SHEET NO.	TOTAL SHEETS
1	13

CITY OF WICHITA, KANSAS
MICHAEL E. LINDEBAK, P.E., CITY ENGINEER

STREET IMPROVEMENTS

LAKE RIDGE CIRCLE - E.L. OF LOT 2, BLOCK 1, TO AND INCLUDING CUL-DE-SAC
SERVING LOTS 2 THROUGH 14, BLOCK 1 INCLUSIVE

IN

REFLECTION RIDGE ADDITION

CITY OF WICHITA PROJECT NO. 472-76-245-81716-000-000-001

INDEX OF SHEETS

PROJECT SURVEY CONTROL

PROJECT DATUM: CITY OF WICHITA DATUM

DATUM BENCH MARK: RAILROAD SPIKE IN SW SIDE OF POWER POLE LOCATED 75' NORTH AND 58' EAST OF THE CENTERLINE INTERSECTION OF RIDGE ROAD AND 21ST STREET NORTH.
ELEV. = 143.30

BENCH MARK: RAILROAD SPIKE IN SOUTH SIDE POWER POLE LOCATED APPROXIMATELY 1/4 MILE EAST OF TYLER ROAD ON NORTH SIDE OF 21ST STREET.
ELEV. = 171.66

BENCH MARK: RAILROAD SPIKE IN EAST FACE OF 18" ELM LOCATED APPROXIMATELY AT STA. 107+75, 192' RIGHT OF CENTERLINE OF TEE TIME.
ELEV. = 151.31

BENCH MARK: RAILROAD SPIKE IN SOUTH FACE OF 36" COTTONWOOD LOCATED APPROXIMATELY AT STA. 58+34.5, 23' LEFT OF CENTERLINE OF LAKE RIDGE COURT.
ELEV. = 161.05

BENCH MARK: TOP OF T-POST (1' BELOW GROUND SURFACE) LOCATED 3' NORTH OF THE NORTHEAST CORNER OF THE FIRST MENNONITE CHURCH PROPERTY (NORTHWEST CORNER OF LOT 49, BLOCK 2, REFLECTION RIDGE ADDITION).
ELEV. = 168.33

BENCH MARK: TOP OF T-POST (1' BELOW GROUND SURFACE) LOCATED 3' NORTH OF THE NORTHWEST CORNER OF THE FIRST MENNONITE CHURCH PROPERTY (APPROXIMATELY 1,315' WEST OF THE NW CORNER LOT 49, BLOCK 2, REFLECTION RIDGE ADDITION.
ELEV. = 168.94

EARTHWORK

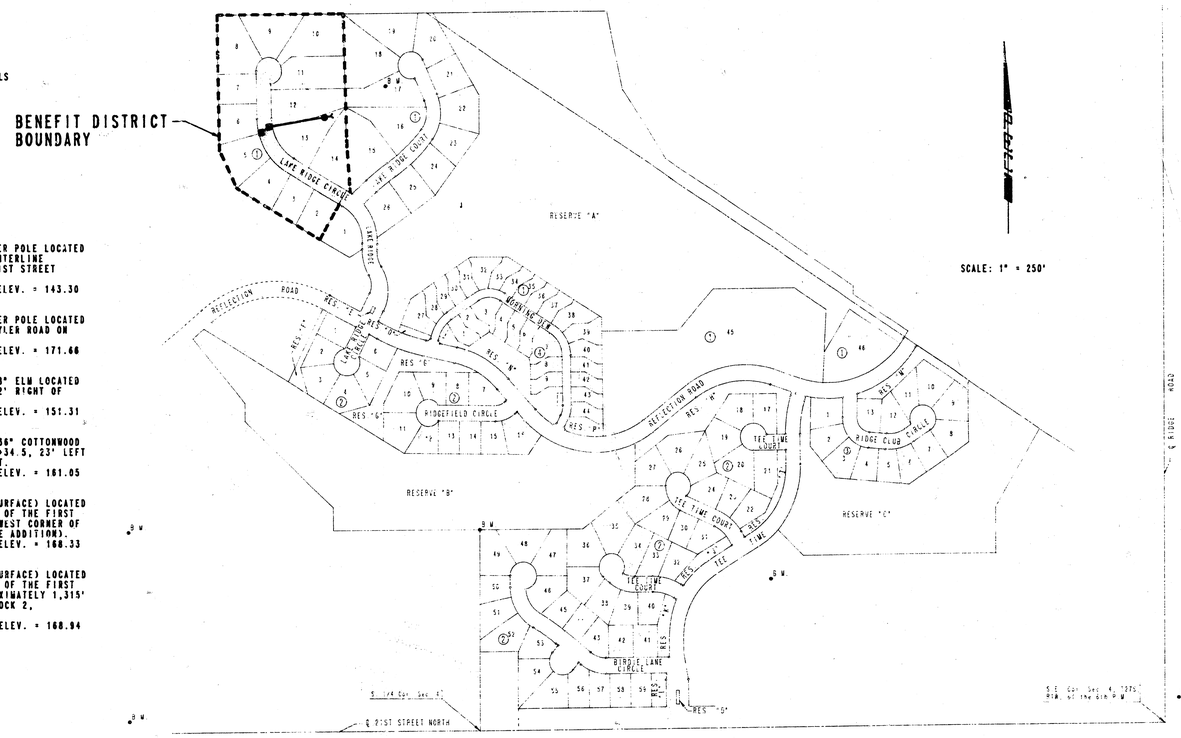
EXCAVATION

X-SECTIONS	1028 CU. YDS.
10%	103 CU. YDS.
TOTAL	1131 CU. YDS.

COMPACTED FILL

X-SECTIONS	0 CU. YDS.
10%	0 CU. YDS.
TOTAL	0 CU. YDS.

SUBGRADE MANIPULATION= 2,466.5 S.Y.



GENERAL NOTES

UNDERGROUND UTILITY SERVICE LINES AND OVERHEAD UTILITY POLE LINES ARE TO BE ADJUSTED AS NECESSARY BY OTHERS PRIOR TO CONSTRUCTION UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT BY THE CONTRACTOR. EXISTING UTILITIES AND THEIR LOCATION, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS UTILITY COMPANIES AND IS EITHER FROM COMPANY RECORD DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.

CONTRACTOR SHALL SATISFY HIMSELF OF SUBSURFACE CONDITIONS PRIOR TO CONSTRUCTION.

TREES AND SHRUBS IN PUBLIC RIGHT-OF-WAY WHICH ARE IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE REMOVED BY THE CONTRACTOR WITH THE ENGINEER'S APPROVAL. TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE SAVED AND PROTECTED FROM DAMAGE.

EXCESS EXCAVATED MATERIAL AND EXCESS TOPSOIL SHALL BE STOCKPILED OR WASTED ON THE PROJECT SITE OR WITHIN ONE-HALF MILE OF THE NORTH LINE LINE OF REFLECTION RIDGE ADDITION. THE CONTRACTOR SHALL CONTACT THE OWNER'S ENGINEER AT 262-2691 FOR INFORMATION PERTAINING TO THE ACCEPTABLE LOCATIONS FOR THE DISPOSITION OF EXCESS MATERIAL. WASTE MATERIAL SHALL BE GRADED SMOOTH AND SLOPED TO DRAIN. THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO OTHER BID ITEMS.

A SAW CUT OF AT LEAST ONE-HALF THE DEPTH OF EXISTING SURFACE COURSES OR ONE-FOURTH THE DEPTH OF THE EXISTING TOTAL PAVEMENT THICKSESS SHALL BE PROVIDED AT LOCATIONS WHERE PROPOSED CONSTRUCTION ABUTS AN EXISTING SURFACE CGURSE OR PAVEMENT FOR WHICH PARTIAL REMOVAL OF THAT SURFACE OR PAVEMENT IS REQUIRED. SAWED JOINT TO FACILITATE REMOVAL WITHIN THREE (3) FEET OF EXISTING JOINTS WILL NOT BE PERMITTED AND FOR SUCH INSTANCES THE LIMITS OF REMOVAL SHALL EXTEND TO THE EXISTING JOINT. SUCH SAW CUTS WILL NOT BE PAID FOR DIRECTLY AND THIS COST SHALL BE CONSIDERED AS SUBSIDIARY TO REMOVAL OF THE SURFACE OR PAVEMENT.

LIMITS OF EARTHWORK SHALL MATCH EXISTING GROUND ELEVATIONS AT THE RIGHT-OF-WAY LINE UNLESS OTHERWISE NOTED ON THE PLANS WITH A NEW FINISHED GRADE ELEVATION. WHEN A NEW FINISHED GRADE ELEVATION IS SHOWN, THE EARTHWORK SHALL EXTEND ONE FOOT BEYOND THE RIGHT-OF-WAY LINE AND THEN SLOPED UP OR DOWN USING PERMISSABLE SLOPES TO MATCH THE EXISTING GROUND SURFACE.

THIS PROJECT INCLUDES A CERTAIN AMOUNT OF ROLL TYPE CURB CONSTRUCTION. ROLL CURBS SHALL BE DEPRESSED THROUGH ALL DRIVEWAY OPENINGS WHEN SUCH DRIVES ARE CONSTRUCTED AS A PART OF THE PROJECT.

THE CONTRACTOR SHALL SEED, FERTILIZE, AND MULCH THE DRAINAGE EASEMENT BETWEEN LOTS 12 & 13, BLOCK 1 IN ACCORDANCE WITH CITY OF WICHITA STANDARD SPECIFICATIONS. THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO OTHER BID ITEMS.

JANUARY, 1988

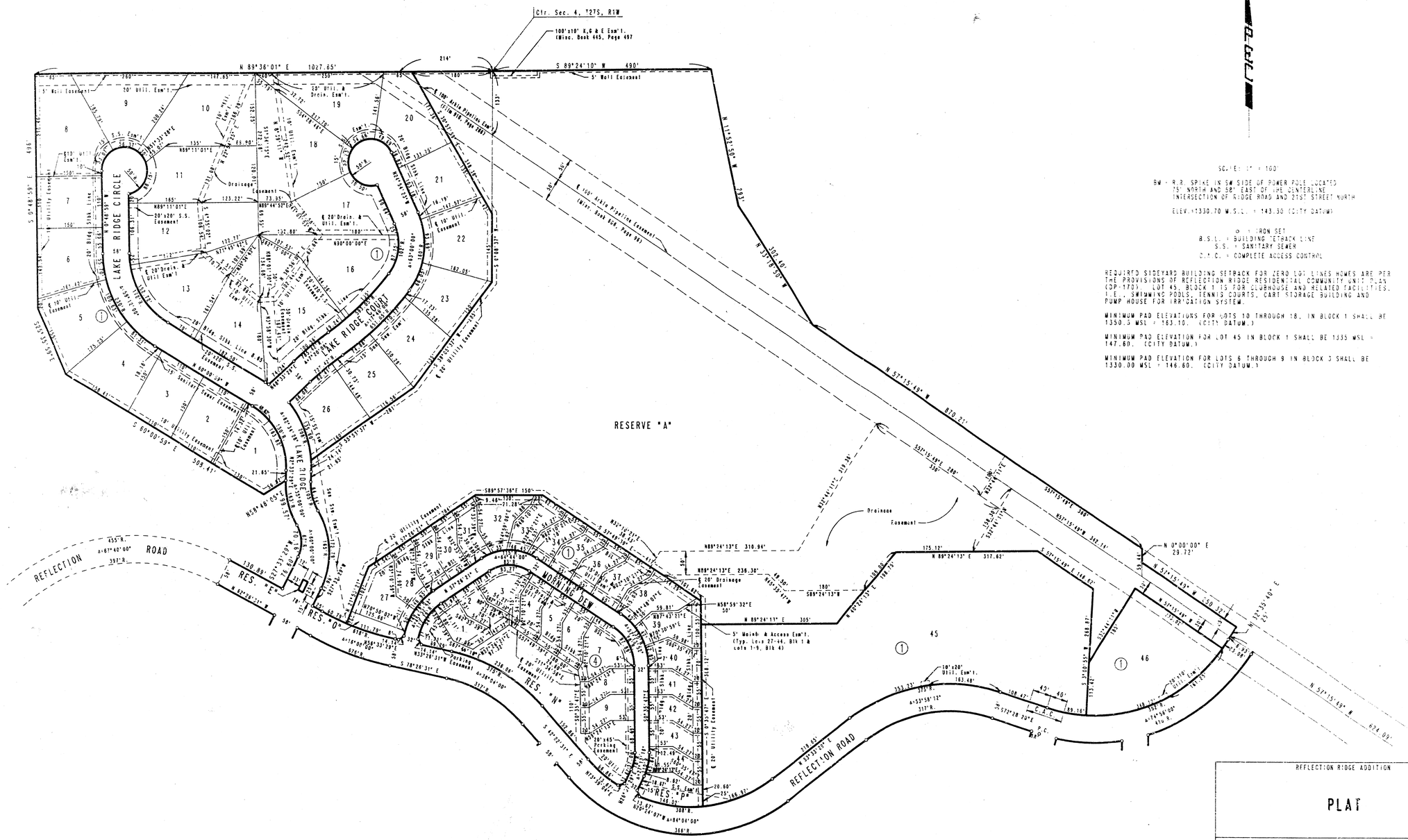
PLANS PREPARED BY
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

CHARLES S. BROWN LICENSED 7581 KANSAS PROFESSIONAL ENGINEER

PROJECT NO.	SHEET NO.	TOTAL SHEETS
472-76-245-81716-009-000-001	2	13

REFLECTION RIDGE

AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS



SCALE: 1" = 100'

BM = R.R. SPIKE IN SW SIDE OF POWER POLE LOCATED 75' NORTH AND 58' EAST OF THE CENTERLINE INTERSECTION OF RIDGE ROAD AND 21ST STREET NORTH

ELEV. = 1330.70 M.S.L. = 143.30 (CITY DATUM)

⊙ = IRON SET
B.S.L. = BUILDING SETBACK LINE
S.S. = SANITARY SEWER
C.A.C. = COMPLETE ACCESS CONTROL

REQUIRED SIDEYARD BUILDING SETBACK FOR ZERO LOT LINES HOMES ARE PER THE PROVISIONS OF REFLECTION RIDGE RESIDENTIAL COMMUNITY UNIT PLAN (CUP-170). LOT 45, BLOCK 1 IS FOR CLUBHOUSE AND RELATED FACILITIES, I.E., SWIMING POOLS, TENNIS COURTS, CART STORAGE BUILDING AND PUMP HOUSE FOR IRRIGATION SYSTEM.

MINIMUM PAD ELEVATIONS FOR LOTS 10 THROUGH 18, IN BLOCK 1 SHALL BE 1350.5 MSL = 163.10. (CITY DATUM.)

MINIMUM PAD ELEVATION FOR LOT 45 IN BLOCK 1 SHALL BE 1335 MSL = 147.60. (CITY DATUM.)

MINIMUM PAD ELEVATION FOR LOTS 6 THROUGH 9 IN BLOCK 3 SHALL BE 1330.00 MSL = 146.60. (CITY DATUM.)

REFLECTION RIDGE ADDITION

PLAT

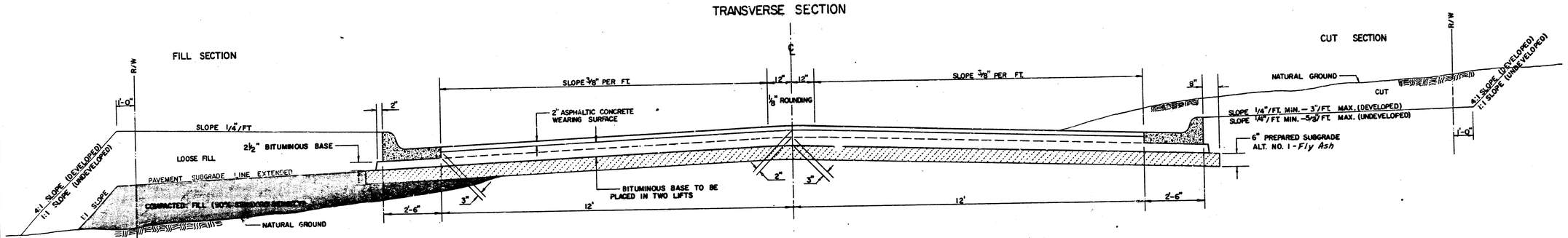
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

2/13

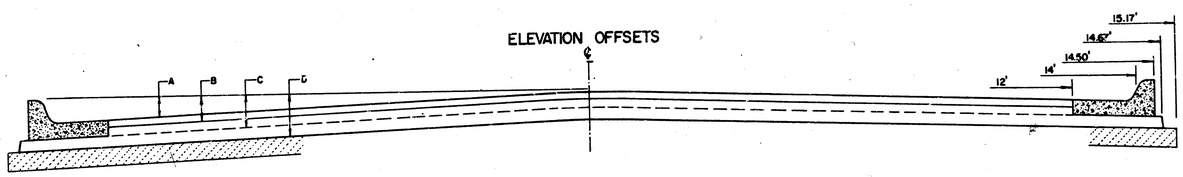
Designed by		Checked by	
Drawn by	DEP	Date DEC., 1988	Job No. 87190

TYPICAL 29' PAVEMENT DETAILS

TRANSVERSE SECTION

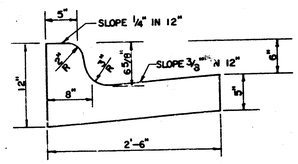


ELEVATION OFFSETS

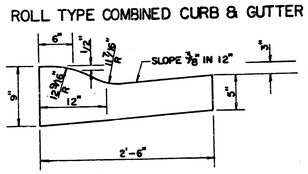


	DISTANCE FROM CENTERLINE (LT. & RT.)											
	0'	2'	4'	6'	7'	8'	10'	12'	14'	14.5'	14.67'	15.17'
A: TOP OF CURBS TO TOP OF SURFACE LIFT	0.13	0.18	0.24	0.30	0.33	0.36	0.43	0.49	—	—	—	—
B: TOP OF CURBS TO TOP OF UPPER BASE LIFT	0.30	0.35	0.41	0.47	0.50	0.53	0.60	0.66	—	—	—	—
C: TOP OF CURBS TO TOP OF LOWER BASE LIFT	0.47	0.52	0.60	0.68	0.71	0.75	0.83	0.90	0.98	1.00	1.01	—
D: TOP OF CURBS TO TOP OF SUBGRADE	0.72	0.77	0.84	0.91	0.94	0.98	1.05	1.12	1.19	1.21	1.21	1.23

COMBINED CURB & GUTTER



ROLL TYPE COMBINED CURB & GUTTER



GENERAL NOTES

1) THE ASPHALTIC CONCRETE PAVEMENT BETWEEN THE COMBINED CURB AND GUTTER SHALL BE PAID AS SQUARE YARDS OF 7" ASPHALTIC CONCRETE (5" BITUMINOUS BASE).

2) THE BITUMINOUS BASE UNDER AND BEHIND THE COMBINED CURB AND GUTTER SHALL BE PAID AS SQUARE YARDS OF 2 1/2" BITUMINOUS BASE.

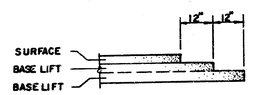
3) A TACK COAT OF EMULSIFIED ASPHALT (SC-1H OR CSS-1H) SHALL BE APPLIED AT AN APPROXIMATE RATE OF 0.05 GALLONS PER SQUARE YARD BETWEEN EACH LIFT OF ASPHALTIC MATERIAL.

4) BITUMINOUS BASE AND ASPHALTIC CONCRETE WEARING SURFACE SHALL BE PLACED WITH A LAYDOWN MACHINE HAVING AUTOMATIC CONTROLS FOR LINE AND GRADE.

5) CONSTRUCTION JOINTS IN EACH LIFT SHALL BE STAGGERED A MINIMUM DISTANCE OF ONE (1) FOOT FROM JOINTS IN PRECEDING LIFTS AND PLACED SO THAT A JOINT WILL BE CONSTRUCTED ON THE CENTERLINE OF THE TOP LIFT.

6) CONTRACTOR TO BID ONLY ONE SUBGRADE TREATMENT ALTERNATE WHEN ALTERNATES ARE PROVIDED IN THE PROPOSAL AND CONTRACT. THE ALTERNATE CHOSEN BY THE SUCCESSFUL BIDDER SHALL BE USED IN CONSTRUCTING THIS PROJECT.

TRANSVERSE CONSTRUCTION JOINTS



TRANSVERSE CONSTRUCTION JOINTS SHALL BE CONSTRUCTED IN FLEXIBLE BASE PAVEMENTS AT LOCATIONS WHERE PAVEMENT JOINS EXISTING FLEXIBLE BASE PAVEMENT AS SHOWN BY THE DETAIL. ALL COSTS ASSOCIATED WITH THE CONSTRUCTION OF THE TRANSVERSE JOINT SHALL BE INCLUDED IN THE BID PRICE FOR SQUARE YARDS 7" ASPHALTIC CONCRETE (5" BITUMINOUS BASE).

7 INCH RESIDENTIAL ASPHALTIC CONCRETE PAVEMENT WITH 5 INCH BITUMINOUS BASE

CITY OF WICHITA, KANSAS

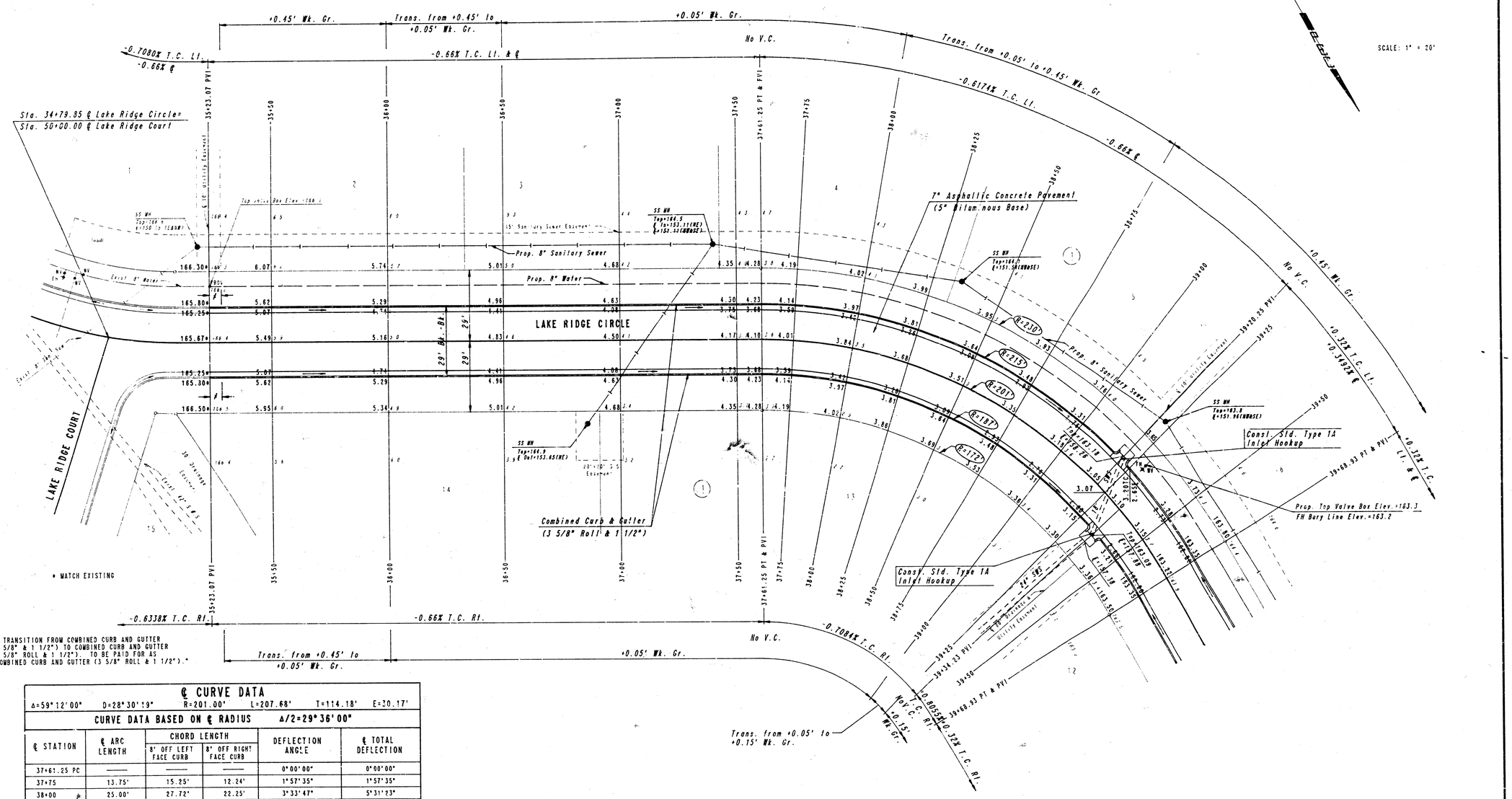
PROJECT NUMBER

472-76-245-81716-000-000-001

3/13

PROJECT NO.	SHEET NO.	TOTAL SHEETS
472-76-245-81716-000-000-001	4	13

SCALE: 1" = 20'



/ 5' TRANSITION FROM COMBINED CURB AND GUTTER (6 5/8" & 1 1/2") TO COMBINED CURB AND GUTTER (3 5/8" ROLL & 1 1/2") TO BE PAID FOR AS "COMBINED CURB AND GUTTER (3 5/8" ROLL & 1 1/2")."

℄ CURVE DATA

Δ=59°12'00" D=28°30'19" R=201.00' L=207.68' T=114.18' E=20.17'

CURVE DATA BASED ON ℄ RADIUS Δ/2=29°36'00"

℄ STATION	℄ ARC LENGTH	CHORD LENGTH 8' OFF LEFT FACE CURB	CHORD LENGTH 8' OFF RIGHT FACE CURB	DEFLECTION ANGLE	℄ TOTAL DEFLECTION
37+61.25 PC	——	——	——	0°00'00"	0°00'00"
37+75	13.75'	15.25'	12.24'	1°57'35"	1°57'35"
38+00	25.00'	27.72'	22.25'	3°33'47"	5°31'23"
38+25	25.00'	27.72'	22.25'	3°33'47"	9°05'10"
38+50	25.00'	27.72'	22.25'	3°33'47"	12°38'57"
38+75	25.00'	27.72'	22.25'	3°33'47"	16°12'45"
39+00	25.00'	27.72'	22.25'	3°33'47"	19°46'32"
39+20.25	20.75'	22.46'	18.03'	2°53'10"	22°39'42"
39+25	4.75	5.27'	4.23'	0°40'37"	23°20'20"
39+34.23	9.23'	10.24'	8.21'	1°18'56"	24°39'15"
39+50	15.77'	17.49'	14.04'	2°14'52"	26°54'07"
39+68.93 PT	18.93'	20.99'	16.85'	2°41'53"	29°36'00"

Defl./ft.=8.551618 min.

NOTE: THIS STREET TO BE CONSTRUCTED WITH ROLL-TYPE CURB. TOP OF CURB ELEVATIONS GIVEN ARE FOR FULL HEIGHT CURB.

LAKE RIDGE CIRCLE

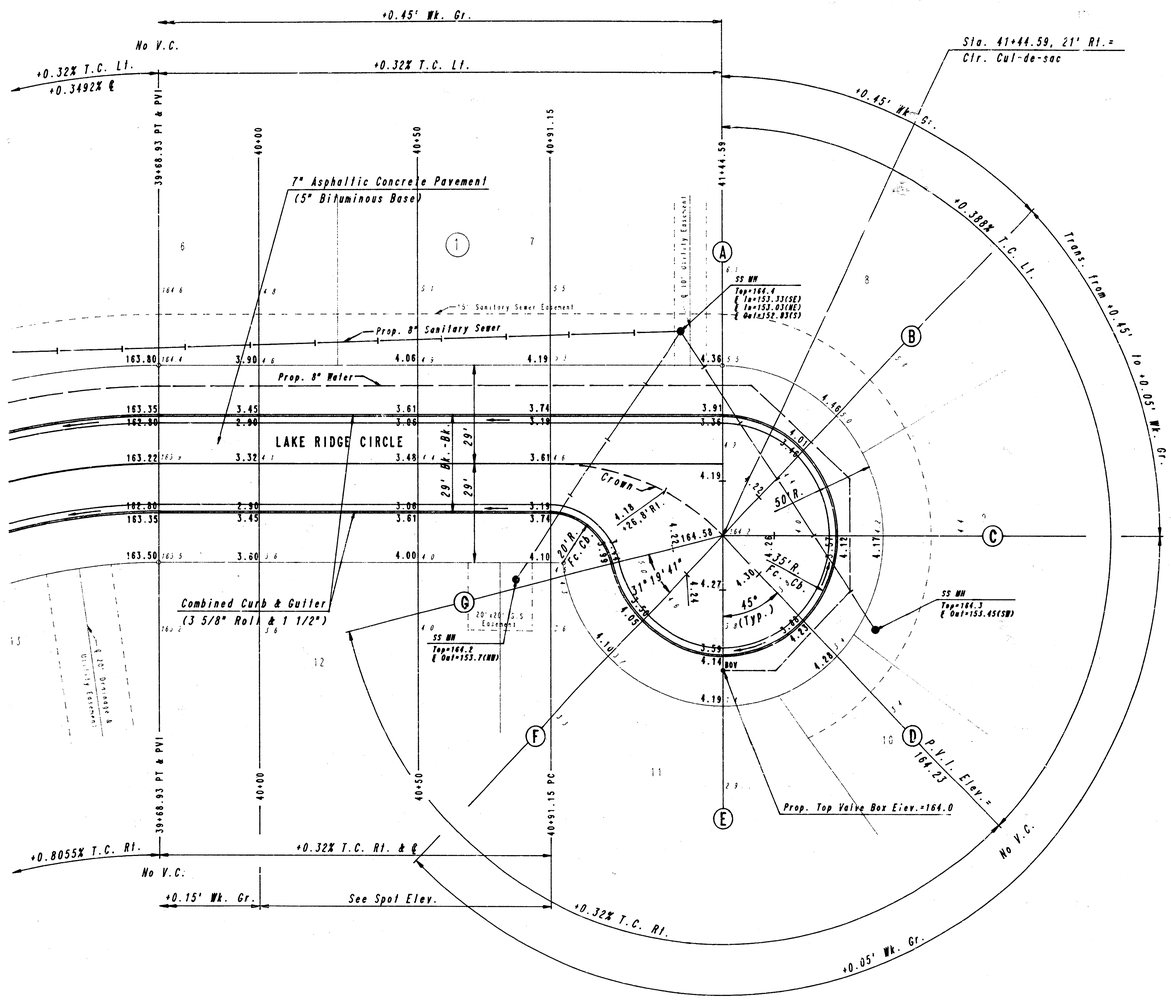
STA. 35+23.07 TO STA. 39+68.93

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

4/13

Designed by	CSB, GDD	Checked by	
Drawn by	DEP	Date JAN., 1988	Job No. 87590

PROJECT NO.	SHEET NO.	TOTAL SHEETS
472-76-245-61716-000-000-001	5	13



SCALE: 1" = 20'

NOTE: THIS STREET TO BE CONSTRUCTED WITH ROLL-TYPE CURB. TOP OF CURB ELEVATIONS GIVEN ARE FOR FULL HEIGHT CURB.

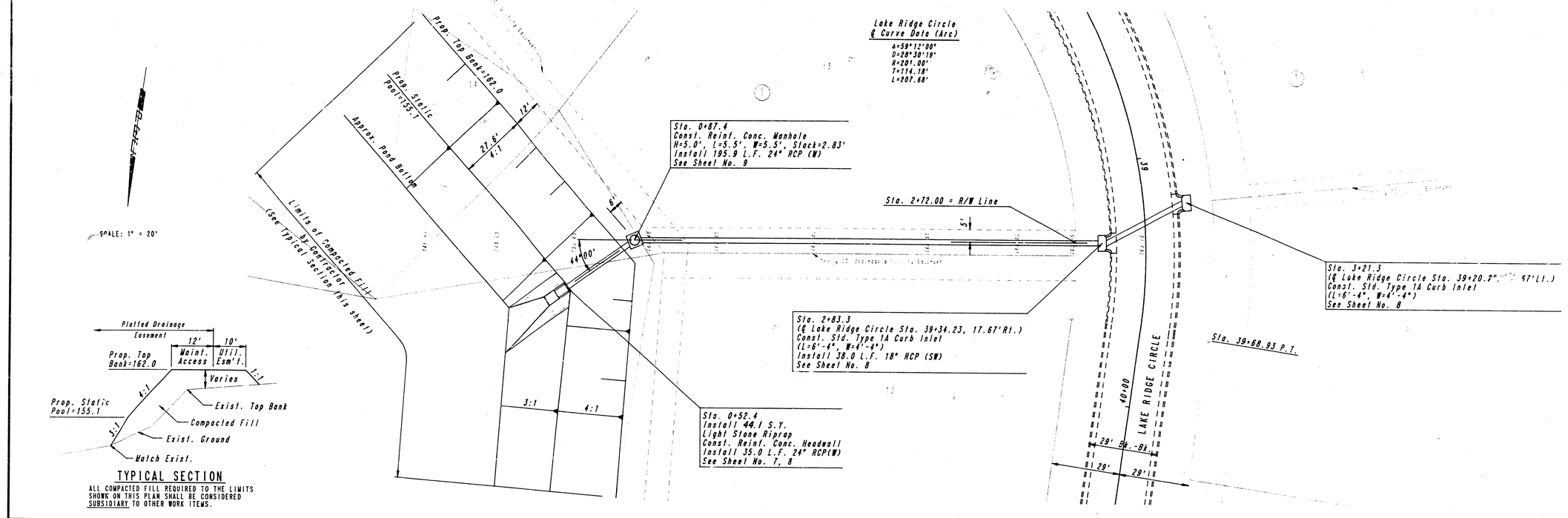
LAKE RIDGE CIRCLE

STA. 39+68.93 TO STA. 41+44.59

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

5/13

Designed by	CSB, GJD	Checked by	
Drawn by	DEP	Date JAN., 1988	Job No. 87590



REFLECTION RIDGE

S.W.S. IMPROVEMENT

C.O.W. PROJECT NO. 472-76-245-81716-000-000-001

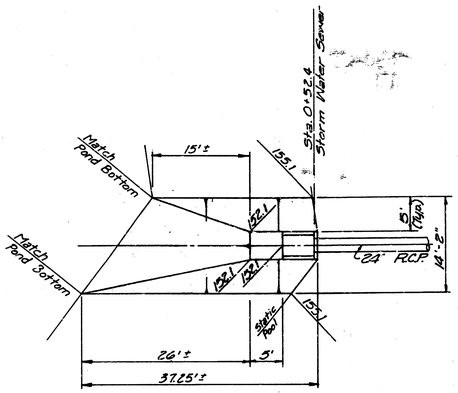
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Designed By	CSB, GDD
Drawn By	DEP
Job No.	32-67590
Date	JAN., 1988

6/13

Sheet 6 of 13

PROJECT NO.	SHEET NO.	TOTAL SHEETS
472-76-215-81716-000-000-001	7	13



RIPRAP PLAN
1" = 10'

RIPRAP GENERAL NOTES

ALL RIPRAP FOR THIS PROJECT SHALL BE NATURAL STONE. NEITHER THE BROKEN CONCRETE, FABRIC ENVELOPE NOR PREMIXED DRY PACKAGED CONCRETE BAG ALTERNATES WILL BE ALLOWED.

GROUTING OF THE SURFACE OF THE RIPRAP SHALL NOT BE PERFORMED. GROUTING OF THE TOEWALLS SHALL BE PERFORMED PER CITY SPECIFICATIONS.

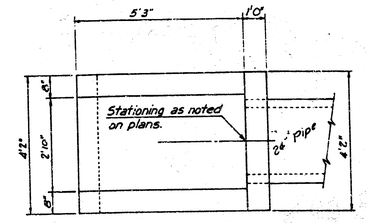
TOEWALLS SHALL BE INSTALLED ALONG ALL EDGES OF STONE RIPRAP.

CONCRETE HEADWALL NOTES

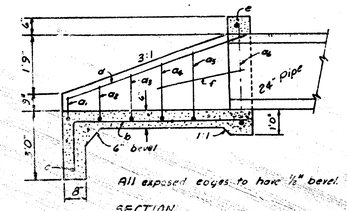
CONCRETE: BEVEL ALL EXPOSED EDGES WITH A 3/4" TRIANGULAR MOLDING OR FINISH WITH AN APPROVED EDGING TOOL. CONCRETE SHALL BE AS PER CITY OF WICHITA STANDARD SPECIFICATIONS FOR CONCRETE PAVING MIX EXCEPT THAT IT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 P.S.I. ALL PIPES SHALL BE MITER CUT PRIOR TO BEING CAST INTO THE HEADWALL.

REINFORCING STEEL: ALL DIMENSIONS RELATIVE TO REINFORCING STEEL ARE TO CENTERLINE OF BAR UNLESS OTHERWISE NOTED. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. DESIGNATION A615 GRADE 60 AND SHALL BE EPOXY COATED.

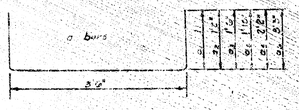
PAYMENT: A DEDUCTION IN CONCRETE QUANTITIES HAS BEEN MADE FOR THE PIPE OPENING. THE "HEADWALL (24") (REINFORCED CONCRETE)" SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH IN PLACE INCLUDING CONCRETE, REINFORCING STEEL, EXCAVATION AND ALL OTHER MISCELLANEOUS MATERIALS, LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK. QUANTITIES SHOWN ARE FOR INFORMATION ONLY.

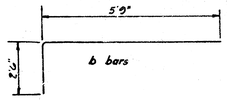


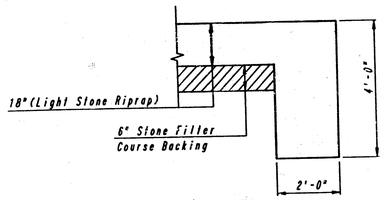
PLAN



SECTION







TYPICAL SECTION THRU TOEWALL
NO SCALE

TABLE OF QUANTITIES				
BAR	NUMBER	LENGTH	SHAPE	WEIGHT
a_1	1	5'4"	⌐	3.56
a_2	1	5'10"	⌐	3.90
a_3	1	6'6"	⌐	4.34
a_4	1	7'2"	⌐	4.79
a_5	1	7'10"	⌐	5.23
a_6	1	10'0"	⌐	6.68
b	6	8'5"	⌐	33.07
c	1	3'10"	—	2.56
d	2	6'2"	—	8.24
e	1	5'10"	—	2.56
f	2	3'0"	—	4.01
Total Rebar, lbs				78.90
Concrete, CY				1.56

All Rebars to be #4

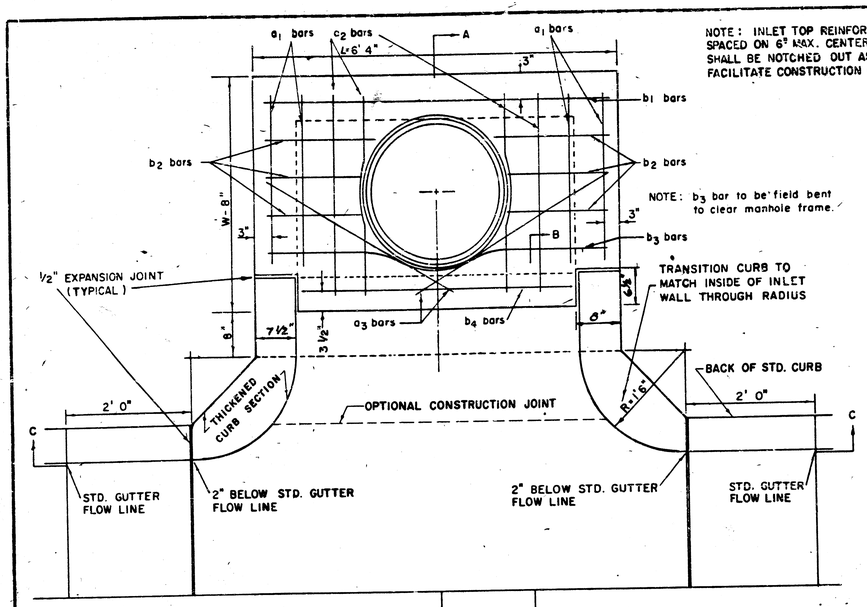
HEADWALL FOR 24" PIPE

MISCELLANEOUS DETAILS

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

7/13

Designed by	CSB	Checked by		
Drawn by		Date	Jan 88	Job No. 87590

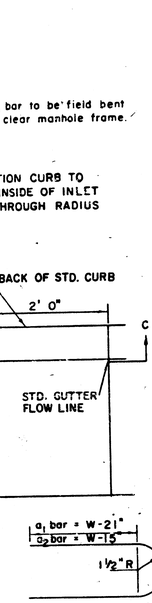


NOTE: EXPANSION JOINT ONLY IN CURB AREA WITH CONC. PAVEMENT.

PLAN

NOTE: INLET TOP REINFORCING SHALL BE SPACED ON 6" MAX. CENTERS. INLET LIDS SHALL BE NOTCHED OUT AS INDICATED TO FACILITATE CONSTRUCTION OF CURB.

NOTE: b_3 bar to be field bent to clear manhole frame.



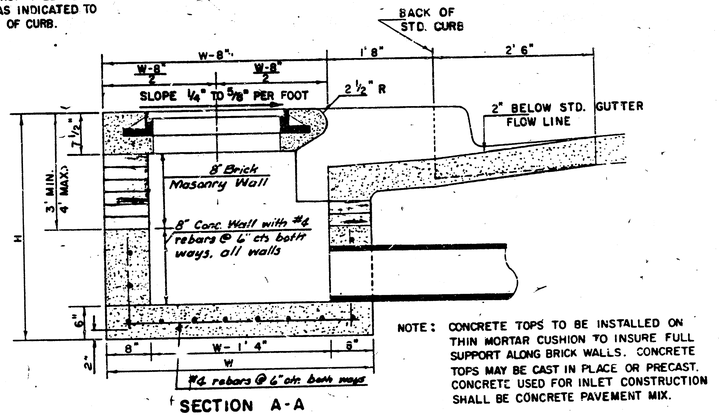
BENDING DIAGRAM

STEEL SCHEDULE

BAR	a_1	a_2	a_3*	b_1 W=4'4"	W=5'4"	W=6'4"	W=7'4"	W=8'4"	b_2	b_3	b_4	WT. LBS.
NUMBER	4	4	2	1	3	5	7	9	6	1	1	
SIZE	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#6	
LENGTH W=4'4"	5'7"	6'7"	4'0"	6' 1"	–	–	–	–	1' 9"	6'2"	4'8"	60±
LENGTH W=5'4"	7'7"	8'7"	5'0"	–	6' 1"	–	–	–	1' 9"	6'2"	4'8"	81 ±
LENGTH W=6'4"	9'7"	10'7"	6'0"	–	–	6' 1"	–	–	1' 9"	6'2"	4'8"	101±
LENGTH W=7'4"	11'7"	12'7"	7'0"	–	–	–	6' 1"	–	1' 9"	6'2"	4'8"	121 ±
LENGTH W=8'4"	13'7"	14'7"	8'0"	–	–	–	–	6' 1"	1' 9"	6'2"	4'8"	141±

* NOTE: a_3 BARS TO BE PLACED APPROX. 2" BELOW TOP OF INLET COVER

STANDARD CURB INLET PRECAST TOPS			
W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
4' 4"	3'8"x 6'4" x7 1/2"	21" & SMALLER	0.38 ±
5' 4"	4'8"x 6'4" x7 1/2"	24" & 30"	0.51 ±
6' 4"	5'8"x 6'4" x7 1/2"	36" & 42"	0.64 ±
7' 4"	6'8"x 6'4" x7 1/2"	48" & 54"	0.77 ±
8' 4"	7'8"x 6'4" x7 1/2"	60" & 66"	0.90 ±



SECTION A-A

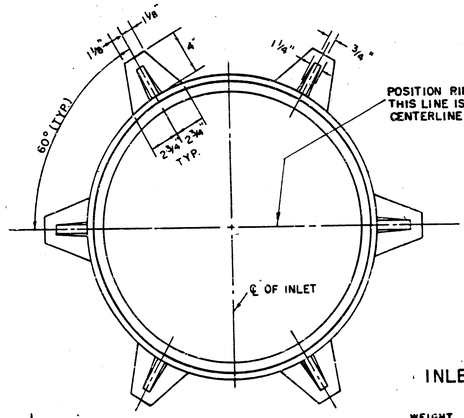
NOTE: CONCRETE TOPS TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK WALLS. CONCRETE TOPS MAY BE CAST IN PLACE OR PRECAST. CONCRETE USED FOR INLET CONSTRUCTION SHALL BE CONCRETE PAVEMENT MIX.

NOTE: CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING 8" BRICK MASONRY WALLS BETWEEN THE CONCRETE INLET BASE AND TOP ON THIS INLET WHEN W = 6'4" AND H = 7'0" OR LESS.

ADDITIONAL CURB AND GUTTER CONSTRUCTION NECESSARY TO CONNECT SET-BACK INLET TO PAVEMENT WILL BE PAID FOR AT THE UNIT PRICE BID FOR EACH INLET HOOKUP.

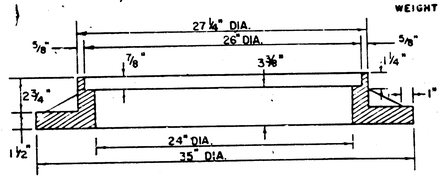
INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.

THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.

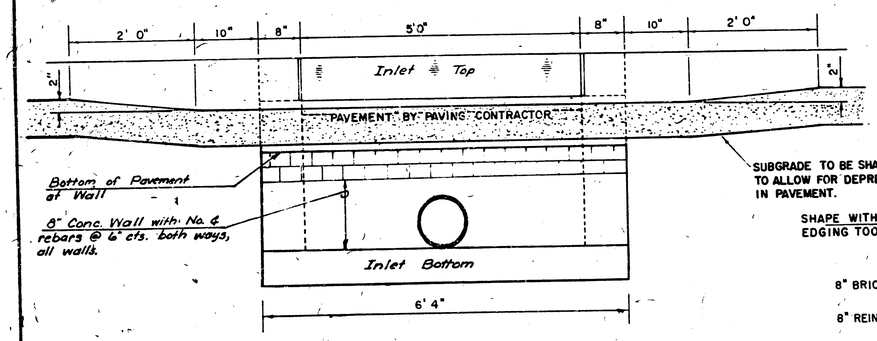


INLET FRAME

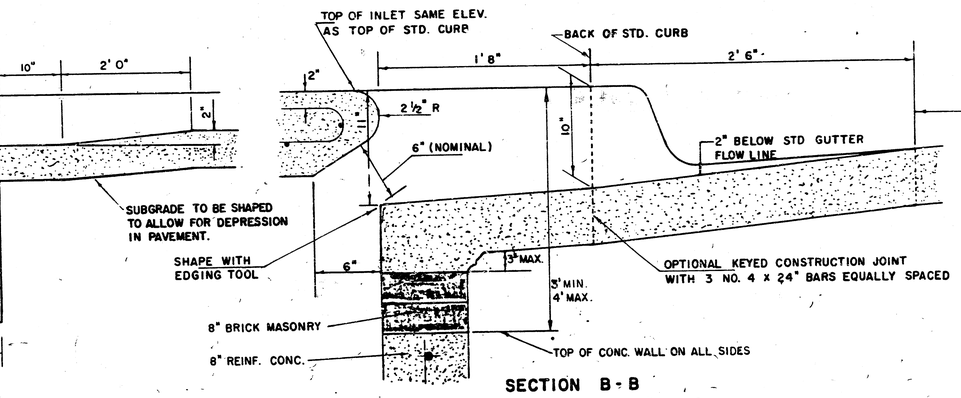
WEIGHT = 180 LBS.



SEE CITY OF WICHITA STANDARD MANHOLE FRAME AND COVER DETAIL SHEET FOR COVER DETAILS TO BE USED WITH INLET FRAME.



SECTION C-C



SECTION B-B

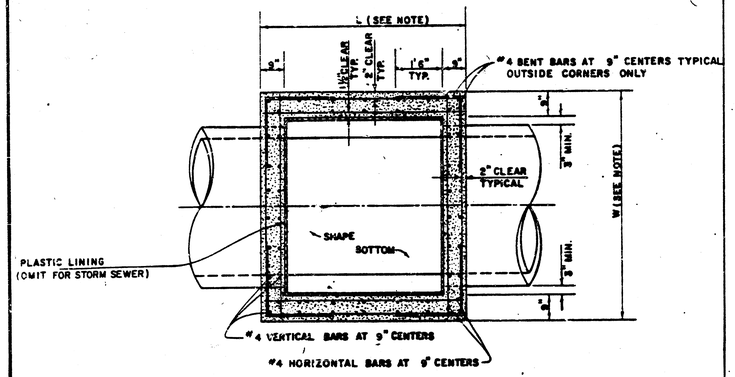
REVISED 12-21-1984 Proj. No. 472-76-245-81716-000-000-001

DETAIL STANDARD TYPE IA CURB INLET

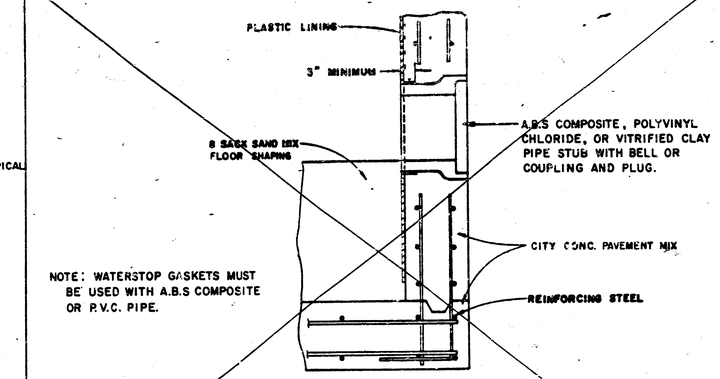
CITY OF WICHITA, KANSAS

INLET OPENING = 6" x 5' 0"
(L=6'-4")

JUNE 1984

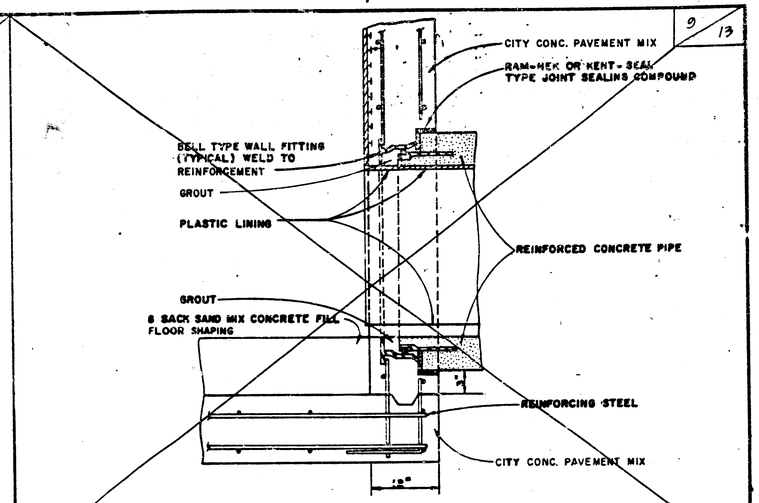


TOP VIEW

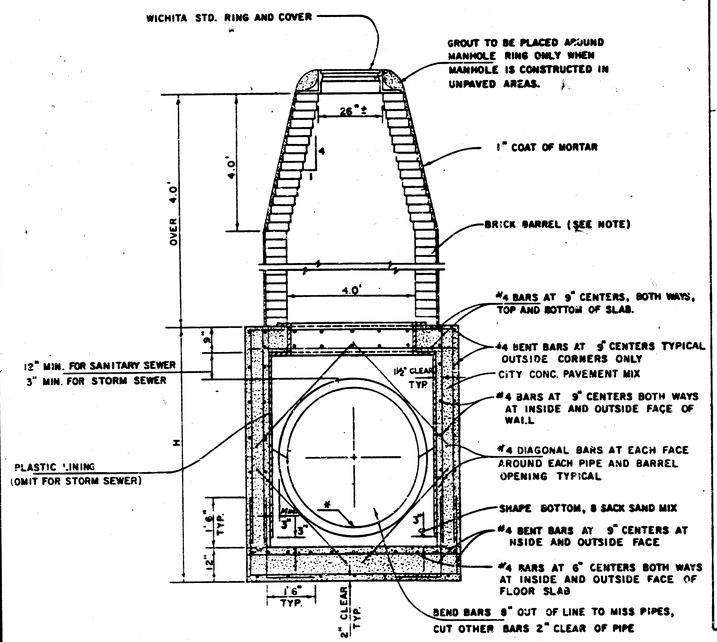


NOTE: WATERSTOP GASKETS MUST BE USED WITH A.B.S COMPOSITE OR P.V.C. PIPE.

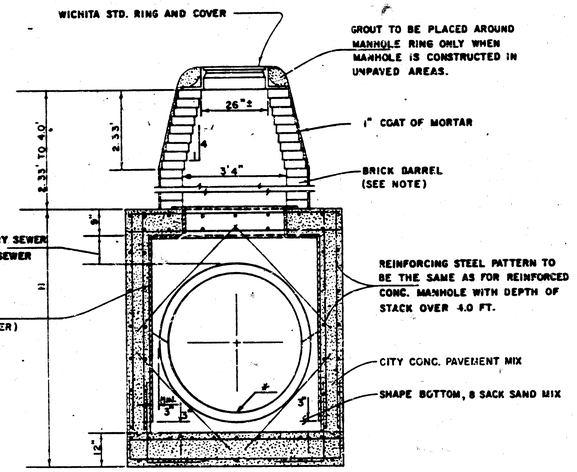
PIPE STUB DETAIL
SANITARY SEWER ONLY



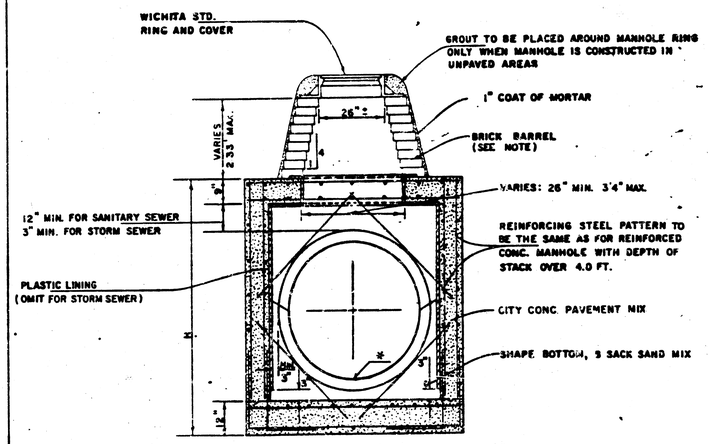
R.C.P. CONNECTION DETAIL
SANITARY SEWER ONLY



REINFORCED CONCRETE MANHOLE
DEPTH OF STACK: OVER 4.0'
SCALE 1" = 2'



REINFORCED CONCRETE MANHOLE
DEPTH OF STACK: 2.33' TO 4.0'
SCALE 1" = 2'



REINFORCED CONCRETE MANHOLE
DEPTH OF STACK: 0' TO 2.33'
SCALE 1" = 2'

NOTE:
BRICK BARRELS LESS THEN 16' DEEP SHALL HAVE 8" WALLS EXCEPT WHEN LOCATED WITHIN PUBLIC STREET OR ALLEY PAVEMENT THEN THE WALL SHALL BE 12". BRICK BARRELS MORE THEN 16' DEEP SHALL HAVE 12" WALLS. THE "L" AND "W" DIMENSIONS SHALL BE A MINIMUM OF 5'6" FOR BRICK BARRELS WITH 8" WALLS AND 6'2" FOR BRICK BARRELS WITH 12" WALLS WHEN THE BRICK BARRELS ARE OVER 4 FT. IN HEIGHT. COMLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATERTIGHT.

* R.E. Elev. as called out on plan & profile

REVISIED 1-7-85 Proj. No. 472-76-245-81716-000-000-001

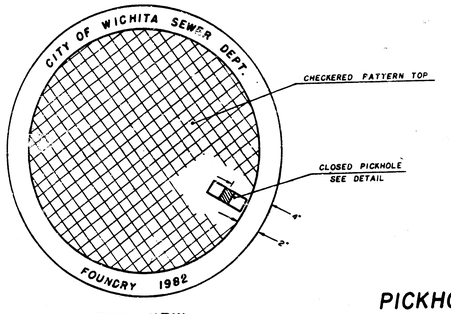
STANDARD DETAILS
REINFORCED CONCRETE MANHOLES
CITY OF WICHITA

FEBRUARY 1984

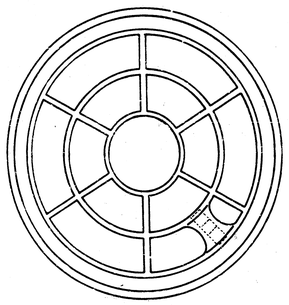
MANHOLE FRAME AND COVER DETAIL

ADOPTED AS STANDARD DESIGN
BY
City of Wichita, Kansas

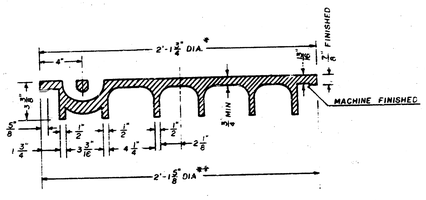
MANHOLE COVER
Weight: 180 Lbs.



TOP VIEW



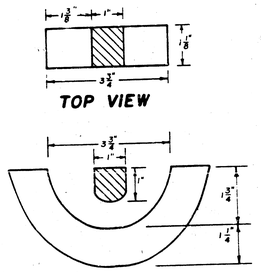
BOTTOM VIEW



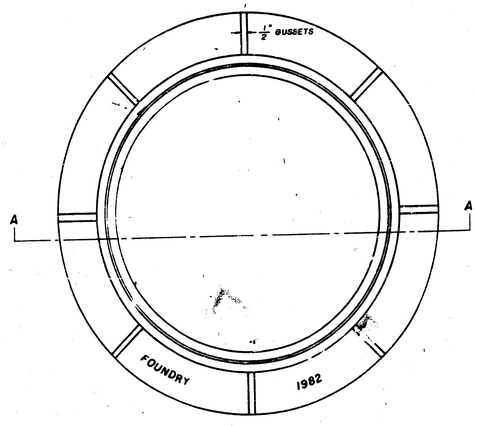
SECTION VIEW

* OUTSIDE DIA TOP OF COVER
** OUTSIDE DIA BOTTOM OF COVER

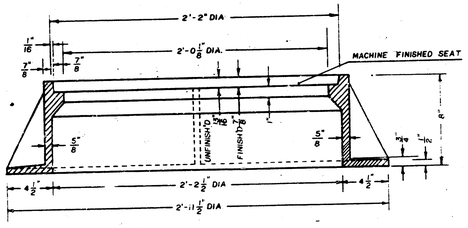
PICKHOLE DETAIL



MANHOLE FRAME
Weight: 240 Lbs.



TOP VIEW



SECTION A-A

GENERAL NOTES

1. MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS AND WEIGHTS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AS MIMIMUN REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTIONS OR OTHER DEFECTS.

2. MANHOLE CASTINGS SHALL BE COATED WITH AN ASPHALT PAINT RESULTING IN A SMOOTH, TOUGH AND TENACIOUS COATING WHICH IS NOT BRITTLE OR TACKY.

3. MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDRY WILL FIT INTERCHANGEABLY INTO A FRAME MANUFACTURED BY ANOTHER FOUNDRY AND STILL MEET ALLOWABLE CLEARANCES AND NON-ROCKING REQUIREMENTS. THIS WILL REQUIRE MANUFACTURING OF THE MATCHING FACES ON THE COVER AND THE FRAME TO CLOSE TOLERANCES.

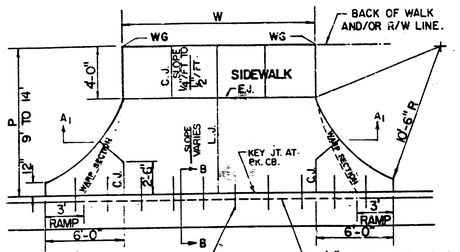
4. THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME RECESS SHALL BE MANUFACTURED TO TOLERANCES SUCH THAT THE CLEARANCE BETWEEN THE COVER AND FRAME WILL NOT EXCEED 1/8" AT ANY POINT AROUND THE CIRCUMFERENCE OF THE COVER. THE SEATING SURFACES BETWEEN THE COVER AND FRAME SHALL BE MACHINED SUCH THAT THESE SURFACES SHALL MAKE FULL CONTACT FOR THEIR FULL CIRCUMFERENCE TO PRECLUDE THE COVER FROM ROCKING IN THE FRAME.

5. THE MANHOLE FRAME AND COVER SHALL BE MARKED WITH LETTERING INDICATING THE NAME OF THE MANUFACTURER AND THE YEAR WHEN THE COVER OR FRAME WAS CAST. THE COVER SHALL BE FURTHER IDENTIFIED WITH REGARDS TO OWNERSHIP USING LETTERS AT LEAST 1" IN HEIGHT. THIS IDENTIFICATION SHALL BE "CITY OF WICHITA SEWER DEPARTMENT". THE WORD DEPARTMENT MAY BE ABBREVIATED. THE TEXTURE OF THE TOP SURFACE OF THE COVER SHALL BE MANUFACTURED IN A CHECKERED PATTERN DESIGN AS INDICATED ON THE DRAWINGS. SMOOTH BLOCKOUTS SHALL BE UTILIZED TO HIGHLIGHT THE LETTERING ON THE COVER SURFACE. THE TOTAL AREA OF SMOOTH SURFACE BLOCKOUT SHALL NOT EXCEED THE AREA AS INDICATED ON THE DRAWING. POSITIONING OF SMOOTH BLOCKOUTS AND LETTERING MAY VARY FROM THAT SHOWN ON THE DETAILED DRAWING.

JHL DEC. 1981

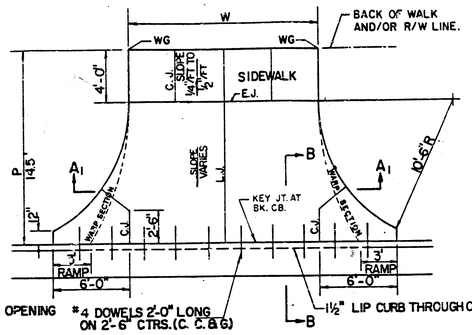
Proj. No. 472-76-215-81716-000-000-001

ALT. LONGITUDINAL CONSTRUCTION JOINT



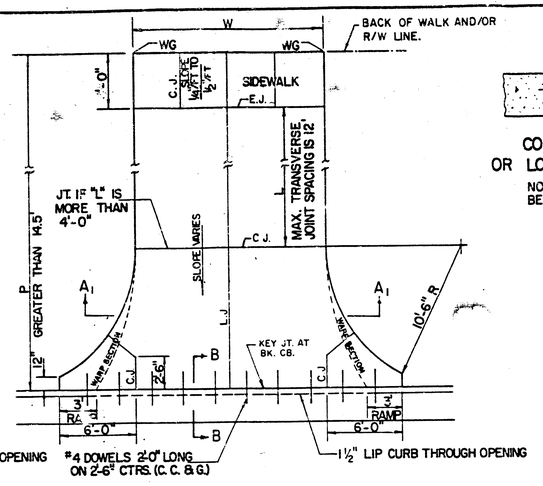
#4 DOWELS 2'-0" LONG ON 2'-6" CTRS. (C.C. & G.)

1½" LIP CURB THROUGH OPENING



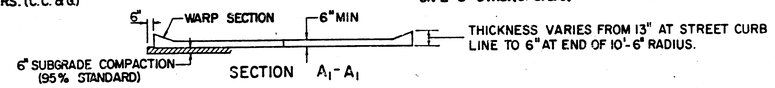
#4 DOWELS 2'-0" LONG ON 2'-6" CTRS. (C. C. & G)

1½" LIP CURB THROUGH OPENING



#4 DOWELS 2'-0" LONG ON 2'-6" CTRS. (C. C. & G.)

1½" LIP CURB THROUGH OPENING

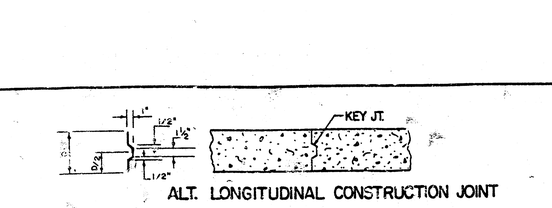


THICKNESS VARIES FROM 13" AT STREET CURB LINE TO 6" AT END OF 10'-6" RADIUS.

SECTION $A_1 - A_1$

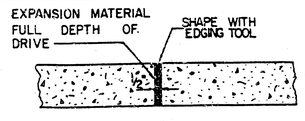
PARKING WIDTH "P"		9'	10'	11'	12'	13'	14.5'	20'	25'	30'	35'	40'	45'	50'
ABSOLUTE	MAX. DIST. OF PT. "WG" ABOVE OR-BELOW TOP OF FULL CURB	0.35'	0.35'	0.40'	0.45'	0.60'	0.80'	1.35'	1.85'	2.35'	2.85'	3.35'	3.85'	4.35'
OPTIMUM	MAX. DIST. OF PT. "WG" ABOVE OR BELOW TOP OF FULL CURB	0.35'	0.35'	0.40'	0.45'	0.60'	0.70'	1.04'	1.30'	1.56'	1.82'	2.08'	2.34'	2.60'
OPTIMUM	MIN. DIST. OF PT. "WG" ABOVE OR BELOW TOP OF FULL CURB	0.19'	0.21'	0.23'	0.25'	0.27'	0.30'	0.42'	0.52'	0.62'	0.72'	0.82'	0.92'	1.02'
ABSOLUTE	MIN. DIST. OF PT. "WG" ABOVE OR BELOW TOP OF FULL CURB	-.19'	-.16'	-.13'	-.10'	-.06'	0.00'	0.00'	0.15'	0.25'	0.35'	0.45'	0.55'	0.65'

RADIUS RAMP DRIVES (P = 9.0' & GREATER)

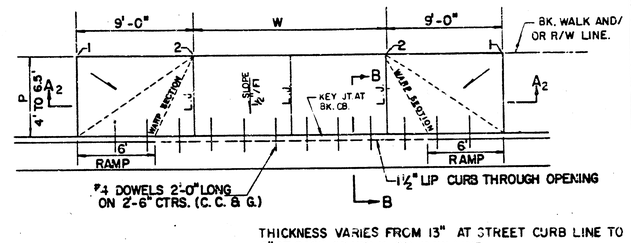


CONTRACTION JOINT (C.J.) OR LONGITUDINAL JOINT (L.J.)

NO SAWN JOINTS WILL BE ALLOWED.



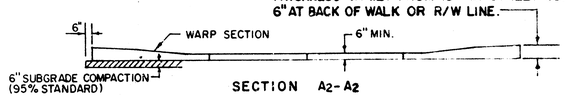
EXPANSION JOINT (E.J.)



#4 DOWELS 2'-0" LONG ON 2'-6" CTRS. (C. C. & G.)

1½" LIP CURB THROUGH OPENING

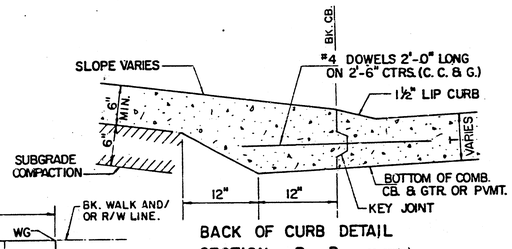
THICKNESS VARIES FROM 13" AT STREET CURB LINE TO 6" AT BACK OF WALK OR R/W LINE.



SECTION $A_2 - A_2$

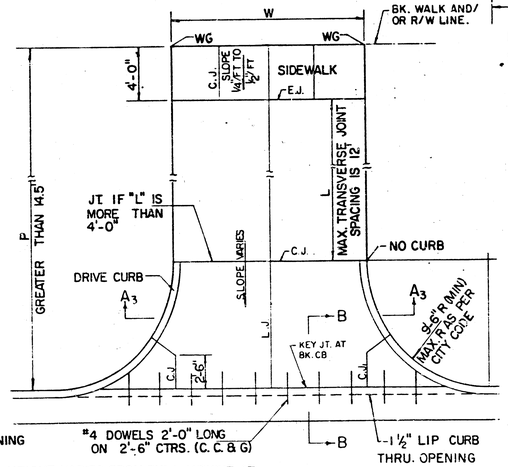
PARKING WIDTH "P"	4'	4.5'	5'	5.5'	6'	6.5'
DIST. OF PT. "I" ABOVE TOP OF FULL CB.	0.08'	0.09'	0.10'	0.12'	0.13'	0.14'
DIST. OF PT. "2" BELOW TOP OF FULL CB.	-.26'	-.24'	-.22'	-.20'	-.18'	-.16'

FULL RAMP DRIVE (P=4.0' TO 6.5')



BACK OF CURB DETAIL

SECTION B - B (no scale)

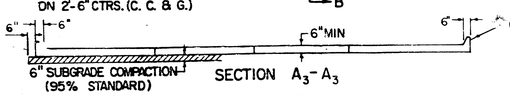


#4 DOWELS 2'-0" LONG ON 2'-6" CTRS. (C. C. & G)

1½" LIP CURB THRU. OPENING

#4 DOWELS 2'-0" LONG ON 2'-6" CTRS. (C. C. & G.)

1½" LIP CURB THROUGH OPENING

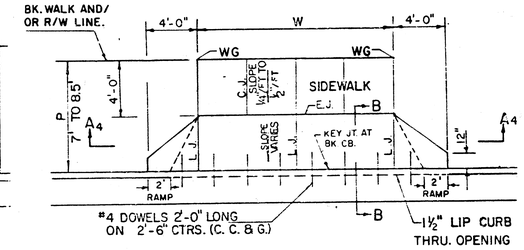


CURB HEIGHT VARIES FROM FULL HEIGHT AT STREET CURB LINE TO NO CURB AS INDICATED.

SECTION $A_3 - A_3$

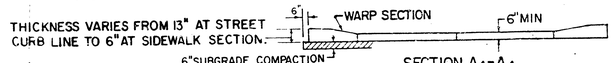
PARKING WIDTH "P"	14.5'	20'	25'	30'	35'	40'	45'	50'
ABSOLUTE MAX. DIST. OF PT. "WG" ABOVE TOP OF FULL CB.	0.80'	1.35'	1.85'	2.35'	2.85'	3.35'	3.85'	4.35'
OPTIMUM MAX. DIST. OF PT. "WG" ABOVE TOP OF FULL CB.	0.70'	1.04'	1.30'	1.56'	1.82'	2.08'	2.34'	2.60'
OPTIMUM MIN. DIST. OF PT. "WG" ABOVE TOP OF FULL CB.	0.30'	0.42'	0.52'	0.62'	0.72'	0.82'	0.92'	1.02'
ABSOLUTE MIN. DIST OF PT. "WG" ABOVE TOP OF FULL CB.	0.00'	0.00'	0.15'	0.25'	0.35'	0.45'	0.55'	0.65'

FULL RADIUS DRIVES (P=14.5' & GREATER)



#4 DOWELS 2'-0" LONG ON 2'-6" CTRS. (C. C. & G.)

1½" LIP CURB THRU. OPENING



THICKNESS VARIES FROM 13" AT STREET CURB LINE TO 6" AT SIDEWALK SECTION.

SECTION $A_4 - A_4$

PARKING WIDTH "P"	7'	7.5'	8'	8.5'
ABSOLUTE MAX. DIST. OF PT. "WG" ABOVE TOP OF FULL CB.	0.00'	0.10'	0.20'	0.30'
OPTIMUM MAX. DIST. OF PT. "WG" ABOVE TOP OF FULL CB.	0.00'	0.10'	0.20'	0.30'
OPTIMUM MIN. DIST. OF PT. "WG" BELOW TOP OF FULL CB.	-.15'	-.16'	-.17'	-.17'
ABSOLUTE MAX. DIST OF PT. "WG" BELOW TOP OF FULL CB.	-.25'	-.20'	-.20'	-.20'

FULL RAMP DRIVE (P=7.0' TO 8.5')

GENERAL NOTES

1. DRIVEWAY CONSTRUCTION DETAILED ON THIS SHEET IS FOR USE WITH FULL HEIGHT STREET CURBS AND IN AREAS WITHOUT FULL WALK CONSTRUCTION IN THE PARKING. SEE OTHER DETAIL SHEETS FOR DRIVEWAY CONSTRUCTION WITH ROLL CURB AND/OR FULL WALK.
2. ONE LONGITUDINAL JOINT SHALL BE CONSTRUCTED ALONG THE CENTERLINE OF DRIVES HAVING A "W" DIMENSION OF 24' OR LESS. TWO LONGITUDINAL JOINTS SHALL BE CONSTRUCTED WITH EQUAL SPACINGS NOT TO EXCEED 10' FOR DRIVES WITH A "W" DIMENSION GREATER THAN 24'.
3. DRIVEWAY WIDTH DENOTED AS "W" ON THE DETAIL DRAWINGS SHALL BE A MINIMUM OF 10' AND A MAXIMUM OF 30'. THE MAXIMUM OPENING FOR RADIUS TYPE DRIVES WITH CURBS THROUGH THE RADIUS SHALL NOT EXCEED 52' AT THE STREET CURB LINE.
4. CONTRACTION JOINT SPACING IN THE DRIVEWAY WALK SECTION SHALL BE A MINIMUM OF 5' AND A MAXIMUM OF 6' AND ARE TO BE EQUALLY SPACED WITHIN THIS RANGE. WALK SECTION SHALL BE CONSTRUCTED TO THE SAME THICKNESS AS THE DRIVEWAY.
5. DOWEL BARS SHALL BE OMITTED FROM THE KEYED CONSTRUCTION JOINT ALONG THE BACK OF THE STREET CURB LINE WHEN DRIVEWAYS ARE CONSTRUCTED IN CONJUNCTION WITH NEW CONCRETE PAVEMENT CONSTRUCTION.
6. ADDITIONAL THICKNESS OF DRIVE AS INDICATED IN THE DRAWINGS WILL NOT BE PAID FOR DIRECTLY AND THIS COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE DRIVEWAY CONSTRUCTION.
7. ONE HALF INCH EXPANSION JOINTS SHALL BE INSTALLED WHEREVER DRIVE CONSTRUCTION ABUTS SIDEWALK. ONE HALF INCH EXPANSION JOINTS SHALL ALSO BE INSTALLED ALONG THE PROPERTY LINE AND/OR BACK OF WALK LINE WHEN DRIVE CONSTRUCTION ALONG THIS LINE ABUTS CONCRETE PARKING LOTS OR CONCRETE DRIVE EXTENSION.
8. ALL DRIVEWAYS SHALL BE A MINIMUM OF 6" IN THICKNESS AND SHALL BE WITHOUT REINFORCEMENT. DRIVEWAYS MAY BE CONSTRUCTED THICKER THAN 6" AND THEY MAY BE REINFORCED WITH 6"x12" W4-W4 WELDED WIRE FABRIC WHEN PROPERLY AUTHORIZED BY THE PROPERTY OWNER WITH THE ENGINEER'S CONCURRENCE.
9. OPTIMUM DRIVEWAY ELEVATIONS SHOWN IN THE TABLES ARE TO BE USED WHENEVER POSSIBLE. ABSOLUTE MAXIMUM AND MINIMUM ELEVATIONS ARE TO BE USED ONLY WHEN THESE VALUES WILL PERMIT NEW CONSTRUCTION TO MATCH EXISTING DRIVES OR PARKING LOTS. VALUES SHOWN IN THE TABLES ARE BASED ON A FULL CURB HEIGHT ELEVATION OF 0.55' ABOVE THE GUTTER FLOW LINE AND MUST BE ADJUSTED ACCORDINGLY FOR OTHER CURB HEIGHTS. VALUES SHOWN IN THE TABLES WITH MINUS SIGNS INDICATE ELEVATIONS BELOW TOP OF FULL HEIGHT CURB.

REVISED OCTOBER 1985

SCALE: 1" = 5'

STANDARD DRIVE ENTRANCES
FULL HEIGHT CURB
CITY OF WICHITA, KANSAS

PROJECT NUMBER
472-76-245-81716-000-000-001

50 40 30 20 10 ℄ 10 20 30 40 50

19.03' Exc. = 41 C.Y.

165 — 163.15 — 165

39+50 — 39+50

160 — 160

C = 59

50' Exc. = 95 C.Y.

165 — 163.18 — 165

39+00 — 39+00

160 — 160

C = 44

50' Exc. = 65 C.Y. LF = 3 C.Y.

165 — 163.51 — 165

38+50 — 38+50

160 — 160

C = 26 LF = 3

50' Exc. = 39 C.Y. LF = 16 C.Y.

165 — 163.84 — 165

38+00 — 38+00

160 — 160

C = 16 LF = 14

38.75' Exc. = 17 C.Y. LF = 26 C.Y.

165 — 164.10 — 165

37+61.25 — 37+61.25

160 — 160

C = 8 LF = 22

11.25' Exc. = 3 C.Y. LF = 9 C.Y.

165 — 164.17 — 165

37+50 — 37+50

160 — 160

C = 8 LF = 21

50' Exc. = 18 C.Y. LF = 40 C.Y.

165 — 164.50 — 165

37+00 — 37+00

160 — 160

C = 11 LF = 22

50' Exc. = 27 C.Y. LF = 30 C.Y.

165 — 164.83 — 165

36+50 — 36+50

160 — 160

C = 18 LF = 10

50' Exc. = 37 C.Y. LF = 13 C.Y.

170 — 170

36+00 — 165.16 — 36+00

165 — 165

C = 22 LF = 4

50' Exc. = 69 C.Y. LF = 4 C.Y.

170 — 170

35+50 — 165.49 — 35+50

165 — 165

C = 53

26.23' Exc. = 36 C.Y.

170 — 170

35+23.07 — 165.67 — 35+23.07

165 — 165

Table 2
Exc. = 1028 C.Y.
LF = 170 C.Y.

C = 20

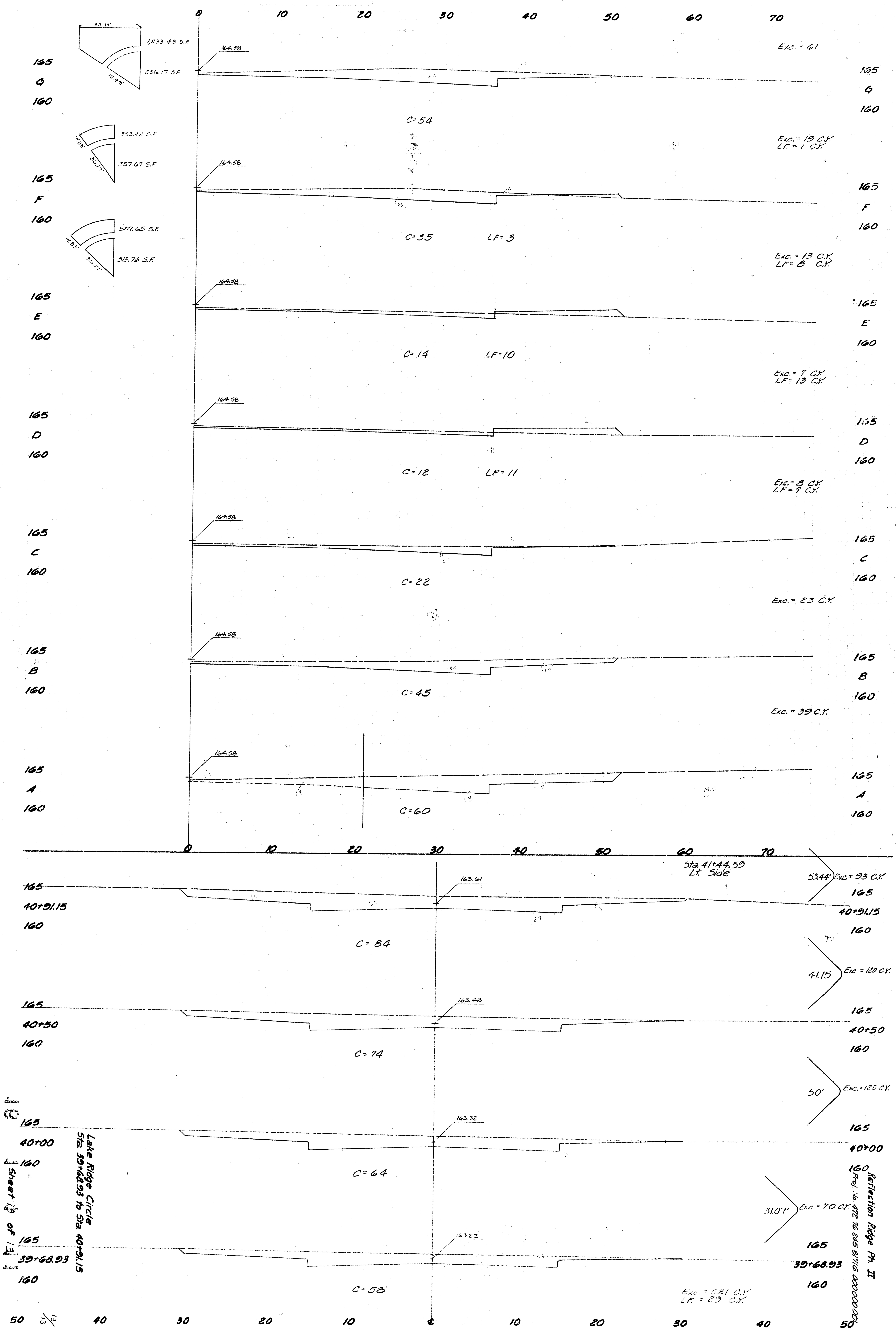
Exc. = 447 C.Y.
L.F. = 141 C.Y.

50 ℄ 40 30 20 10 ℄ 10 20 30 40 50

Lake Ridge Circle
Sta 35+23.07 to Sta 39+50

Sheet 12 of 13

Reflection Ridge Ph. II
Proj. No. 472 96 245 8176 000 000 001


Reflection Ridge Ph. II
Proj. No. 472 76 245 81716 000000001
Lake Ridge Circle
Sta. 39+68.93 to Sta. 40+91.15
Sheet 13 of 13
13/13
165 G 160
Exc. = 61
C= 54
1,833.43 S.F.
836.17 S.F.
165 F 160
Exc. = 19 C.Y.
LF = 1 C.Y.
353.41 S.F.
357.67 S.F.
C= 35
LF= 3
165 E 160
Exc. = 13 C.Y.
LF = 8 C.Y.
507.65 S.F.
513.76 S.F.
C= 14
LF=10
165 D 160
Exc. = 7 C.Y.
LF = 13 C.Y.
C=12
LF= 11
165 C 160
Exc. = 8 C.Y.
LF = 7 C.Y.
C= 22
165 B 160
Exc. = 23 C.Y.
C= 45
165 A 160
Exc. = 39 C.Y.
C=60
164.58
Sta. 41+44.59
Lt. Side
165 40+91.15 160
53.44'
Exc. = 93 C.Y.
163.61
C= 84
41.15
Exc. = 120 C.Y.
165 40+50 160
163.48
C= 74
50'
Exc. = 125 C.Y.
165 40+00 160
163.32
C= 64
31.01'
Exc. = 70 C.Y.
165 39+68.93 160
163.22
C= 58
Exc. = 581 C.Y.
LF. = 29 C.Y.