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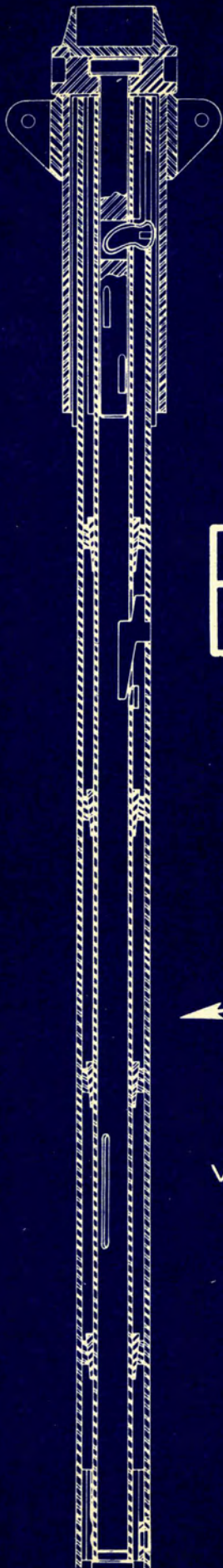
the website about
Vulcan Iron Works
Inc. and the pile
driving equipment it
manufactured

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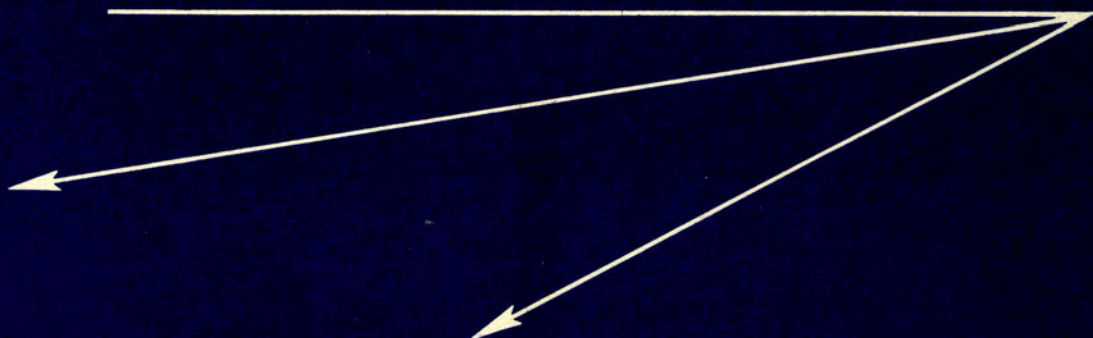
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VULCAN

EXPANDING MANDREL



VULCAN MANDRELS + SHELL PILES + CONCRETE
= ECONOMICAL FOUNDATIONS



VULCAN IRON WORKS INC.

CHATTANOOGA, TENNESSEE, U. S. A.



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USED ON: EXPANDING MANDREL		PART NO.
NAME VULCAN EXPANDING MANDREL ASSEMBLY		
DRAWN <i>J.M.S.</i>	CHECKED <i>ack.</i>	APPROVED <i>D.B.</i>
REF. DWG.	SUB. ASSEM. D100896 GEN'L. ASSEM. B 200978	BULLETIN NO. 90

SPECIAL PRODUCTS DIVISION

1-63-5M

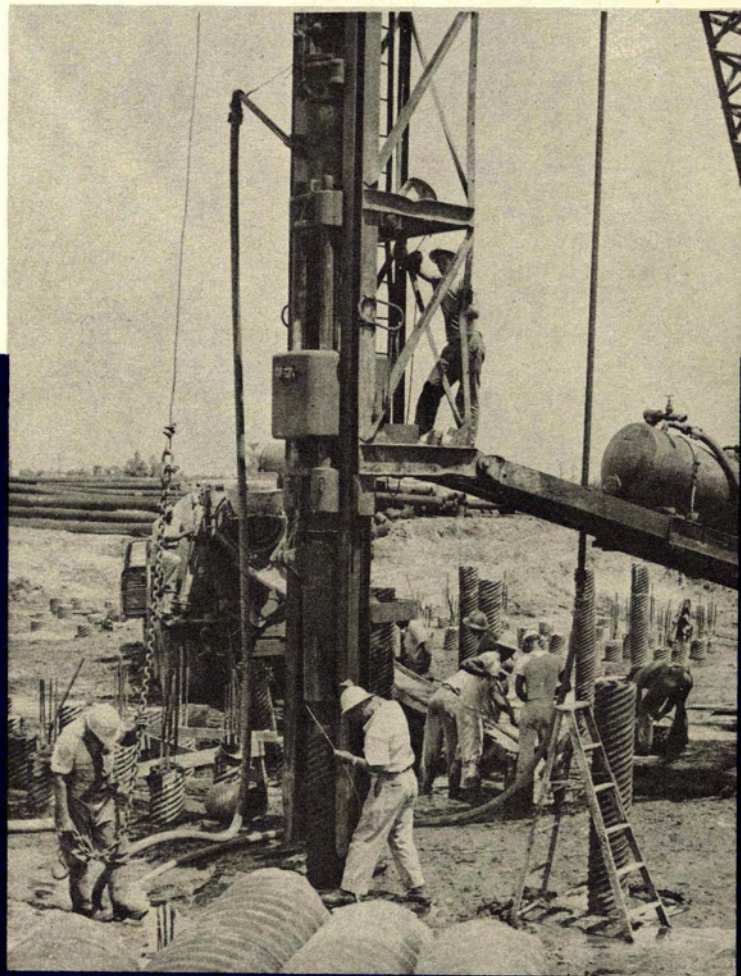
VULCAN MANDRELS + SHELL PILES +

As in the above equation for economic foundations, the installation of shell piling is a matter of taking all elements in simple logical steps. The Vulcan Expanding Mandrel is expressly designed and engineered for installing light gauge shell piles. The Vulcan Expanding Mandrel is a mechanical mandrel and requires no auxiliary equipment other than the pile hammer. The design and features of the Vulcan Expanding Mandrel are based upon field tested and proven concepts. The principle is a simple one utilizing as few moving parts as possible to insure trouble free service. The mandrel is expanded by the co-action of pressure cones on the core of the mandrel with correspondingly conical leaf blocks on the inside surfaces of the outer leaves. The mandrel is collapsed by a simple cam mechanism in the head of the mandrel. Simple in principle and few parts to give troublesome worries to the user. The first element of success in the equation leading to economic foundation pile installation is the Vulcan Expanding Mandrel.

Step two in the equation for economic foundations is the shell pile itself. Constant diameter, helically corrugated, gauge metal wall shell piles are manufactured by several manufacturers in the United States today. Aside from being excellent foundation piles after installation, shell piles have many other attractive features which will appeal to the pile driving contractor . . . some of the most important are:

1. Freight savings in transportation of piling to the job-site. This is due to the light weight per foot of the shell pile.
2. Ease of handling the shell pile on the job. This again due to the light weight of the shell pile.
3. Easy to splice by welding. Being of constant diameter it is not necessary to match mate the sections for splicing.
4. Easy to install closure. Pile boots are specially designed to fit all makes of shell pile and are readily welded to the pile shell.

Shell piles have many other attributes but these are the outstanding ones. After installation with the Vulcan Expanding Mandrel we proceed to the next important step on the road to success. Don't forget that your Vulcan distributor can also supply you with the pile boots for any and all requirements.



VULCAN When you want

CONCRETE=ECONOMIC FOUNDATIONS

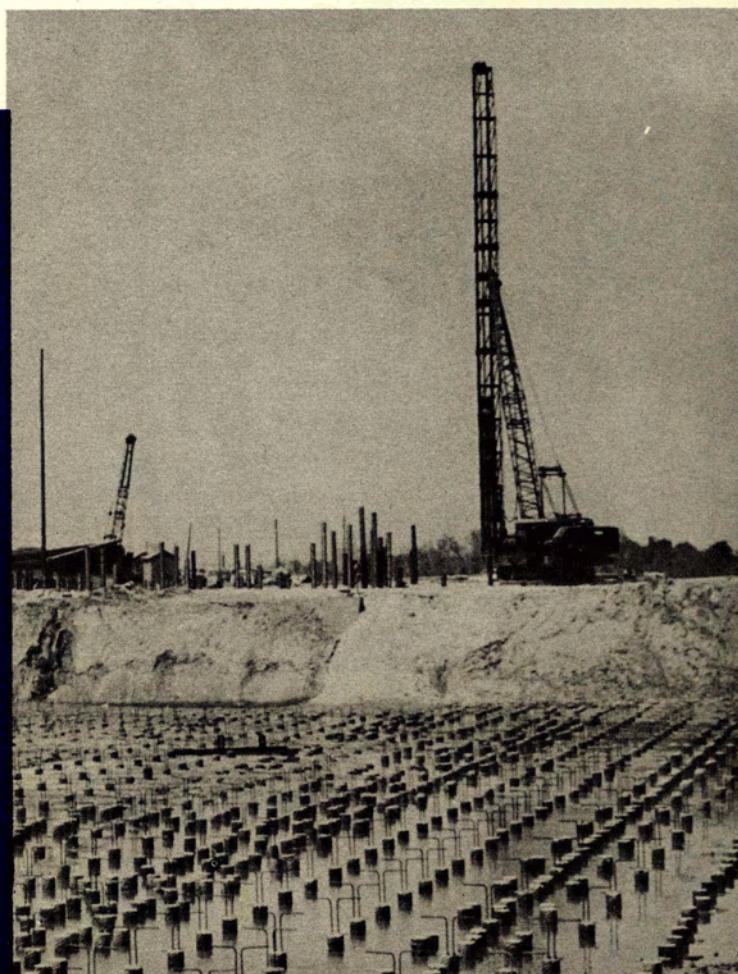
Prior to pouring the concrete into the installed pile shell it is well to remember further attributes of the shell pile.

1. Before pouring it is advisable to use a drop light to inspect the interior of the shell. As in the case with pipe piling of any kind, it is a real advantage to know whether the pile is sound and installation conditions are good.
2. Shells need not be poured immediately after installation. By covering the top of the open shell it is possible to pour many shells at one time and thereby incur savings by mass pouring either of the piling alone or in conjunction with other pouring on the job.
3. It is not necessary to pay truck or rail freight on the concrete as is the case of pre-cast concrete pile.
4. If it is necessary to cut the pile off to a specified grade it can be done with an acetylene torch. This is far simpler than cutting off a pre-cast pile.

Depending on the location of the piling to be poured, the concrete for shell piling can be placed in any conventional concrete placing equipment or direct from the transit-mixer if access permits. Another plus for the contractor is that if reinforcing steel is required for the piling, it can be locally or job-site fabricated as needed for driving progress. Reinforcing steel requirements can be scheduled to coincide with the arrival of shell from the mill. Normally the mills that produce steel piling can make far better deliveries of large quantities of shell as compared with the delivery of large quantities of pre-cast piling. The curing of the concrete in a shell pile takes place in the ground and not in a kiln or casting yard. Generally costs and other economic factors affecting the price in place can be more accurately figured when shell pile is specified, thus giving the contractor a more accurate bid and a better chance of making the all important profit. Shell piles are now manufactured in the middle west and on the west coast for the convenience of the contracting industry.

The final and by far the most important step in this process is the in place shell pile, poured and ready for incorporation in the structure. In the previous steps we have shown the outstanding economies that are available with the use of shell piles. When all of these factors are considered in their proper perspective and all pertinent costs are tallied, there is no other conclusion that can be drawn except that shell piles when properly installed are in fact the most economical concrete piles available. Nothing succeeds like success and there are thousands of shell piles now under structures that are living proof that economy is the watch-word.

Essentially when we talk of using the Vulcan Expanding Mandrel to install shell piles we are talking not of a tool but of a hole in the ground lined with corrugated steel. In this sense of the word we are selling holes and not tools, although without an able tool the holes would not be possible. Heretofore the mandrel usage for installing shell piles was confined to a few contractors who enjoyed exclusive rights to certain patents and processes. Now ALL CONTRACTORS need not decline to bid jobs where shell piles are specified . . . nor need the contractor start searching for a sub-contractor to do shell pile work for him. Now all contractors may purchase the Vulcan Expanding Mandrel for his own use with no strings attached . . . rental . . . royalty . . . or any other gimmicks that put the contractor at a disadvantage. Free competition is what made our country as great as it is and this product freely available gives all companies in the pile driving industry the opportunity to compete equally with all. Remember . . . good tools in the hands of aggressive contractors means profit.



the very best



VULCAN IRON WORKS INC.

RIVERSIDE DRIVE & STEWART ST. • CHATTANOOGA, TENN.

CABLE ADDRESS "WARRINGTON" CHATTANOOGA

PHONE 698-1585 • AREA CODE 615 • TWX NO. 867-7782

Guarantee

The Vulcan Iron Works Inc. guarantees this product to be constructed in a substantial and workmanlike manner of the best materials for the service intended.

Should any part of the product prove to be defective within six months from the time it is put into operation, the manufacturers will replace such part, F.O.B. our plant, upon its return for examination, to Vulcan Iron Works Inc. transportation charges prepaid provided that the failure has not been caused by misuse, abuse or neglect on the part of the user.

As it is easily possible to overload this product to a very great extent, it becomes impossible to guarantee the product parts against failure in service, for there are no existing means of preventing the material in the product from being stressed beyond the limit of its endurance.

Claims for contingent damages or for expense incurred in transportation, repairs or delay will not be allowed.

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