

VALUE ENGINEERING CHANGE PROPOSAL  
MISSOURI DEPARTMENT OF TRANSPORTATION

GT

Conceptual Proposal  Final Proposal

Date 8-31-09

~~Contract ID~~ PROJ. SPONSOR: CITY OF ST. CHARLES

Job No. STP-5414 (609)

County St Charles

Original Bid Cost \$ 2,174,999.87

Contractor Krupp Construction, Inc

By John Meinen

Designed By Larry Hudson

Phone 636-391-8844

VECP# 09-76 (to be completed by C.O.)

VECP  or PDVECP

1. Description of existing requirements and proposed change(s). Advantages/Disadvantages

*See Attached*

2. Estimate of reduction in construction costs.

\$ 49,930<sup>76</sup>

3. Prediction of any effects the proposed change(s) will have on other department costs, such as maintenance and operations.

*See Attached*

4. Anticipated date for submittal of detailed change(s) of items required by Section 104.6 of the Specifications.

8-31-09  
(date)

5. Deadline for issuing a change order to obtain maximum cost reduction, noting the effect of contract completion time or delivery schedule.

9-4-09  
(date)

This will depend on the days concrete base is installed per old plan.  
(effect)

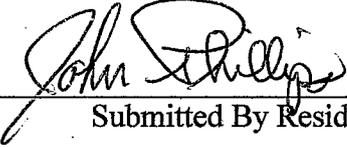
6. Dates of any previous or concurrent submission of the same proposal.

7-28-09  
(date and/or dates)

Additional Comments:

**\*\* Portion Below This Line To Be Filled Out by MoDOT \*\***

**Comments:** UPON REVIEW OF THESE PROPOSED CHANGES, I AGREE WITH THE INTENT AND DESIGN & ENDORSE THIS V.E. PROPOSAL. JP

  
Submitted By Resident Engineer

9/1/09  
Date

**Comments:** BASED ON THE INFORMATION PROVIDED, THE PROPOSED CHANGE SHOULD PROVIDE A BETTER PRODUCT IN ADDITION TO A SIGNIFICANT COST SAVINGS.

Approval Recommended

Rejection Recommended

  
District Engineer

9/4/09  
Date

**Comments:**

Approval Recommended

Rejection Recommended

Federal Highway Administration  
Required for FHWA Full Oversight Projects

\_\_\_\_\_  
Date

**Comments:**

Approval

Rejection

  
State Construction and Materials Engineer  
OK DMG 9/10/2009

9-21-09  
Date

# *L. Krupp Construction, Inc.*

Larry Hudson, Project Manager

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June 24, 2009

John Phillips  
Assistant Project Manager  
200 North Second St, Rm 202  
St Charles, MO 63301

**Project:** First Capitol/West Clay STP-5414(609)

**Subject:** Type "S" Curb for Medians and Roadway

Dear Mr. Phillips,

I am submitting the following as a value engineering proposal under MoDot specification 104.6 for this project.

After reviewing the plans and specs on this project I believe a significant amount of money and time can be saved. I will break the curb down according to where it will be placed, in median or in roadway.

In the area of the new medians the plan called for Type "S" Curb which would cause the pavement to be saw cut full depth at the face of the curb. The pavement in this area is structurally sound and in good condition. Saw cutting this area of roadway could compromise the integrity of the pavement, allow water infiltration and could cause future problems. The use of Type "S" Curb in this area would allow a full depth joint that could allow water to infiltrate in this area.

Asphalt Paving and Excavation  
415 Old State Road Ellisville, MO 63021  
(636) 391-8844 FAX (636) 391-7544

I believe a better alternative would be Type "B" Barrier Curb as highlighted in the enclosed drawing. The curb could be installed on the existing concrete after the asphalt is partially saw cut to the top of concrete and removed. The asphalt in this area is about 4" thick and this would be saw cut and removed to allow the installation of the Block Pavers as designed. This method of installation would keep the concrete base in tact and keep water from infiltrating into the rock base and sub grade. The curb would be installed as to leave 6" exposed after the final lift of asphalt is installed.

This method of installation will serve to accomplish the desired finished product along with keeping the integrity of the existing concrete roadway.

In the area of the base widening the plan also called for Type "S" Curb to be installed at the edge of the new base widening. This would also leave a full depth joint right at the area where water drains down the roadway against the curb. This would leave the possibility of water infiltration into the rock base and sub grade.

I believe, once again, the Type "B" Barrier Curb would allow for a better joint seal and a better finished product. The curb would be installed on the base concrete allowing for 6" of curb exposed after the final lift of asphalt is installed.

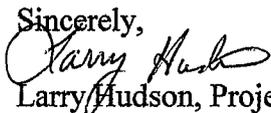
Both of these suggestions would save money and time for the project. This would also provide a safer project overall by cutting down on the time these areas would be left open to weather and traffic, both pedestrian and vehicle. The existing medians have pin on Type "B" Barrier Curb.

This proposal will save \$49,930.76 in construction costs and will allow the project to be completed 10 days earlier.

I have attached drawings showing the existing and proposed design. I have also attached cost estimates and savings for each design.

If you have additional questions please call me at 314-575-6406.

Sincerely,



Larry Hudson, Project Manager

Original Design with Type "S" Curb

Item #	Item Disc	Quantity	Unit Cost	Total
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New Design with Type "B" Curb Medians

Type "B" Curb 12"	2143	16.46	35273.78
4" Conc Filler	2143	2.14	4586.02

<b>Sub Total</b>			<b>39859.8</b>
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Deduct for Pavement left in Place

Rem of Imp	476	3	1428
Sawcut	2143	1.13	2421.59

<b>Total Deduct</b>			<b>3849.59</b>
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<b>Sub Total</b>	<b>16.80364</b>		<b>36010.21</b>
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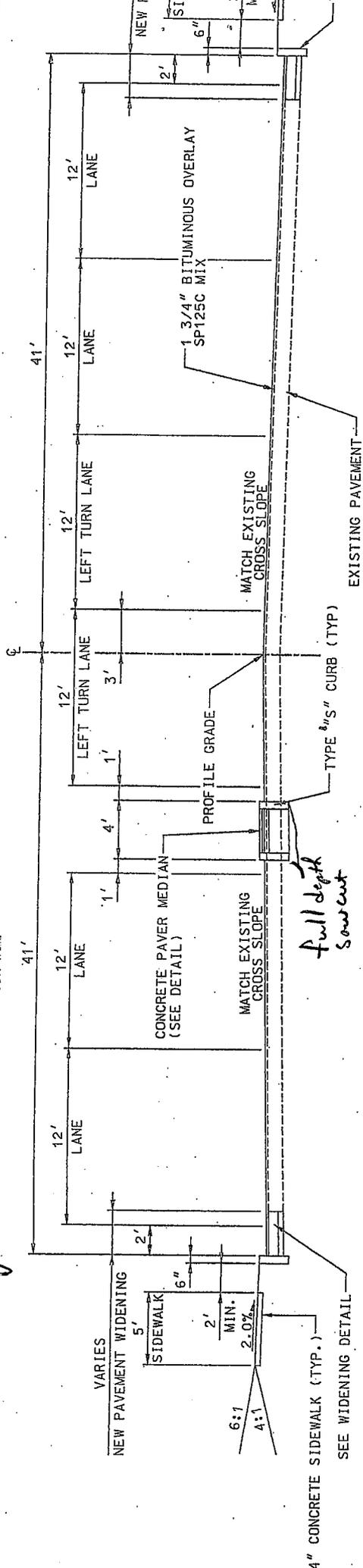
New Design for Curb on Base Widening

Type "B" Curb 8"	4941	12.3	60774.3
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<b>Sub Total</b>			<b>60774.3</b>
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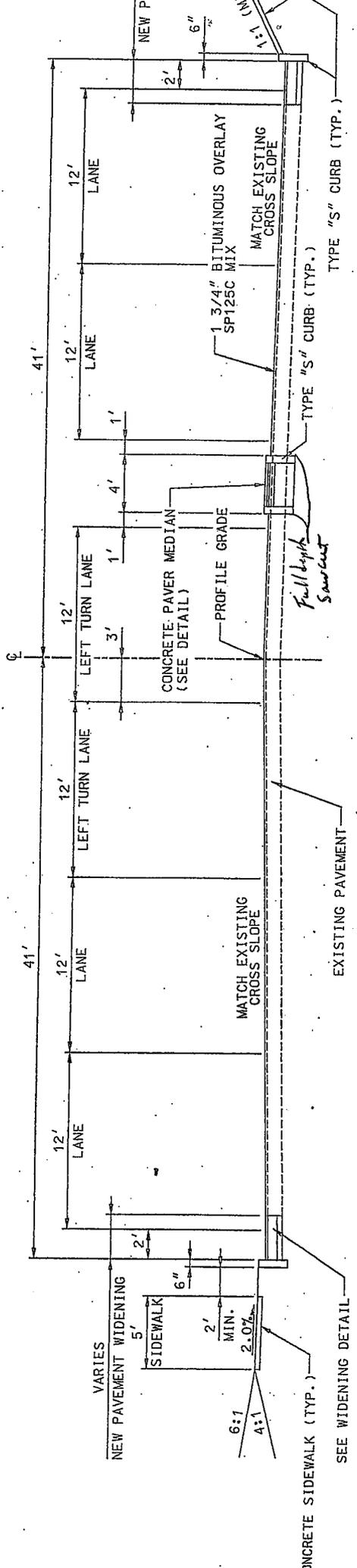
<b>Curb Total</b>	<b>13.66241</b>		<b>96784.51</b>
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*Original*



**FIRST CAPITOL (ROUTE 94)  
SECTION**

STA. 615+00.00 TO STA. 622+20.00



**FIRST CAPITOL (ROUTE 94)  
SECTION**

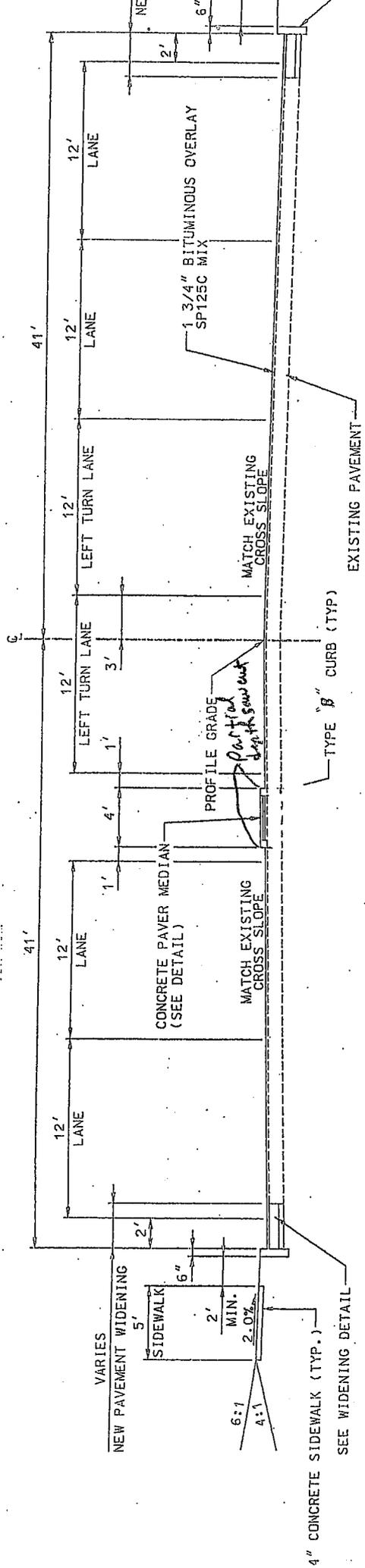
STA. 623+56.00 RT TO STA. 626+47.00 RT  
STA. 623+56.00 LT TO STA. 627+81.56 LT

(1) CONCRETE SLOPE PROTECTION USED  
BETWEEN ROUTE 94 AND SERVICE ROAD  
STA. 620+46.34 TO STA. 626+75.23

46'

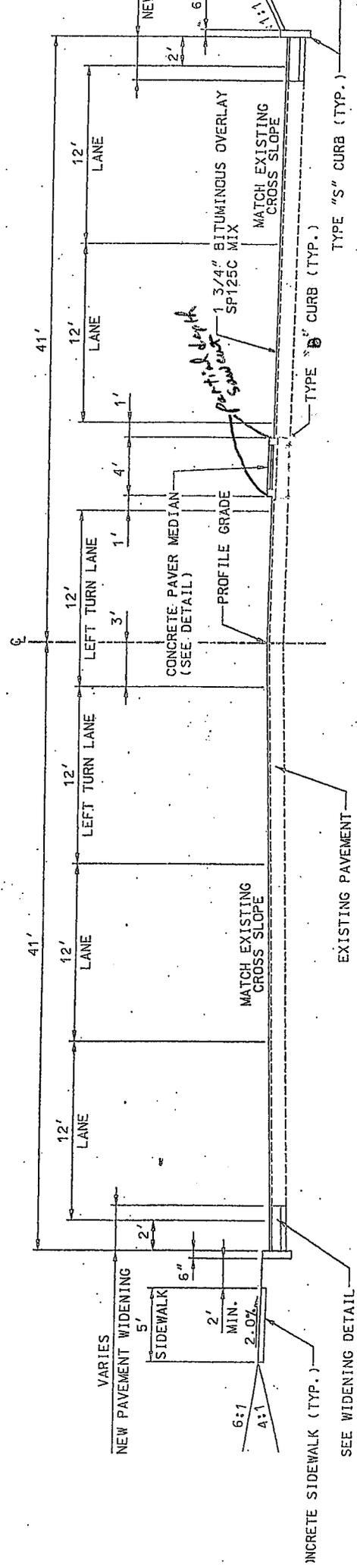
36'

New



**FIRST CAPITOL (ROUTE 94)  
SECTION**

STA. 615+00.00 TO STA. 622+20.00

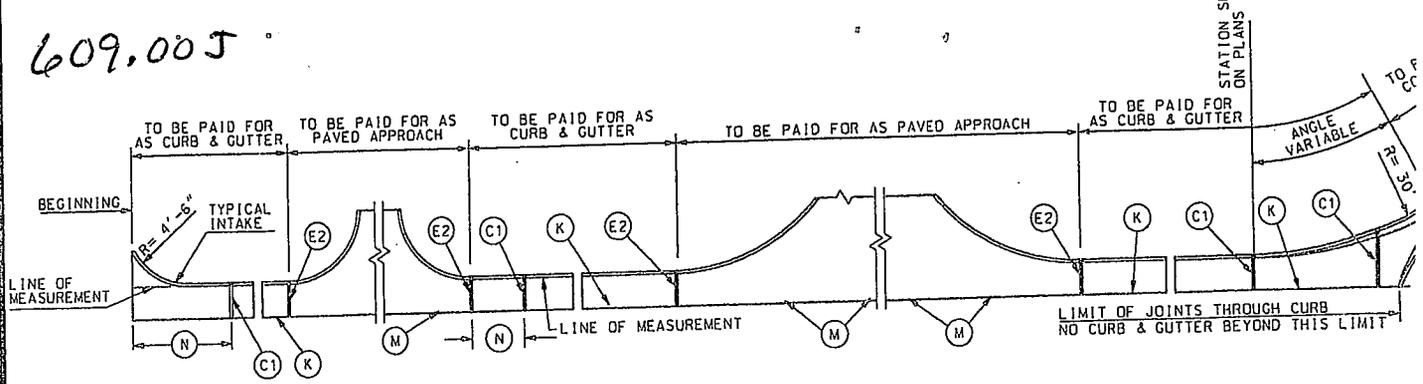


**FIRST CAPITOL (ROUTE 94)  
SECTION**

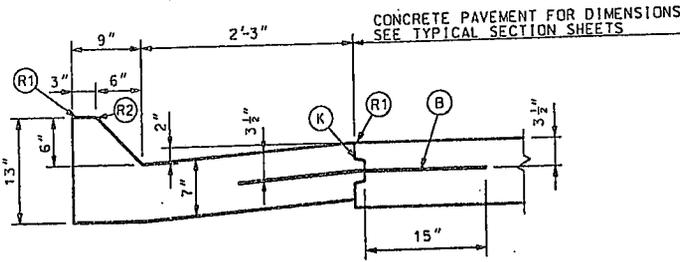
STA. 623+56.00 RT TO STA. 626+47.00 RT  
STA. 623+56.00 LT TO STA. 627+81.56 LT

(1) CONCRETE SLOPE PROTECTION USED BETWEEN ROUTE 94 AND SERVICE ROAD STA. 620+46.34 TO STA. 626+75.23

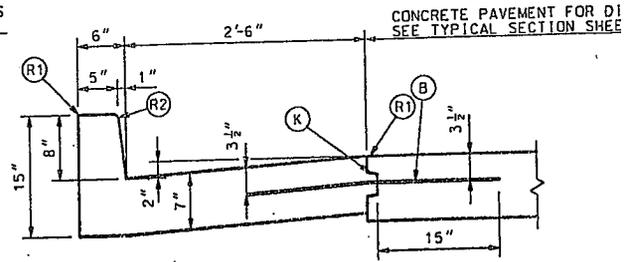
609.005



PLAN OF MEASUREMENT OF CURB & GUTTER AND JOINT PLAN

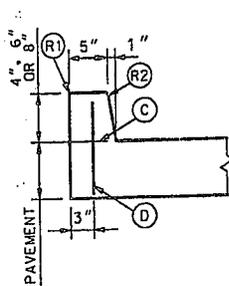


TYPE A (MOUNTABLE)

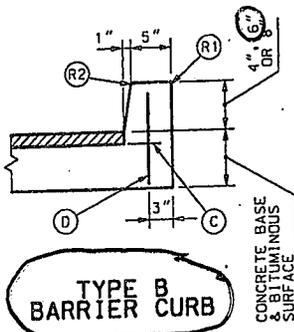


TYPE B (BARRIER)

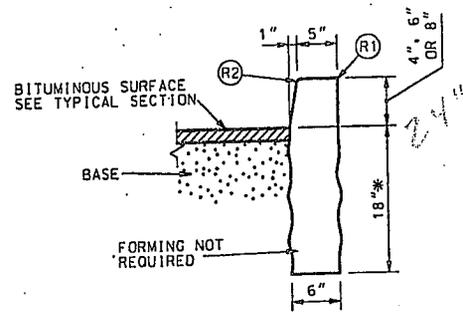
CURB & GUTTER



TYPE A (INTEGRAL)



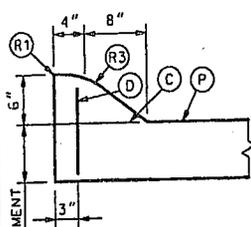
TYPE B BARRIER CURB



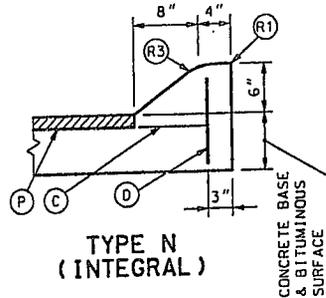
TYPE S (SEPERATED)

\* DEPTH MAY BE REDUCED IF KEYED 6" IN ROCK

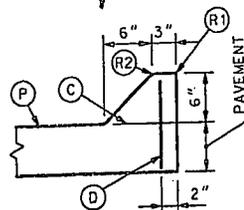
BARRIER CURBS



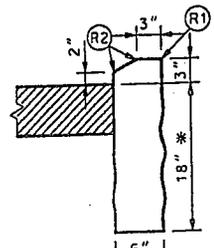
TYPE M (INTEGRAL)



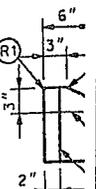
TYPE N (INTEGRAL)



TYPE O (INTEGRAL)



TYPE F (SEPERATED)



TYPE I (INTEGRAL)

BEGINNING AND ENDINGS OF INTRODUCED LOW PRO SHALL UTILIZE CURB HEIGHT RUNOUT FORM 0.1 IN IN 5 FEET PAYMENT LENGTH SHALL INCLUDE TAPE

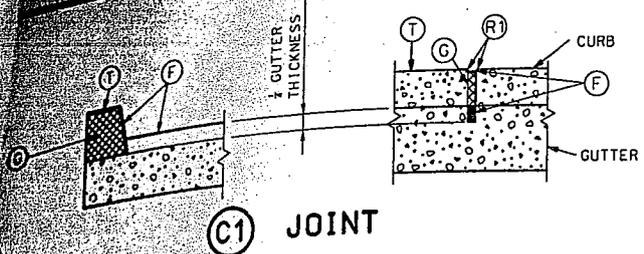
\* DEPTH MAY BE REDUCED IF KEYED 6" IN ROCK.

MOUNTABLE CURBS

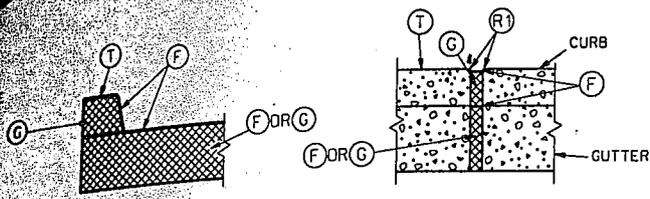
LOW PROFILE CURB

LEGEND

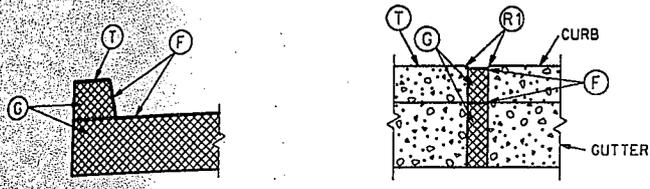
- (B) TIE BARS - 30" X #5 @ 30" CTRS.
- (C) PERMISSIBLE CONSTRUCTION JOINT. IF CONSTRUCTED IN THIS MANNER TIE BARS MUST BE USED.
- (C1) 3/8" MINIMUM TRANSVERSE CONTRACTION JOINT. (PERFORMED OR SAWED)
- (D) #4 @ TIE BAR AT 24" CTRS. LENGTH OF THE TIE BARS EQUALS THICKNESS OF PAVEMENT PLUS HEIGHT OF CURB, LESS 3 INCHES.
- (E1) 2" TRANSVERSE EXPANSION JOINT. (PERFORMED OR SAWED)
- (E2) 1/2" TRANSVERSE EXPANSION JOINT. (PERFORMED OR SAWED)
- (F) FILLER FOR JOINTS - HOT POURED.
- (G) PREFORMED JOINT FILLER MATERIAL.
- (K) TONGUE & GROOVE JOINT WITH TIE BAR - SEE DETAIL.
- (M) TONGUE & GROOVE JOINT WITHOUT TIE BARS - SEE DETAIL.
- (N) NOT LESS THAN 10' OR MORE THAN 30'.
- (P) TOP OF PAVEMENT OR CONCRETE BASE.
- (T) TOP OF CURB.
- (R1) ROUND TO 1/4" RADIUS. (EXCEPT FOR SAWED JOINTS)
- (R2) ROUND TO 3/4" RADIUS.
- (R3) CONSTRUCT TO 9" RADIUS



(C1) JOINT



(E2) JOINT



(E1) JOINT

GENERAL NOTES:

A MINIMUM 4" TYPE 5 AGGREGATE BASE SHALL BE PLACED BENEATH ALL CURB AND GUTTER SECTIONS. A MINIMUM 4" TYPE 5 AGGREGATE SHALL BE PLACED BENEATH AND EXTEND 18" BEYOND THE CURB AND GUTTER FOR RIGID PAVEMENT.

WHEN CURBS ARE CONSTRUCTED DIRECTLY BENEATH GUARD RAIL THE CURB HEIGHT WILL BE 4 INCHES.

CURB, GUTTER AND CURB AND GUTTER CONSTRUCTED ALONG AND ATTACHED TO CONCRETE PAVEMENT OR BASE SHALL HAVE:

1. JOINT C1 THROUGH CURB AND ONE-QUARTER GUTTER THICKNESS AS A CONTINUATION OF EACH CONTRACTION JOINT IN THE BASE OR PAVEMENT.
2. JOINT E1 AS CONTINUATION OF 2" EXPANSION JOINT E IN THE CONCRETE BASE OR PAVEMENT SHALL EXTEND AND CONTINUE THROUGH THE CURB, GUTTER, AND CURB AND GUTTER.
3. JOINT E2 THROUGH CURB, AND CURB AND GUTTER AT THE BEGINNING AND END OF EACH PAVED APPROACH.

CURB, GUTTER AND CURB AND GUTTER CONSTRUCTED APART OR SEPARATED FROM CONCRETE BASE OR PAVEMENT OR AS A FORM FOR ASHALTIC CONCRETE PAVEMENT SHALL HAVE A JOINT E2 ENTIRELY THROUGH THE CURB, GUTTER AND CURB AND GUTTER. AT THE BEGINNING AND END OF EACH "PAVED APPROACH" AND A JOINT C1 ENTIRELY THROUGH THE CURB AND TO A DEPTH OF 1/4 GUTTER THICKNESS AT INTERVALS OF 30 FEET BETWEEN APPROACHES.

JOINTS E1 AND E2 AND JOINT C1 THROUGH CURB SHALL BE FILLED WITH PREFORMED FILLER MATERIAL AND SEALED WITH HOT POURED FILLER FOR JOINTS.

JOINT C1 IN GUTTER SHALL BE FILLED AND SEALED WITH HOT POURED FILLER FOR JOINTS.

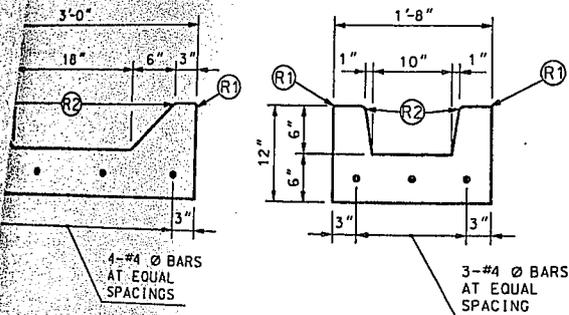
JOINT E1 IN GUTTER SHALL BE FILLED WITH PREFORMED FILLER AND SEALED WITH HOT FILLER MATERIAL.

JOINT E2 IN GUTTER SHALL BE FILLED WITH PREFORMED FILLER AND SEALED WITH FILLER OR FILLED WITH HOT POURED FILLER.

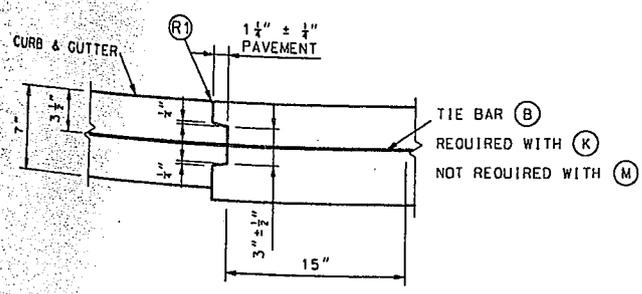
PREFORMED FILLER MATERIAL SHALL BE PLACED TO PROVIDE 1" HOT POURED FILLER FOR JOINTS.

THE BARRIER CLASS CURBS MAY BE CONSTRUCTED WITHOUT BATTER WHEN CONSTRUCTED ON A RADIUS OF 6 FEET OR LESS. THE R2 WILL BE REQUIRED.

WHERE A SIDEWALK INTERSECTS A CURB, THE SIDEWALK SHALL BE RAMPED NO STEEPER THAN 12:1 SLOPE TO PROVIDED ACCESS FOR WHEELCHAIR ACROSS APPROACHES.



TYPE A  
TYPE B  
GUTTERS



THRU TONGUE & GROOVE JOINT

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION	
	<p>CONCRETE CURB CURB AND GUTTER GUTTER</p>
<p>2/2/06</p>	<p>609.005</p>

# VALUE ENGINEERING CHECK SHEET

## *TYPE OF WORK*

(Check one that applies)

- Bridge/Structure/Footings
- Drainage Structures (RCP, RCB, CMP's, ect.)
- TCP/MOT
- Paving (PCCP, ect.)
- Grading/MSE Walls
- Signal/Lighting/ITS
- Misc.

## *SUMMARY OF PROPOSAL*

(If needed, condense summary to a couple of lines)

This VE involves substituting a Type B Curb for a Type S Curb.

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## *SCANNING OF DOCUMENT*

If the proposal is large, please mark or make note, which pages need to be scanned into the database. If there are special instructions, make note of them here.

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