PAVING IMPROVEMENT OF NEW JERSEY

FROM

OLIVER TO SOUTH LINE OF LOT 3, BLOCK 1, REPLAT OF BLOCK 1 & J, WASHINGTON HEIGHTS ADDITION

IN

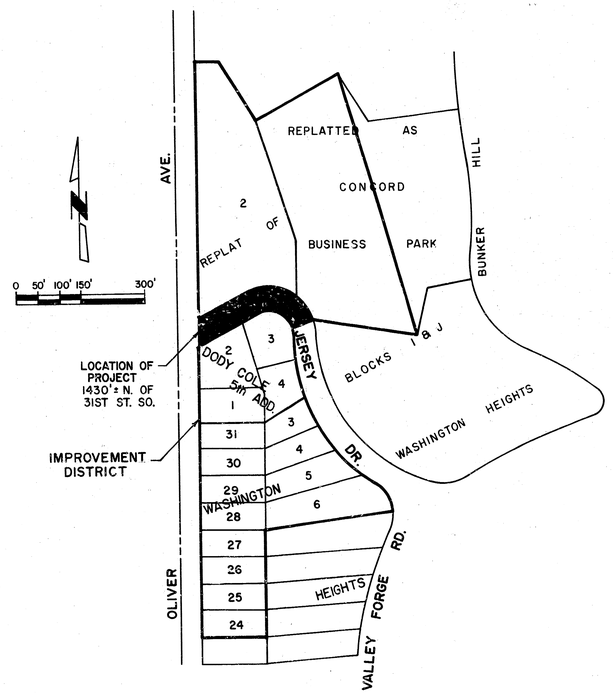
THE CITY OF WICHITA

SEDGWICK COUNTY, KANSAS

MICHAEL E. LINDEBAK, P.E., CITY ENGINEER

CITY PROJECT NO. 472-76-245-81809-000-000-001 **INDEX #602755**

INDEX OF SHEETS



JULY, 1988

Booker/Freund
Engineers Architects Planners

STEVEN K. BACHELOR
REGISTERED
7017
PROFESSIONAL ENGINEER

Steven K. Bachelor

SHEET 5 REVISED 11-7-88

1/10

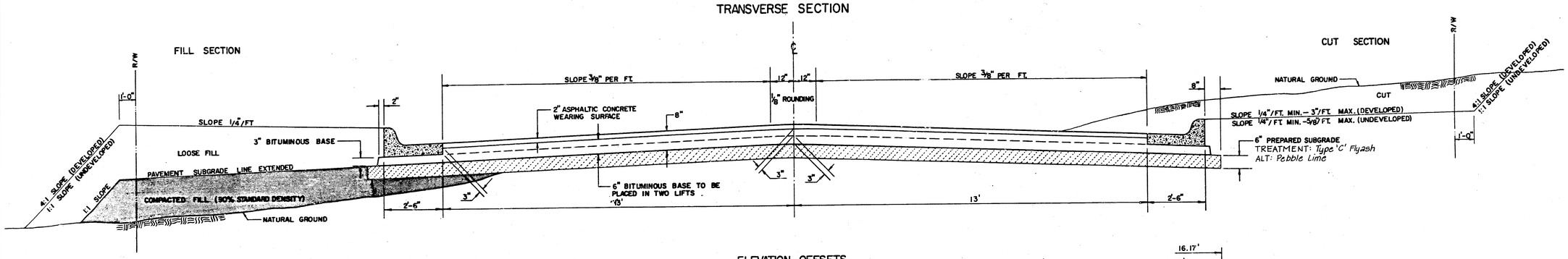
DWG. NO. 1 OF 10

APP. CHD. TR. DR. DES. PLOT. SURV.

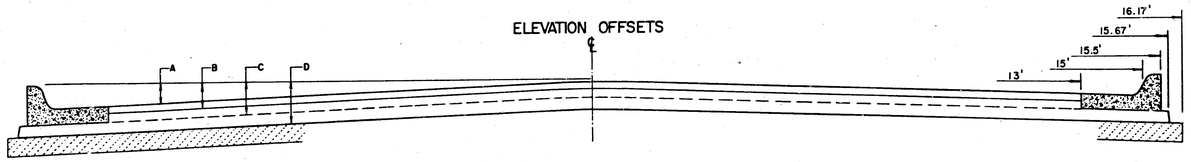
CUSTOM BLUEPRINT

TYPICAL 31' PAVEMENT DETAILS

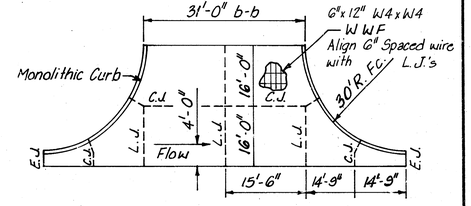
TRANSVERSE SECTION



ELEVATION OFFSETS

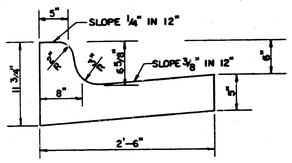


	DISTANCE FROM CENTERLINE (LT. & RT.)											
	0'	2'	4'	6'	7.5'	10'	12'	13'	15'	15.5'	15.67'	16.17'
A: TOP OF CURBS TO TOP OF SURFACE LIFT	.10	.14	.21	.27	.32	.39	.46	.49	—	—	—	—
B: TOP OF CURBS TO TOP OF UPPER BASE LIFT	.27	.31	.37	.44	.48	.56	.62	.65	—	—	—	—
C: TOP OF CURBS TO TOP OF LOWER BASE LIFT	.52	.56	.62	.69	.73	.81	.87	.90	.97	.98	.99	—
D: TOP OF CURBS TO TOP OF SUBGRADE	.77	.81	.87	.94	.98	1.06	1.12	1.15	1.22	1.23	1.24	1.25

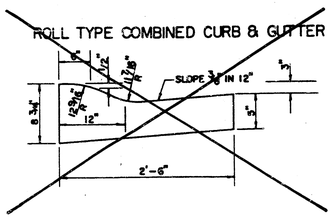


NEW JERSEY AT OLIVER

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 8" ASPHALTIC CONCRETE (6" BITUMINOUS BASE).

2) THE BITUMINOUS BASE UNDER AND BEHIND THE COMBINED CURB AND GUTTER SHALL BE PAID AS SQUARE YARDS OF 3" BITUMINOUS BASE.

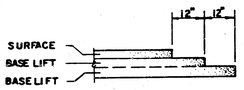
3) A TACK COAT OF EMULSIFIED ASPHALT (SC-1H OR CSS-1H) SHALL BE APPLIED AT AN APPROXIMATE RATE OF 0.05 GALLONS PER SQUARE YARD BETWEEN EACH LIFT OF ASPHALTIC MATERIAL.

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



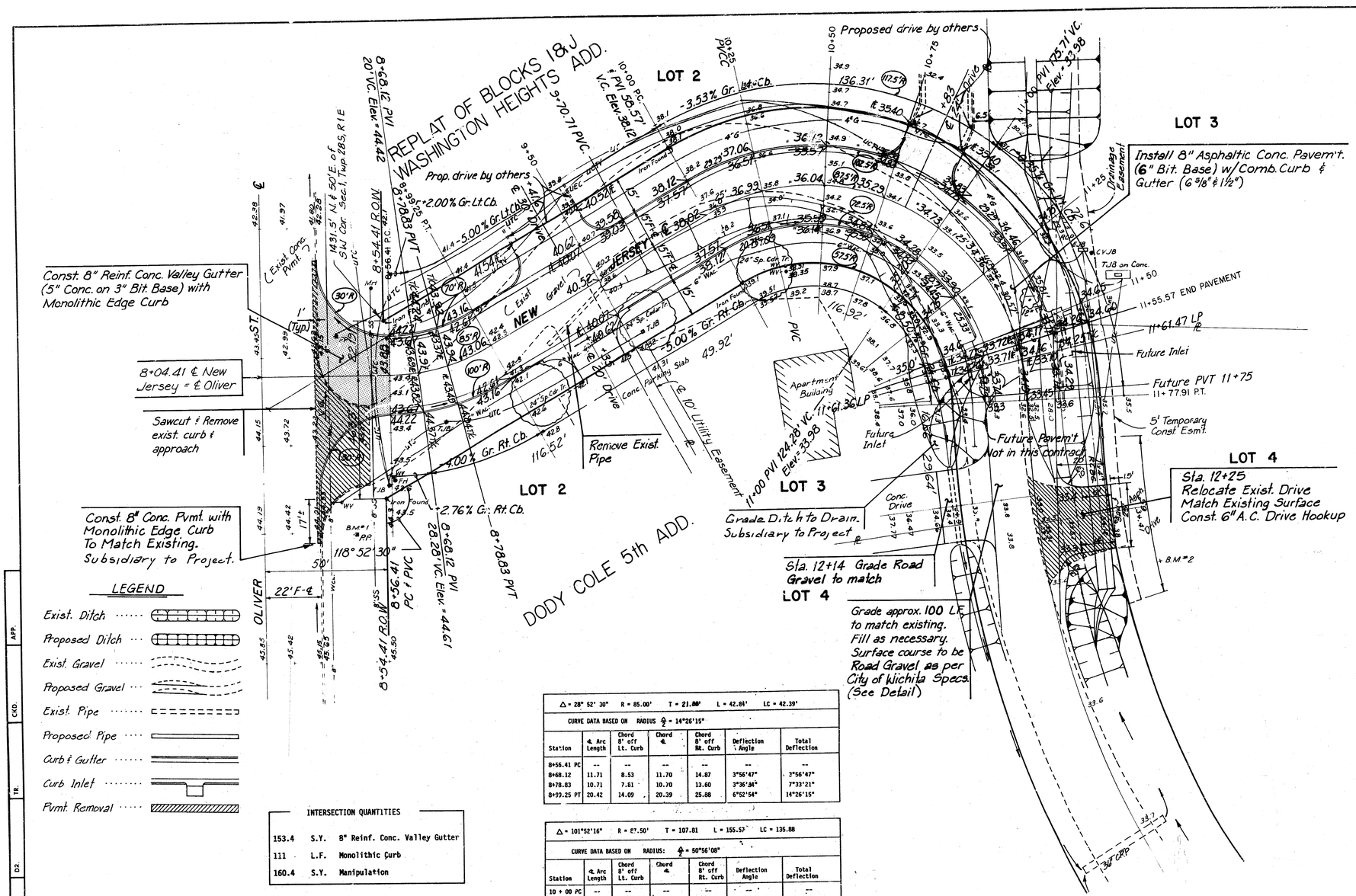
TRANSVERSE CONSTRUCTION JOINTS SHALL BE CONSTRUCTED IN FLEXIBLE BASE PAVEMENTS AT LOCATIONS WHERE PAVEMENT JOINS EXISTING FLEXIBLE BASE PAVEMENT AS SHOWN BY THE DETAIL. ALL COSTS ASSOCIATED WITH THE CONSTRUCTION OF THE TRANSVERSE JOINT SHALL BE INCLUDED IN THE BID PRICE FOR SQUARE YARDS 8" ASPHALTIC CONCRETE (6" BITUMINOUS BASE).

8 INCH RESIDENTIAL ASPHALTIC CONCRETE PAVEMENT WITH 6 INCH BITUMINOUS BASE

CITY OF WICHITA, KANSAS

PROJECT NUMBER 472-76-245-81809-000-000-001

DWG. NO. 2 of 10



GENERAL NOTES

1. Utility service lines, poles, valve boxes, meters, etc., are to be adjusted as necessary by others prior to construciton unless the plans specifically call for their adjustment by the contractor or unless the plans specifically identify a utility to be adjusted by its owner during construction. Existing utilities and their location, as shown on the plans represent the best information obtainable for design. The contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.

2. A saw cut of at least one-half the depth of existing surface courses or one-fourth the depth of the existing total pavement thickness shall be provided at locations where proposed construction abuts an existing surface course or pavement for which partial removal of that surface or pavement is required, except when such saw cuts are within three (3) feet of an existing joint the limits of removal shall be extended to the existing joint. Such saw cuts will not be paid for directly and this cost shall be considered as subsidiary to the removal of the surface or pavement.

3. Rubble from the removal of miscellaneous structures and excess excavation which is to be wasted shall be disposed of on sites to be provided by the Contractor. These sites shall be approved by the Engineer as to suitability, appearance and site location. Locations that, in the opinion of the Engineer, will leave an unsightly appearance will not be approved.

4. Properties within the project limits may have underground sprinkler systems in public right-of-way which conflict with new construction. Contractor will be required to remove such improvements should they not be removed by their owner at the time of construction of the project. The Contractor will be required to salvage all sprinkler heads and/or valves and give such material to their owner. Portions of underground sprinkler systems not in conflict with new construction shall be protected from damage and shall remain in place. All work in connection with underground sprinkler systems shall be considered as subsidiary to the contract pay items of work.

5. Trees and shrubs in public right-of-way which are indirect 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.

6. 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.

7. All entrance and cross road pipe within the project limits shall be removed by the Contractor unless otherwise noted on the plans. Removal of such pipes shall conform to the applicable seccion of the Standard Specifications.

8. The Contractor shall be responsible for preserving property irons. The Contractor will 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.

9. Construction of concrete parking lot pavement will be paid as square feet of drive for the thickness indicated.

10. Driveway widths and locations shown on the plan are tentative. Contractor will be required to obtain properly executed driveway request form signed by property owner or his authorized representative verifying such driveway widths and locations. Such forms shall be submitted to the Engineer for his review and approval.

11. The Contractor shall adjust Water Valve Boxes and Fire Hydrants as directed by the Engineer at the price bid for said adjustments. The Water Department shall field locate water valves one time during construction when requested by the Contractor. It shall be the Contractor's responsibility to preserve such field locations during the construction process. Water valves, wat... valve boxes or fire hydrants damaged during contruction shall be repaired by the Contractor at his own expense.

12. The Contractor shall give all property owners and/or tenants of developed property abutting the project limits a minimum of ten (10 days advance notice prior to start of construction.

13. Interurban traffic generated outside the project area is not to be carried through construction. Local business or apartment traffic generated within the project area is to be carried through construction as further promulgated by project special provisions.

14. The City of Wichita's Sewer Maintenance Division of the Department of Water and Water Pollution Control has televised sewers within the limits of the project and have found no defects requiring repair. The Division shall be notified and afforded the opportunity to retelevise sewer lines after subgrade work has been completed and prior to pavement construction to determine if such sewer lines have been damaged by the Contractor's operations. Damaged sewer lines will be repaired by the Contractor, as directed by the Engineer, at the Contractor's expense. Television logs are available for inspection by the Contractor during normal office hours at the Sewer Maintenance Division's office at City Hall.

15. No more than three drives 25 feet in width, or equivalent combinations thereof, are to be constructed with this project.

△ = 28° 52' 30"	R = 85.00'	T = 21.88'	L = 42.84'	LC = 42.39'
CURVE DATA BASED ON RADIUS ℄ = 14°26'15"				

Station	℄ Arc Length	Chord 8' off Lt. Curb	Chord ℄	Chord 8' off Rt. Curb	Deflection Angle	Total Deflection
8+56.41 PC	--	--	--	--	--	--
8+68.12	11.71	8.53	11.70	14.87	3°56'47"	3°56'47"
8+78.83	10.71	7.81	10.70	13.60	3°36'34"	7°33'21"
8+99.25 PT	20.42	14.09	20.39	25.88	6°52'54"	14°26'15"

△ = 101°52'16"	R = 27.50'	T = 107.81	L = 155.57	LC = 135.88
CURVE DATA BASED ON RADIUS: ℄ = 50°56'08"				

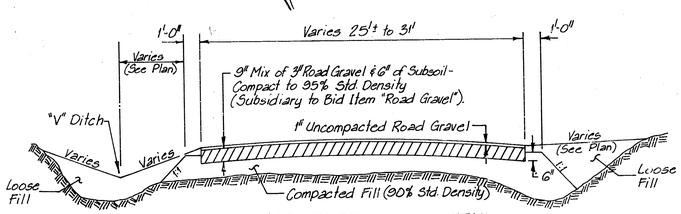
Station	℄ Arc Length	Chord 8' off Lt. Curb	Chord ℄	Chord 8' off Rt. Curb	Deflection Angle	Total Deflection
10 + 00 PC	--	--	--	--	--	--
10 + 25	25	31.46	24.92	18.37	8°11'07"	8°11'07"
10 + 50	25	31.46	24.92	18.37	8°11'07"	16°22'14"
10 + 75	25	31.46	24.92	18.37	8°11'07"	24°33'21"
11 + 00	25	31.46	24.92	18.37	8°11'07"	32°44'28"
11 + 25	25	31.46	24.92	18.37	8°11'07"	40°55'35"
11 + 55.57	30.57	38.41	30.42	22.42	10°00'33"	50°56'08"

INTERSECTION QUANTITIES

153.4	S.Y.	8" Reinf. Conc. Valley Gutter
111	L.F.	Monolithic Curb
160.4	S.Y.	Manipulation

EARTHWORK

	Excav.	Comp. Fill
Crossection	242.5 CY	311.9 CY
10%	24.2 CY	31.2 CY
Total	266.7 CY	343.1 CY
Total Manipulated Fill	=	1162 SY
Borrow Excav.	=	905.6 CY



GRAVEL TRANSITION DETAIL
Not to Scale

B.M. #1 - 50d Step in P.P., Sta. 8+16, 36' Rt. El. = 145.85

Oliver & George Washington Boulevard
City of Wichita Bench Mark Disk, 44.2' west of center line Oliver and 55' northeast of centerline George Washington Blvd.
J.F.G. 1971 Elev. 123.69

B.M. #2 - Chiseled "□" Top of Sidewalk
Sta. 12+50, 46' Lt. El. = 135.33

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

PAVING IMPROVEMENT OF NEW JERSEY
FROM
OLIVER TO 370± EAST

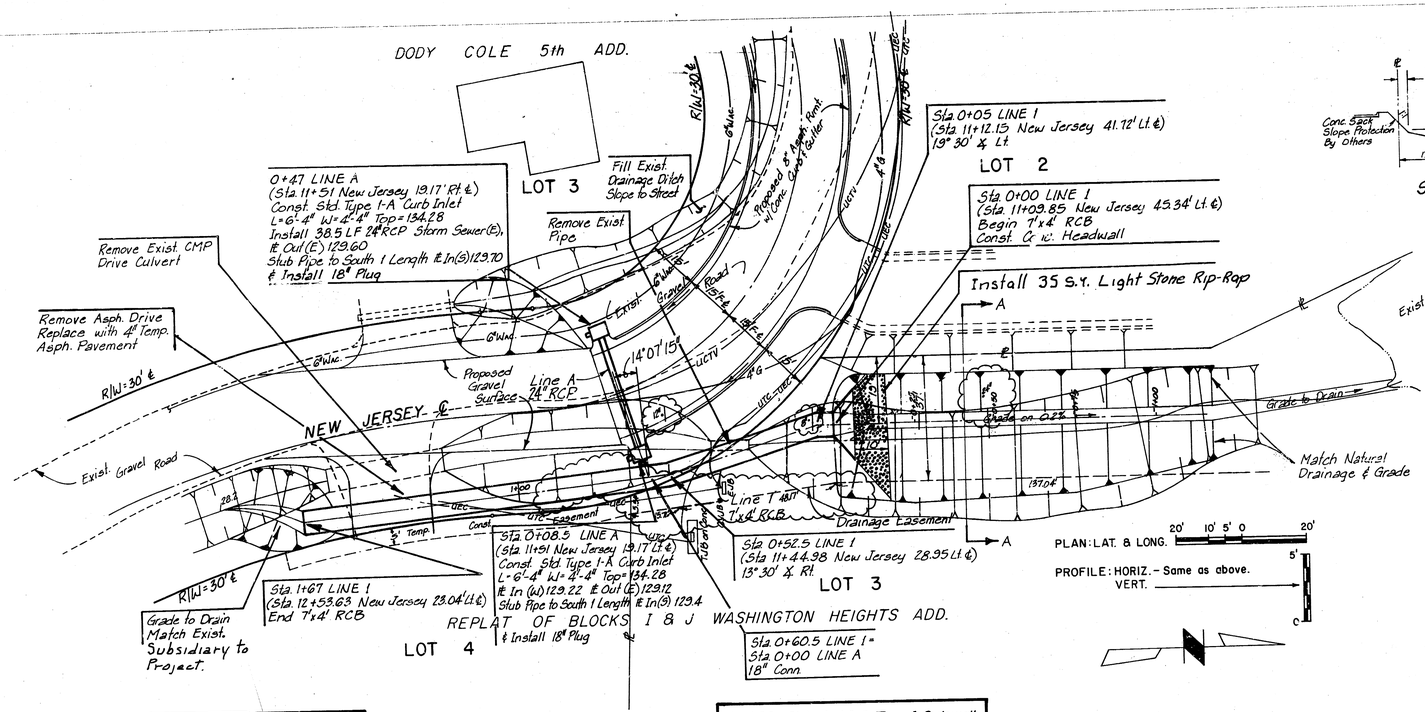
CITY PROJECT NO. 472-76-245-81809-000-000-001

Booker/Freund
Engineers Architects Planners

3/10

SCALE	DATE	DWG. NO.
1" = 20'	JULY, 1988	3 of 10

APP. CK'D. DR. DES. PLOT. SURV.



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 locations, 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.

A saw cut of at least one-half the depth of existing surface courses or one-fourth the depth of the existing total pavement thickness shall be provided at locations where proposed construction abuts an existing surface course or pavement for which partial removal of that surface or pavement is required, except when such saw cuts are within three (3) feet of an existing joint the limits of removal shall be extended to the existing joint. Such saw cuts will not be paid for directly and this cost shall be considered as subsidiary to the removal of the surface or pavement.

Rubble from the removal of miscellaneous structures and excess excavation which is to be wasted shall be disposed of on sites to be provided by the Contractor. These sites shall be approved by the Engineer as to suitability, appearance and site location. Locations that, in the opinion of the Engineer, will leave an unsightly appearance will not be approved.

Properties within the project limits may have underground sprinkler systems in public right-of-way which conflict with new construction. Contractor will be required to remove such improvements should they not be removed by their owner at the time of construction of the project. The Contractor will be required to salvage all sprinkler heads and/or valves and give such material to their owner. Portions of underground sprinkler systems not in conflict with new construction shall be protected from damage and shall remain in place. All work in connection with underground sprinkler systems shall be considered as subsidiary to the contract pay items of work.

Trees and shrubs in public right-of-way which are indirect 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.

The Contractor shall give all property owners and/or tenants of developed property directly abutting the construction of this project a minimum of ten (10) days advance notice prior to start of construction.

Only active building drain lines which connect actual buildings to the storm sewer system are to be reconnected to the new storm sewer construction. Building drain lines and/or connections which have been abandoned are not to be reconnected to the new storm sewer construction. It will be the sole responsibility of the Contractor to ascertain which such building drain lines and/or connections are active and which such drains and/or connections have been abandoned. All work involved with building drain line construction and/or building drain line connections shall conform to the applicable sections of the City of Wichita Code. This work will be paid for at the unit prices bid for the various sizes and types of pipe involved. Connection of building drain lines to storm sewer pipe will be paid for at the unit price bid for Building Drain Line Connection and such connection shall be made in accordance with the details shown on the plan.

The Contractor shall be responsible for preserving property irons. The Contractor will 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.

Storm sewer construction which occurs below water table elevations at the time of construction shall meet certain infiltration requirements as specified herein, when such construction discharges into a closed system or pumping station. Infiltration into such storm sewer construction shall not exceed an allowance greater than 300 gallons per each inch of vertical distance, which vertical distance shall not exceed the vertical dimension of the construction, that the flow line of the sewer is below the water table elevation per mile of storm sewer per day for each reach tested. Manholes shall be considered as sections of sewer for purposes of determining the maximum allowable leakage.

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

PAVING IMPROVEMENT OF NEW JERSEY FROM OLIVER TO 370± WEST

CITY PROJECT NO. 472-76-245-81809-000-000-001

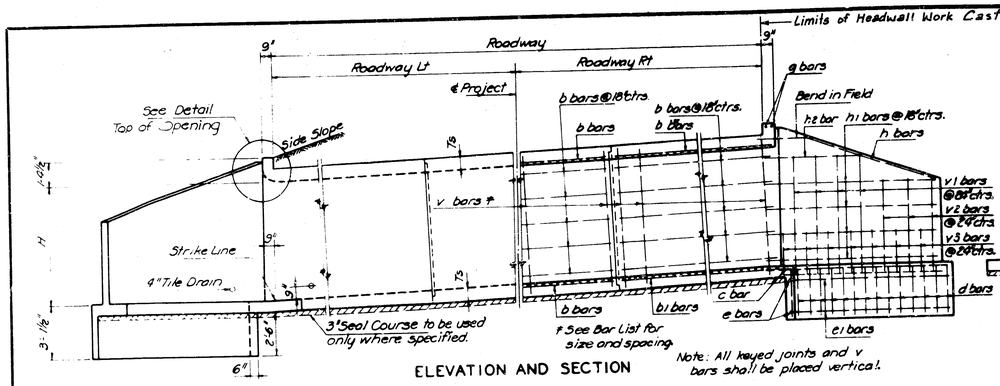
Booker/Freund Engineers Architects Planners

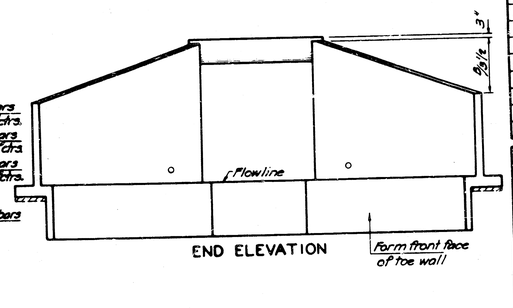
4/10

SCALE	DATE	DWG. NO.
NOTED	JULY, 1988	4 of 10

HIGHWAY FEDERAL AID SHEET
PLATE I-SINGLE PLAN AND PROFILE-FULL LINE
TELEDYNE
PRINTED IN U.S.A.

FHWA REGION NO.	STATE	PROJECT NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
7	KANSAS			5	10





LIST OF BARS AND DIMENSIONS

7'x																												
Apron Steel (One)	Lbs.	Seal Course										CY	Hdwl. Concrete (Two)															C.Y.
Apron Concrete (One)	C.Y.	Apron Seal Course										CY	Concrete Per Ft of Box															C.Y.
Letter	A	B	C	H	R	T	Ts	Tw	W	X	Y	Bar	a	v														
Dimension												Space																
Bar	a	b	b1	c	c1	d	e	e1	g	h	hi	v	v1	v2	v3													
Number		10		2	12		4	8	4	8																		
Size	#4	#4		#4	#4	#4	#4	#4	#5	#5	#4		#4	#4	#4													
Length				10'0"																								

7'x3'x																												
Apron Steel (One)	23 Lbs	Seal Course										CY	Hdwl. Concrete (Two)															6.778 C.Y.
Apron Concrete (One)	1.849 C.Y.	Apron Seal Course										CY	Concrete Per Ft of Box															C.Y.
Letter	A	B	C	H	R	T	Ts	Tw	W	X	Y	Bar	a	v														
Dimension	8'-3"	5'-10"	4'-9⅝"+2Tw	3'-0"	9"	6"			2'-6"	1'-0"	1'-0"	Space																
Bar	a	b	b1	c	c1	d	e	e1	g	h	hi	v	v1	v2														
Number		10		2	12	36	4	8	4	8	8		8	12														
Size	#4	#4		#4	#4	#4	#4	#4	#5	#5	#4		#4	#4														
Length				10'0"	10'0"	5'-1"	8'0"	8'-3"	7'9"	9'-9"	9'-6"		5'-2"	4'0"														

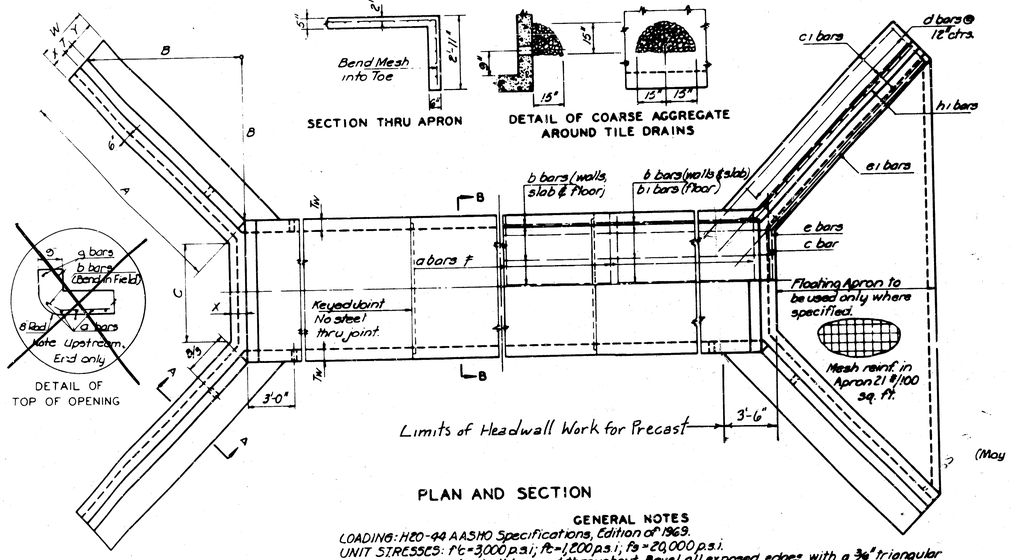
7'x4'x Tee T																												
Apron Steel (One)	30 Lbs	Seal Course										CY	Hdwl. Concrete (One)															4.360 C.Y.
Apron Concrete (One)	2.393 C.Y.	Apron Seal Course										CY	Concrete Per Ft of Box															C.Y.
Letter	A	B	C	H	R	T	Ts	Tw	W	X	Y	Bar	a	v														
Dimension	10'-3"	7'-3"	4'-3⅝"+2Tw	4'-0"	6"	6"	7½"		2'-6"	1'-0"	1'-0"	Space	5½"	1'-6"														
Bar	a	b	b1	c	c1	d	e	e1	g	h	hi	he	v	v1	v2													
Number	72	75	5	1	6	22	2	4	2	4	4	2	224	6	6													
Size	#5	#4	#4	#4	#4	#4	#4	#4	#5	#5	#4	#4	#4	#4	#4													
Length	7'-9"	33'-6"	31'-6"	10'0"	12'3"	5'-1"	8'-0"	10'-3"	7'-9"	11'-9"	11'-6"	8'-8"	5'-0"	5'-10"	4'-7"													

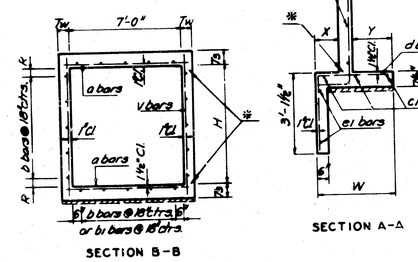
7'x5'x																												
Apron Steel (One)	38 Lbs	Seal Course										CY	Hdwl. Concrete (Two)															11.208 C.Y.
Apron Concrete (One)	3.000 C.Y.	Apron Seal Course										CY	Concrete Per Ft of Box															C.Y.
Letter	A	B	C	H	R	T	Ts	Tw	W	X	Y	Bar	a	v														
Dimension	12'-5"	8'-8"	6'-3⅝"+2Tw	5'-0"	9"	6"			2'-9"	1'-0"	1'-3"	Space																
Bar	a	b	b1	c	c1	d	e	e1	g	h	hi	he	v	v1	v2													
Number		10		2	12	52	4	8	4	8	12			16	12													
Size	#4	#4		#4	#4	#4	#4	#4	#5	#5	#4			#4	#4													
Length				10'0"	14'9"	5'-4"	8'-0"	12'-3"	7'-9"	13'-5"	13'-6"	7'-6"		6'-5"	5'-2"													

7'x6'x																												
Apron Steel (One)	47 Lbs	Seal Course										CY	Hdwl. Concrete (Two)															14.558 C.Y.
Apron Concrete (One)	3.679 C.Y.	Apron Seal Course										CY	Concrete Per Ft of Box															C.Y.
Letter	A	B	C	H	R	T	Ts	Tw	W	X	Y	Bar	a	v														
Dimension	14'-3"	10'-0⅝"	6'-7⅝"+2Tw	5'-0"	9"	6½"			3'-0"	1'-0"	1'-3½"	Space																
Bar	a	b	b1	c	c1	d	e	e1	g	h	hi	he	v	v1	v2	v3												
Number		10		2	12	60	4	8	4	8	12			20	12	28												
Size	#4	#4		#4	#4	#4	#4	#4	#5	#5	#4	#4		#4	#4	#4												
Length				10'0"	17'0"	5'-7"	8'-0"	14'3"	7'10"	13'-9"	13'-6"	10'-0"		7'-0"	6'-5"	8'-6"												

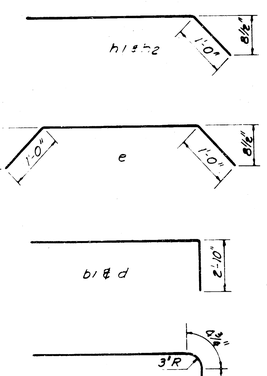
7'x7'x																												
Apron Steel (One)	57 Lbs	Seal Course										CY	Hdwl. Concrete (Two)															18.83 C.Y.
Apron Concrete (One)	4.412 C.Y.	Apron Seal Course										CY	Concrete Per Ft of Box															C.Y.
Letter	A	B	C	H	R	T	Ts	Tw	W	X	Y	Bar	a	v														
Dimension	16'-3"	11'-5⅞"	8'-6⅛"+2Tw	7'-0"	6"	7"			3'-5"	1'-0"	1'-10"	Space																
Bar	a	b	b1	c	c1	d	e	e1	g	h	hi	he	v	v1	v2	v3												
Number		10		2	12	68	4	8	4	8	16	4		20	16	32												
Size	#4	#4		#4	#4	#4	#4	#4	#5	#5	#4	#4		#4	#4	#4												
Length				10'0"	19'6"	6'0"	8'0"	16'3"	7'11"	17'-9"	17'-7"	8'-10"		8'-0"	6'-5"	3'-9"												

7'x																												
Apron Steel (One)	Lbs	Seal Course										CY	Hdwl. Concrete (Two)															C.Y.
Apron Concrete (One)	C.Y.	Apron Seal Course										CY	Concrete Per Ft of Box															C.Y.
Letter	A	B	C	H	R	T	Ts	Tw	W	X	Y	Bar	a	v	vi													
Dimension												Space																
Bar	a	b	b1	c	c1	d	e	e1	g	h	hi	he	v	vi	v2	v3												
Number		10		2	12		4	8	4	8																		
Size	#4	#4		#4	#4	#4	#4	#4	#5	#5	#4	#4		#4	#4	#4												
Length				10'0"																								





* Optional Construction Joints
(May be constructed at the Contractor's option.)



PLAN AND SECTION

GENERAL NOTES

LOADING: H20-44 AASHO Specifications, Edition of 1969.
UNIT STRESSES: f'c = 3,000 p.s.i.; fc = 1,200 p.s.i.; fs = 20,000 p.s.i.

Class A Concrete shall be used throughout. Bevel all exposed edges with a ¾" triangular molding unless otherwise noted.

All dimensions relative to reinforcing steel are to center line of bar unless otherwise noted.

Seal Course, consisting of 3" of Class A Concrete, shall be constructed only where specified on the Plans or by the Engineer. No reinforcing shall be placed until the Seal Course has gained sufficient strength to permit working upon it without injury.

Floating Apron shall be constructed only between downstream wings in locations subject to scour where specified on the Plans or by the Engineer.

Wire reinforcing mesh shall be electrically welded and shall be composed of No. W1.4 wire at 6" centers each way. Weight of reinforcing mesh shall be classified as pounds of reinforcing steel.

Payment for additional quantities resulting from including Seal Course and or Floating Apron as a change in the original plans, shall be made at the Unit Price bid for the various items involved.

Coarse aggregate shall be deposited behind each weep hole to occupy a space extending 15" in all directions above the weep hole flowline. This work shall not be paid for directly, but shall be considered a part of the excavation work.

Keyed Joints shall be provided as shown on all culverts where the box length is 40' or more. These joints shall be spaced so as to divide the box into sections of equal length. The number of joints to be used shall be as follows; 40' to 80' - 1 joint; 80' to 120' - 2 joints; 120' to 160' - 3 joints, etc.

The quantities shown in Culvert Summary include Apron and or Soil Saver quantities if they are to be constructed.

The Contractor may, at his option, substitute No. 4 steel reinforcing bars for the keyed construction joints. Rebars are to be a minimum of thirty (30) inches in length, set so the joint divides the bar equally and these extra rebars will be required in each plane of steel in the culvert. The extra steel required will not be paid for directly but will be considered subsidiary to other items in the contract.

NOTE: Wings on Outlet End only. Square off Entrance End. Entrance End Is To Have A Construction Joint. Finish To Allow Future Extension.

NOTE: All earthwork to be subsidiary to Bid Price for Box.

NOTE: At Contractor's Option The RCB May Be Precast And Set Into Place With A Headwall Cast In Place And Connected To The RCB Sections. Precast RCB Shall Conform To A.S.T.M. C 789.

CULVERT SUMMARY

Station	Size	Crown or Elev.	Flowline Elev. Lt.	Flowline Elev. Rt.	Adwy Horiz. Lt.	Adwy Horiz. Rt.	Lgth. along Box Lt.	Lgth. along Box Rt.	Sections No.	Sections Length	Apron	Soil Saver	Design Fill Ft.	C.I.A Conc. Cu. Yds.	Reinf. Steel Lbs.

NO	DATE	REVISIONS	BY	APP'D
5	4-5-79	Rebar Quan. Rdy. Conc. & Elim. Fence Bolt	W.L.H.	L.R.P.
4	9-26-77	Keyed Joint Option	W.L.H.	L.R.P.
3	9-10-73	Wire Reinf. Mesh Changed to W1.4	W.L.H.	K.G.L.
2	10-27-72	Wire Size AASHO Des. M32-72 I	W.L.H.	K.G.L.
1	5-19-72	Removed 12' Uniform Bbl. Sections	W.L.H.	K.G.L.

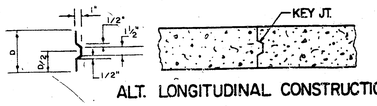
472 76 245 81809 000 000 001

R.C. BOX CULVERT
7 FT. SPAN
REVISED 11-7-88 KK

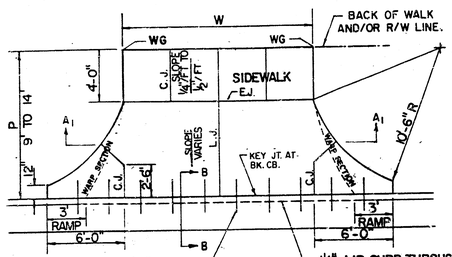
4-6-71 S / 10

SHEET NO 5 OF 7	SCALE	APP'D K. G. Lancaster	
DESIGNED Boynton	DETAILED Richards	QUANTITIES Richards	TRACED Booth
DESIGN CK Latham	DETAIL CK Schwartz	QUAN. CK Clennan	TRACE CK Hecht

DATE
DATE
CALCULATED BY
CHECKED BY

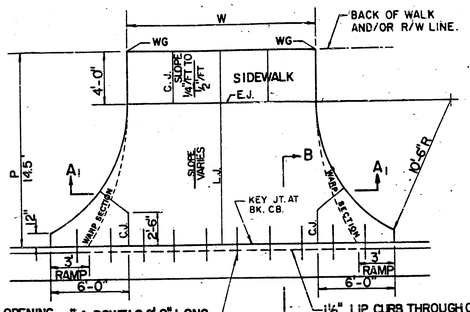


ALT. LONGITUDINAL CONSTRUCTION JOINT



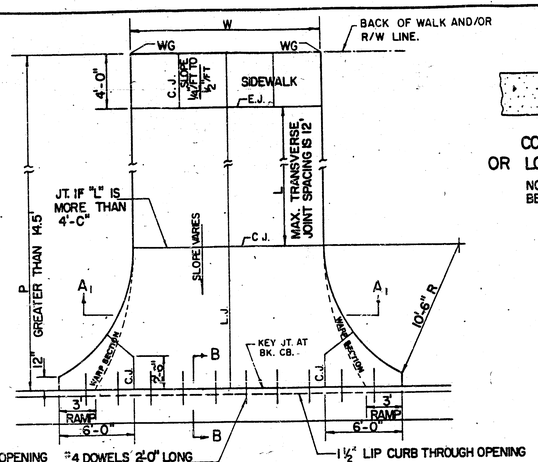
#4 DOWELS 2'-0" LONG ON 2'-6" CTRS. (C.C. & G.)

1½" LIP CURB THROUGH OPENING



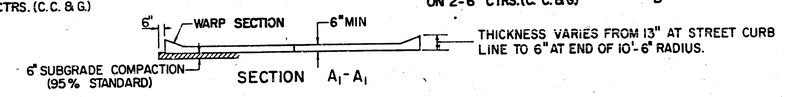
#4 DOWELS 2'-0" LONG ON 2'-6" CTRS. (C.C. & G.)

1½" LIP CURB THROUGH OPENING



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

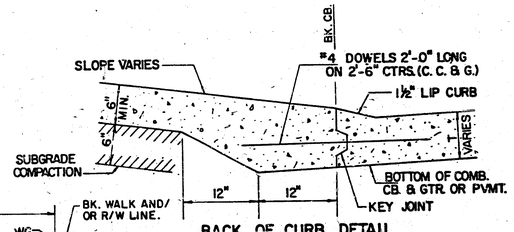
1½" LIP CURB THROUGH OPENING



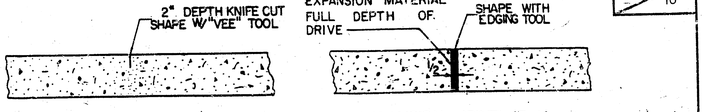
THICKNESS VARIES FROM 13" AT STREET CURB LINE TO 6" AT END OF 10'-6" RADIUS.

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'	0.43'	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)



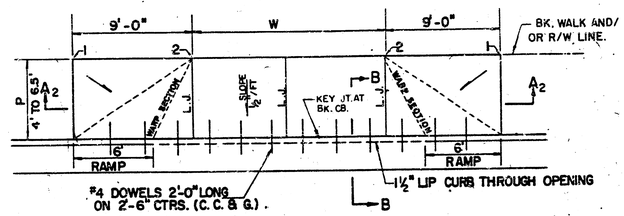
BACK OF CURB DETAIL
SECTION B - B (no scale)



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

NO SAWN JOINTS WILL BE ALLOWED.

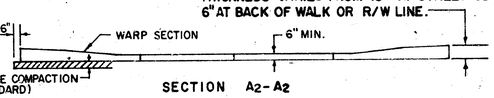
EXPANSION JOINT (E.J.)



#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.



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

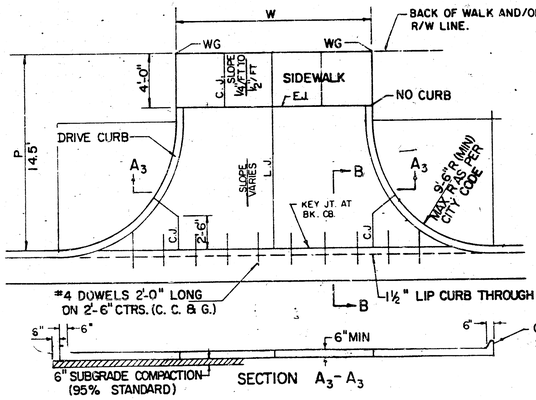
FULL RAMP DRIVE (P=4.0' TO 6.5')

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 3' 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 WHEREVER 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.

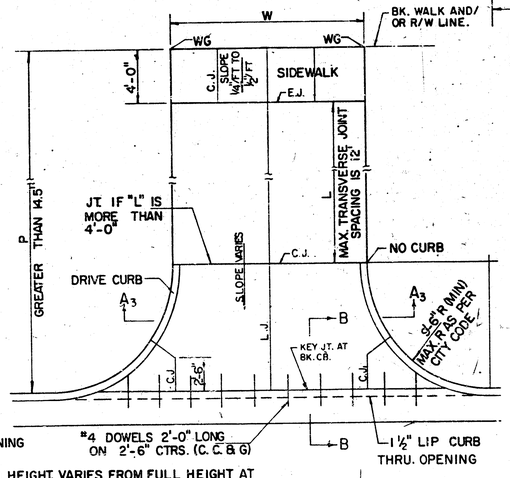
REVISED OCTOBER 1985

SCALE: 1"=5'



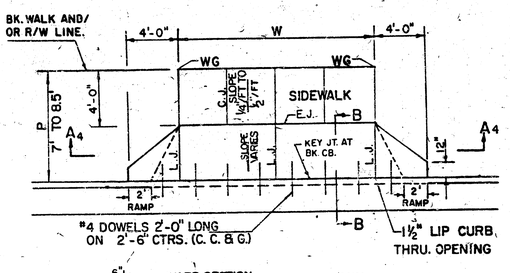
#4 DOWELS 2'-0" LONG ON 2'-6" CTRS. (C. C. & G.)

1½" LIP CURB THROUGH OPENING



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

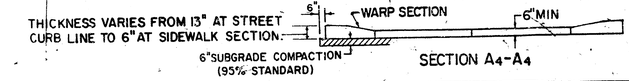
1½" LIP CURB THRU. OPENING



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

1½" LIP CURB, THRU. OPENING

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



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

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

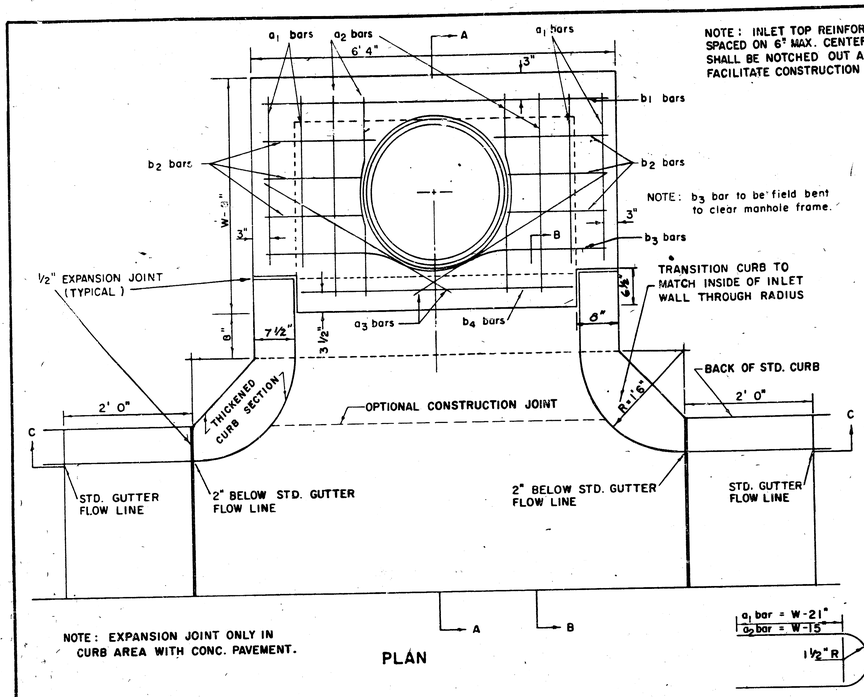
FULL RADIUS DRIVES (P=14.5' & GREATER)

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')

STANDARD DRIVE ENTRANCES
FULL HEIGHT CURB
CITY OF WICHITA, KANSAS

PROJECT NUMBER
472.76 245 81809 000 000 001



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.

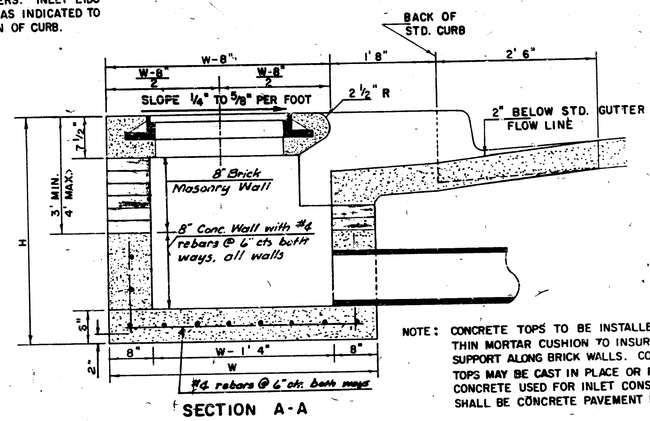
NOTE: b_3 bar to be field bent to clear manhole frame.

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



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.

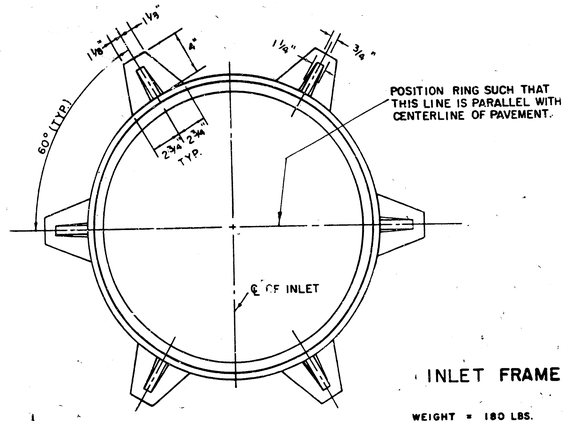
STANDARD CURB INLET PRECAST TOPS			
W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
4' 4"	3'8" x 6'4" x 7 1/2"	21" & SMALLER	0.38 ±
5' 4"	4'8" x 6'4" x 7 1/2"	24" & 30"	0.51 ±
6' 4"	5'8" x 6'4" x 7 1/2"	36" & 42"	0.64 ±
7' 4"	6'8" x 6'4" x 7 1/2"	48" & 54"	0.77 ±
8' 4"	7'8" x 6'4" x 7 1/2"	60" & 66"	0.90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

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.

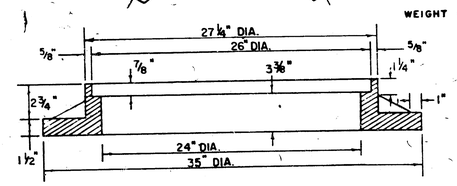
INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.

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

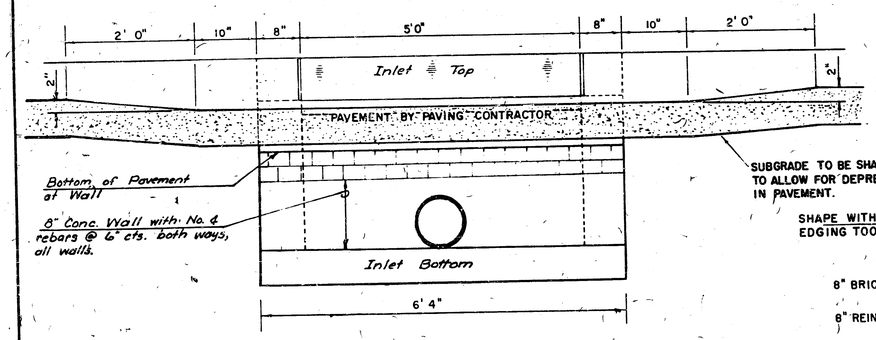


INLET FRAME

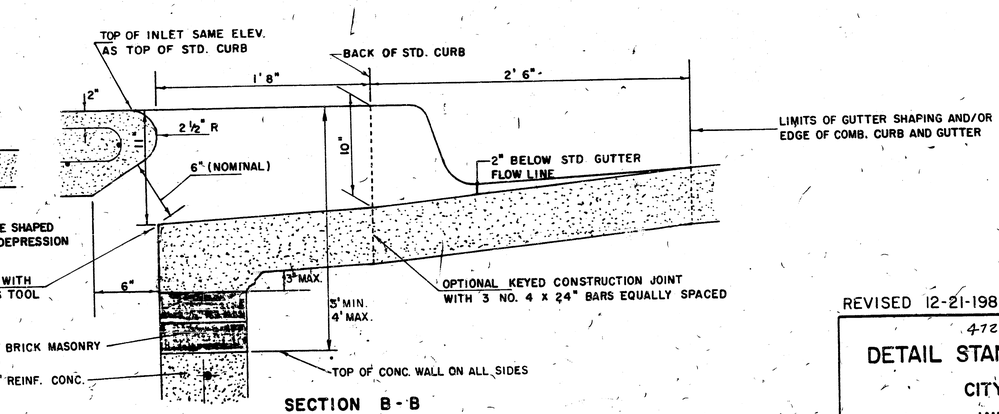
WEIGHT = 180 LBS.



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

DWG. NO. 7 of 10

472 76 245 81809 000 000 001

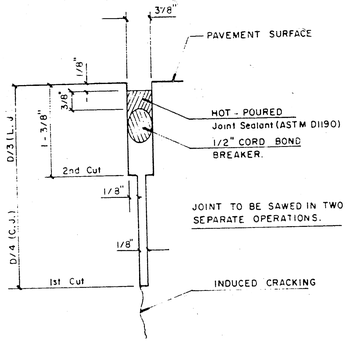
DETAIL STANDARD TYPE IA CURB INLET

CITY OF WICHITA, KANSAS

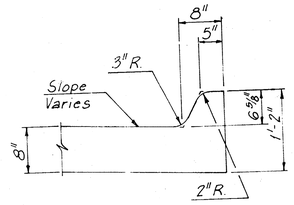
INLET OPENING = 6" x 5' 0"

JUNE 1984

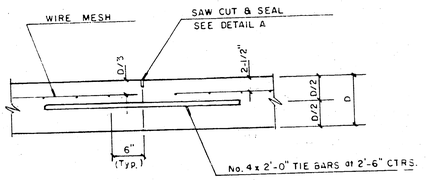
7/10



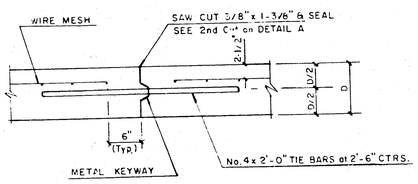
DETAIL A



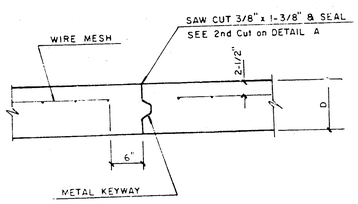
MONOLITHIC EDGE CURB
(Construct Curb Monolithicly With Pavement)



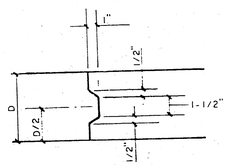
LONGITUDINAL JOINT DETAIL (L.J.)



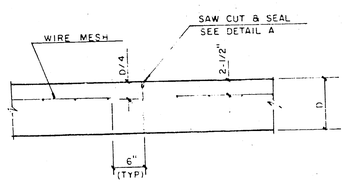
OPTIONAL LONGITUDINAL CONSTRUCTION JOINT (L.J.)
(Alternate L.J.)



OPTIONAL CONTRACTION CONSTRUCTION JOINT (C.J.)
(Alternate C.J.)



KEYWAY DETAIL



CONTRACTION JOINT DETAIL (C.J.)

APP.
CKD.
TR.
DR.
DES.
PLOT.
SURV.

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

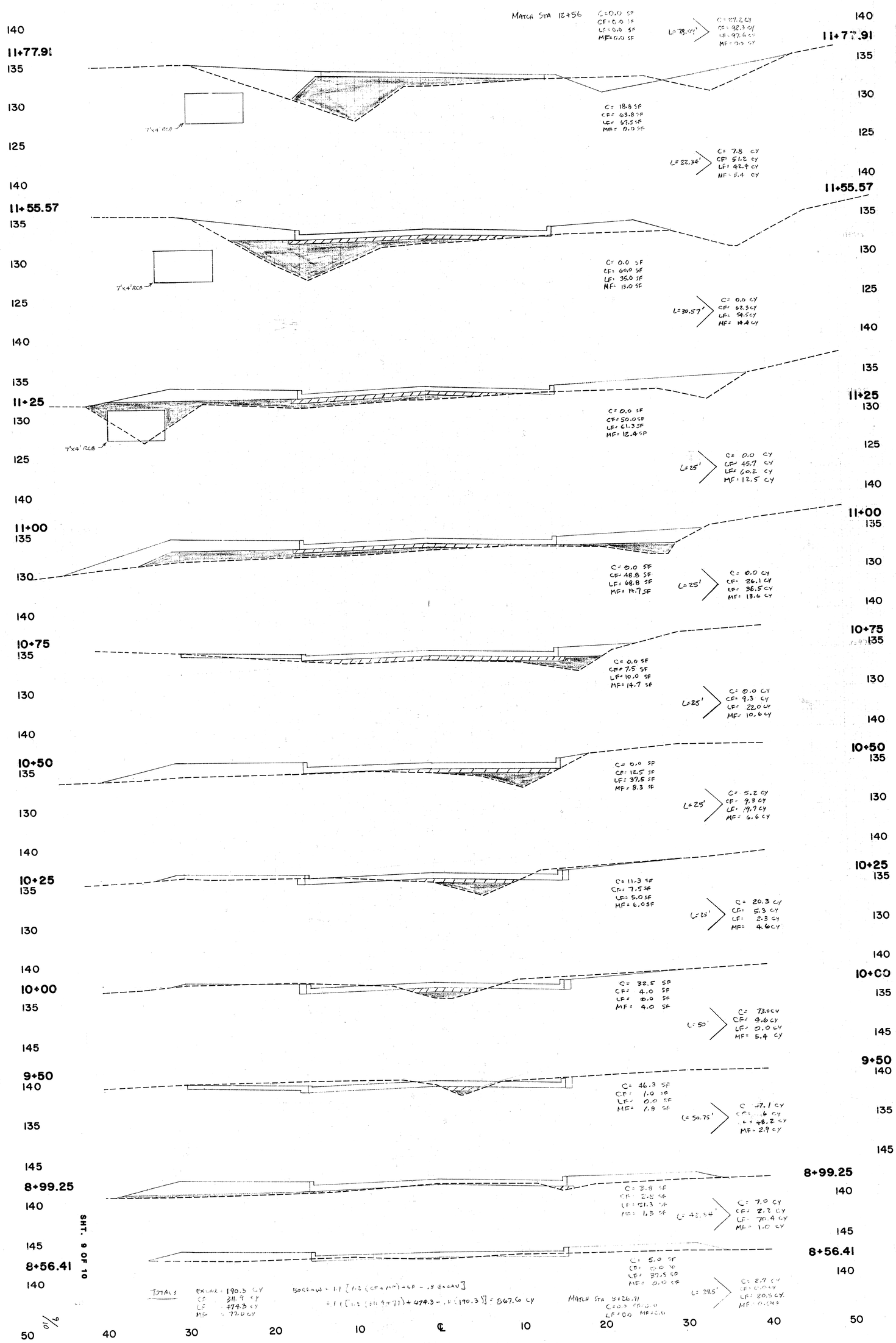
PAVING IMPROVEMENT OF NEW JERSEY
FROM
OLIVER TO 370 ± WEST

CITY PROJECT NO. 472-76-245-81809-000-000-001

Booker/Freund
Engineers Architects Planners

8/10

SCALE	DATE	DWG. NO.
N. T. S.	JULY, 1988	8 of 10


MATCH STA 12+56
C=0.0 SF
CF=0.0 SF
LF=0.0 SF
MF=0.0 SF
L=78.09'
C= 77.2 CY
CF= 92.3 CY
LF= 97.6 CY
MF= 0.0 CY
11+77.91
C= 18.8 SF
CF= 63.8 SF
LF= 67.5 SF
MF= 0.0 SF
7'x4' RCB
L=22.34'
C= 7.8 CY
CF= 51.2 CY
LF= 42.4 CY
MF= 5.4 CY
11+55.57
C= 0.0 SF
CF= 60.0 SF
LF= 35.0 SF
MF= 13.0 SF
7'x4' RCB
L=30.57'
C= 0.0 CY
CF= 62.3 CY
LF= 54.5 CY
MF= 14.4 CY
11+25
C= 0.0 SF
CF= 50.0 SF
LF= 61.3 SF
MF= 12.4 SF
7'x4' RCB
L=25'
C= 0.0 CY
CF= 45.7 CY
LF= 60.2 CY
MF= 12.5 CY
11+00
C= 0.0 SF
CF= 48.8 SF
LF= 68.8 SF
MF= 14.7 SF
L=25'
C= 0.0 CY
CF= 26.1 CY
LF= 36.5 CY
MF= 13.6 CY
10+75
C= 0.0 SF
CF= 7.5 SF
LF= 10.0 SF
MF= 14.7 SF
L=25'
C= 0.0 CY
CF= 9.3 CY
LF= 22.0 CY
MF= 10.6 CY
10+50
C= 0.0 SF
CF= 12.5 SF
LF= 37.5 SF
MF= 8.3 SF
L=25'
C= 5.2 CY
CF= 9.3 CY
LF= 19.7 CY
MF= 6.6 CY
10+25
C= 11.3 SF
CF= 7.5 SF
LF= 5.0 SF
MF= 6.0 SF
L=25'
C= 20.3 CY
CF= 5.3 CY
LF= 2.3 CY
MF= 4.6 CY
10+00
C= 32.5 SF
CF= 4.0 SF
LF= 0.0 SF
MF= 4.0 SF
L=50'
C= 73.0 CY
CF= 4.6 CY
LF= 0.0 CY
MF= 5.4 CY
9+50
C= 46.3 SF
CF= 1.0 SF
LF= 0.0 SF
MF= 1.8 SF
L=50.75'
C= 47.1 CY
CF= 1.6 CY
LF= 48.2 CY
MF= 2.9 CY
8+99.25
C= 3.9 SF
CF= 2.5 SF
LF= 51.3 SF
MF= 1.3 SF
L=43.54'
C= 7.0 CY
CF= 2.2 CY
LF= 70.4 CY
MF= 1.0 CY
8+56.41
C= 5.0 SF
CF= 0.0 SF
LF= 37.5 SF
MF= 0.0 SF
L=29.5'
C= 2.9 CY
CF= 0.0 CY
LF= 20.5 CY
MF= 0.0 CY
MATCH STA 9+26.71
C=0.0 CF=0.0
LF=0.0 MF=0.0
TOTALS
EXCAV = 190.3 CY
CF = 311.9 CY
LF = 474.3 CY
MF = 77.0 CY
BOCEAW = 1.1 [1.2 (CF + MF) + LF - 1.2 EXCAV]
= 1.1 [1.2 (311.9 + 77) + 474.3 - 1.2 (190.3)] = 867.6 CY
SHT. 9 OF 10
140
135
130
125
145
50
40
30
20
10
℄
10
20
30
40
50

DITCH SECTIONS