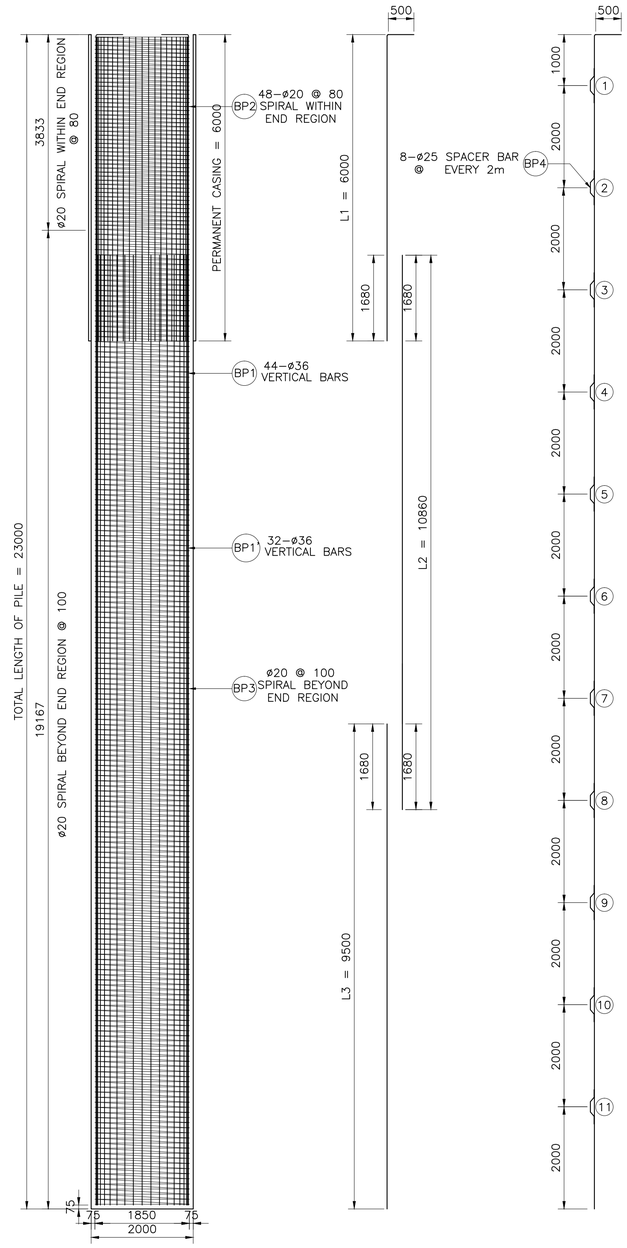
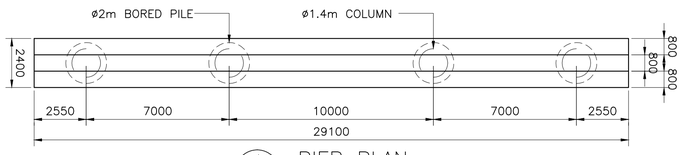


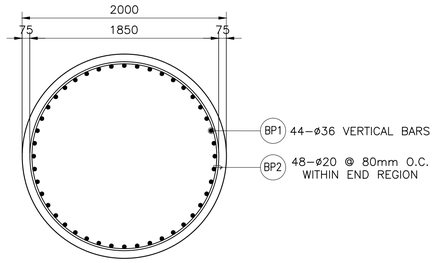
1 VERTICAL SECTION
SCALE 1:60

2 SCHEMATIC DETAIL
SCALE 1:60

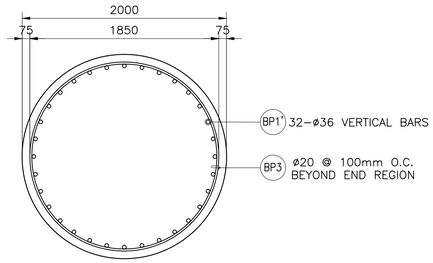
3 STIFFENER LAYOUT
SCALE 1:60



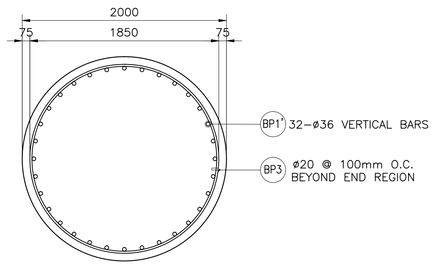
4 PIER PLAN
SCALE 1:150



5 PILE SECTION THRU L1
SCALE 1:30



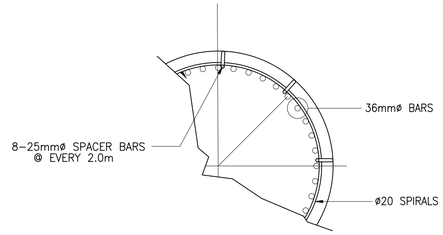
6 PILE SECTION THRU L2
SCALE 1:30

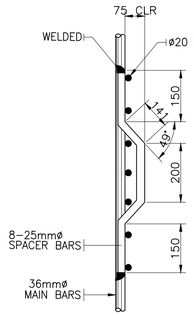


7 PILE SECTION THRU L3
SCALE 1:30

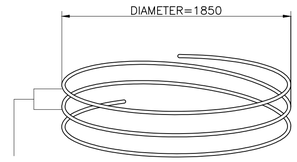
NOTES:

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.

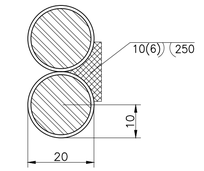




8 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS

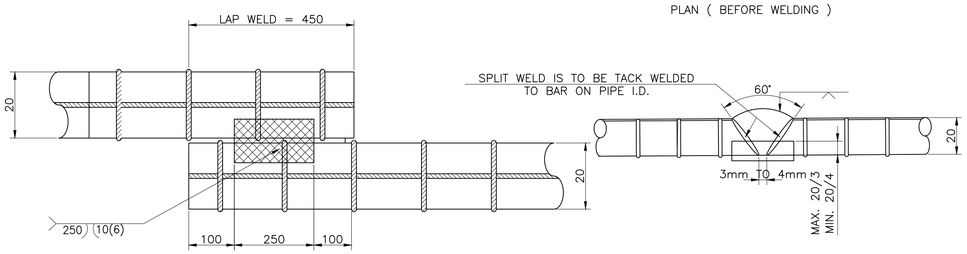


ø20 SPIRAL FINAL PITCH BEYOND END REGION @ 90
WITHIN END REGION @ 50



DOUBLE FLARED –V– GROOVE WELD
SECTION – A

PLAN (BEFORE WELDING)



DIRECT LAP JOINT WITH BARS IN CONTACT

DETAILS OF SINGLE–V–GROOVE BUTT WELD

9 DETAILS OF TIES REINFORCEMENT LAP–WELD CONNECTION
SCALE NTS

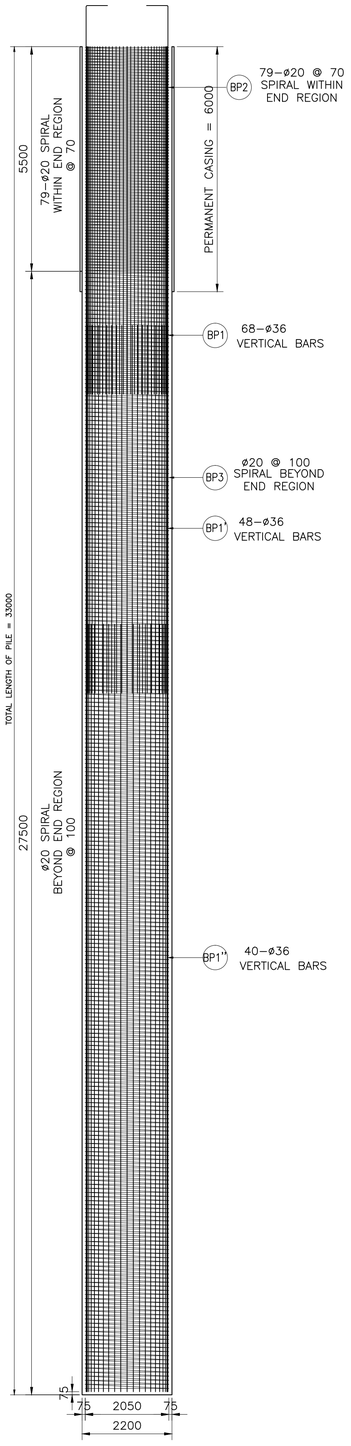
SCHEDULE OF REINFORCEMENT FOR PIER 2 BORED PILE

BAR BENDING DIAGRAM	BAR MARK	SIZE (mm)	SPACING (mm)	QTY	BAR SHAPE	BAR DIMENSION (ALL DIMENSIONS ARE OUT TO OUT OF BARS) a	b	c	d	e	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg./m.)	TOTAL WEIGHT (kg.)	VOLUME CONCRETE (cu.m.)
	FOR ONE (1) BORED PILE (L=23m, Ø2000mm)															
A	BP1	36	AS SHOWN	44	A	0.50	6.0	–	–	–	BORED PILE	6.5	208.00	7.991	1663	72.26
B	BP1'	36	AS SHOWN	32	B	10.86	–	–	–	–		10.86	347.52	7.991	2779	
C	BP1"	36	AS SHOWN	32	B	9.5	–	–	–	–		9.5	304.00	7.991	2431	
D	BP2	20	80	48	D	0.20	6.3	–	–	–		6.5	312.00	2.468	770	
L	BP3	20	100	192	D	0.20	6.3	–	–	–		6.5	1248.00	2.468	3080	
E	BP4	25	AS SHOWN	80	C	0.15	0.141	0.20	0.141	0.15		0.782	62.56	3.854	241	
													TOTAL		10965 Kgs	72.26 cu.m

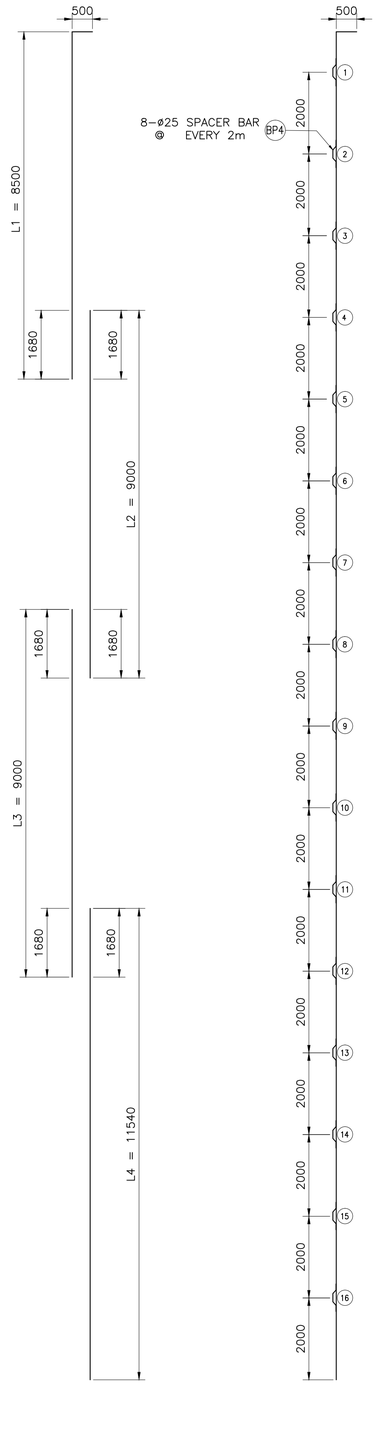
NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF RA 9184, APPROVED BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGNS UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF 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	SUBMITTED BY	DESIGNED BY		REVISIONS	DATE	PROJECT TITLE	SCALE	DRAWING STATUS
Urban Integrated Consultants, Inc. UIC CORPORATE BLDG., 8 LANZIS STREET, VASRA, DILIMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI DATE: -	ALBERTO C. CAÑETE, P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	BCDA Bases Conversion and Development Authority CHECKED BY: RYAN PAUL S. GALURA, PROJECT MANAGER, DATE: - APPROVED BY: JOVITO M. SUNGA, OIC - PMD, DATE: -	A B C D E F		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.0+000 - STA.1+500) - SACOBIA PIER 2 BORED PILE DETAILS	AS SHOWN PROJECT CODE DATE APPROVED -	DRAFT DRAWING DRAWING NO. P2SB-40 DATE REVISED - SIZE A1 REV. -

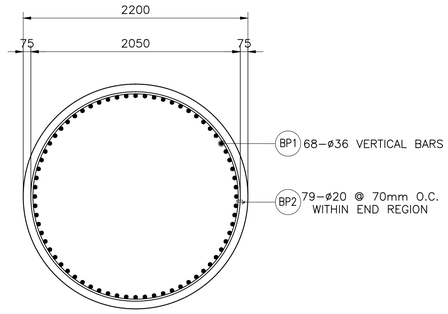


1 VERTICAL SECTION
SCALE 1:75

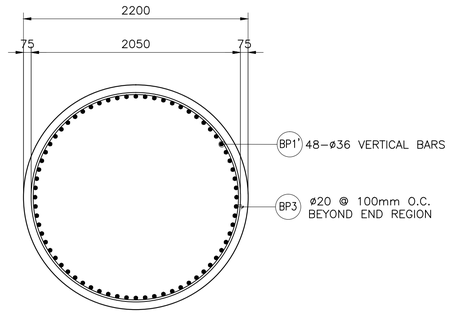


2 SCHEMATIC DETAIL
SCALE 1:75

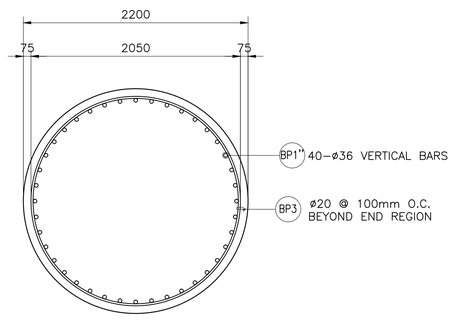
3 STIFFENER LAYOUT
SCALE 1:75



4 PILE SECTION THRU L1
SCALE 1:30



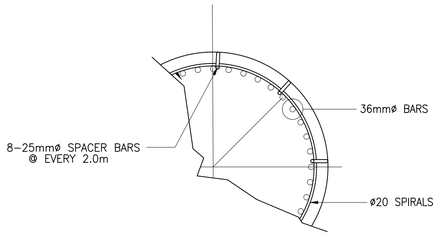
5 PILE SECTION THRU L2
SCALE 1:30

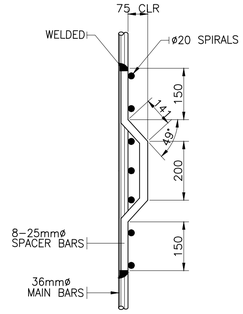


6 PILE SECTION THRU L3 AND L4
SCALE 1:30

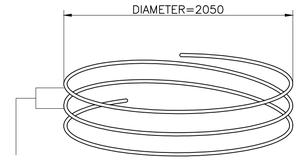
NOTES:

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.

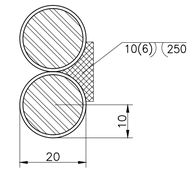




7 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS

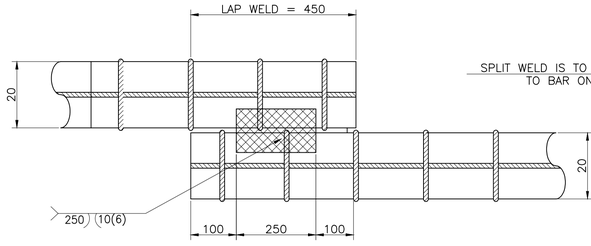


ø20 SPIRAL FINAL PITCH BEYOND END REGION @ 100 WITHIN END REGION @ 70

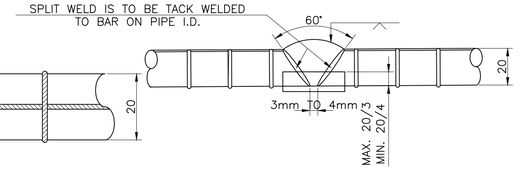


DOUBLE FLARED –V– GROOVE WELD
SECTION – A

PLAN (BEFORE WELDING)



DIRECT LAP JOINT WITH BARS IN CONTACT



DETAILS OF SINGLE–V–GROOVE BUTT WELD

8 DETAILS OF TIES REINFORCEMENT LAP–WELD CONNECTION
SCALE NTS

SCHEDULE OF REINFORCEMENT FOR PIER 6 BORED PILE

BAR BENDING DIAGRAM	BAR MARK	SIZE (mm)	SPACING (mm)	QTY	BAR SHAPE	BAR DIMENSION (ALL DIMENSIONS ARE OUT TO OUT OF BARS) a	b	c	d	e	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg./m.)	TOTAL WEIGHT (kg.)	VOLUME CONCRETE (cu.m.)
	FOR ONE (1) BORED PILE (L=33m, Ø2200mm)															
A	BP1	36	AS SHOWN	68	A	0.50	8.5	–	–	–	BORED PILE	9.00	612.00	7.996	4894	126
B	BP1'	36	AS SHOWN	48	B	9.00	–	–	–	–		9.00	432.00	7.996	3455	
C	BP1"	36	AS SHOWN	40	B	9.00	–	–	–	–		9.00	360.00	7.996	2879	
D	BP1"	36	AS SHOWN	40	B	11.54	–	–	–	–		11.54	46160	7.996	3691	
E	BP2	20	70	79	D	0.20	7.0	–	–	–		7.2	568.80	2.468	1404	
	BP3	20	100	275	D	0.20	7.0	–	–	–		7.2	1980.00	2.468	4887	
	BP4	25	AS SHOWN	96	C	0.15	0.141	0.20	0.141	0.15		0.782	75.07	3.856	290	
													TOTAL		21498 Kgs	126 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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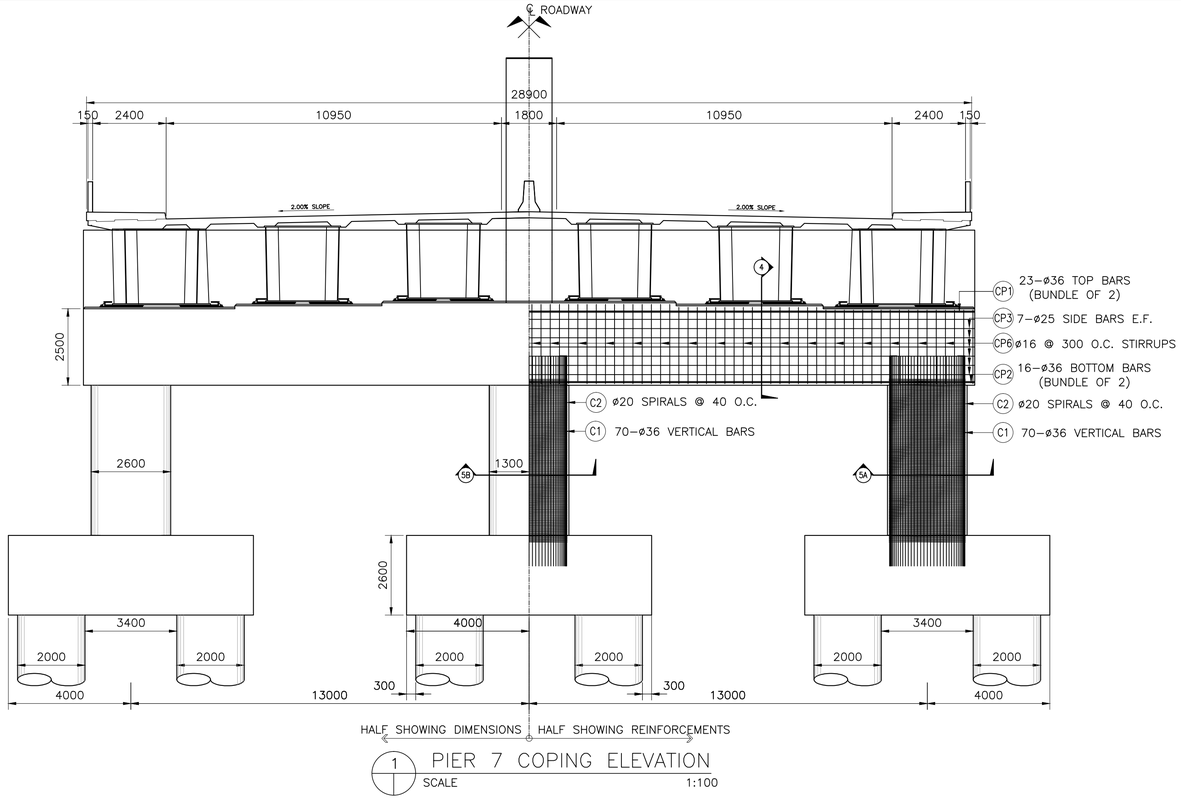
ENGR. ALBERTO C. CAÑETE
TEAM LEADER

CONSULTANTS	SUBMITTED BY	DESIGNED BY	CHECKED BY	APPROVED BY
Urban Integrated Consultants, Inc. UICI CORPORATE BLDG., 8 LANDS STREET, VASRA, DILIMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI DATE: -	ALBERTO C. CAÑETE, P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	JOVITO M. SUNGA OIC - PMD DATE: -

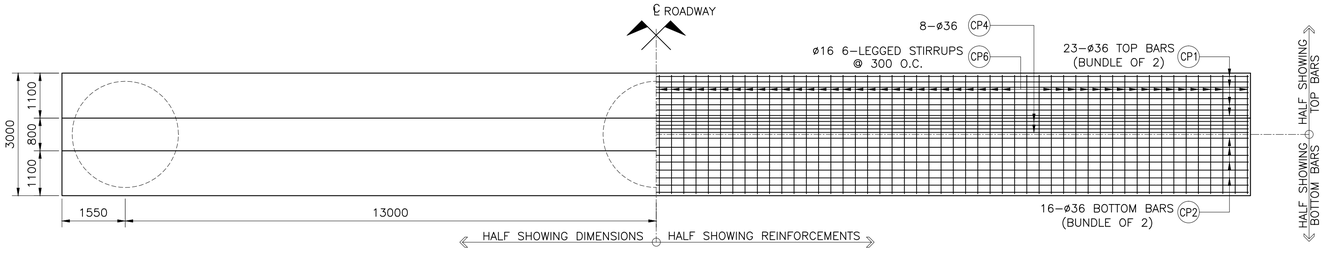
BCDA Bases Conversion and Development Authority

REVISIONS	DATE
A	
B	
C	
D	
E	
F	

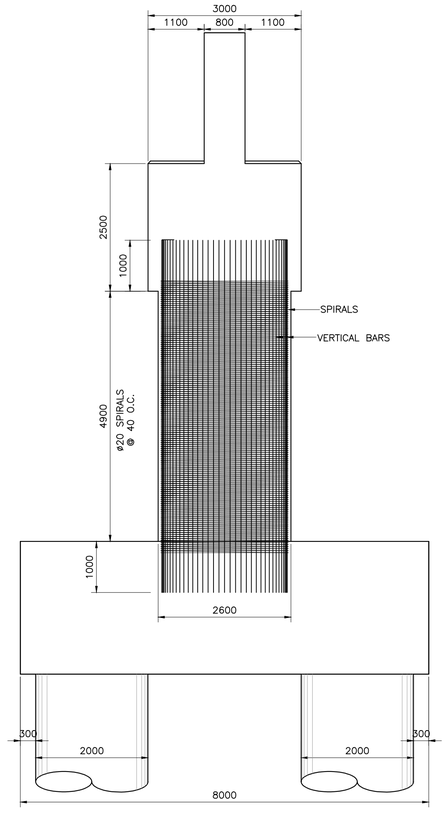
PROJECT TITLE	SCALE	DRAWING STATUS
DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING
SHEET CONTENT AIRPORT TO NCC (STA.0+000 - STA.1+500) - SACOBIA	PROJECT CODE	DRAWING NO. / SIZE
		P2SB-49 / A1
PIER 6 BORED PILE DETAILS	DATE APPROVED	DATE REVISED / REV.
	-	- / -



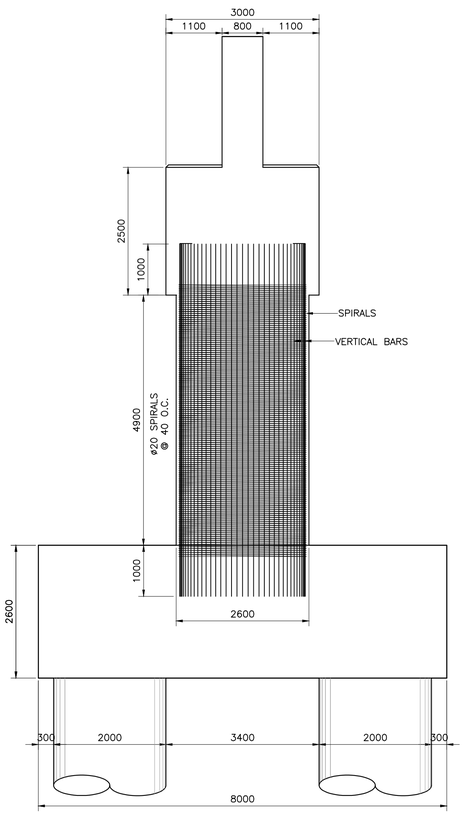
1 PIER 7 COPING ELEVATION
SCALE 1:100



2 PIER 7 COPING PLAN
SCALE 1:75

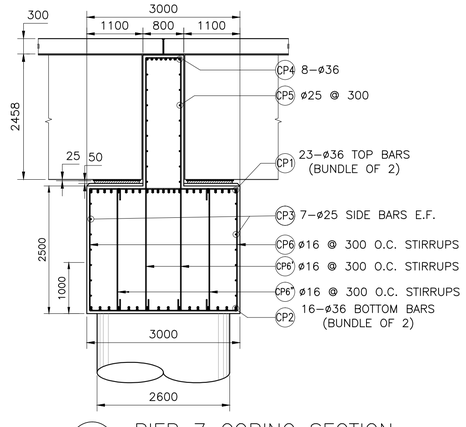


3A PIER 7 LEFT AND RIGHT

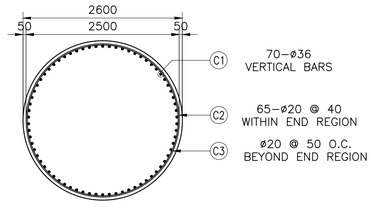


3B PIER 7 CENTER

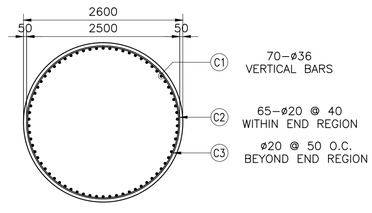
3 PIER 7 TYPICAL SECTION
SCALE 1:60



4 PIER 7 COPING SECTION
SCALE 1:60



5A PIER 7 LEFT AND RIGHT
SCALE 1:50



5B PIER 7 CENTER
SCALE 1:50

5 PIER 7 COLUMN DETAIL
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.

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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

SCHEDULE OF REINFORCEMENTS FOR PIER 7 COLUMN AND COPING

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	C1	36	AS SHOWN	16	0.5	8.5	0.5				A		9.5	152.00	7.996	1216	
B	C2	20	40	70	8.2	0.2					F	COLUMN	8.4	588.00	2.468	1452	27
	C3	20	50	42	8.2	0.2					F		8.4	352.80	2.468	871	
C	CP1	36	AS SHOWN	46	0.5	29	0.5				A		30	1380.00	7.9963	11035	
	CP2	36	AS SHOWN	32	0.5	29	0.5				A		30	960.00	7.9963	7677	
D	CP3	25	AS SHOWN	8	0.2	29	0.2				A		29.4	235.2	3.8568	907	
	CP4	36	AS SHOWN	8	0.5	29	0.5				A	COPING	30	240.00	7.9963	1920	221
	CP5	25	300	12	0.2	29	0.2				A		29.4	352.80	3.8568	1361	
E	CP6	16	300	97	2.9	2.5	2.9	2.5	0.15	0.15	B		11.1	1076.70	1.5795	1701	
	CP6'	16	300	97	0.7	4.4	0.7	4.4	0.15	0.15	B		10.5	1018.50	1.5795	1609	
F	CP6"	16	300	194	0.2	2.5	0.2				A		2.9	562.60	1.5795	889	
a = P×D×3pcs												GRAND TOTAL		Grade 60 bar		37716 Kgs	248 cu.m

CONSULTANTS
Urban Integrated Consultants, Inc.
UICI CORPORATE BLDG., 8 LANDS STREET, VASRA, DILIMAN, QUEZON CITY, 1128

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

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

BCDA Bases Conversion and Development Authority

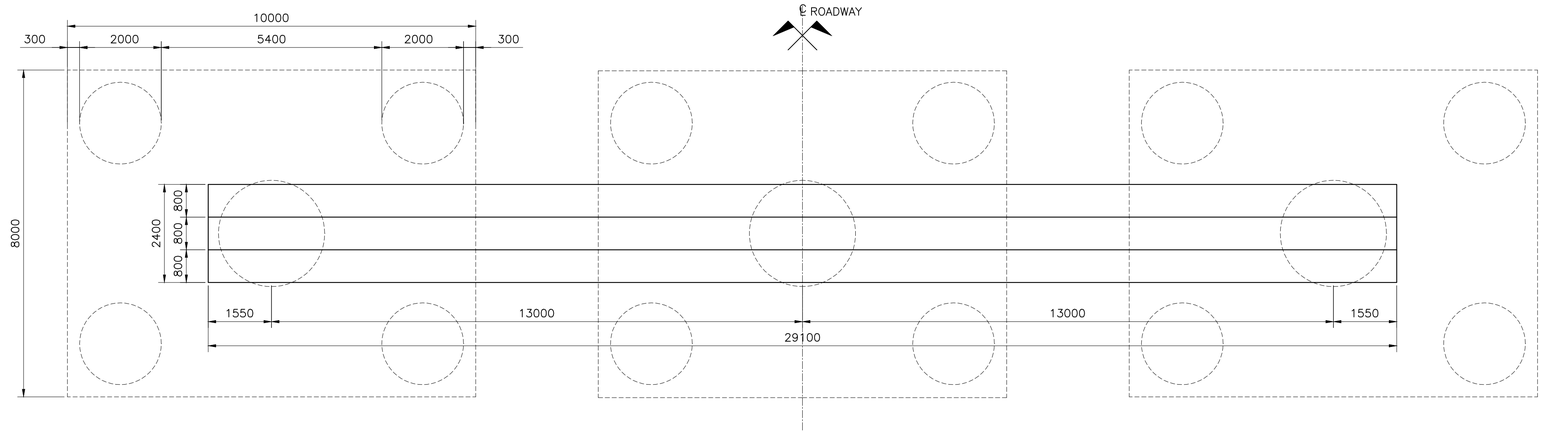
CHECKED BY
RYAN PAUL S. GALURA
PROJECT MANAGER
DATE: -

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

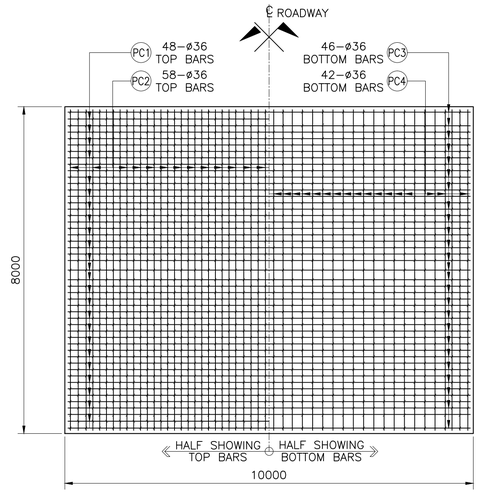
REVISIONS	DATE
A	
B	
C	
D	
E	
F	

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.0+000 - KM.1+500) - SACOBIA
PIER 7 COLUMN PLAN AND ELEVATION
COLUMN SECTION
SCHEDULE OF REINFORCEMENTS AND SUMMARY OF QUANTITIES

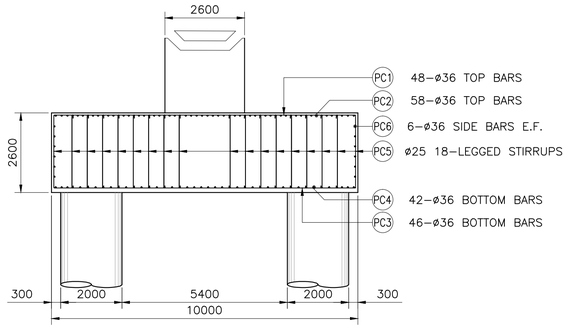
SCALE	DRAWING STATUS
AS SHOWN	DRAFT DRAWING
PROJECT CODE	DRAWING NO. / SIZE
	P2SB-50 / A1
DATE APPROVED	DATE REVISED / REV.
-	- / -



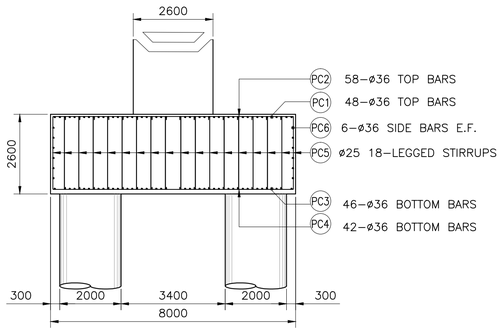
1 PIER 7 PLAN
SCALE 1:75



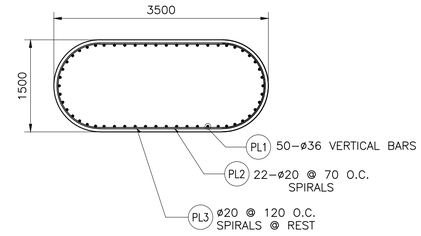
2 PILE CAP PLAN
SCALE 1:75



3 PILE CAP TRANSVERSE SECTION
SCALE 1:100



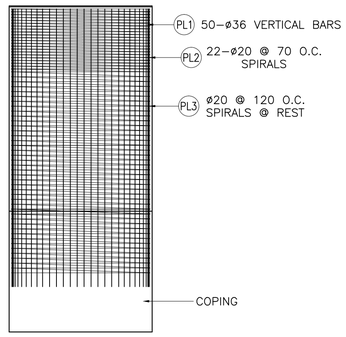
4 PILE CAP TRANSVERSE SECTION
SCALE 1:100



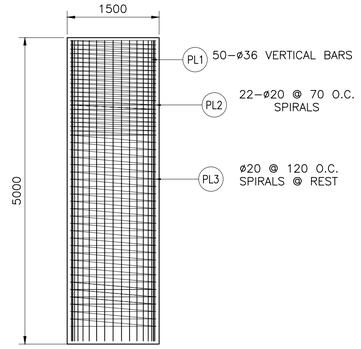
5 PEDESTAL PLAN
SCALE 1:50

SCHEDULE OF REINFORCEMENTS FOR PILE CAP - PIER 7

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	e	f				
PC1	36	48	AS SHOWN	A	1.5	8	1.5				11	528.00	7.99632	4222.05696
PC2	36	58	AS SHOWN	A	1.5	10	1.5				13	754.00	7.99632	6029.22528
PC3	36	46	AS SHOWN	A	1.5	8	1.5				11	506.00	7.99632	4046.13792
PC4	36	42	AS SHOWN	A	1.5	10	1.5				13	546.00	7.99632	4365.99072
PC5	25	896	AS SHOWN	A	0.3	2.5	0.3				3.1	2777.60	3.85625	100711012
PC6	25	736	AS SHOWN	A	0.3	2.5	0.3				3.1	2281.60	3.85625	8798.42
												TOTAL GRADE 60		38173 Kgs
												GRAND TOTAL		114519 Kgs



6 PEDESTAL TRANSVERSE SECTION
SCALE 1:75



7 PEDESTAL TRANSVERSE 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

CONSULTANTS	SUBMITTED BY	DESIGNED BY	CHECKED BY	APPROVED BY
Urban Integrated Consultants, Inc. UICI CORPORATE BLDG., 8 LANDS STREET, VASRA, DILIMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI DATE: -	ALBERTO C. CAÑETE P.P.,F. ASEP PROJECT MANAGER - UICI DATE: -	RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	JOVITO M. SUNGA OIC - PMD DATE: -

BCDA Bases Conversion and Development Authority

REVISIONS	DATE
A	
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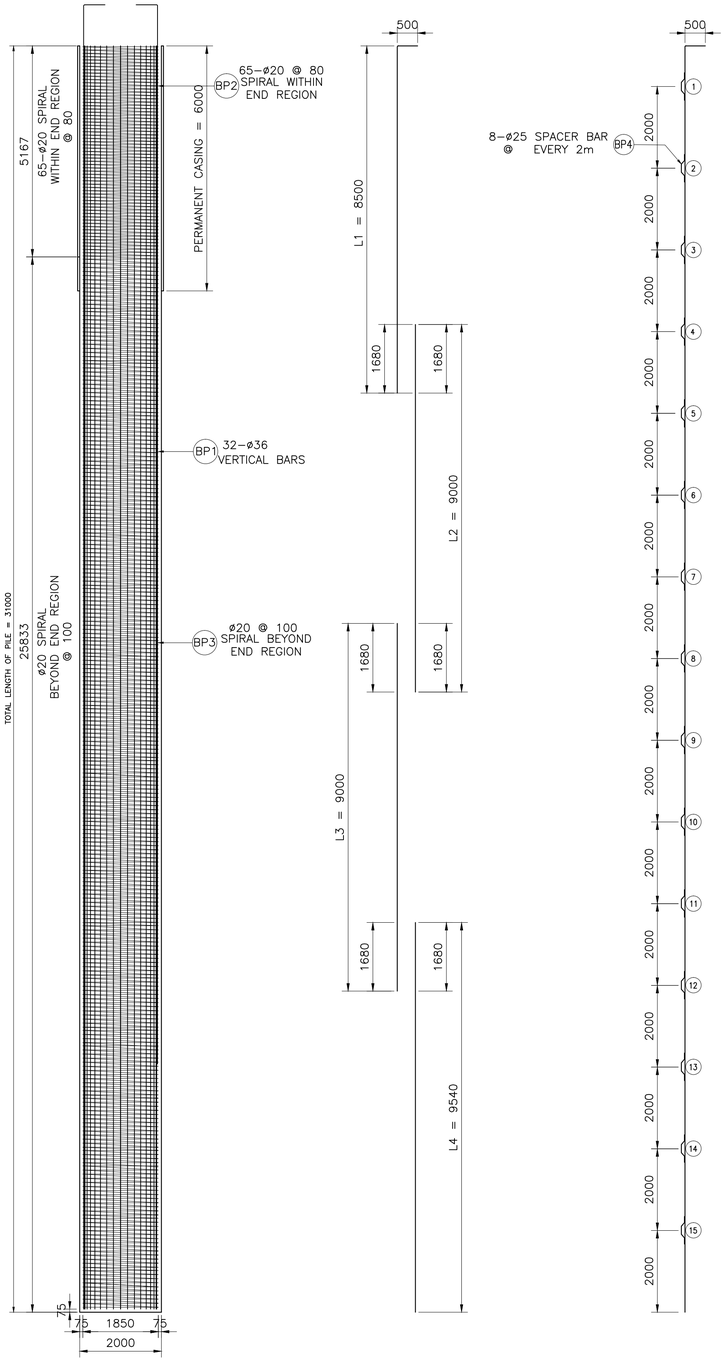
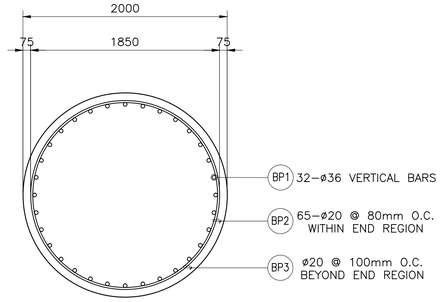
PROJECT TITLE	SCALE	DRAWING STATUS
DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING
SHEET CONTENT AIRPORT TO NCC (KM.0+000 - KM.1+500) - SACOBIA	PROJECT CODE	DRAWING NO. / SIZE
PIER 7 PILE CAP DETAIL PEDESTAL DETAIL		P2SB-51 / A1
	DATE APPROVED	DATE REVISED / REV.
	-	- / -



1 VERTICAL SECTION
SCALE 1:75



4 BORED PILE 7 SECTION
SCALE 1:30

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.

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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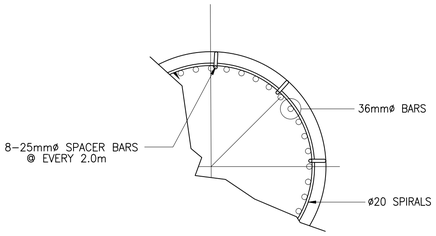
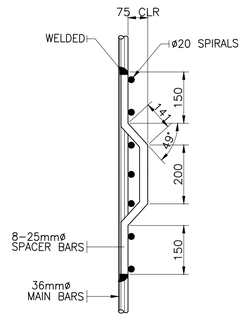
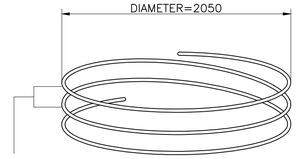
ENGR. ALBERTO C. CAÑETE
TEAM LEADER

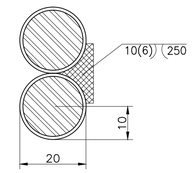




5 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS

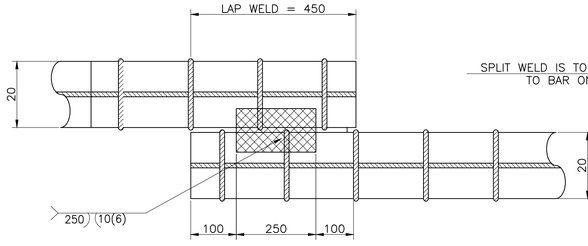


ø20 SPIRAL FINAL PITCH BEYOND END REGION @ 100 WITHIN END REGION @ 80

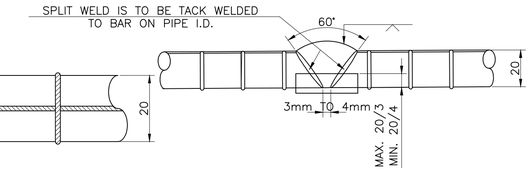


DOUBLE FLARED -V- GROOVE WELD
SECTION - A

PLAN (BEFORE WELDING)



DIRECT LAP JOINT WITH BARS IN CONTACT



DETAILS OF SINGLE-V-GROOVE BUTT WELD

6 DETAILS OF TIES REINFORCEMENT LAP-WELD CONNECTION
SCALE NTS

SCHEDULE OF REINFORCEMENT FOR PIER 7 BORED PILE

BAR MARK	SIZE (mm)	SPACING (mm)	QTY	BAR SHAPE	BAR DIMENSION (ALL DIMENSIONS ARE OUT TO OUT OF BARS) a	b	c	d	e	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg./m.)	TOTAL WEIGHT (kg.)	VOLUME CONCRETE (cu.m.)
FOR ONE (1) BORED PILE (L=31m, Ø2000mm)															
BP1	36	AS SHOWN	32	A	0.50	8.5	–	–	–	BORED PILE	9	288.00	7.996	2303	98
BP1'	36	AS SHOWN	32	B	9	–	–	–	–		9	288.00	7.996	2303	
BP1"	36	AS SHOWN	32	B	9	–	–	–	–		9	288.00	7.996	2303	
BP1"	36	AS SHOWN	32	B	9.54	–	–	–	–		9.54	305.28	7.996	2441	
BP2	20	80	65	D	0.20	6.3	–	–	–		6.5	422.50	2.468	1043	
BP3	20	100	259	D	0.20	6.3	–	–	–		6.5	1683.50	2.468	4155	
BP4	25	AS SHOWN	96	C	0.15	0.141	0.20	0.141	0.15		0.782	75.07	3.856	290	
												TOTAL		14837 Kgs	98 cu.m

BAR BENDING DIAGRAM

CONSULTANTS	SUBMITTED BY	DESIGNED BY	CHECKED BY	APPROVED BY
Urban Integrated Consultants, Inc. UICI CORPORATE BLDG., 8 LANDS STREET, VASRA, DILIMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI DATE: -	ALBERTO C. CAÑETE, P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	JOVITO M. SUNGA OIC - PMD DATE: -

BCDA Bases Conversion and Development Authority

REVISIONS	DATE
A	
B	
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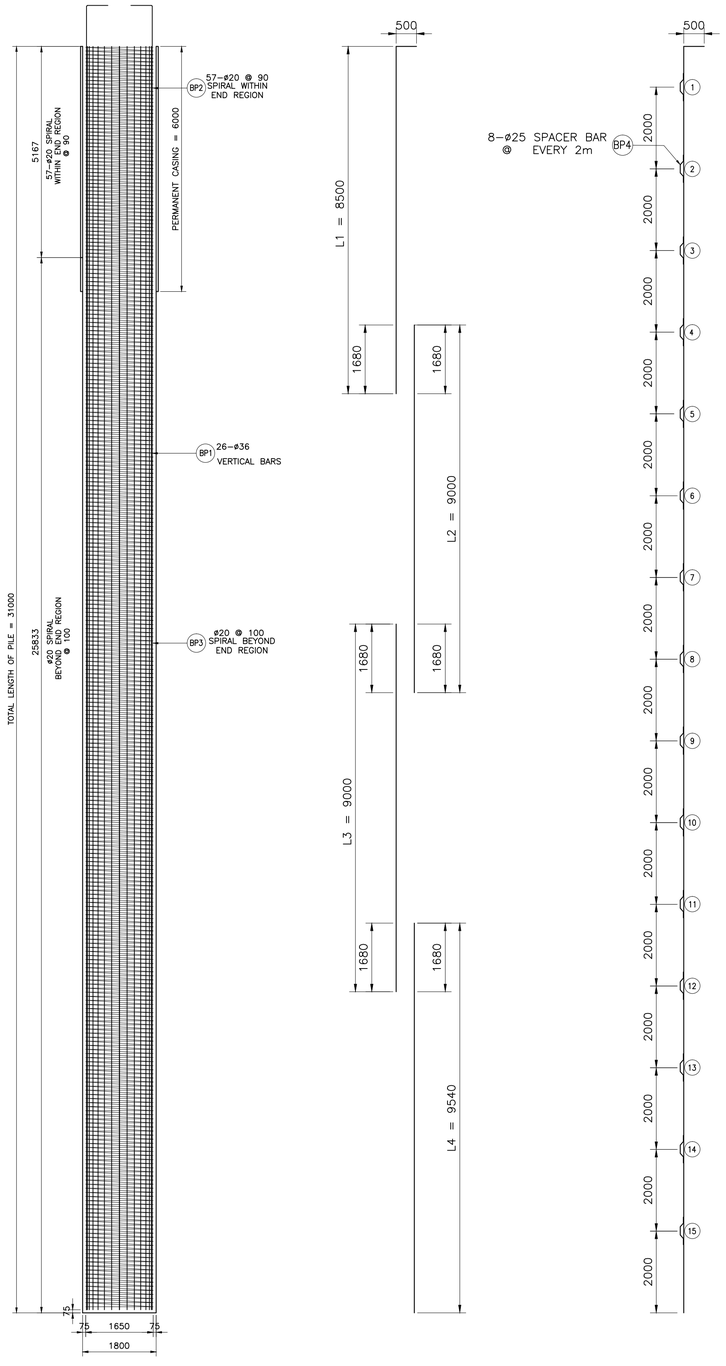
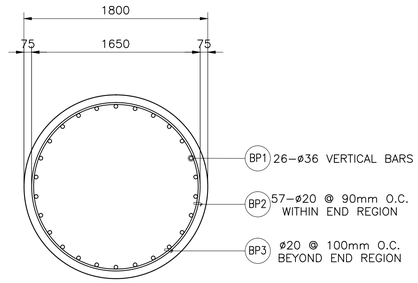
PROJECT TITLE	SCALE	DRAWING STATUS
DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING
SHEET CONTENT AIRPORT TO NCC (STA.0+000 - STA.1+500) - SACOBIA	PROJECT CODE	DRAWING NO. / SIZE
PIER 7 BORED PILE DETAILS		P2SB-52 / A1
	DATE APPROVED	DATE REVISED / REV.
	-	- / -



1 VERTICAL SECTION
SCALE NTS

2 SCHEMATIC DETAIL
SCALE NTS

3 STIFFENER LAYOUT
SCALE NTS



4 BORED PILE 8 SECTION
SCALE 1:30

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.
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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.

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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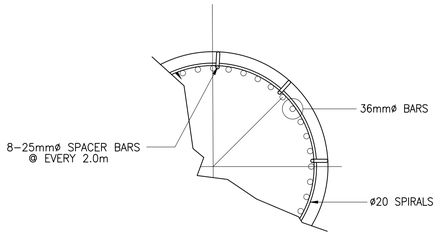
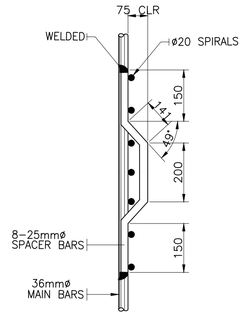
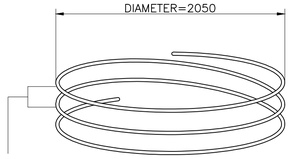
ENGR. ALBERTO C. CAÑETE
TEAM LEADER

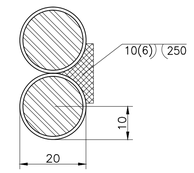




5 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS

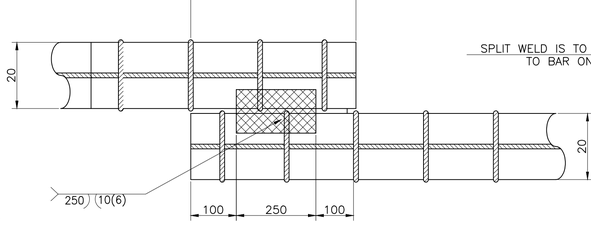


ø20 SPIRAL FINAL PITCH BEYOND END REGION @ 100
WITHIN END REGION @ 80

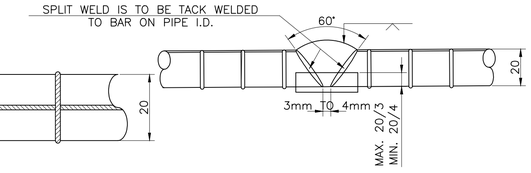


DOUBLE FLARED -V- GROOVE WELD
SECTION – A

PLAN (BEFORE WELDING)



DIRECT LAP JOINT WITH BARS IN CONTACT



DETAILS OF SINGLE-V-GROOVE BUTT WELD

6 DETAILS OF TIES REINFORCEMENT LAP-WELD CONNECTION
SCALE NTS

SCHEDULE OF REINFORCEMENT FOR PIER 8 BORED PILE

BAR BENDING DIAGRAM	BAR MARK	SIZE (mm)	SPACING (mm)	QTY	BAR SHAPE	BAR DIMENSION (ALL DIMENSIONS ARE OUT TO OUT OF BARS) a	b	c	d	e	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg./m.)	TOTAL WEIGHT (kg.)	VOLUME CONCRETE (cu.m.)
	FOR ONE (1) BORED PILE (L=31m, Ø1800mm)															
A	BP1	36	AS SHOWN	26	A	0.50	8.5	–	–	–	BORED PILE	9	234.00	7.996	1872	79
A	BP1'	36	AS SHOWN	26	B	9	–	–	–	–		9	234.00	7.996	1872	
A	BP1"	36	AS SHOWN	26	B	9	–	–	–	–		9	234.00	7.996	1872	
A	BP1"	36	AS SHOWN	26	B	9.54	–	–	–	–		9.54	248.04	7.996	1984	
D	BP2	20	90	58	D	0.20	5.7	–	–	–		5.9	342.20	2.468	845	
C	BP3	20	100	259	D	0.20	5.7	–	–	–		5.9	1528.10	2.468	3772	
E	BP4	25	AS SHOWN	96	C	0.15	0.141	0.20	0.141	0.15		0.782	75.07	3.856	290	
													TOTAL		12503 Kgs	79 cu.m

CONSULTANTS	SUBMITTED BY	DESIGNED BY	CHECKED BY	APPROVED BY
Urban Integrated Consultants, Inc. UICI CORPORATE BLDG., 8 LANDS STREET, VASRA, DILIMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI DATE: -	ALBERTO C. CAÑETE, P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	JOVITO M. SUNGA OIC - PMD DATE: -

BCDA Bases Conversion and Development Authority

REVISIONS	DATE
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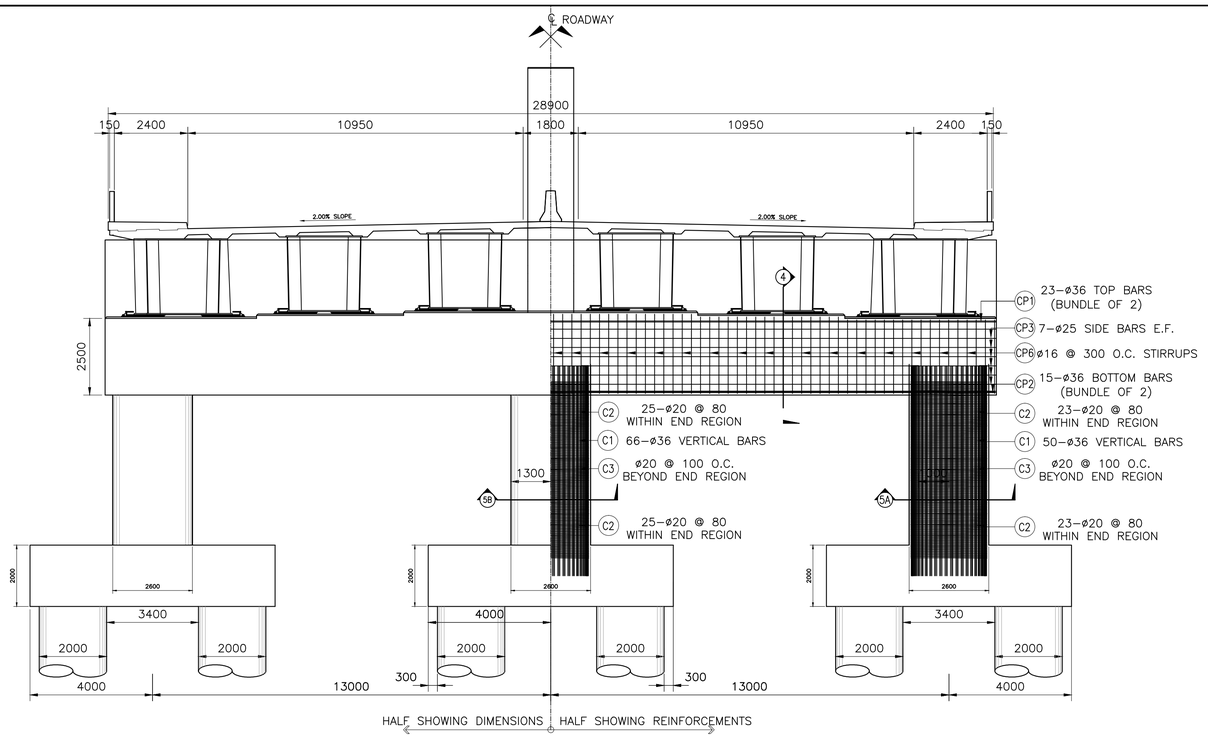
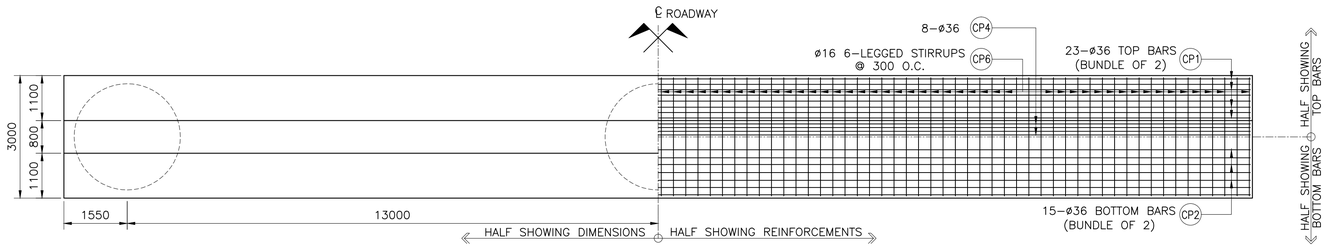
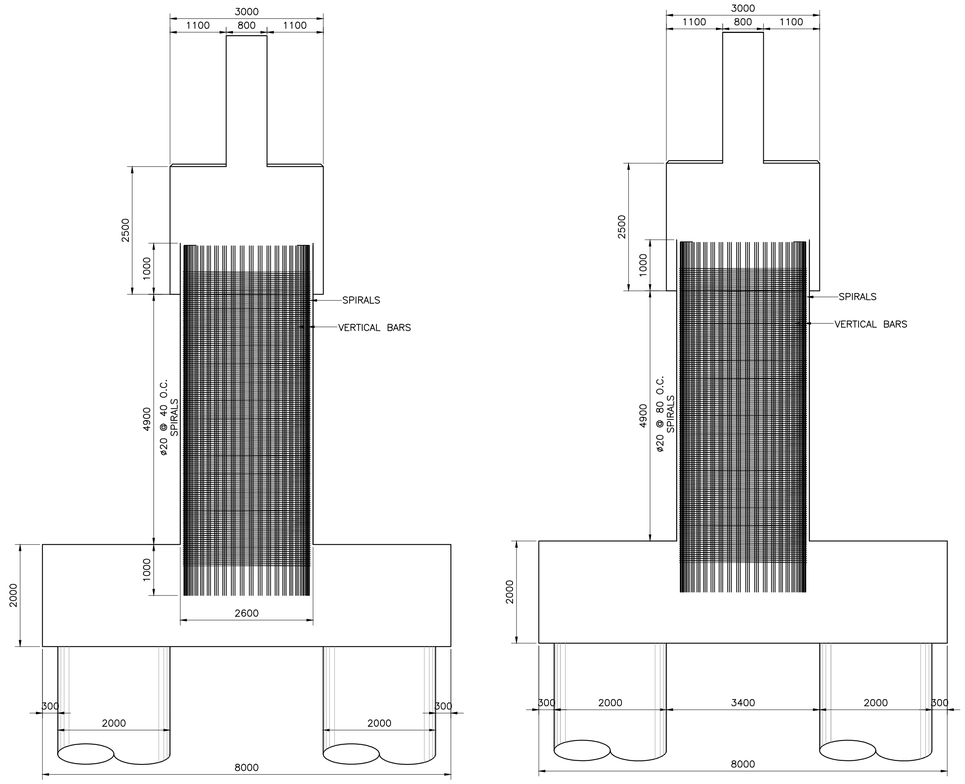
PROJECT TITLE	SCALE	DRAWING STATUS
DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING
	PROJECT CODE	DRAWING NO. / SIZE
SHEET CONTENT AIRPORT TO NCC (STA.0+000 - STA.1+500) - SACOBIA		P2SB-55 / A1
PIER 8 BORED PILE DETAILS	DATE APPROVED	DATE REVISED / REV.
	-	- / -



1 PIER 9 COPING ELEVATION
SCALE 1:100



2 PIER 9 COPING PLAN
SCALE 1:75



3A PIER 9 LEFT AND RIGHT

3B PIER 9 CENTER

3 PIER 9 TYPICAL SECTION
SCALE 1:60

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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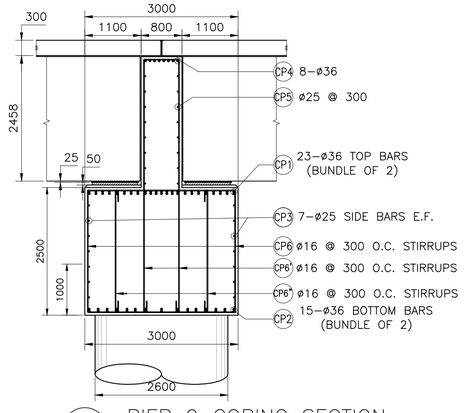
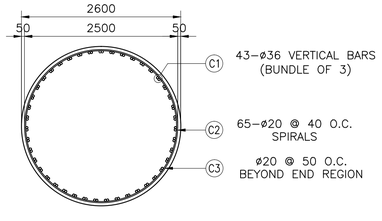
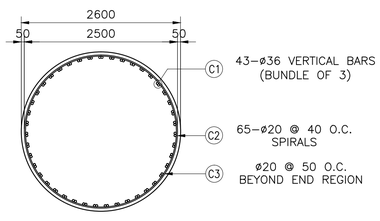
ENGR. ALBERTO C. CAÑETE
TEAM LEADER



4 PIER 9 COPING SECTION
SCALE 1:60



5A PIER 9 LEFT AND RIGHT
SCALE 1:50



5B PIER 9 CENTER
SCALE 1:50

5 PIER 9 COLUMN DETAIL
SCALE 1:50

SCHEDULE OF REINFORCEMENTS FOR PIER 9 COLUMN AND COPING

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	C1	36	AS SHOWN	16	0.5	8.5	0.5				A	COLUMN	9.5	152.00	7.996	1216	27
B	C2	20	40	70	8.2	0.2					F		8.4	588.00	2.468	1452	
	C3	20	50	42	8.2	0.2					F		8.4	352.80	2.468	871	
C	CP1	36	AS SHOWN	46	0.5	29	0.5				A	COPING	30	1380.00	7.9963	11035	221
	CP2	36	AS SHOWN	30	0.5	29	0.5				A		30	900.00	7.9963	7197	
D	CP3	25	AS SHOWN	8	0.2	29	0.2				A		29.4	235.20	3.8568	907	
	CP4	36	AS SHOWN	8	0.5	29	0.5				A		30	240.00	7.9963	1920	
	CP5	25	300	12	0.2	29	0.2				A		29.4	352.80	3.8568	1361	
E	CP6	16	300	97	2.9	2.5	2.9	2.5	0.15	0.15	B		11.1	1076.70	1.5795	1701	
	CP6'	16	300	97	0.7	4.4	0.7	4.4	0.15	0.15	B		10.5	1018.50	1.5795	1609	
F	CP6"	16	300	194	0.2	2.4	0.2				A		2.9	562.60	1.5795	889	
a = P×D×3pcs												GRAND TOTAL		Grade 60 bar		37236 Kgs	248 cu.m

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BCDA Bases Conversion and Development Authority

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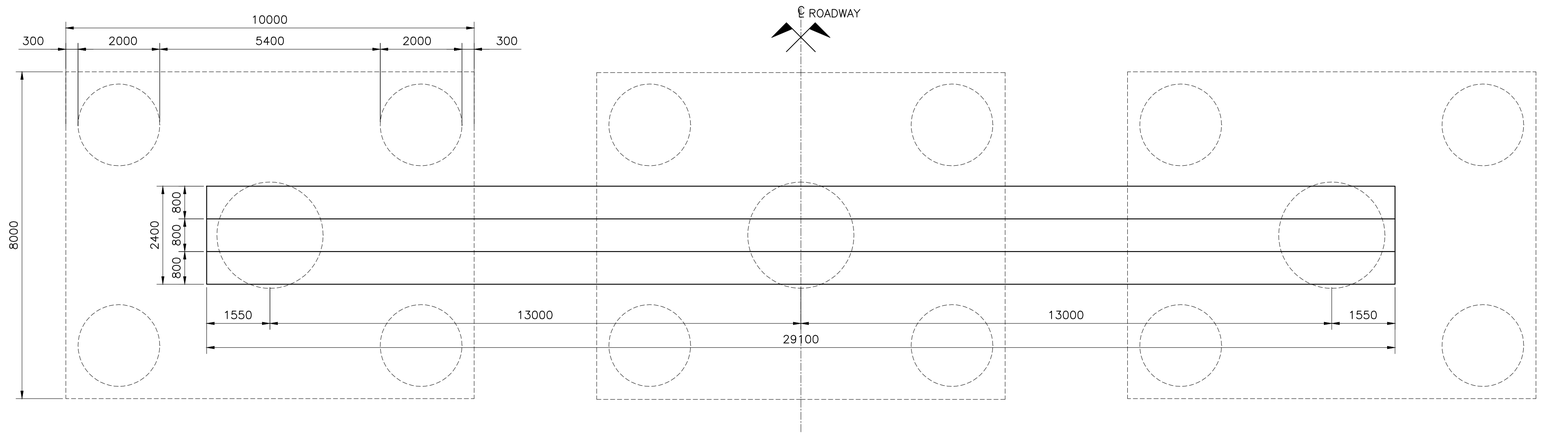
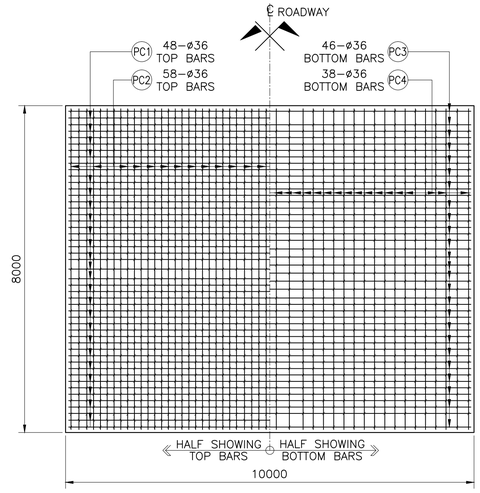
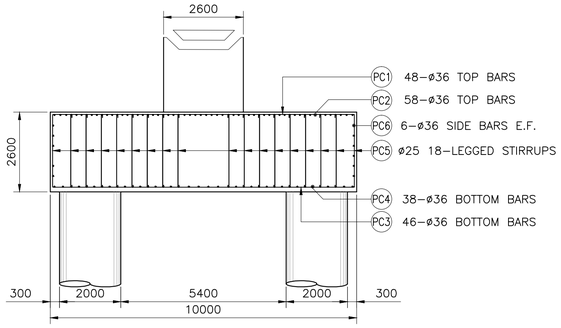
PROJECT TITLE	SCALE	DRAWING STATUS
DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING
SHEET CONTENT AIRPORT TO NCC (KM.0+000 - KM.1+500) - SACOBIA	PROJECT CODE	DRAWING NO. / SIZE
PIER 9 COLUMN PLAN AND ELEVATION COLUMN SECTION SCHEDULE OF REINFORCEMENTS AND SUMMARY OF QUANTITIES		P2SB-56 / A1
	DATE APPROVED	DATE REVISED / REV.
	-	- / -



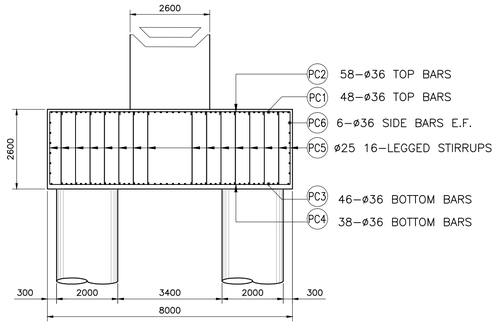
1 PIER 9 PLAN
SCALE 1:75



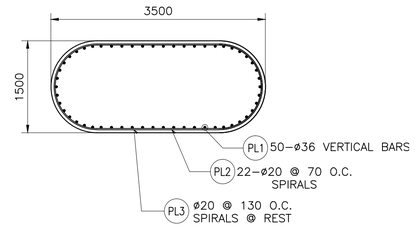
2 PILE CAP PLAN
SCALE 1:75



3 PILE CAP TRANSVERSE SECTION
SCALE 1:100



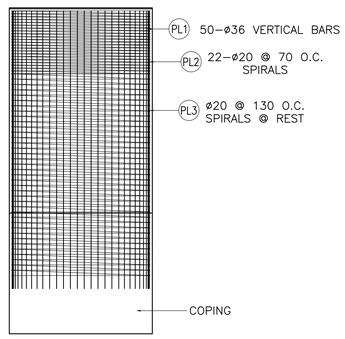
4 PILE CAP TRANSVERSE SECTION
SCALE 1:100



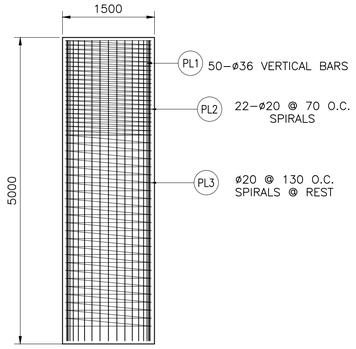
5 PEDESTAL PLAN
SCALE 1:50

SCHEDULE OF REINFORCEMENTS FOR PILE CAP - PIER 9

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	e	f				
PC1	36	48	AS SHOWN	A	1.5	8	1.5				11	528.00	7.99632	4222.05696
PC2	36	58	AS SHOWN	A	1.5	10	1.5				13	754.00	7.99632	6029.22528
PC3	36	46	AS SHOWN	A	1.5	8	1.5				11	506.00	7.99632	4046.13792
PC4	36	38	AS SHOWN	A	1.5	10	1.5				13	494.00	7.99632	3950.18208
PC5	25	784	AS SHOWN	A	0.3	2.5	0.3				3.1	2430.40	3.85625	9372.23
PC6	25	736	AS SHOWN	A	0.3	2.5	0.3				3.1	2281.60	3.85625	8798.42
												TOTAL GRADE 60		36419 Kgs
												GRAND TOTAL		109255 Kgs



6 PEDESTAL TRANSVERSE SECTION
SCALE 1:75



7 PEDESTAL TRANSVERSE 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.

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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

CONSULTANTS	SUBMITTED BY	DESIGNED BY	BCDA Bases Conversion and Development Authority
Urban Integrated Consultants, Inc. UICI CORPORATE BLDG., 8 LANDS STREET, VASRA, DILIMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI DATE: -	ALBERTO C. CAÑETE 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
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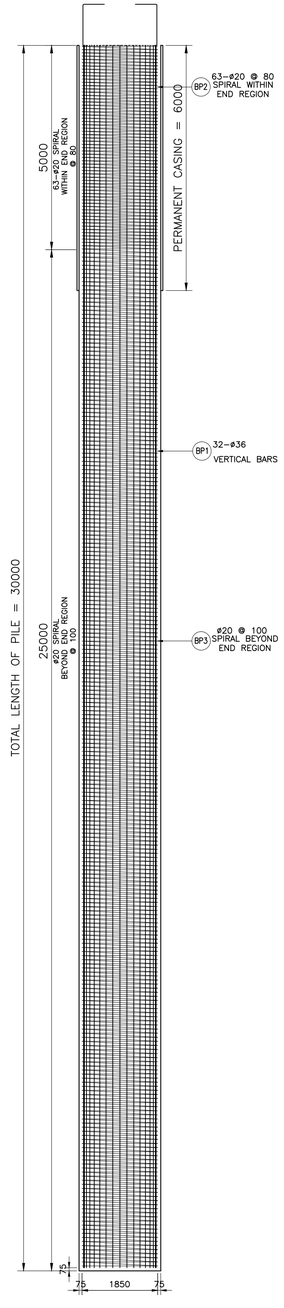
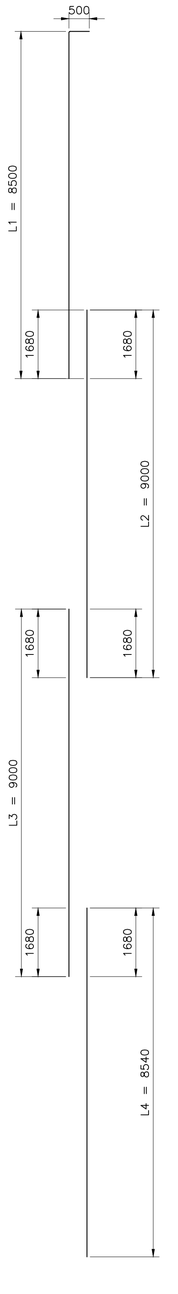
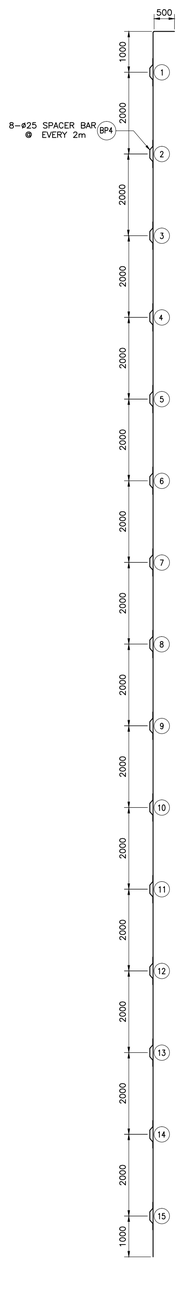
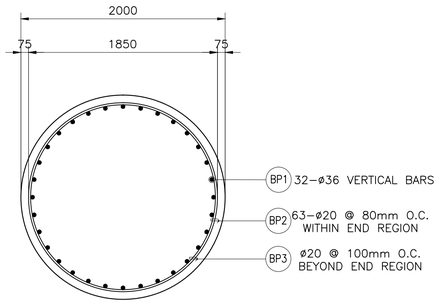
PROJECT TITLE	SCALE	DRAWING STATUS
DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING
SHEET CONTENT AIRPORT TO NCC (KM.0+000 - KM.1+500) - SACOBIA	PROJECT CODE	DRAWING NO. / SIZE
PIER 9 PILE CAP DETAIL PEDESTAL DETAIL		P2SB-57 / A1
	DATE APPROVED	DATE REVISED / REV.
	-	- / -









4 BORED PILE 9 SECTION
SCALE 1:30

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.

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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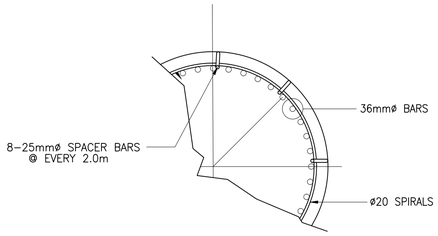
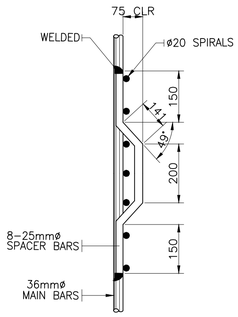
ENGR. ALBERTO C. CAÑETE
TEAM LEADER

1 VERTICAL SECTION
SCALE 1:75

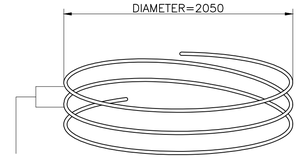
2 SCHEMATIC DETAIL
SCALE 1:75

3 STIFFENER LAYOUT
SCALE 1:75

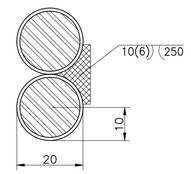




5 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS

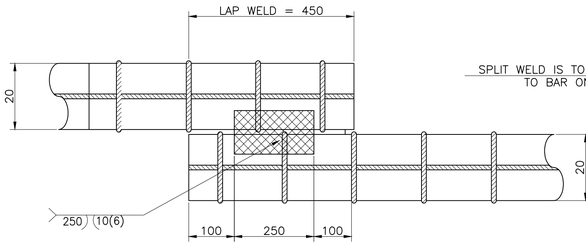


ø20 SPIRAL FINAL PITCH BEYOND END REGION @ 100
WITHIN END REGION @ 80

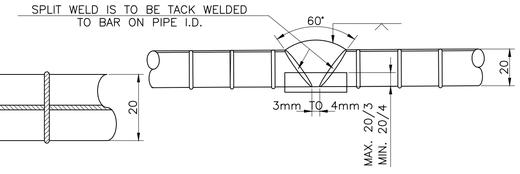


DOUBLE FLARED -V- GROOVE WELD
SECTION - A

PLAN (BEFORE WELDING)



DIRECT LAP JOINT WITH BARS IN CONTACT



DETAILS OF SINGLE-V-GROOVE BUTT WELD

6 DETAILS OF TIES REINFORCEMENT LAP-WELD CONNECTION
SCALE NTS

SCHEDULE OF REINFORCEMENT FOR PIER 9 BORED PILE

BAR BENDING DIAGRAM	BAR MARK	SIZE (mm)	SPACING (mm)	QTY	BAR SHAPE	BAR DIMENSION (ALL DIMENSIONS ARE OUT TO OUT OF BARS) a	b	c	d	e	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg./m.)	TOTAL WEIGHT (kg.)	VOLUME CONCRETE (cu.m.)
	FOR ONE (1) BORED PILE (L=30m, Ø2000mm)															
A	BP1	36	AS SHOWN	32	A	0.50	8.5	–	–	–	BORED PILE	9	288.00	7.996	2303	95
B	BP1'	36	AS SHOWN	32	B	9	–	–	–	–		9	288.00	7.996	2303	
C	BP1"	36	AS SHOWN	32	B	9	–	–	–	–		9	288.00	7.996	2303	
D	BP1"	36	AS SHOWN	32	B	8.54	–	–	–	–		8.54	273.28	7.996	2185	
D	BP2	20	80	63	D	0.20	6.3	–	–	–		6.5	409.50	2.468	1011	
E	BP3	20	100	250	D	0.20	6.3	–	–	–		6.5	1625.00	2.468	4011	
	BP4	25	AS SHOWN	96	C	0.15	0.141	0.20	0.141	0.15		0.782	75.07	3.856	290	
													TOTAL		14405 Kgs	95 cu.m

CONSULTANTS	SUBMITTED BY	DESIGNED BY	CHECKED BY	APPROVED BY
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BCDA Bases Conversion and Development Authority

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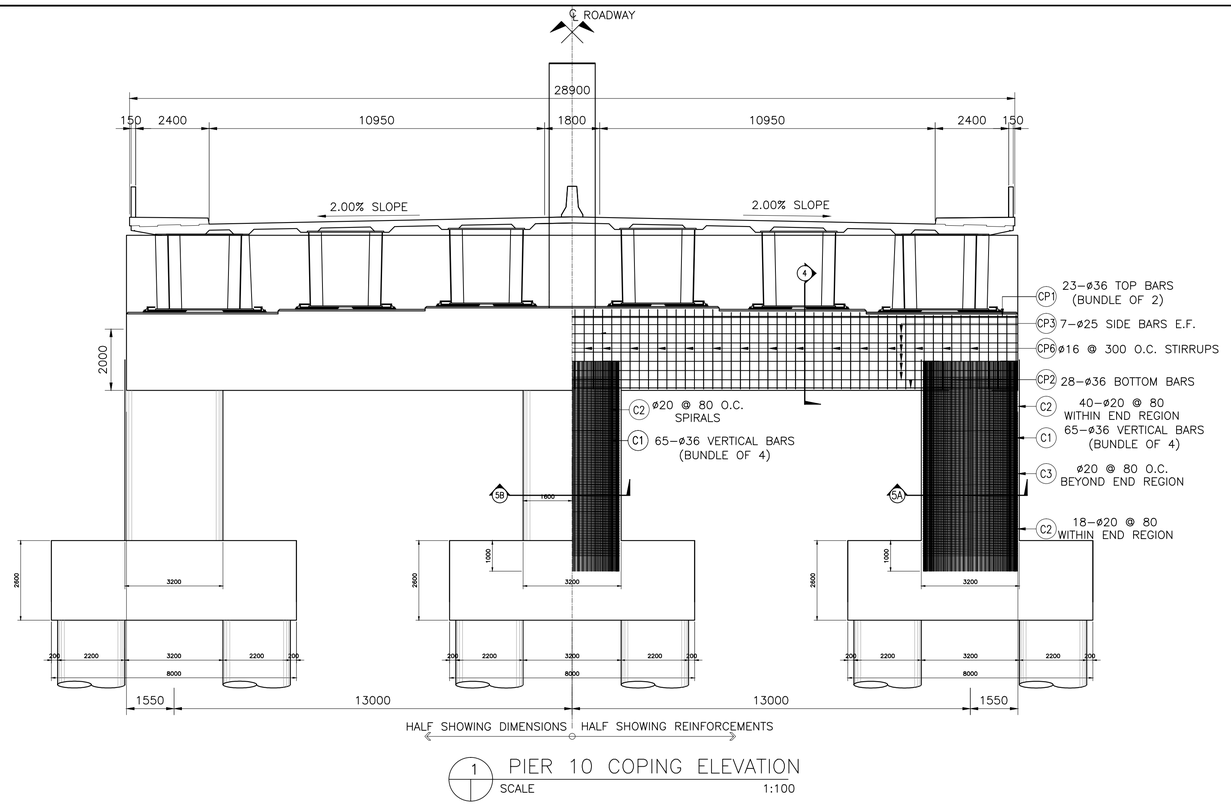
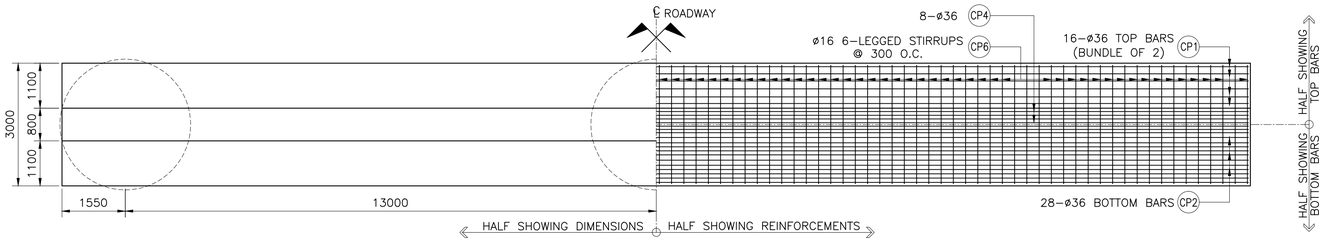
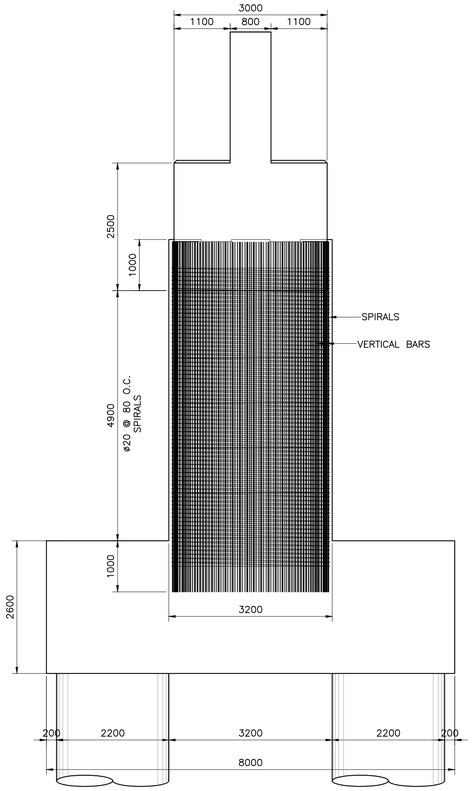
PROJECT TITLE	SCALE	DRAWING STATUS
DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING
SHEET CONTENT AIRPORT TO NCC (STA.0+000 - STA.1+500) - SACOBIA	PROJECT CODE	DRAWING NO. / SIZE
PIER 9 BORED PILE DETAILS		P2SB-58 / A1
	DATE APPROVED	DATE REVISED / REV.
	-	- / -



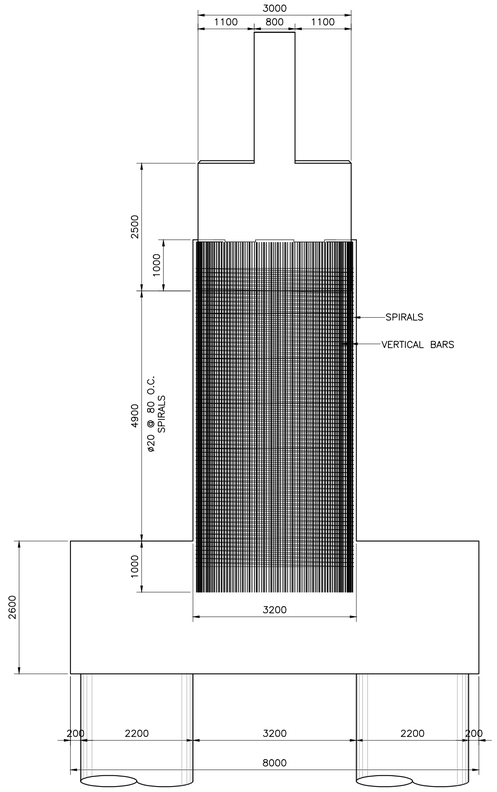
1 PIER 10 COPING ELEVATION
SCALE 1:100



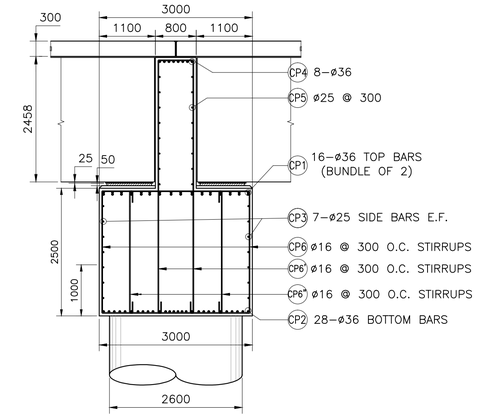
2 PIER 10 COPING PLAN
SCALE 1:75



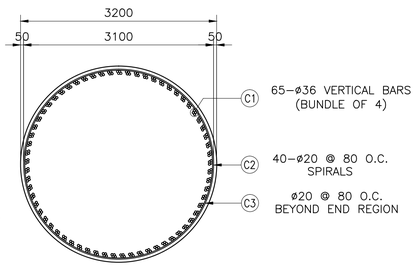
3A PIER 10 LEFT AND RIGHT



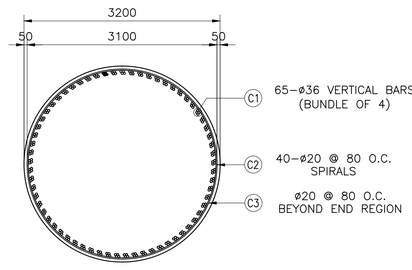
3B PIER 10 CENTER



4 PIER 10 COPING SECTION
SCALE 1:60



5A PIER 10 LEFT AND RIGHT
SCALE 1:50



5B PIER 10 CENTER
SCALE 1:50

5 PIER 10 COLUMN DETAIL
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.

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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

SCHEDULE OF REINFORCEMENTS FOR PIER 10 COLUMN AND COPING

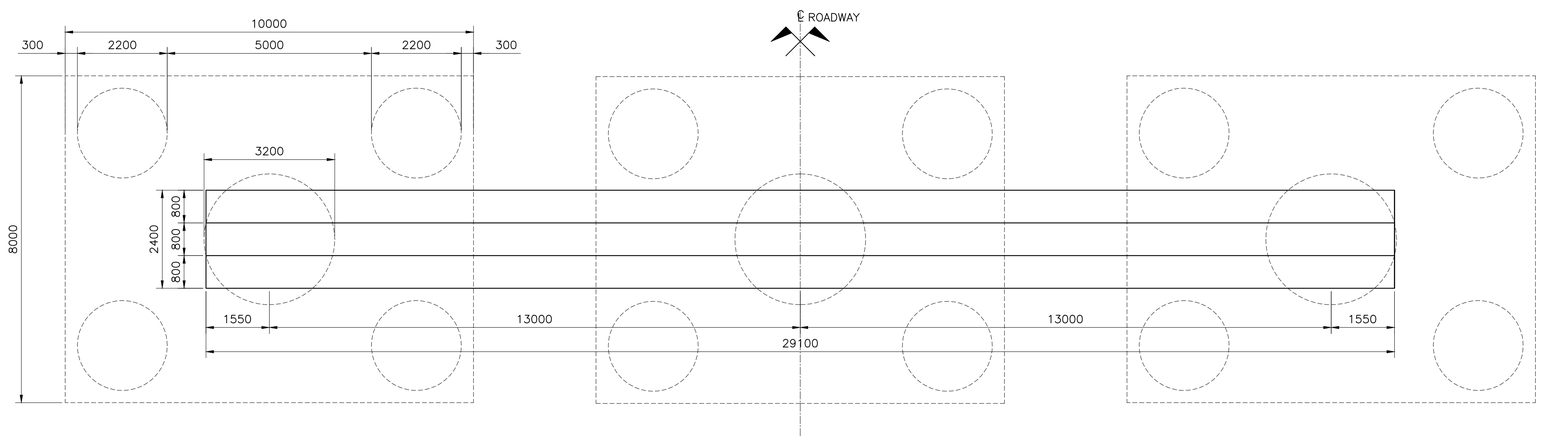
BAR BENDING DIAGRAM	REINFORCING STEEL BARS				ALL DIMENSIONS ARE OUT TO OUT OF REBARS						TYPE	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONCRETE VOLUME (cu.m)
	MARK	SIZE (mm)	SPACING (mm)	QUANTITY	a	b	c	d	e	f							
A	C1	36	AS SHOWN	16	0.5	8.5	0.5				A	COLUMN	9.5	152.00	7.996	1216	40
B	C2	20	80	35	10.1	0.2					F		10.3	360.50	2.468	890	
	C3	20	80	26	10.1	0.2					F		10.3	270.38	2.468	668	
C	CP1	36	AS SHOWN	20	0.5	29	0.5				A	COPING	30	600.00	7.9963	4798	221
	CP2	36	AS SHOWN	111	0.5	29	0.5				A		30	3330.00	7.9963	26628	
D	CP3	25	AS SHOWN	8	0.2	29	0.2				A		29.4	235.20	3.8568	907	
	CP4	36	AS SHOWN	8	0.5	29	0.5				A		30	240.00	7.9963	1920	
E	CP5	25	300	12	0.2	29	0.2				A		29.4	352.80	3.8568	1361	
	CP6	16	300	97	2.9	2.5	2.9	2.5	0.15	0.15	B		11.1	1076.70	1.5795	1701	
	CP6'	16	300	97	0.7	4.4	0.7	4.4	0.15	0.15	B		10.5	126.00	1.5795	1609	
F	CP6"	16	300	194	0.2	2.5	0.2				A		2.9	562.60	1.5795	889	
a = PHDH/360												GRAND TOTAL			Grade 60 bar	50909 KGS.	261 cu.m

CONSULTANTS	SUBMITTED BY	DESIGNED BY	CHECKED BY	APPROVED BY
Urban Integrated Consultants, Inc. UIC CORPORATE BLDG., 8 LANDS STREET, VASRA, DILIMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI DATE: -	ALBERTO C. CAÑETE, P.P., F. ASEP PROJECT MANAGER - UICI DATE: -	RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	JOVITO M. SUNGA OIC - PMD DATE: -

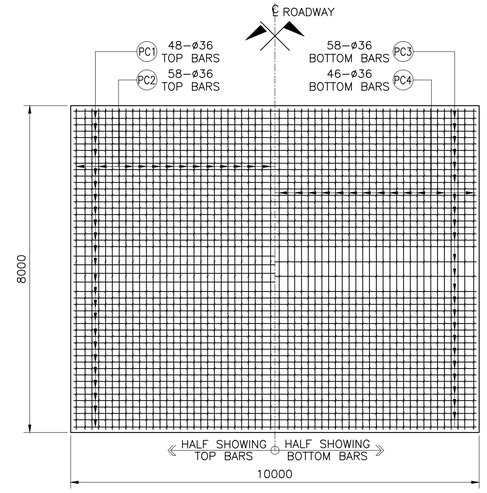
BCDA Bases Conversion and Development Authority

REVISIONS	DATE
A	
B	
C	
D	
E	
F	

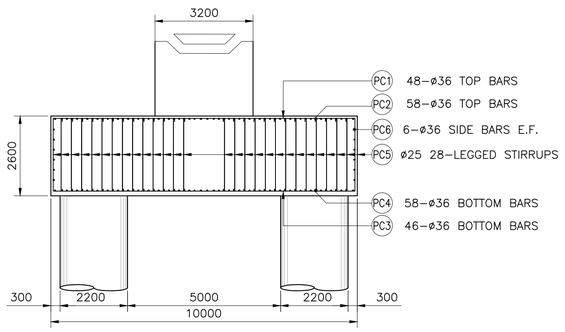
PROJECT TITLE	SCALE	DRAWING STATUS
DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING
	PROJECT CODE	DRAWING NO. / SIZE
SHEET CONTENT AIRPORT TO NCC (KM.0+000 - KM.1+500) - SACOBIA		P2SB-59 / A1
PIER 10 COLUMN PLAN AND ELEVATION COLUMN SECTION SCHEDULE OF REINFORCEMENTS AND SUMMARY OF QUANTITIES	DATE APPROVED	DATE REVISED / REV.
	-	- / -



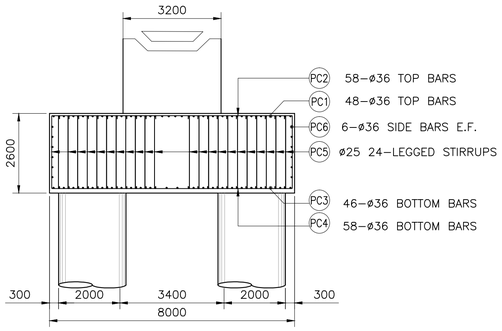
1 PIER 6 PLAN
SCALE 1:75



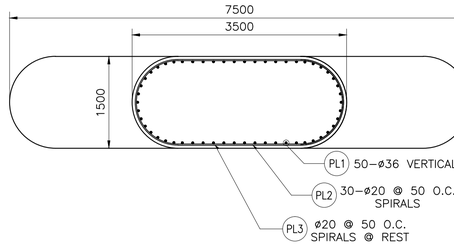
2 PILE CAP PLAN
SCALE 1:75



3 PILE CAP TRANSVERSE SECTION
SCALE 1:100



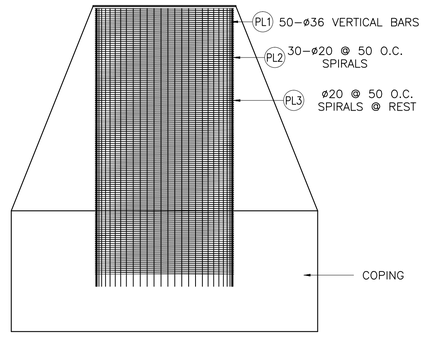
4 PILE CAP TRANSVERSE SECTION
SCALE 1:100



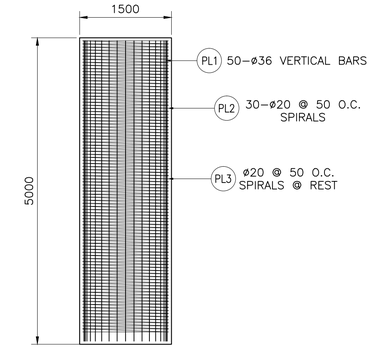
5 PEDESTAL PLAN
SCALE 1:50

SCHEDULE OF REINFORCEMENTS FOR PILE CAP - PIER 10

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	e	f				
PC1	36	48	AS SHOWN	A	1.5	8	1.5				11	528.00	7.99632	4222.05696
PC2	36	58	AS SHOWN	A	1.5	10	1.5				13	754.00	7.99632	6029.22528
PC3	36	50	AS SHOWN	A	1.5	8	1.5				11	506.00	7.99632	4046.13792
PC4	36	62	AS SHOWN	A	1.5	10	1.5				13	754.00	7.99632	6029.22528
PC5	25	1232	AS SHOWN	A	0.3	2.5	0.3				3.1	3819.20	3.85625	14727.79
PC6	25	1196	AS SHOWN	A	0.3	2.5	0.3				3.1	3546.40	3.85625	14297.4325
												TOTAL GRADE 60		50120 KGS
												GRAND TOTAL		150359 KGS



6 PEDESTAL TRANSVERSE SECTION
SCALE 1:75



7 PEDESTAL TRANSVERSE SECTION
SCALE 1:75

NOTE:

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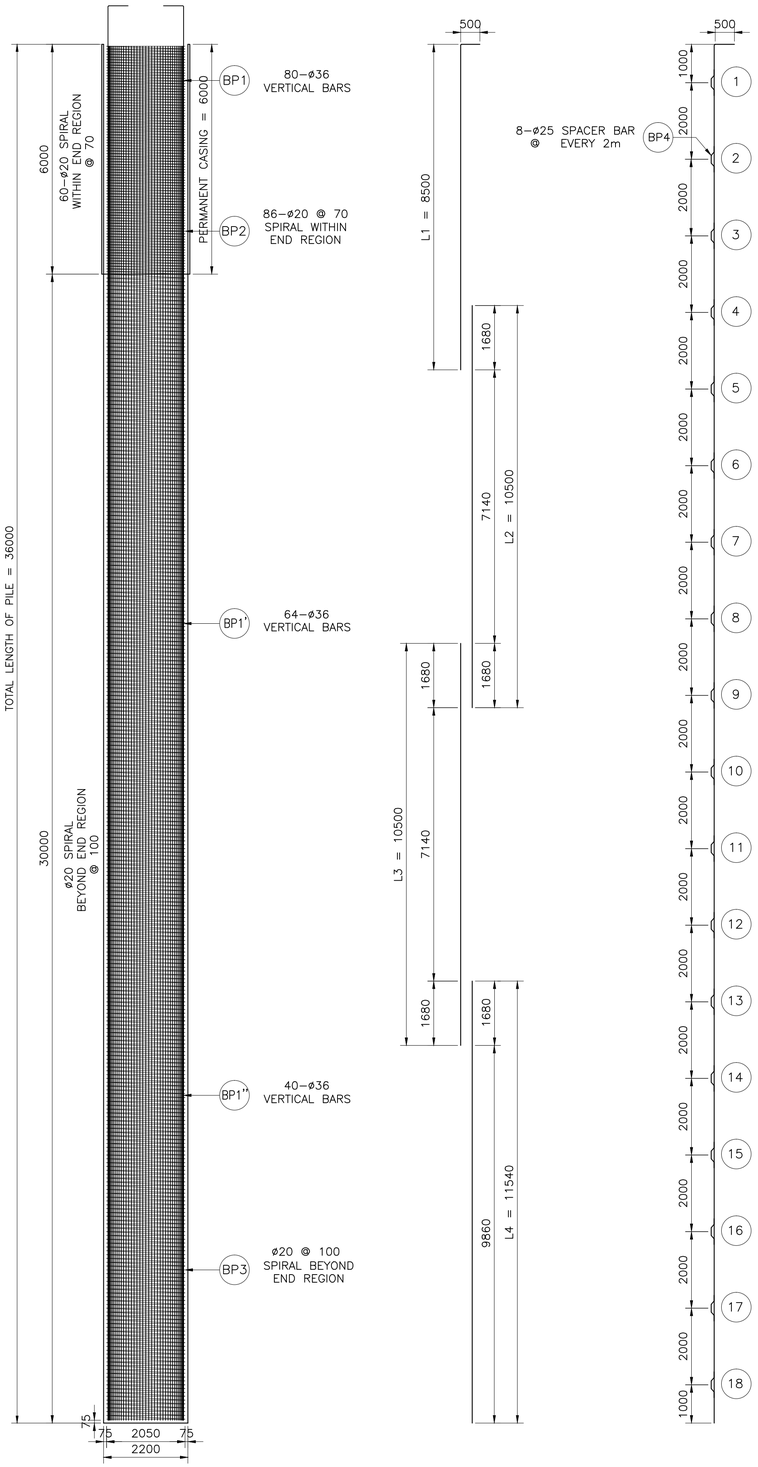
ENGR. ALBERTO C. CAÑETE
TEAM LEADER

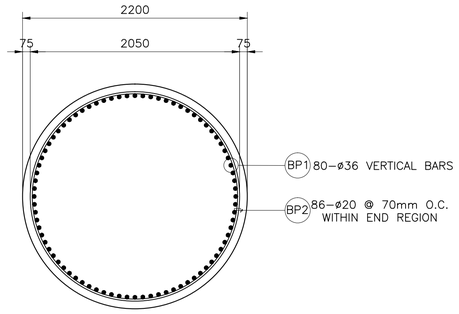
CONSULTANTS	SUBMITTED BY	DESIGNED BY	BCDA	REVISIONS	DATE	PROJECT TITLE	SCALE	DRAWING STATUS
Urban Integrated Consultants, Inc. UIC! CORPORATE BLDG., 8 LANDS STREET, VASRA, DILIMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UIC!	ALBERTO C. CAÑETE P.P.,F. ASEP PROJECT MANAGER - UIC!	CHECKED BY: RYAN PAUL S. GALURA, PROJECT MANAGER	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			PROJECT CODE	DRAWING NO. / SIZE
			APPROVED BY: JOVITO M. SUNGA, OIC - PMD	C		SHEET CONTENT AIRPORT TO NCC (KM.0+000 - KM.1+500) - SACOBIA		P2SB-60 / A1
			DATE: -	D				
				E		PIER 10 PILE CAP DETAIL PEDESTAL DETAIL	DATE APPROVED	DATE REVISED / REV.
				F			-	- / -



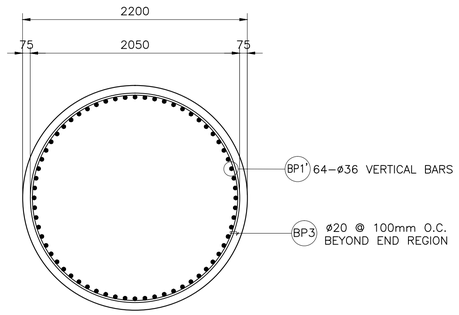
1 VERTICAL SECTION
SCALE 1:80

2 SCHEMATIC DETAIL
SCALE 1:80

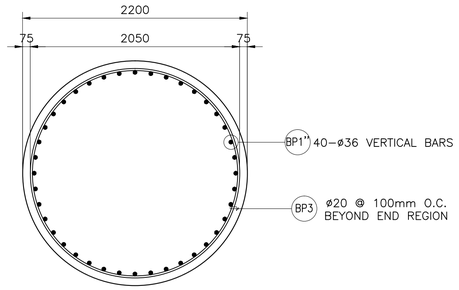
3 STIFFENER LAYOUT
SCALE 1:80



4 PILE SECTION THRU L1
SCALE 1:30

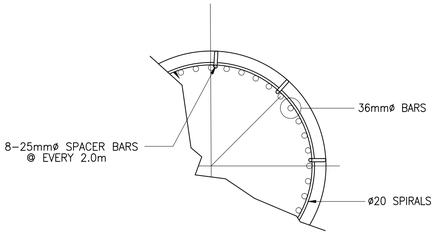


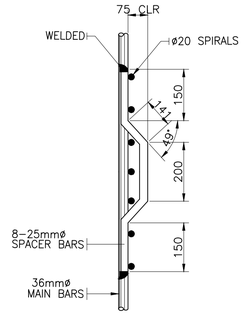
5 PILE SECTION THRU L2
SCALE 1:30



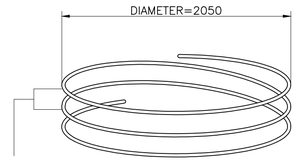
6 PILE SECTION THRU L3 AND L4
SCALE 1:30

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.

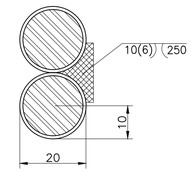




7 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS

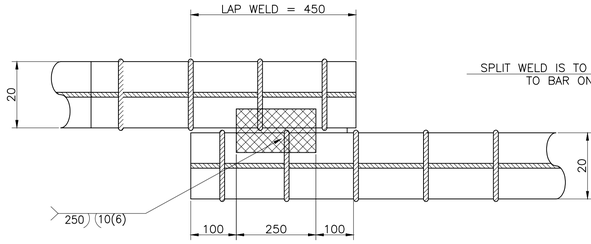


ø20 SPIRAL FINAL PITCH BEYOND END REGION @ 100 WITHIN END REGION @ 70

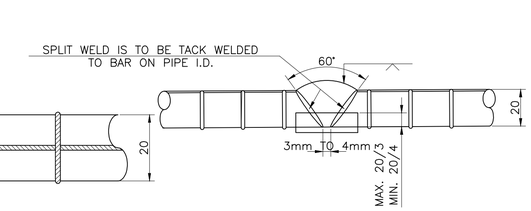


DOUBLE FLARED –V– GROOVE WELD
SECTION – A

PLAN (BEFORE WELDING)



DIRECT LAP JOINT WITH BARS IN CONTACT



DETAILS OF SINGLE–V–GROOVE BUTT WELD

8 DETAILS OF TIES REINFORCEMENT LAP–WELD CONNECTION
SCALE NTS

SCHEDULE OF REINFORCEMENT FOR PIER 10 BORED PILE

BAR BENDING DIAGRAM	BAR MARK	SIZE (mm)	SPACING (mm)	QTY	BAR SHAPE	BAR DIMENSION (ALL DIMENSIONS ARE OUT TO OUT OF BARS) a	b	c	d	e	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg./m.)	TOTAL WEIGHT (kg.)	VOLUME CONCRETE (cu.m.)
	FOR ONE (1) BORED PILE (L=36m, Ø2200mm)															
A	BP1	36	AS SHOWN	64	A	0.50	8.5	–	–	–	BORED PILE	9.00	720.00	7.996	5758	137
B	BP1'	36	AS SHOWN	32	B	10.5	–	–	–	–		10.5	672.00	7.996	5374	
C	BP1"	36	AS SHOWN	64	B	10.5	–	–	–	–		10.5	420.00	7.996	3359	
D	BP1"	36	AS SHOWN	64	B	11.54	–	–	–	–		11.54	369.28	7.996	2953	
	BP2	20	AS SHOWN	86	D	0.20	7.0	–	–	–		7.2	619.20	2.468	1529	
E	BP3	20	AS SHOWN	300	D	0.20	7.0	–	–	–		7.2	2160.00	2.468	5331	
	BP4	25	AS SHOWN	96	C	0.15	0.141	0.20	0.141	0.15		0.782	75.07	3.856	290	
													TOTAL		24591 Kgs	137 cu.m

NOTE:
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TEAM LEADER

CONSULTANTS	SUBMITTED BY	DESIGNED BY	CHECKED BY	APPROVED BY
Urban Integrated Consultants, Inc. UICI CORPORATE BLDG., 8 LANZIS STREET, VASRA, DILIMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI DATE: -	ALBERTO C. CAÑETE, P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	JOVITO M. SUNGA OIC - PMD DATE: -

BCDA Bases Conversion and Development Authority

REVISIONS	DATE
A	
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C	
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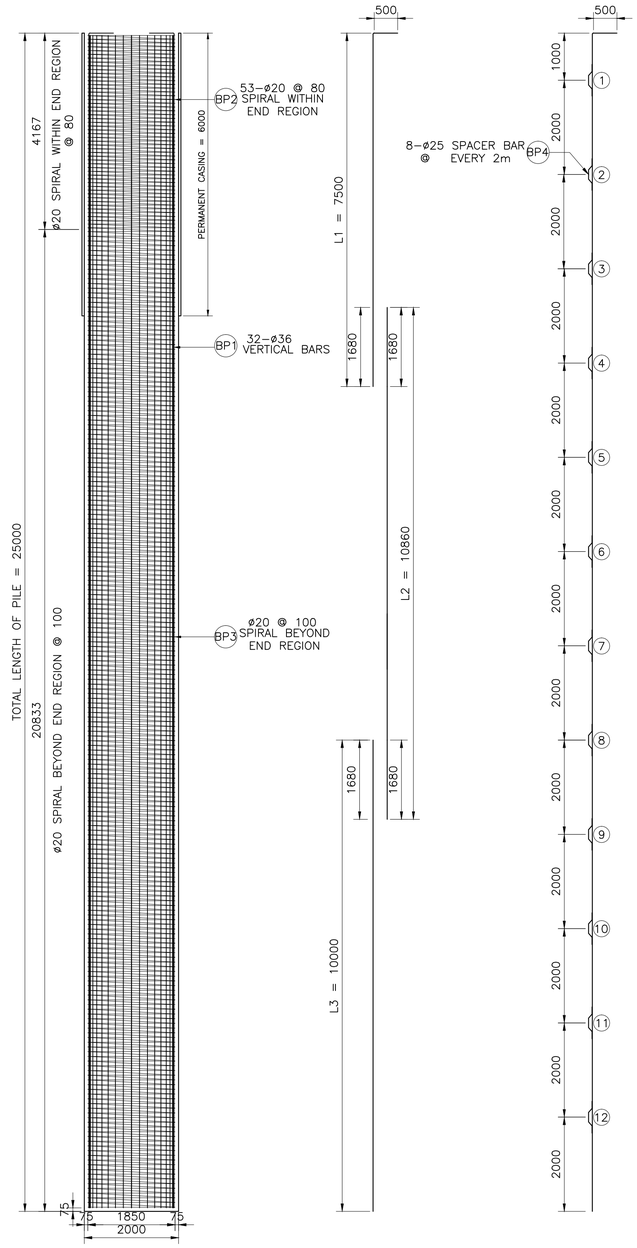
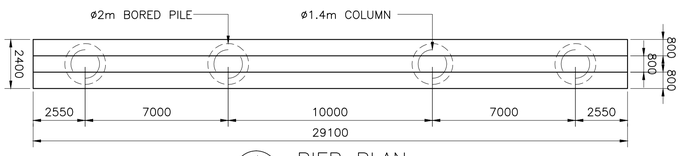
PROJECT TITLE	SCALE	DRAWING STATUS
DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING
	PROJECT CODE	DRAWING NO. / SIZE
SHEET CONTENT AIRPORT TO NCC (STA.0+000 - STA.1+500) - SACOBIA		P2SB-61 / A1
PIER 10 BORED PILE DETAILS	DATE APPROVED	DATE REVISED / REV.
	-	- / -



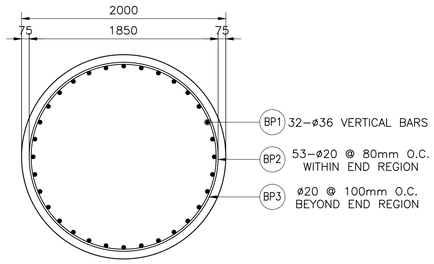
1 VERTICAL SECTION
SCALE 1:65

2 SCHEMATIC DETAIL
SCALE 1:65

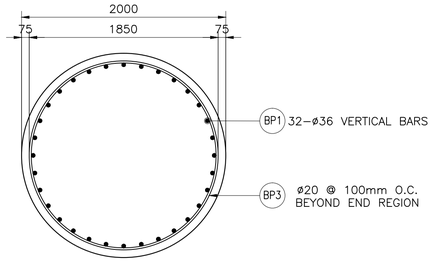
3 STIFFENER LAYOUT
SCALE 1:65



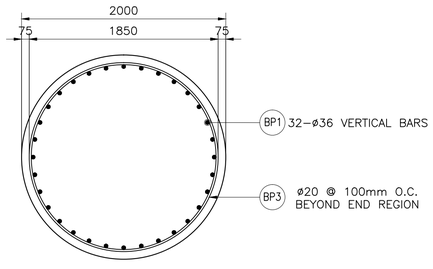
4 PIER PLAN
SCALE 1:150



5 PILE SECTION THRU L1
SCALE 1:30



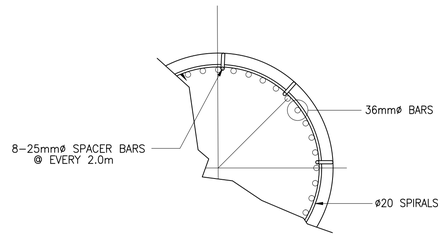
6 PILE SECTION THRU L2
SCALE 1:30

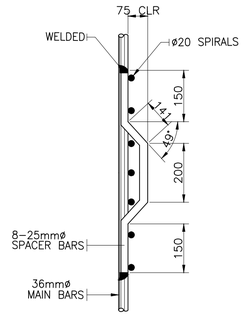


7 PILE SECTION THRU L3
SCALE 1:30

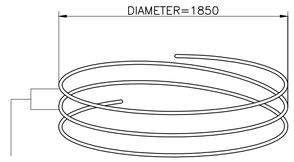
NOTES:

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 1200 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.

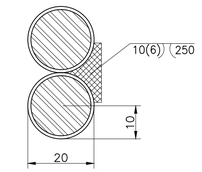




8 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS

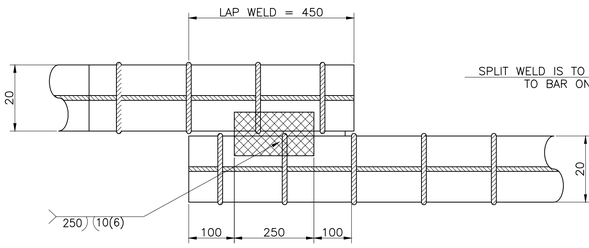


ø20 SPIRAL FINAL PITCH BEYOND END REGION @ 90
WITHIN END REGION @ 50

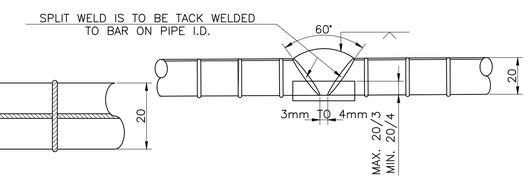


DOUBLE FLARED –V– GROOVE WELD
SECTION – A

PLAN (BEFORE WELDING)



DIRECT LAP JOINT WITH BARS IN CONTACT



DETAILS OF SINGLE–V–GROOVE BUTT WELD

9 DETAILS OF TIES REINFORCEMENT LAP–WELD CONNECTION
SCALE NTS

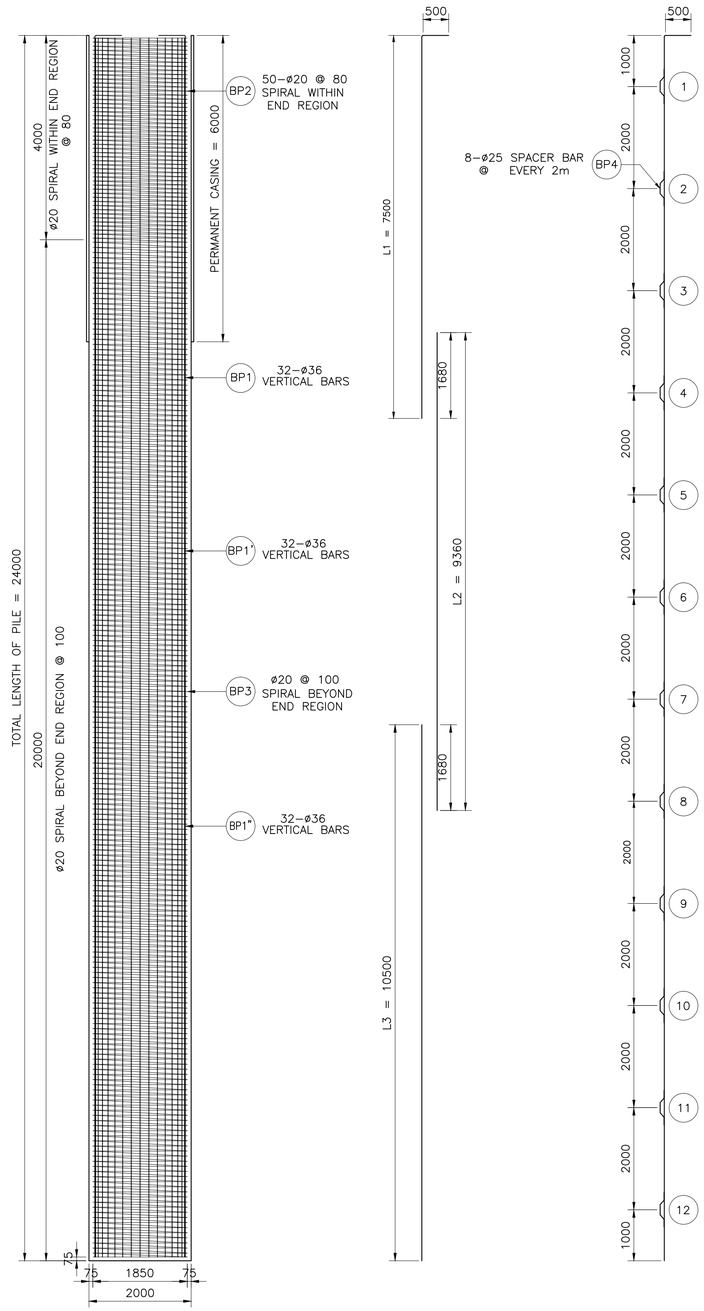
SCHEDULE OF REINFORCEMENT FOR PIER 14 BORED PILE

BAR BENDING DIAGRAM	BAR MARK	SIZE (mm)	SPACING (mm)	QTY	BAR SHAPE	BAR DIMENSION (ALL DIMENSIONS ARE OUT TO OUT OF BARS) a	b	c	d	e	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg./m.)	TOTAL WEIGHT (kg.)	VOLUME CONCRETE (cu.m.)
	FOR ONE (1) BORED PILE (L=25m, Ø2000mm)															
A	BP1	36	AS SHOWN	32	A	0.50	7.5	–	–	–	BORED PILE	8.0	256.00	7.991	2047	78.54
B	BP1'	36	AS SHOWN	32	B	10.86	–	–	–	–		10.86	347.52	7.991	2779	
C	BP1"	36	AS SHOWN	32	B	10	–	–	–	–		10	320.00	7.991	2559	
D	BP2	20	80	53	D	0.20	6.3	–	–	–		6.5	344.50	2.468	850	
	BP3	20	100	209	D	0.20	6.3	–	–	–		6.5	1358.50	2.468	3353	
E	BP4	25	AS SHOWN	80	C	0.15	0.141	0.20	0.141	0.15		0.782	62.56	3.854	241	
													TOTAL		11830 Kgs	78.54 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.

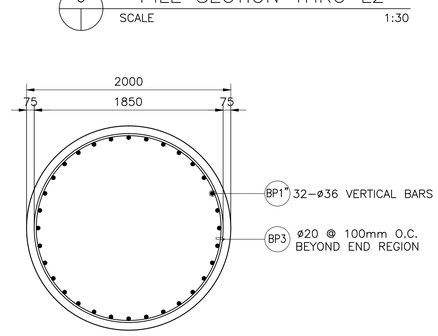
ENGR. ALBERTO C. CAÑETE
TEAM LEADER

CONSULTANTS	SUBMITTED BY	DESIGNED BY	BCDA	REVISIONS	DATE	PROJECT TITLE	SCALE	DRAWING STATUS
Urban Integrated Consultants, Inc. UIC CORPORATE BLDG., 8 LANDS STREET, VASRA, DILIMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI DATE: -	ALBERTO C. CAÑETE, 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: -	A B C D E F		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.0+000 - STA.1+500) - SACOBIA PIER 14 BORED PILE DETAILS	AS SHOWN	DRAFT DRAWING
							PROJECT CODE	DRAWING NO.	SIZE
								P2SB-69	A1
							DATE APPROVED	DATE REVISED	REV.
							-	-	-

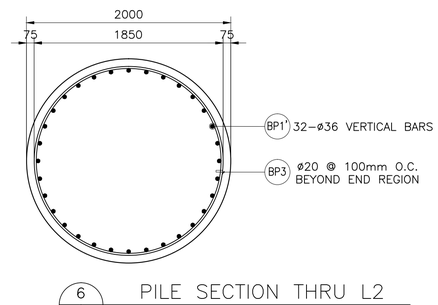


1 VERTICAL SECTION
SCALE 1:60

2 SCHEMATIC DETAIL
SCALE 1:60

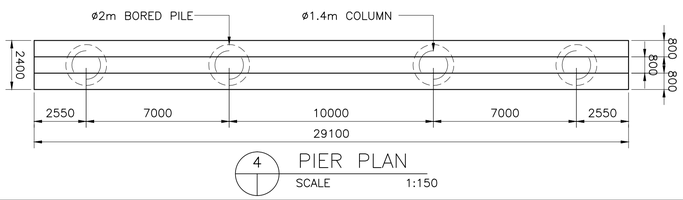


5 PILE SECTION THRU L1
SCALE 1:30



6 PILE SECTION THRU L2
SCALE 1:30

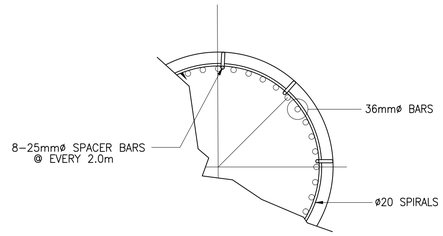
7 PILE SECTION THRU L3
SCALE 1:30

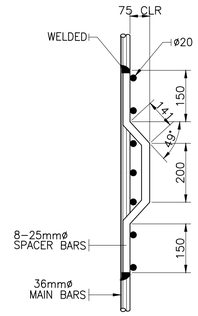


4 PIER PLAN
SCALE 1:150

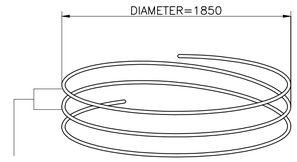
NOTES:

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 1:30 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.

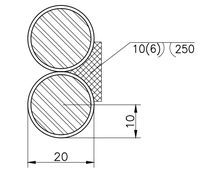




8 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS

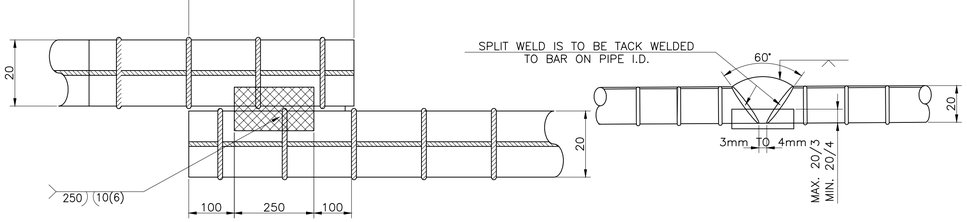


ø20 SPIRAL FINAL PITCH BEYOND END REGION @ 90
WITHIN END REGION @ 50



DOUBLE FLARED –V– GROOVE WELD
SECTION – A

PLAN (BEFORE WELDING)



DIRECT LAP JOINT WITH BARS IN CONTACT

DETAILS OF SINGLE–V–GROOVE BUTT WELD

9 DETAILS OF TIES REINFORCEMENT LAP–WELD CONNECTION
SCALE NTS

SCHEDULE OF REINFORCEMENT FOR PIER 15 BORED PILE

BAR BENDING DIAGRAM	BAR MARK	SIZE (mm)	SPACING (mm)	QTY	BAR SHAPE	BAR DIMENSION (ALL DIMENSIONS ARE OUT TO OUT OF BARS) a	b	c	d	e	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg./m.)	TOTAL WEIGHT (kg.)	VOLUME CONCRETE (cu.m.)
	FOR ONE (1) BORED PILE (L=24m, Ø2000mm)															
	BP1	36	AS SHOWN	32	A	0.50	7.5	–	–	–	BORED PILE	8.0	256.00	7.996	2047	76
	BP1'	36	AS SHOWN	32	B	9.36	–	–	–	–		9.36	299.52	7.996	2395	
	BP1"	36	AS SHOWN	32	B	10.5	–	–	–	–		10.5	336.00	7.996	2687	
	BP2	20	80	50	D	0.20	6.3	–	–	–		6.5	325.00	2.468	803	
	BP3	20	100	200	D	0.20	6.3	–	–	–		6.5	1300.00	2.468	3209	
	BP4	25	AS SHOWN	80	C	0.15	0.141	0.20	0.141	0.15		0.782	62.56	3.856	242	
													TOTAL		11381 Kgs	76 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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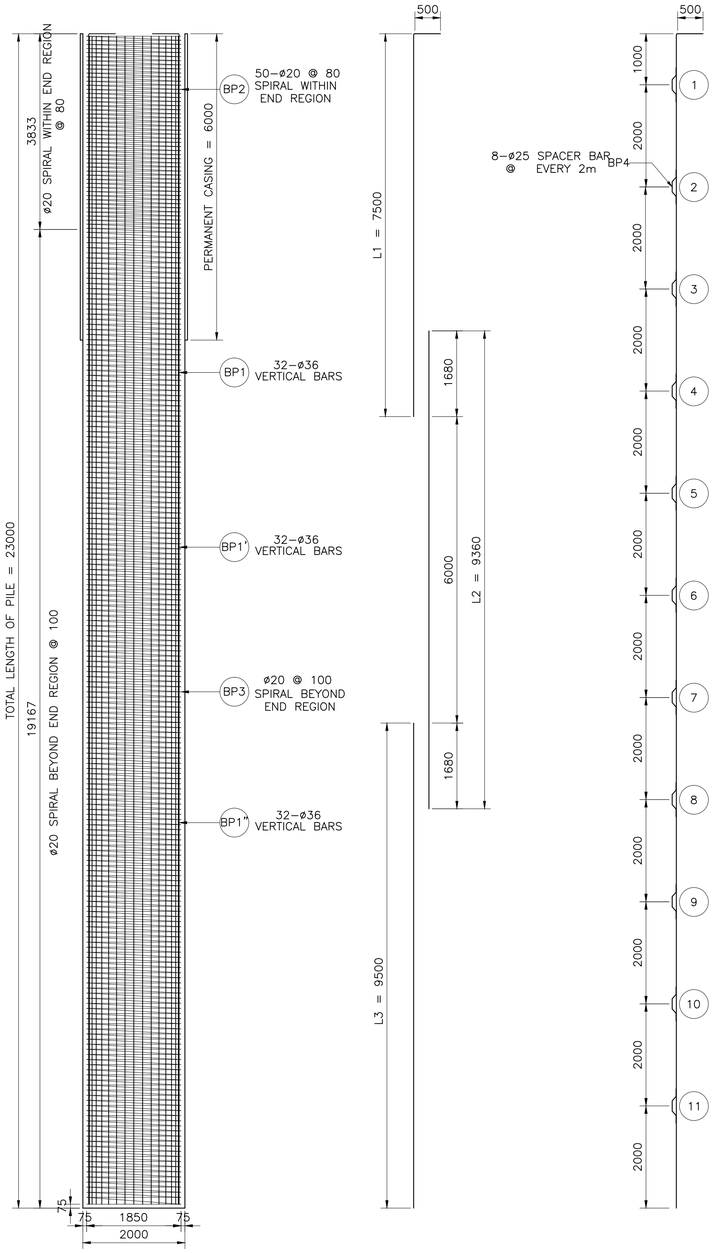
ENGR. ALBERTO C. CAÑETE
TEAM LEADER

CONSULTANTS	SUBMITTED BY	DESIGNED BY	CHECKED BY	APPROVED BY
Urban Integrated Consultants, Inc. UICI CORPORATE BLDG., 8 LANDS STREET, VASRA, DILIMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI DATE: -	ALBERTO C. CAÑETE, P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	JOVITO M. SUNGA OIC - PMD DATE: -

BCDA Bases Conversion and Development Authority

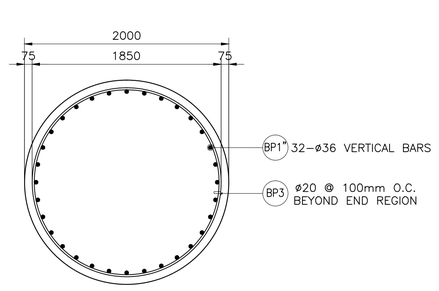
REVISIONS	DATE
A	
B	
C	
D	
E	
F	

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 (STA.0+000 - STA.1+500) - SACOBIA	PROJECT CODE	DRAWING NO. / SIZE
		P2SB-71 / A1
PIER 15 BORED PILE DETAILS	DATE APPROVED	DATE REVISED / REV.
	-	- / -

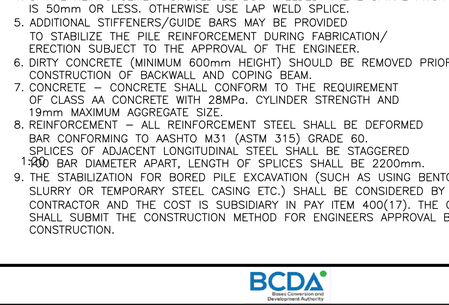


1 VERTICAL SECTION
SCALE 1:60

2 SCHEMATIC DETAIL
SCALE 1:60



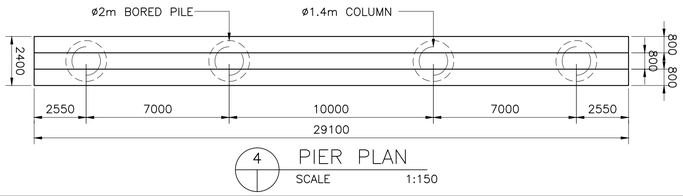
5 PILE SECTION THRU L1
SCALE 1:30



6 PILE SECTION THRU L2
SCALE 1:30

7 PILE SECTION THRU L3
SCALE 1:30

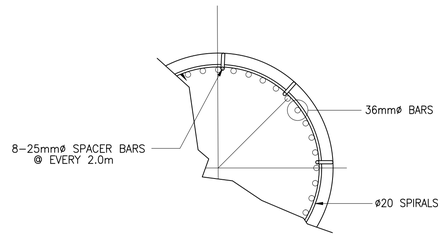
3 STIFFENER LAYOUT
SCALE 1:60

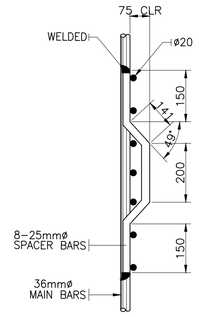


4 PIER PLAN
SCALE 1:150

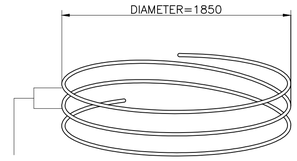
NOTES:

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 1200 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.

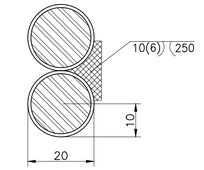




8 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS

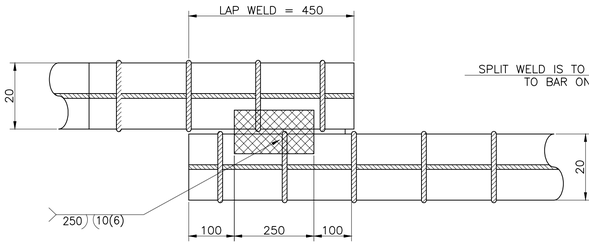


ø20 SPIRAL FINAL PITCH BEYOND END REGION @ 90
WITHIN END REGION @ 50

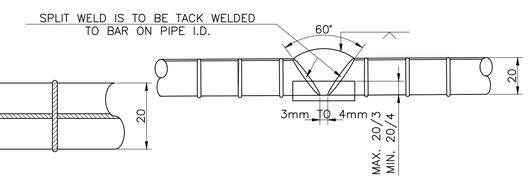


DOUBLE FLARED –V– GROOVE WELD
SECTION – A

PLAN (BEFORE WELDING)



DIRECT LAP JOINT WITH BARS IN CONTACT



DETAILS OF SINGLE–V–GROOVE BUTT WELD

9 DETAILS OF TIES REINFORCEMENT LAP–WELD CONNECTION
SCALE NTS

SCHEDULE OF REINFORCEMENT FOR PIER 16 BORED PILE

BAR BENDING DIAGRAM	BAR MARK	SIZE (mm)	SPACING (mm)	QTY	BAR SHAPE	BAR DIMENSION (ALL DIMENSIONS ARE OUT TO OUT OF BARS) a	b	c	d	e	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg./m.)	TOTAL WEIGHT (kg.)	VOLUME CONCRETE (cu.m.)
	FOR ONE (1) BORED PILE (L=23m, Ø2000mm)															
A	BP1	36	AS SHOWN	32	A	0.50	7.5	–	–	–	BORED PILE	8.0	256.00	7.996	2047	73
B	BP1'	36	AS SHOWN	32	B	9.36	–	–	–	–		9.36	299.52	7.996	2395	
C	BP1"	36	AS SHOWN	32	B	9.5	–	–	–	–		9.5	304.00	7.996	2430	
D	BP2	20	80	48	D	0.20	6.3	–	–	–		6.5	312.00	2.468	771	
	BP3	20	100	192	D	0.20	6.3	–	–	–		6.5	1248.00	2.468	3081	
E	BP4	25	AS SHOWN	80	C	0.15	0.141	0.20	0.141	0.15		0.782	62.56	3.856	242	
													TOTAL		10965 Kgs	73 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.

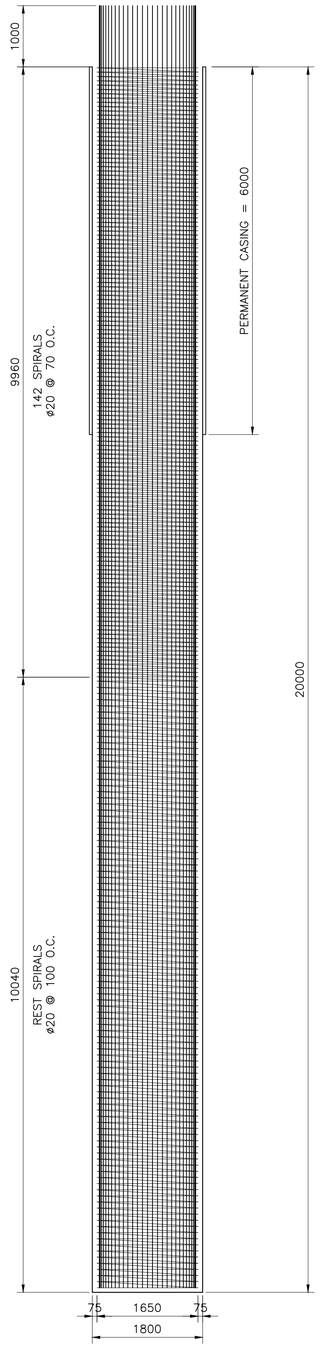
ENGR. ALBERTO C. CAÑETE
TEAM LEADER

CONSULTANTS	SUBMITTED BY	DESIGNED BY	CHECKED BY	APPROVED BY
Urban Integrated Consultants, Inc. UICI CORPORATE BLDG., 8 LANDS STREET, VASRA, DILIMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI DATE: -	ALBERTO C. CAÑETE, P.P., F.ASEP PROJECT MANAGER - UICI DATE: -	RYAN PAUL S. GALURA PROJECT MANAGER DATE: -	JOVITO M. SUNGA OIC - PMD DATE: -

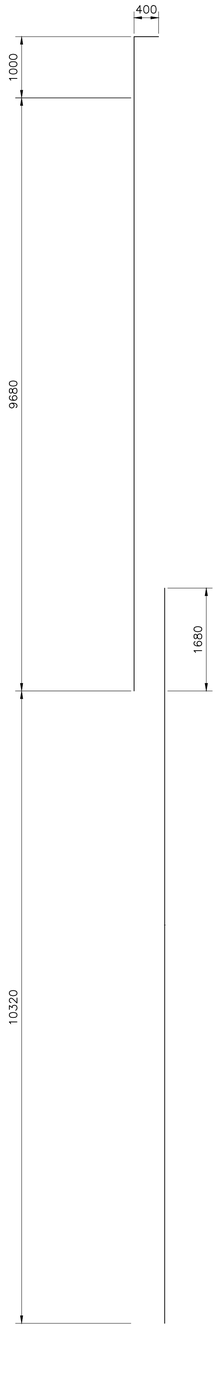
BCDA Bases Conversion and Development Authority

REVISIONS	DATE
A	
B	
C	
D	
E	
F	

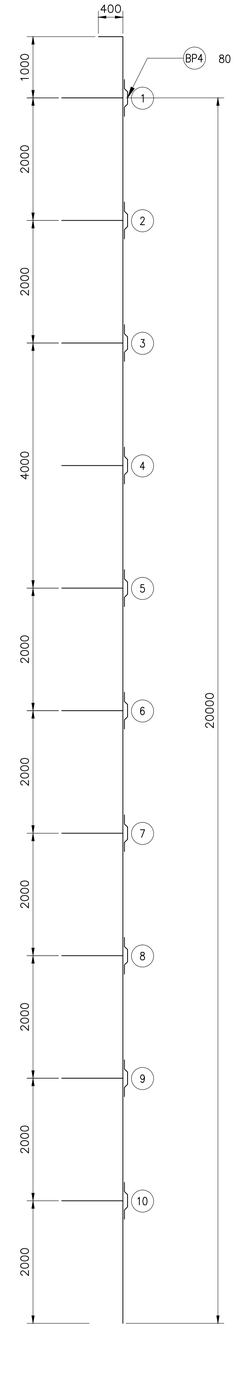
PROJECT TITLE	SCALE	DRAWING STATUS
DETAILED ENGINEERING DESIGN OF THE PROPOSED AIRPORT-NCC ACCESS ROAD, MACARTHUR-NCC ACCESS ROAD, MACARTHUR-SCTEX ACCESS ROAD & OLYMPIC VILLAGE ACCESS ROAD	AS SHOWN	DRAFT DRAWING
SHEET CONTENT AIRPORT TO NCC (STA.0+000 - STA.1+500) - SACOBIA	PROJECT CODE	DRAWING NO. / SIZE
PIER 16 BORED PILE DETAILS		P2SB-73 / A1
	DATE APPROVED	DATE REVISED / REV.
	-	- / -



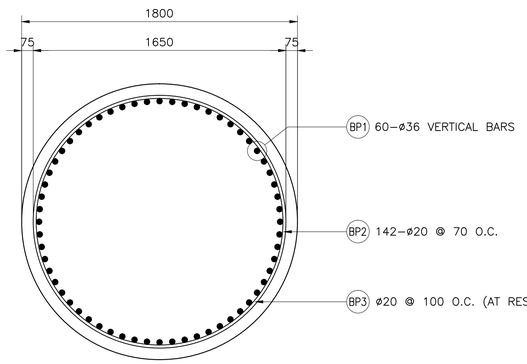
1 VERTICAL SECTION
SCALE 1:50



2 SCHEMATIC DETAIL
SCALE 1:50

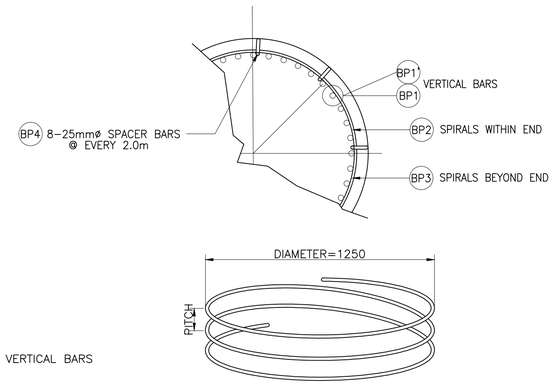


3 STIFFENER LAYOUT
SCALE 1:50

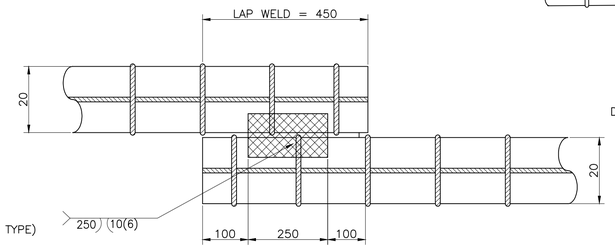


4 ABUTMENT BORED PILE SECTION
SCALE 1:20

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.

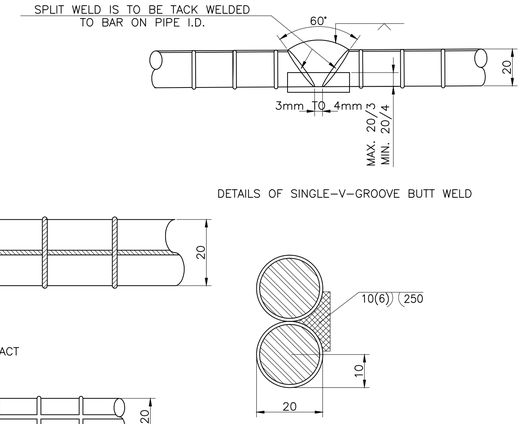


5 BORED PILE CONFINEMENT RING & SPACER DETAIL
SCALE NTS



DIRECT LAP JOINT WITH BARS IN CONTACT

PLAN (BEFORE WELDING)



DETAILS OF SINGLE–V–GROOVE BUTT WELD

DOUBLE FLARED –V– GROOVE WELD
SECTION – A

6 DETAILS OF TIES REINFORCEMENT LAP–WELD CONNECTION
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 SURVEYS AND DESIGNS NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

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ENGR. ALBERTO C. CAÑETE
TEAM LEADER

SCHEDULE OF REINFORCEMENT FOR BORED PILE AT ABUTMENT ONLY

BAR BENDING DIAGRAM	BAR MARK	SIZE (mm)	SPACING (mm)	QTY	BAR SHAPE	BAR DIMENSION (ALL DIMENSIONS ARE OUT TO OUT OF BARS) a	b	c	d	e	LOCATION	BAR LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg./m.)	TOTAL WEIGHT (kg.)	VOLUME CONCRETE (cu.m.)
	FOR ONE (1) BORED PILE AT PIER (L=20m, Ø1800mm)															
A	BP1	36	AS SHOWN	60	A	0.25	23				BORED PILE	23.25	1395.00	7.990	11147	51
B	BP2	20	70	142	A	0.15	5.7					5.85	830.70	2.466	2049	
	BP3	20	100	104	A	0.15	5.7					5.85	608.40	2.466	1507	
C	BP4	25	AS SHOWN	80	C	0.15	0.141	0.20	0.141	0.15		0.782	62.56	3.853	244	
	NOTE: 40db SPLICES ARE NOT INCLUDED															
	* 12 mm dia. and below are Grade 40															
	* 16 mm dia. and above are Grade 60												TOTAL		14947 Kgs	51

CONSULTANTS	SUBMITTED BY	DESIGNED BY	BCDA	REVISIONS	DATE	PROJECT TITLE	SCALE	DRAWING STATUS
Urban Integrated Consultants, Inc. UICI CORPORATE BLDG., 8 LANDS STREET, VASRA, DILIMAN, QUEZON CITY, 1128	EFREN L. DAVID PRESIDENT - UICI DATE: -	ALBERTO C. CAÑETE 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: -	A B C D E F		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.0+000 - KM.1+500) - SACOBIA ABUTMENT BORED PILE SCHEDULE OF REINFORCEMENTS AND SUMMARY OF QUANTITIES	AS SHOWN	DRAFT DRAWING
							PROJECT CODE	DRAWING NO. / SIZE
								P2SB-78 / A1
							DATE APPROVED	DATE REVISED / REV.
							-	- / -

Location	REF: SHEET NO.	BORED PILE DIAMETER	CORRECTED BP DIAMETER
Pier 7	P2SB - 50	2200MMØ	2000MMØ
	P2SB - 51 & P2SB -52	2000MMØ	2000MMØ
Pier 9	P2SB - 56	2200MMØ	2000MMØ
	P2SB - 57 & P2SB -58	2000MMØ	2000MMØ
Pier 10	P2SB - 60	2200MMØ	2200MMØ
	P2SB - 59 & P2SB -61	2000MMØ	2200MMØ

Bored Pile Location	Sheet No.	Reference	Qty. of Vertical Reinforcement (PCS)	Qty. of Vertical Reinforcement (PCS) Corrected
Pier 2	P2SB - 40	Detailed Dwg.	BP1 - 44	BP1 - 44
		Sched. Of Reinforcement	BP1 - 32	BP1 - 44
Pier 6	P2SB - 49	Detailed Dwg.	BP1 - 68; BP1' - 48; BP1" - 40	BP1 - 68; BP1' - 48; BP1" - 40
		Sched. Of Reinforcement	BP1 - 64; BP1' - 32; BP1" - 64	BP1 - 68; BP1' - 48; BP1" - 40
Pier 7	P2SB - 52	Detailed Dwg.	BP1 - 32; BP1' - 32; BP1" - 32	BP1 - 32; BP1' - 32; BP1" - 32
		Sched. Of Reinforcement	BP1 - 64; BP1' - 32; BP1" - 64	BP1 - 32; BP1' - 32; BP1" - 32
Pier 8	P2SB - 55	Detailed Dwg.	BP1 - 26; BP1' - 26; BP1" - 26	BP1 - 26; BP1' - 26; BP1" - 26
		Sched. Of Reinforcement	BP1 - 64; BP1' - 32; BP1" - 64	BP1 - 26; BP1' - 26; BP1" - 26
Pier 9	P2SB - 58	Detailed Dwg.	BP1 - 32; BP1' - 32; BP1" - 32	BP1 - 32; BP1' - 32; BP1" - 32
		Sched. Of Reinforcement	BP1 - 64; BP1' - 32; BP1" - 64	BP1 - 32; BP1' - 32; BP1" - 32
Pier 10	P2SB - 61	Detailed Dwg.	BP1 - 80; BP1' - 64; BP1" - 40	BP1 - 80; BP1' - 64; BP1" - 40
		Sched. Of Reinforcement	BP1 - 64; BP1' - 32; BP1" - 64	BP1 - 80; BP1' - 64; BP1" - 40
Pier 14	P2SB - 69	Detailed Dwg.	BP1 - 32; BP1' - 32; BP1" - 32	BP1 - 32; BP1' - 32; BP1" - 32
		Sched. Of Reinforcement	BP1 - 64; BP1' - 32; BP1" - 32	BP1 - 32; BP1' - 32; BP1" - 32
Pier 15	P2SB - 71	Detailed Dwg.	BP1 - 32; BP1' - 32; BP1" - 32	BP1 - 32; BP1' - 32; BP1" - 32
		Sched. Of Reinforcement	BP1 - 64; BP1' - 32; BP1" - 32	BP1 - 32; BP1' - 32; BP1" - 32
Pier 16	P2SB - 73	Detailed Dwg.	BP1 - 32; BP1' - 32; BP1" - 32	BP1 - 32; BP1' - 32; BP1" - 32
		Sched. Of Reinforcement	BP1 - 32; BP1' - 36; BP1" - 36	BP1 - 32; BP1' - 32; BP1" - 32
Abutment	P2SB - 78	Detailed Dwg.	BP1 - 60	BP1 - 60
		Sched. Of Reinforcement	BP1 - 45	BP1 - 60