097.13 DPWH
12.19.2022

Republic of the Philippines
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
OFFICE OF THE SECRETARY
Manila

DEC 19 2022

DEPARTMENT ORDER)
)
NO. 263)
Series of 2022)
dt 12/19/22

SUBJECT: Updated Guidelines and Standard Design Drawings for Bicycle Facilities along National Roads

In line with the mandate of the Department of providing effective standards to be used in the implementation of bicycle facilities along national roads, the updated guidelines and standard design drawings for the aforementioned facilities are now available for reference.

The issuance of the said guidelines aims to ensure cost-effectiveness and uniformity in the design of bicycle facilities for new or existing road and bridge infrastructure projects along national roads that will facilitate safe and efficient non-motorized vehicle use. Furthermore, it shall serve as reference for all Implementing Offices of this Department [Unified Project Management Office (UPMO) Clusters, Regional Offices (ROs) and District Engineering Offices (DEOs); including Engineering Consultants] in the preparation of design plans and reports for various bicycle facilities.

The updated standard guidelines consist of three (3) sets, as follows:

- Set 1 - Bicycle Facilities on Roads
- Set 2 - Bicycle Facilities on Bridges
- Set 3 - Bicycle Parking Facilities

The abovelisted plans may be downloaded from the DPWH Intranet (http:dpwhweb) under Bureau of Design - Standard Plans.

Provision of bicycle facilities shall be mandatory for all new road and bridge projects, in accordance with Executive Order No. 774, series of 2008 and NEDA Board Resolution No. 5, series of 2017 as stipulated under DPWH General Appropriations Act (GAA) for FY 2022.

The authority to approve exemptions to the above-mentioned policies/standards for UPMO Clusters, ROs, and DEOs may be allowed subject to the evaluation of the Bureau of Design and approval of the Undersecretary for Technical Services. For this purpose, the form hereto attached as **Annex "A"** is hereby prescribed.

This order supersedes D.O. No. 88, Series of 2020, and other previous issuances inconsistent herewith, and shall take effect immediately.

MANUEL M. BONOAN
Secretary

5.1.3 RCR/DLB/ECM/EAA/MLC

Department of Public Works and Highways
Office of the Secretary
WIN2R01576

REQUEST FORM FOR APPROVAL OF NON-IMPLEMENTATION OF BICYCLE FACILITIES FOR NEW CONSTRUCTION ALONG NATIONAL ROADS

Date: _____

FOR : UNDERSECRETARY FOR TECHNICAL SERVICES

THRU : DIRECTOR
Bureau of Design

1. Project Location :
2. Implementing Office :
3. Scope of Work of the Project :
   (attach typical section)
4. Reason for Non-Implementation of Bicycle Facility :

_____ **4.1 Not adaptable to site condition (SAMPLE ONLY)**

4.1.1 Involving Road-Right-of-Way (RROW) constraints
- Provide Vicinity Map showing the location and RROW limit of the project.
- Details of the proposed roadway typical section

4.1.2 Affected by existing structures/obstructions
- Photographs of existing structures i.e. trees, posts, etc.

4.1.3 Desirable bicycle facilities as per traffic volume and operating speed cannot be implemented
- Provide latest traffic data and operating speed
- Details of the proposed roadway typical section

_____ **4.2 Other reason(s) : _____**

Requested by:

Regional Director/District Engineer

The request was found to be meritorious, hence approval hereof is respectfully recommended.

Division Chief	**Division Chief**	**Division Chief**
Chief, Highways Division	Chief, Bridges Division	Chief, Buildings Division

Recommending Approval:

Director
DPWH Bureau of Design

Approved:

Undersecretary for Technical Services

DEPARTMENT OF TRANSPORTATION
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES

SET 1: BICYCLE FACILITIES ON ROADS
SET 2: BICYCLE FACILITIES ON BRIDGES
SET 3: BICYCLE PARKING FACILITIES

SUBMITTED:

ROMEO C. RAAGAS
CHIEF, HIGHWAYS DIVISION
BUREAU OF DESIGN
DATE: 12-7-22

BLESILDA S. RAMOS
CHIEF, BRIDGES DIVISION
BUREAU OF DESIGN
DATE: 12/7/22

ERIBERTO B. SIOSON
CHIEF, BUILDINGS DIVISION
BUREAU OF DESIGN
DATE: 12.07.22

RECOMMENDING APPROVAL:

EDWIN C. MATANGUIHAN
OIC - DIRECTOR
BUREAU OF DESIGN
DATE: DEC 07 2022

ERIC A. AYAPANA
ASSISTANT SECRETARY FOR
INFORMATION MANAGEMENT AND
TECHNICAL SEVICES
DATE:

APPROVED:

MAXIMO L. CARVAJAL
UNDERSECRETARY FOR
INFORMATION MANAGEMENT AND
TECHNICAL SEVICES
DATE: 12-07-2022

CONCURRED BY:

MARK STEVEN C. PASTOR
UNDERSECRETARY
ROAD TRANSPORT & INFRASTRUCTURE
DEPARTMENT OF TRANSPORTATION
DATE:

UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS

(SET 1)

INDEX OF DRAWINGS

SHEET CONTENTS	SET No.	SHEET No.
COVER PAGE		
INDEX OF DRAWINGS	D - 01	01/01
GENERAL NOTES	G - 01	01/03
	G - 01	02/03
	G - 01	03/03
BICYCLE CLASSIFICATIONS & BICYCLE FACILITY ALONG CONFLICT AREAS		
- ISOMETRIC PLAN, CLASS I - TYPE A, SHARED USED PATH WITH FENCE	R - 01	01/18
- ISOMETRIC PLAN, CLASS I - TYPE B, SHARED USED PATH WITHOUT FENCE	R - 01	01/18
- ISOMETRIC PLAN, CLASS II - TYPE A, SEPARATED BIKELANE	R - 02	02/18
- ISOMETRIC PLAN, CLASS II - TYPE A, SEPARATED BIKELANE ALONG CONFLICT AREAS	R - 02	02/18
- ISOMETRIC PLAN, CLASS II - TYPE B, SEPARATED BIKELANE	R - 03	03/18
- ISOMETRIC PLAN, CLASS II - TYPE B, SEPARATED BIKELANE ALONG CONFLICT AREAS	R - 03	03/18
- ISOMETRIC PLAN, CLASS II - TYPE B, SEPARATED BIKELANE (BI-DIRECTIONAL)	R - 04	04/18
- ISOMETRIC PLAN, CLASS II - TYPE B, SEPARATED BIKELANE ALONG CONFLICT AREAS (BI-DIRECTIONAL)	R - 04	04/18
- ISOMETRIC PLAN, CLASS II - TYPE C, SEPARATED BIKELANE ALONG CONFLICT AREA (WITH BOLLARDS)	R - 05	05/18
- ISOMETRIC PLAN, CLASS II - TYPE C, SEPARATED BIKELANE ALONG COMMERCIAL PROPERTIES (WITH BOLLARDS & SOLAR LED PAVEMENT MARKERS)	R - 06	05/18
- ISOMETRIC PLAN, CLASS III, SHARED ROADWAY	R - 06	06/18
- ISOMETRIC PLAN, CLASS III, SHARED ROADWAY (1.50m WIDTH)	R - 07	06/18
- ISOMETRIC PLAN, CLASS III, SHARED ROADWAY ALONG CONFLICT AREAS (1.50m WIDTH)	R - 07	06/18
- ISOMETRIC PLAN, CLASS III, SHARED ROADWAY, ALONG COMERCIAL PROPERTIES(1.50m WIDTH)	R - 08	08/18
- ISOMETRIC PLAN, SPEED HUMPS (FOR TRAFFIC CALMING ALONG LOCAL ROADS)	R - 08	08/18
- SECTIONS WITH COMBINED SOLAR STUDS, CONCRETE DELINEATOR AND COLLAPSIBLE RUBBER BOLLARDS	R - 09	09/18
- CONFLICT AREA RUNNING ALONG CENTER OF ROAD	R - 10	10/18
- BIKE LANES INSIDE YELLOW INTERSECTION BOX	R - 11	11/18
- BIKE LANES OUTSIDE YELLOW INTERSECTION BOX	R - 11	11/18
- BIKELANE INTERSECTION APPROACH "A" (YELLOW BOX)	R - 12	12/18
- BIKELANE INTERSECTION APPROACH "B" (YELLOW BOX)	R - 12	12/18
- BIKELANE INTERSECTION APPROACH "C"	R - 12	12/18
- REFLECTORIZED THERMOPLASTIC BICYCLE MARKING & DIRECTIONAL ARROW DETAIL	R - 13	13/18
- BIKELANE INTERSECTION APPROACH "D"	R - 13	13/18
- BIKELANE ALONG MERGING & DIVERGING LANES	R - 13	13/18
- PUV STOPS / LOADING & UNLOADING BAY	R - 13	13/18
- PUV TURNOUT / LOADING & UNLOADING BAY	R - 13	13/18
MISCELLANEOUS ITEMS		
- REFLECTORIZED CONCRETE DELINEATOR SECTION, ELEVATION & PLAN	R - 14	14/18
- BOLLARD POST & CONCRETE DELINEATOR ELEVATION	R - 14	14/18
- FENCE ELEVATION PLAN	R - 15	15/18
- END & MIDDLE CONNECTION DETAIL	R - 15	15/18
- SOLAR LED PAVEMENT MARKER DETAIL (INTERNALLY ILLUMINATED)	R - 15	15/18
- ELEVATION & PLAN OF FLEXIBLE BOLLARD POST	R - 15	15/18
- MISCELLANEOUS SIGNS	R - 16	16/18
- INSTALLATION DETAIL	R - 16	16/18
- OTHER PAVEMENT MARKING DETAILS	R - 17	17/18
- SAFE STORMWATER GRATES	R - 18	18/18
- BIKELANE PHYSICAL SEPARATOR	R - 18	18/18

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

PROJECT TITLE: UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)

SHEET CONTENTS: INDEX OF DRAWINGS

PREPARED: [illegible] DESIGN ENGINEER

CHECKED: [illegible] DESIGN ENGINEER

SUBMITTED: ROMEO C. RAAGAS, CHIEF, HIGHWAYS DIVISION

RECOMMENDING: (SEE COVER SHEET) EDWIN C. MATANGUIHAN, OIC - DIRECTOR, BUREAU OF DESIGN, DEC 07 [illegible]

(SEE COVER SHEET) ERIC A. AYAPANA, ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES

APPROVED: (SEE COVER SHEET) MAXIMO L. CARVAJAL, UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES

SET NO: D / 1

SHEET NO: 1 / 1

GENERAL NOTES

GENERAL NOTES

1. STANDARD SPECIFICATIONS

1.1 ALL WORKS SHALL COMPLY WITH DPWH STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES AND AIRPORTS, 2013.

1.2 FOR ITEMS OF WORK THAT ARE NOT FOUND IN THE REVISED STANDARD PAY ITEM LIST, THE CONCERNED IMPLEMENTING OFFICE SHALL SUBMIT TECHNICAL SPECIFICATIONS OF THE SAID SPECIAL PAY ITEM TO THE BUREAU OF RESEARCH AND STANDARDS (BRS) FOR REVIEW AND EVALUATION PRIOR TO THE APPROVAL OF UNDERSECRETARY FOR TECHNICAL SERVICES AS PRESCRIBED IN DEPARTMENT ORDER NO. 35 SERIES OF 2018.

2. DIMENSIONS

2.1 ALL DIMENSION ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.

3. BICYCLE FACILITIES

3.1 DEFINITION

3.1.1 A GENERAL TERM DENOTING IMPROVEMENTS AND PROVISIONS TO ACCOMMODATE OR ENCOURAGE BICYCLING, INCLUDING PARKING AND STORAGE FACILITIES, AND SHARED ROADWAYS NOT SPECIFICALLY DEFINED FOR BICYCLE USE.

3.2 THREE CLASSES:

3.2.1 CLASS I (SHARED USE PATH OR BIKE PATH) - A DESIGNATED PATH, COMPLETELY SEPARATED FROM THE ROADWAY, DESIGNATED FOR THE EXCLUSIVE USE OF BICYCLES OR SHARED WITH PEDESTRIANS; TYPICALLY SEPARATED FROM MOTOR-VEHICLE ROADWAY BY OPEN SPACE SUCH AS ON ROAD SECTIONS WITH WIDE SIDEWALK.

3.2.2 CLASS II (SEPARATED BIKE LANE) - A PORTION OF ROADWAY WHICH IS DESIGNATED FOR EXCLUSIVE USE BY BICYCLE NORMALLY DISTINGUISHED BY A PAINT STRIPE, CURB OR BARRIER. SEPARATED BIKE LANES CAN USE A VARIETY OF SEPARATION METHODS, DEPENDING ON COST, DURABILITY, SAFETY AND AESTHETICS. SEPARATION TYPES CAN BE USED IN COMBINATION TO REALIZE THE FULL BENEFITS OF SEVERAL TREATMENTS AT A LOWER OVERALL COST.

3.2.3 CLASS III (SHARED ROADWAY) - A PART OF ROADWAY THAT HAS BEEN OFFICIALLY DESIGNATED AND MARKED AS BICYCLE ROUTE BUT CAN ALSO BE USED BY MOTOR VEHICLE WHERE THERE IS LIMITED CARRIAGEWAY WIDTH. AN OPTIONAL SHARED BIKE LANE USING BROKEN WHITE LINES MAY BE USED TO LIMIT THE MOVEMENT OF CYCLISTS IN A NARROW-TRAVELED WAY/ CARRIAGEWAY. ENCROACHMENT OF MOTOR VEHICLES ALONG THE SAID LANE MAY BE ALLOWED IN A SHORT PERIOD OF TIME.

3.3 REQUIREMENTS/GUIDELINES:

3.3.1 CLASS I (SHARED USE PATH OR BIKE PATH)

- EXISTING SHARED USE PATH OR BIKE PATH ALONG THE PROJECT SHALL BE UTILIZED, TAKING INTO CONSIDERATION ALL THE APPLICABLE IMPROVEMENT THAT MAY BE NECESSARY ON THE EXISTING ROAD SIGNS AND PAVEMENT MARKINGS.
- ROADSIDE OBJECT OR FEATURE, WITH A DIAMETER GREATER THAN 100 MM THAT IS LOCATED WITHIN THE PATH MUST BE PAINTED WITH REFLECTORIZED WHITE OR MARKED IN ACCORDANCE TO DPWH DEPARTMENT ORDER NO. 73 SERIES OF 2016.
- THE SHARED USE PATH SHALL BE SEPARATED WITH SOLID LINE PAVEMENT MARKINGS WITH APPROPRIATE INFORMATORY SIGN TO GUIDE AND SEPARATE THE CYCLIST FROM PEDESTRIANS ALONG THE PATH.
- THE MINIMUM PAVED CLEAR WIDTH FOR A SHARED USE PATH IS 3.0 M. HOWEVER, IF THERE ARE PHYSICAL CONSTRAINTS SUCH AS AN ENVIRONMENTAL FEATURE, BRIDGE ABUTMENT, UTILITY STRUCTURE, FENCE, ETC., A PATH CLEAR WIDTH OF 2.44 M MAY BE USED FOR A SHORT DISTANCE CONSIDERING THAT A MINIMUM CLEAR WIDTH OF 1.50M SHALL BE PROVIDED FOR THE CYCLISTS.
- THE MINIMUM CLEAR WIDTH OF A ONE-DIRECTIONAL BIKE PATH IS 2.44 M TO ALLOW FOR BICYCLISTS TO TRAVEL SIDE-BY-SIDE OR PASS EACH OTHER WITHOUT LEAVING THE LANE.
- TYPICALLY, CLEAR WIDTHS RANGE FROM 3.0 TO 4.3 M, WITH THE WIDER VALUES APPLICABLE TO AREAS WITH HIGH USE AND/OR A WIDER VARIETY OF USER GROUPS.
- EXISTING SIDEWALK MAY BE CONVERTED INTO A TWO-DIRECTIONAL SHARED USE PATH IF ITS WIDTH IS GREATER THAN OR EQUAL TO 3.0 M TAKING INTO CONSIDERATION THAT THE LEVEL OF SERVICE FOR BOTH PEDESTRIANS AND CYCLISTS WILL NOT BE COMPROMISED; IN CONSTRAINED CONDITIONS, 2.44 M MAY BE USED/ALLOWED.
- THE CROSS-SLOPE FOR SHARED USE PATH OR BIKE PATH MUST NOT EXCEED 2% AND ITS LONGITUDINAL GRADE SHALL BE LIMITED TO 5% MAXIMUM.
- THE LONGITUDINAL GRADE ON SHARED USE PATH OR BIKE PATH SHOULD BE LIMITED TO 5% MAXIMUM. THE GRADE FOR SEPARATED BIKE LANE MUST FOLLOW THE ROADWAY GRADE.
- THE VERTICAL CLEARANCE TO OBSTRUCTIONS FROM SIGNS, POLES, TREES OR OTHER FIXED OBJECTS IS 2.5 M, PREFERRED IS 3.0 M. FIXED OBJECTS SHALL NOT BE PERMITTED TO PROTRUDE WITHIN THE VERTICAL OR HORIZONTAL CLEARANCE OF A SHARED USE PATH OR BIKE PATH.
- THE SHARED USE PATH AND BIDIRECTIONAL SEPARATED BIKE LANE SHALL BE SEPARATED WITH SOLID WHITE LINE PAVEMENT MARKINGS WITH WIDTH OF 100MM AND CONSIDERATION OF APPROPRIATE INFORMATORY SIGN TO GUIDE AND SEPARATE THE CYCLISTS FROM PEDESTRIANS AND OTHER USERS ALONG THE PATH.

3.3.2 CLASS II (SEPARATED BIKE LANE)

- SEPARATED BIKE LANES ARE INTENDED EXCLUSIVELY FOR BICYCLIST AND NOT INTENDED FOR USE OF PEDESTRIANS AND MOTOR VEHICLES. PEDESTRIAN AND MOTORISTS ARE EXPECTED TO TRAVEL ALONG A SEPARATE FACILITY SUCH AS A SIDEWALK AND CARRIAGEWAY, RESPECTIVELY.
- THE PREFERRED MINIMUM CLEAR WIDTH OF A ONE-DIRECTIONAL SEPARATED BIKE LANE OR BIKE PATH IS 2.44 M TO ALLOW FOR BICYCLISTS TO TRAVEL SIDE-BY-SIDE OR PASS EACH OTHER WITHOUT LEAVING THE LANE. HOWEVER, IF THERE ARE PHYSICAL CONSTRAINTS SUCH AS AN ENVIRONMENTAL FEATURE, BRIDGE ABUTMENT, UTILITY STRUCTURE, FENCE, RROW, AN ABSOLUTE MINIMUM CLEAR WIDTH OF 1.50 M MAY BE ALLOWED TO ACCOMMODATE THE SAFEST ONE-LANE ONE-DIRECTIONAL MOVEMENT BY MOST BICYCLISTS IN ACCORDANCE WITH INTERNATIONAL STANDARD. PHYSICAL SEPARATOR OR PAVEMENT MARKINGS (INNER EDGE) , SHOULD NOT BE INCLUDED IN THE MEASUREMENT OF USABLE WIDTH; HOWEVER, PAVEMENT MARKINGS MAY BE INCLUSIVE IF THE EFFECTIVE LANE WIDTH CANNOT BE ACHIEVED DESPITE OF NARROWING ALL OTHER TRAVEL LANES TO THEIR MINIMUM WIDTHS.
- AN OPTIONAL MINIMUM OF 1.00 M BUFFER SPACE AND/OR APPLICATION OF RUMBLE STRIP MAY BE USED TO PROVIDE ADDITIONAL HORIZONTAL DISTANCE BETWEEN MOVING VEHICLES AND BICYCLISTS.
- THE CROSS-SLOPE AND LONGITUDINAL GRADE FOR SEPARATED BIKE LANE MUST BE THE SAME AS THE SLOPE OF THE ADJOINING CARRIAGEWAY.
- PAVEMENT MARKINGS OR COMBINATION OF CONCRETE CURB (PRECAST CONCRETE DELINEATOR) WITH FLEXIBLE BOLLARD POSTS SHALL BE USED TO DESIGNATE AN EXCLUSIVE SPACE FOR BICYCLISTS ALONG EXISTING ROADS.

3.3.3 CLASS III (SHARED ROADWAY)

SHARED ROADWAY TYPE WILL BE USED ALONG SECTIONS WITH ROADWAY LANE WIDTH BETWEEN 3.35 M AND 4.20 M. BEYOND THIS WIDTH, BIKE LANES OR SHOULDERS MAY PROVIDED. SHARED ROADWAY IS APPROPRIATE FOR LOW VOLUME OF TRAFFIC WITH OPERATING SPEED OF 40 KPH AND BELOW. SOMETIMES IT MAY BE USED AS A TEMPORARY SOLUTION ON CONSTRAINED CONDITIONS, UNTIL ADDITIONAL ROAD RIGHT-OF-WAY CAN BE ACQUIRED, BUT SHOULD NOT BE CONSIDERED AS PERMANENT SOLUTION IN THIS CONDITION.

- AN OPTIONAL SHARED BIKE LANE USING BROKEN WHITELINES (150 MM (W) X 1000 MM (L) WITH 1 M GAP SPACING) WITH A MINIMUM CLEAR WIDTH OF 3.50 M MAY BE USED TO LIMIT THE MOVEMENT OF CYCLISTS IN A NARROW-TRAVELLED WAY OR CARRIAGEWAY TO IMPROVES COMFORT AND SAFETY OF BICYCLISTS THROUGH A HIGH DEMAND CORRIDOR. ENCROACHMENT OF MOTOR VEHICLES ALONG THE SAID LANE MAY BE ALLOWED IN A SHORT PERIOD OF TIME.
- BROKEN WHITELINES (BOTH SIDES) WILL BE USED IF THE SELECTION OF SHARED BIKE LANE ALIGNMENT IS IN THE CENTER OF THE ROAD, AND COMBINATION OF INNER EDGE BROKEN WHITE LINE AND OUTER EDGE CONTINUOUS WHITE LINE IF THE SHARED BIKE LANE ALIGNMENT IS RUNNING IN THE OUTER LANE SIDE OF THE ROAD.
- APPROPRIATE ROAD SIGNS AND PAVEMENT MARKINGS SHALL BE PROVIDED TO WARN/INFORM MOTORISTS OF THE POTENTIAL PRESENCE OF BICYCLISTS WITHIN A NARROW TRAVEL WAY.
- SHARED ROADWAY MARKINGS SHALL BE PLACED IN THE CENTER OF DESIGNATED SHARED TRAVEL LANE TO REDUCE MARKING'S PREMATURE WEAR AND TEAR AND SHALL BE APPLIED AT INTERVALS FREQUENT ENOUGH TO KEEP USERS WELL INFORMED OF CHANGES IN ROUTE USAGE AND DIRECTION, AND TO REMIND MOTORISTS OF THE PRESENCE OF BICYCLISTS. THERE ARE FOUR MAIN COMPONENTS OF A SHARED ROADWAY MARKINGS SHOULD HAVE. BIKE SYMBOLS, ARROWS, TEXT INDICATING "SHARE THE ROAD OR SHARE THE LANE" AND AN OPTIONAL SHARED BIKE LANE USING BROKEN WHITELINES.

3.4 BICYCLE FACILITY SELECTION

3.4.1 THE TABLE BELOW SHALL BE USED IN DETERMINING THE APPROPRIATE FACILITY CHOICE, BASED ON THE AVAILABLE DATA OF MOTOR VEHICLE VOLUME AND OPERATING SPEED. GENERALLY, THE HIGHER THE OPERATING SPEED AND VOLUME OF TRAFFIC ON A ROAD, THE MORE PROTECTIVE BICYCLE FACILITY IS RECOMMENDED. SHARED ROADWAY IS RECOMMENDED FOR A ROAD WITH OPERATING THE LOWEST SPEED AND TRAFFIC VOLUME. SEPARATED BIKE LANES USING PAVEMENT MARKINGS FOR LOW SPEED AND LOW TO MODERATE VOLUME, AND SEPARATED BIKE LANE USING PHYSICAL SEPARATION (BOLLARDS, MEDIANS, RAISED CURBS, ETC.) OR SHARED USE PATHS FOR MODERATE TO HIGH SPEEDS AND HIGH VOLUMES.

BICYCLE FACILITY	TRAFFIC VOLUME (ADT)	OPERATING SPEED (KPH)
CLASS I	> 6,000	≥ 50
CLASS II_A (PHYSICAL SEPARATION)		
CLASS II_B (PAVEMENT MARKINGS)	> 3,000 BUT ≤ 6,000	> 40 BUT < 50
CLASS III	≤ 3,000	≤ 40

3.4.2 IF ENOUGH SPACE IS NOT AVAILABLE/APPLICABLE TO PROVIDE THE PREFERRED BICYCLE FACILITY AT THE PRESCRIBED DESIGN VALUES, IT WILL BE NECESSARY TO CONSIDER OTHER BICYCLE FACILITY CLASSIFICATION AND/OR TO PROVIDE A PARALLEL FACILITY PER ENGINEERING JUDGEMENT TAKING INTO CONSIDERATION THE OVERALL IMPACTS ON RIDERSHIP, COMFORT, SAFETY, AND OVERALL NETWORK CONNECTIVITY OF ALL ROAD USERS.

3.4.3 SHARED ROADWAY FOR BOTH BICYCLISTS AND MOTORISTS CAN BE CONSIDERED AS TEMPORARY SOLUTION ALONG ROAD SECTIONS WITH HIGH TRAFFIC VOLUME. GENERALLY, THE APPLICABILITY OF SHARED ROADWAY IN METROPOLITAN AREA IS JUST A TEMPORARY SOLUTION TO FILL THE SHORT DISTANCE GAP ALONG A CONTINUOUS BIKE PATH OR BICYCLE LANE UNTIL A MORE APPROPRIATE BICYCLE FACILITIES CAN BE IMPLEMENTED. HOWEVER, THIS MIGHT POSE POTENTIAL HAZARD TO THE CYCLISTS CONSIDERING THE HIGH TRAFFIC VOLUME. THEREFORE A MORE STRINGENT GUIDELINES AND PROTOCOLS SUCH AS STRICT ENFORCEMENT OF SPEED LIMIT, PROVISION OF A DEDICATED TRAFFIC ENFORCER, ETC., SHALL BE DEFINED AND IMPLEMENTED TO ACCOMMODATE MIXED TRAFFIC.

3.5 BICYCLE OPERATING SPACE

3.5.1 BIKE LANES SHOULD HAVE A SMOOTH RIDING SURFACE.

3.5.2 AN ELECTRONIC OR NON-MOTORIZED VEHICLES (TWO WHEELS ATTACHED TO A FRAME, ONE BEHIND THE OTHER) WEIGHING NOT MORE THAN 100 KG ARE ALLOWED TO USE THE BIKE LANE.

3.5.3 THE BICYCLISTS OPERATING WIDTH IS 1.22 M, WHICH CONSIST OF WIDTH FOR PHYSICAL DIMENSION AND 0.31 M FOR WEAVING SPACE ON EACH SIDE. THE GUTTER SHOULD NOT BE INCLUDED IN THE MEASUREMENT AS USABLE WIDTH, AS BICYCLISTS ARE NOT COMFORTABLE/SAFE TO RIDE IN UNEVEN CROSS-SLOPE.

3.5.4 OBSTRUCTIONS DUE TO ON-GOING ACTIVITIES WITHIN THE ROADWAY, IF NOT ILLUMINATED, SHALL BE MARKED WITH REFLECTORIZED HAZARD MARKERS (BLACK AND WHITE STRIPES) IN COMPLIANCE WITH THE DPWH DEPARTMENT ORDER NO. 73 SERIES OF 2016)

3.6 ESTABLISHING DIRECTIONAL CRITERIA

3.6.1 THE DECISION IN THE SELECTION OF ONE-WAY OR TWO-WAY BIKE LANES SHALL BE BASED ON TRAFFIC LANE CONFIGURATIONS, BICYCLE DEMAND, TURNING MOVEMENT CONFLICTS, PARKING REQUIREMENTS, AND SURROUNDING BICYCLE ROUTE NETWORK OPTIONS AND DESTINATIONS, AMONG OTHERS.

3.6.2 SELECTION OF ALIGNMENT DECISION FOR RUNNING THE BIKE LANE ON THE RIGHT SIDE, LEFT SIDE, OR IN THE CENTER OF THE ROAD, INCLUDE CONSIDERATIONS ON TRANSIT STOP CONFLICTS, INTERSECTION AND DRIVEWAY CONFLICTS, LOCATIONS OF DESTINATIONS, AND PARKING PLACEMENT. THE DESIGNER SHALL USE THE EXISTING CONDITIONS AND SURROUNDING NETWORK CHARACTERISTICS TO EVALUATE THE SELECTION OF DIRECTIONAL CHARACTERISTICS, USING ENGINEERING JUDGEMENT.

3.6.3 BROKEN YELLOW CENTER LINE PAVEMENT MARKINGS (100 MM (W) x 1500 MM (L) WITH 3 M GAP SPACING) SHALL BE USED TO SEPARATE A TWO-DIRECTIONAL BIKE LANE.

3.7 INTERSECTION APPROACH

3.7.1 GREEN PAVEMENT MARKINGS SHALL BE USED ALONG THE LENGTH OF A CORRIDOR OR IN SELECTED CONFLICT LOCATIONS WHERE VEHICLES AND BICYCLES ARE MANEUVERING AT THE SAME TIME THRU MERGING, WEAVING AND CROSSING. THESE SHALL BE PROVIDED ON CONFLICT AREAS SUCH AS INTERSECTIONS, ENTRANCE/EXIT RAMPS, DRIVEWAYS, AND TRANSIT STOP PER ENGINEERING JUDGEMENT.

3.7.2 GREEN-COLORED DASHED PAVEMENT MARKINGS WITHIN A DASHED BICYCLE LANE (WHITE PAVEMENT MARKINGS) INDICATE AREAS WHERE MERGING AND WEAVING MANEUVERS ARE PERMITTED. THIS WILL DECREASE THE CHANCE OF COLLISIONS AS IT ALLOWS MOTORISTS TO MERGE WHEN THERE IS A GAP IN BICYCLE TRAFFIC UP TO THE INTERSECTION. SAID MARKINGS SHALL BE DASHED 15 TO 70 METERS IN ADVANCE OF INTERSECTION.

- THE LENGTH OF GREEN-COLORED DASHED PAVEMENT MARKINGS WILL BE BASED ON THE RATE OF ARRIVAL AND DEPARTURE OF RIGHT TURNING VEHICLES AVERAGE TWO-MINUTE PERIOD WITHIN THE PEAK

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

PROJECT TITLE: UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)

SHEET CONTENTS: GENERAL NOTES

DESIGNED: [illegible]
DRAWN: [illegible]
CHECKED: [illegible]
RECOMMENDED: [illegible]

ROMEO C. RAAGAS
CHIEF HIGHWAYS ENGINEER

RECOMMENDED: SEE COVER SHEET
EDWIN C. MATANGUIHAN
OIC - DIRECTOR, BUREAU OF DESIGN
DEC 07 2022

APPROVED: (SEE COVER SHEET)
ERIC A. AYAPANA
ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES

APPROVED: (SEE COVER SHEET)
MAXIMO L. CARVAJAL
UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES

SHEET NO. 5
SHEETS NO. 8

GENERAL NOTES

HOUR OR PER SIGNAL CYCLE LENGTH WILL BE CONSIDERED FOR UNSIGNALIZED INTERSECTION AND SIGNALIZED INTERSECTION, RESPECTIVELY.

- BIKE SYMBOLS MAY BE PROVIDED ALONG THIS SECTION TO EMPHASIZE THE PRESENCE OF CYCLISTS.

3.7.3 A COLORED CONFLICT AREA (SOLID GREEN ROAD SURFACE PAVEMENT MARKINGS) SHALL BE USED INSIDE OF QUEUING AREA AT INTERSECTIONS, WHITE PAVEMENT MARKINGS SHALL BE USED ALONG THE OUTER PORTION OF THE SOLID GREEN. COLORED CONFLICT AREA SHALL BE PLACED/APPLIED 4.50 TO 9.00 METERS BEFORE INTERSECTION OR INSIDE OF QUEUING AREA. MOTOR VEHICLES ARE PROHIBITED IN THIS AREA UNLESS INADVERTENT STOP BY RED SIGNAL. BIKE SYMBOLS MAY BE PROVIDED ALONG THIS SECTION TO EMPHASIZE THE PRESENCE OF CYCLISTS.

3.7.4 DOTTED LINE EXTENSIONS TO INDICATE CONTINUITY AND TRANSITIONS. THIS CAN BE APPLIED ACROSS INTERSECTIONS. DOTTED LINES SHALL BE 150 MM (W) X 1000 MM (L) WITH 1 M GAP SPACING. MARKINGS SHALL BE WHITE, SKID RESISTANCE AND RETRO REFLECTIVE.

- BIKE LANES INSIDE YELLOW INTERSECTION BOX IN A SIGNALIZED INTERSECTION MUST FOLLOW THE RULES OF TRAFFIC LIGHT.
- BIKE LANES OUTSIDE YELLOW INTERSECTION BOX IN A SIGNALIZED INTERSECTION ALLOWS BIKERS TO PASS THROUGH WITH CAUTION EVEN IF THE RED LIGHT IS ON.

3.7.5 THE WIDTH OF CONFLICT AREA MARKINGS SHALL BE AS WIDE AS THE BIKE LANES, PROVIDED BEFORE AND/OR AFTER INTERSECTION/RAMP. MERGE OR DIVERGE LANES SUCH AS RAMP-STYLE (ENTRANCE AND EXIT LANES) OR ANY OTHER SIMILAR CASES, TYPICALLY HAVE INTRINSIC VISIBILITY PROBLEM DUE TO LOW APPROACH INTERSECTION ANGLES. GREEN-COLORED DASHED PAVEMENT MARKINGS WITHIN A DASHED BICYCLE LANE SHALL BE PROVIDED ALONG THIS AREA.

- IF THE ALIGNMENT IS IN THE CENTER OF THE ROAD, WHITE PAVEMENT MARKINGS SHALL BE USED ALONG THE OUTER PORTION OF THE DASHED GREEN PAVEMENT MARKINGS (BOTH SIDES).
- AN OPTIONAL REFLECTIVE ROAD STUDS FLUSH TYPE WITH GREEN COLOR AT INTERVAL OF 4.8 M MAY BE USED TO SUPPLEMENT DELINATION ALONG HIGHLY URBANIZED AREA.

3.7.6 A BIKE BOX IS A DESIGNATED AREA LOCATED AT THE HEAD OF A TRAFFIC LANE AT A SIGNALIZED INTERSECTION THAT PROVIDES BICYCLISTS WITH A SAFE AND VISIBLE SPACE TO GET IN FRONT OF QUEUING MOTORIZED TRAFFIC DURING THE RED SIGNAL PHASE. MOTOR VEHICLES MUST QUEUE BEHIND THE WHITE STOP LINE AT THE REAR OF THE BIKE BOX.

- THE BIKE BOX SHALL INCLUDE A MINIMUM LENGTH OF 4.50 M AND MINIMUM COMBINED WIDTH OF THE BIKE LANE, BUFFER SPACE, AND ADJACENT TRAVEL LANE.
- ON MULTILANE STREETS (TWO LANES PER DIRECTION) WHERE LEFT TURNS ARE ALLOWED, BIKE BOXES MAY BE EXTENDED ACROSS MULTIPLE TRAVEL LANES TO FACILITATE BICYCLIST LEFT TURN POSITIONING.
- BIKE BOX SHALL HAVE A SETBACK/OFFSET OF 1.20 M FROM THE PEDESTRIAN CROSSING TO MINIMIZE ENCROACHMENT BY CYCLISTS INTO THE PEDESTRIAN CROSSING.
- STOP LINES MAY BE PLACED UP TO 2.0 M IN ADVANCE OF THE BIKE BOX SPACE TO LIMIT ENCROACHMENT BY MOTOR VEHICLES. A "WAIT HERE" LEGEND MARKING MAY BE USED TO SUPPLEMENT THE STOP LINE SIGN IN A BIKE BOX.

3.7.7 A TWO-STAGE TURN QUEUE BOX MAY BE AN ALTERNATIVE APPROACH TO FACILITATING LEFT TURNS WHERE THERE ARE MULTIPLE VEHICLE THROUGH LANES (THREE OR MORE LANES PER DIRECTION). TWO-STAGE TURN QUEUE BOX DIMENSIONS WILL VARY BASED ON THE STREET OPERATING CONDITIONS, THE PRESENCE OR ABSENCE OF A PARKING LANE, TRAFFIC VOLUMES AND SPEEDS, AND AVAILABLE STREET SPACE. THE TURN BOX MAY BE PLACED IN A VARIETY OF LOCATIONS INCLUDING IN FRONT OF THE PEDESTRIAN CROSSING OR AT THE TAIL END OF A PARKING LANE OR A MEDIAN ISLAND.

3.8 DRIVEWAY AND COMMERCIAL PROPERTIES

3.8.1 GREEN PAVEMENT MARKINGS SHALL BE USED TO IDENTIFY THE CONFLICT AREA OPPOSITE THE DRIVEWAY TO MAKE IT CLEAR THAT THE BICYCLE HAS PRIORITY OVER THE ENTERING AND EXITING VEHICLE/TRAFFIC. THE LENGTH OF COLORED CONFLICT AREA SHALL BE EQUAL TO THE OPENING OF THE DRIVEWAY. BIKE LANE LINE SHOULD BE DISCONTINUED ALONG THIS SECTION TO EMPHASIZE THAT BICYCLISTS MUSH SHARE THE TRAVEL LANE ON THIS SIDE OF THE STREET.

3.8.2 GREEN-COLORED DASHED MARKINGS WITH BOLLARDS WITH A GAP OF 6 M SHALL BE PROVIDED TO INDICATE CONFLICT AREAS ALONG A CONTINUOUS ESTABLISHMENTS OR COMMERCIAL PROPERTIES. ADDITIONAL REFLECTIVE ROAD STUDS FLUSH TYPE (GREEN COLOR) MAY BE APPLIED IN BETWEEN BOLLARDS IN URBAN AREAS TO INCREASE VISIBILITY OF CYCLE TRACK THAT AVOIDS POTENTIAL COLLISIONS DUE TO LACK OF VISIBILITY.

- IN THE EVENT THAT FLEXIBLE BOLLARD IS NOT FEASIBLE DUE TO EXISTING SITE CONDITION (I.E. NARROW CARRIAGEWAY), REFLECTIVE ROAD STUDS (GREEN COLOR) MAY BE USED AS A REPLACEMENT TO FLEXIBLE BOLLARD IN PROVIDING DELINEATION ALONG THE SAID CONFLICT AREAS.

3.9 TRANSIT STOPS

3.9.1 A SEPARATED BIKE LANE WITH CONFLICT TO LOADING/UNLOADING AREAS SHALL BE IDENTIFIED BY GREEN-COLORED PAVEMENT MARKINGS WITH CROSSWALKS AT THE START AND A SIGN INDICATING THAT THE BICYCLIST SHALL YIELD TO PEDESTRIANS. BUSES MUST UNLOAD/LOAD PASSENGERS WITHOUT ENCROACHING THE BICYCLE LANE.

3.9.2 IF WITH A LAY-BY, THE SEPARATED BIKE LANE SHALL BE ROUTED BEHIND THE FLOATING TRANSIT PLATFORM. THE MINIMUM WIDTH OF THE TRANSIT PLATFORM IS 2.50 M. RAILINGS SHALL BE INSTALLED ALONG THE EDGE OF THE ISLAND TO RESTRICT THE PEDESTRIANS TO CROSS ONLY AT THE CROSSWALK.

3.9.3 INCLUDE A LOADING AND UNLOADING ZONE SIGNAGE PLACED IN FRONT OF THE PUV STOPS.

3.10 ROAD SIGNS AND PAVEMENT MARKINGS

3.10.1 ROAD SIGNS AND PAVEMENT MARKINGS SHALL CONFORM WITH THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS, HIGHWAY SAFETY STANDARD PART 2: ROAD SIGNS AND PAVEMENT MARKINGS MANUAL 2012, AND AS INDICATED/PRESCRIBED IN THIS PLAN. TO MAXIMIZE SAFETY, IT IS ESSENTIAL TO INCLUDE BIKE SYMBOLS AND SIGNAGES IN THE DESIGN OF BICYCLE FACILITIES.

3.10.2 ROAD SIGNS AND PAVEMENT MARKINGS SHALL CONFORM WITH THE DPWH, HIGHWAY SAFETY DESIGN STANDARDS PART 2: ROAD SIGNS AND PAVEMENT MARKINGS MANUAL 2012, UNLESS OTHERWISE STATED IN THE PLAN.

- W6-5 SIGN WITH A SUPPLEMENTARY WORD SIGN "AHEAD" SHALL BE PLACED NOT LESS THAN 30M BEFORE THE BEGINNING OF A BIKE LANE.
- W6-5 SIGN WITH A SUPPLEMENTARY WORD SIGN "ENDS" SHALL BE PLACED AT THE END OF A BIKE LANE.
- W6-5 AND THE SUPPLEMENTARY WORD SIGN "AHEAD" AND "ENDS" SHALL BE USED ONLY FOR CLASS I AND CLASS II BICYCLE FACILITIES.
- R6-10 SHALL BE USED ONLY IN CLASS I AND CLASS II BICYCLE FACILITIES. IT SHALL BE PLACED AT THE BEGINNING OF BIKE LANE, AT INTERSECTION AND AT PERIODIC INTERVALS. ITS PERIODIC INTERVAL SHALL BE DETERMINED BY ENGINEERING JUDGEMENT BASED ON PREVAILING SPEED OF BICYCLE AND OTHER TRAFFIC, BLOCK LENGTH, DISTANCES FROM ADJACENT INTERSECTIONS AND OTHER CONSIDERATIONS. IF THERE ARE MULTIPLE SIDE ROADS/TURNS EXIST, IT IS NOT REQUIRED TO LOCATE SIGNS AT EVERY TURN. HOWEVER, SIGN SPACING SHALL NOT EXCEED 500M.
- A SIGN INDICATING THE DESIGNATED PATH OF PEDESTRIANS AND CYCLIST SHALL BE PLACED AT THE START OF A CLASS I-SHARED USE PATH AND AT PERIODIC INTERVALS SAME AS DESCRIBED FOR R6-10 SIGN.
- "SHARE THE ROAD" SIGN SHALL BE PLACED AT THE START OF A CLASS III-SHARED ROADWAY.
- "RIGHT TURNER YIELD TO BIKES" SHALL BE PLACED NOT LESS THAN 30M BEFORE THE INTERSECTION AND EVERY DRIVEWAY/COMMERCIAL PROPERTY FOR VEHICLES EXITING THE PROPERTY.
- A "YIELD TO BIKES" SIGN SHOULD BE USED AT INTERSECTIONS OR DRIVEWAY CROSSINGS TO REINFORCE THAT BICYCLISTS HAVE THE RIGHT-OF-WAY AT COLORED BIKE LANE AREAS.
- "YIELD TO PEDS" SIGN SHOULD BE USED AT PEDESTRIAN CROSSING IN ORDER FOR PEDESTRIANS TO LEGALLY HAVE THE RIGHT-OF-WAY.

3.10.3 BICYCLE LANE SYMBOL AND/OR ARROW MARKINGS SHALL BE PLACED IN ACCORDANCE TO THE FOLLOWING REQUIREMENTS TO REMIND MOTORISTS AND PEDESTRIANS OF THE POTENTIAL PRESENCE OF BICYCLISTS, ESPECIALLY IN AREAS WHERE MOTORISTS ARE EXPECTED TO CROSS BIKE LANES ALONG THE FACILITY BASED ON ENGINEERING JUDGEMENT AND SHALL BE MAINTAINED PERIODICALLY:

- BICYCLE LANE SYMBOL AND/OR ARROW MARKINGS FOR SHARED USE PATH AND SEPARATED BIKE LANE USING PHYSICAL SEPARATORS SHALL BE PLACED AT THE BEGINNING OF A CYCLE TRACK, INTERSECTION AND AT PERIODIC INTERVALS OF 100M MINIMUM AND NOT GREATER THAN 300M.
- BICYCLE LANE SYMBOL AND/OR ARROW MARKINGS FOR SEPARATED BIKE LANE USING PAVEMENT MARKINGS SHALL BE PLACED IMMEDIATELY AFTER AN INTERSECTION AND SPACED AT INTERVALS OF 50M MINIMUM. IN AREAS WHERE MOTORISTS MAKE PARKING MANEUVERS ACROSS BIKE LANES OR WHERE THERE IS SIGNIFICANT DRIVEWAY DENSITY, IT MAY BE APPROPRIATE TO SPACE THE SYMBOLS AS OFTEN AS EVERY 30M.
- SHARED LANE MARKINGS SHALL BE PLACED IMMEDIATELY AFTER AN INTERSECTION AND SPACED AT INTERVALS OF 25M MINIMUM AND NOT GREATER THAN 76M. A "SHARE THE ROAD" SYMBOLS ON THE PAVEMENT MAY BE CONSIDERED TO ALERT MOTORISTS AND CYCLISTS TO SHARE THE ROAD SPACE.
- USE OF SMALL OR LARGE BIKE SYMBOLS IS AT THE DISCRETION OF THE DESIGNER DEPENDING ON THE GEOMETRIC AND TRAFFIC CONDITIONS TO SUIT THE ACTUAL FIELD CONDITIONS OR REQUIREMENTS OF THE PROJECT.

3.10.4 BIKE ROUTE SIGN SHALL BE USED TO IDENTIFY THE FACILITY AS A DESIGNATED BICYCLE ROUTE. IT SHALL BE PLACED AT EVERY 800 M ON A MAJOR BIKE ROUTE AND ON THE APPROACH TO MAJOR BIKE ROUTES. IT CAN BE SUPPLEMENTED WITH "FINGERBOARD" PANELS SHOWING DESTINATIONS, DIRECTIONS, AND DISTANCES.

3.10.5 REFLECTIVE ROAD STUDS FLUSH TYPE WITH GREEN COLOR MAY BE USED TO SUPPLEMENT DELINATION FOR BIKE LANE IN URBAN AREA TO CREATE A CLEAR/VISIBLE AND DISTINCT TRAVEL PATH FOR BIKE USERS. GREEN STUDS MARK THE EDGE OF MAIN LANE, LAY-BYS, AND THE DIVIDING LINE OF THE NON-MOTORIZED VEHICLE LANE. THIS MAY BE USED WITH WHITE LINES. A SPACING OF 6.0 M SHALL BE USED ALONG SECTIONS WHERE HEAVY RAIN OCCURS IN THE BUILT-UP AREAS OR NO STREET LIGHTING IN THE ENVIRONMENT; ELSE, OTHER AREAS MAY BE CONSIDERED 9.0 M SPACING TO INCREASE ECONOMIC EFFICIENCY.

3.11 LANE WIDTH REDUCTION FOR ROAD AND BRIDGE

3.11.1 IMPLEMENTATION OF LANE WIDTH REDUCTION FOR ROAD AND BRIDGE THAT IS PURPOSIVELY FOR THE PROVISION OF SPACE FOR BICYCLE LANES WILL ONLY BE ALLOWED TO A MINIMUM WIDTHS OF 3.05 M AND 3.35 M TAKING INTO CONSIDERATION THE DESIGN VEHICLE TYPE, RESPECTIVELY, IN EXCEPTIONAL SITUATION APPLICABLE ONLY FOR URBAN ROADS WITH HIGH VOLUME AND LOW SPEED OF TRAFFIC.

3.12 BIKEWAY FACILITY MAINTENANCE

3.12.1 REGULAR BICYCLE FACILITY MAINTENANCE INCLUDES SWEEPING, MAINTAINING A SMOOTH ROADWAY SURFACE, PAVEMENT MARKINGS, SIGNAGES, AND ENSURING THAT THE GUTTER-TO-PAVEMENT TRANSITION REMAINS RELATIVELY FLAT, AND INSTALLING BICYCLE FRIENDLY DRAINAGE GATES.

4. EXISTING UTILITIES

4.1 EXISTING UTILITY COVERS SHOULD BE ADJUSTED FLUSHED WITH THE SURFACE OF THE ROADWAY PAVEMENT. BIKE LANES SHOULD BE PROVIDED WITH ADEQUATE DRAINAGE (BICYCLE-COMPATIBLE DRAIN GRATES) TO PREVENT PONDING OF WATER, WASHOUTS, DEBRIS ACCUMULATION, AND OTHER POTENTIAL CONCERNS FOR BICYCLISTS. ALL EXISTING DRAINAGE GRATINGS PARALLEL WITH THE TRAFFIC DIRECTION SHOULD BE REPLACED WITH GRATING PERPENDICULAR TO TRAFFIC FLOW.

5. REMOVAL OF EXISTING STRUCTURES AND OBSTRUCTION

5.1 ALL WORKS SHALL COMPLY WITH ITEM 101 OF THE DPWH STANDARD SPECIFICATIONS VOLUME II, HIGHWAYS, BRIDGES AND AIRPORTS, 2013.

5.2 PORTION OF ANY UTILITIES SUCH AS TELEPHONE POSTS AND TRUNK LINES ETC., THAT MAY CAUSE OBSTRUCTION TO CONSTRUCTION SHALL BE RELOCATED BY THE ENTITY/OWNER CONCERNED. EXTREME PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR NOT TO DAMAGE ANY SECTION OF THE EXISTING PUBLIC UTILITIES DURING CONSTRUCTION. RESTITUTION/RECTIFICATION OF ANY DAMAGE AS A RESULT OF THE PROJECT IMPLEMENTATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

5.3 A CLEAR AND UNOBSTRUCTED PASSAGE SHALL BE MAINTAINED AT ALL TIMES ALONG BIKE PATH, SHARED USE PATH AND BIKE LANE TO BE UNDERTAKEN BY THE DISTRICT ENGINEERING OFFICES (DEOS).

6. BATAS PAMBANSA BLG. 344 (ACCESSIBILITY LAW)

6.1 BICYCLE FACILITIES SHALL BE ADJUSTED/CONSTRUCTED IN ACCORDANCE TO BATAS PAMBANSA BLG. 344 TO PROVIDE ACCESS FOR THE PERSONS WITH DISABILITIES AT THE DESIGNATED PLACE IN BUILT-UP AREAS ALONG THE PROJECT ROAD, UPON APPROVAL BY THE PROJECT ENGINEER.

7. TRAFFIC CALMING

7.1 A SPEED HUMP IS A RAISED AREA IN THE ROADWAY PAVEMENT SURFACE WITH A HEIGHT OF 76 TO 100MM AND A TRAVEL LENGTH OG 3.70 TO 4.30 M. HUMP SHOULD NOT BE ALLOWED ALONG NATIONAL ROADS ESPECIALLY ON HIGH-SPEED SECTIONS. HOWEVER, IN SOME CASES, SPEED HUMP MAY BE INSTALLED ON ROADWAY FUNCTIONALLY CLASSIFIED AS LOCAL ROADS, RESIDENTIAL LOCAL STREET SUCH AS THOSE LOCATED WITHIN SUBDIVISIONS, PARKS AND SCHOOL ZONES INTENDED TO SLOW DOWN TRAFFIC SPEEDS ON HIGH PEDESTRIAN VOLUME.

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN	PROJECT TITLE: UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)	SHEET CONTENTS: GENERAL NOTES	PREPARED / DRAWN / CHECKED	SUBMITTED: ROMEO C. RAAGAS, CHIEF, HIGHWAYS DIVISION	RECOMMENDED: (SEE COVER SHEET) EDWIN C. MATANGUIHAN, OIC - DIRECTOR, BUREAU OF DESIGN [illegible]	(SEE COVER SHEET) ERIC A. AYAPANA, ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	APPROVED: (SEE COVER SHEET) MAXIMO L. CARVAJAL, UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	SET NO: G 1	SHEET NO: 2 3

GENERAL NOTES

8. OTHER CONSIDERATIONS IN THE PROVISION OF BICYCLE FACILITIES ALONG NATIONAL ROADS

8.1 EXEMPTIONS TO THE PROVISIONS OF THIS ORDER MAY BE ALLOWED SUBJECT TO THE EVALUATION OF THE BUREAU OF DESIGN AND APPROVAL OF THE UNDERSECRETARY FOR TECHNICAL SERVICES.

8.2 PRIOR TO IMPLEMENTATION OF BICYCLE FACILITIES, A FEASIBILITY STUDY (FS) SHALL BE UNDERTAKEN BY THE CONCERNED IMPLEMENTING AGENCY TO EVALUATE ITS APPLICABILITY BOTH ON NEW AND EXISTING ROADS, TAKING INTO CONSIDERATION THE FOLLOWING, AMONG OTHERS:

8.2.1 EVALUATION OF THE GEOMETRIC AND OPERATIONAL CONDITIONS OF THE ROADS, GIVEN THE TRAFFIC VOLUME, OPERATING SPEED, AND THE PREFERRED BICYCLE FACILITIES NECESSARY TO ENSURE THE SAFETY OF CYCLISTS.

8.2.2 A STUDY ON THE FORECASTED PROJECT UTILIZATION AND MODE CHOICE (NUMBER OF MOTORIZED USERS SHIFTING TO BICYCLE) TO ENSURE THAT THE IMPLEMENTATION OF BICYCLE FACILITIES WILL NOT GRAVELY AFFECT THE EXPECTED AND EXISTING CAPACITY AND LEVEL OF SERVICE OF THE ROADS. PURSUING THE SAID PROJECT WITHOUT ANALYZING THIS CONSIDERATION MIGHT RESULT TO SEVERE UNSTABLE TRAFFIC CONDITIONS/OPERATIONS OF THE ROADWAY OR THE ADJACENT ROAD NETWORK AND MAY SERIOUSLY COMPROMISE THE SAFETY OF ALL ROAD USERS.

8.3 A MORE STRINGENT GUIDELINES AND PROTOCOLS SUCH AS STRICT ENFORCEMENT OF SPEED LIMIT, PROVISION OF A DEDICATED TRAFFIC ENFORCER, ETC., TO INCLUDE MONITORING AND REPORTING OF ITS COMPLIANCE SHALL BE ESTABLISHED, FULLY DEFINED, AND IMPLEMENTED TO ACCOMMODATE MIXED TRAFFIC. ANY ROAD USERS WHO JEOPARDIZE THE SAFETY OF OTHER USERS SHALL BE SUBJECT TO SANCTIONS/DISCIPLINARY ACTIONS DEFINED AND ACCEPTED BY THE PROPER AUTHORITY; AND

8.4 APPROPRIATE ADVERTISEMENT AND INFORMATION DISSEMINATION OF RULES AND REGULATIONS IN THE IMPLEMENTATION AND RIGHT USAGE FOR BICYCLE FACILITIES SHALL BE UNDERTAKEN TO INCREASE UNDERSTANDING AND AWARENESS TO ALL ROAD USERS REGARDING THE SAID FACILITIES.

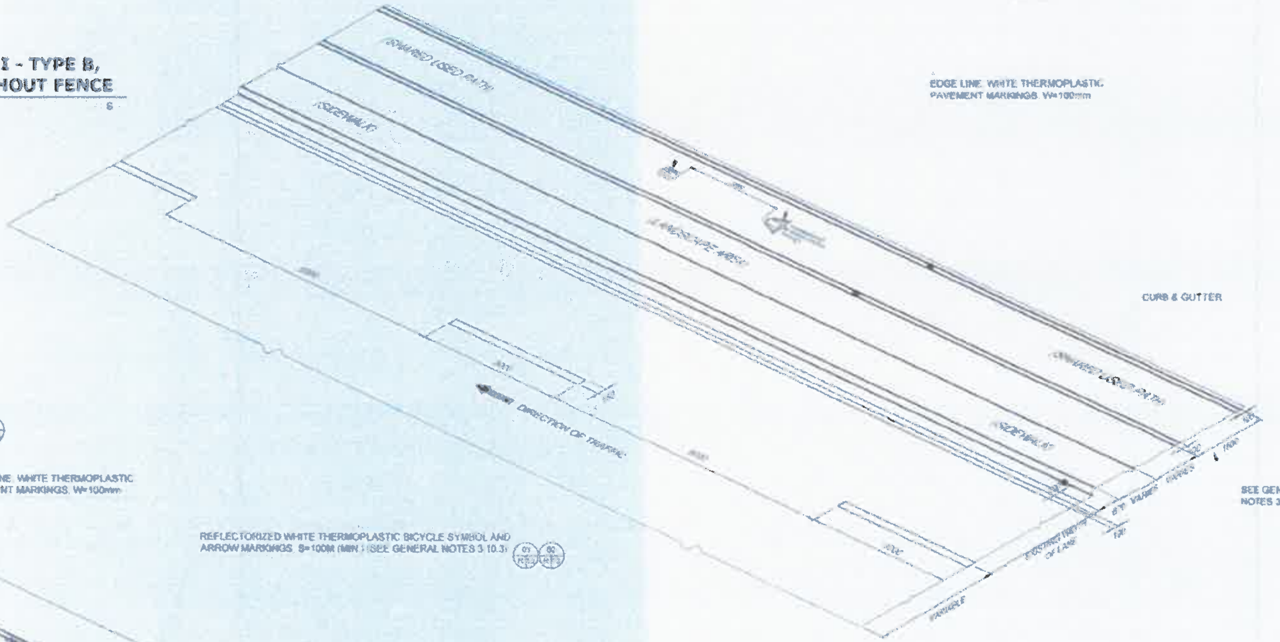
8.5 REFER TO SECTION 4.12.11 OF AASHTO GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES, 4TH EDITION 2012 FOR DESIGNING BICYCLE TRAVEL WITHIN THE ROUNDABOUT.

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN MANILA	PROJECT TITLE: UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)	SHEET CONTENTS: GENERAL NOTES	PREPARED: DRAWN: CHECKED:	SUBMITTED: ROMEO C. RAAGAS CHIEF, HIGHWAYS DIVISION	RECOMMENDING: (SEE COVER SHEET) EDWIN C. MATANGUIHAN DIRECTOR, BUREAU OF DESIGN DEC 07 2022	(SEE COVER SHEET) ERIC A. AYAPANA ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	APPROVED: (SEE COVER SHEET) MAXIMO L. CARVAJAL UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	SET NO: G 1	SHEET NO: 1 1

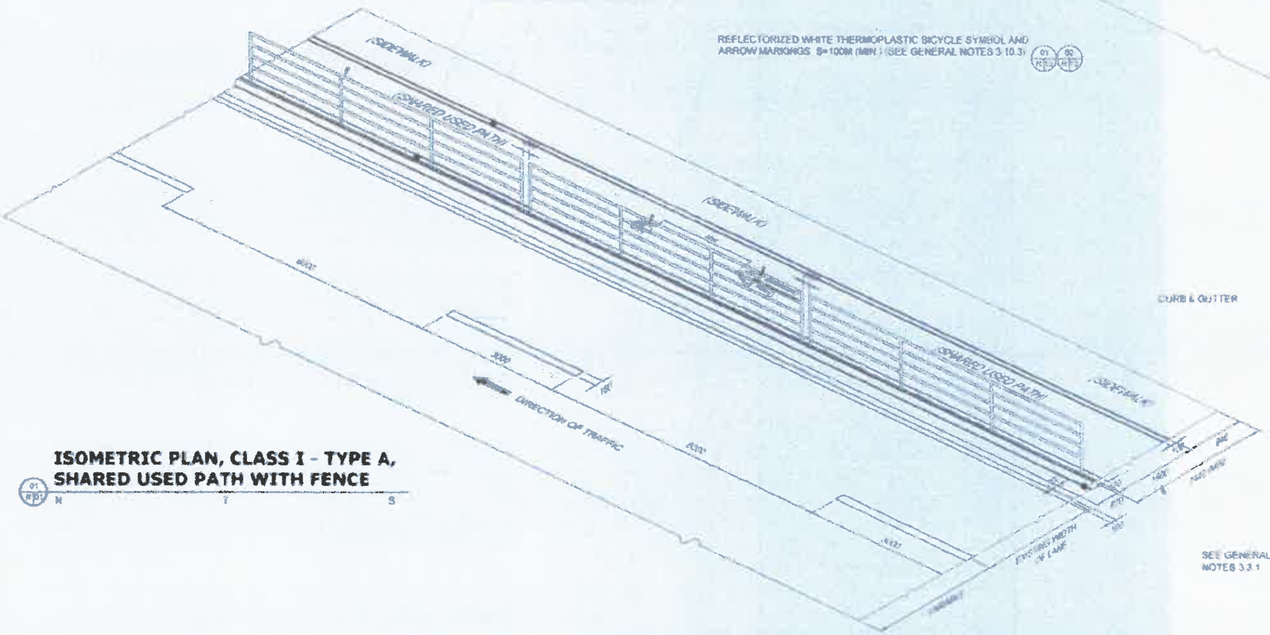
BICYCLE CLASSIFICATIONS & BICYCLE FACILITY ALONG CONFLICT AREAS

ISOMETRIC PLAN, CLASS I - TYPE B, SHARED USED PATH WITHOUT FENCE

N T S



PROPOSED FENCE



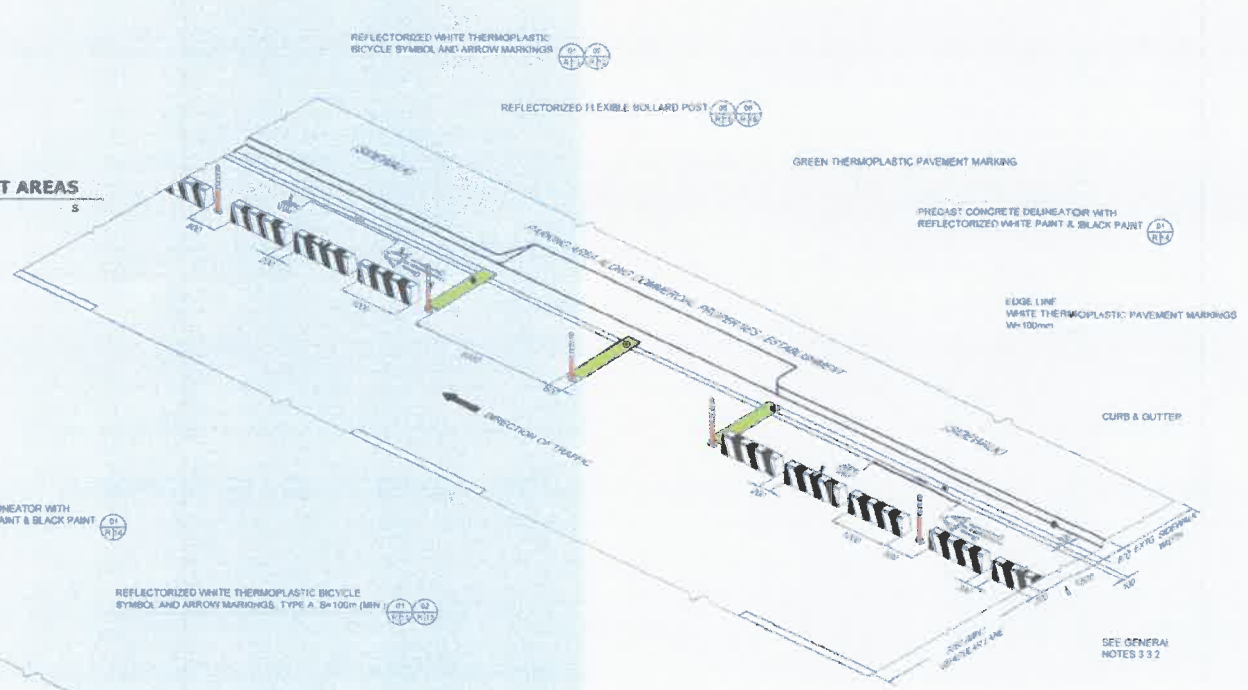
ISOMETRIC PLAN, CLASS I - TYPE A, SHARED USED PATH WITH FENCE

N T S

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN MANILA	PROJECT TITLE	SHEET CONTENTS	PREPARED / DRAWN / CHECKED	SUBMITTED	RECOMMENDED		APPROVED	SET NO	SHEET NO
	UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)	ISOMETRIC PLAN, CLASS I - TYPE A, SHARED USED PATH WITH FENCE ISOMETRIC PLAN, CLASS I - TYPE B, SHARED USED PATH WITHOUT FENCE		ROMEO C. RAAGAS CHIEF, HIGHWAYS DIVISION	(SEE COVER SHEET) EDWIN C. MATANGUIHAN OIC, BUREAU OF DESIGN DEC 07 2022	(SEE COVER SHEET) ERIC A. AYAPANA ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	(SEE COVER SHEET) MAXIMO L. CARVAJAL UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	R / 01	01 / 18

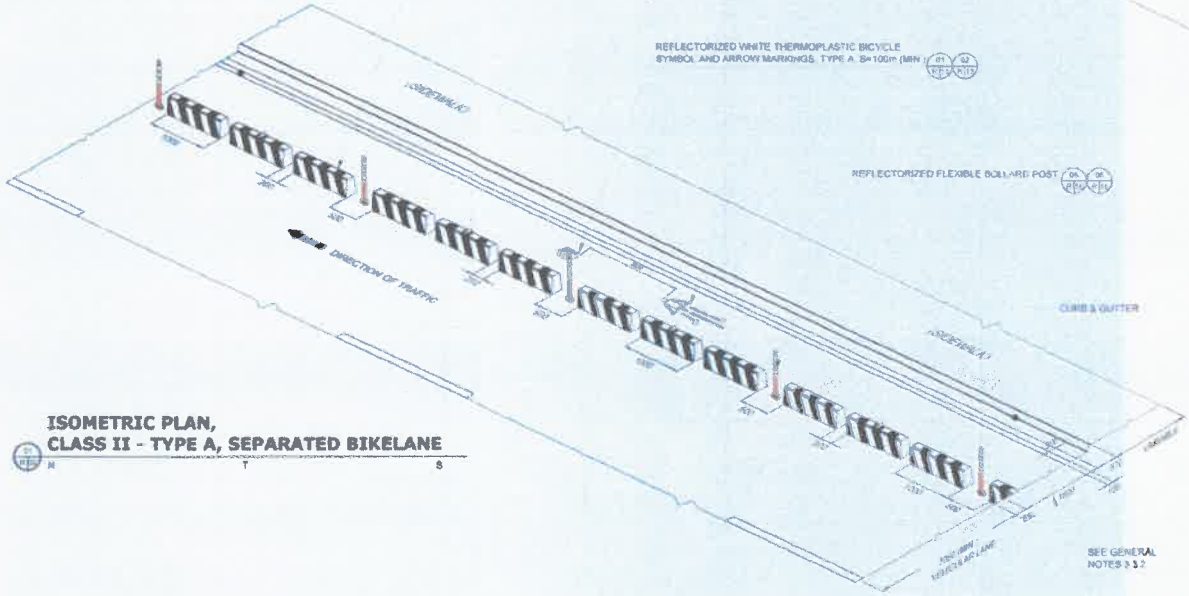
ISOMETRIC PLAN, CLASS II - TYPE A, SEPARATED BIKELANE ALONG CONFLICT AREAS

N T S

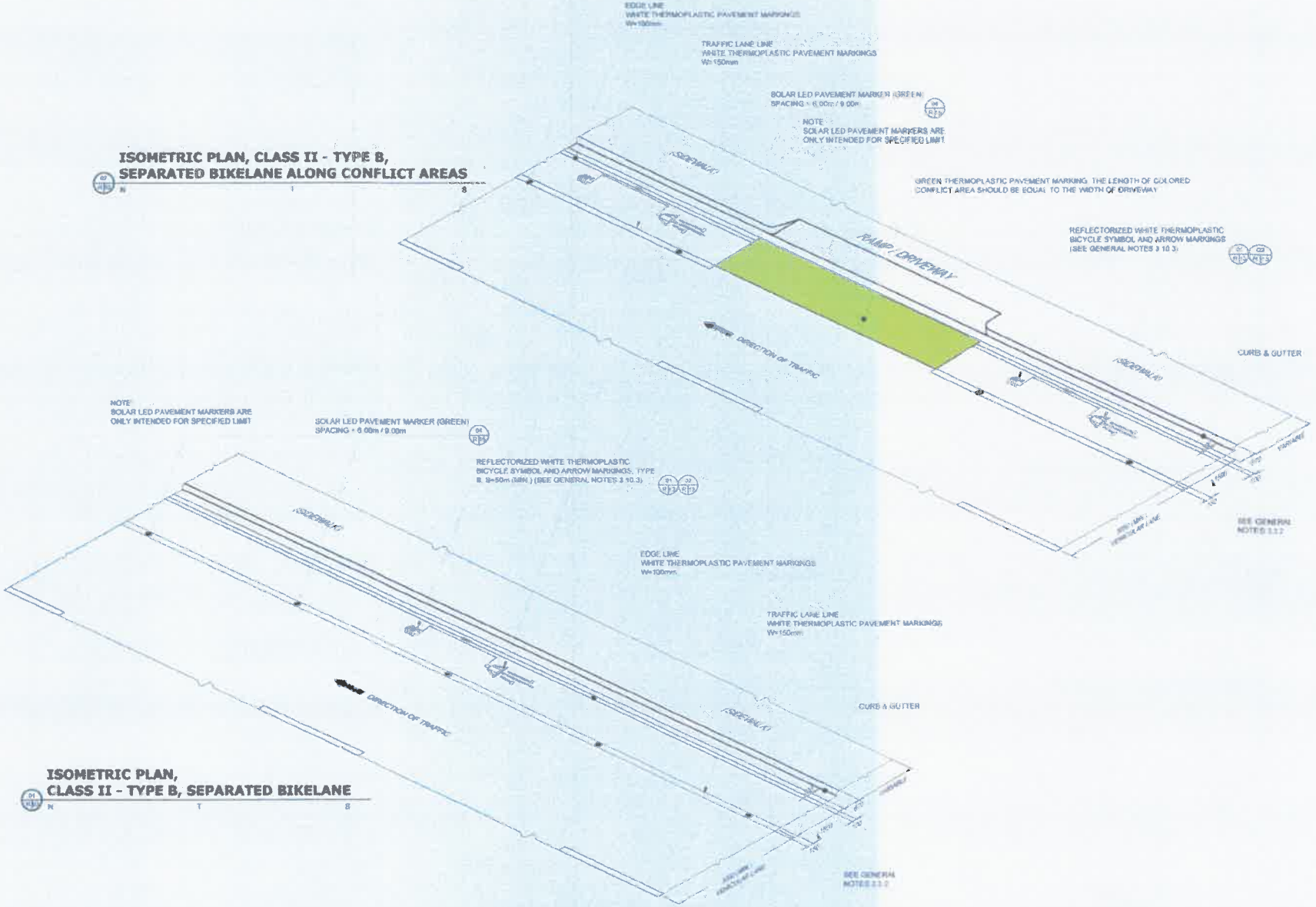


ISOMETRIC PLAN, CLASS II - TYPE A, SEPARATED BIKELANE

N T S



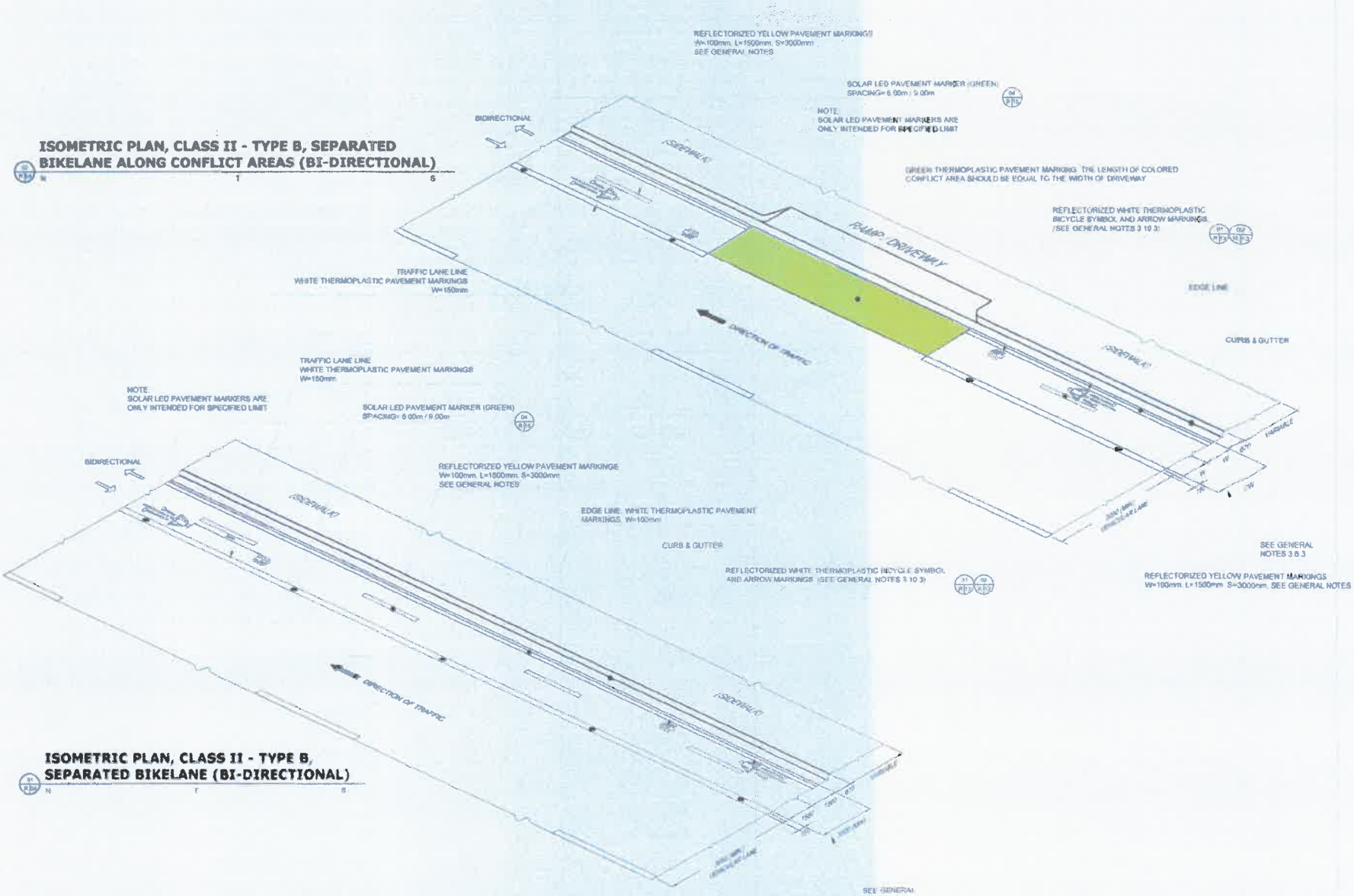
REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN	PROJECT TITLE: UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)	SHEET CONTENTS: ISOMETRIC PLAN, CLASS II - TYPE A, SEPARATED BIKELANE ISOMETRIC PLAN, CLASS II - TYPE A, SEPARATED BIKELANE ALONG CONFLICT AREAS	PREPARED: DRAWN: CHECKED:	SUBMITTED: ROMEO C. RAAGAS CHIEF, HIGHWAYS DIVISION	RECOMMENDED: (SEE COVER SHEET) EDWIN C. MATANGUIHAN OIC - DIRECTOR, BUREAU OF DESIGN DEC 07 2022	(SEE COVER SHEET) ERIC A. AYAPANA ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	APPROVED: (SEE COVER SHEET) MAXIMO L. CARVAJAL UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	SET NO. R 02	SHEET NO. 02 / 18



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

PROJECT TITLE:	SHEET CONTENTS:	PREPARED:	SUBMITTED:	RECOMMENDED:		APPROVED:	SET NO.	SHEET NO.
UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)	ISOMETRIC PLAN, CLASS II - TYPE B, SEPARATED BIKELANE ISOMETRIC PLAN, CLASS II - TYPE B, SEPARATED BIKELANE ALONG CONFLICT AREAS	DRAWN:	ROMEO C. RAAGAS CHIEF, HIGHWAYS DIVISION	(SEE COVER SHEET) EDWIN C. MATANGUIHAN OIC - DIRECTOR, BUREAU OF DESIGN DEC 07 2022	(SEE COVER SHEET) ERIC A. AYAPANA ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	(SEE COVER SHEET) MAXIMO L. CARVAJAL UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	03	03 18

ISOMETRIC PLAN, CLASS II - TYPE B, SEPARATED BIKELANE ALONG CONFLICT AREAS (BI-DIRECTIONAL)

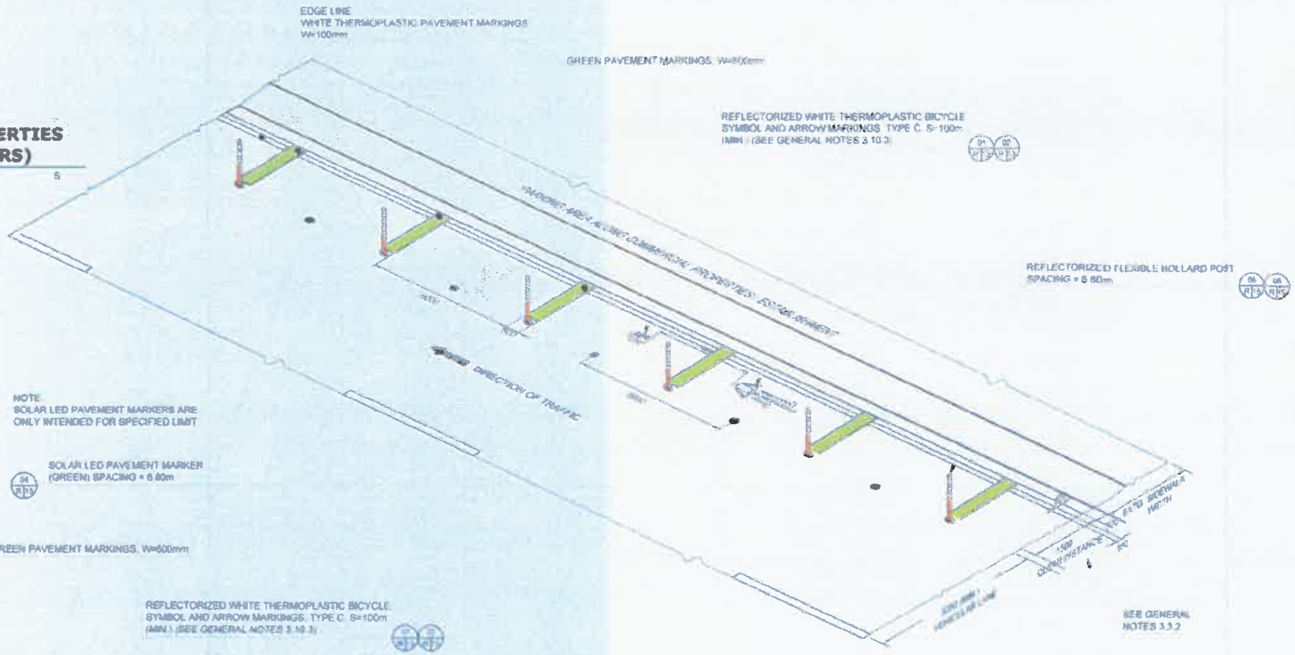


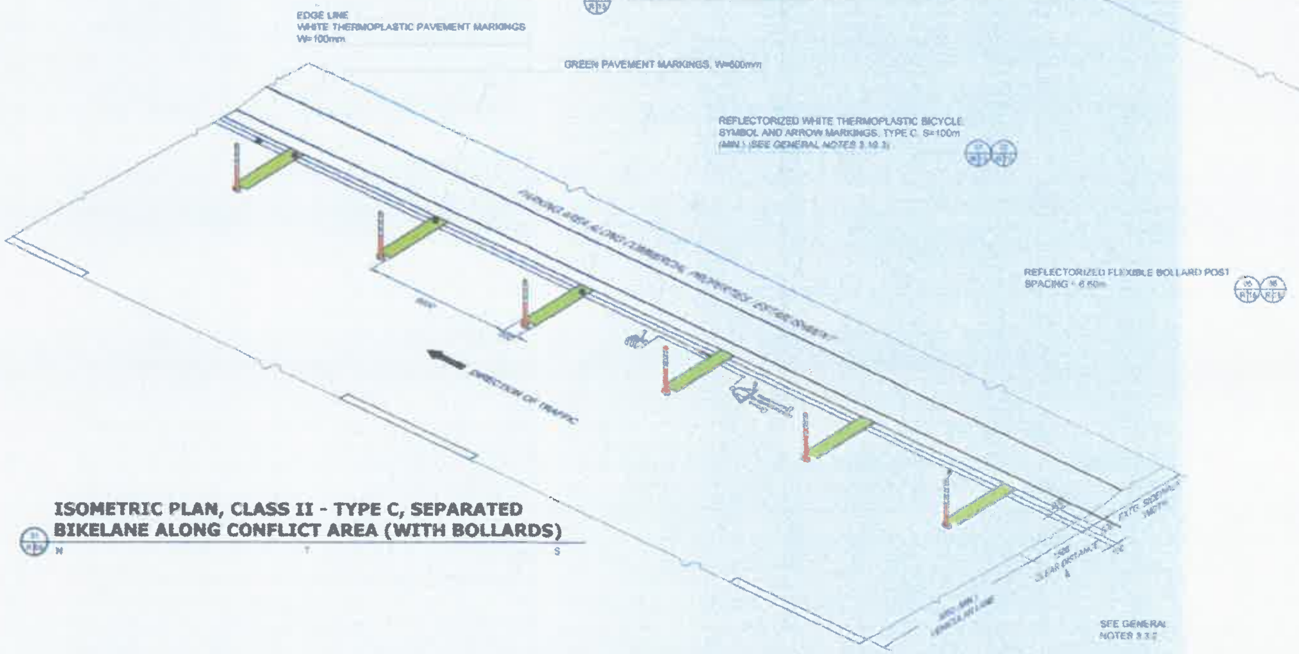
ISOMETRIC PLAN, CLASS II - TYPE B, SEPARATED BIKELANE (BI-DIRECTIONAL)

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN WIRLA	PROJECT TITLE: UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)	SHEET CONTENTS: ISOMETRIC PLAN, CLASS II - TYPE B, SEPARATED BIKELANE (BI-DIRECTIONAL) ISOMETRIC PLAN, CLASS II - TYPE B, SEPARATED BIKELANE ALONG CONFLICT AREAS (BI-DIRECTIONAL)	PREPARED: DRAWN: CHECKED:	SUBMITTED: ROMEO C. RAAGAS CHIEF, HIGHWAYS DIVISION	RECOMMENDED: (SEE COVER SHEET) EDWIN C. MATANGUIHAN OIC - DIRECTOR, BUREAU OF DESIGN DEC 07 2022	(SEE COVER SHEET) ERIC A. AYAPANA ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	APPROVED: (SEE COVER SHEET) MAXIMO L. CARVAJAL UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	SET NO. 01 04	SHEET NO. 04 10

ISOMETRIC PLAN, CLASS II - TYPE C, SEPARATED BIKELANE ALONG COMMERCIAL PROPERTIES (WITH BOLLARDS & SOLAR LED PAVEMENT MARKERS)

N T S

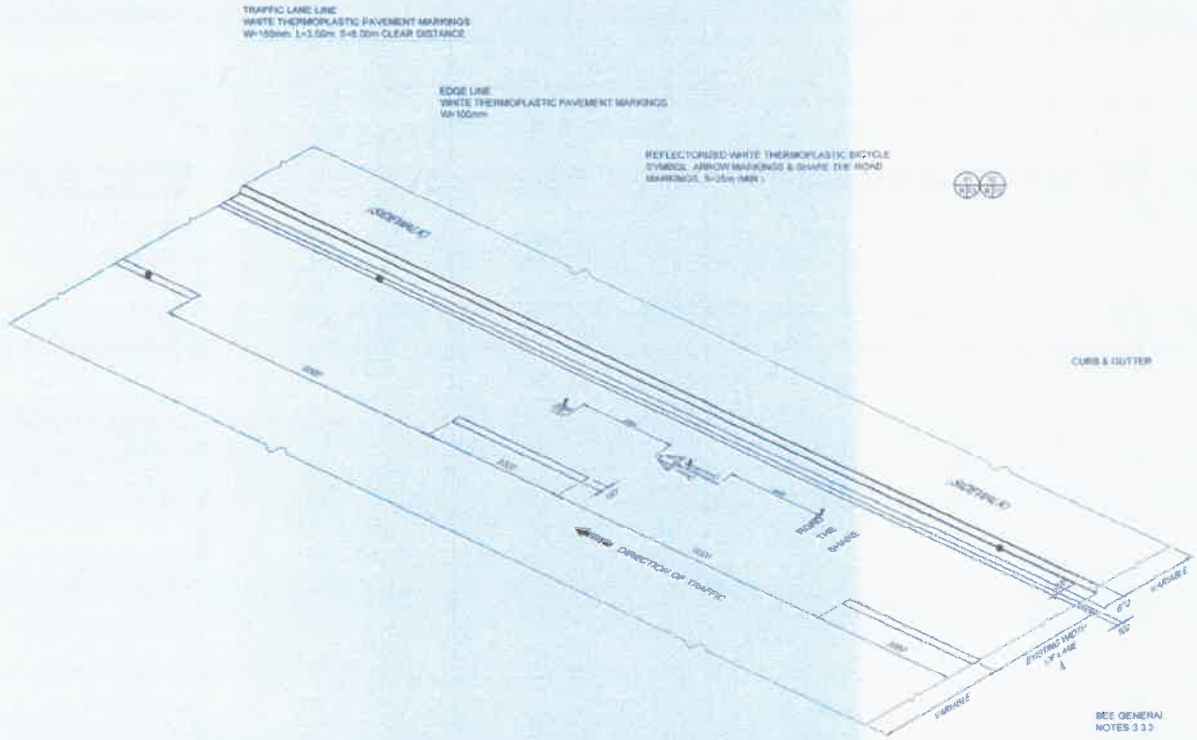




ISOMETRIC PLAN, CLASS II - TYPE C, SEPARATED BIKELANE ALONG CONFLICT AREA (WITH BOLLARDS)

N T S

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN MANILA	PROJECT TITLE: UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)	SHEET CONTENTS: ISOMETRIC PLAN, CLASS II - TYPE C SEPARATED BIKELANE ALONG CONFLICT AREA (WITH BOLLARDS) ISOMETRIC PLAN, CLASS II - TYPE C SEPARATED BIKELANE ALONG COMMERCIAL PROPERTIES (WITH BOLLARDS & SOLAR LED PAVEMENT MARKERS)	PREPARED: DRAWN: CHECKED:	SUBMITTED: ROMEO C. RAAGAS CHIEF, HIGHWAYS DIVISION	RECOMMENDED: (SEE COVER SHEET) EDWIN C. MATANGUIHAN OIC - DIRECTOR, BUREAU OF DESIGN DEC 07 2022	(SEE COVER SHEET) ERIC A. AYAPANA ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	APPROVED: (SEE COVER SHEET) MAXIMO L. CARVAJAL UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	SET NO.: R / 05 SHEET NO.: 05 / 18



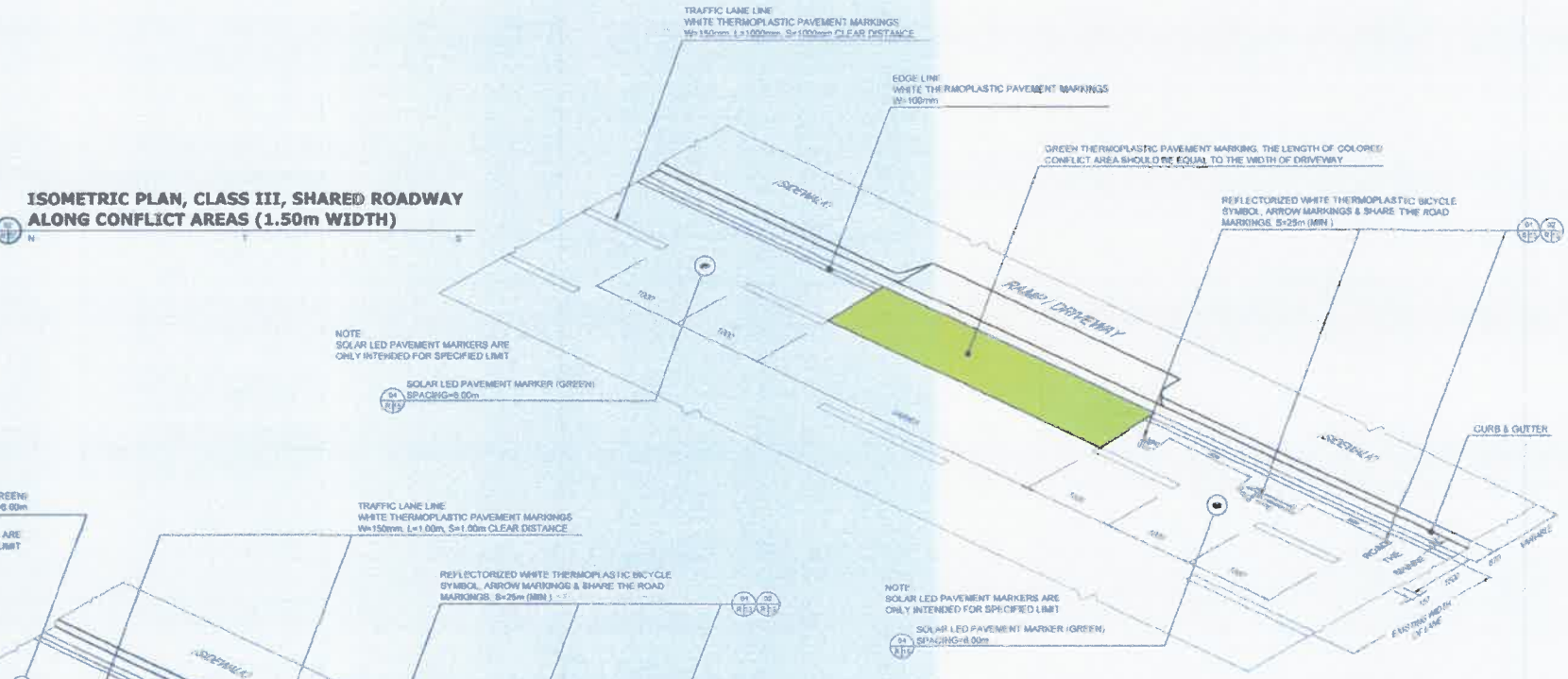
ISOMETRIC PLAN, CLASS III, SHARED ROADWAY

S1 R(W) — N — S

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN MANILA	PROJECT TITLE UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)	SHEET CONTENTS ISOMETRIC PLAN, CLASS III SHARED ROADWAY	PREPARED DRAWN CHECKED	SUBMITTED ROMEO C. RAAGAS CHIEF, HIGHWAYS DIVISION	RECOMMENDED (SEE COVER SHEET) EDWIN C. MATANGUIHAN OIC - DIRECTOR, BUREAU OF DESIGN DEC 07 2022	(SEE COVER SHEET) ERIC A. AYAPANA ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	APPROVED (SEE COVER SHEET) MAXIMO L. CARVAJAL UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	SET NO. R 06	SHEET NO. 06 19

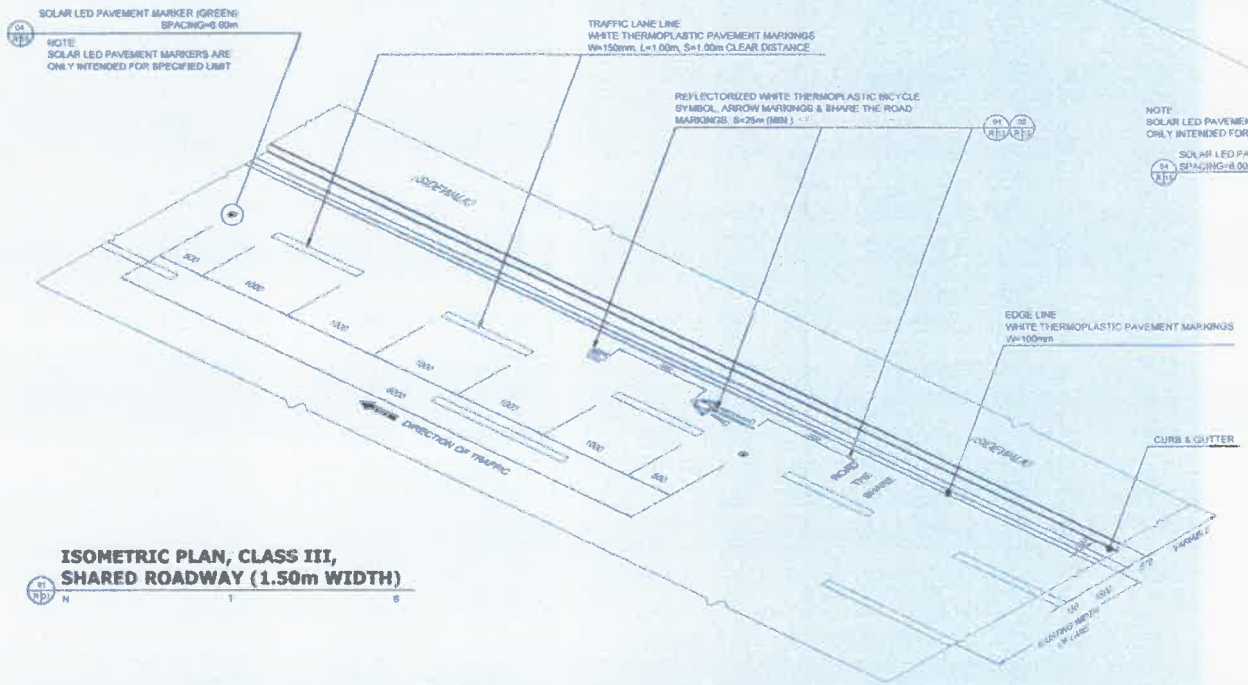
ISOMETRIC PLAN, CLASS III, SHARED ROADWAY ALONG CONFLICT AREAS (1.50m WIDTH)

N T S



ISOMETRIC PLAN, CLASS III, SHARED ROADWAY (1.50m WIDTH)

N T S



REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN MANILA	PROJECT TITLE: UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)	SHEET CONTENTS: ISOMETRIC PLAN, CLASS III SHARED ROADWAY (1.50m WIDTH) ISOMETRIC PLAN, CLASS III, SHARED ROADWAY ALONG CONFLICT AREAS (1.50m WIDTH)	PREPARED BY: DRAWN: CHECKED:	SUBMITTED: ROMEO C. RAAGAS CHIEF, HIGHWAYS DIVISION	RECOMMENDED: (SEE COVER SHEET) EDWIN C. MATANGUIHAN DEC 07 2022 DIRECTOR, BUREAU OF DESIGN	(SEE COVER SHEET) ERIC A. AYAPANA ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	APPROVED: (SEE COVER SHEET) MAXIMO L. CARVAJAL UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	SET NO: R 07	SHEET NO: 07 18

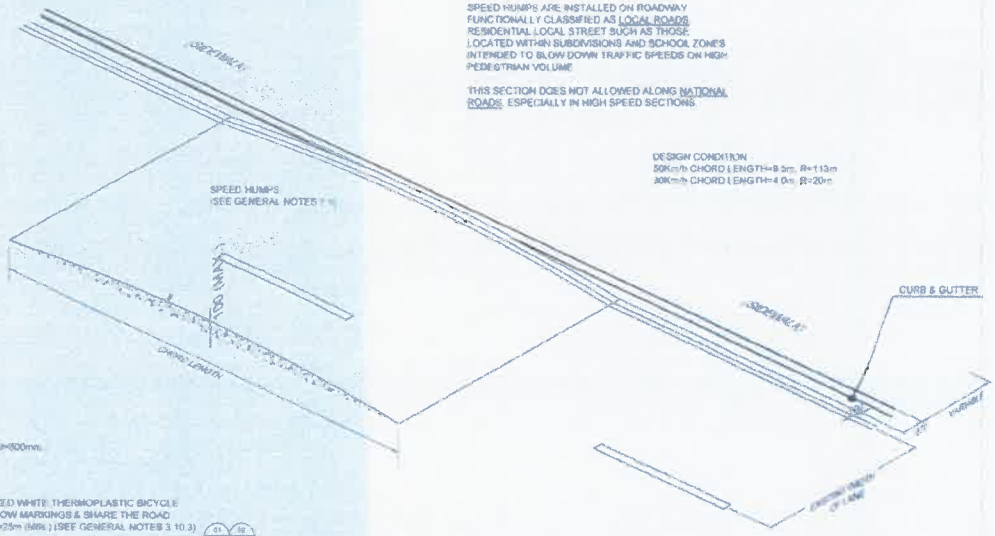
ISOMETRIC PLAN, SPEED HUMPS (FOR TRAFFIC CALMING ALONG LOCAL ROADS)

T S

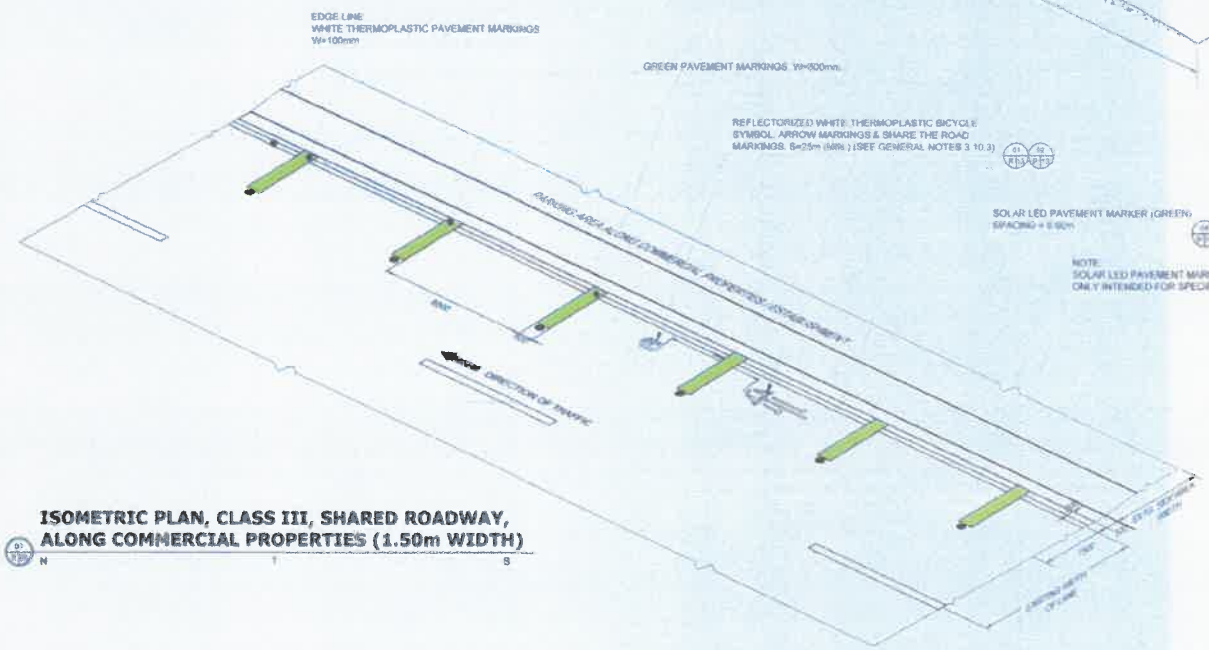
NOTE

SPEED HUMPS ARE INSTALLED ON ROADWAY FUNCTIONALLY CLASSIFIED AS LOCAL ROADS, RESIDENTIAL LOCAL STREET SUCH AS THOSE LOCATED WITHIN SUBDIVISIONS AND SCHOOL ZONES INTENDED TO SLOW DOWN TRAFFIC SPEEDS ON HIGH PEDESTRIAN VOLUME

THIS SECTION DOES NOT ALLOWED ALONG NATIONAL ROADS ESPECIALLY IN HIGH SPEED SECTIONS



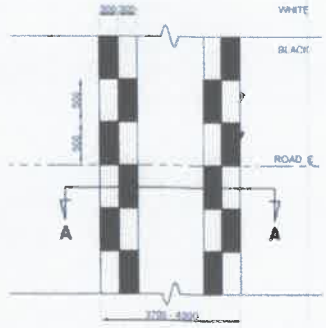
DESIGN CONDITION
50Km/h CHORD LENGTH=9.0m, R=113m
30Km/h CHORD LENGTH=4.0m, R=20m



ISOMETRIC PLAN, CLASS III, SHARED ROADWAY, ALONG COMMERCIAL PROPERTIES (1.50m WIDTH)

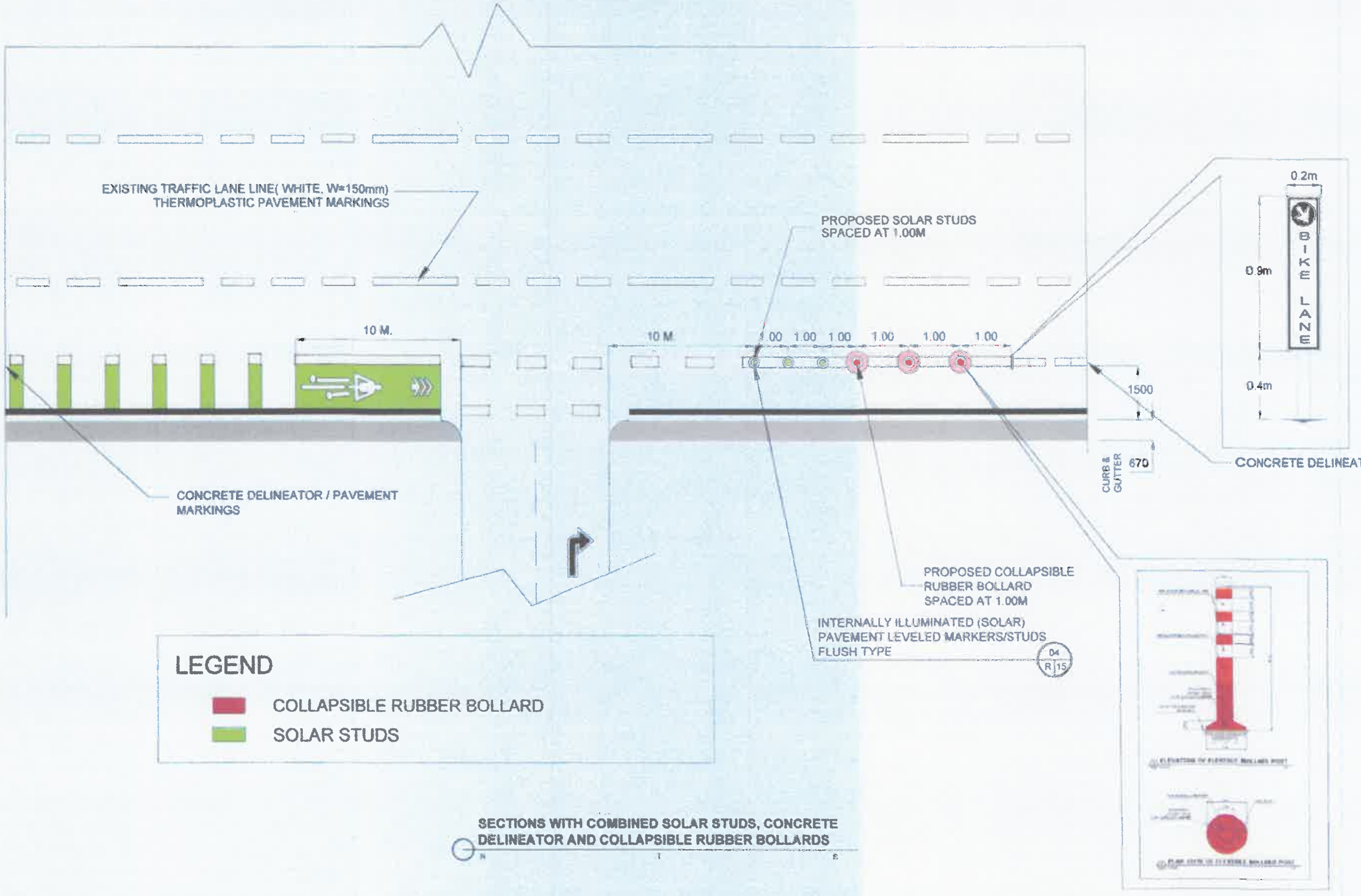
N T S

SECTION "A"



PLAN

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN MANILA	PROJECT TITLE: UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)	SHEET CONTENTS: ISOMETRIC PLAN, CLASS III, SHARED ROADWAY, ALONG COMMERCIAL PROPERTIES (1.50m WIDTH) ISOMETRIC PLAN, SPEED HUMPS (FOR TRAFFIC CALMING ALONG LOCAL ROADS)	PREPARED: DRAWN: CHECKED:	SUBMITTED: ROMEO C. RAASAS CHIEF, HIGHWAYS DIVISION	RECOMMENDED: (SEE COVER SHEET) EDWIN C. MATANGUIHAN OIC - DIRECTOR, BUREAU OF DESIGN DEC 07 2022	(SEE COVER SHEET) ERIC A. AYAPANA ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	APPROVED: (SEE COVER SHEET) MAXIMO L. CARYAJAL UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	SET NO. 08	SHEET NO. 39 18

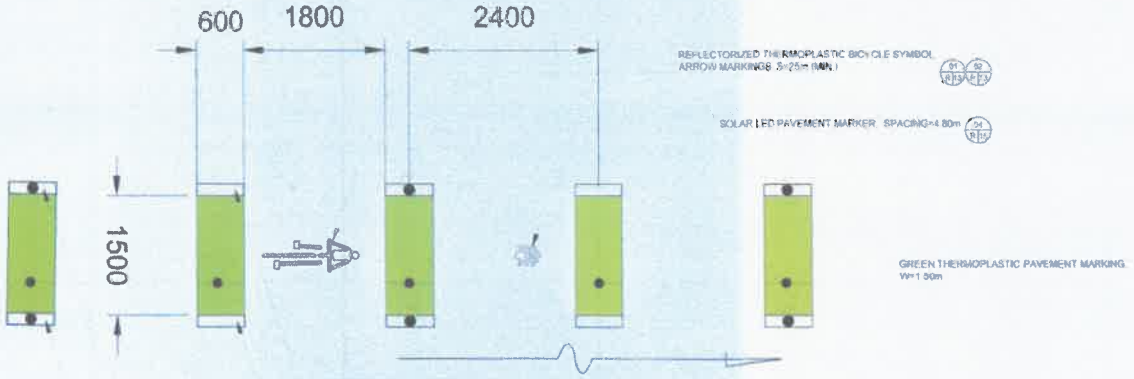


LEGEND

- COLLAPSIBLE RUBBER BOLLARD
- SOLAR STUDS

SECTIONS WITH COMBINED SOLAR STUDS, CONCRETE DELINEATOR AND COLLAPSIBLE RUBBER BOLLARDS

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN MANILA	PROJECT TITLE UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)	SHEET CONTENTS SECTIONS WITH COMBINED SOLAR STUDS, CONCRETE DELINEATOR AND COLLAPSIBLE RUBBER BOLLARDS	PREPARED / DRAWN / CHECKED	SUBMITTED ROMEO C. RAAGAS CHIEF, HIGHWAYS DIVISION	RECOMMENDED (SEE COVER SHEET) EDWIN C. MATANGUIHAN OIC - DIRECTOR, BUREAU OF DESIGN DEC 07 2022	(SEE COVER SHEET) ERIC A. AYAPANA ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	APPROVED (SEE COVER SHEET) MAXIMO L. CARVAJAL UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	SET NO. R 09	SHEET NO. 09 18



CONFLICT AREA RUNNING ALONG CENTER OF ROAD

N S

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN

PROJECT TITLE: UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)

SHEET CONTENTS: CONFLICT AREA RUNNING ALONG CENTER OF ROAD

PREPARED:

CHECKED:

SUBMITTED:
ROMEO C. RAAGAS
CHIEF, HIGHWAYS DIVISION

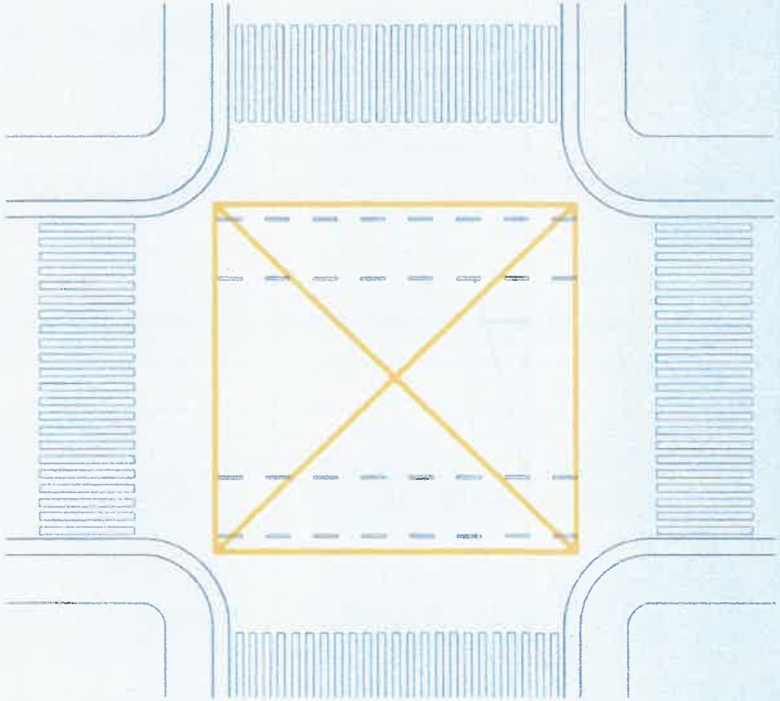
RECOMMENDED:
(SEE COVER SHEET)
EDWIN C. MATANGUIHAN
DIR. DIRECTOR, BUREAU OF DESIGN
DEC 07 2022

(SEE COVER SHEET)
ERIC A. ATAPANA
ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES

APPROVED:
(SEE COVER SHEET)
MAXIMO L. CARVAJAL
UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES

SET NO. R 10

SHEET NO. 10 / 18

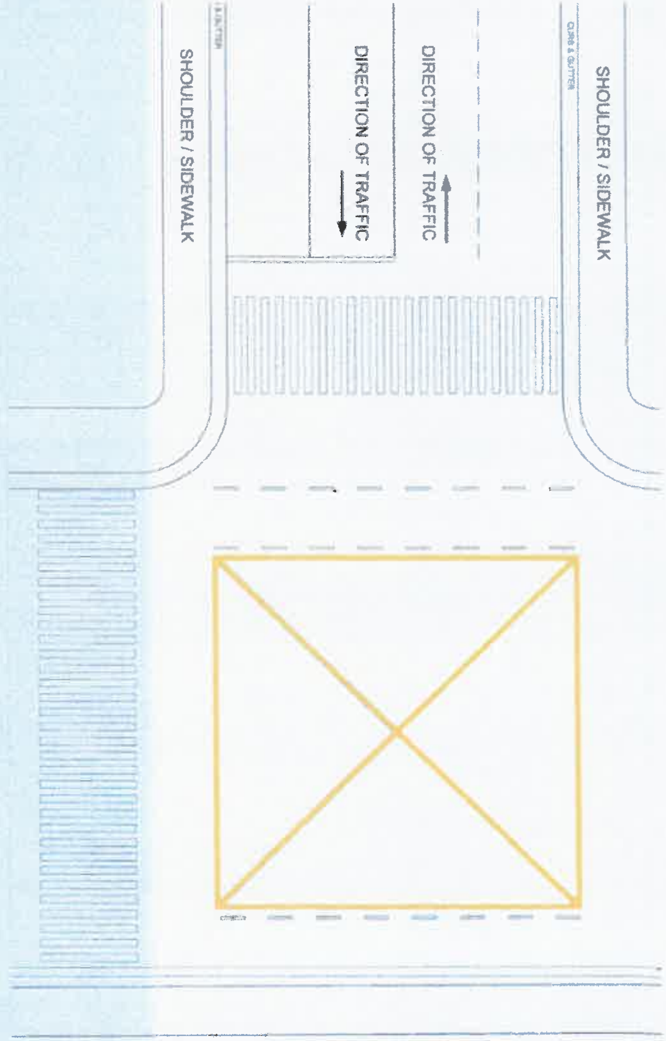


WHITE REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS
BROKEN LINE (SEE GENERAL NOTES 3.7.3)
W=150mm

BIKE LANES INSIDE YELLOW INTERSECTION BOX

N T S

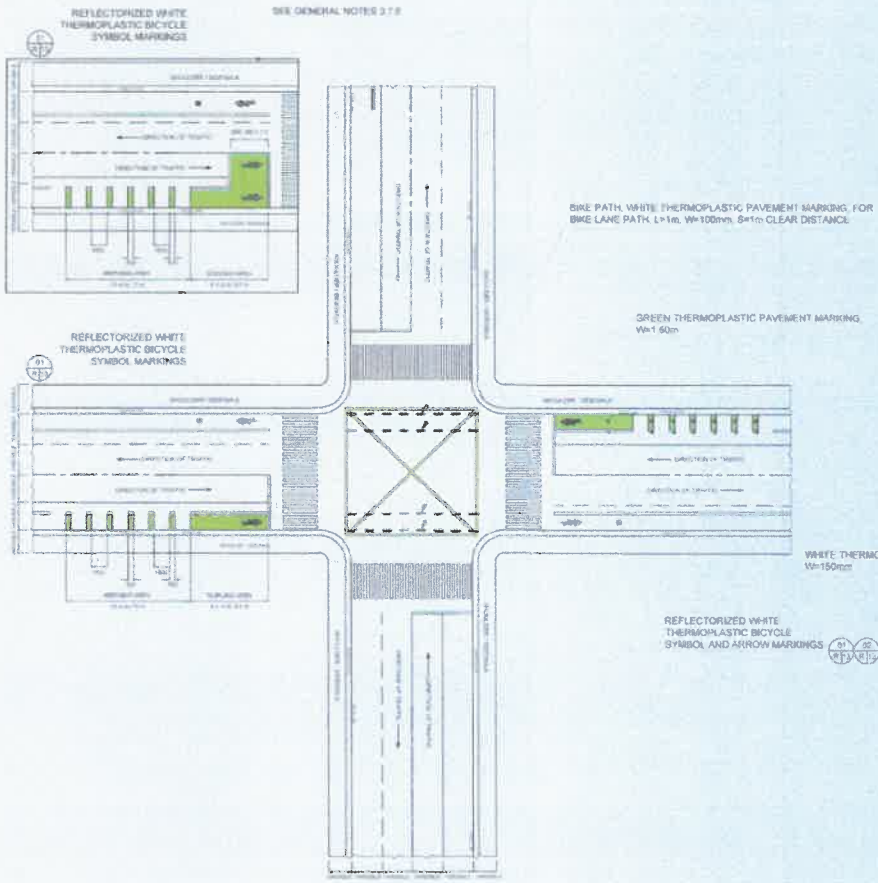
WHITE REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS
BROKEN LINE (SEE GENERAL NOTES 3.7.4)
W=150mm



BIKE LANES OUTSIDE YELLOW INTERSECTION BOX

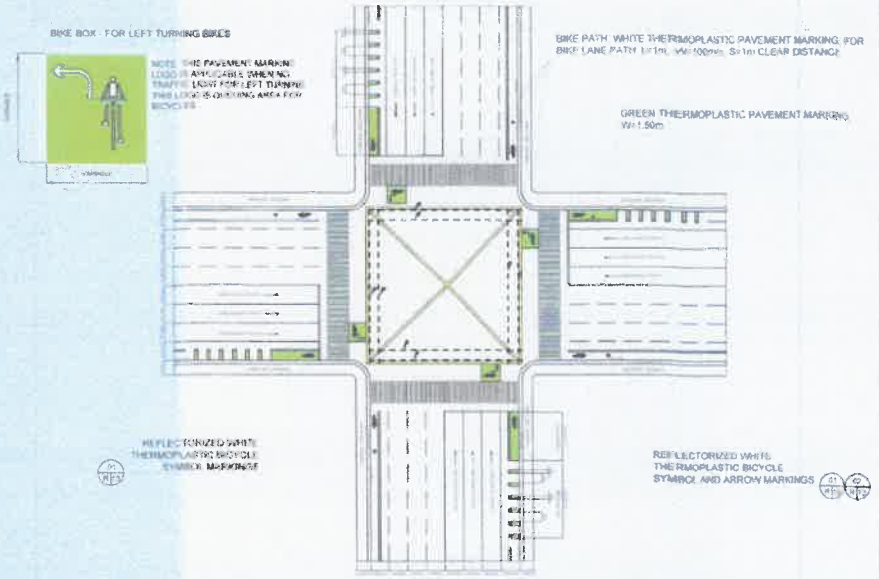
N T S

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN MANILA	PROJECT TITLE UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)	SHEET CONTENTS BIKE LANES INSIDE YELLOW INTERSECTION BOX BIKE LANES OUTSIDE YELLOW INTERSECTION BOX	PREPARED / DRAWN / CHECKED	SUBMITTED ROMEO C. RAAGAS CHIEF, HIGHWAYS DIVISION	RECOMMENDED (SEE COVER SHEET) EDWIN C. MATANGUIHAN OIC - DIRECTOR, BUREAU OF DESIGN DEC 07 2022	(SEE COVER SHEET) ERIC A. AYAPANA ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	APPROVED (SEE COVER SHEET) MAXIMO L. CARVAJAL UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	SET NO. 8 / 11	SHEET NO. 11 / 18



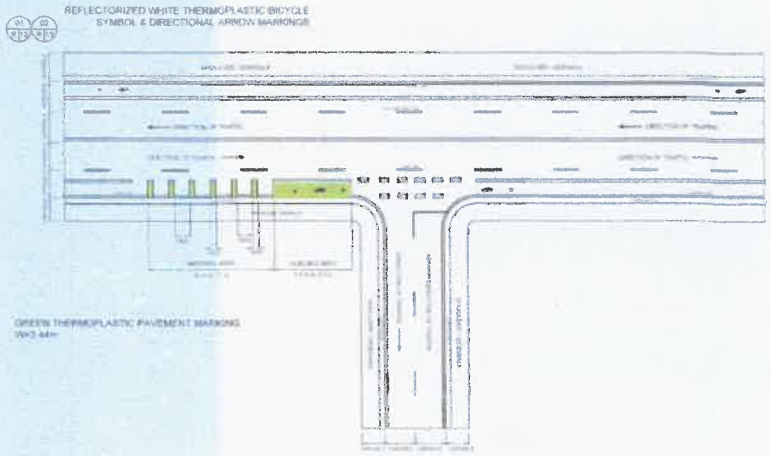
BIKELANE INTERSECTION APPROACH "A" (YELLOW BOX)

N T S



BIKELANE INTERSECTION APPROACH "B" (YELLOW BOX)

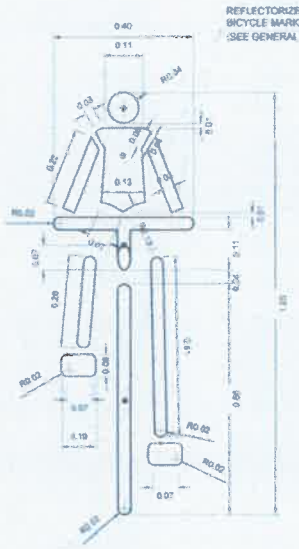
N T S



BIKELANE INTERSECTION APPROACH "C"

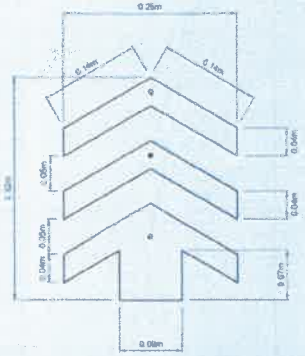
N T S

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN	PROJECT TITLE: UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)	SHEET CONTENTS: BIKELANE INTERSECTION APPROACH "A" (YELLOW BOX) BIKELANE INTERSECTION APPROACH "B" (YELLOW BOX) BIKELANE INTERSECTION APPROACH "C"	PREPARED BY: DRAWN CHECKED	SUBMITTED: ROMEO C. RAGAS CHIEF, HIGHWAYS DIVISION	RECOMMENDING: SEE COVER SHEET: EDWIN C. MATANGUIHAN DEC 07 2022	APPROVED: (SEE COVER SHEET) ERIC A. AYAPANA ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	APPROVED: (SEE COVER SHEET) MAXIMO L. CARVAJAL UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	SET NO.: R 12	SHEET NO. 12 18



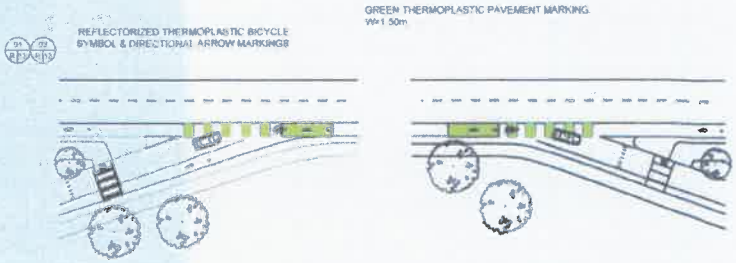
REFLECTORIZED THERMOPLASTIC BICYCLE MARKING DETAIL

SCALE 1:10



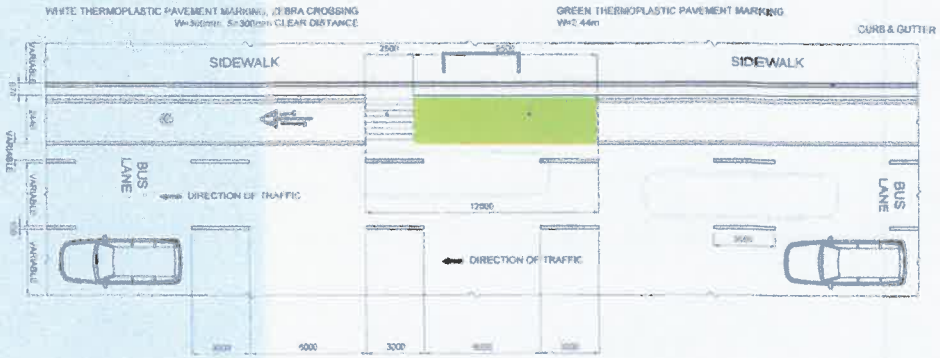
REFLECTORIZED THERMOPLASTIC DIRECTIONAL ARROW DETAIL

SCALE 1:



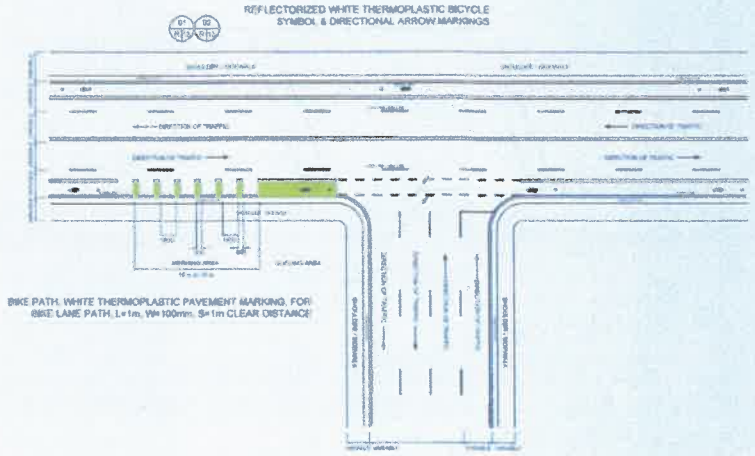
BIKELANE ALONG MERGING & DIVERGING LANES

N T S



PUV STOPS / LOADING & UNLOADING BAY

N T S



BIKELANE INTERSECTION APPROACH "D"

N T S

PUV TURNOUT / LOADING & UNLOADING BAY

N T S

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN

PROJECT TITLE: UPDATING GUIDELINES AND STANDARD BIKE DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)

SHEET CONTENTS: REFLECTORIZED THERMOPLASTIC BICYCLE MARKING & DIRECTIONAL ARROW DETAIL; BIKELANE INTERSECTION APPROACH "D"; BIKELANE ALONG MERGING & DIVERGING LANES; PUV STOPS / LOADING & UNLOADING BAY; PUV TURNOUT / LOADING & UNLOADING BAY

PREPARED: [illegible]
DRAWN: [illegible]
CHECKED: [illegible]

SUBMITTED: ROMEO O. RAAGAS, CHIEF HIGHWAYS DIVISION

RECOMMENDED: (SEE COVER SHEET) EDWIN C. MATANGUIHAN, OIC - DIRECTOR, BUREAU OF DESIGN — DEC 07 2022

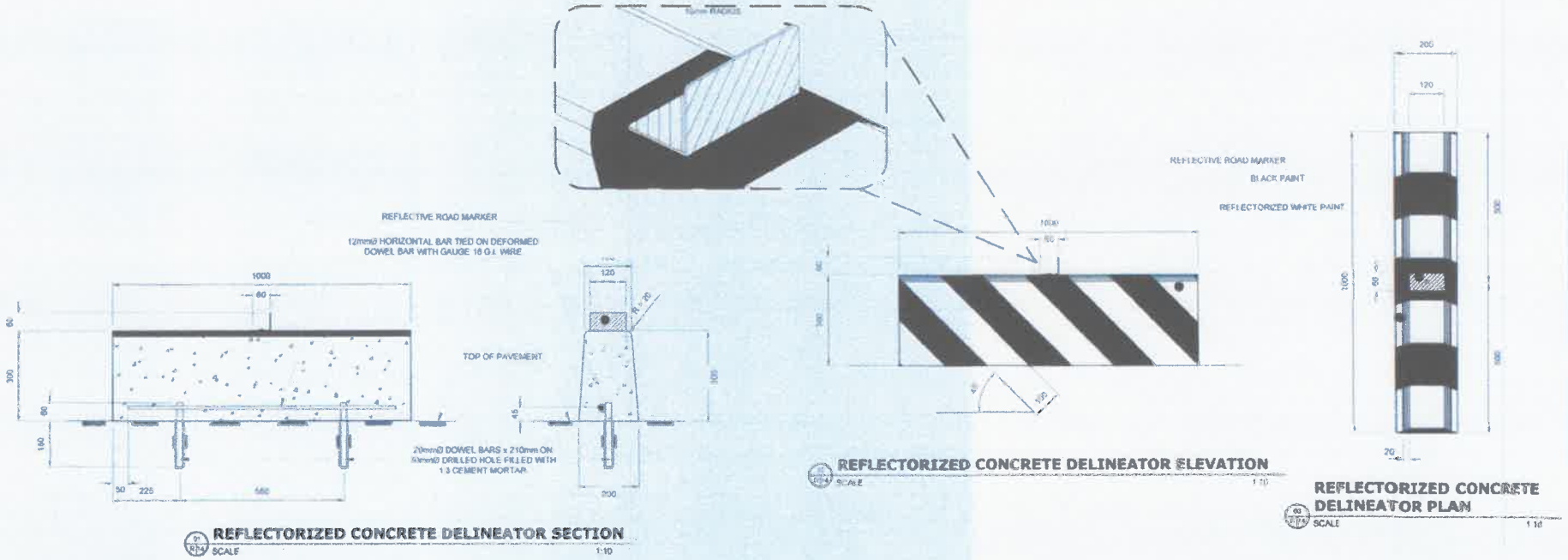
(SEE COVER SHEET) ERIC A. AYAPANA, ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES

APPROVED: (SEE COVER SHEET) MAXIMO L. CARVAJAL, UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES

SET NO. 8 / 17

SHEET NO. 13 / 19

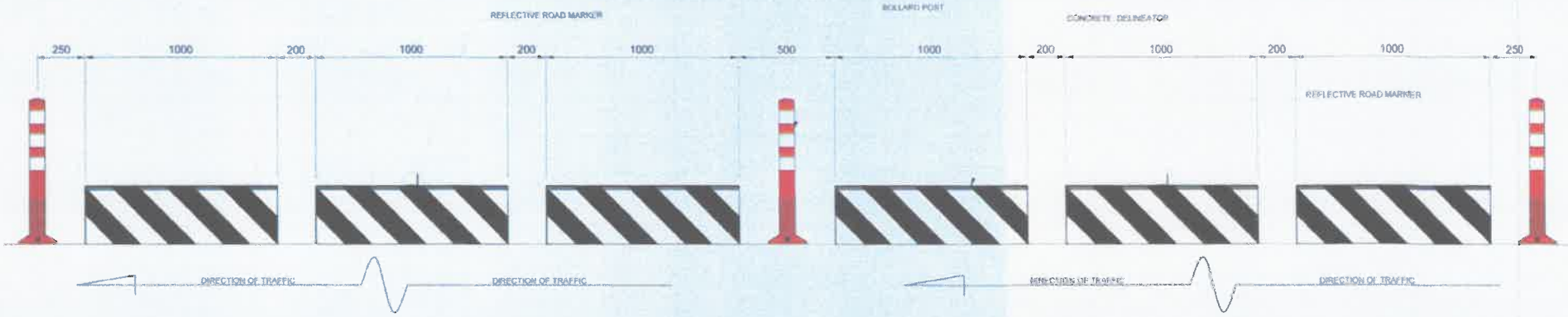
MISCELLANEOUS ITEMS



REFLECTORIZED CONCRETE DELINEATOR SECTION
SCALE 1:10

REFLECTORIZED CONCRETE DELINEATOR ELEVATION
SCALE 1:10

REFLECTORIZED CONCRETE DELINEATOR PLAN
SCALE 1:10



BOLLARD POST & CONCRETE DELINEATOR ELEVATION
SCALE 1:10

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

PROJECT TITLE: UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)

SHEET CONTENTS: REFLECTORIZED CONCRETE DELINEATOR SECTION, ELEVATION & PLAN; BOLLARD POST & CONCRETE DELINEATOR ELEVATION

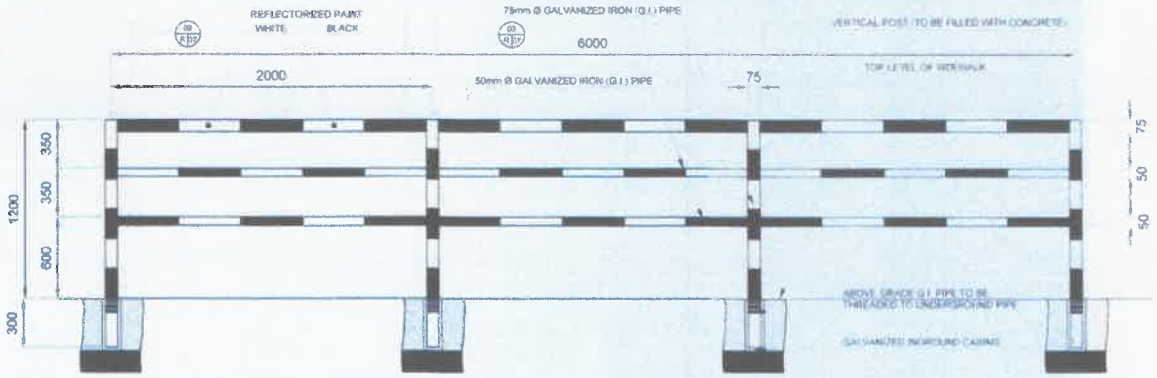
PREPARED: ROMEO S. TAGTAG
DRAWN:
CHECKED:

SUBMITTED: ROMEO C. RAAGAS, DIRECTOR, HIGHWAYS DIVISION

RECOMMENDED:
(SEE COVER SHEET) EDWIN C. MAYANGUMAN, OIC-DIRECTOR, BUREAU OF DESIGN, DEC 07 2022
(SEE COVER SHEET) ERIC A. AYAPANA, ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES

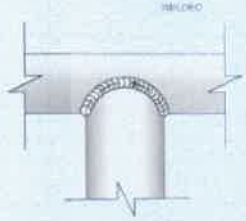
APPROVED:
(SEE COVER SHEET) MAXIMO L. CARVAJAL, UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES

SHT NO. 11/14
SHEET NO. 14/16

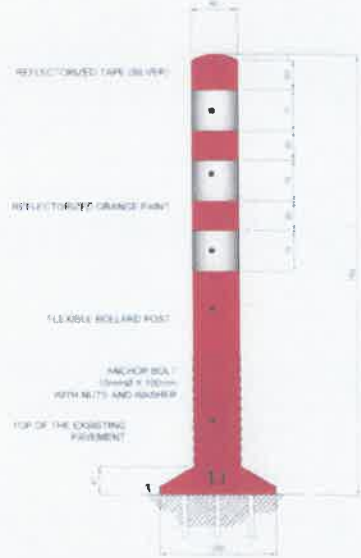


FENCE ELEVATION PLAN

END CONNECTION DETAIL



MIDDLE CONNECTION DETAIL

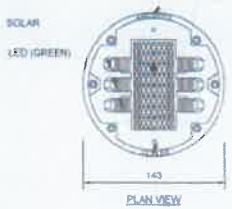


ELEVATION OF FLEXIBLE BOLLARD POST

PLAN VIEW OF FLEXIBLE BOLLARD POST

(NAME OF MANUFACTURER/ APPLICABLE ABBREVIATION)

(PRODUCT APPROVAL NUMBER)



PLAN VIEW

ELEVATION

NOTE:

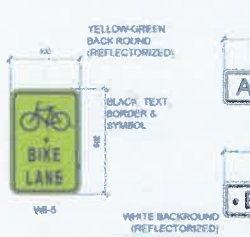
1. THE REINFORCED BODY CASE SHALL BE MADE OF ALUMINUM DIE CAST WITH ADEQUATE WEBBING TO ENSURE A FIRM KEY TO THE ROAD WHEN INSTALLED. THE PROTECTIVE UPPER CUP OR SECURITY RING SHALL BE MADE OF ALUMINUM DIE CAST WITH A MINIMUM OF FIVE (5) STAINLESS STEEL SAFETY LOCKS
2. THE MANUFACTURER SHALL ISSUE THE CERTIFIED TRUE COPY OF NECESSARY TEST RESULTS TO THE CONTRACTOR REITERATING THE CURRENT DATE OF CERTIFICATION AND MUST BE SUBMITTED TO THE ENGINEER BEFORE DOING THE INSTALLATION WORK
3. PRODUCT MARKING (MANUFACTURER OR APPLICABLE ABBREVIATION AND APPROVAL NUMBER) SHALL BE CLEAR AND FIRM BY WAY OF NOT ERASING EASILY AND TO BE SEEN EASILY FOR ROAD STUDS
4. ALL MATERIAL REQUIREMENTS AND SPECIFICATIONS SHALL COMPLY WITH DPWH DEPARTMENT ORDER NO. 8, SERIES OF 2022 RE: ITEM 807(2) - INTERNALLY ILLUMINATED (SOLAR) PAVEMENT LEVELLED MARKERS/STUDS FLUSH TYPE

INTERNALLY ILLUMINATED (SOLAR) PAVEMENT LEVELED MARKERS/STUDS FLUSH TYPE

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN MANILA	PROJECT TITLE: UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)	SHEET CONTENTS: FENCE ELEVATION PLAN END & MIDDLE CONNECTION DETAIL INTERNALLY ILLUMINATED (SOLAR) PAVEMENT LEVELED MARKERS/STUDS FLUSH TYPE ELEVATION OF FLEXIBLE BOLLARD POST PLAN VIEW OF FLEXIBLE BOLLARD POST	PREPARED: [illegible] DRAWN: [illegible] CHECKED: [illegible]	SUBMITTED: ROMEO C. RAAGAS CHIEF HIGHWAYS DIVISION	RECOMMENDING: SEE COVER SHEET: EDWIN C. MATANGUIHAN DIRECTOR BUREAU OF DESIGN DEC 07 2022	(SEE COVER SHEET) ERIC A. AYAPANA ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	APPROVED: (SEE COVER SHEET) MAXIMO L. CARVAJAL UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	SET NO. 4 of 10	SHEET NO. 10

MISCELLANEOUS SIGNS

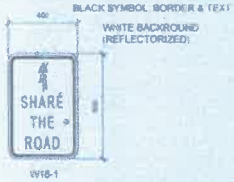
SCALE 1:20



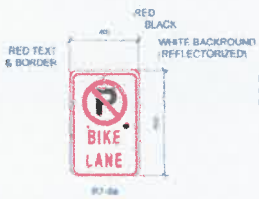
W8-5 SIGN WITH A SUPPLEMENTARY WORD SIGN "AHEAD" SHALL BE PLACED NOT LESS THAN 30M BEFORE THE BEGINNING OF A BIKE LANE.

W8-5 SIGN WITH A SUPPLEMENTARY WORD SIGN "ENDS" SHALL BE PLACED AT THE END OF A BIKE LANE

W8-5 AND THE SUPPLEMENTARY WORD SIGN "AHEAD" AND "ENDS" SHALL BE USED ONLY FOR CLASS I AND CLASS II BICYCLE FACILITIES



SHARE THE ROAD SIGN / W16-1 SIGN - INFORCE TRAFFIC REGULATION AND FOR SAFETY STANDARDS OF DRIVERS & BICYCLE RIDERS IN ROADWAYS. SIGN SHALL BE PLACED AT THE BEGINNING OF CLASS III-SHARED ROADWAY, AT SIGNALIZED INTERSECTION AND AT PERIODIC INTERVALS. ITS PERIODIC INTERVAL SHALL BE DETERMINED BY ENGINEERING JUDGEMENT BASED ON PREVAILING SPEED OF BICYCLE AND OTHER TRAFFIC

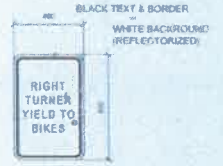


NO PARKING BIKELANE SIGN / R7-8a SIGN - THIS SIGN RESTRICT PARKING, STANDING OR STOPPING IN A BICYCLE LANE. BASICALLY INSTALLED AT ILLEGAL PARKING PRONE AREA

R6-10 SIGN SHALL BE PLACED AT THE BEGINNING OF BIKE LANE, AT SIGNALIZED INTERSECTION AND AT PERIODIC INTERVALS. ITS PERIODIC INTERVAL SHALL BE DETERMINED BY ENGINEERING JUDGEMENT BASED ON PREVAILING SPEED OF BICYCLE AND OTHER TRAFFIC, BLOCK LENGTH, DISTANCES FROM ADJACENT INTERSECTIONS AND OTHER CONSIDERATIONS. IF THERE ARE MULTIPLE SIDE ROADS/TURNS EXIST, IT IS NOT REQUIRED TO LOCATE SIGNS AT EVERY TURN. HOWEVER, SIGN SPACING SHALL NOT EXCEED 500M.

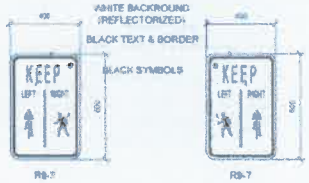
BLACK SYMBOL, LEGEND AND BORDER, REFLECTORIZED FLOURESCENT YELLOW-GREEN BACKGROUND

SIGN NO.	SIZE (Ø mm)
R6-10A	450
R6-10B	600
R6-10C	750

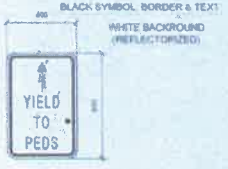


RIGHT TURNER YIELD TO BIKES SIGN - INFORM ROAD-USERS OF THE START OF RIGHT TURN LANE AND YIELD TO ANY INCOMING BIKES. SHALL BE PLACED NOT LESS THAN 30M BEFORE THE INTERSECTION, SPECIFICALLY BEFORE CROSSING (YELLOW BOX)

BIKE RACK SIGN - INFORM BICYCLIST TO WHERE BICYCLES CAN BE SECURELY ATTACHED FOR PARKING PURPOSES



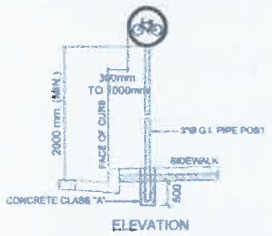
A SIGN INDICATING THE DESIGNATED PATH OF PEDESTRIANS AND CYCLIST / R9-7 SIGN SHALL BE PLACED AT THE START OF A CLASS I-SHARED USE PATH AND AT PERIODIC INTERVALS SAME AS DESCRIBED FOR R6-10 SIGN.



YIELD TO PEDS SIGN / R9-6 SIGN - INFORM BICYCLISTS TO YIELD TO ALL PEDESTRIANS ON A CROSSWALK BEFORE CROSSING

BAWAL ANG MOTORSIKLO SA BIKELANE SIGN - THIS SIGN RESTRICT MOTORCYCLE RIDERS ENTERING THE LANE DESIGN FOR BICYCLIST

BICYCLE FACILITIES ROAD SIGNS SHALL CONFORM TO HIGHWAY SAFETY DESIGN STANDARDS - PART 2 ROAD SIGNS AND PAVEMENT MARKINGS MANUAL



ELEVATION

PLAN

INSTALLATION DETAIL

SCALE 1:50

NOTES:

1. THE DIMENSIONS, SIZES OF LETTERS AND NUMERALS, SHAPE, COLOR AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS OF D.P.W.H. HIGHWAY SAFETY STANDARD PART 2: ROAD SIGNS AND PAVEMENT MARKINGS MANUAL 2012
2. ROAD SIGNS SHALL BE PLAIN CEMENT FINISH, SMOOTHENED AND TREATED WITH CONCRETE NEUTRALIZER AND PRIMER PRIOR TO THE APPLICATION OF RETRO REFLECTIVE MATERIALS/ STICKERS ON LEGENDS, LETTERS, BORDERS AND BACKGROUND OF THE SIGN SLAB AS DIRECTED BY THE ENGINEER

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

PROJECT TITLE: UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)

SHEET CONTENTS: MISCELLANEOUS SIGNS INSTALLATION DETAIL

PREPARED: [illegible]
DRAWN: [illegible]
CHECKED: [illegible]

SUBMITTED: ROMEO C. RAAGAS, CHIEF, HIGHWAYS DIVISION

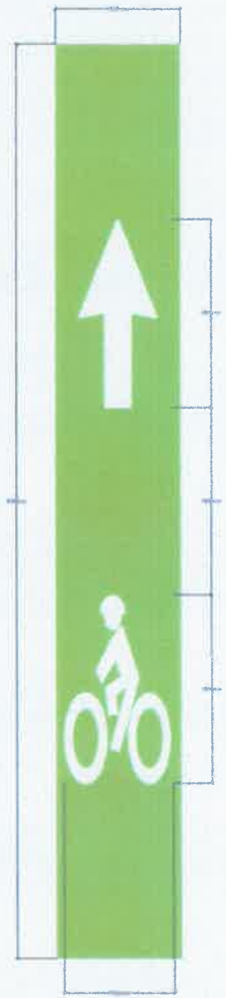
RECOMMENDED: SEE COVER SHEET: EDWIN C. MATANGUIHAN, OIC - DIRECTOR, BUREAU OF DESIGN, DEC 07 2022

(SEE COVER SHEET) ERIC A. AYAPANA, ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES

APPROVED: (SEE COVER SHEET) MAXIMO I. CARVAJAL, UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES

REV NO. 01 10

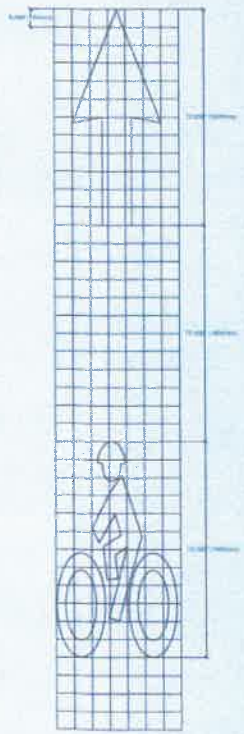
SHEET NO. 10 10



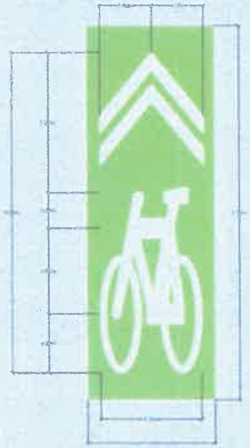
NOTE
REFLECTORIZED WHITE MARKING,
REFLECTORIZED GREEN BACKGROUND

(SEE GENERAL NOTES 3.10.3)

01 / R17 COLORED CONFLICT AREA PAVEMENT MARKING
N T S



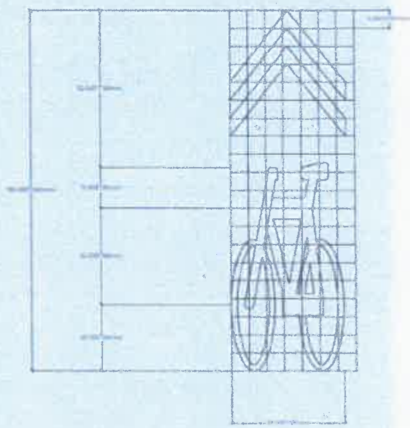
02 / R17 HELMETED RIDER WITH ARROW DETAILS
N T S



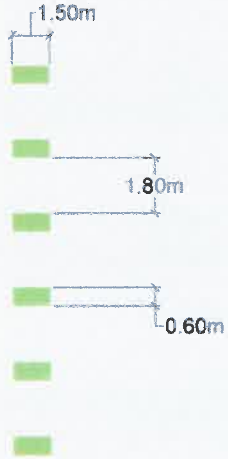
NOTE
REFLECTORIZED WHITE MARKING, REFLECTORIZED GREEN BACKGROUND (USED FOR SHARED ROADS)

(SEE GENERAL NOTES 3.10.3)

03 / R17 SHARROW PAVEMENT MARKING
N T S

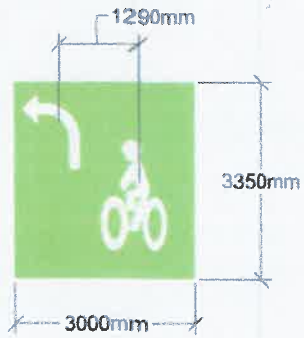


04 / R17 SHARROW MARKING DETAILS
N T S



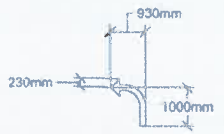
NOTE
REFLECTORIZED GREEN PAINT

05 / R17 DASHED PAVEMENT MARKING
N T S



NOTE
REFLECTORIZED WHITE MARKING, REFLECTORIZED GREEN BACKGROUND (USED FOR SHARED ROADS)

06 / R17 QUEUE BOX
N T S



NOTE
REFLECTORIZED WHITE MARKING, REFLECTORIZED GREEN BACKGROUND (USED FOR SHARED ROADS)

LEFT TURN PAVEMENT MARKING
N T S

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN MANILA	PROJECT TITLE: UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)	SHEET CONTENTS: OTHER PAVEMENT MARKING DETAILS	PREPARED: DRAWN: CHECKED:	SUBMITTED: ROMEO C. RAAGAS CHIEF, HIGHWAYS DIVISION	RECOMMENDED: (SEE COVER SHEET) EDWIN C. MATANGUIHAN OIC - DIRECTOR, BUREAU OF DESIGN DEC 07 2022	(SEE COVER SHEET) ERIC A. AYAPANA ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	APPROVED: (SEE COVER SHEET) MAXIMO L. CARVAJAL UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	SET NO. R / 17	SHEET NO. 17 / 18

BICYCLE SAFE STORMWATER GRATES

ACCEPTABLE GRATE DESIGNS

UNACCEPTABLE GRATE DESIGNS

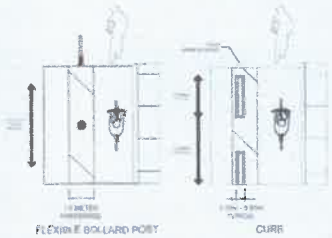
EXAMPLE INSTALLATION WITH VANE GRATE

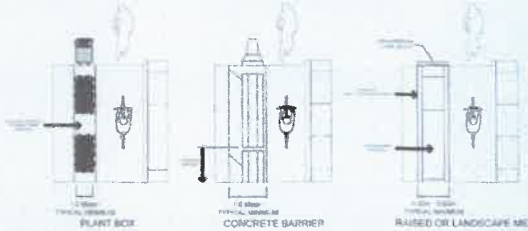
NOTES

1. GRATE TYPES ARE ONLY CONSIDERED BICYCLE SAFE WITH THE CURB ORIENTATION AS SHOWN.
2. VANE GRATE OPENINGS ARE DESIRABLE IN LOCATIONS WHERE HIGHER HYDRAULIC CAPACITY IS NEEDED. THE GRATE MUST BE ORIENTED WITH THE DIRECTION OF FLOW AS SHOWN IN THE "EXAMPLE VANE GRATE OPENINGS" DETAIL.
3. EXISTING UTILITY COVERS SHOULD BE ADJUSTED FLUSHED WITH THE SURFACE OF THE ROADWAY PAVEMENT. BIKE LANES SHOULD BE PROVIDED WITH ADEQUATE DRAINAGE (BICYCLE-COMPATIBLE DRAIN GRATES) TO PREVENT PONDING OF WATER. WASHOUTS, DEBRIS ACCUMULATION, AND OTHER POTENTIAL CONCERNS FOR BICYCLISTS. ALL EXISTING DRAINAGE GRATINGS SHOULD BE ADJUSTED PARALLEL WITH THE TRAFFIC.

SAFE STORMWATER GRATES

N T S





	FLEXIBLE BOLLARD POST	CURB	PLANT BOX	CONCRETE BARRIER	RAISED OR LANDSCAPED MEDIAN
1. Appropriate Context	• Lower-speed environments; may not be appropriate for roads with posted speeds that exceed 50kph. • Recommended treatment adjacent to motor vehicle parking to allow access.	• Lower-speed environments; may not be appropriate for roads with posted speeds that exceed 50kph.	• Lower-speed environments, planter boxes with periodic or intermittent spacing are not appropriate on roads with posted speeds of 50kph or greater. • If planter boxes are used on roads with posted speeds of 50kph or greater, they should be constructed of a durable material and should not be periodic or intermittently spaced unless they are placed on top of a concrete median or adjacent to a median or curb to provide continuous physical protection. • If they are used on roads where operating speeds are different from posted speeds, the design should be adjusted accordingly.	• Recommended for locations where more physical protection from motor vehicles is needed, such as bridges with high-speed traffic. • Should not be used with on-street parking.	Recommended for locations where more physical protection from motor vehicles is needed; for example, on bridges with high-speed traffic.
2. Cost	• Lowest initial capital cost but may need routine replacement, resulting in higher long-term costs.	• Low cost	• High cost, including ongoing maintenance for re-positioning and possible seasonal removable.	• Relatively low initial capital cost compared to other types of separation	• Higher initial capital cost but requires less long-term maintenance than other types of separation
3. Design Flexibility	• Easily removed and relocated	• Easily removed and relocated	• Easily removed and relocated • If they are used on roads with posted speeds of 50kph or less, there is more flexibility in their design.	• Relatively low flexibility	• Relatively low flexibility
4. Design Notes	• Small footprint compatible with a range of buffer designs. • Should be combined with buffered bicycle lane pavement markings. • Allows drainage and snow storage. • Appearance is less "permanent" than other forms and may be less aesthetically pleasing	• Can be used in narrower buffers than other types of separation. • Must be pinned down. • Consider use of end treatments such as mini-barrier noses. • Must have vertical element at least at the start when adjacent to traffic; may need additional vertical elements to enhance visibility.	• Can add to the aesthetics and enjoyment of the facility. • Planters with intermittent spacing that are not separated from adjacent motor vehicle lanes should consider clear zone. • Should have reflective markings or be signed.	• Intended to provide continuous vertical separation. • On higher speed roads, crash cushions should be included at barrier ends. • Less aesthetically pleasing than other types of separation	• Intended to provide continuous vertical separation. • On higher speed roads, crash cushions should be included at barrier ends. • Can add to the aesthetics and enjoyment of the facility.
5. Durability	• Low Durability	• High Durability	• Relatively high durability, depends on material used.	• High Durability	• High Durability
6. Protection	• May increase user comfort but does not offer physical protection.	• Can be used to provide continuous protection, but low height provides less protection than other types of separation.	• Moderate to high degree of protection, depending on spacing and material used. • The face of the planter exposed to traffic may be rounded to better absorb the energy of an impact. The planter should not be anchored to the pavement and should have sufficient mass to absorb the energy of an impact without significant deflection.	• Provide a high degree of separation and physical protection from motor vehicles	• Can provide a continuous curb separation from motor vehicles, though may include gaps or inlets for channelizing stormwater towards existing catch basins in retrofit facilities.
7. Maintenance	• Can be impacted if buffer space is used for snow storage. • Susceptible to damage and may need to be frequently replaced.	• Low maintenance requirements	• High maintenance requirements; likely to require ongoing care and land scaping	• Low maintenance requirements	• Low maintenance requirements
8. Line of Sight	• Minimal impacts	• Minimal impacts	• Need t ensure they do not restrict clear zone requirements and signdlines, particularly on roads with higher motor vehicle speeds	• Minimal impacts	• Need to ensure they do not restrict clear zone requirements and sightlines, particularly on roads with higher motor vehicle speeds.
9. Spacing	• Spaced 3.0 to 6.0 meters apart. • Spacing may be dependent on factors such as parking and loading encroachment. • Generally placed in the middles of the buffer area but may be positioned to one side or the other as site conditions indicate.	• May be spaced closer to create a continuous barrier. • If spaced apart, spacing should be even along the corridor. Spaced 2.5m to 3.5m apart.	• May be spaced closer to create a continuous barrier. • If spaced apart, spacing should be even along the corridor.	• Continuous with breaks for emergency access as needed	• Continuous, with breaks for emergency access as needed

BIKE LANE PHYSICAL SEPARATOR

N T S

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN	PROJECT TITLE: UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON ROADS (SET 1)	SHEET CONTENTS: SAFE STORMWATER GRATES BIKE LANE PHYSICAL SEPARATOR	PREPARED: DRAWN: CHECKED:	SUBMITTED: ROMEO C. RAAGAS, CHIEF, HIGHWAYS DIVISION	RECOMMENDED: SEE COVER SHEET: EDWIN C. MATANGUIHAN, OIC - DIRECTOR, BUREAU OF DESIGN, DEC 07 2022	APPROVED: (SEE COVER SHEET) ERIC A. AYAPANA, ASSISTANT SECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES; (SEE COVER SHEET) MAXIMO L. CARVAJAL, UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	SET NO: P 18	SHEET NO: 18 18

UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE FACILITIES ON BRIDGES

(SET 2)

GENERAL NOTES

1. THIS STANDARD IS ONLY INTENDED TO PROVIDE MINIMUM REQUIREMENTS AND GUIDELINES IN PREPARATION OF PLANS FOR BRIDGE PROJECTS CONSIDERING BICYCLE LANE.

2. ALL DRAWINGS SHOWN ON THIS PLAN ARE TYPICAL DRAWINGS AND FOR REFERENCE ONLY. THE IMPLEMENTING OFFICE SHALL VERIFY ALL DETAILS AND DETAILED ENGINEERING DESIGN PLANS SHALL BE SUBJECT TO REVIEW AND APPROVAL.

3. STRUCTURAL DESIGN

3.1. BRIDGE DESIGN SHALL BE IN ACCORDANCE WITH THE FOLLOWING CODES, STANDARDS AND SPECIFICATIONS:

3.1.1. DPWH DESIGN GUIDELINES, CRITERIA AND STANDARDS (DGCS), 2015, VOLUME 5 BRIDGE DESIGN
3.1.2. DPWH LRFD BRIDGE SEISMIC DESIGN SPECIFICATIONS (BSDS), 1ST EDITION, 2013
3.1.3. DPWH LRFD BRIDGE SEISMIC DESIGN SPECIFICATIONS (BSDS), INTERIM REVISIONS, 2019
3.1.4. DPWH STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES AND AIRPORTS, 2013
3.1.5. ALL OTHER DPWH DEPARTMENT ORDERS (D.O.) RELATED TO BRIDGE DESIGN

3.2. BRIDGE TRAFFIC RAILINGS/PARAPET/BARRIERS SHALL SATISFY THE STRUCTURAL AND GEOMETRIC REQUIREMENTS SPECIFIED IN ARTICLE 18.3.2 RE: TEST LEVEL SELECTION CRITERIA, UNDER CHAPTER 18 - RAILINGS, OF THE DGCS 2015 VOLUME 5 BRIDGE DESIGN.

3.3. STRUCTURAL COMPONENTS/MEMBERS (DECK SLAB, GIRDER, AMONG OTHERS) AFFECTED BY THE "SHARED USED PATH" (BICYCLE AND PEDESTRIAN LANE) SHALL ALSO BE DESIGNED CONSIDERING VEHICULAR LOADING, WITH APPLICABLE DYNAMIC LOAD ALLOWANCE AND DISTRIBUTION FACTOR, IN CONSIDERATION FOR POSSIBLE FUTURE TRAFFIC USE FOR VEHICLES.

4. DESIGN REQUIREMENTS/GUIDELINES:

4.1. FOR EXISTING BRIDGE:

4.1.1. 1500MM MINIMUM CLEAR WIDTH BICYCLE LANE OF SHARED ROADWAY (CLASS III) CAN BE ADOPTED FOR ALL EXISTING BRIDGE TYPES. HOWEVER, EXISTING BRIDGES WITH AT LEAST 3000MM OF SIDEWALK WIDTH SHALL BE CONVERTED TO SHARED-USE PATH (CLASS I).
4.1.2. FLYOVER SHALL BE EXEMPTED FROM THE PROPOSED BICYCLE LANE WHEN THERE IS AN UNDERSIDE ROAD, SUCH AS SERVICE ROAD. IN CASES WHEN THERE ARE NO SERVICE ROADS, BICYCLE LANES SHALL BE INSTALLED DIRECTLY ALONG THE FLYOVER, FOLLOWING THE PROVISION SET UNDER SECTION 4.1.1.
4.1.3. SHARE THE ROAD SIGN / W16-1 SIGN SHALL BE INSTALLED AT THE BEGINNING OF SHARED ROADWAY. BICYCLE FACILITIES ROAD SIGN SHALL CONFORM TO HIGHWAY SAFETY DESIGN STANDARDS - PART 2 ROAD SIGNS AND PAVEMENT MARKINGS MANUAL.

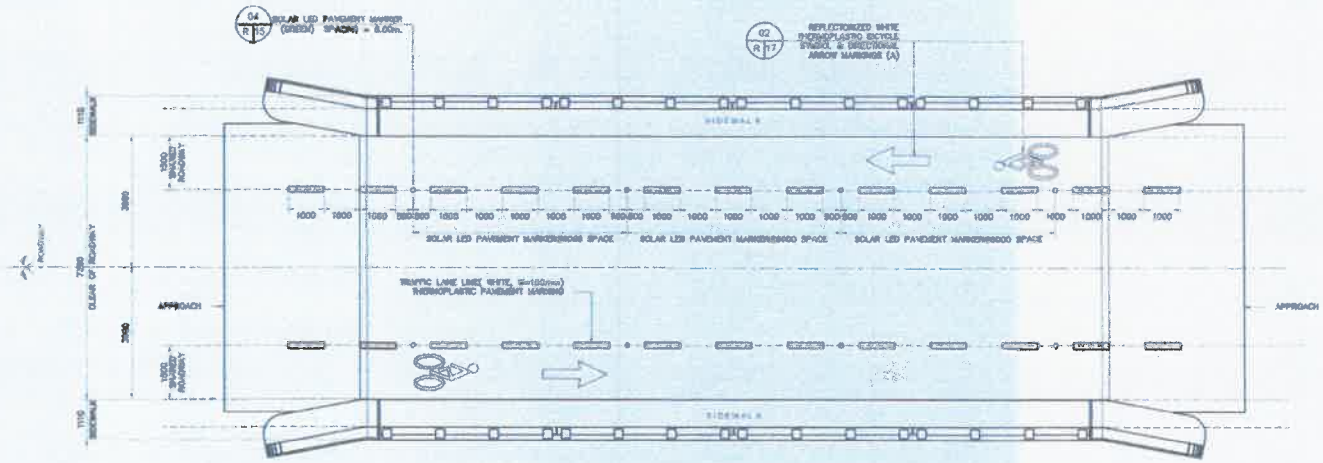
4.2. FOR NEW BRIDGE:

4.2.1. THE MINIMUM CLEAR WIDTH OF SHARED-USE PATH (CLASS I) IN ONE DIRECTION SHALL BE 3000MM. HOWEVER, IF THERE ARE PHYSICAL CONSTRAINTS SUCH AS ENVIRONMENTAL FEATURE, ETC., THE 2440MM CLEAR WIDTH OF SHARED-USE PATH MAY BE USED PROVIDED THAT A MINIMUM WIDTH OF 1500MM SHALL BE PROVIDED FOR CYCLISTS.
4.2.2. PROVIDE REQUIRED ROAD SIGNS AND PAVEMENT MARKINGS IN ACCORDANCE WITH DPWH - HIGHWAY STANDARDS PART 2: ROAD SIGNS AND PAVEMENT MARKINGS MANUAL 2012.
4.2.3. THE MINIMUM HEIGHT OF BIKE AND PEDESTRIAN RAILING IS 1200MM MEASURED FROM THE TOP OF WALKWAY AND RIDING SURFACE. THE 2018 DPWH STANDARD BRIDGE RAILING IS RECOMMENDED TO BE USED BASED ON DESIGN OBJECTIVES AND USER'S PREFERENCE.
4.2.4. REFLECTORIZED FLEXIBLE BOLLARD POST SHALL BE INSTALLED AT THE BEGINNING AND END OF SHARED-USE PATH.

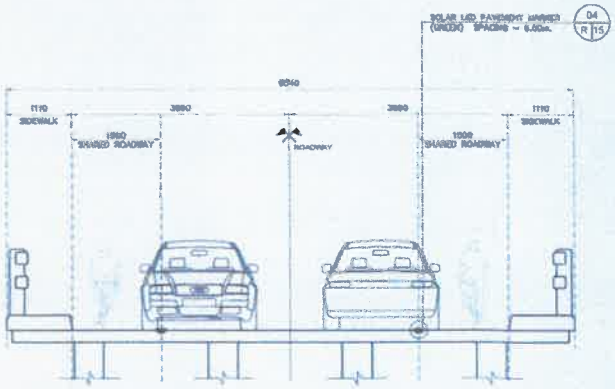
5. BIKE RAMP SHALL BE INSTALLED ON STAIRS OF GRADE SEPARATION, SUCH AS OVERPASS, UNDERPASS, ETC., WITH A CLEAR WIDTH OF AT LEAST 1500MM.

GENERAL INDEX OF DRAWING

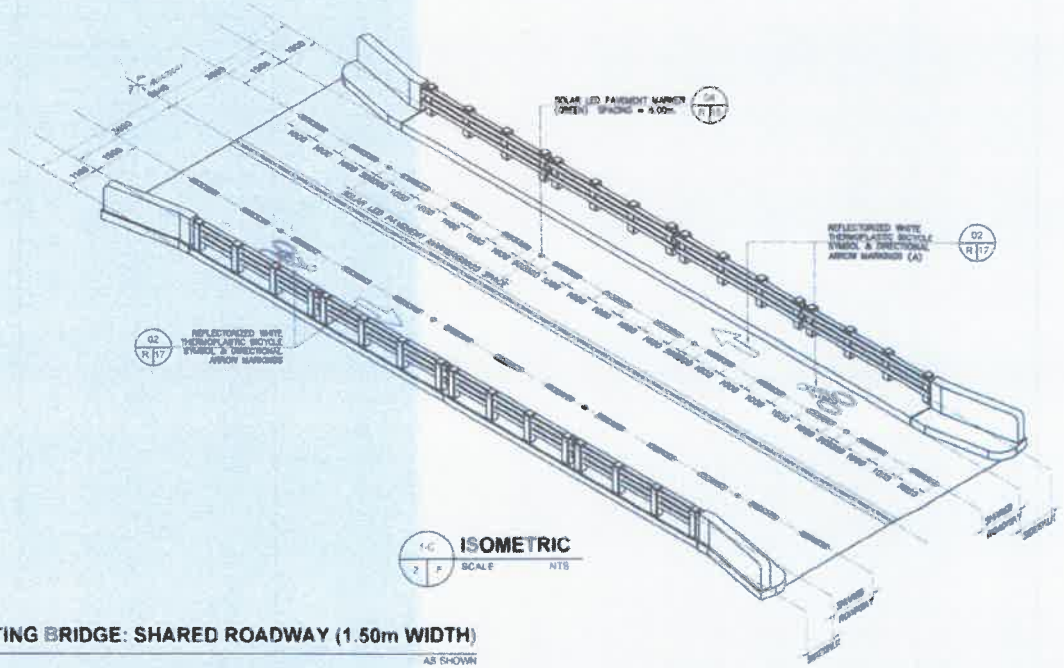
REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN BRIDGES DIVISION PORT AREA, MANILA	SHEET TITLE: UPDATED GUIDELINES AND STANDARD DRAWINGS FOR BICYCLE FACILITIES ON BRIDGES (SET 2)	SHEET CONTENTS: GENERAL INDEX OF DRAWINGS & GENERAL NOTES	DESIGNED: JEROME V. KATIGBAK, MARK ROBERT M. MANGASSONG CHECKED: ERDOLFO M. DOMINGO, JR. CADD: ... C. MEDIANTE	SUBMITTED: BLESILDA S. RAMOS CHIEF, BRIDGES DIVISION	RECOMMENDING APPROVAL: SEE COVER SHEET: EDWIN C. MATANGUIHAN OIC - DIRECTOR DATE: DEC 07 2022	ERIC A. AYAPANA ASSISTANT SECRETARY FOR TECHNICAL SERVICES	APPROVED: MAXIMO L. CARVAJAL UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES	SET NO. BOD 2022-13 BrD	SHEET NO. F 1 / 4



1-A | 2 | F — **PLAN**
SCALE 1:100M



1-B | 2 | F — **ROADWAY SECTION**
SCALE 1:50M

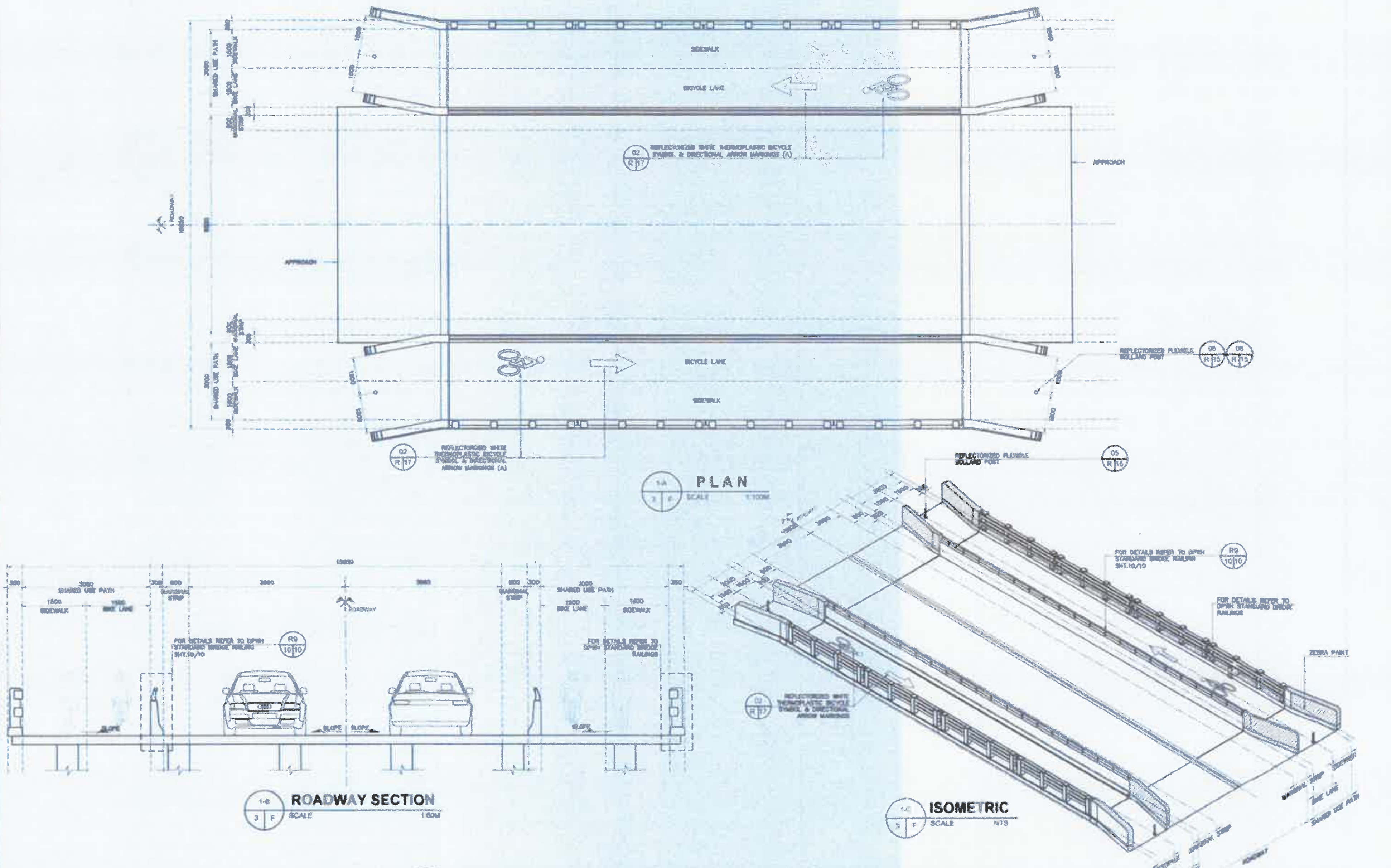


1-C | 2 | F — **ISOMETRIC**
SCALE NTS

1 | 2 | F — BIKE LANE ON EXISTING BRIDGE: SHARED ROADWAY (1.50m WIDTH)
SCALE AS SHOWN

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
BRIDGES DIVISION
BONIFACIO DRIVE PORT AREA MANILA

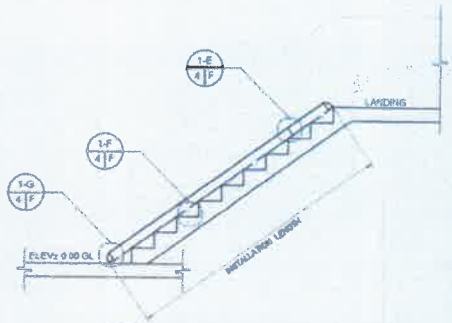
SHEET TITLE	UPDATED GUIDELINES AND STANDARD DRAWINGS FOR BICYCLE FACILITIES ON BRIDGES (SET 2)
SHEET CONTENTS	BIKE LANE ON EXISTING BRIDGE: SHARED ROADWAY (1.50m WIDTH)
CHECKED	JEROME V. KATIGBAK, MARK ROBERT S. MANONGDO; ERDOLFO M. DOMINGO, JR.; ROLANDO C. REDANTE
SUBMITTED	BLESILDA S. RAMOS
RECOMMENDING APPROVAL	SEE COVER SHEET: EDWIN C. MATANGUIHAN
SEE COVER SHEET	ERIC A. AYAPANA
APPROVED	SEE COVER SHEET: MAXIMO L. CARVAJAL
SET NO	BOD 2022-13 BRD
SHEET NO	2 of 4



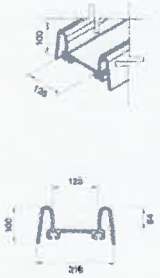
BRIDGE WIDTH CONSIDERING BIKE LANE FOR NEW BRIDGE: SHARED-USE PATH

SCALE AS SHOWN

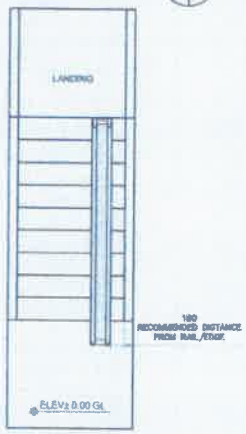
REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN BRIDGES DIVISION BONIFACIO DRIVE PORT AREA, MANILA	SHEET TITLE UPDATED GUIDELINES AND STANDARD DRAWINGS FOR BICYCLE FACILITIES ON BRIDGES (SET 2)	SHEET CONTENTS BRIDGE WIDTH CONSIDERING BIKE LANE FOR NEW BRIDGE: SHARED-USE PATH	JEROME V. CATIOBAK, MARK ROBERT ... BANGCOBONG CHECKED: ERDOLFO M. DOMINGO, JR. ROLANDO C. MEDIANTE	SUBMITTED: BLESILDA S. RAMOS CHIEF, BRIDGES DIVISION DATE	RECOMMENDING APPROVAL: SEE COVER SHEET: EDWIN C. MATANGUIHAN OIC - DIRECTOR BUREAU OF DESIGN DATE: DEC 07 2022	SEE COVER SHEET ERIC A. AYAPANA ASSISTANT SECRETARY FOR TECHNICAL SERVICES DATE	APPROVED: SEE COVER SHEET MAXIMO L. CARVAJAL UNDERSECRETARY FOR INFORMATION MANAGEMENT AND TECHNICAL SERVICES DATE	SET NO. BOD 2022-13 BrD	SHEET NO. F 3 4



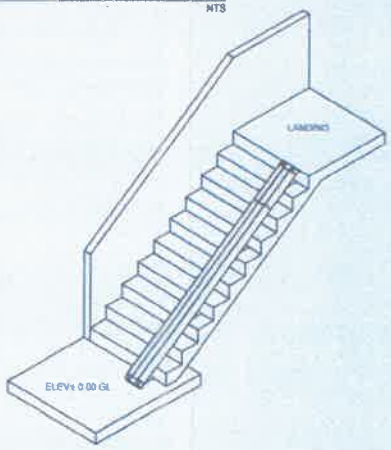
1-A 4 F **BICYCLE RAMP ELEVATION** SCALE NTS



1-D 4 F **RAMP MODULE** SCALE NTS



1-B 4 F **BICYCLE RAMP PLAN** SCALE NTS



1-C 4 F **BICYCLE RAMP ISOMETRIC** SCALE NTS

EXPLODED ISO

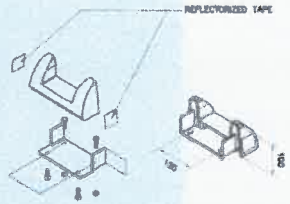
JOINING & RAMP CONNECTION

1-H 4 F **JOINING BISCUIT MODULE** SCALE NTS

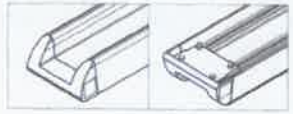
1-F 4 E **MOUNTING BRACKET MODULE** SCALE NTS

INSTALLATION LENGTH (ft)	QTY. OF RAMP MODULES	QTY. OF JOINING BISCUIT MODULES (A)	QTY. OF MOUNTING BRACKET MODULES (B)	QTY. OF END CAP MODULES (C)
4 - 8	1	0	3	1
8 - 12	2	1	4	1
12 - 16	2	1	5	1
16 - 20	3	2	6	1
20 - 24	3	2	7	1
24 - 28	4	3	8	1
28 - 32	4	3	9	1

NOTE: END CAP MODULE INCLUDES 2 END CAPS



EXPLODED ISO



JOINING & RAMP CONNECTION

1-G 4 E **END CAP MODULE** SCALE NTS

4 F **BICYCLE ACCESS RAMP DETAILS** SCALE NTS

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
BRIDGES DIVISION
BONIFACIO DRIVE PORT AREA, MANILA

SHEET TITLE: UPDATED GUIDELINES AND STANDARD DRAWINGS FOR BICYCLE FACILITIES ON BRIDGES (SET 2)

SHEET CONTENTS: BICYCLE ACCESS RAMP DETAILS

DESIGNED: JEROME V. SATIOQUIN, MARK ROBERT B. MANONGSONG (ENGINEER I)
CHECKED: ERDOLFO M. DOMINGO, JR.
CADD: ROMMEL C. MEDIANTE

SUBMITTED: BLESILDA S. RAMOS (CHIEF BRIDGES DIVISION) DATE

RECOMMENDING APPROVAL: SEE COVER SHEET
EDWIN C. MATANGUIHAN (OIC, DIRECTOR FOR BUREAU OF DESIGN) DATE DEC 01 2022

SEE COVER SHEET
ERIC A. AYAPANA (ASSISTANT SECRETARY FOR TECHNICAL SERVICES) DATE

APPROVED: SEE COVER SHEET
MARIO L. CARVAJAL (UNDERSECRETARY FOR INFRASTRUCTURE DEVELOPMENT AND TECHNICAL SERVICES) DATE

SET NO: BOD 2022-13 B-D

SHEET NO: F 4 4

UPDATED GUIDELINES AND STANDARD DESIGN DRAWINGS FOR BICYCLE PARKING FACILITIES

(SET 3)

GENERAL NOTES

1. STANDARD SPECIFICATIONS

1.1. ALL WORKS SHALL COMPLY WITH DPWH STANDARD SPECIFICATIONS FOR PUBLIC WORKS STRUCTURES (BUILDINGS, PORTS AND HARBORS, FLOOD CONTROL AND DRAINAGE STRUCTURES AND WATER SUPPLY SYSTEMS), 2019

1.2. FOR ITEM WORKS THAT ARE NOT FOUND IN THE REVISED PAY ITEM LIST, THE CONCERNED IMPLEMENTING OFFICE SHALL SUBMIT TECHNICAL SPECIFICATIONS OF SAID SPECIAL PAY ITEM TO THE BUREAU OF RESEARCH AND STANDARDS (BRS) FOR REVIEW AND EVALUATION PRIOR TO THE APPROVAL OF UNDERSECRETARY FOR TECHNICAL SERVICES AS PRESCRIBED IN DEPARTMENT ORDER NO. 35 SERIES OF 2018.

2. BICYCLE PARKING FACILITIES/AMENITIES

2.1. CLASSIFICATION OF BICYCLE PARKING FACILITIES

- THE REQUIREMENTS FOR CHOOSING A LOCATION FOR THE SITE OF THE FACILITY WILL BE BASED ON THE USE WHETHER IT IS A SHORT-TERM OR LONG-TERM. EACH OF THESE PARKING TYPES HAS UNIQUE SITE DESIGN REQUIREMENTS THAT WILL AFFECT THE KINDS OF FIXTURES TO BE INSTALLED IN THESE FACILITIES
- PROVIDE A CLEAR ZONE AROUND BICYCLE PARKING TO AVOID IMPENDING TRAFFIC, INCLUDING NEAR TRANSIT VEHICLE DOORS, ON ADJACENT SIDEWALKS, AND THROUGH LONG-TERM STORAGE FACILITIES.
- LOCATE PARKING IN WELL-LIT AREAS IN FULL VIEW OF SIDEWALKS AND PEDESTRIANS PATHS

2.1.1. SHORT-TERM BICYCLE PARKING FACILITY

THIS TYPE OF BICYCLE PARKING FACILITY FOCUSES ON CONVENIENCE,UTILITY, AND THE SECURITY FOR THE BASIC BICYCLE IT USUALLY DEFINED A PARKING PERIOD OF TWO HOURS OR LESS. PARKING RACKS SHALL BE CONVENIENT TO THE DESTINATION OF THE CYCLIST,MUST BE WITHIN 15000mm TO 30000mm OF THE MAIN ENTRANCE TO THE BUILDING, OR ENTRANCES THAT ARE FREQUENTLY USED BY CYCLISTS. VISIBLE TO THE CYCLIST LOCATED IN AREAS OF HIGH PEDESTRIAN ACTIVITY, AND ALONG THE LINE ADJACENT TO THE BIKEWAYS, WELL DISTRIBUTED, AND SHELTERED OR UNSHELTERED.

- **BICYCLE RACK DESIGN**
  - THERE ARE CERTAIN KEY FEATURES IN DESIGNING A BICYCLE RACK THAT WILL DETERMINE THEIR QUALITY AND SUSTAINABILITY. ONE IS THE MATERIALS TO BE USED; GALVANIZED STEEL, STAINLESS STEEL, OR INDUSTRIAL GRADE MATERIALS ARE PRESCRIBED. WOOD, SOFT METALS, UNTREATED METALS THAT WILL RUST, BRITTLE CAST COMPOSITE THAT MAY CRACK UNDER IMPACT AND STAINLESS STEEL THAT DO NOT WELD STRONGLY SHOULD BE AVOIDED.
  - EPOXY PRIMER SHALL BE APPLIED TO STEEL COMPONENTS OF THE BICYCLE RACKS BEFORE APPLYING TOP COAT OF FINISHING PAINT. IT SHALL ALSO HAVE A SMOOTH OUTER SURFACE THAT WILL NOT DAMAGE OR SCRATCH BICYCLE FRAMES.
  - TWO POINT CONTACT BETWEEN THE BICYCLE AND THE RACK RATHER THAN ONE POINT CONTACT TO ALLOW BOTH FRAME AND AT LEAST ONE WHEEL TO BE LOCKED TO THE RACK AND SUPPORTS THE BICYCLE.
  - IT SHALL BE SPACE EFFICIENT TO ALLOW MANY BICYCLES TO BE PARKED IN A SMALL AREA AND ALSO PROVIDE ADEQUATE SPACE TO FACILITATE PARKING AND LOCKING.
  - SHELTERED RACKS OR COVERED BICYCLE PARKING PROTECTS THE BICYCLE FROM WEATHER AND PROVIDE PROTECTION FROM ACCIDENTAL DAMAGES.
- **INSTALLATION**
  - ALL BICYCLE RACKS SHALL BE FIRMLY SECURED TO THE GROUND OR FLOOR BY BOLTING THEM TO A HARD SURFACE OR FIXING THEM IN CONCRETE. CONCRETE IS A PREFERRED SURFACE FOR MAXIMUM SECURITY ALTHOUGH OTHER SURFACES MAY ALSO BE APPROPRIATE.
- **BICYCLE SHED DESIGN**
  - BICYCLE SHEDS WILL BE USED TO PROVIDE PROTECTION TO BIKE RACKS EXPOSED TO EXTERNAL ENVIRONMENT CONDITIONS.
  - IT MUST BE DURABLE AND SHOULD CONFORM TO STRUCTURAL STANDARDS.
  - THE STEEL MATERIAL TO BE USED SHOULD BE GALVANIZED OR STAINLESS STEEL.
  - EPOXY PRIMER SHALL BE APPLIED TO THE STEEL COMPONENTS OF THE BICYCLE SHED BEFORE APPLYING TOP FINISH COAT OF FINISHING PAINT.
  - THE DIMENSIONS OF THE BICYCLE SHED SHALL DEPEND ON THE AREA COVERAGE OF THE BICYCLE PARKING. A MINIMUM DIMENSION OF 4800mm X 2650 mm SHED CAN COVER FOUR (4) BICYCLE RACKS OR EIGHT (8) BICYCLES.
- **BICYCLE REPAIR STATION**
  - BICYCLE REPAIR STATIONS MUST INCLUDE AT LEAST THE FOLLOWING TOOLS - ALLEN WRENCH SET, AIR PUMP, BIKE MOUNT, SCREWDRIVERS (PHILLIPS AND FLAT, TIRE LEVER, PEDAL WRENCH, AND BOX WRENCH)
  - BICYCLE REPAIR STATIONS MUST BE LOCATED IN LOCATIONS WITH HIGH FOOT TRAFFIC (E.G. TRANSPORTATION, COMMERCIAL, INSTITUTIONAL, AND OTHER FUNDAMENTAL FACILITIES.

2.1.2. LONG-TERM BICYCLE PARKING FACILITY

THIS TYPE OF BICYCLE PARKING FACILITY SUGGEST AN ALL DAY, OVERNIGHT, OR LONGER DURATION PARKING PERIOD. THE LEVEL OF SECURITY AND PROTECTION FROM THE ELEMENTS SHALL BE HIGH, BUT IMMEDIATE CONVENIENCE OF THE PARKING FACILITY MAY NOT BE IMPORTANT. BICYCLE RACKS ARE IN AN ENCLOSED, SECURED AREA WITH CONTROLLED ACCESS OR INDIVIDUAL, SECURE ENCLOSURES OR BICYCLE LOCKERS. EASILY LINK TO TRANSIT AND VARIETY OF OTHER SERVICES

- **BICYCLE CAGES**
  - BICYCLES ARE LOCKED TO RACKS THAT ARE INSTALLED INSIDE A CAGE. THROUGH THE USE OF AN ELECTRONIC KEY PAD, SECURITY PASS CARD OR SIMILAR TYPE OF SYSTEM RESTRICT ACCESS TO BICYCLE PARKING RACKS

2.1.3. TOILET/SHOWER/CHANGE FACILITIES

THE PRESENCE OF TOILET, SHOWER, AND CHANGING FACILITIES IN COMMERCIAL BUILDINGS, TERMINALS, PUBLIC AND PRIVATE INSTITUTIONS, AND OTHER KEY ACTIVITY AREAS ARE GOOD MOTIVATORS FOR PEOPLE TO MAKE USE OF BICYCLES AS A FORM OF TRANSPORTATION. PEOPLE FIND THOSE FACILITIES OF INTEREST ESPECIALLY AMONG COMMUTERS WHO EXPERIENCE LONG DAILY TRAVELS FROM HOME TO THEIR PLACE OF WORK OR STUDY ESPECIALLY IF THEY ARE REQUIRED TO OBSERVE CERTAIN DRESS CODE.

IN THE DESIGN OF SUCH FACILITIES, SPECIAL CONSIDERATION SHOULD BE TAKEN IN TERMS OF THE PROPORTION/RATIO OF LONG-TERM USERS OF BICYCLE PARKING IN THE SITE AS WELL AS THE NUMBER OF SHOWER STALLS TO BE INSTALLED. USUALLY, THE STANDARD DICTATES ONE SHOWER STALL FOR EVERY FOUR OR LESS BICYCLE PARKING SPACES.

3. CRITERIA FOR GOOD QUALITY BICYCLE PARKING

ALTHOUGH THERE ARE A WIDE VARIETY OF DESIGN STRATEGIES THAT CAN BE USED TO IMPLEMENT GOOD QUALITY BICYCLE BICYCLE PARKING, THERE ARE THREE (3) MAIN CRITERIA THAT MUST BE SATISFIED.

3.1. ACCESSIBILITY

- NO OBSTACLES LIKE STEEP SLOPES
- SEPARATE, DEDICATED BICYCLE RAMPS IN TO PARKING AREAS THAT ARE DESIRABLE
- WAY-FINDING SIGNAGE

3.2. SAFETY AND SECURITY

BIKE PARKING AREAS SHALL BE RESERVED FOR USE BY BIKES ONLY. REGULAR MONITORING IS REQUIRED FOR SIGNS OF DAMAGE TO BICYCLES OR RACKS AND MISUSE SUCH AS STORING ITEMS OTHER THAN BICYCLES.

- RACKS OR LOCKERS MADE FROM HIGH QUALITY MATERIALS FIRMLY SECURED TO THE GROUND, FLOOR, OR WALL.
- REGULARLY MONITORED BY BY SECURITY PERSONNEL
- KEEPING THE AREA FREE FROM GARBAGE
- LOCATED IN A WELL LIT-AREA
- SHORT-TERM PARKING LOCATED IN A BUSY, PUBLIC AREA TO INCREASE INFORMAL SURVEILLANCE
- LONG-TERM PARKING LOCATED IN A SEPARATE, ACCESS CONTROLLED AREA

3.3. CONVENIENCE

- EASY TO LOCATE AND ACCESS
- EASY TO USE
- WHEREVER POSSIBLE, SITUATED CLOSE TO BICYCLE FRIENDLY ROUTES

3.4. BUILDING FACILITY

- CONSTRUCTION OF BUILDING FACILITY FOR BICYCLES SHALL CONFORM WITH THE IMPLEMENTING RULES AND REGULATIONS OF THE PHILIPPINE NATIONAL BUILDING CODE AND LOCAL GOVERNMENT ORDINANCES

3.5. STANDARD BICYCLE PARKING DIMENSIONS

3.5.1. PARALLEL PARKING LAYOUT TO THE ROAD/STREET SEE

- ORIENTING THE BIKE RACKS PARALLEL TO THE STREET REQUIRES LESS TOTAL AREA TO PARK BICYCLES AND ALLOW PEDESTRIAN WALKWAYS. FOR THE DESIGN, BEGIN BY SETTING THE BIKE RACK 600 mm FROM THE CURB.
- MULTIPLE INVERTED-U BIKE RACKS SHALL BE SPACED 1800 mm (MIN. 1200 mm) BETWEEN THE NEAREST LEGS. 600 mm - 1200 mm SHALL BE ALLOWED BETWEEN WALL OBSTRUCTION AND THE NEAREST LEG OF THE BIKE RACK.
- THE PEDESTRIAN WALKWAY IS THEN CREATED BY SETTING 2400 mm FROM THE WALL MEASURED TO THE CENTER OF THE RACK.
- FOR THE POST AND RING BIKE RACK, THE MINIMUM DISTANCE, CENTER-TO-CENTER, SHALL BE 2500 mm. 3500 mm SHALL BE USED IN AREAS WITH HIGH BICYCLE PARKING TURNOVER.

3.5.2. PERPENDICULAR PARKING LAYOUT TO ROAD/STREET SEE

- ORIENTING THE BIKE RACKS PERPENDICULAR TO THE ROAD/STREET, REQUIRES BY 1200 mm (MIN. 900 mm) FROM THE CURB. THIS IS MEASURED TO THE CENTER OF THE BIKE RACK. DISTANCE TO THE NEAR LEG OF THE RACK SHALL HAVE AN OFFSET OF 900 mm (MIN. 600 mm) FROM THE CURB.
- WHEN THE BICYCLE IS PROPERLY SECURED, THE FRAME AND WHEEL LOCKED TO THE RACK, THE DISTANCE FORM THE CURB WILL ALLOW FOR ENOUGH SPACE FOR THE REMAINDER OF THE BICYCLE WITHOUT EXTENDING INTO THE STREET.
- BIKE RACKS SHALL BE PLACED 1200 mm (MIN. 900 mm) FROM EACH OTHER, MEASURED FROM THE CENTER OF THE RACK.
- A CLEARANCE OF 900 mm (MIN. 600 mm) FROM WALLS OR OTHER OBSTRUCTION WILL ALLOW ENOUGH SPACE TO MANEUVER THE BICYCLE INTO THE RACK, AS WELL AN ACCESS FROM THE SIDE, TO LOCK/UNLOCK THE BIKE FROM THE RACK.
- A SETBACK OF 3000 mm FROM BUILDINGS/WALLS TO THE BIKE RACKS, THIS WILL CREATE 1800 mm WALKWAY FOR PEDESTRIAN TRAFFIC.

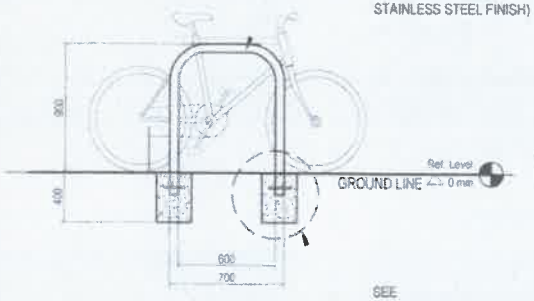
3.5.3. BIKE PARKING LOT LAYOUT SEE

- WHEN DESIGNING A LAYOUT THAT WILL CREATE A BIKE PARKING LOT, CONSISTING OF MULTIPLE COLUMNS OF BIKE RACKS, ONE KEY IS TO ENSURE THERE IS USABLE AISLE BETWEEN THE ROWS OF RACKS. THIS WILL LET THE CYCLIST EASILY FLOW IN AND OUT OF THE BIKE PARKING AREA AND RACKS SPECIFICALLY.
- YOU CAN START IN A CORNER AND PLACE THE FIRST RACK 900 mm (MIN. 600 mm) FROM A PARALLEL WALL. THEN SET IT BACK 600 mm - 900 mm FROM THE PERPENDICULAR WALL, MEASURED TO THE NEAREST LEG. THIS DISTANCE IS NEEDED TO ALLOW SPACE FOR THE WHEEL AND FRAME TO ALIGN WITH THE RACK FOR PROPER LOCKING. THE PARALLEL DISTANCE BETWEEN THE TWO (2) RACKS IS 1200 mm (MIN. 900 mm) WHILE PERPENDICULAR DISTANCE BETWEEN TWO (2) RACKS IS 2400 mm (MIN. 1800 mm).
- SETBACKS TO THE PERPENDICULAR WALLS CAN ALSO BE MEASURED AT 900 MM - 1200 mm TO THE CENTER OF THE RACK.

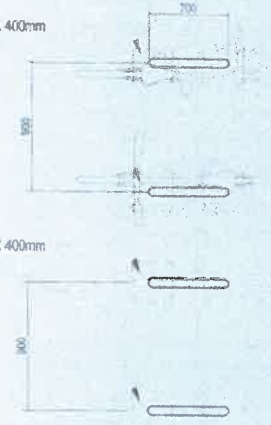
REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS **BUREAU OF DESIGN** BUILDINGS DIVISION BONIFACIO DRIVE, PORT AREA, MANILA	PROJECT AND LOCATION: PROPOSED: UPDATED GUIDELINES AND STANDARD DRAWINGS OF BICYCLE FACILITIES (SET 3) (STANDARD PLANS FOR BIKE RACKS AND BIKE SHED)	SHEET CONTENTS: GENERAL NOTES	DESIGNED: DPWH-BOD PREPARED: ARMIE BERNARDO ARCHITECT II CHECKED: FRANCIS G. SERRANO ARCHITECT IV	SUBMITTED: ERIBERTO B. SIOSON CHIEF, BUILDINGS DIVISION	RECOMMENDING APPROVAL: (SEE COVER SHEET FOR SIGNATURE) DEC 07 2022 EDWIN C. MATANGUIHAN OFFICER-IN-CHARGE BUREAU OF DESIGN	(SEE COVER SHEET FOR SIGNATURE) ERIC A. AYAPANA ASSISTANT SECRETARY FOR INFRASTRUCTURE AND TECHNICAL SERVICES	APPROVED: (SEE COVER SHEET FOR SIGNATURE) MAXIMO L. CARVAJAL UNDERSECRETARY FOR INFRASTRUCTURE AND TECHNICAL SERVICES	SET NO. BOD B	SHEET NO. A-0 7 11

BIKE RACK CRITERIA MATRIX:

THE SELECTION OF TYPE OF BIKE RACKS TO BE INSTALLED WILL BE AT THE DISCRETION OF THE PROPERTY OWNER



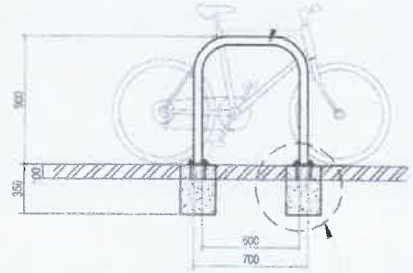
SECTION



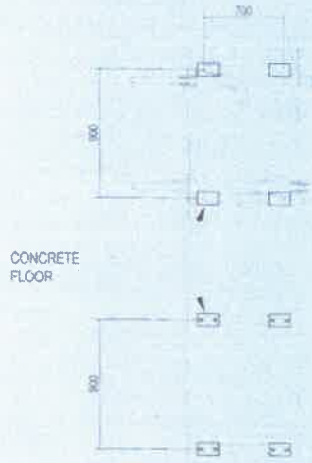
PLAN

APPLICABLE IF **THERE ARE NO UTILITIES** THAT WILL BE AFFECTED UNDERGROUND

1 A-1 INVERTED - U RACK (IN-GROUND) NTS



SECTION



PLAN

APPLICABLE IF **THERE ARE NO UTILITIES** THAT WILL BE AFFECTED UNDERGROUND

2 A-1 INVERTED - U RACK (SURFACE MOUNTED) NTS

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
BUILDINGS DIVISION
BONIFACIO DRIVE PORT AREA, MANILA

PROJECT AND LOCATION:
PROPOSED
UPDATED GUIDELINES AND STANDARD DRAWINGS OF BICYCLE FACILITIES
(SET 3)
(STANDARD PLANS FOR BIKE RACKS AND BIKE SHED)

SHEET CONTENTS:
INVERTED - U RACK (IN-GROUND & SURFACE MOUNTED)
- PLAN
- SECTION
- PERSPECTIVE

DESIGNED: DOTr/DPWH-BOD
PREPARED: RUDY BERNARDO ARCHITECT III
CHECKED: FRANCIS G. SERRANO ARCHITECT III

SUBMITTED:
ERIBERTO B. SIOSON
CHIEF, BUILDINGS DIVISION

RECOMMENDING APPROVAL:
EDWIN C. MATANGUIHAN
OFFICER-IN-CHARGE
BUREAU OF DESIGN

ERIC A. AYAPANA

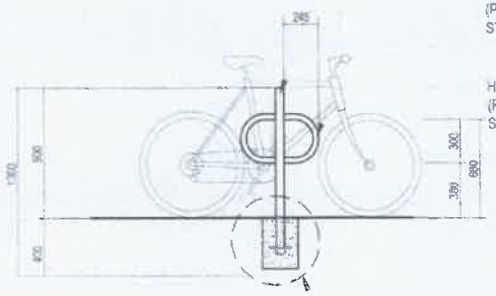
APPROVED:
MAXIMO L. CARVAJAL

SET NO.: BOD II

SHEET NO.: A-1 6 11

BIKE RACK CRITERIA MATRIX:

THE SELECTION OF TYPE OF BIKE RACKS TO BE INSTALLED WILL BE AT THE DISCRETION OF THE PROPERTY OWNER

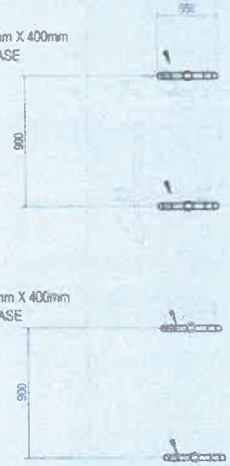


HSS 60mm Ø x 4mm THK POST (PAINTED/POWDER-COATED STAINLESS STEEL FINISH)

HSS 40mm Ø x 3mm THK RING (PAINTED/POWDER-COATED/STAINLESS STEEL FINISH

SEE STRUCTURAL DETAIL

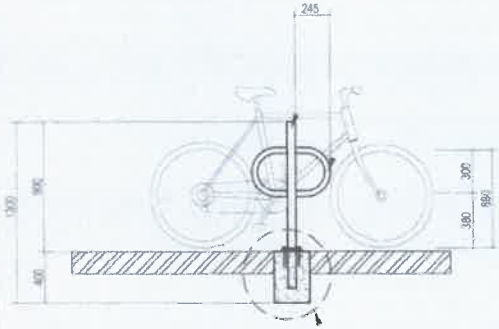
SECTION



PLAN

APPLICABLE IF **THERE ARE NO UTILITIES** THAT WILL BE AFFECTED UNDERGROUND

1 A-2 POST AND RING RACK (IN-GROUND) NTS



HSS 60mm Ø x 4mm THK POST (PAINTED/POWDER-COATED/ STAINLESS STEEL FINISH)

HSS 40mm Ø x 3mm THK RING (PAINTED/POWDER-COATED/ STAINLESS STEEL FINISH)

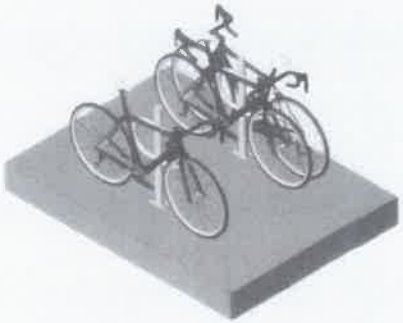
CONCRETE FLOOR

SEE STRUCTURAL DETAIL

SECTION

PLAN

APPLICABLE IF **THERE ARE NO UTILITIES** THAT WILL BE AFFECTED UNDERGROUND



2 A-2 POST AND RING RACK (SURFACE MOUNTED) NTS

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS **BUREAU OF DESIGN** BUILDINGS DIVISION BONIFACIO DRIVE PORT AREA, MANILA	PROJECT AND LOCATION PROPOSED UPDATED GUIDELINES AND STANDARD DRAWINGS OF BICYCLE FACILITIES (SET 2) STANDARD PLANS FOR BIKE RACKS AND BIKE SHED	SHEET CONTENTS POST AND RING RACK (IN-GROUND & SURFACE MOUNTED) • PLAN • SECTION • PERSPECTIVE	DESIGNED DOTr/DPWH-BOD PREPARED IRMAN B. BERNARDO ARCHITECT III CHECKED FRANCIS G. SERRANO ARCHITECT IV	SUBMITTED ERISERTO B. SIOSON CHIEF, BUILDINGS DIVISION	RECOMMENDING APPROVAL SEE COVER SHEET FOR SIGNATURE DEC 07 2022 EDWIN C. MATANGUIHAN OFFICER-IN-CHARGE BUREAU OF DESIGN	SEE COVER SHEET FOR SIGNATURE ERIC A. AYAPANA	APPROVED SEE COVER SHEET FOR SIGNATURE MAXIMO L. CARVAJAL	SET NO. BOD 8	SHEET NO. A-2 8 12

BIKE RACK CRITERIA MATRIX:

THE SELECTION OF TYPE OF BIKE RACKS TO BE INSTALLED WILL BE AT THE DISCRETION OF THE PROPERTY OWNER.

GUIDELINES:

AT LEAST 2440MM OF FLOOR SPACE FROM THE WALL IS NEEDED. 1220MM FOR THE BIKE STORAGE AND 1220MM FOR THE AISLE.

THE AISLE SPACE ALLOWS FOR ENOUGH ROOM TO RAISE OR LOWER THE BIKES FOR MANEUVERING OF THE BIKES IN AND OUT OF THE BIKE STORAGE AREA. HEIGHT OF EACH RACK IS STAGGERED SO THAT HANDLE BARS WILL NOT OVERLAP.

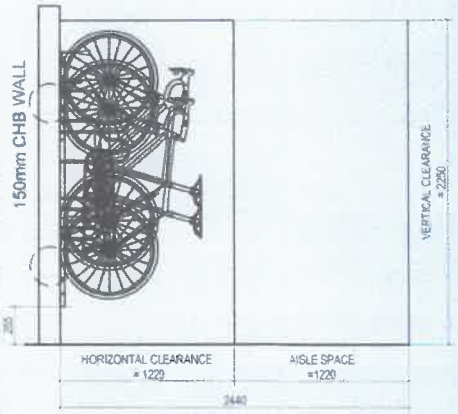
THIS TYPE OF BIKE RACK IS AN ALTERNATIVE OPTION TO THE WALL-MOUNTED VERTICAL STORAGE RACK (WHEN MOUNTING TO WALLS IS NOT FEASIBLE DUE TO OBSTRUCTIONS OR EMBEDMENTS IN WALLS)

ADVANTAGE: SIMPLE INSTALLATION AND MINIMIZES SPACE FOR OBSTRUCTION. CAN BE EASILY DETACHED AND RELOCATED.

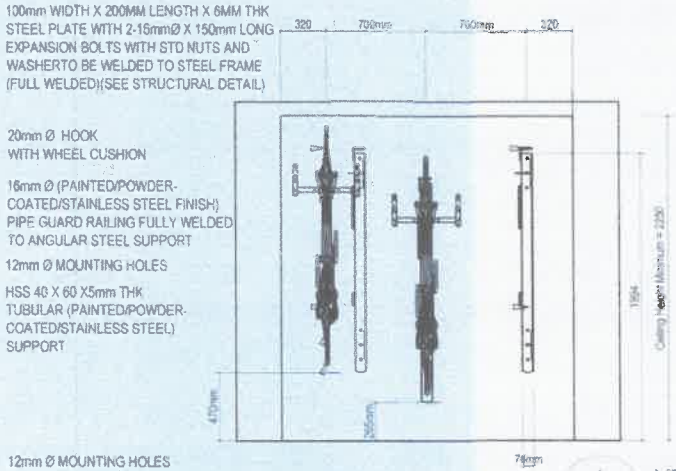
NOTES:

PROVIDE A CLEAR ZONE AROUND BICYCLE PARKING TO AVOID IMPENDING TRAFFIC, INCLUDING NEAR TRANSIT VEHICLE DOORS, ON ADJACENT SIDEWALKS AND THROUGH LONG-TERM STORAGE FACILITIES.

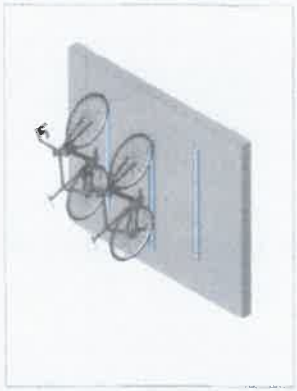
LOCATE PARKING IN WELL-LIT AREAS IN FULL VIEW OF SIDEWALKS AND PEDESTRIAN PATHS.



SECTION

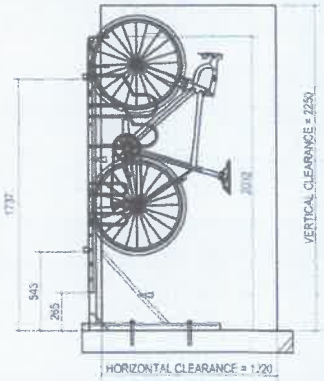


FRONT ELEVATION

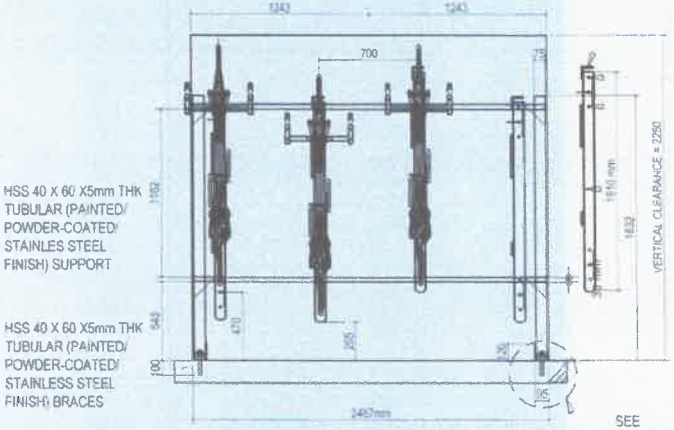


1 A-3 VERTICAL STORAGE (WALL-MOUNTED)

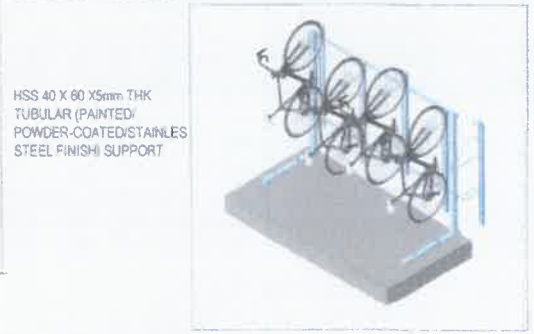
NTS



SECTION



FRONT ELEVATION



SEE STRUCTURAL DETAIL

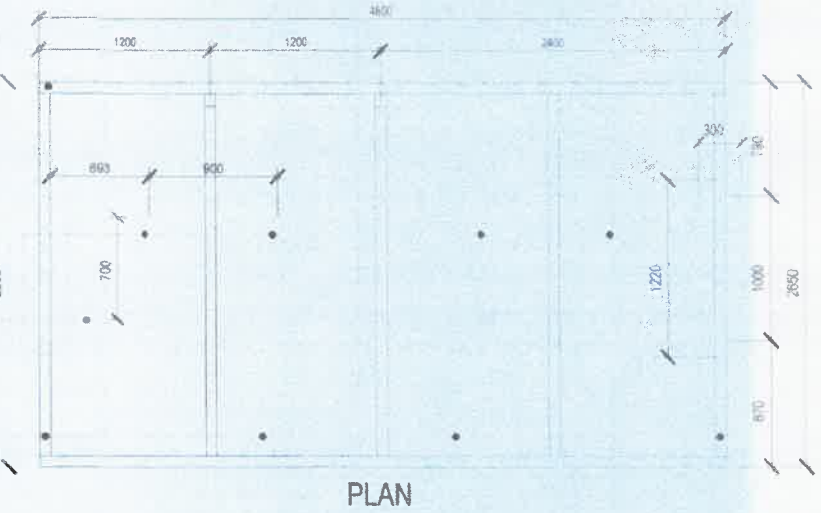
2 A-3 VERTICAL STORAGE (STANDING RACK)

NTS

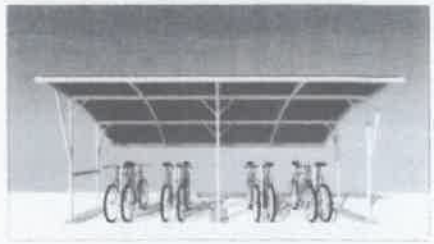
REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS **BUREAU OF DESIGN** BUILDINGS DIVISION BONIFACIO DRIVE PORT AREA, MANILA	PROJECT AND LOCATION: PROPOSED: UPDATED GUIDELINES AND STANDARD DRAWINGS OF BICYCLE FACILITIES (SET 3) (STANDARD PLANS FOR BIKE RACKS AND BIKE SHED)	SHEET CONTENTS: VERTICAL STORAGE (WALL MOUNTED & STANDING RACK) • BIKE RACK CRITERIA MATRIX • GUIDELINES & NOTES • SECTION • FRONT ELEVATION • PERSPECTIVE	DESIGNED: DOTr/DPWH-BOD PREPARED: IRMA B. BERNARDO ARCHITECT III CHECKED: FRANCIS G. SERRANO ARCHITECT IV	SUBMITTED: ERIBERTO B. SIOSON CHIEF, BUILDINGS DIVISION	RECOMMENDING APPROVAL: SEE COVER SHEET FOR SIGNATURE DEC 07 2022 EDWIN C. MATANGUIHAN OFFICER-IN-CHARGE BUREAU OF DESIGN	SEE COVER SHEET FOR SIGNATURE ERIC A. AYAPANA	APPROVED: SEE COVER SHEET FOR SIGNATURE MAXIMO L. CARVAJAL	SET NO. BOD 8	SHEET NO. A-3 7 11

NOTES:

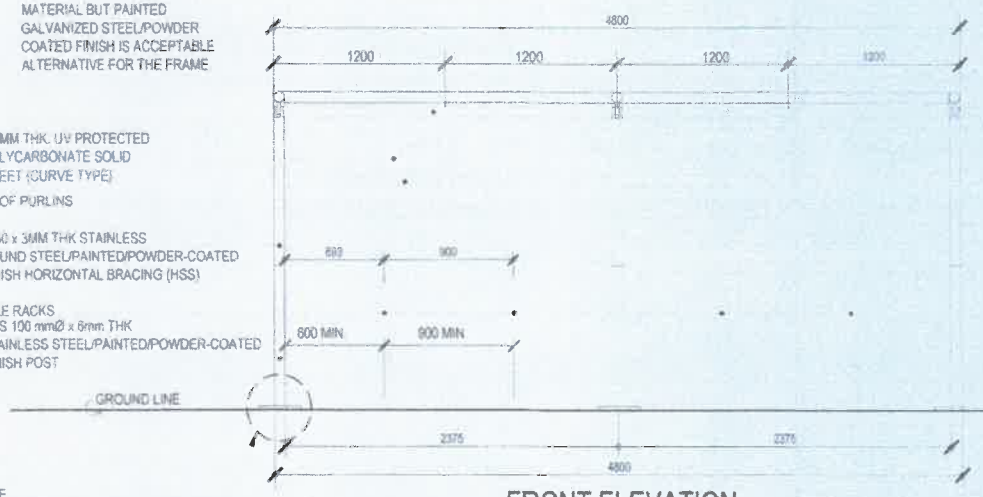
1. A SHELTER IS RECOMMENDED FOR EVERY CLUSTER OF FOUR INVERTED U-LOOPS. EACH FOUR-LOOP RACK WILL BE ABLE TO SECURE UP TO EIGHT (8) BICYCLES. THE SHELTER WILL BE SECURED TO THE GROUND BY BOLTS.
2. FOR EVERY ADDITIONAL RACK, THE BIKE SHED MUST EXTEND ACCORDINGLY AND IN COMPLIANCE TO THE MINIMUM SPACE REQUIREMENTS.
3. THE MODULAR AND COMPACT NATURE OF THE SHEDS MEAN THAT THEY CAN BE USED IN A VARIETY OF LAYOUTS AND LOCATIONS.
4. THE SHELTER SHOULD ALSO BE DURABLE, WATER-RESISTANT AND FUNCTIONAL. STAINLESS STEEL IS THE PREFERRED MATERIAL BUT PAINTED GALVANIZED STEEL/POWDER COATED FINISH IS ACCEPTABLE ALTERNATIVE FOR THE FRAME.



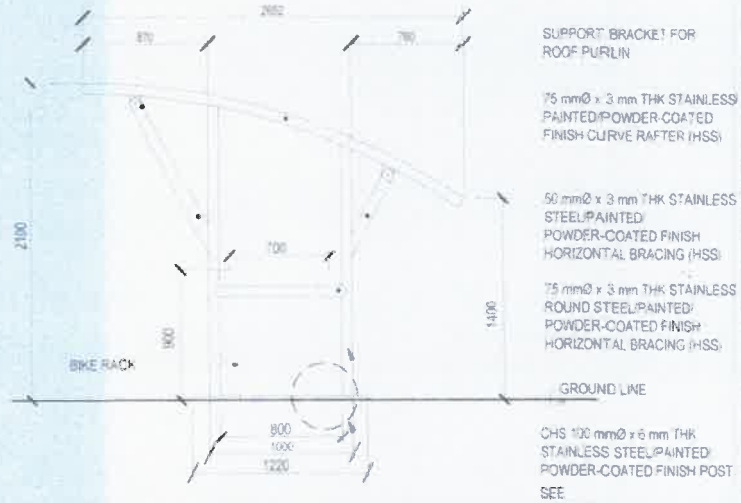
PLAN



PERSPECTIVE



FRONT ELEVATION

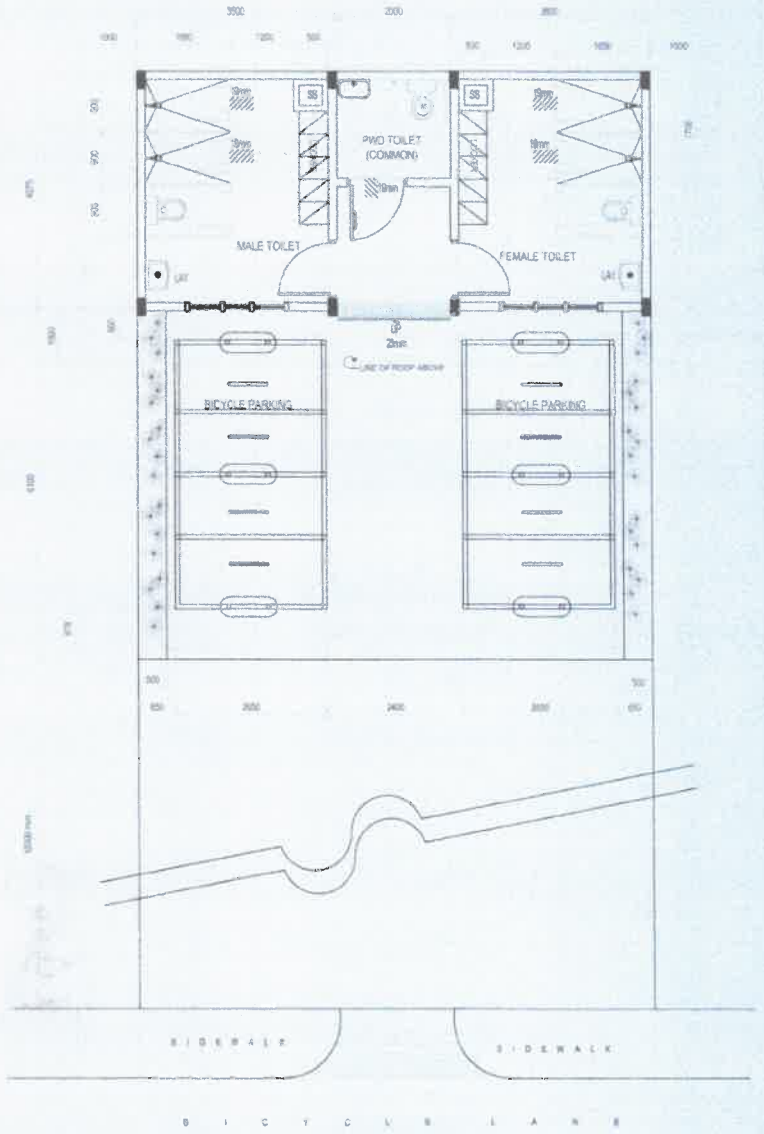


SIDE ELEVATION

1 / A-4 **PROPOSED BIKE SHED** NTS

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
BUILDINGS DIVISION
BONIFACIO DRIVE PORT AREA, MANILA

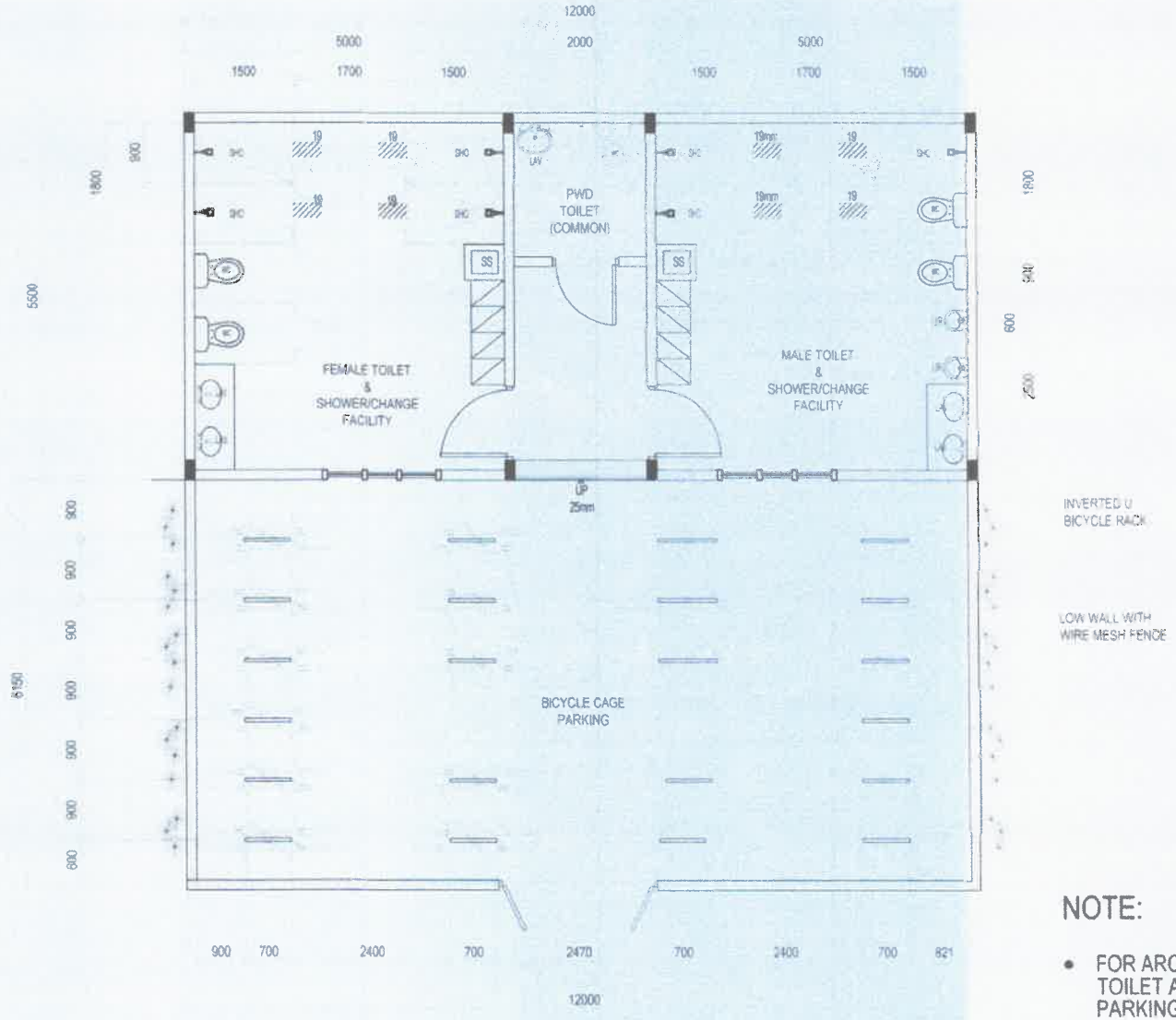
PROJECT AND LOCATION	SHEET CONTENTS	DESIGNED	SUBMITTED	RECOMMENDING APPROVAL		APPROVED	SET NO	SHEET NO
PROPOSED: UPDATED GUIDELINES AND STANDARD DRAWINGS OF BICYCLE FACILITIES (BF's) (STANDARD PLANS FOR BIKE RACKS AND BIKE SHED)	BIKE SHED • PLAN • FRONT ELEVATION • LEFT SIDE ELEVATION • NOTES	DOT/DPWH-BOD PREPARED: IRMA B. BERNARDO ARCHITECT III CHECKED: FRANCIS G. SERRANO ARCHITECT IV	ERIBERTO B. SIOSON CHIEF, BUILDINGS DIVISION	DEC 07 2022 EDWIN C. MATANGUIHAN OFFICER-IN-CHARGE BUREAU OF DESIGN	ERIC A. AYAPANA	MAXIMO L. CARVAJAL	BOD 8	A-4 6 11



FLOOR PLAN

PERSPECTIVE

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS **BUREAU OF DESIGN** BUILDINGS DIVISION BONIFACIO DRIVE PORT AREA, MANILA	PROJECT AND LOCATION PROPOSED: UPDATED GUIDELINES AND STANDARD DRAWINGS OF BICYCLE FACILITIES (SET 3) (STANDARD ARCHITECTURAL CONCEPTUAL PLANS OF TOILET/SHOWER/CHANGE FACILITY AND SHORT-TERM BICYCLE PARKING FACILITY)	SHEET CONTENTS TOILET • PLAN • PERSPECTIVE	DESIGNED: DPWH-BOD PREPARED: RICAR BERNARDO ARCHITECT III CHECKED: FRANCIS G. SERRANO ARCHITECT IV	SUBMITTED: ERIBERTO B. SIOSON CHIEF, BUILDINGS DIVISION	RECOMMENDING APPROVAL: SEE COVER SHEET FOR SIGNATURE DEC 07 2022 EDWIN C. MATANGUIHAN OFFICER-IN-CHARGE BUREAU OF DESIGN	SEE COVER SHEET FOR SIGNATURE ERIC A. AYAPANA	APPROVED: SEE COVER SHEET FOR SIGNATURE MAXIMO L. CARVAJAL	SET NO. BOD E	SHEET NO. A-5 5 of 11



FLOOR PLAN

NOTE:

- FOR ARCHITECTURAL FACADE OF TOILET ADOPT SHORT-TERM BICYCLE PARKING FACILITY

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
BUILDINGS DIVISION
BONIFACIO DRIVE, PORT AREA, MANILA

PROJECT AND LOCATION:
PROPOSED:
UPDATED GUIDELINES AND STANDARD DRAWINGS OF BICYCLE FACILITIES
(OFFICE OF ARCHITECTURAL CONCEPTUAL PLAN OF TOILET/SHOWER/CHANGE FACILITY AND LONG-TERM BICYCLE PARKING FACILITY)

SHEET CONTENTS
TOILET
- PLAN
- NOTE

DESIGNED: DPWH-BOD
PREPARED: IRMAE BERNARDO, ARCHITECT III
CHECKED: FRANCIS G. SERRANO, ARCHITECT IV

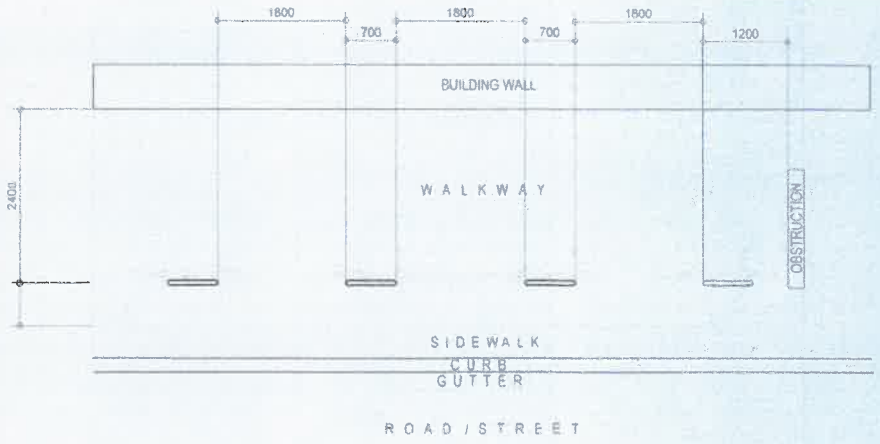
SUBMITTED:
ERIBERTO B. SIOSON
CHIEF, BUILDINGS DIVISION

RECOMMENDING APPROVAL:
DEC 07 2022
EDWIN C. MATANGUIHAN
OFFICER-IN-CHARGE
BUREAU OF DESIGN

ERIC A. AYAPANA

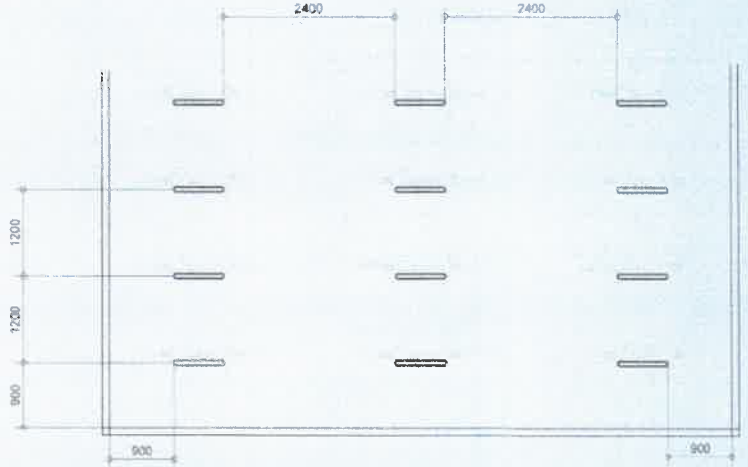
APPROVED:
MAXIMO L. CARVAJAL

SET NO: BOD B
SHEET NO: A-6 | 11



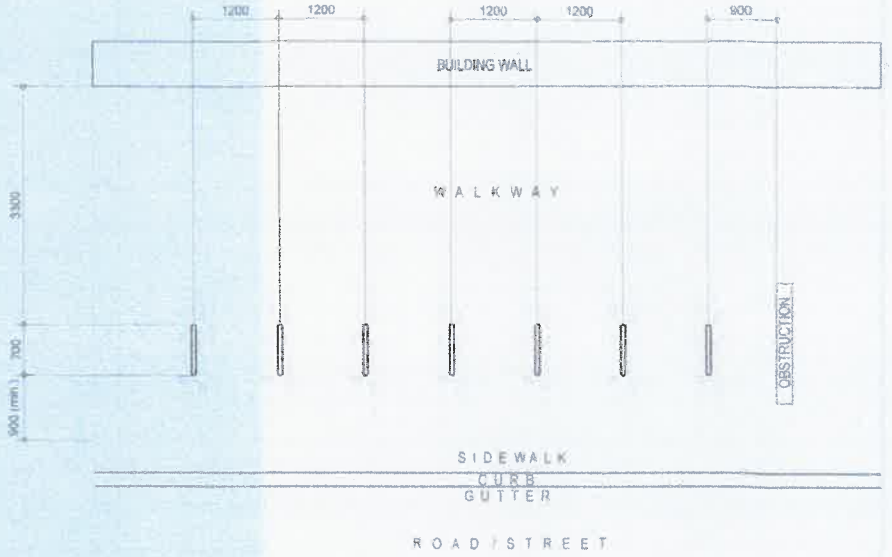
PARALLEL PARKING LAYOUT TO THE ROAD/STREET

1 / A-7 NTS



BIKE PARKING LOT LAYOUT

3 / A-7 NTS



PERPENDICULAR PARKING LAYOUT TO THE ROAD/STREET

2 / A-7 NTS

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
BUILDINGS DIVISION
BONIFACIO DRIVE PORT AREA, MANILA

PROJECT AND LOCATION
PROPOSED:
UPDATED GUIDELINES AND STANDARD DRAWINGS OF BICYCLE FACILITIES

SHEET CONTENTS:
PARALLEL PARKING LAYOUT TO THE ROAD/STREET
PERPENDICULAR PARKING LAYOUT TO THE ROAD/STREET
BIKE PARKING LOT LAYOUT TO THE ROAD/STREET

DESIGNED: DOT//DPWH-BOD
PREPARED: IRMA O. BERNARDO, ARCHITECT III
CHECKED: FRANCIS O. SERRANO, ARCHITECT IV

SUBMITTED:
ERIBERTO B. SIOSON
CHIEF, BUILDINGS DIVISION

RECOMMENDING APPROVAL:
SEE COVER SHEET FOR SIGNATURE
DEC 07 2022
EDWIN C. MATANGUIHAN
OFFICER-IN-CHARGE
BUREAU OF DESIGN

SEE COVER SHEET FOR SIGNATURE
ERIC A. AYAPANA

APPROVED:
SEE COVER SHEET FOR SIGNATURE
MAXIMO L. CARVAJAL

SET NO.: BOD B

SHEET NO.: A-7 7 11

DESIGN CRITERIA :

1. DESIGN LOADS (DL)

CONCRETE	24.00 kN/m³
STEEL	77.00 kN/m³
SOIL	18.00 kN/m³
WOOD NG. PUNLAS	0.20 kPa
FLOOR FINISH	1.00 kPa
150MM THK CHB WALL	2.73 kPa
BICYCLE WEIGHT	0.12 KN (25.00 LBS)

2. LIVE LOADS (LL) :

ROOF	0.60 kPa

3. WIND LOAD (WL)

THE WIND LOAD ON STRUCTURE SHALL BE CALCULATED, BASED ON SECTION 207 OF THE NATIONAL STRUCTURAL CODE OF THE PHILIPPINES (NSCP 2015) , VOLUME 1--BUILDINGS, TOWERS AND OTHER STRUCTURES.

WIND PRESSURE :

$P = qGC_p - q_i (GC_{pi})$ in N/m^2

BASIC WIND VELOCITY , = 270 kM/hour

VELOCITY PRESSURE AT HEIGHT 'Z',

$q = 0.613 K_z K_{zt} K_d V^2$ (N/m^2); V in m/s

WHERE, V IN KM/HOUR

K_{zt} = TOPOGRAPHIC FACTOR = 1.00

K_z = EXPOSURE COEFFICIENTS = $2.01(z/z_g)^{2/\alpha}$

z_g = GRADIENT HEIGHT = 457M/a AND = 5

AND, Q_z = 0.9683 X 20.174 M^2 KN/M

4. SEISMIC LOAD (SL):

THE SEISMIC LOAD ON STRUCTURE SHALL BE CALCULATED, BASED ON SECTION 208 OF THE NATIONAL STRUCTURAL CODE OF THE PHILIPPINES (NSCP 2015) , VOLUME 1--BUILDINGS, TOWERS AND OTHER STRUCTURES.

5. MATERIALS ALLOWABLE STRESSES AND SPECIFICATIONS :

5.1 ALL STRUCTURAL STEEL (STEEL PLATES, RODS & HSS) SHALL HAVE A MINIMUM YIELD STRENGTH,
Fy = 248 MPa (36 Ksi) AND SHALL CONFORM TO ASTM A36 SPECIFICATIONS.

5.2 ALL STRUCTURAL STAINLESS STEEL SHALL HAVE A MINIMUM YIELD STRENGTH,
Fy = 110.50 MPa (16 Ksi) AND SHALL CONFORM TO ASTM A 304 OR HIGHER SPECIFICATIONS.

5.3 ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC SPECIFICATIONS (9TH EDITION) AND CODE OF STANDARD PRACTICE AS AMENDED TO DATE.

5.4 UNLESS OTHERWISE SPECIFIED ON PLANS, REINFORCING BARS SHALL BE DEFORMED WITH A MINIMUM YIELD STRENGTH:
16MM∅ AND ABOVE: fy = 275 MPa (40,000 PSI).
BELOW 12MM∅: fy = 227 MPa (33,000 PSI).

5.5 UNLESS OTHERWISE INDICATED ALL ANCHOR BOLTS SHALL CONFORM TO ASTM A307 SPECIFICATIONS.
Fv = 413.64 MPa

5.6 UNLESS OTHERWISE INDICATED ALL WELDS SHALL BE E70XX ELECTRODES. SHALL CONFORM TO AWS SPECIFICATIONS.
Fv = 476.00 MPa (70 Ksi)

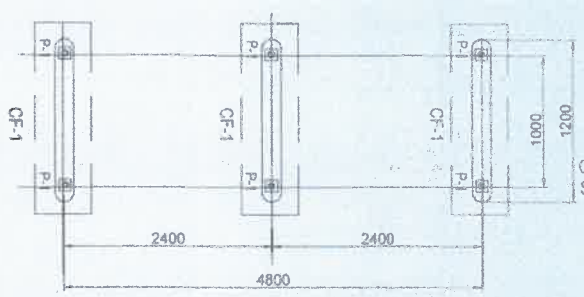
6.1 FOR COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS.
FC' = 20.70 MPa (3 Ksi) FOR FOOTINGS AND PEDESTAL
FC' = 17.00 MPa (2.5 Ksi) FOR SLAB ON FILL

6. FOUNDATION :

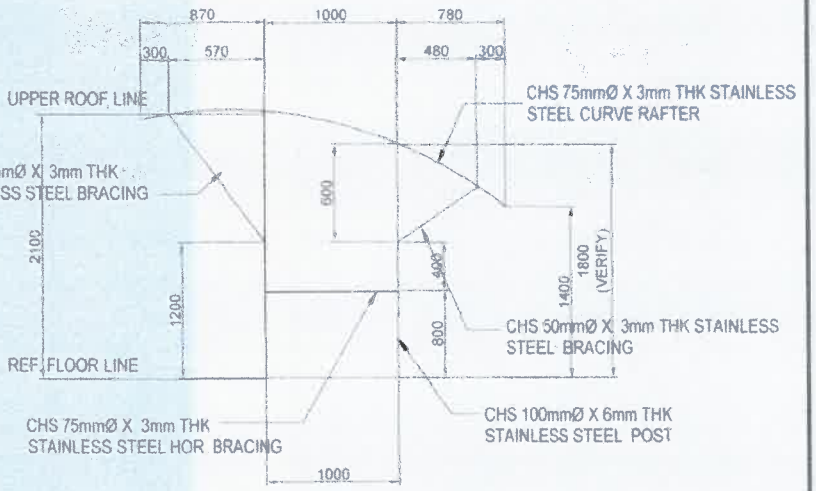
ASSUMED ALLOWABLE SOIL BEARING CAPACITY OF 143.64 KPa.

NOTE

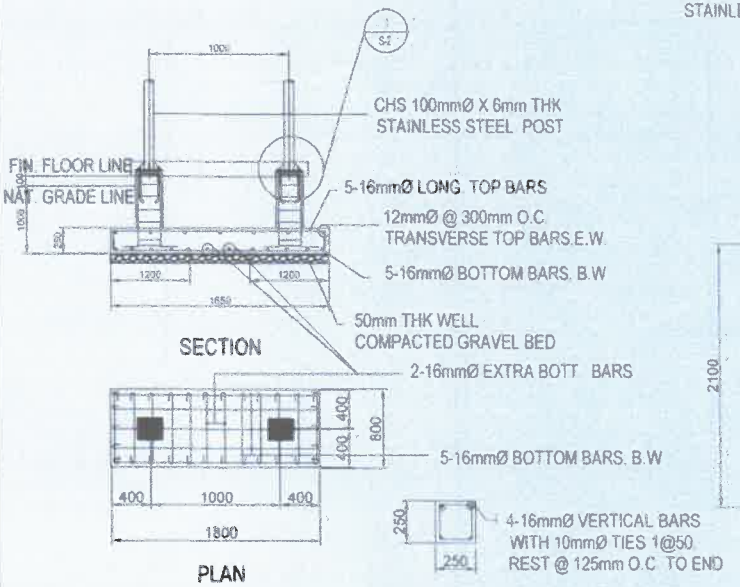
1. IN CASE THE ACTUAL SOIL BEARING CAPACITY IS FOUND LESS THAN THE ASSUMED DESIGN VALUE OF 143.64 KPa, NOTIFY THE BUREAU OF DESIGN , DPWH FOR PROPER REVISION OF FOOTINGS.
2. NO FOOTING SHALL REST ON FILL.



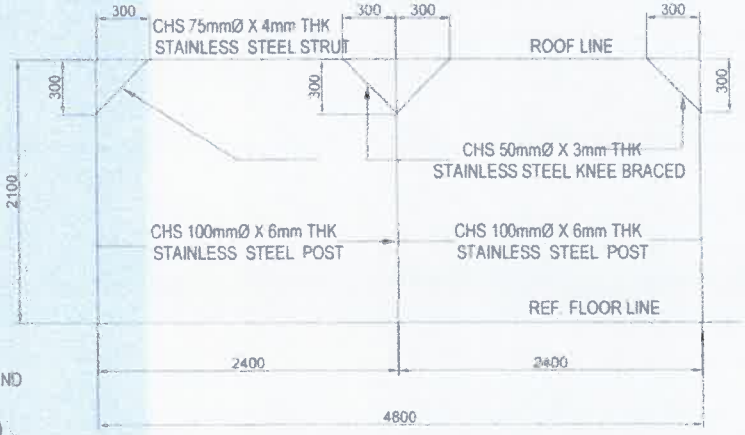
1 / S-1 FOUNDATION PLAN
NTS



3 / S-1 TRANSVERSE FRAME ELEV. (DIAGRAM)
NTS



2 / S-1 DET. OF COMBINED FOOTING (CF-1)
NTS



4 / S-1 LONGITUDINAL FRAME ELEV. (DIAGRAM)
NTS

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
BUILDINGS DIVISION
BONIFACIO DRIVE PORT AREA, MANILA

PROJECT AND LOCATION
PROPOSED
UPDATED GUIDELINES AND STANDARD DRAWINGS OF BICYCLE FACILITIES
(STANDARD PLANS FOR BIKE RACKS AND BIKE SHED)

SHEET CONTENTS:
DESIGN CRITERIA
FOUNDATION PLAN
DETAIL OF FOOTING (CF-1)
DETAIL SECT. OF PEDESTAL
TRANSVERSE FRAME ELEV.
LONG. FRAME ELEV.

DESIGNED
DCTV/DPWH-BOD
PREPARED
HILARION D. ESTABILLO JR.
ENGINEER
CHECKED
WILFREDO S. VALLO
ENGINEER V / CHIEF, STRUCTURAL SECTION

SUBMITTED
ERIBERTO B. SIOSON
CHIEF, BUILDINGS DIVISION

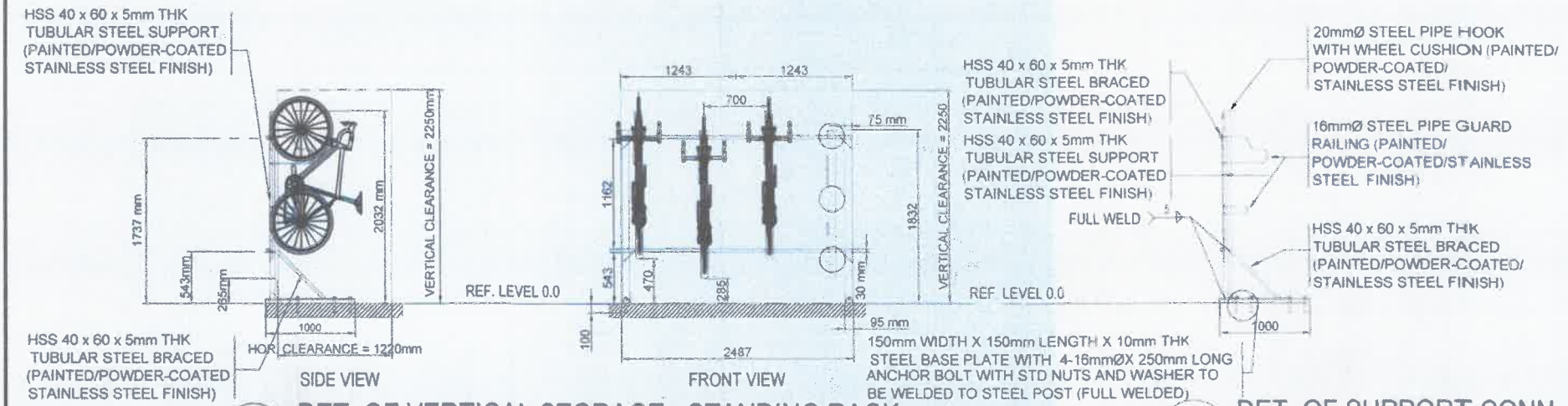
RECOMMENDING APPROVAL
DEC 07 2022
EDWIN C. MATANGUIHAN
OFFICER-IN-CHARGE
BUREAU OF DESIGN

ERIC A. AYAPANA

APPROVED
MAXIMO L. CARVAJAL

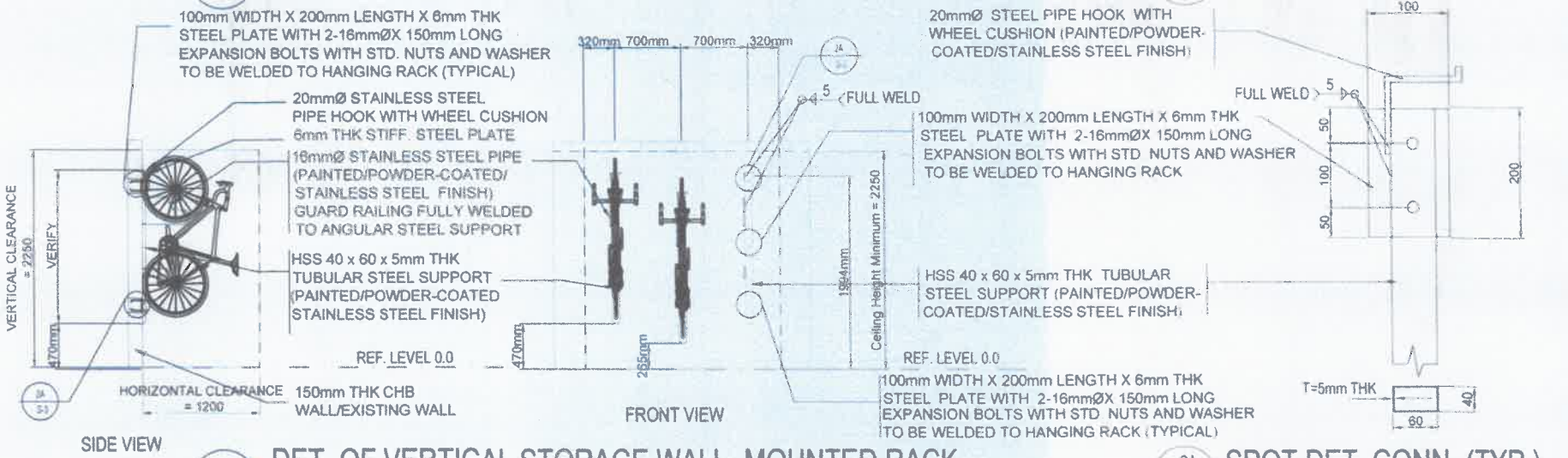
SET NO.
BOD

SHEET NO.
S-1
4 / 11



1 S-3 DET. OF VERTICAL STORAGE - STANDING RACK
NTS

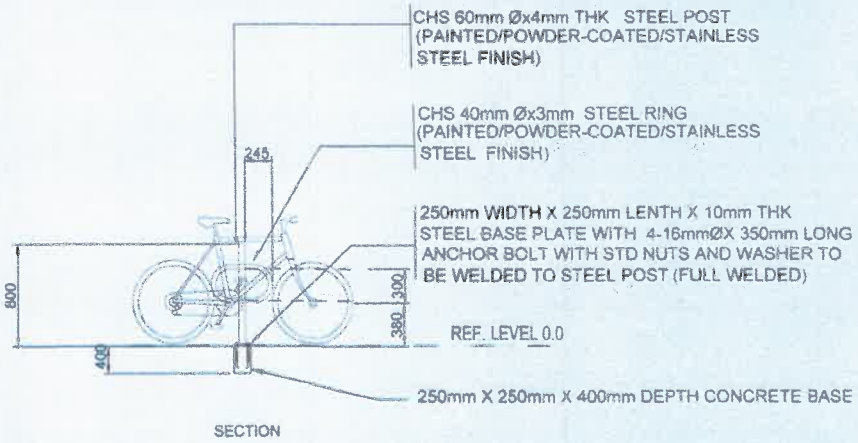
1A S-3 DET. OF SUPPORT CONN.
NTS

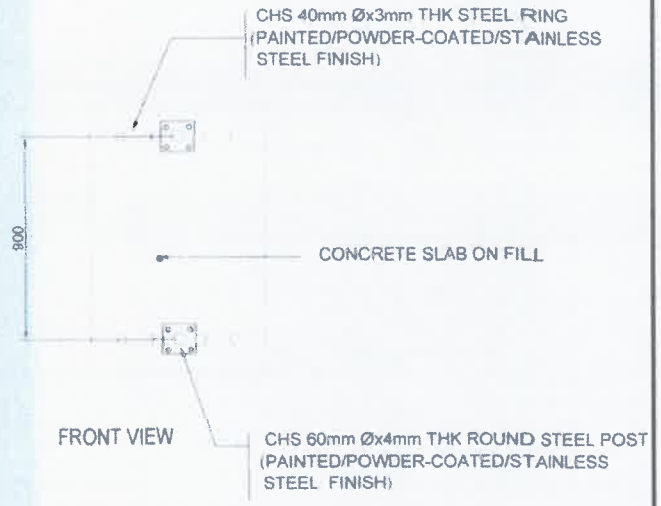


2 S-3 DET. OF VERTICAL STORAGE WALL- MOUNTED RACK
NTS

2A S-3 SPOT DET. CONN. (TYP.)
NTS

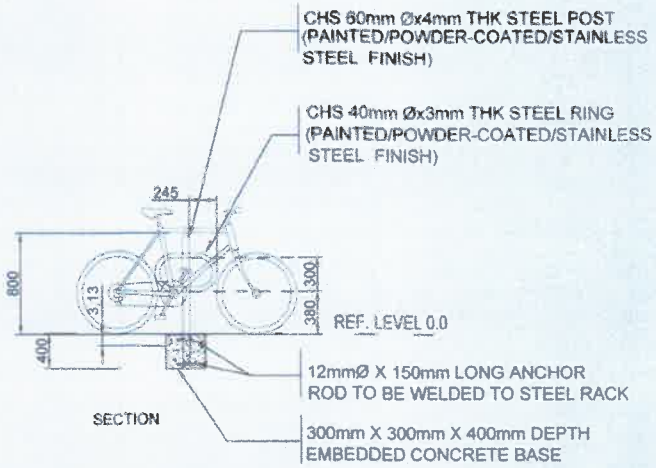
REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS **BUREAU OF DESIGN** BUILDINGS DIVISION BONIFACIO DRIVE PORT AREA, MANILA	PROJECT AND LOCATION PROPOSED UPDATED GUIDELINES AND STANDARD DRAWINGS OF BICYCLE FACILITIES (SET 3) (STANDARD PLANS FOR BIKE RACKS AND BIKE SHED)	SHEET CONTENTS DET. OF VERT. STORAGE-STANDING RACK DET OF VERT. STORAGE WALL MOUNTED RACK DET. SUPPORT CONNECTION	DESIGNED DOT/DPWH-BOD PREPARED HILARION D. ESTABILLO JR ENGINEER CHECKED WILFREDO S. VALLO ENGINEER III - STRUCTURAL SECTION	SUBMITTED ERIBERTO B. SIOSON CHIEF, BUILDINGS DIVISION	RECOMMENDING APPROVAL DEC 07 2022 EDWIN C. MATANGUIHAN OFFICER-IN-CHARGE BUREAU OF DESIGN ERIC A. AYAPANA	APPROVED MAXIMO L. CARVAJAL	SET NO. BOD 8	SHEET NO. S-3 4 11





1 S-4 POST AND RING RACK (SURFACE-MOUNTED)

NTS



FRONT VIEW

2 S-4 POST AND RING RACK (IN-GROUND)

NTS

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
BUILDINGS DIVISION
BONIFACIO DRIVE PORT AREA, MANILA

PROJECT AND LOCATION:
PROPOSED
UPDATED GUIDELINES AND STANDARD DRAWINGS OF BICYCLE FACILITIES
SHEET II
(STANDARD PLANS FOR BIKE RACKS AND BIKE SHED)

SHEET CONTENTS:
DET. OF POST AND RING RACK (SURFACE-MOUNTED)
DET. OF POST AND RING RACK (IN-GROUND)

DESIGNED
DOTr/DPWH-BOD

PREPARED
HILARION D. ESTARES JR.
ENGINEER

CHECKED
WILFREDO [illegible]
ENGINEER V / SECTIONAL HEAD

SUBMITTED
ERIBERTO S. SIOSON
CHIEF, BUILDINGS DIVISION

RECOMMENDING APPROVAL
DEC 07 2022
EDWIN C. MATANGUIHAN
OFFICER-IN-CHARGE
BUREAU OF DESIGN

ERIC A. AYAPANA

APPROVED
MAXIMO L. CARVAJAL

SET NO.
BOD
8

SHEET NO.
S-4
4 11