Capitol Fence

Historic Structure Report

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SPWD Project #15-A025

Prepared for
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Early photo of Capitol Plaza soon after fence was erected in 1875 and trees plants as part of the Capitol Grounds beautification project, Nevada State Museum, Capitol 003.

"I think that'll be a pretty good fence"

- Hannah Clapp

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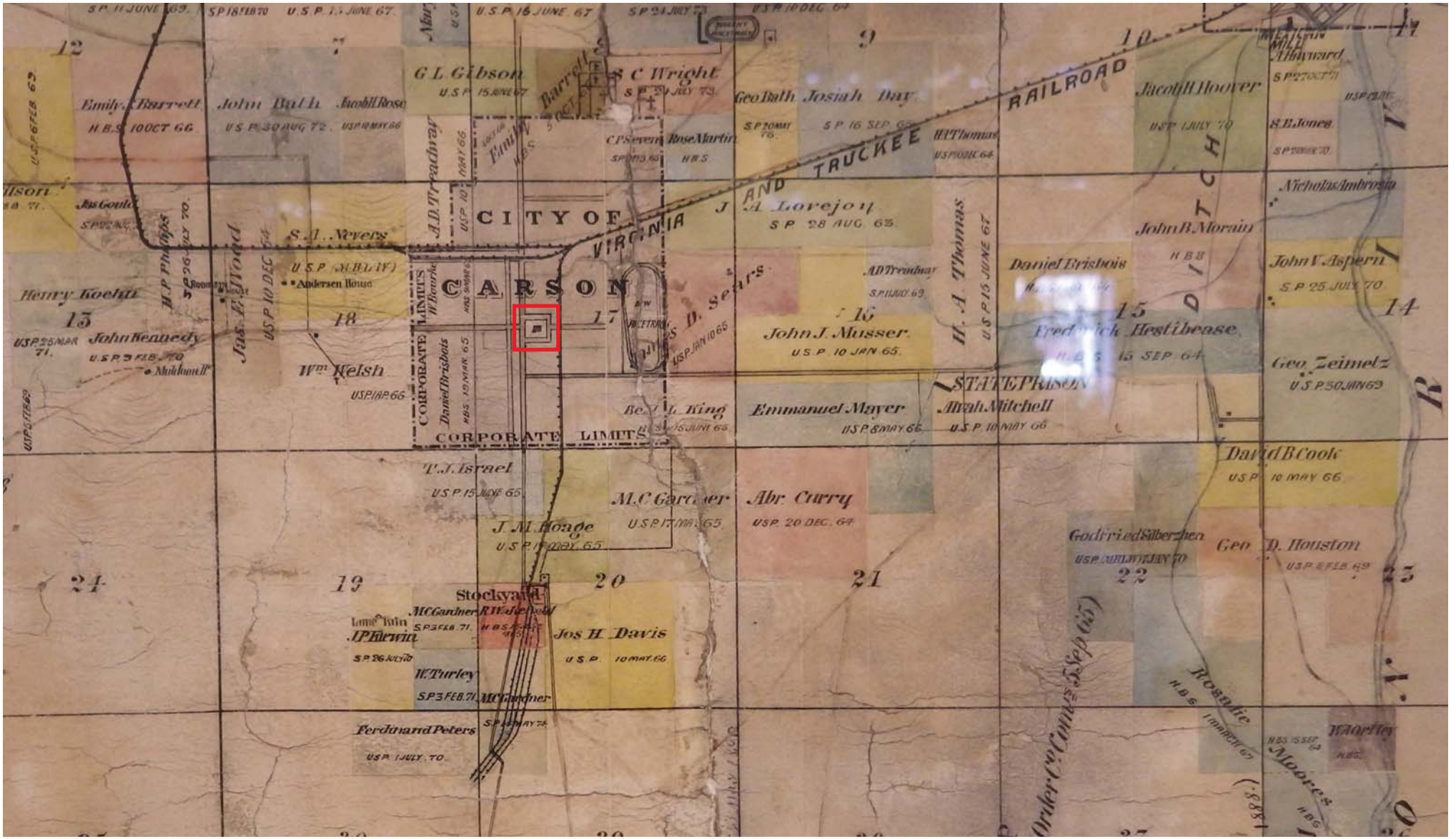
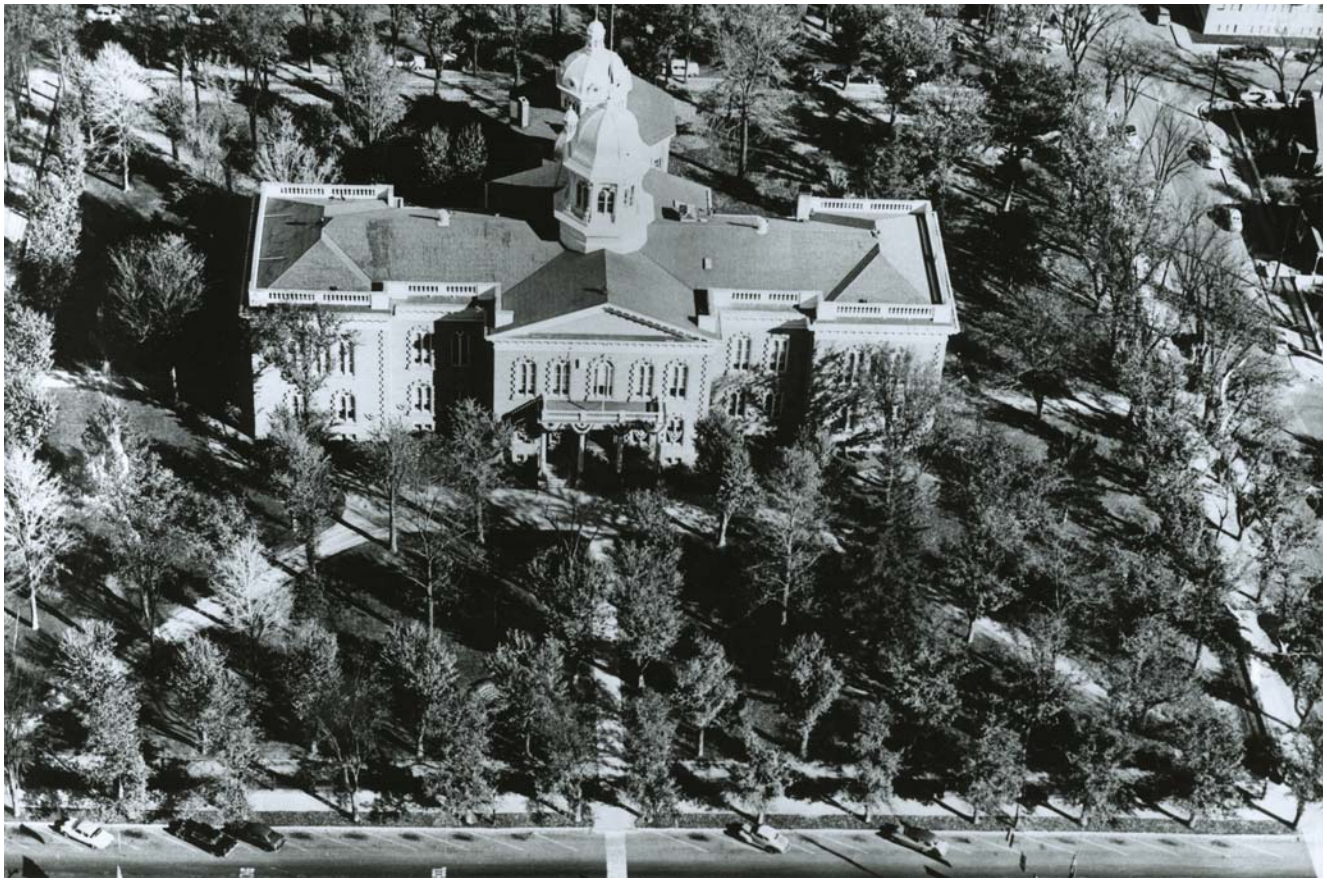


Township map, dated 5 September 1865, details parcel ownership by land owner and date in a section of Ormsby County, a Nevada County from 1861 until 1969; dotted black lines top center indicate Carson City limits; red box placed around Capitol Plaza; Carson River is visible on eastern edge of map; Virginia and Truckee Railroad tracks apparent a couple blocks east of the Capitol, running west then north towards Franktown and east to Round House and south to rail yard; map is located in Carson City Clerk-Recorder's Office, photo courtesy of Wendell Huffman, Nevada State Railroad Museum.



Circa 1945 aerial photo of Capitol Plaza prior to the Blasdel building constructed in the northeast corner of the lot in 1957; iron fence in original configuration enclosing grounds on all four sides, drives and sidewalks demarcate eight distinct sections. View looking east from N. Carson Street, note diagonal off-street parking, Capitol Building wings added in 1915 visible, Nevada State Archive, NSC-0005.

Introduction

The Capitol Fence is located at 101 N. Carson Street in Carson City, Nevada (APN 00420301). The iron fence encloses the Capitol Plaza, a 4.54-acre parcel that is owned by the State of Nevada. The fence is listed as a contributing resource in the Nevada State Capitol National Register of Historic Places Nomination completed in 1975. The Capitol Plaza occupies a level site in the center of town at an elevation of roughly 4,802 feet above sea level. The Capitol Plaza sits east of the Sierra Foothills and Lake Tahoe along major transportation routes. The Carson River is located to the east. Virginia and Truckee Railroad tracks originally ran parallel to the Plaza through Carson City before heading north to Reno, northeast to Virginia City, east to Dayton, and south to the Carson Valley.

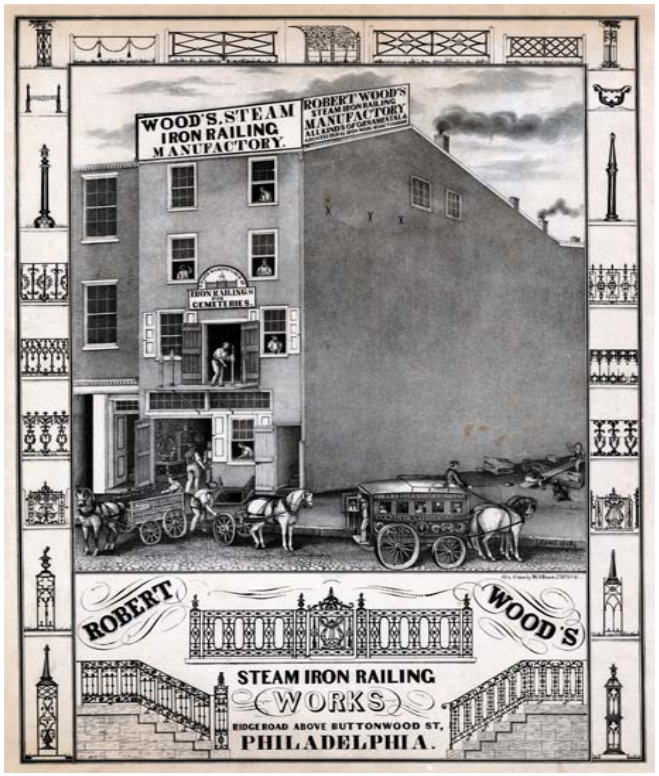
A simple wooden fence enclosed the plaza around 1870 when the Capitol Building was constructed. After numerous complaints from citizens, the Nevada State Legislature authorized an expenditure in 1875 for the erection of an iron fence with gates to surround the Capitol. This expenditure was part of "An Act to provide the protection of the State Capitol Building and for the Improvement of the Grounds surrounding it." Bids for supplying the iron fence were called for, and the lowest bid submitted was approved. The bid was from Miss Hannah K. Clapp for $5,500 plus $950 for freight charges. Hannah Clapp was the founder of the Sierra Seminary, a private coeducational school in Carson City. The fence was manufactured in Philadelphia by Robert Wood & Co., transported via the railroad, and assembled on site by Z.B. Ravenelle, a local contractor. The fence sits on a sandstone foundation.

The Capitol Fence remains largely intact in its original configuration except for sections, representing roughly twenty percent of total historic fabric, that were removed when the Blasdel building was constructed in 1957 in the northeast corner of the Capitol Plaza. Recent changes to the fence over the past 35 years include replacing the historic cast iron end posts with taller flat stock iron posts with light fixtures, addition of larger iron backstays, and inappropriate fixes such as welding of railing components and concrete repairs to the sandstone base. Work undertaken as part of the 1980 rehab project compromised the structural integrity of the fence.

Capitol Fence Historic Structure Report

In September 2014, Nevada State Public Works Division (SPWD) contacted Dubé Group Architecture (DGA) to discuss completing a Historic Structure Report (HSR) for the Capitol Fence. Historic Structure Reports serve as valuable planning tools that guide decisions prior to and during preservation, restoration, reconstruction, and rehabilitation efforts so to avoid inappropriate changes or alterations that could damage the structure's integrity.

A site tour to determine project scope was held on September 17, 2014 with representatives from DGA, SPWD, State Historic Preservation Office



Robert Wood & Company, iron railing manufacturer, Philadelphia, Pennsylvania, catalogue cover lithograph, William H. Rease artist, 1847, Library Company of Philadelphia (World Digital Library). Advertisement shows the long and narrow iron railing works on the 1100 block of Ridge Road owned by Robert Wood. Signboards on the facade advertise "Wood's steam iron railing manufactory, all kinds of ornamental & architectural iron work made to order" and "manufacturer of iron railings for cemeteries." Laborers are visible through the open windows and doors on all levels of the factory. Two men carry an iron piece into the building past a display of ornamental iron sculpture. Workers in the street load and unload iron railings and bars. The image is surrounded by a border of iron-work models.

(SHPO), and Buildings & Grounds in attendance. The Dubé Group contract to develop the HSR was approved by the Board of Examiners in December 2014. The Capitol Fence Historic Structure Report, SPWD Project Number 15-A025 is an agency project funded by the Buildings & Grounds Section of the State Public Works Division.

The purpose of the Capitol Fence Historic Structure Report is to identify, evaluate, and provide treatment recommendations and cost estimates for protecting the historic resource. DGA scope of work includes research, fieldwork, documentation, measured drawings, assessment, and restoration recommendations. As requested by the client, a team of specialists was assembled to assist in evaluation of the resource that included Cal Dillon, Masonry Consultant, Comstock Cemetery Foundation; Roger Hyytinen, Structural Engineer, Hyytinen Engineering; and Chuck Thompson, Ironwork Consultant, Reno Ironworks. The specialist team met on site with DGA on January 21, 2015 and March 5, 2015.

Progress meetings were held at the State Public Works Division Conference Room on March 19, 2015 and August 27, 2015 with SPWD, B&G, and SHPO to review preliminary findings and present final recommendations and costs. Key participants included Gus Nunez, Chris Chimits, and Robbie Oxoby, SPWD; Rebecca Palmer and Jim Bertolini, SHPO; Pete Dubé and Michelle Schmitter, DGA; and Tom Federici and Betty Badgett, B&G.

The preparation of the Historic Structure Report for the Capitol Fence is the first step in adopting a disciplined approach to the stabilization and ongoing maintenance of the iron fence. The Historic Structure Report for the Capitol Fence: a) catalogs critical information related to the structure's history, changes, and maintenance records; b) addresses goals for maintenance efforts; c) guides a thoughtful selection of the most sensible and appropriate treatments to achieve organizational and operational objectives; and d) outlines the scope of the proposed work in addition to the cost of those activities.

The Historic Structure Report provides a significant record of discovery for future investigations and/or facility management projects at the Capitol Plaza with respect to resource's visibility with the community. Specific recommendations are offered that take into account the political, social, cultural, and/or financial significance of proposed work.
The Capitol Fence HSR contains four key chapters: Introduction, Developmental History, Condition Assessment, and Treatment & Recommendations.

Introduction provides an overview of the project. Developmental History identifies the historical context and details the resource investigation. The majority of historic photographs and research materials are included in this chapter. Condition Assessment records in photographs, drawings, and keynotes all intact fence components and current conditions. Treatment Recommendations outlines guidelines for preservation and restoration consistent with The Secretary of the Interior's Standards for the Treatment of Historic Properties. Physical conditions are documented with photographs and narrative. Recommendations include a phased approach with identified cost per phase and suggestions for further investigation provided.

Historic Research and Fieldwork

Historic research included a review of primary and secondary sources (listed below) available in the collection of the Nevada State Library & Archives, Nevada Historical Society, and Nevada State Museum. Significant historical records were found in the Special Collection Room at the State Archive in Carson City.

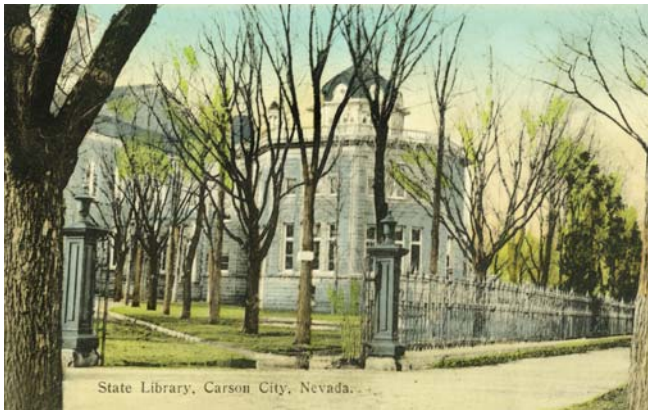
- Review of documents of the Board of Capitol Commissioners: Bids and Contracts records (CAPCOMM-0006): Specifications for Capitol Fence (1875); Report on Expenses for Beautifying Capitol Grounds (1875/6); Specifications for completion of Capitol Sidewalk (1893); Specifications for Outside Lights (1911); Nevada State Planning Board report (May 16, 1949) in manuscript collections at the Nevada State Library & Archives in Carson City
- Review of historic photographs of the Capitol Plaza in the collection of the Nevada State Library & Archives in Carson City
- Archival research of albums, photographs, newspaper clipping, cards, letters, journals in the manuscript collection of Hannah Clapp at the Nevada Historical Society in Reno
- Review of historic photographs on the Capitol Complex in the collection of the Nevada State Museum in Carson City
- Review of microfiche editions of the Carson City Daily Appeal from July-August 1875 at the Nevada State Library & Archives in Carson City

Contextual research encompassed a review of publications, articles, journals, and on-line resources relative to the Philadelphia manufacturer Robert Wood & Company, iron fences, wrought and cast iron preservation, and construction technology. State Public Works Board supplied post-1950 plans of work at the Plaza that assisted in identification and dating later alterations. Fieldwork included physical inspection, site photography and documentation of existing conditions.

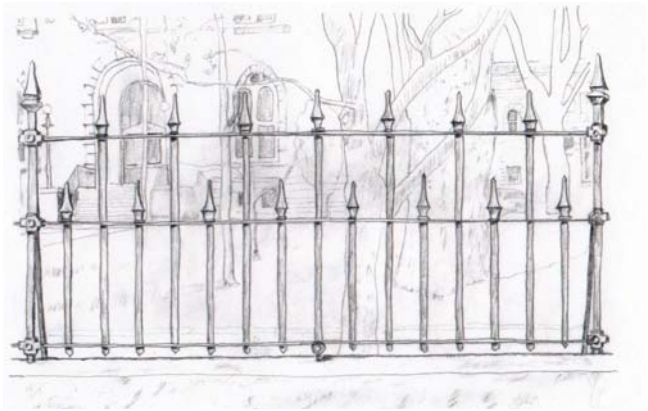
Photos are credited and source material noted throughout the report. Unless noted otherwise, all photos were taken by Dubé Group Architecture.

Architectural Evaluation and Documentation Methodology

The initial Capitol Fence investigation with the specialist team was held on January 21, 2015. The Dubé Group team spent twelve days on site over the next three months assessing the resource. Historic information was gathered and existing conditions documented in measured drawings and photographs. Drawings were later produced in AutoCAD from field measurements and sketches.



Colored photo of State Library (Capitol Annex) built 1906 with fence in foreground, gates visible at SE corner of Plaza, circa 1910, Nevada Historical Society CC00755. Note: Gray was used to color both the fence and the stone on the Capitol Building and Annex possibly to contrast with the brown used for the trees.



Field sketch of fence railing with Capitol Building in background by S. MacLellan, March 2015.

The complete condition, including structural, of the ironwork and sandstone base was surveyed and recorded, noting changes made over time, previous alterations and fixes, historic vs. non-historic elements, damage, and deterioration. Character-defining features of the fence were identified and preliminary recommendations were made for improvements. Several follow-up visits were undertaken by the Dubé Group team; the final visit to the site occurred on August 27, 2015 to verify findings prior to submitting Historic Structure Report. A fence component was sent to Art First in Portland, Oregon in January 2016 for a paint analysis to verify the historic color; brown was identified in July 1875 Carson Daily Appeal article.

Opportunities for restoration of lost, altered or deteriorated features were noted. Treatment recommendations outlined in Chapter 3 and 4 comply with The Secretary of the Interior's Standards for the Treatment of Historic Properties. Developed in 1977 and periodically updated, The Standards describe treatments as "the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values." National Park Service Preservation Brief 27, The Maintenance and Repair of Architectural Cast Iron was used as a guide for this report.

Documentation Methodology

The Capitol Fence is comprised of iron posts and rails capped with finals set on a sandstone foundation. Enclosing the Capitol Plaza, the fence was originally 1,652 lineal feet. The historic grid delineated by axial and diagonal walks and gated driveways located on the primary and secondary axis provided the methodology for documenting the fence. The site was divided into eight sections of fencing per the grid. Each section is designated with a capital letter A through H. Sections were originally comprised of 24 panels for a total of 192 panels. Construction of the Blasdel Building resulted in loss of 39 panels leaving 153 panels to survey. Historic pattern is found in B, E, F, and G.

A typical section includes one line post and two end posts. The numbers of panels per section vary from 2 to 24. Originally sections consisted of two sets of twelve panels each with a cast iron urn secured on top of each line and end post. Lights replaced the urns on end posts in 1911. In 1980, the historic cast-iron end posts were removed and new taller posts fabricated out of flat stock. The new light posts were topped with a fixture to match those used at the Capitol Building. This rehab project caused structural instability due to weight redistribution and unstable footings and the posts have now become a safety concern.

A summary of existing and missing fence components per the eight sections is as follows moving clockwise from Section A that occupies the northernmost section flanking Carson Street:

Section A
End Post -11 Panels – Line Post - 12 Panels – End Post

Section B
End Post - 12 Panels – Line Post - 12 Panels – End Post

Section C
End Post - 9 Panels – Line Post – Missing - Missing

Section D
Missing – Missing – Line Post - 2 Panels – Line Post

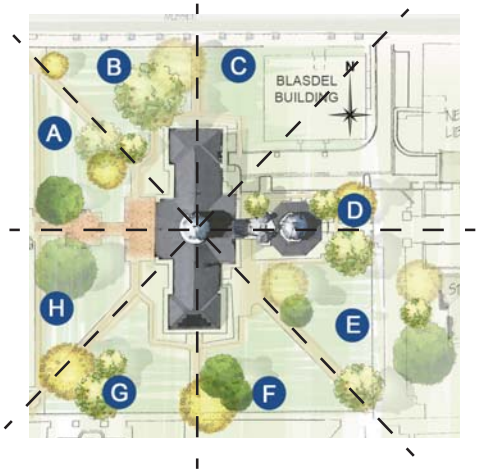
Section E
End Post - 12 Panels – Line Post - 12 Panels – End Post

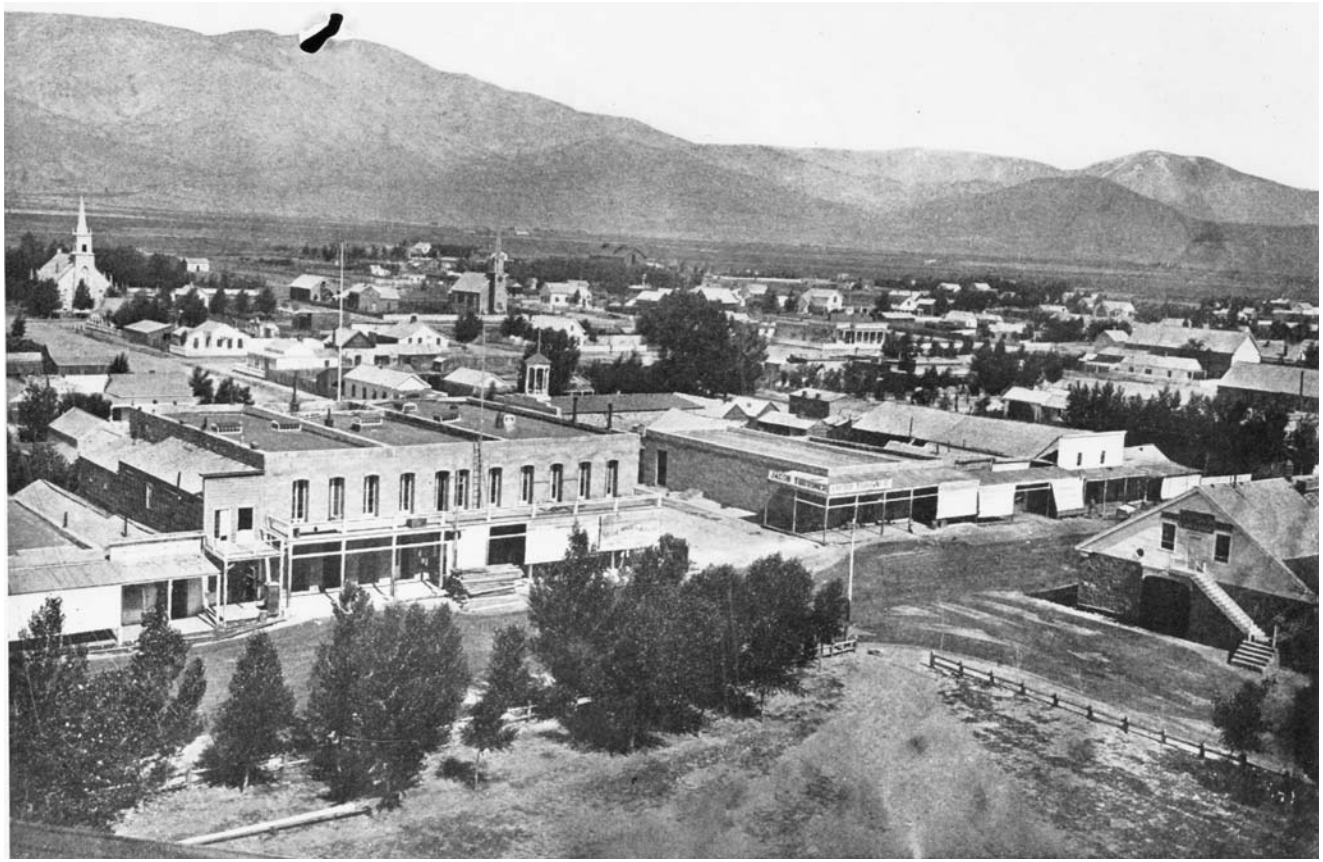
Section F
End Post - 12 Panels – Line Post - 12 Panels – End Post

Section G
End Post - 12 Panels – Line Post - 12 Panels – End Post

Section H
End Post - 12 Panels – Line Post - 11 Panels – End Post

For documentation, each panel was provided a number corresponding to the section letter. A map in the footer in the Condition Assessment chapter provides an overview of each section layout. The site grid is shown in bottom right under keynotes with an arrow that points to location of the fence panel under assessment.





Photograph taken from Nevada State Capitol Building looking to the northwest, circa 1871, a simple wood fence encloses the Capitol Plaza, Nevada State Archive CCC-0035. Churches on Division Street are visible in background; St. Peter's Episcopal Church is center right, built in 1867/68 in Gothic Style. The Ormsby County Courthouse is at the southwest corner of Carson and Musser Streets, Jacob Trobiner's store is in the northwest corner; note the covered and screened boardwalks on the front façade of these buildings. Jacob Trobiner was an early settler in Carson City. He was born in Germany and died in Carson City in 1890 and is buried in the Carson City Hebrew Benevolent Society Cemetery established in 1862.

Developmental History

Historical Background & Context

Historical backgrounds and contexts identified as important to investigate for this Historic Structure Report concentrate on: Capitol Square/Plaza and the broader context of local history; Board of Capitol Commissioners and the broader context of State government; Robert Wood & Company and the broader context of iron manufacturing; and Misses Clapp & Babcock and the broader context of Nevada pioneers. This is not a definitive list. Based on the team's understanding of the project scope, these four areas of study provide the framework for preserving and interpreting the Capitol Fence.

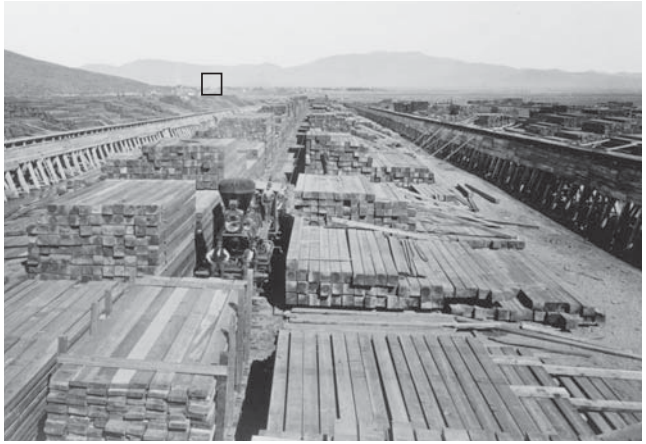
Capitol Square/Plaza

The Capitol Plaza is two blocks long on each side and is bounded on the west by Carson Street, on the north by Musser Street, on the east by Fall Street, and on the south by Second Street. Fall and Second Streets are closed off except for authorized vehicles and pedestrians. The Capitol Building was completed in 1871 and is situated in the center of the plaza with the primary façade facing west to Carson Street. An iron fence, erected in 1875 on a base of locally quarried sandstone blocks, surrounds the plaza. The area is planted with trees and traversed by axial and diagonal walkways with fence openings at the entrances.

The history of the Capitol Fence begins with the establishment of Carson City and the subsequent donation of land for a central town square and future building site. In 1851, Eagle Valley had been settled by ranchers; many of them Mormon families sent out from Salt Lake City. Abraham Curry arrived in the Nevada Territory in 1858 and purchased land with three other settlers - Francis M. Proctor, John J. Musser, and Proctor's father-in-law, Benjamin F. Green. A town site was surveyed and platted with lots initially divided between the four landholders. Curry and Proctor both took credit for naming the town Carson City after the river named in honor of John C. Fremont's celebrated scout, Carson. Curry reserved a large ten acre parcel, equivalent to four city blocks, in the center of town for a future capitol building. The discovery of the Comstock Lode spurred the development of Caron City as a freight and transportation center and assisted with the town being selected as the territorial capital in 1861. Curry established a sandstone quarry that provided material for the city's early buildings and later became the site of a territorial prison where prisoners worked in the quarry.

Orion Clemens and his younger brother Samuel arrived in Carson City by stage coach in 1861. Orion had been appointed Secretary of the newly formed Nevada Territory, and Samuel was known as the Assistant Secretary. Samuel Clemens made his name, Mark Twain, as a newspaper reporter at the Territorial Legislature. Mark Twain describes early Carson City as they found it on arrival in Roughing It:

Sanborn Map, Carson City, 1885, Capitol Plaza enclosed by Fall, Second, Carson, and Musser Streets, Nevada Historical Society.



View looking north showing the Carson & Tahoe Lumber and Flume Company wood and lumber yard located south of Carson City at the bottom of Clear Creek Canyon. Tahoe timbers were used for building Comstock mines and were transported via the Virginia & Truckee Railroad; box denotes Capitol Dome barely visible in background. Carleton E. Watkins Photographer, circa 1877, courtesy of the Nevada State Railroad Museum, Carson City.

It was a 'wooden' town; its population two thousand souls. The main street consisted of four or five blocks of little white frame stores that were too high to sit down on but not too high for various other purposes. They were packed close together, side by side, as if room were scarce in that mighty plain. The sidewalk was of boards that were more or less loose and inclined to rattle when walked upon. ***In the middle of town, opposite the stores, was the 'plaza' which is native to all towns beyond the Rocky Mountains — a large, unfenced, level vacancy, with a liberty pole in it, and very useful for a place of public auctions, horse trades, and mass meetings, and likewise for teamsters to camp in****. Two other sides of the Plaza were faced by stores, offices, and stables. The rest of Carson City was pretty scattering.*

Carson City was confirmed as Nevada's permanent capital upon statehood in 1864, and after that development was no longer entirely dependent on the health of the Comstock mines. Until they began to decline in the 1880s, the mines provided Carson City with economic importance as the freight and staging center for the timber harvest in the Lake Tahoe basin.

Logs were transported in flumes down the eastern slope of the Sierra from Spooner Summit to Carson City. The logs were fed into sawmills where they became timbers for the underground mines and planed boards for construction. The finished lumber was then loaded onto flatcars and rolled off to Silver City, Gold Hill, and Virginia City via the Virginia & Truckee Railroad (V&T). The V&T was completed between Carson City and Virginia City in 1869, with the railroad station, shops and main offices in close proximity to the Capitol Plaza. Three years later, the V&T rails were extended north through Washoe Valley to connect with the transcontinental railroad at Reno. When the Comstock mines were at peak production in 1874, thirty-six trains a day passed through Carson City.

Until 1875, the Capitol Plaza was essentially a great unimproved expanse of natural vegetation and dust or mud. It was a gathering spot for "loafers", stray animals, and garbage and so considered an eyesore and health hazard by the more "respectable" community members. Through the efforts of the concerned citizenry, an act was passed by the 1875 legislature and signed by Acting Governor Adams for the Improvement of the Capitol Grounds with $23,000 allocated for the repair of the State House and the adornment of the Capitol Square. To move forward with spending this sum, the Board of Capitol Commissioners printed bid notices in the newspaper for the improvements including the specifications for the stone base on which an iron fence would be placed. Separate bids were requested for laying the stonework, providing the ironwork, and installing the fence.

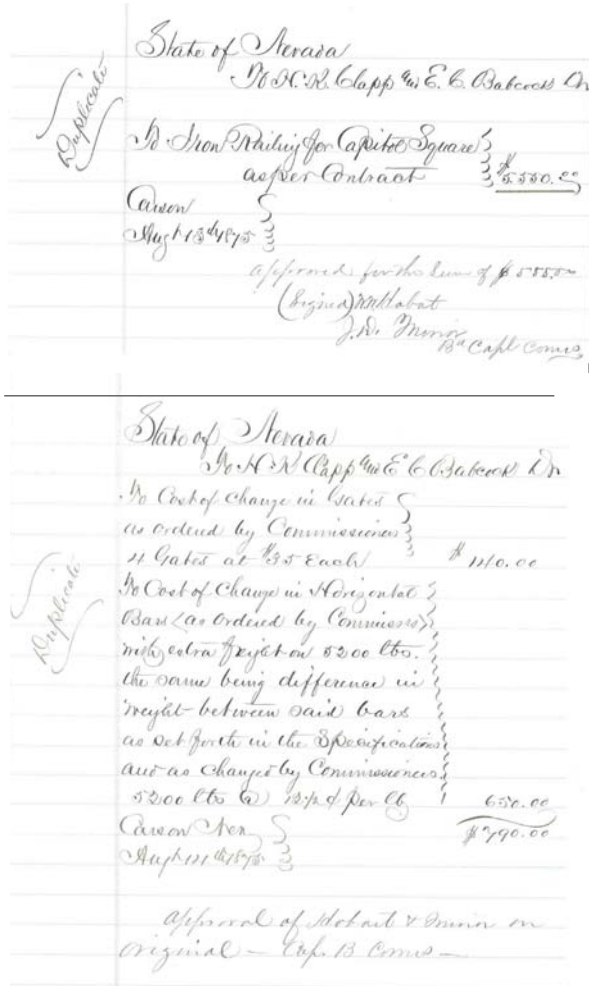
The Carson Daily Appeal reported on May 4, 1875: *Let there be no further complaints about the non-enjoyment of their rights by the women in Nevada. The contract for furnishing the iron fencing for the Capitol Square has been awarded to the Misses Clapp and Babcock, Principals of Sierra Seminary; their bid of $5,550 in coin for the delivery of the fencing upon the grounds is the lowest by some hundreds of dollars of those submitted.*

In addition to the fence contracts, the act also provided line items for beautifying the Capitol Plaza including plowing and grading; rock, earth and granite; manure; trees and shrubbery; and laying water pipes through the grounds. The framework of axial and diagonal walkways and planting plan for the grounds that was laid out in 1875 exists today.

Three years after the Capitol Plaza was beautified, Frank Leslie describes Carson City in his 1878 "Across the Continent" journal: *Via the Virginia and Truckee Railroad we reached Carson City at seven o'clock of a Sunday morning. It is a sort of "half-way house" between Reno and Virginia City, and considers itself a fine, thriving, full-grown town – quite an old-established one, having had twenty years' time wherein to improve and beautify, and to run up its population to three thousand five hundred souls. It is not a fair city to look upon – few of these Western centers of young civilization are such; it is only a straggling place set on a flat plain, with the glorious snowy "sierras" stretching away to the north and south, a shiny rampart behind which the sun goes down in glory.*

By 1890 the population of Carson City had increased to 5,412 residents. After the turn of the century Carson City participated in the Tonopah and Goldfield booms to the south. Much of the freight and passenger traffic bound for those two cities was routed to Reno and then through Carson City to Mound House on the V&T. From there the narrow gauge Carson & Colorado Railway carried it south to Sodaville where it was transported via wagons to Tonopah, fifty miles to the southeast. Train traffic through Carson City slowed considerably when the Southern

East and north elevations of Capitol Building with farms visible in foreground, one of the earliest photographs of the newly constructed Nevada State Capitol Building taken in 1872, Nevada State Museum #583-31.



Copies of warrant claims to the Misses Clapp and Babcock for services rendered to the State of Nevada relative to the contract for supplying ironwork for the fence project, dated August 13th, 1875 and August 14th, 1875; the latter claim was a change order adding four sets of gates at $35.00 each and the cost to replace the horizontal bars as requested by the Board of Capitol Commissioners, Nevada State Archive, CAPPCOMM-0007.

Sketches of the Capitol Building and the US Mint, built 1869, published in Frank Leslie's "Across the Continent" journal, 1878. Note iron fence around the Mint.

Pacific built a branch line that bypassed the V&T altogether, connecting with the C&C from the east. In an effort to replace the Tonopah-Goldfield traffic, the V&T extended its line south into the Carson Valley in 1906, but agriculture did not generate the revenues of mining boomtowns.

In 1933, Carson Street, the main highway adjacent to the plaza and running north and south through town, was paved. By 1957 when the concrete and glass, Brutalist-style Blasdel Building was erected in the northeast corner of the Capitol Plaza, the Carson City population had nearly doubled from 4,172 residents to 8,063. Nevada grew from 161,145 residents in 1950 to 287,660 in 1960 (Moreno, 2011). By 1960, Carson City was down to its 1890 population level; in 2010, the census records indicate 55,275 residents. Ormsby County was merged into Carson City representing a total of 145.6 square miles. There are eleven state capitals with smaller populations than Carson City and seven that are larger geographically.

Board of Capitol Commissioners

The Nevada State Library & Archives contains the records of the Board of Capitol Commissioners. The Archives compiled the below narrative on the history of the Board as an overview to the collection.

The Nevada Territorial Legislature of 1861 designated the town of Carson City to be the permanent seat of government and also declared that a parcel known as the "Plaza", bounded by Musser, Fall, Second, and Carson Streets to be dedicated to the use of the State for the erection of public buildings (Compiled Laws of Nevada, 1873, Chapter CLXI, 4048, Section 1; and 4050, Section 2). However, the new state initially conducted its business in rented or leased buildings around Carson City, including the Warm Springs Hotel which served as the home of the first Nevada Legislature. During this period, the 1865 Legislature appointed the Nevada Secretary of State as the ex-officio Superintendent of Public Buildings and Property. He took charge of, preserved and kept in proper repair the capitol building and furniture and readied them for legislative sessions. He was also in charge of laying in a supply of fuel and other supplies for the Legislature.

It was not until the 1869 legislative session that funding, planning and construction of a capitol building were authorized. Chapter XXXIII of the 1869 Statues as approved February 23, 1869 authorized the State Treasurer to set up a State Capitol Fund financed by a special tax, and designated $100,000 as the amount to be spent on construction of the capitol building. The fund was under the direction and supervision of the Board of Capitol Building Commissioners, consisting of seven members who were private individuals: Frederick Stadtmuller, George T. Davis, John Wagner, A. Klauber, John H. Mills, J.H. Sturtevant, and J.C. Hazlett who would elect a president, vice-president, and secretary.

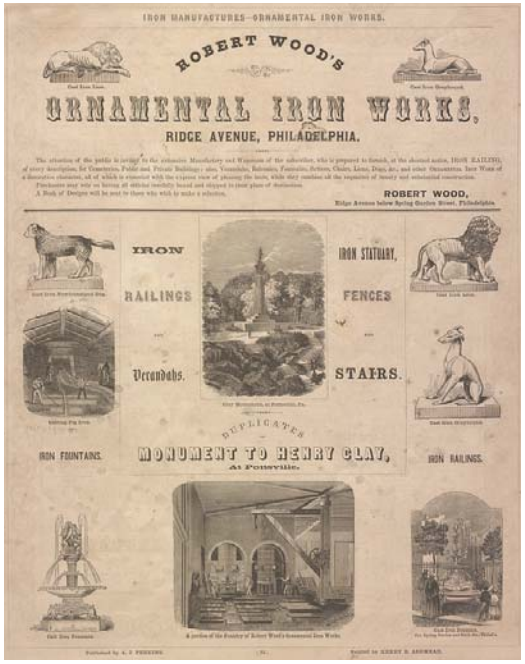
The Legislature authorized the Commissioners to begin advertising for plans, specifications, and building bids as soon as the State Capitol Fund reached the sum of $15,000; $250.00 was allocated for the building plan. The Legislature specified that the walls of the building be of stone quarried at the Nevada State Prison. The capitol cornerstone was laid on June 9, 1870 and construction was completed in time for the 5th Legislative Session to meet in the building in 1871.

With construction completed, on Feb. 26, 1875 the State Legislature passed "An Act to Provide for the Protection of the State Capitol Building and for the Improvement of the Grounds Surrounding it." A Board of Capitol Commissioners was created to carry out that mandate, consisting of the Lieutenant Governor (president), Secretary of State (secretary), and State Controller. The Board focused on soliciting a plan and completing the design for the capitol grounds, painting the capitol interior, making repairs, and constructing privies.

By the 1880s, the Board of Capitol Commissioners' responsibilities had increased along with the growth of state government. The Board supervised the capitol building and grounds; the state water works; state printing office; and all other state buildings, grounds, and property. They controlled the expenditures of all appropriations for furnishing, repairing and maintaining state property and for defraying the telegraphic, postal and other expenses of state officers, Supreme Court, and State Library. They were also responsible for hiring and paying porters, watchmen and laborers. The 1887 Legislature officially relieved the Secretary of State of duties imposed by the 1865 session.

The 1899 Legislature made changes to the Board, enlarging membership to include the Governor (chair), Lieutenant Governor, Secretary of State, State Controller, and State Treasurer. The Legislature again amended the duties and membership of the Board in 1911. In 1933 the Board of Capitol Commissioners was abolished and its functions were assumed by the newly created State Board of Control. In 1949, the State Department of Buildings and Grounds took over the functions of the Board of Control; in turn it

Illustration from Robert Wood & Co. catalogue designs depicting square posts capped with an urn similar to the design selected for the Capitol Fence, circa 1850, page 174, collection of the Winterthur Museum, DE.



Advertisement for Robert Wood's Ornamental Ironworks, Philadelphia, circa 1860.

became the Buildings and Grounds Division of the Department of Administration in 1963.

In 1875, the Board of Capitol Commissioners solicited bids and awarded contracts for laying the stonework, providing the ironwork, and installing the fence around the Capitol Plaza. The contract for the stone work went to Robert B. Stewart; W.D. Torreyson was selected to supervise the erection of the fence; and the contract for supplying the fence material was awarded to H.K. Clapp and E.C. Babcock of Carson City. The Board's mandate was to take the lowest reasonable bid for the work specified. Clapp's bid was the lowest by $350. Two payments were authorized by the Board to the Misses Clapp and Babcock in August of 1875. The first payment in the amount of $5,500 was to cover the cast and wrought iron fence components ordered from Robert Wood & Company and the freight charges from Philadelphia. The second payment in the amount of $790 was a change order by the Board of Capitol Commissioners for the vertical bars originally ordered and four additional gates.

Robert Wood & Company

In the United States, cast iron was increasingly popular from the late 1800s to the early 1900s and was typically used for fences and railings. Fence designs were carefully related to the buildings they were to surround and enhance. In 1811, Philadelphia had replaced the brick wall around Independence Square with a "Palisadoes of Iron". Similar to most designs in cast iron, the basic elements of the fence were simple but subject to great elaboration depending on taste and funds available. Typical fence form consisted of straight pickets set in a rectangular framework, lengths of five to six feet long supported by posts, and posts surmounted by a finial or cap. Nineteenth century iron manufacturers produced extensive catalogues of designs which ranged from the plain and refined to the more elaborate and ornate. Manufacturers understood the potential of the material and were soon producing goods of all sizes, from flower pots and saucepans, railings, and ornamental fountains to bandstands, structural and engineering components and agricultural implements.

The manufacturer of the Capitol Fence was Robert Wood & Co. located at Ridge Road in Philadelphia. Robert Wood began business as a blacksmith in 1838, but soon moved into cast iron work. In 1849, business expanded and the name changed to "Robert Wood, Iron Rail Foundry and Manufacturing." By 1853, Wood's business had grown into nearly an acre of workspace with 200 employees. Wood further expanded when he partnered with Elliston Perot, becoming Wood & Perot from 1857 to 1865, and then renamed Wood & Perot Ornamental Iron Works. After 1865, it was again only Robert Wood & Co. until they filed for bankruptcy. The foundry closed in 1878. The makers mark on the post bases of the Capitol Fence read: ROBERT WOOD & Co. MAKERS PHILA.

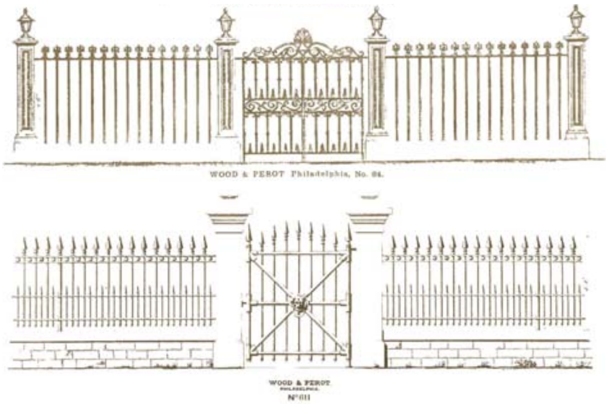
Robert Wood & Company published a 634-page Design of Ornamental Ironwork Catalogue around 1865. The firm was well known for a large number of fence designs. Projects began in the pattern room, where the pattern maker created a wooden model to size. The final designs were then taken to the foundry where a mold was constructed from the pattern. Since it was so laborious to produce these patterns, they were kept in a storeroom for future projects. In 1853, Wood's pattern room was filled with several thousand patterns, 150 of which were fence patterns.

While the molder was at work, the charger prepared the cylindrical 12 foot tall by 38 inch wide cupola melting pot. The inside of the cupola needed to be methodically stacked with sand, wood, coal, imperfect castings from the previous day, and then more coal and iron. Once the contents of the cupola were lit it would take two hours for the iron to melt. Foundry workers would then spend half a day bringing ladles to an opening at the bottom of the cupola and filling molds with the liquid iron. Castings were then lifted into the cleaning room, where they were scoured with files, wire brushes, and hickory brooms. After cleaning, castings were taken to one of three finishing rooms at the factory.

There was also a drilling room at Robert Wood's factory. A blacksmith shop attached to the main building made all of the wrought iron work, and the foreman there marked the position and size of holes needed to screw wrought iron pieces together. Once the necessary markings were made, works would be sent to the drilling room so that the driller could make holes with a drill powered by a steam engine.

Robert Wood contracted with "agents" in large cities where there was significant demand for ironwork. On behalf of the client, the agents would select the design from the Robert Wood catalogue, place the order by mail or telegraph, arrange for shipping, and cover transportation costs. Transportation along the eastern seaboard was primarily by ship and by rail to points west. The ironwork was delivered to the job site where it was erected by a local ironworker. The agent would charge a standard fee of 10% to cover selecting, ordering, shipping and handling. Hannah Clapp acted as the agent for the Capitol Fence.

Wrought iron fence set on a granite base with lead sleeves, circa 1840, Lancaster, PA, photo by M. Schmitter, November 2014.



Hannah Clapp would have reviewed the Robert Wood & Co. catalogue to select the design number for the fence railing, finials, posts, and gate model. These two illustrations above from Wood & Perot have similarities to Capitol Fence - post and caps (top) and undulating spear pickets (bottom), collection of the Winterthur Museum, DE.

Philadelphia & New York Ornamental Iron Works.
No.1136 Ridge Avenue, Philadelphia. No.524 Broadway, New York.

Philadelphia Aug 20th 1867
The Antietam Natl Cemetery
Sharpsburg Md

TERMS-NET CASH

Bought of Robert Wood & Co.

Special Contract. For use as a manufactured article, not as a pattern to cast others from, without consent and paying a suitable price therefor.

Ordered by A. A. Biggs Esq. Supt.

1 Set Gates Complete #361 — 880 —
607' Railing #611 — $6 — 3642 —
Boxing Gate & Pedestal — 25 50
Cash paid Mason Expenses — 35 90 — 4583 40

Sept. 7/67 — Rec'd Payment
Robt. Wood & Co.

Ironwork sales order/receipt from 1867 placed by an "Agent" to Robert Wood for complete gate set and 607 feet of fence railings for the Antietam National Cemetery in Sharpsburg, VA, 1867, collection of the Winterthur Museum, DE.

On July 31, 1875, the Carson Daily Appeal reported: *THE PLAZA FENCE HAS COME – Some years ago we ventured to say that we (of Carson) were going to have a State House right over there – meaning the place where the Pavilion stood. Some parties from the Great East laughed the laugh of meekery and said they guessed somebody was crazy. Well, there it is; and it anchors the Capitol right here till the Great East gets people enough to make a short allowance of standing room between sage brushes. And now, to put the finishing touches on the business, the State is adorning the grounds there. An iron fence is an indispensable part of the improvement, of course. As has been heretofore stated in these columns, the Misses Clapp & Babcock of the Sierra Seminary entered into a contract to furnish the iron fence.*

Yesterday, the first car load of the same arrived here. There will be another car load very soon. The contract calls for the delivery of the fence here by September 1. We went to the freight depot and took a look at it, helped by Mr. Preddy's politeness. ***It is in sections boxed. Ten or twelve feet long, we should guess the sections to be. Plain and substantial is the work and all painted brown. Alternate tall and short wrought iron pickets with spear heads of cast iron. The posts are cast iron, light enough to correspond with the other work, and strong enough for all purposes.***

The manufacturers (a Philadelphia firm whose name we will get and publish) will have a big freight bill to pay. (They deliver the goods here.) The charges for the car which arrived yesterday amount to about $950. The shippers made a sad mistake in not sending to Sacramento and then trans-shipping. They would have saved all of one-half the amount of their present bill. (That's what meant by discrimination in freight and fares, and it is pretty high time the thing was corrected.) It will be found, we think, that the Misses Clapp & Babcock have handsomely filled their contract.

On August 1, 1875, the Carson Daily Appeal again reported on the fence: *MORE OF THE PLAZA FENCE – Another car load of fence for Capitol Square arrived from Philadelphia yesterday morning, consigned to the Misses Clapp & Babcock. This fence was built by Robert Wood & Co., Philadelphia, the same whose advertisement, illustrated with a picture of a fountain, is to be seen in another column of the Appeal. This is the most extensive manufactory of iron fencing in the United States, and in other departments of iron working second to none in the country.*

Metals are entirely manufactured materials. Iron ore is extensively processed to become iron that can be turned into almost any shape. Wrought iron is made from heated metal strips or plates formed by a blacksmith. Cast iron is made from pouring molten iron into a mold. Typically, the mold was made by embedding a wooden pattern into sand. Removing the pattern would leave an imprint and the iron would be poured into it. The casting process has been known since antiquity when it was used to make jewelry, weapons, and statuary. In Great Britain during the Industrial Revolution, the technical qualities of cast iron advanced to a point where it was used for structural purposes. The French followed the English lead and both countries used cast iron imaginatively, i.e. Eiffel Tower. The beginning of the 19th century found the United States technologically backward and regarding itself as inferior to the Old World. In America, cast iron was used as a decorative material rather than a structural material for railings, fences, balconies, porches, minor architectural elements, window caps, cornices, and storefronts. The nonflammable nature of iron made it especially desirable in fire-prone areas.

Decorative iron fence set on elevated stone wall, collars at base hide attachment sleeves, Nob Hill, San Francisco, CA, photo by M. Schmitter April 2015.

Traditionally, decorative architectural castings were made using grey cast iron. Grey cast iron is a ferrous metal derived from iron ore. It is crystalline in structure which gives it excellent strength in compression, though it is weaker in tension. Cast iron typically has a carbon content of around 2 – 4%; the high carbon content makes it relatively brittle. The earliest cast iron designs were derived from Renaissance wrought iron patterns. Designs were widely circulated, published, copied and used by local foundries and craftsmen. Around 1890, cast iron began to lose favor as a material for architectural ornamentation.

Misses Clapp & Babcock

Hannah Keziah Clapp was listed as a passenger on a wagon train headed to California in 1859 from the midwest. Born outside Albany, New York in 1824, she was employed as a teacher at the Union Seminary in Ypsilanti, Michigan and then served as the principal of the Female Seminary in Lansing, Michigan and teacher at the Michigan Female College before heading west with the intention of founding a private school. In California, Clapp secured a position as a teacher in Vacaville but in 1860 moved to

Professor Emeritus Hannah K. Clapp

"Whereas, Miss Hannah K. Clapp, has been an honored and beloved member of the University Faculty, first as Professor of English and later as Librarian, from the opening of the University March 31, 1886, therefore by the Board of Regents in regular session June Nineteenth, A.D. Nineteen Hundred and One be it Resolved. That the Regents express to Miss Clapp their best wishes for continued good health and happiness during the remaining days of her life, and also their desire that, while Miss Clapp may rest from active and exacting duties of her position, she will retain an honorary position in the University and an active interest in the life and growth of the Institution." Letter from UNR Board of Regents found in the Hannah Clapp Collection, Nevada Historical Society.

Carson City to begin her 27 year residency in Nevada's capital. Educational opportunities were lacking in the Nevada Territory when Clapp arrived in Carson City and she began organizing a private co-educational school known as the Sierra Seminary. Lawyer and legislator, William Stewart, who would become Clapp's lifelong friend, drew up the Act of Incorporation for the school and presented it to the Territorial Legislature in the fall of 1861. By December 1862, "Miss Clapp's school, as it was generally called, was an established part of the community" (Totton, 1977). Samuel Clemens (Mark Twain) made favorable mention of his visits to Sierra Seminary in 1862 and 1864 and it is thought that his description of examinations at the school provided the language for the *Examination Evening* in Tom Sawyer (see Appendix C).

Mark Twain later reported that Miss Clapp had donated ten acres of land for a new building to house forty boarding students in addition to day students. Undeterred when a bill for a $20,000 appropriation for the project did not pass, Clapp moved forward with her plans and by July 1865 the building was ready for the new term. The previous year's concerns over the funding for the new building left Sierra Seminary in need of a new teacher of Latin and English. Elizabeth C. Babcock of Orono, Maine, who was visiting relatives in Stockton, CA and recovering from a broken engagement, saw the employment notification and applied. In 1864, Babcock accepted the position of assistant principal and so began a friendship between Clapp and Babcock that would last thirty-five years.

In 1865, Hannah Clapp built a house on Mountain Street for herself and Eliza Babcock at the northwestern edge of Carson City near the new Sierra Seminary. The Carson Daily Appeal on August 12, 1873 noted the "Clapp-Babcock place" as one of the most outstanding residences in the City with "the finest most extensive fence in Carson" that enclosed a landscaped garden, fruit trees and ornamental clover. Clapp was widely regarded as a capable businesswoman. She and Babcock took advantage of mining investments and for a while realized substantial returns on stock purchases until the Comstock began its slump in 1878.

The most frequently misquoted tale of Clapp's financial endeavors surrounds her bid in 1875 for the contract to furnish the iron fence to surround the Capitol Square. Guy Rocha and Dennis Myers in their article: Myth #4: Hannah Clapp and the Capitol Fence state:

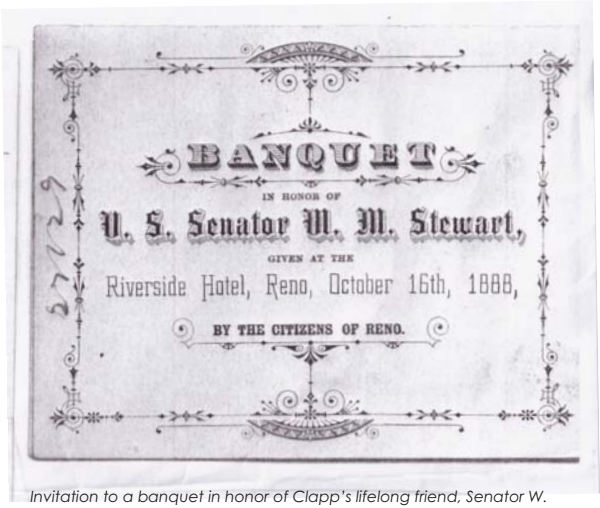
This is a folktale generations of school children in northern Nevada have grown up believing to be historical fact. Even today well-meaning teachers, authors, and others, unknowingly perpetuate the myth as a true story. According to the legend, practically everyone in Carson City was shocked to discover that Hannah Keziah Clapp was awarded the bid to purchase the Capitol fence in 1875 because the Capitol Commissioners did not recognize her initials, H.K., and found, to their surprise, that they had given the job to a woman!... The population of the entire county was listed as only 3,222 souls in the 1875 state census. The truth was almost everybody knew H. K. Clapp, including Samuel Clemens when he lived and worked in the capital city in the early 1860's. In addition, the Carson City section of the 1862 First Directory of Nevada Territory lists Samuel Clemens and Miss H.K. Clapp on page 69. Virtually every city directory and newspaper story referred to Hannah as H.K. Clapp….In the end, these pioneer educators and astute businesswomen made a sizeable profit of $1,000.

In 1876, Clapp and Babcock leased their school and rented their house and used their savings to travel back east for eight months to visit friends and relatives and to attend the Centennial Exposition in Philadelphia. Their whereabouts were reported in the May 5, 1876 edition of the Carson Daily Appeal: "The Misses Clapp and Babcock of this place were at Baton Rouge, passengers on the steamer Grand Republic, one week ago last Sunday. They were well and delighted with their journey." In 1877, Clapp and Babcock opened Nevada's first kindergarten in Carson City.

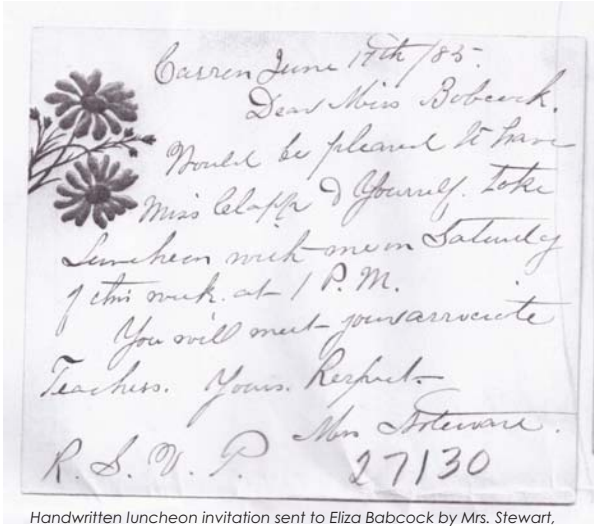
By 1880, like many Nevadans their fortunes were gone and to keep the school open, both Hannah Clapp (56 years-old) and Eliza Babcock (41 years-old) took positions elsewhere. In 1886, Hannah Clapp and Eliza Babcock sold the property at 512 N. Mountain Street to Governor C. C. Stevenson and moved to Reno. In 1887, Clapp was appointed professor of History and English at the newly established University of Nevada in Reno (UNR), becoming the first woman faculty member at the University. In addition to teaching classes, Clapp also managed the women's dormitories and the school library. Professor Clapp inherited a tiny collection of books and pamphlets housed in a single room in Morrill Hall. When she retired from UNR in 1901, the library contained over six thousand books and five thousand pamphlets most purchased or received from donations that Clapp requested from her friends in political positions.

In Reno, Clapp was involved alongside Babcock with the organization of the Reno Kindergarten Association in 1895, a free public kindergarten associated with the Reno Public School System. In 1896, Clapp resigned her position in charge of the dormitories for the female students when Eliza Babcock suffered a stroke which left her in ill health and in need of continuous care for the remainder of her life.

Clapp/Babcock residence built in 1865 located at 512 N. Mountain Street in Carson City, photo by M. Schmitter, August 2015.



Invitation to a banquet in honor of Clapp's lifelong friend, Senator W. Stewart, 1888, Hannah Clapp Collection, Nevada Historical Society.



Handwritten luncheon invitation sent to Eliza Babcock by Mrs. Stewart, 1885, Hannah Clapp Collection, Nevada Historical Society.

On September 19, 1899, the Gazette reported on the death of Eliza Babcock: *It is with profound sorrow that the Gazette is called upon to record the death of Miss E.C. Babcock, who died this morning at 6:45. Miss Babcock was a pioneer woman of Nevada whose name is interwoven with much of the State's history. She was the mother of the kindergarten system of teaching in Nevada and leaves valuable history of kindergarten work. For over thirty-five years she has been a close companion of Miss Clapp and the two have shared each other's sorrows and joys. Miss Babcock's remains will be taken to Oakland on tomorrow night's train for internment.*

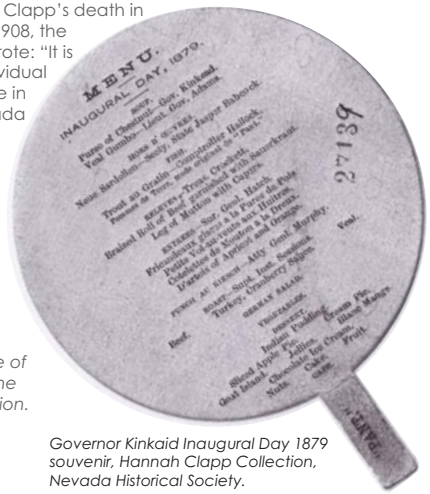
A week after Babcock's death, Clapp received a letter from a reporter, Miriam Michelson, asking if she would consent to an interview for a story on "the unique and very beautiful friendship which existed between yourself and Miss Babcock." The feature story titled *A SKETCH FROM LIFE - "MISS ELIZA CILICIA BABCOCK and MISS HANNAH K. CLAPP"* appeared in the San Francisco Bulletin on October 8, 1899 is included in this report in its entirety as Appendix B.

After Miss Babcock died, Clapp continued with her work at the University until 1901 when she requested a two-year leave of absence without pay. At the Board of Regents meeting on June 19, 1901, the matter was discussed and resolved; Clapp's request was granted with thanks for "her long and useful services to the University". A July 13, 1901 letter sent to Miss H. K. Clapp in Palo Alto by Secretary Taylor reads: "I take much pleasure in transmitting here within an engrossed copy of the resolutions of the Board of Regents of the State University of Nevada…I also wish you all that is good in your remaining years, which I hope will be many."

Following Hannah Keziah Clapp's death in Palo Alto on October 8, 1908, the Reno Evening Gazette wrote: "It is doubtful if any single individual has had a wider influence in the forming days of Nevada than Miss Clapp."

In her Notes on pages 181 and 182 of her comprehensive article on Hannah K. Clapp for the Nevada Historical Society Quarterly in 1977, Kathryn Totton writes:

In recent years the nature of this friendship has been the subject of some speculation.



Governor Kinkaid Inaugural Day 1879 souvenir, Hannah Clapp Collection, Nevada Historical Society.

During the lifetime of the two women, however, it seemed to have simply been an accepted part of the Nevada scene. For thirty-five years, Hannah Clapp and Elizabeth Babcock lived together, sharing whatever life had to offer. Their friendship was frequently remarked upon as beautiful example of a true and loyal friendship. In those days of romanticism, their friendship occasionally served as the inspiration to journalists, authors and poets. Kate N.T. Tupper, a professor at the university and accomplished poet, contributed on the occasion of their twenty-fifth year of friendship (Thanksgiving Day 1888), a poem, "A Theme for a Poet." When Liza Babcock died in October 1899, the newspapers recounted the story of this exceptional friendship. Miriam Michelson, then working as a journalist in San Francisco, wrote a two-page feature story for the Bulletin. Again in January, 1906, they were the subject of an article when Lou Spencer Ellis, also an accomplished poet and former student at Sierra Seminary, wrote "Dux Femina Facti" for the Progressive West Magazine.

This fence-building episode has been the subject of nearly as many later articles as the Clapp-Babcock friendship. Miriam Michelson told the story in her 1899 feature article; in 1940, it was the subject of a radio program called "Death Valley Days" and of an article in the Nevada State Journal (October 13, 1940); and on December 28, 1943, Gladys Rowley made it the major topic of her column "Reno Revu" in the Journal. It is interesting to note in these re-tellings how the details of the event are altered for the sake of the tale. Michelson has Hannah hiring the crew and supervising the work in a "long, warm ulster" and warm woolen hat (the fence was built in August and September). The 1940 article dresses her in trousers and boots, while Gladys Rowley states that the Capitol Commissioners were unaware of H.K. Clapp to whom they were awarding the bid was a woman, despite the fact that by 1875 Hannah Clapp had been a well-known resident of Carson City for over ten years.

Chronology of Development and Use

Research findings specific to construction, additions, alterations, and demolition trace the physical evolution of the Capitol Fence from erection in 1875 to 1980 when the last documented rehabilitation project occurred. The chronology of development of the fence within the larger context of the Capitol Plaza can be organized into three periods.

1875 - 1910: Construction
Fence in as-built condition with gates intact.

- 1871 - Capitol Building completed
- 1875 - Iron fence erected on sandstone base, trees planted, grounds graded, water pipe installed, and walks added
- 1891 - Walkways authorized
- 1893 – West concrete paths and curbing and gate fittings added

At the north and east gates there shall be concrete slabs to hold the fittings for the gates, which fittings are to be set in place by the contractor

EXPENSES FOR BEAUTIFYING CAPITOL GROUNDS.

Plans, specifications and survey	$525 84
Labor and salary superintendent grounds	1,379 04
Manure	686 17
Salary superintendent improvements	357 00
Plowing, grading, etc	765 00
Rock, earth and granite	2,286 00
Trees and shrubbery, including freight	553 92
Water	163 37
Contract—Laying water pipe through grounds	345 95
Contract—Furnishing iron railing	5,550 00
Contract—Curbing and grading	3,280 00
Changes made, sills, braces for gates, lead	1,758 54
Miscellaneous	349 17
Total	$18,000 00

Report of the Board of Capitol Commissioners for expenses spent during a two year period from 9 March 1875 through 31 December 1876, Nevada State Archive, CAPPCOMM-0009.

Capital Plaza, view from southwest corner, circa 1890; iron fence with gates, concrete pathways, and wood boardwalk along Carson Street visible, Nevada State Archive, NSC-0002.

*while making the slabs. Said slabs are to be joined at the walk and shall be 16 inches wide, 8 feet long and 6 inches thick. There shall be three driveways: one each through the northeast and southeast gates, which shall begin 2 feet within the gates, with a width of 12 feet and shall extend outwardly to a curved line about 18 feet distant…the third driveway shall extend from the west steps of the Capitol to the east end of the new walk and shall be 16 feet wide and 22 feet long…**The contractor shall also point up the coping under the fence about the grounds as far as his work goes** (CAPCOMM 0006/005).*

1895 – East concrete paths and curbing and gate fittings added

The 1895 specifications for the construction of a concrete sidewalk through the Capitol grounds, "commencing at the stone steps at the East entrance of the Capitol Building and running to the gate East to Fall Street", call for a driveway and walkway to be constructed similar to the 1893 walks and driveways on the West side of the Capitol Building. The specifications also noted that the State would supply "water for mixing and wetting and broken stone at the State Prison" with work to begin September 1, 1895.

1896 - Gazebo/Bandstand constructed
1906 - Capitol Annex built
1907 - Capitol grounds first electrified with gas and electric fixtures
1909 - New and improved telephone service to Capitol Building

1911 – 1956: Adaptation
Fence in original configuration, gates removed during this time; 1911 light post additions sympathetic to existing fence design and architecture.

1911 - Electricity to Capitol conduit system main feed wires at west gate
1911 – End posts adapted for new light post addition

*Outside Lights. There shall be furnished and installed outside the building, at the outlets, heretofore mentioned on the N.W., West and S.W gates, the North, South, East, and West steps of the building; at each outlet on gates, **the present posts shall have a four foot extension, substantially set, on top of which shall be installed complete with socket and holder, twelve inch R.I. ball with 100 watt tungsten lights**…All outside conduits must be placed properly underground in standard conduit tubes. All outlets must be secured in such a manner as to firmly support and hold all fixtures (CAPCOMM-0006/061, 1911).*

1914 - Capitol Wings constructed
1931 - Concrete pathways using Portland cement added – 4,100 square feet of sidewalk installed

1957 – 1980: Alteration
Blasdel Building constructed in modern architectural style, fence sections removed during site work; 1980 fence rehab removed original cast-iron ends posts and 1911 light extension and round globes, new material used did not match original in design, structural integrity of fence compromised by rehab; renewed interest in restoration possibly factored into selection of light fixture globes to match those used on Capitol Building.

May 16, 1949 - Minutes of State Planning Board meeting relative to location for new state office building note: "Secretary indicated that possibilities are now very strong for location in an area near the state capitol building." (NSPB 0008/035)
Ca. 1955 - Nevada State Public Works Board presents plan to modernize Capitol Complex and demolish Capitol Building
1957 – Blasdel Building constructed on plaza; 39 panels of fence removed to "be used for salvage"

In 1957, the Board actually built the first phase of the plan – the boxy "new" State Office Building on the northeast corner of the Capitol Complex grounds. The structure was erected unusually close to the northern wing of the Old Capitol Building because the Board assumed it would be demolished. The 1957 edition was a sturdy but bland concrete-and-glass rectangular three-story building with little architectural charm (Moreno, 2011).

1950/51 Biennium - $144,500 provided to the newly created Department of Buildings and Grounds
1959 - Nevada State Assembly passes resolution to restore and preserve Old Capitol
1964 - State Division of Buildings and Grounds names office building Blasdel Building after Henry Goode Blasdel, Nevada's first elected governor
1978-1980 – Capitol Building receives $6,000,000 improvement project centered on seismic and fire safety
1980 – Fence rehabilitation undertaken to include stabilization of panels, replacement of 1911 light fixtures with current taller posts and lamps, and re-painting

Description of the Resource

Physical Description

The resource under assessment, Capitol Fence, is located at 101 N. Carson Street in Carson City, Nevada and encloses the Capitol Plaza. The plaza is laid out in a grid two blocks long and two blocks wide with walks and driveways located on the primary and secondary axes. The 4.54-acre parcel (Assessor #00420301) is level and grassy, marked by mature trees, rose bushes, flowers and shrubs. Musser, Carson, Second and Fall Streets form the outer boundary of the property. An asphalt lot sits to the east of the Capitol Building within the plaza and provides parking for the Governor and staff. Vehicular access to the property is gained off Musser Street and Fall Street. Maintenance vehicles use the paved walkway, previously the historic right-of-way on Second and Fall Streets. The Capitol

Circa 1950 photograph of Capitol Fence at secondary axis with 1911 light extensions to cast end posts apparent, backstays in original locations, Nevada State Museum #CM-5327-P-00057.

Aerial view of Capitol Building, circa 1960, third period of development for Plaza Fence, Nevada State Museum #576-1.

Annex, located to the east of the Capitol, is accessed by a driveway extending from Second Street at the diagonal southeast entrance.

The Capitol Plaza is enclosed by an iron fence secured to a sandstone base; fence erected in 1875. The onsite quarry at the Nevada State Prison provided the sandstone base blocks and coping stones for the project. The fence is affixed to the coping stone via a lead sleeve. The Capitol Fence was manufactured in Philadelphia by Robert Wood & Co.; the pedestals bear the name of the makers. The cast iron elements are the pedestals, posts, caps (urn), finials (spear), and junction pieces (knuckle). The horizontal rails and vertical pickets are wrought iron. There is a system of vertical bracing bars (backstays), both original (round) and fixes (square). Historic photos reveal gates on all eight axial openings, larger gates at the diagonal entries and smaller gates on the secondary axis; no gates survive today. Historically, the gated entrances provided public access to the Capitol Plaza.

Character-defining Features

Character-defining features are attributes or features of the Capitol Fence that may be individually or collectively important in defining the various historic contexts and thus the overall significance of the structure. Character refers to those visual aspects and physical features that comprise the appearance of the structure.

- Setting - Capitol Plaza
- Fence Design
- Proportions and Rhythm
- Symmetry and Balance
- Cast Iron Urns and Spear Finials
- Cast Iron Pedestals and Line and End Posts
- Cast Iron Knuckles (Junction pieces)
- Wrought Iron Bars
- Quarried Sandstone Coping Stones
- 1911 Light Fixtures

Intact and missing features that date to the period of significance (1875 - 1957) are listed and are considered to contribute to the significance of the structure. A select number of features have been compromised by later alterations. Noting significant features is intended as a tool to guide decisions for future stabilization and maintenance work on the fence. Caution should be exercised in developing plans that would radically change character-defining features or that would obscure, damage, alter, or destroy them in anyway.

Construction

Cast iron can only be shaped by pouring molten iron into a mold. Because molds are usually made in two halves, mold lines can be found on cast iron elements of the Capitol Fence. The casting process allowed mass production of identical parts that could be assembled quickly at a construction site. Fence panels are joined together by means of a slotting system. Knuckles, slotted grooves, and concealed bolts and pins join individual castings together. The Capital Fence spans 1,652 lineal feet and consists of three slotted wrought iron horizontal rails into which were placed vertical pickets; a cast iron knuckle concealed the junction point. The horizontal rails terminated at the end posts. End post panels were grooved so the rails would terminate inside the post. End and line posts were capped with an urn. Pins were placed in pre-drilled holes to secure backstays that were used to stabilize the fence panels. Vertical fence pieces were placed in holes in the sandstone base and secured with lead.

Measurements for fence components:

- Spear finial is roughly 9 inches tall
- Urn is 9 inches in diameter, 18 inches tall atop the capital
- Square wrought iron rails are 3" x 4" (w)
- Knuckle measures 3.25" x 3.75" (w)

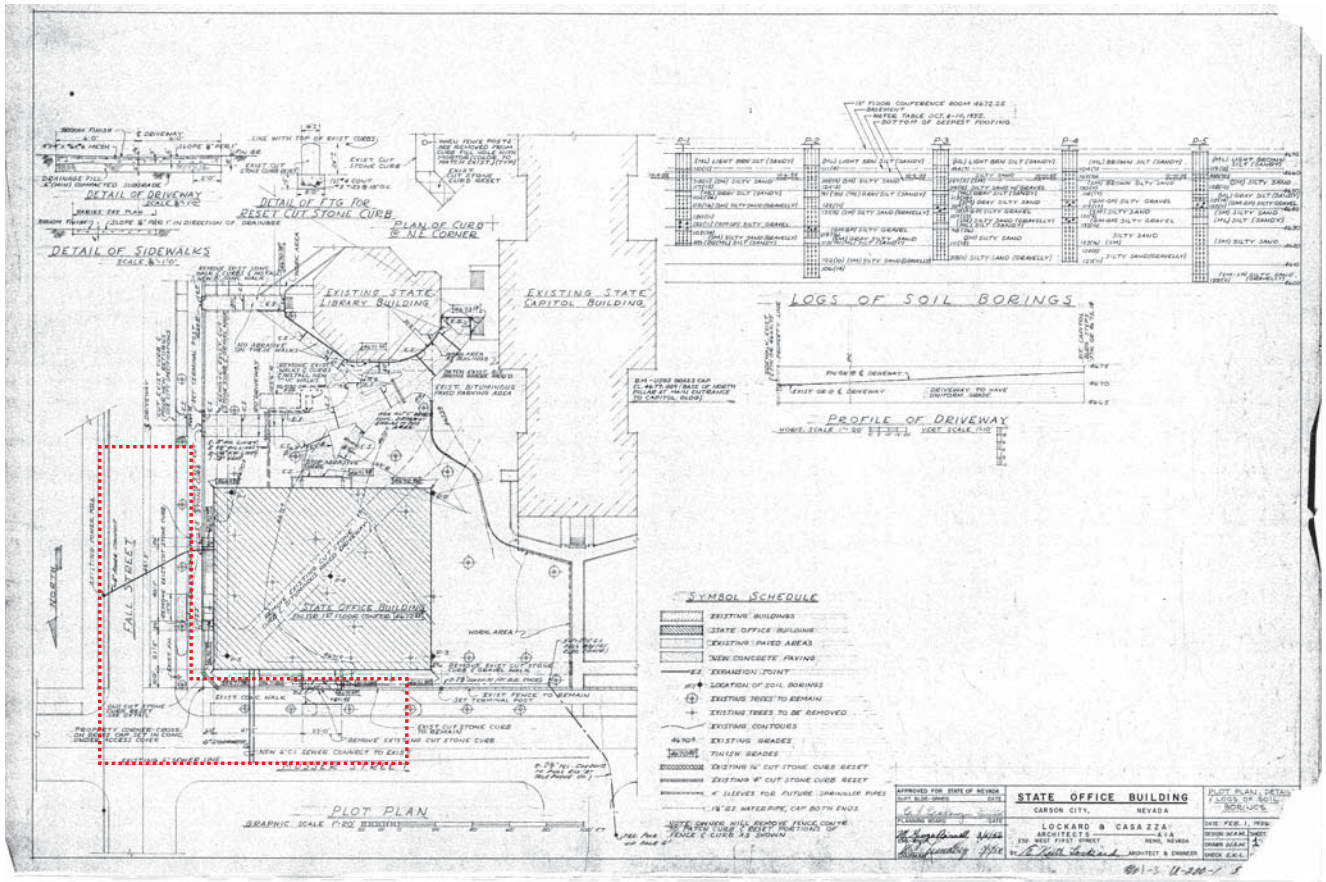
The masonry specifications (Appendix A) that date to April of 1875, specify that all materials to be furnished by the Commissioners and provide details on the laying of the foundation stone for the fence. *The foundation wall for the fence to be 2 feet x 1 foot with the bottom of the wall to be 18 inches below ground, the wall to be 1652 feet long enclosing the square; lime mortar to be use between the blocks or a mortar of adobe mud and sand. The coping stone to be 16 inches thick and 24 inches high, six inches of the stone wall shall set in a trench on the foundation, all the coping to be set in fresh lime mortar, with all joints as close as possible.*

Evaluation of Significance

Review of the National Register nomination and the HABS report for the Capitol Building, historic photos, specifications and plans for work, and research findings provided recommendations as to the period of significance for the Capitol Fence. The period of significance is defined as that period of time in which the structure achieved significance. Discussions by the project team culminated in a determination that the period of significance for the Capitol Fence spans from 1875 to 1957. The start date reflects the erection of the fence on the Capitol Plaza and the end date indicates the construction of the Blasdel Building on the northeast corner of the plaza, thereby altering the original fence design.

In1875, Assembly Bill No. 32 authorized $25,000 for repairs on the Capitol and construction of the iron fence. Development of the site over the past 141 years represents a continuum of broader trends in Nevada's history. While the Blasdel building brought the plaza into its present form, the rhythm and symmetry of the fence was adversely impacted. Up until 1957, the fence was in its 1875 configuration.

Though sections have been removed and alterations made, the Capitol Fence continues to exhibit a high degree of integrity of design, materials, workmanship, setting, feeling, location, and association. The Capitol Fence is located on the Capitol Plaza on land donated by Carson City founder, Abraham Curry. The cast and wrought iron fence is an

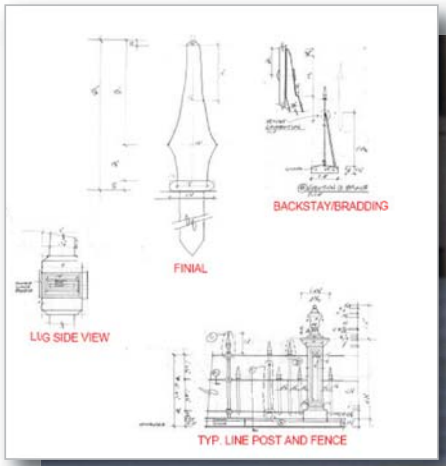


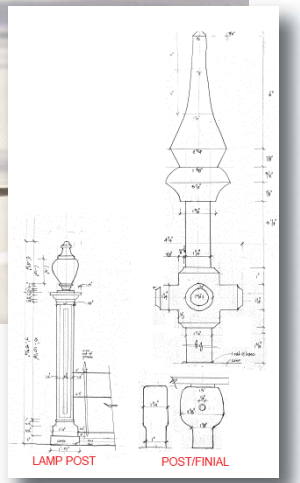
Civil plans for Blasdell Building construction specifying modifications to the ironwork, driveways and walkways, and removal of thirteen trees, dated Feb. 1, 1956, Lockard & Casazza, courtesy of the Nevada State Public Works Division. Red dotted line indicates where fence and sandstone base were identified for removal and relocation, detail indicates to fill stone after removing fence with mortar, color to match existing. The site work for the Blasdel building resulted in the removal of 39 fence panels or roughly 20% of the fence. The sandstone foundation base was also disturbed and coping stones removed and/or relocated.

outstanding example of a classical design manufactured by Robert Wood & Co., Philadelphia. The urns and spears are symbolic of the ancient Roman Republic. The lightness of the fence complements the strongly masculine architectural expression of the facades of the Capitol Building. Unifying features of classical design elements are found on the Capitol Building and the fence. As the fence was to be erected at the Capitol Plaza, a prominent location in the capital city, there would have been careful deliberation by Hannah Clapp in selecting the individual ironwork pieces and overall fence design. The fence is significant in its composition, overall design, and relationship of cast and wrought elements in their spacing and placement.

The Capitol Fence retains sufficient integrity to convey its significance as a contributing resource in the Nevada State Capitol listing on the National Register of Historic Places. The nomination for the Capitol Building identifies Areas of Significance as Architecture and Politics/Government and provides the following narrative: *Considering the remoteness of the territory at the time of initial design and construction of the state capitol, this structure displays outstanding qualities of regionalism, or territorialism. The overall design concept is a territorial adaption of a renaissance edifice with strong Italianate characteristics. Heavily rusticated quoins and window surrounds, together with strongly classical trim detailing, identify the capitol with the popular renaissance revival of that period….There is an overwhelming simplicity and graceful charm in the uncomplicated, logical expression of the building façade. Materials are plain and warm. The building displays two colors only, the light earthen brown of the native sandstone, and the antique white of the painted woodwork and trim. This simple statement is contrasted by the deep green of the surrounding lawns and the tranquility of a multitude of towering trees.* ***The entire complex, as a design entity abuts the life of the city at the original, and well preserved wrought iron fence.*** *The changing foliage of the trees enhances the elegance of the capitol in every season (Sparbel, 1975).*

In the United States, fence designs were closely related to the buildings they were to frame, as was the case with the Capitol Fence. When cast iron came into popularity in the 1840s, the design of fencing shifted from the creativity of wrought iron artisans and the inherent characteristics of the metal itself to the mass production of identical pieces based on design sources. Because it was mass producible, cast iron made possible the order-by-catalog products of foundries, such as the Robert Wood & Co., Philadelphia, which shipped cast iron fencing and wrought iron railings all over the country. Designers (and politicians) soon realized that affordable fencing could be achieved. Thus, architectural fencing came into favor especially for state and civic buildings throughout the United States. The US Mint in Carson City, completed in 1869, was enclosed with an iron fence to signify its importance.





"Wood may be the most expedient fencing material, but when it comes to surrounding public and non-residential buildings for decades – even centuries – the best blend of beauty, versatility, and durability has always been iron and steel. Long-lived as they are, iron and steel fences and railings can't survive on their own, especially against impact damage and their unrelenting enemy, rust. Regular maintenance in the form of surface protection and proper repairs is key…Left exposed. Iron and steel are inevitably destroyed by rust, so the first line of defense for most historic ironwork is to protect it with some sort of coating. Rust – technically the oxidation of ferrous metal – is most often caused by exposure to water and air, but is also the result of salt water, acids, acid rain, and air pollution." – Gordon Block, "Maintaining Metal Fencing", Traditional Building, October 2012

Condition Assessment

The Dubé Group Architecture team conducted the condition assessment on the Capitol Fence equipped with drafting paper, pencils, clipboards, survey sheets, white board, and a camera to document each interior and exterior section and identify problem areas. Detailed drawings of the ironwork panels and sandstone base, with deficiencies called out, are located on pages 18 through 170. Specific information recorded included:

- Measuring the height and length of each fence panel, end and line posts, and sandstone blocks
- Examining each fence panel and post to determine construction, original/non-historic material, inappropriate fixes, and structural condition
- Examining each sandstone block to determine construction, original/non-historic material, lead attachment points, and overall condition
- Recording significant cast-iron features, such as urns and spear finials
- Noting any missing elements, damage and vandalism, presence of plant life, standing water and irrigation concerns, corrosion, Portland cement, and changes or modern alterations that may have been made to each fence section

During the assessment, the specific condition of the fence was recorded, photographed, and particularly problematic areas were documented. The severity of some condition problems are tied to location, but similar issues can be found in nearly every section of the fence. The following conditions/common problems were observed:

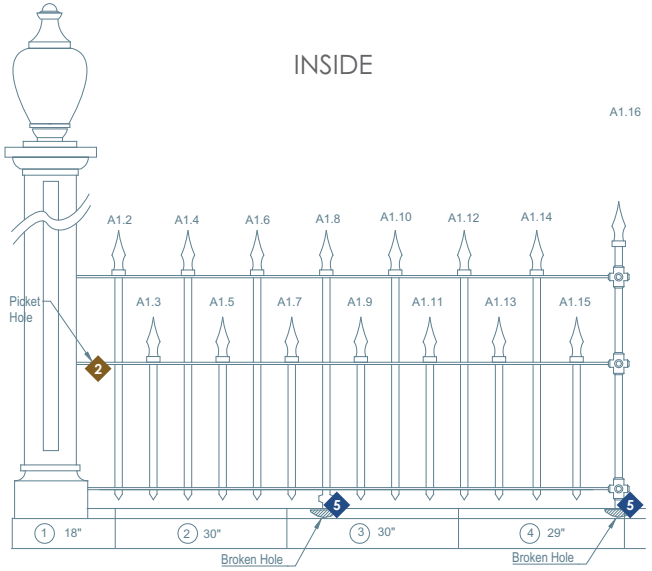
- Ironwork support points have rusted and expanded, eroding the stone base, and leaving the fence unsupported in places.
- Fence is undulating due to damage to connections caused by impact and vehicular damage, and structural failures due to loss of anchorage.
- Base stones are fractured, spalling, developing water pockets, and covered with biological growth in places; failed patches are apparent.
- Corrosion exists throughout on posts, rails, finials, knuckles, fractures in casting, and broken joints.
- Few pieces are missing overall but include bolts, fasteners, pins, backstays, urns, and end posts.
- Ground settling/movement and concrete is exerting pressure on sandstone blocks.
- Hollow, tall, circa 1980 light posts are in poor condition and structurally unstable compromising the integrity of the 1875 railing where they re-attach to the light posts; several open joints noted at attachments.

These concerns have been organized into three categories: Ironwork Corrosion, Sandstone Deterioration, and Structural Instability. Colored triangles indicate location of problem areas and numbered keynotes outline treatment approach. The specialist team noted at the January 21, 2015 meeting that the overall condition of the fence was fair to good and that the attachment point at the sandstone base is the weakest link and should be first priority for structural stabilization.

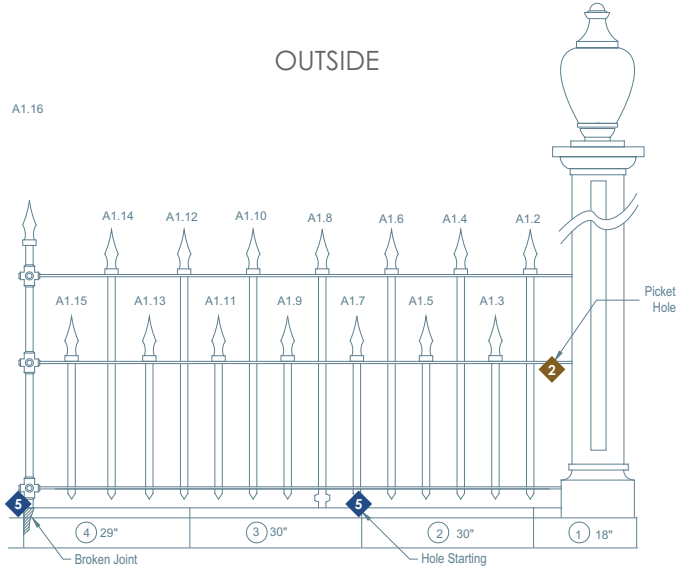
SECTION
A1

Condition Assessment

INSIDE



OUTSIDE



Ironwork Corrosion

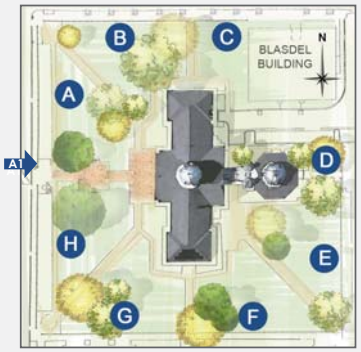
1. Repair holes, cracks and casting defects using filler compound containing iron particles in an epoxy resin binder
2. Replace missing or severely damaged cast iron components with in-kind casting technique and material
3. Major cracks and inappropriate repairs to be repaired by brazing with special nickel alloy welding rods

Sandstone Deterioration

4. Remove vegetation, failed patches (concrete), and embedded foreign objects
5. Eliminate water infiltration by re-setting fractured stone, filling pockets, shelves and depressions, and stabilizing post base with restoration mortar

Structural Instability

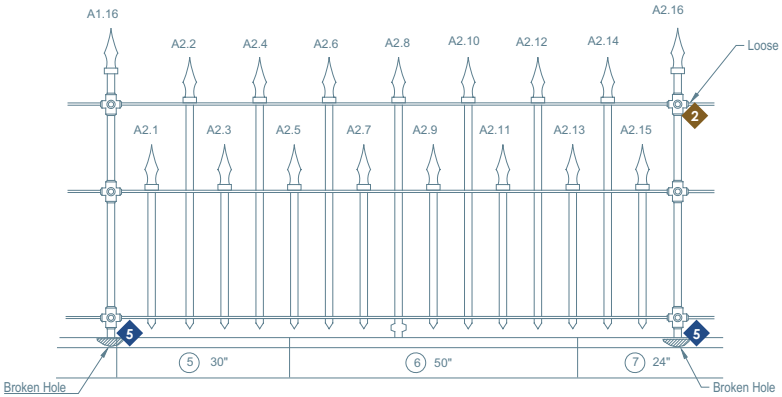
6. Repair primary anchor points by pouring new molten lead into existing masonry socket and building up coping stone with restoration mortar
7. Replace missing or non-historic (square stock) backstays with in-kind material
8. Realign and stabilize fence to include straightening bent, bowed, or out of plumb fence sections and individual horizontal or vertical components
9. Remove non-historic end posts and restore with in-kind materials to period of significance



SECTION
A2

Condition Assessment

inside



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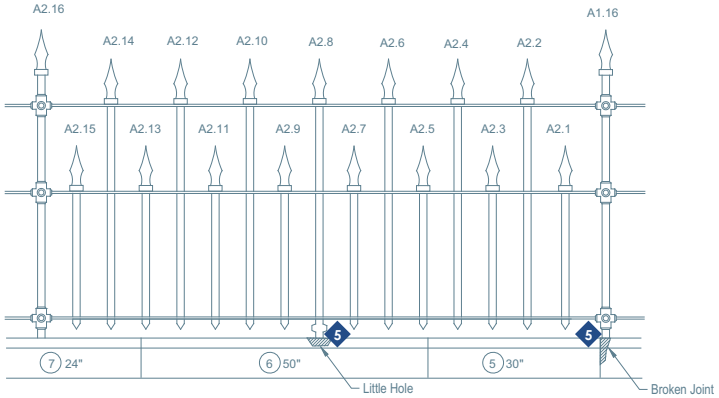

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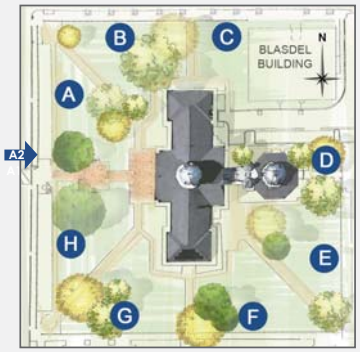
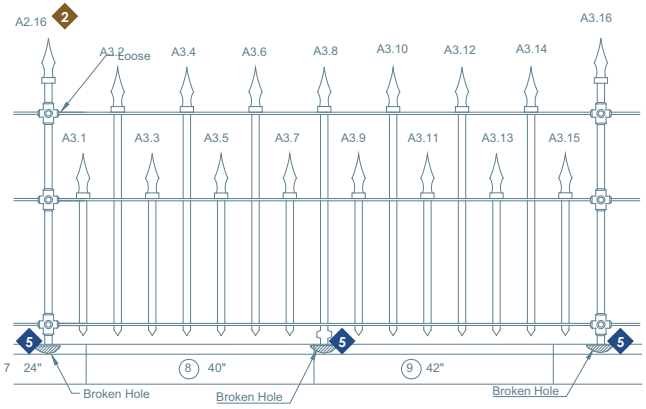


SECTION
A3

Condition Assessment

inside



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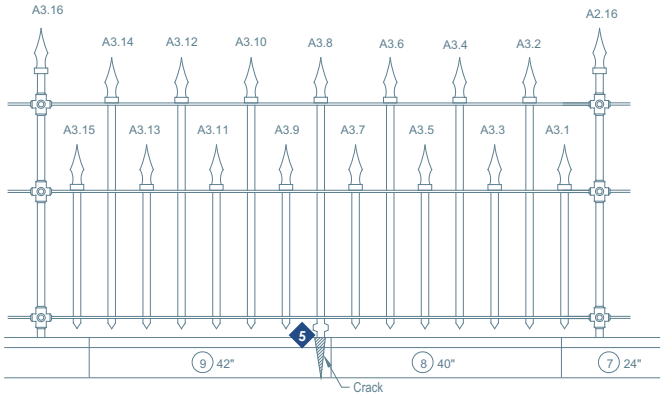

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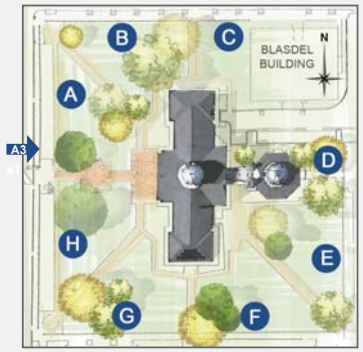
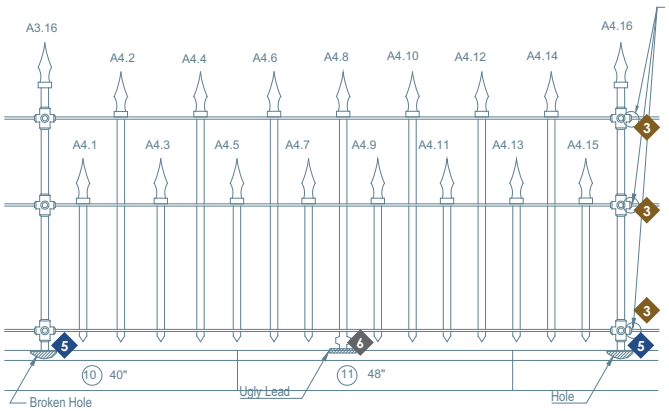


SECTION
A4

Condition Assessment

inside



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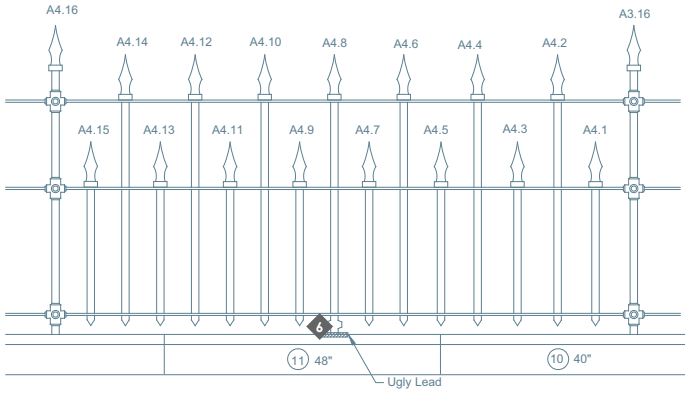

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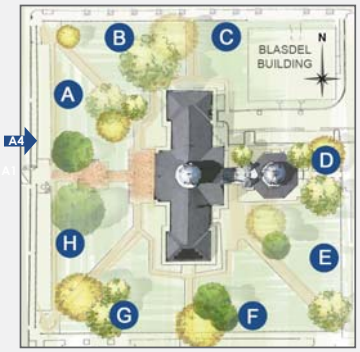
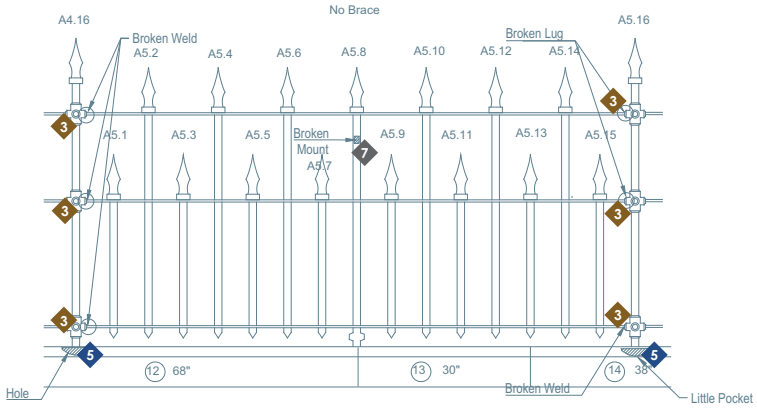


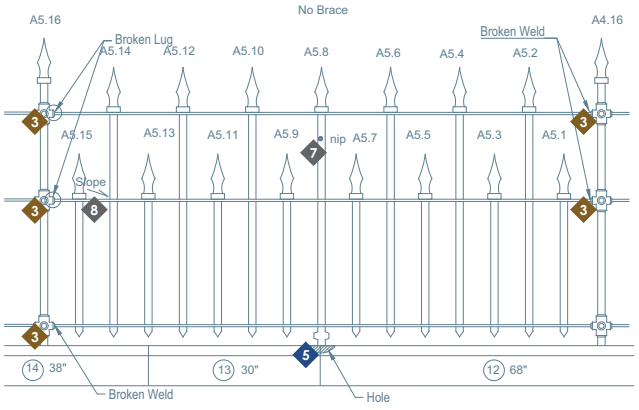
SECTION
A5

Condition Assessment

inside

outside





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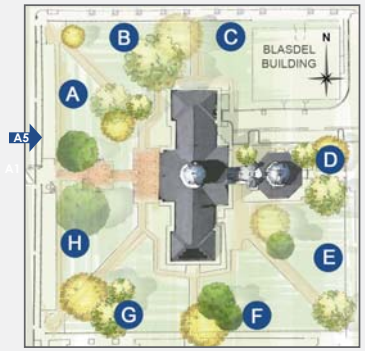
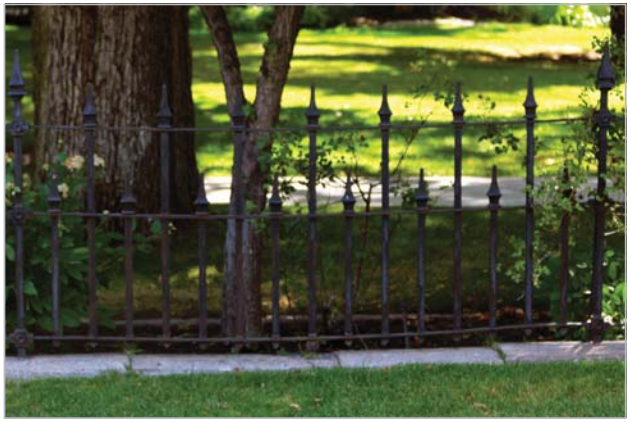


SECTION
A6

Condition Assessment



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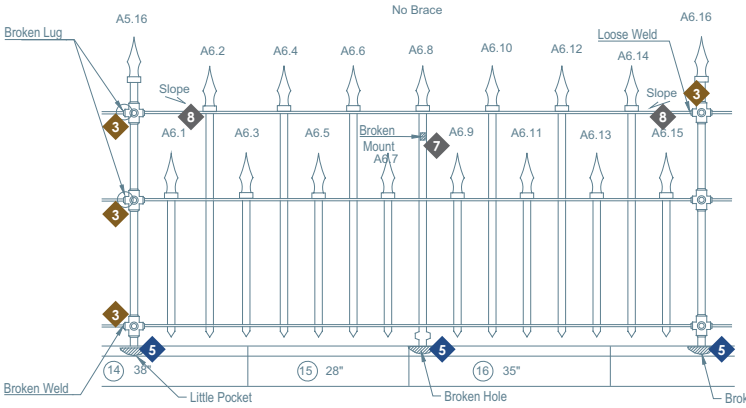

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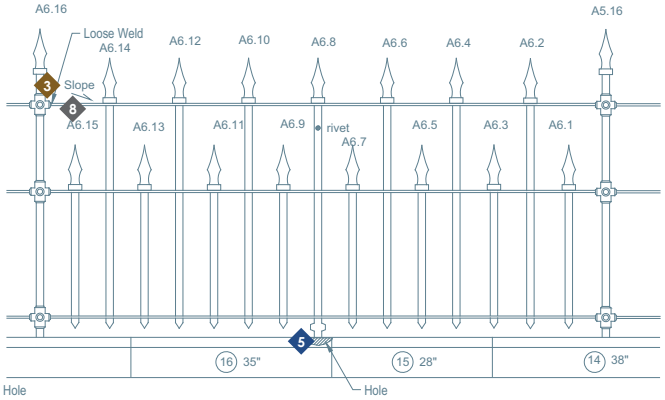

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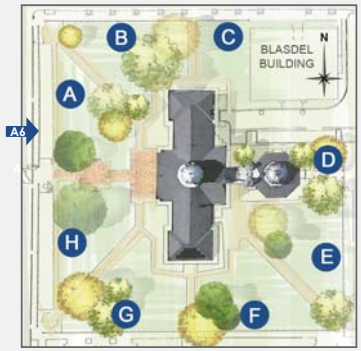
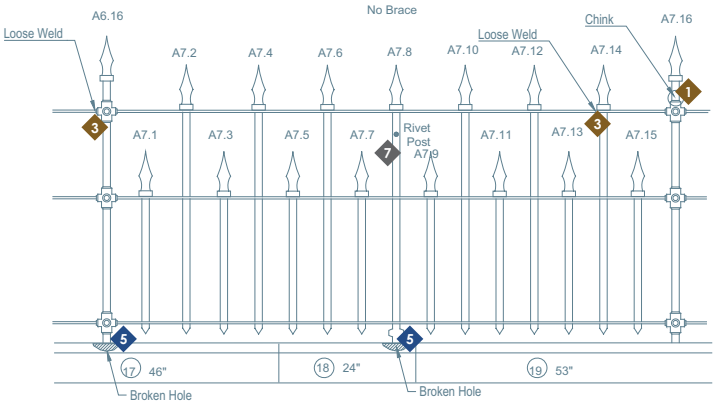


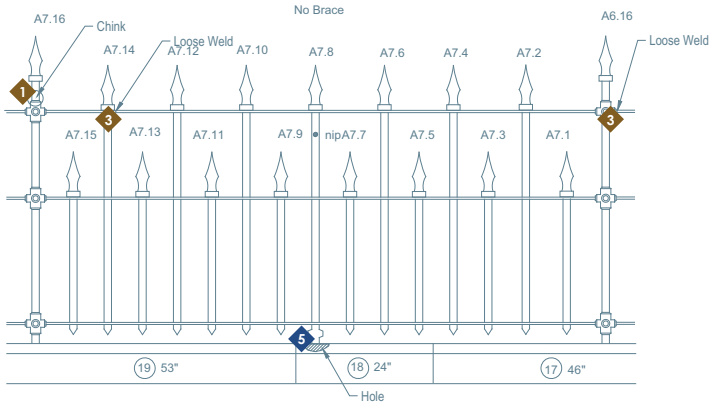
SECTION
A7

Condition Assessment

inside

outside





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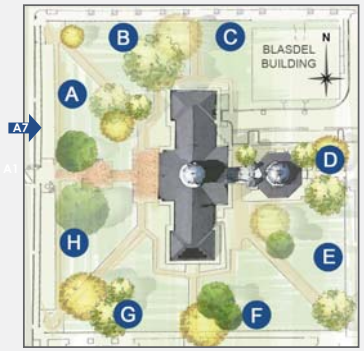
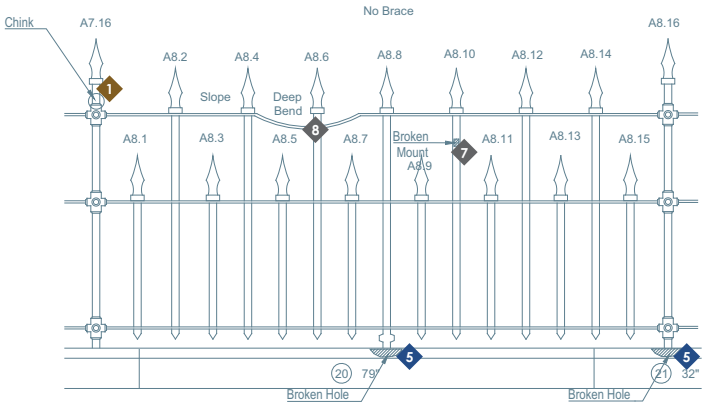


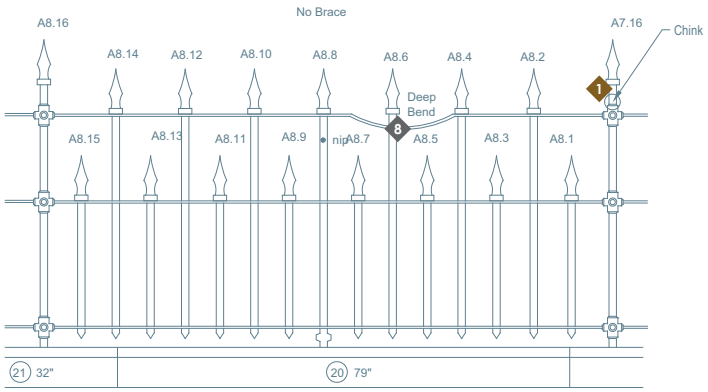
SECTION
A8

Condition Assessment

inside

outside





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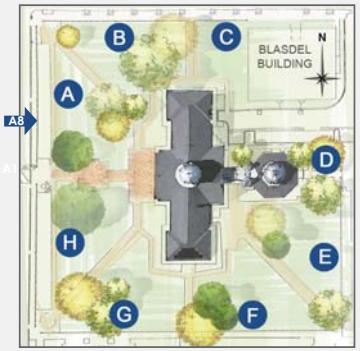
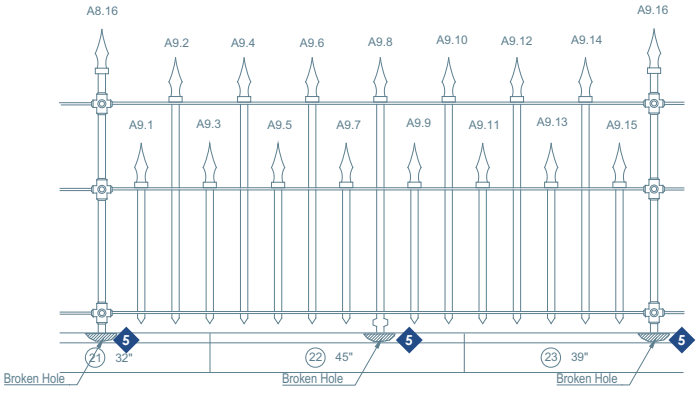


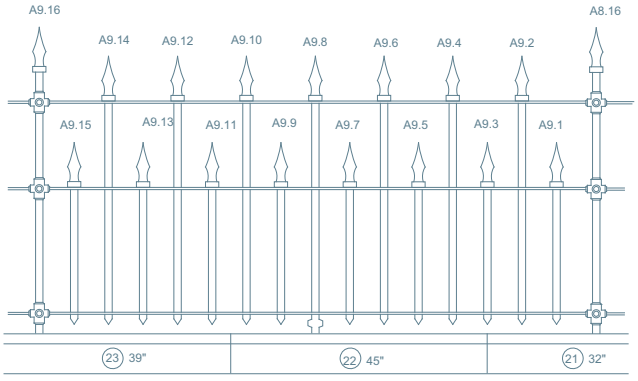
SECTION
A9

Condition Assessment

inside

outside





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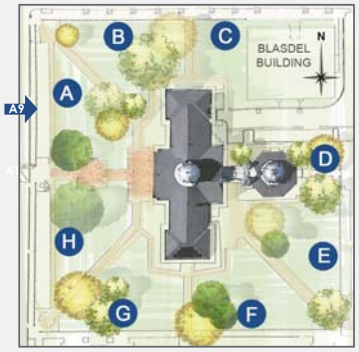
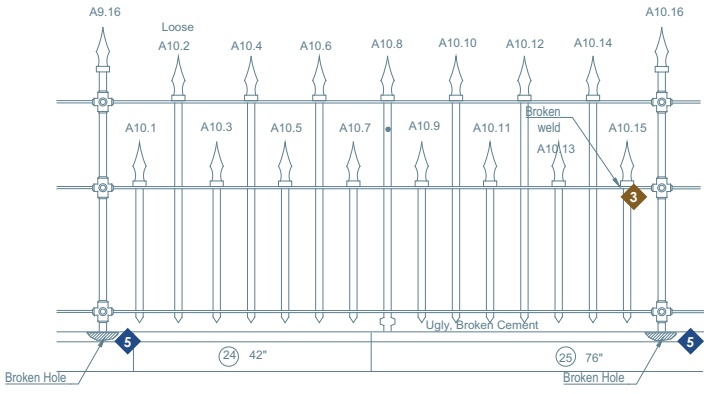


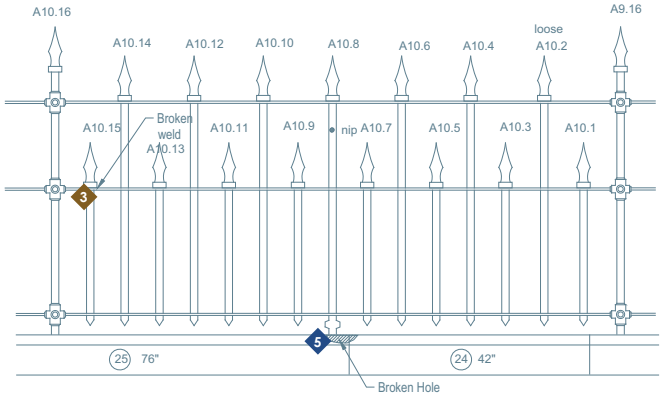
SECTION
A10

Condition Assessment

inside

outside





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Structural Instability

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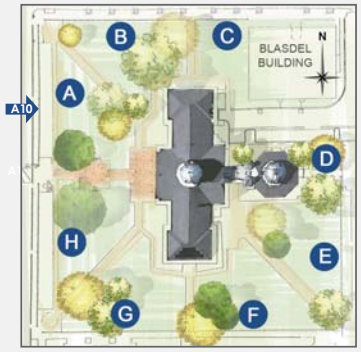
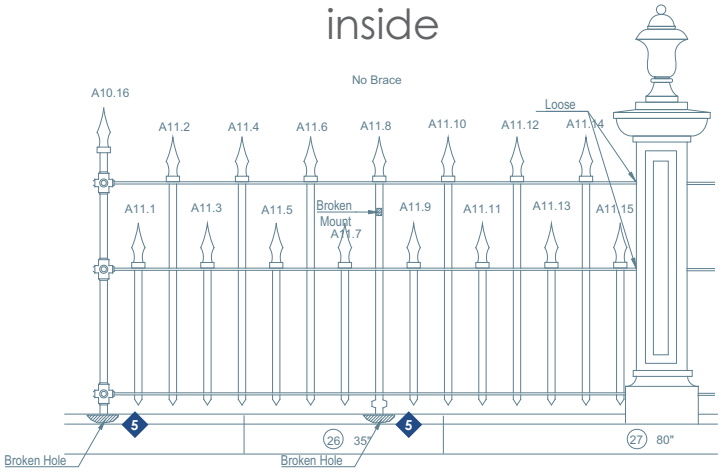


SECTION
A11

Condition Assessment

inside



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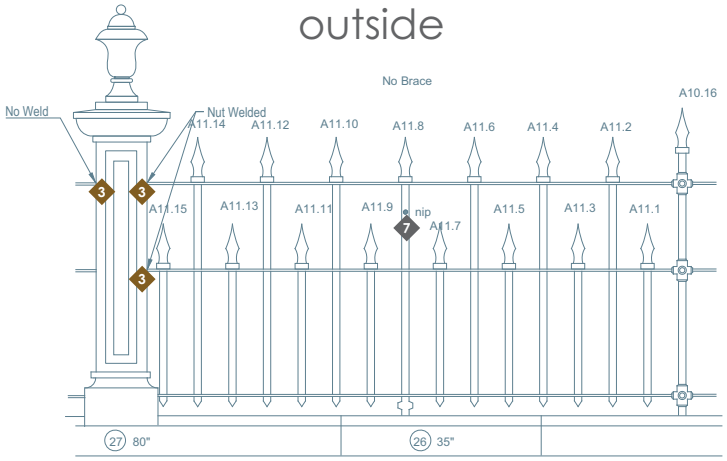

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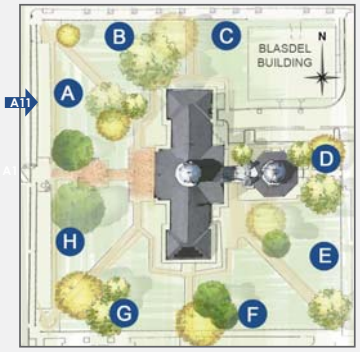
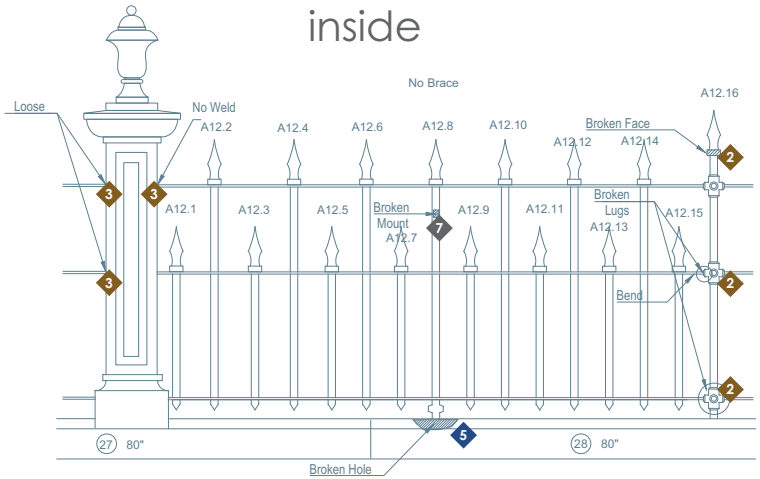


SECTION
A12

Condition Assessment

inside



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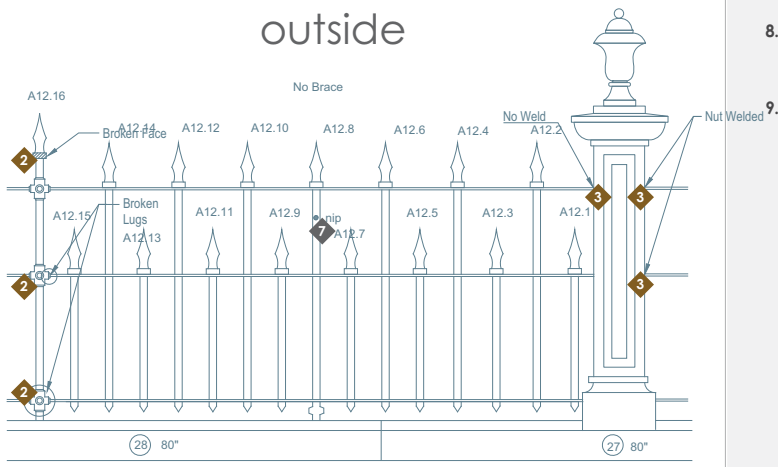

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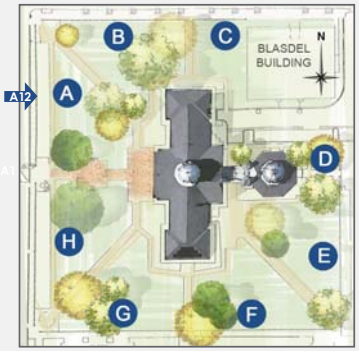
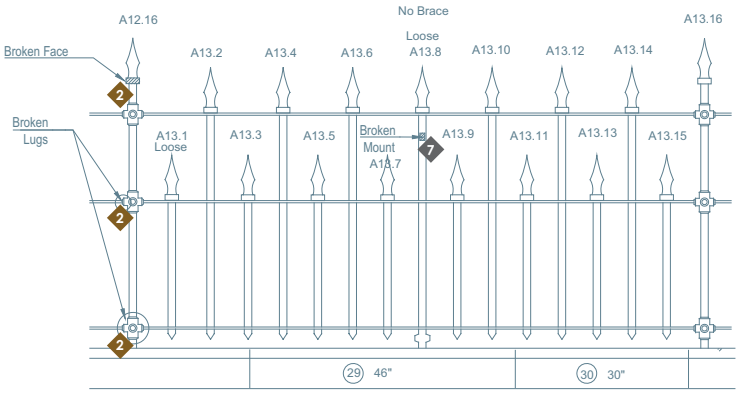


SECTION
A13

Condition Assessment

inside



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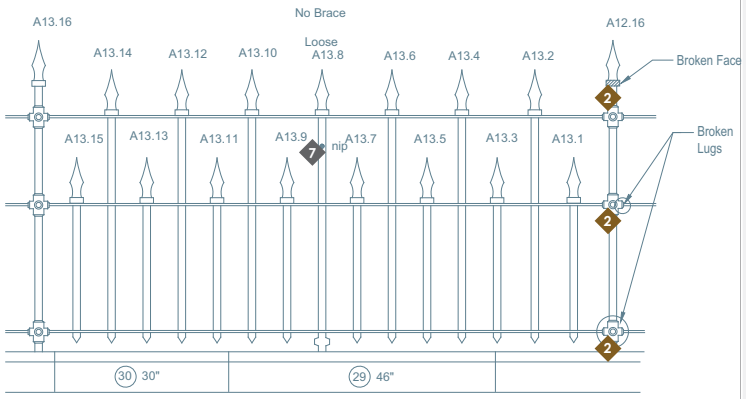

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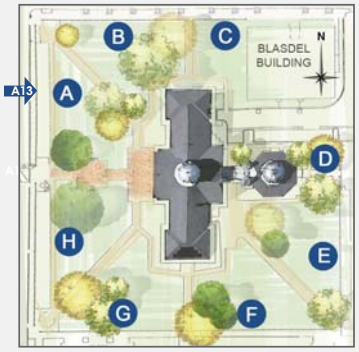
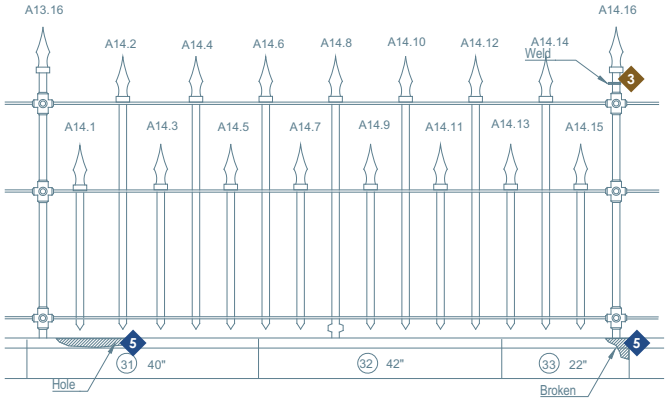


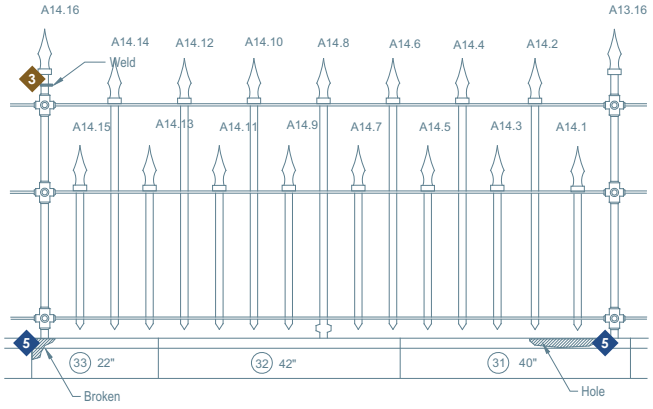
SECTION
A14

Condition Assessment

inside

outside





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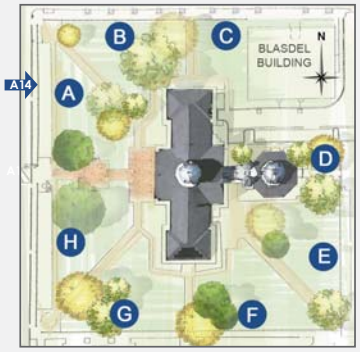
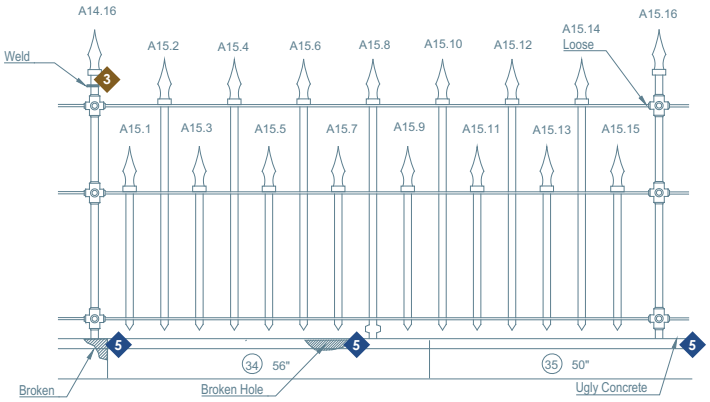


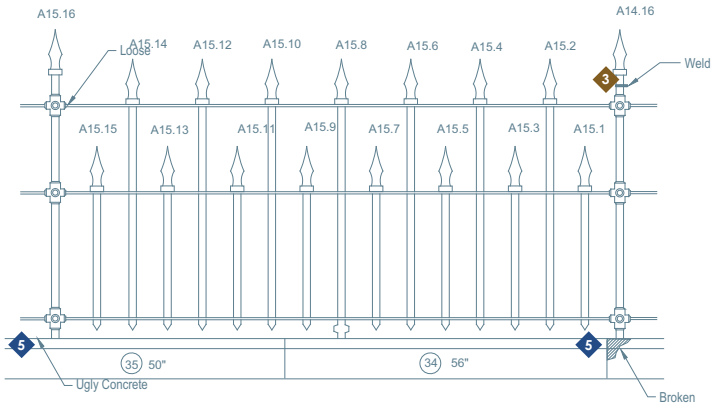
SECTION
A15

Condition Assessment

inside

outside





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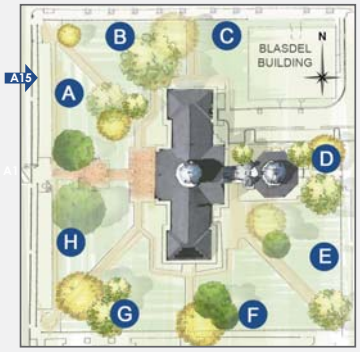

SECTION
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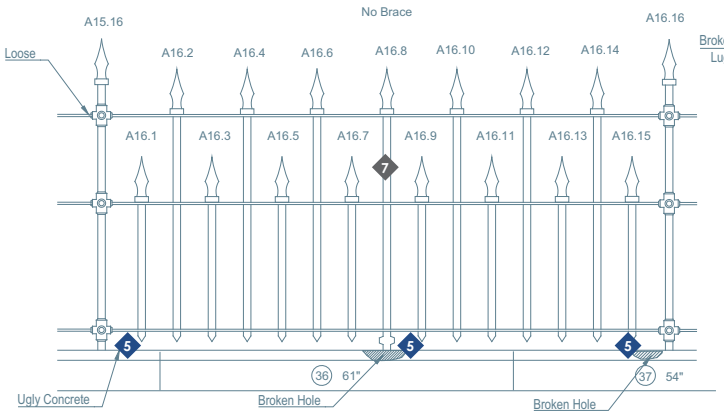
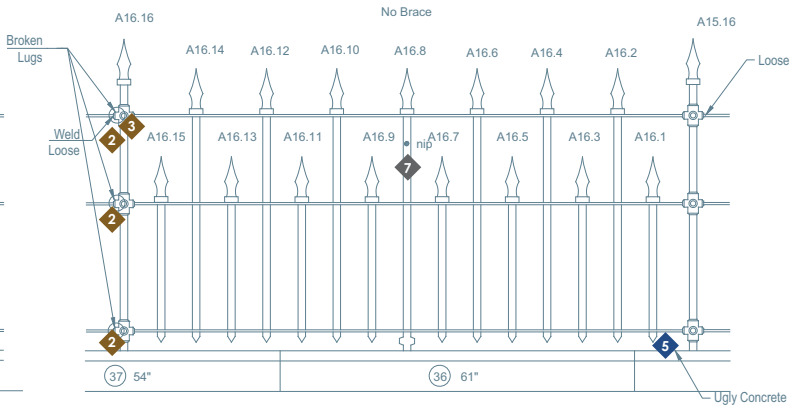
Condition Assessment





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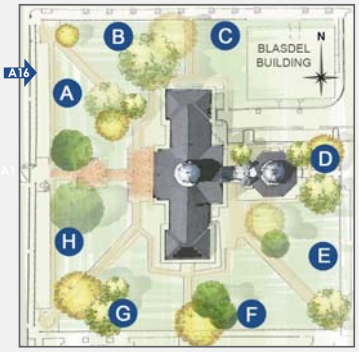
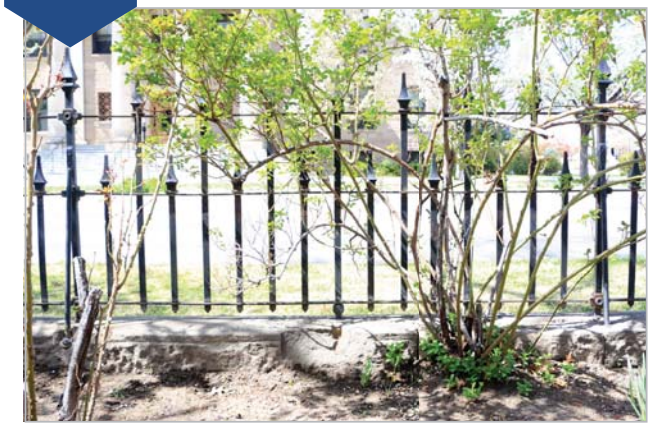


SECTION
A17

Condition Assessment



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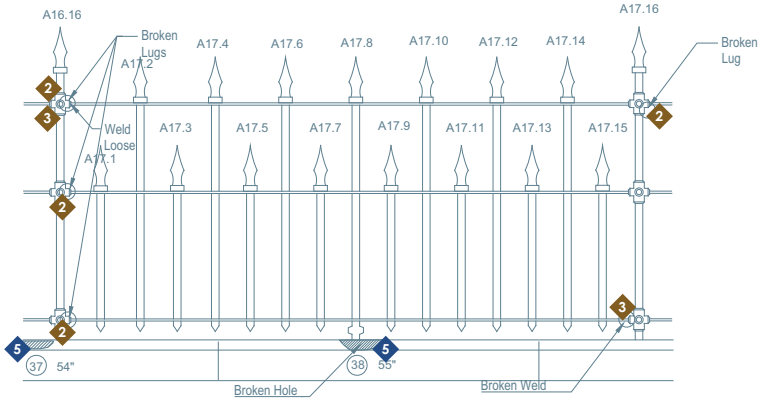

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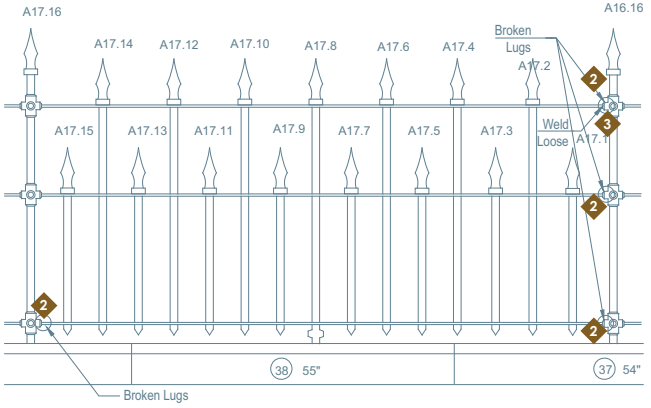

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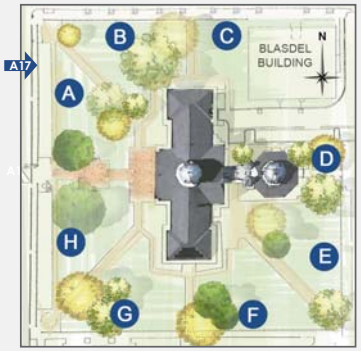

SECTION
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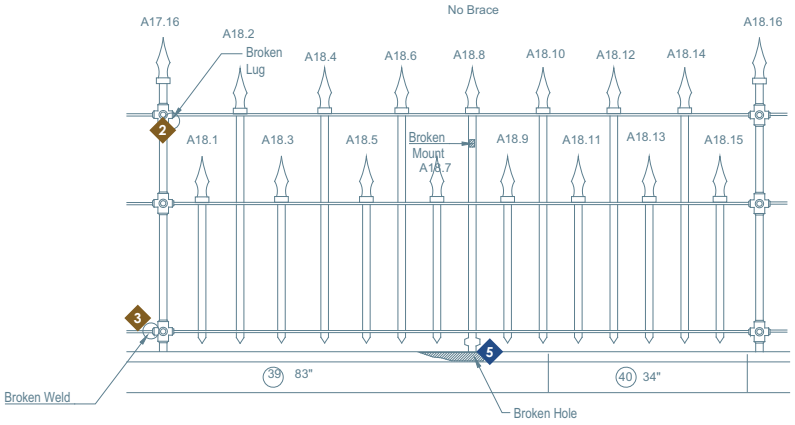
Condition Assessment

inside



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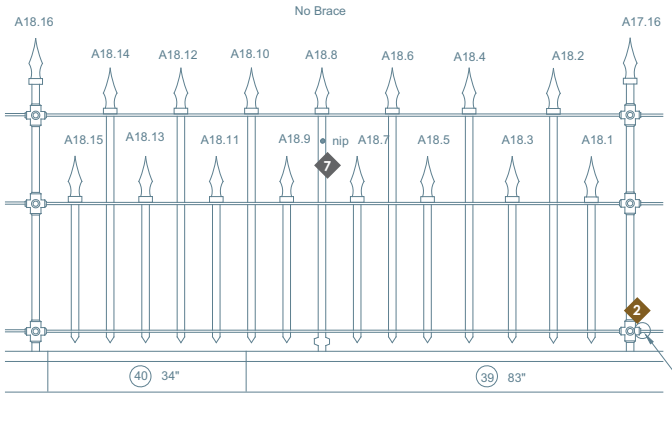

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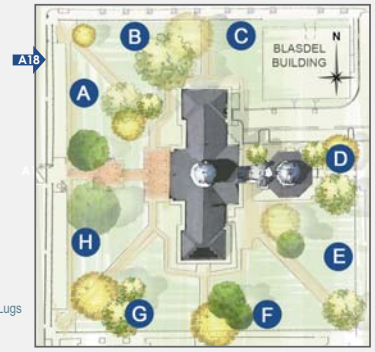

SECTION
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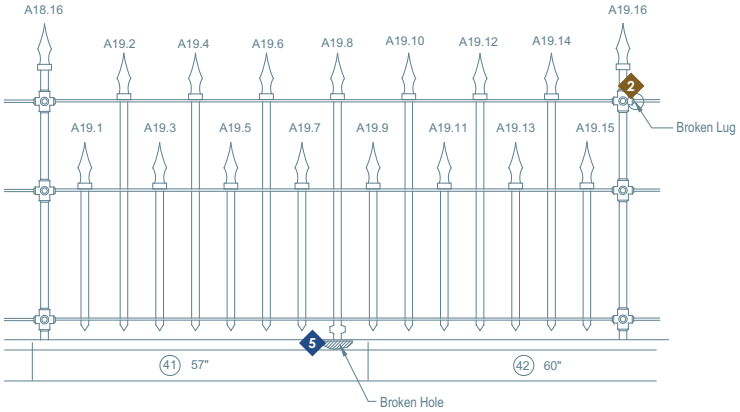
Condition Assessment

inside



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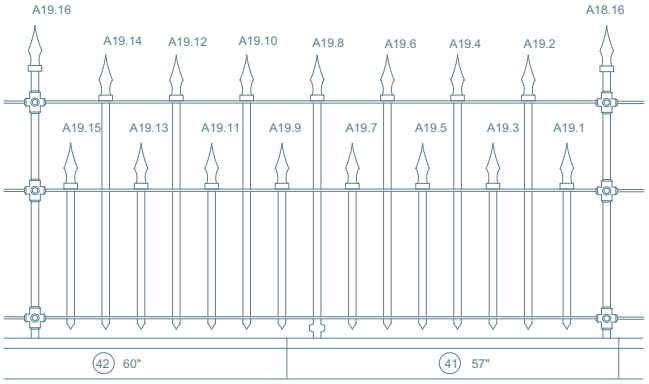

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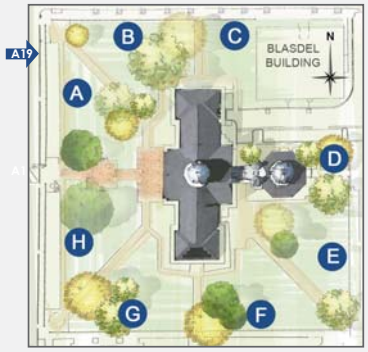
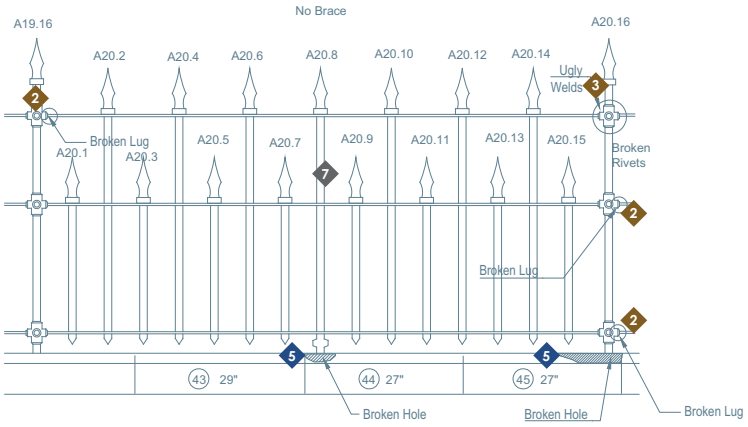


SECTION
A20

Condition Assessment

inside



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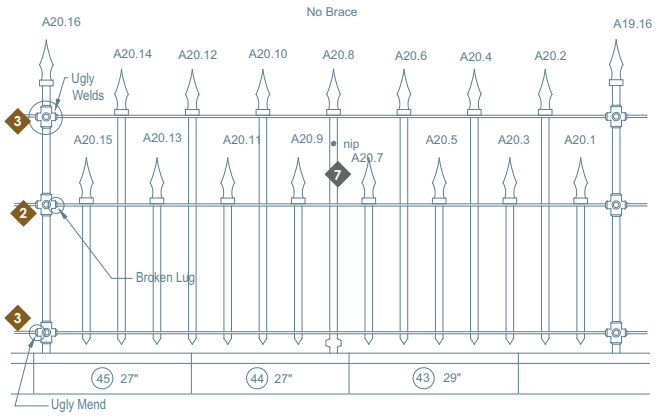

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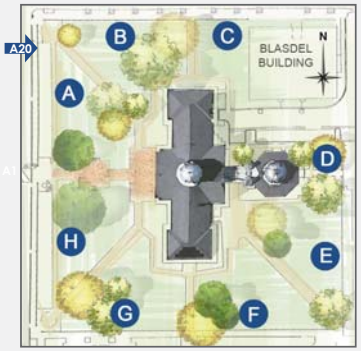
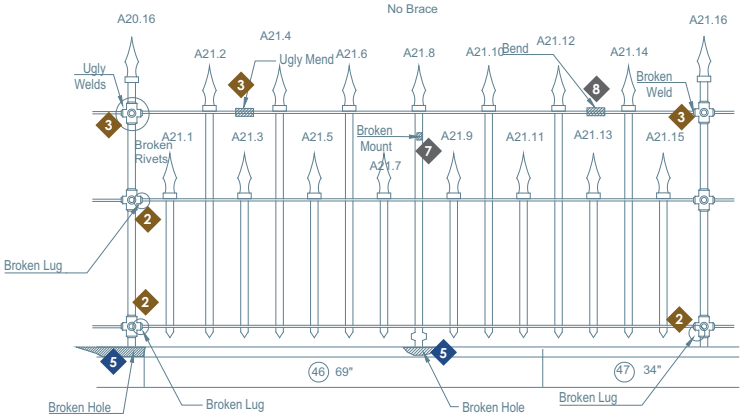


SECTION
A21

Condition Assessment

inside



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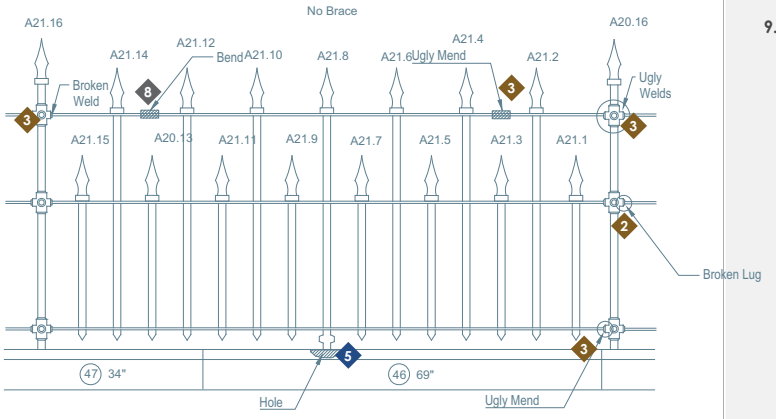

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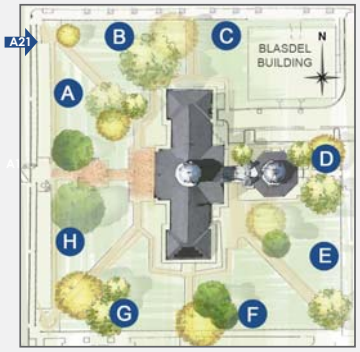
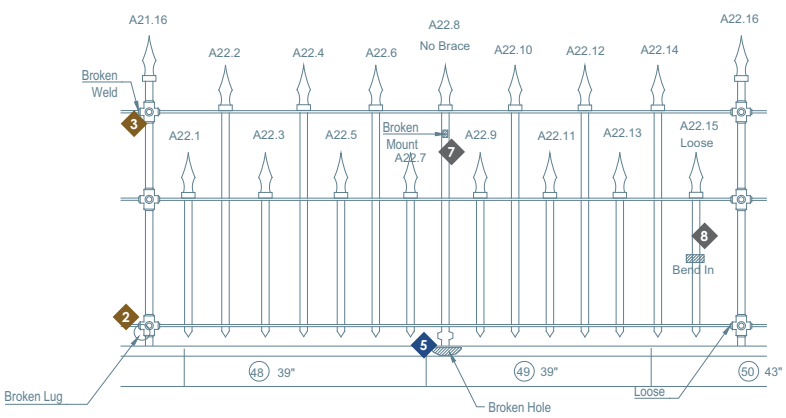


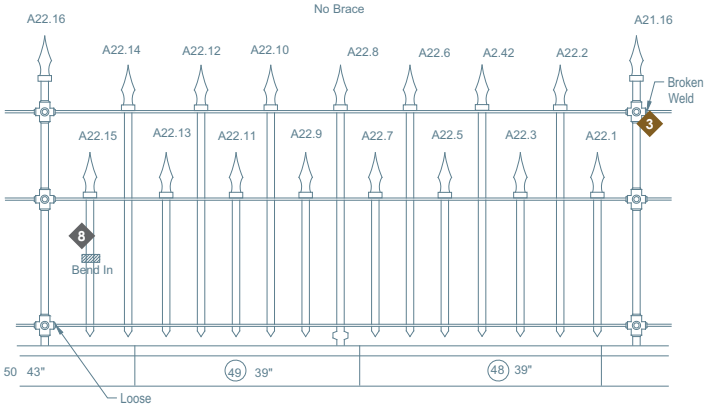
SECTION
A22

Condition Assessment

inside

outside





Ironwork Corrosion

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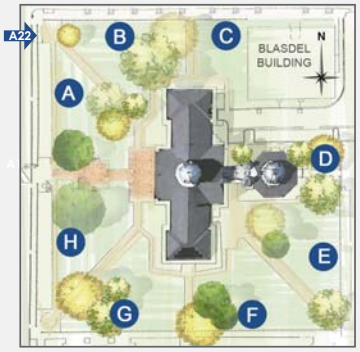
3. Major cracks and inappropriate repairs to be repaired by brazing with special nickel alloy welding rods

Sandstone Deterioration

4. Remove vegetation, failed patches (concrete), and embedded foreign objects
5. Eliminate water infiltration by re-setting fractured stone, filling pockets, shelves and depressions, and stabilizing post base with restoration mortar

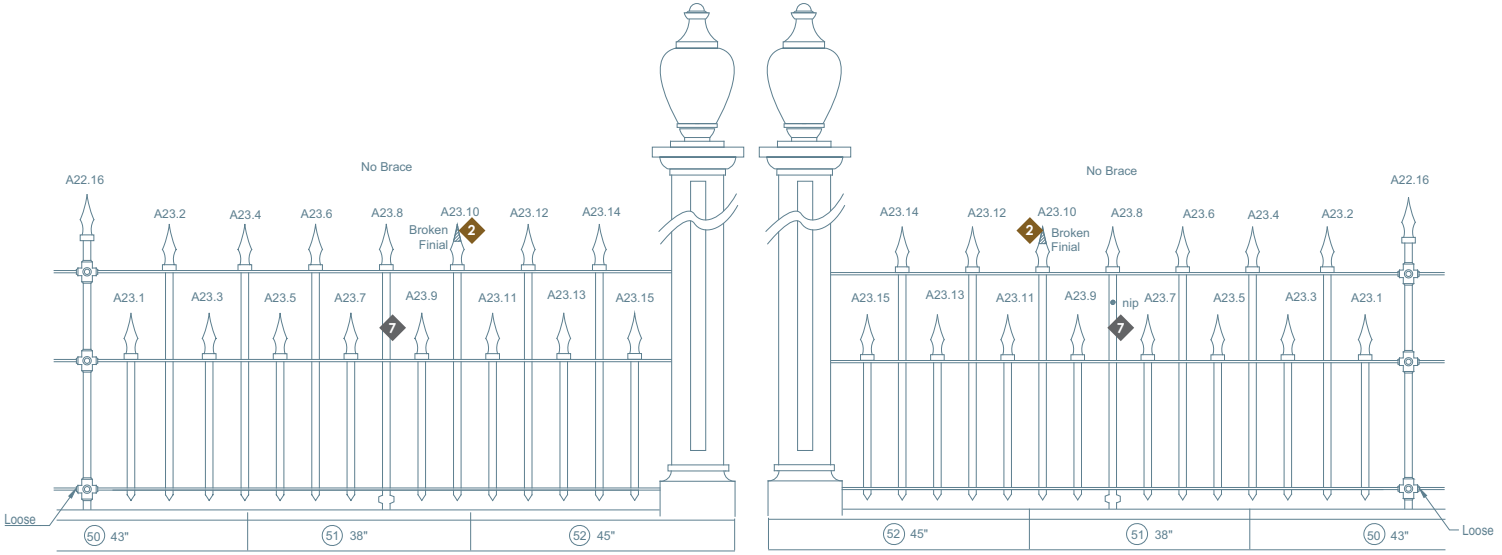
Structural Instability

6. Repair primary anchor points by pouring new molten lead into existing masonry socket and building up coping stone with restoration mortar
7. Replace missing or non-historic (square stock) backstays with in-kind material
8. Realign and stabilize fence to include straightening bent, bowed, or out of plumb fence sections and individual horizontal or vertical components
9. Remove non-historic end posts and restore with in-kind materials to period of significance



SECTION
A23

Condition Assessment



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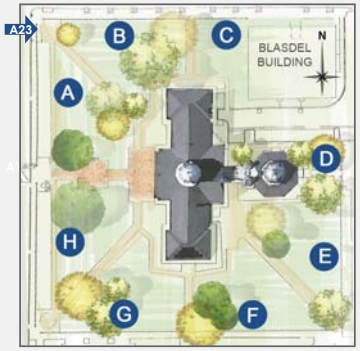
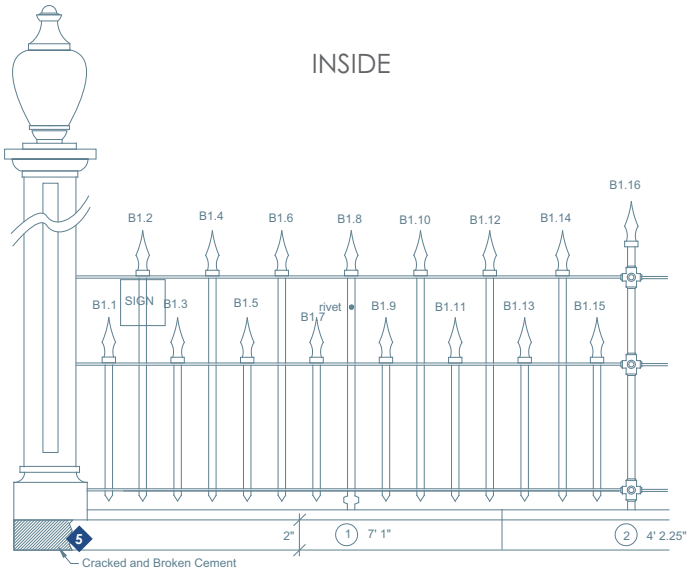


SECTION
B1

Condition Assessment

INSIDE



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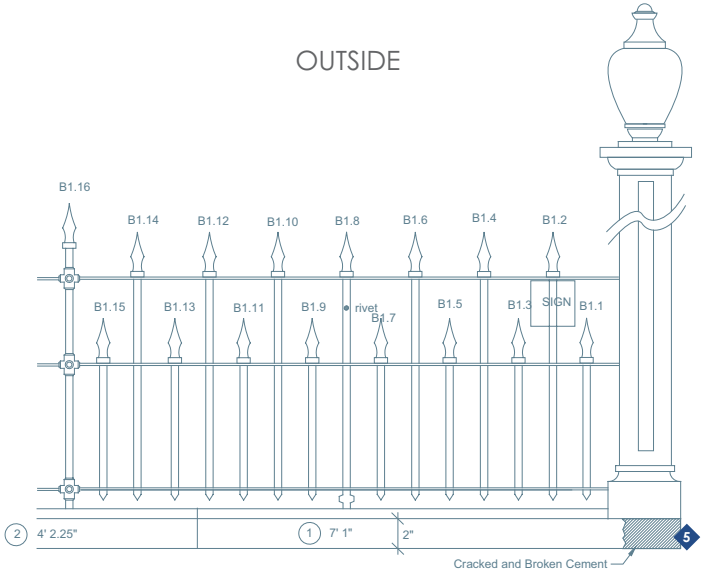

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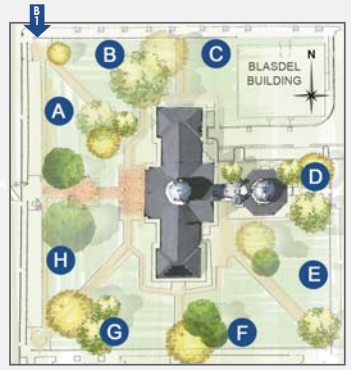
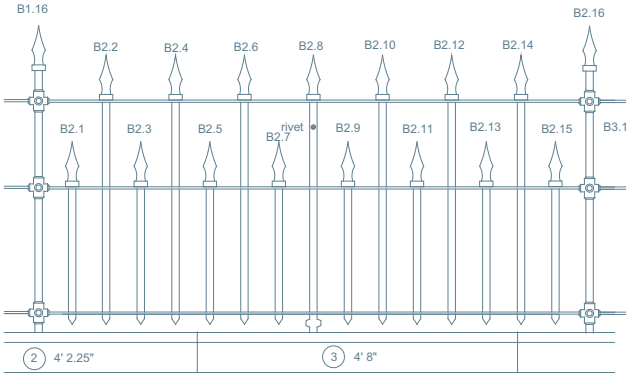


SECTION
B2

Condition Assessment

INSIDE



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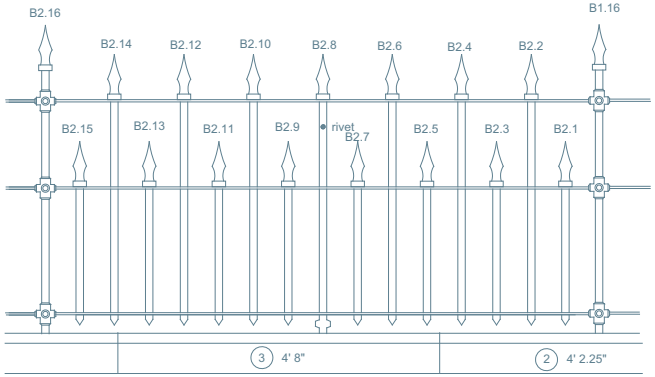

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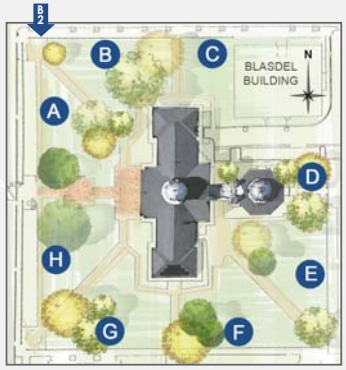
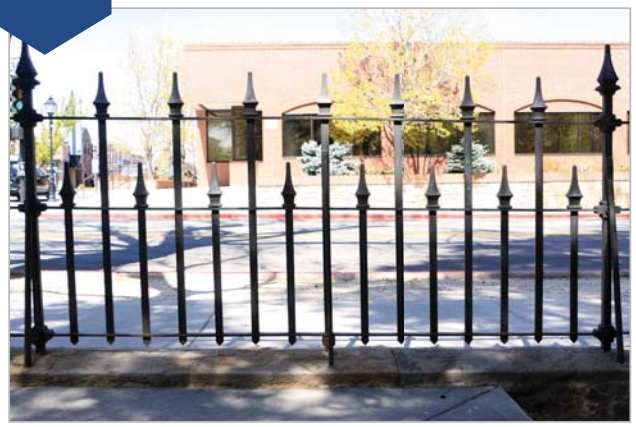


SECTION
B3

Condition Assessment



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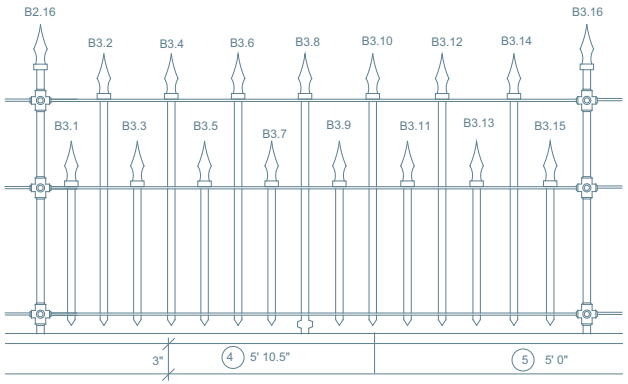

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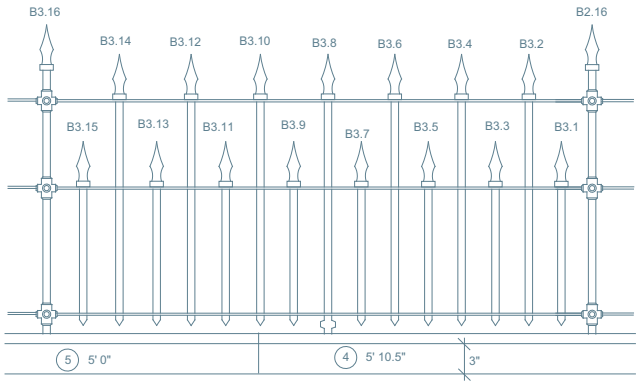

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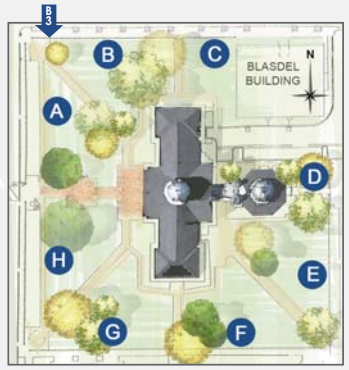
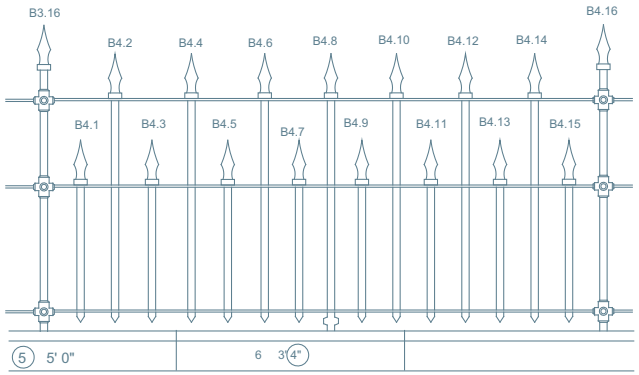


SECTION
B4

Condition Assessment

INSIDE



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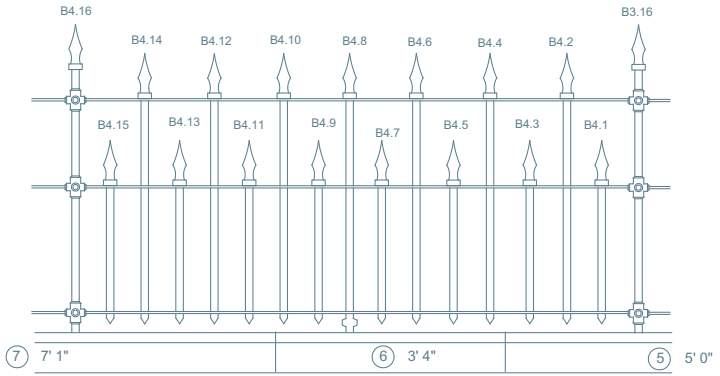

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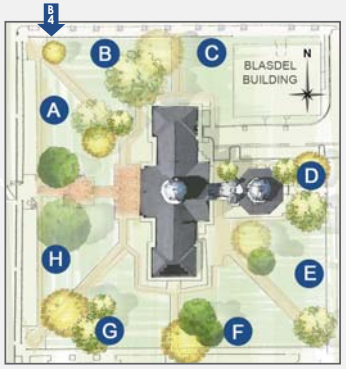
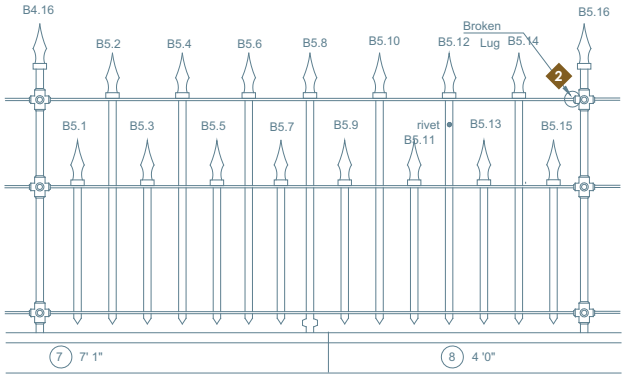


SECTION
B5

Condition Assessment

INSIDE



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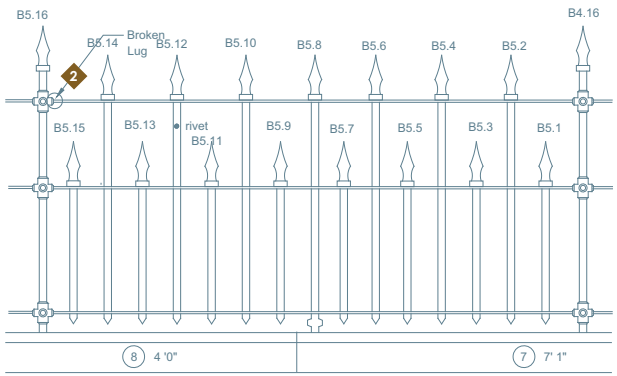

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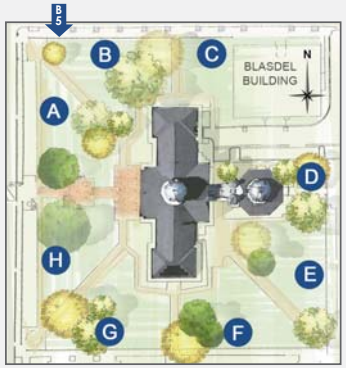
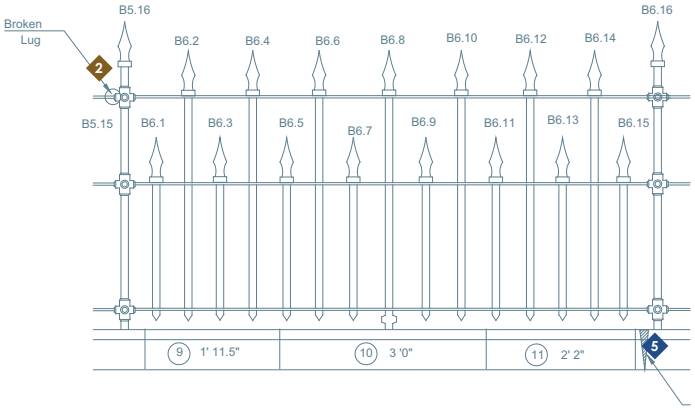


SECTION
B6

Condition Assessment

INSIDE



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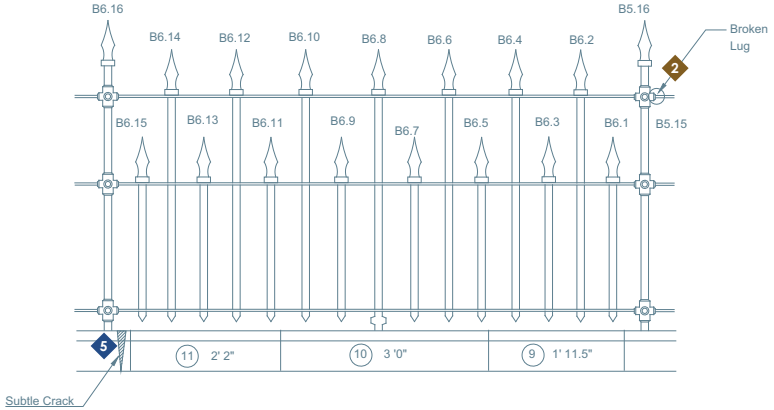

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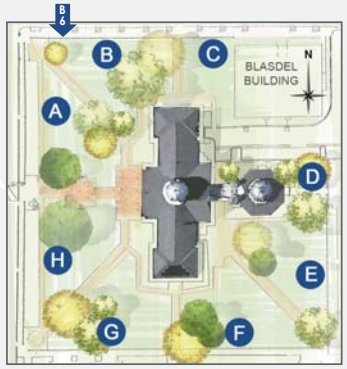
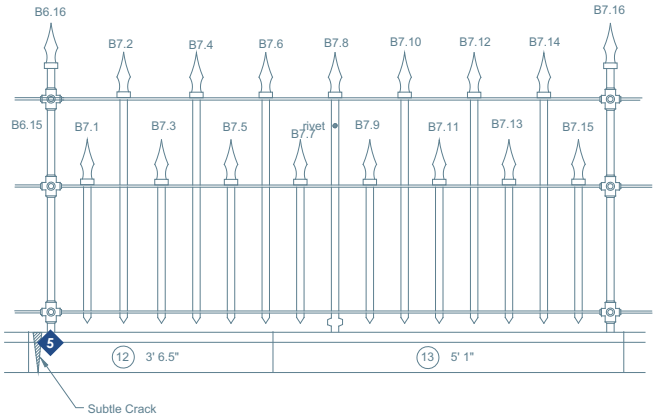


SECTION
B7

Condition Assessment

INSIDE



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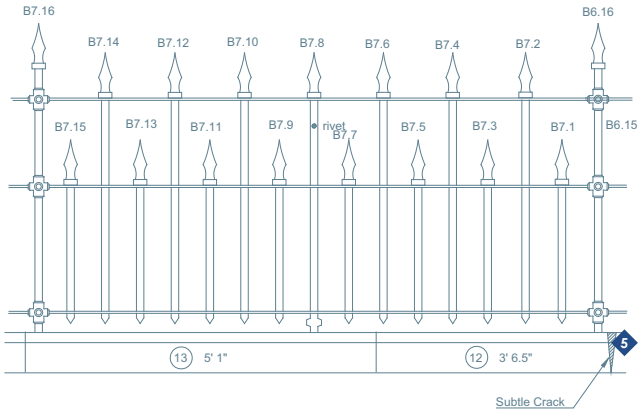

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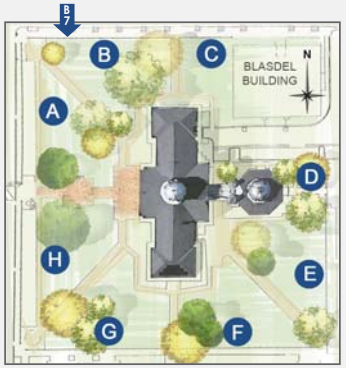
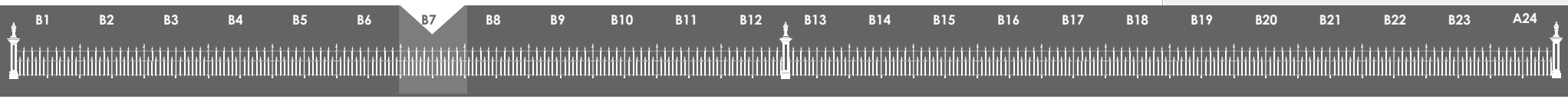
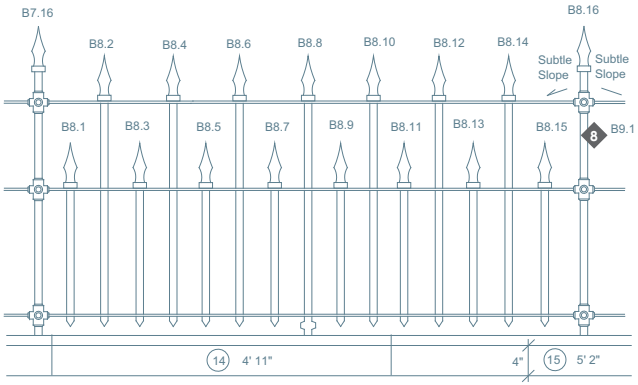




SECTION
B8

Condition Assessment

INSIDE



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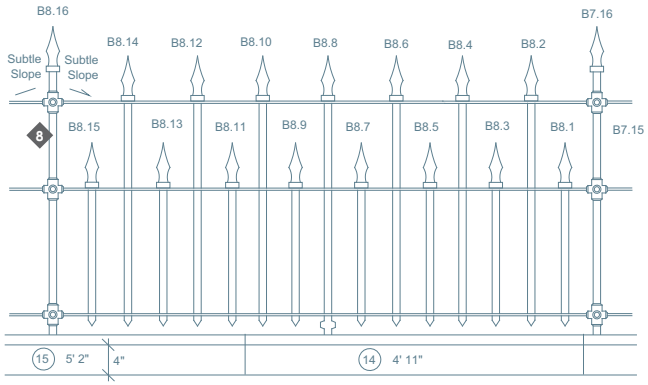

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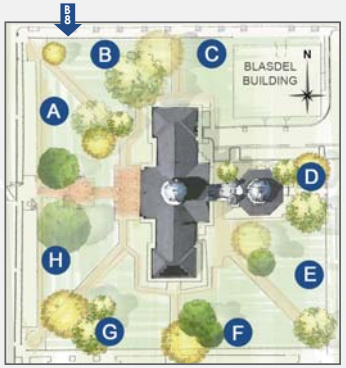
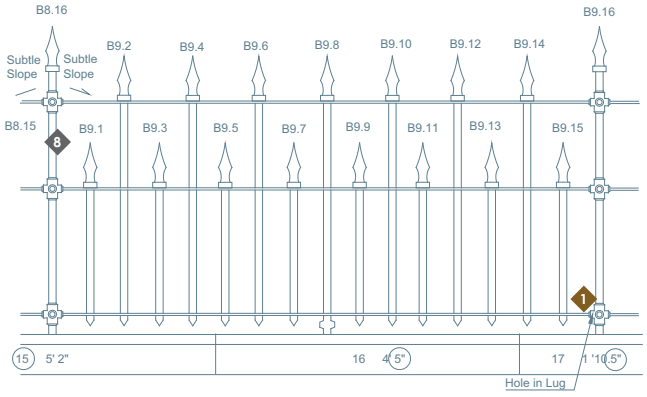


SECTION
B9

Condition Assessment

INSIDE



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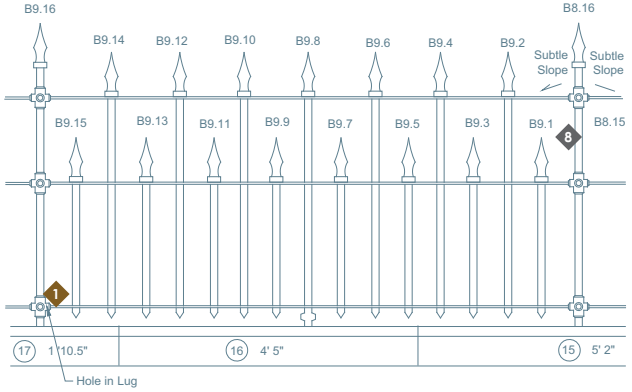

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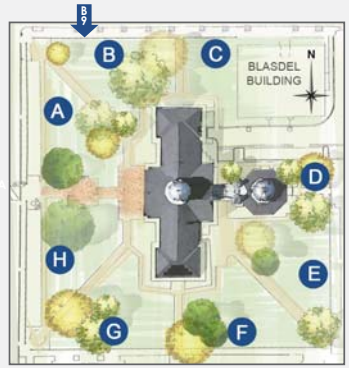
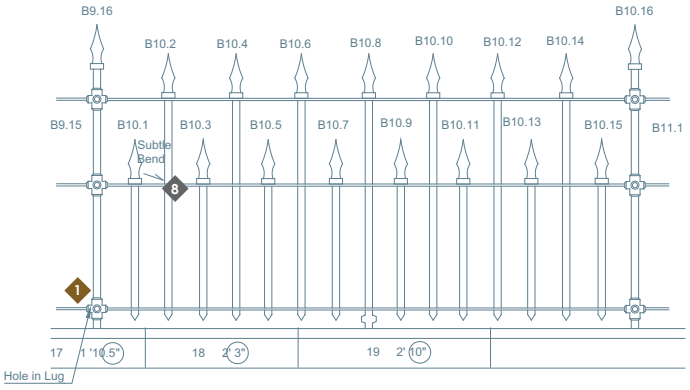


SECTION
B 10

Condition Assessment

INSIDE



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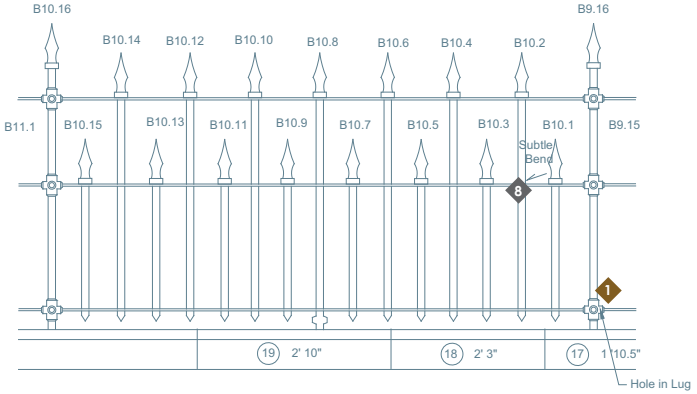

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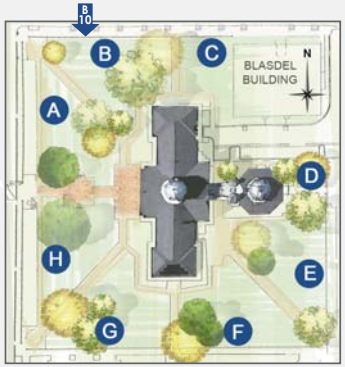
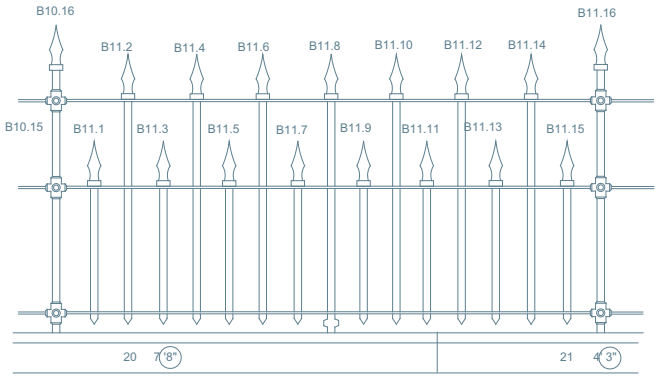


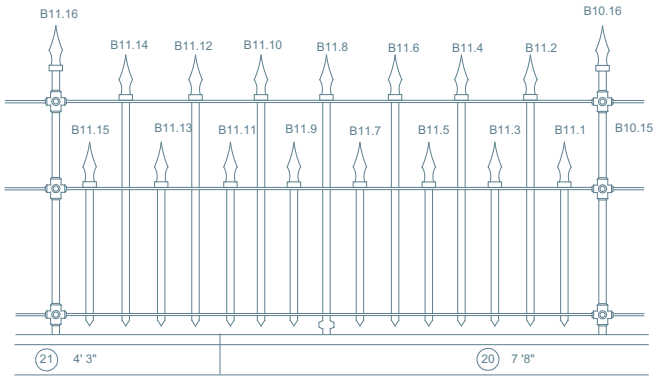
SECTION
B11

Condition Assessment

INSIDE

OUTSIDE





Ironwork Corrosion

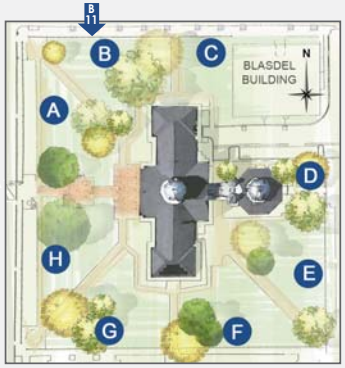
1. Repair holes, cracks and casting defects using filler compound containing iron particles in an epoxy resin binder
2. Replace missing or severely damaged cast iron components with in-kind casting technique and material
3. Major cracks and inappropriate repairs to be repaired by brazing with special nickel alloy welding rods

Sandstone Deterioration

4. Remove vegetation, failed patches (concrete), and embedded foreign objects
5. Eliminate water infiltration by re-setting fractured stone, filling pockets, shelves and depressions, and stabilizing post base with restoration mortar

Structural Instability

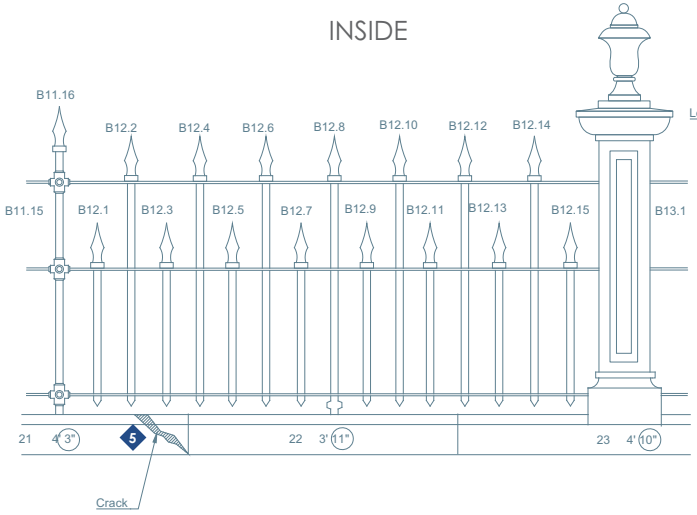
6. Repair primary anchor points by pouring new molten lead into existing masonry socket and building up coping stone with restoration mortar
7. Replace missing or non-historic (square stock) backstays with in-kind material
8. Realign and stabilize fence to include straightening bent, bowed, or out of plumb fence sections and individual horizontal or vertical components
9. Remove non-historic end posts and restore with in-kind materials to period of significance



SECTION
B12

Condition Assessment

INSIDE



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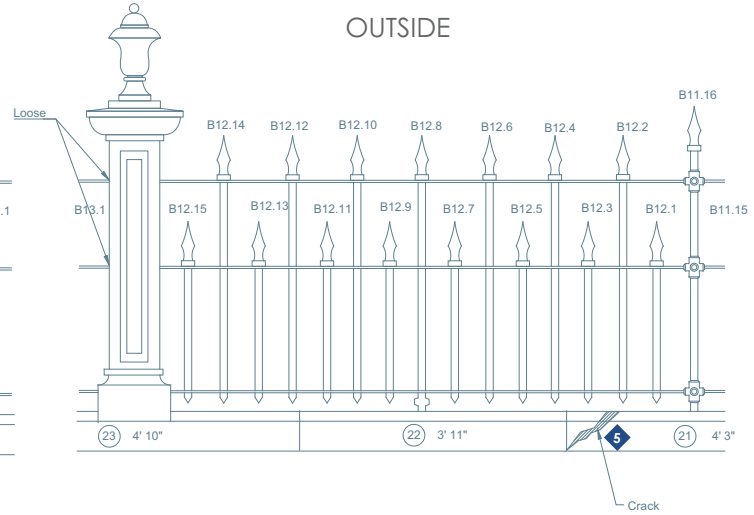

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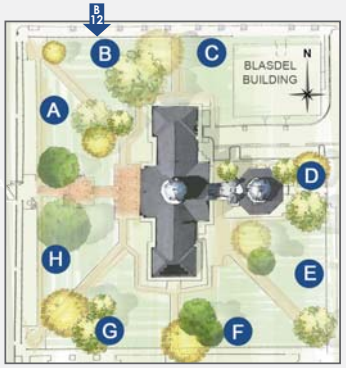
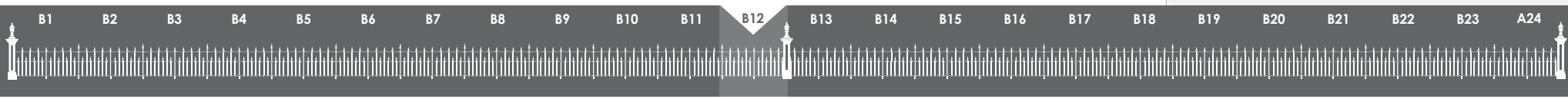
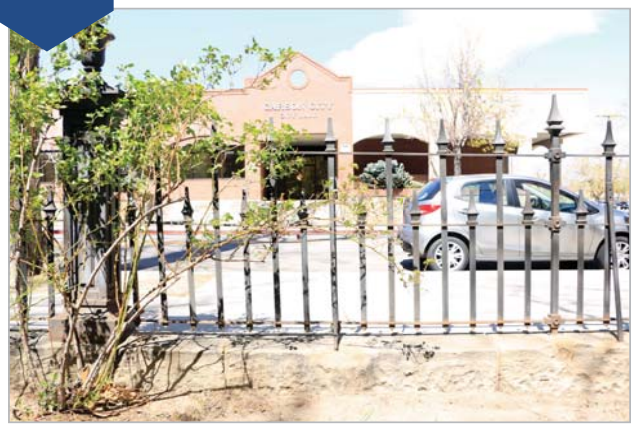




SECTION
B13

Condition Assessment



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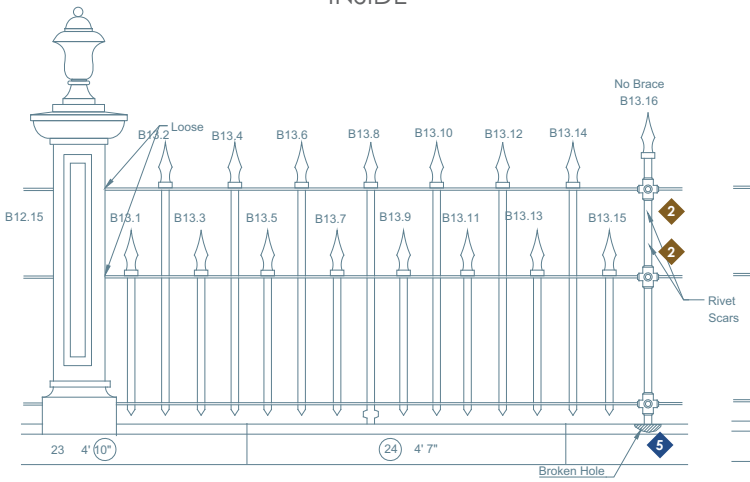

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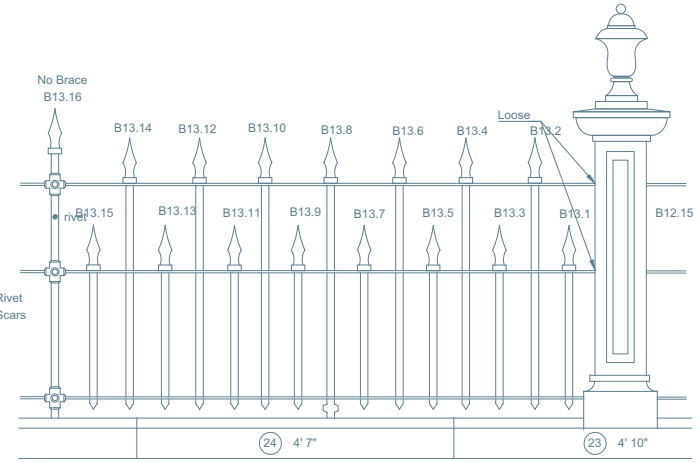

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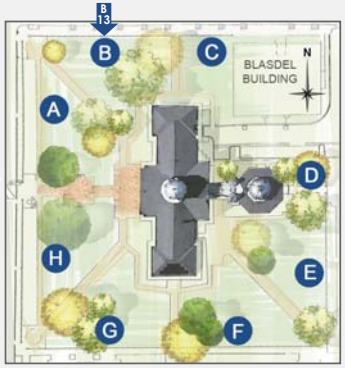
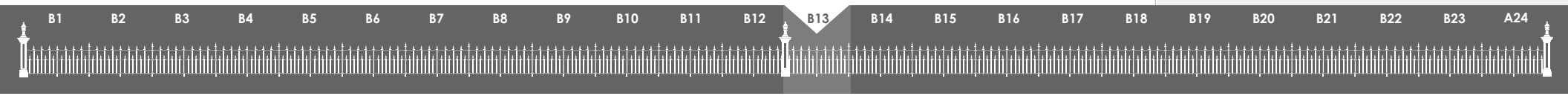
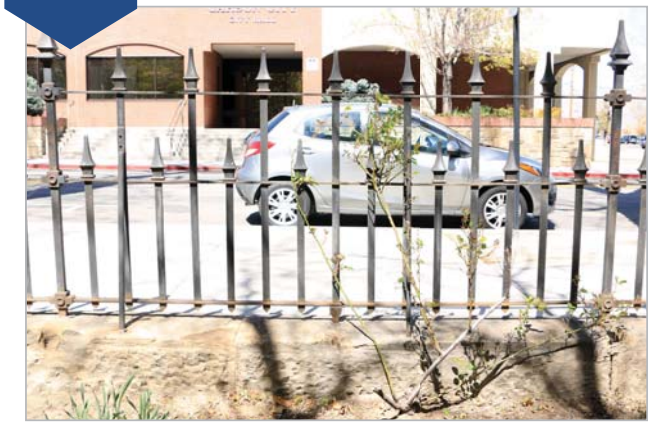




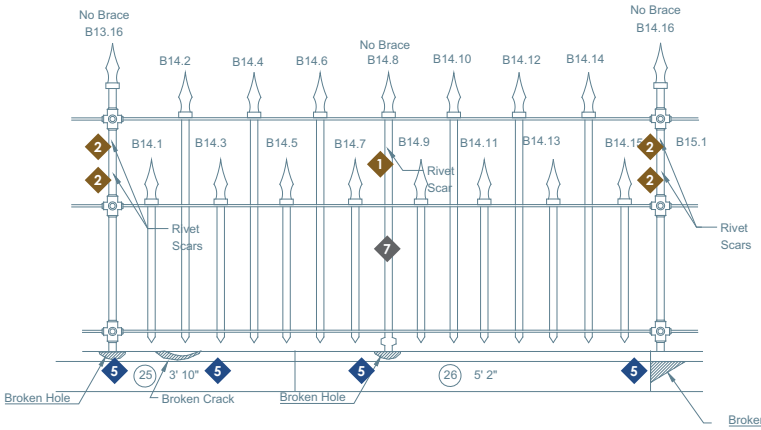
SECTION
B14

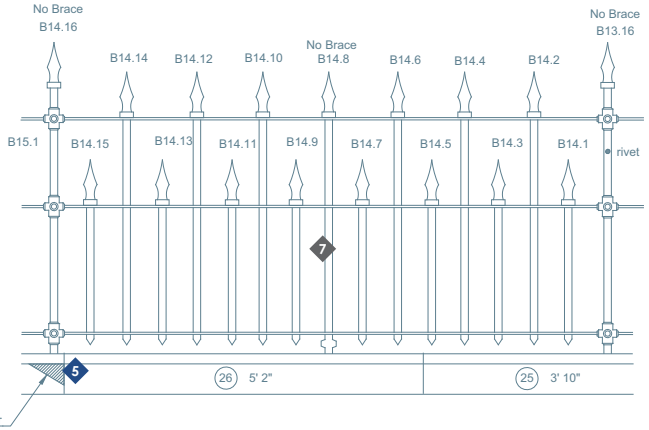
Condition Assessment



INSIDE

OUTSIDE





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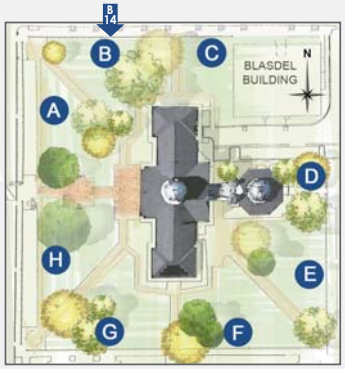
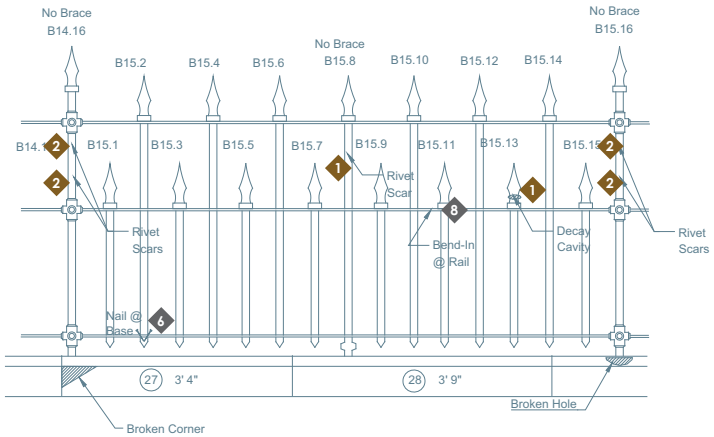


SECTION
B15

Condition Assessment

INSIDE



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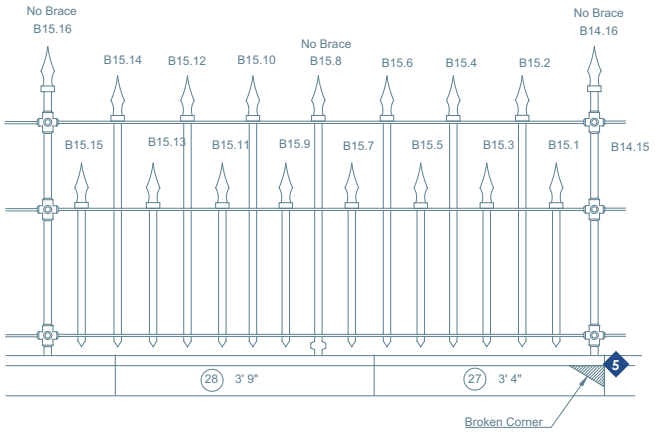

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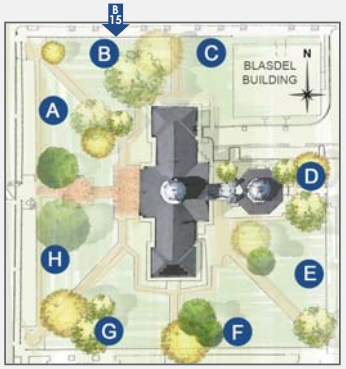
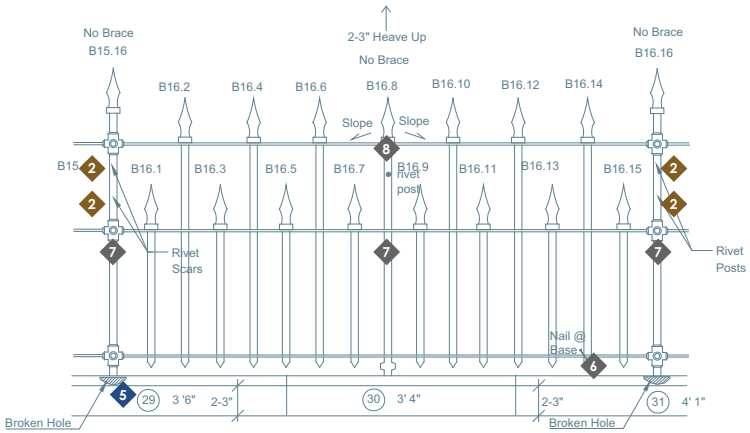


SECTION
B16

Condition Assessment

INSIDE



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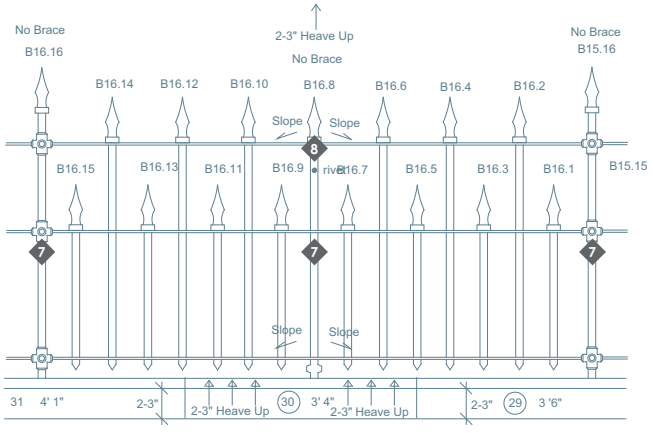

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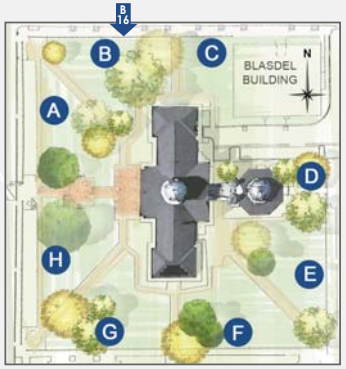
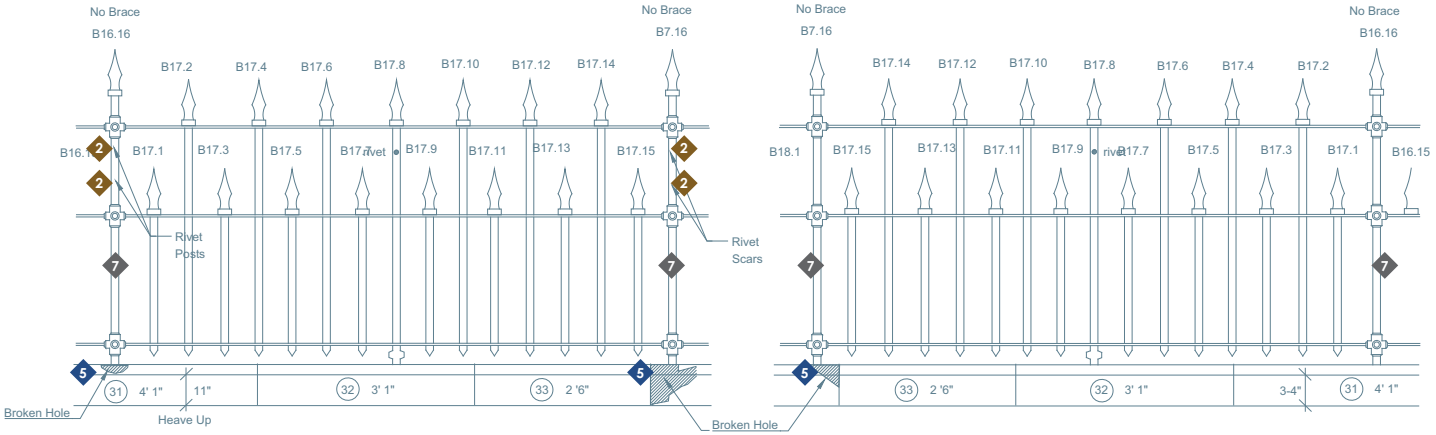


SECTION
B17

Condition Assessment

INSIDE

OUTSIDE



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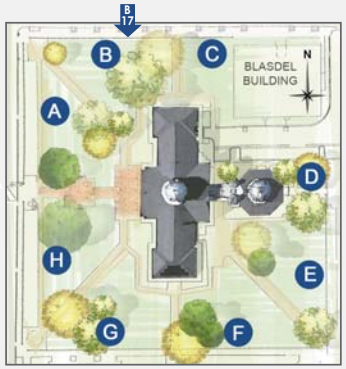
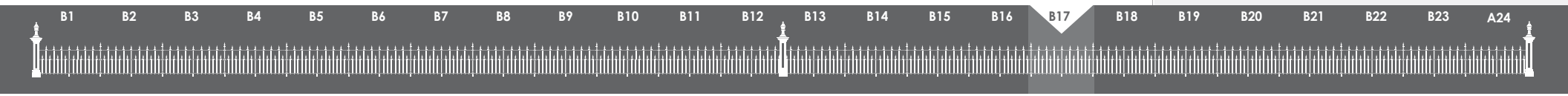
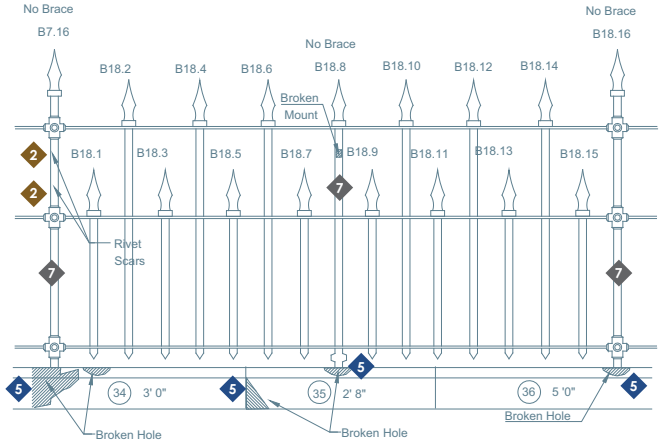




SECTION
B18

Condition Assessment

INSIDE



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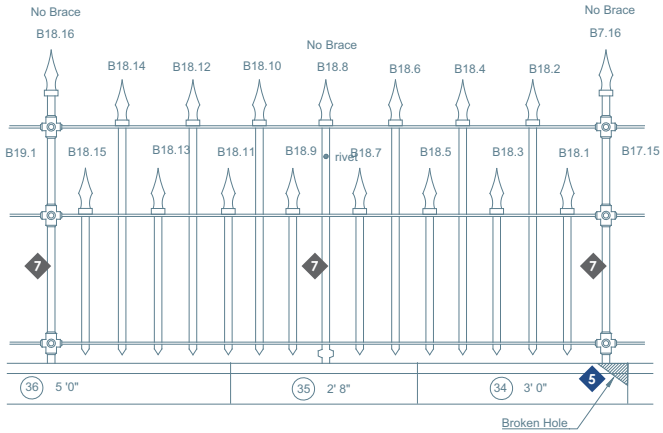

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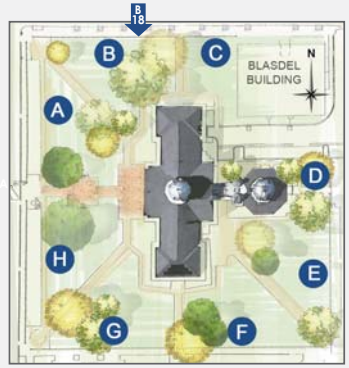
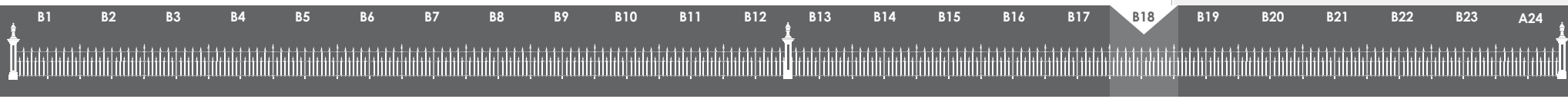
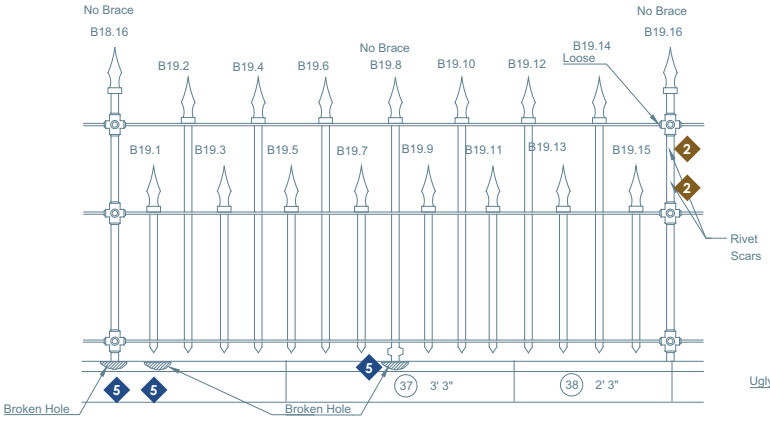




SECTION
B19

Condition Assessment

INSIDE



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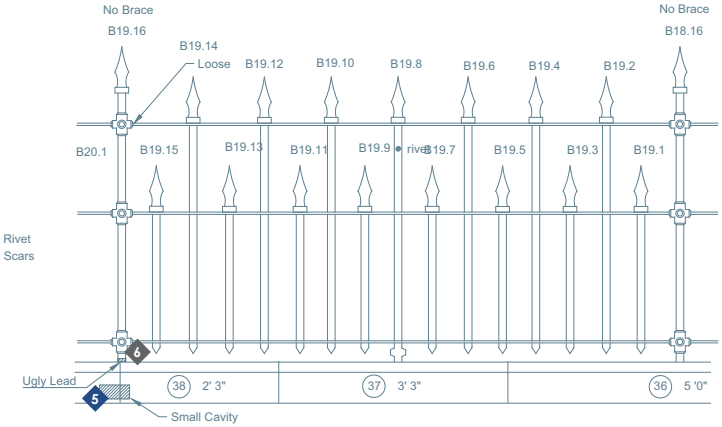

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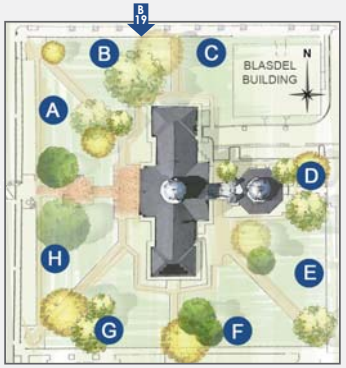
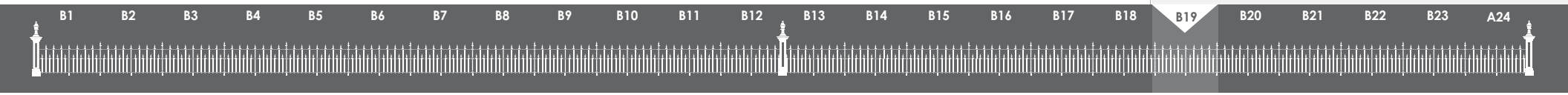


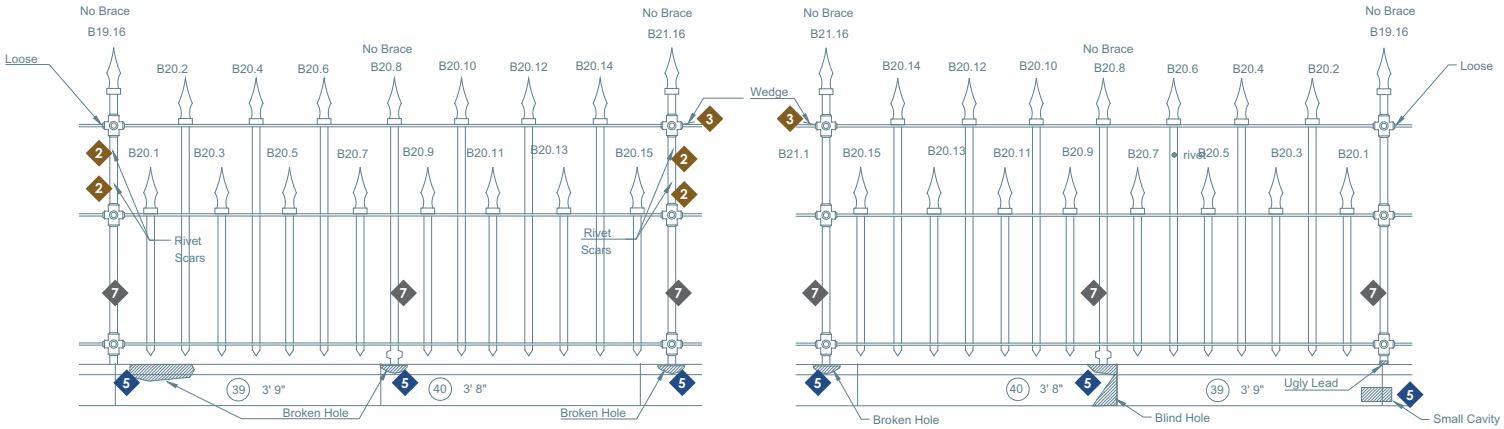


SECTION
B20

Condition Assessment

INSIDE

OUTSIDE



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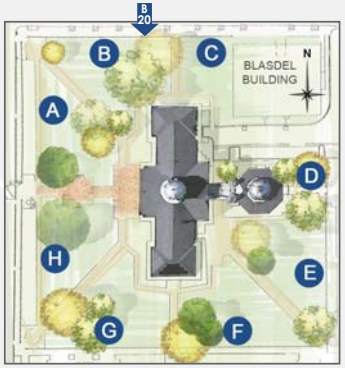
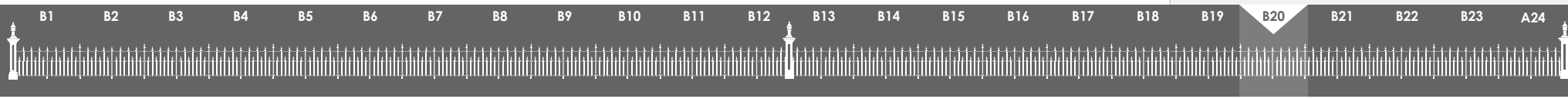


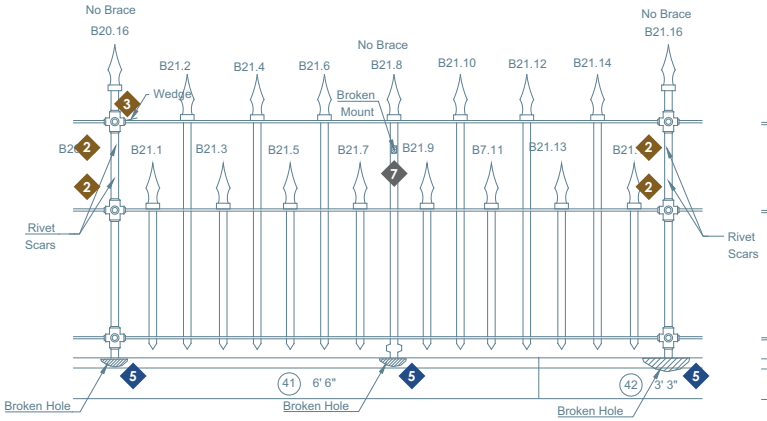


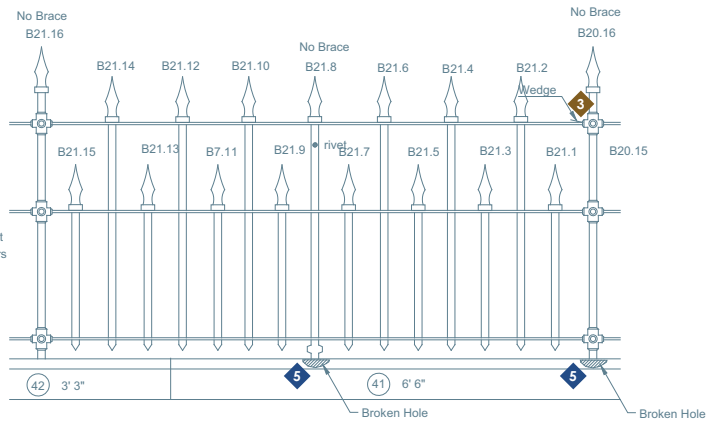
SECTION
B21

Condition Assessment

INSIDE

OUTSIDE





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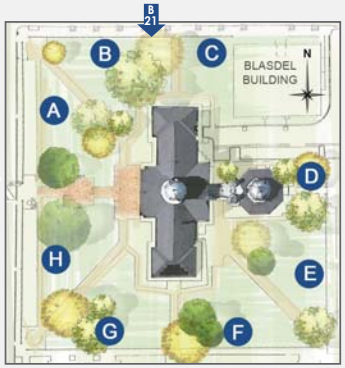
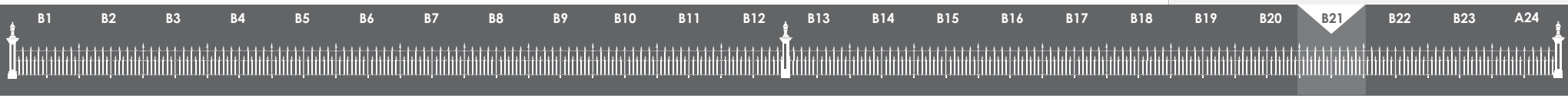


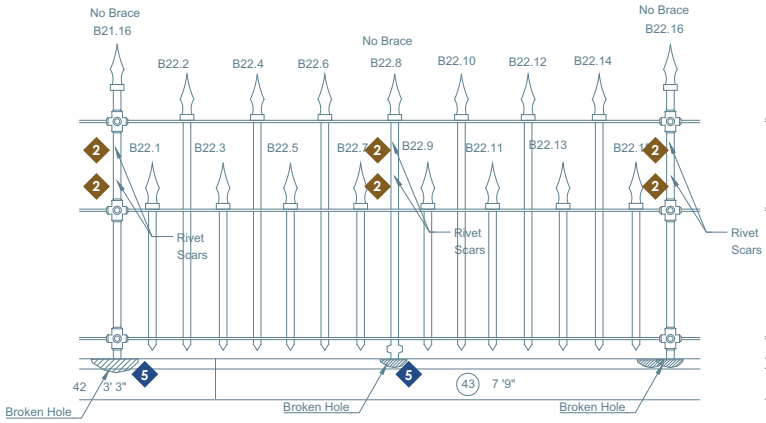


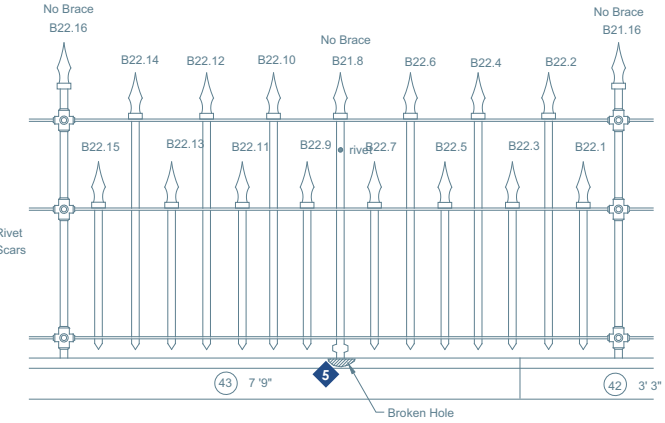
SECTION
B22

Condition Assessment

INSIDE

OUTSIDE





Ironwork Corrosion

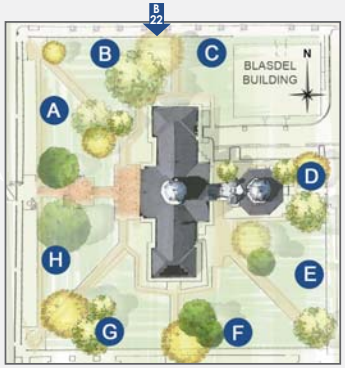
1. Repair holes, cracks and casting defects using filler compound containing iron particles in an epoxy resin binder
2. Replace missing or severely damaged cast iron components with in-kind casting technique and material
3. Major cracks and inappropriate repairs to be repaired by brazing with special nickel alloy welding rods

Sandstone Deterioration

4. Remove vegetation, failed patches (concrete), and embedded foreign objects
5. Eliminate water infiltration by re-setting fractured stone, filling pockets, shelves and depressions, and stabilizing post base with restoration mortar

Structural Instability

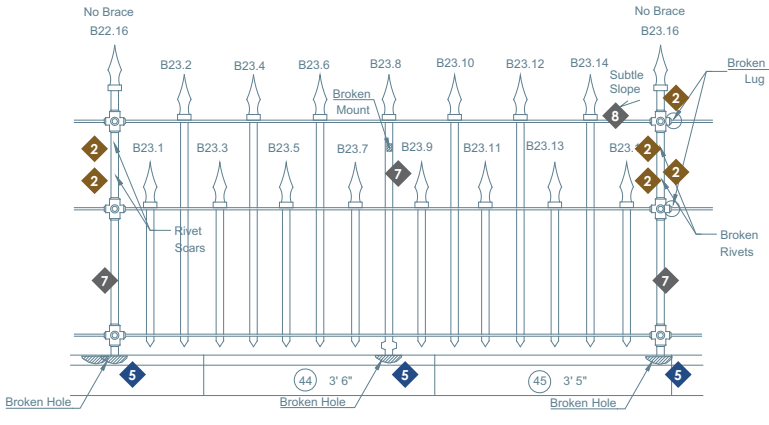
6. Repair primary anchor points by pouring new molten lead into existing masonry socket and building up coping stone with restoration mortar
7. Replace missing or non-historic (square stock) backstays with in-kind material
8. Realign and stabilize fence to include straightening bent, bowed, or out of plumb fence sections and individual horizontal or vertical components
9. Remove non-historic end posts and restore with in-kind materials to period of significance



SECTION
B23

Condition Assessment

INSIDE



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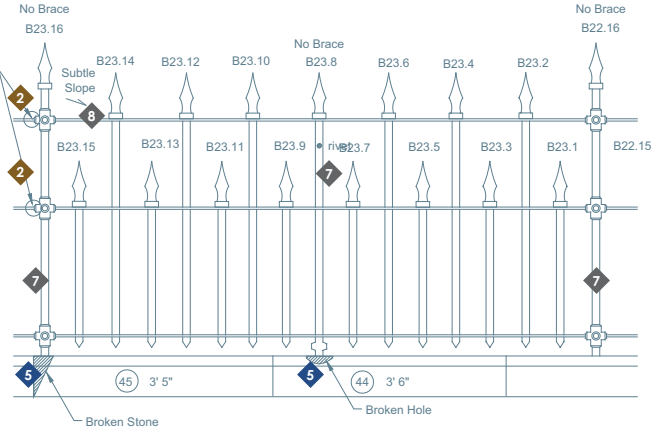

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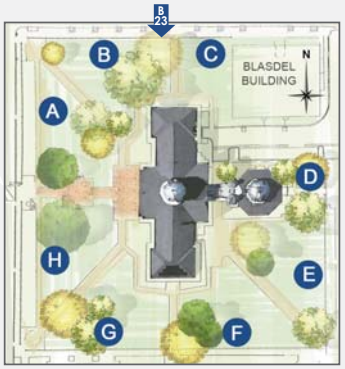
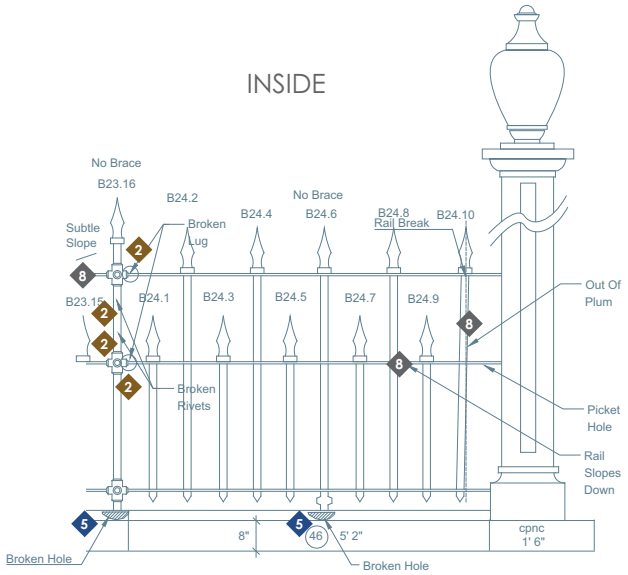
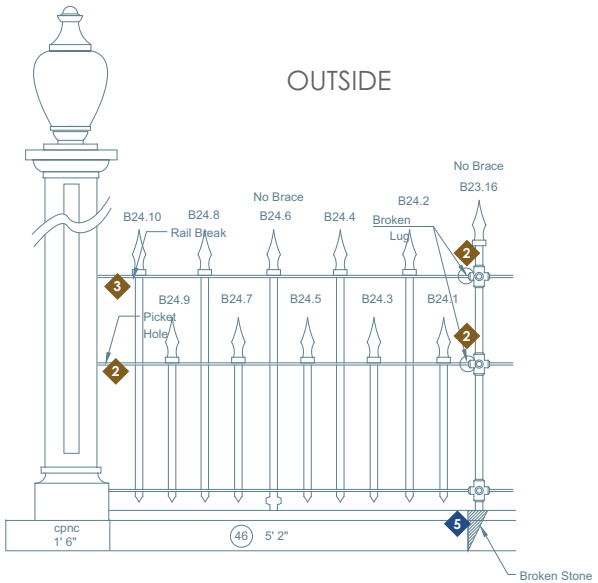


SECTION
B24

Condition Assessment





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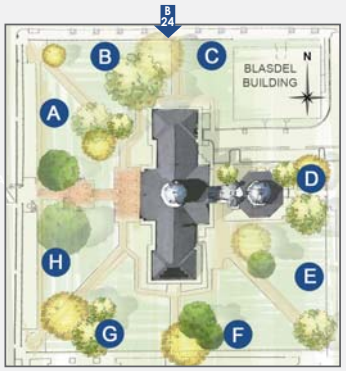
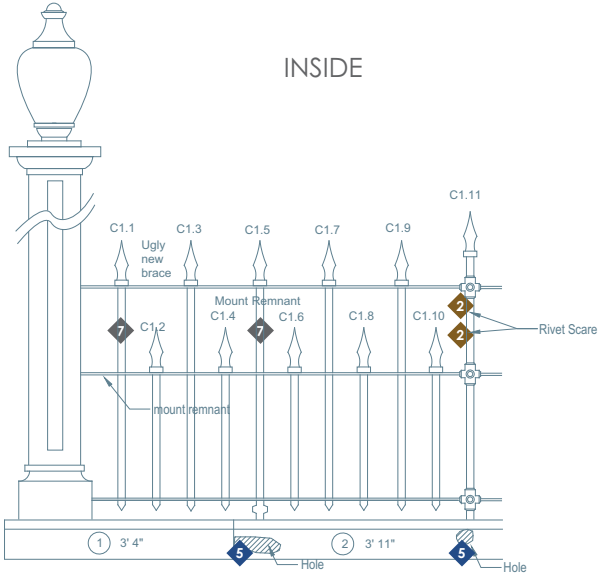


SECTION
C1

Condition Assessment

INSIDE



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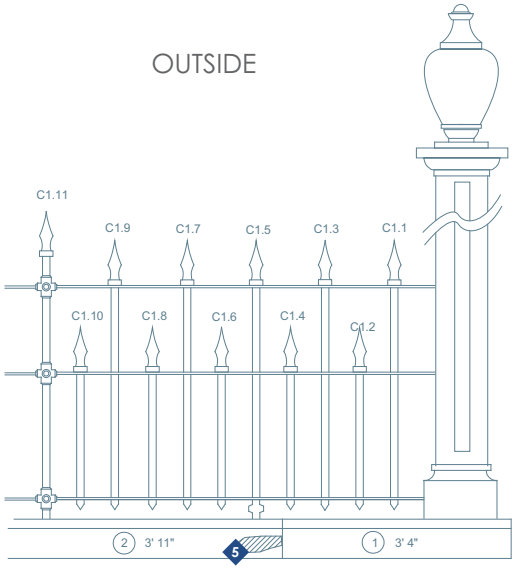

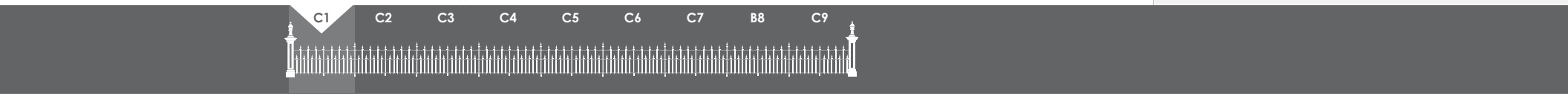

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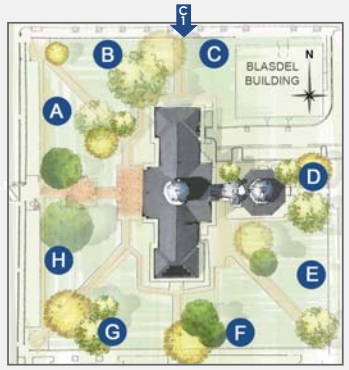
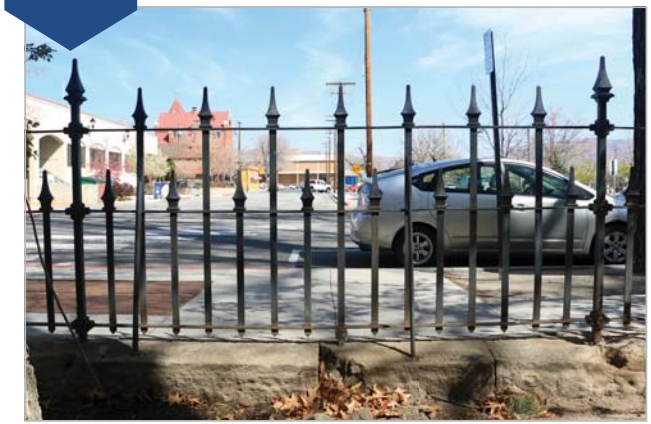


SECTION
C2

Condition Assessment



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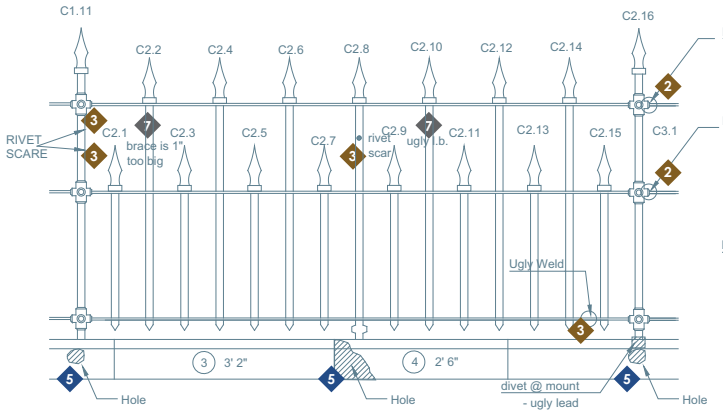

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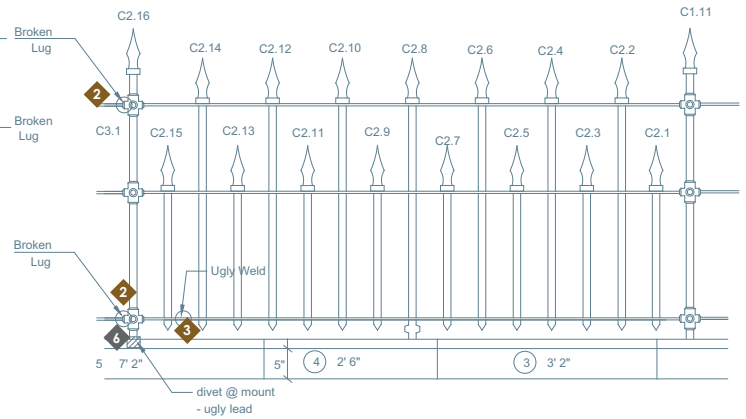

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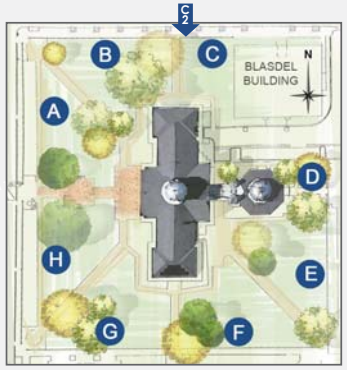
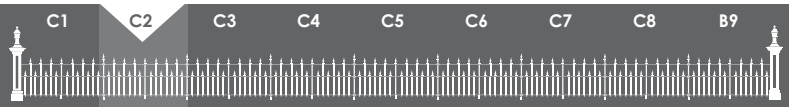
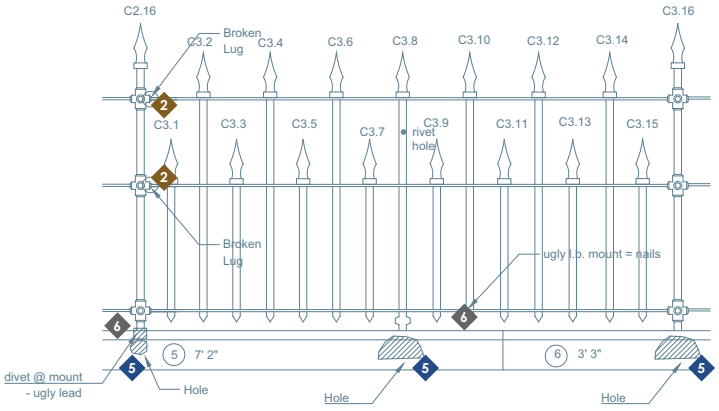




SECTION
C3

Condition Assessment

INSIDE



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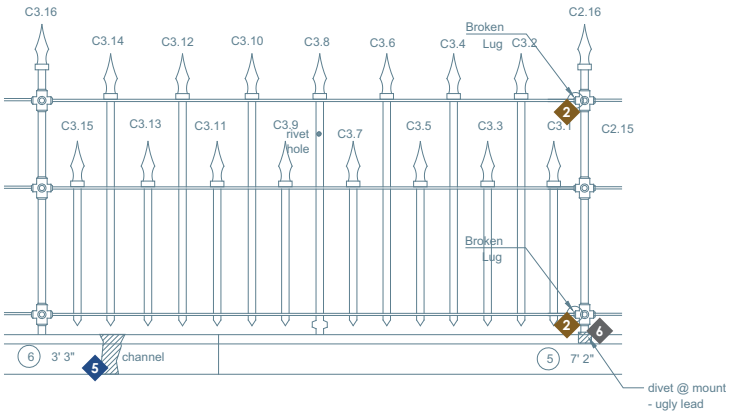

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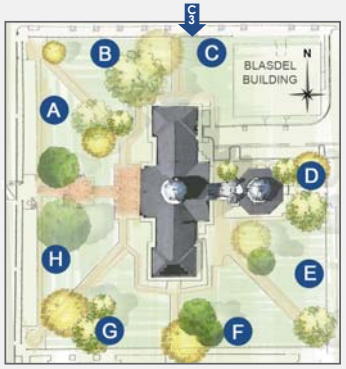
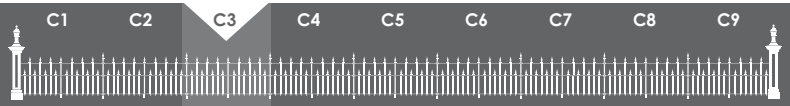
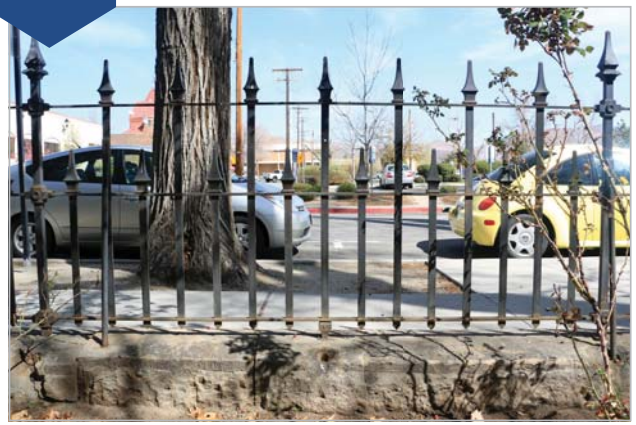




SECTION
C4

Condition Assessment



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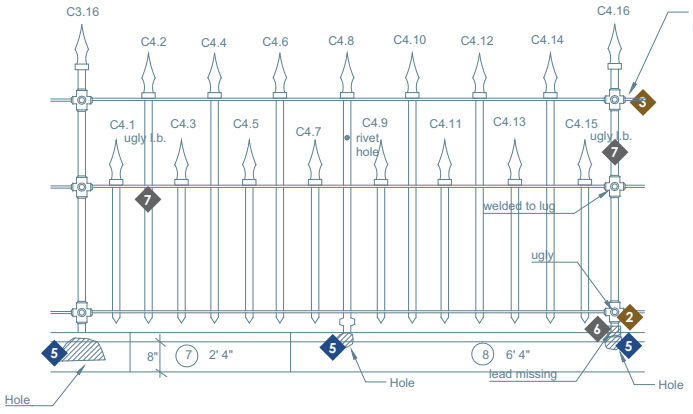

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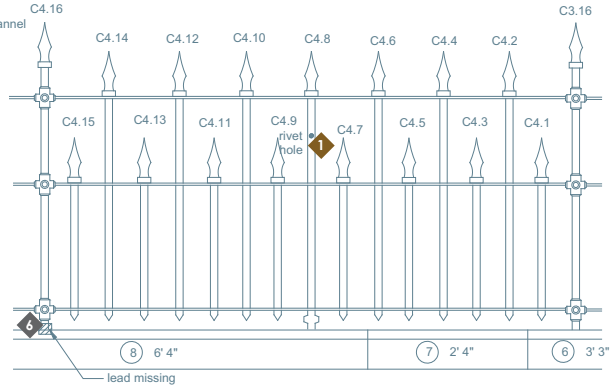

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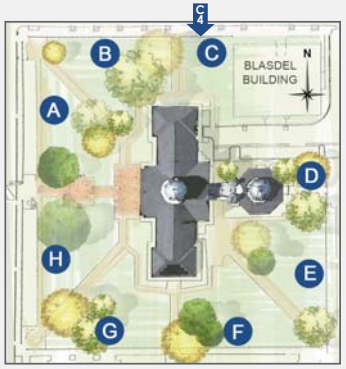
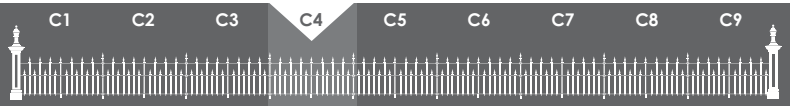
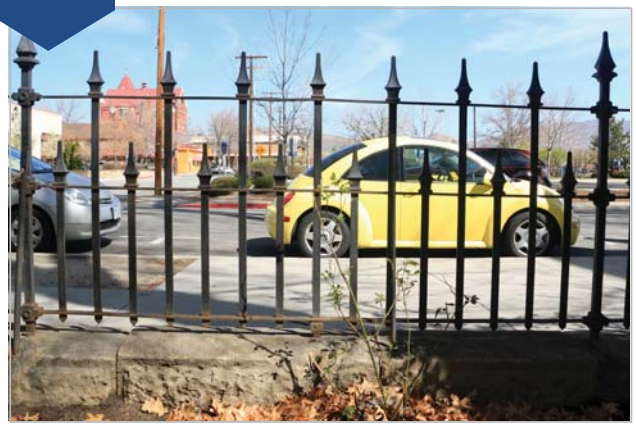




SECTION
C5

Condition Assessment



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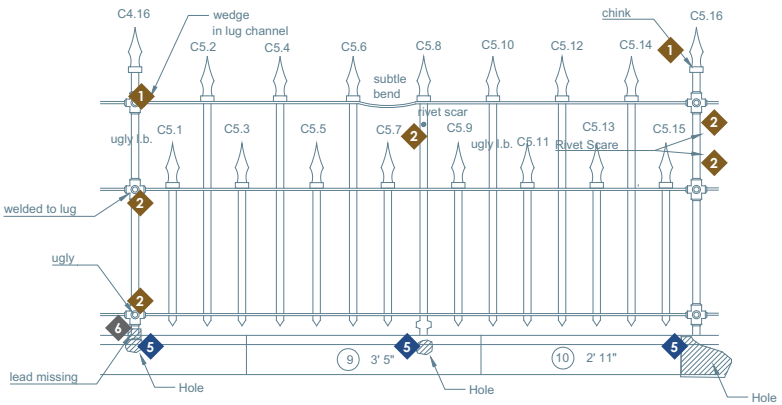

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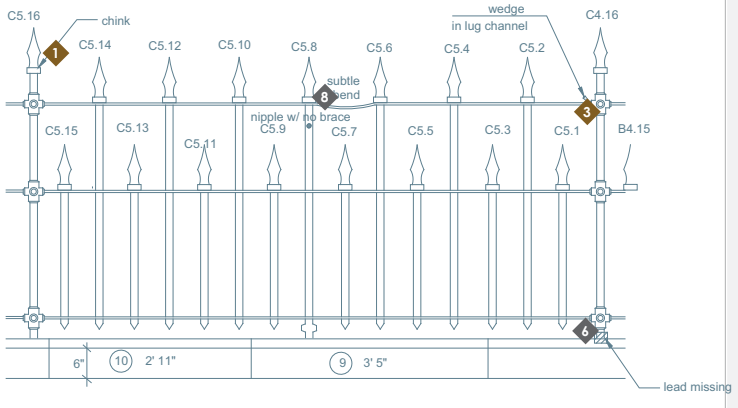

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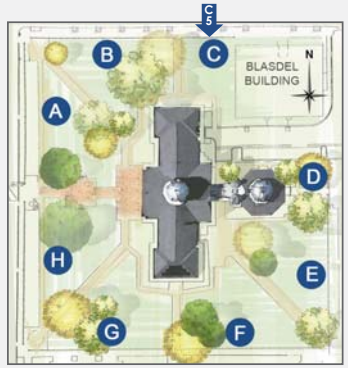
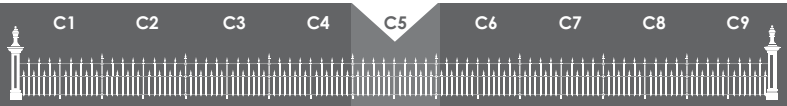
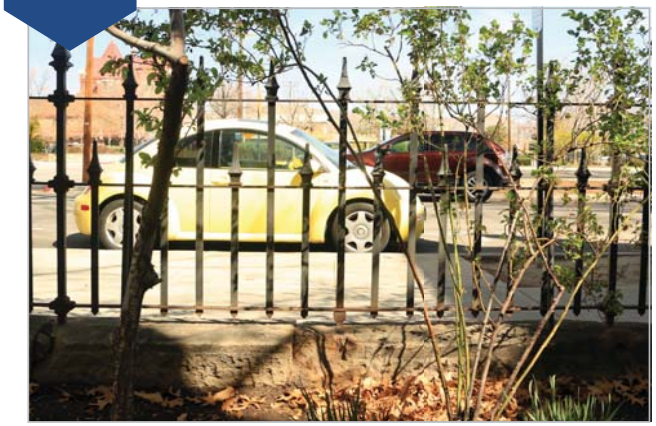




SECTION
C6

Condition Assessment



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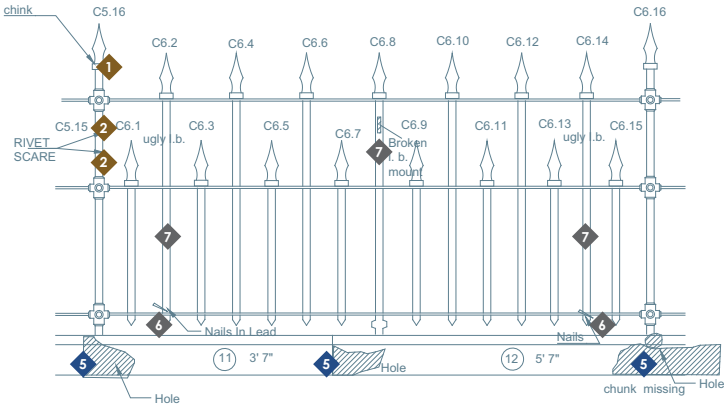

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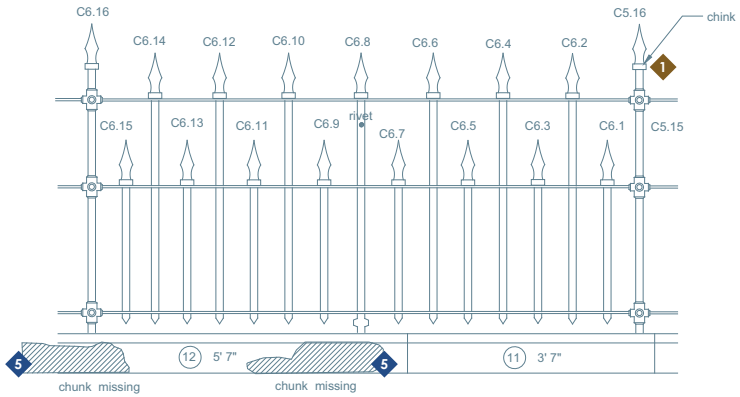

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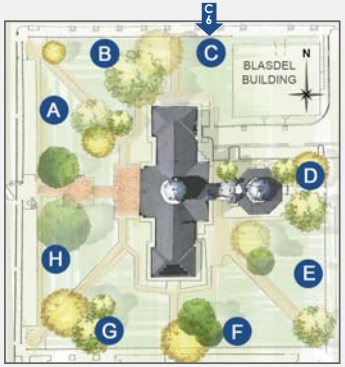
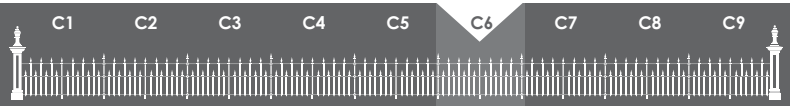
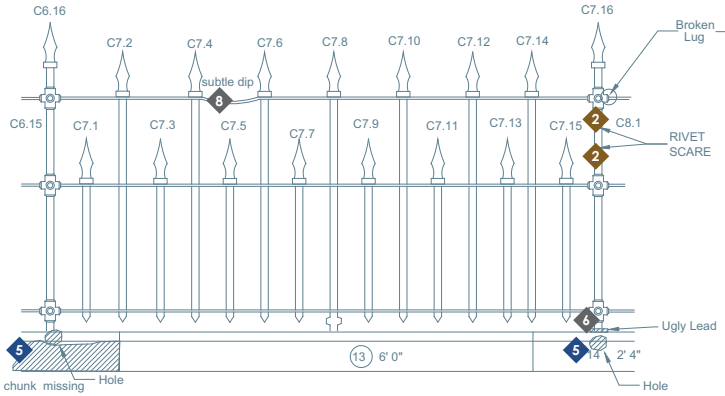




SECTION
C7

Condition Assessment

INSIDE



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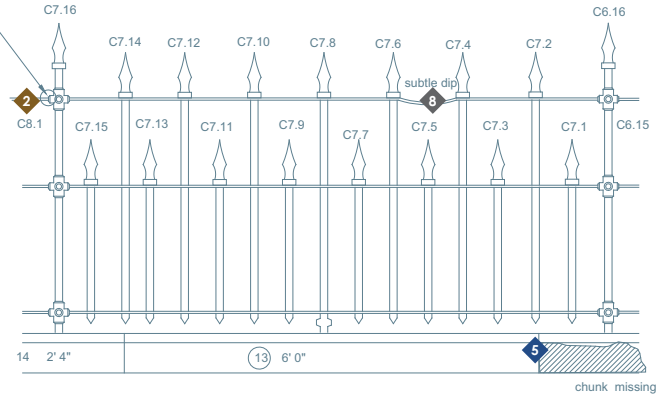

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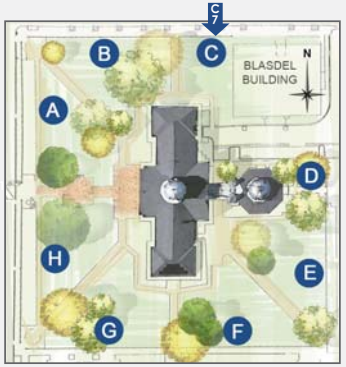
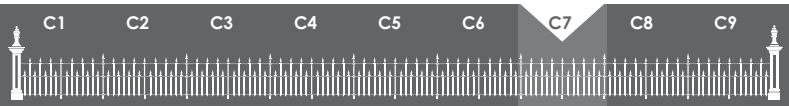
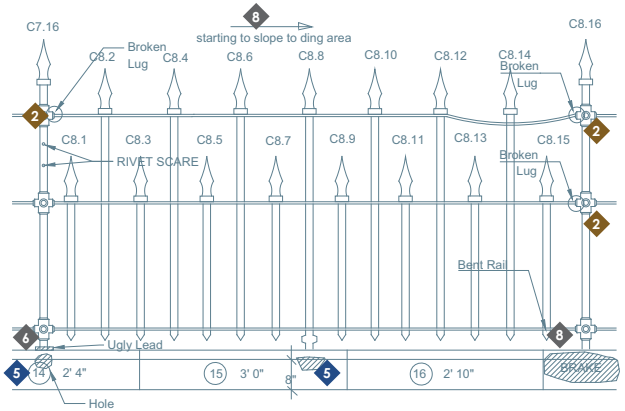




SECTION
C8

Condition Assessment

INSIDE



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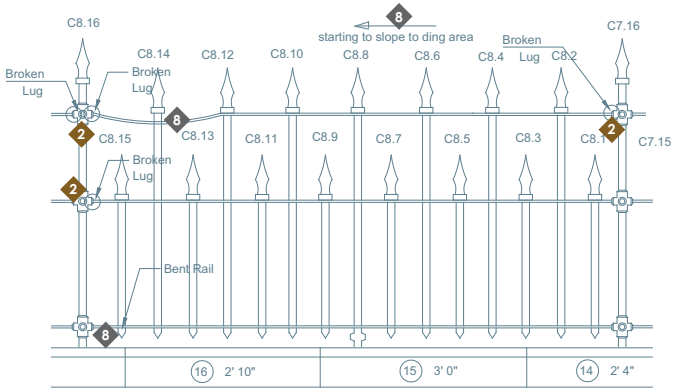

Ironwork Corrosion

1. Repair holes, cracks and casting defects using filler compound containing iron particles in an epoxy resin binder
2. Replace missing or severely damaged cast iron components with in-kind casting technique and material
3. Major cracks and inappropriate repairs to be repaired by brazing with special nickel alloy welding rods

Sandstone Deterioration

4. Remove vegetation, failed patches (concrete), and embedded foreign objects
5. Eliminate water infiltration by re-setting fractured stone, filling pockets, shelves and depressions, and stabilizing post base with restoration mortar

Structural Instability

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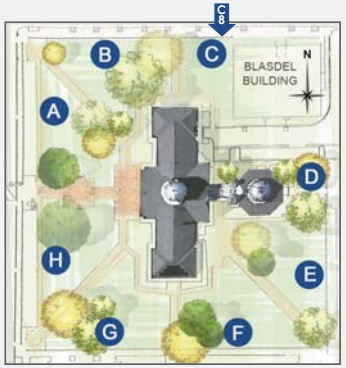
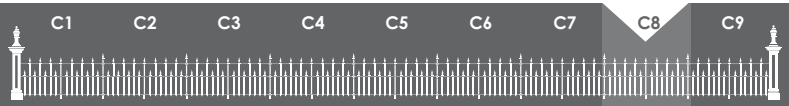
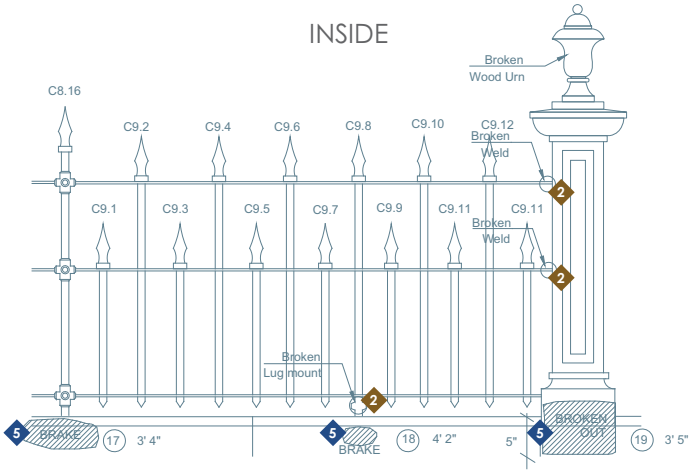
8. Realign and stabilize fence to include straightening bent, bowed, or out of plumb fence sections and individual horizontal or vertical components
9. Remove non-historic end posts and restore with in-kind materials to period of significance

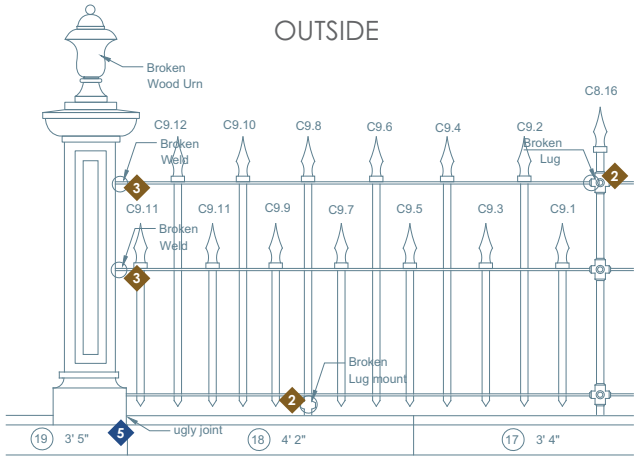




SECTION
C9

Condition Assessment





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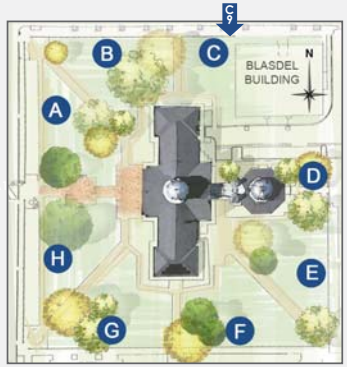
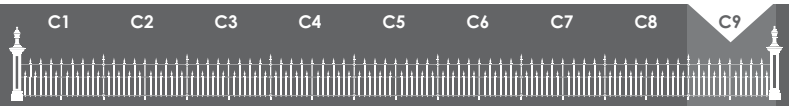
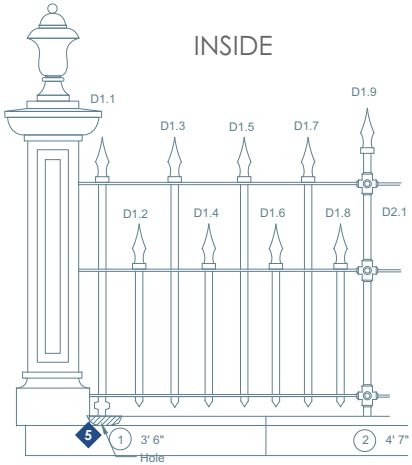
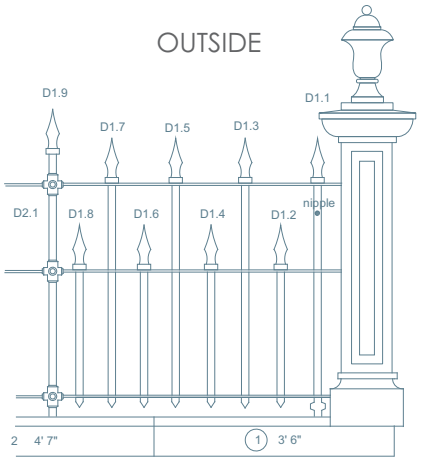




SECTION
D1

Condition Assessment





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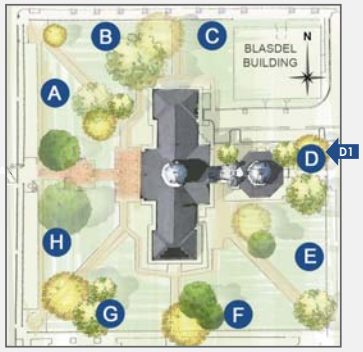
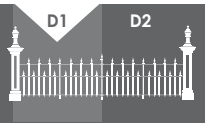
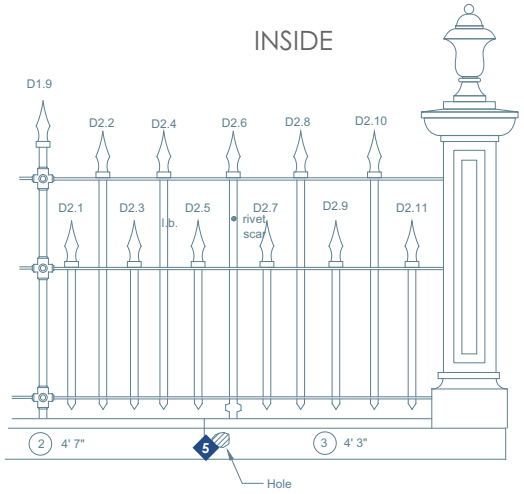
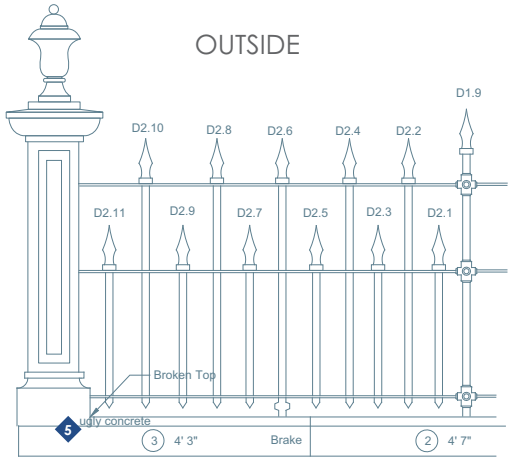




SECTION
D2

Condition Assessment





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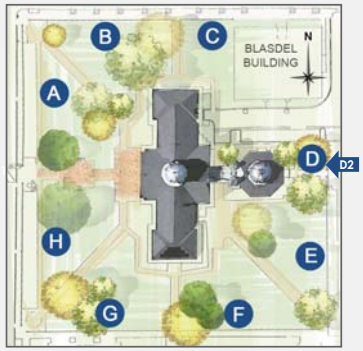
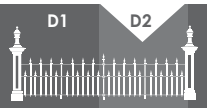
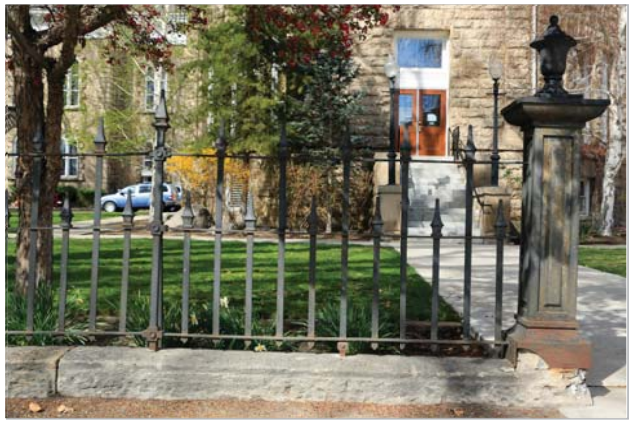
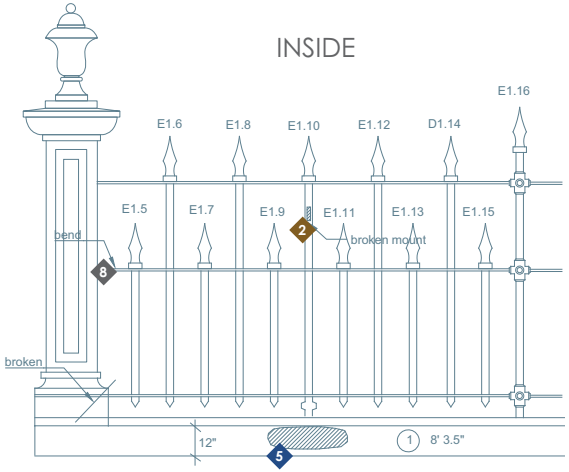


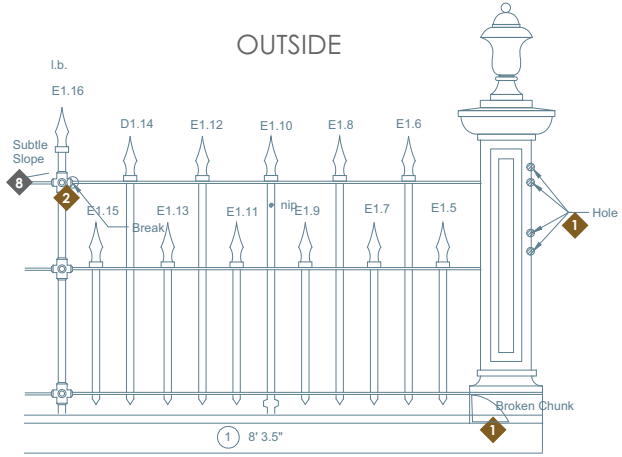


SECTION
E1

Condition Assessment







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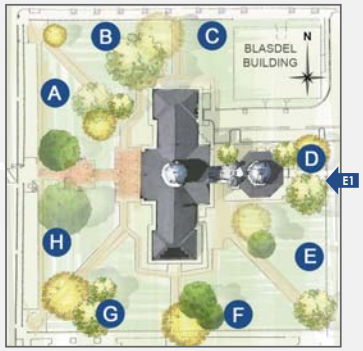
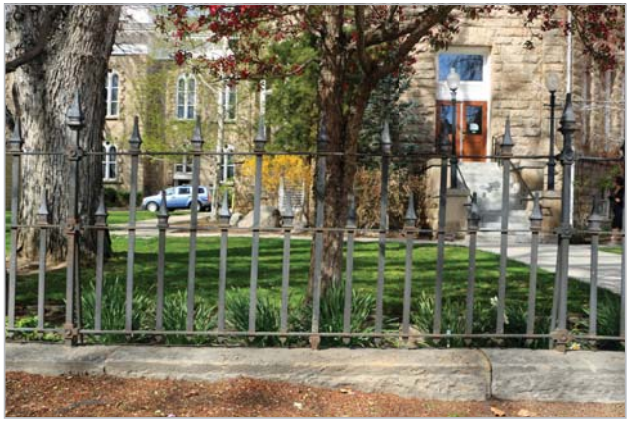


SECTION
E2

Condition Assessment



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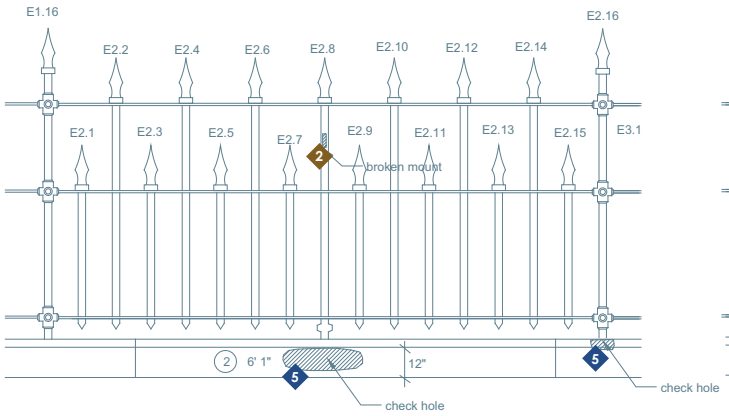

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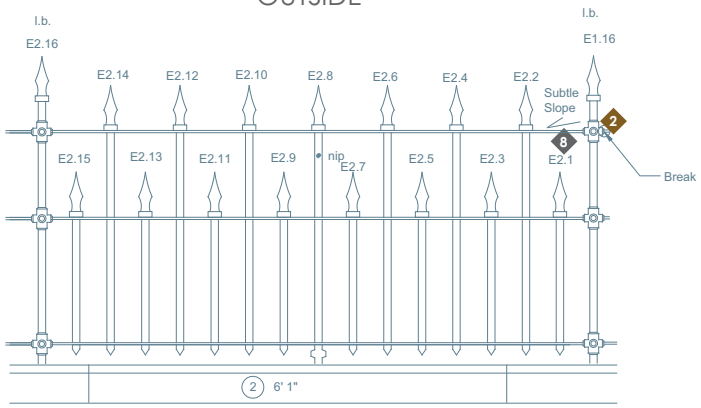

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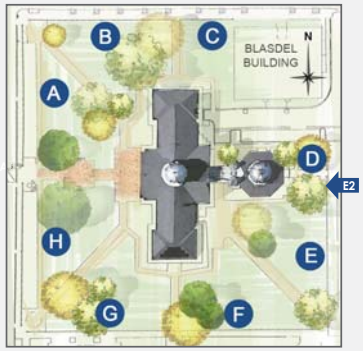
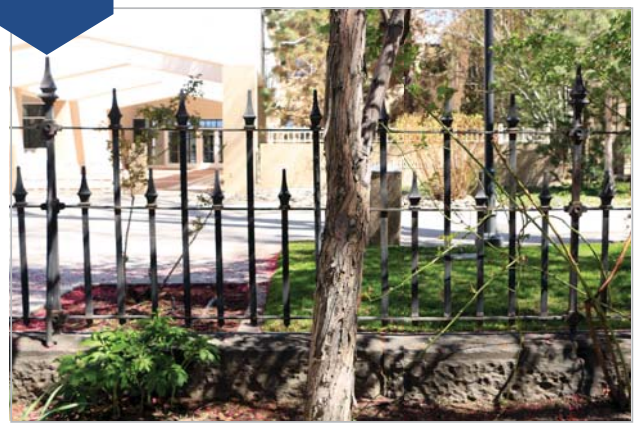


SECTION
E3

Condition Assessment



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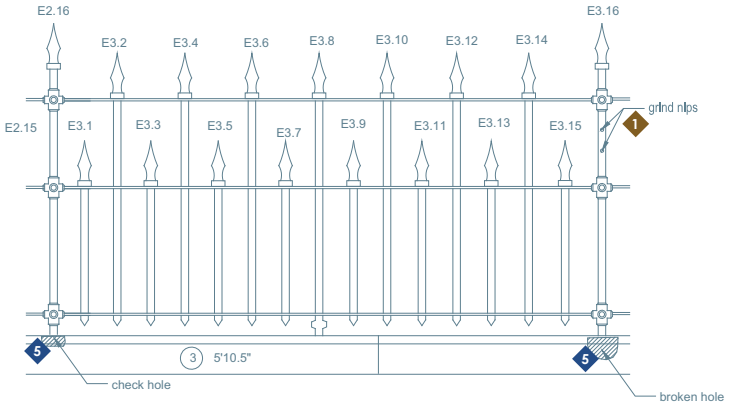

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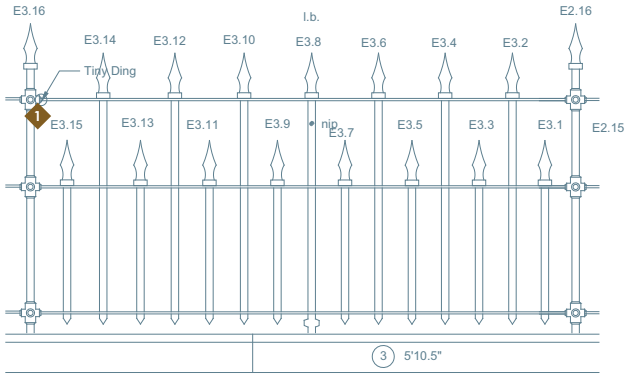

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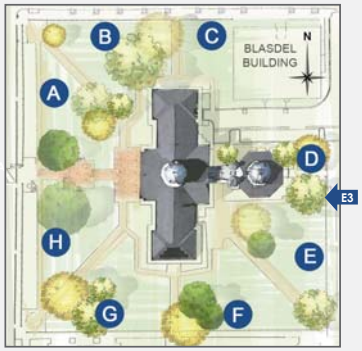
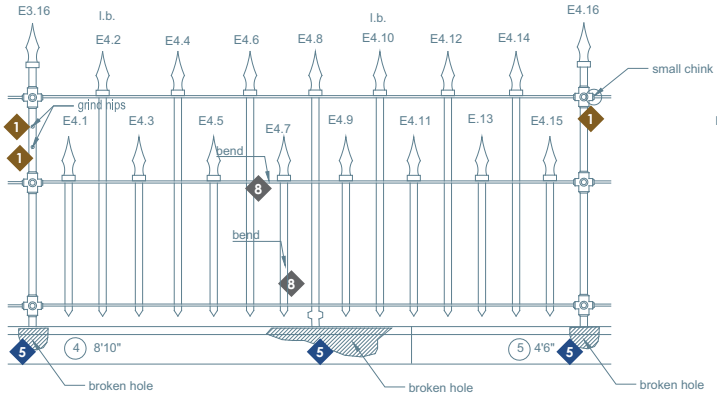


SECTION
E4

Condition Assessment

INSIDE



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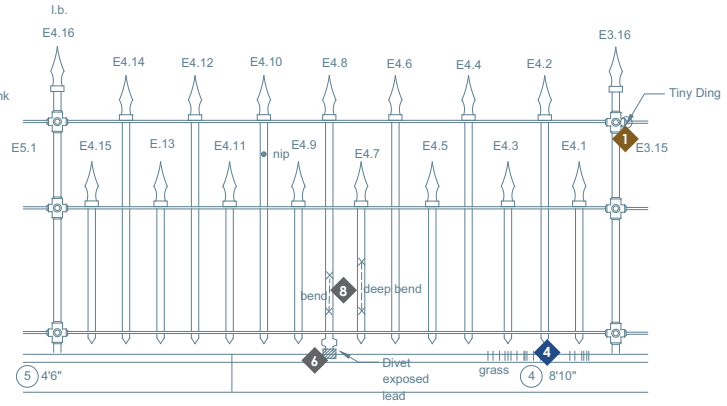

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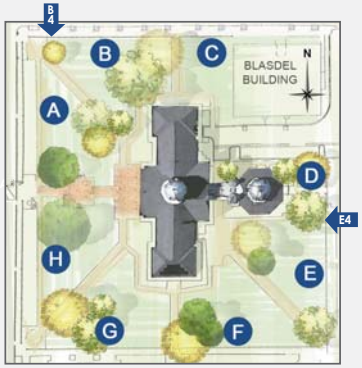
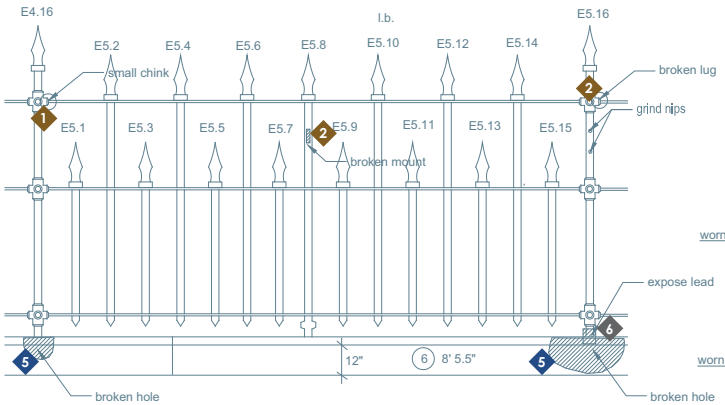


SECTION
E5

Condition Assessment

INSIDE



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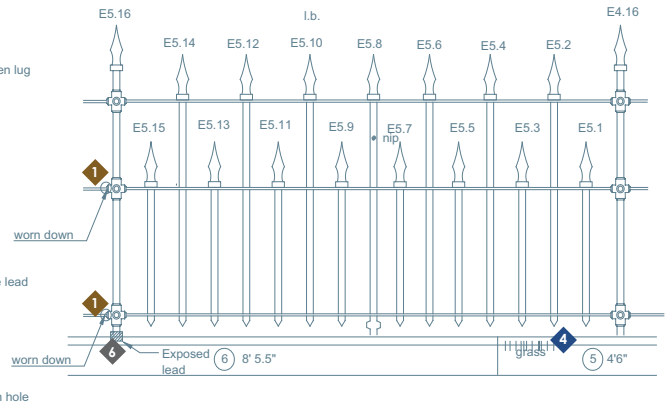

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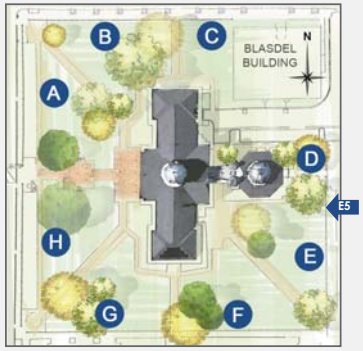
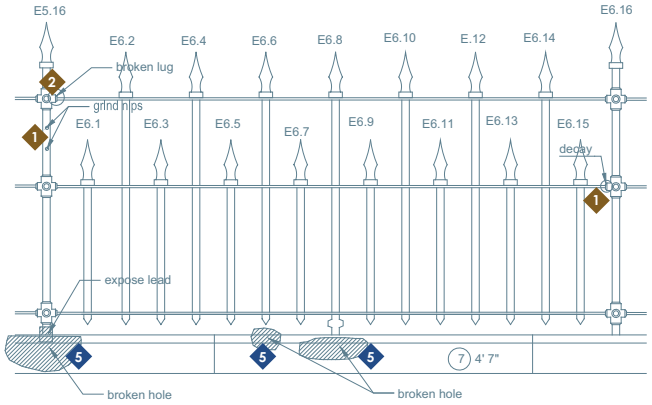


SECTION
E6

Condition Assessment

INSIDE



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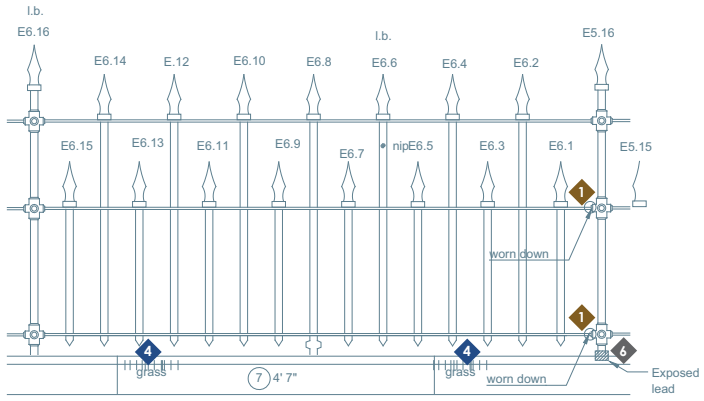

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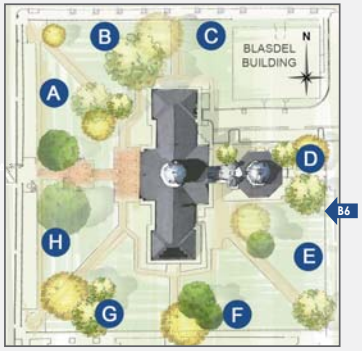
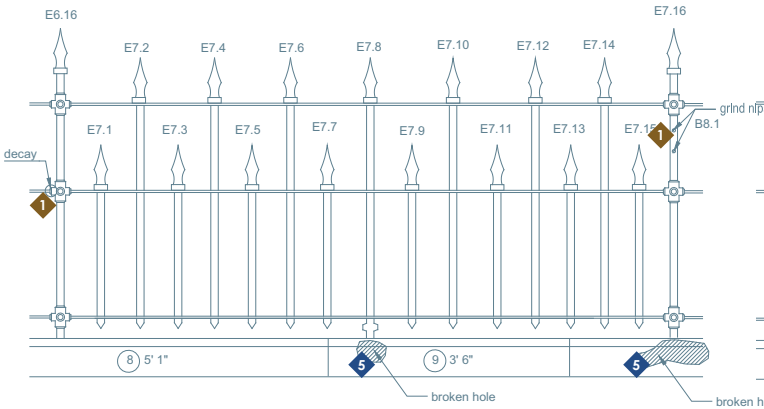


SECTION
E7

Condition Assessment

INSIDE



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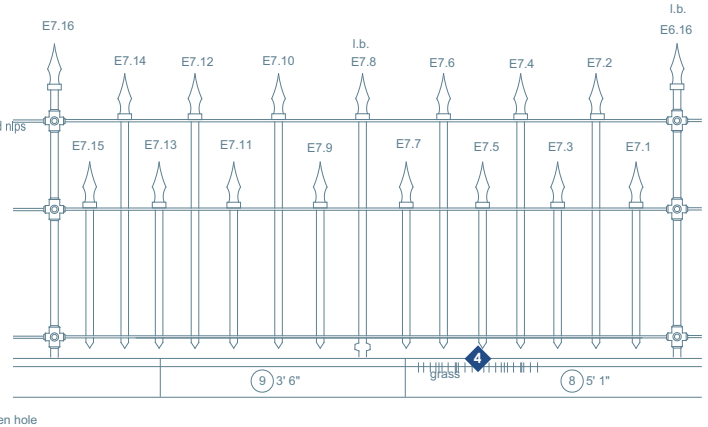

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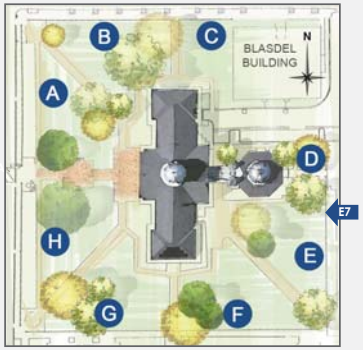
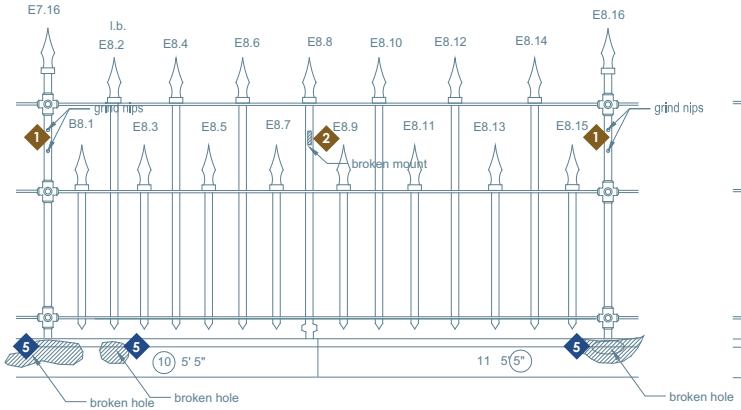


SECTION
E8

Condition Assessment

INSIDE



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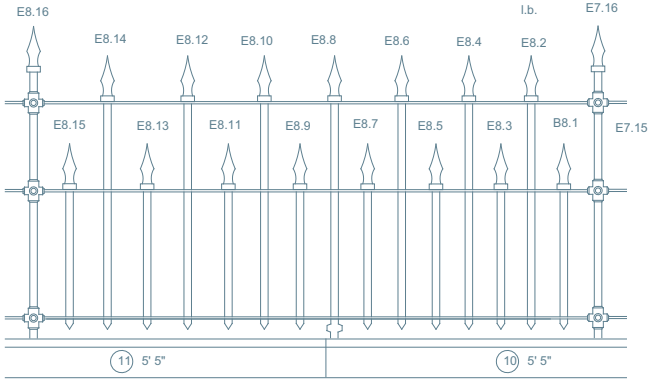

Ironwork Corrosion

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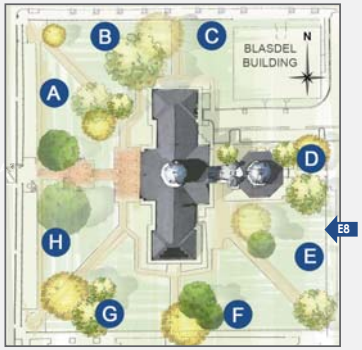
2. Replace missing or severely damaged cast iron components with in-kind casting technique and material
3. Major cracks and inappropriate repairs to be repaired by brazing with special nickel alloy welding rods

Sandstone Deterioration

4. Remove vegetation, failed patches (concrete), and embedded foreign objects
5. Eliminate water infiltration by re-setting fractured stone, filling pockets, shelves and depressions, and stabilizing post base with restoration mortar

Structural Instability

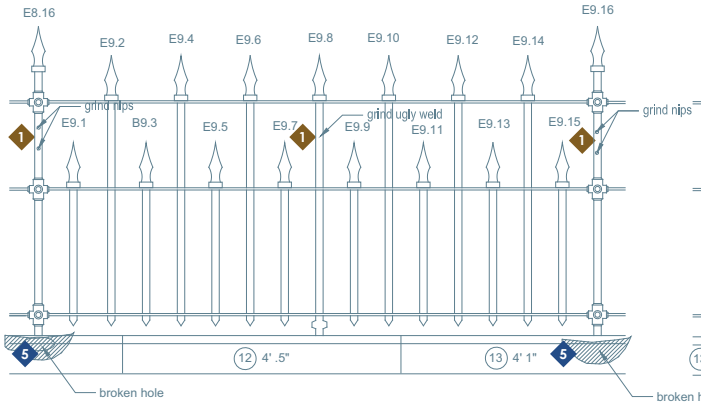
6. Repair primary anchor points by pouring new molten lead into existing masonry socket and building up coping stone with restoration mortar
7. Replace missing or non-historic (square stock) backstays with in-kind material
8. Realign and stabilize fence to include straightening bent, bowed, or out of plumb fence sections and individual horizontal or vertical components
9. Remove non-historic end posts and restore with in-kind materials to period of significance



SECTION
E9

Condition Assessment

INSIDE



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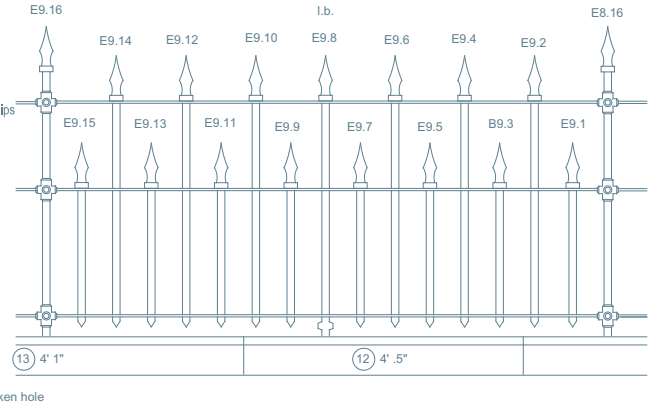

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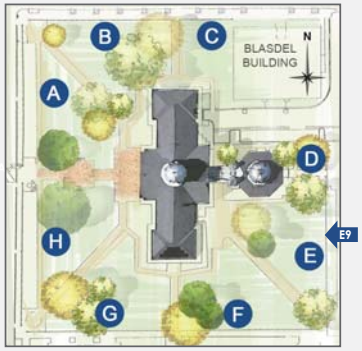
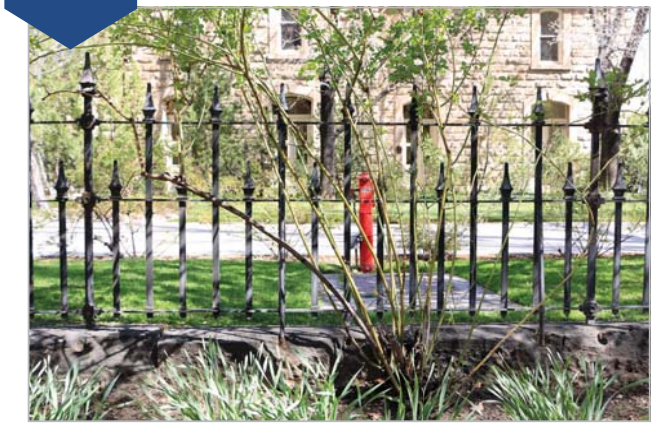


SECTION
E10

Condition Assessment



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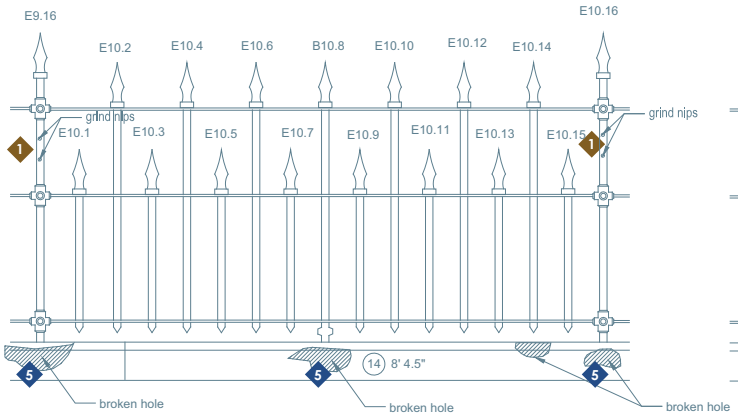

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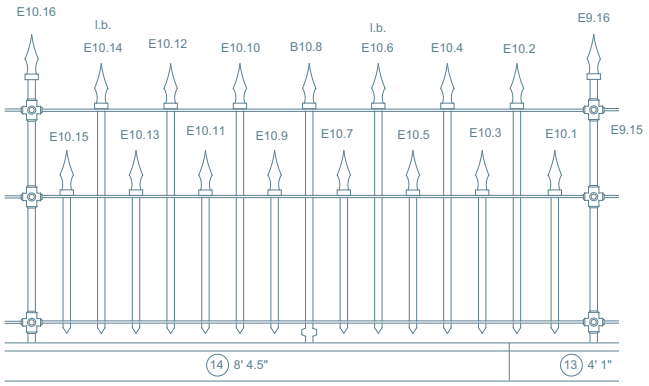

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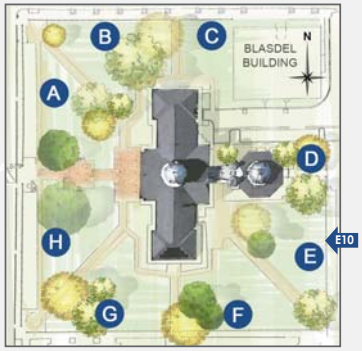
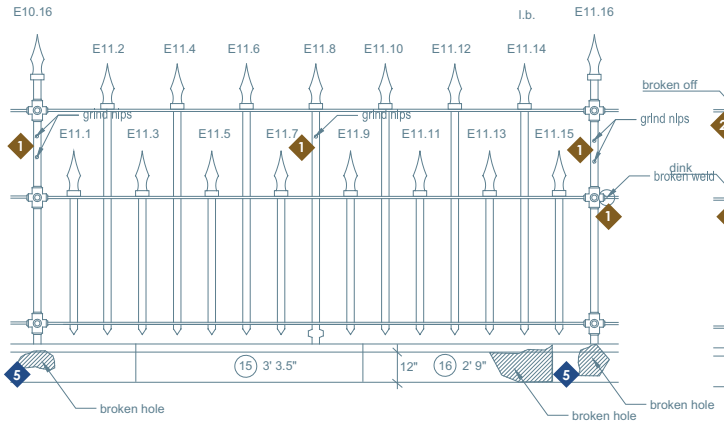


SECTION
E11

Condition Assessment

INSIDE



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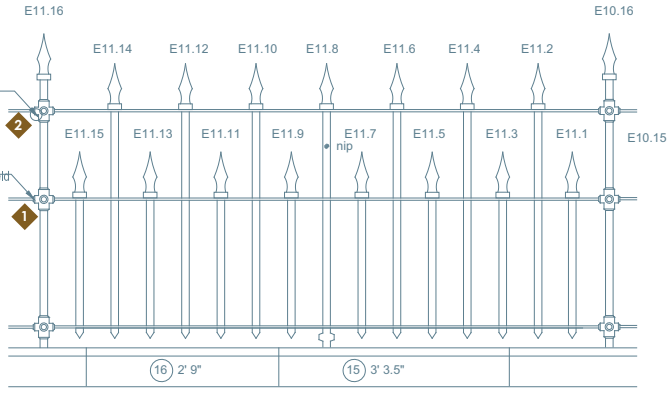

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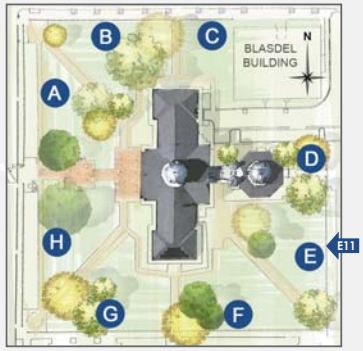
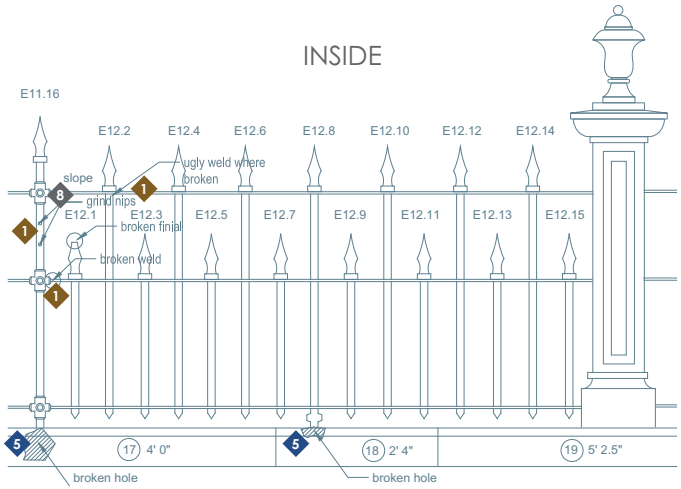


SECTION
E12

Condition Assessment

INSIDE



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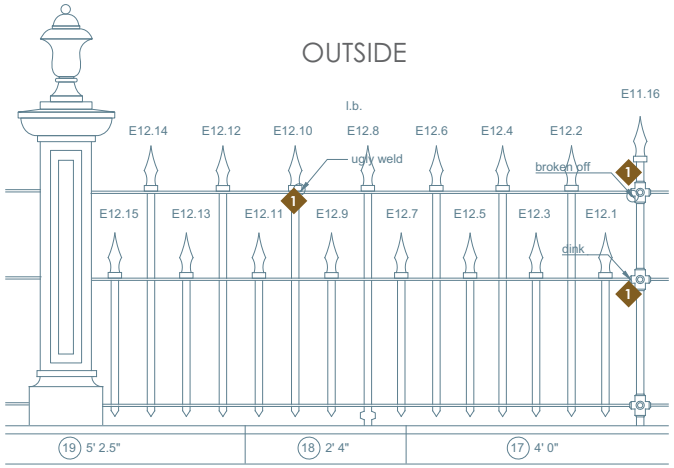

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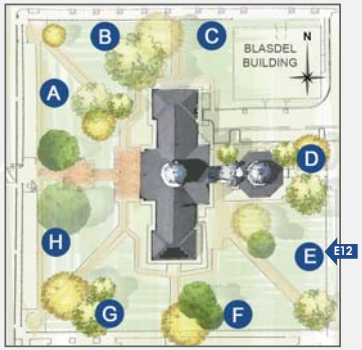
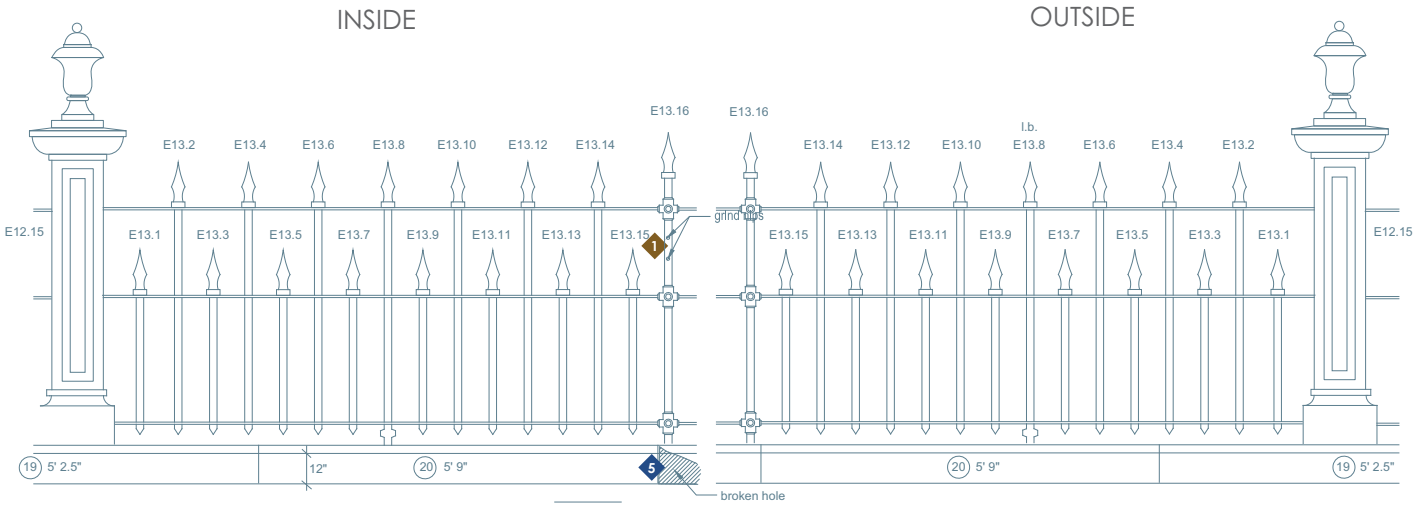


SECTION
E13

Condition Assessment



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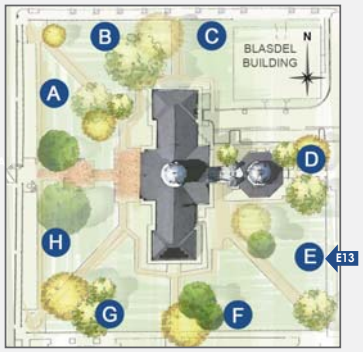
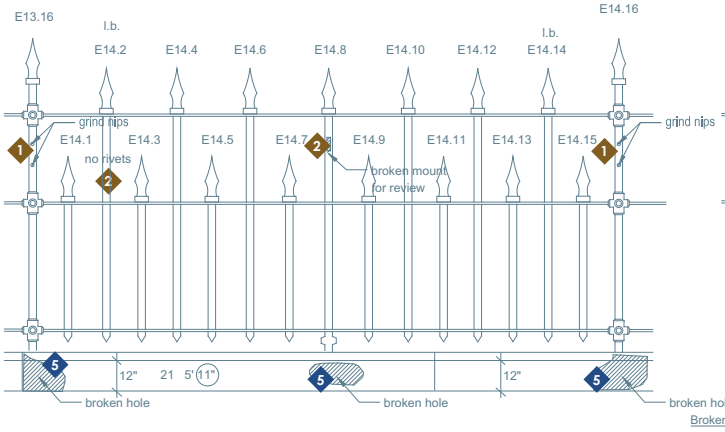
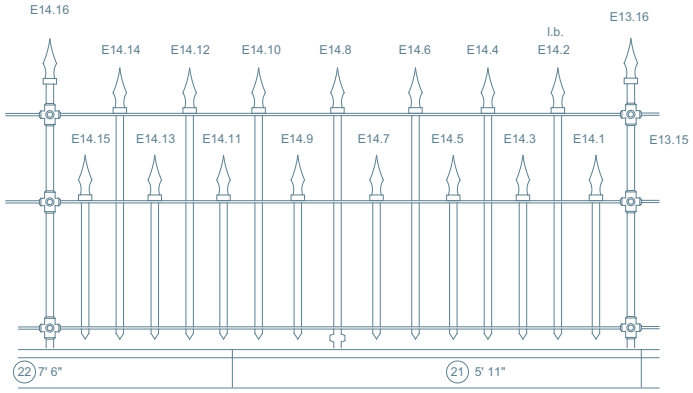


SECTION
E14 Condition Assessment

INSIDE

OUTSIDE





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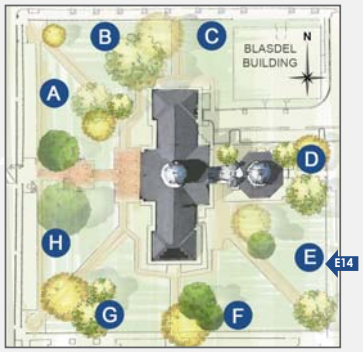
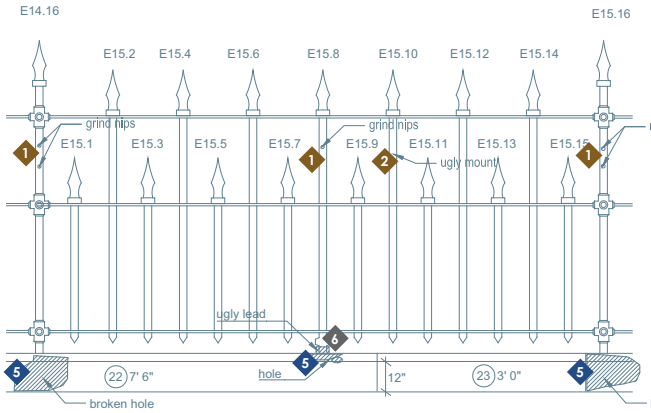


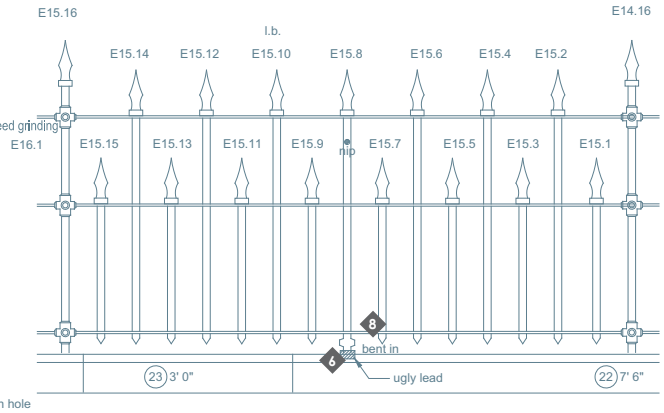
SECTION
E15

Condition Assessment

INSIDE

OUTSIDE





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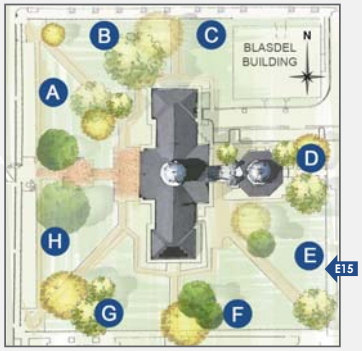
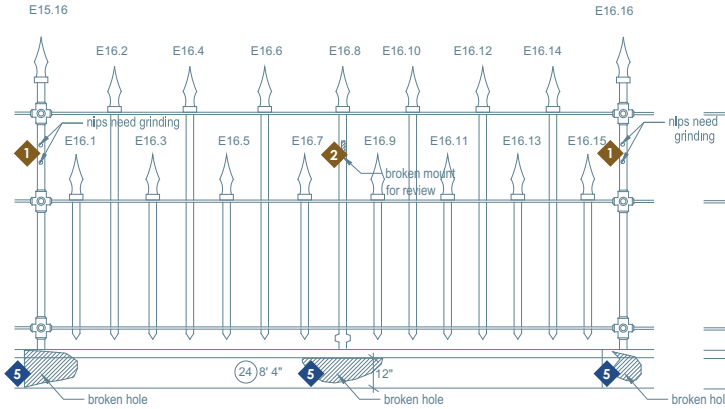


SECTION
E16

Condition Assessment

INSIDE



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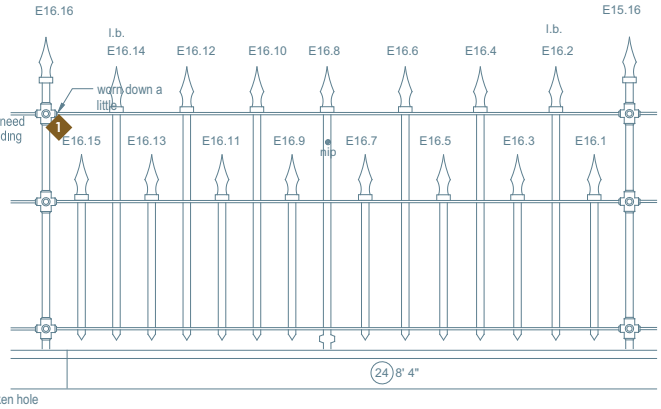

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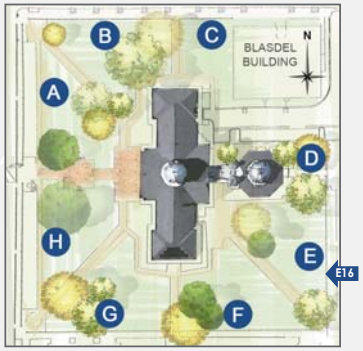
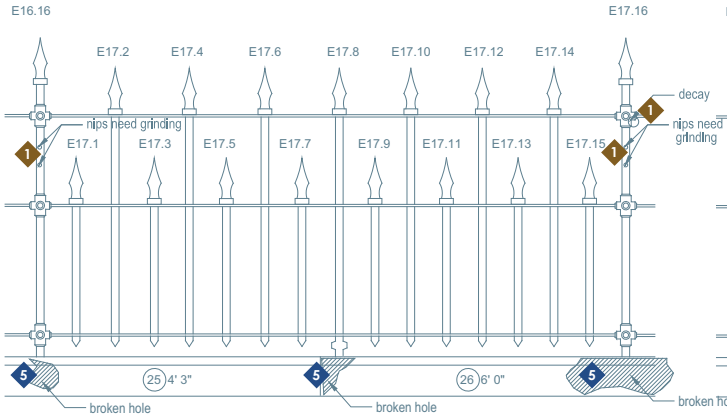


SECTION
E17

Condition Assessment

INSIDE



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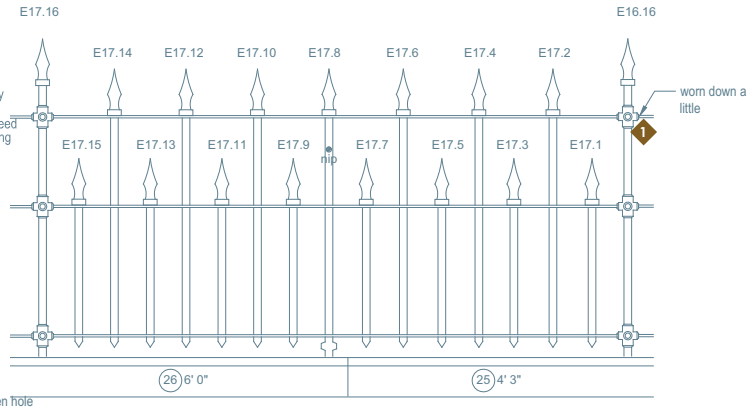

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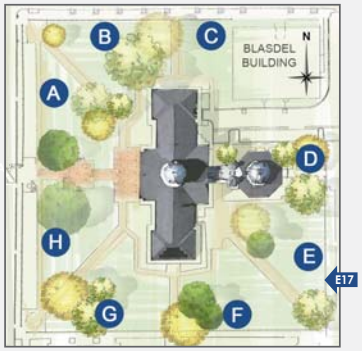
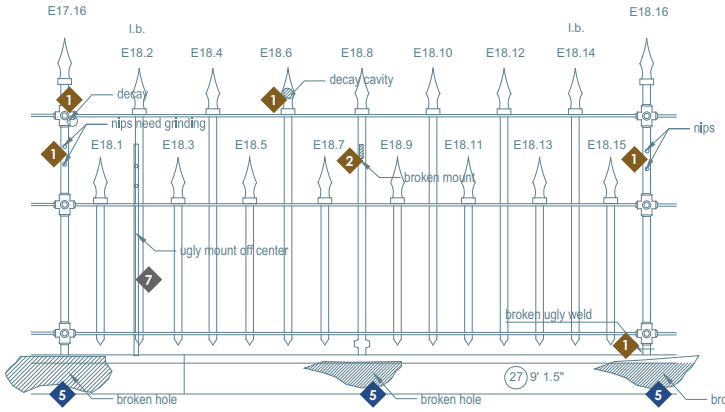


SECTION
E18

Condition Assessment

INSIDE



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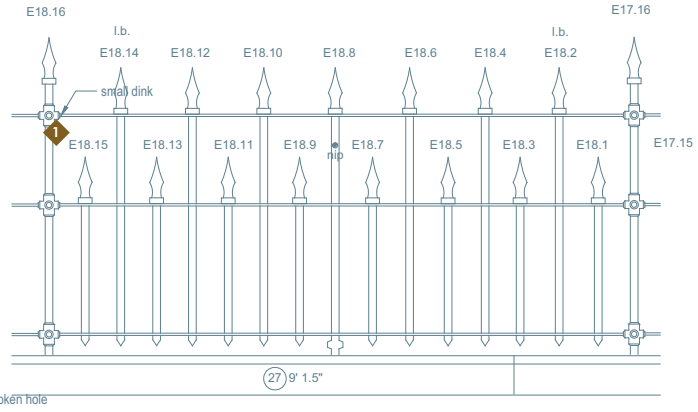

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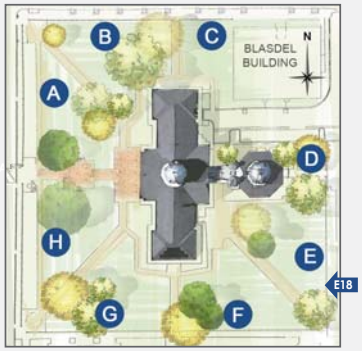
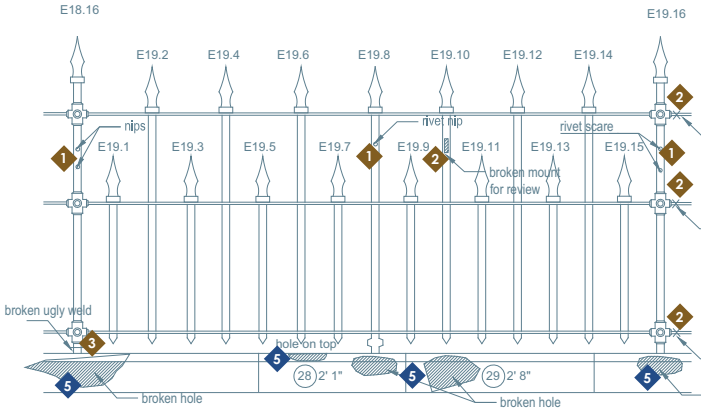


SECTION
E19

Condition Assessment

INSIDE



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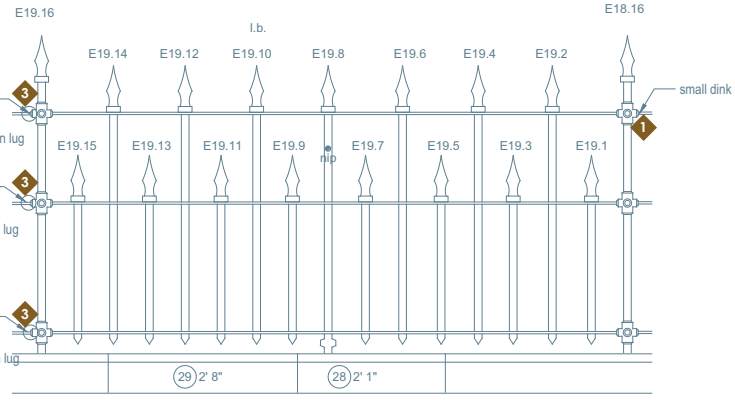

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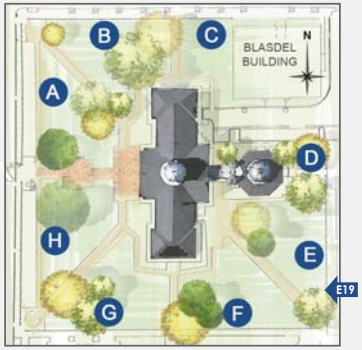
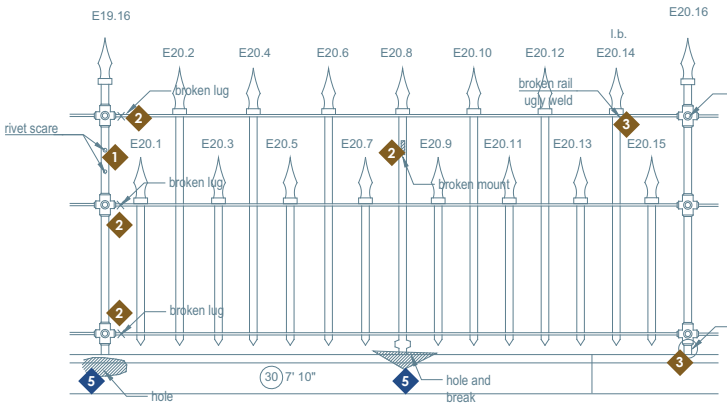


SECTION
E20

Condition Assessment

INSIDE



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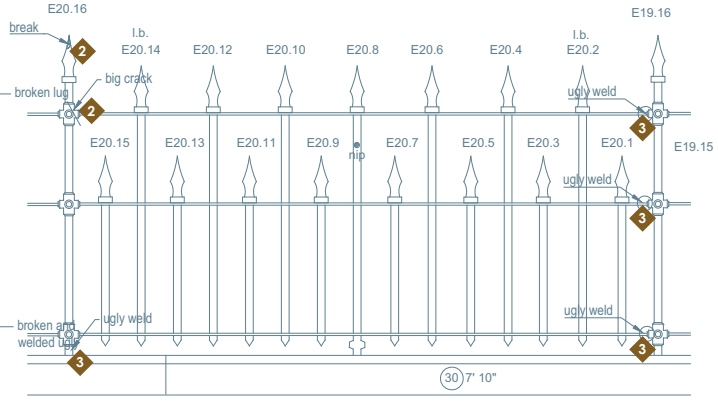

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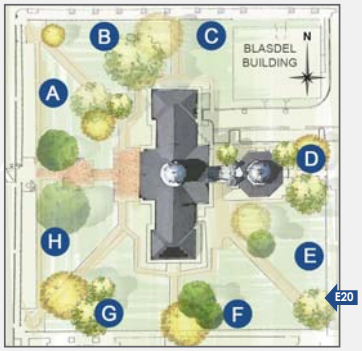
5. Eliminate water infiltration by re-setting fractured stone, filling pockets, shelves and depressions, and stabilizing post base with restoration mortar

Structural Instability

6. Repair primary anchor points by pouring new molten lead into existing masonry socket and building up coping stone with restoration mortar
7. Replace missing or non-historic (square stock) backstays with in-kind material
8. Realign and stabilize fence to include straightening bent, bowed, or out of plumb fence sections and individual horizontal or vertical components
9. Remove non-historic end posts and restore with in-kind materials to period of significance

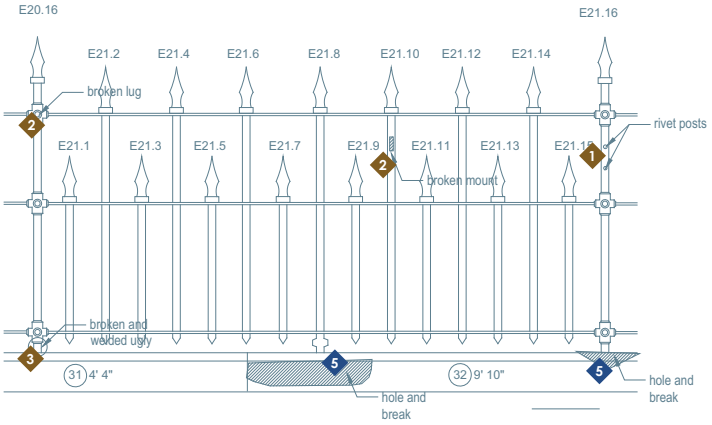


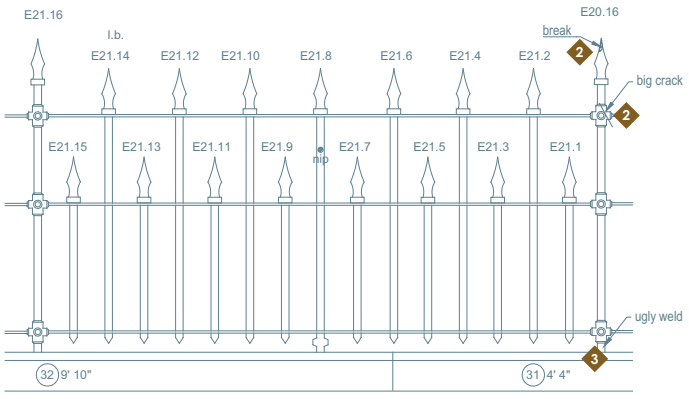
SECTION
E21

Condition Assessment

INSIDE

OUTSIDE





Ironwork Corrosion

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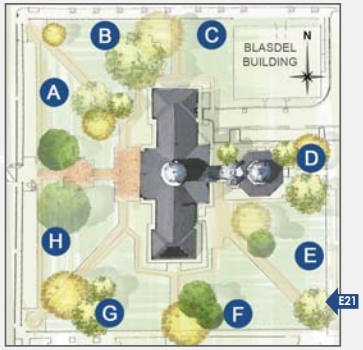
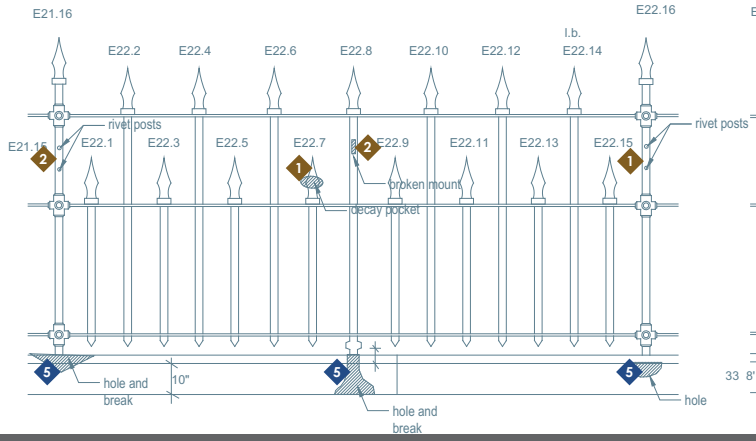
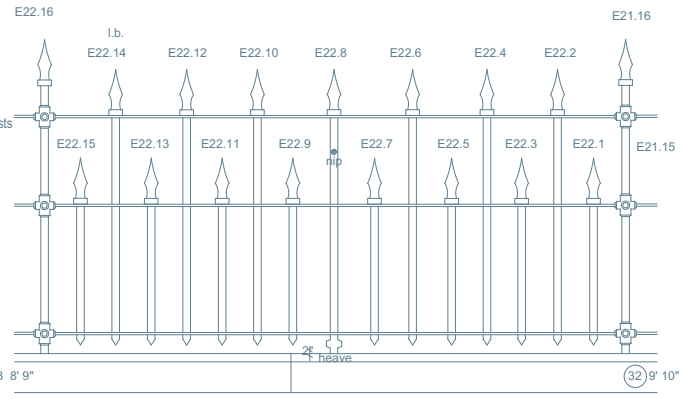


SECTION
E22 Condition Assessment

INSIDE

OUTSIDE





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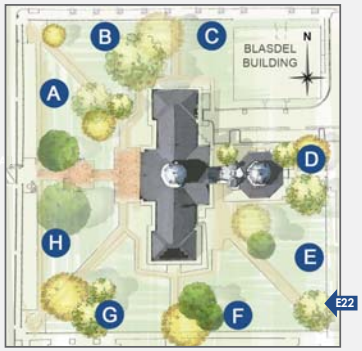
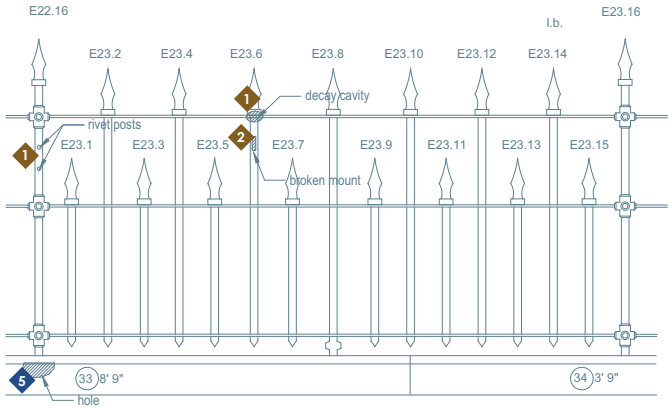


SECTION
E23

Condition Assessment

INSIDE



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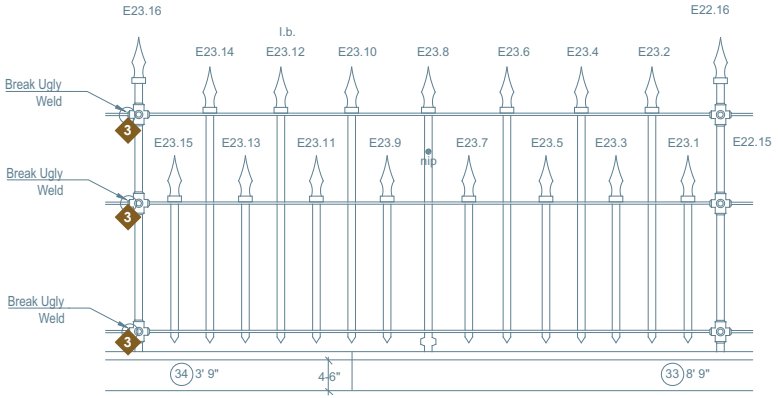

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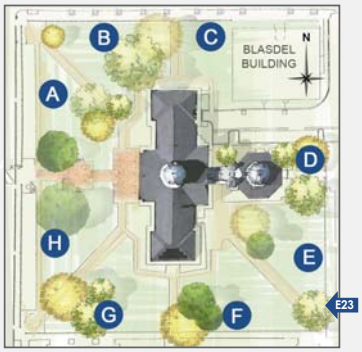
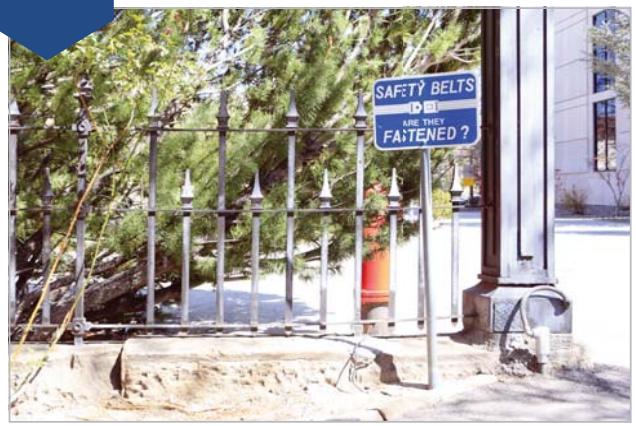


SECTION
E24

Condition Assessment



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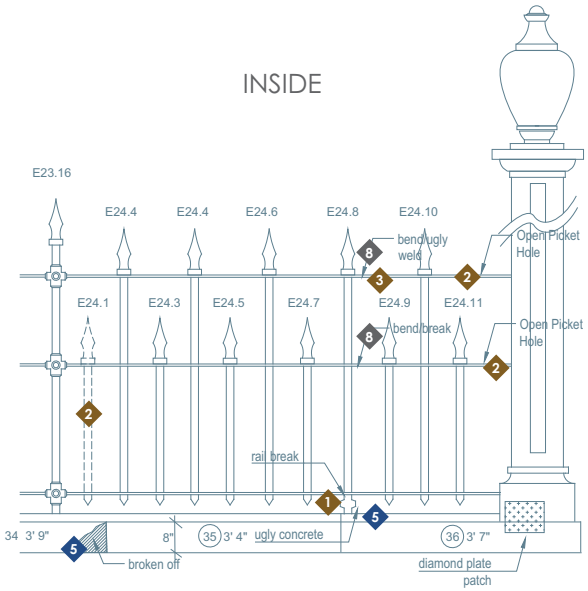

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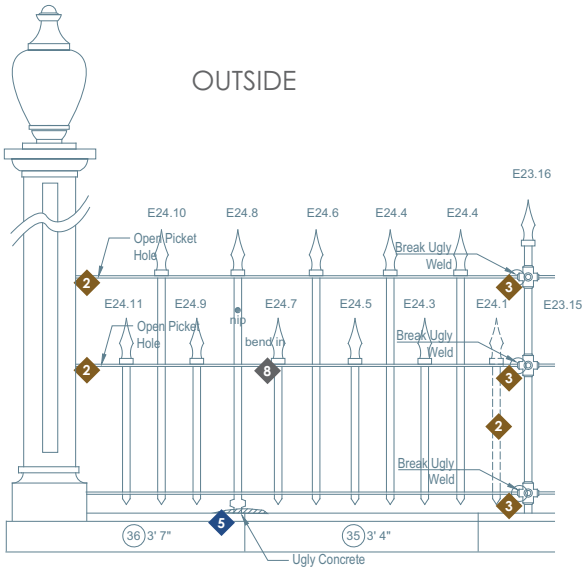

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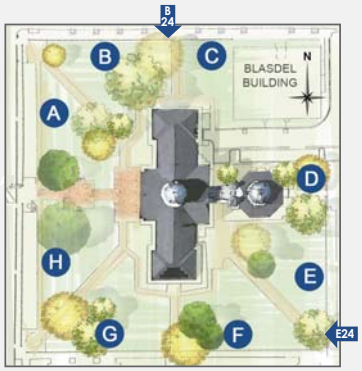
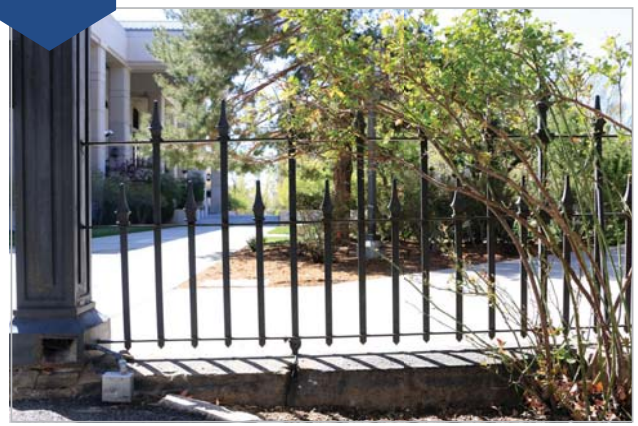


SECTION
F1

Condition Assessment



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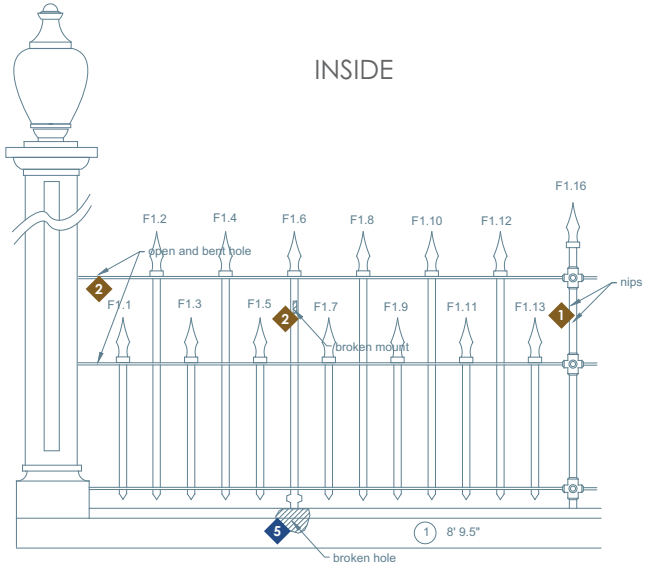

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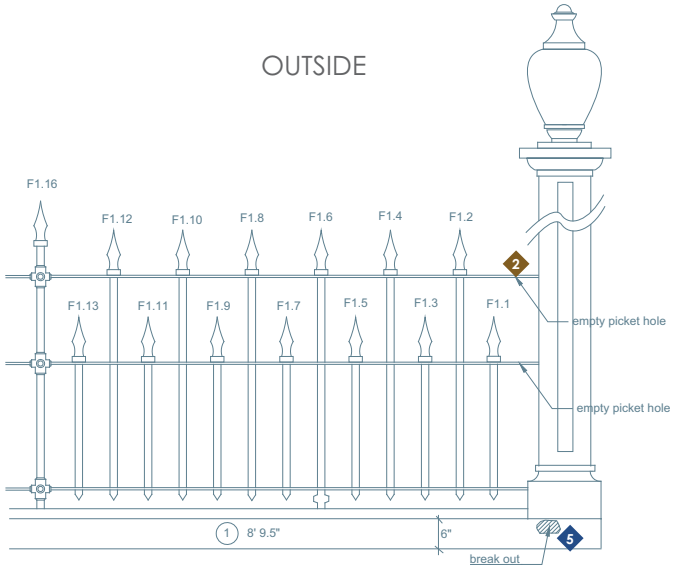

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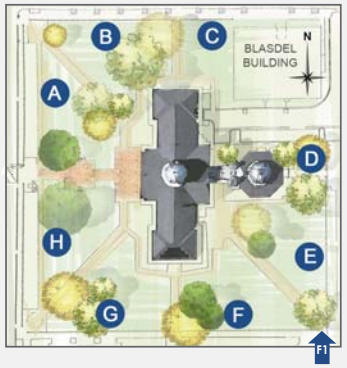
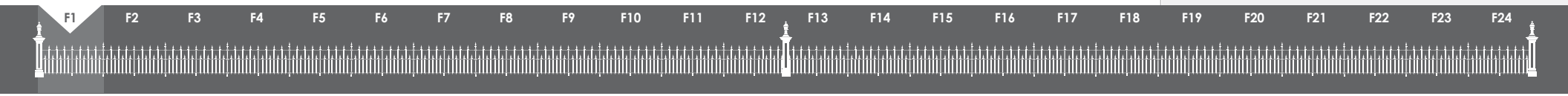
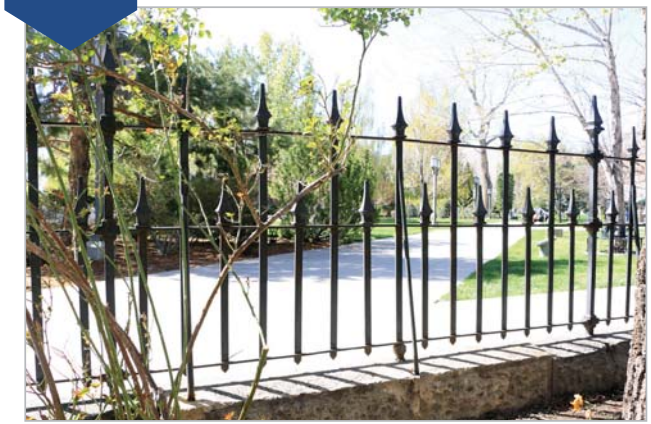




SECTION
F2

Condition Assessment



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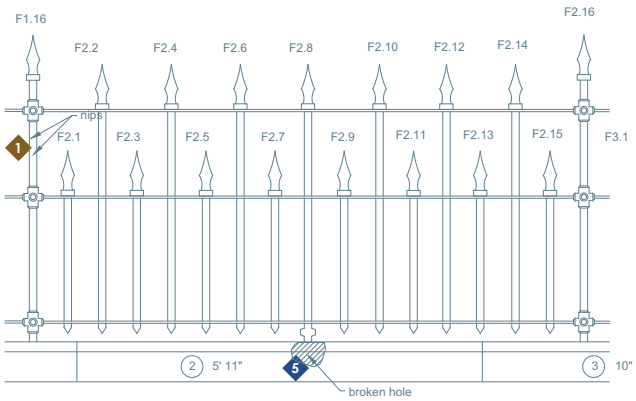

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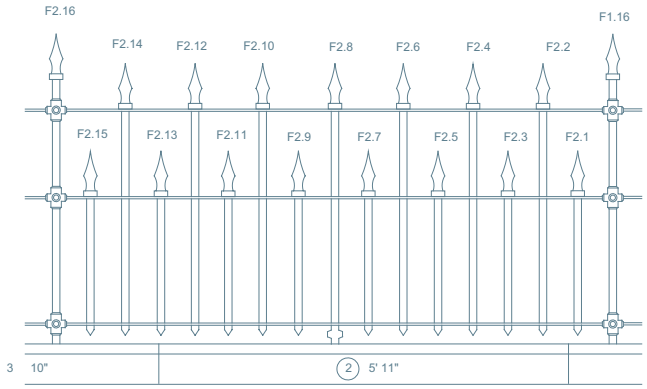

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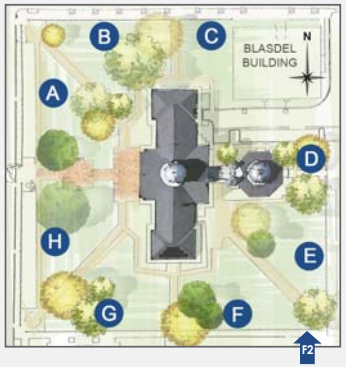
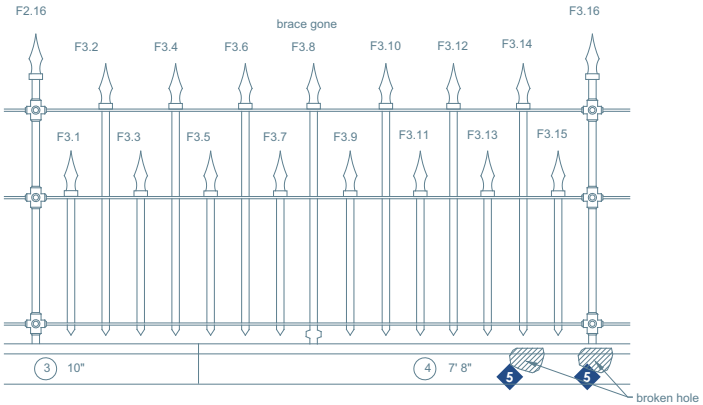


SECTION
F3

Condition Assessment

INSIDE



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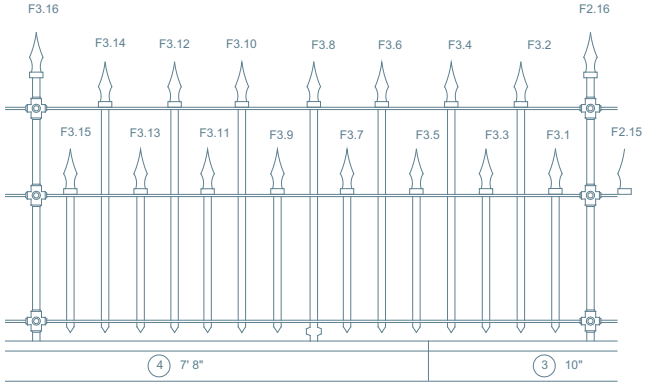

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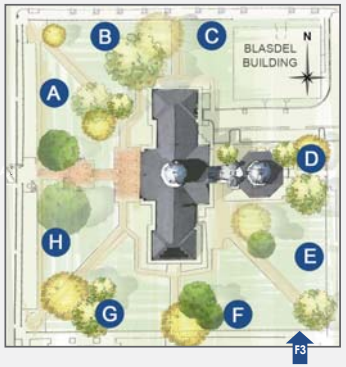
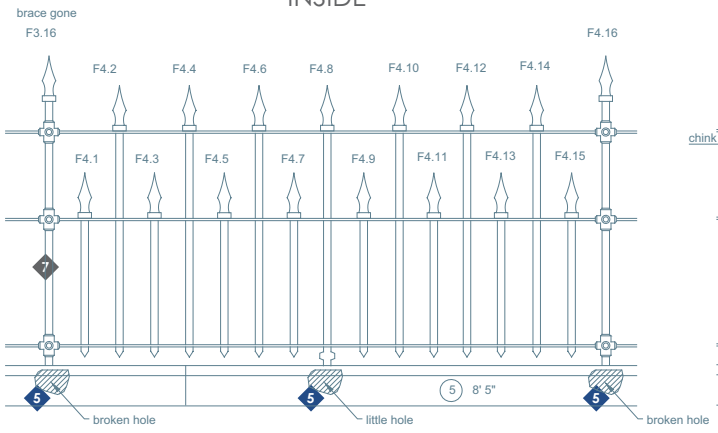


SECTION
F4

Condition Assessment

INSIDE



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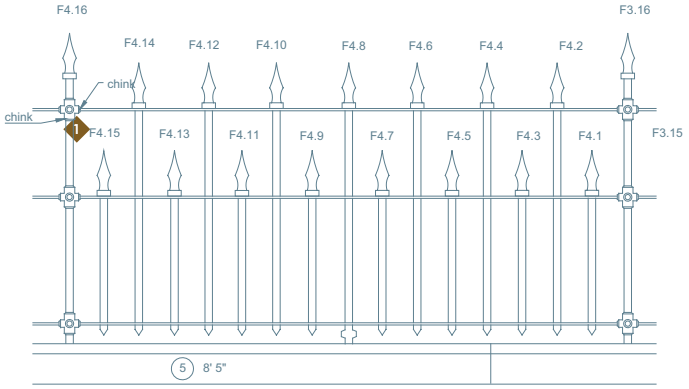

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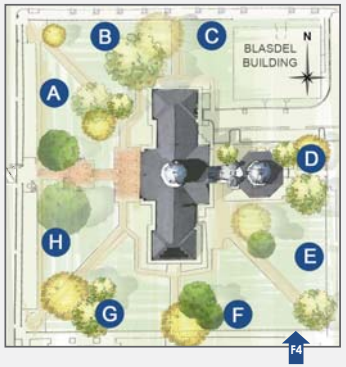
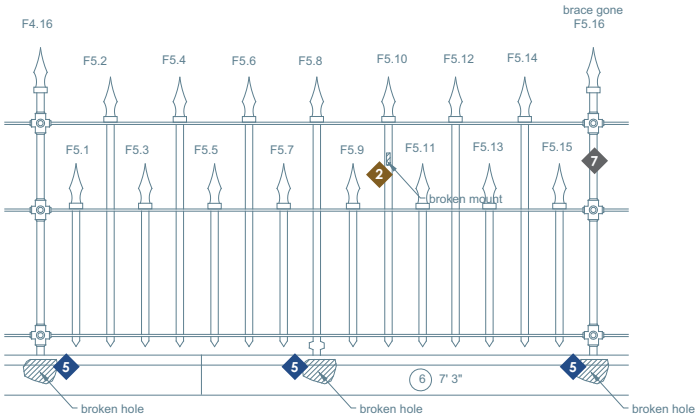


SECTION
F5

Condition Assessment

INSIDE



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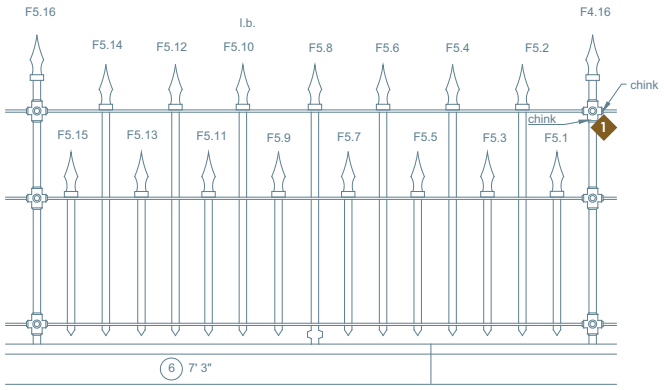

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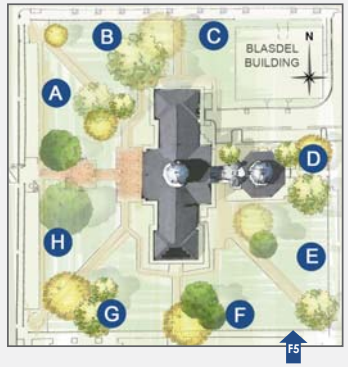
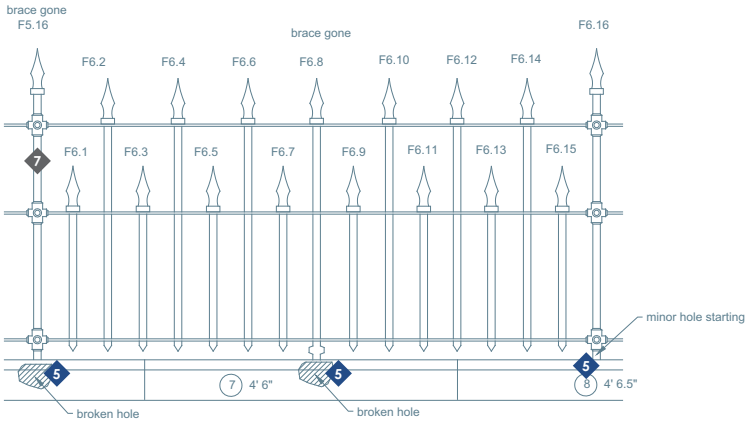


SECTION
F6

Condition Assessment

INSIDE



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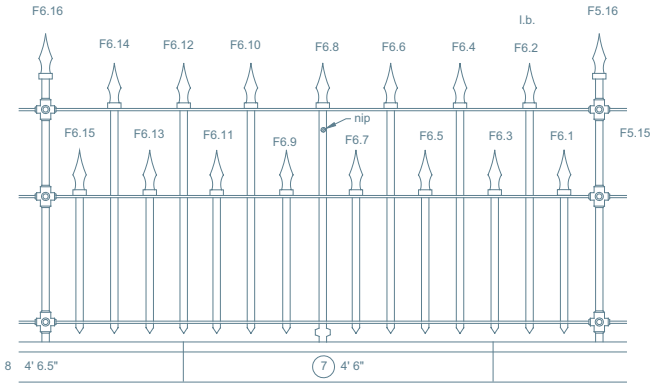

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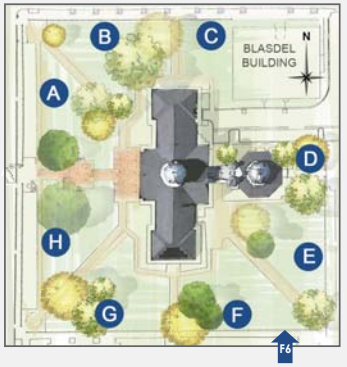
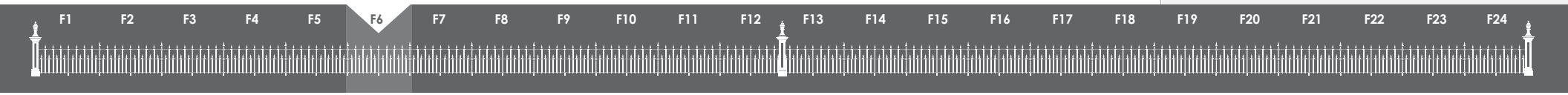
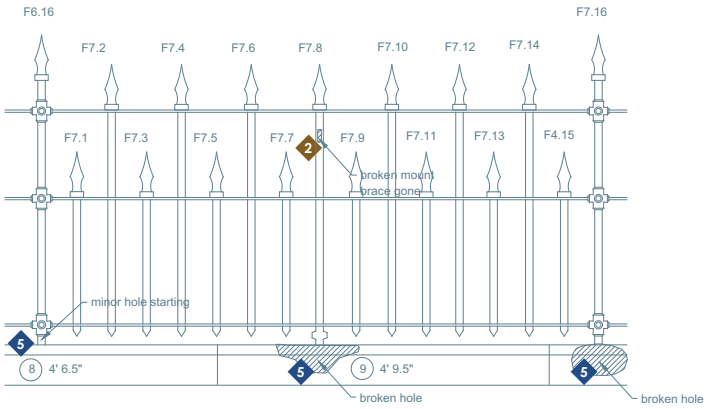




SECTION
F7

Condition Assessment

INSIDE



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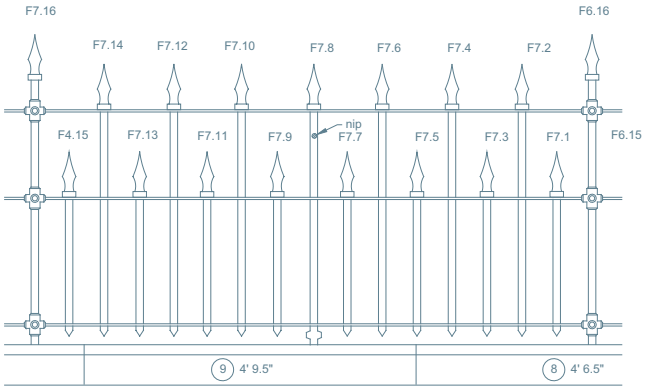

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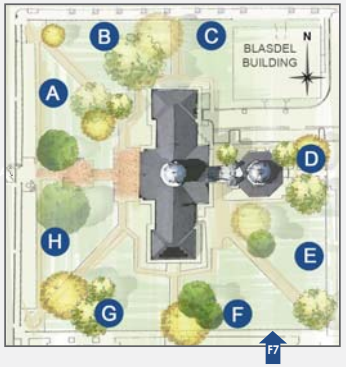
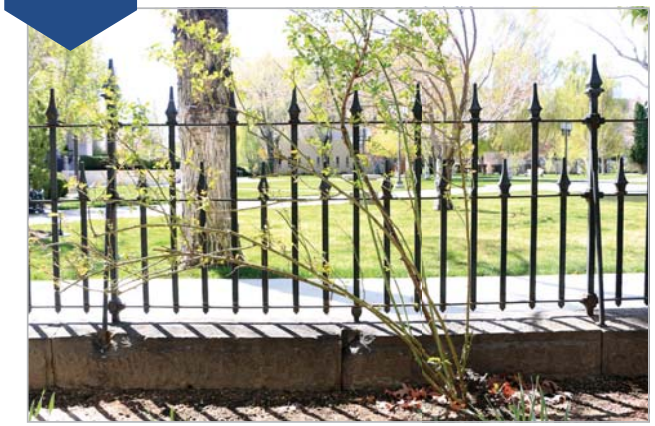


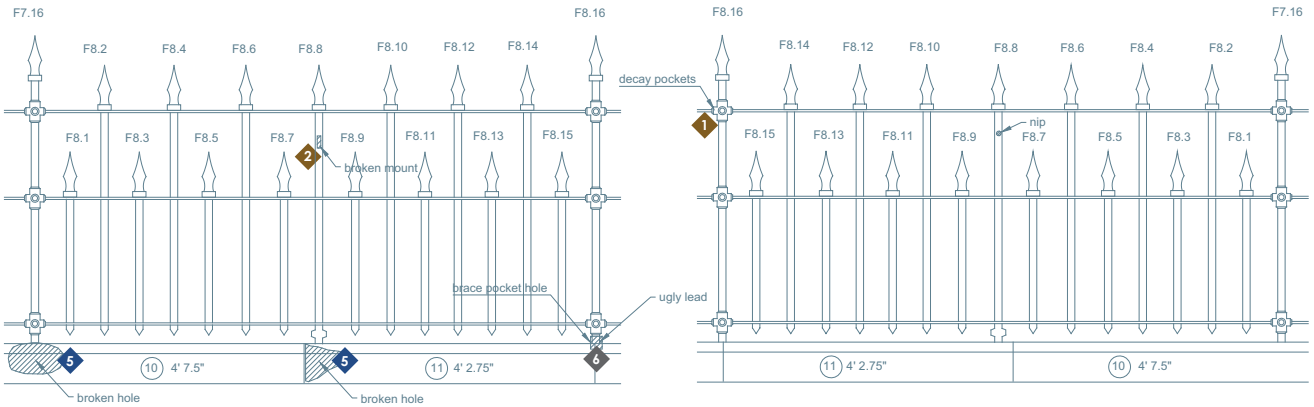
SECTION
F8

Condition Assessment



INSIDE

OUTSIDE



Ironwork Corrosion

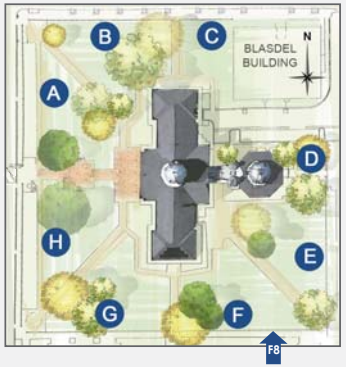
1. Repair holes, cracks and casting defects using filler compound containing iron particles in an epoxy resin binder
2. Replace missing or severely damaged cast iron components with in-kind casting technique and material
3. Major cracks and inappropriate repairs to be repaired by brazing with special nickel alloy welding rods

Sandstone Deterioration

4. Remove vegetation, failed patches (concrete), and embedded foreign objects
5. Eliminate water infiltration by re-setting fractured stone, filling pockets, shelves and depressions, and stabilizing post base with restoration mortar

Structural Instability

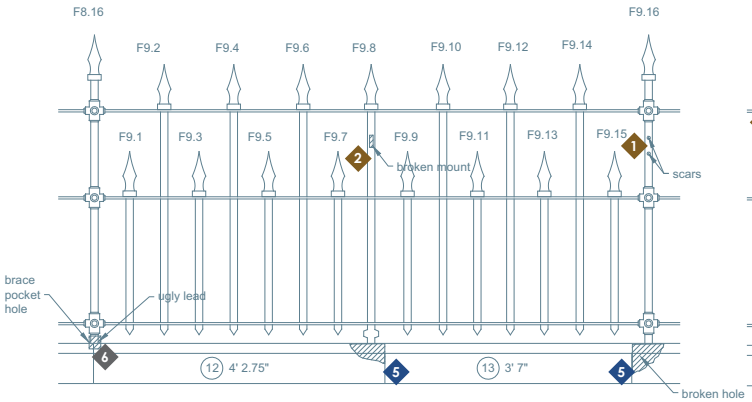
6. Repair primary anchor points by pouring new molten lead into existing masonry socket and building up coping stone with restoration mortar
7. Replace missing or non-historic (square stock) backstays with in-kind material
8. Realign and stabilize fence to include straightening bent, bowed, or out of plumb fence sections and individual horizontal or vertical components
9. Remove non-historic end posts and restore with in-kind materials to period of significance



SECTION
F9

Condition Assessment

INSIDE



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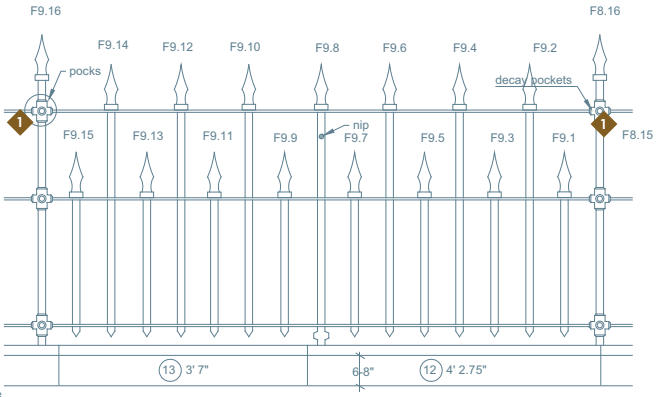

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Sandstone Deterioration

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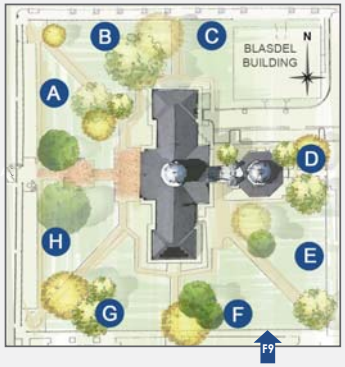
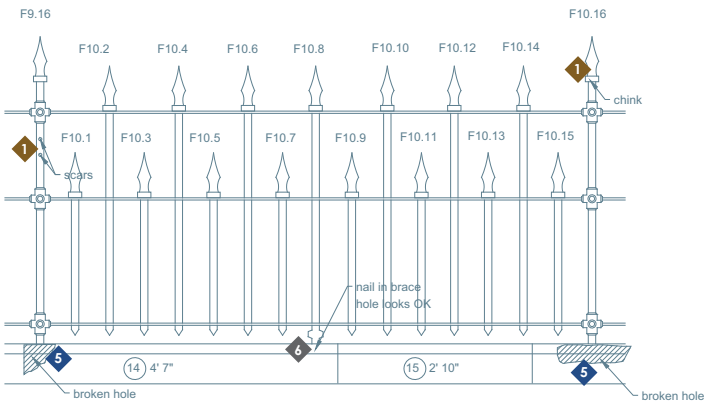


SECTION
F10

Condition Assessment

INSIDE



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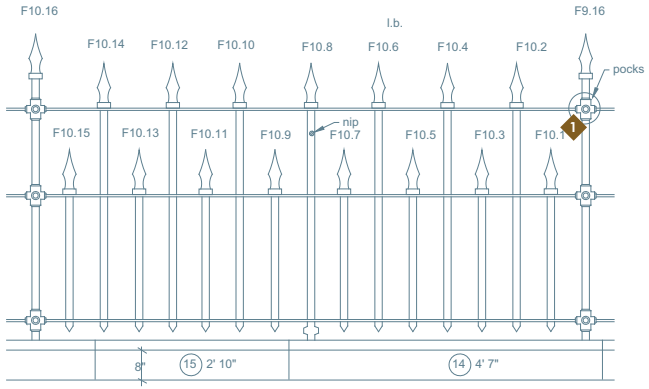

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Sandstone Deterioration

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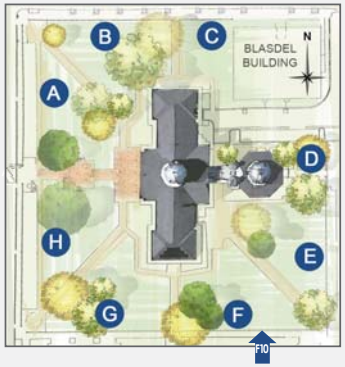
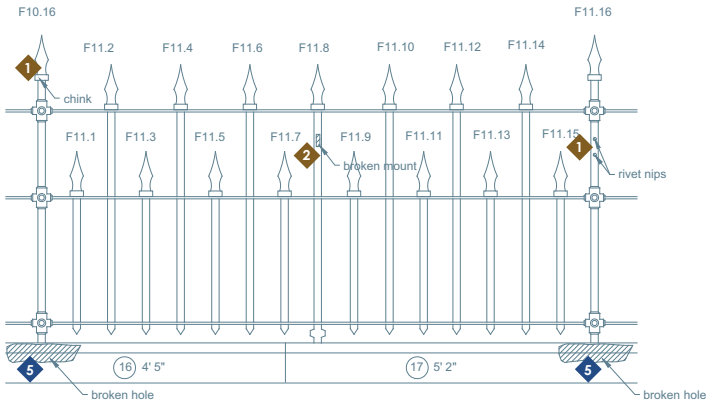


SECTION
F11

Condition Assessment

INSIDE



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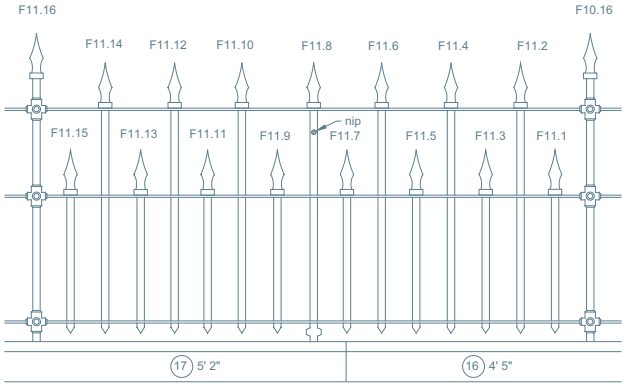

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Sandstone Deterioration

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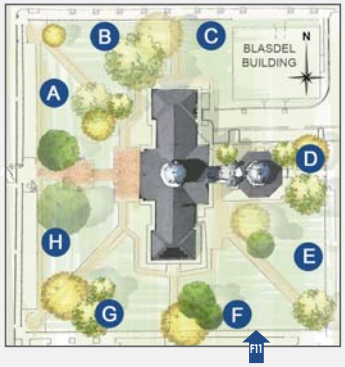
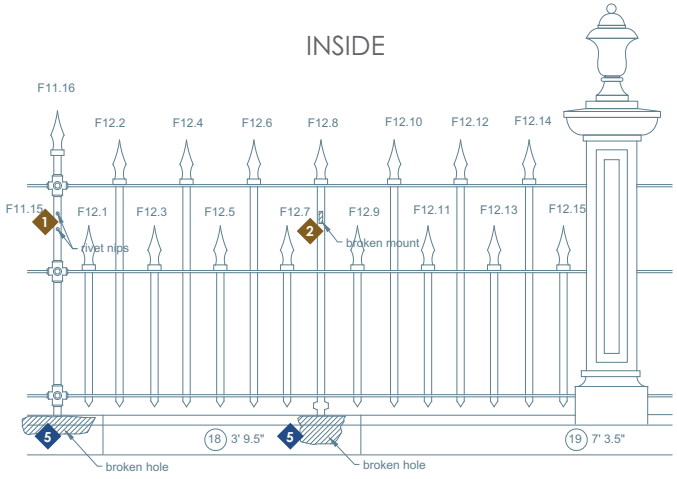


SECTION
F12

Condition Assessment

INSIDE



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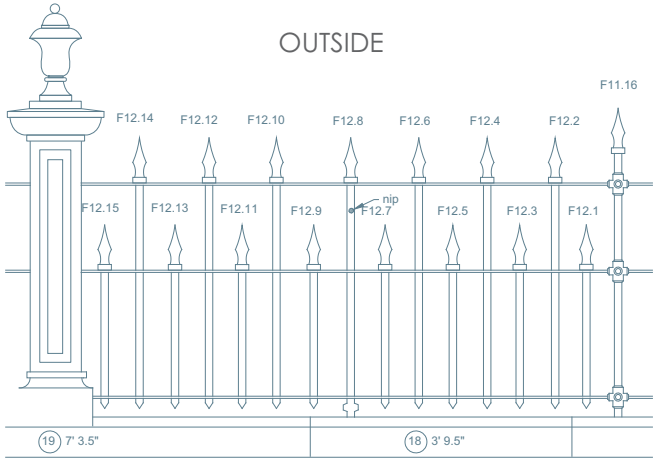

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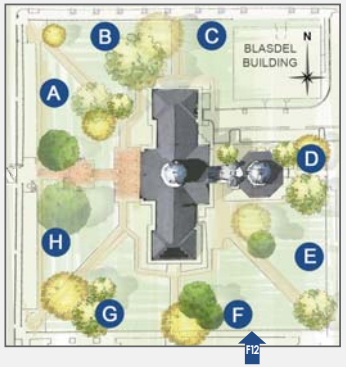
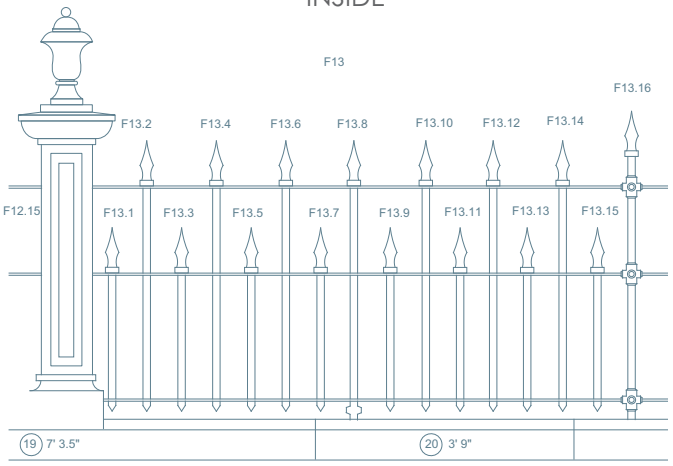


SECTION
F13

Condition Assessment

INSIDE



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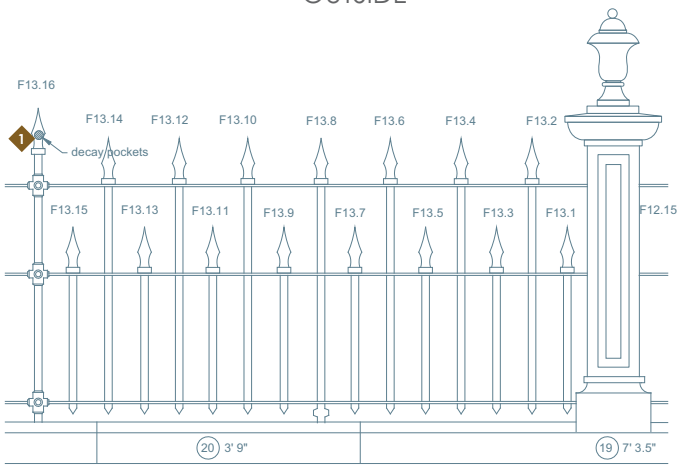

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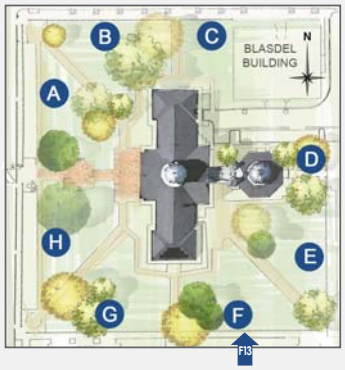
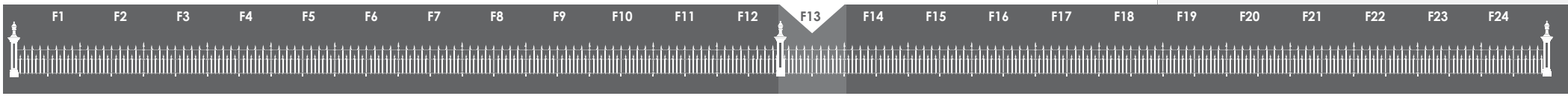
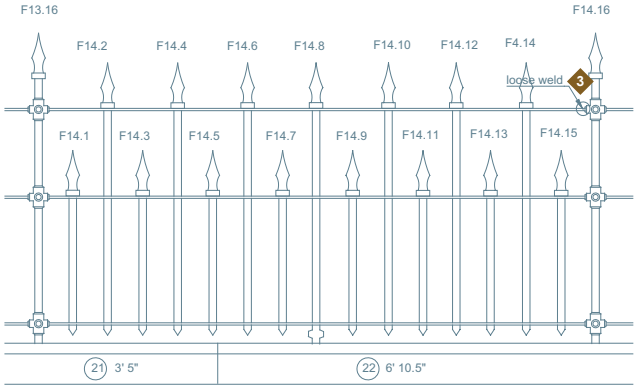


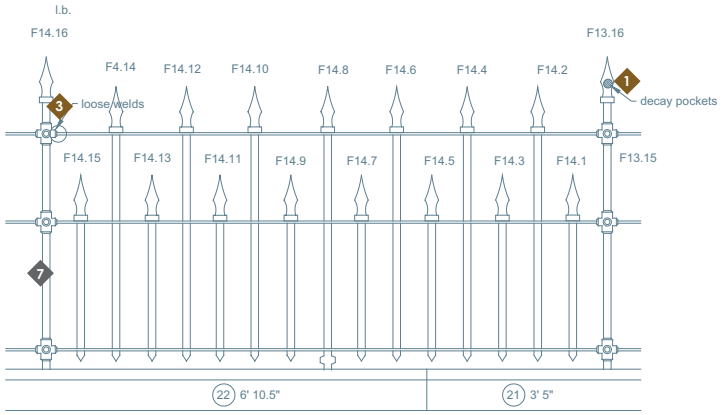


SECTION
F14 Condition Assessment

INSIDE

OUTSIDE





Broken Corner

Ironwork Corrosion

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Sandstone Deterioration

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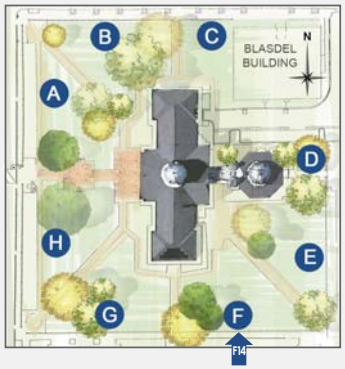
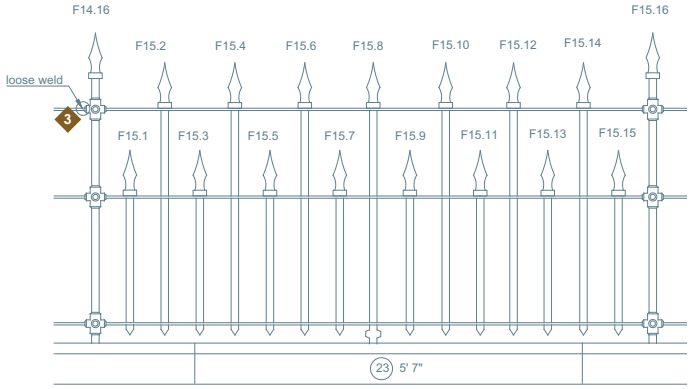


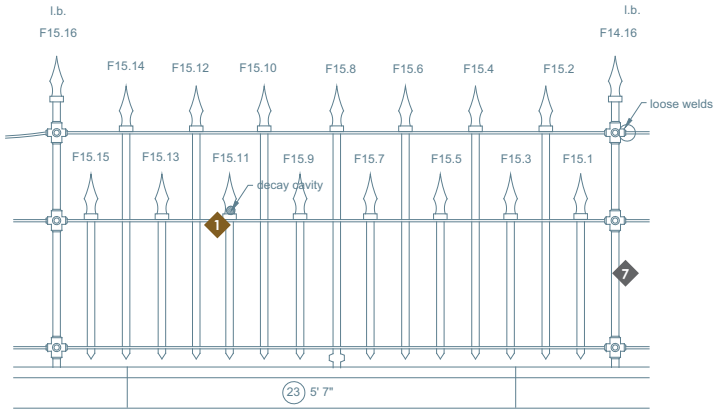
SECTION
F15

Condition Assessment

INSIDE

OUTSIDE





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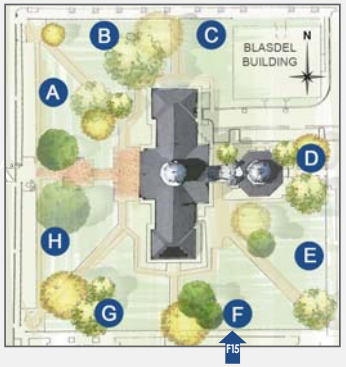
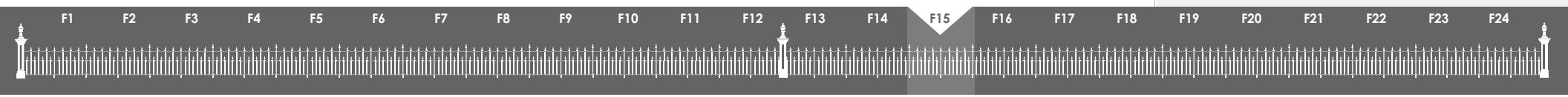
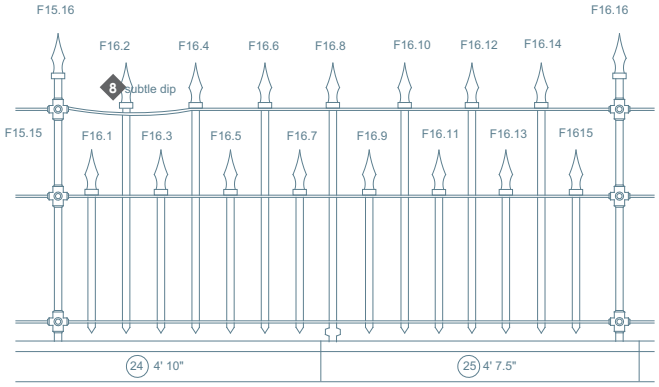




SECTION
F16

Condition Assessment

INSIDE



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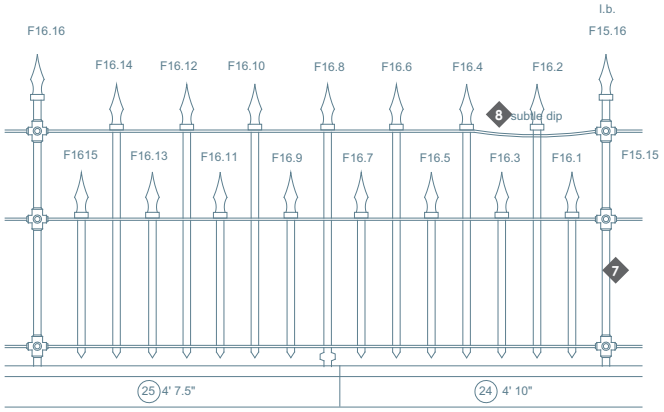

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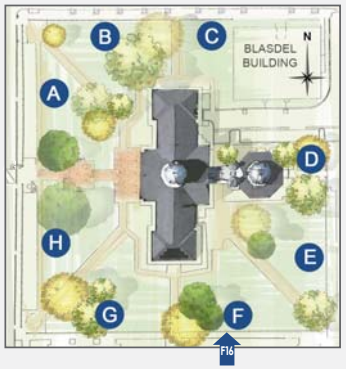
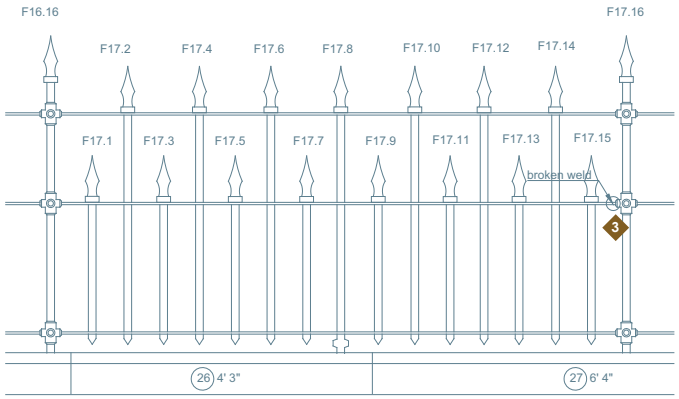


SECTION
F17

Condition Assessment

INSIDE



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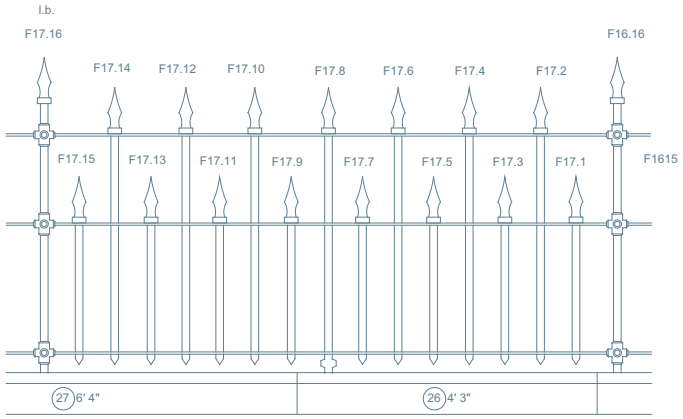

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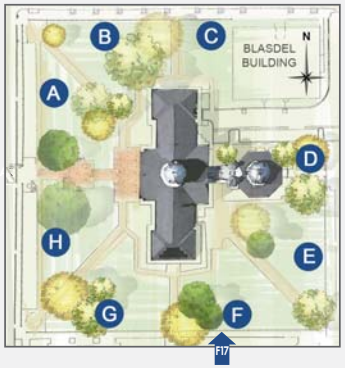
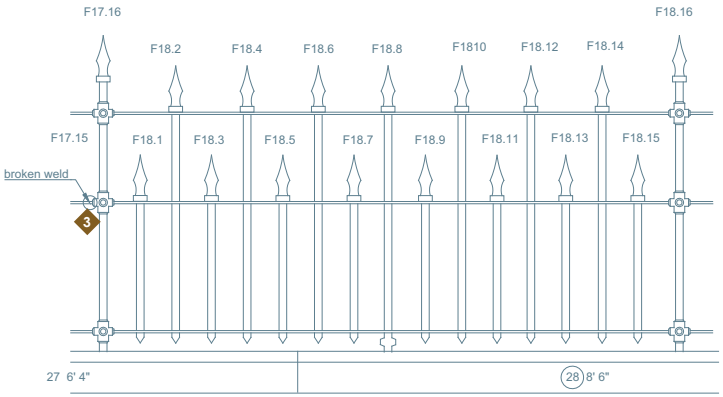


SECTION
F18

Condition Assessment

INSIDE



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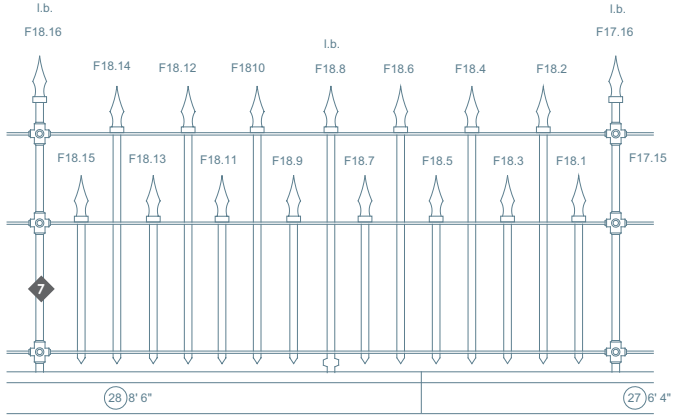

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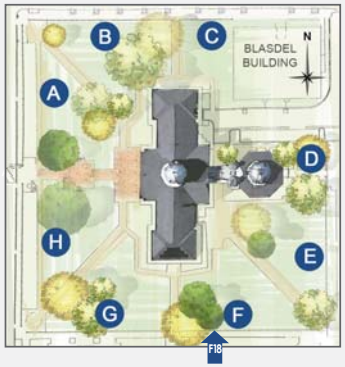
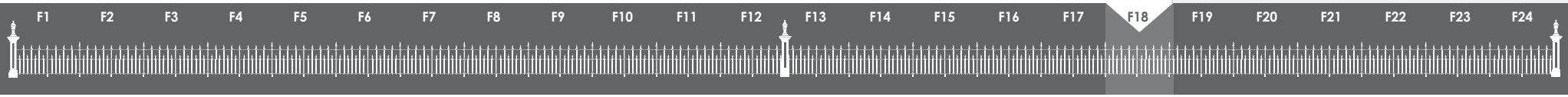
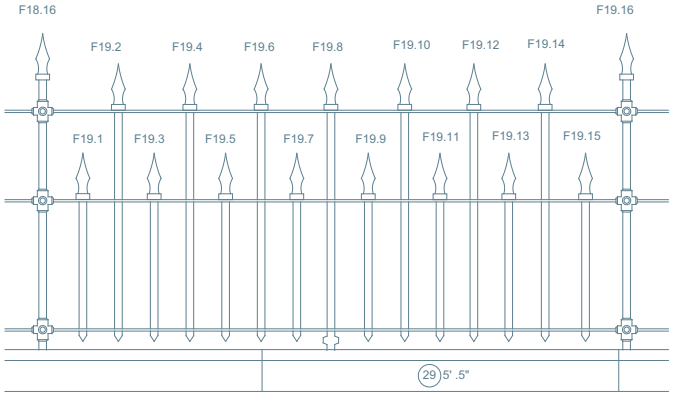




SECTION
F19

Condition Assessment

INSIDE



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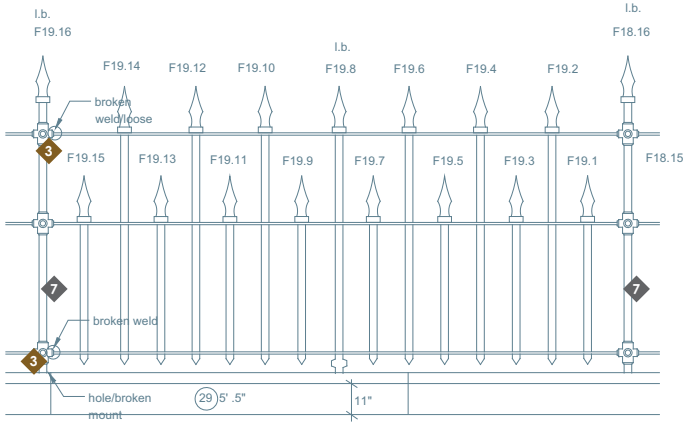

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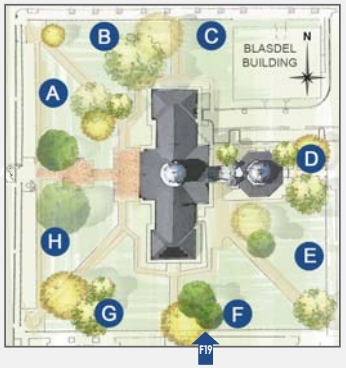
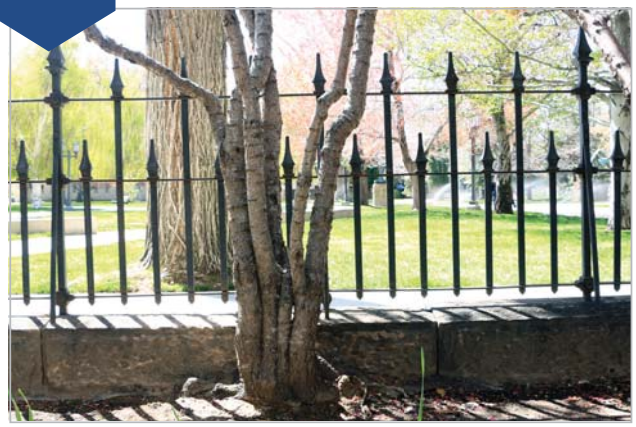


SECTION
F20

Condition Assessment



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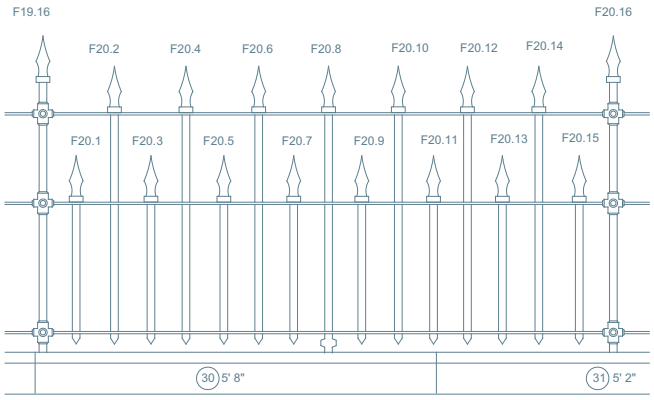

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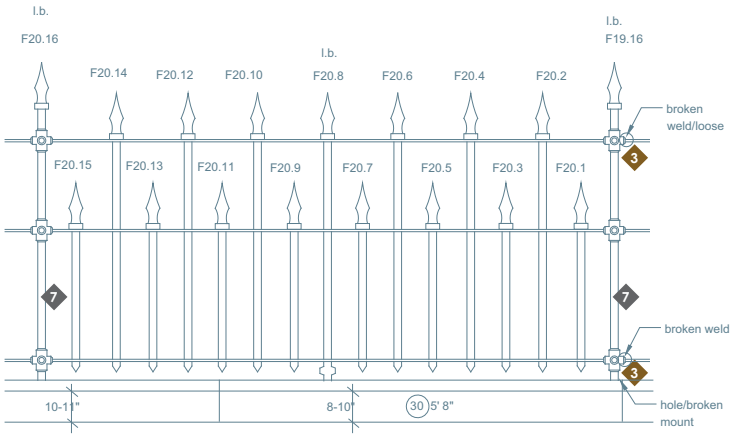

Ironwork Corrosion

1. Repair holes, cracks and casting defects using filler compound containing iron particles in an epoxy resin binder
2. Replace missing or severely damaged cast iron components with in-kind casting technique and material
3. Major cracks and inappropriate repairs to be repaired by brazing with special nickel alloy welding rods

Sandstone Deterioration

4. Remove vegetation, failed patches (concrete), and embedded foreign objects
5. Eliminate water infiltration by re-setting fractured stone, filling pockets, shelves and depressions, and stabilizing post base with restoration mortar

Structural Instability

6. Repair primary anchor points by pouring new molten lead into existing masonry socket and building up coping stone with restoration mortar
7. Replace missing or non-historic (square stock) backstays with in-kind material
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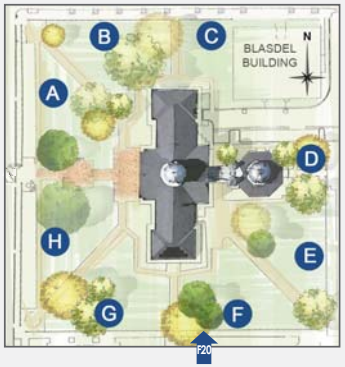
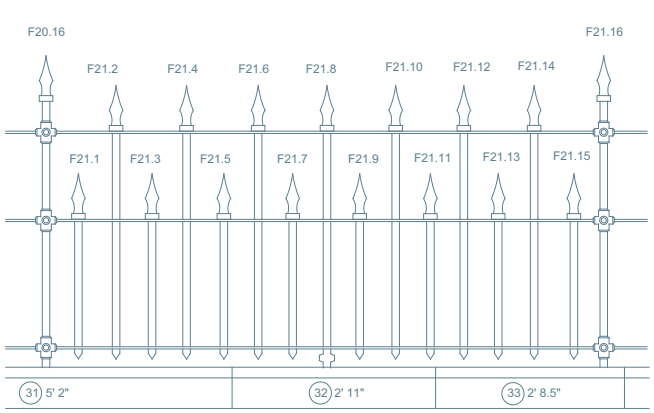


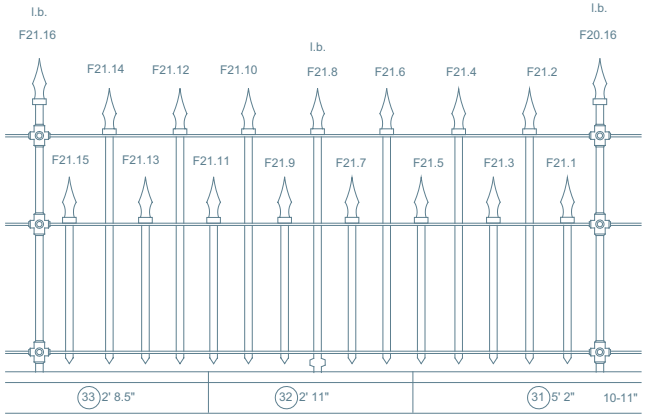
SECTION
F21

Condition Assessment

INSIDE

OUTSIDE





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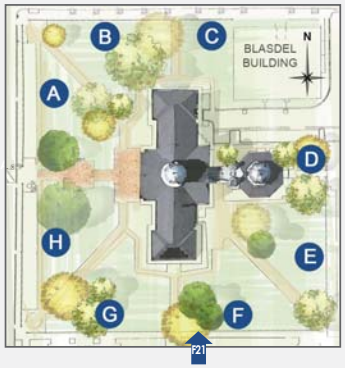
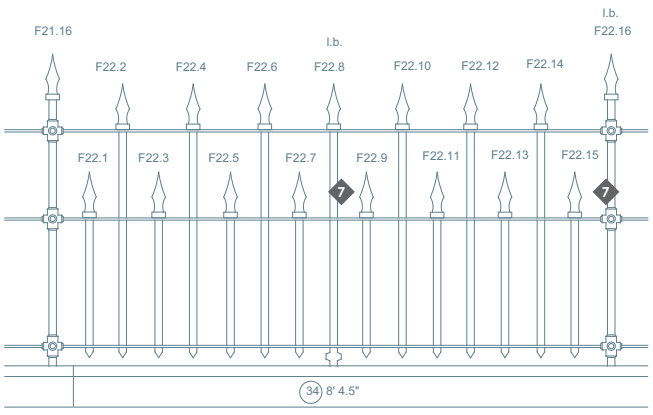


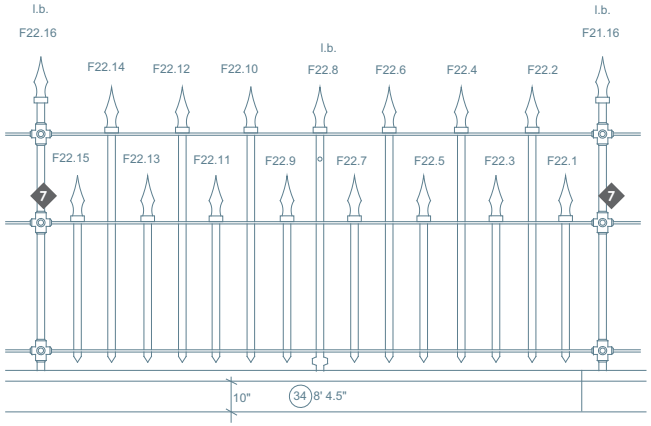
SECTION
F22

Condition Assessment

INSIDE

OUTSIDE





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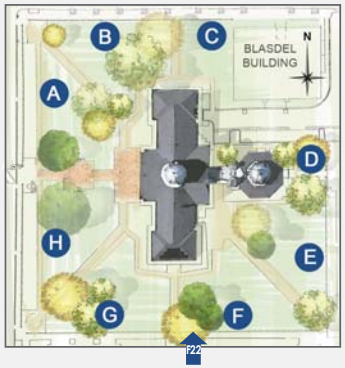
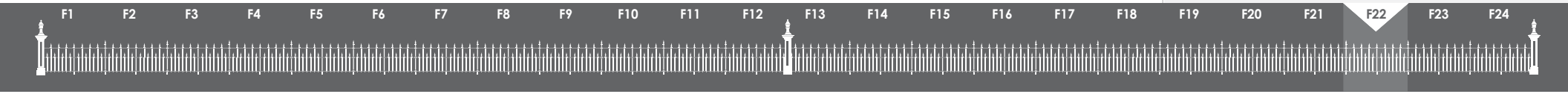
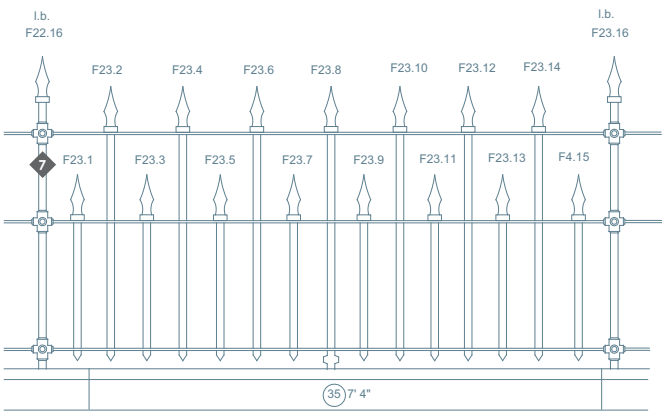




SECTION
F23

Condition Assessment

INSIDE



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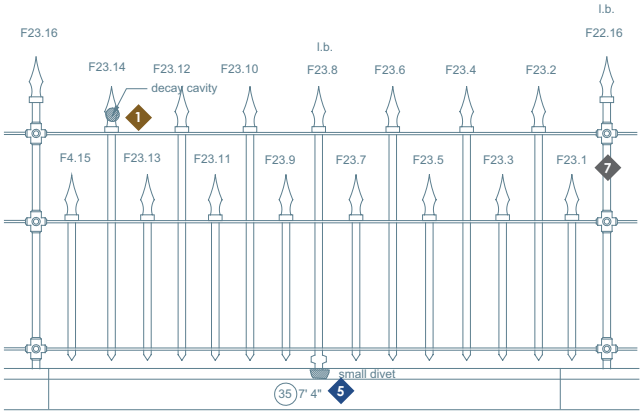

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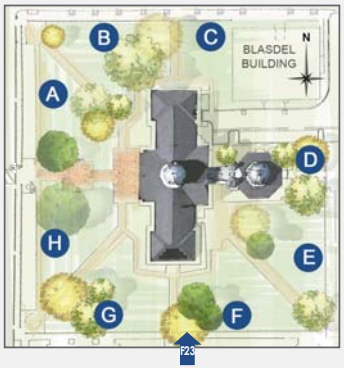
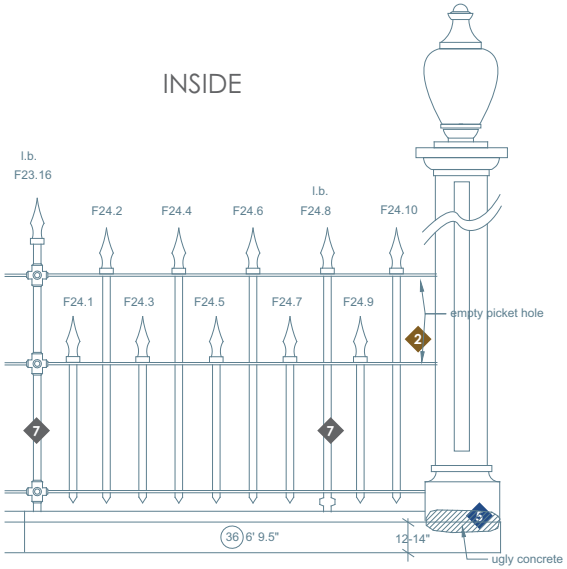


SECTION
F24

Condition Assessment

INSIDE



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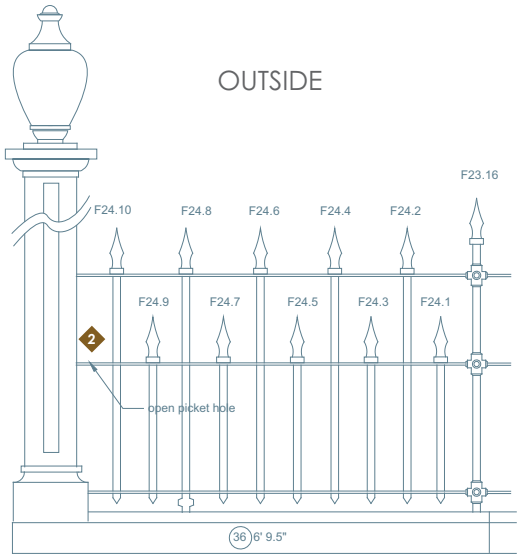

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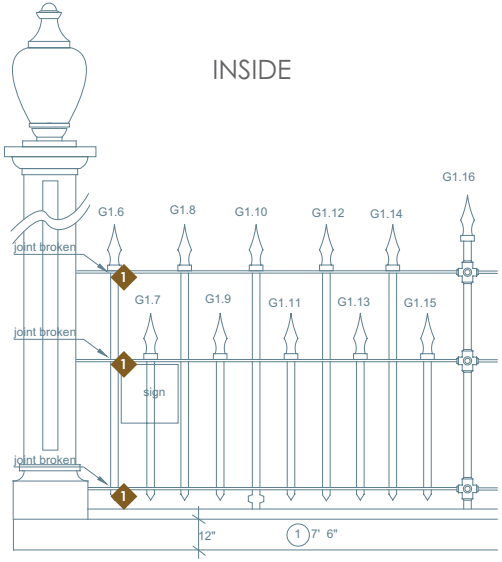
SECTION
G1

Condition Assessment

INSIDE



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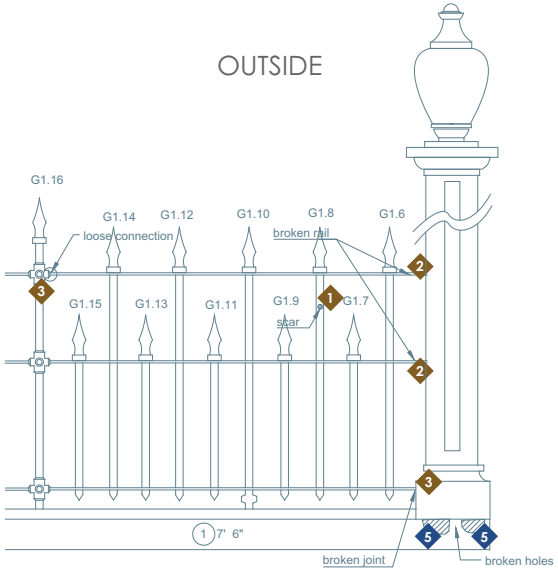

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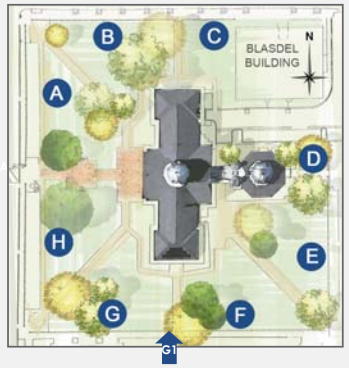
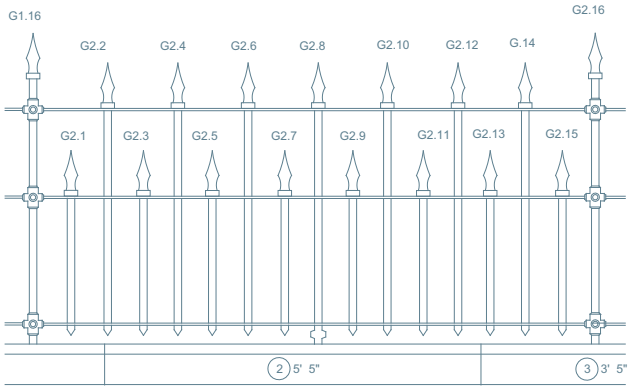
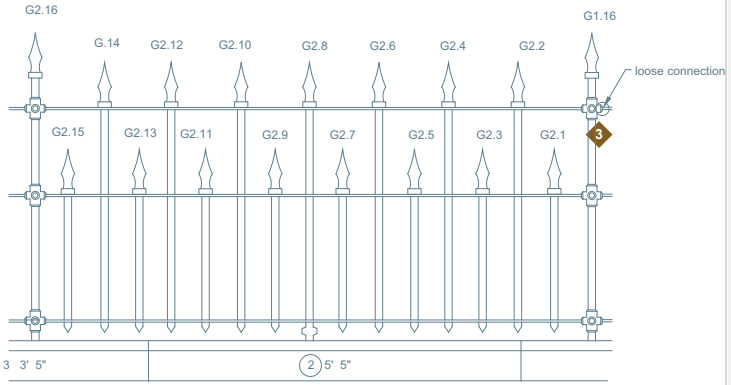


SECTION
G2

Condition Assessment

INSIDE





Ironwork Corrosion

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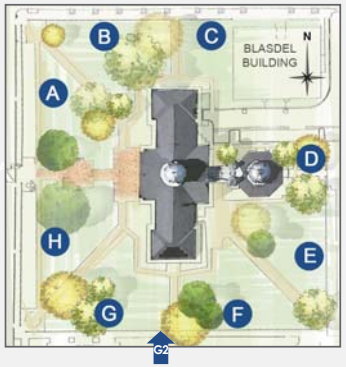
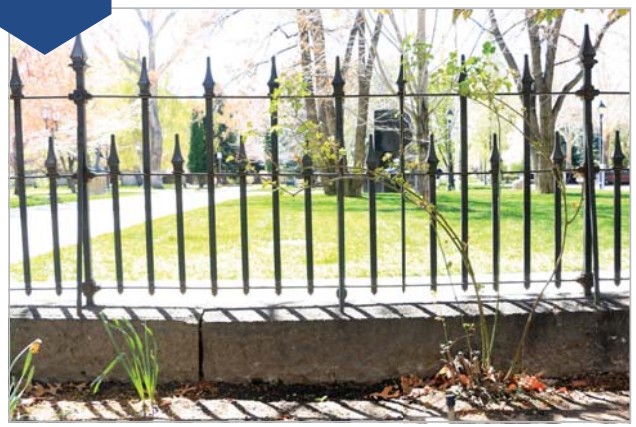


SECTION
G3

Condition Assessment



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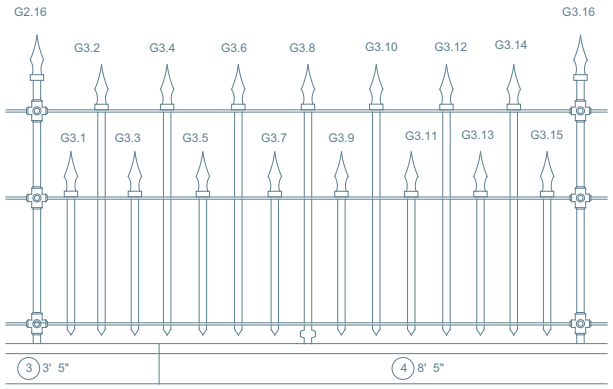

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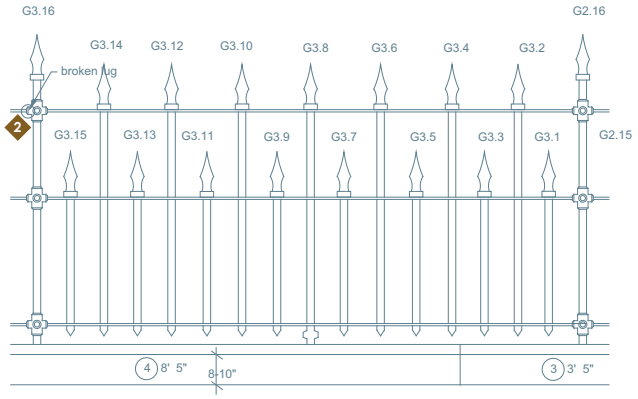

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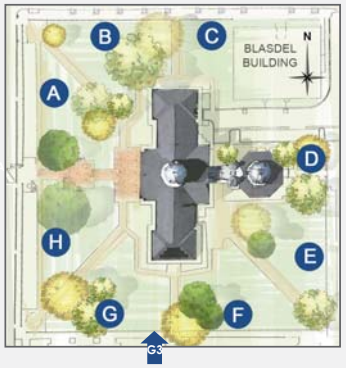
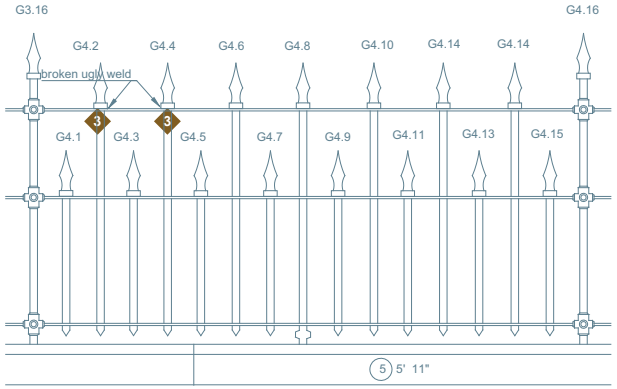


SECTION
G4

Condition Assessment

INSIDE



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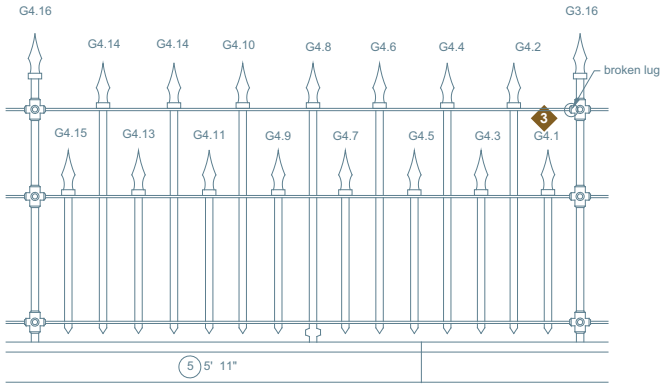

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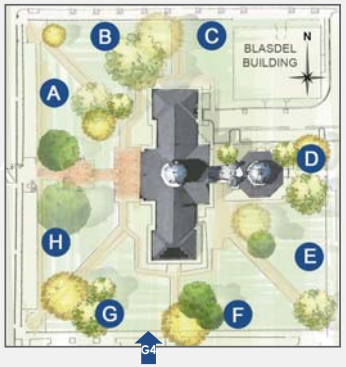
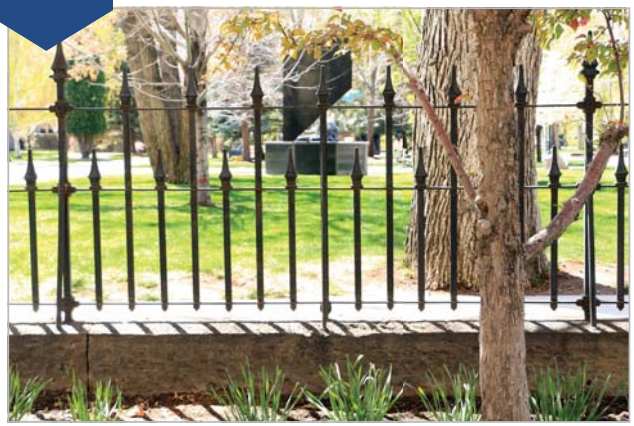


SECTION
G5

Condition Assessment



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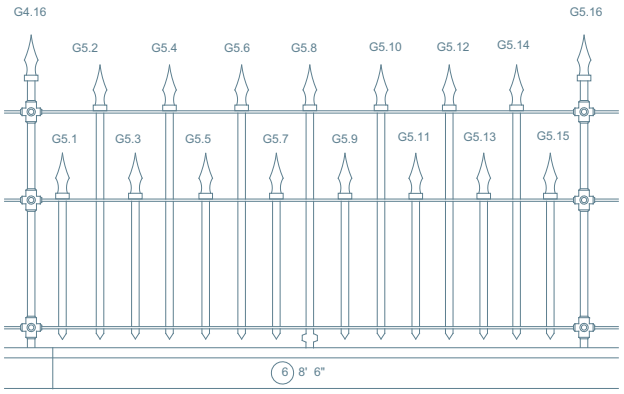

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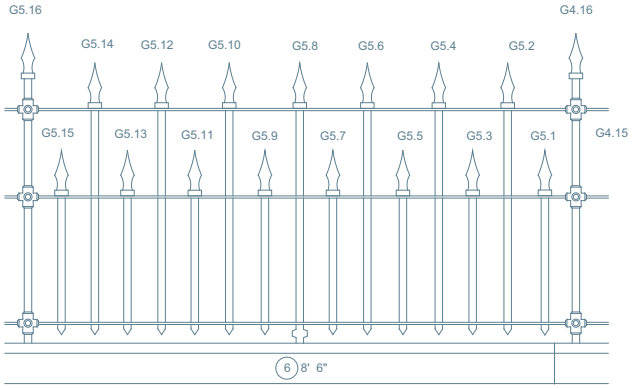

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Sandstone Deterioration

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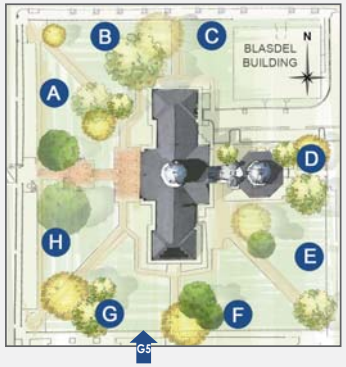
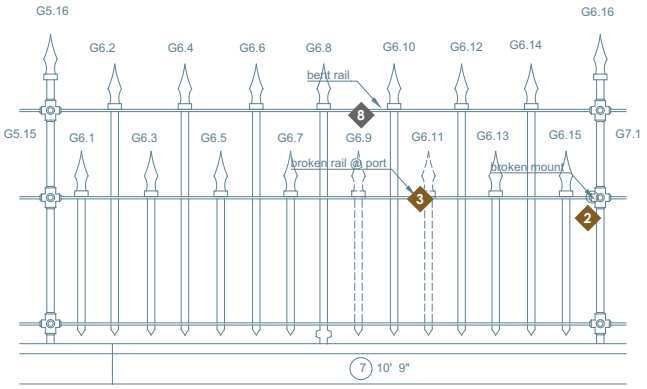


SECTION
G6

Condition Assessment

INSIDE



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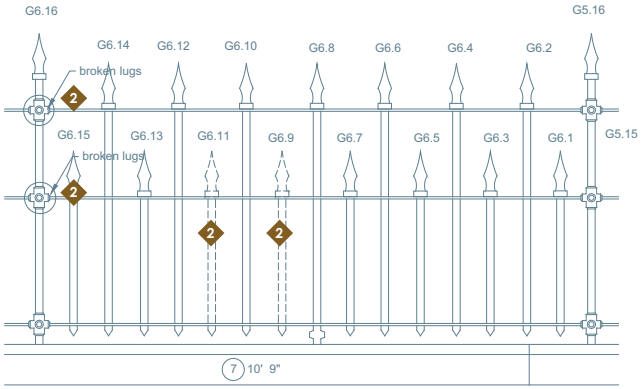

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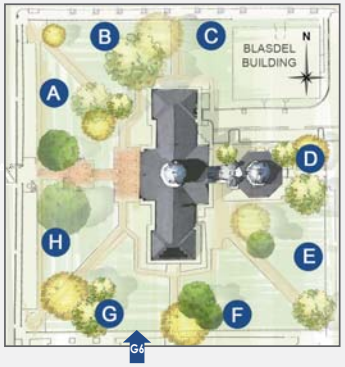
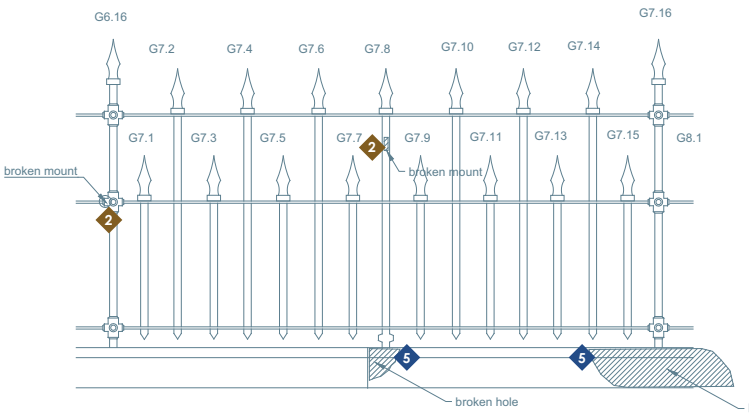


SECTION
G7

Condition Assessment

INSIDE



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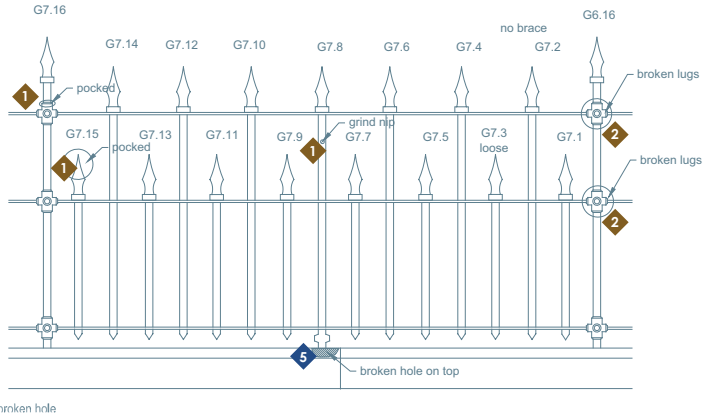

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Structural Instability

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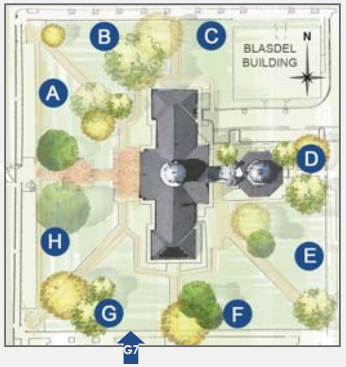
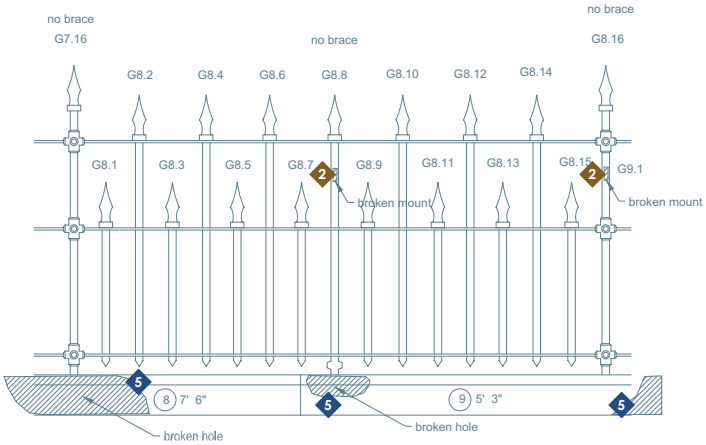
7. Replace missing or non-historic (square stock) backstays with in-kind material
8. Realign and stabilize fence to include straightening bent, bowed, or out of plumb fence sections and individual horizontal or vertical components
9. Remove non-historic end posts and restore with in-kind materials to period of significance



SECTION
G8

Condition Assessment

INSIDE



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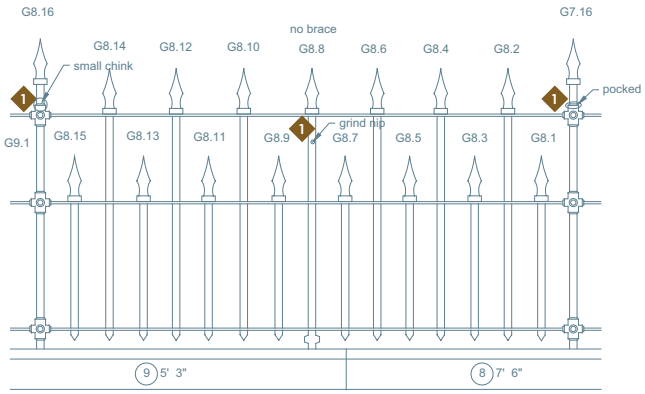

Ironwork Corrosion

1. Repair holes, cracks and casting defects using filler compound containing iron particles in an epoxy resin binder
2. Replace missing or severely damaged cast iron components with in-kind casting technique and material
3. Major cracks and inappropriate repairs to be repaired by brazing with special nickel alloy welding rods

Sandstone Deterioration

4. Remove vegetation, failed patches (concrete), and embedded foreign objects
5. Eliminate water infiltration by re-setting fractured stone, filling pockets, shelves and depressions, and stabilizing post base with restoration mortar

Structural Instability

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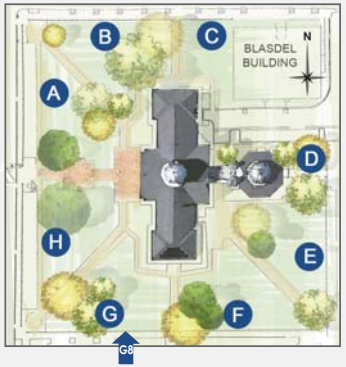
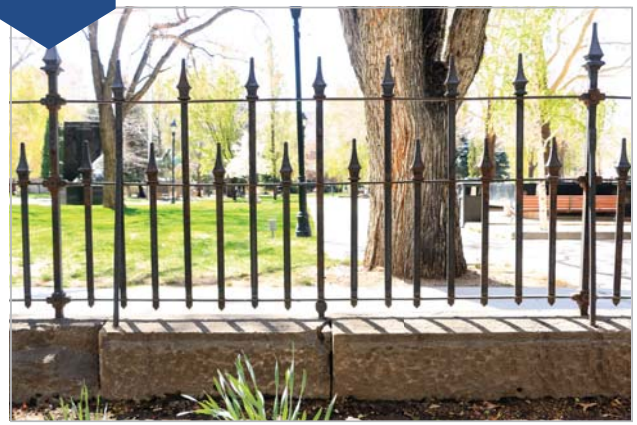


SECTION
G9

Condition Assessment



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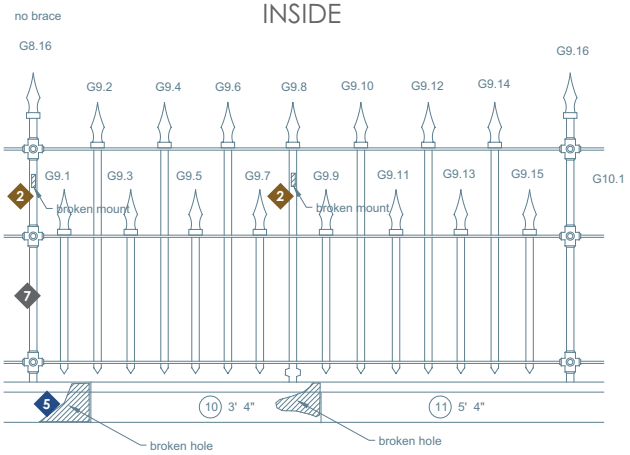

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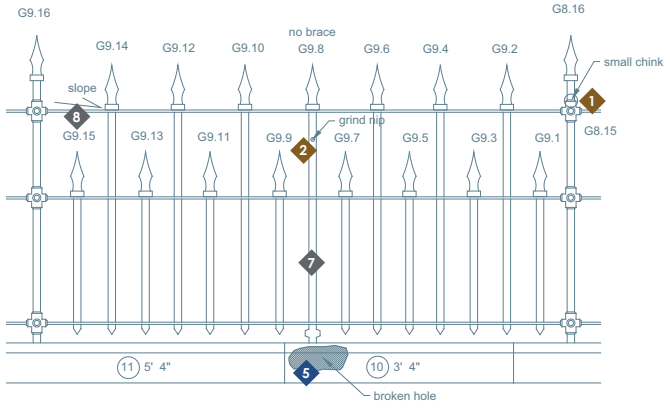

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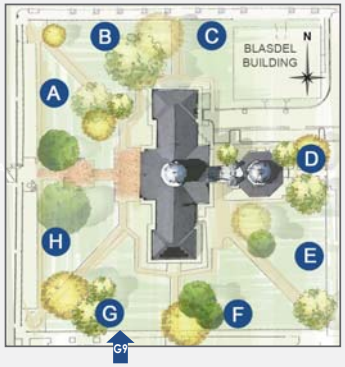
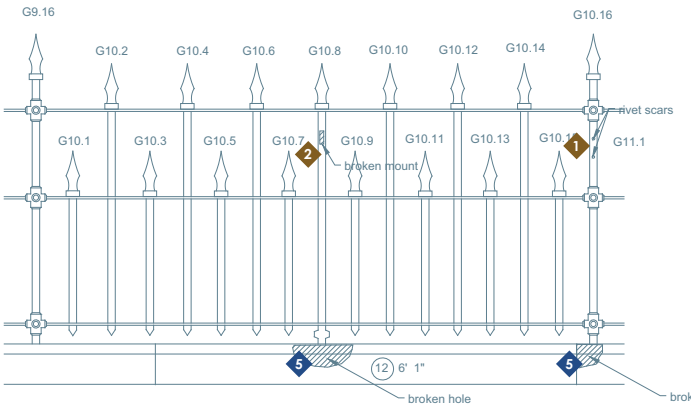


SECTION
G10

Condition Assessment

INSIDE



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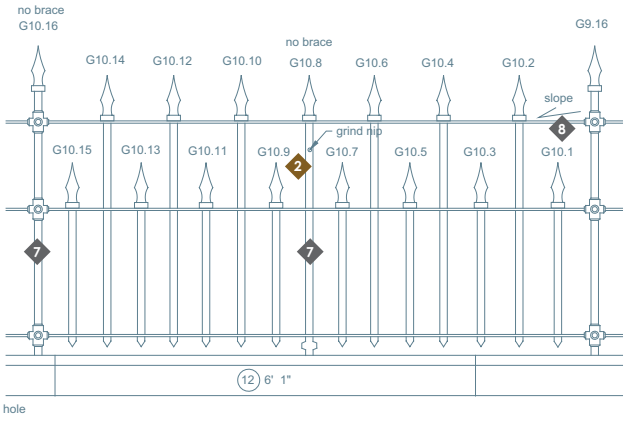

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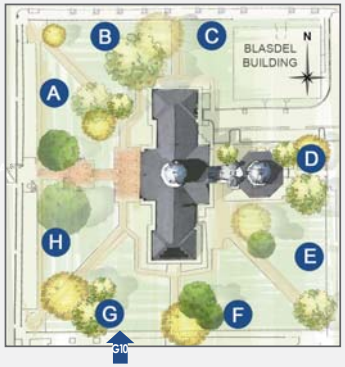
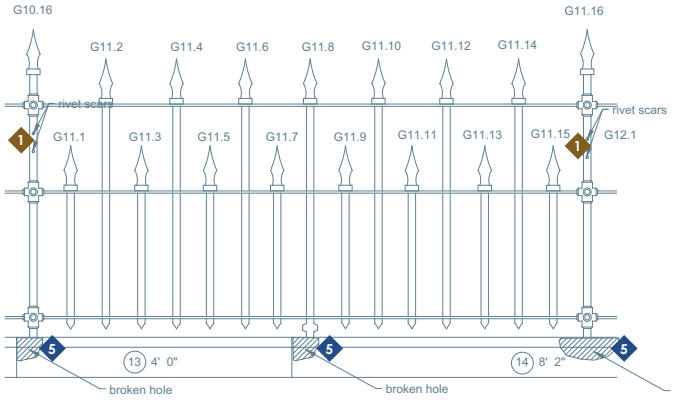


SECTION
G11

Condition Assessment

INSIDE



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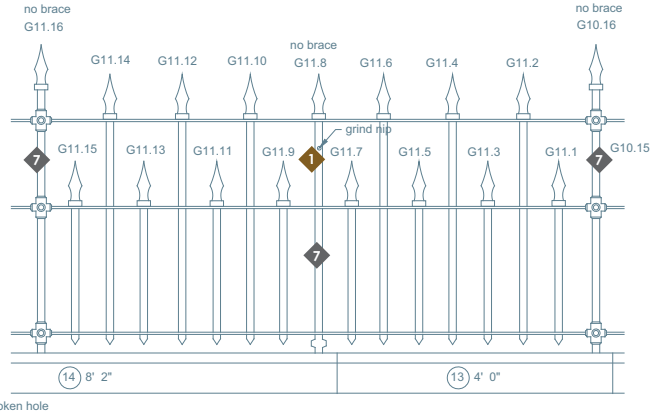

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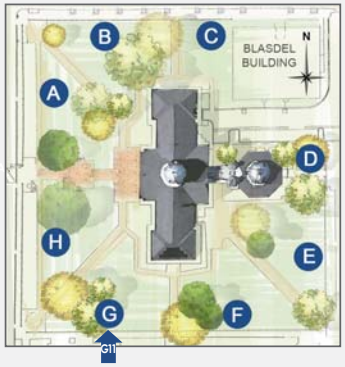
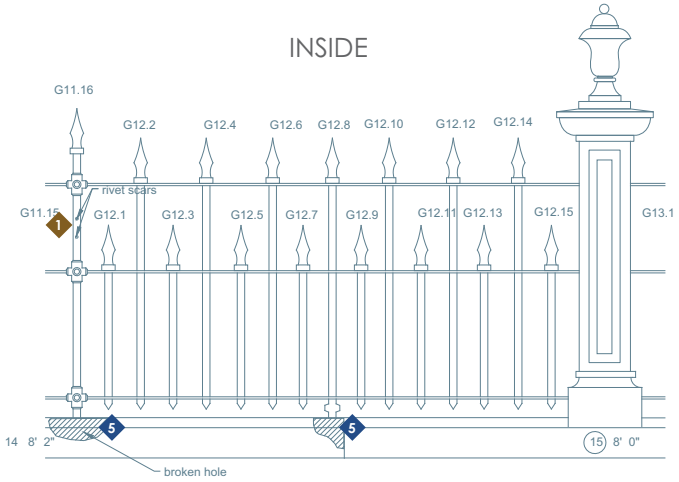


SECTION
G12

Condition Assessment

INSIDE



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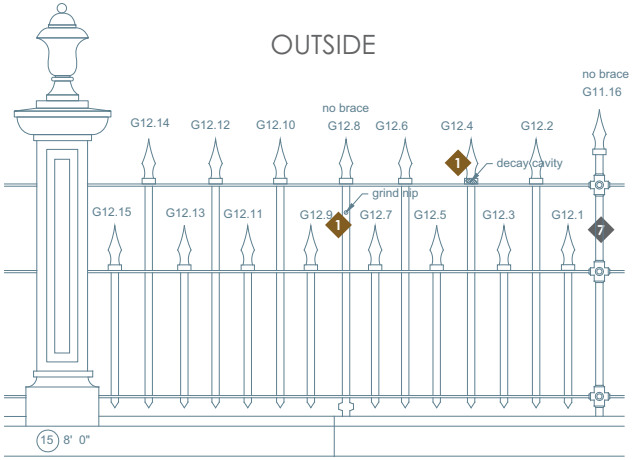

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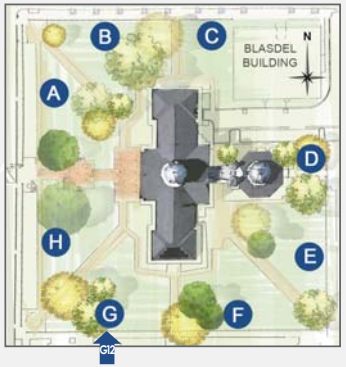
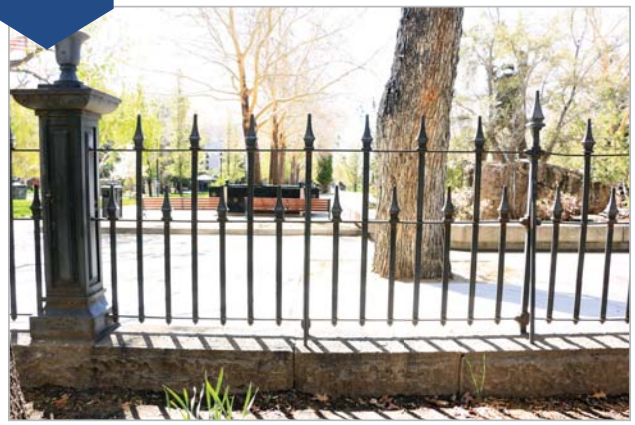


SECTION
G13

Condition Assessment



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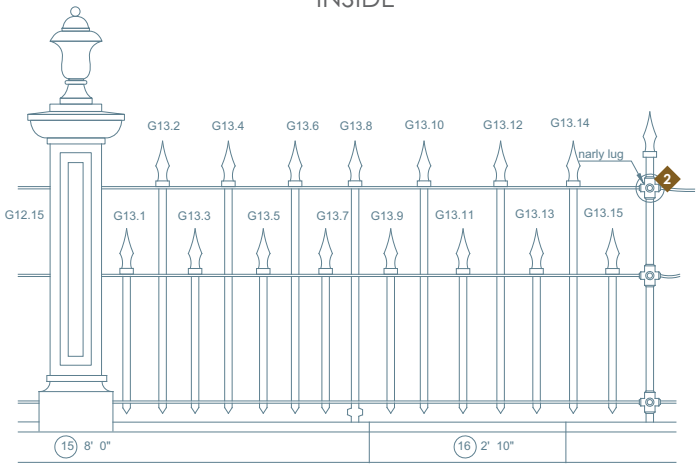

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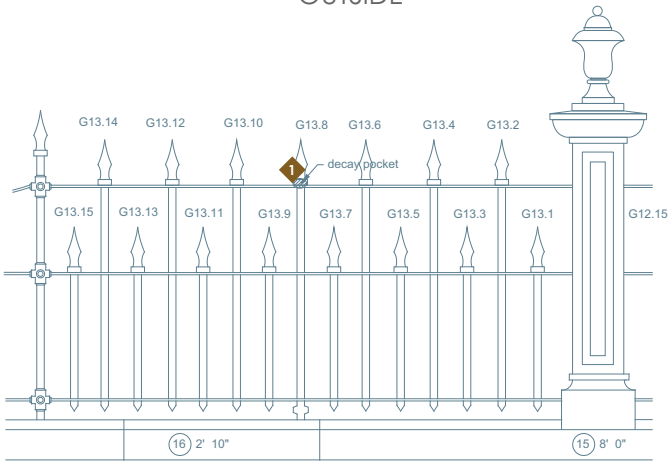

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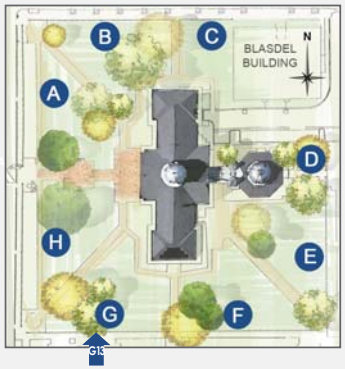
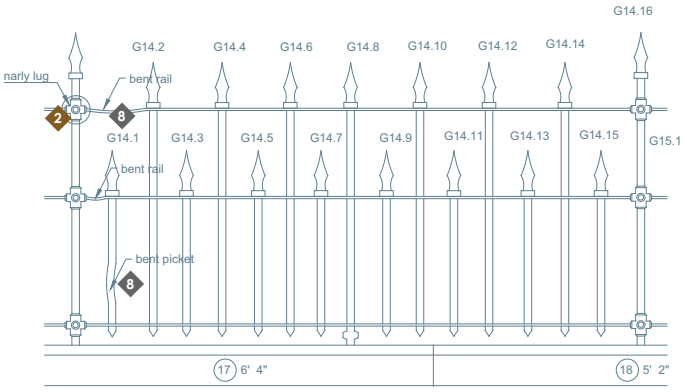
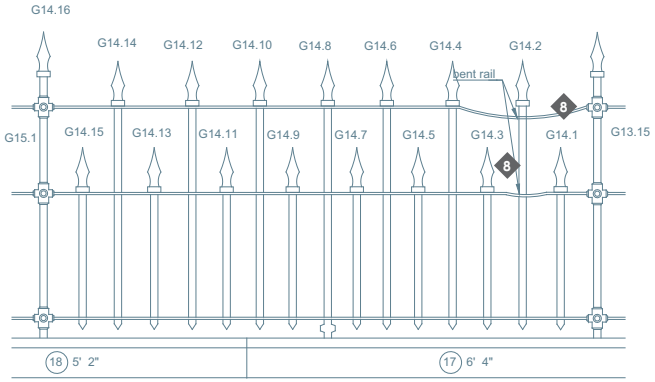


SECTION
G14 Condition Assessment

INSIDE

OUTSIDE





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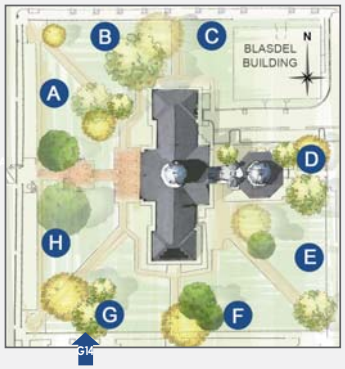
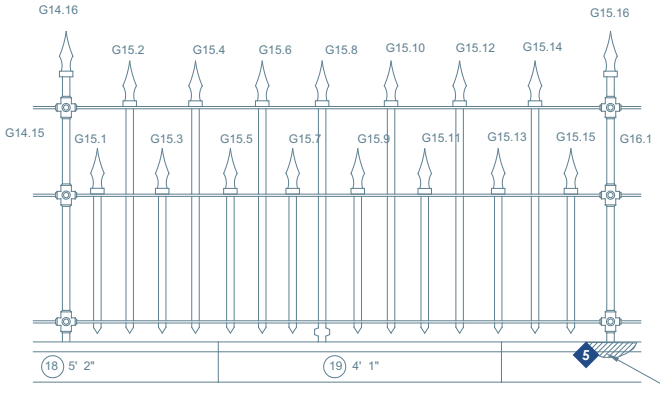


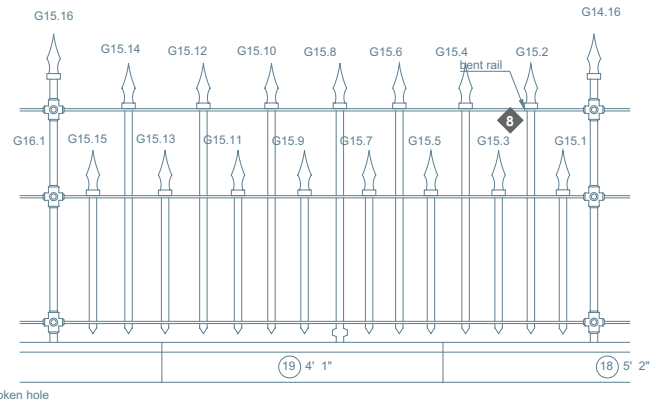
SECTION
G15

Condition Assessment

INSIDE

OUTSIDE





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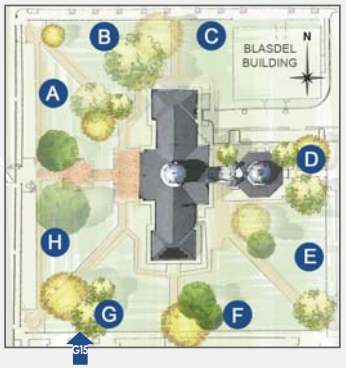
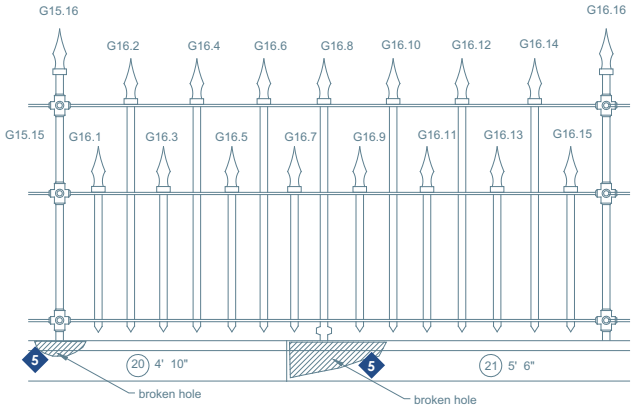


SECTION
G16

Condition Assessment

INSIDE



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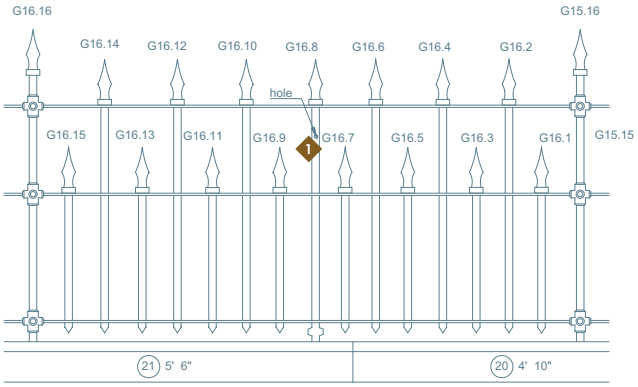

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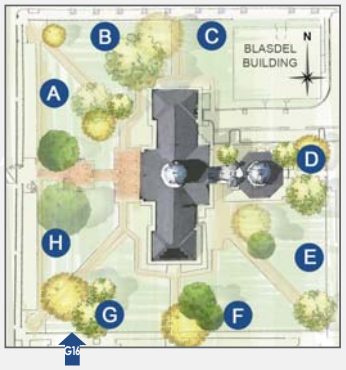
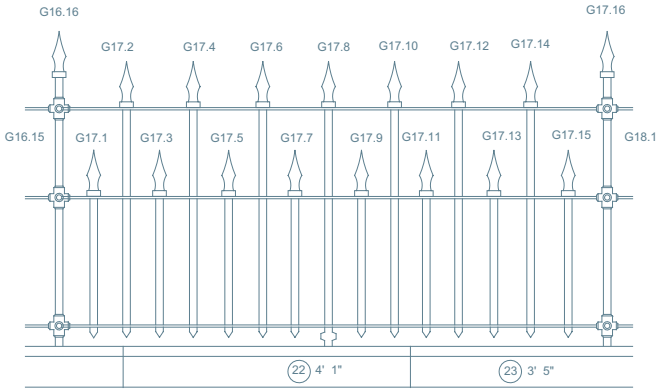


SECTION
G17

Condition Assessment

INSIDE



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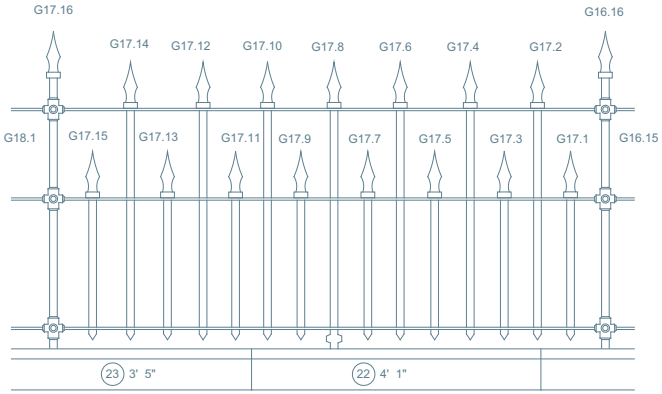

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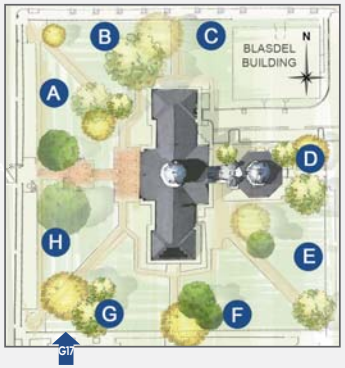
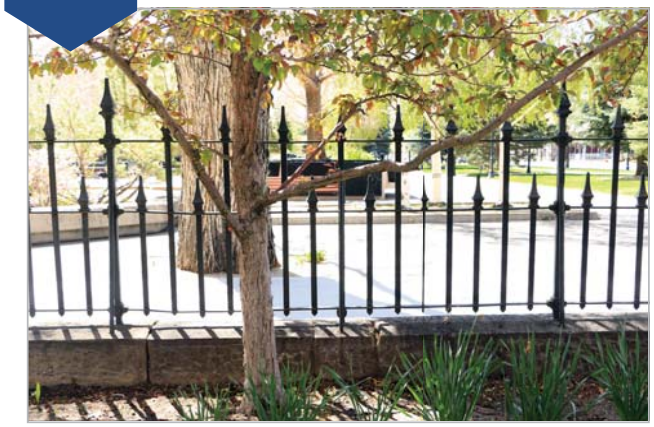


SECTION
G18

Condition Assessment



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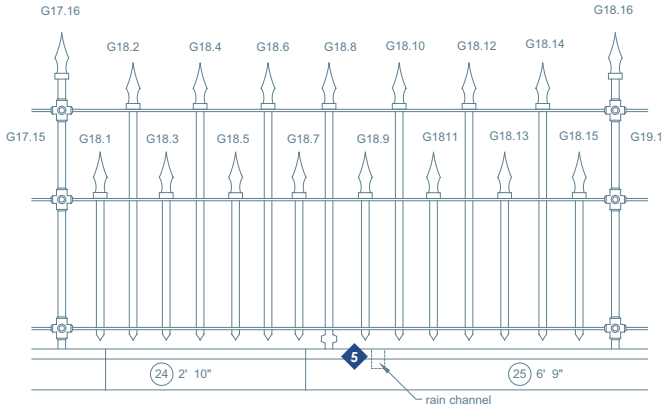

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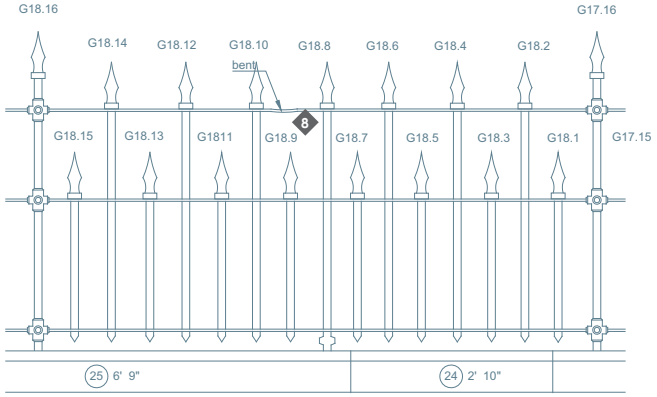

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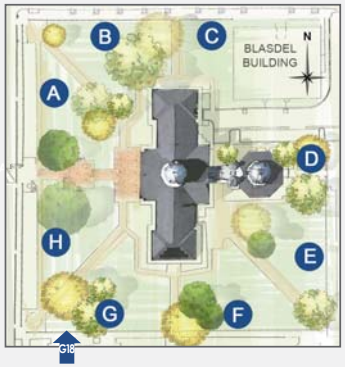
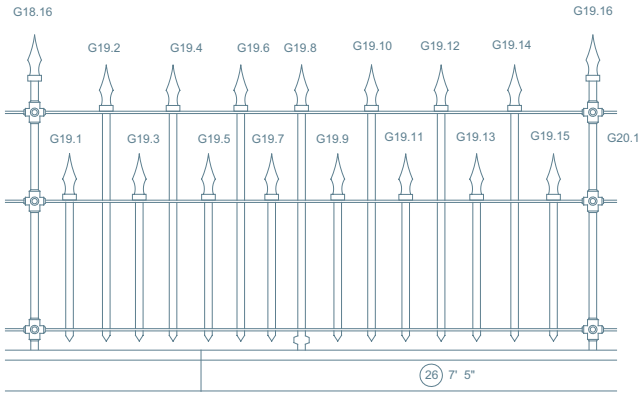


SECTION
G19

Condition Assessment

INSIDE



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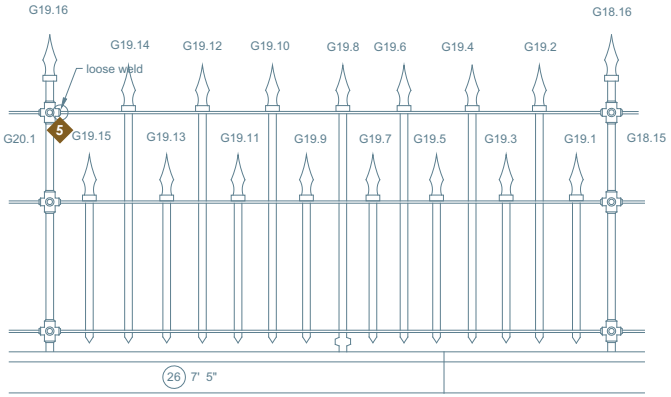

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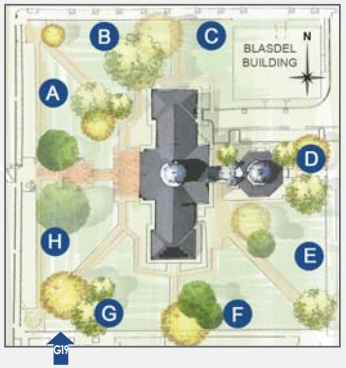
4. Remove vegetation, failed patches (concrete), and embedded foreign objects
5. Eliminate water infiltration by re-setting fractured stone, filling pockets, shelves and depressions, and stabilizing post base with restoration mortar

Structural Instability

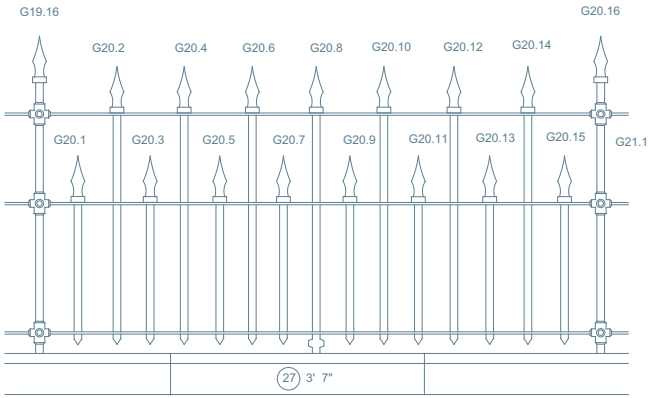
6. Repair primary anchor points by pouring new molten lead into existing masonry socket and building up coping stone with restoration mortar
7. Replace missing or non-historic (square stock) backstays with in-kind material
8. Realign and stabilize fence to include straightening bent, bowed, or out of plumb fence sections and individual horizontal or vertical components
9. Remove non-historic end posts and restore with in-kind materials to period of significance



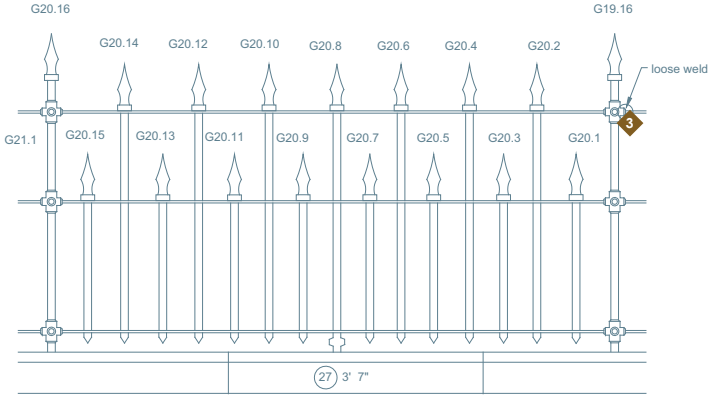
SECTION
G20

Condition Assessment

INSIDE



OUTSIDE



Ironwork Corrosion

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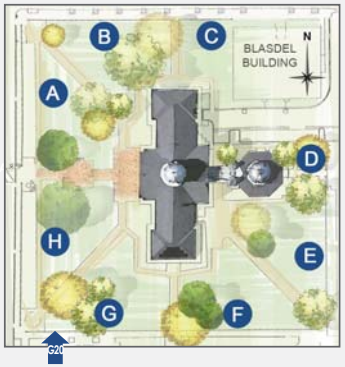
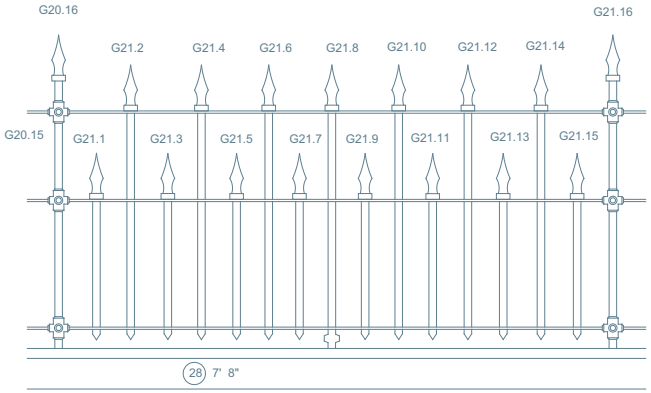


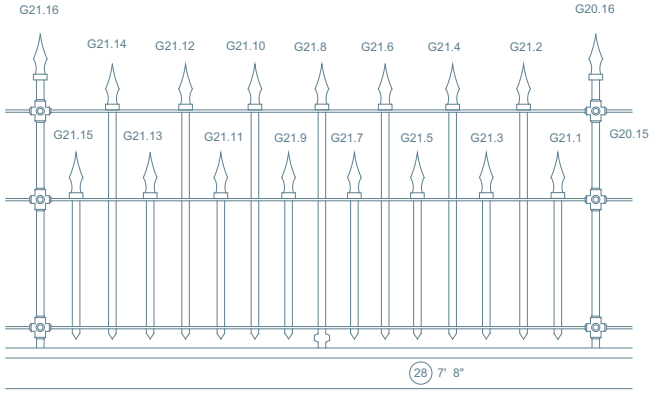
SECTION
G21

Condition Assessment

INSIDE

OUTSIDE





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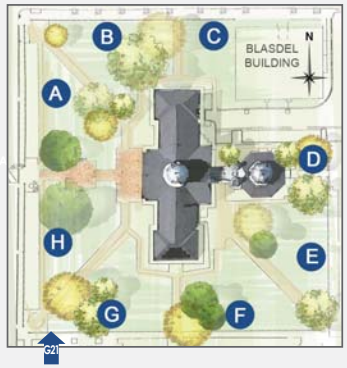
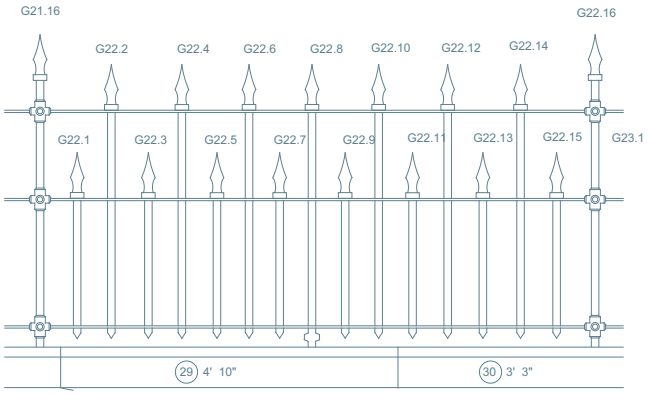


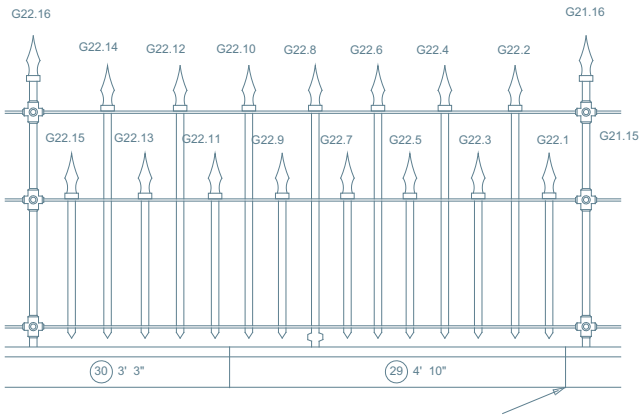
SECTION
G22

Condition Assessment

INSIDE

OUTSIDE





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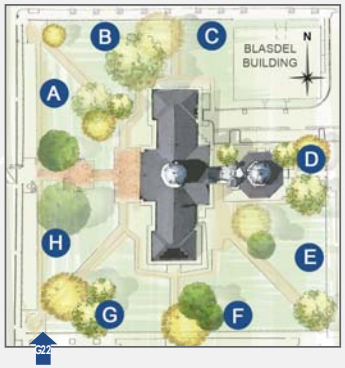
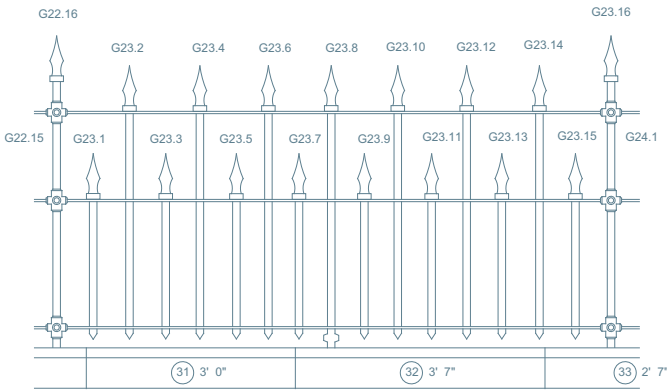


SECTION
G23

Condition Assessment

INSIDE



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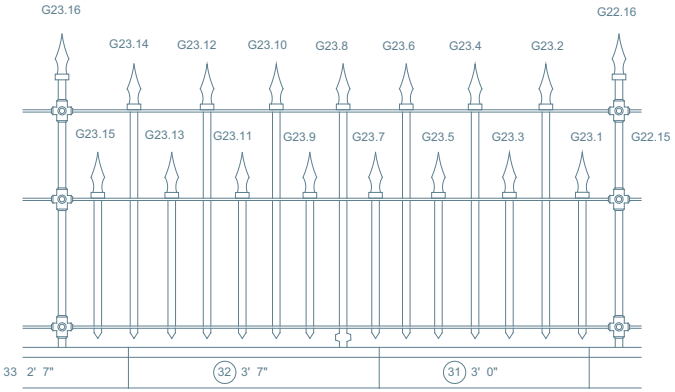

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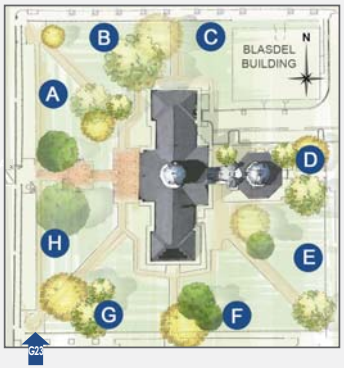
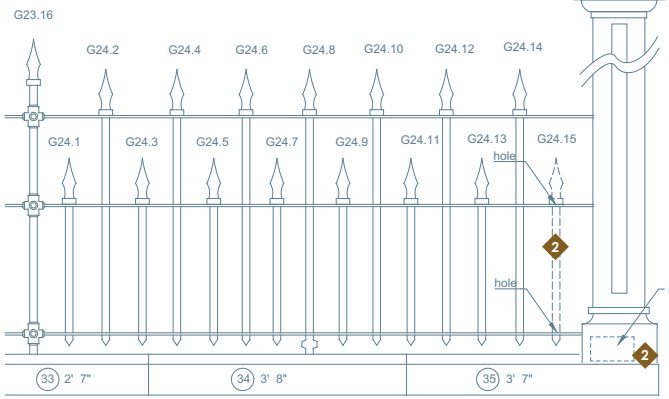


SECTION
G24

Condition Assessment

INSIDE



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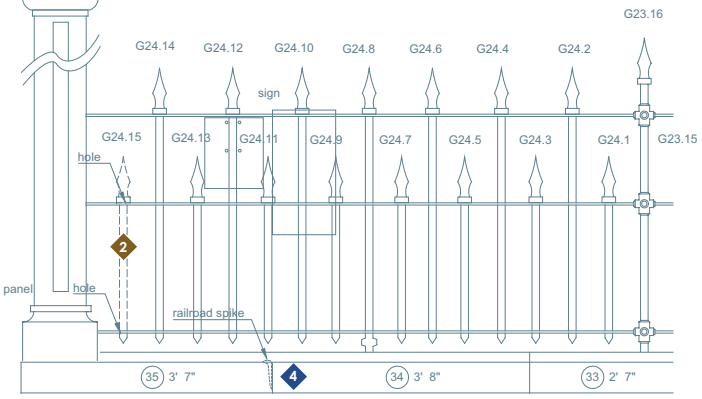

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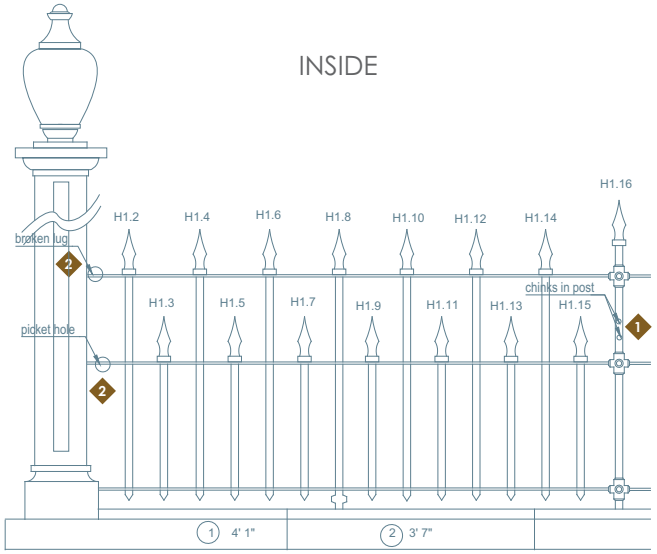
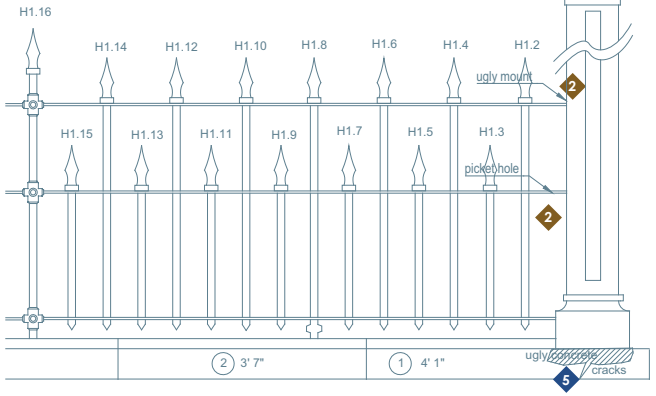
SECTION
H1

Condition Assessment

INSIDE

OUTSIDE





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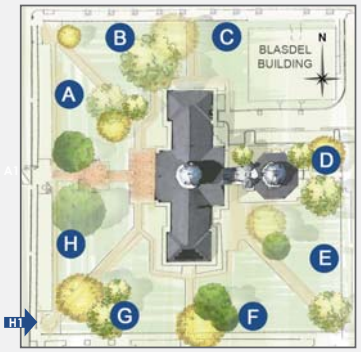
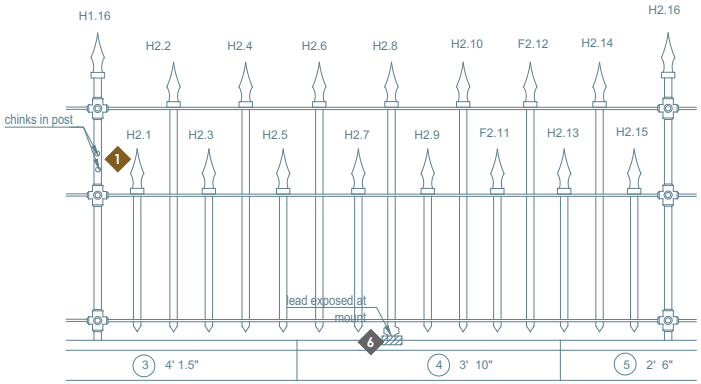


SECTION
H2

Condition Assessment

inside



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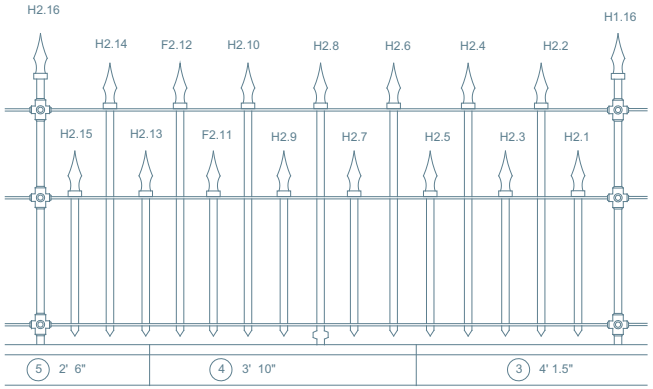

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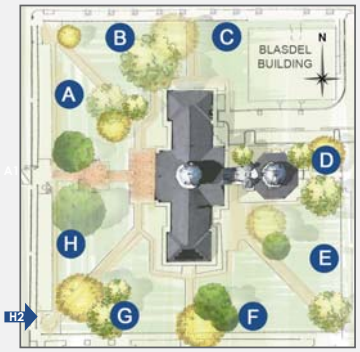
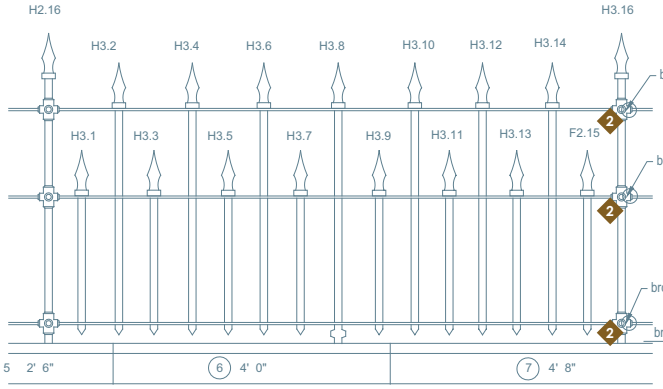


SECTION
H3

Condition Assessment

inside



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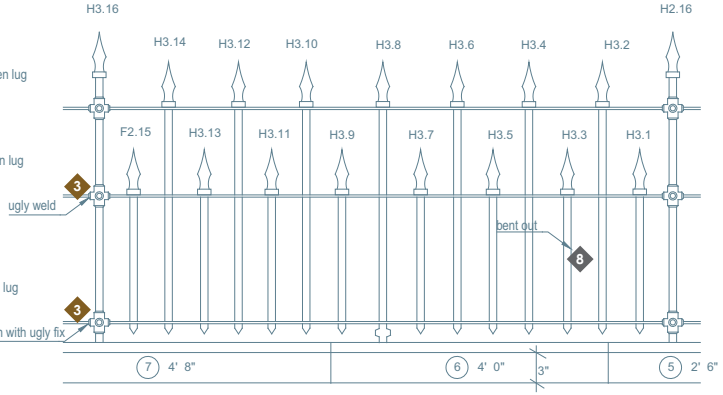

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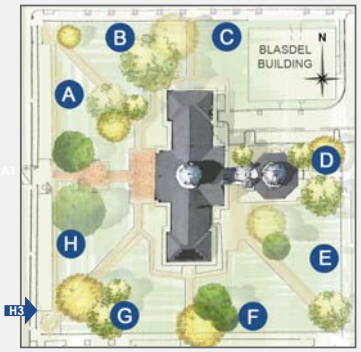
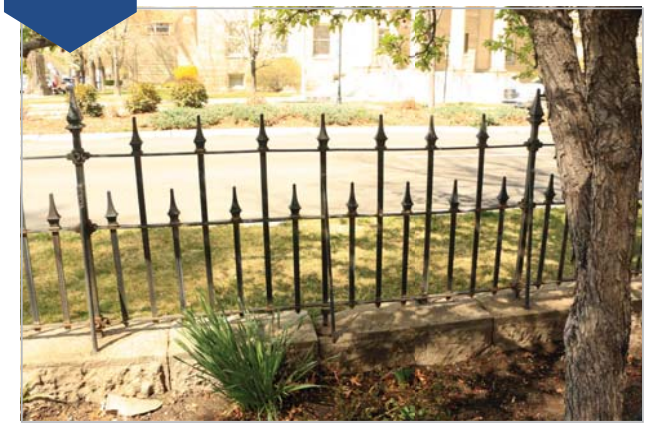


SECTION
H4

Condition Assessment



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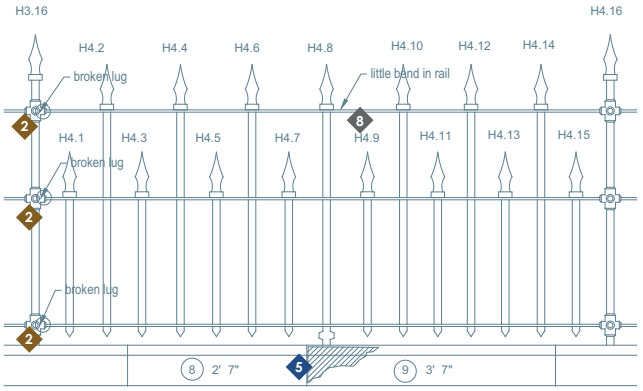

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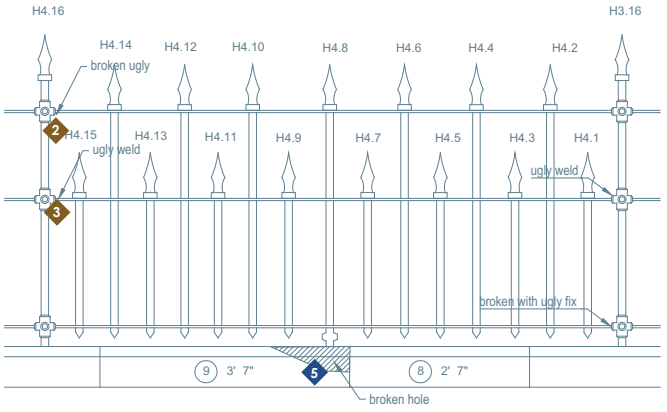

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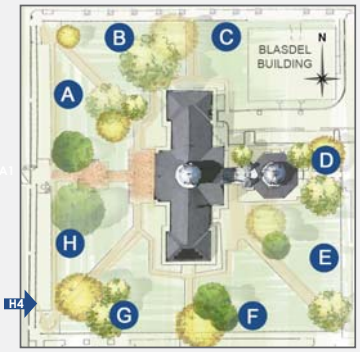
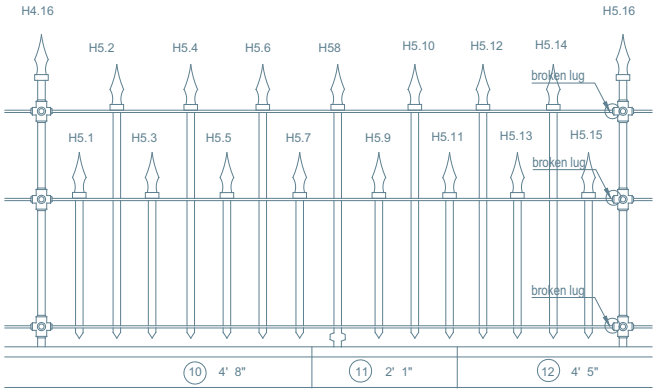
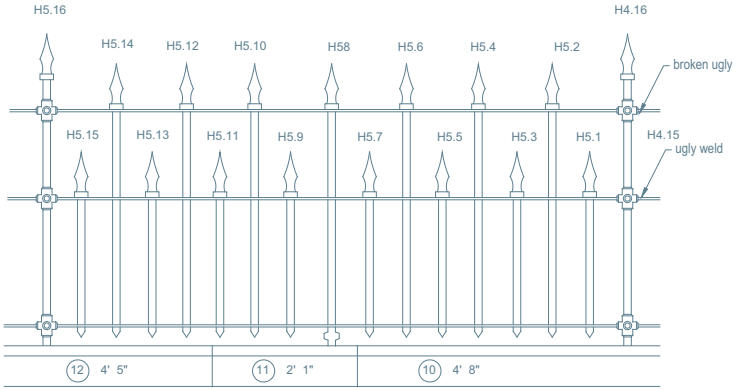


SECTION
H5 Condition Assessment

inside

outside





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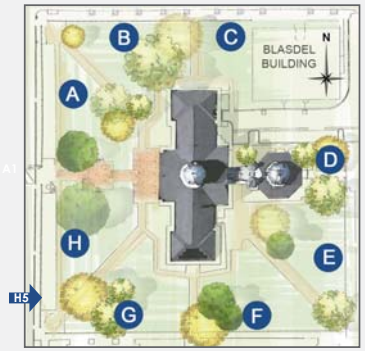
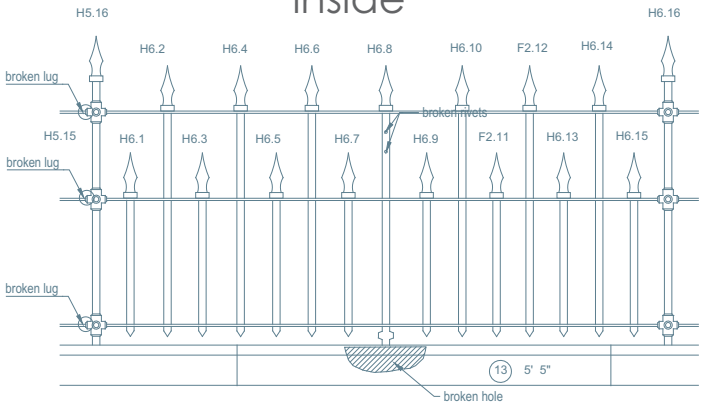


SECTION
H6

Condition Assessment

inside



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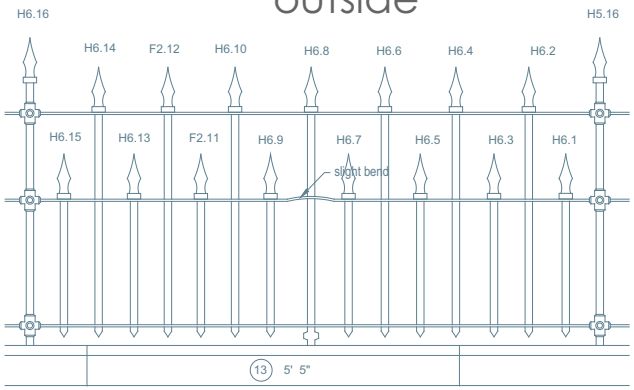

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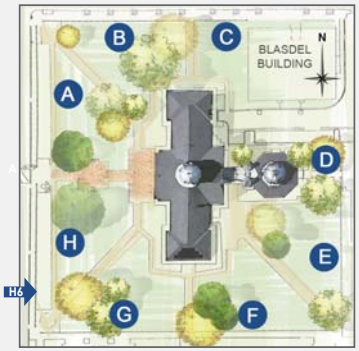
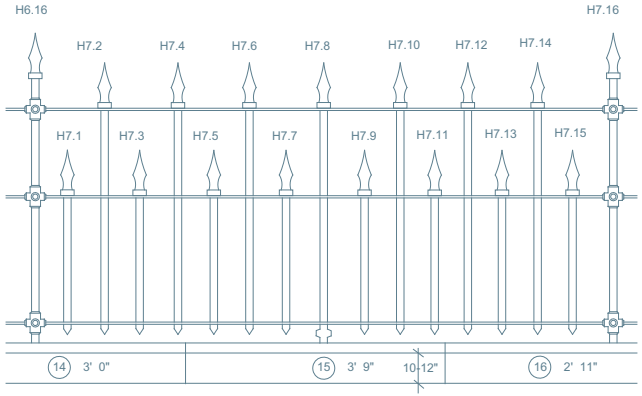


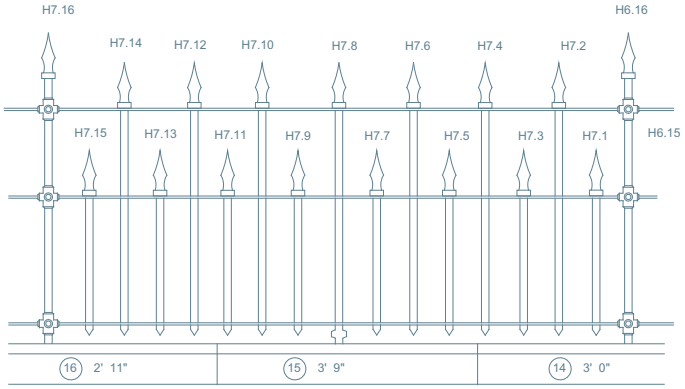
SECTION
H7

Condition Assessment

inside

outside





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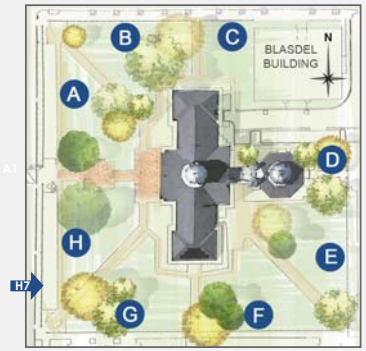
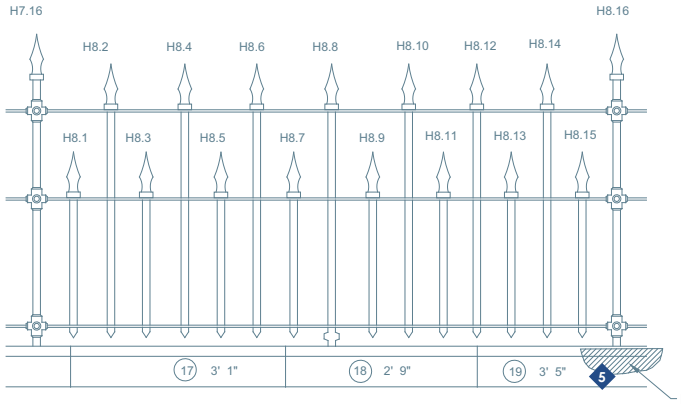


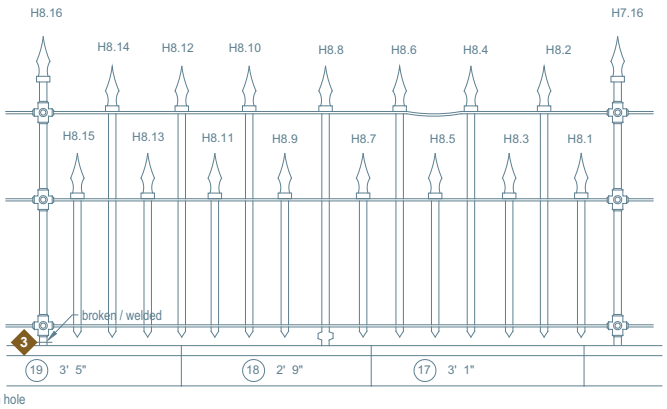
SECTION
H8

Condition Assessment

inside

outside





Ironwork Corrosion

1. Repair holes, cracks and casting defects using filler compound containing iron particles in an epoxy resin binder
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Sandstone Deterioration

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Structural Instability

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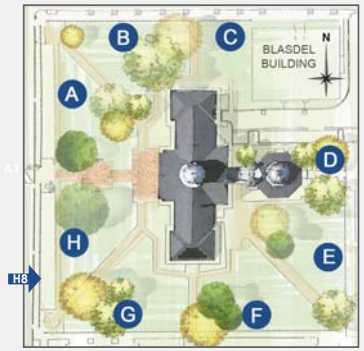
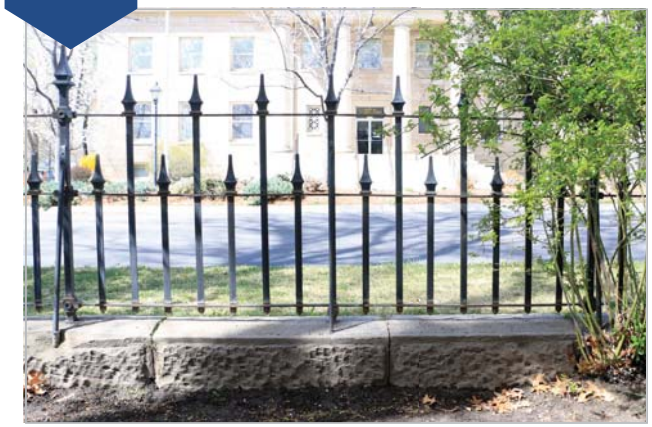
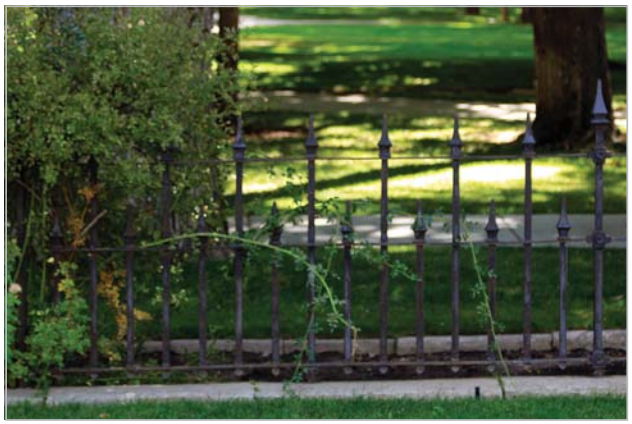
9. Remove non-historic end posts and restore with in-kind materials to period of significance



SECTION
H9

Condition Assessment





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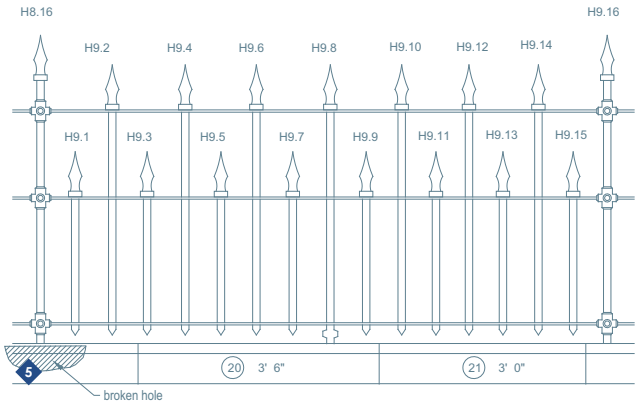

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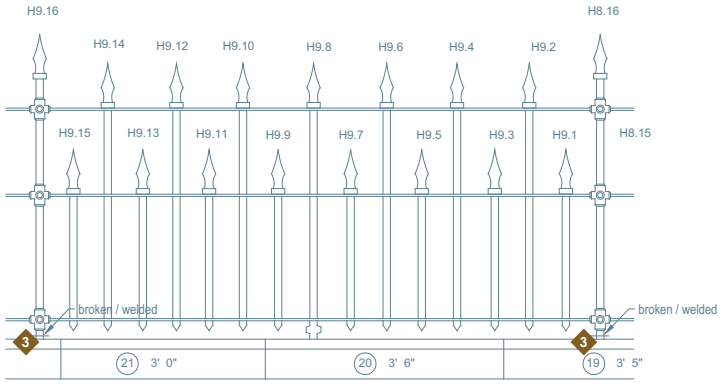

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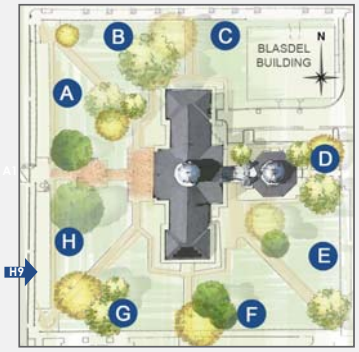
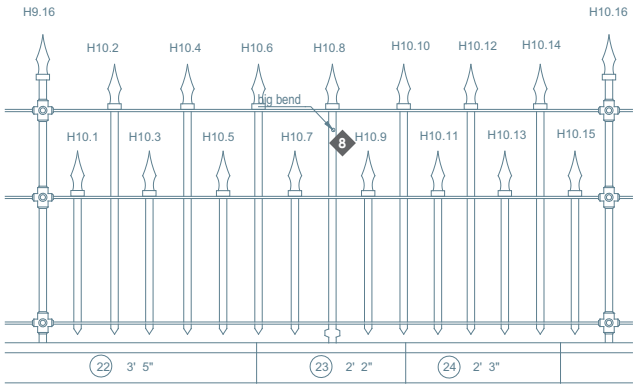


SECTION
H10

Condition Assessment

inside



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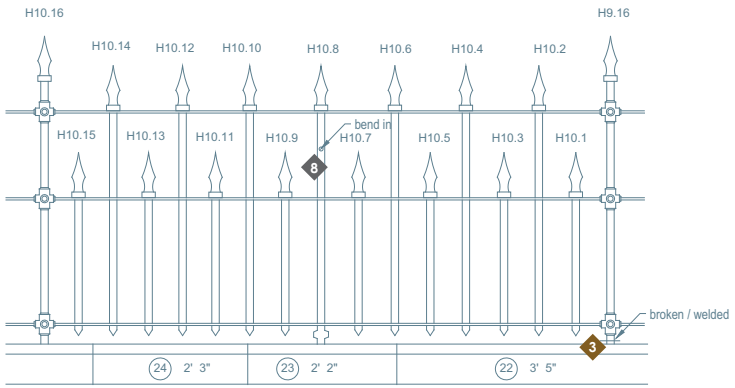

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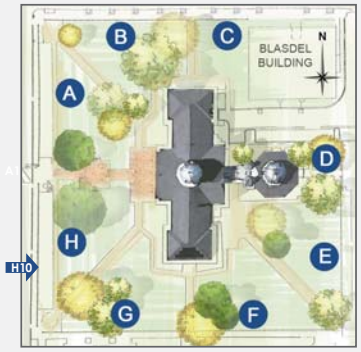
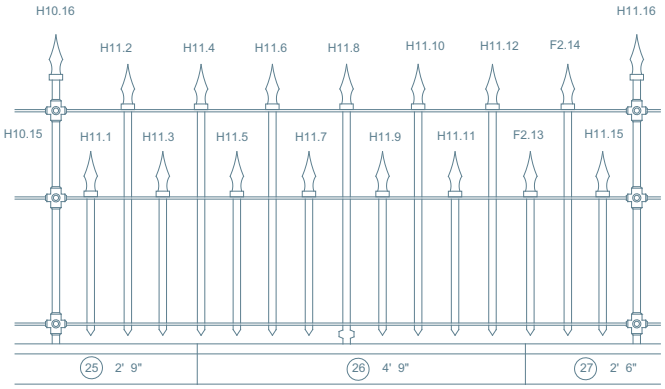


SECTION
H11

Condition Assessment

inside



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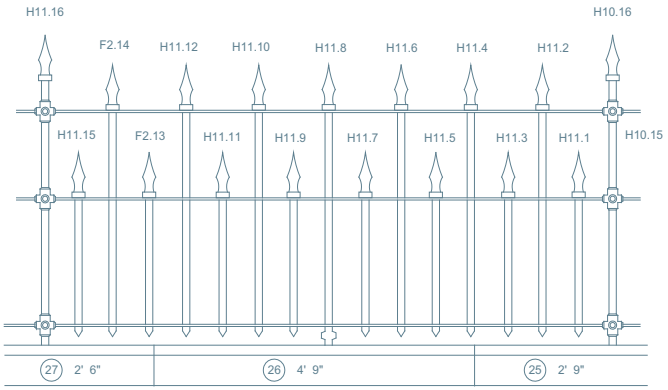

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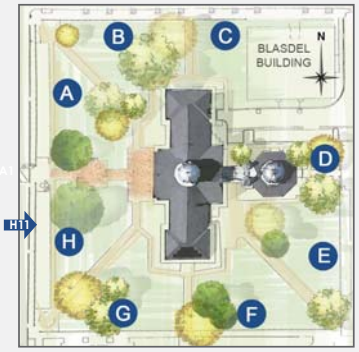
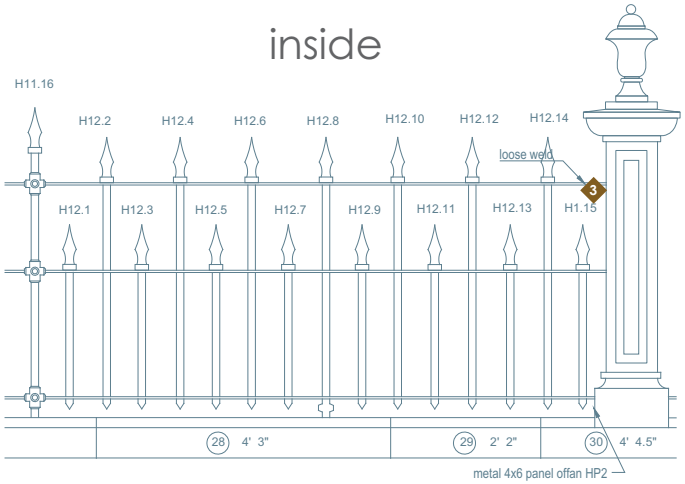


SECTION
H12

Condition Assessment

inside



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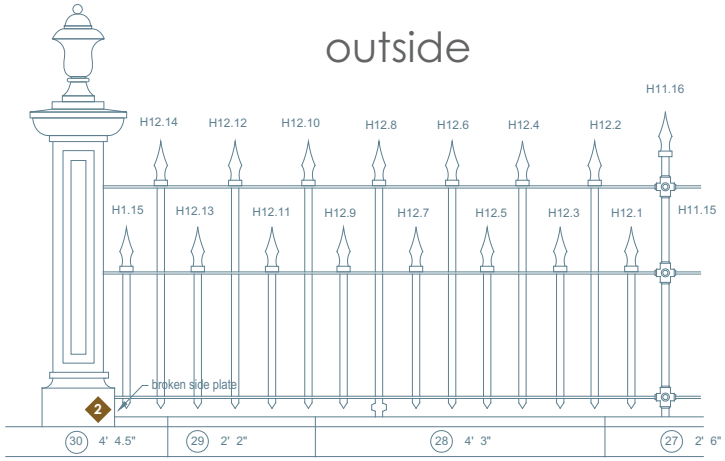

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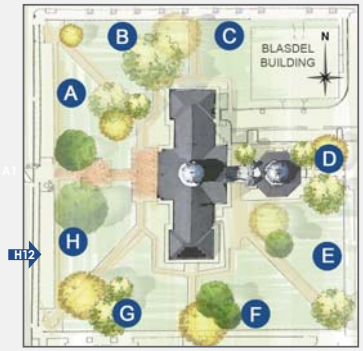
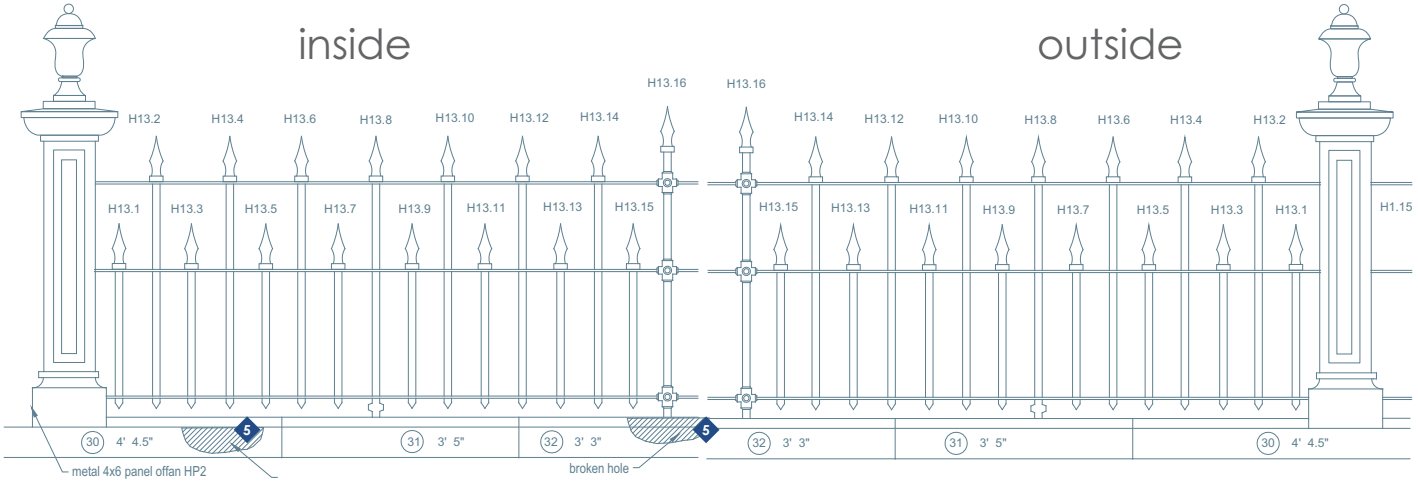


SECTION
H13

Condition Assessment



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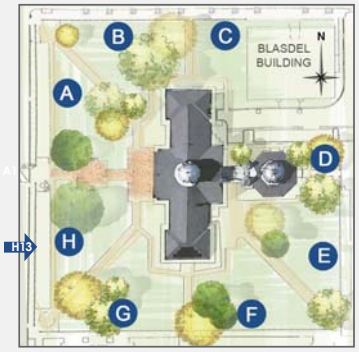
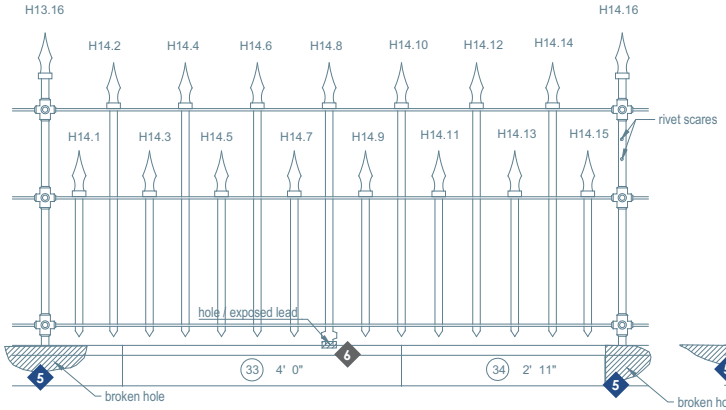


SECTION
H14

Condition Assessment

inside



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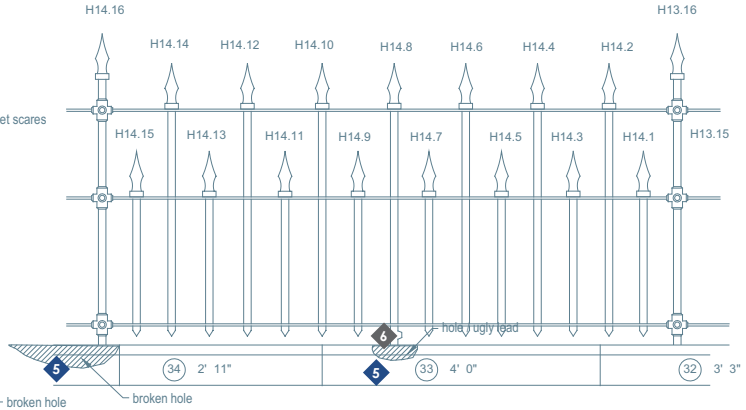

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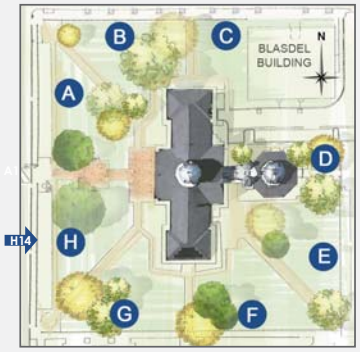
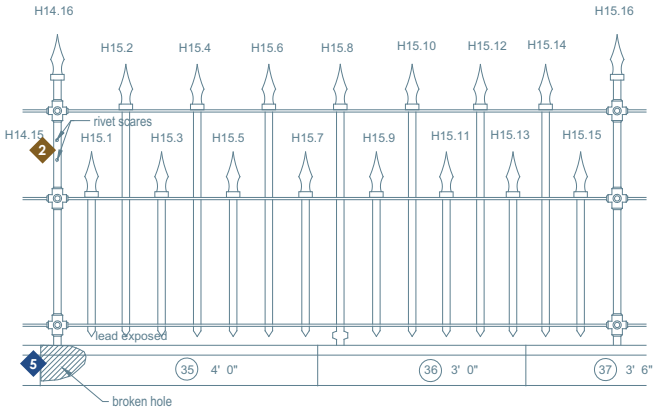


SECTION
H15 Condition Assessment

inside



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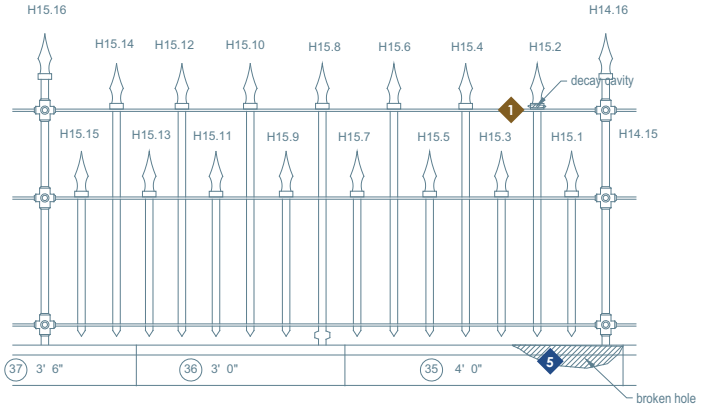

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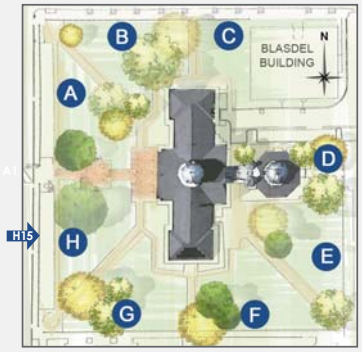
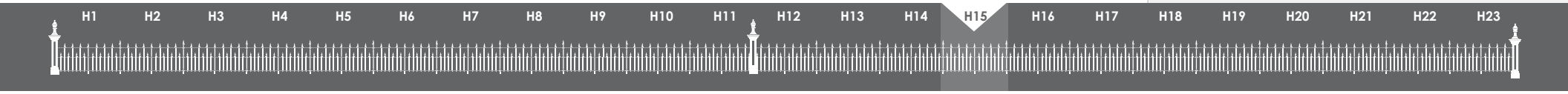
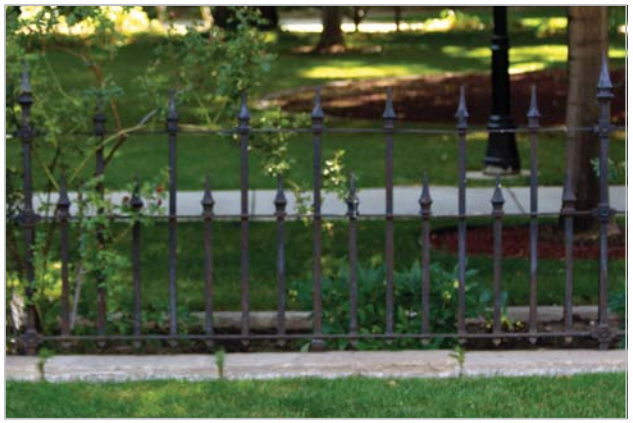
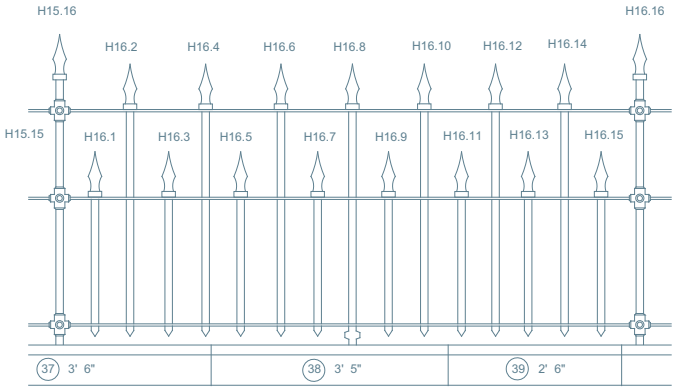
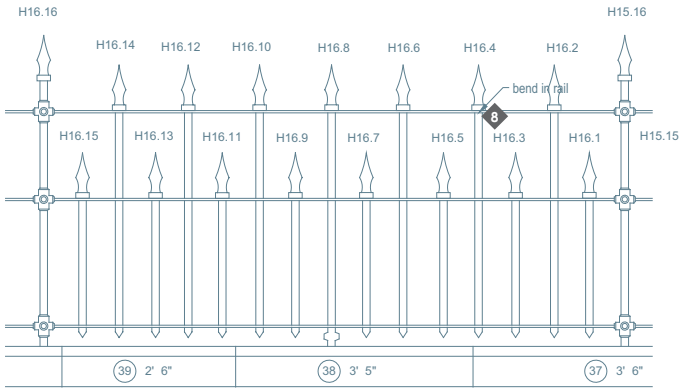




SECTION
H16 Condition Assessment







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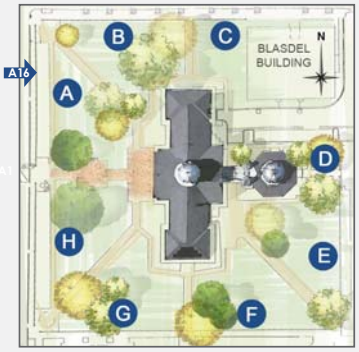
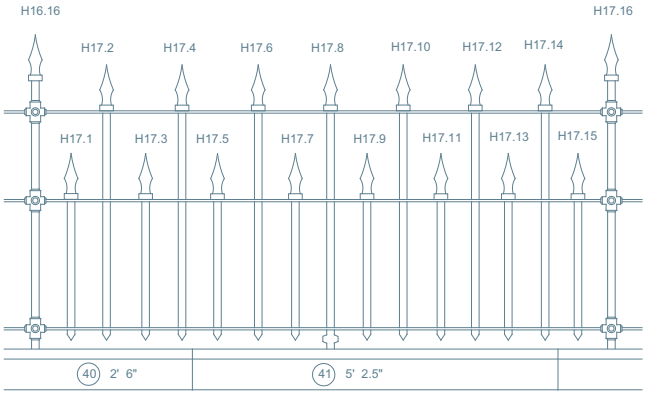


SECTION
H17 Condition Assessment

inside



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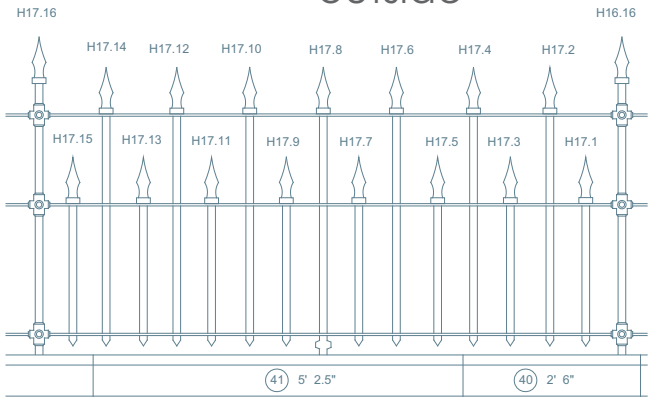

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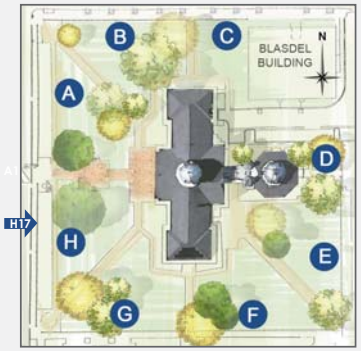
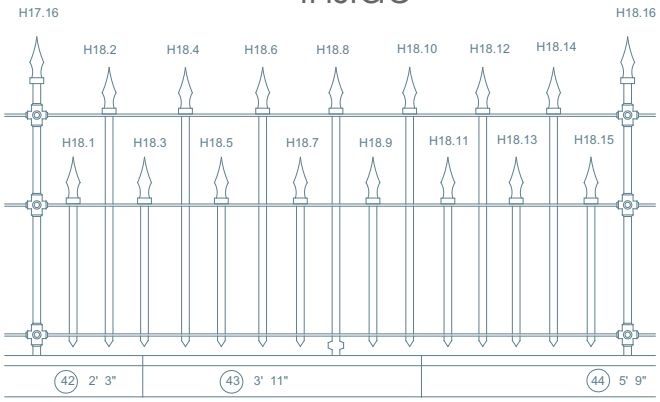


SECTION
H18 Condition Assessment

inside



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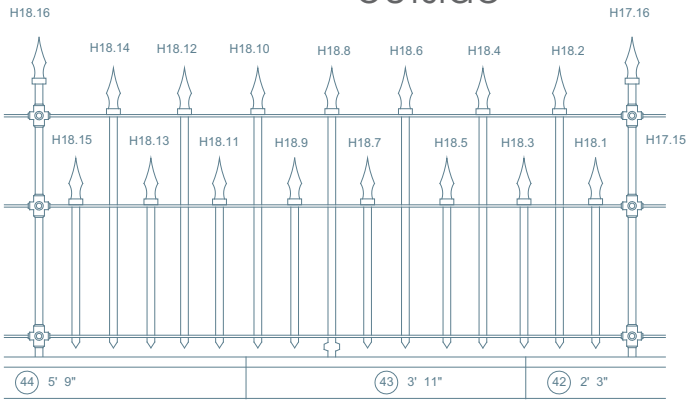

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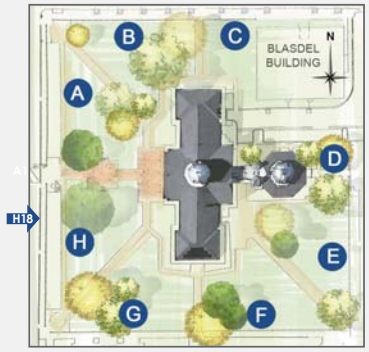
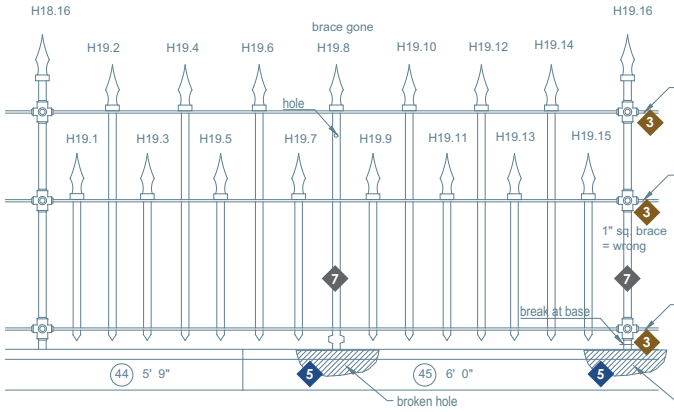


SECTION
H19

Condition Assessment

inside



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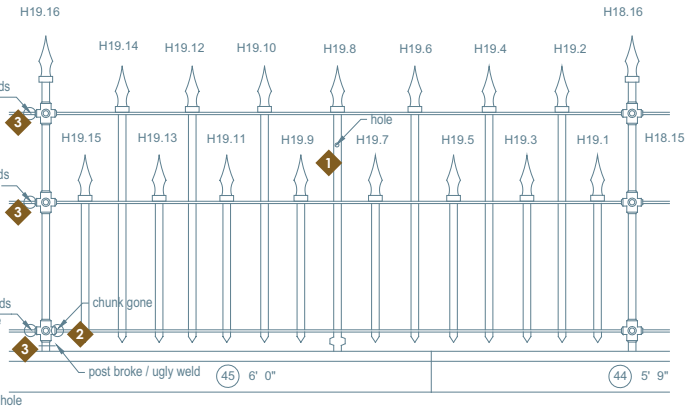

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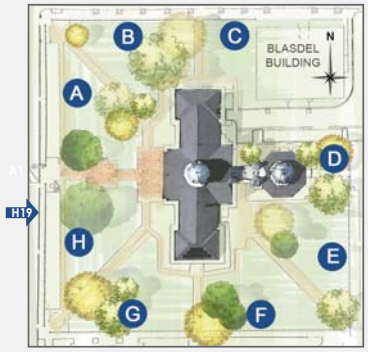
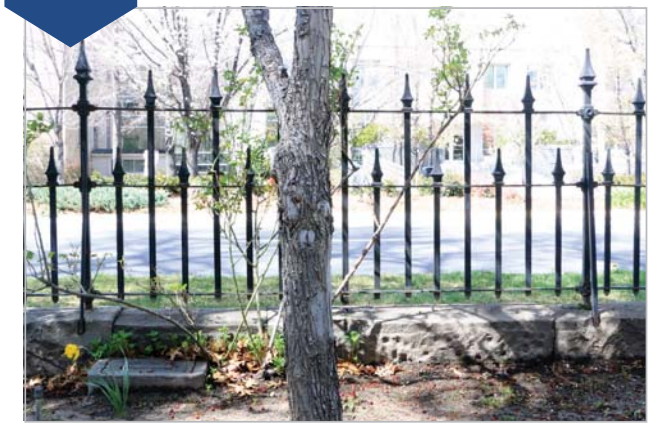


SECTION
H20

Condition Assessment



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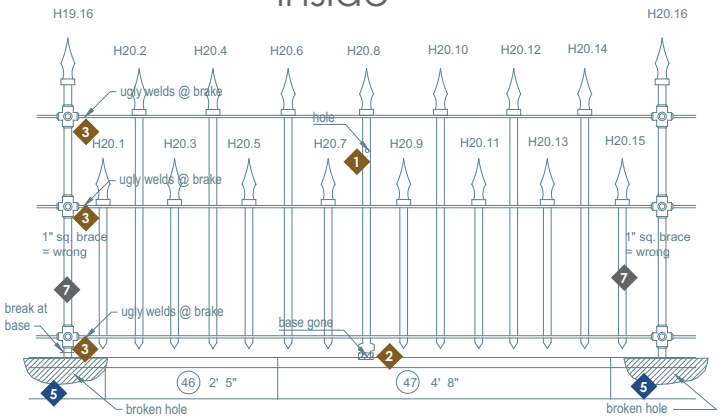

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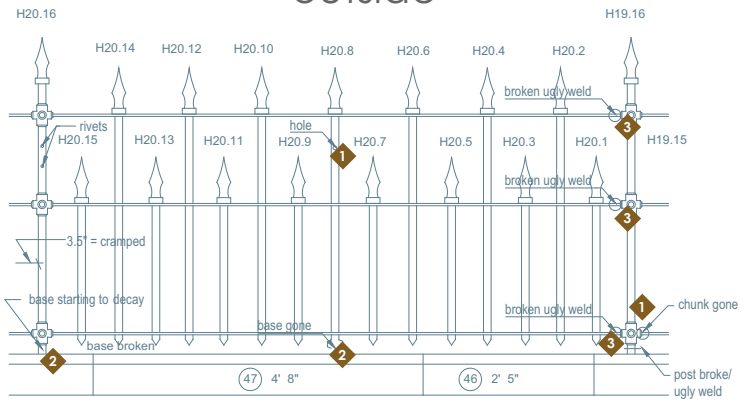


Ironwork Corrosion

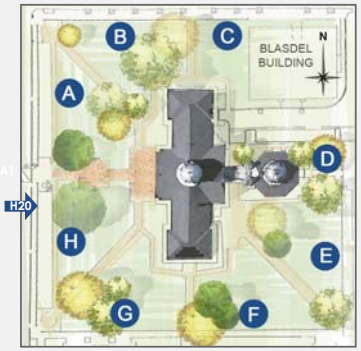
1. Repair holes, cracks and casting defects using filler compound containing iron particles in an epoxy resin binder
2. Replace missing or severely damaged cast iron components with in-kind casting technique and material
3. Major cracks and inappropriate repairs to be repaired by brazing with special nickel alloy welding rods

Sandstone Deterioration

4. Remove vegetation, failed patches (concrete), and embedded foreign objects
5. Eliminate water infiltration by re-setting fractured stone, filling pockets, shelves and depressions, and stabilizing post base with restoration mortar

Structural Instability

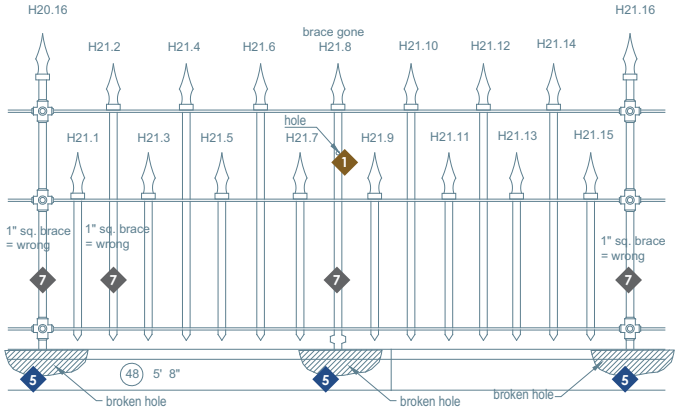
6. Repair primary anchor points by pouring new molten lead into existing masonry socket and building up coping stone with restoration mortar
7. Replace missing or non-historic (square stock) backstays with in-kind material
8. Realign and stabilize fence to include straightening bent, bowed, or out of plumb fence sections and individual horizontal or vertical components
9. Remove non-historic end posts and restore with in-kind materials to period of significance



SECTION
H21

Condition Assessment

inside



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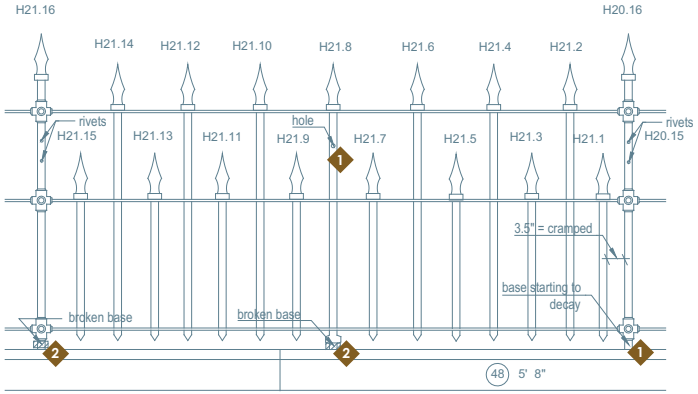

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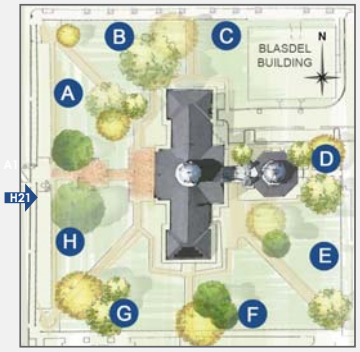
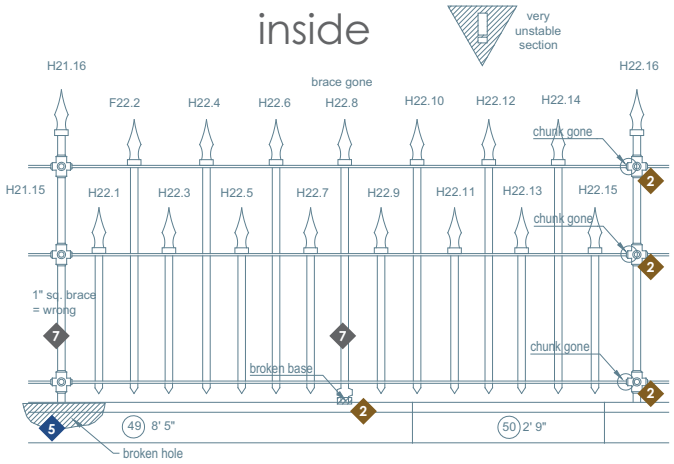
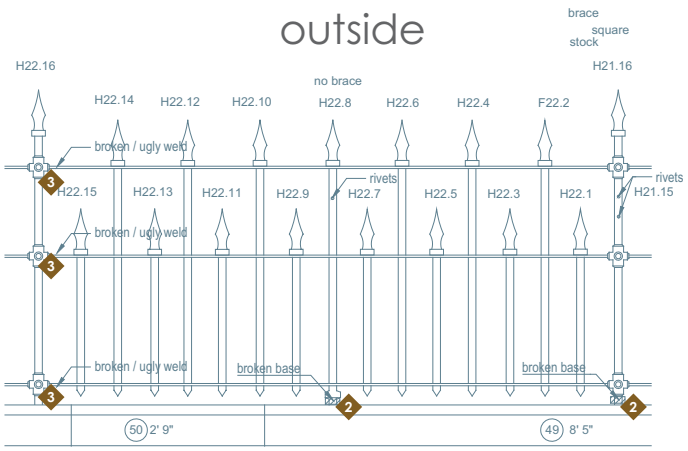


SECTION
H22 Condition Assessment





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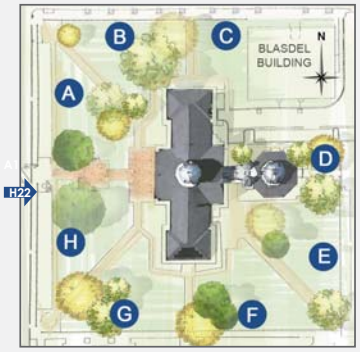
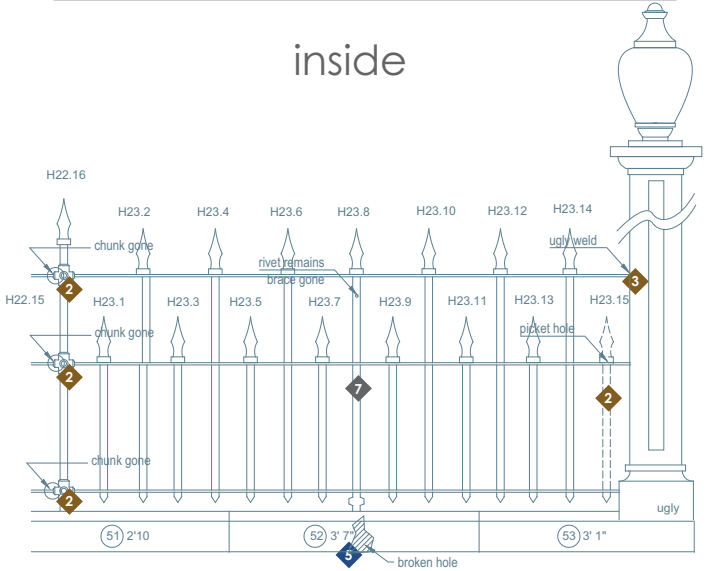


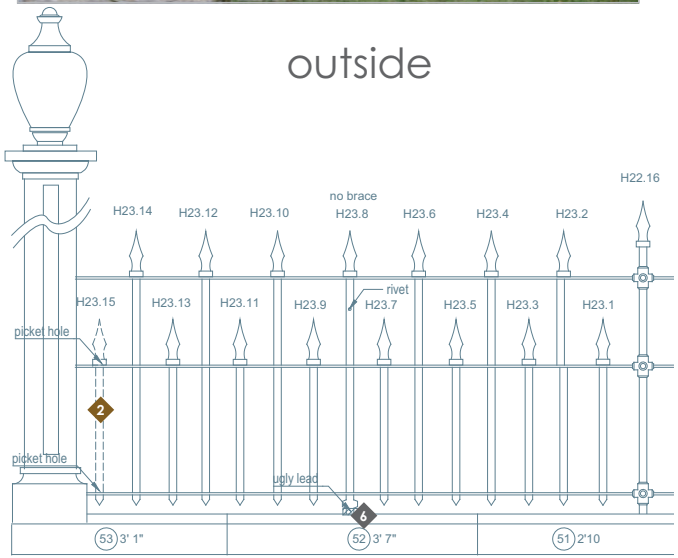
SECTION
H23

Condition Assessment

inside

outside





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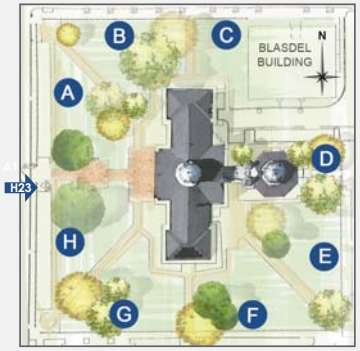

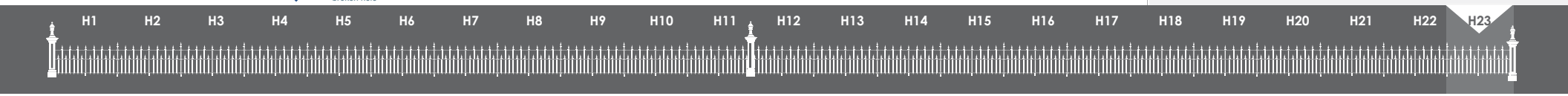

Sandstone is very porous by nature; cracks and flaking develop, important to identify cracks that will become a problem later. Between the sandstone blocks is a lime mortar. Quarried formed border visible on the blocks. A single jack was used on the sides for texturing. This technique requires two workers, a driller, referred to as a "cousin jack" wielded a 4lb hammer and drove a chisel pointed steel into the rock. The other worker would strike the chisel with the hammer, and rotate the chisel 90 degrees before striking it again.

Treatment & Recommendations

Treatment Recommendations developed for the Capitol Fence are based upon the historical and architectural significance of the structure, assessment of materials and structural concerns, and discussions with the project team and the client. The Existing Conditions chapter details areas of deficiencies, deterioration, and failure of materials. Recommendations are grounded in the Secretary of the Interior's Standards for the Treatment of Historic Properties and the Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.

The Standards provides guidelines for four distinct, but interrelated, approaches - preservation, rehabilitation, restoration, and reconstruction.

Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focus upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. Treatment guidance includes identifying, retaining, and preserving character-defining features.

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, and architectural values.

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period in time by means of the removal of features from other periods in history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration period.

When the property's design, architectural, or historical significance during a particular period of time outweighs the potential loss of extant materials, features, spaces, and finishes that characterize other historical periods; when there is substantial physical and documentary evidence for the work; and when contemporary alterations and additions are not planned, Restoration may be considered as a treatment.

Reconstruction is defined as the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and its historic location.

General Treatment Recommendations emphasize a Preservation and Restoration Approach:

- Existing materials and features should be repaired in place where possible.
- All new repair materials should match the existing material in color, texture, composition.
- Where replacement material is necessary, use material matching to the greatest extent possible. Alterative materials should be used if matching materials are not possible, and these materials should be compatible in color, texture, and other qualities.
- Restore missing fence components to period of significance where possible.
- Ensure that replacement material is not harder than the surrounding material and that it does no expand and contract at a difference rate.
- The work undertaken should be performed by qualified ironworkers and stone masons who can demonstrate previous experience with historic structures.

Historic Preservation Objectives

The project team agreed that the primary strategy for the fence for on-going maintenance and repair would be to preserve-in-place. Fence sections would not be removed from the sandstone base to be conditioned off-site. Salvage material representing those fence components that were previously removed and stored by Buildings & Grounds would be used to make appropriate fixes. Fence panels to be stabilized. Backstays would be returned to original locations if good anchorage could be made into existing sandstone. Inappropriate fixes and materials would be removed. Missing elements, primarily the light fixtures, would be recast to appropriate the 1911 appearance. The gates were not identified to be restored as part of the HSR process. The restoration period has been identified as 1875(end post) - 1911(light fixture). During this time the overall structural integrity of the fence was intact.

Standards for Restoration

1. A property will be used as it was historically or be given a new use which reflects the property's restoration period.
2. Materials and features from the restoration period will be retained and preserved. The removal of materials or alteration of features, spaces, and spatial relationships that characterize the period will not be undertaken.
3. Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate and conserve materials and features from the restoration period will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.
4. Materials, features, spaces, and finishes that characterize other historical periods will be documented prior to their alteration or removal.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize the restoration period will be preserved.
6. Deteriorated features from the restoration period will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials.
7. Replacement of missing features from the restoration period will be substantiated by documentary and physical evidence. A false sense of history will not be created by adding conjectural features, features from other properties, or by combining features that never existed together historically.
8. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
9. Archeological resources affected by a project will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
10. Designs that were never executed historically will not be constructed.

Requirements for Work

There are two important principles to keep in mind when undertaking iron fence repairs: 1) Do no harm to the artifact, and 2) Exercise personal safety.

Old layers of paint are likely to contain lead, which is a hazardous substance if ingested. To reduce the risk of lead ingestion, paint should be dampened with water sprays before using emery paper or wire brushes. Appropriate personal protection equipment (PPE) should also be worn to prevent ingestion of lead. Additionally, wind or water-borne waste resulting from cleaning and prepping the fence can be harmful to the environment and should be disposed of responsibly.

Not all existing paint needs to be removed; however for the primer to best adhere to the ironwork, it is important to remove the paint as close to bare metal as possible. Prior to bidding the work, it will be important to document through testing how much lead is present and the abatement procedures. The 1980s specifications called for the use of a red lead primer which was the traditional primer used for centuries on bare metal fencing. Based on this information, we can assume lead is present and we recommend testing now. Lead is also present in the attachment sleeves and is the material recommended to be used to reattach the backstays.

Lead will need to be contained during paint removal; this could be done by tenting each fence sections as they are being prepped, providing means of collection and disposal, and protecting the surrounding vegetation. During painting, the stonework should be protected from overspray which if done electrostatically will be minimal. It may be necessary to install traffic cones against back of curbs or plan for a lane closure along Carson Street while working on Sections A and H.

In a discussion between Pete Dubé and Steve Whitfield of Central Sierra Construction regarding the scope of work, approach, and cost estimate for the fence, Steve recommended that the client hire a painter and keep track of their time to prep a 2 – 3 foot fence panel and then paint it. This would be used as a control mockup that could be included in bidding process to let vendors know how long it took to achieve the desired level of work.

Work Recommendations and Alternatives

Work recommendations are based on the assessment of the existing condition of the fence, research, and from field notes from meetings with the project team. The recommendations generally fall into the following categories:

- Ironwork repairs
- Sandstone repairs
- Fence stabilization – structural and safety concerns
- Painting – preparation and application
- Casting – light fixture restoration

The minimal level of intervention necessary is recommended – balanced against the need to prevent further corrosion, deterioration, and/or remedy structural instability. There are a wide variety of repair methods available, recommended approaches include welding, brazing, epoxy repairs, and fixing replacements.

Welding

Cast ironwork is often composed of a number of individual castings joined together. Traditionally, this was not done by welding. Castings were most commonly joined by interlocking via lugs or bolts. These jointing techniques are part of the character of cast ironwork and it is important

to preserve and replicate these during repair work. Welding is a good solution for heavier castings. Welding cast iron to cast iron is tricky, as the metal has to be heated to cherry red.

Brazing
Where a traditional repair is not practical, or would require the loss of too much original material, brazing may produce a more successful repair. Brazing uses a bronze alloy filler rod and may form a more successful joint than standard welding.

Epoxy
Epoxy is useful for re-profiling pitted sections of ironwork and preventing water from pooling. The advantage is that it is a relatively inert material and forms a reversible repair; epoxy can be removed by blast cleaning. It can help to isolate smaller areas of different metals from each other. It can also be used to secure pin repairs in place. Epoxy is not recommended for filling masonry sockets.

Fixings
Fixings are lugs, screws, bolts, nuts, washers and other items that help hold castings together. New fixings should be made of either high grade stainless steel or bronze. They should be painted before fixing in place and should be isolated from the surrounding casting by a nylon 'top hat' and a nylon washer. Isolation is inexpensive but very important to prevent corrosion. Steel rivets from Master and Carr can be purchased and used to reattached backstays. Fractured lugs can be repaired by brazing. If the lug has been lost, a new one can be cast and attached to the original casting using the same techniques. This repair technique is not suitable for all broken lugs, such as those that are load bearing, in which case the entire casting may need to be replaced.

Repair techniques frequently used in the United Kingdom, where a skilled labor force trained in the trade exists, include Pinning, Plating, and Stitching. These repairs allow the original casting material to be retained and joined together. However, it is frequently less expensive to replace deteriorated cast iron elements with new castings then to implement these repair techniques.

Ironwork Corrosion

Ironwork corrosion is visible on the Capitol Fence. The key to ironwork preservation is surface protection (see recommendations under Painting). Left exposed, iron and steel are inevitably destroyed by rust. Rust, the oxidation of ferrous metals, is commonly caused by exposure to water and air. Cast iron is a processed form of iron ore, the naturally occurring form of iron, and relatively stable. The processed iron seeks to return to its natural state through corrosion. There are two main types of corrosion that occur to cast iron, chemical corrosion and galvanic corrosion.

Chemical corrosion occurs when iron oxidizes, i.e. the metal loses electrons to a non-metal substance such as oxygen. When cast iron is exposed to water and air for a prolonged period of time, electrons in the iron combine with oxygen in the air in a process known as oxidation. The water lying on the metal surface acts as an electrolyte, a substance that enables the release of electrons from the iron. These released electrons are then free to combine with oxygen in the air; this is chemical corrosion. Painted ironwork prevents moisture and air coming into contact with the metal surface and driving this chemical corrosion process of oxidation.

Galvanic corrosion, also known as bi-metallic or sacrificial corrosion, occurs when two dissimilar metals are placed in direct contact with one another in the presence of water; this is a form of electrochemical corrosion. In these circumstances, one metal will corrode sacrificially to the other (and will corrode more quickly). Water (rainwater, condensation or moisture in soil) acts as an electrolyte, establishing an electrical current between the two metals. The current flows from the anodic metal, the more reactive/ less "noble" metal, to the cathodic metal, the less reactive / more "noble" metal, slowly removing material from the anodic metal. The potential for galvanic corrosion should always be considered when repairing cast iron; introducing dissimilar metals can have serious consequences for the longevity and effectiveness of repairs. Similarly, this is a consideration when selecting fixings and therefore relatively stable metals such as bronze or stainless steel should be used.

Sandstone Deterioration

Problems are visible at the interface where ironwork has been fixed into masonry. Lead, poured into the masonry socket while molten, was used to secure the ironwork in place. The lead sleeves exhibit signs of failure and are allowing moisture to saturate the foot of the ironwork which has begun to corrode. The corrosion of the ironwork is exerting pressure on the surrounding masonry socket and causing fractures. Where a fracture has occurred, a number of approaches can be taken depending on the severity of the fracture:

- Clean the ironwork as far as possible in-situ and repaint. If water is pooling in the socket, re-fill it with hot-poured lead.
- If the fracture has not caused loss of stone or structural damage to the masonry, repeat step one and fill the fracture with a lime mortar.
- Drill out the original lead, thoroughly clean as much of the ironwork as possible, paint the ironwork and re-fill the socket with lead.
- If part of the stone has been lost or requires replacement, auger new stone to create a new socket for the ironwork to sit into. New stone should be carefully matched, not just by color but by composition. While a stone may match in color, its other properties, such as hardness and porosity, may not be compatible with the original stone and may cause accelerated deterioration.

Cal Dillon, masonry consultant, recommended using a Jahn product by Cathedral Stone to repair sandstone and to add a yellow gray pigment to match existing stone. This product has a 25-30 year warranty. Cal noted limited reaction between iron and sandstone because of the lead sleeve; lead is malleable.

Structural Instability

The Capitol Fence exhibits signs of structural instability caused primarily by failure of anchorage into the masonry base. Instability of structural elements results in sways. Impact damage by vehicles also has caused structural failure of fence sections. The concrete sidewalk adjacent to the sandstone base will exert pressure on the fence on Second Street. Attachment points are weakest link in overall structural stability of fence.

The hollow cast iron end and line posts are anchored into the stone foundation by a vertical central threaded rod. Tightening the nut at the top with gentle applications of penetrating oil, wire brushing and a little heat from a torch, will pull the post back into place. Structural members, such as posts, must be reinforced with steel or replaced all together.

The fence rehabilitation design plan in 1980 called for replacing the 1911 light fixtures with new material. The new design undermined the overall structural integrity of the fence. The height of the replacement light fixtures was not scaled appropriately in relation to the historic fence making the base unstable. The fence railing connection at the new post did not offer the same stuctural strength as the original. The instability of the new light fixtures pose a safety hazard, as they could be potentially pushed over. Buildings and Grounds staff have attempted to stabilize the lights at the sandstone base using concrete. They have also made upgrades to the electrical feed. They shared their concerns on the stability and overall safety of the light posts with the project team.

Note footing and electrical repairs on 1980 light fixture addition.

Photo Documentation - Ironwork Corrosion

The primary purpose of the maintenance program is to control corrosion. As soon as rusting is noted, it should be carefully removed and the protective coating of the iron renewed in the affected area. Repair holes, cracks and casting defects using filler compounds containing iron particles In an epoxy resin binder. Fractures are common in cast iron which is a brittle material. Some fractures can be repaired, using a variety of methods as outlined above, though occasionally it may be necessary to replace all or part of a fractured element if the degree of fracturing is too extensive. Not everything that looks like a fracture necessarily is; original casting flaws can look like a fracture but may be merely cosmetic. Cast iron components are hollow; cracks can allow water intrusion, leading to rust or freeze/thaw damage.

Photo Documentation - Ironwork Corrosion

Cast iron is an alloy of the elements iron, carbon and silicon that is formed into shapes by pouring the molten metal into a mold. The technique was invented by the Chinese more than 2,000 years ago. Replace missing, non-original materials, and/or severely damaged cast-iron components with salvage and/or in-kind casting technique and material. Left exposed, iron and steel are inevitably destroyed by rust. Rust, the oxidation of ferrous metals, is commonly caused by exposure to water and air. Ironwork is usually painted or coated in an attempt to prevent moisture and air coming into contact with the metal surface and causing corrosion. Rebuild wood urns with epoxy and seal prior to painting.

Photo Documentation - Ironwork Corrosion

Major cracks and inappropriate repairs to be repaired by brazing or welding with special nickel-alloy welding rods. Generally, welding is not a good solution for fine or delicate cast iron, although it can in some circumstances work well - usually in heavier castings. Original casting flaws are relatively common and can appear as holes, ranging from tiny to quite large, and occasionally as folds, which can look like cracks. These were sometimes hidden by foundries using various filling materials which are usually removed during the cleaning process.

Photo Documentation - Sandstone Deterioration

Remove vegetation, concrete, embedded foreign objects and eliminate water shelves by filling pockets and depressions that don't drain, fix primary anchor points and seal from water. Inherent problems with sandstone noted; goal is to take measures to prevent further deterioration of material. Railings secured into masonry sockets using hot poured lead. Iron fence must be set in footings that extend below the frost line in order to withstand heaving. Adjust landscape watering to minimize overspray on sandstone.

Photo Documentation - Sandstone Deterioration

Where the ironwork is not longer supported, reconstruct the support using Jahn or equivalent mortar, Loose, missing or detached backstays will require re-attachment, Developing corrosion exerts pressure on stone causing fracture; address fractures around the lead anchors. Concrete is not an appropriate material for the repair of ironwork especially in combination with stone.

Photo Documentation - Structural Instability

Repair primary anchor points including missing, incorrect material (square stock) not in its original location, and rivit issues (welded repair, broken lugs). Impact damage results in fracturing or shattering in cast iron. Attachment elements are the weakest points of existing fence structure and the first place to address. Drill out rusted bolts and replace with iron or stainless steel.

Photo Documentation - Structural Instability

Fence instability caused by 1980 light fixture rehab; attachment points compromised, footing unstable, electrical feed to be upgraded. Repair lead sleeve; railings secured into masonry sockets using hot poured lead; melt lead to close the gaps, Realign and stabilize fence to include straightening bent, bowed, or out of plumb fence section(s) and / or individual horizontal or vertical component(s), repair post base. Bent or damaged parts can be straightened with a crowbar. A straight panel is only important if fence components are not fitting together correctly.

In addition to the brown fence color, the newspaper article in 1875 noted that the fence arrived in twelve foot crates, possibly indicating that the panels and end posts were shipped assembled. The paint analysis revealed the original color to be a "deep forest brown". The color would have complimented the sandstone used on the Capitol Building, the sandstone foundation wall, and the green of the landscape. Traditionally, oil-based lead (white lead) paints were most commonly used for outdoor ironwork, applied on top of a red lead primer.

Painting

Fence Color

The Carson Daily Appeal offers source evidence that the fence arrived painted brown in 1875. No other mention of color has been found. To confirm the newspaper report, additional research was undertaken. On the recommendation of SHPO, Michelle Schmitter contacted Dr. Mary Stiegel and Jason Church, a material conservator at the National Center for Preservation Technology & Training (NCPTT). They suggested that the fence most likely arrived from the factory fully-assembled and painted as no records were found to indicate the fence was field painted after erection on the Capitol Plaza. Jason Church noted that "brown" was most likely not a primer color and would appear to be the paint color; furthermore, he suggested that the fence was likely finished in a paint with a flat or very low sheen.

Notes from call with Dr. Mary Stiegel, NCPTT (June 18, 2015) to discuss color and electrostatic painting:

- Mary said Jason Church is the expert on latest materials and application measures for primers and painting ironwork.
- She mentioned that the rust may all have to be removed and fence stripped to bear metal before using electrostatic painting.
- She has seen this used in the factory setting on new metal, never outside on historic ironwork. But she is not against it and thinks we just need more information to make a good decision.
- NCPTT recommends a rust convertor primer that allows for some rust to remain and it actually calls for it – "it chelates with a phosphate and gives a more stable surface".

Notes from phone conversation with Jason Church, NCPTT (7/14/2015):

- Primed and/or finish coats were options available to Clapp for selection from Robert Wood & Co.
- Color chosen would have blended well with the Capitol Building
- Protect sandstone, specify minimal overspray
- Electrostatic painting okay to recommend, this involves electrical current hooked-up to the fence that draws paint to surface
- Recommends rust converter primer, suggests Rustoleum rust performer or Fertan, brushed on – it goes on quick as is very thin
- Wire brush or dust away loose rust, some to remain; the rust con verter takes rust from iron oxide to iron ternate
- Jahn product is good to use on sandstone

Various colors have been found on historic ironwork. In the first half of the nineteenth century 'invisible' greens (so called because they would blend into a background of foliage) were used for fences, gates, railings and garden furniture. Green was used throughout the mid Victorian period but dark blue, red and chocolate brown were also popular. Typically, late 19th century iron fences were painted using oil-based white lead paint over red lead primer and generally tended toward low gloss rather than high gloss sheen.

Visual inspections of historic photos were unable to confirm brown color and paint sheen. The 1875 photo on page 3 reveals similarities between fence and color of tree trunks and hitching posts, unlike to black suit on the man standing next to the fence. Upon recommendation of a paint analysis and approval by SPWD, a sample of the cast-iron finial and wrought iron picket from the salvage pile at the B&G warehouse in Carson City was sent to Mary McMurray at Art First in Portland, OR for analysis. During a color analysis, a professional is often able to determine earlier color schemes by examining the sample under a microscope. Colors can be identified by cutting a diagonal slice through the paint layers. Primers and top coats were usually deliberately selected in different colors to aid the painting process. The fence piece sent to Portland was removed during construction of the Blasdel Building and was not involved in the two documented painting efforts.

ART FIRST COLORS FOR ARCHITECTURE
Mary McMurray 503 287 4354 PO BOX 14644 PORTLAND OREGON 97293

Original Paint Color Seriology Analysis February 10, 2016

Building: STATE CAPITOL, CARSON CITY, NEVADA
Address:
Contact: PETER DUBÉ, DUBÉ GROUP ARCHITECTURE

Sample Number A2 Location IRON FENCE POST Date taken 2/1/16
Description PAINT SAMPLE CONTAINING ALL PAINT LAYERS, INCLUDING SUBSTRATE
Micro Analysis

Layer	Substrate	1	2	3	4	5
Color	IRON	DARK BROWN	RUST			
MATCHES SHERWIN-WILLIAMS PAINT		#9175, "DEEP FOREST BROWN"				
Method	SUSPENSION OF SAMPLE IN ACRYLIC RESIN, MAGNIFIED X8 AND X32					

Sample Number A3 Location IRON FENCE RAILING Date taken 2/1/16
Description SAME AS SAMPLE #A2.
Micro Analysis

Layer	Substrate	1	2	3	4	5
Color	IRON	DARK BROWN	RUST			
MATCHES SHERWIN-WILLIAMS PAINT		#9175, "DEEP FOREST BROWN"				
Method	SAME AS FOR SAMPLE #A2.					

Sample Number A5 Location IRON FENCE RAILING Date taken 2/1/16
Description SAME AS SAMPLE #A2
Micro Analysis

Layer	Substrate	1	2	3	4	5
Color	IRON	DARK BROWN	RUST			
MATCHES SHERWIN-WILLIAMS PAINT		#9175, "DEEP FOREST BROWN"				
Method	SAME AS FOR SAMPLE #A2					

The original color on the iron fence at the Capitol Plaza was a very dark brown, matching Sherwin-Williams #9175, "Deep Forest Brown". The chemical composition of the original paint from historic handbooks including "The Expert Paint Mixer": *Red Lead is the best of all pigments for first-coating iron and steel. It is a mixture of Red Lead and litharge.... The Government requires of a red lead that it contain at least 94 per cent of red lead, and most railroads require a similar quality. If it is desired to use black with the paint add at the rate of ten ounces of lampblack to twelve pounds of red lead, mixing with enough oil to make one gallon of paint. A paint chemist gives the following formula for ordinary iron work. Take the best French yellow ochre 39 lbs., and lampblack 1 lb., both ground in oil. Thin with raw linseed oil 54 lbs., and japan drier 6 lbs.*

Based on an interview Pete Dubé had with Joe Tucker the painting contractor responsible for the last known painting episode on the fence (ca. 1995), he mentioned that the selection of the color was "quite a process"; he remembered that an employee for B&G had selected a blueish color to "match existing" and he determined that was likely the hue cast by the iron after weathering and not the actual color of the fence. Instead of black, they selected the lighter color "carbon" in a "satin" sheen. He thought the fence was previously painted around 1980.

Paint Preparation and Application

Before painting, it is important to clean the fence. Choosing the right cleaning method depends on the degree of corrosion and paint deterioration and required surface finish. Getting the balance right between removing corrosion material thoroughly enough to form a stable surface for fresh paint, while still preserving the surface integrity of the ironwork without damaging it is the primary consideration. The aim is to clean the ironwork with the least aggressive method possible, but to clean it enough that most of the corrosion material will be removed, leaving a surface that paint will adhere well to.

- Begin with water and a cloth to remove general dirt and grime.
- Light areas of corrosion can be removed using emery paper, taking care to remove any residue before applying paint.
- Areas of chipped paint should be sanded down using emery paper, feathering the edges into good surrounding paint in preparation for paint application.
- Vary cleaning techniques on different areas of the ironwork according to need.

Ironwork in good condition may be cleaned by hand. More aggressive methods, such as power tools, can cause damage by scoring the surface of the iron and are not recommended. Remove upper layers of paint until a stable layer is reached, then apply fresh paint. Avoid painting over corroded areas as corrosion will continue to develop under paint and will compromise the efficacy of fresh paint. The weather is of critical importance in cleaning and coating iron - low temperature and high moisture content in the atmosphere will often lead to failure.

A bronze wire brush, chisel and hammer can be used to remove more aggressive areas of corrosion. Finish off by sanding down all surfaces using emery paper, taking care to remove any dust left on the surface. All dust, dirt and grease should be removed before applying fresh coatings, as per manufacturer recommendations.

Good surface preparation is the first step in ensuring fresh coatings perform well. Iron should be completely dry before coatings are applied. Ample drying time should be allowed between coats to prevent solvents from layers below damaging freshly applied layers of paint. If an entirely new paint system is being applied, the ideal dry film thickness (DFT) is between 200 and 250 µ (microns) – this can be measured using a simple hand-held device.

Painting in-situ: The advantage of painting in-situ is that surrounding masonry does not need to be disturbed by removing ironwork, and the costs and inconvenience of dismantling and removing ironwork are avoided. When ironwork is in reasonably good condition, this is a viable option, particularly in dry weather. If ironwork is damp when it is painted this can cause the coating to fail within a short period of time (sometimes within a year). By painting on top of damp ironwork, moisture becomes trapped and cannot evaporate. This trapped moisture may initiate the process of corrosion. Paint should not be applied in-situ in windy conditions as wind-blown debris will stick to wet paint and compromise the effectiveness of the coating. Very low temperatures will also compromise coating performance.

If a new paint system is to be applied to existing paint layers, small trial areas should be painted to check compatibility. The paint manufacturer will also be able to advise. It is advisable to select a system that is suited specifically to traditional ironwork.

If a modern paint system is specified, current best practice recommends:

- Two coats of a metal rich primer (often zinc based)
- One coat of micaceous iron oxide or other build coat
- Two coats of paint

Electrostatic process

Notes from call with Joe Tucker on April 14, 2015:

- Pete called Warren "Joe" Tucker / American Pride Painting / 1 Savage Cir, Carson City / (775) 338-2252 amd he confirmed he painted the fence at least 20 years ago (approximately 1995).
- Confirmed use of electrostatic paint. Industrial enamel possibly Fuller O'Brien or Sherwin Williams.
- He mentioned that the selection of color was "quite a process".
- He said a lot of work went into properly prepping the fence. They used wire brushes, sandpaper, and trisodium phosphate to remove rust.

- He sprayed the fence in each direction and promptly backrolled.
- He used a high volume, low pressure sprayer to apply the paint. The bottoms of rails, etc., were mostly hand-painted.

Key points on electrostatic painting:

- Electro painters use specialized spray equipment, which atomizes and statically charges the atomized paint as it leaves the spray head, driven only by centrifugal force. The positively charged paint seeks grounded metals and "wraps" around even the most intricate shapes. Unlike conventional spray processes, the paint is statically drawn only to the metal from all directions, so there is no overspray, spatters or mess.

- Electrostatic paint application uses positive and negative charges to apply paint in order to prevent overspray and ensure an even application. It works by creating an electrostatic field between the object and the paint. The grounded object (the object being painted) is positively charged in order to attract the negatively charged paint molecules to its surface. By creating this electrostatic field, the grounded object acts like a magnet, pulling the paint molecules to its surface, forcing even disbursement.

- Electrostatic guns are usually used in situations where the savings in coating usage pays for the gun in a short period of time or in situations where over-spray must be kept to an absolute minimum. The measure of electrostatic efficiency and pay back include reduced booth clean-up, decreased labor required to paint a part, and reduced paint usage.

- Electrostatic spray painting is a smart way to apply coatings to metal to improve efficiency, drive down cost and become more environmentally friendly.

- Electrostatic spray painting is an ideal option for businesses that perform onsite or maintenance painting such as fencing, handrails, window frames, elevator doors, office furniture, etc. For these types of jobs, electrostatic painting can provide a factory-like finish in the field and can reduce labor and material costs by increasing transfer efficiency.

- Most standard solvent based coatings can be sprayed electrostatically; recommend paint formulated from the manufacturer for electrostatic use.

- For exterior use it is recommended to use a two-component urethane enamel paint specially formulated for use with electrostatic spray equipment. This urethane enamel offers exceptional gloss retention and weatherability equal to 3 or 4 times that of convention al high grade enamels. It is resistant to gasoline, hydraulic fluids, liquid coolants and most chemical fumes or spills with a heat resistance to 3000F. Urethane enamel is perfect for wrought iron, fences, tanks, metal enclosures, trailers, recreational equipment, awnings and hundreds of other items exposed to the elements.

Benefits of electrostatic painting:

- No overspray.
- Hygienic – the non-porous surface does not create a harbor for MRSA and other pathogens.
- Impervious to disinfectants and common cleaning solutions.
- Factory-like enamel finish.
- Cost effective.
- Done on-site.
- Minimal interruption.
- Dries to the touch in about an hour and is ready for light use the next morning

Spraying outside may be challenging and it will be important to shield the area from any wind. Wind can carry the paint away from the part before the coating can be attracted to the ground object. "Wrap" is the common term used for the electrostatic effect. When a fence is sprayed from one side and both sides are coated, a good "wrap" is achieved.

Pete's Notes from call with Mark Cooper at Precision Electro Coat, Inc., in Portland OR (5/14/2015):

- Spoke with Mark Cooper at Precision Electro Coat, Inc., in Portland OR (503) 234-6995 and he said electrostatic paint was best application method for iron fencing.
- He referred us to Accessa as the premier electrostatic coating manufacturer – their product was used on the interior metal at the Washington Monument.
- His recommended application:
  A. Prep fence
  B. Prime fence using two part catalytic primer; one coat if using two guys spraying in tandem on either side of fence
  C. Top coat fence with urethane; one coat if using two guys spraying in tandem on either side of fence
  D. This method will give you a "wet look" during painting and should last 15 years
  E. Primer: Epoxy Primer and INVIRApoxy Primer: two-component, rust inhibitive, catalyzed polyamide epoxy primer with ability to adhere to less than perfectly prepared surfaces – available in light gray.
  F. Top coat: Futurac and INVIRAthane Acrylic Urethane: two-component, automotive grade, acrylic urethanes offering tough, long-lasting exterior finish with excellent gloss retention, color stability, and weatherability. Available in gloss, semi-gloss and satin finishes.

Restoration of Light Fixtures

During the 1980 fence rehabilitation project, the 1875 cast iron end posts that were adapted in 1911 for light fixtures were removed and replaced with new material and a new light post design was implemented (see Appendix D). Fence panels were straightened, new thicker square backstays were added and repairs made with incompatible materials. The intent of the rehab project was to stabilize the fence. Thirty-five years later and upon investigation of the condition of the light fixtures for the HSR, the project team determined that the measures taken during this documented rehab project have caused additional structural concerns. The overall structural integrity of the fence was compromised when the historic end posts were dismantled and the attachments terminating at the posts were cut. The fence panels are not weighted as originally constructed. The new end posts are oversized and add to instability of fence. The footings for the light posts are unstable and modern concrete fixes have not addressed this problem adequately. Concrete is a porous material that absorbs water and can contribute to iron corrosion. Originally, the sandstone coping stone was notched to provide a secure footing for the end posts. Various conditions exist at the footing on each of the twelve light posts. To stabilize the lights, a firm connection between the foundation wall and the post base is required.

Based on the existing conditions of the light fixtures, overall structural instability of the fence, and concerns over public safety, the project team is recommending that the end posts and light extensions be recast and restored to the 1911 design. Concerns with the sandstone footing, connection points with fence rails and electrical feed to be addressed as part of this project. Recommend replacing current CFL 42 bulbs (@150 watt equivalent) with LEDs.

Wrought iron components can be individually reproduced in mild steel by qualified artisans. Cast iron components require a foundry that specializes in historic fencing, see list below. The project team contacted Historical Arts & Casting in Utah to obtain an estimate for this project.

Historical Arts & Casting, West Jordan, UT, www.historicalarts.com
Architectural Iron Company, Milford, PA, www.architecturaliron.com
Robinson Iron, Alexander City, AL, www.robinsoniron.com
Stewart Iron Works, Covington, KY, www.stewartironworks.com
DeAngelis Iron Work, Inc., South Easton, MA, www.deangelisiron.com
Schwartz's Forge & Metalworks, Deansboro, NC, www.schwartzforge.com
Wiemann Metalcraft, Tulsa, OK, www.wmcraft.com

Foundries often have large collections of historic molds. If a matching mold cannot be located, foundries have the facilities to replicate the pattern. Casting replacements requires making a new sand mold from a new pattern. Newly cast iron shrinks approximately 1/8" per foot as it cools. Using an existing piece of ironwork as a pattern produces a slightly smaller component. When an exact match is necessary, a new oversized

pattern will be made. Originally measurements are built up with a polyester resin and then new sand molds made from the oversized patterns. Foundries can also laser scan the original on site and cast a new pattern in polyurethane. This process does not require dismantling the fence. Stainless steel fasteners and pins are recommended for reattaching old to new casting work. Type 304 stainless steel bolts recommended to reassemble restored fencing. Mild steel will not perform like traditional wrought iron.

Regarding duplication and replacement of fence components and substitution of materials, Preservation Brief 27 (pages 11 & 12) advises:

The replacement of cast-iron components is often the only practical solution when such features are missing, severely corroded, or damaged beyond repair, or when repairs would be only marginally useful in extending the functional life of the iron element. Sometimes it is possible to replace small decorative, non-structural elements using intact sections of the original as a casting pattern. For large sections, new patterns of wood or plastic made slightly larger in size than the original will need to be made in order to compensate for the shrinkage of the iron during the casting (cast iron shrinks approximately 1/8 inch per foot as it cools from liquid to solid).

Factors to consider in using substitute materials are addressed in Preservation Brief 16, which emphasizes that "every means of repairing deteriorating historic materials or replacing them with identical materials should be examined before turning to substitute materials."

There exists a small number of other cast iron elements that could be recast at the same time as the light fixtures, if the client so desires. These include three urns, several knuckles, backstays, and rivets. It may be cost-effective to have the molds made while the foundry staff is on site taking measurements of the end posts. The cost estimate does not detail recasting the urns and other elements. We are recommending the wood urns be repaired and the knuckles fixed using brazing.

Prioritization/Phased Approach

Preservation and restoration recommendations are presented as a phased approached to the Capitol Fence project. The Opinion of Probable Cost worksheets located on pages 185 and 186 provide detail on the cost to implement the three phases outlined below.

Priority 1: Repair of sandstone base including anchor points and fence repairs as needed for stabilization

Priority 2: Prep and paint fence; replace missing components using salvage; repair wood urns

Priority 3: Remove existing and restore historic light fixture and post to 1911 appearance; Recast end posts and light extensions

Maintenance Strategies

Ironwork requires periodic maintenance and protection against corrosion. Paint and other coating systems are applied to ironwork to slow the corrosion process by preventing moisture and air coming into contact with the metal surface. Over time, coatings degrade and eventually fail if not regularly maintained by cleaning and repainting.

Ironwork should be inspected annually. Joints and fixings (screws, pins, bolts, washers, nuts etc) are more vulnerable to deterioration than other parts because they tend to form natural water traps (trapped water accelerates the rate of deterioration). These should be inspected carefully for signs of corrosion. If the ironwork is in reasonably good condition it may just require light cleaning and chipped areas of paint to be touched up.

The primary purpose of the maintenance program is to control corrosion. As soon as rusting is noted, it should be carefully removed and the protective coating of the iron renewed in the affected area.

- Every year perform annual inspection and record problems
- Check for:
    - Damage to paint
    - Corrosion to parts fixed into masonry
    - Corrosion to underside surfaces
    - Corrosion to joints, fixings and other water traps
    - Signs of movement or instability in the ironwork and masonry
- Repaint every five years
- Keep landscape irrigation in check – water is biggest problem on site to fence deterioration

Touch ups to chipped paint are often required as part of a regular maintenance program. Areas of chipped paint should be sanded down using emery paper, feathering the edges into good surrounding paint in preparation for paint application. Ironwork will need to be repainted every 5 years with periodic touch ups performed annually.

Future Research/Documentation Suggestions

The HSR project team identified three future areas of study that would be beneficial to the preservation and interpretation of the Capitol Fence.

Develop a preservation plan for the landscape (Historic Landscape Report). The Capitol Plaza and the larger Capitol Complex landscape continues to evolve and are dependent on natural resources. The connections of land, air and water, vegetation and wildlife have dynamic qualities that differentiate landscapes from other cultural resources, such as historic structures. As with the historic buildings and structures at the Capitol Complex, the documentation, treatment, and ongoing management of the landscape requires a comprehensive, multi-disciplinary approach. Preservation planning generally involves the following steps: historical research; inventory and documentation of existing conditions; site analysis and evaluation of integrity and significance; development of a cultural landscape preservation approach and treatment plan; development of a cultural landscape management plan and management philosophy; the development of a strategy for ongoing maintenance; and preparation of a record of treatment and future research recommendations.

As noted in this report, recommendations regarding the fence and the grounds center on water and vegetation concerns. Plant life adjacent to and/or growing on the fence, though it often looks nice, may be harmful to the fence structure over time. Excessive watering of plant material and overspray is causing sandstone deterioration and ironwork corrosion.

Develop a policy to address hanging material on the Capitol Fence. The Carson Street façade of the fence is used as a hanging place for lights, banners and signs to recognize certain events and for wayfinding. Traditionally fences were adorned with bunting for holiday celebrations. This modern use may degrade the structural integrity of the fence and, depending on type of attachments used such as wire thread and steel bolts, may ultimately cause corrosion. The best recommendation would be to develop a policy and procedure for attaching material to the fence. This would detail allowable uses, design, materials, and installation. Recommended to use staff from Buildings and Grounds.

Educate public on the history of the Capitol Fence. It is the belief of the project team that if individuals were more educated about the history of the fence, the community and visitors to the Capitol Plaza would have a vested interest in protecting the structure. This education could take the form of interpretive signs or pamphlet relative to the fence available inside the Capitol Building. There exists an excellent opportunity to provide education when the fence is returned to its historic brown color. Information on the historical backgrounds contained in this report could be used to develop interpretive materials and press releases. Education would lead to greater awareness about the history of the fence and ultimately instill a cultural stewardship ethic in Nevada.

15-A025 Capitol Fence Historic Structure Report

PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COST

Project no. 14-2400
Date : 2/12/2016
By : DGA

SUMMARY OF COSTS

ITEM	DESCRIPTION	ESTIMATE	NOTES
Priority 1	Structural stabilization	$ 62,606.52	Assume 40 Calendar Days for Construction
Priority 2	Paint fence	$ 99,946.20	Assume 80 Calendar Days for Construction
Priority 3	Replace light fixtures and posts	$ 149,700.00	Lead time approximately 210 Calendar Days
	Subtotal Base Bid	$ 312,252.72	
	Equipment rental, traffic control, temporary facilities etc.	$ 12,000.00	
	Lead abatement	$ 50,000.00	
	Arborist	$ 15,000.00	
	Cleanup / hauling	$ 4,500.00	
	Bonds	$ 5,464.42	*1.75%*
	Project Management	$ 10,000.00	*(4) months @ $2,500 per month*
	Supervision	$ 52,000.00	*(4) months @ $13,000 per month*
	Liability Insurance	$ 3,122.53	*1%*
	Contractor's Fee	$ 18,735.16	*6%*
	Subtotal Fees	$ 170,822.11	
	Total	**$ 483,074.83**	

15-A025 Capitol Fence Historic Structure Report

PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COST

Project no. 14-2400
Date : 2/12/2016
By : DGA

PRIORITY ONE | STRUCTURAL STABILIZATION

ITEM	DESCRIPTION	QUAN	UNIT	UNIT COST	ESTIMATED COST
1.0	**Coping stone**				
	Section A Post	1	EA	$ 340.02	$ 340.02
	Fence	2	EA	$ 680.04	$ 1,360.08
	Section B Post	1	EA	$ 340.02	$ 340.02
	Fence	3	EA	$ 680.04	$ 2,040.12
	Section C Post	1	EA	$ 340.02	$ 340.02
	Fence	1	EA	$ 680.04	$ 680.04
	Section D Post	1	EA	$ 340.02	$ 340.02
	Fence	1	EA	$ 680.04	$ 680.04
	Section E Post	1	EA	$ 340.02	$ 340.02
	Fence	3	EA	$ 680.04	$ 2,040.12
	Section F Post	1	EA	$ 340.02	$ 340.02
	Fence	3	EA	$ 680.04	$ 2,040.12
	Section G Post	1	EA	$ 340.02	$ 340.02
	Fence	3	EA	$ 680.04	$ 2,040.12
	Section H Post	1	EA	$ 340.02	$ 340.02
	Fence	3	EA	$ 680.04	$ 2,040.12
				Subtotal 1.0	**$ 15,640.92**
1.1	**Fence**				
	Section A Post	1	EA	$ 533.70	$ 533.70
	Fence	6	EA	$ 1,067.40	$ 6,404.40
	Section B Post	1	EA	$ 533.70	$ 533.70
	Fence	6	EA	$ 1,067.40	$ 6,404.40
	Section C Post	1	EA	$ 533.70	$ 533.70
	Fence	3	EA	$ 1,067.40	$ 3,202.20
	Section D Post	1	EA	$ 533.70	$ 533.70
	Fence	1	EA	$ 1,067.40	$ 1,067.40
	Section E Post	1	EA	$ 533.70	$ 533.70
	Fence	6	EA	$ 1,067.40	$ 6,404.40
	Section F Post	1	EA	$ 533.70	$ 533.70
	Fence	6	EA	$ 1,067.40	$ 6,404.40
	Section G Post	1	EA	$ 533.70	$ 533.70
	Fence	6	EA	$ 1,067.40	$ 6,404.40
	Section H Post	1	EA	$ 533.70	$ 533.70
	Fence	6	EA	$ 1,067.40	$ 6,404.40
				Subtotal 1.1	**$ 46,965.60**
				Total	**$ 62,606.52**

Assumptions:

(1) mason repairing each post for (0.25) work day
(1) mason repairing each fence section for (0.5) work day at $37.78 per hour prevailing wage multipled by 2.25 and then double to cover material and equipment

(18) Working Days

Assumptions:

(1) ironworker repairing each post for (0.25) work day
(2) ironworkers repairing each fence section for (0.25) work day at $59.30 per hour prevailing wage multipled by 2.25 and then double to cover material and equipment

(15) Working Days

15-A025 Capitol Fence Historic Structure Report

PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COST

Project no. 14-2400
Date : 2/12/2016
By : DGA

PRIORITY TWO | PAINT FENCE

ITEM	DESCRIPTION		QUAN	UNIT	UNIT COST	ESTIMATED COST
2.0	**Repair wood urns prior to painting**		3	EA	$ 450.00	$ 1,350.00
					Subtotal 2.0	**$ 1,350.00**
2.1	**Replace missing components using salvage material prior to painting -**		1	LS	$ 2,500.00	$ 2,500.00
					Subtotal 2.1	**$ 2,500.00**
2.2	**Prep fence for painting**					
		Section A Post	3	EA	$ 318.06	$ 954.18
		Fence	23	EA	$ 318.06	$ 7,315.38
		Section B Post	3	EA	$ 318.06	$ 954.18
		Fence	24	EA	$ 318.06	$ 7,633.44
		Section C Post	2	EA	$ 318.06	$ 636.12
		Fence	9	EA	$ 318.06	$ 2,862.54
		Section D Post	2	EA	$ 318.06	$ 636.12
		Fence	2	EA	$ 318.06	$ 636.12
		Section E Post	3	EA	$ 318.06	$ 954.18
		Fence	24	EA	$ 318.06	$ 7,633.44
		Section F Post	3	EA	$ 318.06	$ 954.18
		Fence	24	EA	$ 318.06	$ 7,633.44
		Section G Post	3	EA	$ 318.06	$ 954.18
		Fence	24	EA	$ 318.06	$ 7,633.44
		Section H Post	3	EA	$ 318.06	$ 954.18
		Fence	23	EA	$ 318.06	$ 7,315.38
					Subtotal 2.2	**$ 55,660.50**
2.3	**Paint fence**					
		Section A Post	3	EA	$ 178.91	$ 536.73
		Fence	23	EA	$ 238.56	$ 5,486.88
		Section B Post	3	EA	$ 178.91	$ 536.73
		Fence	24	EA	$ 238.56	$ 5,725.44
		Section C Post	2	EA	$ 178.91	$ 357.82
		Fence	9	EA	$ 238.56	$ 2,147.04
		Section D Post	2	EA	$ 178.91	$ 357.82
		Fence	2	EA	$ 238.56	$ 477.12
		Section E Post	3	EA	$ 178.91	$ 536.73
		Fence	24	EA	$ 238.56	$ 5,725.44
		Section F Post	3	EA	$ 178.91	$ 536.73
		Fence	24	EA	$ 238.56	$ 5,725.44
		Section G Post	3	EA	$ 178.91	$ 536.73
		Fence	24	EA	$ 238.56	$ 5,725.44
		Section H Post	3	EA	$ 178.91	$ 536.73
		Fence	23	EA	$ 238.56	$ 5,486.88
					Subtotal 2.3	**$ 40,435.70**
					Total	**$ 99,946.20**

Assumptions:

(1) painter prepping each post for (0.5) work day
(2) painters prepping each fence section for (0.25) work day at $35.34 per hour prevailing wage multipled by 2.25

(49) Working Days

Assumptions:

(3) painters each post for (0.03125) work day (15 min)
(3) painters each fence section for (0.04167) work day (20 min) at $35.34 per hour prevailing wage multipled by 2.25 and then triple to cover material and equipment

(8) Working Days

15-A025 Capitol Fence Historic Structure Report

PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COST

Project no. 14-2400
Date : 2/12/2016
By : DGA

PRIORITY THREE | REPLACE LIGHT FIXTURES AND POSTS

ITEM	DESCRIPTION	QUAN	UNIT	UNIT COST	ESTIMATED COST
3.0	**Remove existing light fixture and end post**	12	EA	$ 200.00	$ 2,400.00
				Subtotal 3.0	**$ 2,400.00**
3.1	**Recast iron light fixture and end post**	12	EA	$ 10,125.00	$ 121,500.00
				Subtotal 3.1	**$ 121,500.00**
3.2	**Post base**	12	EA	$ 950.00	$ 11,400.00
				Subtotal 3.2	**$ 11,400.00**
3.3	**Electrical for new light fixture**	12	EA	$ 1,200.00	$ 14,400.00
				Subtotal 3.3	**$ 14,400.00**
				Total	**$ 149,700.00**

Page 29, Exterior Lighting Fixtures: Lamps, Posts, Brackets & Lanterns, Smyser-Royer Co., Philadelphia, Trade Catalogue, 1931, illustrates round globe topped fixtures similar to 1911 fence end post lighting addition. Round globes were widely used circa 1905 through the1930s. The fixtures contain elements of the popular Classical Revival style, Canadian Centre for Architecture Collection.

Circa 1900 photo of the Capitol Plaza taken in the fall showing tree lined pathways running parallel to Musser Street on interior of Capitol grounds prior to Portland Cement added to sidewalks in 1931; iron fencing barely discernable on left side of image obscured by adjacent plantings; Gazebo built in 1896 is visible in background, Peterson & Carrington Collection, Nevada State Museum #253-9.

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Glossary of Terms

BACKSTAY
A backstay is an arm of iron that stabilizes railings by running from the top rail into the ground.

BAR
A bar is a single shaft of metal placed vertically in a piece of ironwork.

BRADDED / BRADDING
Also known as 'riveted'/ riveting'. A bar of iron is slotted through another piece of iron and the end is hammered into a dome to secure it in place.

BRAZING
Brazing is a form of welding that uses an alloy rod, commonly brass or bronze, to join two sections of iron or steel together.

CAST IRON
Cast iron is a hard and brittle form of iron which is higher in carbon than wrought iron and crystalline in structure. It cannot be forged and can only be shaped by casting.

COLLAR
Cast iron collars are decorative cast elements that usually slot over wrought iron bars. Wrought iron collars are bands that fit around two or more elements of wrought ironwork to secure them together.

COPING STONE
A coping stone is a stone topping a wall.

COVER PLATE
Also known as a slam bar, this is a flat plate of wrought iron on the non-hinged side of a gate frame. It often prevents the gate from swinging beyond the gate post or adjoining leaf (in the case of a double-leafed gate).

FINIAL
A finial is a decorative element placed at the top of something, for example, at the top of bars forming a length of railings. It can also refer to a decorative element placed on top of a roof, dormer window, ridge, or other portion of a roof. A finial placed on the highest point of a roof is called a terminal.

FIRE WELDING
Traditionally fire welding (also known as forge welding) was done by heating two pieces of iron and then hammering them together to form a seamless join.

FORGE
Verb: to shape using a hammer. Noun: the workshop of a Blacksmith; the fire at which the Blacksmith works.

FORGE WELDING
See 'fire welding'

FOUNDRY
A foundry is a workshop with a furnace where castings are made.

GUDGEON
Also known as a heel cup, a gudgeon is the hole that receives the pintle or heel of the gate so that it can swivel open and closed.

HEEL
A heel, or pintle, is the round-section foot or bar that projects from the base of the hinged side of a gate frame. It slots into the gudgeon and enables the gate to swing open and closed.

HEEL CUP
See 'gudgeon'

HUSK
A husk is made of cast iron, often in the shape of a bell-flower, nut-shell, or wheat ear. Similar to a cast iron collar but longer in length, it is an element that slots over bars to add decoration.

IRONWORKS
Traditionally an ironworks was where wrought iron was made and processed.

MORTICE-AND-TENON JOINT
The end of one piece is stepped to form a tongue (the tenon) which is narrower than the main body of iron. This tongue pierces through a corresponding hole (the mortice) in the second section of iron.

MOLD
A mold is a depression made in sand into which molten iron is poured to produce a casting. Molds were traditionally made of green sand and were formed using a pattern to create the desired shape.

NEWEL
A newel is a vertical post usually used to anchor and stabilize railings or handrails. Newels are normally placed at intervals or key points along a run of railings or other ironwork.

PATTERN
A pattern is used in the making of cast iron. Patterns were traditionally carved in wood and were used to create the shaped depression in sand to form a mold into which molten iron would be poured.

PIG IRON
Pig iron is one of the crudest forms of iron. It is obtained from the first melting of iron ore.

PINTLE
See 'heel'

PINNING
Pinning is the repair technique for holding sections of iron or steel together. Fractured sections can be joined together by drilling one or more threaded holes into each fractured face and screwing them together using a threaded or plain stainless steel bar.

PLATING
Plating is a repair method that uses a strap or plate of iron or steel to hold fractured sections together.

PURE IRON
Pure iron is homogenous in composition, low in carbon and without the slag content found in wrought iron. It is malleable, so can be forged.

RAIL
A rail is the horizontal (usually flat) member of a railing or gate, often pierced by vertical bars.

RIVET / RIVETING
See 'bradded / bradding'

SLAM BAR
See 'cover plate'

STEEL
Steel is an alloy of iron and carbon. It has a homogenous structure, is strong in tension and compression, but is generally considered to have lower corrosion resistance than iron.

STITCHING
Stitching is a repair method for holding sections of iron or steel together. One series of holes is drilled along the length of a fracture, and another series of holes is drilled perpendicular to the fracture. A series of metal keys are then inserted into the holes across the fracture to hold the sections of metal together.

WELDING
Traditionally fire welding was done by heating two pieces of iron and then hammering them together to form a seamless join. Modern welding uses a variety of techniques which involve melting a rod of metal into the joint to hold two sections of iron or steel together.

WROUGHT IRON
Wrought iron is a malleable form of iron that is low in carbon and contains strands of slag, which give it a fibrous composition. It cannot be shaped by casting and is usually shaped by forging.

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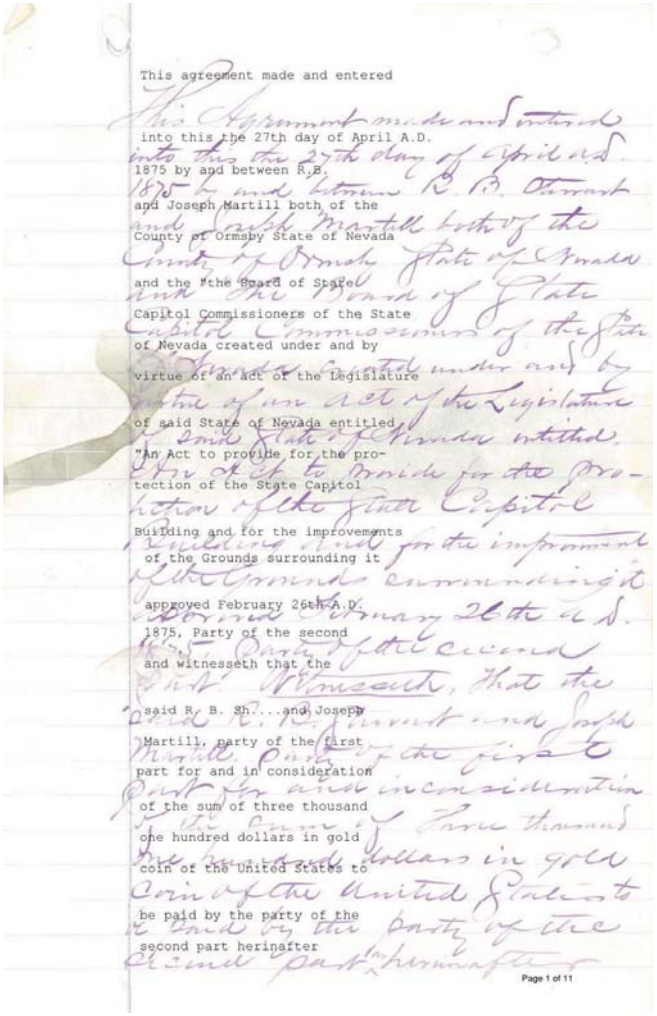
Appendix A



This agreement made and entered
into this the 27th day of April A.D.
1875 by and between R.B.
and Joseph Martill both of the
County of Ormsby State of Nevada
and the the Board of State
Capitol Commissioners of the State
of Nevada created under and by
virtue of an act of the Legislature
of said State of Nevada entitled,
"An Act to provide for the pro-
tection of the State Capitol
Building and for the improvement
of the Grounds surrounding it
approved February 26th A.D.
1875, Party of the second
and witnesseth that the
said R. B. Sh...and Joseph
Martill, party of the first
part for and in consideration
of the sum of three thousand
one hundred dollars in gold
coin of the United States to
be paid by the party of the
second part herinafter

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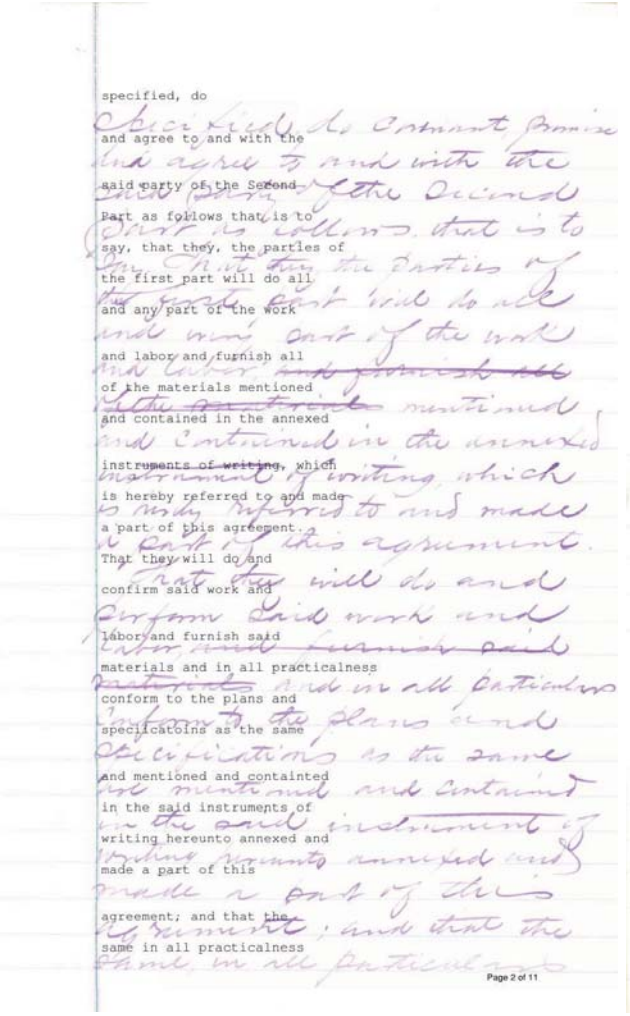

specified, do
and agree to and with the
said party of the Second
Part as follows that is to
say, that they, the parties of
the first part will do all
and any part of the work
and labor and furnish all
of the materials mentioned
and contained in the annexed
instruments of writing, which
is hereby referred to and made
a part of this agreement.
That they will do and
confirm said work and
labor and furnish said
materials and in all practicalness
conform to the plans and
specifications as the same
and mentioned and containted
in the said instruments of
writing hereunto annexed and
made a part of this
agreement; and that the
same in all practicalness

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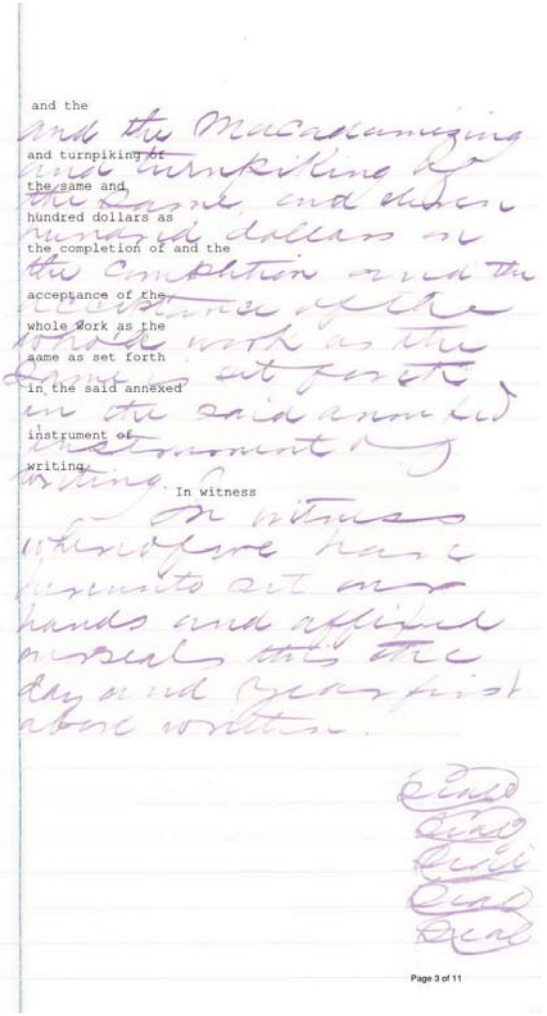


and the
and turnpiking of
the same and
hundred dollars as
the completion of and the
acceptance of the
whole work as the
same as set forth
in the said annexed
instrument of
writing.

In witness

Page 3 of 11

Shall be in strict accord-
ance and subject to all
of the conditions set forth
and manner in the said
annexed instruments of
writing. That the party of
the Second part will pay
to the parties of the first
part in consideration
of three
thousand one hundred
dollars, as follows.
1st. Five Hundred
dollars on the completion and
acceptance of the following
named : On the
digging of the trench for
the foundation wall, laying
rubble foundation and
setting the coping in the
same.
2nd. Fifteen Hundred
dollars in the completion and
acceptance of the excavation
of walks and drives

Page 4 of 11

Specifications and description of the
different works and materials requested
for the improvements of the Capitol
grounds at Carson City Nevdaa
according to accompanying diagrams

Masons work

Dig a trench for the founda
tion wall of the fence which will enclose
the grounds - the length of the wall will
be in the aggregate 1652 lineal feet -
the bottom of the trench shall be 18 inches below the
level of the ground on the lines of the
fence and the foundation will be 2
feet wide - after the foundation and
coping are done, the Earth shall be
returned behind the walls and well
ra.....d down - the surplus dirt to be
thrown on the inside of the fence, -
and to be disposed of as the Commiss
ioners may direct -

Mason Work Rubble Foundation

There shall be a foundation wall for
the fence - all materials will be furnished

Page 5 of 11

end joints to be neatly pointed with
mortar. The mason shall cut all
necessary anchor holes in the coping and
set the anchors according to the directions
which will be given; anchors will be furnished by Commissioner.
The coping to be set in the most substan
tial and workmanlike manner, perfectly
plumb and level and to the perfect
satisfaction of the Commissioners
or their superintendent.

Excavations for the walks, drive up,

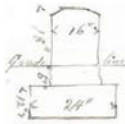
Excavations for walks, drives &c. of
according to diagram - (all such
spaces are tinted light yellow on the
plan)

The contractor shall excavate for
above mentioned walks of about 20172
cub. feet of dirt according to levels
which will be furnished, and he
shall distribute and level the same, around
the square according to the direc
tions of the Commissioners; the
edges to be perfectly true according
to the ..which are set -

Page 6 of 11

for the same will be furnished by the Com

missioners - the wall to be 2 ft. x 1 foot -
the bottom of the wall to be 18 inches
below the level of ground - the wall
to be 1652 ft. long enclosing the
square - In place of lime mortar
a mortar made of adobe mud and
sand will be used; which materials
will be furnished, but the contractor
shall furnish his own mortar beds
tools and mix the mortar - The
Stone to be laid up plumb and true each
perfectly level, for the reception of
the coping and to be built in the
most substantial manner and well
grouted.



Section of foundation and coping

Coping All materials for the
coping will be furnished by the commission
ners - the stones will be 16 inches
thick and 24 inches high - six inches
of the stone shall set in the trench
on the foundations - all the coping
to be set in fresh lime mortar, with
all joints, as close as possible and the

The Contractor shall, at his own ex

pense do the following work, the
stone for which will be furnished on
the ground dumped in the walks and
drives - sand and water will be furnished by Commissioners.
Spread the rock evenly and carefully
in the trenches. The stones which aer
too large must be broken and the
whole to be levelled according to
diagrams - the larger stone shall be in
the bottom and shall not be larger
that that they may go trough a 5 inch sieve; the top stones
to be about
the size of a hazelnut - after this
is all levelled in, it shall be sprinkled
with water and then rolled with a
very heavy roller - until it is compact.
it shall then be sprinkled with water
and a thin layer of clean
sharp screened sand be spread over
the surface - it shall be again
rolled with a heavy roller and as
soon as dry, put on another thin
layer of same kind of sand, sprinkle
with water and again rolled, until
perfectly dry.

There is 17751 cub.feet of this

rock to put in the trenches and the
layer will be 6 inches thick.
The curbing, which is described below
shall be put in before the filling
of the trenches
The stone for the curbing will be
furnished by the Commissioners on
the ground.
Set 3488 lineal feet of curbstone
according to the plans; following the
edges of walks, drives ....on both
side - the bottom of stones, which are 14 inches
x 4 inches and of any length, shall
set 10 inches below the lower edge of
the curved walk or drive - the whole
to be set perfectly level on top, following
all around or to levels which may
be furnished - all to be set cold, but
with close joints, in the curves and
particularly in the short curves
where short stone must of a necessity
be used; the stones must be anchored
to each other. The contractor shall

cut the anchorholes and set the anchors
which will with necessary sulphur
and lead be furnished by the Commis
sioners.

All of the work in the speci
fications shall be estimated for
in one bid and not separate and
the right of rejection of any or
all bids is hereby reserved
and all of the work herein
specified shall be done in the
most solid, substantial and work
manlike manner and to the entire
satisfaction of the Commissioners

Page 10 of 11

The bids are to be set forth the
price for each kind of work and
the aggregate for he whold

The Board reserves the right
to accept bids for one or more
of the kinds of work and to reject
any portion of the proposal for

Though
preference will be given
to the proposal that will in
the aggregate be found to
be the lowest as they prefer
to let the whole work to one
bidder (also to reject any
and all bids, also to
require a bond for the

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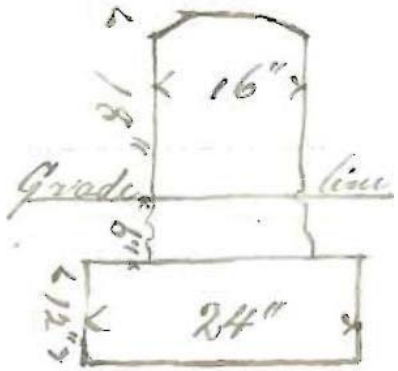


Section of
Foundation and
Pedestal

Specifications for work and material for improvements of the Capitol Grounds (translated),1875 Nevada State Archive CAPCOMM-0006.

Appendix B

SAN FRANCISCO BULLETIN, OCTOBER 8, 1899
A SKETCH FROM LIFE -
MISS ELIZA CILICIA BABCOCK and MISS HANNAH K. CLAPP
BY MIRIAM MICHELSON

"I will lend you a theme, O poet,
If you would only lend me your pen!
A theme that is worthy the effort
Of the greatest among men.

"No hackneyed tale of a woman's love
For one whose truth's at sea;
No hackneyed tale of a fearful wreck
On the rock inconstancy.

"Nor is it a tale, though rare were such,
Of love in summer's brook
That bubbles with laughter between the hills,
With never an outward look.

"No! the theme I will lend you, O poet,
Is not love of woman for man,
Or man for woman, all such are old;
They began when the race began.

"The theme is richer and rarer;
So rare, you may search the earth
And not find its like in all the tomes
To which though has given birth.

"Tis a woman's love for a woman,
That theme I would have you write;
And now you will grant that a theme so rare
Will invite a poet's might"
– Kate Tupper

These lines are the first part of a poem that was written in praise of "a woman's love for a woman," eleven years before that love came to an end. It ended in the only way this extraordinary affection could end – by death.

Miss Eliza Cilicia Babcock died in Reno, Nevada a few days ago, and her death has disrupted a unique and very beautiful friendship which has existed for over thirty-five years between herself and Miss Hanna Clapp, librarian of the Nevada State University.

The real poem, though, is in the manner of life which these two women led; in the perfect union, of a kind so rare, between the two, and also in their dealings with their fellow-men.

The friendship of Miss Clapp and Miss Babcock is an old story to Nevadans. It is so many years since it began; it has lasted so long, uninterrupted by the smallest ripple of discontent, that cynics have ceased to be surprised and scoffers have ceased to doubt.

Friendship between women is possible. A friendship as pure, as loyal, as lasting as any of the masculine partnerships whose memory the world cherishes and quotes, half in glory to man, half in rebuke to women. As to the Nevada women who have demonstrated this fact as long as I can remember I have heard their names linked together. For the quaint soul-marriage that existed between the two was consummated before Nevada attained Statehood.

There were never two women so unlike as these, who for thirty-five years lived in the same house, occupied the same room, lived absolutely the same life and possessed but one and the same purse. The older of the two is a woman of masculine mind, with strong, almost rough-hewn features. The younger was delicate, dainty, short and slight, exquisitely feminine.

The older one, the "man" of this strange, happy family of two, wears her thick, iron-gray hair cut short, her skirts, too, cut short; her boots are strong, thick, "common-sense."

The "wife of Miss Clapp wore her beautiful soft white hair dressed according to the prevailing style. Her hand was soft and white, tiny and very shapely. Her feet were delicately shod, as such patrician feet should be, in high-heeled, soft boots. The "man" of the family wears and has always worn a gown absolutely devoid of ornament, serviceable, straight-cut, simple. The lady of the house dressed herself in soft, feminine fabrics. No one of all the great number of acquaintances and friends, which Miss Clapp's strong individuality and well-balanced mind have made for her, has seen a jewel on this woman's finger or in her hair or on her breast. Miss Babcock loved beautiful things and wore them gracefully. Miss Clapp had a diamond worth half a thousand dollars set in a ring, which was worn on the first finger like an engagement ring till death broke the compact.

Hannah Clapp loved to work. She was endowed with a good, practical mind, unbounded energy and an original way of looking at things. Eliza Babcock found pleasure in home-keeping. The domestic triumphs over the holes in stockings, over dust in corners, over refractory recipes for cakes and puddings satisfied her womanly nature.

Hannah Clapp delighted in politics, in business, in playing the man's part with hammer and nails, when occasion demanded and household repairs were needed. She believed strongly in women's rights. Nevadans tell of her contemptuous words at a woman's suffrage rally. Her address consisted of only a few words, but they were very expressive. "When I die," said Hannah Keziah Clapp, sturdily, "no one shall write "Relict of _____' on my tombstone. As if, even in death, a woman's identity might not be her own!" I think Miss Babcock approved of woman's suffrage, too – for Miss Clapp.

When Miss Clapp went on a journey, it was Miss Babcock who put out her clothes and made up her valise. When the two went together to see any of the multitude of friends their long, strong, faithful life in Nevada entitled them to, it was Miss Babcock who set her "man's" hat aright – that hat which never could set quite straight on the short-haired, large, interesting head – and walked out beside Miss Clapp, taking short, ladylike steps. "I can't see," said Miss Clapp to a friend the other day when walking down Market Street, "I can't seem to keep in step with you. You see – you see," she said sadly, "all my life I have tried to take short steps so that I could walk comfortably with Miss Babcock." She succeeded in "walking comfortably with Miss Babcock" through a long life whose years take in the biggest and best part in Nevada's history. And this is how it came about: Before the Southern Pacific had its rails laid across the continent, before Nevada became a State, before its present metropolis had half a dozen log houses to brag about, before Sharon and Fair, Mackay and Flood had learned their way about the underground city of silver which burrows beneath Virginia City, Hannah Clapp came to Carson City with friends who went to Nevada as to a wild, barren wilderness, where there was money to be made and privations to be endured. Through a mutual friend she heard of Eliza Babcock, a girl from Maine, then living in Oakland. In a short correspondence between the strangers a partnership was agreed upon. The Maine girl came to Carson, and she and the young pioneer who had been before her started the Sierra Seminary, long before there was a public school in the State.

In these days of higher education, I doubt whether the Sierra Seminary would be accredited. But there isn't a school in the world that holds such a record as this poor, little, pioneer seminary. For, you see, it was conduct-

ed on such unbusiness-like lines. The teachers seemed to think it their affair to comfort and strengthen and uphold and love, as well as to teach. You can't begin to name the prominent men and cultured women in Nevada and California who learned what books these two women had to teach. "It was a home," said an important personage down on Montgomery Street, yesterday. "They took us into their very hearts. We weren't pupils. We were their own children."

"If you can imagine," said an ex-Nevadan, "how it would feel to come clear across the plain, fresh from college, into a wild, little mining town out in the West. If you can imagine how one's peculiarities and one's little efforts at civilized living were ridiculed. If you can imagine how sensitive and resentful one is when he's young, and how easy it was to get into a fight in young Nevada, then you can understand how I felt when I found myself in jail after a shooting scrape, and Miss Clapp came to me, like the man she is, bailed me out and took me home to nurse my wounds."

"If you were a man," said another man who is a grandfather now, to me, "and drink had taken such a hold on you that there was no resisting; and if a woman, plucky, strong, self-reliant, hauled you up out of the gutter, and took you into her spotless, old-maid's home, and kept you there till you were fit to live as a man, you'd realize how we, who did not go to school at the Sierra Seminary, learned more than Berkeley itself can teach."

Nature intended Miss Babcock for a typical creature of the gentler sex. Yet, so strong was her faith, so unlimited her confidence in the executive, energetic, head of the family, that she seconded every plan, no matter how unconventional, that ripened in the head of this woman before the term was invented. Witness the building of the fence around the State Capitol at Carson, Nevada – that enduring monument to the business capacity of Miss Babcock's "husband."

It was during Governor Bradley's term that Nevada decided that she could afford to put a high iron fence, mounted on a stone coping, around the Capitol. Plans and specifications were drawn up, and bids were advertised for. The foremost and the richest firms in Nevada and California put in bids, naturally, for the State is a generous employer. When the time came to open the bids, there was one signed H.K. Clapp. It was the lowest one, and it was awarded the contract. "I never had built a fence, an iron one," chuckled Miss Clapp when telling the story, "though, since then I have put up wooden ones with my own hands. But I had recently come into possession of information about the cost of iron fencing. I knew that these great contractors would expect to make two or three thousand dollars, at least, out of the contract. A thousand would satisfy me, if I could make that out of it."

She did. She hired men and put them to work. In the morning after she had milked half a dozen cows, and helped her mate and co-worker put the house in order, they two devoted themselves to their professed work, teaching. After school was over, Miss Babcock turned her attention to domestic affairs. After school, Miss Clapp drew on her stout, thick boots, donned a long warm ulster, pulled down over her eyes a small, soft woolen round hat and went off to work. For two or three hours daily, Carsonites could see this woman contractor – who had never before (and who hasn't since) undertaken a contract – standing about the Capitol, in all sorts of weather, overseeing her men. When darkness came and work for the day was over, Contractor Clapp trudged sturdily homeward. "I think," she would say, musingly, in talking over her labors with her wifely confidant, "I think that'll be a pretty good fence." And it was. It is, in fact; for the personal, conscientious supervision of Builder and Contractor Clapp is to be discovered in that celebrated fence after a lapse of about thirty years.

There was one time when Miss Clapp's unswerving individuality brought her into prominence, not altogether pleasantly. For the protection of these two women living alone in an unsettled mining town, a most savage animal, half bull dog, half blood hound had been bought. Miss Clapp's "Brutus" was the wonder and terror of the town. He was uncompromisingly fierce, vicious. All day he was chained. At night he was loosed, his hoarse, deep bellow warned shuddering Carsonites for blocks around that Brutus was on guard. In view of the delight of Carson in the Corbett-Fitzsimmons contest, it will not surprise you to learn that dog fights in the old silvered days of Nevada, were very much in Vogue. When a new dog came to town, respectfully heralded by human advance agents, a bout was expected. One particular new dog, a regular Jeffries of a dog, had made his first appearance at Carson, and when his admiring press agents bragged about his attainments, it suddenly occurred to a loyal Carsonite to suggest a contest with Brutus. "Can we have your dog?" said a deputation of sports to Miss Clapp. "Certainly," responded the obliging woman. "Go out and get him." They went, but they did not "get him." Brutus nearly tore his chain to fragments trying to get them, and they went off without him.

But there were reporters in those days, too. One of them saw what should have been a story. He wrote up what might have, but what didn't occur, and the pink Police Gazette (whose color, by the way, has been paled by the yellow journals of nowadays) appeared with an account of the fight and a sensational picture of Miss Clapp at the ring side, applauding enthusiastically the uppercuts and left-hand smashes of her Brutus. Nothing is more characteristic of the difference in temperament of these two women, so closely united, so far apart in nature, than the way each received this publication. For a moment, Miss Clapp was furiously angry. Then she laughed out with all the enjoyment of one who can see a joke, even upon herself. But with the gentle little lady, who loved her, was shocked and horrified. She never quite recovered from the blow to her pride, to her retiring, sensitive disposition. Years afterward, when both had grown gray, Miss Clapp would herself tell the story of her appearance in the Police Gazette. Miss Babcock would shrink and shudder at the thought of it, and then secretly, almost blushingly, this pretty, little old, old maid would bring forth the torn copy and with the ends of her fingers she would expose to a close, discreet friend the awful depravity of pink paper and printer's ink.

Fortune came to these two in time. When the Centennial was being celebrated in Philadelphia, these old maids school ma'rms went abroad, strange countries for to see. Stocks were booming on the Comstock. It was hard to say just what one was worth. These two single women might have been worth $100,000. They might be worth more later. In the meantime, their dividends from "Belcher" alone amounted to over $500 a month. So they traveled. They saw all they wanted to. They visited every place that tempted them. They bought whatever they coveted. They ordered furniture for their home in Carson from the most artistic furnishing houses in the country. And then, slowly, they journeyed back to Nevada – for it never occurred to these two loyal Nevadans to forsake their sagebrush home – to find that the bottom had dropped out of the stocks; that their broker had held, instead of selling, and that three twenty-dollar pieces remained of their fortune, after he had been paid and discharged.

So again they set to work, in indefatigable two. Through the influence of one of Nevada's Senators, who has been a close friend of these women for years, Miss Clapp was given a position in the Nevada State University. They removed to Reno, where the university is, and there the health of the weaker one began to fail. But Miss Clapp's salary was a generous one, and the two lived upon it, sharing it as they had shared when they were rich and when they were poorer. "Let's go to the bank, Duckie," the head of the family would say when pay day came, "and deposit what we can of our salary." "All right, Miss Clapp," was the reply. It was always "Miss Clapp" – a queer sort of pedagogical courtesy that remained long after these two were closer than most women who lavish endearing words upon each other. The head of the family, indeed, permitted herself occasional tender, protecting pet names, as a husband might. And so "our" salary was deposited.

Where is the woman married to a man, who has been treated with such financial consideration? In rare cases, he does hand over his wages to you madam, but the money is his, nevertheless, given in your care only because you are more prudent, less tempted. The wills of these two were made in each other's favor. Both had relations, who were thought of kindly, but all they had was for each other. "When I die, I shall be cremated," said the stronger one. "When I die, bury me," asked the other, "where your ashes may be laid upon my breast."

The night death came to Miss Babcock, her protector awakened with the feeling, as she afterward said, that a "mother might have if she is troubled about her baby." The wife of Miss Clapp was gasping, but she put her arms about the neck of the one who had cherished her so tenderly, so unselfishly, so generously, and clung there with all the strength of her last breath. Her small, stiff white fingers had to be bent back, afterward, that of these two faithful comrades, the living might be separated from the dead.

Appendix C

Hannah Clapp, owner and principal of the Sierra Seminary founded in Carson City, Nevada, in 1861, stands at far right. Mark Twain visited the school in 1864 and incorporated his observations of Clapp's teachings in his famous 1876 novel, The Adventures of Tom Sawyer, image courtesy of the Nevada State Museum.

Territorial Enterprise, January 19-20, 1864

LETTER FROM MARK TWAIN
CARSON, January 14.
MISS CLAPP'S SCHOOL.

By authority of an invitation from Hon. Wm. M. Gillespie, member of the House Committee on Colleges and Common Schools, I accompanied that statesman on an unofficial visit to the excellent school of Miss Clapp and Mrs. Cutler, this afternoon. The air was soft and balmy - the sky was cloudless and serene - the odor of flowers floated upon the idle breeze - the glory of the sun descended like a benediction upon mountain and meadow and plain - the wind blew like the very devil, and the day was generally disagreeable.

The school - however, I will mention, first that a charter for an educational institution to be called the Sierra Seminary, was granted to Miss Clapp during the Legislative session of 1861, and a bill will be introduced while the present Assembly is in session, asking an appropriation of $20,000 to aid the enterprise. Such a sum of money could not be more judiciously expended, and I doubt not the bill will pass.

The present school is a credit both to the teachers and the town. It now numbers about forty pupils, I should think, and is well and systematically conducted. The exercises this afternoon were of a character not likely to be unfamiliar to the free American citizen who has a fair recollection of how he used to pass his Friday afternoons in the days of his youth. The tactics have undergone some changes, but these variations are not important. In former times a fellow took his place in the luminous spelling class in the full consciousness that if he spelled cat with a "k," or indulged in any other little orthographical eccentricities of a similar nature, he would be degraded to the foot or sent to his seat; whereas, he keeps his place in the ranks now, in such cases, and his punishment is simply to "'bout face." Johnny Eaves stuck to his first position, to-day, long after the balance of the class had rounded to, but he subsequently succumbed to the word "nape," which he persisted in ravishing of its final vowel. There was nothing irregular about that. Your rightly-constructed schoolboy will spell a multitude of hard words without hesitating once, and then lose his grip and miss fire on the easiest one in the book.

The fashion of reading selections of prose and poetry remains the same; and so does the youthful manner of doing that sort of thing. Some pupils read poetry with graceful ease and correct expression, and others place the rising and falling inflection at measured intervals, as if they had learned the lesson on a "see-saw;" but then they go undulating through a stanza with such an air of unctuous satisfaction, that it is a comfort to be around when they are at it.

"The boy - stoo-dawn - the bur-ning deck -
When-sawl - but him had fled -
The flames - that shook - the battle - zreck -
Shone round - him o'er - the dead."

That is the old-fashioned impressive style - stately, slow-moving and solemn. It is in vogue yet among scholars of tender age. It always will be. Ever since Mrs. Hemans wrote that verse, it has suited the pleasure of juveniles to emphasize the word "him," and lay atrocious stress upon that other word "o'er," whether she liked it or not; and I am prepared to believe that they will continue this practice unto the end of time, and with the same indifference to Mrs. Hemans' opinions about it, or any body's else.

They sing in school, now-a-days, which is an improvement upon the ancient regime; and they don't catch flies and throw spit-balls at the teacher, as they used to do in my time - which is another improvement, in a general way. Neither do the boys and girls keep a sharp look-out on each other's shortcomings and report the same at headquarters, as was a custom of by-gone centuries. And this reminds me of Gov. Nye's last anecdote, fulminated since the delivery of his message, and consequently not to be found in that document. The company were swapping old school reminiscences, and in due season they got to talking about that extinct species of tell-tales that were once to be found in all minor educational establishments, and who never failed to detect and impartially denounce every infraction of the rules that occurred among their mates. The Governor said that he threw a casual glance at a pretty girl on the next bench one day, and she complained to the teacher - which was entirely characteristic, you know. Says she, "Mister Jones, Warren Nye's looking at me." Whereupon, without a suggestion from anybody, up jumped an in famous, lisping, tow-headed young miscreant, and says he, "Yeth, thir, I thee him do it!" I doubt if the old original boy got off that ejaculation with more gusto than the Governor throws into it.

The "compositions" read to-day were as exactly like the compositions I used to hear read in our school as one baby's nose is exactly like all other babies' noses. I mean the old principal ear-marks were all there: the cutting to the bone of the subject with the very first gash, without any preliminary foolishness in the way of a gorgeous introductory; the inevitable and persevering tautology; the brief, monosyllabic sentences (beginning, as a very general thing, with the pronoun "I"); the penchant for presenting rigid, uncompromising facts for the consideration of the hearer, rather than ornamental fancies; the depending for the success of the composition upon its general merits, without tacking artificial aids to the end of it, in the shape of deductions, or conclusions, or clap-trap climaxes, albeit their absence sometimes imparts to these essays the semblance of having come to an end before they were finished - of arriving at full speed at a jumping-off place and going suddenly overboard, as it were, leaving a sensation such as one feels when he stumbles without previous warning upon that infernal "To be Continued" in the midst of a thrilling magazine story.

I know there are other styles of school compositions, but these are the characteristics of the style which I have in my eye at present. I do not know why this one has particularly suggested itself to my mind, unless the literary effort of one of the boys there to-day left with me an unusually vivid impression. It ran something in this wise:

COMPOSITION.

"I like horses. Where we lived before we came here, we used to have a cutter and horses. We used to ride in it. I like winter. I like snow. I used to have a pony all to myself, where I used to live before I came here. Once it drifted a good deal - very deep - and when it stopped I went out and got in it."

That was all. There was no climax to it, except the spasmodic bow which the tautological little student jerked at the school as he closed his labors. Two remarkably good compositions were read. Miss P.'s was much the best of these - but aside from its marked literary excellence, it possessed another merit which was peculiarly gratifying to my feelings just at that time. Because it took the conceit out of young Gillespie as completely as perspiration takes the starch out of a shirt-collar. In his insufferable vanity, that feeble member of the House of Representatives had been assuming imposing attitudes, and beaming upon the pupils with an expression of benignant imbecility which was calculated to inspire them with the conviction that there was only one guest of any consequence in the house. Therefore, it was an unspeakable relief to me to see him forced to shed his dignity. Concerning the composition, however. After detailing the count-

less pleasures which had fallen to her lot during the holidays, the authoress finished with a proviso, in substance as follows - I have forgotten the precise language: "But I have no cheerful reminiscences of Christmas. It was dreary, monotonous and insipid to the last degree.

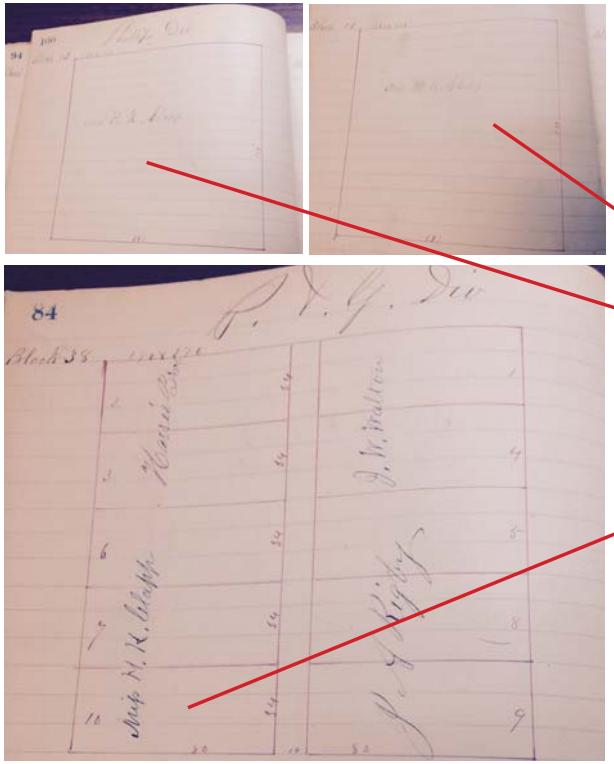
Mr. Gillespie called early, and remained the greater part of the day!" You should have seen the blooming Gillespie wilt when that literary bombshell fell in his camp! The charm of the thing lay in the fact that that last naive sentence was the only suggestion offered in the way of accounting for the dismal character of the occasion. However, to my mind it was sufficient - entirely sufficient.

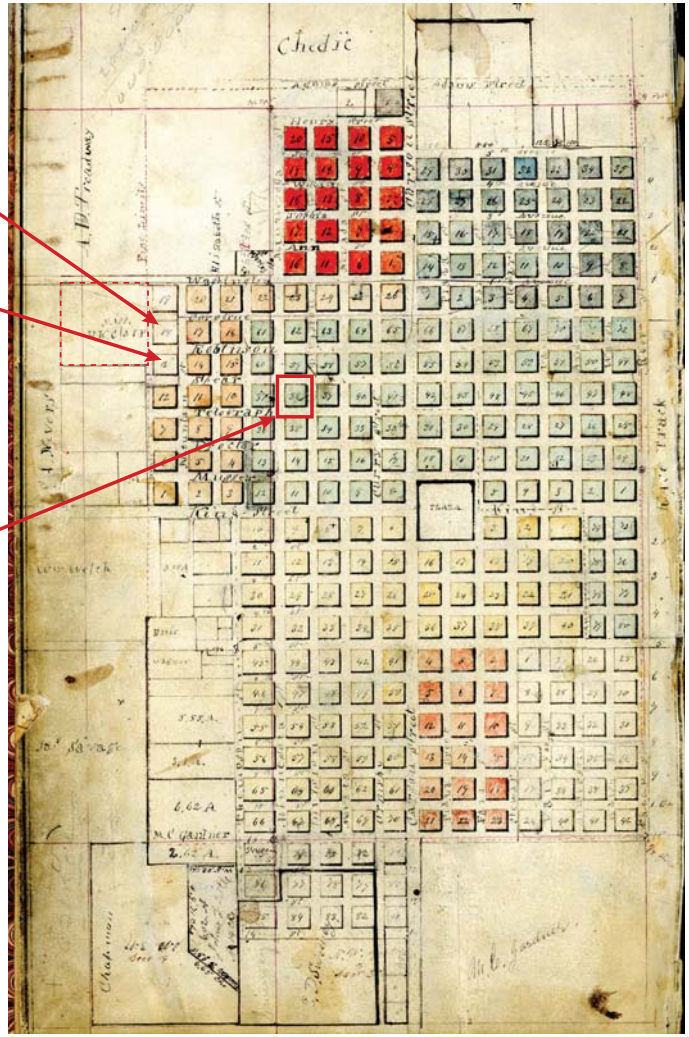
Since writing the above, I have seen the architectural plans and specifications for Miss Clapp and Mrs. Cutler's proposed "Sierra Seminary" building. It will be a handsome two-story edifice, one hundred feet square, and will accommodate forty "boarders" and any number of pupils beside, who may board elsewhere. Constructed of wood, it will cost $12,000; or of stone, $18,000. Miss Clapp has devoted ten acres of ground to the use and benefit of the institution.

I sat down intending to write a dozen pages of variegated news. I have about accomplished the task - all except the "variegated." I have economised in the matter of current news of the day, considerably more than I purposed to do, for every item of that nature remains stored away in my mind in a very unwritten state, and will afford unnecessarily ample material for another letter. It is useless material, though, I suspect, because, inasmuch as I have failed to incorporate it into this, I fear me I shall not feel industrious enough to weave out of it another letter until it has become too stale to be interesting. Well, never mind - we must learn to take an absorbing delight in educational gossip; nine-tenths of the revenues of the Territory go into the bottomless gullet of that ravenous school fund, you must bear in mind.

MARK TWAIN.

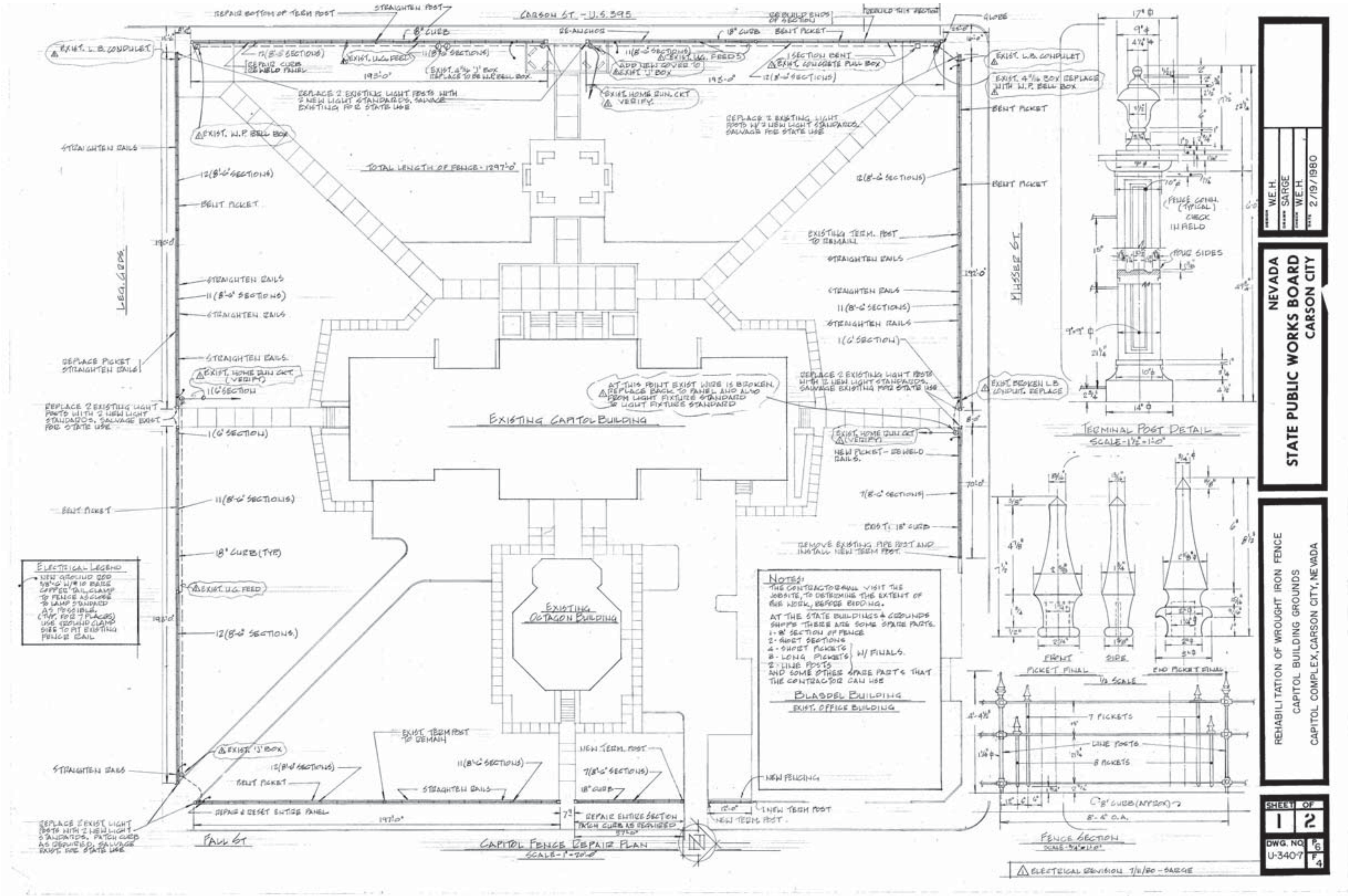
[reprinted in The Works of Mark Twain; Early Tales & Sketches, Vol. 1 1851-1864, (Univ. of California Press, 1979), pp. 334-38.]

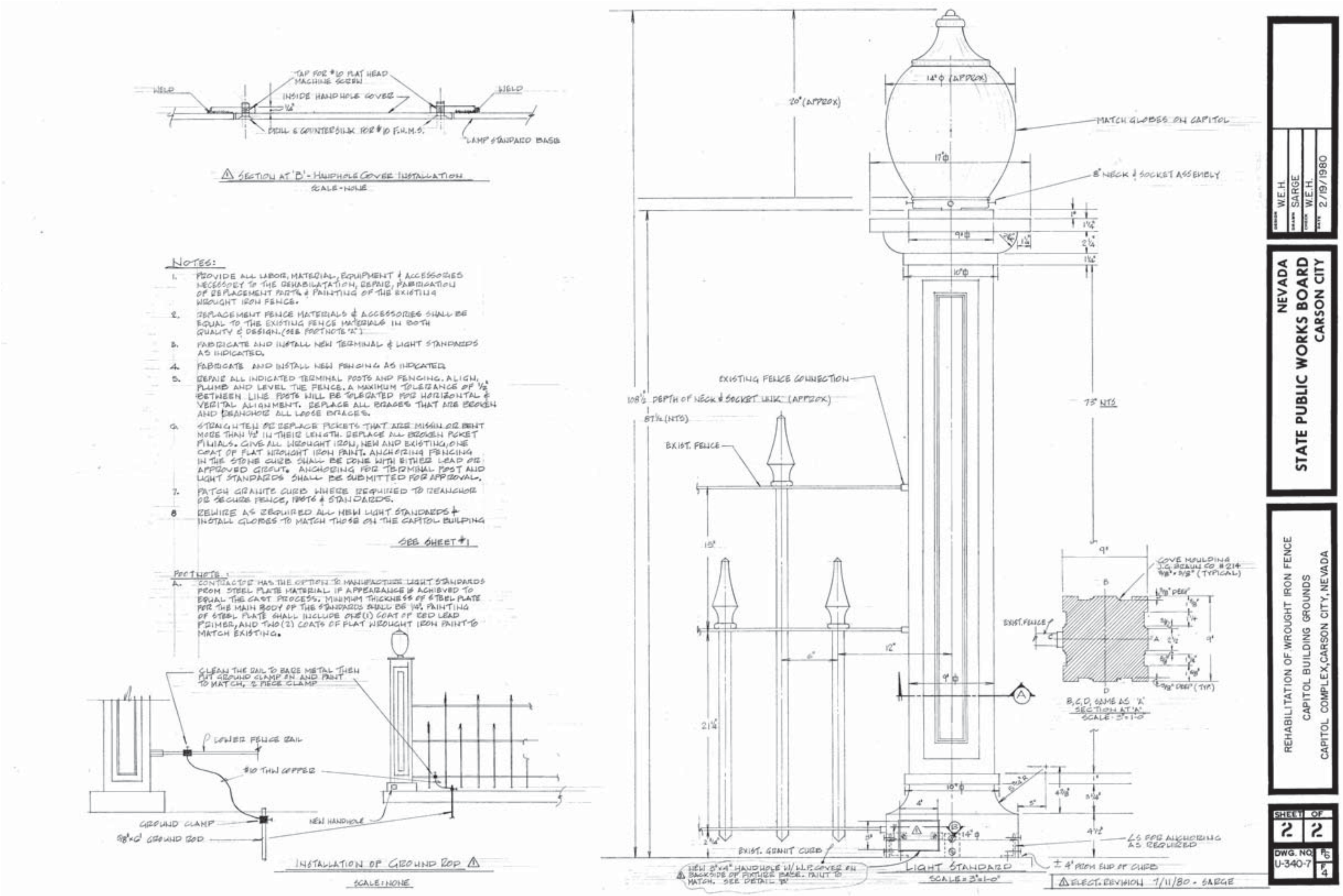




An undated property book in the collection of the Nevada State Railroad Museum in Carson City was used to verify the original location of Miss Clapp's School, Sierra Seminary. The image above from page 84, shows Miss H.K. Clapp's signature indicating ownership of a parcel in block 38 fronting Minnesota Street at the northeast corner of Telegraph; D.L. Bliss's first home in Carson City was located across the street at the northwest corner, his signature appears in the book on a parcel on block 37. The wood clad original home of the Sierra Seminary does not survive; a law practice was built in 1972 on the site. The two photos at top indicate Clapp's ownership of blocks 13 and 18 in the Phillips Division on Mountain Street and several acres of land behind each 181' x 170' block. The Clapp/Babcock House, built 1865, is located on Block 13 and the Governor's Mansion, built 1909, on block 18. Mark Twain reported in 1864 that Miss Clapp had donated ten acres of land to build her new Sierra Seminary with room to board up to 40 students.

Appendix D


CARSON ST. - U.S. 395
EXISTING CAPITOL BUILDING
EXISTING OCTAGON BUILDING
BLASDEL BUILDING
CAPITOL FENCE REPAIR PLAN
TERMINAL POST DETAIL
FENCE SECTION
NEVADA
STATE PUBLIC WORKS BOARD
CARSON CITY
REHABILITATION OF WROUGHT IRON FENCE
CAPITOL BUILDING GROUNDS
CAPITOL COMPLEX, CARSON CITY, NEVADA
W.E.H.
SARGE
W.E.H.
2/19/1980
SHEET 1 OF 2
DWG. NO. U-3407


TAP FOR #10 FLAT HEAD MACHINE SCREW
WELD
INSIDE HANDHOLE COVER
DRILL & COUNTERSINK FOR #10 F.H.M.S.
LAMP STANDARD BASE
SECTION AT 'B' - HANDHOLE COVER INSTALLATION
SCALE - NONE
NOTES:
1. PROVIDE ALL LABOR, MATERIAL, EQUIPMENT & ACCESSORIES NECESSARY TO THE REHABILATATION, REPAIR, FABRICATION OF REPLACEMENT PARTS & PAINTING OF THE EXISTING WROUGHT IRON FENCE.
2. REPLACEMENT FENCE MATERIALS & ACCESSORIES SHALL BE EQUAL TO THE EXISTING FENCE MATERIALS IN BOTH QUALITY & DESIGN. (SEE FOOTNOTE "A")
3. FABRICATE AND INSTALL NEW TERMINAL & LIGHT STANDARDS AS INDICATED.
4. FABRICATE AND INSTALL NEW FENCING AS INDICATED.
5. REPAIR ALL INDICATED TERMINAL POSTS AND FENCING. ALIGN, PLUMB AND LEVEL THE FENCE. A MAXIMUM TOLERANCE OF ½" BETWEEN LINE POSTS WILL BE TOLERATED FOR HORIZONTAL & VERITAL ALIGNMENT. REPLACE ALL BRACES THAT ARE BROKEN AND REANCHOR ALL LOOSE BRACES.
6. STRAIGHTEN OR REPLACE PICKETS THAT ARE MISSING OR BENT MORE THAN ½" IN THEIR LENGTH. REPLACE ALL BROKEN PICKET FINIALS. GIVE ALL WROUGHT IRON, NEW AND EXISTING, ONE COAT OF FLAT WROUGHT IRON PAINT. ANCHORING FENCING IN THE STONE CURB SHALL BE DONE WITH EITHER LEAD OR APPROVED GROUT. ANCHORING FOR TERMINAL POST AND LIGHT STANDARDS SHALL BE SUBMITTED FOR APPROVAL.
7. PATCH GRANITE CURB WHERE REQUIRED TO REANCHOR OR SECURE FENCE, POSTS & STANDARDS.
8 REWIRE AS REQUIRED ALL NEW LIGHT STANDARDS & INSTALL GLOBES TO MATCH THOSE ON THE CAPITOL BUILDING
SEE SHEET #1
FOOTNOTE:
A. CONTRACTOR HAS THE OPTION TO MANUFACTURE LIGHT STANDARDS FROM STEEL PLATE MATERIAL IF APPEARANCE IS ACHIEVED TO EQUAL THE CAST PROCESS. MINIMUM THICKNESS OF STEEL PLATE FOR THE MAIN BODY OF THE STANDARDS SHALL BE ¼". PAINTING OF STEEL PLATE SHALL INCLUDE ONE (1) COAT OF RED LEAD PRIMER, AND TWO (2) COATS OF FLAT WROUGHT IRON PAINT TO MATCH EXISTING.
CLEAN THE RAIL TO BARE METAL THEN PUT GROUND CLAMP ON AND PAINT TO MATCH, 2 PIECE CLAMP
LOWER FENCE RAIL
#10 THW COPPER
GROUND CLAMP
NEW HANDHOLE
INSTALLATION OF GROUND ROD
SCALE: NONE
20" (APPROX)
14" φ (APPROX)
MATCH GLOBES ON CAPITOL
8" NECK & SOCKET ASSEMBLY
EXISTING FENCE CONNECTION
EXIST. FENCE
EXIST. GRANIT CURB
LIGHT STANDARD
SCALE: 3"=1'-0"
75" NTS
COVE MOULDING
B, C, D, SAME AS 'A'
SECTION AT 'A'
LS FOR ANCHORING AS REQUIRED
± 4" FROM END OF CURB
ELECT. REVISION 7/11/80 - SARGE
W.E.H.
SARGE
W.E.H.
2/19/1980
NEVADA
STATE PUBLIC WORKS BOARD
CARSON CITY
REHABILITATION OF WROUGHT IRON FENCE
CAPITOL BUILDING GROUNDS
CAPITOL COMPLEX, CARSON CITY, NEVADA
SHEET 2 OF 2
DWG. NO. U-340-7