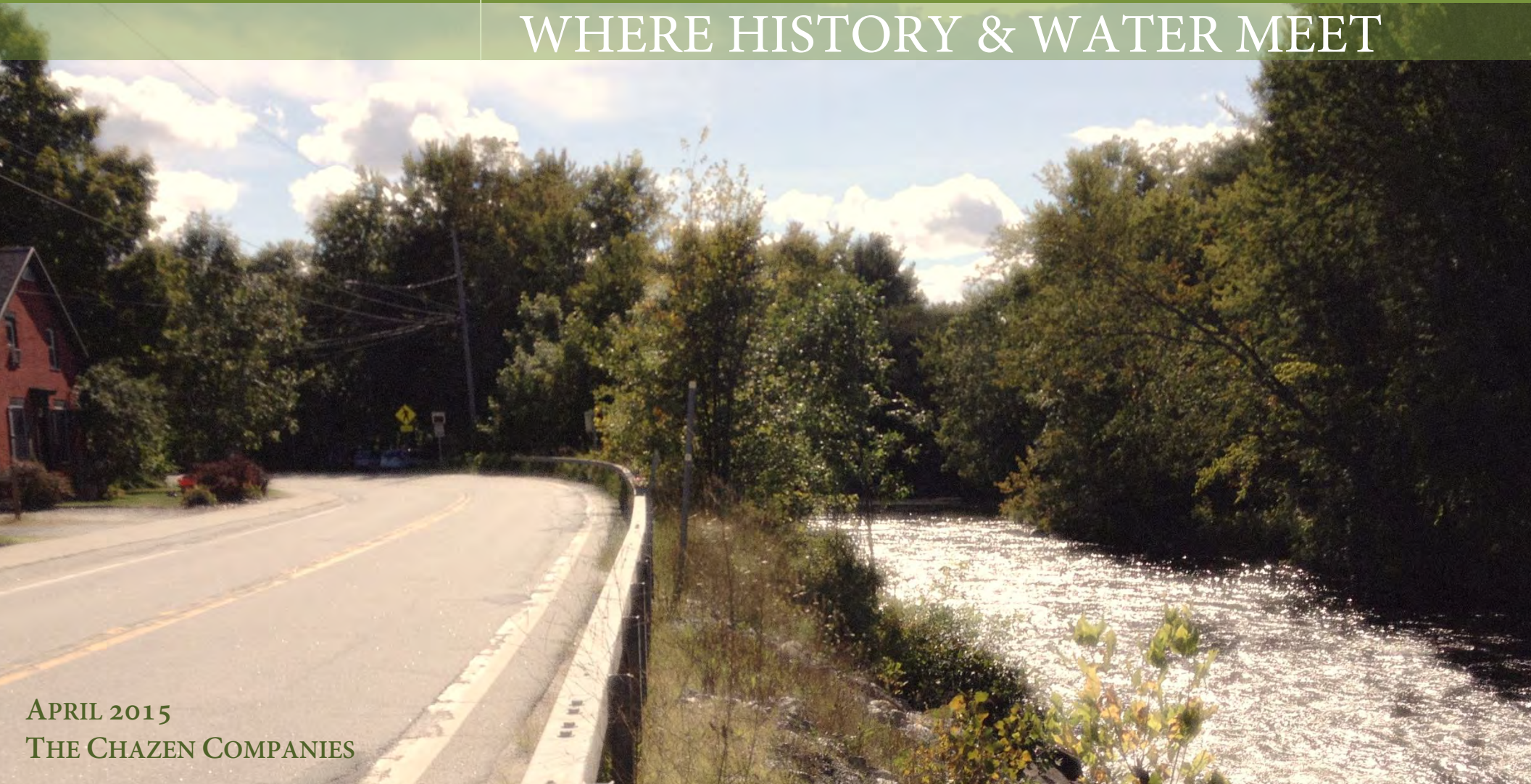
TOWN OF WARRENSBURG

River Street Streetscape Revitalization Plan

WHERE HISTORY & WATER MEET



APRIL 2015

THE CHAZEN COMPANIES

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INTRODUCTION

Classified as a "Rural Minor Collector" roadway, River Street in the Town of Warrensburg (NYS Route 418 and County Route 14) may not seem like it is a significant transportation corridor.[1] However, as an Adirondack gateway community, Warrensburg's roadways serve as a vital link to a sizable portion of the Adirondack Park, particularly for northern and western portions of Warren County. River Street is no exception. As one of the primary connections to the Town of Thurman (including Thurman's recently redeveloped railroad station), River Street has long been conduit for locals, recreationists, visitors, and business alike.

Approximately 2.3 miles in length, River Street runs parallel to the Schroon River's southern bank, providing important waterfront access. Between Judd Bridge and Richards Avenue, River Street is owned by Warren County and designated as County Route 14. West of Richards Avenue, the roadway is owned by New York State and designated as NYS Route 418. The western portion of the corridor is the principal collector road to the Town's Adirondack Park Agency (APA) southern Hamlet Area. It also serves as an important link to Main Street (NYS Route 9, via Richards Ave and Judd Street bridges) as well as to Warrensburg Elementary School and the Town's Recreation Field (via Milton Street Bridge and Library Avenue) for residents that live south of the Schroon River. Approximately 0.25 miles beyond the Milton Street intersection (near the National Grid Substation) the corridor becomes increasingly rural in nature, offering splendid views of the Schroon River and nearby forested mountain landscape (see Study Area Map located at the end of this section).

Residents and visitors enjoying the bustling local farmers market located along Rivers Street

Adjoining land uses include a concentration of residential neighborhoods along Alden, Commercial, Mill, Ridge, and Burdick Avenues. There are also a variety of recreation and commercial uses: the proposed Paper Mill Park (former Warrensburg Board & Paper Mill site), the Town's Historic Mills District Park and Riverfront Farmer's Market, Grist Mill Restaurant, River Street Plaza, Curtis Lumber, and Hickory Ski Center. This mix of land use supports a small but vibrant and revitalizing community center.

[1] NYS Department of Transportation (NYSDOT) functional classification

The Town desires to enhance the River Street corridor. A handful of pocket parks, a disconnected network of sidewalks, variable roadway conditions, and a number of impediments within the right of way result in a streetscape that is visually unappealing and may contribute to a number safety related concerns among residents.[2] Among the greatest concerns is the number of vehicular accidents involving utility poles as well as the lack of pedestrian accommodations in select areas. The River Street Existing Conditions Analysis (see Appendix A) provides a summary of these conditions.

In light of these issues, the Town of Warrensburg, with funding and technical support from the Adirondack/Glens Falls Transportation Council (A/GFTC), has developed the River Street Streetscape Revitalization Plan to address these issues. The River Street Streetscape Revitalization Plan is also intended to create a strategy that will help further revitalize the corridor by attracting funding opportunities for improvements, promote new private investments, encourage new visitors, and provide facilities that meet the needs of existing and future residents. This plan does not obligate Warren County or the New York State Department of Transportation to any specific improvements. Although the Town does not directly control the roadway, it is hoped that the collaborative process which was used to create this plan will be carried forward as projects are completed in the future.

From local commuting to recreationist, anecdotal evidence suggest that cycling has increased in popularity along the River Street corridor

Developed by a committee that consisted of local staff and elected officials, as well as A/GFTC, Warren County, and NYS Department of Transportation representatives, the River Street Streetscape Revitalization Plan was prepared following an extensive inventory and analysis process, walking tours of the corridor, Farmers Market visits, stakeholder input, and a Town Board workshop that was held April 8, 2015. This participatory planning approach has resulted in a plan that is based on a shared community vision. Furthermore, the plan acknowledges that there are a limited local, state, and federal funding opportunities. Therefore, the plan is intended to be both practical in design and implementable through strategic partnerships and with diverse range of grant support.

[2] Note that further technical analysis may be required in order to verify safety concerns that were identified by the Town and/or community.

River Street Study Area
Historic District
Corridor Parcels

Hudson River
Schroon River
River Street
To Thurman Station
Hickory Ski Center
Board & Paper Mill
Frederick H. Flynn Memorial Park
Warrensburg School
To Downtown

NORTH

SCALE: N.T.S.

TOWN OF WARRENSBURG, NY
MARCH 6, 2015

PROPOSED STREET IMPROVEMENTS
WARRENSBURG ROUTE 418 & RIVER STREET

STUDY AREA MAP

THE Chazen COMPANIES

HISTORICAL CONTEXT

Rivers Street's close proximity to the Schroon River (and confluence with the Hudson River) has had a strong influence on the Town's industrial heritage. According to the Historical Park and Riverfront Farmer's Market plaque (located along River Street), "timber, water, location…this winning combination sparked development and fortunes of early Warrensburg."[3] This convergence of natural resources led to the growth of sawmills, gristmills, planing mills, and tanneries along the Schroon River in early nineteenth century, supporting job growth and development of working-class residential neighborhoods. During this time period River Street evolved to accommodate the demands of these industrial land uses.

In 1870, Thomas C. Durant brought the 'Adirondac' railroad to nearby Thurman.[4] In 1909 a dam along the Schroon River was constructed, forming a large impoundment (Schroon River Pond) and providing hydropower to the nearby Schroon River Pulp Company (eventually renamed Warrensburg Wood & Paper Corporation).[5] This, coupled with roadway reconstruction in 1912 by the NYS Department of Highways (now NYSDOT), buoyed the production and shipment of goods and services, as well as visitors to the region.

However, according to the National Park Service (NPS), much of this industrial base quickly "succumbed to the economic pressures of expanding national markets…," throughout the early part of twentieth century. While a handful of operations (particularly milling) continued through the middle twentieth century, a precipitous decline in local manufacture resulted in the shuttering of many business along the River Street corridor (including the end of passenger and freight service at

[3] The eastern portion of River Street is located within the Warrensburg Hamlet Historic District (01NRO1752)
[4] Lake to Locks Passage (www.lakestolocks.org)
[5] Warren County Historical Society (www.warrencountyhistoricalsociety.org)

Thurman Station). In the absence of manufacturing, recreation and tourism emerged as the region's economic base industry. Throughout the latter part of the twentieth century this economic shift resulted in the adaptive reuse of several buildings, which were turned into locally owned shops and restaurants. For example, in 1976 the Grist Mill was sold and converted into a restaurant and museum. Later, the Empire Shirt Factory was converted into the River Street Plaza, a mix of commercial uses that include office, retail, and dining space. In addition to these conversions several sites were redeveloped into open space resources. For example, the Town's Historic Mills District Park was once home to the J.R. Foster's Shoe Peg Factory and the proposed Paper Mill Park was once the Warrensburg Wood & Paper Corporation. These changes have resulted in a River Street corridor that is significantly different from its industrial past. From its charming commercial district and quaint residential neighborhoods to its open space and outdoor recreation resources, the River Street corridor is now a place where residents and visitors can enjoy shopping, dining out, riding their bike, paddling, fishing, picnicking, or just watching the Schroon River float on by.

As interest in heritage tourism, cycling, and water-based recreation continues to grow, coupled with an increasing desire among Baby Boomers and Millennials to live, work, and play in more walkable mixed use communities, there are many new opportunities to capitalize on when it comes to the continued revitalization of the River Street Corridor (as well as the entire Town of Warrensburg). These opportunities include new and improved waterfront access, expanded cultural and recreational resources, improved pedestrian access and amenities, historic interpretation design features, wayfinding signage, aesthetic enhancements, and increased multimodal opportunities (e.g., cycling, leveraging the reopening of Thurman Station passenger service, etc.).

VISION & OBJECTIVES

Today River Street is an important transportation, residential, commercial, recreation, waterfront, and historical access corridor. On any given day you will find residents going about their daily lives, walking, shopping, and traveling to school and work. You may also find outdoor and recreation enthusiasts fishing, kayaking, canoeing, jogging, or cycling up and down the roadway and along the Schroon River. Local shops and restaurants are often filled with patrons, particularly during the warm months when seasonal residents and tourists fill the area. In order to support the continued revitalization of the River Street corridor, the future vision for its streetscape is multifaceted and needs to address the following:

- Improved vehicular, multimodal, and pedestrian access and safety for existing users and to support future demands, taking into consideration new businesses, cultural and recreational opportunities.
- Improved physical and visual access to existing and new recreation and waterfront facilities.
- Improved interpretation of the corridor's historic resources and industrial legacy.
- Improved aesthetic quality of the corridor in order to encourage new private investment and increased visitation.
- Encouraged use of the Thurman Station by improving physical and informational (e.g., signage, web based, etc.) connectivity to River Street business and the Town's hamlet center.
- Acknowledgment that the corridor is not homogenous when it comes nearby land uses and/or physical settings and that pedestrian related improvements need to be context sensitive.

Ultimately the design objective for the River Street corridor is to create a more "complete street." While traditional roadway designs use a classification system based on increasing volumes and speeds, a more "complete street" integrates various design features to control access and speed, thereby making for a safer, convenient, and comfortable travel and access experience for users of all ages and abilities regardless of their mode of transportation. This integrated design approach helps to reduce vehicle miles traveled and promotes pedestrian mobility. Formally recognized by the NYS Complete Streets Act in 2011 and by the Warrensburg's Complete Streets policy in 2012 and Complete Streets ordinance in 2013, a complete streets approach often includes a variety of design features that make streets and communities more livable.

According to the National Complete Streets Coalition (NCSC), "a complete street may include: sidewalks, bike lanes (or wide paved shoulders), special bus lanes, comfortable and

accessible public transportation stops, frequent and safe crossing opportunities, median islands, accessible pedestrian signals, curb extensions, narrower travel lanes, roundabouts, and more."[6] The NCSC further states, "A complete street in a rural area will look quite different from a complete street in a highly urban area, but both are designed to balance safety and convenience for everyone using the road."

The River Street corridor consists of two (2) distinct land use patterns, a more developed eastern portion and a rural western portion. Therefore, a complete streets design approach that recognizes these differences is appropriate. More specifically, it is recommended that the area between the Judd Bridge and just beyond the Milton Street bridge neighborhood include more robust streetscape improvements. In turn, it is recommended that the western portion (towards Thurman) incorporate more subtle improvements, including additional safety signage and wider road shoulders wherever practicable.

Although complete streets enhancements can at times be cost prohibitive, the River Street Streetscape Revitalization Plan acknowledges this and advances a new vision for the corridor by using practical and cost-effective design solutions. Furthermore, future improvements are intended to be done iteratively, thus spreading the potential costs over a longer period of time or as part of series of interrelated public and private projects.

Residence and adaptively reused buildings line the eastern portion of the River Street corridor (courtesy Google Street View)

Western portions of the River Street corridor is predominantly defined by a more rural characteristic (courtesy Google Street View)

[6] http://www.smartgrowthamerica.org/complete-streets/complete-streets-fundamentals/complete-streets-faq

RIVER STREET CONCEPT PLAN

The River Street Streetscape Revitalization Concept Plan (located at the end of this section) is divided into four (4) sections: Judd Bridge to west of Mill Avenue (Figure 1); west of Mill Avenue to Alden Avenue (Figure 2); Alden Avenue to the National Grid Substation (Figure 3); and the National Grid Substation to the Thurman Bridge (Figure 4). Figures 1-3 provide a detailed rendering of the proposed corridor improvements. Given the more rural character of the corridor's western portion, Figure 4 provides a general overview of the proposed improvements.

While the River Street Streetscape Revitalization Concept Plan illustrates site-specific improvements, it is important to note that the proposed design elements are conceptual in nature and do not commit the Town of Warrensburg, Warren County, AGFTC, or NYSDOT to fund any of these improvements. Furthermore, additional analysis of the proposed design elements is necessary (e.g., traffic safety analysis, warrant analysis, etc.) during future design phases and/or before any financial commitments can be made. Finally, it will also be important to work with willing land owners in order to implement select features. This includes any design elements that extends beyond the right of way limits and onto privately owned lands.[7]

As part of the Town's 2012 Comprehensive Plan's hamlet sustainability and complete streets goals, it is important to recognize that the revitalization of the River Street corridor is a priority initiative for Warrensburg. As part of this effort, Warren County recently repaved their portion of the roadway and is in the process of installing select improvements to the Judd Bridge intersection.

Currently the repaving of the NYS-owned portion of the roadway is not scheduled until 2017 at the earliest. This is a case where the New York State Region 1 paving schedule is asynchronous to the local priorities. The Town could work with NYSDOT to determine if the State schedule has flexibility for the paving to move forward sooner. However, given that the Town also desires additional improvements, which would not be part of a strict pavement preservation project, it may be beneficial for the local agencies to pursue funding for the non-preservation elements (such as lighting, signage, etc.) in

[7] Note the River Street right of way (ROW) is approximately 50 feet. Based on real property data, approximately five (5) or six (6) parcels may be impacted by the proposed improvements. Please note this estimate does not include in-kind replacement of existing sidewalks or the relocation select utility poles onto adjoining parcels. Furthermore, expanded road shoulders may result in additional encroachments.

the meantime. This may allow the Town to coordinate with the State to complete these additional improvements in tandem with the scheduled pavement preservation projects, resulting in less disruption to the roadway. This is particularly true where/if full depth reconstruction is required. However, if NYSDOT is going to invest in roadway improvements, even for preservation purposes, elements of the River Street Streetscape plan should be taken into consideration in order to support future growth and economic development opportunities.

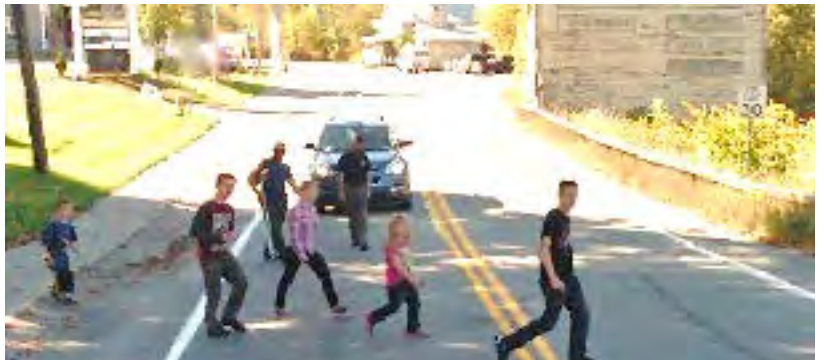
For organizational purposes the River Street Streetscape Revitalization Plan recommendations (next page) have been divided into the following categories: pedestrian safety and amenities; multimodal access and safety; vehicle access and safety; waterfront access and recreation; and interpretation, wayfinding, and visual enhancements.

Recently repaved section of River Street near the Judd Bridge Intersection. Note Warren County plans to install new crosswalks and stop signs.

Pedestrian Access & Amenities: Proposed pedestrian enhancements to the River Street corridor include sidewalk replacements from the Judd Bridge to the National Grid Substation. It also includes new sidewalks that are intended to enhance safety and improve connectivity between existing sidewalk segments and adjoining places of interest. This includes the Richards Avenue Bridge Park, the southern side of River Street between Richards Avenue and Mill Avenue, and between the Historical Park and Riverfront Farmer's Market (hereafter 'Farmers Market Park') and National Grid Substation. Please note that some these improvements may require minor realignment of the roadway and/or intersection and guiderail reconfiguration.

Sidewalks must comply with ADA accessibility requirements and be maintained during winter months. Wherever sidewalks are impracticable due to existing infrastructure, site access, or parking configurations (e.g., Judd Bridge, Grist Mill, Curtis Lumber, etc.), pedestrian spaces may be defined using striping or textured/contrasting surfaces (e.g., at grade concrete, etc.).

The plan also calls for improved crosswalks and new crossing opportunities throughout the corridor. At a minimum it is recommended that all existing crosswalks should be restriped. Existing, relocated, modified, and proposed crosswalks at Judd Bridge, Veterans Park, Richards Avenue, Mill Avenue, Commercial Avenue and Farmers Market, Alden Avenue, and Milton Avenue should be well-connected to the pedestrian access and/or intersection improvements. For example, the proposed Veterans Park midblock crosswalk should link with the respective pedestrian walkway improvements. These improvements may also include modification to the existing guiderails as well.



In the absence of crosswalks pedestrians are more likely to cross at unsafe or illegal locations (courtesy Google Street View)

In addition to the above physical improvements, enhanced pedestrian signage should be used to alert drivers. This not only includes crosswalk signage but flashing beacons as well. If warranted, flashing beacons in advance of the Veterans Park midblock crosswalk as well as the crosswalks at Mill and Commercial avenues (Farmers Market) should be considered. In effort slow vehicle traffic approaching the Milton Avenue Bridge neighborhood, a variable speed sign west of the National Grid Substation should be considered.

Multimodal Access & Amenities: Cycling continues to increase in popularity as a mode of transportation, a method of exercise, and as a recreational activity. In response, the River Street Streetscape Plan calls for a number of cycling related improvements. While narrow travel lanes, slower travel speeds, relocation of problematic utility poles, and the installation of more bicycle friendly stormwater grates will (and already do) encourage and support cycling between Judd Bridge and the National Grid Substation, expanded road shoulders from the substation to the Thurman Bridge, coupled with shared roadway signage, are recommended in order to enhance the cyclist's experience throughout the remainder of the River Street corridor. Ongoing maintenance (e.g., street cleaning, snow removal, etc.) of these improvements will further encourage safe cycling as well. Additionally, bicycle racks at Veterans Park, Richards Avenue Park, Farmers Market Park, and the proposed Paper Mill Park will help facilitate cycling.

The redevelopment and expanded use of Thurman Station presents additional multimodal opportunities for the River Street corridor and Town of Warrensburg. With increased ridership, the Town, Warrensburg Chamber of Commerce, or an alternative entity may consider providing scheduled shuttle service from the Thurman Station to points along River Street and downtown Warrensburg. Improvements to River Street should take into consideration possible transit service stops.

Narrow and poor road shoulder conditions along River Street can deter cycling and can be contribute to a number of safety related concerns

Passenger train service at the Thurman Station continues to increase in popularity (courtesy of flickr user Ironmike9)

Vehicle Access, Travel & Safety: While the primary focus of the River Street Streetscape Revitalization Plan is to improve pedestrian access and aesthetic quality of the corridor, several vehicular related improvements were identified through the planning process. (It is important to reiterate that traffic related improvement will require further traffic safety and warrant analysis during subsequent design and/or funding phases.)

Proposed vehicle related improvements include the installation of stop signs at each approach to the Judd Bridge intersection. The current configuration, which currently has a single yield sign at the Judd Street approach, can be confusing to drivers, conducive to fast turning speeds, and does not provide an opportunity for pedestrians to cross. Reduced turning radii using restriping and guiderails, coupled with new signage, stop lines, crosswalks, and walkway and sidewalk segments is believed to make a safer intersection for all users. The Town and County are already collaborating to make some of these improvements, especially concerning the installation of stop signs.

Similar improvements to the Richards Avenue intersection are proposed. According to the existing conditions analysis there a number of vehicle accidents at this intersection. Based on community input and a review of crash data, limited line of sight and the current two-way stop configuration may play a role. The lack of a crosswalk is a cause for concern among residents. As such, the installation of four-way stop, the narrowing of turning radii, and the moving of stop lines in order to improve line of sight is suggested. Turning radii need to accommodate truck traffic. Further traffic analysis is needed to ensure that these improvements will have a positive impact. An alternate, more subtle approach, may include simple restriping to accommodate truck traffic or a mountable curb, and clearly defined stop lines and crosswalks.

Poor striping, no stop lines, lack of crosswalks, wide turning radii, and an awkward stopping configuration make for seemingly unsafe intersection (courtesy of Google Street View)

The Alden Avenue intersection may be improved by slightly realigning (to make a T-intersection) and narrowing the

intersection in order to reduce turning speeds and limit the distance pedestrians must cross.

Finally, the plan calls for a number of vehicle related access, travel, and safety enhancements. This includes resurfacing or reconstruction of the roadway, traffic calming measures (e.g., additional speed limit signage, variable speed signs, etc.), and select access management improvements. Perhaps one of the most important improvements is the relocation of utility poles that are located within close proximity to travel lanes. According to the existing conditions report there are a number accidents that have involved problematic utility poles, some of which have resulted personal injury. It also appears that a handful of utility poles have also been struck by snow plows, which may impact the structural integrity of the poles.

Evidence of vehicle and/or snow plow impacts can be seen on several utility poles within the corridor. Other utility poles are considerably closer to the travel lane.

Waterfront Access & Recreation: There are several formal and informal points of access to the Schroon River within the River Street corridor. This includes Veterans and the Farmers Market parks, as well as small pocket parks at Richards and Milton Avenues. Each offers opportunities for both active (primarily fishing) and passive recreation. The Town is also currently in the process of developing a new waterfront park at the former Warrensburg Board & Paper Mill Company site, which was recently named Paper Mill Park. In addition to these park facilities are a number of informal locations where outdoor enthusiasts can access the waterfront via the River Street right of way. However, these locations tend to be overgrown with vegetation, located along steep embankments, and/or have limited parking opportunities.

While canoe and kayak enthusiasts may take advantage of these waterfront opportunities, the only formal boat launch is located directly above the Schroon River hydroelectric dam. The site is owned by Boralex and the boat launch is required as part of their Federal Energy Regulatory Commission (FERC) license. This access point allows paddlers to enjoy the Schroon River Pond impoundment, which extends from the dam to the Milton Avenue Bridge. There are no formal access opportunities below the dam or above the Richards Avenue Bridge.

The plan identifies several fishing and canoe and kayak access improvements in order to enhance recreational opportunities within the Schroon River corridor. This includes enhancements to Richards Avenue pocket park (a popular fishing location) as well as the pocket park opposite Alden Avenue. More specifically, improved sidewalk connectivity and small riverfront trails at both locations should help increase accessibility and usage. It also includes a more well-defined parking area at Richards Avenue pocket park. The plan also includes a new waterfront park at the National Grid

With no sidewalks and only small gap in the guiderail, the small pocket park located opposite the Alden Avenue intersection has limited accessibly (courtesy of Google Street View)

substation. The proposed park includes a parking area and a cartop boat launch, which would provide access to the upper reaches of the Schroon River Pond impoundment.

Finally, the plan supports the Town of Warrensburg's effort to develop Paper Mill Park at the site of the former Warrensburg Board and Paper Mill Company. The proposed park is currently in the design phase and the Town is now identifying elements of the project that can be done using local labor forces. Once complete, the park will include a portage from the existing boat launch located above the dam to a cartop boat launch that will be located below the dam. This will not only improve accessibility for users of the park, it may also support through paddlers and perhaps be part of a future Hudson River and Schroon River blueway trail. A concept plan for the proposed Paper Mill Park is included as the end of this section (see Figure 5).

The Town's proposed Paper Mill Park will provide enhanced waterfront access below the Schroon River Dam. The park will also include a host of other passive and active recreation opportunities

Interpretation, Wayfinding, and Visual Enhancements: Two of the Town of Warrensburg's greatest resources are the Hamlet of Warrensburg and Warrensburg Mills Historic Districts. As previously noted a significant portion of the study area is within these historic district boundaries. Signage identifying the hamlet and historic district is generally lacking. The River Street corridor should include informational signs that better identify the limits of the historical districts and help interpret its historical resources. Additional signage that helps visitors navigate points of interest and local business should also be included.

The River Street Streetscape Revitalization Concept Plan identifies several locations where wayfinding signage is recommended (note certain wayfinding is subject to Manual on Uniform Traffic Control Devices standards). This includes: town-wide, historic district, and River Street gateway signage at the Thurman Bridge, National Grid substation, and Judd Bridge, respectively; natural resource signage at select River Street pull offs; a comprehensive wayfinding signage system at the proposed Paper Mill Park; and historical interpretive and waterfront access signage at the Farmers Market, Richards Avenue, and Veterans parks, and proposed Schroon River Overlook (see below for more information). It is important to note that such signage should be attractive, include uniform and complementary design elements, appropriately scaled for the intended user (e.g., vehicular traffic verse pedestrians), and highlight landmarks, points of interest and access, and local businesses. The Town should consider a preferred signage design strategy to ensure visual continuity. It may consider using the signage design scheme that is currently being developed for the Paper Mill Park (see image left).

Finally, the Town should explore additional ways to improve visual access to the Schroon River waterfront and enhance the aesthetic quality of corridor. For example, a unique design feature that was identified during the planning process was the Schroon River overlook near the Grist Mill Restaurant. The concept includes a proposed walkway along the existing Grist Mill parking lot that connects to an observation deck situated

along the Schroon River riverbank. The walkway and overlook could incorporate a number historical interpretive signs and or features (e.g., historical industrial equipment that is currently located on the property). While located on private property, a public private partnership could bring this unique opportunity to fruition.

As for the aesthetic quality of the corridor, a host of landscaping improvements, reconfiguration of select parking areas, and pedestrian scale design features and amenities can be employed to beautify the River Street streetscape and its adjoining public spaces. Often referred to as corridor beautification, the use of attractive period lighting (that compliments the historic district), banner, pavers or pressed asphalt, street furniture, planters, street trees, flowerbeds, as well as public art displays not only instill a sense of local pride and foster a greater sense of place, it can help attract new investments and promote tourism. A rendering that illustrates these design elements along the River Street is provided below (see Figure 6 next page).

Streetscape elements that are designed to complement one another provide for an attractive and unique user experiences. These features, coupled with landscaping and other enhancements, will help improve the visual quality of the River Street corridor

New sidewalks and striping can be used to reduce curb cuts, improve access management, and enhance safety

Wayfinding signage should be used to help residents and visitors navigate the corridor and to identify local business and points of interests

Encourage local property owners to reinvest in properties along the corridor. Provide support through funding opportunities and/or technical assistance

Attractive streetscape features such as period lighting, bollards, benches, banners, plantings and landscaping are important design elements

Narrower travel lanes (wherever practicable) along with thoughtfully planned and designed crosswalks are important pedestrian safety and traffic calming features

New or improved sidewalks, wider shoulders and/or on-street parking, as appropriate,, and relocated utility poles, coupled with additional pedestrian and bicycle signage, will make for a safer

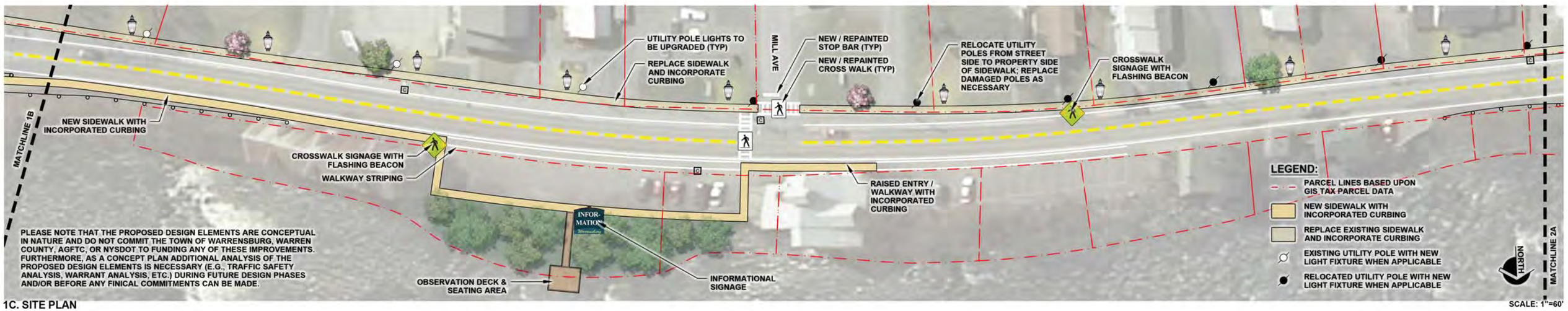
Figure 6: River Street Revitalization Rendering

1A. SITE PLAN

SCALE: 1"=60'

1B. SITE PLAN

SCALE: 1"=60'



1C. SITE PLAN

SCALE: 1"=60'

TOWN OF WARRENSBURG, NY
MARCH 6, 2015

0 30 60 120

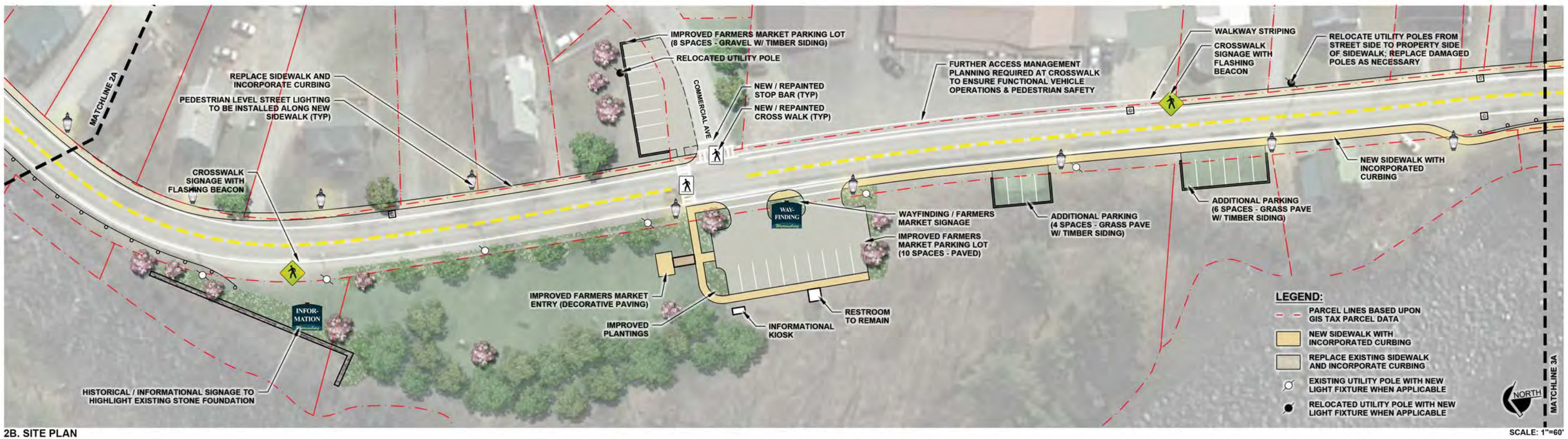
PROPOSED STREET IMPROVEMENTS
WARRENSBURG ROUTE 418 & RIVER STREET

CONCEPT PLAN: FIGURE 1

THE Chazen COMPANIES

2A. SITE PLAN

SCALE: 1"=60'



2B. SITE PLAN

SCALE: 1"=60'

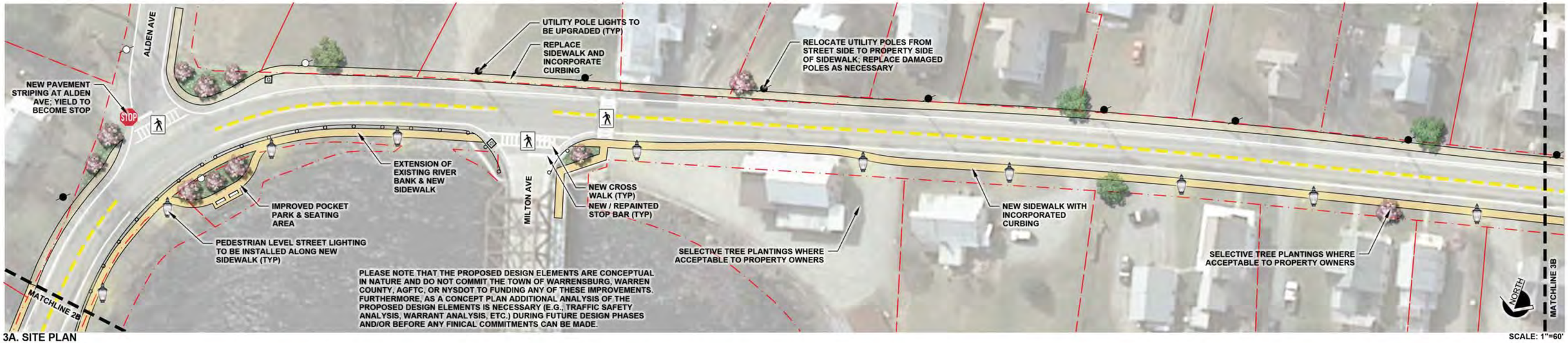
TOWN OF WARRENSBURG, NY
MARCH 6, 2015

PROPOSED STREET IMPROVEMENTS
WARRENSBURG ROUTE 418 & RIVER STREET

0 30 60 120

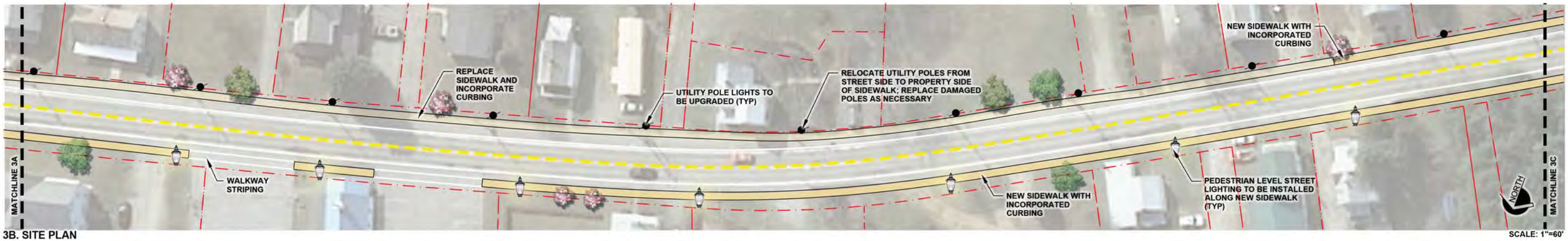
CONCEPT PLAN: FIGURE 2

THE Chazen COMPANIES



3A. SITE PLAN

SCALE: 1"=60'

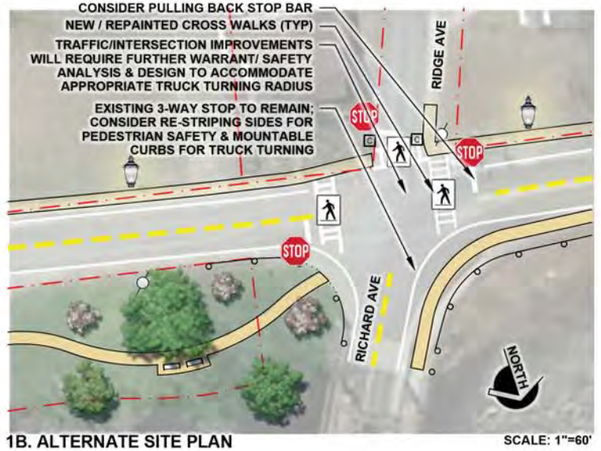


3B. SITE PLAN

SCALE: 1"=60'

3C. SITE PLAN

SCALE: 1"=60'



1B. ALTERNATE SITE PLAN

SCALE: 1"=60'

VARIABLE SPEED SIGN

INTEGRATED CATCH BASIN / CURB INLET

LEGEND:

- PARCEL LINES BASED UPON GIS TAX PARCEL DATA
- NEW SIDEWALK WITH INCORPORATED CURBING
- REPLACE EXISTING SIDEWALK AND INCORPORATE CURBING
- EXISTING UTILITY POLE WITH NEW LIGHT FIXTURE WHEN APPLICABLE
- RELOCATED UTILITY POLE WITH NEW LIGHT FIXTURE WHEN APPLICABLE

TOWN OF WARRENSBURG, NY
MARCH 6, 2015

0 30 60 120

PROPOSED STREET IMPROVEMENTS
WARRENSBURG ROUTE 418 & RIVER STREET

CONCEPT PLAN: FIGURE 3

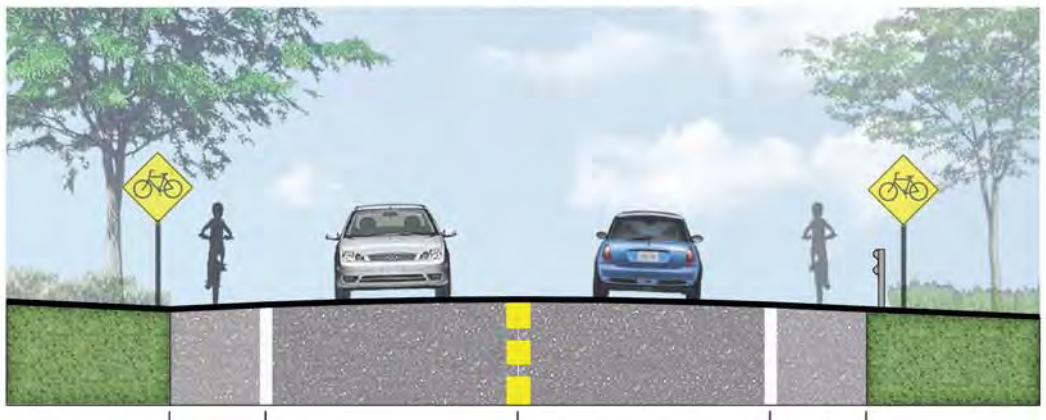
THE Chazen COMPANIES

RIVER STREET RURAL ROAD SEGMENT

THE WESTERN PORTION OF WARRENSBURG'S RIVER STREET (NYS 418) CAN BE DESCRIBED AS MORE RURAL IN NATURE, WITH FEW PEDESTRIAN GENERATING LOCATIONS OR ACTIVITIES. HOWEVER, CYCLING CONTINUES TO BE A POPULAR ACTIVITY ALONG THIS SECTION, AS IS FISHING & SIGHTSEEING. WHILE RIVER STREET'S RIGHT-OF-WAY LIMITS PROVIDE ENOUGH ROOM FOR EXPANDED PEDESTRIAN ACCESS (E.G. INCREASED ROAD SHOULDERS), SUCH IMPROVEMENTS ARE LIKELY COST PROHIBITIVE DUE TO A NUMBER OF PHYSICAL CONSTRAINTS INCLUDING STEEP UPLAND AND RIVERSIDE EMBANKMENTS, ROCK OUTCROPPINGS, WETLANDS, AND STORMWATER SWALES. NEVERTHELESS, GIVEN THE POOR CONDITION OF THE ROADWAY, FUTURE IMPROVEMENTS REMAIN NECESSARY. DUE TO VARIATIONS IN THE ROADWAY, A NUMBER OF DESIGN SOLUTIONS SHOULD BE EMPLOYED WHEN MAKING FUTURE UPGRADES. BELOW ARE 4 SECTIONS THAT REPRESENT THE DESIRED IMPROVEMENTS IN LOCATIONS THAT RANGE FROM LEAST TO MOST CONSTRAINED.

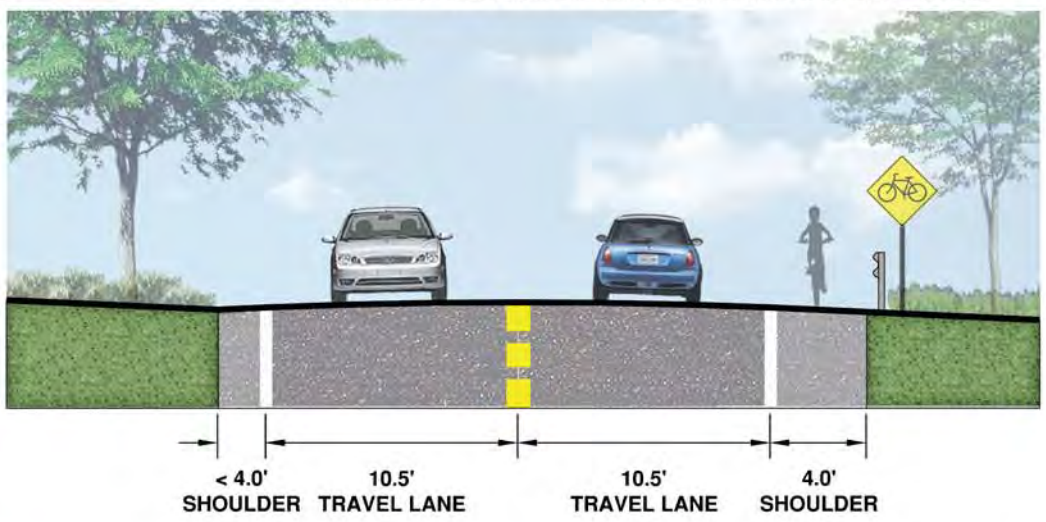
PLEASE NOTE THAT THE PROPOSED DESIGN ELEMENTS ARE CONCEPTUAL IN NATURE AND DO NOT COMMIT THE TOWN OF WARRENSBURG, WARREN COUNTY, AGFTC, OR NYSDOT TO FUNDING ANY OF THESE IMPROVEMENTS. FURTHERMORE, AS A CONCEPT PLAN ADDITIONAL ANALYSIS OF THE PROPOSED DESIGN ELEMENTS IS NECESSARY (E.G., TRAFFIC SAFETY ANALYSIS, WARRANT ANALYSIS, ETC.) DURING FUTURE DESIGN PHASES AND/OR BEFORE ANY FINICAL COMMITMENTS CAN BE MADE.

A



B

* PER AASHTO STANDARDS, SHOULDERS SHOULD REMAIN EQUAL EXCEPT IN PARTICULAR CIRCUMSTANCES LIKE UPHILL SECTIONS OR AREAS WITH POOR SIGHT DISTANCES.



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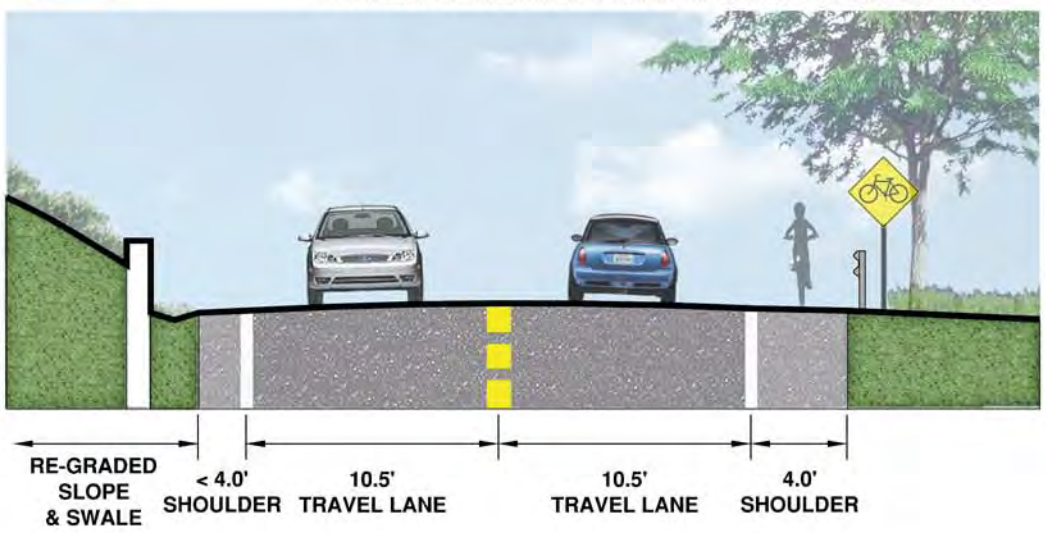

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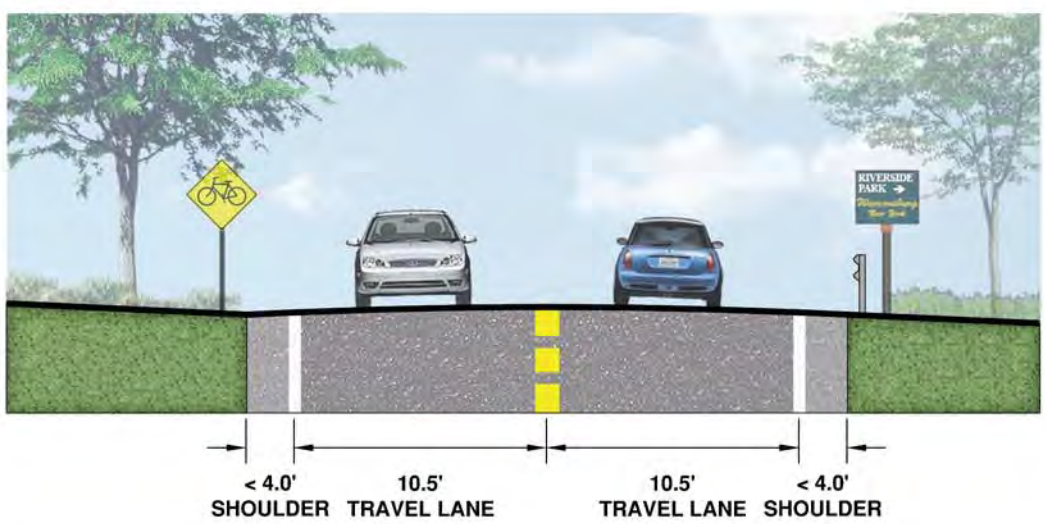
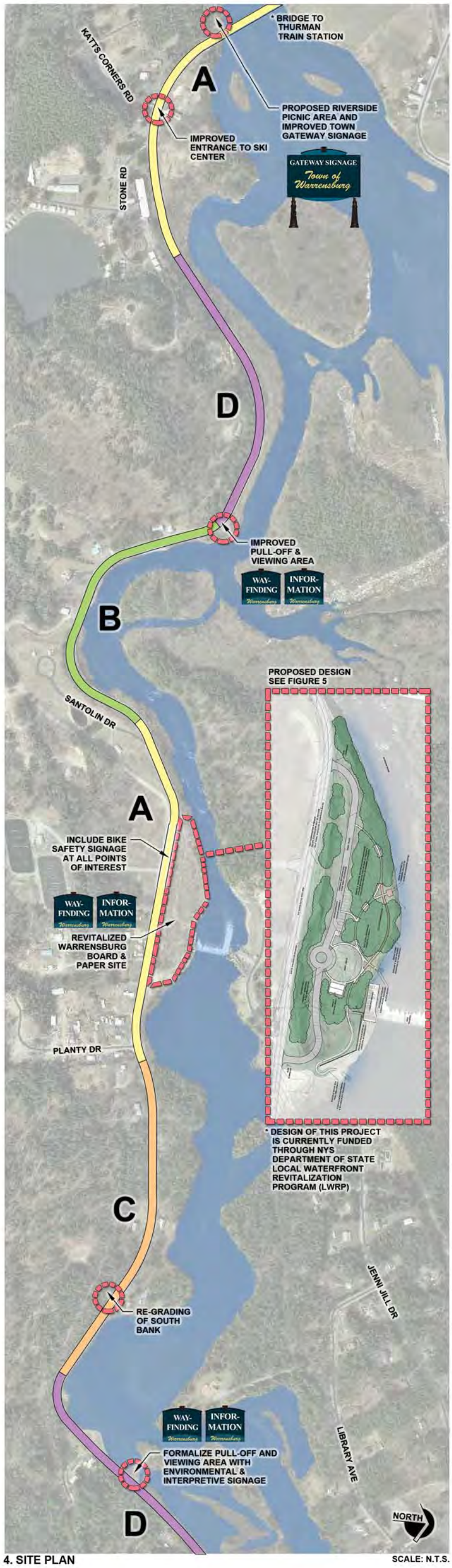




4. SITE PLAN

SCALE: N.T.S.

TOWN OF WARRENSBURG, NY
MARCH 6, 2015

PROPOSED STREET IMPROVEMENTS
WARRENSBURG ROUTE 418 & RIVER STREET

CONCEPT PLAN: FIGURE 4

THE Chazen COMPANIES

PLEASE NOTE THAT THE PROPOSED DESIGN ELEMENTS ARE CONCEPTUAL IN NATURE AND DO NOT COMMIT THE TOWN OF WARRENSBURG, WARREN COUNTY, AGFTC, OR NYSDOT TO FUNDING ANY OF THESE IMPROVEMENTS. FURTHERMORE, AS A CONCEPT PLAN ADDITIONAL ANALYSIS OF THE PROPOSED DESIGN ELEMENTS IS NECESSARY (E.G., TRAFFIC SAFETY ANALYSIS, WARRANT ANALYSIS, ETC.) DURING FUTURE DESIGN PHASES AND/OR BEFORE ANY FINICAL COMMITMENTS CAN BE MADE.

SCALE: ± 1"=80'

TOWN OF WARRENSBURG, NY
MARCH 6, 2015

0 40 80 160

PROPOSED STREET IMPROVEMENTS
WARRENSBURG ROUTE 418 & RIVER STREET

PAPERMILL PARK CONCEPT: FIGURE 5

THE Chazen COMPANIES

PRELIMINARY COST ESTIMATE & IMPLEMENTATION STRATEGY

There are several potential funding sources that may be used to implement River Street Streetscape Revitalization Plan. However, no one source will likely fund the project in its entirety. As such, it is important to explore and leverage all funding opportunities. Given the variety of funding sources and strategies, it is important to continually examine priorities, possible alternatives, and implementation strategies to champion the projects that are identified with this plan. The estimated 2015 project cost for the River Street Streetscape Revitalization Plan is approximately $4.0 to $5.9 million. Below is a summary of this estimate:

RIVER STREET STREETSCAPE REVITALIZATION PRELIMINARY COST ESTIMATE

River Street Roadway (resurface vs. reconstruction)	$865,000-$4,100,000[1]
Sidewalk Improvements (new segments only vs. new segments and replacement of existing)	$236,400-$1,004,000[2]
Intersection Improvements (Judd Bridge, Ridge Avenue, Alden Avenue)	$63,000[3]
Other Pedestrian Safety Improvements (e.g., bike safe stormwater drainage grates)	$11,00
Other Streetscape Improvements (trees, lighting, utility pole relocation, gateway signage)	$454,00
Select Park Improvements (Veterans, Richards Ave Bridge, Proposed Grist Mill Overlook , Historic Mills District, Alden Ave Riverfront , Proposed Schroon River Waterfront Access)	$274,000
Total	**$1,903,400 - $5,906,000[4]**

[1]Estimate does not include Warren County Portion of River Street
[2]From Judd Bridge to National Grid Substation
[3]Includes full depth reconstruction, paving striping, and select signage and guide rail improvements
[4]Estimate does not include Paper Mill Park project cost estimates

IMPLEMENTATION STRATEGY

While NYSDOT may be responsible for roadway repairs and/or improvements, many projects (particularly improvements that fall outside the limits of the right of way or along adjoining properties) are the responsibility of the Town, and will therefore require strong local leadership. The portion of River Street between Judd Bridge and Richards Avenue Bridge will also require strong support from Warren County. Because of this the Town will need to partner with NYSDOT, Warren County, and adjoining landowners in order to implement the River Street Streetscape Revitalization Concept Plan. Given the scale of the project it is suggested that the Town consider dividing it into phases or priorities in order to make it more attainable and attractive to a variety of funding programs. This may include: 1) roadway improvements; 2) sidewalks and pedestrian connections; 3) wayfinding and gateway signage; and, 4) recreation and waterfront access.

- **Roadway improvements:** It is assumed that the NYSDOT will complete a majority of the roadway reconstruction and/or resurfacing as a component of ongoing maintenance and preservation efforts. As such, early engagement with the NYSDOT is recommended in order to help foster a positive and proactive partnership with the Town. According to the NYSDOT, other routes within the region have a higher priority (e.g., NYS Route 9L, Route 28N, and Route 8) and repaving of River Street will not occur until 2017 at the earliest. As such, the Town should have ongoing discussions regarding scheduling with AGFTC, NYSDOT, and elected officials in order to establish a clearer/more predictable timeframe.

- **Sidewalk, pedestrian connections, and amenities:** Many pedestrian improvements could be incorporated into a NYSDOT funded work plan. Alternatively, with grant funding and through a Betterment Agreement with NYSDOT, the Town could construct select pedestrian improvements (in conjunction with repaving/reconstruction efforts) that are considered a local priority. The Town could also construct select streetscape amenities (e.g., lighting, wayfinding signage, etc.), park improvements, and waterfront access opportunities (e.g., the proposed Grist Mill Overlook and Schroon River waterfront access area) as well. This would also include any improvements that are not within the NYSDOT right-of-way.

- **Wayfinding and gateway signage:** Certain wayfinding signage could be installed (in accordance with the Manual on Uniform Traffic Control Devices standard) throughout the corridor as part of a standalone initiative or as a compliment to site specific (e.g., parks) improvements. The timing and layout of future improvements must be considered to avoid

subsequent impact, removal, or replacement when making other physical improvements. Because wayfinding and gateway signage often require more in-depth design or branding considerations, it is recommended that the Town develop a wayfinding strategy (e.g., logos, signal art elements, etc.) for the corridor in the near-term in order to achieve the desired results (i.e., a visually appealing , uniform, and well-coordinated user experience). The Town may consider expanding the wayfinding strategy that is currently being developed for the Paper Mill Park for the entire River Street corridor.

- **Site-specific enhancements:** The Town may choose to design and construct other site-specific projects identified in the River Street Streetscape Revitalization Plan (i.e., Veterans, Richards Ave Bridge, Proposed Grist Mill Overlook, Historic Mills District, Alden Ave Riverfront, Proposed Schroon River Waterfront Access, Paper Mill Park). The Town could select a single site to focus their initial efforts and manage costs. On a larger-scale the Town could choose to pursue funding for all the site-specific projects. This latter strategy would likely be more successful if the individual projects were woven together by a single theme (e.g., as one single waterfront and/or historic resource access initiative). Finally, absent NYSDOT support, the Town may choose to advance select streetscape improvements.

POTENTIAL FUNDING SOURCES

Given the overall cost to revitalize the River Street corridor, responsibility cannot solely be borne by the Town of Warrensburg. As such, funding assistance and material support is essential in order for the project to be successful. Because of limited federal and state funding, NYSDOT is primarily focused on "preservation" of roadways and is less likely to take on more elaborate reconstruction initiatives. The Town of Warrensburg will have to take a greater leadership role when it comes to advocating for redevelopment of the corridor.

With the exception of Urban Local, Rural Minor Collector, and Rural Local classified roadways, all state road are eligible for federal funding.[8] As noted in the Existing Conditions Analysis (Attachment A), River Street is classified as a Rural Minor Collector and is therefore not a "Federal Aid" eligible roadway. However, there is some precedent for using Federal Surface Transportation Program (STP) Funds for safety and bicycle/pedestrian-related priority projects, regardless of location on or off the federal-aid system. The River Street corridor is noted as a priority in the A/GFTC Bicycle Priority

[8] https://www.dot.ny.gov/divisions/engineering/technical-services/highway-data-services/functional-class-maps

Network. In addition, the River Street bicycle-pedestrian improvements may soon be listed as an "Illustrative Project" in the regional Transportation Improvement Program. An "Illustrative Project" is one in which current funding is not available; if funding becomes available in the future, the project may be considered for inclusion in the TIP. In order to determine the availability of funds and/or project eligibility the Town should meet with NYSDOT and A/GFTC representatives to discuss next steps in this process.

The Town should also work with the representatives from the Capital Region Economic Development Council (CREDC) in order to identify priority project or Consolidated Funding Application (CFA) opportunities.[9] Some of these opportunities are identified below while others are standalone funding initiatives and programs:

- **A/GFTC Make the Connection Program** is intended to assist with small-scale projects that "will improve the region's bicycle and pedestrian travel network." Announced on annual basis, the Make the Connection Program requires a 20 percent local match and can be used for a variety of small projects. However, it is important to note that funding is limited and project administration can be technically difficult in relation to award amount due to administrative guidelines and/or requirements. Nevertheless, the program may help implement a critical piece of the River Street Streetscape Revitalization Plan.
- **NYSDOT Transportation Alternative Program (TAP)** provides funding for transportation alternatives including "on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation." Because the proposed improvements are primarily focused on transportation alternatives, several aspects of the project may be eligible for funding through TAP program. It is also important to note that River Street provides access to the Warrensburg Elementary School for nearby students. As such, certain aspects of the project may be eligible for TAP funding, specifically the Safe Routes to School funding category.
- **New York State Department of State (NYSDOS) Local Waterfront Revitalization Program (LWRP)** funds are available through the State's Consolidated Funding Application (CFA) process. As a Hudson River community, and with the Schroon River recently being identified asa designated inland waterway, monies from the State's Environmental Protection Fund (EPF) may be used to prepare a wide variety of community planning initiatives and projects. Because the Town has already developed a partnership with the NYSDOS

[9] http://regionalcouncils.ny.gov/content/capital-region

through its LWRP funded Comprehensive Plan, there is a greater likelihood of being awarded funding support. When pursuing LWRP funding for the River Street Streetscape Revitalization Plan the Town should focus on Schroon River access and waterfront revitalization. LWRP Grant requirements include a 50 percent local match.

- Also available through the State's CFA process are **New York State Office of Parks, Recreation, and Historic Preservation Parks (OPRHP)** funded programs. This includes its Parks and Historic Preservation programs. These individuals programs could be used to advance a number of the plan recommendations. This includes proposed park improvements, building preservation, and select pedestrian improvements (if pitched as a transportation alternative or historic trail experience). If the Town does choose to pursue OPRHP funding it should leverage River Street's historic district designations.
- **The NYS Environmental Facility Corporation (EFC) Green Innovation Grant Program** is a highly competitive grant program that uses funding from the US Environmental Protect Agency (EPA) and is administered under the Clean Water State Revolving Fund. The Green Innovation Grant Program will provide seed money for projects which spur green innovation, build green capacity, and facilitate technology transfer throughout the State. Eligible projects should be designed to water quality and demonstrate sustainable wastewater infrastructure in communities across the State. The Town could use this funding source to design and construct stormwater management features that are part of the proposed River Street Streetscape Revitalization Plan. Particularly for any design features that would focus on improvements Schroon River water quality.
- Through the **NYS Department of Environmental Conservation (NYSDEC) Adirondack Park Smart Growth Implementation Grants**, municipalities and not-for-profits may request up to $75,000 (with no required match) for "smart growth" related projects that are wholly within the Adirondack Park. This includes "capital projects and community development initiatives that link environmental protection, economic development and community livability within the special conditions of the Adirondack Park." Given the flexibility of this program, funding could be used for a number of recommended River Street improvements.
- **NYSDEC Urban and Community Forestry Grants Funding** seeks to encourage and assist municipalities as they develop and implement sustainable local urban forestry programs. Grants are designed to encourage communities to actively enhance tree cover along their

streets and in their parks, to properly care for and maintain their community trees, to develop tree inventories and management plans, and to inform their residents of the value and benefits of urban trees. The Town should consider pursuing this funding for street trees along River Street.

- **Glens Falls Hospital's Creating Healthy Places to Live, Work & Play** program provides monies for projects, after the adoption of a local complete streets resolution or through its grant program, that meet its programs goals. This may include monies for signage and small site-specific improvements. The Town of Warrensburg has adopted a complete streets resolution and worked with Glens Falls Hospital on a number of complete streets initiatives. The Town should continue to work with Glens Falls Hospital in order to identify new funding and partnership opportunities.

APPENDIX A: EXISTING CONDITIONS ANALYSIS

MEMORANDUM

To: Project Advisory Committee

From: Paul Cummings, AICP, LEED AP

Date: March 9, 2015

Re: Warrensburg River Street Streetscape Revitalization Plant

Job #: 91418.00

This Existing Conditions Analysis has been prepared by gathering information through field visits, review of existing resources, research, and Computer Aided Design (CAD) and Geographic Information Systems (GIS) mapping.

Introduction

The focus of this streetscape project is River Street within the Town of Warrensburg (Warren County) from the Judd Street Bridge west to the bridge across the Hudson the Town of Thurman (see Figure 1 in Attachment A). Warren County owns the portion of roadway between Judd Street and Richards Avenue (County Route 14) and NYS Department of Transportation (NYSDOT) controls from Richards Ave to Thurman Station (NYS Route 418). River Street is functionally classified as a Rural Minor Collector, and as such are generally not Federal Aid eligible. Consistent with the US Federal Highway Administration, NYSDOT states that a Rural Minor Collector should have the following characteristics:

- Be spaced at intervals to collect traffic from local roads and bring all developed areas within a reasonable distance of a collector road.
- Provide service to the remaining smaller communities.
- Link the locally important traffic generators with their rural areas.

The overall length of this roadway is approximately 2.3± miles. Over the length of this roadway a total of three bridges span the Schroon River at Judd Street, Richards Avenue, and Milton Street. At the western end of the Study Area a bridge crosses the Hudson River to Thurman Station. Land use along this section of River Street is predominantly a mix of uses including residential, vacant, commercial, and community services. The Warrensburg Mills Historic District is a national historic district and was added to the National Register of Historic Places in 1975 from the Woolen Mill Bridge to the Osborne Bridge. It encompasses a number of mill complexes and homes related to the development of Warrensburg (see Photo Log in Attachment B).

The River Street right of way in this area is approximately 50 feet (three rods). However, this may be less due to existing land uses and physical restrictions that may have limited the overall width of the road in sections. Acquisitions along this roadway occurred in: 1916, 1933, 1936 and 1939 (2 each), 1941 and 1994 (see historic mapping in Attachment C). Portions of River Street run adjacent to the Schroon River, resulting in narrow shoulders and steep banks along the river in in various locations.

River Street serves as a link to Warrensburg's "downtown" via the three bridges that cross the Schroon River and provides a link to Thurman across the Hudson River. Traffic speeds along this section of roadway are posted 30 mph and 55 mph, with numerous advisory speed limit signs due to geometrics. The two lane roadway (one lane each direction) travels in an eastbound/westbound direction along the Schroon River. Roadway width varies throughout and is generally between 25 – 30 feet in width. Parking along this roadway is prohibited near the intersection with Commercial Avenue at the site of the farmer's market.

Road Conditions

One of the tools that NYSDOT uses to identify where pavement work is needed (and what type of work should be done) is based on a Surface Rating that describes the severity and extent of pavement surface distress for each segment of highway. The measurement of ride quality is also considered. While a rating of 1-10 is used, the following four generalized surface conditions are used by NYSDOT to classify roadways.

- Excellent – no significant surface distress
- Good – Surface distress beginning to show
- Fair – surface distress is clearly visible
- Poor – distress is frequent and severe

Surface rating of the roadway was given a score of 6 by NYSDOT which represents a fair condition with surface distress clearly visible. However, in some locations the roadway condition may be described as poor as the roadway moves further west towards the Hudson River. Existing condition photographs illustrate the cracking, potholes, and cold patch within the roadway (see Photo Log in Attachment B). The photos further show broken pavement along the shoulder's edge as it transitions to an unpaved surface. Years of patching and alligator cracking are evident. Recently a washout west of a National Grid Substation (near Big Brook) occurred and has since been temporarily repaired. According to NYSDOT, while it is recognized that paving 418 would be beneficial, due to the priority of other routes, repaving will not likely occur until 2017 at the earliest.

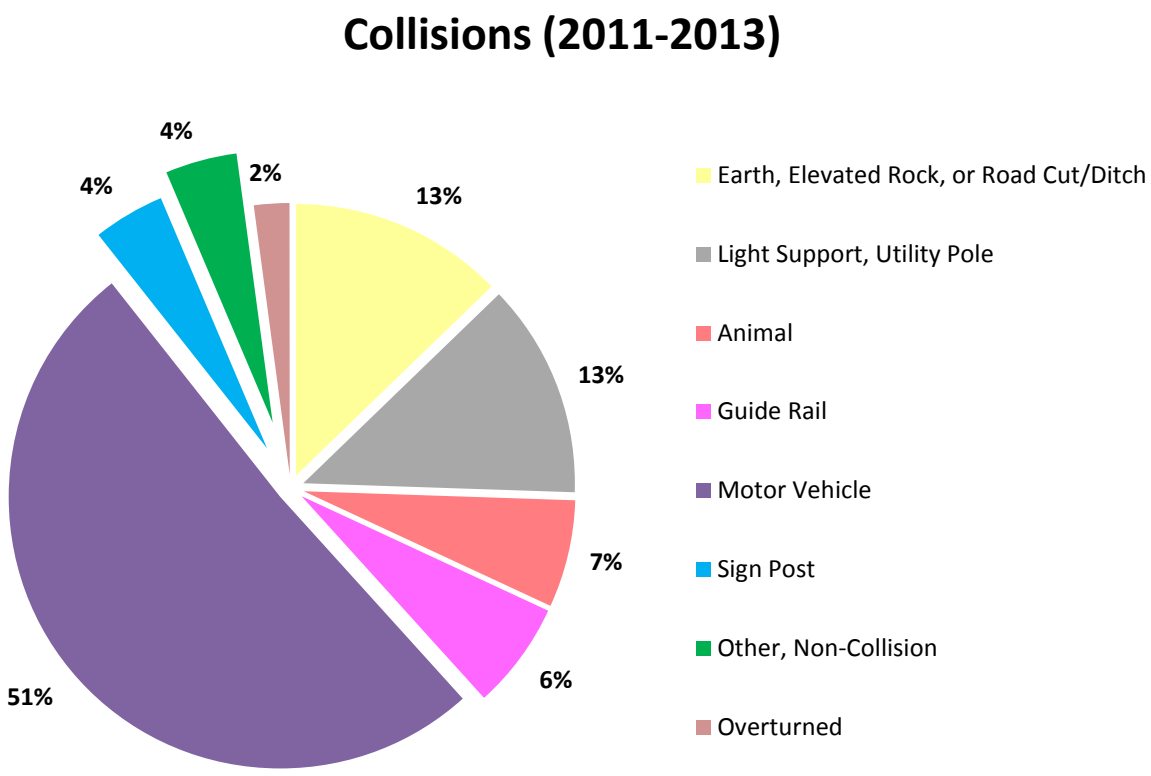
Roadway and crosswalk striping is also generally poor throughout the Study Area as the striping is broken, faded, and unclear in many spots. According to NYSDOT, this is a paint (as opposed to epoxy) route, which should be painted yearly. More detail is provided in the Vehicular Travel and Safety section below.

Vehicular Travel and Safety

In July 2014, NYSDOT obtained updated traffic data for the section of River Street from Alden Ave to the junction with Route 9 (see Table 1 and Attachment B). The estimated average annual daily traffic (AADT) was 1,336 vehicles eastbound and 1,288 vehicles westbound. During the period of data collection, the average weekday peak was 136 vehicles per hour travelling eastbound, and 144 vehicles travelling westbound. The average speed travelling eastbound was 30.9 mph and westbound was 31.2. The 85^{th} percentile speeds for eastbound and westbound was 36.3 mph and 37.4 mph, respectively. The percent of F4-F13 heavy vehicles was 4.36, while the percent of F3-F13 trucks and buses was 28.12.

Table 1 – Traffic Count Notable Findings		
	Eastbound	Westbound
AADT (vehicles)	1,336	1,288
Average Weekday Peak (vehicles/hour)	136	144
Average Speed (MPH)	30.9	31.2
85th Percentile Speed (MPH)	36.3	37.4
Percent Heavy Vehicles (Class F4-F-13)	4.32%	4.40%

According to traffic accident data obtained from Adirondack/Glens Falls Transportation Committee (A/GFTC), for the past three years there have been a total of 47 accidents between 2011 and 2013 for the section of River Street within the Study Area (see travel data in Attachment D). Accidents have largely been with other vehicles over this period of time. However, averages of nearly six accidents a year are a result of a collision with fixed objects (light support, utility pole, guide rail, sign post) and the roadway shoulder, ditch, or elevated bank. As shown in photos included within Attachment B, there are a number of locations where utility poles are located within the roadway shoulder and in some instances as close as 1-3 feet to the active travel lane.



Further, the GIS data showing the location of these collisions indicate that four out of six collisions with utility poles along River Street are between Richards Avenue and South Street (see Figure 2 in Attachment A). This presents safety concerns for not only motor vehicles, but also for pedestrians and bicyclists using this portion of the roadway. Another concentration of accidents, related to roadway shoulder, ditch, or elevated bank was identified along River Street near Sue Ann Drive at the western end of the Study Area. Sight lines in this location are likely an influencing factor. Accidents with other vehicles are concentrated at intersections with Richards Avenue, South Avenue, and Milton Street. Based on Town input, a lack of a four-way stop, proper signage, and roadway striping could be contributing factors.

Data related to contributing factors for these accidents varies as they involve multiple factors and multiple vehicles. Of note, over the three year period failure to yield right of way was identified as an influencing factor 13 times and slippery pavement was counted 6 times. Other influencing factors of note include driver's inattention, animal involvement, alcohol, unsafe speed, disregarded traffic control devices, and backing unsafely.

A site visit conducted in August 2014 identified the following observations as they related to vehicular and pedestrian movement and safety along this portion of River Street (see Figure 3).

- A number of utility poles are located within very close proximity to the travel between the Judd Street Bridge and Veterans Park and between Richards Avenue to the Grist Mill.
- Guiderail along portions of the Richards Avenue Bridge can obstruct line of sight for motorists
- The intersection of River Street with Judd Street is controlled by a yield sign for traffic on Judd Street with no roadway striping or crosswalks..
- There are multiple houses within 10± FT of travel lane in the section of roadway between the Grist Mill and Curtis Lumber.
- A bank along a section of the road has been washed out along River Street near Big Brook where water was impounding along an old rail bed (see Photo Log in Attachment B).

Pedestrian and Multi-Modal Travel and Safety

Sidewalks within the Study Area are located on the non-river side of River Street beginning at the Judd Street Bridge west to the intersection with Commercial Avenue. Sidewalks begin again approximately 300 feet further along River Street past the Curtis Lumber parking lot. They continue another 250 feet just past Pebble Drive. Sidewalks pick up again at the intersection of River Street and Alden Avenue on the non-river side. There is a 125± ft sidewalk gap before they pick up again at the intersection with Johnson Drive. No other sidewalks are located within the Study Area, and no sidewalks are located along the river side of River Street. In general, sections of sidewalk east of Richards Avenue are 3.5 feet wide and are in fair to poor conditions. Sidewalks west of Richards Avenue are generally 5 feet in width are in good condition.

Crosswalks along River Street are limited to the intersections with Commercial Avenue, and Milton Street (Bridge). Crosswalks were not found at intersections with Judd Street (bridge), Richards Avenue (bridge), Alden Avenue, or near the Board and Paper Mill site. A single pedestrian crossing sign is

located at the northern end of the Warrensburg Historical Park (see River Street Inventory Map). The Warrensburg Riverfront Farmers' Market can be found at this location. During the farmers market orange cones are placed along the roadway and temporary pedestrian crossing signs are put up. However, parking for the farmers market is scattered along the roadway and adjoin properties. As vehicles and pedestrians navigate this area there are at times pedestrian and vehicular related safety concerns. More specifically, vehicles are parked in the shoulder and grass areas along River Street, in the Historical Park parking lot, at Curtis Lumber, and in unpaved areas at the intersection of River Street with Commercial Avenue. All the while pedestrians cross the street as vehicles navigate a somewhat congested roadway.

As discussed in the Vehicular Travel and Safety section, there are a number of impediments within the right of way that present concerns for pedestrians and bicyclists within this area. This includes the following:

- include utility poles located adjacent to travel lanes that limits bicycle and pedestrian movements,
- Narrow travel lanes and shoulders (particularly west of Milton Street to the Hudson River) that offers limited shared roadway opportunities,
- Inconsistent/disconnected sidewalk network that limits pedestrian mobility in select areas and raises safety concerns,
- Unclear or nonexistent crosswalks at Judd Bridge and Richards Avenue intersection (note a lack of crosswalks in other locations may also contribute to unsafe midblock crossing by pedestrians),
- Storm drains along road shoulders that below surface grades due to repaving and have grate designs that present safety concerns for bicyclist,
- Guard rail that may inhibit line of sight and/or restrict pedestrian access and mobility (particularly near the bridges),
- Limited poor pedestrian signage.

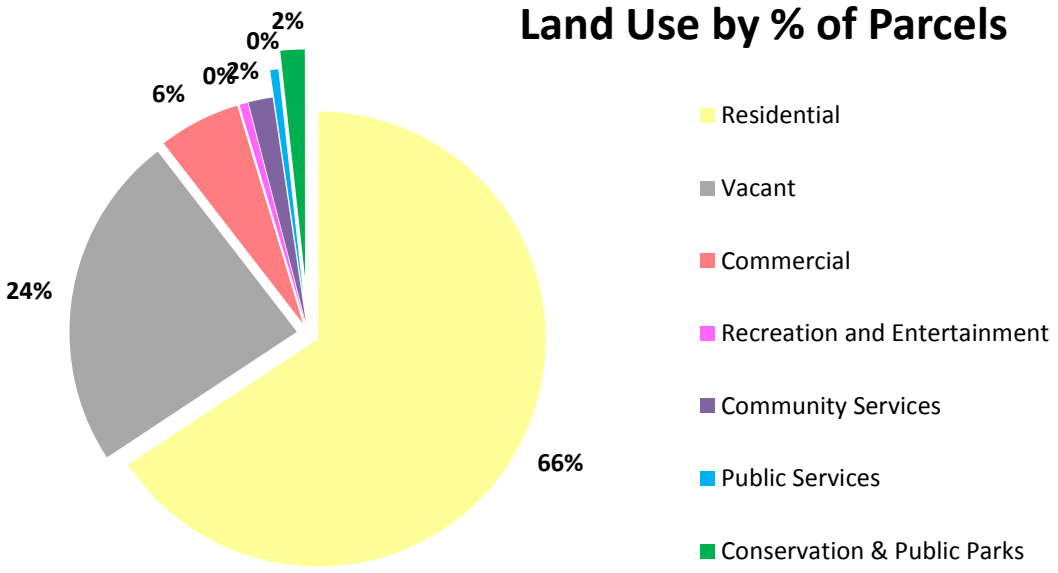
Finally, It should be also noted that there is limited access to the Schroon River along this section of roadway. While this may not be a pedestrian safety issue, members of the community have suggested that additional access to the waterfront is desirable.

Land Use Characteristics

Land use along this section of River Street is predominantly a mix of uses including residential, vacant, commercial, and community services (see Figure 4 in Attachment A). Noted land uses include: the Board and Paper Mill sites, the site of a future waterfront park and car top boat/fishing access, the wastewater treatment plant, and a cluster of other businesses and the Veteran's Park. Within the Study Area a total of 172 parcels are located adjacent to River Street. These parcels account for a total of 579 acres of land (see Table 2).

Table 2 – Land Use					
Property Class Code	Property Class	Total Parcels	*% of Parcels*	Total Acres	*% of Acres*
100	Agriculture	--	--	--	--
200	Residential	113	*65.7%*	283	*48.8%*
300	Vacant	41	*23.8%*	68.8	*11.9%*
400	Commercial	10	*5.8%*	15.3	*2.6%*
500	Recreation and Entertainment	1	*0.6%*	0.2	*0.0%*
600	Community Services	3	*1.7%*	101.0	*17.4%*
700	Industrial	--	--	--	--
800	Public Services	1	*0.6%*	1.1	*0.2%*
900	Wild, Forested, Conservation Lands and Public Parks	3	*1.7%*	110.0	*19.0%*
Total		**172**	***100.0%***	**579.4**	***100.0%***
Source: Warren County Real Property Tax Service Agency					

Residential uses are the most predominant land use in terms of parcels and overall acreage. Vacant, community services, and wild, forested conservation lands and public parks are the next most common land use. The balance of the study area is largely made up of commercial, public services, and recreation and entertainment. As shown on Figure 4, it should be noted that there are a number of large parcels at the western end of the Study Area that account for a majority of the land area. Businesses within the Study Area along River Street are limited and include: the Grist Mill on the Schroon (restaurant), R&D Transmissions, River Street Plaza, Curtis Lumber, and the Hickory Ski Center.



Within the Study area there are a number of recreational resources that provide fishing, kayaking, water access and cycling opportunities for residents and tourists to the area. These resources often generate pedestrian activities and the Town desires to improve accessibility along River Street to these facilities. Some of these recreational resources include the following:

- Veteran's Park is located on the Schroon River side of River Street between Catherine Street and Burdick Avenue. The park includes picnic tables and a gazebo. Current access to the park includes a parking area. There are no adjoining sidewalks or a crosswalk that would provide improved access to the park.
- The Warrensburg Board and Paper Site (recently renamed Paper Mill Park) is the location for a new Town recreation park along the Schroon River, which is currently in the planning stages. Alternative concepts have been developed that include: an observation deck, seating/viewing areas, an event lawn, kayak put in, pavilion, parking, and trails throughout the site. The site will include a new driveway and parking area for vehicle access. Along this portion of River Street there are very limited/narrow road shoulders. Expanded road shoulder and shared roadway signage would improve access to the proposed park.
- The Hickory Ski Center operates a surface lift only ski area with more than five miles of skiing on 18 beginner to expert trails. The facility reopened during the 2009-2010 season and again during the 2013-2014 season. Although Hickory Ski Center is primarily a winter operation, there are discussions about expanding services, amenities, and/or events during the warmer months. Expanded road shoulders and shared roadway signage along River Street would improve pedestrian and bicycle access to this important economic development entity.
- The pocket park located across from Alden Avenue near the Milton Street Bridge is blocked by the guardrail and primarily includes a bench.

The Study Area is within the Warrensburg Mills Historic District, where historic manufacturing mills were once located. Improvements to the River Street corridor will need to take into consideration the district's historical resources, particularly any potential impacts to unique landscape features and historic properties.

The Warrensburg Riverfront Farmers' Market is located on the Schroon River. The farmers market was established in 1998 and sells locally grown, raised and prepared products including produce, plants, cut flowers, dairy, poultry, meats, maple syrup, honey, wine, preserves, baked goods and refreshments. The market is held Friday afternoons from 3-6 p.m. from Memorial Day Weekend thru the end of October.

Attachments

A. Figures
    a. Study Area Map
    b. Collision Data Map
    c. Roadway Inventory Map
    d. Land Use Map
B. Travel/AADT Data
C. Photo Log
D. Historic Mapping

Attachment A
Figures

THE Chazen COMPANIES

Engineers/Surveyors
Planners
Environmental Scientists
Landscape Architects

CHAZEN ENGINEERING, LAND SURVEYING & LANDSCAPE ARCHITECTS CO., P.C.

Dutchess County Office:
21 Fox Street
Poughkeepsie, NY. 12601
Phone: (845) 454-3980

Capital District Office:
547 River Street
Troy, NY. 12180
Phone: (518) 273-0055

North Country Office:
375 Bay Road
Queensbury, NY. 12804
Phone: (518) 812-0513

N
W E
S

0 0.2 0.4
Miles

Warrensburg River Street Plan

Study Area Map

Town of Warrensburg
Warren County, New York

Drawn:	PWC
Date:	07/14/2014
Scale:	1 " equals 420 '
Project:	91418.00
Figure:	NA

River Street Study Area

Collissions

- Earth, Elevated Rock, or Road Cut/Ditch
- Light Support/Utility Pole
- Animal
- Guide Rail
- Motor Vehicle
- Sign Post
- Other
- Overturned

Hudson River

Schroon River

River Street

To Thurman Station

Hickory Ski Center

Board & Paper Mill

State Route 418

Warrensburg School

Frederick H. Flynn Memorial Park

To Downtown

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Queensbury, NY. 12804
Phone: (518) 812-0513

N W E S

0 0.175 0.35 Miles

Warrensburg River Street Plan

Inventory of Collissions Map

Town of Warrensburg
Warren County, New York

Drawn:	GHM
Date:	09/24/2014
Scale:	1 " equals 420 '
Project:	91418.00
Figure:	NA

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N
W E
S

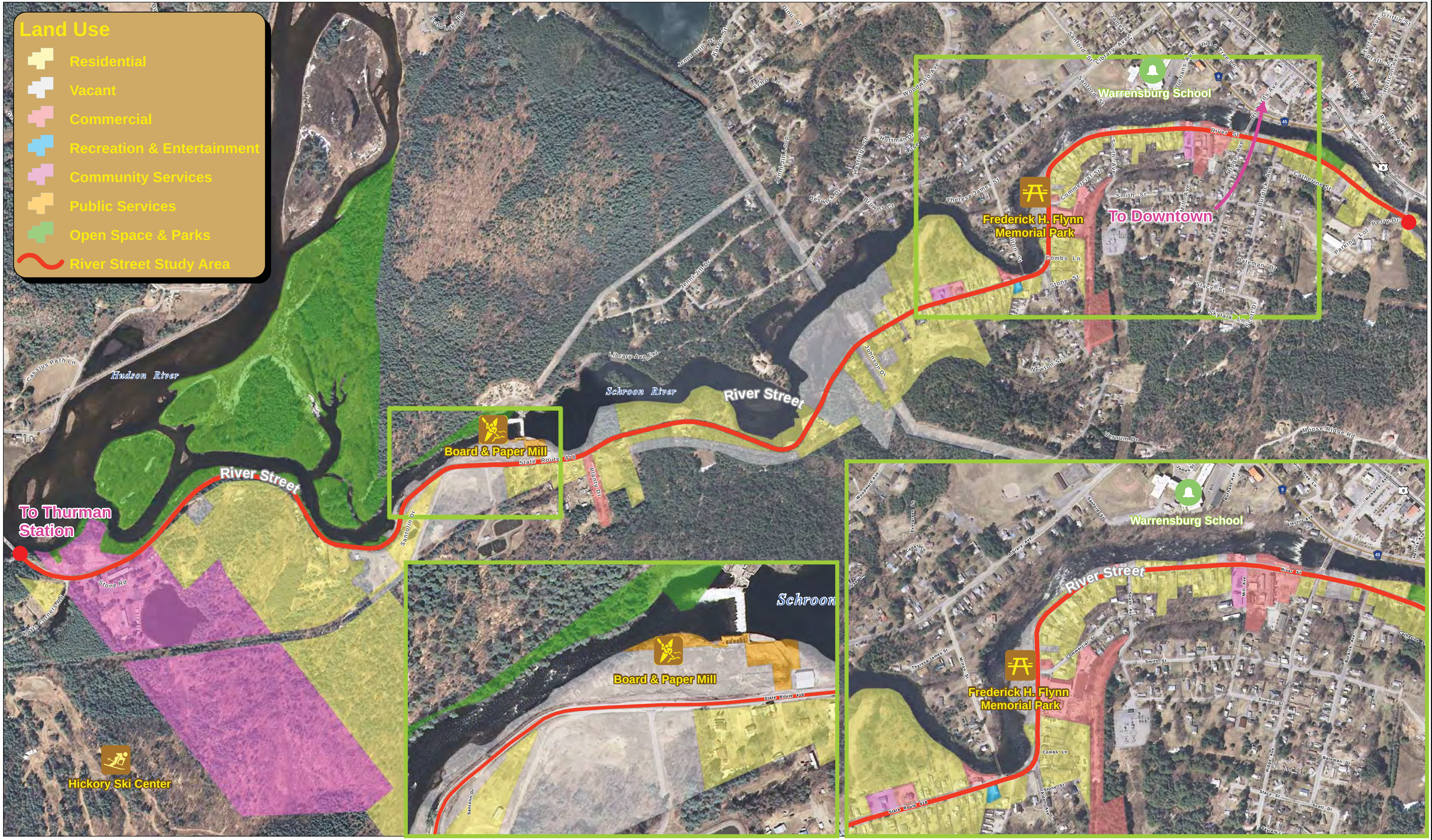
0 50 100 200 Feet

Warrensburg River Street Plan

River Street Inventory Map

Town of Warrensburg
Warren County, New York

Drawn:	GHM
Date:	09/24/2014
Scale:	1 " equals 100 '
Project:	91418.00
Figure:	NA



Land Use
Residential
Vacant
Commercial
Recreation & Entertainment
Community Services
Public Services
Open Space & Parks
River Street Study Area
Hudson River
Schroon River
River Street
River Street
To Thurman Station
To Downtown
Board & Paper Mill
Warrensburg School
Frederick H. Flynn Memorial Park
Hickory Ski Center
State Route 418
Stone Rd
Library Ave Ext
Johnson Dr
Santolin Dr
Vernum Dr
Moose Ridge Rd
River St
Commercial St
Smith St
Combs Ln
Stone St
Bateman Dr
Schroon
Board & Paper Mill
Warrensburg School
River Street
Frederick H. Flynn Memorial Park

Warrensburg River Street Plan

Land Use Map

Town of Warrensburg
Warren County, New York

Drawn:	PWC
Date:	07/14/2014
Scale:	1 " equals 420 '
Project:	91418.00
Figure:	NA

0 0.2 0.4 Miles

N W E S

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Queensbury, NY. 12804
Phone: (518) 812-0513

Attachment B
Travel Data

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **NY 418** ROAD NAME:
DIRECTION: Eastbound FACTOR GROUP: 40
STATE DIR CODE: 6 WK OF YR: 29
DATE OF COUNT: 07/18/2014
NOTES LANE 1: EB Lane

COUNT TAKEN BY: ORG CODE: TST INITIALS: MDB

FROM: **ALDEN AVE JCT RIGHT**
REC. SERIAL #: CM27
PLACEMENT: 180' N of Pebble Dr
@ REF MARKER:
ADDL DATA:
COUNT TYPE: VEHICLES

PROCESSED BY: ORG CODE: DOT INITIALS: JLB

TO: **JCT RT 9 WARRENSBURG END RT** COUNTY: **Warren**
FUNC. CLASS: 08 TOWN: **WARRENSBURG**
NHS: no LION#:
JURIS: City BIN: 1048240
CC Stn: RR CROSSING:
BATCH ID: DOT-R1 WW29C Class HPMS SAMPLE:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	T																											
2	W																											
3	T																											
4	F																											
5	S																											
6	S																											
7	M																											
8	T																											
9	W																											
10	T																											
11	F																											
12	S																											
13	S																											
14	M																											
15	T																											
16	W																											
17	T																											
18	F														**133**	**103**	**152**	**145**	**92**	**77**	**78**	**52**	**43**	**28**	**19**			
19	S	**6**	**2**	**3**	**6**	**6**	**16**	**39**	**77**	**110**	**123**	**122**	**151**	**125**	**113**	**117**	**124**	**105**	**100**	**82**	**77**	**72**	**51**	**46**	**21**	1694	151	11
20	S	**6**	**5**	**4**	**5**	**5**	**22**	**34**	**55**	**81**	**114**	**106**	**129**	**138**	**97**	**125**	**91**	**102**	**83**	**107**	**77**	**56**	**32**	**24**	**12**	1510	138	12
21	M	**4**	**4**	**2**	**4**	**18**	**47**	**97**	**138**	**103**	**107**	**118**	**97**	**111**	**100**	**97**	**111**	**96**	**90**	**77**	**54**	**48**	**35**	**16**	**5**	1579	138	7
22	T	**2**	**2**	**3**	**4**	**17**	**46**	**96**	**144**	**101**	**99**	**98**	**112**	**112**	**97**	**109**	**108**	**93**	**95**	**71**	**58**	**45**	**47**	**19**	**9**	1587	144	7
23	W	**7**	**0**	**1**	**6**	**14**	**52**	**92**	**129**	**124**	**96**	**120**	**95**	**113**	**102**	**101**	**99**	**89**	**85**	**77**	**50**	**33**	**34**	**11**	**9**	1539	129	7
24	T	**8**	**2**	**4**	**9**	**18**	**47**	**91**	**139**	**105**	**115**	**100**	**100**	**106**	**98**	**120**	**97**	**97**	**92**	**94**	**49**	**50**	**59**	**18**	**14**	1632	139	7
25	F	**5**	**2**	**2**	**9**	**21**	**48**	**93**	**129**	**129**	**107**	**116**	**90**	**91**														
26	S																											
27	S																											
28	M																											
29	T																											
30	W																											
31	T																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																									ADT
6	**2**	**2**	**7**	**18**	**48**	**94**	**136**	**112**	**105**	**110**	**99**	**110**	**99**	**107**	**104**	**94**	**90**	**80**	**53**	**44**	**44**	**16**	**9**	**1589**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
8	168	4	102	136	9%	1.000	1.189

ESTIMATED

AADT

1336

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **NY 418** ROAD NAME:
DIRECTION: Westbound FACTOR GROUP: 40
STATE DIR CODE: 7 WK OF YR: 29
DATE OF COUNT: 07/18/2014
NOTES LANE 1: WB Lane

COUNT TAKEN BY: ORG CODE: TST INITIALS: MDB

FROM: **ALDEN AVE JCT RIGHT**
REC. SERIAL #: CM27
PLACEMENT: 180' N of Pebble Dr
@ REF MARKER:
ADDL DATA:
COUNT TYPE: VEHICLES

PROCESSED BY: ORG CODE: DOT INITIALS: JLB

TO: **JCT RT 9 WARRENSBURG END RT** COUNTY: **Warren**
FUNC. CLASS: 08 TOWN: **WARRENSBURG**
NHS: no LION#:
JURIS: City BIN: 1048240
CC Stn: RR CROSSING:
BATCH ID: DOT-R1 WW29C Class HPMS SAMPLE:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	T																											
2	W																											
3	T																											
4	F																											
5	S																											
6	S																											
7	M																											
8	T																											
9	W																											
10	T																											
11	F																											
12	S																											
13	S																											
14	M																											
15	T																											
16	W																											
17	T																											
18	F													**147**	**137**	**147**	**176**	**203**	**128**	**129**	**97**	**73**	**71**	**38**				
19	S	**21**	**11**	**12**	**7**	**1**	**5**	**16**	**33**	**63**	**94**	**92**	**118**	**143**	**126**	**144**	**149**	**111**	**120**	**99**	**101**	**94**	**64**	**59**	**35**	1718	149	15
20	S	**27**	**9**	**5**	**3**	**3**	**5**	**12**	**28**	**41**	**72**	**77**	**109**	**112**	**83**	**161**	**121**	**120**	**92**	**81**	**92**	**79**	**57**	**36**	**30**	1455	161	14
21	M	**7**	**7**	**2**	**2**	**4**	**10**	**40**	**41**	**43**	**78**	**83**	**84**	**114**	**98**	**94**	**131**	**132**	**142**	**117**	**90**	**93**	**65**	**32**	**14**	1523	142	17
22	T	**8**	**5**	**6**	**5**	**5**	**7**	**40**	**33**	**71**	**84**	**84**	**82**	**106**	**90**	**100**	**146**	**153**	**138**	**95**	**72**	**76**	**71**	**29**	**32**	1538	153	16
23	W	**9**	**3**	**11**	**2**	**1**	**6**	**38**	**42**	**52**	**64**	**93**	**73**	**90**	**108**	**104**	**130**	**140**	**137**	**92**	**82**	**59**	**52**	**29**	**23**	1440	140	16
24	T	**11**	**8**	**3**	**7**	**1**	**12**	**26**	**38**	**62**	**58**	**70**	**76**	**107**	**94**	**123**	**133**	**151**	**149**	**107**	**97**	**89**	**76**	**69**	**33**	1600	151	16
25	F	**10**	**5**	**8**	**3**	**2**	**6**	**42**	**42**	**62**	**63**	**85**	**102**	**118**														
26	S																											
27	S																											
28	M																											
29	T																											
30	W																											
31	T																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																								ADT
10	**5**	**7**	**4**	**2**	**8**	**37**	**39**	**58**	**69**	**83**	**83**	**104**	**98**	**105**	**135**	**144**	**142**	**103**	**85**	**79**	**66**	**40**	**26**	**1532**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
8	168	4	102	144	9%	1.000	1.189

ESTIMATED

AADT

1288

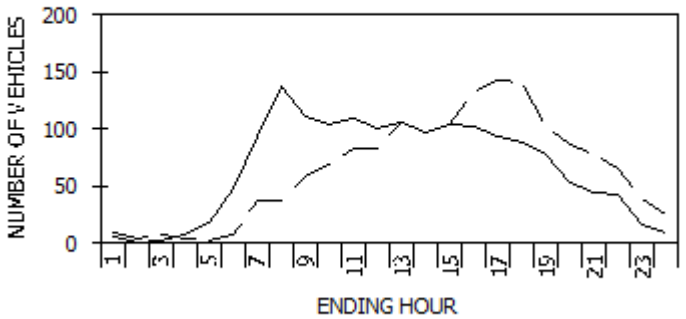
New York State Department of Transportation
Classification Count Average Weekday Data Report

ROUTE #: NY 418 ROAD NAME: YEAR: 2014 STATION: 170028
COUNTY NAME: Warren MONTH: July
REGION CODE: 1
FROM: ALDEN AVE JCT RIGHT
TO: JCT RT 9 WARRENSBURG END RT
REF-MARKER:
END MILEPOINT: 0351 NO. OF LANES: 2
FUNC-CLASS: 08 HPMS NO:
STATION NO: 0028 LION#:
COUNT TAKEN BY: ORG CODE: TST INITIALS: MDB
PROCESSED BY: ORG CODE: DOT INITIALS: JLB BATCH ID: DOT-R1 WW29C Class

DIRECTION	East	West	TOTAL
NUMBER OF VEHICLES	**1573**	**1524**	**3097**
NUMBER OF AXLES	**3182**	**3083**	**6266**
% HEAVY VEHICLES (F4-F13)	**4.32%**	**4.40%**	**4.36%**
% TRUCKS AND BUSES (F3-F13)	**28.48%**	**27.76%**	**28.12%**
AXLE CORRECTION FACTOR	**0.99**	**0.99**	**0.99**

VEHICLE CLASS		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	TOTAL
NO. OF AXLES		2	2	2	2.5	2	3	4	3.5	5	6	5	6	8.75	
ENDING HOUR	1:00	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
	2:00	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
	3:00	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
	4:00	1	6	0	0	0	0	0	0	0	0	0	0	0	**7**
	5:00	0	12	5	0	0	1	0	0	0	0	0	0	0	**18**
	6:00	1	26	17	0	4	0	0	0	0	0	0	0	0	**48**
	7:00	2	60	27	0	3	1	0	0	0	0	0	0	0	**93**
	8:00	4	99	27	0	4	1	0	1	0	0	0	0	1	**137**
	9:00	1	80	27	1	3	0	0	0	0	0	0	0	0	**112**
	10:00	0	75	24	1	3	0	0	1	0	0	0	0	0	**104**
DIRECTION	11:00	2	75	27	1	2	1	1	1	0	0	0	0	0	**110**
East	12:00	2	68	25	0	3	1	0	1	0	0	0	0	0	**100**
	13:00	1	73	26	1	4	0	0	1	0	0	0	0	0	**106**
	14:00	1	68	25	1	2	0	0	0	0	0	0	0	0	**97**
	15:00	4	75	22	1	2	0	0	0	0	0	0	0	0	**104**
	16:00	2	65	30	1	3	0	0	1	0	0	0	0	1	**103**
	17:00	1	63	24	0	4	0	0	1	0	0	0	0	0	**93**
	18:00	2	63	21	0	3	0	0	0	0	0	0	0	0	**89**
	19:00	3	54	19	0	2	0	0	0	0	0	0	0	0	**78**
	20:00	1	40	11	0	1	0	0	0	0	0	0	0	0	**53**
	21:00	2	31	10	0	1	0	0	0	0	0	0	0	0	**44**
	22:00	0	32	9	0	1	0	0	1	0	0	0	0	0	**43**
	23:00	0	14	2	0	0	0	0	0	0	0	0	0	0	**16**
	24:00	0	7	2	0	0	0	0	0	0	0	0	0	0	**9**
TOTAL VEHICLES		**30**	**1095**	**380**	**7**	**45**	**5**	**1**	**8**	**0**	**0**	**0**	**0**	**2**	**1573**
TOTAL AXLES		60	2190	760	18	90	15	4	28	0	0	0	0	18	3182
	1:00	0	8	1	0	0	0	0	0	0	0	0	0	0	**9**
ENDING HOUR	2:00	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
	3:00	0	5	2	0	0	0	0	0	0	0	0	0	0	**7**
	4:00	1	3	0	0	0	0	0	0	0	0	0	0	0	**4**
	5:00	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
	6:00	0	4	3	0	0	0	0	0	0	0	0	0	0	**7**
	7:00	0	24	12	0	1	0	0	0	0	0	0	0	0	**37**
	8:00	1	23	11	0	3	0	0	0	0	0	0	0	0	**38**
	9:00	0	32	19	1	4	0	1	1	0	0	0	0	0	**58**
	10:00	0	45	19	0	2	1	1	1	1	0	0	0	0	**70**
	11:00	1	52	23	0	3	1	1	1	1	0	0	0	0	**83**
DIRECTION	12:00	1	53	24	0	3	1	0	1	0	0	0	0	0	**83**
West	13:00	1	70	31	0	3	1	0	0	0	0	0	0	0	**106**
	14:00	2	70	22	0	2	0	1	1	0	0	0	0	0	**98**
	15:00	2	75	23	0	3	0	0	0	1	0	0	0	0	**104**
	16:00	4	90	34	0	4	1	0	0	0	0	0	0	0	**133**
	17:00	2	105	31	0	5	0	0	0	0	0	0	0	0	**143**
	18:00	3	104	28	0	4	1	0	1	0	0	0	0	0	**141**
	19:00	2	75	21	0	3	0	0	1	0	0	0	0	0	**102**
	20:00	2	67	15	0	1	0	0	1	0	0	0	0	0	**86**
	21:00	3	58	15	0	2	0	0	0	0	0	0	0	0	**78**
	22:00	1	52	11	0	2	0	0	0	0	0	0	0	0	**66**
	23:00	0	30	9	0	0	0	0	0	0	0	0	0	0	**39**
	24:00	0	23	2	0	0	0	0	0	0	0	0	0	0	**25**
TOTAL VEHICLES		**26**	**1075**	**356**	**1**	**45**	**6**	**4**	**8**	**3**	**0**	**0**	**0**	**0**	**1524**
TOTAL AXLES		52	2150	712	2	90	18	16	28	15	0	0	0	0	3083
GRAND TOTAL VEHICLES		**56**	**2170**	**736**	**8**	**90**	**11**	**5**	**16**	**3**	**0**	**0**	**0**	**2**	**3097**
GRAND TOTAL AXLES		112	4340	1472	20	180	33	20	56	15	0	0	0	18	6265

TRAFFIC FLOW BY DIRECTION



--- East - -West

PEAK HOUR DATA

DIRECTION	HOUR	COUNT	2-WAY	HOUR	COUNT
East	**8**	**137**	**A.M.**	**11**	**193**
West	**17**	**143**	**P.M.**	**16**	**236**

VEHICLE CLASSIFICATION CODES:

F1. Motorcycles
F2. Autos*
F3. 2 Axle, 4-Tire Pickups, Vans, Motorhomes*
F4. Buses
F5. 2 Axle, 6-Tire Single Unit Trucks
F6. 3 Axle Single Unit Trucks
F7. 4 or More Axle Single Unit Trucks
F8. 4 or Less Axle Vehicles, One Unit is a Truck
F9. 5 Axle Double Unit Vehicles, One Unit is a Truck
F10. 6 or More Double Unit Vehicles, One Unit is a Truck
F11. 5 or Less Axle Multi-Unit Trucks
F12. 6 Axle Multi-Unit Trucks
F13. 7 or More Axle Multi-Unit Trucks

* INCLUDING THOSE HAULING TRAILERS

FUNCTIONAL CLASS CODES:

RURAL	URBAN	SYSTEM
01	11	PRINCIPAL ARTERIAL-INTERSTATE
02	12	PRINCIPAL ARTERIAL-EXPRESSWAY
02	14	PRINCIPAL ARTERIAL-OTHER
06	16	MINOR ARTERIAL
07	17	MAJOR COLLECTOR
08	17	MINOR COLLECTOR
09	19	LOCAL SYSTEM

SOURCE: NYSDOT DATA SERVICES BUREAU

New York State Department of Transportation
Speed Count Average Weekday Report

Station:	170028	Start date:	Fri 07/18/2014 12:00	Count duration:	170 hours
Route #: NY 418	Road name:	End date:	Fri 07/25/2014 13:45	Functional class:	8
From:	ALDEN AVE JCT RIGHT	County:	Warren	Factor group:	40
To:	JCT RT 9 WARRENSBURG END RT	Town:	WARRENSBURG	Batch ID:	DOT-R1 WW29C Class
Direction:	East	Speed limit:	30	Count taken by:	Org: TST Init: MDB
		LION#:		Processed by:	Org: DOT Init: JLB

Speeds, mph

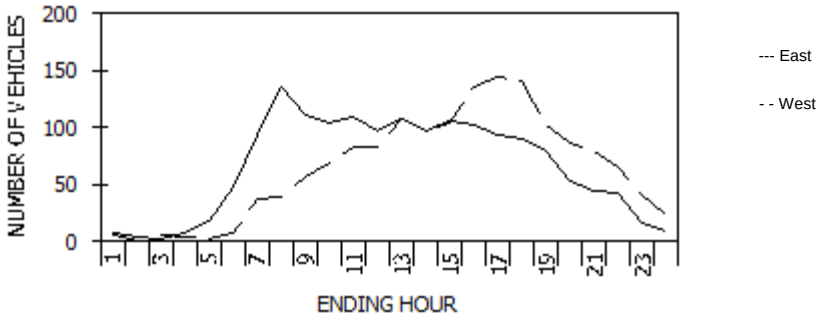
Hour	0.0-20.0	20.1-25.0	25.1-30.0	30.1-35.0	35.1-40.0	40.1-45.0	45.1-50.0	50.1-55.0	55.1-60.0	60.1-65.0	65.1-70.0	70.1-75.0	75.1-95.0	% Exc 45.0	% Exc 50.0	% Exc 55.0	% Exc 60.0	% Exc 65.0	Avg	50th%	85th%	Total
1:00	0	0	1	3	2	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	33.0	33.4	37.8	6
2:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	22.5	22.6	24.3	1
3:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	34.8	35.0	38.6	2
4:00	1	1	1	2	1	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	26.2	31.3	39.8	7
5:00	0	0	2	8	6	2	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	34.2	34.4	39.5	18
6:00	1	2	6	23	13	3	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.9	33.3	38.4	48
7:00	0	3	13	47	29	2	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	32.7	33.3	38.0	94
8:00	1	3	27	74	28	3	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.7	32.6	36.9	136
9:00	0	3	26	59	22	2	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.7	32.3	36.7	112
10:00	1	3	26	58	15	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.9	31.9	35.2	104
11:00	2	6	40	50	12	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	29.5	30.8	34.6	110
12:00	1	7	27	49	13	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.2	31.5	35.0	98
13:00	1	7	35	53	10	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	29.9	31.0	34.6	107
14:00	2	9	32	38	16	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	29.4	30.8	35.8	98
15:00	0	6	34	51	15	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.5	31.3	35.0	106
16:00	0	6	30	52	14	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.7	31.5	35.0	103
17:00	0	4	26	47	16	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.1	31.9	36.0	94
18:00	1	2	20	47	20	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.4	32.4	36.9	91
19:00	1	3	17	39	18	2	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.3	32.5	37.3	80
20:00	1	3	14	24	12	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.4	31.9	36.7	54
21:00	0	4	14	20	6	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.3	31.2	35.3	45
22:00	0	4	13	20	6	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.2	31.2	34.9	43
23:00	0	0	4	7	4	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	32.6	32.9	38.3	16
24:00	0	0	2	4	3	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	32.6	33.2	37.8	9
Avg. Daily Total	13	77	410	776	282	24	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.9	31.9	36.3	1582
Percent	0.8%	4.9%	25.9%	49.1%	17.8%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%									
Cum. Percent	0.8%	5.7%	31.6%	80.7%	98.5%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%									
Average hour	1	3	17	32	12	1	0	0	0	0	0	0	0									66

	Avg. Speed	50th% Speed	85th% Speed
East	30.9	31.9	36.3
West	31.2	32.4	37.4

Peak Hour Data

Direction	Hour	Count	2-way	Hour	Count
East	8	136	A.M.	11	194
West	17	144	P.M.	16	238

TRAFFIC FLOW BY DIRECTION



Station:	170028	Start date:	Fri 07/18/2014 12:00	Count duration:	170 hours
Route #: NY 418	Road name:	End date:	Fri 07/25/2014 13:45	Functional class:	8
From:	ALDEN AVE JCT RIGHT	County:	Warren	Factor group:	40
To:	JCT RT 9 WARRENSBURG END RT	Town:	WARRENSBURG	Batch ID:	DOT-R1 WW29C Class
Direction:	West	Speed limit:	30	Count taken by:	Org: TST Init: MDB
		LION#:		Processed by:	Org: DOT Init: JLB

Speeds, mph

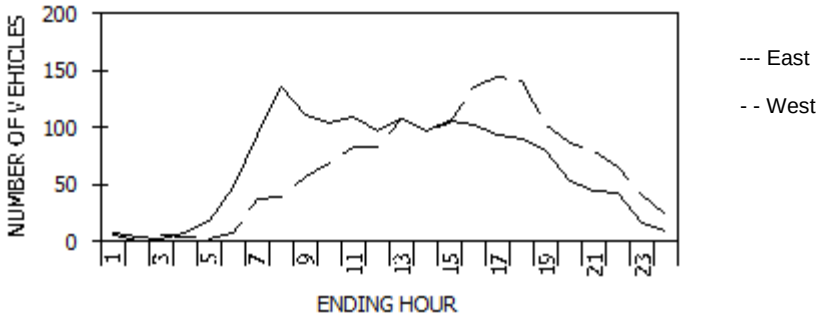
Hour	0.0-20.0	20.1-25.0	25.1-30.0	30.1-35.0	35.1-40.0	40.1-45.0	45.1-50.0	50.1-55.0	55.1-60.0	60.1-65.0	65.1-70.0	70.1-75.0	75.1-95.0	% Exc 45.0	% Exc 50.0	% Exc 55.0	% Exc 60.0	% Exc 65.0	Avg	50th%	85th%	Total
1:00	0	0	0	6	2	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	33.6	33.4	37.0	8
2:00	0	0	1	2	2	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	33.1	33.8	38.2	5
3:00	0	1	1	2	2	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.7	32.6	37.8	6
4:00	1	0	1	1	1	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	23.7	30.0	37.0	4
5:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	34.8	35.0	38.6	2
6:00	0	1	0	4	1	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	32.2	33.2	39.8	7
7:00	0	2	6	15	11	3	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	32.7	33.6	38.9	37
8:00	0	2	8	17	11	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	32.0	32.8	37.8	39
9:00	2	3	14	22	14	2	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.2	32.2	37.7	57
10:00	1	5	17	31	13	3	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.6	32.0	37.2	70
11:00	1	8	25	36	12	2	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	29.8	31.2	35.6	84
12:00	0	6	23	40	12	2	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.7	31.6	35.7	83
13:00	2	7	27	50	19	2	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.3	31.8	36.4	107
14:00	3	5	23	46	18	2	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.1	32.0	36.6	97
15:00	2	6	21	54	18	4	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.7	32.2	36.8	105
16:00	2	6	26	68	31	2	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.2	32.5	37.1	135
17:00	1	4	26	76	32	5	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.9	32.7	37.5	144
18:00	2	3	23	68	39	6	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	32.1	33.2	38.1	141
19:00	1	2	16	50	28	5	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	32.4	33.2	38.2	102
20:00	0	4	20	38	21	3	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.8	32.6	37.7	86
21:00	1	2	17	37	19	3	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.6	32.7	37.7	79
22:00	0	3	16	34	11	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.3	32.0	36.1	65
23:00	0	1	11	20	7	2	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.7	32.2	37.1	41
24:00	0	0	2	12	9	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	34.0	34.2	38.6	24
Avg. Daily Total	19	71	324	730	334	50	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.2	32.4	37.4	1528
Percent	1.2%	4.6%	21.2%	47.8%	21.9%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%									
Cum. Percent	1.2%	5.9%	27.1%	74.9%	96.7%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%									
Average hour	1	3	14	30	14	2	0	0	0	0	0	0	0									64

	Avg. Speed	50th% Speed	85th% Speed
East	30.9	31.9	36.3
West	31.2	32.4	37.4

Peak Hour Data

Direction	Hour	Count	2-way	Hour	Count
East	8	136	A.M.	11	194
West	17	144	P.M.	16	238

TRAFFIC FLOW BY DIRECTION



Attachment C
Photo Log

River Street Photo Log

Town of Warrensburg
Warren County, New York

September 22, 2014

THE Chazen COMPANIES
Proud to be Employee Owned
Engineers
Land Surveyors
Planners
Environmental Professionals
Landscape Architects

Judd Bridge
View northeast

Bridge at Richards Ave.
View northeast

West of Veteran's Park
View east

West of Veteran's Park
View east

Intersection of River St. and Ridge Ave
View southeast

East of Grist Mill
View west

East of Grist Mill
View west

West of Grist Mill
View east

West of Grist Mill
View west

West of Grist Mill
View east

East of South St.
View east

East of South St.
View west

East of South St.
View east

Intersection of River St. and South St.
View east

Warrensburg Historical Park
View southwest

Warrensburg Historical Park
View southwest

Warrensburg Historical Park

Warrensburg Historical Park
View west

Warrensburg Historical Park
View west

Warrensburg Historical Park
View west

Intersection of River St. and Commercial Ave.
View east

Intersection of River St. and Commercial Ave.
View east

Intersection of River St. and Commercial Ave.
View north

Curtis Lumber parking lot
View northeast

South of Curtis Lumber
View northeast

Crosswalk at Milton St.
View east

Bridge at Milton St.
View north

Bridge at Milton St.
View east

West of bridge at Milton St
View west

West of bridge at Milton St

View east

View east

East of substation
View west

At pull off near substation
View west

At washout near Big Brook
View southwest

At washout near Big Brook
View south

East of Board and Paper Site
View west

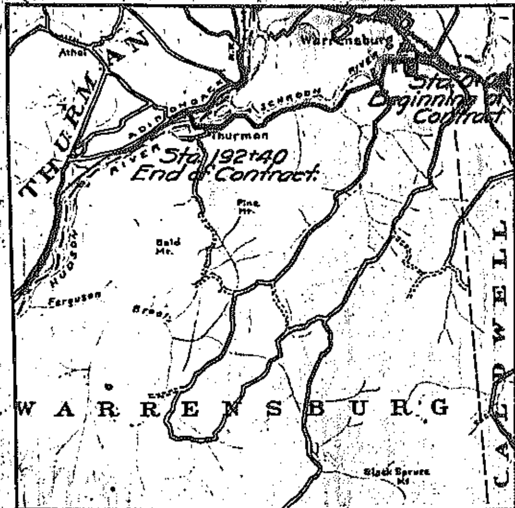
Near Browns Drive
View west

South of S Santolin Dr.
View east

Attachment D
Historic Mapping

SH 1021

1R



→ NOTE 1 ←

UNDER ITEM #73 THE CONTRACTOR SHALL FURNISH AND PLACE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER, A MIXTURE OF No. 2 AND No. 3 STONE UPON THE SHOULDERS, DRIVES, HIGHWAY INTERSECTIONS AND IN TRENCHES. PAYMENT TO BE MADE FOR THE NUMBER OF CUBIC YARDS, LOOSE MEASURE IN PLACE COMPLETE.

STATE OF NEW YORK
DEPARTMENT OF HIGHWAYS

PLANS FOR IMPROVING THE

WARRENSBURG-THURMAN STATION COUNTY HIGHWAY

From State Highway No.5157, at Grand Army Hotel in the Hamlet of Warrensburg, southwesterly to the D. & H. Depot, at Thurman Station, a length of 3.21 miles in the Town of Warrensburg, 0.31 miles in the Town of Thurman, a total length of 3.52 miles, Warren County.

CHAPTER 30, LAWS OF 1909

11 Sheets — **Petition No. 3167** — **County Highway No. 1021**

SCALES			SCALES		
Map		50 feet = 1 inch	Map		500 feet = 1 inch
Profile	Hor.	50 " 1 "	Profile	Hor.	500 " 1 "
	Ver.	10 " 1 "		Ver.	50 " 1 "
Sections		5 " 1 "	Sections		5 " 1 "

TYPE OF CONSTRUCTION
3.52 MILES, BIT. MAC.

SHEET No. 1 — WARRENSBURG THURMAN STATION HIGHWAY No. 1021 — WARREN COUNTY

RE-EXAMINED AND APPROVED.
BY ______ DIV. ENGINEER
DATED January 22 1914

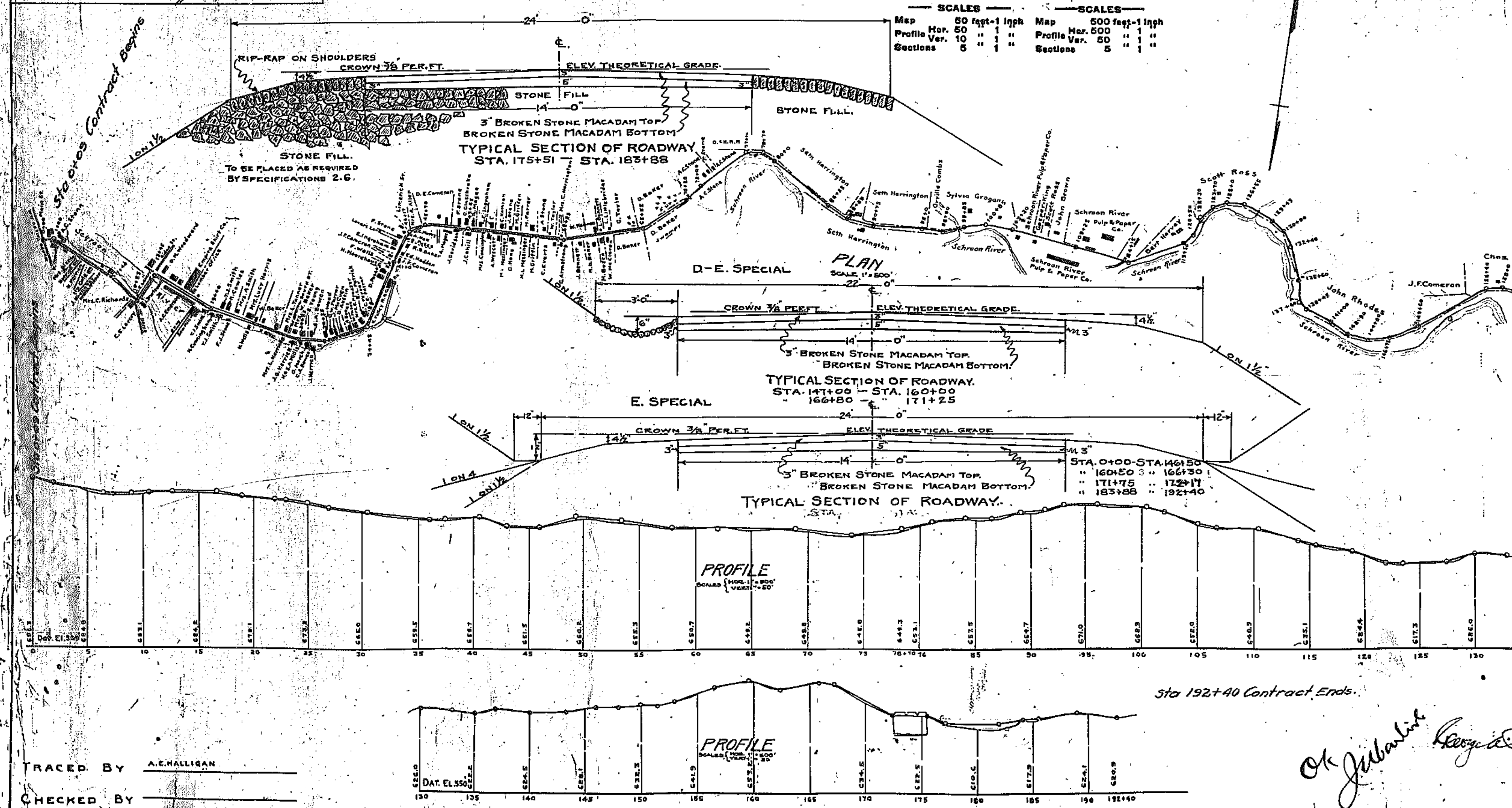
PREPARED UNDER SEC. 125 OF THE HIGHWAY LAW AND RECOMMENDED BY ______ ENGINEER DIVISION No. 2
DATED July 17 1913

EXAMINED PURSUANT TO SEC. 126 (See below)
BY ______ COUNTY SUPT.
DATED July 21 1913

APPROVED BY OFFICIAL ORDER OF THE STATE COMMISSION OF HIGHWAYS PURSUANT TO SECTION 127 OF THE HIGHWAY LAW
Aug 29 1913

APPROVED AND ADOPTED BY RESOLUTION OF THE BOARD OF SUPERVISORS OF Warren COUNTY PURSUANT TO SECTION 128 OF THE HIGHWAY LAW AT A MEETING HELD ON ______
CLERK OF BOARD OF SUPERVISORS

Re-examined Pursuant To Sec 126
By ______ County Supt.
Dated ______ 1913



Prepared under Sec. 125 of the Highway Law and recommended by ______ Engineer Division No. 2
Dated March 25 1912

Examined pursuant to Section 126 by ______ County Supt.
Dated March 27 1912

Approved at an Executive Session of the State Commission of Highways pursuant to Section 127 of the Highway Law
March 29 1912

Approved and adopted by Resolution of the Board of Supervisors of Warren County pursuant to Section 128 of the Highway Law at a meeting held on April 1 1912

TRACED BY A.E. HALLIGAN

CHECKED BY ______

SH1021

Note: The grades shown on these plans may be adjusted to meet requirements.

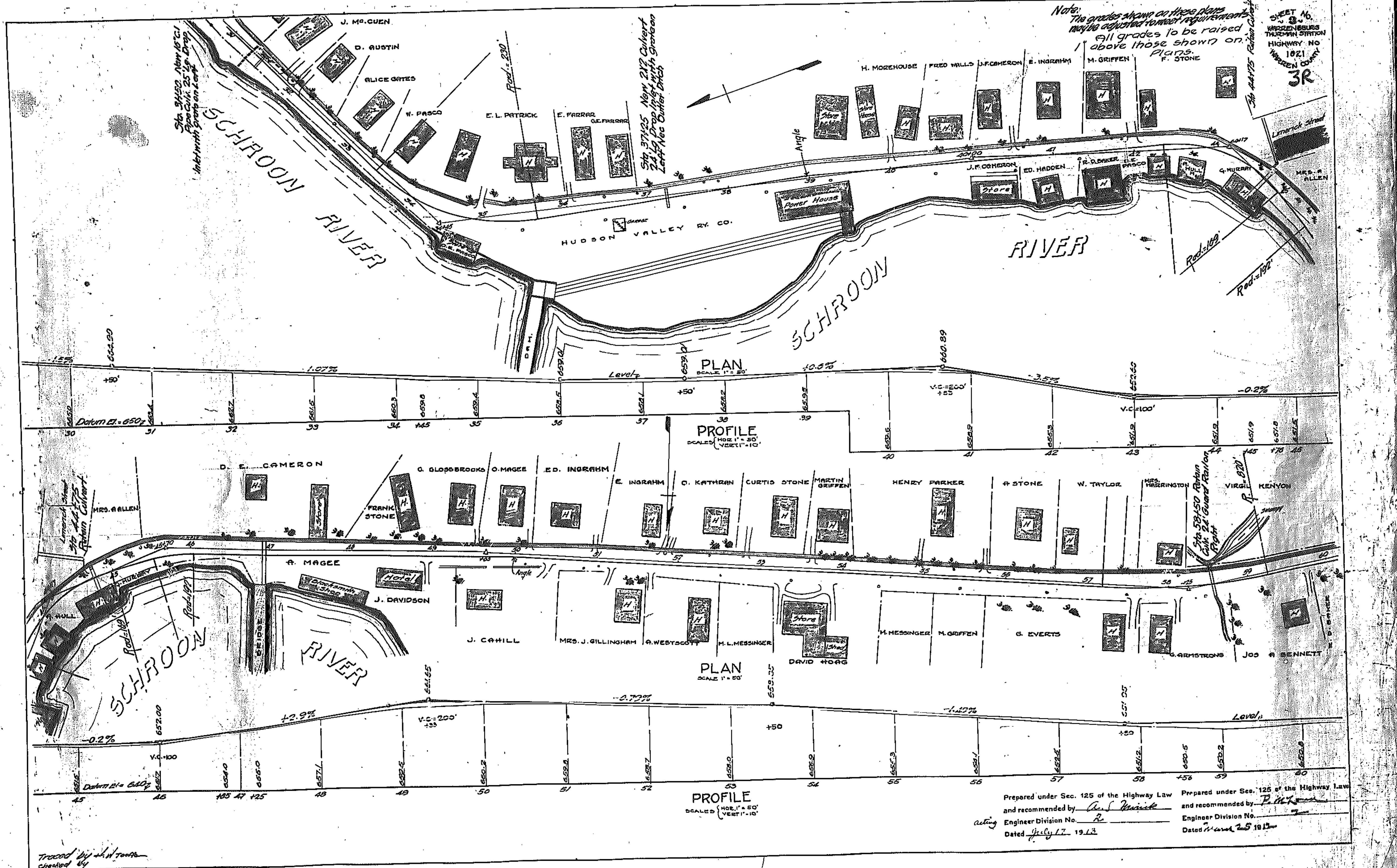
All grades to be raised 1" above those shown on Plans.

Traced by H.W. Taaffe
checked by

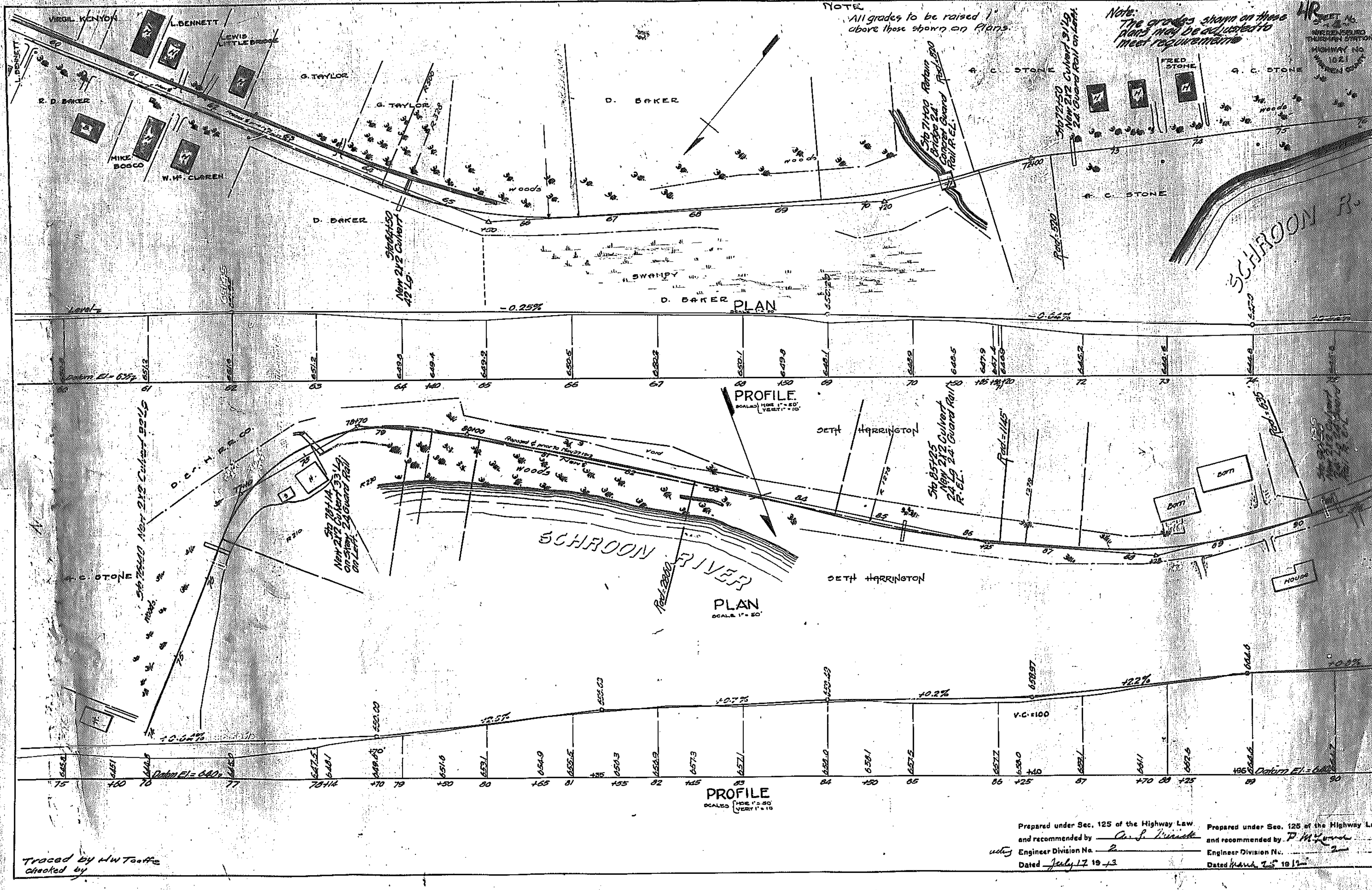
Prepared under Sec. 125 of the Highway Law
and recommended by A. S. [illegible]
acting Engineer Division No. 2
Dated July 17 1913

Prepared under Sec. 125 of the Highway Law
and recommended by R. M. [illegible]
Engineer Division No.
Dated March 25 1912

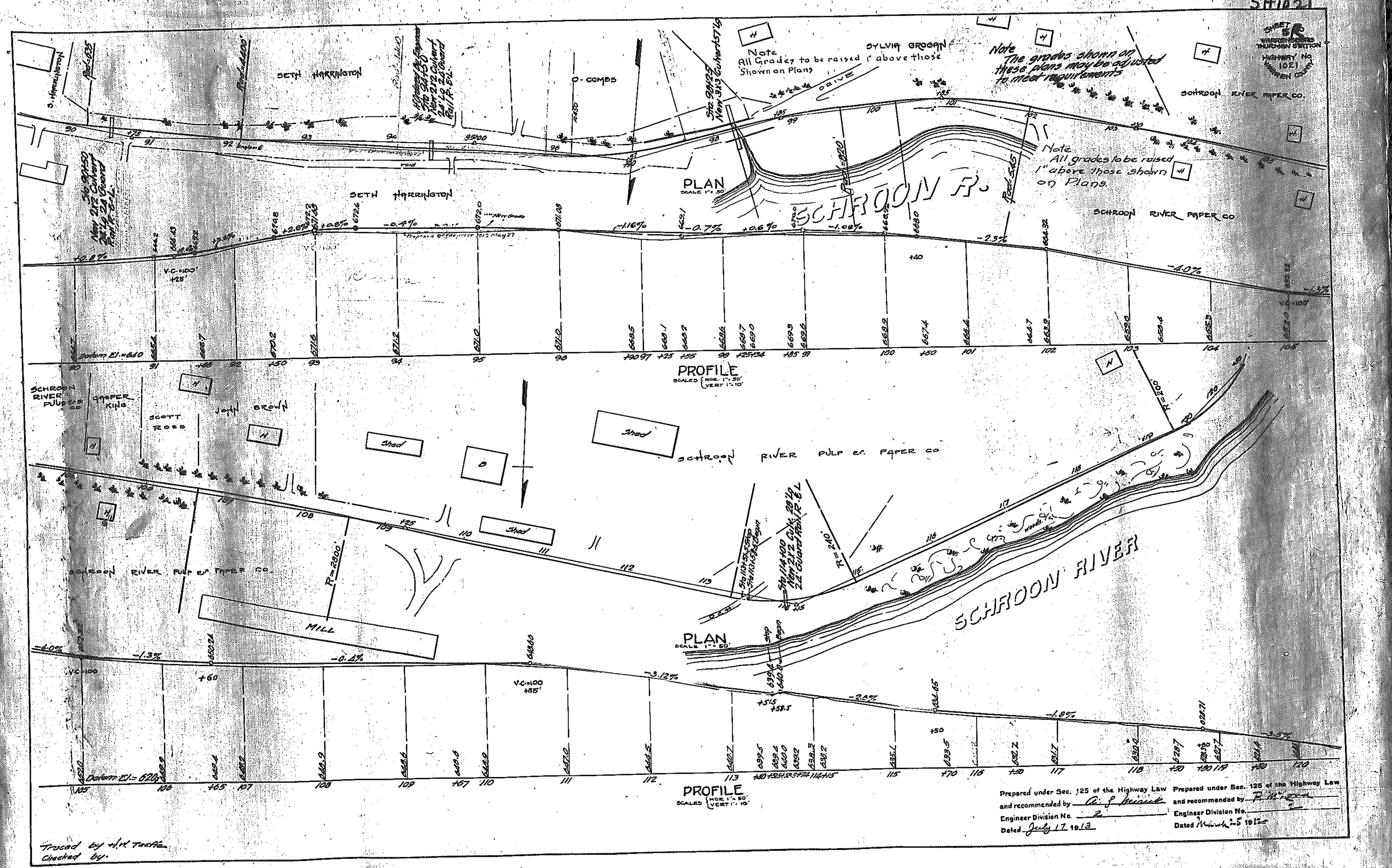
SH1021



Note: The grades shown on these plans may be adjusted to meet requirements. All grades to be raised above those shown on plans.
SHEET No. 3 WARRENSBURG THURMAN STATION HIGHWAY No 1021 WARREN COUNTY
3R
J. McCUEN
D. AUSTIN
ALICE GATES
W. PASCO
E. L. PATRICK
E. FARRAR
G.E. FARRAR
H. MOREHOUSE
FRED WALLS
J.F. CAMERON
E. INGRAHM
M. GRIFFEN
F. STONE
Limerick Street
MRS. A. ALLEN
G. MURRAY
R.D. BAKER
ED. HADDEN
Store
Power House
HUDSON VALLEY RY. CO.
SCHROON RIVER
Sta. 37+25 New 2'x2' Culvert 2'x 1/2 Drop Inlet with Grate on Left Ne Gutter Ditch
Rad.=230'
Rad.=109'
Rad.=192'
Angle
PLAN SCALE 1" = 50'
PROFILE SCALES HOR. 1" = 50' VERT. 1" = 10'
Datum El. = 650
Level
V.C.=200'
V.C.=100'
-1.07%
-3.5%
-0.2%
D. E. CAMERON
MRS. A. ALLEN
Limerick Street
G. GLOSSBROOKS
O. MAGEE
ED. INGRAHM
E. INGRAHM
O. KATHRAN
CURTIS STONE
MARTIN GRIFFEN
HENRY PARKER
A. STONE
W. TAYLOR
MRS. HARRINGTON
VIRGIL KENYON
FRANK STONE
A. MAGEE
Hotel
Blacksmith Shop
J. DAVIDSON
J. CAHILL
MRS. J. GILLINGHAM
A. WESTSCOTT
H.L. MESSINGER
DAVID HOAG
Shed
H. MESSINGER
M. GRIFFEN
G. EVERTS
G. ARMSTRONG
JOS. A. BENNETT
BRIDGE
SCHROON RIVER
Sta. 58+50 Remove 2x Guard Rail on Right
R=820'
PLAN SCALE 1" = 50'
PROFILE SCALES HOR. 1" = 50' VERT. 1" = 10'
Datum El. = 640
+2.9%
-0.73%
-1.42%
-0.2%
Level
V.C.=200'
V.C.=100
Prepared under Sec. 125 of the Highway Law and recommended by A. S. Minck
acting Engineer Division No. 2
Dated July 17 1913
Prepared under Sec. 125 of the Highway Law and recommended by
Engineer Division No.
Dated
Traced by H.W. Tooth
Checked by

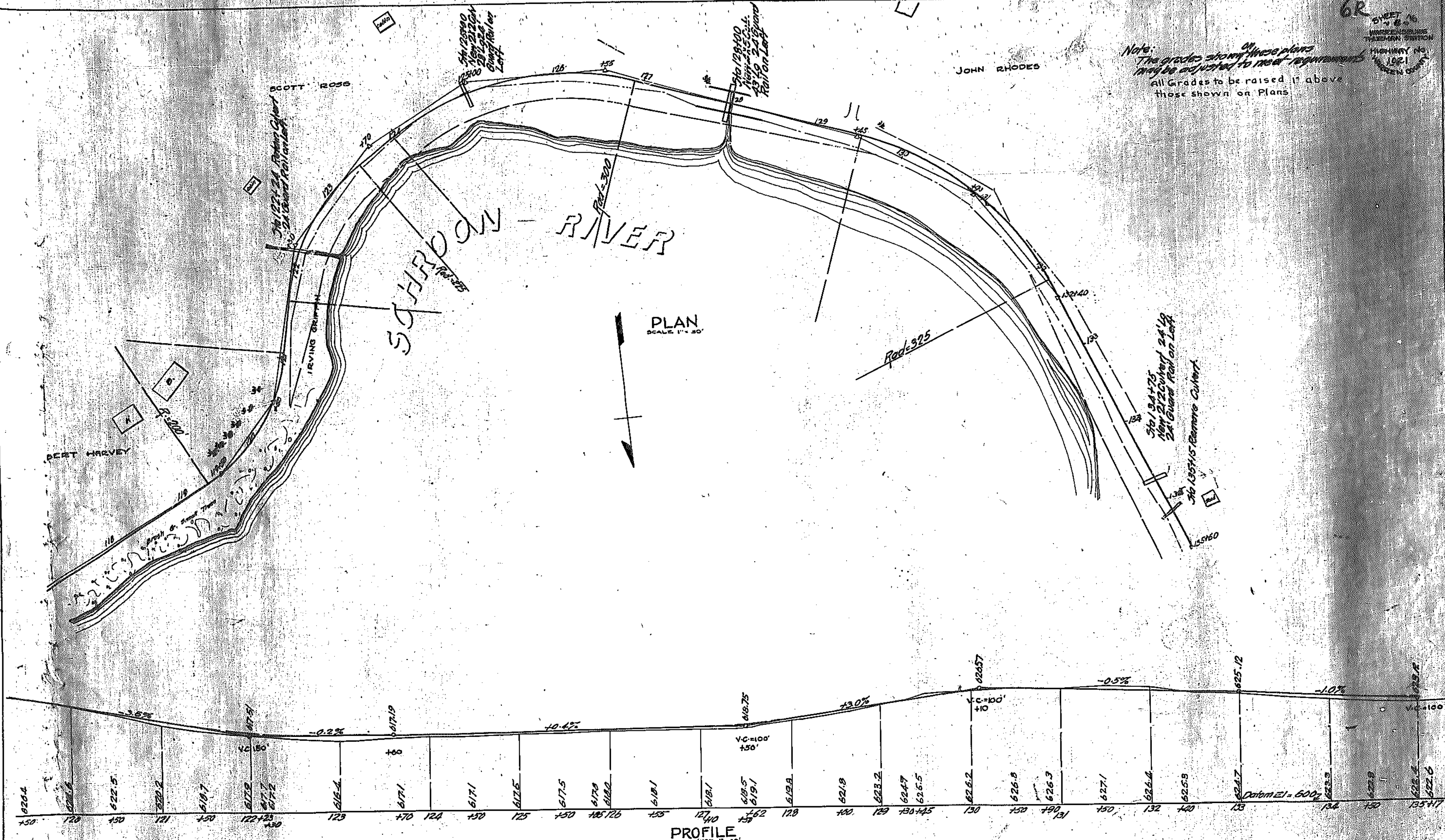


SH 1021
NOTE
All grades to be raised 1' above those shown on Plans.
Note:
The grades shown on these plans may be adjusted to meet requirements
WARRENSBURG THURMAN STATION
HIGHWAY NO. 1021
WARREN COUNTY
VIRGIL KENYON
L. BENNETT
LEWIS LITTLEBROOK
G. TAYLOR
R. D. BAKER
MIKE BOSCO
W. H. McCLAREN
D. BAKER
woods
SWAMPY
A. C. STONE
FRED STONE
SCHROON R.
Sta 64+50 New 2'x2' Culvert 42' Lg.
Sta 71+00 Retain Bridge & Guard Rail R. EL.
Sta 72+50 New 2'x2' Culvert 31' Lg. 24' Guard Rail on Left
PLAN
PROFILE
Datum El = 635
-0.25%
-0.62%
SETH HARRINGTON
D. & H. R. R. Co.
SCHROON RIVER
Sta 78+14 New 2'x2' Culvert 33' Lg. on Skew 24' Guard Rail on Left
Sta 85+25 New 2'x2' Culvert 24' Lg. 24' Guard Rail R. EL.
Barn
House
PLAN
SCALE 1" = 50'
PROFILE
SCALES HOR. 1" = 50' VERT. 1" = 10'
Datum El = 640
+0.2%
+2.2%
V.C. = 100
Prepared under Sec. 125 of the Highway Law and recommended by
Engineer Division No. 2
Dated July 17 19
Traced by H W Tooffe
checked by


SH1021
SHEET 5
WARRENSBURG THURMAN STATION
HIGHWAY No 1021
WARREN COUNTY
SETH HARRINGTON
O. COMBS
SYLVIA GROGAN
Note
All Grades to be raised 1" above those Shown on Plans
Note
The grades shown on these plans may be adjusted to meet requirements
SCHROON RIVER PAPER CO.
DRIVE
Note
All grades to be raised 1" above those shown on Plans.
PLAN
SCALE 1" = 50'
SCHROON R.
SCHROON RIVER PAPER CO
PROFILE
SCALES HOR. 1" = 50' VERT 1" = 10'
Datum El. = 640
SCHROON RIVER PULP & PAPER CO
CASPER KING
SCOTT ROSS
JOHN BROWN
Shed
Shed
Shed
SCHROON RIVER PULP & PAPER CO
SCHROON RIVER PULP & PAPER CO.
MILL
R = 2800
R = 240
R = 200
SCHROON RIVER
PLAN
SCALE 1" = 50'
PROFILE
SCALES HOR. 1" = 50' VERT 1" = 10'
Datum El. = 620
Traced by H.H. Tuttle
Checked by
Prepared under Sec. 125 of the Highway Law and recommended by
Engineer Division No. 2
Dated July 17 1913
Prepared under Sec. 125 of the Highway Law and recommended by
Engineer Division No.
Dated March 25 1912

SH 1021
6R

Note:
The grades shown on these plans may be adjusted to meet requirements
All Grades to be raised 1' above those shown on Plans

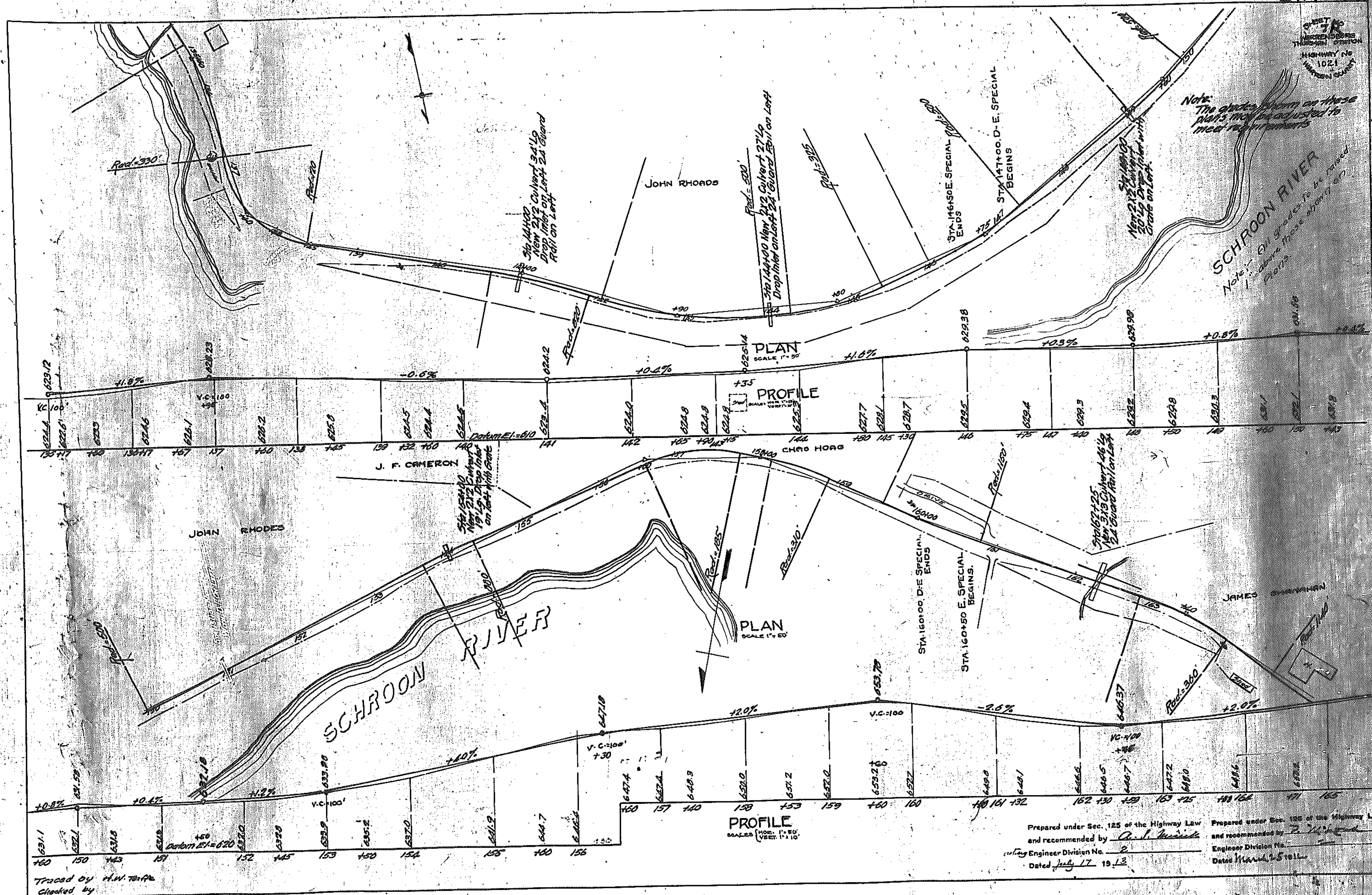


Prepared under Sec. 125 of the Highway Law and recommended by A. S. Minick
Engineer Division No. 2
Dated July 17 1943

Prepared under Sec. 125 of the Highway Law and recommended by P. McL[illegible]
Engineer Division No. [illegible]
Dated March 25 1912

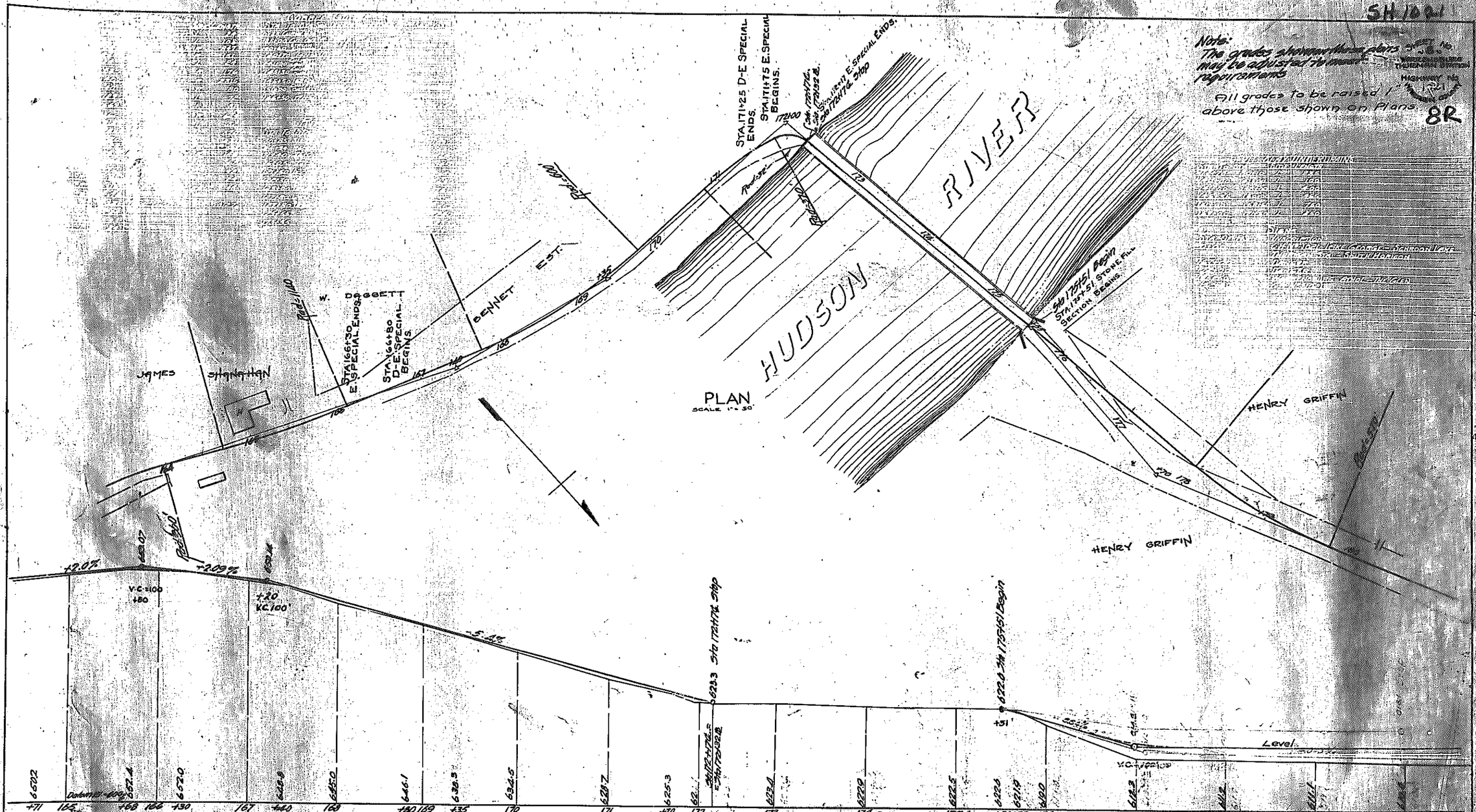
Traced by H.W. Taaffe
checked by

SH1021



Highway No 1021
Warren County
Note: The grades shown on these plans may be adjusted to meet requirements
Note: Oil grades to be raised 1' above those shown on plans
JOHN RHOADS
Rad.=330'
Rad.=500'
Rad.=325'
Rad.=800'
Sta.144+00 New 2x2 Culvert 34' Lg. Drop Inlet on Left 24' Guard Rail on Left
Sta.144+40 New 2x2 Culvert 27' Lg. Drop Inlet on Left 24' Guard Rail on Left
Sta.146+50 E. Special Ends
Sta.147+00 D-E Special Begins
SCHROON RIVER
PLAN
SCALE 1"= 50'
PROFILE
+1.8%
-0.6%
+0.4%
+1.6%
+0.3%
+0.8%
V.C.=100
Datum El.=610
CHAS HOAG
J. F. CAMERON
JOHN RHODES
JAMES SHANAHAN
Rad.=185'
Rad.=310'
Rad.=1150'
Rad.=360'
Sta.160+00 D-E Special Ends
Sta.160+50 E. Special Begins
Sta.162+25 New 3x3 Culvert 46' Lg. 24' Guard Rail on Left
SCHROON RIVER
PLAN
SCALE 1"= 50'
PROFILE
SCALES HOR. 1"= 50' VERT. 1"= 10'
+0.8%
+0.4%
+1.2%
+4.0%
+2.0%
-2.6%
+2.0%
Datum El.=620
Prepared under Sec. 125 of the Highway Law and recommended by A. L. [illegible]
Acting Engineer Division No. 2
Dated July 17 1913
Prepared under Sec. 125 of the Highway Law and recommended by
Engineer Division No.
Dated March 25 1911
Traced by H.W. Taft
Checked by

SH 1001



Note:
The grades shown on these plans may be adjusted to meet requirements

All grades to be raised 1' above those shown on Plans.

8R

Traced by H. W. Teeff
Checked by

Prepared under Sec. 125 of the Highway Law
and recommended by A. S. Minick
acting Engineer Division No. 2
Dated July 17 1913

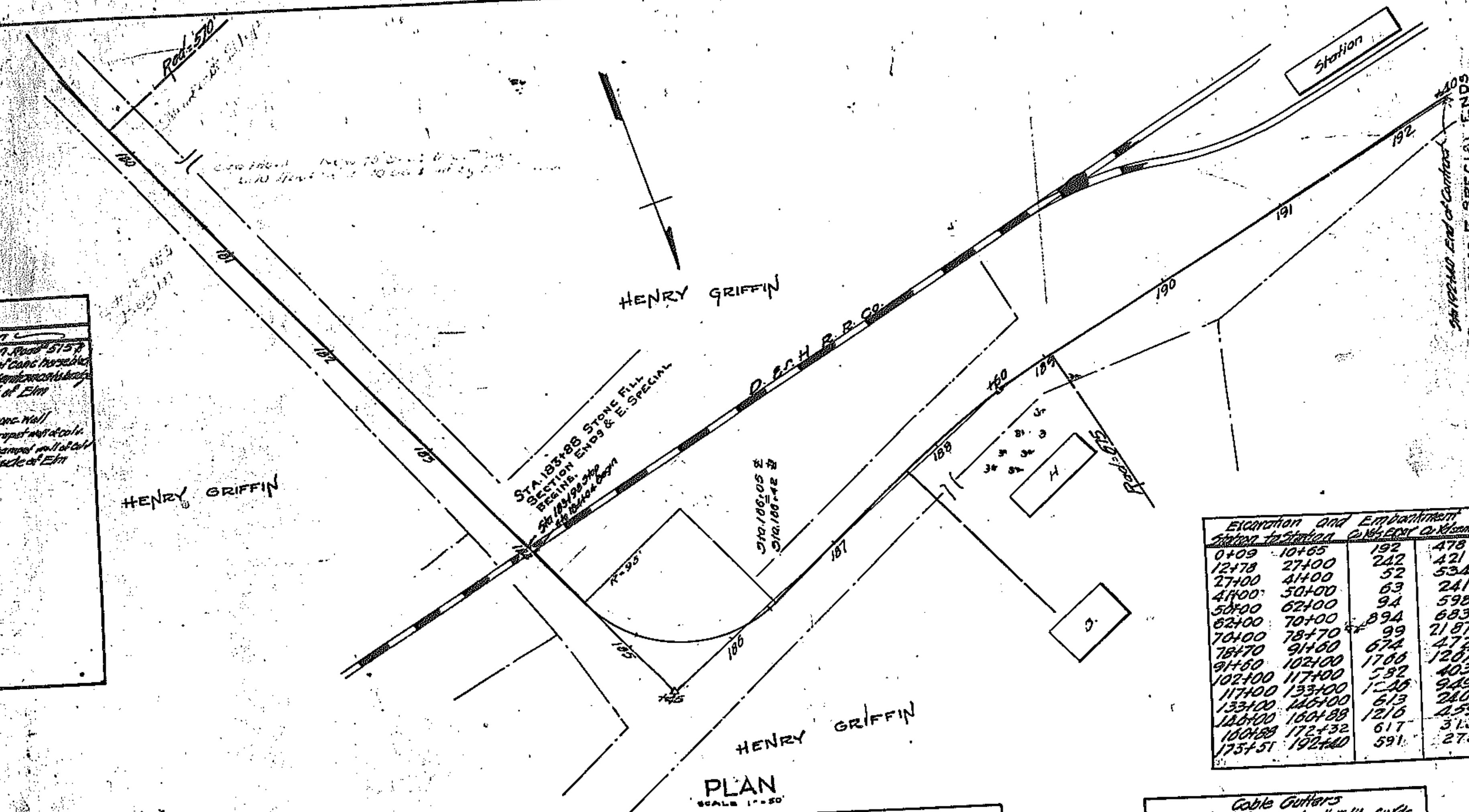
Prepared under Sec. 125 of the Highway Law
and recommended by P. McLaughlin
Engineer Division No.
Dated March 26 1912

SH1021

Note:
The grades shown on these plans may be adjusted to meet requirements.

All grades to be raised 1" above those shown on Plans.

SHEET 8 K.
WARRENSBURG THURMAN STATION
HIGHWAY NO 1021
WARREN COUNTY



Signs etc Station	Location	
0+00	Lake George 6¾ M. Chestertown 13 M. Thurman 3½ M. C. H. No	
186+00	Warrensburg 3½ M. Lake George 10¼ M. Chestertown 10¼ M. C. H. No	
	Where Ordered by Eng. & Danger Signs	

Bench Marks

No	Station	Side	Elevation	Description
(2)	2+80	R	705.81	Top of property Mon. Road 515 ft
0	0+60	L	696.43	X (Cross) Lane step of conc. horseblock
1	10+86	L	685.39	+ " on boulder
2	19+58	L	680.42	Spike in Front root of Elm
3	31+30	L	663.44	+ (Cross) on conc. curb
4	43+90	L	653.94	+ " on s. end conc. wall
5	58+55	L	651.45	+ " on s. end parapet wall of culv.
6	70+90	L	647.42	+ " on N.W. Cor. parapet wall of culv.
7-8	78+50	R	649.60	Bent spike in front side of Elm
9	90+45	L	644.05	Butternut
10	99+00	L	671.99	Pine
11	108+60	R	649.64	Elm
12	118+20	R	629.51	Pine
13	130+25	R	627.41	Elm
14	132+00	L	625.57	Tel. pole
15	155	L	634.32	" "
16	162+00	R	647.06	White Birch
17	174	R	622.15	Tel. pole
18	183+15	R	613.65	Butternut
19	189+00	R	626.86	Maple

Excavation and Embankment

Station	to Station	Cu. Yds. Exc.	Cu. Yds. Emb.
0+09	10+65	192	478
12+78	27+00	242	421
27+00	41+00	52	534
41+00	50+00	63	241
50+00	62+00	94	598
62+00	70+00	894	683
70+00	78+70	99	2187
78+70	91+60	674	472
91+60	102+00	1766	1267
102+00	117+00	582	403
117+00	133+00	1246	949
133+00	146+00	613	2406
146+00	160+88	1216	459
160+88	172+32	617	313
175+51	192+40	591	275

Guard Rail

Station	to Station	Side	Length
2+00	5+30	L	330
21+63	23+10	R	147
30+40	33+40	R	308
45+00	46+80	R	180
64+00	69+50	R	550
71+10	83+50	L	1240
75+80	77+50	R	170
85+75	87+75	L	200
96+90	98+[illegible]	L	170
97+75	98+[illegible]	R	85
99+00	100+[illegible]	[illegible]	100
100+50	102+[illegible]	[illegible]	150
105+50	10[illegible]	[illegible]	120
115+07	11[illegible]	[illegible]	205
119+20	11[illegible]	[illegible]	60
121+20	16[illegible]	[illegible]	4305
162+10	16[illegible]	[illegible]	70
165+90	17[illegible]	[illegible]	595
175+51	18[illegible]	[illegible]	1678
184+04	18[illegible]	[illegible]	56
184+04	18[illegible]	[illegible]	160

Table of Widths

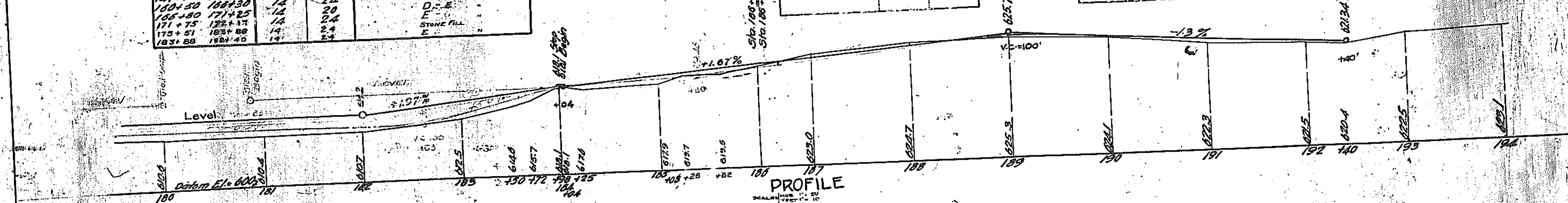
Station to Station		Width of Pavement	Width of Roadway	Typical Section
0+00	146+50	14	24	E — Special
147+00	160+00	14	20	D–E "
160+50	166+30	14	24	E "
166+80	171+25	14	20	D–E "
171+75	172+17	14	24	E "
175+51	183+88	14	24	Stone Fill
183+88	192+40	14	24	E "

Rip-Rap

Side	Station	to Station	Length	Width	Th'k	Cu. Yds.
R	98+40	98+70	15		12	17
R	123+50	126+50	10		12	111
R	140+00	144+50	10		12	107

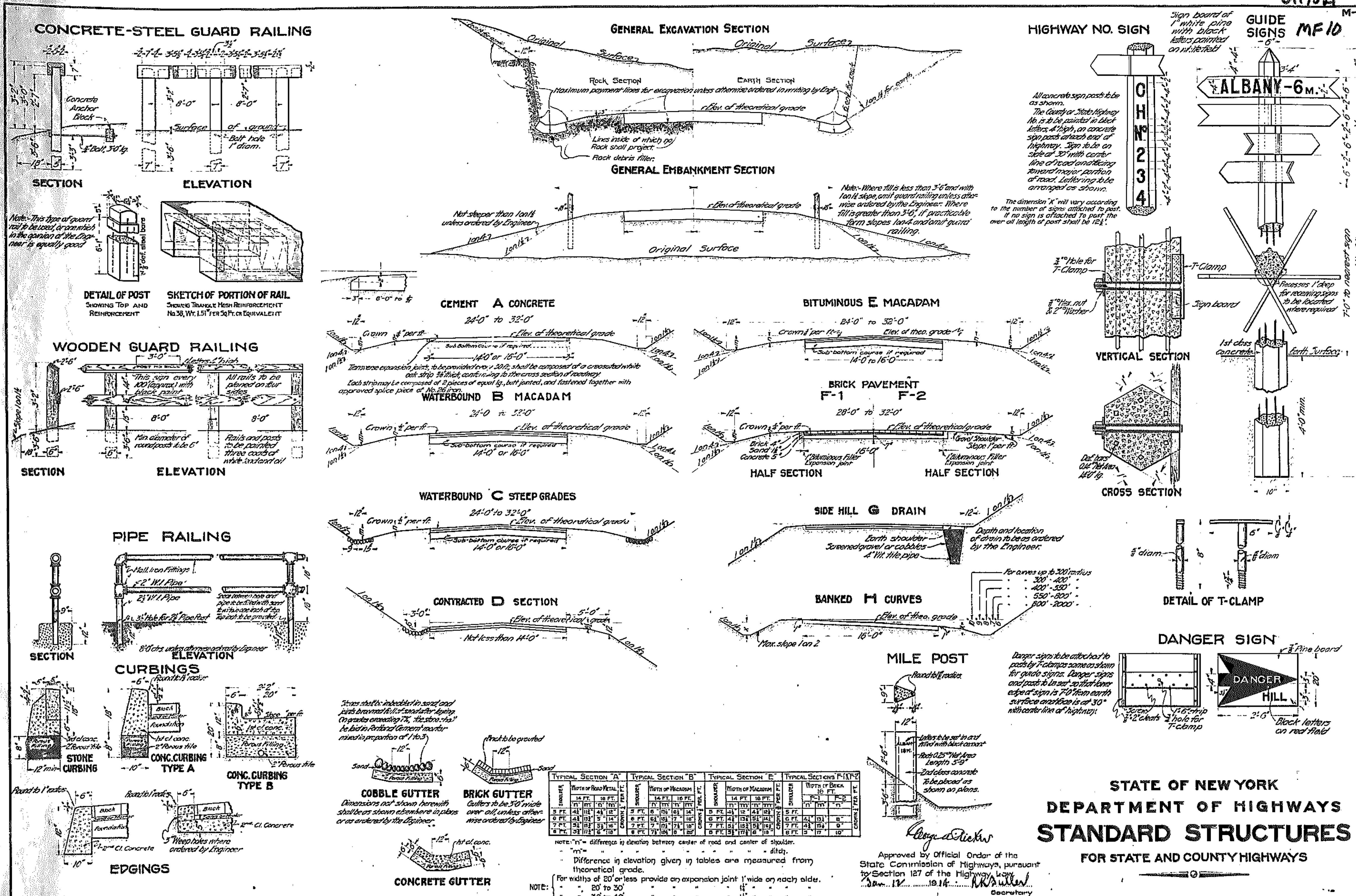
Cable Gutters

Station	to Station	Length	Width	Cu. Yds.
146+40	160+40	1400	3	467
166+30	171+85	555	3	185



Prepared under Sec. 125 of the Highway Law and recommended by A. J. Minick
Engineer Division No. 2
Dated July 17 1913

Prepared under Sec. 125 of the Highway Law and recommended by P. McLeod
Engineer Division No. 1
Dated March 25 1912



TYPICAL SECTION "A"						TYPICAL SECTION "B"						TYPICAL SECTION "E"						TYPICAL SECTIONS F-1 & F-2				
SHOULDER	WIDTH OF ROAD METAL 14 FT. "n"	14 FT. "m"	16 FT. "n"	16 FT. "m"	CROWN ¼" PER FT.	SHOULDER	WIDTH OF MACADAM 14 FT. "n"	14 FT. "m"	16 FT. "n"	16 FT. "m"	CROWN ½" PER FT.	SHOULDER	WIDTH OF MACADAM 14 FT. "n"	14 FT. "m"	16 FT. "n"	16 FT. "m"	CROWN ⅜" PER FT.	SHOULDER	WIDTH OF BRICK 16 FT. F-1 "n"	F-1 "m"	F-2 "n"	CROWN ¼" PER FT.
5 FT.	4¼"	11¾"	4½"	12"		5 FT.	6"	13½"	6½"	14"		5 FT.	4⅛"	12"	4⅜"	12⅜"		5 FT.				
6 FT.	4¾"	13¾"	5"	14"		6 FT.	6½"	15½"	7"	16"		6 FT.	4⅝"	13⅝"	5⅛"	14⅛"		6 FT.	4¼"	13¼"	8"	
7 FT.	5¼"	15¾"	5½"	16"		7 FT.	7"	17½"	7½"	18"		7 FT.	5⅛"	15⅝"	5⅝"	16⅝"		7 FT.	4⅝"	15⅛"	9"	
8 FT.	5¾"	17¾"	6"	18"		8 FT.	7½"	19½"	8"	20"		8 FT.	5⅝"	17⅝"	6"	18"		8 FT.	5"	17"	10"	

NOTE: "n" = difference in elevation between center of road and center of shoulder.
" "m" = " " " " " " " " " ditch.
" Difference in elevation given in tables are measured from theoretical grade.

NOTE: For widths of 20' or less provide an expansion joint ¾" wide on each side.
" " 20' to 30' " " " " 1¼" " " " "
" " 30' to 40' " " " " 1½" " " " "

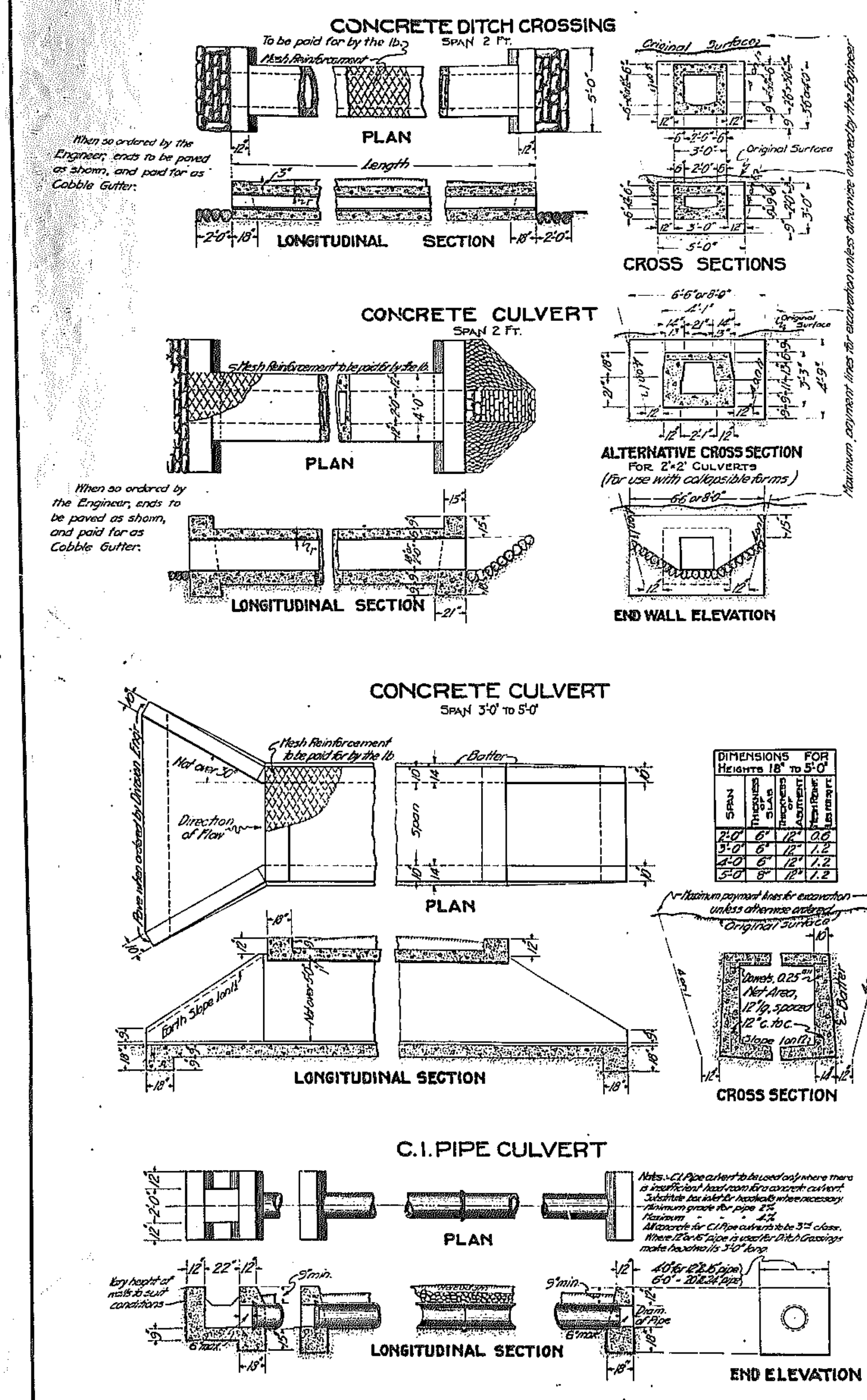
Approved by Official Order of the State Commission of Highways, pursuant to Section 127 of the Highway Law.
Jan. 17 1914 ... Secretary

STATE OF NEW YORK
DEPARTMENT OF HIGHWAYS
STANDARD STRUCTURES
FOR STATE AND COUNTY HIGHWAYS

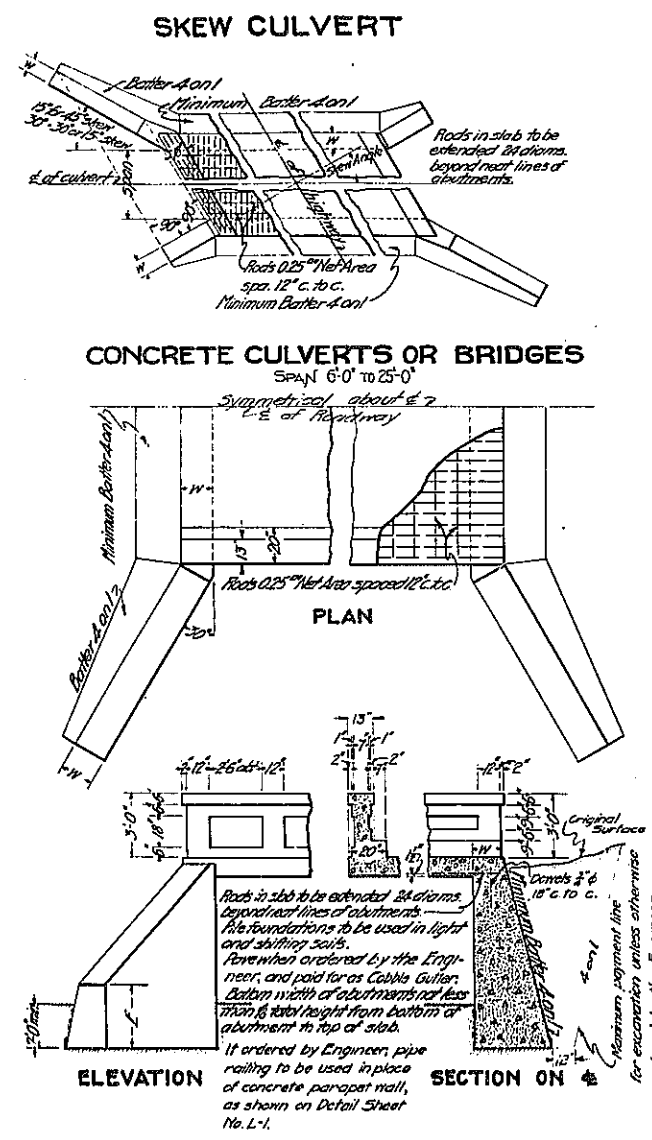
SH1021

M-2

MF11



Dimensions for Heights 18" to 5'0"			
Span	Thickness of Slab	Thickness of Abutment	Mesh Reinf.
2'-0"	6"	12"	0.6
3'-0"	6"	12"	1.2
4'-0"	6"	12"	1.2
5'-0"	8"	12"	1.2



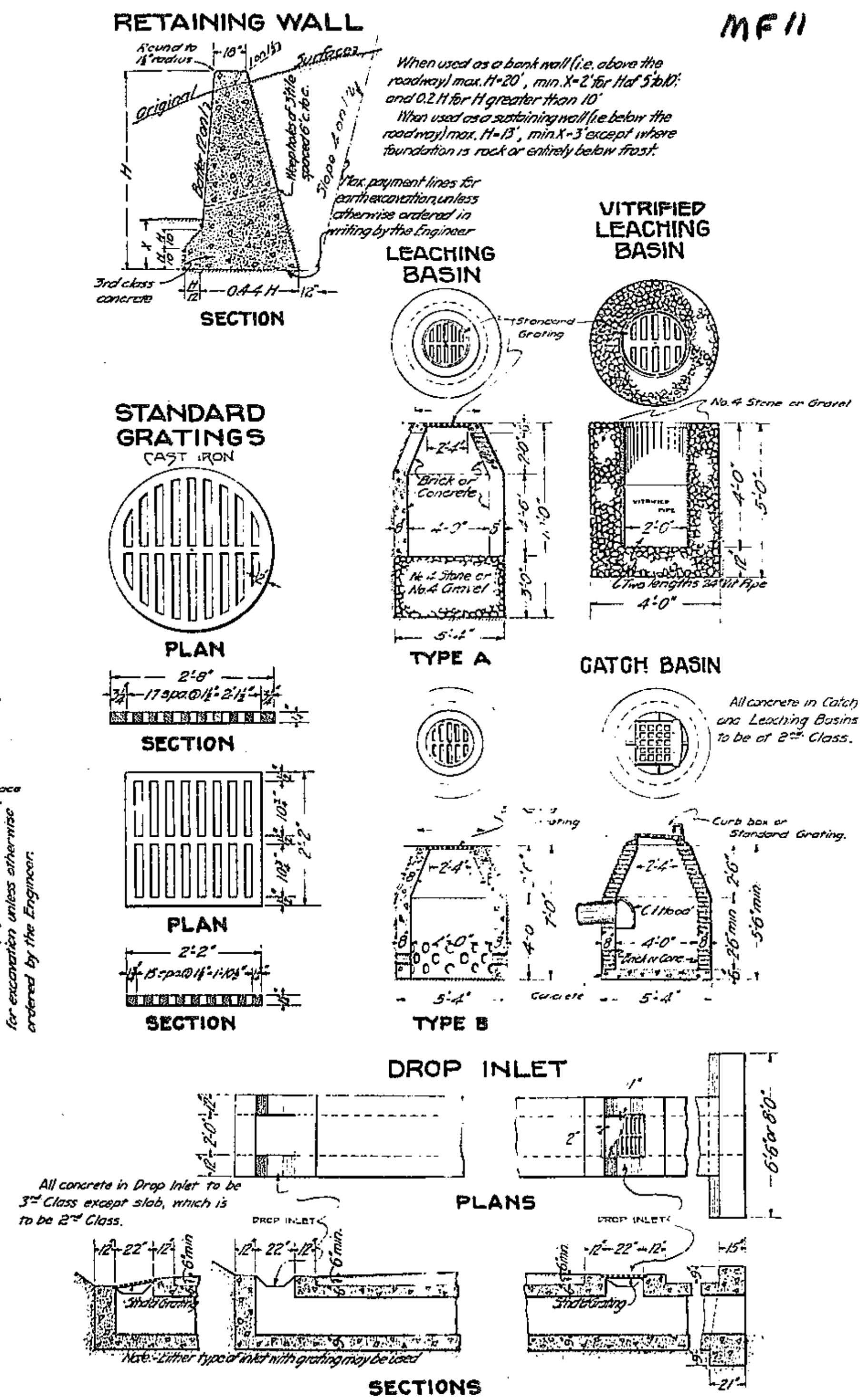
If ordered by Engineer, pipe railing to be used in place of concrete parapet wall, as shown on Detail Sheet No. L-1.

Dimensions for Spans 6'0" to 25'0"				
Span	Thickness of Slab	Net Area of Rods	Rod Spacing C. to C.	Length of Dowels
6'-0"	9"	0.25""	4"	12"
7'-0"	10"	0.39""	5¼"	"
8'-0"	10"	"	5¼"	"
9'-0"	11"	"	5"	"
10'-0"	12"	"	4¾"	"
11'-0"	12"	0.56""	6¼"	"
12'-0"	13"	"	6"	18"
13'-0"	13"	"	5¾"	"
14'-0"	14"	"	5⅜"	"
15'-0"	14"	"	5"	"
16'-0"	15"	"	4¾"	"
17'-0"	15"	"	4¾"	"
18'-0"	16"	"	4½"	"
19'-0"	17"	"	4½"	"
20'-0"	18"	0.77""	5¼"	"
21'-0"	18"	"	5¼"	"
22'-0"	19"	"	5"	24"
23'-0"	19"	"	5"	"
24'-0"	20"	"	4⅝"	"
25'-0"	21"	1.00""	5⅝"	"

For spans 5' to 19', W=18" for clear height of 10' or less.
" " 5' to 19', W=24" " " " " 11' to 15'
" " 20' to 25', W=24" " " " " 15' or less.
" clear heights 7' or less, E=3'
" " " 8', 9' & 10', E=4'
" " " above 10', E=5'

All paving to be paid for as Cobble Gutter.
All rods to have a deformed cross section.
All mesh reinforcement to be of medium steel.
All slabs and parapets to be of 2nd class concrete.
All wings, inverts, also headwalls etc. to be of 3rd class concrete.
Wings, on outlet end of all square culverts with concrete floors, to be built parallel to center line of culvert.
All exposed edges to be rounded to ½" radius.

FOR TYPICAL SECTIONS F-1 & F-2
Where culvert covers become a part of concrete base for brick pavement, transverse reinforcement shall be extended 12" beyond back of abutments into the concrete base.



STATE OF NEW YORK
DEPARTMENT OF HIGHWAYS
STANDARD STRUCTURES
FOR STATE AND COUNTY HIGHWAYS

George A. Ricker

Approved by Official Order of the State Commission of Highways, pursuant to Section 127 of the Highway Law.
Jan 17 1914. R.K. Fuller. Secretary.

Del. A.W. Thayer 12-30-13 Wm. V. Fonda 8 January 1914

STATE OF NEW YORK
DEPARTMENT OF HIGHWAYS

PLANS FOR IMPROVING THE WARRENSBURG-THURMAN STATION COUNTY HIGHWAY

From State Highway No. 5157, at Grand Army Hotel in the Hamlet of Warrensburg, southwesterly to the D. & H. Depot, at Thurman Station, a length of 3.21 miles in the Town of Warrensburg, 0.31 miles in the Town of Thurman, a total length of 3.52 miles, Warren County.

CHAPTER 30, LAWS OF 1909

11 Sheets — Petition No. 3167 — County Highway No. 1021.

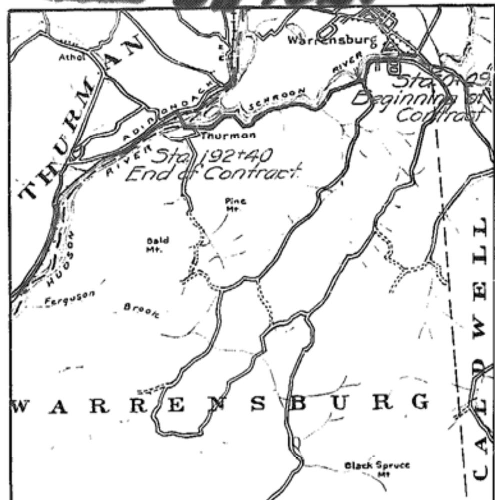
SCALES			SCALES		
Map		50 feet-1 inch	Map		500 feet-1 inch
Profile	Hor.	50 " 1 "	Profile	Hor.	500 " 1 "
	Ver.	10 " 1 "		Ver.	50 " 1 "
Sections		5 " 1 "	Sections		5 " 1 "

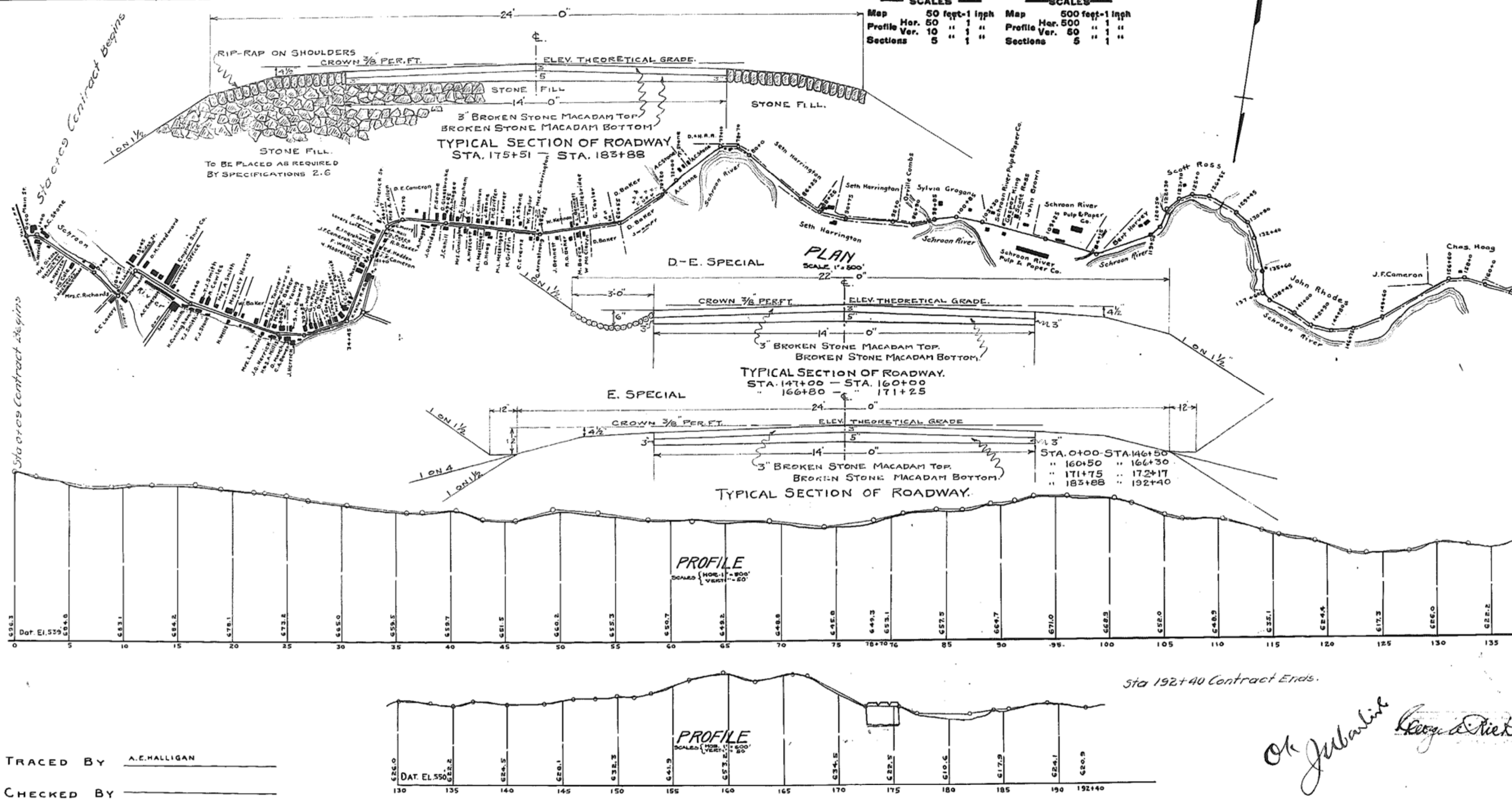
Microfilm Note:
Sheets 10 AND 11 were standard structure sheets and are not included in this set.

SHEET No. 1 — WARRENSBURG THURMAN STATION — HIGHWAY No 1021 — WARREN COUNTY

TYPE OF CONSTRUCTION
3.52 MILES, BIT. MAC.

→ NOTE 1. ←
Under Item # 73 The Contractor Shall Furnish And Place As Shown On The Plans Or As Directed By The Engineer, A Mixture Of No. 2 And No. 3 Stone Upon The Shoulders, Drives, Highway Intersections And In Trenches. Payment To Be Made For The Number Of Cubic Yards, Loose Measure In Place Complete.





RE-EXAMINED AND APPROVED.
BY H.W. Schermerhorn DIV. ENGINEER
DATED January 22 1914

A. S. Minck
July 17 13
(See below)
Bertram E. Murray
July 21 1913
BY OFFICIAL ORDER
Aug 29 1913 R.K. Fuller
Warren
Lolan R. Dunlap

Re-examined Pursuant To Sec. 126.
By Bertram E. Murray County Supt.
Dated Aug 6 1913.

Prepared under Sec. 125 of the Highway Law and recommended by H. McLood
Engineer Division No. 2
Dated March 25 1912

Examined pursuant to Section 126
by Bertram E. Murray County Supt.
Dated March 21 1912

Approved at an Executive Session of the State Commission of Highways, pursuant to Section 127 of the Highway Law held on March 29 1912 Chas P. Dillon Secretary

Approved and adopted by Resolution of the Board of Supervisors of Warren County pursuant to Section 128 of the Highway Law at a meeting held on April 1st 1912.
Lolan R. Dunlap
Clerk Board of Supervisors

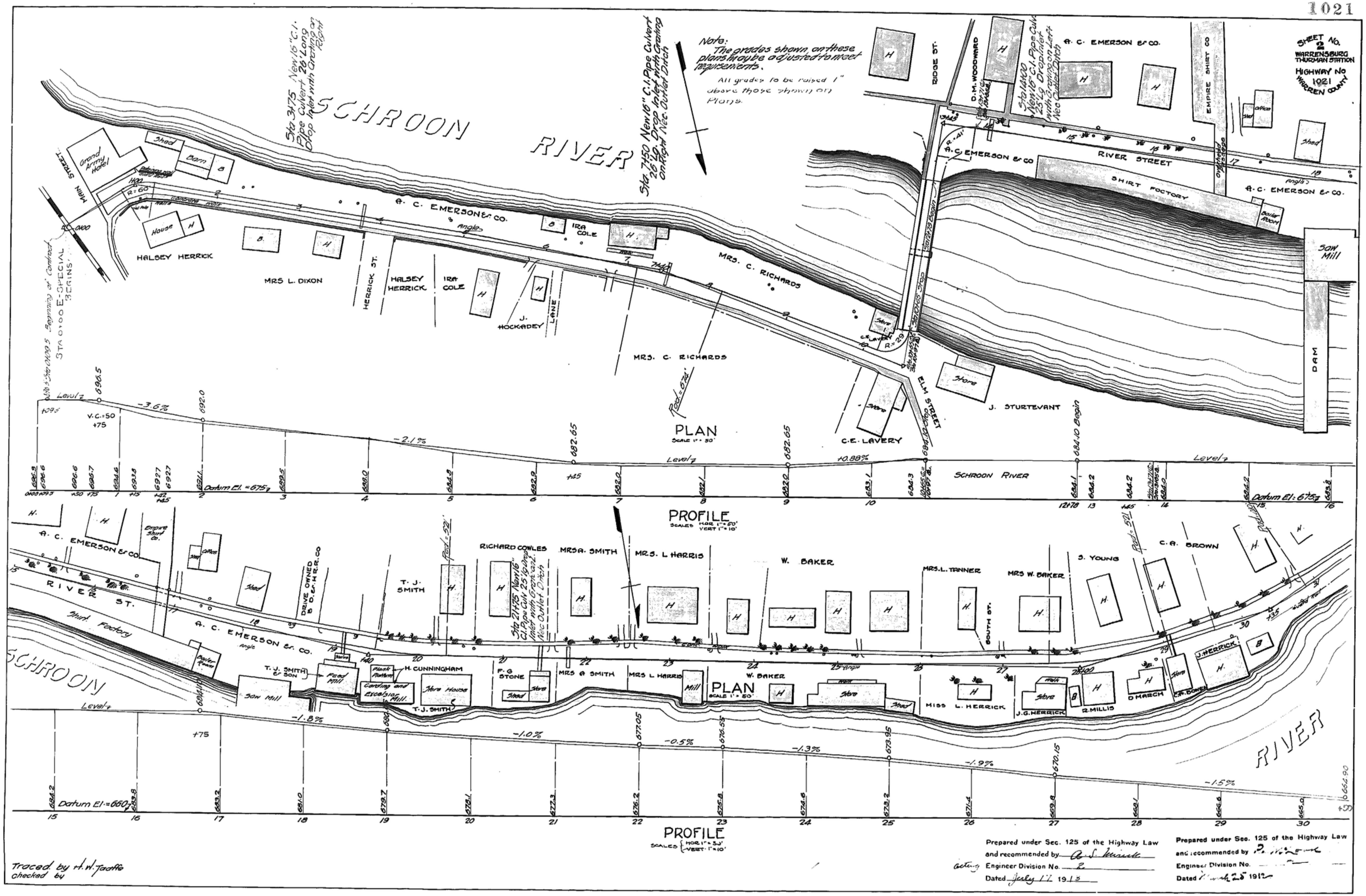
OK J.H. Bartlett — George A. Ricker

TRACED BY A.E. HALLIGAN

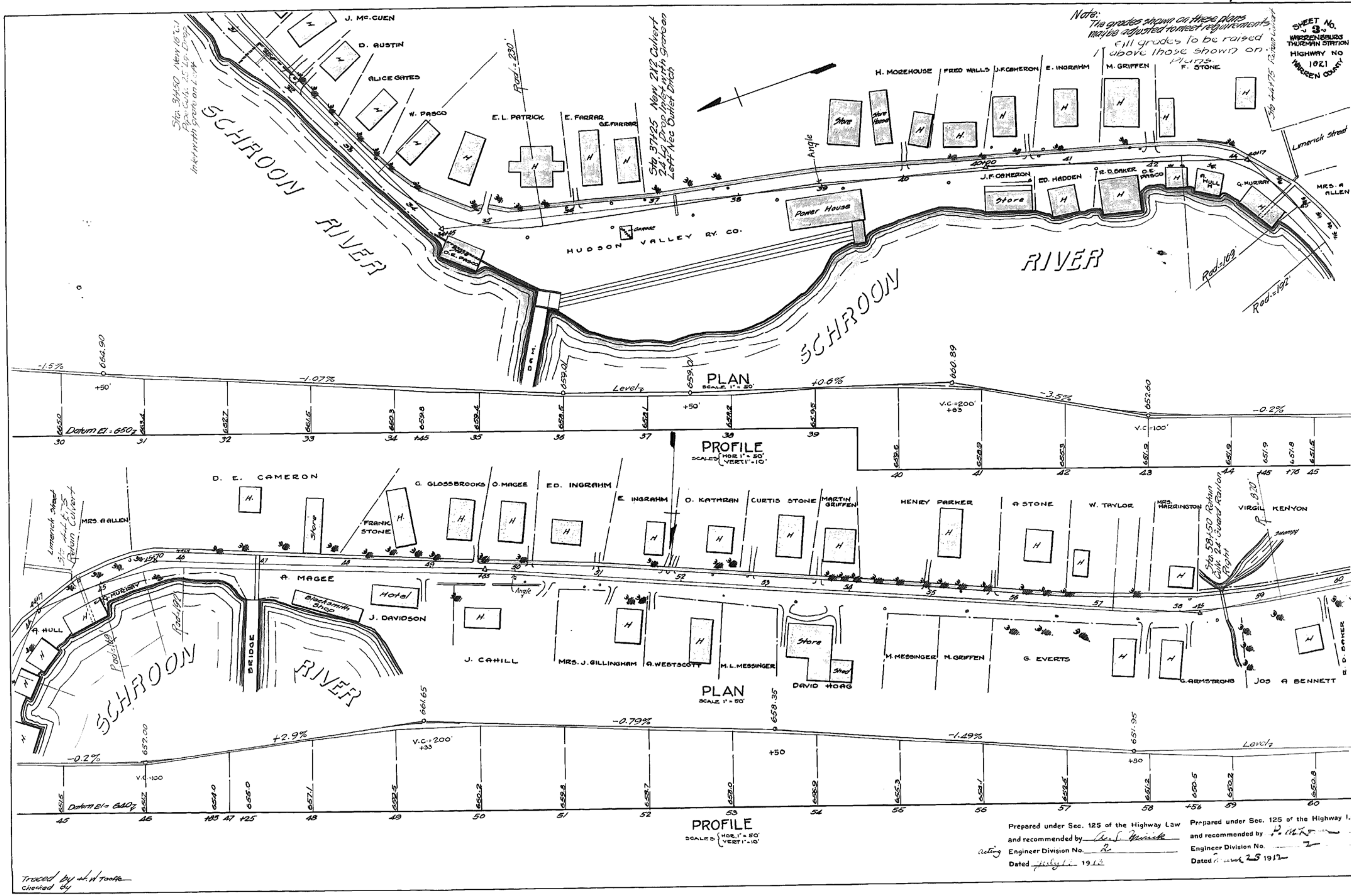
CHECKED BY

SH1021

1021


SHEET No. 2
WARRENSBURG THURMAN STATION
HIGHWAY No 1921
WARREN COUNTY
Note:
The grades shown on these plans may be adjusted to meet requirements.
All grades to be raised 1" above those shown on Plans.
SCHROON RIVER
A. C. EMERSON & CO.
RIDGE ST.
D. M. WOODWARD
EMPIRE SHIRT CO
RIVER STREET
SHIRT FACTORY
Boiler Room
Saw Mill
DAM
Grand Army Hotel
Shed
Barn
House
MAIN STREET
HALSEY HERRICK
MRS L. DIXON
HERRICK ST.
IRA COLE
J. HOCKADEY
LANE
MRS. C. RICHARDS
ELM STREET
Store
J. STURTEVANT
C.E. LAVERY
PLAN
SCALE 1" = 50'
PROFILE
SCALES HOR 1" = 50' VERT 1" = 10'
Datum El. = 675
Level
-3.6%
-2.1%
+0.88%
Schroon River
RIVER ST.
DRIVE OWNED B D. & H. R.R. CO
T. J. SMITH
RICHARD COWLES
MRS A. SMITH
MRS. L HARRIS
W. BAKER
MRS. L. TANNER
MRS W. BAKER
S. YOUNG
C. A. BROWN
SOUTH ST.
T. J. SMITH & SON
Feed Mill
H. CUNNINGHAM
Carding and Excelsior Mill
Store House
F. G STONE
Mill
MISS L. HERRICK
J. G. HERRICK
R. MILLIS
D MARCH
J. HERRICK
Datum El. = 660
-1.8%
-1.0%
-0.5%
-1.3%
-1.9%
-1.5%
Traced by H. W. Taaffe
checked by
Prepared under Sec. 125 of the Highway Law and recommended by
Acting Engineer Division No. 2
Dated July 17 1913
Prepared under Sec. 125 of the Highway Law and recommended by
Engineer Division No.
Dated March 25 1912

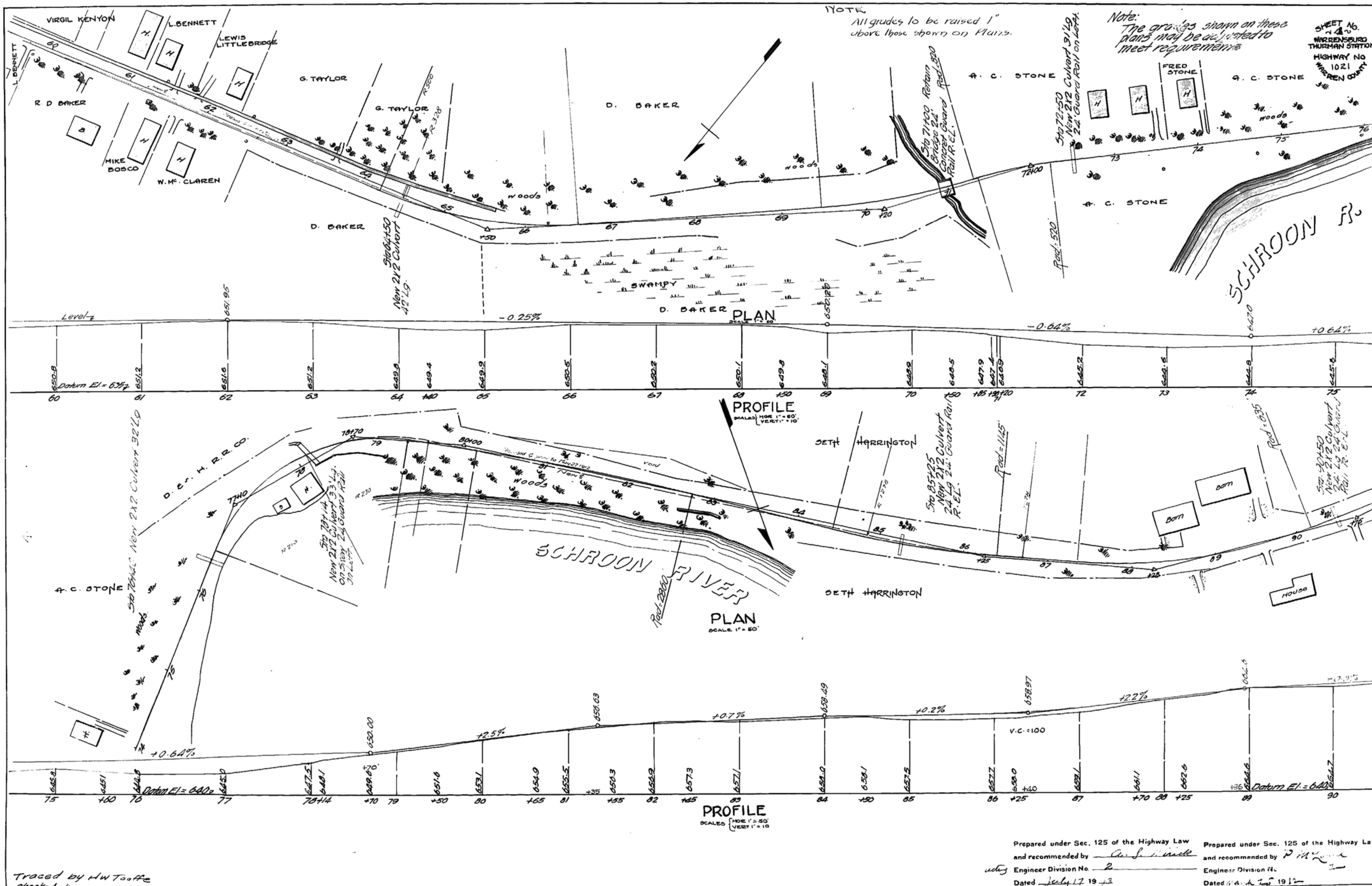
SH1021



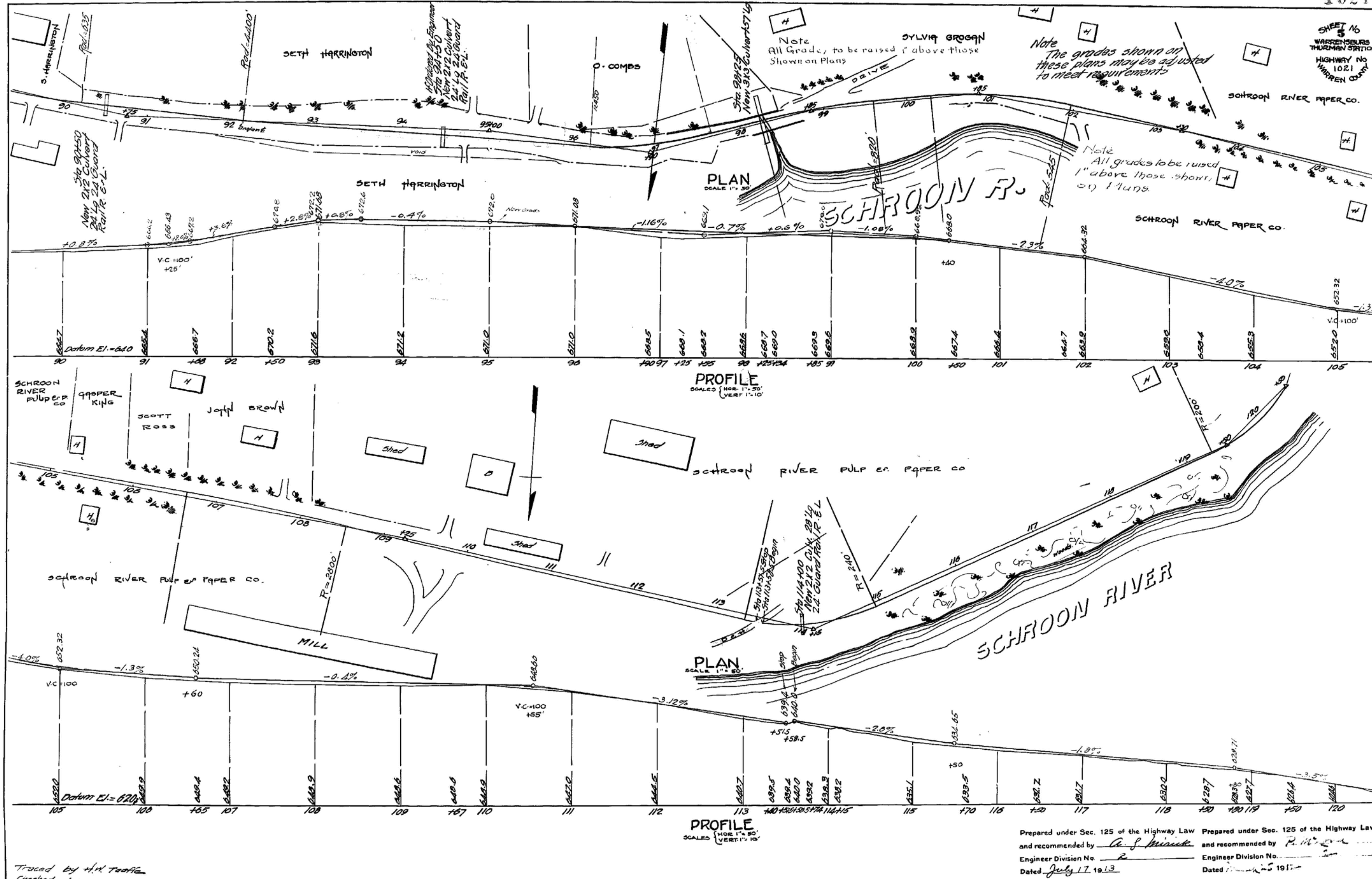
Note: The grades shown on these plans may be adjusted to meet requirements. Fill grades to be raised 1' above those shown on plans.
SHEET No. 9 WARRENSBURG THURMAN STATION HIGHWAY NO 1021 WARREN COUNTY
J. McCUEN
D. AUSTIN
ALICE GATES
W. PASCO
E. L. PATRICK
E. FARRAR
G.E. FARRAR
H. MOREHOUSE
FRED WALLS
J. F. CAMERON
E. INGRAHM
M. GRIFFEN
F. STONE
ED. HADDEN
R. D. BAKER
O. E. PASCO
A. HULL
G. MURRAY
MRS. A ALLEN
Limerick Street
Power House
HUDSON VALLEY RY. CO.
SCHROON RIVER
DAM
Sta. 37+25 New 2'x2' Culvert 24" Lg Drop Inlet with Grate on Left Nec Outlet Ditch
Rad. = 230'
Rad. = 169'
Rad. = 192'
Angle
PLAN SCALE 1" = 50'
PROFILE SCALES HOR 1" = 50' VERT 1" = 10'
Datum El. = 650
-1.5%
-1.07%
Level
+0.6%
-3.5%
-0.2%
V.C. = 200' +83
V.C. = 100'
D. E. CAMERON
G. GLOSSBROOKS
O. MAGEE
ED. INGRAHM
E. INGRAHM
O. KATHRAN
CURTIS STONE
MARTIN GRIFFEN
HENRY PARKER
A. STONE
W. TAYLOR
MRS. HARRINGTON
VIRGIL KENYON
FRANK STONE
A. MAGEE
Blacksmith Shop
Hotel
J. DAVIDSON
J. CAHILL
MRS. J. GILLINGHAM
A. WESTSCOTT
M. L. MESSINGER
DAVID HOAG
M. MESSINGER
M. GRIFFEN
G. EVERTS
G. ARMSTRONG
JOS A BENNETT
R. D. BAKER
BRIDGE
Store
Shed
Swampy
Sta. 58+50 Retain Culv. 24' Guard Rail on Right
Datum El. = 640
-0.2%
+2.9%
-0.79%
-1.49%
V.C. = 200' +33
V.C. = 100
Prepared under Sec. 125 of the Highway Law and recommended by
acting Engineer Division No. 2
Dated July 1913
Prepared under Sec. 125 of the Highway Law and recommended by
Engineer Division No. 2
Dated March 25 1912
Traced by H. W. Toohe
Checked by

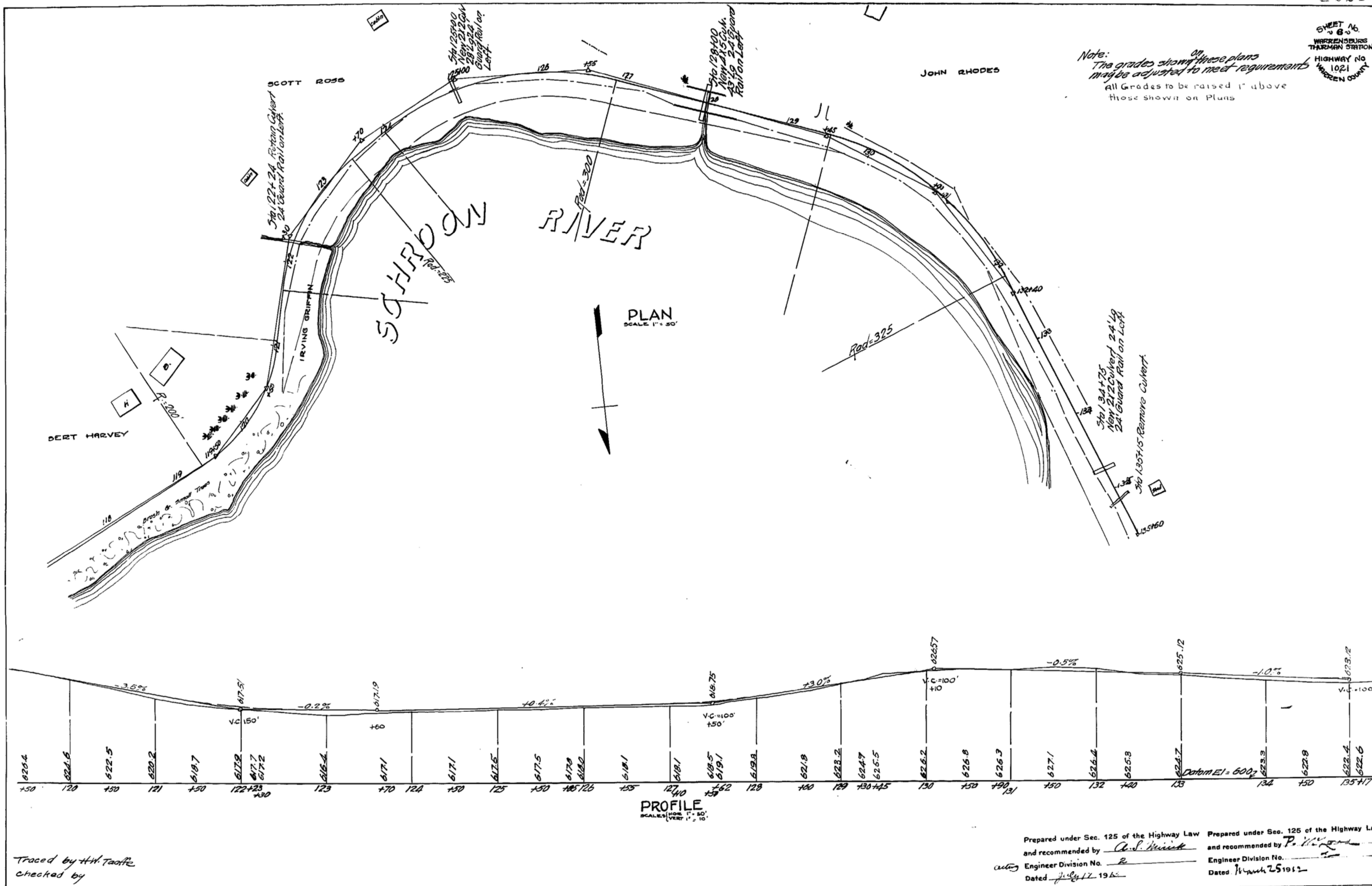
SH1021

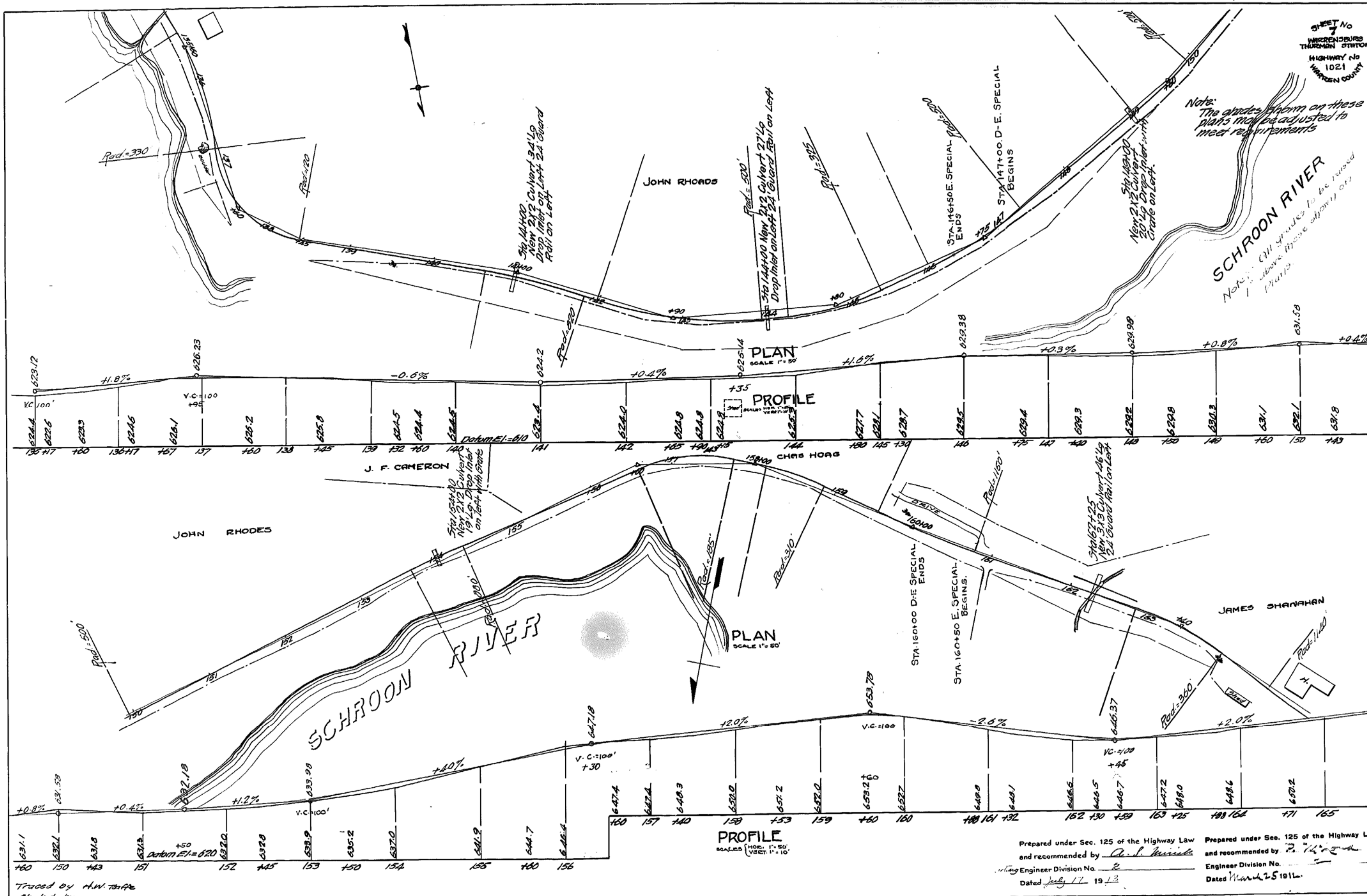
1021


NOTE
All grades to be raised 1" above those shown on Plans.
Note: The grades shown on these plans may be adjusted to meet requirements
SHEET No. 4
WARRENSBURG THURMAN STATION
HIGHWAY No. 1021
WARREN COUNTY
VIRGIL KENYON
L. BENNETT
LEWIS LITTLEBRIDGE
R. D. BAKER
MIKE BOSCO
W. McCLAREN
G. TAYLOR
D. BAKER
A. C. STONE
FRED STONE
SWAMPY
WOODS
SCHROON R.
PLAN
PROFILE
Level
-0.25%
-0.64%
+0.64%
Datum El = 645
SETH HARRINGTON
D. & H. R.R. CO.
SCHROON RIVER
HOUSE
Barn
PLAN
SCALE 1" = 50'
+0.64%
+2.5%
+0.7%
+0.2%
+2.2%
V.C. = 100
Datum El = 640
PROFILE
SCALES HOR. 1" = 50' VERT. 1" = 10'
Traced by H W Tooffe
checked by
Prepared under Sec. 125 of the Highway Law and recommended by
Engineer Division No. 2
Dated July 17 1913
Prepared under Sec. 125 of the Highway Law and recommended by
Engineer Division No.
Dated 1912

SH1021


SHEET No 5
WARRENSBURG THURMAN STATION
HIGHWAY No 1021
WARREN COUNTY
SETH HARRINGTON
S. HARRINGTON
O. COMBS
SYLVIA GROGAN
SCHROON RIVER PAPER CO.
Note
All Grades to be raised 1" above those Shown on Plans
Note
The grades shown on these plans may be adjusted to meet requirements
Note
All grades to be raised 1" above those shown on Plans.
SCHROON R.
PLAN
SCALE 1"=50'
PROFILE
SCALES { HOR. 1"=50' VERT. 1"=10'
Datum El.=640
SCHROON RIVER PULP & P. CO
GASPER KING
SCOTT ROSS
JOHN BROWN
Shed
SCHROON RIVER PULP & PAPER CO
MILL
SCHROON RIVER
Datum El.=620
Prepared under Sec. 125 of the Highway Law and recommended by
Engineer Division No. 2
Dated July 17 1913
Prepared under Sec. 125 of the Highway Law and recommended by
Engineer Division No.
Dated
Traced by H.H. Teale
Checked by.


SHEET No. 6
WARRENSBURG THURMAN STATION
HIGHWAY No 1021
WARREN COUNTY
Note: The grades shown on these plans may be adjusted to meet requirements
All Grades to be raised 1" above those shown on Plans
SCOTT ROSS
JOHN RHODES
BERT HARVEY
IRVING GRIFFIN
SCHROON RIVER
PLAN
SCALE 1" = 50'
Rad=300
Rad=275
Rad=325
R=200'
Brush & Small Trees
Sta 122+24 Retain Culvert 24' Guard Rail on Left.
Sta 128+00 New 2x5 Culv. 24' Guard Rail on Left
Sta 134+75 New 2' Culvert 24' Lg 24' Guard Rail on Left
Sta 135+15 Remove Culvert
PROFILE
SCALES HOR 1" = 50' VERT 1" = 10'
-3.5%
-0.2%
+0.4%
+3.0%
-0.5%
-1.0%
V.C. 150'
V.C. = 100'
Datum El = 600
Traced by H.W. Taaffe
Checked by
Prepared under Sec. 125 of the Highway Law and recommended by A. S. Minick acting Engineer Division No. 2
Dated July 17 1912
Prepared under Sec. 125 of the Highway Law and recommended by
Engineer Division No.
Dated March 25 1912



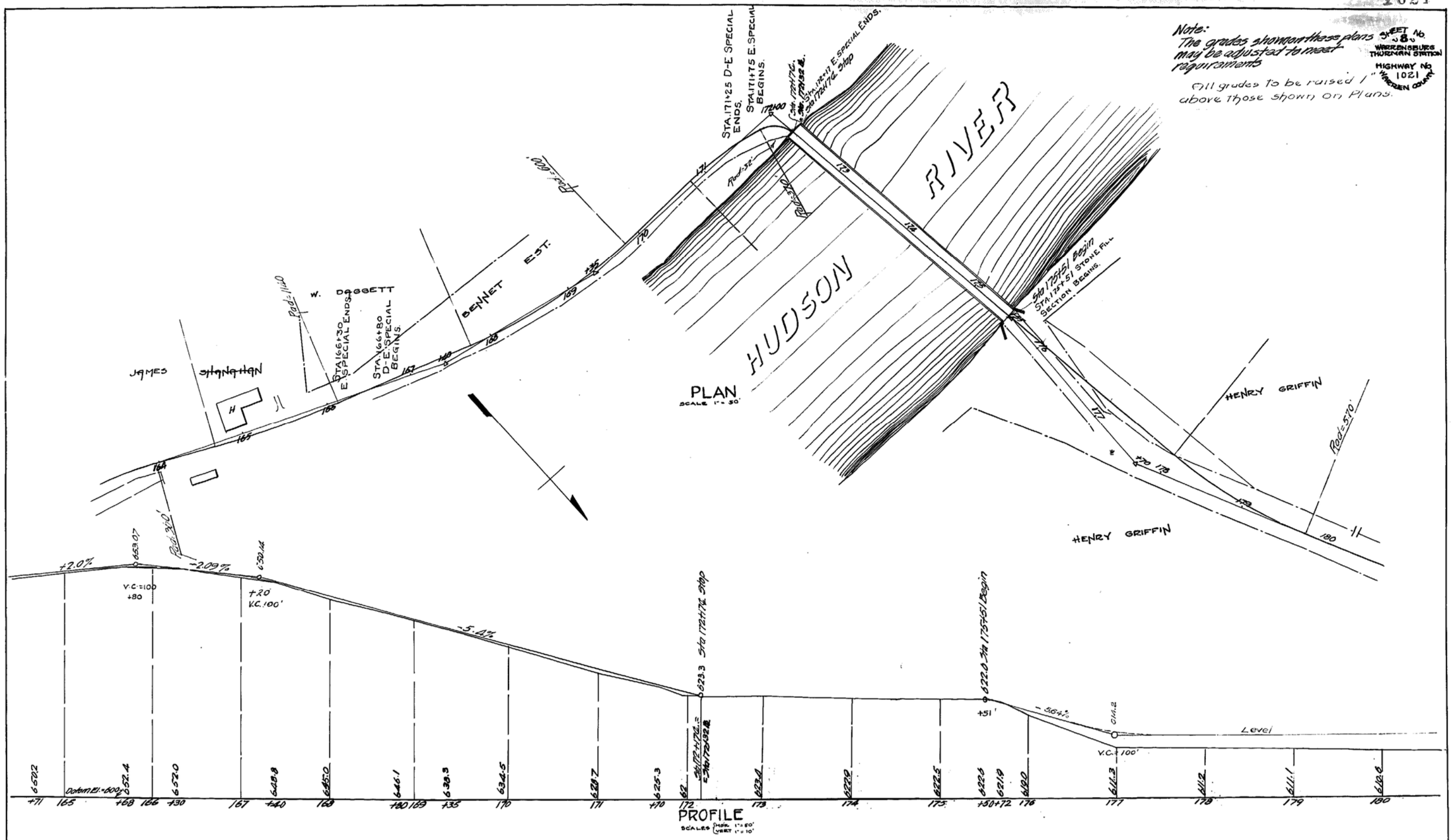
Prepared under Sec. 125 of the Highway Law and recommended by
Engineer Division No. 2
Dated July 11 1913

Prepared under Sec. 125 of the Highway Law and recommended by
Engineer Division No.
Dated March 25 1912

Note:
The grades shown on these plans may be adjusted to meet requirements

Fill grades to be raised 1" above those shown on Plans.

SHEET No. 3 of 3 Sheets
WARRENSBURG THURMAN STATION
HIGHWAY No 1021
WARREN COUNTY



Traced by H W. Tearle
Checked by

Prepared under Sec. 125 of the Highway Law
and recommended by A. S. Merrill
Engineer Division No. 2
Dated July 17 1913

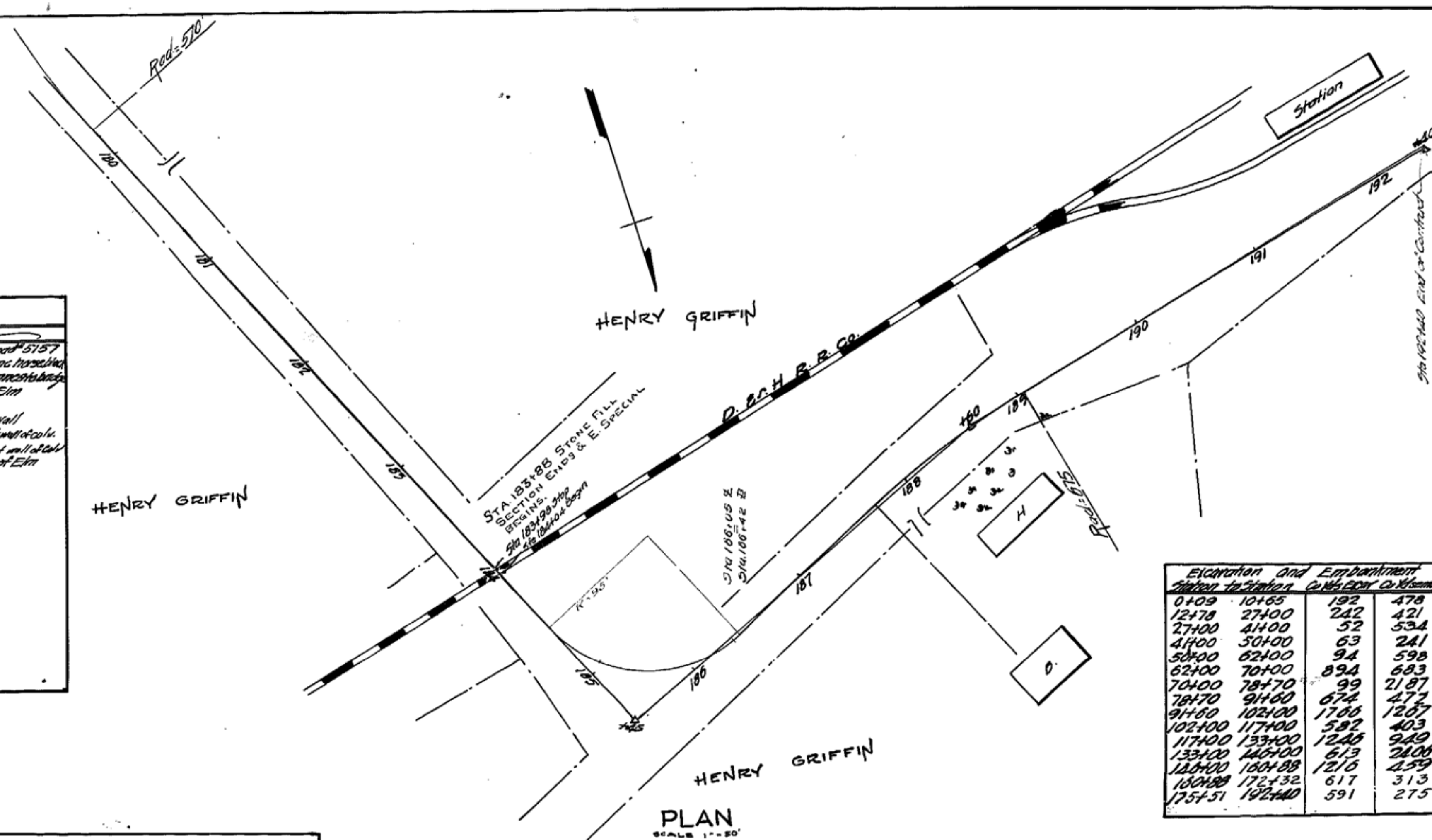
Prepared under Sec. 125 of the Highway Law
and recommended by P. M. Rossman
Engineer Division No.
Dated June 25 1913

Note:
The grades shown on these plans may be adjusted to meet requirements.

All grades to be raised 1' above those shown on Plans

SHEET No. 9
WARRENSBURG THURMAN STATION
HIGHWAY No 1021
WARREN COUNTY

Bench Marks				
No	Station	Side	Elevation	Description
(2)	21+80	R	705.81	Top of property Mon. Road 5157
0	0+60	L	696.43	X (Cross) Lower step of conc. horseblock
1	10+96	L	685.39	+ " on boulder at entrance to bridge
2	19+58	L	680.42	Spike in Front root of Elm
3	31+30	L	663.44	+ (Cross) on conc. curb
4	43+90	L	653.94	+ " on south end conc. wall
5	58+55	L	651.45	+ " on south end parapet wall of culv.
6	70+90	L	647.42	+ " on N.W. Cor. parapet wall of culv.
7-8	78+50	R	649.60	Bent spike in front side of Elm
9	90+05	L	666.05	Butternut
10	99+00	L	671.99	Pine
11	108+60	R	649.84	Elm
12	118+90	R	629.51	Pine
13	130+25	R	627.41	Elm
14	139+80	L	625.67	Tel Pole
15	160+	?	634.32	" "
16	162+00	R	647.06	White Birch
17	171+	R	629.15	Tel Pole
18	183+15	R	613.86	Butternut
19	189+00	R	626.86	Maple



PLAN
SCALE 1" = 50'

Station	Signs etc. Inscription	
0+00	Lake George 6¾ M. Chestertown 13 M. Thurman 3½ M C. H. No	
186+00	Warrensburg 3½ M Lake George 10¼ M. Chestertown 10½ M. C. H. No	
	Where Ordered by Eng. 4 Danger Signs	

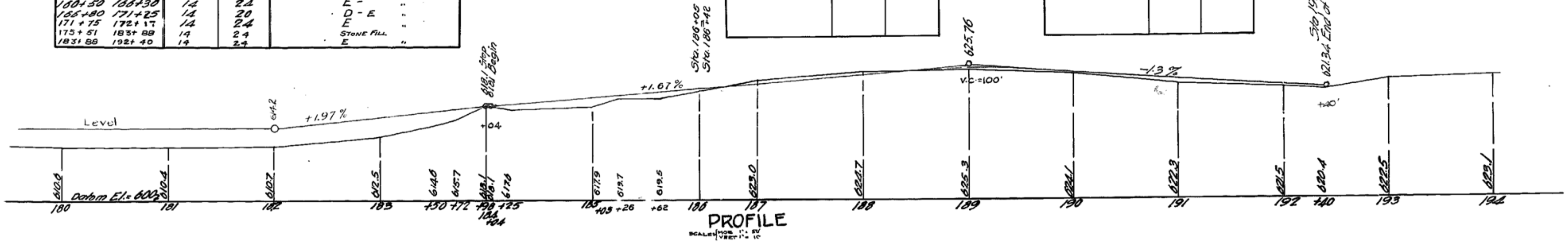
Excavation and Embankment			
Station	to Station	Cu. Yds. Excav.	Cu. Yds. Embankment
0+09	10+65	192	478
12+78	27+00	242	421
27+00	41+00	52	534
41+00	50+00	63	241
50+00	62+00	94	598
62+00	70+00	894	683
70+00	78+70	99	2187
78+70	91+60	674	472
91+60	102+00	1766	1207
102+00	117+00	582	403
117+00	133+00	1246	949
133+00	146+00	613	2406
146+00	160+88	1216	459
160+88	172+32	617	313
175+51	192+40	591	275

Guard Rail			
Station	to Station	Side	Lin. ft.
2+00	5+50	L	350
21+63	23+10	R	147
30+40	33+48	R	308
45+00	46+80	R	180
64+00	69+50	R	550
71+10	83+50	R	1240
75+80	77+50	L	170
85+75	87+75	R	200
96+90	98+60	L	170
97+75	98+60	R	85
99+00	100+00	L	100
100+50	102+00	R	150
106+50	107+70	R	120
115+07	118+75	R	305
119+20	119+80	R	60
121+20	164+25	R	4305
162+10	162+80	L	70
165+90	171+85	R	595
175+51	183+90	R-L	1678
184+04	184+60	R	56
184+04	185+65	L	161

Table of widths				
Station	to Station	Width of Pavement	Width of Roadway	Typical Section
0+00	146+50	14	24	E — Special
147+00	160+00	14	20	D - E "
160+50	166+30	14	24	E - "
166+80	171+25	14	20	D - E "
171+75	172+17	14	24	E "
175+51	183+88	14	24	STONE FILL
183+88	192+40	14	24	E "

Rip-Rap					
Side	Station	to Station	Length	Width	Cu. Yds.
R	98+40	98+70	15	12	17
R	123+50	126+50	10	12	111
R	140+00	144+50	10	12	167

Cobble Gutters				
Station	to Station	Length	Width	Cu. Yds.
146+40	160+40	1400	3	467
166+30	171+85	555	3	185



PROFILE
SCALES: HOR. 1" = 50' VERT. 1" = 10'

Prepared under Sec. 125 of the Highway Law
and recommended by A. S. Merick
actg Engineer Division No 2
Dated July 17 1913

Prepared under Sec. 125 of the Highway Law
and recommended by P. McHand
Engineer Division No.
Dated March 25 1912