MEMBER AM. SOC. C. E.
" AM. ASSN. E.
" COLO SOC. E.
" IDAHO SOC. E. E.

JOHN E. HAYES
CIVIL, IRRIGATION AND CONSTRUCTION ENGINEER
CONSULTATION
DENVER, COLORADO

2063 CLERMONT ST.
PHONE YORK 2378

Synopsis of Professional Record

September, 1893-May, 1899, Cripple Creek Mining District, Colorado. On location, patent and underground surveys; railroad preliminary and location surveys; Arkansas River control; canal survey for the Stirrup Ranch near Black Mountain, Mermod & Jaccard of St. Louis, owners.

Season May-December, 1899, 1900, 1901, on U. S. Government examination of Public Land Surveys, timber and land classification in Oregon, Montana and Colorado. Canal survey in southwestern Oregon and northern Montana.

Nineteen hundred and two, in conjunction with Paul S. A. Bickel, on original U. S. Public Land Surveys in northwestern Montana. Made survey of territory now designated as Glacier National Park.

Nineteen hundred two to 1909 inclusive, Twin Falls Irrigation Projects in Idaho, including topographic surveys, land classification, preliminary and location surveys for dams, canals and laterals. The original project included the Milner Dam in Snake River, height 86 feet, length 2,100 feet; main canal, 3,600 second feet capacity, together with the complete irrigation system for 240,000 acres. Made survey of Snake River Canyon for a distance of more than 100 miles, involving riparian rights. Project value, $6,000,000.

A complete irrigation system for the Salmon River Project of Idaho, of 70,000 acres, including reservoir 300,000 acre-feet capacity, outlet tunnel one mile in length, dam 228 feet in height, canals 100 to 1,200 second-feet (1905-1909). Project value, $3,000,000.

Twin Falls-Oakley Project, Idaho, 50,000 acres; preliminary surveys, report and estimate; 80-foot dam. (1905-1906). Project value, $2,000,000.

Cedar Creek Project, Idaho, preliminary surveys and estimate for diverting Cedar Creek into the Salmon River reservoir; 25,000 acre-feet involved (1906-1908). Project value, $600,000.

Survey of the following towns in Idaho, including appurtenances: Milner, Twin Falls, Buhl, Burley, Hansen, Jerome, Wendell and Hollister.

Fish Creek Project, Idaho (1906), complete surveys, preliminary and location, together with initial construction; 10,000 acres; height of dam, 60 feet. Conducted surveys across lava beds in 1906, which was a part of the territory later described in National Geographic Magazine as "The Valley of the Moon" (1924). Project value, $400,000.

Twin Falls-Bruneau Project (Idaho), preliminary survey and estimate; 640,000 acres, including the American Falls dam and reservoir on Snake River; main canal designed for 10,000 second-feet (1907-1908). (This dam now under construction by the U. S. Government.) Project value, $40,000,000.

Preliminary reconnaissance and data for railroad, Twin Falls, Idaho, to Wells, Nevada (1906). Constructed by the Union Pacific System, 1924.

Preliminary and location surveys for Idaho-Oregon Light and Power Company hydro-electric development at the Ox Bow on Snake River (near Idaho-Oregon state line). Included diversion dam, tunnel and plant location. For The Arnold Company, Engineers, Chicago (1907). Project value, $2,000,000.

Surveys and data for important litigation—Henry Schodde vs. The Twin Land and Water Company. Successfully defended through U. S. Supreme Court. Extensive U. S. Land Office practice and litigation, involving Carey Act selections and land titles.

Farmers Reservoir and Irrigation Company Project, Denver, Colorado, 1909 to March 15, 1922. Examinations, reports, location and construction until June, 1910. Project placed in receivership in June, 1910. Was appointed chief engineer and manager for the receiver, June, 1910. Project was completed under receivership, the system comprising 463 miles of main canals, 100 to 1,250 second-feet; 4 large and 26 small reservoirs; involving as major items more than 10,000,000 cubic yards of earth excavation, 53,000 cubic yards reinforced concrete, 1,000,000 feet B. M. in bridges and flumes, 52,000 cubic yards rip rap, 1,100 tons 48-inch C. I. pipe, 241,000 linear feet sheet piling, several hundred canal headgates and appurtenances. Project value, $10,000,000.

In addition to and in conjunction with the above work, was chief engineer for the Kenefick Construction Company of Kansas City, for the completion of the Henrylyn Irrigation Project, comprising 110 miles of main canal, 100-1,250 second-feet, and 3 reservoir dams, involving 2,950,000 cubic yards earth work, 8,500 cubic yards concrete, bridges, flumes, headgates, etc. This unit, including engineering and construction, was completed in less than eight months (1911). Project value, $2,000,000.