



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
BRIDGES DIVISION
MANILA

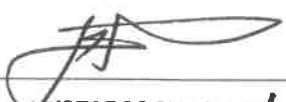
STANDARD PLAN FOR BAILEY BRIDGE
(FOR PRE-POSITIONING @ DPWH REGIONAL OFFICES)
BOD SET NO. 2020-9 BrD

SUBMITTED:

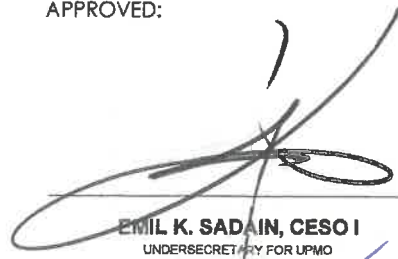

BLESILDA S. RAMOS
OIC - CHIEF, BRIDGES DIVISION

DATE:

RECOMMENDING APPROVAL:


ARISTARCO M. DOROY
OFFICER-IN-CHARGE, BUREAU OF DESIGN
DATE: **FEB 12 2020**

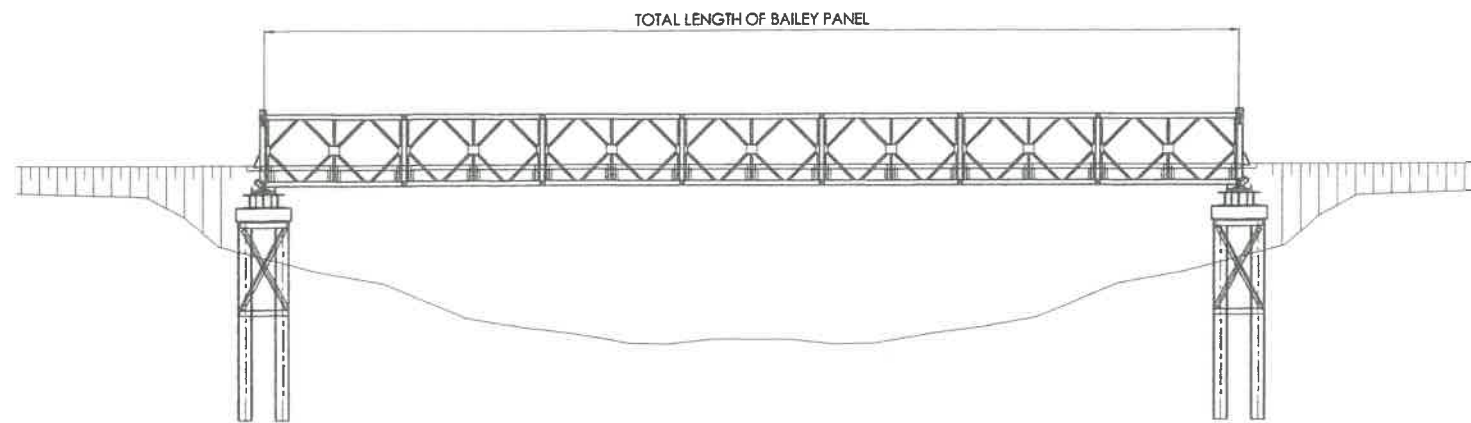
APPROVED:


EMIL K. SADAIN, CESO I
UNDERSECRETARY FOR UPMO
OPERATION AND TECHNICAL SERVICES
DATE:

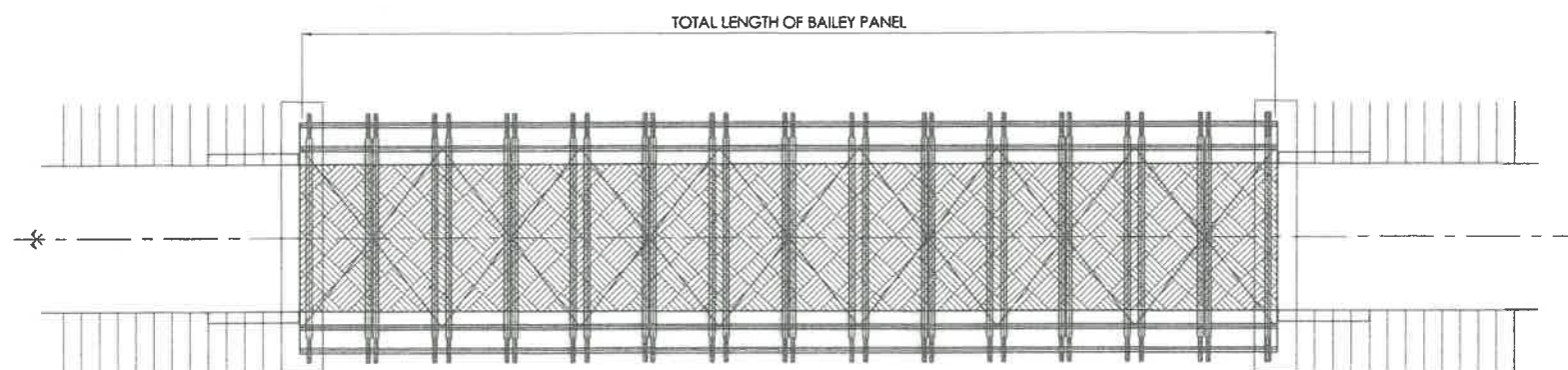
GENERAL INDEX OF DRAWING

SHEET CONTENT	DRAWING NO.	
	SET NO.	SHEET NO.
COVER PAGE	<div style="border: 1px solid black; border-radius: 50%; padding: 10px; text-align: center;"> BOD 2020-9 BrD </div>	-
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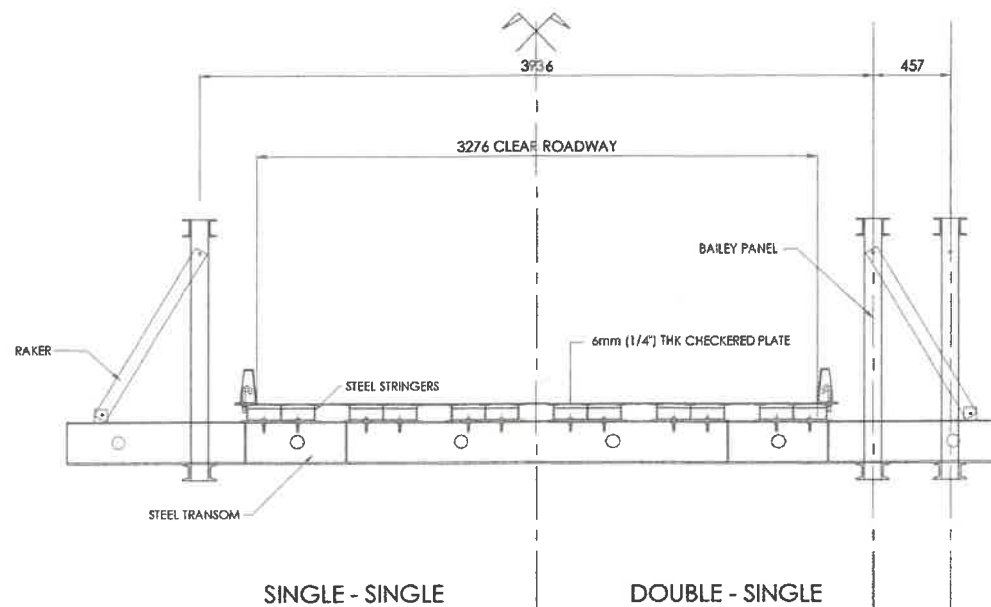
	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN BRIDGES DIVISION	SHEET TITLE: STANDARD PLAN FOR BAILEY BRIDGE <small>(FOR PRE-POSITIONING @ DPWH REGIONAL OFFICES)</small>	SHEET CONTENTS: GENERAL INDEX OF DRAWING	DESIGNED: <i>[Signature]</i> <small>RONALDO M. CHUA</small> CHECKED: <i>[Signature]</i> <small>WILHELMINA L. ANCHETA</small> CADD: <i>[Signature]</i> <small>ROLANDO C. MEDIANTE</small>	SUBMITTED: <i>[Signature]</i> BLESSILDA S. RAMOS <small>OIC-CHIEF, BRIDGES DIVISION</small>	RECOMMENDING APPROVAL: <small>SEE COVER SHEET</small> ARISTARCO M. DOROY <small>OFFICER-IN-CHARGE, BUREAU OF DESIGN</small>	APPROVED: <small>SEE COVER SHEET</small> EMIL K. SADAIN, CESO I <small>UNDERSECRETARY FOR UPMO OPERATIONS AND TECHNICAL SERVICES</small>	SET NO. <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;"> BOD 2020-9 BrD </div>	SHEET NO. <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;"> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="width: 20px; height: 20px; border: 1px solid black; margin: 0 auto;"></div> <div style="width: 20px; height: 20px; border: 1px solid black; margin: 0 auto;"></div> </div> </div>
	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> FEB 12 2020 </div>								
	<small>BONIFACIO DRIVE PORT AREA, MANILA</small>								



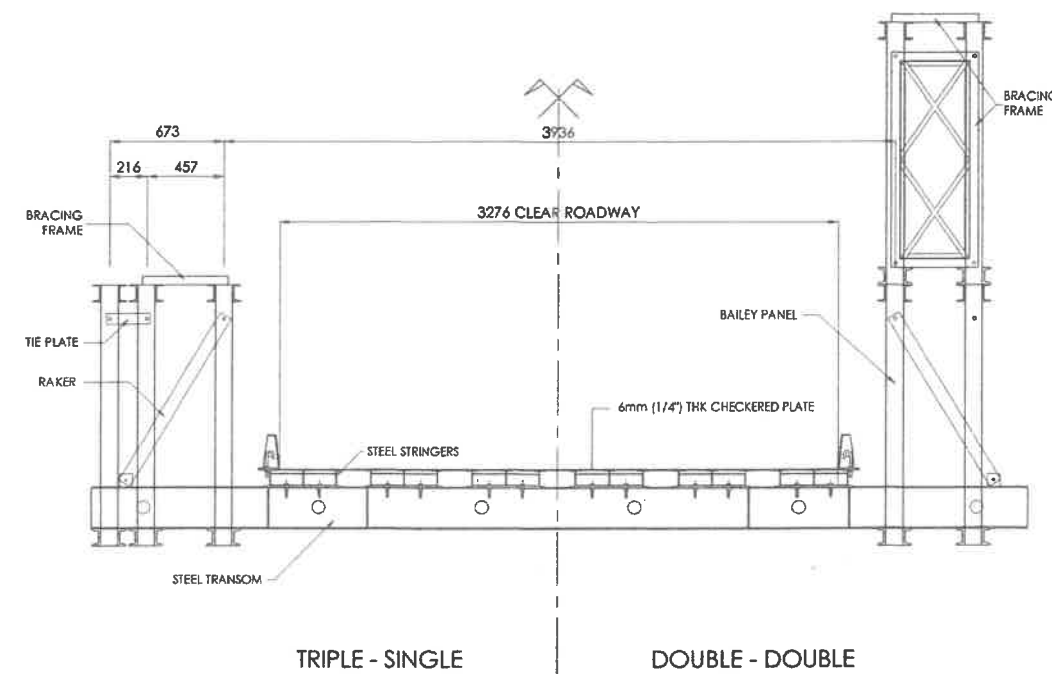
1 GENERAL ELEVATION
1 SB SCALE: 1:75



2 GENERAL PLAN
1 SB SCALE: 1:75



3 ROADWAY CROSS SECTION (SS & DS)
1 SB SCALE: 1:25



4 ROADWAY CROSS SECTION (TS & DD)
1 SB SCALE: 1:25

GENERAL NOTES

A. DESIGN CRITERIA:

1. SPECIFICATIONS

- A) 1995 DPWH STANDARD SPECIFICATIONS
- B) 1998 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES
- C) 1988 AISC STEEL CONSTRUCTION MANUAL
- D) A.W.S. STRUCTURAL WELDING CODE

2. LIVELOADS

MS18

B. CONSTRUCTION:

ALL MATERIALS, CONSTRUCTION METHODS AND PROCEDURES SHALL COMPLY WITH THE DPWH STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES AND AIRPORTS 2013 EDITION PROVIDE ALL BOLT HEAD NUTS WITH STANDARD WASHERS, SPIKE ALL JOINTS IN ADDITION TO BOLTS SHOWN. IF ASPHALT WEARING COURSE IS TO BE USED, RUNNING BOARDS SHALL BE OMITTED. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

C. STRUCTURAL STEEL:

THE STEEL MATERIALS FOR BAILEY COMPONENTS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

- 1. TENSILE ————— 540 - 618 Mpa
- 2. YIELD ————— 353 Mpa
- 3. ELONGATION ————— 14 % - 3 / 8 " thk. (9.50 mm) Below
18 % - 3 / 8 " thk. (9.50 mm) to 3 / 4 thk. (19.0 mm)
- 4. SHALL BE BSS 4380 GRADE 50 B (MINIMUM) OR BSS 4380 GRADE 55 C OR EQUIVALENT ASTM JIS OR DIN STANDARDS
- 5. WELDING SHALL BE IN ACCORDANCE WITH THE SPECIFICATION OF AMERICAN WELDING SOCIETY (AWS).
- 6. ALL FABRICATED STEEL SHALL CONFORM TO EN ISO 1461 HOT DIP GALVANIZED COATING.

D. STEEL H-PILES:

- 1. SHALL BE ROLLED STEEL SECTIONS OF THE WEIGHT AND SHAPE CALLED FOR ON THE PLANS
- 2. SHALL CONFORM TO ASTM A709 (AASHTO M270) GRADE 36 WITH A MINIMUM YIELD STRENGTH OF 248MPa
- 3. SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS INDICATED IN DPWH STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES AND AIRPORTS, 2013 EDITION
- 4. TO BE DRIVEN TO MINIMUM BEARING CAPACITY OF 20 TONS (~200KN)

THIS UPDATED PLAN COVERS THE FOLLOWING MODIFICATION FROM THE PREVIOUSLY APPROVED STANDARD PLAN:

- 1. USE OF STEEL DECK WITH 6mm THICK CHECKERED PLATE
- 2. DESIGN FOR STANDARD ABUTMENT USING BUILT-UP H-PILES

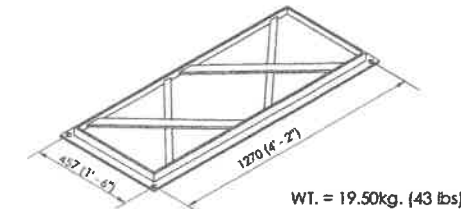
<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN BRIDGES DIVISION</p> <p>BONIFACIO DRIVE PORT AREA, MANILA</p>	<p>SHEET TITLE:</p> <p>STANDARD PLAN FOR BAILEY BRIDGE (FOR PRE-POSITIONING @ DPWH REGIONAL OFFICES)</p>	<p>SHEET CONTENTS:</p> <p>GENERAL NOTES GENERAL ELEVATION GENERAL PLAN ROADWAY CROSS SECTION</p>	<p>DESIGNED: RONALDO M. CHUA CHECKED: WILHELMINA ANCHETA CADD: ROLANDO C. MEDIANTE</p>	<p>SUBMITTED: BLESILDA S. RAMOS OIC-CHIEF, BRIDGES DIVISION</p>	<p>RECOMMENDING APPROVAL: ARISTARCO M. DOROS OFFICER-IN-CHARGE, BUREAU OF DESIGN</p>	<p>APPROVED: EMIL K. SADAIN, CESO I UNDERSECRETARY FOR UPMO OPERATIONS AND TECHNICAL SERVICES</p>	<p>SET NO. BOD 2020-9 BrD</p>	<p>SHEET NO. SB 1/6</p>
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REQUIRED PANEL TYPE BASED ON SPAN LENGTH								
SPAN LENGTH ft. (m)	30 (9.144)	40 (12.192)	50 (15.240)	60 (18.288)	70 (21.336)	80 (24.384)	90 (27.432)	100 (30.480)
M 13.5	SS	SS	SS	SS	DS	DS	DS	TS
MS 13.5	SS	SS	SS	DS	DS	TS	TS	TS
M 18	SS	SS	SS	DS	DS	TS	TS	DD
MS 18	SS	SS	DS	DS	TS	TS	DD	DD

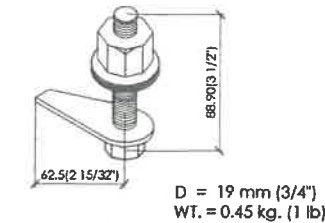
NOTE:

SS - SINGLE-SINGLE
DS - DOUBLE-SINGLE
TS - TRIPLE-SINGLE
DD - DOUBLE-DOUBLE

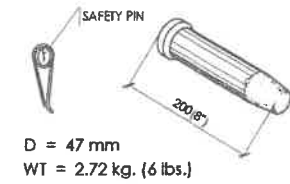
SUPERSTRUCTURE QUANTITIES BASED ON SPAN LENGTH (kg)										
SPAN LENGTH ft. (m)	10 (3.048)	20 (6.096)	30 (9.144)	40 (12.192)	50 (15.240)	60 (18.288)	70 (21.336)	80 (24.384)	90 (27.432)	100 (30.480)
403(4)a2 Structural Steel, furnished and fabricated (Grade 50)	3,513	6,422	9,331	12,241	18,603	22,135	30,221	34,337	43,249	47,950



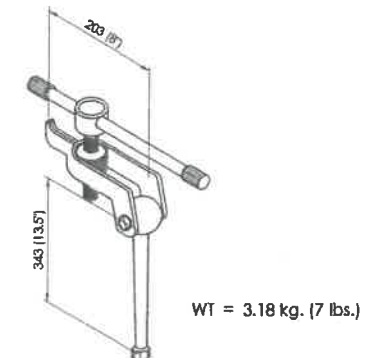
1
2 SB NOT TO SCALE
ISOMETRIC BRACING FRAME



2
2 SB NOT TO SCALE
ISOMETRIC BRACING/RAKER BOLT



3
2 SB NOT TO SCALE
ISOMETRIC PANEL PIN



4
2 SB NOT TO SCALE
ISOMETRIC TRANSOM CLAMP

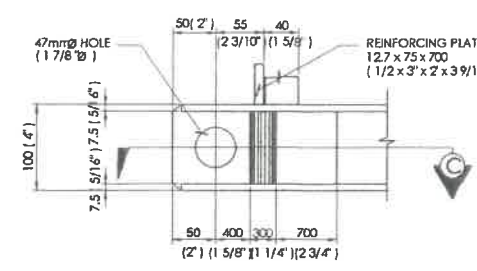
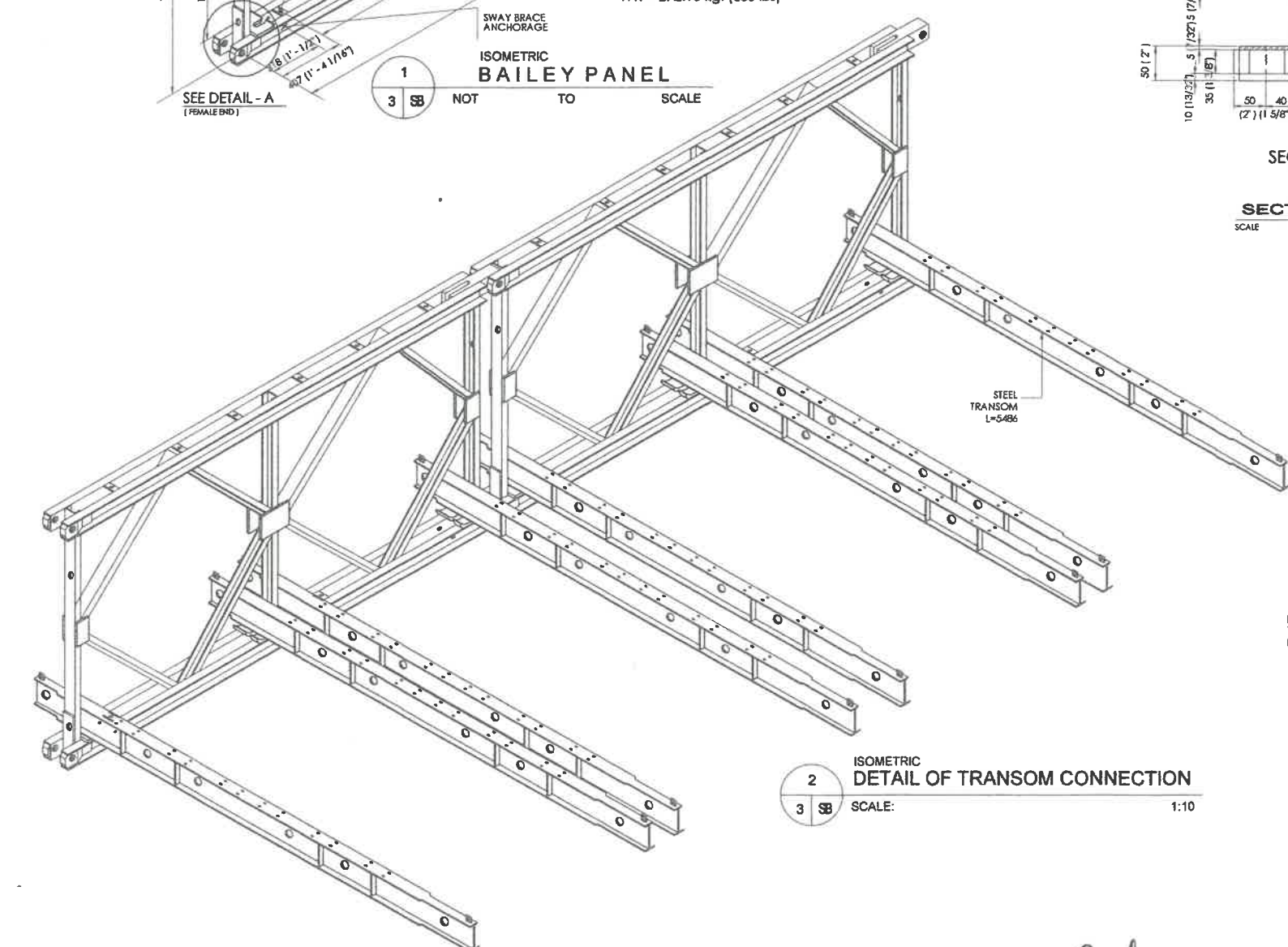
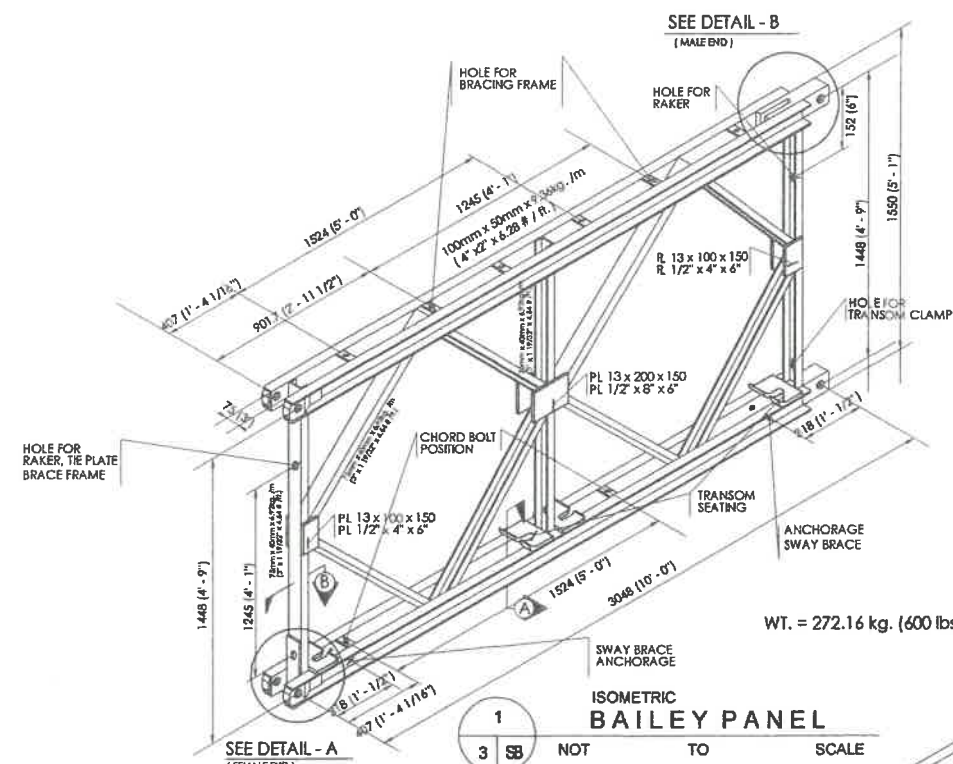
	QUANTITIES FOR EVERY SET (EVERY 10 FEET)																							
	Single-Single						Double-Single						Triple-Single						Double-Double					
	No.	Dimension			Quantities (kg.)		No.	Dimension			Quantities (kg.)		No.	Dimension			Quantities (kg.)		No.	Dimension			Quantities (kg.)	
		Height	Width	Length	per pc.	Total		Height	Width	Length	per pc.	Total		Height	Width	Length	per pc.	Total		Height	Width	Length	per pc.	Total
Bailey Panel	2	5.1'	7"	10'	272.16	544.31	4	5.1'	7"	10'	272.16	1088.62	6	5.1'	7"	10'	272.16	1632.93	8	5.1'	7"	10'	272.16	2177.24
Panel Pin	4		1.875"φ	8"	2.72	10.89	8		1.875"φ	8"	2.72	21.77	12		1.875"φ	8"	2.72	32.66	16		1.875"φ	8"	2.72	43.54
Transom	4	10"	5"	18'	208.65	834.61	4	10"	5"	18'	208.65	834.61	4	10"	5"	18'	208.65	834.61	4	10"	5"	18'	208.65	834.61
Transom Clamp	8		8"	13.5"	3.18	25.40	16		8"	13.5"	3.18	50.80	24		8"	13.5"	3.18	76.20	16		8"	13.5"	3.18	50.80
Stringers (plain) - 3 pc set	6	4"	2.5"	10'	117.93	707.60	6	4"	2.5"	10'	117.93	707.60	6	4"	2.5"	10'	117.93	707.60	6	4"	2.5"	10'	117.93	707.60
Bolt (stringer)	96		0.5"φ	3.5"	0.23	21.77	96		0.5"φ	3.5"	0.23	21.77	96		0.5"φ	3.5"	0.23	21.77	96		0.5"φ	3.5"	0.23	21.77
Sway Bracing	2		1"φ		28.58	57.15	2		1"φ		28.58	57.15	2		1"φ		28.58	57.15	2		1"φ		28.58	57.15
Steel Checkered Plate	1	0.25"	117"	10'	498.95	498.95	1	0.25"	108"	10'	498.95	498.95	1	0.25"	108"	10'	498.95	498.95	1	0.25"	108"	10'	498.95	498.95
Bracing Frame							2	4'2"	1'6"		19.50	39.01	2	4'2"	1'6"		19.50	39.01	2	4'2"	1'6"		19.50	39.01
Bolt (bracing)							8		0.75"φ	3.5"	0.45	3.63	8		0.75"φ	3.5"	0.45	3.63	8		0.75"φ	3.5"	0.45	3.63
Bolt (chord)																			16		1.25"φ	12.25"	3.63	58.06
Raker	4	3"	1.5"	3'6"	11.79	47.17	4	3"	1.5"	6"	11.79	47.17	4	3"	1.5"	6"	11.79	47.17	4	3"	1.5"	6"	11.79	47.17
Bolt (raker)	8		0.75"φ	3.5"	0.45	3.63	8		0.75"φ	3.5"	0.45	3.63	8		0.75"φ	3.5"	0.45	3.63	8		0.75"φ	3.5"	0.45	3.63
Riband (curb)	2	8"	5"	10'	78.93	157.85	2	8"	5"	10'	78.93	157.85	2	8"	5"	10'	78.93	157.85	2	8"	5"	10'	78.93	157.85
Tie Plate													2	2.5"	0.375"	10"	1.36	2.72						
TOTAL WEIGHT (kg)	2909.34						3532.58						4115.90						4701.03					

FOR END SPANS ONLY	QUANTITIES																							
Bearing Plate	4	3"	1'5.5"	1'9"	66.68	266.71	4	3"	1'5.5"	1'9"	66.68	266.71	6	3"	1'5.5"	1'9"	66.68	400.07	4	3"	1'5.5"	1'9"	66.68	266.71
Bearing	4	0.625"	1'3"	1'6"	28.58	114.31	8	0.625"	1'3"	1'6"	28.58	228.61	12	0.625"	1'3"	1'6"	28.58	342.92	8	0.625"	1'3"	1'6"	28.58	228.61
End Post (male)	2	4'9"			54.43	108.86	4	4'9"			54.43	217.72	6	4'9"			54.43	326.59	4	4'9"			54.43	217.72
End Post (female)	2	4'9"			56.70	113.40	4	4'9"			56.70	226.80	6	4'9"			56.70	340.19	4	4'9"			56.70	226.80
Bracing Frame for end spans																			4	4'2"	1'6"		19.50	78.02
Bolt (bracing) for end spans																			8		0.75"φ	3.5"	0.45	3.63
TOTAL WEIGHT (kg)	603.28						939.84						1409.77						939.84					

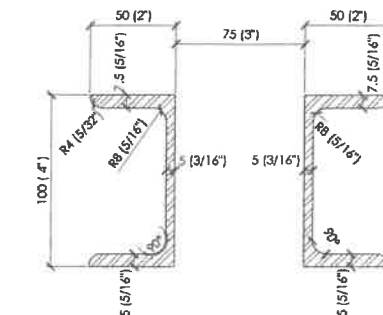
Notes:

- The above values are for bridges designed for MS-18.

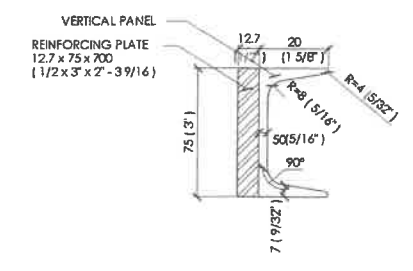
<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN BRIDGES DIVISION BONIFACIO DRIVE PORT AREA, MANILA</p>	SHEET TITLE:	SHEET CONTENTS:	DESIGNED:	SUBMITTED:	RECOMMENDING APPROVAL:	APPROVED:	SET NO.	SHEET NO.
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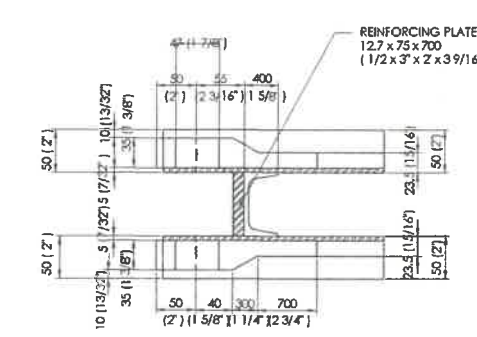
ELEVATION



SECTION - A

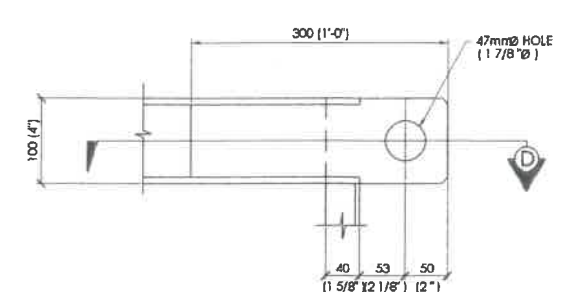


SECTION - B

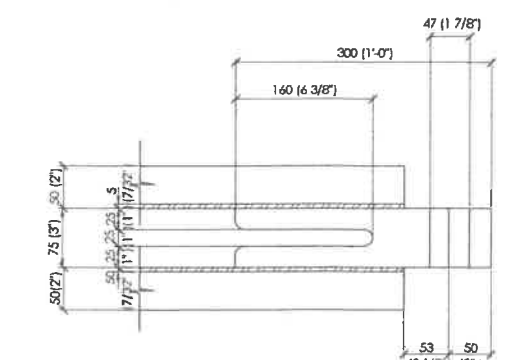


SECTION - C

SECTION - A
SCALE 1:40



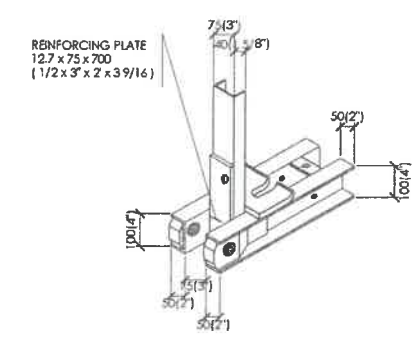
ELEVATION



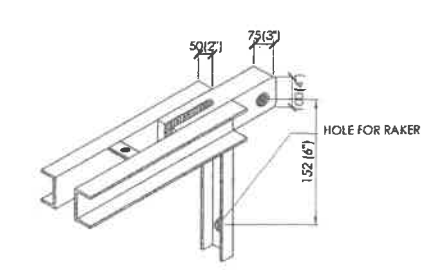
SECTION - D

SECTION - B
SCALE 1:40

ISOMETRIC
DETAIL OF TRANSOM CONNECTION
SCALE: 1:10

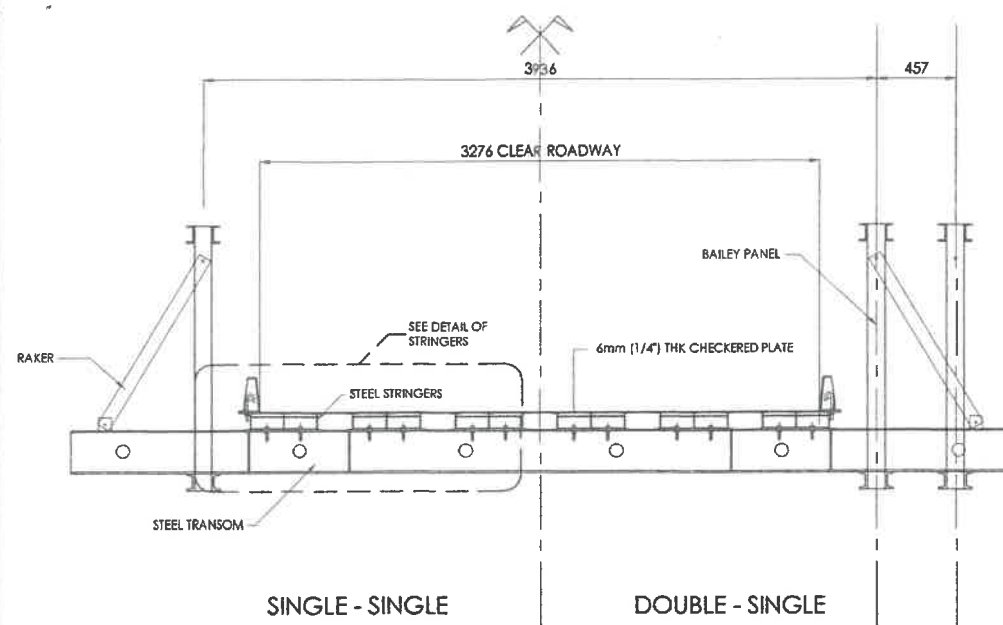


ISOMETRIC DETAIL - A
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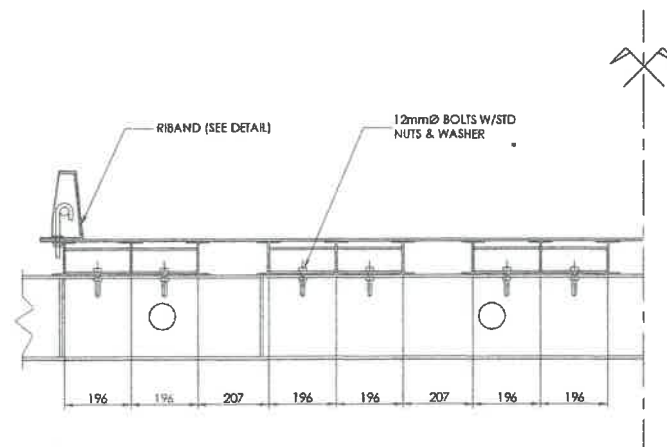


ISOMETRIC DETAIL - B
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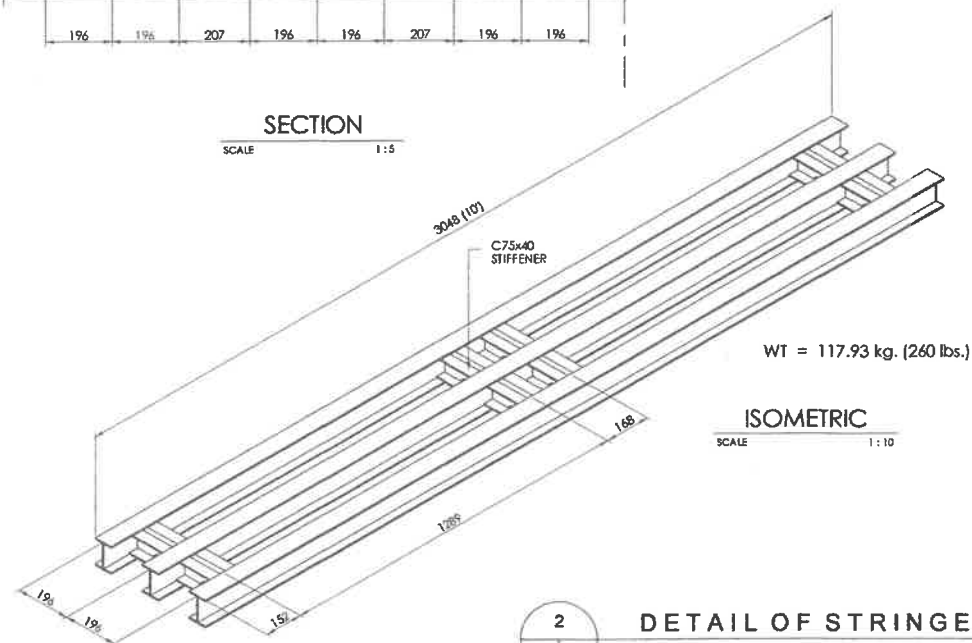
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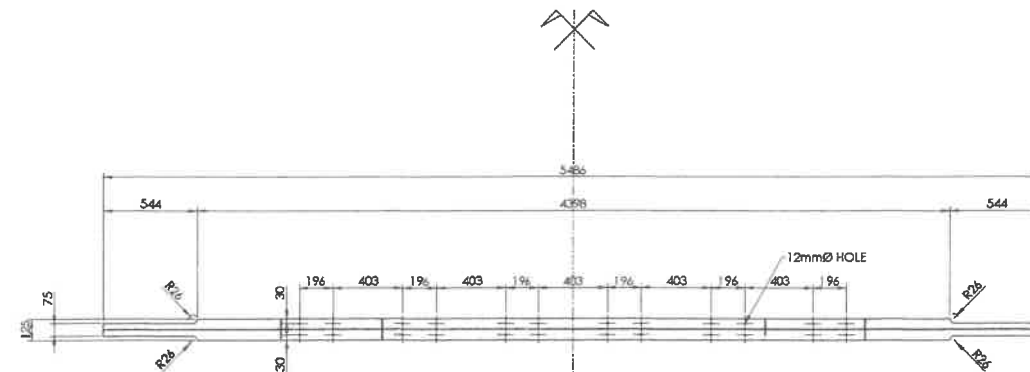
1
4 SB
TYPICAL ROADWAY CROSS SECTION
SCALE: 1:20



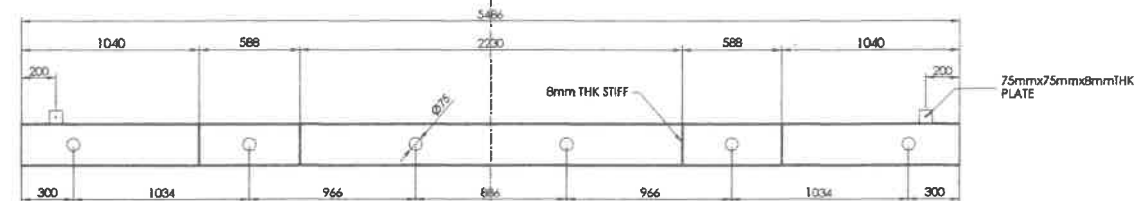
SECTION
SCALE 1:5



2
4 SB
DETAIL OF STRINGERS
SCALE 1:10

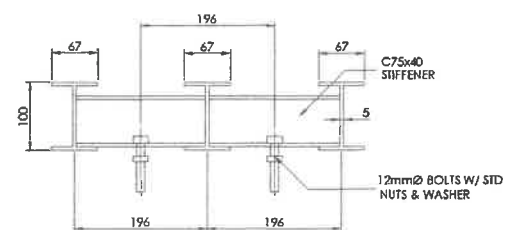


PLAN

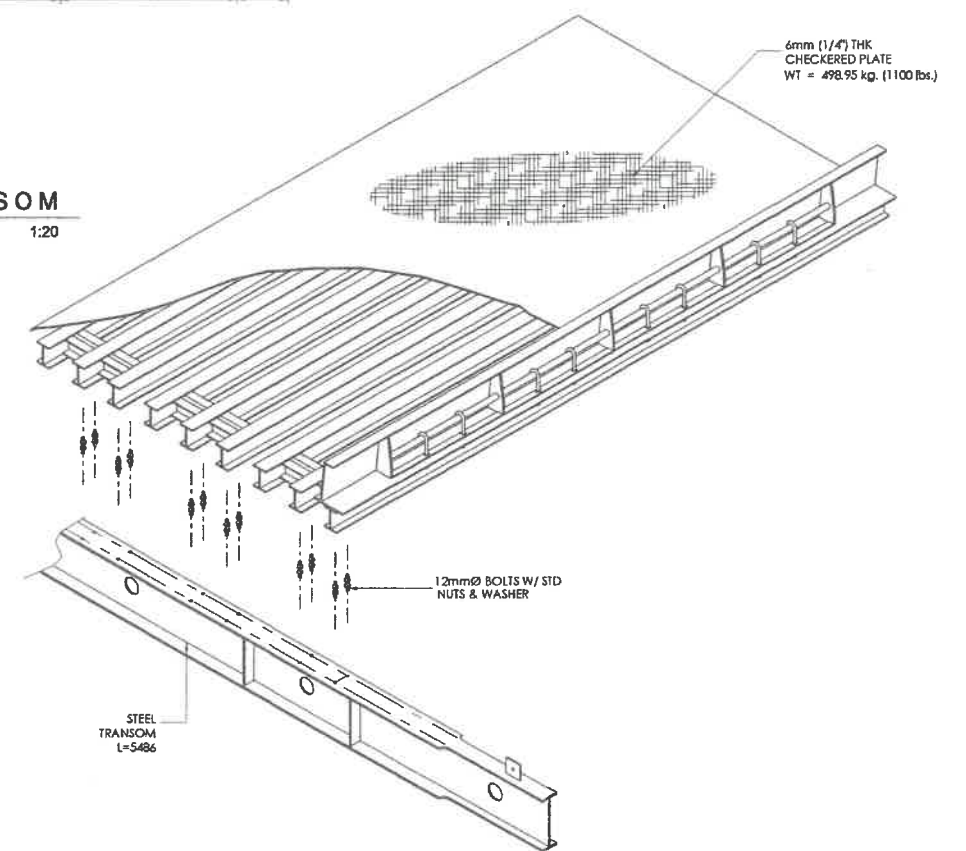


ELEVATION

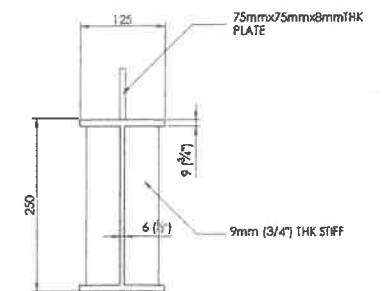
3
4 SB
DETAIL OF STEEL TRANSOM
SCALE: 1:20



SECTION OF STRINGER
SCALE 1:5

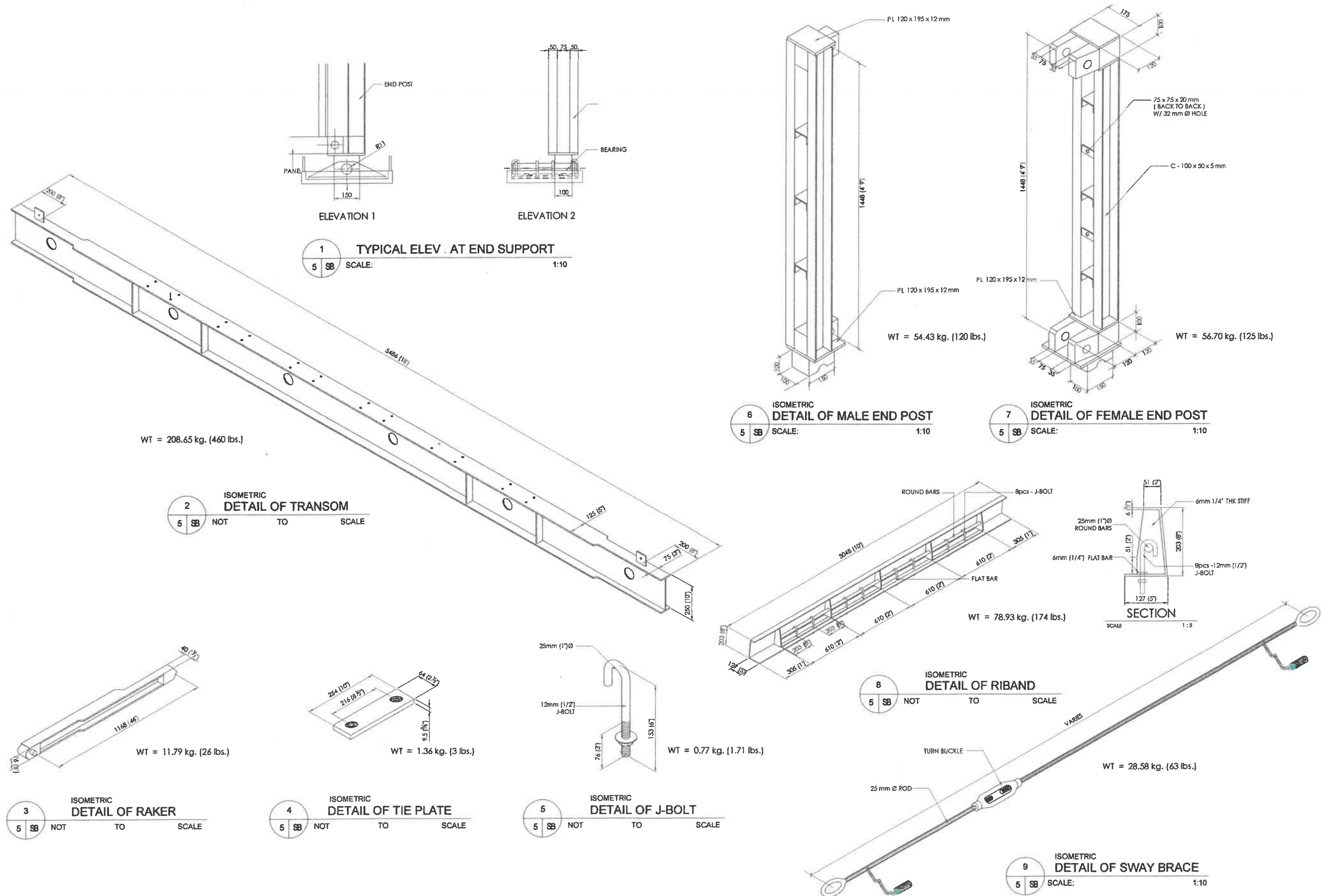


4
4 SB
DETAIL CONNECTION OF STRINGER & TRANSOM
SCALE

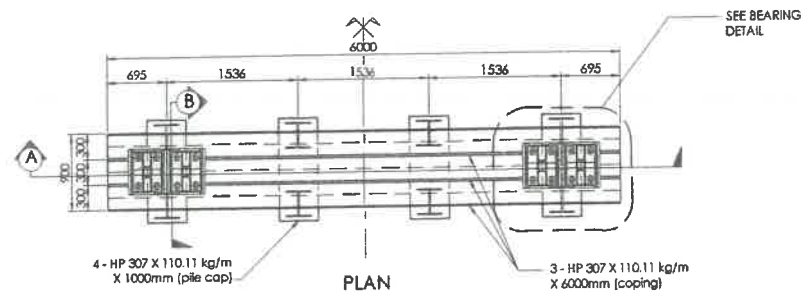


SECTION
SCALE 1:5

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN BRIDGES DIVISION BONIFACIO DRIVE PORT AREA, MANILA	SHEET TITLE: STANDARD PLAN FOR BAILEY BRIDGE (FOR PRE-POSITIONING @ DPWH REGIONAL OFFICES)	SHEET CONTENTS: TYPICAL ROADWAY CROSS SECTION DETAIL OF STRINGERS DETAIL OF TRANSOM DETAIL CONNECTION OF STRINGER AND TRANSOM	DESIGNED: RONILYN M. CHUA CHECKED: WILHELMINA L. ANCHETA CADD: ROLANDO C. MEDIANTE	SUBMITTED: BLESILDA S. RAMOS OIC-CHIEF, BRIDGES DIVISION	RECOMMENDING APPROVAL: SEE COVER SHEET ARISTARCO M. DOROY OFFICER-IN-CHARGE, BUREAU OF DESIGN	APPROVED: FEB 12 2020 SEE COVER SHEET EMIL K. SADAIN, CESO I UNDERSECRETARY FOR UPMO OPERATIONS AND TECHNICAL SERVICES	SET NO. BOD 2020-8 BrD	SHEET NO. SB 4 6
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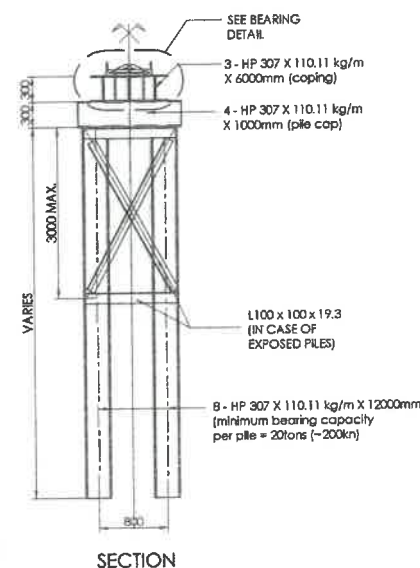
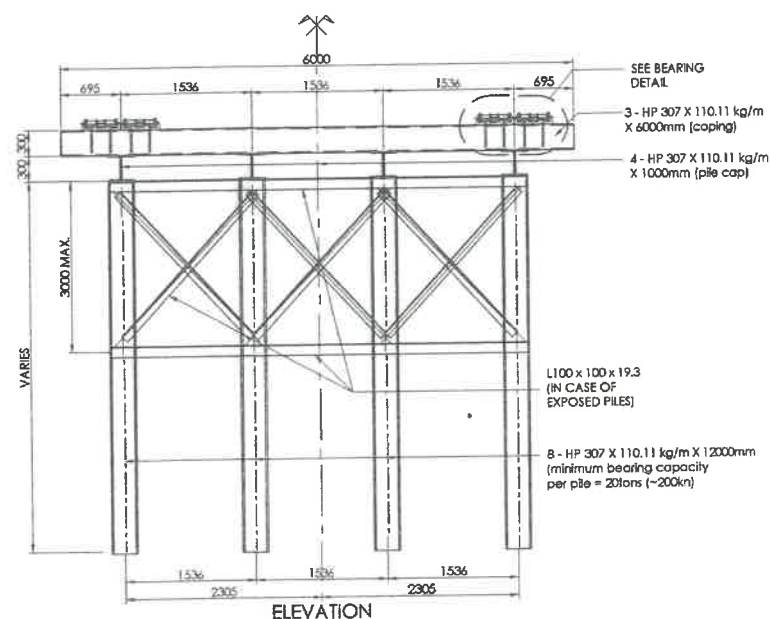


REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN BRIDGES DIVISION BONIFACIO DRIVE PORT AREA, MANILA	SHEET TITLE: STANDARD PLAN FOR BAILEY BRIDGE (FOR PRE-POSITIONING @ DPWH REGIONAL OFFICES)	SHEET CONTENTS: TYPICAL ELEV. AT END SUPPORT DETAIL OF TRANSOM, RAKER, TIE PLATE, J-BOLT, MALE & FEMALE END POST, RIBAND AND SWAY BRACE	DESIGNED: <i>Ron M. Chua</i> CHECKED: <i>Wilhelmina Ancheta</i> CADD: <i>Rolando C. Mediente</i>	SUBMITTED: <i>Blesilda S. Ramos</i> OIC-CHIEF, BRIDGES DIVISION	RECOMMENDING APPROVAL: SEE COVER SHEET ARISTARCO M. DOROY OFFICER-IN-CHARGE, BUREAU OF DESIGN	APPROVED: <i>Emil K. Sadain</i> SEE COVER SHEET EMIL K. SADAIN, CESO I UNDERSECRETARY FOR UPMO OPERATIONS AND TECHNICAL SERVICES	SET NO. BOD 2020-9 BrD	SHEET NO. SB 5 6
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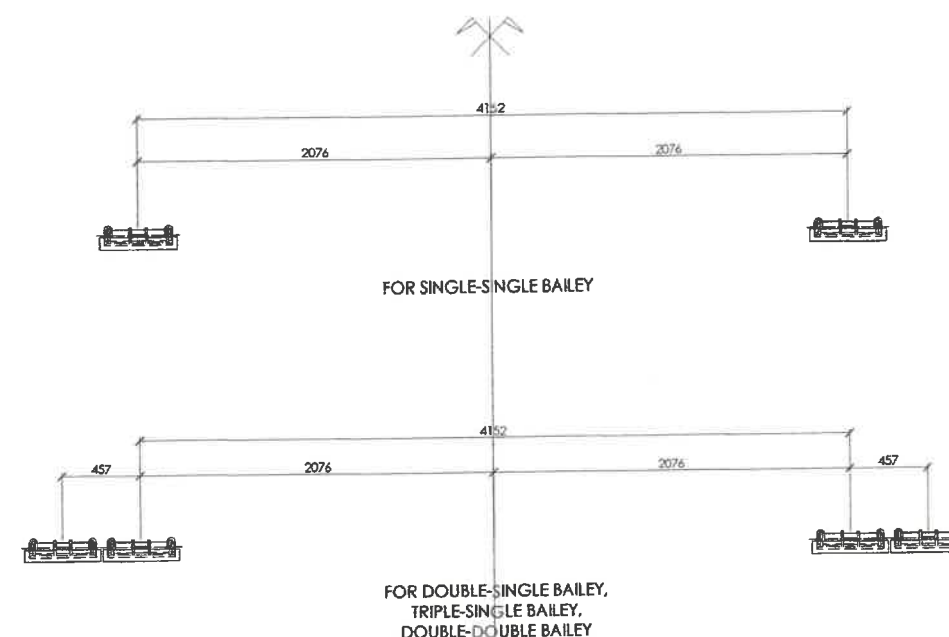


ESTIMATE OF QUANTITIES					
Item No.	Description	Quantities			
		Unit	Abut. A	Abut. B	Total
400(3)	Steel H-Piles, furnished	m.	214	214	428
403(1)a1	Structural Steel, furnished (Grade 36)	kg.	1274	1274	2548

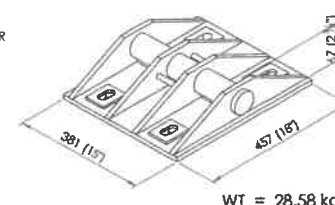
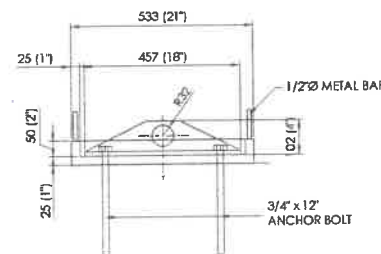
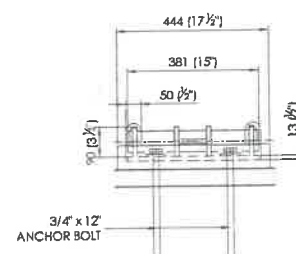
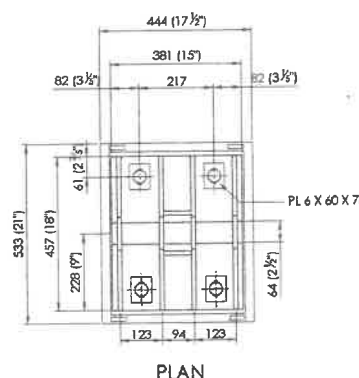
MATERIALS LIST				
Item 400(3) - Steel H-Piles (Per Abutment)				
	No.	I.m.	total length	pcs. of 12m H-pile
Coping	3	6	18	2
Pile Cap	4	1	4	
Pile Foundation	16	12	192	16
TOTAL			214	18
Item 403(1)a1, L 100mm x 100mm x 13mm, (Per Abutment)				
	No.	I.m.	total length	pcs. of 6m Angle Bar
Cross Bracing				
Diagonal	14	3	42	7
Horizontal	16	1.5	24	4
TOTAL			66	11



1
6 SB SCALE: 1:25
DETAIL OF STEEL ABUTMENT

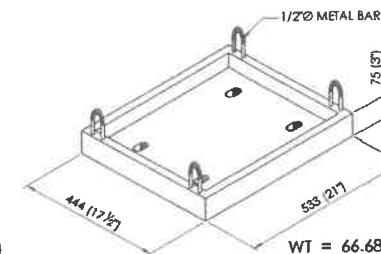


2
6 SB SCALE: 1:20
LOCATION OF BEARINGS



WT = 28.58 kg. (63 lbs.)

BEARING ISOMETRIC



WT = 66.68 kg. (147 lbs.)

BEARING PLATE ISOMETRIC

3
6 SB SCALE: 1:10
DETAIL OF BEARING & PLATE

<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN BRIDGES DIVISION BONIFACIO DRIVE PORT AREA, MANILA</p>	SHEET TITLE:	SHEET CONTENTS:	DESIGNED:	SUBMITTED:	RECOMMENDING APPROVAL:	APPROVED:	SET NO.	SHEET NO.
	STANDARD PLAN FOR BAILEY BRIDGE (FOR PRE-POSITIONING @ DPWH REGIONAL OFFICES)	ESTIMATE OF QUANTITIES MATERIALS LIST DETAIL OF STEEL ABUTMENT DETAIL OF BEARING & PLATE LOCATION OF BEARINGS	RONALD M. CHUA ENGINEER I	BLESSILDA S. RAMOS OIC-CHIEF, BRIDGES DIVISION	SEE COVER SHEET ARISTARCO M. DOROY OFFICER-IN-CHARGE, BUREAU OF DESIGN	SEE COVER SHEET EMIL K. SADAIN, CESO I UNDERSECRETARY FOR UPMO OPERATIONS AND TECHNICAL SERVICES	BOD 2020-9 BrD	SB 6/6
			WILHELMINA ANCHETA ENGINEER II					