

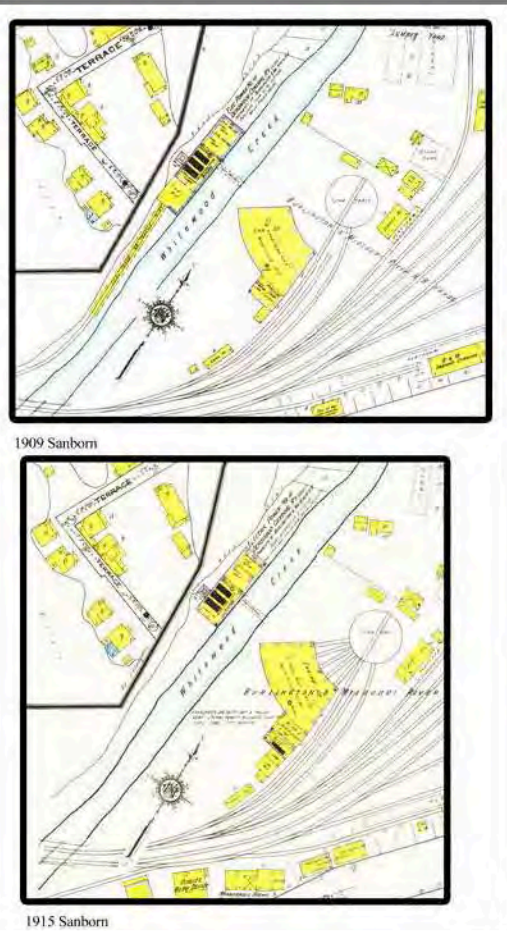


POWERHOUSE PARK

DEADWOOD, SD



Piecing together history



Site evaluation



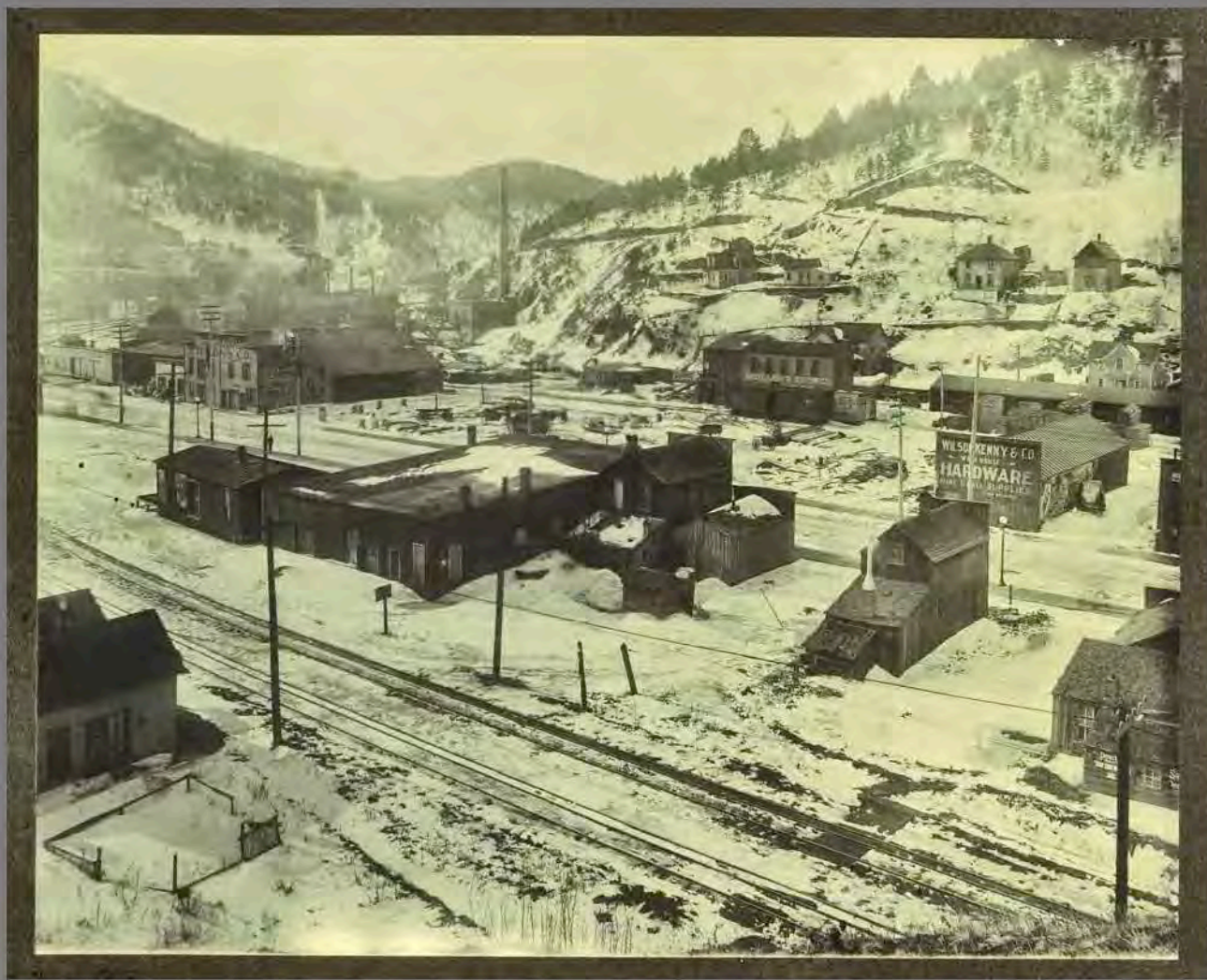
Schematic Design



DESIGN PROCESS



HISTORY



Burlington's Electric Road in South Dakota.

Plans are being drawn for installing an electric-railway system on the narrow-gauge, four-mile railroad of the Chicago, Burlington and Quincy Railroad company, between Deadwood, S. D., and Lead. B. J. Arnold of Chicago is the consulting engineer for the work. The foundation has already been laid for the power house of the line at Deadwood, and the equipment for the power house and rolling stock has been selected.

1901 The Western Electrician

Constructed in 1902 by subsidiaries of the Chicago, Burlington & Quincy Railroad to power the electric trolley between Lead and Deadwood

Decommissioned for trolley use in 1910

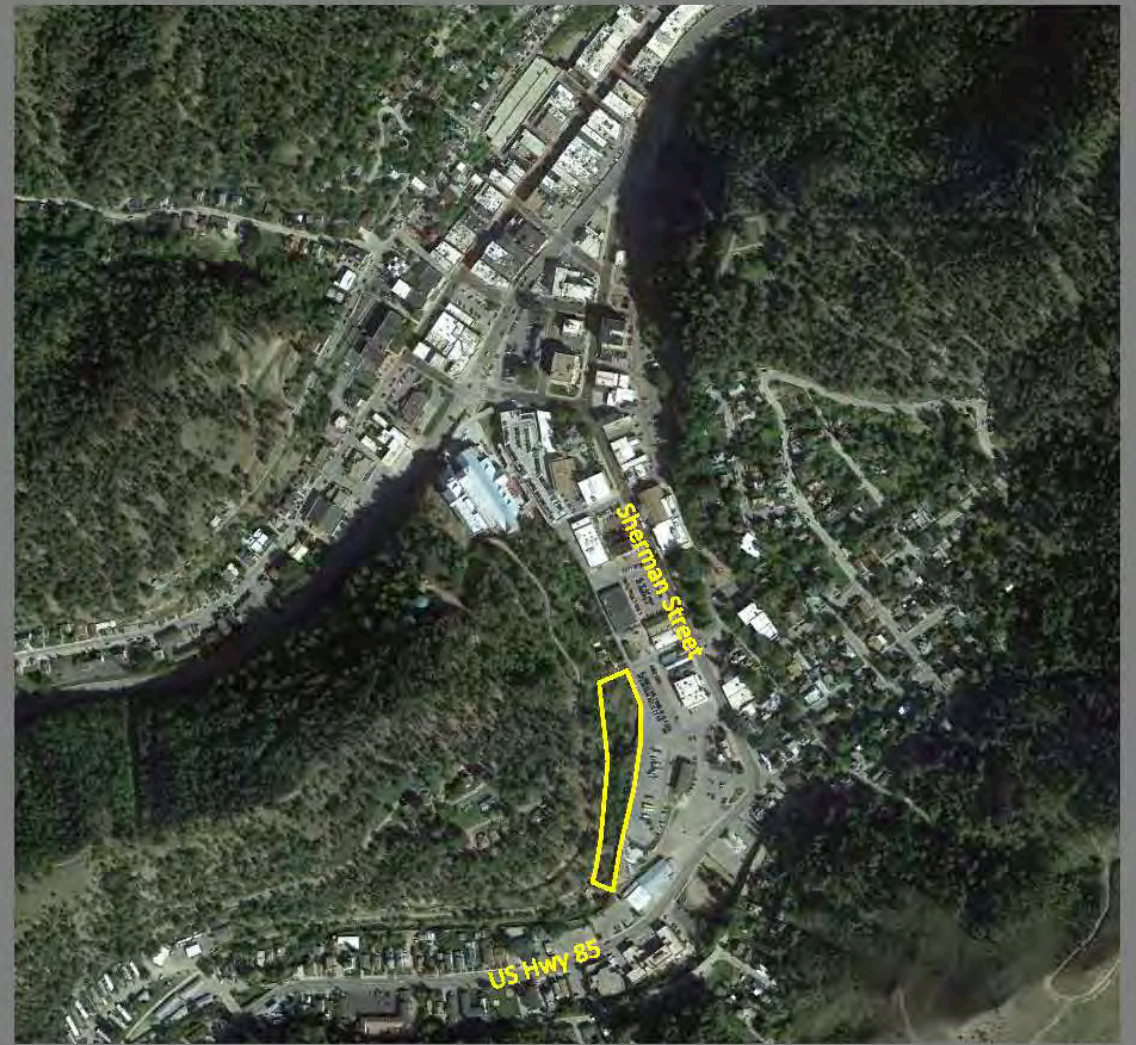
Plant demolished in July of 1911

Smokestack collapsed or demolished in the 1920's

Home of the City fire whistle

Home of the third telephone in Deadwood to be used for fire emergencies only

HISTORY: BURLINGTON POWERHOUSE



Deadwood National Historic District
Deadwood State Historic District
Deadwood National Historic Landmark District
Deadwood Local Historic District

“Proposed development of the project area into a city park is not expected to diminish the archaeological or historical significance of the power plant and will provide the opportunity to stabilize physical elements such as the smokestack base. The proposed development activities are also expected to enhance the public interpretive value of the property.”

Archaeological Documentation of the Burlington Interurban Power Plan, Jeff Buechler,
Dakota Research Services

HISTORY: DEADWOOD NATIONAL LANDMARK

CITY OF DEADWOOD



The pages which are missing were removed because they were advertisements.

The Improvement Bulletin
 with which are published
 The Architect, Builder and Decorator and The Street Railway and Electrical News.

SATURDAY, DECEMBER 1, 1900

Vol. XXIII, No. 1

THE CHAPIN PUBLI

THE ENGINEERING RECORD
 BUILDING RECORD AND SANITARY ENGINEER

OFFICE
 211 East 10th Street
 Deadwood, S.D.

Subscription rates:
 One Year \$2.00
 Six Months \$1.25
 Three Months \$0.75

Advertisements:
 One Line per Week \$0.25
 One Line per Month \$0.75

McGraw Pu
 239 West
 New

The Deadwood Daily Pioneer-Times

GLAVIS TELLS OF CUNNINGHAM DEAL

WOULD LIMIT ARMY APPROPRIATIONS

PREPARED FOR
 City of Deadwood
 Deadwood Historic Preservation Office
 108 Sherman Street
 Deadwood, South Dakota

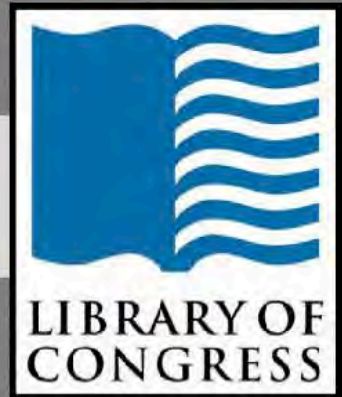
Prepared by
 Jeff Buechler

Archaeological Documentation of the Burlington Interurban Power Plant (39LA3000-2014.03) in the City of Deadwood, Lawrence County, South Dakota

Prepared for
 City of Deadwood
 Deadwood Historic Preservation Office
 108 Sherman Street
 Deadwood, South Dakota

Prepared by
 Jeff Buechler

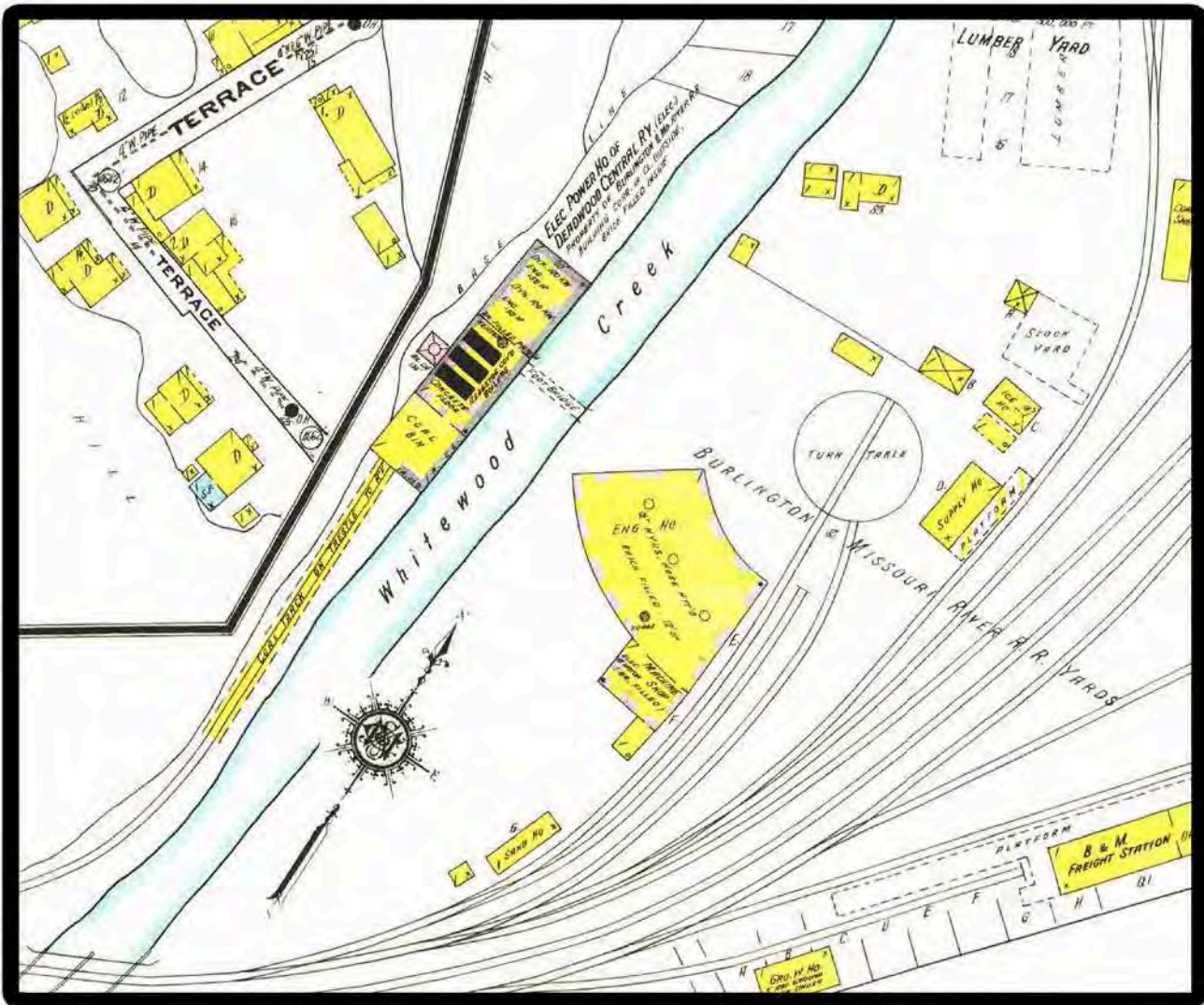
IMPROVING LIFE WITH ENERGY
 The First 125 Years of Black Hills Corporation



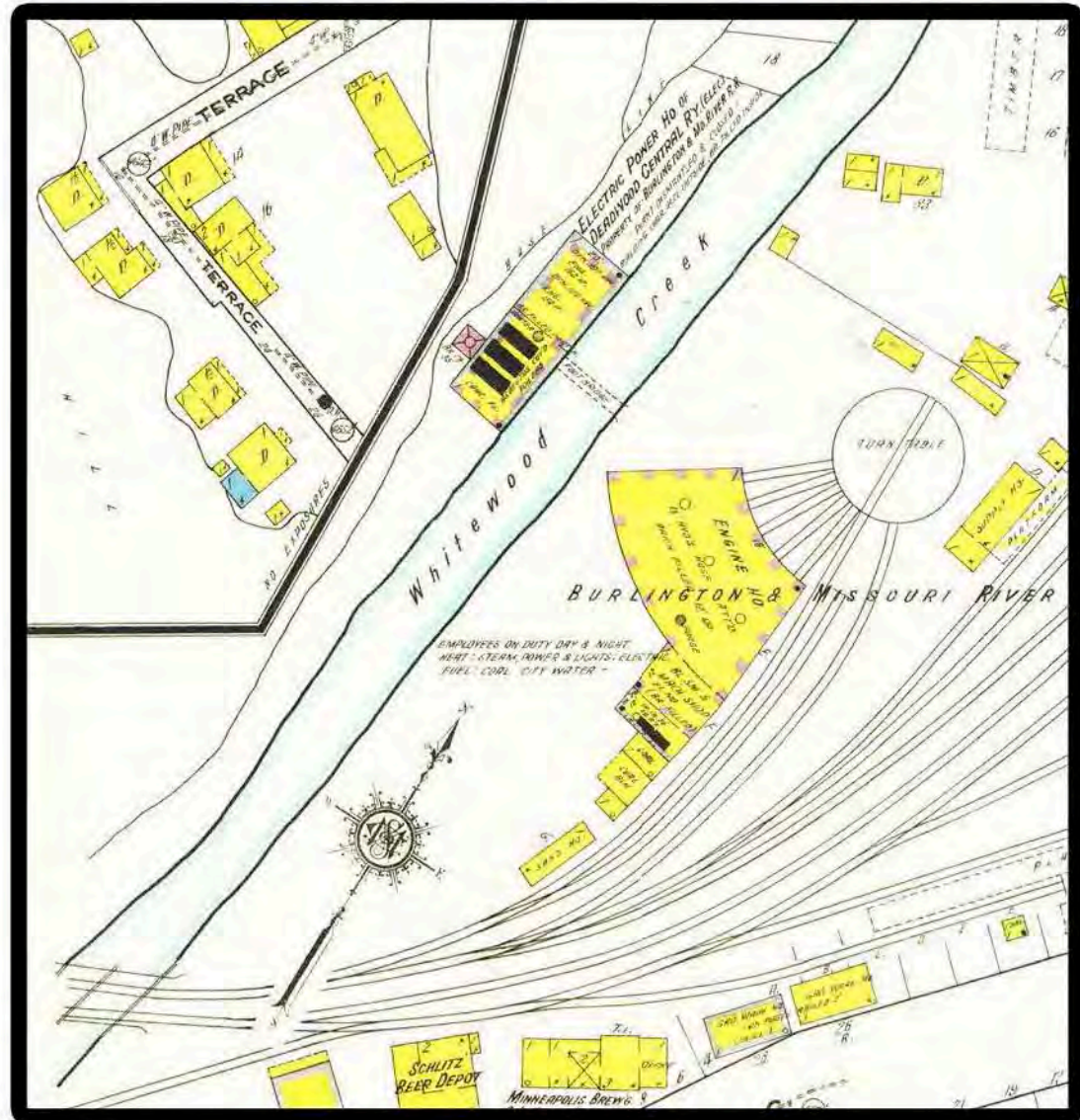
HISTORY: RESOURCES

October 2014





1909 Sanborn



1915 Sanborn



HISTORY: INTERURBAN TROLLEY



FOUNDATION

SMOKESTACK BASE

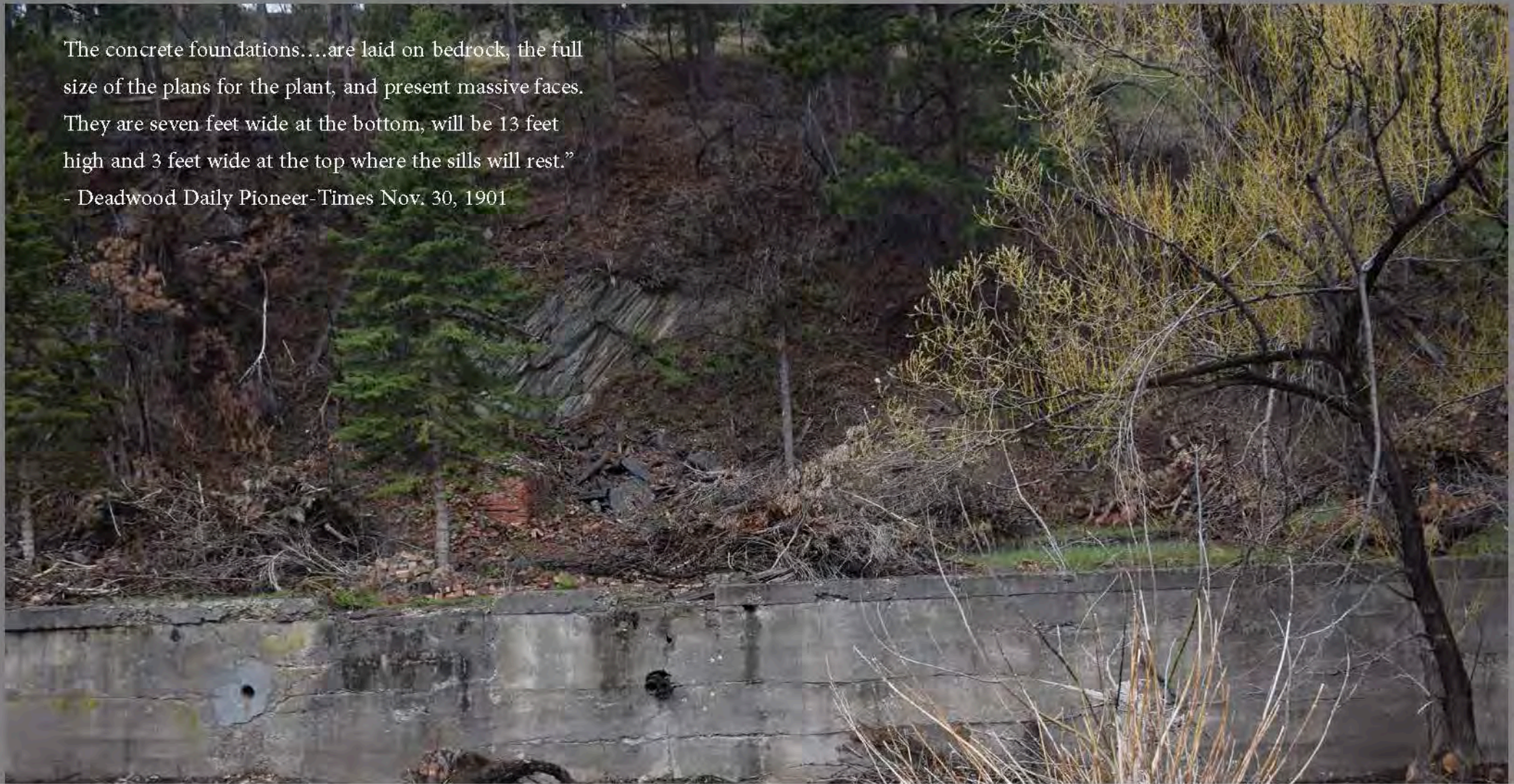
COAL TRACK PIERS

MICKELSON TRAIL

WHITEWOOD CREEK

SITE EVALUATION

The concrete foundations...are laid on bedrock, the full size of the plans for the plant, and present massive faces. They are seven feet wide at the bottom, will be 13 feet high and 3 feet wide at the top where the sills will rest.”
- Deadwood Daily Pioneer-Times Nov. 30, 1901



SITE: FOUNDATION AND INTERNAL ELEMENTS





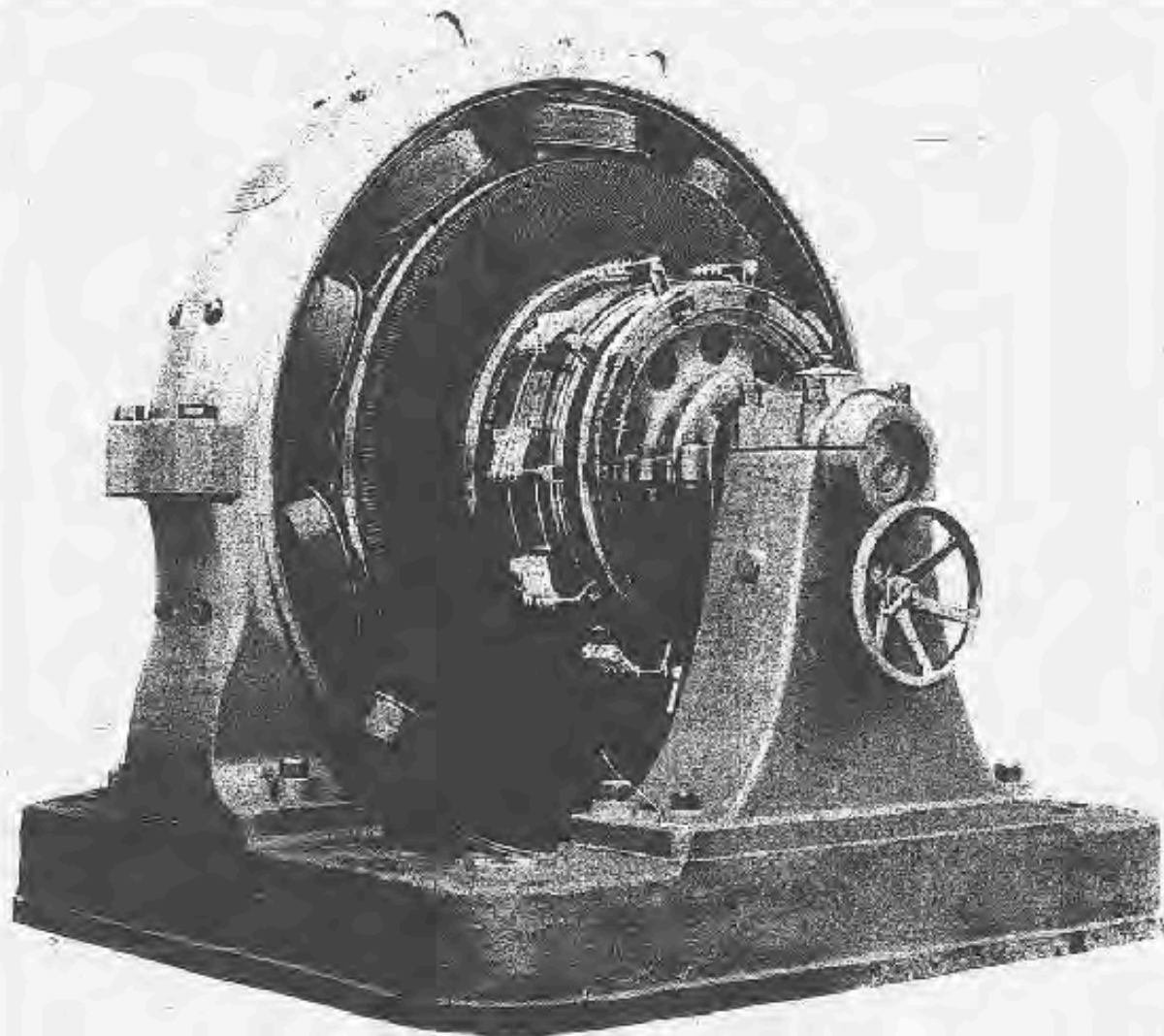


FIG. 87.—Dynamo Apparatus.

are connected to many extending above roof of the building, where they are fixed to a heavy cast-iron frame, 15 ft. high, which extends outside from the classed of electrical class, which is about 200 ft. from station building, to the latter end is contained in the building as a whole, made from which the cooling pipes take water. The cooling air is discharged from the transformers into a cold-draft room against the face of the lower end of the engine room. The water circulating the building has a stand at its point of exit, which is made to rise to the level of the water in the tanks at main station, a 100 ft. has been raised above a channel of the shaft, and a special device along station has been added to the end of the charge control. The cooling system is only of water there is an indication (quantity) of air passing about the coils. It consists entirely of a quantity of standard forward-pipe steam pipe, ranging from 1 1/2 to 18 in. diameter, with special valves having gun flanges over the hand plate fixed with a series of 100,000 lb. steam pressure. The machinery is carried by concrete piers, the latter are each supported at the middle by a frame of equipped with a standard and attached to the top of the structure. The standard are 10 in. 2 1/2 in. and 3 in. pipe, with a 100,000 lb. steam pressure (the standard) the water of the water supply, two of which is carried by each station. The latter are used to 10,000 lb. steam, small diameter with flange or flange in every 1000 gal. of steam per hour a pressure of 10 to 15 lb. is maintained, the two valves in the standard are part of the cooling system of the station.



Exhaust and Swirlworks in Turbine Room.



Three Main Units in Turbine Room.

A complete description of the apparatus is shown in one of the illustrations. The use of the locally known rubber equipment from the spring to and the same conditions. The latter part of the main apparatus provided. Two of these each have a 2000-volt, high-pressure generator driven by a turbine. The third is a 1000-volt

The turbine, machinery and its parts are on the concrete platform along the front side of the apparatus. Ten switchboards are provided one for the generator circuit and the other for 11,000-volt. Three single-phase 2300-volt lines are carried from the 2300-volt board to the turbine and from to feed for conventional lighting. Two units for 1100-volt are also carried to load, and out to the turbine from the

main line (connected to a 10 ft. p. three-phase, 2300-volt, induction motor). The 1000-volt circuit is against the wall of the turbine room; the motor-driven water is in a concrete pit (in the front side of the main and feed) with the floor of the lower.

The exhaust air also passes from the turbine.

The two 2300-volt main and the 11,000-volt transmission lines are equipped with motor-operated three-phase cut-out. These cut-outs are controlled from the ground switchboard by the

main control system and is operated by motor drive to the 11,000-volt current being obtained from the motor shaft. The transmission line cut-outs are also operated by hand from emergency.

The 2300-volt bus bars are in separate bins and connect to the main station. The turbine machinery carrying all conventional switchgear. The generators are connected to the main of the bus bars, and (protecting) switches are provided in the latter between the generators and the circuit breakers which are taken off from the middle portion of the bars. Disconnecting switches are also placed between each motor-operated cut-out and the bus bars for safety during repairs and clearing.

Two banks of transformers are arranged between the two switchboards, in order that current may be taken from either one to the other. One set consists of three, 1000-volt, oil-cooled type, and the other of three 2300-volt, air-cooled type.

A fireproof lock door, 10 ft. high and 10 ft. wide, is provided on the front side of the building for all transmission lines leaving the station. The 2300-volt transmission is placed in an opening in the building side of the front side of the tower, and together with its connections and equipment occupies most of that story although very ample room for reaching the back of the tower is available. Current carrying transformers for the 11,000-volt lighting transmission lines occupy the second floor, and lighting arrester, choke coils and air force, the third. The 2300-volt lines in the tower are steel-wire, insulated with the 11,000-volt lines are bare wire in separate bins with air space between.

The 2300-volt transmission lines (insulated) and the 11,000-volt lines are both 2300-volt lines. The 11,000-volt lines extend to various wiring cases within a radius of 10 miles of the station. None of these lines includes any manual feature of construction.





SITE: SMOKESTACK







Image courtesy of Deadwood Historic Preservation



SITE: COAL TRACK PIERS



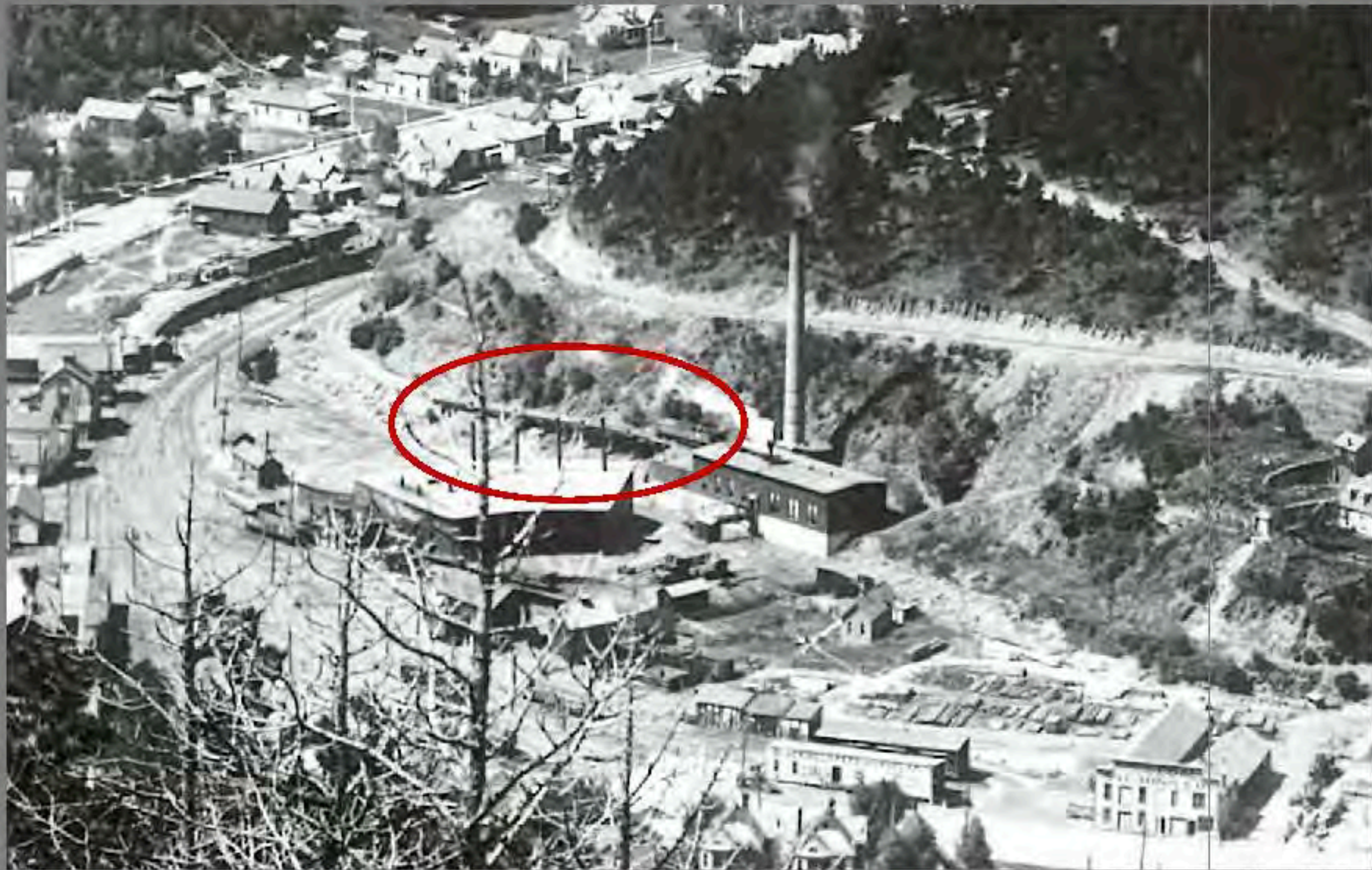


Image courtesy of Deadwood Historic Preservation





Plans courtesy Albertson Engineering

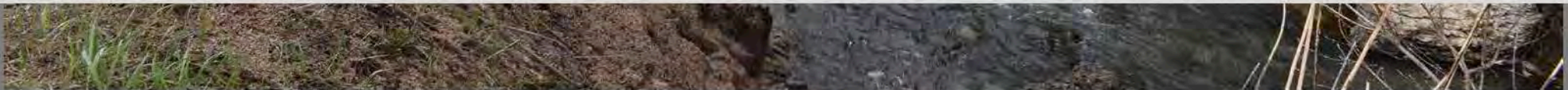


SITE: MICKELSON TRAIL CONNECTION





SITE: WHITEWOOD CREEK CONNECTION



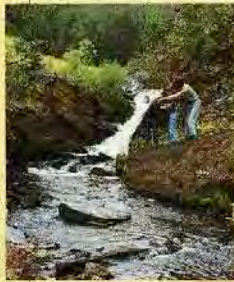
Whitewood Creek and Bear Butte Creek Watersheds

WHITWOOD CREEK AND BEAR BUTTE Creek watersheds are in an area mined for gold since the late 1800s. As a result of past mining practices, fisheries in both watersheds have been negatively impacted. Before 1977, mine tailings and raw sewage were released directly into Whitewood Creek. Since 1983, stream reclamation projects and improved

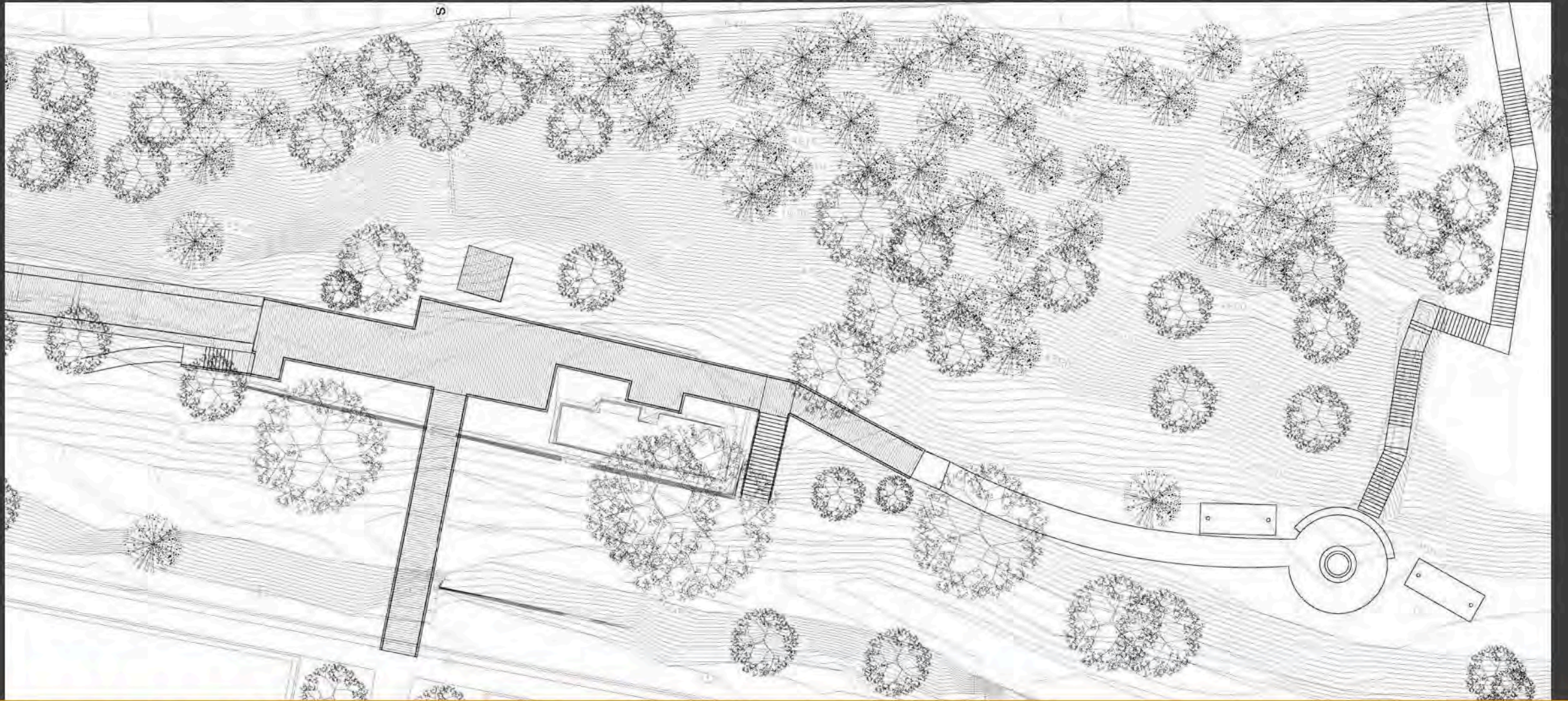
water quality have allowed a partial recovery of the trout populations. Today the reach of Whitewood Creek through the town of Deadwood downstream of Highway 14A has good access and a respectable population of brown trout. Whitewood Creek downstream of Deadwood flows through a canyon that offers pocket water fishing to anglers willing to hike in and out.

The headwater streams of both watersheds support excellent brook trout populations.

Strawberry Hill Pond just west of Highway 385 has handicap fishing facilities and is stocked with rainbow trout.

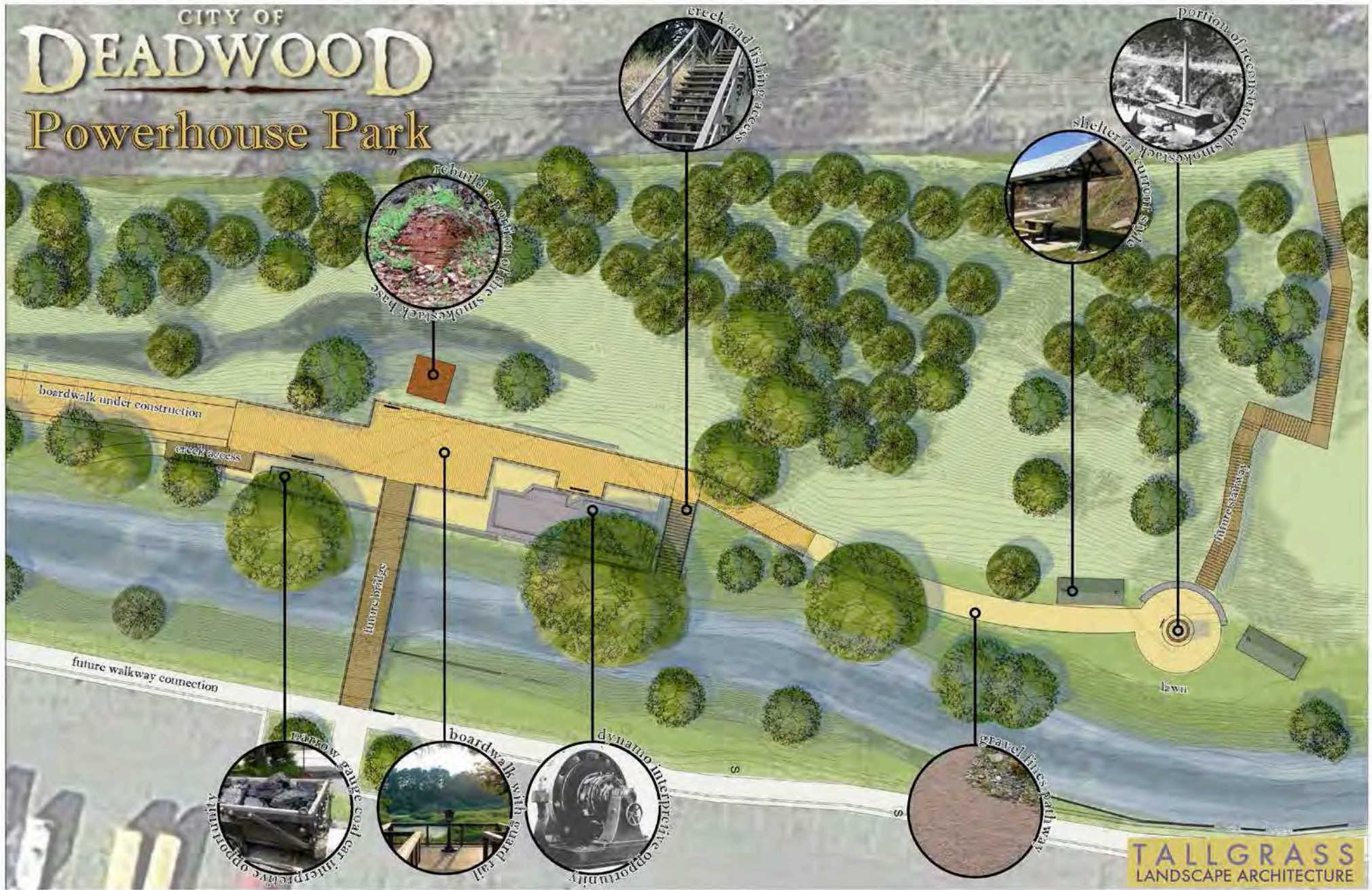


- During active discharge period Whitewood Creek and 60 miles of the Belle Fourche River supported NO aquatic life
- Superfund site downstream from Deadwood delisted in 1996
- Aquatic life has rebounded considerable since mining discharge ceased
- Sanford Lab discharges some water - NPDES (National Pollution Discharge Elimination System) Permit requires yearly testing of water, fish and some invertebrate populations
- There are no advisories against consumption of fish from Whitewood Creek from SD Department of Health
- Whitewood Creek health depends on stability of surrounding soils

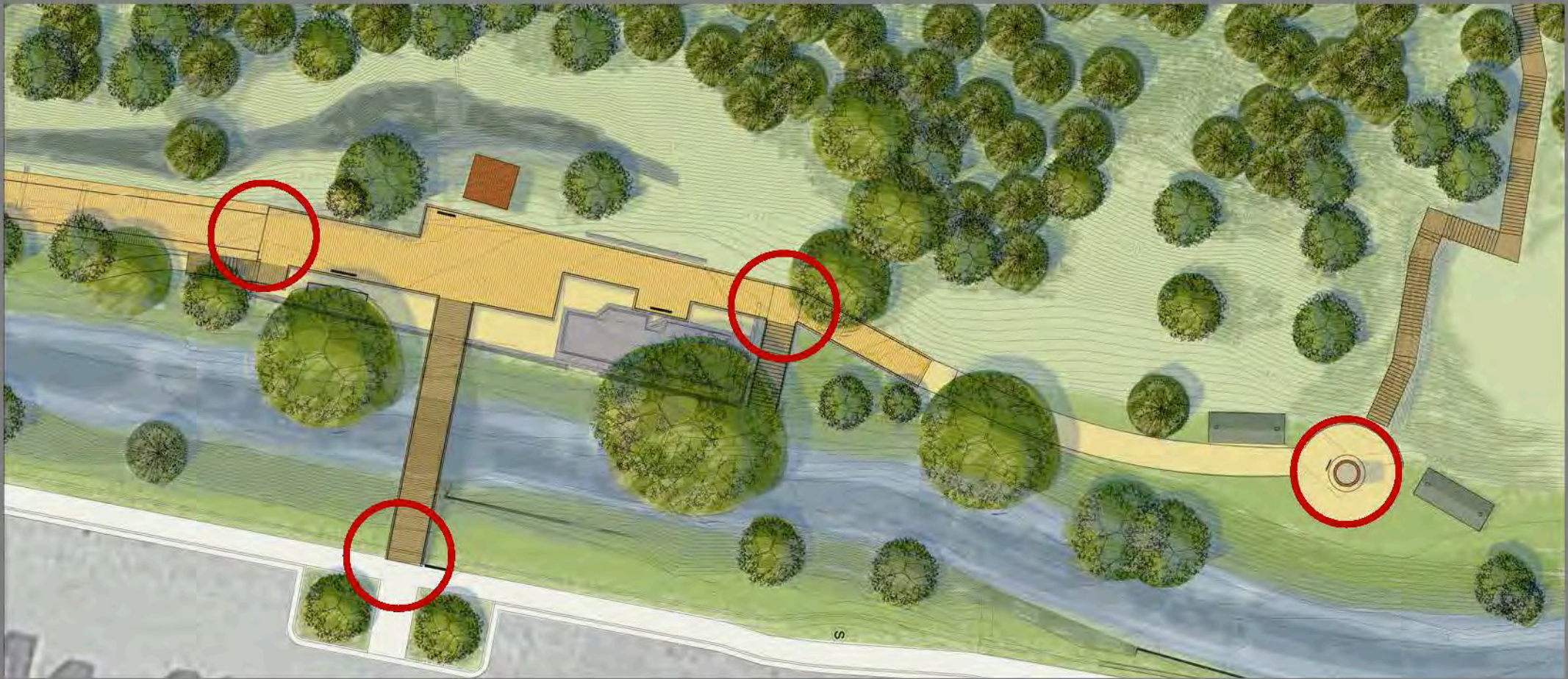


SCHEMATIC DESIGN

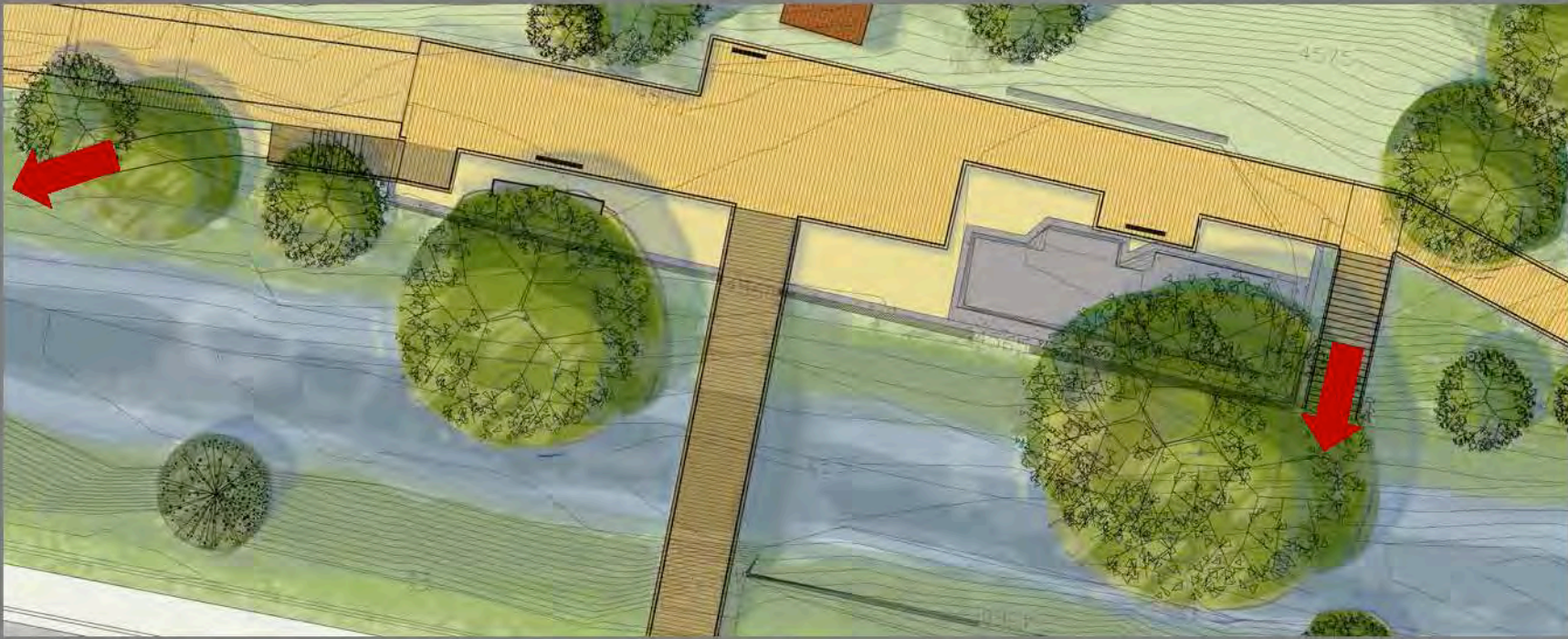
CITY OF DEADWOOD Powerhouse Park



TALLGRASS
LANDSCAPE ARCHITECTURE



CHALLENGES: ADA ACCESS



CHALLENGES: WHITEWOOD CREEK ACCESS

Preservation without restoration

Slow rates of loss through preventive measures, wise use, appropriate interventions and custodianship, and prioritization of efforts

Recognize the conflict between excavation (or other site use activities) and preservation.

Ensure practices that protect and conserve sites

Address problems arising from site use: ranging from structures being worn away by weathering, erosion and water damage, inappropriate excavation and reconstruction methods to theft and vandalism



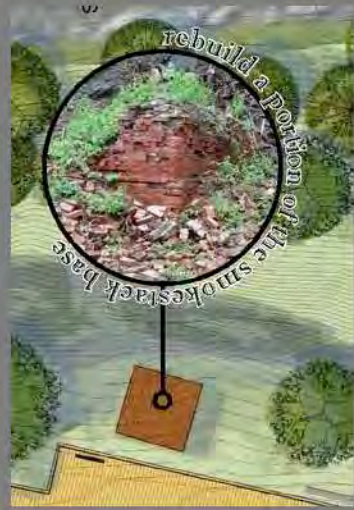
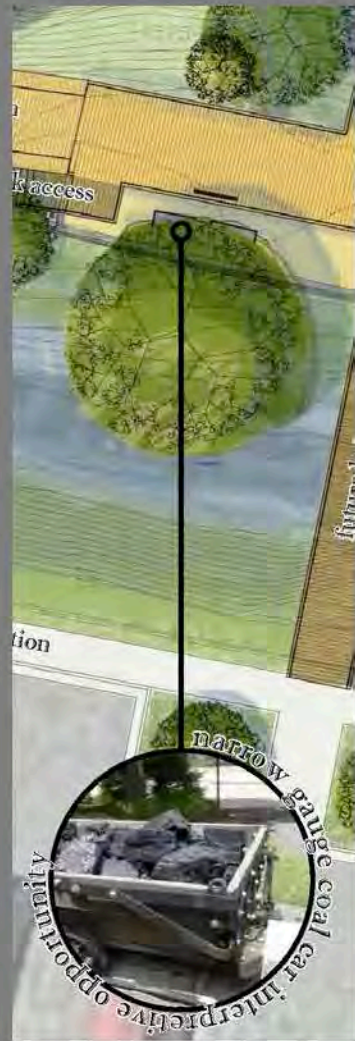
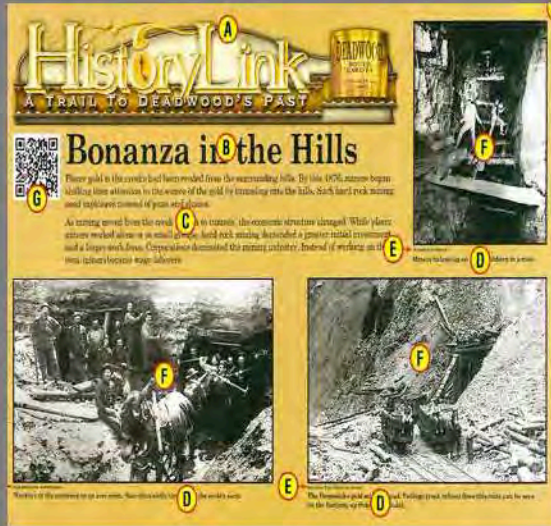
CHALLENGES: CONSTRUCTION & PRESERVATION



CHALLENGES: CONSTRUCTION & PRESERVATION



Train / Coal Delivery
 Smokestack Base
 Dynamo Pit
 Whitewood Creek
 Smokestack Cross Section
 Interurban Trolley



SCHEMATIC DESIGN: INTERPRETIVE OPPORTUNITIES

Bridge access to parking lot
Mickelson Trail Access
Private Bridge Access
Other trails



SCHEMATIC DESIGN: CONNECTION OPPORTUNITIES

CITY OF DEADWOOD



State of South Dakota

Recreational Trails

Program Grant (RTP)

Cost Estimate

Design Development

Collection Protocols

Construction 2016

Future Park Expansion



FUNDING SOURCES AND NEXT STEPS

Thanks to:

The City of Deadwood
Kevin Kuchenbecker, Historic Preservation Officer
Bob Nelson, Jr. Planning and Zoning Director
Mike Runge, City Archivist
Homestake Adams Research and Cultural Center
Jessica Michak, HARCC Archivist



THANK YOU