

GREAT ENGINEERING FEAT IN PROGRESS

Attracting Much Attention—
Only Equaled in Two Ameri-
can Cities.

BIG GRADE DISAPPEARING

BY ELLA FLEISHMAN.
Unequaled as an engineering feat of its sort or magnitude in the business district of any American cities except Pittsburgh and Seattle, the Dodge street grade reduction project now in progress in Omaha is being widely featured in engineering mag-



H. E. McClintock,
azines throughout the country. The job, a \$1,000,000 one, will be completed early in 1921, according to the outlook.

H. E. McClintock of this city, member of the American Society of Engineers and a former captain of engineers in the American expeditionary force, under whose immediate direction the project is carried out, is author of the most comprehensive article, to be published shortly in the Engineering News Record.

The project involves the excavation of 350,000 cubic yards of dirt, or enough, it placed on a city block, to make a pile 150 feet high with vertical sides.

The grading is on Dodge street, from Seventeenth to Twenty-second, and including one block north and south of Dodge on Eighteenth, Nineteenth and Twentieth streets, and the grading of private property on both sides of Dodge street. Removal of excavated dirt to the Union Pacific railroad at a point one mile from the site of the work by running railroad cars up the old street railway tracks, and necessary changes in street railway, gas, water and electricity service; underbuilding of a church, apartment houses and razing of frame houses along the site, will be additional features of interest.

Benefits expected to accrue from the 11 per cent grade reduction, twenty-four feet at the deepest point, are to create a new main thoroughfare east and west and to remove the physical barrier to north and south travel into the business district.

"This is only the beginning of what ought to be done to Dodge street to make it one of the best thoroughfares in the United States," said Mr. McClintock. "Looking ahead for ten years, the program should include a cut from Twenty-fifth street west, to reduce that grade; a viaduct across the boulevard valley and a cut on the hill above Thirty-first to Thirty-third street. It is the main entrance to the city from the west and should be made a street of easy grades."

Brick and frame structures left high along Dodge street will be razed, with the exception of the Morris and El Beudor apartments, which were built to conform to the new grade, and St. Mary Magdalene's church, on which \$60,000 will be spent in improvements to make it conform.

The church capacity will be enlarged by 500 by the new plan, which provides for building a story underneath, lowering the altar, using the present main floor as a balcony floor and the present basement as the main floor. The increased height in the interior will give it the appearance of an European cathedral,

said Father Simme, pastor of this parish.

Other large new buildings, the Fontenelle hotel, telephone building and Masonic temple, will be able to make necessary alterations without heavy expense.

Central high school, however, which will be left high up from the street level, has adopted a plan for cutting some five feet off the top of its grounds and then sloping to meet the new grade. The plans also call for an esplanade around the building, which will make a notably beautiful improvement to the school. The school board estimates this cost will be around \$350,000.

Legal procedure to secure the sanction of property owners on those abutting streets took years. The property owners will bear the expense. Public service corporations are also placed under heavy expense to make the desired changes.

As Dodge street and Twentieth street north of Dodge was the route of one of the original cable street car lines, subsequently changed to a trolley line, these tracks had to be removed from the street and re-routed before work could begin; also the cable slot, which had been left, had to be removed. This work was done by the Omaha and Council Bluffs Street Railway Co., with a seven and one-half ton electric locomotive crane, but the salvage in cast iron was enough to pay for the cost of the removal of the cable slot and a neat balance to the credit of the street railway company. Re-laying the tracks will cost \$65,000.

It was necessary for the Metropolitan Water district to lower two blocks of twenty-four-inch high pressure cast iron main on Eighteenth street a maximum depth of twelve feet at Dodge street, and with the construction of temporary feeders to take care of property abutting on the

streets to be graded, involved a total expense of approximately \$12,000.

The Omaha Gas Co. had a twelve-inch high pressure gas main in Nineteenth street. This had to be lowered twenty-seven feet where it crosses Dodge street at a cost of \$7,500. Services serving abutting property are taken care of by temporary connections in adjacent streets.

Wires and conduits are carried overhead temporarily. Replacements by the electric light company will cost \$25,000.

"The main difficulty is handling this work on a 7 per cent grade," said Mr. McClintock, "in addition to delay in travel through city streets

in interference to dirt trains because of congested condition on the Missouri Pacific, Illinois Central, and Union Pacific tracks over which dirt trains are being routed to the point where they are delivered to Union Pacific motive power for final disposition. These trains are compelled to side-step regular switching movement on these tracks, causing great delay."

The equipment used by the contractor is a seventy ton Bucyrus steam shovel with two and one-half yard dipper, forty twelve-yard Western dump cars, one forty-five ton and two five ton locomotives. A conservative estimate of the cost of this plant is \$115,000.

Steam power is used instead of electric due to the impossibility of securing delivery on electric equipment with present market conditions and because most of the cost would have to be charged to this job as projects of this magnitude are not often attempted by any city and the contractor would have no further use for such equipment.

Mr. McClintock anticipates further difficulty from removing material from privately owned property adjacent.

"More flexible equipment," said Mr. McClintock, "will probably have to be used, in fact a small Erie one and three-fourth yard shovel is now at work on the upper end of Dodge and at Twentieth and Douglas streets. Up to date, an average of about 1,000 cubic yards per day has been moved, which daily average is now increased to 1,500 cubic yards, but this must be largely increased, probably by working two shifts, commencing at 6 a. m., and ending at 10 p. m., in order to complete the work by early spring of 1921."

A first cut was made by the shovel from Seventeenth street to Twentieth along the south side of Dodge, loading into wagons which dumped into cars through a trap at Eighteenth street. This was found necessary to so reduce the grade that the locomotive could handle a six-car train of dump cars up the hill. The shovel has cut out most of Dodge street from Seventeenth to Twentieth on the south side and has also taken out a large block of property at the southwest corner of Nineteenth and Dodge. It is now engaged in taking out the dirt which was left on the north side of Dodge from Seventeenth to Twentieth, after which the small shovel will take out Eighteenth street from Capitol avenue to Douglas.

The locomotives are, of course, used only on the down hill end of

the train to prevent cars getting away by broken couplings. The business streets, namely Seventeenth, Sixteenth and Fifteenth carry the heaviest traffic and they, as well as Fourteenth and Thirteenth street, are protected at all times by traffic officers.

Dirt trains have right of way over all street traffic.

Condon and Bolen have the contract for the work which is being done under the supervision of Roy N. Towl, commissioner of public improvements, and John Bruce, city engineer. Mr. McClintock has immediate direction of the work.

From Ninth and Davenport streets, the point to which excavated dirt is hauled, the Union Pacific handles

the dirt with its own power, an additional distance of more than two miles to the east approach of the material is used in widening the approach to accommodate two additional tracks. The plan of the Union Pacific is to enlarge the bridge to accommodate four tracks in the near future.

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Five years ago

ENGLAND was calling hard for men to join her armies—and her navy. Complete divisions were being sent across the channel daily. English women were filling the men's places—on the bus-car lines, in the factories, etc.—that the men might go.

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You must fight film

To get white teeth, or save your teeth, you must above all fight the film. Film is the teeth's great enemy—that viscous film which you feel with your tongue. Most tooth troubles are now traced to it.

Film clings to teeth, enters crevices and stays. Then, between your dental cleanings, it may do a ceaseless damage. And it also makes teeth dingy.

It is the film-coat that discolors—not the teeth. Film is the basis of tartar. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea. Also of other serious troubles, local and internal.

Why very few escape

The ordinary tooth paste does not dissolve film, so the tooth brush has left much of it intact. Thus millions have found that well-brushed teeth still discolor and decay. Statistics show that tooth troubles have been constantly increasing, and very few escape.

Dental science, on this account, has sought a film combatant. Now, after much research, the method has been found. For five years it has been subjected to scientific tests. And now leading dentists all over America are urging its daily use.

The method is now embodied in a dentifrice called Pepsodent. This is an ideal modern tooth paste, made to meet every new-day requirement. But, above all, it efficiently fights film.

Supplied to millions

A ten-day test of Pepsodent has been supplied to millions. Thus it has quickly come into very general use. Now we urge that every home accept it.

Pepsodent is based on pepsin, the digestant of albumin. The film is albuminous matter. The object of Pepsodent is to dissolve it, then to day by day combat it.

But pepsin must be activated, and the usual agent is an acid harmful to the teeth. So this method long seemed barred. Science, however, has discovered a harmless activating method. Now active pepsin can be daily used to combat this tooth destroyer.

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This is to urge that you send the coupon for a 10-day Tube. Note how clean the teeth feel after using. Mark the absence of the viscous film. See how the teeth whiten as the film-coat disappears.

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Marshmallow Sponge Cake

LIGHT, fluffy sponge cake and a thick, creamy filling and top of marshmallows—a dainty, tempting combination.

RECIPE

Beat together until real light; one cup sugar and 5 egg yolks. Beat the egg whites very stiff, add to yolks and sugar, add one cup flour with one even teaspoon baking powder. Bake in two layers.

MARSHMALLOW FILLING:

4 tablespoons water 14 boxes Campfire
1 cup sugar Marshmallows
2 egg whites 1 teaspoon vanilla

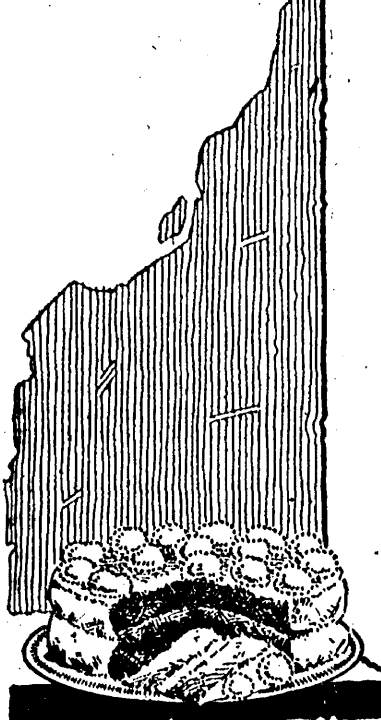
Beat whites of eggs very stiff, boil sugar with water until it spins a thread from tip of spoon. Pour slowly into the beaten whites, stirring constantly. Beat well and add melted marshmallows.

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