

TAB 24-17, D214971

BUFFALO DIVISION:

PAVEMENT REPAIRS AT VARIOUS LOCATIONS 2024-2025

Design Calculations



PREPARED BY:

NEW YORK STATE THRUWAY AUTHORITY
HIGHWAY DESIGN BUREAU
200 SOUTHERN BOULEVARD
ALBANY, NEW YORK 12209

January 2024



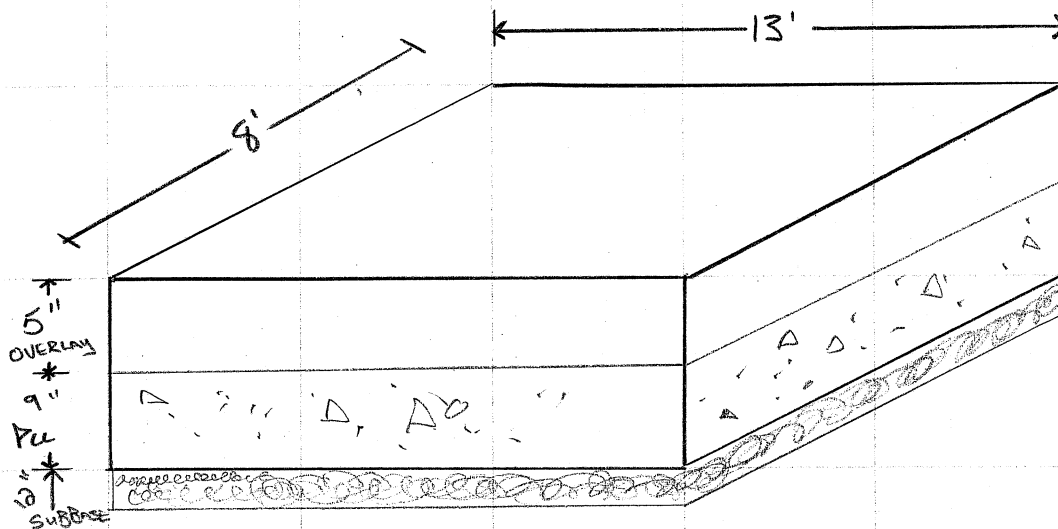
New York State Thruway Authority

PROJECT # H384.1MADE BY [Signature]DATE 12-20-23CHECKED BY TJWDATE 1/19/2024SUBJECT TYP. FDR DESIGN CALL.SHEET # 1OF 2

TYPICAL FDR

* ASSUMED REPAIR SIZE 13' x 8'

* SEE NYSTA SS TA 402-01 FOR MORE INFO.



Item 304.12 : SUBBASE

- IT IS ASSUMED THAT 20% OF FDR LOCATIONS REQ FULL 12\"/>

$$V_a = \left[\frac{1'(8')(13')}{27 \text{ ft}^3/\text{cy}} \right] \times 0.20 = \underline{0.77 \text{ cy}}$$

Item 203.02: UNCLASSIFIED EXCAVATION

$$V_{ex} = \left[\frac{\left(\frac{5'' + 9''}{12 \text{ in/ft}} \right) (8')(13')}{27 \text{ ft}^3/\text{cy}} \right] = 4.49 \text{ cy} + 0.77 \text{ cy} = \underline{5.26 \text{ cy}}$$

: 37.5mm BASE

→ 9\"/>

$$\frac{\left[9''/12 \text{ in/ft} (8')(13') \right] 155 \text{ lb/ft}^3}{2,000 \text{ lb/TN}} = \underline{6.05 \text{ TN}}$$

: 19mm BINDER

→ 5\"/>

$$\frac{\left[5''/12 \text{ in/ft} (8')(13') \right] 155 \text{ lb/ft}^3}{2000 \text{ lb/TN}} = \underline{3.36 \text{ TN}}$$

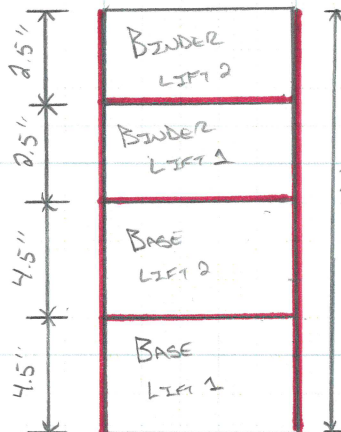


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PROJECT # 4384.1MADE BY [Signature] DATE 12-20-23CHECKED BY TJW DATE 1/19/2024SUBJECT TID FOR DESIGN CALC. CONT.SHEET # 2 OF 2ITEM 627.5014--08: CUTTING PAVEMENT:

- ITEM IS USED TO SAW CUT PERIMETER OF REPAIR.

$$P = 2(13') + 2(8') = 26' + 16' = \underline{42'} \checkmark$$

ITEM 407.01040009: TACK COAT:

APPRATE PER \Rightarrow NEW = 0.04 - 0.05 \Rightarrow USE 0.05 GAL/yd^2
 VERTFACE = 0.07 - 0.08 \Rightarrow USE 0.08 GAL/yd^2

$$\text{VERTFACES} = \text{AREA} = P(d) \Rightarrow 42' \left(\frac{14''}{12''/\text{ft}} \right) = 5.44 \text{ yd}^2 \checkmark$$

$$\Rightarrow 5.44 \text{ yd}^2 (0.08 \text{ GAL}/\text{yd}^2) = 0.44 \text{ GAL} \checkmark$$

$$\text{FLAT} = 3 \text{ LIFTS} \left(\frac{8' \times 13'}{9 \text{ ft}^2/\text{yd}^2} \right) = 34.67 \text{ yd}^2 \checkmark$$

$$\Rightarrow 34.67 \text{ yd}^2 (0.05 \text{ GAL}/\text{yd}^2) = 1.73 \text{ GAL} \checkmark$$

$$= \underline{2.17 \text{ GAL}} \checkmark$$



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PROJECT # LOCATION E3MADE BY [Signature]DATE 12-19-23SUBJECT BUFFALO DESIGN CALLSCHECKED BY TJWDATE 1-19-2024SHEET # 1 OF 2LOCATIONS EB-3APPROX \approx MP 458.5 - 456.5 $\approx 10,546'$

RIGHT LANE = 12'

$$\text{AREA, } A = 10,546' (12') = 126,552 \text{ FE}^2$$

→ MILLING

$$\frac{126,552 \text{ FE}^2}{9 \text{ FE}^2/\text{yd}^2} = 14,061.3 \text{ yd}^2$$

→ ASPHALTASSUME $\gamma = 153 \text{ lb/FE}^3$, DEPTH = 2"

$$\rightarrow \left[\frac{126,552 \text{ FE}^2}{2000 \text{ lb/TN}} \left(\frac{2''}{12''/\text{FE}} \right) \right] 153 \text{ lb/FE}^3 = 1,613.54 \text{ TN}$$

→ TACK COATMILLED APP RATE: 0.07 GAL/yd^2 VERT APP RATE: 0.08 GAL/yd^2

$$\text{FLAT} \rightarrow [14,061.3 \text{ yd}^2 (0.07 \text{ GAL/yd}^2)] = 984.29 \text{ GAL}$$

$$\text{VERT FACE} \rightarrow \left[\frac{[2(13') + 2(10,546')]}{9 \text{ FE}^2/\text{yd}^2} \left(\frac{2''}{12''/\text{FE}} \right) \right] (0.08 \text{ GAL/yd}^2) = 31.29 \text{ GAL}$$

$$\Sigma = 1,015.58 \text{ GAL}$$

→ JOINT ADH.

$$2 \text{ FACES } (10,546') = 21,092' \quad \checkmark$$

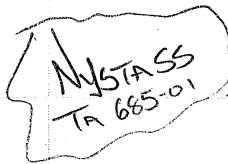
→ SAW CUT

(START & STOP OF MILL & IDLING)

$$2(12') = 24' \quad \checkmark$$



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PROJECT # LOCATION E3MADE BY [Signature]DATE 1-18-24CHECKED BY TJWDATE 1/19/2024SUBJECT BUFFALO DESIGN CALLS:SHEET # 2 OF 2→ PAVEMENT MARKINGS:→ WHITE:

IN RIGHT LANE ∴ 1 EDGE & SKIP LINE

$$\rightarrow 10' / 40' = 0.25 \quad \text{PAY FACTOR} \quad + 1 \text{ EDGE} = 1.25$$

LENGTH (PF)

$$10,546' (1.25) = \underline{13,182.50} \quad \checkmark$$

→ YELLOW

IN RIGHT LANE ∴ No Yellow

→ RECESS GRIND:

$$\S \text{ WHITE \& YELLOW} = 13,182.5'$$



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PROJECT # TAB 24-17MADE BY TJW DATE 1/2/2024

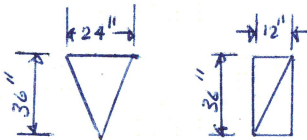
DESIGN CALL.

CHECKED BY [Signature] DATE 1-22-24SUBJECT SYMBOL/LETTER LOCATIONSSHEET # 1 OF 1

N6 RAMP "A" 1- RAMP ARROW (74.0 LF) EACH 5- LARGE YIELD SYMBOLS
 N6 RAMP "B" 1- RAMP ARROW (74.0 LF) EACH 5- LARGE YIELD SYMBOLS
 N6 RAMP "V"

↙	↗	↑	↕
↗	↖	↑	↕
ONLY		ONLY	
ONLY		ONLY	
↙	↗	↑	↕
ONLY		ONLY	

2- RAMP ARROWS	$74.0 \text{ LF} * 2 = 148.0 \text{ LF}$	ITEM 685.1106--25
6 - "ONLY"	$4 \text{ LETTER} * 6 \text{ LOCATIONS} = 24.0 \text{ EA}$	ITEM 685.1306--25
12 - SYMBOLS	$12.0 \text{ EA} = 12.0 \text{ EA}$	ITEM 685.1406--25
10 - YIELD ARROWS (LARGE)	$= 60.0 \text{ LF}$	ITEM 685.1106--25

NYS DOT
S.S. 685-21

$$\frac{12''}{6''} = 2.0 \times \frac{36''}{12''} = 6.0 \text{ FT EACH} * 10 \text{ YIELD ARROWS} = 60.0 \text{ LF}$$

TAB 24-17, D214971

BUFFALO DIVISION:

PAVEMENT REPAIRS AT VARIOUS LOCATIONS 2024-2025

Quantity Work Ups.



PREPARED BY:

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HIGHWAY DESIGN BUREAU
200 SOUTHERN BOULEVARD
ALBANY, NEW YORK 12209

January 2024



New York State Thruway Authority

PROJECT # H384.1, TAB 24-17, D214971MADE BY [Signature]DATE 1-18-24CHECKED BY TJWDATE 1/19/2024SUBJECT FULL DEPTH REPAIRSSHEET # 1OF 1ITEM 203.02: UNCLASSIFIED EXCAVATION & DISPOSAL

- ITEM IS USED IN FULL DEPTH REPAIR TO REMOVE PAVEMENT & UNDERCUT OF SUBBASE IF REQ'D.
- SEE "TYP. FDR DESIGN CALL" FOR STANDARD ASSUMED REPAIR.
- SEE NYSTA SS TA402-01 FOR ADDITIONAL INFO

MAIN LINE REPAIRS = 620 ✓
 INT / RAMP REPAIRS = 249 ✓

Σ = 869 REPAIRS ✓

SEE TYP. FDR
DESIGN CALL

5.26 CY / REPAIR (869 REPAIRS) = 4,570.94 CY ✓

5% Bump => 1.05 (4,570.94 CY) = 4,799.49 CY ✓

∴ SAY 4,810 CY FOR ITEM 203.02 ✓

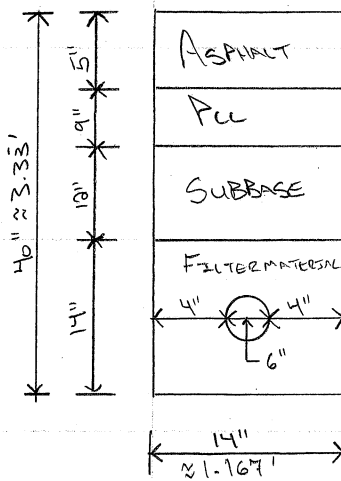


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PROJECT # 1384.1, TAS 24-17MADE BY [Signature]DATE 1-21-24CHECKED BY TJWDATE 1/22/2024SUBJECT 206.0201: UNDERDRAIN.SHEET # 1OF 1ITEM 206.0201: TRENCH & CULVERT EXCAVATION (CY)

* ITEM IS USED IN FULL DEPTH REPAIR LOCATIONS USE OF ITEM IS A.O.B.E WHERE UNDERDRAIN IS REQ'D.

* SEE NYSTA SS TA 605-01



$$\text{Area, } A = L \times W \Rightarrow 3.33' (1.167') = 3.89 \text{ ft}^2 \checkmark$$

$$\text{Assume } L = 1,000'$$

$$\text{Volume, } V = A \times L \Rightarrow 3.89 \text{ ft}^2 (1,000')$$

$$\checkmark = \frac{3,890 \text{ ft}^3}{27 \text{ ft}^3/\text{cy}} \checkmark$$

$$V = 144.07 \text{ cy} \checkmark$$

∴ Say 150 cy for Item 206.0201 ✓



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PROJECT # TAB 24-117MADE BY [Signature]DATE 2-27-24CHECKED BY TJWDATE 2-27-2024SUBJECT LoopsSHEET # 1OF 1ITEM 206-03: CONDUIT EXCAVATION & BACKFILL w/ SURFACE RESTORATION (LF)

* ITEM IS USED @ TDS LOCATIONS: MP 456.5 EB
 MP 456.5 WB
 MP 422.4 WB

* ITEM USE IS A.O.B.E IF EXISTING PAVEMENT
 LOOPS ARE DAMAGED DUE TO FULL DEPTH REPAIR OR
 MILLING OPERATION.

→ MP 456.5 EB	Loops	$2A = 14' + 15' = 29'$ $1A = 14' + 15' = 29'$ $2B = 14'$ $1B = 14'$ $\Sigma = 86'$
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→ MP 456.5 WB	Loops	$2A = 14' + 8' = 22'$ $1A = 14' + 8' = 22'$ $2B = 14' + 8' = 22'$ $1B = 14' + 8' = 22'$ $\Sigma = 88'$
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→ MP 422.4 WB	Loops	$3B = 14' + 8' = 22'$ $2B = 14' + 8' = 22'$ $1B = 14' + 8' = 22'$ $3A = 14' + 8' = 22'$ $2A = 14' + 8' = 22'$ $1A = 14' + 8' = 22'$ $\Sigma = 132'$
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Assume $\frac{1}{2}$ REQ'D $\Rightarrow \frac{86' + 88' + 132'}{2}$
 $= 153'$

∴ Say 200' For ITEM 206-03



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PROJECT # H384.1, TAB 24-17MADE BY [Signature]DATE 1-18-24CHECKED BY TJWDATE 1/19/2024SUBJECT FULL DEPTH REPAIRS.SHEET # 1 OF 1ITEM 304.12: SUBBASE COURSE TYP 2 (CY)

- ITEM IS USED IN FULL DEPTH REPAIRS WHERE UNDERCUT IS REQ'D. (ASSUMED 20%)
- SEE NYSTA SS TA 402-01 FOR ADDITIONAL INFO.
- SEE "TYP FOR DESIGN CALL" FOR STANDARD ASSUMED REPAIR.

MAINLINE REPAIRS = 620'

INT / RAMP REPAIRS = 249

SEE TYP FOR
DESIGN CALL $\Sigma = 869^2$ REPAIRS. ✓ $0.77 \text{ CY / REPAIR } (869 \text{ REPAIRS}) = 669.13 \text{ CY} \checkmark$ $5\% \text{ BUMP} = 1.05 (669.13 \text{ CY}) = 702.6 \text{ CY} \checkmark$

SAY 710 CY FOR ITEM 304.12 ✓



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PROJECT # H384-1, TAB 24-17MADE BY [Signature]DATE 1-20-24CHECKED BY TJWDATE 1/22/2024SUBJECT ITEM 404-000011SHEET # 1 OF 1ITEM 404-000011: PLANT PRODUCTION QUALITY ADJUSTMENTS TO HMA ITEMS (QU)ITEM THAT QUALIFY FOR ADJUSTMENT:

12.5MM TOP ITEM 404-127201: 21,150 TN ✓

19MM BINDER ITEM 404-197901: 3,110 TN ✓

37.5MM BASE ITEM 404-377901: 5,520 TN ✓

 $\Sigma = 29,780 \text{ TN.}$ $29,780 \text{ TN } (0.05) = 1,489 \text{ QU.}$

∴ SAY 1490 QU FOR ITEM 404-000011



PROJECT #

TAB 04-17

MADE BY

DATE

1-19-24

CHECKED BY

TJW

DATE

1/22/2024

SUBJECT

12.5mm TOP, MAINLINE

SHEET #

1

OF

3

ITEM 404.127201: 12.5mm F0 TOP COURSE ASPHALT (TNS)

* ASSUME $\delta = 153^{15}/\text{ft}^3$, 2" DEPTH ON ALL M & INTERCHANGES

* SEE EB-3 DESIGN CALL.

TB Label	Lane	Direction	Start Mp	End mp	Width (ft)	Length (ft)	Area (Ft^2)	12.5 mm WMA (Tn)
I-90 EASTBOUND MAINLINE								
EB-1	L. Center	EB	421.86	421.31	13	2,917.00	37,921.00	483.49
EB-2	R. Center	EB	421.86	421.31	13	2,917.00	37,921.00	483.49
EB-3	RIGHT	EB	458.50	456.50	12	10,546.00	126,552.00	1,613.54
EB-4	RIGHT	EB	461.58	459.99	12	8,372.00	100,464.00	1,280.92
EB-5	RIGHT	EB	461.90	461.71	12	1,014.00	12,168.00	155.14
EB-6	RIGHT	EB	463.26	462.56	12	3,689.00	44,268.00	564.42
EB-7	RIGHT	EB	464.50	463.90	12	3,169.00	38,028.00	484.86
EB-8	RIGHT	EB	467.00	465.40	12	8,446.00	101,352.00	1,292.24
I-90 WESTBOUND MAINLINE								
WB-1	CENTER	WB	421.30	424.11	13	14,823.00	192,699.00	2,456.91
WB-2	ACCEL. RAMP	WB	421.57	421.90	14	1,719.00	24,066.00	306.84
WB-3	RIGHT	WB	429.30	429.40	12	525.00	6,300.00	80.33
WB-4	RIGHT	WB	455.79	456.27	12	2,538.00	30,456.00	388.31
WB-5	RIGHT	WB	456.42	457.36	12	4,989.00	59,868.00	763.32
WB-6	LEFT	WB	458.00	458.48	13	2,542.00	33,046.00	421.34
WB-7	RIGHT	WB	458.00	458.48	12	2,542.00	30,504.00	388.93
WB-8	LEFT	WB	459.61	459.85	13	1,272.00	16,536.00	210.83
WB-9	RIGHT	WB	459.61	459.85	12	1,272.00	15,264.00	194.62
WB-10	LEFT	WB	459.91	462.02	13	11,119.00	144,547.00	1,842.97
WB-11	RIGHT	WB	459.91	460.74	12	4,388.00	52,656.00	671.36
WB-12	RIGHT	WB	462.67	462.95	12	1,502.00	18,024.00	229.81
WB-13	RIGHT	WB	465.81	466.03	12	1,177.00	14,124.00	180.08
WB-14	RIGHT	WB	466.65	467.00	12	1,839.00	22,068.00	281.37
I-190 MAINLINE								
NB-1	RIGHT	NB	916.90	917.50	12	3,165.00	37,980.00	484.25
SB-1	RIGHT	SB	917.45	917.10	12	1,899.00	22,788.00	290.55
SB-2	LEFT	SB	918.50	918.40	13	582.00	7,566.00	96.47
SB-3	RIGHT	SB	918.50	918.61	12	582.00	6,984.00	89.05



PROJECT # TAB 24-17
 SUBJECT 12.5mm TOP, INTERCHANGE

MADE BY [Signature] DATE 1-19-24
 CHECKED BY TJW DATE 1/22/2024
 SHEET # 2 OF 3

ITEM 404-127201: 12.5mm F₂ TOP COURSE ASPHALT (TN)

* $\delta = 153' \frac{1}{2} / \text{FE}^3$, 2" DEPTH

Lane	Ramp Designation	Length (ft)	Width (ft)	Length (ft)	Area (Ft ²)	12.5 mm WMA (Tn)
I-90 Interchanges						
LEFT	Int. 50 Ramp "MA"	3,287.00	14.00	3,287.00	46,018.00	586.73
RIGHT	Int. 50 Ramp "MA"	3,287.00	14.00	3,287.00	46,018.00	586.73
LEFT	Int. 50 Ramp "MD"	2,146.00	14.00	2,146.00	30,044.00	383.06
LEFT	Int. 50 Ramp "MB"	2,069.00	14.00	2,069.00	28,966.00	369.32
RIGHT	Int. 50 Ramp "MB"	2,069.00	14.00	2,069.00	28,966.00	369.32
LEFT	Int. 50 Ramp "MB"	958.00	14.00	958.00	13,412.00	171.00
RIGHT	Int. 50 Ramp "MB"	699.00	14.00	699.00	9,786.00	124.77
RIGHT	Int. 53 Ramp "TS"	1,330.00	12.00	1,330.00	15,960.00	203.49
RIGHT	Int. 53 Ramp "TS"	900.00	12.00	900.00	10,800.00	137.70
RIGHT	Int. 53 Ramp "TS"	120.00	12.00	120.00	1,440.00	18.36
I-190 Interchanges						
RAMP	Int. N6 Ramp "A"	377.00	22.00	377.00	8,294.00	105.75
RAMP	Int. N6 Ramp "B"	456.00	14.00	456.00	6,384.00	81.40
LEFT	Int. N6 Ramp "U"L-1	339.00	14.00	339.00	4,746.00	60.51
RIGHT	Int. N6 Ramp "U"R-1	332.00	14.00	332.00	4,648.00	59.26
LEFT	Int. N6 Ramp "U"L-2	344.00	14.00	344.00	4,816.00	61.40
RIGHT	Int. N6 Ramp "U"R-2	347.00	14.00	347.00	4,858.00	61.94
LEFT	Int. N6 Ramp "V"L-1	205.00	14.00	205.00	2,870.00	36.59
RIGHT	Int. N6 Ramp "V" R-1	337.00	14.00	337.00	4,718.00	60.15
LEFT	Int. N6 Ramp "V"L-2	333.00	14.00	333.00	4,662.00	59.44
RIGHT	Int. N6 Ramp "V" R-2	335.00	14.00	335.00	4,690.00	59.80
LEFT	Int. N6 Ramp "W"	203.00	14.00	203.00	2,842.00	36.24
RIGHT	Int. N6 Ramp "W"	203.00	14.00	203.00	2,842.00	36.24
LEFT	Int. N6 Ramp "X"	206.00	14.00	206.00	2,884.00	36.77
RIGHT	Int. N6 Ramp "X"	206.00	14.00	206.00	2,884.00	36.77
RAMP	Int. N6 Ramp "Y"	314.00	26.00	314.00	8,164.00	104.09
LEFT	Int. N7 Ramp "D"	393.00	14.00	393.00	5,502.00	70.15
RIGHT	Int. N7 Ramp "D"	402.00	14.00	402.00	5,628.00	71.76
RAMP	Int. N7 Ramp "E"	426.00	24.00	426.00	10,224.00	130.36
LEFT	Int. N7 Ramp "F"	563.00	14.00	563.00	7,882.00	100.50
RIGHT	Int. N7 Ramp "F"	262.00	14.00	262.00	3,668.00	46.77



New York State Thruway Authority

PROJECT # TAB 24-17 MADE BY [Signature] DATE 1-19-24
 CHECKED BY TJW DATE 1/22/2024
 SUBJECT 12.5mm TOP 6" OVERLAP #8 SHEET # 3 OF 3

ITEM 404.127201: 12.5mm F2 TOP COURSE ASPHALT (TN)

$$6" \text{ OVERLAP} = \frac{[21,700 \text{ FE} (6" / 12" / \text{FE}) (2" / 12" / \text{FE})] 153 \text{ LB / YD}}{2000 \text{ LB / TN}} = 138.34 \text{ TN}$$

SEE MD-1
ITEM 490.30
WORKUP FOR
MORE INFO

TOTALS →

I-90 INTERCHANGES = 2,950.48 TN
 I-190 INTERCHANGES = 1,315.88 TN
 I-90 EB MAINLINE = 6,358.09 TN
 I-90 WB MAINLINE = 8,117.01 TN
 I-190 NB & SB MAINLINE = 960.30 TN
 6" OVERLAP = 138.34 TN

$$\Sigma = 20,140.10 \text{ TN}$$

$$5\% \text{ Bump} \Rightarrow 1.05 (20,140.10 \text{ TN}) = 21,147.10 \text{ TN}$$

∴ SAY 21,150 TN FOR ITEM 404.127201



New York State Thruway Authority

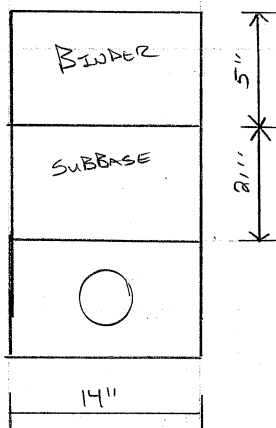
PROJECT # H384.1, TAB 24-17MADE BY [Signature]DATE 01/21/24CHECKED BY TJWDATE 1/22/2024SUBJECT 404.197901: UNDERDRAINSHEET # 1 OF 2ITEM 404.197901: 19mm F9 BINDER COURSE ASPHALT, 70 SERIES.

- ITEM IS USED DURING UNDERDRAIN INSTALLATION.
A.C.B-E

Assume 5" ASPHALT OVERLAY
9" PCC PAVEMENT
12" SUBBASE

$$S = 26"$$

Assume: 1000'
 $\gamma_{\text{BINDER}} = 155 \text{ lb/ft}^3$



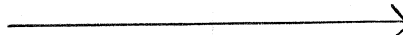
$$\text{AREA} = \frac{14" \times 5"}{(12"/\text{ft})^2} = 0.486 \text{ ft}^2$$

$$\text{VOLUME} = 0.486 \text{ ft}^2 (1000') = 486 \text{ ft}^3$$

$$\Rightarrow \frac{486 \text{ ft}^3 (155 \text{ lb/ft}^3)}{2000 \text{ lb/ton}}$$

$$= 37.67 \text{ tons}$$

Say 40 tons





New York State Thruway Authority

PROJECT # TAB 24-17MADE BY [Signature]DATE 1-19-24CHECKED BY TJWDATE 1/22/2024SUBJECT FULL DEPTH REPAIRS / TOTALSSHEET # 2

OF

2ITEM 404-197901: 19MM F9 BINDER ASPHALT, 70 SERIES COMPACTION (TN)

* ITEM IS USED IN FULL DEPTH REPAIRS TO REPLACE REMOVED ASPHALT OVERLAY W/ FRESH BINDER (ASSUME 5")

* $\gamma = 155 \text{ lb/cu ft}$, DEPTH = 5" (2 - 2-1/2" LIFTS PER CFPM T6-M)

* SEE "TYP FOR DESIGN CALL" FOR STANDARD ASSUMED REPAIR.

* SEE NYSTA SS TA 402-02 FOR ADDITIONAL INFO.

MAINLINE REPAIRS = 620
INT / RAMP = 249

SEE DWG TB-1 & TB-2

SEE TYP. FOR
DESIGN CALL

$\Sigma = 869$ REPAIRS

$3.36 \text{ TN / REPAIR} (869 \text{ REPAIRS}) = \underline{2,919.84 \text{ TN}}$

TOTALS →

FDR = 2,919.84 TN
UNDERDRAIN = 70 TN

$\Sigma = 2,959.84 \text{ TN}$

5% BUMP $\Rightarrow 1.05 (2,959.84 \text{ TN}) = 3,107.83 \text{ TN}$

∴ Say 3,110 TN FOR ITEM 404-197901



New York State Thruway Authority

PROJECT # TAB 24-17MADE BY [Signature]DATE 1-19-24CHECKED BY TJWDATE 1/22/2024SUBJECT FULL DEPTH REPAIRSSHEET # 1OF 1

ITEM 404.374901: 37.5MM F9 BASE COURSE ASPHALT, 70 SERIES (TN)

* ITEM IS USED IN FULL DEPTH REPAIRS TO REPLACE 9" OF UNDERLYING PCC PAVEMENT OR BASE & REPLACE W/ FRESH BASE.

* $\delta = 155 \text{ } ^{1/2} / \text{ft}^2$ DEPTH = 9" (2 - 4-1/2" LIFTS PER CPM T6-17)

* SEE "TYP FOR DESIGN CALL" FOR STANDARD ASSUMED REPAIR.

* SEE NYSTA SS TA 402-01 FOR ADDITIONAL INFO.

MAINLINE REPAIRS = 620
JCT / RAMP = 249

SEE TYP FOR
DESIGN CALL

$\delta = 869$ REPAIRS.

$6.05 \text{ TN/REPAIR} \times (869 \text{ REPAIRS}) = 5,257.45 \text{ TN}$

$5\% \text{ BUMP} \Rightarrow 1.05 (5,257.45 \text{ TN}) = 5,520.32 \text{ TN}$

\therefore SAY 5,520 TN FOR ITEM 404.374901

PROJECT # H384.1 TAB 24-17MADE BY [Signature]

DATE

1-20-24SUBJECT TRACKLESS TACK, MAINLINECHECKED BY TJW

DATE

1-22-2024SHEET # 1

OF

4ITEM 407-01040009: NON-TRACKING TACK (GAL)-> SEE Pg 4 FOR MORE INFO.SEE DESIGN
CALL FOR EXAMPLE

TB Label	Lane	Direction	Start Mp	End mp	Width (ft)	Length (ft)	Area (Ft^2)	Trackless Tack (Gal)
I-90 EASTBOUND MAINLINE								
EB-1	L. Center	EB	421.86	421.31	13	2,917.00	37,921.00	303.62
EB-2	R. Center	EB	421.86	421.31	13	2,917.00	37,921.00	303.62
EB-3	RIGHT	EB	458.50	456.50	12	10,546.00	126,552.00	1,015.58
EB-4	RIGHT	EB	461.58	459.99	12	8,372.00	100,464.00	806.23
EB-5	RIGHT	EB	461.90	461.71	12	1,014.00	12,168.00	97.68
EB-6	RIGHT	EB	463.26	462.56	12	3,689.00	44,268.00	355.27
EB-7	RIGHT	EB	464.50	463.90	12	3,169.00	38,028.00	305.20
EB-8	RIGHT	EB	467.00	465.40	12	8,446.00	101,352.00	813.35
I-90 WESTBOUND MAINLINE								
WB-1	CENTER	WB	421.30	424.11	13	14,823.00	192,699.00	1,542.73
WB-2	ACCEL. RAMP	WB	421.57	421.90	14	1,719.00	24,066.00	192.31
WB-3	RIGHT	WB	429.30	429.40	12	525.00	6,300.00	50.59
WB-4	RIGHT	WB	455.79	456.27	12	2,538.00	30,456.00	244.44
WB-5	RIGHT	WB	456.42	457.36	12	4,989.00	59,868.00	480.46
WB-6	LEFT	WB	458.00	458.48	13	2,542.00	33,046.00	264.59
WB-7	RIGHT	WB	458.00	458.48	12	2,542.00	30,504.00	244.82
WB-8	LEFT	WB	459.61	459.85	13	1,272.00	16,536.00	132.42
WB-9	RIGHT	WB	459.61	459.85	12	1,272.00	15,264.00	122.52
WB-10	LEFT	WB	459.91	462.02	13	11,119.00	144,547.00	1,157.24
WB-11	RIGHT	WB	459.91	460.74	12	4,388.00	52,656.00	422.58
WB-12	RIGHT	WB	462.67	462.95	12	1,502.00	18,024.00	144.67
WB-13	RIGHT	WB	465.81	466.03	12	1,177.00	14,124.00	113.38
WB-14	RIGHT	WB	466.65	467.00	12	1,839.00	22,068.00	177.12
I-190 MAINLINE								
NB-1	RIGHT	NB	916.90	917.50	12	3,165.00	37,980.00	304.81
SB-1	RIGHT	SB	917.45	917.10	12	1,899.00	22,788.00	182.90
SB-2	LEFT	SB	918.50	918.40	13	582.00	7,566.00	60.61
SB-3	RIGHT	SB	918.50	918.61	12	582.00	6,984.00	56.08

PROJECT # H384-1, TAB 24-17MADE BY [Signature]DATE 1-20-24CHECKED BY TJWDATE 1/22/2024SUBJECT INTERCHANGE 407.D1040009SHEET # 2OF 4

ITEM 407.D1040009: NON-TRACKING TACK CONT.

- SEE PG 4 FOR MORE INFO

Lane	Ramp Designation	Length (ft)	Width (ft)	Length (ft)	Area (Ft^2)	Trackless Tack (gal)
I-90 Interchanges						
LEFT	Int. 50 Ramp "MA"	3,287.00	14.00	3,287.00	46,018.00	367.70
RIGHT	Int. 50 Ramp "MA"	3,287.00	14.00	3,287.00	46,018.00	367.70
LEFT	Int. 50 Ramp "MD"	2,146.00	14.00	2,146.00	30,044.00	240.08
LEFT	Int. 50 Ramp "MB"	2,069.00	14.00	2,069.00	28,966.00	231.46
RIGHT	Int. 50 Ramp "MB"	2,069.00	14.00	2,069.00	28,966.00	231.46
LEFT	Int. 50 Ramp "MB"	958.00	14.00	958.00	13,412.00	107.20
RIGHT	Int. 50 Ramp "MB"	699.00	14.00	699.00	9,786.00	78.23
RIGHT	Int. 53 Ramp "TS"	1,330.00	12.00	1,330.00	15,960.00	128.11
RIGHT	Int. 53 Ramp "TS"	900.00	12.00	900.00	10,800.00	86.70
RIGHT	Int. 53 Ramp "TS"	120.00	12.00	120.00	1,440.00	11.59
I-190 Interchanges						
RAMP	Int. N6 Ramp "A"	377.00	22.00	377.00	8,294.00	65.69
RAMP	Int. N6 Ramp "B"	456.00	14.00	456.00	6,384.00	51.05
LEFT	Int. N6 Ramp "U" L-1	339.00	14.00	339.00	4,746.00	37.96
RIGHT	Int. N6 Ramp "U" R-1	332.00	14.00	332.00	4,648.00	37.18
LEFT	Int. N6 Ramp "U" L-2	344.00	14.00	344.00	4,816.00	38.52
RIGHT	Int. N6 Ramp "U" R-2	347.00	14.00	347.00	4,858.00	38.85
LEFT	Int. N6 Ramp "V" L-1	205.00	14.00	205.00	2,870.00	22.97
RIGHT	Int. N6 Ramp "V" R-1	337.00	14.00	337.00	4,718.00	37.74
LEFT	Int. N6 Ramp "V" L-2	333.00	14.00	333.00	4,662.00	37.29
RIGHT	Int. N6 Ramp "V" R-2	335.00	14.00	335.00	4,690.00	37.51
LEFT	Int. N6 Ramp "W"	203.00	14.00	203.00	2,842.00	22.75
RIGHT	Int. N6 Ramp "W"	203.00	14.00	203.00	2,842.00	22.75
LEFT	Int. N6 Ramp "X"	206.00	14.00	206.00	2,884.00	23.08
RIGHT	Int. N6 Ramp "X"	206.00	14.00	206.00	2,884.00	23.08
RAMP	Int. N6 Ramp "Y"	314.00	26.00	314.00	8,164.00	64.51
LEFT	Int. N7 Ramp "D"	393.00	14.00	393.00	5,502.00	44.00
RIGHT	Int. N7 Ramp "D"	402.00	14.00	402.00	5,628.00	45.01
RAMP	Int. N7 Ramp "E"	426.00	24.00	426.00	10,224.00	80.85
LEFT	Int. N7 Ramp "F"	563.00	14.00	563.00	7,882.00	63.01
RIGHT	Int. N7 Ramp "F"	262.00	14.00	262.00	3,668.00	29.35



New York State Thruway Authority

PROJECT # H384-1, TAB 24-17MADE BY [Signature]DATE 1-20-24CHECKED BY TJWDATE 1/22/2024SUBJECT FDR # 6" OVERLAP 407-0104009SHEET # 3OF 4ITEM 407-0104009: NON-TRACING TACK COAT (6AL)FDR → * ITEM IS USED IN FULL DEPTH REPAIRS

* SEE "TYP FDR DESIGN CALL" FOR STANDARD ASSUMED REPAIR

MAINLINE REPAIRS = 620
INT / RAMP = 249

Σ = 869 REPAIRS

SEE "TYP FDR DESIGN CALL" P. 3

2.17 GAL/REPAIR (869 REPAIRS) = 1,885.73 GAL ✓

— = TACK SURFACE

BINDER LIFT 2
BINDER LIFT 1
BASE LIFT 2
BASE LIFT 1

APPRATE → NEW ASPHALT = 0.05 GAL/yd²
VERT FACES = 0.08 GAL/yd²

T 407-1
10 SPECIAL
SPEC
407-0104009

6" OVERLAP →

* NO VERTICAL FACES ASSUMED DUE TO EACH MILL & INLAY LOCATION ACCOUNTING FOR TWO FACES. ∴ WHEN LOCATIONS ARE ADJACENT FACE IS ACCOUNTED FOR.

* SEE DWG. MD-1 & ITEM 490.30 FOR MORE INFO.

APPRATE → MILLED = 0.07 GAL/yd² ←

$$\text{AREA} = \frac{21,700' (6" / 12" / 12")}{9 \text{ ft}^2 / \text{yd}^2} = 1,205.56 \text{ yd}^2 \quad \checkmark$$

$$\rightarrow 1,205.56 \text{ yd}^2 (0.07 \text{ GAL/yd}^2) = \underline{\underline{84.39 \text{ GAL}}} \quad \checkmark$$



New York State Thruway Authority

PROJECT # H384-1, TAB 24-17MADE BY [Signature]DATE 1-20-24CHECKED BY TJWDATE 1/22/2024SUBJECT TOTALS 407.01040009SHEET # 4 OF 4ITEM 407.01040009: NON-TRACKING TACK COAT (GAL)

* PERIMETER OF EACH MILL & INLAY LOCATION SHALL BE TACKED.
AS WELL AS MILLED SURFACES

MAINLINE & INT/RAMPS =>

— = VERT FACE @ 0.08 gal/yd²▨ = MILLED SURFACE @ 0.07 gal/yd²

T407-1
ITEM
407.01040009

* SEE BUFFALO DESIGN CALLS FOR EB-3

I-90 MAINLINE EB = 4,000.55 GAL ✓

I-90 MAINLINE WB = 5,289.86 GAL ✓

I-190 MAINLINE NB&SB = 604.41 GAL ✓

I-90 INTERCHANGES = 1,850.22 GAL ✓

I-190 INTERCHANGES = 823.14 GAL ✓

FULL DEPTH REPAIRS = 1,885.73 GAL ✓

6" OVERLAP = 84.39 GAL ✓

Σ = 14,538.32 GAL ✓

5% Bump => 1.05 (14,538.32 GAL) = 15,265.24 ✓

∴ SAY 15,270 GAL FOR ITEM 407.01040009 ✓

PROJECT # H1384-1, TABS 24-17MADE BY DWDATE 1-20-04SUBJECT MAINLINE 418.7603CHECKED BY TJWDATE 11/22/2024SHEET # 1OF 3ITEM 418.7603: ASPHALT JOINT ADHESIVE (LF)* SEE P.3 OF 3 FOR ASSUMED USE.SEE DESIGN
CALL EXAMPLE
OF EB-3

TB Label	Lane	Direction	Start Mp	End mp	Width (ft)	Length (ft)	Area (Ft^2)	Joint adh. (ft)
I-90 EASTBOUND MAINLINE								
EB-1	L. Center	EB	421.86	421.31	13	2,917.00	37,921.00	5,834.00
EB-2	R. Center	EB	421.86	421.31	13	2,917.00	37,921.00	5,834.00
EB-3	RIGHT	EB	458.50	456.50	12	10,546.00	126,552.00	21,092.00
EB-4	RIGHT	EB	461.58	459.99	12	8,372.00	100,464.00	16,744.00
EB-5	RIGHT	EB	461.90	461.71	12	1,014.00	12,168.00	2,028.00
EB-6	RIGHT	EB	463.26	462.56	12	3,689.00	44,268.00	7,378.00
EB-7	RIGHT	EB	464.50	463.90	12	3,169.00	38,028.00	6,338.00
EB-8	RIGHT	EB	467.00	465.40	12	8,446.00	101,352.00	16,892.00
I-90 WESTBOUND MAINLINE								
WB-1	CENTER	WB	421.30	424.11	13	14,823.00	192,699.00	29,646.00
WB-2	ACCEL. RAMP	WB	421.57	421.90	14	1,719.00	24,066.00	3,438.00
WB-3	RIGHT	WB	429.30	429.40	12	525.00	6,300.00	1,050.00
WB-4	RIGHT	WB	455.79	456.27	12	2,538.00	30,456.00	5,076.00
WB-5	RIGHT	WB	456.42	457.36	12	4,989.00	59,868.00	9,978.00
WB-6	LEFT	WB	458.00	458.48	13	2,542.00	33,046.00	5,084.00
WB-7	RIGHT	WB	458.00	458.48	12	2,542.00	30,504.00	5,084.00
WB-8	LEFT	WB	459.61	459.85	13	1,272.00	16,536.00	2,544.00
WB-9	RIGHT	WB	459.61	459.85	12	1,272.00	15,264.00	2,544.00
WB-10	LEFT	WB	459.91	462.02	13	11,119.00	144,547.00	22,238.00
WB-11	RIGHT	WB	459.91	460.74	12	4,388.00	52,656.00	8,776.00
WB-12	RIGHT	WB	462.67	462.95	12	1,502.00	18,024.00	3,004.00
WB-13	RIGHT	WB	465.81	466.03	12	1,177.00	14,124.00	2,354.00
WB-14	RIGHT	WB	466.65	467.00	12	1,839.00	22,068.00	3,678.00
I-190 MAINLINE								
NB-1	RIGHT	NB	916.90	917.50	12	3,165.00	37,980.00	6,330.00
SB-1	RIGHT	SB	917.45	917.10	12	1,899.00	22,788.00	3,798.00
SB-2	LEFT	SB	918.50	918.40	13	582.00	7,566.00	1,164.00
SB-3	RIGHT	SB	918.50	918.61	12	582.00	6,984.00	1,164.00

PROJECT # H384-1, TAB 24-17MADE BY [Signature]

DATE

1-20-24CHECKED BY TJW

DATE

1/22/2024SUBJECT INTERCHANGE 418.7603SHEET # 2

OF

3ITEM 418.7603: ASPHALT PAVEMENT JOINT ADHESIVE

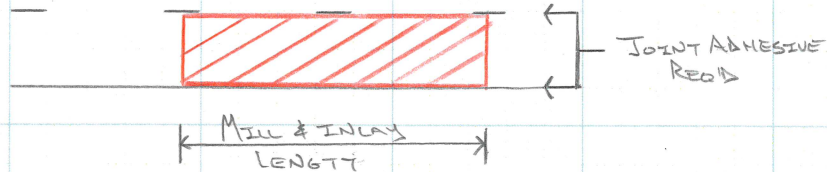
Lane	Ramp Designation	Length (ft)	Width (ft)	Length (ft)	Area (Ft^2)	Joint adh. (ft)
I-90 Interchanges						
LEFT	Int. 50 Ramp "MA"	3,287.00	14.00	3,287.00	46,018.00	6,574.00
RIGHT	Int. 50 Ramp "MA"	3,287.00	14.00	3,287.00	46,018.00	6,574.00
LEFT	Int. 50 Ramp "MD"	2,146.00	14.00	2,146.00	30,044.00	4,292.00
LEFT	Int. 50 Ramp "MB"	2,069.00	14.00	2,069.00	28,966.00	4,138.00
RIGHT	Int. 50 Ramp "MB"	2,069.00	14.00	2,069.00	28,966.00	4,138.00
LEFT	Int. 50 Ramp "MB"	958.00	14.00	958.00	13,412.00	1,916.00
RIGHT	Int. 50 Ramp "MB"	699.00	14.00	699.00	9,786.00	1,398.00
RIGHT	Int. 53 Ramp "TS"	1,330.00	12.00	1,330.00	15,960.00	2,660.00
RIGHT	Int. 53 Ramp "TS"	900.00	12.00	900.00	10,800.00	1,800.00
RIGHT	Int. 53 Ramp "TS"	120.00	12.00	120.00	1,440.00	240.00
I-190 Interchanges						
RAMP	Int. N6 Ramp "A"	377.00	22.00	377.00	8,294.00	754.00
RAMP	Int. N6 Ramp "B"	456.00	14.00	456.00	6,384.00	912.00
LEFT	Int. N6 Ramp "U"L-1	339.00	14.00	339.00	4,746.00	678.00
RIGHT	Int. N6 Ramp "U"R-1	332.00	14.00	332.00	4,648.00	664.00
LEFT	Int. N6 Ramp "U"L-2	344.00	14.00	344.00	4,816.00	688.00
RIGHT	Int. N6 Ramp "U"R-2	347.00	14.00	347.00	4,858.00	694.00
LEFT	Int. N6 Ramp "V"L-1	205.00	14.00	205.00	2,870.00	410.00
RIGHT	Int. N6 Ramp "V" R-1	337.00	14.00	337.00	4,718.00	674.00
LEFT	Int. N6 Ramp "V"L-2	333.00	14.00	333.00	4,662.00	666.00
RIGHT	Int. N6 Ramp "V" R-2	335.00	14.00	335.00	4,690.00	670.00
LEFT	Int. N6 Ramp "W"	203.00	14.00	203.00	2,842.00	406.00
RIGHT	Int. N6 Ramp "W"	203.00	14.00	203.00	2,842.00	406.00
LEFT	Int. N6 Ramp "X"	206.00	14.00	206.00	2,884.00	412.00
RIGHT	Int. N6 Ramp "X"	206.00	14.00	206.00	2,884.00	412.00
RAMP	Int. N6 Ramp "Y"	314.00	26.00	314.00	8,164.00	628.00
LEFT	Int. N7 Ramp "D"	393.00	14.00	393.00	5,502.00	786.00
RIGHT	Int. N7 Ramp "D"	402.00	14.00	402.00	5,628.00	804.00
RAMP	Int. N7 Ramp "E"	426.00	24.00	426.00	10,224.00	852.00
LEFT	Int. N7 Ramp "F"	563.00	14.00	563.00	7,882.00	1,126.00
RIGHT	Int. N7 Ramp "F"	262.00	14.00	262.00	3,668.00	524.00



New York State Thruway Authority

PROJECT # 4384.1, TAB 24-17MADE BY [Signature] DATE 1-20-24CHECKED BY TJW DATE 1/22/2024SUBJECT TOTALS 418.7603SHEET # 3 OF 3

ITEM 418.7603: ASPHALT JOINT ADHESIVE (LF)



TOTALS

I-90 MAINLINE EB = 82,140' ✓

I-90 MAINLINE WB = 104,494' ✓

I-190 MAINLINE (NB+SB) = 12,456' ✓

I-90 INTERCHANGES = 33,730' ✓

I-190 INTERCHANGES = 13,166' ✓

 $\Sigma = 245,986$ ✓

* AT LOCATIONS WHERE 6" OVERLAP IS ASSUMED (211,700')
 JOINT ADHESIVE IS COUNTED X 2 ALONG THE CENTERLINE
 JOINT \therefore NO 5% BUMP

\therefore SAY 245,990' FOR ITEM 418.7603 ✓



New York State Thruway Authority

PROJECT # H384.1, TABS 24-117MADE BY [Signature]DATE 1-19-24CHECKED BY TJWDATE 1/19/2024

SUBJECT _____

SHEET # 1OF 1ITEM 490-10: PRODUCTION COLD MILLING OF BITUMINOUS CONCRETE

- PER NYSDOT CDM CH 5, Pg 5-23, 5-24, PRODUCTION COLD MILLING $> 12,500 \text{ m}^2 (10.764 \text{ Fe}^2/\text{m}^2) = 134,550 \text{ Fe}^2$

- MILL & INLAY LOCATIONS AREA $> 134,550 \text{ Fe}^2$ SHALL BE MILLED UNDER 490-10

LOCATIONS
DENOTED
BY *00
DWS-TB-1

WB - 1 AREA = $192,699 \text{ Fe}^2 > 134,550 \text{ Fe}^2$

WB - 10 AREA = $144,547 \text{ Fe}^2 > 134,550 \text{ Fe}^2$

$\Sigma = 337,246 \text{ Fe}^2 \checkmark$

$$\Rightarrow \frac{337,246 \text{ Fe}^2}{9 \text{ Fe}^2/\text{yd}^2} = 37,471.78 \text{ yd}^2 \checkmark$$

$$5\% \text{ Bump} \Rightarrow 1.05 (37,471.76 \text{ yd}^2) = 39,345.37 \text{ yd}^2 \checkmark$$

∴ SAY 39,350 yd² FOR ITEM 490-10 ✓

PROJECT # H384.1, TAB 24-17MADE BY [Signature] DATE 1-19-24SUBJECT MAINLINE MILLING 490.30CHECKED BY TJW DATE 1/19/2024SHEET # 1 OF 4

Item 490.30: Misc Cold Milling of Bituminous Concrete (sy)

TB Label	Lane	Direction	Start Mp	End mp	Width (ft)	Length (ft)	Area (Ft^2)	Misc. Milling (sy)
I-90 EASTBOUND MAINLINE								
EB-1	L. Center	EB	421.86	421.31	13	2,917.00	37,921.00	4,213.44
EB-2	R. Center	EB	421.86	421.31	13	2,917.00	37,921.00	4,213.44
EB-3	RIGHT	EB	458.50	456.50	12	10,546.00	126,552.00	14,061.33
EB-4	RIGHT	EB	461.58	459.99	12	8,372.00	100,464.00	11,162.67
EB-5	RIGHT	EB	461.90	461.71	12	1,014.00	12,168.00	1,352.00
EB-6	RIGHT	EB	463.26	462.56	12	3,689.00	44,268.00	4,918.67
EB-7	RIGHT	EB	464.50	463.90	12	3,169.00	38,028.00	4,225.33
EB-8	RIGHT	EB	467.00	465.40	12	8,446.00	101,352.00	11,261.33
I-90 WESTBOUND MAINLINE								
WB-1	CENTER	WB	421.30	424.11	13	14,823.00	192,699.00	-
WB-2	ACCEL. RAMP	WB	421.57	421.90	14	1,719.00	24,066.00	2,674.00
WB-3	RIGHT	WB	429.30	429.40	12	525.00	6,300.00	700.00
WB-4	RIGHT	WB	455.79	456.27	12	2,538.00	30,456.00	3,384.00
WB-5	RIGHT	WB	456.42	457.36	12	4,989.00	59,868.00	6,652.00
WB-6	LEFT	WB	458.00	458.48	13	2,542.00	33,046.00	3,671.78
WB-7	RIGHT	WB	458.00	458.48	12	2,542.00	30,504.00	3,389.33
WB-8	LEFT	WB	459.61	459.85	13	1,272.00	16,536.00	1,837.33
WB-9	RIGHT	WB	459.61	459.85	12	1,272.00	15,264.00	1,696.00
WB-10	LEFT	WB	459.91	462.02	13	11,119.00	144,547.00	-
WB-11	RIGHT	WB	459.91	460.74	12	4,388.00	52,656.00	5,850.67
WB-12	RIGHT	WB	462.67	462.95	12	1,502.00	18,024.00	2,002.67
WB-13	RIGHT	WB	465.81	466.03	12	1,177.00	14,124.00	1,569.33
WB-14	RIGHT	WB	466.65	467.00	12	1,839.00	22,068.00	2,452.00
I-190 MAINLINE								
NB-1	RIGHT	NB	916.90	917.50	12	3,165.00	37,980.00	4,220.00
SB-1	RIGHT	SB	917.45	917.10	12	1,899.00	22,788.00	2,532.00
SB-2	LEFT	SB	918.50	918.40	13	582.00	7,566.00	840.67
SB-3	RIGHT	SB	918.50	918.61	12	582.00	6,984.00	776.00

SEE DESIGN
CALL FOR
EXAMPLE EB-3

Production
SEE ITEM
490.30

PROJECT # H384.1, TAB 24-17MADE BY [Signature]DATE 1-19-24CHECKED BY TJWDATE 1/19/2024SUBJECT INTERCHANGE MILLING 490.30SHEET # 2 OF 4ITEM 490.30: MISC. COLD MILLING OF BITUMINEOUS CONCRETE (sy)

Lane	Ramp Designation	Length (ft)	Width (ft)	Length (ft)	Area (Ft^2)	Misc. Milling (sy)
I-90 Interchanges						
LEFT	Int. 50 Ramp "MA"	3,287.00	14.00	3,287.00	46,018.00	5,113.11
RIGHT	Int. 50 Ramp "MA"	3,287.00	14.00	3,287.00	46,018.00	5,113.11
LEFT	Int. 50 Ramp "MD"	2,146.00	14.00	2,146.00	30,044.00	3,338.22
LEFT	Int. 50 Ramp "MB"	2,069.00	14.00	2,069.00	28,966.00	3,218.44
RIGHT	Int. 50 Ramp "MB"	2,069.00	14.00	2,069.00	28,966.00	3,218.44
LEFT	Int. 50 Ramp "MB"	958.00	14.00	958.00	13,412.00	1,490.22
RIGHT	Int. 50 Ramp "MB"	699.00	14.00	699.00	9,786.00	1,087.33
RIGHT	Int. 53 Ramp "TS"	1,330.00	12.00	1,330.00	15,960.00	1,773.33
RIGHT	Int. 53 Ramp "TS"	900.00	12.00	900.00	10,800.00	1,200.00
RIGHT	Int. 53 Ramp "TS"	120.00	12.00	120.00	1,440.00	160.00
I-190 Interchanges						
RAMP	Int. N6 Ramp "A"	377.00	22.00	377.00	8,294.00	921.56
RAMP	Int. N6 Ramp "B"	456.00	14.00	456.00	6,384.00	709.33
LEFT	Int. N6 Ramp "U" L-1	339.00	14.00	339.00	4,746.00	527.33
RIGHT	Int. N6 Ramp "U" R-1	332.00	14.00	332.00	4,648.00	516.44
LEFT	Int. N6 Ramp "U" L-2	344.00	14.00	344.00	4,816.00	535.11
RIGHT	Int. N6 Ramp "U" R-2	347.00	14.00	347.00	4,858.00	539.78
LEFT	Int. N6 Ramp "V" L-1	205.00	14.00	205.00	2,870.00	318.89
RIGHT	Int. N6 Ramp "V" R-1	337.00	14.00	337.00	4,718.00	524.22
LEFT	Int. N6 Ramp "V" L-2	333.00	14.00	333.00	4,662.00	518.00
RIGHT	Int. N6 Ramp "V" R-2	335.00	14.00	335.00	4,690.00	521.11
LEFT	Int. N6 Ramp "W"	203.00	14.00	203.00	2,842.00	315.78
RIGHT	Int. N6 Ramp "W"	203.00	14.00	203.00	2,842.00	315.78
LEFT	Int. N6 Ramp "X"	206.00	14.00	206.00	2,884.00	320.44
RIGHT	Int. N6 Ramp "X"	206.00	14.00	206.00	2,884.00	320.44
RAMP	Int. N6 Ramp "Y"	314.00	26.00	314.00	8,164.00	907.11
LEFT	Int. N7 Ramp "D"	393.00	14.00	393.00	5,502.00	611.33
RIGHT	Int. N7 Ramp "D"	402.00	14.00	402.00	5,628.00	625.33
RAMP	Int. N7 Ramp "E"	426.00	24.00	426.00	10,224.00	1,136.00
LEFT	Int. N7 Ramp "F"	563.00	14.00	563.00	7,882.00	875.78
RIGHT	Int. N7 Ramp "F"	262.00	14.00	262.00	3,668.00	407.56

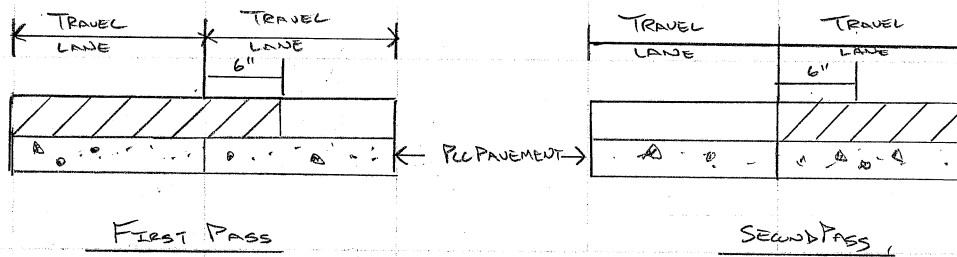


New York State Thruway Authority

PROJECT # H384-1, TAB 24-17MADE BY [Signature]DATE 1-19-24CHECKED BY TJWDATE 1/19/2024SUBJECT 6" OVERLAPSHEET # 3OF 4

ITEM 490.30 : MISC. COLD MILLING OF BITUMINEOUS CONCRETE. (Sq. Yd)

* IT IS ASSUMED THAT ADJACENT LANES MILL & INLAY LIMITS WILL EXTEND 6" INTO ADJACENT LANE DURING FIRST PASS. THE 6" OVERLAP WILL BE REMOVED SUCH THAT THE JOINT IS ALIGNED W/ UNDERLYING PCC PAVEMENT JOINT. DURING SECOND PASS.



ASSUMED OVERLAP = 21.700'

$$\text{AREA} = \frac{(6''/12'') \times 21.700'}{9 \text{ FC}^2/\text{yd}^2} = 1,205.56 \text{ yd}^2 \checkmark$$

TOTALS \Rightarrow



New York State Thruway Authority

PROJECT # H384.1, TAB 24-17MADE BY [Signature]DATE 1-19-24CHECKED BY TJWDATE 1/19/2024SUBJECT MISC. MILLING TOTALSSHEET # 4OF 4ITEM 490.30: MISC. COLD MILLING OF BITUMINOUS CONCRETE (SY)I-90 MAINLINE EB = 55,408.22 yd² ✓I-90 MAINLINE WB = 35,879.11 yd² ✓I-190 MAINLINE (WB+SB) = 8,368.67 yd² ✓I-90 INTERCHANGES = 25,712.22 yd² ✓I-190 INTERCHANGES = 11,467.33 yd² ✓6" OVER LAP = 1,205.56 yd² ✓Σ = 138,041.11 yd² ✓5% ⇒ 1.05 (138,041.11 yd²) = 144,943.17 yd² ✓∴ Say 144,950 yd² ITEM 490.30 ✓



New York State Thruway Authority

PROJECT # H384.1, TAB 24-17MADE BY [Signature]DATE 1-21-24CHECKED BY TJWDATE 1/22/2024SUBJECT 603.9825--25: UNDERDRAINSHEET # 1 OF 1ITEM 603.9825--25: EXTENSION CONNECTION TO EXISTING DRAINAGE STRUCTURE (EA)

* ITEM IS USED IN FULL DEPTH REPAIR LOCATIONS
USE OF ITEM IS A.O.B.E. WHERE UNDERDRAIN IS
REQ'D.

* REFER TO NYSTA SS TA 605-01

ASSUME 6 LOCATIONS WHERE UNDERDRAIN CAN
OUTLET INTO EXISTING D.I.

∴ SAY 6 EA. FOR ITEM 603.9825--25 ✓

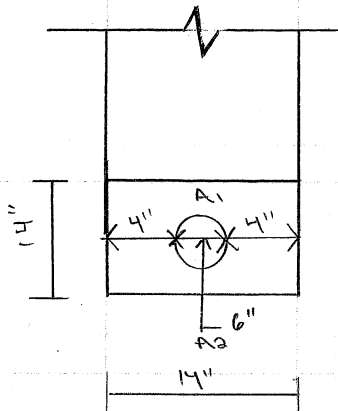


New York State Thruway Authority

PROJECT # H384.1, TAB 24-17MADE BY [Signature]DATE 1-21-24CHECKED BY TJWDATE 1/22/2024SUBJECT 605-1001: UNDERDRAINSHEET # 1OF 1Item 605-1001: UNDERDRAIN FILTER TYPE 2 (cy)

* ITEM IS USED IN FAR LOCATIONS WHERE UNDERDRAIN IS REQ'D A.O.B.E

* REFER TO NYSTA SS TA 605-01



$$\text{PIPE DIA. } \phi = 6" = 0.5'$$

$$L = 1,000'$$

$$A_1 = \frac{14"(14")}{144 \text{ in}^2/\text{ft}^2} = 1.361 \text{ ft}^2$$

$$A_2 = \pi r^2 = \left(\frac{0.5}{2}\right)^2 \pi = 0.196 \text{ ft}^2$$

$$A_1 - A_2 = 1.361 \text{ ft}^2 - 0.196 = 1.165 \text{ ft}^2$$

$$\text{Vol} = 1.165 \text{ ft}^2 (1,000') = \frac{1,165 \text{ ft}^3}{27 \text{ ft}^3/\text{cy}} = 43.1 \text{ cy}$$

∴ SAY 50 cy FOR ITEM 605-1001



New York State Thruway Authority

PROJECT # H384-1, TAB 24-17. MADE BY [Signature] DATE 1-21-24
CHECKED BY TJW DATE 1/22/2024
SUBJECT 605-1502 : UNDERDRAIN SHEET # 1 OF 1

ITEM 605-1502 : PREFORMED CORRUGATED POLYETHYLENE UNDERDRAIN TUBING, 6" (LF)

* ITEM IS USED IN FULL DEPTH REPAIR LOCATIONS. USE OF
ITEM IS A.O.B.E. WHERE UNDERDRAIN IS REQ'D.

* REFER TO NYSTA SS TA 605-01

ASSUME 1000' OF UNDERDRAIN.

•• SAY 1000' FOR ITEM 605-1502.



New York State Thruway Authority

PROJECT # H384-1, TAB 24-17MADE BY [Signature] DATE 01-21-24CHECKED BY TJW DATE 1/22/2024SUBJECT 605.21015025: UNDERDRAIN.SHEET # 1 OF 1ITEM 605.21015025: PRECAST CONCRETE HEADWALL FOR 6" LATERAL OUTLET PIPES (EA)

* ITEM IS USED IN FULL DEPTH REPAIR LOCATIONS. USE OF
ITEM IS A.O.B.E. WHERE UNDERDRAIN IS REQ'D.

* REFER TO NYSTA SS TA 605-01

ASSUME 6 LATERAL OUTLETS.

∴ SAY 6 EA FOR ITEM 605.21015025



New York State Thruway Authority

PROJECT # H384-1, TAB 24-17MADE BY [Signature]

DATE

1-22-24CHECKED BY TJW

DATE

1/22/2024

SUBJECT _____

SHEET #

1

OF

1ITEM 619.01: BASIC WORKZONE TRAFFIC CONTROL (LS)

1.0 LS FOR ITEM 619.01



New York State Thruway Authority

PROJECT # H384.1, TAB 24-17MADE BY [Signature]DATE 1-21-24CHECKED BY TJWDATE Feb 1/22/2024SUBJECT 619.0901: TEMP. P. MARKINGSSHEET # 1 OF 1ITEM 619.0901: TEMPORARY PAVEMENT MARKING STRIPES (TRAFFIC PAINT) (LF)

* ITEM IS USED AFTER MILL & INLAY BEFORE PERM-PAVEMENT MARKINGS CAN BE INSTALLED

* SEE NYSTA SS TA 685-04

MAINLINE &
RAMPS

$$\begin{aligned} \rightarrow 685-1106--25 &= 24,300' \quad \checkmark \\ 685-1206--25 &= 13,250' \quad \checkmark \\ 685-1707--25 &= 94,000' \quad \checkmark \\ 685-1708--25 &= 15,905' \quad \checkmark \end{aligned}$$

$$\Sigma = \underline{147,455'} \quad \checkmark$$

FDR

MAINLINE REPAIRS = 680

INT / RAMP REPAIRS = 249

Σ = 869 REPAIRS

$$869 \text{ REPAIRS (8' REPAIR)} = 6,952' (1.25) = 8,690' \quad \checkmark$$

$\{ 1.0 \text{ OVERLINE} + 10\% \text{ 40' LSCID} \}$

TOTALS Σ

$$147,455' + 8,690' = \underline{156,145'} \quad \checkmark$$

\therefore SAY 156,150' FOR 619.0901 \checkmark



New York State Thruway Authority

PROJECT # H384.1, TAB 24-17MADE BY [Signature]DATE 1-20-24CHECKED BY TJWDATE 1/22/2024SUBJECT 619-110513SHEET # 1OF 1ITEM 619.110513: PORTABLE, VARIABLE MESSAGE SIGN (PUMS) STANDARD SIZE (EN)

* ASSUME: 2 UNITS / WORKZONE
2 WORKZONE @ A TIME

$$2 \text{ UNITS} / \text{WORKZONE} (2 \text{ WORKZONE}) = 4.0$$

+ 2 ADDITIONAL FOR WZTC ON INT PAVING.

$$4.0 + 2 = \underline{6.0}$$

∴ SAY 6.0^{EN} FOR ITEM 619.110513



New York State Thruway Authority

PROJECT # H384.1, TAB 24-17MADE BY [Signature]DATE 1-22-24CHECKED BY TJWDATE 1/22/2024

SUBJECT _____

SHEET # 1OF 1Item 619.24: NIGHT TIME OPERATIONSLS

1.0 LS FOR ITEM 619.24



New York State Thruway Authority

PROJECT # 4384.1, TAB 24-17MADE BY DATE 1-20-24CHECKED BY TJWDATE 1/22/2024SUBJECT 619-96000025SHEET # 1OF 1ITEM 619-96000025: SPEED DISPLAY TRAILER (EA)

1.0 EACH REA'D

•• SAY 1.0 EA FOR ITEM 619-96000025



New York State Thruway Authority • New York State Canal Corporation

PROJECT # H384.1, TAB 24-17MADE BY [Signature]

DATE

1-20-24SUBJECT MAINLINE CUTTING PAVEMENTCHECKED BY TJW

DATE

1/22/2024SHEET # 1

OF

3ITEM 627.50140008: CUTTING PAVEMENT (LF)

* ITEM IS USED TO PROVIDE A FULL WIDTH TRANSVERSE SAW CUT
 @ THE START & END OF MILL & INLAY OPERATION.

TB Label	Lane	Direction	Start Mp	End mp	Width (ft)
I-90 EASTBOUND MAINLINE					
EB-1	L. Center	EB	421.86	421.31	13
EB-2	R. Center	EB	421.86	421.31	13
EB-3	RIGHT	EB	458.50	456.50	12
EB-4	RIGHT	EB	461.58	459.99	12
EB-5	RIGHT	EB	461.90	461.71	12
EB-6	RIGHT	EB	463.26	462.56	12
EB-7	RIGHT	EB	464.50	463.90	12
EB-8	RIGHT	EB	467.00	465.40	12
I-90 WESTBOUND MAINLINE					
WB-1	CENTER	WB	421.30	424.11	13
WB-2	ACCEL. RAMP	WB	421.57	421.90	14
WB-3	RIGHT	WB	429.30	429.40	12
WB-4	RIGHT	WB	455.79	456.27	12
WB-5	RIGHT	WB	456.42	457.36	12
WB-6	LEFT	WB	458.00	458.48	13
WB-7	RIGHT	WB	458.00	458.48	12
WB-8	LEFT	WB	459.61	459.85	13
WB-9	RIGHT	WB	459.61	459.85	12
WB-10	LEFT	WB	459.91	462.02	13
WB-11	RIGHT	WB	459.91	460.74	12
WB-12	RIGHT	WB	462.67	462.95	12
WB-13	RIGHT	WB	465.81	466.03	12
WB-14	RIGHT	WB	466.65	467.00	12
I-190 MAINLINE					
NB-1	RIGHT	NB	916.90	917.50	12
SB-1	RIGHT	SB	917.45	917.10	12
SB-2	LEFT	SB	918.50	918.40	13
SB-3	RIGHT	SB	918.50	918.61	12

PROJECT # H384.1, TAB 24-17MADE BY [Signature] DATE 1-20-24CHECKED BY TJW DATE 1/22/2024SUBJECT INTERCHANGE: CUTTING PAVEMENTSSHEET # 2 OF 3ITEM 627.50140008: CUTTING PAVEMENT. (LF)

* ITEM IS USED TO PROVIDE A FULL WIDTH TRANSVERSE
SAW CUT @ START & STOP OF PAVING LIMITS.

Lane	Ramp Designation	Length (ft)	Width (ft)
I-90 Interchanges			
LEFT	Int. 50 Ramp "MA"	3,287.00	14.00
RIGHT	Int. 50 Ramp "MA"	3,287.00	14.00
LEFT	Int. 50 Ramp "MD"	2,146.00	14.00
LEFT	Int. 50 Ramp "MB"	2,069.00	14.00
RIGHT	Int. 50 Ramp "MB"	2,069.00	14.00
LEFT	Int. 50 Ramp "MB"	958.00	14.00
RIGHT	Int. 50 Ramp "MB"	699.00	14.00
RIGHT	Int. 53 Ramp "TS"	1,330.00	12.00
RIGHT	Int. 53 Ramp "TS"	900.00	12.00
RIGHT	Int. 53 Ramp "TS"	120.00	12.00
I-190 Interchanges			
RAMP	Int. N6 Ramp "A"	377.00	22.00
RAMP	Int. N6 Ramp "B"	456.00	14.00
LEFT	Int. N6 Ramp "U" L-1	339.00	14.00
RIGHT	Int. N6 Ramp "U" R-1	332.00	14.00
LEFT	Int. N6 Ramp "U" L-2	344.00	14.00
RIGHT	Int. N6 Ramp "U" R-2	347.00	14.00
LEFT	Int. N6 Ramp "V" L-1	205.00	14.00
RIGHT	Int. N6 Ramp "V" R-1	337.00	14.00
LEFT	Int. N6 Ramp "V" L-2	333.00	14.00
RIGHT	Int. N6 Ramp "V" R-2	335.00	14.00
LEFT	Int. N6 Ramp "W"	203.00	14.00
RIGHT	Int. N6 Ramp "W"	203.00	14.00
LEFT	Int. N6 Ramp "X"	206.00	14.00
RIGHT	Int. N6 Ramp "X"	206.00	14.00
RAMP	Int. N6 Ramp "Y"	314.00	26.00
LEFT	Int. N7 Ramp "D"	393.00	14.00
RIGHT	Int. N7 Ramp "D"	402.00	14.00
RAMP	Int. N7 Ramp "E"	426.00	24.00
LEFT	Int. N7 Ramp "F"	563.00	14.00
RIGHT	Int. N7 Ramp "F"	262.00	14.00



New York State Thruway Authority

PROJECT # H384.1, TAB 24-17MADE BY [Signature]DATE 1-20-24CHECKED BY TJWDATE 1/22/2024SUBJECT FULL DEPTH REPAIRS / MAINLINE & RAMP TOTALSSHEET # 3OF 3ITEM 627.50140008: CUTTING PAVEMENT (LF)→ FDR

* ITEM IS USED TO SAWCUT PERIMETER OF FULL DEPTH REPAIR, ASSUMED 8' X 13'

* SEE "TYP FDR DESIGN CALL" Pg 2 & NYSTA SSTA 402-02 FOR MORE INFO

MAINLINE REPAIRS = 620

INT / RAMP REPAIRS = 249

SEE DWG. TB-1 & TB-2

 $\Sigma = 869$ REPAIRS

$$2(13') + 2(8') = 42' / \text{REPAIR}$$

→ 42' / REPAIR (869 REPAIRS)

$$= \underline{36,498 \text{ Ft}}$$

→ MAINLINE / RAMP :

* SAWCUT START & STOP OF MILL & INLAY LIMITS.

* SEE DESIGN CALL, 2 (WIDTH)

Pg 1 & 2 WIDTH →

I-90 MLEB =

$$\Sigma \text{WIDTH (2)} = \text{CUT}$$

$$98' (2) = 196'$$

I-90 ML WB =

$$174' (2) = 348'$$

I-190 ML NB & SB =

$$49' (2) = 98'$$

I-90 INT =

$$134' (2) = 268'$$

I-190 INT =

$$310' (2) = 620'$$

$$\Sigma = \underline{1,530'}$$

MILL & INLAY WIDTH

MILL & INLAY LENGTH

→ TOTALS

$$\text{FDR} = 36,498'$$

$$\text{MAINLINE \& RAMP} = 1,530'$$

$$\Sigma = 38,028'$$

$$5\% \text{ BUMP} \Rightarrow 1.05(38,028') = 39,929.4'$$

∴ SAY 39,930' FOR 627.50140008



New York State Thruway Authority

PROJECT # H384-1, TAB 24-17MADE BY [Signature] DATE 1-21-24CHECKED BY TJW DATE 1/22/2024SUBJECT 635-04030225SHEET # 1 OF 1ITEM 635-04030225: RECESS DIAMOND GRINDING FOR INLAID PAVEMENT MARKINGS (LF)

* ITEM IS USED IN CONJUNCTION W/ ITEM 685-1707-25 & 685-1708-25
ON MAINLINE PER NYSTA SS TA 685-01

$$685-1707-25 = 94,000' \checkmark$$

$$685-1708-25 = 15,905' \checkmark$$

$$\Sigma = 109,905' \checkmark$$

∴ SAY 109,905 FOR ITEM 635-04030225



New York State Thruway Authority

PROJECT # H384.1, TAB 24-17MADE BY [Signature]DATE 1-20-24CHECKED BY TJWDATE 1/22/2024SUBJECT ITEM 637.12--25SHEET # 1OF 1ITEM 637.12--25: ENGINEER'S FIELD OFFICE - TYPE 2 (MONTHS)

PROPOSED LETTING = 2-21-24

ASSUMED AWARD = 4-1-24

≈ 20 MONTHS

COMPLETION = 11-14-25

4-1-24 → 11-14-25 ≈ 20 MONTHS

DELAYS ≈ 1 MONTH

CLOSE OUT ≈ 2 MONTHS

Σ = 23 MONTHS

∴ SAY 24 MONTHS FOR ITEM 637.12-25



New York State Thruway Authority

PROJECT # H384.1, TAB 24-17MADE BY [Signature]DATE 1-22-24CHECKED BY TJWDATE 1/22/2024SUBJECT 649.01: UNDER DRAIN.SHEET # 1OF 1ITEM 649.01: MILES - IN AUDIBLE ROADWAY DELINEATORS (MIARDS) (LF)

* ITEM IS USED TO REPLACE MIARDS REMOVED DURING
UNDER DRAIN INSTALLATION. USE OF ITEM IS A.G.B.E

ASSUME 1,000'

•• Say 1,000' For ITEM 649.01



New York State Thruway Authority

PROJECT # TAB 24-17MADE BY [Signature]

DATE

2-27-24CHECKED BY TJW

DATE

2-27-2024SUBJECT LoopsSHEET # 1

OF

1ITEM 680.52080325: 1" NPS CONDUIT, FLEXIBLE, LIQUID TIGHT PVC

* ITEM USED @ TAB LOCATIONS: MP 456.5 EB
 MP 456.5 WB
 MP 422.4 WB

* ITEM USE IS A.O.B.E. IF EXISTING LOOPS ARE DAMAGED
 DUE TO FULL DEPTH REPAIR OR MILLING OPERATION.

→ MP 456.5 EBLoops

$$2A = 14' + 15' = 29'$$

$$1A = 14' + 15' = 29'$$

$$2B = 14' = 14'$$

$$1B = 14' = 14'$$

$$\Sigma = 86'$$

→ MP 456.5 WBLoops

$$2A = 14' + 8' = 22'$$

$$2B = 14' + 8' = 22'$$

$$1A = 14' + 8' = 22'$$

$$1B = 14' + 8' = 22'$$

$$\Sigma = 88'$$

→ MP 422.4 WBLoops

$$3B = 14' + 8' = 22'$$

$$2B = 14' + 8' = 22'$$

$$1B = 14' + 8' = 22'$$

$$3A = 14' + 8' = 22'$$

$$2A = 14' + 8' = 22'$$

$$1A = 14' + 8' = 22'$$

$$\Sigma = 132'$$

$$MP\ 456\ EB = 86'$$

$$MP\ 456\ WB = 88'$$

$$MP\ 422.4\ WB = 132'$$

$$\Sigma = 306'$$

$$\text{Assume } 1/2 \Rightarrow \frac{306'}{2} = 153'$$

∴ Say 200' For ITEM 680.52080325

PROJECT # TAB 24-117

MADE BY:

DATE _____

2/27/27

CHECKED BY

DATE _____

2-27-2024

SUBJECT Loops

SHEET #

OF

1

ITEM	680.54	INDUCTANCE	LOOP	INSTALLATION	LF
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* ITEM USED @ TDS LOCATIONS:

MP	456.5 EB
MP	456.5 WB
MP	722.4 WB

* ITEM USE IS A.O.B.E IF EXISTING LOOPS ARE DAMAGED DUE TO FULL DEPTH REPAIR OR MILLING OPERATIONS.

$\rightarrow 6' + 6' + 6' + 6'$

→ MP 456.5 EB	Loops	2A =	24' + 15' = 39'
		1A =	24' + 3' = 27'
		2B =	24' + 15' = 39'
		1B =	24' + 3' = 27'
			<u>Σ = 132'</u>

→ MP 456.5 WB	Loops	2A = 24' + 15' = 39'	1A = 24' + 3' = 27'	2B = 24' + 15' = 39'	1B = 24' + 3' = 27'	Σ = 132'

→ MP 402-4 WB	Loops
	$3A = 24' + 15' + 12' = 51'$ $2A = 24' + 15' = 39'$ $1A = 24' + 3' = 27'$ $3B = 24' + 15' + 12' = 51'$ $2B = 24' + 15' = 39'$ $2A = 24' + 3' = 27'$ $\Delta = 234'$

MP 456.5 EB = 132'
MP 456.5 WB = 132'
MP 422.4 WB = 234'
Σ = 498'

Assume $\frac{1}{2}$ loops will req replacement
 $\hookrightarrow \frac{498'}{2} = 249'$

\therefore SAY 275' FOR ITEM 680.54



New York State Thruway Authority

PROJECT # TAB 24-17MADE BY [Signature]DATE 2-27-24CHECKED BY TJWDATE 2-27-2024SUBJECT LoopsSHEET # 1 OF 1

ITEM 680-5840--25: PREFORMED INDUCTANCE LOOP DETECTOR (LUTIN-APPLICATION) EA.

* ITEM IS USED @ TDS LOCATIONS: MP 456.5 EB
MP 456.5 WB
MP 422.4 WB

* USE OF ITEM IS A.O.B.E IF EXISTING LOOPS ARE DAMAGED
DUE TO FULL DEPTH REPAIR OR MILLING OPERATIONS.

* NOT EVERY LOOP MAY REQ REPLACEMENT.

MP 422.4 WB = 6.0 EA
MP 456.5 EB = 4.0 EA
MP 456.5 WB = 4.0 EA
Σ = 14 EA

ASSUME 1/2 LOOPS WILL REQ REPLACEMENT

$$\frac{14 \text{ EA}}{2} = 7 \text{ EA}$$

∴ SAY 8.0 EA FOR ITEM 680-5840--25



New York State Thruway Authority

PROJECT # TAB 24-17MADE BY [Signature]DATE 2-27-24

CHECKED BY _____

DATE _____

SUBJECT LoopsSHEET # 1OF 1

ITEM 680-5860--25: PREFORMED INDUCTANCE LOOP DETECTOR (ASPHALT OVERLAY) INSTALL EA

* ITEM IS USED @ THE LOCATIONS: MP 456.5 EB
MP 456.5 WB
MP 422.4 WB

* USE OF ITEM IS A.O.B.E IF EXISTING
LOOPS ARE DAMAGED DURING FULL DEPTH REPAIR OR
MILLING OPERATIONS.

* NOT EVERY LOOP MAY REQ REPLACEMENT.

MP	422.4 WB	=	6.0 EA
MP	456.5 EB	=	4.0 EA
MP	456.5 WB	=	4.0 EA
			<u>14 EA</u>

ASSUME $\frac{1}{2}$ OF LOOPS MAY REQ REPLACEMENT

$$\frac{14 \text{ EA}}{2} = 7 \text{ EA}$$

\therefore SAY 8 EA FOR ITEM 680-5860--25



New York State Thruway Authority

PROJECT # H384.1, TAB 24-17MADE BY [Signature] DATE 1-22-24CHECKED BY TJW DATE 1/22/2024SUBJECT TDS LOAD INSTALLSHEET # 1 OF 1Item 680-71: SHIELDED LEAD-IN CABLE (LF)

* ITEM USED TO CONNECT INDUCTANCE LOAD WIRE TO EQUIPMENT IN CABINET.

* ITEM ONLY REQ'D IF EXISTING WIRE IS DEEMED TO BE NOT REUSABLE
USE OF ITEM IS A.O.B.E.

Assume 300'

∴ Say 300' For Item 680-71

PROJECT # H384-1, TAB 24-17MADE BY [Signature]DATE 1-19-24CHECKED BY TJWDATE 1/22/2024SUBJECT INTERCHANGE 685.1106--25SHEET # 1 OF 2Item 685-1106--25: WHITE EPOXY REFLECTORIZED PAVEMENT STRIPES 6"X DUMILS (LF)

* ITEM IS USED ON RAMPs, SEE NYSTA SS TA 685-01 FOR USAGE

* BASED ON LANE DESIGNATION, MULT. PAYFACTOR (LENGTH) = LF OF 685-1106--25

Lane	Ramp Designation	Length (ft)	Width (ft)	White Epoxy
I-90 Interchanges				
LEFT	Int. 50 Ramp "MA"	3,287.00	14.00	821.75
RIGHT	Int. 50 Ramp "MA"	3,287.00	14.00	4,108.75
LEFT	Int. 50 Ramp "MD"	2,146.00	14.00	536.50
LEFT	Int. 50 Ramp "MB"	2,069.00	14.00	517.25
RIGHT	Int. 50 Ramp "MB"	2,069.00	14.00	2,586.25
LEFT	Int. 50 Ramp "MB"	958.00	14.00	239.50
RIGHT	Int. 50 Ramp "MB"	699.00	14.00	873.75
RIGHT	Int. 53 Ramp "TS"	1,330.00	12.00	1,662.50
RIGHT	Int. 53 Ramp "TS"	900.00	12.00	1,125.00
RIGHT	Int. 53 Ramp "TS"	120.00	12.00	150.00
I-190 Interchanges				
RAMP	Int. N6 Ramp "A"	377.00	22.00	377.00
RAMP	Int. N6 Ramp "B"	456.00	14.00	456.00
LEFT	Int. N6 Ramp "U" L-1	339.00	14.00	84.75
RIGHT	Int. N6 Ramp "U" R-1	332.00	14.00	415.00
LEFT	Int. N6 Ramp "U" L-2	344.00	14.00	86.00
RIGHT	Int. N6 Ramp "U" R-2	347.00	14.00	433.75
LEFT	Int. N6 Ramp "V" L-1	205.00	14.00	51.25
RIGHT	Int. N6 Ramp "V" R-1	337.00	14.00	421.25
LEFT	Int. N6 Ramp "V" L-2	333.00	14.00	83.25
RIGHT	Int. N6 Ramp "V" R-2	335.00	14.00	418.75
LEFT	Int. N6 Ramp "W"	203.00	14.00	50.75
RIGHT	Int. N6 Ramp "W"	203.00	14.00	253.75
LEFT	Int. N6 Ramp "X"	206.00	14.00	51.50
RIGHT	Int. N6 Ramp "X"	206.00	14.00	257.50
RAMP	Int. N6 Ramp "Y"	314.00	26.00	314.00
LEFT	Int. N7 Ramp "D"	393.00	14.00	98.25
RIGHT	Int. N7 Ramp "D"	402.00	14.00	502.50
RAMP	Int. N7 Ramp "E"	426.00	24.00	426.00
LEFT	Int. N7 Ramp "F"	563.00	14.00	140.75
RIGHT	Int. N7 Ramp "F"	262.00	14.00	327.50



New York State Thruway Authority

PROJECT # H384.1, TAB 24-17MADE BY [Signature]DATE 1-24-24CHECKED BY TJWDATE 1/22/2024SUBJECT 685.1106-25: WHITE EPOXY.SHEET # 2OF 2ITEM 685.1106--25: WHITE EPOXY REFLECTORIZED PAVEMENT STRIPES (LF)

- ITEM IS USED ON RAMPS SEE NYSTA SS TA 685-01 FOR EXACT USAGE
- BASED ON "LANE" MULT. PAYFACTOR (LENGTH) = LF OF 685.1106-25

LANE	PAYFACTOR (PF)
RAMP	1.0 = 1.0 WHITE EDGE
ACCEL RAMP	1.0 = 1.0 RAMP SEEN CHANGE
LEFT	0.25 = 10'/40' & SKIPS
RIGHT	1.25 = 1.0 WHITE EDGE + 10'/40' & SKIPS

I-90 INTERCHANGES = 12,621.25' ←

I-190 INTERCHANGES = 5,249.5' ←

← 1.0 LENGTH (PF)

WB-2 EDGE LINE = 1,719' ✓

N6 RAMP "A" ARROWS = 74' ✓

N7 RAMP "B" ARROWS = 74' ✓

GOES @ N6 = 2,700' ✓

GOES @ N7 = 700' ✓

Σ = 23,137.75' ✓

5% Bump = 1.05 (23,137.75') = 24,294.64' ✓

∴ SAY 24,300' FOR ITEM 685.1106--25 ✓

NYS DOT
SS 685-01
PS 8-19
"RAMP ARROWS"

PROJECT # 4384-1, TAB 24-17MADE BY [Signature]

DATE

1-19-24CHECKED BY TJW

DATE

1/22/2024SUBJECT INTERCHANGE 685-1206--25SHEET # 1

OF

2

ITEM 685-1206--25: YELLOW EPOXY REFLECTORIZED PAVEMENT STRIPES 6"X20MILS(LF)

* ITEM IS USED ON RAMPS, SEE NYSTA SS, TA 685-01 FOR USAGE.

* BASED ON LANE DESIGNATION. MULT. PAY FACTOR (LENGTH) = LF OF 685-1206--25

Lane	Ramp Designation	Length (ft)	Width (ft)	Yellow Epoxy
I-90 Interchanges				
LEFT	Int. 50 Ramp "MA"	3,287.00	14.00	3,287.00
RIGHT	Int. 50 Ramp "MA"	3,287.00	14.00	-
LEFT	Int. 50 Ramp "MD"	2,146.00	14.00	2,146.00
LEFT	Int. 50 Ramp "MB"	2,069.00	14.00	2,069.00
RIGHT	Int. 50 Ramp "MB"	2,069.00	14.00	-
LEFT	Int. 50 Ramp "MB"	958.00	14.00	958.00
RIGHT	Int. 50 Ramp "MB"	699.00	14.00	-
RIGHT	Int. 53 Ramp "TS"	1,330.00	12.00	-
RIGHT	Int. 53 Ramp "TS"	900.00	12.00	-
RIGHT	Int. 53 Ramp "TS"	120.00	12.00	-
I-190 Interchanges				
RAMP	Int. N6 Ramp "A"	377.00	22.00	377.00
RAMP	Int. N6 Ramp "B"	456.00	14.00	456.00
LEFT	Int. N6 Ramp "U"L-1	339.00	14.00	339.00
RIGHT	Int. N6 Ramp "U"R-1	332.00	14.00	-
LEFT	Int. N6 Ramp "U"L-2	344.00	14.00	344.00
RIGHT	Int. N6 Ramp "U"R-2	347.00	14.00	-
LEFT	Int. N6 Ramp "V"L-1	205.00	14.00	205.00
RIGHT	Int. N6 Ramp "V" R-1	337.00	14.00	-
LEFT	Int. N6 Ramp "V"L-2	333.00	14.00	333.00
RIGHT	Int. N6 Ramp "V" R-2	335.00	14.00	-
LEFT	Int. N6 Ramp "W"	203.00	14.00	203.00
RIGHT	Int. N6 Ramp "W"	203.00	14.00	-
LEFT	Int. N6 Ramp "X"	206.00	14.00	206.00
RIGHT	Int. N6 Ramp "X"	206.00	14.00	-
RAMP	Int. N6 Ramp "Y"	314.00	26.00	314.00
LEFT	Int. N7 Ramp "D"	393.00	14.00	393.00
RIGHT	Int. N7 Ramp "D"	402.00	14.00	-
RAMP	Int. N7 Ramp "E"	426.00	24.00	426.00
LEFT	Int. N7 Ramp "F"	563.00	14.00	563.00
RIGHT	Int. N7 Ramp "F"	262.00	14.00	-



New York State Thruway Authority

PROJECT # H384-1, TAB 24-17MADE BY [Signature]DATE 1-21-24CHECKED BY TJWDATE 1/22/2024SUBJECT 685-1206-25 : Yellow EpoxySHEET # 2OF 2ITEM 685-1206-25 : YELLOW EPOXY REFLECTORIZED PAVEMENT STRIPES (LF)- ITEM IS USED ON RAMPs ^{FDWG TB-2} SEE NYSTA SS TA 685-01 FOR EXACT USAGE

- BASED ON "LANE" MULT. PAY FACTOR (LENGTH) = LF OF 685-1206-25

LANE	PAY FACTOR (PF)
LEFT	1.0 = 1.0 LEFT EDGE
RAMP	1.0 = 1.0 LEFT EDGE

I-90 INTERCHANGE = 8,460' ←

I-190 INTERCHANGES = 4,159' ←

 $\Sigma = 12,619' \checkmark$

← LENGTH (PF) ON P. 1

 $5\% \Rightarrow 1.05 (12,619') = 13,249.95 \checkmark$ ∴ 13,250' FOR ITEM 685-1206-25 ✓

PROJECT # H384.1, TAB 24-17MADE BY [Signature]

DATE

1-19-24CHECKED BY TJW

DATE

1/22/2024SUBJECT MAINLINE, 685-1707-25SHEET # 1

OF

2

ITEM 685-1707-25: WHITE HIGHLY REFLECTORIZED TRIPLE DROPT EPOXY 6"x20"x1/2" (LF)

* ITEM IS USED ON RAMPS, SEE NYSTA SSTA 685-01, FOR EXACT USAGE

* BASED ON "LANE" MULT. PAYFACTOR (LENGTH) = LF OF 685-1707-25

TB Label	Lane	Direction	Start Mp	End mp	Width (ft)	Length (ft)	Area (Ft^2)	White Triple Epoxy
I-90 EASTBOUND MAINLINE								
EB-1	L. Center	EB	421.86	421.31	13	2,917.00	37,921.00	1,458.50
EB-2	R. Center	EB	421.86	421.31	13	2,917.00	37,921.00	1,458.50
EB-3	RIGHT	EB	458.50	456.50	12	10,546.00	126,552.00	13,182.50
EB-4	RIGHT	EB	461.58	459.99	12	8,372.00	100,464.00	10,465.00
EB-5	RIGHT	EB	461.90	461.71	12	1,014.00	12,168.00	1,267.50
EB-6	RIGHT	EB	463.26	462.56	12	3,689.00	44,268.00	4,611.25
EB-7	RIGHT	EB	464.50	463.90	12	3,169.00	38,028.00	3,961.25
EB-8	RIGHT	EB	467.00	465.40	12	8,446.00	101,352.00	10,557.50
I-90 WESTBOUND MAINLINE								
WB-1	CENTER	WB	421.30	424.11	13	14,823.00	192,699.00	7,411.50
WB-2	ACCEL. RAMP	WB	421.57	421.90	14	1,719.00	24,066.00	429.75
WB-3	RIGHT	WB	429.30	429.40	12	525.00	6,300.00	656.25
WB-4	RIGHT	WB	455.79	456.27	12	2,538.00	30,456.00	3,172.50
WB-5	RIGHT	WB	456.42	457.36	12	4,989.00	59,868.00	6,236.25
WB-6	LEFT	WB	458.00	458.48	13	2,542.00	33,046.00	635.50
WB-7	RIGHT	WB	458.00	458.48	12	2,542.00	30,504.00	3,177.50
WB-8	LEFT	WB	459.61	459.85	13	1,272.00	16,536.00	318.00
WB-9	RIGHT	WB	459.61	459.85	12	1,272.00	15,264.00	1,590.00
WB-10	LEFT	WB	459.91	462.02	13	11,119.00	144,547.00	2,779.75
WB-11	RIGHT	WB	459.91	460.74	12	4,388.00	52,656.00	5,485.00
WB-12	RIGHT	WB	462.67	462.95	12	1,502.00	18,024.00	1,877.50
WB-13	RIGHT	WB	465.81	466.03	12	1,177.00	14,124.00	1,471.25
WB-14	RIGHT	WB	466.65	467.00	12	1,839.00	22,068.00	2,298.75
I-190 MAINLINE								
NB-1	RIGHT	NB	916.90	917.50	12	3,165.00	37,980.00	3,956.25
SB-1	RIGHT	SB	917.45	917.10	12	1,899.00	22,788.00	2,373.75
SB-2	LEFT	SB	918.50	918.40	13	582.00	7,566.00	145.50
SB-3	RIGHT	SB	918.50	918.61	12	582.00	6,984.00	727.50



New York State Thruway Authority

PROJECT # 4384-1, TAB 24-17MADE BY [Signature]DATE 1-21-24CHECKED BY TJWDATE 1/22/2024SUBJECT 685-1707-25: WHITE T.DSHEET # 2

OF

2ITEM 685-1707-25: WHITE HIGHLY REFLECTORIZED TRIPLE DROP EPOXY 6" x 20 MILS (LF)

SEE DWG TB-1

- ITEM IS USED ON MAINLINE LOCATIONS PER NYSTA SSTA685-01

- BASED ON "LANE" MULT. PAYFACTOR (LENGTH) = LF OF 685-1707-25

LANE	PAYFACTOR (PF)
RIGHT	1.25 = 1 WHITE EDGE + 10'/40' & SKIP
LEFT	0.25 = 10'/40' & SKIP
ACCEL. RAMP	0.25 = 3'/10' "DOTTED" "LAT. TRACES"
CENTER	0.50 = 2 (10'/40') & SKIPS
L. CENTER	0.50 = 2 (10'/40') & SKIPS
R. CENTER	0.50 = 2 (10'/40') & SKIPS

I-90 EAST BOUND MAINLINE = 46,962.00'

I-90 WESTBOUND MAINLINE = 37,539.50'

I-190 NB/SB MAINLINE = 7,203'

$$\Sigma = 91,704.50 \text{ FE}$$

$$2.5\% \text{ Bump} \Rightarrow 91,704.50 (1-0.025) = 93,997.1 \text{ FE}$$

∴ SAY 94,000 FE FOR ITEM 685-1707-25

PROJECT # H384-1, TAB 24-107MADE BY [Signature]DATE 1-19-24

SUBJECT

MAINLINE, 685-1708-25CHECKED BY TJWDATE 1/22/2024SHEET # 1

OF

2

ITEM 685-1708-25: YELLOW HIGHLY REFLECTORIZED TRIPLE DROD EPOXY 6"X20MILS

TB Label	Lane	Direction	Start Mp	End mp	Width (ft)	Length (ft)	Area (Ft^2)	Yellow Triple Epoxy
I-90 EASTBOUND MAINLINE								
EB-1	L. Center	EB	421.86	421.31	13	2,917.00	37,921.00	-
EB-2	R. Center	EB	421.86	421.31	13	2,917.00	37,921.00	-
EB-3	RIGHT	EB	458.50	456.50	12	10,546.00	126,552.00	-
EB-4	RIGHT	EB	461.58	459.99	12	8,372.00	100,464.00	-
EB-5	RIGHT	EB	461.90	461.71	12	1,014.00	12,168.00	-
EB-6	RIGHT	EB	463.26	462.56	12	3,689.00	44,268.00	-
EB-7	RIGHT	EB	464.50	463.90	12	3,169.00	38,028.00	-
EB-8	RIGHT	EB	467.00	465.40	12	8,446.00	101,352.00	-
I-90 WESTBOUND MAINLINE								
WB-1	CENTER	WB	421.30	424.11	13	14,823.00	192,699.00	-
WB-2	ACCEL. RAMP	WB	421.57	421.90	14	1,719.00	24,066.00	-
WB-3	RIGHT	WB	429.30	429.40	12	525.00	6,300.00	-
WB-4	RIGHT	WB	455.79	456.27	12	2,538.00	30,456.00	-
WB-5	RIGHT	WB	456.42	457.36	12	4,989.00	59,868.00	-
WB-6	LEFT	WB	458.00	458.48	13	2,542.00	33,046.00	2,542.00
WB-7	RIGHT	WB	458.00	458.48	12	2,542.00	30,504.00	-
WB-8	LEFT	WB	459.61	459.85	13	1,272.00	16,536.00	1,272.00
WB-9	RIGHT	WB	459.61	459.85	12	1,272.00	15,264.00	-
WB-10	LEFT	WB	459.91	462.02	13	11,119.00	144,547.00	11,119.00
WB-11	RIGHT	WB	459.91	460.74	12	4,388.00	52,656.00	-
WB-12	RIGHT	WB	462.67	462.95	12	1,502.00	18,024.00	-
WB-13	RIGHT	WB	465.81	466.03	12	1,177.00	14,124.00	-
WB-14	RIGHT	WB	466.65	467.00	12	1,839.00	22,068.00	-
I-190 MAINLINE								
NB-1	RIGHT	NB	916.90	917.50	12	3,165.00	37,980.00	-
SB-1	RIGHT	SB	917.45	917.10	12	1,899.00	22,788.00	-
SB-2	LEFT	SB	918.50	918.40	13	582.00	7,566.00	582.00
SB-3	RIGHT	SB	918.50	918.61	12	582.00	6,984.00	-



New York State Thruway Authority

PROJECT # H384-1, TAB 24-17MADE BY [Signature] DATE 1-21-24CHECKED BY TJW DATE 1/22/2024SUBJECT 685.1708--25: Yellow T.DSHEET # 2 OF 2

ITEM 685.1708--25: Yellow Highly ReflectORIZED Tri-Die Drop Epoxy 6" x 20 MILS (LF)

- ITEM IS USED @ MAINLINE LOCATIONS (DWG TB-1) PER
NYSTA SS TA 685-01

- BASED ON "LANE" MULT. PAY FACTOR (LENGTH) = LF OF 685-1708--25

LANE	PAY FACTOR (PF)
LEFT	1.0 = 1 LEFT EDGE
RIGHT	0
L-CENTER	0
R-CENTER	0
ACCEL RAMP	0

I-90 EASTBOUND MAINLINE = 0
 I-90 WESTBOUND MAINLINE = 14,933' ← \sum LENGTH x PF on Pg. 1
 I-190 NB/SB MAINLINE = 582.0' ←

$$\Sigma = 15,515'$$

$$2.5\% \text{ Bump} \Rightarrow 15,515' (1.025) = 15,902.88 \text{ FE}$$

\therefore SAY 15,905' FOR ITEM 685.1708--25



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PROJECT # TAB 24-17 MADE BY TJW DATE 1/3/2024CHECKED BY [Signature] DATE 1-22-24SUBJECT _____ SHEET # 1 OF 1ITEM 685.1306--25 WHITE EPOXY REFLECTORIZED PAVEMENT LETTERS EA.* SEE DESIGN CALL. "SYMBOL/LETTER LOCATIONS"ITEM USED AT NG RAMP "V" (I-190 @ SWAN ST)6 - "ONLY"4 LETTER * 6 LOCATIONS = 24.0 EA. ✓SAY 24.0 EA. ✓



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PROJECT # TAB 24- MADE BY TJW DATE 1/3/2024
CHECKED BY [Signature] DATE 1-22-24
SUBJECT _____ SHEET # 1 OF 1

ITEM 685.1406--25 WHITE EPOXY REFLECTORIZED PAVEMENT SYMBOLS EA.

* SEE DESIGN CALL. "SYMBOL/LETTERLOCATIONS"

ITEM USED AT NG RAMP "V" (I-190 @ SWAN ST).

3- LEFT TURN ARROW

3- LEFT TURN / STRAIGHT

3- STRAIGHT

3- RIGHT TURN / STRAIGHT

12.0 ✓

SAY 12.0 EA ✓



New York State Thruway Authority

PROJECT # H364.1, TAB 24-17MADE BY [Signature]

DATE

2-20-24CHECKED BY SCM

DATE

2/22/24SUBJECT Fco : 697.03SHEET # 1

OF

1ITEM 697.03: FIELD CHANGE PAYMENT (D-L)5% OF TOTAL ELIGIBLE ITEMS.



New York State Thruway Authority

PROJECT # H384-1, TAB 24-14MADE BY [Signature]DATE 1-21-24CHECKED BY TJWDATE 1/22/2024SUBJECT 698-04SHEET # 1OF 1ITEM 698-04: ASPHALT PRICE ADJUSTMENTD-2

THE FOLLOWING ITEMS QUALIFY FOR ADJUSTMENTS

SEE EB 23-06

404.127201 21,150 TN $\times 0.055 \text{ } \epsilon_{PAB/T} = 1,163.25 \checkmark$ 404.197901 3,110 TN $\times 0.049 \text{ } \epsilon_{PAB/T} = 152.39 \checkmark$ 404.377901 5,520 TN $\times 0.040 \text{ } \epsilon_{PAB/T} = 220.8 \checkmark$ 407.01040009 15,270 GRL $\times 0.0026 \text{ } \epsilon_{PAB/T} = 39.70 \checkmark$ $\Sigma = 1,576.14 \text{ } \epsilon_{\text{U}}$ $\Rightarrow 1,576.14 \times \$30/\text{TN} = \$47,284.20 \checkmark$ PER NYSTA DRM
P 2-18 PDF 20/33 \therefore SAY \$48,000 FOR ITEM 698-04 \checkmark



New York State Thruway Authority

PROJECT # H384.1, TAB 24-17MADE BY [Signature]DATE 1-21-24CHECKED BY TJWDATE 1/22/2024SUBJECT 698-05SHEET # 1OF 1ITEM 698-05 FUEL PRICE ADJUSTMENT D-C

THE FOLLOWING ITEMS QUALIFY FOR ADJUSTMENTS PER NYSDOT EB 23-026

203.02	4,810 cy	$\times 0.35 \text{ GAL/cy} =$	1,683.5 GAL ✓
206.0201	150 cy	$\times 0.50 \text{ GAL/cy} =$	75 GAL ✓
304.12	710 cy	$\times 1.0 \text{ GAL/cy} =$	710 GAL ✓
404.127201	21,150 TN	$\times 2.5 \text{ GAL/TN} =$	52,875 GAL ✓
404.197201	3,110 TN	$\times 2.5 \text{ GAL/TN} =$	7,775 GAL ✓
404.377901	5,520 TN	$\times 2.5 \text{ GAL/TN} =$	13,800 GAL ✓
490-10	39,350 yd ²	$\times 0.1 \text{ GAL/yd}^2 =$	3,935 GAL ✓
490-30	144,950 yd ²	$\times 0.1 \text{ GAL/yd}^2 =$	14,495 GAL ✓
			$\Sigma = 95,348.5 \text{ GAL}$

$$\Rightarrow 95,348.5 \text{ GAL} \times \$0.20/\text{GAL} = \$19,069.70$$

∴ SAY \$20,000.00

FOR ITEM 698-05



New York State Thruway Authority

PROJECT # H384.1, TAB 24-17MADE BY [Signature]DATE 1-22-24SUBJECT M6B - 699.04CHECKED BY TJWDATE 1/22/2024SHEET # 1OF 1ITEM 699.04 ---25: MOBILIZATION (LS)UP TO 4% OF ESTIMATED BID ✓

<u>1.0 LS FOR ITEM 699.04 ---25</u>
