11/15/83

17TH ST. CANAL

ORIGINAL DRAINAGE PROPOSAL BY S&WB OF NO

QUANTITY TAKE-OFF FROM S&WB PLANS

VOLUME - DREDGED MATERIAL (D), EXCAVATED MATERIAL (E) & FILL MATERIAL (F)

(End Areas from Modjesky & Masters Plans)

STA. 537+74 TO 538+70 $\quad L = 96'$

$$V = \frac{1}{2}(0 + 1604.0)(96)\left(\frac{1}{27}\right) = \underline{2855 \text{ C.Y. (D)}}$$

STA. 538+70 TO 539+50 $\quad L = 80'$

$$V = \frac{1}{2}(1606.0 + 1137.0)(80)\left(\frac{1}{27}\right) = \underline{4064 \text{ C.Y. (D)}}$$

STA 539+50 TO 540+40 $\quad L = 90'$

$$V = \frac{1}{2}(1137.0 + 807.3)(90)\left(\frac{1}{27}\right) = \underline{3240 \text{ CY (D)}}$$

STA. 540+40 TO 540+73 $\quad L = 33'$

$$V_{CUT} = \frac{1}{2}(807.3 + 1976.3)(33)\left(\frac{1}{27}\right) = 1701 \text{ C.Y. (TOTAL CUT)}$$

STA 540+73 TO 541+44 $\quad L = 71'$

$$V_{CUT} = \frac{1}{2}(1976.3 + 1950.6)(71)\left(\frac{1}{27}\right) = 5163 \text{ C.Y. (TOTAL CUT)}$$

Net Vol. Dredged Material $\cong$ 5643 C.Y. (D)

EXCAV. MAT. STA 540+40 TO 541+44 (E.B. ONLY)

E.B. ONLY $\quad L \approx 220'$

$$\left[\frac{1}{2}(2' + 3') \times 30' + \frac{1}{2}(3 \times 15)\right] \times 220' \times \frac{1}{27} = 794 \text{ C.Y.}$$

W.B. ONLY $\quad L \approx 40'$

$$\left[\frac{1}{2}(6 \times 6) + \frac{1}{2}(6+7)(20) + \frac{1}{2}(7 \times 40)\right] \times 40 \times \frac{1}{27} = 427 \text{ C.Y.}$$

$\underline{1221 \text{ C.Y. (E)}}$

STA 541+44 TO 541+90 $L = 46'$

$V = \frac{1}{2}(1950.6 + 2144.9)(46)(\frac{1}{27}) = 3489$ C.Y.

TOTAL CUT

VOL EXCAV. MAT.

E.B. $A = 228.75^{\square'}$

$V_E = \left[\frac{1}{2}(4.5 \times 23) + (4.5 \times 9.0) + (4.5 \times 12) + \frac{1}{2}(4.5+3)(12) + \frac{1}{2}(3+2)(15)\right] \times 46' \times \frac{1}{27} = 390$ C.Y.

W.B.

$V_E = \frac{1}{2}\left\{\left[\frac{1}{2}(6 \times 5) + \frac{1}{2}(5+6)(9) + (9 \times 6) + (5 \times 6) + \frac{1}{2}(5 \times 42)\right] + \left[\frac{1}{2}(13 \times 4) + \frac{1}{2}(4+5)(23) + \frac{1}{2}(5+3)(18) + (3 \times 31)\right]\right\} \times 46 \times \frac{1}{27} = 467$ C.Y.

TOTAL DREDGED MAT'L = 2632 C.Y.

TOTAL EXCAVATED MAT'L = 857 C.Y.

STA. 541+90 TO 543+60 $L = 170'$

$V = \frac{1}{2}(2144.9 + 1217.6)(170)(\frac{1}{27}) = 10,586$ C.Y.

VOL EXCAV. MAT'L

E.B.

390 C.Y. $\times (\frac{170}{46}) = 1441$ C.Y.

WB $A = 83.25^{\square'}$

$\frac{1}{2}\left\{\left[\frac{1}{2}(15 \times 4) + (4 \times 23) + \frac{1}{2}(4+3.5)(17) + (2 \times 30)\right] + \left[\frac{1}{2}(11 \times 2.5) + (2.5 \times 15) + (1 \times 32)\right] \times 170 \times \frac{1}{27} = 1036$ C.Y.

TOTAL DREDGED MAT'L = 8109 C.Y.

TOTAL EXCAVATED MAT'L = 2477 C.Y.

STA. 543+60 TO 544+52 $L = 92'$

$V = \frac{1}{2}(1217.6 + 1353.2)(92)(\frac{1}{27}) = 4380$ C.Y.

VOL. EXCAV. MAT'L

E.B.

$228.75^{\square'} \times 92' \times \frac{1}{27} = 779$ C.Y.

W.B.

$\frac{1}{2}(83.25^{\square'} + 28 \times 56^{\square'}) \times 92 \times \frac{1}{27} = 237$ C.Y.

TOTAL D = 3364 C.Y.

TOTAL E = 1016 C.Y.

STA. 544+52 TO 546+00 $L = 148'$

$V = \frac{1}{2}(1353.2 + 1130.8)(148)(\frac{1}{27}) = 6808$ C.Y.

VOL. EXCAV. MAT'L

E.B.

$228.75^{\square'} \times 148' \times \frac{1}{27} = 1254$ C.Y.

W.B.

$\frac{1}{2}(56 + 0) \times 148 \times \frac{1}{27} = 153$ C.Y.

TOTAL D = 5401 C.Y.

TOTAL E = 1407 C.Y.

STA. 546+00 TO 547+15 $L = 115'$

$V = \frac{1}{2}(1130.8 + 1016.6)(115)(\frac{1}{27}) = 4573$ C.Y.

VOL. EXCAV. MATIC

E.B.

$101.5^{\square'}$

$\frac{1}{2}\left\{\left[228.75\right] + \left[2(\frac{1}{2} \times 10 \times 3.5) + (3.5 \times 8) + (11 \times 3.5)\right]\right\} 115 \times \frac{1}{27} = 703$ C.Y.

W.B. V = 0

TOTAL D = 3870 C.Y.

TOTAL E = 703 C.Y.

STA. 547+15 TO 548+20 $L = 105'$

$V = \frac{1}{2}(1016.6 + 971.0)(105)(\frac{1}{27}) = 3865$ C.Y.

VOL. EXCAV. MATIC

E.B

$101.5^{\square'} \times 105' \times \frac{1}{27} = 395$ C.Y.

W.B

$20.5^{\square'}$

$\frac{1}{2}\left[(\frac{1}{2} \times 1.5 \times 10) + (\frac{1}{2} \times 1 \times 24)\right] \times 105 \times \frac{1}{27} = 40$ C.Y.

TOTAL D = 3430 C.Y.

TOTAL E = 435 C.Y.

STA. 548+20 TO 549+22 $\quad L = 102'$

$$V = \frac{1}{2}(971.0 + 898.2)(102)\left(\frac{1}{27}\right) = 3531 \text{ C.Y.}$$

VOL. EXCAV. MATL

E.B.

$101.5^{\square'} \times 102 \times \frac{1}{27} = 383 \text{ C.Y.}$ $\quad 55^{\square'}$

W.B.

$$\frac{1}{2}\left\{\left[20.5^{\square'}\right] + \left[\left(\frac{1}{2} \times 5 \times 1\right) + \frac{1}{2}(1+1.5)(10) + \left(\frac{1}{2} \times 30 \times 2\right) + \left(\frac{1}{2} \times 2 \times 10\right)\right]\right.$$
$$\left. \times 102' \times \frac{1}{27} = 143 \text{ C.Y.}\right.$$

TOTAL D = 3005 C.Y.

TOTAL E = 526 C.Y.

STA. 549+22 TO 549+67 $\quad L = 45'$

$$V = \frac{1}{2}(898.2 + 891.8)(45)\left(\frac{1}{27}\right) = 1492 \text{ C.Y.}$$

VOL. EXCAV. MATL

$66^{\square'}$

E.B. $= \frac{1}{2}\left\{\left[101.5^{\square'}\right] + \left[\left(2 \times \frac{1}{2} \times 12 \times 3\right) + (3 \times 10)\right]\right\} \times 45' \times \frac{1}{27} = 140 \text{ C.Y.}$

W.B. $= \frac{1}{2}(55 + 0) \times 45 \times \frac{1}{27} = 46 \text{ C.Y.}$

TOTAL D = 1306 C.Y.

TOTAL E = 186 C.Y.

STA. 549+67 TO 550+37 $L = 70'$

$V = \frac{1}{2}(891.8 + 792.8)(70)(\frac{1}{27}) = 2184$ C.Y.

VOL. EXCAV. MAT'L

EB. = $66^{0'} \times 70 \times \frac{1}{27} = 171$ C.Y.

WB = 0

TOTAL D = 2013 C.Y.

TOTAL E = 171 C.Y.

STA. 550+37 TO 552+05 $L = 168'$

$V = \frac{1}{2}(792.8 + 819.4)(168)(\frac{1}{27}) = 5016$ C.Y.

VOL. EXCAV. MAT'L

EB = $66^{0'} \times 168 \times \frac{1}{27} = 411$

WB = $\frac{1}{2}(\frac{1}{2} \times 19 \times 2 + \frac{1}{2} \times 11 \times 2)(168)(\frac{1}{27}) = 93$ C.Y.

($30^{0'}$)

TOTAL D = 4512 C.Y.

TOTAL E = 504 C.Y.

STA 552+05 TO 552+59 $L = 54'$

$V = \frac{1}{2}(819.4 + 0)(54)(\frac{1}{27}) = 819$ C.Y.

VOL. EXCAV. MAT'L

E.B. = $\frac{1}{2} \times 66^{0'} \times 54' \times \frac{1}{27} = 66$ C.Y.

WB = $\frac{1}{2} \times 30^{0'} \times 54 \times \frac{1}{27} = 30$ C.Y.

TOTAL D = 723 C.Y.

TOTAL E = 96 C.Y.

SUBTOTALS

STA. 537+74 TO 552+59

(N. OF HAMMOND HWY)

DREDGED MAT'L = 5416 C.Y.

EXCAVATED MAT'L = 9599 C.Y.

STA 552+59 TO 553+13 — NO WORK AREA

STA 553+13 TO 553+70 L = 57'

$V = \frac{1}{2}(0 + 1008.0)(57)(\frac{1}{27}) = 1064$ C.Y.

VOL. EXCAV. MAT'L

63.75 D'

$E.B. = \frac{1}{2}\left\{\left[\frac{1}{2}(18+11)(1.5)\right] + \left[\frac{1}{2}(3\times10)\right] + \left[\frac{1}{2}(3\times18)\right]\right\} \times 57 \times \frac{1}{27} = 67$ C.Y.

$W.B. = \frac{1}{2}\left[\frac{1}{2}(8+31)(4)\right] \times 57 \times \frac{1}{27} = 82$ C.Y.

78 D'

TOTAL D = 915 C.Y.

TOTAL E = 149 C.Y.

STA. 553+70 TO 556+00 L = 230'

$V = \frac{1}{2}(1008.0 + 942.9)(230)(\frac{1}{27}) = 8309$ C.Y.

VOL. EXCAV. MAT'L

$E.B. = 63.75^{D'} \times 230 \times \frac{1}{27} = 543$ C.Y.

$WB. = 78^{D'} \times 230 \times \frac{1}{27} = 664$ C.Y.

TOTAL D = 7102 C.Y.

TOTAL E = 1207 C.Y.

STA. 556+00 TO 558+00 L = 200'

$V = \frac{1}{2}(942.9 + 915.7)(200)(\frac{1}{27}) = 6884$ C.Y.

VOL. EXCAV. MAT'L

12.75 D'

$E.B. = \frac{1}{2}\left[63.75^{D'} + (\frac{1}{2}\times7\times1.5 + 5\times1.5)\right] \times 200 \times \frac{1}{27} = 283$ C.Y.

$WB = 78^{D'} \times 200' \times \frac{1}{27} = 578$ C.Y.

TOTAL D = 6023 C.Y.

TOTAL E = 861 C.Y.

STA. 558+00 TO 560+00 $L = 200'$

$V = \frac{1}{2}(915.7 + 864.6)(200)(\frac{1}{27}) = 6594$ C.Y.

VOL. EXCAV. MAT'L

E.B. = $12.75^{0'} \times 200' \times \frac{1}{27} = 94$ C.Y.

WB = $78^{0'} \times 200' \times \frac{1}{27} = 578$ C.Y.

TOTAL D = 5922 C.Y.

TOTAL E = 672 C.Y.

STA. 560+00 TO 562+00 $L = 200'$

$V = \frac{1}{2}(864.6 + 1175.7)(200)(\frac{1}{27}) = 7557$ C.Y.

VOL. EXCAV. MAT'L

E.B. = $12.75^{0'} \times 200' \times \frac{1}{27} = 94$ C.Y.

W.B. = $78^{0'} \times 200' \times \frac{1}{27} = 578$ C.Y.

TOTAL D = 6885 C.Y.

TOTAL E = 672 C.Y.

TOTAL F = 10 C.Y.

STA. 562+00 TO 564+00 $L = 200'$

$V = \frac{1}{2}(1175.7 + 786.0)(200)(\frac{1}{27}) = 7266$ C.Y.

VOL. EXCAV. MAT'L

E.B. = $\frac{1}{2}[12.75^{0'} + (\frac{1}{2} \times 7 \times 1.5 + 9 \times 1.5 + \frac{1}{2} \times 5 \times 2]$ ($23.75^{0'}$) $\times 200 \times \frac{1}{27} = 135$ C.Y.

WB = $\frac{1}{2}[78^{0'} + (\frac{1}{2})(25+7)(3.5)] \times 200 \times \frac{1}{27} = 496$ C.Y.

($56^{0'}$)

TOTAL D = 6635 C.Y.

TOTAL E = 631 C.Y.

TOTAL F = 12 C.Y.

STA. 564+00 TO 566+00 L = 200'

$V = \frac{1}{2}(786.0 + 872.6)(200)(\frac{1}{27}) = 6143$ C.Y.

VOL EXCAV. MAT'L

EB = 23.75□' x 200 x $\frac{1}{27}$ = 176 C.Y.

WB = 56□' x 200 x $\frac{1}{27}$ = 415 C.Y.

TOTAL D = 5552 C.Y.

TOTAL E = 591 C.Y.

TOTAL F = 4 C.Y.

STA. 566+00 TO 568+00 L = 200'

$V = \frac{1}{2}(872.6 + 677.2)(200)(\frac{1}{27}) = 5740$ C.Y.

VOL. EXCAV. MAT'L

E.B. = 23.75□' x 200 x $\frac{1}{27}$ = 176 C.Y.

WB = 56□' x 200 x $\frac{1}{27}$ = 415 C.Y.

TOTAL D = 5149 C.Y.

TOTAL E = 591 C.Y.

TOTAL F = 13 C.Y.

STA 568+00 TO 570+00 L = 200'

$V = \frac{1}{2}(677.2 + 865.6)(200)(\frac{1}{27}) = 5714$ C.Y.

VOL EXCAV. MAT'L

E.B. = 23.75□' x 200' x $\frac{1}{27}$ = 176 C.Y.

W.B. = 56□' x 200 x $\frac{1}{27}$ = 415 C.Y.

TOTAL D = 5123 C.Y.

TOTAL E = 591 C.Y.

TOTAL F = 11 C.Y.

STA. 570+00 TO 572+00 $\quad L = 200'$

$V = \frac{1}{2}(865.6 + 804.0)(200)(\frac{1}{27}) = 6184$ C.Y.

VOL. EXCAV. MAT'L

EB = 23.750' x 200 x 1/27 = 176 C.Y.

WB = 56.0' x 200 x 1/27 = 415 C.Y.

TOTAL D = 5593 C.Y.

TOTAL E = 591 C.Y.

TOTAL F = 22 C.Y.

STA. 572+00 TO 574+00 $\quad L = 200'$

$V = \frac{1}{2}(804.0 + 717.5)(200)(1/27) = 5635$ C.Y.

VOL. EXCAV. MAT'L

EB = 23.750' x 200 x 1/27 = 176 C.Y.

WB = 56.0' x 200 x 1/27 = 415 C.Y.

TOTAL D = 5044 C.Y.

TOTAL E = 591 C.Y.

TOTAL F = 33 C.Y.

STA. 574+00 TO 576+00 $\quad L = 200'$

$V = \frac{1}{2}(717.5 + 850.7)(200)(1/27) = 5808$ C.Y.

VOL. EXCAV. MAT'L

EB = 23.750' x 200' x 1/27 = 176 C.Y.

WB = 56.0' x 200' x 1/27 = 415 C.Y.

TOTAL D = 5217 C.Y.

TOTAL E = 591 C.Y.

TOTAL F = 41 C.Y.

STA 576+00 TO 578+00 $L = 200'$

$V = \frac{1}{2}(850.7 + 1009.9)(200)(1/27) = 6891$ C.Y.

VOL. EXCAV. MAT'L

EB. $= 23.75\square' \times 200' \times 1/27 = 176$ C.Y.

WB. $= \frac{1}{2}\{56\square' + [\frac{1}{2}(30+7)(3.5) + 2(\frac{1}{2} \times 2.5 \times 9)]\} \times 200 \times 1/27 = 531$ C.Y.

($87.25\square'$)

TOTAL D = 6184 C.Y.

TOTAL E = 707 C.Y.

TOTAL F = 62 C.Y.

STA. 578+00 TO 580+00 $L = 200'$

$V = \frac{1}{2}(1009.9 + 993.2)(200)(1/27) = 7419$ C.Y.

VOL. EXCAV. MAT'L

EB $= 23.75\square' \times 200 \times 1/27 = 176$ C.Y.

WB $= 87.25\square' \times 200 \times 1/27 = 646$ C.Y.

TOTAL D = 6597 C.Y.

TOTAL E = 822 C.Y.

TOTAL F = 73 C.Y.

STA. 580+00 TO 582+00 $L = 200'$

$V = \frac{1}{2}(993.2 + 908.4)(200)(1/27) = 7043$ C.Y.

VOL EXCAV. MAT'L

EB $= 23.75\square' \times 200 \times 1/27 = 176$ C.Y.

WB $= 87.25\square' \times 200 \times 1/27 = 646$ C.Y.

TOTAL D = 6221 C.Y.

TOTAL E = 822 C.Y.

TOTAL F = 126 C.Y.

STA. 582+00 TO 584+00 $\ell = 200'$

$V = \frac{1}{2}(908.4 + 1024.0)(200)(1/27) = 7157$ C.Y.

VOL. EXCAV. MAT'L

EB = $23.75^{\square'} \times 200 \times 1/27 = 176$ C.Y.

WB = $87.25^{\square'} \times 200 \times 1/27 = 646$ C.Y.

TOTAL D = 6335 C.Y.

TOTAL E = 822 C.Y.

TOTAL F = 150 C.Y.

STA 584+00 TO 586+00 $\ell = 200'$

$V = \frac{1}{2}(1024.0 + 1020.7)(200)(1/27) = 7573$ C.Y.

VOL. EXCAV. MAT'L

EB = $23.75^{\square'} \times 200 \times 1/27 = 176$ C.Y.

WB = $87.25^{\square'} \times 200 \times 1/27 = 646$ C.Y.

TOTAL D = 6551 C.Y.

TOTAL E = 822 C.Y.

TOTAL F = 187 C.Y.

STA. 586+00 TO 588+00 $\ell = 200'$

$V = \frac{1}{2}(1020.7 + 1064.0)(200)(1/27) = 7721$

VOL. EXCAV. MAT'L

EB = $23.75^{\square'} \times 200' \times 1/27 = 176$ C.Y.

WB = $87.25^{\square'} \times 200' \times 1/27 = 646$ C.Y.

TOTAL D = 6895 C.Y.

TOTAL E = 822 C.Y.

TOTAL F = 229 C.Y.

STA. 588+00 TO 590+00 L = 200'

$V = \frac{1}{2}(1064.0 + 956.7)(200')(1/27) = 7484$ C.Y.

VOL. EXCAV. MAT'L

EB = $\frac{1}{2} \times 23.75^{\square'} \times 200' \times 1/27 = 88$ C.Y.

WB = $87.25^{\square'} \times 200' \times 1/27 = 646$ C.Y.

TOTAL D = 6750 C.Y.

TOTAL E = 734 C.Y.

TOTAL F = 312 C.Y.

STA. 590+00 TO 592+00 L = 200'

$V = \frac{1}{2}(956.7 + 1025.0)(200)(1/27) = 7340$ C.Y.

VOL. EXCAV. MAT'L

EB = 0

WB = $87.25^{\square'} \times 200' \times 1/27 = 646$ C.Y.

TOTAL D = 6694 C.Y.

TOTAL E = 646 C.Y.

TOTAL F = 434 C.Y.

STA. 592+00 TO 594+00 L = 200'

$V = \frac{1}{2}(1025.0 + 1012.5)(200)(1/27) = 7546$

VOL EXCAV. MAT'L

EB = 0

WB = $87.25^{\square'} \times 200' \times 1/27 = 646$ C.Y.

TOTAL D = 6900 C.Y.

TOTAL E = 646 C.Y.

TOTAL F = 521 C.Y.

STA. 594+00 TO 596+00 ℓ = 200'

$V = \frac{1}{2}(1012.5 + 1097.6)(200)(1/27) = 7815$ C.Y.

VOL EXCAV. MAT'L

EB = 0

WB = 87.25^{D}' x 200 x 1/27 = 646 C.Y.

TOTAL D = 7169 C.Y.
TOTAL E = 646 C.Y.
TOTAL F = 517 C.Y.

STA. 596+00 TO 598+00

$V = \frac{1}{2}(1097.6 + 987.5)(200)(1/27) = 7723$ C.Y.

VOL. EXCAV. MAT'L

EB = 11' x 1' x 200' x 1/27 = 81 C.Y.

WB = 87.25^{D}' x 200' x 1/27 = 646 C.Y.

TOTAL D = 6996 C.Y.
TOTAL E = 727 C.Y.
TOTAL F = 522 C.Y.

STA. 598+00 TO 600+00 ℓ = 200'

$V = \frac{1}{2}(987.5 + 931.5)(200)(1/27) = 7107$ C.Y.

VOL. EXCAV. MAT'L

E.B. = 1/2 (11^{D}') x 200 x 1/27 = 41 C.Y.

WB = 87.25^{D}' x 200' x 1/27 = 646 C.Y.

TOTAL D = 6420 C.Y.
TOTAL E = 687 C.Y.
TOTAL F = 460 C.Y.

STA. 600+00 TO 602+00 L = 200'

$V = \frac{1}{2}(931.5 + 949.2)(200)(1/27) = 6966$ C.Y.

VOL. EXCAV. MATIC

EB = 0

WB = 87.250' x 200 x 1/27 = 646 C.Y.

TOTAL D = 6320 C.Y.
TOTAL E = 646 C.Y.
TOTAL F = 300 C.Y.

STA. 602+00 TO 604+00 L = 200'

$V = \frac{1}{2}(949.2 + 916.6)(200)(1/27) = 6910$ C.Y.

VOL. EXCAV. MATIC

EB = 0

WB = 646 C.Y.

TOTAL D = 6264 C.Y.
TOTAL E = 646 C.Y.
TOTAL F = 260 C.Y.

STA. 604+00 TO 606+00 L = 200'

$V = \frac{1}{2}(916.6 + 931.0)(200)(1/27) = 6843$ C.Y.

VOL. EXCAV. MATIC

EB = 0

WB = 646 C.Y.

TOTAL D = 6197 C.Y.
TOTAL E = 646 C.Y.
TOTAL F = 235 C.Y.

STA. 606+00 TO 608+00 L = 200'

$V = \frac{1}{2}(931.0 + 975.8)(200)(1/27) = 7062$ C.Y.

VOL. EXCAV. MAT'L

EB = $(\frac{1}{2} \times 11 \times 1) \times 200' \times \frac{1}{27}$ = 41 C.Y.

WB = 646 C.Y.

TOTAL D = 6375 C.Y.

TOTAL E = 687 C.Y.

TOTAL F = 203 C.Y.

STA. 608+00 TO 610+00 L = 200'

$V = \frac{1}{2}(975.8 + 1106.0)(200)(1/27) = 7710$ C.Y.

VOL. EXCAV. MAT.

E.B. = 41 C.Y. WB = 646 C.Y.

TOTAL D = 7023 C.Y.

TOTAL E = 687 C.Y.

TOTAL F = 180 C.Y.

STA. 610+00 TO 612+00 L = 200'

$V = \frac{1}{2}(1106.0 + 1003.2)(200)(1/27) = 7812$ C.Y.

VOL EXCAV. MAT'L

EB = 12'x1' x 200' x 1/27 = 89 C.Y.

WB = 646 C.Y.

TOTAL D = 7077 C.Y.

TOTAL E = 735 C.Y.

TOTAL F = 159 C.Y.

STA. 612+00 TO 614+00 $\ell = 200'$

$V = \frac{1}{2}(1003.2 + 887.2)(200)(1/27) = 7001$ C.Y.

VOL EXCAV.	MAT'L
EB = $\frac{1}{2} \times 12^{ft} \times 200 \times 1/27$ = 44 C.Y.	
WB = 646 C.Y.	

TOTAL D = 6311 C.Y.
TOTAL E = 690 C.Y.
TOTAL F = 198 C.Y.

STA. 614+00 TO 616+00 $\ell = 200'$

$V = \frac{1}{2}(887.2 + 887.5)(200)(1/27) = 6573$ C.Y.

VOL. EXCAV.	MAT'L
EB = 0	WB = 646 C.Y.

TOTAL D = 5927 C.Y.
TOTAL E = 646 C.Y.
TOTAL F = 300 C.Y.

STA. 616+00 TO 618+00 $\ell = 200'$

$V = \frac{1}{2}(887.5 + 920.6)(200)(1/27) = 6697$ C.Y.

VOL EXCAV.	MAT'L
EB = 0	WB = 646 C.Y.

TOTAL D = 6051 C.Y.
TOTAL E = 646 C.Y.
TOTAL F = 328 C.Y.

STA. 618+00 TO 620+00 ℓ = 200'

$V = \frac{1}{2}(920.6 + 871.1)(200)(1/27) = 6634$ C.Y.

VOL. EXCAV. MAT'L

EB = 0 WB = 646 C.Y.

TOTAL D = 5990 C.Y.
TOTAL E = 646 C.Y.
TOTAL F = 299 C.Y.

STA. 620+00 TO 622+00 ℓ = 200'

$V = \frac{1}{2}(871.1 + 818.4)(200)(1/27) = 6257$

VOL. EXCAV. MAT'L

EB = 0 WB = 646 C.Y.

TOTAL D = 5611 C.Y.
TOTAL E = 646 C.Y.
TOTAL F = 272 C.Y.

STA. 622+00 TO 624+27 ℓ = 227'

$V = \frac{1}{2}(818.4 + 795.8)(227)(1/27) = 6786$ C.Y.

VOL. EXCAV. MAT'L

EB = 0 WB = 646 C.Y.

TOTAL D = 6140 C.Y.
TOTAL E = 646 C.Y.
TOTAL F = 297 C.Y.

STA. 624+27 TO 625+19 L = 92'

$V = \frac{1}{2}(795.8 + 0)(92)(1/27) = 1356$ C.Y.

VOL. EXCAV. MATIC

EB = 0 WB = 646 C.Y.

TOTAL D = 710 C.Y.
TOTAL E = 646 C.Y.
TOTAL F = 61 C.Y.

SUBTOTALS: STA. 553+13 TO 625+19
(HAMMOND HWY TO VETERANS HWY)

DREDGED	MATERIAL	220,872 C.Y.
EXCAVATED	MATERIAL	25,254 C.Y.
FILL	MATERIAL	6,831 C.Y.

STA. 625+19 TO 626+42

NO-WORK AREA

STA. 626+42 TO 627+28 $L = 86'$

$V = \frac{1}{2}(0 + 1018.6)(86)(1/27) = 1622$ C.Y.

VOL. EXCAV. MAT'L

E.B. = 0

$WB = \frac{1}{2}\left\{3(\frac{1}{2}\times 8\times 2) + 3(\frac{1}{2}\times 5\times 1.5) + 3(\frac{1}{2}\times 4\times 1.5) + (\frac{1}{2}\times 8\times 1.5)\right\}\times 86\times 1/27$

$= 80$ C.Y. ($50.25^{\square'}$)

TOTAL D = 1542 C.Y.

TOTAL E = 80 C.Y.

TOTAL F = 70 C.Y.

STA. 627+28 TO 628+00 $L = 72'$

$V = \frac{1}{2}(1018.6 + 931.6)(72)(1/27) = 2600$ C.Y.

VOL. EXCAV. MAT'L

EB = 0

$WB = 50.25^{\square'} \times 72' \times 1/27 = 134$ C.Y.

TOTAL D = 2466 C.Y.

TOTAL E = 134 C.Y.

TOTAL F = 191 C.Y.

STA. 628+00 TO 630+00 $L = 200'$

$V = \frac{1}{2}(931.6 + 826.6)(200)(1/27) = 6512$ C.Y.

VOL. EXCAV. MAT'L

EB = 0

$WB = \frac{1}{2}\left\{50.25^{\square'} + \frac{1}{2}(7+13)(1)\right\}(200)(1/27) = 223$ C.Y. ($10^{\square'}$)

TOTAL D = 6289 C.Y.

TOTAL E = 223 C.Y.

TOTAL F = 658 C.Y.

STA. 630+00 TO 632+00 $L = 200'$

$V = \frac{1}{2}(826.6 + 954.5)(200)(1/27) = 6597$ C.Y.

VOL. EXCAV. MAT'L

E.B. = 0

$WB = \frac{1}{2}\left\{10^{0'} + \left[\frac{1}{2}(15\times3) + \frac{1}{2}(8\times3) + \frac{1}{2}(7\times1.5) + \frac{1}{2}(6\times1.5) + \frac{1}{2}(8+30)(15)\right]\right\}(200)(1/27)$ ($72.75^{0'}$)

$= 306$ C.Y.

TOTAL D = 6291 C.Y.

TOTAL E = 306 C.Y.

TOTAL F = 570 C.Y.

STA. 632+00 TO 634+00 $L = 200'$

$V = \frac{1}{2}(954.5 + 842.4)(200)(1/27) = 6655$ C.Y.

VOL. EXCAV. MAT'L

EB = 0

$WB = 72.75^{0'} \times 200 \times 1/27 = 539$ C.Y.

TOTAL D = 6116 C.Y.

TOTAL E = 539 C.Y.

TOTAL F = 372 C.Y.

STA. 634+00 TO 636+00 $L = 200'$

$V = \frac{1}{2}(842.4 + 984.6)(200)(1/27) = 6767$ C.Y.

VOL. EXCAV. MAT'L

$EB = \frac{1}{2}(72.75^{0'})(200)(1/27) = 269$ C.Y.

$WB = 72.75^{0'} \times 200 \times 1/27 = 539$ C.Y.

TOTAL D = 5959 C.Y.

TOTAL E = 808 C.Y.

TOTAL F = 152 C.Y.

STA. 636+00 TO 638+31 L = 231'

$V = \frac{1}{2}(984.6 + 1014.6)(231)(1/27) = 8552$ C.Y.

VOL. EXCAV. MATL

EB = 72.75□' x 231 x 1/27 = 622 C.Y.

WB = 72.75□' x 231 x 1/27 = 622 C.Y.

TOTAL D = 7308 C.Y.

TOTAL E = 1244 C.Y.

TOTAL F = 0

STA. 638+31 TO 639+16 L = 85'

$V = \frac{1}{2}(1014.6 + 0)(85)(1/27) = 1597$ C.Y.

VOL. EXCAV. MATL

EB = ½ x 72.75□' x 85 x 1/27 = 115 C.Y.

WB = ½ x 72.75□' x 85 x 1/27 = 115 C.Y.

TOTAL D = 1367 C.Y.

TOTAL E = 230 C.Y.

TOTAL F = 0

STA. 639+16 TO 642+08

NO EXCAVATION IN THIS AREA

LEVEE FILL:

E.B. - STA 639+83 TO 640+75 & 641+10 TO 641+82

WB - STA 639+95 TO 640+68 & 640+96 TO 641+46

TOTAL F = 382 C.Y.

STA. 642+08 TO 643+00 L = 92'

$V_{DREDGE} = \frac{1}{2}(0+999.5)(92)(1/27) = 1703$ C.Y.

VOL EXCAV. MAT'L $= \frac{1}{2}(2)(23.7' \times 5') \times 92 \times \frac{1}{27} = 408$ C.Y. EB & WB

VOL. FILL $= \frac{1}{2}(0+60)(92)(1/27) = 102$ C.Y.

TOTAL D = 1295 C.Y.
TOTAL E = 408 C.Y.
TOTAL F = 102 C.Y.

STA. 643+00 TO 644+00 L = 100'

$V = \frac{1}{2}(999.5 + 1062.0)(100)(1/27) = 3818$ C.Y.

EB & WB = $\frac{\text{VOL. EXCAV. MAT'L}}{2(23.7' \times 5')(100)(1/27)} = 878$ C.Y.

$23.7' \times 5' = 118.5$ □'

TOTAL D = 2940 C.Y.
TOTAL E = 878 C.Y.
TOTAL F = 207 C.Y.

STA. 644+00 TO 646+00 L = 200'

$V = \frac{1}{2}(1062.0 + 1071.4)(200)(1/27) = 7901$ C.Y.

VOL. EXCAV. MAT'L = 2 × 878 C.Y. EB & WB
= 1756 C.Y.

TOTAL D = 6145 C.Y.
TOTAL E = 1756 C.Y.
TOTAL F = 376 C.Y.

STA. 646+00 TO 648+00 $L = 200'$

$V = \frac{1}{2}(1071.4 + 1049.0)(200)(1/27) = 7853$ C.Y.

VOL. EXCAV. MAT'L

EB & WB $= 2(118.5^{0'} \times 200' \times \frac{1}{27}) = 878$ C.Y. $\times 2 = 1756$ C.Y.

TOTAL D = 6097 C.Y.
TOTAL E = 1756 C.Y.
TOTAL F = 313 C.Y.

STA. 648+00 TO 650+00 $L = 200'$

$V = \frac{1}{2}(1049.0 + 1149.6)(200)(1/27) = 8143$ C.Y.

VOL EXCAV. MAT'L

E.B. & WB = 878 C.Y. $\times 2 = 1752$ C.Y.

TOTAL D = 6387 C.Y.
TOTAL E = 1756 C.Y.
TOTAL F = 211 C.Y.

STA. 650+00 TO 652+00 $L = 200'$

$V = \frac{1}{2}(1149.6 + 953.7)(200)(1/27) = 7790$ C.Y.

VOL. EXCAV. MAT'L EB & WB = 2×878 C.Y. $= 1756$ C.Y.

TOTAL D = 6034 C.Y.
TOTAL E = 1756 C.Y.
TOTAL F = 204 C.Y.

STA. 652+00 TO 654+00 L = 200'

$V = \frac{1}{2}(953.7 + 966.6)(200)(1/27) = 7112$ C.Y.

VOL. EXCAV. MAT'L

EB = $\frac{1}{2} \times 118.50' \times 200 \times 1/27 = 439$ C.Y.

WB = $118.50' \times 200' \times 1/27 = 878$ C.Y.

TOTAL D = 5795 C.Y.

TOTAL E = 1317 C.Y.

TOTAL F = 269 C.Y.

STA. 654+00 TO 656+00 L = 200'

$V = \frac{1}{2}(966.6 + 1043.7)(200)(1/27) = 7446$ C.Y.

VOL. EXCAV. MAT'L

EB & WB = 1317 C.Y.

TOTAL D = 6129 C.Y.

TOTAL E = 1317 C.Y.

TOTAL F = 452 C.Y.

STA. 656+00 TO 658+00 L = 200'

$V = \frac{1}{2}(1043.7 + 1048.8)(200)(1/27) = 7750$ C.Y.

VOL EXCAV. MAT'L

EB & WB = 1317 C.Y.

TOTAL D = 6433 C.Y.

TOTAL E = 1317 C.Y.

TOTAL F = 534 C.Y.

STA. 658+00 TO 660+00 L = 200'

$V = \frac{1}{2}(1048.8 + 1039.3)(200)(1/27) = 7734$ C.Y.

VOL. EXCAV' MAT'L

EB & WB = 1317 C.Y.

TOTAL D = 6417 C.Y.
TOTAL E = 1317 C.Y.
TOTAL F = 518 C.Y.

STA. 660+00 TO 662+00 L = 200'

$V = \frac{1}{2}(1039.3 + 1097.3)(200)(1/27) = 7913$ C.Y.

VOL. EXCAV. MAT'L

E.B & WB = 1317 C.Y.

TOTAL D = 6596 C.Y.
TOTAL E = 1317 C.Y.
TOTAL F = 597 C.Y.

STA. 662+00 TO 664+00

$V = \frac{1}{2}(1097.3 + 1096.2)(200)(1/27) = 8124$ C.Y.

VOL. EXCAV. MAT'L

E.B. & W.B = 1317 C.Y.

TOTAL D = 6807 C.Y.
TOTAL E = 1317 C.Y.
TOTAL F = 648 C.Y.

STA. 664+00 TO 666+00 L = 200'

$V = \frac{1}{2}(1096.2 + 1114.8)(200)(1/27) = 8189$ C.Y.

VOL. EXCAV. MAT'L

E.B. & W.B. = 1317 C.Y.

TOTAL D = 6872 C.Y.
TOTAL E = 1317 C.Y.
TOTAL F = 609 C.Y.

STA. 666+00 TO 668+00 L = 200'

$V = \frac{1}{2}(1114.8 + 1251.2)(200)(1/27) = 8763$ C.Y.

VOL. EXCAV. MAT'L

E.B. = $\frac{1}{2}\left[\frac{1}{2}(118.5) + 118.5\right](200)(1/27) = 658$ C.Y.

WB = $118.5 \times 200 \times 1/27 = 878$ C.Y.

TOTAL D = 7227 C.Y.
TOTAL E = 1536 C.Y.
TOTAL F = 471 C.Y.

STA. 668+00 TO 669+87 L = 187'

$V = \frac{1}{2}(1251.2 + 1168.8)(187)(1/27) = 8380$ C.Y.

VOL. EXCAV. MAT'L

EB & WB = $2 \times 118.5 \times 187 \times 1/27 = 1641$ C.Y.

TOTAL D = 6739 C.Y.
TOTAL E = 1641 C.Y.
TOTAL F = 308 C.Y.

END EXCAVATION

STA. 669+87 TO 671+25 $\quad L = 138'$

$V = \frac{1}{2}(1168.8 + 0)(138)(1/27) = 2987$ C.Y.

VOL. EXCAV. MAT'L

E.B. $= \frac{1}{2}(878) = 439$ C.Y.

WB $= 878$ C.Y.

TOTAL D = 1670 C.Y.

TOTAL E = 1317 C.Y.

TOTAL F = 88 C.Y.

SUBTOTAL EARTHWORK – STA. 626+42 TO 671+25

Dredging = 126,921 C.Y.

Excavation = 25,587 C.Y.

Fill = 8,242 C.Y.

EARTHWORK SUMMARY

Dredging = 401,960 C.Y. ≈ 402,000 C.Y.

Excavation = 60,440 C.Y. ≈ 61,000 C.Y.

Fill (Levee Raising) = 15,073 C.Y. ≈ 15,000 C.Y.

Concrete Block Mat

Hammond Hwy Bridge	170' x 170' =	28,900 SF
Veterans Hwy Bridge	220' x 320' =	70,400 SF
I-10 Bridges	180' x 480' =	86,400 SF
	TOTAL =	185,700 SF

Selective Demolition

Removal of Existing Floodwalls:

E.B. - Concrete Capped Steel Sheet Piling	8752 LF.
WB - Uncapped Steel Sheet Piling	7484 LF.
Removal of Existing Bike Path: (2" x 6100' x 8' Asphaltic Concrete)	5420 S.Y.
Removal of Existing Orpheum Ave. (2 x 20' Asphaltic Concrete + 6' Shell base)	1430 S.Y.
Removal of Miscellaneous timber structures in canal	1 Job.

Clearing & Grubbing — 1 Job L.S.

Asphaltic Concrete Bike Path (2" thick x 8' wide x 6280' long)

$8' \times 6280 \times 1/9 \simeq$ 5580 S.Y.

Asphalt Road (Orpheum Ave) (2" thick Asphaltic Concrete + 6" Granular Material)

$(568' \times 20' + 148' \times 10') \times 1/9 \simeq$ 1430 S.Y.

Rip-Rap

0.5' x 21' x 1132' x 1/27 x 1.5 Ton/cy. ≈ 6600 Tons

Pedestrian Bridge (at Bucktown) (see dwg. #101)

1 Job Lump Sum

Concrete	73.5	C.Y.
Reinf. Steel	8,175	Lb.
Misc. A36 Steel	50,410	Lb
16" x 16" Prest. Conc. Piles	2,330	L.F.
Structural Timber	15.7	MFBM
12" ϕ C.I. Pipe	305	LF
Fill Material	26	C.Y.