

**Practical Design
2008 Awards for Excellence
By: MoDot District 9**

December 12, 2007

MoDOT Design Division, ATTN: Jay Bestgen
1320 Creek Trail Dr.
Jefferson City, Missouri 65109

Subject: Phelps County, Route 63
Job No. J9P0526
Beaver Creek Bridge Replacement
Practical Design Entry

The subject project is being submitted for entry in the Practical Design 2008 Awards for Excellence. Below are facts relating to the improvements of Route 63.

Purpose and Need - The existing Route 63 Beaver Creek bridge in Phelps County was constructed in 1940, is only 24' wide, and has poor structural ratings, warranting replacement.

Original Scope - Prior to practical design this project was scoped replacement immediately west of the existing structure completing the entire structure in Stage 1 without impacting the existing structure. This plan required the purchase of two homes and 2 acres of right-of-way. This plan avoided a rock hillside and MDC property on the east side. Approximately 3000' of new roadway was required to tie the new bridge into existing Route 63.

Practical Design Scope - The new bridge will be constructed in stages immediately east of the existing structure. The east half of the new bridge will be constructed in Stage 1 and then the existing structure will be removed so the west half can be constructed. This provides for a new alignment very close to the existing shortening the approach roadway work to 1300' and lessening right-of-way impacts in terms of land (0.4 ac.) and residences (none). This also lessened impacts to the existing rock hillside and MDC property.

Cost – The following costs are estimated since the project has not been awarded.

	Construction (\$1000's)	Right-of-Way (\$1000's)
Original STIP	2079	281
Award/Actual	1347	10

Traffic Management - The traffic control will be very similar with both scenarios. Two lanes of traffic will be maintained at all times except when a flagger operation will be needed when making the tie-ins at each end of the project.

Summary - This project meets the purpose and need providing a new wider structure at a much lower cost than originally scoped. The main difference in this design than the original, as discussed earlier, is the location of the new bridge. This improvement will increase the safety of the traveling public by providing a wider bridge that will provide a long life.

**MoDOT PROJECTS
2008 APPLICATION FORM**
(required for each entry)

Job No. J9P0526 **Route** 63 **County** Phelps

STIP Description (Scoping or Construction, state which STIP) This project was included in FY 2008

STIP for construction.

Is the submittal for the entire project or just a portion of the project? Please explain: This submittal is for the entire project. It was originally scoped as a bridge replacement west of the existing bridge but was revised to bridge replacement east of existing.

Project Manager (could have both) **MoDOT** Rob Rakestraw **Consultant** _____

Key core team members as approved by the MoDOT PM (may include consultants) (limit of 9)

Pete Berry Matt Willbanks Ray Jansen

Project Contacts: **District** Pete Berry **Consultant** _____

Project Budget:

Conceptual budget \$ 2,079,000 **Initial STIP Budget** \$ 2,079,000

Final STIP budget \$ 1,251,000 **Award amount** \$ 1,347,000

Other : _____

Value Engineering study during design? yes no (if yes) **Project Stage** N/A

Total VE savings implemented \$ N/A **VE Contact Person** N/A

Construction-stage VE (VECP)? yes no (if yes) **Explain** N/A

Total VECP savings \$ N/A **VECP Contact Person** N/A

What would make this entry stand out from the rest of the entries when considering MoDOT's practical design philosophy? (In layman's terms - 100 words or fewer) The existing bridge was originally planned for replacement west of existing. This is the only way the entire width of the new bridge could be constructed next to the existing without impacting existing bridge traffic and having impacts on MDC property and a rock hillside on the east side of Route 63. We then considered an option that placed the new bridge east of existing Route 63 between the existing bridge and the rock hillside. In order to do this, only the east half of the new bridge could be built, then the existing bridge would have to be removed to make room for the west half of the new bridge. Two lanes of traffic can still be maintained at all times and the new bridge could be built with minimal impacts to the surrounding terrain and properties.

Send entries to: MoDOT Design Division, ATTN: Jay Bestgen
1320 Creek Trail Dr., Jefferson City, Missouri 65109

ALL ENTRIES MUST BE RECEIVED NO LATER THAN CLOSE OF BUSINESS ON DECEMBER 15, 2007.

DESIGN DESIGNATION

A.D.T. - 2006 = 12050
 A.D.T. - 2026 = 15473
 D.H.V. = 8.7%
 T = 15.3%
 V = 60 M.P.H.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

PLANS FOR PROPOSED

STATE HIGHWAY

FINAL PLANS

PHELPS COUNTY

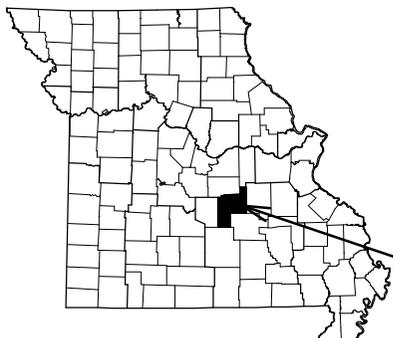
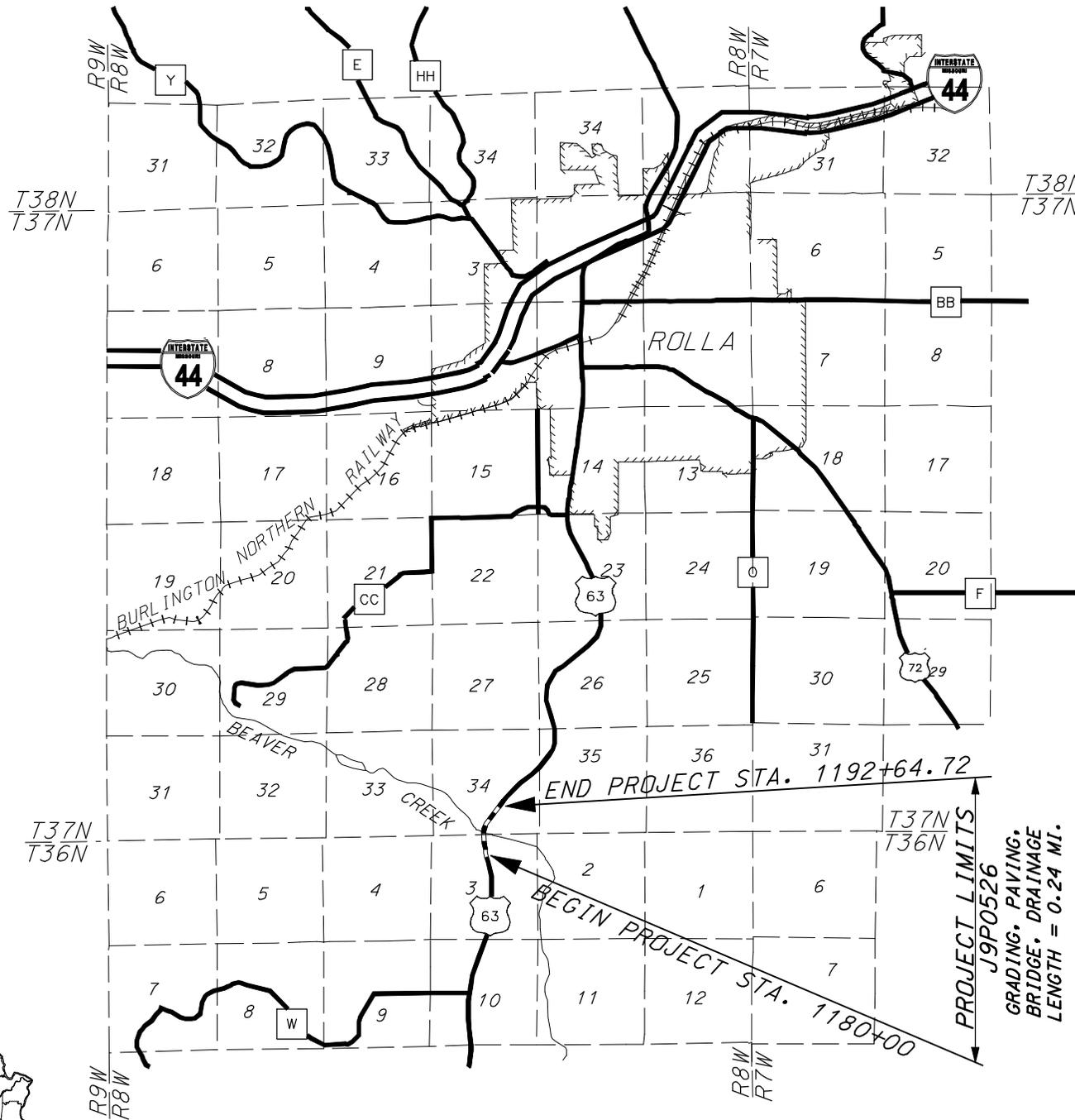
ROUTE 63	STATE MO	DISTRICT 9
JOB NO J9P0526		
CONTRACT ID		
PROJECT NO		
COUNTY PHELPS		

NORMAL ACCESS RIGHT OF WAY ACQUIRED FOR THIS PROJECT

CONVENTIONAL SYMBOLS
(USED IN PLANS)

	EXISTING	NEW
BUILDINGS AND STRUCTURES	[---]	[---]
GUARD RAIL	[---]	[---]
CONCRETE RIGHT-OF-WAY MARKER	[---]	[---]
STEEL RIGHT-OF-WAY MARKER	[---]	[---]
LOCATION SURVEY MARKER	[---]	[---]
UTILITIES		
FIBER OPTICS	[---]	[---]
OVERHEAD TELEPHONE	[---]	[---]
UNDERGROUND TELEPHONE	[---]	[---]
OVERHEAD POWER	[---]	[---]
UNDERGROUND POWER	[---]	[---]
GAS	[---]	[---]
WATER	[---]	[---]
MANHOLE	[---]	[---]
FIRE HYDRANT	[---]	[---]
WATER VALVE	[---]	[---]
WATER METER	[---]	[---]
DROP INLET	[---]	[---]
DITCH BLOCK	[---]	[---]
GROUND MOUNTED SIGN	[---]	[---]
LIGHT POLE	[---]	[---]
H-FRAME POWER POLE	[---]	[---]
TELEPHONE PEDESTAL	[---]	[---]
FENCE		
CHAIN LINK	[---]	[---]
WOVEN WIRE	[---]	[---]
GATE POST	[---]	[---]
BENCHMARK	[---]	[---]

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES



PROJECT LOCATION

INDEX OF SHEETS

DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
TYPICAL SECTIONS (TS) (1 SHEET)	2
QUANTITIES (QU) (3 SHEETS)	3
PLAN-PROFILE (PP)	4-5
REFERENCE POINTS (RP)	6
SPECIAL SHEETS (SS)	7-9
TRAFFIC CONTROL SHEETS (TC)	10-11
EROSION CONTROL SHEETS (EC)	12
BRIDGE DRAWINGS (B)	
A7222	-
CROSS SECTIONS (XS)	1-10

LENGTH OF PROJECT

BEGINNING OF PROJECT STA.	1180 + 00.00
END OF PROJECT STA.	1192 + 64.72
APPARENT LENGTH	1264.72 FEET
EQUATIONS AND EXCEPTIONS	
TOTAL CORRECTIONS	0.00 FEET
NET LENGTH OF PROJECT	1264.72 FEET
STATE LENGTH	0.240 MILES

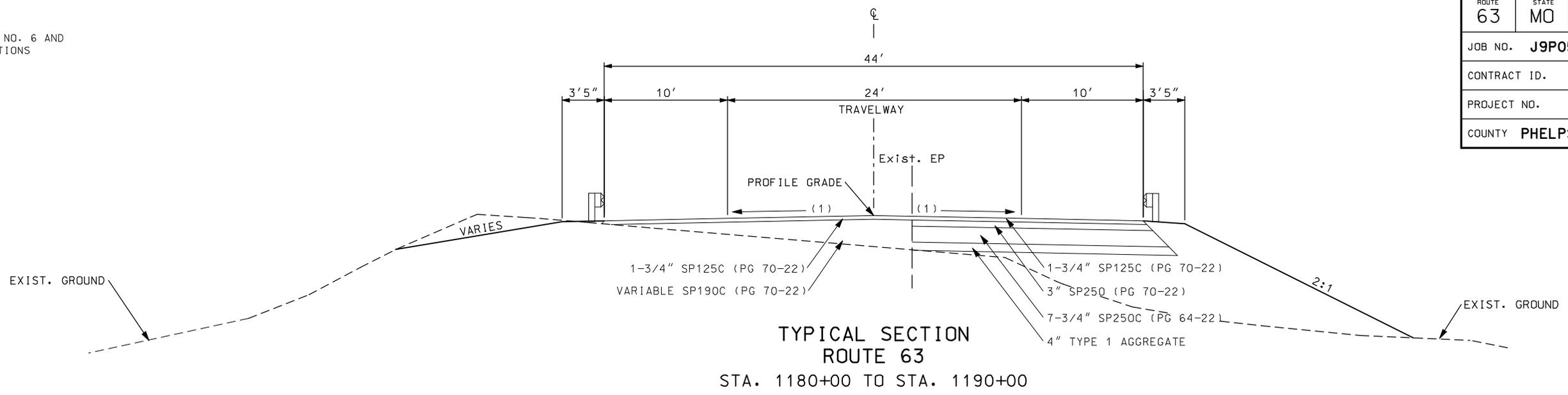
PROJECT LIMITS
 J9P0526
 GRADING, PAVING,
 BRIDGE, DRAINAGE
 LENGTH = 0.24 MI.

DATE _____

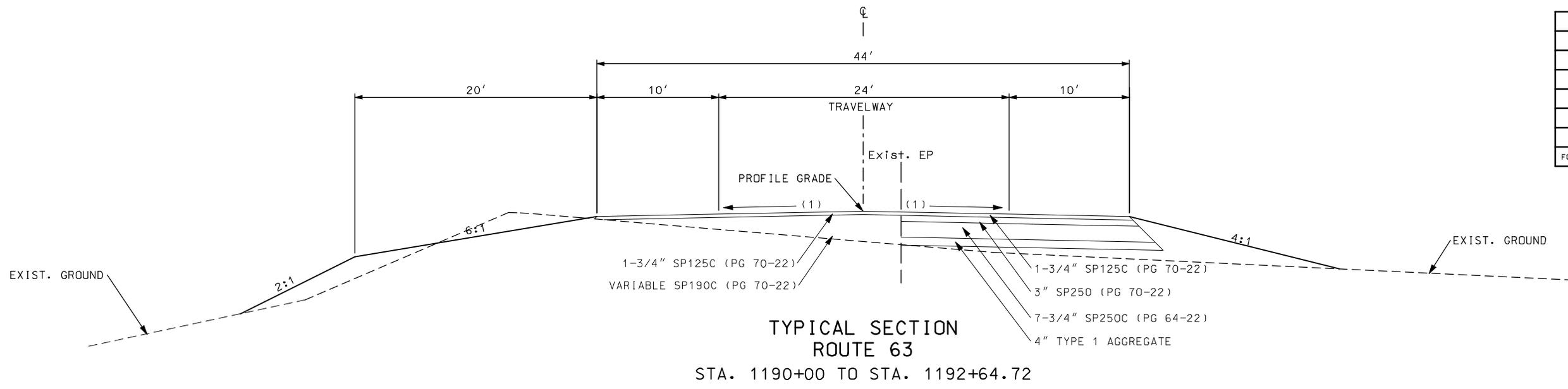
CROSS SLOPE

(1) SEE SHEET NO. 6 AND CROSS SECTIONS

ROUTE 63	STATE MO	DISTRICT 9	SHEET NO. 2
JOB NO. J9P0526			
CONTRACT ID.			
PROJECT NO.			
COUNTY PHELPS			DATE _____

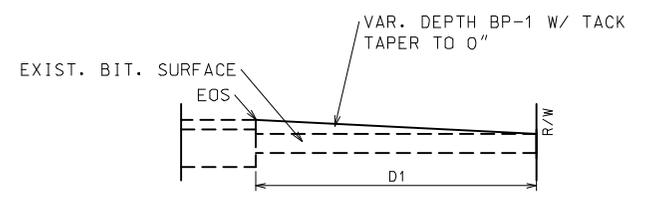
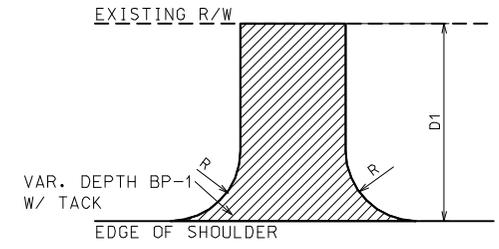


**TYPICAL SECTION
ROUTE 63
STA. 1180+00 TO STA. 1190+00**

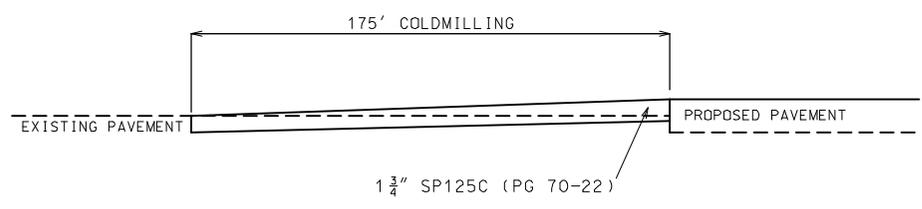


**TYPICAL SECTION
ROUTE 63
STA. 1190+00 TO STA. 1192+64.72**

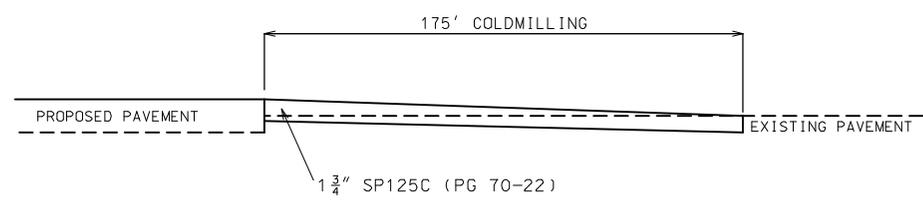
ASHPALT FACTOR	
	TONS/CY
SP125	2.019
SP190	2.037
SP250	2.036
BP-1	2.008
PMBB	2.009
FOR INFORMATIONAL PURPOSES ONLY	



**TYPE II OR III ENTRANCE
EXISTING BITUMINOUS SURFACE**



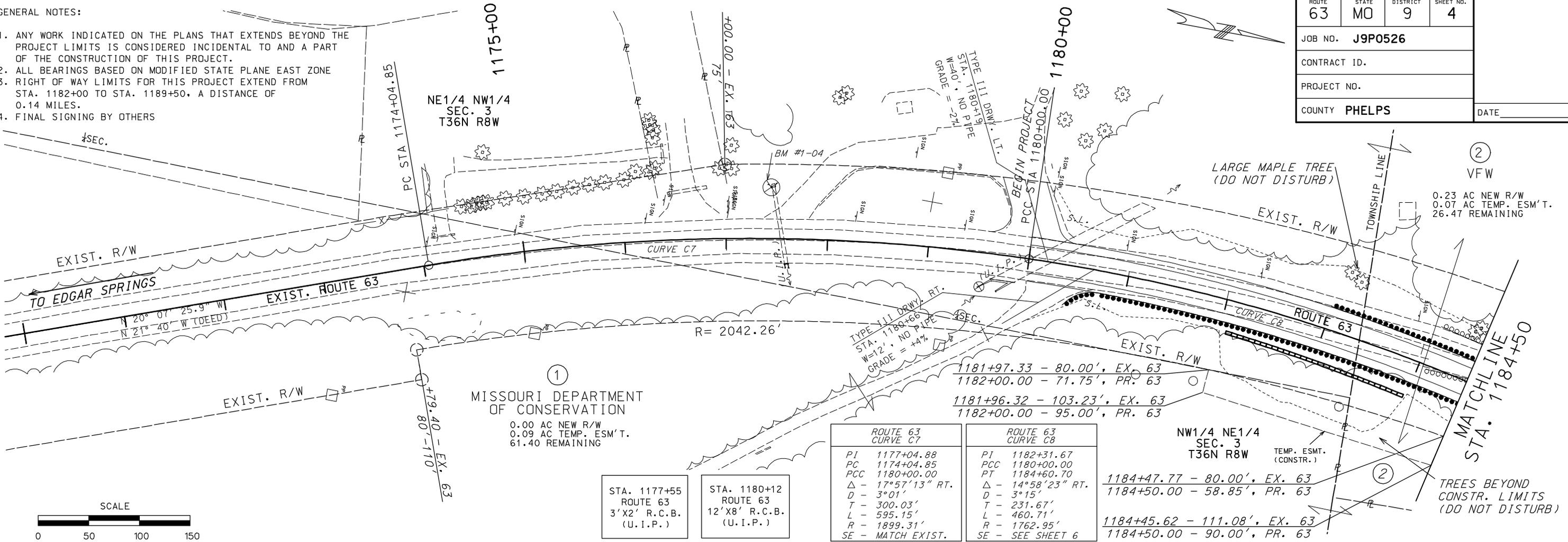
**COLDMILLING AND OVERLAY
STA. 1178+25 TO STA. 1180+00**



**COLDMILLING AND OVERLAY
STA. 1192+64.72 TO STA. 1194+39.72**

ROUTE 63	STATE MO	DISTRICT 9	SHEET NO. 4
JOB NO. J9P0526			
CONTRACT ID.			
PROJECT NO.			
COUNTY PHELPS			DATE

- GENERAL NOTES:
1. ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND A PART OF THE CONSTRUCTION OF THIS PROJECT.
 2. ALL BEARINGS BASED ON MODIFIED STATE PLANE EAST ZONE
 3. RIGHT OF WAY LIMITS FOR THIS PROJECT EXTEND FROM STA. 1182+00 TO STA. 1189+50, A DISTANCE OF 0.14 MILES.
 4. FINAL SIGNING BY OTHERS



① MISSOURI DEPARTMENT OF CONSERVATION
 0.00 AC NEW R/W
 0.09 AC TEMP. ESM'T.
 61.40 REMAINING

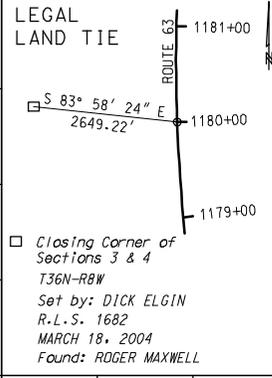
STA. 1177+55
 ROUTE 63
 3'X2' R.C.B.
 (U.I.P.)

STA. 1180+12
 ROUTE 63
 12'X8' R.C.B.
 (U.I.P.)

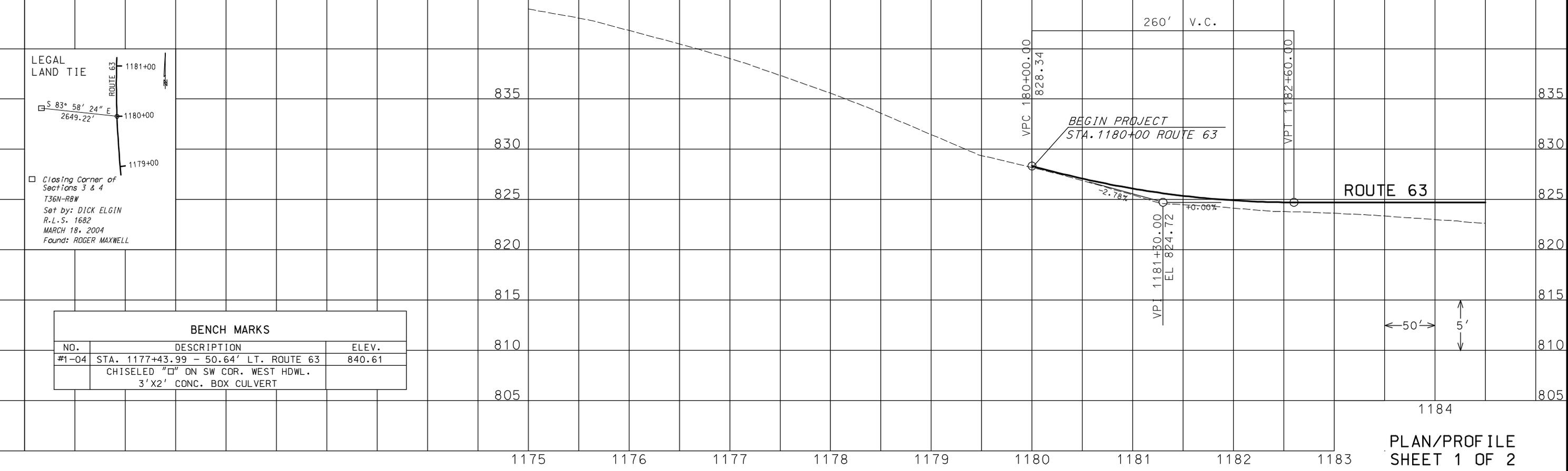
ROUTE 63 CURVE C7	
PI	1177+04.88
PC	1174+04.85
PCC	1180+00.00
Δ	17°57'13" RT.
D	3°01'
T	300.03'
L	595.15'
R	1899.31'
SE	MATCH EXIST.

ROUTE 63 CURVE C8	
PI	1182+31.67
PCC	1180+00.00
PT	1184+60.70
Δ	14°58'23" RT.
D	3°15'
T	231.67'
L	460.71'
R	1762.95'
SE	SEE SHEET 6

NW1/4 NE1/4 SEC. 3 T36N R8W	
TEMP. ESMT. (CONSTR.)	
1184+47.77 - 80.00', EX. 63	
1184+50.00 - 58.85', PR. 63	
1184+45.62 - 111.08', EX. 63	
1184+50.00 - 90.00', PR. 63	

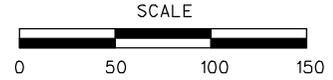
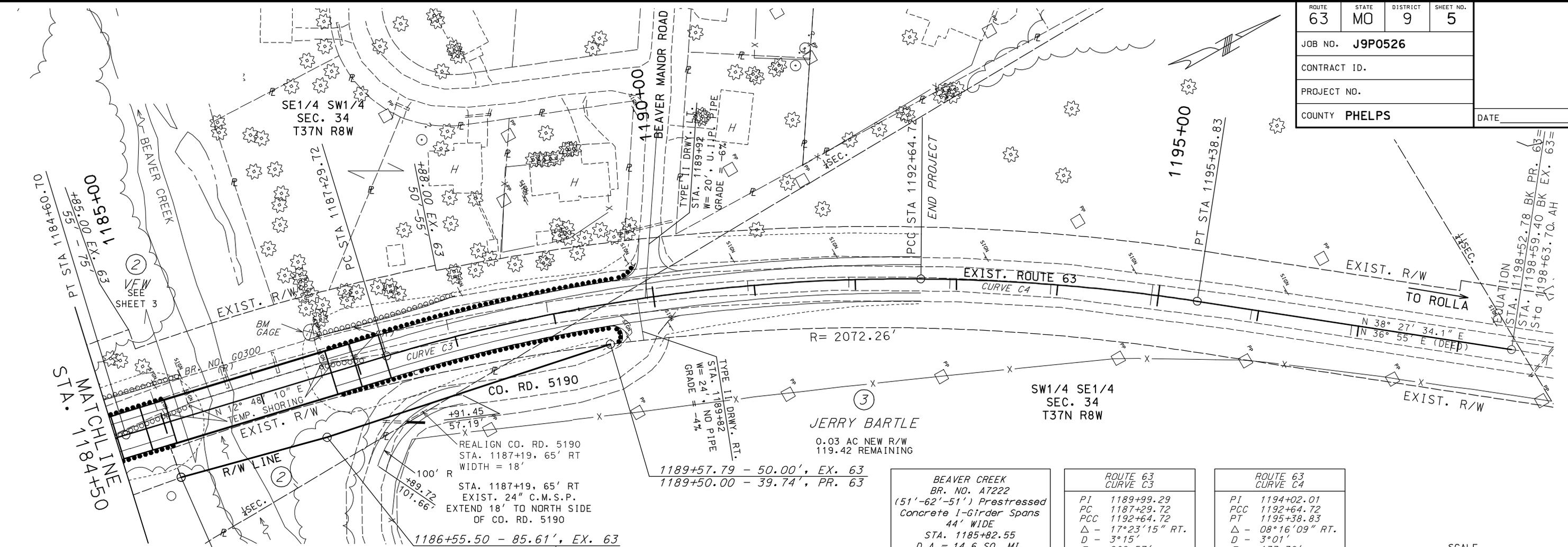


BENCH MARKS		
NO.	DESCRIPTION	ELEV.
#1-04	STA. 1177+43.99 - 50.64' LT. ROUTE 63 CHISELED "□" ON SW COR. WEST HDWL. 3'X2' CONC. BOX CULVERT	840.61

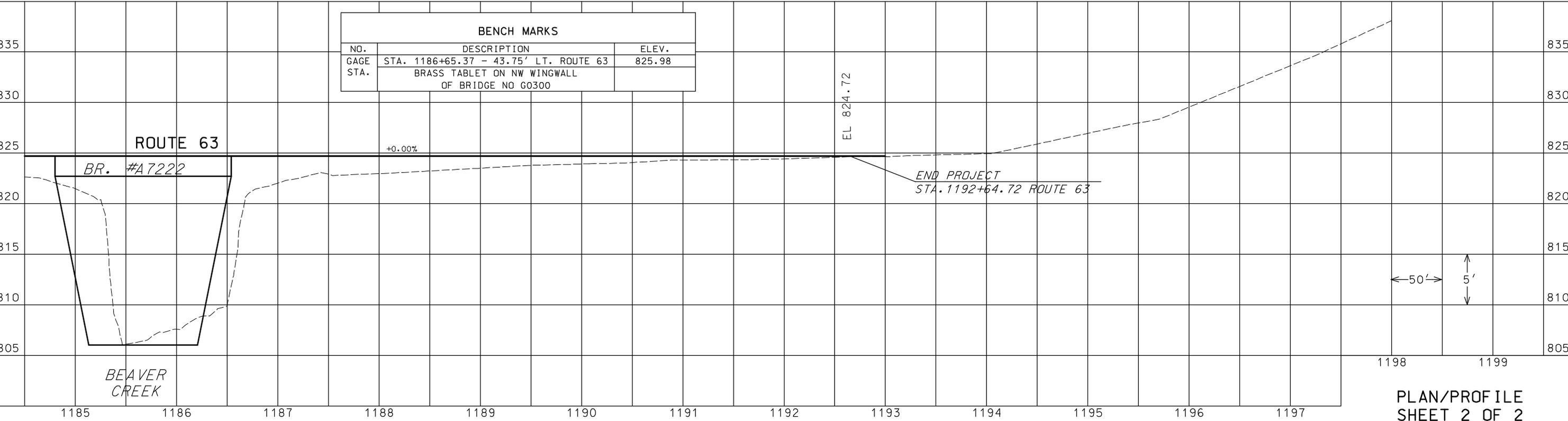


1184
 PLAN/PROFILE
 SHEET 1 OF 2

ROUTE 63	STATE MO	DISTRICT 9	SHEET NO. 5
JOB NO. J9P0526			
CONTRACT ID.			
PROJECT NO.			
COUNTY PHELPS			DATE



BENCH MARKS		
NO.	DESCRIPTION	ELEV.
GAGE STA.	STA. 1186+65.37 - 43.75' LT. ROUTE 63	825.98
	BRASS TABLET ON NW WINGWALL OF BRIDGE NO G0300	



PLAN/PROFILE SHEET 2 OF 2

G0300 12-07-05
Deck from north.



Br. G0300 Phelps Co. Rt. 63 4-21-04
Looking North

