Traffic Engineering Division

Traffic Engineering Division
2633 Michigan Ave
Detroit, MI 48216

Phone: 313·224-1610
www.detroitmi.gov

CITY OF DETROIT PAY ITEMS FOR PAVEMENT MARKING

Line	Specs Year	Pay Item	Description	Units
1	2020	1100001	Mobilization, Max	LSUM
2	2020	8110091	Pavt Mrkg, Polyurea, 4 inch, White	Ft
3	2020	8110092	Pavt Mrkg, Polyurea, 4 inch, Yellow	Ft
4	2020	8110093	Pavt Mrkg, Polyurea, 6 inch, Crosswalk	Ft
5	2020	8110105	Pavt Mrkg, Polyurea, Bike, Small Sym	Ea
6	2020	8110108	Pavt Mrkg, Polyurea, 12 inch, Cross Hatching, White	Ft
7	2020	8110109	Pavt Mrkg, Polyurea, 12 inch, Cross Hatching, Yellow	Ft
8	2020	8110110	Pavt Mrkg, Polyurea, 12 inch, Crosswalk	Ft
9	2020	8110110	Pavt Mrkg, Polyurea, 12 inch, Crosswalk	Ft
10	2020	8110113	Pavt Mrkg, Polyurea, 18 inch, Stop Bar	Ft
11	2020	8110114	Pavt Mrkg, Polyurea, 24 inch, Stop Bar	Ft
12	2020	8110115	Pavt Mrkg, Polyurea, Sharrow Sym	Ea
13	2020	8110153	Pavt Mrkg, Sprayable Thermopl, 4 inch, White	Ft
14	2020	8110154	Pavt Mrkg, Sprayable Thermopl, 4 inch, Yellow	Ft
15	2020	8110155	Pavt Mrkg, Sprayable Thermopl, 6 inch, White	Ft
16	2020	8110159	Pavt Mrkg, Sprayable Thermopl, 12 inch, White	Ft
17	2020	8110343	Rem Spec Mrkg	Sft
18	2020	8110400	Pavt Mrkg, Polyurea, Bus	Ea
19	2020	8110404	Pavt Mrkg, Polyurea, Rt and Lt Turn Arrow Sym	Ea
20	2020	8110405	Pavt Mrkg, Polyurea, Lt Turn Arrow Sym	Ea
21	2020	8110410	Pavt Mrkg, Polyurea, Only	Ea
22	2020	8110411	Pavt Mrkg, Polyurea, Railroad Sym	Ea
23	2020	8110412	Pavt Mrkg, Polyurea, Rt Turn Arrow Sym	Ea
24	2020	8110415	Pavt Mrkg, Polyurea, Stop	Ea
25	2020	8110416	Pavt Mrkg, Polyurea, Thru and Lt Turn Arrow Sym	Ea
26	2020	8110417	Pavt Mrkg, Polyurea, Thru and Rt Turn Arrow Sym	Ea
27	2020	8110418	Pavt Mrkg, Polyurea, Thru Arrow Sym	Ea
28	2020	8112159	Scarification, for Polyurea Spec Mrkg	Sft
29	2020	8112170	Pavt Mrkg, Polyurea, Bike Thru Arrow Sym	Ea
30	2020	8112173	Pavt Mrkg, Polyurea, Yield Triangle Sym	Ea
31	2020	8117001	_Pavt Mrkg, Waterborne, Curb, 12 inch	Ft

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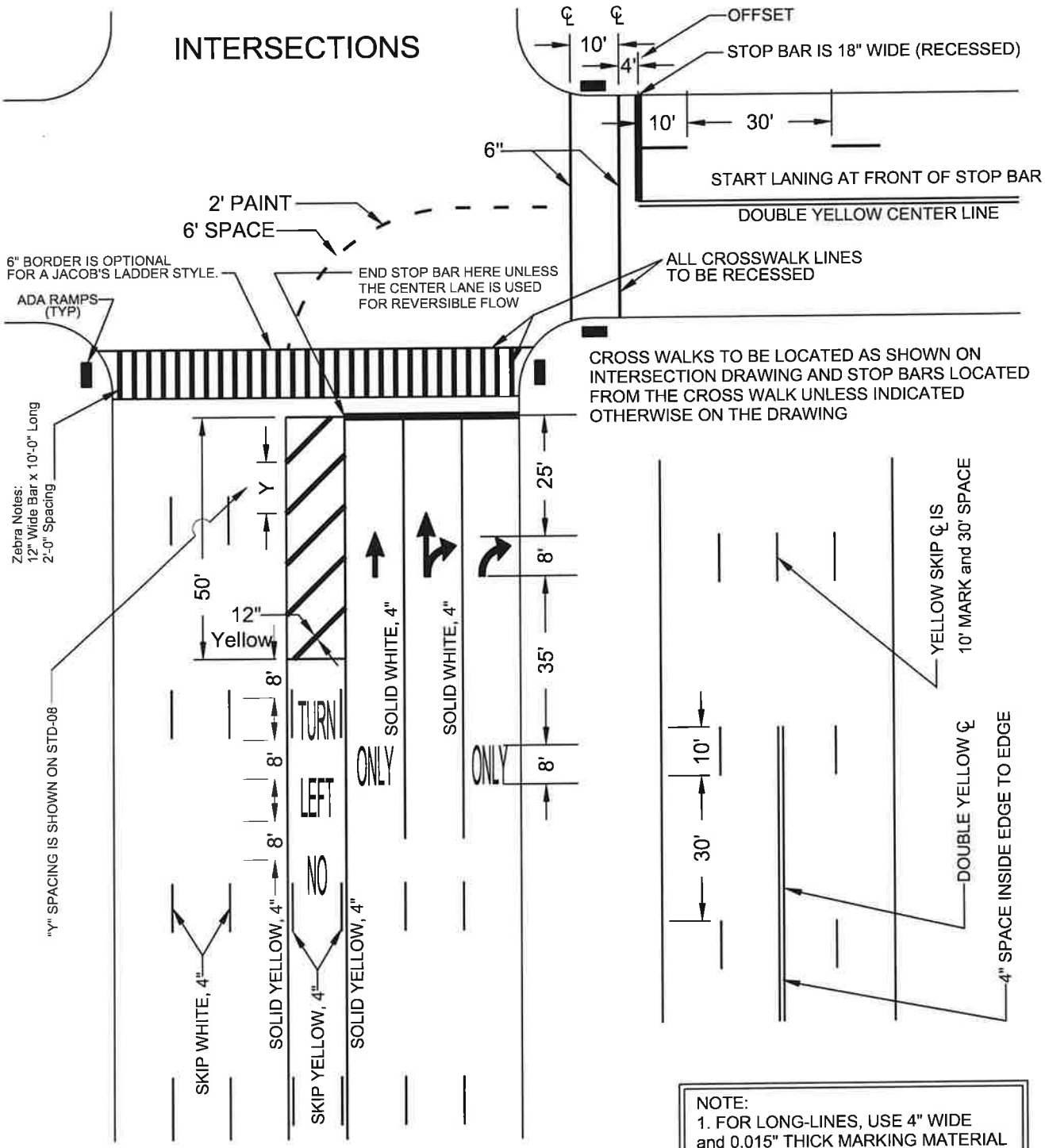
CITY OF DETROIT PAY ITEMS FOR PAVEMENT MARKING

32	2020	8117010	_Recessing Pavt Mrkg, Transv, Modified	Sft
33	2020	8117010	_Pavt Mrkg, Polymer Cement, Base Field, Green	Sft
34	2020	8117010	_Pavt Mrkg, Polymer Cement, Base Field, Red	Sft
35	2020	8117050	_Pavt Mrkg, Polymer Cement, Bike Directional Arrow, White	Ea
36	2020	8117050	_Pavt Mrkg, Polymer Cement, Bike Sharrow Sym, White	Ea
37	2020	8117050	_Pavt Mrkg, Polymer Cement, Bike Sym, Small, White	Ea
38	2020	8117050	_Pavt Mrkg, Polyurea, No Left Turn Legend	Ea
39	2020	8117050	_Pavt Mrkg, Polyurea, Speed Hump Sym	Ea
40	2020	8120140	Lighted Arrow, Type C, Furn	Ea
41	2020	8120141	Lighted Arrow, Type C, Oper	Ea
42	2020	8120170	Minor Traf Devices	LSUM
43	2020	8120210	Pavt Mrkg, Longit, 6 inch or Less Width, Rem	Ft
44	2020	8120350	Sign, Type B, Temp, Prismatic, Furn	Sft
45	2020	8120351	Sign, Type B, Temp, Prismatic, Oper	Sft

INTERSECTIONS



NOTES:
1) DO NOT VARY DETAIL STANDARDS UNLESS APPROVED BY A TRAFFIC ENGINEERING REPRESENTATIVE
2) ALL CROSSWALKS AND STOP BARS SHALL BE RECESSED

NOTE:
1. FOR LONG-LINES, USE 4" WIDE and 0.015" THICK MARKING MATERIAL
2. ALL PAINT IS WHITE UNLESS SPECIFIED OTHERWISE
3. ALL ℄ ARE YELLOW

APPROVED BY: J. Flind

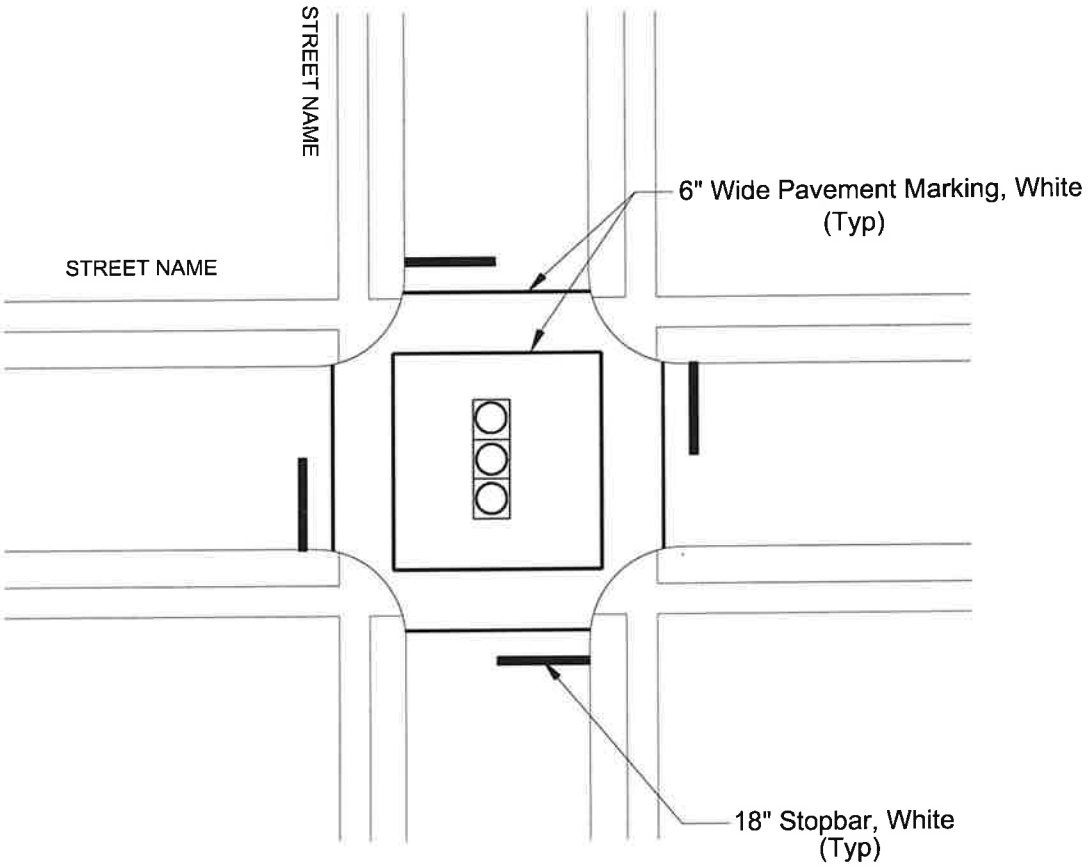
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

FIELD MARKING STANDARDS

DRAWN : A.D. BOLTON
SCALE : 1" = 30'
DATE : 08 - 04 - 2020

NO. STD-01

Basic 6" BORDER CROSSWALK



For Signal Controlled Intersections Which Do Not Meet Zebra Crosswalk criteria Listed On STD-03

APPROVED BY: J. Flint

CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	CROSSWALKS FIELD MARKING STANDARDS	DRAWN : A.D. BOLTON SCALE : 1" = 30' DATE : 08 - 04 - 2020 NO. STD-02

ZEBRA CROSSWALK - 12" BANDS

Install Zebra Crosswalk When:

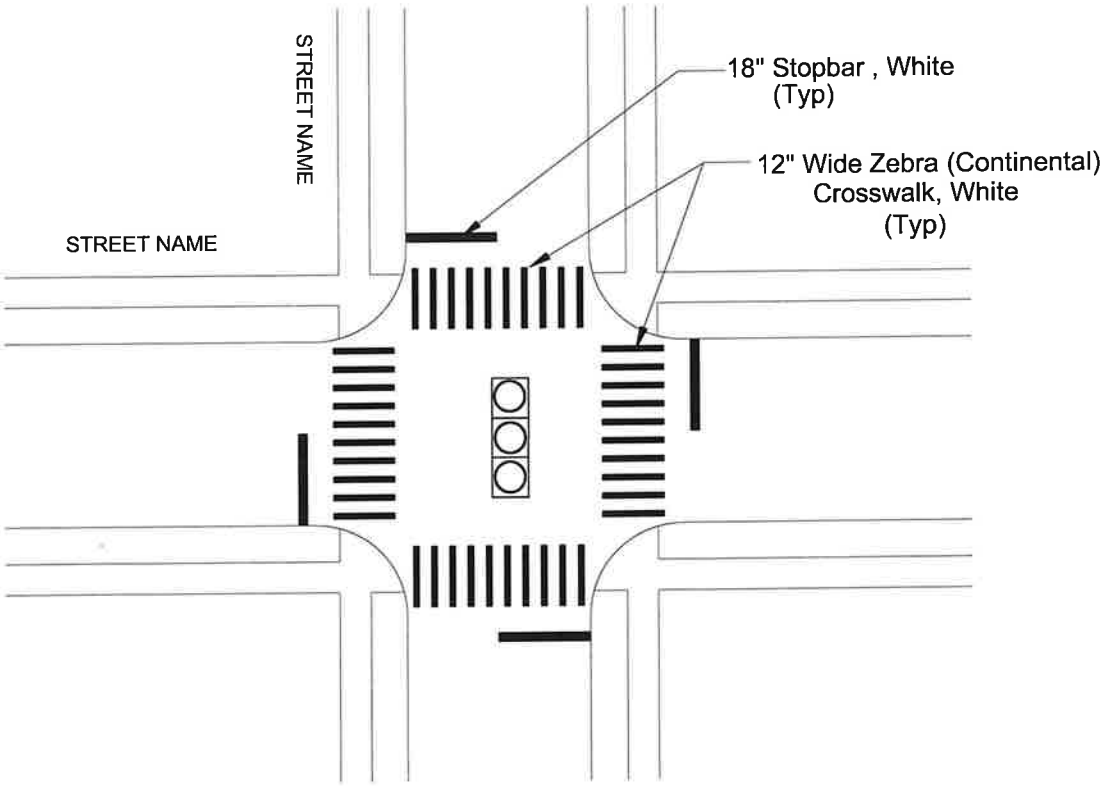
Minimum Pedestrian Volume Thresholds Per MDOT Guidelines

1) 20 pedestrians* per hour, in any one hour, or
2) 18 pedestrians* per hour, in any two hours, or
3) 15 pedestrians* per hour, in any three hours or
4) 10 school age (grades K-12) pedestrians per hour, traveling to or from school, where the crossing is a designated school walking route.

Notes:

Counts are per direction, e.g. East / West or North / South

* Young, elderly, and disabled persons count double



Note: Select Crosswalk Type According To Pedestrian Demand

APPROVED BY: J. Flint

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

CROSSWALKS

FIELD MARKING STANDARDS

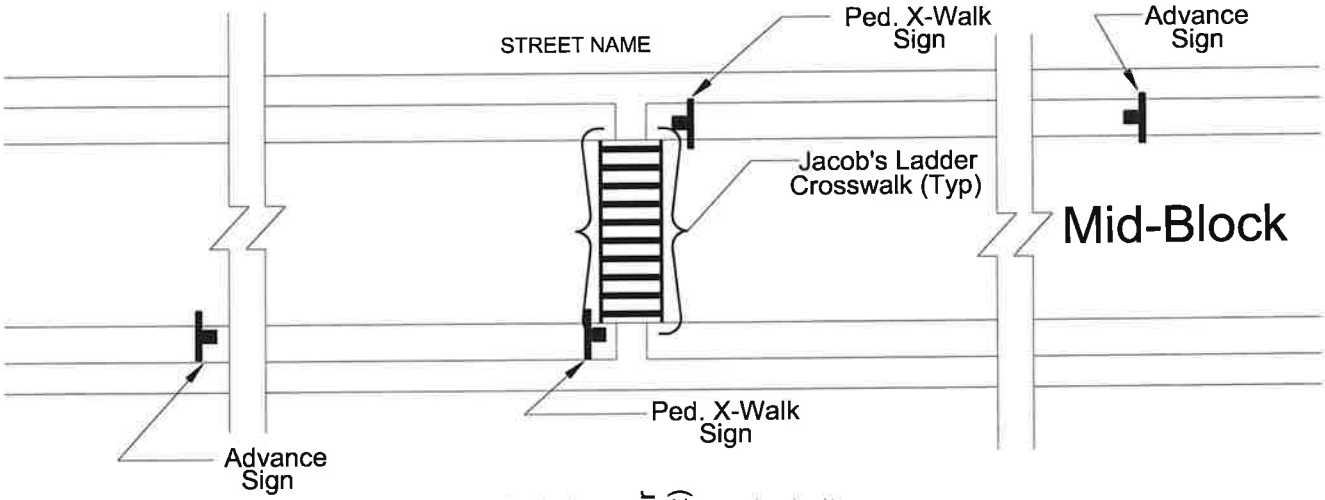
DRAWN : A.D. BOLTON
SCALE : 1" = 30'
DATE : 08 - 04 - 2020

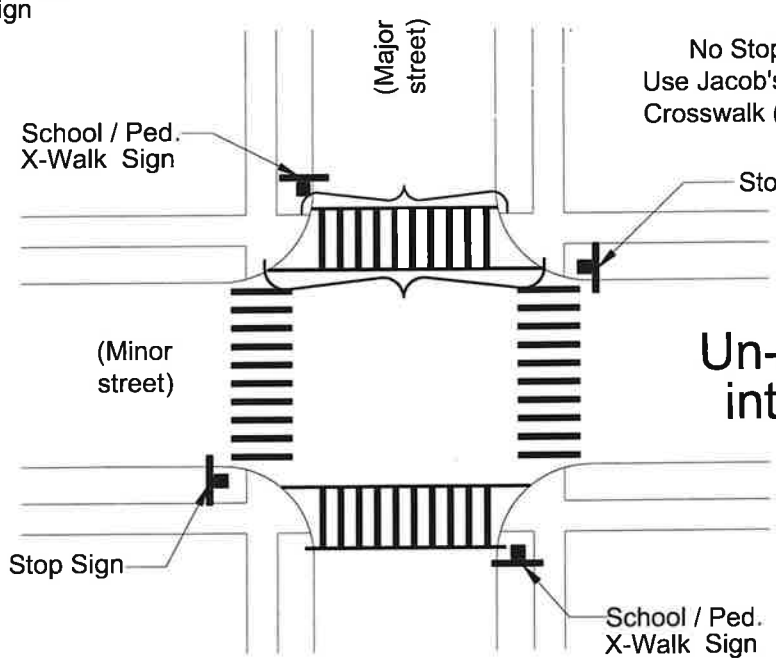
NO. STD-03

CROSSWALKS AT UNSIGNALIZED LOCATIONS
JACOB'S LADDER

For Minor and Major Collector Roads and also at Intersections Adjacent to Schools
Install a Zebra Crosswalk if it meets the following criteria:

1) The pedestrian volume exceeds the minimum threshold. see STD-03
2) It is at least 300 feet from the nearest crossing or
3) 200 feet from the nearest crossing, when the block is only 400 feet long, or
4) A crossing is needed for a shared-use path





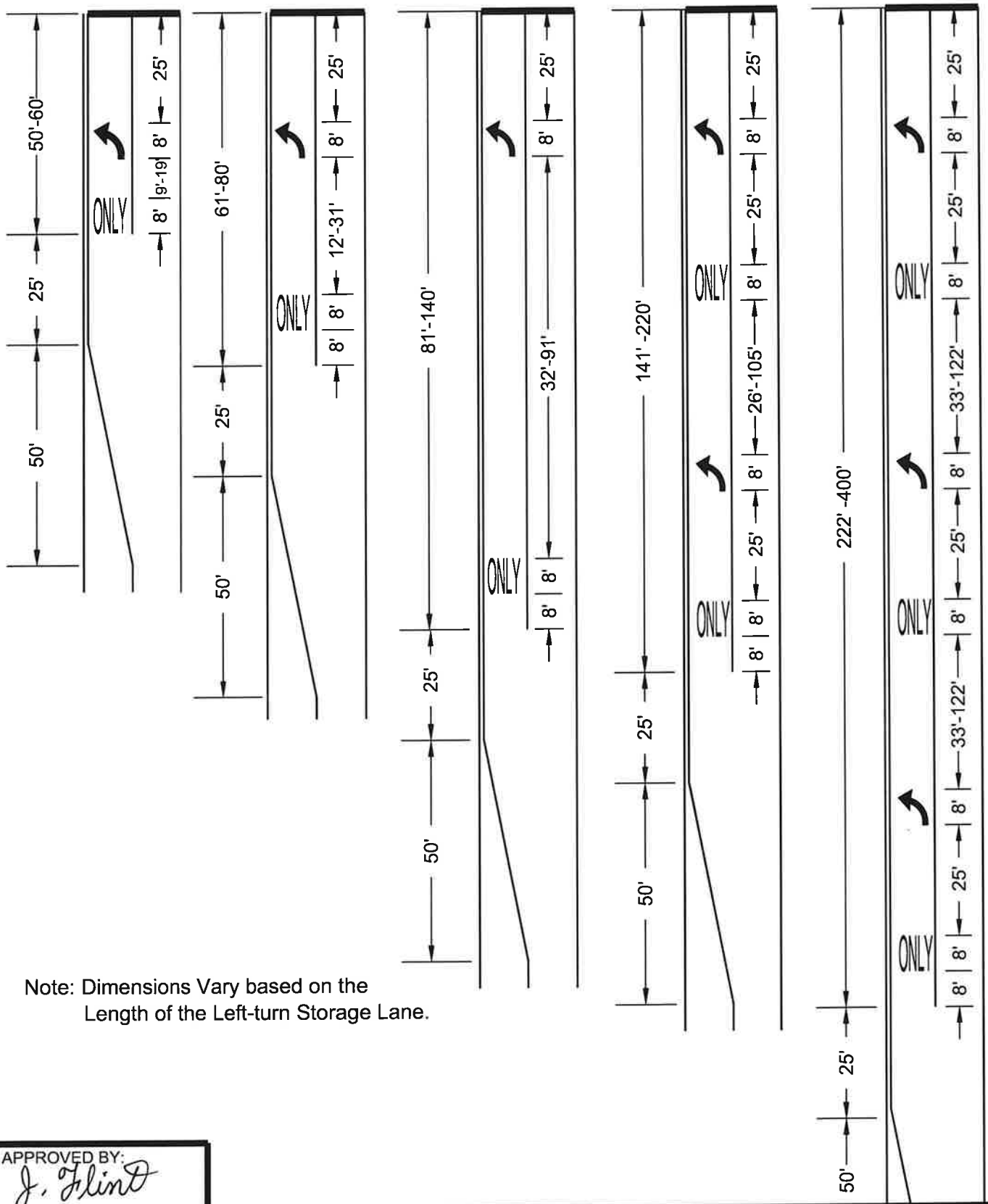
APPROVED BY: J. Flint

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

CROSSWALKS
FIELD MARKING STANDARDS

DRAWN : A.D. BOLTON
SCALE : 1" = 30'
DATE : 08 - 04 - 2020

NO. STD-04



Note: Dimensions Vary based on the Length of the Left-turn Storage Lane.

APPROVED BY: J. Flint

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

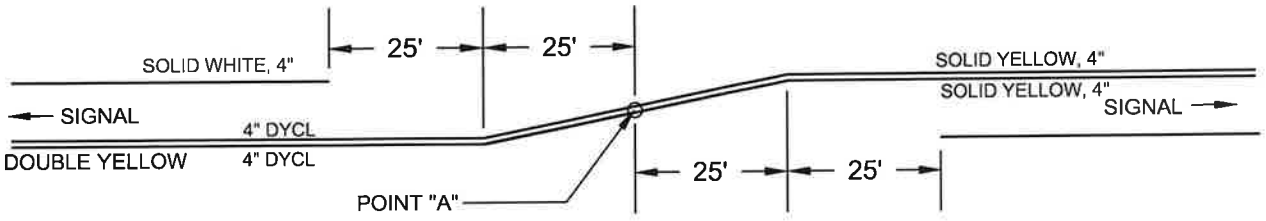
LEFT TURN STORAGE LANES

FIELD MARKING STANDARDS

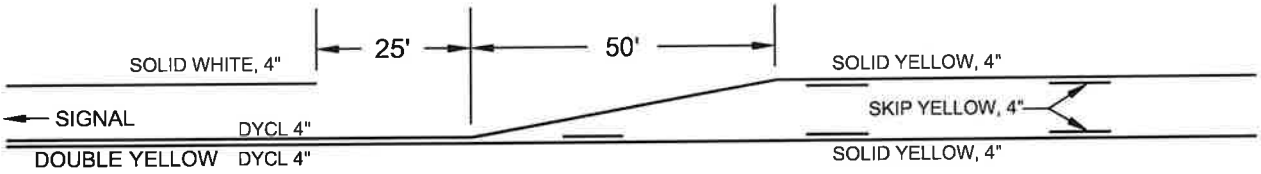
DRAWN : A.D. BOLTON
SCALE : 1" = 30'
DATE : 08 - 04 - 2020

NO. STD-05

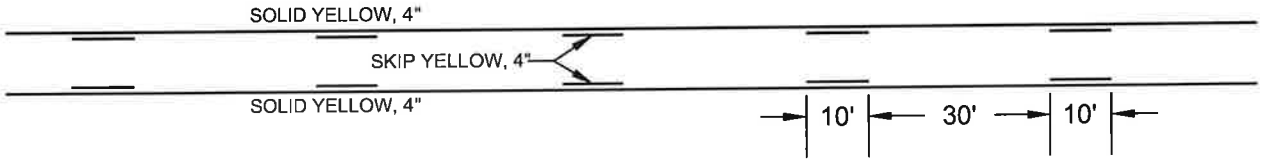
CENTER LEFT TURN LANE CROSSOVER DETAILS



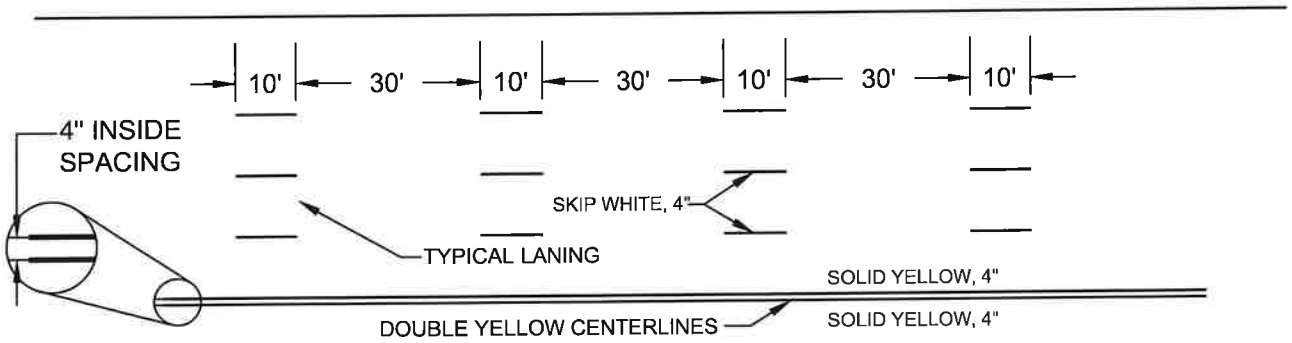
BETWEEN TWO SIGNALIZED INTERSECTIONS



BETWEEN SIGNALIZED AND NON-SIGNALIZED INTERSECTIONS



BETWEEN TWO NON-SIGNALIZED INTERSECTIONS



DETAILS

NOTE:
POINT "A" IS LOCATED MID - BLOCK UNLESS OTHERWISE NOTED.
ALL LANE LINES AND CENTERLINES BEGIN OR END AT FRONT OF INTERSECTIONAL STOP BARS UNLESS OTHERWISE NOTED.

APPROVED BY:
J. Flint

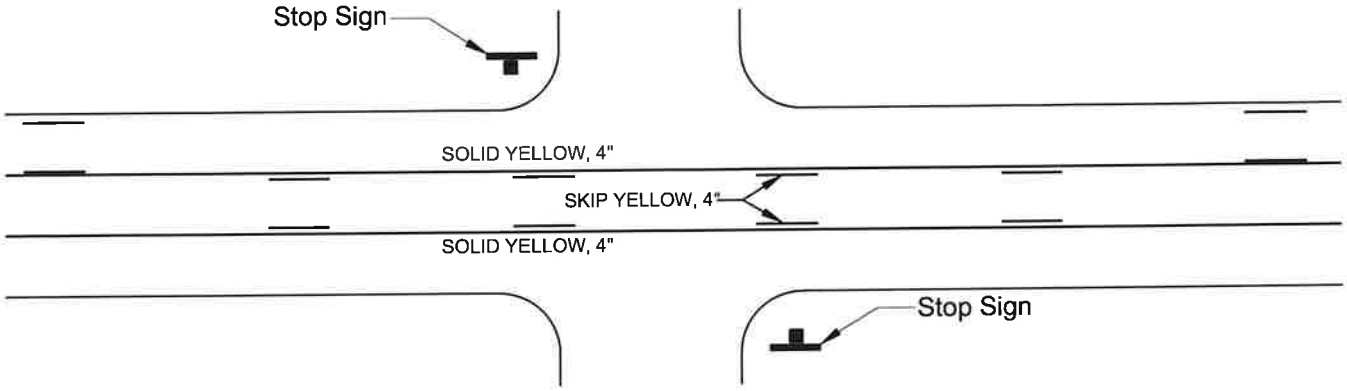
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

FIELD MARKING STANDARDS

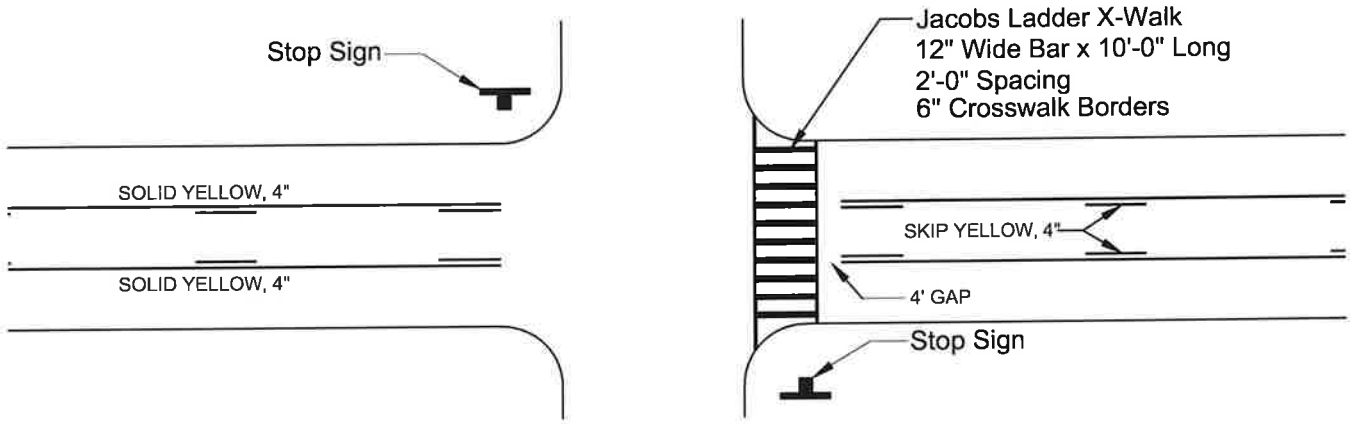
DRAWN : A.D. BOLTON
SCALE : 1" = 30'
DATE : 08 - 04 - 2020

NO. STD-06

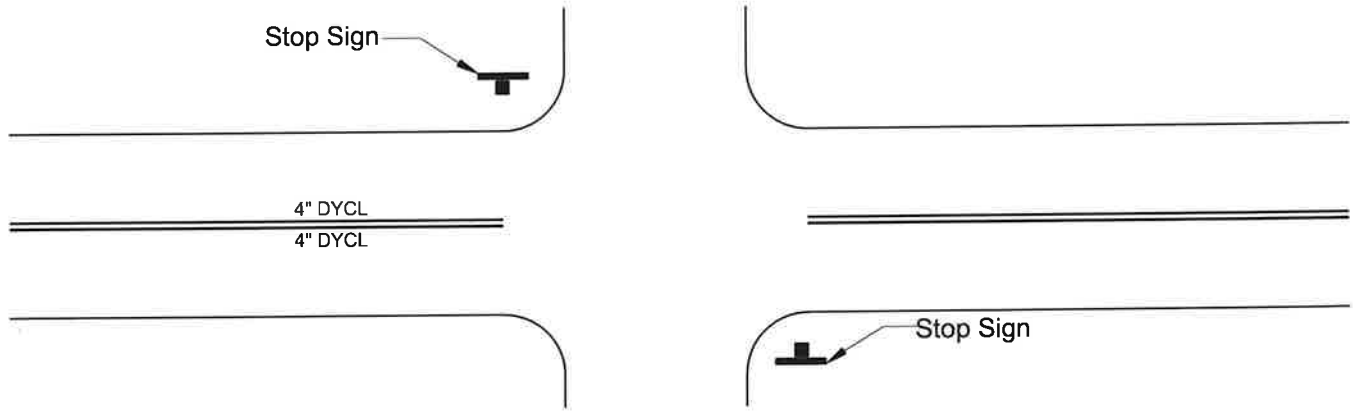
PAVEMENT MARKING AT STOP CONTROLLED INTERSECTIONS



TWO - WAY LEFT-TURN LANE MARKING



TWO - WAY LEFT-TURN LANE MARKING
WITH Jacob's Ladder CROSSWALK



DOUBLE YELLOW LINES

APPROVED BY: J. Flint

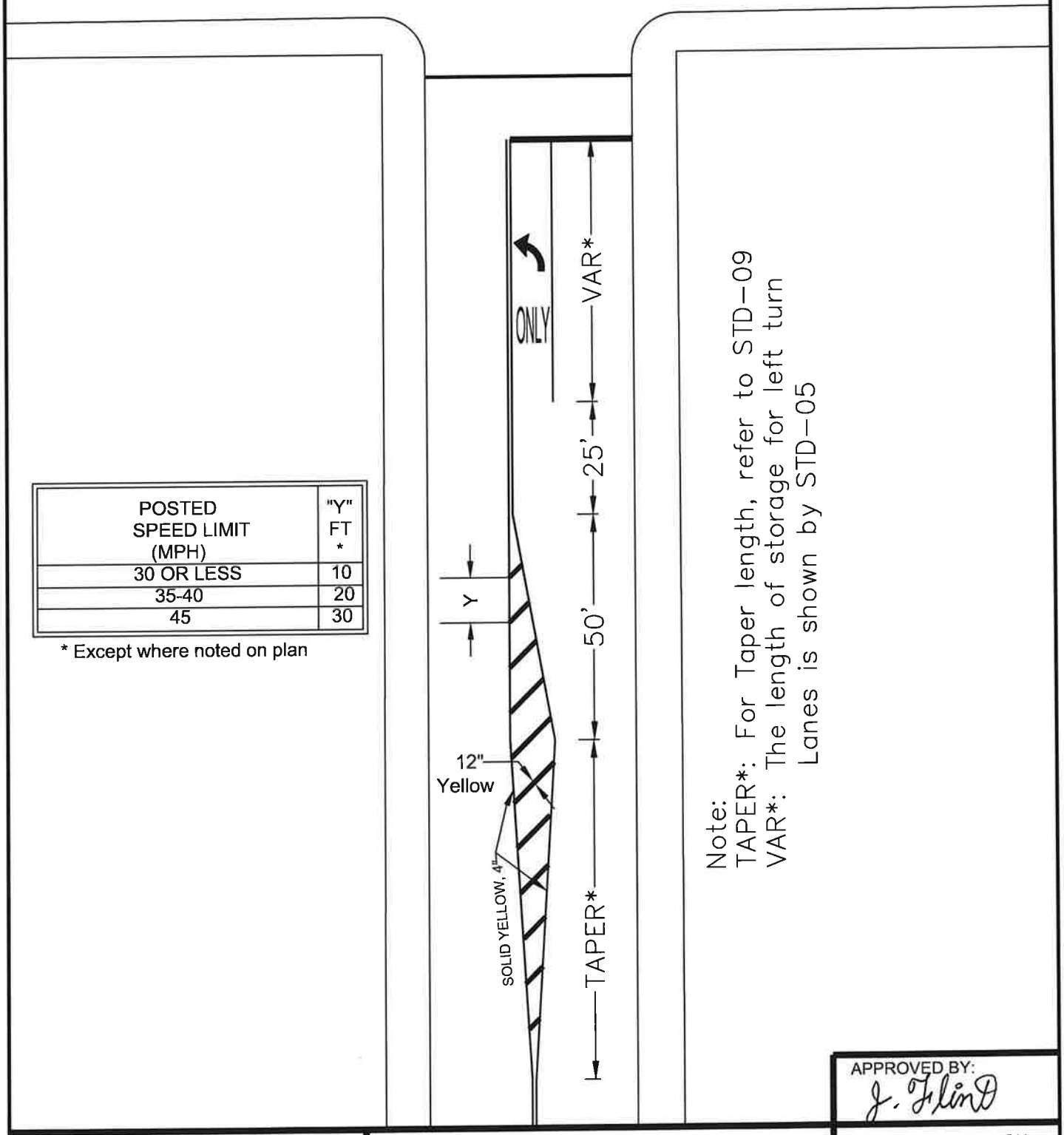
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

FIELD MARKING STANDARDS

DRAWN : A.D. BOLTON
SCALE : 1" = 30'
DATE : 08 - 04 - 2020

NO. STD-07

TAPER EXAMPLE
LEFT TURN LANE



POSTED SPEED LIMIT (MPH)	"Y" FT *
30 OR LESS	10
35-40	20
45	30

* Except where noted on plan

Note:
TAPER*: For Taper length, refer to STD-09
VAR*: The length of storage for left turn Lanes is shown by STD-05

APPROVED BY: J. Flint

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

FIELD MARKING STANDARDS

DRAWN : A.D. BOLTON
SCALE : 1" = 30'
DATE : 08 - 04 - 2020

NO. STD-08

TAPER LENGTH TABLE

Length, "L"

SPEED (mph) / Offset (ft)	15	20	25	30	35	40	45
1	4	7	10	15	20	27	45
2	8	13	21	30	41	53	90
3	11	20	31	45	61	80	135
4	15	27	42	60	82	107	180
5	19	33	52	75	102	133	225
6	23	40	63	90	123	160	270
7	26	47	73	105	143	187	315
8	30	53	83	120	163	213	360
9	34	60	94	135	184	240	405
10	38	67	104	150	204	267	450
11	41	73	115	165	225	293	495
12	45	80	125	180	245	320	540
13	49	87	135	195	265	347	585
14	53	93	146	210	286	373	630
15	56	100	156	225	306	400	675
16	60	107	167	240	327	427	720
17	64	113	177	255	347	453	765
18	68	120	188	270	368	480	810
19	71	127	198	285	388	507	855
20	75	133	208	300	408	533	900
21	79	140	219	315	429	560	945
22	83	147	229	330	449	587	990
23	86	153	240	345	470	613	1,035
24	90	160	250	360	490	640	1,080

$S \leq 40$ mph $L = \frac{W * S^2}{60}$

$S \geq 45$ mph $L = s * w$

Where L=Taper Length in feet
W = width of offset in feet
S = posted speed limit, or off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

APPROVED BY: J. Flint

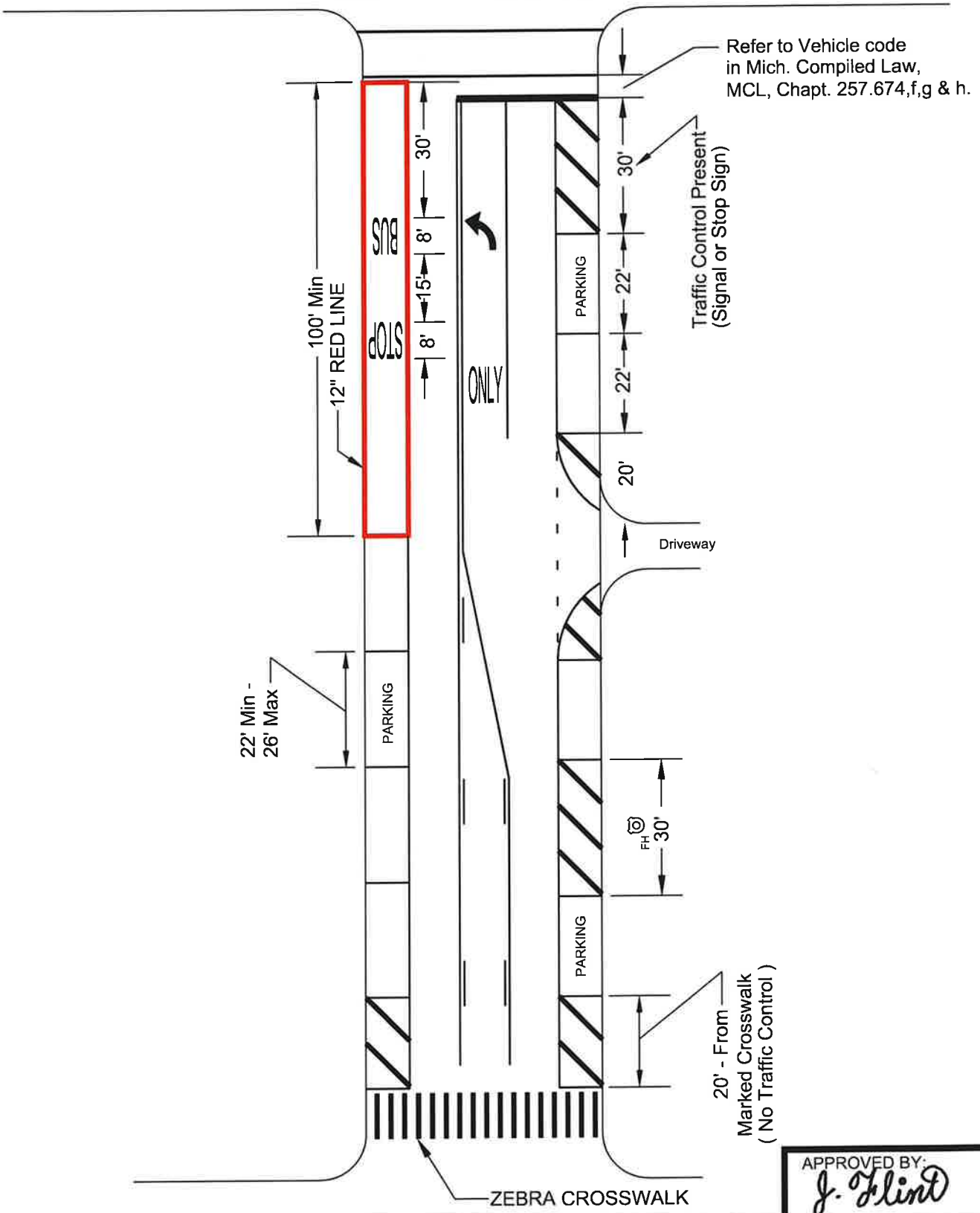
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

FIELD MARKING STANDARDS

DRAWN : A.D. BOLTON
SCALE : 1" = 30'
DATE : 08 - 04 - 2020

NO. STD-09

TYPICAL PARKING LAYOUT



APPROVED BY: J. Flint

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

FIELD MARKING
STANDARDS

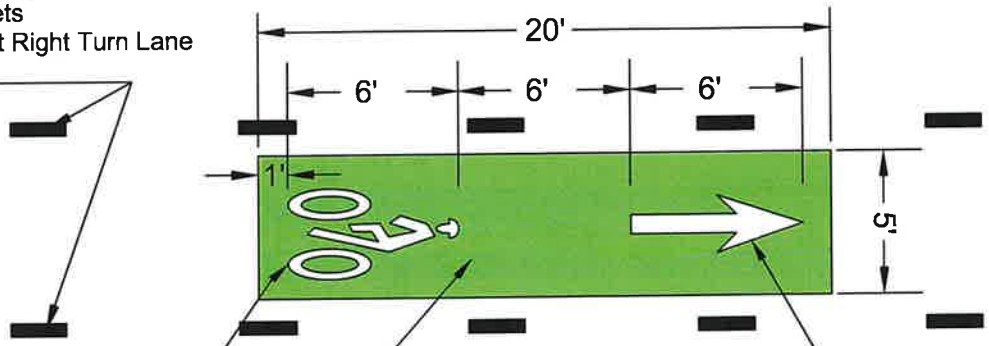
DRAWN : A.D. BOLTON
SCALE : 1" = 30'
DATE : 08 - 04 - 2020

NO. STD-10

PROTECTED BIKE LANE MARKINGS, SHT. 1

DOTTED WHITE
(2ft Solid + 6ft Gap)

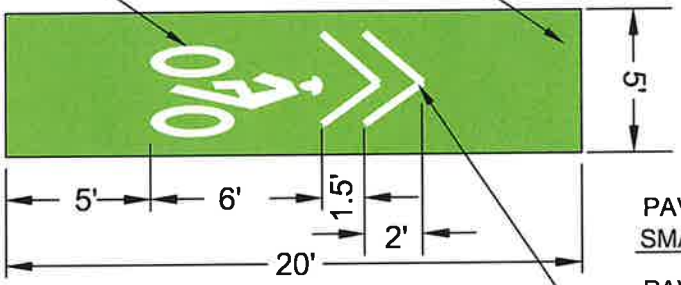
12" Wide for Local Streets
6" Wide for Transition at Right Turn Lane
4" Wide for Driveways



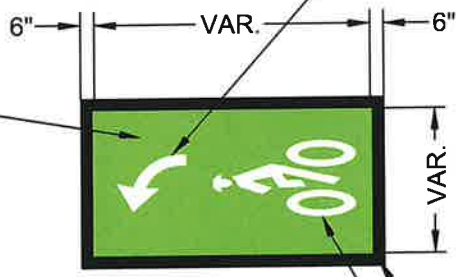
PAVEMENT MARKING, POLY CEMENT
SMALL BIKE SYMBOL, WHITE

PAVEMENT MARKING, POLY CEMENT
GREEN (TYPICAL)

PAVEMENT MARKING, POLY CEMENT
BIKE DIRECTIONAL ARROW, (WHITE)



PAVEMENT MARKING, POLY CEMENT
BIKE CHEVRON, (WHITE)



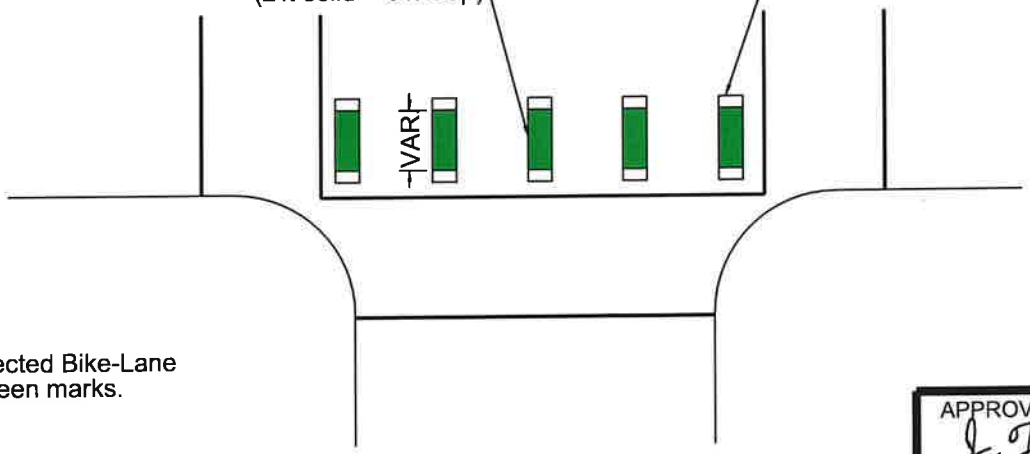
PAVEMENT MARKING, POLY CEMENT
SMALL BIKE SYMBOL, WHITE

PAVEMENT MARKING, POLY CEMENT
6 INCH, WHITE

Green:
Protected Bike Lanes Only

5 ft DOTTED Green
(2 ft solid + 6 ft Gap)

12" DOTTED WHITE
(2 ft solid + 6 ft Gap)



Note:
Non-Protected Bike-Lane
has no green marks.

APPROVED BY:
J. Flint

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

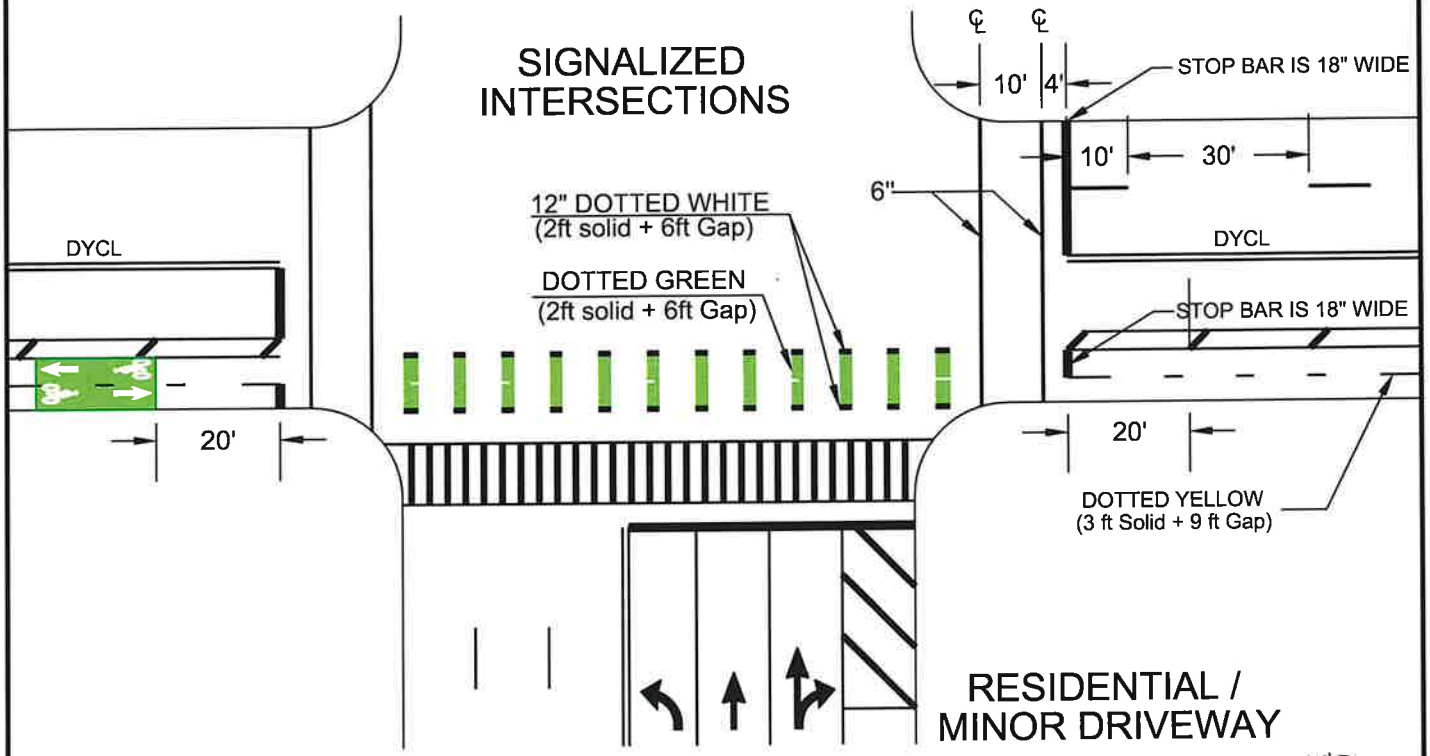
FIELD MARKING
STANDARDS

DRAWN : DUC DUONG
SCALE : 1" = 30'
DATE : 08 - 04 - 2020

NO. STD-11

PROTECTED BIKE LANE MARKINGS, SHT. 2

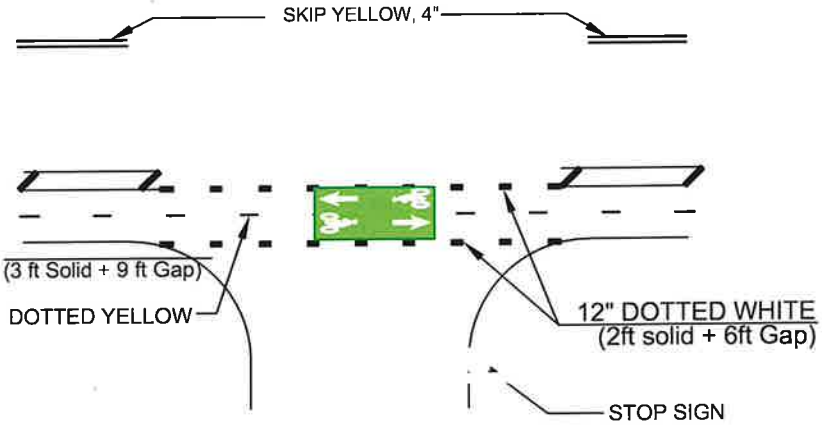
SIGNALIZED INTERSECTIONS

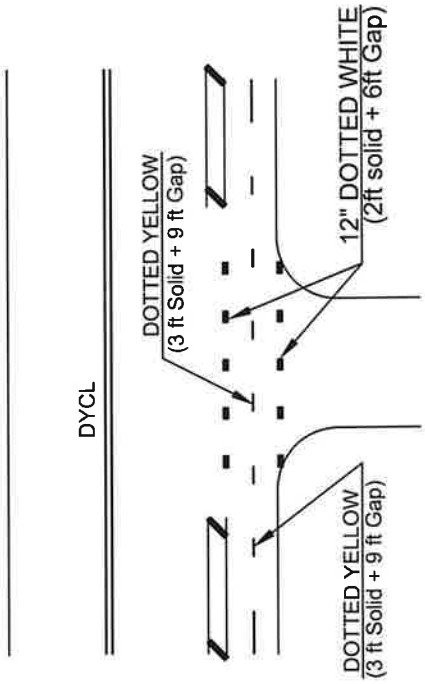


RESIDENTIAL / MINOR DRIVEWAY

NOTE:
DO NOT VARY DETAIL STANDARDS UNLESS APPROVED BY A TRAFFIC ENGINEERING REPRESENTATIVE

LOCAL STREET/ MAJOR DRIVEWAY





APPROVED BY: J. Flint

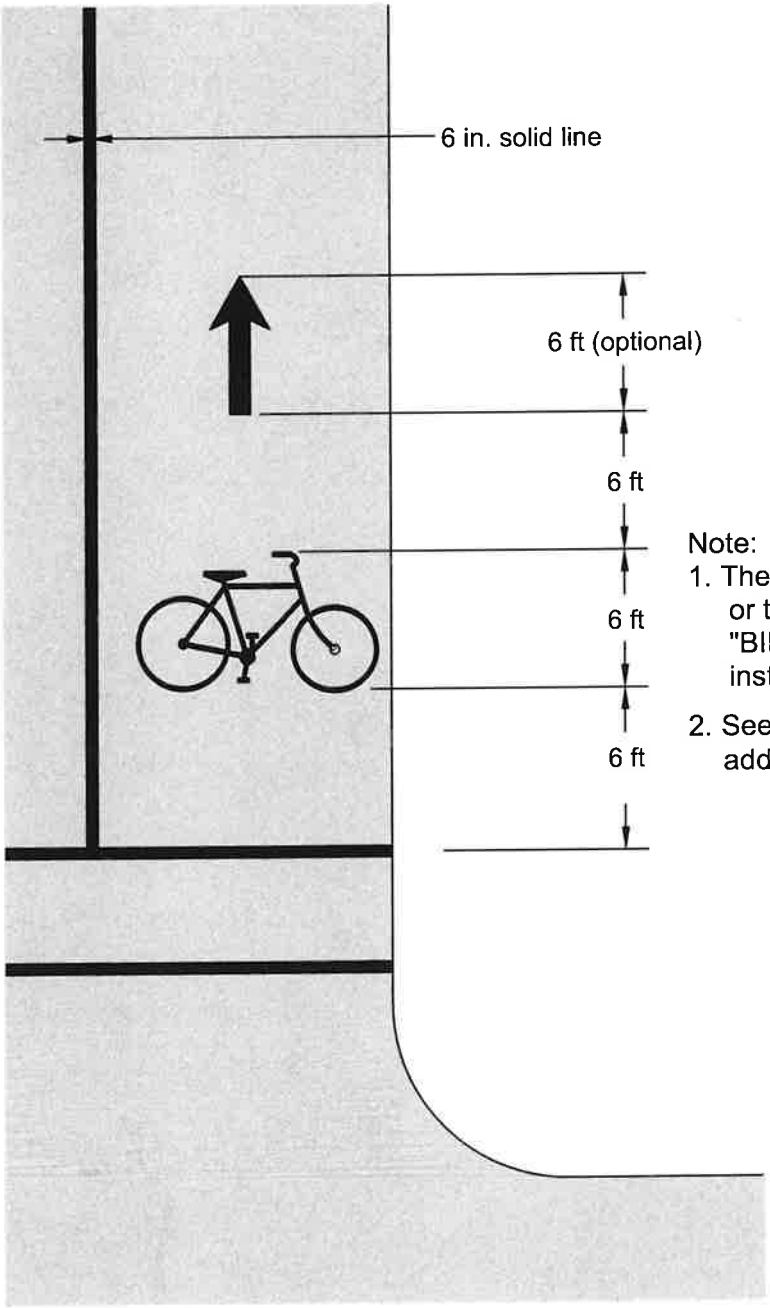
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

FIELD MARKING STANDARDS

DRAWN : DUC DUONG
SCALE : 1" = 30'
DATE : 08 - 04 - 2020

NO. STD-12

TYPICAL BIKE LANE MARKING
ON FAR SIDE OF INTERSECTION



Note:
1. The bicycle rider symbol or the word pavement marking "BIKE LANE" may be used instead of the bicycle-only symbol.
2. See NMS-003 and NMS-007 for additional information.

APPROVED BY: J. Flint

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

FIELD MARKINGS
MISCELLANEOUS
DETAILS

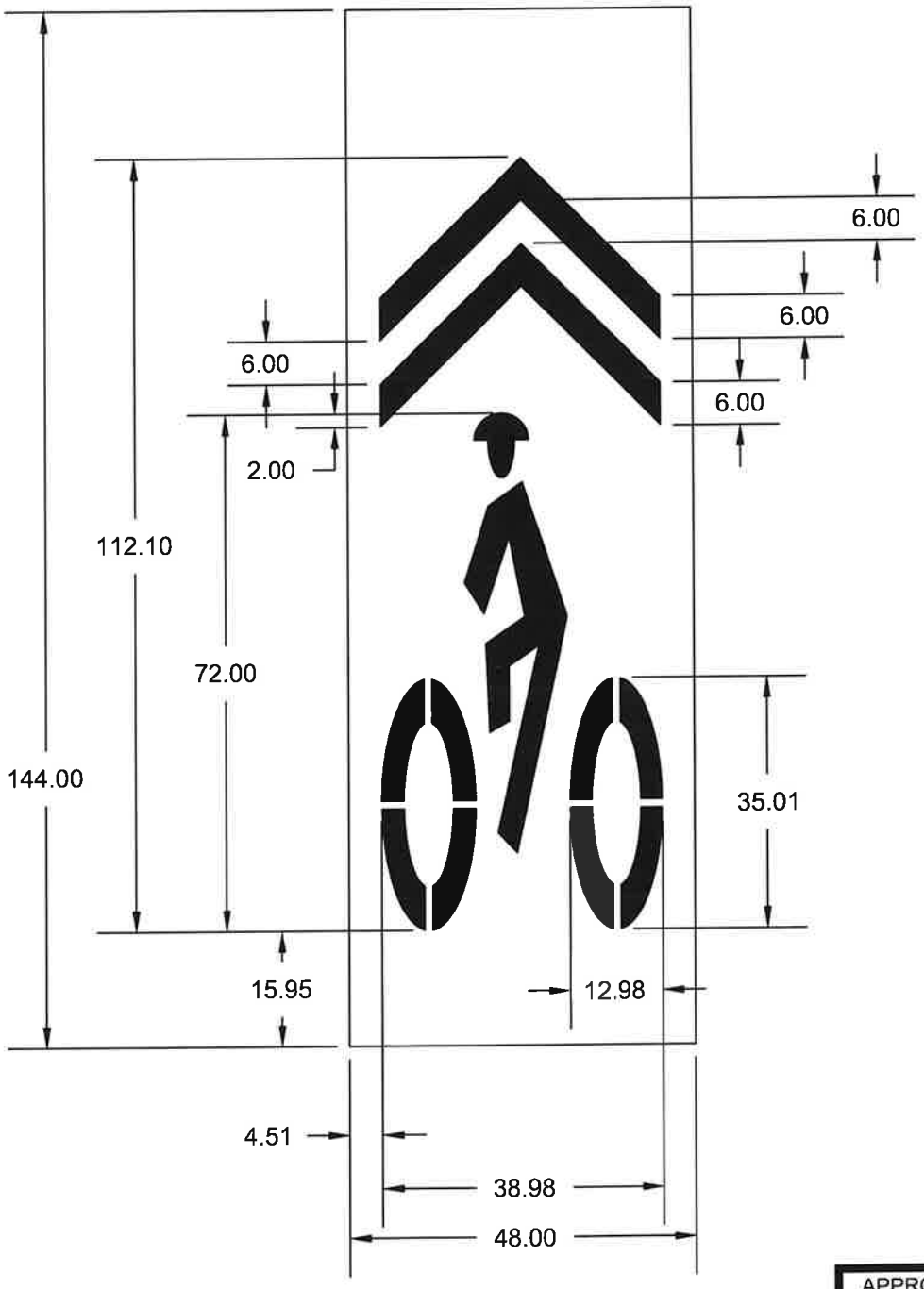
DRAWN : A.D.BOLTON
SCALE : N.T.S
DATE : 08 - 04 - 2020

NO. STD-13

BIKE LANING MARKINGS

SHARROW SYMBOL

NON MOTORIZED STANDARD



APPROVED BY: J. Flint

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

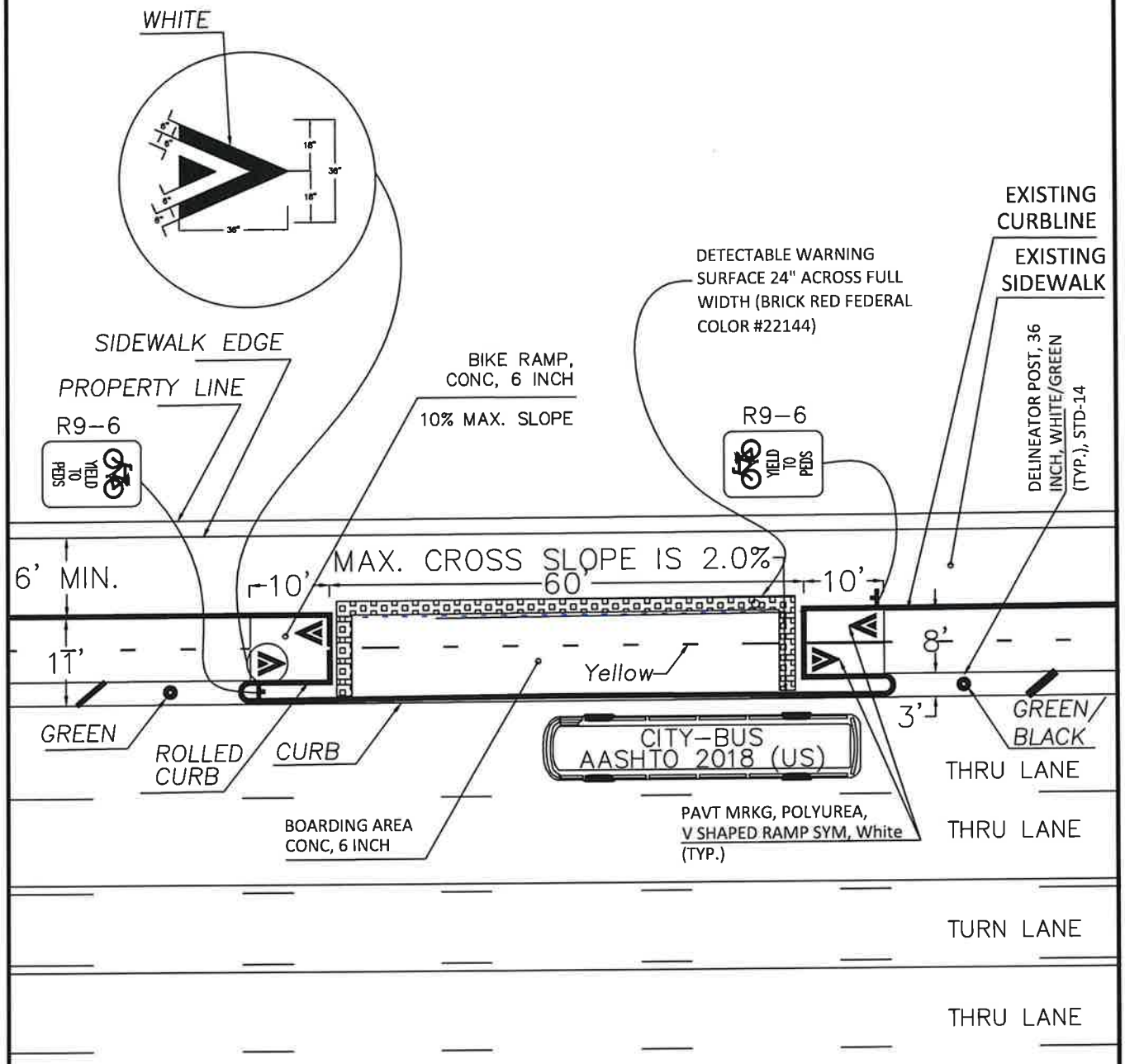
FIELD MARKINGS
MISCELLANEOUS
DETAILS

DRAWN : A.D. BOLTON
SCALE : N.T.S.
DATE : 01 - 10 - 2014

NO. STD-14

CURBSIDE TRANSIT

WITH INTEGRATED CYCLE TRACK



NOTES:

1. The engineer will designate in the field, prior to construction, the locations of new drainage structures at proposed bulb-out bus stops.
2. Proposed sidewalk, sidewalk ramps or curb / curb and gutter to be placed in accordance with MDOT standard details plans R-28-series and R-30-series.
3. Do not vary unless approved by the engineer of signs and markings.

APPROVED BY: J. Flint

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

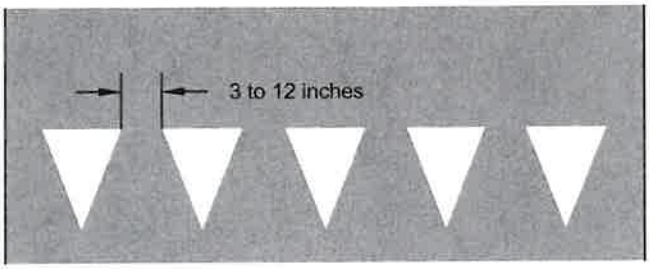
FIELD MARKINGS
MISCELLANEOUS
DETAILS

DRAWN : DUC DUONG
SCALE : 1" = 20'
DATE : 08 - 13 - 2020

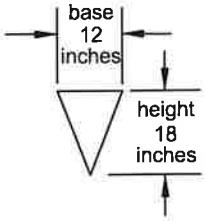
NO. STD-15

YIELD LINE SYMBOLS

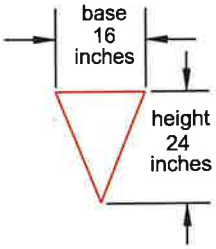
Layouts

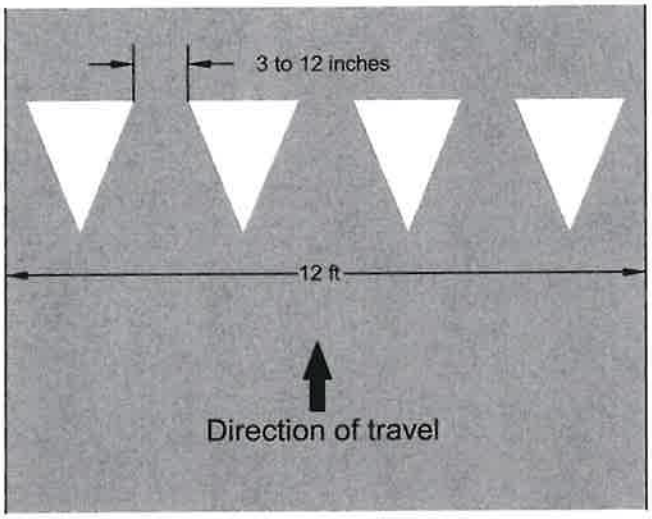


(a) Minimum Dimensions

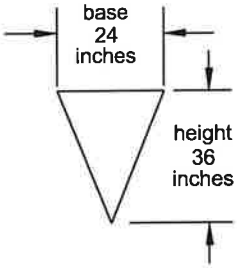


City of Detroit Standard





(b) Maximum Dimensions



Note:
Triangle height is equal to
1.5 times the base dimension.

Yield lines may be smaller than suggested when installed on muchs narrower slow-speed taclities such as shared-use paths.

APPROVED BY: J. Flint

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

FIELD MARKINGS
MISCELLANEOUS
DETAILS

DRAWN : A.D. BOLTON
SCALE : N.T.S
DATE : 08 - 04 - 2020

NO. STD-17

DELINEATOR POST

HIGH-PERFORMANCE SURFACE MOUNT POST

☑ SELECT DESIRED POST:
- ■ EFX GRADE

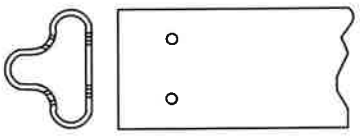
☑ SPECIFY DESIRED HEIGHT:
- ☐ 18" ■ 36"
- ☐ 24" ☐ 42"
- ☐ 28" ☐ 48"
- ☐ CUSTOM (SEE NOTE 4)

☑ SELECT DESIRED POST COLOR:
- ■ WHITE
- ■ YELLOW for Center-Lines

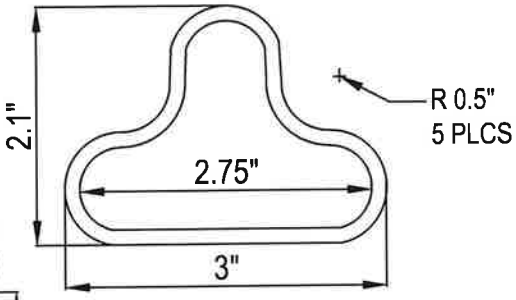
☑ SELECT DESIRED REFLECTIVE SHEETING:
- ■ REFLEXITE AR 1000
- ☐ 3M HIGH INTENSITY GRADE
- ☐ 3M FHIP

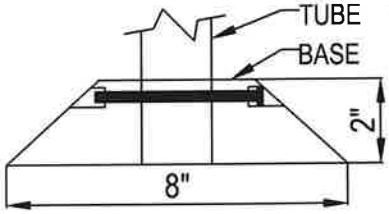
☑ SELECT DESIRED SHEETING COLOR:
- ■ CUSTOM (GREEN)
- ■ YELLOW for Center-Lines

☑ SELECT DESIRED BASE
- ☐ 1 LB. LITE BASE - BLACK ONLY
- ■ 1.5 LB. HEAVY DUTY BASE - COLORS ONLY
- ☐ 10 LB GREEN CROSS BASE
- ☐ INVISI-BASE (FLUSH MOUNT)
- ☐ METRO BASE



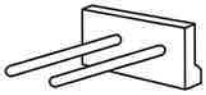
MATERIAL:
POLYURETHANE ALLOY





SECTION

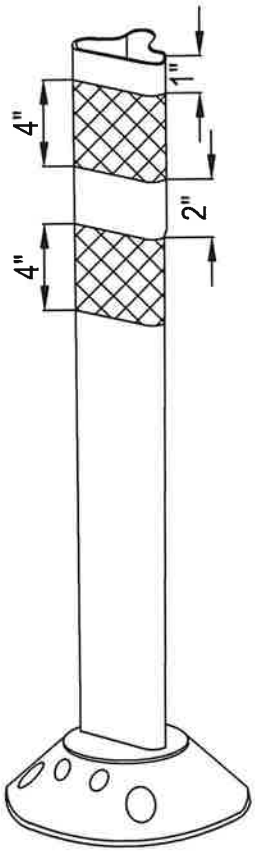
QUICK RELEASE PINS



PIN REMOVAL TOOL

BASE OPTIONS:

1.5 LB HEAVY DUTY
BASE COLORS ONLY



TYPICAL POST
SHOWS REFLECTIVE TAPE

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DRAWING IS NOT TO SCALE

APPROVED BY: J. Flint

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

FIELD MARKINGS
MISCELLANEOUS
DETAILS

DRAWN : DUC DUONG
SCALE : 1" = 30'
DATE : 08 - 04 - 2020

NO.: STD-16

WHITE U-FLEX SURFACE MOUNT
(36" WHITE POST WITH 7X7" WHITE)
#EW7C36W3U3-RARG-3X**12**W**2**
(AS CONFIGURED)

Post Type:	
X	With Cap
	Open Top

Post Colors:	
X	(W) White
	(Y) Yellow
	(O) Orange
	(B) Black
	(G) Green

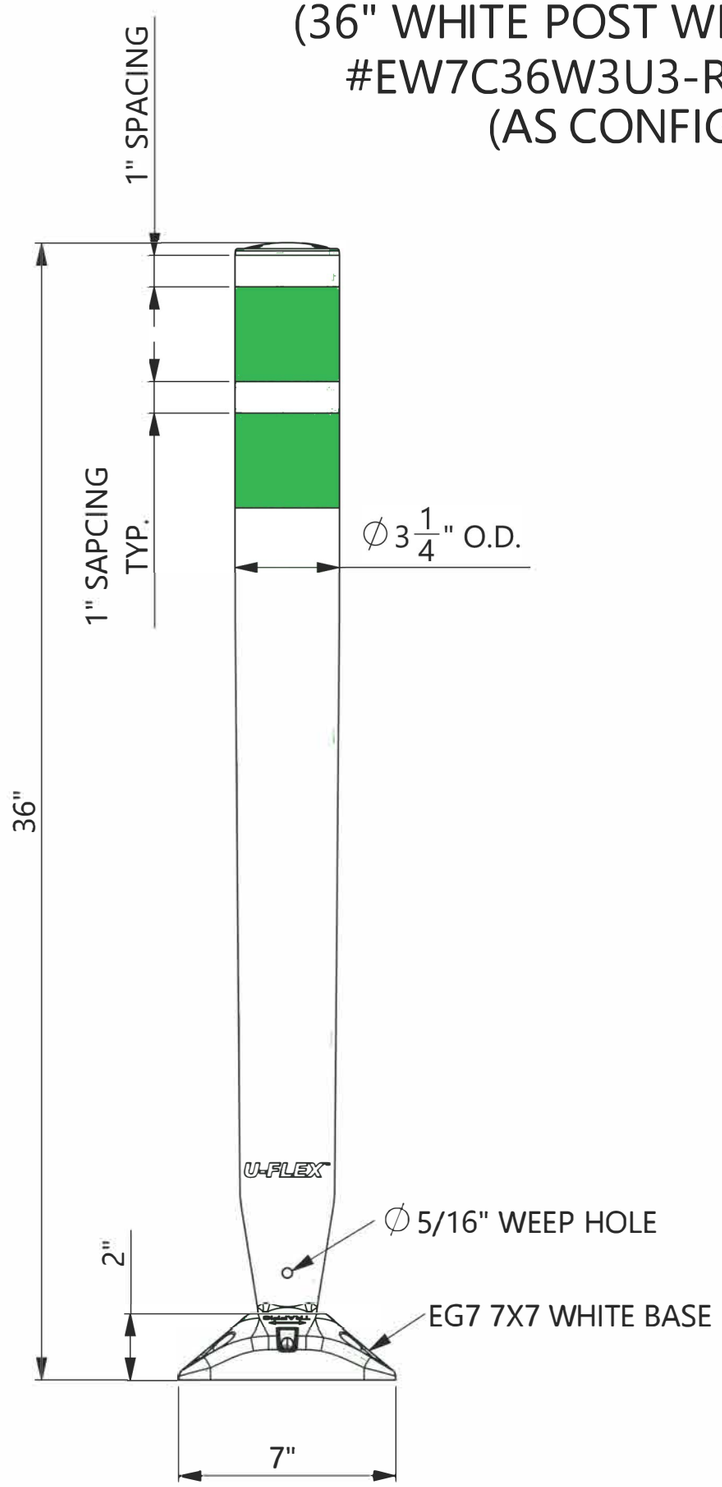
Base Colors:	
X	(W) White
	(Y) Yellow
	(O) Orange
	(B) Black
	(G) Green

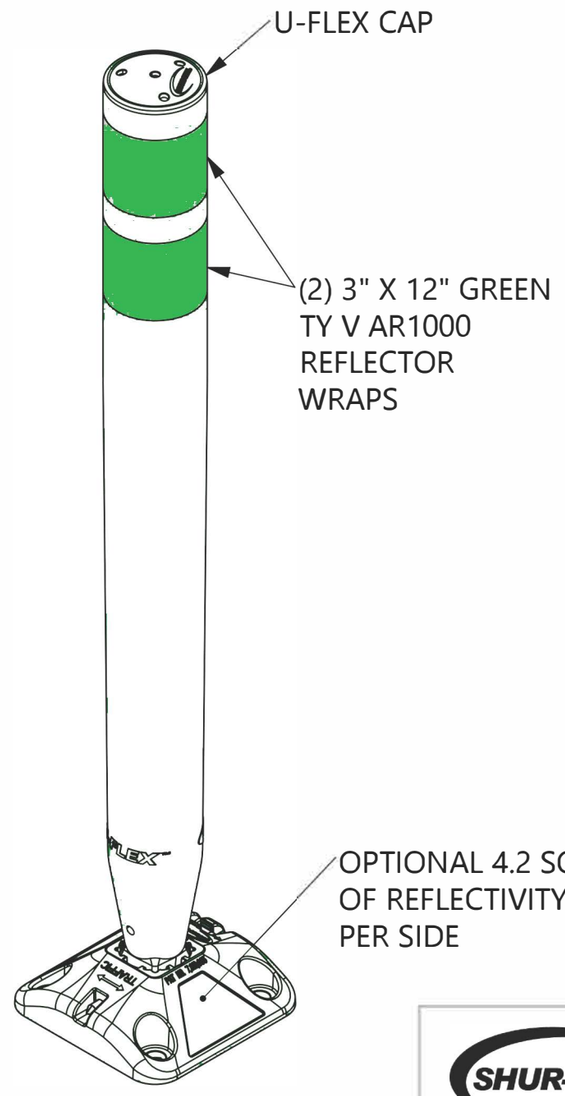
Post Height:	
	18"
	24"
	28"
X	36"
	42"
	48"

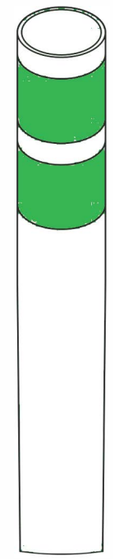
Sheeting Size:	
	Type III/IV High Intensity
X	Type V AR1000
	Type XI Diamond Grade

Sheeting Wraps Size:	
X	3" X 12"
	4" X 12"
	6" X 12"
	10" X 12"
	12" X 12"

Sheeting Colors:	
	(W) White
	(Y) Yellow
	(O) Orange
	(R) Red
x	(G) Green
	(B) Blue







OPTIONAL
OPEN TOP

SHUR-TITE® PRODUCTS
(512) 218-9500
www.shur-tite.com

Title:

36" WHITE U-FLEX SURFACE MOUNT

Date:	Item #:
10/20/23	EW7C36W3U3

YELLOW U-FLEX SURFACE MOUNT
(36" YELLOW POST WITH 7X7" YELLOW BASE)
#EY7C36Y3U3 (AS CONFIGURED)

Post Type:	
X	With Cap
	Open Top

Post Colors:	
	(W) White
X	(Y) Yellow
	(O) Orange
	(B) Black

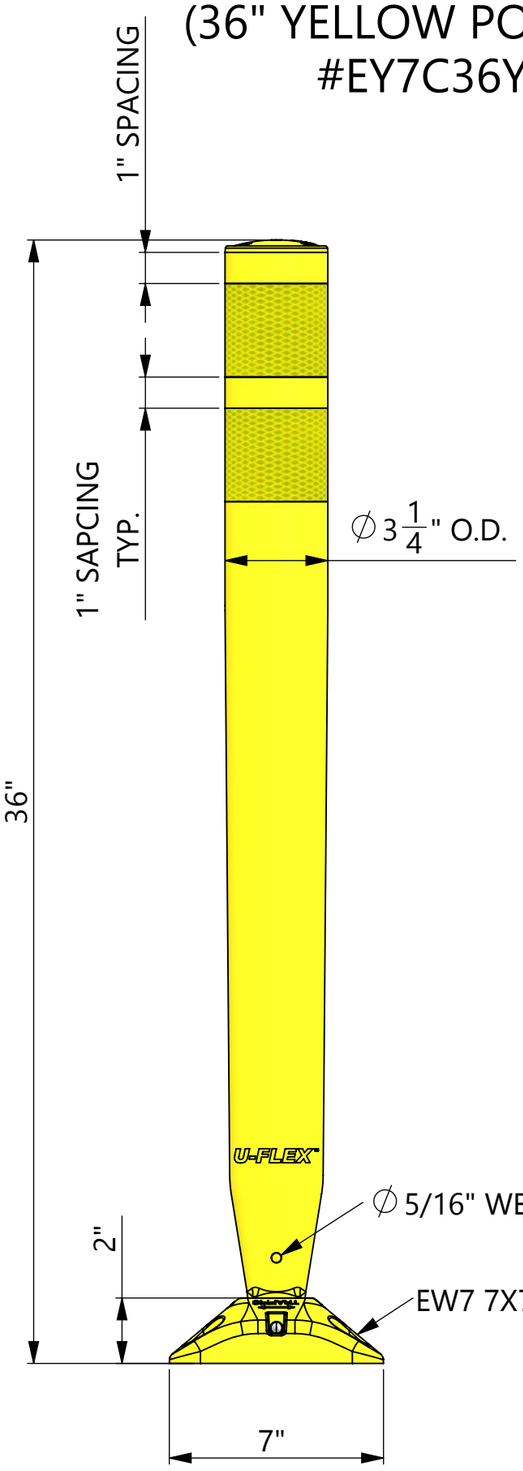
Base Colors:	
	(W) White
X	(Y) Yellow
	(O) Orange
	(B) Black

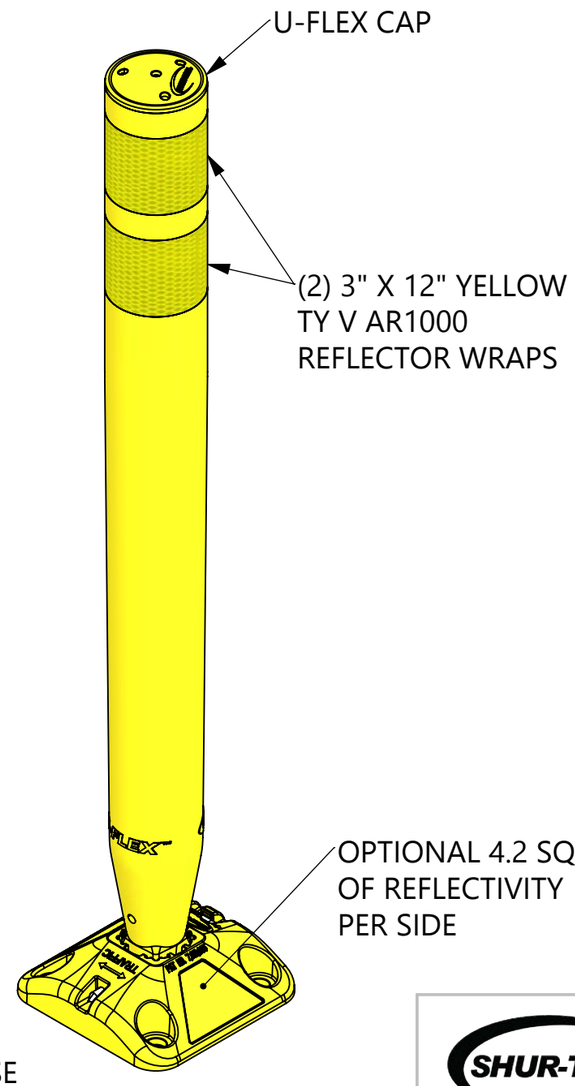
Post Height:	
	18"
	24"
	28"
X	36"
	42"
	48"

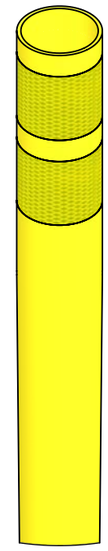
Sheeting Size:	
	Type III/IV High Intensity
X	Type V AR1000
	Type XI Diamond Grade

Sheeting Wraps Size:	
X	3" X 12"
	4" X 12"
	6" X 12"
	10" X 12"
	12" X 12"

Sheeting Colors:	
	(W) White
X	(Y) Yellow
	(O) Orange
	(R) Red
	(G) Green
	(B) Blue







OPTIONAL
OPEN TOP

SHUR-TITE® PRODUCTS
(512) 218-9500
www.shur-tite.com

Title:

36" YELLOW U-FLEX SURFACE MOUNT

Date: 09/14/23

Item #: EY7C36Y3U3

WHITE U-FLEX SURFACE MOUNT
(36" WHITE POST WITH 7X7" WHITE BASE)
#EW7C36W3U3 (AS CONFIGURED)

Post Type:	
X	With Cap
	Open Top

Post Colors:	
X	(W) White
	(Y) Yellow
	(O) Orange
	(B) Black

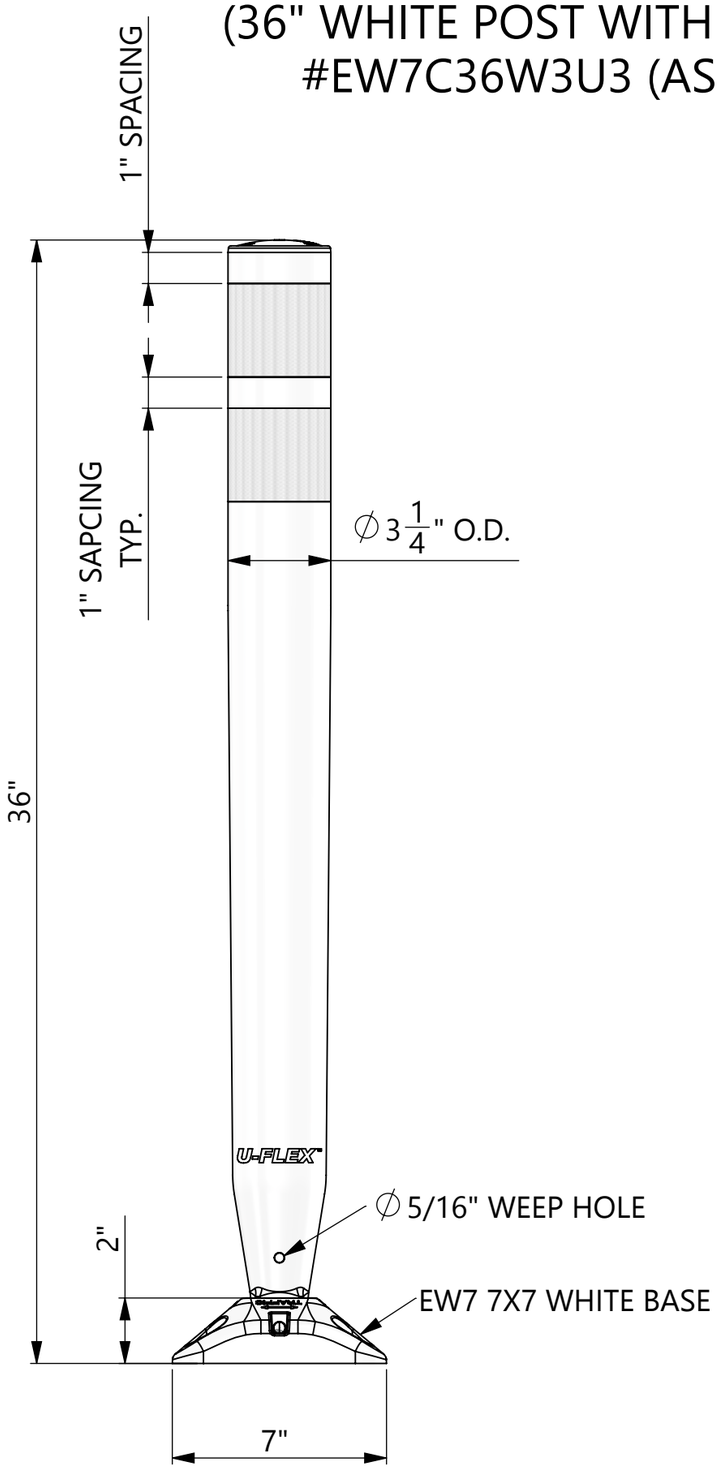
Base Colors:	
X	(W) White
	(Y) Yellow
	(O) Orange
	(B) Black

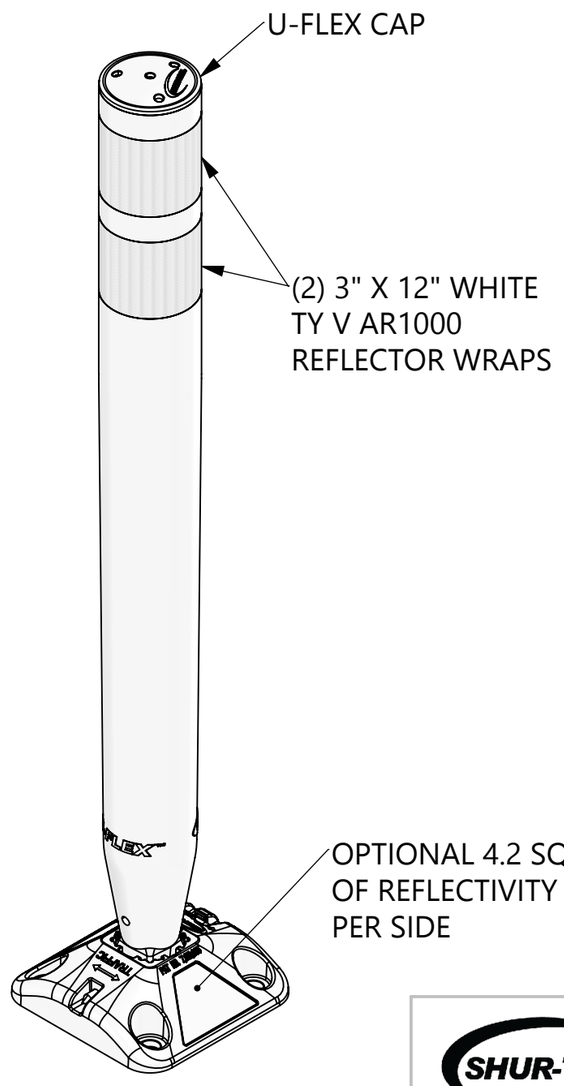
Post Height:	
	18"
	24"
	28"
X	36"
	42"
	48"

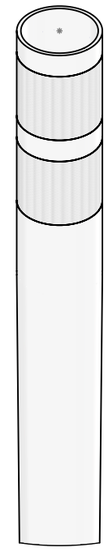
Sheeting Size:	
	Type III/IV High Intensity
X	Type V AR1000
	Type XI Diamond Grade

Sheeting Wraps Size:	
X	3" X 12"
	4" X 12"
	6" X 12"
	10" X 12"
	12" X 12"

Sheeting Colors:	
X	(W) White
	(Y) Yellow
	(O) Orange
	(R) Red
	(G) Green
	(B) Blue







OPTIONAL
OPEN TOP

SHUR-TITE® PRODUCTS
(512) 218-9500
www.shur-tite.com

Title:

36" WHITE U-FLEX SURFACE MOUNT

Date: 09/14/23

Item #: EW7C36W3U3

Shur-Tite® U-Flex Surface Mount Delineator Specification

1) The U-Flex® Surface Mount Delineator is multi-hit, omni-directional and self- righting, providing a long lasting, extremely durable product requiring little field maintenance.

2) Posts are manufactured utilizing a proprietary blend of urethane.

3) Material of post incorporates a premium UV inhibitor package to resist harmful effects of the sun.

4) Bright White finish of post is extremely smooth to resist road grime and mildew. The White finish is highly visible when most needed in low-light and poor weather conditions when headlights might not be in use.

5) Heavier wall thickness of post provides enough structural integrity to prevent collapse after impact from motor vehicles, storms or high winds.

6) The U-Flex Surface Mount Delineator design is comprised of only 2 components, a thermoplastic base and a urethane square to round post. This design allows the post to be replaced independent of the base.

7) The flexible post is a simple one piece, non-metallic design, assuring long-life in severe corrosive environments.

8) Special tools will not be required for post or base change-outs. System is designed so that it will not be obstructed with grime, dust or sand, hindering the process of post replacement.

9) Post replacement, if required will take less than 60 seconds, minimizing the field technician's exposure to traffic, a key safety issue.

10) System can be used with varying colors of reflectivity for 360-degree visibility. {White, Red, Yellow, Green and Blue} This versatility accommodates the use of the product in various applications such as bike lanes, managed lanes, highway crossover markers, delineators, and channelizers.

11) U-Flex Surface Mount base can be installed using an epoxy or bolt-down system.

12) Shur-Tite® Products provides a Factory Representative for training on initial installations to assist DOT Crews or Contractors. This training ensures that state standards are met for installation requirements.

SHUR-TITE®
PO Box 965
Hutto, TX 78634
512-218-9500
sales@shur-tite.com
www.shur-tite.com

SHUR-TITE®

PO Box 965
Hutto, TX 76471

512-966-9198

sales@shur-tite.com
www.shur-tite.com

U-FLEX® SURFACE MOUNT

"Bolt Down Method"

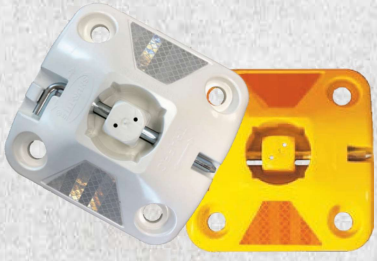
INSTALLATION INSTRUCTIONS

- Use supplied 5/8" green nylon plugs and 1/2" X 3 1/2" hex lag bolts with washers. Using a Hammer Drill with an Industrial 5/8" diameter bit, drill 4 ea - 5/8" diameter holes 3-1/2" deep using the Base as your pattern. Blow the holes clean.

- Insert the nylon plugs into the holes so that the top of the plugs are flush with the surface of the roadway (the top of the plugs must fit flush with the surface of the roadway).

- Position the Base over the holes with plugs in place and screw the 1/2" lag bolts with the washers into the nylon plug and tighten. Use a 3/4" socket to tighten bolts snuggly to a (torque rating of min 30 – max 38 ft lbs). A impact wrench is recommended, however "DO NOT OVER TIGHTEN".

- After securing the base, insert the post into the base and secure with the L-Pin.



PO Box 965
Hutto, TX 76471

512-966-9198

sales@shur-tite.com
www.shur-tite.com

U-FLEX® SURFACE MOUNT

"Epoxy Method"

COVERAGE RATE

- Mix ratio is 1 to 1, equal parts of A & B
- Concrete: (12 oz. mixed epoxy for each base)
- Asphalt: (16 oz. of mixed epoxy for each base)
- Approximately 2 ea Delineators per mixed 2-Tube kit on concrete and asphalt
- Approximately 11 ea Delineators per mixed gallon on concrete
- Approximately 8 ea Delineators per mixed gallon of asphalt

ROAD SURFACE PREPARATION

All surfaces should be clean, free of dirt, dust, grease, oil or any foreign material that will prevent the proper bond of the adhesive to the surface. The surface should be structurally sound and secure. Do not apply epoxy adhesive or markers unless the road surface is dry.

POST PREPARATION

Remove the L-Pin from the base then insert the post into the base making sure the holes are in line. Reinsert the L-Pin in the base and thru the post then locking down the pin in the slot. *Follow this step prior to flame treating and epoxying the U-Flex to the surface.

BASE PREPARATION

The base should be clean and free of dirt and oil prior to flame treatment. For effective flame treating, the tip of the outer blue envelope of flame should just touch the surface of the base material. Time exposure to the flame is approximately one to two seconds. Flame treating overexposure on the plastic can deform or soften the base which can induce failures. Flame treating is NOT heat treating. The base must be expoxied the same day as flame treating.

APPLICATION OF EPOXY

Use rate of coverage shown above and place adhesive onto the surface. Align the base with the direction of traffic arrows and the L-Pin is perpendicular to traffic then place the U-Flex on the road surface using sufficient pressure to ensure a visible bead of adhesive is around the perimeter of the base and ***adhesive is coming up thru the holes in the base***. Ensure that epoxy covers the bolt holes.

NOTE: ***Do not step on markers after placement of the adhesive.*** Simple hand pressure is all that is needed to ensure adequate performance. Protect the area from traffic until the adhesive is set. Excessive pressure on markers may result in insufficient adhesive remaining under the marker.

U-FLEX® SURFACE MOUNT

"Epoxy Method"

Continued....

MARKER ADHESIVE CURE TIME GUIDE

Temp. F (C)	Set Time (hrs.)
110 (43.3)	1/4 to 1/2
100 (37.8)	1/2 to ¾
90 (32.2)	1 hr. to 1-1/2 hrs.
80 (26.7)	1-1/2 hr. to 2-1/4 hrs.
70 (21)	3 to 4 hrs.
60 (15.6)	4 to 5 hrs.
50 (10)	6 to 7 hrs.

NOTE: Do not apply when the road surface or air temperature is below 50° f (10º c). Only apply when the road surface and air temperature is above 50° f (10º c) and is anticipated that it will remain above 50° f (10º c) wfor the following 24 hour after application. When applying at cooler temperature, precondition material to approximately 77°f (25º c) prior to application.

FOR BEST RESULTS:

- Minimum application temperature 40° F (4.4º C).
- Do not thin, solvents will prevent proper cure.
- Moisture passing through substrate by pressure during application curing of the epoxy will cause bond failure.
- Store materials at 70 - 90 degrees for 24 hours prior to use.

TEMPERATURE CONSIDERATIONS

Surface temperature and ambient temperature is quite often beyond the control of the applicator. The applicator should, however, consider the effects of temperature on the product. A product that is stored in a temperature range of 80° to 90° F (26.7-32.2º C) will thin out slightly, making it easier to hand mix. A product mixed at a warmer temperature will have a slightly shorter pot life, perhaps in the neighborhood of 6 min. but faster setting time, thus permitting the area to be opened earlier to traffic.

Product temperatures below 70° F (21º C) thickens very rapidly to a heavy paste making it difficult to mix, provides longer working time, with resulting much longer setting time and delay in opening the areas to traffic. Automatic metering in mixing equipment is the ideal way of using the products. This equipment has the ability to warm the product up to 110 ° F (43.3º C), automatically meters the correct portion and provides thorough mixing.

When applying on road surfaces when it's anticipated that the surface will be in the 50's F (10's C), it is recommended that both components be stored at 70 ° to 90 ° (25º-26.7º C) for 24 hours prior to use.