUTMENT "A" ONLY

BAR BENDING DIAGRAM	REINFORCING STEEL BARS		ALL DIMENSIONS ARE OUT TO OUT OF REBARS											TYPE	LOCATION	BAR LENGTH (□)	TOTAL LENGTH (□)	UNIT WEIGHT (□)	TOTAL WEIGHT (□)	CONCRETE VOLUME (cu.□)
	MARK	SIZE (□)	SPACING (□)	QUANTITY	a	b	c	d	e	f	g	h	i							
FOR ABUTMENT A ONLY																				
A	CP1	25	AS SHOWN	11	0.5	9.84	0.5							A	COPING	10.84	119.19	3.853	482	25
B	CP2	25	AS SHOWN	11	0.5	9.84	0.5						A	10.84		119.19	3.853	482		
C	CP3	16	AS SHOWN	6	9.84								B	9.84		59.01	1.578	98		
D	CP4	16	300	34	2.20	3.00	2.20	3.00	0.60	0.60			A	11.60		394.40	1.578	654		
E	BW1	16	250	39	2.5	0.4	2.50							C	BACKWALL	5.40	210.60	1.578	349	9
	BW2	12	200	26	9.48								STR.	9.84		255.71	0.888	238		
	BW3	12	150	67	0.50	0.10	0.65	0.10	0.10				D	1.45		97.15	0.888	91		
	BW4	12	AS SHOWN	2	9.84								STR.	9.84		19.15	0.888	18		
F	WW1	16	100	40	4.00									STR.	WINGWALL	4.00	160.00	1.578	265	14
	WW2	25	170	24	4.00	1.50							H	4.00		96.00	3.853	388		
	WW3	16	300	15	0.50	3.15	0.50	3.15	0.1	0.1			B	7.50		112.50	1.578	186		
	TIES	12	AS SHOWN	704	0.20	0.40	0.20						G	0.80		563.20	0.888	525		
G	SB1	25	AS SHOWN	24	0.65	0.50								C	SHEAR BLOCK	1.15	27.60	3.853	112	2
	SB2	25	200	96	0.65	0.50							C	1.15		110.40	3.853	447		
	SB3	20	170	120	0.45	0.45	0.45	0.45	0.20	0.20			B	2.20		264.00	2.466	684		
H	R1	12	AS SHOWN	14	3.90	1.00								E	APPROACH RAILING	4.90	68.60	0.888	64	2
	R2	16	200	13	0.20	1.00	0.20						G	1.40		18.20	1.578	30		
	R3	12	300	5	0.60	1.00	0.20						I	1.80		9.00	0.888	16		
I	SW1	12	AS SHOWN	6	4.00									E	APPROACH SIDEWALK	4.00	24.00	0.888	22	2
	SW2	12	200	16	0.10	1.25	0.4	0.1					G	1.85		29.60	0.888	28		
	SW3	12	AS SHOWN	4	4.00								I	4.00		16.00	0.888	15		
GRAND TOTAL																Grade 40 bar		1010 Kgs.	54 CU.M.	
GRAND TOTAL																Grade 60 bar		4178 Kgs.		
* 12 mm dia. and below are Grade 40																				
* 16 mm dia. and above are Grade 60																				

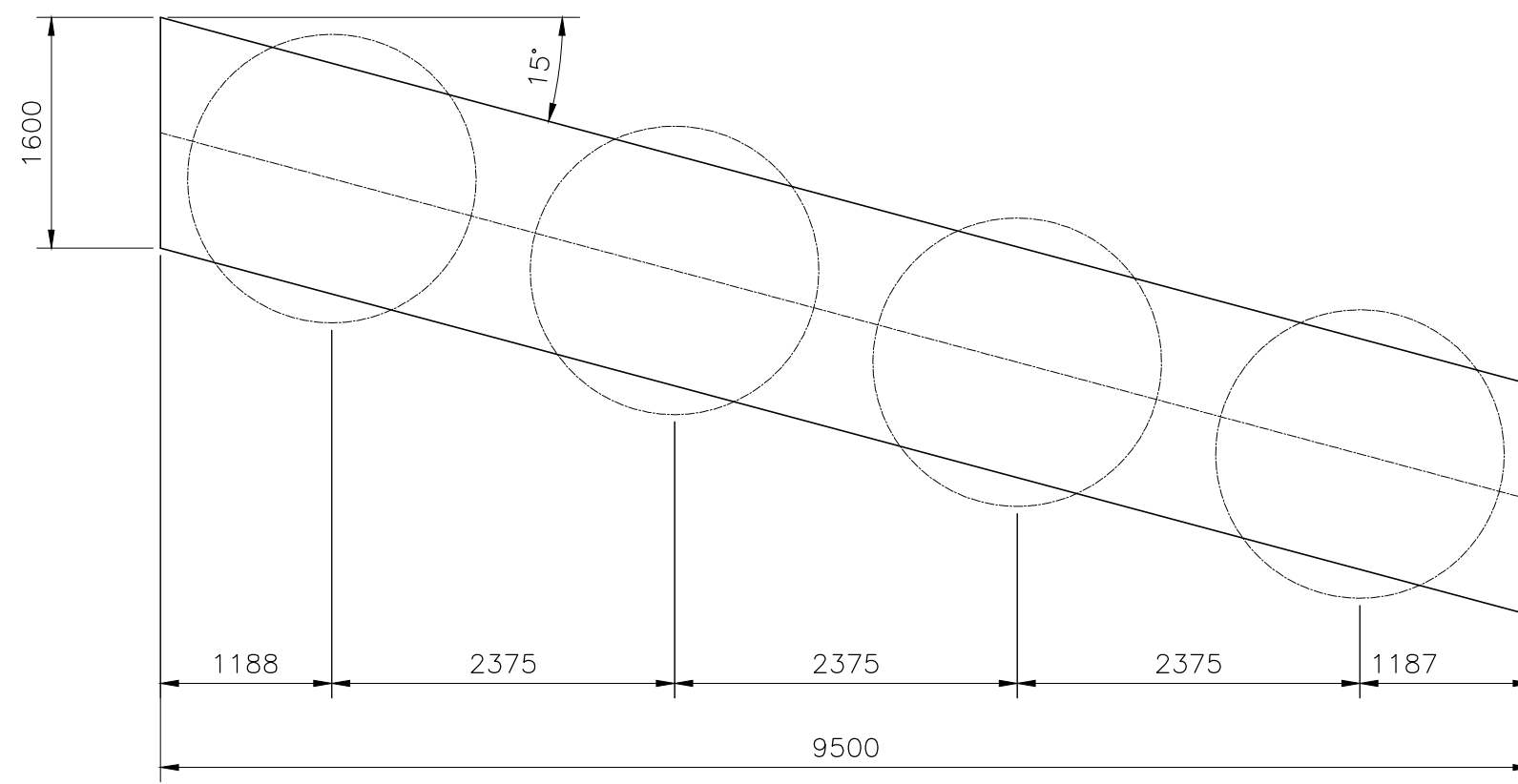
<p>CONSULTANTS</p> <p>Urban Integrated Consultants, Inc. UIC CORPORATE BLDG., 8 LANDS STREET, MISRA, DUMAN, QUEZON CITY, 1128</p>	<p>SUBMITTED BY</p> <p>EFREN L. DAVID PRESIDENT - UICI</p> <p>DATE: -</p>	<p>DESIGNED BY</p> <p>ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI</p> <p>DATE: -</p>	<p>CHECKED BY</p> <p>RYAN PAUL S. GALURA PROJECT MANAGER</p> <p>DATE: -</p>	<p>APPROVED BY</p> <p>JOVITO M. SUNGA OIC - PMD</p> <p>DATE: -</p>	<p>REVISIONS</p> <table border="1"> <tr><td>A</td><td></td><td></td></tr> <tr><td>B</td><td></td><td></td></tr> <tr><td>C</td><td></td><td></td></tr> <tr><td>D</td><td></td><td></td></tr> <tr><td>E</td><td></td><td></td></tr> <tr><td>F</td><td></td><td></td></tr> </table>	A			B			C			D			E			F			<p>DATE</p>	<p>PROJECT TITLE</p> <p>DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 1</p> <p>WINGWALL DETAILS SCHEDULE OF REINFORCEMENTS FOR ABUTMENT "A" AND "B"</p>	<p>SCALE</p> <p>AS SHOWN</p> <p>PROJECT CODE</p> <p>DATE APPROVED</p>	<p>DRAWING STATUS</p> <p>DRAFT DRAWING</p> <p>DRAWING NO. P301-0</p> <p>DATE REVISED</p>	<p>SIZE</p> <p>A1</p> <p>REV</p>
	A																											
B																												
C																												
D																												
E																												
F																												
<p>BCDA BAYAN LEPAGE DEVELOPMENT AUTHORITY</p>																												



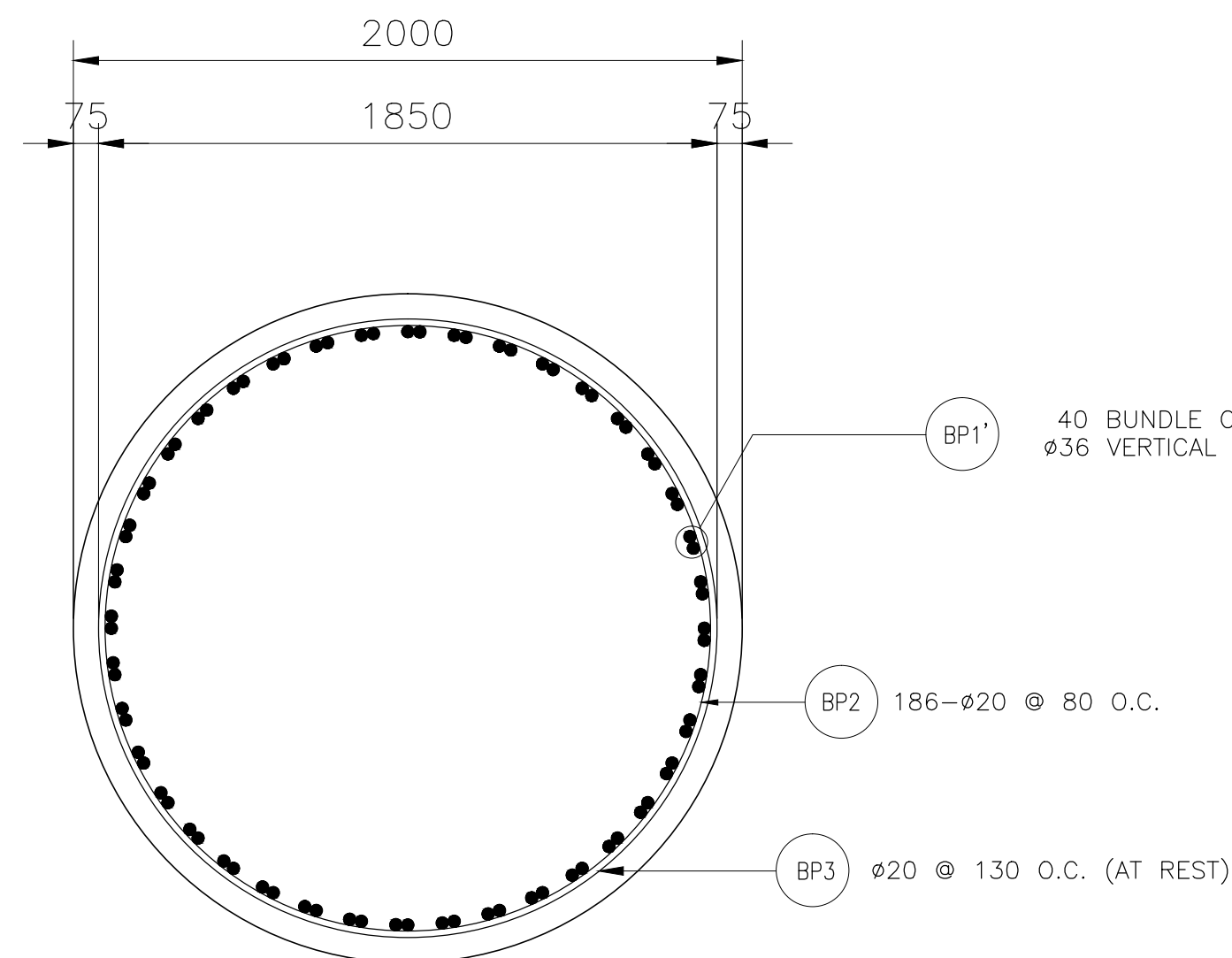
1 VERTICAL SECTION
SCALE 1:50



2 STIFFENER LAYOUT
SCALE 1:50



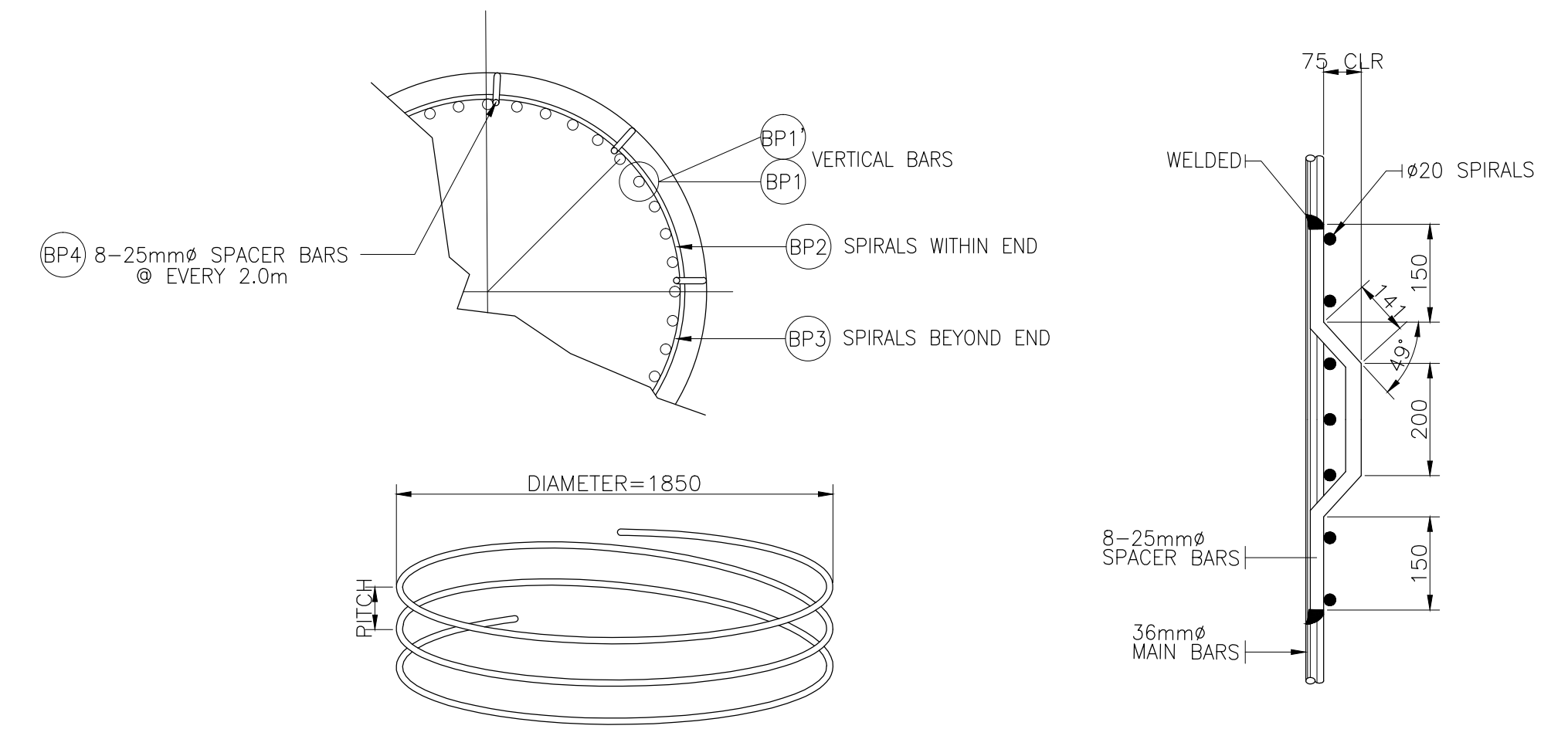
3 ABUTMENT COPING PLAN
SCALE 1:50



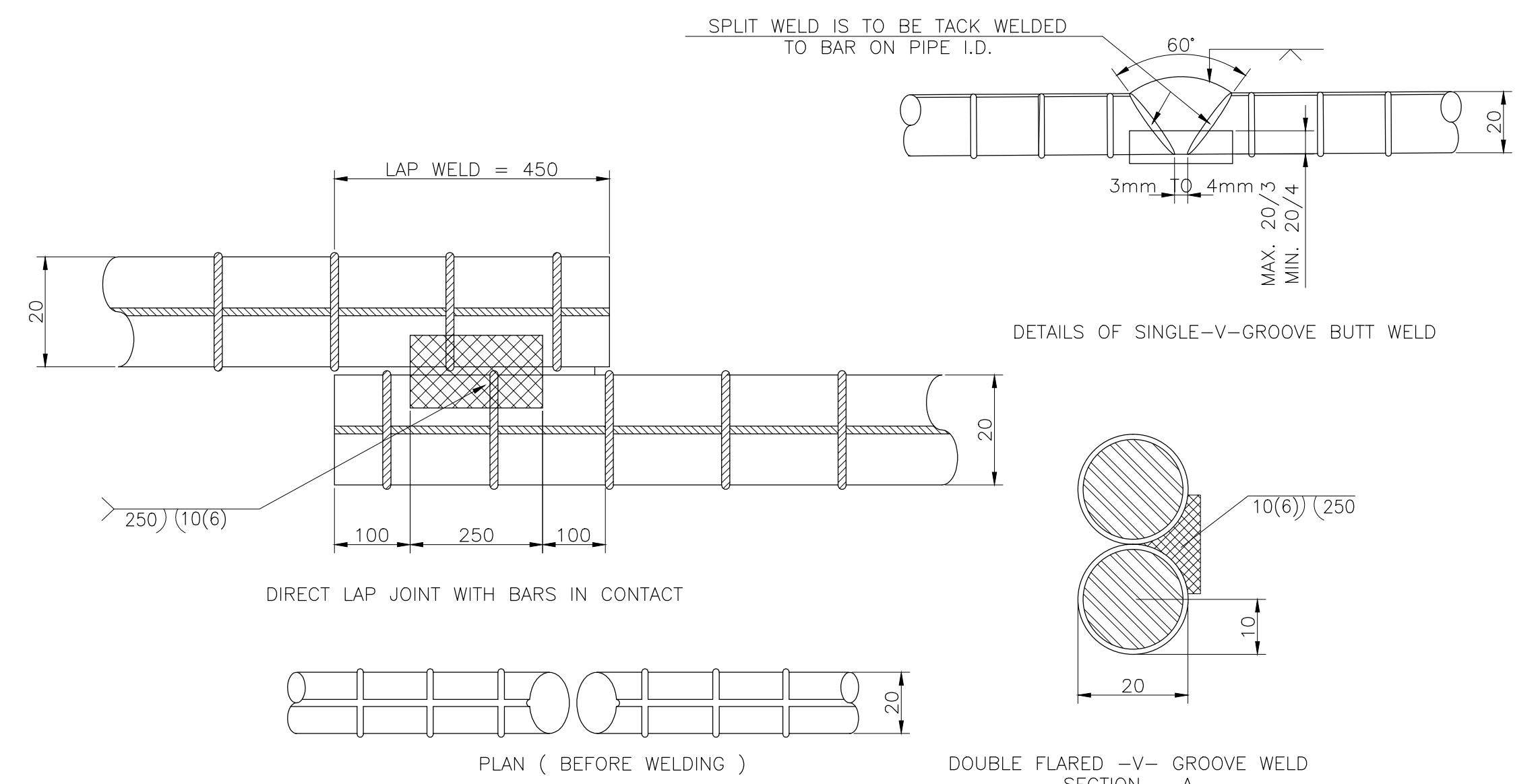
4 ABUTMENT BORED PILE SECTION
SCALE 1:20

NOTES:

1. THE REINFORCEMENT ARE LAP-WELD CONNECTED (FLARED-V-GROOVE TYPE)
2. SPIRAL REINFORCEMENT ARE LAP WELD CONNECTED. WELDING SHALL BE IN ACCORDANCE WITH ANSI/AWS. D1.4-92, STRUCTURAL WELDING CODE REINFORCEMENT STEEL, USE ELECTRODE E90XX-X.
3. CARE SHOULD BE TAKEN NOT TO DAMAGE BORED PILE/COLUMN MAIN BARS DURING WELDING.
4. SPIRAL REINFORCEMENT SHOULD BE BUTT WELDED WHERE SPIRAL PITCH IS 50mm OR LESS. OTHERWISE USE LAP WELD SPLICE.
5. ADDITIONAL STIFFENERS/GUIDE BARS MAY BE PROVIDED TO STABILIZE THE PILE REINFORCEMENT DURING FABRICATION/ERECTION SUBJECT TO THE APPROVAL OF THE ENGINEER.
6. DIRTY CONCRETE (MINIMUM 600mm HEIGHT) SHOULD BE REMOVED PRIOR TO CONSTRUCTION OF BACKWALL AND COPING BEAM.
7. CONCRETE - CONCRETE SHALL CONFORM TO THE REQUIREMENT OF CLASS AA CONCRETE WITH 28MPa. CYLINDER STRENGTH AND 19mm MAXIMUM AGGREGATE SIZE.
8. REINFORCEMENT - ALL REINFORCEMENT STEEL SHALL BE DEFORMED BAR CONFORMING TO AASHTO M31 (ASTM 315) GRADE 60. SPLICES OF ADJACENT LONGITUDINAL STEEL SHALL BE STAGGERED 100 BAR DIAMETER APART, LENGTH OF SPLICES SHALL BE 2200mm.
9. THE STABILIZATION FOR BORED PILE EXCAVATION (SUCH AS USING BENTONITE SLURRY OR TEMPORARY STEEL CASING ETC.) SHALL BE CONSIDERED BY THE CONTRACTOR AND THE COST IS SUBSIDIARY IN PAY ITEM 400(17). THE CONTRACTOR SHALL SUBMIT THE CONSTRUCTION METHOD FOR ENGINEERS APPROVAL BEFORE CONSTRUCTION.



5 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS



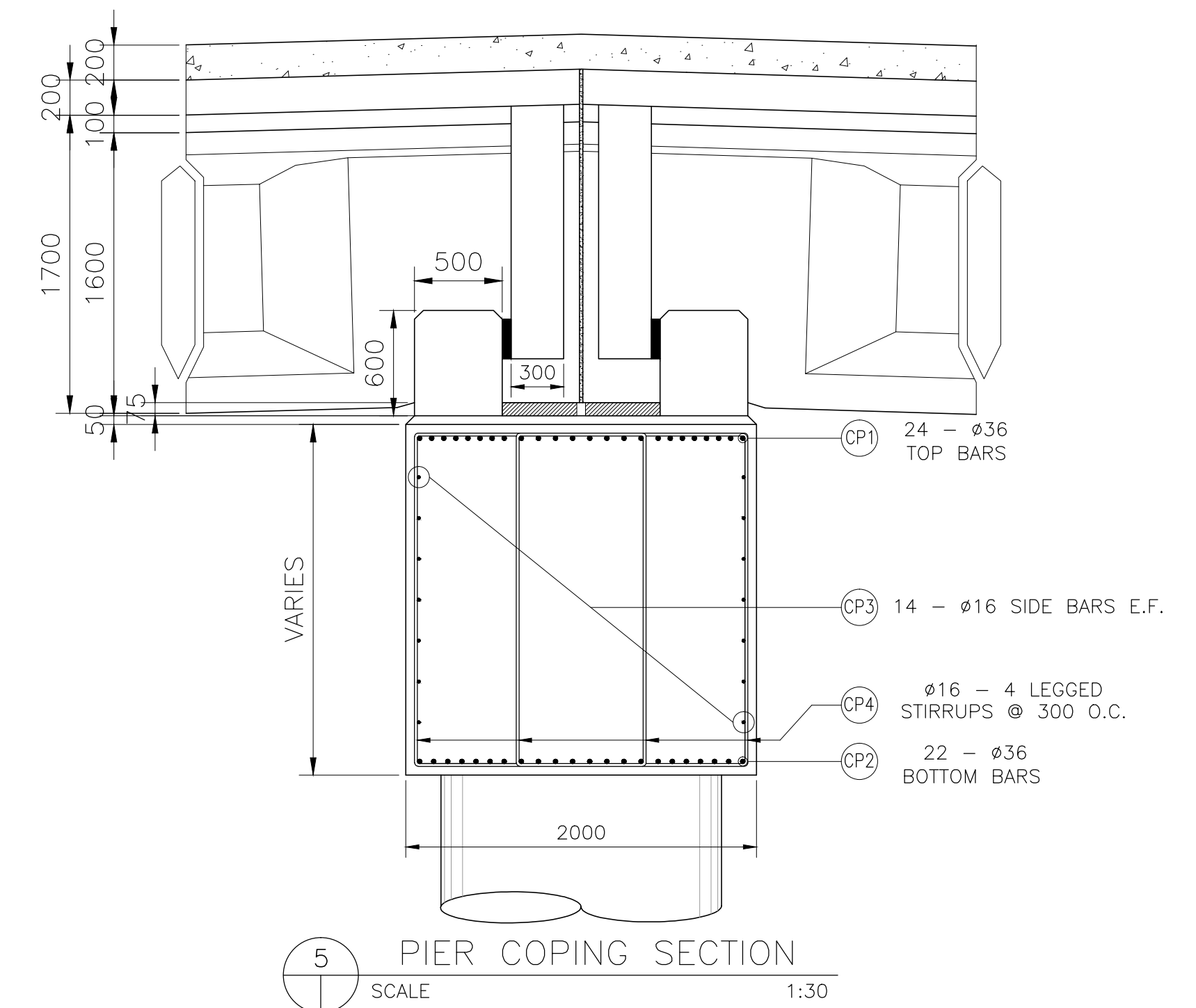
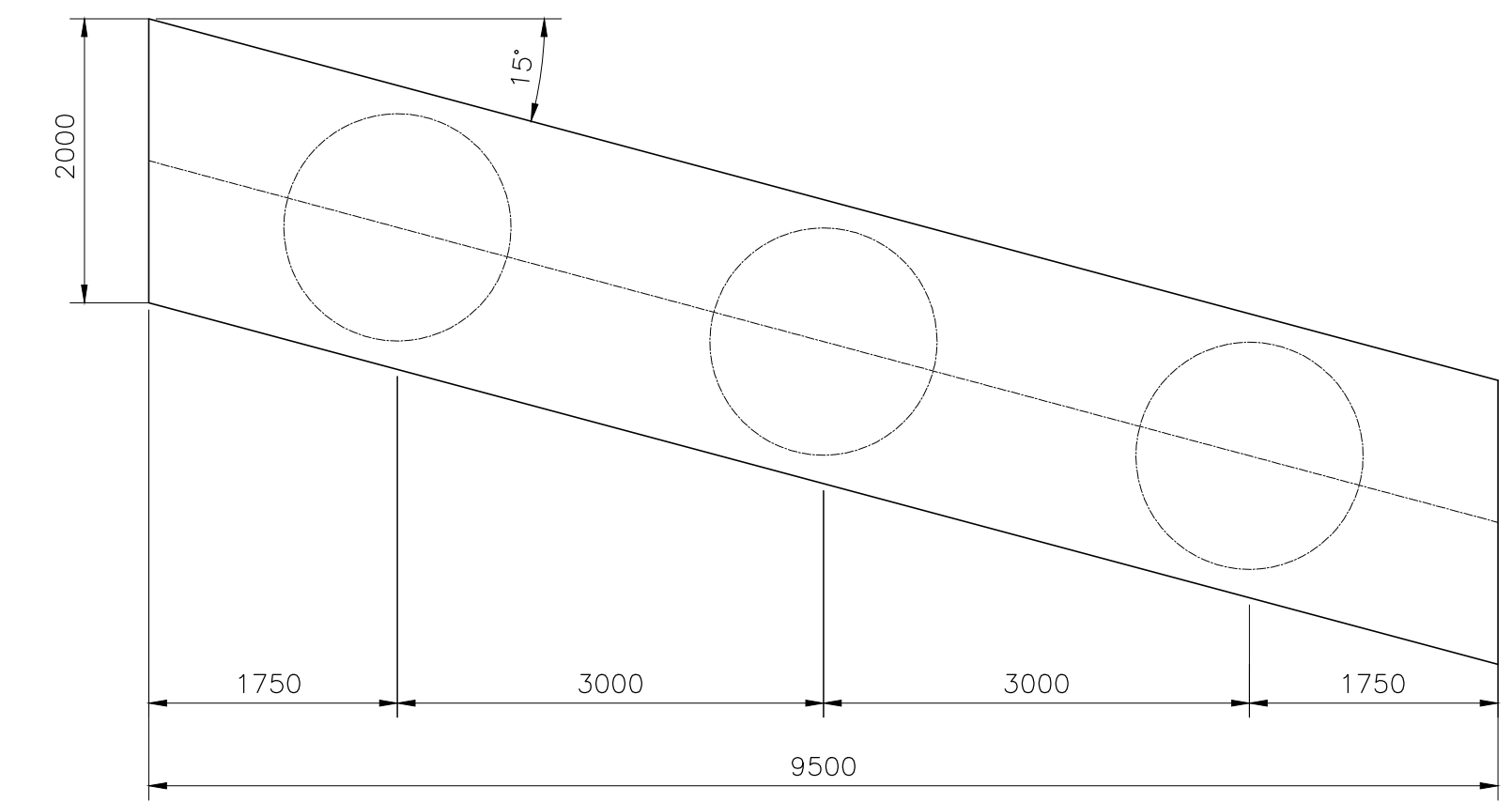
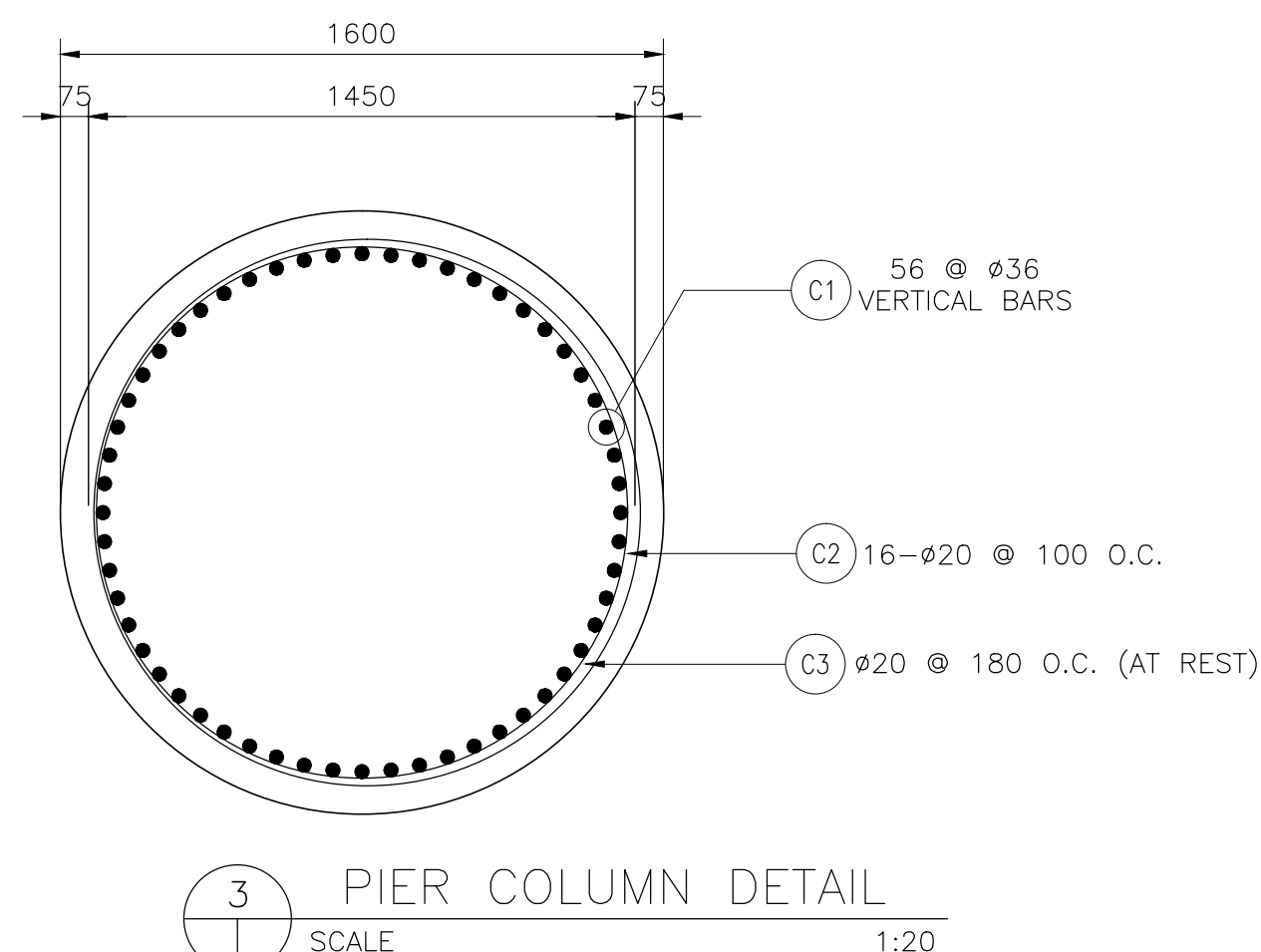
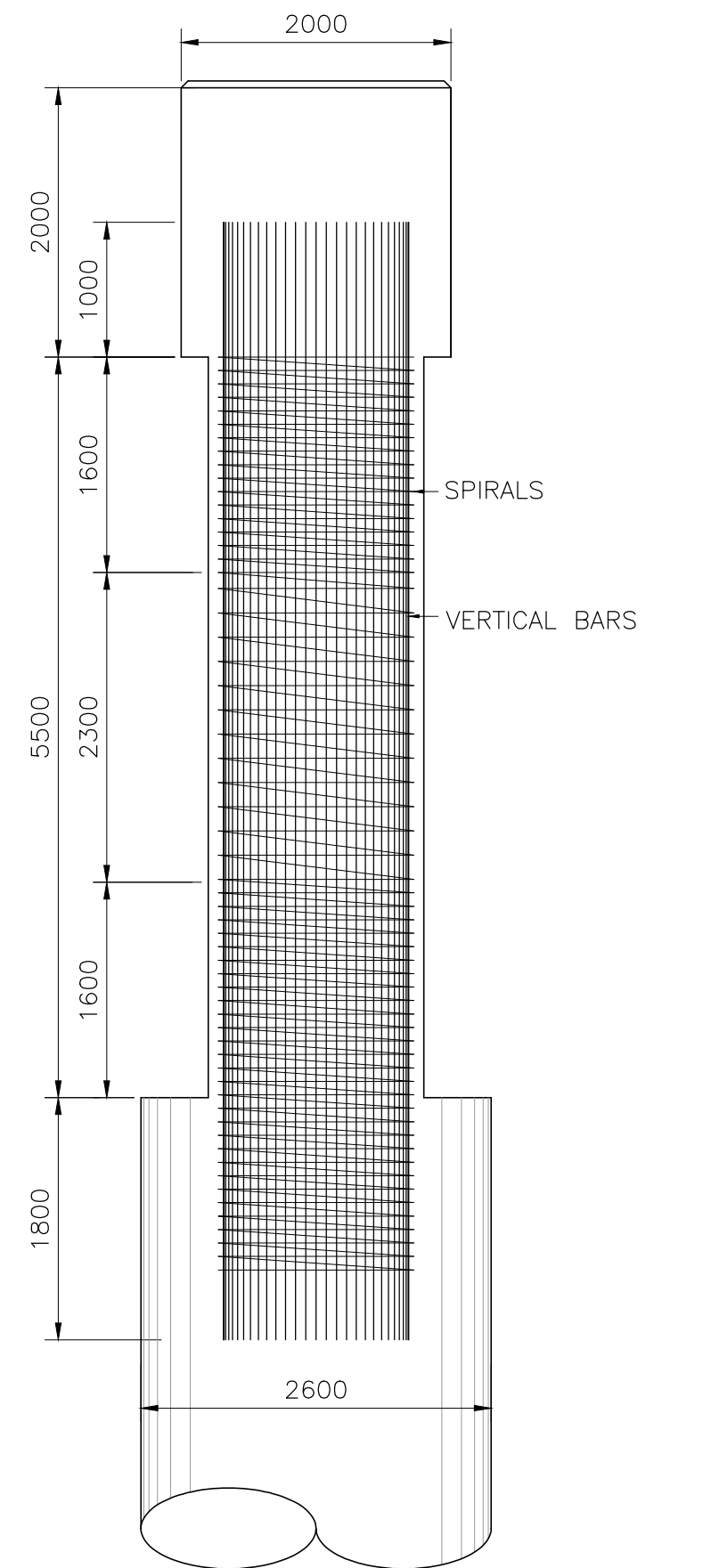
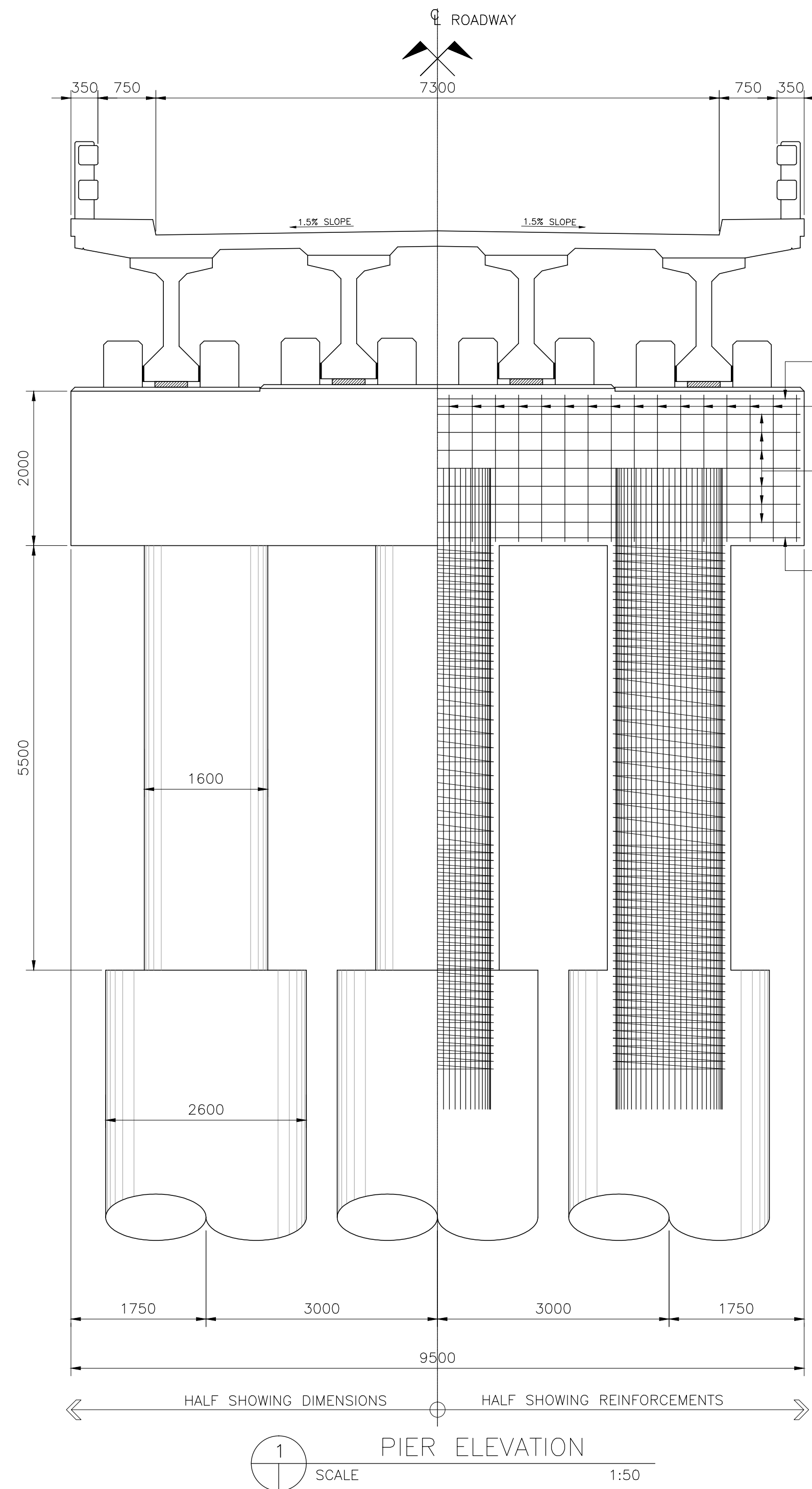
6 DETAILS OF TIES REINFORCEMENT LAP-WELD CONNECTION
SCALE NTS

SCHEDULE OF REINFORCEMENT FOR BORED PILE AT ABUTMENT ONLY

BAR BENDING DIAGRAM	BAR MARK	SIZE (mm)	SPACING (mm)	QTY	BAR SHAPE	BAR DIMENSION					LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	VOLUME CONCRETE (cu.m)
						a	b	c	d	e						
FOR ONE (1) BORED PILE AT PIER (L=20m, Ø1600mm)																
a	BP1	36	AS SHOWN	80		0.40	21					21.40	1712.00	7.990	14363	63
b	BP2	20	AS SHOWN	186		7.20						7.20	1339.20	2.466	3468	
a	BP3	20	130	41		7.20						7.20	295.20	2.466	764	
b	BP4	25	AS SHOWN	80		0.15	0.141	0.20	0.141	0.15		0.78	62.56	3.853	253	
NOTE: 40db SPLICES ARE NOT INCLUDED																
* 12 mm dia. and below are Grade 40																
* 16 mm dia. and above are Grade 60																
														TOTAL	18849 Kgs	63

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.
ENGR. ALBERTO C. CAÑETE
TEAM LEADER

<p>URBAN INTEGRATED CONSULTANTS, INC. 100 CORPORATE BLDG., 8 LANES STREET, MISRA, DUMAN, QUEZON CITY, 1128</p>	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEF PROJECT MANAGER - UICI DATE: -		REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 1 ABUTMENT BORED PILE SCHEDULE OF REINFORCEMENTS AND SUMMARY OF QUANTITIES	SCALE AS SHOWN PROJECT CODE DATE APPROVED -	DRAWING STATUS DRAFT DRAWING DRAWING NO. P301-01 DATE REVISED - REV. A1 -
	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITO M. SUNGA OIC - PMD DATE: -						



NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
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ENR. ALBERTO C. CAÑETE
TEAM LEADER

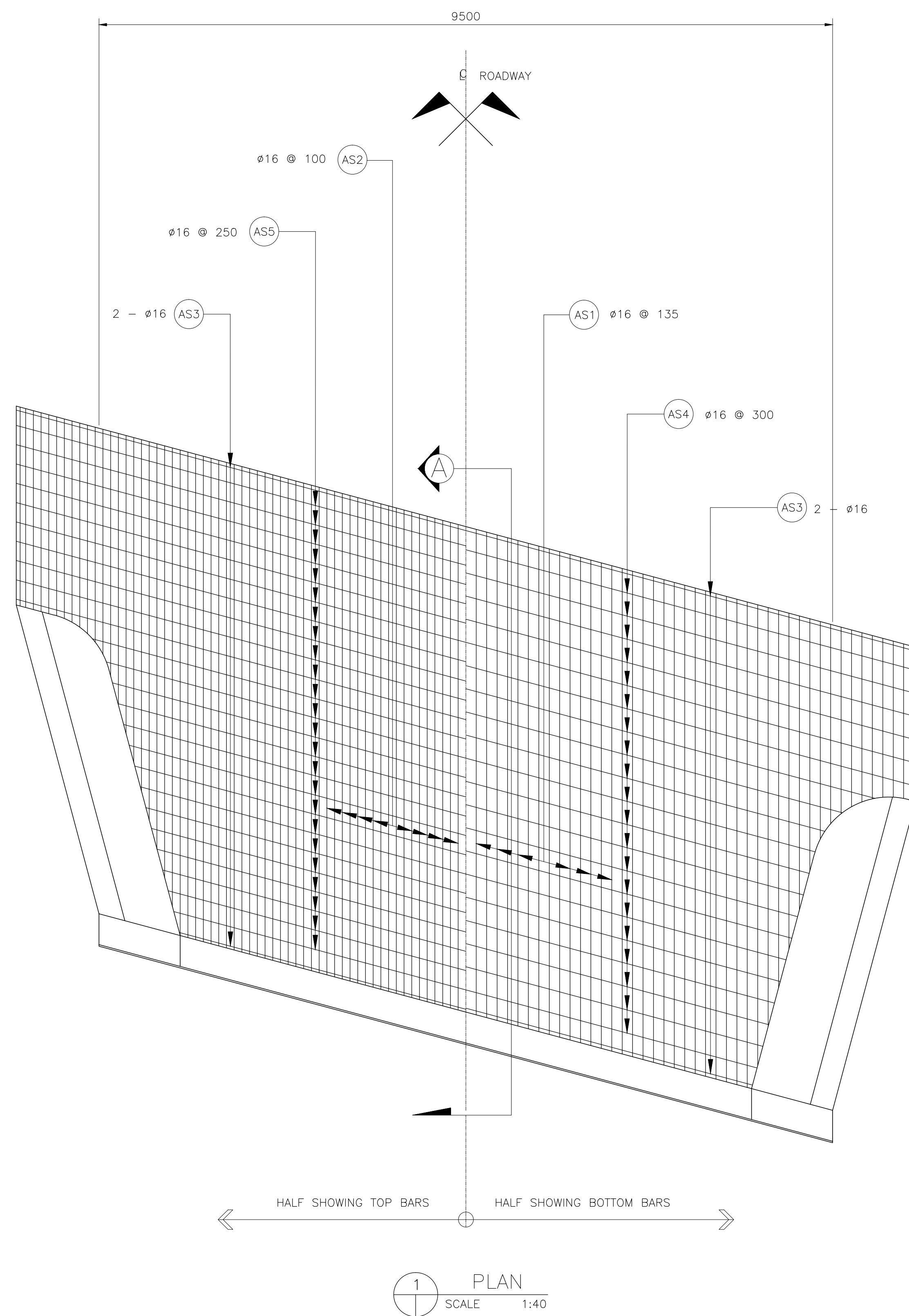
SCHEDULE OF REINFORCEMENTS FOR COLUMN AND SHEAR BLOCK

BAR BENDING DIAGRAM	REINFORCING STEEL BARS				ALL DIMENSIONS ARE OUT TO OUT OF REBARS						TYPE	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONCRETE VOLUME (cu.m)
	MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e	f							
B	SB1	25	AS SHOWN	24	0.65	0.5					A	SHEAR BLOCK	1.15	27.60	3.853	112	2
	SB2	25	200	96	0.65	0.5				A	1.15		110.40	3.853	447		
	SB3	20	170	120	0.45	0.45	0.45	0.45	0.2	0.2	C		2.2	264.00	2.466	684	
C	C1	36	AS SHOWN	168	0.5	7.3					A	COLUMN(P1)	7.80	1310.40	7.990	10994	29
	C2	16	100	51	6.20						6.20		316.20	1.578	524		
	C3	16	180	99	6.20						6.20		613.80	1.578	1017		
GRAND TOTAL														Grade 60 bar	19411	31	

REINFORCEMENT SCHEDULE AND ESTIMATED QUANTITIES FOR COPING AT PIER

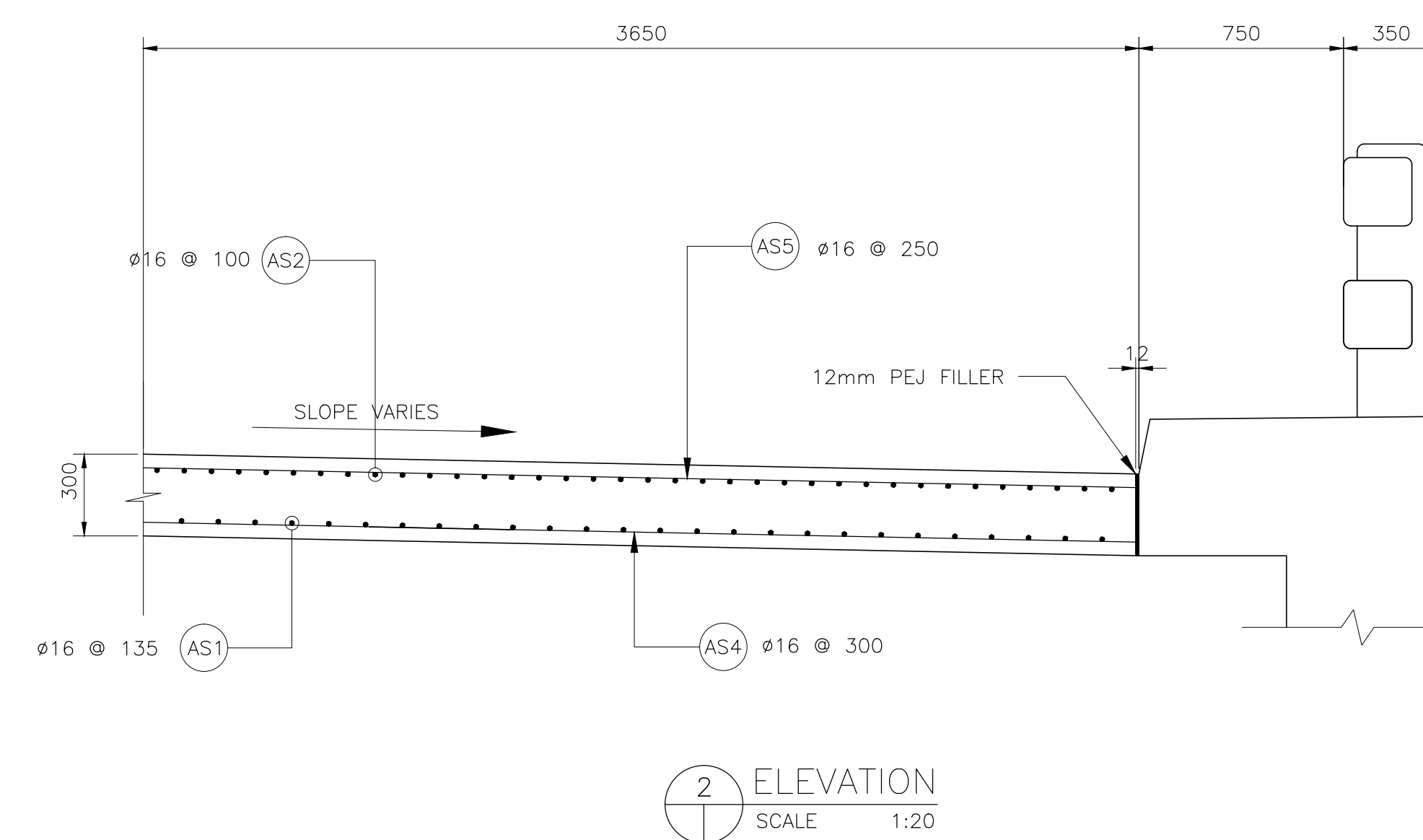
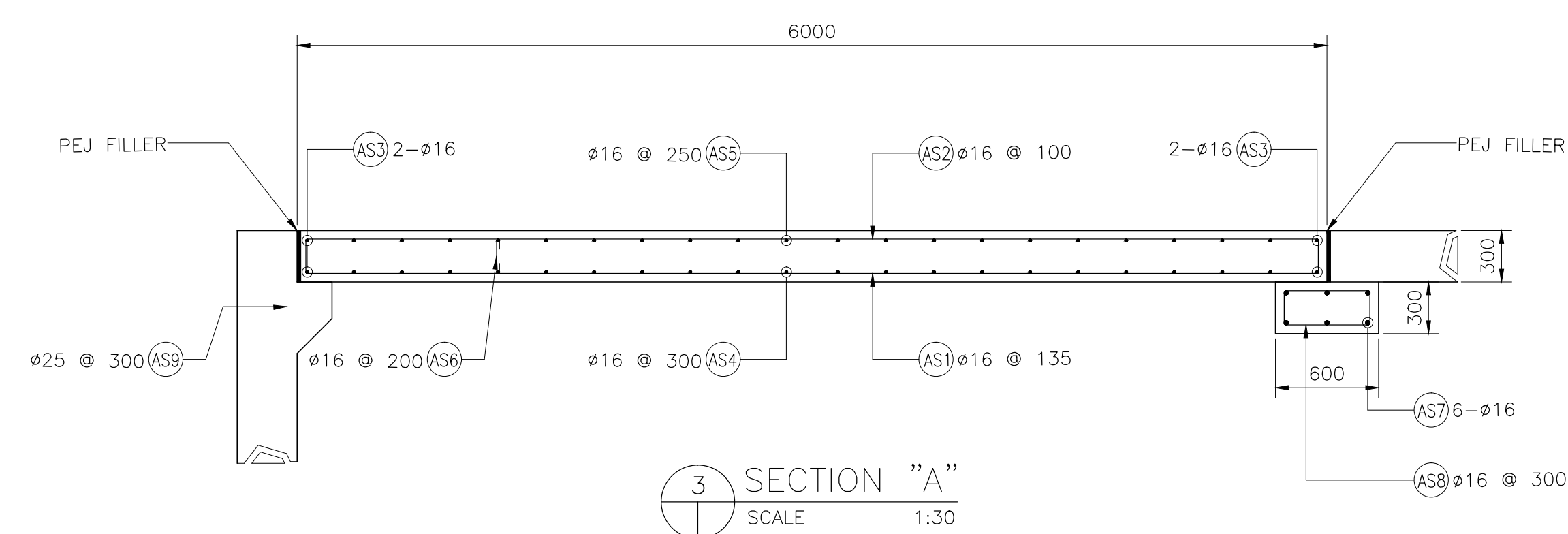
BAR MARK	BAR SIZE (mm)	QUANTITY	SPACING (mm)	SHAPE	DIMENSIONS (m)						LOCATION	LENGTH PER BAR (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)		CONC. VOL. (cu.m)			
					a	b	c	d	e	f					(MPa)	(cu.m)				
CP1	36	24	AS SHOWN	C	0.50	9.84	0.50					COPING(P1)	10.84	260.04	7.990	2182	42			
CP2	36	22	AS SHOWN	C	0.50	9.84	0.50				10.84		238.37	7.990	2000					
CP3	16	14	AS SHOWN	A	9.84						9.84		137.69	1.578	228					
CP4	16	36	300	A	3.35						20.50		738.00	1.578	1223					
GRAND TOTAL																		32530 Kgs	42	

<p>Urban Integrated Consultants, Inc. 100 CORPORATE BLDG., 8 LANES STREET, VISAYAS, DALAMAN, QUEZON CITY, 1128</p>	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEF PROJECT MANAGER - UICI DATE: -	<p>BCDA BAYAN LEPONON DEVELOPMENT AUTHORITY</p>	REVISIONS A B C D E F	DATE PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 1 PIER COLUMN PLAN AND ELEVATION COLUMN SECTION SCHEDULE OF REINFORCEMENTS AND SUMMARY OF QUANTITIES	SCALE AS SHOWN PROJECT CODE P301-10 DATE APPROVED DATE REVISED REV.	DRAWING STATUS DRAFT DRAWING DRAWING NO. A1 DATE APPROVED DATE REVISED REV.
	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITO M. SUNGA OIC - PMD DATE: -	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITO M. SUNGA OIC - PMD DATE: -	DATE PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 1 PIER COLUMN PLAN AND ELEVATION COLUMN SECTION SCHEDULE OF REINFORCEMENTS AND SUMMARY OF QUANTITIES	SCALE AS SHOWN PROJECT CODE P301-10 DATE APPROVED DATE REVISED REV.	DRAWING STATUS DRAFT DRAWING DRAWING NO. A1 DATE APPROVED DATE REVISED REV.



SCHEDULE OF REINFORCEMENTS FOR ONE APPROACH SLAB ONLY

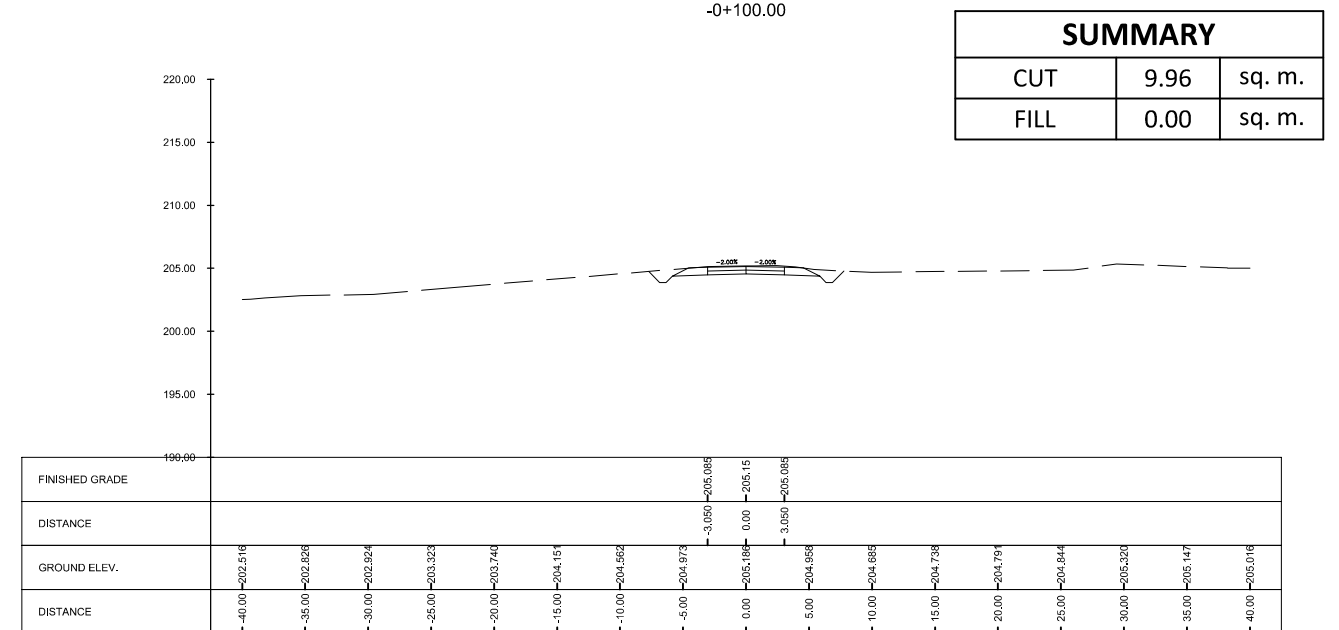
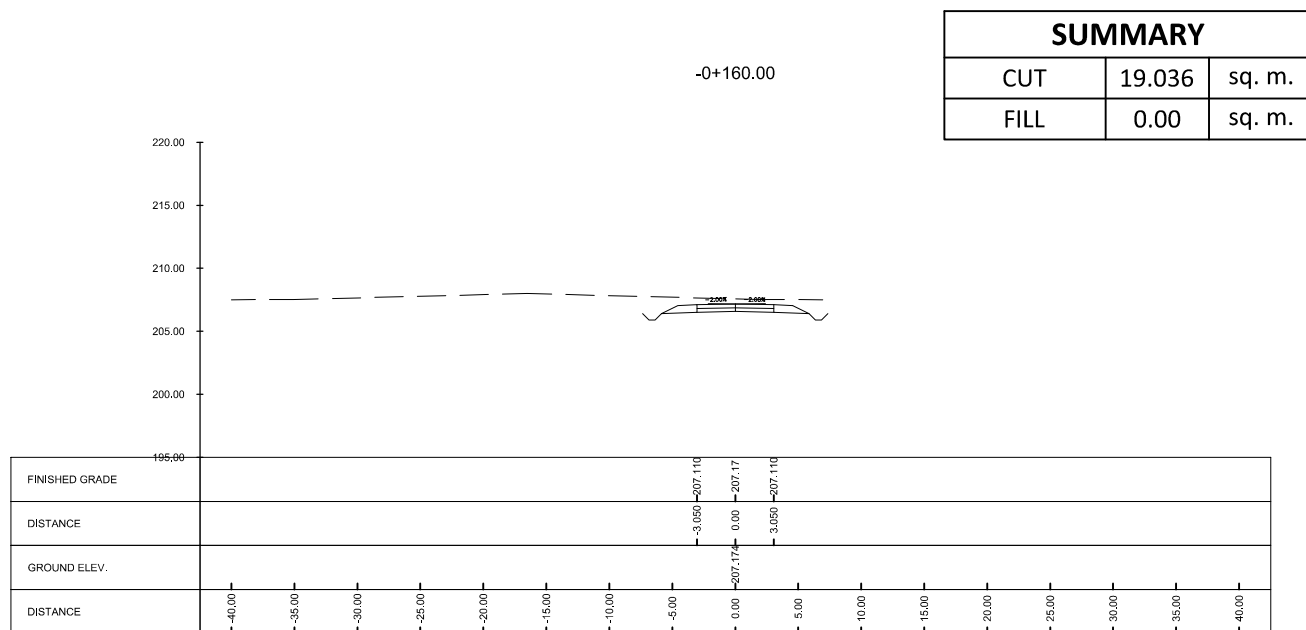
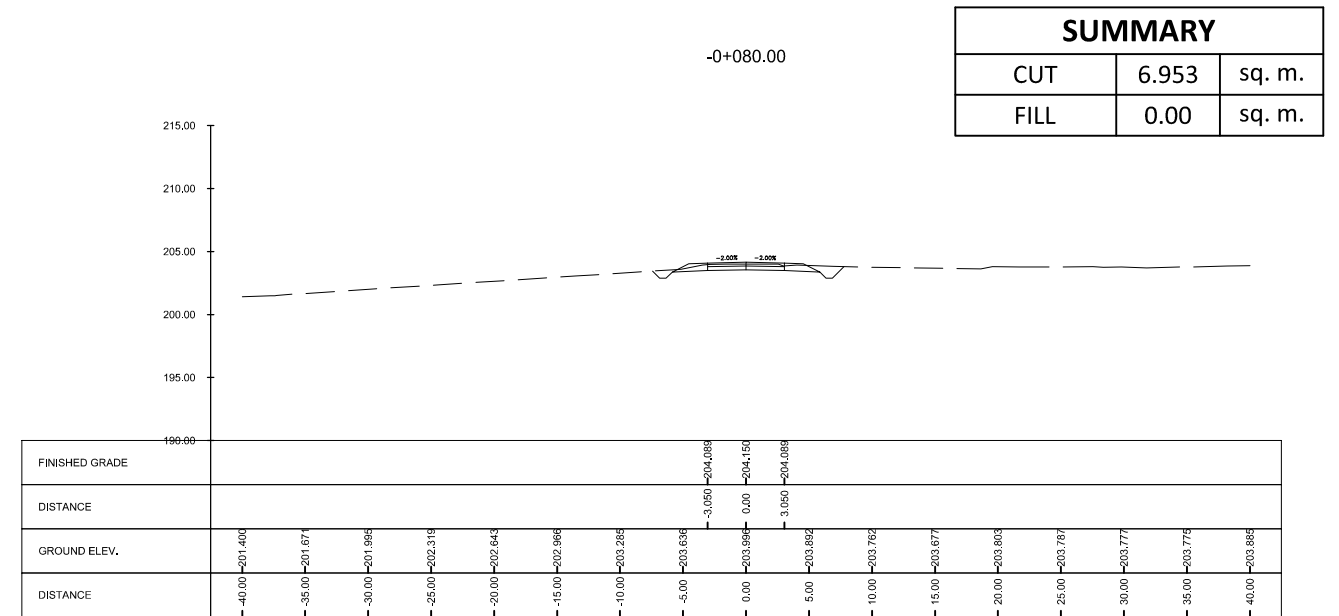
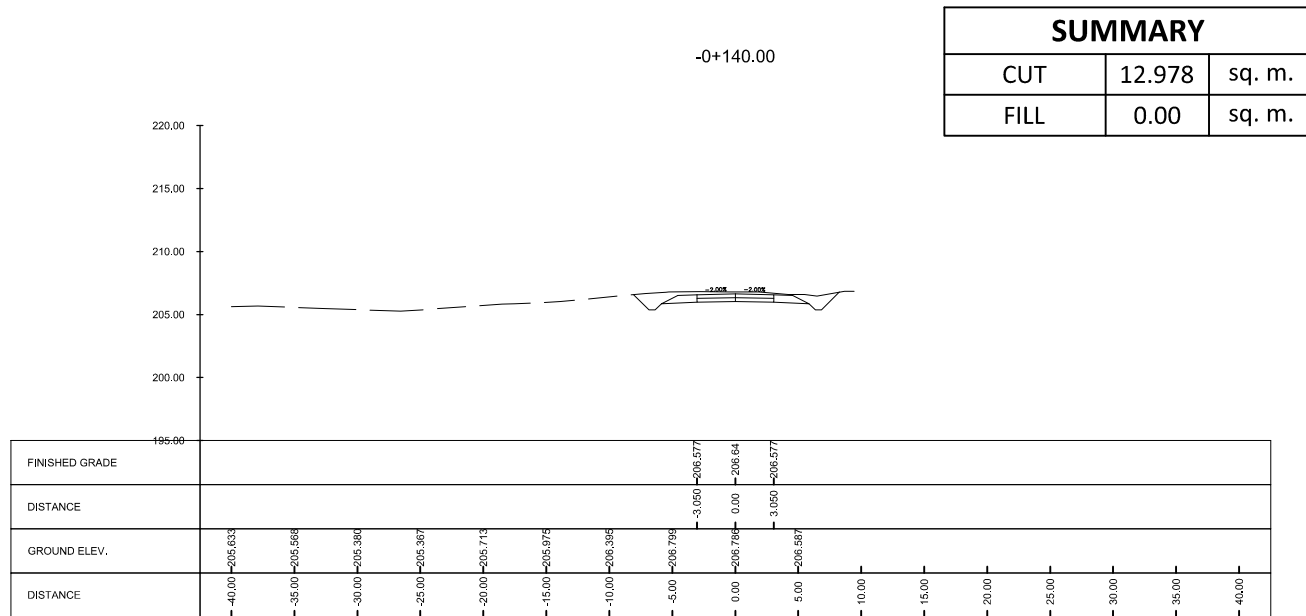
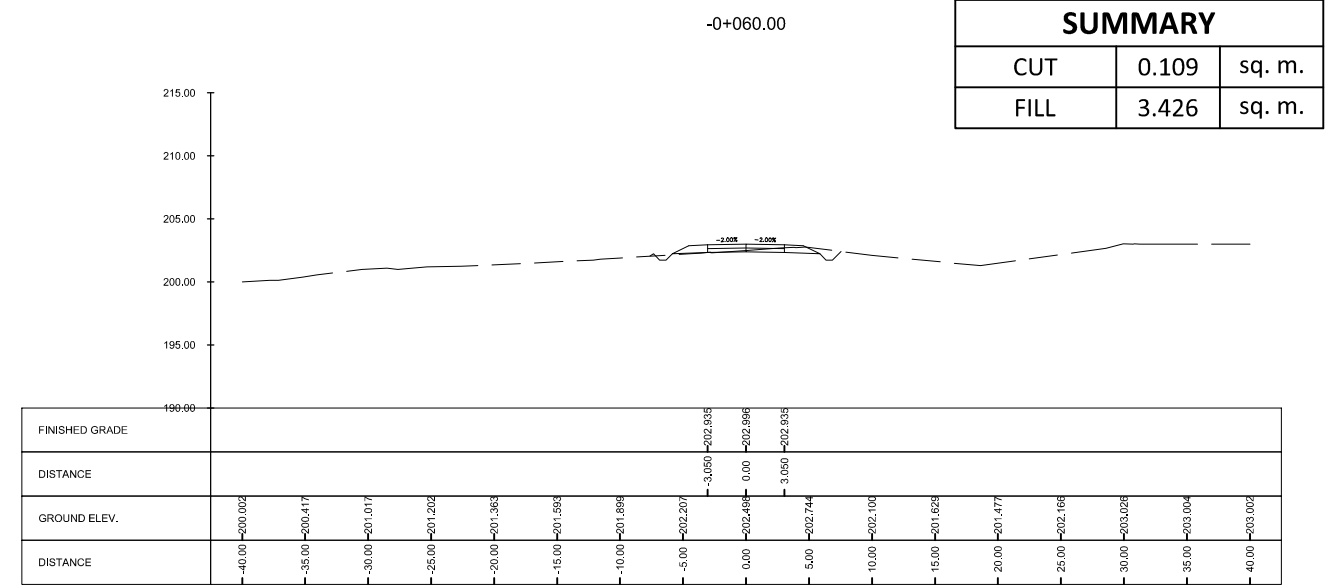
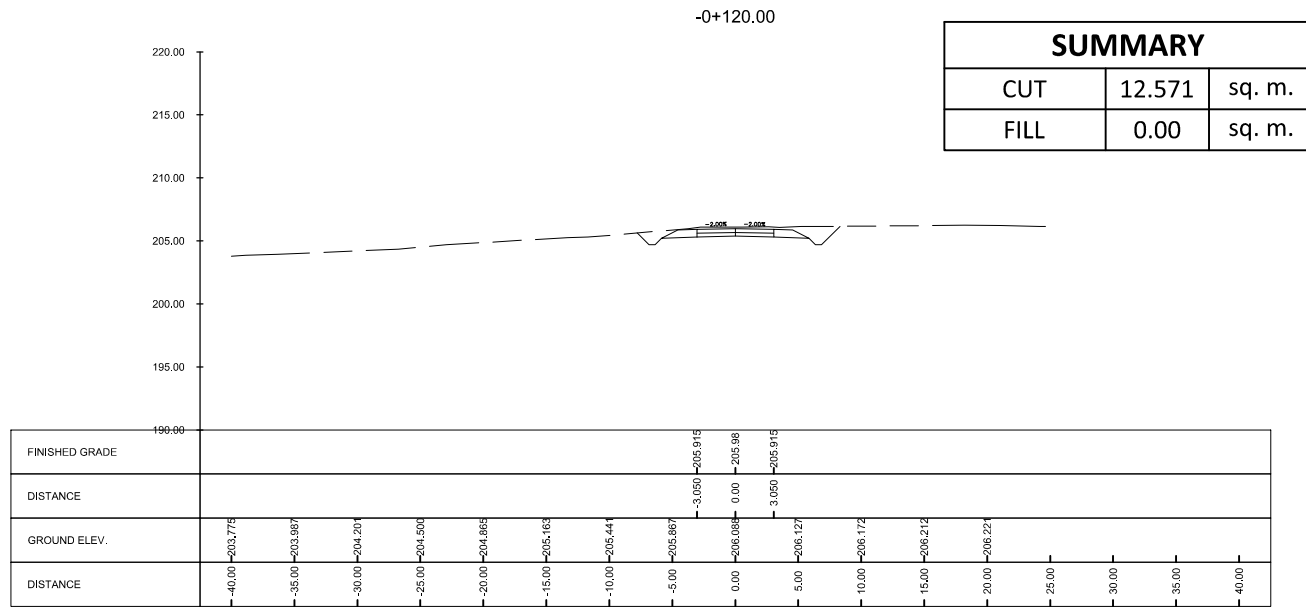
BAR BENDING DIAGRAM	BAR MARK	SIZE (mm)	QTY	SPACING (mm)	BAR SHAPE	REINFORCING BARS									
						BAR DIMENSIONS				BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)		
						a	b	c	d						
a A b	AS1	16	86	135	A	6.00	0.27	0.27		6.54	561.96	1.58	931		
	AS2	16	116	100	A	6.00	0.27	0.27		6.54	758.64	1.58	1257		
b B a	AS3	16	4	AS SHOWN	A	12.1	0.27	0.27		12.64	50.56	1.58	84		
	AS4	16	20	300	A	12.1	0.27	0.27		12.64	252.80	1.58	419		
a B b	AS5	16	24	250	A	12.1	0.27	0.27		12.64	303.36	1.58	503		
	AS6	16	48	200	A	0.3	0.27	0.27		0.84	39.9	1.58	66		
a C b	AS7	16	6	AS SHOWN	A	12.1	0.27	0.27		12.64	75.84	1.58	126		
	AS8	16	39	300	B	0.50	0.50	0.10	0.10	1.20	46.40	1.58	77		
	AS9	25	39	300	C	0.13	0.60	0.13		0.86	33.25	3.85	135		
												TOTAL	3,598	Kgs	

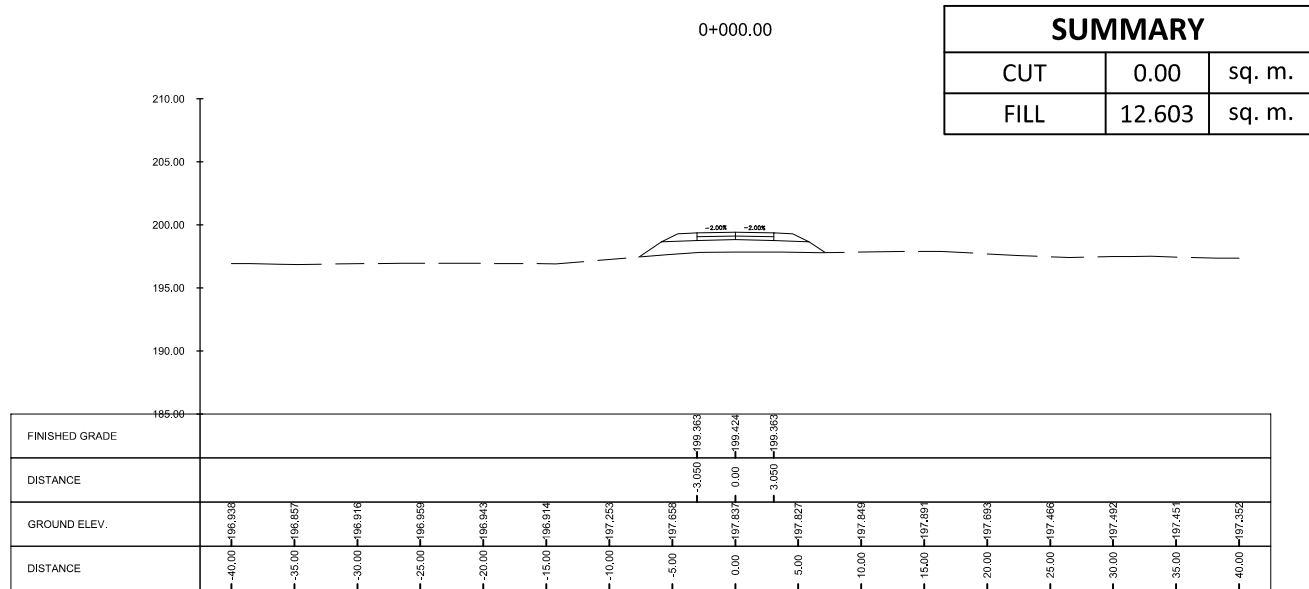


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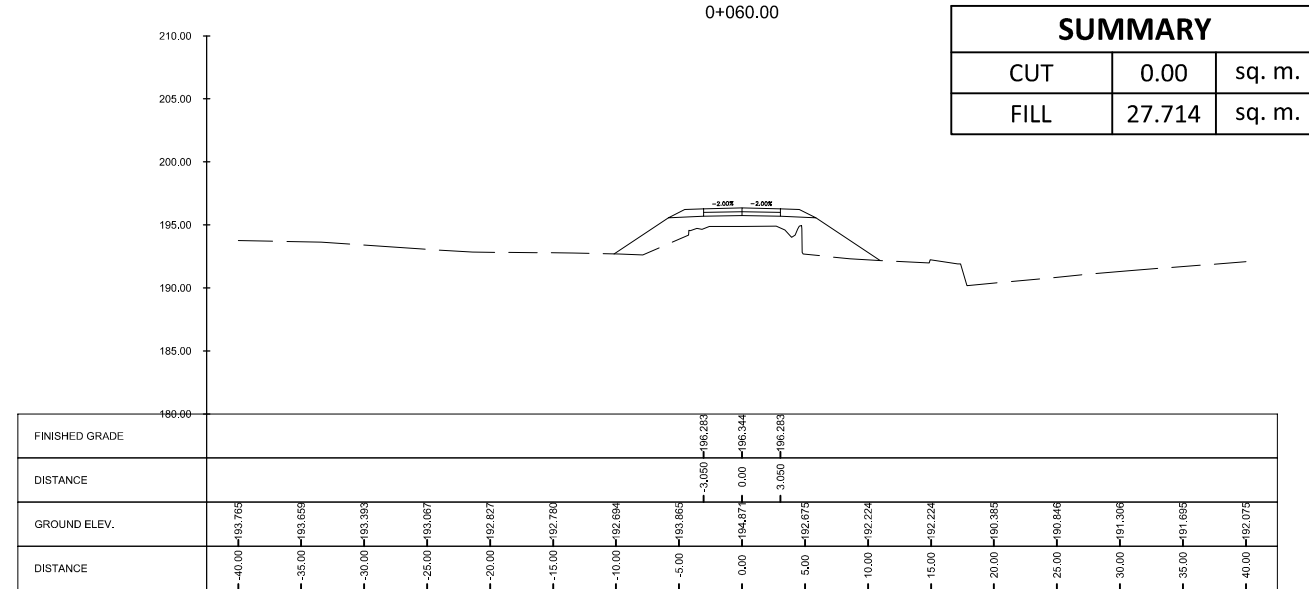
ENGR. ALBERTO C. CAÑETE
TEAM LEADER

CONSULTANTS Urban Integrated Consultants, Inc. <small>UIC CORPORATE BLDG., 8 LANOS STREET, VIGRA, DALMAN, QUEZON CITY, 1128</small>	SUBMITTED BY EFREN L. DAVID <small>PRESIDENT - UICI</small> DATE: -	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP <small>PROJECT MANAGER - UICI</small> DATE: -		REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 1	SCALE AS SHOWN PROJECT CODE DATE APPROVED 	DRAWING STATUS DRAFT DRAWING DRAWING NO. P301-12 SIZE A1 DATE REVISED REV.
	CHECKED BY RYAN PAUL S. GALURA <small>PROJECT MANAGER</small> DATE: -	APPROVED BY JOVITO M. SUNGA <small>OIC - PMD</small> DATE: -	APPROACH SLAB DETAILS SCHEDULE OF REINFORCEMENTS AND SUMMARY OF QUANTITIES					

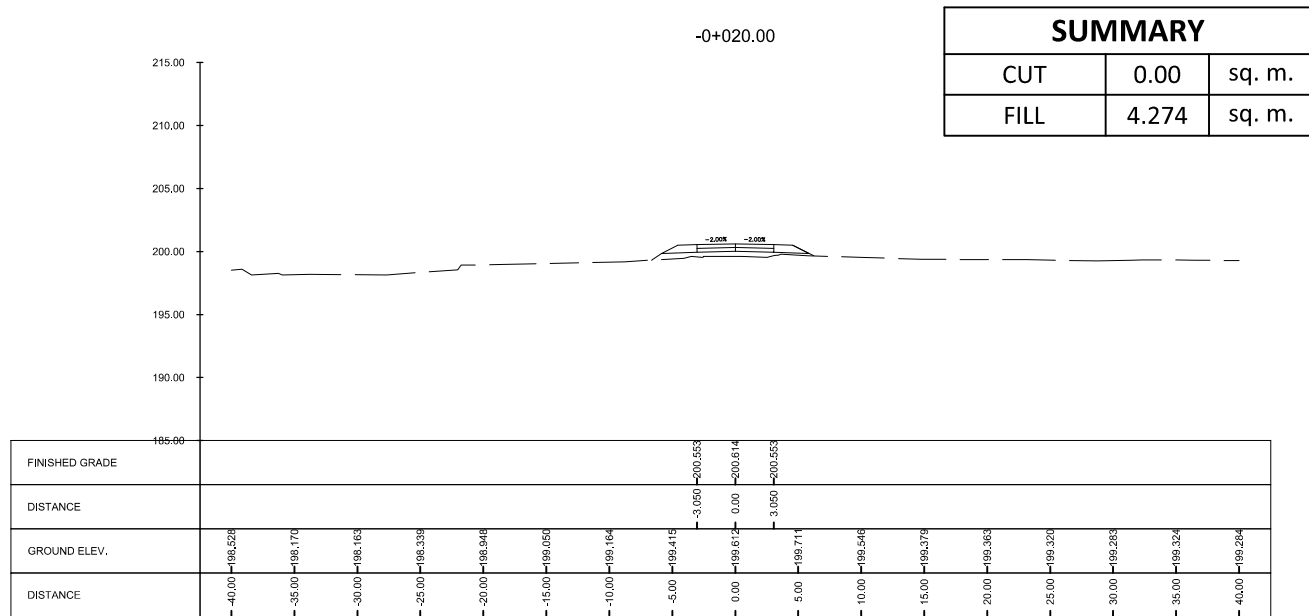




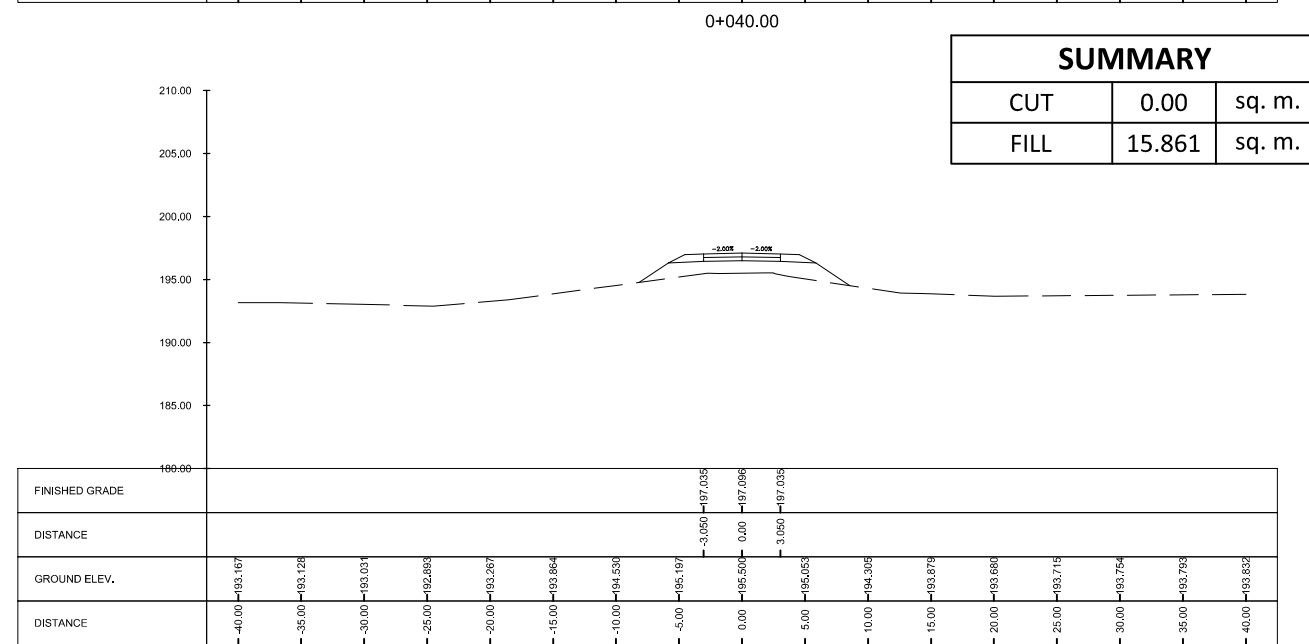
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CUT	0.00	sq. m.
FILL	12.603	sq. m.



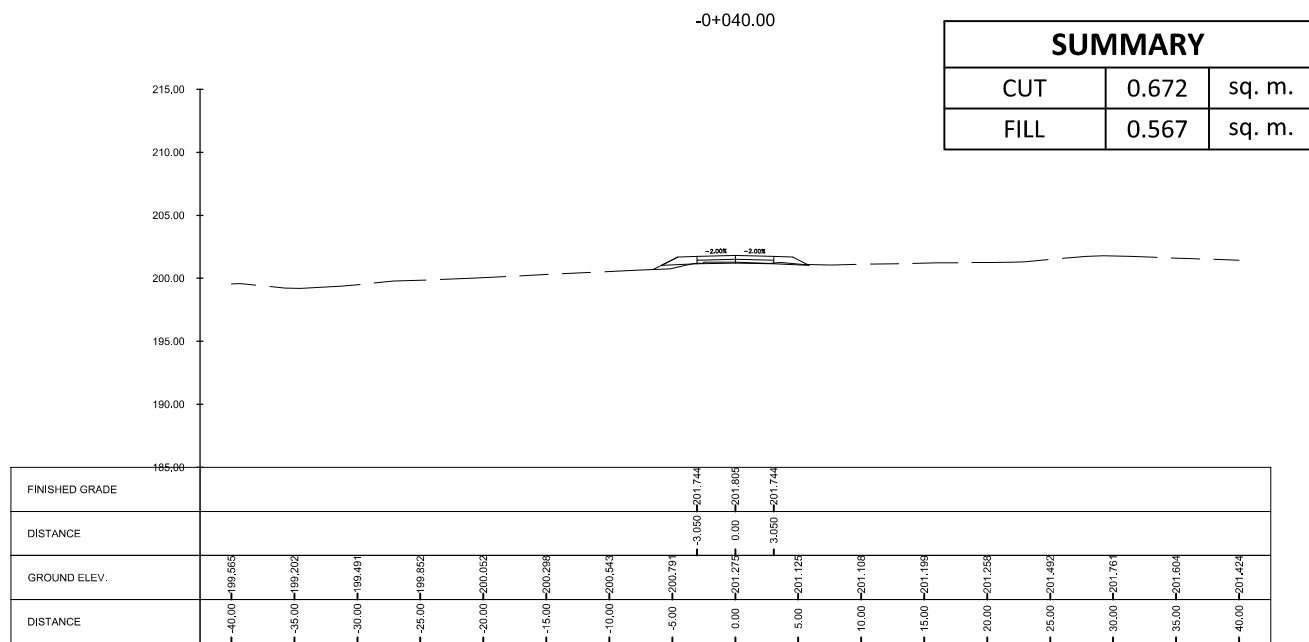
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FILL	27.714	sq. m.



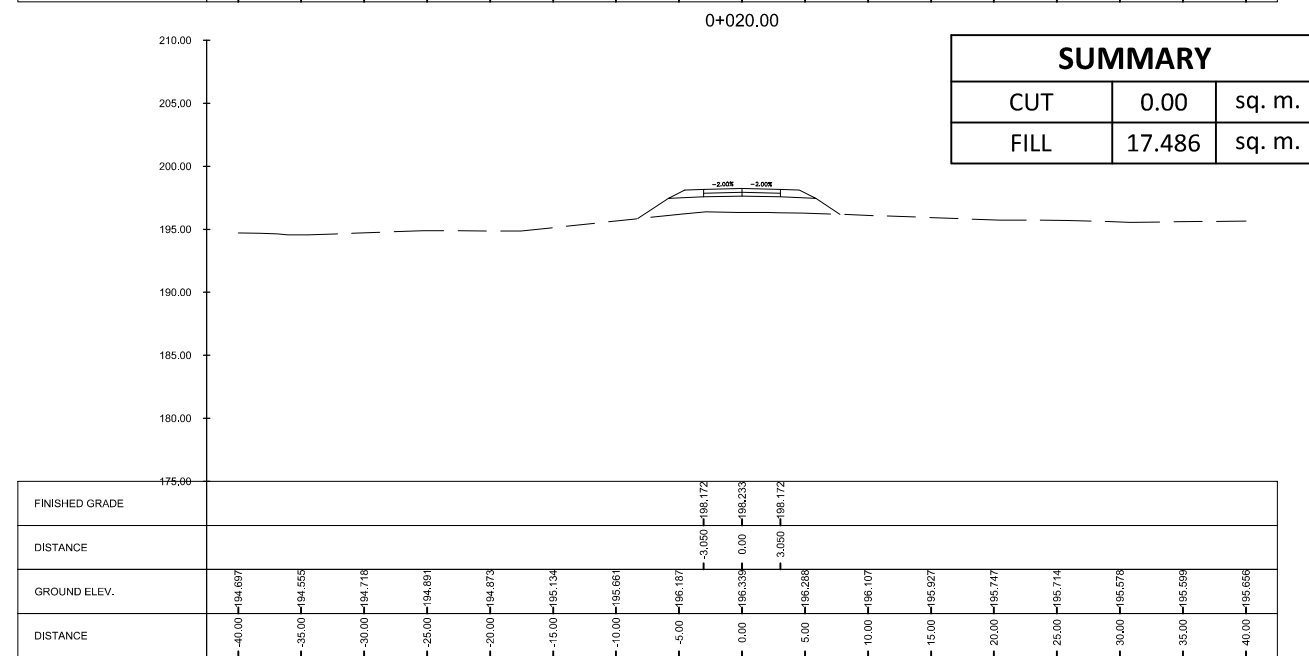
SUMMARY		
CUT	0.00	sq. m.
FILL	4.274	sq. m.



SUMMARY		
CUT	0.00	sq. m.
FILL	15.861	sq. m.

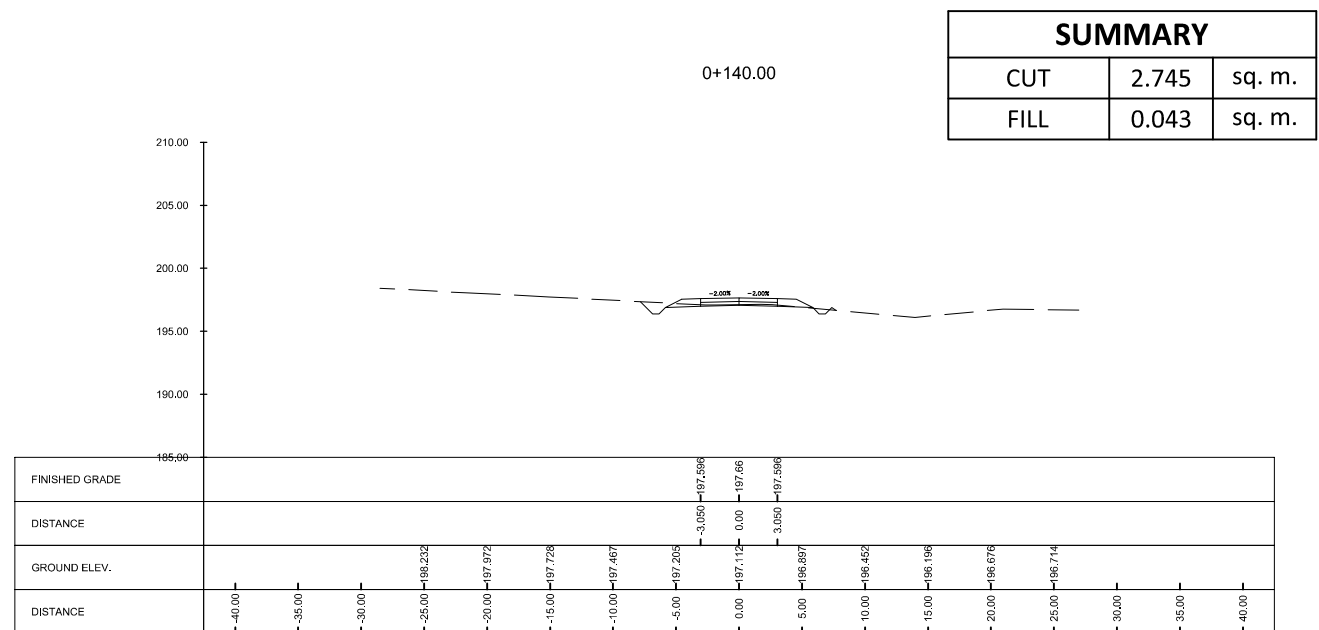
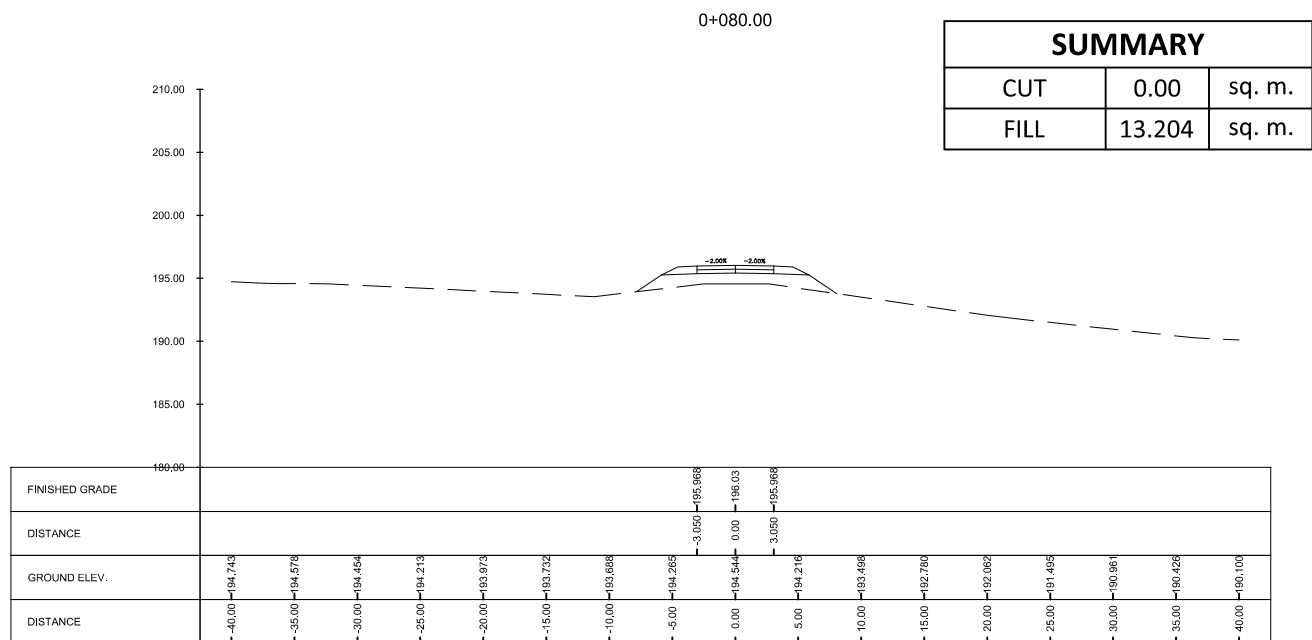
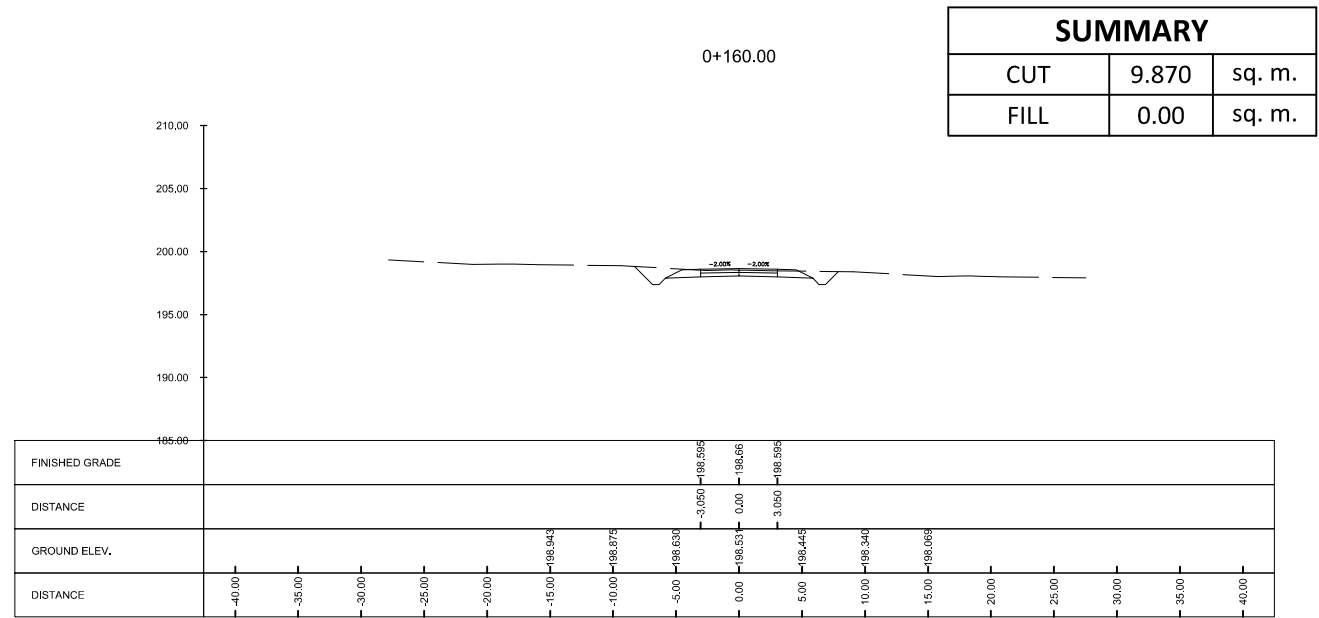
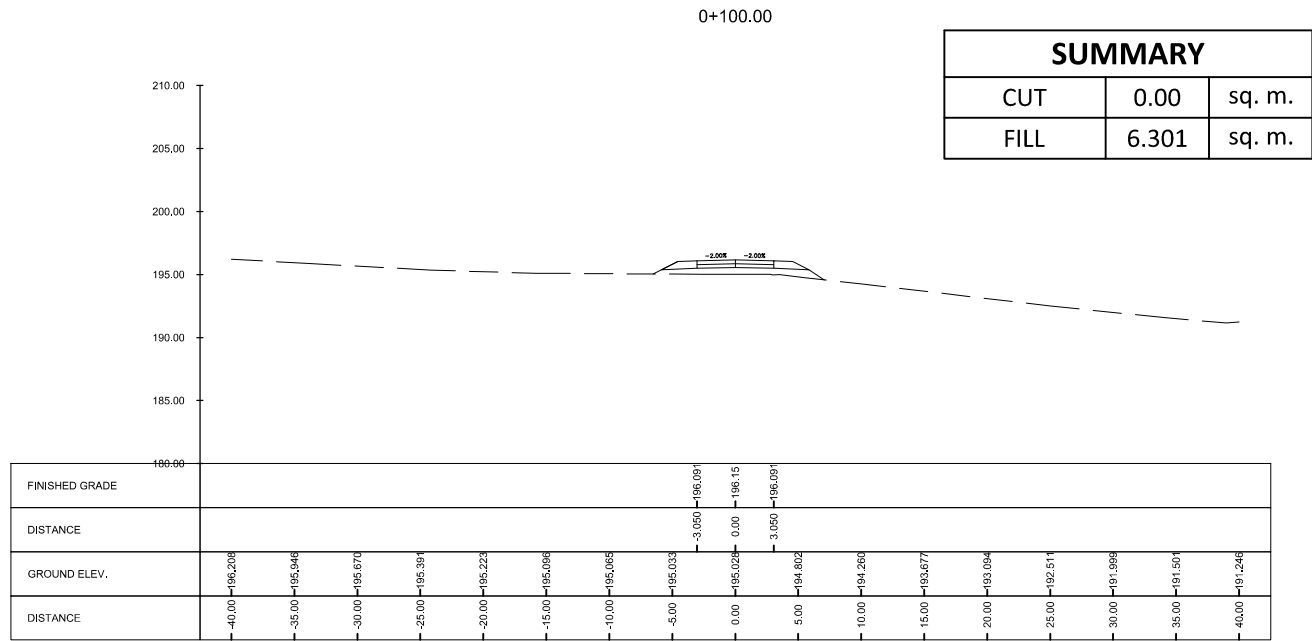
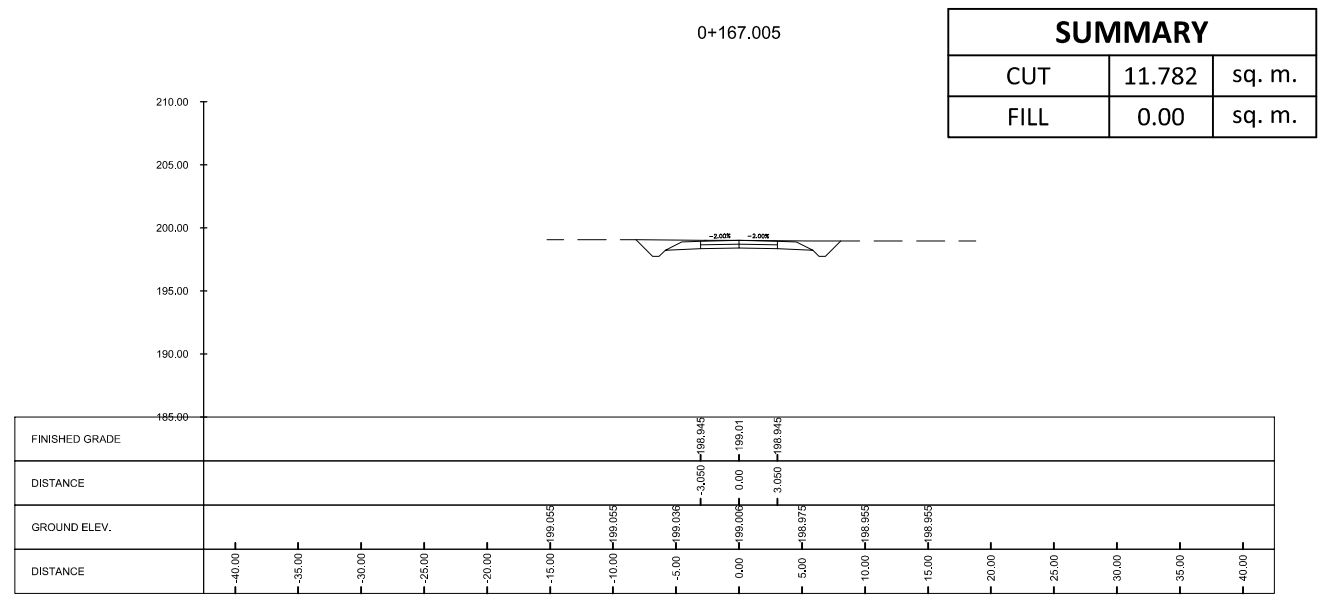
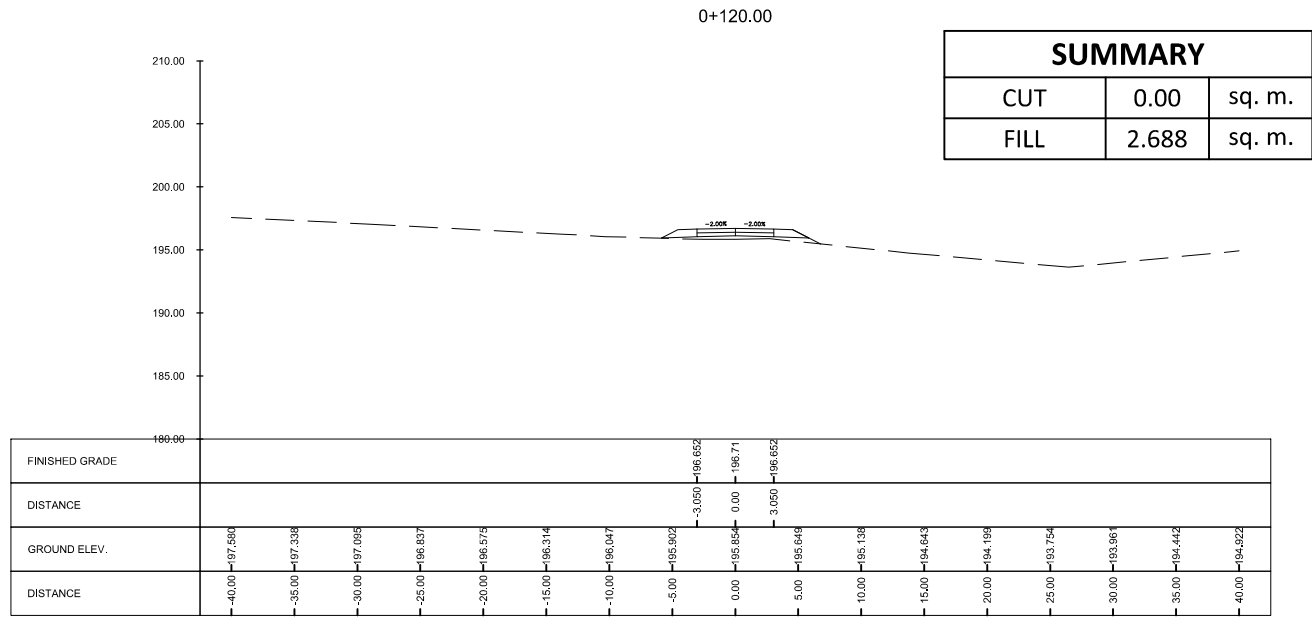


SUMMARY		
CUT	0.672	sq. m.
FILL	0.567	sq. m.



SUMMARY		
CUT	0.00	sq. m.
FILL	17.486	sq. m.

<p style="text-align: center;">CONSULTANTS</p> <p style="font-size: 8px;">1101 CORPORATE BLVD., 4 LANEY DRIVE, WASH. BLVD., QUEEN CITY, 1101</p>	<p style="text-align: center;">SUBMITTED BY</p> <p style="font-size: 8px;">EFREN C. DAVID PRESIDENT - UICI</p> <p style="text-align: center;">DATE: -</p>	<p style="text-align: center;">CHECKED BY</p> <p style="font-size: 8px;">ALBERTO C. CANETE PROJECT MANAGER - UICI</p> <p style="text-align: center;">DATE: -</p>	<p style="text-align: center;">APPROVED BY</p> <p style="font-size: 8px;">RYAN PAUL S. GALURA PROJECT MANAGER</p> <p style="text-align: center;">DATE: -</p>	<p style="text-align: center;">APPROVED BY</p> <p style="font-size: 8px;">JOVITO M. SUNGA OIC - PMD</p> <p style="text-align: center;">DATE: -</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REVISIONS</th> <th>DATE</th> </tr> </thead> <tbody> <tr><td>A</td><td></td></tr> <tr><td>B</td><td></td></tr> <tr><td>C</td><td></td></tr> <tr><td>D</td><td></td></tr> <tr><td>E</td><td></td></tr> <tr><td>F</td><td></td></tr> </tbody> </table>	REVISIONS	DATE	A		B		C		D		E		F		<p style="text-align: center;">PROJECT TITLE</p> <p style="font-size: 8px;">DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD</p> <p style="text-align: center;">SHEET CONTENT</p> <p style="font-size: 8px;">AIRPORT TO NCC ACCESS ROAD</p> <p style="text-align: center;">CROSS SECTION OVERPASS 3 STA.-0+0:0.00 TO STA.0+060.00</p>	<p style="text-align: center;">SCALE</p> <p style="font-size: 8px;">1:800M</p> <p style="text-align: center;">DRAWING STATUS</p> <p style="font-size: 8px;">FINAL DRAWING</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>PROJECT CODE</th> <th>DRAWING NO.</th> <th>SIZE</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">CS-2</td> <td style="text-align: center;">A1</td> </tr> <tr> <th>DATE APPROVED</th> <th>DATE REVISED</th> <th>REV.</th> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> </tr> </tbody> </table>	PROJECT CODE	DRAWING NO.	SIZE	-	CS-2	A1	DATE APPROVED	DATE REVISED	REV.	-	-	-
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CONSULTANTS

Urban Integrated Consultants, Inc.
110 CORPORATE BLVD., 4 LANE DRIVE, WASH. BLVD., QUEEN CITY, 110

SUBMITTED BY

EFREN C. DAVID
EFREN C. DAVID
PRESIDENT - UICI

DATE: -

ALBERTO C. CANETE
ALBERTO C. CANETE
PROJECT MANAGER - UICI

DATE: -

CHECKED BY

RYAN PAUL S. GALURA
PROJECT MANAGER

DATE: -

APPROVED BY

JOVITO M. SUNGA
OIC - PMD

DATE: -

REVISIONS	DATE
A	
B	
C	
D	
E	
F	

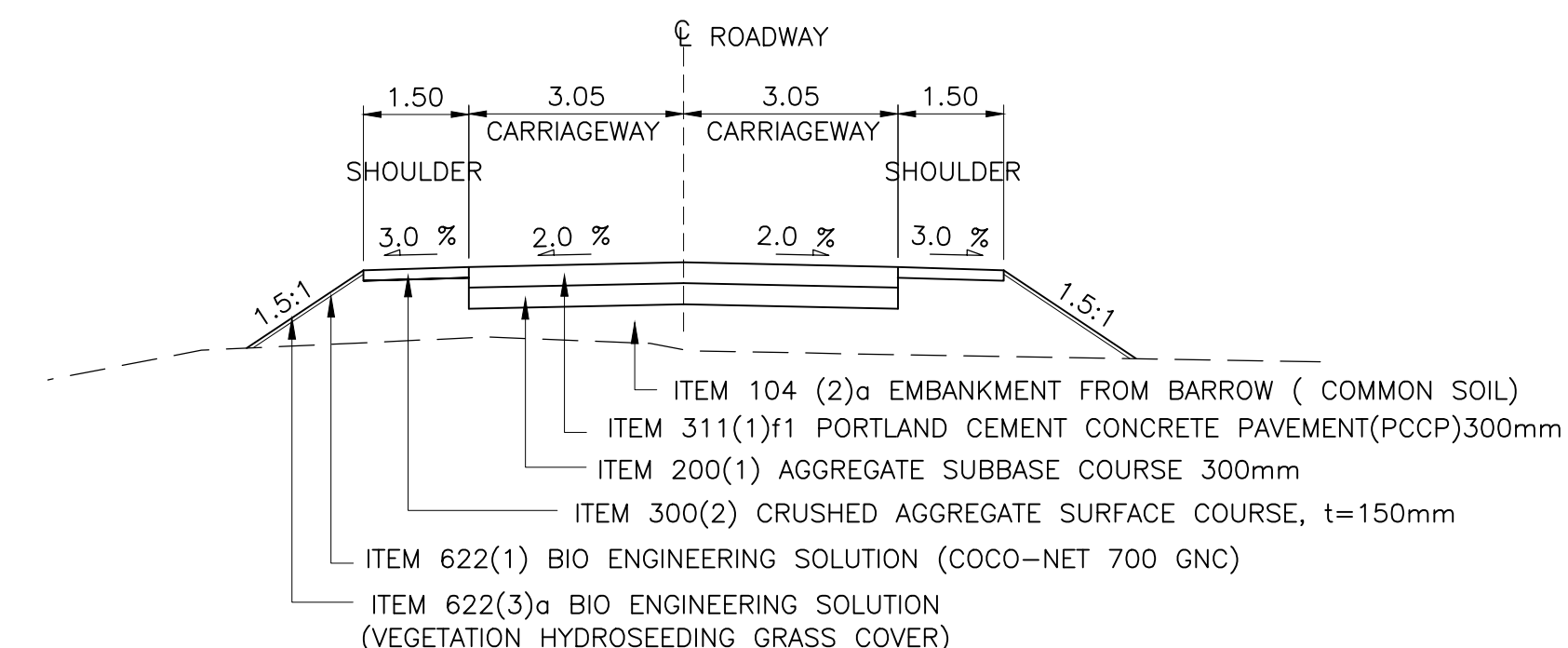
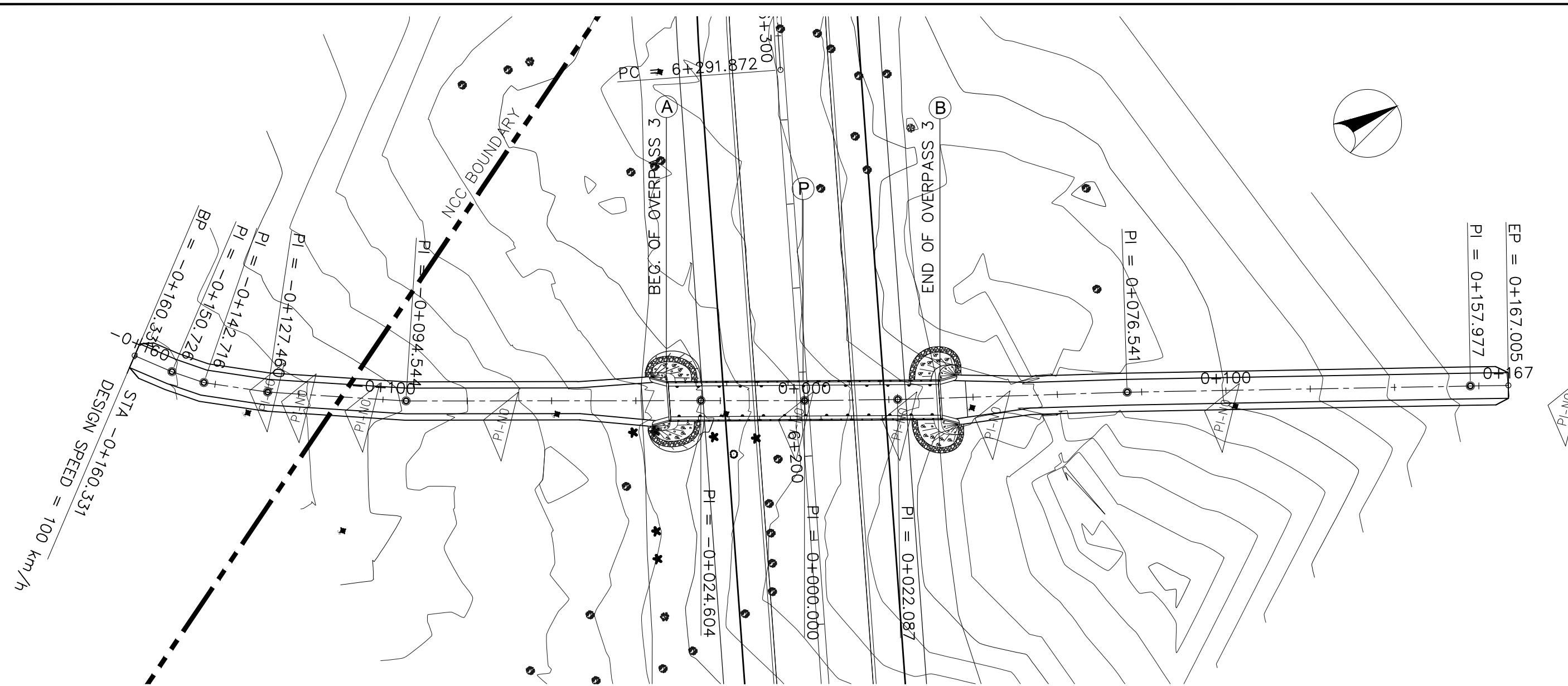
PROJECT TITLE

DETAILED ENGINEERING DESIGN OF THE
PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD,
MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD
SHEET CONTENT AIRPORT TO NCC ACCESS ROAD

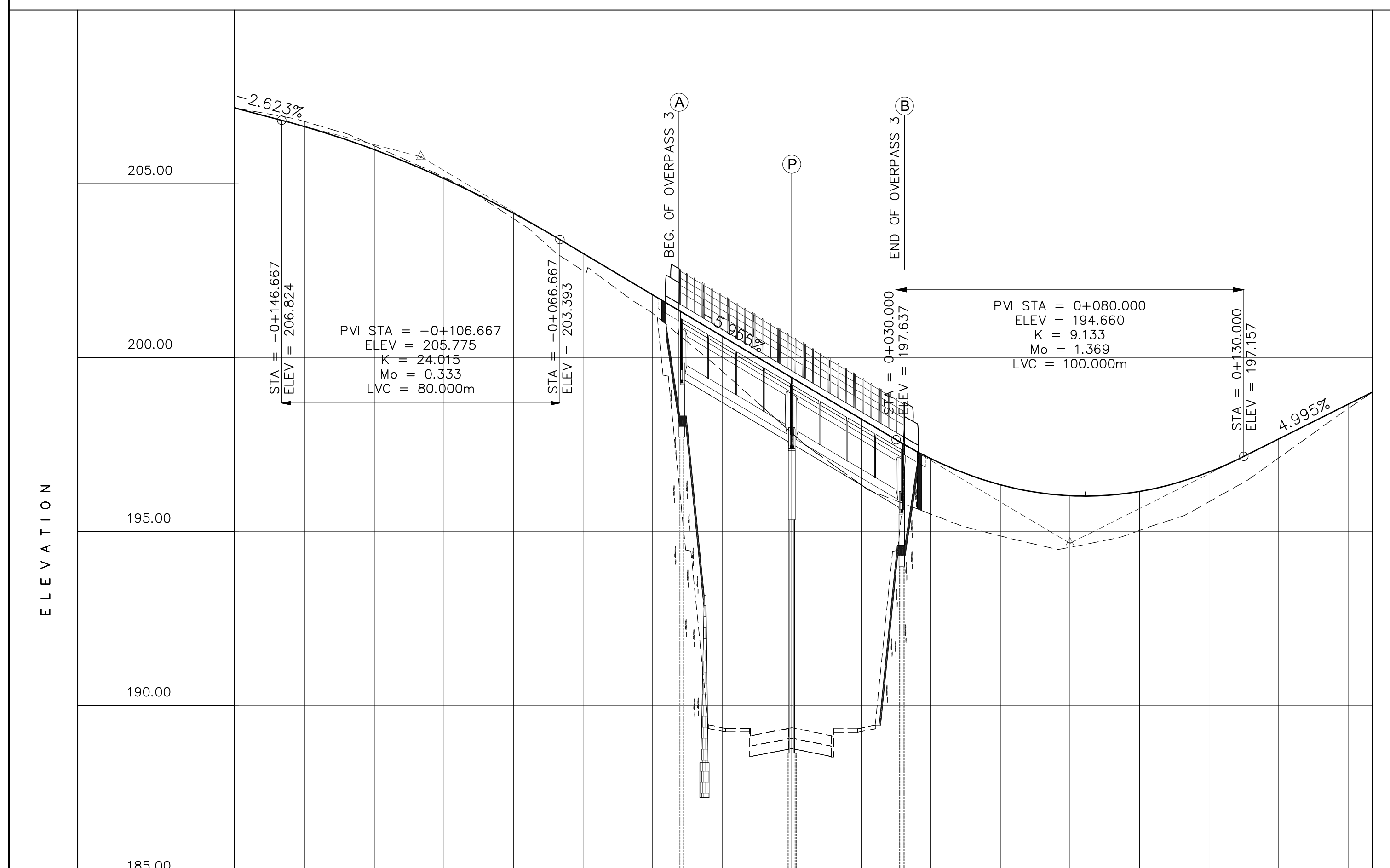
CROSS SECTION OVERPASS 3
STA.0+0:0.00 TO STA.0+1:0.00

SCALE	DRAWING STATUS
1:800M	FINAL DRAWING
PROJECT CODE	DRAWING NO.
-	CS-3
DATE APPROVED	DATE REVISD
-	-
REV.	
-	-



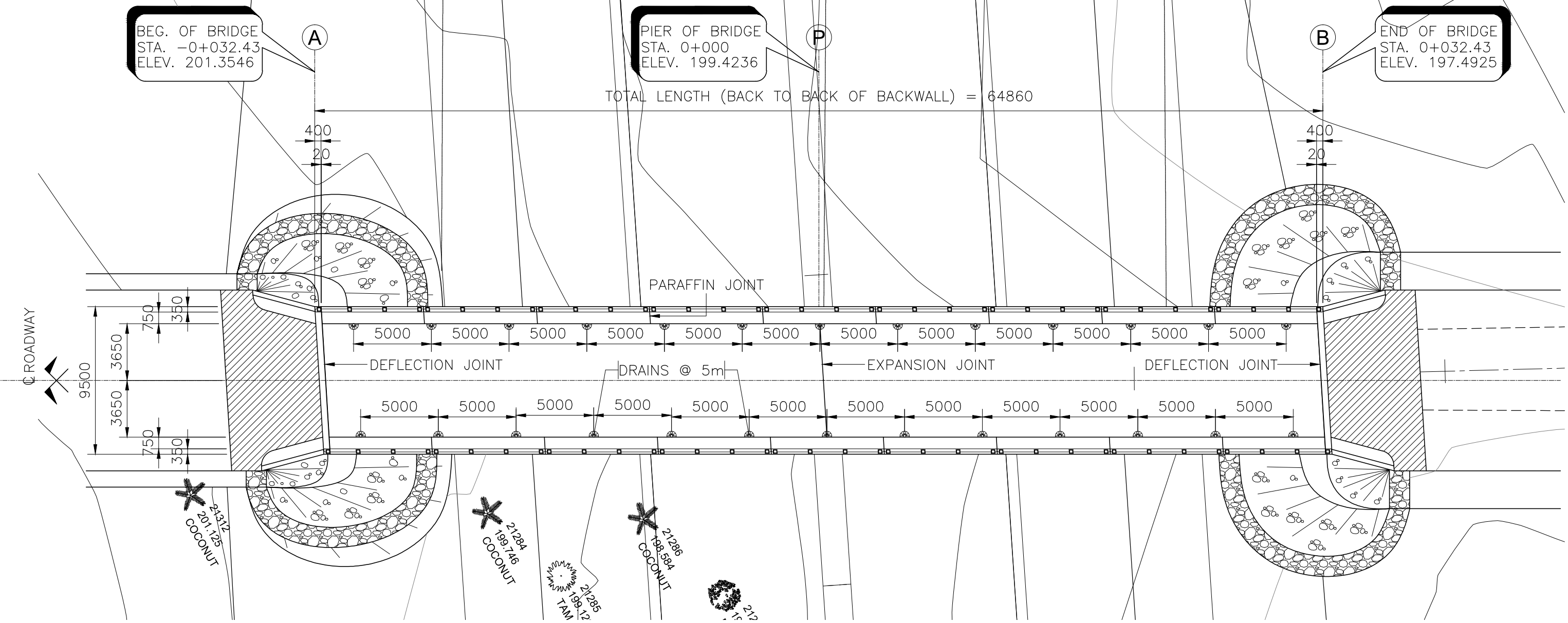


TYPICAL ROAD CROSS SECTION

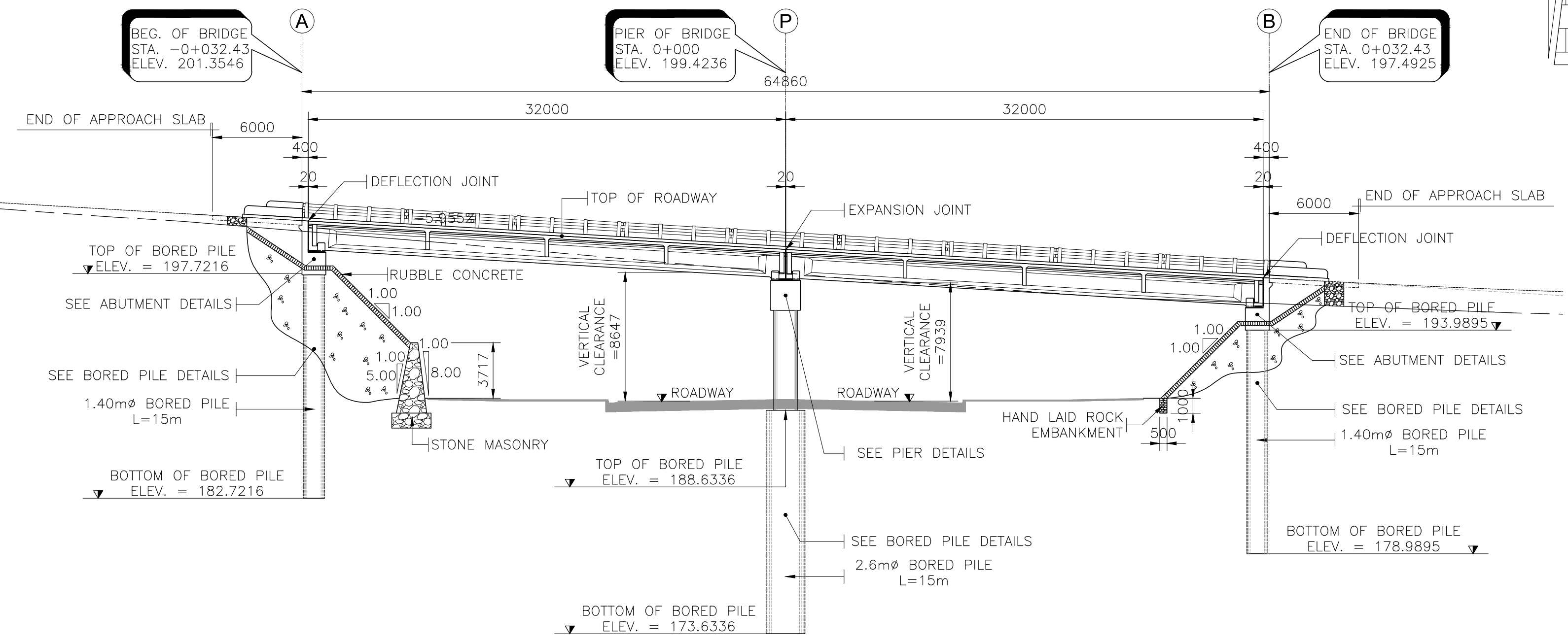


STATION	-0+160	-0+100	0+000	0+100	0+167
FINISHED GRADE	207.174	206.824	203.393	197.657	199.006
GROUND ELEV	207.174	206.782	203.992	194.871	198.531
HOR. CURVATURE	L=9.606	L=15.257	L=32.916	L=69.940	L=24.604
VER. CURVATURE	L=8.009	L=80.00	L=96.67	L=100.00	L=37.00
SUPERELEVATION					

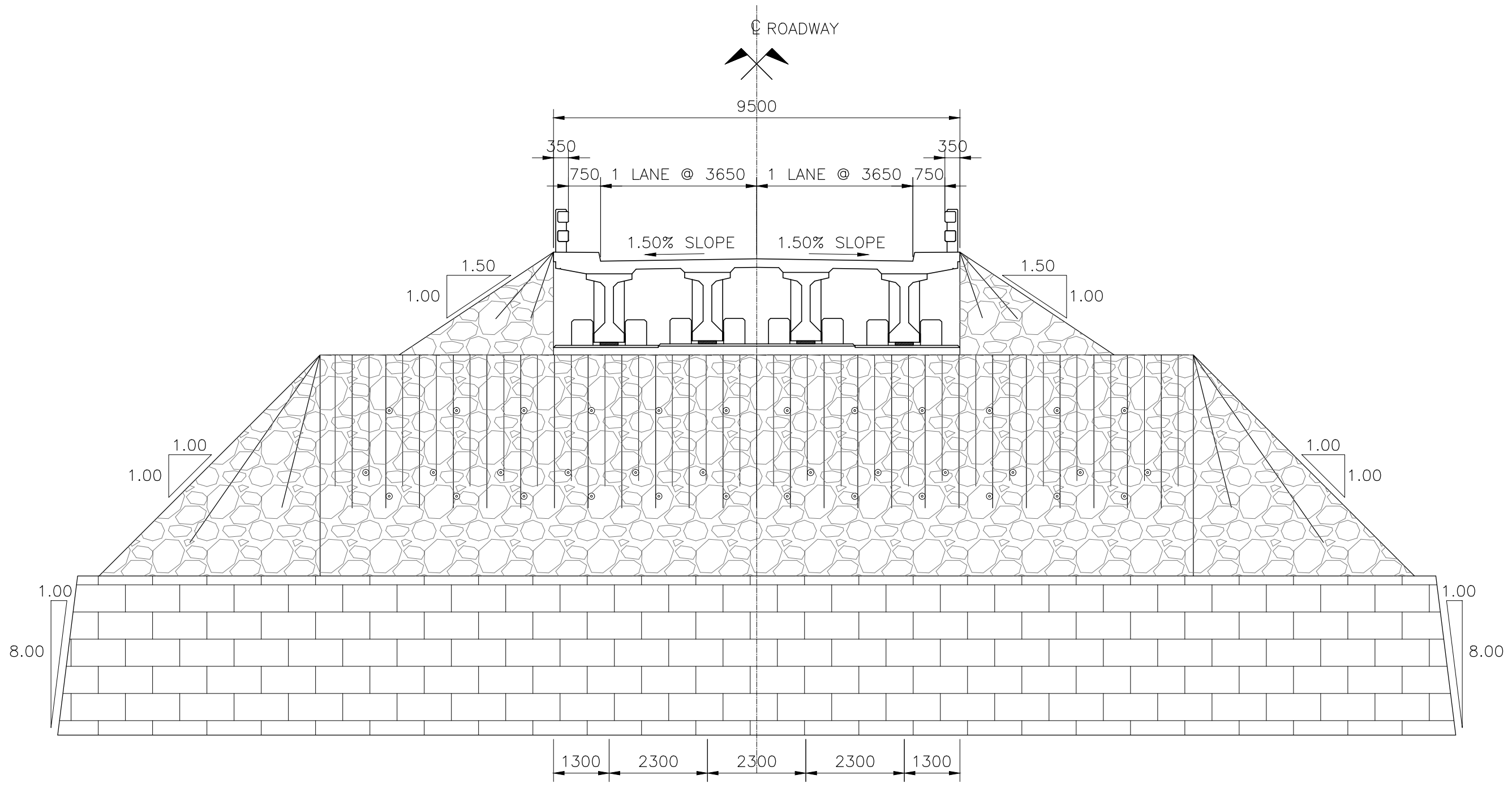
CONSULTANTS UIC CORPORATE BLDG., 8 LANES STREET, NASRA, DUKMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	BCDA Bayan Lungsod ng Calicut Environmental Authority	ALBERTO C. CAÑETE PROJECT MANAGER - UICI DATE: -	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT PACKAGE 3 - AIRPORT - NCC ACCESS ROAD	SCALE AS SHOWN PROJECT CODE DATE APPROVED -	DRAWING STATUS FINAL DRAWINGS DRAWING NO. PP-1 DATE REVISED -	SIZE A1 REV. -



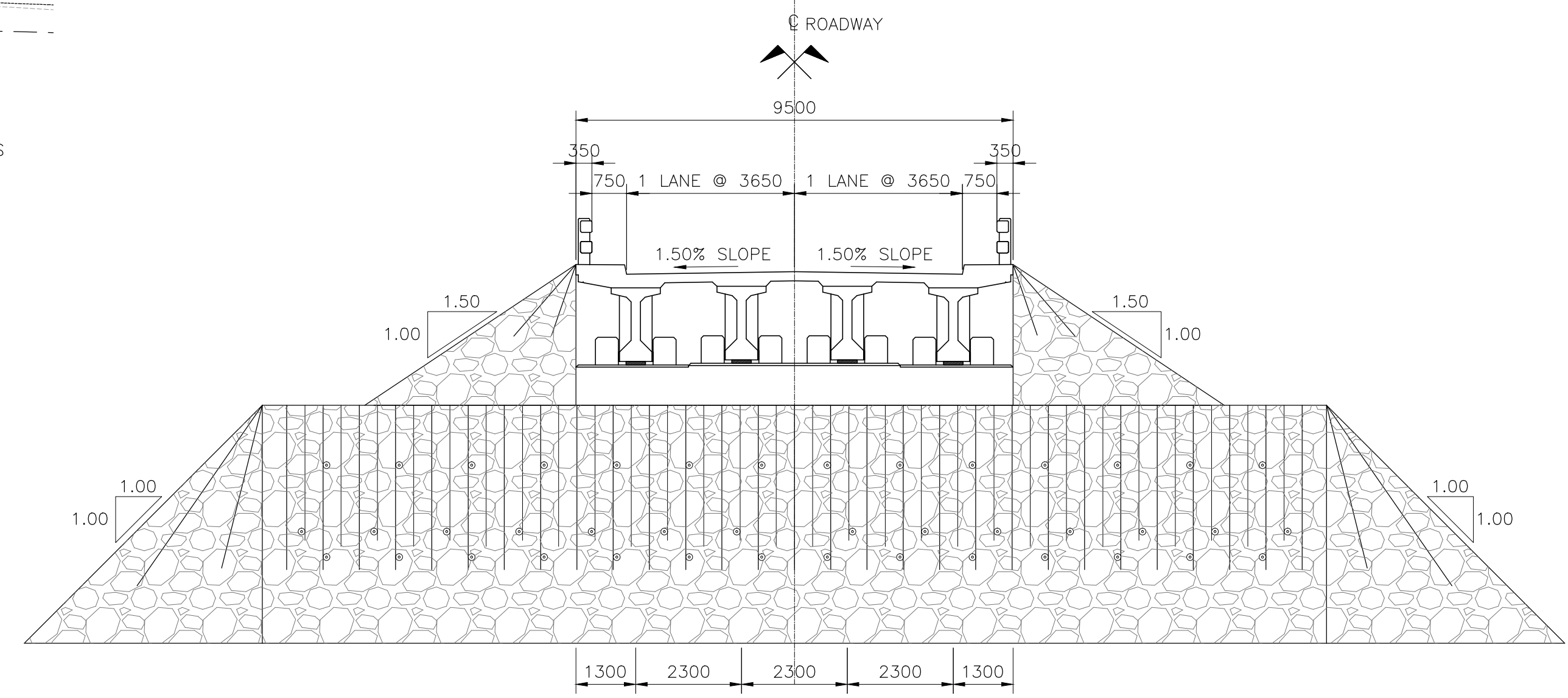
1 GENERAL PLAN
SCALE 1:250



2 GENERAL ELEVATION
SCALE 1:250



3A SECTION AT ABUTMENT A
SCALE 1:100



3B SECTION AT ABUTMENT B
SCALE 1:100

OVERPASS 3 STRUCTURES QUANTITY ESTIMATE (2 LANES)

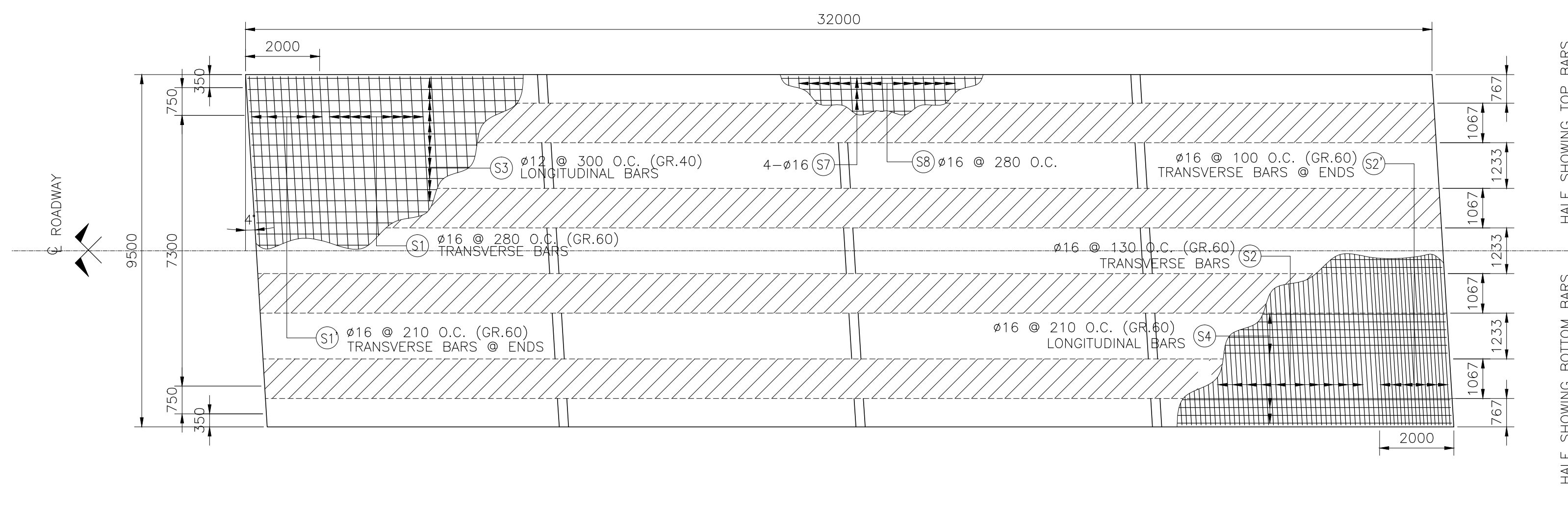
ITEM NO.	DESCRIPTION	UNITS	ABUTMENTS		PIER	SUPERSTRUCTURE	TOTAL
			A	B			
103 (2) a	Bridge Excavation (Common Soil)	cu.m.	234	96			330
104 (1) a	Embankment (From Roadway Excavation)	cu.m.	1740	1142			2882
202 (1)	Crushed Aggregate Base Course 202 (1)	cu.m.	37	37			74
400 (23) a9	Bored Pile (1.40m Diameter)	l.m.	60	60			120
400 (23) a19	Bored Pile (2.6m Diameter)	l.m.			45		45
400 (23) i1	Permanent Casing (1.40 dia. x 12mm thk)	ea.	18	18			36
400 (24) s1	Permanent Casing (2.60 dia. x 12mm thk)	l.m.			18		18
400 (27) a	Load Test (Low Strain Dynamic Method, PIT)	l.m.	2	2	2		6
400 (28)	Load Test (Pile Dynamic Method, PDA)	ea.	1	1	1		3
401 (2) a	Concrete Railing (Standard)	l.m.				1020	1020
404 (1) a	Reinforcing Steel Bar (GRADE 40)	kgs.	999	999		5517	7515
404 (1) b	Reinforcing Steel Bar (GRADE 60)	kgs.	7654	8233	16213	19476	51576
405 (1) b2	Structural Concrete Class "A" (f'c=27.58 Mpa), 14days	cu.m.	37	37			74
405 (1) b3	Structural Concrete Class "A" (f'c=27.58 Mpa), 28days	cu.m.	53	53	71	246	424
406 (1) g7	Prestressed Structural Concrete Members (Type V, L=32m I-Girders)	ea.				8	8
407 (8)	Lean Concrete (Class B, 16.50 Mpa)	cu.m.	7	7			14
412 (1)	Elastomeric Bearing Pad DURO 60	ea.	4	4	8		16
507 (1)	Rubble Concrete	cu.m.	143	135			278
508 (1)	Hand Laid Rock Embankment	cu.m.	234	96			330
517 (1) a	Drain Pipe 100mm Diameter, Galvanized Pipe including Pipe Fittings	l.m.				208	208
SPL - 801	Premolded Expansion Joint Filler with Sealant	sq.m.	26	26	4		56

NOTE: REINFORCING BAR QUANTITIES FOR PRESTRESSED GIRDERS ARE NOT INCLUDED.

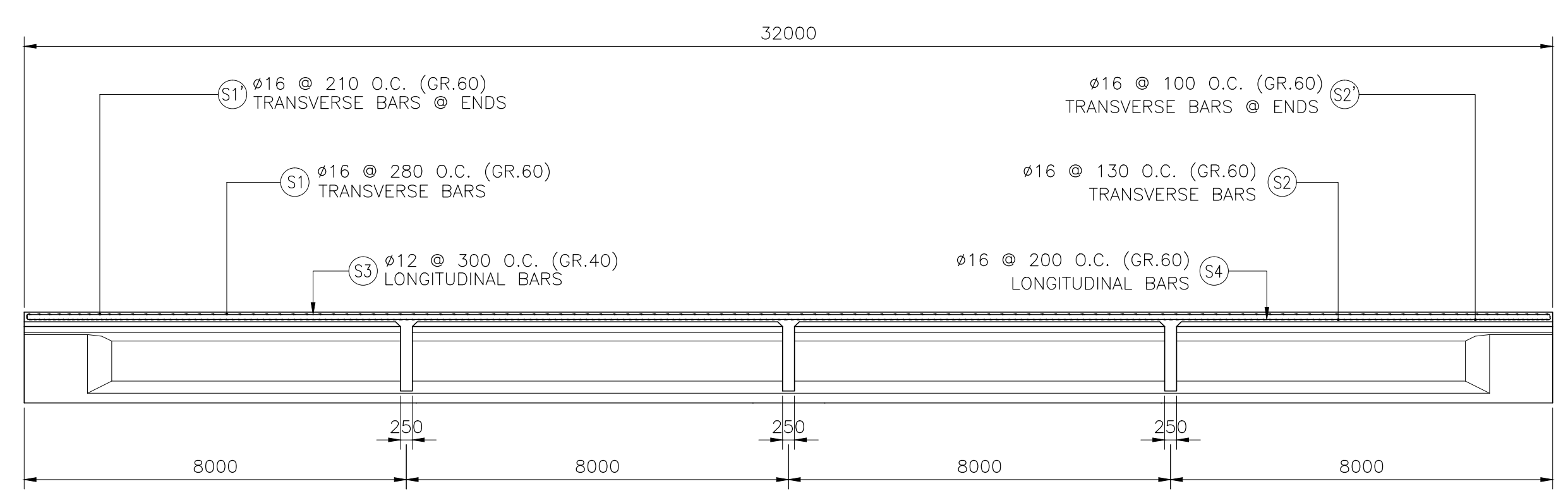
NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.

ENGR. ALBERTO C. CAÑETE
TEAM LEADER

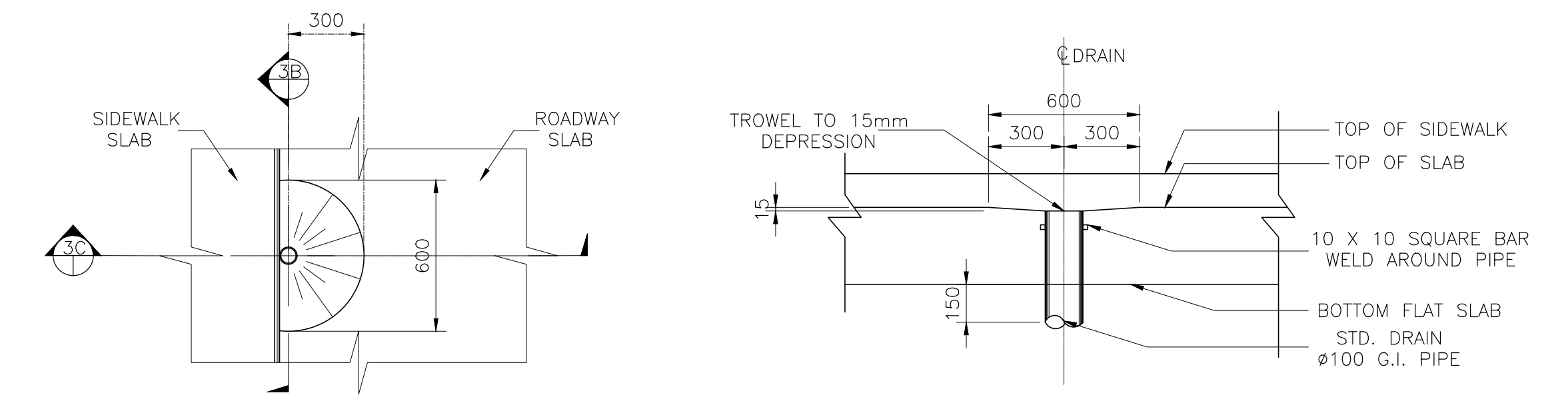
CONSULTANTS UIC CORPORATE BLDG., 8 LANES STREET, WISRA, DUKMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	 CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITO M. SUNGA OIC - PMD DATE: -	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 3 GENERAL PLAN GENERAL ELEVATION GENERAL SECTION	SCALE AS SHOWN PROJECT CODE P303-01 DATE APPROVED DATE REVISED 	DRAWING STATUS DRAFT DRAWING DRAWING NO. A1 SIZE
	GENERAL PLAN GENERAL ELEVATION GENERAL SECTION								



1 DECK SLAB PLAN
SCALE 1:100

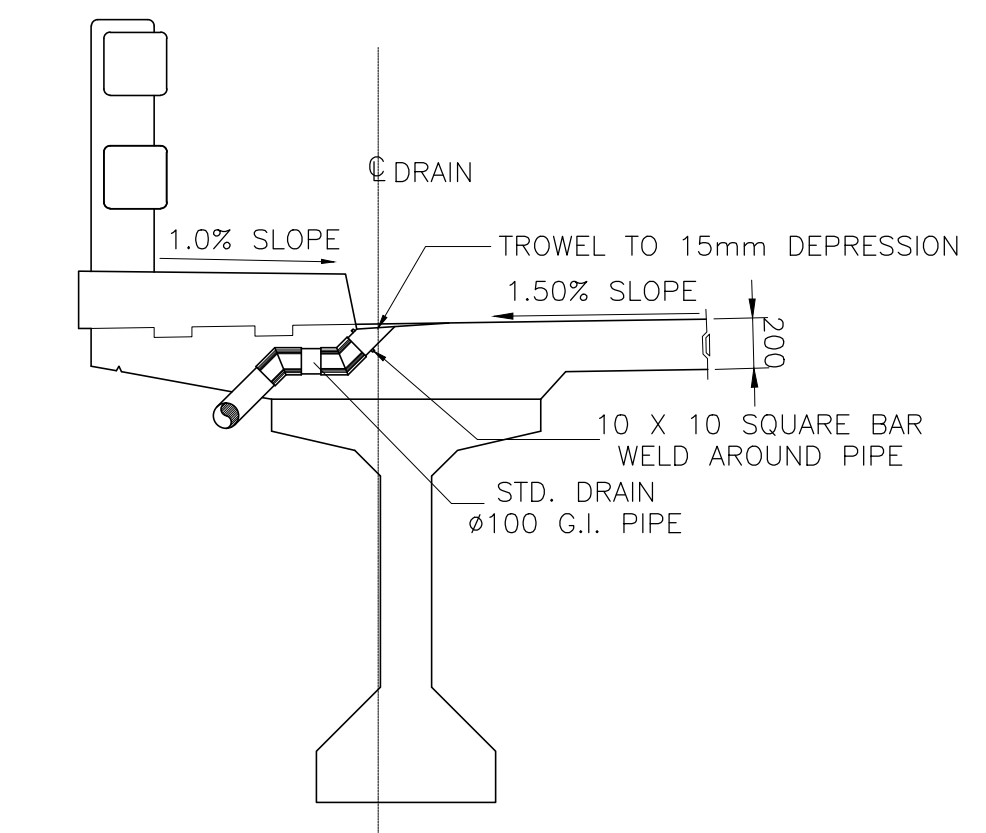


2 LONGITUDINAL SECTION
SCALE 1:100



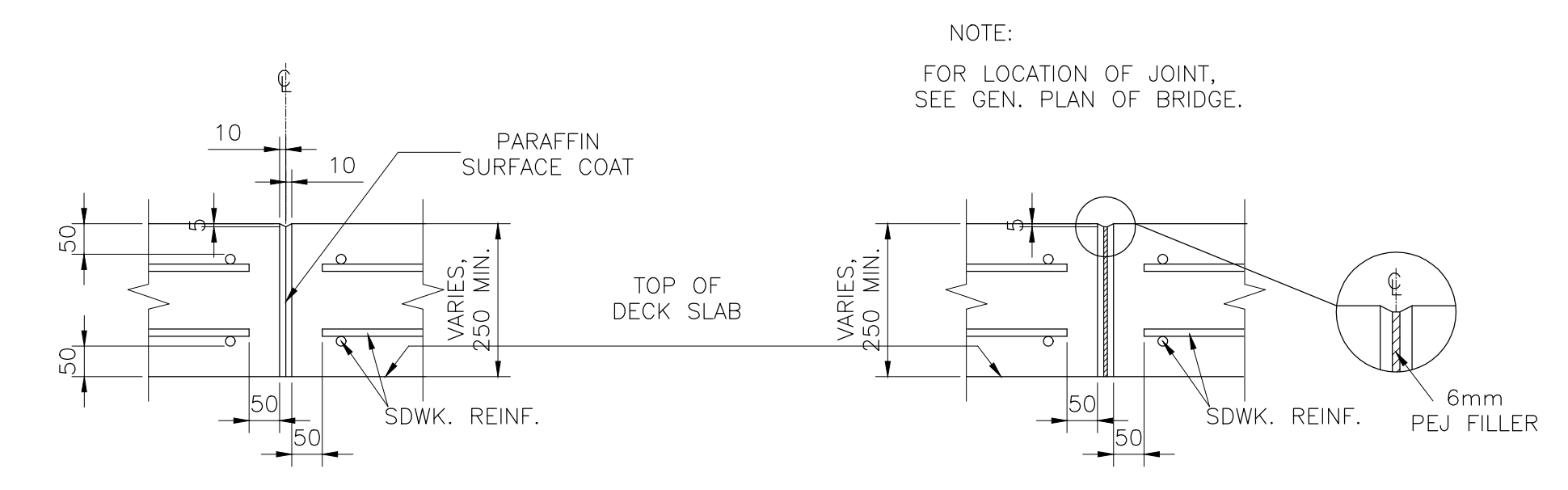
3A PLAN
SCALE 1:20

3B ELEVATION
SCALE 1:20



3C SECTION
SCALE 1:30

3 TYPICAL DRAIN DETAILS
SCALE NTS



4A PARAFFIN JOINT
SCALE 1:10

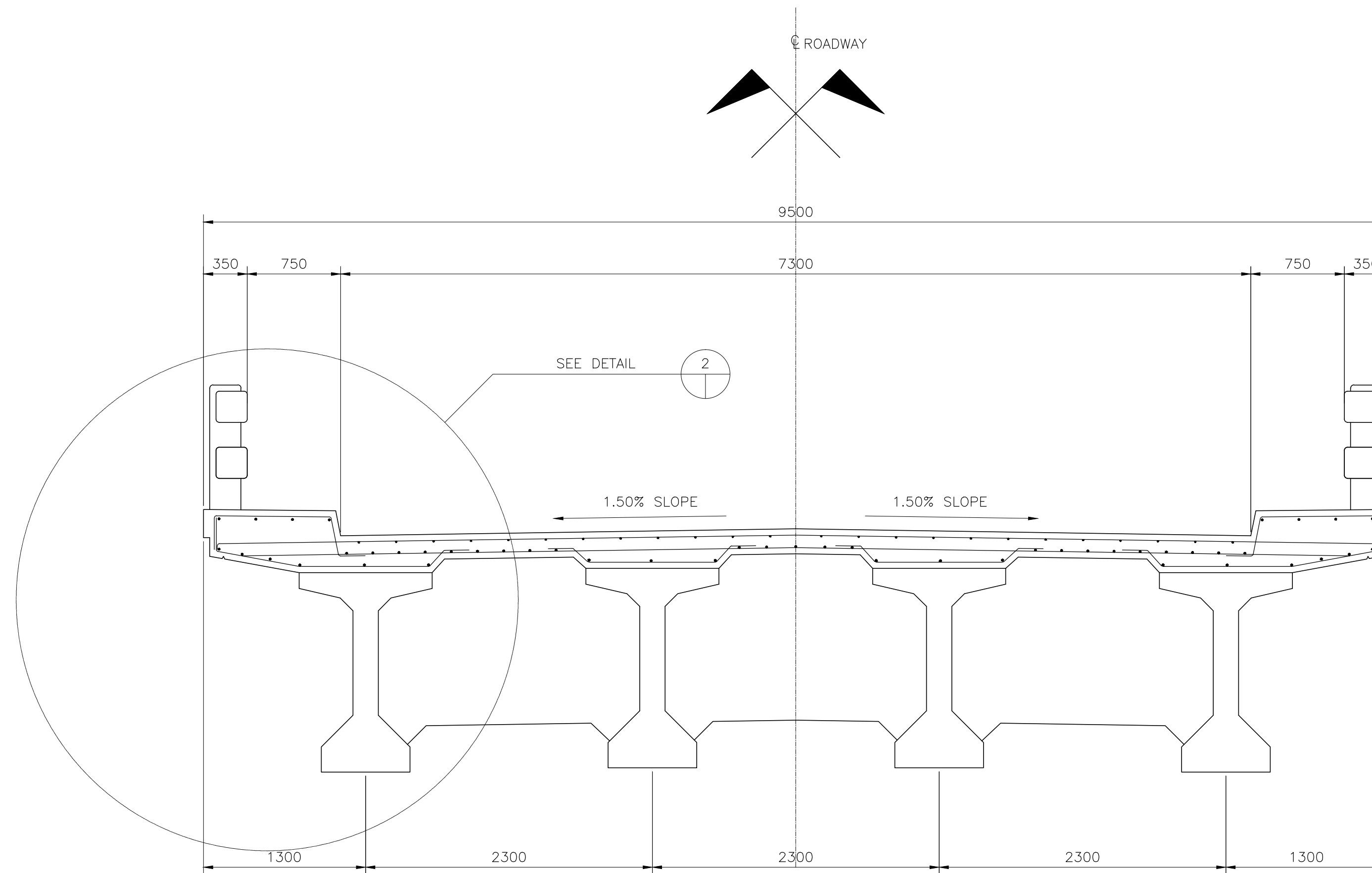
4B DEFLECTION JOINT
SCALE 1:10

4 JOINT DETAILS
SCALE NTS

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184,
APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY
THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE
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TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.

ENGR. ALBERTO C. CAÑETE
TEAM LEADER

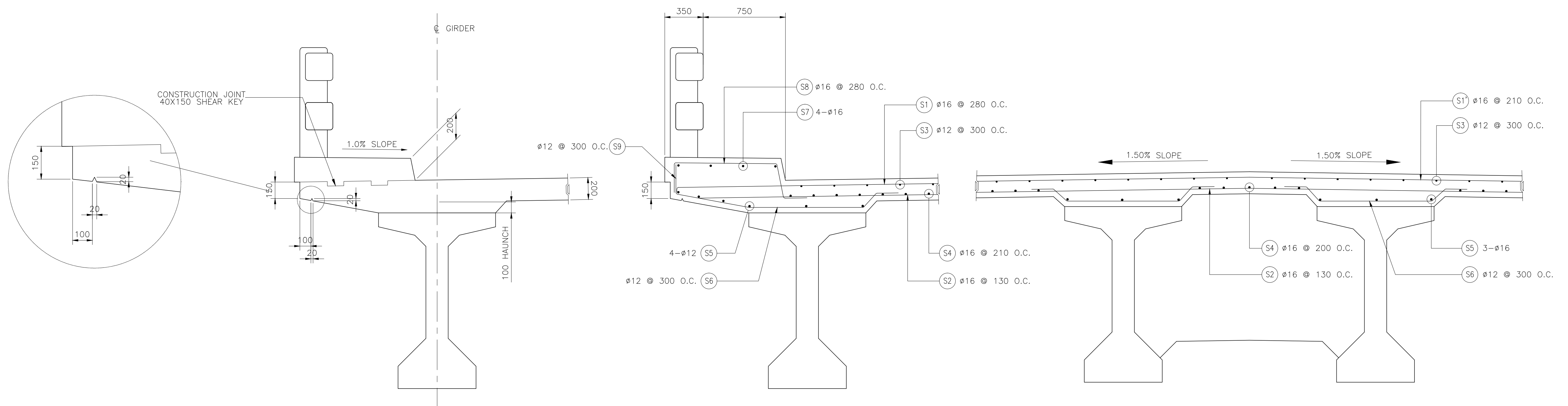
CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, VIGRA, DALMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	 CHECKED BY RYAN PAUL S. GALLURA PROJECT MANAGER DATE: -	APPROVED BY JOVITO M. SUNGA OIC - PMD DATE: -	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 3 DECK SLAB PLAN LONGITUDINAL SECTION TYPICAL DRAINS AND JOINTS	SCALE AS SHOWN PROJECT CODE P303-02 DATE APPROVED DATE REVISED -	DRAWING STATUS DRAFT DRAWING DRAWING NO. P303-02 REV. A1
	UIC CORPORATE BLDG., 8 LANOS STREET, VIGRA, DALMAN, QUEZON CITY, 1128								



1 CROSS SECTION @ MIDSPAN
SCALE 1:30

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
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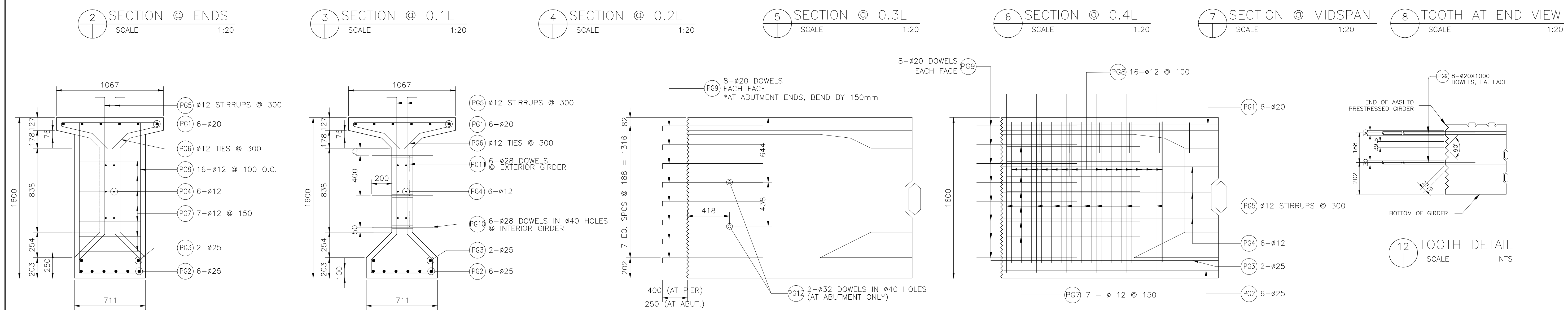
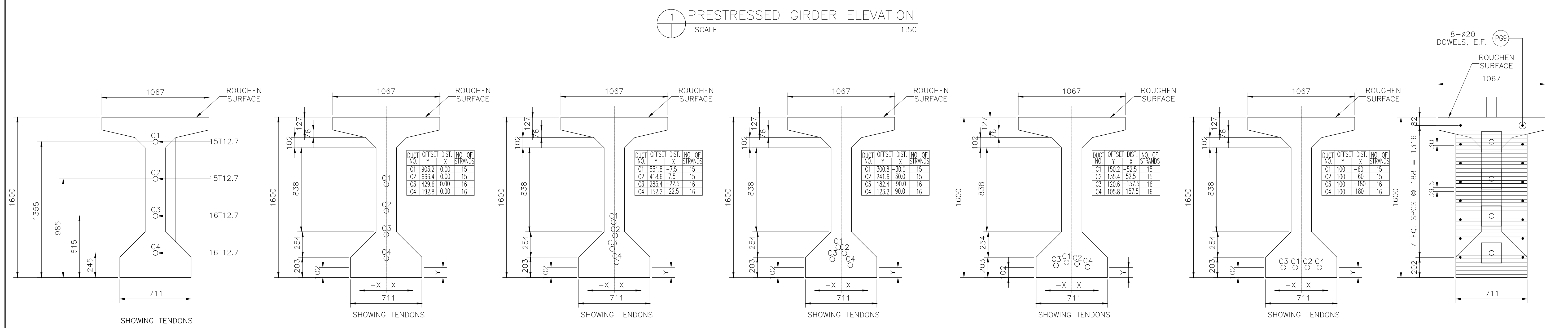
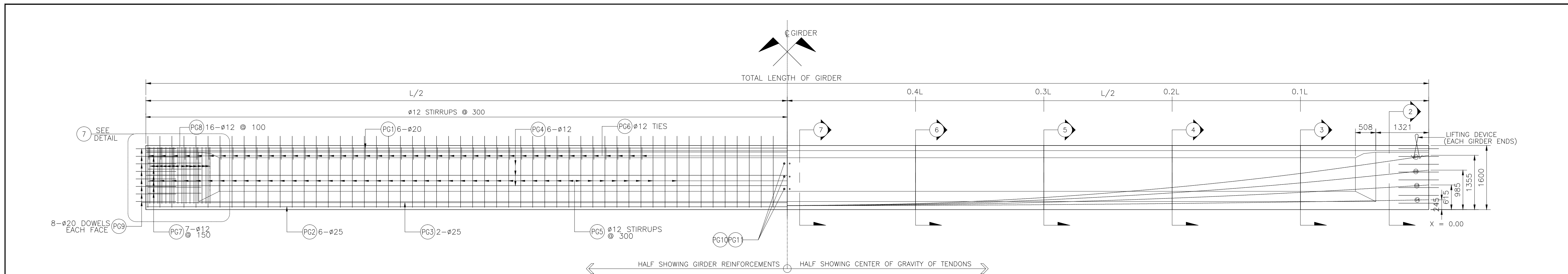
ENGR. ALBERTO C. CAÑETE
TEAM LEADER



3 DRIP GROOVE & SHEAR KEY DETAILS
SCALE 1:20

3 TRANSVERSE SECTION
SCALE 1:20

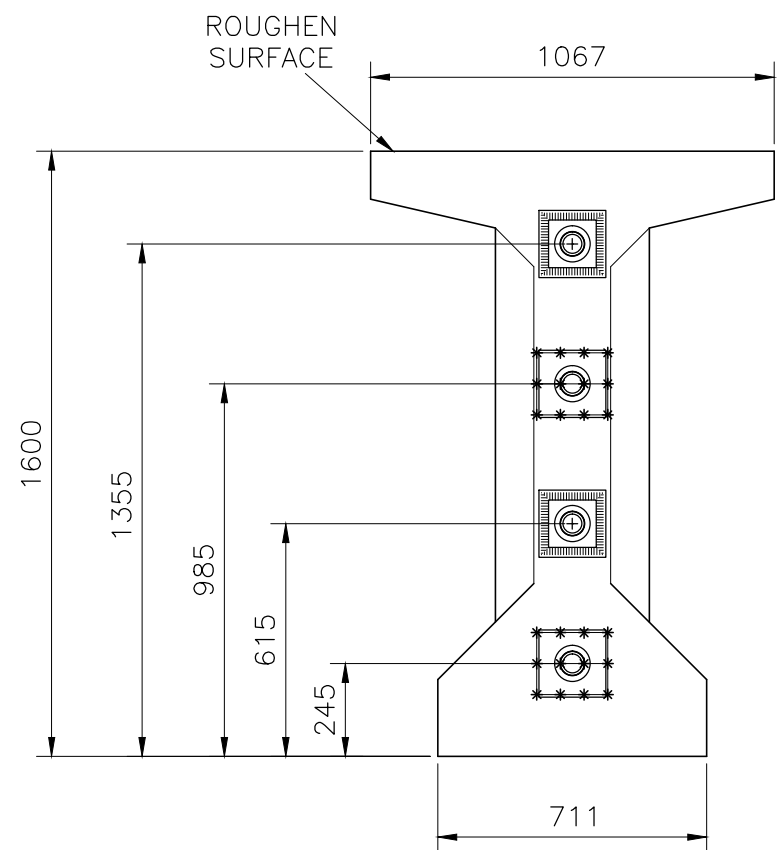
CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, VASRA, DALMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITO M. SUNGA OIC - PMD DATE: -	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 3	SCALE AS SHOWN PROJECT CODE P303-03	DRAWING STATUS DRAFT DRAWING DRAWING NO. A1	DATE APPROVED DATE REVISED REV.
	CROSS SECTION TRANSVERSE SECTION							DATE APPROVED DATE REVISED REV.	DATE APPROVED DATE REVISED REV.	DATE APPROVED DATE REVISED REV.



NOTE:
 PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REGULATING RULES AND REGULATIONS OF RA 9184,
 APPROVED BY THE AUTHORIZED OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY
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ENGR. ALBERTO C. CAÑETE
 TEAM LEADER

CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, MISRA, DILMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI DATE: -		REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 3	SCALE AS SHOWN PROJECT CODE P303-0	DRAWING STATUS DRAFT DRAWING DRAWING NO. A1
	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITO M. SUNGA OIC - PMD DATE: -	TYPE V GIRDER ELEVATION AND SECTIONS		DATE APPROVED 	DATE REVISED 	REV. 	



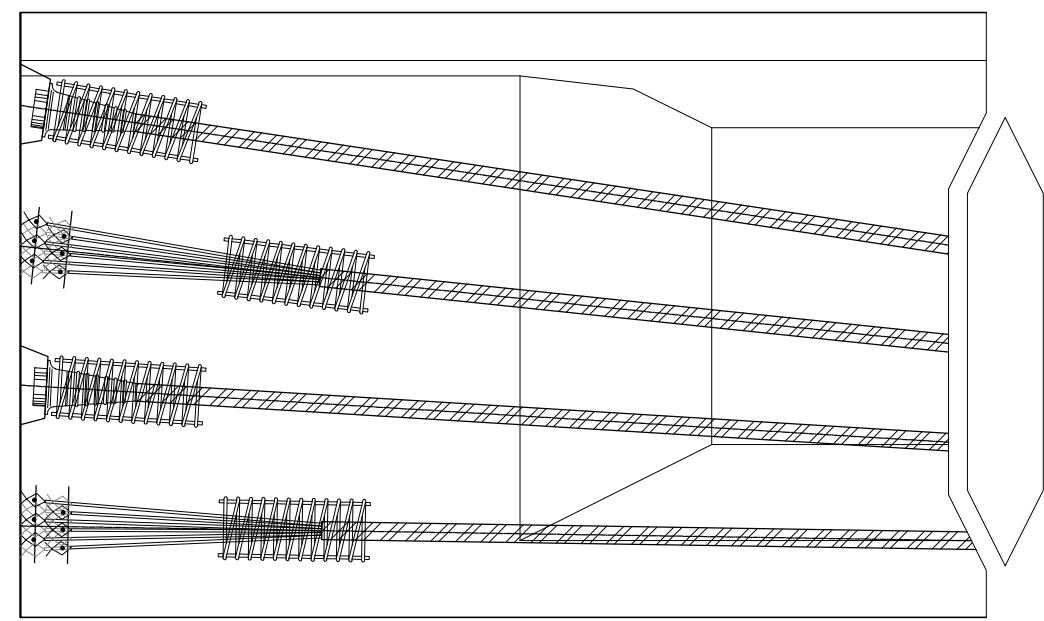
1 SECTION @ LEFT
SCALE 1:20

CABLE 1
(10 / 15 12.7 D)

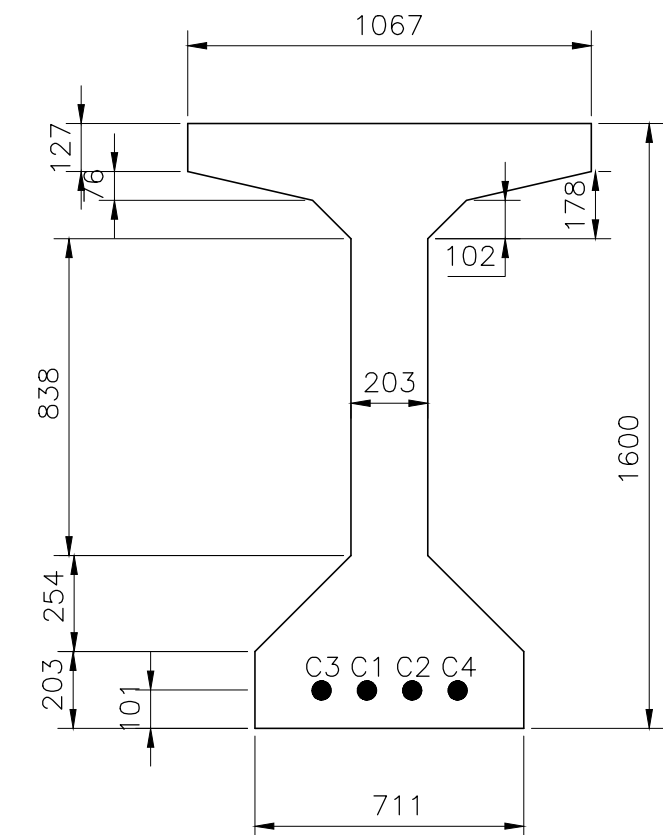
CABLE 2
(10 / 15 12.7 L)

CABLE 3
(10 / 16 12.7 D)

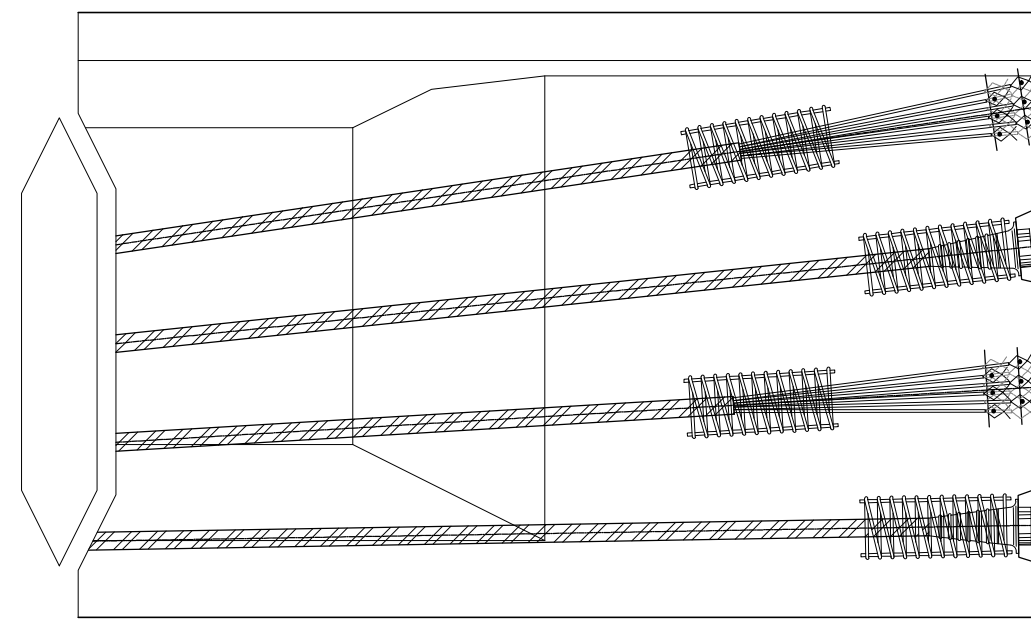
CABLE 4
(10 / 16 12.7 L)



2 ELEVATION @ LEFT
SCALE 1:20



3 SECTION @ MIDSPAN
SCALE 1:20



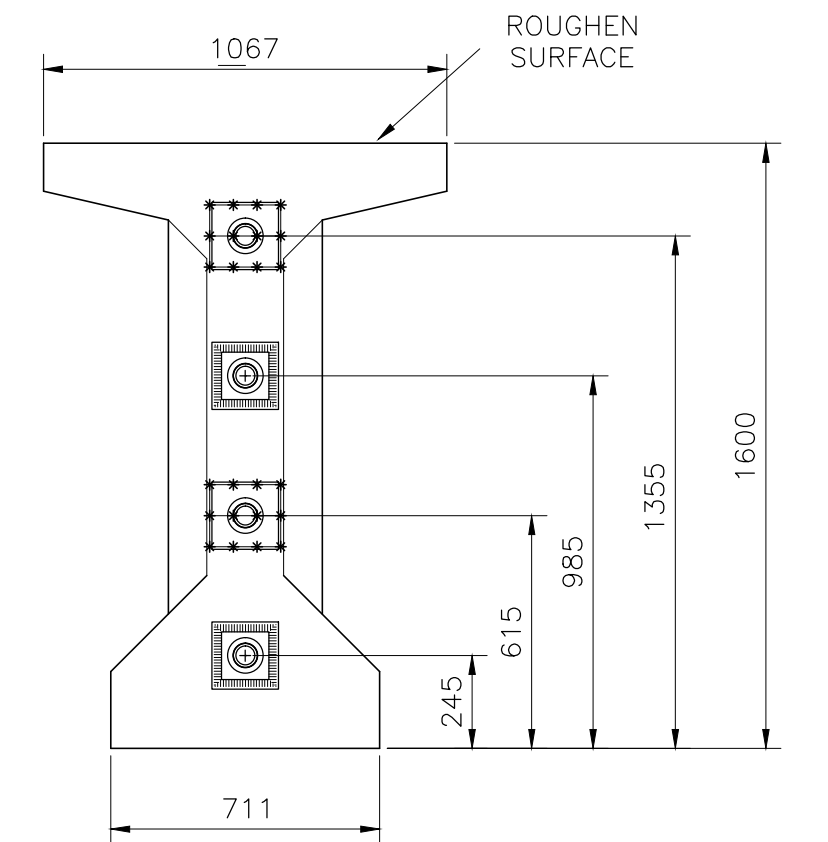
4 ELEVATION @ RIGHT
SCALE 1:20

CABLE 1
(10 / 15 12.7 D)

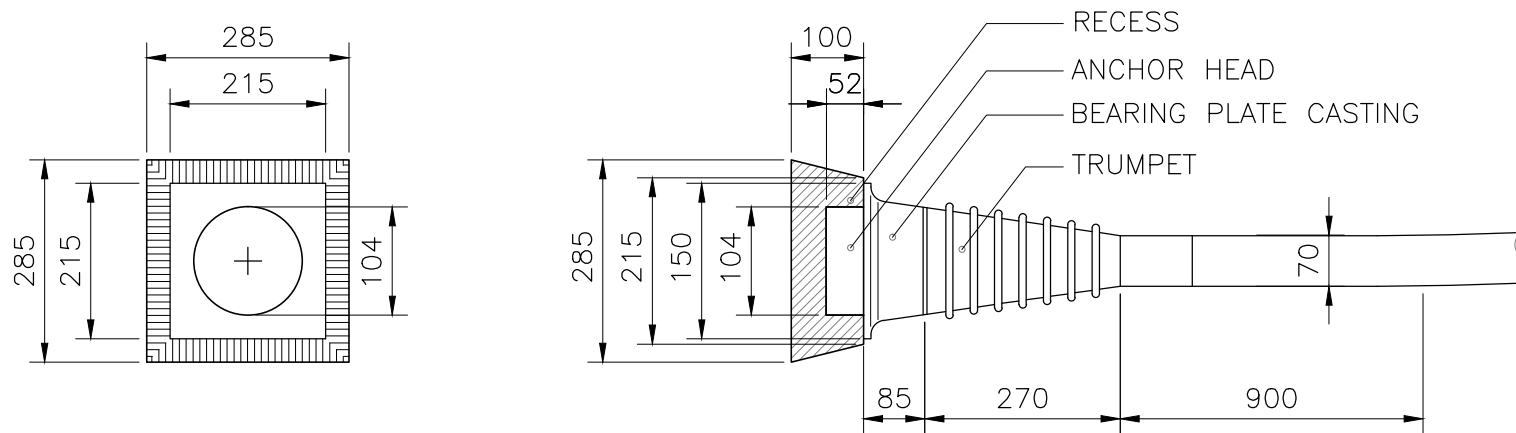
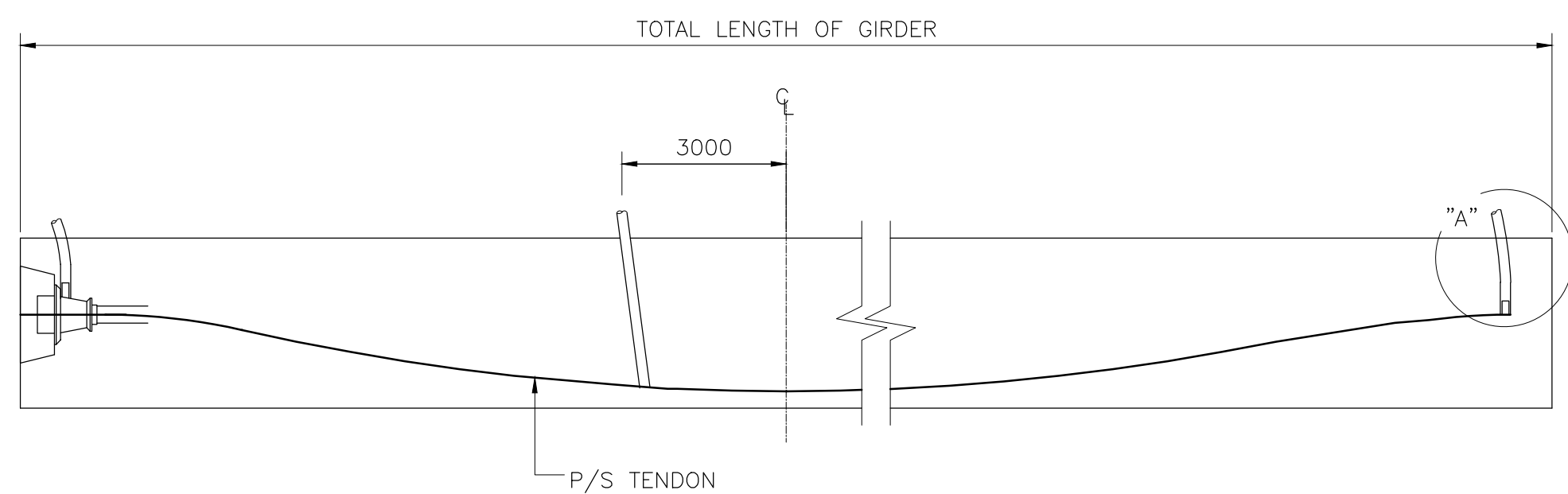
CABLE 2
(10 / 15 12.7 L)

CABLE 3
(10 / 16 12.7 D)

CABLE 4
(10 / 16 12.7 L)

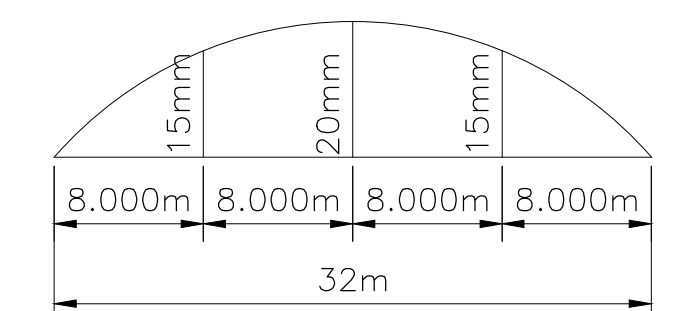


5 SECTION @ RIGHT
SCALE 1:20



7 COMPACT STRESSING ANCHORAGE
SCALE NTS

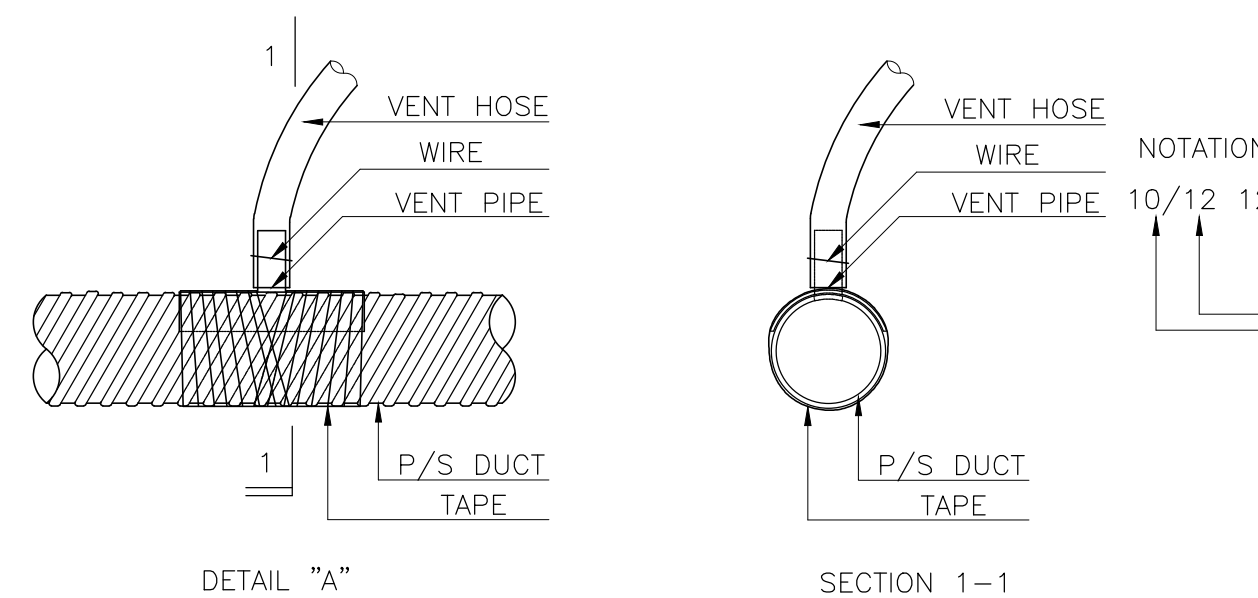
CABLE NO.	NO. OF STRANDS	JFORCE
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2	15	2032.5
3	16	2168.0
4	16	2168.0
TOTAL JACKING FORCE =		8401.00kN



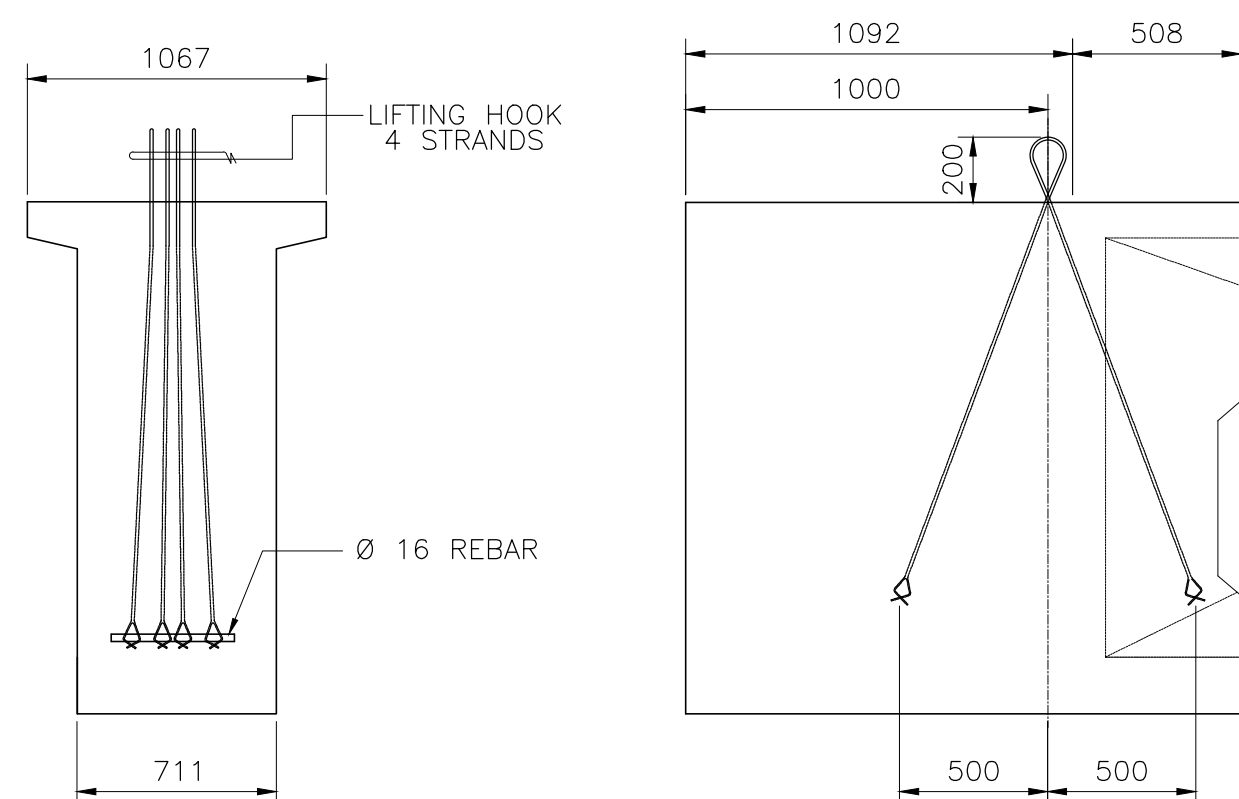
11 CAMBER DIAGRAM
SCALE NTS

GIRDER DESIGN GUIDE:

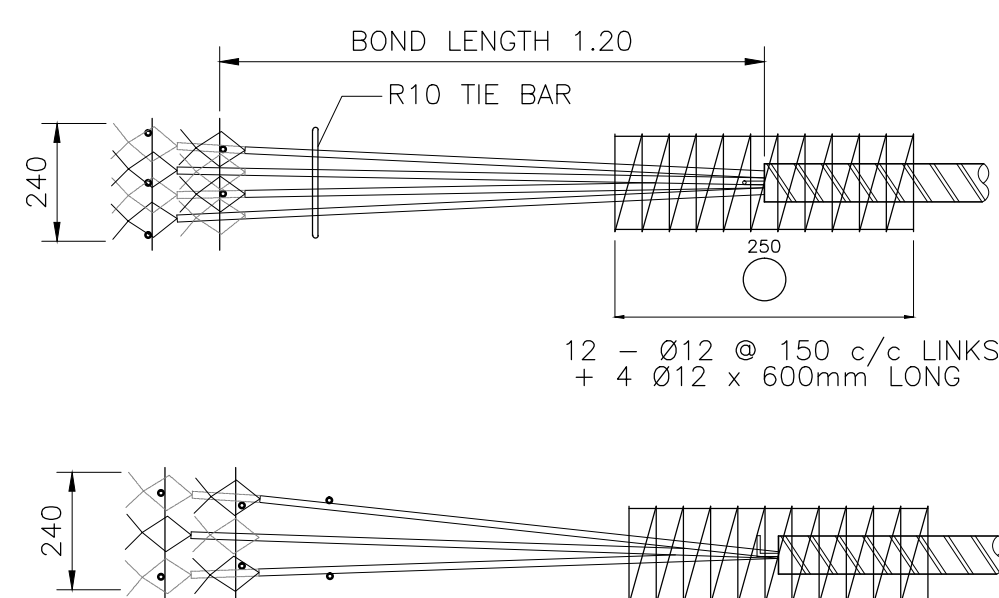
1. POST TENSIONING STEEL: THE PROPOSED TYPE OF TENDONS WHICH WILL BE USED IN THE POST TENSIONED DESIGN, ALL NECESSARY ADDITIONAL DETAILS INCLUDING THOSE FOR END ANCHORAGES, METHODS TO BE EMPLOYED AND PROCEDURES TO BE FOLLOWED SHALL BE AS APPROVED BY THE ENGINEER. A PORTION OF THE TENDONS SHALL BE DRAPED LONGITUDINAL IN PARABOLIC POSITIONS. ALL TENDONS SHALL BE PLACED SO THAT THEIR CENTER OF GRAVITY WILL BE AT THE POSITION SHOWN ON PLANS. THE TOTAL POST TENSION FORCE AFTER LOSSES REQUIRED AT MID SPAN SHALL BE PROVIDED AS CALLED FOR IN THE VARIOUS DESIGN. THE REQUIRED FORCES AFTER LOSSES SHALL BE OBTAINED BY APPLYING INITIAL TENSILE FORCES OF SUFFICIENT MAGNITUDE TO ALLOW FOR ALL SUBSEQUENT LOSSES, INCLUDING THOSE FOR PLASTIC SHORTENING, SHRINKAGE, CREEP, RELAXATION, FRICTION AND EFFICIENCY OF END ANCHORAGE. ALL TENDONS SHALL BE PRESSURE GROUTED IN THEIR CONDUITS IN ACCORDANCE WITH SPECIFICATIONS.
2. CONCRETE FOR GIRDSERS SHALL HAVE AN INITIAL STRENGTH OF 35 N/mm² (5,000 PSI) AND A MINIMUM STRENGTH OF 41 N/mm² (6,000 PSI) AT THE AGE OF 28 DAYS.
3. CONCRETE FOR CAST-IN-PLACE SLAB HAVE A MINIMUM STRENGTH OF 28 N/mm² (4,000 PSI) AT THE AGE OF 28 DAYS.
4. THE CONTRACTOR MAY PROPOSE ANY ALTERNATIVE TENDONS SIZE AND LAYOUT AND SUBJECT SHALL MEET THE APPROVAL OF THE ENGINEER.
5. THE REQUIRED STRENGTH OF CONCRETE AT TIME OF TENSIONING SHALL BE 35 MPa (5,000 PSI). A GRID CONSISTING OF Ø 12 BARS AT 100 CENTERS IN BOTH DIRECTIONS SHALL BE PLACED NEAR EACH ANCHORAGE OF THE POST-TENSIONING SYSTEM. POST-TENSIONING FORCES SHOWN BELOW COMPUTED FOR TENDONS JACKED SIMULTANEOUSLY AT BOTH ENDS, FRICTIONS COEFFICIENTS ARE $k = 0.0066/m$ AND $u = 0.25$ WITH AN ANCHORAGE DEFORMATION OF 6mm.
6. HANDLING PRESTRESSED CONCRETE BEAMS : THE BEAMS SHALL BE MAINTAINED IN AN UPRIGHT POSITION AND SHALL BE LIFTED BY SUITABLE DEVICES PROVIDED AT THE ENDS OF THE BEAMS. ATTENTION IS DIRECTED TO THE INCREASED DIFFICULTY OF LIFTING BEAMS WITHOUT END BLOCKS. THE CONTRACTOR'S PROPOSED LIFTING DETAILS SHOULD BE GIVEN CAREFUL CONSIDERATION BEFORE BEING SUBMITTED ON SHOP DRAWING FOR APPROVAL. THE USE OF HOLES FOR LIFTING PURPOSES WILL NOT BE PERMITTED.
7. CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE ENGINEER THE CALCULATED ELONGATION OF THE PRESTRESSING TENDONS CORRESPONDING TO THE REQUIRED JACKING FORCES
8. ALL REINFORCING BARS SHALL BE GRADE 60.



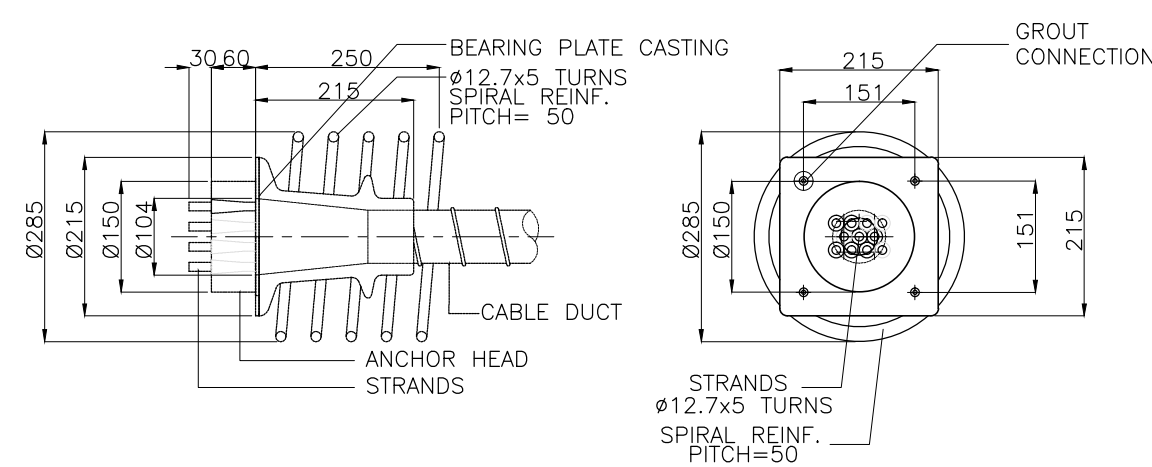
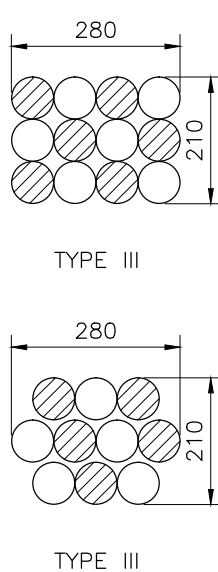
6 TYP. SPACING FOR GROUTING VENTS
SCALE NTS



8 LIFTING HOOK DETAILS
SCALE NTS



9 BURSTING STEEL DEAD-END ANCHORAGE
SCALE NTS



10 PRIMARY BURSTING STEEL
SCALE NTS

NOTE:
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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

CONSULTANTS

Urban Integrated Consultants, Inc.
120 CORPORATE BLDG., 8 LAKES STREET, WISRA, DILMAN, QUEZON CITY, 1128

SUBMITTED BY

EFREN L. DAVID
PRESIDENT - UICI

DATE: -

DESIGNED BY

ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP
PROJECT MANAGER - UICI

DATE: -

CHECKED BY

RYAN PAUL S. GALURA
PROJECT MANAGER

DATE: -

APPROVED BY

JOVITO M. SUNGA
OIC - PMD

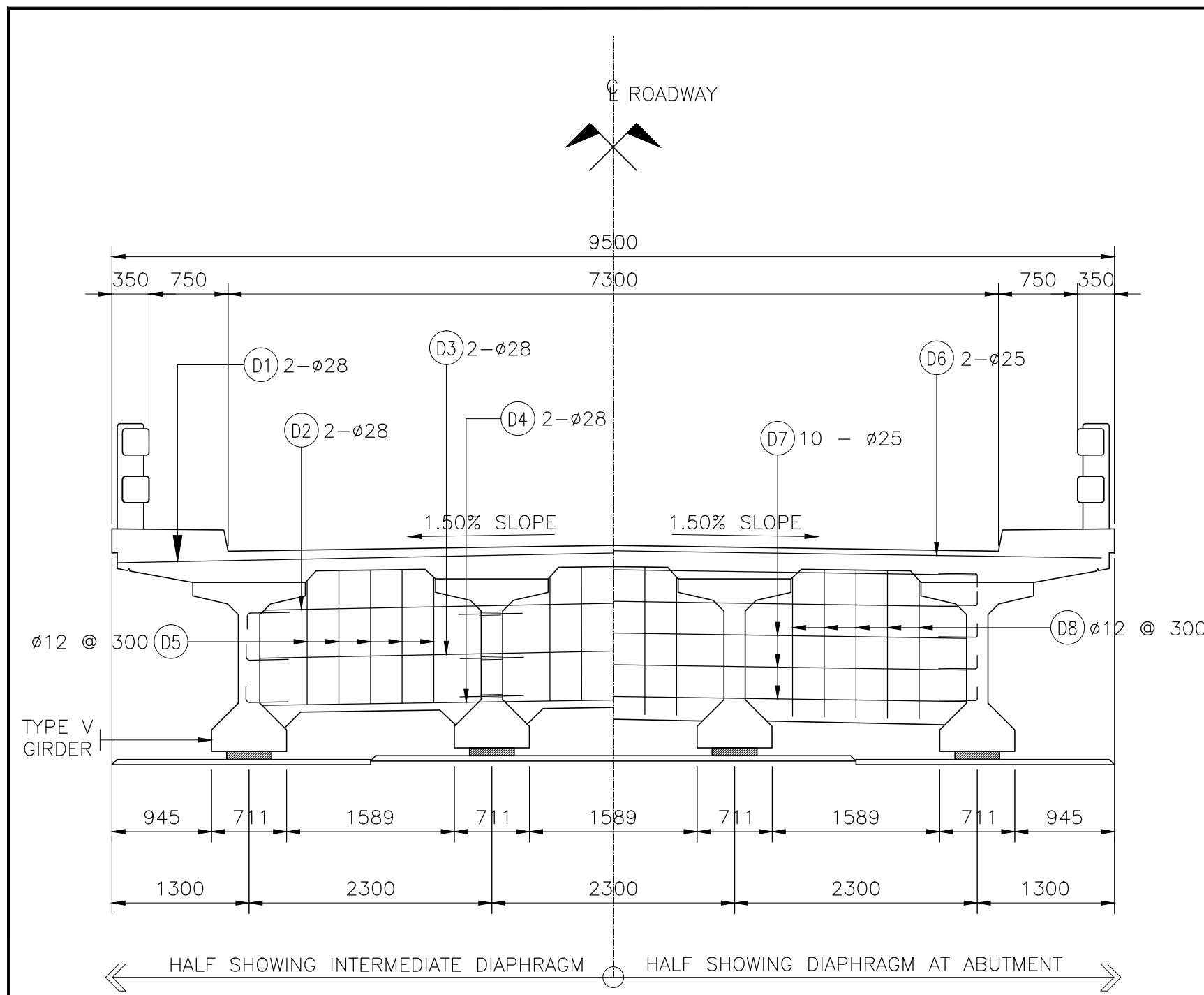
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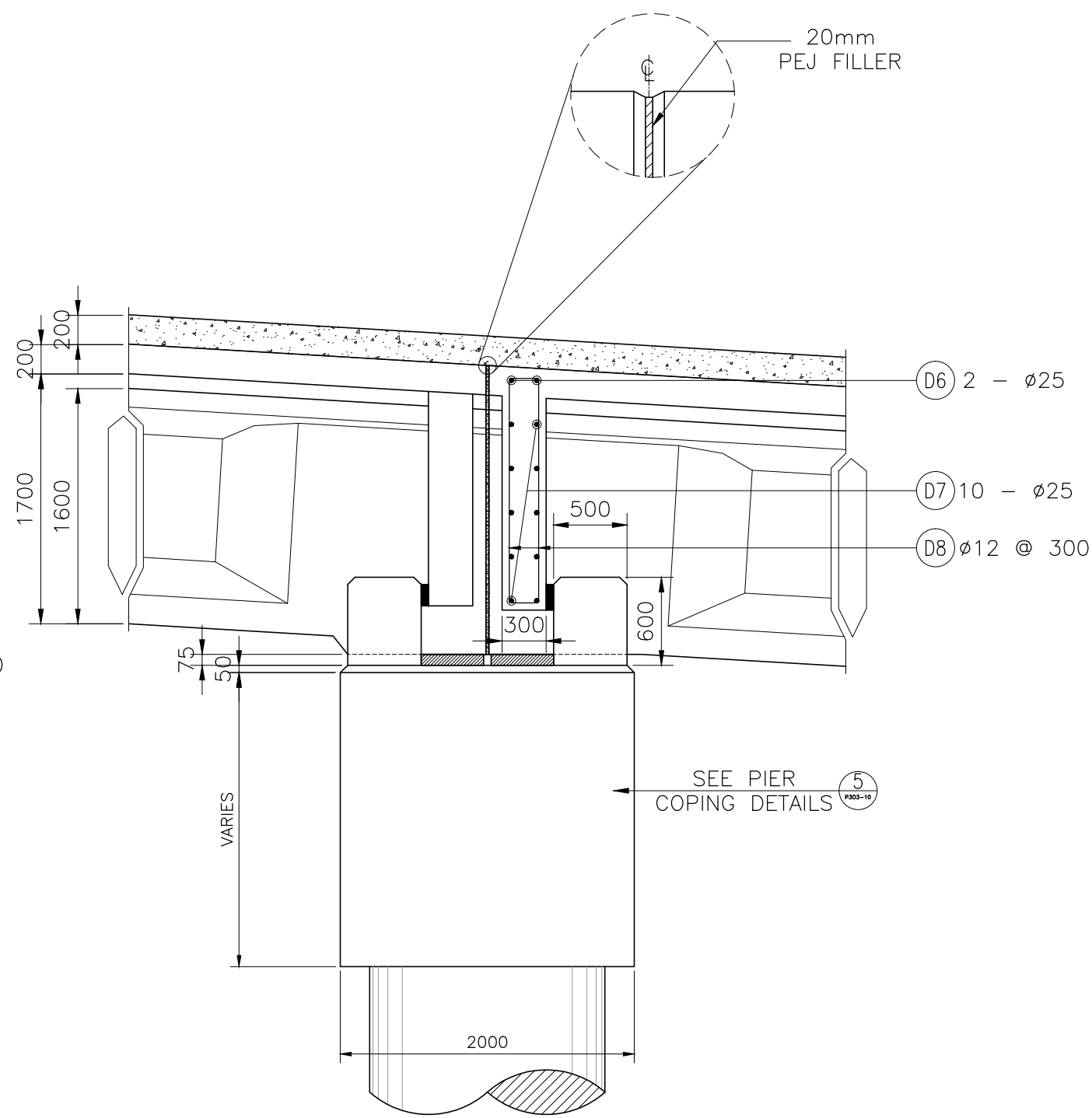
REVISIONS	DATE
A	
B	
C	
D	
E	
F	

PROJECT TITLE	SCALE	DRAWING STATUS
DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING
SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 3	PROJECT CODE	DRAWING NO. SIZE
		P303-05 A1
	DATE APPROVED	DATE REVISED

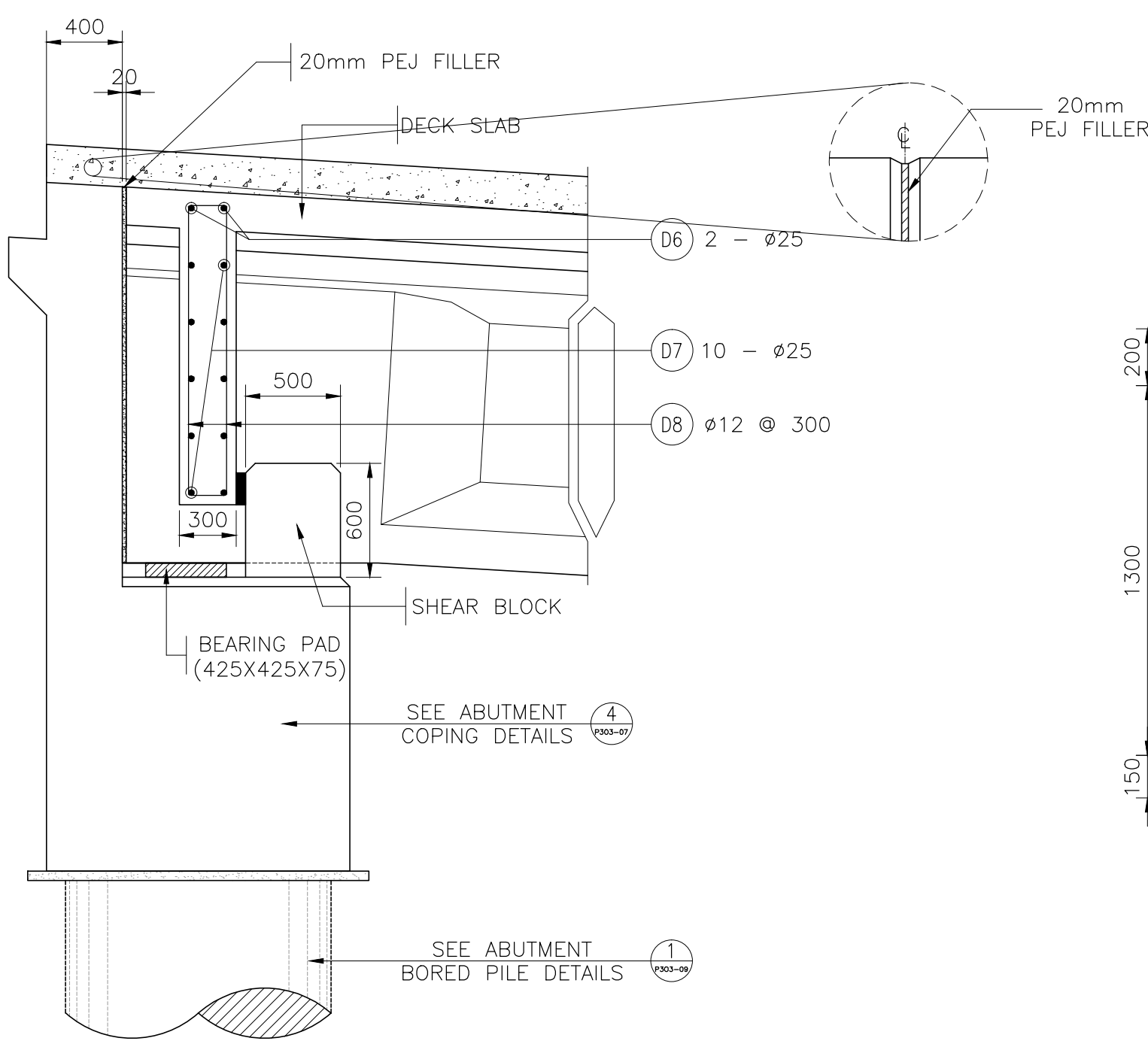
TITLE V GIRDER DETAILS



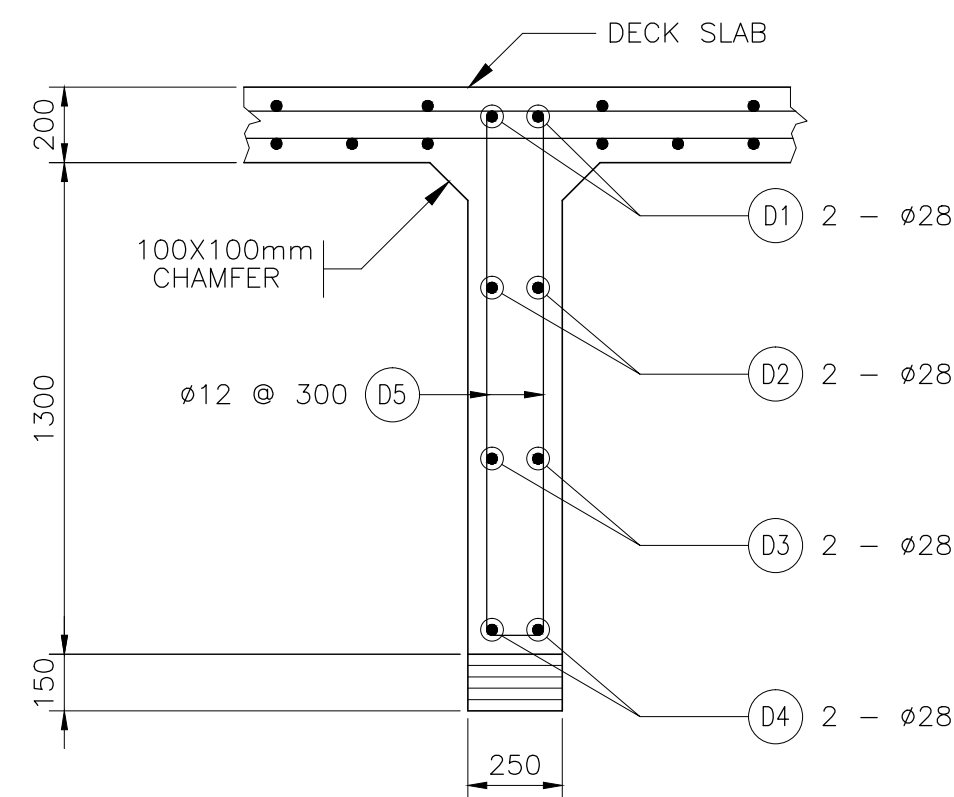
1 DIAPHRAGM ELEVATION
SCALE 1:50



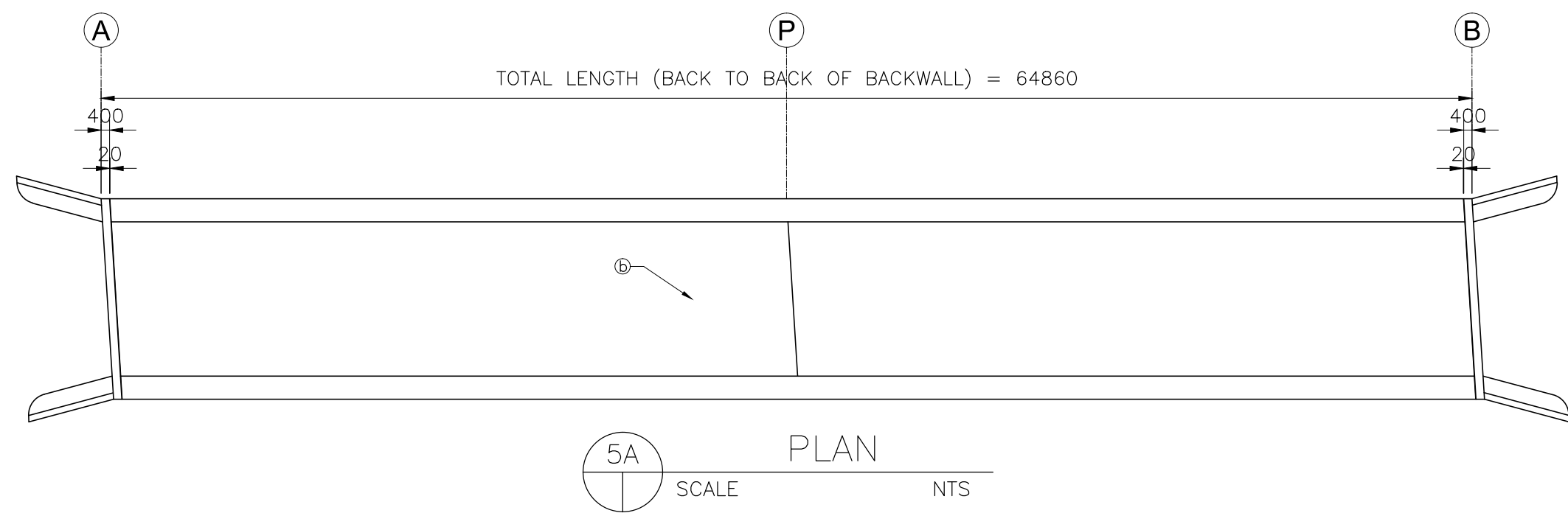
2 DIAPHRAGM @ PIER
SCALE 1:40



3 DIAPHRAGM @ ABUTMENT
SCALE 1:30



4 INTERMEDIATE DIAPHRAGM
SCALE 1:20



5A PLAN
SCALE NTS

5 CONCRETE POURING SEQUENCE
SCALE NTS

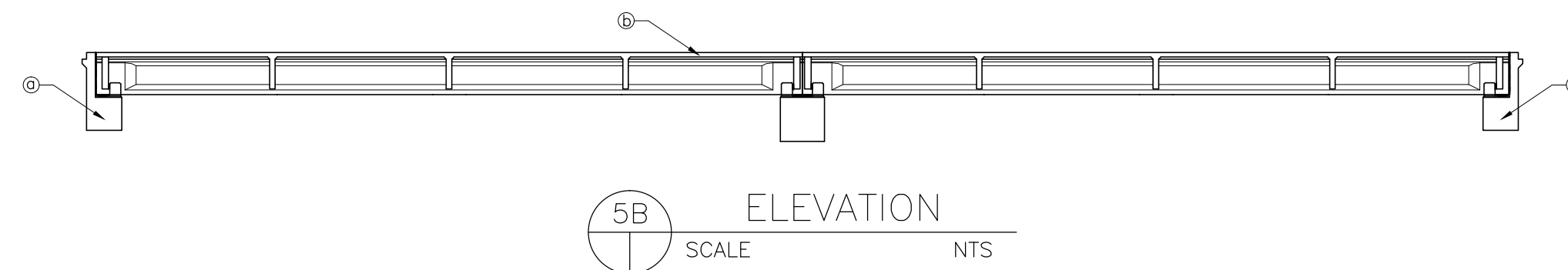
SCHEDULE OF REINFORCEMENTS FOR DECK SLAB & DIAPHRAGMS

BAR BENDING DIAGRAM	REINFORCING STEEL BARS				ALL DIMENSIONS ARE OUT TO OUT OF REBARS						TYPE	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)		
	MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e	f								
A	DECKSLAB																	
	S1	16	280	202	0.10	9.52	0.10											
	S1'	16	210	42	0.10	9.52	0.10											
	S2	16	130	434	0.10	9.52	0.10											
	S2'	16	100	82	0.10	9.52	0.10											
	S3	12	300	66	0.10	32.00	0.10											
	S4	16	210	42	0.10	32.00	0.10											
	S5	16	AS SHOWN	32	32.00													
	S6	16	300	862	0.25	1.00	0.25											
S7	16	AS SHOWN	16	32.00														
S8	16	280	462	0.20	1.00	0.20												
S9	12	300	432	0.20	0.20	0.20												
													Grade 40 bar			4464 Kgs		
													Grade 60 bar			16411 Kgs		
E	DIAPHRAGMS																	
	D1	28	AS SHOWN	12	3.50	3.50												
	D2	28	AS SHOWN	12	3.50	3.50												
	D3	28	AS SHOWN	12	3.50	3.50												
	D4	28	AS SHOWN	12	3.50	3.50												
	D5	12	300	194	1.42	0.17	1.42	0.17	0.144	0.144								
	D6	25	AS SHOWN	8	3.50	3.50												
	D7	25	AS SHOWN	40	3.50	3.50												
													Grade 40 bar			1053 Kgs		
													Grade 60 bar			3065 Kgs		
													Grade 40 bar			5517 Kgs		
													Grade 60 bar			19476 Kgs		
													Grade 40 bar			1053 Kgs		
													Grade 60 bar			3065 Kgs		
													Grade 40 bar			5517 Kgs		
													Grade 60 bar			19476 Kgs		
													Grade 40 bar			1053 Kgs		
													Grade 60 bar			3065 Kgs		
													Grade 40 bar			5517 Kgs		
													Grade 60 bar			19476 Kgs		

NOTE: 40db SPLICES ARE NOT INCLUDED
* 12 mm dia. and below are Grade 40
* 20 mm dia. and above are Grade 60

SCHEDULE OF REINFORCEMENTS & SUMMARY OF QUANTITIES FOR ONE (1) PRESTRESSED GIRDER ONLY

BAR BENDING DIAGRAM	GIRDER LENGTH (m)	REINFORCING STEEL BARS				ALL DIMENSIONS ARE OUT TO OUT OF REBARS						TYPE	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	REMARKS			
		MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e										
A	29.10	PG1	20	AS SHOWN	6	32.00							C	32.00	192.00	2.466	497	1. QUANTITIES ARE FOR 1 GIRDER ONLY. 2. PG10 IS FOR INTERIOR GIRDER ONLY. 3. PG11 IS FOR EXTERIOR GIRDER ONLY. 4. PG12 FOR ABUT. ONLY 5. PG13 FOR PIER ONLY 6. VERIFY ACTUAL LENGTH OF THE BRIDGE		
		PG2	25	AS SHOWN	6	32.00							C	32.00	192.00	3.853	777			
		PG3	25	AS SHOWN	2	32.00							C	32.00	64.00	3.853	259			
		PG4	12	AS SHOWN	4	32.00							A	32.00	128.00	0.888	119			
		PG5	12	300	215	0.45	1.35	0.60	0.16	0.635			G	3.20	686.93	0.888	640			
		PG6	12	300	108	1.00	0.50	0.32	0.20				F	2.02	218.16	0.888	203			
		PG7	12	AS SHOWN	7	0.50	1.10	0.52					D	2.12	14.84	0.888	14			
		PG8	12	AS SHOWN	16	1.52	0.60	1.14					C	3.26	52.16	0.888	49			
		PG9	20	AS SHOWN	16	1.00							A	1.00	16.00	2.466	41			
		PG10	28	AS SHOWN	6	0.603							A	0.60	3.62	4.834	18			
		PG11	28	AS SHOWN	6	0.25	0.40						H	0.65	3.90	4.834	20			
		PG12	32	AS SHOWN	4	1.467							A	1.47	5.87	6.313	39			
													TOTAL							
													Grade 40			1026				
													Grade 60			1652				

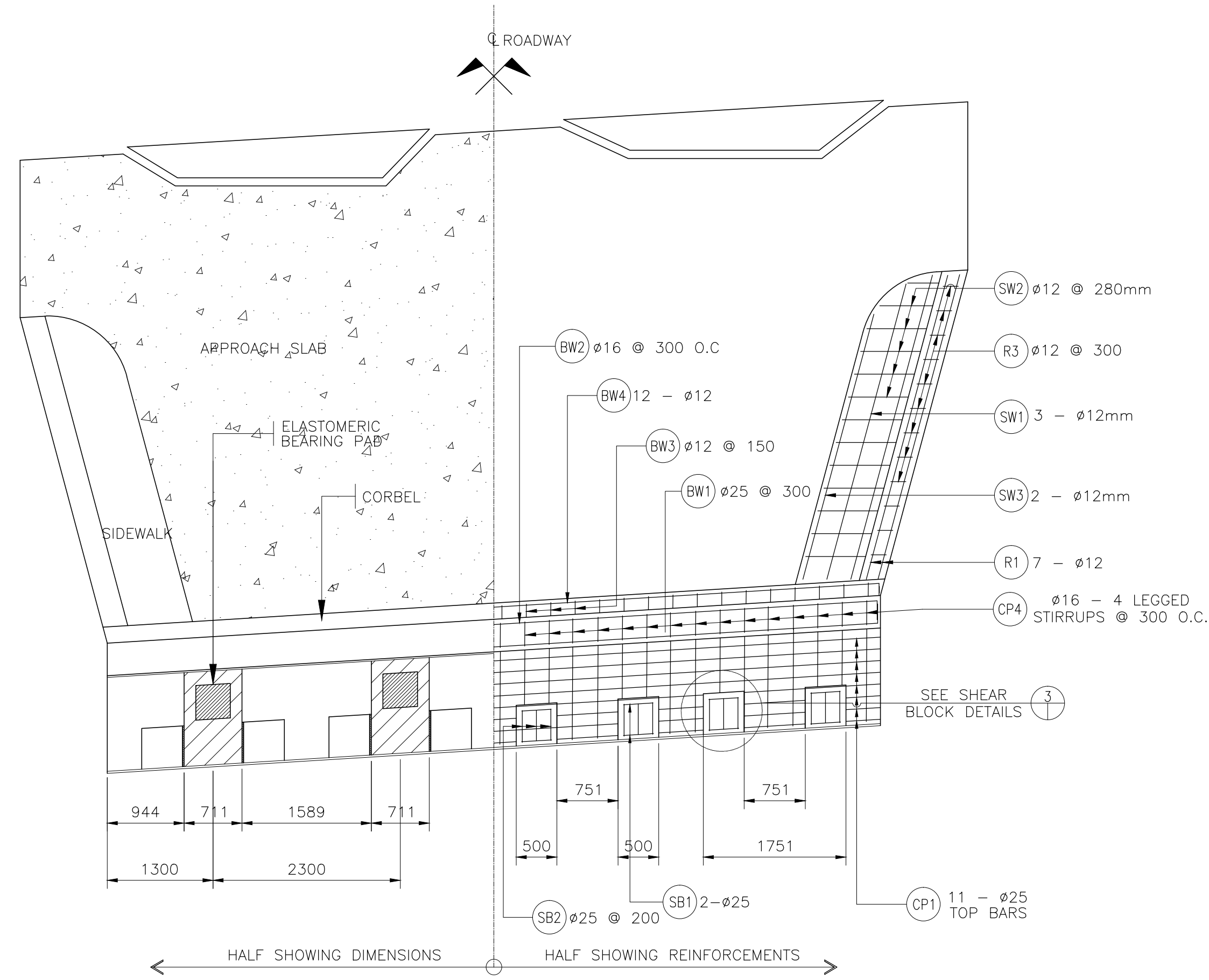


5B ELEVATION
SCALE NTS

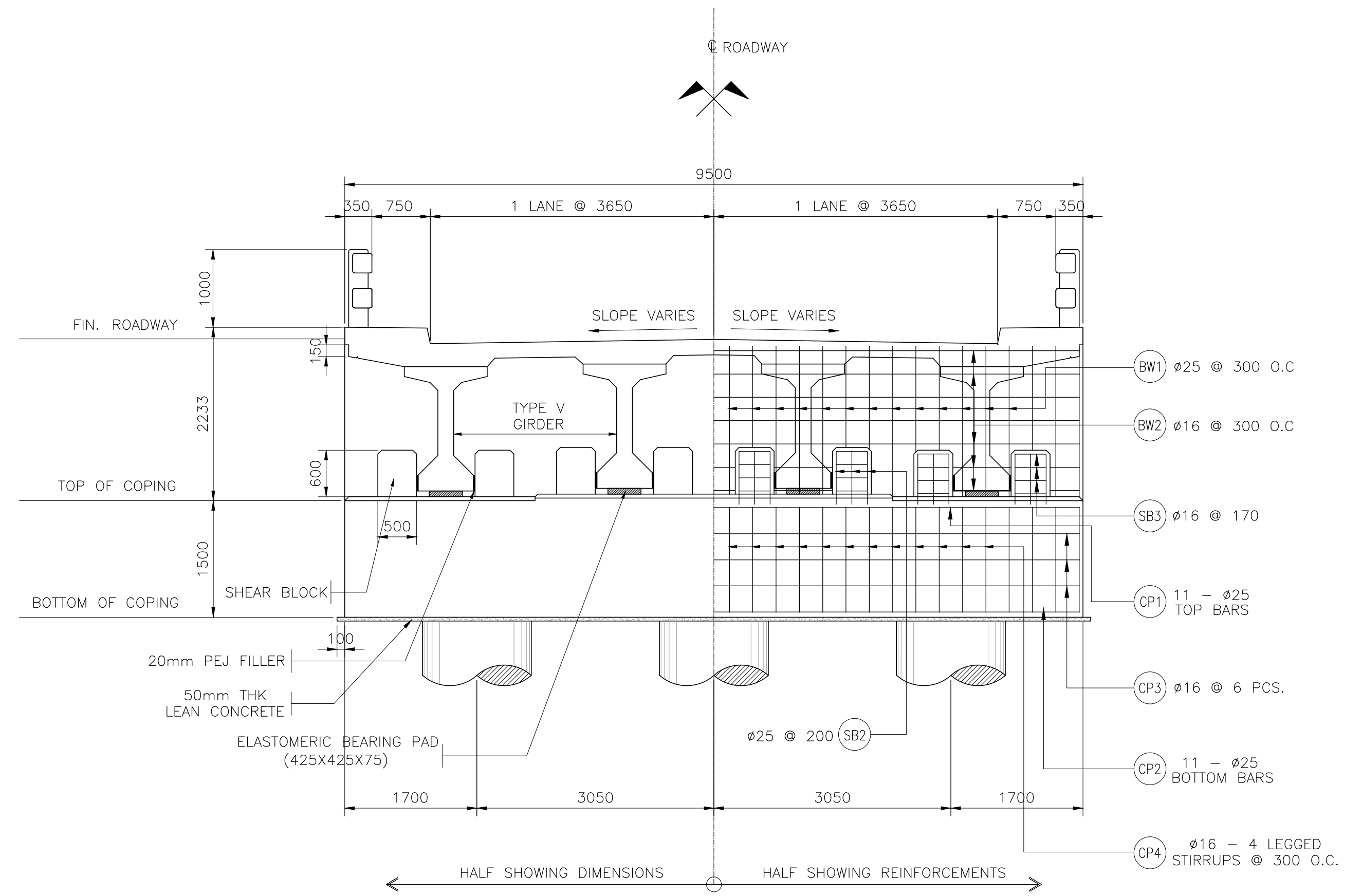
1.0 CONCRETE AT @ AREAS SHALL BE PLACED AT LEAST 21 DAYS AHEAD OF CONCRETE AT @ AREAS.
2.0 REINFORCEMENTS SHALL BE CONTINUOUS AT CONSTRUCTION JOINTS.

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.
ENGR. ALBERTO C. CAÑETE
TEAM LEADER

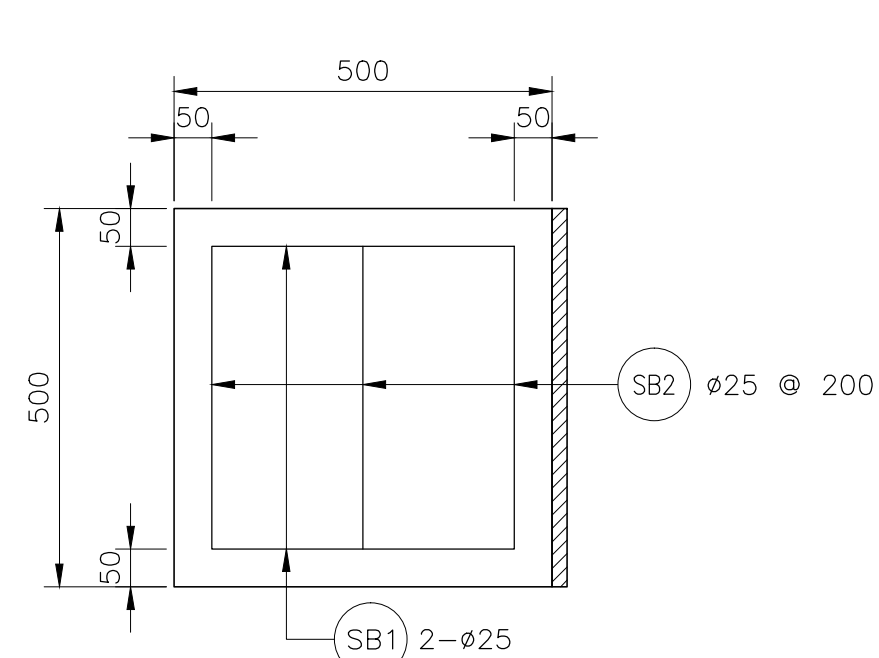
CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, MISRA, DILMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	 CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITO M. SUNGA OIC - PMD DATE: -	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 3	SCALE AS SHOWN	DRAWING STATUS DRAFT DRAWING
	PROJECT CODE P303-06	DRAWING NO. A1	DATE APPROVED -	DATE REVISED -	REV. -				



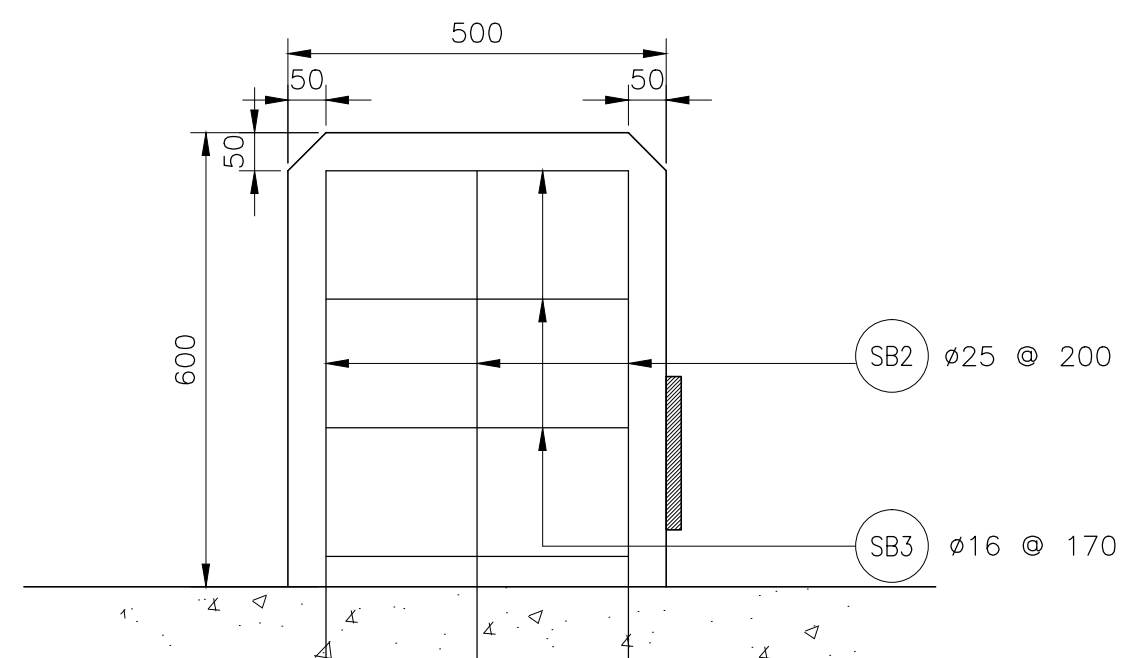
1 PLAN
SCALE 1:50



2 ELEVATION
SCALE 1:50

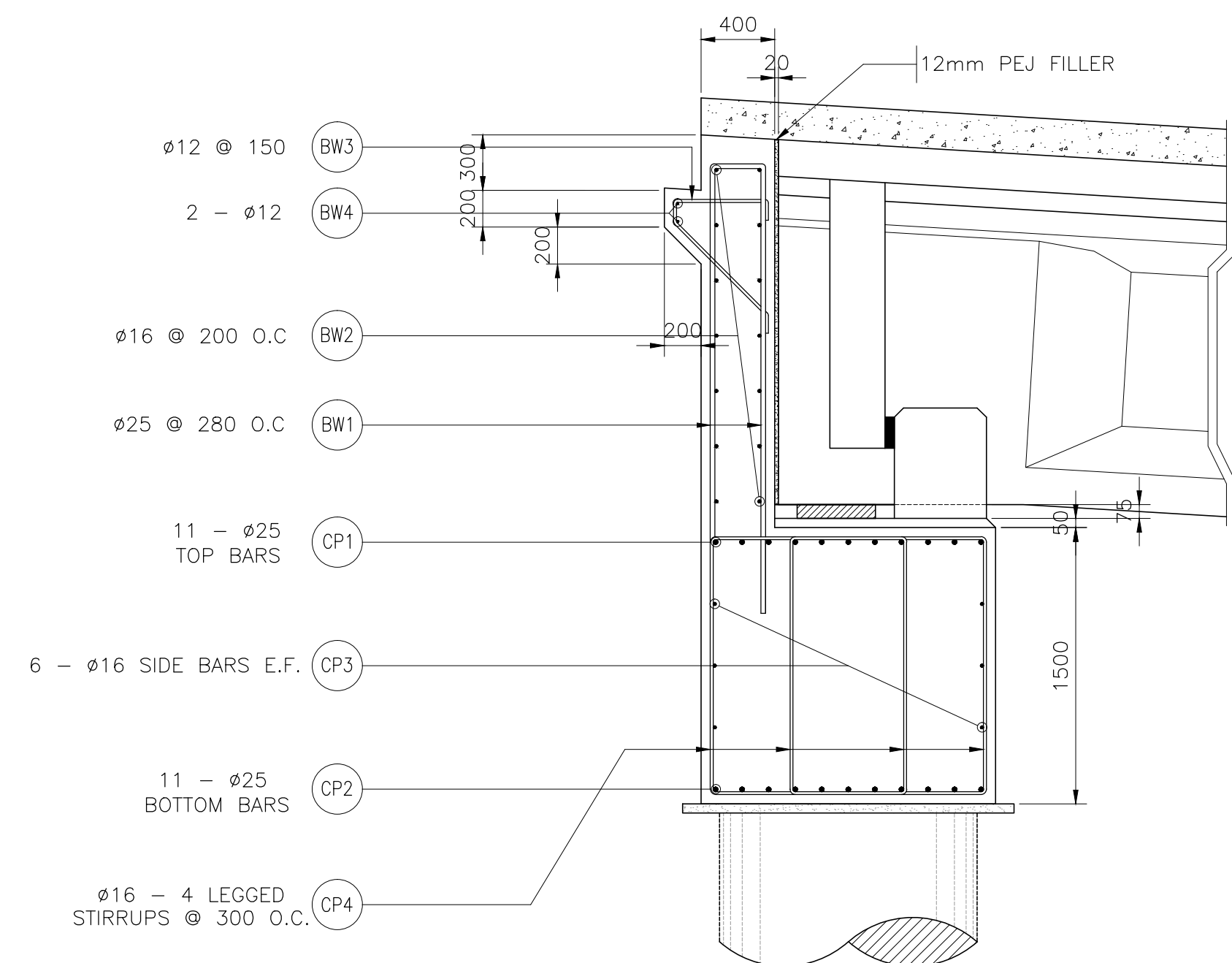


3A PLAN
SCALE 1:10



3B SECTION
SCALE 1:10

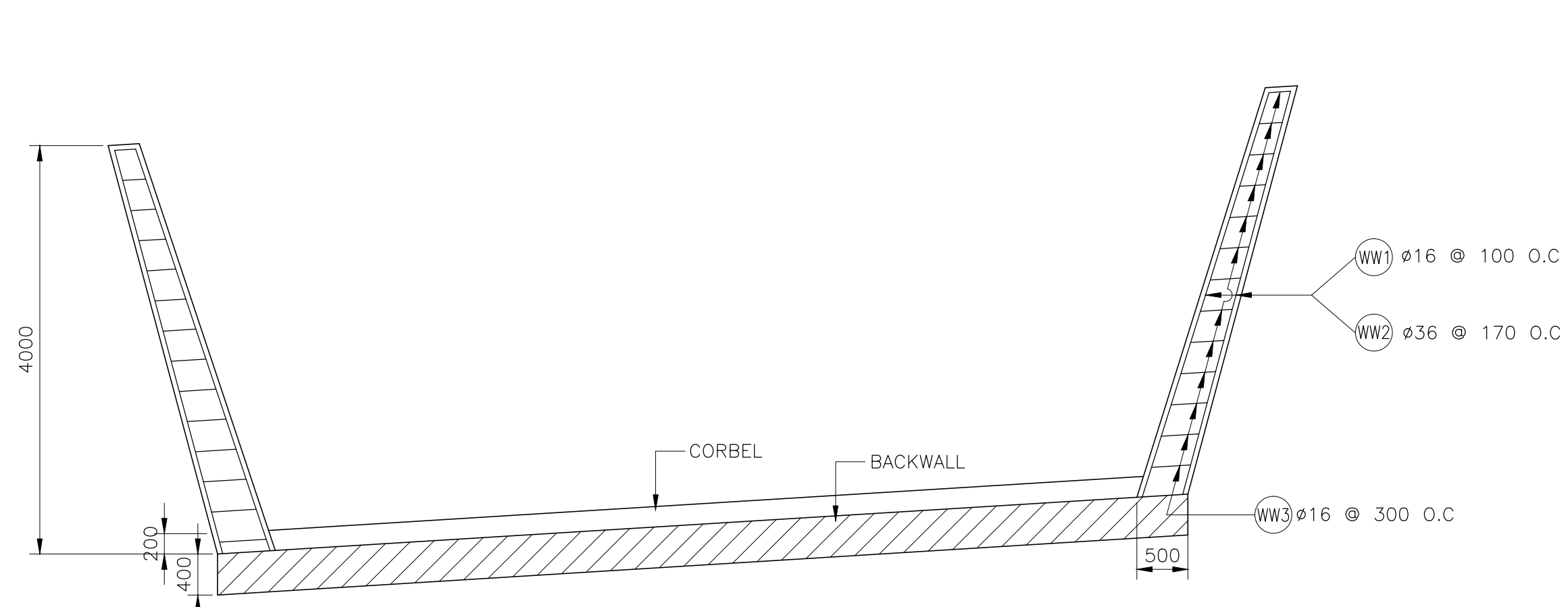
3 SHEAR BLOCK DETAILS
SCALE 1:10



4 BACKWALL AND COPING SECTION
SCALE 1:30

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.
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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

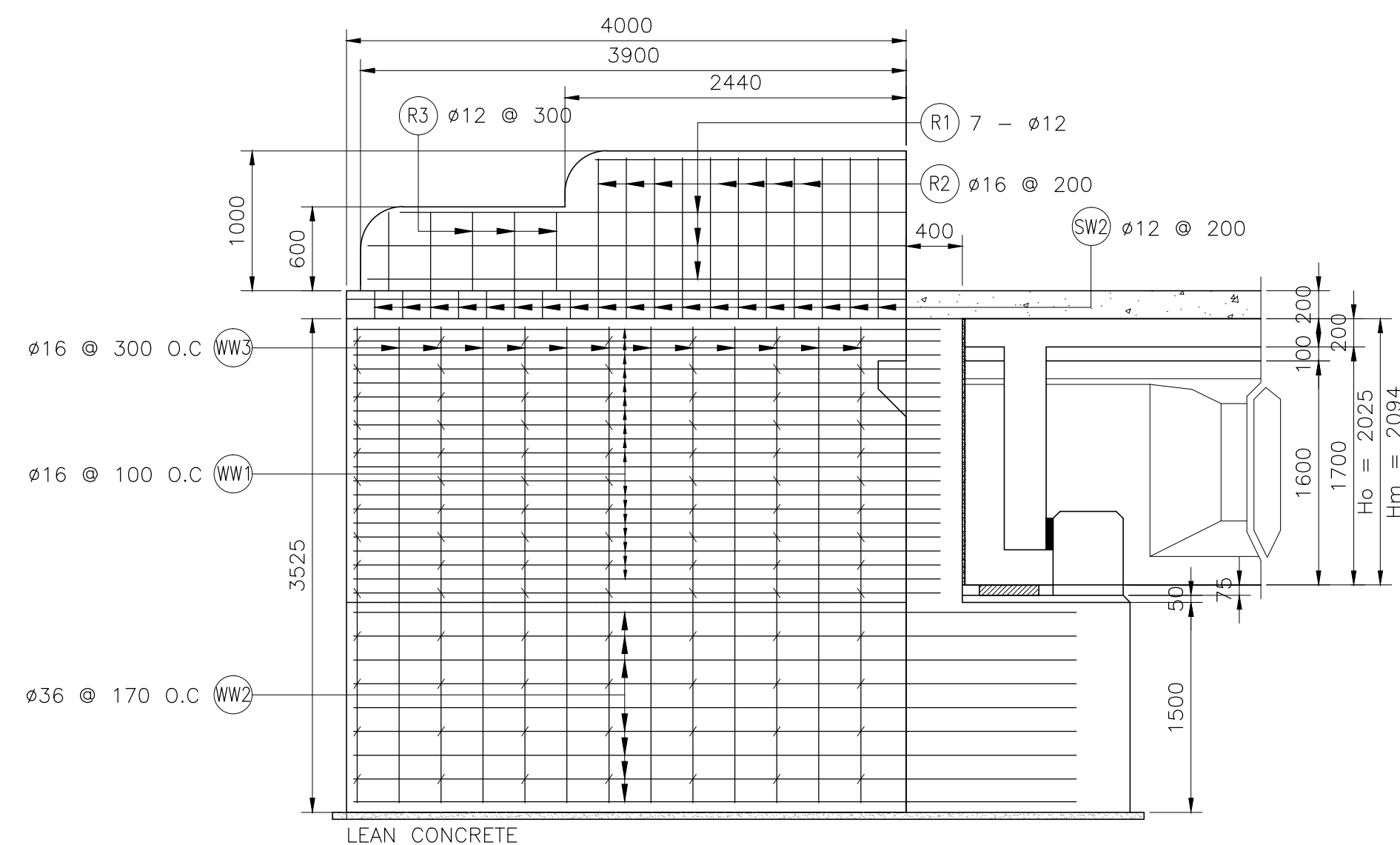
CONSULTANTS UIC CORPORATE BLDG., 8 LANOS STREET, VISRA, DALMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	 BUREAU OF CONSTRUCTION DEVELOPMENT AUTHORITY	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 3	SCALE AS SHOWN	DRAWING STATUS DRAFT DRAWING
	CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITO M. SUNGA OIC - PMD DATE: -	PROJECT CODE P303-0	DRAWING NO. P303-0	SIZE A1	DATE APPROVED -	DATE REVISED -	REV. -



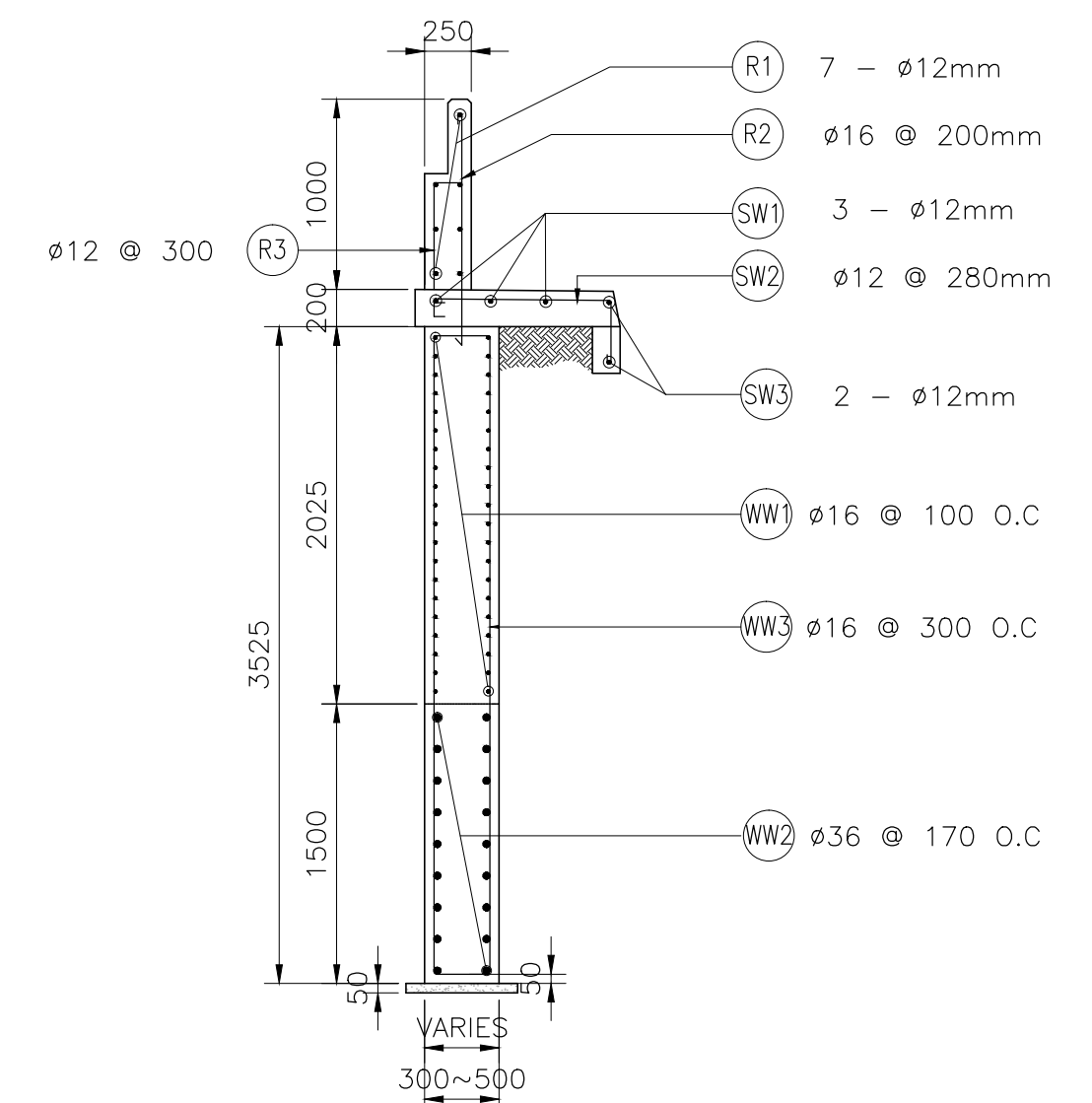
1 PLAN OF WINGWALL
SCALE 1:50

NOTE:
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THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.

ENGR. ALBERTO C. CAÑETE
TEAM LEADER



2 ELEVATION OF WINGWALL
SCALE 1:40



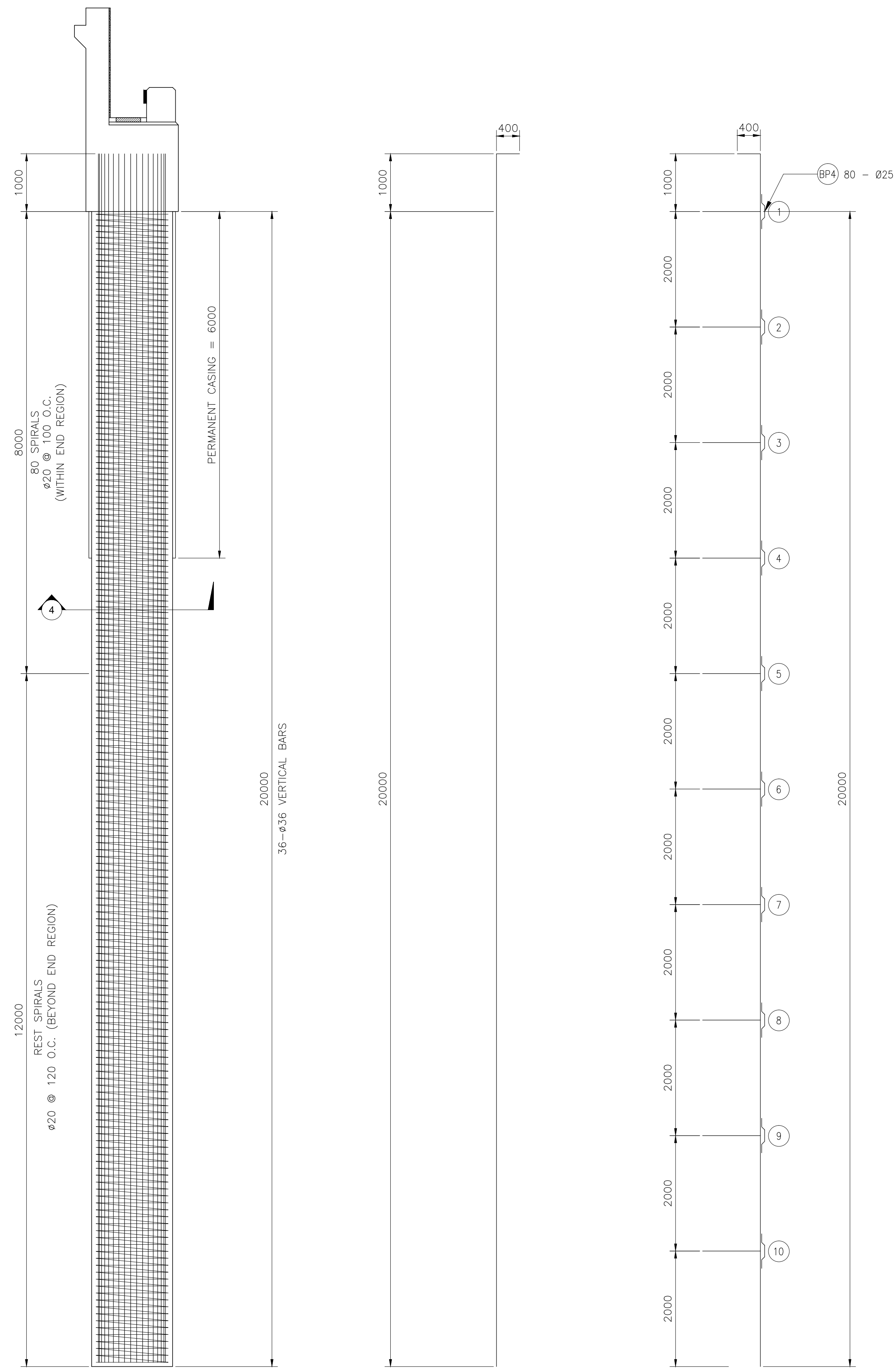
3 SECTION OF WINGWALL
SCALE 1:40

SCHEDULE OF REINFORCEMENTS FOR SUBSTRUCTURE FOR ABUTMENT "A" ONLY

BAR BENDING DIAGRAM	REINFORCING STEEL BARS				ALL DIMENSIONS ARE OUT TO OUT OF REBARS						TYPE	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONCRETE VOLUME (cu.m)
	MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e	f							
FOR ABUTMENT A ONLY																	
A	CP1	25	AS SHOWN	11	0.50	9.52	0.50				A	10.52	115.76	3.853	468	24.00	
B	CP2	25	AS SHOWN	11	0.50	9.52	0.50			A	10.52	115.76	3.853	468			
B	CP3	16	AS SHOWN	6	9.52					A	9.52	57.14	1.578	95			
B	CP4	16	300	33	2.20	3.00	2.20	3.00	0.60	0.60	B	11.60	382.80	1.578	634		
C	BW1	16	280	35	2.50	0.40	2.50				C	5.40	189.00	1.578	313	9.00	
C	BW2	12	200	26	9.52					STR.	9.52	247.60	0.888	231			
C	BW3	12	150	65	0.50	0.10	0.65	0.10	0.10	D	1.45	94.25	0.888	88			
C	BW4	12	AS SHOWN	2	9.52					STR	9.52	19.05	0.888	18			
D	WW1	16	100	40	4.00						STR	2.20	264.00	2.466	684	14.00	
D	WW2	25	170	24	4.00					H	4.00	160.00	1.578	265			
D	WW3	16	300	15	0.50	3.15	0.50	3.15	0.10	0.10	B	4.00	96.00	3.853	388		
D	TIES	12	AS SHOWN	704	0.20	0.40	0.20			G	7.50	112.50	1.578	186			
E	SB1	25	AS SHOWN	24	0.65	0.50					C	2.20	264.00	2.466	684	2.00	
E	SB2	25	200	96	0.65	0.50				C	4.00	160.00	1.578	265			
E	SB3	16	170	120	0.45	0.45	0.45	0.45	0.20	0.20	B	4.00	96.00	3.853	388		
F	R1	12	AS SHOWN	14	3.90	1.00					E	4.90	68.60	0.888	64	2.00	
F	R2	16	200	13	0.20	1.00	0.20			G	1.40	18.20	1.578	30			
F	R3	12	300	5	0.60	1.00	0.20			I	1.80	9.00	0.888	8			
G	SW1	12	AS SHOWN	6	3.90	1.00					STR	4.00	24.00	0.888	22	2.00	
G	SW2	16	280	16	0.10	1.25	0.40	0.10		F	1.85	29.60	0.888	28			
G	SW3	12	AS SHOWN	4	0.60	1.00	0.20			STR	4.00	16.00	0.888	15			
GRAND TOTAL												Grade 40 bar	999 Kgs	53.00			
GRAND TOTAL												Grade 60 bar	4092 Kgs				
* 12 mm dia. and below are Grade 40 * 16 mm dia. and above are Grade 60																	

SCHEDULE OF REINFORCEMENTS FOR SUBSTRUCTURE FOR ABUTMENT "B" ONLY

BAR BENDING DIAGRAM	REINFORCING STEEL BARS				ALL DIMENSIONS ARE OUT TO OUT OF REBARS						TYPE	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONCRETE VOLUME (cu.m)
	MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e	f							
FOR ABUTMENT A ONLY																	
A	CP1	25	AS SHOWN	11	0.50	9.52	0.50				A	10.52	115.76	3.853	468	24.00	
B	CP2	25	AS SHOWN	11	0.50	9.52	0.50			A	10.52	115.76	3.853	468			
B	CP3	16	AS SHOWN	6	9.52					A	9.52	57.14	1.578	95			
B	CP4	16	300	33	2.20	3.00	2.20	3.00	0.60	0.60	B	11.60	382.80	1.578	634		
C	BW1	16	280	35	2.50	0.40	2.50				C	5.40	189.00	1.578	313	9.00	
C	BW2	12	200	26	9.52					STR.	9.52	247.60	0.888	231			
C	BW3	12	150	65	0.50	0.10	0.65	0.10	0.10	D	1.45	94.25	0.888	88			
C	BW4	12	AS SHOWN	2	9.52					STR	9.52	19.05	0.888	18			
D	WW1	16	100	40	4.00						STR	2.20	264.00	2.466	684	14.00	
D	WW2	25	170	24	4.00					H	4.00	160.00	1.578	265			
D	WW3	16	300	15	0.50	3.15	0.50	3.15	0.10	0.10	B	4.00	96.00	3.853	388		
D	TIES	12	AS SHOWN	704	0.20	0.40	0.20			G	7.50	112.50	1.578	186			
E	SB1	25	AS SHOWN	24	0.65	0.50					C	2.20	264.00	2.466	684	2.00	
E	SB2	25	200	96	0.65	0.50				C	4.00	160.00	1.578	265			
E	SB3	16	170	120	0.45	0.45	0.45	0.45	0.20	0.20	B	4.00	96.00	3.853	388		
F	R1	12	AS SHOWN	14	3.90	1.00					E	4.90	68.60	0.888	64	2.00	
F	R2	16	200	13	0.20	1.00	0.20			G	1.40	18.20	1.578	30			
F	R3	12	300	5	0.60	1.00	0.20			I	1.80	9.00	0.888	8			
G	SW1	12	AS SHOWN	6	3.90	1.00					STR	4.00	24.00	0.888	22	2.00	
G	SW2	16	280	16	0.10	1.25	0.40	0.10		F	1.85	29.60	0.888	28			
G	SW3	12	AS SHOWN	4	0.60	1.00	0.20			STR	4.00	16.00	0.888	15			
GRAND TOTAL												Grade 40 bar	999 Kgs	53.00			
GRAND TOTAL												Grade 60 bar	4092 Kgs				
* 12 mm dia. and below are Grade 40 * 16 mm dia. and above are Grade 60																	



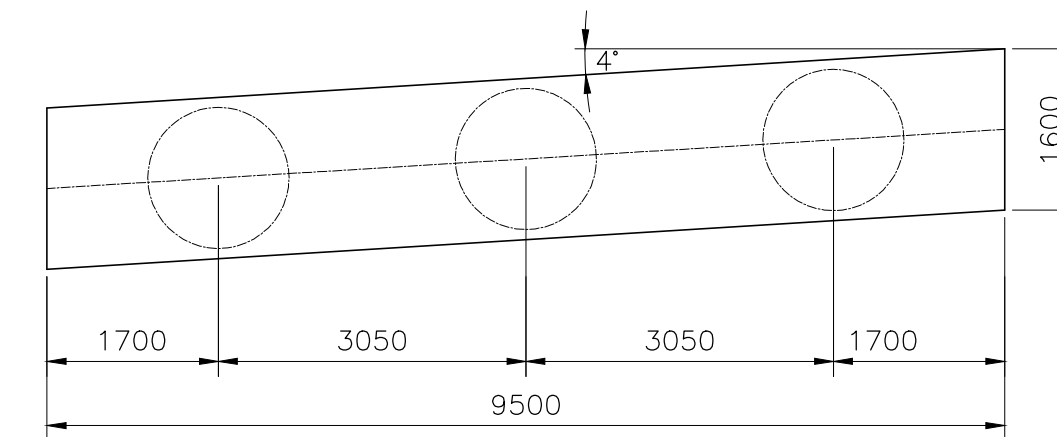
1 VERTICAL SECTION
SCALE 1:50

2 SCHEMATIC DETAIL
SCALE 1:50

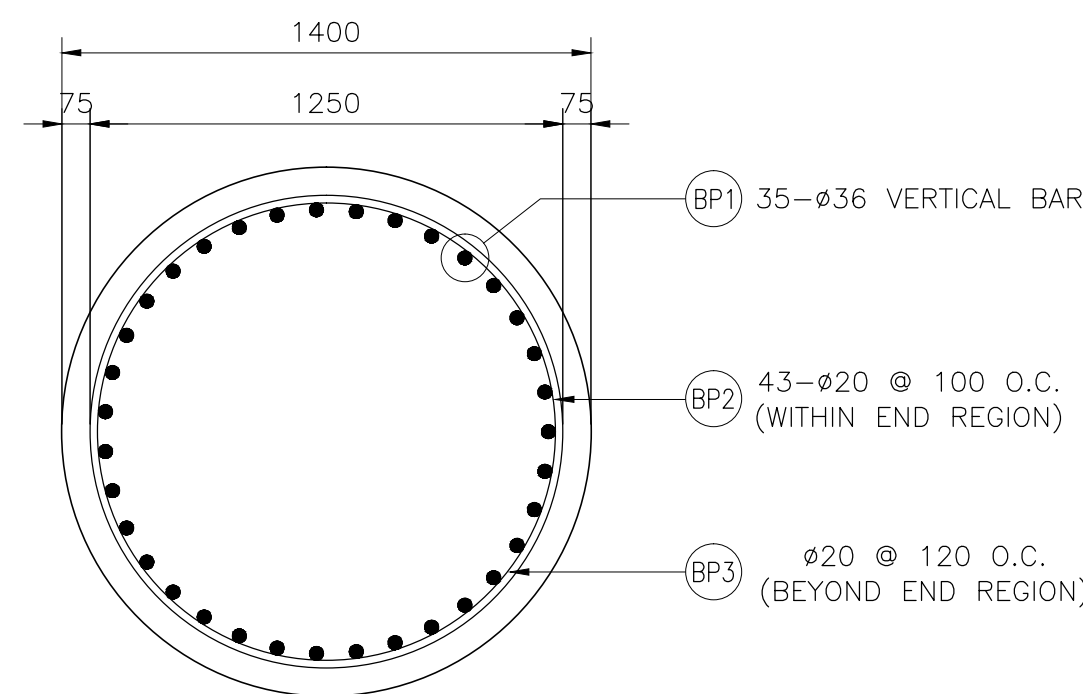
3 STIFFENER LAYOUT
SCALE 1:50

NOTES:

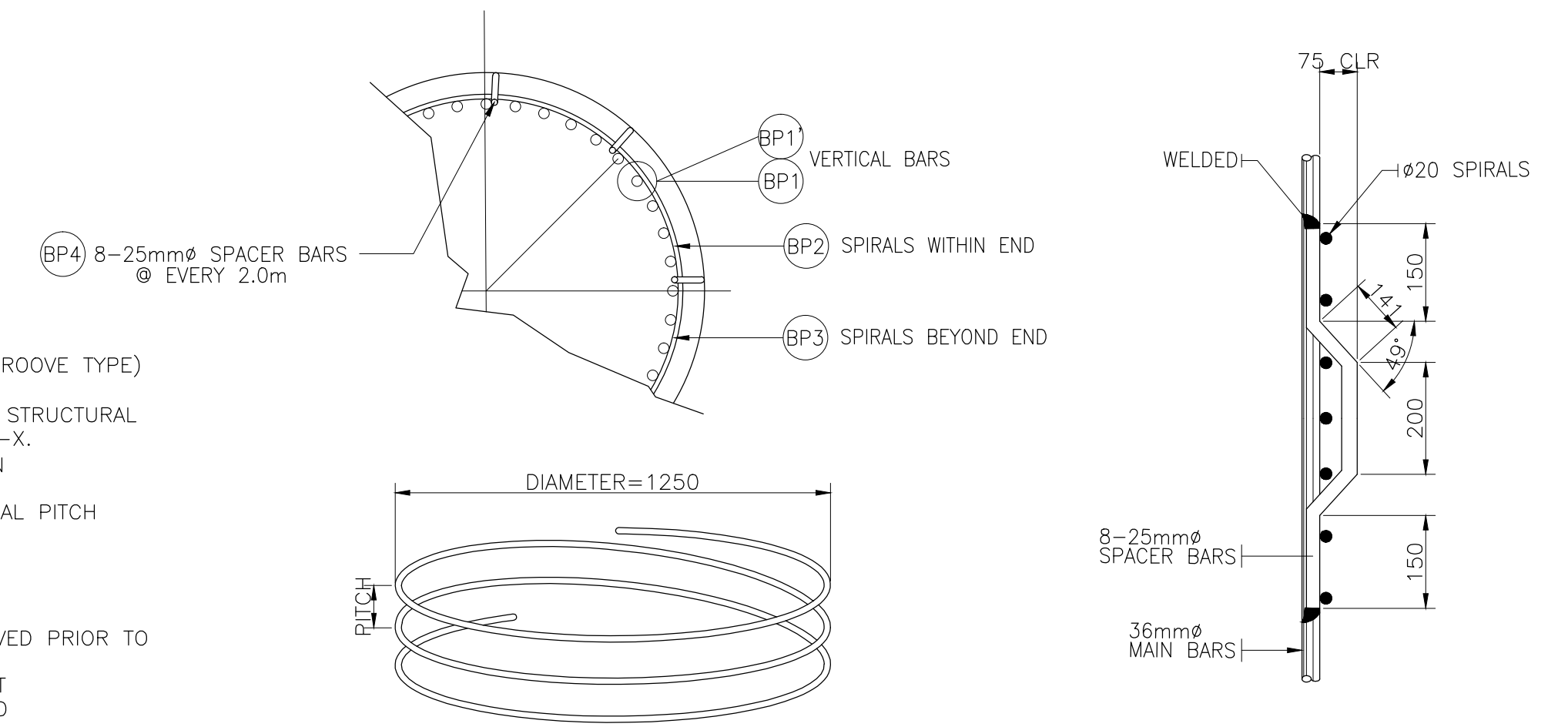
1. THE REINFORCEMENT ARE LAP-WELD CONNECTED (FLARED-V-GROOVE TYPE)
2. SPIRAL REINFORCEMENT ARE LAP WELD CONNECTED.
3. WELDING SHALL BE IN ACCORDANCE WITH ANSI/AWS. D1.4-92, STRUCTURAL WELDING CODE REINFORCEMENT STEEL, USE ELECTRODE E90XX-X.
4. CARE SHOULD BE TAKEN NOT TO DAMAGE BORED PILE/COLUMN MAIN BARS DURING WELDING.
5. SPIRAL REINFORCEMENT SHOULD BE BUTT WELDED WHERE SPIRAL PITCH IS 50mm OR LESS. OTHERWISE USE LAP WELD SPLICE.
6. ADDITIONAL STIFFENERS/GUIDE BARS MAY BE PROVIDED TO STABILIZE THE PILE REINFORCEMENT DURING FABRICATION/ERECTION SUBJECT TO THE APPROVAL OF THE ENGINEER.
7. DIRTY CONCRETE (MINIMUM 600mm HEIGHT) SHOULD BE REMOVED PRIOR TO CONSTRUCTION OF BACKWALL AND COPING BEAM.
8. CONCRETE - CONCRETE SHALL CONFORM TO THE REQUIREMENT OF CLASS AA CONCRETE WITH 28MPa. CYLINDER STRENGTH AND 19mm MAXIMUM AGGREGATE SIZE.
9. REINFORCEMENT - ALL REINFORCEMENT STEEL SHALL BE DEFORMED BAR CONFORMING TO AASHTO M31 (ASTM 315) GRADE 60. SPLICES OF ADJACENT LONGITUDINAL STEEL SHALL BE STAGGERED 100 BAR DIAMETER APART. LENGTH OF SPLICES SHALL BE 2200mm.
10. THE STABILIZATION FOR BORED PILE EXCAVATION (SUCH AS USING BENTONITE SLURRY OR TEMPORARY STEEL CASING ETC.) SHALL BE CONSIDERED BY THE CONTRACTOR AND THE COST IS SUBSIDIARY IN PAY ITEM 400(17). THE CONTRACTOR SHALL SUBMIT THE CONSTRUCTION METHOD FOR ENGINEERS APPROVAL BEFORE CONSTRUCTION.



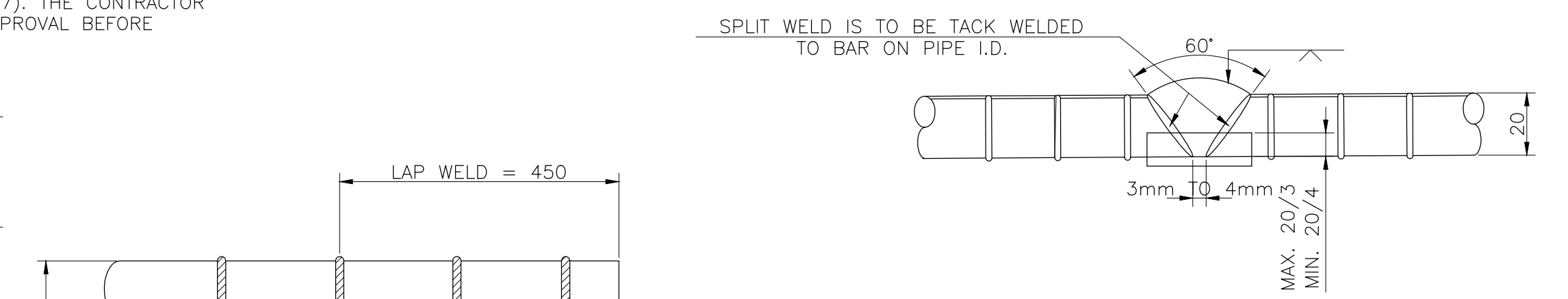
4 ABUTMENT COPING PLAN
SCALE 1:75



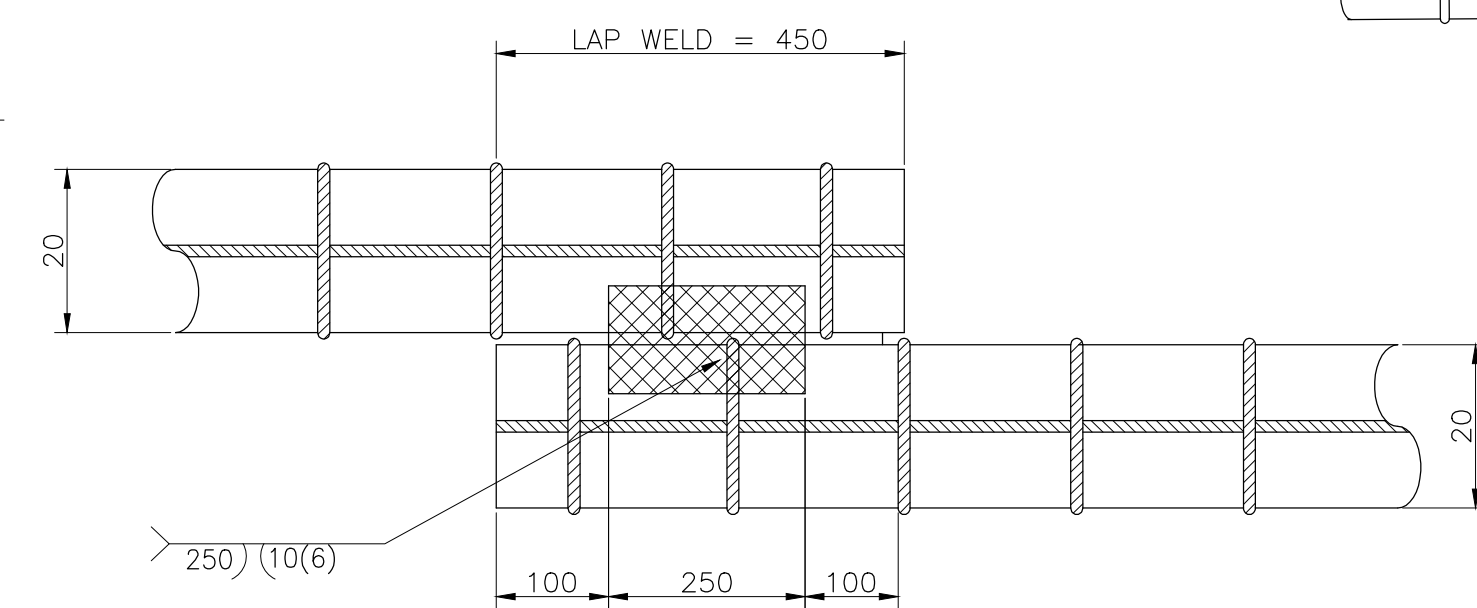
4 ABUTMENT BORED PILE SECTION
SCALE 1:20



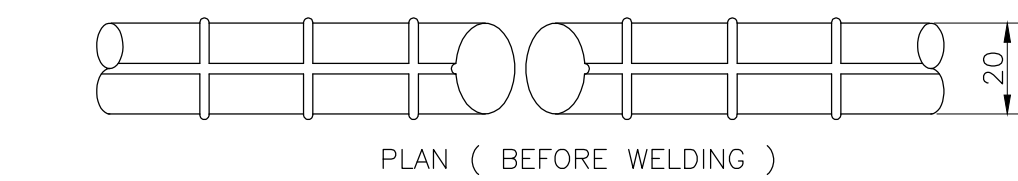
5 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS



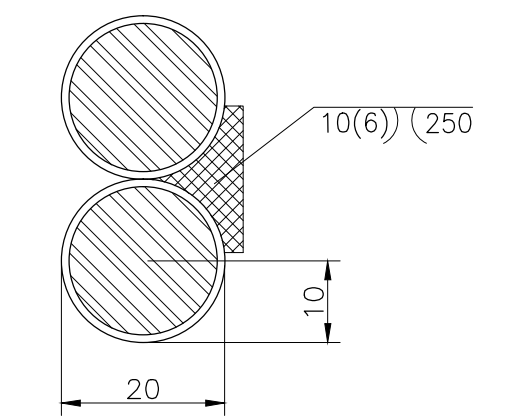
DETAILS OF SINGLE-V-GROOVE BUTT WELD



DIRECT LAP JOINT WITH BARS IN CONTACT



PLAN (BEFORE WELDING)



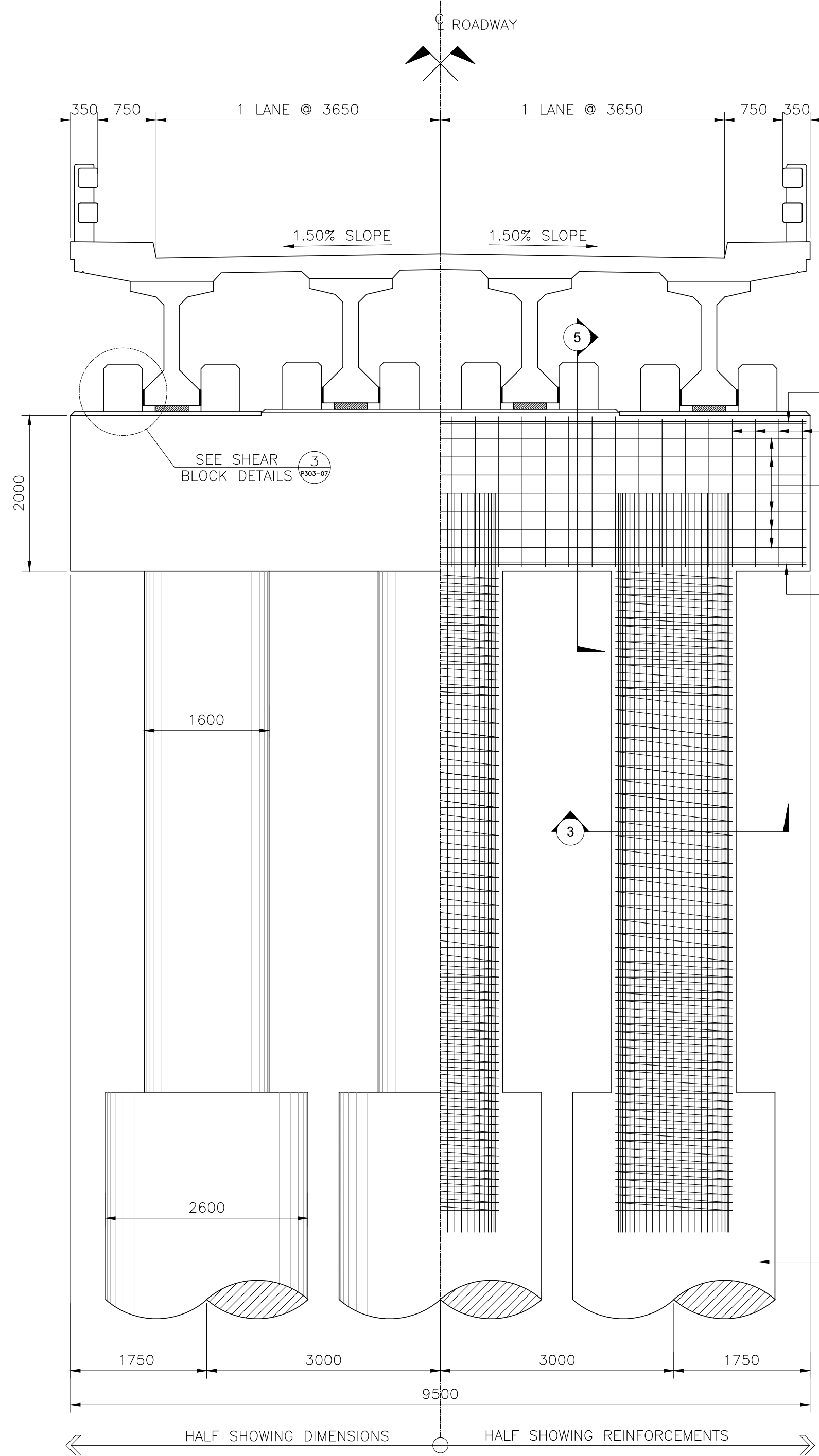
DOUBLE FLARED -V- GROOVE WELD SECTION - A

6 DETAILS OF TIES REINFORCEMENT LAP-WELD CONNECTION
SCALE NTS

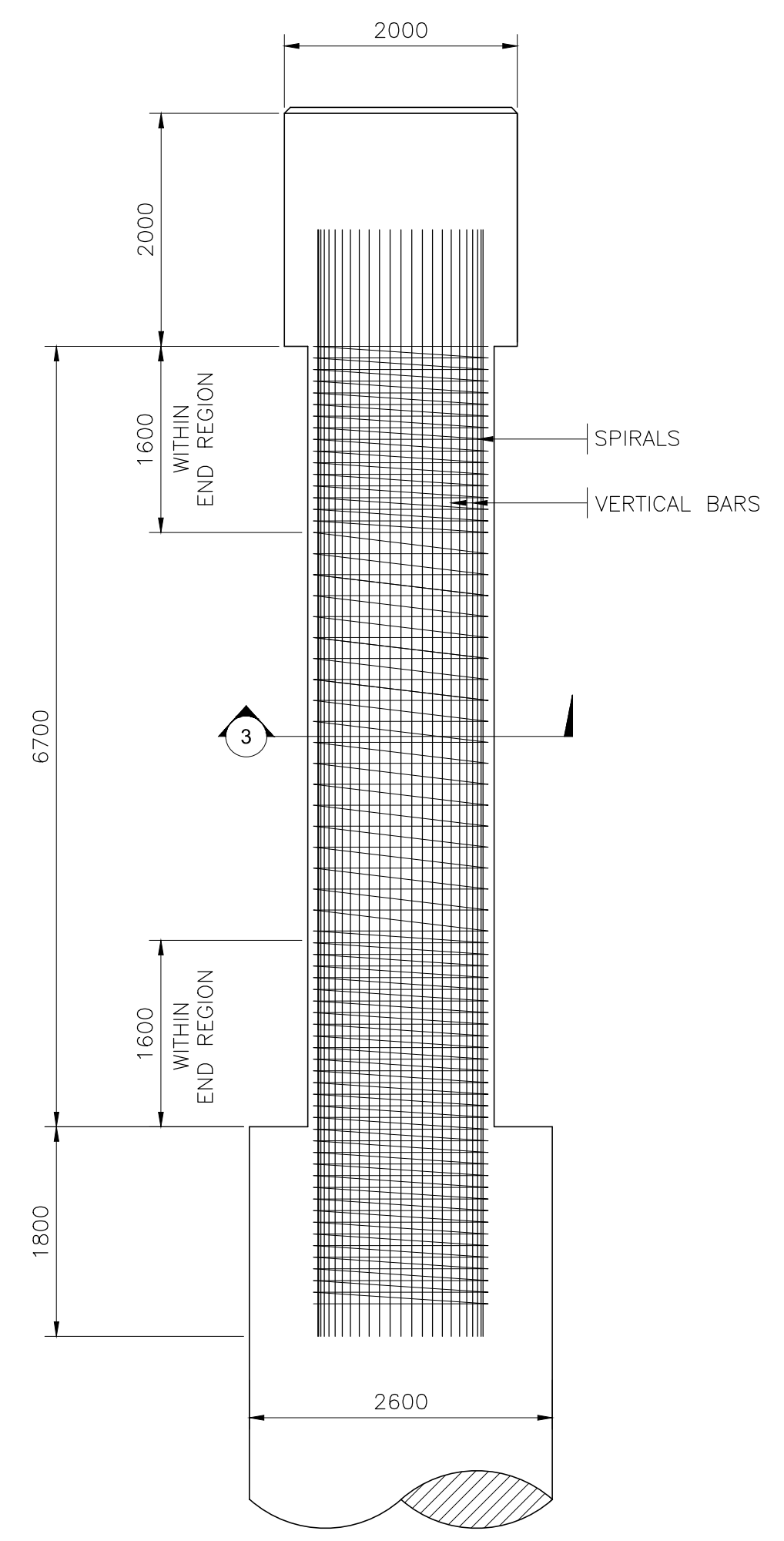
NOTE:
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THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.
ENGR. ALBERTO C. CAÑETE
TEAM LEADER

SCHEDULE OF REINFORCEMENT FOR BORED PILE AT ABUTMENT ONLY

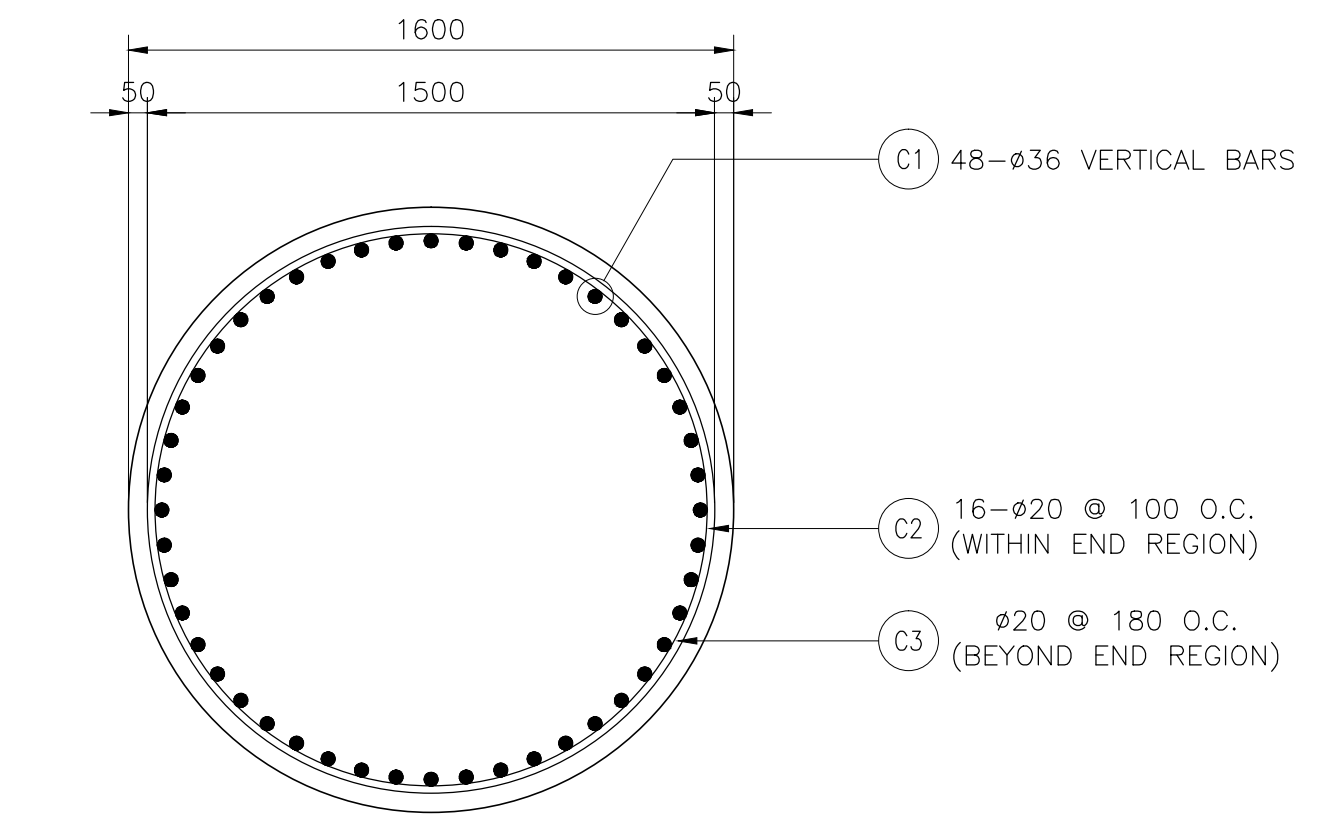
BAR BENDING DIAGRAM	BAR MARK	SIZE (mm)	SPACING (mm)	TY	BAR SHAPE	BAR DIMENSION					LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	VOLUME CONCRETE (cu.m)
						a	b	c	d	e						
FOR ONE (1) BORED PILE AT PIER (L=20m, Ø1400mm)																
	BP1	36	AS SHOWN	35	A	0.40	21									
	BP2	20	AS SHOWN	43	D	5.20										
	BP3	20	120	101	D	5.20										
	BP4	25	AS SHOWN	80	C	0.15	0.141	0.20	0.141	0.15						
NOTE: 40db SPLICES ARE NOT INCLUDED																
* 12 mm dia. and below are Grade 40																
* 16 mm dia. and above are Grade 60																
														TOTAL	8477 Kgs	31.00



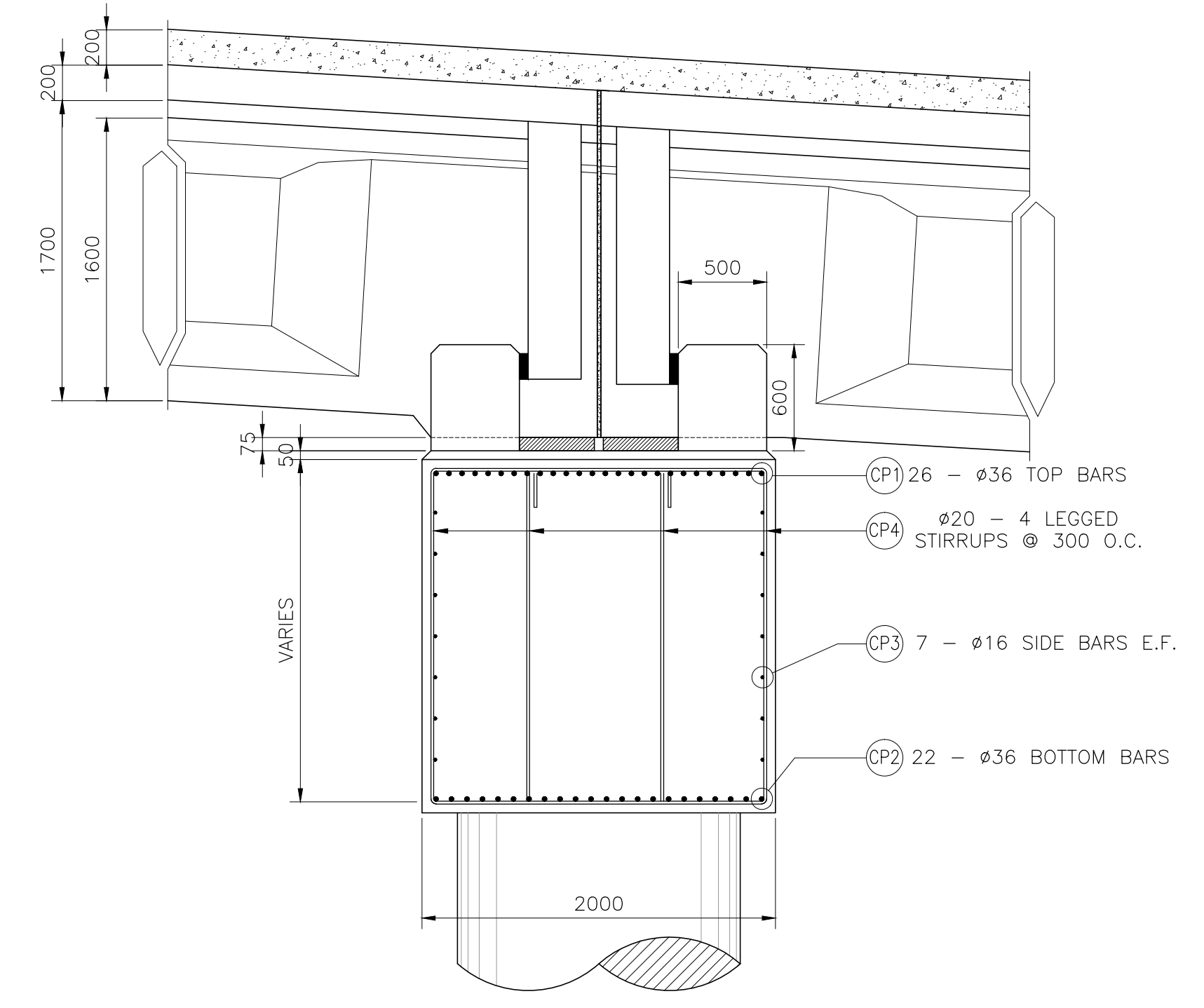
1 PIER ELEVATION
SCALE 1:50



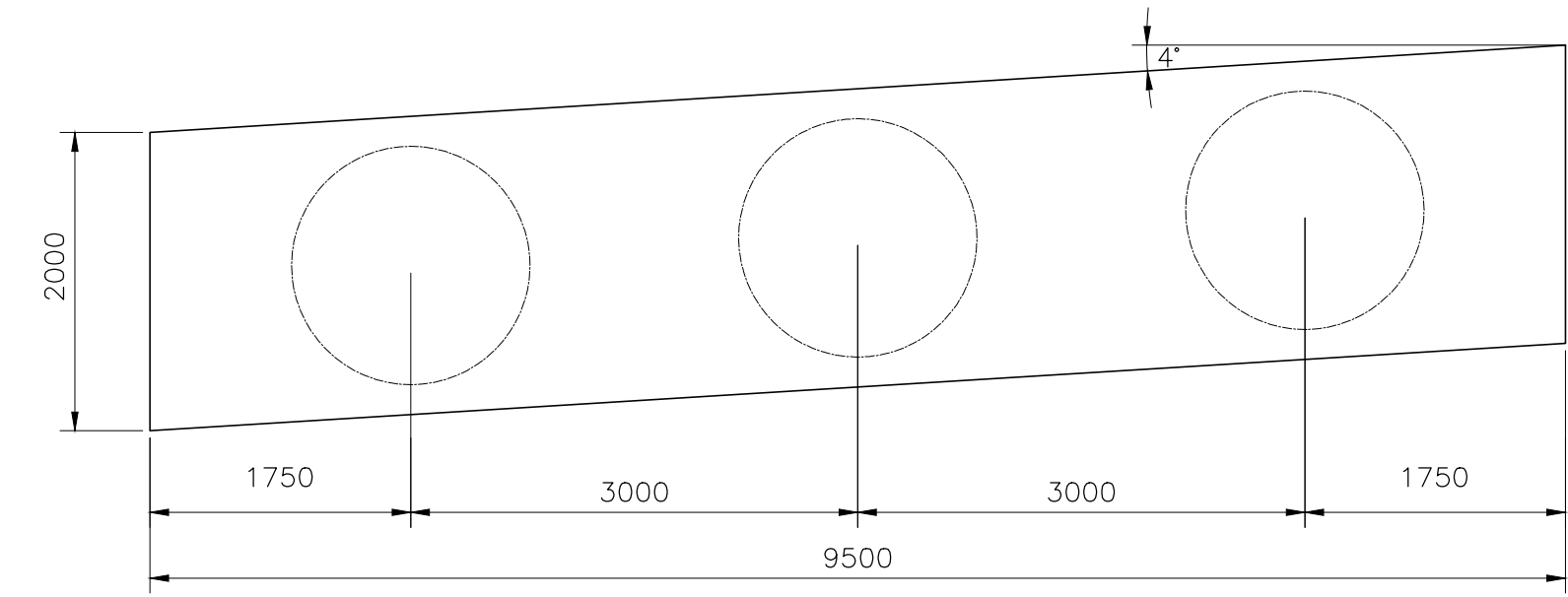
2 PIER TYPICAL SECTION
SCALE 1:50



3 PIER COLUMN DETAIL
SCALE 1:20



5 PIER COPING SECTION
SCALE 1:30



4 PIER COPING PLAN
SCALE 1:50

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS. THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT THE CONFORMITY OF THE CONSULTANT.

ENGR. ALBERTO C. CAÑETE
TEAM LEADER

SCHEDULE OF REINFORCEMENTS FOR COLUMN AND SHEAR BLOCK

BAR BENDING DIAGRAM	REINFORCING STEEL BARS				ALL DIMENSIONS ARE OUT TO OUT OF REBARS								TYPE	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONCRETE VOLUME (cu.m)
	MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e	f									
(A)	SB1	25	AS SHOWN	24	0.65	0.50						A	SHEAR BLOCK	1.15	27.60	3.853	112	2.00	
(B)	SB2	25	200	96	0.65	0.50					A	1.15		110.40	3.853	447			
(C)	SB3	16	170	120	0.45	0.45	0.45	0.45	0.20	0.20	C	2.20		264.00	2.466	684			
(D)	C1	36	AS SHOWN	144	0.50	8.50					A	COLUMN(P1)	9.00	1296.00	4.834	6578	29.00		
(E)	C2	20	100	51	6.20						A		6.20	316.20	2.466	819			
(F)	C3	20	180	120	6.20						A		6.20	744.00	2.466	1927			
(G)																			
GRAND TOTAL													Grade 60 bar	10565 Kgs	30.00				

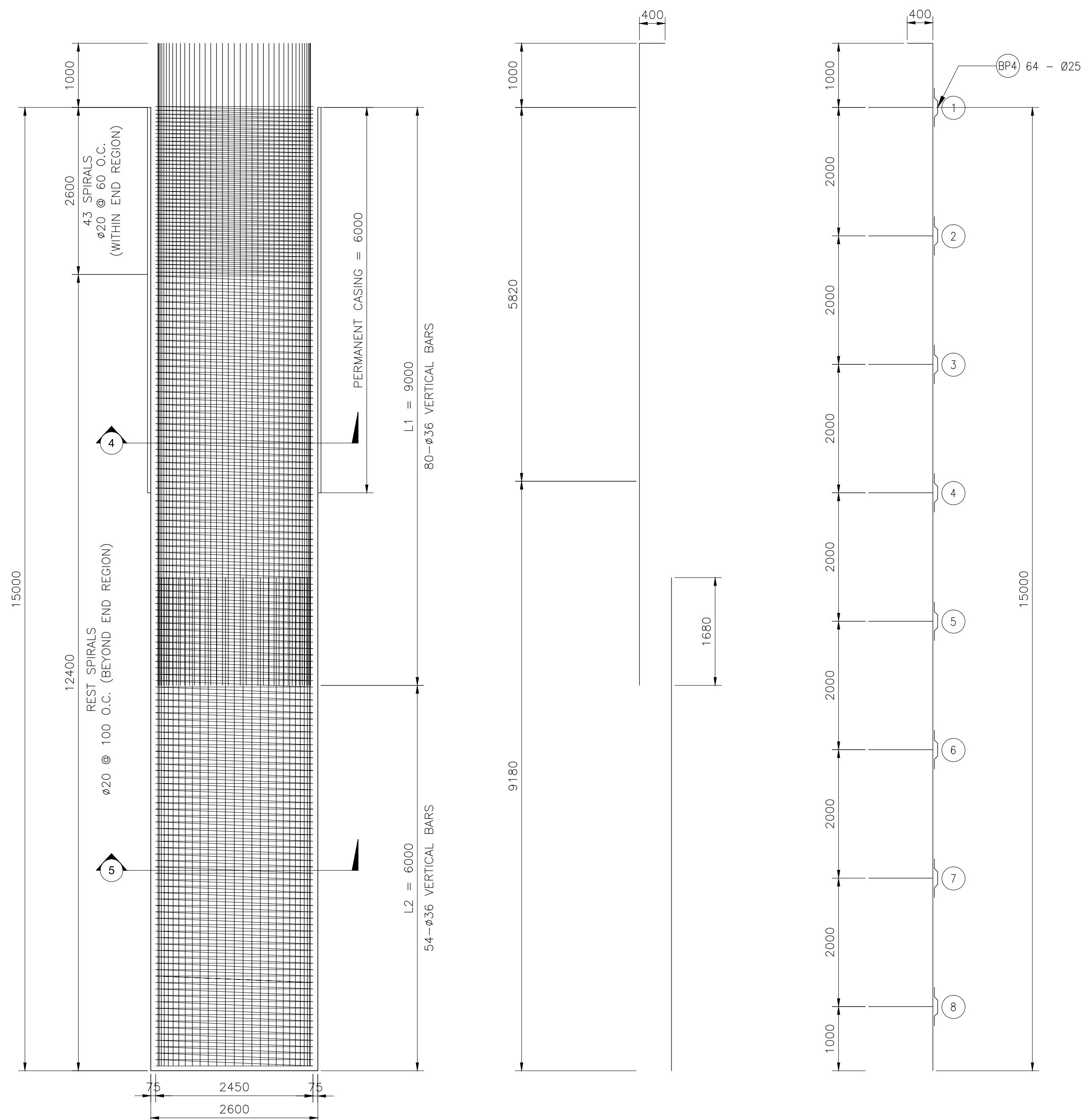
* 12 mm dia. and below are Grade 40
* 16 mm dia. and above are Grade 60

REINFORCEMENT SCHEDULE AND ESTIMATED QUANTITIES FOR COPING AT PIER

BAR MARK	BAR SIZE (mm)	QUANTITY	SPACING (mm)	SHAPE	DIMENSIONS (m)						LOCATION	LENGTH PER BAR (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)		CONC. VOL. (cu.m)
					a	b	c	d	e	f					(MPa)	(cu.m)	
CP1	36	26	AS SHOWN	C	0.50	9.52	0.50					10.52	273.60	7.990	2295	41.00	
CP2	36	22	AS SHOWN	C	0.50	9.52	0.50					10.52	231.51	7.990	1942		
CP3	16	14	AS SHOWN	A	9.52							9.52	133.32	1.578	221		
CP4	16	35	300	A	3.35	12.00	3.35		1.80			20.50	717.50	1.578	1189		
TOTAL													5648 Kgs	41.00			

BAR BENDING DIAGRAM (DIMENSIONS ARE OUT-TO-OUT REBAR)

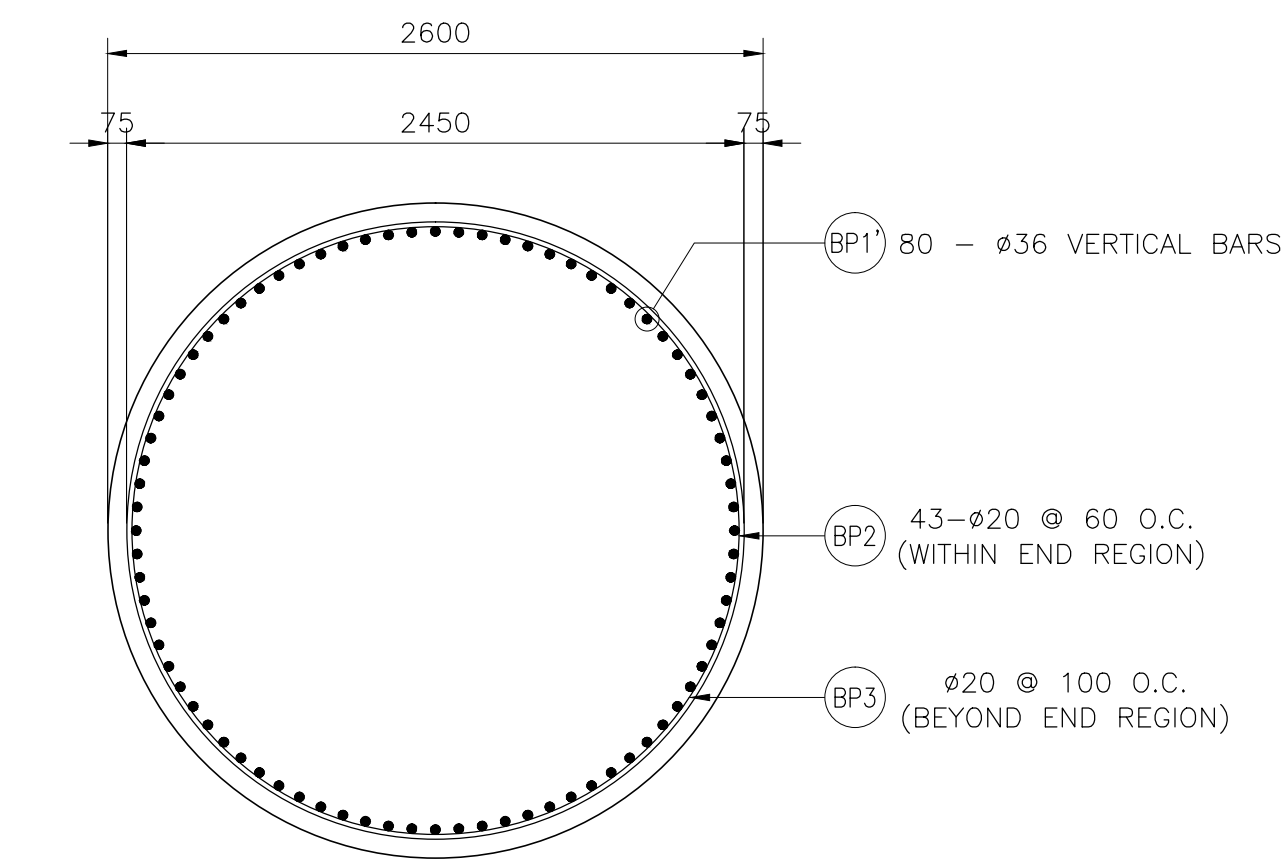
CONSULTANTS UIC CORPORATE BLDG., 8 LANES STREET, WISRA, DELMAN, QUEZON CITY, 1128	SUBMITTED BY EFREN L. DAVID PRESIDENT - UICI DATE: -	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	 CHECKED BY RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	APPROVED BY JOVITO M. SUNGA OIC - PMD DATE: -	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 3 PIER COLUMN PLAN AND ELEVATION COLUMN SECTION SCHEDULE OF REINFORCEMENTS AND SUMMARY OF QUANTITIES	SCALE AS SHOWN PROJECT CODE P303-10 DATE APPROVED DATE REVISED 	DRAWING STATUS DRAFT DRAWING DRAWING NO. A1 REV.
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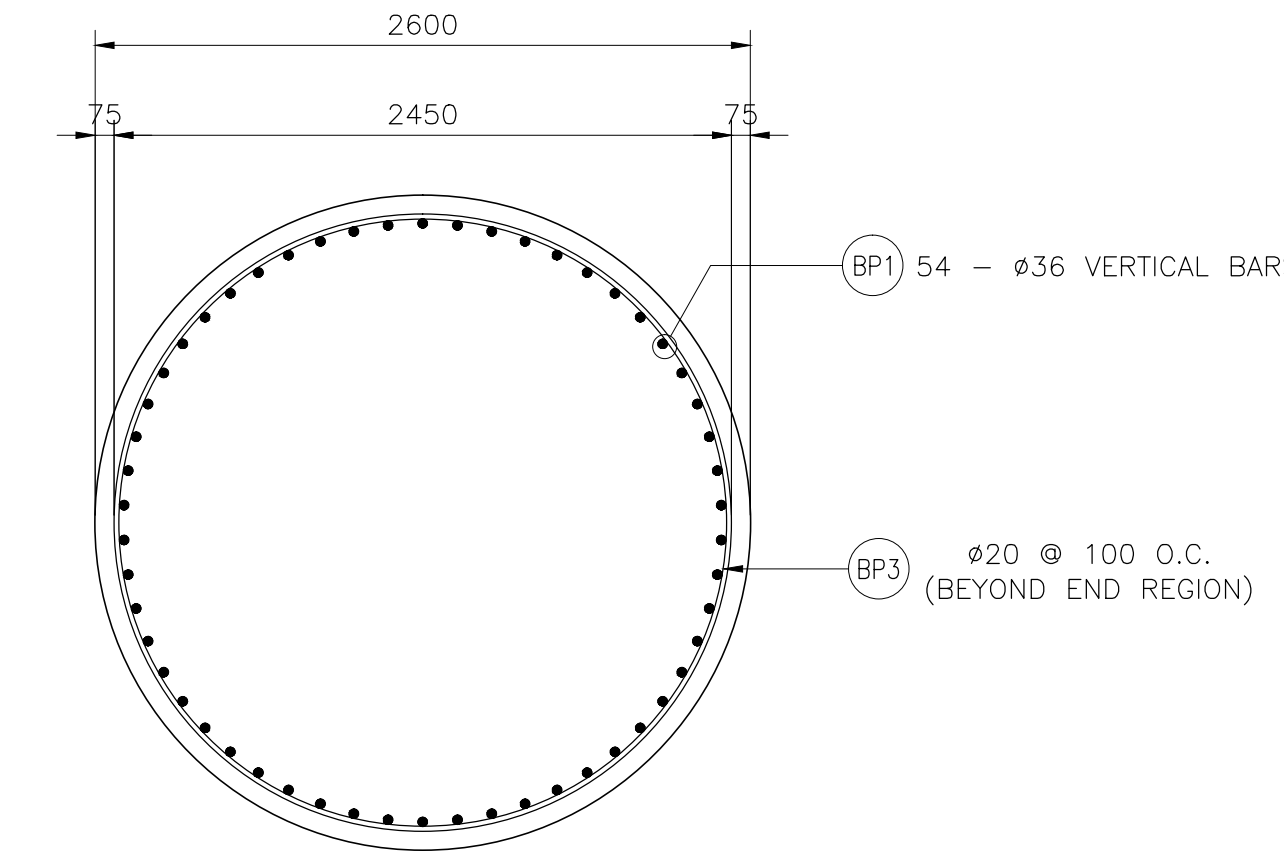
1 VERTICAL SECTION
SCALE 1:50

2 SCHEMATIC DETAIL
SCALE 1:50

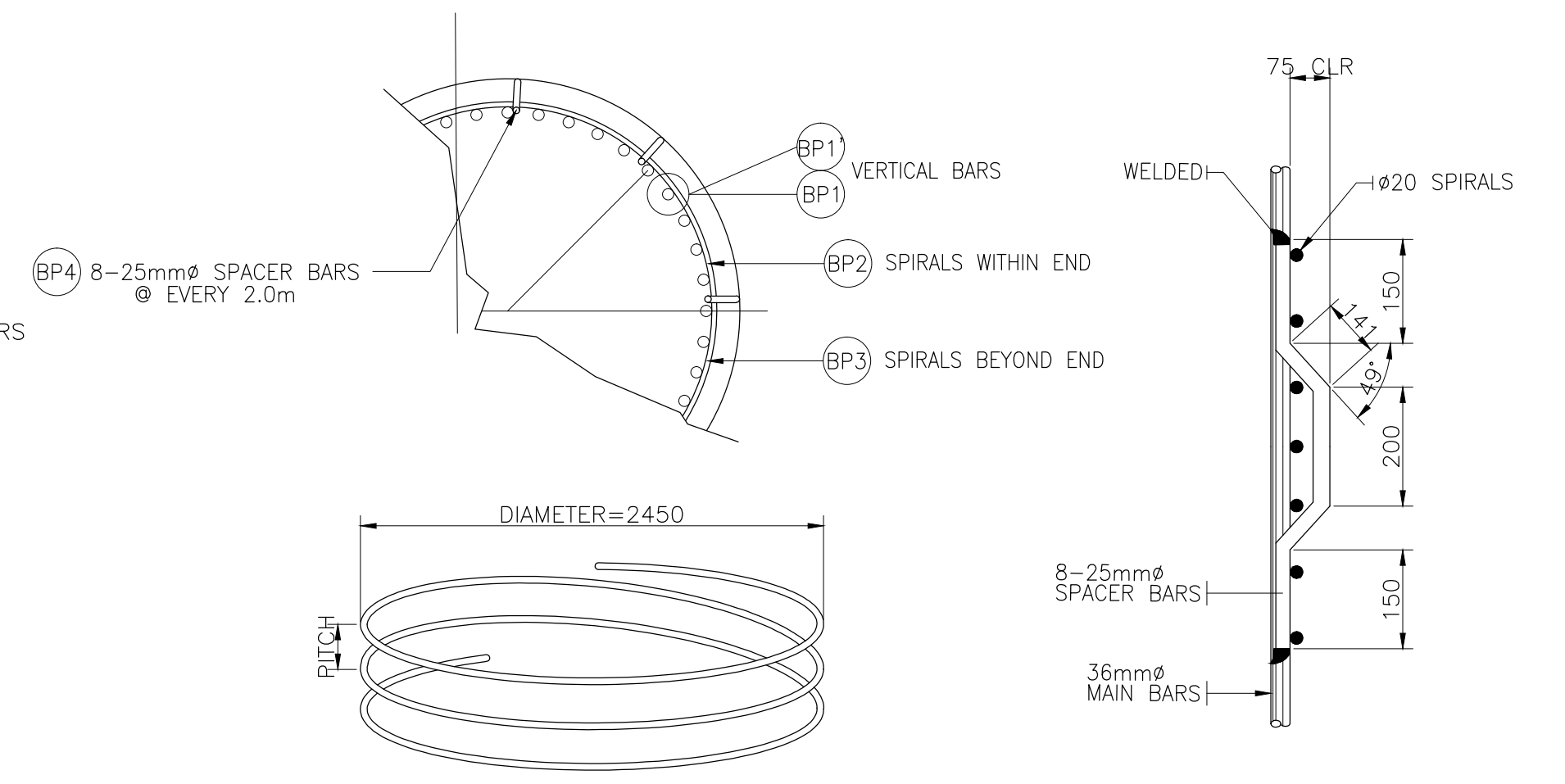
3 STIFFENER LAYOUT
SCALE 1:50



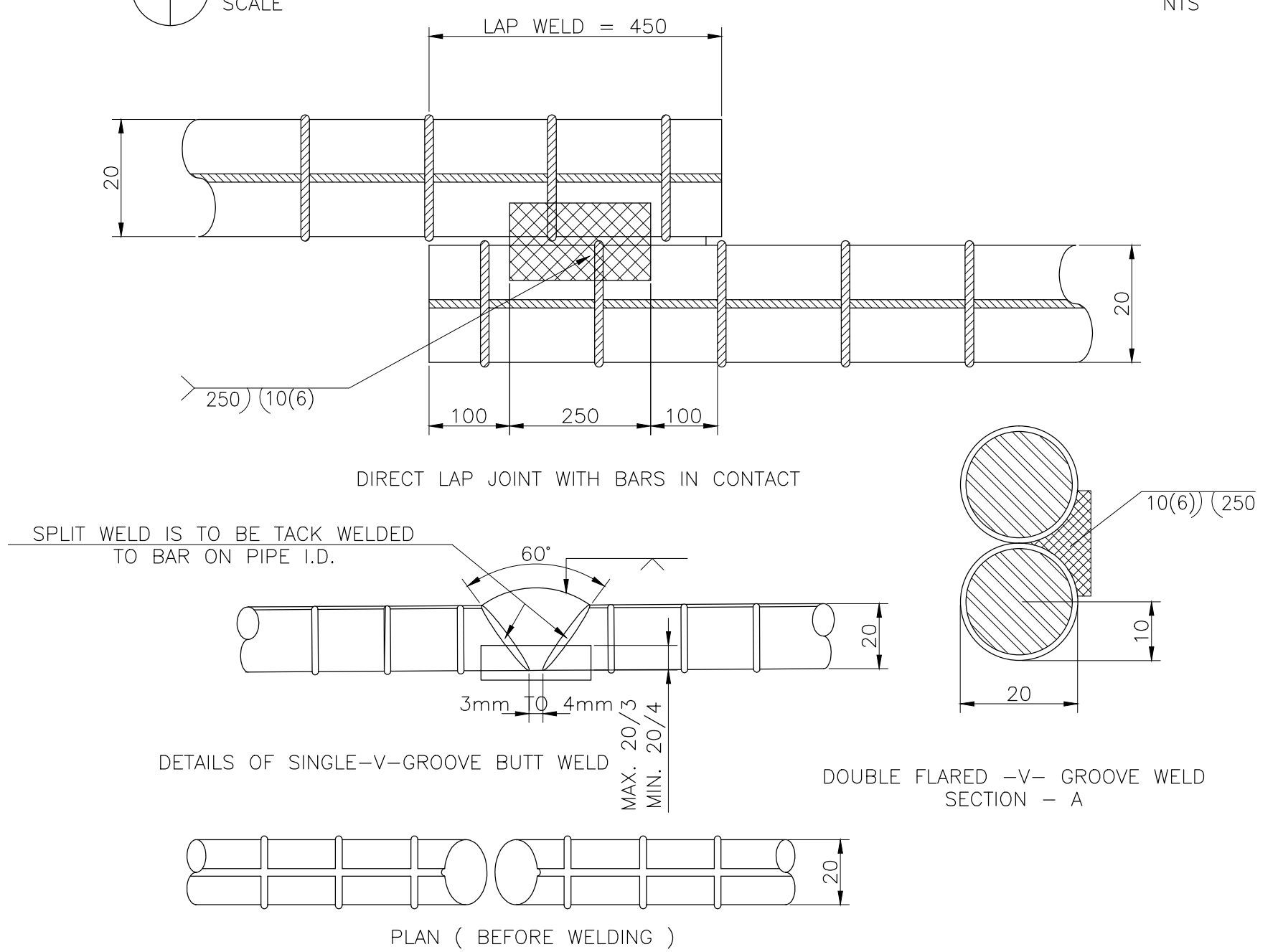
4 PIER BORED PILE SECTION THRU L1
SCALE 1:30



5 PIER BORED PILE SECTION THRU L2
SCALE 1:30



6 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS



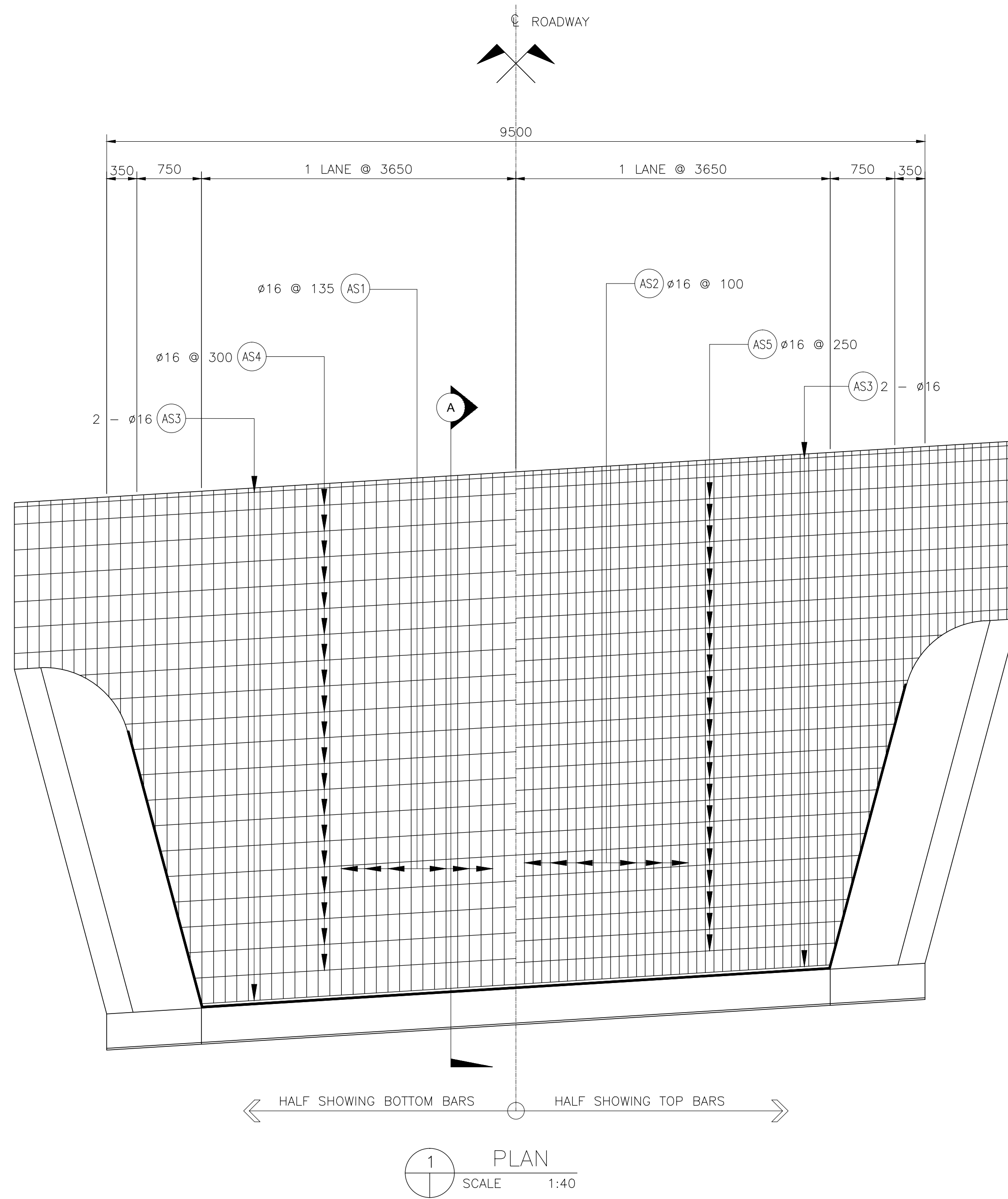
7 DETAILS OF TIES REINFORCEMENT LAP-WELD CONNECTION
SCALE NTS

SCHEDULE OF REINFORCEMENT FOR BORED PILE AT PIER ONLY

BAR BENDING DIAGRAM	BAR MARK	SIZE (□□)	SPACING (□□)	□TY	BAR SHAPE	BAR DIMENSION ALL DIMENSIONS ARE OUT TO OUT OF BARS					LOCATION	BAR LENGTH (□)	TOTAL LENGTH (□)	UNIT WEIGHT (g.□□)	TOTAL WEIGHT (g.)	VOLUME CONCRETE (cu.□□)	
						a	b	c	d	e							
FOR ONE (1) BORED PILE AT PIER (L=15m, Ø2600mm)																	
a	BP1'	36	AS SHOWN	80	A	0.40	10.00										
b	BP1	36	AS SHOWN	54	A	7.68						10.40	832.00	7.990	6980	80.00	
A	BP2	20	AS SHOWN	43	D	9.20						7.68	414.72	7.990	3479		
B	BP3	20	AS SHOWN	125	D	9.20						9.68	395.60	2.466	1024		
C	BP4	25	AS SHOWN	64	C	0.15	0.141	0.20	0.141	0.15		9.68	1150.00	2.466	2978		
D												0.78	50.05	3.853	202		
E																	
NOTE: 40db SPLICES ARE NOT INCLUDED																	
* 12 mm dia. and below are Grade 40																	
* 16 mm dia. and above are Grade 60																	
												TOTAL			14655 Kgs	80.00	

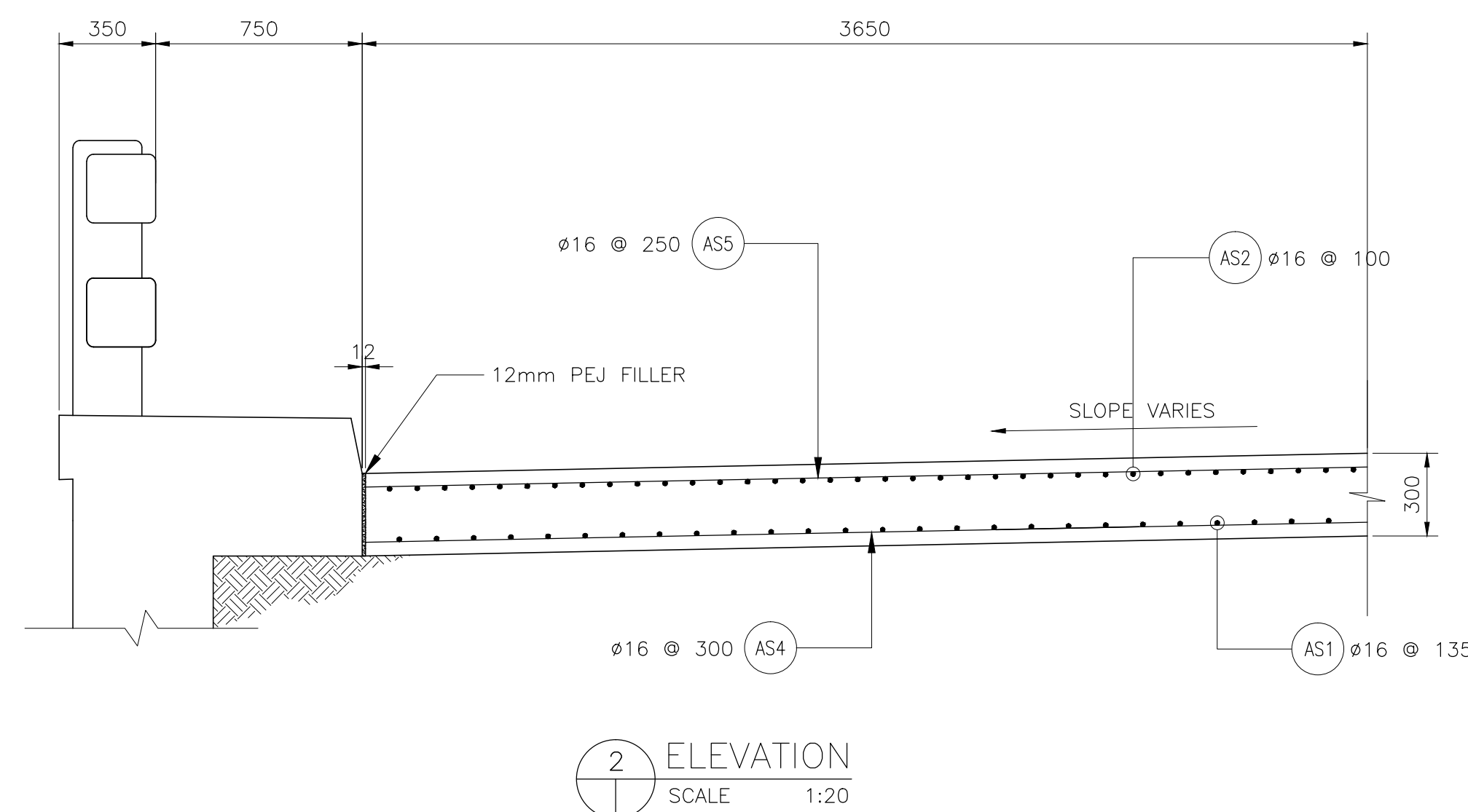
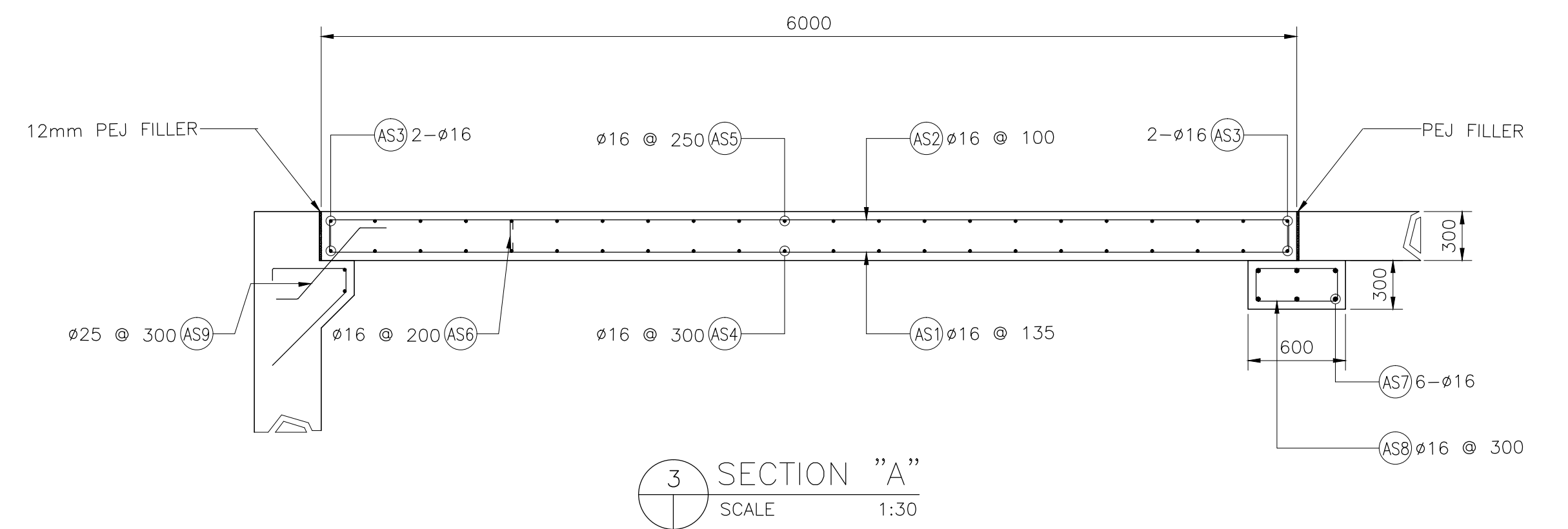
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ENGR. ALBERTO C. CAÑETE
TEAM LEADER



SCHEDULE OF REINFORCEMENTS FOR ONE APPROACH SLAB ONLY

BAR BENDING DIAGRAM	BAR MARK	SIZE (mm)	QTY	SPACING (mm)	BAR SHAPE	REINFORCING BARS							
						BAR DIMENSIONS				BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)
						a	b	c	d				
a A b	AS1	16	86	135	A	6.00	0.27	0.27		6.54	561.96	1.578	931
	AS2	16	116	100	A	6.00	0.27	0.27		6.54	758.64	1.578	1257
b B a	AS3	16	4	AS SHOWN	A	11.70	0.27	0.27		12.24	48.96	1.578	81
	AS4	16	20	300	A	11.70	0.27	0.27		12.24	244.80	1.578	406
a B a	AS5	16	24	250	A	11.70	0.27	0.27		12.24	293.76	1.578	487
	AS6	16	48	200	A	0.30	0.27	0.27		0.84	39.90	1.578	66
a B a	AS7	16	6	AS SHOWN	A	11.70	0.27	0.27		12.24	73.44	1.578	122
	AS8	16	39	300	B	0.50	0.50	0.10	0.10	1.20	46.40	1.578	77
c C c	AS9	25	39	300	C	0.13	0.60	0.13		0.86	33.25	3.853	135
												TOTAL	3562 Kgs



NOTE:
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TEAM LEADER

CONSULTANTS Urban Integrated Consultants, Inc. <small>UIC CORPORATE BLDG., 8 LANOS STREET, VASRA, DALAMAN, QUEZON CITY, 1128</small>	SUBMITTED BY EFREN L. DAVID <small>PRESIDENT - UICI</small> DATE: -	DESIGNED BY ALBERTO C. CAÑETE, M.Eng., P.P., F.ASEP <small>PROJECT MANAGER - UICI</small> DATE: -	BCDA <small>Local Government Development Authority</small>	REVISIONS A B C D E F	DATE 	PROJECT TITLE DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD SHEET CONTENT AIRPORT TO NCC (KM.1+500.00 - KM.16+000) - OVERPASS 3	SCALE AS SHOWN PROJECT CODE DATE APPROVED -	DRAWING STATUS DRAFT DRAWING DRAWING NO. SIZE P303-12 A1 DATE REVISED -
	CHECKED BY RYAN PAUL S. GALURA <small>PROJECT MANAGER</small> DATE: -	APPROVED BY JOVITO M. SUNGA <small>OIC - PMD</small> DATE: -	APPROACH SLAB DETAILS SCHEDULE OF REINFORCEMENTS AND SUMMARY OF QUANTITIES	DATE APPROVED -	DATE REVISED -	REV. -		