



December 11, 2007

Mr. Jay Bestgen
MoDOT Design Division
1320 Creek Trail Drive
Jefferson City, MO 65109

Dear Mr. Bestgen:

The implementation of “Practical Design” has provided a great opportunity for our district to showcase our ability to innovate and meet our customers’ transportation needs in the most cost effective manner possible. Our Arrow Rock project on Spur 41 in Saline County, Job Number J2S0785, is an excellent example of our District employing innovation and teamwork to resolve an outstanding transportation issue and delight our customers at minimal cost to the Department.

Project Purpose and Need

The entire village of Arrow Rock is listed on the National Register of Historic Places. Ownership of Main Street/Spur 41 in Arrow Rock has been in question for many years; however MoDOT has historically maintained the route, providing both pavement maintenance and snow removal. The majority of Main Street is lined on either side by historic limestone gutters, installed by slave labor in the late 1800’s. Over the years, a number of pavement overlays increased the grade on Main Street relative to the gutters and made it difficult for modern vehicles to cross the gutters from Main Street to the side streets in Arrow Rock. The purpose and need for the project were therefore twofold: 1) to restore the original profile on Main Street and improve the traversability of the limestone gutters and 2) to resolve ownership of Main Street.

Project Funding

Implementation of the Practical Design philosophy on this project began well before the design was even underway. The priority for a project of this nature was such that District funding was unavailable – an innovative funding approach was required. Because the village of Arrow Rock is on the National Register of Historic Places, and because the purpose of the project was to restore the traversability of the historic limestone gutters, MoDOT applied for enhancement funds for the project, and the request was approved by FHWA. To our knowledge, this is the only example of enhancement funds being approved for use in repaving a roadway in the State of Missouri – possibly even in the entire country. This practical funding approach – the use of Federal enhancement funds – reduced MoDOT’s share to only 20% of the total project cost.

Project Design

In keeping with the Practical Design philosophy, the scope of this project from its conception was kept to the bare minimum necessary to meet the project’s purpose and need. The entire project consisted of

milling the existing pavement/base to a level 6" below the elevation of the historic limestone gutters and repaving with 6" of bituminous pavement. To provide an appearance consistent with the historic nature of the community, MoDOT maintenance forces applied an Iron Mountain chip seal to the new pavement. Through close coordination with the community, the entire length of Main Street was closed during construction, minimizing the need for traffic control and speeding project completion. The preliminary engineering, construction engineering and maintenance chip seal costs were all applied toward the required 20% MoDOT match for enhancement funds, resulting in a minimal expenditure of MoDOT STIP construction funds.

Project Teamwork

Practical Design, as practiced in District 2, involves much more than controlling a project's scope. It involves collaboration among many disciplines and using a teamwork approach to find the best solution and the most cost effective means of implementing that solution. As mentioned previously, this project required an innovative funding approach to even get off the ground. Close coordination with the village of Arrow Rock allowed us to insure the solution met our customer's needs and resulted in the Village accepting ownership and maintenance of the roadway upon project completion. Because maintaining the historic integrity of the limestone gutters was a primary consideration, the Historic Preservation section of MoDOT was involved from project conception through completion. The chip seal applied by maintenance not only provided the desired appearance, but also helped to reduce the final STIP cost of the project. MoDOT's resource management, planning, design, construction, right-of-way and maintenance forces were included in the project team from the beginning. Each brought their different resources to the table and enabled us to find the right solution.

Conclusion

Because this project was conceived from its beginning with the Practical Design philosophy in mind, it is impossible to document any "cost savings;" however, we still believe the project is a model of Practical Design. From the approach to funding that reduced MoDOT's share of the cost to 20%, to the bare minimum scope employed, to the teamwork involved in completing the project, all phases of this project speak to the level of commitment to Practical Design in District 2. This project allowed us to leverage Federal enhancement funds to meet the needs of the local community and preserve an important piece of history, while removing 0.4 miles of roadway from the State system at minimal cost to our construction program. It is a true example of a "win-win" scenario made possible by MoDOT's philosophy of doing more with less.

Please feel free to contact Brian Haeffner or myself if you have any further question regarding the project.

Sincerely,

Daniel Niec, P.E.
District Engineer

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

Job No. J2S0785 **Route** Spur 41 **County** Saline

STIP Description (Scoping or Construction, state which STIP) 2007-2011 STIP

Mill and resurface roadway, provide 4' aggregate shoulders and relinquish roadway to Arrow Rock of Main Street (Rte. 41 Spur) from Rte. 41 to 1st Street in Arrow Rock.

Is the submittal for the entire project or just a portion of the project? Please explain: Entire project

Project Manager (could have both) **MoDOT** Brian Haeffner **Consultant** _____

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

Dennis Fessler Dennis Brucks Kurt Wengert

Jonathan Bruner Mike McGrath Ron Watts

James Harcourt Junior McCoy Curtis Henry

Project Contacts: **District** Brian Haeffner **Consultant** _____

Project Budget:

Conceptual budget \$ _____ **Initial STIP Budget** \$ _____

Final STIP budget \$ 251,000 **Award amount** \$ 138,387

Other : 80% of project cost funded by Federal Transportation Enhancement program

Value Engineering study during design? yes no (if yes) **Project Stage** _____

Total VE savings implemented \$ _____ **VE Contact Person** _____

Construction-stage VE (VECP)? yes no (if yes) **Explain** _____

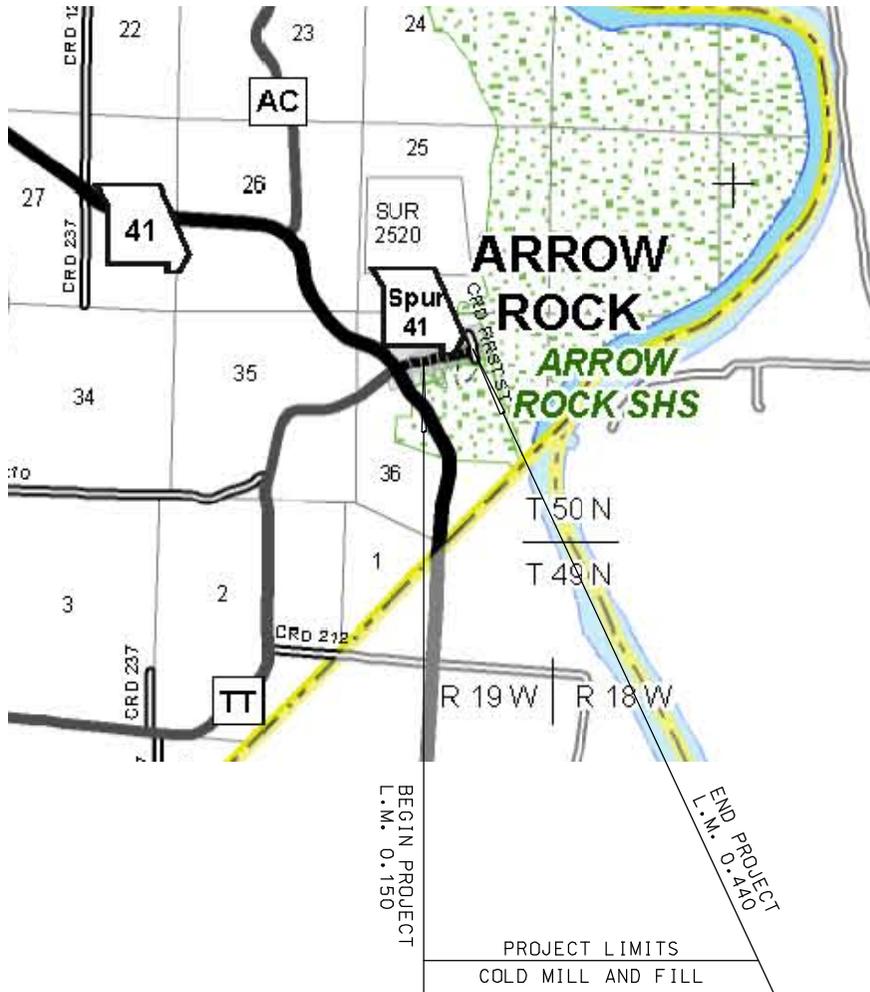
Total VECP savings \$ _____ **VECP Contact Person** _____

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) Through practical funding, practical design, and a practical teamwork approach to project delivery, District 2 was able to maintain the historic integrity of the village of Arrow Rock, leveraging Federal funds to meet the customer's needs with a minimal expenditure of STIP funds, The project removed 0.4 miles of roadway from the state system, transferring ownership and maintenance of Spur 41 to the village of Arrow Rock.

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.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION PLANS FOR PROPOSED STATE HIGHWAY SALINE COUNTY

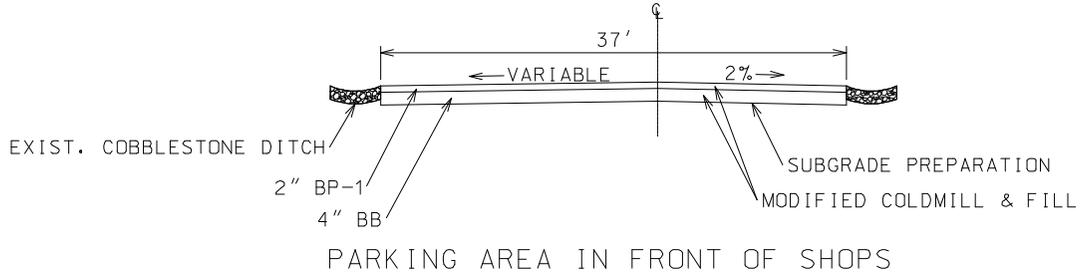
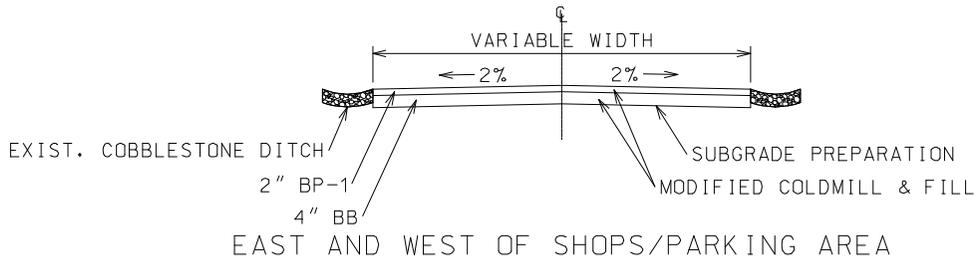


SALINE COUNTY, MO

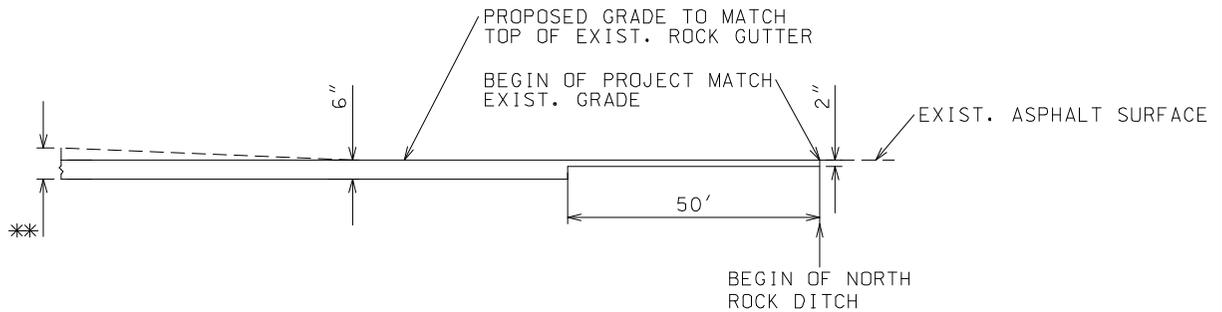
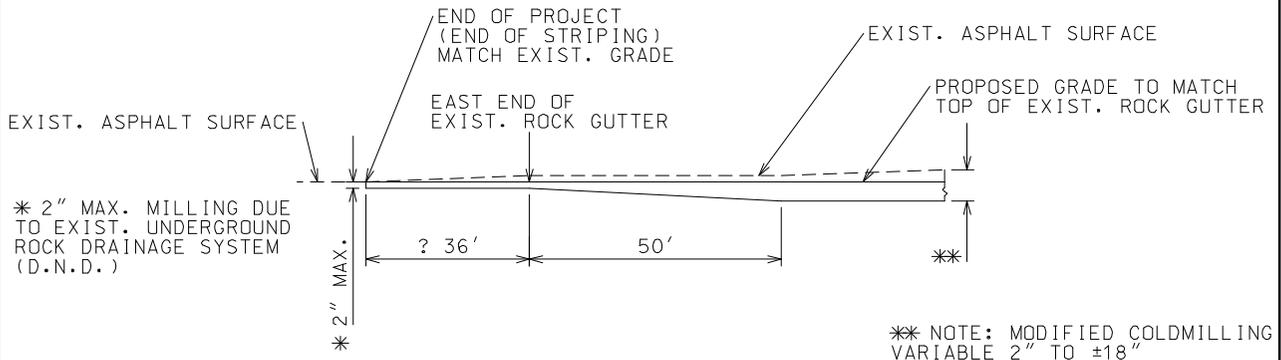


ROUTE 41 SPUR
JOB NO. J2S0785
CONTRACT ID
PROJECT NO.
COUNTY SALINE

TYPICAL SECTION



TYPICAL PROFILES

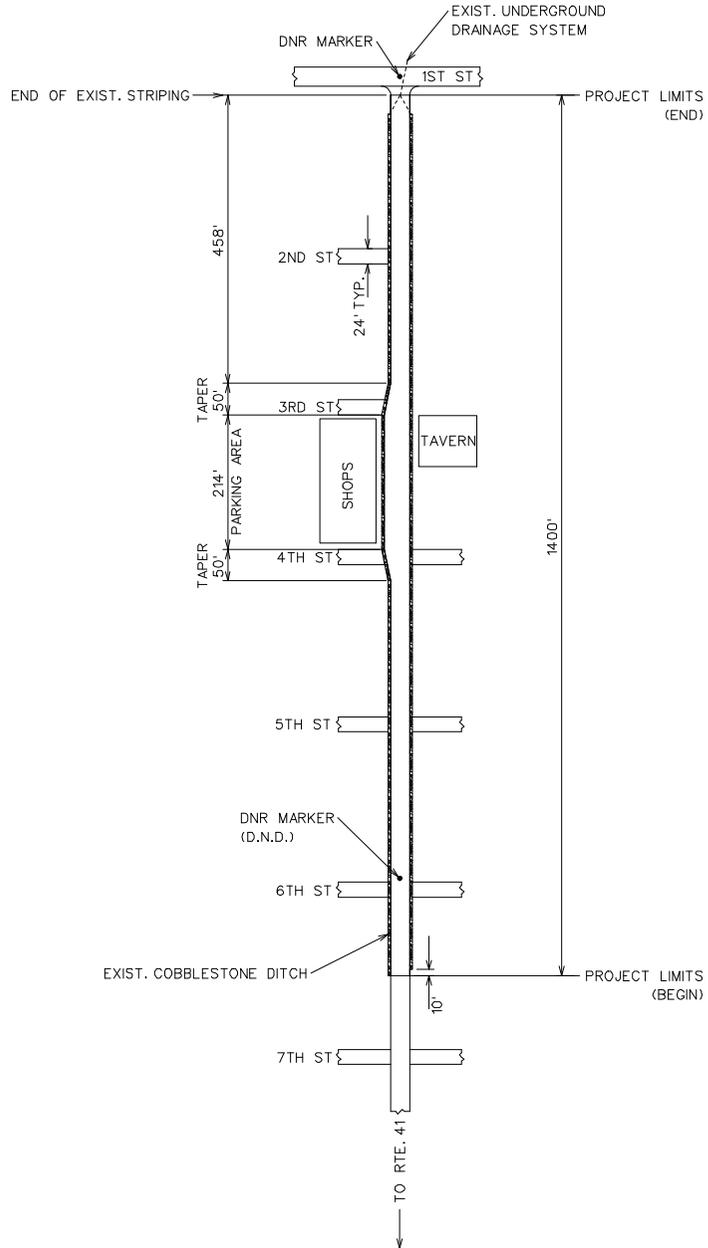


BITUMINOUS PAVEMENT: $LENGTH \times WIDTH \times (THICKNESS/12) / 27 \times 1.987 = QUANTITY$
 BITUMINOUS BASE: $LENGTH \times WIDTH \times (THICKNESS/12) / 27 \times 2.005 = QUANTITY$

PAVEMENT FACTORS

BP 1.987 T./C.Y.
 BB 2.005 T./C.Y.

ROUTE 41 SPUR
 JOB NO. J2S0785
 CONTRACT ID
 PROJECT NO.
 COUNTY SALINE



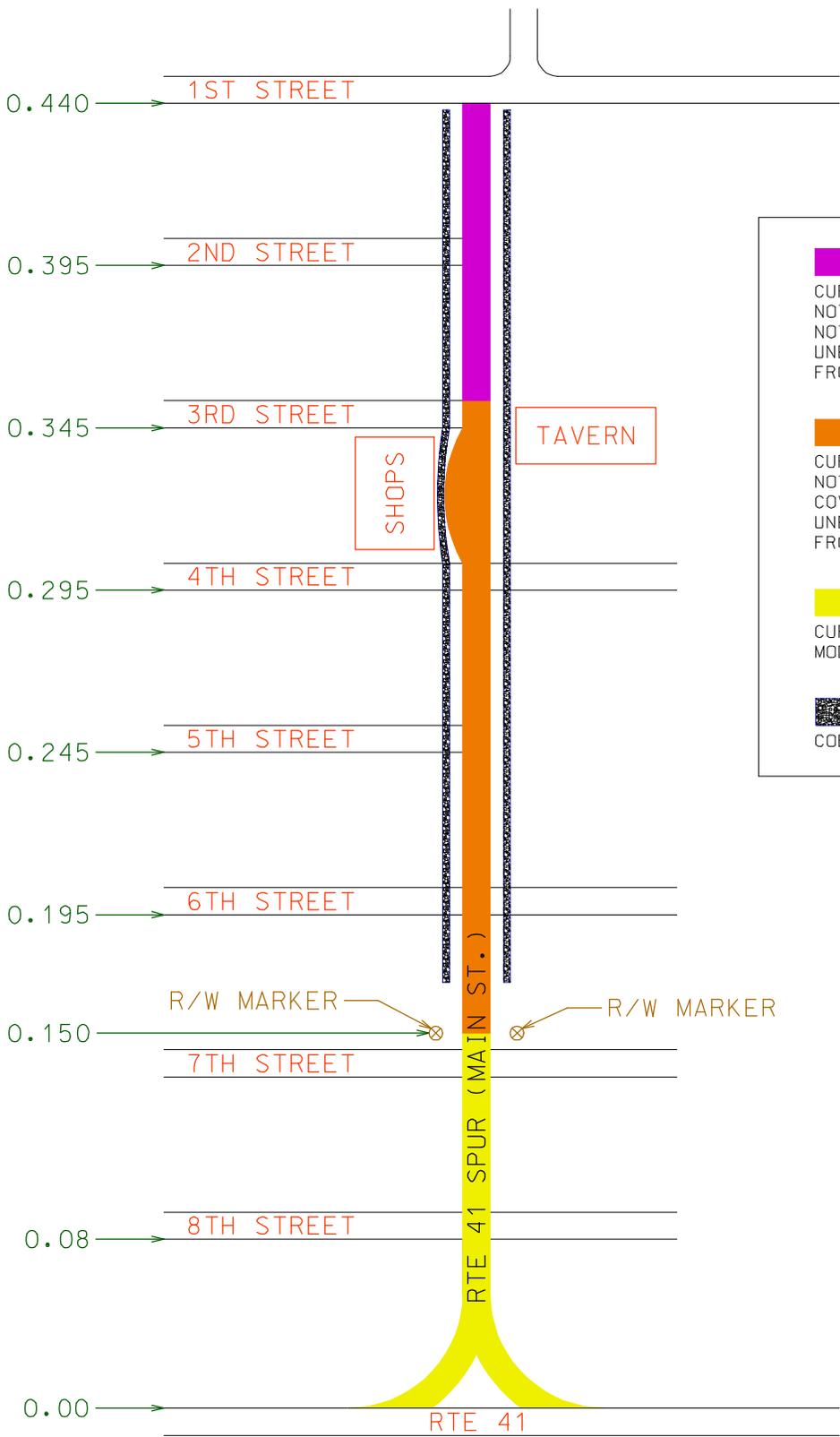
NOTE: PLACE 2 TYPE III MOVABLE BARRICADES @ EACH END OF PROJECT

NOTE: PLACE 5 CHANNELIZERS @ EACH SIDE STREET

PROPOSED

ROUTE 41 SPUR
 JOB NO. J2S0785
 CONTRACT ID
 PROJECT NO.
 COUNTY SALINE

SPUR RTE 41 IN ARROW ROCK SALINE COUNTY

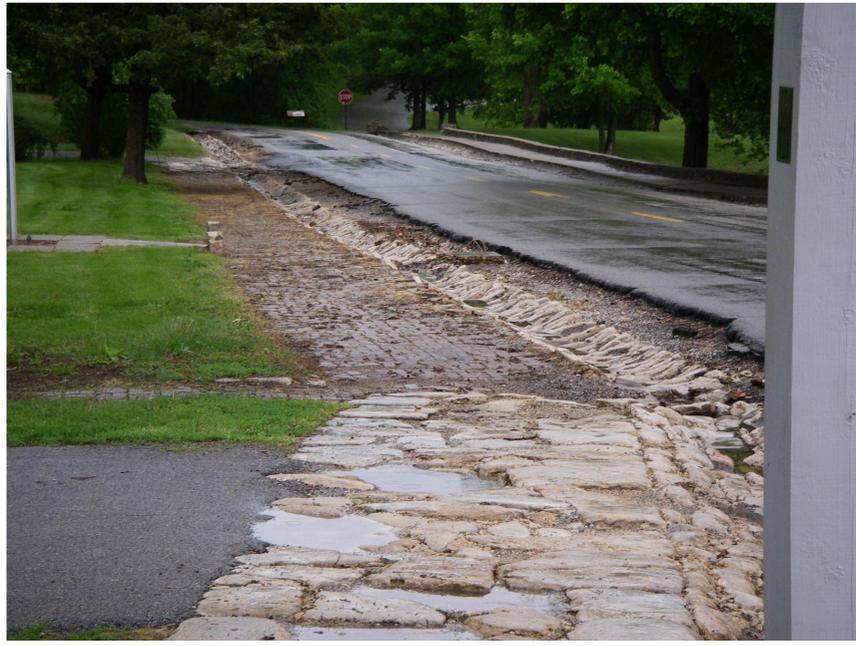


Legend:

- CURRENTLY MAINTAIN BUT NOT WITHIN MODOT R/W. NOT COVERED UNDER UNEXECUTED CITY ORDINANCE FROM APRIL, 1930.
- CURRENTLY MAINTAIN BUT NOT WITHIN MODOT R/W. COVERED UNDER UNEXECUTED CITY ORDINANCE FROM APRIL, 1930.
- CURRENTLY WITHIN MODOT R/W LIMITS
- COBBLESTONE DITCHES



Arrow Rock Before.....



Arrow Rock During.....



Arrow Rock After.....

