FHWA REG NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	15-87 K-8014-01	2002	1	21

PROJ. NO. 15-87 K-8014-01

STATE OF KANSAS

DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED

CITY PROJECT #472 83363

OCA #706815

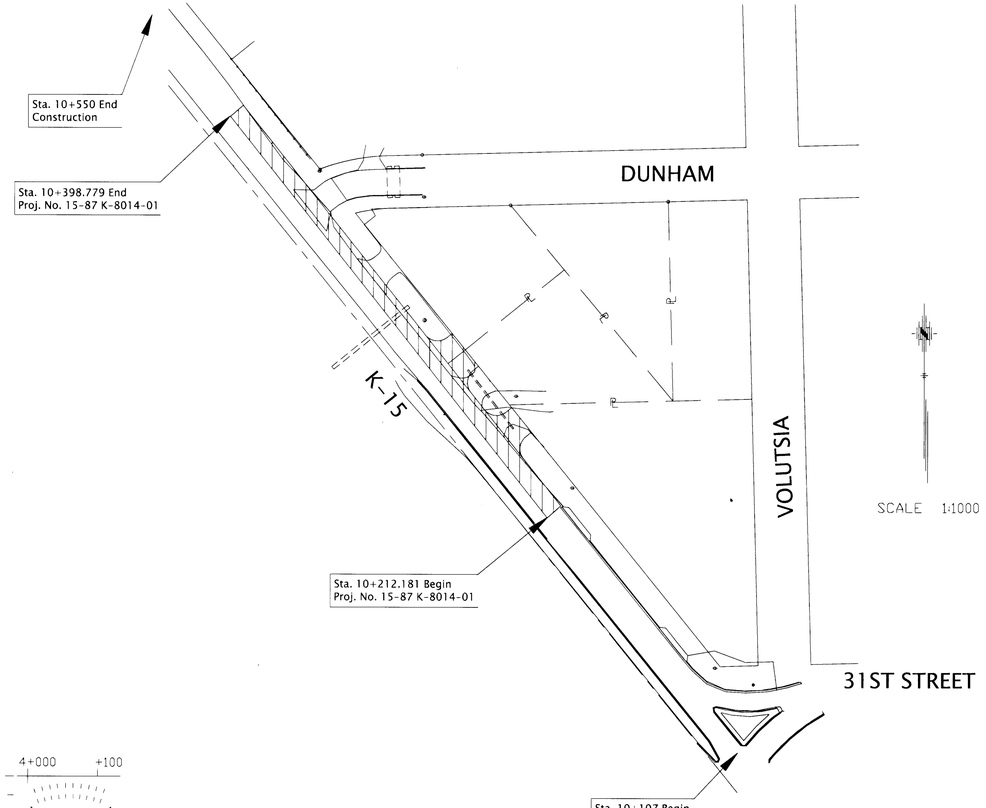
K-15 FROM 31ST STREET SOUTH TO I-135

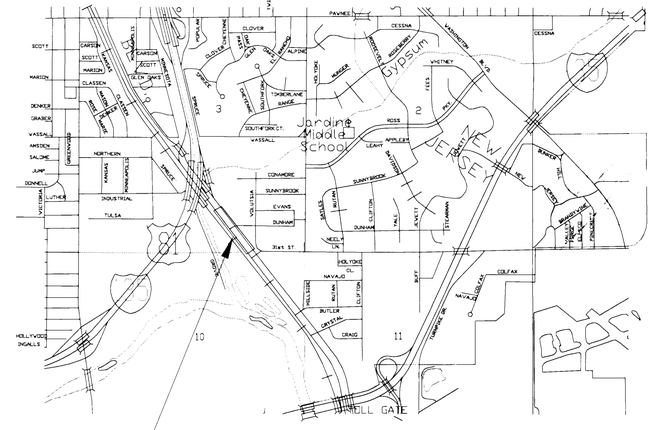
WICHITA, SEDGWICK COUNTY

POPULATION: 310,238

GRADING
SURFACING
SODDING
SIGNING
EROSION CONTROL

INDEX OF SHEETS





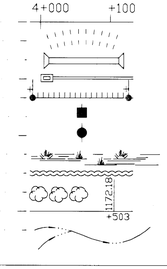
LOCATION MAP

DESIGN DESIGNATION

AADT (2003)	=	38,200
AADT (2023)	=	51,000
DHV	=	10%
D	=	60%
T	=	3%
V	=	80 k/hr.
CONTROL OF ACCESS	=	NONE
CLEAR ZONE	=	6.5 m

CONVENTIONAL SIGNS

COUNTY LINE		CENTER LINE OF PROJECT	
CITY LIMITS		TERRACE	
STATE OR NATIONAL LINE		CULVERTS	
TOWNSHIP, SECTION or GRANT LINE		DROP INLET & STORM SEWER	
PROPERTY LINE		ACCESS CONTROL	
HIGHWAY FENCE		POWER POLE	
EXISTING FENCE		TELEPHONE POLE	
GUARD FENCE		MARSH	
CONSTRUCTION LIMITS		HEDGE	
RIGHT OF WAY LINE		TREES	
TRAVELED WAY		PROFILE ELEVATION	
RAILROADS		STREAM or CREEK	



GROSS LENGTH OF PROJECT	186.598 m
EXCEPTIONS	0.000 m
ADDITIONS	0.000 m
NET LENGTH OF PROJECT	186.598 m
NET LENGTH OF BRIDGES	0.000 m
NET LENGTH OF ROAD	186.598 m

KDOT METRIC

All dimensions shown without a SI suffix are in millimeters. All elevations shown are in meters.

PREPARED & SUBMITTED BY

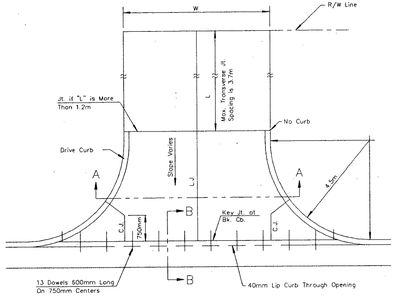
SCHWAB-EATON, P.A.
WICHITA, KANSAS

JOHN DAVID SCHMITT LICENSED L.S. 15404 4-16-04 KANSAS PROFESSIONAL ENGINEER

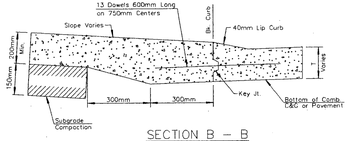
APPROVED - DATE 4-21-04

JAMES L. ARMOUR, P.E.
CITY ENGINEER
PROJECT NO. 472 83363

FHWA SEC NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	15-87 K-8014-01	2002	2	21



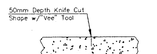
ENTRANCE DETAILS
Not To Scale

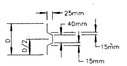


SECTION B – B
Not To Scale

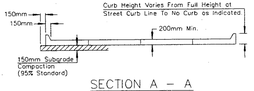
NOTES

1. ONE LONGITUDINAL JOINT SHALL BE CONSTRUCTED ALONG THE CENTERLINE OF DRIVES HAVING A "W" DIMENSION OF 7.4 m OR LESS. TWO LONGITUDINAL JOINTS SHALL BE CONSTRUCTED WITH EQUAL SPACINGS NOT TO EXCEED 3.0 m FOR DRIVES WITH A "W" DIMENSION GREATER THAN 7.4 m.
2. 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.
3. 15 mm EXPANSION JOINTS SHALL BE INSTALLED ALONG THE PROPERTY LINE WHEN DRIVE CONSTRUCTION ALONG THIS LINE ABUTS CONCRETE PARKING LOTS OR CONCRETE DRIVE EXTENSION.
4. ALL DRIVEWAYS SHALL BE A MINIMUM OF 200 mm IN THICKNESS AND SHALL BE WITHOUT REINFORCEMENT. DRIVEWAYS MAY BE CONSTRUCTED THICKER THAN 200mm AND THEY MAY BE REINFORCED WITH 150 mm X 300mm MW25 X MW25 WELDED WIRE FABRIC WHEN PROPERLY AUTHORIZED BY THE PROPERTY OWNER WITH THE ENGINEER'S CONCURRENCE.

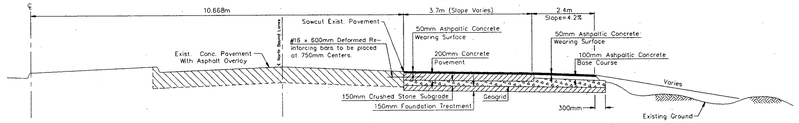




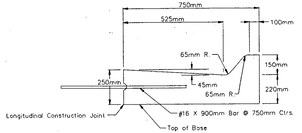
Alt. Longitudinal Construction Joint



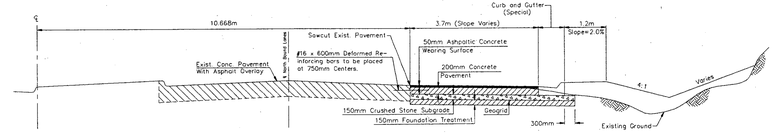
SECTION A – A
Not To Scale



Shoulder Section
Sta. 10+360.825 to Sta. 10+398.779



Curb and Gutter
(Special)



Curb and Gutter Section
Sta. 10+212.181 to Sta. 10+340.599

CITY OF WICHITA
TYPICAL SECTIONS
WICHITA, KANSAS

PROJECT NO. 01W002
REVISED DATE:

CHECKED BY: CM
DRAWN BY: DJC
DATE: OCTOBER 7, 2002
SHEET NUMBER: 2
TOTAL SHEETS: 21

FHWA SEC. NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	15-87 K-8014-01	2002	3	21

P.O.T. Sta. 10+036.050

1. Flush with Surface
2. Spk. & Washer Top Guard Rail — 15.20m S.W.
3. Spk. & 2 Washer Top Guard Rail — 18.80m W.
4. Spk. Top Guard Rail — 20.69m N.N.E.

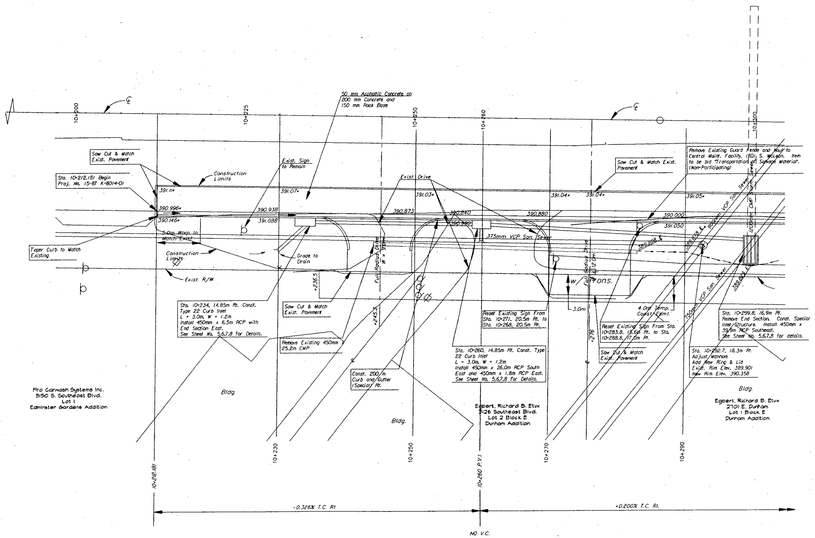
P.O.T. Sta. 10+286.057

1. Flush with Ground
2. Spk. & 1 Washer Top Guard Rail — 17.59m E.
3. Spk. & 1 Washer Top Guard Rail — 21.22m N.
4. Spk. & 2 Washer Top Guard Rail — 15.76m W.S.W.

BM #16. "+" Cut S.E. Cor. Conc. Pipe Base 31.188m Rt. Sta. 10+129.074 Elev. = 391.187

* Match Existing

SCALE 1:200



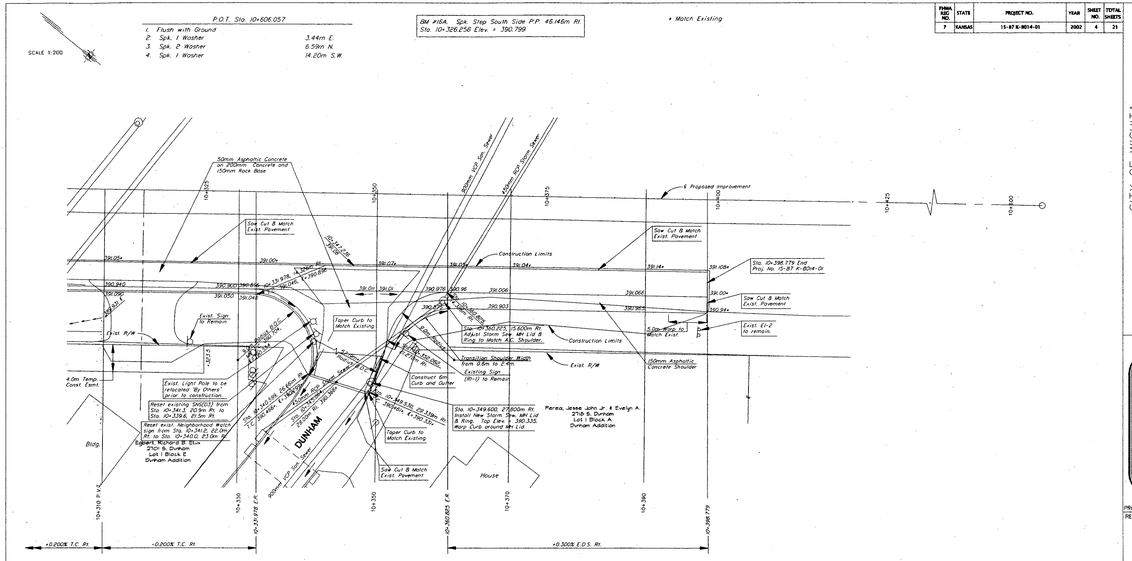
FHWA SEC. NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	15-87 K-8014-01	2002	4	21

P.O.T. Sta. 10+606.057

1. Flush with Ground
2. Spk. & Washer — 3.44m E.
3. Spk. & Washer — 6.59m N.
4. Spk. & Washer — 14.20m S.W.

BM #15A. Spk. Step South Side P.P. 46.146m Rt. Sta. 10+326.856 Elev. = 390.799

SCALE 1:200



CITY OF WICHITA
PLAN STA. 10+305.00 TO STA. 10+389.779
WICHITA, KANSAS

Schwab-Eaton, P.A.
CONSULTING ENGINEERS AND LAND SURVEYORS
3535 NW 58th, Suite 610, Wichita, Kansas 67203

PROJECT NO. 0W0002

REVISED: DATE:

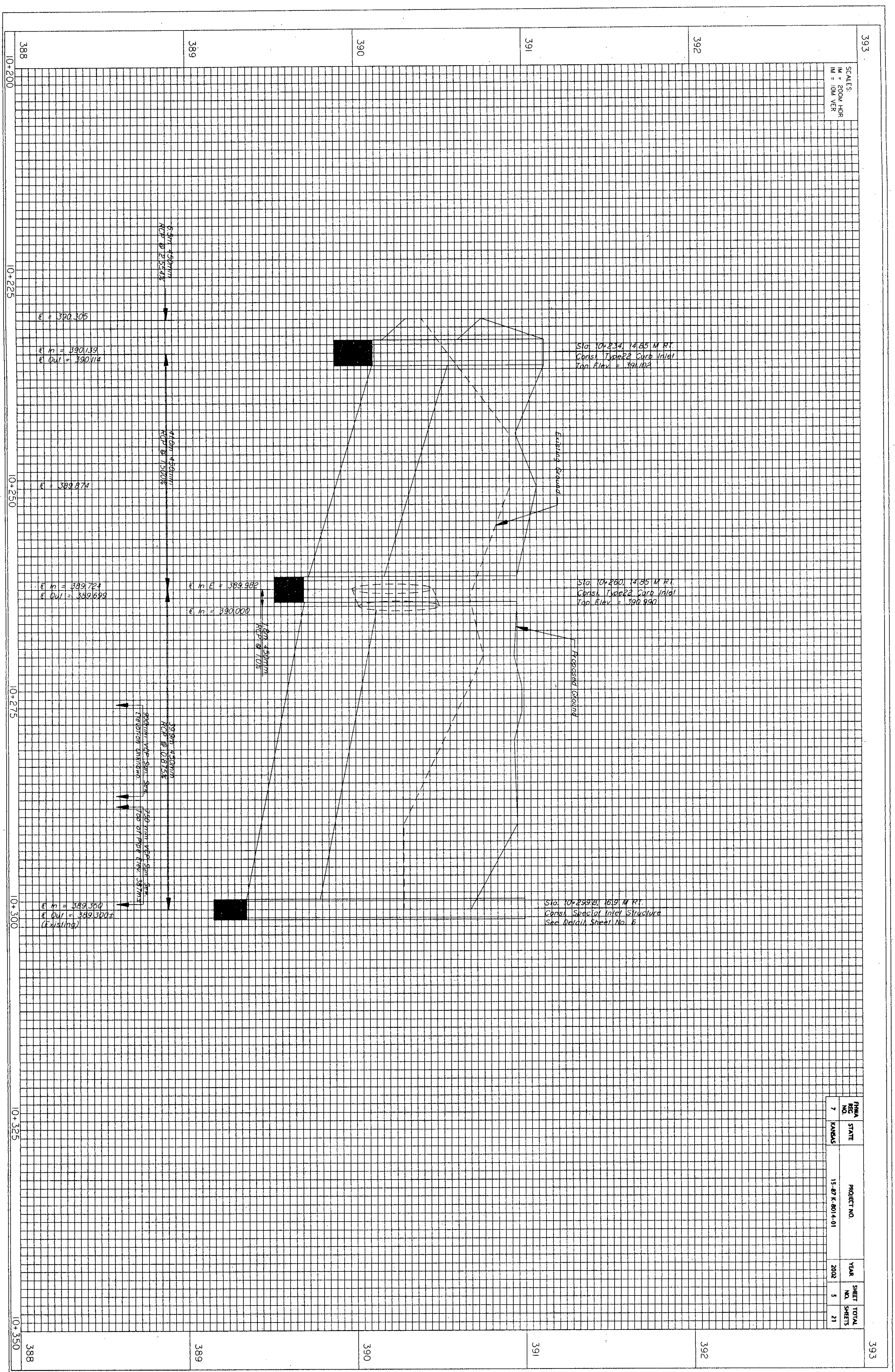
CHECKED BY: CM

DRAWN BY: DJC

DATE: SEPTEMBER 2002

SHEET NUMBER: 4

TOTAL SHEETS: 21



FHWA REG. NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	15-87 K-8014-01	2002	5	21

TOTAL SHEETS: 21

SHEET NUMBER: 5

DATE: MARCH 2004

DRAWN BY: MCO

CHECKED BY: CM

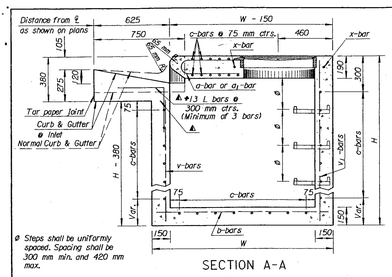
REVISED: DATE:
DRIVEWAY 4/4/04
10+276

PROJECT NO. 01W002

Schwab-Eaton, P.A.
CIVIL ENGINEERS • LAND SURVEYORS
AND LANDSCAPE ARCHITECTS
8615 West Frazier, Suite 2, Wichita, Kansas 67212

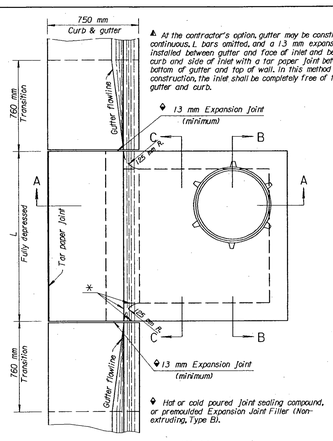
CITY OF WICHITA
KANSAS STATE HIGHWAY 15
WICHITA, KANSAS

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	15-87 K-8014-01	2002	6	21



SECTION A-A

◆ Steps shall be uniformly spaced. Spacing shall be 300 mm min. and 420 mm max.

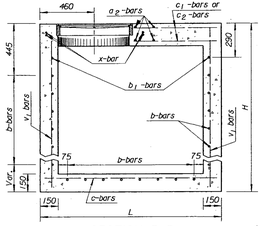


PLAN

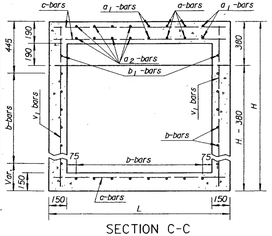
▲ At the contractor's option, gutter may be constructed continuous, L bars omitted, and a 13 mm expansion joint installed between gutter and face of inlet and between curb and side of inlet with a tar paper joint between bottom of gutter and top of wall. In this method of construction, the inlet shall be completely free of the gutter and curb.

GENERAL NOTES

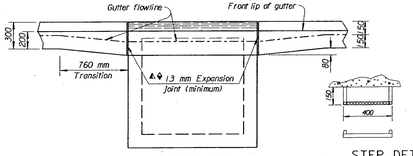
Use Class A Concrete throughout. All exposed edges shall be finished with an edging tool.
At the contractor's option Class A Concrete (AE) or mix used in concrete pavement may be used throughout.
In general, pipes will enter and leave manhole at various positions. Where possible bend bars around pipes.
Floor of manhole to be shaped as shown in various "EXAMPLES" on Standard Drawing RD730 SI.
Manhole opening and steps, where used, shall be placed to afford easy access to top of shaped invert. Top reinforcing bars to be adjusted accordingly.
All castings shall be gray iron and shall comply with the KDOT Standard Specifications.
No deductions in concrete quantities shall be made for pipe openings or additions to concrete quantities shall be made for shaping floor of manholes.
When directed by the Engineer, the top of the inlet shall be sloped slightly to approximately fit the ground line or other conditions.
Dimensions and mass of cast iron as shown on this sheet are minimum. Larger dimensions and/or greater mass of cast iron may be used.
Steps shall be installed in all storm sewer inlets when specified in the plans or when "H" is equal to or greater than 1.8 m. Steps shall comply with the KDOT Standard Specification.
No reduction in concrete quantities shall be made for pipe openings.
When directed by the Engineer, a small opening in the back of the inlet shall be provided in order to drain a low area. Reinforcing bars shall extend through the opening. No reduction in concrete quantities will be made for this opening.
No addition in concrete quantities shall be made for shaping floor of inlet.
No reduction in pay length of curb, gutter, or curb & gutter will be made through the inlet area.
The mass of castings includes no allowance for fillets and overruns.
Curb and Gutter sections shall be shaped as shown where required by the installation of curb inlets. This work shall be subsidiary to other bid items.
See sheet entitled "Reinforcing Steel for Inlets and Manholes" for details and quantities.
For additional notes and details on Light Type Cast Iron Manhole Cover and Ring Type C, and Cast Iron Steps, see Standard Drawing RD730 SI "Reinforced Concrete Manhole".
All reinforcing steel shall be #13 at 150 mm centers except where noted. Minimum clear distance to reinforcement shall be 40 mm.



SECTION B-B



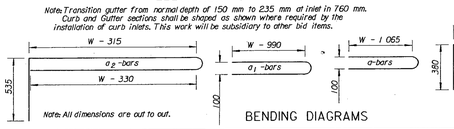
SECTION C-C



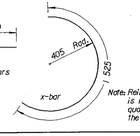
ELEVATION

STEP DETAILS

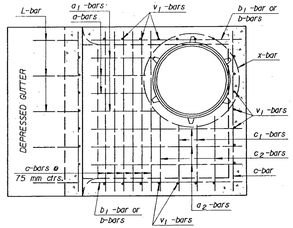
Note: Transition gutter from normal depth of 150 mm to 235 mm at inlet in 760 mm. Curb and Gutter sections shall be shaped as shown where required by the installation of curb inlets. This work will be subsidiary to other bid items.



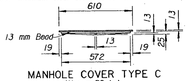
BENDING DIAGRAMS



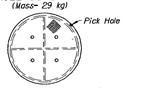
Note: Reinforcing steel for L bars is not included in the steel quantity and is subsidiary to the other inlet items.

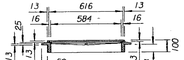


Reinforcing Steel Top View

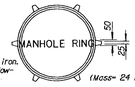


MANHOLE COVER TYPE C
(Mass= 29 kg)





TYPE C



(Mass= 24 kg)

NOTE: All manhole castings are cast iron. Mass of castings includes no allowance for fillets and overruns.

*LIGHT TYPE MANHOLE COVER & RING

*Rings with four equally spaced lugs will be permitted.

NO.	DATE	REVISIONS	BY	APP'D
3				
2	12-16-97	Revised step spacing	R.J.S.	J.D.B.
1	1-27-97	Revised Rebar Designation	R.J.S.	J.D.B.

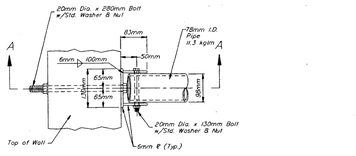
KANSAS DEPARTMENT OF TRANSPORTATION

TYPE 22 CURB INLET

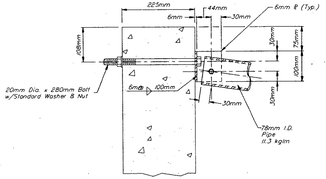
RD748 SI

FINAL APPROVAL	C-2-98	APP'D: James D. Brewer	
QUANTITIES	DETAILED	QUANTITIES	TRACED: Bowser
DESIGN CK.	DETAIL CK.	QUAN CK.	TRACE CK. Seitz

FHWA PROJ. NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	15-87 & 8014-01	2002	7	21

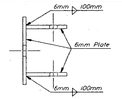


PLAN VIEW
Not to Scale

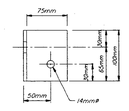


SECT. A-A
Not to Scale

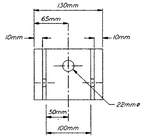
PIPE CONNECTION DETAILS



PLAN VIEW
Not to Scale



SIDE VIEW



FRONT VIEW
Not to Scale

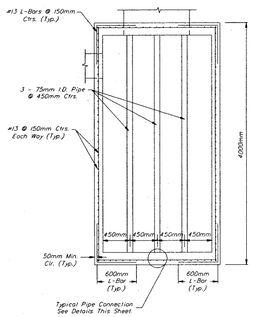
CONNECTION PLATE DETAILS

NOTES:

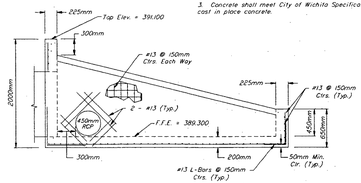
1. Minimum 50mm Clearance shall be maintained between reinforcing steel and concrete surfaces.

2. All corners shall be reinforced with #13 x 600mm L-Bars @ 150mm Centers.

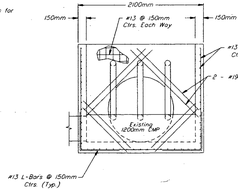
3. Concrete shall meet City of Wichita Specifications for cast in place concrete.



PLAN VIEW
Not to Scale



SIDE VIEW
Not to Scale



FRONT VIEW
Not to Scale

SPECIAL INLET STRUCTURE DETAILS

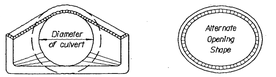
CITY OF WICHITA
INLET STRUCTURE AND DETAILS
WICHITA, KANSAS

Schwab-Eaton, P.A.
CONSULTING ENGINEERS AND LANDSCAPE ARCHITECTS
800 West Douglas, Suite 2, Wichita, Kansas 67213

PROJECT NO. 0W002
REVISED: DATE:

CHECKED BY: CM
DRAWN BY: DJC
DATE: SEPTEMBER 2002
SHEET NUMBER: 7
TOTAL SHEETS: 21

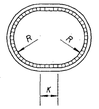
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	15-87 K-8014-01	2002	8	21



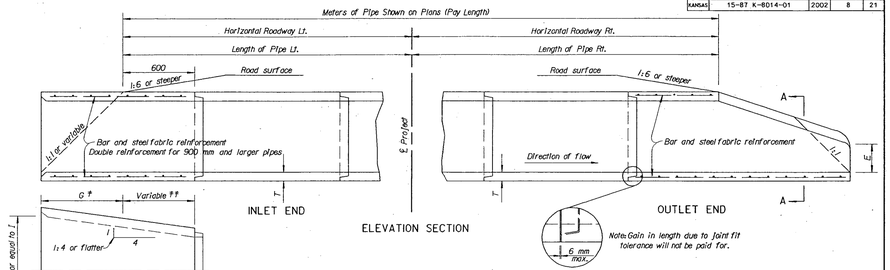
END ELEVATION (TYPE I)

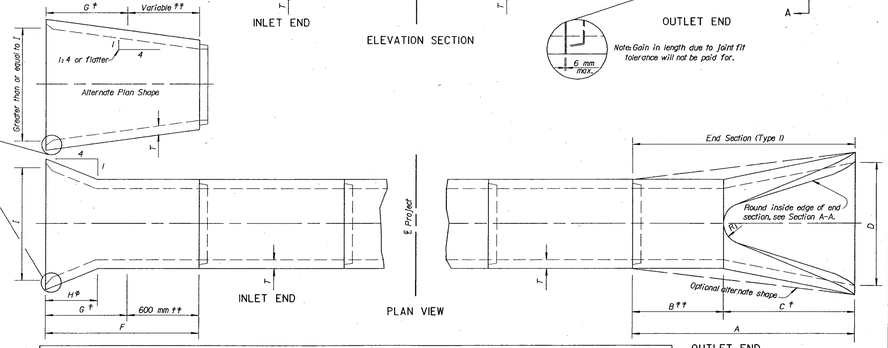
SECTION A-A

Showing rounding of inside edge of end section.



END ELEVATION (TYPE III)





† Transition to round pipe.

‡ Paid for as separate item of End Section, except when structures are bid as alternates, in that case End Sections shall be subsidiary to bid item "Drainage Structure No. ".

†† Included in pay length of pipe.

⊕ Minimum waterway area is calculated at the inside of the bevel.

END SECTION (TYPE I) NOMINAL DIMENSIONS

Diam.	A	B††	C ‡	D	E	R_1	Slope	T
300	1 850	1 240	610	610	100	230	1:3	50
375	1 855	1 170	685	760	150	280	1:3	57
450	1 855	1 170	685	915	230	300	1:3	63
600	1 865	760	1 105	1 220	240	355	1:3	75
750	1 870	500	1 370	1 525	300	380	1:3	88
900	2 485	885	1 600	1 830	380	510	1:3	100
1 050	2 490	890	1 600	1 980	535	560	1:3	113
1 200	2 490	660	1 830	2 135	610	560	1:3	125
1 350	2 495	645	1 650	2 285	585	610	1 :2.4	138
1 500	2 515	990	1 525	2 440	890	610	1:2	150
1 800	2 515	535	1 980	2 745	915	610	1 :1.86	175
2 100	2 835	535	2 300	3 050	915	610	1 :1.6	200

SIDE TAPERED INLET SECTION (TYPE III)-NOMINAL DIMENSIONS

Diam.	Min. W.W. ⊕ Area m²	F	G	H	I	J	K	R	T
600	0.42	1 295	685	435	800	38	200	300	75
750	0.65	1 460	850	545	1 005	51	255	375	88
900	0.94	1 625	1 015	650	1 200	51	300	450	100
1 050	1.27	1 790	1 180	760	1 405	64	355	525	113
1 200	1.66	1 955	1 345	865	1 605	76	405	600	125
1 350	2.11	2 120	1 510	980	1 810	89	460	675	138
1 500	2.60	2 285	1 675	1 090	2 010	102	510	750	150
1 800	3.74	2 615	2 005	1 310	2 410	127	610	900	175
2 100	5.09	2 945	2 335	1 535	2 810	152	710	1 050	200

Dimensions for alternate shapes shall be equal to or greater than those shown in the table, unless otherwise shown.

PIPE CULVERT SUMMARY

Station	Location	Type	Size	Crown Grade Elev.	Flow line LT.	Flow line RT.	Horizontal Roadway LT.	Horizontal Roadway RT.	Degree of Rotation	Length of Pipe LT.	Length of Pipe RT.	Meters of Pipe	End Sects. Type I LT.	End Sects. Type I RT.	End Sects. Type III LT.	End Sects. Type III RT.	End Sects. Type IV LT.	End Sects. Type IV RT.

Note: The culverts listed on this sheet may or may not indicate that the culvert installed will be reinforced concrete, steel, or aluminum.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

CONCRETE END SECTIONS FOR CONCRETE PIPES TYPE I & SIDE TAPERED INLET SECTION (TYPE III)

RD712 SI

TYPE APPROVAL	4-5-94	APP'D: Dennis O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED: Brewer
DESIGN CK.	DETAIL CK.	QUANCK.	TRACE CK: SMITZ

FHWA REG NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	15-87 K-8014-01	2002	9	21

GENERAL NOTES:

1. THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPES OF BMP'S WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.

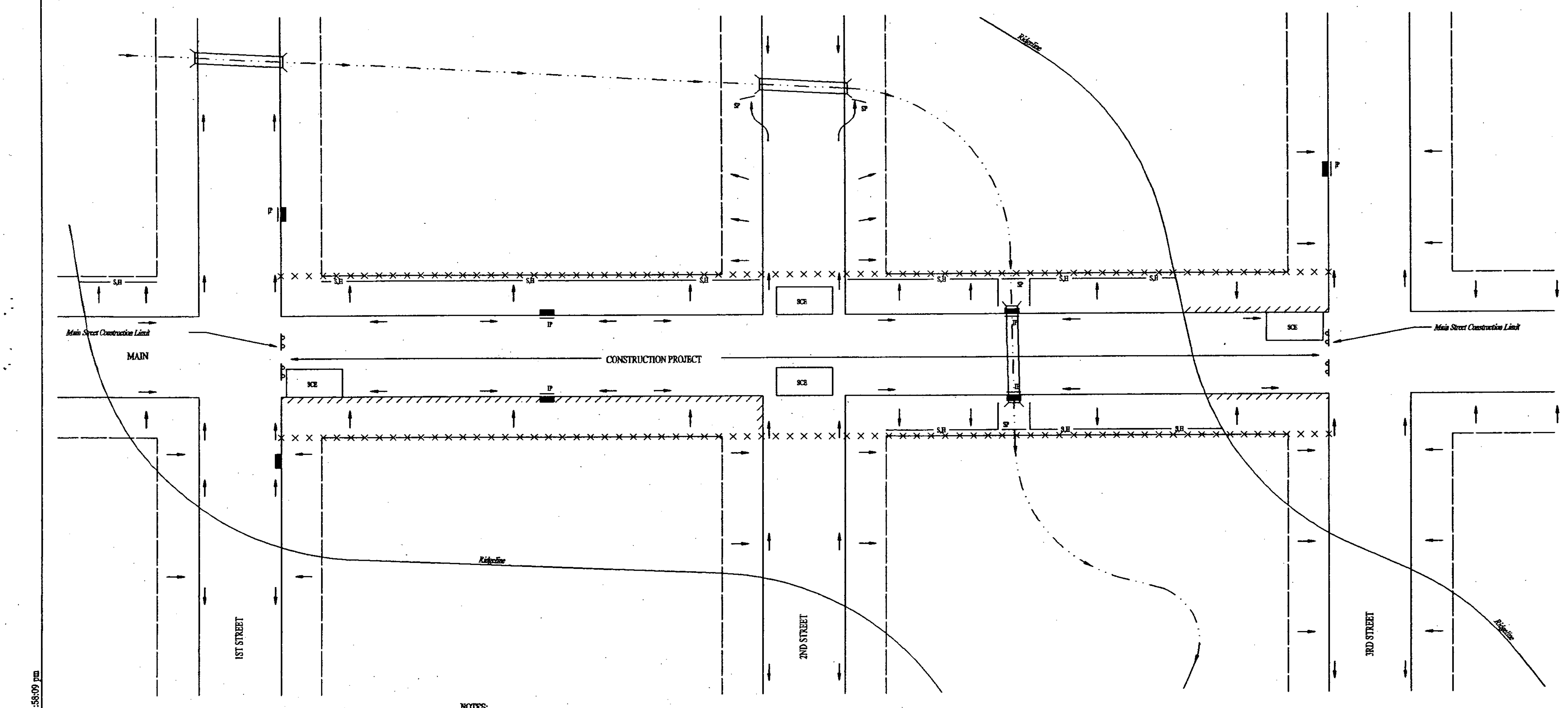
2. BMP'S MUST BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROCESS.

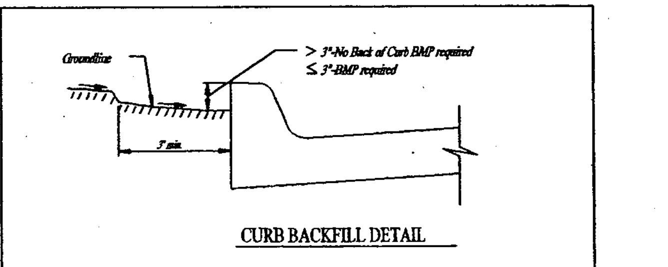
3. IF THE PROJECT WILL DISTURB 5 ACRES OR MORE, A FEDERAL/STATE NPDES STORMWATER PERMIT IS REQUIRED. A DETAILED STORMWATER POLLUTION PREVENTION PLAN, IS REQUIRED. THE BMP'S SHOWN ON THIS SHEET ARE CONSIDERED TO BE THE MINIMUM TO BE SHOWN IN THE POLLUTION PREVENTION PLAN.

4. FOR PROJECTS DISTURBING LESS THAN 5 ACRES, CONTRACTORS ARE ENCOURAGED TO PREPARE STORMWATER POLLUTION PREVENTION PLANS PRIOR TO CONSTRUCTION.

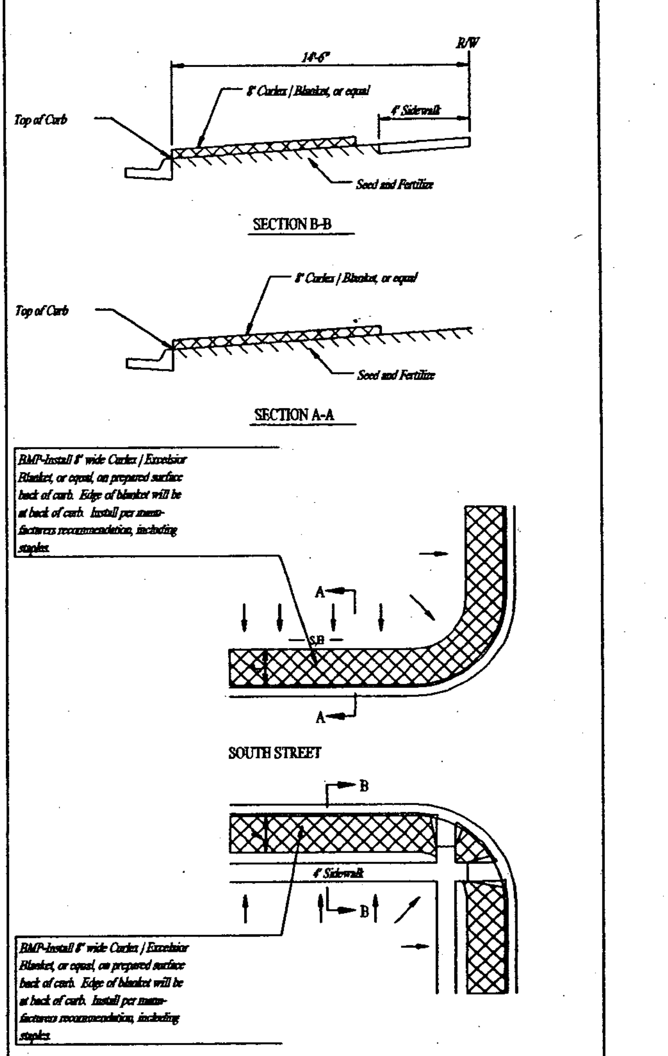
5. FAILURE TO USE AND MAINTAIN BMP'S IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE CONTRACTOR TO THE PENALTIES PROVIDED FOR THEREIN.

6. THE APPLICATION OF BMP'S SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE A DIFFERENT BMP OTHER THAN THOSE SHOWN. BMP'S, OTHER THAN THOSE SHOWN, MAY BE UTILIZED AS LONG AS THEY ARE EFFECTIVE AND MAINTAINED.





CURB BACKFILL DETAIL



SECTION B-B

SECTION A-A

BMP-Install 8' wide Curlex / Excelsior Blanket, or equal, on prepared surface back of curb. Edge of blanket will be at back of curb. Install per manufacturers recommendation, including staples.

SOUTH STREET

BMP-Install 8' wide Curlex / Excelsior Blanket, or equal, on prepared surface back of curb. Edge of blanket will be at back of curb. Install per manufacturers recommendation, including staples.

BACK OF CURB PROTECTION DETAIL

NOTES:

1. EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.

2. EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.

3. AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE GUTTER, SUPPLIMENTAL BMP'S WILL BE INSTALLED BY THE CONTRACTOR AS NEEDED, TO FIX THE PROBLEM.

LEGEND

— — — —	R-O-W LIMITS
→	DRAINAGE FLOW PATH
× × × × ×	R/W LIMIT WITHIN CONSTRUCTION LIMIT
■	STORM WATER INLETS
IP	INLET PROTECTION
— S.B —	SILT FENCE OR HAYBALE BMP
SP	STREAM PROTECTION
SCE	STABILIZED CONSTRUCTION ENTRANCE
//////	BACK OF CURB PROTECTION

NOTES:

1. GENERAL BMP GOAL IS TO KEEP ALL SEDIMENT CONFINED TO THE CONSTRUCTION SITE, AND OUT OF ALL UNDERGROUND PIPES, DITCHES, AND OTHER DRAINAGE FACILITIES.

2. THE POINT OF COMPLIANCE IS GENERALLY THE RIGHT-OF-WAY LINES WITHIN THE LIMITS OF CONSTRUCTION.

3. BMP'S WILL BE REQUIRED AT ALL POINTS ALONG THE PROJECT WHERE DISTURBED EARTH CAN DRAIN ONTO PRIVATE PROPERTY.

4. INLET PROTECTION DEVICES WILL BE REQUIRED WHEREVER WATER CAN DRAIN OFF THE PROJECT SITE INTO AN INLET, INCLUDING ANY SIDE STREET INLETS.

5. BMP'S SHALL BE INSTALLED AT CREEK CROSSINGS SO AS TO PREVENT SEDIMENT FROM ENTERING THEREIN.

6. STABILIZED CONSTRUCTION ENTRANCES SHALL BE PROVIDED, AS NEEDED, TO PREVENT MUD FROM TRACKING ONTO STREETS NOT UNDER CONSTRUCTION AND ON STREETS WITHIN THE PROJECT LIMITS IF TRAFFIC IS BEING MAINTAINED THROUGH THE PROJECT.

7. ANY MUD TRACKED ONTO STREETS MUST BE REMOVED AT THE END OF EACH WORK DAY.

8. THE CONTACTOR WILL BE REQUIRED TO PLACE BMP'S BACK OF CURB, WHENEVER WATER CAN DRAIN OVER CURB, TO KEEP ERODED SOIL OUT OF THE GUTTERLINES, IN ACCORDANCE WITH THE FOLLOWING:
   - A. THE BMP REQUIRED WILL BE CURLEX | EXCELSIOR BLANKET, OR EQUAL. SAID BLANKET SHALL BE PLACED OVER THE APPROPRIATE SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS. (SEE BACK OF CURB PROTECTION DETAIL)
   - B. THIS BMP SHALL BE INSTALLED IMMEDIATELY WHENEVER THE CURB IS BACKFILLED TO WITHIN 3" OF THE TOP OF CURB. (SEE CURB BACKFILL DETAIL) OTHER BMP'S MAY BE REQUIRED AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB.
   - C. ADDITIONALLY, OTHER BMP'S (HAYBALES, SILT FENCE, ETC.) WILL BE INSTALLED AT LOCATIONS OF CONCENTRATED FLOW RESULTING IN SEDIMENT OVERRUNNING THE MAT.
   - D. SHOULD THE PROJECT PLANS SPECIFY THAT THE RIGHT-OF-WAY IS TO BE SODDED, THE EXCELSIOR MAT WILL NOT BE REQUIRED SO LONG AS THE SOD IS PLACED WITHIN 48 HOURS AFTER CURB BACKFILL REACHES A HEIGHT OF 3" OR LESS FROM TOP OF CURB. (SEE DETAIL)

CITY OF WICHITA

SOIL EROSION BMPS STREET IMPROVEMENT PROJECTS

CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

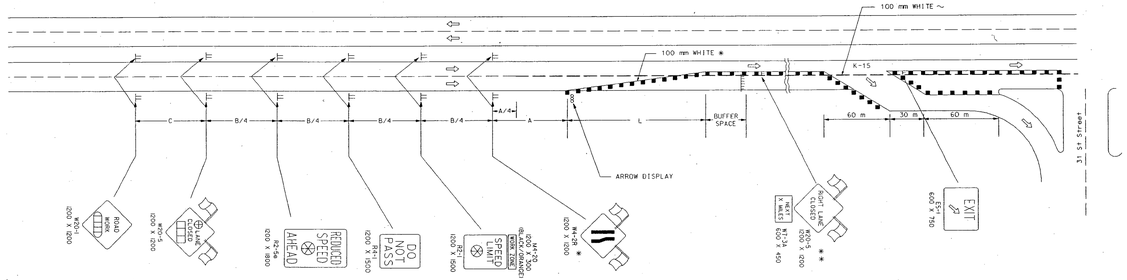
PROJECT NUMBER	OCA NO.
___-_____	_____

DATE	
SEPT. 2002	SHEET 9 OF 21

DSNR: DEP OPER: DEP SCALE: 1=20.00
Q:\STANDARD\Standards Wichita\SEBMP_STREETS 06-05-2001 01:58:09 pm

FHWA REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	15-87 K-8014-01	2002	10	21

REFER TO STD. TE7105I FOR ADDITIONAL INFORMATION ON TRAFFIC CONTROL SIGNS AND SIGN SPACING.
REFER TO STD. TE7025I FOR INFORMATION ON TAPERS AND CHANNELIZING DEVICES.
REFER TO STD. TE7005I FOR LENGTH OF BUFFER SPACE.



LEFT-SIDE SIGNS SHALL BE OMITTED FOR A FOUR-LANE UNDIVIDED HIGHWAY.

* FOR LEFT LANE CLOSURES USE W4-2L AND YELLOW EDGE LINE ALONG CHANNELIZING DEVICES.

** THE W20-5 (RIGHT LANE CLOSED) AND W7-3A (NEXT X MILES) SIGNS SHOULD BE PLACED AT 3.2 KILOMETER INCREMENTS ON A PROJECT OF 6.4 KILOMETERS OR LONGER.

~ 100 mm WHITE BROKEN LINE TO BE PAINTED ON AFTER CONSTRUCTION AS TEMPORARY PAVEMENT MARKING. PERMANENT MARKING WILL BE DONE 'BY OTHERS' WITH THE MILL AND OVERLAY PROJECT FOR THIS STRETCH OF HIGHWAY. ITEM TO BE BID 'LUMP SUM STRIPING'.

A TRAILER OR TRUCK WITH AN ARROW DISPLAY MAY BE USED DURING DAYTIME IN PLACE OF THE ARROW DISPLAY. THE TRUCK SHOULD BE LOCATED BETWEEN THE BUFFER SPACE AND THE WORK AREA.

■ Channelizing Devices
Type III Barricades
AHEAD, 1500 FT Or 1 MILE
Speed To Be Determined By The Engineer
AHEAD, 1000 FT, 1500 FT Or ½MILE
RIGHT OR LEFT
X Length To The Nearest Whole Mile

NO.	DATE	REVISION	BY	APP'D
3				
2				
1	9-26-02	REMOVED D20-1(SM), ADDED W20-5 AND W7-3A	MJK	S.A.R.

KANSAS DEPARTMENT OF TRANSPORTATION
TYPICAL TRAFFIC CONTROL FOUR-LANE HIGHWAY ONE LANE CLOSED

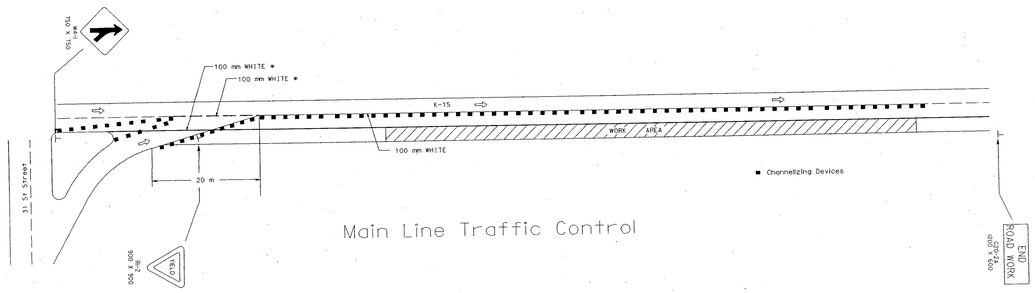
~~8/14/02~~ 9/1/00

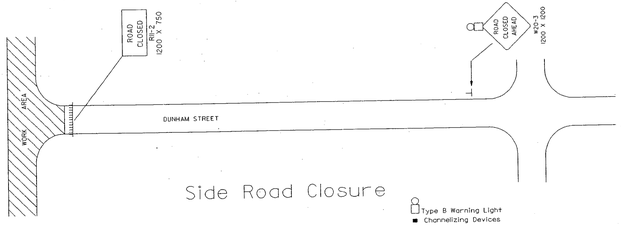
FORM APPROVED	9-10-02	APP'D	WILFRED F. WILKENING
DESIGNED T.E.A.	DETAILED R.A.T.	QUANTITIES	TRACED
DESIGN CH.	DETAIL CH.	QUAN. CH.	TRACE CH.

INPUT DATA: "Access/07/tc/access

FHWA REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	15-87 K-8014-01	2002	100	21

REFER TO STD. TE7105I FOR ADDITIONAL INFORMATION ON TRAFFIC CONTROL SIGNS AND SIGN SPACING.
REFER TO STD. TE7103I FOR INFORMATION ON TAPERS AND CHANNELIZING DEVICES.





NO.	DATE	REVISION	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL

FHWA APPROVAL		APPD	
CHECKED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.

DGN Date: 1 ######## DGN: ########

FHWA REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	15-87 K-8014-01	2002	11	21

1. MUTCD COMPLIANCE
ALL TRAFFIC CONTROL DEVICES AND THEIR INSTALLATION AND MAINTENANCE SHALL COMPLY WITH THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS. WHENEVER THE TRAFFIC CONTROL STANDARDS CONFLICT WITH THE MANUAL, THE STANDARDS SHALL GOVERN.

2. DESIGN SPEED
TRAFFIC CONTROL SHOULD BE DESIGNED AND INSTALLED USING THE POSTED SPEED OF THE ROADWAY PRIOR TO WORK STARTING.

3. CLEAR ZONE
WHENEVER PRACTICAL, ALL CONSTRUCTION EQUIPMENT (INCLUDING VEHICLES), MATERIALS, AND DEBRIS SHALL BE STORED OUT OF THE CLEAR ZONE. WHERE THIS CANNOT BE ACHIEVED, THE CONTRACTOR SHALL PLACE APPROPRIATE SIGNS, OBJECT IDENTIFIERS, AND/OR BARRICADES AS DESIGNATED BY THE ENGINEER. TRAFFIC CONTROL DEVICES NEEDED FOR THIS CONDITION SHALL BE CONSIDERED SUBSIDIARY TO OTHER BID ITEMS.

4. MINIMUM LANE WIDTHS
LANE WIDTHS SHALL BE A MINIMUM OF 3.4 m (MEASURED BETWEEN CENTERLINES OF PAVEMENT MARKINGS) OR AS SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER. A LANE WIDTH LESS THAN 3.4 m MAY REQUIRE RESTRICTED ROADWAY WIDTH SIGNING.

5. FLAGGER
A MINIMUM OF ONE FLAGGER SHALL BE STATIONED WITHIN EACH MULTI-LANE ROADWAY WORK AREA WHERE WORK IS IN A CLOSED LANE ADJACENT TO TRAFFIC AND NOT SEPARATED BY CONCRETE SAFETY BARRIER.

6. PAVEMENT MARKING
(A) TYPE I TAPE IS TO BE APPLIED TO A FINAL SURFACE (NEW PAVEMENT OR ANY SURFACE THAT WILL REMAIN WHEN THE PROJECT IS COMPLETE) AS A TEMPORARY MARKING WHEN THE TEMPORARY MARKINGS WILL BE REMOVED. WHEN TYPE I TAPE IS SPECIFIED, ONLY TYPE I TAPE WILL BE ALLOWED.

TYPE II TAPE IS TO BE APPLIED TO A SURFACE THAT IS TO BE REMOVED OR COVERED BY FUTURE CONSTRUCTION.

TYPE II TAPE (REMOVAL REQUIRED) IS TO BE APPLIED TO A SURFACE THAT IS TO BE REMOVED OR COVERED BY FUTURE CONSTRUCTION, BUT ON WHICH THE MARKINGS MUST BE REMOVED TO ALLOW FOR A DIFFERENT TRAFFIC CONTROL PATTERN PRIOR TO THE REMOVAL OR COVERING OF THE SURFACE.

TYPE IIA TAPE MAY BE APPLIED AS TEMPORARY BROKEN LINES ON INTERMEDIATE BITUMINOUS SURFACES ONLY.

WHEN TYPE II, TYPE II (REMOVAL REQUIRED), OR TYPE IIA TAPE IS SPECIFIED, THE CONTRACTOR HAS THE OPTION TO USE EITHER TYPE I OR TYPE II TAPE.

IF RECOMMENDED BY THE MANUFACTURER, USE A PRIMER TO PRECONDITION THE PAVEMENT SURFACE.

(B) ALL CONFLICTING PAVEMENT MARKINGS SHALL BE REMOVED AND ALL TRANSITION TAPERS, CROSSOVERS, AND EDGE LINES ALONG CHANNELIZING DEVICES SHALL BE MARKED WITH SOLID 100mm WIDE PAVEMENT MARKING WHEN THE WORK WILL OCCUPY A LOCATION MORE THAN THREE DAYS.

WHEN LINE MASKING TAPE IS SPECIFIED TO TEMPORARILY COVER EXISTING PAVEMENT MARKINGS, ONLY LINE MASKING TAPE WILL BE ALLOWED. WHEN EXISTING PAVEMENT MARKING REMOVAL IS SPECIFIED, THE CONTRACTOR HAS THE OPTION TO EITHER REMOVE THE EXISTING PAVEMENT MARKING OR APPLY LINE MASKING TAPE.

7. FIRST MODULE OF IBS:
THE FIRST MODULE OF EACH INERTIAL BARRIER SYSTEM (IBS) SHALL HAVE A MINIMUM OF 0.175 SQ m OF FLUORESCENT ORANGE PRISMATIC GRADE RETROREFLECTIVE SHEETING FACING TRAFFIC. EITHER A VERTICAL RECTANGLE OR DIAMOND SHAPE MAY BE USED.

8. TRUCK-MOUNTED ATTENUATOR (TMA):
THE CONTRACTOR HAS THE OPTION TO USE A TMA ON A PROTECTION VEHICLE OR AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE HASH MARKINGS ON THE BACK OF THE TMA SHALL BE BLACK AND YELLOW STRIPES.

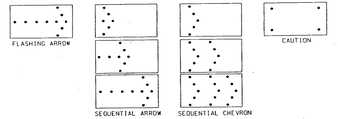
9. PEDESTRIAN AND WORKER SAFETY:
EVERY EFFORT SHOULD BE MADE TO SEPARATE PEDESTRIANS AND WORKERS FROM ADJACENT TRAFFIC. PEDESTRIANS SHOULD NOT BE LED INTO DIRECT CONFLICTS WITH WORK SITE VEHICLES, EQUIPMENT, OR MAINLINE TRAFFIC MOVING THROUGH OR AROUND THE WORK SITE. PEDESTRIANS SHOULD BE PROVIDED WITH A SAFE, CONVENIENT TRAVEL PATH. WORKERS SHOULD BE TRAINED IN HOW TO WORK NEXT TO TRAFFIC IN A WAY THAT MINIMIZES THEIR VULNERABILITY.

10. NCHRP REPORT 350 CRASHWORTHY REQUIREMENTS:
TRAFFIC CONTROL DEVICES SHALL MEET THE EVALUATION CRITERIA IN NCHRP REPORT 350 AS SUPPLEMENTED BY FHWA MEMORANDUM "IDENTIFYING ACCEPTABLE HIGHWAY SAFETY FEATURES, DATED JULY 25, 1997 (AVAILABLE ON THE INTERNET AT http://safety.fhwa.dot.gov/fourthlevel/pro_res_road_pol.htm).

THE CONTRACTOR SHALL:
1) CERTIFY THAT ALL CATEGORY 1 DEVICES (AS DEFINED IN THE FHWA MEMORANDUM) WERE PURCHASED PRIOR TO OCTOBER 1, 1998; OR IF THE DEVICES WERE PURCHASED AFTER OCTOBER 1, 1998, INCLUDE A COPY OF THE MANUFACTURER'S SELF-CERTIFICATION THAT THEY ARE NCHRP REPORT 350 COMPLIANT.
2) CERTIFY THAT ALL CATEGORY 2 DEVICES (AS DEFINED IN THE FHWA MEMORANDUM) WERE PURCHASED PRIOR TO OCTOBER 1, 2000; OR IF THE DEVICES WERE PURCHASED AFTER OCTOBER 1, 2000, INCLUDE A COPY OF THE ENTIRE FHWA ACCEPTANCE LETTER FOR EACH OF THE DEVICES THAT ARE NCHRP REPORT 350 COMPLIANT.
3) CERTIFY THAT THE TRUCK MOUNTED ATTENUATORS (TMA'S) WHICH ARE DEFINED AS CATEGORY 3 DEVICES BY THE FHWA MEMORANDUM) WERE PURCHASED PRIOR TO OCTOBER 1, 1998, AND INCLUDE A COPY OF THE ENTIRE FHWA ACCEPTANCE LETTER STATING THAT THE TMA'S ARE NCHRP REPORT 350 COMPLIANT; OR IF THE DEVICES WERE PURCHASED AFTER OCTOBER 1, 1998, INCLUDE A COPY OF THE ENTIRE FHWA'S ACCEPTANCE LETTER STATING THAT THE TMA'S ARE NCHRP REPORT 350 COMPLIANT.

ALL CATEGORY 1 & 2 DEVICES PURCHASED PRIOR TO THE ABOVE DATES MAY BE USED UNTIL THE END OF THEIR SERVICEABLE LIVES OR JANUARY 1, 2002, WHICHEVER COMES FIRST. TMA'S PURCHASED PRIOR TO OCTOBER 1, 1998, MAY BE USED UNTIL THE END OF THEIR SERVICEABLE LIVES.

ARROW DISPLAYS



ARROW DISPLAY ELEMENTS SHALL BE CAPABLE OF A MINIMUM 50 PERCENT DIMMING FROM THEIR FULL-RATED LAMP VOLTAGE. FULL LAMP VOLTAGE SHOULD BE USED FOR DAY AND DIMMED MODE SHALL BE USED FOR NIGHT. AN ARROW DISPLAY IN THE CAUTION MODE SHALL BE USED ONLY FOR SHOULDER WORK OR ROADSIDE WORK NEAR THE SHOULDER.

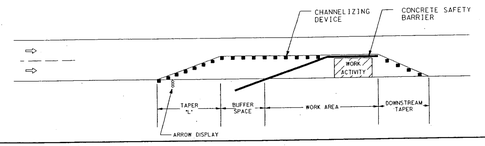
BUFFER SPACE:

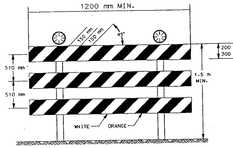
SPEED (MPH) *	20	25	30	35	40	45	50	55	60	65	70
LENGTH (m)	10	15	25	35	50	65	85	100	125	150	175

NEITHER WORK ACTIVITY NOR STORAGE OF EQUIPMENT, VEHICLES, OR MATERIAL SHOULD OCCUR IN THE BUFFER SPACE. WHEN A PROTECTION VEHICLE IS PLACED IN ADVANCE OF THE WORK SPACE, ONLY THE SPACE UPSTREAM OF THE VEHICLE CONSTITUTES THE BUFFER SPACE.

* POSTED SPEED PRIOR TO WORK STARTING

IF TEMPORARY CONCRETE SAFETY BARRIER IS USED TO SEPARATE APPROACHING TRAFFIC FROM THE WORK ACTIVITY, THE BARRIER SHALL BE CONSIDERED PART OF THE WORK AREA. A FULL LANE WIDTH SHOULD BE AVAILABLE THROUGHOUT THE LENGTH OF THE BUFFER SPACE. FOR EXAMPLE:





TYPE III BARRICADE WITH LIGHTS

BARRICADES:
WHEN CLOSING A ROAD, TYPE III BARRICADES SHALL BE PLACED END-TO-END TO SUFFICIENTLY COVER THE ROADWAY. WHEN AUTHORIZED ACCESS MUST BE ALLOWED, THE BARRICADES SHALL BE LONGITUDINALLY STAGGERED TO MAINTAIN THE APPEARANCE OF A CLOSED ROADWAY. IF THE ACCESS IS FOR CONSTRUCTION VEHICLES, THE BARRICADES SHALL BE REALIGNED TO DENY ANY ACCESS WHEN THE CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY. IF THE ACCESS IS FOR LOCAL TRAFFIC, THE BARRICADES SHALL REMAIN LONGITUDINALLY STAGGERED AND A SECOND LINE OF END-TO-END BARRICADES SHALL BE PLACED AT THE WORK AREA TO CLOSE THE ROAD.

FOR WOODEN BARRICADES, NOMINAL LUMBER DIMENSIONS WILL BE SATISFACTORY.

THE ENTIRE AREA OF BARRICADE RAILS, BOTH FRONT AND BACK, SHALL BE FULLY REFLECTORIZED WITH TYPE III HIGH PERFORMANCE RETROREFLECTIVE SHEETING.

THE STRIPES SHALL SLOPE DOWNWARD TO THE SIDE TRAFFIC IS TO PROCEED OR TOWARD THE CENTER OF THE ROADWAY AT ROAD CLOSURES.

SIGNS MOUNTED ON TYPE III BARRICADES SHOULD NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

A MINIMUM OF TWO TYPE A LIGHTS SHALL BE USED AT EACH LOCATION WHERE A TYPE III BARRICADE OR BARRICADES ARE USED. A LIGHT SHALL BE MOUNTED ON THE OUTSIDE CORNER OF THE END BARRICADES WHEN MORE THAN ONE BARRICADE IS USED.

WARNING LIGHTS SHALL COMPLY WITH THE CURRENT ITE PURCHASE SPECIFICATIONS FOR FLASHING AND STEADY BURN WARNING LIGHTS. THE LENS SHALL BE A MINIMUM OF 175 mm IN DIAMETER AND BE MOUNTED AT A MINIMUM HEIGHT OF 1.5 m.

TYPE A LOW INTENSITY FLASHING WARNING LIGHTS SHALL BE MAINTAINED SO AS TO BE CAPABLE OF BEING VISIBLE ON A CLEAR NIGHT FROM A DISTANCE OF 1000 m.

NO.	DATE	REVISION	BY	APP'D
3				
2				
1				

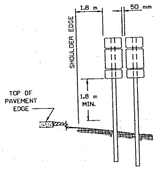
KANSAS DEPARTMENT OF TRANSPORTATION

GENERAL TRAFFIC CONTROL

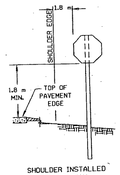
TE700SI 9/1/00

FHWA APPROVAL	DESIGN	APPD WITHOUT EXCEPTION	
DATE: 9-27-02	DETAILED BY: K.A.M.	QUANTITIES	TRACED
BY: [illegible]	DETAIL CK.	DRAWN BY:	TRACE CK.

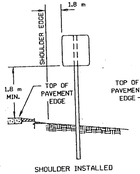
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	5-87 K-1034-01	2002	14	15



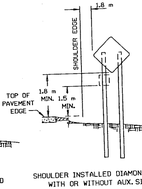
SHOULDER INSTALLED ROUTE MARKER DIRECTIONAL SIGNS



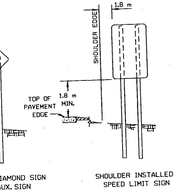
SHOULDER INSTALLED STOP SIGN



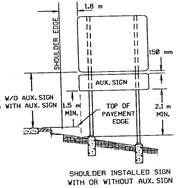
SHOULDER INSTALLED SIGN



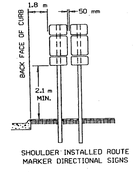
SHOULDER INSTALLED DIAMOND SIGN WITH OR WITHOUT AUX. SIGN



SHOULDER INSTALLED SPEED LIMIT SIGN



SHOULDER INSTALLED SIGN WITH OR WITHOUT AUX. SIGN



SHOULDER INSTALLED ROUTE MARKER DIRECTIONAL SIGNS

DESIRABLE LOCATIONS FOR MAINLINE SIGNING
LATERAL AND LONGITUDINAL LOCATION

THE LATERAL DISTANCE FOR ADVANCE GUIDE, EXIT DIRECTION, SUPPLEMENTAL, MILEAGE, AND GENERAL MOTORIST SIGNS SHALL BE 12 m TO 18 m FROM PAVEMENT EDGE TO NEAR EDGE OF SIGN WITH A MINIMUM OF 3 m FROM THE OUTSIDE EDGE OF SIGN TO THE RIGHT OF WAY LINE. THE MINIMUM DISTANCE BETWEEN THESE SIGNS SHALL BE APPROXIMATELY 250 m . THE LONGITUDINAL ADJUSTMENT FROM PLAN STATION FOR ALL ABOVE MENTIONED SIGNS WITH THE EXCEPTION OF EXIT DIRECTION AND MILEAGE SIGNS SHALL BE DETERMINED BY THE ENGINEER. THE LONGITUDINAL ADJUSTMENT FROM PLAN STATION FOR THE EXIT DIRECTION SIGN SHALL NOT EXCEED 30 m . THE LONGITUDINAL ADJUSTMENT FROM PLAN STATION FOR THE MILEAGE SIGN SHALL NOT EXCEED 800 m .

THE LATERAL DISTANCE FOR THE MERGE SIGN SHOULD BE THE NORMAL SHOULDER INSTALLATION WITH THE LONGITUDINAL ADJUSTMENT FROM PLAN STATION NOT TO EXCEED 15 m .

THE ROUTE MARKER ASSEMBLY AND SPEED LIMIT SIGNS SHALL BE 12 m TO 18 m FROM PAVEMENT EDGE TO NEAR EDGE OF SIGN WITH A MINIMUM OF 3 m FROM THE OUTSIDE EDGE OF SIGN TO THE RIGHT OF WAY LINE. THE MINIMUM DISTANCE BETWEEN THESE TWO SIGNS SHALL BE APPROXIMATELY 300 m . THE LONGITUDINAL ADJUSTMENT FROM PLAN STATION TO BE DETERMINED BY THE ENGINEER. WHEN USED IN AN INTERCHANGE AREA, THESE SIGNS SHOULD BE THE NORMAL SHOULDER INSTALLATION WITH THE LONGITUDINAL ADJUSTMENT FROM PLAN STATION NOT TO EXCEED 15 m .

DESIRABLE LOCATIONS FOR RAMP SIGNING
LATERAL AND LONGITUDINAL LOCATION

THE LATERAL LOCATION FOR ALL SIGNS SHALL BE THE NORMAL SHOULDER INSTALLATION. THE LONGITUDINAL ADJUSTMENT FROM THE PLAN STATION TO BE DETERMINED BY THE ENGINEER.

DESIRABLE LOCATIONS FOR SIDE ROAD SIGNING
LATERAL AND LONGITUDINAL LOCATION

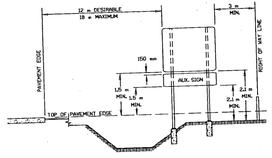
THE LATERAL LOCATION FOR ALL SIGNS, EXCEPT THE E4-1a SIGN, SHALL BE THE NORMAL SHOULDER INSTALLATION. THE LATERAL LOCATION FOR THE E4-1a SIGN SHALL BE OF FROM PAVEMENT EDGE TO NEAR EDGE OF SIGN. THE LONGITUDINAL ADJUSTMENT FROM PLAN STATION FOR ALL SIGNS TO BE DETERMINED BY THE ENGINEER. WHEN THERE IS NO SHOULDER, THE VERTICAL CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE NEAR EDGE OF THE TRAVELING SURFACE SHALL BE AT LEAST 1.8 m, WITH A MINIMUM LATERAL CLEARANCE OF 3.6 m .

VARIATION OF SIGN MOUNTING HEIGHT AND LATERAL CLEARANCE

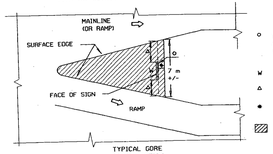
IN BUSINESS, COMMERCIAL, AND RESIDENTIAL DISTRICTS WHERE PARKING AND/OR PEDESTRIAN MOVEMENT IS LIKELY TO OCCUR OR WHERE THERE ARE OTHER OBSTRUCTIONS TO VIEW, THE VERTICAL CLEARANCE TO THE BOTTOM OF THE SIGN SHALL BE AT LEAST 2.1 m WITH A MINIMUM LATERAL CLEARANCE OF 600 mm .

ERECTION OF SIGNS BEHIND GUARD FENCE

GUARD FENCE IS TO BE UTILIZED AS MUCH AS POSSIBLE FOR FINAL PLACEMENT OF SIGNS, USING THE LONGITUDINAL LOCATION CRITERIA FOR THE SIGNS IDENTIFIED ABOVE. ANY SIGN MAY BE ADJUSTED FROM THE PLAN STATION TO BE ERECTED BEHIND GUARD FENCE. NO SIGNS SHALL BE LOCATED BETWEEN 30 m IN ADVANCE OF THE NOSE OF THE GUARD FENCE AND 15 m BEHIND THE THE NOSE OF THE GUARD FENCE. IN NO CASE IS THE NONFLARE END OF THE SIGNS TO EXTEND BEYOND THE BACK SIDE OF THE GUARD FENCE AND NO POST SHALL BE LOCATED CLOSER THAN 1.5 m FROM THE FACE OF THE GUARD FENCE.

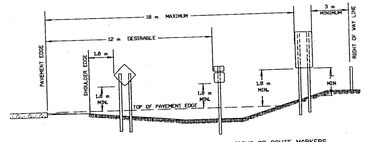


OFFSET INSTALLED SIGN WITH OR WITHOUT AUXILIARY SIGN

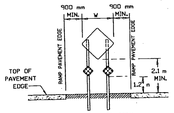


TYPICAL GORE SIGN LOCATION

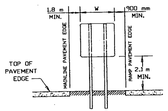
- THE STATION SHOWN ON THE PLAN SHEETS IS AN APPROXIMATED STATION. THE LONGITUDINAL ADJUSTMENT FROM PLAN STATION TO BE DETERMINED BY THE ENGINEER.
- W SIGN WIDTH
- △ FOR LATERAL POSITIONING, SEE SKETCHES OF GORE INSTALLED SIGN
- ● MIN. OF 900 mm CLEAR DISTANCE
- PAVED AREA



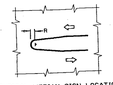
MAINLINE INSTALLED REGULATORY SIGNS, WARNING SIGNS OR ROUTE MARKERS

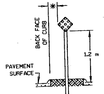


GORE INSTALLED SIGN WITH TWO TI/OM'S (BETWEEN TWO RAMPS)

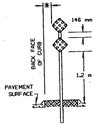


GORE INSTALLED SIGN (BETWEEN MAINLINE AND RAMP)

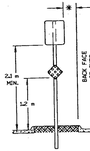




MEDIAN INSTALLED ONE TI/OM



MEDIAN INSTALLED TWO TI/OM



MEDIAN INSTALLED SIGN WITH ONE TI/OM

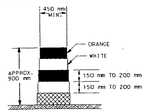
✱ NOTE: A RAISED MEDIAN INSTALLED SIGN SHALL NOT EXTEND BEYOND THE BACK FACE OF CURB. NORMAL CLEARANCE SHOULD BE 600 mm FROM SIGN EDGE TO BACK FACE OF CURB.

NO.	DATE	REVISION	BY	APP'D
3				
2				
1	9-19-96	CHANGED GUARD FENCE NOTE	TCP	TMB

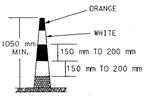
KANSAS DEPARTMENT OF TRANSPORTATION
TYPICAL HEIGHTS, LATERAL LOCATIONS, AND LONGITUDINAL ADJUSTMENTS FOR SIGN INSTALLATION (US OR K-ROUTE)
TE410ASI
9-1-94

FORM APPROVAL	B.H.M.	APP'D	MARK A. RUMPH		
STANDARD NO.	SE14.02	SUBMITTED	TRAGER	RE	
DESIGN CH.	DETAIL CH.	PLAN CH.	TRANS. CH.		

FEDERAL AID NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	15-83 K-8054-01	2002	12	21



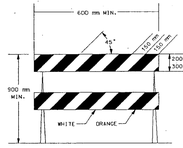
DRUM



TRIM LINE CHANNELIZER

DRUMS AND TRIM LINE CHANNELIZERS SHALL BE RETROREFLECTORIZED FULL CIRCUMFERENCE WITH AT LEAST TWO ORANGE AND TWO WHITE 150 mm TO 200 mm WIDE STRIPES. ADDITIONAL STRIPES MAY BE NON-REFLECTIVE. IF THERE ARE NON-REFLECTIVE SPACES BETWEEN ADJACENT STRIPES, THEY SHALL BE NO MORE THAN 50 mm WIDE.

ALL RETROREFLECTIVE STRIPES ON DRUMS SHALL BE TYPE III HIGH PERFORMANCE SHEETING. THE WHITE STRIPES ON TRIM LINE CHANNELIZERS SHALL BE TYPE III HIGH PERFORMANCE SHEETING. THE ORANGE STRIPES ON TRIM LINE CHANNELIZERS SHOULD BE FLUORESCENT ORANGE PRISMATIC SHEETING; HOWEVER, TRIM LINE CHANNELIZERS PURCHASED PRIOR TO NOVEMBER 1, 2000, MAY HAVE STRIPES OF ORANGE TYPE III HIGH PERFORMANCE SHEETING, PROVIDED THE DEVICES ARE SPACED ACCORDING TO THE CHART BELOW. PROJECTS LET AFTER JANUARY 1, 2002, WILL REQUIRE THAT THE ORANGE STRIPES ON ALL TRIM LINE CHANNELIZERS BE FLUORESCENT ORANGE PRISMATIC SHEETING.



TYPE II BARRICADE

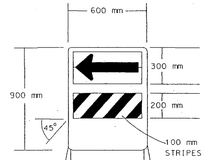
FOR WOODEN BARRICADES, NOMINAL LUMBER DIMENSIONS WILL BE SATISFACTORY.

FOR RAILS LESS THAN 900 mm LONG, 100 mm WIDE STRIPES MAY BE USED.

THE ENTIRE AREA OF BARRICADE RAILS, BOTH FRONT AND BACK, SHALL BE FULLY RETROREFLECTORIZED WITH TYPE III HIGH PERFORMANCE RETROREFLECTIVE SHEETING.

BARRICADES USED ON ROADWAYS WITH SPEED LIMITS OF 45 MPH OR MORE SHALL HAVE A MINIMUM OF 0.175 SQ m OF RETROREFLECTIVE AREA FACING TRAFFIC.

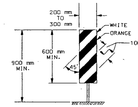
THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



DIRECTION INDICATOR BARRICADE

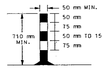
THE ARROW PANEL SHALL BE BLACK ON FLUORESCENT ORANGE PRISMATIC GRADE SHEETING. THE STRIPES SHALL BE ORANGE AND WHITE TYPE III HIGH PERFORMANCE RETROREFLECTIVE SHEETING SLOPING DOWNWARD IN THE DIRECTION TRAFFIC IS TO PASS.

THE DIRECTION INDICATOR BARRICADE SHOULD BE USED IN SERIES TO DIRECT THE MOTORIST INTO THE INTENDED LANE OF TRAVEL.
THE ARROW PANEL SHOULD NOT BE VISIBLE TO OPPOSING TRAFFIC.



VERTICAL PANEL

THE ENTIRE AREA OF VERTICAL PANELS, BOTH FRONT AND BACK, SHALL BE FULLY REFLECTORIZED WITH TYPE III HIGH PERFORMANCE RETROREFLECTIVE SHEETING. VERTICAL PANELS USED ON ROADWAYS WITH A SPEED LIMIT OF OF 45 MPH OR GREATER SHALL HAVE A MINIMUM OF 0.175 SQ m OF RETROREFLECTIVE AREA FACING TRAFFIC. THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TUBULAR MARKERS

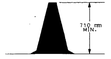
LOCATION / ITEM	CROSS-OVERS	DIVERSIONS	TANGENTS	TAPERS	RAMPS	HEAD TO HEAD	OBJECT IDENTIFIER	
DRUMS	YES	YES	YES	YES	YES	(1)	YES	
TRIM LINES	(2)	(2)	(2)	(2)	(2)	(1,2)	YES	
PORTABLE VERTICAL PANELS	(3)	(3)	(3)	(3)	(3)	(1,3)	YES	
DIRECTION INDICATOR BARRICADE	NO	NO	NO	YES	NO	NO	NO	
TYPE II BARRICADE	(3)	(3)	(3)	(3)	NO	NO	YES	
PORTABLE TUBULAR MARKERS	NO	NO	YES	NO	YES	(1)	NO	
FIXED TUBULAR MARKERS	(4)	(4)	(4)	(4)	(4)	YES	NO	
FIXED VERTICAL PANELS	(4)	(4)	(4)	(4)	(4)	(4)	YES	

(1) Not allowed on freeways or expressways, or for durations of more than three days.

(2) Place at normal spacing if sheeted with fluorescent orange prismatic sheeting. Place at $\frac{1}{2}$ spacing in tapers but pay at the rate of one device per full space if orange stripes are Type III high performance sheeting. Intermixing of trim line channelizers with fluorescent orange and orange Type III high performance sheeting is not allowed.

(3) Slashes must slope down toward direction traffic is to pass.

(4) Fixed tubular markers or Vertical Panels may be substituted for any of the above situations with the approval of the Engineer.



ORANGE CONES

CONES MAY BE USED AS CHANNELIZING DEVICES FOR DAYTIME OPERATIONS ONLY. THEY WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE SUBSIDIARY TO OTHER TRAFFIC CONTROL BID ITEMS. THE ENGINEER MAY REQUIRE THAT CONES BE SUPPLEMENTED BY OTHER TRAFFIC CONTROL DEVICES IN CERTAIN SITUATIONS SUCH AS OPEN TRENCHES.

CHANNELIZER PLACEMENT:

(A) THE SPACING BETWEEN DEVICES IN THE TAPER SHOULD NOT EXCEED A DISTANCE IN METERS EQUAL TO 0.3 TIMES THE POSTED SPEED LIMIT IN MPH PRIOR TO WORK STARTING.

(B) THE SPACING BETWEEN DEVICES IN THE WORK ZONE SHOULD NOT EXCEED A DISTANCE IN METERS OF 0.6 TIMES THE POSTED SPEED LIMIT IN MPH PRIOR TO WORK STARTING.

(C) WHERE EXISTING CONDITIONS WARRANT, THE ENGINEER MAY REQUIRE A DECREASE IN THE SPACING STIPULATED ABOVE. WHEN TRAFFIC CONTROL IS BID LUMP SUM, ADDITIONAL DEVICES WILL BE PAID FOR AS EXTRA WORK.

(D) CHANNELIZING DEVICES SHALL BE PLACED FOR OPTIMUM VISIBILITY, NORMALLY AT RIGHT ANGLES TO THE TRAFFIC FLOW.

(E) CHANNELIZING DEVICES PLACED ALONG SHOULDER EDGES OR IN DROPOFFS SHALL HAVE A MINIMUM OF 600 mm FROM THE TOP OF THE CHANNELIZING DEVICE TO THE TOP OF THE PAVEMENT.

TAPER FORMULAS:

L = WS FOR SPEEDS OF 45 MPH OR MORE

$L = WS^2/60$ FOR SPEEDS OF 40 MPH OR LESS

WHERE: L = MINIMUM LENGTH OF TAPER IN METERS
S = NUMERICAL VALUE OF POSTED SPEED PRIOR TO WORK STARTING IN MPH
W = WIDTH OF OFFSET IN METERS

NO.	DATE	REVISION	BY	APP'D
3				
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1				

KANSAS DEPARTMENT OF TRANSPORTATION

CHANNELIZING DEVICES

TE702SI — 9/1/00

DESIGN UNIT			DATE	Michael F. Hilmes	
DESIGNED	T.P.K.	DETAILED	B.A.C.	QUANTITIES	TRACED
CHECKED		DETAIL CK.		Name Ck.	Trace Ck.

DGN: US15_7_08800_01_SE08800

FHWA REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	15-87 K-8014-01	2002	13	21

GENERAL NOTES

1. MAINTENANCE:
THE CONTRACTOR SHALL MAINTAIN ALL SIGNS AND DEVICES IN THEIR PROPER POSITION AND CLEAN OR REPLACE ANY DAMAGED OR ILLEGIBLE SIGN OR DEVICE AS DIRECTED BY THE ENGINEER.

2. EXISTING SIGNS:
IF EXISTING SIGNS THAT ARE TO REMAIN (WHETHER DENOTED ON THE PLANS OR NOT) INTERFERE WITH CONSTRUCTION WORK, THE CONTRACTOR SHALL REMOVE, STORE, AND RESET THE SIGNS. THIS SHALL BE SUBSIDIARY TO OTHER TRAFFIC CONTROL BID ITEMS. SIGNING DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

3. CONFLICTING SIGNS AND SIGNS NOT IN USE:
SIGNS THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLAN OR DO NOT APPLY TO THE TRAFFIC OPERATIONS SHALL BE IMMEDIATELY REMOVED. TURNED SO NOT VISIBLE TO TRAFFIC FROM ANY DIRECTION, OR COMPLETELY COVERED WITH ADEQUATE OPAQUE WATERPROOF MATERIAL. TAPE SHALL NOT BE APPLIED TO THE FACE OF THE SIGN. SIGNS NOT IN USE FOR A PERIOD LONGER THAN TWO WEEKS SHALL BE REMOVED, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

4. TEMPORARY AND POST MOUNTED SIGNS:
TRAFFIC CONTROL SIGNS THAT ARE ANTICIPATED TO REMAIN IN PLACE FOR 3 DAYS OR LESS ARE CONSIDERED "TEMPORARY". TEMPORARY SIGNS SHALL BE MOUNTED AT A MINIMUM HEIGHT OF 300 mm. TRAFFIC CONTROL SIGNS IN PLACE FOR OVER 3 DAYS ARE REQUIRED TO BE MOUNTED ON WOOD POSTS 89 mm X 89 mm MIN.), OR EQUIVALENT APPROVED BY KDOT BUREAU OF TRAFFIC ENGINEERING. AT A MINIMUM HEIGHT OF 1.5 m. A MINIMUM OF 1050 mm OF THE WOOD POST MUST BE BELOW THE GROUND SURFACE WITH ADEQUATE BACKFILL AND COMPACTION.

5. SHEETING:
ALL ORANGE SIGNS SHALL BE RETROREFLECTORIZED WITH FLUORESCENT ORANGE PRISMATIC GRADE SHEETING. ALL OTHER SIGNS SHALL BE RETROREFLECTORIZED WITH TYPE III HIGH PERFORMANCE SHEETING OF STANDARD COLORS.

6. ROLL-UP SIGNS:
ROLL-UP SIGNS MAY BE USED FOR TEMPORARY WARNING SIGNS. THEY MUST BE FLUORESCENT ORANGE PRISMATIC GRADE RETROREFLECTIVE SIGNS OF OPAQUE MATERIAL. MESH SIGNS ARE NOT ALLOWED.

7. SIGNS INVOLVING SPEEDS:
THE M4-2O(WORK ZONE), R2-1(SPEED LIMIT), R2-5E(REDUCED SPEED AHEAD) SHOULD BE USED ONLY IF THE ENGINEER DETERMINES THAT A REDUCED SPEED IS REQUIRED THROUGHOUT THE PROJECT.

THE M4-2O(WORK ZONE) AND R2-1(SPEED LIMIT) SHALL BE INSTALLED THROUGHOUT THE LENGTH OF THE PROJECT AS DIRECTED BY THE ENGINEER AND BE PAID FOR AT THE "EACH PER DAY" BID FOR THE SIZE OF SIGN USED.

FOR SPEEDS OF 30 MPH OR LESS ON TURNS OR REVERSE TURNS. USE THE W1-1 (TURN) OR W1-3(REVERSE TURN), RESPECTIVELY. FOR SPEEDS OF 35 MPH OR MORE ON CURVES OR REVERSE CURVES. USE THE W1-2(CURVE) OR W1-4(REVERSE CURVE) RESPECTIVELY.

THE W13-1(MPH) IS TO BE ELIMINATED IF THE ADVISORY SPEED IS WITHIN 5 MPH OF THE SPEED LIMIT.

8. OBJECT MARKING:
WHERE PERMANENT TYPE 3 OBJECT MARKERS ARE NOT ALREADY IN PLACE, ORANGE AND WHITE FIXED VERTICAL PANELS SHALL BE ERECTED TO DELINEATE EXPOSED BRIDGE ENDS.

9. SIGNS CONTROLLING WORK AREA:
THE G20-2a(END ROAD WORK) SHOULD BE PLACED 150 m FROM THE END OF THE ACTUAL WORK AREA, NOT NECESSARILY AT THE EXTREME LIMITS OF THE PROJECT.

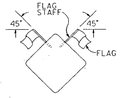
WHERE TWO WORK AREAS ARE LESS THAN 1.6 km APART IN RURAL AREAS OR 0.4 km APART IN URBAN AREAS, THE G20-2a(END ROAD WORK) FOR THE FIRST WORK AREA AND THE W20-1(ROAD WORK) FOR THE SECOND WORK AREA SHOULD BE ELIMINATED.

THE G20-1(ROADWORK NEXT X MILES) IS TO BE USED IF THE PROJECT EXCEEDS 3.2 km, THE LENGTH SHOWN AS "X" SHALL BE TO THE NEAREST WHOLE MILE.

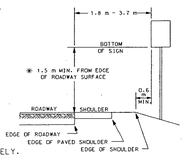
WHERE THE ROAD IS OPEN BEYOND THE POINT OF CLOSURE, EITHER THE R11-3 (ROAD CLOSED _ MILES AHEAD LOCAL TRAFFIC ONLY) OR THE R11-4 (ROAD CLOSED TO THRU TRAFFIC) SHOULD BE SUBSTITUTED FOR THE R11-2(ROAD CLOSED).

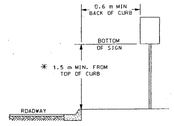
10. WARNING LIGHTS ON SIGNS:
WARNING LIGHTS SHALL COMPLY WITH THE CURRENT I.T.E. PURCHASE SPECIFICATIONS FOR FLASHING AND STEADY BURN WARNING LIGHTS. TYPE B HIGH INTENSITY LIGHTS ARE TO BE USED ON CONSTRUCTION WARNING SIGNS AS DIRECTED BY THE ENGINEER.

THEY SHALL NOT BE INSTALLED ON SIGNS MOUNTED LESS THAN 1.5 m HIGH ON TEMPORARY SUPPORTS. THEY SHALL BE MAINTAINED SO THAT THEY ARE CAPABLE OF BEING VISIBLE ON A SUNNY DAY FROM A DISTANCE OF 300 m WHEN VIEWED WITHOUT THE SUN DIRECTLY ON OR BEHIND THE DEVICE.



TWO (2) 450 mm x 450 mm FLUORESCENT RED-ORANGE FLAGS ARE TO BE ATTACHED IN THE POSITION SHOWN ON THE W1-1(TURN), W1-2(CURVE), W1-3(REVERSE TURN), W1-4(REVERSE CURVE), W3-3(SIGNAL AHEAD), W4-2(LANE REDUCTION), W20-4(ONE LANE ROAD), W20-5(LANE CLOSED), W20-7A(FLAGGER), AND W20-7(BE PREPARED TO STOP) SIGNS AND ANY OTHER ACTION SIGNS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE FLAGS AND STAFFS ARE TO BE ATTACHED IN SUCH A MANNER THAT THE SIGN WILL NOT BE OBSCURED. THE FLAGS MAY BE EITHER A CLOTH OR VINYL MATERIAL. THE FLAGS SHALL BE SUBSIDIARY TO THE CONSTRUCTION SIGN BID ITEMS.





* NOTE: A. IN BUSINESS, COMMERCIAL, AND RESIDENTIAL DISTRICTS, THE DISTANCE BETWEEN THE BOTTOM OF THE SIGN AND THE TOP OF THE NEAR EDGE OF THE TRAVEL WAY SHALL BE AT LEAST 2.1 m.
B. LARGE SIGNS HAVING AN AREA EXCEEDING 5 SQUARE METERS THAT ARE INSTALLED ON MULTIPLE BREAKAWAY POSTS SHALL BE MOUNTED A MINIMUM OF 2.1 m ABOVE THE GROUND
C. THE HEIGHT TO THE BOTTOM OF THE SECONDARY SIGN MOUNTED BELOW ANOTHER SIGN MAY BE 0.3 m LESS THAN THE APPROPRIATE HEIGHT SPECIFIED ABOVE

HEIGHT AND LATERAL DIMENSIONS FOR POST MOUNTED SIGNS
(ALL SIGNS LEFT IN PLACE OVER 3 DAYS)

SIGN LAYOUT INFORMATION

175 C
175 C
175 C

W20-7b
1200 mm x 1200 mm
(BLACK/ORANGE)

	STD. SIZE	EXPWY/FREEWAY
	100 C	200 C
	100 C	200 C
	250 E	400 E
	100 D	200 D
R2-5e (BLACK/WHITE)	600 X 900	1200 X 1800
WORK ZONE M4-20 (BLACK/ORANGE)	75 C 600 X 150	150 C 1200 X 300

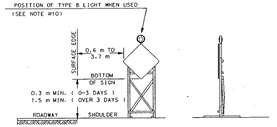
TEXT DIMENSIONS ARE IN mm- SERIES "C" FONT

ADVANCE WARNING SIGN SPACING (IN METERS):

	A	B	C
URBAN (40 MPH OR LOWER)	*60*	*60*	*60*
URBAN (45 MPH OR HIGHER)	*115*	*115*	*115*
RURAL	*150*	*150*	*150*
EXPRESSWAY/FREEWAY	*300*	*525*	*800*

THE SPACING BETWEEN ANY SIGNS MAY BE ADJUSTED AS APPROVED BY THE ENGINEER IN ORDER TO MAXIMIZE VISIBILITY.

IN NO CASE SHALL THE SPACING BETWEEN ANY SIGNS BE LESS THAN 30 m.



(SEE NOTE #6 FOR ROLL-UP SIGNS OPTION)

HEIGHT AND LATERAL DIMENSIONS FOR SIGNS MOUNTED ON SKIDS OR OTHER MOVABLE MOUNTS

NO.	DATE	REVISION	BY	APP'D
3				
2				
1	6-11-01	REDUCED MOUNTING HEIGHT	J.M	S.A.B

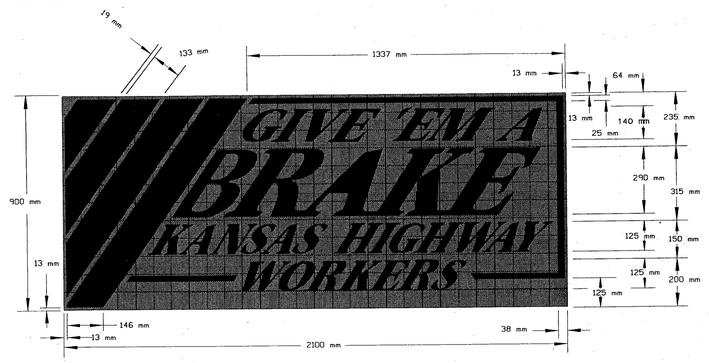
KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SIGNS

TE7105I 9/1/00

FHWA APPROVAL	6-26-01		APP'D	WILCHAR P. NOTARIO	
DESIGNED I.C.A.	DETAILED R.A.M.		QUANTITIES		TRACED
DESIGN CK.	DETAIL CK.		SIGNAL CK.		TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	14-87 K-8044-01	2002	15	21



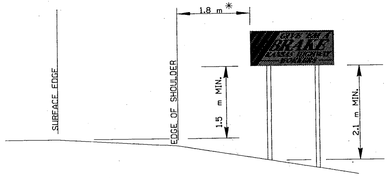
FONT : GARTH GRAPHIC
SLANT : 35° (from vertical)
SPACING: 100% (EXCEPT "BRAKE")

I104

1 square =75 mm

COLORS:

BACKGROUND	- BLACK	KANSAS HIGHWAY	- ORANGE
GIVE 'EM A	- WHITE	WORKERS	- ORANGE
BRAKE	- WHITE	BORDER	- WHITE
		STRIPES	- ORANGE



* If there is no shoulder, the sign shall be placed 1.8 m-3.7 m from the surface edge. If the sign is located in a business, commercial, or residential area where parking and/or pedestrian movement is likely to occur, the minimum lateral clearance from the surface edge of 1.8 m may be reduced to 0.6 m. If there is no feasible location, the sign may be eliminated with the approval of the Engineer.

In business, commercial, and residential districts, the distance between the bottom of the sign and the top of the near edge of traveled way shall be at least 2.1 m.

HEIGHT AND LATERAL PLACEMENT

GENERAL NOTES

The sign blank material shall be aluminum, wood, or fiberglass reinforced plastic.

The orange portion of the I104 sign shall be fluorescent orange prismatic grade retroreflective sheeting. The white portion shall be white Type III high performance retroreflective sheeting.

The signs are to be erected to yield upon impact. Guy wires and tie-downs are not allowed.

Typically, there are to be two informational signs erected per project: one for each direction of traffic.

Install signs a minimum of 75 m in advance of the Road Work Ahead sign. The Engineer may designate a more appropriate location if conditions dictate.

The informational signs are not to interfere with the traffic control signs for the project.

NO.	DATE	REVISION	BY	SUB'R
3				
2				
1	9-27-13	REDUCED MOUNTING HEIGHT	JH	SJH/B
NO.	DATE	REVISION	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

DETAILS FOR

I104 ("GIVE 'EM A BRAKE") SIGN

TE7125I

9/1/00

FINAL APPROVAL	9-27-13	LAYED	MCDONALD, MCDERMID
DESIGNED - L.E.A.	DETAILED - S.M.H.	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	DRAWN CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	15-87 K-8014-01	2002	16	21

SUMMARY OF QUANTITIES

REMOVAL AND RESETTING OF SIGNS ON PROJECT

EXISTING PLAN STATION NUMBER	NEW PLAN STATION NUMBER	SIGN TYPE	SIGN SIZE (mm)
10+283.8	10+283.8		
10+341.3	10+339.6	SNSI(D3)	
10+341.2	10+340.0		

EXISTING PLAN STATION NUMBER	NEW PLAN STATION NUMBER	SIGN TYPE	SIGN SIZE (mm)

EXISTING PLAN STATION NUMBER	NEW PLAN STATION NUMBER	SIGN TYPE	SIGN SIZE (mm)

EXISTING PLAN STATION NUMBER	NEW PLAN STATION NUMBER	SIGN TYPE	SIGN SIZE (mm)

NOTE:
THE CONTRACT PRICE FOR THE BID ITEM 'REMOVAL AND RESETTING OF SIGNS' SHALL BE PAYMENT IN FULL FOR THE REMOVING AND RESETTING OF SIGNS AS SPECIFIED HEREIN. THE CONTRACT PRICE SHALL BE FULL COMPENSATION FOR REMOVING THE EXISTING SIGN FROM THE POST OR POSTS, STORING THE SIGN, TRANSPORTING THE SIGN TO THE NEW LOCATION, FURNISHING ALL BOLTS, NUTS, WASHERS, POST CLIPS, AND ATTACHMENTS, AND ATTACHING THE SIGN OR SIGN ASSEMBLIES TO THE POST OR POSTS AND ALL LABOR REQUIRED.

THE CONTACTOR SHALL BE HELD RESPONSIBLE FOR THE SATISFACTORY HANDLING OF SIGNS. ALL SIGNS WHICH ARE DAMAGED DURING REMOVAL, STORAGE, TRANSPORT, OR RESETTING, THUS IMPAIRING THEIR FUTURE USE, SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR, AS DIRECTED BY THE ENGINEER, AT NO ADDITIONAL COST TO KDOT.

NO.	DATE	REVISION	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES FOR REMOVAL AND RESETTING OF SIGNS

TE4635I 10-1-93

TYPED APPROVAL	HD-05	LAYOUT	MARK A. SUDOW		
DESIGNED DC	DETAILED	QUANTITIES	TRACED DC		
DESIGN CK	DETAIL CK.	DRAWN CK.	TRACE CK.		

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	14-87 K-804-01	3003	17	31

CURB and GUTTER (Special)

STATION to STATION	SIDE	QUANTITY
10+212.2 to 10+332.0	Rt.	113.8 m
10+332.0 to 10+340.6	Rt.	12.2 m
10+349.5 to 10+352.0	Rt.	6.0 m
TOTALS		132 m

CONCRETE PAVEMENT (200 mm)

STATION to STATION	SIDE	QUANTITY
10+212.2 to 10+398.8	Rt.	847 sq m
TOTALS		847 sq m

SEWER MANHOLE ADJUST

STATION	SIDE	QUANTITY
10+292.7	18.3 m Rt.	1
10+349.6	27.8 m Rt.	1
10+360.2	18.6 m Rt.	1
TOTALS		3

CONCRETE DRIVE (200 mm)

CENTERLINE STATION	SIDE	QUANTITY
10+245.3	Rt.	73.5 sq m
10+278.0	Rt.	130.5 sq m
TOTALS		204.0 sq m

A.C. PAVEMENT (50 mm)

STATION to STATION	SIDE	QUANTITY
10+212.2 to 10+398.8	Rt.	847 sq m
TOTALS		847 sq m

A.C. PAVEMENT (150 mm) (Shoulder)

STATION to STATION	SIDE	QUANTITY
10+352.1 to 10+398.8	Rt.	110 sq m
TOTALS		110 sq m

REINF. CRUSHED STONE SUB. (150 mm)

STATION to STATION	SIDE	QUANTITY
10+212.2 to 10+398.8	Rt.	1000 sq m
TOTALS		1000 sq m

⊛REMOVAL OF EXISTING STRUCTURES

STATION to STATION	SIDE	TYPE	QUANTITY
10+244 to 10+289	Rt.	450mm Pipe	25 m
10+273 to 10+307	Rt.	Guard Fence	34 m
10+300	Rt.	1200mm End Section	1

⊛ For Information Only

DRAINAGE STRUCTURES

STATION	SIDE	SIZE	TYPE	GRADE 28 CONC. m^3	REINF. STEEL kg	Pipe (m) 450 mm	Inlets (each) Type 22	Inlets (each) Special	End Sections (each) 450 mm	HEIGHT FILL m	CONC. PIPE AASHTO CLASS NO.	PIPE THICKNESS STEEL
10+234	Rt.		RCP			6.6			1	0.5		
10+234	Rt.	3.0mx1.2m	RCP			1.8	1		1	0.5		
10+280	Rt.		RCP			26.0				0.5		
10+280	Rt.	3.0mx1.2m	RCP				1					
10+280	Rt.		RCP			39.8		1		0.9		
10+398.8	Rt.	4.0mx1.8m										
TOTALS						74.2	2	1	2			

EARTHWORK

STATION to STATION	EXCAVATION COMMON m^3	EXCAVATION COMMON VMF	EXCAVATION ROCK m^3	EXCAVATION ROCK VMF	EXCAVATION COMMON (CONTR. FURN.) ϕ m^3	COMPACTION TYPE AA MR- m^3	COMPACTION TYPE B MR- m^3	THROUGH CUTS NOT SUBGRADED COMMON EXC. m^3	THROUGH CUTS NOT SUBGRADED TYPE AA (MR-1) m^3	* EMBANKMENT m^3 INITIAL CONSOL.	* EMBANKMENT m^3 SETTLEMENT	PLACING SELECT SOIL Δ m^3
10+210.00 to 10+398.8	215.8	0.8	172.7	0.8	65		237.8					
TOTALS												

ϕ Assumed VMF for Contractor furnished excavation is 0.8. * Subsidiary (see General Note). Δ See General note.

RECAPITULATION OF BRIDGE QUANTITIES

BRIDGE NUMBER	STATION	SEE SHEET NO.

RECAPITULATION OF ROAD QUANTITIES

ITEM	QUANTITY	UNIT
Site Preparation and Restoration	1	LS
Borrow Excavation (Contractor Furnished)	95	cu m
Excavation	215	cu m
Rock Excavation	920	sq m
AC Pavement (50mm)	847	sq m
AC Pavement (200mm)	847	sq m
Reinf. Crushed Stone Subgrade (150mm)	1000	sq m
AC Pavement (150mm) (Shoulder)	110	sq m
200mm Concrete Drive	204	sq m
Curb and Gutter (Special)	132	m
Inlet Curb (Type 22)	2	ea
SWS Pipe RCP 450mm	74.2	m
End Section 450mm RCP	2	ea
Special Inlet Structure	1	ea
Removal of Existing Structures	1	LS
Erosion Control (SMP)	1	LS
Traffic Control	1	LS
Signing	2	ea
Sewer MH Adjustment	1	ea
Sewer MH Adjustment (Non-Participating)	1	LS
Transportation of Salvage Material (Non-Participating)	1	

See Sheet R-1 For Additional Quantities

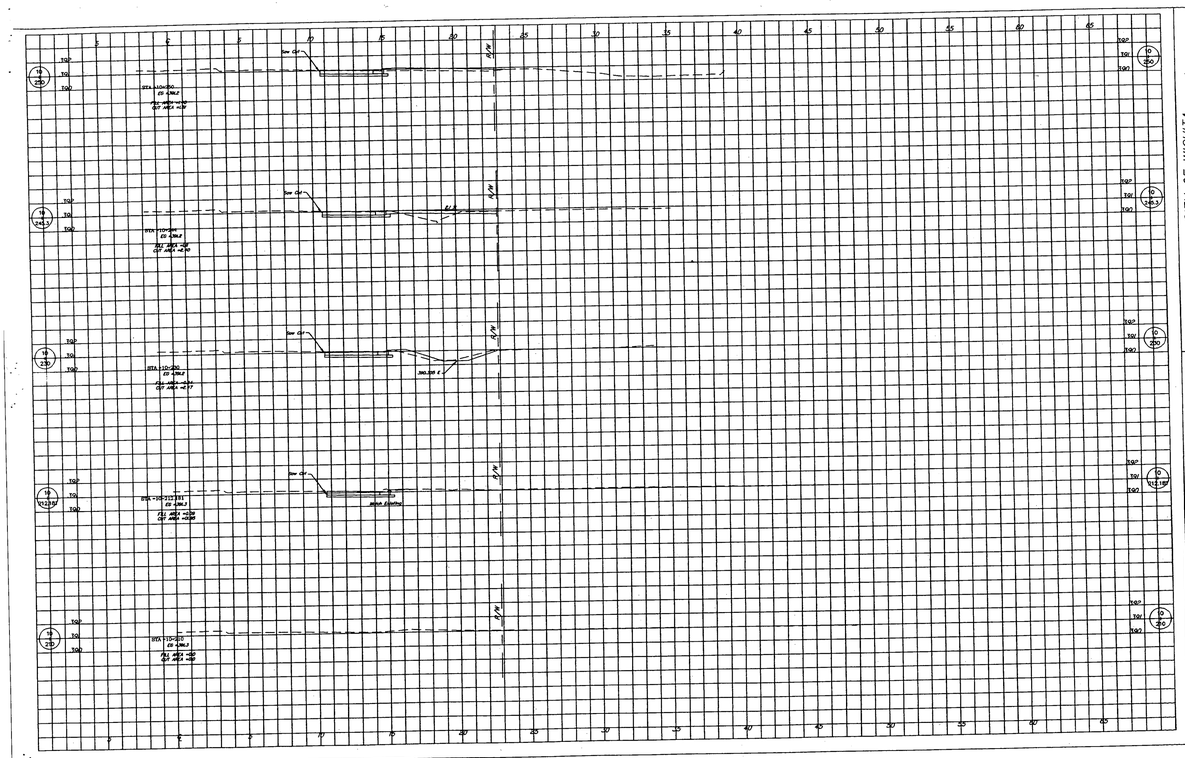
NO.	DATE	REVISIONS	BY
1	5-31-05	K-804-01 Rev. Concrete from Pulse to Grade.	KSDOT

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

RD500 SI

TYPED: QUANTITIES	5-31-05	APP'D: James A. Brewer	
TYPED: ADDITIONS	DETAILS	QUANTITIES	TRACED: Brewer
DESIGN: DK	DETAIL: DK	RUN: DK	TRACE: DK, Seitz



CITY OF WICHITA

CROSS SECTIONS

WICHITA, KANSAS

Schaefer-Tate, P.A.
CIVIL ENGINEERS • LAND SURVEYORS
AND LANDSCAPE ARCHITECTS
800 West Fourth, Suite A Wichita, Kansas 67203

PROJECT NO. 01W008
REVISED: DATE:

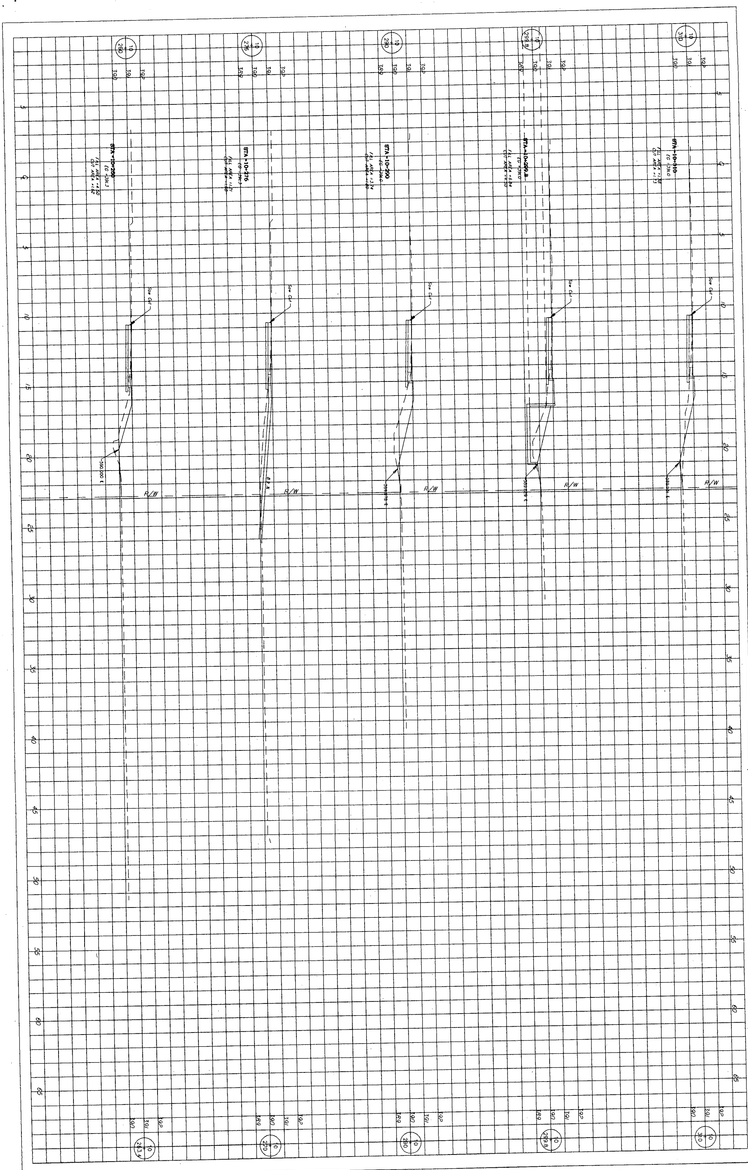
CHECKED BY: CM

DRAWN BY: DJC

DATE: SEPTEMBER 2002

SHEET NUMBER: 18

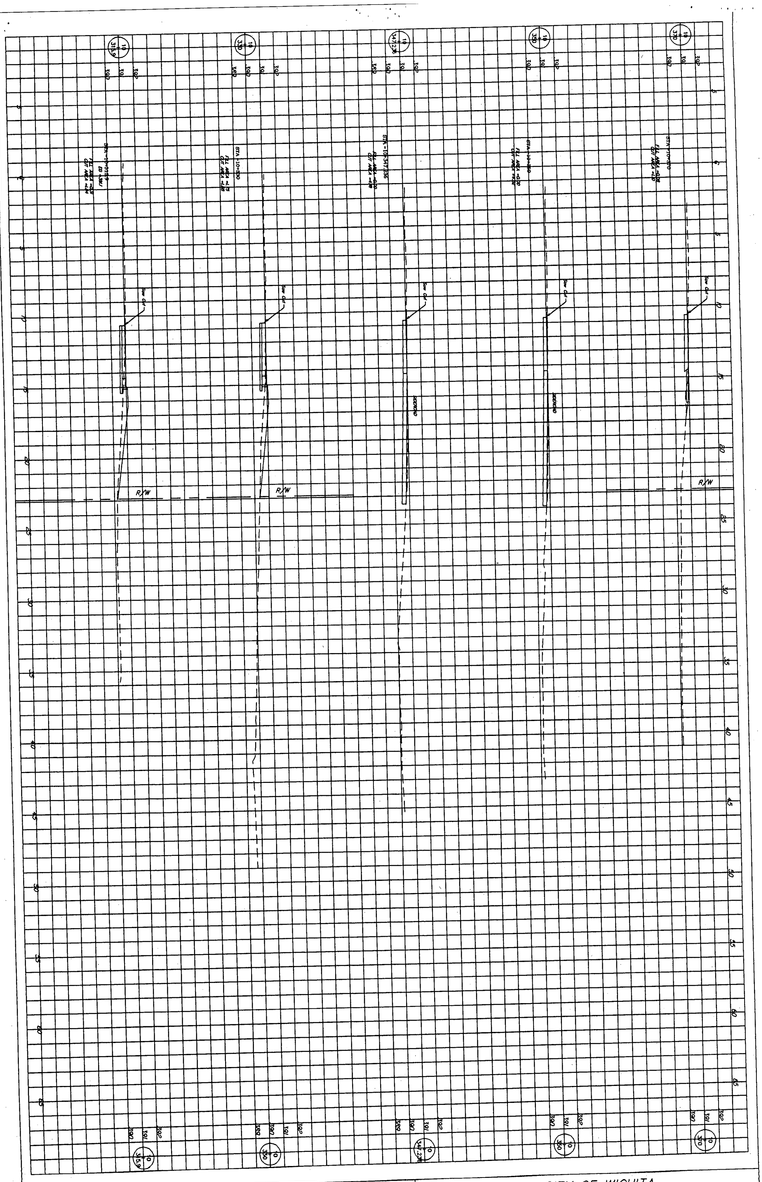
TOTAL SHEETS: 21



SHEET NUMBER	21
TOTAL SHEETS	21
DRAWN BY	MARCH 2004
CHECKED BY	DJC
PROJECT NO.	CK
REVISED DATE	04006

Schwab-Eaton, P.A.
CIVIL ENGINEERS • LAND SURVEYORS
AND LANDSCAPE ARCHITECTS
865 West Frazier, Suite 2, Wichita, Kansas 67202

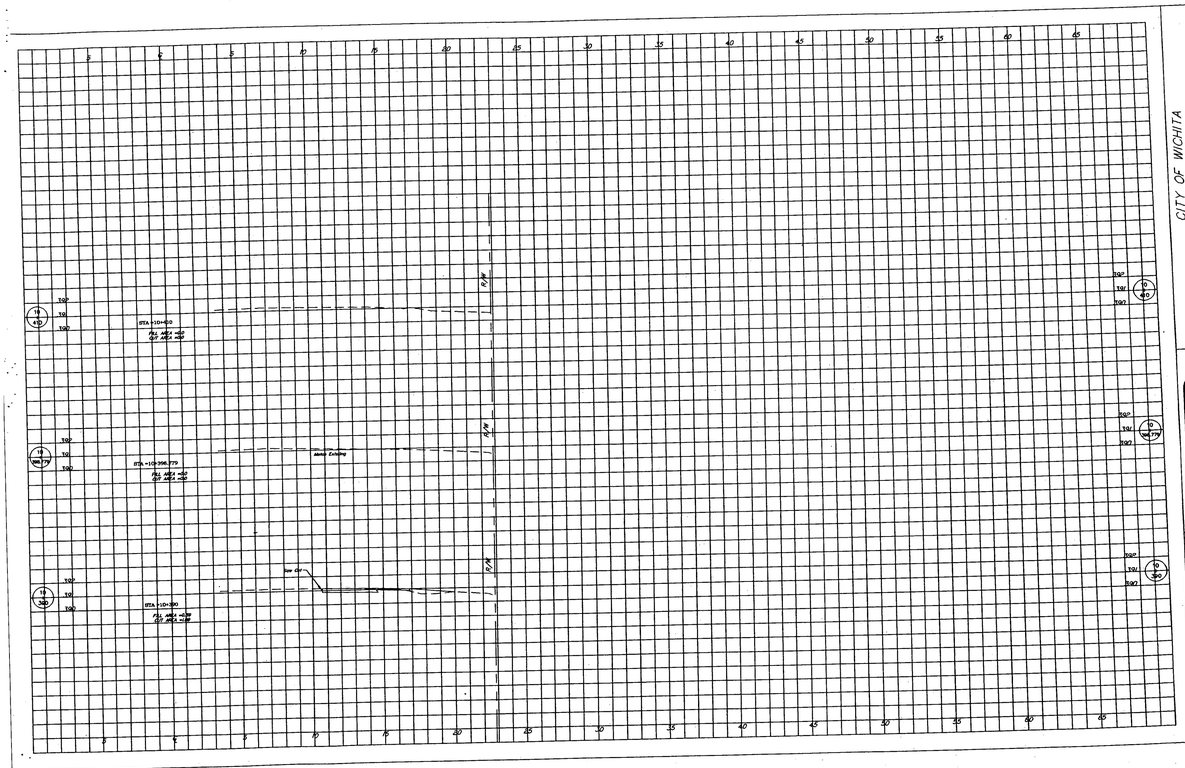
CITY OF WICHITA
CROSS SECTIONS
WICHITA, KANSAS



TOTAL SHEETS: 21	SHEET NUMBER: 20	DATE: SEPTEMBER 2006	DRAWN BY: DJC	CHECKED BY: CM	PROJECT NO. 05-0000

Schwab-Eaton, P.A.
CIVIL ENGINEERS • LAND SURVEYORS AND LANDSCAPE ARCHITECTS
800 West Fourth, Suite E. Wichita, Kansas 67203

CITY OF WICHITA
CROSS SECTIONS
WICHITA, KANSAS



CITY OF WICHITA

CROSS SECTIONS

WICHITA, KANSAS

Schrab-Eaton, P.A.
CIVIL ENGINEERS - LAND SURVEYORS
AND LANDSCAPE ARCHITECTS
800 West Fourth, Suite 2, Wichita, Kansas 67203

PROJECT NO. 01-0003
REVISED: DATE:

CHECKED BY: CM

DRAWN BY: DJC

DATE: SEPTEMBER 2002

SHEET NUMBER: 21

TOTAL SHEETS: 21

FHWA REG. NO.	STATE	PROJECT NO.	YEAR	SHEET NUMBER	TOTAL SHEETS
7	KANSAS	15-87 K-8014-01-GI	2003	R-1	2

STATE OF KANSAS

DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS

RESURFACING

K-15 FROM KTA/I-35 TO I-135

Project No: 472-83363

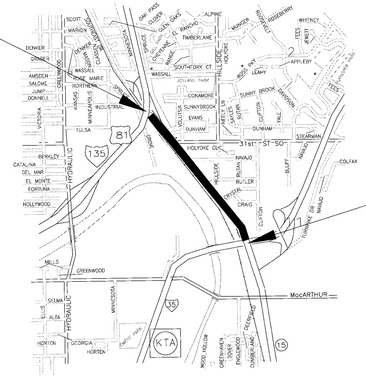
O.C.A. No.: 706815

CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

JIM ARMOUR, P.E. - ACTING CITY ENGINEER

COLD MILLING
ASPHALT OVERLAY
ASPHALT SHOULDER REPAIR
PAVEMENT MARKINGS
CONCRETE BASE REPAIR

STA. 1+890.729
PROJECT NO. 15-87-K-8014-01-GI
KLINK 1R RESURFACING @ I-135



NO SCALE

STA. 0+000
PROJECT NO. 15-87-K-8014-01-GI
KLINK 1R RESURFACING @ KTA/I-35

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
1	50mm Nominal Cold Milling	30218	sq m
2	25mm Refl. Crack Reilief Overlay	1134	MT
3	50mm BMI-B (PG 70-28) Asphalt Overlay	4031	MT
4	150mm Asphalt Shoulder Repair (75m SC-1/75mm BC-1, PG 64-22) w/ 50mm Non-Reinf. Crushed Concrete Base	5961	sq m
5	100mm White Pavement Markings (Thermoplastic)	5378	m
6	100mm Yellow Pavement Markings (Thermoplastic)	3562	m
7	610mm White Pavement Markings (Thermoplastic)	31	m
8	8" Reinf. Concrete Base Repair	200	sq m
9	Sodding and Seeding	1	LS

DESIGN DESIGNATION

K-15

AADT (2002) = 32,900
Posted Speed Limit = 50 MPH (80 KPH)

GROSS LENGTH OF PROJECT	1782 m
EXCEPTIONS	0.00 m
ADDITIONS	0.00 m
NET LENGTH OF PROJECT	1782 m
GROSS LENGTH OF BRIDGES	0.00 m
GROSS LENGTH OF ROAD	1782 m

APPROVED — DATE

JIM ARMOUR, P.E.
ACTING CITY ENGINEER
CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

THE CITY OF WICHITA
CITY ENGINEER'S OFFICE
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4422 PHONE
(316) 268-4419 FAX

K-15
FROM I-135 TO KTA/135

JIM ARMOUR, P.E.-ACTING CITY ENGINEER

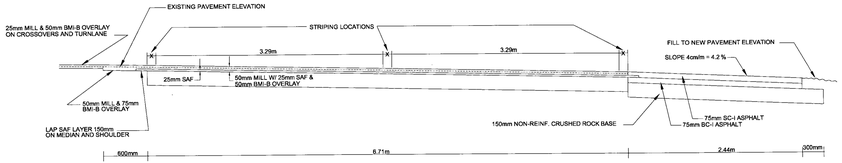
ENGINEER	DRAWN BY
S. BREITENBACH	J. KALLMAN
PROJECT NUMBER	INDEX CODE
472-83363	706815
DATE	SHEET R-1 OF 2
NOV. 2003	

FHWA REG. NO.	STATE	PROJECT NO.:	YEAR	SHEET NUMBER	TOTAL SHEETS
7	KANSAS	87 K-8014-01-GI	2003	R-2	2

K-15

K.T.A. TO NORTH LINE OF 31ST STREET SOUTH TYPICAL

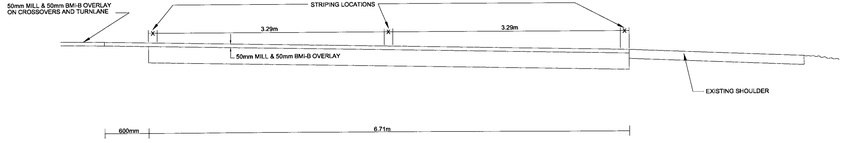
APPROXIMATE KLINK STATIONING 0+000 TO 1+240



K-15

NORTH LINE OF 31ST STREET SOUTH TO I-135 TYPICAL

APPROXIMATE KLINK STATIONING 1+240 TO 1+782



GENERAL NOTES:

ALL CONCRETE PAVEMENT REPAIR SHALL BE DONE IN ACCORDANCE WITH SECTION 511.3 OF THE CITY OF WICHITA STANDARD SPECIFICATIONS EXCEPT THAT ALL PAVEMENT SHALL BE REINFORCED WITH 6x6, W4xW4 WELDED WIRE FABRIC.

ALL ASPHALT SHOULDER REPAIR SHALL BE DONE IN ACCORDANCE WITH SECTION 405 OF THE CITY OF WICHITA STANDARD SPECIFICATIONS EXCEPT THAT THE BINDER SHALL BE PG64-22.

ALL ASPHALT WEARING SURFACE SHALL BE BMI-B WITH PG70-28 BINDER AND SHALL BE PAID IN METRIC TONS (MT).

KDOT PROJ. NO. 87 K-8014-01 GI

THE CITY OF WICHITA

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4401
(316) 268-4414 FAX

K-15 FROM KTA/I-35 TO I-135

JIM ARMOUR, P.E.-ACTING CITY ENGINEER

ENGINEER:	DRAWN BY:
S. BREITENBACH	J. KALLMAN
PROJECT NUMBER:	O.E.#:
472-83363	706815
DATE: NOV. 2003	SHEET R-2 OF 2