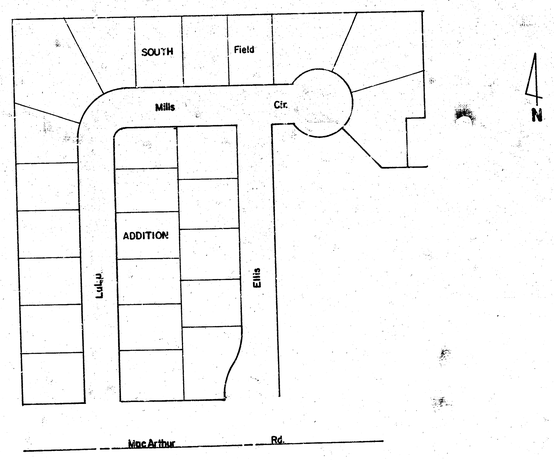
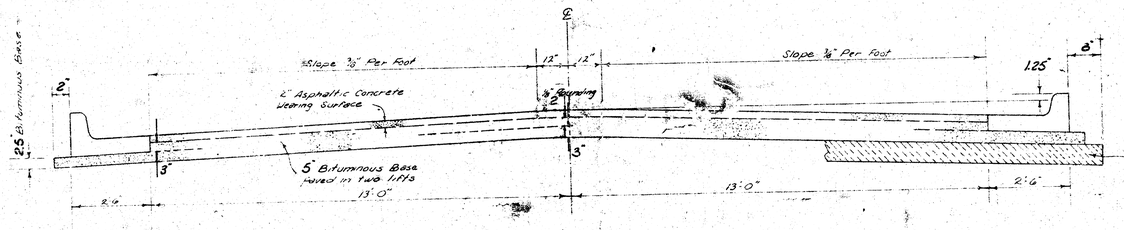
LuLu & Mills Cir.
from NL MacArthur to and incl. cul-de-sac
Ellis
from NL MacArthur to SL Mills Cir.



Department of Engineering
City of Wichita, Kansas
R.W. Bruggeman Dir. Engineering / City Engineer
Proj. no. 472-76-245-81067-000-000-001
Date: _____

STEPHEN R. LACKEY
LICENSED
7714
KANSAS
PROFESSIONAL ENGINEER



TYPICAL SECTION

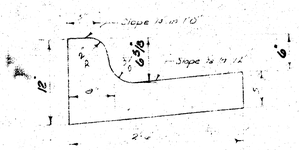
31' ASPHALTIC CONCRETE PAVEMENT WITH BITUMINOUS BASE

The A.C. pavement between the Comb. Curb & Gutter shall be paid as Sq. Yds. 7" A.C. Pavement (5 Bituminous Base) The Bituminous Base under the Comb. Curb & Gutter shall be paid as Sq. Yds. 25 Bituminous Base.

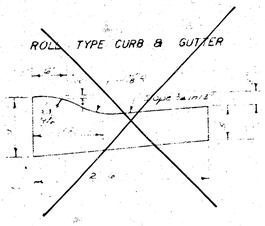
A TACK COAT OF EMULSIFIED ASPHALT (SS-1H) SHALL BE APPLIED AT AN APPROXIMATE RATE OF 0.05 GALLONS PER SQ. YD. BETWEEN LIFTS OF ASPHALTIC MATERIALS WHEN ORDERED BY THE ENGINEER. TACK COAT WILL NOT BE PAID FOR DIRECTLY AND SHALL BE CONSIDERED AS SUBSIDIARY TO PRICE BID FOR ASPHALTIC PAVEMENT.

BITUMINOUS BASE AND ASPHALTIC CONCRETE WEARING SURFACE SHALL BE PLACED WITH A LAYDOWN MACHINE HAVING AUTOMATIC CONTROLS FOR CROWN AND GRADE. CONSTRUCTION JOINTS IN EACH LIFT SHALL BE STAGGERED A MINIMUM DISTANCE OF 1' WITH JOINTS IN PRECEDING LIFTS AND SUCH THAT A JOINT WILL BE CONSTRUCTED ON THE PAVEMENT CENTERLINE IN THE TOP LIFT.

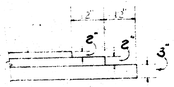
COMBINED CURB & GUTTER



ROLL TYPE CURB & GUTTER



DETAIL OF TRANSVERSE CONSTRUCTION JOINTS



TRANSVERSE CONSTRUCTION JOINTS SHALL BE CONSTRUCTED IN FLEXIBLE BASE PAVEMENTS AT LOCATIONS WHERE PAVEMENT TEMPORARILY ENDS TO FACILITATE FUTURE PAVEMENT CONSTRUCTION AS SHOWN BY DETAIL. THE COST OF CONSTRUCTING THE TRANSVERSE CONSTRUCTION JOINTS SHALL NOT BE MEASURED OR PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE BID PRICE FOR SQUARE YARDS OF ASPHALTIC CONCRETE PAVEMENT.

CITY OF WICHITA, KANSAS

DEPARTMENT OF — ENGINEERING

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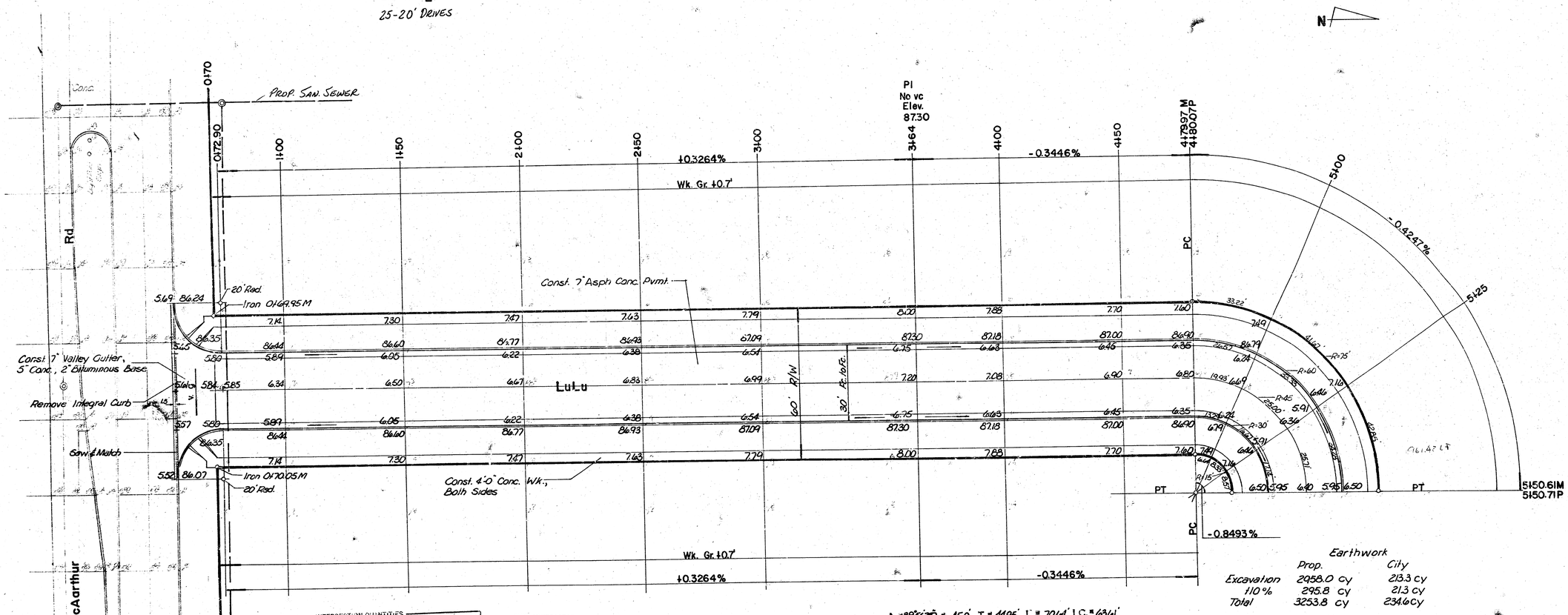
BM 87.90 R.R. spike N. fc. K.G.&E. P.P. N. side MacArthur approx. 109' W. of ℄ Ellis

BL is ℄ Ellis

25-20' DRIVES



Earthwork

	Prop.	City
Excavation	2958.0 cy	213.3 cy
+10%	295.8 cy	21.3 cy
Total	3253.8 cy	234.6 cy
Manipulation	2631.1 sy	

INTERSECTION QUANTITIES

___ S.Y. ___" Concrete Pavement	
___ S.Y. ___" Asphaltic Conc. Pavement (___" Bituminous Base)	
___ S.Y. ___" Bituminous Base	
24.0	SF 4" Walk
49.0	L.F. Integral Curb
112	S.F. 4" Wheelchair Ramp
70.0	LF Integral Curb Removed
33.6	C.Y. Excavation
7.5	C.Y. Compacted Fill
73	LF Saw Jt.
90.2	S.Y. Manipulation
1.1	Tons Lime or Cement
86.0	S.Y. V.G. 5" Concrete & 2" Asphaltic Concrete Base

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR SHALL BE REQUIRED TO RE-ESTABLISH ANY PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY HIS CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR OR A LICENSED PROFESSIONAL ENGINEER IN ACCORDANCE WITH STATE LAWS.

SUB-GRADE

TYPE OF SUB-GRADE TREATMENT SHALL BE DETERMINED BY THE FIELD ENGINEER. SUB-GRADE TREATMENT MAY CONSIST OF LIME TREATMENT, CEMENT TREATMENT, SUB-GRADE MODIFICATION, OR ANY COMBINATION OF THESE.

Note: All excavated Matls. to be left on Job site. Contractor to Contact Property Owner for exact location.

Δ = 89°56'25" R. = 45.0' T. = 44.95' L. = 70.64' LC. = 63.61'

CURVE DATA BASED ON ℄ RAD. Δ/2 = 44°58'13"

STA.	ARC.	CHORD LENGTH 8' OFF U/CS.	CHORD LENGTH 8' OFF R/CS.	DEFLECTION	TOTAL DEFLECTION
4+80.07'					0°0'00"
5+00	19.93'	30.12'	9.74'	12°41'16"	12°41'16"
5+25	25.00'	37.78'	12.22'	15°54'55"	28°36'11"
5+50.71	25.71'	38.85'	12.57'	16°22'02"	44°58'13"

Defl. min./ft. = 38.19660721

LuLu and Mills Cir.
from NL MacArthur to and incl.
cul-de-sac
Proj. no. 472-76-245-81067-000-000-001

Survey Permanent MGP#3
Plan Fleming
Exc. "
Checked

3

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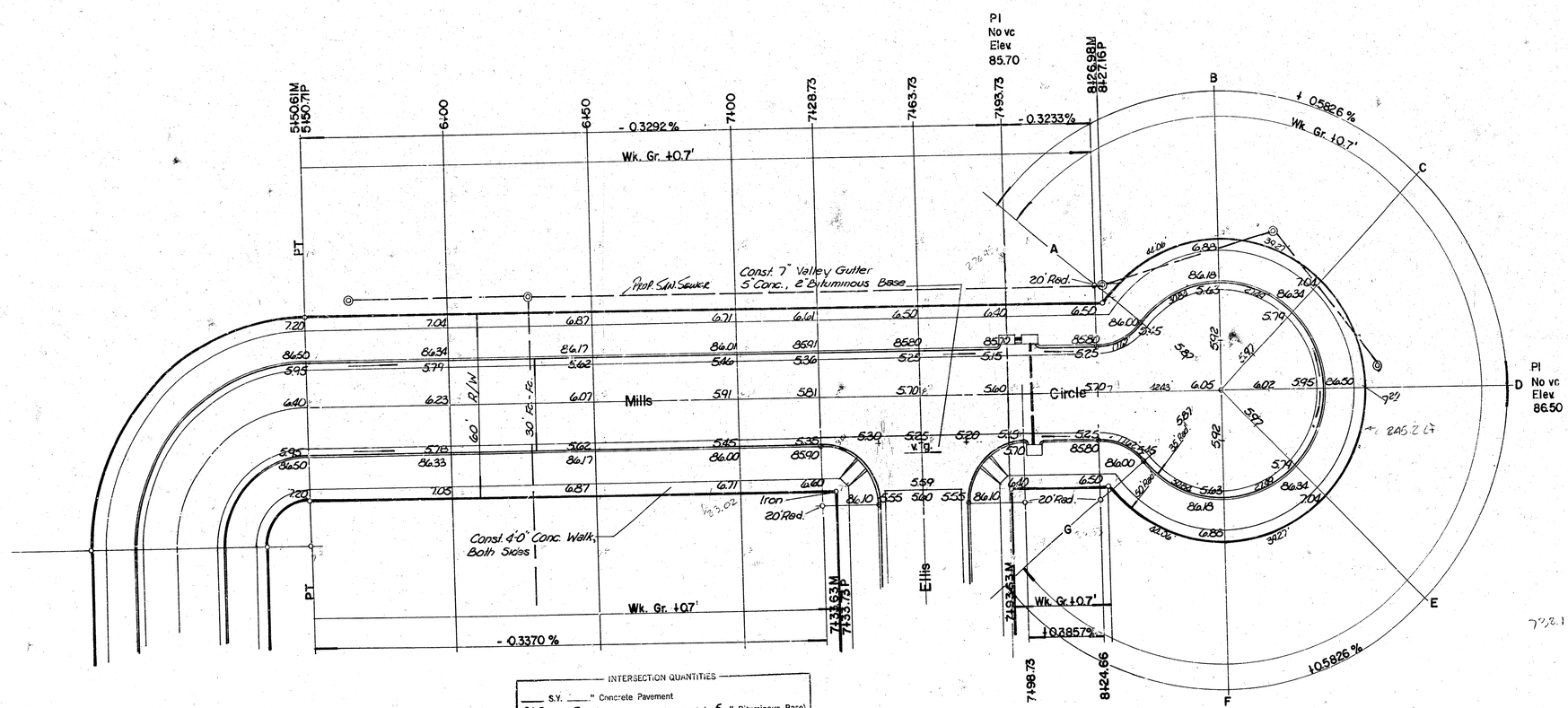
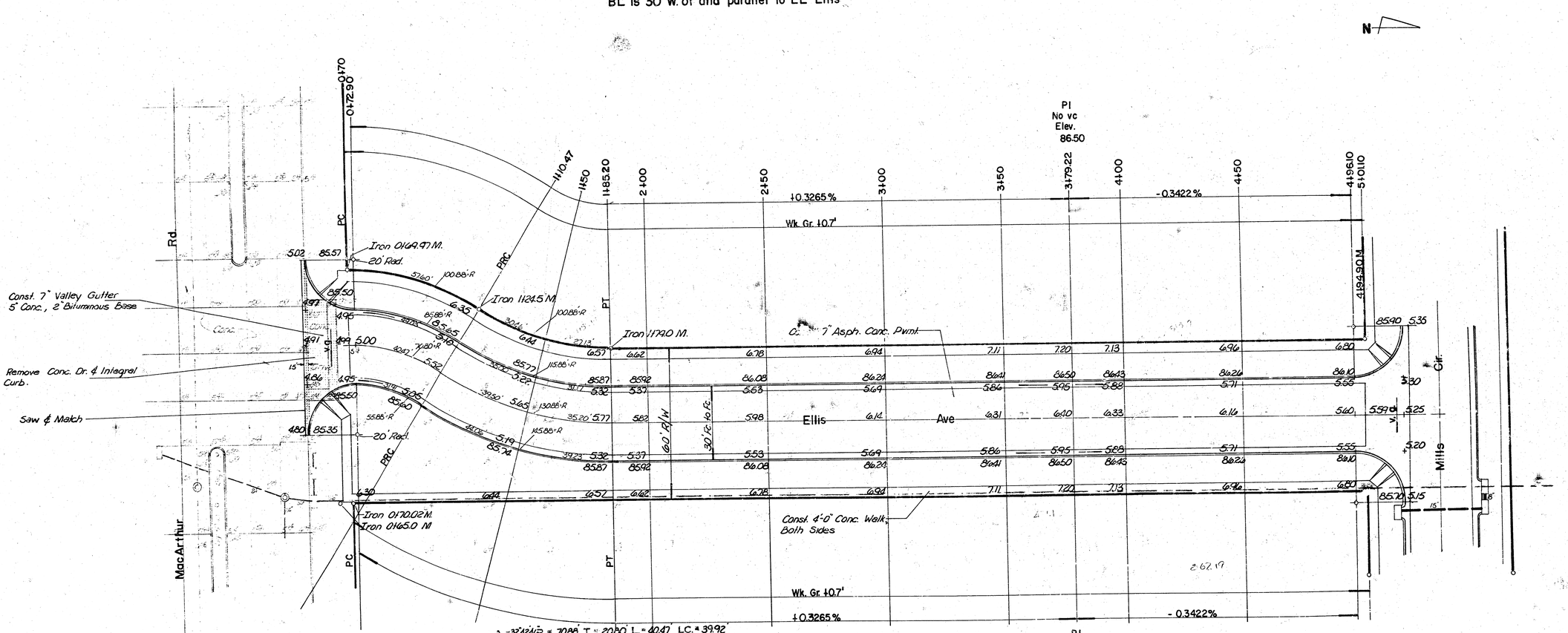
BL is ℄ Mills Circle



INTERSECTION QUANTITIES

____ S.Y.	____" Concrete Pavement
86.7 S.Y.	7 " Asphaltic Conc. Pavement (5 " Bituminous Base)
____ S.Y.	____" Bituminous Base
____ L.F.	Combined Curb & Gutter
34.8 L.F.	Integral Curb
72 S.F.	4" Wheelchair Ramp
24.0 S.F.	4" Walk
179.7 C.Y.	Excavation
13.5 C.Y.	Compacted Fill
____ Lbs.	Reinforcing Steel
1625 S.Y.	Manipulation
2.0 Tons	Lime or Cement
81.9 S.Y. V.G.	5 " Concrete & 2 " Asphaltic Concrete Base

BL is 30' W. of and parallel to EL Ellis



Δ = 32°42'46" R. = 70.88' T. = 20.80' L. = 40.47' LC. = 39.92'

CURVE DATA BASED ON ℄ RAD. Δ/2 = 16°21'23"					
STA.	ARC.	CHORD LENGTH 8' OFF LT. CB.	CHORD LENGTH 8' OFF RT. CB.	DEFLECTION	TOTAL DEFLECTION
0+70					0°0'00"
1+10.47	40.47'	53.60'	27.34'	16°21'23"	16°21'23"

Defl. min/ft = 24.24964995

Δ = 32°42'46" R. = 130.88' T. = 38.41' L. = 74.73' LC. = 73.72'

CURVE DATA BASED ON ℄ RAD. Δ/2 =					
STA.	ARC.	CHORD LENGTH 8' OFF LT. CB.	CHORD LENGTH 8' OFF RT. CB.	DEFLECTION	TOTAL DEFLECTION
1+10.47					0°0'00"
1+50	39.53'	32.58'	46.48'	8°39'07"	8°39'07"
1+85.20	35.20'	29.01'	41.39'	7°42'16"	16°21'23"

Defl. min/ft = 13.13238771

INTERSECTION QUANTITIES

____ S.Y.	____" Concrete Pavement
____ S.Y.	____" Asphaltic Conc. Pavement (____" Bituminous Base)
73	L.F. Saw Jt.
480	S.F. Conc. Dr. Removal
57.0	L.F. Integral Curb
96	S.F. 4" [illegible] Ramp
70	L.F. Integral Curb Removed
40.5	C.Y. Excavation
7.5	C.Y. Compacted Fill
140	S.F. 4" Walk
90.2	S.Y. Manipulation
1.1	Tons Lime or Cement
86.0	S.Y. V.G. 5" Concrete & 2" Asphaltic Concrete Base

Earthwork

	Prop.	City
Excavation	1621.0 cy	40.5 cy
+10%	162.1 cy	4.1 cy
Total	1783.1 cy	44.6 cy
Manipulation	1309.5 sy	

Ellis
from NL MacArthur to SL Mills Cir.

5

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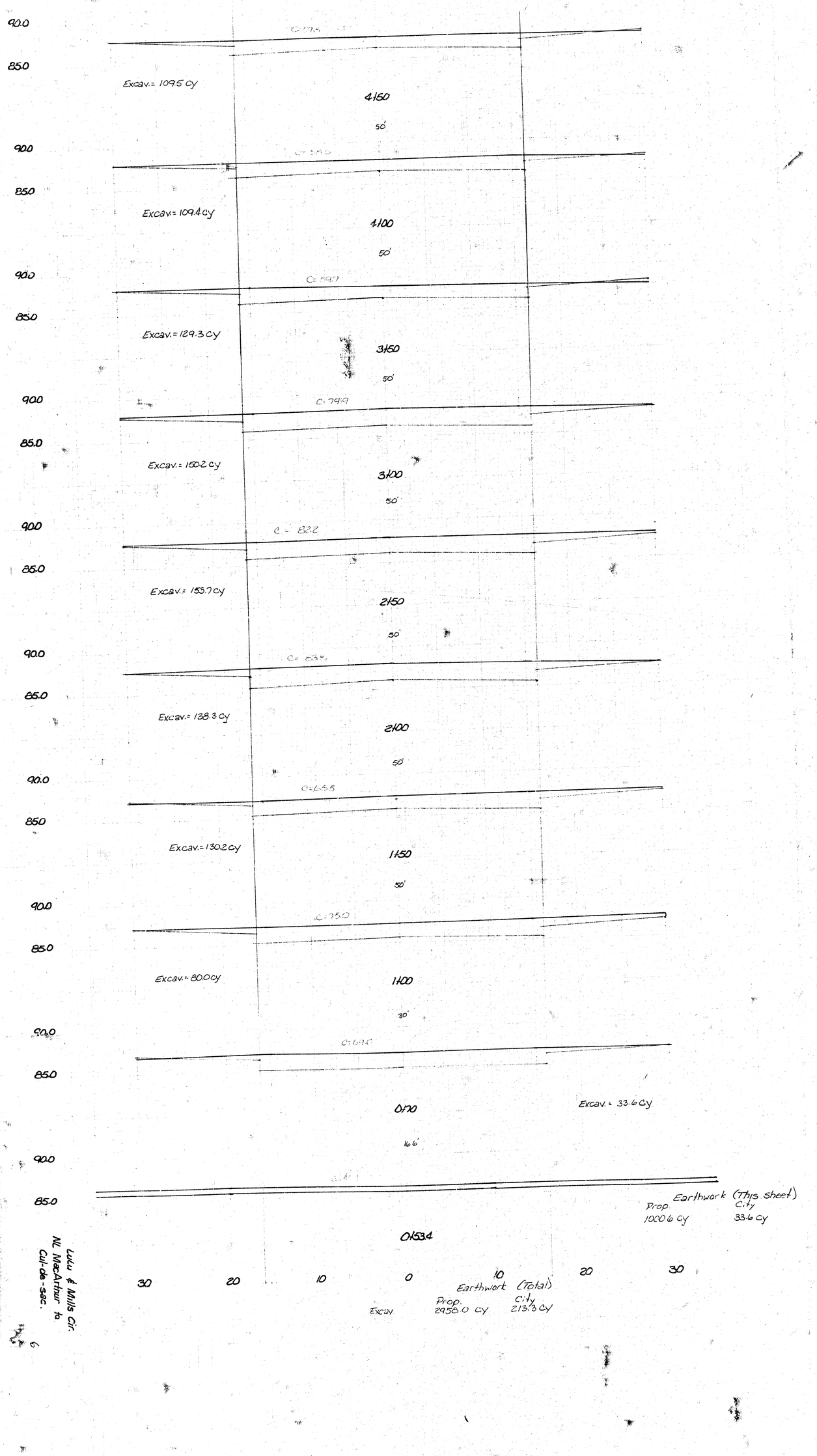

Luau & Mills Cir.
NL MacArthur to
Cul-de-sac.

6

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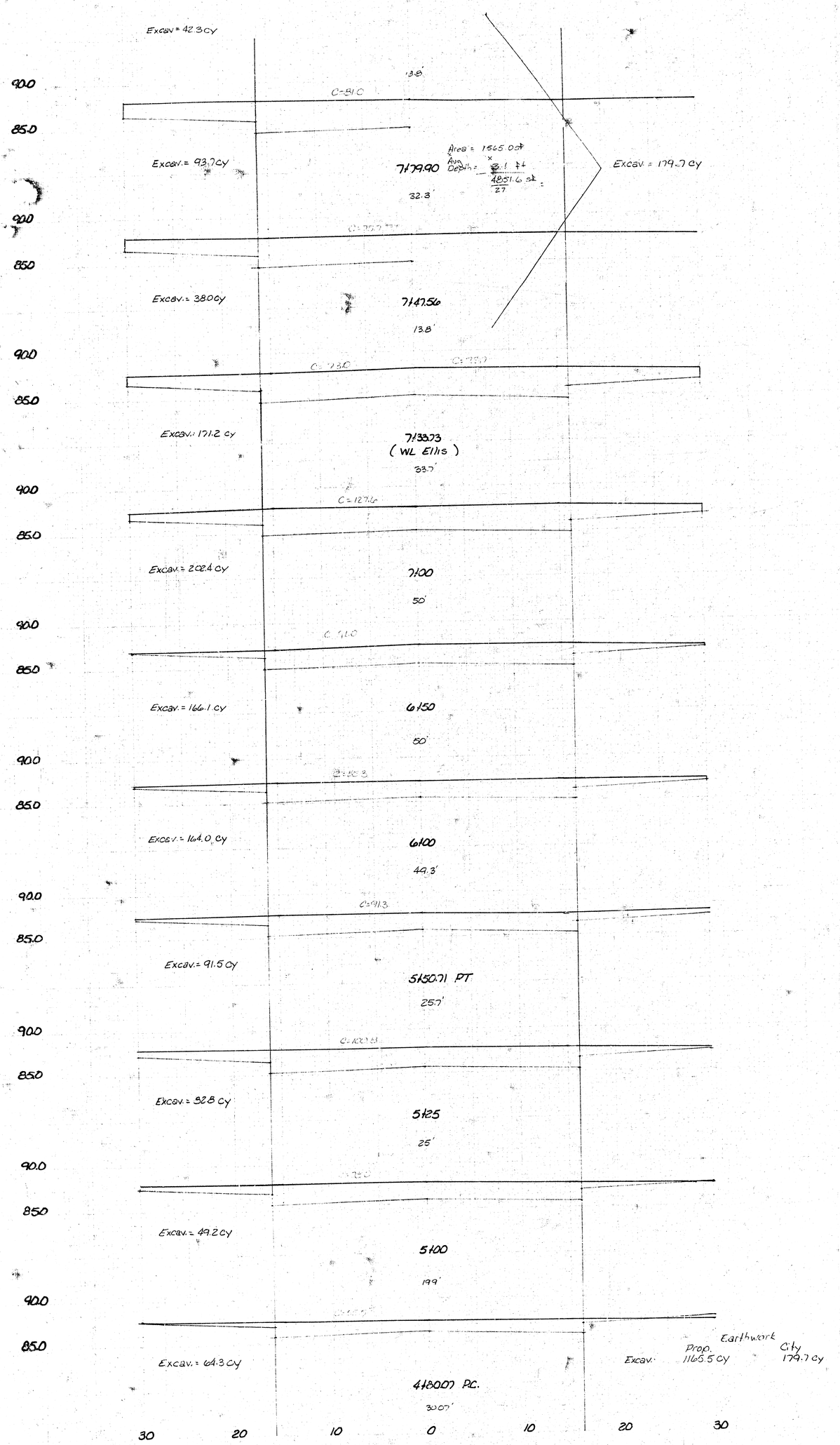

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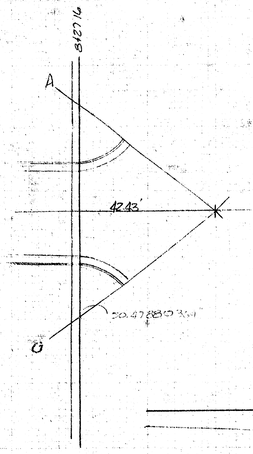


r = 18.83'

$A = \pi(18.83)^2\left(\frac{50.47880'34''}{360}\right) = 156.2\ sf$

$\times 2$

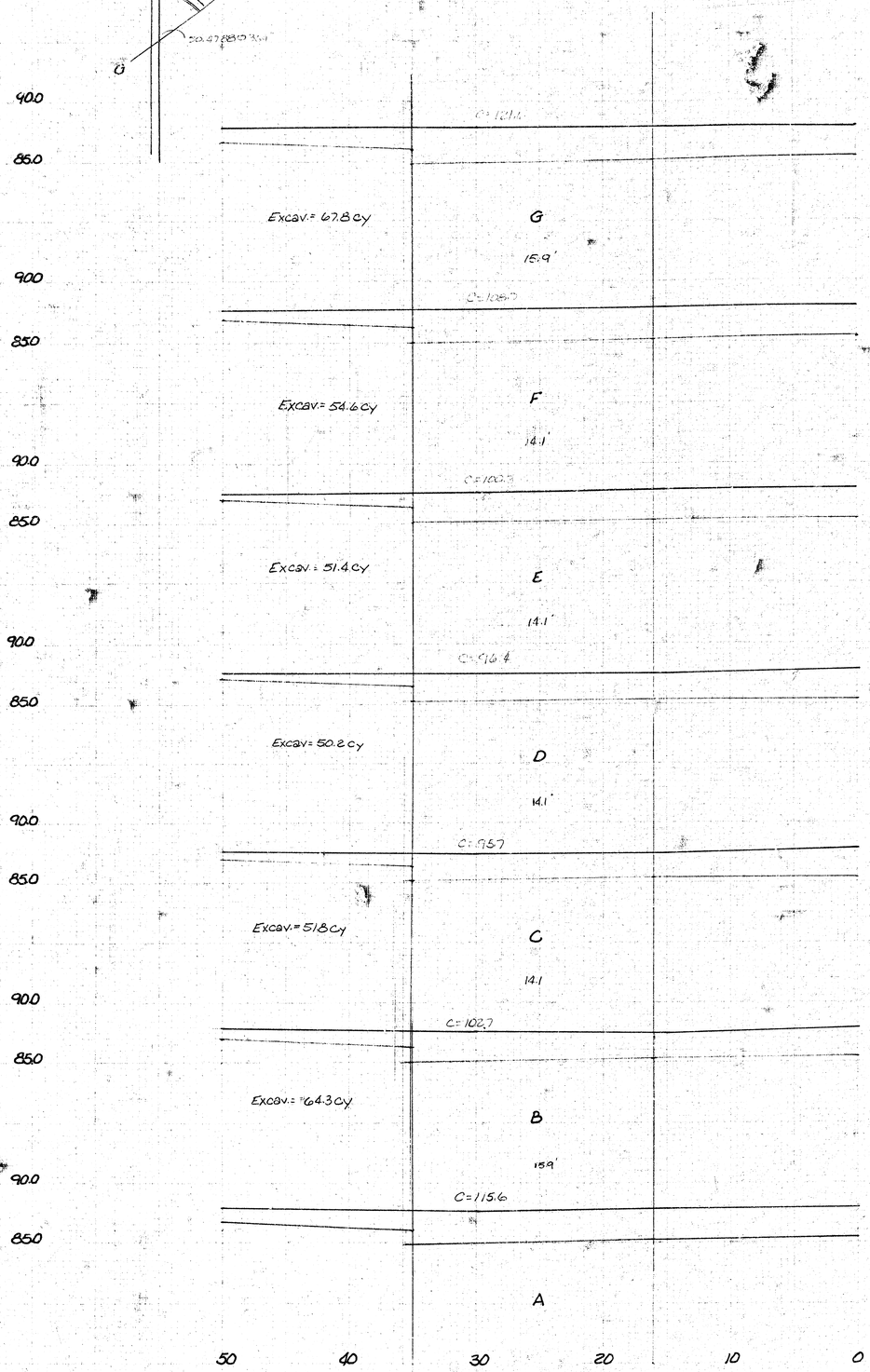
$312.38\ sf$

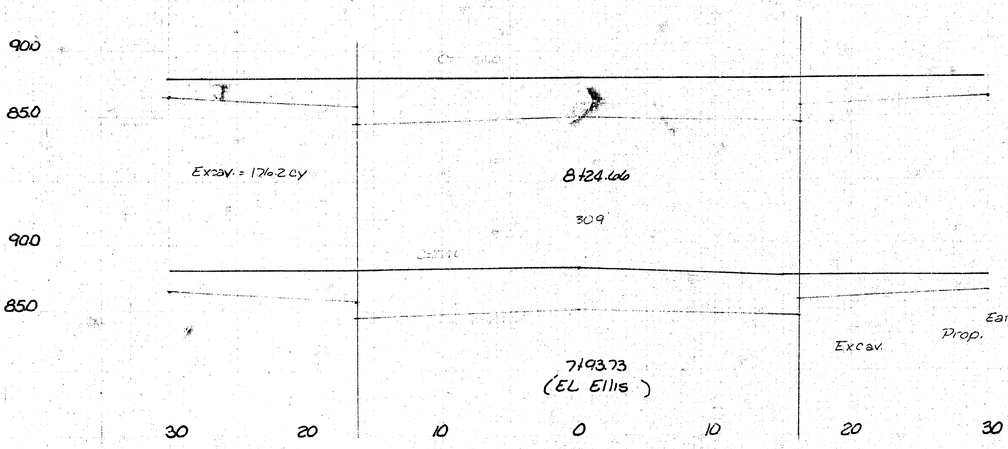
$A_t = (70')(42.43') = 2970.1\ sf$

$A = 2970.1 - 312.4 = 2657.7\ sf$

Avg. Depth of Cut $\times 2.8'$

$\frac{7441.6\ cf}{27} = 275.6\ cy$

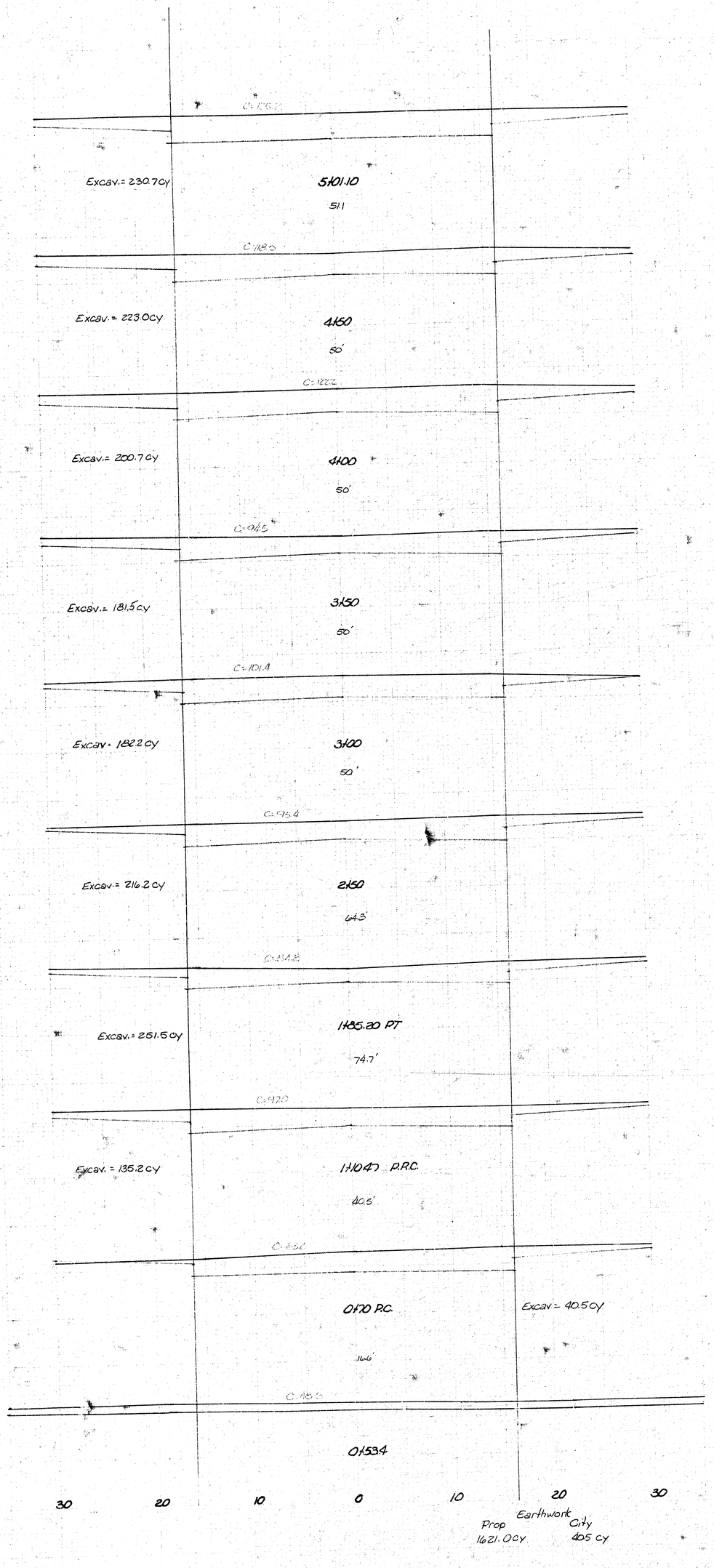




Earthwork (This Sheet)

Prop. 791.9 cy

Excav.



Ellis
NL MacArthur to
SL Mills Cir.
9

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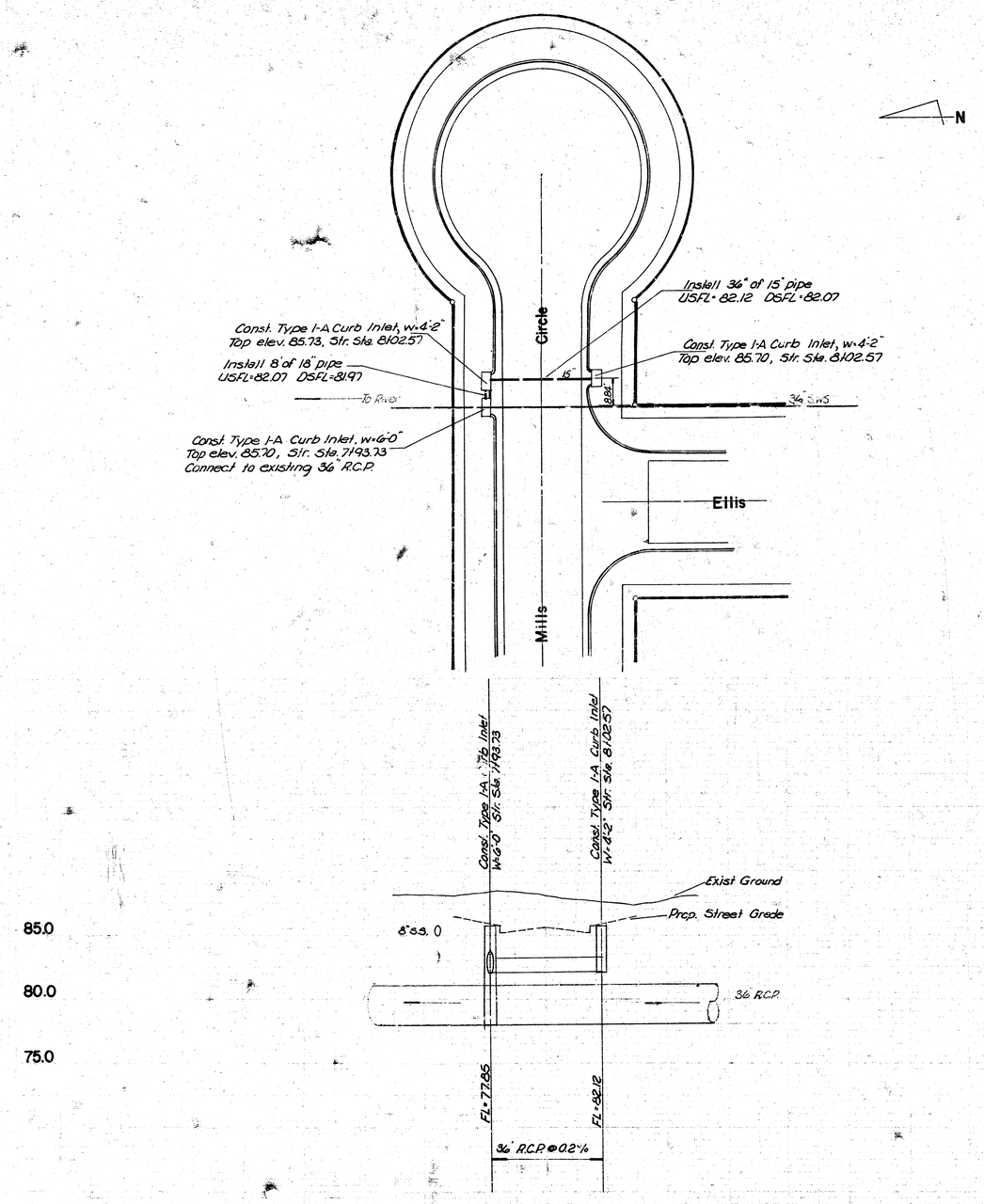

Drainage in Connection w/ Paving

LuLu & Mills Circle

and

Ellis

Proj. no. 472-76-245-81067-000-000-002

10

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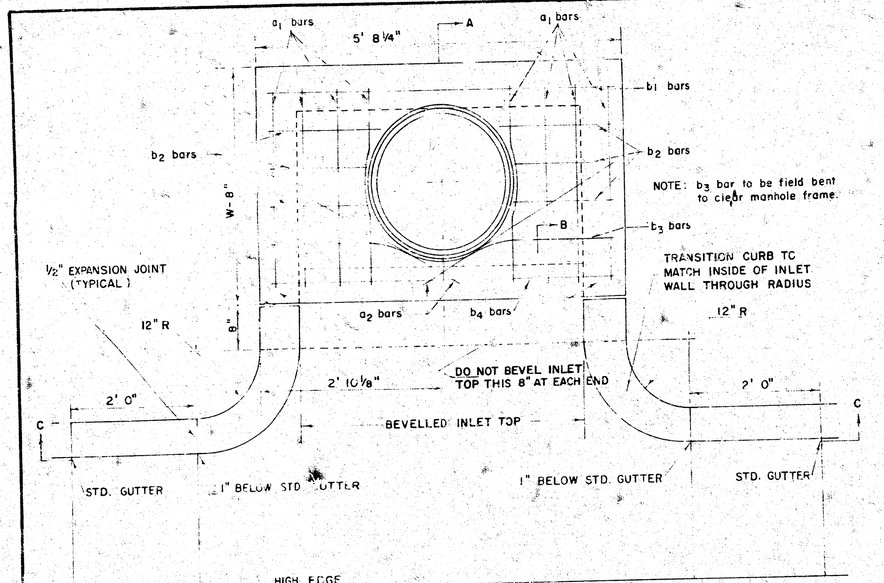
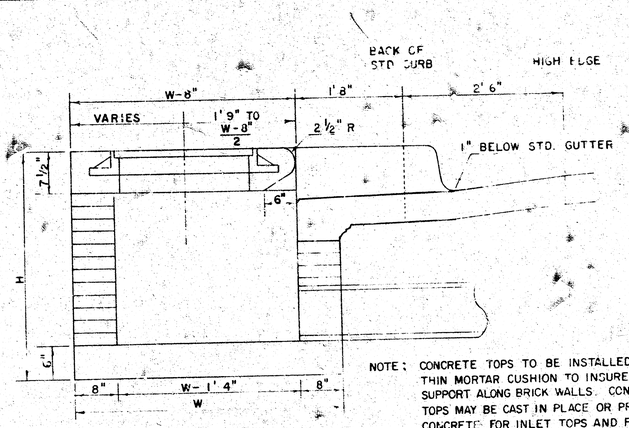
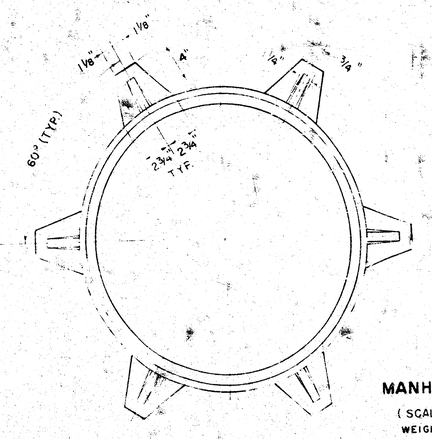


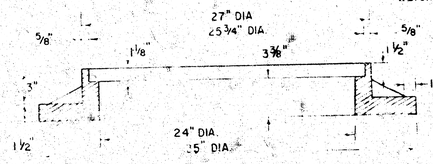


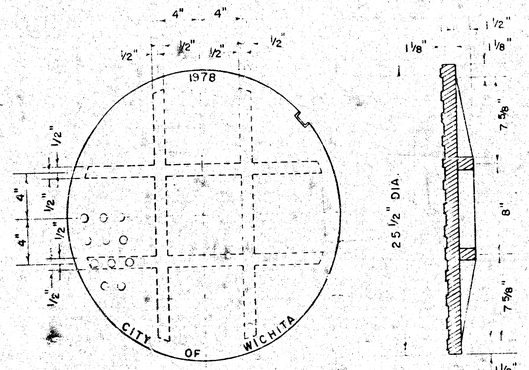
SECTION A-A
(SCALE 1" = 1' 0")

NOTE: CONCRETE TOPS TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK WALLS. CONCRETE TOPS MAY BE CAST IN PLACE OR PRECAST. CONCRETE FOR INLET TOPS AND FLOORS SHALL BE *STANDARD* PAVING MIX.

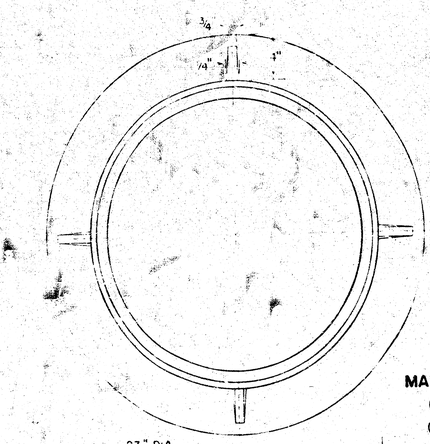


MANHOLE FRAME
(SCALE 1" = 6")
WEIGHT = 180 LBS.

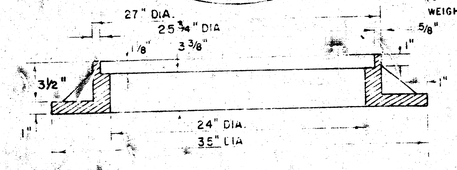




MANHOLE COVER
(SCALE 1" = 6")
WEIGHT = 170 LBS.



MANHOLE FRAME (ALTERNATE)
(SCALE 1" = 6")
WEIGHT = 180 LBS.



STEEL SCHEDULE

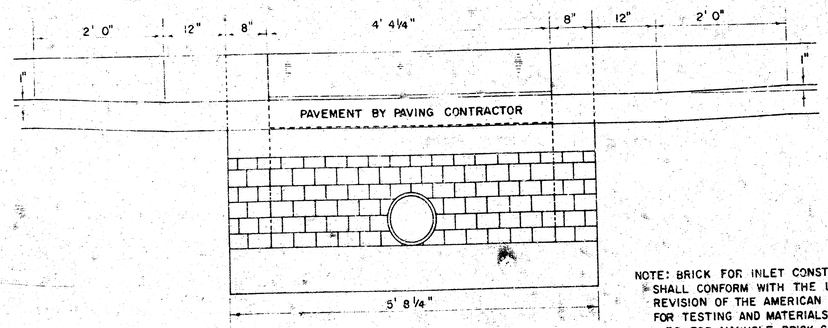
BAR	a_1	a_2	W=4'2"	W=5'0"	W=6'0"	W=7'0"	W=8'0"	b_2	b_3	b_4	WT. LBS.
NUMBER	8	2		3	5	7	9	6	1	1	
SIZE	#4	#4	#4	#4	#4	#4	#4	#4	#4	#6	
LENGTH W=4'2"	6' 5"	3' 4"	5' 5"	–	–	–	–	1' 5"	5' 6"	5' 5"	60#
LENGTH W=5'0"	8' 1"	4' 4"	–	5' 5"	–	–	–	1' 5"	5' 6"	5' 5"	77#
LENGTH W=6'0"	10' 1"	5' 4"	–	–	5' 5"	–	–	1' 5"	5' 6"	5' 5"	97#
LENGTH W=7'0"	11' 1"	6' 4"	–	–	–	5' 5"	–	1' 5"	5' 6"	5' 5"	111#
LENGTH W=8'0"	12' 1"	7' 4"	–	–	–	–	5' 5"	1' 5"	5' 6"	5' 5"	124#

* NOTE: a_2 BARS TO BE PLACED APPROX. 2" BELOW TOP OF INLET COVER

BENDING DIAGRAM

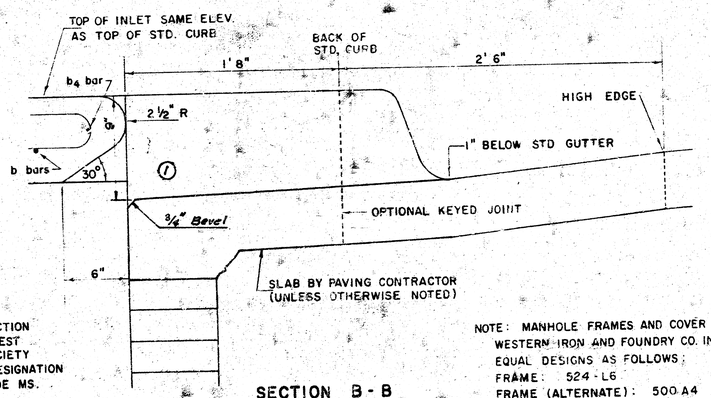
STANDARD CURB INLET PRECAST TOPS			
W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
4' 2"	3'6"x5'8 1/4"x7 1/2"	21" & SMALLER	0.46 *
5' 0"	4'4"x5'8 1/4"x7 1/2"	24" & 30"	0.57 *
6' 0"	5'4"x5'8 1/4"x7 1/2"	36" & 42"	0.71 *
7' 0"	6'4"x5'8 1/4"x7 1/2"	48" & 54"	0.84 *
8' 0"	7'4"x5'8 1/4"x7 1/2"	60" & 66"	0.97 *

* GROSS VOLUME



SECTION C-C
(SCALE 1" = 1' 0")

NOTE: BRICK FOR INLET CONSTRUCTION SHALL CONFORM WITH THE LATEST REVISION OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS DESIGNATION C-32 FOR MANHOLE BRICK GRADE MS.



SECTION B-B
(SCALE 1" = 6")

NOTE: MANHOLE FRAMES AND COVER ARE WESTERN IRON AND FOUNDRY CO. INC. OR EQUAL DESIGNS AS FOLLOWS;
FRAME: 524-L6
FRAME (ALTERNATE): 500-A4
COVER: 222-S4 "NOBBY."

(1) Rev. 5-18-81

DETAIL STANDARD TYPE IA CURB INLET

CITY OF WICHITA, KANSAS

R.W. BRUGGEMAN, DIRECTOR OF ENGINEERING/ CITY ENGINEER

8 4 JUNE, 1981 C

14

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