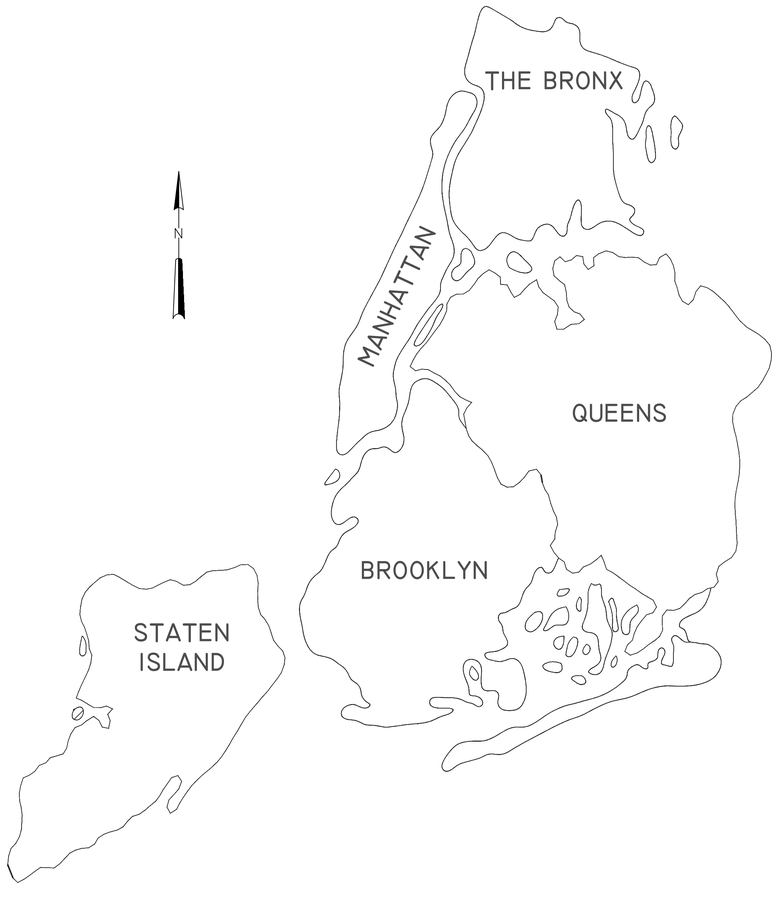
# NEW YORK CITY DEPARTMENT OF TRANSPORTATION
## TRANSPORTATION PLANNING & MANAGEMENT

## TYPICAL PAVEMENT MARKINGS & GEOMETRY

CITY OF NEW YORK CITY, ALL COUNTIES
MAY 2024 UPDATE




Roger K. Weld, P.E.,
Chief Engineer, Transportation Planning & Management Division
New York City Department of Transportation

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**LEGEND:**

- WALKING AREA COLOR
- BUS LANE (PAINT)
- BUS LANE (PAVEMENT)
- BUS BOARDER
- BIKE LANE
- PLANTINGS
- FLEXIBLE DELINEATORS
- QUICK KURB
- MARTELLO BOLLARDS
- TRAFFIC SIGNAL
- DETECTABLE WARNING STRIP
- RUBBER SPEED BUMP

NEW YORK CITY DOT

CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING AND MANAGEMENT (TP&M)
28–11 Queens Plaza North L.I.C., N.Y. 11101

TYPICAL PAVEMENT MARKINGS & GEOMETRY

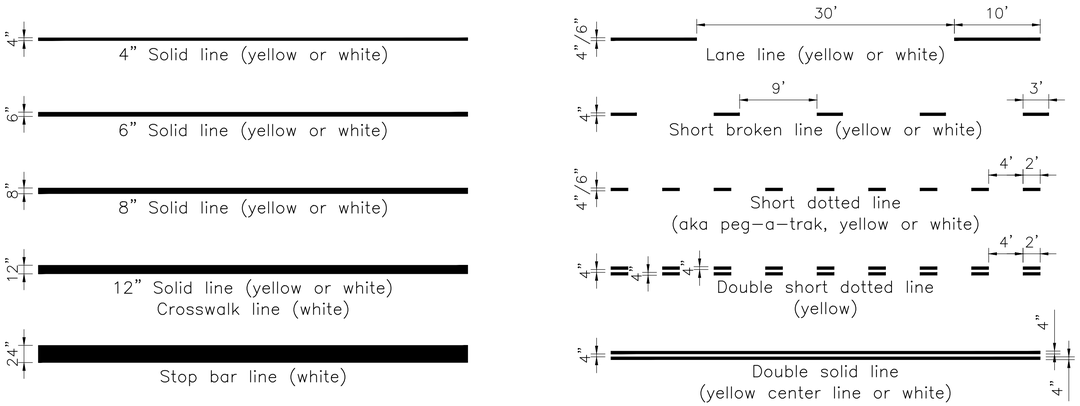
# Index of Sheets & General Notes

STATE OF NEW YORK — ROGER KEVIN WOLF — 075808 — LICENSED PROFESSIONAL ENGINEER — P.E.

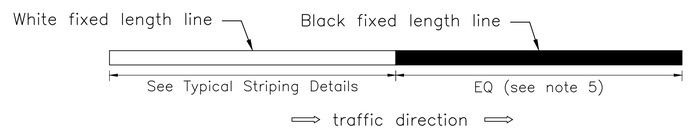
Drawn by D. NELSON
Checked by S. SHAPIRO
Borough ALL
Scale NOT TO SCALE
Effective Date 11/04/2021

SHEET 01 OF 22
DRAWING NO. TYPX–1

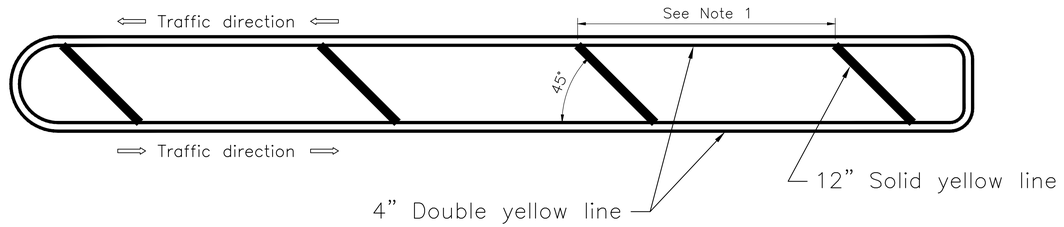
## Typical Striping Details



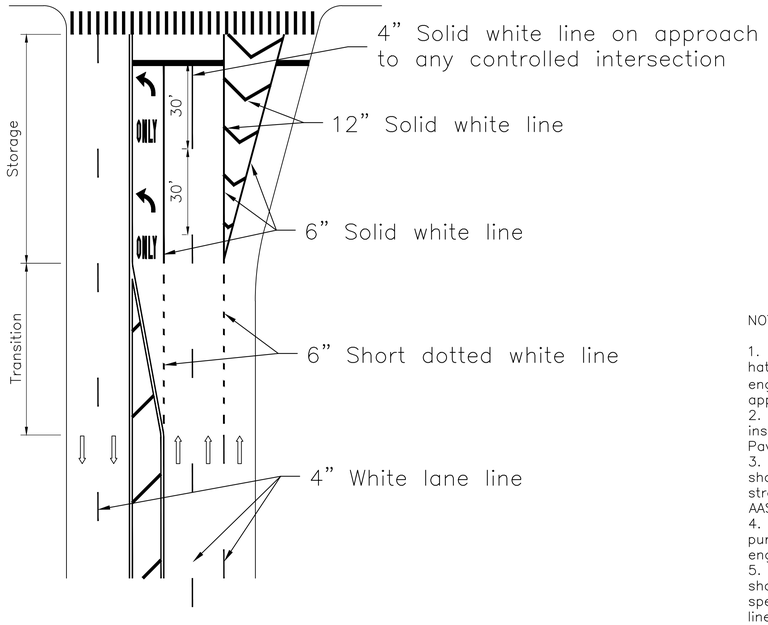

## Contrast Striping




## Typical Flush Median Striping



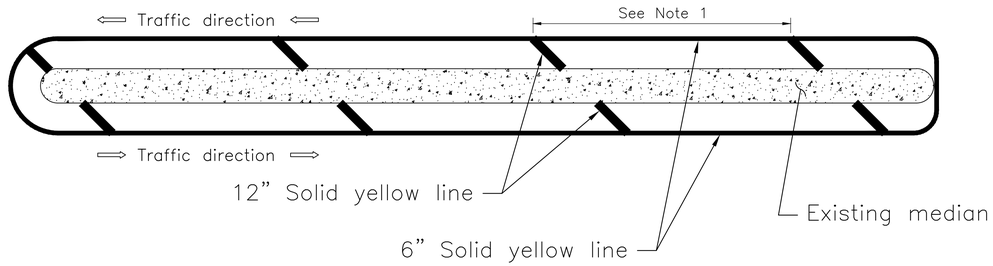

## Typical Striping Layout



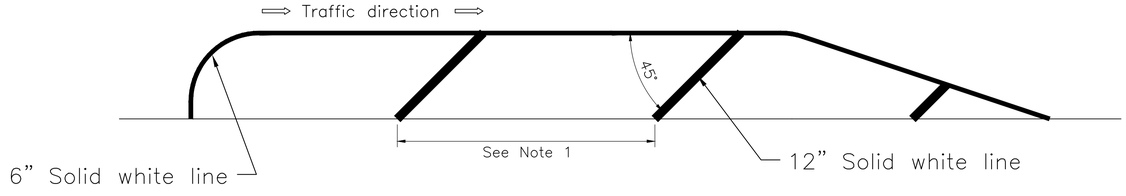

NOTES:

1. On local streets, the spacing between cross hatch lines shall be specified based on engineering judgement. Spacing of 30' is appropriate for most applications.
2. On all highways, gores and striping shall be installed as per NYS DOT drawing number 685-01 Pavement Marking Details sheets 3-5 of 9.
3. The actual length of gores and cross hatching shall be designed by an engineer based on actual street layout and traffic conditions according to AASHTO requirements.
4. Tapers and returns shown for illustrative purposes only and shall be designed based on engineering judgement.
5. For contrast striping, white fixed length line shall be installed with the length and spacing as specified on this sheet and a black fixed length line of equal length shall be installed in the gap following each.

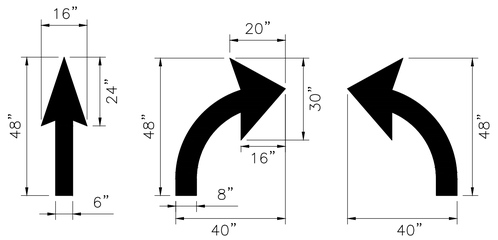
## Typical Extended Median Striping



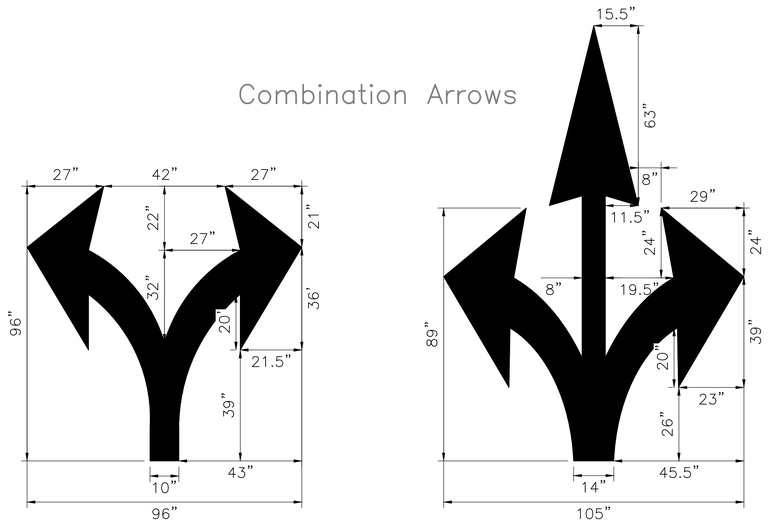

## Typical Curbside Channelization Striping



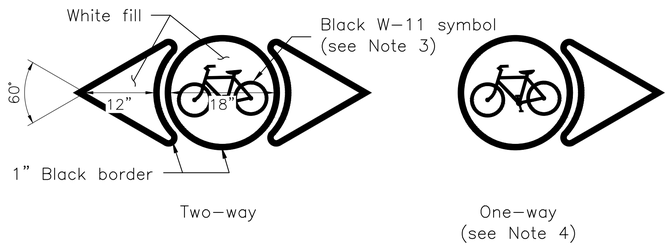
## Bicycling Facility Arrows



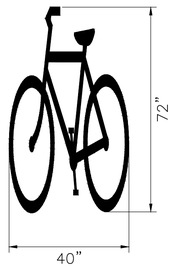

## Combination Arrows



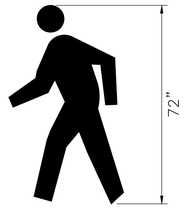

## Bicycling Facility Stamp for Use in Pedestrian Areas




## Bicycling Facility Symbols

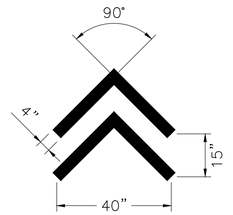



## Walking Facility Symbols

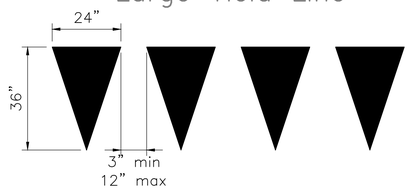



## Mini Bicycling and Walking Facility Symbols


## Bicycling Facility Chevron

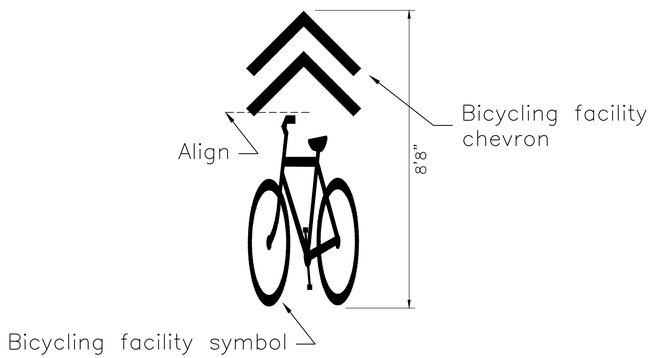



## Large Yield Line




## Small Yield Line


## Shared Lane Marking ”Sharrow”




NOTES:

1. All symbols shall conform to the shapes specified in the MUTCD 2004 Standard Highway Signs and Markings (SHSM) Book, Pavement Markings chapter.
2. Preferential Lane Symbols and the following arrows shall be installed as per NYS DOT drawing number 685–01 Pavement Marking Details sheet 8: Turning, Turning/Straight, Straight, Lane Reduction, Diverge, and Ramp Arrows.
3. Stamp icon shall utilize the W11–1 ”bikes” shape as shown in the SHSM, and for similar shared facility applications may use alternative shapes in the W11 series as noted on plans, i.e. W11–7 ”equestrian” and W11–11 ”golf cart.”
4. One of the two pointers of the Bicycle Stamp may be removed to indicate the intended direction of bicycle traffic.


NEW YORK CITY DOT

CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING AND MANAGEMENT (TP&M)
28–11 Queens Plaza North L.I.C., N.Y. 11101


TYPICAL PAVEMENT MARKINGS

# ARROWS & SYMBOLS

STATE OF NEW YORK · ROGER KEVIN WEILD · 075889 · LICENSED PROFESSIONAL ENGINEER

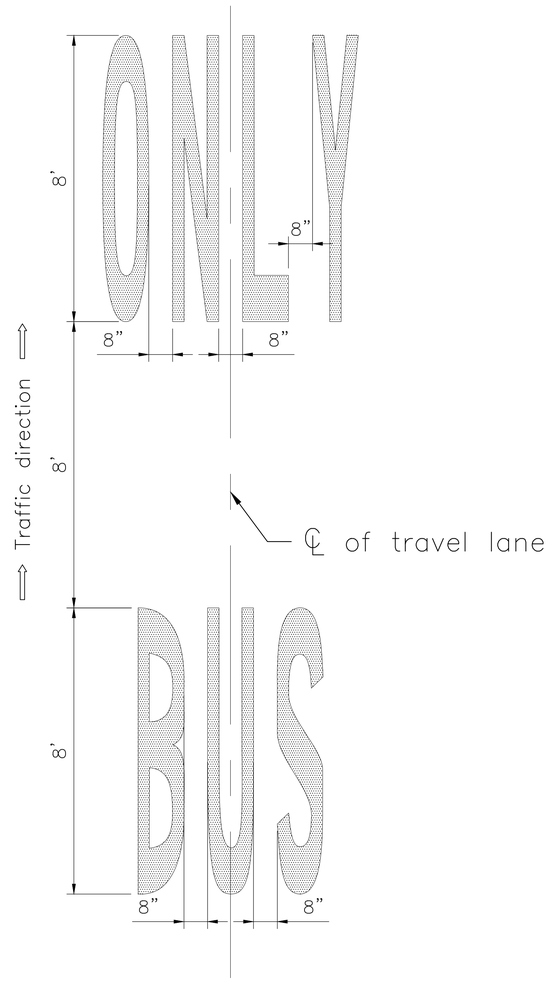
B. [illegible] WEILD, P.E.

| | |
|---|---|
| Drawn by | A. SULESKI & D. CAIAZZO |
| Checked by | M. SINGH |
| Borough | ALL |
| Scale | NOT TO SCALE |
| Effective Date | 05/21/2024 |

SHEET 03 OF 22

DRAWING NO. TAR–1

# Typical Word Message
# (BUS ONLY shown)




NOTES:

1. All messages shall consist of preformed letter shapes as specified in the MUTCD 2004 Standard Highway Signs and Markings (SHSM) Book, Pavement Markings chapter.
2. All messages shall be of an 8' text height, unless otherwise specified. Text height of 4' is typical of messages in bike lanes.
3. All messages consisting of two words or more shall have 8' between words and be laid out such that the first word is closest to an approaching vehicle. Spacing of 4' between words is typical of messages in bike lanes.
4. Spacing between each letter shall be equal for any word. Letter spacing shall be 8" unless otherwise specified or as limited by lane width. All messages shall fit within a single lane and not overlap any striping, unless otherwise specified. Letter spacing of 4" is typical of messages in bike lanes.
5. All messages shall be aligned on center with travel lane, unless otherwise specified.
6. All letters shall be solid white, unless otherwise specified.
7. This drawing replaces TWM–2 and TWM–3.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TYPICAL PAVEMENT MARKINGS

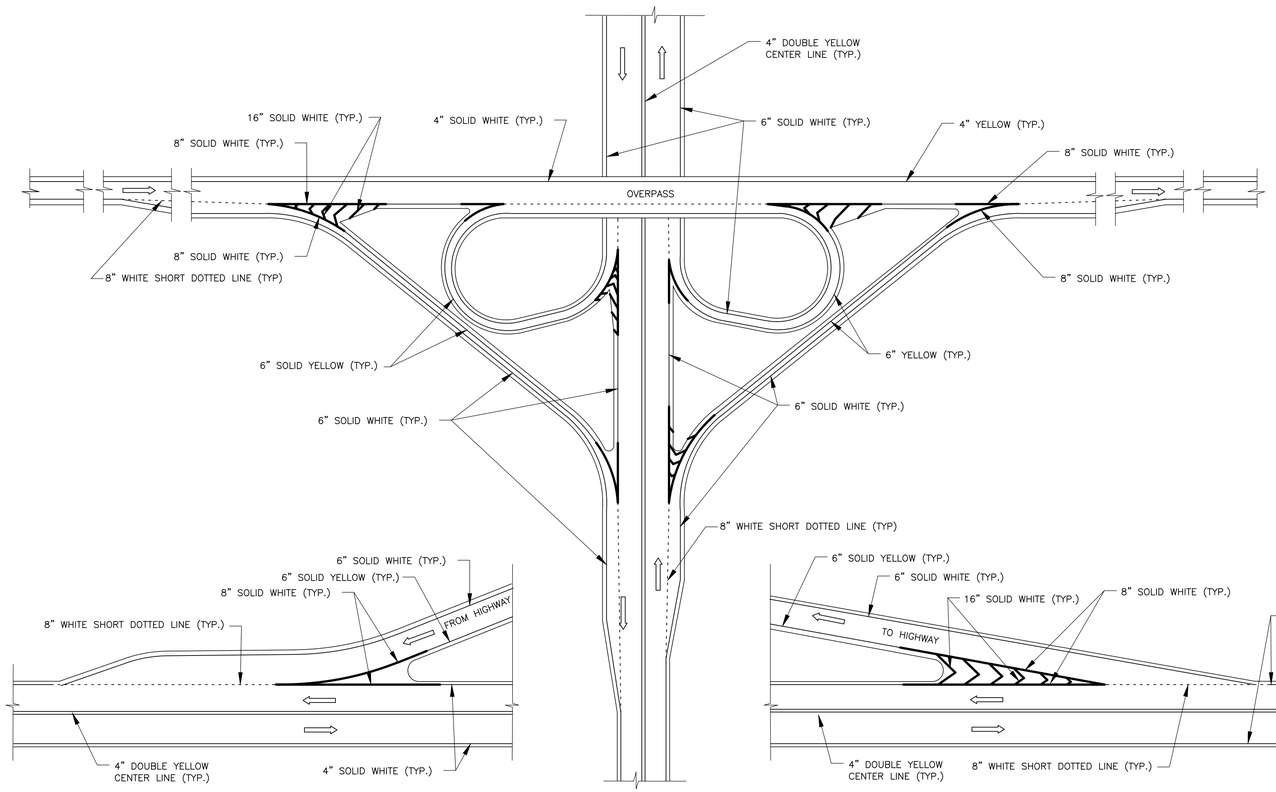
WORD MESSAGES


STATE OF NEW YORK · ROGER KEVIN WEBER · 075808 · LICENSED PROFESSIONAL ENGINEER
P.E.


Drawn by D. NELSON
Checked by S. BARKHO & F. AZER
Borough ALL
Scale NOT TO SCALE
Effective Date 12/01/2015



DRAWING NO. TWM–1



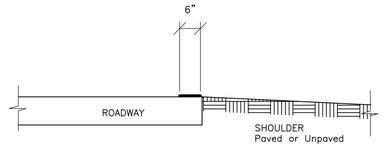

HIGHWAY EXIT GORE



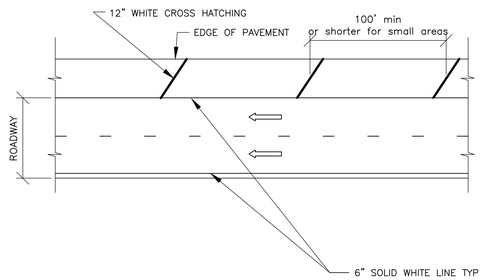

CLOVER LEAF INTERCHANGE




HIGHWAY ENTRANCE GORE




EDGE LINE DETAIL




CROSS HATCHING ADJACENT TO EDGE LINE

NOTES:

1. This drawing repaces DWGS.: MC–89A; MG–443; MG–444.
2. The actual length of the gores and cross sections shall be designed by an engineer based on actual street layout and traffic conditions according to AASHTO requirements.
3. For city streets see typical drawing TSC–1.

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28–11 Queens Plaza North L.I.C., N.Y. 11101

TYPICAL PAVEMENT MARKINGS

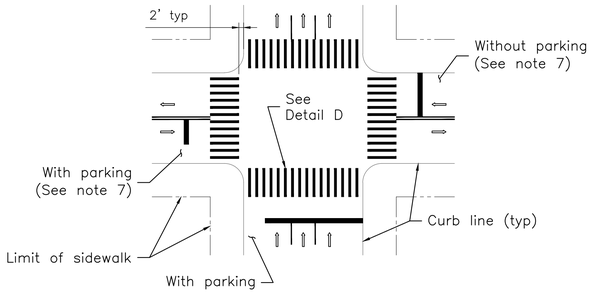
# EDGE LINES FOR PARKWAYS & HIGHWAYS

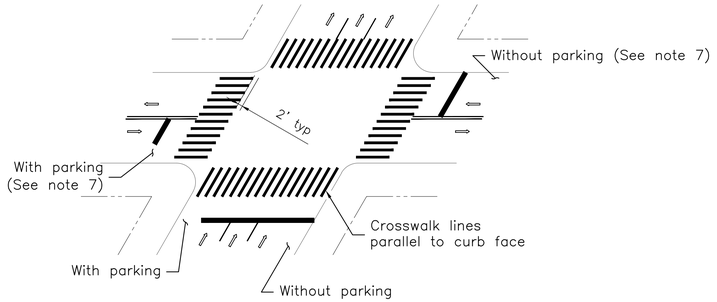
STATE OF NEW YORK — ROGER KEVIN WELLS — 075898 — LICENSED PROFESSIONAL ENGINEER — P.E.

Drawn by D. NELSON
Checked by S. BARKHO & F. AZER
Borough ALL
Scale NOT TO SCALE
Effective Date 12/01/2015

SHEET 05 OF 22
DRAWING
NO. TEL–1

# Typical Crosswalks & Stop Bars

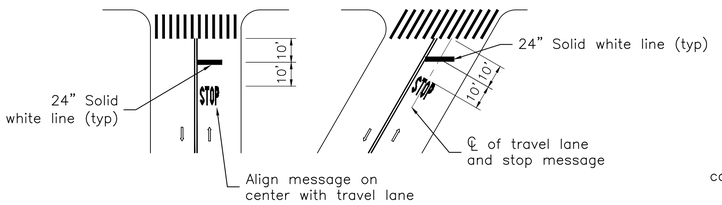


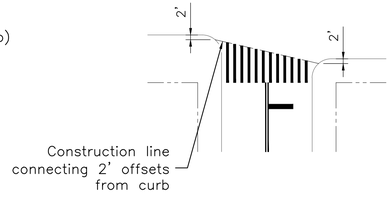

NOTES:

1. The front of crosswalk shall be set back 2' from the curb line unless otherwise specified by the engineer or for accessibility (see note 2).
2. At corners with apex pedestrian ramps, the landing area must fall within the crosswalks, in some cases requiring widening of the crosswalk(s) or marking an extension at the corner.
3. Crosswalks shall be installed at any signalized, stop–controlled, or yield–controlled leg of an intersection, unless otherwise specified.
4. Stop bars shall be installed in any signalized or stop controlled travel lane entering the intersection.
5. All stop bars shall be 10' offset from the back of the crosswalk, parallel to the back of crosswalk, unless otherwise specified.
6. Stop bars may be staggered or setback to accommodate large vehicle turns.
7. Presence or absence of curbside parking shown for illustrative purposes only. Stop bars should extend to curb on streets without curbside parking. Stop bars should extend to parking lane stripe on streets with striped curbside parking. Stop bars should extend to 8' from curb, or as determined by engineer, on streets with unstriped curbside parking.
8. Unless otherwise specified by the engineer on a plan or order, the back of crosswalk shall extend to whichever is greatest of the following: full width of sidewalk, the full extent of the corresponding curb ramp's landing area, or a minimum width of 8'.

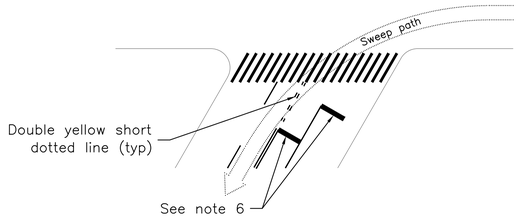
## Detail A: Typical Stop Bar & Stop Message Placement



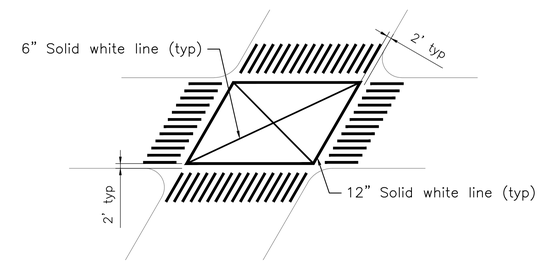

## Detail C: Trapezoidal Crosswalks at Offset Curblines



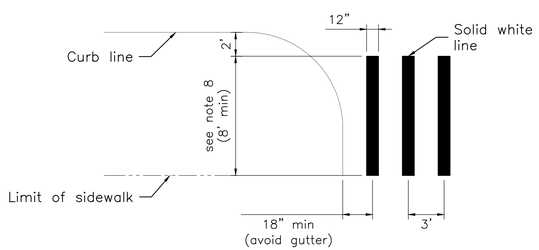

## Detail B: Optional Staggered Stop Bar for Constrained Turns

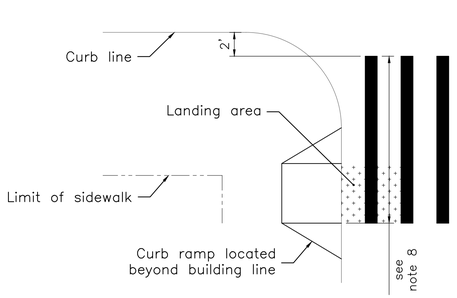


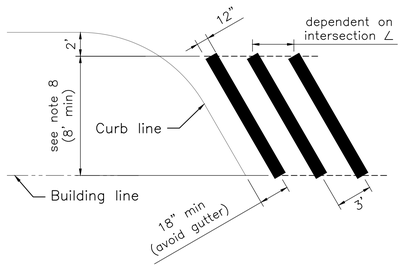

## Detail E: Do Not Block Intersection Markings




## Detail D: Crosswalk Stripe Spacing and Length




NEW YORK CITY DOT

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28–11 Queens Plaza North L.I.C., N.Y. 11101

TYPICAL PAVEMENT MARKINGS

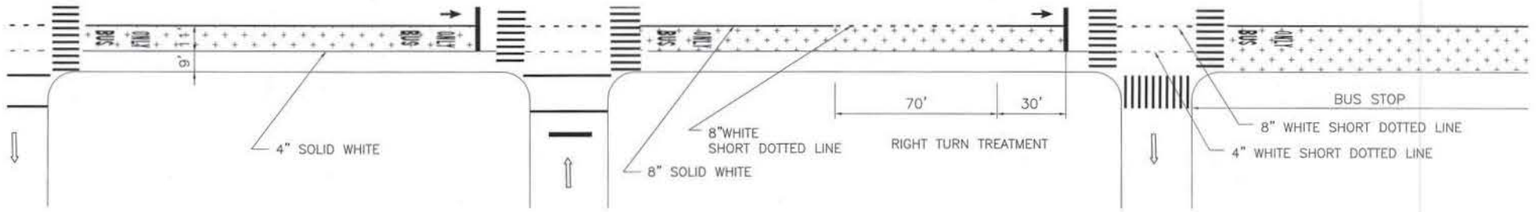
# CROSSWALKS & STOP BARS

STATE OF NEW YORK — ROGER KEVIN WEBER — 075808 — LICENSED PROFESSIONAL ENGINEER — P.E.

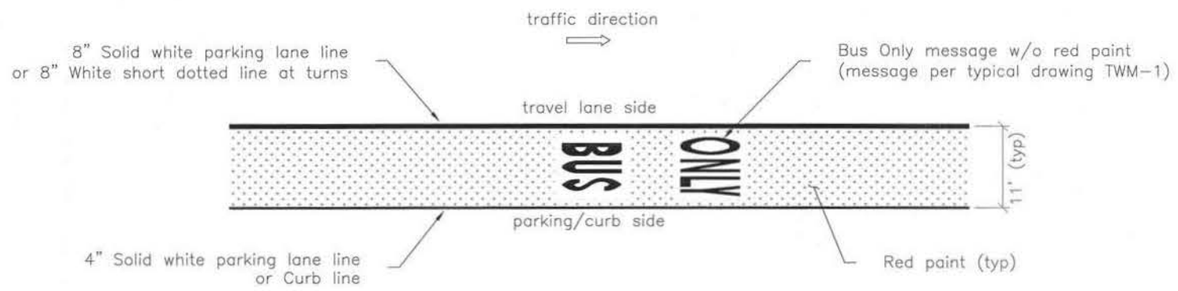
| | |
|---|---|
| Drawn by | D. NELSON |
| Checked by | S. BARKHO |
| Borough | ALL |
| Scale | NOT TO SCALE |
| Effective Date | 12/04/2020 |

SHEET 06 OF 22
DRAWING
NO. TCW–1

## TYPICAL BUS LANE




## BUS LANE DETAIL

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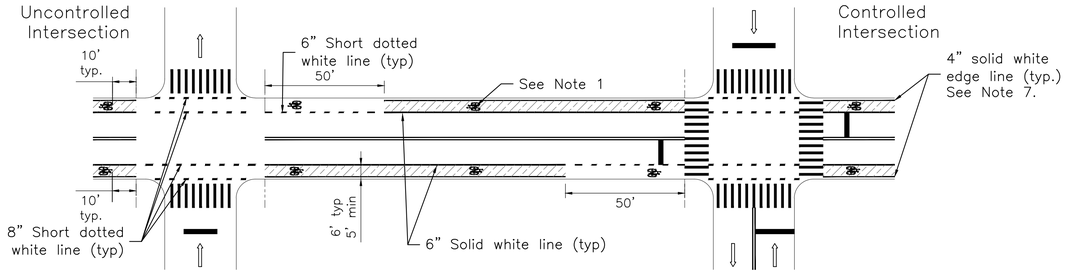
28-11 Queens Plaza North L.I.C., N.Y. 11101

TYPICAL PAVEMENT MARKINGS
# BUS LANES

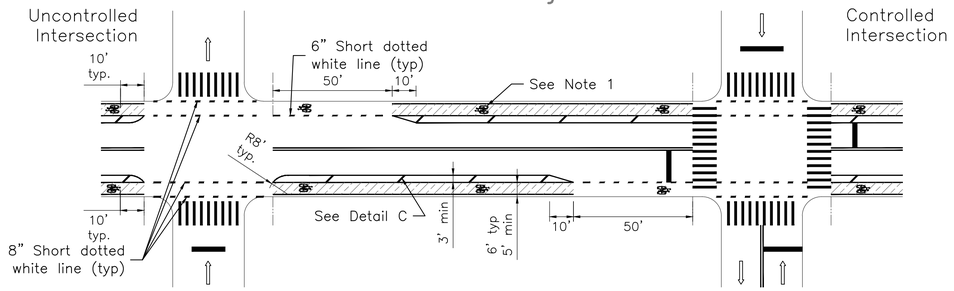
Drawn by D. NELSON & F. AZER
Checked by S. BARKHO & F. AZER
Borough ALL
Scale NOT TO SCALE
Effective Date 12/01/2015


DRAWING NO. TBUS-1

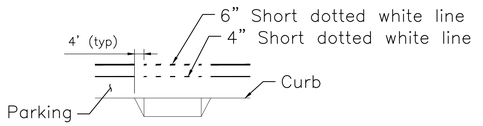
## Typical Bike Lanes Adjacent to Curb

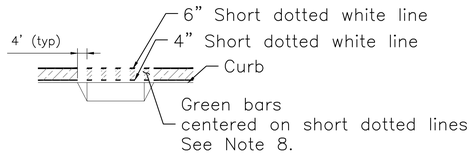



## Buffered Bike Lanes Adjacent to Curb

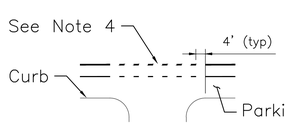


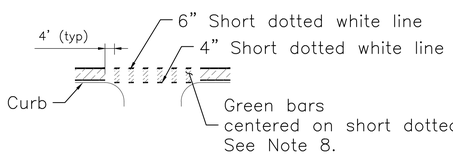

## Detail A: Treatments Across Driveways and Alleys



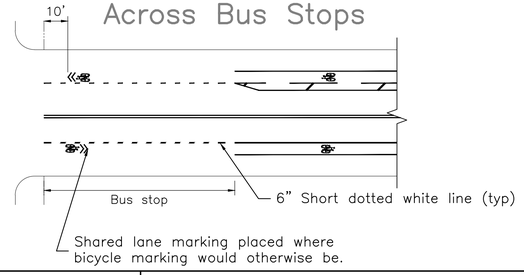

At driveways with frequent ingress/egress, break bike lane with short dotted line across curb cut, including flares. Where an edge line is present, it may remain solid.



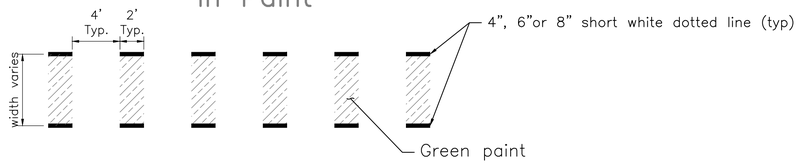




At alleyways, break bike lane lines with short dotted line across alley, including curb returns.

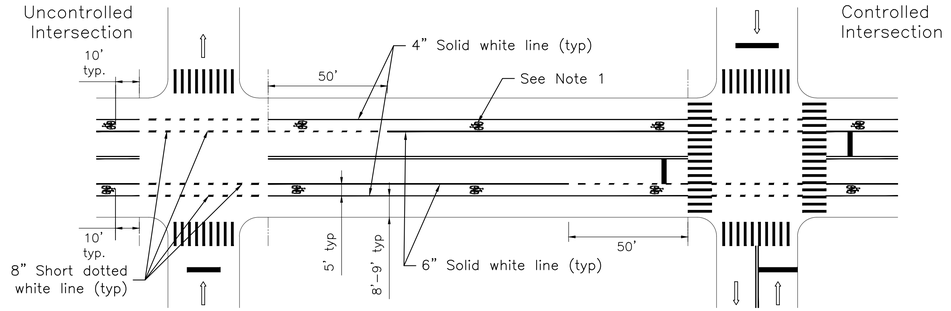
## Detail B: Treatments Across Bus Stops



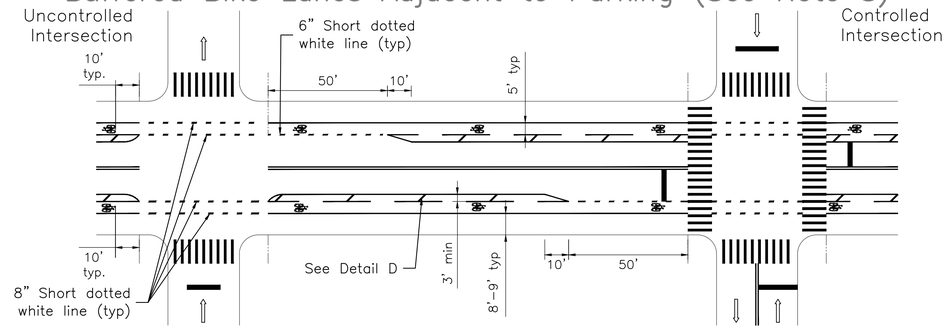

## Detail E: Full Width Green Bars in Paint



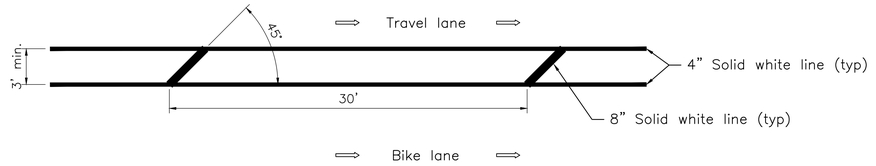

## Typical Bike Lanes Adjacent to Parking



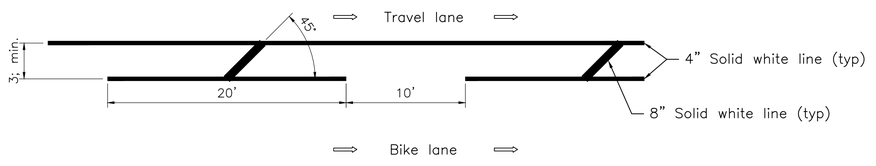

## Buffered Bike Lanes Adjacent to Parking (See Note 8)



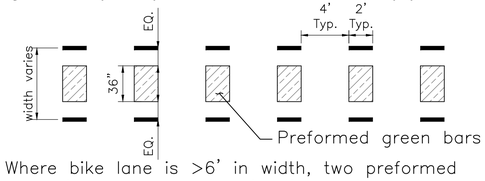

## Detail C: Bike Lane Buffer (Parking Prohibited)




## Detail D: Bike Lane Buffer (Parking Permitted)




## Detail F: 36" Preformed Bars Layout (Requires NYCDOT approval)




Where bike lane is >6' in width, two preformed green bars may be placed adjacent to each other.

NOTES:

1. Bicycle symbols shall be installed at each end each block with additional symbols at least every 200'. For typical blocks of 450' or less, a single midblock symbol is typical.
2. Bicycle symbols, sharrows, and chevrons shall be installed as per typical drawing TAR-1.
3. Some design features that are not annotated or dimensioned are provided for illustrative purposes.
4. For a typical driveway or alley 10'-24' wide, green bars shall be used when possible for curbside bike lanes.
5. Green bars are to be placed based on engineering judgement and current NYCDOT policy.
6. In most cases, a wider parking lane should be considered as a design alternative to providing a bike lane buffer.
7. 4" edge line placed 1' off the curb must be installed where a green curbside bike lane is at least 5' wide. Where the curb is adjacent to the left edge of the bike lane in the direction of travel, the edgeline shall be yellow.
8. Green bars shall be centered on short dotted line markings and fill the full space between lines where feasible. Otherwise 24" x 36" preformed bars may be installed centered within bike lane as approved by NYCDOT. See Details E and F.

NEW YORK CITY DOT

CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING AND MANAGEMENT (TP&M)
28-11 Queens Plaza North L.I.C., N.Y. 11101

TYPICAL PAVEMENT MARKINGS

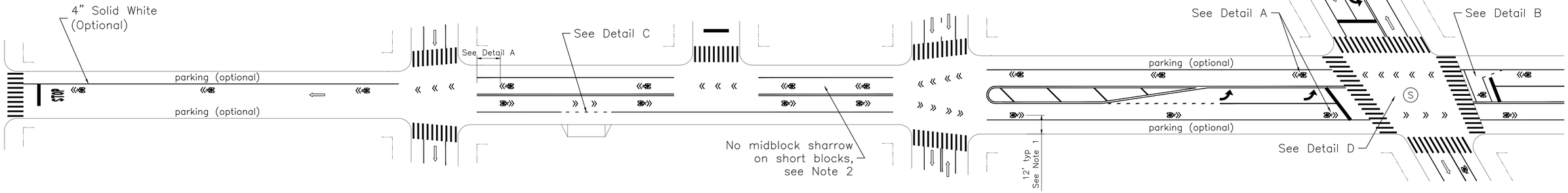
# BIKE LANES & BUFFERED BIKE LANES

STATE OF NEW YORK ROGER KEVIN VELLA 075893 LICENSED PROFESSIONAL ENGINEER P.E.

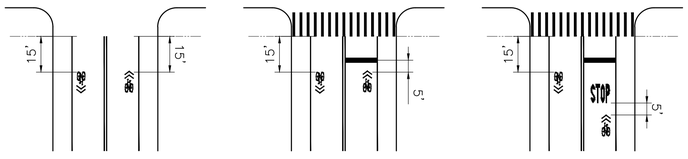
Drawn by A. SULESKI & D. CAIAZZO
Checked by M. SINGH
Borough ALL
Scale NOT TO SCALE
Effective Date 05/21/24

SHEET 08 OF 22
DRAWING NO. TBL-1

# Typical Bike Routes

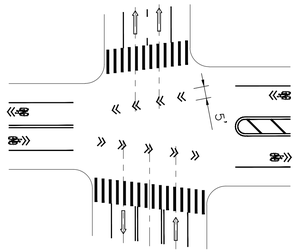


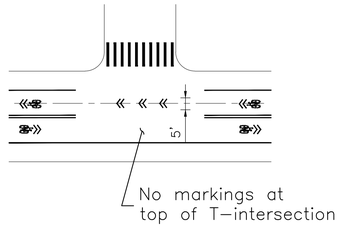

## Detail A: Longitudinal Placement at Approaches



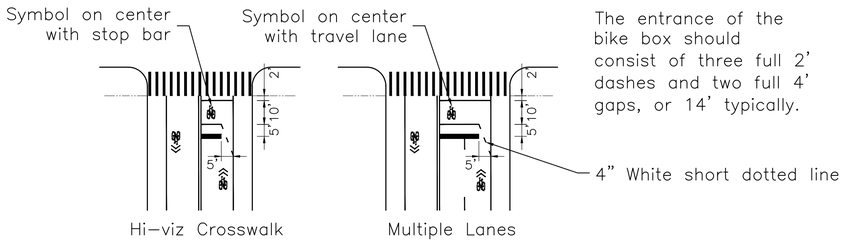

Sharrows should be placed 15' from the crosswalk or property line. Where a STOP message or other marking would obstruct the normal placement of the sharrow, the sharrow should be placed 5' from that marking.

## Detail D: Bike Route Intersection Markings



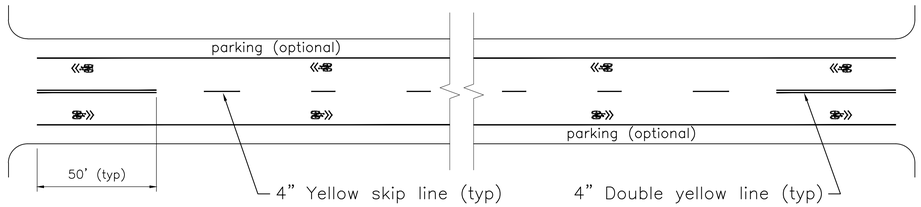




## Detail B: Bike Boxes along Bike Routes (See Note 5)



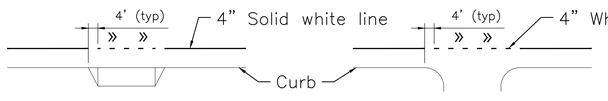

The entrance of the bike box should consist of three full 2' dashes and two full 4' gaps, or 14' typically.

## Typical Passing Permitted Shared Lanes




Treatment shall only be installed on blocks at least 30' in width

## Detail C: Treatments across Driveways & Alleys




At driveways with frequent ingress/egress, break parking lane line with short dotted line across curb cut, including flares.




At alleyways, break parking lane line with short dotted line across alley, including curb returns.

Install two chevrons for a typical driveway or alley 10'–24' wide. More chevrons may be installed for wider driveways.

NOTES:

1. Sharrows should be 12' offset from the curb where there is curbside parking lane. In most others cases sharrows should be 4' offset from the curb or lane line.
2. In addition to the sharrows placed at the ends of the block in accordance with Detail A, a sharrow shall be placed at least every 100'.
3. Bike symbols, sharrows, and chevron shall be installed as per typical drawing TAR–1.
4. Some design features not annotated or dimensioned are provided for illustrative purposes.
5. Where possible, bike boxes installed across more than 2 travel lanes should be avoided, and a two stage queue box should be considered instead.


NEW YORK CITY DOT

CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING AND MANAGEMENT (TP&M)
28–11 Queens Plaza North L.I.C., N.Y. 11101


TYPICAL PAVEMENT MARKINGS

BIKE ROUTES

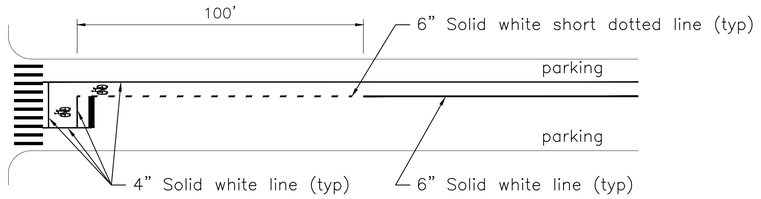
STATE OF NEW YORK · JAMES KEVIN WADE · 075888 · LICENSED PROFESSIONAL ENGINEER

Drawn by A. SULESKI & D. CAIAZZO
Checked by D. NELSON
Borough ALL
Scale NOT TO SCALE
Effective Date 10/07/2020

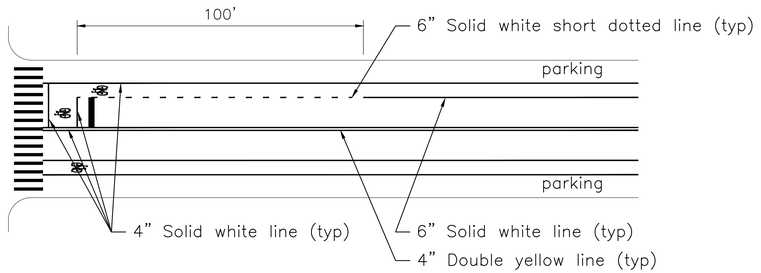
SHEET 09 OF 22

DRAWING NO. TBL–2

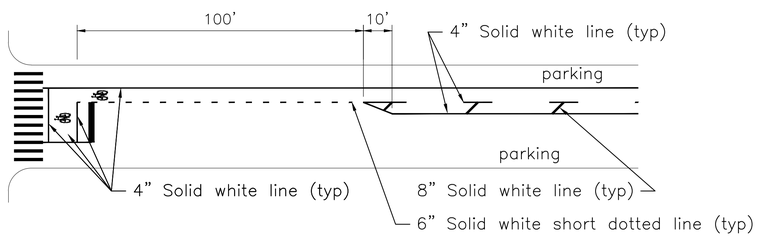
## Typical Bike Box on a One–Way Street



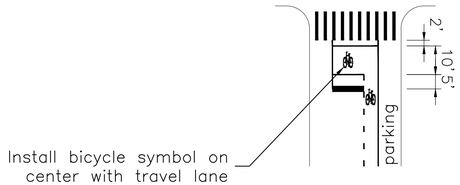

## Typical Bike Box on a Two–Way Street



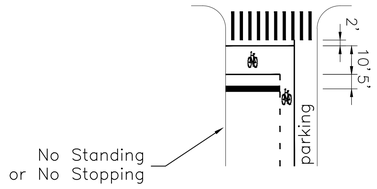

## Typical Bike Box w/ a Buffered Bike Lane



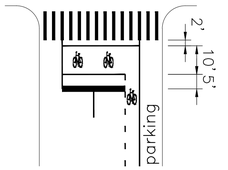

## Detail A: Bike Box Both Parking Lanes



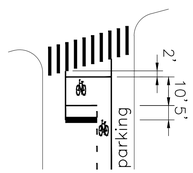

## Detail B: Bike Box w/o Parking on Opposite Side




## Detail C: Bike Box across Multiple Lanes

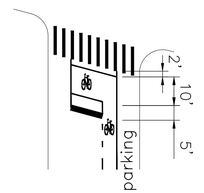



## Detail D: Bike Box at Crosswalk Angled Backwards




Perpendicular design avoids tight ingress to bike box from bike lane.

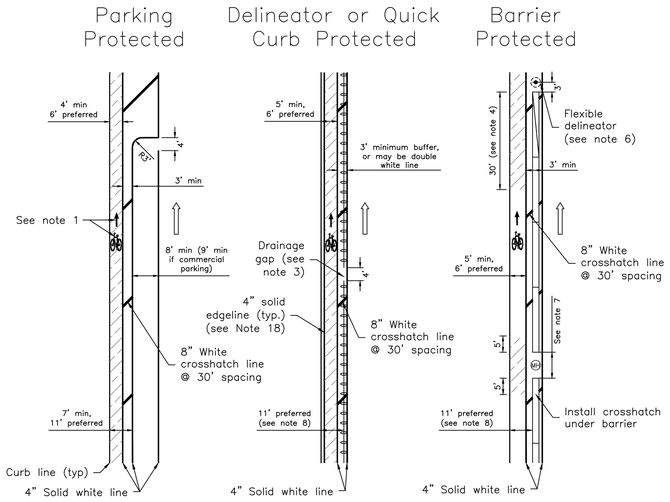
## Detail E: Bike Box at Crosswalks Angled Forwards



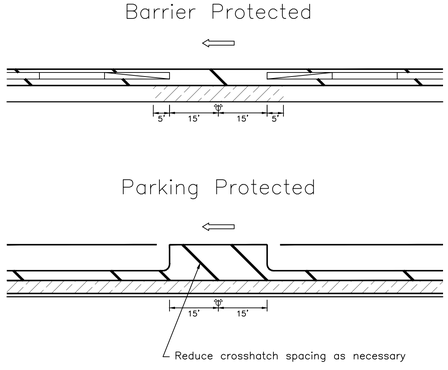

NOTES:

1. Class III bike boxes are not shown here and shall be installed as per typical drawing TBL–2.
2. Where possible, bike boxes installed across more than 2 travel lanes should be avoided, and a two stage queue box should be considered instead.
3. Green paint should not be used in the portion of bike boxes within the alignment of travel lanes. Green may be used where the alignment of the bike lane would otherwise be green (e.g. a pocket lane).
4. Do not omit green paint for 100' of approach to a bike box unless there is a turn conflict.

# Minimum Widths & PBL Types



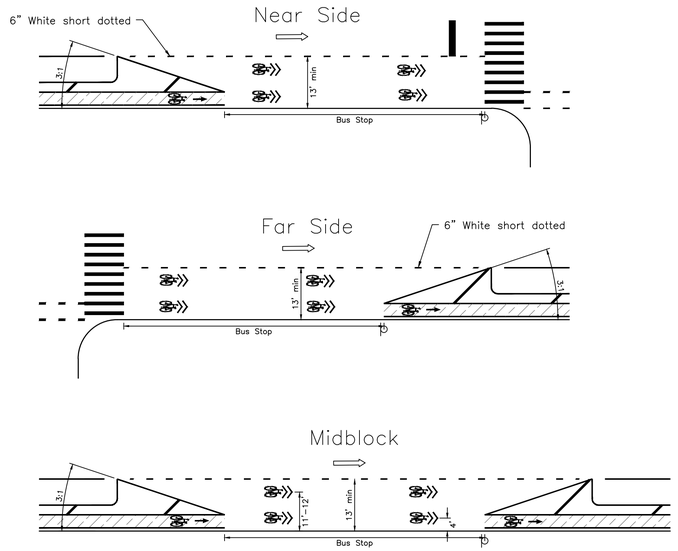

# Hydrant Treatments



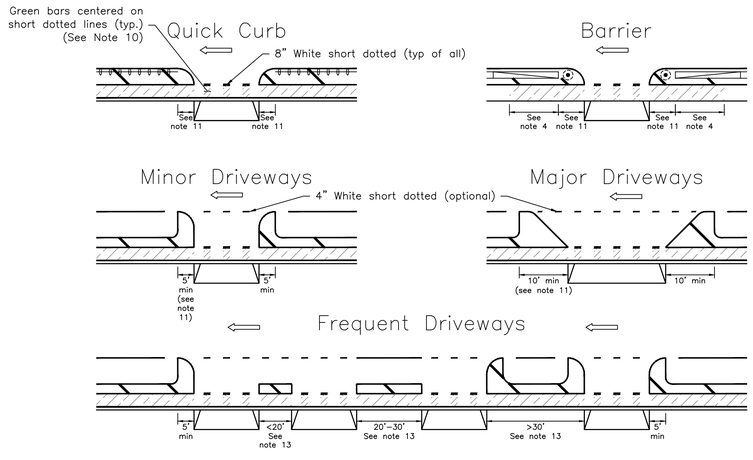

**LEGEND:**

- WALKING AREA COLOR
- BIKE LANE
- DETECTABLE WARNING STRIP
- RUBBER SPEED BUMP
- FLEXIBLE DELINEATORS
- QUICK KURB
- BARRIER MIDDLE SECTION
- BARRIER END SECTION
- (S) TRAFFIC SIGNAL

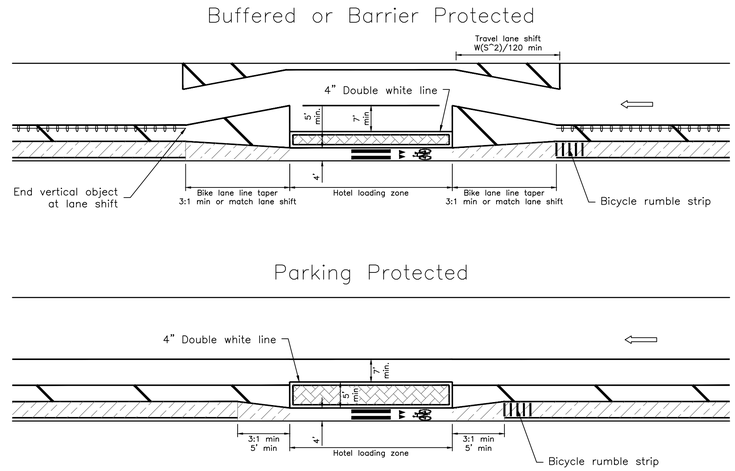
# Bus Stop Treatments (see note 9)




# Driveway Treatments




# Hotel Loading Zones (see note 14)




Notes:

1. Bike symbols should be placed no greater than 200'+/− apart with at least one placed midblock and one at start and end of the block. Directional arrows shall be added to bike symbol in a protected bike lane, except when combined with a bike stop bar or yield teeth.
2. A 4' gap should be left between channelized areas and floating parking lines. 3' fillets should be used in the inside corners of floating parking lanes and no fillets should be used on the outside corners.
3. Quick curb used to protect a bike lane shall have a minimum width 4' gap every 100' +/− to facilitate drainage.
4. Green paint is not required in a barrier protected bike lane, except in breaks in the barrier and an additional 30' at the start and end of a block.
5. For taper lengths, L shall be determined using L=(W*S^2)/60 for design speeds below 45mph. W=Width and S=Speed. Caution should be used in employing these typicals in higher speed contexts.
6. At either end of the block, the barrier shall terminate with end sections of concrete barrier and shall have a flexible delineator offset 3' on center from each end section.
7. For manholes, vaults, valve boxes, etc. that would be obstructed by barrier, a break may be provided wide enough for accessing the utility and no greater than 15'. End sections are not required unless on a sharp horizontal curve or as otherwise determined necessary based on engineering judgement. For barrier breaks greater than 10', add green paint extending 5' past either end of the break.
8. For protected bike lanes without a maintenance plan, 11' of clearance is needed between curb and any vertical element to allow for street sweeping.
9. Only bus stop treatments for 13' or wider between travel lane and curb line are detailed on this sheet. Where width permits, a bus boarding island should be considered per typical drawing BBI−1. For narrower than 13', consider relocation of the bus stop or ramping cyclists onto sidewalk around the bus stop, which may be supplemented with a sidewalk extension along the bus stop.
10. Green bars shall be centered on short dotted line markings and fill the full space between lines where feasible. Otherwise 24"x36" preformed bars may be installed centered within bike lane as approved by NYCDOT. See Details E and F on TBL−1.
11. The limit of vertical elements and/or the length of the buffers within the floating parking on either side of driveways shall be based on turn analysis for ingress and egress of the design vehicle.
12. Driveways should be considered major driveways if they serve a large parking facility, are frequently used, or are used by large trucks.
13. In areas with a large number of driveways, engineering judgement may be used to install the floating parking without buffers between driveways closer than 30' apart.
14. In a hotel loading zone treatment, the crosswalk between the painted pedestrian space and the sidewalk should be positioned as close as possible to the hotel door and be at least 8' wide. Crosswalk bars may be placed closer together than the typical 3' to fit at least 2 bars within the space.
15. Bike lane should taper at a rate not be greater than 3:1 to shift for a pre−existing curb extension.
16. Rumble strips may be used on approach to traffic controls, crosswalks, and obstacles based on engineering judgement.
17. For dimensioning of bus stop treatments, "bus stop" denotes the location of the bus stop pole and the typical distance to the end of the no standing regulation.
18. 4" solid edgeline placed 1' off the curb must be installed where a green curbside bike lane is at least 5' wide. Where the curb is adjacent to the left edge of the bike lane in the direction of travel, the edge line shall be yellow.


NEW YORK CITY DOT

CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING AND MANAGEMENT (TP&M)
28−11 Queens Plaza North L.I.C., N.Y. 11101

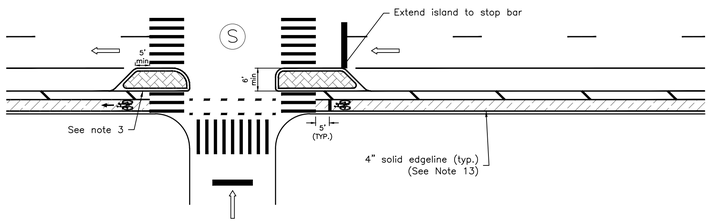

TYPICAL PAVEMENT MARKINGS & GEOMETRY

# One−way Protected Bike Lanes (PBLs): General

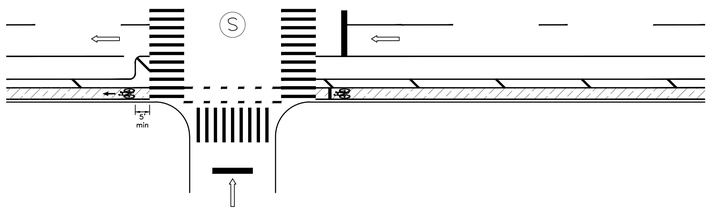

STATE OF NEW YORK ROGER KEVIN VALLA 075885 LICENSED PROFESSIONAL ENGINEER P.E.


Drawn by A. SULESKI & D. CAIAZZO
Checked by M. SINGH
Borough ALL
Scale NOT TO SCALE
Effective Date 05/21/2024

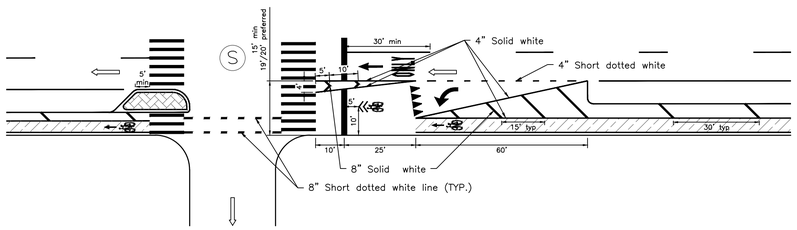
## No Turn Conflict w/ Refuges



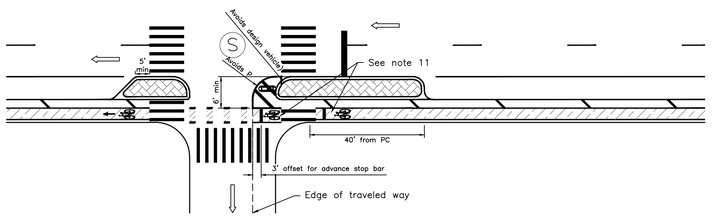

## No Turn Conflict w/o Refuges



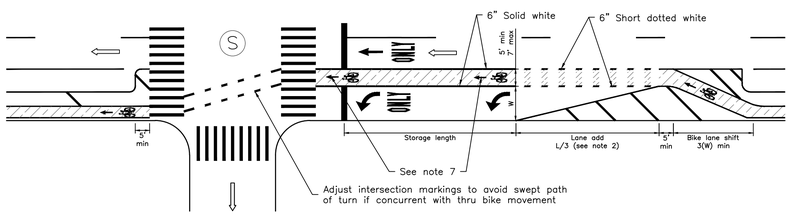

## Mixing Zone



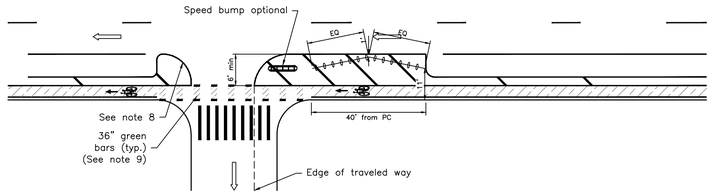

## Offset Crossing (Simple Radius)



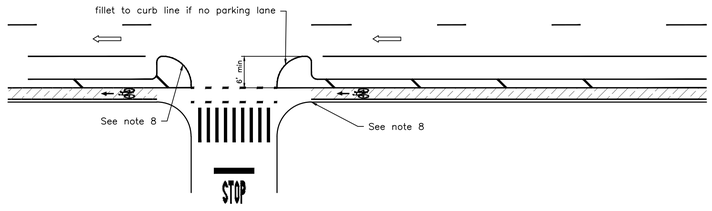

## Pocket Lane



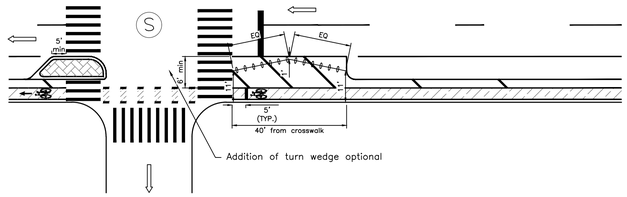

## Uncontrolled Approach w/ Turn Conflict



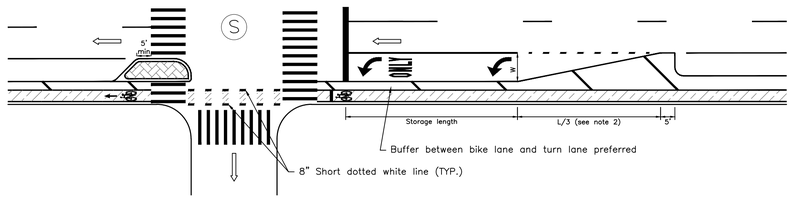

## Uncontrolled Approach w/o Turn Conflict



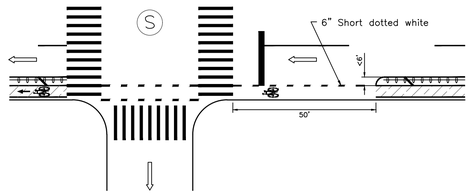

## Constrained Offset (see note 10)



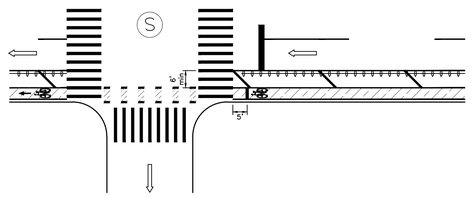

## Separated Phase




## Barrier Protected w/ Narrow Buffer




## Barrier Protected w/ Wide Buffer




Notes:

1. At stop controlled approaches, channelization or painted ped area should be provided at minimum such that a driver and cyclist traveling in the same direction would have a clear sightline to each other from the locations of the relative stop bars.
2. For taper lengths, the length (L) shall be determined using L=(W*S^2)/60 for design speeds below 45mph. W=Width and S=Speed. Caution should be used in employing these typicals in higher speed contexts.
3. Far side islands should be installed wherever feasible. If infeasible, than at least 5' of channelization should be installed in the parking lane.
4. Where there is insufficient width to maintain a 7' wide painted pedestrian island, the island may be widened so that the island may be carried through the buffer to the bike lane.
5. Offset crossing are best as treatments for turns with volumes of 120 vehicles/hour or less.
6. Omit turn wedges and advance queuing position if there is a bus stop or rush hour regulation along the corresponding curb of the receiving leg of the cross street.
7. Bike symbols at stop bar and start of pocket lane, plus at least one midblock symbol per additional 50'. Lane assignment arrows may be used as appropriate.
8. The ends of the buffer may be shifted and/or filleted as necessary to avoid swept path of the design vehicle. For some turn treatments in parking protected bike lanes, where there is no swept path conflict, the buffer should align with the cross street curb lines. For some turn treatments in bike lanes not protected by parking, where there is no swept path conflict, the buffer should align with the PC/PT of the existing corner return.
9. Green bars shall be centered on short dotted line markings and fill the full space between lines where feasible. Otherwise 24"x36" preformed bars may be installed centered within the bike lane as approved by NYCDOT. See Details E and F on TBL-1.
10. Constrained offset design may be used when the swept path does not allow for a painted pedestrian island of minimum width to extend to the edge of crosswalk.
11. If a turn wedge is provided and a cyclist may safely queue in the space adjacent to it during phases nonconcurrent with the cyclists' through phase(s), an advanced queuing position may be marked with a bike symbol and stop bar in the intersection.
12. All painted pedestrian spaces shall have flexible delineators in accordance with latest DOT policy.
13. 4" edge line placed 1' off the curb must be installed where a green curbside bike lane is at least 5' wide. Where the curb is adjacent to the left edge of the bike lane in the direction of travel, the edgeline shall be yellow.

**LEGEND:**

- WALKING AREA COLOR
- BIKE LANE
- DETECTABLE WARNING STRIP
- RUBBER SPEED BUMP
- FLEXIBLE DELINEATORS
- QUICK KURB
- BARRIER MIDDLE SECTION
- BARRIER END SECTION
- (S) TRAFFIC SIGNAL

NEW YORK CITY DOT

CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING AND MANAGEMENT (TP&M)
28-11 Queens Plaza North L.I.C., N.Y. 11101

TYPICAL PAVEMENT MARKINGS & GEOMETRY

# One-way Protected Bike Lanes (PBLs): Turn Treatments

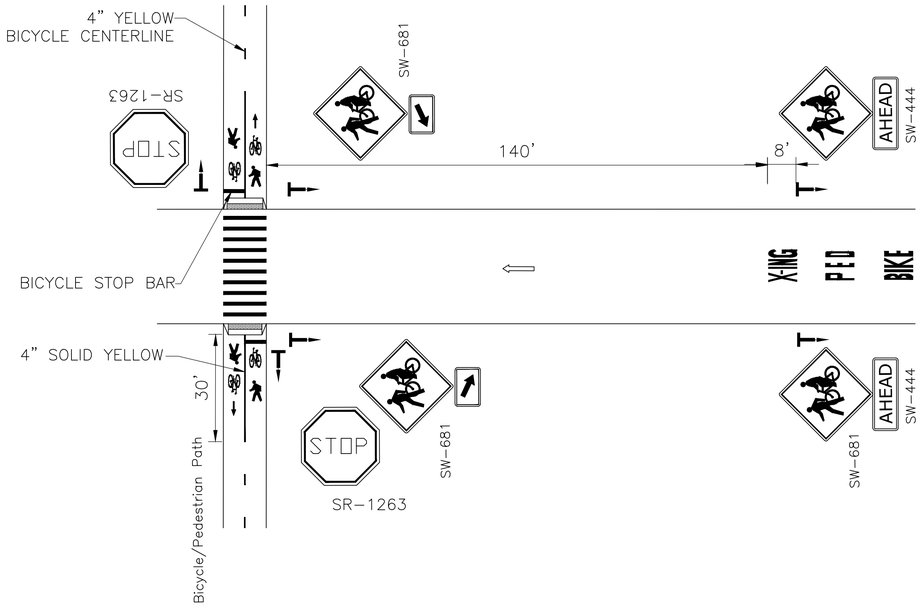
STATE OF NEW YORK · ROGER KEVIN WELD · 075889 · REGISTERED PROFESSIONAL ENGINEER

BY ROGER WELD, P.E.

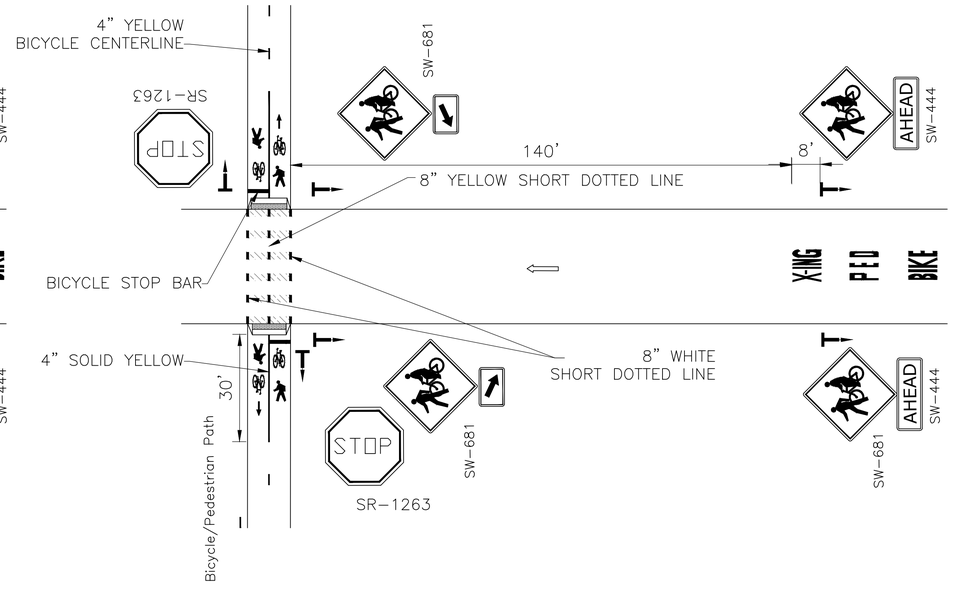
Drawn by A. SULESKI & D. CAIAZZO
Checked by M. SINGH
Borough ALL
Scale NOT TO SCALE
Effective Date 05/21/2024

SHEET 12 OF 22
DRAWING NO. PBL_2

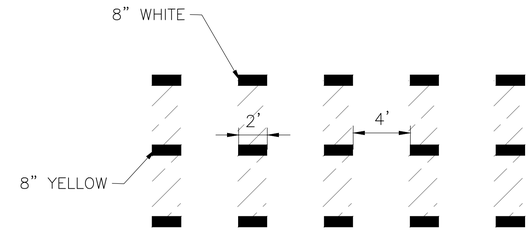
## UNCONTROLLED SHARED BICYCLE / PEDESTRIAN PATH WITH ENHANCED CROSSING APPROVED




## UNCONTROLLED SHARED BICYCLE / PEDESTRIAN PATH WITHOUT ENHANCED CROSSING APPROVED

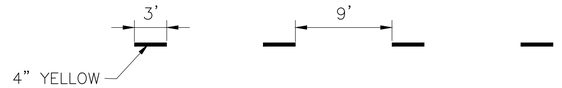



## CROSSING MARKINGS IN INTERSECTION DETAILS

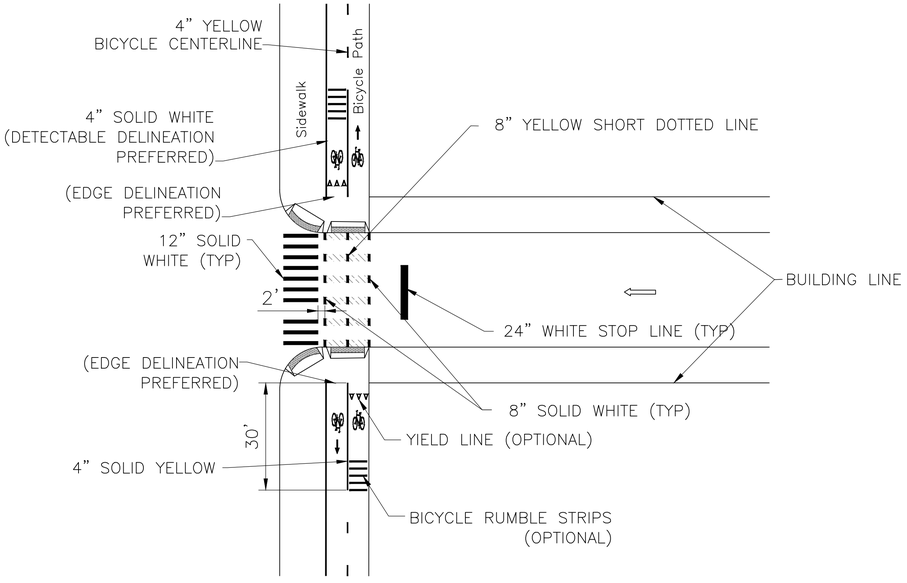



– For crosswalk detail see typical drawing TCW–1

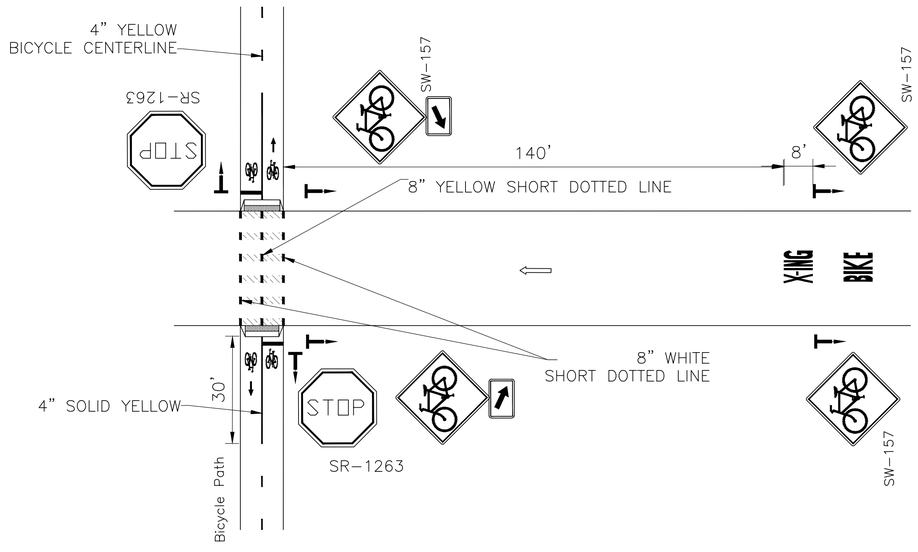
## BIKE CENTERLINE ON PATH DETAIL




## STOP CONTROLLED OR SIGNALIZED BIKE PATH ADJACENT TO CROSSWALK




## BICYCLE PATH CROSSING ON UNCONTROLLED CROSS STREET




NOTES:

1. Other configurations of bike and pedestrian markings, signs, and messages not shown on this sheet may be needed based on site specific contexts.
2. Bicycle centerlines should be solid on tight curves, for 30' on approach to an intersection, or anywhere where bike passing should be discouraged.

NEW YORK CITY DOT

CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING AND MANAGEMENT (TP&M)
28–11 Queens Plaza North L.I.C., N.Y. 11101

TYPICAL PAVEMENT MARKINGS

# BIKE PATHS & CROSSINGS

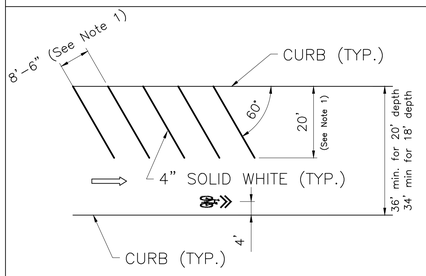
STATE OF NEW YORK ROGER KEVIN WELD 075888 LICENSED PROFESSIONAL ENGINEER

B. WELD, P.E.

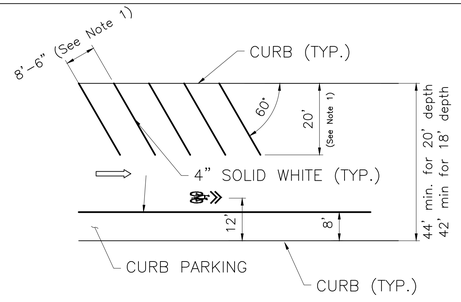
Drawn by A. SULESKI & D. CAIAIZZO
Checked by M. SINGH
Borough ALL
Scale NOT TO SCALE
Effective Date 05/21/2024

SHEET 13 OF 22
DRAWING NO. TBP–1

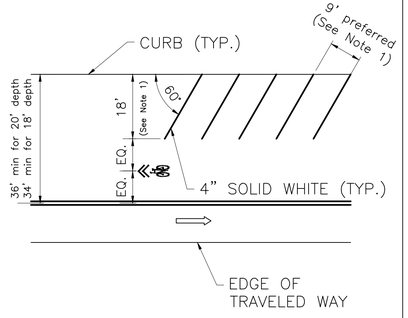
## BIKE ROUTE




ONE SIDE ANGLE PARKING
OTHER SIDE NO PARKING

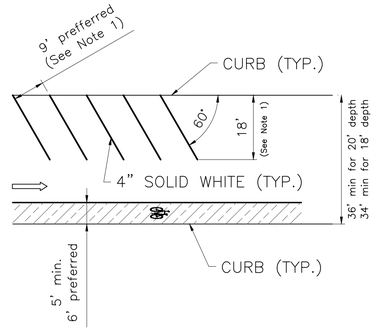



ONE SIDE ANGLE PARKING
OTHER SIDE PARALLEL PARKING

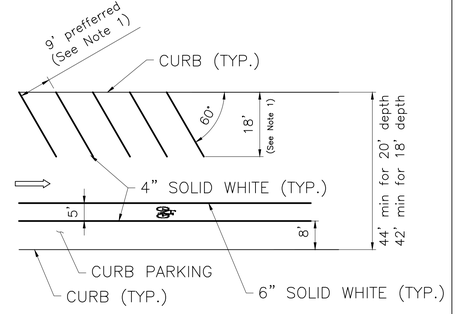



ONE SIDE ANGLE PARKING
TWO–WAY TRAFFIC

## BIKE LANE

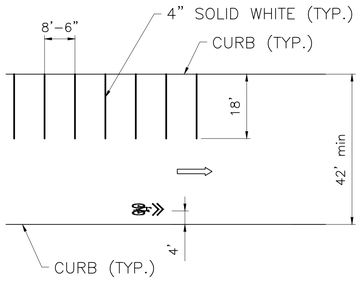



ONE SIDE ANGLE PARKING
OTHER SIDE NO PARKING

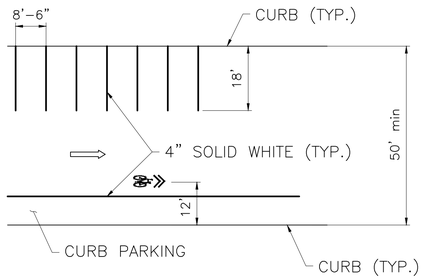



ONE SIDE ANGLE PARKING
OTHER SIDE PARALLEL PARKING

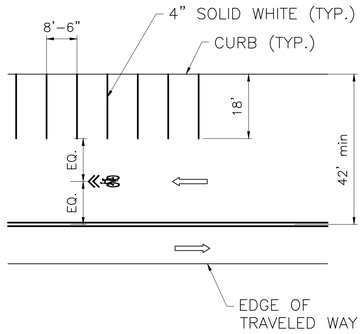
## 60 DEGREE BACK–IN ANGLE PARKING



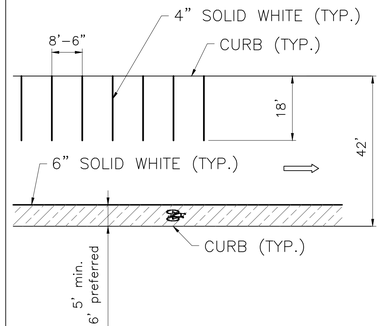

ONE SIDE ANGLE PARKING
OTHER SIDE NO PARKING



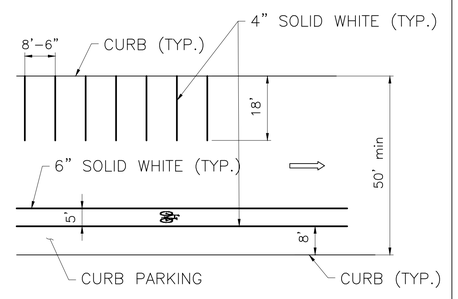

ONE SIDE ANGLE PARKING
OTHER SIDE PARALLEL PARKING




ONE SIDE ANGLE PARKING
TWO WAY TRAFFIC




ONE SIDE ANGLE PARKING
OTHER SIDE NO PARKING




ONE SIDE ANGLE PARKING
OTHER SIDE PARALLEL PARKING

## 90 DEGREE BACK–IN ANGLE PARKING

NOTES:

1. For 60° parking, if the parking stall width is increased from 8'–6" to 9', the minimum required parking stall depth shall be 18' instead of 20'.
2. The preferred placement is shown whereby the bike lane or sharrows are opposite angled parking. However, the engineer may consider bike lanes and sharrows immediately abutting angled parking, but only for configurations that are both back–in and angled at 60°. An offset or buffer should be provided between the parking stalls and the bike lane. The most likely application of such being on two–way streets.


NEW YORK CITY DOT

CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING AND MANAGEMENT (TP&M)
28–11 Queens Plaza North L.I.C., N.Y. 11101


TYPICAL PAVEMENT MARKINGS

# BIKE ROUTES & BIKE LANES ALONG ANGLE PARKING

STATE OF NEW YORK ROGER KEVIN WILLIAMS 075888 LICENSED PROFESSIONAL ENGINEER

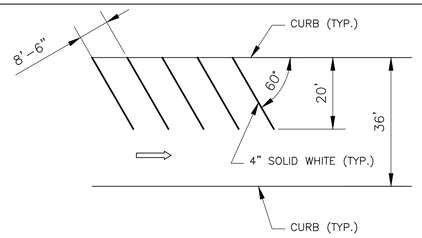
BY ROGER K. WILLIAMS, P.E.

| | |
|---|---|
| Drawn by | A. SULESKI & D. CAIAZZO |
| Checked by | M. SINGH |
| Borough | ALL |
| Scale | NOT TO SCALE |
| Effective Date | 05/21/2024 |

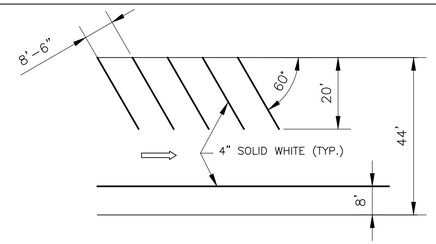


DRAWING NO. TBAP–1

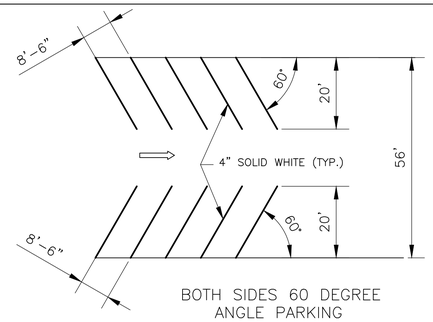
ONE WAY TRAFFIC




ONE SIDE 60 DEGREE ANGLE PARKING

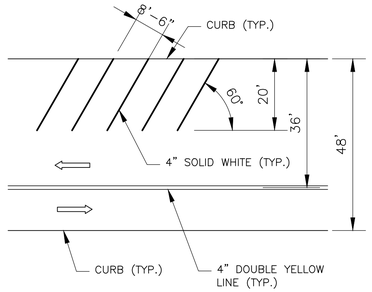



ONE SIDE 60 DEGREE ANGLE PARKING
OTHER SIDE PARALLEL PARKING

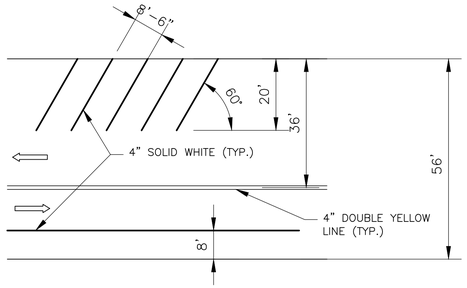



BOTH SIDES 60 DEGREE
ANGLE PARKING

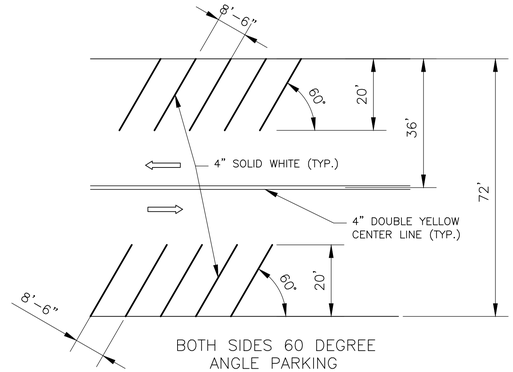
TWO WAY TRAFFIC




ONE SIDE 60 DEGREE ANGLE PARKING

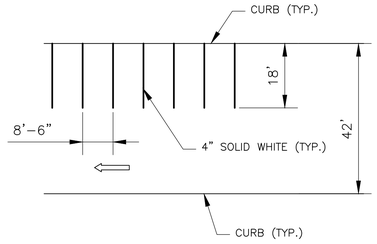



ONE SIDE 60 DEGREE ANGLE PARKING
OTHER SIDE PARALLEL PARKING

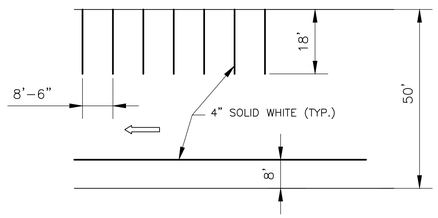



BOTH SIDES 60 DEGREE
ANGLE PARKING

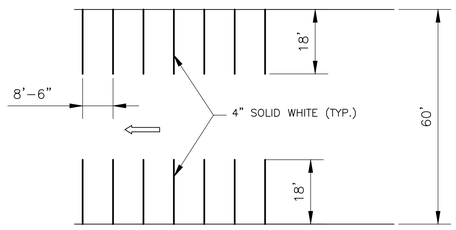
ONE WAY TRAFFIC




ONE SIDE 90 DEGREE ANGLE PARKING

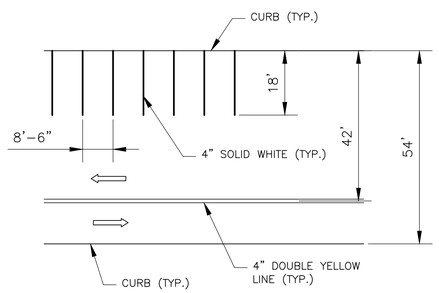



ONE SIDE 90 DEGREE ANGLE PARKING
OTHER SIDE PARALLEL PARKING

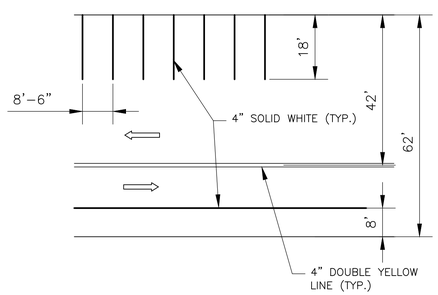



BOTH SIDES 90 DEGREE
ANGLE PARKING

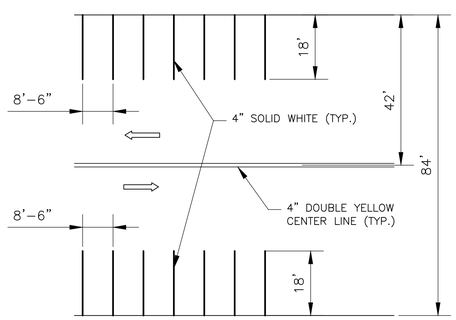
TWO WAY TRAFFIC




ONE SIDE 90 DEGREE ANGLE PARKING




ONE SIDE 90 DEGREE ANGLE PARKING
OTHER SIDE PARALLEL PARKING




BOTH SIDES 90 DEGREE
ANGLE PARKING

NOTES:

1. For 60° parking, if the parking stall width is increased from 8'-6" to 9', the minimum required parking stall depth shall be 18' instead of 20'.


NEW YORK CITY DOT

CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING AND MANAGEMENT (TP&M)
28-11 Queens Plaza North L.I.C., N.Y. 11101

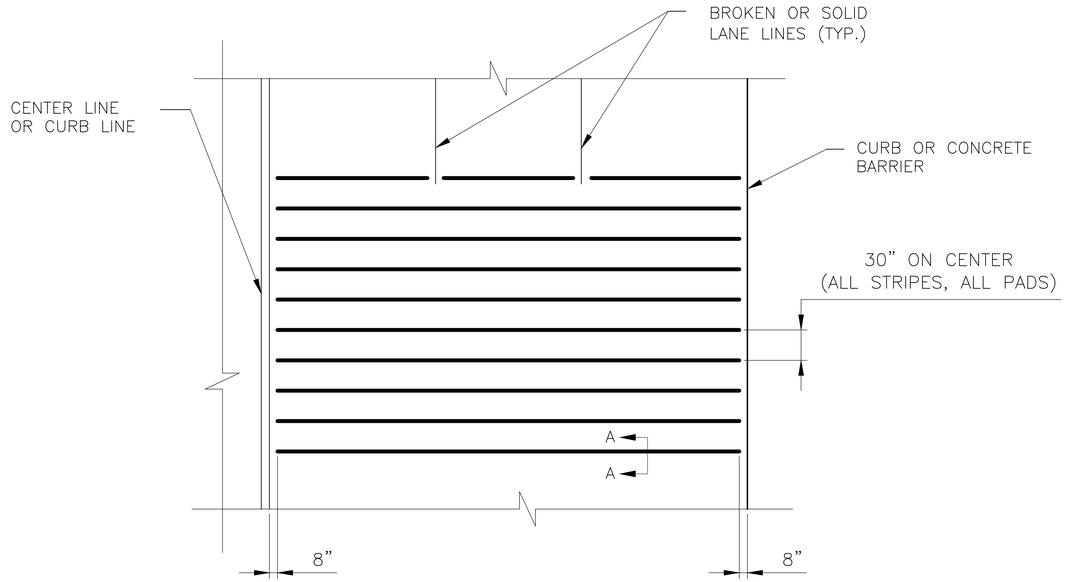

TYPICAL PAVEMENT MARKINGS

# ANGLE PARKING

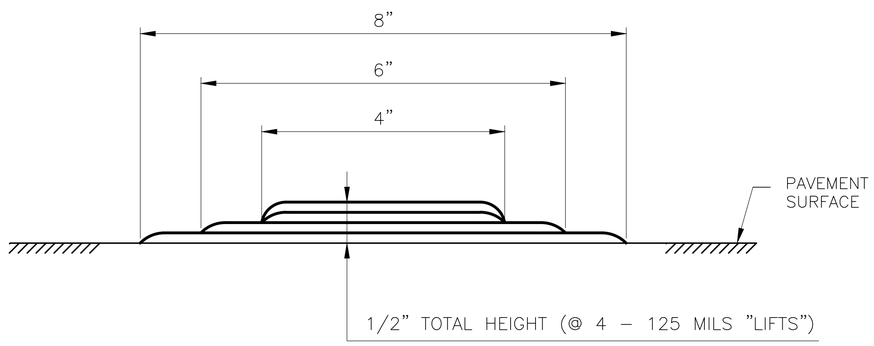


| | |
|---|---|
| Drawn by | D. AMIN |
| Checked by | S. BARKHO & F. AZER |
| Borough | ALL |
| Scale | NOT TO SCALE |
| Effective Date | 12/01/2015 |

# TYPICAL RUMBLE STRIP

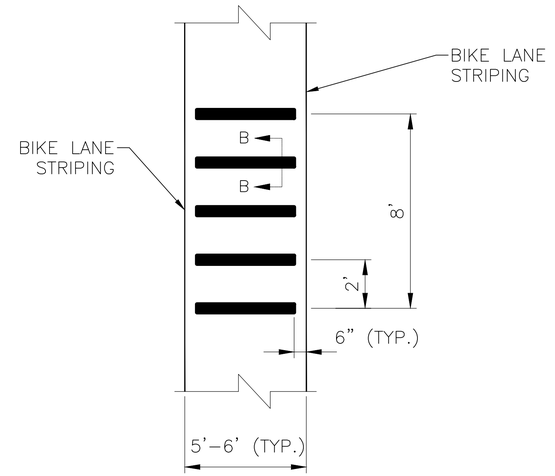



PLAN VIEW
RUMBLE STRIP
(ONE LOCATION)

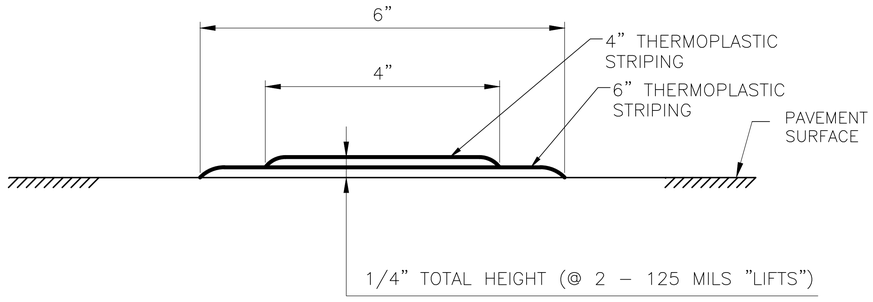



CROSS SECTION DETAIL A–A:
SINGLE TYPICAL STRIPE

# TYPICAL BICYCLE RUMBLE STRIP




PLAN VIEW
RUMBLE STRIP
(ONE LOCATION)




CROSS SECTION DETAIL B–B:
SINGLE TYPICAL STRIPE

NEW YORK CITY DOT

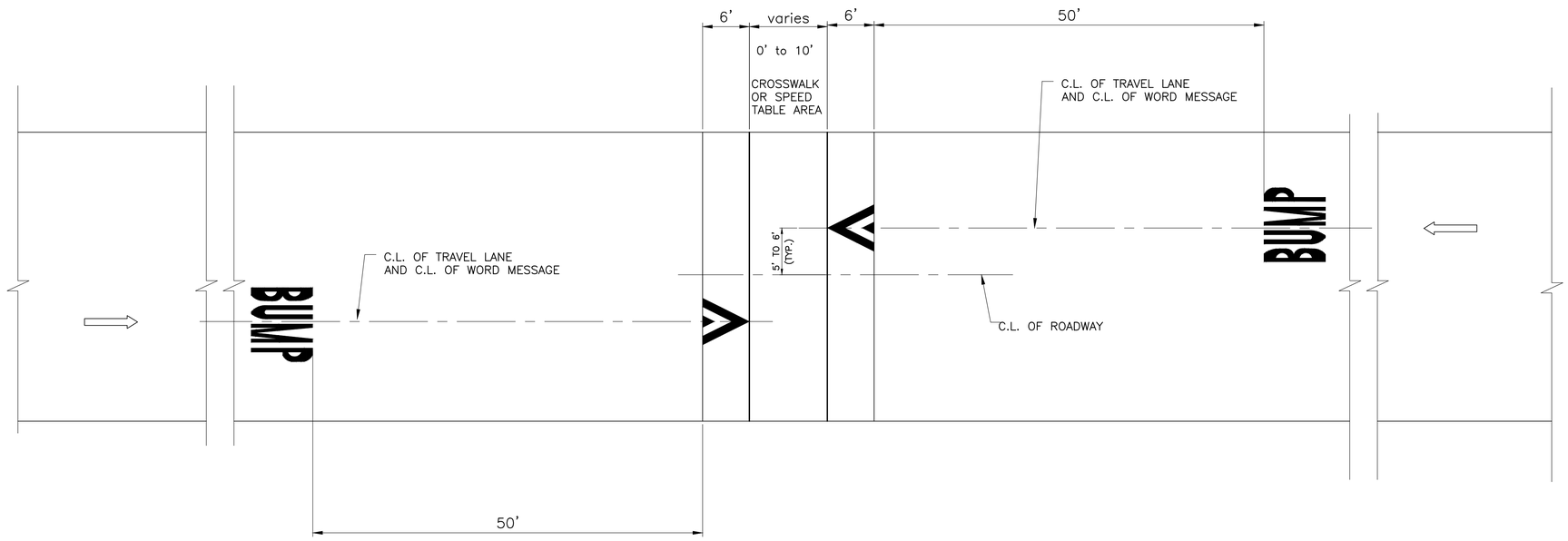
CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING AND MANAGEMENT (TP&M)
28–11 Queens Plaza North L.I.C., N.Y. 11101

TYPICAL PAVEMENT MARKINGS
RUMBLE STRIPS

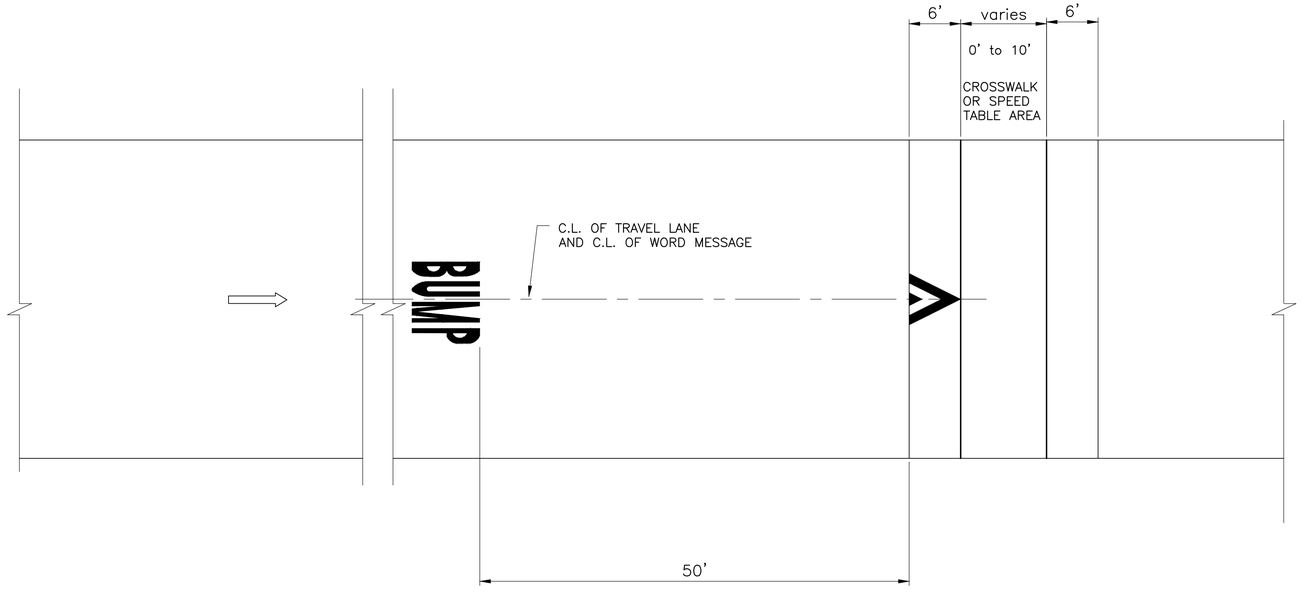
STATE OF NEW YORK ROGER KEVIN WHEELER 075878 LICENSED PROFESSIONAL ENGINEER P.E.

Drawn by K. KUSMICK
Checked by S. BARKHO & F. AZER
Borough ALL
Scale NOT TO SCALE
Effective Date 12/04/2020

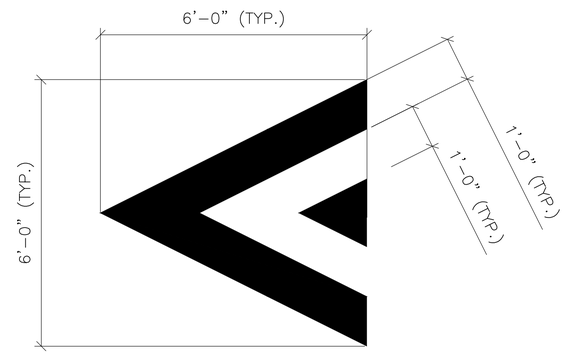
SHEET 16 OF 22
DRAWING
NO. TRS–1




SPEED BUMP SYMBOL AND WORD MESSAGE INSTALLATION FOR TWO-WAY STREETS




SPEED BUMP SYMBOL AND WORD MESSAGE INSTALLATION FOR ONE-WAY STREETS




"BUMP" SYMBOL LAYOUT

NOTES:

1. On multilane roadways one bump symbol and one word message shall be installed for each travel lane.
2. For bump message detail see typical drawing TWM-1.
3. For streets with bike lanes see typical drawing TSR-1.

NEW YORK CITY DOT

CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING AND MANAGEMENT (TP&M)
28-11 Queens Plaza North L.I.C., N.Y. 11101

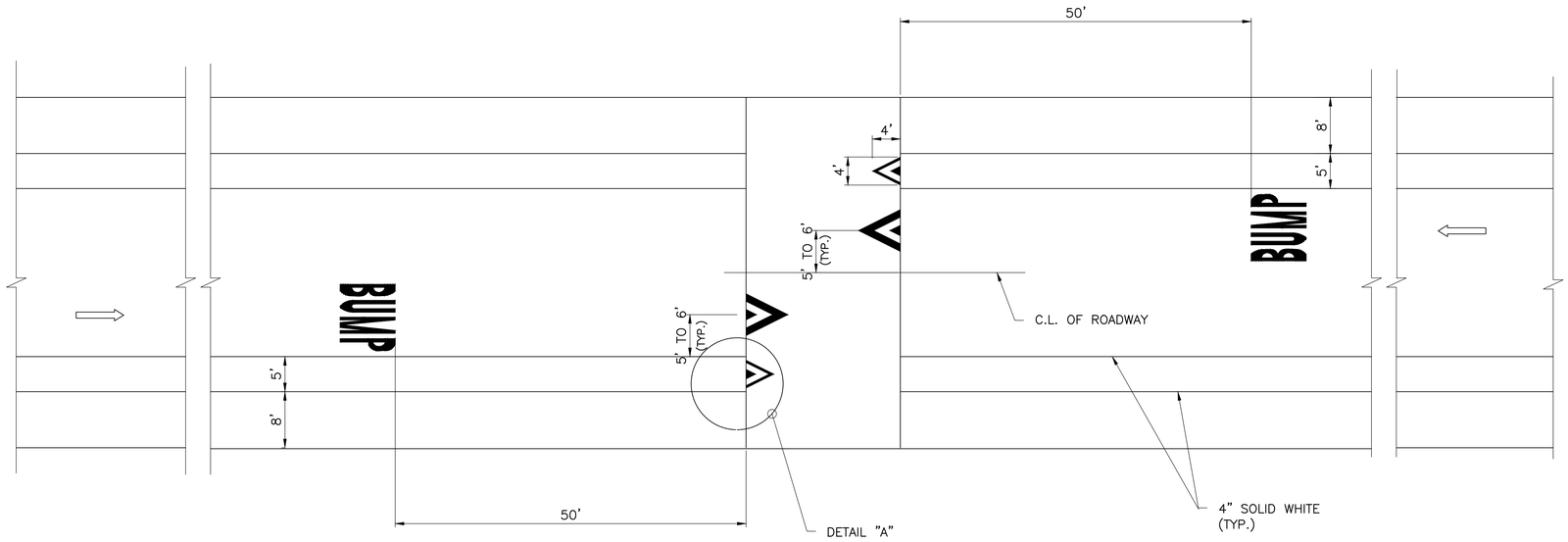
TYPICAL PAVEMENT MARKINGS

# SPEED BUMP MARKINGS

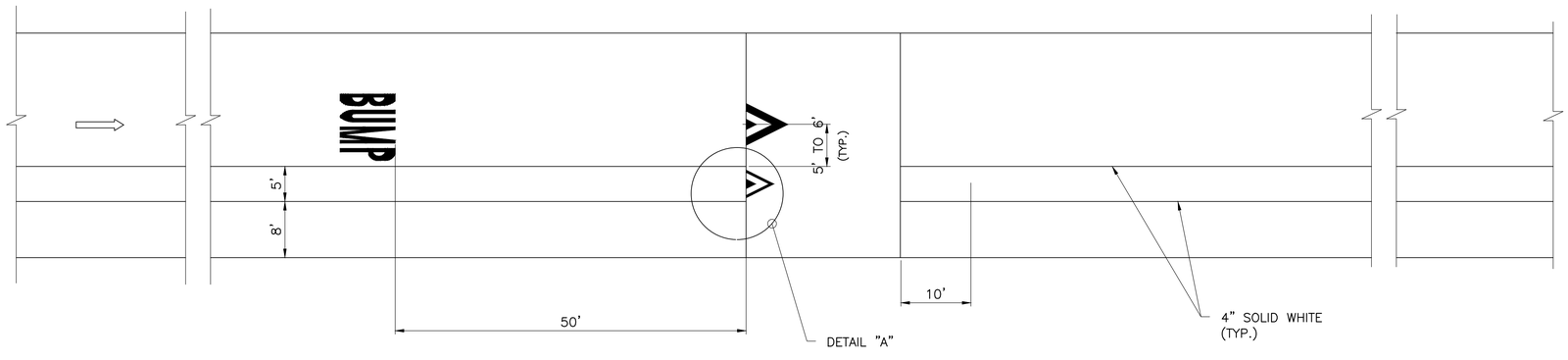
STATE OF NEW YORK — ROGER KEVIN WELLS — 075898 — LICENSED PROFESSIONAL ENGINEER — P.E.

Drawn by M.F.
Checked by S. BARKHO & F. AZER
Borough ALL
Scale NOT TO SCALE
Effective Date 11/04/2021

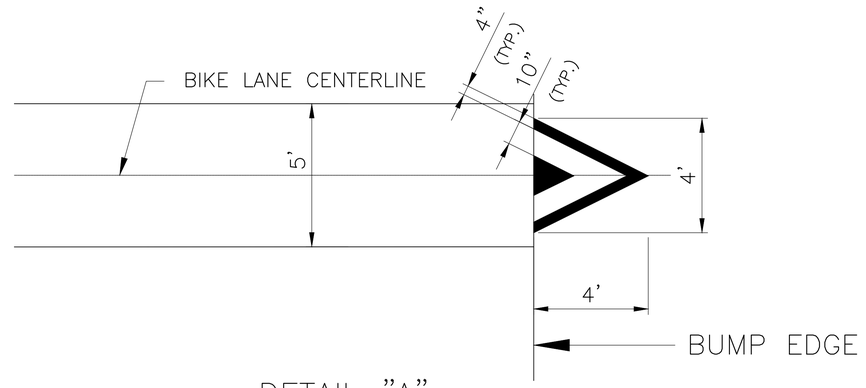
SHEET 17 OF 22
DRAWING NO. TSB-1




INSTALLATION FOR TWO-WAY STREETS



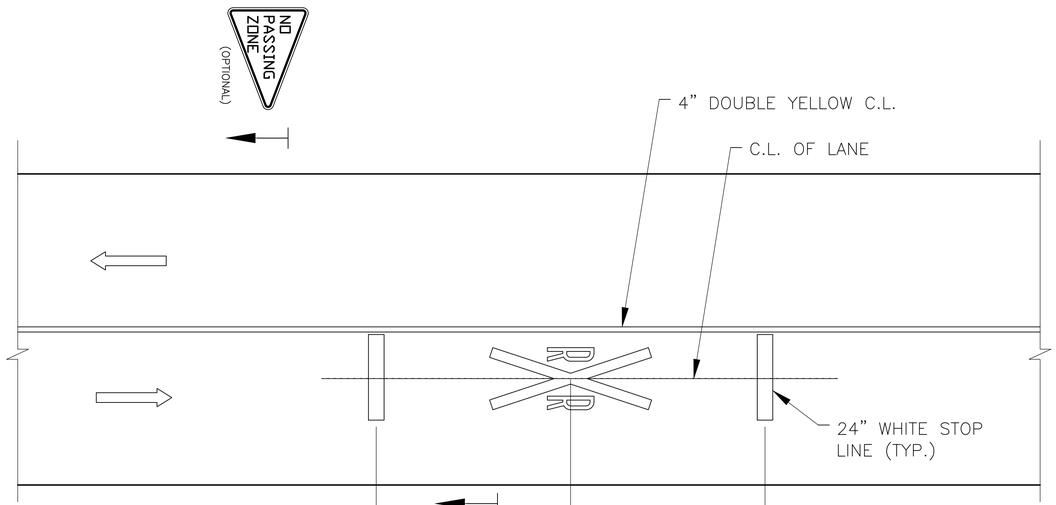

INSTALLATION FOR ONE-WAY STREETS



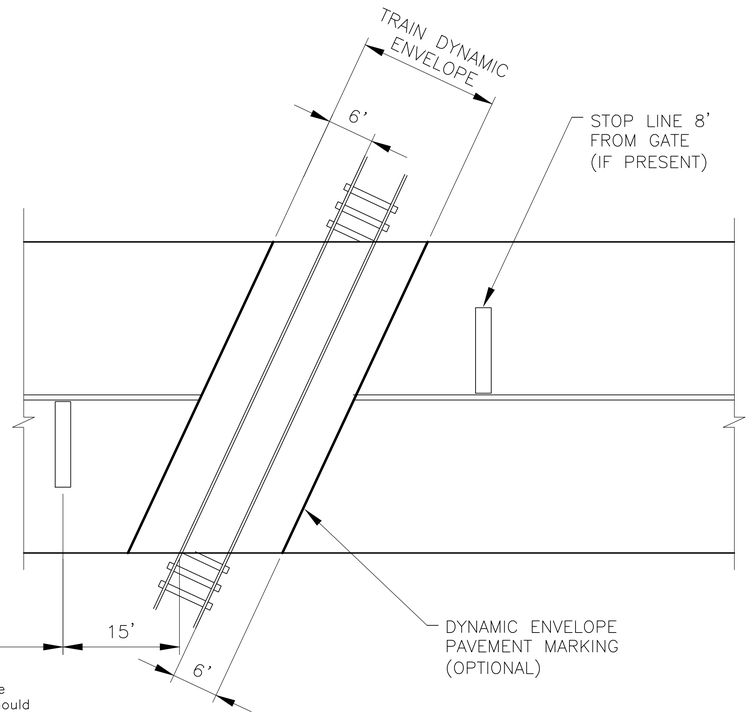

DETAIL "A"

NOTES:

1. For speed bump markings installation see typical drawing TSB-1.

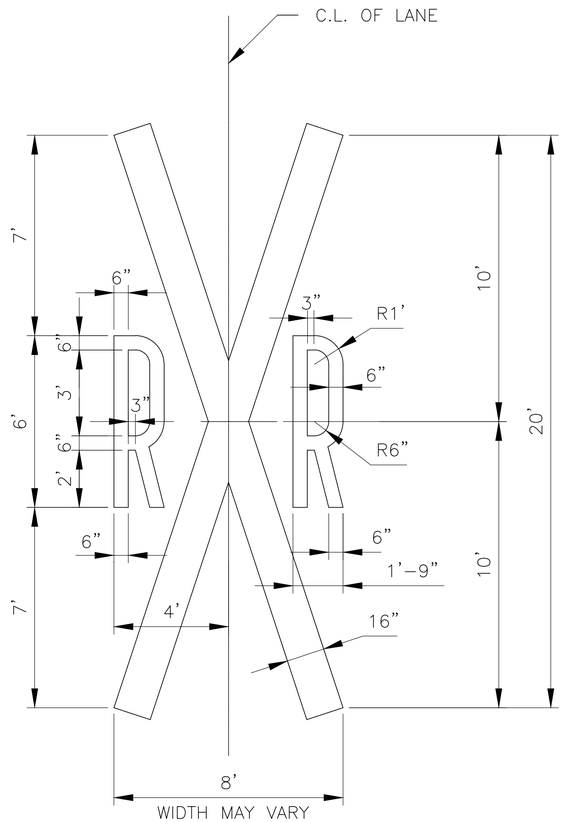



*When used, a portion of the pavement marking symbol should be directly opposite the Advance Warning Sign (W10-1). If needed, supplemental pavement marking sumbols(s) may be placed between the Advance Warning Sign and the crossing, but should be at least 15 meters (50 ft) from the stop line.




A three-lane roadway should be marked with a centerline for two-lane approach operation on the approach to a crossing.

On multi-lane roads, the transverse bands should extend across all approach lanes, and individual RXR symbols should be used in each approach lane.




WIDTH MAY VARY ACCORDING TO LANE WIDTH

DETAIL "A"
3/16"=1'-0"

NOTES:

1. The distances are adjusted for a sign legibility distance of 180 feet for Condition A. The distances for Condition B have been adjusted for a sign legibility distance of 250 feet, which is appropriate for an alignment warning symbol sign. For Conditions A and B, warning signs with less than 6-inch legend or more than four words, a minimum of 100 feet should be added to the advance placement distance to provide adequate legibility of the warning sign.
2. Typical conditions are locations where the road user must use extra time to adjust speed and change lanes in heavy traffic because of a complex driving situation. Typical signs are Merge and Right Lane Ends. The distances are determined by providing the driver a PRT of 14.0 to 14.5 seconds for vehicle maneuvers (2005 AASHTO Policy, Exhibit 3-3, Decision Sight Distance, Avoidance Maneuver E) minus the legibility distance of 180feet for the appropriate sign.
3. Typical condition is the warning of a potential stop situation. Typical signs are Stop Ahead, Yield Ahead, Signal Ahead, and Intersection Warning signs. The distances are based on the 2005 AASHTO Policy, Exhibit 3-1, Stopping Sight Distance, providing a PRT of 2.5 seconds, a deceleration rate of 11.2 feet/second2, minus the sign legibility distance of 180 feet.
4. Typical conditions are locations where the road user must decrease speed to maneuver through the warned condition. Typical signs are Turn, Curve, Reverse Turn, or Reverse Curve. The distance is determined by providing a 2.5 second PRT, a vehicle deceleration rate of 10 feet/second2, minus the sign legibility distance of 250 feet.
5. No suggested distances are provided for these speeds, as the placement location is dependent on site conditions and other signing. An alignment warning sign may be placed anywhere from the point of curvature up to 100 feet in advance of the curve. However, the alignment warning sign should be installed in advance of the curve and at least 100 feet from any other signs.
6. The minimum advance placement distance is listed as 100 feet to provide adequate spacing between signs.

NEW YORK CITY DOT
CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING AND MANAGEMENT (TP&M)
28-11 Queens Plaza North L.I.C., N.Y. 11101

TYPICAL PAVEMENT MARKINGS

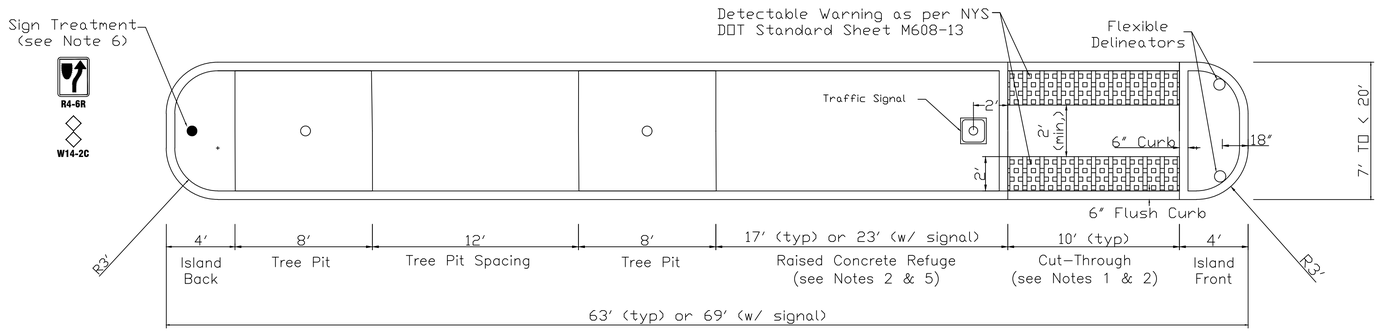
# HIGHWAY-RAIL GRADE CROSSINGS

STATE OF NEW YORK ROGER KEVIN WELLS 075898 LICENSED PROFESSIONAL ENGINEER
R. WELLS, P.E.

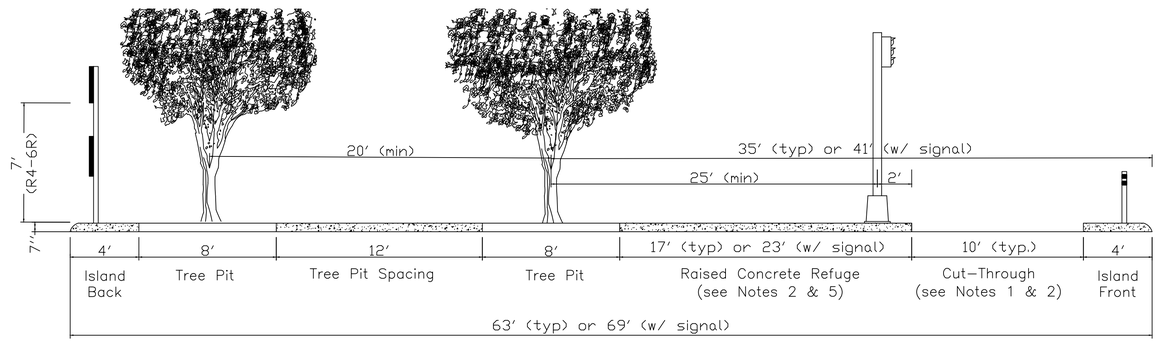
Drawn by M.F.
Checked by S. BARKHO & F. AZER
Borough ALL
Scale NOT TO SCALE
Effective Date 12/01/2015


DRAWING NO. TRR-1

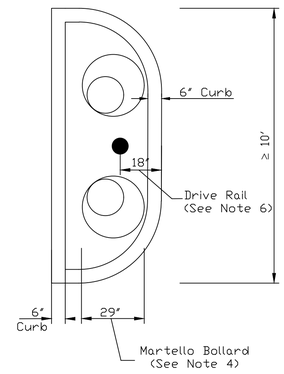
## Typical 7' to <20' Width Island (Plan)



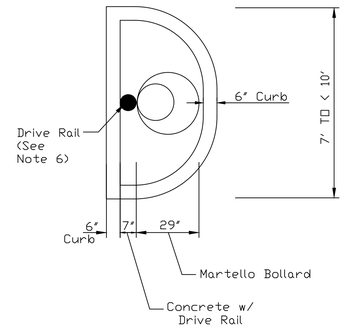

## Typical 7' to <20' Width Island (Side Elevation)



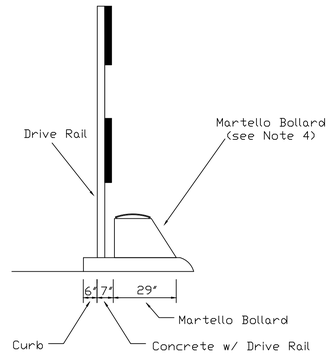

## Detail 1: ≥10' Island Front w/ Double Bollards



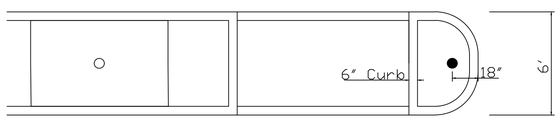

## Detail 2: 7' to <10' Island Front w/ Single Bollard (Plan)



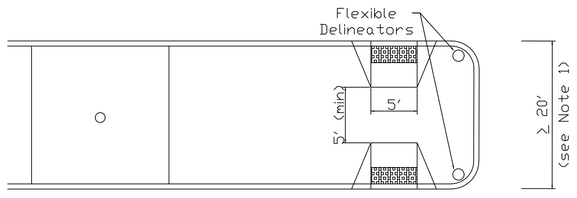

## Detail 3: 7' to <10' Island Front w/ Single Bollard (Elevation)




## Detail 4: 6' Width Island Plan w/o Detectable Warning Mat




## Detail 5: ≥20' Width Island Plan w/ Ped Ramps (see Note 1)




NOTES:

1. For islands 20' and wider, instead of a cut-through, pedestrian ramps with 1:12 max. grade and 5' min. landing area shall be used (as per NYS DOT Standard Sheet M808-13). For islands 16' to <20', pedestrian ramps can be considered if and only if the curb height is lowered to accommodate the 1:12 required ramp grade while maintain the 5' min landing area.

2. Cut-through and raised concrete refuge widths shall be based on width of sidewalk approaching the island according to the following table:

| Sidewalk width | 12' | 13' | ≥14' |
|---|---|---|---|
| Cut-through | 8' min | 9' | 10' max |
| Raised cncrt refuge w/o signal | 19' max | 18' | 17' min |
| Raised cncrt refuge w/ signal | 25' max | 24' | 23' min |

3. Engineering judgement shall be used to determine the size of raised refuge and cut-through for islands with special conditions.

4. Based on engineering judgement, Martello Bollard(s) with approved reflective elements may be included where left-hand turn movement is made towards the island in the receiving leg of an intersection, or otherwise determined to be necessary based on traffic conditions and analyses.

5. Any tree (measured from center) must be at least 25' from any signal head or street light. A tree can not be included if it obstructs the sight line to a pole mounted traffic signal face.

6. Signs are subject to engineering judgement. Signs should be used where it is not readily apparent that traffic is required to keep to the right.

7. A vertical reflective element shall be provided at the front and back of each island. Examples of vertical reflective elements include Martello Bollards, flexible delineators, and signs. Flexible delineators shall be installed at locations where no Martello Bollards or signs are provided. However, at trailing ends, without approaching traffic, a vertical reflective element is not required.

8. No island should be less than 6'. A 6' minimum island should only be considered in locations where no alternatives exist to provide necessary horizontal geometry. For 6' islands, detectable warning surface shall not be installed.

NEW YORK CITY DOT

CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING AND MANAGEMENT (TP&M)
28-11 Queens Plaza North L.I.C., N.Y. 11101

TYPICAL PAVEMENT MARKINGS

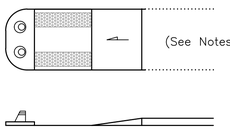
# TYPICAL PLANTED PEDESTRIAN ISLAND

STATE OF NEW YORK — ANDREW KEVIN WELD — 075886 — LICENSED PROFESSIONAL ENGINEER — P.E.

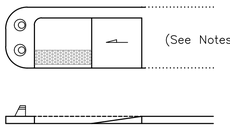
Drawn by D. NELSON
Checked by S. BARKHO
Borough ALL
Scale NOT TO SCALE
Effective Date 1/18/18

SHEET 20 OF 22
DRAWING
NO. TRF-2

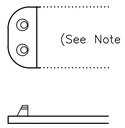
## Island End With Cut–Thru



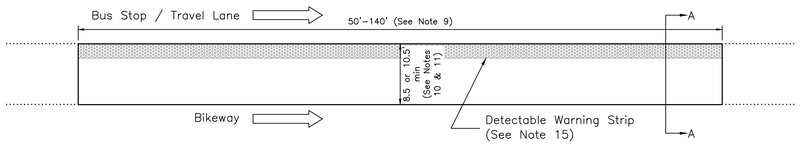

## Island End With Parallel Ramp



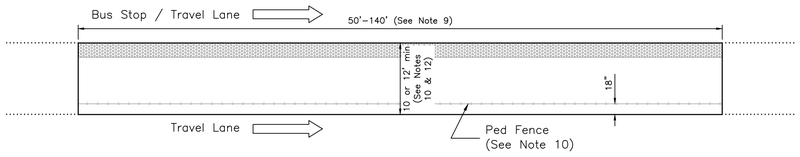

## Island End Without Ramp



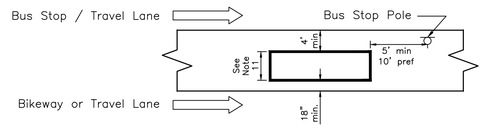

## Middle Section w/o Fence



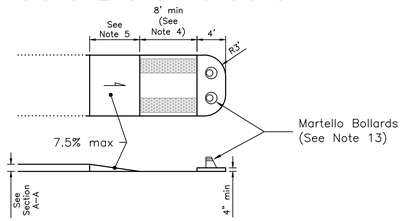

## Middle Section w/ Fence

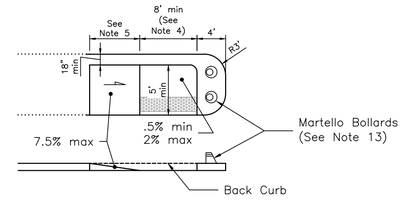


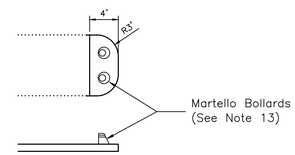

## Bus Shelter Placement




## Island End Dimensions



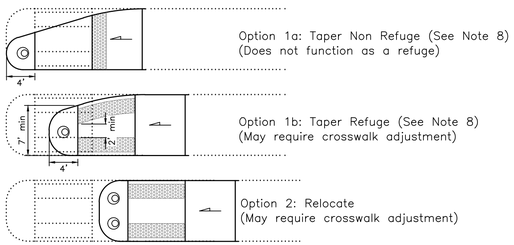



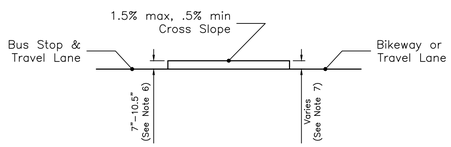

**Notes:**

1. Islands may be wider and/or longer, as determined by engineering judgement for the context.
2. At least one end of the island shall have a ramp and it is desirable that both have ramps. For islands with middle sections longer than 70', both ends should have ramps. If a single ramp is used it should be at the end which is closest to the nearest crosswalk.
3. For particularly wide islands or in other atypical contexts, perpendicular curb ramps may be considered in lieu of cut–thrus and parallel ramps.
4. Width of cut–thru or ramps should be 8' min and as wide as the crosswalk desirably. However, 5' minimum is permitted where a smaller cut–thru or ramp would avoid a constraint that would otherwise hinder constructability. For cut–thrus or ramps wider than 10', pipe bollards or other design features should be present to deter motor vehicle use.
5. Length of the ramp shall be based on 7.5% max slope for design and layout (8.33% max for work acceptance).
6. The curb height against the bus stop shall be 7" min, with 10.5" preferred.
7. The curb height opposite the bus stop may be variable in height to maintain an ADA–compliant cross slope of 1.5% max for design and layout (2% max for work acceptance) and positive drainage across the island of .5% min.
8. Where the bus island would otherwise obstruct permitted vehicle turns, the end section may be tapered and/or filleted to avoid the swept path of the vehicle (Options 1a or 1b). Option 1a should be considered first, and if infeasible or if the island needs to function as a pedestrian refuge for signal timing, then Option 1b should be considered. In cases where Options 1a and 1b are insufficient or infeasible, the island may be moved away from the intersection (Option 2).
9. Minimum middle section lengths are as follows:
   a. Standard bus (40' design vehicle)
      50' infrequent, 90' frequent
   b. Express bus (45' design vehicle)
      50' infrequent, 95' frequent
   c. Articulated bus (62' design vehicle)
      70' infrequent, 140' frequent
10. Minimum island widths with no bus shelter are as follows:
   a. Standard and articulated buses
      8.5' adjacent to bike lane, 10' adjacent to travel lane
   b. Express bus
      10.5' adjacent to bike lane, 12' adjacent to travel lane
11. Bus shelter depth is 3' 8" for types A and B and 5' 2" for types C, D, and SBS double shelters – requiring 9' 2" or 10' 8" minimum island width respectively.
12. Pedestrian fence should be used when the side of the island opposite the bus stop is adjacent to a vehicular travel lane, However since this requires an additional 18", engineering judgment should be used when available width is constrained.
13. Bollards may be installed per NYC DOT policy and engineering judgement where warranted to protect people on the island from turning or merging vehicles.
14. Refer to drawing TRF–2 for placement of flexible delineators. Where a bike lane approaches the bus boarding island, a flexible delineator may be installed on the corner of the island to increase visibility of the curb.
15. A 2' wide detectable warning strip should be placed along the full length of the edge of the middle section wherever the curb height is greater than 7".

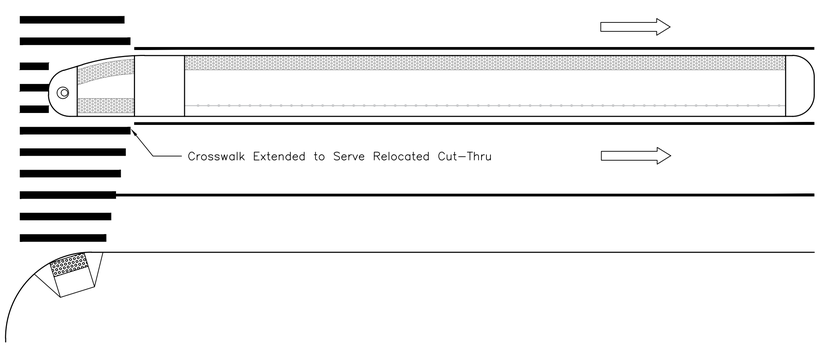
## Island End Modification Options for Turning Vehicle Swept Path

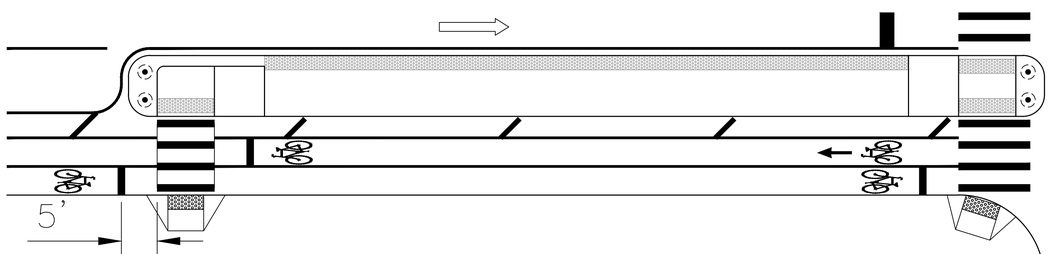



## Section A–A (Scale 1:5)




## Example Islands w/ Markings




NEW YORK CITY DOT

CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING AND MANAGEMENT (TP&M)
28–11 Queens Plaza North L.I.C., N.Y. 11101

TYPICAL DESIGN

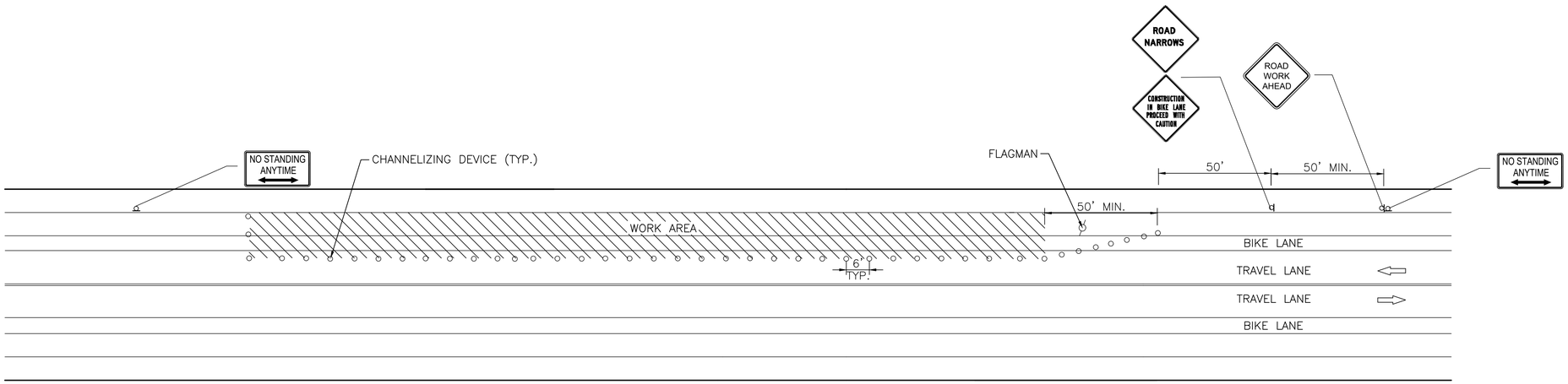
# BUS BOARDING ISLAND

STATE OF NEW YORK ROGER KEVIN LEWIS 075889 LICENSED PROFESSIONAL ENGINEER

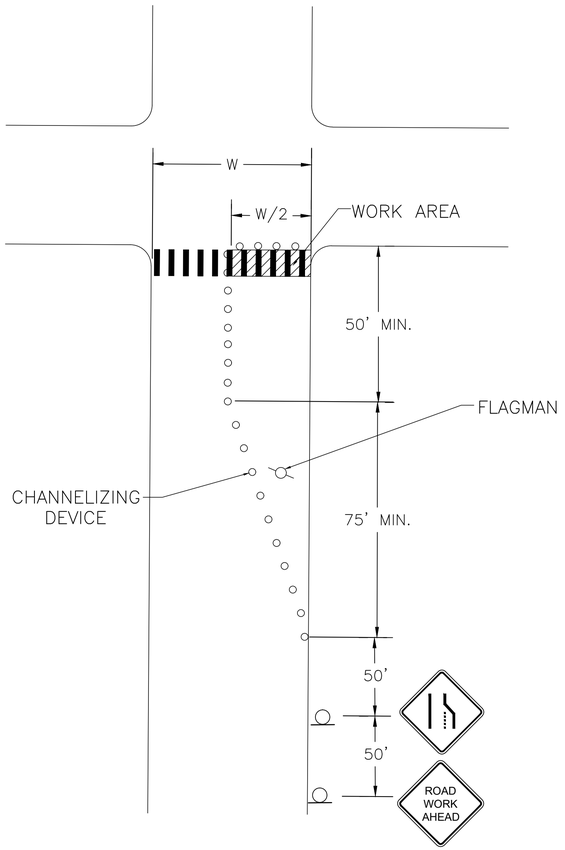
D, P.E.

Drawn by A. SULESKI & D. CAIAZZO
Checked by M. SINGH
Borough ALL
Scale NOT TO SCALE
Effective Date 05/21/2024

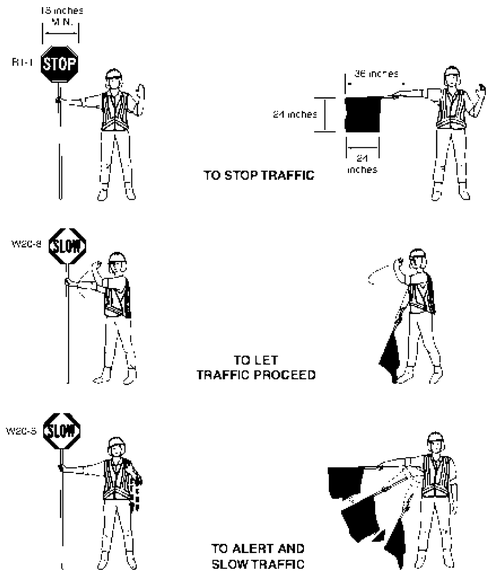
SHEET 21 OF 22
DRAWING
NO. BBI–1



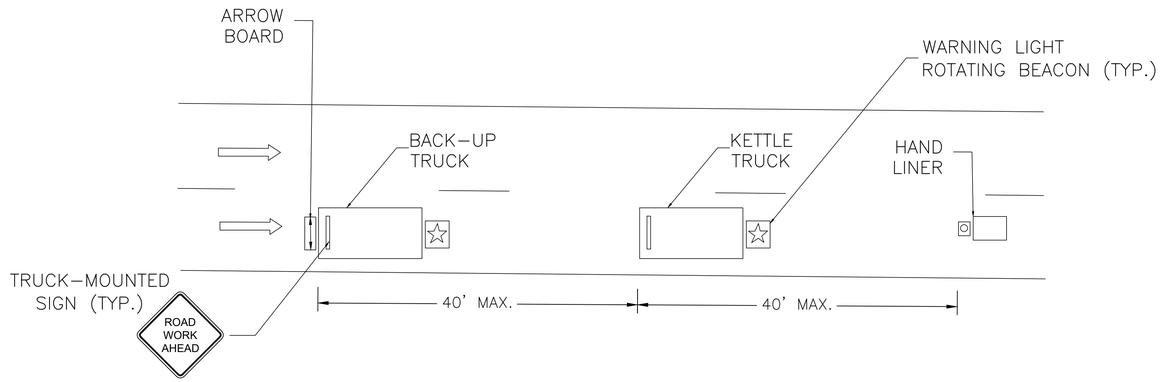

## TYPICAL CONSTRUCTION OF BIKE LANE
N.T.S.




## TYPICAL CONSTRUCTION OF CROSSWALKS
N.T.S.




## USE OF HAND–SIGNALING DEVICES BY FLAGGERS




## MOBILE OPERATIONS FOR PAVEMENT MARKING INSTALLATION
N.T.S.

NOTES:

1. ALL WARNING SIGNS SHALL BE 30" X 30" IN SIZE; PARKING SIGNS SHALL BE 12" X 18" IN SIZE.
2. REFER TO NYCDOT STANDARD PAVEMENT MARKING SHEETS TBL–2 AND TCW–1 FOR TYPICAL PAVEMENT MARKING DETAILS.

NEW YORK CITY DOT
CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING AND MANAGEMENT (TP&M)
28–11 Queens Plaza North L.I.C., N.Y. 11101

TYPICAL PAVEMENT MARKINGS & GEOMETRY

# WORK ZONE TRAFFIC CONTROL PAVEMENT MARKINGS INSTALLATIONS

STATE OF NEW YORK ROGER KEVIN WEED 075808 LICENSED PROFESSIONAL ENGINEER P.E.

| | |
|---|---|
| Drawn by | R. EGAN |
| Checked by | S. BARKHO |
| Borough | ALL |
| Scale | NOT TO SCALE |
| Effective Date | 12/04/2020 |



DRAWING NO. TCC–1